## NOTICE OF THE MEETING OF THE PLAN COMMISSION

The meeting of the Plan Commission is scheduled for May 20, 2021 beginning at 7:00 p.m.

A copy of the agenda for this meeting is attached hereto and can be found at <u>www.tinleypark.org</u>.

#### **NOTICE - MEETING MODIFICATION DUE TO COVID-19**

Pursuant to Governor Pritzker's Executive Order 2020-07, Executive Order 2020-10, Executive Order 2020-18, Executive Order 2020-32, Executive Order 2020-33, Executive Order 2020-39, and Executive Order 2020-44, which collectively suspends the Illinois Open Meetings Act requirements regarding in-person attendance by members of a public body during the duration of the Gubernatorial Disaster Proclamation, issued on June 26, 2020, the Commission members may be participating in the meeting through teleconference.

Pursuant to Governor's Executive Order No. 2020-63 and CDC guidelines, no more than 50 people or 50% of the maximum capacity will be allowed in the Council Chambers at any one time, so long as attendees comply with social distancing guidelines. Anyone in excess of maximum limit will be asked to wait in another room with live audio feed to the meeting until the agenda item for which the person or persons would like to speak on is being discussed or until the open floor for public comments.

Meetings are open to the public, but members of the public may continue to submit their public comments or requests to speak telephonically in advance of the meeting to <u>clerksoffice@tinleypark.org</u> or place requests in the Drop Box at the Village Hall by noon on May 20,2021. Please note, written comments will not be read aloud during the meeting. A copy of the Village's Temporary Public Participation Rules & Procedures is attached to this Notice.

Kristin A. Thirion Clerk Village of Tinley Park

#### VILLAGE OF TINLEY PARK TEMPORARY PUBLIC PARTICIPATION RULES & PROCEDURES

As stated in Gubernatorial Executive Order 2020-07 issued on March 16, 2020 and Gubernatorial Executive Order 2020-10 issued on March 20, 2020, both extended by Gubernatorial Executive Order 2020-18 issued on April 1, 2020, all public gatherings of more than ten people are prohibited. In-person public participation is not defined as an essential activity.

The Mayor of Tinley Park is issuing the following rules for all Village Board and other public meetings in order to promote social distancing as required by the aforementioned Executive Orders and the requirements of the Open Meetings Act:

#### Written Comments

After publication of the agenda, email comments to clerksoffice@tinleypark.org. When providing written comments to be included as public participation at a public meeting, clearly identify the following in the subject line:

- The date of the meeting;
- The type of meeting for the written comments (e.g. Village Board meeting, Zoning Board of Appeals meeting, Plan Commission meeting, etc.);
- Name and any other identifying information the participant wishes to convey to the public body;
- The category of public participation (e.g., Receive Comments from the Public, Agenda Items, etc.);
- For specific Agenda Items, identify and include the specific agenda item number;
- The entire content of the comments will be subject to public release. The Village of Tinley Park is under no obligation to redact any information.

The contents of all comments will be provided to the relevant public body for their review. Written comments will not be read aloud during the meeting. If you wish to publicly address the public body, you may request to participate via teleconference as described below.

Comments must be submitted by 12:00 pm on the day of the meeting. However, it is strongly recommended that comments be emailed not less than twenty-four (24) hours prior to the meeting so the appropriate Board members, Commissioners, Board members, and Committee members have sufficient time to review the comments prior to the meeting.

#### Live Public Participation During Meeting

After publication of the agenda, those wishing to participate in a live telephone call option at a public meeting must register by 12:00 pm on the day of the meeting. A Village representative will call the participant at the relevant portion of the meeting and the participant will be allowed to participate telephonically at the meeting. To participate in a live telephone call during the meeting, a request shall be submitted by email to clerksoffice@tinleypark.org. The following information must be included the subject line:

- The date of the meeting;
- The type of meeting for the written comments (e.g. Village Board meeting, Zoning Board of Appeals meeting, Plan Commission meeting, etc.);
- Name and any other identifying information the participant wishes to convey to the public body;
- The category of public participation (e.g., Receive Comments from the Public, Agenda Items, etc.); and
- For specific Agenda Items, identify and include the specific agenda item number.

If the participant provides an email address, they will receive a confirmation email that their request has been logged. If the participant provides an email address and does not receive a confirmation email, they may call (708) 444-5000 during regular business hours to confirm the application was received.

Upon successful registration, the participant's name will be placed on an internal Village list. On the date and during relevant portion of the meeting, the participant will be called by a Village representative. The Village representative will call the provided telephone number and allow the phone to ring not more than four (4) times. If the call is not answered within those four (4) rings, the call will be terminated and the Village representative will call the next participant on the list.

The public comment should be presented in a manner as if the participant is in attendance at the meeting. At the start of the call, the participant should provide their name and any other information the participant wishes to convey. For comments regarding Agenda Items, identify and include the specific agenda item number. The participant should try to address all comments to the public body as a whole and not to any member thereof. Repetitive comments are discouraged. The total comment time for any single participant is three (3) minutes. Further time up to an additional three (3) minutes may be granted by motion. A participant may not give his or her allotted minutes to another participant to increase that person's allotted time.



### AGENDA FOR REGULAR MEETING VILLAGE OF TINLEY PARK PLAN COMMISSION

May 20, 2021 – 7:00 P.M. Council Chambers Village Hall – 16250 S. Oak Park Avenue

Regular Meeting Called to OrderRoll Call TakenCommunicationsApproval of Minutes:Minutes of the May 6, 2021Regular Meeting

# ITEM #1WORKSHOP – FLOOR & DÉCOR REDEVELOPMENT, 7061-7063 159THSTREET – ARCHITECTURE/SITE PLAN APPROVAL AND SIGN VARIATION

Consider recommending that the Village Board grant Daniel Kelly on behalf of CenterPoint Integrated Solutions a Variation from Section IX.F.1. (Wall Signs – Business Zoning Districts) of the Zoning Code to permit a 290.5 sq. ft. wall sign instead of the maximum 120 sq. ft. at 7061-7063 159th Street in the B-2 (Community Shopping) zoning district. This items also inlcudes Final Site Plan/Architectural Approval.

#### ITEM #2 WORKSHOP – SCANNELL INDUSTRIAL DEVELOPMENT, 19501-19701 HARLEM AVENUE – REZONING, SPECIAL USE FOR A PUD, FINAL PLAT OF SUBDIVISION, SITE PLAN/ARCHITECTUAL APPROVAL

Consider recommending that the Village Board grant Chris Carlino on behalf of Scannell Properties (Contract Purchaser) a Map Amendment (rezoning) and a Special Use Permit for a Planned Unit Development (PUD) for 110.94 acres at 19501-19701 Harlem Avenue (northeast corner of Harlem Avenue and Vollmer Road). Upon Annexation, the parcels are proposed to be zoned ORI PD (Office and Restricted Industrial, Planned Unit Development). The granting of these requests will allow for the lots to be developed with three light industrial buildings totaling approximately 1,262,000 sq. ft. in size. This item also includes review of the Final Plat of Resubdivision for approval by the Village Board and Final Site Plan/Architectural Approval for Phase 1 work.

Good of the Order Receive Comments from the Public Adjourn Meeting



#### MINUTES OF THE REGULAR MEETING OF THE PLAN COMMISSION, VILLAGE OF TINLEY PARK, COOK AND WILL COUNTIES, ILLINOIS

May 6, 2021

The meeting of the Plan Commission, Village of Tinley Park, Illinois, was held in the Council Chambers located in the Village Hall of Tinley Park, 16250 Oak Park Avenue, Tinley Park, IL on May 6, 2021.

**CALL TO ORDER** – PLAN COMMISSIONER CHAIRMAN GRAY called to order the Regular Meeting of the Plan Commission for May 6, 2021 at 7:00 p.m.

CHAIRMAN GRAY stated the meeting was being held remotely consistent with Governor Pritzker's Executive Order 2020-07 issued on March 16, 2020, which suspends the Open Meetings Act provisions relating to in-person attendance by members of a public body. The Open Meetings Act (OMA) requires public bodies to allow for public comment, therefore, this meeting will include public comment via the established protocol. Even if members of the public do not provide comment, participants are advised that people may be listening who do not provide comment, and those persons are not required to identify themselves. He noted that the meeting is being recorded and that some attendees are participating by web/audio conference.

Kathy Congreve called the roll.

Present and responding to roll call were the following:

|                              | Chairman Garrett Gray (Participated electronically)<br>Eduardo Mani (Participated electronically)<br>Angela Gatto (Participated electronically)<br>Kehla West (Participated electronically)<br>James Gaskill    |
|------------------------------|---|
| Absent Plan Commissioners:   | Lucas Engel<br>Frank Loscuito<br>Mary Aitchison<br>Steven Vick  |
| Village Officials and Staff: | Dan Ritter, Senior Planner<br>Paula Wallrich, Planning Manager (Participated electronically)<br>Kimberly Clarke, Comm. Dev. Dir. (Participated electronically)<br>Kathy Congreve, Commission Secretary          |
| Petitioners:                 | Mike Matthys, Linden Group Architect (Participated electronically)<br>Tim Burke, RWE Design Build (Participated electronically)<br>David Sosin - Sosin, Arnold, & Schoenbeck Ltd.<br>Javier Millan - KLOA, Inc. |
| Members of the Public:       | none  |

#### COMMUNICATIONS

None

#### **APPROVAL OF MINUTES**

Minutes of the April 15, 2021 Regular Meeting of the Plan Commission were presented for approval. A motion was made by COMMISSIONER GATTO, seconded by COMMISSIONER MANI to approve the minutes as presented.

COMMISSIONER GRAY requested a voice vote asking if any were opposed to the motion; hearing none, he declared the motion carried.

#### TO: VILLAGE OF TINLEY PARK PRESIDENT AND BOARD OF TRUSTEES

#### FROM: VILLAGE OF TINLEY PARK PLAN COMMISSION

#### SUBJECT: MINUTES OF THE MAY 6, 2021 REGULAR MEETING

## ITEM #1WORKSHOP/PUBLIC HEARING – BREMEN ANIMAL HOSPITAL ADDITION,<br/>7613 159<sup>TH</sup> STREET – ARCHITECTURE/SITE PLAN APPROVAL, VARIATION

Consider recommending the Village Board grant Brittany Maddox (Genelin) on behalf of National Veterinary Associates (Petitioner), a Variation of 5.5 feet from the required aisle width of 26 feet to allow for an aisle width of 20.5 feet for a portion of the parking lot drive aisle and a Variation of .19 feet from the required ten-foot side yard setback to allow for a setback of 9.81feet on the east side of the property. The approval of these variations will allow for the construction of a 400 square foot addition on the north side of the existing building located at 7613 159th Street. There is also a request for Site Plan and Architecture approval.

| Present Plan Commissioners:  | Chairman Garrett Gray (Participated electronically)<br>Eduardo Mani (Participated electronically)<br>Angela Gatto (Participated electronically)<br>Kehla West (Participated electronically)<br>James Gaskill              |
|------------------------------|---|
| Absent Plan Commissioners:   | Lucas Engel<br>Frank Loscuito<br>Mary Aitchison<br>Steven Vick  |
| Village Officials and Staff: | Dan Ritter, Senior Planner<br>Paula Wallrich, Planning Manager (Participated electronically)<br>Kimberly Clarke, Comm. Dev. Dir. (Participated electronically)<br>Kathy Congreve, Commission Secretary                    |
| Petitioner(s):               | Mike Matthys, Linden Group Architects (Participated electronically)<br>Diana Baumgardner Bremen Animal Hospital (Part. electronically)<br>Tim Burke, RWE Design Build General Contractor (Participated<br>electronically) |
| Members of the Public:       | none  |

CHAIRMAN GRAY invited staff to start with the workshop portion of this item.

PAULA WALLRICH, Planning Manager, noted that the Staff Report has been distributed to the Commission and posted on the Village website and will be attached to the minutes as part of the meeting record. Note: The Zoning Request for Variation #1 stated the required aisle width as being 24 feet in the Staff Report; it should have read 26 feet. She gave her presentation, covering the Site Plan and Architectural Approval and two Variations up for review.

CHAIRMAN GRAY asked if there were any comments or discussion from Commissioners. Comments were as follows:

COMMISSIONER GATTO agreed that the roofing needs to be replaced as a condition of approval.

COMMISSIONER GASKILL questioned where the side drive comes down to the 20 feet and why it has to be narrowed down. MS. WALLRICH replied, stating that it's near the entrance and pointed out that area as shown on the Staff Report in the red dashed box. DAN RITTER noted that there is another 35-40 feet before

it gets to 159<sup>th</sup> St. MS. WALLRICH said that the reason is because of the existing structure of the building. COMMISSIONER GASKILL questioned why it was built that way originally. Staff noted that they have been in business since 1969 and that it could have been different zoning at that time. MS. WALLRICH pointed out that it will encourage drivers to slow down.

CHAIRMAN GRAY echoed what Commissioner Gatto stated regarding the roof. And his understanding is that they want to reuse those footings as a cost-saving measure. The reuse of foundations and the fact that it will slow down traffic is a reasonable variation. And Open Item #4 is less than 2 inches and that will match the existing building.

CHAIRMAN GRAY asked if the Petitioner had anything to add; he did not.

CHAIRMAN GARY asked Commissioners if they had any questions for the Petitioner; there were none.

CHAIRMAN GRAY stated that he received proof of the Notice of Publication for this Public Hearing and asked for a motion to open the Public Hearing. Motion made by COMMISSIONER GASKILL, seconded by COMMISSIONER WEST. CHAIRMAN GRAY requested a voice vote asking if any were opposed to the motion; hearing none, he declared the motion carried.

CHAIRMAN GRAY asked staff and the Petitioner if they had any comments; they did not. There was no one from the public wishing to comment. Commissioners were asked if there was any further discussion; there was not.

A Motion was made by COMMISSIONER GATTO, seconded by COMMISSIONER MANI to close the Public Hearing. CHAIRMAN GRAY asked for a voice vote asking if any were opposed to the motion; hearing none, he declared the motion carried.

PAULA WALLRICH reviewed the Standards of Site Plan Approval, Architectural Standards and Standards for a Variation with commissioners, as was summarized in the meeting packet.

The first motion was made by COMMISSIONER WEST, seconded by COMMISSIONER GASKILL, to grant the Petitioner, Brittany Maddox (Genelin), on behalf of National Veterinary Associates, Site Plan and Architectural Approval in accordance with the plans submitted and listed in the May 6, 2021 Staff Report conditioned upon final landscape approval and replacement of the roof shakes. Roll Call:

AYE: COMMISSIONERS MANI, GATTO, WEST, GASKILL, CHAIRMAN GRAY NAY: None

CHAIRMAN GRAY declared the Motion approved by roll call.

The second motion was made by COMMISSIONER GATTO, seconded by COMMISSIONER MANI, to grant the Petitioner, Brittany Maddox (Genelin), on behalf of National Veterinary Associates, a 5.55-foot Variation from the required 26-foot drive aisle width to allow a drive aisle width of 20.5 feet for a small portion of the driveway in accordance with the plans submitted and listed herein and adopt Findings of Fact as proposed by Village Staff in the May 6, 2021 Staff Report.

Roll Call: AYE: COMMISSIONERS MANI, GATTO, WEST, GASKILL, CHAIRMAN GRAY NAY: None CHAIRMAN GRAY declared the Motion approved by roll call.

The third motion was made by COMMISSIONER GASKILL, seconded by COMMISSIONER WEST, to recommend that the Village Board grant the Petitioner, Brittany Maddox (Genelin), on behalf of National Veterinary Associates, a .19 foot (less than 2 inches) Variation of the required 10 foot side yard setback to allow for a side yard setback of 9.81 foot on the east side of the property in accordance with the plans submitted and listed herein and adopt Findings of Fact as proposed by Village Staff in the May 6, 2021 Staff Report.

Roll Call:

AYE: COMMISSIONERS MANI, GATTO, WEST, GASKILL, CHAIRMAN GRAY NAY: None

CHAIRMAN GRAY declared the Motion approved by roll call.

This will go to the Village Board on May 18, 2021. MS. WALLRICH pointed out that because this received unanimous approval, this will take just one approval at the Village Board Meeting.

| TO: VILLAGE OI               |   | TINLEY PARK PRESIDENT AND BOARD OF TRUSTEES  |  |
|------------------------------|---|--|--|
| FROM:                        | VILLAGE OF TINLEY PARK PLAN COMMISSION  |  |  |
| SUBJECT:                     | MINUTES OF THE MAY 6, 2021 REGULAR MEETING  |  |  |
|                              |   | VEQUITY MULTI-TENANT REMODEL,<br>GRANGE ROAD – SITE PLAN/ARCHITECTUAL APPROVAL   |  |
|                              | Consider recommending approval of the Site Plan and Architecture for an exist<br>at 17111-17119 LaGrange Road (formally 9561 171st St) in the B3 PD (Gener<br>and Commercial, Park Hills Towne Centre PUD) Zoning District. The proper<br>allows for the former MD Financial/Fifth-Third Bank building to be converted<br>tenant commercial building that includes a Starbucks Coffee drive-thru. |  |  |
| Present Plan Commissioners:  |   | Chairman Garrett Gray (Participated electronically)<br>Eduardo Mani (Participated electronically)<br>Angela Gatto (Participated electronically)<br>Kehla West (Participated electronically)<br>James Gaskill |  |
| Absent Plan Commissioners:   |   | Lucas Engel<br>Frank Loscuito<br>Mary Aitchison<br>Steven Vick   |  |
| Village Officials and Staff: |   | Dan Ritter, Senior Planner<br>Paula Wallrich, Planning Manager (Participated electronically)<br>Kimberly Clarke, Comm. Dev. Dir. (Participated electronically)<br>Kathy Congreve, Commission Secretary       |  |
| Petitioner(s):               |   | David Sosin – Sosin, Arnold, & Schoenbeck Ltd.<br>Javier Millan - KLOA, Inc.   |  |
| Members of the Public:       |   | none   |  |

CHAIRMAN GRAY invited staff to start with their presentation.

Prior to making his presentation, DAN RITTER noted for the record that the staff report has been distributed to the Commission, and posted on the Village website. The staff report will be attached to the minutes as part of the meeting record.

DAN RITTER, Senior Planner, then presented his staff report, pointing out that this and the next workshop are the same developer and main tenant, but separate projects. The developer is Vequity, LLC and is the same developer that came before the commission for rezoning and site plan approval for a 7-Eleven gas station on 171<sup>st</sup> and Harlem. They do 7-Elevens and outlot multi-tenant buildings. The site has had an address of 9561 W. 171<sup>st</sup> Street, but it faces LaGrange Road so they have altered the address.

CHAIRMAN GRAY asked for comments from each Commissioner. Comments were as follows:

COMMISSIONER WEST stated that she didn't see anything on the Site Plan about bicycle parking and was wondering if that had been taken into consideration. DAN RITTER agreed that it was a good idea. COMMISSIONER WEST strongly encouraged working that into the plans.

COMMISSIONER MANI stated that he is fine with the changes on Open Item #1. For Open Item #2, he felt it would look better with a brick border to match the structure. That way you could utilize the EIFS and installation is easier.

CHAIRMAN GRAY thought the traffic flow looks fine. He likes the layout and the patio. He had a concern about the location of the dumpster pad location though. Referring to the plans, he asked if that was a concrete sidewalk along the east perimeter of the building and if that is a sidewalk that goes across the drive-thru lane. DAN RITTER replied, stating that it is a sidewalk in the back that runs on the east side of the building; the path to the dumpster enclosure will be striped out. CHAIRMAN GRAY was good with that; it keeps uniformity and the striping should be visible enough to the people in the drive-thru. He likes the foresight of the designers and how they repurposed the building. He agrees with Commissioner West's point of there needing to be a sidewalk for connectivity and a bicycle rack. Regarding the EIFS, he likes Staff's recommendation to break it up with some brick.

CHAIRMAN GRAY invited the petitioner to speak. DAVID SOSIN, the attorney for the petitioner, introduced himself. He commented on some of the issues that the Plan Commission had concerns about. He stated that he will address with the staff the EIFS questions and the desirability of having some flexibility of the signage on the south and west elevation. Starbucks themselves are very hands-on and have some requirements and have approved the site plan and repurpose of the building; they will be included on the conversations with staff as well. In regards to the bike rack, he said they would work with the staff to figure out an appropriate type of bike rack and the best location.

JAVIER MILLAN, a principal in KLOA who worked on the report, accompanied David Sosin and had a few things to add. Regarding the stacking, their observation showed a maximum stacking of 11 vehicles. Starbucks data shows anywhere between 10-12, so it's been very consistent. All the stacking occurs internally. Should additional stacking be required, it would likely be in the morning when the other businesses are either closed or are doing minimal business, so it would have a lower impact on the other tenants.

CHAIRMAN GRAY stated there will be a vote on this at the May 27, 2021 Plan Commission Public Hearing.

#### TO: VILLAGE OF TINLEY PARK PRESIDENT AND BOARD OF TRUSTEES

#### FROM: VILLAGE OF TINLEY PARK PLAN COMMISSION

SUBJECT: MINUTES OF THE MAY 6, 2021 REGULAR MEETING

ITEM #3 WORKSHOP - VEQUITY MULTI-TENANT CONSTRUCTION, 17118-30 HARLEM AVENUE – SITE PLAN/ARCHITECTUAL APPROVAL, REZONING (MAP AMENDMENT), SPECIAL USE FOR A PLANNED UNIT DEVELOPMENT, PLAT OF SUBDIVISION APPROVAL

Consider recommending that the Village Board grant Vequity, LLC (Contract Purchaser/Owner) a map amendment to rezone the subject properties from R-1 (Single-Family Residential) to a B-1 (Neighborhood Shopping) zoning district. Additionally, the Petitioner is requesting a Special Use for a Planned Unit Development (PUD) with Exceptions from the Zoning Ordinance on both the subject site and the neighboring 7-Eleven site currently under construction. The requests will permit a multi-tenant building with a Starbuck's drive-thru to be constructed at the properties located at 17120–17126 Harlem Avenue. Architecture/Site Plan and Final Plat Approval will also be considered at the meeting.

| Present Plan Commissioners:  | Chairman Garrett Gray (Participated electronically)<br>Eduardo Mani (Participated electronically)<br>Angela Gatto (Participated electronically)<br>Kehla West (Participated electronically)<br>James Gaskill |
|------------------------------|--|
| Absent Plan Commissioners:   | Lucas Engel<br>Frank Loscuito<br>Mary Aitchison<br>Steven Vick   |
| Village Officials and Staff: | Dan Ritter, Senior Planner<br>Paula Wallrich, Planning Manager (Participated electronically)<br>Kimberly Clarke, Comm. Dev. Dir. (Participated electronically)<br>Kathy Congreve, Commission Secretary       |
| Petitioner(s):               | David Sosin – Sosin, Arnold, & Schoenbeck Ltd.<br>Javier Millan - KLOA, Inc.   |
| Members of the Public:       | none   |

CHAIRMAN GRAY invited staff to start with the workshop portion of this item.

Prior to making his presentation, DAN RITTER noted for the record that the staff report has been distributed to the Commission, and posted on the Village website. The staff report will be attached to the minutes as part of the meeting record.

DAN RITTER, Senior Planner, then presented his staff report, adding that in many ways this is similar to the workshop the commission had just gone over except that it is not an already existing site.

CHAIRMAN GRAY asked for comments from each Commissioner. Comments were as follows:

COMMISSIONER MANI stated he is good with Open Item #1 and likes the architecture of the building. He had a concern about whether there would be enough parking for the other tenant spaces though and suggested possibly adding more at the north end facing Harlem Ave. DAN RITTER responded, stating that area is part of the 7-Eleven cross-access. Maybe one could sit there but it doesn't appear to be the safest that close to the cross-access aisle. Calculating how much parking is needed is difficult, not knowing who the tenants will be. However, the amount provided appears adequate and the Petitioner feels comfortable with it.

COMMISSIONER WEST stated she liked the idea of using evergreens for year-round screening and suggested a bike rack be installed. DAN RITTER added a point, letting commissioners know that they are extending the sidewalk to the south and agreed to Commissioner West's suggestion of making bike parking available.

CHAIRMAN GRAY pointed out that Open Item #1 is a big variation but to Staff's point, the original planning was for residential; that area of the corridor along Harlem has changed considerably since then. This is a good repurposing of the site. The added access to the site will help the flow. He liked the recommendation from Staff to use the raised porkchop to discourage people from trying to take a left turn onto Harlem. Extending the PVC wall and adding evergreens to fortify the west buffer and help reduce noise is good planning. Relating to this and also the last project, and being that we have a separate public hearing for the drive-thru board, he suggested we revisit the code to streamline the process as it may become more common. He had no issues with the other Open Items. He is ok with the R1 to B1 and the list of exceptions. DAN RITTER responded to Chairman Gray's comment about the drive-thru board, he agreed it would save time making one change rather than have two public hearings. CHAIRMAN GRAY added that he thinks it's a good idea to have stop signs between the properties that were suggested.

DAVID SOSIN commented on the menu board, stating that three of the variances are actually an integration between this project and the 7-Eleven. Their concern is to be good neighbors and they are very proud of the screening and buffering that they've been able to do. Every Starbucks is subject to new menu board technology and he assures the Commission that the lighting and speaker system will not be an intrusion on the neighbors. They'll work with staff to figure out where to put the bike rack. Regarding the preview menu boards, he asked if we could consider some kind of language that there be a text amendment to have the developer work with staff to make a minor variation to satisfy the standards of the Village. DAN RITTER replied they previously requested information on the preview menu board but was told it was up to the tenant to apply later. If Starbucks can supply us with an example with dimensions, they'd be open to that and avoiding the potential of another public hearing later just for the signs. DAVID SOSIN stated that they'll work on that.

CHAIRMAN GRAY agreed about the continuation of the project from the 7-Eleven development and uniformity that it presents. He appreciates the effort to be a good neighbor. DAVID SOSIN thanked the staff for his work on this project.

CHAIRMAN GRAY asked Commissioners if they had any further comments; there were none.

There will be a Public Hearing on this item at the May 27, 2021 Plan Commission Meeting.

#### GOOD OF THE ORDER -

DAN RITTER stated that the next meeting is the regularly scheduled date of May 20, 2021. It will include rezoning of a larger industrial development on Harlem Avenue near the Amazon building in Matteson. Also, annexation and review of site plans. They did have some preemptive meetings with Odyssey residents on the project to get their initial feedback and address their concerns.

There will be a special meeting on May 27, 2021 staff previously emailed the Commission about, it will have the workshop items from tonight addressed in a Public Hearing along with another item.

#### COMMENTS FROM THE PUBLIC – There were none.

A Motion was made by COMMISSIONER GATTO, seconded by COMMISSIONER MANI to adjourn the May 6, 2021 Plan Commission meeting.

COMMISSIONER GRAY asked for a voice vote asking if any were opposed to the motion; hearing none, he declared the motion carried and adjourned the meeting at 9:21 P.M.



#### Petitioner

Daniel Kelly, on behalf of CenterPoint Integrated Solutions

#### Property Location

7061-7063 159<sup>th</sup> Street

#### PIN

28-19-100-012-0000

#### Zoning

B-2 (Community Shopping)

#### **Approvals Sought**

- Variations
- Site Plan & Architectural Approval

#### **Project Planner**

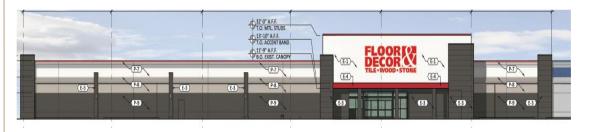
Daniel Ritter, AICP Senior Planner

## PLAN COMMISSION STAFF REPORT

May 20, 2021 - Workshop

#### Floor & Décor Redevelopment

7061-7063 159<sup>th</sup> Street



#### **EXECUTIVE SUMMARY**

Daniel Kelly, on behalf of CenterPoint Integrated Solutions (Petitioner) has requested Site Plan and Architectural Approval for redevelopment of an existing site at 7061-7063 159th Street in the B-2 (Community Shopping) zoning district. The proposal includes façade changes, parking lot changes, landscaping additions, and traffic control upgrades throughout the commercial shopping center. Also requested is that the Village Board grant Sign Variation from Section IX.F.1. (Wall Signs – Business Zoning Districts) of the Zoning Code to permit a 290.5 sq. ft. wall sign, 10.25 ft. in height.

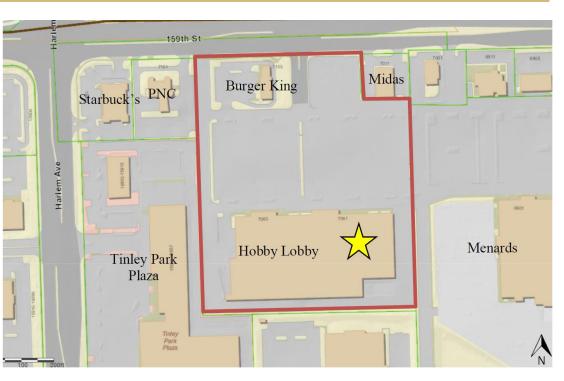
Floor & Décor is proposing to locate in the existing Burlington tenant space, which is expected to be vacated this year when they relocate to their newly constructed space in the adjacent Tinley Park Plaza redevelopment. Floor & Decor is proposing façade upgrades to bring the building in compliance with their corporate standards. Additionally, due to the need for a separate customer pickup area, the east side of the building will have adjustments to the parking and drive aisles. Lastly, the property owner is proposing to make upgrades to the overall site that would increase landscaping, enhance its overall appearance, and improve traffic safety. The improvements help to tie the property into the neighboring interconnected shopping centers with more recent upgrades (Menard's and Tinley Park Plaza).

With many large commercial developments, there is some flexibility given to large anchor tenant signs since those tenants tend to take up a large amount of the building space and are often set back from roadways. Due to these issues, wall signage variations have been previously approved to allow for flexibility with sign regulations, based on the unique design of commercial centers. Sign variations typically consider the proposed sign's proportionality to the building's size and the overall development appearance. The proposed sign exceeds the maximum total size allowed (capped at 120 sq. ft.) and the maximum sign height. The sign is similar in size to those approved for similar anchor tenants in shopping centers (Menards, Sam's Club, Burlington, Aldi, Target, Kohl's, etc.) The overall façade design accommodates the proposed sign well and keeps it looking proportionate to the building's façade.

#### EXISTING SITE & HISTORY

The subject site is located along the south side of 159<sup>th</sup> Street, near the intersection with Harlem Avenue. The property was one of the first commercial developments in the area

constructed and was around 1971 for K-Mart Corporation (predating neighboring the Brementowne Mini Mall). K-Mart beigusso the building until May 1996, when they relocated to the Super K-mart location on Harlem Avenue (now owned by Pete's Fresh Market). The center has



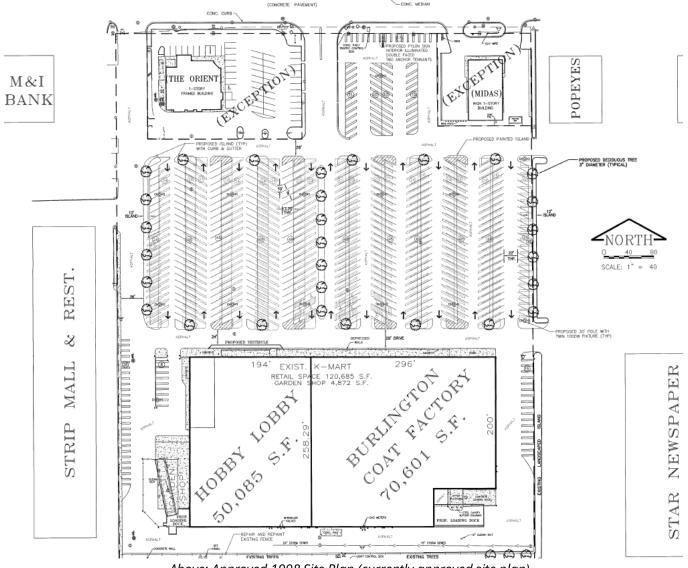
cross-access to the properties to the west (Tinley Park Plaza) and East (Menards/Bremen Towne Mini Mall). The property includes an outlot building (Burger King) located on the northwest corner of the lot and a small parking area along 159th Street that is currently being marketed for future development. The Burger King replaced a previously existing vacant restaurant on the site in 2010.

The building remained vacant for a few years after K-Mart left until it was occupied by Burlington and Hobby Lobby in 1998. The center had façade and site changes in 1998 to make it more accommodating for two tenants and to add some landscaping and end islands to the largely asphalted site. Burlington signed a lease last year to move to a new space being constructed at the adjacent Tinley Park Plaza along Harlem Avenue. The new building has been constructed with interior buildout and final site work underway. Burlington intends to occupy the space by summer this year and will vacate its current space at that time. The current property owner was able to find Floor & Décor as a preferable tenant that could take the large space. Hobby Lobby also intends to remain occupying their portion of the building.



Above: Existing building façade and signage.

The site was believed to be in a Planned Unit Development (PUD) for many years due to a mapping error carried over from a Zoning Map in 1978. However, the error was corrected a few years ago when it was noticed the site has never had a PUD ordinance approved for the site (similarly was discovered on multiple properties in the area). The site was developed before the current version of the Zoning Code (adopted in 1978) and before the Village's first PUD ordinance was adopted. Due to its age, much of the site development is considered "legal non-conforming" to current code requirements. The non-conforming aspects of the site are permitted to remain as they are. However, the Village works to bring sites closer into compliance whenever possible, while also understanding that meeting every aspect of new codes may not be possible on redevelopment sites. It is likely when/if the outlot is developed that the site may request to be a PUD at that time, similar to what was done with Tinley Park Plaza in 2020, and would bring the site into full conformance at that time.



Above: Approved 1998 Site Plan (currently approved site plan).

#### **ZONING & NEARBY LAND USES**

The subject site is zoned B-2 (Community Shopping). Adjacent properties to the east (Menards, Midas, Popeyes, etc.), south (Centennial Bowling), and west (PNC Bank, Tinley Park Plaza) are also similarly zoned B-2. All neighboring properties have crossaccess between them. To the north of the subject property across 159<sup>th</sup> Street in Orland Park, where they have a variety of commercial outlots, and zoned BIZ (General Business District). Orland Park's BIZ zoning is similar to Tinley Park's B-2 and B-3 (General Business & Commercial) zoning districts.

Floor & Décor is proposing to reutilize the existing loading docks for deliveries. The loading docks are located more than 500 ft. from the nearest residence and thus do not have limits related to truck loading times that are required of businesses within 300 ft. of a predominantly residential area.



#### **PROPOSED USE**

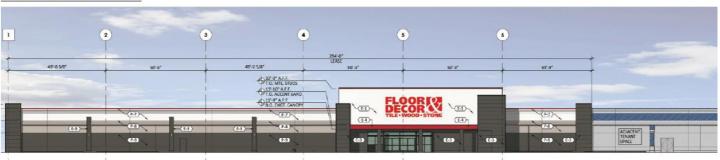
Floor & Décor is a national commercial retailer specializing in residential and commercial remodeling products that include flooring, tile, installation materials, and accessories. They operate mostly as a "Brick and Mortar" company but do allow for some online purchase and ordering options. The retail locations are vital though due to the difficulty with shipping some of the products and a preference for many customers to physically see the products before purchasing. Their retail



locations keep a large stock of product on-site and require high ceilings for rack storage systems. Floor & Décor is open to the public but has a strong returning customer base of construction professionals like designers and contractors. Many of their locations are near home improvement stores like Menards and Home Depot and tend to compliment those stores well. Floor & Décor would occupy the full ~70,300 sq. ft. space being vacated by Burlington. Hobby Lobby will continue to occupy their ~53,800 sq. ft. space they do now.

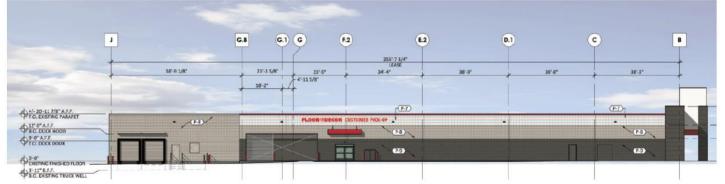
#### ARCHITECTURE

Among the most important items for Floor & Décor to locate at this site is a need to change the exterior of the building. Floor & Décor strives to create a clean and consistent look across its stores. The changes proposed include new decorative column elements and some vertical striping. Changes also include adding grey decorative vertical elements at the entrance, building corner, and separating the two differing tenant façade styles. These new façade elements help to break up the long and flat façade by giving it some added dimension. Changes have also been proposed on the east/side elevation that was previously dismissed. On that east side there will be a customer pickup entrance along with an overhead door that allows customers to drive their vehicles into the building for quick loading of materials.



#### Front/North Elevation

#### Side/East Elevation



#### Open Item #1: Review the proposed Floor & Décor elevation changes.

One of the major challenges with the proposed façade changes, is to blend the differing façade styles of the two tenant spaces. It is common for larger "anchor tenants (typically over 40,000 sq. ft. in floor space) to have distinct facades from each other or an adjacent shopping center. For example, the neighboring Tinley Park Plaza/Brixmor development has a unique façade for Burlington and the new grocer. Aldi, Target, and Dick's Sporting Goods are other examples of this trend. However, even with a unique façade, the preference is to have a smooth transition between spaces rather than an abrupt change in the façade color, materials, or design elements. This usually means carrying some common elements through an entire facade.

While the proposal only includes Floor & Décor's façade changes, the property owner has indicated their agreement and desire to make changes to Hobby Lobby's portion of the façade. However, they will need additional time to coordinate with the tenant and work with an architect that is beyond Floor & Décor's timeframe for occupancy of the building. It was also recommended that a deadline be placed on the work to ensure that portion of the façade receives an update and is not left in its outdated state next to the new Floor & Décor Façade. A specific date has been requested from the Petitioner based on what they think is a reasonable timeframe to plan and complete the work. Staff has also recommended that they utilize matching decorative "column" and corner elements through the front façade that are similar in style and color to Floor & Décor's proposal. The deadline and any required design elements will be included as conditions of approval.

## Open Item #2: Discuss and review the overall façade look, including the phasing of the Hobby Lobby front façade and staff recommendations for consistent design elements and a deadline for completion of the Phase 2 work.

While the front and side facades of the building's two tenant spaces will be completed in two phases, staff has recommended that the rear façade be painted one color at one time with the proposed Floor & Décor work. This will ensure that the rear of the building is not different shades or colors along a flat façade. Painting it at one time will be more appealing and avoid future maintenance issues.

Open Item #3: Staff recommends conditioning the approval on the painting of the rear façade with Phase 1 (Floor & Décor) façade work.

#### SITE PLAN & LANDSCAPE UPGRADES

The property is showing signs of wear and aging (50+ years old) with a lack of clear traffic control and lacking landscaping compared to the neighboring properties. With the project, the property owner has worked with staff to design the proposed plans that would provide upgrades to the site that bring it closer to compliance with current Village codes.

The proposed work creates a more attractive and safer environment for customers and visitors. Most notably, the installation of end islands and traffic control signage/striping will create better traffic circulation through the site. Following the site improvements, traffic control and landscaping will remain consistent between the subject site and the adjacent interconnected shopping centers (Menards and Tinley Park Plaza).

Overall Site Upgrades Include:

- Repair and replacement of internal walkways to ensure a smooth walking surface that is Illinois Accessibility Code (IAC) compliant.
- Repaving, restriping, and new signage for required accessible parking spaces.
- Installation of missing landscape end islands along the parking lot to create a more attractive development and well-defined main drive aisles.
- Installation of a landscaped island on the west side of the building by Hobby Lobby where there is an awkward parking area with a grade difference and a large area of undefined pavement.
- Installation of trees and landscaping in any new end islands and in existing islands with missing trees.
- New planter landscaping installed along the front façade.
- Restriping of shopping center entrances and intersections with appropriate traffic control mechanisms (stop bars, arrows, lane striping, etc.)
- Replacement and installation of missing or worn traffic control signage.
- Striping of crosswalk areas in front of the commercial tenant entrances to help slow traffic.
- Create a smooth front curb line between the tenants along the main drive aisle (currently an awkward drive aisle with a walkway bump out in front of Hobby Lobby).

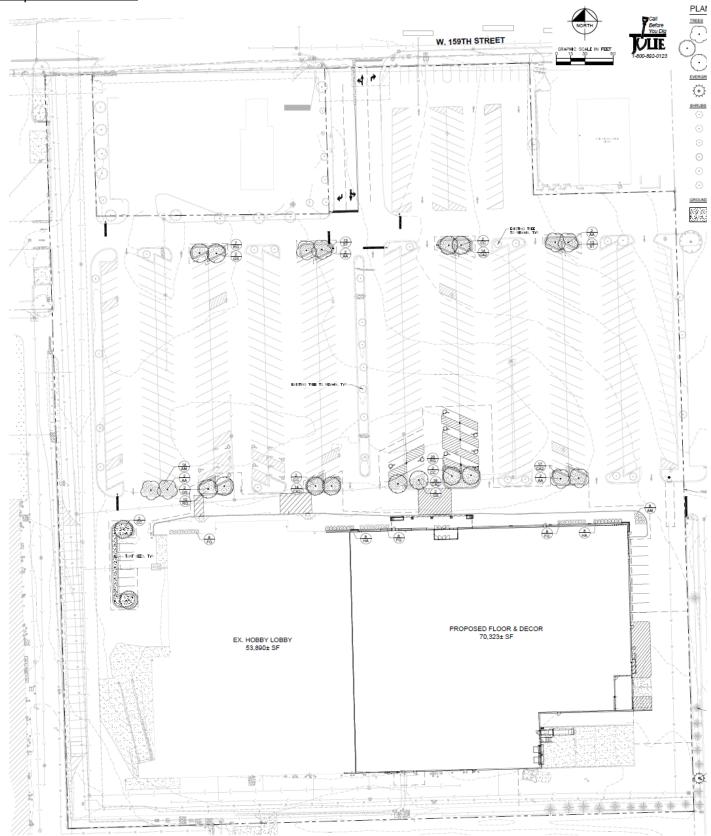
The Petitioner has adjusted the east side of the site where Floor & Décor will be installing a customer pickup area. Parking will shift from being on the east side of the drive aisle to being against the building. Additionally, an existing fire hydrant will be moved to make for a straight access aisle on that east side of the building.

#### Open Item #4: Review overall site plan and site circulation based on Site Plan Standards.

The plans are still under review from the Village Engineer and are subject to their final review and approval in regards to traffic control and grading. Staff has recommended a standard condition that the approval be subject to Final Engineering Plan review and approval.

Open Item #5: Staff is recommending the site plan approval be conditioned upon final engineering review and approval.

#### Proposed Site Plan



#### PARKING

The site currently has 574 parking spaces and the proposal would have 556 spaces. The reduction is primarily from the removal of spaces added along the east side and the additional of new ADA spaces. These spaces were not a part of the originally approved plan for the site and other spaces were approved along the west side of the site. The original Plans included 554 spaces and thus, there is no reduction to that total with the proposed plans.

The parking spaces on this east side have largely been unused as they are far from the building's entrance. The center was developed in the 1970's for a K-Mart department store. Additionally, the code requirements of 1 space per 650 sq. ft. is a parking requirement dating from 1978 and result in a total requirement of 807 spaces. While the proposed site doesn't comply with the current parking minimum requirements (short 241 stalls), it is considered legal non-conforming and permitted to remain per the original parking approval.

Staff does not have concerns with the proposed parking on the site based on the proposed retail users. While specific parking counts weren't conducted, staff has noticed that the site has a significant amount of open parking, including on nights and weekend peak times. Additionally, Floor & Décor is expected to have even lower parking demand than Burlington currently has. Additional spaces can be added by designing the ADA accessible stalls to share drive aisles, which is now permitted with the newest version of the Illinois Accessibility Code. However, there does not appear to be a need for any additional parking stalls to be added at this time or a need to revise the proposal.

#### LIGHTING

Lighting in the parking lot and on the building has been proposed to be upgraded with more modern and efficient LED fixtures. However, the submitted plans only indicate this happening on the Floor & Décor side of the building and parking lot. Staff recommends maintaining а light fixture style for consistent



appearance purposes and to ensure a consistent lighting level, color, and intensity on the site. Any exterior lighting upgrades will need to happen simultaneously throughout the property with a uniform pole and fixture appearance.

Open Item #6: Staff recommends revising the lighting plans be revised to include consistent lighting upgrades throughout the site to provide a consistent look and lighting intensity to the site.

#### SIGNAGE AND VARIATION

The Floor & Décor wall sign is permitted to be 1 sq. ft. in size per lineal foot of tenant frontage, with a maximum of 120 square feet. Additionally, there is a maximum sign height of 7 ft. Floor & Décor is proposing a sign that is 290.5 sq. ft. and ~10' 3" in height. The total tenant frontage is 294 feet in length so without the 120 sq. ft. cap, the sign's size would be permitted. The sign's overall height is related to its size and the proportionality of its logo. Variations have been requested to exceed the



maximum wall sign size and the maximum total sign height.

Wall signage in large commercial centers are viewed as unique because the regulations are largely related to site aesthetics and architectural design of the development. While certain limits are needed, large commercial developments can present challenges that prevent signage from being visible and providing adequate wayfinding. Similar Variations in size

| Floor & Décor Wall Sign Variation Requests |             |               |
|--|-------------|---------------|
|  | Size        | Sign Ht. Max. |
| Code Required                              | 120 sq. ft. | 7 ft          |
| Requested                                  | 290.5 ft    | 10' 3"        |

(including allowing up to 1.5 sq. ft. in size per lineal foot) have recently been permitted for surrounding anchor tenants like Menards, Aldi, Sam's Clubs, and the Burlington/grocer tenants in Tinley Park Plaza. These spaces are unique in that they are large anchor tenants that take up a large amount of commercial space and set back far from the roadway, making wall signage visibility difficult. These properties also have exterior facades specifically designed for the size signage and results in the sign's size look proportionate to the façade. Due to these unique factors, the request would not set any new precedents that might make for unattractive signage elsewhere in the Village.

Complying with the code is possible but a smaller sign would look disproportionately small on the building's façade. Additionally, it would be difficult to ready from 159<sup>th</sup> Street, which is over 475 feet away, and thus making wayfinding more difficult for customers. Due to these concerns and the proposal being within existing precedent, staff is supportive of the proposed sign Variations.

## Open Item #7: Review sign Variation requests for signage (max. size, max. sign height, max. rows of lettering.

A second wall sign will be added to the east side of the building for customer pickup and complies with code requirements. The ground sign will also comply with the code; it remains largely the same with a panel change and a change in the color of the base.



#### SUMMARY OF OPEN ITEMS

Staff identified the following open items for discussion at the workshop:

- 1. Review the proposed Floor & Décor elevation changes.
- 2. Discuss and review the overall façade look, including the phasing of the Hobby Lobby front façade and staff recommendations for consistent design elements and a deadline for completion of the Phase 2 work.
- 3. Staff recommends conditioning the approval on the painting of the rear façade with Phase 1 (Floor & Décor) façade work.
- 4. Review overall site plan and site circulation based on Site Plan Standards.
- 5. Staff is recommending the site plan approval be conditioned upon final engineering review and approval.
- 6. Staff recommends revising the lighting plans be revised to include consistent lighting upgrades throughout the site to provide a consistent look and lighting intensity to the site.
- 7. Review sign Variation requests for signage (max. size, max. sign height, max. rows of lettering.

#### STANDARDS FOR SITE PLAN & ARCHITECTUAL APPROVAL

Section III.T.2. of the Zoning Ordinance requires that the conditions listed below must be met and reviewed for Site Plan approval. Specific findings are not required but all standards shall be considered to have been met upon review from the Plan Commission.

#### <u>Architectural</u>

- a. Building Materials: The size of the structure will dictate the required building materials (Section V.C. Supplementary District Regulations). Where tilt-up or pre-cast masonry walls (with face or thin brick inlay) are allowed vertical articulation, features are encouraged to mask the joint lines. Concrete panels must incorporate architectural finishes that comply with "Building Articulation" (Section III.U.5.h.) standards. Cast in place concrete may be used as an accent alternate building material (no greater than 15% per façade) provided there is sufficient articulation and detail to diminish it's the appearance if used on large, blank walls.
- b. Cohesive Building Design: Buildings must be built with approved materials and provide architectural interest on all sides of the structure. Whatever an architectural style is chosen, a consistent style of architectural composition and building materials are to be applied on all building facades.
- c. Compatible Architecture: All construction, whether it be new or part of an addition or renovation of an existing structure, must be compatible with the character of the site, adjacent structures and streetscape. Avoid architecture or building materials that significantly diverge from adjacent architecture. Maintain the rhythm of the block in terms of scale, massing and setback. Where a development includes outlots they shall be designed with compatible consistent architecture with the primary building(s). Site lighting, landscaping and architecture shall reflect a consistent design statement throughout the development.
- d. Color: Color choices shall consider the context of the surrounding area and shall not be used for purposes of "attention getting" or branding of the proposed use. Color choices shall be harmonious with the surrounding buildings; excessively bright or brilliant colors are to be avoided except to be used on a minor scale for accents.
- e. Sustainable architectural design: The overall design must meet the needs of the current use without compromising the ability of future uses. Do not let the current use dictate an architecture so unique that it limits its potential for other uses (i.e. Medieval Times).
- f. Defined Entry: Entrance shall be readily identifiable from public right-of-way or parking fields. The entry can be clearly defined by using unique architecture, a canopy, overhang or some other type of weather protection, some form of roof element or enhanced landscaping.
- g. Roof: For buildings 10,000 sf or less a pitched roof is required or a parapet that extends the full exterior of the building. For buildings with a continuous roof line of 100 feet of more, a change of at least five feet in height must be made for every 75 feet.
- h. Building Articulation: Large expanses of walls void of color, material or texture variation are to be avoided. The use of material and color changes, articulation of details around doors, windows, plate lines, the provision of architectural details such as "belly-bands" (decorative cladding that runs horizontally around the building), the use of recessed design elements, exposed expansion joints, reveals, change in texture, or other methods of visual relief are encouraged as a means to minimize the oppressiveness of large expanses of walls and break down the overall scale of the building into intermediate scaled parts. On commercial buildings, facades greater than 100 feet must include some form of articulation of the façade through the use of recesses or projections of at least 6 inches for at least 20% of the length of the façade. For industrial buildings efforts to break up the long façade shall be accomplished through a change in building material, color or vertical breaks of three feet or more every 250 feet.
- i. Screen Mechanicals: All mechanical devices shall be screened from all public views.

j. Trash Enclosures: Trash enclosures must be screened on three sides by a masonry wall consistent with the architecture and building material of the building it serves. Gates must be kept closed at all times and constructed of a durable material such as wood or steel. They shall not be located in the front or corner side yard and shall be set behind the front building façade.

#### <u>Site Design</u>

- a. Building/parking location: Buildings shall be located in a position of prominence with parking located to the rear or side of the main structure when possible. Parking areas shall be designed so as to provide continuous circulation avoiding dead-end parking aisles. Drive-through facilities shall be located to the rear or side of the structure and not dominate the aesthetics of the building. Architecture for canopies of drive-through areas shall be consistent with the architecture of the main structure.
- b. Loading Areas: Loading docks shall be located at the rear or side of buildings whenever possible and screened from view from public rights-of-way.
- c. Outdoor Storage: Outdoor storage areas shall be located at the rear of the site in accordance with Section III.O.1. (Open Storage). No open storage is allowed in front or corner side yards and are not permitted to occupy areas designated for parking, driveways or walkways.
- d. Interior Circulation: Shared parking and cross access easements are encouraged with adjacent properties of similar use. Where possible visitor/employee traffic shall be separate from truck or equipment traffic.
- e. Pedestrian Access: Public and interior sidewalks shall be provided to encourage pedestrian traffic. Bicycle use shall be encouraged by providing dedicated bikeways and parking. Where pedestrians or bicycles must cross vehicle pathways a cross walk shall be provided that is distinguished by a different pavement material or color.

#### STANDARDS FOR A VARIATION

Section X.G.4. of the Zoning Ordinance states the Plan Commission shall not recommend a Variation of the regulations of the Zoning Ordinance unless it shall have made Findings of Fact, based upon the evidence presented for each of the Standards for Variations listed below. The Plan Commission must provide findings for the first three standards; the remaining standards are provided to help the Plan Commission further analyze the request. Staff will prepare draft responses for the Findings of Fact within the next Staff Report.

- 1. The property in question cannot yield a reasonable return if permitted to be used only under the conditions allowed by the regulations in the district in which it is located.
- 2. The plight of the owner is due to unique circumstances.
- 3. The Variation, if granted, will not alter the essential character of the locality.
- 4. Additionally, the Plan Commission shall also, in making its determination whether there are practical difficulties or particular hardships, take into consideration the extent to which the following facts favorable to the Petitioner have been established by the evidence:
  - a. The particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship upon the owner, as distinguished from a mere inconvenience, if the strict letter of the regulations were carried out;
  - b. The conditions upon which the petition for a Variation is based would not be applicable, generally, to other property within the same zoning classification;
  - c. The purpose of the Variation is not based exclusively upon a desire to make more money out of the property;
  - d. The alleged difficulty or hardship has not been created by the owner of the property, or by a previous owner;
  - e. The granting of the Variation will not be detrimental to the public welfare or injurious to other property or improvements in the neighborhood in which the property is located; and
  - f. The proposed Variation will not impair an adequate supply of light and air to an adjacent property, or substantially increase the congestion in the public streets, or increase the danger of fire, or endanger the public safety, or substantially diminish or impair property values within the neighborhood.

#### RECOMMENDATION

Following a successful workshop, proceed to a Public Hearing at the June 3, 2021 Plan Commission meeting.



Village of Tinley Park Community Development Dept. 16250 S. Oak Park Ave. Tinley Park, IL 60477 708-444-5100

#### VILLAGE OF TINLEY PARK, ILLINOIS PLANNING AND ZONING GENERAL APPLICATION

#### REQUEST INFORMATION

\*Additional Information is Required for Specific Requests as Outlined in Specific Addendums

| Special Use   | for:  |                           |                    |  |
|---|---|---------------------------|--------------------|--|
|   | Development (PUD) Conce                             | pt Preliminary Fi         | nal Deviation      |  |
|   | Variation Residential Commercial for Signage Relief |                           |                    |  |
| Annexation  |   | 0 0                       |                    |  |
| Rezoning (M   | ap Amendment) From                                  | to                        |                    |  |
| Plat (Subdivis  | ion, Consolidation, Public Ease                     | ment) Prelimina           | ary Final          |  |
| ✓ Site Plan   |   |                           |                    |  |
| Landscape C   | Change Approval                                     |                           |                    |  |
| Other:  |   |                           |                    |  |
|   |   |                           |                    |  |
| PROJECT & PRO   | OPERTY INFORMATION                                  | *                         |                    |  |
| Project Name:   | Floor and Decor                                     |                           |                    |  |
| Project Description:  | Re-Tenant of Existing Retail Build                  | -                         |                    |  |
| Project Address:  | 7061 W. 159th St.                                   | Property Index No. (PIN): | 28-19-100-008-0000 |  |
| Zoning District:  | B-2 (Community Shopping)                            | Lot Dimensions & Area:    | 11.57              |  |
| Estimated Project Cost: \$  |   |                           |                    |  |
|   |   |                           |                    |  |
| OWNER OF REC  | CORD INFORMATION                                    |                           |                    |  |
| Please supply proper documentation of ownership and/or designated representative for any corporation. |   |                           |                    |  |
| Name of Owner: C  | hicago Trust Co, trust # 8-2120                     | Company: JMW P            | roperties, LLC     |  |
| Street Address:   |   | City, State & Zip:        |                    |  |
| E-Mail Address:   |   | Phone Number:             |                    |  |
|   | en constant en  |                           |                    |  |
| APPLICANT INFORMATION   |   |                           |                    |  |
| Same as Owner of  | Record  |                           |                    |  |

All correspondence and invoices will be sent to the applicant. If applicant is different than owner, "Authorized Representative Consent" section must be completed



Village of Tinley Park Community Development Dept. 16250 S. Oak Park Ave. Tinley Park, IL 60477 708-444-5100

Alan Silverman

#### VILLAGE OF TINLEY PARK, ILLINOIS PLANNING AND ZONING GENERAL APPLICATION

#### Authorized Representative Consent

It is required that the property owner or his designated representative be present at all requests made to the Plan Commission and Zoning Board of Appeals. During the course of a meeting, questions may arise regarding the overall project, the property, property improvements, special conditions attached to recommendations among other aspects of any formal request. The representative present must have knowledge of the property and all aspects of the project. They must have the authority to make commitments related to the project and property. Failure to have the property owner or designated representative present at the public meeting can lead to substantial delays to the project approval. If the owner cannot be present or does not wish to speak at the public meeting, the following statement must be signed by the owner for an authorized repetitive.

I hereby authorize Daniel Kelly (print clearly) to act on my behalf and advise that they have full authority to act as my/our representative in regards to the subject property and project, including modifying any project or request. I agree to be bound by all terms and agreements made by the designated representative.

Property Owner Signature:

Property Owner Name (Print):

## Alan Silverman, Mgr Partner, JMW Properties, LLC

#### Acknowledgements

- Applicant acknowledges, understands and agrees that under Illinois law, the Village President (Mayor), Village Trustees, Village Manager, Corporation Counsel and/or any employee or agent of the Village or any Planning and Zoning Commission member or Chair, does not have the authority to bind or obligate the Village in any way and therefore cannot bind or obligate the Village. Further, Applicant acknowledges, understands and agrees that only formal action (including, but not limited to, motions, resolutions, and ordinances) by the Board of Trustees, properly voting in an open meeting, can obligate the Village or confer any rights or entitlement on the applicant, legal, equitable, or otherwise.
- Members of the Plan Commission, Zoning Board of Appeals, Village Board as well as Village Staff may conduct inspections
  of subject site(s) as part of the pre-hearing and fact finding review of requests. These individuals are given permission to
  inspect the property in regards to the request being made.
- Required public notice signs will be obtained and installed by the Petitioner on their property for a minimum of 10 days prior to the public hearing. These may be provided by the Village or may need to be produced by the petitioner.
- The request is accompanied by all addendums and required additional information and all applicable fees are paid before scheduling any public meetings or hearings.
- Applicant verifies that all outstanding fees and monies owed to the Village of Tinley Park have been paid.
- Any applicable recapture, impact, engineering, contracted review or other required fees and donations shall be paid prior to issuance of any building permits, occupancy permits, or business licenses.
- The Owner and Applicant by signing this application certify that the above information and all supporting addendums and documentation is true and correct to the best of their knowledge

| Property Owner Signature:                     | Alan Silverman                               |  |
|---|--|--|
| Property Owner Name (Print):                  | erty Owner Name (Print): JMW Properties, LLC |  |
| Applicant Signature:<br>(If other than Owner) | Daniel Kelly                                 |  |
| Applicant's Name (Print):                     | Daniel Kelly                                 |  |
| Date:   |  |  |

#### STANDARDS AND CRITERIA FOR A VARIATION

Section X.G.1 of the Village of Tinley Park Zoning Ordinance requires that the Zoning Board of Appeals determine compliance with the following standards and criteria. In order for a variance to be approved, the Petitioner must respond to all the following statements and questions related to the Standards with factual evidence and information to support the requested Variation. If additional space is required, you may provide the responses on a separate document or page.

A. Describe the difficulty that you have in conforming with the current regulations and restrictions relating to your property, and describe how this hardship is not caused by any persons presently having an interest in the property. (Please note that a mere inconvenience is insufficient to grant a Variation). For example, does the shape or size of the lot, slope, or the neighboring surroundings cause a severe problem in completing the project in conformance with the applicable Ordinance requirement?

Floor and Decor is seeking relief due to the proximity of the structure in relation to 159th St. and the substantial setback (~500 ft.) from the roadway.

B. Describe any difficulties or hardships that current zoning regulations and restrictions would have in decreasing your property value compared to neighboring properties.

Due to the limiting size of the signage in the zoning ordinance Floor and Decor wouldn't be able to obtain adequate advertising to the roadway that the neighboring tenants are able to achieve based on the proximity of their building to the right of way.

C. Describe how the above difficulty or hardship was created.

The Hardship was created due to the proximity of the existing structure Floor and Decor in relation to 159th St. and the substantial setback (~500 ft.) from the roadway.

D. Describe the reasons this Variance request is unique to this property only and is not applicable, in general, to other properties within the same Zoning District.

Floor and Decors building location is unique due to the property due to the setback from 159th street and out parcels in front of the storefront that limit the signage view from the Right of Way.

E. Explain how this Variance would not be regarded as an attempt at financial gain, but only because of personal necessity. For example, the intent of the Variance is to accommodate related living for an elderly relative as opposed to adding an additional income source.

Floor and Decor is seeking relief from the Zoning Ordinance due to the limited visual availability from the Right of Way. Allowing Floor and Decor this relief will allow potential customers a better opportunity to locate the store in passing from the Right of Way.

F. Describe how granting this Variance request will not be detrimental to the public welfare or injurious to other properties or improvements in the neighborhood in which the property is located.

Floor and Decor is seeking relief due to the proximity of the structure in relation to 159th St. and the substantial setback (~500 ft.) from the roadway. The proposed signage will not have any negative impact to any adjacent properties as they are afforded the same advertizing ability that Floor and Decor is seeking with their variance request.

G. Explain how granting this Variance will not alter the essential charter of the neighborhood or locality.

Floor and Decor is seeking a variance that is consistent with the signage of neighboring tenants and appropriate in size with respect to the facade and storefront. Floor and Decor's signage is consistent in size with other retail buildings in close proximity of this location.

#### H. Describe how the requested Variance will not:

1. Impair an adequate supply of light and air to adjacent properties.

Floor and Decor's proposed signage will have no adverse impact on the supply of light and air to any adjacent properties.

#### 2. Substantially increase the congestion of the public streets.

Floor and Decor's proposed signage will have no adverse impact on the flow of traffic on public streets. It is anticipated that the proposed signage will help the flow of traffic as customers will clearly be able to deliniate the stores location with the proposed signage from the Right of Way.

#### 3. Increase the danger of fire.

Floor and Decor's proposed signage will have no adverse impact on the fire safety components of the property.

#### 4. Impair natural drainage or create drainage problems on adjacent property.

Floor and Decor's proposed signage will have no adverse impact on the drainage systems on any adjacent properties.

#### 5. Endanger the public safety.

Floor and Decor's proposed signage will have no adverse impact on the public safety components on any adjacent properties.

#### 6. Substantially diminish or impair property values within the neighborhood.

Floor and Decor's proposed signage will have no adverse impact on the property values for any adjacent properties.





### Village of Tinley Park Project Narrative for Site Plan

The below is a narrative as part of the Site Plan Application for the proposed Floor and Decor re-development at 7061 W 159<sup>th</sup> St. (PIN: 28-19-100-012-0000). The site is currently an operating Burlington store with a Zoning Designation of Community Shopping (B-2). The site is approximately 10.86 Acres and the proposed Floor and Decor space is approximately 70,323 SF.

Floor & Decor sells hard surface flooring products (tile, wood, stone, etc.), vanities, sinks, counter tops, and accessory products for install. Typical store hours consist of Monday- Friday: 7am-9pm, Saturday 8am-9pm, and Sunday 10am-7pm. It is anticipated that the store will have 40-50 employees with 60% of the staff being full time employees with a morning shift and evening shift. Customers will find a wide range of quality, in-stock flooring. PRO customers, who are typically installers, make up 60% of the customer base. These customers have a dedicated PRO sales manager to help them get their jobs done. Floor & Decor also offers free design services which is typically used by non-PRO customers to assist in making product selections.

The products are displayed on the sales floor and many of the inventory is stored on steel racks. Several forklifts are on-site to move pallets of products and unload the delivery trucks. Deliveries occur 5-7 days a week and up to 4 deliveries per day can be expected depending on the sales volume of the store for a total of 20-25 total deliveries per week (maximum truck size is WB-67). Due to the nature of Floor and Decors operation forklifts are necessary to move material from the trucks to the showroom floor. To avoid conflict and ensure the safety of all customers and employees Floor and Decor makes its deliveries overnight. Items are moved directly from the trucks to the showroom floor. Based on the existing site conditions (buffer wall and tree plantings) it is anticipated that Floor and Decor will have the necessary screening required to ensure overnight deliveries will not be a conflict or nuisance for neighboring sites.

The proposed project will re-tenant the existing Burlington space to a Floor and Decor Retail store. The proposed building improvements include a new storefront entrance location and

update to the façade to match Floor and Decors corporate brand. The update to the façade will be designed to be complementary with the adjacent tenant to create a cohesive look for the shopping center. The rear façade will be painted a consistent color for both tenants to blend the two tenants together.

Other site improvements include:

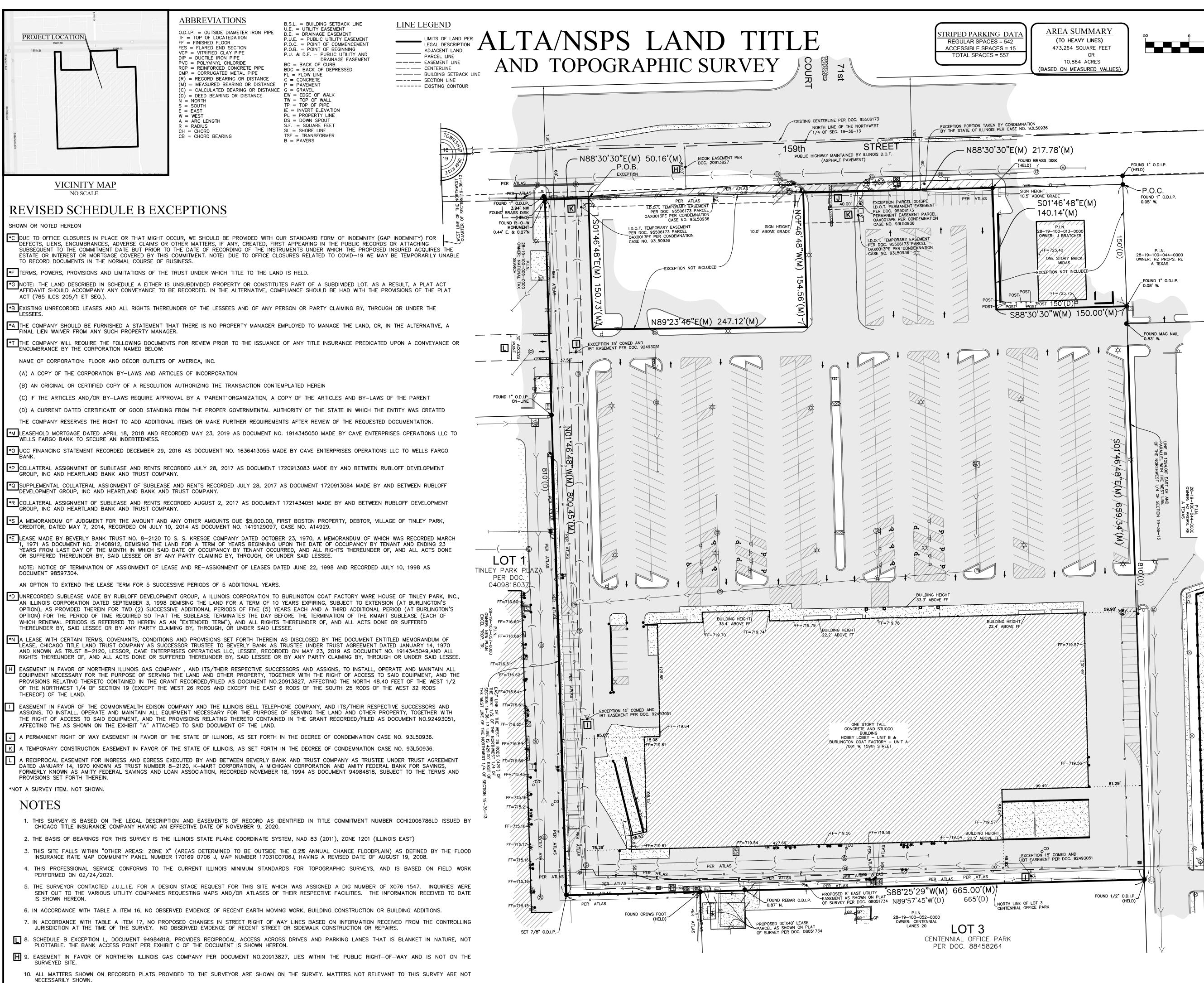
- Improvements to existing parking lot deficiencies (potholes, parking islands, ADA upgraded etc.)
- Flush Curb along front vestibule
- Installing Customer Pickup Area (CPU)
  - CPU area facilitates large quantity orders for both PRO and typical customers. The CPU area is serviced by a forklift to load and unload large quantities of orders directly into their vehicle.

Floor and Decor is seeking variation from the Village sign standards for the allowable square footage of sign area. Floor and Decor's signage on the front elevation "Sign A" is proposed to be 290.5 sf. Per the municipal code, the allowable sign area is 120 sf in the B-2 Community Shopping Zoning Designation. Floor and Decor is seeking relief due to the proximity of the structure in relation to 159<sup>th</sup> St and the substantial setback (~500 ft.) from the roadway. The proposed sign area is consistent with other retailers in the area and is proportional to the front building façade.

Floor and Decor looks forward to partnering with the Village of Tinley Park. Should you have any questions or need any additional information please feel free to contact me at <u>dkelly@centerpoint-is.com</u> or 585-329-4683.

Respectfully,

Daniel Kelly



## GRAPHIC SCALE

( IN FEET 1 inch = 50 ft.

## LEGAL DESCRIPTION

#### THAT PART OF THE WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 19, TOWNSHIP 36 NORTH, RANGE 13, EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING ON A LINE 1094 FEET EAST OF THE WEST LINE OF SAID NORTHWEST 1/4 AND 50 FEET SOUTH OF THE NORTH LINE OF SAID SECTION 19, THENCE SOUTH ON SAID LINE 1094 FEET FAST OF SAID WEST LINE 810 FEFT: THENCE NORTH 89 DEGREES 57 MINUTES 45 SECONDS WEST 665 FEET TO THE EAST LINE OF THE WEST 26 RODS OF SAID WEST 1/2 OF THE NORTHWEST 1/4; THENCE NORTH 810 FEET ALONG LAST SAID LINE TO A POINT ON A LINE 50 FEET SOUTH OF THE NORTH LINE OF SAID SECTION 19 THENCE NORTH 87 DEGREES 15 MINUTES 43 SECONDS EAST ALONG SAID SOUTH LINE OF THE NORTH 50 FEET OF SAID SECTION 19, 212.24 FEET; THENCE SOUTH 89 DEGREES 57 MINUTES 45 SECONDS EAST ALONG SAID SOUTH LINE 453 FEET TO THE PLACE OF BEGINNING (EXCEPTING THEREFROM THE NORTH 150 FEET OF THE EAST 150 FEET,

ALSO EXCEPTING THEREFROM THAT PART DESCRIBED AS: COMMENCING AT THE POINT OF INTERSECTION OF THE SOUTH LINE OF THE NORTH 50 FEET OF SAID SECTION 19 AND THE EAST LINE OF THE WEST 26 RODS (429.0 FEET) OF SAID NORTH WEST 1/4 OF SECTION 19; THENCE NORTH 87 DEGREES 20 MINUTES 16 SECONDS EAST (RECORD NORTH 87 DEGREES 15 MINUTES 43 SECONDS EAST) ALONG SAID SOUTH LINE OF TH NORTH 50 FEET OF SECTION 19 FOR A DISTANCE OF 50.18 FEET TO THE POINT OF BEGINNING. THENCE CONTINUING ALONG THE LAST DESCRIBED LINE FOR A DISTANCE OF 162.14 FEET TO AN ANGLE POINT IN SAID SOUTH LINE OF THE NORTH 50 FEET OF SECTION 19; THENCE (RECORD SOUTH 89 DEGREES 57 MINUTES 45 SECONDS EAST) ALONG SAID SOUTH LINE FOR A DISTANCE OF 85.00 FEET: THENCE SOUTH 00 DEGREES 19 MINUTES 25 SECONDS EAST ALONG A LINE PARALLEL WITH SAID EAST LINE OF THE WEST 26 RODS OF THE NORTH WEST 1/4 OF SECTION 19 FOR A DISTANCE OF 170.00 FEET; THENCE NORTH 89 DEGREES 57 MINUTES 45 SECONDS WEST ALONG A LINE FOR A DISTANCE OF 247.00 FEET: THENCE NORTH 00 DEGREES 19 MINUTES 25 SECONDS WEST ALONG A LINE PARALLEL WITH SAID EAST LINE OF THE WEST 26 RODS OF THE NORTH WEST 1/4 OF SECTION 19 FOR A DISTANCE OF 162.36 FEET TO SAID POINT OF BEGINNING.

ALSO EXCEPTING THEREFROM THAT PORTION TAKEN BY CONDEMNATION BY THE STATE OF ILLINOIS, IN CASE NO. 93L50936) ALL IN COOK COUNTY ILLINOIS.

## SNOW NOTE

THE SURVEYOR LOCATED THE OBSERVED IMPROVEMENTS ON THIS SITE. HOWEVER, DUE TO HEAVY SNOW COVERAGE AT THE TIME OF THE SURVEY. SOME IMPROVEMENTS MAY NOT HAVE BEEN VISIBLE. THEREFORE. THE IMPROVEMENTS SHOWN HEREON MAY OR MAY NOT COMPRISE ALL SUCH IMPROVEMENTS FOR THIS SITE. ADDITIONALLY, SOME HIGH POINTS OR LOW POINTS MAY NOT HAVE BEEN VISIBLE DUE TO DRIFTED SNOW.

CMC GAS METER

⊗<sup>G</sup> GAS VALVE

な GAS MARKER

Ons DOWN SPOU

GATE POST

🗕 SIGN

Ω

≈ FLAG POLE

**OBH** BORING HOLE

MONITORING WELL

BOLLARD POLE

MAILBOX

→ STORM SEWER

-E -ELECTRIC LINE

-OHW-OVERHEAD WIRES

8" CONIFEROUS TREE

+ ELEVATION

DECIDUOUS TREE W/APPROX. DIAMETER MS=MULTI-STEM

W/APPROX. DIAMETER

(DRIP LINE SHOWN IS APPROXIMATE)

BITUMINOUS PAVEMENT

CONCRETE SURFACE

DEPRESSED CURB

GRAVEL SURFACE

´↓ <sup>\*</sup>↓ LANDSCAPE AREA

WARNING SURFACE

BRICK PAVERS

STONE SURFACE

-o---o- WOOD FENCE

-D-D-METAL FENCE

ARM

•\_\_\_•METAL GUARDRAII

o OVERHEAD TRAFFIC

AREAS OF HEAVY SNOW FALL

- T - TELEPHONE LINE

— G — GAS MAIN

## LEGEND

- FOUND 7/8" O.D.I.P
- UNLESS ÓTHERWISE NOTED (HELD LOCATION)
- CONCRETE MONUMENT CROSS IN CONCRETE
- MANHOLE
- STORM STRUCTURE SANITARY MANHOLE
- CO CLEANOUT
- FLARED END SECTION TRANSFORMER PAD
- ELECTRIC MANHOLE
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- E ELECTRIC PEDESTAL
- ELECTRIC MARKER
- EM ELECTRIC METER -O- UTILITY POLE
- -O- UTILITY POLE W/LIGHT
- -D- UTILITY POLE W/TSF GUY POLE
- OVERHEAD TRAFFIC SIGNAL TRAFFIC SIGNAL MANHOLE LIGH
- ☆ LIGHT POLE HH HAND HOLE
- ⊘ VALVE VAULT
- ♥ FIRE HYDRANT
- **<sup>OICV</sup>** IRRIGATION CONTROL VALVE Ø<sup>₽IV</sup> POST INDICATOR VALVE SWC SIAMESE WATER CONNECTION
- WATER MARKER WATER METER
- VALVE BOX
- B/BOX SPRINKLER CONTROL VALVE
- (D) TELEPHONE MANHOL TNIC TELEPHONE NETWORK INTERFACE
- \* TELEPHONE MARKER
- TELEPHONE PEDESTAL CABLE TELEVISION PEDESTAL
- CB CONTROL BOX

# SURVEYOR'S CERTIFICATION

TO: FLOOR AND DECOR OUTLETS OF AMERICA, INC., ITS AFFILIATES, SUCCESSORS AND ASSIGNS AND CHICAGO TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6(b), 7(A), 7(b)(1), 8, 9, 11, 13, 16, 17, 19 AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 03-03-2021.

#### COMPASS SURVEYING LTD PROFESSIONAL DESIGN FIRM

LAND SURVEYOR CORPORATION NO. 184-002778 LICENSE EXPIRES 4/30/2023

DATE OF PLAT OR MAP: 03-19-2021

- SCOTT C. KREBS IL PROFESSIONAL LAND SURVEYOR NO. 3509 LICENSE EXPIRES 11/30/22
  - J:\PSDATA\2021 PROJECTS\21.0039\21.0039 LTS.DW PROJ. NO.: 21.0039

OF 3

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## **SNOW NOTE**

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STORM STRUCTURE CURB GRATE RIM=718.61

IE=715.76(N)10"RCF

WATER VALVE

PER ATLAS

TRAFFIC SIGNAL MANHOLE NOT LOCATED

EDGE OF LANDSCAPE

STORM STRUCTURE OPEN GRATE RIM=718.17 IE=713.27(SW)6"

STORM STRUCTURE OPEN GRATE RIM=716.56 IE=712.46(SW)10''RCP

WOOD FENCE \_ REFUSE AREA

STORM STRUCTURE OPEN GRATE RIM=715.84 IE=710.44(N-S)18"RCP IE=710.59(W)12"RCP

WATER VALVE RIM=717.14

SANITARY MANHOLE CLOSED RIM=716.49

=712.04(W-S)8"PVC

GATE-

\_\_\_\_W\_\_\_\_C\_\_\_\_

SANITARY MANHOLE

SANITARY MANHOLE CLOSED RIM=716.21 IE=706.96(N−S)8"VCP

0.5 10 13

PER ATLAS

OPEN GRATE

STORM STRUCTURE OPEN GRATE RIM=715.83

IE=712.63(N)12"RCP IE=712.59(S)15"RCP

0.25

=715.14 IE=712.79(S)15"RC FILLED WITH WATEF

CLOSED / RIM=718.89

IE=704.84(N-S)

## BENCHMARKS

## **REFERENCE BENCHMARK:**

CONTROL POINT #500 REFERENCED IN COMPASS PROJECT NUMBER 16.0113 CUT CROSS IN CONCRETE ON SOUTHERN END OF CURB ISLAND IN ENTRANCE TO PARKING LOT OF HOME DEPOT NORTH SIDE OF 159TH STREET. DATUM: NAVD88 ELEVATION = 714.12

#### SITE BENCHMARKS: SOUTHEAST BOLT ON FIRE HYDRANT AT THE SOUTHWEST CORNER OF 159TH STREET AND SITE ENTRANCE AT THE NORTH EAST CORNER OF BURGER KING. SITE BENCHMARK #1 ELEVATION = 721.09

SITE BENCHMARK #2 SOUTHEAST BOLT ON FIRE HYDRANT AT THE SOUTH CENTER OF SITE ELEVATION = 719.20



- LOCATED 7/8" O.D.I.P. UNLESS OTHERWISE NOTED
- (HELD LOCATION)
- CONCRETE MONUMENT + CROSS IN CONCRETE
- MANHOLE
- SANITARY MANHOLE
- CO CLEANOUT
- FLARED END SECTION
- TRANSFORMER PAD
- ELECTRIC MANHOLE
- EB ELECTRIC BOX E ELECTRIC PEDESTAL
- 定 ELECTRIC MARKER
- ELECTRIC METER
- -O- UTILITY POLE
- -OL UTILITY POLE W/LIGHT -D- UTILITY POLE W/TSF
- GUY POLE
- OVERHEAD TRAFFIC SIGNAL TRAFFIC SIGNAL MANHOLE
- -. LIGHT
- 🔅 LIGHT POLE
- HH HAND HOLE
- Ø VALVE VAULT
- O FIRE HYDRANT
- Ø<sup>ICV</sup> IRRIGATION CONTROL VALVE Ø<sup>₽IV</sup> POST INDICATOR VALVE
- SWC SIAMESE WATER CONNECTION
- w/: WATER MARKER WMX WATER METER
- ⊗ VALVE BOX
- ⊗<sup>в</sup> в∕вох
- ⊗<sup>SCV</sup> SPRINKLER CONTROL VALVE
- TELEPHONE MANHOLE THE TELEPHONE NETWORK INTERFACE
- ホ TELEPHONE MARKER
- TELEPHONE PEDESTAL CABLE TELEVISION PEDESTAL
- CB CONTROL BOX

- ⊗<sup>G</sup> GAS VALVE な GAS MARKER

ODS DOWN SPOUT

OBH BORING HOLE

GP GATE POST BOLLARD POLE

8 CONIFEROUS TREE W/APPROX. DIAMETER

(DRIP LINE SHOWN IS APPROXIMATE)

AREAS OF HEAVY SNOW FALL

BITUMINOUS PAVEMENT

CONCRETE SURFACE

DEPRESSED CURB GRAVEL SURFACE LANDSCAPE AREA STONE SURFACE WARNING SURFACE

+ ELEVATION

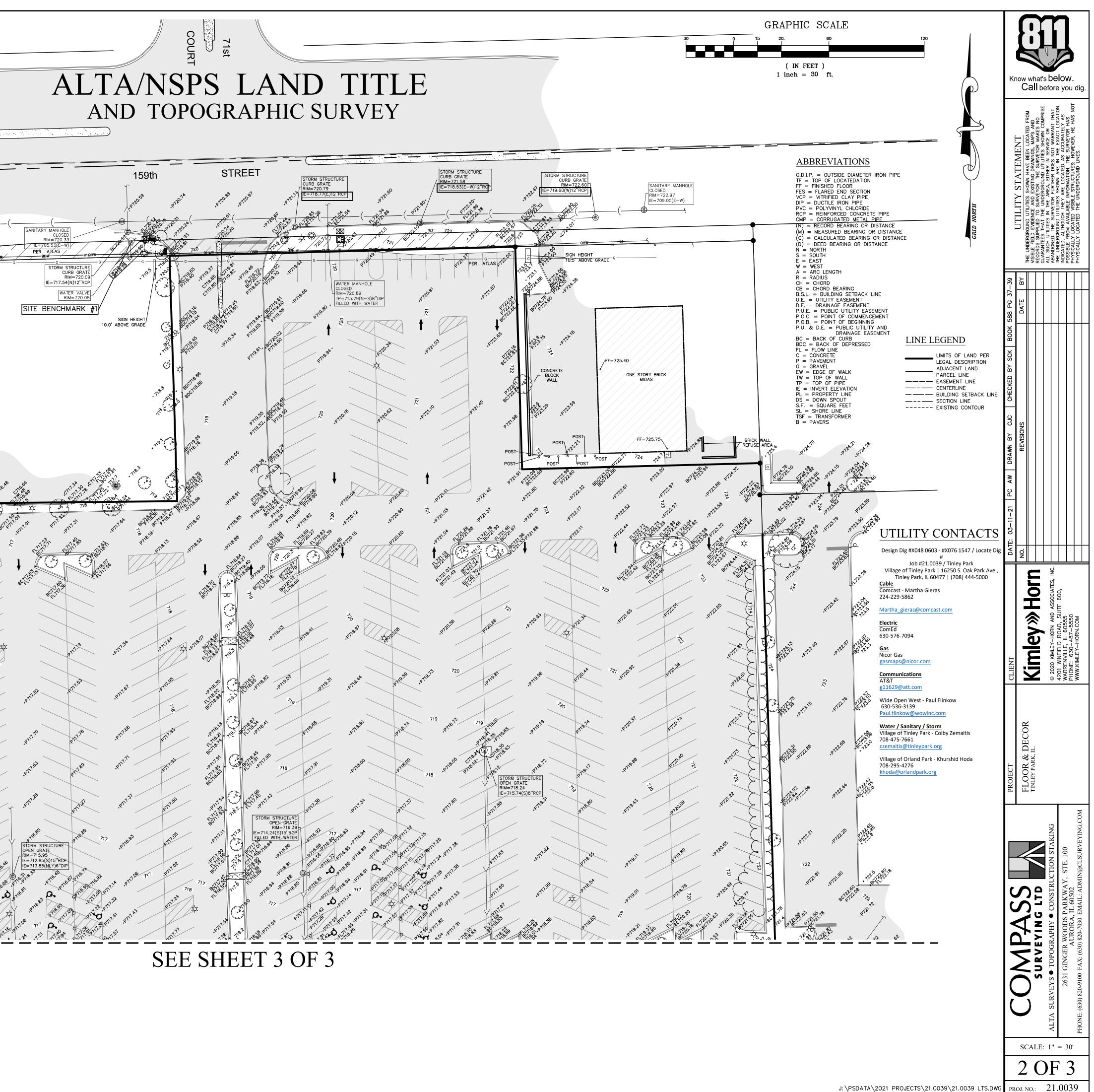
BRICK PAVERS -x-x- CHAIN LINK FENCE •\_\_\_\_•METAL GUARDRAIL - ምም OVERHEAD TRAFFIC ARM

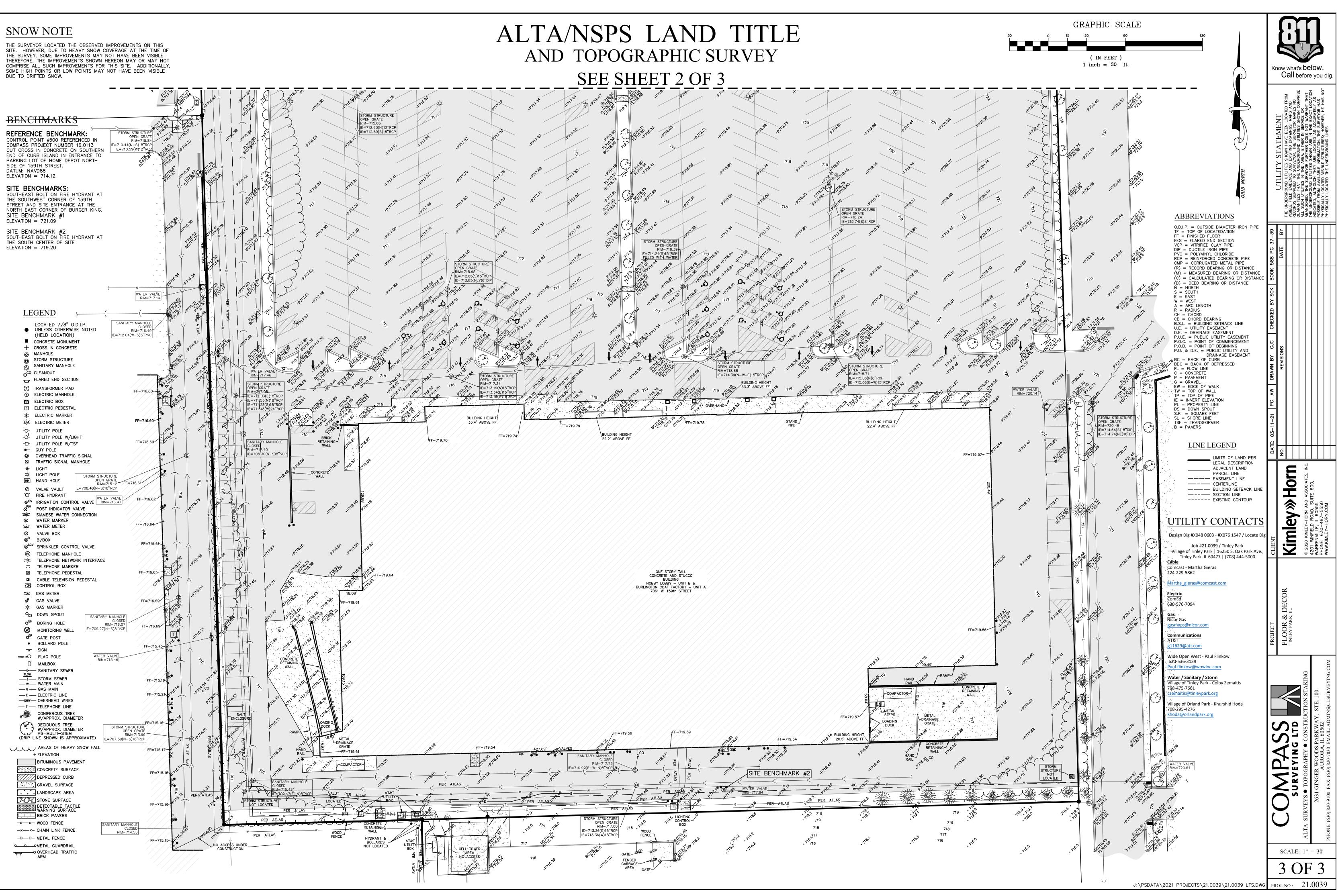
— G — GAS MAIN -E -ELECTRIC LINE -OHW-OVERHEAD WIRES

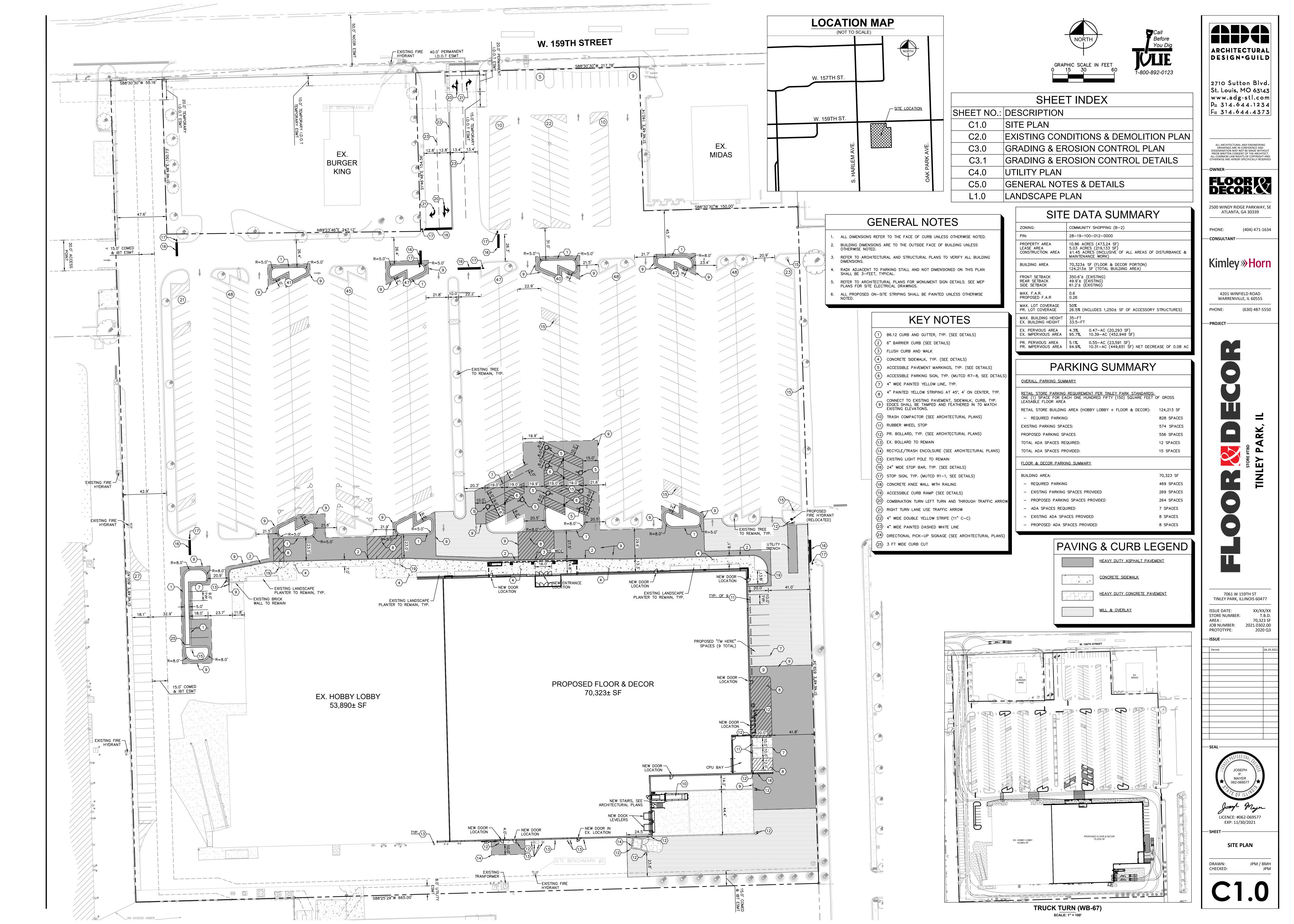
🗕 SIGN  $\rightleftharpoons$  FLAG POLE 

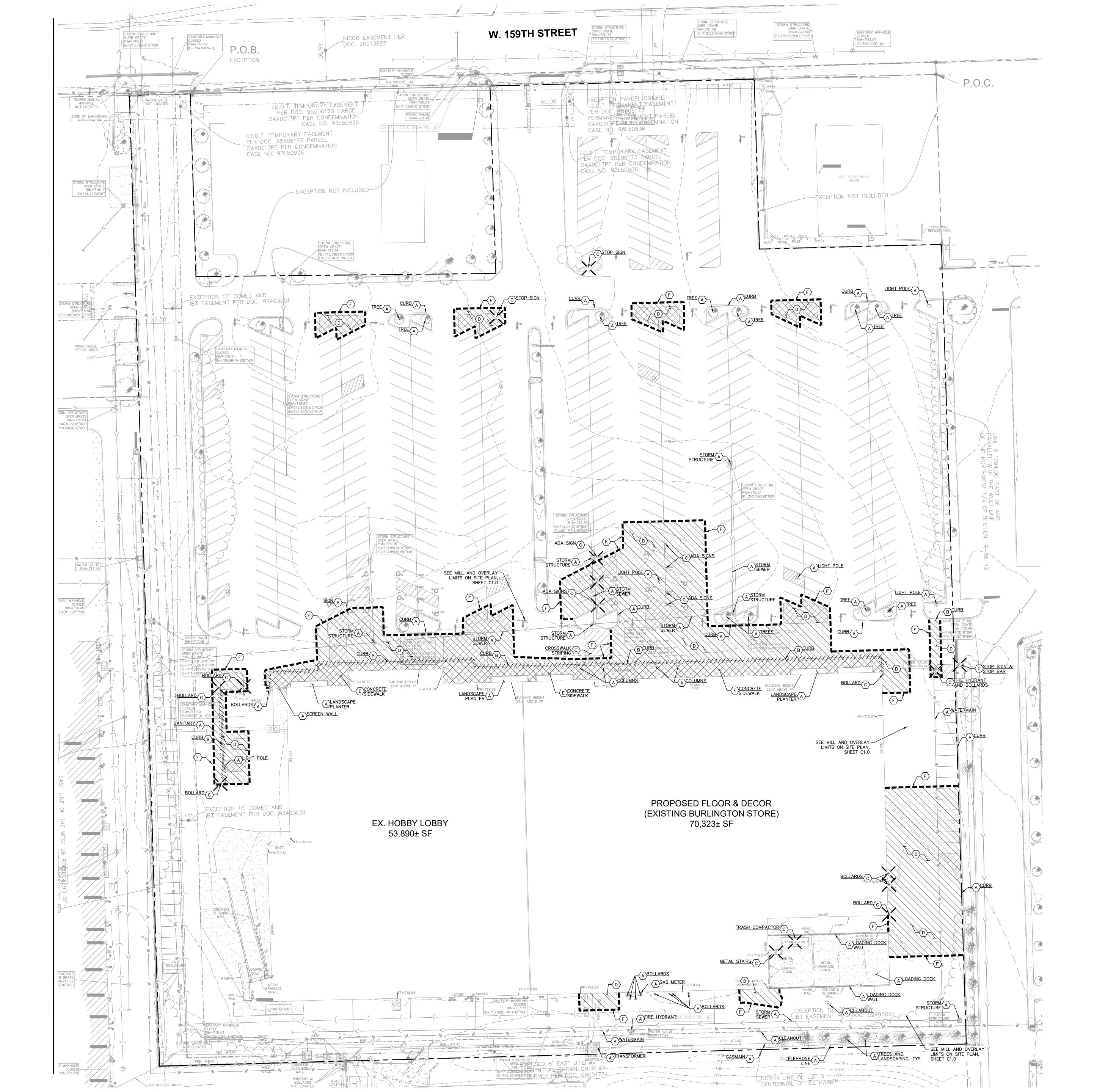
W MONITORING WELL

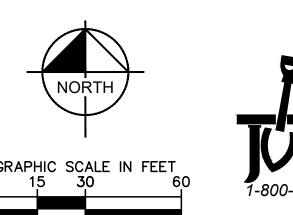
- CM GAS METER







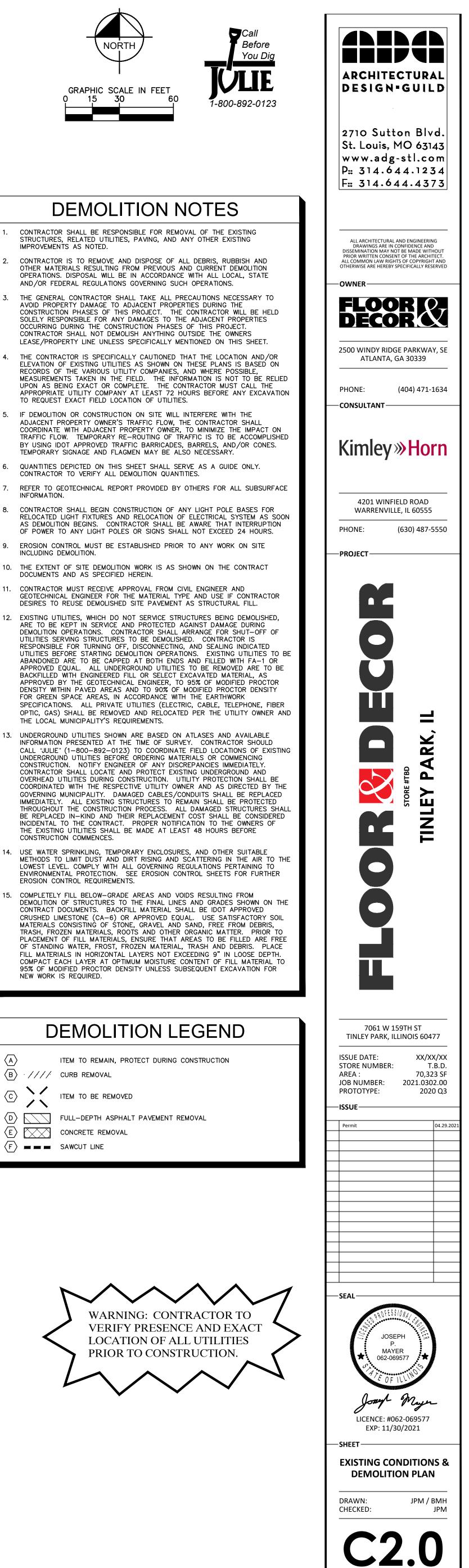


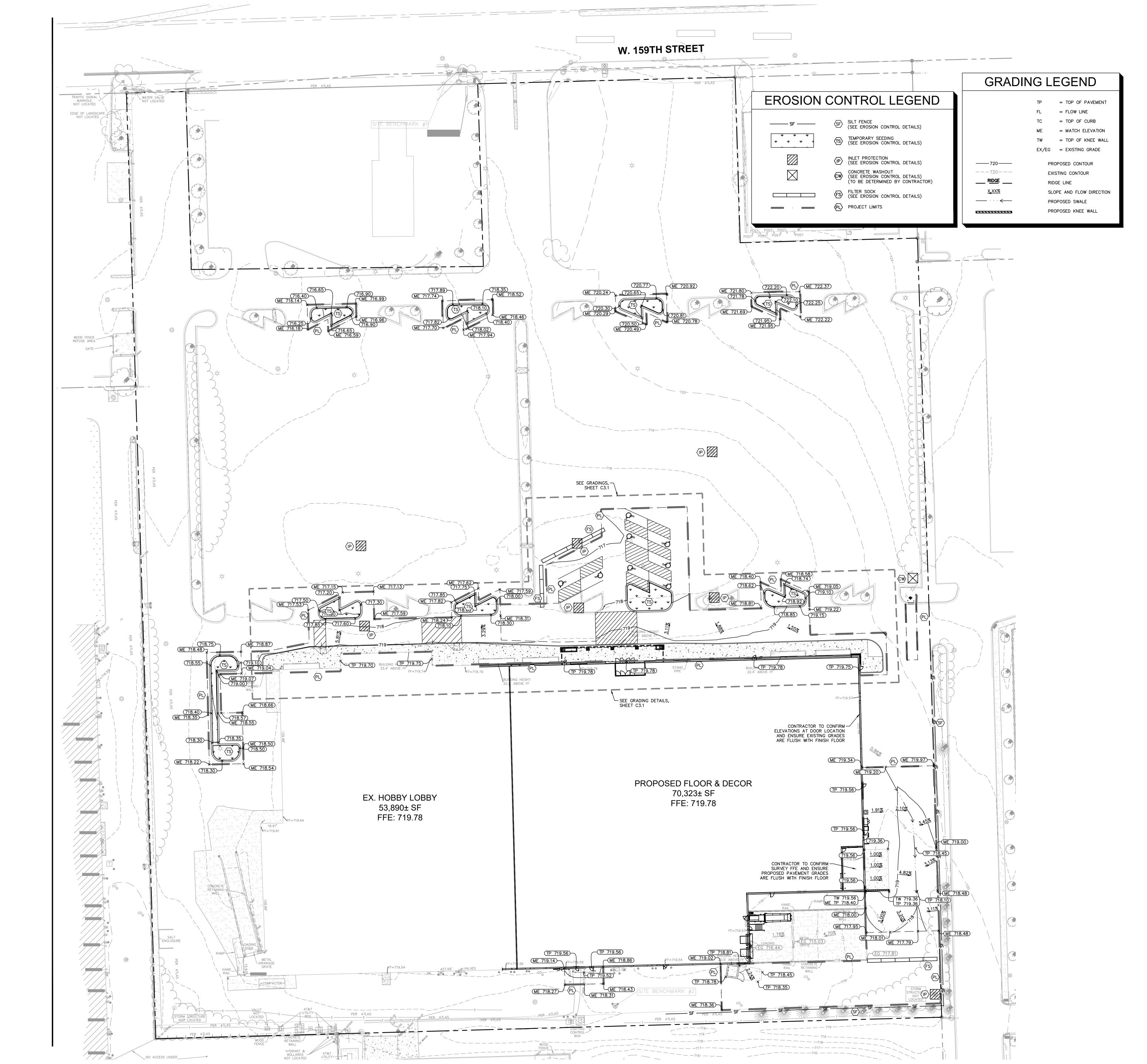


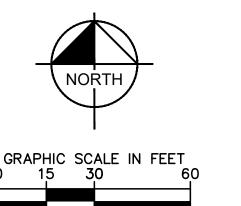
- AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
- OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR SHALL NOT DEMOLISH ANYTHING OUTSIDE THE OWNERS
- 5. IF DEMOLITION OR CONSTRUCTION ON SITE WILL INTERFERE WITH THE
- . QUANTITIES DEPICTED ON THIS SHEET SHALL SERVE AS A GUIDE ONLY. CONTRACTOR TO VERIFY ALL DEMOLITION QUANTITIES.
- INFORMATION.
- 10. THE EXTENT OF SITE DEMOLITION WORK IS AS SHOWN ON THE CONTRACT
- 11. CONTRACTOR MUST RECEIVE APPROVAL FROM CIVIL ENGINEER AND
- UTILITIES SERVING STRUCTURES TO BE DEMOLISHED. CONTRACTOR IS FOR GREEN SPACE AREAS, IN ACCORDANCE WITH THE EARTHWORK
- CONSTRUCTION COMMENCES.
- EROSION CONTROL REQUIREMENTS.
- 15. COMPLETELY FILL BELOW-GRADE AREAS AND VOIDS RESULTING FROM NEW WORK IS REQUIRED.

| $\langle A \rangle$ |          | ITEM  |
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L-DEPTH ASPHALT PAVEMENT REMOVAL ICRETE REMOVAL









# **EROSION CONTROL NOTES**

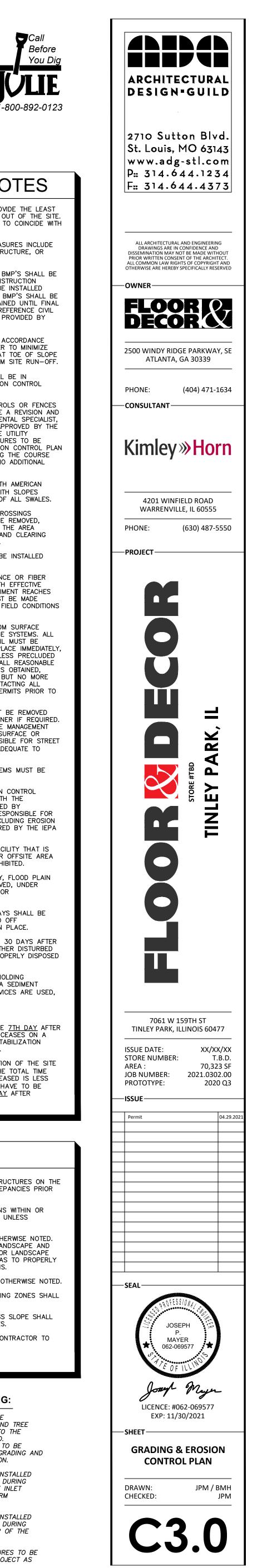
- CONSTRUCTION ENTRANCE SHALL BE LOCATED SO AS TO PROVIDE THE LEAST AMOUNT OF DISTURBANCE TO THE FLOW OF TRAFFIC IN AND OUT OF THE SITE. ADDITIONALLY, CONSTRUCTION ENTRANCE SHALL BE LOCATED TO COINCIDE WITH THE PHASING OF THE PAVEMENT REPLACEMENT.
- POST CONSTRUCTION STORM WATER POLLUTION CONTROL MEASURES INCLUDE STABILIZATION BY PERMANENT PAVING, DRAINAGE SYSTEM STRUCTURE, OR LANDSCAPING.
- TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
- BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF
- THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN.
- ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST, OR ARBORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY THE PLANNING AND DEVELOPMENT DEPARTMENT AND THE DRAINAGE UTILITY DEPARTMENT. MINOR CHANGES OR ADDITIONAL CONTROL MEASURES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL PLACE EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S150BN OR APPROVED EQUAL) ON ALL SITE AREAS WITH SLOPES GREATER THAN 4:1, AND IN THE BOTTOM AND SIDE SLOPES OF ALL SWALES.
- PRIOR TO FINAL ACCEPTANCE, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.
- PERMANENT, FINAL PLANT COVERING OR STRUCTURES SHALL BE INSTALLED PRIOR TO FINAL ACCEPTANCE. ALL CONTROL DEVICES THAT FUNCTION SIMILARLY TO SILT FENCE OR FIBER
- ROLLS MUST BE REPAIRED, REPLACED OR SUPPLEMENTED WITH EFFECTIVE CONTROLS WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES ONE-THIRD THE HEIGHT OF THE DEVICE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF THE RAINFALL EVENT OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. ALL SEDIMENT DELTAS AND DEPOSITS MUST BE REMOVED FROM SURFACE
- WATERS, DRAINAGE WAYS, CATCH BASINS AND OTHER DRAINAGE SYSTEMS. ALL AREAS WHERE SEDIMENT REMOVAL RESULTED IN EXPOSED SOIL MUST BE RESTABILIZED. THE REMOVAL AND STABILIZATION MUST TAKE PLACE IMMEDIATELY, BUT NO MORE THAN 7 DAYS AFTER THE RAINFALL EVENT UNLESS PRECLUDED BY LEGAL, REGULATORY OR PHYSICAL ACCESS CONSTRAINTS. ALL REASONABLE EFFORTS MUST BE USED TO OBTAIN ACCESS. ONCE ACCESS IS OBTAINED, REMOVAL AND STABILIZATION MUST TAKE PLACE IMMEDIATELY, BUT NO MORE THAN 7 DAYS LATER. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL APPROPRIATE AUTHORITIES AND RECEIVING THE APPLICABLE PERMITS PRIOR TO CONDUCTING ANY WORK.
- ACCUMULATIONS OF TRACKED AND DEPOSITED SEDIMENT MUST BE REMOVED FROM OFF-SITE PAVED SURFACES WITHIN 24 HOURS OR SOONER IF REQUIRED. SEDIMENT TRACKING MUST BE MINIMIZED BY THE APPROPRIATE MANAGEMENT PRACTICE, LIKE A DEDICATED SITE EXIT WITH AN AGGREGATE SURFACE OR DESIGNATED OFFSITE PARKING AREA. CONTRACTOR IS RESPONSIBLE FOR STREET SWEEPING AND/OR SCRAPING IF YOUR PRACTICES ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED FROM THE SITE.
- SURFACE WATERS, DRAINAGE DITCHES AND CONVEYANCE SYSTEMS MUST BE INSPECTED FOR SEDIMENT DEPOSITS.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL MEASURES AS INDICATED ON THIS SHEET IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED BY KIMLEY-HORN AND ASSOCIATES, INC. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THE PROVISIONS INDICATED IN THE SWPPP, INCLUDING EROSION CONTROL MEASURES AND INSPECTION FREQUENCY, AS REQUIRED BY THE IEPA NPDES PHASE II PERMIT PROGRAM REQUIREMENTS.
- PUMPING SEDIMENT LADEN WATER INTO ANY STORMWATER FACILITY THAT IS NOT DESIGNATED TO BE A SEDIMENT TRAP, DRAINAGEWAY, OR OFFSITE AREA EITHER DIRECTLY OR INDIRECTLY WITHOUT FILTRATION IS PROHIBITED.
- SOIL STOCKPILES SHALL NOT BE LOCATED IN A DRAINAGEWAY, FLOOD PLAIN AREA OR A DESIGNATED BUFFER, UNLESS OTHERWISE APPROVED, UNDER SPECIFIC CONDITIONS TO BE ESTABLISHED BY THE DIRECTOR OR ADMINISTRATOR.
- STOCKPILES TO REMAIN IN PLACE FOR MORE THAN THREE DAYS SHALL BE PROVIDED WITH SESC MEASURES. MATERIAL IS TO BE HAULED OFF IMMEDIATELY AND LEGALLY IF NO STOCKPILE IS TO REMAIN IN PLACE.
- ALL TEMPORARY SESC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL STABILIZATION IS ACHIEVED.TRAPPED SEDIMENT AND OTHER DISTURBED SOILS RESULTING FROM TEMPORARY MEASURES SHALL BE PROPERLY DISPOSED OF PRIOR TO PERMANENT STABILIZATION.
- WATER REMOVED FROM TRAPS, BASINS, AND OTHER WATER HOLDING DEPRESSIONS OR EXCAVATIONS MUST FIRST PASS THROUGH A SEDIMENT CONTROL AND/OR FILTRATION DEVICE. WHEN DEWATERING DEVICES ARE USED, DISCHARGE LÓCATIONS SHALL BE PROTECTED FROM EROSION. 20. SITE STABILIZATION REQUIREMENTS ARE AS FOLLOWS:
- 20.1. WHERE THE INITIATION OF STABILIZATION MEASURE BY THE 7TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES ON A PORTION OF THE SITE IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURE SHALL BE INITIATED AS SOON AS PRACTICABLE.
- 20.2. WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 14 DAYS FROM WHEN ACTIVITIES CEASED, (E.G. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN <u>14 DAYS</u>) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE <u>7TH DAY</u> AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED.

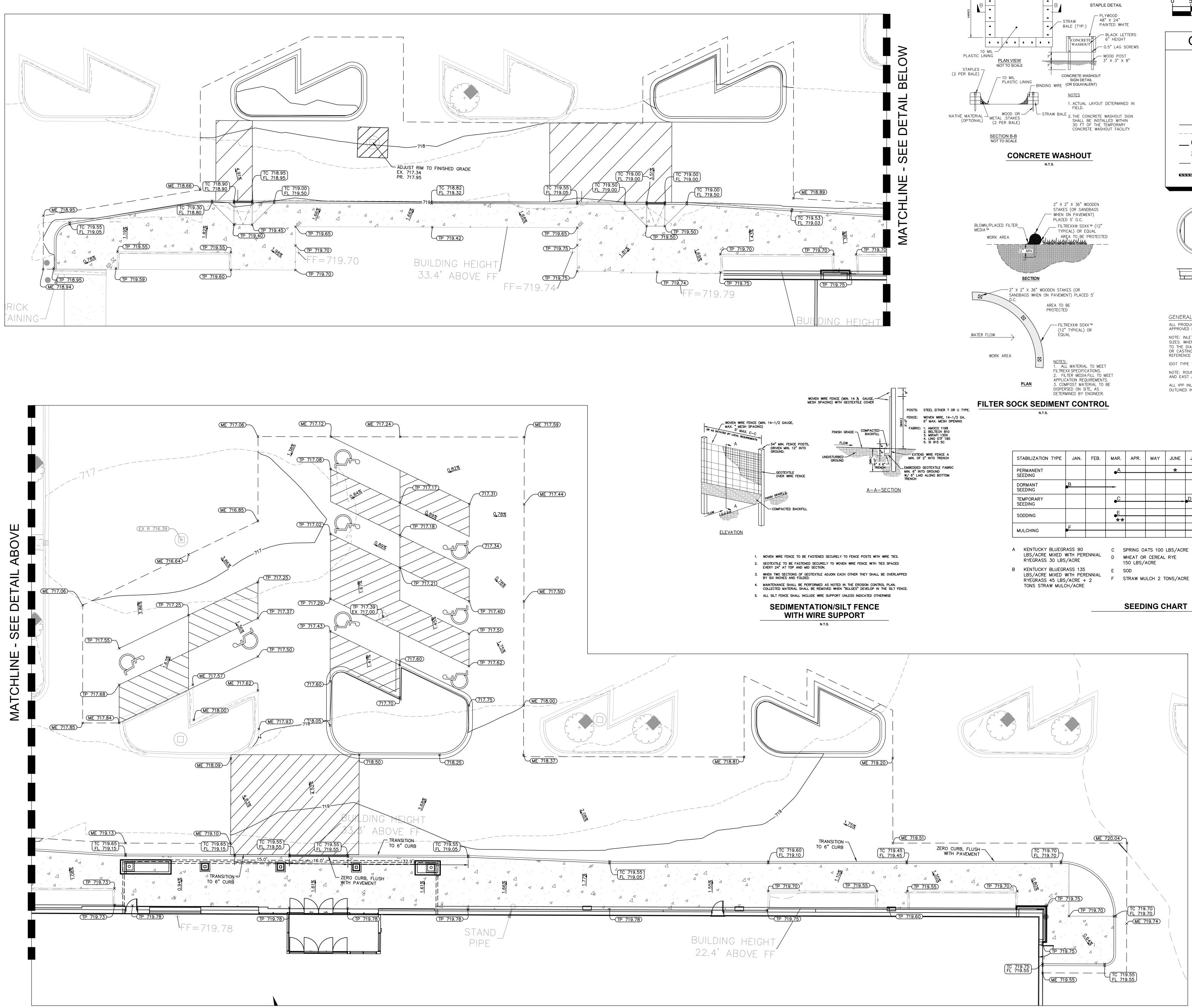
# **GRADING NOTES**

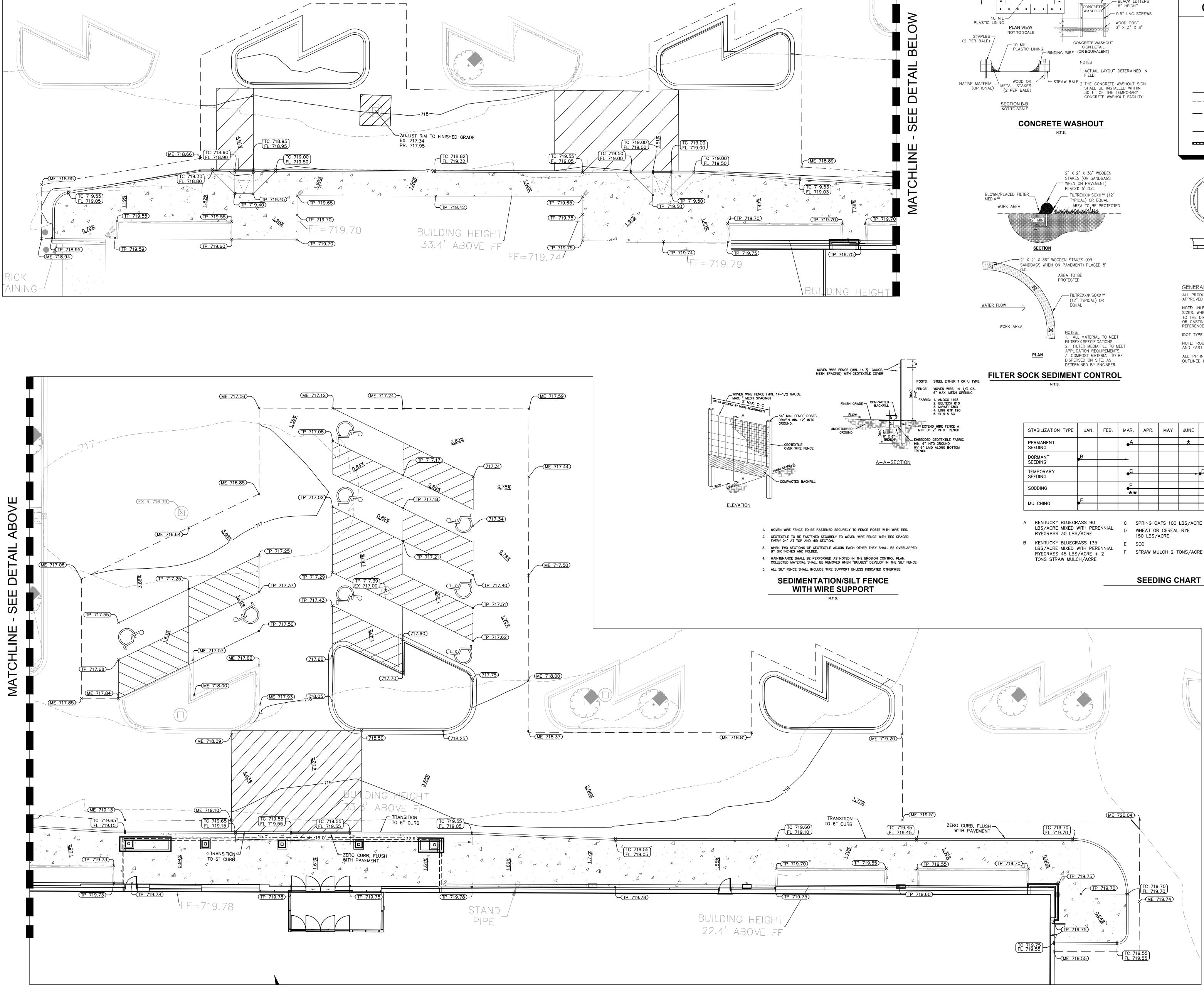
- CONTRACTOR TO VERIFY ALL EXISTING TOPOGRAPHY AND STRUCTURES ON THE SITE AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR
- TO STARTING WORK. ALL PAVEMENT SPOT GRADE ELEVATIONS AND RIM ELEVATIONS WITHIN OR ALONG CURB AND GUTTER REFER TO FLOW LINE ELEVATIONS UNLESS
- OTHERWISE NOTED. ALL ELEVATIONS SHOWN DEPICT FINISHED GRADE UNLESS OTHERWISE NOTED. GENERAL CONTRACTOR TO COORDINATE WITH EXCAVATION, LANDSCAPE AND PAVING SUBCONTRACTORS REGARDING TOPSOIL THICKNESS FOR LANDSCAPE AREAS AND PAVEMENT SECTION THICKNESS FOR PAVED AREAS TO PROPERLY ENSURE ADEQUATE CUT TO ESTABLISH SUBGRADE ELEVATIONS.
- 4. NO EARTHEN SLOPE SHALL BE GREATER THAN 3:1, UNLESS OTHERWISE NOTED. MAXIMUM SLOPE IN ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL
- NOT EXCEED 2.0% IN ALL DIRECTIONS. MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL
- NOT EXCEED 2% ON ALL SIDEWALKS AND ACCESSIBLE ROUTES WHEN NATURAL FLOW OF DRAINAGE IS AWAY FROM CURB, CONTRACTOR TO
- INSTALL REVERSE GUTTER PITCH. MATCH EXISTING ELEVATIONS AT THE PROPERTY LIMITS.

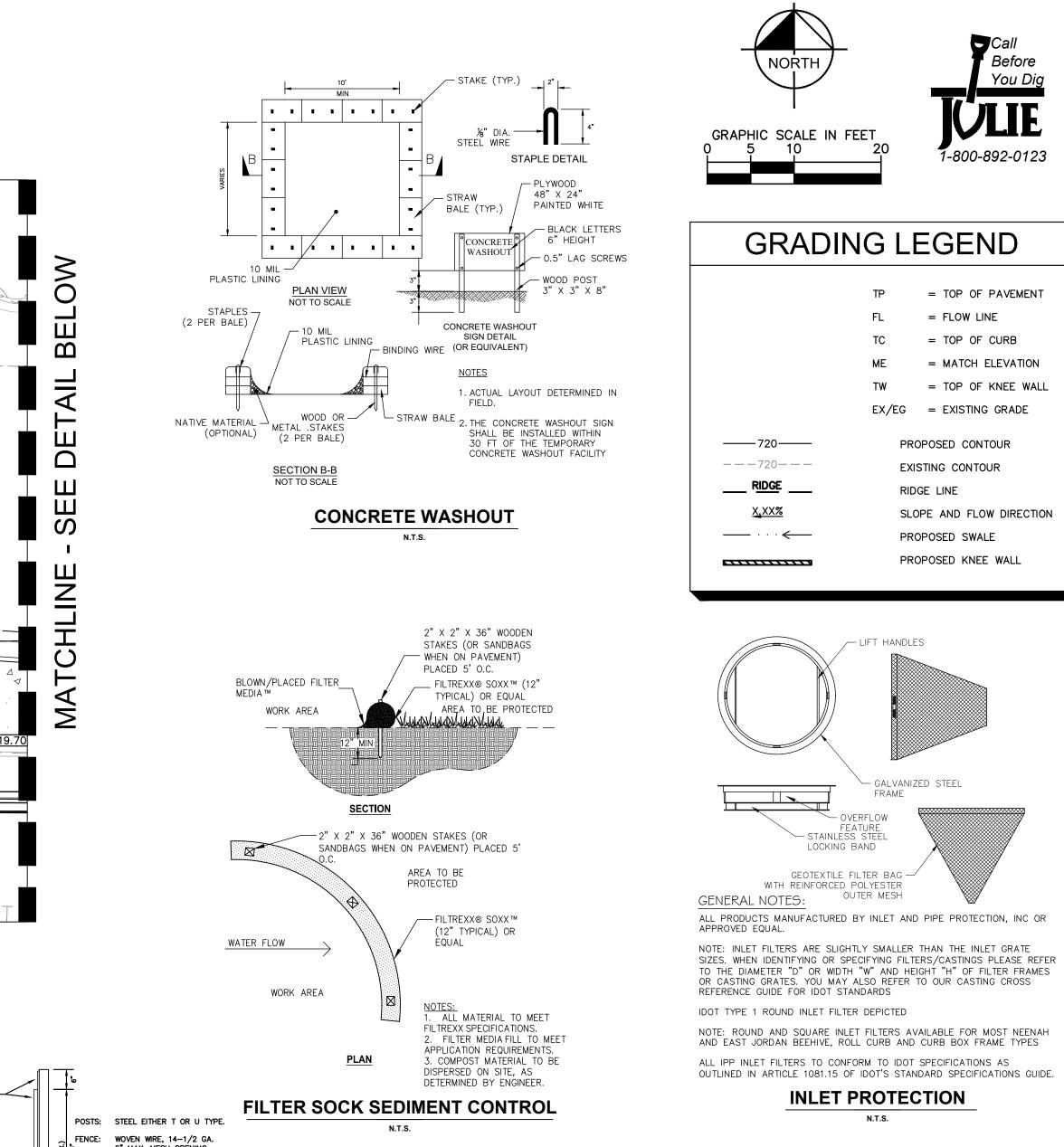
# **EROSION CONTROL SCHEDULE AND SEQUENCING:**

| I.           | ROUGH GRADING                                       | CONSTRUCTION ENTRANCE/EXIT, SILT FENCE<br>PROTECTION, CONCRETE WASHOUT AREA AND TREE<br>PROTECTION SHALL BE INSTALLED PRIOR TO THE<br>INITIATION OF ROUGH GRADING, AS NEEDED.<br>TEMPORARY EROSION CONTROL MEASURES TO BE<br>INSTALLED UPON COMPLETION OF ROUGH GRADING A<br>AS NECESSARY THROUGHOUT CONSTRUCTION. |
|--------------|---|--|
| <i>II</i> .  | UTILITY<br>INSTALLATION                             | ALL PRIOR EROSION CONTROL MEASURES INSTALLED<br>ABOVE TO BE MAINTAINED AS NECESSARY DURING<br>UTILITY INSTALLATION. STORM STRUCTURE INLET<br>PROTECTION SHALL BE INSTALLED AS STORM<br>DRAINAGE SYSTEM IS CONSTRUCTED.   |
| <i>III</i> . | PAVING  | ALL PRIOR EROSION CONTROL MEASURES INSTALLED<br>ABOVE TO BE MAINTAINED AS NECESSARY DURING<br>PAVING AND THROUGHOUT THE REMAINDER OF THE<br>PROJECT.   |
| IV.          | FINAL GRADING/SOIL<br>STABILIZATION/<br>LANDSCAPING | ALL TEMPORARY EROSION CONTROL MEASURES TO E<br>REMOVED AT THE CONCLUSION OF THE PROJECT AS<br>DIRECTED BY THE LOCAL MUNICIPALITY.  |
|              |   |  |







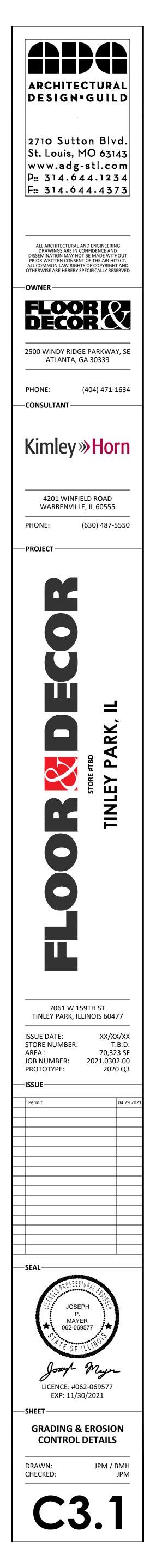


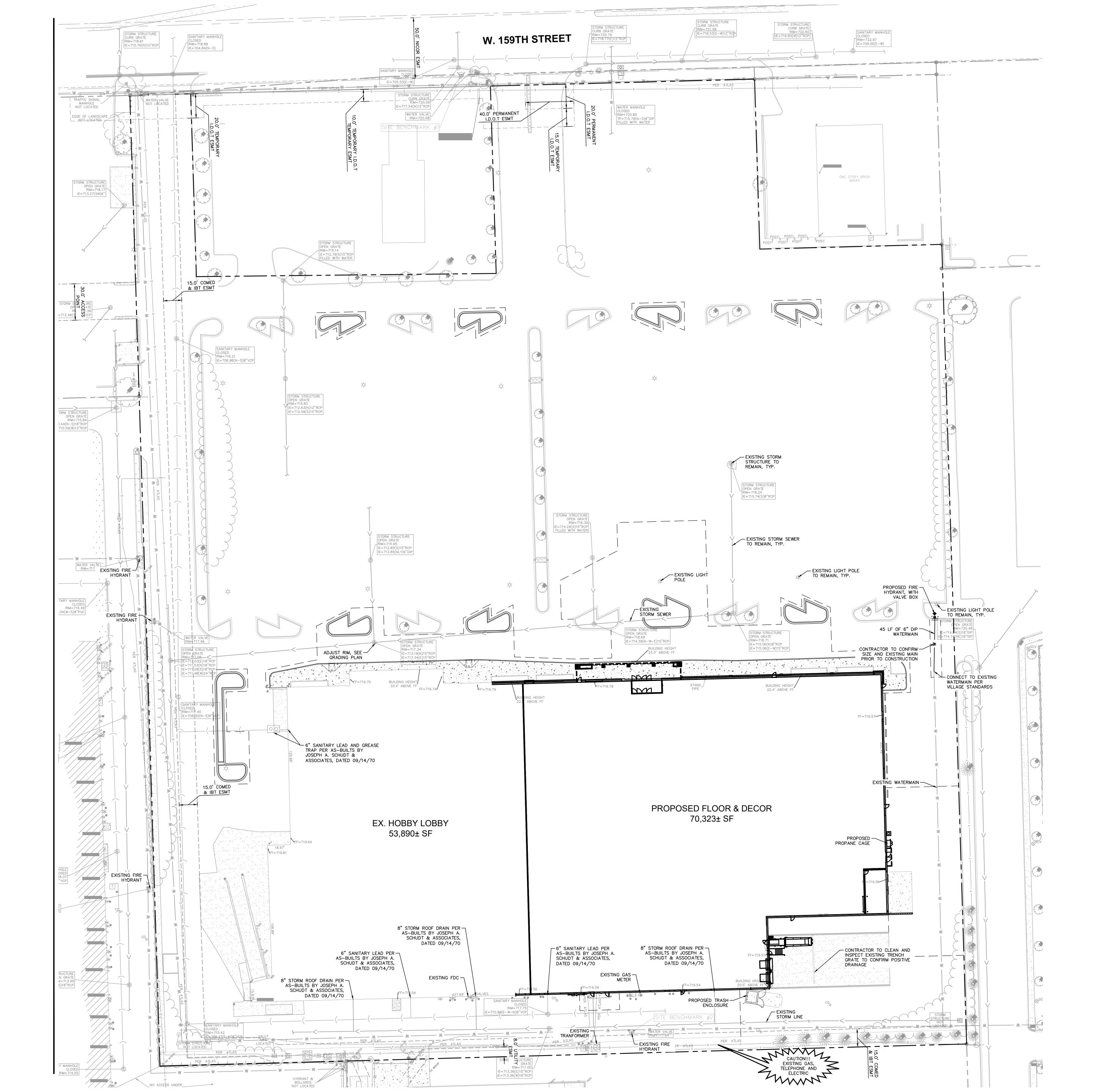
| STABILIZATION TYPE   | JAN. | FEB. | MAR.           | APR. | MAY | JUNE | JULY | AUG. | SEPT. | OCT. | NOV. | DEC. |
|----------------------|------|------|----------------|------|-----|------|------|------|-------|------|------|------|
| PERMANENT<br>SEEDING |      |      | ● <sup>A</sup> |      |     | *    | *    |      |       | -    |      |      |
| DORMANT<br>SEEDING   | В    |      | -              |      |     |      |      |      |       |      | В    | •    |
| TEMPORARY<br>SEEDING |      |      | ● <sup>C</sup> |      |     |      | D    |      |       |      |      |      |
| SODDING              |      |      | ●E<br>**       |      |     |      |      |      |       |      |      |      |
|                      | F    |      |                |      |     |      |      |      |       |      |      |      |
| MULCHING             |      |      |                |      |     |      |      |      |       |      |      |      |

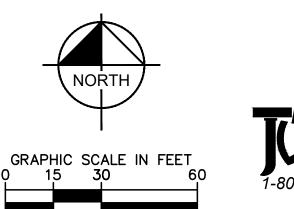
\* WATERING NEEDED DURING JUNE AND JULY \*\* WATERING NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD











# 1-800-892-0123

# UTILITY NOTES

- 1. ALL WATER LINES ≥ 3" SHALL BE DUCTILE IRON PIPE, CLASS 52.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
- CONTRACTOR TO CALL "JULIE" (1-800-892-0123) TO COORDINATE FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES BEFORE ORDERING MATERIALS OR COMMENCING CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
- CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
- CONTRACTOR TO AVOID DISRUPTION OF ANY ADJACENT TENANT'S TRAFFIC OPERATIONS DURING INSTALLATION OF UTILITIES.
- ALL DIMENSIONS ARE TO CENTERLINE OF PIPE OR CENTER OF MANHOLE UNLESS NOTED OTHERWISE.
- 8. SEE ARCHITECTURAL AND MEP PLANS FOR EXACT UTILITY CONNECTION LOCATIONS AT BUILDING.
- LIGHT POLES SHOWN FOR COORDINATION PURPOSES ONLY AND DO NOT REPRESENT ACTUAL SIZE. SEE SITE LIGHTING PLANS BY OTHERS FOR MORE INFORMATION.
- 10. SEE DETAILS FOR LOCATING STORM STRUCTURES WITHIN THE CURB LINE.

# UTILITY LEGEND

| ——— W ——— | W          | EX. WATER LINE                 |
|-----------|------------|--------------------------------|
| Ŭ         |            | EX. HYDRANT                    |
| $\otimes$ |            | EX. WATER VALVE                |
| )         | )          | EX. SANITARY SEWER LINE        |
| S         |            | EX. SANITARY SEWER MANHOLE     |
| oc        | 0          | EX. SANITARY SEWER CLEANOUT    |
| >·        |            | EX. STORM DRAIN LINE           |
|           |            | EX. STORM STRUCTURE            |
| G         | G          | EX. GAS LINE                   |
| ĩg¦Mĩ     |            | EX. GAS METER                  |
| E         | ——— Е ———— | EX. UNDERGROUND ELECTRIC LINE  |
| [7]       |            | EX. TRANSFORMER PAD            |
| -0-       |            | EX. UTILITY POLE               |
| T         | T          | EX. UNDERGROUND TELEPHONE LINE |
| Ē         |            | EX. TELEPHONE MANHOLE          |
| ф.        |            | EX. LIGHT POLE                 |
| —— w ——   | — w ——     | PROPOSED WATER LINE            |
| •         |            | PROPOSED VALVE BOX             |
| •         |            | PROPOSED FIRE HYDRANT          |



## GENERAL NOTES

EXISTING SITE TOPOGRAPHY, UTILITIES, RIGHT-OF-WAY AND HORIZONTAL CONTROL SHOWN ON THE DRAWINGS WERE OBTAINED FROM A SURVEY PREPARED BY: COMPASS SURVEYING, LTD 2631 GINGER WOODS PARKWAY, SUITE 100

- AURORA, IL 60502 TEL: (630) 820-9100
- COPIES OF THE SURVEY ARE AVAILABLE FROM THE ENGINEER. SITE CONDITIONS MAY HAVE CHANGED SINCE THE SURVEY WAS PREPARED. CONTRACTORS TO VISIT SITE TO FAMILIARIZE THEMSELVES WITH THE CURRENT CONDITIONS.
- COPIES OF SOILS INVESTIGATION REPORTS MAY BE OBTAINED FROM THE OWNER. ANY BRACING, SHEETING OR SPECIAL CONSTRUCTION METHODS DEEMED NECESSARY BY THE CONTRACTOR IN ORDER TO INSTALL THE PROPOSED IMPROVEMENTS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PROJECT. ANY ADDITIONAL SOILS DATA NEEDED TO CONFIRM THE CONTRACTOR'S OPINIONS OF THE SUBSOIL CONDITIONS HALL BE DONE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL OBTAIN THE OWNER'S WRITTEN AUTHORIZATION TO ACCESS THE SITE TO CONDUCT A SUPPLEMENTAL SOILS INVESTIGATION.
- THE CONTRACTOR SHALL PHOTOGRAPH THE WORK AREA PRIOR TO CONSTRUCTION FOR THE PURPOSE OF DOCUMENTING EXISTING CONDITIONS.
- 4. EXCEPT WHERE MODIFIED BY THE CONTRACT DOCUMENTS, ALL PROPOSED WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS WHICH ARE HEREBY MADE A PART HEREOF: A. "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS," AS PREPARED BY IDOT, LATEST EDITION.
- B. "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS" AS PUBLISHED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA), LATEST EDITION. C. "ILLINOIS RECOMMENDED STANDARDS FOR SEWAGE WORKS," AS PUBLISHED BY THE ILLINOIS
- ENVIRONMENTAL PROTECTION AGENCY (IEPA), LATEST EDITION. D. REGULATIONS, STANDARDS AND GENERAL REQUIREMENTS SET FORTH BY THE MUNICIPALITY, UNLESS OTHERWISE NOTED ON THE PLANS.
- E. THE NATIONAL ELECTRIC CODE. F. ALL APPLICABLE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT ARE HEREIN INCORPORATED BY REFERENCE. 5. STANDARD SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND RECURRING SPECIAL PROVISIONS
- CONSTRUCTION PLANS, AND SUBSEQUENT DETAILS ARE ALL TO BE CONSIDERED AS PART OF THE CONTRACT. INCIDENTAL ITEMS OR ACCESSORIES NECESSARY TO COMPLETE THE CONTRACTOR'S WORK MAY NOT BE SPECIFICALLY NOTED, BUT ARE CONSIDERED A PART OF THE CONTRACTOR'S CONTRACT. 6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL ITEMS REQUIRED FOR CONSTRUCTION OF THE PROJECT. AS SHOWN ON THE PLANS, ARE INCLUDED IN THE CONTRACT, ANY
- ITEM NOT SPECIFICALLY INCLUDED IN THE CONTRACT. BUT SHOWN ON THE PLANS. SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER MMEDIATELY IN THE EVENT OF A DISCREPANCY WITH THE PLANS AND QUANTITIES
- 7. THE CONTRACTOR IS RESPONSIBLE FOR HAVING A SET OF "APPROVED" ENGINEERING PLANS WITH THE LATEST REVISION DATE ON THE JOB SITE PRIOR TO THE START OF CONSTRUCTION. IF THERE ARE AN DISCREPANCIES WITH WHAT IS SHOWN ON THE CONSTRUCTION PLANS, HE MUST IMMEDIATELY REPORT THEM TO THE SURVEYOR OR ENGINEER BEFORE DOING ANY WORK. OTHERWISE, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY. IN THE EVENT OF DISAGREEMENT BETWEEN THE CONSTRUCTION PLANS, SPECIFICATIONS, AND /OR SPECIAL DETAILS, THE CONTRACTOR SHALL SECURE WRITTEN INSTRUCTION FROM HE ENGINEER PRIOR TO PROCEEDING WITH ANY PART OF THE WORK AFFECTED BY OMISSIONS OR DISCREPANCIES. FAILING TO SECURE SUCH INSTRUCTION, THE CONTRACTOR WILL BE CONSIDERED TO HAVE PROCEEDED AT THE CONTRACTOR'S OWN RISK AND EXPENSE. IN THE EVENT OF ANY DOUBT OR QUESTIONS ARISING WITH RESPECT TO THE TRUE MEANING OF THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE DECISION OF THE ENGINEER SHALL BE FINAL AND CONCLUSIVE.
- 8. THE CONTRACTOR SHALL SUBSCRIBE TO ALL GOVERNING REGULATIONS AND SHALL OBTAIN ALL NECESSARY PUBLIC AGENCY PERMITS PRIOR TO STARTING WORK. THE CONTRACTOR, BY USING THESE PLANS FOR THEIR WORK, AGREE TO HOLD HARMLESS KIMLEY-HORN AND ASSOCIATES, INC, THE MUNICIPALITY, THEIR EMPLOYEES AND AGENTS AND THE OWNER FROM AND AGAINST ANY AND ALL LIABILITY, CLAIMS, DAMAGES, AND THE COST OF DEFENSE ARISING OUT OF CONTRACTOR(S) PERFORMANCE OF THE WORK DESCRIBED HEREIN.
- 9. THE ENGINEER AND OWNER ARE NOT RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, TIME OF PERFORMANCE, PROGRAMS OR FOR ANY SAFETY PRECAUTIONS USED BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXECUTION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS. 10. CONSTRUCTION MATERIALS AND/OR EQUIPMENT MAY NOT BE STORED IN THE RIGHT-OF-WAY, AS
- DIRECTED BY THE OWNER. 11. EASEMENTS FOR THE EXISTING UTILITIES, BOTH PUBLIC AND PRIVATE, AND UTILITIES WITHIN PUBLIC RIGHT-OF-WAYS ARE SHOWN ON THE PLANS ACCORDING TO AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THESE UTILITY LINES AND THEIR PROTECTION FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS. IF EXISTING UTILITY LINES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT WITH LOCATIONS OF THE NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.
- 12. OWNER SHALL OBTAIN EASEMENTS AND APPROVAL OF PERMITS NECESSARY TO FACILITATE CONSTRUCTION OF THE PROPOSED UTILITIES. THE CONTRACTOR, HOWEVER, SHALL FURNISH ALL REQUIRED BONDS AND EVIDENCE OF INSURANCE NECESSARY TO SECURE THESE PERMITS AND EASEMENTS.
- 13. THE CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES UNTIL THEY ARE NO LONGER NEEDED. ANY STAKES DESTROYED OR DISTURBED BY THE CONTRACTOR PRIOR TO THEIR USE SHALL BE RESET BY THE SURVEYOR AT THE CONTRACTOR'S EXPENSE. 14. NOTIFICATION OF COMMENCING CONSTRUCTION:
- 14.A. THE CONTRACTOR SHALL NOTIFY AFFECTED GOVERNMENTAL AGENCIES IN WRITING AT LEAST THREE FULL WORKING DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL NOTIFY, AS NECESSARY, ALL TESTING AGENCIES, THE MUNICIPALITY, AND THE OWNER SUFFICIENTLY IN ADVANCE OF CONSTRUCTION. 14.B. FAILURE OF THE CONTRACTOR TO ALLOW PROPER NOTIFICATION TIME WHICH RESULTS IN THE TESTING COMPANIES TO BE UNABLE TO VISIT THE SITE AND PERFORM TESTING WILL CAUSE THE CONTRACTOR TO SUSPEND THE OPERATION TO BE TESTED UNTIL THE TESTING AGENCY CAN
- SCHEDULE TESTING OPERATIONS. COST OF SUSPENSION OF WORK SHALL BE BORNE BY THE CONTRACTOR 15. ALL CONTRACTORS SHALL KEEP ACCESS AVAILABLE AT ALL TIMES FOR ALL EMERGENCY TRAFFIC, AS DIRECTED BY THE MUNICIPALITY.
- 16. ANY EXISTING SIGNS, LIGHT STANDARDS, AND UTILITY POLES THAT INTERFERE WITH CONSTRUCTION OPERATIONS AND ARE NOT NOTED ON THE PLANS FOR DISPOSAL SHALL BE REMOVED AND RESET BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE, AS DIRECTED BY THE ENGINEER. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE TO THE SATISFACTION OF THE OWNER. ANY SIGNS NOT REQUIRED TO BE RESET SHALL BE DELIVERED TO THE RESPECTIVE OWNERS.
- 17. ALL TREES TO BE SAVED SHALL BE IDENTIFIED PRIOR TO CONSTRUCTION BY THE LANDSCAPE ARCHITECT AND SHALL BE PROTECTED PER IDOT SECTION 201.05. THE RIGHT-OF-WAY LINE AND LIMITS OF THE CONTRACTOR'S OPERATIONS SHALL BE CLEARLY DEFINED THROUGHOUT THE CONSTRUCTION PERIOD. TREES NOTED TO REMAIN SHALL BE PROTECTED FROM DAMAGE TO TRUNKS, BRANCHES AND ROOTS. NO EXCAVATING, FILLING OR GRADING IS TO BE DONE INSIDE THE DRIP LINE OF TREES UNLESS OTHERWISE INDICATED. 18. LIMB PRUNING SHALL BE PERFORMED UNDER THE SUPERVISION OF AN APPROVED LANDSCAPE ARCHITECT
- FORESTER, OR ARBORIST AND SHALL BE UNDERTAKEN IN A TIMELY FASHION SO AS NOT TO INTERFERE WITH CONSTRUCTION. ALL LIMBS, BRANCHES, AND OTHER DEBRIS RESULTING FROM THE CONTRACTOR'S WORK SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE. ALL CUTS OVER ONE (1) INCH IN DIAMETER SHALL BE PAINTED WITH AN APPROVED TREE PAINT. 19. ALL EXISTING PAVEMENT OR CONCRETE TO BE REMOVED SHALL BE SAWCUT ALONG LIMITS OF PROPOSED
- REMOVAL BEFORE COMMENCEMENT OF PAVEMENT REMOVAL. 20. ALL EXISTING UTILITIES OR IMPROVEMENTS, INCLUDING WALKS, CURBS, PAVEMENT, AND PARKWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE PROMPTLY RESTORED TO THEIR RESPECTIVE ORIGINAL CONDITION. THE CONTRACTOR'S WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT
- UNLESS A PAY ITEM IS LISTED ON THE BID LIST. 21. REMOVAL OF SPECIFIED ITEMS, INCLUDING BUT NOT LIMITED TO, PAVEMENT, SIDEWALK, CURB, CURB AND GUTTER, CULVERTS, ETC., SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE. THE CONTRACTOR IS RESPONSIBLE FOR ANY PERMITS REQUIRED FOR SUCH DISPOSAL
- 22. THE CONTRACTOR SHALL COLLECT AND REMOVE ALL CONSTRUCTION DEBRIS, EXCESS MATERIALS, TRASH, OIL AND GREASE RESIDUE, MACHINERY, TOOLS, AND OTHER MISCELLANEOUS ITEMS WHICH WERE NOT PRESENT PRIOR TO PROJECT COMMENCEMENT AT NO ADDITIONAL EXPENSE TO THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ANY AND ALL PERMITS NECESSARY FOR THE HAULING AND DISPOSAL REQUIRED FOR CLEANUP, AS DIRECTED BY THE ENGINEER OR OWNER. BURNING ON THE SITE IS NOT PERMITTED.
- 23. NO UNDERGROUND WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE COVERED UNTIL IT HAS BEEN APPROVED BY THE MUNICIPALITY. APPROVAL TO PROCEED MUST BE OBTAINED FROM THE MUNICIPALITY PRIOR TO INSTALLING PAVEMENT BASE, BINDER, AND SURFACE, AND PRIOR TO POURING ANY CONCRETE AFTER FORMS HAVE BEEN SET, AS NECESSARY.
- 24. WHERE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, EXISTING DRAINAGE STRUCTURES AND PIPE SHALL BE CLEANED OF DEBRIS AND PATCHED AS NECESSARY TO ASSURE INTEGRITY OF THE STRUCTURE. THE CONTRACTOR'S WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE MERGED INTO THE CONTRACT UNIT PRICE EACH FOR STRUCTURES AND CONTRACT UNIT PRICE PER LINEAL FOO FOR STORM SEWERS, WHICH SHALL BE PAYMENT IN FULL FOR CLEANING, PATCHING, REMOVAL, AN DISPOSAL OF DEBRIS AND DIRT. DRAINAGE STRUCTURES AND STORM SEWERS CONSTRUCTED AS PART OF THE CONTRACTOR'S PROJECT SHALL BE MAINTAINED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. NO EXTRA PAYMENT WILL BE MADE FOR CLEANING STRUCTURES OR STORM SEWERS CONSTRUCTED AS PART OF THE CONTRACTOR'S PROJECT.
- 25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE UTILITY COMPANIES LOCATE THEIR FACILITIES IN THE FIELD PRIOR TO CONSTRUCTION AND SHALL ALSO BE RESPONSIBLE FOR THE MAINTENANCE AND PRESERVATION OF THESE FACILITIES. THE ENGINEER DOES NOT WARRANT THE LOCATION OF ANY EXISTING JTILITIES SHOWN ON THE PLANS. THE CONTRACTOR SHALL CALL J.U.L.I.E. (1-800-892-0123) AND THE MUNICIPALITY FOR UTILITY LOCATIONS. 26. THE GENERAL CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO PROVIDE CABLE TV, PHONE,
- ELECTRIC, GAS AND IRRIGATION SERVICES. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING SITE LAYOUTS FOR THESE UTILITIES AND SHALL COORDINATE AND PROVIDE CONDUIT CROSSINGS AS REQUIRED. THIS COORDINATION SHALL BE CONSIDERED INCIDENTAL TO GENERAL CONTRACTOR AGREEMENT WITH THE OWNER. ANY CONFLICTS IN UTILITIES SHALL BE CORRECTED BY THE GENERAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- 27. CONTRACTOR IS TO VERIFY ALL EXISTING STRUCTURES AND FACILITIES AT ALL PROPOSED UTILITY CONNECTION LOCATIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL AND STARTING WORK 28. ANY FIELD TILES ENCOUNTERED SHALL BE INSPECTED BY THE ENGINEER. THE DRAIN TILE SHALL BE CONNECTED TO THE STORM SEWER SYSTEM AND A RECORD KEPT BY THE CONTRACTOR OF THE
- LOCATIONS AND TURNED OVER TO THE ENGINEER UPON COMPLETION OF THE PROJECT. THE COST OF THE CONTRACTOR'S WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT, AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED 29. ALL FRAMES AND LIDS FOR STORM AND SANITARY SEWERS, VALVE VAULT COVERS, FIRE HYDRANTS, AND B-BOXES ARE TO BE ADJUSTED TO MEET FINISHED GRADE. THE CONTRACTOR'S ADJUSTMENT IS TO BE MADE BY THE SEWER AND WATER CONTRACTOR, AND THE COST IS TO BE CONSIDERED INCIDENTAL.
- THESE ADJUSTMENTS TO FINISHED GRADE WILL NOT ALLEVIATE THE CONTRACTOR FROM ANY ADDITIONAL ADJUSTMENTS AS REQUIRED BY THE MUNICIPALITY UPON FINAL INSPECTION OF THE PROJECT. 30. HYDRANTS SHALL NOT BE FLUSHED DIRECTLY ONTO THE ROAD SUBGRADES. WHENEVER POSSIBLE, HOSES SHALL BE USED TO DIRECT THE WATER INTO LOT AREAS OR THE STORM SEWER SYSTEM, IF AVAILABLE. DAMAGE TO THE ROAD SUBGRADE OR LOT GRADING DUE TO EXCESSIVE WATER SATURATION AND/OR FROSION FROM HYDRANT FLUSHING. OR FROM LEAKS IN THE WATER DISTRIBUTION SYSTEM, WILL BE REPAIRED BY THE CONTRACTOR FLUSHING OR USING THE HYDRANT AT THE CONTRACTOR'S OWN EXPENSE. LEAKS IN THE WATER DISTRIBUTION SYSTEM SHALL BE THE RESPONSIBILITY OF THE WATER MAIN CONTRACTOR AND SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- 31. TRENCH BACKFILL WILL BE REQUIRED TO THE FULL DEPTH ABOVE SEWERS AND WATERMAIN WITHIN TWO (2) FEET HORIZONTAL OF PROPOSED OR EXISTING PAVEMENT. 32. IF SOFT, SPONGY, OR OTHER UNSUITABLE SOILS WITH UNCONFINED COMPRESSIVE STRENGTH LESS THAN
- 0.5 TSF ARE ENCOUNTERED AT THE BOTTOM OF THE TRENCH, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH WELL-COMPACTED, CRUSHED LIMESTONE BEDDING MATERIAL, IF ROCK IS ENCOUNTERED, IT SHALL BE REMOVED TO AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE TO ALLOW PROPER THICKNESS OF BEDDING. ANY UNDERCUTS OF TWO (2) FEET OR LESS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. DEPTHS GREATER THAN TWO (2) FEET SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PROCEEDING.
- 33. THE TRENCHES FOR PIPE INSTALLATION SHALL BE KEPT DRY AT ALL TIMES DURING PIPE PLACEMENT. APPROPRIATE FACILITIES TO MAINTAIN THE DRY TRENCH SHALL BE PROVIDED BY THE CONTRACTOR, AND THE COST OF SUCH SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE ITEM. PLANS FOR THE SITE DEWATERING, IF EMPLOYED, SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER PRIOR TO IMPLEMENTATION. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR DEWATERING DURING CONSTRUCTION UNLESS APPROVED IN WRITING BY THE OWNER.
- 34. AFTER THE STORM SEWER SYSTEM HAS BEEN CONSTRUCTED, THE CONTRACTOR SHALL PLACE PROPER INLET PROTECTION EROSION CONTROL AT LOCATIONS INDICATED BY THE ENGINEER. THE PURPOSE OF THE INLET PROTECTION WILL BE TO MINIMIZE THE AMOUNT OF SILTATION THAT NORMALLY WOULD ENTER THE STORM SEWER SYSTEM FROM ADJACENT AND/OR UPSTREAM DRAINAGE AREAS.
- 35. AT THE CLOSE OF EACH WORKING DAY AND AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL DRAINAGE STRUCTURES AND FLOW LINES SHALL BE FREE FROM DIRT AND DEBRIS. 36. EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH IEPA REGULATIONS AND IDOT STANDARDS FOR SOIL EROSION AND SEDIMENTATION CONTROL AND SHALL BE MAINTAINED BY THE
- CONTRACTOR AND REMAIN IN PLACE UNTIL A SUITABLE GROWTH OF GRASS, ACCEPTABLE TO THE ENGINEER, HAS DEVELOPED. 37. THE CONTRACTOR SHALL CONFORM TO ALL EROSION CONTROL REQUIREMENTS AS SET FORTH BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY THROUGH THE NPDES PHASE II PERMIT PROGRAM
- REQUIREMENTS AND GOVERNING MUNICIPALITY. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL MEASURES AS INDICATED ON THE EROSION CONTROL DRAWINGS AND SPECIFICATIONS AS WELL AS THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED BY KIMLEY-HORN AND ASSOCIATES, INC. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THE PROVISIONS INDICATED IN THE SWPPP AT A MINIMUM, INCLUDING EROSION CONTROL MEASURES AND INSPECTION FREQUENCY, AS REQUIRED BY THE IEPA NPDES PHASE II PERMIT PROGRAM REQUIREMENTS. THE CONTRACTOR IS
- RESPONSIBLE FOR KEEPING ALL SWPPP DOCUMENTATION CURRENT AND READILY AVAILABLE ON THE PROJECT SITE AT ALL TIMES FOR REVIEW BY THE OWNER, ENGINEER, AND REGULATORY AGENCIES. KIMLEY-HORN AND ASSOCIATES, INC. IS NOT RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE

- CONTRACTOR, SUBCONTRACTORS OR SUPPLIERS, WHICH CONTRIBUTE TO DEFIC ANY VIOLATIONS RESULTING FROM INADEQUATE EROSION CONTROL PROTECTIC 8. THE PAVEMENT SHALL BE KEPT FREE OF MUD AND DEBRIS AT ALL TIMES. IT TO KEEP A SWEEPER ON-SITE AT ALL TIMES.
- 39. ALL DISTURBED AREAS OF THE RIGHT-OF-WAY SHALL BE FULLY RESTORED CONDITIONS WITH A MINIMUM OF SIX (6) INCHES OF TOPSOIL, SEEDING, AND STANDARDS.
- 40. ALL PROPOSED GRADES SHOWN ON PLANS ARE FINISHED SURFACE ELEVATIONS OTHERWISE
- 1. ALL TESTING SHALL BE THE RESPONSIBILITY AND EXPENSE OF THE CONTRAC THE MUNICIPALITY OR ENGINEER, COPIES OF ALL TEST RESULTS SHALL BE PR FOR REVIEW AND APPROVAL.
- 42. PROVIDE SMOOTH VERTICAL CURVES THROUGH HIGH AND LOW POINTS INDICA PROVIDE UNIFORM SLOPES BETWEEN NEW AND EXISTING GRADES. AVOID RIDGE
- -3. WHEN REQUIRED. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN RECORD PREPARED. RECORD DRAWINGS SHALL INDICATE THE FINAL LOCATION AND LA IMPROVEMENTS, INCLUDING VERIFICATION OF ALL CONCRETE PADS, INVERT, R ELEVATIONS, AND INCORPORATE ALL FIELD DESIGN CHANGES APPROVED BY
- 44. BEFORE ACCEPTANCE, ALL WORK SHALL BE INSPECTED BY THE MUNICIPALITY, EARTHWORK NOTES
- GENERAL 1.1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE SOIL AND (
- AT THE SITE. ANY QUANTITIES IN THE BID PROPOSAL ARE INTENDED AS A GUIDE FOR TH DETERMINING THE SCOPE OF THE COMPLETED PROJECT. IT IS THE CONTRACT
- DETERMINE ALL MATERIAL QUANTITIES AND BE KNOWLEDGEABLE OF ALL SIT
- 1.3. THE CONTRACTOR WILL NOTE THAT THE ELEVATIONS SHOWN ON THE CONS FINISHED GRADE AND THAT PAVEMENT THICKNESS, TOPSOIL, ETC., MUST BE .4. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCT STORMWATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS. THE PROPER DRAINAGE WILL NEGATE ANY POSSIBLE ADDED COMPENSATION REC UNSUITABLE MATERIALS CREATED AS A RESULT THEREOF. FINAL GRADES SI
- AGAINST DAMAGE FROM EROSION, SEDIMENTATION, AND TRAFFIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE S SEDIMENTATION CONTROL MEASURES. THE INITIAL ESTABLISHMENT OF EROS AND THE PLACEMENT OF SILT AND FILTER FENCING, ETC., TO PROTECT ADJ WETLANDS, ETC., SHALL OCCUR BEFORE GRADING BEGINS.
- 6. PRIOR TO COMMENCEMENT OF GRADING ACTIVITIES. THE CONTRACTOR SHAL FENCE AROUND ANY TREE DESIGNATED TO BE PRESERVED. SAID FENCE SHA CENTERED AROUND THE TREE, THE DIAMETER OF WHICH SHALL BE SUCH (EXTENT OF FURTHEST EXTENDING BRANCHES) SHALL BE WITHIN THE FENCE GRADE WITHIN THE FENCED AREA SHALL NOT BE DISTURBED. TOPSOIL EXCAVATION INCLUDES:
- EXCAVATION OF TOPSOIL AND OTHER STRUCTURALLY UNSUITABLE MATERIAL THAT WILL REQUIRE EARTH EXCAVATION OR COMPACTED EARTH FILL MATERI SHALL BE REMOVED PRIOR TO STRIPPING TOPSOIL OR FILLING AREAS.
- 2.2. PLACEMENT OF EXCAVATED MATERIAL IN OWNER-DESIGNATED AREAS FOR F TO BE LANDSCAPED AND THOSE AREAS NOT REQUIRING STRUCTURAL FILL NECESSARY EROSION CONTROL MEASURES FOR STOCKPILE.
- . TOPSOIL STOCKPILED FOR RESPREAD SHALL BE FREE OF CLAY AND SHALL TRANSITIONAL MATERIAL BETWEEN THE TOPSOIL AND CLAY. THE TRANSITION
- USED IN NON-STRUCTURAL FILL AREAS OR DISPOSED OF OFF-SITE. 2.4. TOPSOIL RESPREAD SHALL INCLUDE HAULING AND SPREADING SIX (6) INCH OVER AREAS TO BE LANDSCAPED WHERE SHOWN ON THE PLANS OR AS DIR
- 2.5. MODERATE COMPACTION IS REQUIRED IN NON-STRUCTURAL FILL AREAS.
- . EARTH EXCAVATION INCLUDES: 3.1. EXCAVATION OF SUBSURFACE MATERIALS WHICH ARE SUITABLE FOR USE A
- EXCAVATION SHALL BE TO WITHIN A TOLERANCE OF 0.1 FEET OF THE PLAI WHILE MAINTAINING PROPER DRAINAGE. THE TOLERANCE WITHIN PAVEMENT THAT THE EARTH MATERIALS SHALL "BALANCE" DURING THE FINE GRADING . PLACEMENT OF SUITABLE MATERIALS SHALL BE WITHIN THOSE AREAS REQU ORDER TO ACHIEVE THE PLAN SUBGRADE ELEVATIONS TO WITHIN A TOLERA
- MATERIALS SHALL BE PLACED IN LOOSE LIFTS THAT SHALL NOT EXCEED E THICKNESS, AND THE WATER CONTENT SHALL BE ADJUSTED IN ORDER TO COMPACTION. 3. STRUCTURAL FILL MATERIAL MAY BE PLACED WITHIN THOSE PORTIONS OF
- STRUCTURAL FILL, WITHIN SIX (6) INCHES OF THE PLAN FINISHED GRADE E REQUIRING STRUCTURAL FILL, HOWEVER, THIS MATERIAL SHALL NOT BE PLA OTHER UNSUITABLE MATERIALS UNLESS SPECIFICALLY DIRECTED BY A SOILS CONCURRENCE OF THE OWNER.
- 3.4. COMPACTION OF SUITABLE MATERIALS SHALL BE TO AT LEAST 93% OF THE DENSITY WITHIN PROPOSED PAVEMENT AREAS, SIDEWALK, ETC. COMPACTION OF THE MODIFIED PROCTOR WITHIN PROPOSED BUILDING PAD AREAS. UNSUITABLE MATERIAL: UNSUITABLE MATERIALS SHALL BE CONSIDERED MATE
- FOR THE SUPPORT OF PAVEMENT AND BUILDING CONSTRUCTION, AND IS EN TOPSOIL DEPTHS AND THE PROPOSED SUBGRADE ELEVATION. THE DECISION AND TO WHAT EXTENT SHALL BE MADE BY THE ENGINEER WITH THE CONCUR MISCELLANEOUS. THE CONTRACTOR SHALL: 5.1. SPREAD AND COMPACT UNIFORMLY TO THE DEGREE SPECIFIED ALL EXCESS
- COMPLETION OF THE UNDERGROUND IMPROVEMENTS 5.2. SCARIFY, DISC, AERATE, AND COMPACT, TO THE DEGREE SPECIFIED, THE UF OF THE SUITABLE SUBGRADE MATERIAL IN ALL AREAS THAT MAY BE SOFT CONTENT. THIS APPLIES TO CUT AREAS AS WELL AS FILL AREAS.
- 3. PROVIDE WATER TO ADD TO DRY MATERIAL IN ORDER TO ADJUST THE MOIST PURPOSE OF ACHIEVING THE SPECIFIED COMPACTION. 5.4. BACKFILL THE CURB AND GUTTER AFTER ITS CONSTRUCTION AND PRIOR TO
- BASE COURSE MATERIAL. TESTING AND FINAL ACCEPTANCE
- . THE CONTRACTOR SHALL PROVIDE AS A MINIMUM A FULLY LOADED SIX-WH FOR PROOF ROLLING THE PAVEMENT SUBGRADE PRIOR TO THE PLACEMENT AND THE BASE MATERIAL. THIS SHALL BE WITNESSED BY THE ENGINEER PAVING SPECIFICATION.) 6.2. ANY UNSUITABLE AREA ENCOUNTERED AS A RESULT OF PROOF ROLLING SH
- REPLACED WITH SUITABLE MATERIAL OR OTHERWISE CORRECTED AND APPRO PAVING NOTES GENERAL
- PAVING WORK INCLUDES FINAL SUBGRADE SHAPING, PREPARATION, AND C SUBBASE OR BASE COURSE MATERIALS; BITUMINOU'S BINDER AND/OR SURF FINISHING, AND CURING CONCRETE PAVEMENT, CURBS, AND WALKS; AND FI RELATED WORK.
- . COMPACTION REQUIREMENTS [REFERENCE ASTM D-1557 (MODIFIED PROCTO SUBBASE = 93%; AGGREGATE BASE COURSE = 95%; BITUMINOUS COURSES DENSITY, PER ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) HIGHWAY S
- IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE PROPI DEVICES, AND THE SAFE MANAGEMENT OF TRAFFIC WITHIN THE AREA OF DEVICES AND THEIR INSTALLATION SHALL CONFORM TO THE MANUAL OF UN DEVICES (MUTCD), LATEST EDITION, AND IN ACCORDANCE WITH THE MUNICIP SUBGRADE PREPARATION
- . EARTHWORK FOR PROPOSED PAVEMENT SUBGRADE SHALL BE FINISHED TO MINUS, OF PLAN ELEVATION. THE CONTRACTOR SHALL CONFIRM THAT THE PROPERLY PREPARED AND THAT THE FINISHED TOP SUBGRADE ELEVATION TOLERANCES ALLOWED IN THESE SPECIFICATIONS, UNLESS THE CONTRACTO WRITING PRIOR TO FINE GRADING FOR BASE COURSE CONSTRUCTION. IT IS CONTRACTOR HAS APPROVED AND ACCEPTS THE RESPONSIBILITY FOR TH
- 2. PRIOR TO THE PLACEMENT OF THE BASE COURSE, THE SUBGRADE MUST & INSPECTED FOR UNSUITABLE MATERIALS AND/OR EXCESSIVE MOVEMENT. I ENCOUNTERED, IT SHALL BE CORRECTED. THIS MAY INCLUDE ONE OR MORE METHODS:
- 2.2.1. SCARIFY, DISC, AND AERATE. 2.2.2. REMOVE AND REPLACE WITH STRUCTURAL CLAY FILL.
- 2.2.3. REMOVE AND REPLACE WITH GRANULAR MATERIAL. 2.2.4. USE OF GEOTEXTILE FABRIC
- MAXIMUM DEFLECTION ALLOWED IN ISOLATED AREAS MAY BE ONE-QUARTER (1/2) INCH IF NO DEFLECTION OCCURS OVER THE MAJORITY OF THE AREA. . PRIOR TO THE CONSTRUCTION OF THE CURB AND GUTTER AND THE PLACE MATERIAL, THE PAVEMENT AREA SHALL BE FINE-GRADED TO WITHIN 0.04 SUBGRADE FLEVATION TO A POINT TWO (2) FEET BEYOND THE BACK OF ENSURE THE PROPER THICKNESS OF PAVEMENT COURSES. NO CLAIMS FOR MATERIALS DUE TO IMPROPER SUBGRADE PREPARATION WILL BE HONORED.
- .4. PRIOR TO PLACEMENT OF THE BASE COURSE, THE SUBGRADE SHALL BE A FNGINFFR. CONCRETE WORK
- ALL EXTERIOR CONCRETE SHALL BE PORTLAND CEMENT CONCRETE WITH AIF FSS THAN FIVE (5%) OR MORE THAN FIGHT (8%) PERCENT, CONCRETE SH (6) BAG MIX AND SHALL DEVELOP A MINIMUM OF 4,000 PSI COMPRESSIVE TWENTY-EIGHT (28) DAYS. ALL CONCRETE SHALL BE BROOM-FINISHED PER DIRECTION OF TRAVEL.
- CONCRETE CURB AND OR COMBINATION CURB AND GUTTER SHALL BE OF PLANS. THE CONTRACTOR IS CAUTIONED TO REFER TO THE CONSTRUCTION PAVEMENT CROSS SECTION TO DETERMINE THE GUTTER FLAG THICKNESS A COURSE THICKNESS BENEATH THE CURB AND GUTTER. PRE-MOLDED FIBER TWO 3/4-INCH BY 18-INCH EPOXY-COATED STEEL DOWEL BARS, SHALL BI METAL EXPANSION TUBES
- . CURBS SHALL BE DEPRESSED AND MEET THE SLOPE REQUIREMENTS OF THI CODE AT LOCATIONS WHERE PUBLIC WALKS INTERSECT CURB LINES AND OT DIRECTED, FOR THE PURPOSE OF PROVIDING ACCESSIBILITY. 3.4. THE CURBS SHALL BE BACKFILLED AFTER THEIR CONSTRUCTION AND PRIOR
- THE BASE COURSE. 3.5. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH THE ABOVE AND THE
- JOINTS AT 5-FOOT INTERVALS AND 1/2-INCH PRE-MOLDED FIBER EXPANS INTERVALS AND ADJACENT TO CONCRETE CURBS, DRIVEWAYS, FOUNDATION
- 3.6. CONCRETE CURING AND PROTECTION SHALL BE PER IDOT STANDARDS. TWO APPROVED CURING AGENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE 3.7. THE COST OF AGGREGATE BASE OR SUBBASE UNDER CONCRETE WORK SHAL COST OF THE RESPECTIVE CONCRETE ITEM.
- FLEXIBLE PAVEMEN THE PAVEMENT MATERIALS FOR BITUMINOUS STREETS, PARKING LOTS, AND DETAILED ON THE PLANS. UNLESS OTHERWISE SHOWN ON THE PLANS, TH CONSIST OF AGGREGATE BASE COURSE, TYPE B, BITUMINOUS CONCRETE B IL-19, N50: AND BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, N AND MATERIALS SPECIFIED ON THE PLANS. THICKNESSES SPECIFIED SHALL

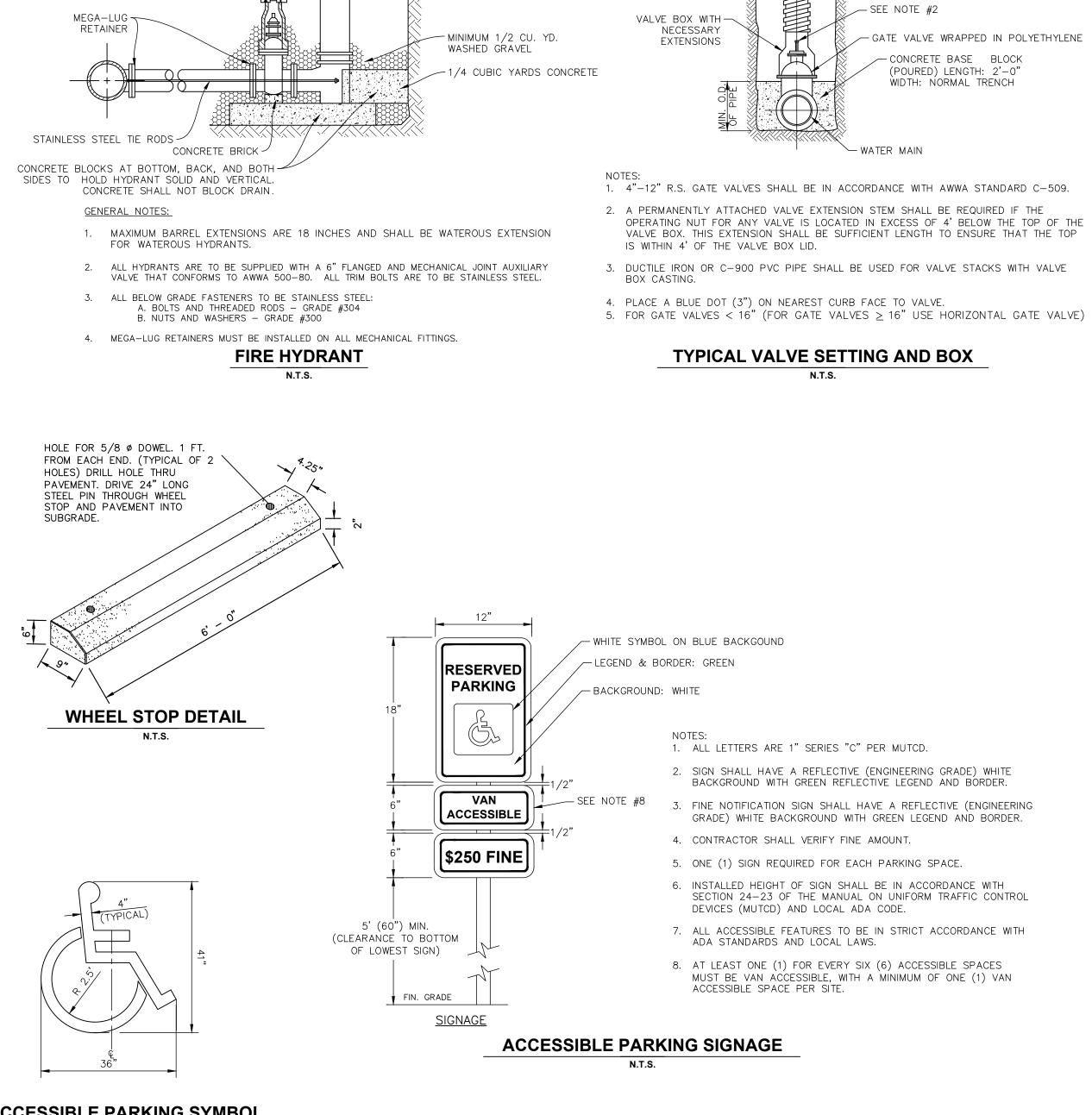
MINIMUM COMPACTED THICKNESS.

- 4.2. ALL TRAFFIC SHALL BE KEPT OFF THE COMPLETED AGGREGATE BASE UNTIL LAID. THE AGGREGATE BASE SHALL BE UNIFORMLY PRIME COATED AT A RA PER SQUARE YARD PRIOR TO PLACING THE BINDER COURSE. PRIME COAT APPROVED
- 4.3. PRIOR TO PLACEMENT OF THE SURFACE COURSE, THE BINDER COURSE SH TACK-COATED IF DUSTY OR DIRTY. ALL DAMAGED AREAS IN THE BINDER, REPAIRED TO THE SATISFACTION OF THE OWNER PRIOR TO LAYING THE SU CONTRACTOR SHALL PROVIDE WHATEVER EQUIPMENT AND STAFF NECESSARY, INCLUDING THE USE POWER BROOMS IF REQUIRED BY THE OWNER, TO PREPARE THE PAVEMENT FOR APPLICATION OF THE SURFACE COURSE. THE TACK COAT SHALL BE UNIFORMLY APPLIED TO THE BINDER COURSE AT A RATE OF 0.05 TO 0.10 GALLONS PER SQUARE YARD. TACK COAT SHALL BE AS PER IDOT STANDARDS.
- 4.4. SEAMS IN BAM, BINDER, AND SURFACE COURSE SHALL BE STAGGERED A MINIMUM OF 6 INCHES. TESTING AND FINAL ACCEPTANCE. 5.1. THE CONTRACTOR SHALL FOLLOW THE QUALITY CONTROL TESTING PROGRAM FOR CONCRETE AND
- PAVEMENT MATERIALS ESTABLISHED BY THE MATERIALS/TESTING ENGINEER. 5.2. PRIOR TO PLACEMENT OF THE BITUMINOUS CONCRETE SURFACE COURSE, THE CONTRACTOR, WHEN REQUIRED BY THE MUNICIPALITY, SHALL OBTAIN SPECIMENS OF THE BINDER COURSE WITH A CORE

|  |  | FINISHED GRADE   |
|--|--|--|
| FICIENCIES IN THE SWPPP OR<br>TION AND/OR DOCUMENTATION.   | DRILL WHERE DIRECTED, FOR THE PURPOSE OF THICKNESS VERIFICATION.<br>5.3. WHEN REQUIRED BY THE MUNICIPALITY, THE CONTRACTOR SHALL OBTAIN SPECIMENS OF THE FULL  | WIN.   |
| IT MAY BE NECESSARY<br>D TO PRE-CONSTRUCTION<br>D MULCH AS PER IDOT  | DEPTH BITUMINOUS CONCRETE PAVEMENT STRUCTURE WITH A CORE DRILL WHERE DIRECTED IN ORDER<br>TO CONFIRM THE PLAN THICKNESS. DEFICIENCIES IN THICKNESS SHALL BE ADJUSTED FOR BY THE<br>METHOD REQUIRED BY IDOT STANDARDS.<br>5.4. FINAL ACCEPTANCE OF THE TOTAL PAVEMENT INSTALLATION SHALL BE SUBJECT TO THE TESTING AND  |  |
| TIONS, UNLESS NOTED  | CHECKING REQUIREMENTS CITED ABOVE.<br>6. ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE MUNICIPALITY CODE. WHEN CONFLICTS<br>ARISE BETWEEN MUNICIPAL CODE, GENERAL NOTES AND SPECIFICATIONS, THE MORE STRINGENT SHALL  | $\begin{array}{ c c c c c c c c c c c c c c c c c c c$   |
| ACTOR. IF REQUESTED BY<br>PROVIDED TO THE ENGINEER   | TAKE PRECEDENCE.<br>SIGNAGE AND PAVEMENT MARKING NOTES   |  |
| CATED BY SPOT ELEVATIONS.<br>DGES AND DEPRESSIONS.<br>IRD DRAWINGS CAN BE  | 1. ALL SIGNING AND PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM<br>TRAFFIC CONTROL DEVICES (MUTCD) AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT)<br>STANDARDS.  | FORCE MAIN SANITARY SEWER  |
| LAYOUT OF ALL<br>RIM, AND SPOT GRADE<br>7 THE OWNER.<br>TY, AS NECESSARY.  | <ol> <li>SIGNS: SIGNS SHALL BE CONSTRUCTED OF 0.080-INCH THICK FLAT ALUMINUM PANELS WITH<br/>REFLECTORIZED LEGEND ON THE FACE. LEGEND SHALL BE IN ACCORDANCE WITH THE MUTCD.</li> <li>POSTS: SIGN POSTS SHALL BE A HEAVY-DUTY STEEL "U" SHAPED CHANNEL WEIGHING 3.0 POUNDS/FOOT,<br/>SUCH AS A TYPE B METAL POST, AS PER THE IDOT STANDARDS (OR 2-INCH PERFORATED STEEL TUBE).</li> </ol>  | MECHANICALLY COMPACTED CA-6 CRUSHED STONE IN 6 INCH LIFTS UNDER OR WITHIN<br>2 FEET OF ANY PAVEMENT, CURB, GUTTER AND SIDEWALK, MACHINE COMPACTION OF<br>EXCAVATED MATERIAL IN OTHER LOCATIONS WHERE SUITABLE. |
| TT, AS NEUESSANT.  | 4. SIGNS AND POSTS SHALL BE INSTALLED IN ACCORDANCE WITH IDOT STANDARDS.<br>5. PAVEMENT MARKINGS: ALL PAVEMENT MARKINGS IN THE PUBLIC RIGHT-OF-WAY, SUCH AS STOP LINES,  | 2 WATERMAIN & FORCEMAIN:<br>CA-11 OR CA-13 CRUSHED STONE TAMPED INTO PLACE TO SPRING LINE OF DUCTILE<br>IRON PIPE ALL AROUND   |
| D GROUNDWATER CONDITIONS   | CENTERLINES, CROSSWALKS, AND DIRECTIONAL ARROWS, SHALL BE REFLECTORIZED THERMOPLASTIC ON<br>ASPHALT AND EPOXY ON CONCRETE OR AS APPROVED BY IDOT.<br>6. PAVEMENT MARKINGS ON BIKE PATHS, PARKING LOT STALLS, AND SIMILAR "LOW-WEAR" APPLICATIONS,<br>SHALL BE PAINT IN ACCORDANCE WITH IDOT STANDARDS.   | STORM SEWER & SANITARY SEWER:<br>CA-11 OR CA-13 CRUSHED STONE TAMPED INTO PLACE TO SPRING LINE OF PIPE<br>*ADDITIONAL 12" OF CA-11 CRUSHED STONE ABOVE TOP OF PVC PIPE.  |
| THE CONTRACTOR'S USE IN<br>ACTOR'S RESPONSIBILITY TO<br>SITE CONDITIONS.   | 7. COLOR, WIDTH, STYLE, AND SIZE OF ALL MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND<br>LOCAL CODE. STANDARD PARKING SPACES SHALL BE PAINTED WHITE OR YELLOW PER LOCAL CODE.   | <ul> <li>(3) 4" BED MECHANICALLY COMPACTED CA-11 OR CA-13 CRUSHED STONE</li> <li>(4) UNSUITABLE MATERIAL TO BE REMOVED AND REPLACED.</li> <li>(5) TRENCH WIDTH</li> </ul>                                      |
| NSTRUCTION PLANS ARE<br>BE ACCOUNTED FOR.  | 8. THERMOPLASTIC MARKINGS SHALL BE INSTALLED WHEN THE PAVEMENT TEMPERATURE IS 55 DEGREES<br>FAHRENHEIT AND RISING. PAINT MARKINGS MAY BE INSTALLED WHEN THE AIR TEMPERATURE IS 50<br>DEGREES FAHRENHEIT AND RISING.  | OUTSIDE DIAMETER + 18 IN.  |
| THE FAILURE TO PROVIDE<br>EQUESTED DUE TO DELAYS OR<br>S SHALL BE PROTECTED  | WATERMAIN NOTES  | PIPE BEDDING DETAIL  |
| SOIL EROSION AND<br>OSION CONTROL PROCEDURES<br>ADJACENT PROPERTY,   | 1. WATERMAIN PIPE: ALL WATERMAIN PIPE MATERIAL, SIZE AND TYPE SHALL BE INSTALLED AS INDICATED<br>ON THE UTILITY PLAN. UNLESS OTHERWISE NOTED ON THE PLANS, ALL WATERMAIN PIPE SHALL BE<br>CONSTRUCTED OF BITUMINOUS-COATED CEMENT-LINED DUCTILE IRON PIPE, CLASS 52, CONFORMING TO<br>ANSI A21.51 (AWWA C151). CEMENT MORTAR LINING SHALL CONFORM TO ANSI A21.4 (AWWA C104). THE<br>JOINTS SHALL BE PUSH-ON COMPRESSION GASKET JOINTS CONFORMING TO ANSI A21.11 (AWWA C111).   | 1/4" WIDE SAWCUT, 1" DEEP,   |
| IALL ERECT A CONSTRUCTION<br>SHALL BE PLACED IN A CIRCLE<br>I THAT THE ENTIRE DRIP ZONE<br>NCE LIMITS. THE EXISTING                    | ANY CHANGES TO THE PIPE MATERIAL, SIZE AND TYPE MUST BE APPROVED BY THE OWNER, ENGINEER<br>AND MUNICIPALITY PRIOR TO ORDERING MATERIALS OR INSTALLING THE PIPE. ALL WATERMAIN PIPE<br>SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:   | 15' O.C. MAX<br>#4 DOWELS<br>© 18" O.C.  |
|  | PIPE SIZE CODE PIPE MATERIAL<br>3"-48" DIP DUCTILE IRON PIPE, CLASS 52 (ANSI 21.51 AND AWWA C151)<br>< 3" TYPE "K" COPPER PIPE   |  |
| IALS WITHIN THOSE AREAS<br>TERIAL. EXISTING VEGETATION<br>R FUTURE USE WITHIN AREAS  | <ol> <li>FITTINGS: ALL FITTINGS SHALL BE OF DUCTILE IRON WITH CEMENT MORTAR LINING AND MECHANICAL<br/>JOINTS CONFORMING TO ANSI AS21.10 (AWWA C110).</li> <li>VALVES: GATE VALVES SHALL BE USED ON ALL WATERMAINS. ALL VALVES SHALL TURN<br/>COUNTER-CLOCKWISE TO OPEN. VALVES SHALL BE IRON BODY RESILIENT WEDGE GATE VALVES WITH</li> </ol>  |  |
| L MATERIAL. PROVIDE  | BRONZE-MOUNTED SEATS AND NON-RISING STEMS CONFORMING TO AWWA C-509. THE VALVES SHALL<br>HAVE MECHANICAL JOINTS.<br>4. THE MECHANICAL JOINTS AND ALL FASTENERS ON THE VALVE BODY SHALL HAVE STAINLESS STEEL NUTS  |  |
| IONAL MATERIAL SHALL BE  | AND BOLTS.<br>5. VALVE VAULTS: VALVE VAULTS SHALL BE PRECAST CONCRETE STRUCTURES FIVE (5) FEET IN DIAMETER,<br>AS NOTED ON THE PLANS. THE FRAME AND LID SHALL BE ACCORDING TO THE DETAIL ON THE PLANS,<br>WITH "WATER" EMBOSSED ON THE LID.  |  |
| DIRECTED BY THE OWNER.   | 6. FIRE HYDRANTS: SEE PLANS FOR APPROVED FIRE HYDRANT DETAIL. FIRE HYDRANTS SHALL BE INSTALLED<br>WITH AN AUXILIARY VALVE AND CAST IRON VALVE BOX. FIRE HYDRANTS SHALL HAVE AUXILIARY VALVES<br>WITH A HYDRANT BARREL TO VALVE BOX RESTRAINING DEVICE. THE PUMPER CONNECTION SHALL FACE  | └──COMPACTED SUB-GRADE OR TRENCH └──AGGREGATE BASE COURSE<br>BACKFILL TO AT LEAST 95% OF THE (CA-6), COMPACTED TO 95%<br>MODIFIED PROCTOR MAXIMUM DRY DENSITY MODIFIED PROCTOR DENSITY                         |
| AS STRUCTURAL FILL. THE<br>LAN SUBGRADE ELEVATIONS<br>IT AREAS SHALL BE SUCH   | THE ROADWAY.<br>7. PROVIDE AND INSTALL FOUR MEGALUG JOINT RESTRAINTS AT EACH JOINT FROM THE MAINLINE TEE TO<br>THE AUXILIARY VALVE AND BETWEEN THE AUXILIARY VALVE AND THE HYDRANT BARREL.   | NOTE:<br>PAVEMENT THICKNESS BASED ON GENERAL UNDERSTANDING OF<br>THE AREA. NO GEOTECHNICAL ANALYSIS HAS BEEN PROVIDED.   |
| NG OPERATION.<br>QUIRING STRUCTURAL FILL IN<br>ERANCE OF 0.1 FEET. THE FILL<br>EIGHT (8) INCHES IN                                     | <ol> <li>8. THE BREAK FLANGE AND ALL BELOW-GRADE FITTING SHALL HAVE STAINLESS STEEL NUTS AND BOLTS.</li> <li>9. CORPORATION STOPS: CORPORATION STOPS SHALL BE BRONZE BODY KEY STOPS CONFORMING TO AWWA<br/>C-800 AND SHALL INCLUDE "J" BEND, TAILPIECE, AND COMPRESSION FITTINGS. SIZE AND LOCATION AS</li> </ol>  | CONTRACTOR TO INSTALL PAVEMENT THAT MATCHES THE<br>EXISTING PAVEMENT SECTION OR THE RECOMMENDED SECTION<br>ABOVE, WHICHEVER IS MORE STRINGENT.   |
| O ACHIEVE REQUIRED   | SHOWN ON THE PLANS.<br>10. SERVICE BOX: PROVIDE CURB VALVE AND CURB BOX, AS INDICATED ON THE PLANS. BOX SHALL BE<br>EXTENSION TYPE WITH FOOT PIECE AND STATIONARY RODS FOR SIX (6) FEET OF BURY.   | HEAVY DUTY   |
| ELEVATION. IN AREAS<br>PLACED OVER TOPSOIL OR<br>DILS ENGINEER WITH THE  | <ol> <li>MAXIMUM DEFLECTION AT PIPE JOINTS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S CURRENT<br/>RECOMMENDATIONS AND AWWA SPECIFICATIONS.</li> <li>BEDDING: ALL WATERMAINS SHALL BE BEDDED ON FIRM GROUND, WITH BELLHOLES EXCAVATED SO THAT</li> </ol>   | CONCRETE PAVEMENT SECTION N.T.S.   |
| THE MODIFIED PROCTOR DRY<br>ION SHALL BE AT LEAST 95%  | THE PIPE HAS AN EVEN BEDDING FOR ITS ENTIRE LENGTH.<br>13. GRANULAR BEDDING MATERIAL OR GRANULAR BACKFILL MATERIAL SHALL BE CAREFULLY PLACED TO<br>TWELVE (12) INCHES OVER THE TOP OF THE PIPE BEFORE FINAL BACKFILLING AND COMPACTION.  |  |
| NTERIAL THAT IS NOT SUITABLE<br>NCOUNTERED BELOW NORMAL<br>N TO REMOVE SAID MATERIAL<br>SURRENCE OF THE OWNER.                         | 14. A MINIMUM DEPTH OF COVER OF 5-FEET, 6-INCHES SHALL BE MAINTAINED OVER THE WATER LINES. THE MAXIMUM COVER SHALL BE EIGHT (8) FEET, EXCEPT AT SPECIAL CROSSINGS AND ONLY AS DESIGNATED ON THE PLANS  |  |
| SS TRENCH SPOIL AFTER  | 15. "MEGA-LUG" RETAINER GLANDS AND THRUST BLOCKING SHALL BE INSTALLED ON WATERMAINS AT ALL<br>BENDS, FITTINGS, TEES, ELBOWS, ETC. "MEGA-LUG" RESTRAINED JOINTS ARE REQUIRED ON ALL VALVES<br>AND ALL FITTINGS. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE UNIT PRICE FOR THE PIPE<br>INSTALLED.   |  |
| UPPER TWELVE (12) INCHES<br>FT DUE TO EXCESS MOISTURE  | 16. ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) AND MUNICIPALITY WATERMAIN PROTECTION:<br>16.1. <u>HORIZONTAL SEPARATION</u>   |  |
| IOISTURE CONTENT FOR THE   | <ul> <li>16.1.1. WATERMAINS SHALL BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, OR SEWER SERVICES CONNECTION.</li> <li>16.1.2. WATERMAINS MAY BE LAID CLOSER THAN TEN (10) FEET TO A SEWER LINE WHEN:</li> </ul>   |  |
| WHEEL TANDEM AXLE TRUCK  | 16.1.2.1. LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF TEN (10) FEET;<br>16.1.2.2. THE WATERMAIN INVERT IS AT LEAST EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE<br>SEWER:  |  |
| NT OF THE CURB AND GUTTER<br>EER AND THE OWNER. (SEE   | 16.1.2.3. THE WATERMAIN IS EITHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE SIDE OF THE SEWER.   | ROUNDED CONCRETE TOP   |
| SHALL BE REMOVED AND<br>PROVED BY THE ENGINEER.  | 16.1.3. WHEN IT IS IMPOSSIBLE TO MEET (1) OR (2) ABOVE, BOTH THE WATERMAIN AND DRAIN OR<br>SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON<br>PIPE, PRESTRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATERMAIN STANDARDS OF<br>CONSTRUCTION AND IN CONFORMANCE WITH THE ILLINOIS STANDARDS FOR WATER AND SEWER<br>CONSTRUCTION IN ILLINOIS. THE DRAIN OR SEWER SHALL BE PRESSURE-TESTED TO THE  | 6" DIAMETER, NOMINAL,  |
| COMPACTION; PLACEMENT OF<br>JRFACE COURSES; FORMING,   | MAXIMUM EXPECTED SURCHARGE HEAD BEFORE BACKFILLING.<br>16.2. <u>VERTICAL SEPARATION</u>  | SCHEDULE 40 STEEL PIPE.  |
| TOR)]: SUBGRADE = 93%;   | 16.2.1. A WATERMAIN SHALL BE LAID SO THAT ITS INVERT IS EIGHTEEN (18) INCHES ABOVE THE<br>CROWN OF THE DRAIN OR SEWER WHENEVER WATERMAINS CROSS STORM SEWERS, SANITARY<br>SEWERS, OR SEWER SERVICE CONNECTIONS. THE VERTICAL SEPARATION SHALL BE MAINTAINED<br>FOR THAT PORTION OF THE WATERMAIN LOCATED WITHIN TEN (10) FEET HORIZONTALLY OF<br>ANY SEWER OR DRAIN CROSSED. A LENGTH OF WATERMAIN PIPE SHALL BE CENTERED OVER   |  |
| SES = 95% OF MAXIMUM<br>Y STANDARDS.<br>PER BARRICADING WARNING<br>CONSTRUCTION. ALL SUCH  | THE SEWER TO BE CROSSED WITH JOINTS EQUIDISTANT FROM THE SEWER OR DRAIN.<br>16.2.2. BOTH THE STORM SEWER AND SANITARY SEWER SHALL BE CONSTRUCTED WITH PIPE EQUIVALENT<br>TO WATERMAIN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>UNIVERSITY OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OF THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OF THE STORM SEWER SHALL BE CONSTRUCTED<br>IN STANDARDS OF CONSTRUCTION OF THE STORM SEWER SHALL SEVER | FINISH GRADE/PAVEMENT  |
| UNIFORM TRAFFIC CONTROL<br>ICIPALITY CODE.   | USING "O" RING GASKET JOINTS, PER ASTM C-443, OR THE WATERMAIN MAY BE IN ENCASED IN<br>A WATERTIGHT CASING PIPE WHEN:<br>16.2.2.1. IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION, AS DESCRIBED ABOVE; OR   | CONCRETE FOOTING<br>CONCRETE FOOTING<br>CONCRETE FOOTING<br>SIDES TO   |
| TO WITHIN 0.1 FOOT, PLUS OR<br>IE SUBGRADE HAS BEEN<br>IN HAS BEEN GRADED WITHIN<br>TOR ADVISES THE ENGINEER IN                        | 16.2.2.2. THE WATERMAIN PASSES UNDER A SEWER OR DRAIN.<br>16.2.3. A VERTICAL SEPARATION OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE SEWER OR<br>DRAIN AND THE CROWN OF THE WATERMAIN SHALL BE MAINTAINED WHERE A WATERMAIN   |  |
| IS UNDERSTOOD THAT THE<br>HE SUBGRADE.<br>BE PROOF-ROLLED AND<br>IF UNSUITABLE SUBGRADE IS   | CROSSES UNDER A SEWER. SUPPORT THE SEWER OR DRAIN LINES TO PREVENT SETTLING AND<br>BREAKING OF THE WATERMAIN.<br>16.2.4. CONSTRUCTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE NORMAL DISTANCE<br>FROM THE WATERMAIN TO THE SEWER OR DRAIN LINE IS AT LEAST TEN (10) FEET.  |  |
| ORE OF THE FOLLOWING   | 17. ALL WATERMAINS SHALL BE PRESSURE-TESTED FOR A MIN. OF 2 HOURS AT 200 PSI, FLUSHED, AND<br>DISINFECTED IN ACCORDANCE WITH AWWA AND MUNICIPALITY SPECIFICATIONS. EACH VALVE SECTION<br>SHALL BE PRESSURE-TESTED FOR A MINIMUM OF ONE (1) HOUR. ALLOWABLE LEAKAGE IS TO BE ONLY   | 1'-6"<br>DIAMETER  |
|  | THAT WHICH IS PREDETERMINED BY THE MUNICIPALITY. AT NO TIME IS THERE TO BE ANY VISIBLE<br>LEAKAGE FROM THE MAIN.   | 6" BOLLARD DETAIL  |
| 'ER (1/4) INCH TO ONE—HALF<br>A.   | 6"   | N.T.S.   |
| CEMENT OF THE BASE<br>4 FEET (1/2 INCH) OF FINAL<br>7 THE CURB, SO AS TO<br>DR EXCESS QUANTITY OF BASE                                 |  | HOLE F   |
| ED.<br>APPROVED BY THE TESTING   |  | FROM E<br>HOLES)<br>PAVEME<br>STEEL F  |
| AIR ENTRAINMENT OF NOT<br>SHALL BE A MINIMUM OF SIX  |  | STOP A<br>SUBGRA   |
| VE STRENGTH AT<br>PERPENDICULAR TO THE   |  |  |
| F THE TYPE SHOWN ON THE<br>ON STANDARDS AND THE<br>AND THE AGGREGATE BASE<br>ER EXPANSION JOINTS, WITH<br>. BE GREASED AND FITTED WITH | $d = \frac{1}{2}$<br>$d = \frac{1}{2}$<br>$d = \frac{1}{2}$<br>$d = \frac{1}{2}$<br>Two $- \frac{3}{4}$ × 1'-6" smooth round<br>Steel dowel bars with one end  |  |
| THE ILLINOIS ACCESSIBILITY<br>OTHER LOCATIONS, AS  | GREASED AND FITTED WITH METAL<br>EXPANSION CAP AND PLACED<br>THROUGH 1/2" PREMOLDED JOINT  |  |
| IOR TO THE PLACEMENT OF  |  |  |
| THE PLANS. PROVIDE SCORED<br>NSION JOINTS AT 20-FOOT<br>DNS, AND OTHER STRUCTURES.   | 3500 P.S.I. CONCRETE   | W  |
| WO (2) COATS OF IDOT<br>TE SURFACES.<br>SHALL BE INCLUDED IN THE   | 4" MIN. COMPACTED<br>GRANULAR BEDDING  |  |
| ND DRIVE AISLES SHALL BE AS  |  | 30"  |
| HE FLEXIBLE PAVEMENTS SHALL<br>BINDER COURSE, SUPERPAVE,<br>MIX N50, OF THE THICKNESS<br>LL BE CONSIDERED TO BE THE                    | COMPACTED CLAY SUB-BASE  |  |
| ITIL THE BINDER COURSE IS<br>RATE OF 0.4 TO 0.5 GALLONS<br>T MATERIALS SHALL BE IDOT   | NOTES:<br>1. USE TWO #5 REBARS FOR 10 L.F. ON EITHER SIDE OF ALL UTILITY TRENCHES.<br>2. INSTALL EXPANSION JOINTS EVERY 50 FT. AND SAW-CUT CONSTRUCTION  |  |
| SHALL BE CLEANED AND<br>R, BASE, OR CURB SHALL BE<br>SURFACE COURSE. THE   | JOINTS EVERY 25 FT.<br>6" BARRIER CURB   | <sup>30"</sup> STOP  |
| ARY, INCLUDING THE USE OF<br>NT FOR APPLICATION OF THE<br>HE BINDER COURSE AT A RATE   | N.T.S.   |  |

30"X 30"R1-1 **STOP SIGN** N.T.S.





US PIPF M-94 OR APPROVED

-3–1/2'SETBACK FROM

- VALVE BOX GRIPS BY BLR

ENTERPRISES, INC. OR

APPROVED EQUAL

FARTH FACE

EDGE OF DRIVEWAY

BREAKAWAY FLANGE TO BE

APPROXIMATELY 2" ABOVE

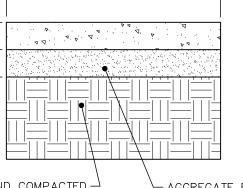
EQUAL

GROUND LEVEL

#### CONCRETE SIDEWALK N.T.S.

- EXISTING IMPROVEMENTS AND AT ALL CHANGES IN GRADE 5. USE 2-#4 REINFORCING BARS, 10' LONG OVER ALL UTILITY TRENCHES FOR NEW SIDEWALK AND CONNECTIONS TO EXISTING SIDEWALK 6. AT DRIVE APPROACHES, SIDEWALK PCC AND BASE THICKNESS SHALL MATCH THAT OF THE DRIVE.
- 4. PROVIDE 1/2" BITUMINOUS EXPANSION JOINT FILLER MATERIAL WHERE WALK ABUTS
- 3. WELDED WIRE FABRIC (6X6-6X6) SHALL BE INSTALLED THROUGH DRIVEWAYS AT 2" ABOVE SLAB BOTTOM.
- JOINTS SHALL HAVE #4 DOWELS, LUBRICATED, 18" LONG, AT 12" CENTERS, 6" FROM 2. PROVIDE 3/8" GROOVED CONTROL JOINTS AT 5' CENTERS.
- 1. PROVIDE 1/2" EXPANSION JOINTS AT 20', MAXIMUM, SPACING AND FILLED WITH PREMOLDED BITUMINOUS EXPANSION JOINT FILLER MATERIAL OR REDWOOD. EXPANSION





### HEAVY DUTY ASPHALTIC PAVEMENT SECTION N.T.S

WIDTH VARIES – SEE PLAN

#### PAVEMENT THICKNESS BASED ON GENERAL UNDERSTANDING OF THE AREA. NO GEOTECHNICAL ANALYSIS HAS BEEN PROVIDED. CONTRACTOR TO INSTALL PAVEMENT THAT MATCHES THE EXISTING PAVEMENT SECTION OR THE RECOMMENDED SECTION ABOVE, WHICHEVER IS MORE STRINGENT

NOTE:

3' MIN. TO 8' MAX. FROM BACK OF

- FINISHED GRADE

PROVIDE 6' AUXILIARY -

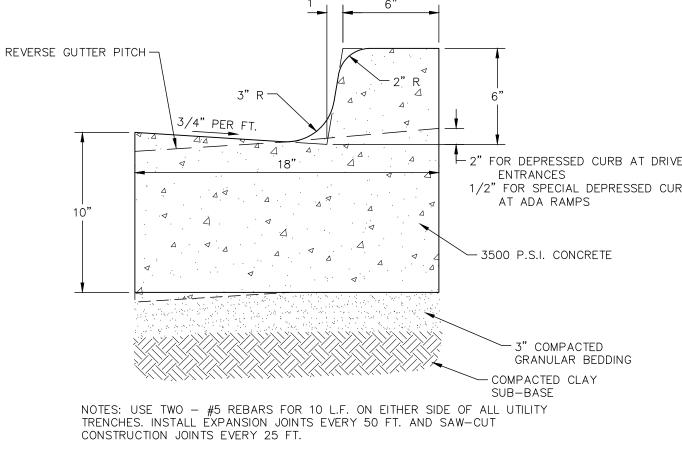
VALVE AND VALVE BOX

CURB TO NEAREST PART OF HYRDANT

- SUBGRADE-SCARIFIED AND COMPACTED TO AT LEAST 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY

- AGGREGATE BASE COURSE (CA-6) COMPACTED TO 95% MODIFIÉD PROCTOR DENSITY <u>\_\_\_¥\_\_\_</u>

-HMA SURFACE COURSE, MIX "C", N50 - HMA BINDER COURSE, IL-19.0, N50



B6.12 CURB & GUTTER

N.T.S.

MOUNT SIGN

(3 LBS./FT.)

"U"-CHANNEL POST -

WHEN SIGN IS IN PAVED AREAS, USE -

YELLOW DO NOT USE BOLLARD IN GRASS

<u>NOTES:</u>

CONTRACTOR.

CAST IRON COVER — 4

FINISH GRADE -

CONCRETE AND PAINTED TRAFFIC

6" PIPE BOLLARD FILLED W/

HERE

AREAS

SLOPE TOP -

GROUND SURFACE

OF CONCRETE

PC CONCRETE

ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF

TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S

ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN

STANDARD SIGN BASE

"MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL

- CONCRETE PAD 24" SQUARE SHALL BE POURED AROUND ALL VALVE BOXES NOT PLACED WITHIN PAVEMENT. PAD SHALL BE 4500

P.S.I. CONCRETE.

— 4-#3 BARS

POLE AND SIGN TO BE PROVIDED AND INSTALLED BY GENERAL

1/2" FOR SPECIAL DEPRESSED CURE

www.adg-stl.com P:: 314.644.1234 |F:: 314.644.4373

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-OWNER-**FLOOR** ECOR

2500 WINDY RIDGE PARKWAY, SE

ATLANTA, GA 30339

PHONE: (404) 471-1634 -CONSULTANT

Kimley »Horr

4201 WINFIELD ROAD WARRENVILLE, IL 60555

PHONE: -PROJECT-

ISSUE DATE: XX/XX/XX

T.B.D.

70,323 SF

2020 Q3

2021.0302.00

7061 W 159TH ST

TINLEY PARK, ILLINOIS 60477

STORE NUMBER:

JOB NUMBER:

PROTOTYPE:

ARFA

-ISSUE-

-SEAL-

-SHEET

DRAWN

CHECKED:

MAYER

062-069577

LICENCE: #062-069577

EXP: 11/30/2021

**GENERAL NOTES & DETAILS** 

JPM / BMH

JPM

2

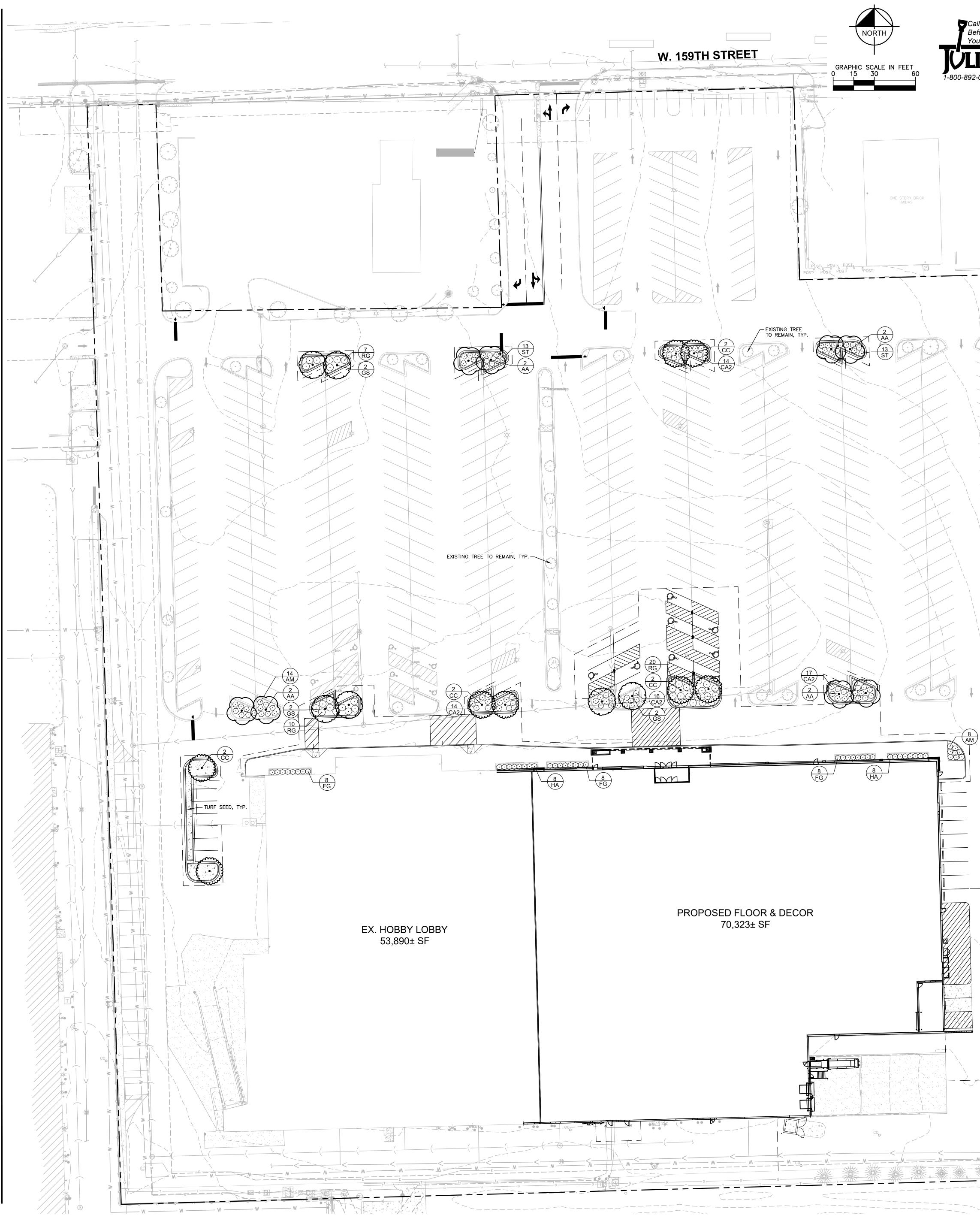
(630) 487-5550

2710 Sutton Blvd. St. Louis, MO 63143

ARCHITECTURAL

DESIGN-GUILD

GRANULAR BEDDING



| Call              | PLANT SC   |                   |                  |   |                           |  |                     |
|-------------------|--|-------------------|------------------|---|---------------------------|--|---------------------|
| Before<br>You Dig | $\frac{\text{TREES}}{}$  | CODE              | <u>QTY</u>       | BOTANICAL / COMMON NAME   | <u>CONT</u>               | <u>CAL</u>                             | SIZ                 |
| <b>IIF</b>        | from   | AA                | 8                | ACER X FREEMANII `AUTUMN FANTASY` / FREEMAN MAPLE   | B & B                     | 2.5" CAL. MIN                          |                     |
| 892-0123          | E · J  | CC                | 8                | CELTIS OCCIDENTALIS `CHICAGOLAND` / COMMON HACKBERRY  | B & B                     | 2.5" CAL. MIN                          |                     |
|                   |  | GS                | 6                | GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST  | B & B                     | 2.5" CAL. MIN                          |                     |
|                   | <u>EVERGREEN TREES</u><br>يىر  | <u>CODE</u>       | <u>QTY</u>       | BOTANICAL / COMMON NAME   | <u>CONT</u>               | CAL                                    | SIZ                 |
|                   | } + {<br>}   | PF                | 1                | PINUS FLEXILIS `VANDERWOLF`S PYRAMID` / VANDERWOLF`S PYRAMID LIMBER PINE  | B & B                     |  | 6` ⊦                |
|                   | SHRUBS   | <u>CODE</u><br>AM | <u>QTY</u><br>22 | BOTANICAL / COMMON NAME<br>ARONIA MELANOCARPA `MORTON` TM / IROQUIS BEAUTY BLACK CHOKEBERRY   | <u>CONT</u><br>3 GAL      | <u>SPACING</u><br>SEE PLAN             | <u>SIZ</u><br>18"   |
|                   | $\bigcirc$   | CA2               | 61               | CEANOTHUS AMERICANUS / NEW JERSEY TEA   | 3 GAL                     | SEE PLAN                               | 24"                 |
|                   | $\bigcirc$   | FG                | 24               | FOTHERGILLA GARDENII / DWARF FOTHERGILLA  | 3 GAL                     | SEE PLAN                               | 18"                 |
|                   |  | НА                | 16               | HYDRANGEA ARBORESCENS `ANNABELLE` / ANNABELLE HYDRANGEA   | 5 GAL                     | SEE PLAN                               | 24"                 |
|                   |  | RG                |                  | RHUS AROMATICA `GRO-LOW` / GRO-LOW FRAGRANT SUMAC   | 3 GAL                     | SEE PLAN                               | 24"                 |
|                   |  | ST                | 37               | SPIRAEA BETULIFOLIA `TOR` / BIRCHLEAF SPIREA  |                           |  | 24<br>18"           |
|                   | 1  | 51                | 26               |   | 3 GAL                     | SEE PLAN                               | 10                  |
|                   | GROUND COVERS  |                   |                  | BOTANICAL / COMMON NAME   |                           |  |                     |
|                   | 0, 1, 1, 0, 1, 1<br>1, 1, 0, 1, 1, 0<br>1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1 |                   |                  | TURF SEED   |                           |  |                     |
| ×                 |  | O_SP              |                  | NDSCAPE NOTES<br>HE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING MATERIALS AND PLANTS SHOWN ON TH   |                           | PLAN THE CONT                          | BACTOR              |
|                   |  |                   | TI<br>O          | HE COST TO REPAIR UTILITIES, ADJACENT LANDSCAPE, PUBLIC AND PRIVATE PROPERTY THAT IS DAMAGED BY T<br>PERATIONS DURING INSTALLATION OR DURING THE SPECIFIED MAINTENANCE PERIOD. CALL FOR UTILITY LOCAT   | HE CONTRACTIONS PRIOR     | CTOR OR THEIR SUI<br>TO ANY EXCAVATION | IBCONTRA<br>ION.    |
|                   |  |                   | P                | HE CONTRACTOR SHALL REPORT ANY DISCREPANCY IN PLAN VS. FIELD CONDITIONS IMMEDIATELY TO THE LAND<br>ORTION OF WORK.<br>O PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMED   |                           | HIECT, PRIOR TO C                      | JONTINUI            |
|                   |  |                   |                  | HE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY OF THEIR TRENCHES OR EXCAVATIONS THA   |                           | E FREE FROM DISE                       | ASE, PES            |
|                   |  |                   | S(<br>IF         | CARS. PLANTS SHALL BE FREE FROM NOTICEABLE GAPS, HOLES, OR DEFORMITIES. PLANTS SHALL BE FREE FRO<br>NECESSARY TO PREVENT SUN SCALD AND INSECT DAMAGE. THE LANDSCAPE CONTRACTOR SHALL REMOVE TH<br>HE OWNER'S REPRESENTATIVE MAY REJECT ANY PLANT MATERIALS THAT ARE DISEASED, DEFORMED, OR OTHE | M BROKEN C<br>E WRAP AT 1 | OR DEAD BRANCHES                       | S. TRUNK<br>AS PART |
|                   |  |                   | 7. Al<br>LA      | LL NURSERY STOCK SHALL BE GUARANTEED, BY THE CONTRACTOR, FOR ONE YEAR FROM DATE OF FINAL INSPE<br>ANDSCAPE ARCHITECT'S OR OWNERS WRITTEN ACCEPTANCE OF THE INITIAL PLANTING. REPLACEMENT PLANT N  | CTION. THE                | GUARANTEE BEGIN                        | NS ON TH            |
|                   |  |                   |                  | OMMENCING UPON PLANTING.<br>LANTS TO MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2014 OR MOST CURRENT VERSION) RE(   | QUIREMENTS                | S FOR SIZE AND TYP                     | PE SPECI            |
|                   |  | 1                 |                  | RUNE PLANTS AS NECESSARY- PER STANDARD NURSERY PRACTICE AND TO CORRECT POOR BRANCHING OF EX<br>OPSOIL SHALL BE PROVIDED AND GRADED BY THE GENERAL CONTRACTOR UP TO 6 INCHES BELOW FINISHED GI   |                           |  |                     |
|                   |  |                   | 0                | LANTING AREA TOPSOIL SHALL BE AMENDED WITH 25% SPHAGNUM PEATMOSS, 5% HUMUS AND 70% PULVERIZ<br>RNAMENTAL GRASS, PERENNIAL AND ANNUAL BEDS.<br>EED/SOD LIMIT LINES ARE APPROXIMATE. CONTRACTOR SHALL SEED/SOD ALL AREAS WHICH ARE DISTURBED B'   |                           |  |                     |
|                   |  |                   | 13. EI           | DGING TO BE A SPADED EDGE UNLESS INDICATED OTHERWISE ON THE PLANS. SPADED EDGE TO PROVIDE V-SH/<br>ULCH AND GRASS. A SPADED BED EDGE SHALL SEPARATE MULCH BEDS FROM TURF OR SEEDED AREAS. A SPAD  | APED DEPTH                | AND WIDTH TO CR                        | REATE SEF           |
| 1                 |  | /                 |                  | ONTRACTOR SHALL INSTALL SHREDDED HARDWOOD MULCH AT A 3" DEPTH TO ALL TREES, SHRUB, PERENNIAL,<br>OVERED BY TURF SHALL RECEIVE A 4 FT WIDE MAXIMUM TREE RING WITH 3" DEPTH SHREDDED HARDWOOD MUL   |                           | DCOVER AREAS. TF                       | REES PLA            |
|                   |  |                   | TI               | ISTALLATION OF TREES WITHIN PARKWAYS SHALL BE COORDINATED IN THE FIELD WITH LOCATIONS OF UNDERG<br>HAN 5' FROM UNDERGROUND UTILITY LINES AND NO CLOSER THAN 10' FROM UTILITY STRUCTURES.<br>O NOT DISTURB THE EXISTING PAVING, LIGHTING, OR LANDSCAPING THAT EXISTS ADJACENT TO THE SITE UNLES  |                           |  |                     |
|                   |  |                   | 17. A            | LL DISTURBED AREAS TO BE SODDED OR SEEDED, UNLESS OTHERWISE NOTED. SOD/SEED SHALL BE LOCAL HAP  | RDY TURF GR               | ASS MIX UNLESS, (                      | OTHERWI             |
|                   |  |                   | PI<br>19. TI     | LANT QUANTITIES SHOWN ARE FOR THE CONVENIENCE OF THE OWNER AND JURISDICTIONAL REVIEW AGENCIES<br>LANT QUANTITIES AS DRAWN.<br>HE CONTINUED MAINTENANCE OF ALL REQUIRED LANDSCAPING SHALL BE THE RESPONSIBILITY OF THE OWNER   | OF THE PROI               | PERTY ON WHICH S                       | SAID MAT            |
|                   |  |                   |                  | EQUIRED. ALL PLANT MATERIALS REQUIRED BY THIS SECTION SHALL BE MAINTAINED AS LIVING VEGETATION ANI<br>AS DIED PRIOR TO FINAL ACCEPTANCE. PLANTING AREAS SHALL BE KEPT FREE OF TRASH, LITTER, AND WEEDS A  |                           |  | ED IF TH            |
|                   |  |                   |                  |   |                           |  |                     |
|                   | O SIGN   | 7                 |                  | NOTES:  |                           |  | V                   |
|                   |  | L                 |                  | 2. SET ROOT BALL ON L<br>TOP OF ROOTBALL S  | IG.<br>INEXCAVAT          | ED OR TAMPED S                         | SOIL.               |
|                   |  | , TYP.            | 111              | SURROUNDING GRAD<br>BASKET INTACT.<br>3. REMOVE WIRE BASKET   | DE WITH BU                | RLAP AND WIRE                          | R TO                |
| 8<br>AM           |  |                   |                  | SIX INCHES BELOW T<br>TWINE AND (IF USED)<br>OR CORRECT GIRDLI  | ), SYNTHETI<br>NG ROOTS.  | IC MATERIAL. REN                       | MOVE                |
|                   |  |                   | *                | 4. TAMP EXCAVATED SC<br>5. BACKFILL REMAINDED<br>LIGHTLY. HIGH CLAY<br>SOIL AMENDMENT PE  | R EXCAVAT<br>OR POOR S    | ED SOIL TAMPED                         | 2                   |
|                   |  |                   |                  | 6. WATER THOROUGHL<br>TO 15 GALLONS OF W<br>7. APPLY MULCH IN EVE   | Y WITHIN T\<br>/ATER.     | WO HOURS USING                         |                     |
| -                 |  |                   |                  | ROOT FLARE.<br>8. FINAL LOCATION OF TOWNER.   | REE TO BE                 | APPROVED BY                            |                     |
| -                 |  |                   | ,<br>1           |   |                           |  |                     |
| -                 |  |                   |                  |   |                           | ARDWOOD N                              | VIULUF              |
| - <               |  |                   |                  | EXC/  | AVATED                    | BACKFILL                               |                     |
| -                 |  |                   |                  |   | PED BAC                   | KFILL                                  |                     |
|                   |  |                   | C<br>C           | SUB   | GRADE                     |  |                     |
|                   |  |                   |                  |   |                           |  |                     |
|                   |  |                   |                  | 1 TREE PLANTING   |                           |  | NTS                 |
|                   |  |                   |                  | MINIMUM 6" BEYOND ROOT BALL   |                           | I                                      | NT5                 |
|                   |  |                   | }                |   |                           |  |                     |
|                   |  |                   | ,                |   | REDDED<br>RDWOOD          | ) MULCH                                |                     |
|                   |  |                   |                  | AMI   | ENDED S                   | OIL                                    |                     |
|                   | EXISTING T<br>TO REMAIN  |                   | -                | TT I SUE  | BGRADE                    |  |                     |
|                   |  |                   | 2                |   |                           |  |                     |
| <u>)</u>          |  |                   | ~                | NOTES:  |                           |  |                     |
|                   |  |                   | ~                | <ol> <li>APPLY CORRECTIVE PRUNING.</li> <li>SET ROOT BALL OR CONTAINER ON UNEXCAVATED OR TAMPED SOIL. TOP OF ROOTBALL<br/>(CONTAINER) SHALL BE ONE INCH ABOVE SURROUNDING GRADE. FOR LARGER SHRUBS V</li> </ol>   | VITHIN                    |  |                     |
|                   |  |                   | -                | PLANTING BÉD DIG A DEEPER PIT ONLY FOR THOSE SHRUBS.<br>3. REMOVE BURLAP FROM TOP HALF THE LENGTH OF ROOTBALL. TWINE AND (IF USED) SYN<br>MATERIAL SHALL BE REMOVED FROM PLANTING BED. FOR CONTAINER GROWN SHRUBS,  | THETIC                    |  |                     |
| /                 | REPLACE<br>WITH OTH<br>TREES TO  | IER EXISTING      | <u>م</u>         | <ul> <li>CONTAINER AND LOOSEN ROOTS PRIOR TO INSTALLATION.</li> <li>4. REMOVE OR CORRECT GIRDLING ROOTS.</li> <li>5. PLUMB AND BACKFILL WITH AMENDED SOIL PER LANDSCAPE NOTES. WATER THOROUGHI<br/>TWO HOURS</li> </ul>   | Y WITHIN                  |  |                     |
|                   |  | - M               | ₽°<br>           | <ul> <li>TWO HOURS.</li> <li>6. APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE. MULCH LIMITS FOR SHEXTEND TO ALL LIMITS OF PLANTING BED, SEE PLANS FOR BED LAYOUTS.</li> </ul>   | IRUBS                     |  |                     |
|                   |  |                   | (                | SHRUB PLANTING  |                           |  |                     |
|                   |  |                   |                  | 2) NTS  |                           |  |                     |
|                   | - ar 1   | 1114. P           |                  |   |                           |  |                     |



## SIZE

6` HT MIN

<u>SIZE</u> 18" HT MIN

24" HT MIN

18" HT MIN

24" HT MIN

24" HT MIN

18" HT MIN

TRACTOR IS RESPONSIBLE FOR JBCONTRACTOR'S

CONTINUING WITH THAT

EASE, PESTS, WOUNDS, AND ES. TRUNKS WILL BE WRAPPED EAS PART OF THIS CONTRACT. OR QUALITY. NS ON THE DATE OF THE EAR GUARANTEE

PE SPECIFIED.

CHES IN PLANTING AREAS. ED MIX AREAS, SHRUB,

D SEED/SOD MIXES. EATE SEPARATION BETWEEN ONG CURBED EDGES. REES PLACED IN AREA

L NOT BE LOCATED CLOSER

OTHERWISE NOTED. SIBLE FOR VERIFYING ALL

SAID MATERIALS ARE CED IF THE PLANT MATERIAL

MOVE BALL.

MULCH

2710 Sutton Blvd. St. Louis, MO 63143 www.adg-stl.com P:: 314.644.1234 F:: 314.644.4373 ALL ARCHITECTURAL AND ENGINEERING DRAWINGS ARE IN CONFIDENCE AND DISSEMINATION MAY NOT BE MADE WITHOUT PRIOR WRITTEN CONSENT OF THE ARCHITECT. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED -OWNER-FLOOR DECOR 2500 WINDY RIDGE PARKWAY, SE ATLANTA, GA 30339 (404) 471-1634 PHONE: -CONSULTANT-Kimley »Horn

ARCHITECTURAL DESIGN-GUILD

# 4201 WINFIELD ROAD WARRENVILLE, IL 60555

PHONE: (630) 487-5550 



2

TIN

7061 W 159TH ST TINLEY PARK, ILLINOIS 60477 XX/XX/XX T.B.D. ISSUE DATE: STORE NUMBER: AREA :

JOB NUMBER:

PROTOTYPE:

-ISSUE-

70,323 SF 2021.0302.00 2020 Q3

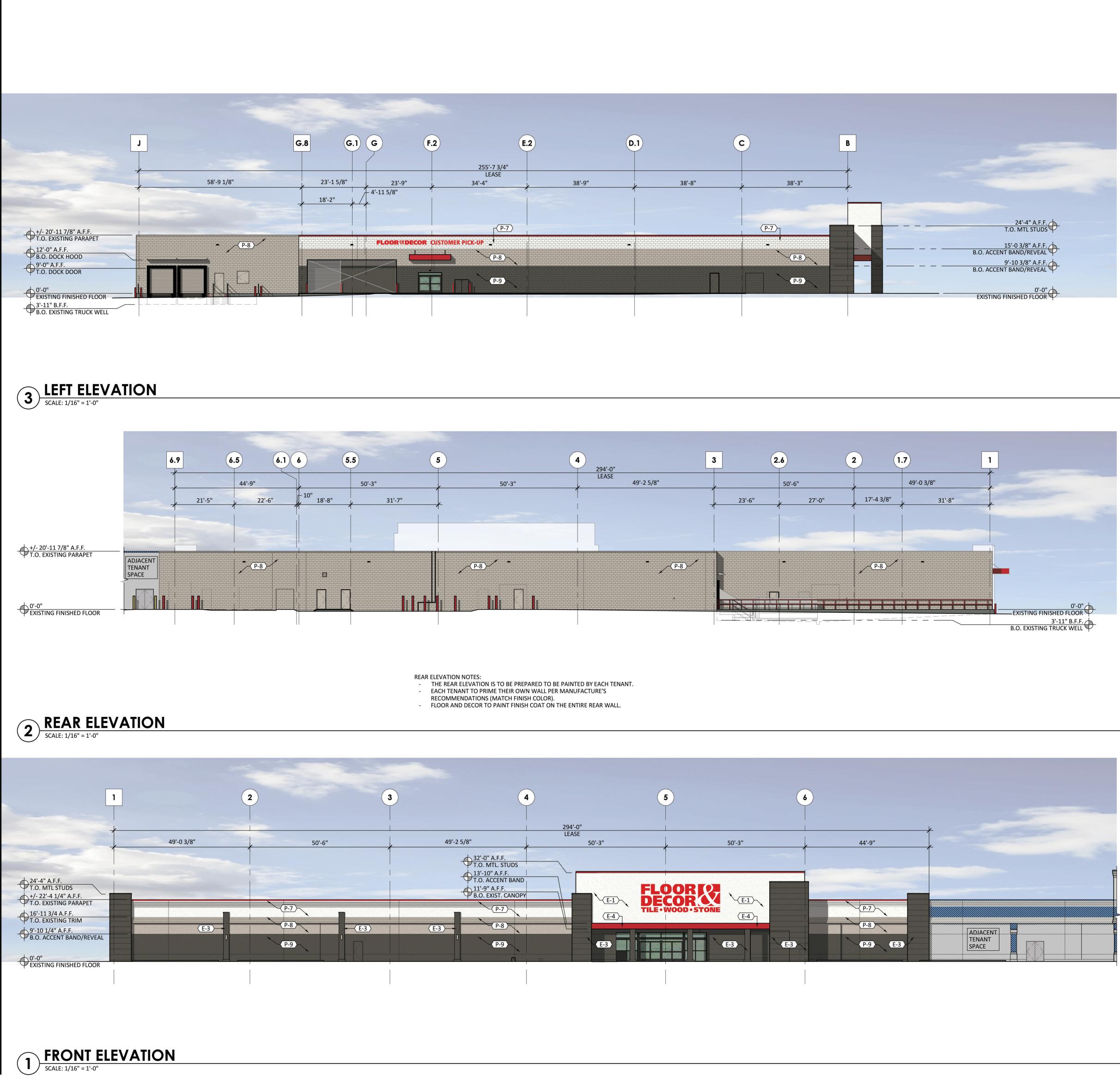




LANDSCAPE PLAN

-SHEET ---

JPM / BMH DRAWN: CHECKED: JPM



### FINISH LEGEND SW = SHERWIN-V

| (P-7) PAINT: SW HIGH REFLECTIVE WHITE |
|---------------------------------------|
| P-8 PAINT: SW AMAZING GRAY            |
| P-9 PAINT: SW URBANE BRONZE           |
| P-10 PAINT: SW REAL RED               |
| EIFS: SW HIGH REFLECTIVE WHITE        |
| EIFS: SW URBANE BRONZE                |
| EIFS: SW REAL RED                     |
|                                       |

# **VERSION INDEX**

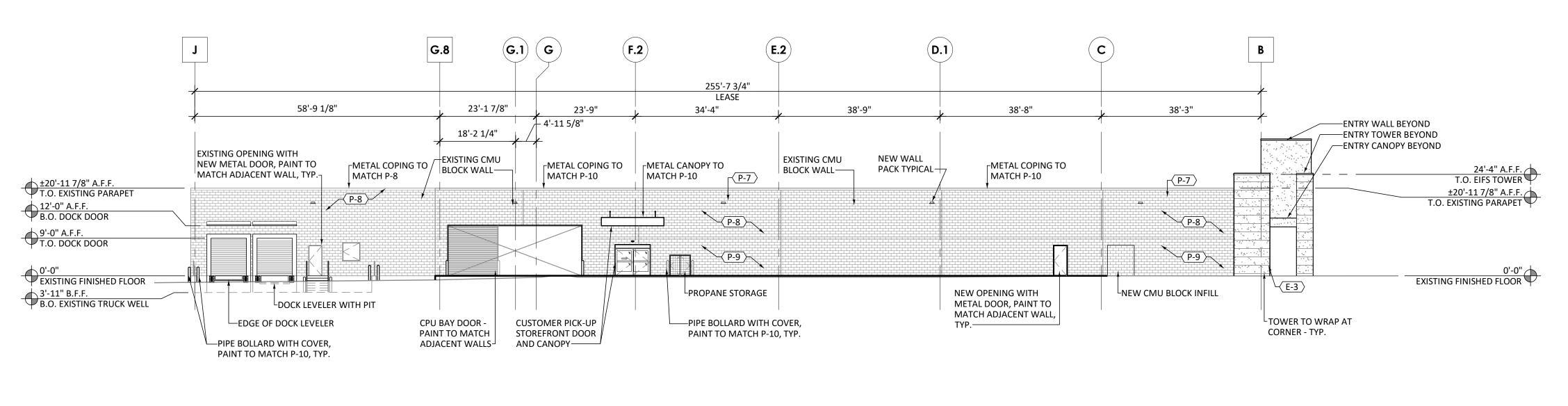
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| ∕⊙                  | •       |       |       | INITIAL ISSUE   |
| $\underline{\land}$ | •       |       |       | WALL PACKS ADDED TO LEFT AND REAR<br>ELEVATIONS, PAINT NOTES AT REAR ELEVA<br>ADDED |
| 2                   | •       |       |       | SIGNAGE ADDED TO FRONT AND LEFT ELEV  |
| 3                   | ٠       |       |       | SIGN HEIGHTS ALTERED AT FRONT AND LEI<br>ELEVATIONS                                 |

| -WILLIA | AMS                 |
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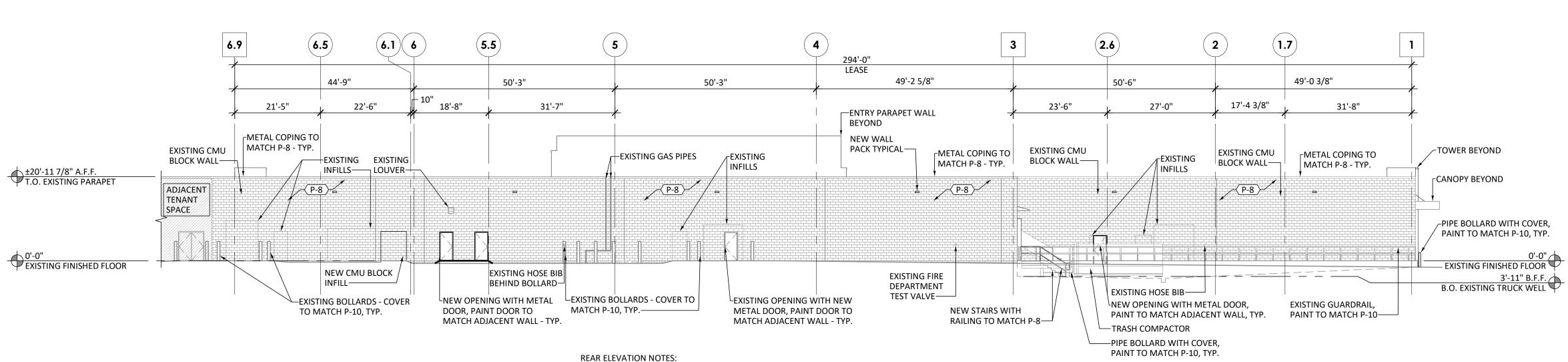


## DECORATIVE LIGHT FIXTURE

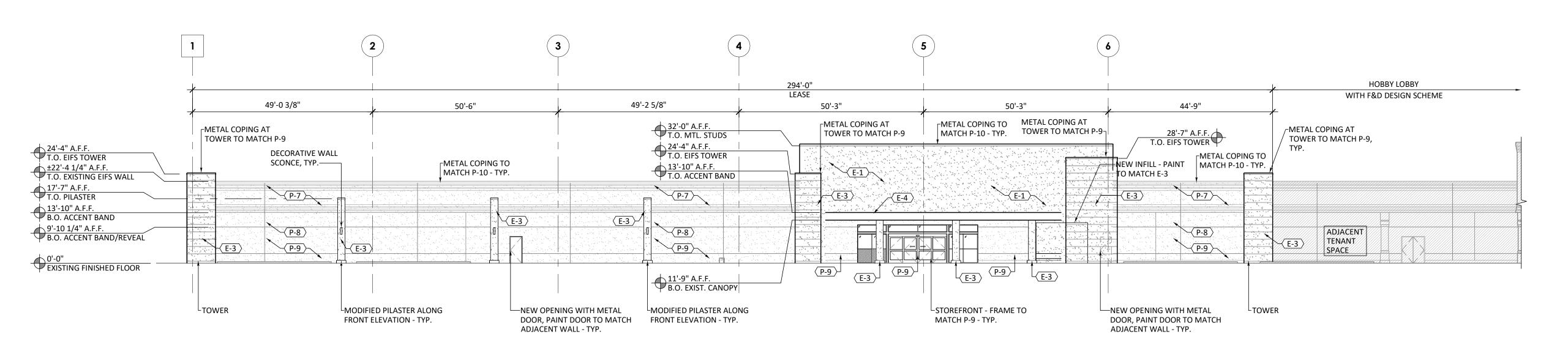




## 3 LEFT ELEVATION SCALE: 1/16" = 1'-0"



## 2 REAR ELEVATION SCALE: 1/16" = 1'-0"





TYPICAL WALL PACK LIGHT FIXTURE Type W TECH LIGHTING **KAXW** LED Wall Luminaire 🕋 😨 <u> </u> + Capable Luminaire This item is an A+ capable luminaire, which has be designed and tested to provide consistent color appearance and system-level interoperability. Specifications All configurations of this luminaire meet the Ac Brands' specification for chromatic consistency Length: 14 (356c Width: 1' (357 This luminaire is A+ Certified when ordered wit controls marked by a shaded background. DTL Height: 5' 102.7ml Weight 19.7 lbs (max): (83 lg) luminaires meet the A+ specifica to photocontrol interoperability1 This luminaire is part of an A+ Certified solution for ROAM<sup>®</sup> or XPoint<sup>™</sup> Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background<sup>1</sup> H w To learn more about A+, visit <u>www.acuitybrands.com/aplus</u>. 1. See ordering tree for details. A+ Capable options incicated by this color background. EXAMPLE: KAXW LED P3 40K R3 MVOLT DDBXD Ordering Informatio Shipped installed R NEMA twist-lock receptacle only (controls ordered separate)<sup>34</sup> KS Five-wire receptacle only (controls ordered separate)<sup>45</sup> DF Double fuse [2 240 or 480V]<sup>5</sup> Seven-wire receptacle only (controls ordered senarate)<sup>43</sup> DSSXD Sandstone DDBTXD Textured da RCE Right Conduit DBLBXD Textured black unting height, arbitent abled at SIC <sup>6</sup>
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BSW Bird-deterrent spikes<sup>®</sup>
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SSTXD
SS GAGE 20 shown in charcoal EGS External glare Accessories LL127F 1.5 JU Photocell - SSL twist-look (120-2277V) <sup>10</sup> LL327F 1.5 CU, JU Photocell - SSL twist-look (120-2277V) <sup>10</sup> LL480F 1.5 CU, JU Photocell - SSL twist-look (4807) <sup>10</sup> LL480F 1.5 CU, JU Photocell - SSL twist-look (4807) <sup>10</sup> R, PERS or PER7 option. DSHORT SBK U Shorting cap KXXWHS U House-side shield KXXWRSW U Bird determent spikes KXXWRSS U External glane shield Specifies the Sensor Switch MSOD-7-ODP control; see Outdoor Control lechnical Guide for details. Dimming driver standard. Not available with \*ERS or PER7. Must specify 120V or 277V. Requires PER or separate on/ KAXW-LED Rev. 02/11/19 Page 1 of 3 One Lithonia Way • Convers, Georgia 30012 • Phone: 800.279.8041 • www. © 2011-2019 Acuity Brands Lighting, Inc. All rights reserved. EE®236₩ Shawn Campbell shawn.campbell@ced.com 678-215-3065 EE®236₩

THE REAR ELEVATION NOTES:
 THE REAR ELEVATION IS TO BE PREPARED TO BE PAINTED BY EACH TENANT.
 EACH TENANT TO PRIME THEIR OWN WALL PER MANUFACTURES

RECOMMENDATIONS (MATCH FINISH COLOR). FLOOR AND DECOR TO FINISH PAINT THE ENTIRE REAR WALL.

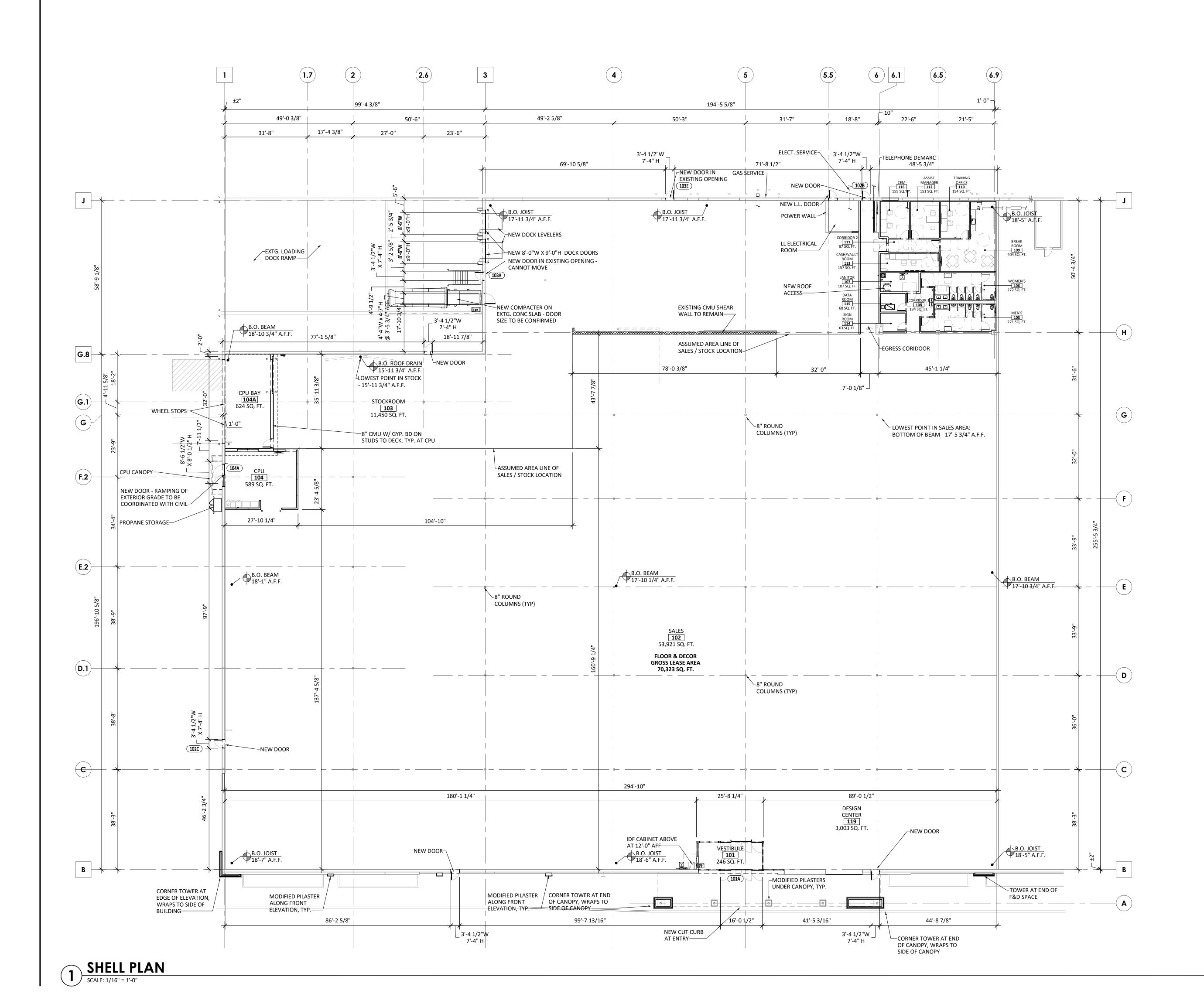
# FINISH LEGENDSW = SHERWIN-Y(P-7) PAINT: SW HIGH REFLECTIVE WHITE(P-8) PAINT: SW AMAZING GRAY(P-9) PAINT: SW URBANE BRONZE(P-10) PAINT: SW REAL RED(E-1) EIFS: SW HIGH REFLECTIVE WHITE

# **VERSION INDEX**

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| REV #       | F&D        | ARCH   | REQ'D | NARRATIVE                                |
|             | •          |        |       | INITIAL ISSUE BASED ON SITE PLAN AND SIR |
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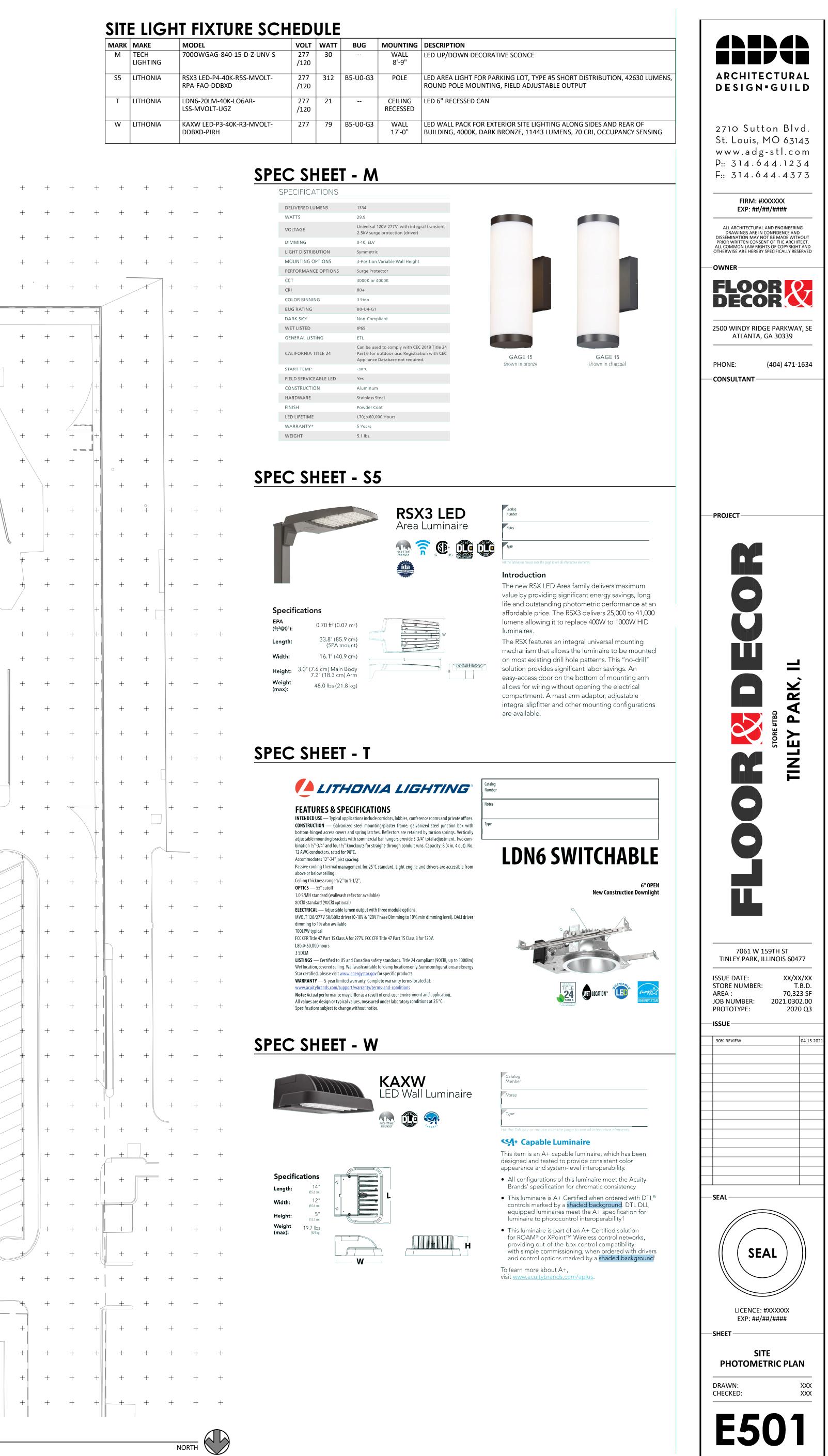




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| \+0.6 \            | \ + <sup>1.2</sup> | +1.8              | + <sup>2.1</sup> | +2.8              | +3.4             | +3.9                   | 4.3          | +4.5             | 4.5              | 4.2              | _4.2             | +4.0             | 3.8  |
| 0.5                | 1.0                | +1.7              | 2.0              | +2.7              | 3.4              | 3.9 <b>\$</b>          | 5 4 B        | + <sup>4.5</sup> | +4.4             | +3.9             | 3.7              | +3.4             | 3.0  |
| +0.6               | +1.1               | _+ <sup>1.7</sup> | 2.0              | + <sup>2.6</sup>  | + <sup>3.2</sup> | <br> _+ <sup>3.7</sup> | _ <b>4.1</b> | + <sup>4.2</sup> | _ <sup>4.1</sup> | _ <sup>3.7</sup> | + <sup>3.4</sup> | 3.0              | 2.6  |
| / <sub>+</sub> 0.6 | 1.1                | +1.6              | +1.9             | 2.4               | 2.7              | +3.2                   | +3.5         | +3.5             | +3.5             | +3.2             | <u>2.9</u>       | + <sup>2.6</sup> | +2.2 |
| 0.7                | +1.1               | 1.6               | +1.8             | + <sup>2.1</sup>  | + <sup>2.2</sup> | _ <u>+</u> 2.4         | 2.6          | 2.7              | 2.7              | 2.5              | +2.3             | 2.0              | 1.5  |
| +0.6               | \_+ <b>1.1</b>     | + <sup>1.5</sup>  | + <sup>1.6</sup> | +1.7              | 2<br>            | 2- <u>1.8</u> +        | +1.9         | 2.0              | 2.0              | <del>_2.0</del>  | +1.9             | +1.5             | +1.1 |
| 0.5                | +0.8               | +1.2              | +1.3             | +1.4              | + <sup>1.4</sup> | +1.4                   | +1.4         | +1.5             | + <sup>1.5</sup> | +1.4             | +1.3             | 1.0              | +0.7 |
| +0.3               | +0.5               | 0.7               | 0.8              | _+ <sup>0.7</sup> | 0.8              | 0.7                    | _0.7         | +0.8             | +0.8             | 1<br>0.8         | 0.8              | +0.6             | +0.4 |
|                    | SITE               | E PH              | IOI              | ΟΛ                | ٨ET              |                        | C PL         | AN               |                  |                  |                  |                  |      |
|                    | SCALE: 1           | /32" = 1'         | -0"              | • • •             |                  |                        |              |                  |                  |                  |                  |                  |      |
|                    |                    |                   |                  |                   |                  |                        |              |                  |                  |                  |                  |                  |      |

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| MARK | MAKE             | MODEL                                       | VOLT        | WATT | BUG      | MOUNTING            | DESCRIPTION   |  |
|------|------------------|---|-------------|------|----------|---------------------|---|--|
| M    | TECH<br>LIGHTING | 7000WGAG-840-15-D-Z-UNV-S                   | 277<br>/120 | 30   |          | WALL<br>8'-9"       | LED UP/DOWN DECORATIVE SCONCE   |  |
| S5   | LITHONIA         | RSX3 LED-P4-40K-R5S-MVOLT-<br>RPA-FAO-DDBXD | 277<br>/120 | 312  | B5-U0-G3 | POLE                | LED AREA LIGHT FOR PARKING LOT, TYPE #5 SHORT DISTRIBUTION, 4<br>ROUND POLE MOUNTING, FIELD ADJUSTABLE OUTPUT               |  |
| Т    | LITHONIA         | LDN6-20LM-40K-LO6AR-<br>LSS-MVOLT-UGZ       | 277<br>/120 | 21   |          | CEILING<br>RECESSED | LED 6" RECESSED CAN   |  |
| W    | LITHONIA         | KAXW LED-P3-40K-R3-MVOLT-<br>DDBXD-PIRH     | 277         | 79   | B5-U0-G3 | WALL<br>17'-0"      | LED WALL PACK FOR EXTERIOR SITE LIGHTING ALONG SIDES AND REA<br>BUILDING, 4000K, DARK BRONZE, 11443 LUMENS, 70 CRI, OCCUPAN |  |



| SIGN A          | 45/102 Floor & Decor               |
|-----------------|------------------------------------|
| Туре:           | Individual channel letters/ Remote |
| Illumination:   | Internally Illuminated LED         |
| Square Footage: | 290.50                             |



Sign Layout Detail

Scale: 3/16" = 1'-0" FD-95LOGO-45CLS-TWS-UC-21

#### Electrical Detail:

White LEDs (X) 60w Power Supplies Total Amps: X.XX (1) 20 amp 120V Circuit Req.

#### General Notes:

This sign is to be installed in accordance with the requirements of Article 600 of the National Electrical Code.

- Grounded and bonded per NEC 600.7/NEC 250

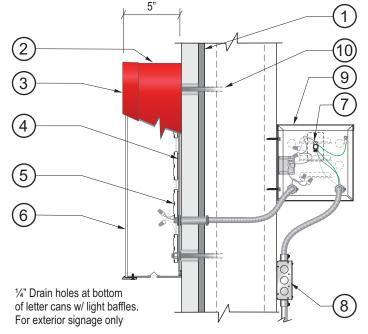
- Existing branch circuit in compliance with NEC 600.5, not to exceed 20 amps
- Sign is to be UL listed per NEC 600.3
- UL disconnect switch per NEC 600.6- required per sign component before leaving manufacturer. For multiple signs, a disconnect is permitted but not required for each section
- The location of the disconnect switch after installation shall comply with artilcle 600.6 (A) (1) per NEC

#### **Specifications: Channel Letters**

- 1. Existing Facade: To be determined
- 2. 0.040" Aluminum letter returns Pre-finished Red Aluminum (5" Deep)
- 3. 1"Jewelite trimcap (Red) bonded to face, #8 pan head screws to returns
- Note: 1" Aluminum retainer Painted to match 3m 3630-33 Red Vinyl for Itrs 60" and larger 4. .125" ACM backs (pre-finished white) fastened to returns. Seal w/ VOC compliant
- 360 white latex caulk to prevent moisture penetration.
- 5. White Leds (6500 Kelvin / .76 Watts Per Mod)
- 6. .150" White Acrylic faces w/ 3m 3630-33-red Vinyl Overlay
- 7. Disconnect switch UL Outdoor rated toggle type w/ neoprene boot per NEC 600-6
- 8. Primary electrical feed in UL conduit / customer supplied UL junction box
- 9. Power Supplies within UL enclosure (removable lid), 1/4" x 1" min screws
- 10. Mounting Hardware to suit

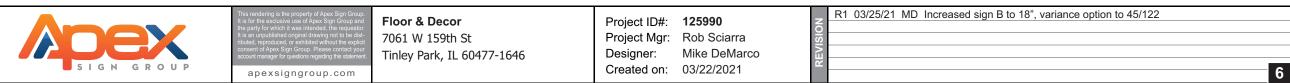
#### Ampersand 4' & Larger

Returns: Fabricated Aluminum Cabinet (5" Deep), Painted to match 3M 3630-33 Red Vinyl Faces: 3M Panagraphics III w/ 3M 3630-33 Red Vinyl Overlay



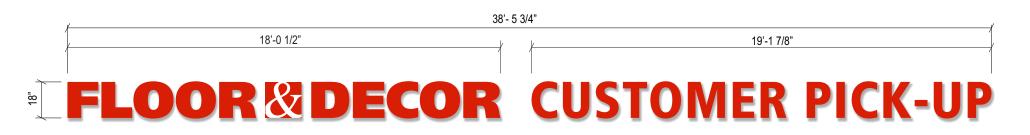
#### Section @ LED Channel Letter

Scale: N.T.S.



| SIGN B          | 18 Floor & Decor, customer pick-up |
|-----------------|------------------------------------|
| Туре:           | Individual channel letters/ Remote |
| Illumination:   | Internally Illuminated LED         |
| Square Footage: | 57.72                              |

# FLOOR&DECOR CUSTOMER PICK-UP



2. 0.040" Aluminum letter returns Pre-finished Red Aluminum (5" Deep)

360 white latex caulk to prevent moisture penetration.

5. White Leds (6500 Kelvin / .76 Watts Per Mod)

6. .150 White Lexan w/ 3M 3630-33 red vinyl overlay

3. 1"Jewelite trimcap (Red) bonded to face, #8 pan head screws to returns

8. Primary electrical feed in UL conduit / customer supplied UL junction box

9. Power Supplies within UL enclosure (removable lid), 1/4" x 1" min screws

4. .125" ACM backs (pre-finished white) fastened to returns. Seal w/ VOC compliant

7. Disconnect switch UL Outdoor rated toggle type w/ neoprene boot per NEC 600-6

Sign Layout Detail

Scale: 1/4" = 1'-0"

#### **Electrical Detail:**

White LEDs (X) 60w Power Supplies Total Amps: X.XX (1) 20 amp 120V Circuit Reg.

#### **General Notes:**

This sign is to be installed in accordance with the requirements of Article 600 of the National Electrical Code.

- Grounded and bonded per NEC 600.7/NEC 250
- Existing branch circuit in compliance with NEC 600.5, not to exceed 20 amps
- Sign is to be UL listed per NEC 600.3
- UL disconnect switch per NEC 600.6- required per sign component before leaving manufacturer. For multiple signs, a disconnect is permitted but not required for each section
- The location of the disconnect switch after installation shall comply with artilcle 600.6 (A) (1) per NEC



**FD-CPU-18CL RED** 

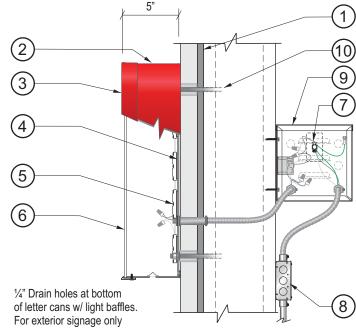
#### Floor & Decor 7061 W 159th St Tinley Park, IL 60477-1646 apexsigngroup.com

10. Mounting Hardware to suit

**Specifications: Channel Letters** 

1. Existing Facade: To be determined

Project ID#: 125 Project Mar: Rok Designer: Mik Created on: 03/2



#### Section @ LED Channel Letter

Scale: N.T.S.

| 5990      | -                       | R1 03/25/21 MD Increased sign B to 18", variance option to 45/122 |
|-----------|-------------------------|---|
| 9990      | 5                       |   |
| o Sciarra | SIG                     |   |
| e DeMarco | $\mathbf{\overline{>}}$ |   |
| e Demarco | Щ                       |   |
| 22/2021   |                         |   |
| 22/2021   |                         | 1   |



| SIGN C          | Floor & Decor   |
|-----------------|---|
| Туре:           | replacement panel 3/16" white<br>flex face w/ applied vinyl |
| Square Footage: | 72.00   |

#### **Temporary Graphic Detail**

Scale: NTS

Temporary & removable Low Tack vinyl, Yellow and black. Inset graphic 2" in from edge of panel (each way)



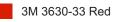
Note: Opposite face similar

#### **New Replacement Panel - Existing D/F Monument** Scale: 3/8" = 1'-0" QTY 2 (1 SET)

#### **Specifications:**

- 1. New 3/16" white flex face material
- 2. applied vinyl 3M 3630-33 Red
- 3. Existing Retainer (Visual Opening)











apexsigngroup.com

Floor & Decor 7061 W 159th St Tinley Park, IL 60477-1646 Project ID#: 125990 Project Mgr: Rob Sciarra Mike DeMarco Designer: Created on: 03/22/2021

R1 03/25/21 MD Increased sign B to 18", variance option to 45/122 8



## PLAN COMMISSION STAFF REPORT

May 20, 2021 - Workshop

#### **Scannell Industrial Development**

19501-19701 Harlem Avenue (NEC Vollmer Rd & Harlem Ave)



Chris Carlino, on behalf of Scannell Properties (Contract Purchaser)

#### **Property Location**

19501 – 19701 Harlem Avenue (NEC Vollmer Rd & Harlem Ave)

#### PINs

31-07-103-001-0000 & 31-07-300-001-0000

#### Zoning

Current: Unincorporated Cook County

Proposed: ORI PD (Office & Restricted Industrial, Planned Unit Development)

#### **Approvals Sought**

- Special Use Permit for a PUD
- Site Plan Approval
- Plat Approval
- Rezoning

#### **Project Planner**

Daniel Ritter, AICP Senior Planner



#### **EXECUTIVE SUMMARY**

The Petitioner, Chris Carlino on behalf of Scannell Properties (Contract Purchaser), is requesting a Rezoning upon annexation to the Office & Restricted Industrial (ORI) zoning district and a Special Use Permit for a Planned Unit Development (PUD) at the property located at 19501-19701 Harlem Avenue (northeast corner of Vollmer Rd and Harlem Avenue). Additionally, Final Plat Approval and Final Site Plan Approval are requested for Phase 1 of the multi-phased development.

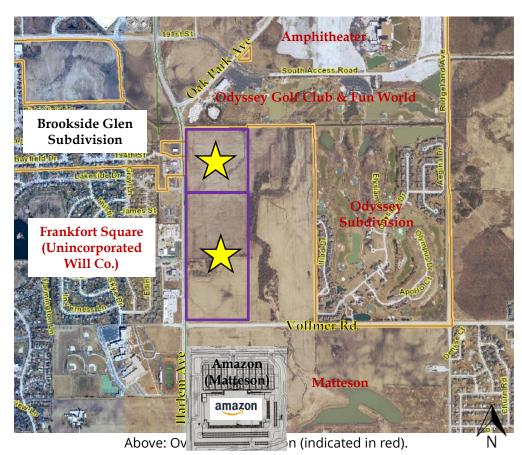
The development is proposed on 110.94 acres with approximately 1,262,000 sq. ft. of floor space over three industrial buildings, expected to be utilized for light industrial uses. The development may be completed in up to three phases. Phase 1 includes the construction of building 1, internal roadways, utilities, landscaping, and detention ponds. The construction of a watermain connection down Harlem Avenue and Vollmer Road will create a continuous loop that allows for redundancy in the water system. Property will be deeded to the Village for the future construction of an emergency radio tower that will improve emergency response on the southern area of town.

With the approval and construction of a large Amazon Fulfillment Center in Matteson expected to open this year has changed the vision for the area. The proposed development is expected to bring additional jobs to the area and property tax revenue to the various taxing districts. Staff has worked with the developer on the site to create an attractive development that mitigates any negative impacts from the area's development as best as possible.

#### **EXISTING SITE & HISTORY**

The subject site consists of two lots with a total of 110.94 acres of property located at the northeast corner of Vollmer Road and Harlem Avenue. The parcels are located in unincorporated Cook County currently under the county's R-4 Single-Family Residence zoning district. The site has an existing vacant home located on it with various accessory structures. The land has largely been used for agricultural purposes.

The area was previously covered under a boundary agreement between the Village of Tinley Park and Village of Matteson approved in 1980, which designated Vollmer Road as the boundary separating the communities. The agreements typically use roads or other "breaks" that create a logical and definable delineation between different communities. Boundary



agreements help communities plan for and invest in the necessary infrastructure to support future developments and avoid "annexation wars" between communities. The boundary agreement with Matteson expired in 2000 after the statutory 20-year maximum allowance, and has not been renewed.

The site is directly north across Vollmer Road of the Amazon Fulfillment Center that is currently under construction in the Village of Matteson. The Amazon development was approved in 2019 by Matteson with no coordination with neighboring communities, including Tinley Park. Tinley Park's Comprehensive Plan indicates the future land use as "Mixed-Use/PUD", which is not clear or defined as to the specific uses envisioned. The area has traditionally been expected to be an expansion of commercial and entertainment uses that are located to the north and west of the site. However, commercial development has slowed considerably due to the rise in e-commerce and appears highly unlikely at this location. Additionally, the expenses related to developing floodplain and the



Above: Amazon Distribution Facility Rendering in Matteson.

property tax rates have not appealed to residential developers.

With the approval and development of the adjacent Amazon Fulfillment Center, the vision and marketability for the surrounding area along Harlem Avenue has been for light-industrial development. Most notably there has been a

strong market demand for distribution and warehousing facilities in the Chicagoland area, particularly along the I-80 and I-57 corridors. This site is attractive for these users because the site is less than 1 mile from full access points to both interstate highways. Additionally, Amazon tends to attract a variety of related and ancillary businesses to their immediate area. Due to the Amazon development and existing Manheim Auto Auction on the east side of Harlem Avenue, the expectation is that this land will develop with light-industrial uses including distribution and warehousing. That development is likely whether in Tinley Park, Matteson, or unincorporated Cook County. To ensure the best development for the community , the Village took steps to acquire the property in Fall 2020. However, the property owner found a separate purchaser and developer for the property in Scannell Properties. Scannell Properties (https://www.scannellproperties.com/) has an over 30-year history developing and managing build-to-suit and speculative industrial and warehousing facilities over 44 states and internationally. Scannell has a strong reputation in the industry and connections to various regional, national, and international tenants.

The subject site is located near a creek (located to the east and a separate property) and has an encumbrance of floodplain located on it (see map below). The existing floodplain on the site creates some unique development challenges and additional costs in regards to development. Additionally, staff notes that the land to the east of the subject site has an even larger encumbrance of floodplain and floodway. The majority of that neighboring parcel is largely seen as undevelopable due to the technical and financial challenges associated with it; the exception is a small area near Vollmer Road east of the creek.



Above: Location of subject site (outlined in green) and existing floodplain/floodway. ZONING & NEARBY LAND USES

Zoning District names and regulations differ for every regulatory body, even if the district codes appear similar. The subject site is surrounded by four different local government levels that control zoning including Tinley Park, Matteson, Cook County, and Will County thus a zoning map showing these zoning classifications will not accurately show a clear distinction. The existing uses and the zoning district from the current jurisdiction location are listed below for properties surrounding the subject site.

- North: Tinley Park B-3 (General Business & Commercial) Odyssey Fun World and Driving Range
- West (Across Harlem Ave): Tinley Park B-3 (General Business & Commercial) Gas N Wash and Unincorporated Will County C-3 and C-4 zoning – Various Commercial Properties
- East: Unincorporated Cook County vacant land/floodplain zoned R-2 zoning
- South: Matteson C-4 (Highway Commercial) Amazon Distribution/Fulfillment Center

#### PROPOSED USE & DEVELOPMENT

Proposed with the development are up to three industrial buildings expected to be utilized for light industrial, distribution, warehouse, and manufacturing uses. While the demand for distribution and warehouse is currently high, the building has the ability to attract various other users such as manufacturing and technology. Specific tenants have not been identified and the first building is going to be constructed on a speculative ("spec") basis. Spec construction has been typical of recent industrial development to construct buildings without a specific user identified. By doing starting construction with spec buildings it provides some proof to potential future tenants that the area and developer can quickly support their development (as it is similarly done with residential development). Additionally, spec buildings allow for quick move-ins when tenants expand to rapidly to plan for a build-to-suit. Spec industrial development has grown since it has been deemed relatively safe by investors with the rapid expansion of e-commerce that has only increased further with the effects of the COVID-19 pandemic.

The Midwest market for these types of developments has remained strong based on information supplied by commercial real estate consultant CoStar. The location on two major Arterials that connect to two different interstate expressways in less than a mile, along with the location of the Amazon development has made it a desirable location for new businesses to locate or relocate to. Scannell has experience developing and filling these types of industrial developments throughout the country. They propose to construct the smallest building first to draw interest and the hope is the other sites will be built-to-suit to specific tenants. Existing businesses within Tinley Park who are expanding may also have an interest in relocating to a new and larger development.

#### SPECIAL APPROVALS NEEDED (ANNEXATION, REZONING, AND SPECIAL USE FOR A PUD)

#### <u>Annexation</u>

The Petitioner is requesting annexation into the Village OF Tinley Park. The Annexation Agreement is scheduled to be reviewed by the Committee of the Whole and then will be scheduled for Village Board review at the same time as all zoning and entitlements requests. While the Plan Commission does not specifically review annexations in themselves, the appropriate zoning district and overall development proposal are reviewed. The annexation will include adjacent IDOT right-of-way along Harlem Avenue for a total annexation of ~121.33 acres.

#### <u>Rezoning</u>

There are two possibilities for zoning this property based on the proposed and surrounding land uses; either the ORI (Office and Restricted Industrial) or M-1 (General Manufacturing) zoning districts can accommodate the types of uses expected to be attracted to the development. Upon discussion with staff, the Petitioner decided the best option was to Rezone the property, upon annexation into the Village, to Office and Restricted Industrial (ORI). The ORI zoning district is described in the Zoning Ordinance (Sec.V.A.3.) as follows:

"The ORI Office and Restricted Industrial District is intended to provide land for medium to large office buildings, research activities, and non-objectionable industrial activities which are attractively landscaped

and designed to create a "park-like" setting. The low intensity and limiting restrictions are intended to provide for permitted uses which will be compatible with adjacent residential and commercial developments."

The alternative option to the ORI district is to have an underlying M-1 zoning district. The M-1 district is described as *"The M-1 General Manufacturing District is intended to provide for those industrial activities that have moderate environmental effects and are located in areas relatively removed from residential and prime retail development."* However, due to the proximity to residential and general commercial and its location along a major thoroughfare, the M-1 zoning district is not a preferred fit for the area.

#### Planned Unit Development (PUD)

In addition to rezoning, the request includes a Special Use for a Planned Unit Development (PUD) due to the unique nature of the development. While the site will still be regulated by the proposed ORI zoning district regulations. The PUD allows for the property to be regulated by a custom set of requirements and allows for flexibility with codes restrictions. PUDs are common with large and phased developments such as this and have been used for the majority of the Village's larger commercial, office, and industrial developments since the 1990's. The Zoning Ordinance (Sec. VII) notes the following about the intent of PUD's:

"Planned Unit Developments are intended to encourage the most imaginative and best possible design of building forms and site planning for tracts of land where a unitary plan would best adapt to the natural and physical characteristics of the site. Under this procedure, well planned residential, commercial, industrial, and other types of land use, individually or in combination, may be developed with complete design flexibility. Planned Unit Developments are of such a size and character that they may create their own environment. Although Planned Unit Developments are Special Uses subject to the Special Use provisions of this Ordinance (see Section X.J) (except as otherwise provided in this Section VII), they are also substantially different from other Special Uses so that specific and additional standards and exceptions are necessary to regulate these developments. Therefore, to assist the Tinley Park Plan Commission in their review and processing of Planned Unit Developments and to govern their recommendations and the action of the Village Board of Trustees..."

Through the adoption of a PUD, the Petitioner is requesting allowances for warehouse and distribution uses that are high users of their developments. The site has also been purposefully designed to best mitigate the negative effects of truck traffic and trailer storage of those proposed uses. This approval process utilizing the ORI zoning has been successful in ensuring the developments proposing additional truck-dependent uses are well designed for to mitigate any negative impacts. This specific setup of an ORI district that allows for distribution, warehouses, and wholesale establishments is utilized in many of the Village's other successful industrial parks along the south side of 183<sup>rd</sup> Street, including North Creek Business Center and Mercury Business Center.

As part of the PUD approval (and similar to many development processes), a final Plat of Subdivision is approved. This plat covers the division of lots and any easements required (utility, drainage, access, sign, etc.) for the development to properly work as designed. Any future changes to the plat of "Major Changes" to the PUD as defined by the Zoning Ordinance, requires a Substantial Deviation from the originally approved plans. Anything not specifically listed in the PUD regulations (including the ordinance, indicated on the plans, or indicated in the covenants and restrictions) defaults back to being regulated by the Zoning Ordinance.

Open Item #1: Discuss the proposed ORI zoning district and PUD approval for a larger, unique, and phased development.

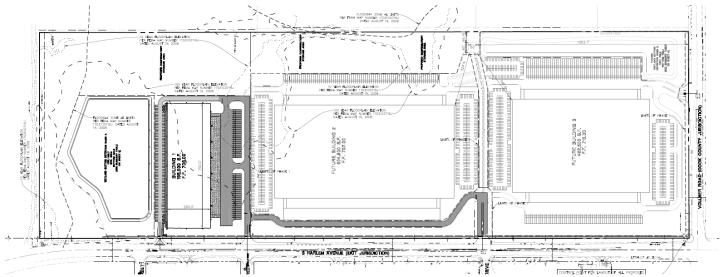
#### SITE PLAN

#### **Overall Development Plan and Phasing**

The approval before the Plan Commission today includes an overall conceptual approval of the development and final approval for "Phase 1". Phase 1 includes the construction of Building 1 and some larger site development outlined further below. Any future phases are required to come back for final Site Plan and Architectural review and approval; this ensures the final design complies with the PUD's intent and requirements. The overall concept site plan is shown below indicating three buildings, adjacent parking, truck docks, trailer storage, roadways, detention and landscaping. Overall, they propose approximately 1,262,000 sq. ft. of floor spaces over the three buildings.



While this general concept plan is being approved, the specifics may be changed based on final approval. However, the development will need to be in substantial conformance with the plan as presented. It has been noted deepening on the future users they identify, there is potential for buildings 2 and 3 to be combined and developed within a single phase or for each to be developed separately.



Above: Extent of Phase 1 site work shown in dark grey. Detention, Harlem Avenue berm, utilities, and right-of-way improvements will also be part of Phase 1.

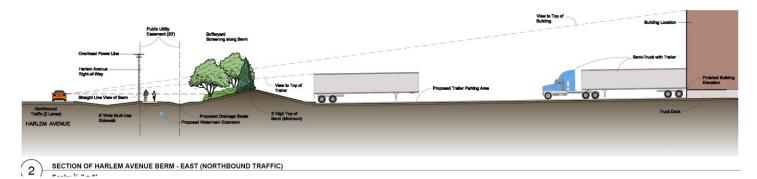
The overall plan and building layout were driven by a few main factors. First, the existing floodplain limited the area that can be developed because disturbing floodplain required expensive compensatory storage (1.5x the amount filled) to be located elsewhere on the site (or occasionally off-site and downstream). To minimize costs, the development largely tries to avoid the floodplain on the north and east sides of the site. Second, the overall location of detention needed to be located at areas the site naturally drains to. Third, was the need to align the development's internal road network with existing curb cuts and lights. This created a rough grid of what areas were buildable. Lastly, is the desire for largely rectangular "cross-dock" buildings which have a high market demand. Based on those factors staff and the developer worked through a large number of alternatives to come up with the proposed plan which aligns good site design with the developer's marketability interests.

#### Open Item #2: Discuss and review the overall conceptual site plan and phasing.

#### Harlem Avenue Berm

One concern based on the design was the location of truck docks and storage adjacent to Harlem Avenue. While the preference has always been for these items to be located in the rear of buildings, the limited building area and need for cross-docks required them to face the roadway. This specifically happens with buildings 2 and 3. Rotating the building's docks on those to face north and south (similar to building 1) severely limits the overall size of the buildings and the number of docks due to the buildable area of the site. Those alternatives were explored but are not marketable for the developer to potential tenants.

To mitigate the potential views of docks and trailers along Harlem avenue, a landscape berm has been proposed. The berm includes a 3-4 foot high grade increase along with landscaping planted on it. The image above shows a cross-section of how views from Harlem avenue looking towards buildings 2 and 3.

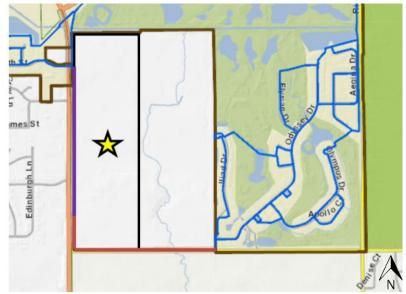


# Open Item #3: Discuss the proposed 3'-4' landscape berm buffering the buildings, docks, and trailers from Harlem Avenue.

#### Watermain and Utilities (Phase 1 Final)

One significant benefit of the development will be the expansion and looping of the Village's watermain system. Currently, watermains dead-end at the Odyssey subdivision and at the Lenny's Gas N Wash. The issue with dead-end watermains is that if any work needs to be done on the mains (main break, maintenance, etc.), water need to be completely shut off to anything that is downstream from the work. By looping a watermain, it provides redundancy and limits any need to shut water off to a smaller section. This is concerning because a break along Ridgeland Avenue will lead to the entire Odyssey subdivision being without water for an extended period of time while it is repaired. While this issue hasn't happened yet, the infrastructure to the subdivision is now beyond 30 years in age and as time passes breaks and maintenance requirements are likely to increase as well. By completing this water loop, it will not only avoid inconvenience for residents, but also ensures that resident fire protection isn't compromised for any period of time.

To complete the watermain loop, the developer will need to extend the watermain much further than their development requires down Vollmer Road (shown as the red line on the image above). The developer has agreed to complete this work with their project to create the benefit to their development and the larger community. Any cost reimbursement for watermain beyond their development's requirements will be covered within the Annexation Agreement. The watermain work will be completed with Phase 1 of the project. In addition to water, other utilities such as sanitary and storm sewer will be run to the sites but phased with the development since they are not as crucial to public safety. The location of the utilities will be located on the private site within a utility easement based on the preference of the Public Works Department to not have the utilities in IDOT right-of-way.



Above: Existing watermain (blue), required extension for development (purple), and additional extension to create water system loop (red).

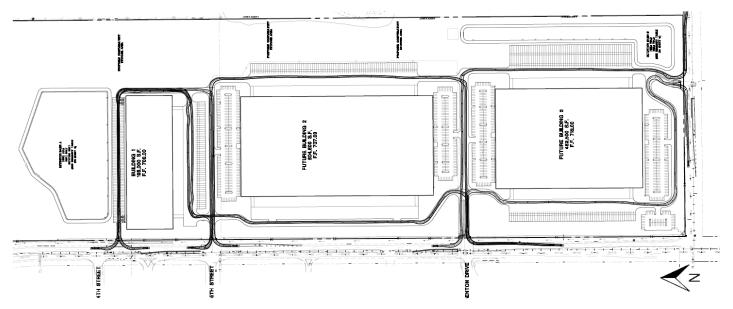
#### Open Item #4: Discuss proposed watermain extension and utility improvements.

#### Truck and Vehicle Access (Overall and Phase 1)

The addition of Amazon to the area has led to some roadway improvements along Vollmer Road and Harlem Avenue that will allow for better truck access through the intersection. Signal timing will also be studied with the development to ensure the best traffic flow through the intersection. These changes have been coordinated with IDOT and Cook County Highway Department.

The developments overall traffic flow is driven by existing lighted intersections on Volmer Road (being installed with the Amazon development) and at Benton Drive on Harlem Avenue. These are the primary access points for trucks to enter and leave from. Internal roadways design for truck movement run throughout the development. Two additional access points have been added along Harlem Avenue and can also be used by trucks entering from or leaving to go northbound on Harlem Avenue. Employee and visitor parking are largely planned to be separated from truck and loading areas but will utilize many of the same entrances. These access points and right-of-way improvements will be subject to review and corrections from IDOT and Cook County. The plans have been supplied to those agencies in an effort to get initial feedback and ensure proper planning is completed with any roadway improvements. The drive aisles have been reduced to 24 feet in width from the required 26 foot minimum to allow for some additional space. 24-foot aisle widths are standard in many communities and acceptable to staff on various projects if turning radii show adequate space for vehicle movements including fire and semi-trucks.

Overall traffic flow within the site was analyzed by their consultant KLOA in a Traffic Impact Study (3-11-21). The report shows adequate roadway access and capacity for the development. One large advantage of the location is the development is at the intersection of two major arterial roads that are designed for heavy traffic volumes. The Village's engineering consultant also reviewed the report and found the data used, conclusions drawn, and recommendations to be fair and correct to their knowledge. The specific details of the access points will be subject to the requirements of each roadway's jurisdiction (IDOT and Cook County).



As part of phase 1, there will be the construction of the turning lane at the signalized access at Benton drive and the roadway connecting building 1. That roadway serves primarily as a truck access between the three sites. Additionally, the two Harlem Avenue right-in/right-out driveways will be constructed pending IDOT approval. Lastly, work at the Vollmer Road lighted entrance will be completed so that it is installed from the beginning (with Amazon's improvements) and doesn't need to be modified later. However, while the work is going to be completed, that intersection will not be connected by roadway to building 1. The work to be completed as part of phase 1 is shown in white below while the light gray indicates the pad that will be left for future phases and final approvals.



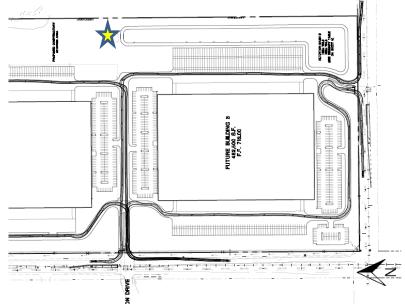
*Open Item #5: Discuss circulation within and external to the site overall and proposed with Phase 1.* 

#### Sidewalks/Paths

An 8-foot wide multi-purpose path is proposed along Harlem Avenue. This will connect from the north to the south. While the path won't immediately connect to the Village's sidewalk and bike path system, there is plans for paths to be installed down Oak Park Avenue by the amphitheater that may connect to the proposed path in the future.. A walkway is also required along Vollmer Road, however, whether it is installed or not will be determined by the Village Engineer and their understanding on if it can be extended to connect to any walkway system in the future.

#### Village Emergency Radio Tower

The area that the development is located in was noted to have poor emergency communication consistency between public safety personnel (fire, police, and paramedics) and dispatch. The area with issues includes the proposed development along with the general Odyssey and Brookside Glen subdivisions. То improve the emergency communication in the area, the Village will need to construct a new emergency communication radio tower in the near future. To assist in resolving the issue, the developer is donating area lot to be given to the Village. The Village will own the parcel and can construct the tower as they deem fit. Having the land to locate the tower ensures there isn't an extended process of acquiring or subdividing land in the future. Since the lot has no public frontage,

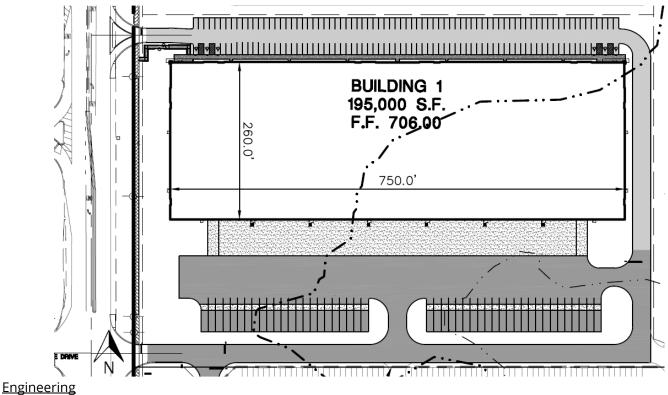


construction access and permanent cross-access to the site has been provided on the Final Plat of Subdivision.

#### **Building 1 Final**

As part of Phase 1, final approval is being given to the building 1 site. The site includes an approximately 195,000 sq. ft. building, 125 parking spaces on the north side of the building, 24 docks and 50 trailer storage locations on the south side of the building. The site will tie into the internal roadway system and will have access to three access points including the signalized intersection at Benton Drive that will be constructed with phase 1. The building is setback 63' 9" from the Harlem avenue right-of-way line. In that setback will include the 3-4' high landscape berm to help block views of the docks and trailer storage. All garbage will be kept internal to the building and placed outside on pickup days only.





The plans for building 1 and phase 1 require final engineering review and approvals. Additionally, the plans are subject to review by a variety of other jurisdictions including MWRD, IDOT, Cook County, IEPA, and others. Any comments or corrections are not expected to significantly change the conceptual overall of phase 1 final site plans. However, staff recommends a standard condition be placed on the approvals, requiring final engineering review and approval of all plans.

Open Item #7: Staff is recommending the site plan approval be conditioned upon final engineering review and approval.

#### PARKING

Warehouse and distribution use minimum parking requirements in the zoning ordinance are based on the number of employees with the requirement being "One (1) space for each two (2) employees, plus one (1) space for each vehicle used in the conduct of the business." However, this is not an efficient way to understand the parking based when a building is built speculatively or in general since tenants can come and go. When a specific minimum parking requirement is not existent or possible, parking requirements for these uses are approved by Plan Commission with the Final Site Plan Approvals. To offer guidance, staff looked at other resources and communities as a guide that utilize more of a generic square footage value. Staff found examples of "warehouses" of anywhere from 1 space per 800 sq. ft. to 1 space to 2,000 sq. ft. (APA Parking Standards, PAS Report 510/511, 2002). The ITE (institute of Traffic Engineers) Parking Generation Manual also offers a large range but results in an average parking requirement of .39 spaces per 1,000 sq. ft.

Minimum parking requirements Are particularly tough to determine on industrial and warehouse properties due to the variety of different potential uses and tenants that result in a wide range of employment totals. However, it will be up to the developer and owners to regulate parking. Ultimately if a tenant needs more parking than is provided, they are unlikely to locate there. Having too little parking is to the detriment of the developer and their properties marketability. Having too much reduces the buildable area. The developer has noted that they have extensive experience in the market and have had success with regards to the parking and trailer storage totals shown. An estimate of the parking data is shown in the table below:

|                 | Approximate             | Parking Stalls        | Stalls per    | Required based | Required based |
|-----------------|-------------------------|-----------------------|---------------|----------------|----------------|
|                 | Floor Area              | Proposed              | 1,000 sq. ft. | on 1 stall per | on 1 stall per |
|                 |                         |                       |               | 1,000 sq. ft.  | 2,000 sq. ft.  |
| Phase 1 (Final) | <u>+</u> 195k sq. ft.   | 152 (6 ADA)           | .77           | 195 (-43)      | 97.5 (+54.5)   |
| Building 2      | <u>+</u> 605k sq. ft.   | <u>+</u> 514 (11 ADA) | .85           | 605 (-91)      | 302.5 (+211.5) |
| (Conceptual)    |                         |                       |               |                |                |
| Building 3      | <u>+</u> 462.5k sq. ft. | <u>+</u> 381 (8 ADA)  | .82           | 462 (-81.5)    | 231 (+150)     |
| (Conceptual)    |                         |                       |               |                |                |

Staff notes that the following phases will be subject to parking reviews with their final site plan approvals. One benefit afforded to those future reviews/approvals is that the developer expects those projects to be a build-to-suit with at least some of the tenancy known at the approval process. Knowing the tenants ahead of time ensures a more detailed parking review based on proposed employment can be met. There is also a benefit of starting with the smallest building first as the speculative building, as it has the smallest impact if there is some future parking issue. If additional parking is needed for building 1 after occupancy, there will still be an opportunity to add parking for their use with the land available for the future phases (although it might be at the cost of building square footage in the future phases). Additionally, if a future tenant may require less trailer storage spaces and more parking the storage locations can be replaced with parking. Due to this future flexibility and need for final approvals, staff is comfortable with the proposed parking on the speculative building 1.

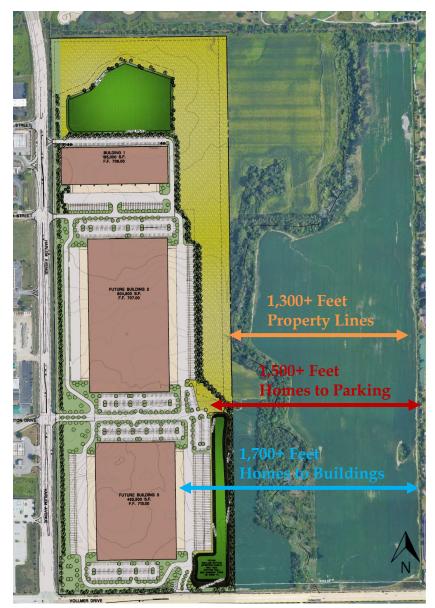
Open Item #8: Review overall proposed parking with an emphasis on the Final approval for building 1.

#### LANDSCAPE & SITE BUFFERING

The Village's Landscape Ordinance generally provides direction for certain development within the Village. Staff has noted though that the code was largely designed for commercial and office, style developments, without larger industrial parks or auto oriented in mind. As such, while it provides guidance, a variety of waivers have been requested over the years depending on the specific circumstances of unique developments. Particularly, a focus is given to create an attractive streetscape and community by creating a substantial buffer around developments to mitigate and substantial negative effects or views form roadways or neighboring properties. For the subject site, this has meant a focus on the perimeter, especially along Harlem Avenue, where it will be most visible to the public. Along with planting a substantial year-round landscape buffer of large trees, under-story trees, bushes, and shrubs, the landscaping is being placed on a berm that is 3' - 4' in height. The berm further creates a buffer of views to the proposed building docks and trailers. The view angles from Harlem Avenue and the berm are located on page

In addition to the berm along Harlem Avenue, landscaping is proposed around the perimeter of the development on the north and east sides of the property. Landscaping along the east side was designed to be thick and buffer any potential views to the development to the residents in the Odyssey subdivision. The subdivision sits more than 1,300 feet to the east of the proposed development, with a distance of more than 1,500 feet from the closest home to any pavement and more than 1,700 feet from any of the proposed buildings.

In addition to the development's proposed landscape buffer, there are two other landscape buffers between the nearest homes and the development. First, the Odyssey subdivision's bufferyard and the second buffer is the naturalized buffer along the creek on the adjacent unincorporated property. While that land is privately owned, it is severely encumbered with floodplain and floodway (see map on page 3 above). A small area close to Vollmer Road is the only area considered reasonable to build upon. While development appears difficult, any new development will be required to construct bufferyards if located within the Village of Tinley Park. Additionally, the "floodway", which is the area closest to and including the creek, is unlikely to be substantially altered due to those requirements. The expectation is that with the distance, proposed landscape buffer, and existing landscaping buffers, any potential visible negative effects of the facilities will be mitigated.





Above: Naturalized buffer along creek looking east toward Odyssey subdivision.

Landscaping internal to the site is proposed at the development's various entrance/exits, lining internal drive aisles and with the placement of landscape islands within employee/visitor parking lots. Landscaping is not proposed in loading dock or storage areas as landscaping/curbs and large trucks trying to maneuver through the sites do not mix well. The final Phase 1 approval includes all landscaping shown below including the buffers along Harlem Avenue and Vollmer Road, the driveway entrances, and around the internal drive aisles and parking lots associated with building 1. Additionally, the detention ponds will be constructed to includes native wetland prairie grass that allow for an attractive open space and helps to filter



stormwater without needing excessive pesticides. The natively planted open space and detention ponds are expected to blend into the surrounding golf course and the adjacent undeveloped land to the east (with the creek).



Open Item #9: Review overall Landscape Plan including overall bufferyard proposals and final approval for Phase/Building 1.

#### LIGHTING

All lighting has been proposed with light levels below .5 fc at all property lines in compliance with Village Code requirements. All light fixtures are parallel to the ground and full cutoff so that the light source isn't visible or create any offsite glare on roadways or adjacent properties. Parking lot and internal drive aisle lights are mounted at 25 ft. in height. Staff is recommending a condition that all lighting within the development utilize the same fixtures proposed with Phase 1. This will ensure a cohesive look to the lighting and a constant lighting color/intensity on the site.



Lighting will be supplied at the intersection and at entrances to the development, however street lighting along Vollmer Road and Harlem Avenue will be subject to each of the roadway jurisdictions in regards to requirements.

#### Open Item #10: Discuss staff recommendation for matching lighting fixture requirement throughout the PUD.

#### ARCHITECTURE

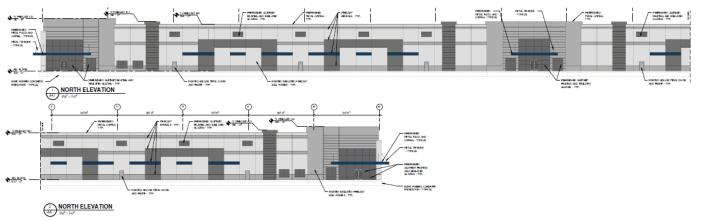
#### Overall Development – Concept

The buildings are expected to be constructed of concrete precast panels typical of industrial buildings today. These panels allow for cost-effective construction of large buildings. The ORI district is largely considered a commercial zoning district and therefore does not permit buildings with 100% concrete precast panels (over 80,000 sq. ft. requires 25% face brick or stone). However, if the project was located in the M-1 district, no brick or stone is required. Due to the size of the structure, brick and stone are not economical and atypical of this type of development. Since this is a unique development that is branching the two zoning districts, they have requested the buildings be permitted to be constructed wholly of precast concrete masonry material. This exception is being requested for all three buildings. However, the buildings are subject to the Village's architectural guidelines and standards that promote attractive design and ensure that a flat-looking boxy building is not permitted. Notably, it requires vertical and horizontal articulation with changes in materials, colors, and breaks within the elevation.

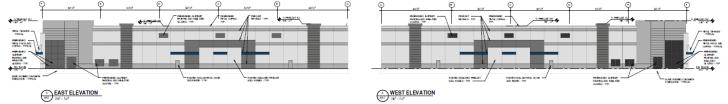
Overall the development's buildings are expected to be similar to the final building 1 approval outlined further below. However, buildings 1 and 2 will need to be reviewed and approved with their final site plan and architectural approvals. While there are not specific design standards in the PUD regulations, the Architectural Guidelines in the Zoning Ordinance provide some overall guidance. Additionally, staff has notes that while the preference is not to have three buildings that all exactly match, there is a preference to see some common elements carried over between the buildings and within the ground signage. These common elements might include the geometric design, scale, and color that helps identify make the development look purposeful and cohesive.

#### Building 1 – Final Approval

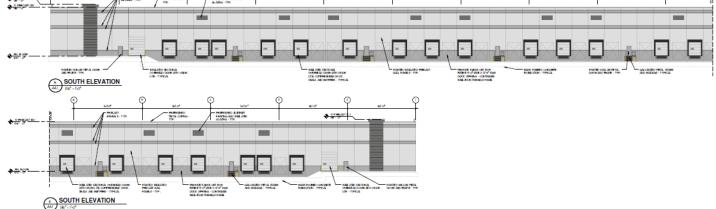
The building will be largely constructed of precast concrete panels. There are three glass architectural elements to anchor the building's two corners and the center for the north/front façade that will be most visible to Harlem Avenue. While the total number of tenants and internal layout will be determined based on the tenants chosen, this provides a natural space for up to three main entrances for employees. Canopies have also been placed over the entrance points to draw attention to them as customer or employee entrances. Overall there is articulation in the buildings appearance and roof line that makes it look attractive and not "boxy". The rooftop parapet has been designed to screen all rooftop equipment from view of the street.



The glass architectural elements will wrap around the corners of the building, providing attractive side facades.



The rear/south side of the of the building is where the dock location has been proposed.. However, the common architectural design elements have been carried through to this side. Due to the unknown needs of the future tenants,, some of the docks have been proposed to be installed while other locations will have "knock-out" areas where docks doors can be added or enlarged if needed by the future tenants.



Open Item #11: Review and discuss the proposed architecture of building 1 and need for any overall development standards.

#### SIGNAGE

Wall signage for individual tenants is proposed to be regulated by the Zoning Code. Ground signs are proposed at the entrances to the subdivision which will include allowances for individual tenants to be listed.. The PUD allows for offsite signage for businesses within the development due to the signs being located at only a few access points and the need for directional signage throughout the development to businesses for way-finding purposes. Directional sign locations are also indicated on the engineering plans. Specific design details for the ground and directional signage have not been determined and would need to comply with the Zoning Code requirements as well if no specific examples or requests are made

Open Item #12: Review signage locations and acceptability of not submitting a Unified Sign Plan.

#### SPECIAL USE PERMIT FOR A PUD

This project proposes to rezone the subject properties to ORI along with a Special Use for a PUD over the subject property. The PUD will allow for certain uses not typically permitted in the ORI zoning district, but relevant to the proposed project. A similar zoning allowance for distribution and warehousing uses has been utilized in other areas of the Village with success. The zoning allows for those uses while still limiting some of the more obtrusive manufacturing uses allowed in the M-1 (General Manufacturing) zoning district. The PUD allows for a phased development that is interconnected between the different parcels. The CCC&Rs, Annexation Agreement, and Approved Plans will all be exhibits of the PUD ordinance.

Any items that don't meet zoning code are considered "Exceptions" instead of Variations and are covered by the PUD approval. The specifics of the PUD Ordinance allowances are listed below.

- a. Additional Permitted Uses All uses of the ORI district will be permitted. The following uses are added as additional permitted uses on the property:
  - a. Warehouses, distributions plants, and wholesale establishments
  - b. Exterior storage of trucks and vehicles accessory to a principal permitted use.
- b. Exceptions The Following Exceptions will be requested as part of the PUD:
  - a. Permit parking in the front yard.
  - b. Permit loading docks to front a public frontage with the establishment of the proposed landscape berm.
  - c. Permit open exterior storage of trucks and semi-trailers directly related to a principal business established on the premise where indicated on the Final Site Plan Approval and with the establishment of the proposed landscape berm. There shall be no maximum time limit for truck or trailer storage.
  - d. Permit a drive aisle width of 24 ft. in width instead of 26 ft. minimum width required.
  - e. Allow for the use of exterior building materials required for industrial uses (typically M-1 and Mu-1 districts) instead of commercial uses (includes ORI). This will allow for structures over 80,000 sq. ft. in size to utilize precast concrete panels instead of using 20% brick.
  - f. Signage
    - 1. Permit off-site signage for businesses within the PUD to be placed on any approved ground or monument signs.
    - 2. Permit business names and logos to be placed on directional signage.
    - 3. Permit up to one ground sign per driveway/entrance into the development.
    - 4. Permit ground signs to be located as close as 5 feet from a property line.
  - g. A waiver from minimum parking requirements (Sec. VIII.A.10) to allow for the parking to be permitted as shown on the Final Site Plan Approvals.
  - h. Permit the parcel to be subdivided into a maximum of 3 developable lots with a Plat of Subdivision Approval and filing of appropriate covenants to establish a Property Owners Association (POA) to own an maintain common area property and shared development signage.
  - i. All bulk regulations related to the Village of Tinley Park emergency communication tower parcel.

#### Open Item #13: Discuss the overall proposed PUD documents.

#### FINAL PLAT APPROVAL

The proposed Plat of Subdivision will consolidate the two existing lots into one large lot at this time. A second lot will be subdivided off for the Village emergency communication tower site. Conservation and drainage easements are being placed over the detention pond and floodplain areas. Cross-access easements are being placed over main drive aisles. Utility and public walkway easements along Harlem Avenue and Vollmer Road. Because the Plat is not proposing any additional lots, the land cannot be sold separately until such time as they come back to resubdivide

the property. At that time additional requirements may be needed including the establishment of a Property Owners Association through recording of covenants and additional cross-access easements through all the of the properties. Since the developer will need to come back to resubdivide the lot with final approvals of future phases, and no portions of the lot can be sold separately until that time, staff does not have a concern with the proposal. If the developer would like to avoid resubdividing again in the future, a complete subdivision breaking out each parcel is required to be submitted along with completed CC&Rs that would establish an association if not under a single ownership.

#### Open Item #14: Review the proposed Plat of Subdivision for recommendation to the Village Board.

#### SUMMARY OF OPEN ITEMS

Staff identified the following open items for discussion at the workshop:

- 1. Discuss the proposed ORI zoning district and PUD approval for a larger, unique, and phased development.
- 2. Discuss and review the overall conceptual site plan and phasing.
- 3. Discuss the proposed 3'-4' landscape berm buffering the buildings, docks, and trailers from Harlem Avenue.
- 4. Discuss proposed watermain extension and utility improvements.
- 5. Discuss circulation within and external to the site overall and proposed with Phase 1.
- 6. Discuss the final site plan approval for Building 1.
- 7. Staff is recommending the site plan approval be conditioned upon final engineering review and approval.
- 8. Review overall proposed parking with an emphasis on the Final approval for building 1.
- 9. Review overall Landscape Plan including overall bufferyard proposals and final approval for Phase/Building 1.
- 10. Discuss staff recommendation for matching lighting fixture requirement throughout the PUD.
- 11. Review and discuss the proposed architecture of building 1 and need for any overall development standards.
- 12. Review signage locations and acceptability of not submitting a Unified Sign Plan.
- 13. Discuss the overall proposed PUD documents.
- 14. Review the Plat of Subdivision for recommendation to the Village Board.

#### STANDARDS FOR A SPECIAL USE

Section X.J.5. of the Zoning Ordinance lists standards that need to be considered by the Plan Commission. The Plan Commission is encouraged to consider these standards (listed below) when analyzing a Special Use request. Staff will provide draft Findings in the Staff Report for the Public Hearing.

It is also important to recognize that a Special Use Permit does not typically run with the land and instead the Special Use Permit is tied to the Petitioner. However, the exception to this rule is for Planned Unit Developments as outlined in Section X.J.6. of the Zoning Ordinance (Special Use – Not Covenant Running with the Land).

X.J.5. Standards: No Special Use shall be recommended by the Plan Commission unless said Commission shall find:

- a. That the establishment, maintenance, or operation of the Special Use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare;
- b. That the Special Use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood;
- c. That the establishment of the Special Use will not impede the normal and orderly development and improvement of surrounding property for uses permitted in the district;
- d. That adequate utilities, access roads, drainage, and/or other necessary facilities have been or are being provided;
- e. That adequate measures have been or will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public streets; and
- f. That the Special Use shall, in all other respects, conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the Village Board pursuant to the recommendation of the Plan Commission. The Village Board shall impose such conditions and restrictions upon the premises benefited by a Special Use Permit as may be necessary to ensure compliance with the above standards, to reduce or minimize the effect of such permit upon other properties in the neighborhood, and to better carry out the general intent of this Ordinance. Failure to comply with such conditions or restrictions shall constitute a violation of this Ordinance.
- g. The extent to which the Special Use contributes directly or indirectly to the economic development of the community as a whole.

#### STANDARDS AND CRITERIA FOR A PLANNED UNIT DEVELOPMENT

Section VII.C. of the Zoning Ordinance lists standards that need to be considered by the Plan Commission for a Planned Unit Development (PUD). The Plan Commission is encouraged to consider these standards (listed below) as well as the Applicant's responses (attached) when analyzing the PUD request. Staff has provided the following draft Findings for the Commission's review.

- A. The site of the proposed planned unit development is not less than five (5) acres in area, is under single ownership and/or unified control, and is suitable to be planned and developed, or redeveloped, as a unit and in a manner consistent with the purpose and intent of this Ordinance and with the Comprehensive Plan of the Village.
- B. The planned development will not substantially injure or damage the use, value and enjoyment of the surrounding property nor hinder or prevent the development of surrounding property in accordance with the land use plan of the Village.
- C. The uses permitted in the development are necessary or desirable and that the need for such uses has been clearly demonstrated.
- D. The proposed development will not impose an undue burden on public facilities and services, such as sewer and water systems, police and fire protection.
- E. The proposed development can be substantially completed within the period of time specified in the schedule of development submitted by the developer.
- F. The street system serving the planned development is adequate to carry the traffic that will be imposed upon the streets by the proposed development, and that the streets and driveways on the site of the planned development will be adequate to serve the residents or occupants of the proposed development.
- G. When a Planned Unit Development proposes the use of private streets, common driveways, private recreation facilities or common open space, the developer shall provide and submit as part of the application the method and arrangement whereby these private facilities shall be operated and maintained.
- H. The general development plan shall contain such proposed covenants, easements and other provisions relating to the bulk, location and density of residential buildings, non- residential uses and structures and public facilities as are necessary for the welfare of the planned development and the Village. All such covenants shall specifically provide for enforcement by the Village of Tinley Park in addition to the land owners within the development.
- I. The developer shall provide and record easements and covenants, and shall make such other arrangements as furnishing a performance bond, escrow deposit, or other financial guarantees as may be reasonably required to assure performance in accordance with the development plan and to protect the public interest in the event of abandonment of said plan before completion.
- J. Any exceptions or modifications of the zoning, subdivision, or other regulations that would otherwise be applicable to the site are warranted by the design of the proposed development plan, and the amenities incorporated in it, are consistent with the general interest of the public.

#### STANDARDS FOR SITE PLAN & ARCHITECTUAL APPROVAL

Section III.T.2. of the Zoning Ordinance requires that the conditions listed below must be met and reviewed for Site Plan approval. Specific findings are not required but all standards shall be considered to have been met upon review from the Plan Commission.

#### <u>Architectural</u>

- a. Building Materials: The size of the structure will dictate the required building materials (Section V.C. Supplementary District Regulations). Where tilt-up or pre-cast masonry walls (with face or thin brick inlay) are allowed vertical articulation, features are encouraged to mask the joint lines. Concrete panels must incorporate architectural finishes that comply with "Building Articulation" (Section III.U.5.h.) standards. Cast in place concrete may be used as an accent alternate building material (no greater than 15% per façade) provided there is sufficient articulation and detail to diminish it's the appearance if used on large, blank walls.
- b. Cohesive Building Design: Buildings must be built with approved materials and provide architectural interest on all sides of the structure. Whatever an architectural style is chosen, a consistent style of architectural composition and building materials are to be applied on all building facades.
- c. Compatible Architecture: All construction, whether it be new or part of an addition or renovation of an existing structure, must be compatible with the character of the site, adjacent structures and streetscape. Avoid architecture or building materials that significantly diverge from adjacent architecture. Maintain the rhythm of the block in terms of scale, massing and setback. Where a development includes outlots they shall be designed with compatible consistent architecture with the primary building(s). Site lighting, landscaping and architecture shall reflect a consistent design statement throughout the development.
- d. Color: Color choices shall consider the context of the surrounding area and shall not be used for purposes of "attention getting" or branding of the proposed use. Color choices shall be harmonious with the surrounding buildings; excessively bright or brilliant colors are to be avoided except to be used on a minor scale for accents.
- e. Sustainable architectural design: The overall design must meet the needs of the current use without compromising the ability of future uses. Do not let the current use dictate an architecture so unique that it limits its potential for other uses (i.e. Medieval Times).
- f. Defined Entry: Entrance shall be readily identifiable from public right-of-way or parking fields. The entry can be clearly defined by using unique architecture, a canopy, overhang or some other type of weather protection, some form of roof element or enhanced landscaping.
- g. Roof: For buildings 10,000 sf or less a pitched roof is required or a parapet that extends the full exterior of the building. For buildings with a continuous roof line of 100 feet of more, a change of at least five feet in height must be made for every 75 feet.
- h. Building Articulation: Large expanses of walls void of color, material or texture variation are to be avoided. The use of material and color changes, articulation of details around doors, windows, plate lines, the provision of architectural details such as "belly-bands" (decorative cladding that runs horizontally around the building), the use of recessed design elements, exposed expansion joints, reveals, change in texture, or other methods of visual relief are encouraged as a means to minimize the oppressiveness of large expanses of walls and break down the overall scale of the building into intermediate scaled parts. On commercial buildings, facades greater than 100 feet must include some form of articulation of the façade through the use of recesses or projections of at least 6 inches for at least 20% of the length of the façade. For industrial buildings efforts to break up the long façade shall be accomplished through a change in building material, color or vertical breaks of three feet or more every 250 feet.
- i. Screen Mechanicals: All mechanical devices shall be screened from all public views.

j. Trash Enclosures: Trash enclosures must be screened on three sides by a masonry wall consistent with the architecture and building material of the building it serves. Gates must be kept closed at all times and constructed of a durable material such as wood or steel. They shall not be located in the front or corner side yard and shall be set behind the front building façade.

#### <u>Site Design</u>

- a. Building/parking location: Buildings shall be located in a position of prominence with parking located to the rear or side of the main structure when possible. Parking areas shall be designed so as to provide continuous circulation avoiding dead-end parking aisles. Drive-through facilities shall be located to the rear or side of the structure and not dominate the aesthetics of the building. Architecture for canopies of drive-through areas shall be consistent with the architecture of the main structure.
- b. Loading Areas: Loading docks shall be located at the rear or side of buildings whenever possible and screened from view from public rights-of-way.
- c. Outdoor Storage: Outdoor storage areas shall be located at the rear of the site in accordance with Section III.O.1. (Open Storage). No open storage is allowed in front or corner side yards and are not permitted to occupy areas designated for parking, driveways or walkways.
- d. Interior Circulation: Shared parking and cross access easements are encouraged with adjacent properties of similar use. Where possible visitor/employee traffic shall be separate from truck or equipment traffic.
- e. Pedestrian Access: Public and interior sidewalks shall be provided to encourage pedestrian traffic. Bicycle use shall be encouraged by providing dedicated bikeways and parking. Where pedestrians or bicycles must cross vehicle pathways a cross walk shall be provided that is distinguished by a different pavement material or color.

#### RECOMMENDATION

Following a successful workshop, proceed to a Public Hearing at the June 3, 2021 Plan Commission meeting.



Village of Tinley Park Community Development Dept. 16250 S. Oak Park Ave. Tinley Park, IL 60477 708-444-5100

#### VILLAGE OF TINLEY PARK, ILLINOIS PLANNING AND ZONING GENERAL APPLICATION

#### **REQUEST INFORMATION**

\*Additional Information is Required for Specific Requests as Outlined in Specific Addendums

|              | Special Use for:   |
|--------------|--|
| $\checkmark$ | Planned Unit Development (PUD) Concept / Preliminary / Final Deviation   |
|              | Variation Residential Commercial for                                     |
| 1            | Annexation   |
| 1            | Rezoning (Map Amendment) From to to                                      |
| √            | Plat (Subdivision, Consolidation, Public Easement) 🗸 Preliminary 🗸 Final |
| √            | Site Plan  |
|              | Site Plan<br>Landscape Change Approval                                   |
|              | Other:   |

#### PROJECT & PROPERTY INFORMATION

| Project Name:              | Harlem Ave and Vollmer Road Industrial Development                                      |                           |                            |  |  |  |
|----------------------------|---|---------------------------|----------------------------|--|--|--|
| Project Description:       | Phased Construction of approximately 1,200,000 SF of Industrial with associated parking |                           |                            |  |  |  |
| Project Address:           | 19401 & 19601 Harlem Ave  | Property Index No. (PIN): | 31-07-103-001, 31-07-300-( |  |  |  |
| Zoning District:           | R4 in Unincorporated Cook Co.   | Lot Dimensions & Area:    | See ALTA Survey            |  |  |  |
| Estimated Project Cost: \$ |   |                           |                            |  |  |  |

#### OWNER OF RECORD INFORMATION

Please supply proper documentation of ownership and/or designated representative for any corporation.

| Name of Owner:  | Rick E. Heidner | Company:      | Harlem & Vollmer Holdings LLC |
|-----------------|-----------------|---------------|-------------------------------|
| Street Address: |                 | City, State 8 | & Zip:                        |
| E-Mail Address: |                 | Phone Num     | nber:                         |

#### **APPLICANT INFORMATION**

All correspondence and invoices will be sent to the applicant. If applicant is different than owner, "Authorized Representative Consent" section must be completed.

| Name of Applicant: <u>Chris Carlino</u> | Company: Scannell Properties |  |
|---|------------------------------|--|
| Relation To Project: Development Ass    | ociate                       |  |
| Street Address:                         | City, State & Zip:           |  |
| E-Mail Address:                         | Phone Number:                |  |



Village of Tinley Park Community Development Dept. 16250 S. Oak Park Ave. Tinley Park, IL 60477 708-444-5100

quest. I agree to

clearly) to act on the hehalf and advise that they have full authority

#### VILLAGE OF TINLEY PARK, ILLINOIS

PLANNING AND ZONING GENERAL APPLICATION

#### Authorized Representative Consent

It is required that the property owner or his designated representative be present at all requests made to the Plan Commission and Zoning Board of Appeals. During the course of a meeting, questions may arise regarding the overall project, the property, property improvements, special conditions attached to recommendations among other aspects of any formal request. The representative present must have knowledge of the property and all aspects of the project. They must have the authority to make commitments related to the project and property. Failure to have the property owner or designated representative present at the public meeting can lead to substantial delays to the project approval. If the owner cannet be present or does not wish to speak at the public meeting, the following statement must be signed by the owner for an authorized kepetitive.

I hereby authorize Scannell Properties

to act as my/our representative in reg be bound by all terms and agreements

Property Owner Signature:

Property Owner Name (Print):

#### Acknowledgements

- Applicant acknowledges, understands and agrees that under Illinois law, the Village President (Mayor), Village Trustees, Village Manager, Corporation Counsel and/or any employee or agent of the Village or any Planning and Zoning Commission member or Chair, does not have the authority to bind or obligate the Village in any way and therefore cannot bind or obligate the Village. Further, Applicant acknowledges, understands and agrees that only formal action (including, but not limited to, motions, resolutions, and ordinances) by the Board of Trustees, properly voting in an open meeting, can obligate the Village or confer any rights or entitlement on the applicant, legal, equitable, or otherwise.
- Members of the Plan Commission, Zoning Board of Appeals, Village Board as well as Village Staff may conduct inspections • of subject site(s) as part of the pre-hearing and fact finding review of requests. These individuals are given permission to inspect the property in regards to the request being made.
- Required public notice signs will be obtained and installed by the Petitioner on their property for a minimum of 10 days • prior to the public hearing. These may be provided by the Village or may need to be produced by the petitioner.
- The request is accompanied by all addendums and required additional information and all applicable fees are paid before ٠ scheduling any public meetings or hearings.
- Applicant verifies that all outstanding fees and monies owed to the Village of Tinley Park have been paid. .

Rich E Herdner Prodat

Any applicable recapture, impact, engineering, contracted review or other required fees and donations shall be paid prior . to issuance of any building permits, occupancy permits, or business licenses.

| <ul> <li>The Owner and Applica<br/>documentation is true a</li> </ul> |  | dendums and |
|---|--|-------------|
| Property Owner Signature:   |  |             |
| Property Owner Name (Print):  | Rich E. Herdner - President  |             |
| Applicant Signature:<br>(If other than Owner)                         | Christopher Carlino<br>Christopher Christopher Christopher Carlino<br>Christopher Christopher Christopher Carlino<br>Christopher Christopher Chr |             |
| Applicant's Name (Print):   | Chris Carlino  |             |
| Date:   | 3/29/2021  |             |
|   |  | 210.250     |



Village of Tinley Park Community Development Dept. 16250 S. Oak Park Ave. Tinley Park, IL 60477 708-444-5100

#### VILLAGE OF TINLEY PARK, ILLINOIS ANNEXATION ADDENDUM

#### APPLICATION & SUBMITTAL REQUIREMENTS

A complete application consists of the following items submitted in a comprehensive package. If materials are submitted separately or are incomplete they will not be accepted and may delay the review and hearing dates until a complete application package is received. The following information is being provided in order to assist applicants with the process of requesting **Annexation into the Village of Tinley Park** from the terms of the Zoning and Subdivision Ordinances. This information is a summary of the application submittal requirements and may be modified based upon the particular nature and scope of the specific request.

Depending upon meeting schedules, legal notification requirements, and the specific type and scope of the request, this process generally takes between 45 to 60 days from the date of submission of a complete application package. Additional time may be required for drafting and review of an Annexation Agreement.

Schedule a pre-application meeting with Planning Department staff to review the feasibility of the proposal, discuss applicable Ordinance requirements, receive preliminary feedback, and describe submittal requirements and any applicable fees, donations, and recaptures.

General Application form is complete and is signed by all property owner(s) and applicant (if applicable). Include all engineering and surveyor contact information.

Signed and notarized annexation petition (attached).

Ownership documentation is submitted for all affected properties indicating proper ownership through a title report or title policy. If a corporation or partnership, documentation of the authorized agent must be supplied as well. All beneficiaries of a property must be disclosed.

A written project narrative detailing the general nature and specific aspects of the proposal being requested. Details on any existing and proposed uses or buildings should be described in detail. Requested zoning district (annexations automatically come in under R1 Zoning District) and describe the need for such a zoning district and how it relates to the Village's Comprehensive Plan. Any additional requests such as rezoning, site plan approval, variations, waivers or incentives should be indicated in the narrative as well.

A Plat of Annexation for the property that is prepared by a register land surveyor and has all upto-date structures and property improvements indicated.

Site Plans, engineering, plat and other information indicating existing and proposed grading, utilities, and structures on the site.

Hearing fees differ based upon the size of the parcel being requested(\$750 <1 acre, 1500 1-5 acres, \$3000 >5 acres) request and the need for engineering and legal fees, as well as specific recaptures, school/parks donations, impact fees, or other applicable payments required prior to annexation. A fee total for review will be provided upon a complete submittal and a final fee total will be presented prior to scheduling a public hearing.

#### PETITION REQUESTING ANNEXATION TO THE VILLAGE OF TINLEY PARK, ILLINOIS

#### TO: THE VILLAGE CLERK, VILLAGE OF TINLEY PARK, ILLINOIS

We, the undersigned Petitioner(s), owner(s) of record of all the land herein requested to be annexed, respectfully represent that all the conditions required for annexation to the Village of Tinley Park, pursuant to and in accordance with Chapter 65, Illinois Compiled Statutes, Act 5, Illinois Municipal Code, Article 7, Division 1, Section 8 (65 ILCS 5/7-1-8) do hereby exist, to wit:

1. That the territory requested to be annexed is legally described as follows (include tax identification number):

#### See Plat

- 2. That the described territory is not within the corporate limits of any municipality, but is contiguous to the Village of Tinley Park, a municipality organized and existing under the laws of the State of Illinois.
- 3. That a Plat of Annexation showing the described territory is attached hereto and made a part of this Petition.
- 4. That this petition is signed by the owners of record of all land in the described territory.
- 5. That one of the following statements is true:

That this petition is signed by all the electors residing in the described territory. (Property has a home built on it) That there are no electors residing in the described territory. (Property is vacant)

**WHEREFORE,** your Petitioners respectfully request the Corporate Authorities of the Village of Tinley Park to annex the above described territory to the Village of Tinley Park.  $\frown$ 

| ·                                       |                                       |  |   |
|---|---------------------------------------|--|---|
| PRINTED NAME(S) of OWNER(S)             |                                       |  | ADDRESS                                 |
| Rick E. Heidner                         |                                       | <u>v v v · · · · · · · · · · · · · · · · ·</u> |   |
|   | γ-                                    |  |   |
|   |                                       |  |   |
|   |                                       |  |   |
|   |                                       |  |   |
|   |                                       |  |   |
| I, Rick E. Heidner                      | (pointed name of in                   | dividual signing oath)                         | do hereby state under oath              |
| that I am one of the Petit              |                                       | n, that I h                                    | have read the same, and that            |
| the facts stated in such Pe             |                                       |  |   |
|   |                                       |  |   |
| Petitioner Signature:                   |                                       |  |   |
|   |                                       |  |   |
| To Be Completed by a Notary Public:     |                                       |  | ,                                       |
| Subscribed and sworn to before me this3 | 2 day of                              | , 20 <b>2</b>                                  | -/                                      |
|   |                                       |  | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |
|   | <u>د</u> ا                            | OFFICIAL SEAL<br>RISTOPHER J GOLUBA            | \$                                      |
|   |                                       | RY PUBLIC - STATE OF ILLINOIS                  | s <b>8</b>                              |
| Notary Public                           |                                       | OMMISSION EXPIRES:03/13/25                     |   |
|   | · · · · · · · · · · · · · · · · · · · | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~        |   |
| Updated 2/3/2020                        |                                       |  | ∠   Page                                |



Village of Tinley Park Community Development Dept. 16250 S. Oak Park Ave. Tinley Park, IL 60477 708-444-5100

## VILLAGE OF TINLEY PARK, ILLINOIS REZONING (MAP AMENDMENT) ADDENDUM

## **APPLICATION & SUBMITTAL REQUIREMENTS**

A complete application consists of the following items submitted in a comprehensive package. If materials are submitted separately or are incomplete they may not be accepted and may delay the review and meeting dates until a complete application package is received. The following information is being provided in order to assist applicants with the process of requesting a **Map Amendment for Rezoning** from the terms of the Zoning Ordinance. This information is a summary of the application submittal requirements and may be modified based upon the particular nature and scope of the specific request.

Depending upon meeting schedules, legal notification requirements, and the specific type and scope of the request, this process generally takes between 45 to 60 days from the date of submission of a complete application package. Please schedule a pre-application meeting with Planning Department staff to review the feasibility of the proposal, discuss applicable Ordinance requirements, discuss submittal requirements, and receive some preliminary feedback on any concept ideas or plans prior to making a submittal.

General Application form is complete and is signed by the property owner(s) and applicant (if applicable).

□Ownership documentation is submitted indicating proper ownership through a title report or title policy. If a corporation or partnership, documentation of the authorized agent must be supplied as well. All beneficiaries of a property must be disclosed.

□Response to LaSalle Factors/Criteria listed below.

□A written project narrative detailing the general nature and specific aspects of the proposal being requested. Details should include the existing zoning designation, the proposed designation and the intended future use and function of the site. The narrative should describe how the rezoning conforms to the Village's Comprehensive Plan as well as how it works with adjacent and nearby existing and proposed land uses. Any additional requests such as a Site Plan approval, Special Use permit or Variation should be indicated in the narrative as well.

□ A Plat of Survey of the property, including the legal description, that is prepared by a register land surveyor and has all up-to-date structures and property improvements indicated.

□ It is standard practice and policy that zoning is not changed without specific plans for development that can be attached to the zoning change. Site Plan or interior layout plans that indicate how the property and site will be utilized and developed should be submitted and it is likely site plan approval will be required at the same time.

□\$750 Map Amendment/Rezoning hearing fee.

## LASALLE FACTORS/CRITERIA FOR REZONING (MAP AMENDMENT)

The Zoning Code does not establish any specific criteria that must be met in order for the Village Board to approve a rezoning request. Likewise, Illinois Statutes does not provide any specific criteria. Historically, Illinois courts have used eight factors enunciated in two court cases, LaSalle Bank of Chicago v. Count of Cook (1957) and Sinclair Pipeline v. Village of Richton Park (1960), when evaluating the validity of zoning changes. The so-called "LaSalle factors" are listed below. Village staff and officials will take these factors into consideration when evaluating and deciding rezoning requests. The petitioner should prepare their own responses to the "LaSalle Factors" with factual evidence to defend the requested rezoning. If additional space is required, you may provide the responses on a separate document or page.

## A. The existing uses and zoning of nearby property;

## B. The extent to which property values are diminished by the particular zoning;

There is no anticipated diminishing of property values. Due to strong improvements on the property, values would be expected to increase.

C. The extent to which the destruction of property values of the complaining party benefits the health, safety, or general welfare of the public;

## D. The relative gain to the public as compared to the hardship imposed on the individual property owner;

The gain to the public will be an improvement of the property. Further this may raise nearby property values. The commercial tax revenue and employment opportunities these properties will bring are a great asset to the community.

## E. The suitability of the property for the zoned purpose;

The property is well suited for the intended use. It is properly buffered from adjacent properties and provides sufficient space to allow for the build as well as future tenant's uses. With access to major roadways it also makes this location ideal.

## F. The length of time the property has been vacant as zoned, compared to development in the vicinity of the property;

Residential property has been vacated and abandoned but the land is currently under an agriculture lease and is being farmed. There is an agreement in place with the farmer.

## G. The public need for the proposed use; and

The public need for the proposed use is two-fold. There has been a continual and increasing demand for industrial and logistics uses in the Chicagoland area. Through these potential uses there will be an increase in jobs and employment as well an improvement of the land and landscaping.

## H. The thoroughness with which the municipality has planned and zoned its land use.

Applicant has continually met with the municipality and has made adjustments pertaining to the municipality's requests. Further Applicant is devoted to working with the municipality closes to maintain its standards.



Village of Tinley Park Community Development Dept. 16250 S. Oak Park Ave. Tinley Park, IL 60477 708-444-5100

## VILLAGE OF TINLEY PARK, ILLINOIS PLANNED UNIT DEVELOPMENT (PUD) ADDENDUM

## **APPLICATION & SUBMITTAL REQUIREMENTS**

The following information is being provided in order to assist applicants with the submission of **Planned Unit Development (PUD)** plans and support documentation for staff review prior to placement on a Plan Commission agenda or meeting. A complete application consists of the following items submitted in a comprehensive package. If materials are submitted separately or are incomplete, it may delay and review or hearing of the materials until a complete application package is received. Submittal requirements may be modified based upon the particular nature and scope of the specific request.

Section VII of the Zoning Code details the purpose, procedures, submittal requirements and standards that must be met to receive different levels of approval for a Planned Unit Development (PUD). Please schedule a pre-application meeting with Planning Department staff to review the feasibility of the proposal, discuss applicable Ordinance requirements, discuss submittal requirements and receive some preliminary feedback on concept plans prior to making a submittal.

□ Schedule a pre-application meeting with Planning Department staff to review the feasibility of the proposal, discuss applicable Ordinance requirements, and explain the difference between concept, preliminary and final approval.

 $\Box$  General Application form is complete and is signed by the property owner(s) and applicant (if applicable).

Ownership documentation is submitted indicating proper ownership through a title report or title policy. If a corporation or partnership, documentation of the authorized agent must be supplied. All beneficiaries of a property must be disclosed.

□ A written project narrative detailing the general nature and specific aspects of the proposal being requested. Details on all existing and proposed uses, densities, expected traffic, differences from existing zoning code allowances, the general nature of the development and how the resulting code flexibility will benefit the Village.

□ Preliminary/Final plans in conjunction with the Site Plan checklist (site plan, landscaping, engineering, etc.) and Plat of Subdivision of the property that is prepared by a register land surveyor and has all up-to-date structures and property improvements indicated.

 $\Box$  Site Plan or interior layout plans that indicate how the property and site will be utilized.

□ Responses to all Standards and Criteria for Planned Unit Developments (PUDs) on the following page (can be submitted along with the narrative, but all standards must be covered).

□ Additional PUD standard responses based on if the PUD is residential, commercial, or industrial. Please respond to the appropriate PUD standards and criteria in section 7-C of the zoning code on a separate page.

 $\Box$  \$500 PUD Special Use Hearing fee.

## STANDARDS AND CRITERIA FOR PLANNED UNIT DEVELOPMENTS (PUD)

Section VII.C of the Village of Tinley Park Zoning Ordinance establishes standards and criteria for all Planned Developments. In order for a Planned Unit Development to be approved, the Petitioner must respond to and confirm each of the following general provisions by indicating the facts supporting such findings. If a general provision cannot be met, please state the reason and indicate if a variation will be requested for that item. In order to thoroughly respond to the following items, please label and answer each question on a separate page and attach additional pages as necessary. Please provide factual evidence that the proposed Planned Unit Development (PUD) meets the statements below. If additional space is needed, you may provide the responses on a separate document or page.

A. The site of the proposed planned unit development is not less than five (5) acres in area, is under single ownership and/or unified control, and is suitable to be planned and developed, or redeveloped, as a unit and in a manner consistent with the purpose and intent of this Ordinance and with the Comprehensive Plan of the Village.

The site of the proposed PUD, as per its ALTA survey is significantly larger than 5 acres. The proposed PUD is under single ownership and is suitable to be planned and developed for the intended purpose according to the criteria proposed by the ordinance and the Village's Comprehensive Plan

# B. The planned development will not substantially injure or damage the use, value and enjoyment of the surrounding property nor hinder or prevent the development of surrounding property in accordance with the land use plan of the Village.

The PUD will not substantially injure or damage the use and enjoyment of neighboring properties. It will likely increase the values of neighboring properties due to the improvements upon the land. Further it will likely generate an increase in tax revenues to the area and therefore helping bring money to the community. The PUD will not affect other properties' uses of their own properties. because it will be decently buffered from other adjacent lots. Further PUD will follow applicable Village ordinances and regulations.

## C. The uses permitted in the development are necessary or desirable and that the need for such uses has been clearly demonstrated.

The PUD is both necessary and desirable for many reasons. There has been a continual and increasing demand for industrial and logistics uses in the Chicagoland area, particularly in light of the past year. This PUD will provide an increase in jobs and employment as well an improvement of the land and landscaping.

D. The proposed development will not impose an undue burden on public facilities and services, such as sewer and water systems, police and fire protection.

The proposed development will not impose any undue burden on public facilities and services. This has been confirmed as so by Village of Tinley Park.

E. The proposed development can be substantially completed within the period of time specified in the schedule of development submitted by the developer.

F. The street system serving the planned development is adequate to carry the traffic that will be imposed upon the streets by the proposed development, and that the streets and driveways on the site of the planned development will be adequate to serve the residents or occupants of the proposed development.

The street is more than adequate to handle future tenants and the development of the PUD. Further there will be an installation of a light that will further help conduct traffic in a proper manner. A traffic impact study has been provided for reference. Information has further been verified by the traffic engineer.

G. When a Planned Unit Development proposes the use of private streets, common driveways, private recreation facilities or common open space, the developer shall provide and submit as part of the application the method and arrangement whereby these private facilities shall be operated and maintained.

H. The general development plan shall contain such proposed covenants, easements and other provisions relating to the bulk, location and density of residential buildings, non-residential uses and structures and public facilities as are necessary for the welfare of the planned development and the Village. All such covenants shall specifically provide for enforcement by the Village of Tinley Park in addition to the land owners within the development.

I. The developer shall provide and record easements and covenants, and shall make such other arrangements as furnishing a performance bond, escrow deposit, or other financial guarantees as may be reasonably required to assure performance in accordance with the development plan and to protect the public interest in the event of abandonment of said plan before completion.

J. Any exceptions or modifications of the zoning, subdivision, or other regulations that would otherwise be applicable to the site are warranted by the design of the proposed development plan, and the amenities incorporated in it, are consistent with the general interest of the public.

Developer affirms the above and will work with Village staff to identify any exceptions and modifications that it may require to maintain the public's general interest.

## THE LAW OFFICES OF LISTON & TSANTILIS A PROFESSIONAL CORPORATION



## 33 NORTH LASALLE STREET, 28TH FLOOR CHICAGO, ILLINOIS 60602 BRIAN P. LISTON (312) 580-1594 PETER TSANTILIS (312) 604-3808 FACSIMILE (312) 580-1592

March 31, 2021

Via Email Village of Tinley Park ATTN: Kimberly Clarke 16250 S. Oak Park Avenue Tinley Park, IL 60477

RE:

Harlem and Vollmer Industrial Development **Scannell Properties, LLC** 19401-19601 South Harlem Avenue PINs: 31-07-300-001-0000/31-07-103-001-0000

## PROJECT NARRATIVE

Dear Kimberly,

Scannell Properties, LLC (the "Applicant") is a real estate development and investment company that focuses on build-to-suit and speculative development projects throughout the United States, Canada and Europe. They have been in business for over 30 years and offer experience, a history of successful development projects, broad geographic reach and expertise in a wide range of building types. Applicant is requesting a resolution from the Village of Tinley Park supporting and consenting to their requests made within their general application, site plan addendum, annexation addendum, plat addendum, rezoning addendum, and planned unit development addendum.

Applicant is proposing the development of three light-industrial facilities and associated infrastructure at the northeast corner of Harlem Avenue (IL Route 43) and Vollmer Road located at 19401-19601 South Harlem Avenue in within an unincorporated Cook County with permanent index numbers of 31-07-300-001-0000 and 31-07-103-001-0000. The 110.94 acre property, made up of 2 parcels in unincorporated Cook County, is primarily open green space with a few residential structures. Currently the structures are vacant and abandoned and the land has been used for farming. The property sits contiguous to Tinley Park, therefore Applicant proposes to annex the entire property into the Village of Tinley Park corporate limits. Currently, the property is zoned R4 Single-Family Residence and Applicant's PUD proposal is to rezone to an ORI zoning district.

Applicant further proposes to provide access to the site at three separate locations along Harlem Avenue and one location along Vollmer Road. Per the plans, the access on Harlem Ave that would align with Benton Drive would modify the existing traffic signal to include a fourth "leg" of the intersection. An un-signalized full access is proposed across from 195th Street, and a third 'right-in/right-out' access is proposed north of that. The singular access proposed on Vollmer Road would align with the signalized access permitted by the distribution facility across Vollmer Road and currently under construction in

Matteson. There has been a traffic study conducted pertaining to these changes as well as the project as a whole that can affirm.

The first phase of the project would include all accesses along Harlem Avenue, access along Vollmer Road, the frontage drive between Benton Drive and 195<sup>th</sup> Street, Building 1 and parking, the detention basins, water main connection along the site's frontage, pedestrian path along Harlem Avenue frontage, utility services for Building 1, and floodplain compensatory storage grading. Future phases would include buildings to the south of the Building 1 site, parking, and utility service extensions to serve future buildings. Applicant understands additional permits will be required from Tinley Park and outside jurisdictional governing entities prior to starting construction.

Applicant is dedicated to providing an aesthetic in line with those of the Village's ordinances and will greatly improve the look of the property from its current state. Applicant has a proposed landscape plan that takes into mind adding landscaping as a means to screen the property as well as creating an appealing visual to neighbors and passersby. Applicant has also taken other measures to make sure they are conscious of their neighbors and other nearby properties.

The Village of Tinley Park has requested an area to be provided for a radio tower near the proposed southeastern detention basin. Applicant agrees to this and will provide the cross-access to Tinley Park to further operate and maintain the radio tower. The Village will construct the radio tower itself.

Applicant will also be requesting a Class 8 Tax Incentive for the subject property. Without such an incentive it will be difficult to go forward with the project as designed per these proposals.

Applicant's proposed project is a substantial investment into Tinley Park as a community but also its economy. With the proper incentives and approvals by the village, the Applicant will be able to construct and occupy a property that has otherwise been vacant, abandoned and not used to its fullest potential. Applicant's proposal will bring an increase of employment to the area. Not only that but those employees will then boost the economy through frequenting the Village's nearby restaurants, gas stations, banks, stores, and other businesses. Further the development will generate additional revenue to the Village and also increase tax dollars.

Based on the foregoing the Applicant requests that the Village of Tinley Park review and consent to Applicant's requests and approve a Resolution supporting such. Should there be any questions or requests for documents, please do not hesitate to contact me at (312) 604-3891.

Sincerely,

Monica Shamass

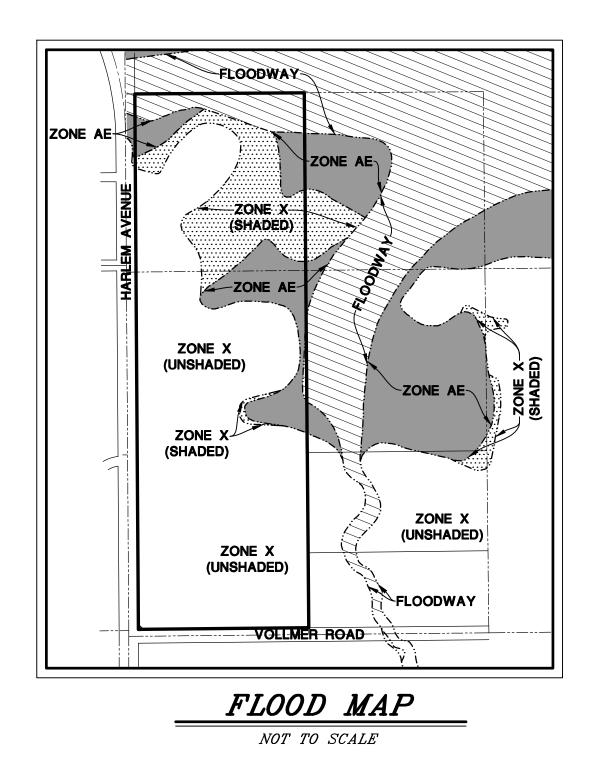


# TITLE NOTES

FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NO. NCS-1041259-CHI2 WITH AN EFFECTIVE DATE OF NOVEMBER 20, 2020 HAS BEEN REVIEWED IN CONJUNCTION WITH THE PREPARATION OF THIS SURVEY. THIS SURVEY MAY NOT REFLECT MATTERS OF TITLE THAT MAY BENEFIT OR BURDEN THE PROPERTY UNLESS THEY ARE EVIDENT FROM THE FIELD SURVEY OR THEY ARE CONTAINED IN THE ABOVE TITLE COMMITMENT. THE FOLLOWING NOTES ARE RELATED TO CERTAIN TITLE EXCEPTIONS CONTAINED IN THE ABOVE COMMITMENT.

# INDEX TO SCHEDULE B

| SCHEDULE B PART II EXCEPTION TABLE |  |  |                            |                                 |  |
|------------------------------------|--|--|----------------------------|---------------------------------|--|
| EXCEPTION<br>NUMBER                | DOCUMENT<br>NUMBER   | DESCRIPTION  | PLOTTABLE                  | NOTATION                        |  |
| PART 1-1                           | N/A  | RIGHTS OR CLAIMS OF PARTIES IN POSSESSION  | NO                         | NOT ADDRESSED BY<br>SURVEY      |  |
| PART 1-2                           | N/A  | EASEMENTS NOT SHOWN BY PUBLIC RECORDS  | NO                         | IMPROVEMENTS SHOWN<br>ON SURVEY |  |
| PART 1-3                           | N/A  | MATTERS DISCLOSED BY AN ACCURATE SURVEY  | YES                        | IMPROVEMENTS SHOWN<br>ON SURVEY |  |
| PART 1-4                           | N/A  | ANY LIEN FOR SERVICES, LABOR OR MATERIAL   | NO                         | NOT ADDRESSED BY<br>SURVEY      |  |
| PART 1-5                           | N/A  | TAXES OR SPECIAL ASSESSMENTS   | NO                         | NOT ADDRESSED BY<br>SURVEY      |  |
| PART1-6                            | N/A  | DEFECTS, LIENS. ENCOMBERANCES OR ADVERSE<br>CLAIMS AFTER DATE OF COMMITMENT          | NO                         | NOT ADDRESSED BY<br>SURVEY      |  |
| PART 2-1                           | N/A  | 2020 PROPERTY TAXES FOR PIN: 31-07-103-001-0000                                      | NO                         | NOT ADDRESSED BY<br>SURVEY      |  |
| PART 2-2                           | N/A  | 2020 PROPERTY TAXES FOR PIN: 31-07-300-001-0000                                      | NO                         | NOT ADDRESSED BY<br>SURVEY      |  |
| PART 2-3                           | 17889126   | TERMS, CONDITIONS AND PROVISIONS OF THE<br>RIGHT-OF-WAY AGREEMENT FOR A PIPE LINE    | YES                        | SHOWN ON SURVEY                 |  |
| PART 2-3                           | 17968889   | GRANT OF EASEMENT  | UNKNOWN                    | UNKNOWN                         |  |
| PART 2-3                           | 20862338   | ASSIGNMENT OF PIPELINE   | NO                         | UNKNOWN                         |  |
| PART 2-4                           | 925944030  | TERMS, CONDITIONS AND PROVISIONS OF THE<br>RIGHT-OF-WAY PLAT                         | NO                         | NO EASEMENTS GRANTED            |  |
| PART 2-5                           | N/A  | RIGHTS OF THE PUBLIC, STATE AND MUNICIPALITY FOR<br>ANY PART TAKEN FOR ROAD PURPOSES | NO                         | IMPROVEMENTS SHOWN<br>ON SURVEY |  |
| PART 2-6                           | N/A  | EVIDENCE OF AN UNRECORDED EASEMENT AS NOTED<br>ON PRIOR SURVEY                       | NO                         | IMPROVEMENTS SHOWN<br>ON SURVEY |  |
| PART 2-7                           | N/A  | RIGHT-OF-WAY FOR DRAINAGE TILES, DITCHES, FEEDERS<br>AND LATERALS, IF ANY            | NO                         | IMPROVEMENTS SHOWN<br>ON SURVEY |  |
| PART 2-8                           | 8 N/A CLAIMS FOR THE THE PERISHABLE AGRICULTURAL NO NOT ADDRESSED COMMODITIES ACT OR PACKERS AND STOCKYARD ACT NO SURVEY |  | NOT ADDRESSED BY<br>SURVEY |                                 |  |
| PART 2-9                           | N/A  | EXISTING UNRECORDED LEASESS  | NO                         | NOT ADDRESSED BY<br>SURVEY      |  |

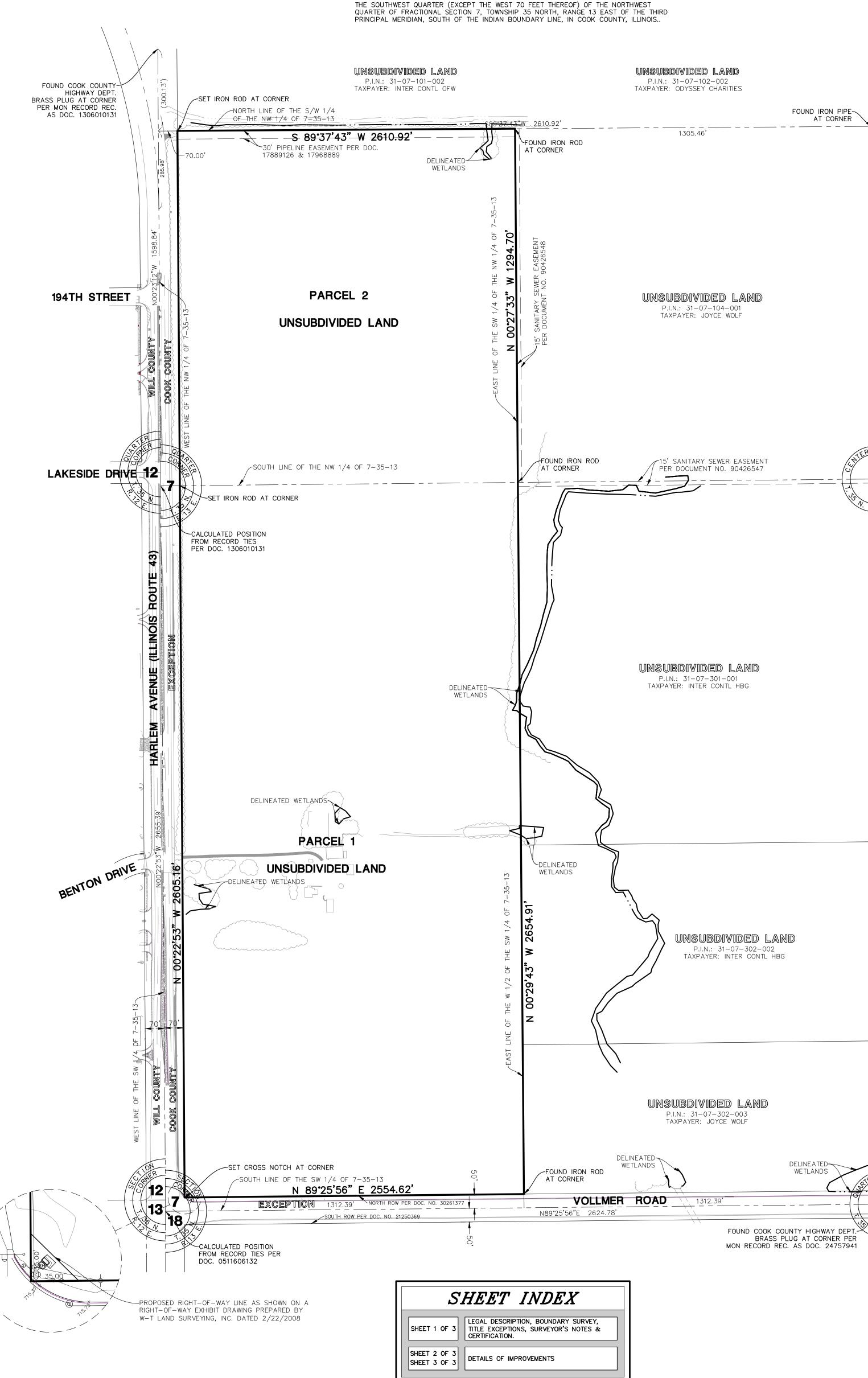


# FLOOD HAZARD NOTE:

THE FEDERAL EMERGENCY MANAGEMENT AGENCY FIRM COMMUNITY PANEL NUMBERS 17031C0718J AND 17031C0716J BOTH WITH AN EFFECTIVE DATE OF JANUARY 19, 2008 INDICATES THAT THE ABOVE DESCRIBED PROPERTY LIES WITHIN AREAS DESIGNATED AS ZONE X (UNSHADED), ZONE X (SHADED), ZONE AE AND FLOODWAY AREAS IN ZONE AE. ZONE X (UNSHADED) IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN, ZONE X (SHADED) IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR DRAINAGE AREAS LESS THAN 1 SQUARE MILE. ZONE AE AND FLOODWAY AREAS IN ZONE AE ARE DEFINED AS SPECIAL FLOOD HAZARD AREAS AND IS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD WITH BASEFLOOD ELEVATIONS DETERMINED. THE FLOODWAY IS THE CHANNEL OF A STREAM PLUS ANY ADJACENT FLOODPLAIN AREAS THAT MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS THIS MAP DOES NOT NECESSARILY SHOW ALL AREAS SUBJECT TO FLOODING IN THE COMMUNITY OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. THIS DOES NOT GUARANTEE THAT THE SURVEYED PROPERTY WILL OR WILL NOT FLOOD. APPROXIMATE LOCATIONS OF FLOOD ZONES HAVE BEEN SHOWN HEREON BASED ON THE INTERPOLATION AND SCALING OF THE CURRENT FLOOD INSURANCE RATE MAPS.

# WETLAND LOCATION NOTE:

EXISTING WETLANDS LOCATED ON THE SURVEYED PROPERTY HAVE BEEN SHOWN HEREON BASED ON THE FIELD LOCATION OF WETLAND MARKERS STAKED BY GARY R. WEBER ASSOCIATES, INC. OCTOBER OF 2020, JANUARY 21, 2021 AND MARCH 30, 2021. A FORMAL WETLAND DELINEATION REPORT AND/OR FORMAL APPROVAL OF THE WETLAND BOUNDARIES IS NOT PROVIDED AS PART OF THIS SURVEY.

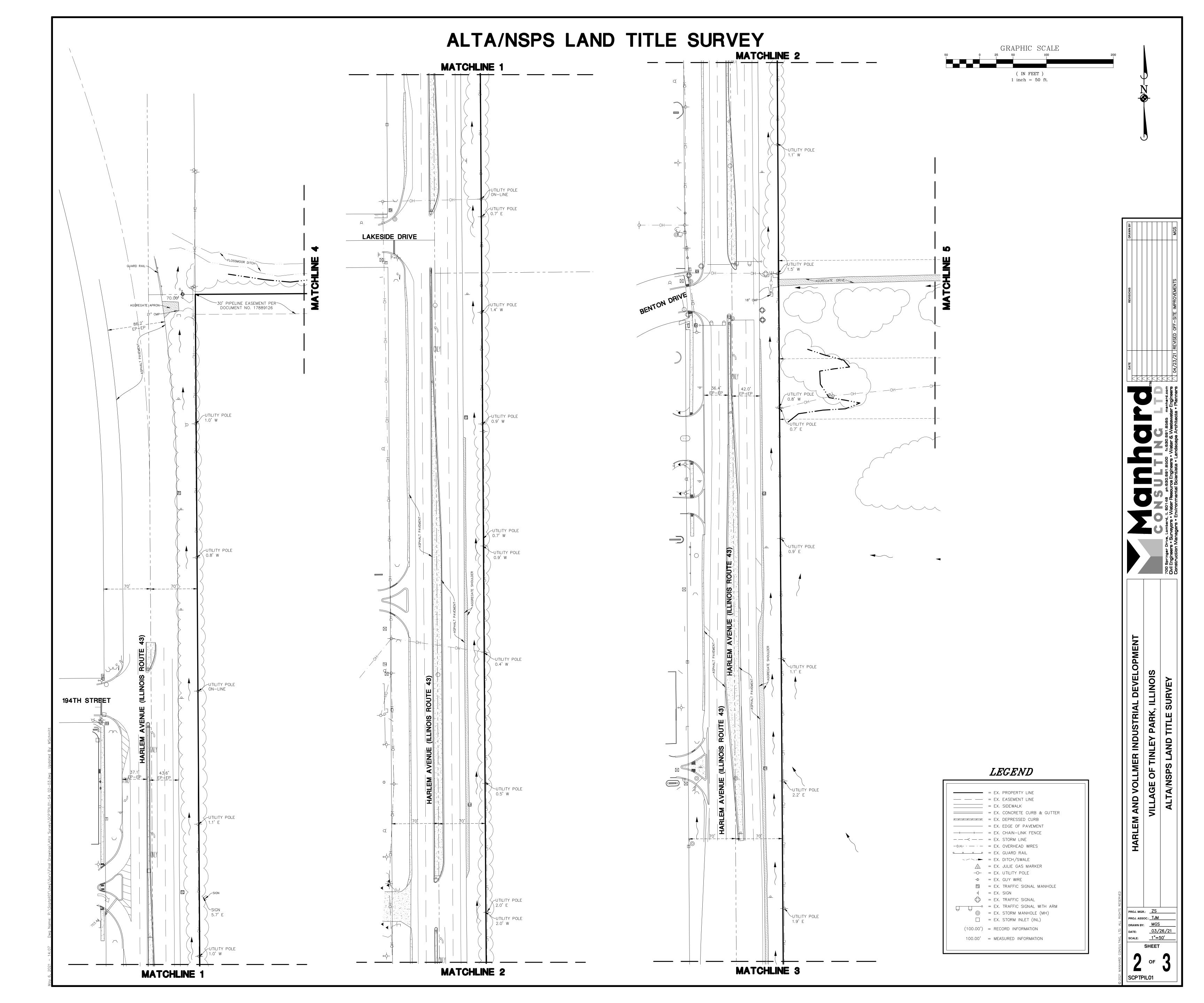


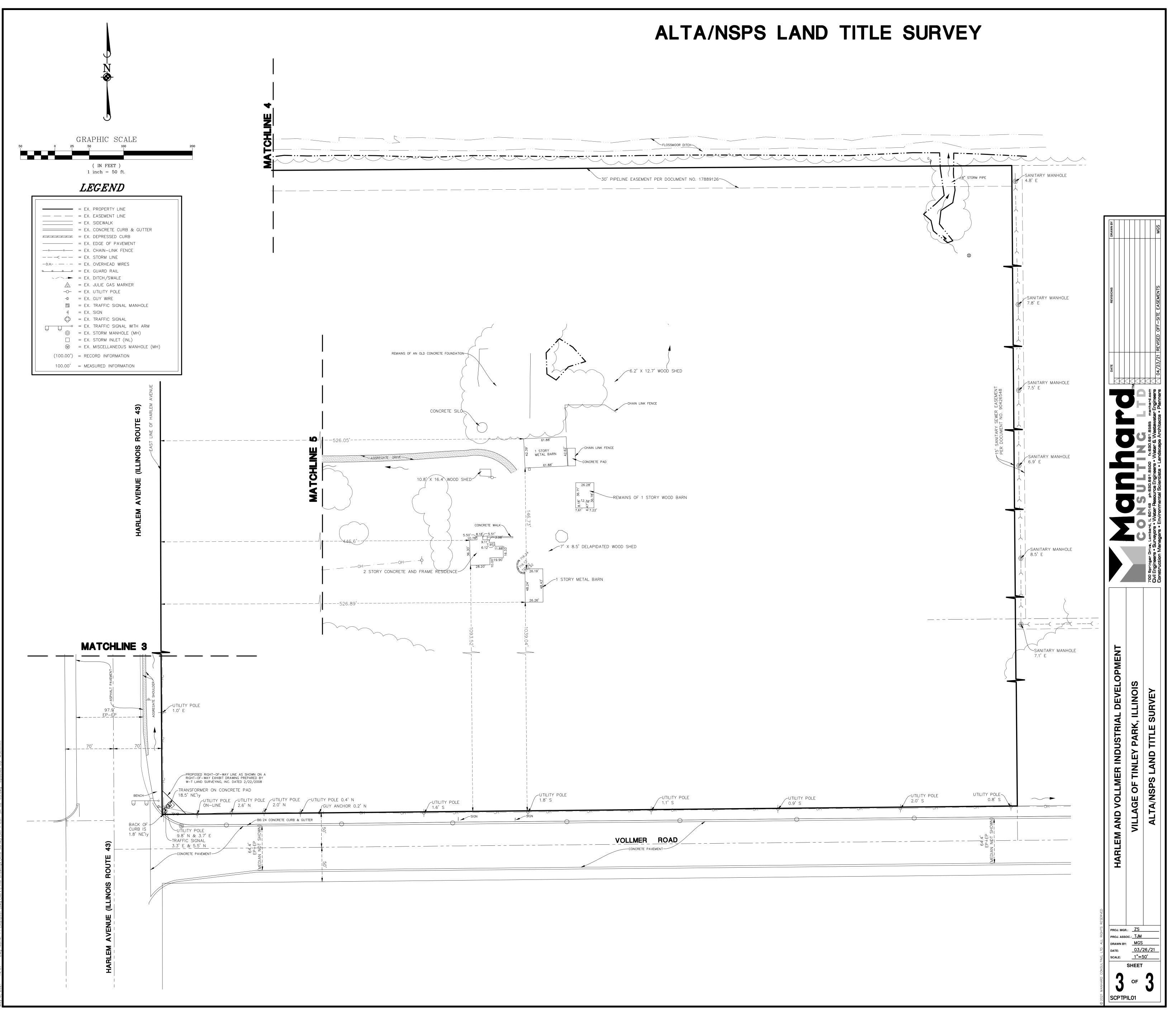
# ALTA/NSPS LAND TITLE SURVEY

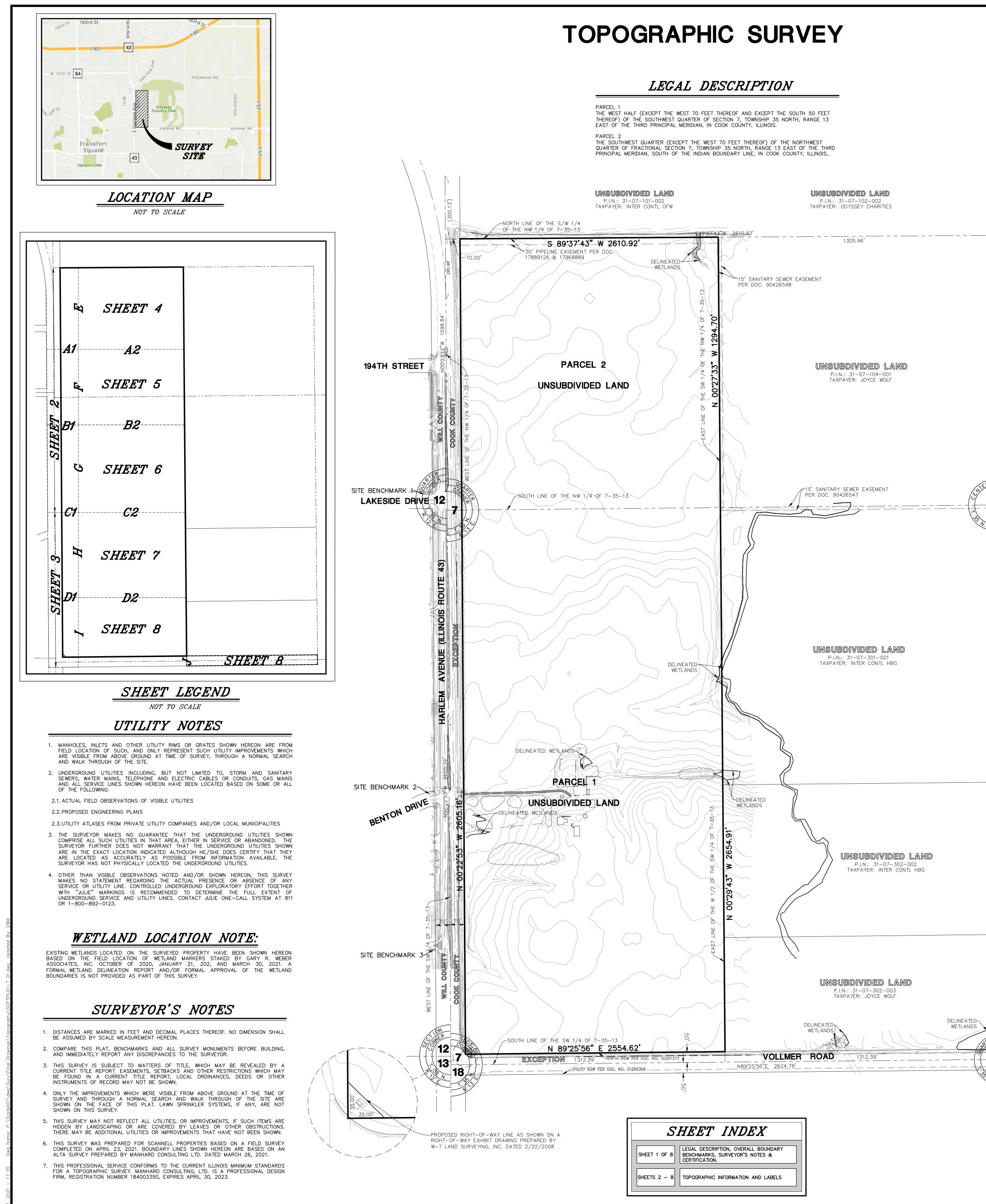
# LEGAL DESCRIPTION

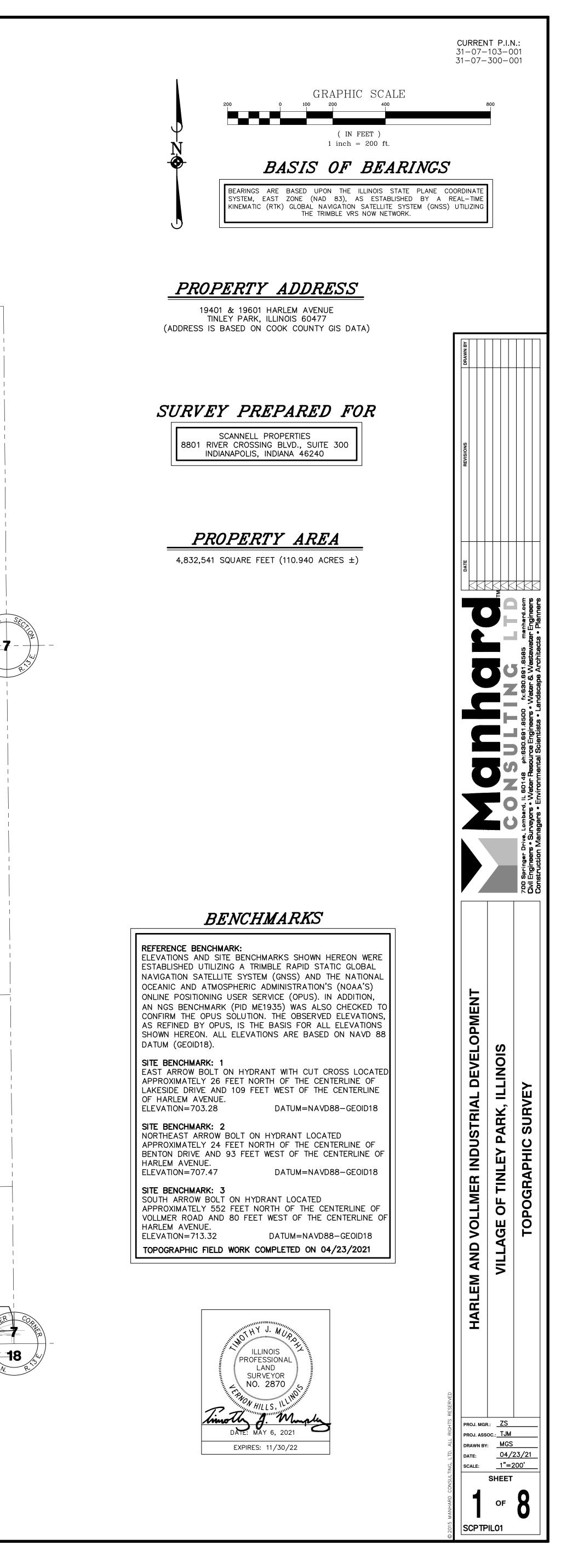
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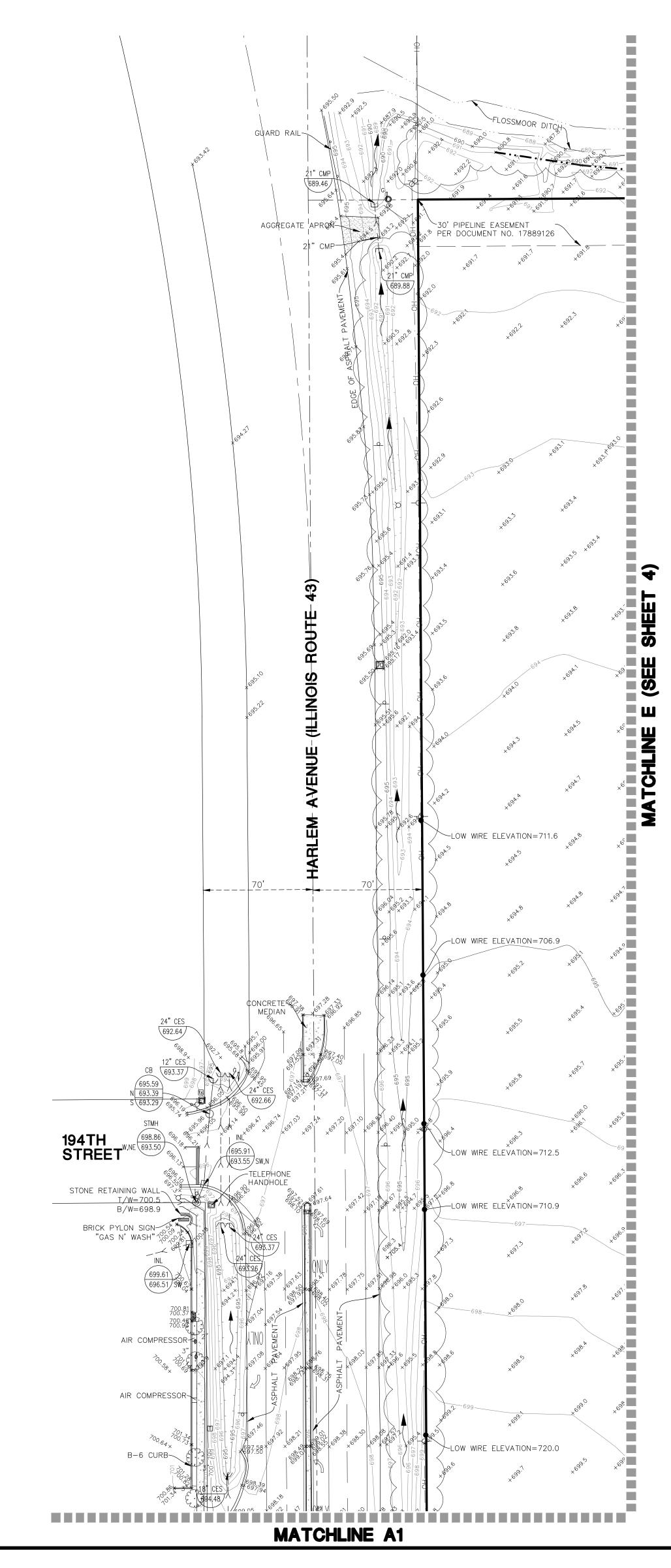






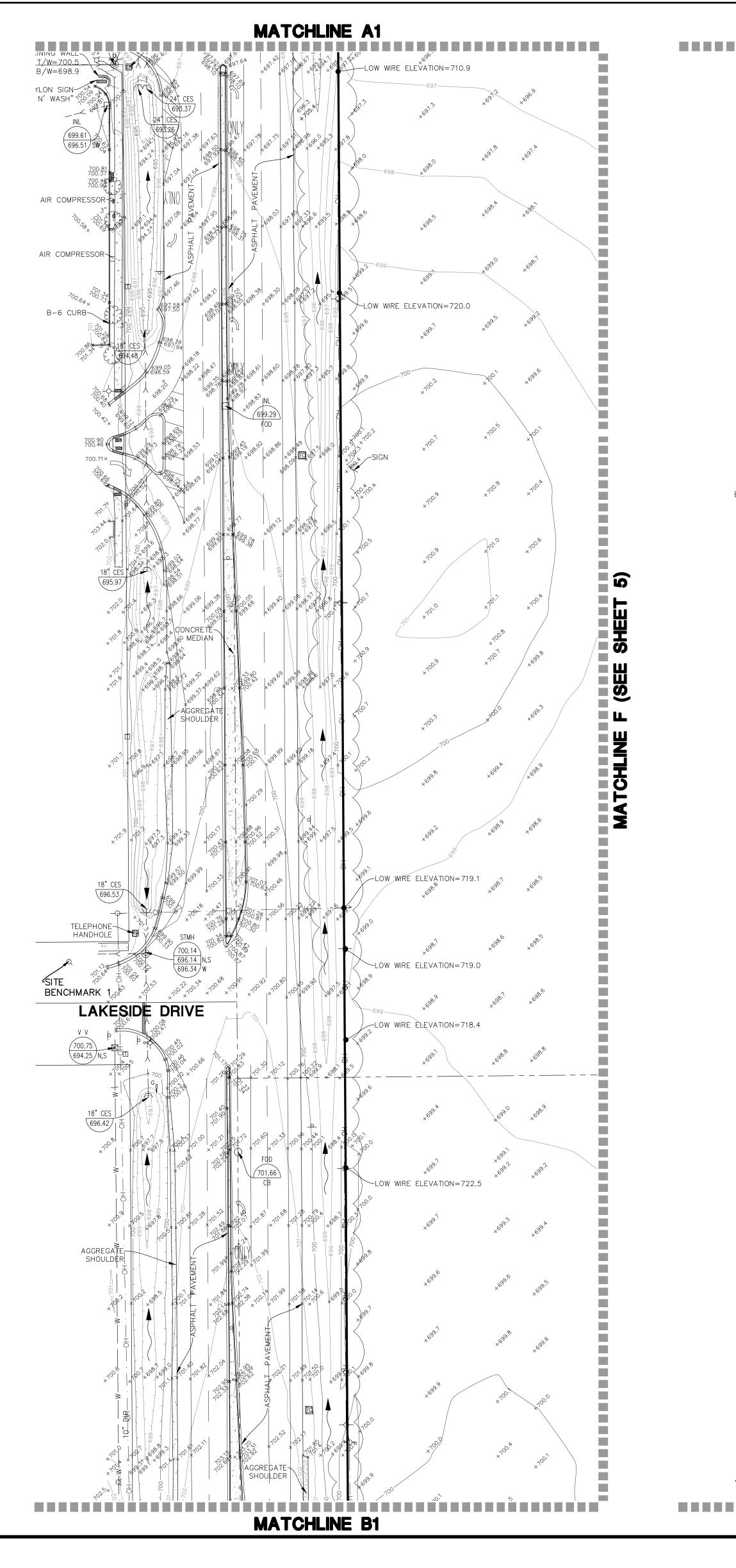
LEGEND

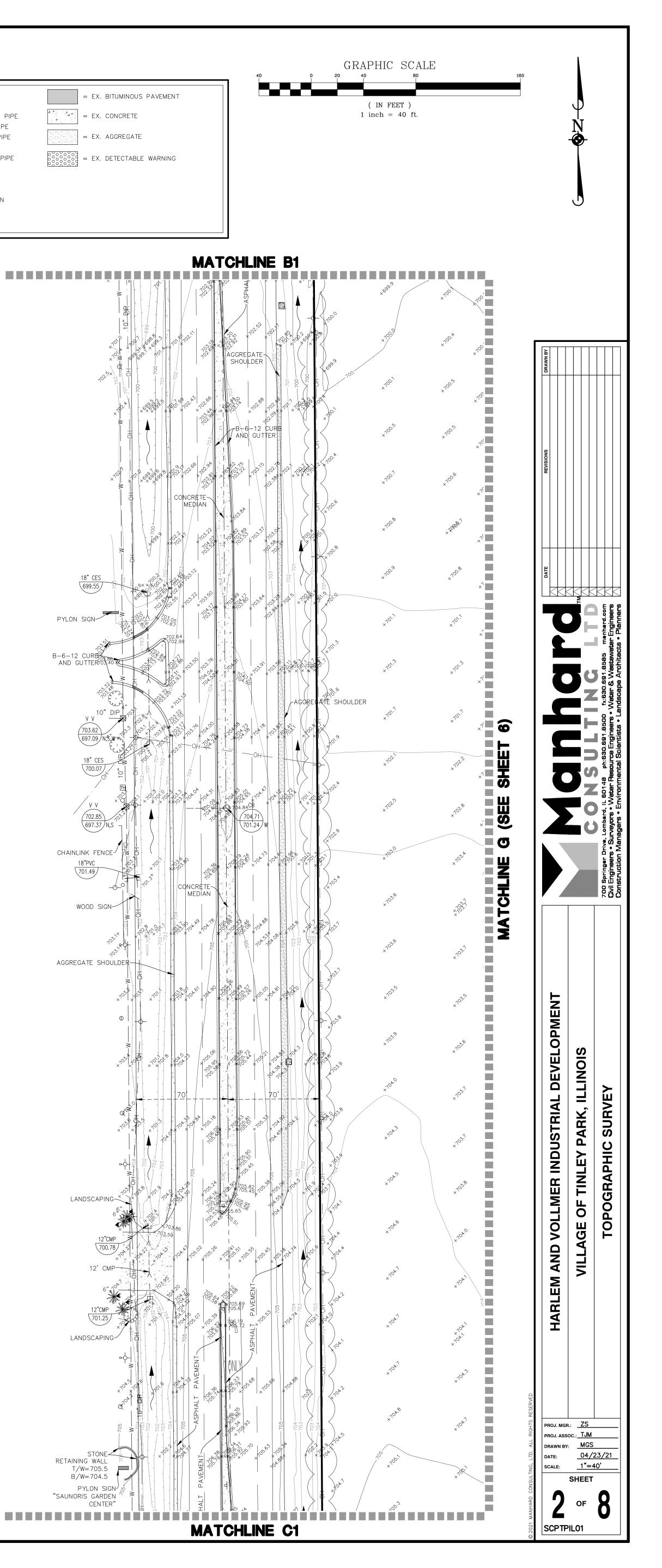
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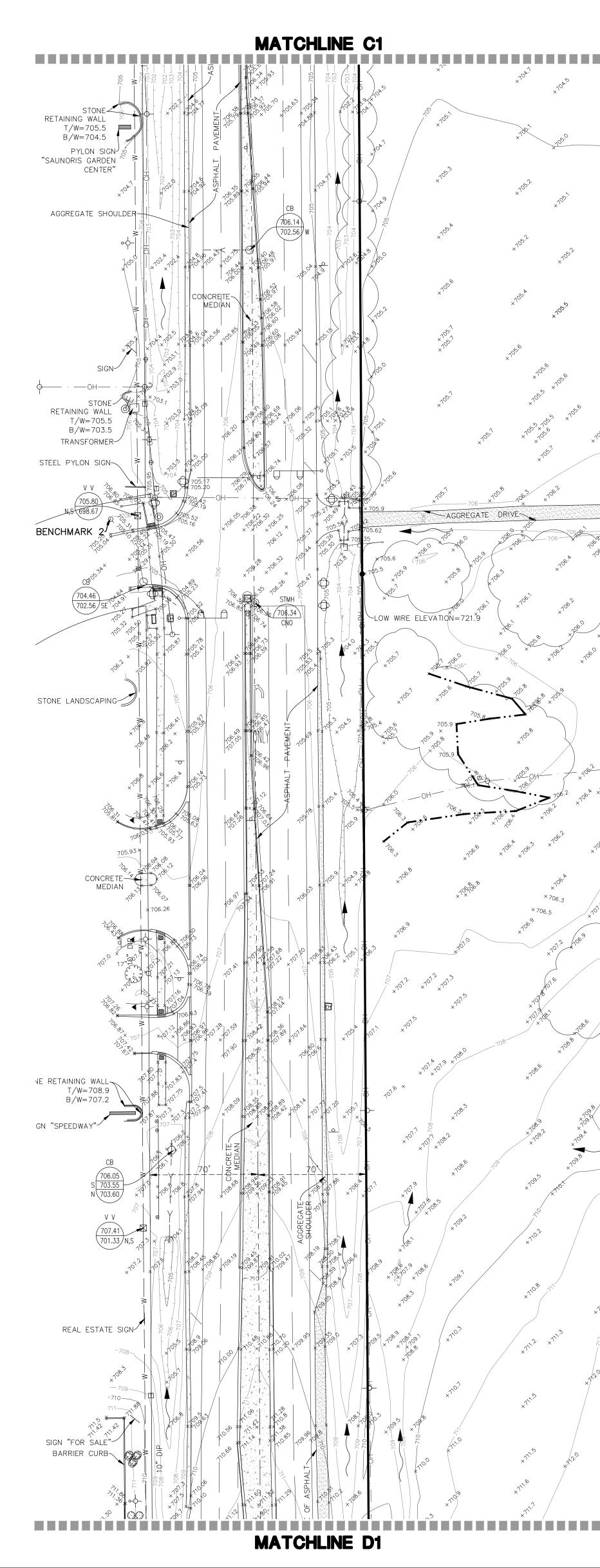


# **TOPOGRAPHIC SURVEY**

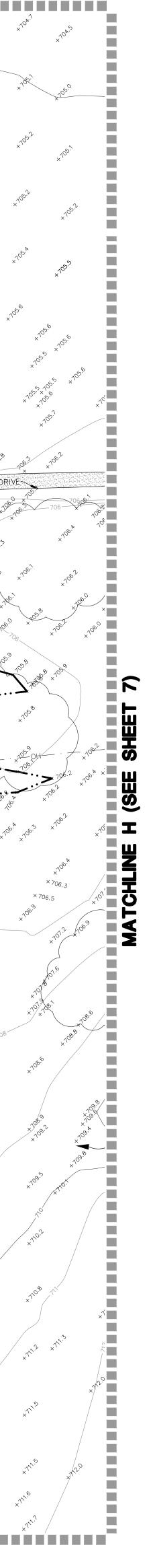
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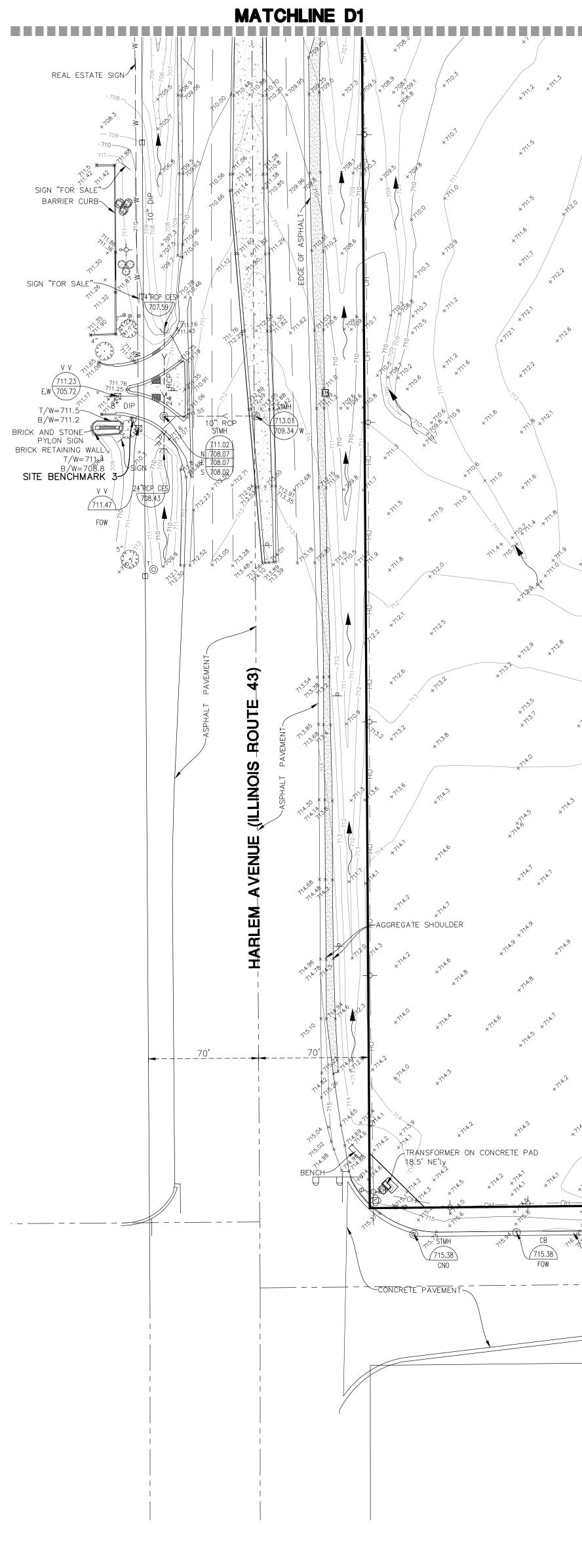






**TOPOGRAPHIC SURVEY** 





GRAPHIC SCALE ( IN FEET ) 1 inch = 40 ft.

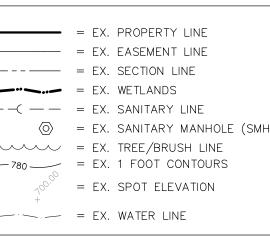
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| 0       = EX. BRIGATION CONTROL VALVE         0       = EX. BRIGATION CONTROL VALVE         0       = EX. SRINKLER CONTROL VALVE         0       = EX. CAS MATTER         0       = EX. ELECTROL ANDROLE         0       = EX. TRAFFIC SIGNAL ANDROLE         0       = EX. TRAFFIC SIGNAL ANDROLE         0       = EX. TRAFFIC SIGNAL ANDROLE         0       = EX. TRA  | $\triangleright$   | = EX. VALVE VAULT (V.V.)                       |
| $ \begin{aligned}                                   $   | C  | = EX. BUFFALO BOX                              |
| S       = EX. GAS VALVE         S       = EX. GAS MANIOLE         S       = EX. JULE CAS MARKER         S       = EX. ELECTRICAL MARKER         S       = EX. ELECTRIC FANAPOLE         E       = EX. ELECTRIC FANAPOLE         E       = EX. TRAFTIC SIGNAL MARHOLE         E       = EX. TRAFTIC SIGNAL CONTROL BOX         E       = EX. TRAFTIC SIGNAL         E       = EX. TREET MORE         E       = EX. TREET MORE         E       = EX. TREET MORE         E       = EX  | 8  | RR = EX. IRRIGATION CONTROL VALVE              |
| Solution       = EX. JULE CAS MARKER         Solution       = EX. JULE CAS MARKER         Solution       = EX. ELECTRICAL MATHOLE         Solution       = EX. ELECTRICAL MARKER         Solution       = EX. INATHE SIGNAL MARKER         Solution       = EX. TRAFFIC SIGNAL CONTROL EX         Solution       = EX. TRAFFIC SIGNAL MARKER         Solution       = EX. TREEPHONE MARKER POST         Solution       = EX. TREEPHONE MARKER POST         Solution       = EX. FIGHER OFTIC LINE MARKER         Solution       = EX. FIGHER OFTIC LI  | (  | = EX. GAS VALVE                                |
|   | G  | = EX. GAS MANHOLE                              |
| Figure 2       EX. ELECTRICAL MANHOLE         III EX. ELECTRICAL PLOSTAL/BOX         A. EX. ELECTRIC PLOSTAL/BOX         A. EX. ELECTRIC PLOSTAL/BOX         A. EX. ELECTRIC PLOSTAL/BOX         A. EX. ELECTRIC SIGNAL MANHOLE         III EX. TRAFFIC SIGNAL MANHOLE         III EX. TRAFFIC SIGNAL CONTROL BOX         III EX. TRAFFIC SIGNAL CONTROL BOX         III EX. TRAFFIC SIGNAL CONTROL BOX         III EX. TRAFFIC SIGNAL WITH ARM         III EX. TRAFFIC SIGNAL WITH ARM         III EX. TRAFFIC SIGNAL         III EX. TELEPHONE MARKER         III EX. TELEPHONE MARKER POST         III EX. TELEPHONE MARKER POST         III EX. TELEPHONE MARKER POST         IIII EX. TELEPHONE MARKER POST         IIII EX. TRAFFIC OPTIC MARKER POST         IIII EX. SIGN         IIIII EX. SIGNO         IIIII EX. SIGNO         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII  |  | = EX. GAS MARKER POST                          |
| <ul> <li>EX ELECTRIC FEDESTAL/BOX</li> <li>EX. JULE ELECTRIC MARKER</li> <li>EX. LECTRIC TRANSFORMER</li> <li>EX. TRAFTIC SIGNAL MANHOLE</li> <li>EX. TRAFTIC SIGNAL MODILE</li> <li>EX. TRAFTIC SIGNAL CONTROL BOX</li> <li>EX. TRAFTIC SIGNAL CONTROL BOX</li> <li>EX. TRAFTIC SIGNAL CONTROL BOX</li> <li>EX. TRAFTIC SIGNAL MATH ARM</li> <li>EX. TRAFTIC SIGNAL WITH ARM</li> <li>EX. TRAFTIC SIGNAL WITH ARM</li> <li>EX. TRAFTIC SIGNAL</li> <li>EX. TELEPHONE HANDHOLE</li> <li>EX. TELEPHONE MARKER POST</li> <li>EX. TELEPHONE MARKER</li> <li>EX. TELEPHONE MARKER POST</li> <li>EX. FIBER OPTIC MANHOLE</li> <li>EX. FIBER OPTIC MANHOLE</li> <li>EX. FIBER OPTIC LINE MARKER</li> <li>EX. TILEVISION MARKER POST</li> <li>EX. TILEVISION MARKER POST</li> <li>EX. UTILITY POLE WITH LIGHT</li> <li>EX. COLV WRE</li> <li>EX. SIGN</li> <li>EX. SIGN</li> <li>EX. SIGN</li> <li>EX. SIGN</li> <li>EX. SIGN</li> <li>EX. SIGN</li> <li>EX. DECOLVOUS TREE WITH</li> <l< td=""><td>E@</td><td>= EX. ELECTRICAL MANHOLE</td></l<></ul>   | E@   | = EX. ELECTRICAL MANHOLE                       |
| ■       E.X. FLACTRC TRANSFORMER         ●       E.X. TRAFFIC SIGNAL MANHOLE         ■       E.X. TRAFFIC SIGNAL DOUBLE HANDHOLE         ■       E.X. TRAFFIC SIGNAL CONTROL BOX         ●       E.X. TRAFFIC SIGNAL ONTROL BOX         ●       E.X. TRAFFIC SIGNAL WITH ARM         ■       E.X. TELEPHONE MANHOLE         ■       E.X. TELEPHONE MANHOLE         ■       E.X. TELEPHONE MARKER POST         ■       E.X. TELEPHONE MARKER POST         ■       E.X. TELEVISION MANHOLE         ■       E.X. TELEVISION PEDESTAL         ■       E.X. TELEVISION PEDESTAL         ■       E.X. TELEVISION PEDESTAL         ■       E.X. TELEVISION MANHOLE         ■       E.X. TELEVISION MANHOLE         ■       E.X. TELEVISION PEDESTAL         ■       E.X. TELEVISION PEDESTAL         ■       E.X. TELEVISION MANHOLE         ■       E.X. TELEVISION MANHOLE         ■       E.X. TELEVISION MANHOLE         ■       E.X. TELEVISION MANHOLE <t< td=""><td>Ē</td><td>= EX. ELECTRIC PEDESTAL/BOX</td></t<>   | Ē  | = EX. ELECTRIC PEDESTAL/BOX                    |
| $ \begin{array}{rcl} \blacksquare & = \text{EX. TRAFFIC SIGNAL HANDHOLE} \\ \blacksquare & = \text{EX. TRAFFIC SIGNAL DOUBLE HANDHOLE} \\ \blacksquare & = \text{EX. TRAFFIC SIGNAL CONTROL BOX} \\ \hline & = \text{EX. TRAFFIC SIGNAL WITH ARM} \\ \hline & = \text{EX. TRAFFIC SIGNAL WITH ARM} \\ \hline & = \text{EX. TRAFFIC SIGNAL WITH ARM} \\ \hline & = \text{EX. TRAFFIC SIGNAL WITH ARM} \\ \hline & = \text{EX. TELEPHONE MANHOLE} \\ \hline & = \text{EX. TELEPHONE MANHOLE} \\ \hline & = \text{EX. TELEPHONE MANHOLE} \\ \hline & = \text{EX. TELEPHONE MARKER POST} \\ \hline & = \text{EX. FIBER OFTIC HANDHOLE} \\ \hline & = \text{EX. UDUTY POLE WITH LIGHT} \\ \hline & = \text{EX. UDUTY FOLE} \\ \hline & = \text{EX. UDY COLOLULY THE UTY FOLE} \\ \hline & = \text{EX. UDY COLOLULY THE UTY FOLE} \\ \hline & = \text{EX. UDY COLOLULY THE UTY FOLE} \\ \hline & = \text{EX. UDY COLOLULY THE UTY FOLE} \\ \hline & = \text{EX. UDY COLOLULY THE UTY FOLE} \\ \hline & = \text{EX. UDY COLOLULY THE UTY FOLE} \\ \hline & = \text{EX. UDY OF CED DEVENTION \\ \hline & = \text{EX. UDY OF CED DEVENTION \\ \hline & = \text{EX. UDY ONCL S PAVEMENT \\ \hline & = \text{EX. UDY ONCL S PAVEMENT \\ \hline & = \text{EX. UDY ONCL S PAVEMENT \\ \hline & = \text{EX. UDY ONCL S PAVEMENT \\ \hline & = \text{EX. CONCRETE } \\ \hline$ | E  | = EX. ELECTRIC TRANSFORMER                     |
| <ul> <li>■ EX. TRAFFIC SIGNAL CONTROL BOX</li> <li>■ EX. TRAFFIC SIGNAL</li> <li>■ EX. TRAFFIC SIGNAL WITH ARM</li> <li>■ EX. TRAFFIC SIGNAL WITH ARM</li> <li>■ EX. TELEPHONE MANHOLE</li> <li>■ EX. TELEPHONE MANHOLE</li> <li>■ EX. TELEPHONE MANHOLE</li> <li>■ EX. TELEPHONE MARKER POST</li> <li>■ EX. FIBER OPTIC HANHOLE</li> <li>■ EX. FIBER OPTIC HANHOLE</li> <li>■ EX. FIBER OPTIC HANDHOLE</li> <li>■ EX. FIBER OPTIC HANDHOLE</li> <li>■ EX. FIBER OPTIC HANDHOLE</li> <li>■ EX. UTILITY POLE</li> <li>■ EX. UTILITY POLE</li> <li>■ EX. UTILITY POLE</li> <li>■ EX. UTILITY POLE WITH LIGHT</li> <li>■ EX. GROUND LIGHT</li> <li>■ EX. SIGN</li> <li>■ EX. BUSHES</li> <li>■ EX. BUSHES</li> <li>■ EX. DECIDIOUS TREE WITH</li> <li>■ EX. BUSHES</li> <li>■ EX.</li></ul>  | T  | = EX. TRAFFIC SIGNAL HANDHOLE                  |
| = EX. TRAFIC SIGNAL WITH ARM $ = EX. HANDHOLE $ $ = EX. HANDHOLE $ $ = EX. TELEPHONE MANHOLE $ $ = EX. TELEPHONE MANHOLE $ $ = EX. TELEPHONE MARKER POST $ $ = EX. FIBER OPTIC MANHOLE $ $ = EX. FIBER OPTIC MARKER POST $ $ = EX. UTLITY POLE WITH LIGHT $ $ = EX. UTLITY POLE WITH LIGHT $ $ = EX. SIGN $ $ = EX. SIGN$  | T  | = EX. TRAFFIC SIGNAL CONTROL BOX               |
| HEI       = EX. DOUBLE HANDHOLE         HO       = EX. TELEPHONE MANHOLE         HO       = EX. TELEPHONE MARKER         →       = EX. TELEVISION MANHOLE         HO       = EX. TELEVISION MANHOLE         HO       = EX. FIBER OPTIC MARKER POST         HO       = EX. GUY WIRE         HE       = EX. SIGN         HE       = EX. SIGN         HE       = EX. SIGN         HE       = EX. BOLLARD LIGHT         HE       = EX. DECIDUOUS TREE WITH         HE <td>U U</td> <td>◦ = EX. TRAFFIC SIGNAL WITH ARM</td>   | U U  | ◦ = EX. TRAFFIC SIGNAL WITH ARM                |
| ■       = EX. TELEPHONE HANDHOLE         □       = EX. TELEPHONE MARKER         □       = EX. TELEPHONE MARKER         □       = EX. TELEVISION MANHOLE         □       = EX. TELEVISION PEDESTAL         □       = EX. TELEVISION PEDESTAL         □       = EX. CABLE HANDHOLE         □       = EX. FIBER OPTIC MANHOLE         □       = EX. FIBER OPTIC MANHOLE         □       = EX. FIBER OPTIC MARKER         □       = EX. UTILTY POLE         □       = EX. UTILTY POLE WITH LIGHT         □       = EX. GOUND LIGHT         □       = EX. STREET LIGHT   | Н  | = EX. DOUBLE HANDHOLE                          |
|   | TI   |  |
|   |  | = FX TELEPHONE MARKER POST                     |
| $ \begin{array}{rcl} F_{0}^{\circ} & = \text{EX. FIBER OPTIC MANHOLE} \\ \hline \mathbf{EV} & = \text{EX. FIBER OPTIC LINE MARKER} \\ \hline \mathbf{EV} & = \text{EX. FIBER OPTIC LINE MARKER} \\ \hline \mathbf{EV} & = \text{EX. FIBER OPTIC MARKER POST} \\ \hline \mathbf{EV} & = \text{EX. UTILITY POLE} \\ \hline \mathbf{EV} & = \text{EX. UTILITY POLE WITH LIGHT} \\ \hline \mathbf{O} & = \text{EX. UTILITY POLE WITH LIGHT} \\ \hline \mathbf{O} & = \text{EX. STREET LIGHT} \\ \hline \mathbf{V} & = \text{EX. STREET LIGHT} \\ \hline \mathbf{V} & = \text{EX. SOUD LIGHT} \\ \hline \mathbf{O} & = \text{EX. SOUT ELEVATION} \\ \hline \mathbf{O} & = \text{EX. BUSHES} \\ \hline \mathbf{O} & = \text{EX. DECIDIOUS TREE WITH} \\ \hline \hline \hline \mathbf{O} & = \text{EX. INVERT ELEVATION} \\ \hline \mathbf{RCP} & = \text{REINFORCED CONCRETE PIPE} \\ \hline \mathbf{CMP} & = \text{CORRUGATED METAL PIPE} \\ \hline \mathbf{PCP} & = \text{POLYINYL CHORIDE PIPE} \\ \hline \mathbf{DP} & = \text{PUCTILE IRON PIPE} \\ \hline \mathbf{CPP} & = \text{CORRUGATED METAL PIPE} \\ \hline \mathbf{CPP} & = \text{CORRUGATED PLASTIC PIPE} \\ \hline \mathbf{CNO} & = \text{COULD NOT OPEN} \\ \hline \mathbf{FOD} & = \text{FULL OF WATER} \\ \hline \mathbf{FOW} & = \text{FULL OF PLASTIC PIPE} \\ \hline \mathbf{CPP} & = \text{CORRUGATED PLASTIC PIPE} \\ \hline \mathbf{CPP} & = \text{CORRUGATED PLASTIC PIPE} \\ \hline \mathbf{CNO} & = \text{CONCRETE END SECTION} \\ \hline \mathbf{TP} & = \text{TOP OF PIPE} \\ \hline \mathbf{EV} & = \text{EX. BITUMINOUS PAVEMENT} \\ \hline \hline \mathbf{EV} & = \text{EX. CONCRETE} \\ \hline \hline \mathbf{EV} & = \text{EX. CONCRETE} \\ \hline \mathbf{EV} & = \text{EX. CONCRETE} \\ \hline \hline \mathbf{EV} & = \text{EX. CONCRETE} \\ \hline \hline \hline \hline \mathbf{EV} & = \text{EX. CONCRETE} \\ \hline \end{bmatrix} \\ \hline \hline \end{array} \end{array}$  | IV@  |  |
| $ \begin{array}{rcl} & = \text{EX. FIBER OPTIC LINE MARKER} \\ = \text{EX. FIBER OPTIC MARKER POST} \\ \hline & = \text{EX. UTILITY POLE} \\ \hline & = \text{EX. UTILITY POLE WITH LIGHT} \\ \hline & = \text{EX. UTILITY POLE WITH LIGHT} \\ \hline & = \text{EX. UIGHT STANDARD} \\ \hline & = \text{EX. STREET LIGHT} \\ \hline & = \text{EX. GROUND LIGHT} \\ \hline & = \text{EX. BOLLARD LIGHT} \\ \hline & = \text{EX. BOLLARD LIGHT} \\ \hline & = \text{EX. BUSHES} \\ \hline & = \text{EX. BUSHES} \\ \hline & = \text{EX. BUSHES} \\ \hline & = \text{EX. DECIDUOUS TREE WITH} \\ \hline & \hline & = \text{EX. BUSHES} \\ \hline & = \text{EX. CONFEROUS TREE WITH} \\ \hline & \hline & = \text{EX. RIVERT ELEVATION} \\ \hline & = \text{EX. RIVERT ELEVATION} \\ \hline & \hline & = \text{EX. RIVERT USATION} \\ \hline & \hline$  | FO<br>CO   |  |
| $-\bigcirc = EX. UTILITY POLE$ $= EX. UTILITY POLE WITH LIGHT$ $= EX. GUY WRE$ $= EX. GUY WRE$ $= EX. UIGHT STANDARD$ $= EX. STREET LIGHT$ $= EX. GROUND LIGHT$ $= EX. SOLLARD LIGHT$ $= EX. SOLLARD LIGHT$ $= EX. SUSHES$ $= EX. SPOT ELEVATION$ $= EX. BUSHES$ $= EX. DECIDUOUS TREE WITH$ $= EX. CONVERTENT IN FEET$ $= EX. CONVERTENT FEET WITH$ $= EX. CONVERTER PIPE$ $PCP = POLYVINYL CHLORIDE PIPE$ $PCP = POLYVINYL CHLORIDE PIPE$ $PCP = CORRUGATED METAL PIPE$ $PCP = CORRUGATED METAL PIPE$ $PCP = OLYVINYL CHLORIDE PIPE$ $PCP = OLYVINYL CHLORIDE PIPE$ $PCP = CORRUGATED PLASTIC PIPE$ $PCP = TOP OF $   | FO   |  |
| $ \begin{array}{rcl} - \Phi & = \text{EX. GUY WIRE} \\ + \Phi & = \text{EX. LIGHT STANDARD} \\ + & = \text{EX. STREET LIGHT} \\ + & = \text{EX. GROUND LIGHT} \\ + & = \text{EX. GROUND LIGHT} \\ + & = \text{EX. BOLLARD LIGHT} \\ + & = \text{EX. BOLLARD LIGHT} \\ + & = \text{EX. SIGN} \\ + \Phi^{O^O} & = \text{EX. SPOT ELEVATION} \\ + & = \text{EX. BUSHES} \\ + & = \text{EX. DECIDUOUS TREE WITH} \\ + & = \text{EX. DECIDUOUS TREE WITH} \\ + & = \text{EX. CONFEROUS TREE WITH} \\ + & = \text{EX. CONFEROUS TREE WITH} \\ + & = \text{EX. CONFEROUS TREE WITH} \\ + & = \text{EX. RIM_ELEVATION} \\ + & = \text{EX. RIM_ELEVATION} \\ + & = \text{EX. RIM_ELEVATION} \\ + & = \text{REINFORCED CONCRETE PIPE} \\ + & = \text{CORPUGATED METAL PIPE} \\ + & = \text{CORPUGATED METAL PIPE} \\ + & = \text{OURU GATED PLASTIC PIPE} \\ + & = \text{OURU GATED PLASTIC PIPE} \\ + & = \text{OURU GATED PLASTIC PIPE} \\ + & = \text{CORPUGATED PLASTIC PIPE} \\ + & = \text{CONCRETE END SECTION} \\ + & = \text{TPULL OF WATER} \\ + & = \text{CORCETE END SECTION} \\ + & = \text{TPULL OF WATER} \\ + & = \text{CONCRETE END SECTION} \\ + & = \text{TPULL OF PUPE} \\ + & = \text{EX. BITUMINOUS PAVEMENT} \\ + & = \text{EX. CONCRETE} \\ + & = EX. C$  | -C   | = EX. UTILITY POLE                             |
| $ \begin{array}{c} \bullet \\ \bullet \\ \bullet \\ = & \text{EX. STREET LIGHT} \\ = & \text{EX. GROUND LIGHT} \\ \bullet \\ = & \text{EX. BOLLARD LIGHT} \\ \bullet \\ = & \text{EX. SIGN} \\ \bullet \\ $   |  | = EX. GUY WIRE                                 |
|   |  | = EX. STREET LIGHT                             |
|   | 0  | = EX. BOLLARD LIGHT                            |
| $ \widehat{\bigcirc} = EX. BUSHES $ $ \widehat{\bigcirc} = EX. BUSHES $ $ \widehat{\bigcirc} = EX. DECIDUOUS TREE WITH TRUNK DIAMETER IN INCHES $ $ \widehat{\frown} = EX. CONIFEROUS TREE WITH $ $ \widehat{\bigcirc} = EX. CONIFEROUS TREE WITH $ $ \widehat{\bigcirc} = EX. RIM ELEVATION  TS5.00 = EX. RIM ELEVATION  RCP = REINFORCED CONCRETE PIPE  CMP = CORRUGATED METAL PIPE  PCP = POLYVINYL CHLORIDE PIPE  DIP = DUCTILE IRON PIPE  CPP = CORRUGATED PLASTIC PIPE  CNO = COULD NOT OPEN  FOD = FULL OF WATER  FOW = FULL OF WATER  FOW = FULL OF WATER  CES = CONCRETE END SECTION  TP = TOP OF PIPE   = EX. BITUMINOUS PAVEMENT   \widehat{\frown} = EX. CONCRETE $   |  |  |
| $F_{V} = F_{NUNE VDAMETER NETWORKS}$ $F_{V} = F_{NUNE VDAMETER NETWORKS}$ $F_{V} = F_{NUNE VDAMETER}$ $F_{V} = F_{V} $  | +  |  |
| $ \begin{array}{rcl} \hline \hline 756.00\\\hline \hline 754.00\\\hline \hline \end{array} &= EX. RIM ELEVATION\\ RCP &= REINFORCED CONCRETE PIPE\\ CMP &= CORRUGATED METAL PIPE\\ PCP &= POLYVINYL CHLORIDE PIPE\\ DIP &= DUCTILE IRON PIPE\\ CPP &= CORRUGATED PLASTIC PIPE\\ CNO &= COULD NOT OPEN\\ FOD &= FULL OF WATER\\ FOW &= FULL OF WATER\\ CES &= CONCRETE END SECTION\\ TP &= TOP OF PIPE\\ \hline \end{array} $  | 8"~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~  |  |
| $\frac{1}{754.00} = \text{EX. INVERT ELEVATION}$ $RCP = \text{REINFORCED CONCRETE PIPE}$ $CMP = \text{CORRUGATED METAL PIPE}$ $PCP = \text{POLYVINYL CHLORIDE PIPE}$ $DIP = \text{DUCTILE IRON PIPE}$ $CPP = \text{CORRUGATED PLASTIC PIPE}$ $CN0 = \text{COULD NOT OPEN}$ $FOD = \text{FULL OF WATER}$ $FOW = \text{FULL OF WATER}$ $CES = \text{CONCRETE END SECTION}$ $TP = \text{TOP OF PIPE}$ $= \text{EX. BITUMINOUS PAVEMENT}$   | <sup>16</sup>  | : = EX. CONIFEROUS TREE WITH<br>HEIGHT IN FEET |
| CMP=CORRUGATED METAL PIPEPCP=POLYVINYL CHLORIDE PIPEDIP=DUCTILE IRON PIPECPP=CORRUGATED PLASTIC PIPECNO=COULD NOT OPENFOD=FULL OF WATERFOW=FULL OF WATERCES=CONCRETE END SECTIONTP=TOP OF PIPEImage: Image: Imag  | (756<br>(754   | = EX. RIM ELEVATION  = EX. INVERT ELEVATION    |
| $DIP = DUCTILE IRON PIPE$ $CPP = CORRUGATED PLASTIC PIPE$ $CN0 = COULD NOT OPEN$ $FOD = FULL OF WATER$ $FOW = FULL OF WATER$ $CES = CONCRETE END SECTION$ $TP = TOP OF PIPE$ $= EX. BITUMINOUS PAVEMENT$ $A_{A} = A_{A} = A_{A}$ $A_{A} = A_{A} = A_{A}$  |  |  |
| $CNO = COULD NOT OPEN$ $FOD = FULL OF WATER$ $FOW = FULL OF WATER$ $CES = CONCRETE END SECTION$ $TP = TOP OF PIPE$ $= EX. BITUMINOUS PAVEMENT$ $\frac{A_{A}}{A_{A}} = EX. CONCRETE$   |  |  |
| FOW = FULL OF WATER<br>CES = CONCRETE END SECTION<br>TP = TOP OF PIPE<br>= EX. BITUMINOUS PAVEMENT<br>$\left[\frac{d^{A} + d^{A}}{d^{A} + d^{A}}\right]$ = EX. CONCRETE   |  |  |
| TP = TOP  OF PIPE $= EX.  BITUMINOUS PAVEMENT$ $= EX.  CONCRETE$ $= EX. CONCRETE$   |  |  |
| $\begin{bmatrix} a & A & A & A & A \\ \vdots & \vdots & A & A & A \\ \vdots & \vdots & \vdots & \vdots \end{bmatrix} = EX. CONCRETE$  |  |  |
|   |  | = EX. BITUMINOUS PAVEMENT                      |
| = EX. AGGREGATE   | ۵ <sup>۵</sup>   | = EX. CONCRETE                                 |
|   | $\sum_{i=1}^{N_{i}} \sum_{j=1}^{N_{i}} \sum_{j=1}^{N_{$ | = EX. AGGREGATE                                |

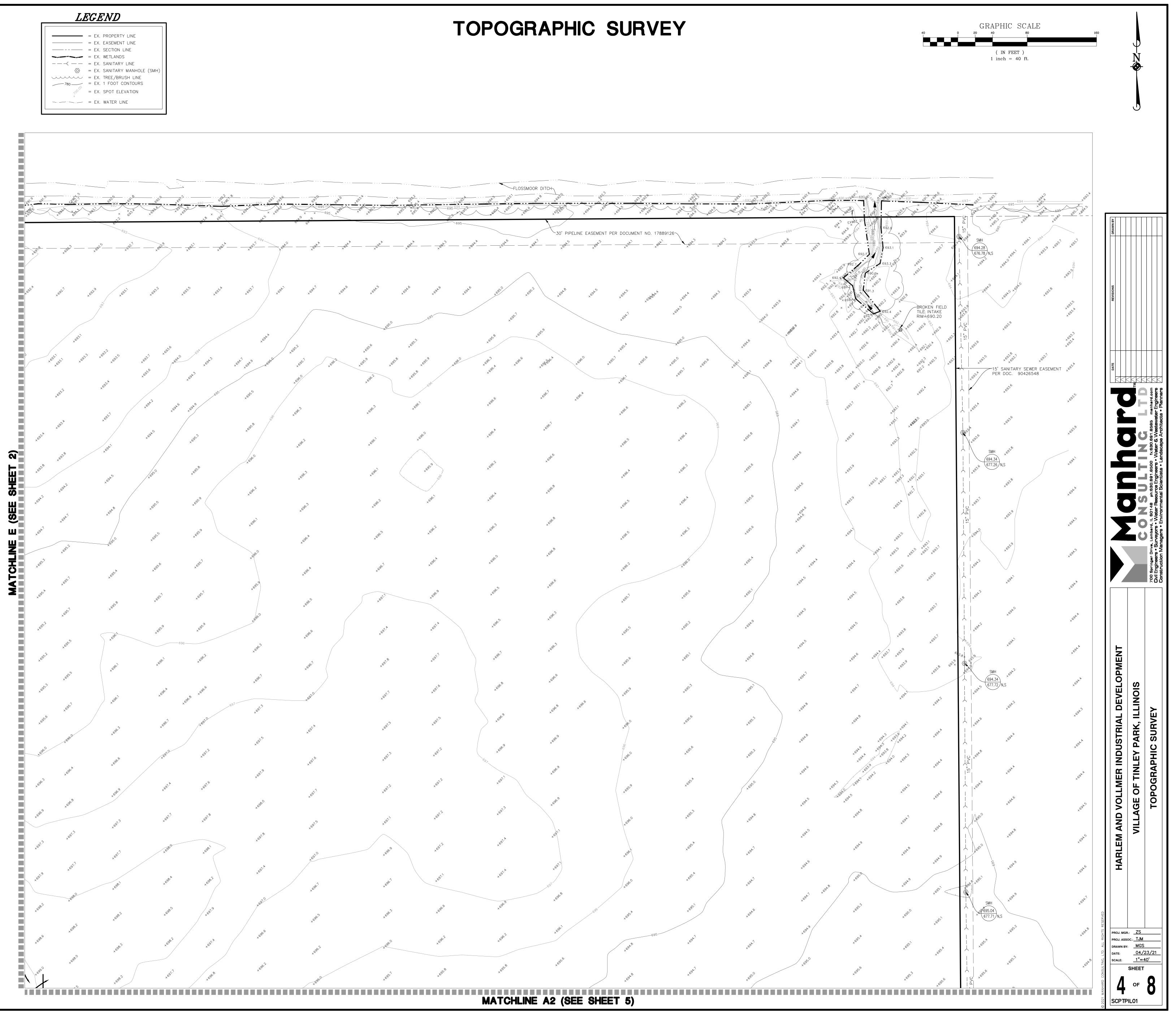


PROJ. MGR.: <u>ZS</u> PROJ. ASSOC.: TJM DRAWN BY: MGS 04/23/21 DATE: \_**1"**=40' SCALE: SHEET 3 OF SCPTPIL01

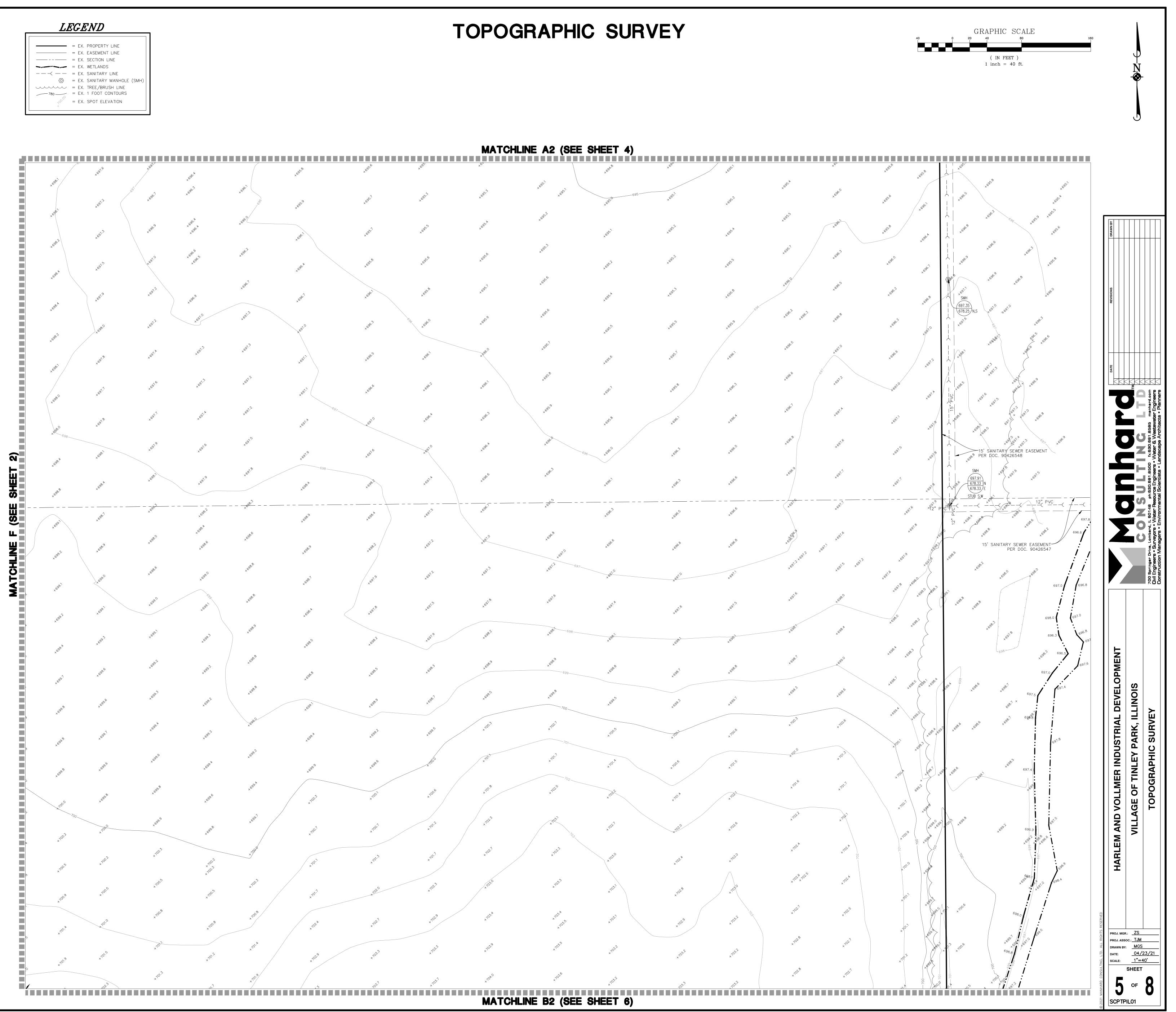
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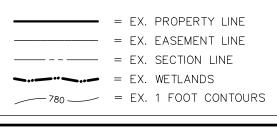


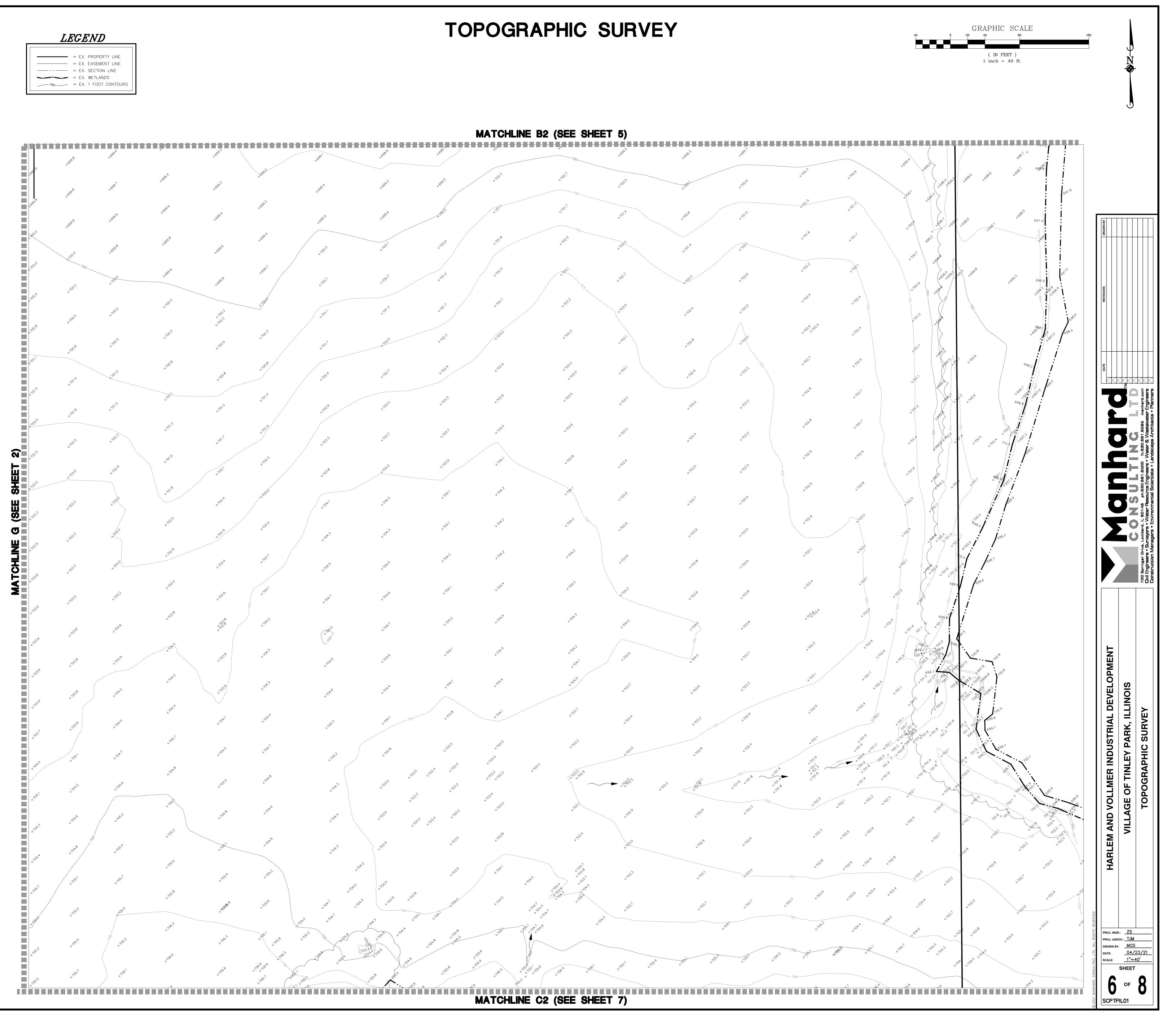


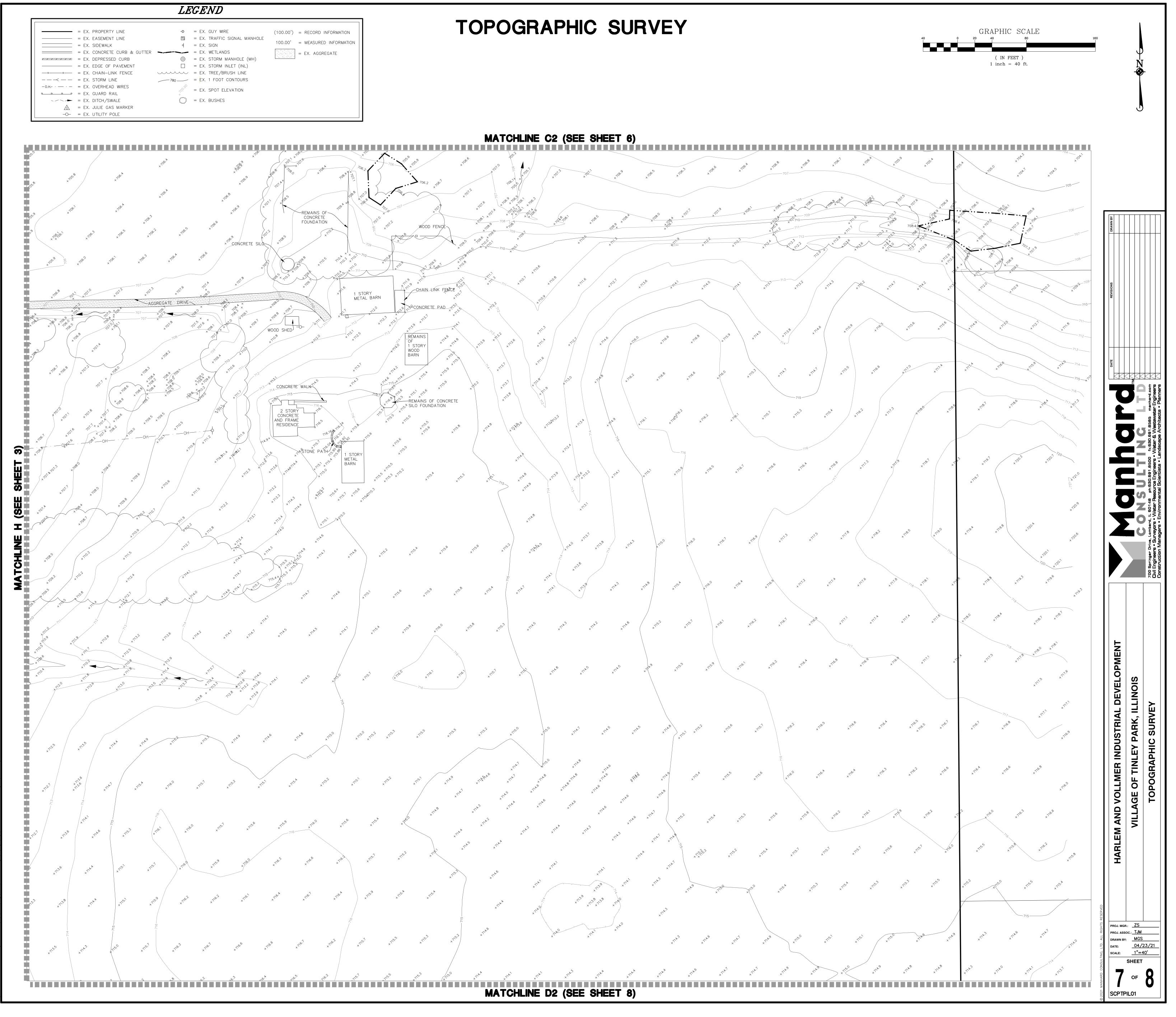
|  | = EX. PROPER  | TY LINE         |
|--|---------------|-----------------|
|  | = EX. EASEME  | NT LINE         |
|  | = EX. SECTION | I LINE          |
|  | = EX. WETLAN  | DS              |
| —————————————————————————————————————— | = EX. SANITAR | RY LINE         |
| $\langle \bigcirc \rangle$             | = EX. SANITAR | RY MANHOLE (SMH |
| ·····                                  | = EX. TREE/B  | RUSH LINE       |
|  |               |                 |

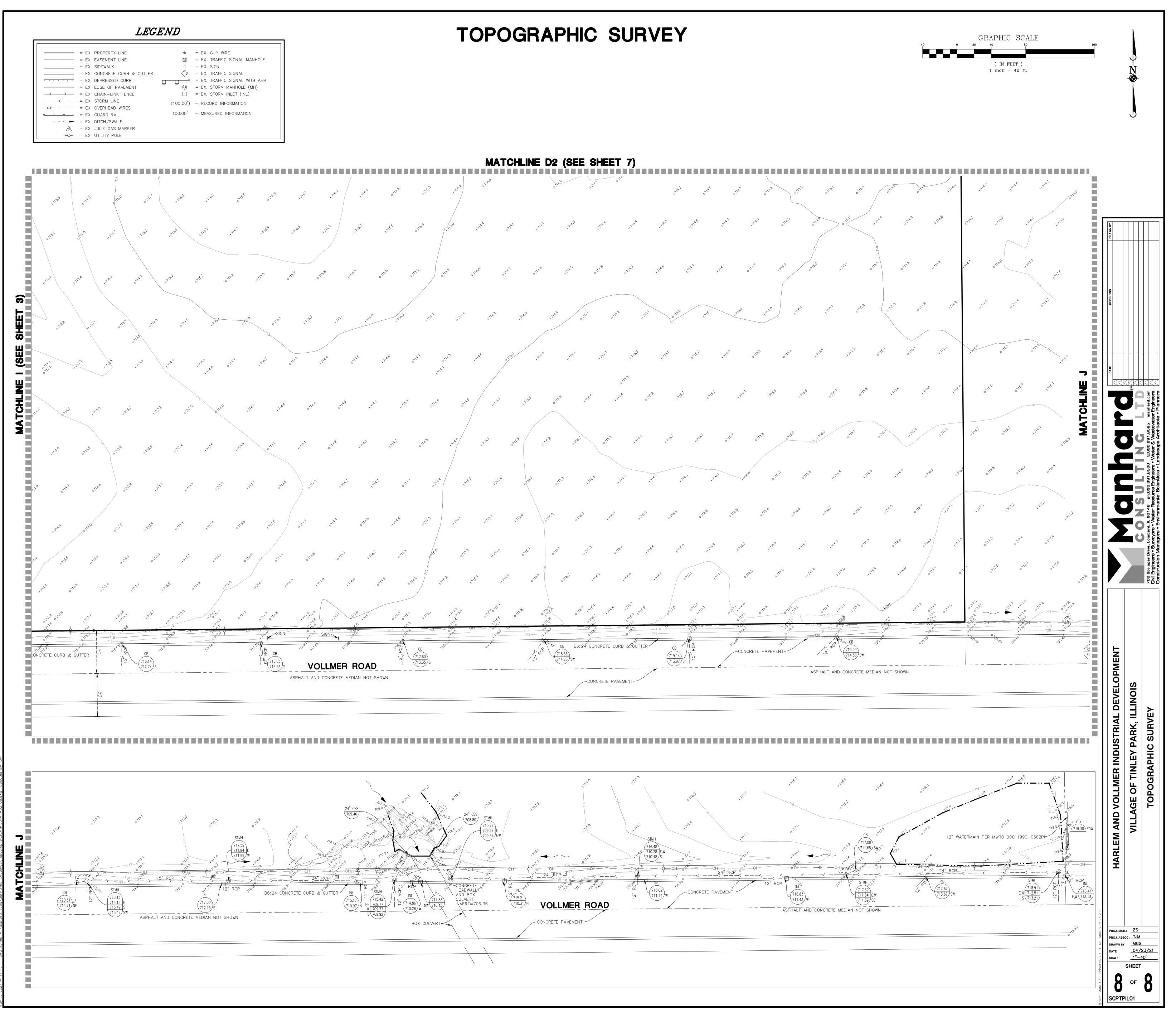


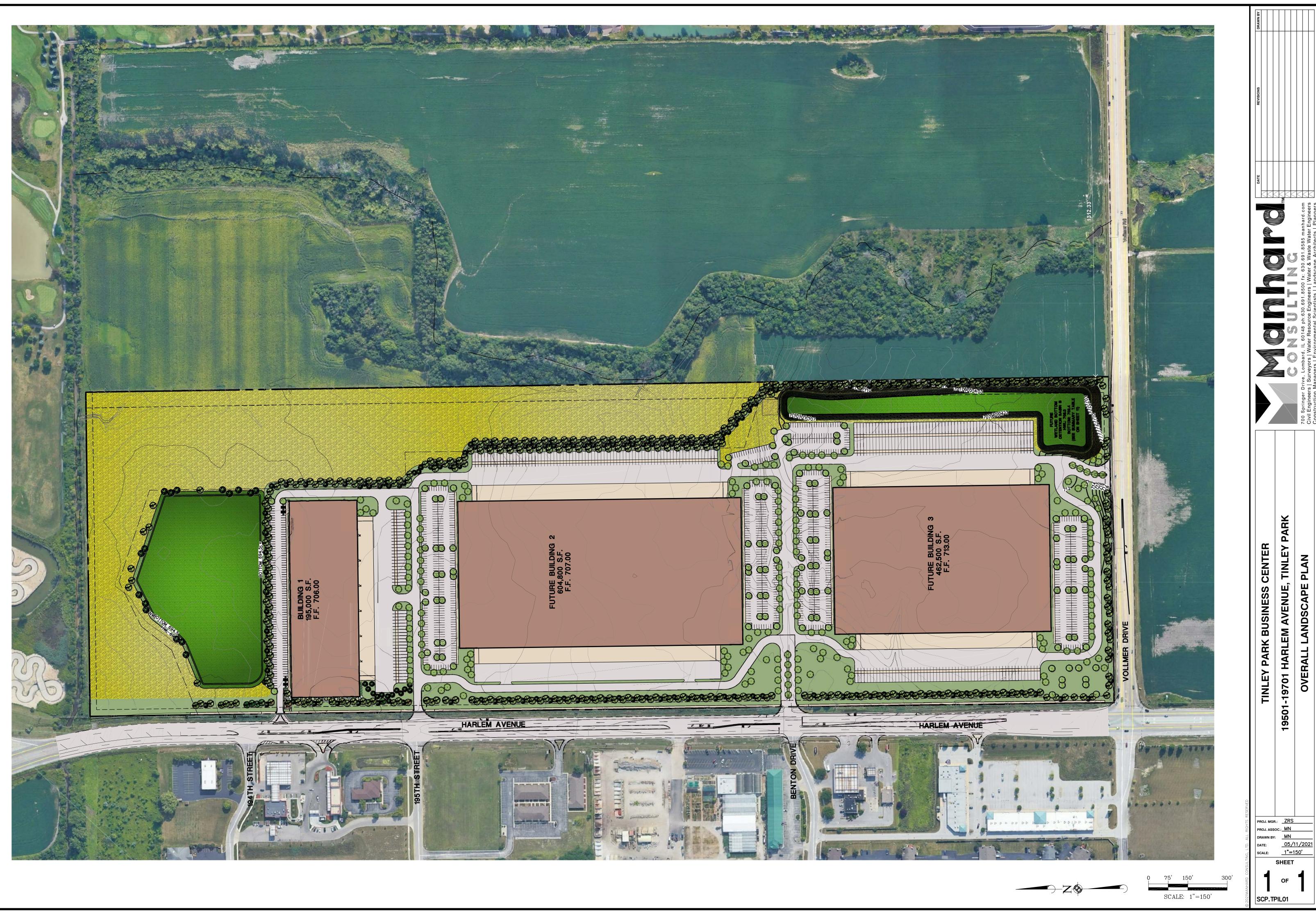


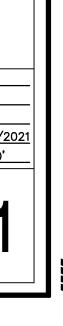








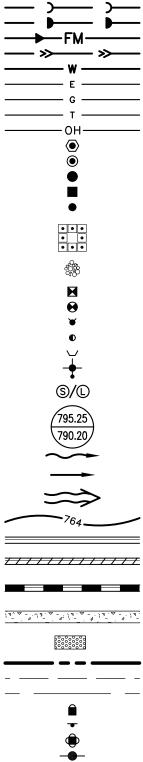


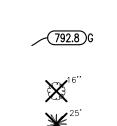


## STANDARD SYMBOLS EXISTING PROPOSED STORM SEWER $-- \succ -- \succ --$ \_\_ )\_\_\_ )\_\_ SANITARY SEWER —— D—— D—— COMBINED SEWER —► -FM- --FORCEMAIN DRAINTILE \_\_ >>\_ \_\_ >>\_ \_\_ >>\_ \_\_ WATER MAIN \_\_\_\_\_ w \_\_\_\_\_ ELECTRIC GAS TELEPHONE \_\_\_\_\_OH\_\_\_\_ OVERHEAD WIRES SANITARY MANHOLE STORM MANHOLE CATCH BASIN STORM INLET CLEANOUT HAY BALES RIP RAP VALVE IN VAULT VALVE IN BOX FIRE HYDRANT BUFFALO BOX FLARED END SECTION STREET LIGHT SUMMIT / LOW POINT RIM ELEVATION DITCH OR SWALE DIRECTION OF FLOW OVERFLOW RELIEF SWALE \_\_\_\_\_\_64\_\_\_\_\_ 1 FOOT CONTOURS CURB AND GUTTER

DEPRESSED CURB AND GUTTER REVERSE CURB AND GUTTER SIDEWALK DETECTABLE WARNINGS PROPERTY LINE EASEMENT LINE SETBACK LINE

MAIL BOX SIGN TRAFFIC SIGNAL POWER POLE GUY WIRE GAS VALVE HANDHOLE ELECTRICAL EQUIPMENT TELEPHONE EQUIPMENT CHAIN-LINK FENCE SPOT ELEVATION BRUSH/TREE LINE DECIDUOUS TREE WITH TRUNK DIA. IN INCHES (TBR) CONIFEROUS TREE WITH HEIGHT IN FEET (TBR) SILT FENCE RETAINING WALL WETLAND





# ABBREVIATIONS

|  |  | 06-01-16  |  |  |   |
|--|--|---|--|--|---|
| ADJ<br>AGG.<br>ARCH<br>B.A.M.<br>B-B<br>B/C<br>B/P<br>B-T.<br>BM<br>B.C.E.<br>CMP<br>CNO.<br>CON<br>DIA.<br>DIP<br>DIS<br>DT<br>E ELEV.<br>F.E.<br>F.F.<br>FES | ADJUST<br>AGGREGATE<br>ARCHITECT<br>BITUMINOUS AGGREGATE MIXTURE<br>BACK TO BACK<br>BACK OF CURB<br>BOTTOM OF PIPE<br>BACK OF WALK<br>BUFFALO BOX<br>BITUMINOUS<br>BENCHMARK<br>BY OTHERS<br>COMMERCIAL ENTRANCE<br>CATCH BASIN<br>CENTERLINE<br>CORRUGATED METAL PIPE<br>CONTROL<br>CLEANOUT<br>CONCRETE<br>CUBIC YARD<br>DITCH<br>DIAMETER<br>DUCTILE IRON PIPE<br>DUCTILE IRON PIPE<br>DUCTILE IRON PIPE<br>DUCTILE IRON WATER MAIN<br>DOWNSPOUT<br>DRAIN TILE<br>ELECTRIC<br>EDGE TO EDGE<br>ELEVATION<br>EDGE OF PAVEMENT<br>EXISTING<br>FIELD ENTRANCE<br>FACE TO FACE<br>FINISHED FLOOR<br>FLARED END SECTION | F/L<br>FM<br>G G/F<br>GWWL<br>HH<br>HYD.<br>INV.<br>INV.<br>INV.<br>INV.<br>INV.<br>INV.<br>INV.<br>INV | FLOW LINE<br>FORCE MAIN<br>GROUND<br>GRADE AT FOUNDATION<br>GUY WIRE<br>HEADWALL<br>HANDHOLE<br>HIGH WATER LEVEL<br>HYDRANT<br>INLET<br>INVERT<br>IRON PIPE<br>LEFT<br>MAXIMUM<br>MAILBOX<br>MEET EXISTING<br>MANHOLE<br>MINIMUM<br>NORMAL WATER LEVEL<br>PRIVATE ENTRANCE<br>POINT OF CURVATURE<br>POINT OF CURVATURE<br>POINT OF COMPOUND CURVE<br>PROFILE GRADE LINE<br>POINT OF INTERSECTION<br>PROPERTY LINE<br>POWER POLE<br>PROPOSED<br>POINT OF TANGENCY<br>POLYVINYL CHLORIDE PIPE<br>POINT OF VERTICAL CURVATURE<br>POINT OF VERTICAL INTERSECTION<br>POINT OF VERTICAL INTERSECTION<br>POINT OF VERTICAL INTERSECTION<br>POINT OF VERTICAL TANGENCY<br>PAVEMENT<br>PUBLIC UTILITY & DRAINAGE EASEMENT<br>RADIUS | R.O.W.<br>RCP<br>REM<br>REV<br>RT<br>SAN<br>SF LD.<br>SL<br>SL<br>STA.<br>STD<br>SW<br>SY<br>TBR<br>T - A<br>T /C<br>T /F<br>T /W<br>ALL<br>TEMP<br>TRANS<br>V.B.<br>VCP<br>V.V.<br>WL<br>WM | RIGHT-OF-WAY<br>REINFORCED CONCRETE PIPE<br>REMOVAL<br>REVERSE<br>RAILROAD<br>RIGHT<br>SANITARY<br>SQUARE FOOT<br>SHOULDER<br>STREET LIGHT<br>SANITARY MANHOLE<br>STORM<br>STATION<br>STANDARD<br>SIDEWALK<br>SQUARE YARDS<br>TO BE REMOVED<br>TELEPHONE<br>TYPE A<br>TOP OF CURB<br>TOP OF CURB<br>TOP OF FOUNDATION<br>TOP OF PIPE<br>TOP OF WALK<br>TOP OF WALK<br>TOP OF WALL<br>TEMPORARY<br>TRANSFORMER<br>VALVE BOX<br>VITRIFIED CLAY PIPE<br>VALVE VAULT<br>WATER LEVEL<br>WATER MAIN |

MANHARD CONSULTING, LTD. IS NOT RESPONSIBLE FOR THE SAFETY OF ANY PARTY AT OR ON THE CONSTRUCTION SITE. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ANY OTHER PERSON OR ENTITY PERFORMING WORK OR SERVICES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR THE JOB SITE SAFETY OF PERSONS ENGAGED IN THE WORK OR THE MEANS OR METHODS OF CONSTRUCTION.

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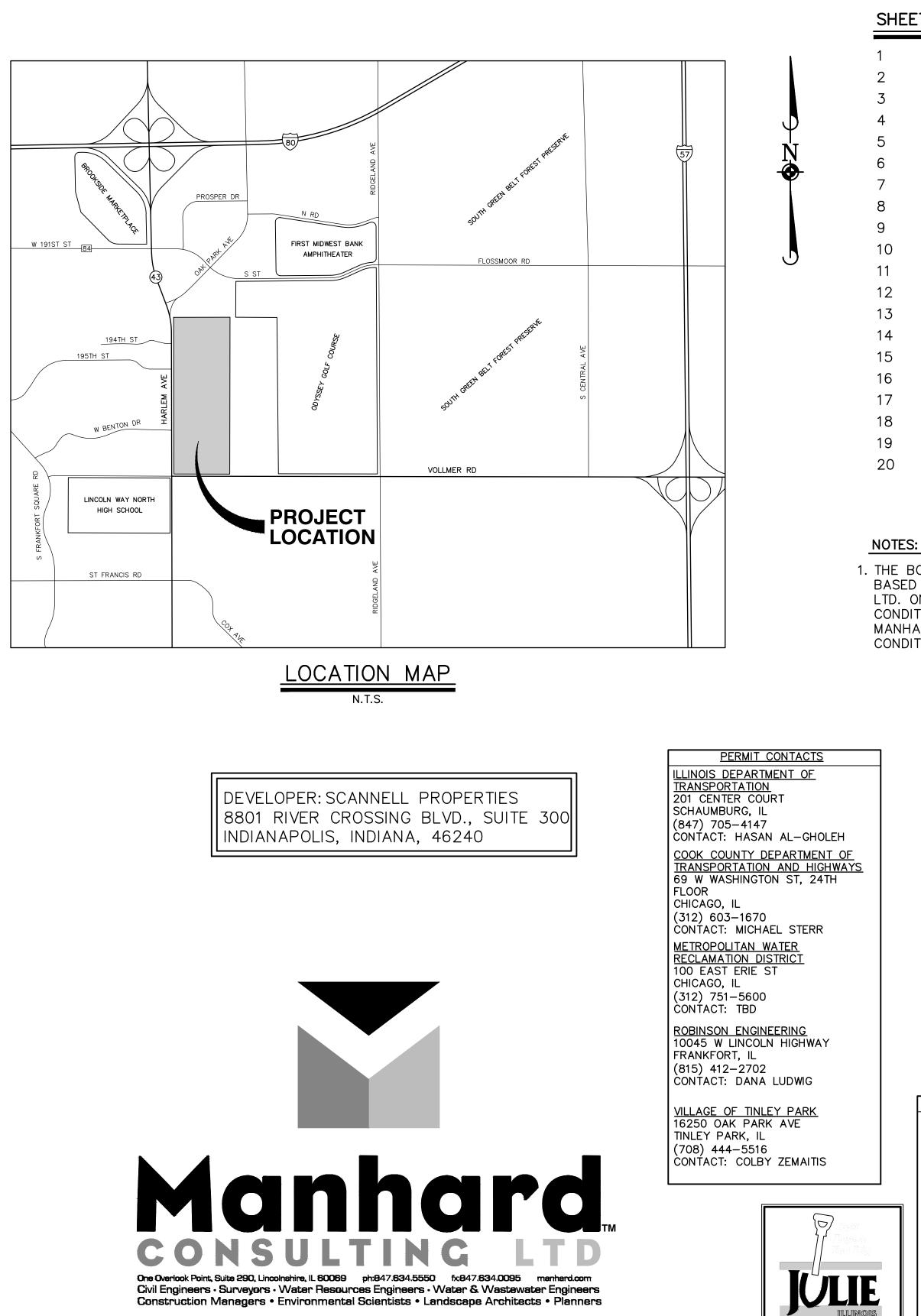
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6 E

# **Proposed Improvements** for **TINLEY PARK BUISNESS CENTER 19501-19701 HARLEM AVENUE VILLAGE OF TINLEY PARK, ILLINOIS** INDEX OF SHEETS



one-call system Simply Call 811

## SHEET NO. DESCRIPTION

## TITLE SHEET EXISTING CONDITIONS AND DEMOLITION PLAN OVERALL SITE DIMENSIONAL AND PAVING PLAN SITE DIMENSIONAL AND PAVING PLAN - NORTH SITE DIMENSIONAL AND PAVING PLAN - MID-NORTH SITE DIMENSIONAL AND PAVING PLAN - MID-SOUTH SITE DIMENSIONAL AND PAVING PLAN - SOUTH GRADING PLAN - NORTH GRADING PLAN - MID-NORTH GRADING PLAN - MID-SOUTH GRADING PLAN - SOUTH GRADING CROSS SECTIONS UTILITY PLAN - NORTH UTILITY PLAN - MID-NORTH UTILITY PLAN - MID-SOUTH UTILITY PLAN - SOUTH UTILITY PLAN - OFFSITE CONSTUCTION DETAILS CONSTUCTION DETAILS CONSTRUCTION SPECIFICATIONS

1. THE BOUNDARY LINES AND TOPOGRAPHY FOR THIS PROJECT ARE BASED ON A FIELD SURVEY COMPLETED BY MANHARD CONSULTING, LTD. ON 04-23-21. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY MANHARD CONSULTING AND THE CLIENT IN WRITING OF ANY DIFFERING CONDITIONS.

## **BENCHMARKS:**

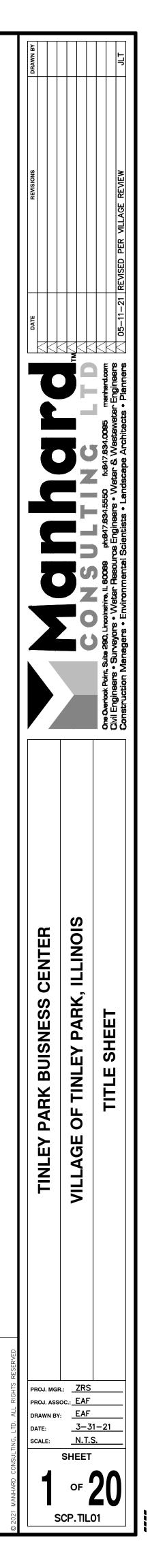
SOURCE BENCHMARK: ELEVATIONS AND SITE BENCHMARKS SHOWN HEREON WERE ESTABLISHED UTILIZING A TRIMBLE RAPID STATIC GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) AND THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA'S) ONLINE POSITIONING USER SERVICE (OPUS). INADDITION, AN NGS BENCHMARK (PID ME1935) WAS ALSO CHECKED TO CONFIRM THE OPUS SOLUTION. THE OBSERVED ELEVATIONS, AS REFINED BY OPUS, IS THE BASIS FOR ALL ELEVATIONS SHOWN HEREON. ALL ELEVATIONS ARE BASED ON NAVD 88 DATUM (GEOID18).

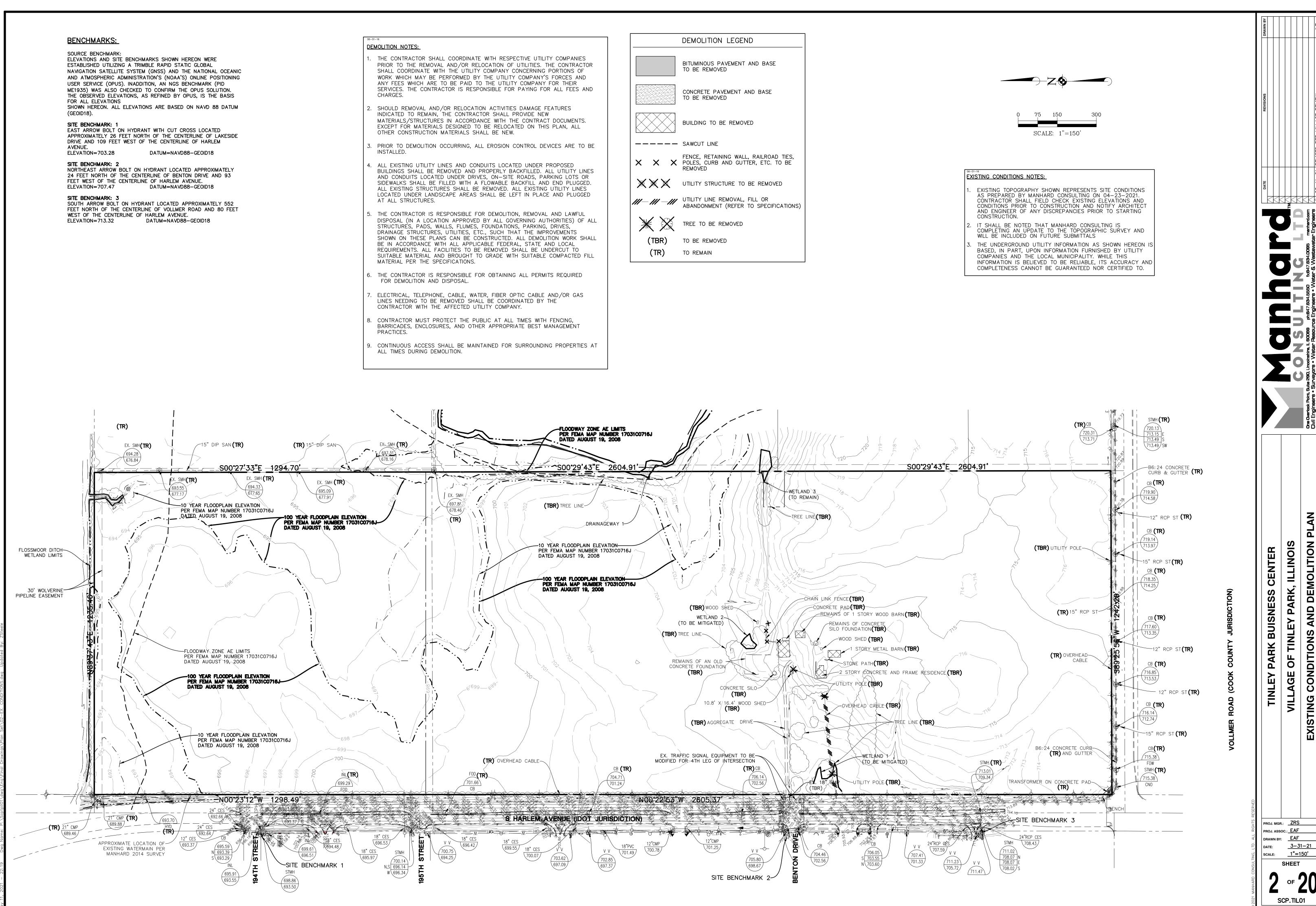
SITE BENCHMARK: 1 EAST ARROW BOLT ON HYDRANT WITH CUT CROSS LOCATED APPROXIMATELY 26 FEET NORTH OF THE CENTERLINE OF LAKESIDE DRIVE AND 109 FEET WEST OF THE CENTERLINE OF HARLEM AVENUE. ELEVATION=703.28 DATUM=NAVD88-GEOID18

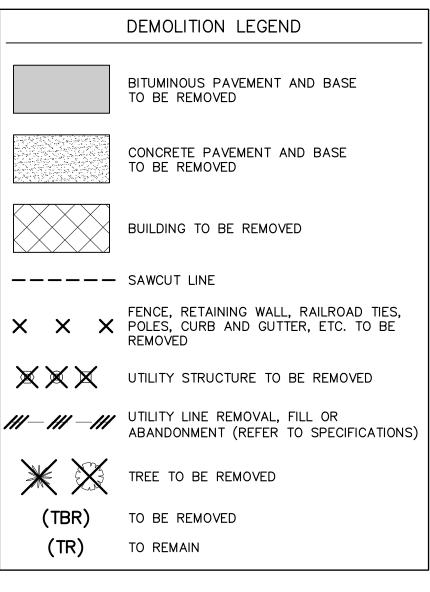
SITE BENCHMARK: 2 NORTHEAST ARROW BOLT ON HYDRANT LOCATED APPROXIMATELY 24 FEET NORTH OF THE CENTERLINE OF BENTON DRIVE AND 93 FEET WEST OF THE CENTERLINE OF HARLEM AVENUE. ELEVATION=707.47 DATUM=NAVD88-GEOID18

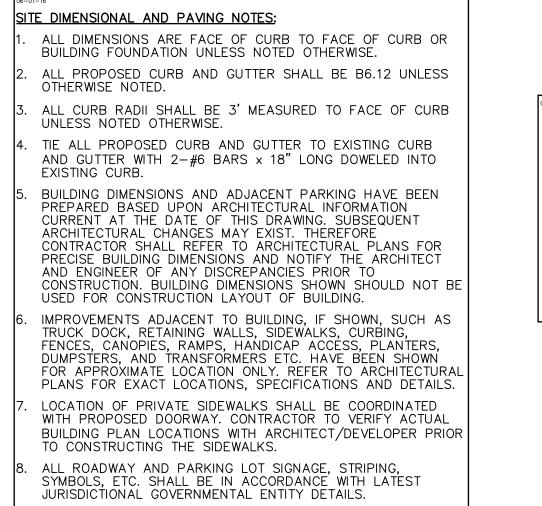
SITE BENCHMARK: 3 SOUTH ARROW BOLT ON HYDRANT LOCATED APPROXIMATELY 552 FEET NORTH OF THE CENTERLINE OF VOLLMER ROAD AND 80 FEET WEST OF THE CENTERLINE OF HARLEM AVENUE. ELEVATION=713.32 DATUM=NAVD88-GEOID18

| UTILITY CONTACTS                                             |                                                                                                                      |  |  |
|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--|--|
| <u>ELECTRIC</u><br>COMED<br>1-866-NEW-ELEC<br>1-866-639-3532 | WATER<br>VILLAGE OF TINLEY PARK<br>16250 OAK PARK AVE<br>TINLEY PARK, IL<br>(708) 444–5500<br>CONTACT: JOHN URBANSKI |  |  |
| GAS                                                          | TELEPHONE                                                                                                            |  |  |
| NICOR                                                        | AT&T                                                                                                                 |  |  |
| 90 FINLEY ROAD                                               | 65 W. WEBSTER ST                                                                                                     |  |  |
| GLEN ELLYN, IL                                               | JOLIET, IL                                                                                                           |  |  |
| (815) 272–9276                                               | (815) 727–0327                                                                                                       |  |  |
| CONTACT: TIFFANY WICKS                                       | CONTACT: CURT LUINS                                                                                                  |  |  |
| <u>SEWER</u>                                                 | GAS – TRANSMISSION LINE                                                                                              |  |  |
| VILLAGE OF TINLEY PARK                                       | WOLVERINE PIPE LINE CO.                                                                                              |  |  |
| 16250 OAK PARK AVE                                           | 8075 CREEKSIDE DR                                                                                                    |  |  |
| TINLEY PARK, IL                                              | PORTAGE, MI                                                                                                          |  |  |
| (708) 444–5500                                               | (269) 323–2491 EXT: 124                                                                                              |  |  |
| CONTACT: JOHN URBANSKI                                       | CONTACT: LOUIS KRAUS                                                                                                 |  |  |





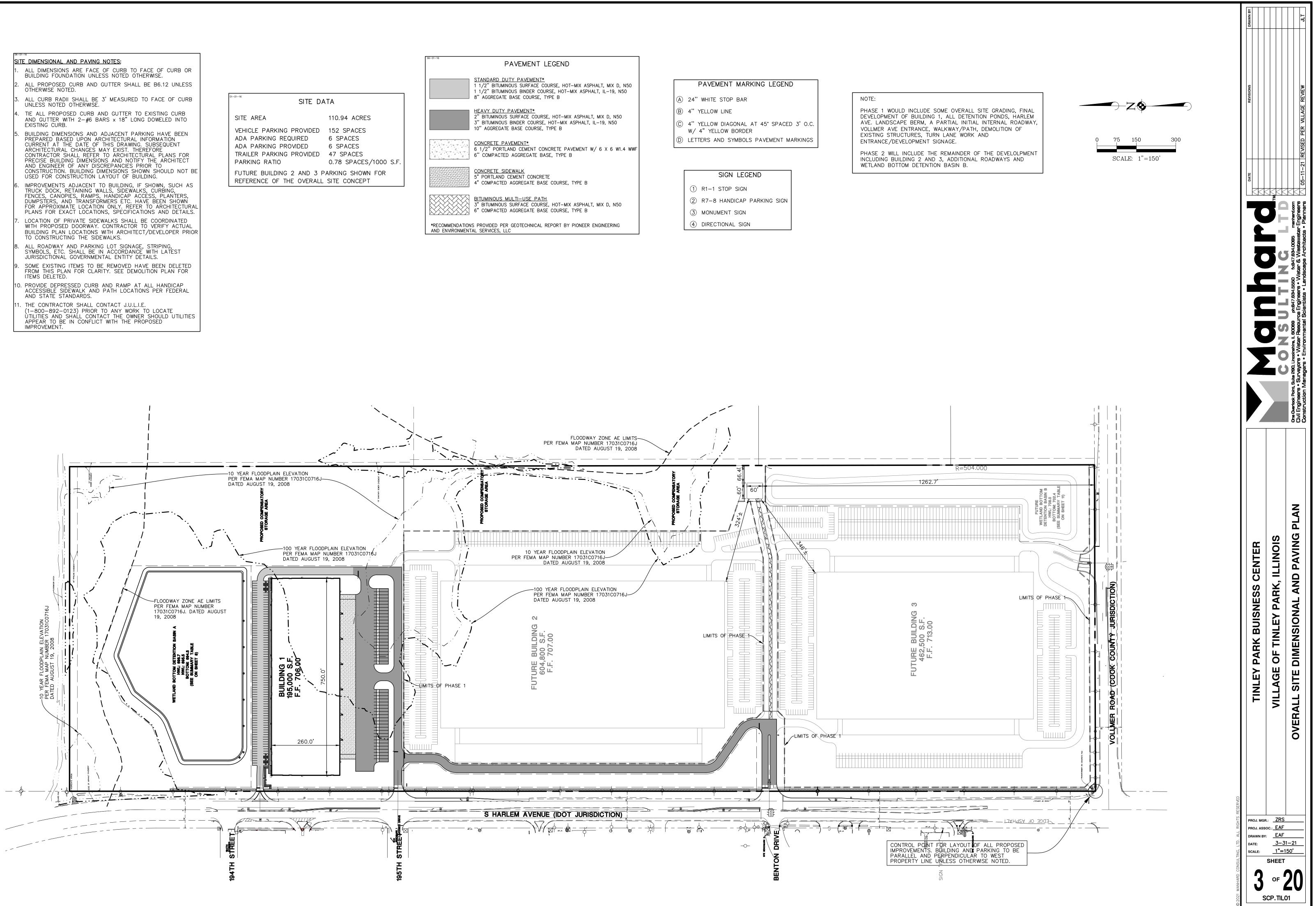




|     | JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.                                                                                  |
|-----|------------------------------------------------------------------------------------------------------------------------------|
| 9.  | SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED<br>FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR<br>ITEMS DELETED. |
| 10. | PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP<br>ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL                        |

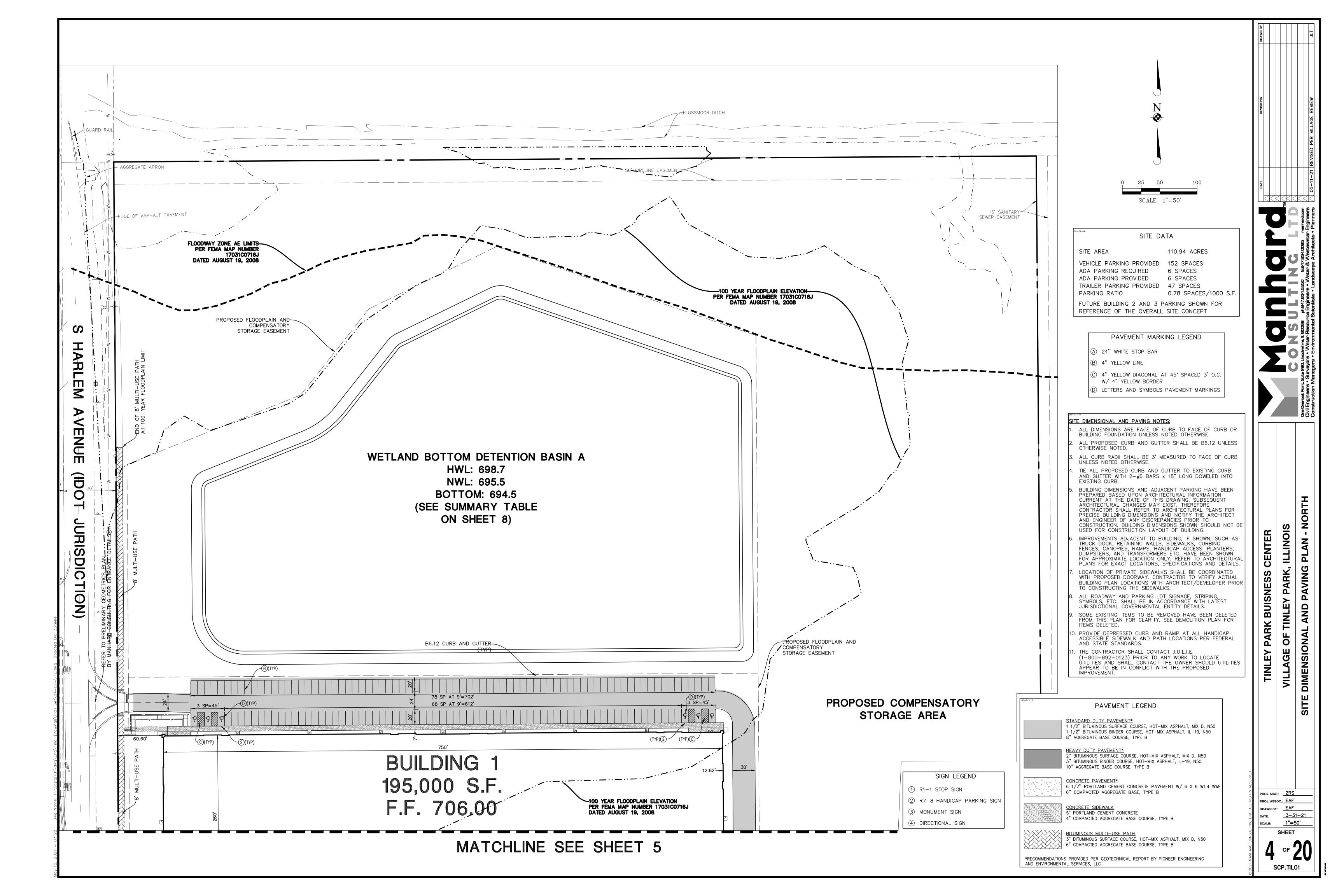
- A LOCATIONS PER FEDERAL AND STATE STANDARDS.
- (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE

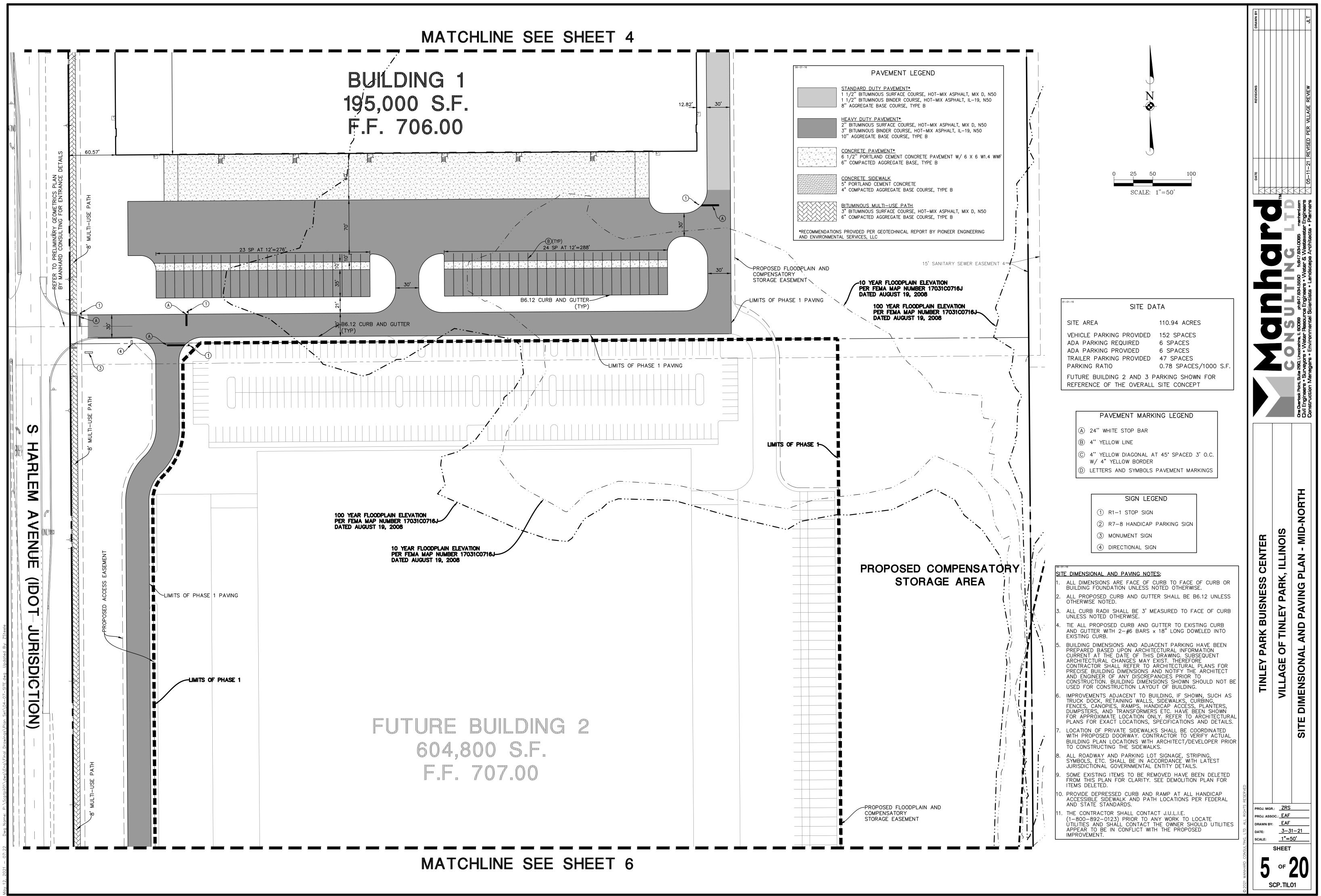
| SITE DATA                                                                                                             |                                                                                                                |  |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--|
| SITE AREA                                                                                                             | 110.94 ACRES                                                                                                   |  |
| VEHICLE PARKING PROVIDED<br>ADA PARKING REQUIRED<br>ADA PARKING PROVIDED<br>TRAILER PARKING PROVIDED<br>PARKING RATIO | <ul><li>152 SPACES</li><li>6 SPACES</li><li>6 SPACES</li><li>47 SPACES</li><li>0.78 SPACES/1000 S.F.</li></ul> |  |
| FUTURE BUILDING 2 AND 3 P<br>REFERENCE OF THE OVERALL                                                                 |                                                                                                                |  |

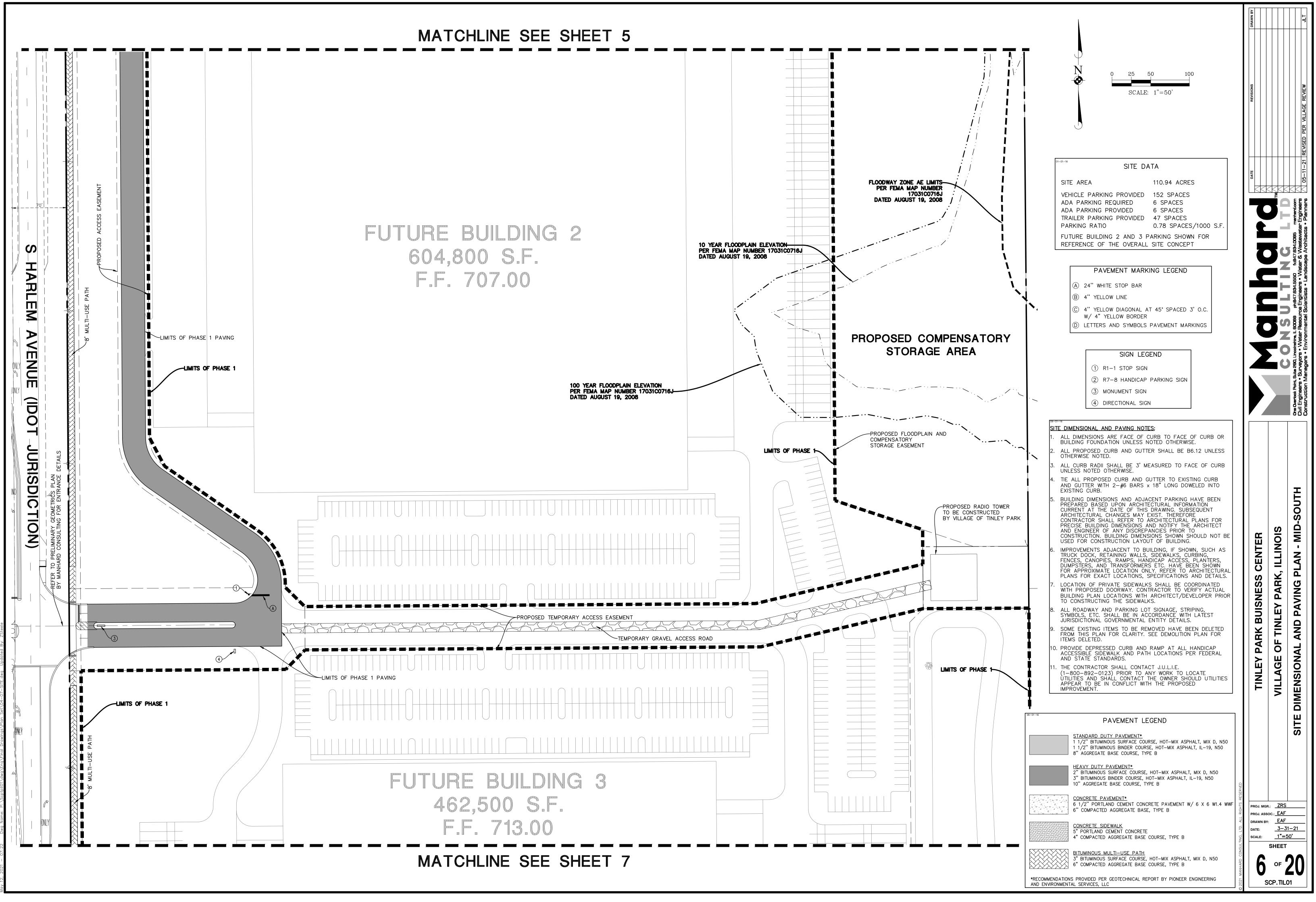


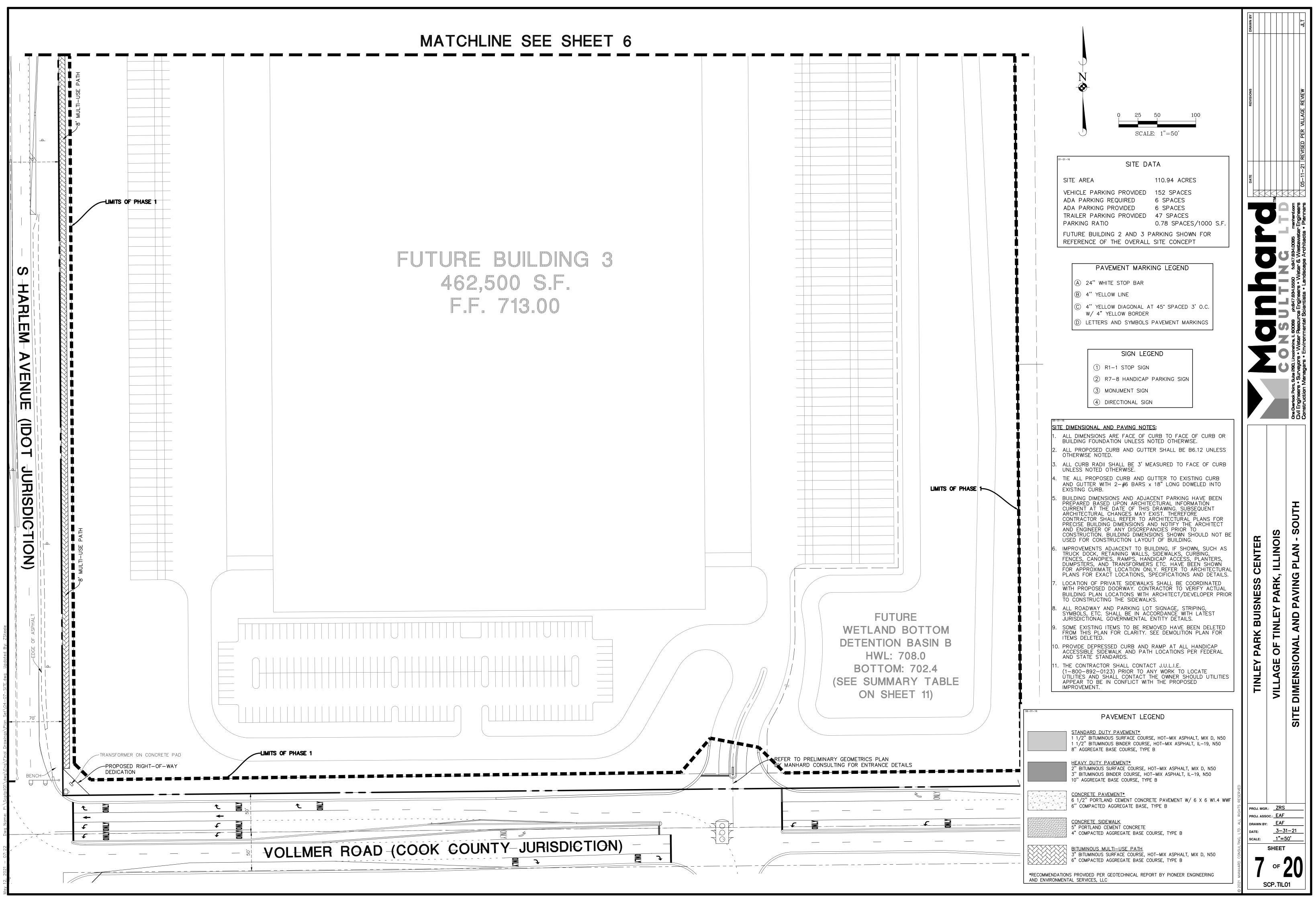
| 06-01-16                                                                                                    | PAVEMENT LEGEND                                                                                                                                                                                     |  |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                             | <u>STANDARD_DUTY_PAVEMENT*</u><br>1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX_ASPHALT, MIX_D, N50<br>1 1/2" BITUMINOUS BINDER_COURSE, HOT-MIX_ASPHALT, IL-19, N50<br>8" AGGREGATE BASE COURSE, TYPE B |  |
|                                                                                                             | HEAVY DUTY PAVEMENT*<br>2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50<br>3" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50<br>10" AGGREGATE BASE COURSE, TYPE B                  |  |
|                                                                                                             | CONCRETE PAVEMENT*<br>6 1/2" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF<br>6" COMPACTED AGGREGATE BASE, TYPE B                                                                             |  |
|                                                                                                             | <u>CONCRETE_SIDEWALK</u><br>5" PORTLAND_CEMENT_CONCRETE<br>4" COMPACTED_AGGREGATE_BASE_COURSE, TYPE_B                                                                                               |  |
|                                                                                                             | BITUMINOUS MULTI-USE PATH<br>3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50<br>6" COMPACTED AGGREGATE BASE COURSE, TYPE B                                                                |  |
| *RECOMMENDATIONS PROVIDED PER GEOTECHNICAL REPORT BY PIONEER ENGINEERING<br>AND ENVIRONMENTAL SERVICES, LLC |                                                                                                                                                                                                     |  |

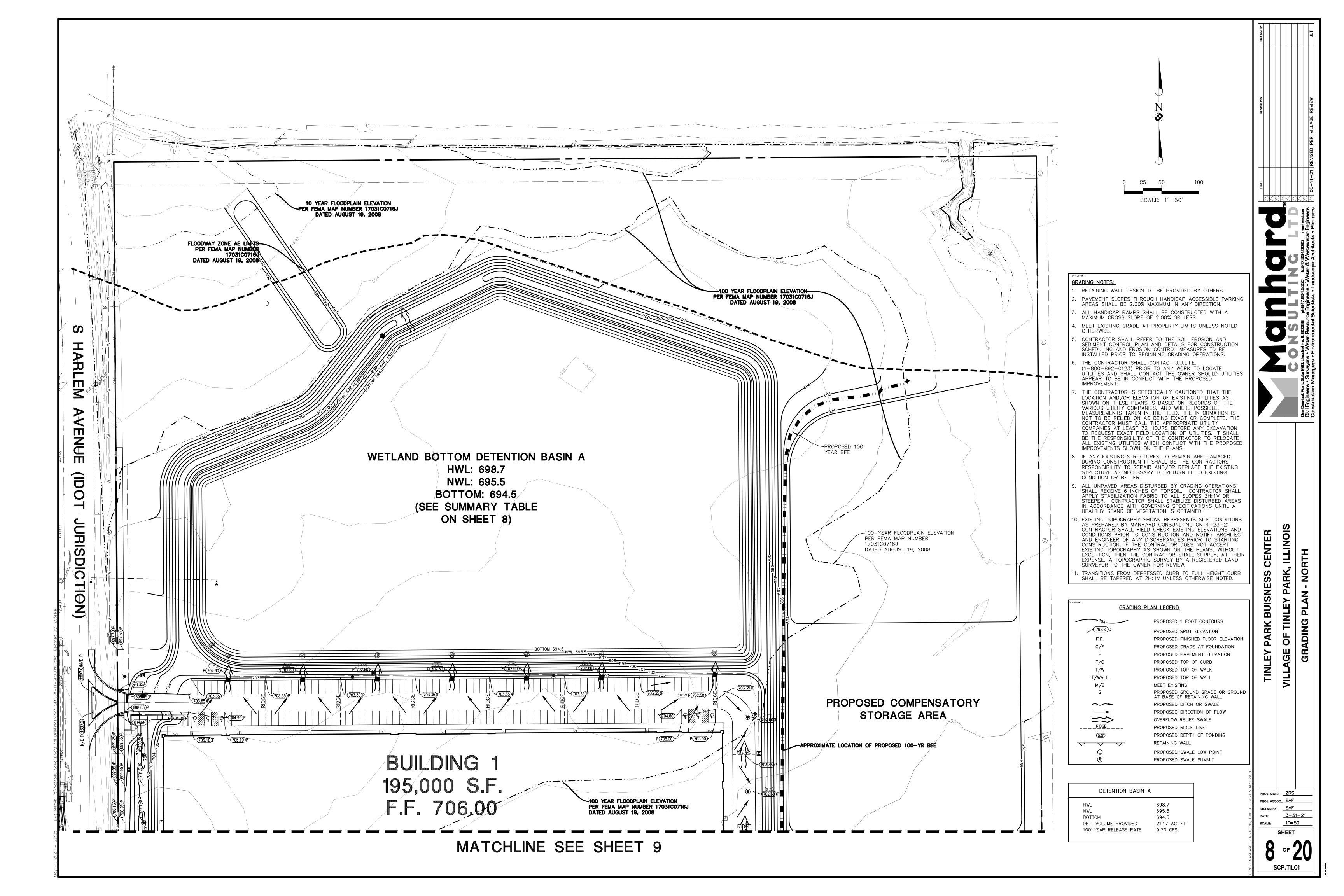


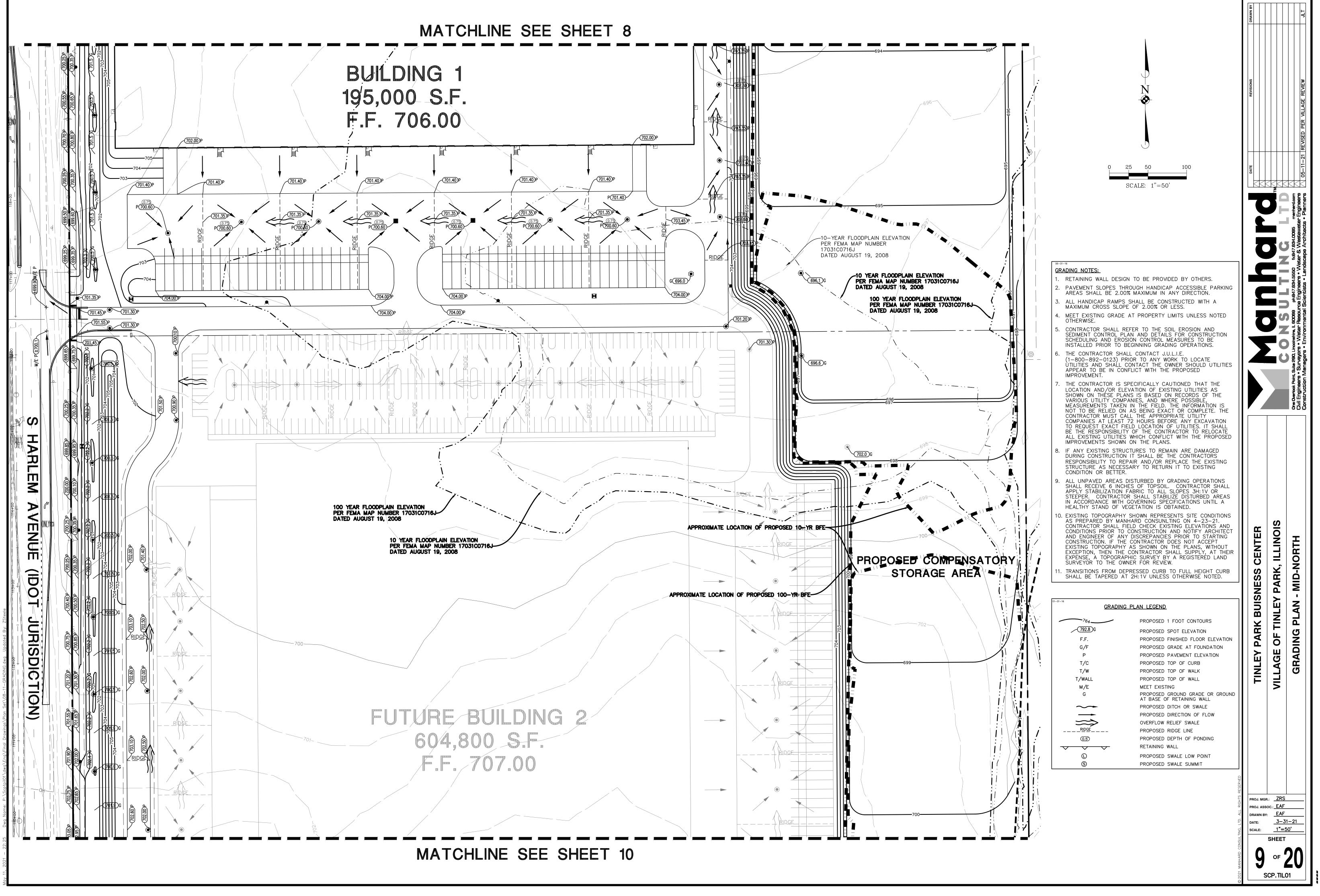


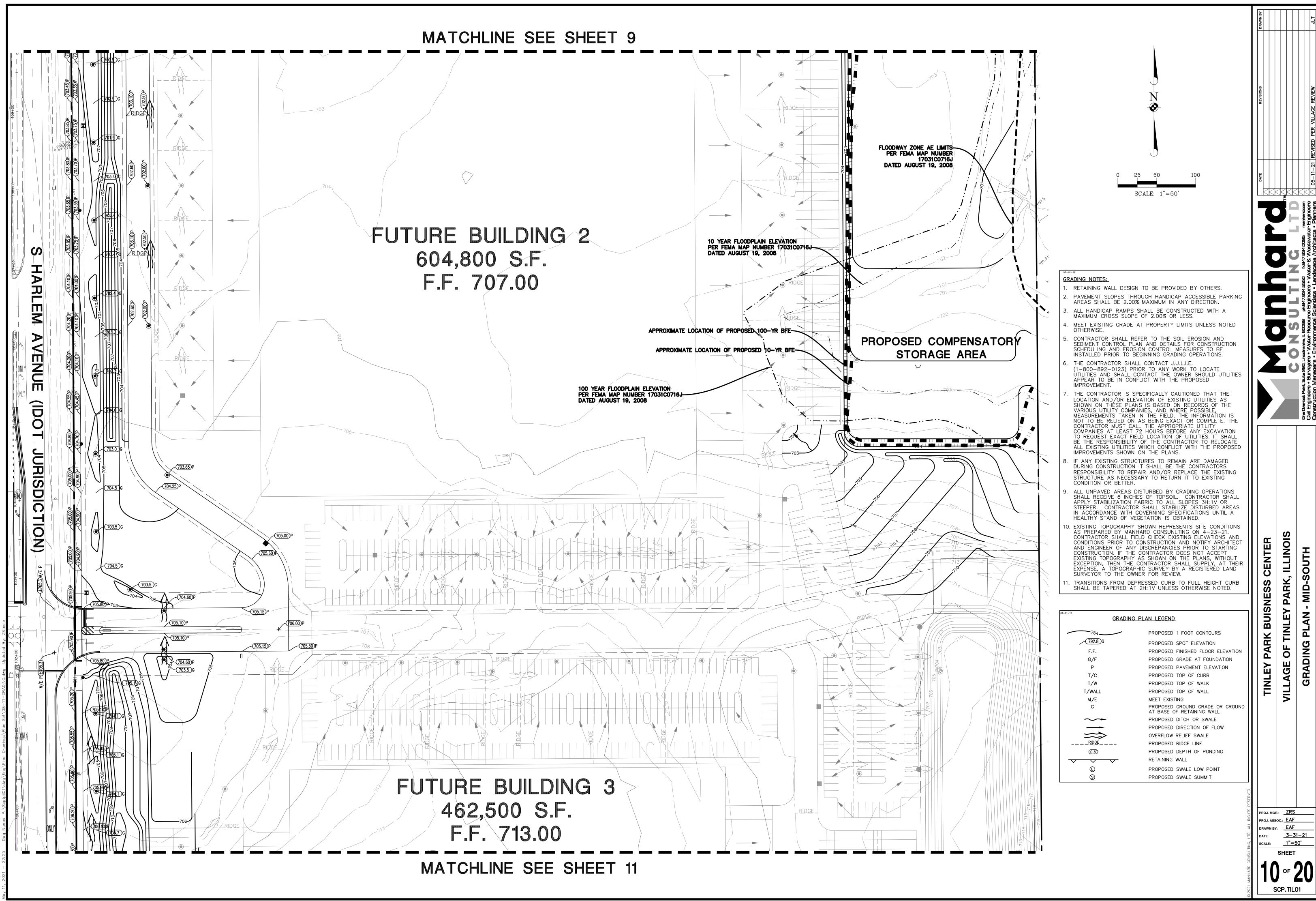


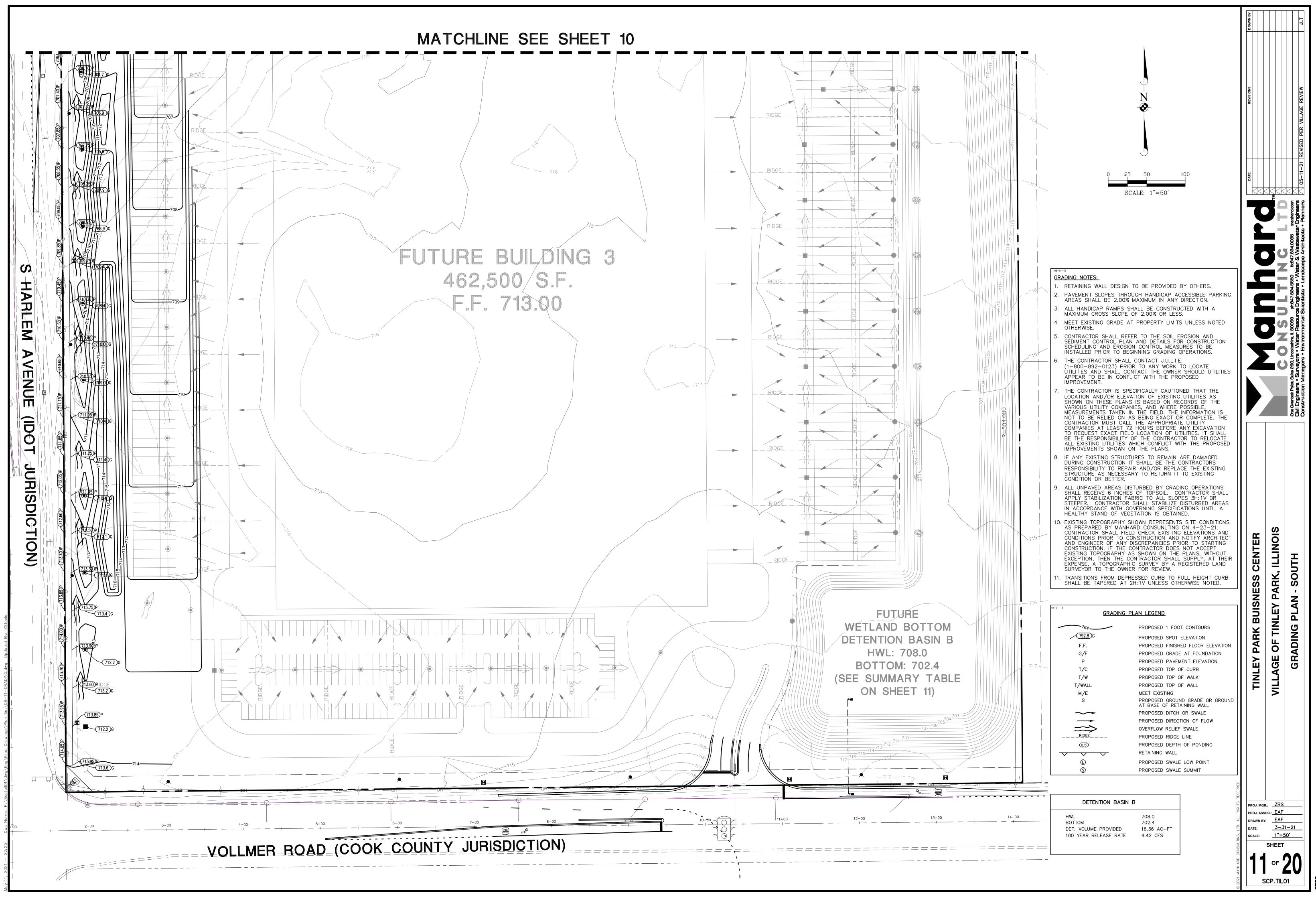


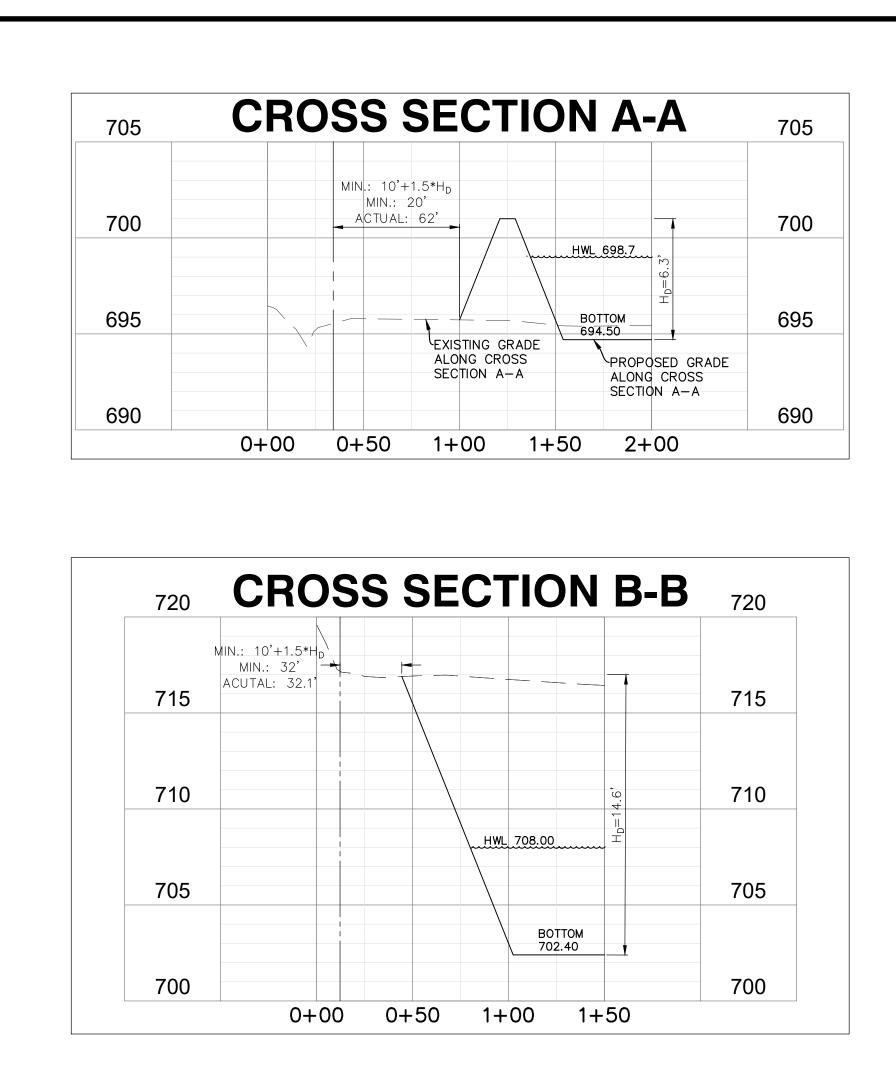




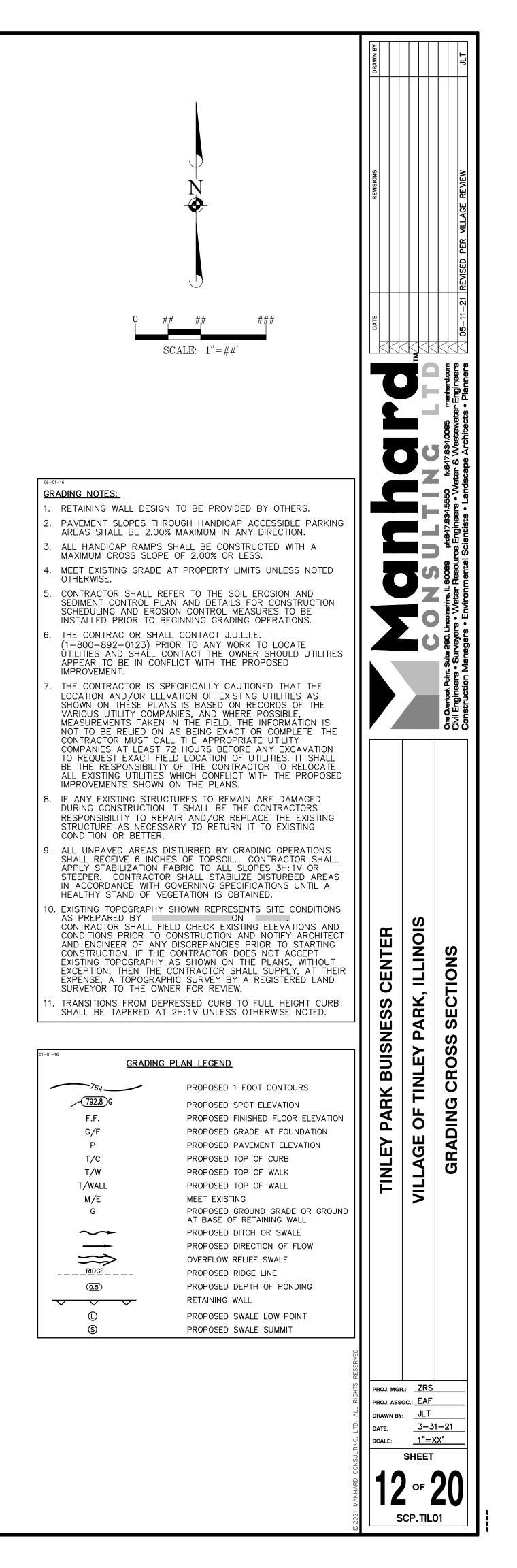


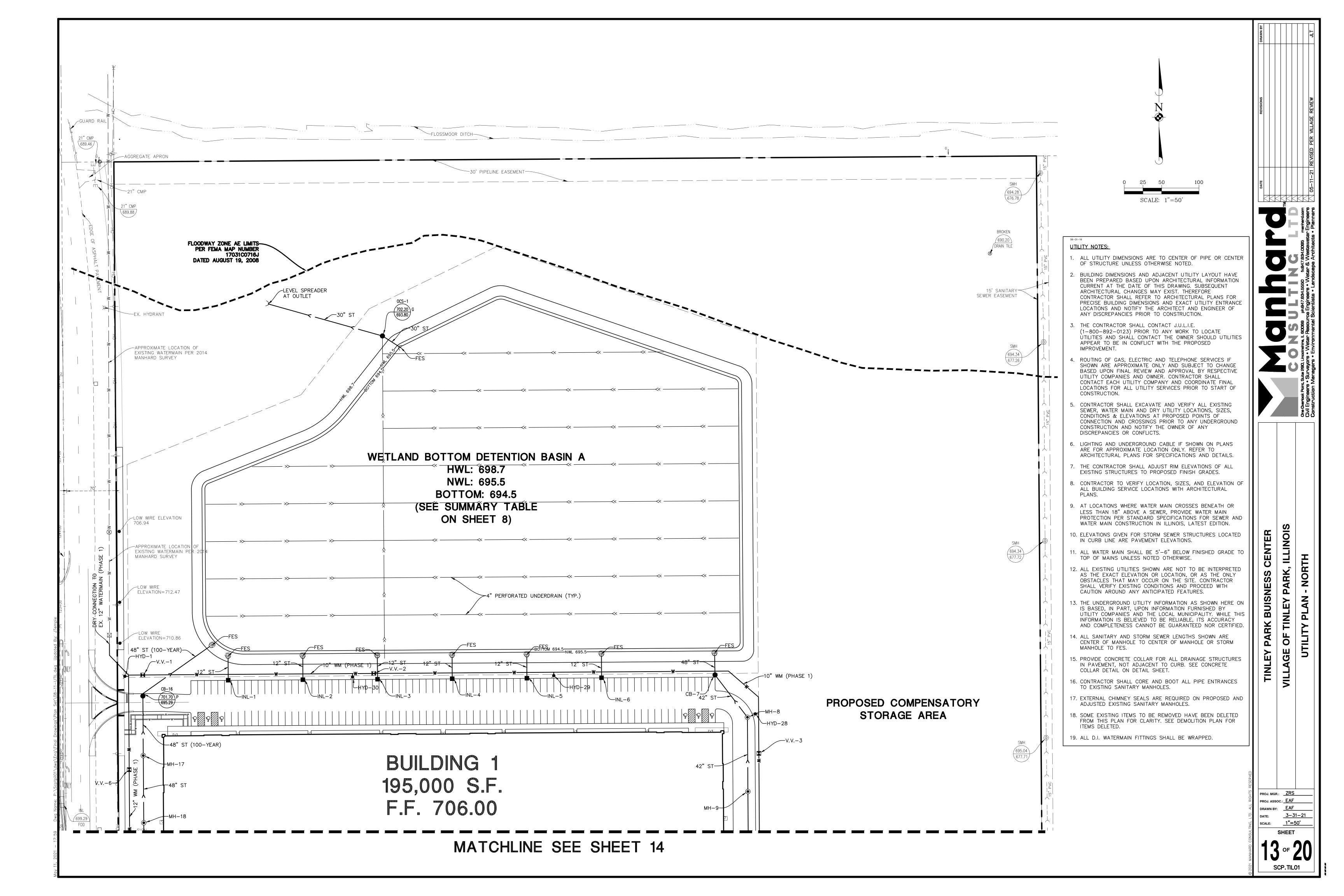


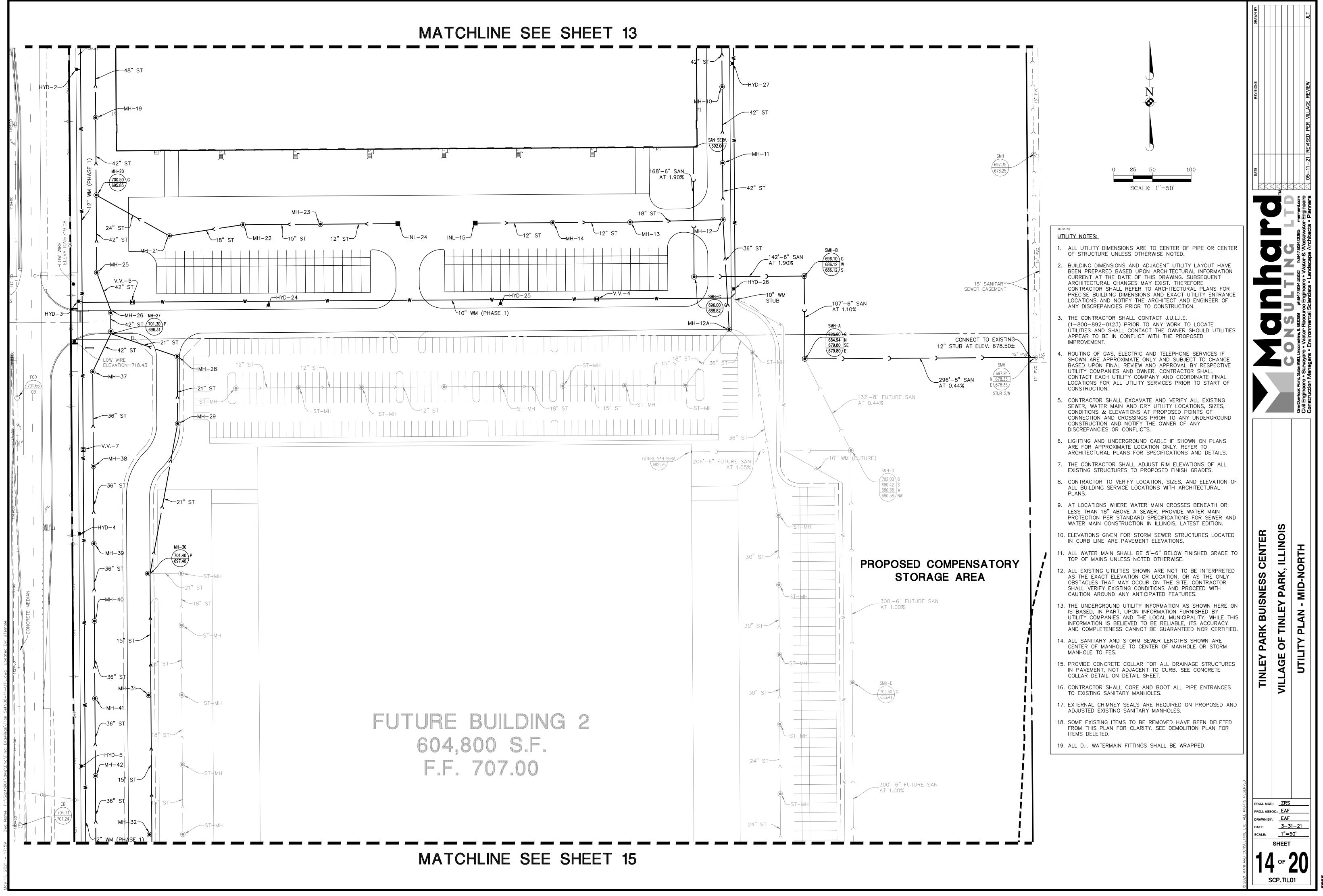


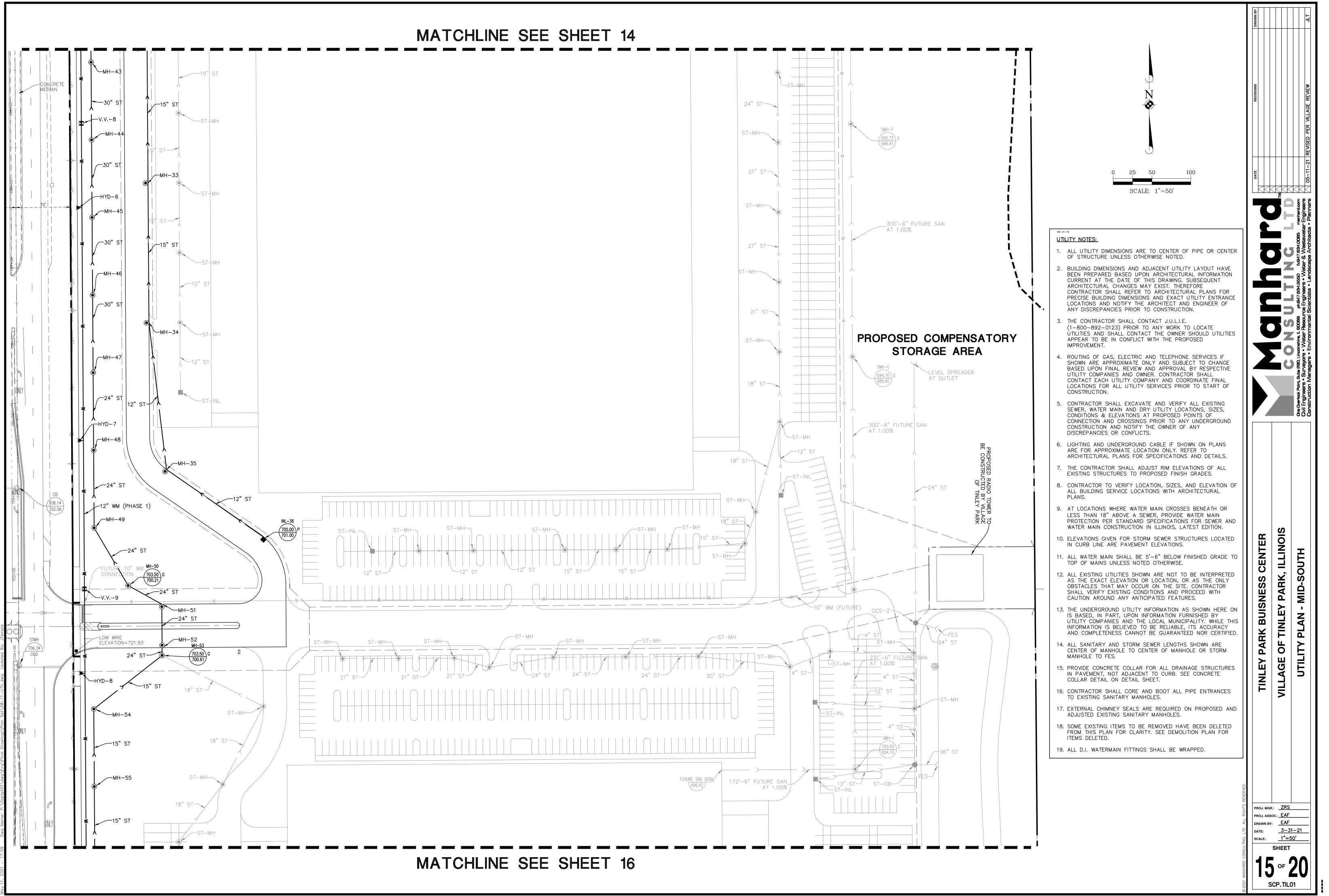


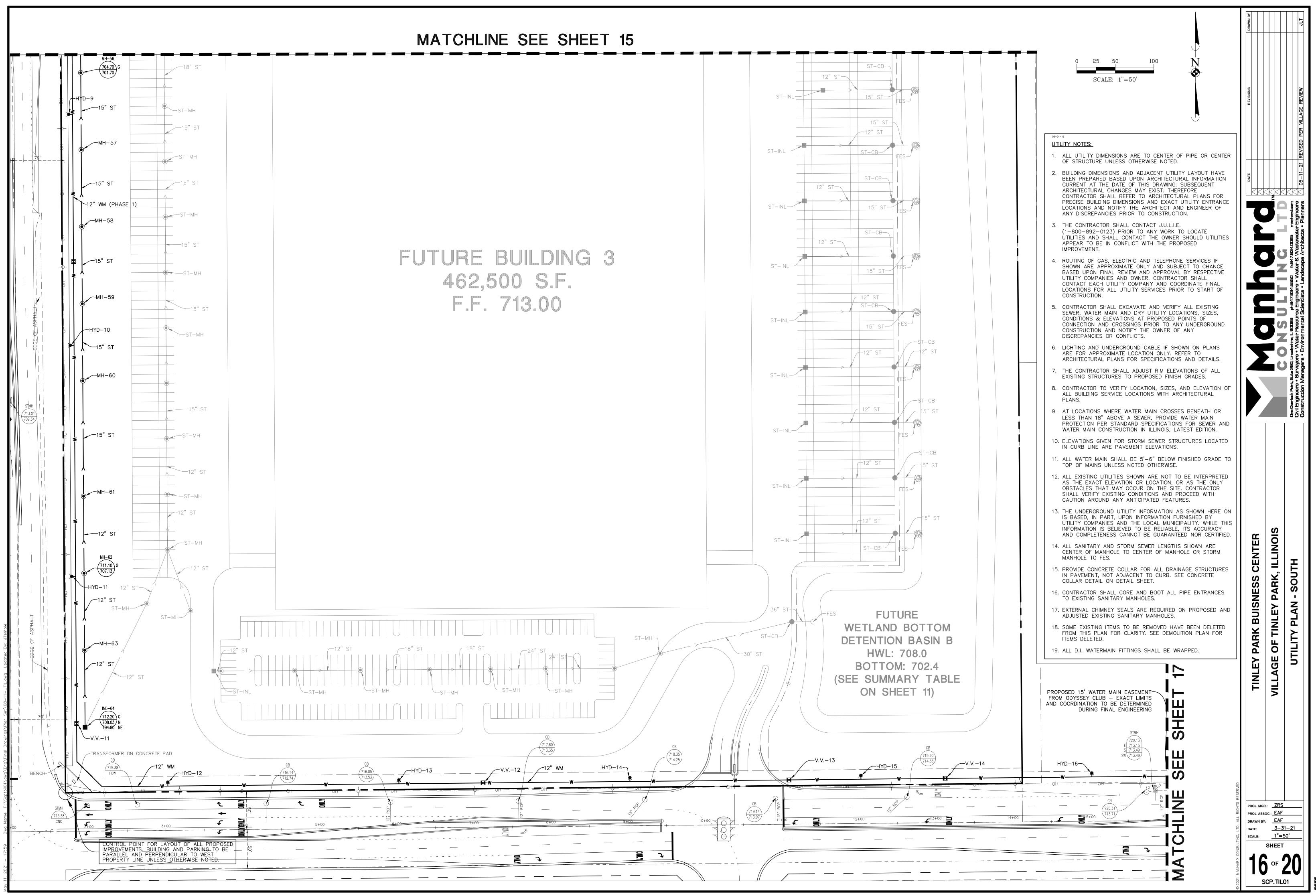


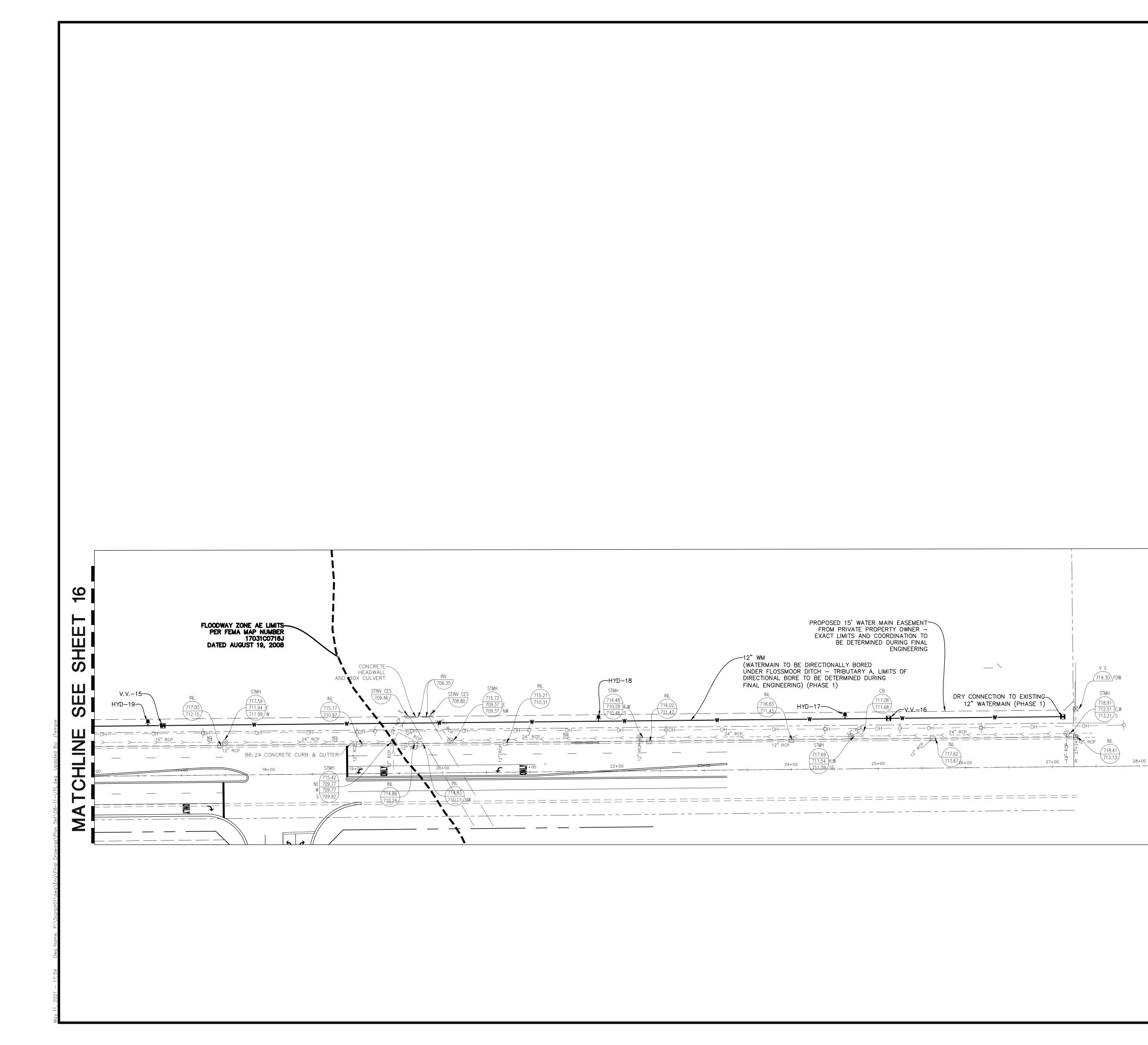


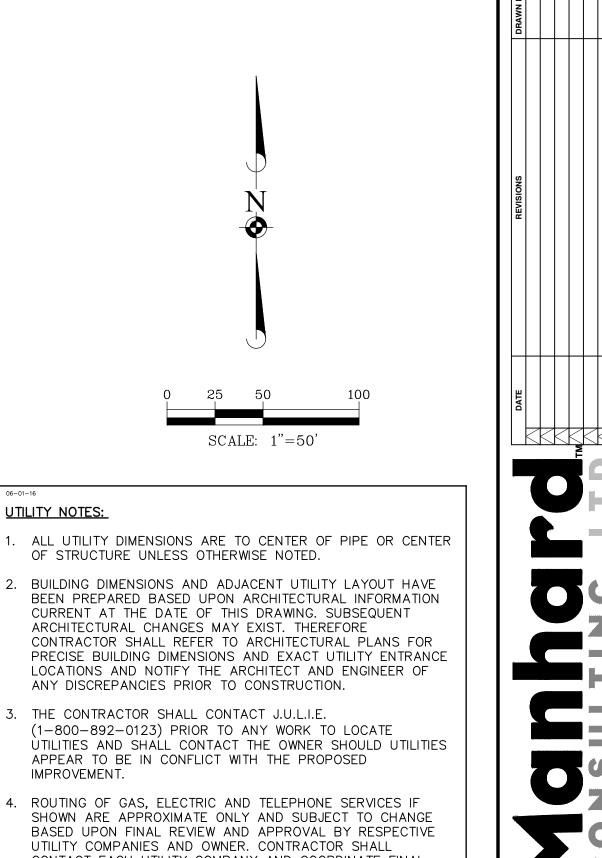








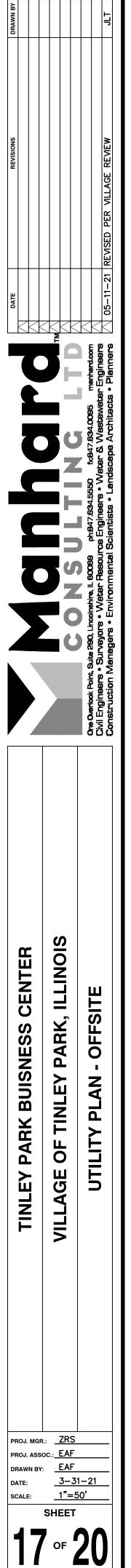




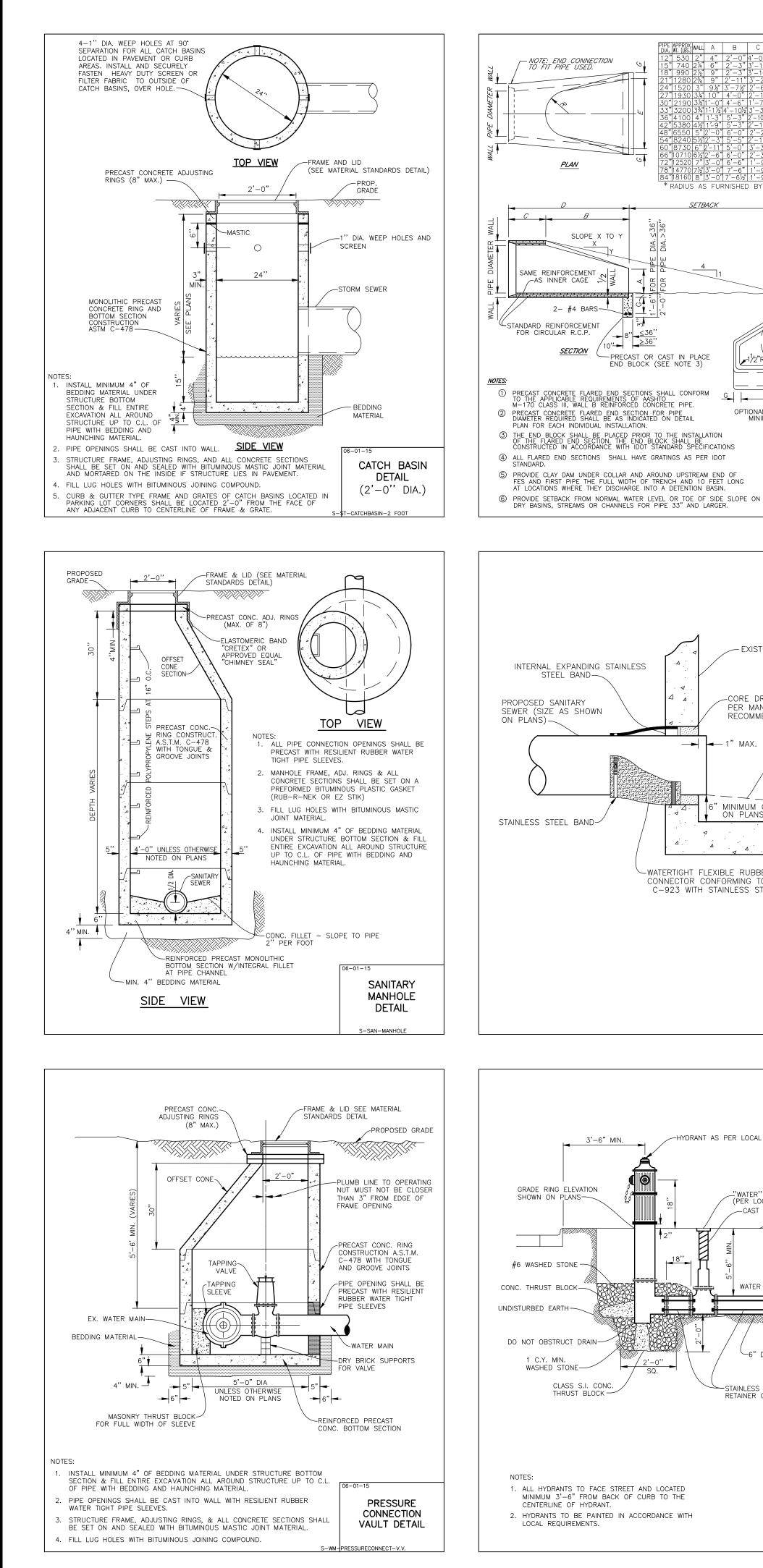
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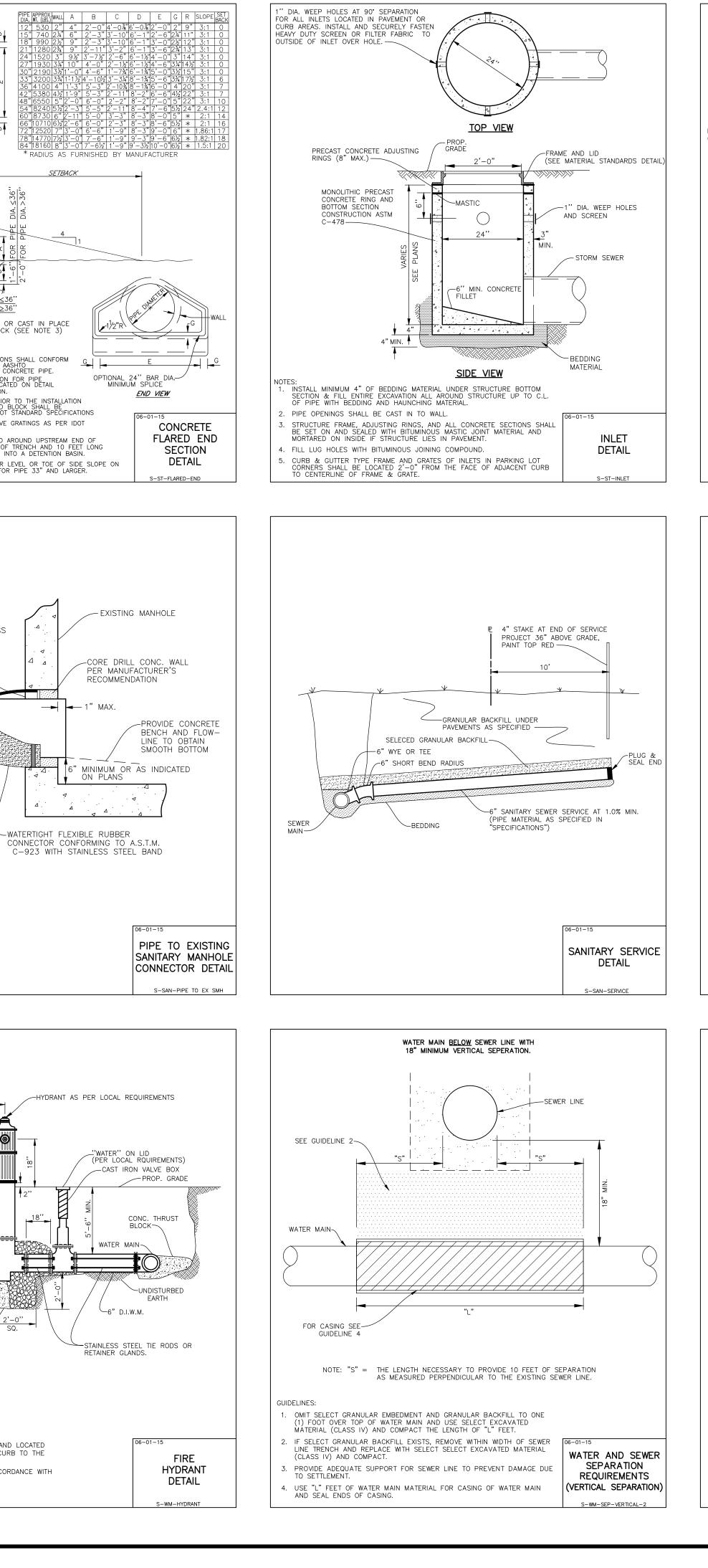
- 2. BUILDING DIMENSIONS AND ADJACENT UTILITY LAYOUT HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE
- 3. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED
- 4. ROUTING OF GAS, ELECTRIC AND TELEPHONE SERVICES IF SHOWN ARE APPROXIMATE ONLY AND SUBJECT TO CHANGE BASED UPON FINAL REVIEW AND APPROVAL BY RESPECTIVE UTILITY COMPANIES AND OWNER. CONTRACTOR SHALL CONTACT EACH UTILITY COMPANY AND COORDINATE FINAL LOCATIONS FOR ALL UTILITY SERVICES PRIOR TO START OF CONSTRUCTION.
- 5. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
- 6. LIGHTING AND UNDERGROUND CABLE IF SHOWN ON PLANS ARE FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATIONS AND DETAILS.
- 7. THE CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF ALL EXISTING STRUCTURES TO PROPOSED FINISH GRADES.
- 8. CONTRACTOR TO VERIFY LOCATION, SIZES, AND ELEVATION OF ALL BUILDING SERVICE LOCATIONS WITH ARCHITECTURAL PLANS.
- 9. AT LOCATIONS WHERE WATER MAIN CROSSES BENEATH OR LESS THAN 18" ABOVE A SEWER, PROVIDE WATER MAIN PROTECTION PER STANDARD SPECIFICATIONS FOR SEWER AND WATER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.
- 10. ELEVATIONS GIVEN FOR STORM SEWER STRUCTURES LOCATED IN CURB LINE ARE PAVEMENT ELEVATIONS.
- 11. ALL WATER MAIN SHALL BE 5'-6" BELOW FINISHED GRADE TO TOP OF MAINS UNLESS NOTED OTHERWISE.
- 12. ALL EXISTING UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT ELEVATION OR LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES.
- 13. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HERE ON IS BASED. IN PART. UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED.
- 14. ALL SANITARY AND STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
- 15. PROVIDE CONCRETE COLLAR FOR ALL DRAINAGE STRUCTURES IN PAVEMENT, NOT ADJACENT TO CURB. SEE CONCRETE COLLAR DETAIL ON DETAIL SHEET.
- 16. CONTRACTOR SHALL CORE AND BOOT ALL PIPE ENTRANCES TO EXISTING SANITARY MANHOLES.
- 17. EXTERNAL CHIMNEY SEALS ARE REQUIRED ON PROPOSED AND ADJUSTED EXISTING SANITARY MANHOLES.
- 18. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.

19. ALL D.I. WATERMAIN FITTINGS SHALL BE WRAPPED.

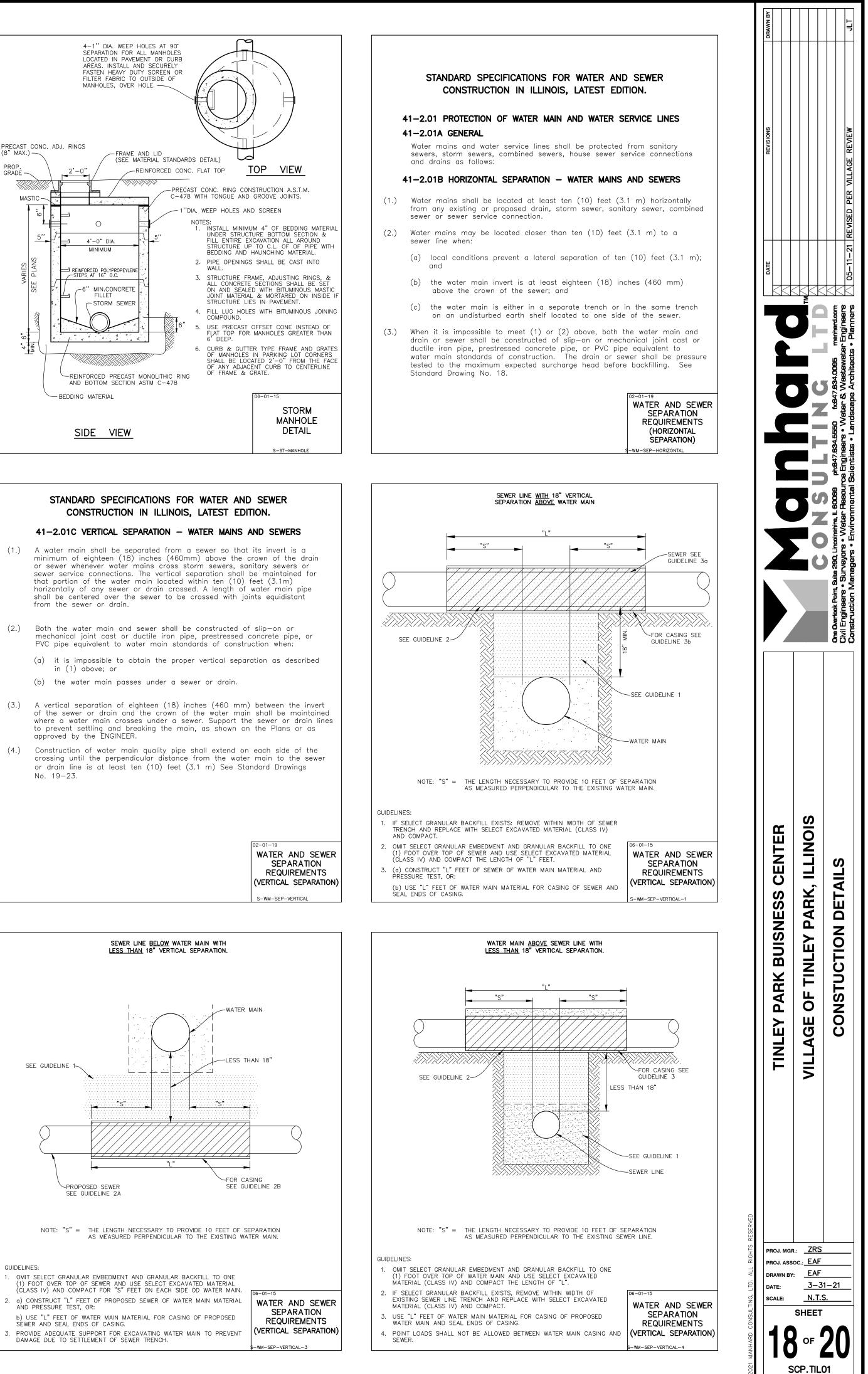


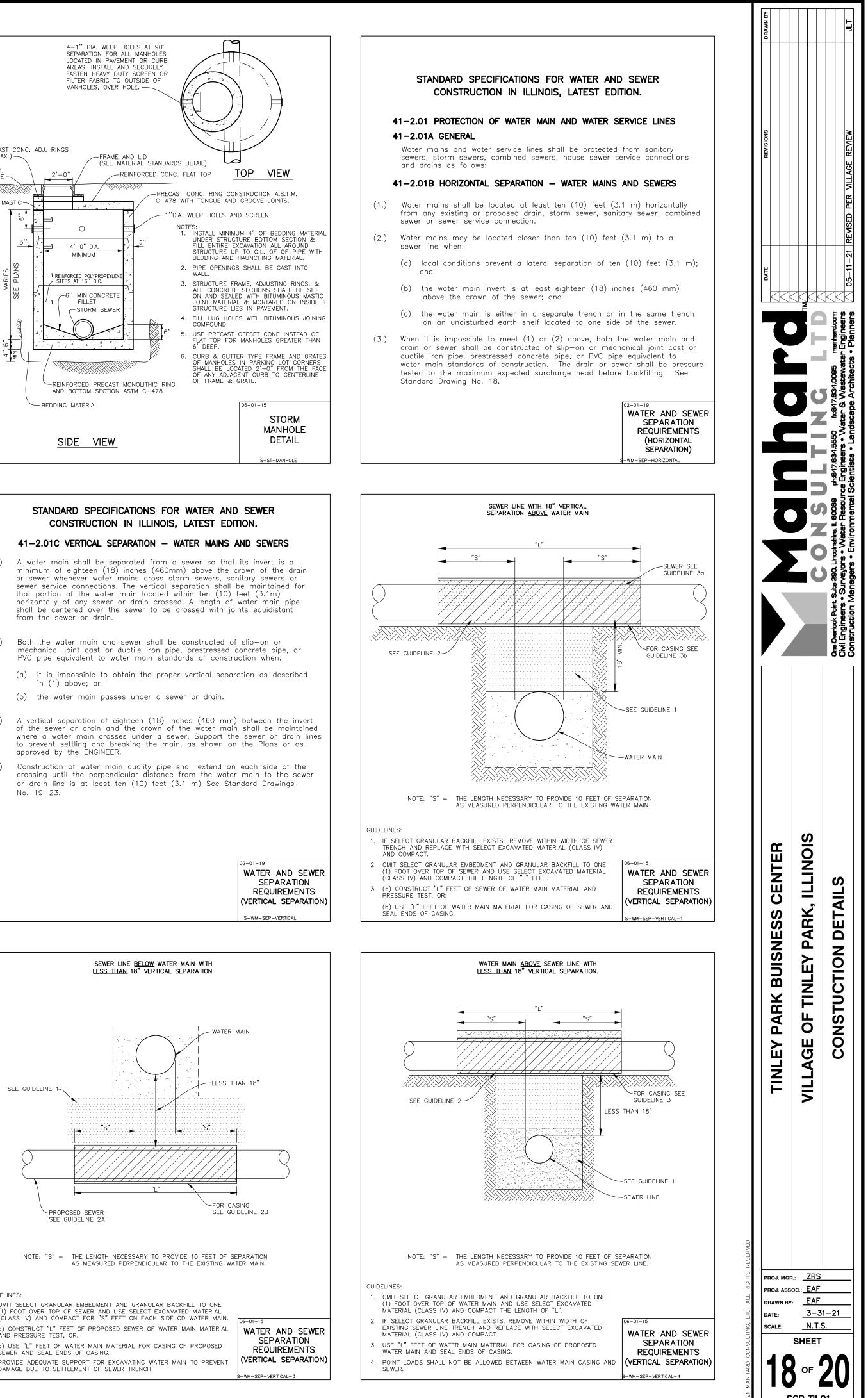
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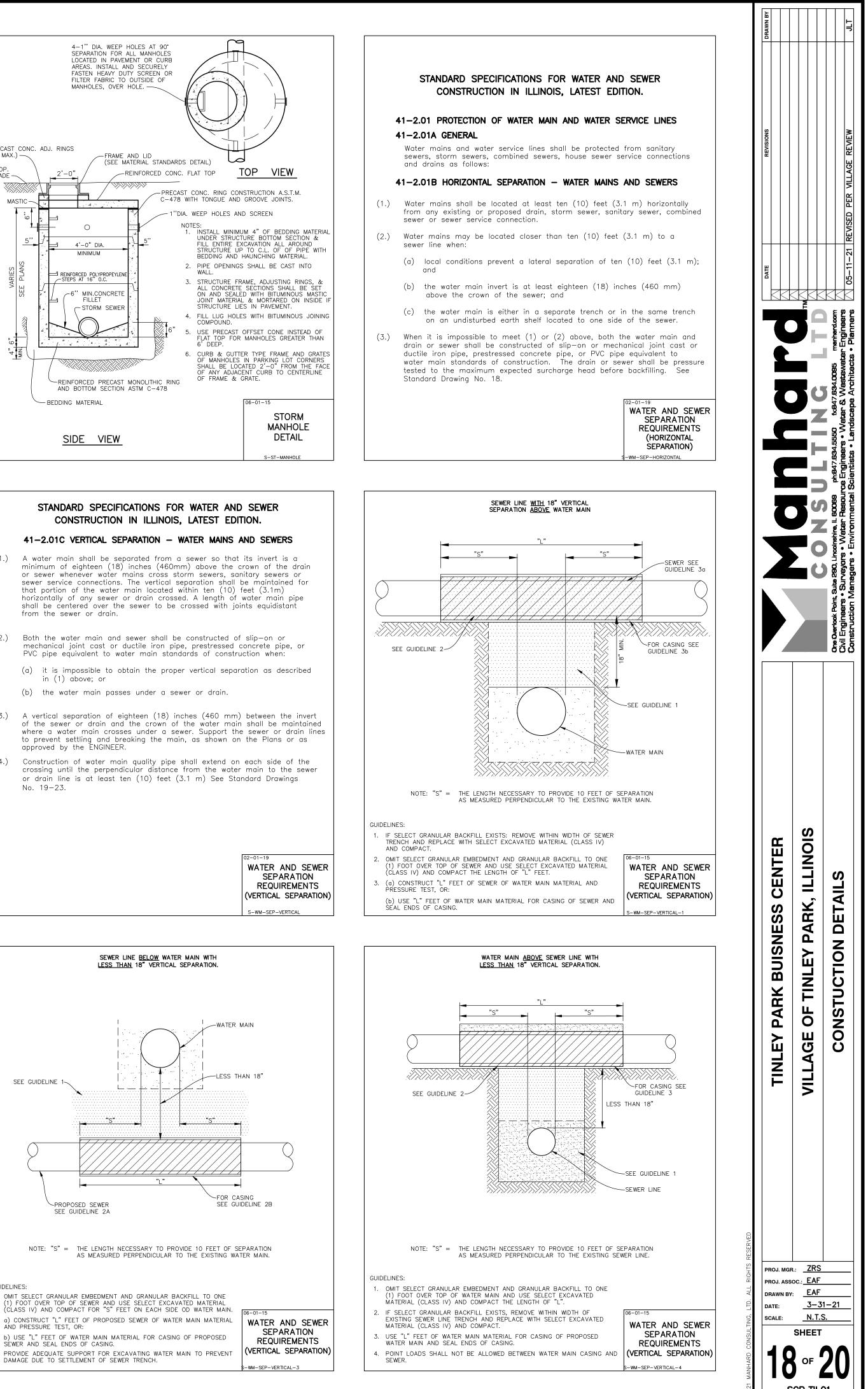


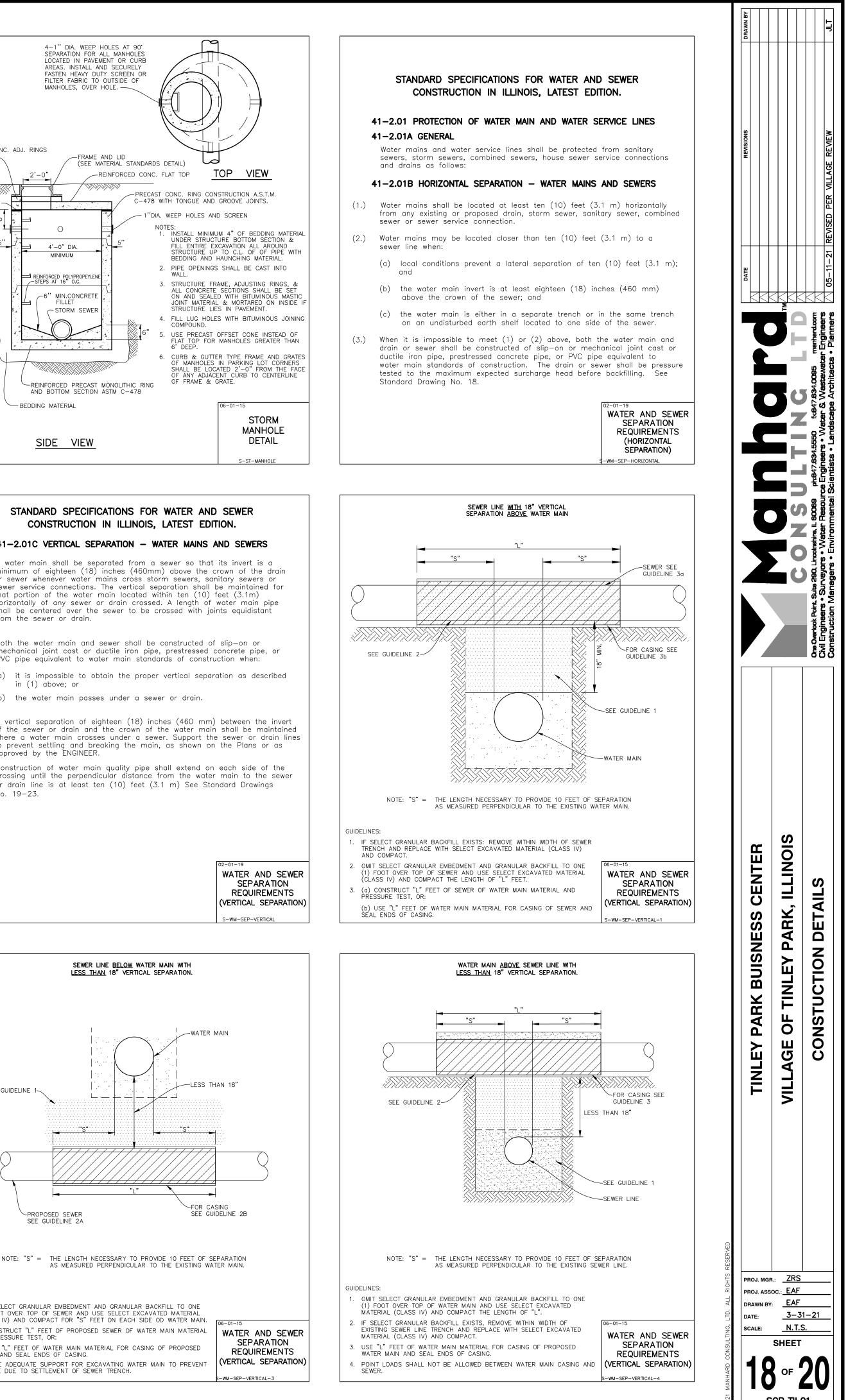


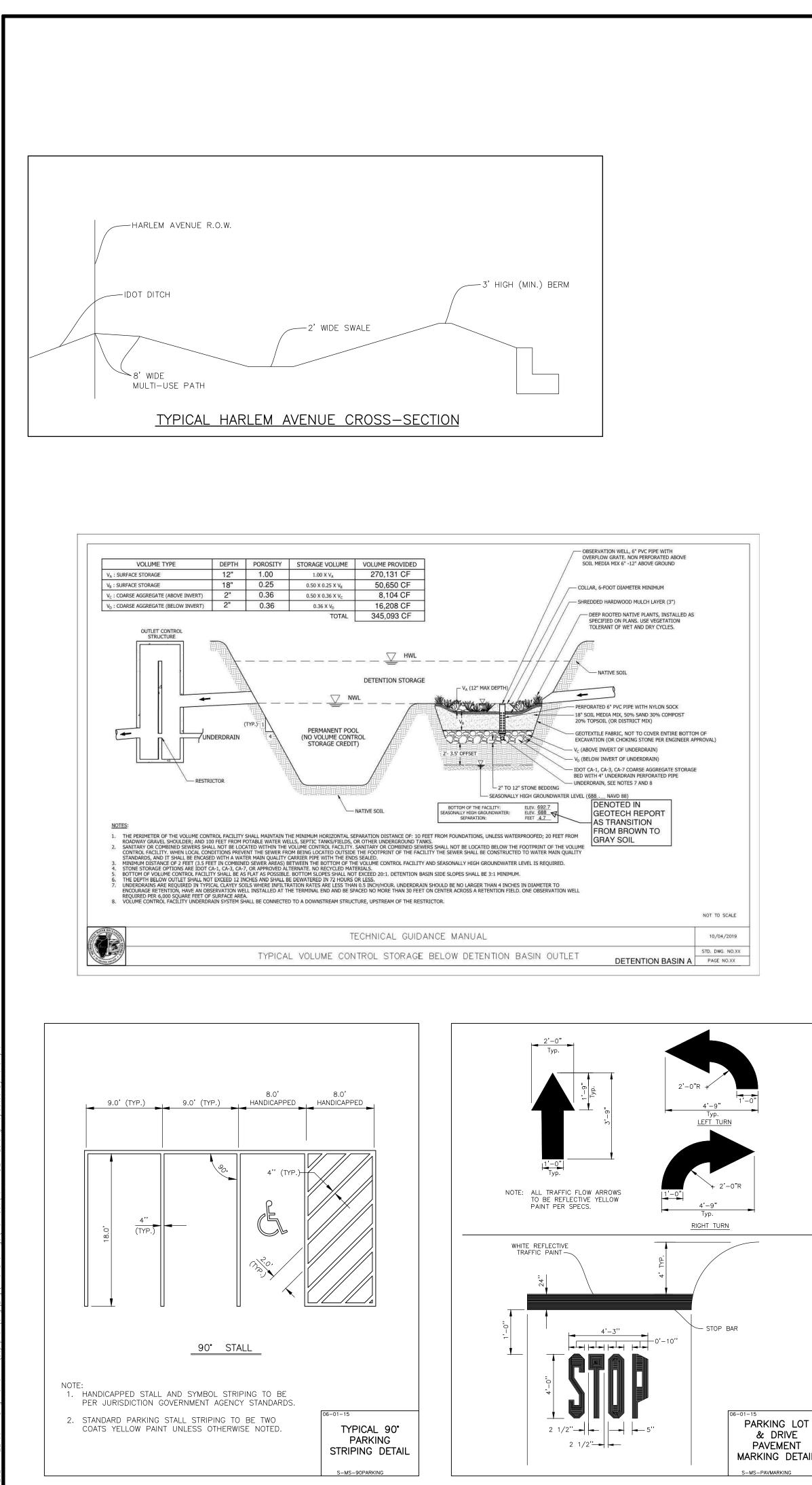
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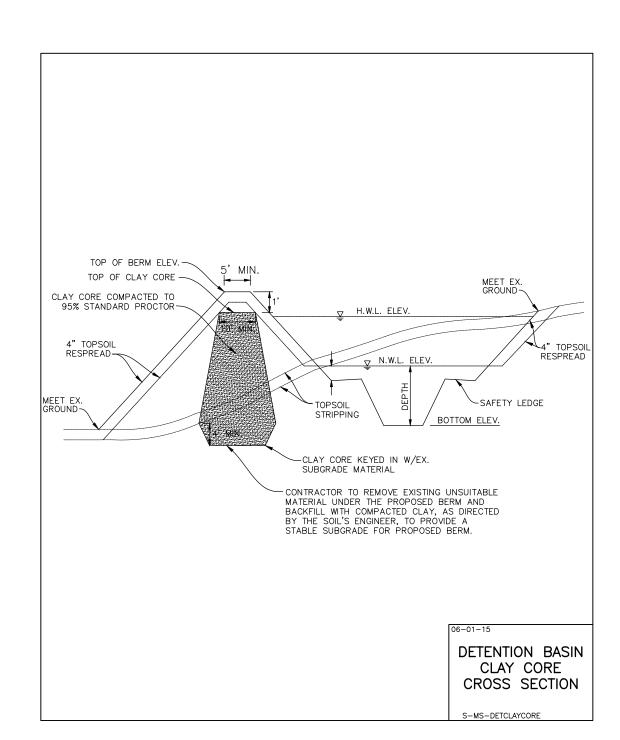


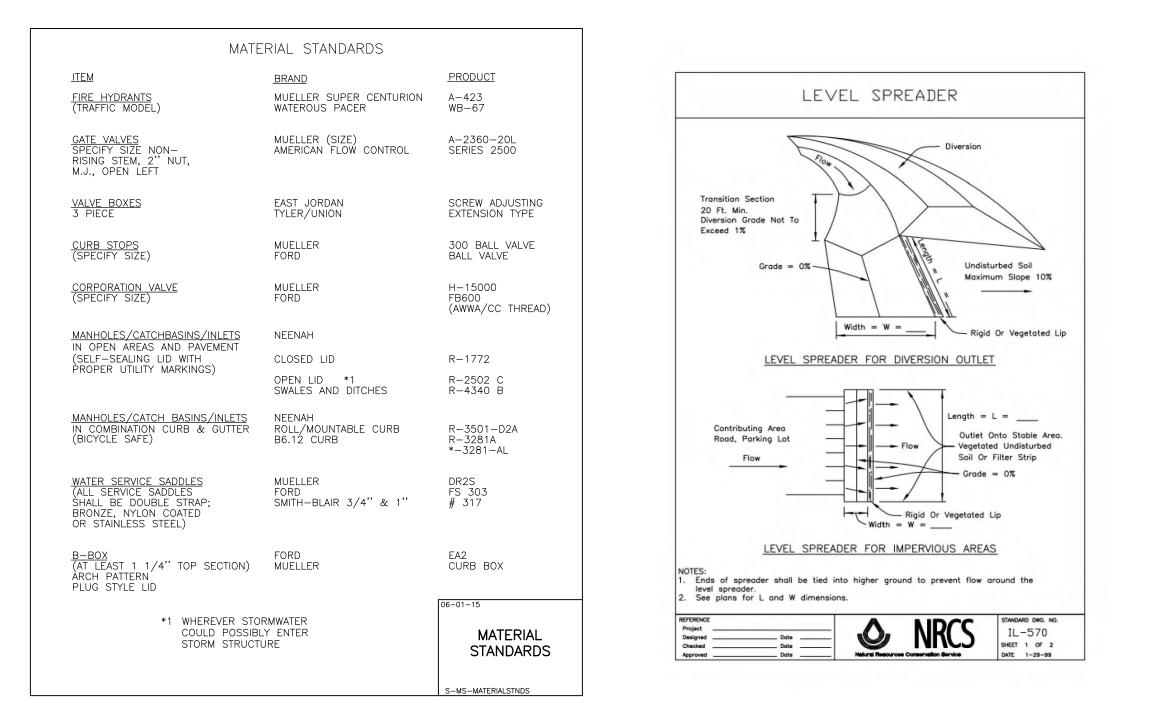


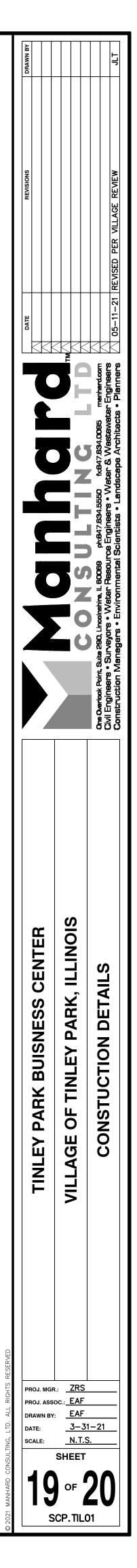


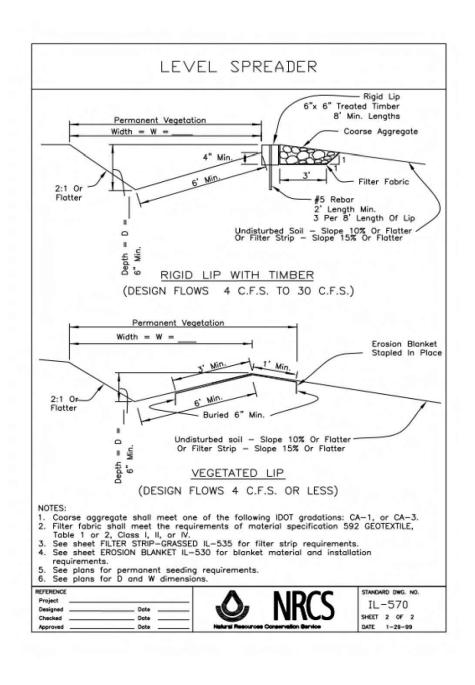


| PARKING LOT    |
|----------------|
| & DRIVE        |
| PAVEMENT       |
| MARKING DETAIL |
|                |









# MANHARD CONSULTING, LTD. STANDARD SPECIFICATIONS

# GENERAL CONDITIONS

CONTRACTOR acknowledges and agrees that the use and reliance of these Plans and Specifications is sufficient consideration for CONTRACTOR'S covenants stated herein

# **DEFINITION OF TERMS**

- a. "CLIENT" shall mean , which is the person or entity with whom Manhard Consulting, Ltd. has contracted with to prepare Civil Engineering PLANS and SPECIFICATIONS.
- b. "ENGINEER" shall mean Manhard Consulting, Ltd., a Civil Engineering consultant on the subject project.
- c. "PLANS and SPECIFICATIONS" shall mean the Civil Engineering PLANS and SPECIFICATIONS prepared by the ENGINEER, which may be a part of the contract documents for the subject project
- d. "CONTRACTOR" shall mean any person or entity performing any work described in the PLANS and SPECIFICATIONS. e. "JURISDICTIONAL GOVERNMENTAL ENTITY" shall mean any municipal, county, state or federal unit of government from whom an approval, permit and/or review is required for any aspect of the subject project.

# INTENT OF THE PLANS AND SPECIFICATIONS

The intent of the PLANS and SPECIFICATIONS is to set forth certain requirements of performance, type of equipment and structures, and standards of materials and construction. They may also identify labor and materials, equipment and transportation necessary for the proper execution of the work but are not intended to be infinitely determined so as to include minor items obviously required as part of the work. The PLANS and SPECIFICATIONS require new material and equipment unless otherwise indicated and to require complete performance of the work in spite of omissions of specific references to any minor component part. It is not intended, however, that materials or work not covered by or properly inferred from any heading, branch, class or trade of the SPECIFICATIONS shall be supplied unless distinctly so noted. Materials or work described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

# INTERPRETATION OF PLANS AND SPECIFICATIONS

- a. The CLIENT and/or CONTRACTOR shall promptly report any errors or ambiguities in the PLANS and SPECIFICATIONS to the ENGINEER. Questions as to meaning of PLANS and SPECIFICATIONS shall be interpreted by the ENGINEER, whose decision shall be final and binding on all parties concerned.
- b. The ENGINEER will provide the CLIENT with such information as may be required to show revised or additional details of construction. c. Should any discrepancies or conflicts on the PLANS or SPECIFICATIONS be discovered either prior to or after award of the contract, the ENGINEER's attention shall be called to the same before the work is begun thereon and the proper corrections made. Neither the CLIENT nor the CONTRACTOR may take advantage of any error or omissions in the PLANS and SPECIFICATIONS. The ENGINEER will provide information when errors or omissions are discovered.

# GOVERNING BODIES

All works herein proposed shall be completed in accordance with all requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, and all such pertinent laws, directives, ordinances and the like shall be considered to be a part of these SPECIFICATIONS. If a discrepancy is noted between the PLANS and SPECIFICATIONS and requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, the CLIENT and/or the CONTRACTOR shall immediately notify the ENGINEER in writing.

# LOCATION OF UNDERGROUND FACILITIES AND UTILITIES

When the PLANS and SPECIFICATIONS include information pertaining to the location of existing underground facilities and utilities (including but not limited to water mains, sanitary sewers, storm sewers, electric, telephone, gas and cable TV lines), such information represents only the opinion of the ENGINEER as to the approximate location and elevation of such facilities and utilities. At the locations wherein detailed positions of these facilities and utilities become necessary to the new construction, including all points of connection, the CONTRACTOR shall furnish all labor and tools to verify or definitely establish the horizontal location, elevation, size and material (if appropriate) of the facilities and utilities. The CONTRACTOR shall notify the ENGINEER at least 48 hours prior to construction if any discrepancies in existing utility information or conflicts with existing utilities exist. The ENGINEER assumes no responsibility whatever with respect to the sufficiency or accuracy of the information shown on the PLANS and SPECIFICATIONS relative to the location of underground facilities and utilities. nor the manner in which they are removed or adjusted.

It shall be the CONTRACTOR's responsibility prior to construction, to notify all Utility Companies of the intent to begin construction and to verify the actual location of all such facilities and utilities. The CONTRACTOR shall also obtain from the respective Utility Companies the working schedules for removing or adjusting these facilities

# UNSUITABLE SOILS

The PLANS have been prepared by the ENGINEER based on the assumption that all soils on the project are suitable to support the proposed improvements shown. The CLIENT or CONTRACTOR shall immediately notify the ENGINEER if he discovers or encounters an obstruction that prevents the installation of the improvement according to the line and grades shown on the PLANS.

# PROTECTION OF TREES

All trees that are not to be removed shall be protected from damage. Trees shall not be removed unless requested to do so in writing by the CLIENT. NOTIFICATION OF OWNERS OF FACILITIES AND UTILITIES

The CONTRACTOR shall notify all applicable Jurisdictional Governmental Entities or utility companies, i.e., water, sewer, electric, telephone, gas and cable TV prior to beginning any construction so that said entity or company can establish the location and elevation of underground pipes, conduits or cables adjoining or crossing proposed construction.

# TRAFFIC CONTROL

The CONTRACTOR shall provide when required by any JURISDICTIONAL GOVERNMENTAL ENTITY, all signs, equipment, and personnel necessary to provide for safe and efficient traffic flow in all areas where the work will interrupt, interfere or cause to change in any form, the conditions of traffic flow that existed prior to the commencement of any portions of the work. The CLIENT may, at his discretion, require the CONTRACTOR to furnish traffic control under these or other circumstances where in his opinion it is necessary for the protection of life and property. Emergency vehicle access shall be maintained at all times. Unless authorized by the CLIENT or CLIENT's construction representative, all existing access points shall be maintained at all times by the CONTRACTOR. The need for traffic control shall be anticipated by the CLIENT.

# WORK AREA

The CONTRACTOR, his agents and employees and their employees and all equipment, machinery and vehicles shall confine their work within the boundaries of the project or work area specified by the Client. The CONTRACTOR shall be solely liable for damage caused by him or his agents and employees and their equipment, machinery and vehicles on adjacent property or areas outside designated work areas.

# UTILITY POLES

It shall be the responsibility of the CONTRACTOR to arrange for the relocation or bracing of existing utility poles that may be within the working limits of this contract. It is expressly understood that all work and costs connected with the maintenance of these utility poles, their temporary relocations, etc., shall be the responsibility of the CLIENT or the CONTRACTOR. RESTORATION

# It is the intent of these SPECIFICATIONS that clean-up and final restoration shall be performed immediately upon completion of each phase of the work, both

inside and outside the Project, or when so directed by the CLIENT so that these areas will be restored as nearly as possible to their original condition of better, and shall include but not be limited to, restoration of maintained lawns and rights-of-way, roadways, driveways, sidewalks, ditches, bushes, hedges, trees, shrubs, fences, mailboxes, sewers, drain tiles, water mains, etc. CLEANING UP

The CONTRACTOR shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish, tools, scaffolding and surplus materials and shall leave his work "broom clean" or its equivalent, unless more exactly specified.

# ROAD CLEANING

The CONTRACTOR shall maintain roadways adjoining the project site free from mud and debris at all times. If mud and/or debris is carried onto the roadways from vehicles entering onto the highway from either the CONTRACTOR's trucks, his employees' vehicles, or his material suppliers, the CONTRACTOR shall immediately remove said mud and/or debris.

# SAFETY AND PROTECTION

The CONTRACTOR shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. The CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all work is completed and the CLIENT has notified CONTRACTOR that the work is acceptable. The duties of the ENGINEER do not include review of the adequacy of either the CONTRACTOR's or the general public's safety in, on, or near the construction site.

# HOLD HARMLESS

To the fullest extent permitted by law, any CONTRACTOR; material supplier or other entity by use of these plans and specifications hereby waives any right of contribution and agrees to indemnify, defend, save and hold harmless the CLIENT and ENGINEER and its agents, employees and consultants from and against all manner of claims, causes, causes of action, damages, losses and expenses, including but not limited to, attorneys' fees arising out of, resulting from or in connection with the performance of any work, pursuant to or with respect to these plans and specifications. However, this indemnity shall not be construed to indemnify ENGINEER, its consultants, agents or employees against its own negligence.

Claims, damages, losses and expenses as these words are used in the Agreement shall mean and include, but not be limited to (1) injury or damage occurring by reason of the failure of or use or misuse of any hoist, riggings, blocking, scaffolding or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by any part or entity, including any contractor; (2) all attorneys' fees and costs incurred in bringing an action to enforce the provisions of this indemnity; (3) costs for time expended by the indemnified party and its employees, at its usual rates plus costs or travel, long distance telephone and reproduction of documents and (4) consequential damages.

In any and all claims against the CLIENT or ENGINEER or any of their agents or employees and consultants by any party, including any employee of the CONTRACTOR or any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount of type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts or any insurance maintained by CONTRACTOR or any Subcontractor or any other party.

# INSURANCE

Any party using or relying on these plans, including any contractor, material supplier, or other entity shall obtain, (prior to commencing any work) general public liability insurance insuring against all damages and claims for any bodily injuries, death or property damage arising out of any work, including the construction work provided for in these plans, and shall name the CLIENT and ENGINEER and its consultants, agents and representatives as additional insureds under such insurance policy; provided that any party using or relying on these plans having obligations to maintain specific insurance by reason of any agreement with CLIENT or any CONTRACTOR or ENGINEER shall provide evidence and certificates of insurance as required by such contract or agreement. Such insurance must contain a clause stating that the insurance is primary coverage for ENGINEER and ENGINEER's other applicable coverage is considered secondary. Such insurance shall not limit any liability of any party providing work or services or providing materials.

# THIRD PARTY BENEFICIARY

Manhard Consulting, Ltd., the ENGINEER, is intended to be a third party beneficiary of this willing agreement and requirement. Note: These Specifications are for Northern Illinois.

# DETAILED SPECIFICATIONS

# I. DEMOLITION

The CONTRACTOR shall coordinate with respective utility companies prior to the removal and/or relocation of utilities. The CONTRACTOR shall coordinate with the utility company concerning portions of work which may be performed by the Utility Company's forces and any fees which are to be paid to the utility company for their services. The CONTRACTOR is responsible for paying for all fees and charges.

Should removal and/or relocation activities damage features indicated to remain, the CONTRACTOR shall provide new materials/structures in accordance with the contract documents. Except for materials designed to be relocated on this plan, all other construction materials shall be new.

Prior to demolition occurring, all erosion control devices are to be installed.

All existing utility lines and conduits located under proposed buildings shall be removed and properly backfilled. All utility lines and conduits located under drives, on-site roads, parking lots or sidewalks shall be filled with a flowable backfill and end plugged. All existing structures shall be removed. All existing utility lines located under landscape areas shall be left in place and plugged at all structures.

The CONTRACTOR is responsible for demolition, removal and disposal (in a location approved by all JURISDICTIONAL GOVERNING ENTITIES) of all structures, pads, walls, flumes, foundations, road, parking lots, drives, drainage structures, utilities, etc., such that the improvements shown on these plans can be constructed. All demolition work shall be in accordance with all applicable federal, state and local requirements. All facilities to be removed shall be undercut to suitable material and brought to grade with suitable compacted fill material per the specifications

The CONTRACTOR is responsible for obtaining all permits required for demolition and disposal. Electrical, telephone, cable, water, fiber optic cable and/or gas lines needing to be removed shall be coordinated by the CONTRACTOR with the affected utility company.

CONTRACTOR must protect the public at all times with fencing, barricades, enclosures, and other appropriate best management practices.

Continuous access shall be maintained for surrounding properties at all times during demolition.

All fire access lanes within the project area shall remain in service, clean of debris, and accessible for use by emergency vehicles.

The CONTRACTOR shall coordinate water main work with the Fire Department and the JURISDICTIONAL GOVERNING ENTITY to plan the proposed improvements and to ensure adequate fire protection is available to the facility and site throughout this specific work and through all phases of construction. CONTRACTOR shall be esponsible for any required water main shut offs with the JURISDICTIONAL GOVERNING ENTITY during construction. Any costs associated with water main shut offs will be the responsibility of the CONTRACTOR and no extra compensation will be provided.

# with the facility manager to minimize disturbance and inconvenience to facility operations. incurred on any of the surrounding pavement, etc. the CONTRACTOR shall be responsible for ITS removal and repair Any existing wells encountered shall be exposed and sealed 3' below proposed finish grade by the CONTRACTOR in accordance with Section 920.120 (latest edition) of permits required by JURISDICTIONAL GOVERNMENTAL ENTITIES for abandoning existing wells.

Any existing septic tanks and grease traps encountered shall have all liquids and solids removed and disposed of by a licensed commercial hauler in accordance with JURISDICTIONAL GOVERNING ENTITY regulations, and the tank and grease traps shall then be filled with suitable materials or removed from the site and disposed of by the CONTRACTOR. Voids left by any item removed under any proposed building, pavement, walk, etc. or within 24" thereof shall be filled and compacted with suitable materials by the CONTRACTOR. The CONTRACTOR shall be responsible for the disconnection of utility services to the existing buildings prior to demolition of the buildings. Any material containing asbestos found within existing structures shall be removed from the site and disposed of off-site by the CONTRACTOR in accordance with

County, State and Federal regulations JURISDICTIONAL GOVERNING ENTITY as requested sewer and water utilities as necessary and to provide stormwater conveyance until new facilities are constructed, tested and placed into operation conditions and proceed with caution around any anticipated features

The CONTRACTOR is responsible for removing the existing irrigation system in the areas of proposed improvements. The contractor shall cap the existing irrigation system to remain such that the remaining system shall continue to function properly. for work to be performed.

# **II.EARTHWORK**

STANDARDS Transportation, State of Illinois, latest edition except as modified below.

SOIL BORING DATA Copies of results of soil boring and reports, if such borings were taken by the CLIENT in the vicinity of the proposed construction site, should be made available by the CLIENT to the CONTRACTOR. These borings are presented for whatever purpose the CONTRACTOR chooses to make of them. The ENGINEER makes no representation or warranty regarding the number, location, spacing or depth of borings taken, nor of the accuracy or reliability of the information given in the results thereof.

Further, the ENGINEER does not assume responsibility for the possibility that during construction, the soil and groundwater condition may be different than indicated. Neither does the ENGINEER assume responsibility for variations of soil and groundwater at location between borings. The CONTRACTOR is required to make its own borings, explorations and observations to determine soil and groundwater conditions.

EARTHWORK CALCULATIONS AND CROSS SECTIONS The CONTRACTOR understands that any earthwork calculations, quantities or cross sections that have been furnished by the ENGINEER are for information only and are provided without any guarantee by the CLIENT or ENGINEER whatsoever as to their sufficiency or accuracy. CONTRACTOR warrants that he has performed his own subsurface investigations as necessary and his own calculations and cross sections to determine site soil conditions and earthwork volumes. The ENGINEER makes no representation or guarantee regarding earthwork quantities or that the earthwork for this project will balance due to the varying field conditions, changing soil types, allowable construction to tolerances and construction methods that are beyond the control of the ENGINEER. CLEARING, GRUBBING AND TREE REMOVAL

damage.

# TOPSOIL STRIPPING

Upon completion of demolition, clearing, grubbing and tree removal, all topsoil shall be stripped from under all buildings and pavements areas, and other areas necessary to complete the work. Topsoil stripped shall be placed in stockpiles in locations as designated by the CLIENT.

TOPSOIL RESPREAD

SEEDING

designated on landscape drawings and specifications provided by the CLIENT.

SODDING

and specifications provided by the CLIENT

EXCAVATION AND EMBANKMENT ditching and culverts necessary to complete the excavation and embankment.

Specifically included in the scope of Excavation and Embankments is grading and shaping of all cut or fill areas including swales and ditches; handling of sewer spoil, etc., and all work required to provide positive drainage at the end of each working day and upon completion of a section. The CONTRACTOR shall be responsible for the excavation of all swales and ditches and for the excavation or filling of the roads, building pads and parking lots within the work limits to lines & grades shown on the plans. He shall be responsible for obtaining compaction in accordance with the minimum values listed in the table below for all embankments unless more stringent values are listed in the soils report or are approved by the CLIENT, and to use any method approved by the CLIENT necessary to obtain this compaction (i.e., soil fabric or any undercutting that may be required).

|                | Percent          |             |
|----------------|------------------|-------------|
|                | Compaction       | Pavement a  |
| Type Material  | Standard         | Floor Slabs |
| Sandy Soils    | Modified Proctor | 95%         |
| Clayey Soils   | Standard Proctor | 95%         |
| <br>CONTRACTOR |                  |             |

The CONTRACTOR shall notify the CLIENT if proper compaction cannot be obtained so that the CLIENT may determine what remedial measures may be A soils testing firm employed by the CLIENT shall determine which soils are unsuitable. Materials in their natural state being defined as unsuitable that would be suitable material if moisture conditioned, shall be conditioned by the CONTRACTOR and used as suitable embankment material or hauled from the site.

For purposes of definition, unsuitable material shall be as follows unless determined otherwise by the Soils Engineer: 1. Any soil whose optimum moisture content exceeds 25%.

3. Any soil whose silt content exceeds 60% by weight.

4. Any soil whose maximum density is less than 100 pounds per cubic foot.

5. Any soil containing organic, deleterious, or hazardous material. Upon completion of excavation and shaping of the water retention areas intended to maintain a permanent pool of water, all silt seams and granular or sandy soils shall be removed to a minimum depth of three feet below the subgrade and replaced with an impermeable clay liner, including adjacent to and under storm sewer inlets and outlets. It is the intent of these PLANS and SPECIFICATIONS that the CONTRACTOR shall prepare the lake bottoms, side slopes, and compaction thereof such that the lakes will maintain the proposed normal water level and that leakage does not exceed ½ inch per week Ditches and swales are to be excavated to the lines and grades indicated on the PLANS. All suitable materials excavated from the ditches shall be used in construction of the embankments.

joints wrapped with fabric, the CONTRACTOR shall install the same.

believes that the earthwork will not balance

**EROSION CONTROL** Sedimentation Control ordinances and the PLANS.

UNDERCUTTING DURING EARTHWORK

subgrade does not meet the standards set forth above, the CLIENT may require undercutting.

MISCELLANEOUS CONTRACT ITEMS (1) GEOTEXTILE FABRIC

JURISDICTIONAL GOVERNING ENTITY where proper compaction of embankments over existing soft soils is not possible. Geotextile fabric shall meet the material specifications of and shall be installed in accordance with the above standards.

(2) EROSION CONTROL BLANKET

Erosion control blanket or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY for the stabilization of disturbed areas. Erosion control blanket shall meet the material specifications of and shall be installed in accordance with the above standards, the Illinois Urban Manual and/or the details shown on the PLANS. **III.UNDERGROUND IMPROVEMENTS** 

# A. GENERAL

# STANDARDS

All underground improvements shall be constructed and tested in accordance with the Standard Specifications for Water and Sewer Construction in Illinois and Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition. In the event of conflicting guidelines, the more restrictive shall govern.

SELECTED GRANULAR BACKFILL

MANHOLES, CATCH BASIN, INLETS & VALVE VAULTS

All Manholes, Catch Basins, Inlets, and Valve Vaults shall be constructed of reinforced precast concrete ring construction with tongue and groove joints in conformance with the latest revision of ASTM designation C-478. All joints between sections and frames (except sanitary manholes, see Section IIIB Manholes, below) shall be sealed with mastic type bituminous jointing compound. CONTRACTOR shall remove all excess mastic on inside of structure and butter joints with mortar. Manholes are to have offset cones except that no cone shall be used on storm manholes 6'-0" deep or less in which case a reinforced concrete flat top section shall be used, and Valve Vaults shall have concentric cones. Only concrete adjustment rings will be permitted where necessary and shall be limited to two adjustment rings totaling not more than 8" in height. All manholes and catch basin steps shall be copolymer polypropylene with continuous 1/2" steel reinforcement as manufactured by MA Industries, or approved equal.

CONTRACTOR shall maintain all existing parking press, sidewalks, drives, etc. clear and free from any construction activity and/or material to ensure easy and safe pedestrian and vehicular traffic to and from the site. CONTRACTOR shall coordinate/phase all construction activity within proximity of the building and utility interruptions

CONTRACTOR may limit saw-cut and pavement removal to only those areas where it is required as shown on these construction plans, however if any damage is

the Illinois Water Well Construction Code, Department of Public Health, and all applicable local rules and regulations. CONTRACTOR is responsible for obtaining all

CONTRACTOR shall develop and implement a daily program of dust control and shall submit and obtain JURISDICTIONAL GOVERNING ENTITY approval of dust control procedures prior to demolition of any structures. Modification of dust control procedures shall be performed by the CONTRACTOR to the satisfaction of the

The CONTRACTOR shall coordinate all demolition with the JURISDICTIONAL GOVERNING ENTITY and CLIENT to ensure protection and maintenance of sanitary

The locations of all existing utilities shown on this plan have been determined from the best information available and are given for the convenience of the CONTRACTOR and are not to be interpreted as the exact location, or as the only obstacles that may occur on the site. The ENGINEER assumes no responsibility for their accuracy. Prior to the start of any demolition activity, the CONTRACTOR shall notify the utility companies for location of existing utilities and shall verify existing

The parking lot shall be completed in sections such that it does not interrupt the facility operations. The CONTRACTOR shall coordinate with the construction manager

This work shall be completed in conformance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of

The site shall be cleared, grubbed, and trees and stumps removed where designated on the PLANS. Trees designated to remain shall be protected from

Upon completion of roadway and/or parking lot improvements and installation of underground utilities a minimum of six inches (6") of topsoil shall be respread over all unpaved areas which have been disturbed by earthwork construction, except building pads and other designated areas, which shall be kept free from

Upon completion of topsoil respread, the CONTRACTOR shall apply seed and fertilizer to all respread areas in accordance with IDOT standards or as

Upon completion of topsoil respread, the CONTRACTOR shall install sod to all areas designated on the plans or as designated on the landscape drawings

Upon completion of topsoil stripping, all excavation and embankments shall be completed as shown on the PLANS. All suitable excavated materials shall be hauled, placed (moisture conditioned if necessary) and compacted in the embankment areas. The CONTRACTOR shall include all dewatering, temporary

> bs Grass Areas 90%

2. Any cohesive soil with an unconfined compressive strength of 1.5 tons per square foot or less.

The CONTRACTOR shall notify the CLIENT immediately upon encountering groundwater during excavation. If in the opinion of the CLIENT or the JURISDICTIONAL GOVERNING ENTITY this condition necessitates the installation of perforated drain tile bedded in washed gravel or open storm sewer

During excavation and embankment, grades may be adjusted to achieve an overall site earthwork balance. The CONTRACTOR shall cooperate fully with the CLIENT in adjustment of grades, construction methods and placement of material to meet the above goals and shall immediately advise CLIENT if he

It is the intent of these PLANS that storm waters falling on the site be diverted into sedimentation / lake / detention basins during construction. The CONTRACTOR shall construct and maintain any temporary ditches or swales that are necessary to accomplish this prior to beginning mass excavation.

Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and

If the subgrade cannot be dried adequately by discing as outlined above for placement of material to planned grades and if the CLIENT determines that the

The following items may be required at the CLIENT's option, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY:

Geotextile fabric or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the

Selected Granular Backfill shall be required for all sewer and water main trenches lying under existing or proposed streets, driveways, parking lots and within 24" thereof, and where noted on PLANS. All material placed in such trenches shall be in accordance with the above standards.

# AUGER/BORING AND CASING

Casing pipe shall be welded steel pipe, installed where shown on the PLANS. The carrier pipe shall be securely blocked and banded and sanitary and storm sewers shall maintain the specified gradient. Upon installing the carrier pipe the ends shall be sealed with hydraulic cement.

HORIZONTAL AND VERTICAL SEPARATION OF WATER AND SEWER MAINS

Horizontal and vertical separation of water and sewer mains shall be in accordance with Standard Specifications for Water and Sewer Construction in Illinois Section 41-2.01A and 41-2.01B and Standard Drawing 18, 19, 20, 21, 22, 23 and 24.

STRUCTURE ADJUSTMENTS Structures shall be adjusted to the finished grade as shown on PLANS.

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# **B. SANITARY SEWERS AND APPURTENANCES**

SANITARY SEWER PIPE

Sanitary sewer pipe including building services, shall conform to the following:

- (1) Polyvinyl Chloride (PVC) Sewer Pipe shall conform to ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 48-inch) minimum SDR 26 with flexible elastomeric seal gasket gasketed joints conforming to ASTM D3212 and F477. (2) Ductile Iron Sewer Pipe shall conform with ANSI/AWWA C151/A21.51 Class 50, cement lined with push on type joints conforming to ANSI/AWWA
- (3) Extra Strength Clay Sewer Pipe shall conform with ASTM Specification C700 (glazed) with ASTM D1784 type joints conforming to Clow NO-BEL (ESVCP), with flexible gasket meeting ASTM C425 (MWRD only).
- Sanitary sewers shall include bedding and backfilling.

Manholes shall be constructed in conformance with Section IIIA Manholes, etc. above. The concrete base and bottom section shall be constructed of precast reinforced concrete monolithically cast sections including benches, pipe connection and invert flow lines. Manhole frame and lids shall be Neenah R-1772 or approved equal, with lids imprinted "SANITARY", with recessed pick holes. Manhole joints between adjustment rings and frames and between manhole sections shall be set on preformed plastic gasket consisting of a homogeneous blend of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler to provide a water tight seal. All pipe connection openings shall be precast with resilient rubber watertight pipe sleeves. A 10" elastomeric band (chimney seal) shall be installed extending from the manhole top to the manhole frame as shown on detail. Manholes shall include steps, frame & grate, bedding, and trench backfill.

# FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

# TESTING

MANHOLES

Sanitary sewers shall be air tested and tested for deflection in accordance with the requirements of Section 31-1.12 "TESTING AND INSPECTION FOR ACCEPTANCE OF SANITARY SEWERS" of the Standard Specifications for Water and Sewer Construction in Illinois or the JURISDICTIONAL GOVERNING ENTITY, whichever is more restrictive. In addition, a televised inspection of the completed sanitary sewers shall be conducted and a copy of the videotape and report furnished to the JURISDICTIONAL GOVERNING ENTITY.

All sanitary manholes are to be tested for water tightness in accordance with ASTM C969 "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines", or ASTM C1244 "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test".

SERVICES A wye branch or "tee" and sanitary service line, properly plugged and sealed shall be constructed as shown on the PLANS. The ends of all services shall be marked with a 4"x4" post extending 36" above grade and painted red. The CONTRACTOR shall keep accurate records of all Wye or Tee locations as

Risers shall be constructed in locations as shown on the PLANS and according to the detail.

measured from the downstream manhole as well as the service lengths and furnish same to CLIENT

DROP MANHOLE CONNECTIONS

Drop manhole connections to existing manholes shall be constructed according to the PLANS and the detail.

SANITARY SEWER FORCE MAIN Sanitary sewer force main shall conform to the following

- (1) Polyvinyl Chloride (PVC) Pressure Pipe conforming to the latest revision of ANSI/AWWA C900, Class 150 with integral bell and flexible elastomeric gasket joints conforming to ASTM F477.
- (2) Ductile iron cement lined pipe conforming to the latest revision of ANSI/AWWA C151/A21.51, Thickness Class 50, minimum 150 psi working pressure with "push on" type joints.

Force mains shall have a minimum of five feet six inches (5'-6") of cover and shall include bedding and trench backfill. Upon completion of installation, force mains are to be plugged and pressure tested at 2 times the working pressure or total dynamic head for a period of 10

minutes, with no loss of pressure or as required by the JURISDICTIONAL GOVERNING ENTITY, whichever is more stringent

# **TELEVISION INSPECTION**

Upon completion of construction a television inspection of the sanitary sewer system shall be performed on all portions of the sewer if required by the JURISDICTIONAL GOVERNING ENTITY. Videotapes and written report of all television inspections shall be provided to the CLIENT. The form of report and type and format of the videotape shall be approved by the JURISDICTIONAL GOVERNING ENTITY

All sewers and appurtenances shall be cleaned prior to inspection and testing required by this section.

All defects and corrective work required as the result of television inspection shall be performed by the CONTRACTOR without delay. All dips, cracks, leaks, improperly sealed joints and departures from approved grades and alignment shall be repaired by removing and replacing the involved sections of pipe. Upon completion thereof, the sewer shall be retested and such further inspection made as may appear warranted by the CLIENT. MISCELLANEOUS

# All floor drains shall be connected to the sanitary sewer.

**C. WATER MAINS AND APPURTENANCES** 

WATER MAIN PIPE (3" AND LARGER)

- Water main pipe shall conform to the following:
- (1) Ductile iron pipe shall be per ANSI/AWWA C151/A21.51, Thickness Class 52, minimum 150 psi working pressure, cement lined in accordance with ANSI/AWWA C104/A21.4, with "push on" type joints.(2) (2) Polyvinyl Chloride Pipe (PVC) conforming to the latest revision of ANSI/AWWA C900 (4-inch thru 12-inch) or ANSI/AWWA C905 (14-inch thru
- 48-inch) with a pressure rating of 235 psi, SDR 18 in accordance with ASTM D2241. Joints shall be pressure rated in accordance with ASTM D3139 with elastomeric seals in accordance with ASTM F477.

Installation shall be in accordance with ANSI/AWWA C600 (Ductile Iron) or ANSI/AWWA C605 (PVC). All water main shall have mechanical joint cast iron or ductile iron fittings in accordance with ANSI/AWWA C110/A21.10 or compact ductile iron fittings in accordance with ANSI/AWWA C153/A21.53 with 250 psi working pressure

Poured or monolithic concrete thrust blocks are required to brace all tees, plugs, caps, and bends of 11 1/4 degree deflection or greater. Minimum cover for all water mains, including services, shall be 5'-6" from the finished grade. Water main shall include bedding and backfilling.

WATER VALVES

All valves shall be resilient wedge gate valves conforming to the latest revision of ANSI/AWWA C515, with a rated working pressure of 200 psi in accordance with JURISDICTIONAL GOVERNING ENTITY requirements, except that butterfly valves conforming to ANSI/AWWA C504 shall be constructed on all water mains 16" diameter and larger. Valves shall be non-rising stem and shall close by turning clockwise.

# VALVE VAULTS

Valve vaults shall be constructed in conformance with Section IIIA Manholes, etc. above. Frame and lids shall be as approved by the JURISDICTIONAL GOVERNING ENTITY and shall be imprinted "WATER" VALVE BOXES

Valve boxes shall be constructed in conformance with the standard detail. Valve boxes shall be cast iron extension screw type having lids imprinted with the

letters "WATER". FIRE HYDRANTS

Fire Hydrants shall be per JURISDICTIONAL GOVERNING ENTITY requirements. All fire hydrants shall be located as shown on the PLANS and shall be painted in a manner acceptable to the JURISDICTIONAL GOVERNING ENTITY after installation and shall be adjusted to final grade.

TAP, STOPS AND BOX The CONTRACTOR shall determine from the JURISDICTIONAL GOVERNING ENTITY as to the exact style, type, and manufacture of corporation stops,

ground key stops and services boxes preferred by the JURISDICTIONAL GOVERNING ENTITY and shall furnish same. SMALL WATER SERVICES (2" DIAMETER OR LESS)

Water services shall be type K copper size as shown on PLANS, and constructed where shown on the PLANS. The ends of all services shall be marked with a 4"x4" post extending 36" above grade and painted blue. The CONTRACTOR shall keep accurate records of tap locations and service box locations, as well as the service lengths and furnish same to CLIENT. Water services shall include bedding and backfilling.

DISINFECTION

Disinfections shall meet all of the requirements of the State of Illinois, Environmental Protection Agency, Public Water Supplies Division. The safe quality of the water supply shall be demonstrated by bacteriological analysis of samples collected at sampling taps on at least two consecutive days following disinfection of the mains and copies of the said report submitted to the JURISDICTIONAL GOVERNING ENTITY and the CLIENT. PRESSURE TEST

Allowable leakage, test pressure and duration shall be as per the requirements of the JURISDICTIONAL GOVERNING ENTITY.

PRESSURE CONNECTION TO EXISTING WATER MAIN

The CONTRACTOR shall maintain system pressure on existing water main at all times. Existing water main shall be located and material excavated, and valve basin slab and main supports installed. The existing water main shall be cleaned and the exterior disinfected prior to installing the tapping tee (material to conform to AWWA C110). The tapping valve shall be installed (valve to conform to AWWA C500) and the pressure tap completed in accordance with the detail on the plans. Valve shall be constructed in conformance with the detail. Payment for pressure connection to existing water main shall include disinfection, tapping valve and tee, valve vault, frame and lid, bedding, and trench backfill. DRY CONNECTION TO EXISTING WATER MAIN

A dry connection to existing water main shall include a connection to an existing water main stub where shown on the PLANS. The CONTRACTOR shall

obtain approval of the JURISDICTIONAL GOVERNING ENTITY to shut down any main, including submittal of a schedule of the time of shut off and the time the line will be returned to service. All mains shut down that are opened to atmosphere must be disinfected prior to returning main into service. POLYETHYLENE ENCASEMENT (FOR DUCTILE IRON WATER MAIN ONLY)

The CLIENT, or JURISDICTIONAL GOVERNING ENTITY may request that portions of the water main be enclosed in a polyethylene encasement in accordance with ANSI/AWWA C105/A21.5 should soil conditions so warrant its use.

FOUNDATION, BEDDING AND HAUNCHING Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

If the distance between valves when installing PVC pipe exceeds 1.000', tracer wire stations will be required for current induction. Tracer wire stations in grass areas will

TRACER WIRE

be Rhino TriView Flex Tracing Wire Stations or approved equal. In paved areas, they will be Valvco Tracer Wire Access Box for H2O loading or approved equal. For open cut construction, using PVC pipe, a continuous, insulated, 12 gauge copper wire suitable for direct burial shall be taped on top of all piping to provide for locating following construction. This wire shall be securely terminated inside every valve vault on stainless steel hardware with an exposed lead of at least 12". A mechanically secure and soldered connection shall be provided for all wire splices. Where construction is by directional drilling or similar trenchless technology the tracer wire shall be 3/16" 7x19 PVC coated stainless steel aircraft cable with minimum breaking strength of 3,700 lbs (Lexco, Chicago, IL). Or Trace-Safe water blocking tracerwire RT series 19 gauge conductor (RT 1802W water, RT 1803W sewer).

Before final approval of any water main, there will be a monitored tracer wire continuity test in order to confirm proper installation of any tracer wire

# D. STORM SEWERS AND APPURTENANCES

STORM SEWER PIPE Storm sewer pipe shall conform to the following:

- (1) Reinforced concrete pipe minimum Class IV in conformance with the latest revision of ASTM designation C76 with C361 or C443 flexible gasket joints, except that bituminous mastic joints may be used in grass areas
- (2) Polyvinyl Chloride (PVC) Pipe: ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 36-inch), rated SDR 35, continually marked with manufacturer's name, pipe size, cell classification, SDR rating. Joints shall be flexible elastomeric seals conforming to ASTM D3212. (3) Ductile Iron Pipe (DIP) shall conform to ANSI/AWWA C151/21.5, Class 50 cement lined with push on type joints conforming to ANSI/AWWA
- C111/A21 11
- (4) Spiral Rib Metal Pipe Type 1R: 18-inch diameter and greater. Pipe ends shall be re-corrugated and installed with semi-corrugated Hugger type brands and "O" ring gaskets. (Only permitted with Municipality approval and/or when specifically indicated on PLANS). (5) High Density Polyethylene Pipe (HDPE) Smooth Interior, AASHTO Designation M252 and M294, maximum diameter of 48 inches. Pipe joints and
- fittings shall be watertight gasketed joints. No band seals will be allowed. (Only permitted with Municipality Approval and/or when specifically indicated on PLANS). (6) Polypropylene (PP) Pipe shall have a smooth interior and annular exterior corrugations and shall meet or exceed ASTM F2881 and AASHTO M330.
- Pipe shall be joined with a gasketed integral bell & spigot joint meeting the requirements of ASTM F2881. PP Pipe shall be watertight according to the requirements of ASTM D3212. Spigots shall have gaskets meeting the requirements of ASTM F477. (Only permitted with Municipality Approval and\or when specifically indicated on PLANS.) (7) Polyvinyl Chloride (PVC) large diameter closed profile gravity sewer pipe, UNI-B-9: ASTM F794. (Only permitted with Municipality Approval and/or
- when specifically indicated on PLANS). (8) Corrugated Steel (Metal) Pipe (CSP or CMP), ASTM A760, 16 gauge unless noted on PLANS. Corrugated steel pipe may be round pipe, arch pipe, or slotted drainpipe as indicated on PLANS. Slotted drainpipe shall have 1.75 inches wide drain waterway openings and 6 inches minimum height drain guide. (Only permitted with Municipality approval and/or when specifically indicated on PLANS).
- Precast tees, bends, and manholes may be used if permitted by the JURISDICTIONAL GOVERNMENTAL ENTITY.

# Storm sewer shall include bedding and trench backfill.

# MANHOLES, INLETS & CATCH BASINS

Manholes, Inlets and Catch Basins shall be constructed in conformance with Section IIIA Manholes, etc. above. The space between connecting pipes and the wall of the manhole shall be completely filled with non-shrink hydraulic cement mortar. Frames and lids shall be Neenah or approved equal unless specified otherwise on the PLANS. All frames and grates shall be provided such that the flange fully covers the opening plus 2" of the structure as a minimum. \* Provide "Vane" Type frame & grate for all structures located in curb where gradient exceed 2.0%. Manholes shall include steps, frame & grate, bedding and trench backfill.

# FLARED END SECTION

Flared end sections shall be pre-cast reinforced concrete flared end section with an end block cast separate as per the Illinois Department of Transportation Standard 542301 and shall be installed where shown on the PLANS. All flared end sections for storm sewers 12" in diameter and larger shall be installed with a grating per Standard 542311 and/or as detailed on the PLANS. Work shall include end block.

## RIP RAP

Stone rip rap consisting of pieces of "A" quality stone 4" to 8" in diameter shall be furnished and installed in accordance with IDOT Specifications and shall be placed where shown on the plans, to a minimum thickness of 12" and a width as indicated on the plans. Broken concrete or concrete blocks will not be acceptable.

# FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

UNDERDRAINS

Pipe underdrains shall be corrugated flexible plastic pipe conforming to AASHTO Designation M252 perforated corrugated polyethylene pipe (PE) with a smooth interior of the diameter indicated on the PLANS and wrapped in a soil filter fabric supplied and installed by the CONTRACTOR. Perforations may be circular or slotted, but shall provide a minimum inlet area of 1.0 square inch per 2.0 linear feet of pipe. CONTRACTOR shall submit fabric and pipe catalogue Specifications for approval by the CLIENT. CONTRACTOR shall bed and backfill the underdrain in one of the following IDOT gradations of aggregate (CA-5, CA-7, CA-11, CA-14 or CA-15).

## MISCELLANEOUS

- (1) All existing field drainage tile or storm sewers encountered or damaged during construction shall either be restored to their original condition, properly rerouted and/or connected to the storm sewer system
- (2) Footing drains shall be connected to sump pumps or discharged directly into storm sewers. Footing drains or drainage tile shall not be connected to the sanitary sewer.

# CONNECTION FOR STORM SERVICE TO STORM MAIN

Connections of storm sewer services to storm sewer mains should be made with manufactured tees when available. Availability of manufactured tees will be a function of the storm sewer material and pipe diameter size of the service sewer and main. If manufactured tees are not reasonably available, connections should be made in accordance with manufacturer's recommendations for all storm sewer other than concrete pipe. For concrete pipe connections without manufactured tees the storm sewer main shall be machine cored and the service sewer connected using non-shrink grout for the void between pipes. The service sewer shall be cut flush with the inside wall of the sewer main and not extend into the inside flow area of the main or otherwise impede flow.

# **IV. ROADWAY AND PARKING LOT IMPROVEMENTS**

## Work shall be completed in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition (hereinafter referred to collectively as the "Standard Specifications") except as modified below and except that payment will be defined as detailed in the contract documents between the CLIENT and the CONTRACTOR. Supplementing the Standard Specifications shall be the applicable sections of the latest editions of the "Supplemental Specifications and Recurring Special Provisions", the "Manual on Uniform Traffic Control Devices for Streets and Highways" and the Illinois Supplement thereto, (hereinafter referred to collectively as the "MUTCD"). Any references to "ENGINEER" in the "Standard Specifications" shall be interpreted as the CLIENT or CLIENT's Construction Representative.

SUBGRADE PREPARATION

The CONTRACTOR shall be responsible for all subgrade compaction and preparation to the lines and grades shown on the plans.

# AGGREGATE BASE COURSE TYPE 'B'

Aggregate Base Course Type B shall be limited to CA-6 or CA-10 gradation. Aggregate base courses shall be proof rolled as outlined below.

# PROOF ROLL

STANDARDS

The CONTRACTOR shall proof roll the subgrade with either a 2-axle truck loaded to 27,000 lbs. Or a 3-axle truck loaded to 45,000 lbs. or as specified by the JURISDICTIONAL GOVERNING ENTITY. The CLIENT and JURISDICTIONAL GOVERNING ENTITY shall observe and approve the proof rolling of the subgrade and the base course. Proof rolling tolerances shall be a maximum deflection of 1" for the subgrade and 1/2" for the base course. The above criteria is intended as a maximum deflection standard and that proof rolling of a majority of the area will have less deflection than specified above. In any case of deficiency, the subgrade and/or base course shall be repaired and retested before proceeding with the pavement construction.

Pavement subgrade material shall not be removed, placed or disturbed after proof roll testing has been completed prior to the pavement construction. Additional testing will be required if the pavement subgrade is disturbed and/or material is removed from or placed on the pavement subgrade after proof rolling approval

Trucks or heavy equipment shall not travel on any pavement subgrade after final testing prior to pavement construction.

# HOT-MIX ASPHALT BASE COURSE

HMA Base Course shall meet the requirements of IDOT or N50 mix design as indicated and shown on the plans. The maximum amount of recycled asphalt pavement allowed shall be 30% in a N30 mix design and 25% in a N50 mix design.

HOT-MIX ASPHALT BINDER AND SURFACE COURSE

HMA binder and surface courses, shall be constructed to the compacted thickness as shown on the PLANS. The base course shall be cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. The surface course shall be placed after the base and courses have gone through one winter season, or as directed by the CLIENT. Before applying the surface course, the binder course shall be thoroughly cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. Prior to the placement of the surface course, the JURISDICTIONAL GOVERNING ENTITY shall examine the completed pavement, including curb and gutter, and all failures shall be corrected by the CONTRACTOR.

# CONCRETE PAVEMENTS

Concrete pavements shall be constructed in accordance with American Concrete Institute Standard ACI330R-08 and as shown on the PLANS. Slabs and driveway aprons shall be constructed with 6 x 6 W1.4/1.4 welded wire fabric positioned on steel chair supports. Placing fabric during the concrete pouring operation will not be allowed.

Sawing of joints shall commence as soon as the concrete has cured and hardened sufficiently to permit sawing without excessive raveling, but no later than eight hours after the concrete has been placed. All joints shall be sawed to a depth equal to 1/3 of the pavement thickness before uncontrolled shrinkage cracking take place. If necessary, the sawing operation shall occur during the day or at night, regardless of weekends, holidays or weather conditions. The CONTRACTOR shall be aware of jurisdictional noise ordinances and holiday restrictions for scheduling purposes.

The CONTRACTOR is responsible to guard fresh concrete until it sets and hardens sufficiently to prevent people from writing, walking, riding bicycles or otherwise permanently marking, defacing or causing depressions of any type in the concrete. Any concrete so marked will be removed and replaced by the CONTRACTOR at the CONTRACTOR's expense.

The CONTRACTOR shall protect the pavement against all traffic, including that of their own employees or other workers, until test specimens have attained the specified strength.

# SIDEWALKS

Concrete sidewalks shall be constructed to width and thickness as shown on the PLANS. Sidewalks shall be thickened to a minimum of 6" at all driveways. All sidewalks shall be IDOT Class SI concrete, on aggregate base as shown on the detail. A <sup>3</sup>/<sub>4</sub>" expansion joint shall be provided when meeting existing sidewalk.

# CURB AND GUTTER

Curb and gutter shall be as per the detail shown on the PLANS, which shall include compacted aggregate base course under the curb and gutter. All contraction and expansion joints shall be constructed as per the detail.

CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT

The CONTRACTOR shall saw cut and remove the existing concrete curb where shown on the PLANS and install a curb of similar cross section and pavement to that removed (or depressed curb and gutter if shown on the PLANS). Upon completion of the curb and gutter any voids between the existing pavement and the new curb shall be filled with concrete to within 2" of the final surface, which is to be filled with bituminous pavement. The area behind the curb shall be filled and compacted with embankment material within 6" of the top of the new curb. The CONTRACTOR shall then restore the remaining 6" to its original condition (i.e., sod, gravel, topsoil). Where proposed curb connects to an existing curb, the existing curb shall be saw cut and then two 18" long x <sup>3</sup>/<sub>4</sub>" (#6) dowel bars shall be drilled and installed 9" into the existing and proposed curb. Bars shall be installed in a location similar to the expansion joint in the curb.

# FRAME ADJUSTMENTS

The road contractor shall be responsible for making final adjustments and the setting on a bituminous mastic jointing compound all castings located in the roadway, sidewalks, and parking areas prior to construction of any curbing, sidewalk, or final surface. Any structures that need to be lowered, or raised in excess of 4" shall be completed and the work backcharged against the underground contractor. This Contractor shall also be responsible for cleaning all of the above structures immediately upon completion of his phase of work. This work shall be incidental to the cost of the pavement.

### **PAVEMENT MARKING - PAINT**

The CONTRACTOR shall furnish and apply painted marking lines, letters & symbols of the patterns, sizes and colors where shown on the PLANS. Paint pavement marking shall be applied in accordance with the IDOT Standard Specifications.

# **PAVEMENT MARKING - THERMOPLASTIC**

The CONTRACTOR shall furnish and apply extruded thermoplastic pavement marking lines, letters and symbols of the patterns, sizes and colors where shown on the PLANS. Thermoplastic pavement marking shall be installed in accordance with the IDOT Standard Specifications.

# QUALITY CONTROL

The CONTRACTOR shall provide all testing necessary to ensure improvements are in accordance with the project specifications and provide testing

documentation that specifications were met

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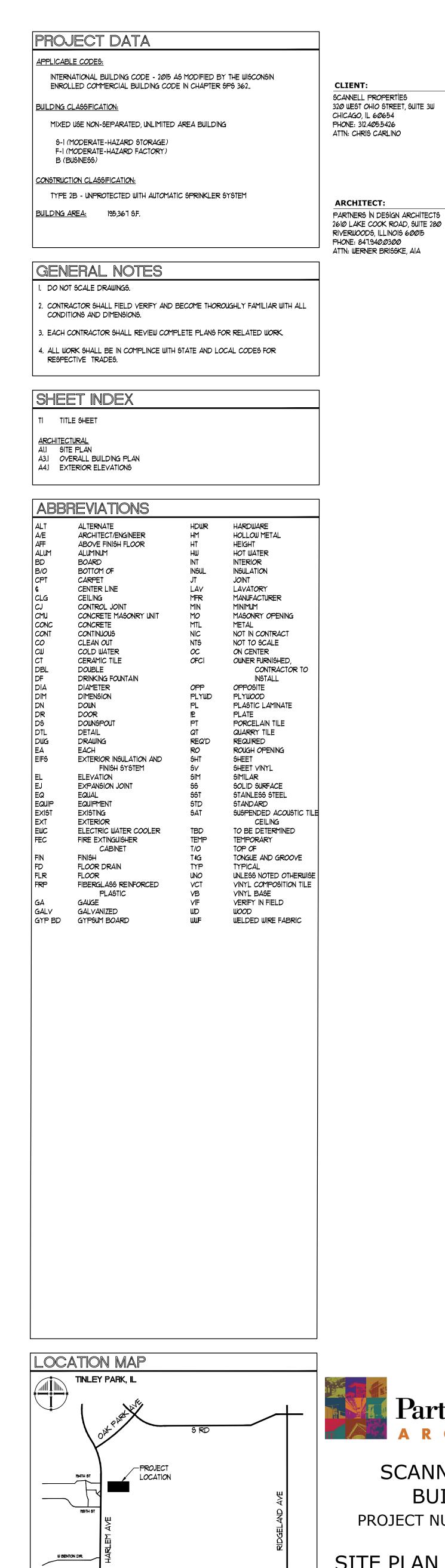
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# HARLEM AND VOLLMER INDUSTRIAL DEVELOPMENT

NORTHEAST CORNER OF SOUTH HARLEM AVENUE AND VOLLMER ROAD, VILLAGE OF TINLEY PARK, IL SITE AND BUILDING PLAN REVIEW





VOLLMER RD

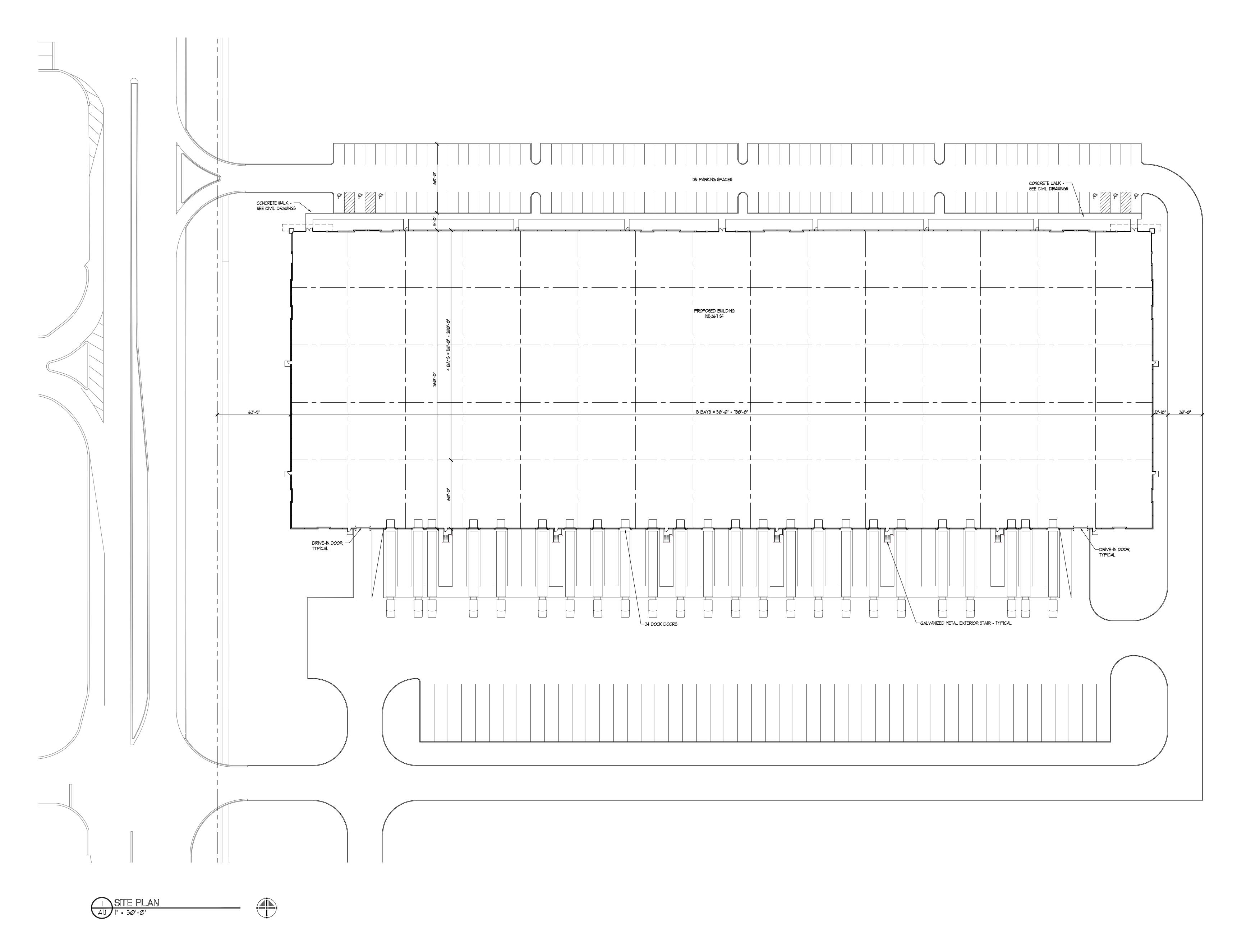
SITE PLAN AND BUILDING REVIEW ISSUE DATE: 03.31.21

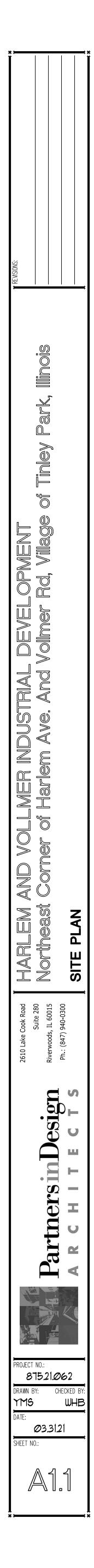


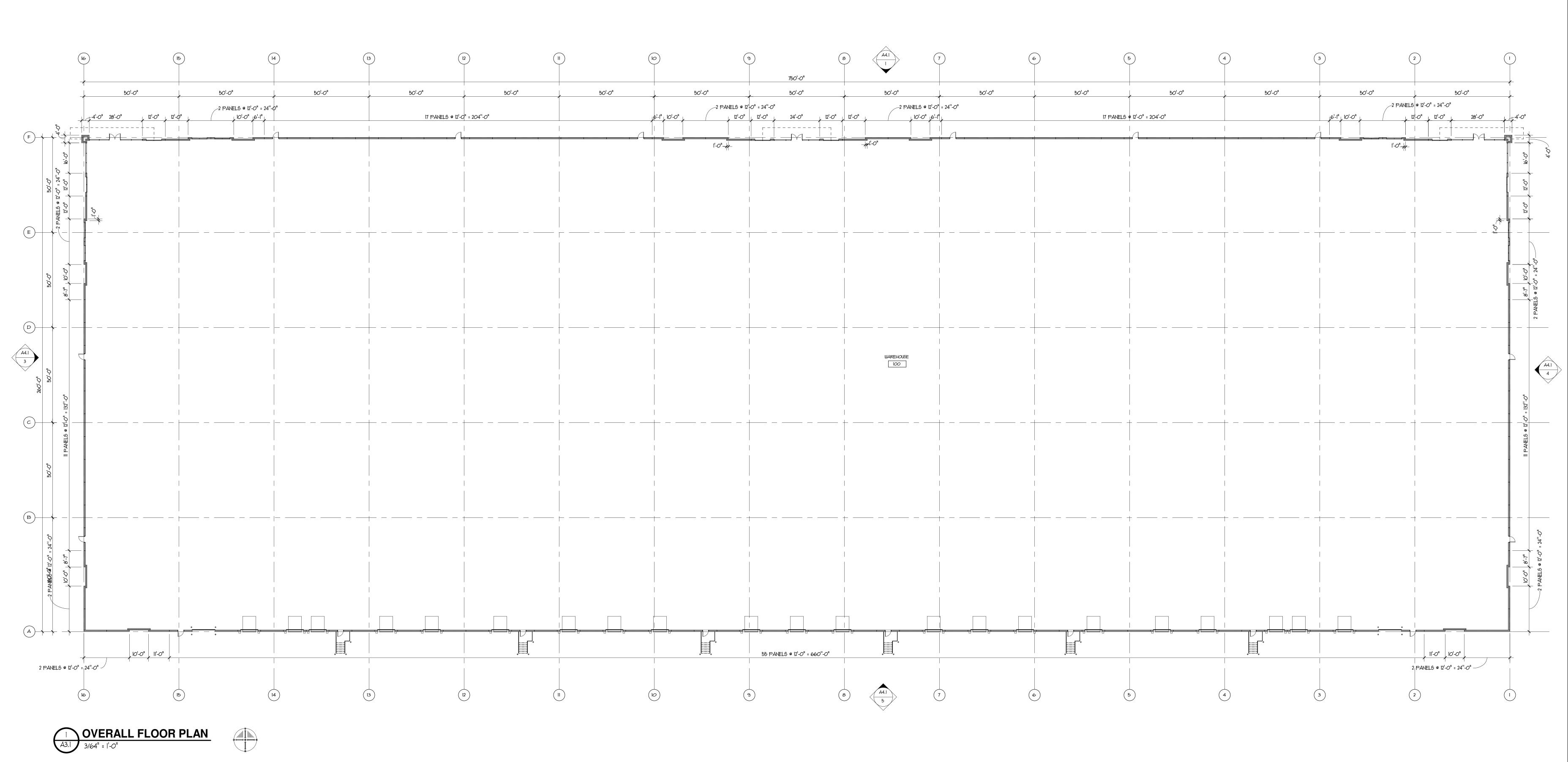


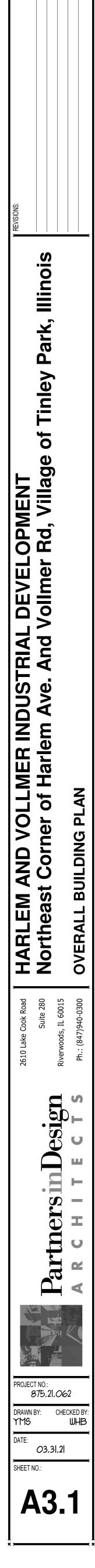
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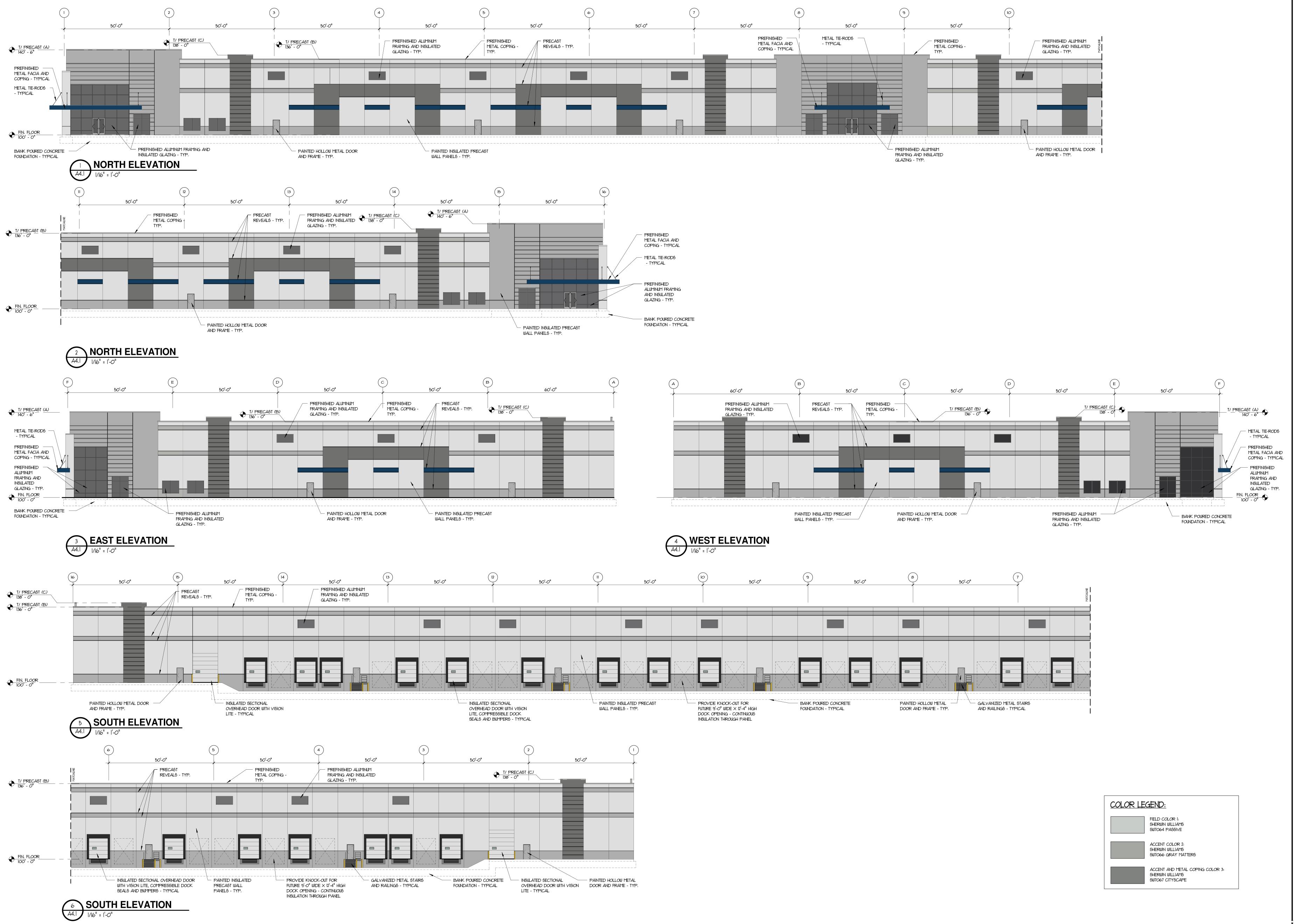
> SCANNELL TINLEY **BUILDING 1** PROJECT NUMBER: 875.21.062











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# for TINLEY PARK BUSINESS CENTER **19501-19701 HARLEM AVENUE, TINLEY PARK VILLAGE OF TINLEY PARK, ILLINOIS**

|           | INDEX OF SHEETS                   |
|-----------|-----------------------------------|
|           | DECODIDITION                      |
| SHEET NO. | DESCRIPTION                       |
| L1        | TITLE SHEET AND LANDSCAPE SUMMARY |
| L2        | LANDSCAPE PLAN                    |
| L3        | LANDSCAPE PLAN                    |
| L4        | LANDSCAPE PLAN                    |
| L5        | LANDSCAPE PLAN                    |
| L6        | LANDSCAPE PLAN                    |
| L7        | LANDSCAPE PLAN                    |
| L8        | LANDSCAPE PLAN                    |
| L9        | LANDSCAPE PLAN                    |
| L10       | LANDSCAPE PLAN                    |
| L11       | LANDSCAPE PLAN                    |
| L12       | LANDSCAPE PLAN                    |
| L13       | LANDSCAPE PLAN                    |
| L14       | LANDSCAPE PLAN                    |
| L15       | LANDSCAPE PLAN                    |
| L16       | LANDSCAPE DETAILS                 |
| L17       | LANDSCAPE SPECIFICATIONS          |

# Village of Tinley Park Required Landscaping

# STREET TREE REQUIREMENT

Requirement: One canopy tree per 25 feet of street frontage in parkway

Harlem Ave: 3,672 LF / 25 = 147 Trees (calculations excl. driveways & sight triangles) Vollmer Rd: 1,182 LF Parkway less than 4' wide, no trees required Required- 147 Trees

# On Plan - 0 Trees (parkway too narrow, w/ utility and drainage conflicts)

PARKING LOT LANDSCAPING

Requirement: Lots to be screened from view of adjacent properties and streets with evergreen plantings 3' ht. or by 3' berm. Shrubs and groundcovers are encouraged in islands and along borders. Each island shall include at least 1 tree and 1 shrub per 200 sf of island green area.

Required - Screening hedge and 4 Island Trees and 4 Island Shrubs (PH1) On Plan - Screening hedge and 4 Island Trees and 8 Island Shrubs (PH1)

# FOUNDATION LANDSCAPING

Requirement: Live species shall be planted along the front, side and rear walls of non-residential buildings wherever feasible. A min. 10' wide landscape areas shall front no less than 70% of the side of all buildings fronting streets. On Plan - Meets Ordinance

# **BUFFER YARD LANDSCAPING**

Requirement: North Property-Type C, South-Type B, East-Type D and West Type C Type B Per 100 LF, 20' wide: 2.4 Canopy Trees, .6 Understory Trees and 12 Shrubs Type C Per 100 LF, 25' wide: 3.5 Canopy Trees, 1.4 Understory Trees and 14 Shrubs Type D Per 100 LF, 60' wide: 4.8 Canopy Trees, 2.4 Understory Trees and 19 Shrubs

North: 820' = 8.20 100' Sections =29 Canopy Trees, 11 Understory, 115 Shrubs South: 1,182' (1,242'-60' Drive)= 11.82 100' Sections = 28 CT, 7 UT, 142 SH East: 3,400' = 34.00 100' Sections = 163 CT, 82 UT, 646 SH West: 3,413' (3,523'-110' Drives)= 34.13 100' Sections =120 CT, 48 UT, 478 SH Required - 340 canopy trees, 148 understory trees, and 1,381 shrubs

On Plan - 340 canopy trees, 158 understory trees, and 1,410 shrubs (some plantings to be provided in future phases. Note: Buffer Yards measured to edge of developed areas. Some pulled internal to site for improved buffering and to avoid conflicts with utilities, floodplain, etc.)

# INTERIOR LOT LANDSCAPING Requirement: One tree required per 25,000 sf of lot area Lot Area 4,832,540 / 25,000 = 193 Trees required **Required - 193 trees** On Plan - 193 trees

# **KEY MAP**

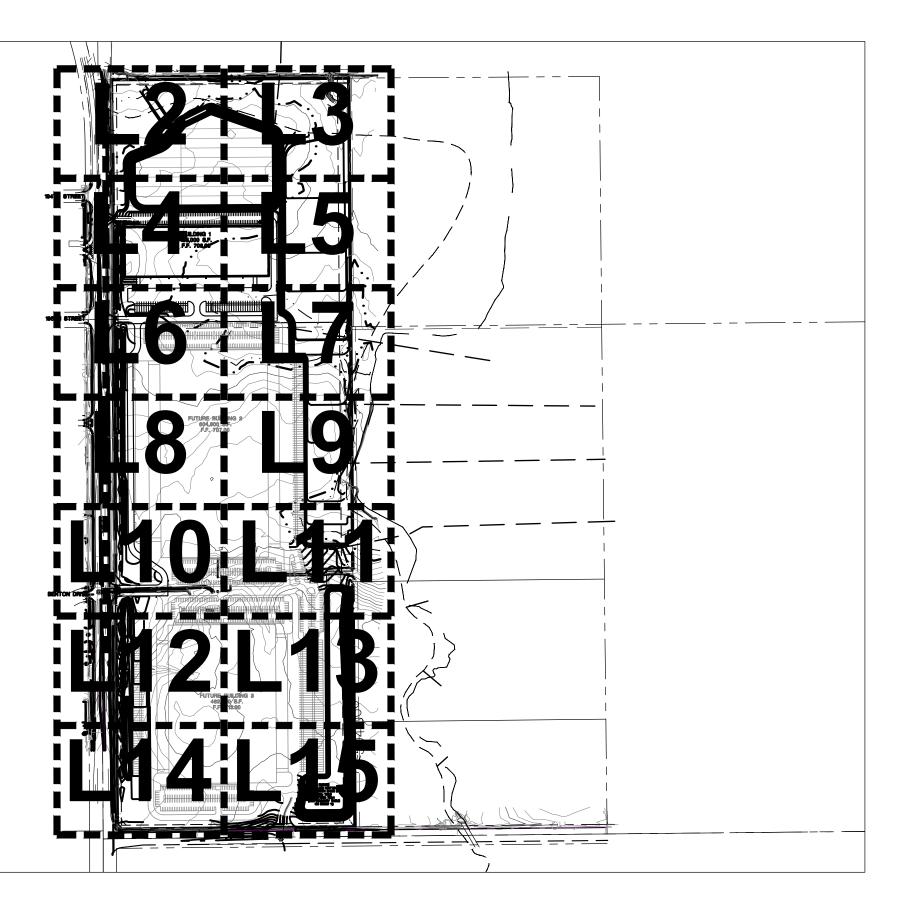
# Landscape Notes:

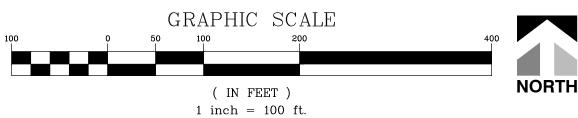
- disruption outside of designated construction area.
- 2.

- required to complete the work as drawn and specified.

- not be available prior to construction.
- resulting from his work at no additional cost to the owner.

# PRELIMINARY LANDSCAPE PLAN





Seed/ Sod limit line is approximate. Seed/ Sod to limits of grading and disturbance. Contractor responsible for restoration of any unauthorized

Contractor responsible for erosion control in all seeded/ sodded areas.

3. Tree mulch rings in turf areas are 5' diameter. Contractor shall provide a mulch ring around all existing trees within the limits of work. Remove all existing grass from area to be mulched and provide a typical spade cut edge. Landscape Fabric shall not be installed under mulch. Bedlines are to be spade cut to a minimum depth of 3". Curved bedlines are to be smooth and not segmented.

All planting, beds shall receive top dressing of mulch. Landscape fabric shall not be installed under mulch.

6. Do not locate plants within 10' of utility structures or within 5' horizontally of underground utility lines unless otherwise shown on plans. Consult with Landscape Architect if these conditions exist.

7. For Lump Sum Contracts, plants and other materials are quantified and summarized for the convenience of the Owner and jurisdictional agencies only. Confirm and install sufficient quantities to complete the work as drawn and specified. No additional payments will be made for materials

For Unit Price Contracts, payments will be made based on actual quantities installed as measured in place by the Owner's Representative. 9. It is the responsibility of the contractor to locate and provide plant material as specified on this plan. The contractor may submit a request to provide substitutions for the specified plant material under the following conditions:

a. Any substitutions proposed shall be submitted to the project owner's representative within two weeks of the award of contract. Substitutions must meet equivalent design and functional goals of the original materials as determined by the owner's representative. Any changes must have the approval of the owner's representative,

b. The request will be accompanied by at least three notices from plant material suppliers that the plant material specified is not available and will

10. Verify site conditions and information on drawings. Promptly report any concealed conditions, mistakes, discrepancies or deviations from the information shown in the Contract Documents. The Owner is not responsible for unauthorized changes or extra work required to correct unreported discrepancies. Commencement of work shall constitute acceptance of conditions and responsibility for corrections

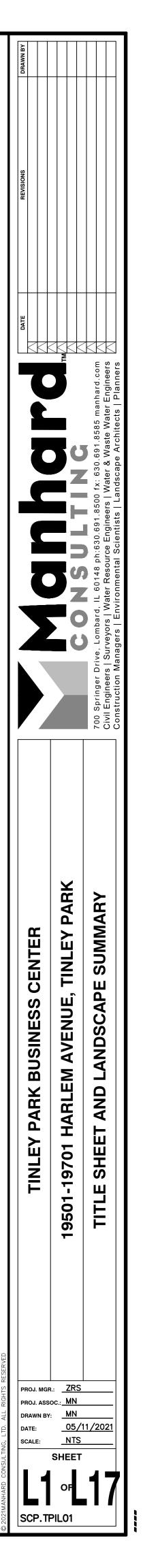
11. A minimum of two working days before performing any digging, call underground service alert for information on the location of natural gas lines, electric cables, telephone cables, etc. The contractor shall be responsible for location and protection of all utilities, and repair of any damage

12. Contractor shall promptly repair all damages to existing site at no cost to owner.

13. Refer to landscape specifications for additional conditions, standards, and notes.

# CONCEPT

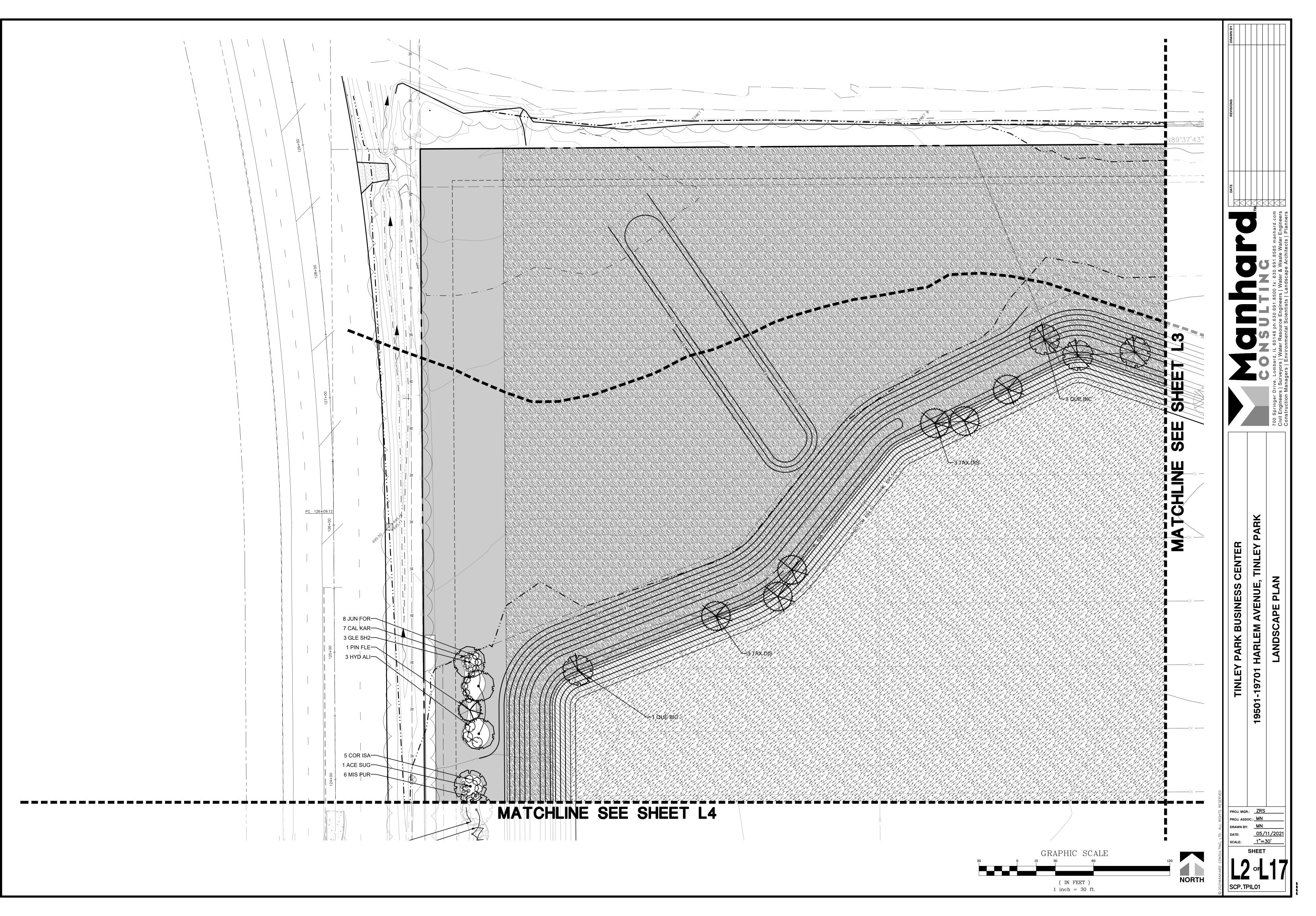
| PLANT SCHEDULE                                   |             |
|--------------------------------------------------|-------------|
| PARKING ISLAND TREE                              | 4           |
| BUFFER CANOPY TREE- NORTH                        | 30          |
| BUFFER CANOPY TREE- SOUTH                        | 28          |
| BUFFER CANOPY TREE- EAST<br>-                    | 22          |
| BUFFER CANOPY TREE- EAST (FUTURE PHASE)<br>-     | 140         |
| BUFFER CANOPY TREE- WEST<br>-                    | 120         |
| BUFFER UNDERSTORY TREE- NORTH                    | 10          |
| BUFFER UNDERSTORY TREE- SOUTH                    | 7           |
| BUFFER UNDERSTORY TREE- EAST                     | 13          |
| BUFFER UNDERSTORY TREE- EAST (FUTURE PHASE)<br>- | 77          |
| BUFFER UNDERSTORY TREE- WEST                     | 51          |
| NTERIOR LOT SHADE TREE                           | 89          |
| NTERIOR LOT SHADE TREE (FUTURE)<br>-             | 104         |
| BUFFER SHRUB- NORTH                              | 120         |
| BUFFER SHRUB- SOUTH                              | 144         |
| BUFFER SHRUB- EAST<br>-                          | 104         |
| BUFFER SHRUB- EAST (FUTURE PHASE)<br>-           | 559         |
| BUFFER SHRUB- WEST<br>-                          | 483         |
| PARKING LOT INTERIOR SHRUB                       | 8           |
| WETLAND EMERGENT SEEDMIX<br>-                    | 391,769 sf  |
| STORMWATER SEED MIX                              | 83,690 sf   |
| ECONOMY PRAIRIE SEED MIX                         | 1,067,353 s |

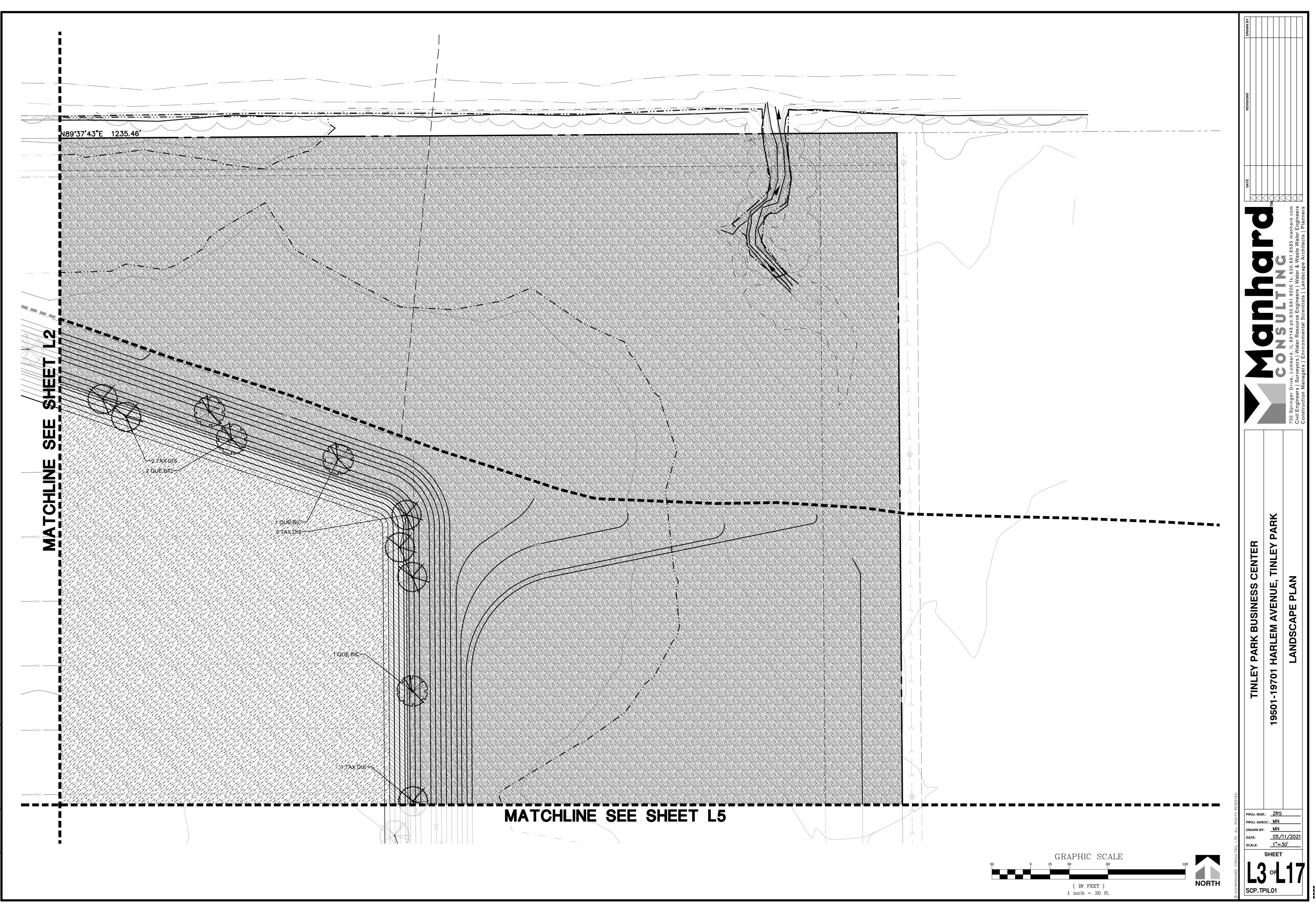




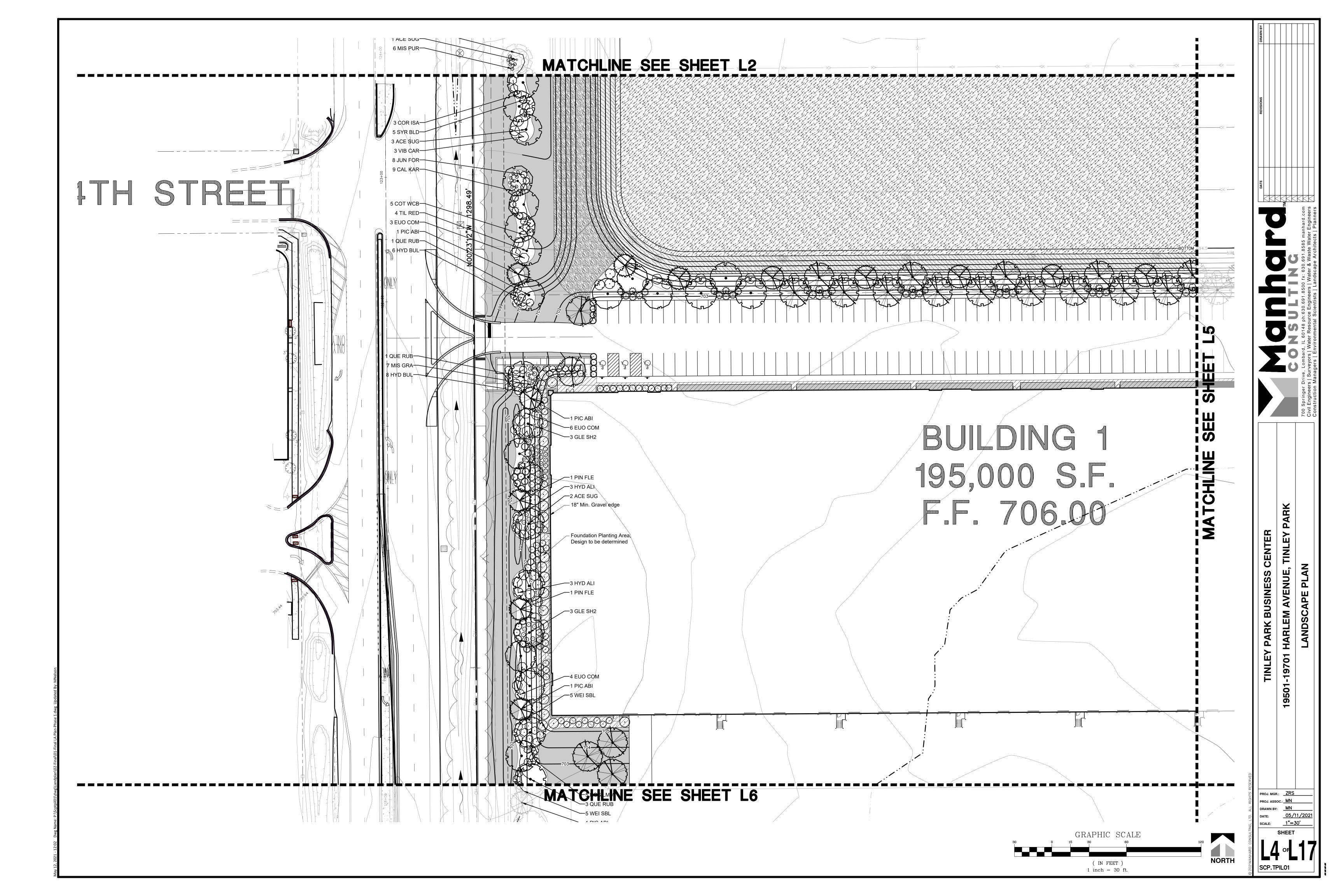


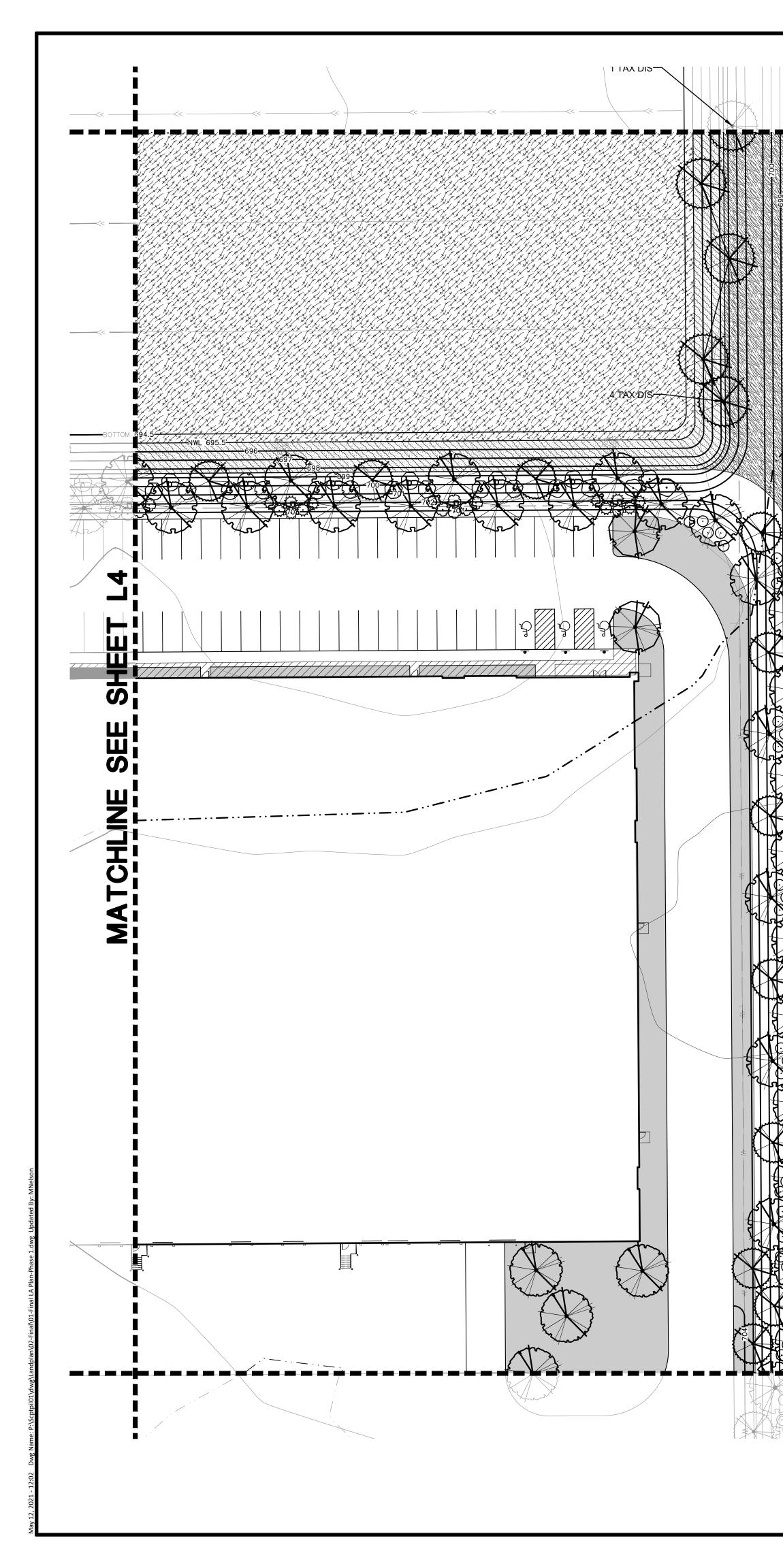






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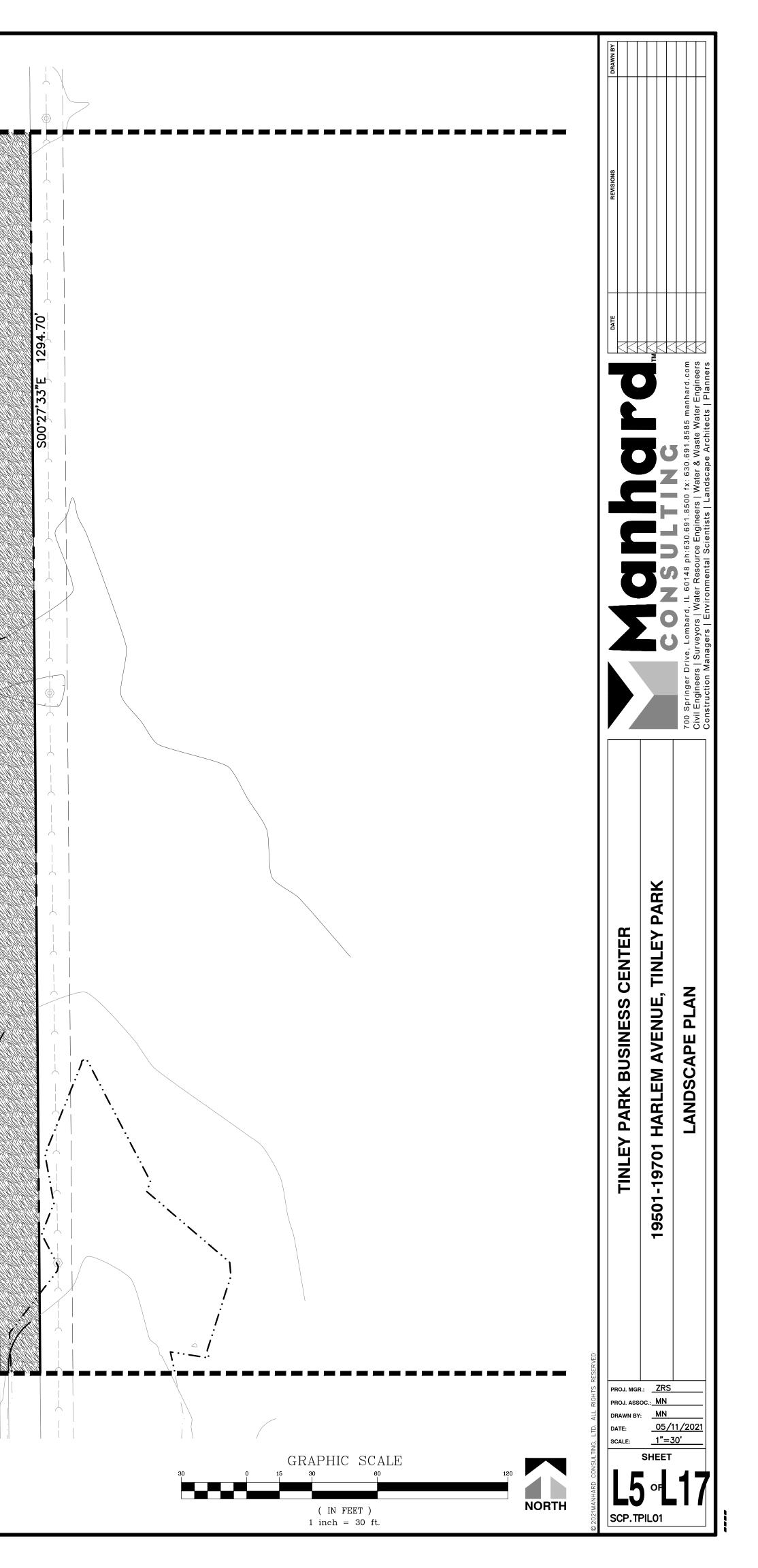


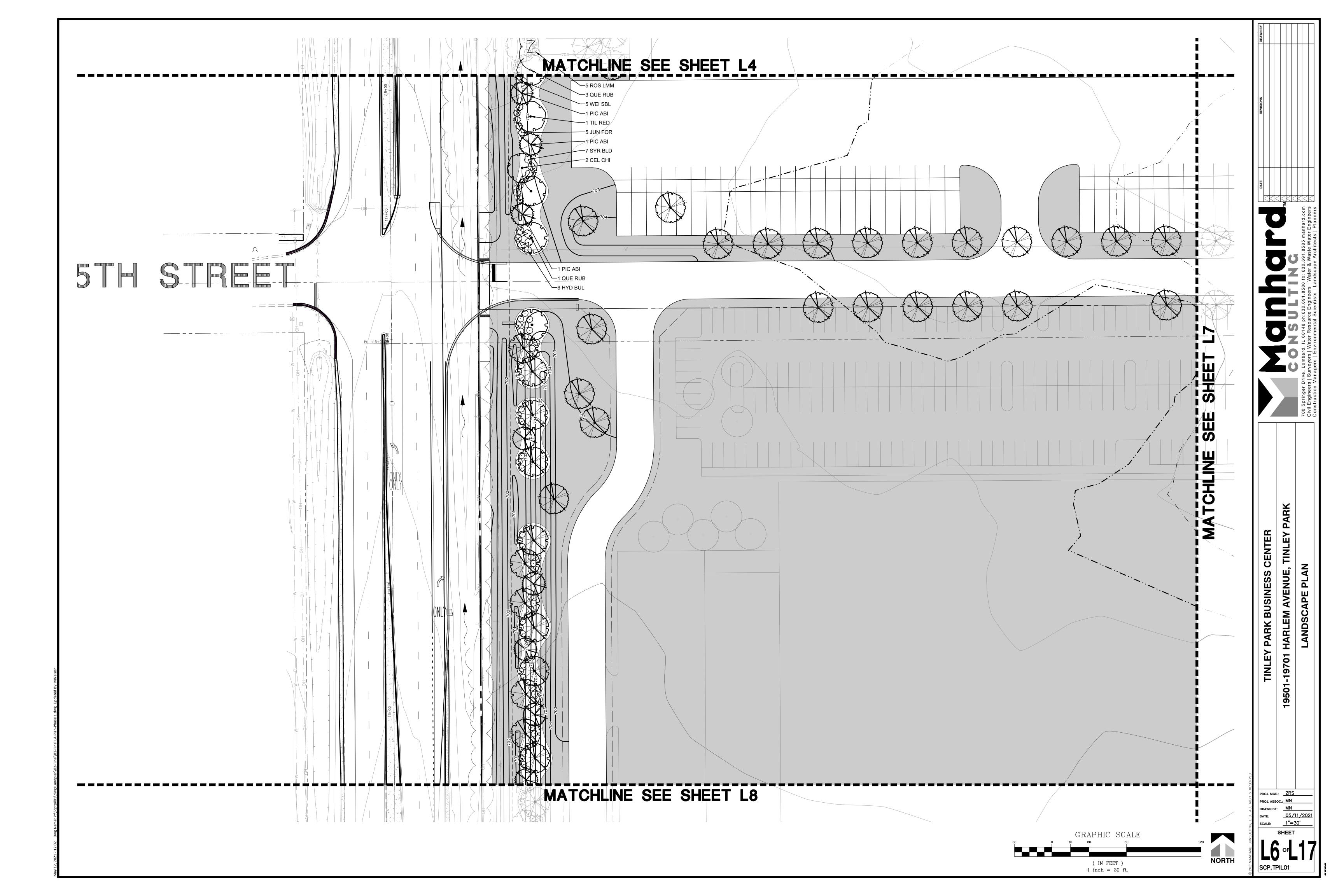


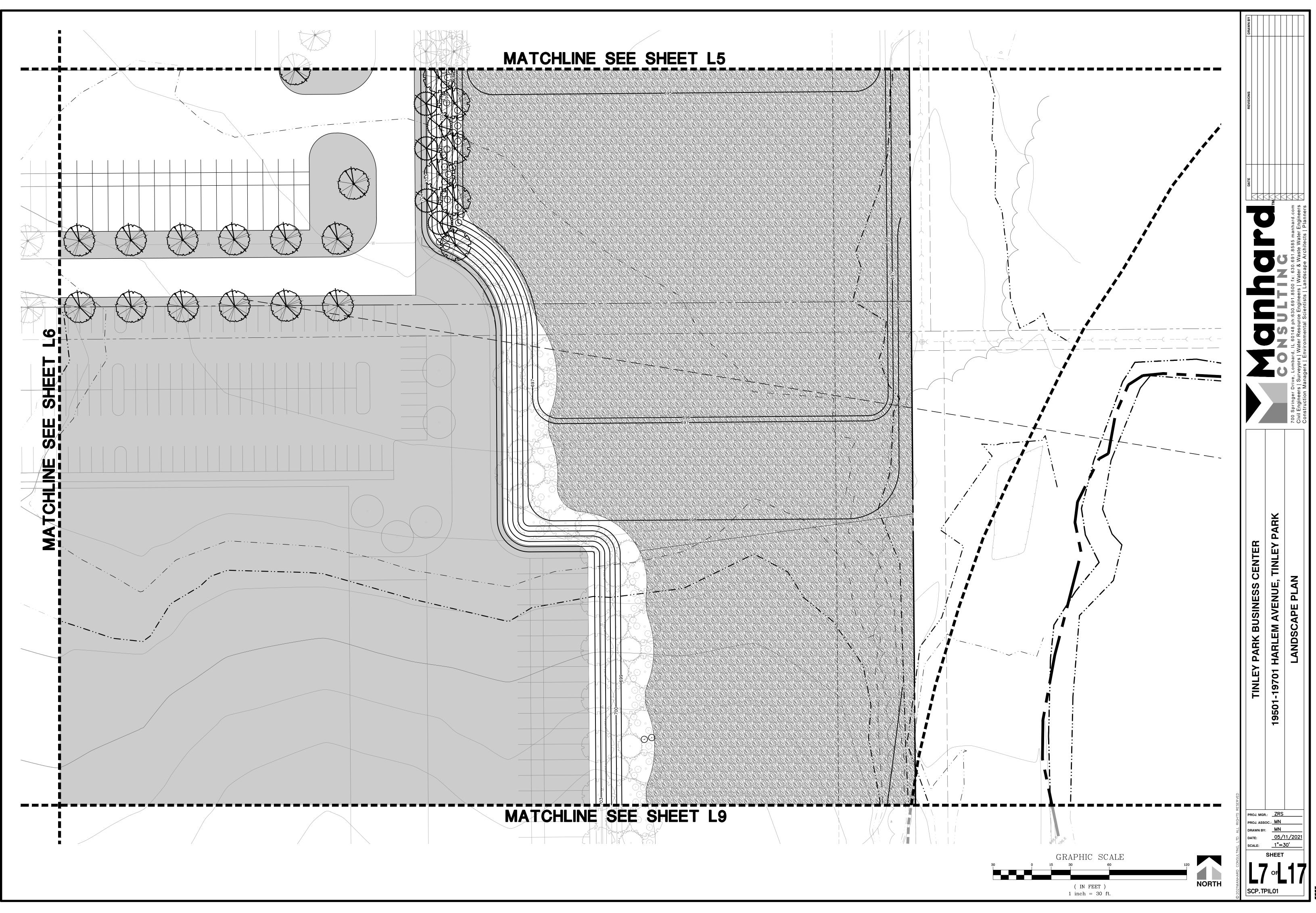


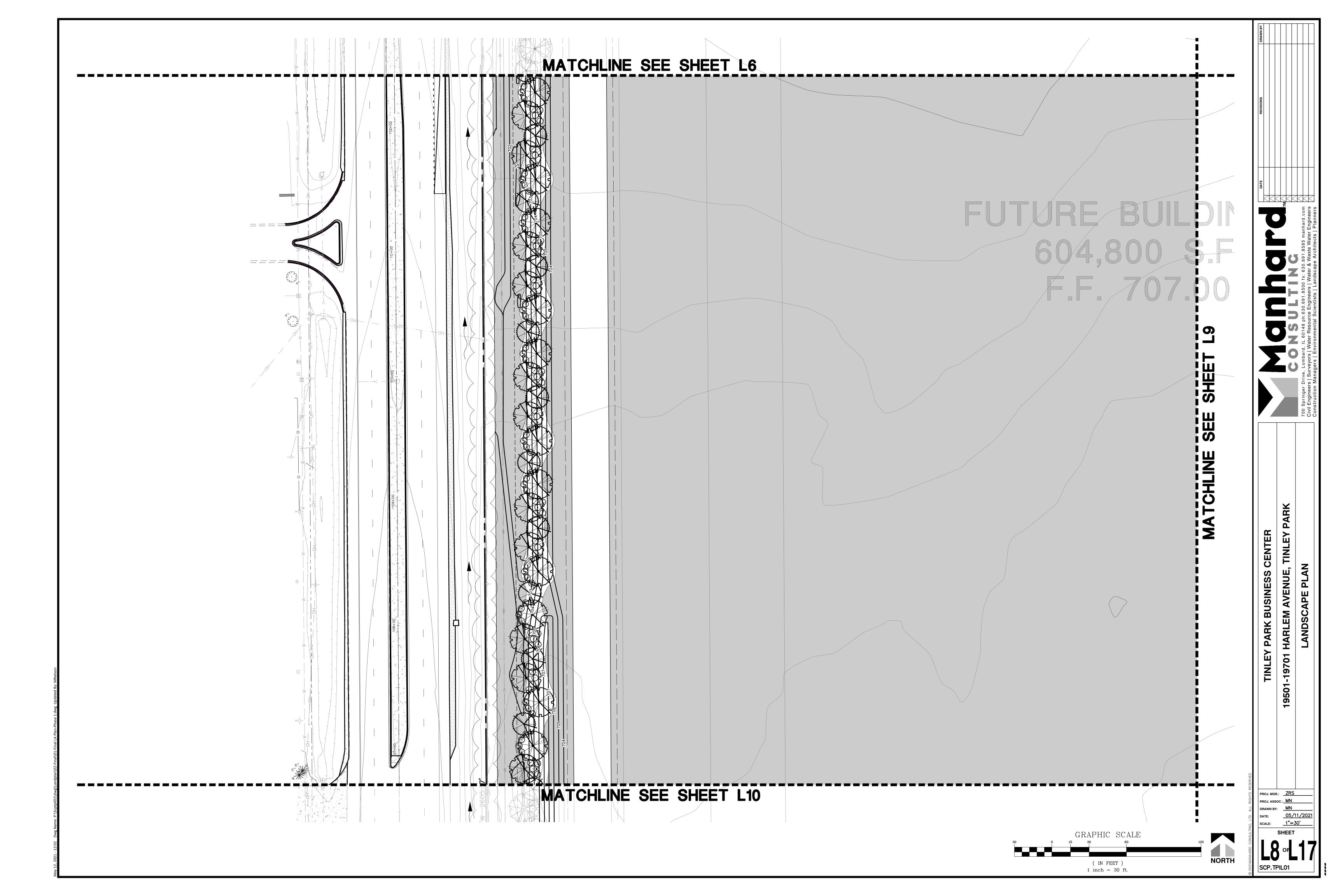
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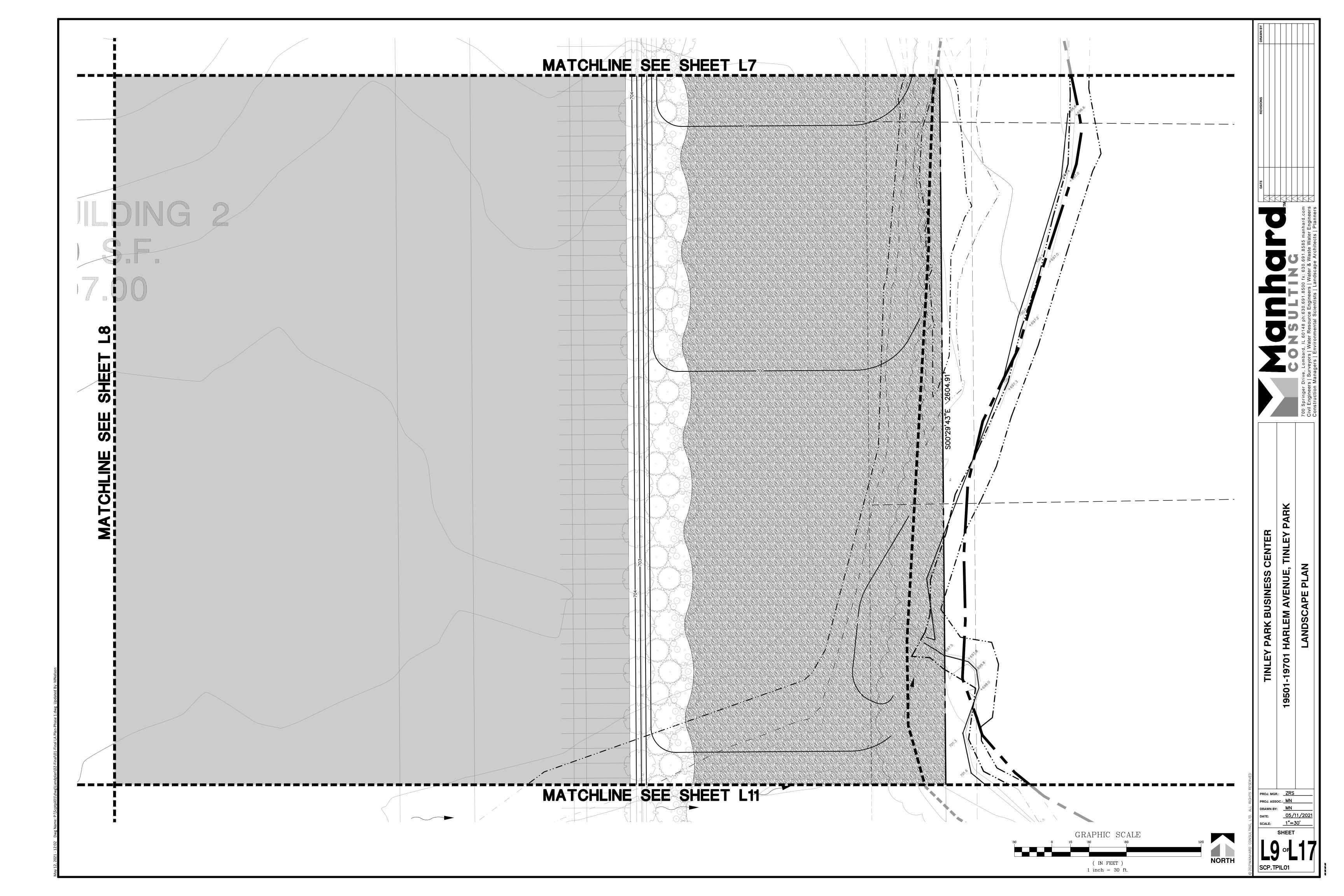
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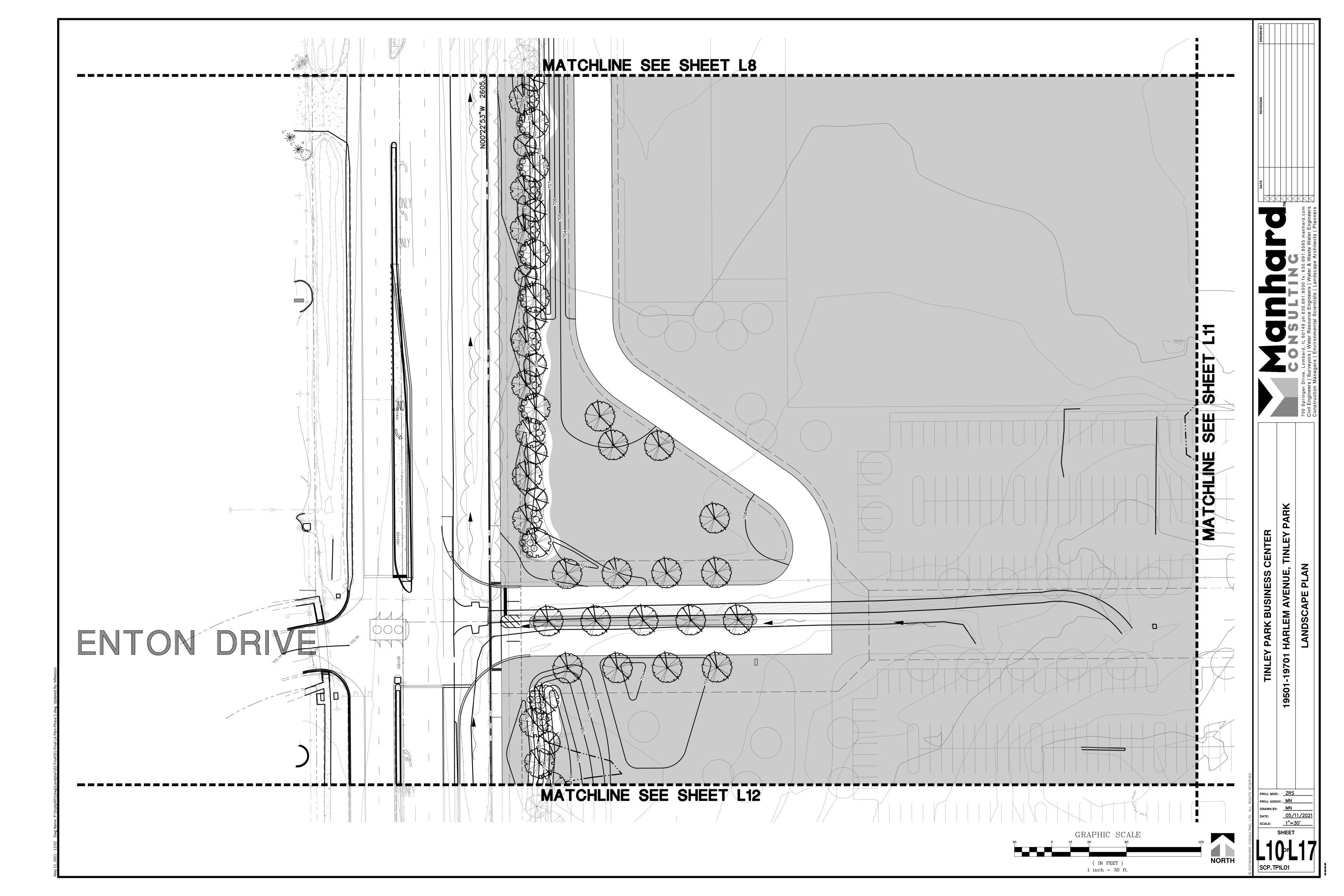


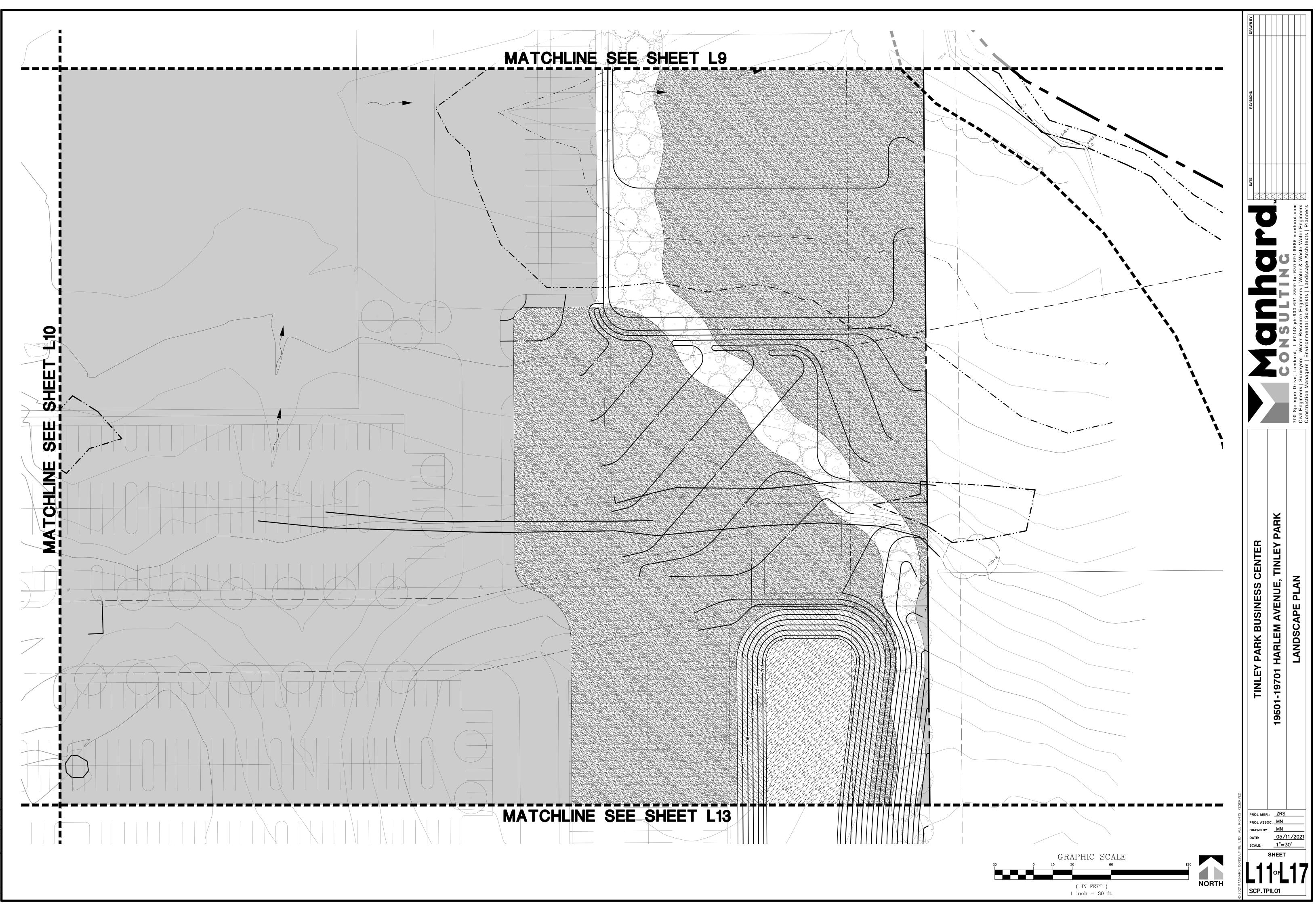




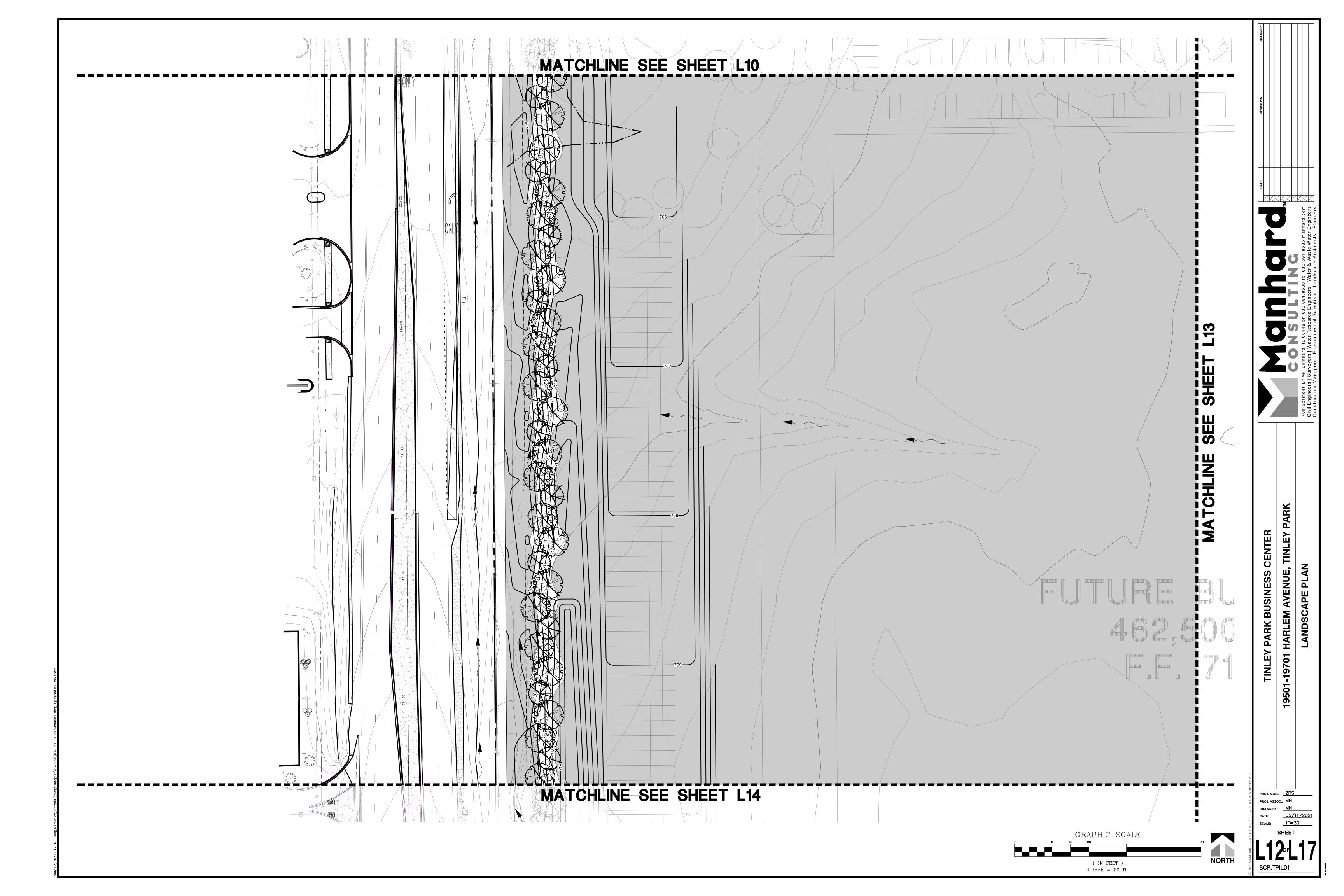


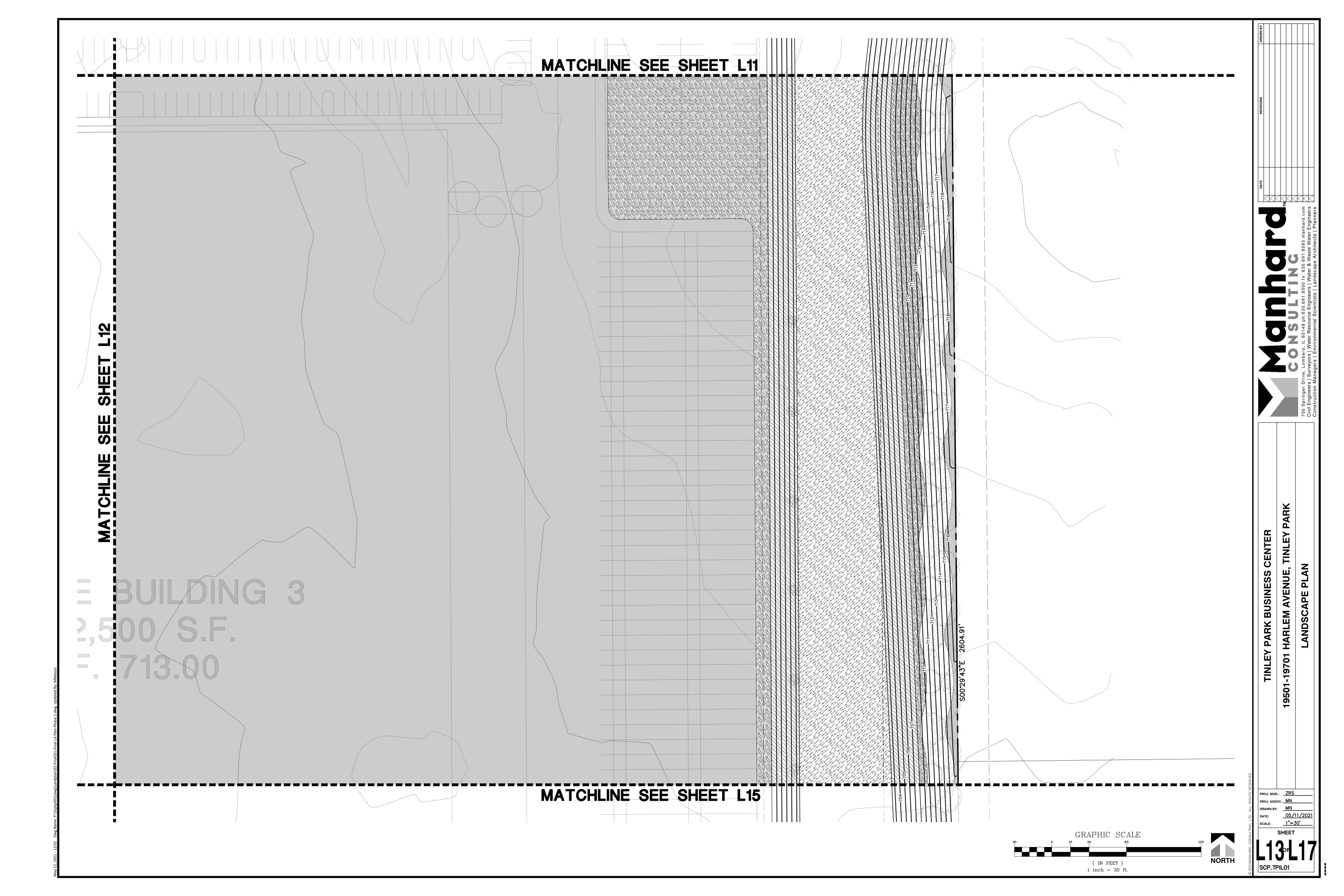


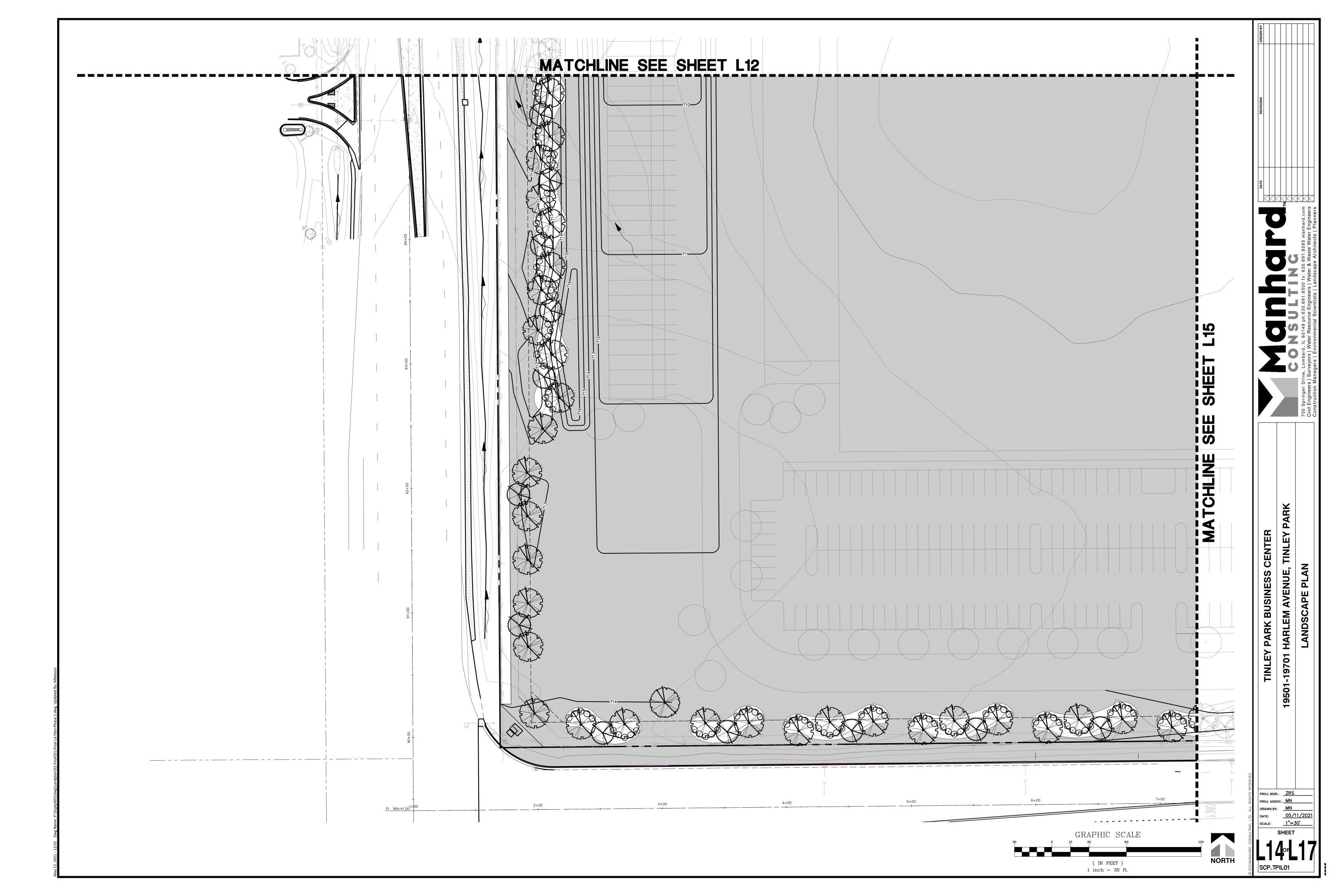


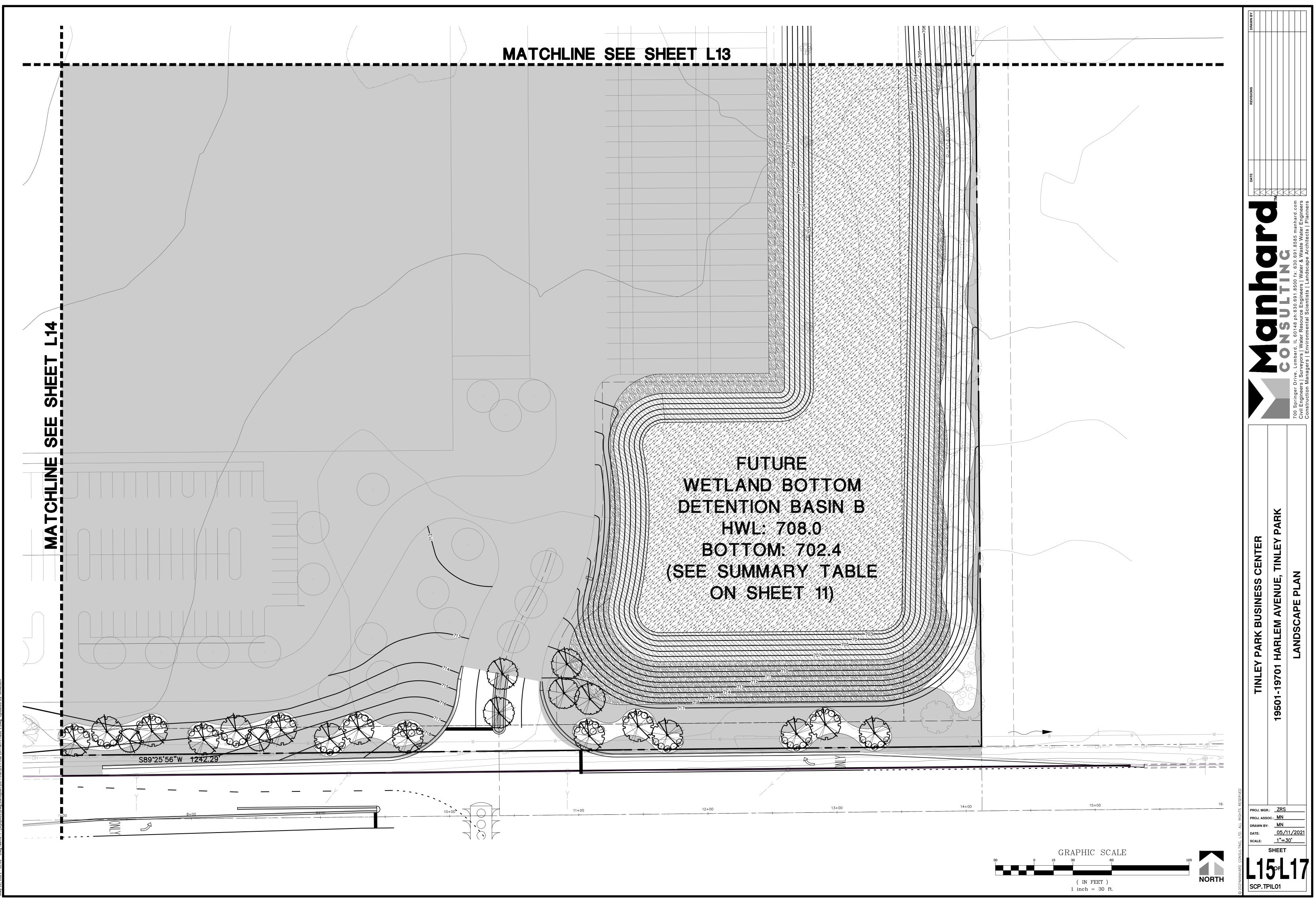


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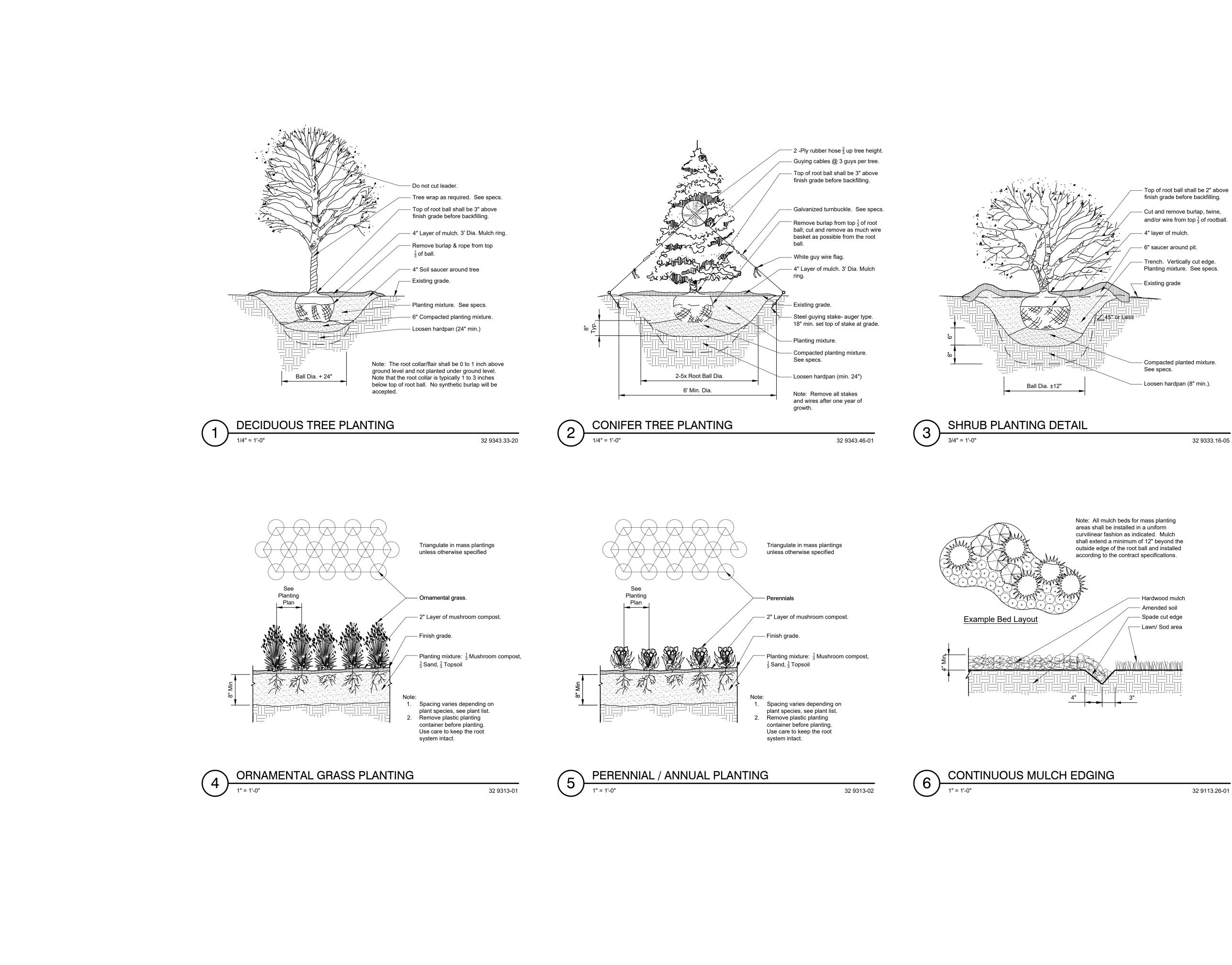




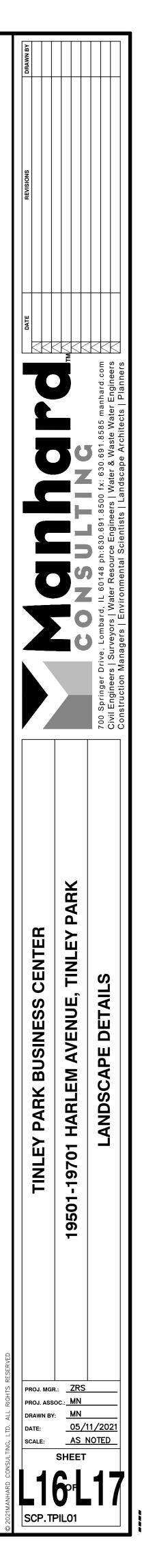




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# **GENERAL PLANTING SPECIFICATIONS:**

# PART 1 - GENERAL

# 1-01 DESCRIPTION:

- A. Provide trees, shrubs, perennials and groundcovers as shown and specified. This work includes: 1. Spreading of topsoil or soil preparation
  - 2. Trees, shrubs, perennials and groundcovers 3. Planting mixes
  - 4. Mulch and planting accessories
  - 5. Fertilizer and herbicide 6. Maintenance
  - 7. Warranty of plant material
- B. The Contractor shall verify all existing conditions and dimensions in the field prior to bidding and report any discrepancies to the Owner or his/her representative.

# 1-02 QUALITY ASSURANCE:

- A. Comply with site work requirements
- B. Plant names indicated must comply with 'Standardized Plant Names' as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. Names of varieties which are not listed should conform with those generally accepted by the nursery trade. Stock should be legibly tagged.
- C. All plant materials shall conform to the 'American Standards for Nursery Stock' (ASNS), latest edition, published by the American Association of Nurserymen, Washington, D.C.
- D. All plant material shall be grown and supplied within a 50 mile radius of the project for a minimum of two full growing seasons.
- E. Adhere to sizing requirements as listed in the plant list and/or bid form for the project. A plant shall be measured in its natural standing position.
- F. Stock that is furnished shall be at least the minimum size shown. With permission of the landscape architect, substitution from the specified plant list will be accepted only when satisfactory evidence in writing is submitted to the landscape architect, showing that the plant specified is not available. Requests for approval of substitute plant material shall include common and botanical names and size of substitute material. Only those substitutions of at least equivalent size and character to that of the specified material will be approved. Stock which is larger than that which is specified is acceptable with permission of the landscape architect, providing there is no additional cost and that the larger plant material will not be cut down in order to conform to the size indicated.
- G. All shrubs shall be dense in form. Shrub liners do not meet these specifications. Shrubs specified by height shall have a spread that is equal to the height measurement. Shrubs which are specified by spread shall exhibit the natural growth habit of the plant by having a greater spread than height.
- H. All plant materials are subject to inspection and approval. The landscape architect and Owner reserve the right to select and tag all plant material at the nursery prior to planting. The landscape architect and Owner reserve the right to inspect plant material for size and condition of root systems, the presence of insects and diseases, injuries and latent defects (due to Contractor negligence or otherwise), and to reject unacceptable plant material at any time during progress of the project.
- I. Container grown deciduous and/or evergreen shrubs will be acceptable in lieu of balled and burlapped shrubs subject to specified limitations for container grown stock. Size of container grown material must conform to size/height requirements of plant list.

# 1-03 DELIVERY, STORAGE & HANDLING:

- A. Fertilizer shall be delivered in original, unopened and undamaged packaging. Containers shall display weight, analysis and manufacturer's name. Store fertilizer in a manner that will prevent wetting and deterioration.
- B. Take all precautions customary concerning proper trade practice in preparing plants for transport. Plants shall be dug, packed and transported with care to ensure protection against injury. Inspection certificates required by law shall accompany each shipment invoice or order to stock and on arrival, the certificate shall be filed with the landscape architect . All plants must be protected from drying out. If plant material cannot be planted immediately upon delivery, said material should be properly protected in a manner that is acceptable to the landscape architect . Heeled-in plants must be watered daily. No plant shall be bound with rope or wire in a manner that could strip bark or break or shear branches.
- C. Plant material transported on open vehicles should be covered with a protective covering to prevent wind burn
- D. Dry, loose topsoil shall be provided for planting bed mixes. Muddy or frozen topsoil is unacceptable as working with medium in this condition will destroy its structure, making root development more difficult.

# 1-04 PROJECT CONDITIONS:

- A. Notify landscape architect at least seven (7) working days prior to installation of plant material.
- B. It shall be the Contractor's responsibility to locate and protect all existing above and below ground utilities. Utilities can be located and marked (in Illinois) by calling J.U.L.I.E. at (800)892-0123.
- C. The Contractor shall provide, at his/her own expense, protection against trespassing and damage to seeded areas, planted areas, and other construction areas until the preliminary acceptance. The Contractor shall provide barricades, temporary fencing, signs, and written warning or policing as may be required to protect such areas. The Contractor shall not be responsible for any damage caused by the Owner after such warning has been issued.
- D. The Contractor shall be responsible for the protection of crowns, trunks and roots of existing trees, plus shrubs, lawns, paved areas and other landscaped areas that are to remain intact. Existing trees, which may be subject to construction damage, shall be boxed, fenced or otherwise protected before any work is started. The Owner desires to preserve those trees within and adjacent to the limits of construction except those specifically indicated to be removed on the Drawings. The contractor shall erect protective tree fencing and tree armor at locations indicated on the drawings and around all trees on site which are to be preserved. Protective fencing shall be erected between the limits of construction and any tree preservation areas shown on the Drawings.
- E. A complete list of plants including a schedule of sizes, quantities and other requirements is shown on the Drawings and on the bid form. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.

# **1-05 PRELIMINARY ACCEPTANCE:**

A. All plantings shall be maintained by the Contractor for a period of 90 days after preliminary acceptance by the Owner or his/her representative. Maintenance shall include, but is not limited to: mowing and edging turf, pulling weeds, watering turf and plant material and annual flower maintenance.

# 1-06 WARRANTY:

A. All plant material (excluding annual color), shall be warranteed for one (1) year after the end of the 90 day maintenance period. The end of the maintenance period is marked by the final acceptance of the Contractor's work by the Owner or his/her representative. Plant materials will be warranteed against defects including death and unsatisfactory growth, except for defects resulting from abuse or damage by others, or unusual phenomena or incidents which are beyond the control of the Contractor. The warranty covers a maximum of one replacement per item.

# PART 2 - PRODUCTS

# 2-01 PLANT MATERIALS:

- A. Plants: Provide typical of their species or variety, with normal, densely developed branches and vigorous, fibrous root systems. Only sound, healthy, vigorous plants which are free from sunscald injuries, disfiguring knots, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation shall be provided. All plants shall have a fully developed form without voids and open patches.
  - 1. Balled and burlapped plants shall have a firm natural ball of earth of sufficient diameter and depth to encompass a root system necessary for a full recovery of the plant. Root ball sizes shall comply with the latest edition of the 'American Standards for Nursery Stock' (ASNS). Root balls that are cracked or mushroomed are unacceptable.
  - 2. Container grown stock should be grown for an amount of time that is of sufficient length for the root system to have developed enough to hold its soil togehter, firm and whole. Plants will not be loose in their containers, nor shall they be pot-bound and all container grown stock will comply with the sizes stated on the plant list.
  - 3. No evidence of wounds or pruning cuts shall be allowed unless approved by the Landscape Architect.
  - 4. Evergreen trees shall be branched to the ground. The height of evergreen trees are determined by measuring from the ground to the first lateral branch closest to the top. Height and/or width of other trees are measured by the mass of the plant not the very tip of the branches.
  - 5. Shrubs and small plants shall meet the requirements for spread and/or height indicated in the plant list. The height measurement shall be taken from ground level to the average height of the top of the plant, not the longest branch. Single stem or thin plants will not be accepted. Side branches shall be flushed with growth and have good form to the ground. Plants shall be in a moist, vigorous condition, free from dead wood, bruises or other root or branch injuries.

# 2-02 ACCESSORIES:

# A. Topsoil:

- 1. Topsoil shall be fertile, natural topsoil of a loamy character, without admixture of subsoil material. Topsoil shall be reasonably free from clay, lumps, coarse sand, stones, plants, roots, sticks and other foreign materials with a pH between 6.5 to 7.0.
- B. Topsoil for seed areas shall be a minimum of 6".
- C. Soil amendments shall be as follows: 1. For trees and shrubs the plant pit will be backfilled with pulverized black dirt.
- 2. For perennials and ornamental grasses the soil mixture will be as follows: CM-63 General Purpose Peat Based Mix as supplied by Midwest Trading. Top beds with 8" of CM-63 and till into existing beds to a depth of 8". Soil mixtures are available from Midwest Trading. Midwest Trading, St. Charles, IL 60174 (630) 365-1990

# D. Fertilizer:

- 1. For trees and shrubs use: 14-4-6 briquettes 17 g or equivalent available from Arthur Clesen, Inc. Follow manufacturer's recommendation for application. Arthur Clesen, Inc. 543 Diens Drive, Wheeling, IL 60090 (847)537-2177
- 2. For turf areas use 6-24-16 Clesen Fairway with micronutrients with minor elements 3.0 % S, .02% B. .05% Cu. 1.0% Fe. .0006% Mo. .10% Mn available from Arthur Clesen or approved equal

# E. Herbicide:

- 1. Round-Up or approved equal F. Mulch:
- 1. Bark mulch shall be finely shredded hardwood bark which has been screened and is free of any green foliage, twigs, rocks, sawdust, wood shavings, growth or germination inhibiting ingredients, or other foreign materials. Bark mulch is available from Midwest Trading.
- 2. Mushroom compost as available from Midwest Trading.

# G. Water: Landscape Contractor.

- H. Guying: Stakes: 5/8" x 40" steel eve anchor with 4" helix
  - Cable:
  - a. Trees under 5": flexible 1/8" galvanized aircraft cable, 7x7 strand or approved equal b. Trees 5" and over: flexible 3/16" galvanized aircraft cable, 7x7 strand or approved equal.

  - 4. Hose: new two-ply reinforced rubber hose, minimum 1/2" I.D.
- I. Tree wrap: Burlap tree wrap 4" wide.
- J. Twine: Soft nursery jute.

# PART 3 - INSTALLATION OF PLANT MATERIAL

# 3-01 FIELD VERIFICATION:

A. Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected.

# 3-02 PREPARATION

- A. All planting techniques and methods shall be consistent with the latest edition of 'Horticulture Standards of Nurserymen, Inc.' and as detailed on these Drawings.
- B. Planting shall be performed by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.
- D. Apply Round-Up or approved equivalent to kill any existing vegetation in all areas to be planted. Confirm length of waiting period between chemical application and plant installation with manufacturer. Do not begin planting operations until prescribed post-application waiting period has elapsed. Take extreme care to avoid chemical drift to adjoining properties of landscape plantings.

- 1. Water service will be available on the site, with the cost of water being paid by the Owner. Transporting of the water from the source to the work areas shall be the responsibility of the Landscape Contractor. All necessary hose, piping, tank truck, etc. shall be supplied by the
- 3. Turnbuckles: 5/16", eye and eye, with 4" takeup.

C. All underground utilities must be located and marked clearly.

- E. Prior to all planting, rototill all areas to be landscaped to prepare for plant installation to a minimum depth of 12". Eliminate uneven areas and low spots. Maintain lines, levels, profiles and contour. Changes in grade are to be gradual. Blend slopes into level areas. Remove all debris, weeds and undesirable plants and their roots from areas to be planted. Remove all concrete slag larger than 2" in diameter.
- F. Topsoil shall be spread over the site at a minimum depth of 6". Those areas which are indicated as prairie or natural areas on the Drawings shall have a minimum topsoil depth of 18".
- G. It shall be the responsibility of the landscape contractor to prepare all seeded areas by disking and raking prior to planting seed. Soil shall be loosened and scarified to a minimum depth of 6". Fine grading of all seeded areas is required. Maximum size of stone or topsoil lump is 1".
- H. Locate all plant material as indicated or as approved in the field by the Landscape Architect. If obstructions are encountered which are not shown on the drawings, then do not proceed with planting operations until alternate plant locations have been selected.
- Planting holes shall be constructed as shown on the planting details. Holes shall be hand dug or machine dug. Great care will be taken to not excavate the hole deeper than the root ball and the diameter shall be a minimum of two times the root ball width. Remove any materials encountered in excavation that may be injurious to plant growth, including stones larger than 2" in diameter or other debris. Soil to be used as backfill should be pulverized.
- J. Provide pre-mixed planting mixture for use around root systems and root balls of the plants. The mixtures are outlined in section B of part 2-02.
- K. Prior to planting, provide additional topsoil to all planting beds to bring the finish grade of the bed to 2" above lawn grade and to finish grade of adjacent hard surface grades.
- L. Add 2" thickness of mushroom compost to all annual, perennial and groundcover beds. Finish grade bed and install plants.

# 3-03 PLANTING PROCEDURES

- A. Set plant material in the planting hole to proper grade and alignment. Set plants upright and plumb. Set plant material 2" above the adjacent finish grade. Remove burlap from top 1/3 of root ball. Remove treated burlap (green). Cut and remove or cut and fold down upper half of wire basket, dependent upon tree size. Backfill hole by firmly tamping soil to avoid any air pockets or voids.
- B. Set balled and burlapped plants in the planting hole and compact 8" of soil around the base of the ball. Backfill remaining space with planting mixture. Water plants immediately after planting to eliminate all voids and thoroughly soak the plant root ball.
- C. Space groundcover plants according to dimensions given on the plans. Adjust spacing as necessary to evenly fill planting bed with indicated number of plants. Plant to within 18" of the trunks of trees and shrubs or at the edge of the plant ball, whichever is closest. Plant to within 12" of edge of bed.
- D. Mulching: 1. Install 4" depth of mulch around all tree and shrub beds as indicated on drawings or planting details. Mulch shrub planting areas as continuous beds. Do not place mulch directly against tree trunk; form mulch to create an inverted cone around trunk.
  - 2. Mulch perennial, groundcover and annual planting beds with 2" mushroom compost. Water mulched areas thoroughly after placing mulch.
- E. Tree wrapping is not required, unless the Contractor feels it is necessary due to characteristics of a particular species or past experience with the species. The landscape architect will be notified as to which trees are to be wrapped and shall inspect the trunk(s) before wrapping. Tree wrap will not be used to cover damage or defects. When wrapping is done, trunks will be wrapped spirally with approved tree wrapping tape that is not less than 4" wide, and securely tied with suitable cord at the top, bottom and 2" intervals along the trunk. Wrap from ground to the height of the first branch.
- Staking and guying of trees is optional. If the Contractor chooses to stake all or part of the trees, he/she shall use the method specified in the planting details. One (1) stake is to be used on trees of 1" caliper and under, or 4' height and under. Two (2) stakes are to be used on trees of 1" to 2 3/4" caliper. Guy trees of 3" caliper or larger at three (3) per tree. The root ball will not be pierced with a stake. Stakes are to be driven at least eighteen (18) inches into subsoil below the planting hole. Stakes and wire attachments shall be removed after three months for spring planted material and by the following May for fall planted stock by the Contractor. Staking and guying should be done immediately after lawn seeding or sodding operations.
- G. Seeding of specified lawn areas on plans will be treated as follows: 1. Topsoil shall be spread over all areas to be seeded to a minimum depth of 6" when compacted (to be performed by others).
  - 2. Seed mixture and application rate use Premium seed mix as supplied by Arthur Clesen, Inc. Apply at a rate of 5 lbs./1000 s.f.
  - 3. Apply fertilizers and conditioners at the rate specified per soil test findings. In lieu of soil test results, apply two (2) tons of ground agricultural limestone and 1000 lbs. 10-10-10 or equivalent analysis fertilizer per acre. At least 40% of the fertilizer nitrogen shall be of an organic origin.
  - 4. Soil preparation areas where vehicular traffic has compacted the soil shall be loosened/scarified to a minimum depth of 6" before fertilizing and seeding. Fine grading of all seeded areas is required. Maximum size of stone or topsoil lump is 1".
  - 5. Watering seeded areas shall be done to ensure proper germination. Once seeds have germinated, watering may be decreased but the seedlings must never be allowed to dry out completely. Frequent watering should be continued approximately four (4) weeks after germination or until grass has become sufficiently established to warrant watering on an 'as needed' basis.
  - 6. Turf is being established on a variety of slope conditions. It shall be the Contractor's responsibility to determine and implement whatever procedures he/she deems necessary to establish the turf as part of his/her work. Seeded areas will be accepted when all areas show a uniform stand of the specified grass in healthy condition and at least 90 days have elapsed since the completion of this work. The Contractor shall submit with his/her bid a description of the methods and procedures he/she intends to use.

# H. Erosion Control Blanket

- 1. Erosion Control Blanket shall be installed per manufacturer's recommendation in all areas shown on the plan
- 2. Install S-75 Erosion Control Blanket as manufactured by North American Green or approved equal
- 3. Blanket should be premarked with staple pattern.
- 4. Staples should be 8" wire staples, applied at two (2) per square yard minimum.
- 5. Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and Sedimentation Control ordinances and the PLANS.
- I. Sodding of specified lawn areas on plans will be completed as follows:
  - 1. Rake soil surface to receive sod to completely remove any soil crust no more than one day prior to laying sod.
  - 2. Moisten prepared surface immediately prior to laying sod. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.

- 3. Sod shall be laid within 24 hours from the time of stripping. Do not plant dormant sod or if the ground is frozen.
- 4. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent sod.
- 5. Place top elevation of sod 1/2 inch below adjoining edging or paving.
- 6. Water sod thoroughly with a fine spray immediately after planting.
- 7. After sod and soil have dried, roll seeded areas to ensure a good bond between the sod and soil, and to remove minor depressions and irregularities.
- 8. Sodded slopes 3:1 or greater shall be staked to prevent erosion and washout.
- 9. Warranty sodding for a period of one (1) year from the end of the 90 day maintenance period. If sod fails or lacks vigor and full growth as determined by the Landscape Architect, the Contractor will repeat site preparation operations and re-sod affected areas at the Contractor's expense.
- 10.Note: Sod shall be a premium Kentucky Bluegrass blend, and is required in all areas indicated on the plans as well as areas which have been affected by construction. Sod can be placed as long as water is available and the ground surface can be properly prepared. Sod shall not be laid on frozen or snow-covered ground. Sod shall be strongly rooted, not less than two (2) years old and free of weeds and undesirable native grasses. Sod should be machine cut to pad thickness of 3/4" (plus or minus 1/4"), excluding top growth and thatch. Provide only sod capable of vigorous growth and development when planted (viable, not dormant). Provide sod of uniform pad sizes with maximum 5% deviation in either length or width. Broken pads or pads with uneven ends will not be acceptable. Sod pads incapable of supporting their own weight when suspended vertically with a firm grasp on the upper 10% of pad will not be accepted.
- J. Timing of plant material and seeding operations:
  - 1. Seeding of specified areas shall occur when the soil temperature is above 55° F. No seed shall be sown during periods of high winds, or when the ground is not in proper condition for seeding (see section 3-02 (G)). Seeding operations for the specified mixes shall occur in the spring time frame of April 15 through June 30 and in the summer time frame of August 15 through December 1. The mixes containing bluegrass and fescue seed must have six weeks to harden off for winter survival.
  - 2. Sod shall be installed when the ground is not frozen or snow covered and temperatures are less than 80° F. It shall not be placed during a period of extended drought.
  - 3. Herbaceous ornamental plants shall be planted between May 1 and June 15 or between August 15 and December 1.
  - 4. Spring planting of woody ornamental plants shall be performed from the time the soil can be easily worked until June 1, except that evergreen planting shall end on May 15. Oak, hawthorn and red maple species will only be planted during this spring planting period. Fall planting will begin August 15 and will continue until the ground cannot be worked satisfactorily, except that evergreen planting shall be performed between August 15 and December 1.

# 3-04 MAINTENANCE

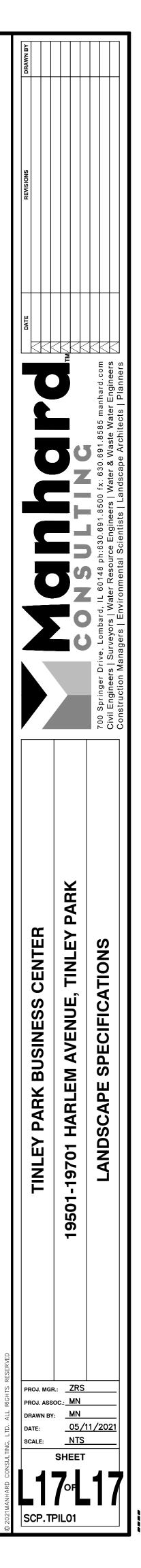
A. All plantings shall be maintained by the Contractor for a period of 90 days after preliminary acceptance by the Owner or his/her representative. Maintenance shall include but is not limited to: mowing and edging turf, pulling weeds, watering turf areas and plant material plus annual flower maintenance. The Contractor will reset settled plants to proper grade and position. Dead material will be removed. Stakes and guy wires will be tightened and repaired as required.

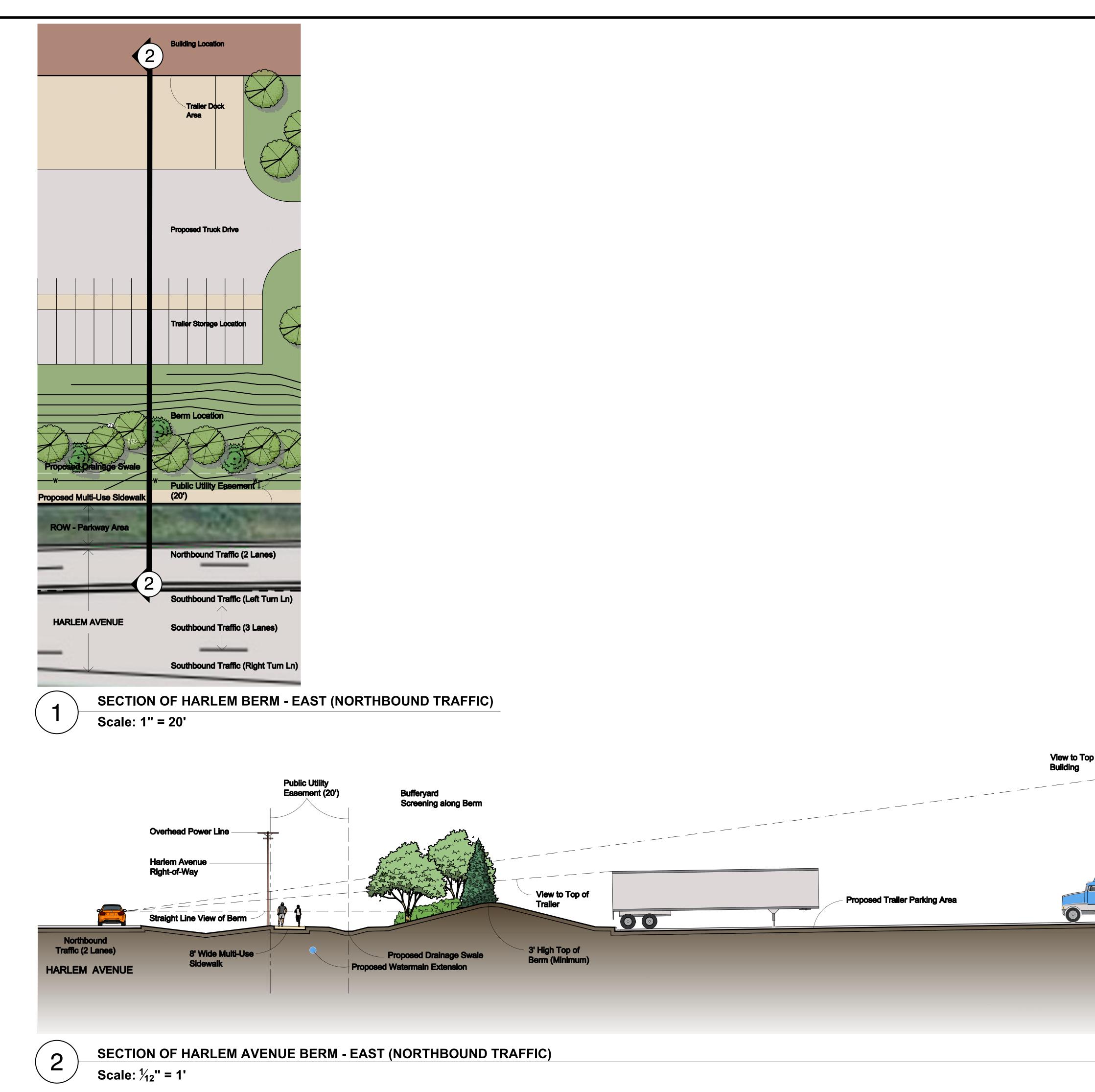
# 3-04 ACCEPTANCE:

A. All plant material (excluding annual color), shall be warranteed for one (1) year after the end of the 90 day maintenance period. The end of the maintenance period is marked by the final acceptance of the Contractor's work by the Owner or his/her representative.

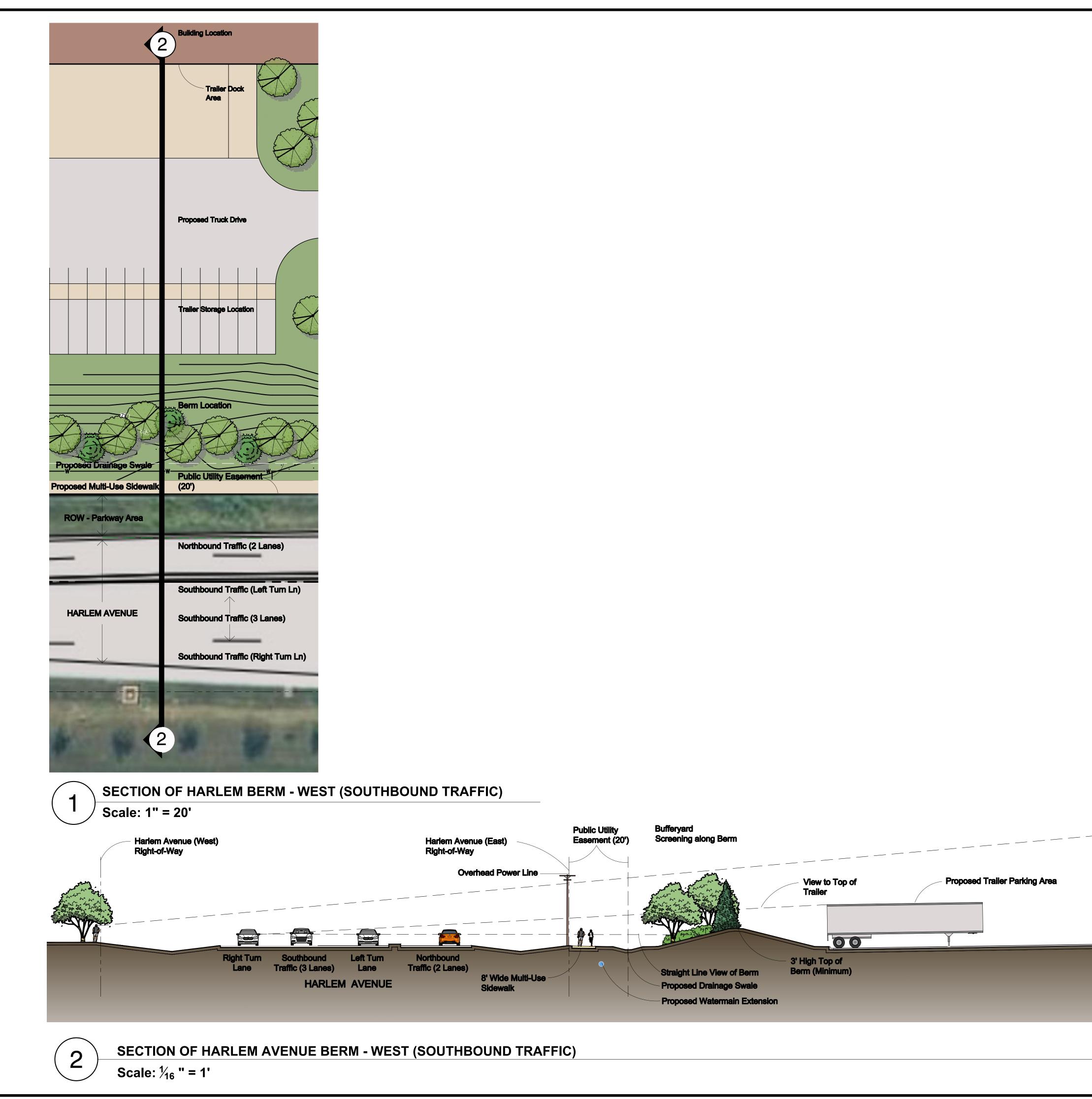
# 3-06 SITE CLEAN-UP:

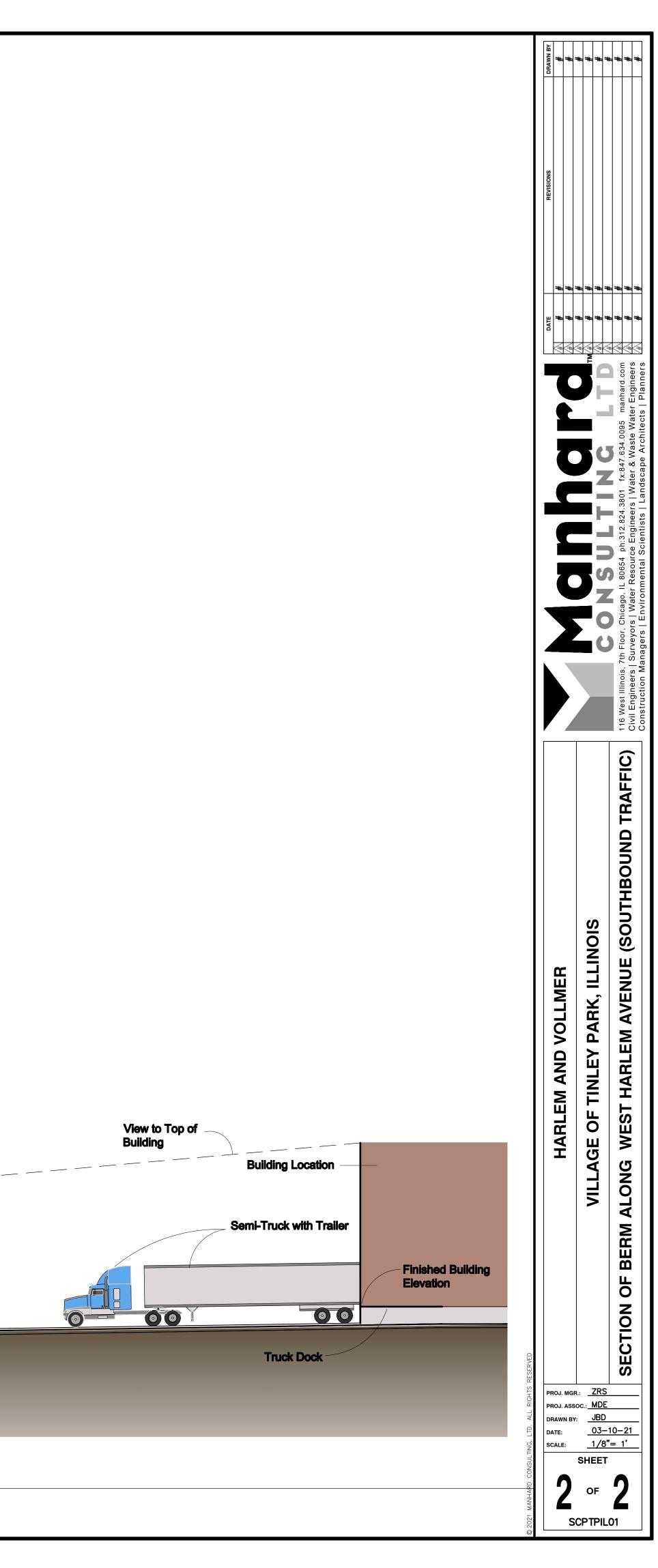
A. The Contractor shall protect the property of the Owner and the work of other contractors. The Contractor shall also be directly responsible for all damage caused by the activities and for the daily removal of all trash and debris from his/her work area to the satisfaction of the landscape architect .

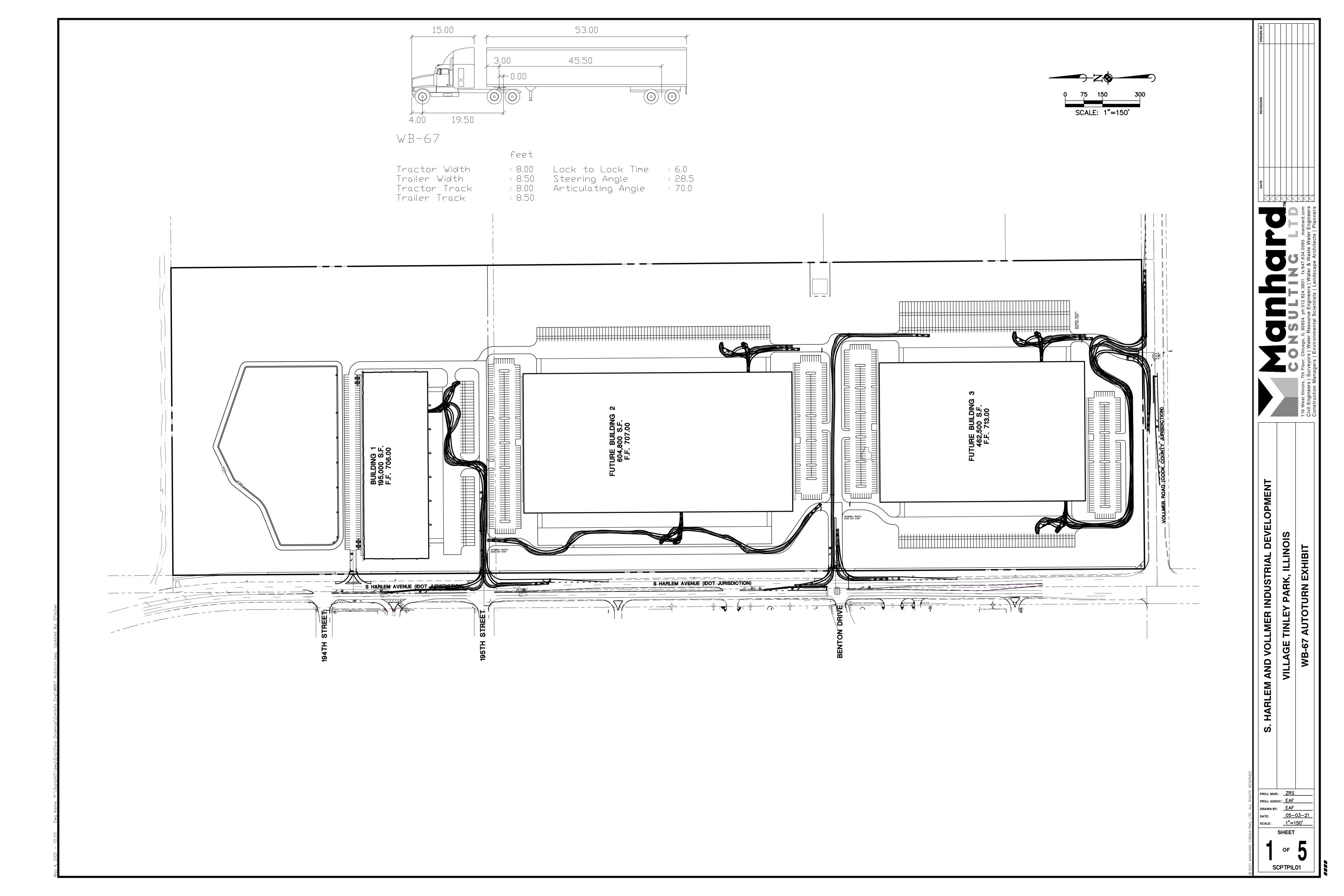




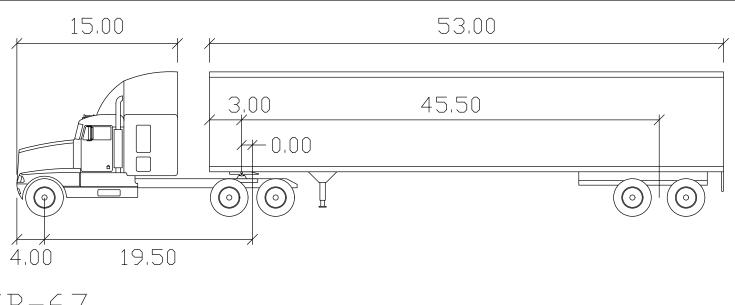
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|    |                   | © 2021 MANHARD CONSULTING, LTD. ALL RIGHTS RESERVED | 1                  | oc.: <u>MDE</u><br>: <u>JBD</u>  | <u>10-21</u><br><u>"= 1'</u>                                                                                                                                                             |





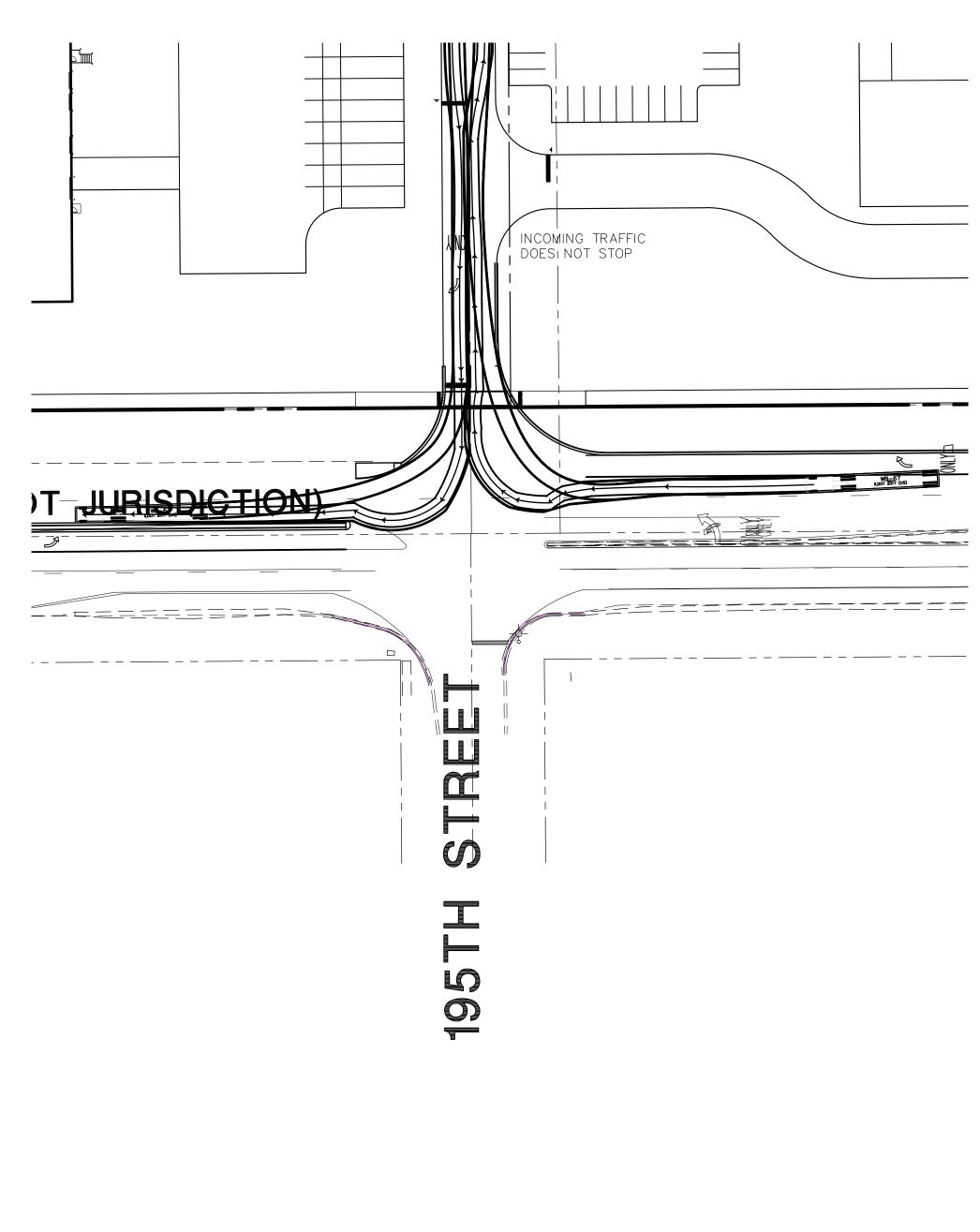




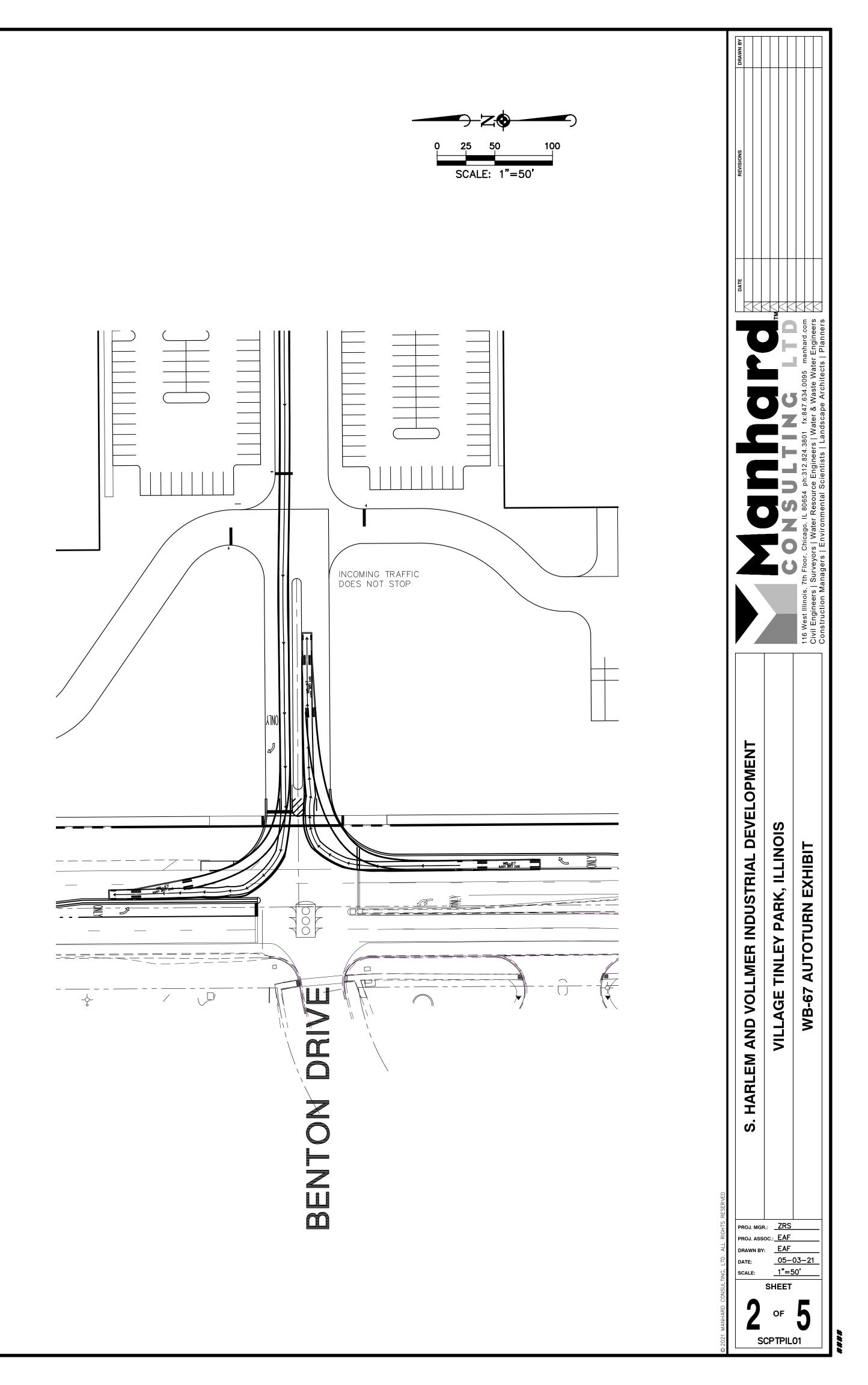


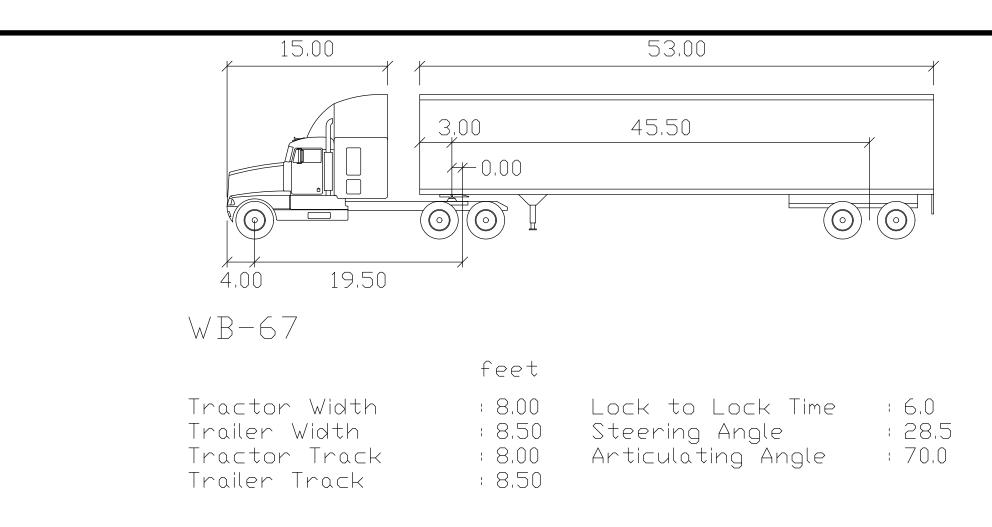
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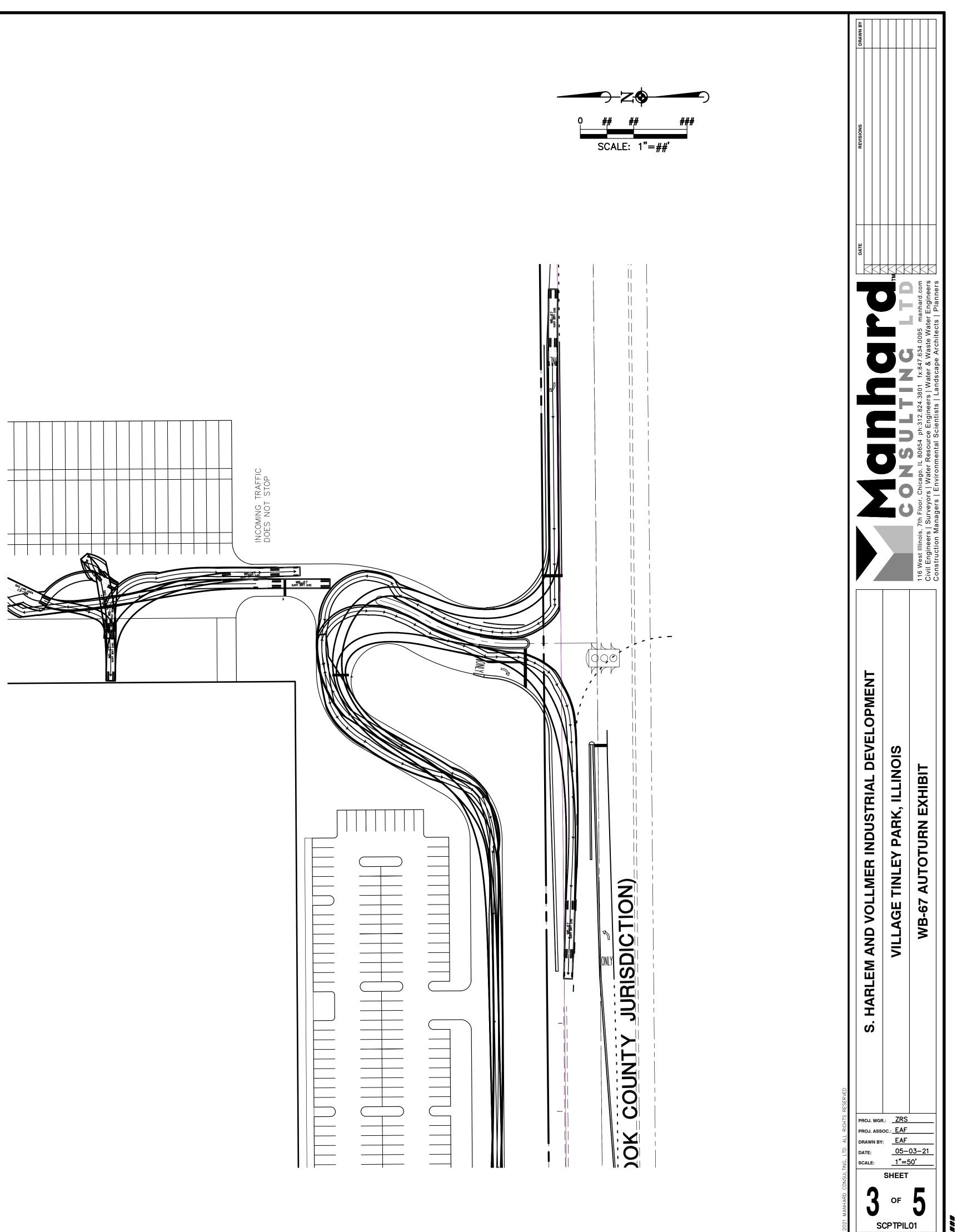
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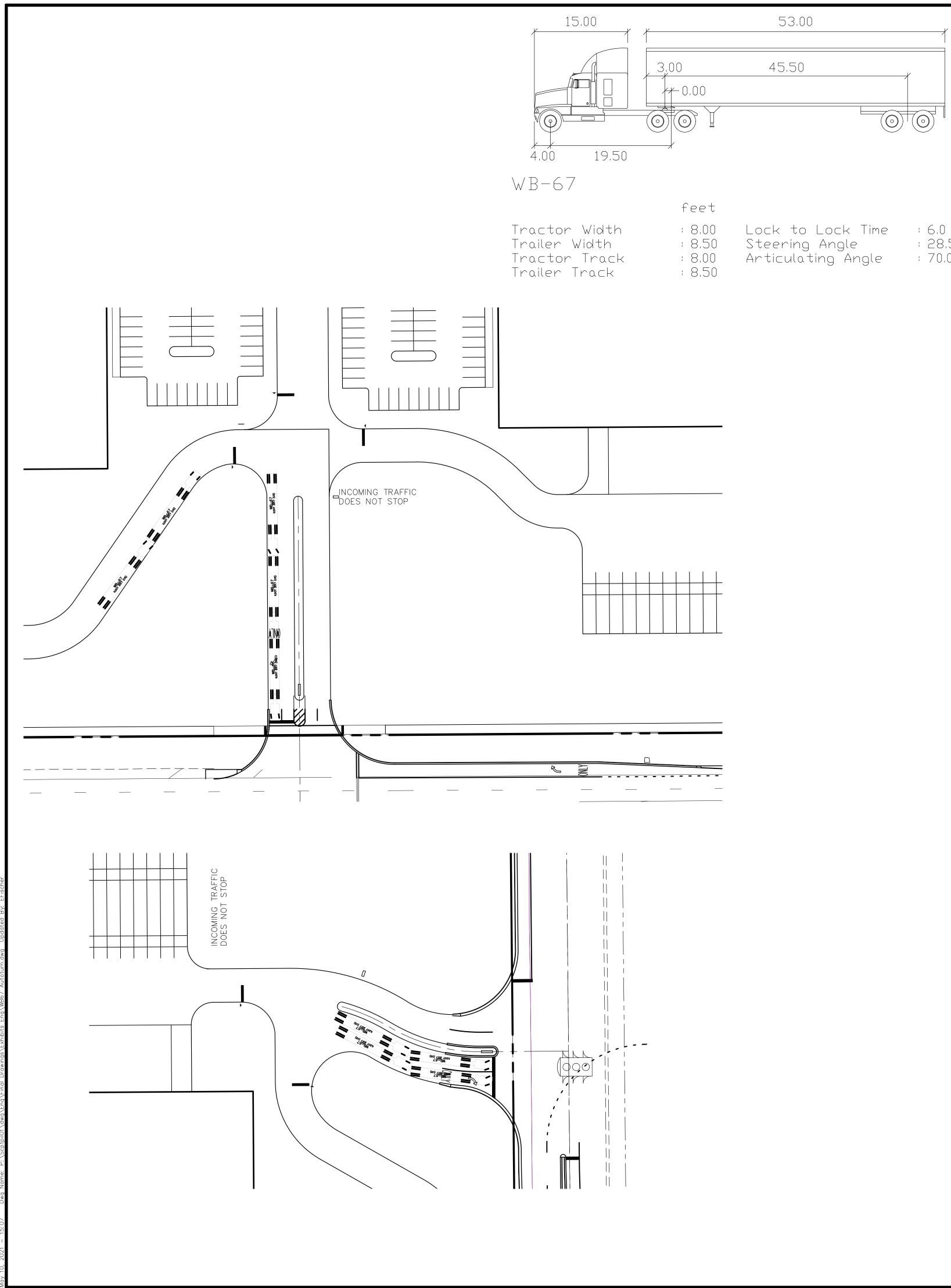


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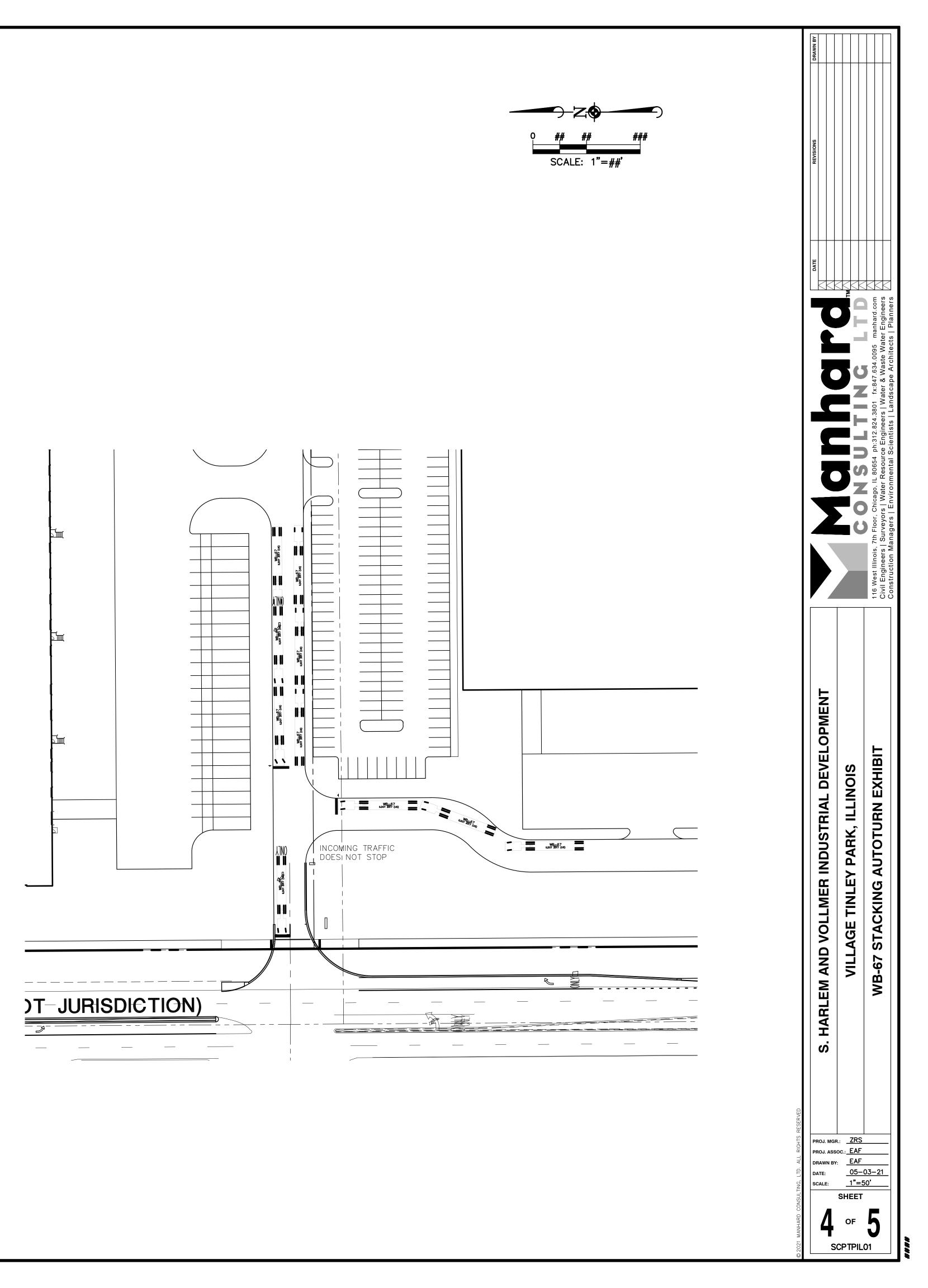


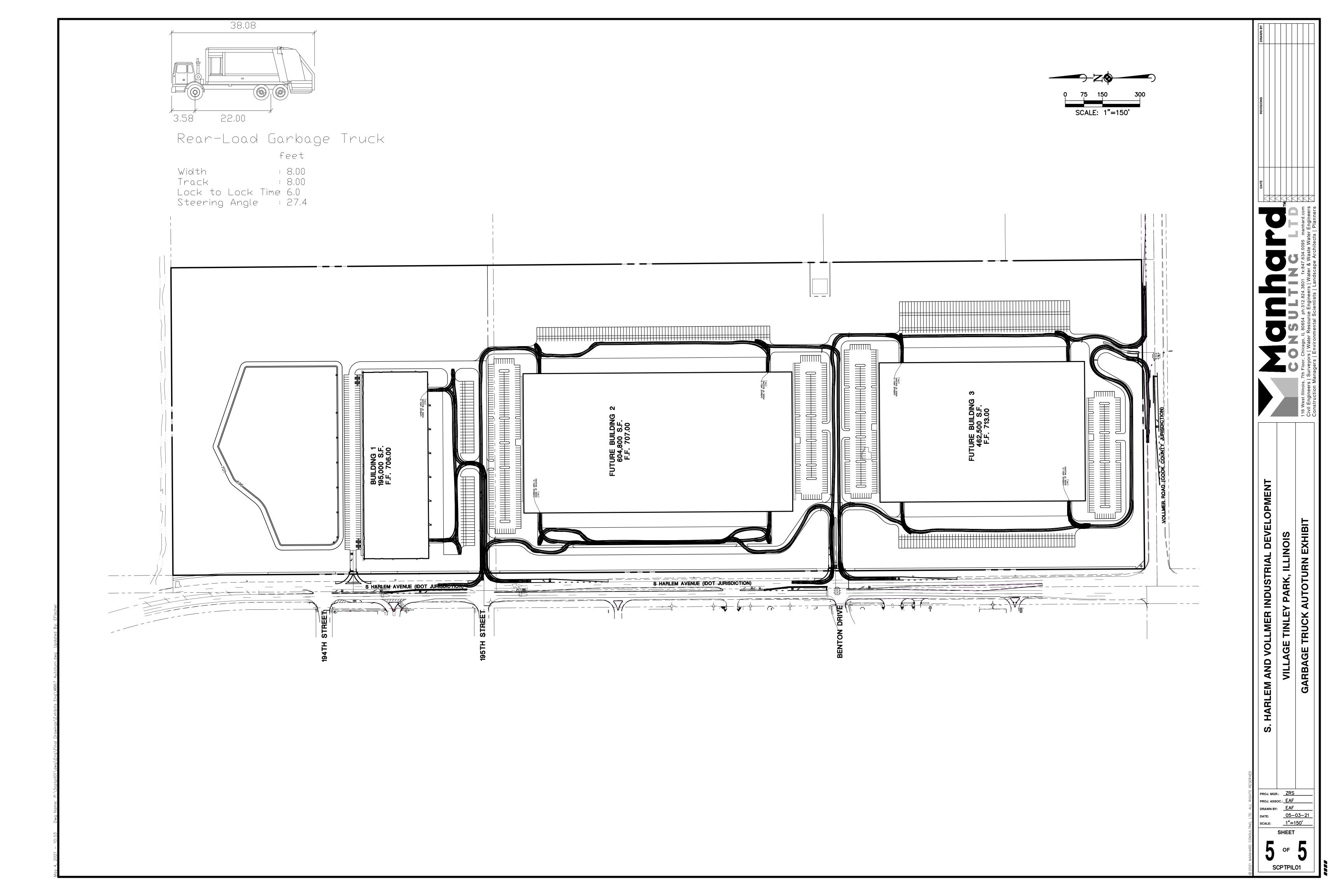


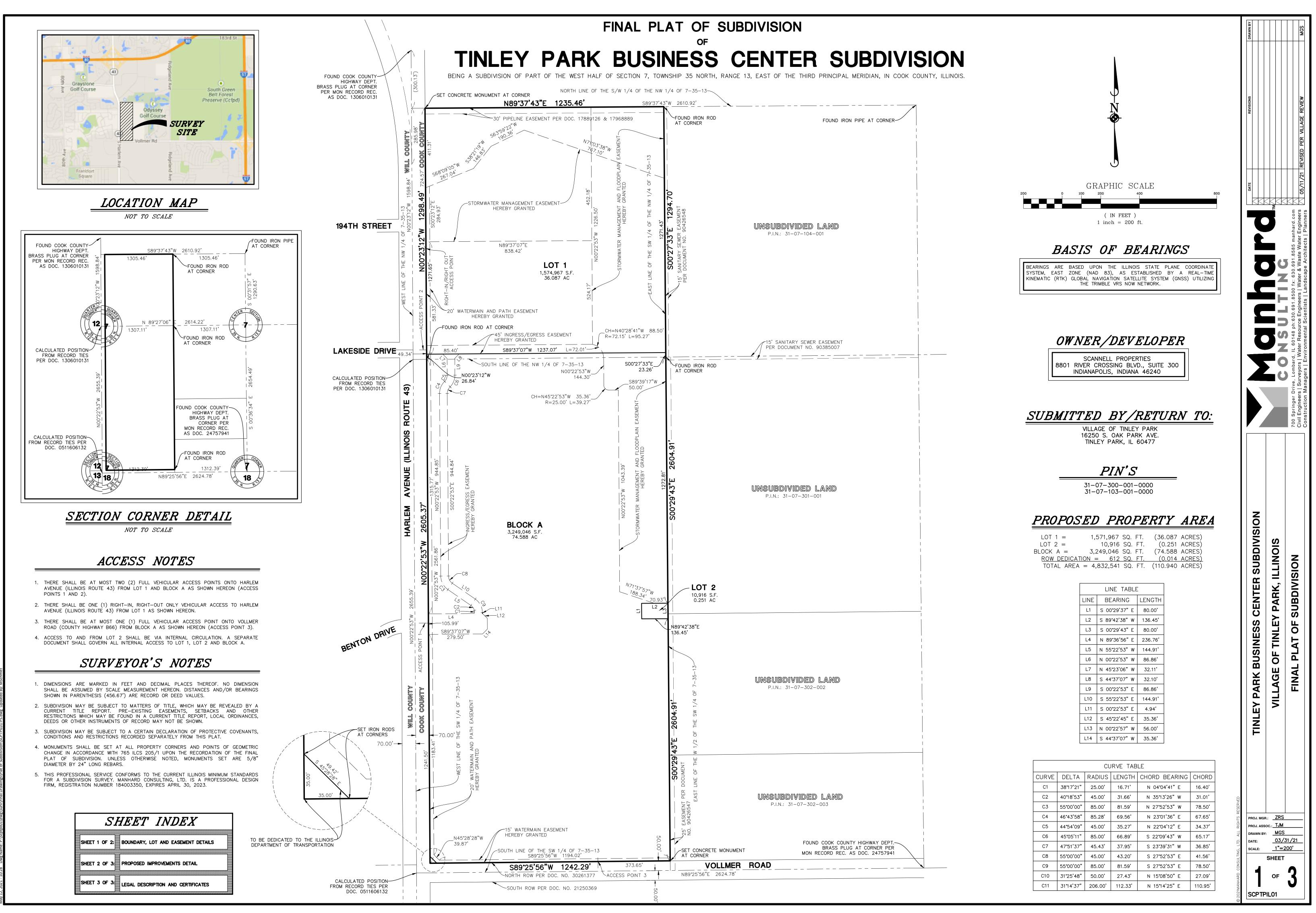


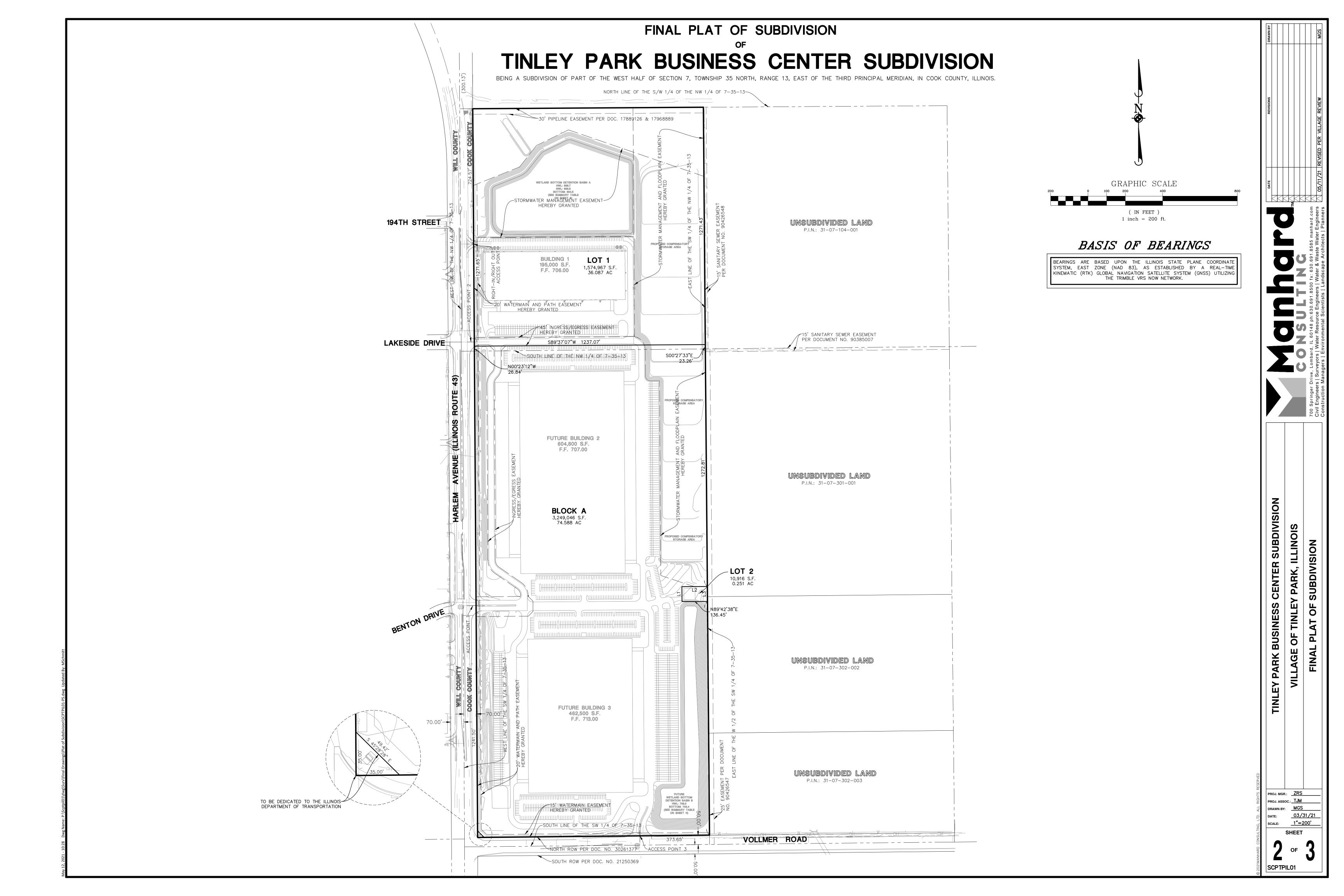


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|                                                                                                                                                                                                                                                                                                                                                                                                                               | TINLEY PARK BU                                                                                                                                                                                                                                                                                                                                               |
| OWNER'S CERTIFICATE<br>THIS IS TO CERTIFY THAT HARLEM AND VOLLMER HOLDINGS LLC, AN ILLINOIS LIMITED LIABILITY COMPANY IS THE<br>LEGAL OWNER OF THE LAND DESCRIBED ON THE ATTACHED PLAT, AND HAS CAUSED THE SAME TO BE SURVEYED,<br>SUBDIVIDED AND THE PLATTED AS SHOWN BY THE PLAT FOR THE USES AND PURPOSES INDICATED THEREON AND<br>DOES HEREBY ACKNOWLEDGE AND ADOPT THE SAME UNDER THE STYLE AND TITLE THEREON INDICATED. | BEING A SUBDIVISION OF PART OF THE WEST HALF OF SE                                                                                                                                                                                                                                                                                                           |
| THIS IS TO ALSO CERTIFY THAT THE UNDERSIGNED, AS OWNER OF THE STILE AND TITLE THEREON INDICATED.<br>BUSINESS CENTER SUBDIVISION AND LEGALLY DESCRIBED ON THE PLAT OF THE SAME NAME, HAVE DETERMINED TO<br>THE BEST OF OUR KNOWLEDGE THE SCHOOL DISTRICT IN WHICH EACH OF THE FOLLOWING LOTS LIE.                                                                                                                              | VILLAGE CLERK'S CERTIFICATE                                                                                                                                                                                                                                                                                                                                  |
| OT NUMBER(S) SCHOOL DISTRICT                                                                                                                                                                                                                                                                                                                                                                                                  | STATE OF ILLINOIS )                                                                                                                                                                                                                                                                                                                                          |
| ELEMENTARY SCHOOL DISTRICT NO. 159 (MATTESON)<br>ALL RICH TOWNSHIP HIGH SCHOOL DISTRICT NO. 227<br>PRAIRIE ST COMMUNITY COLLEGE 515 (CHICAGO HEIGHTS)                                                                                                                                                                                                                                                                         | COUNTY OF COOK )                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | I HEREBY CERTIFY THAT THERE ARE NO DELINQUENT SPECIAL ASSESSMENTS OR UNPAID CURRENT SPECIAL ASSESSMENTS ON THE ABOVE DESCRIBED PROPERTY.                                                                                                                                                                                                                     |
| ATED THIS DAY OF, A.D., 2021.                                                                                                                                                                                                                                                                                                                                                                                                 | DATED THISDAY OF, A.D., 2021.                                                                                                                                                                                                                                                                                                                                |
| OWNER'S NAME AND ADDRESS                                                                                                                                                                                                                                                                                                                                                                                                      | VILLAGE CLERK                                                                                                                                                                                                                                                                                                                                                |
| RINTED NAME AND TITLE                                                                                                                                                                                                                                                                                                                                                                                                         | VILLAGE BOARD CERTIFICATE                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | STATE OF ILLINOIS )<br>)S.S.                                                                                                                                                                                                                                                                                                                                 |
| DTARY PUBLIC                                                                                                                                                                                                                                                                                                                                                                                                                  | COUNTY OF COOK )                                                                                                                                                                                                                                                                                                                                             |
| ATE OF )                                                                                                                                                                                                                                                                                                                                                                                                                      | APPROVED BY THE VILLAGE PRESIDENT AND BOARD OF TRUSTEES OF THE VILLAGE OF TINLEY                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | PARK, ILLINOIS.<br>DATED THISDAY OF, A.D., 2021.                                                                                                                                                                                                                                                                                                             |
| A NOTARY PUBLIC IN AND FOR THE COUNTY AND STATE                                                                                                                                                                                                                                                                                                                                                                               | BY:                                                                                                                                                                                                                                                                                                                                                          |
| RSONALLY KNOWN TO ME TO BE THE SAME WHOSE NAME IS SUBSCRIBED TO THE FOREGOING CERTIFICATE,<br>PEARED BEFORE ME THIS DAY IN PERSON AND ACKNOWLEDGED THAT THEY DID SIGN AND DELIVER THIS<br>NEXED PLAT AS A FREE AND VOLUNTARY ACT FOR THE PURPOSES THEREIN SET FORTH.                                                                                                                                                          | BY:                                                                                                                                                                                                                                                                                                                                                          |
| EN UNDER MY HAND AND NOTORIAL SEAL THIS DAY OF, A.D., 2021.                                                                                                                                                                                                                                                                                                                                                                   | CLERK                                                                                                                                                                                                                                                                                                                                                        |
| TARY PUBLIC                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | VILLAGE ENGINEER'S CERTIFICATE                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | STATE OF ILLINOIS )<br>)S.S.                                                                                                                                                                                                                                                                                                                                 |
| IORTGAGEE CONSENT                                                                                                                                                                                                                                                                                                                                                                                                             | COUNTY OF COOK )                                                                                                                                                                                                                                                                                                                                             |
| HE UNDERSIGNED, AS MORTGAGEE, UNDER THE PROVISIONS OF CERTAIN MORTGAGE DATED                                                                                                                                                                                                                                                                                                                                                  | APPROVED BY THE VILLAGE ENGINEER OF THE VILLAGE OF TINLEY PARK, COOK COUNTY, ILLINOIS.                                                                                                                                                                                                                                                                       |
| AND RECORDED IN THE RECORDER'S OFFICE OF COOK COUNTY,                                                                                                                                                                                                                                                                                                                                                                         | DATED THISDAY OF, A.D., 2021.                                                                                                                                                                                                                                                                                                                                |
| COUNTY, ILLINOIS, ON THIS DAY OF, A.D.,, AS DOCUMENT<br>NUMBER, HEREBY CONSENTS TO THE SUBDIVISION STATED HEREIN.                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                              |
| DATED:, A.D., 20                                                                                                                                                                                                                                                                                                                                                                                                              | VILLAGE ENGINEER                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                              |
| IY:                                                                                                                                                                                                                                                                                                                                                                                                                           | ILLINOIS DEPARTMENT OF TRANSPORTATION CERTIFICATE<br>THIS PLAT HAS BEEN APPROVED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION WITH RESPECT                                                                                                                                                                                                                   |
| PRINTED NAME AND TITLE MORTGAGEE'S NAME AND ADDRESS                                                                                                                                                                                                                                                                                                                                                                           | ROADWAY ACCESS PURSUANT TO PARAGRAPH 2 OF "AN ACT TO REVISE THE LAW IN RELATION TO<br>AS AMENDED. A PLAN THAT MEETS THE REQUIREMENTS CONTAINED IN THE DEPARTMENT'S "POLIC"<br>PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS" WILL, BE REQUIRED BY THE DEPARTMENT.                                                                                           |
| TTEST:                                                                                                                                                                                                                                                                                                                                                                                                                        | DATE:                                                                                                                                                                                                                                                                                                                                                        |
| RINTED NAME AND TITLE                                                                                                                                                                                                                                                                                                                                                                                                         | JOSE RIOS, P.E.<br>REGION ONE ENGINEER                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | 1. THERE SHALL BE AT MOST TWO (2) FULL VEHICULAR ACCESS POINTS ONTO HARLEM AVENUE<br>ROUTE 43) FROM LOT 1 AND BLOCK A AS SHOWN HEREON (ACCESS POINTS 1 AND 2).                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | <ol> <li>THERE SHALL BE ONE (1) RIGHT-IN, RIGHT-OUT ONLY VEHICULAR ACCESS TO HARLEM AVENU<br/>ROUTE 43) FROM LOT 1 AS SHOWN HEREON.</li> </ol>                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | 3. ACCESS TO AND FROM LOT 2 SHALL BE VIA INTERNAL CIRCULATION.                                                                                                                                                                                                                                                                                               |
| MORTGAGEE NOTARY PUBLIC                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                              |
| ) SS<br>COUNTY OF )                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | COOK COUNTY HIGHWAY DEPARTMENT CERTIFICATE                                                                                                                                                                                                                                                                                                                   |
| I,, A NOTARY PUBLIC IN AND FOR THE COUNTY AND STATE AFORESAID, DO HEREBY CERTIFY THAT AND AND                                                                                                                                                                                                                                                                                                                                 | THIS PLAT HAS BEEN APPROVED BY THE COOK COUNTY HIGHWAY DEPARTMENT WITH RESPECT<br>TO ROADWAY ACCESS PURSUANT TO 765 ILCS 205/2. HOWEVER, A HIGHWAY PERMIT,<br>CONFORMING TO THE STANDARDS OF COOK COUNTY HIGHWAY DEPARTMENT IS REQUIRED BY<br>THE OWNER OF THE PROPERTY FOR THIS ACCESS. (RESTRICTED ACCESS)                                                 |
| OF WHO ARE PERSONALLY KNOWN TO ME TO BE THE<br>SAME WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING CERTIFICATE, APPEARED BEFORE ME<br>THIS DAY IN PERSON AND ACKNOW EDGED THAT THEY DID SIGN AND DELIVER THIS                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                              |
| THIS DAY IN PERSON AND ACKNOWLEDGED THAT THEY DID SIGN AND DELIVER THIS<br>INSTRUMENT AS A FREE AND VOLUNTARY ACT FOR THE USES AND PURPOSES HEREIN SET<br>FORTH.                                                                                                                                                                                                                                                              | COOK COUNTY, ILLINOIS SUPERINTENDENT OF HIGHWAYS DATE  1. THERE SHALL BE AT MOST ONE (1) FULL VEHICULAR ACCESS POINT ONTO VOLLMER ROAD                                                                                                                                                                                                                       |
| GIVEN UNDER MY HAND AND NOTORIAL SEAL THIS DAY OF, A.D. 20                                                                                                                                                                                                                                                                                                                                                                    | (COUNTY HIGHWAY B66) FROM BLOCK A AS SHOWN HEREON (ACCESS POINT 3).                                                                                                                                                                                                                                                                                          |
| NOTARY PUBLIC                                                                                                                                                                                                                                                                                                                                                                                                                 | DRAINAGE CERTIFICATE                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                               | STATE OF ILLINOIS )<br>) S.S.                                                                                                                                                                                                                                                                                                                                |
| PLAN COMMISSION CERTIFICATE                                                                                                                                                                                                                                                                                                                                                                                                   | COUNTY OF COOK )                                                                                                                                                                                                                                                                                                                                             |
| STATE OF ILLINOIS )                                                                                                                                                                                                                                                                                                                                                                                                           | TO THE BEST OF OUR KNOWLEDGE AND BELIEF THE DRAINAGE OF SURFACE WATERS WILL NOT BE<br>CHANGED BY THE CONSTRUCTION OF SUCH SUBDIVISION OR ANY PART THEREOF, OR, THAT IF SUCH                                                                                                                                                                                  |
| )S.S.<br>COUNTY OF COOK )                                                                                                                                                                                                                                                                                                                                                                                                     | SURFACE WATER DRAINAGE WILL BE CHANGED, REASONABLE PROVISION HAS BEEN MADE FOR THE<br>COLLECTION AND DIVERSION OF SUCH SURFACE WATERS INTO PUBLIC AREAS, OR DRAINS WHICH THE<br>SUBDIVIDER HAS A RIGHT TO USE, AND THAT SUCH SURFACE WATERS WILL BE PLANNED FOR IN<br>ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES SO AS TO REDUCE THE LIKELIHOU |
| APPROVED BY THE PLAN COMMISSION OF THE VILLAGE OF TINLEY PARK, COOK COUNTY,<br>ILLINOIS.                                                                                                                                                                                                                                                                                                                                      | DAMAGE TO THE ADJOINING PROPERTY BECAUSE OF THE CONSTRUCTION OF THE SUBDIVISION.                                                                                                                                                                                                                                                                             |
| DATED THISDAY OF, A.D., 2021.                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                              |
| CHAIRMAN OF PLAN COMMISSION                                                                                                                                                                                                                                                                                                                                                                                                   | OWNER/ATTORNEY:                                                                                                                                                                                                                                                                                                                                              |
| SECRETARY                                                                                                                                                                                                                                                                                                                                                                                                                     | PRINTED NAME AND TITLE                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                              |

\_\_\_\_\_ ENGINEER

ZACHARY R STEELE, ILLINOIS REGISTERED PROFESSIONAL ENGINEER ILLINOIS REGISTRATION NUMBER 062-072551 LICENSE EXPIRES NOVEMBER 30, 2021

# FINAL PLAT OF SUBDIVISION

# INLEY PARK BUSINESS CENTER SUBDIVISION

ING A SUBDIVISION OF PART OF THE WEST HALF OF SECTION 7, TOWNSHIP 35 NORTH, RANGE 13, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

ED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION WITH RESPECT TO TO PARAGRAPH 2 OF "AN ACT TO REVISE THE LAW IN RELATION TO PLATS," MEETS THE REQUIREMENTS CONTAINED IN THE DEPARTMENT'S "POLICY ON AYS TO STATE HIGHWAYS" WILL, BE REQUIRED BY THE DEPARTMENT.

TWO (2) FULL VEHICULAR ACCESS POINTS ONTO HARLEM AVENUE (ILLINOIS AND BLOCK A AS SHOWN HEREON (ACCESS POINTS 1 AND 2). RIGHT-IN, RIGHT-OUT ONLY VEHICULAR ACCESS TO HARLEM AVENUE (ILLINOIS S SHOWN HEREON.

# DEPARTMENT CERTIFICATE

GE AND BELIEF THE DRAINAGE OF SURFACE WATERS WILL NOT BE OF SUCH SUBDIVISION OR ANY PART THEREOF, OR, THAT IF SUCH BE CHANGED, REASONABLE PROVISION HAS BEEN MADE FOR THE SUCH SURFACE WATERS INTO PUBLIC AREAS, OR DRAINS WHICH THE , AND THAT SUCH SURFACE WATERS WILL BE PLANNED FOR IN CCEPTED ENGINEERING PRACTICES SO AS TO REDUCE THE LIKELIHOOD OF PERTY BECAUSE OF THE CONSTRUCTION OF THE SUBDIVISION.

INGRESS/EGRESS EASEMENT PROVISIONS

A NON-EXCLUSIVE EASEMENT FOR THE ACCESS TO AND FROM HARLEM AVENUE (IL ROUTE 43). OVER PORTIONS OF LOT 1 AND LOT 2 DESIGNATED "INGRESS/EGRESS EASEMENT" IS HEREBY GRANTED FOR THE BENEFIT OF LOT 1 AND LOT 2, TOGETHER WITH THERE RESPECTIVE THEIR SUCCESSORS, ASSIGNS, LESSEES, PERMITEES AND INVITEES. THIS EASEMENT MAY BE FURTHER GOVERNED BY A SEPARATE ACCESS EASEMENT AND MAINTENANCE AGREEMENT.

STORMWATER MANAGEMENT AND FLOODPLAIN EASEMENT PROVISIONS

AN EASEMENT IS HEREBY RESERVED FOR AND GRANTED TO THE VILLAGE OF TINLEY PARK AND TO ITS SUCCESSORS AND ASSIGNS OVER ALL OF THE AREAS MARKED "STORMWATER MANAGEMENT EASEMENT" OR "STORMWATER MANAGEMENT AND FLOODPLAIN EASEMENT" ON THE PLAT HEREON DRAWN FOR THE PERPETUAL RIGHT, PRIVILEGE AND AUTHORITY TO CONSTRUCT, RECONSTRUCT, REPAIR, INSPECT, MAINTAIN, AND OPERATE STORM SEWERS AND THE STORMWATER MANAGEMENT AREAS. TOGETHER WITH ANY AND ALL NECESSARY MANHOLES, CATCH BASINS, CONNECTIONS, DITCHES, SWALES, AND OTHER STRUCTURES AND APPURTENANCES AS MAY BE DEEMED NECESSARY BY SAID VILLAGE OVER, UPON, ALONG, UNDER AND THROUGH SAID INDICATED EASEMENT, TOGETHER WITH THE RIGHT OF ACCESS ACROSS THE PROPERTY FOR NECESSARY PERSONNEL AND EQUIPMENT TO DO ANY OF THE ABOVE WORK. THE RIGHT IS ALSO GRANTED TO CUT DOWN, TRIM OR REMOVE ANY TREES, SHRUBS OR OTHER PLANTS ON THE EASEMENT THAT INTERFERE WITH THE OPERATION OF THE SEWERS OR OTHER UTILITIES. NO PERMANENT BUILDINGS SHALL BE PLACED ON SAID EASEMENT. NO CHANGES TO THE TOPOGRAPHY OR STORMWATER MANAGEMENT STRUCTURES WITHIN THE EASEMENT AREA SHALL BE MADE WITHOUT THE EXPRESS WRITTEN CONSENT OF THE VILLAGE OF TINLEY PARK BUT SAME MAY BE USED FOR PURPOSES THAT DO NOT THEN OR LATER INTERFERE WITH THE AFORESAID USES OR RIGHTS. THE OWNER OF THE PROPERTY SHALL REMAIN RESPONSIBLE FOR THE MAINTENANCE OF THE STORMWATER DETENTION MANAGEMENT AREA AND APPURTENANCES. THE VILLAGE OF TINLEY PARK WILL PERFORM ONLY EMERGENCY PROCEDURES AS DEEMED NECESSARY BY THE VILLAGE OF TINLEY PARK.

# WATERMAIN EASEMENT PROVISIONS

A PERMANENT, NON-EXCLUSIVE EASEMENT IS HEREBY RESERVED FOR AND GRANTED TO THE VILLAGE OF TINLEY PARK, TOGETHER WITH THEIR SUCCESSORS AND ASSIGNS, TO INSTALL, RENEW. EXTEND, OPERATE, MAINTAIN AND REMOVE, FROM TIME TO TIME, FACILITIES USED IN CONNECTION WITH THE UNDERGROUND TRANSMISSION AND DISTRIBUTION WATER SERVICE. THIS EASEMENT SHALL EXTEND IN, UNDER, ACROSS, ALONG AND UPON THE SURFACE OF THE PROPERTY SHOWN AND LABELED "WATERMAIN EASEMENT" AND/OR "WATERMAIN AND PATH EASEMENT". THE EASEMENT SHALL INCLUDE THE RIGHT OF UNOBSTRUCTED ACCESS FOR INGRESS AND EGRESS TO ALL WATERMAIN EASEMENTS ON THIS PLAT, THE RIGHT TO BORE UNDER PAVEMENT, THE RIGHT TO CUT, TRIM OR REMOVE TREES, BUSHES AND ROOTS AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHT HEREIN GIVEN, AND THE RIGHT TO ENTER UPON THE SUBDIVIDED PROPERTY FOR ALL THESE PURPOSES. NO PERMANENT BUILDINGS, STRUCTURES OR OTHER OBSTRUCTIONS SHALL BE PLACED OVER THE GRANTEES' FACILITIES, OR IN, UPON OR OVER SAID EASEMENT, BUT THE SAME MAY BE USED FOR PLANTINGS, LANDSCAPING, PARKING, PAVING, CONCRETE CURBS AND SUCH OTHER PURPOSES THAT THEN AND LATER DO NOT UNREASONABLY INTERFERE WITH THE USES OR THE RIGHTS HEREIN GRANTED. IN THE EVENT THE GRANTEE ENTERS UPON SAID EASEMENT FOR PURPOSES HEREIN STATED, SAID GRANTEE SHALL BE RESPONSIBLE ONLY FOR RESTORING THE GRADE OF THE PROPERTY, ANY REMOVED PAVEMENTS AND CURBS AND RE-ESTABLISHING GRASS IN AFFECTED VEGETATED AREAS.

# PATH EASEMENT PROVISIONS

A NON-EXCLUSIVE PATH EASEMENT IS HEREBY GRANTED TO THE VILLAGE OF TINLEY PARK, TOGETHER WITH THEIR SUCCESSORS AND ASSIGNS, OVER AND ACROSS THE PLATTED AREAS SHOWN AND LABELED HEREON AS "PATH FASEMENT" AND OR "WATERMAIN AND PATH FASEMENT". TO ACCESS. INSTALL, CONSTRUCT, RECONSTRUCT, REPAIR, INSPECT, MAINTAIN AND OPERATE THE PATH. TOGETHER WITH THE RIGHT TO ENTER UPON SAID EASEMENT AT ALL TIMES FOR ANY AND FOR ALL OF THE PURPOSES AFORESAID AND TO TRIM OR REMOVE TREES, SHRUBS OR OTHER PLANTS ON OR ADJACENT TO THE EASEMENT THAT INTERFERE WITH THE OPERATION OF THE PATH.

PERMISSION TO RECORD STATE OF ILLINOIS

) S.S. COUNTY OF DuPAGE )

I, TIMOTHY J. MURPHY, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, HEREBY GRANT PERMISSION TO ANY REPRESENTATIVE OF VILLAGE OF TINLEY PARK TO RECORD THIS PLAT BY OR BEFORE DECEMBER 31, 2022. THE REPRESENTATIVE SHALL PROVIDE THIS SURVEYOR WITH A RECORDED COPY OF THIS

DATED THIS 11TH DAY OF MAY, A.D. 2021.

ILLINOIS PROFESSIONAL LAND SURVEYOR NO 035-002870 LICENSE EXPIRES NOVEMBER 30, 2022



SURVEYORS CERTIFICATE

STATE OF ILLINOIS

COUNTY OF DUPAGE )

PARCEL 1

THIS IS TO DECLARE THAT THE PROPERTY DESCRIBED HEREON WAS SURVEYED AND SUBDIVIDED BY MANHARD CONSULTING, LTD., UNDER THE SUPERVISION OF AN ILLINOIS PROFESSIONAL LAND SURVEYOR AND THAT THE PLAT HEREON DRAWN IS A CORRECT REPRESENTATION OF SAID SURVEY AND SUBDIVISION:

THE WEST HALF (EXCEPT THE WEST 70 FEET THEREOF AND EXCEPT THE SOUTH 50 FEET THEREOF) OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 35 NORTH, RANGE 13 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

PARCEL 2 THE SOUTHWEST QUARTER (EXCEPT THE WEST 70 FEET THEREOF) OF THE NORTHWEST QUARTER OF FRACTIONAL SECTION 7. TOWNSHIP 35 NORTH, RANGE 13 EAST OF THE THIRD PRINCIPAL MERIDIAN, SOUTH OF THE INDIAN BOUNDARY LINE, IN COOK COUNTY, ILLINOIS.

SUBDIVIDED PROPERTY CONTAINS 110.940 ACRES, MORE OR LESS AND ALL DISTANCES ARE SHOWN IN FEET AND DECIMAL PARTS THEREOF.

THE FEDERAL EMERGENCY MANAGEMENT AGENCY FIRM COMMUNITY PANEL NUMBERS 17031C0718J AND 17031C0716J BOTH WITH AN EFFECTIVE DATE OF JANUARY 19, 2008 INDICATES THAT THE ABOVE DESCRIBED PROPERTY LIES WITHIN AREAS DESIGNATED AS ZONE X (UNSHADED), ZONE X (SHADED), ZONE AE AND FLOODWAY AREAS IN ZONE AE. ZONE X (UNSHADED) IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN, ZONE X (SHADED) IS DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR DRAINAGE AREAS LESS THAN 1 SQUARE MILE, ZONE AE AND FLOODWAY AREAS IN ZONE AE ARE DEFINED AS SPECIAL FLOOD HAZARD AREAS AND IS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD WITH BASEFLOOD ELEVATIONS DETERMINED. THE FLOODWAY IS THE CHANNEL OF A STREAM PLUS ANY ADJACENT FLOODPLAIN AREAS THAT MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS.THIS MAP DOES NOT NECESSARILY SHOW ALL AREAS SUBJECT TO FLOODING IN THE COMMUNITY OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. THIS DOES NOT GUARANTEE THAT THE SURVEYED PROPERTY WILL OR WILL NOT FLOOD. APPROXIMATE LOCATIONS OF FLOOD ZONES HAVE BEEN SHOWN HEREON BASED ON THE INTERPOLATION AND SCALING OF THE CURRENT FLOOD INSURANCE RATE MAPS.

5/8" DIAMETER BY 24" LONG IRON RODS WILL BE SET AT ALL SUBDIVISION CORNERS, LOT CORNERS, POINTS OF CURVATURE AND POINTS OF TANGENCY IN COMPLIANCE WITH ILLINOIS STATUTES AND APPLICABLE ORDINANCES, UNLESS OTHERWISE NOTED.

THIS IS ALSO TO DECLARE THAT THE PROPERTY AS DESCRIBED ON THE ANNEXED PLAT LIES WITHIN THE CORPORATE LIMITS OF THE VILLAGE OF TINLEY PARK, COOK COUNTY, ILLINOIS WHICH HAS ADOPTED A VILLAGE PLAN AND IS EXERCISING THE SPECIAL POWER AUTHORIZED BY 65 ILCS 5, SECTION 11-12-6.

GIVEN UNDER MY HAND AND SEAL THIS 11TH DAY OF MAY, A.D. 2021.

. Mungles ILLINOIS PROFESSIONAL LAND SURVEYOR NO 035-002870 LICENSE EXPIRES NOVEMBER 30, 2022

DESIGN FIRM PROFESSIONAL LICENSE NO. 184003350 LICENSE EXPIRES APRIL 30, 2023

THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A SUBDIVISION SURVEY.



SHEE

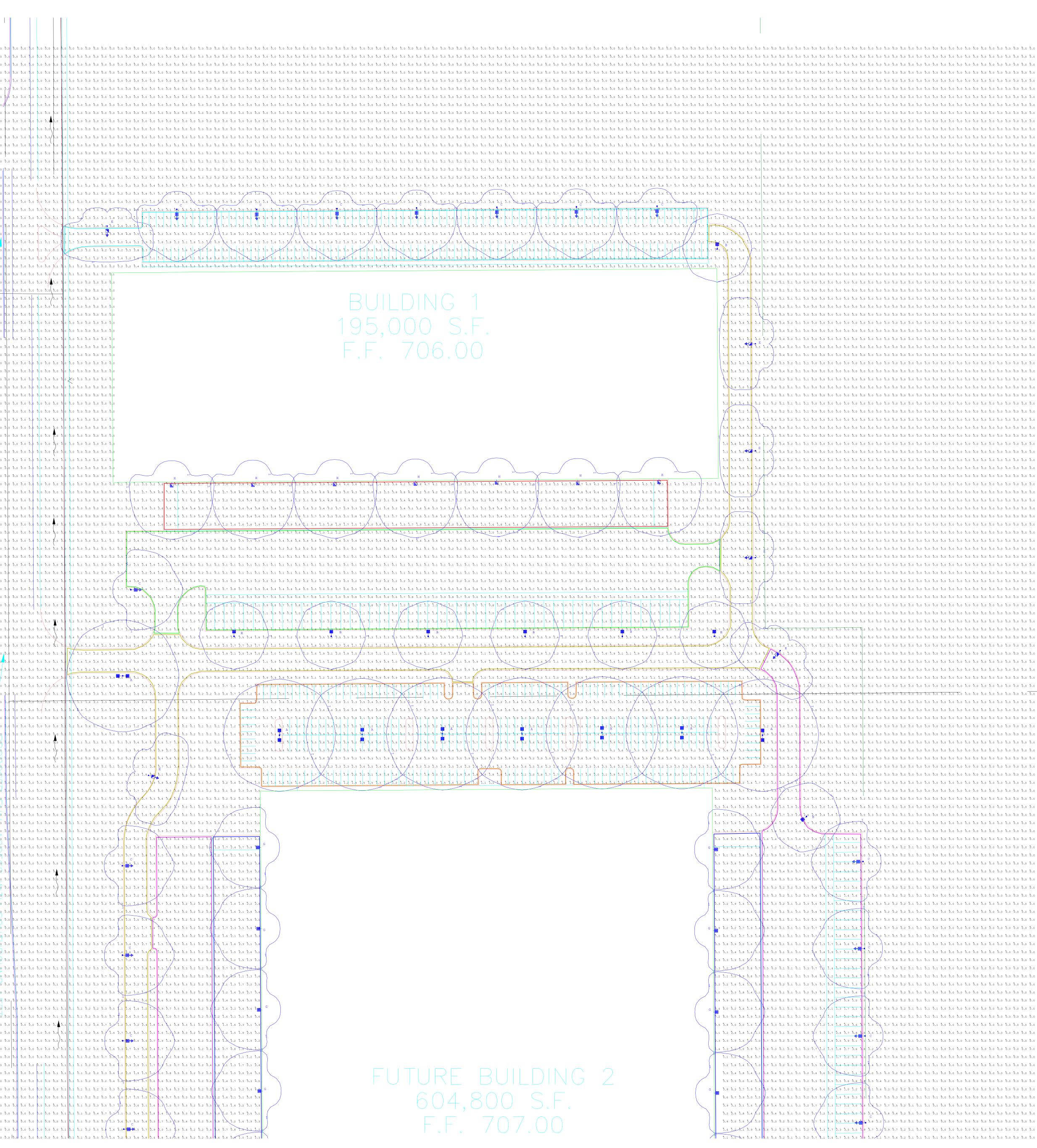
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|                                     | DATE                                                                                                     | REVISIONS DRAWN BY                                                                                                                                                                                                                                     |
|-------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EY PARK BUSINESS CENTER SUBDIVISION |                                                                                                          |                                                                                                                                                                                                                                                        |
|                                     |                                                                                                          |                                                                                                                                                                                                                                                        |
| VILLAGE OF TINLEY PARA, ILLINOIS    |                                                                                                          |                                                                                                                                                                                                                                                        |
|                                     |                                                                                                          |                                                                                                                                                                                                                                                        |
| FINAL PLAT OF SUBDIVISION           | 700 Springer Drive, Lombard, IL 60148 ph:630.691.8500 fx: 630.691.8585 manhard.com                       |                                                                                                                                                                                                                                                        |
|                                     | K                                                                                                        | REVIEW MGS                                                                                                                                                                                                                                             |
|                                     | CONSTRUCTION MANAGES   ENVIRONMENTAL SCIENTISTS   LANGSCAPE ALCHNEGUS   L'ANNERS                         |                                                                                                                                                                                                                                                        |
|                                     | TINLEY PARK BUSINESS CENTER SUBDIVISION<br>VILLAGE OF TINLEY PARK, ILLINOIS<br>FINAL PLAT OF SUBDIVISION | TOD Springer Drive, Lombard, IL 60148 ph:630.691.8580 fx: 630.691.8585 manhard.com<br>Civil Engineers   Water Resource Engineers   Water & Waste Water Engineers<br>Construction Managers   Environmental Scientists   Landscape Architects   Planners |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RE    | VISIO | NS |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| HSTREET                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Rev # | DATE  |    | BY: |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |    |     | STR | b.o $b.o$ < |
| H STREET HEALAN<br>H STRE |       |       |    |     |     | b.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.ob.o </td                                                                                                                                                                                                                                                                                                                                              |
| b.o b.o b.o b.o<br>b.o b.o b.o b.o<br>b.o b.o b.o b.o                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |       |    |     | ST  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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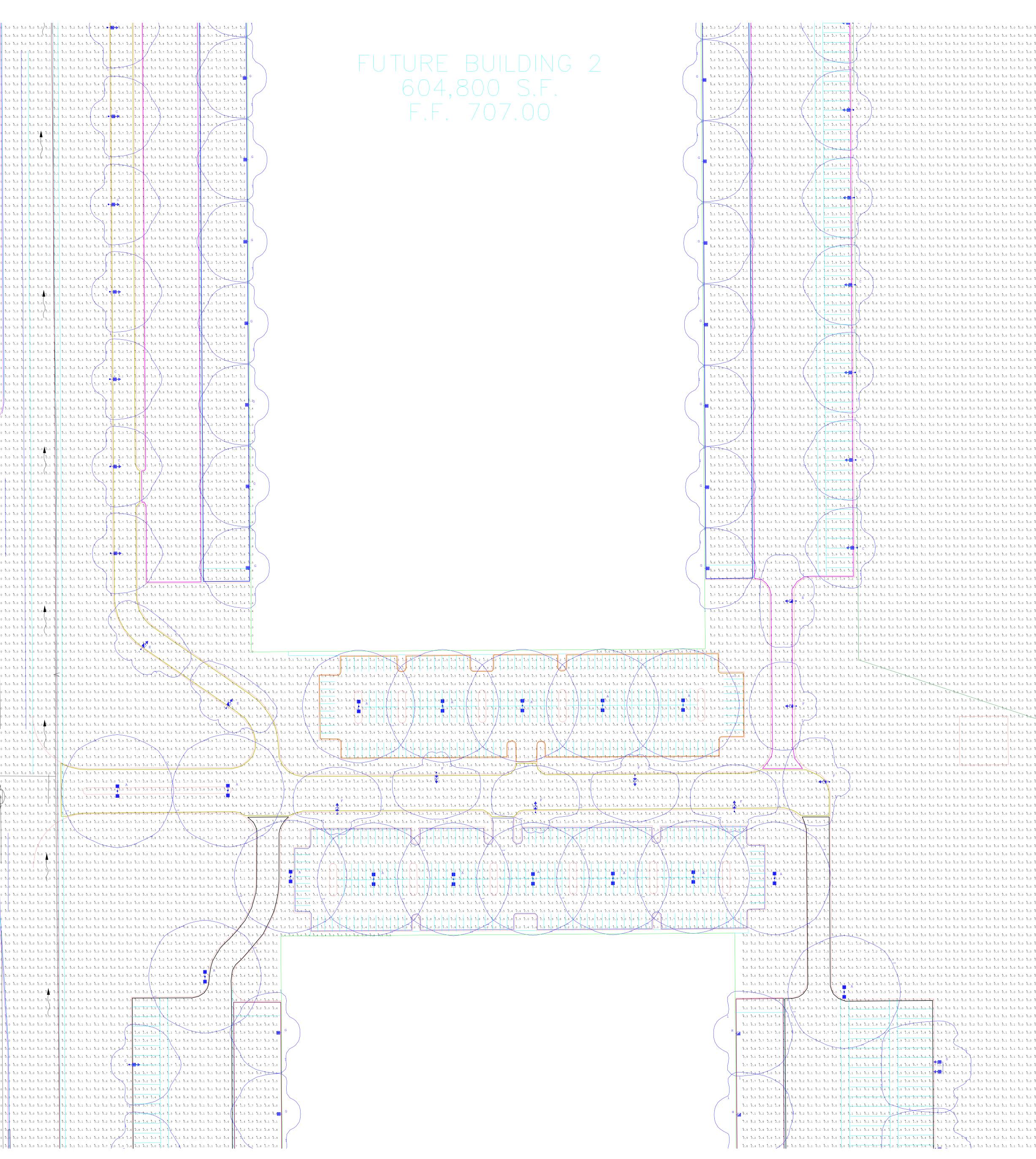
| Calculation Summary           |       |      |      |     |         |         |         |         |        |           |         |             |              |          |                                                  |
|-------------------------------|-------|------|------|-----|---------|---------|---------|---------|--------|-----------|---------|-------------|--------------|----------|--------------------------------------------------|
| Label                         | Units | Avg  | Max  | Min | Avg/Min | Max/Min | PtSpcLr | PtSpcTb | Lumina | ire Sched | lule    |             |              |          |                                                  |
| BLDG 1 DOCK AREA              | Fc    | 2.77 | 9.8  | 0.8 | 3.46    | 12.25   | 10      | 10      | WLS136 | 66 INDU   | JSTRIAL | TINLEY PARE | K, IL PM: HO | LLY PLEA | SE EMAIL US FOR PRICING AT HOLLY@WLSLIGHTING.COM |
| BLDG 1 DOCK DRIVE AND PARKING | Fc    | 0.71 | 6.4  | 0.1 | 7.10    | 64.00   |         |         | Symbol |           | Qty     | Label       | Lum. Lumens  | LLF      | Description                                      |
| BLDG 1 PARKING                | Fc    | 2.11 | 6.9  | 0.5 | 4.22    | 13.80   |         |         |        |           | 32      | A           | 19788        | 0.950    | WLS-CLA-N-20L-T5W-SLW 25' MOUNTING HEIGHT        |
| BLDG 2 DOCK AREA              | Fc    | 2.14 | 7.8  | 0.6 | 3.57    | 13.00   |         |         |        | •         | 12      | В           | 19788        | 0.950    | WLS-CLA-N-20L-T5W-SLW 25' MOUNTING HEIGHT        |
| BLDG 2 DOCK DRIVE AND PARKING | Fc    | 1.09 | 7.5  | 0.1 | 10.90   | 75.00   |         |         |        | • • •     | 32      | С           | 19783        | 0.950    | WLS-CLA-N-20L-T4-SLW 25' MOUNTING HEIGHT         |
| BLDG 2 PARKING                | Fc    | 2.84 | 5.8  | 0.4 | 7.10    | 14.50   |         |         |        |           | 6       | D           | 19783        | 0.950    | WLS-CLA-N-20L-T4-SLW 25' MOUNTING HEIGHT         |
| BLDG 3 DOCK AREA              | Fc    | 2.42 | 8.8  | 0.6 | 4.03    | 14.67   |         |         |        | •         | 15      | E           | 20280        | 0.950    | WLS-CLA-N-20L-T2-SLW 25' MOUNTING HEIGHT         |
| BLDG 3 DOCK DRIVE AND PARKING | Fc    | 1.23 | 12.1 | 0.0 | N.A.    | N.A.    |         |         |        | •         | 7       | F           | 19975        | 0.950    | WLS-CLA-N-20L-T3-SLW 25' MOUNTING HEIGHT         |
| BLDG 3 PARKING                | Fc    | 2.88 | 5.8  | 0.6 | 4.80    | 9.67    |         |         |        |           | 27      | G           | 19783        | 0.950    | WLS-CLA-N-20L-T4-WM-SLW 25' MOUNTING HEIGHT      |
| MAIN DRIVE                    | Fc    | 2.47 | 7.7  | 0.3 | 8.23    | 25.67   |         |         |        |           | 14      | Н           | 25070        | 0.950    | WLS-CLA-N-25L-T4-WM-SLW 25' MOUNTING HEIGHT      |
|                               |       |      |      |     |         |         |         |         |        |           |         |             |              |          |                                                  |

| B≺: J. P.<br>SHEET 1 OF 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 800-633-8711 РМ:НОLLY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | WLS-13666 DATE -3/25/21 SCALE: 1"=50'                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6820 CORPORATION PKWY<br>FORT WORTH, TX 76126<br>www.wlslighting.com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TINLEY PARK, IL                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | BUG Rating         B5-U0-G3         B5-U0-G3         B3-U0-G3         B3-U0-G3         B3-U0-G3         B3-U0-G3         B3-U0-G3         B3-U0-G3         B3-U0-G3         B3-U0-G3         B3-U0-G3         B3-U0-G3 |
| 10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0           10         5.0         5.0         5.0 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                        |
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| REVISIONS            |                                                                         |                                                                |                                                                                                       |
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| ხ.<br>ნ.<br>ნ.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .0 ზ.0<br>.0 ზ.0<br>.0 ზ.0                                     | 5.0 5.0<br>5.0 5.0<br>5.0 5.0                                                                         |
| ზ.<br>ხ.<br>ბ.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .0 ō.0<br>.0 ō.0<br>.0 ō.0                                     | 5.0 5.0<br>5.0 5.0<br>5.0 5.0                                                                         |
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| b.<br>b.<br>b.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .o ზ.o<br>.o ზ.o<br>.o ზ.o                                     | to.o         to.o           to.o         to.o           to.o         to.o           to.o         to.o |
| ხ.<br>ხ.<br>ხ.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .o ō.o<br>.o ō.o<br>.o ō.o                                     | b.o         b.o           b.o         b.o           b.o         b.o           b.o         b.o         |
| t.<br>t.             | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .0 ზ.0<br>.0 ზ.0                                               | t.o<br>t.o<br>t.o                                                                                     |
| b.<br>b.<br>b.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .0 5.0<br>.0 5.0<br>.0 5.0                                     | b.o         b.o           b.o         b.o           b.o         b.o           b.o         b.o         |
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| b.<br>b.<br>b.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .0 5.0<br>.0 5.0<br>.0 5.0                                     | b.o         b.o           b.o         b.o           b.o         b.o           b.o         b.o         |
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| b.<br>b.<br>b.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .0 5.0<br>.0 5.0<br>.0 5.0                                     | b.o         b.o           b.o         b.o           b.o         b.o                                   |
| b.<br>b.<br>b.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .0 5.0<br>.0 5.0<br>.0 5.0                                     | b.o     b.o       b.o     b.o       b.o     b.o                                                       |
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| ხ.<br>ხ.<br>ხ.       |                                                                         | .0 0.0<br>.0 0.0<br>.0 0.0                                     | t.o t.c<br>t.o t.o<br>t.o t.o                                                                         |
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| b.<br>b.<br>b.       | 0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.0 0<br>0 0.0 0.                   | .0 0.0<br>.0 0.0                                               | t.o t.o<br>t.o t.o<br>t.o t.o                                                                         |
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BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.

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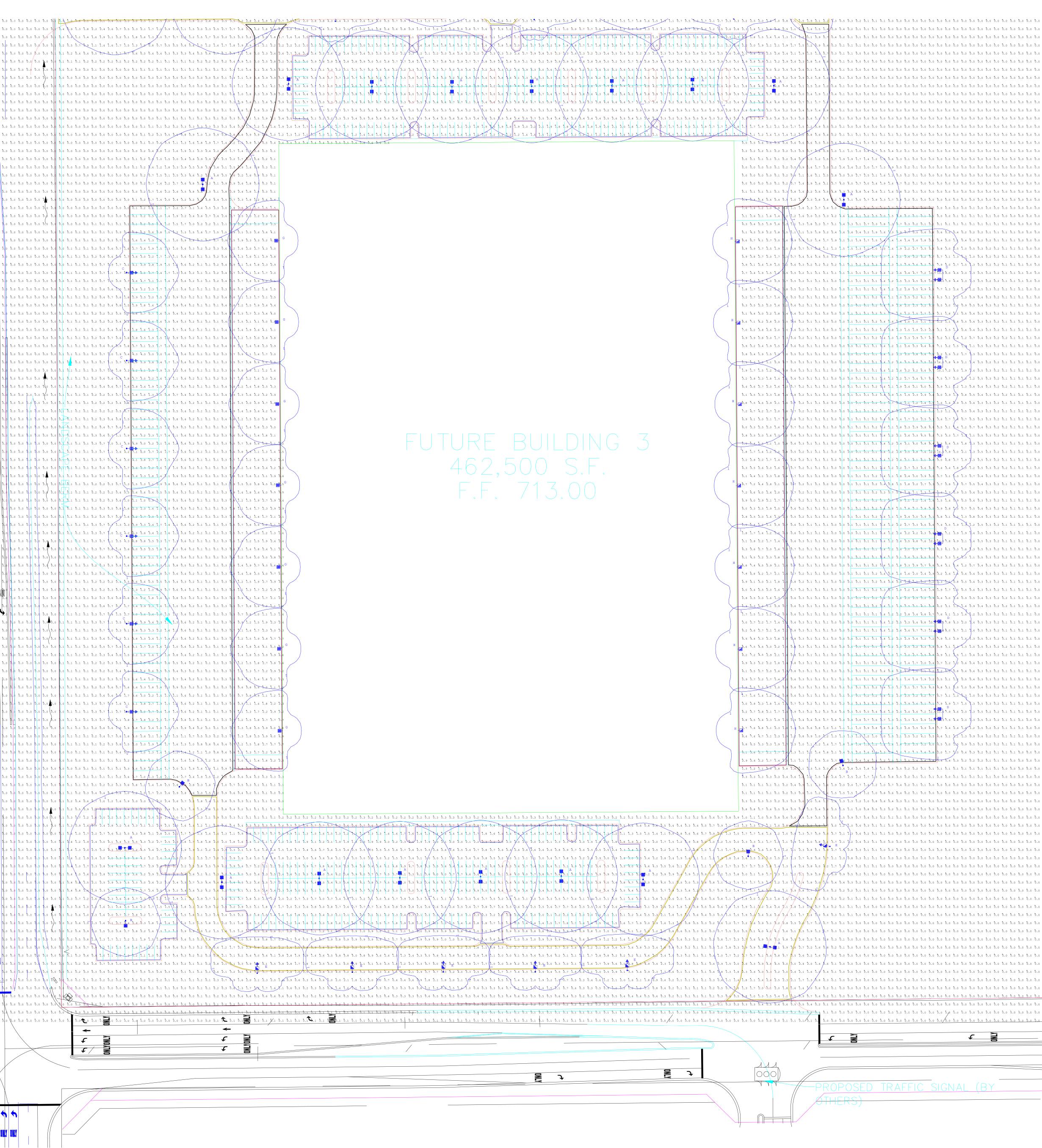
| Label                         | Units                                                                                                                                                                                         | Avg                                                                                                                                                                               | Max                                                                                                                                                                                                               | Min                                                                                                                                                                                                                                        | Avg/Min                                                                                                                                           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                                                                                                                               | PtSpcTb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| BLDG 1 DOCK AREA              | Fc                                                                                                                                                                                            | 2.77                                                                                                                                                                              | 9.8                                                                                                                                                                                                               | 0.8                                                                                                                                                                                                                                        | 3.46                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 12.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| BLDG 1 DOCK DRIVE AND PARKING | Fc                                                                                                                                                                                            | 0.71                                                                                                                                                                              | 6.4                                                                                                                                                                                                               | 0.1                                                                                                                                                                                                                                        | 7.10                                                                                                                                              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| BLDG 3 PARKING                | Fc                                                                                                                                                                                            | 2.88                                                                                                                                                                              | 5.8                                                                                                                                                                                                               | 0.6                                                                                                                                                                                                                                        | 4.80                                                                                                                                              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|                               | BLDG 1 DOCK DRIVE AND PARKING<br>BLDG 1 PARKING<br>BLDG 2 DOCK AREA<br>BLDG 2 DOCK DRIVE AND PARKING<br>BLDG 2 PARKING<br>BLDG 3 DOCK AREA<br>BLDG 3 DOCK DRIVE AND PARKING<br>BLDG 3 PARKING | BLDG 1 DOCK DRIVE AND PARKINGFcBLDG 1 PARKINGFcBLDG 2 DOCK AREAFcBLDG 2 DOCK DRIVE AND PARKINGFcBLDG 2 PARKINGFcBLDG 3 DOCK AREAFcBLDG 3 DOCK DRIVE AND PARKINGFcBLDG 3 PARKINGFc | BLDG 1 DOCK DRIVE AND PARKINGFc0.71BLDG 1 PARKINGFc2.11BLDG 2 DOCK AREAFc2.14BLDG 2 DOCK DRIVE AND PARKINGFc1.09BLDG 2 PARKINGFc2.84BLDG 3 DOCK AREAFc2.42BLDG 3 DOCK DRIVE AND PARKINGFc1.23BLDG 3 PARKINGFc2.88 | BLDG 1 DOCK DRIVE AND PARKINGFc0.716.4BLDG 1 PARKINGFc2.116.9BLDG 2 DOCK AREAFc2.147.8BLDG 2 DOCK DRIVE AND PARKINGFc1.097.5BLDG 2 PARKINGFc2.845.8BLDG 3 DOCK AREAFc2.428.8BLDG 3 DOCK DRIVE AND PARKINGFc1.2312.1BLDG 3 PARKINGFc2.885.8 | BLDG 1 DOCK DRIVE AND PARKING       Fc       0.71       6.4       0.1         BLDG 1 PARKING       Fc       2.11       6.9       0.5         BLDG 2 DOCK AREA       Fc       2.14       7.8       0.6         BLDG 2 DOCK DRIVE AND PARKING       Fc       1.09       7.5       0.1         BLDG 2 DOCK DRIVE AND PARKING       Fc       2.84       5.8       0.4         BLDG 3 DOCK AREA       Fc       2.42       8.8       0.6         BLDG 3 DOCK DRIVE AND PARKING       Fc       1.23       12.1       0.0         BLDG 3 DOCK DRIVE AND PARKING       Fc       2.88       5.8       0.6 | BLDG 1 DOCK AREA       Fc       2.77       9.8       0.8       3.46         BLDG 1 DOCK DRIVE AND PARKING       Fc       0.71       6.4       0.1       7.10         BLDG 1 PARKING       Fc       2.11       6.9       0.5       4.22         BLDG 2 DOCK AREA       Fc       2.14       7.8       0.6       3.57         BLDG 2 DOCK DRIVE AND PARKING       Fc       1.09       7.5       0.1       10.90         BLDG 2 PARKING       Fc       2.84       5.8       0.4       7.10         BLDG 3 DOCK AREA       Fc       2.84       5.8       0.4       7.10         BLDG 3 DOCK AREA       Fc       2.84       5.8       0.4       7.10         BLDG 3 DOCK AREA       Fc       2.42       8.8       0.6       4.03         BLDG 3 DOCK DRIVE AND PARKING       Fc       1.23       12.1       0.0       N.A.         BLDG 3 PARKING       Fc       2.88       5.8       0.6       4.80 | BLDG 1 DOCK AREA       Fc       2.77       9.8       0.8       3.46       12.25         BLDG 1 DOCK DRIVE AND PARKING       Fc       0.71       6.4       0.1       7.10       64.00         BLDG 1 PARKING       Fc       2.11       6.9       0.5       4.22       13.80         BLDG 2 DOCK AREA       Fc       2.14       7.8       0.6       3.57       13.00         BLDG 2 DOCK DRIVE AND PARKING       Fc       1.09       7.5       0.1       10.90       75.00         BLDG 2 PARKING       Fc       2.84       5.8       0.4       7.10       14.50         BLDG 3 DOCK AREA       Fc       2.42       8.8       0.6       4.03       14.67         BLDG 3 DOCK DRIVE AND PARKING       Fc       1.23       12.1       0.0       N.A.       N.A.         BLDG 3 DOCK DRIVE AND PARKING       Fc       2.88       5.8       0.6       4.80       9.67 | BLDG 1 DOCK AREA       Fc       2.77       9.8       0.8       3.46       12.25       10         BLDG 1 DOCK DRIVE AND PARKING       Fc       0.71       6.4       0.1       7.10       64.00       12.25       10         BLDG 1 DOCK DRIVE AND PARKING       Fc       0.71       6.4       0.1       7.10       64.00       12.25       10         BLDG 1 PARKING       Fc       2.11       6.9       0.5       4.22       13.80       12.10         BLDG 2 DOCK AREA       Fc       2.14       7.8       0.6       3.57       13.00       14.50         BLDG 2 DOCK DRIVE AND PARKING       Fc       1.09       7.5       0.1       10.90       75.00       14.50         BLDG 3 DOCK AREA       Fc       2.42       8.8       0.6       4.03       14.67       14.50         BLDG 3 DOCK AREA       Fc       1.23       12.1       0.0       N.A.       N.A.       14.67       14.50         BLDG 3 PARKING       Fc       2.88       5.8       0.6       4.80       9.67       14.50       14.50 | SLDG 1       DOCK AREA       Fc       2.77       9.8       0.8       3.46       12.25       10       10         SLDG 1       DOCK DRIVE AND PARKING       Fc       0.71       6.4       0.1       7.10       64.00       Image: constraint of the state of | SLDG 1 DOCK AREA       FC       2.77       9.8       0.8       3.46       12.25       10       10       MLS13666         SLDG 1 DOCK DRIVE AND PARKING       FC       0.71       6.4       0.1       7.10       64.00       Image: Constraint of the state of the s | BLDG 1 DOCK AREA       Fc       2.77       9.8       0.8       3.46       12.25       10       10       WLS13666       INDU         BLDG 1 DOCK DRIVE AND PARKING       Fc       0.71       6.4       0.1       7.10       64.00       Image: constraint of the state o | SALDG 1 DOCK AREA       FC       2.77       9.8       0.8       3.46       12.25       10       10         SALDG 1 DOCK DRIVE AND PARKING       FC       0.71       6.4       0.1       7.10       64.00       Image: Signal of the state of the s | BALDG 1 DOCK AREAFc2.779.80.83.4612.251010BALDG 1 DOCK DRIVE AND PARKINGFc0.716.40.17.1064.00Image: Stable of the | ALL       ALL | SALDG 1 DOCK AREA       Fc       2.77       9.8       0.8       3.46       12.25       10       10       MLS1366       INJUSTATE       Important       Import |

| J-633-8711 РМ:НОЦЦҮ ВҮ: J.P. SHEET 2 ОF 3                     | WLS-13666 DATE -3/25/21 SCALE: 1"=50' 80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BERGHATION PKWY</b><br>BALS COMPANY<br>MWW.WLSLIGHTING.COM | TINLEY PARK, IL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                               | BUG Rating         BUG Rating         B5-00-G3         B5-00-G3         B3-00-G3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.

THIS LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS UTILIZING CURRENT INDUSTRY STANDARD LAMP RATINGS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER<sup>1</sup>S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER VARIABLE FIELD CONDITIONS.



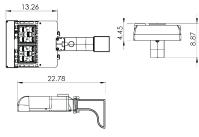
| Calculation Sum                   |
|-----------------------------------|
| Label                             |
| BLDG 1 DOCK ARE                   |
| BLDG 1 DOCK DRI                   |
| BLDG 1 PARKING                    |
| BLDG 2 DOCK ARE                   |
| BLDG 2 DOCK DRI                   |
| BLDG 2 PARKING                    |
| BLDG 3 DOCK ARE                   |
| BLDG 3 DOCK DRI                   |
| BLDG 3 PARKING                    |
| MAIN DRIVE                        |
| BLDG 3 DOCK DRI<br>BLDG 3 PARKING |

| BX: J.P.<br>SHEET 3 OF 3                                            | 800-633-8711 PM:HOLLY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | WLS-13666 DATE -3/25/21 SCALE: 1"=50'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 820 CORPORATION PKWY<br>FORT WORTH, TX 76126<br>www.wlslighting.com | Den band<br>Mrs compand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | TINLEY PARK, IL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | BUG Rating         BUG Rating         B5-U0-G3         B5-U0-G3         B3-U0-G3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1.0         b.0         b.0 |
|                                                                     | A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O.S.O.S.O.S.O.S.O.A.O.S.O.S.O.S.O. | 0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0                                                                                               |

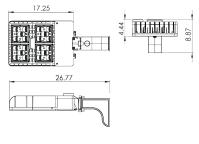


#### DIMENSIONS

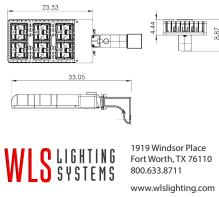
Dimensions shown for 5L - 20L Brick Unit



Dimensions shown for 25L - 40L Brick Unit



Dimensions shown for 45L - 70L Brick Unit



## CLA SERIES LED AREA

#### SPECIFICATIONS

**APPLICATION** - The CLA Series of high output LED luminaries are designed for new outdoor parking area lighting and to be a replacement for HID area lights. They are optimal for lighting applications where long life, low maintenance and consistent color rendering is required. The high efficient/lumen output allows the fixture to be used for parking, restaurant, quick service, shopping centers or general area lighting applications.

**CONSTRUCTION** - The heavy-duty housing is constructed of cast aluminum with heat dissipating fins. The optical assemblies are sealed in place using a silicone gasket for weather tight protection. ETL listed for wet locations (IP65). Each fixture can accommodate advanced wireless control, management and reporting systems for outdoor lighting when ordered with the optional accessories (verify compatibility if using controls supplied by others) such as CLTARM mounting (required).

**FINISH** - A corrosion-resistant epoxy E-Coat layer that forms a uniform and all-encompassing protective barrier is applied to the fixtures prior to electrostatically applying a super durable powder coat finish. Standard colors available: Black, Bronze, US Green and White. Custom colors available on request.

**OPTICAL SYSTEM** - Made with state of the art UV stabilized acrylic high performance refractive optical assemblies that use high transmissivity materials to achieve precise photometric distributions. Available in Type II, III, IV, IV Automotive, Automotive Frontline Wide, IV Tennis, V Medium and V Wide Beam configurations. Star Light friendly (meets or exceeds Dark Sky requirements) in the horizontal position.

**ELECTRICAL SYSTEM** - Available in up to a 70,000 LED lumens in most optical distributions with either 5000K Cool White (+/- 500K), 4000K Neutral White or 3000K Warm White color temperatures. LED's rated for over 50,000 hours at 25°C ambient temperature. Available with 120-277 50/60 Hz power supply. 480V and 347V input option available. 0-10V dimming. Built-in surge protection up to 10 kV. Built-in Active PFC Function LED driver conforms to UL8750 standards.

**MOUNTING** - Proprietary slide-on mounting system allows for quick installation. The CLA can be ordered with an aesthetically pleasing arm mount (CLAARM - required for integrated dynamic control systems), a 2" adjustable slip fitter (CLA2AF) for mounting on a standard 2-3/8" OD tenon and an entire compliment of pole brackets with integrated quick mount technology. CLASM for direct mounting to poles in single (1@90°) or D180 (2@ 180°).

LISTINGS - Complies with UL8750, ETL listed for wet locations. Meets US and Canadian safety standards. -40°C to 50°C ambient operation. RoHS Compliant.

WARRANTY - The complete luminaire is covered by a 5-year limited warranty.

| FIXTURE WEIGHTS (AP | PROXIMATE) |         |         |
|---------------------|------------|---------|---------|
|                     | 2 BRICK    | 4 BRICK | 6 BRICK |
| Weight (lbs)        | 14 lbs     | 20 lbs  | 28 lbs  |



Project Name: \_\_\_\_\_

Date: \_\_\_\_\_\_
Location: \_\_\_\_\_\_
Notes: \_\_\_\_\_

#### 55 REV. 12/20

Specifications subject to change without notice.

Type:

#### ORDERING INFORMATION SELECT APPROPRIATE CHOICE FROM EACH COLUMN TO FORMULATE ORDER CODE. Refer to example below.

| PRODUCT | COLOR TEMP                                                              | NOMINAL LUMENS                                                                                                                                                                                                                                                                                                                                                                                                          | OPTICS                                                                                                                           | VOLTAGE                                     | OPTIONS                                                                                                             | FINISH                                                                      | ACCESSORIES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CLA     | C Cool White (5000K)<br>N Neutral White (4000K)<br>W Warm White (3000K) | <ul> <li>5L 5000 Lumens</li> <li>8L 8000 Lumens</li> <li>10L 10,000 Lumens</li> <li>12L 12,000 Lumens</li> <li>15L 15,000 Lumens</li> <li>20L 20,000 Lumens</li> <li>30L 30,000 Lumens</li> <li>35L 35,000 Lumens</li> <li>40L 40,000 Lumens</li> <li>45L 45,000 Lumens</li> <li>50L 50,000 Lumens</li> <li>55L 55,000 Lumens</li> <li>60L 60,000 Lumens</li> <li>65L 65000 Lumens</li> <li>70L 70000 Lumens</li> </ul> | T2 Type II<br>T3 Type III<br>T4 Type IV<br>FAW Frontline Auto Wide<br>T4T Type IV Tennis<br>T5M Type V Medium<br>T5W Type V Wide | 1 Multi-Volt <sup>1</sup><br>2 347-480 (HV) | PCR7 7 Pin<br>Twist-Lock<br>Photocell<br>Receptacle<br>ANSI C136.41<br>& Receptacle<br>Shorting<br>Cap <sup>6</sup> | BZ Bronze<br>BK Black<br>GR US Green<br>WH White<br>SP Special <sup>2</sup> | CLA2AF 2" Adjustable Slip Fitter <sup>7,8</sup><br>PC2 480V Twist-Lock Photocell<br>PC7 Multi-Tap (105-285V) Twist-Lock Photocell<br>CLAARM Decorative Arm Mount (0.3 EPA, 3.7 lbs) <sup>7</sup><br>CLASM Slide Mount Adaptor <sup>3,7</sup><br>CLAB15 Adjustable Yoke Mount with Slide Adaptor <sup>8</sup><br>CLAARMR Decorative Arm Mount for Round Poles (0.3 EPA, 3.7 lbs)<br>CLAARMFSP Arm with Integrated PIR Motion Sensor<br>S215 Angled Back Light Shield <sup>4</sup><br>S219 Large Angled Back Light Shield <sup>5</sup><br>TLWSFSIR-L2 360° Lens, Maximum Coverage 48' Diameter From<br>8' Height<br>TLWSFSIR-L4 360° Lens, Maximum Coverage 60' Diameter From<br>40' Height<br>TLWSFSIR-L7 360° Lens, Maximum Coverage 100' Diameter From<br>40' Height |
| ORDEF   | <b>{:</b>                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                  |                                             |                                                                                                                     |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| WLS-CTL |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                  |                                             |                                                                                                                     |                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Example: WLS-CTL-N-25L-T5W-1-B-PCR7-BZ

**FOOTNOTES:** 

1 Multi-Volt is an auto ranging power supply from 100V to 300V input.

2 Custom RAL color matching is available. Contact your sales professional for additional information.

CLA2AF<sup>8</sup>

- 3 Slide mount adaptor for direct pole mounts cannot be used when mounting fixtures at 90° increments.
- 4 Requires one piece for 5L-20L units; two pieces for 25L-40L units.

5 Requires one piece for 45L-60L units.

CLAARM Decorative Arm Mount (0.3 EPA, 3.5 lbs.) with Slide Mount Adapter





LUI





PC2 480V Twist-Lock Photocell PC7

Twist-Lock Photocell

CLAHT238

PCR79 7-Pin Twist-Lock Photocell Receptacle ANSI C136.41 and Receptacle Shorting Cap

with a fixture in an upward facing position will void warranty.



CLAB158 Adjustable Yoke Mount with Slide Adaptor

6 PCR7 photocell receptacle must be oriented in the field so that the light sensor on the control is facing North.

When using with the CLA2AF, the fixture must be in a downward facing position (<90° tilt). Use of the PCR7

7 Accessory mounting device must be ordered for each luminaire to provide mounting means.

8 Do not tilt the CLA more than 45 degrees upward from horizontal when using the CLT2AF & CTLB15. 9 Only available in certain optics and wattages. See LUMINAIRE CHARACTERISTICS table for details.



S219⁵ Large Angled Back Light Shield



S2154 Angled Back Light Shield



NOTES

- 4 = Requires one piece for 5L-20L units; two pieces for 25L-40L units
- 5 = Requires one piece for 45L-60L units.
- 9= PCR7 photocell receptacle mustbe oriented in the field so that the light sensor on the control is facing North.



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www.wlslighting.com

Date: \_

Horizontal 2-3/8" OD Tenon Mount with Slide Mount Adaptor

| MINAIRE EPA CHAR         | T - CLAARM    | EPA's shown include both the fixtu | ire and the mounting apparatus. |
|--------------------------|---------------|------------------------------------|---------------------------------|
| FIXTURE<br>CONFIGURATION | 2 BRICK EPA's | 4 BRICK EPA's                      | 6 BRICK EPA's                   |
| 1 @ 90°                  | 0.8           | 0.9                                | 1.1                             |
| 2 @ 180°                 | 1.5           | 1.7                                | 2.1                             |
| 2 @ 90°                  | 1.4           | 1.5                                | 1.7                             |
| 3 @ 90°                  | 2.1           | 2.3                                | 2.6                             |
| 4 @ 90° or 4 @ 70°       | 2.2           | 2.5                                | 2.6                             |

Project Name: \_\_\_\_\_



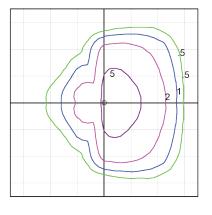
Notes: \_\_\_\_

55 REV. 12/20

Specifications subject to change without notice.

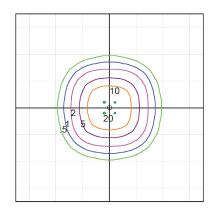
#### IES INDOOR REPORT PHOTOMETRIC FILE

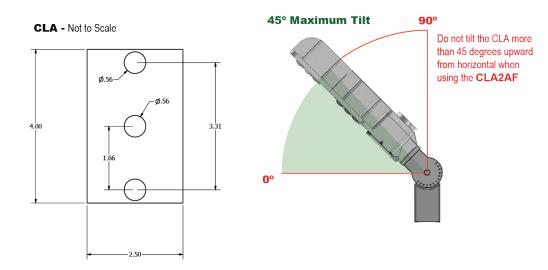
Typical Type III photometric optical distribution



#### IES INDOOR REPORT PHOTOMETRIC FILE

Typical Type 5M photometric optical distribution







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Project Name: \_\_\_\_\_ Date: \_\_\_\_ Location: \_\_\_\_\_ Notes: \_\_\_\_\_

#### 55 REV. 12/20

Specifications subject to change without notice.

| COOLV        | VHITE             |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |
|--------------|-------------------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|
|              |                   |                  | TYPE FAW        |      |                  | TYPE II         |      |                  | TYPE III        |      |                  | TYPE IV         |      |                  | TYPE 4T         |      |                  | TYPE 5M         |      |                  | TYPE 5W         |      |
| Output<br>ID | Nominal<br>Lumens | System<br>Lumens | System<br>Watts | Lm/W |
|              |                   |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |
| 5L           | 5,000             | 5012             | 35              | 145  | 5525             | 35              | 160  | 5126             | 35              | 148  | 5557             | 35              | 160  | 5723             | 35              | 165  | 5663             | 35              | 164  | 5702             | 35              | 165  |
|              |                   |                  | B1-U0-G1        |      |                  | B1-U0-G1        |      |                  | B1-U0-G1        |      |                  | B2-U0-G2        |      | ļ                | B2-U0-G1        |      |                  | B2-U0-G0        |      |                  | B3-U0-G2        |      |
| 8L           | 8,000             | 8206             | 59              | 139  | 8200             | 53              | 155  | 8392             | 59              | 142  | 5247             | 53              | 156  | 8495             | 53              | 161  | 8405             | 53              | 159  | 8463             | 53              | 160  |
|              |                   |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B3-U0-G1        |      |                  | B3-U0-G0        | 1    |                  | B3-U0-G2        |      |
| 10L          | 10,000            | 10393            | 78              | 134  | 9864             | 65              | 151  | 9912             | 71              | 139  | 9920             | 65              | 152  | 10218            | 65              | 157  | 10110            | 65              | 155  | 10179            | 65              | 156  |
|              |                   |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B3-U0-G1        |      |                  | B3-U0-G0        |      |                  | B4-U0-G2        |      |
| 12L          | 12,000            | 11808            | 83              | 142  | 11455            | 78              | 147  | 11753            | 79              | 149  | 11521            | 78              | 148  | 11867            | 78              | 153  | 11742            | 78              | 151  | 11822            | 78              | 152  |
|              |                   |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B3-U0-G3        |      |                  | B3-U0-G1        |      |                  | B3-U0-G0        |      |                  | B4-U0-G2        |      |
| 15L          | 15,000            | 15084            | 111             | 136  | 15177            | 97              | 156  | 15265            | 106             | 144  | 15216            | 97              | 157  | 15207            | 92              | 164  | 15045            | 92              | 163  | 15017            | 82              | 162  |
|              |                   |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G1        |      |                  | B3-U0-G1        |      |                  | B4-U0-G2        |      |
| 20L          | 20,000            | 20096            | 157             | 128  | 19837            | 134             | 148  | 20082            | 147             | 136  | 19888            | 134             | 149  | 20146            | 129             | 156  | 19931            | 129             | 154  | 19894            | 129             | 154  |
|              |                   |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G2        |      |                  | B4-U0-G1        |      |                  | B5-U0-G3        |      |
| 25L          | 25,000            | 24813            | 176             | 141  | 25139            | 158             | 159  | 24761            | 167             | 148  | 25204            | 158             | 160  | 24913            | 149             | 167  | 24647            | 149             | 166  | 24601            | 149             | 165  |
|              |                   |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G4        |      |                  | B3-U0-G4        |      |                  | B4-U0-G2        |      |                  | B4-U0-G1        | 1    |                  | B5-U0-G4        |      |
| 30L          | 30,000            | 30167            | 221             | 136  | 30354            | 194             | 156  | 29456            | 203             | 145  | 30432            | 194             | 157  | 30415            | 185             | 164  | 30090            | 185             | 163  | 30034            | 185             | 162  |
|              |                   |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G4        |      |                  | B3-U0-G4        |      |                  | B4-U0-G2        |      |                  | B5-U0-G1        |      |                  | B5-U0-G4        |      |
| 35L          | 35,000            | 35380            | 267             | 132  | 35005            | 231             | 152  | 34967            | 249             | 140  | 35095            | 231             | 152  | 35370            | 221             | 160  | 34992            | 221             | 158  | 34928            | 221             | 158  |
|              |                   |                  | B3-U0-G4        |      |                  | B4-U0-G4        |      |                  | B3-U0-G4        |      |                  | B3-U0-G4        |      |                  | B4-U0-G2        |      |                  | B5-U0-G1        |      |                  | B5-U0-G4        |      |
| 40L          | 40,000            | 40193            | 313             | 128  | 39674            | 267             | 148  | 40164            | 295             | 136  | 39777            | 267             | 149  | 40292            | 258             | 156  | 39861            | 258             | 154  | 39788            | 258             | 154  |
|              |                   |                  | B3-U0-G4        |      |                  | B4-U0-G4        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G2        |      |                  | B5-U0-G1        |      |                  | B5-U0-G4        |      |
| 45L          | 45,000            | 45251            | 332             | 136  | 45070            | 313             | 144  | 44184            | 305             | 145  | 454187           | 313             | 144  | 44913            | 295             | 152  | 45547            | 304             | 150  | 45463            | 304             | 150  |
|              |                   |                  | B3-U0-G4        |      |                  | B4-U0-G4        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G2        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 50L          | 50,000            | 50024            | 373             | 134  | 50743            | 332             | 153  | 50773            | 360             | 141  | 50874            | 332             | 153  | 49408            | 305             | 162  | 50663            | 318             | 159  | 50570            | 318             | 159  |
|              |                   |                  | B4-U0-G5        |      | <u> </u>         | B4-U0-G4        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        | 1    |                  | B4-U0-G3        |      |                  | B5-U0-G2        | 1    |                  | B5-U0-G5        |      |
| 55L          | 55,000            | 54545            | 415             | 132  | 5431             | 360             | 151  | 55644            | 401             | 139  | 54442            | 360             | 151  | 54900            | 346             | 159  | 54313            | 346             | 157  | 54213            | 346             | 157  |
|              |                   |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 60L          | 60,000            | 60289            | 470             | 128  | 59511            | 401             | 148  | 60246            | 442             | 136  | 59665            | 401             | 149  | 60437            | 387             | 156  | 59792            | 387             | 154  | 59687            | 387             | 154  |
|              |                   |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B5-U0-G5        |      |                  | B5-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 65L          | 65,000            |                  | N/A             |      | 6443             | 442             | 146  | 64669            | 484             | 134  |                  | 442             | 146  | 65680            | 429             | 153  | 64987            | 429             | 152  | 64858            | 429             | 151  |
|              |                   |                  |                 |      |                  | B5-U0-G5        |      |                  | B5-U0-G5        |      |                  | B5-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 701          | 70.000            |                  |                 |      | 69163            | 484             | 143  |                  |                 |      | 69342            | 484             | 143  | 70686            | 470             | 150  | 69931            | 470             | 149  | 69802            | 470             | 149  |
| 70L          | 70,000            |                  | N/A             |      |                  | B5-U0-G5        |      |                  | N/A             |      |                  | B5-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |



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Project Name: \_\_\_\_\_

Date: \_\_\_\_

Location: \_\_\_\_\_ Notes: \_

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55 REV. 12/20

| NEUTR        | AL WHITE          |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |
|--------------|-------------------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|
|              |                   |                  | TYPE FAW        |      |                  | TYPE II         |      |                  | TYPE III        |      |                  | TYPE IV         |      |                  | TYPE 4T         |      |                  | TYPE 5M         |      |                  | TYPE 5W         |      |
| Output<br>ID | Nominal<br>Lumens | System<br>Lumens | System<br>Watts | Lm/W |
|              |                   |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |
| 5L           | 5,000             | 5136             | 35              | 148  | 5661             | 35              | 163  | 5253             | 35              | 152  | 5964             | 35              | 164  | 5865             | 35              | 169  | 5803             | 35              | 168  | 5843             | 35              | 169  |
|              | -,                |                  | B1-U0-G1        |      | ļ                | B1-U0-G1        |      |                  | B1-U0-G1        |      |                  | B2-U0-G2        |      |                  | B2-U0-G1        |      |                  | B2-U0-G0        |      |                  | B3-U0-G1        |      |
| 8L           | 8,000             | 8409             | 59              | 142  | 8402             | 53              | 159  | 7796             | 53              | 147  | 8451             | 53              | 160  | 7808             | 47              | 167  | 7726             | 47              | 165  | 7778             | 47              | 166  |
|              |                   |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B3-U0-G1        |      |                  | B3-U0-G0        |      |                  | B3-U0-G2        |      |
| 10L          | 10,000            | 9931             | 71              | 139  | 10107            | 65              | 155  | 10156            | 71              | 142  | 10165            | 65              | 156  | 10470            | 65              | 160  | 10360            | 65              | 159  | 10431            | 65              | 160  |
|              |                   |                  | B2-U0-G2        |      | ļ                | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B3-U0-G1        |      |                  | B3-U0-G0        |      |                  | B4-U0-G2        |      |
| 12L          | 12,000            | 11745            | 83              | 141  | 11738            | 78              | 151  | 12315            | 83              | 148  | 11805            | 78              | 152  | 12160            | 78              | 156  | 12032            | 78              | 155  | 12114            | 78              | 156  |
|              |                   |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G1        |      |                  | B3-U0-G0        |      |                  | B4-U0-G2        |      |
| 15L          | 15,000            | 15003            | 111             | 136  | 15096            | 97              | 156  | 15184            | 106             | 143  | 15135            | 97              | 156  | 15123            | 92              | 164  | 14965            | 92              | 162  | 14937            | 92              | 161  |
|              |                   |                  | B2-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G1        |      | ļ                | B3-U0-G1        |      |                  | B4-U0-G2        |      |
| 20L          | 20,000            | 19989            | 157             | 128  | 20280            | 138             | 147  | 19975            | 147             | 135  | 19783            | 134             | 148  | 20039            | 129             | 155  | 19824            | 129             | 154  | 19788            | 129             | 153  |
|              |                   |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G2        |      |                  | B4-U0-G1        |      |                  | B5-U0-G3        |      |
| 25L          | 25,000            | 24681            | 176             | 140  | 25005            | 158             | 158  | 24629            | 167             | 148  | 25070            | 158             | 159  | 24780            | 149             | 166  | 24516            | 149             | 165  | 24470            | 149             | 164  |
|              |                   |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G4        |      |                  | B3-U0-G4        |      |                  | B4-U0-G2        |      |                  | B4-U0-G1        | 1    |                  | B5-U0-G3        |      |
| 30L          | 30,000            | 30007            | 221             | 136  | 30192            | 194             | 156  | 30368            | 212             | 146  | 30270            | 194             | 156  | 30253            | 185             | 164  | 29930            | 185             | 162  | 29874            | 185             | 161  |
|              |                   |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G4        |      |                  | B3-U0-G4        |      |                  | B4-U0-G2        |      |                  | B5-U0-G1        |      |                  | B5-U0-G4        |      |
| 35L          | 35,000            | 35192            | 267             | 132  | 34818            | 231             | 151  | 34781            | 249             | 140  | 34908            | 231             | 151  | 35182            | 221             | 159  | 34806            | 221             | 157  | 34742            | 221             | 157  |
|              |                   | 20076            | B3-U0-G4        | 100  |                  | B4-U0-G4        |      | 20050            | B4-U0-G4        | 405  | 20545            | B4-U0-G4        |      | 40077            | B4-U0-G2        |      |                  | B5-U0-G1        |      | 20574            | B5-U0-G4        | 452  |
| 40L          | 40,000            | 39976            | 313<br>B4-U0-G4 | 128  | 39462            | 267<br>B4-U0-G4 | 148  | 39950            | 295<br>B4-U0-G5 | 135  | 39565            | 267<br>B4-U0-G5 | 148  | 40077            | 158<br>B4-U0-G2 | 155  | 39649            | 258<br>B5-U0-G1 | 154  | 39576            | 258<br>B5-U0-G4 | 153  |
|              |                   | 4510             | 332             | 136  | 44831            | 313             | 143  | 45552            | 318             | 143  | 44947            | 313             | 143  | 44674            | 295             | 151  | 45305            | 304             | 149  | 45221            | 301             | 149  |
| 45L          | 45,000            | 1510             | B4-U0-G4        | .50  | 11031            | B4-U0-G4        |      | 15552            | B4-U0-G5        |      |                  | B4-U0-G5        | 115  |                  | B4-U0-G2        |      |                  | B5-U0-G2        |      | 15221            | B5-U0-G5        |      |
|              |                   | 49758            |                 | 133  | 50473            | 332             | 152  | 50503            | 360             | 140  | 50603            | 332             | 152  | 49145            | 305             | 161  | 50393            | 318             | 158  | 50300            | 318             | 158  |
| 50L          | 50,000            |                  | B4-U0-G5        |      |                  | B4-U0-G4        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
|              |                   | 54254            |                 | 131  | 55797            | 373             | 149  | 55348            | 401             | 138  | 54152            | 360             | 151  | 54608            | 346             | 158  | 55870            | 360             | 155  | 55767            | 360             | 158  |
| 55L          | 55,000            |                  | B4-U0-G5        | -    |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        | L    |
|              |                   | 59968            | 480             | 128  | 59195            | 401             | 148  | 59926            | 442             | 135  | 59348            | 401             | 148  | 60116            | 387             | 155  | 59473            | 387             | 154  | 59364            | 387             | 153  |
| 60L          | 60,000            |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B5-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
|              |                   |                  |                 |      | 64090            | 442             | 146  | 64324            | 484             | 133  | 64256            | 442             | 145  | 65330            | 4229            | 152  | 64632            | 429             | 151  | 64513            | 429             | 151  |
| 65L          | 65,000            |                  | N/A             |      |                  | B5-U0-G5        |      |                  | B5-U0-G5        |      |                  | B5-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        | 1    |                  | B5-U0-G5        |      |
|              |                   |                  |                 |      | 68795            | 484             | 142  |                  |                 |      | 68973            | 484             | 143  | 7310             | 470             | 150  | 69559            | 470             | 148  | 69431            | 470             | 148  |
| 70L          | 70,000            |                  | N/A             |      |                  | B5-U0-G5        |      |                  | N/A             |      |                  | B5-U0-G5        | I    |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
|              |                   |                  |                 |      | l                |                 |      | l                |                 |      |                  |                 |      |                  |                 |      | l                |                 |      |                  |                 |      |



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Date: \_\_\_\_

Location: \_\_\_\_\_ Notes: \_\_\_\_\_

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| WARM         | WHITE             |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |                  |                 |      |
|--------------|-------------------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|------------------|-----------------|------|
|              |                   |                  | TYPE FAW        |      |                  | TYPE II         |      |                  | TYPE III        |      |                  | TYPE IV         |      |                  | TYPE 4T         |      |                  | TYPE 5M         |      |                  | TYPE 5W         |      |
| Output<br>ID | Nominal<br>Lumens | System<br>Lumens | System<br>Watts | Lm/W |
|              |                   |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      | İ                | BUG Rating      |      |                  | BUG Rating      |      |                  | BUG Rating      |      |
|              | 5.000             | 4782             | 35              | 138  | 4891             | 32              | 141  | 4891             | 35              | 141  | 5301             | 35              | 153  | 5461             | 35              | 158  | 5403             | 35              | 156  | 5440             | 35              | 157  |
| 5L           | 5,000             |                  | B1-U0-G1        |      |                  | B1-U0-G1        |      |                  | B1-U0-G1        |      |                  | B1-U0-G1        |      |                  | B2-U0-G1        |      |                  | B2-U0-G0        |      |                  | B3-U0-G1        |      |
| 8L           | 8.000             | 7829             | 53              | 148  | 7823             | 53              | 148  | 8007             | 59              | 136  | 7868             | 53              | 149  | 8105             | 53              | 153  | 8019             | 53              | 152  | 8074             | 53              | 153  |
|              | 0,000             |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G1        |      |                  | B3-U0-G0        |      |                  | B4-U0-G2        |      |
| 10L          | 10,000            | 9915             | 71              | 139  | 10191            | 71              | 143  | 10141            | 78              | 130  | 12050            | 71              | 143  | 10558            | 71              | 148  | 10447            | 71              | 146  | 10518            | 71              | 147  |
|              |                   |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B3-U0-G1        |      |                  | B3-U0-G0        |      |                  | B4-U0-G2        |      |
| 12L          | 12,000            | 11760            | 78              | 151  | 11915            | 79              | 151  | 12331            | 88              | 140  | 11946            | 79              | 151  | 11322            | 78              | 146  | 11203            | 78              | 144  | 11279            | 78              | 145  |
|              |                   |                  | B2-U0-G2        |      |                  | B2-U0-G2        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G1        |      |                  | B3-U0-G0        |      |                  | B4-U0-G2        |      |
| 15L          | 15,000            | 15301            | 97              | 158  | 14931            | 102             | 147  | 14991            | 111             | 135  | 14970            | 102             | 0147 | 15042            | 97              | 155  | 14881            | 97              | 153  | 14854            | 97              | 153  |
|              |                   |                  | B2-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G1        |      |                  | B3-U0-G1        |      |                  | B4-U0-G2        |      |
| 20L          | 20,000            | 19488            | 138<br>B3-U0-G3 | 141  | 19849            | 143<br>B3-U0-G3 | 139  | 199747           | 157<br>B3-U0-G3 | 128  | 19900            | 143<br>B3-U0-G3 | 139  | 20207            | 138<br>B3-U0-G2 | 146  | 19991            | 138<br>B4-U0-G1 | 145  | 19954            | 138             | 144  |
|              |                   | 24590            |                 | 156  | 25102            | B3-00-G3        | 150  | 24661            |                 | 140  | 25167            | 167             | 151  | 24915            |                 | 158  | 24649            | 158             | 156  | 24604            | B5-U0-G3        | 156  |
| 25L          | 25,000            | 24590            | 158<br>B3-U0-G3 | 150  | 25102            | 167<br>B3-U0-G3 | 150  | 24661            | 176<br>B3-U0-G4 | 140  | 25167            | B3-U0-G4        | 151  | 24915            | 158<br>B4-U0-G2 | 158  | 24649            | B4-U0-G1        | 150  | 24604            | 158<br>B5-U0-G3 | 150  |
|              |                   | 29590            | 184             | 152  | 29862            | 203             | 147  | 29983            | 221             | 135  | 29940            | 203             | 147  | 30084            | 194             | 155  | 29763            | 194             | 153  | 29708            | 194             | 153  |
| 30L          | 30,000            |                  | B3-U0-G3        |      |                  | B3-U0-G3        |      |                  | B3-U0-G4        |      |                  | B3-U0-G4        |      |                  | B4-U0-G2        |      |                  | B5-U0-G1        |      |                  | B5-U0-G4        |      |
|              |                   | 35401            | 240             | 148  | 35449            | 249             | 142  | 35164            | 267             | 132  | 35541            | 249             | 143  | 34694            | 231             | 150  | 35496            | 240             | 148  | 35430            | 240             | 148  |
| 35L          | 35,000            |                  | B3-U0-G4        |      |                  | B4-U0-G4        |      |                  | B4-U0-G4        |      |                  | B4-U0-G4        |      |                  | B4-U0-G2        |      |                  | B5-U0-G1        |      |                  | B5-U0-G4        |      |
|              |                   | 38977            | 277             | 141  | 39697            | 286             | 139  | 39947            | 313             | 128  | 39800            | 286             | 139  | 40414            | 277             | 146  | 39982            | 277             | 1454 | 39908            | 277             | 144  |
| 40L          | 40,000            |                  | B4-U0-G4        |      |                  | B4-U0-G4        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G2        |      |                  | B5-U0-G1        |      |                  | B5-U0-G4        |      |
| 45L          | 45,000            | 44386            | 322             | 138  | 44793            | 305             | 147  | 44974            | 332             | 135  | 44909            | 305             | 147  | 44670            | 313             | 143  | 45211            | 322             | 140  | 45127            | 322             | 140  |
| 45L          | 45,000            |                  | B4-U0-G4        |      |                  | B4-U0-G4        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G2        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 50L          | 50,000            | 50307            | 332             | 151  | 49772            | 346             | 144  | 49719            | 373             | 133  | 49901            | 346             | 144  | 50292            | 332             | 151  | 49755            | 332             | 150  | 4963             | 332             | 150  |
| 501          | 30,000            |                  | B4-U0-G5        |      |                  | B4-U0-G4        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 55L          | 55,000            | 54467            | 373             | 146  | 54793            | 387             | 142  | 54212            | 415             | 131  | 54935            | 387             | 142  | 55597            | 373             | 149  | 55003            | 373             | 147  | 54901            | 373             | 147  |
| 352          | 55,000            |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B5-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 60L          | 60,000            | 58465            | 415             | 141  | 59546            | 429             | 439  | 59921            | 470             | 128  | 59700            | 429             | 139  | 60621            | 415             | 146  | 59973            | 415             | 145  | 59863            | 415             | 144  |
| OOL          | 00,000            |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B4-U0-G5        |      |                  | B5-U0-G5        | 1    |                  | B5-U0-G3        | 1    |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 65L          | 65,000            |                  | N/A             |      | 64085            | 470             | 136  |                  | N/A             |      | 64250            | 470             | 137  | 65462            | 456             | 144  | 64762            | 456             | 142  | 64643            | 456             | 142  |
| 052          | 03,000            |                  | 11/74           |      |                  | B5-U0-G5        |      |                  | 11/71           |      |                  | B5-U0-G5        |      |                  | B5-U0-G3        |      |                  | B5-U0-G2        |      |                  | B5-U0-G5        |      |
| 70L          | 70,000            |                  | N/A             |      |



1919 Windsor Place Fort Worth, TX 76110 800.633.8711 www.wlslighting.com Project Name: \_\_\_\_\_

Date: \_\_\_\_

Location: \_\_\_\_\_ Notes: \_\_\_\_\_

**55 REV. 12/20** Specifications subject to change without notice.

### Traffic Impact Study Proposed Warehouse/Distribution Development

Tinley Park, Illinois



Prepared For:





March 11, 2021

### **1. Introduction**

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed warehouse/distribution development to be located in Tinley Park, Illinois. The site, which is currently vacant, is located in the northeast quadrant of the intersection of the Harlem Avenue (IL Route 43) with Vollmer Road. As proposed, the site will be developed with approximately 1,262,300 square feet of warehouse/distribution space in three buildings. Access to the development will be provided via two full movement access drives and a right-in/right-out access drive on Harlem Avenue and a full movement access drive on Vollmer Road.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate traffic generated by the proposed development.

Figure 1 shows the location of the site in relation to the area roadway system. Figure 2 shows an aerial view of the site.

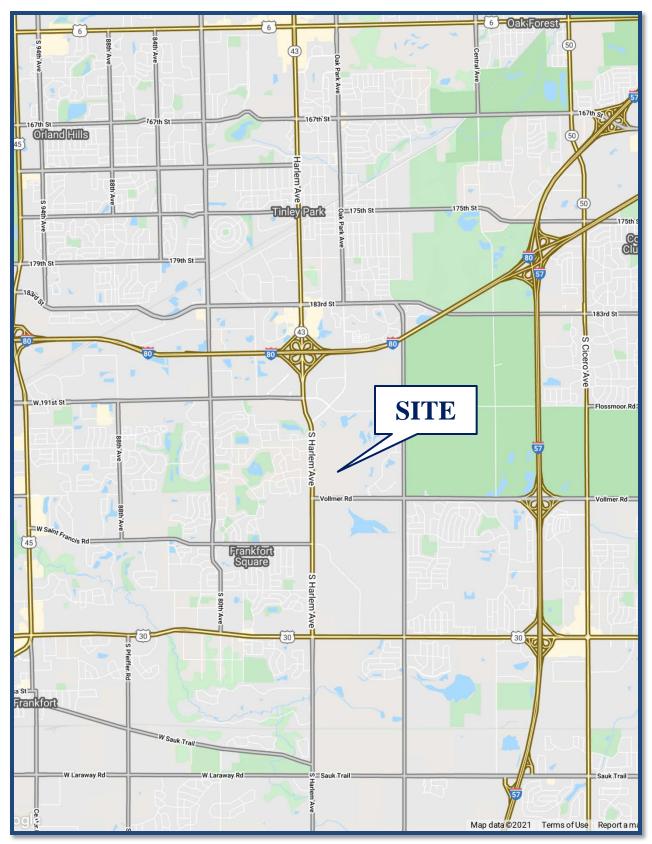
The sections of this report present the following:

- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system

Traffic capacity analyses were conducted for the weekday morning and evening peak hours for the following conditions:

- 1. Year 2021 Base Conditions Analyzes the capacity of the existing roadway system using peak hour traffic volumes conducted in 2019 and 2021 adjusted to represent pre-pandemic conditions.
- 2. Year 2027 No-Build Conditions Analyzes the capacity of the roadway system using Year 2021 base traffic volumes increased by an ambient area growth factor not attributable to any particular development as well the traffic expected to generated by the proposed Amazon distribution development to be located south of the site.
- 3. Year 2027 Total Projected Conditions Analyzes the capacity of the future roadway system using the projected traffic volumes that include the Year 2021 no build volumes and the traffic estimated to be generated by the proposed development.





**Site Location** 

Figure 1

Warehouse/Distribution Development Tinley Park, Illinois





**Aerial View of Site** 

Warehouse/Distribution Development Tinley Park, Illinois



### **2. Existing Conditions**

Existing transportation conditions in the vicinity of the site were documented based on field visits conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

#### Site Location

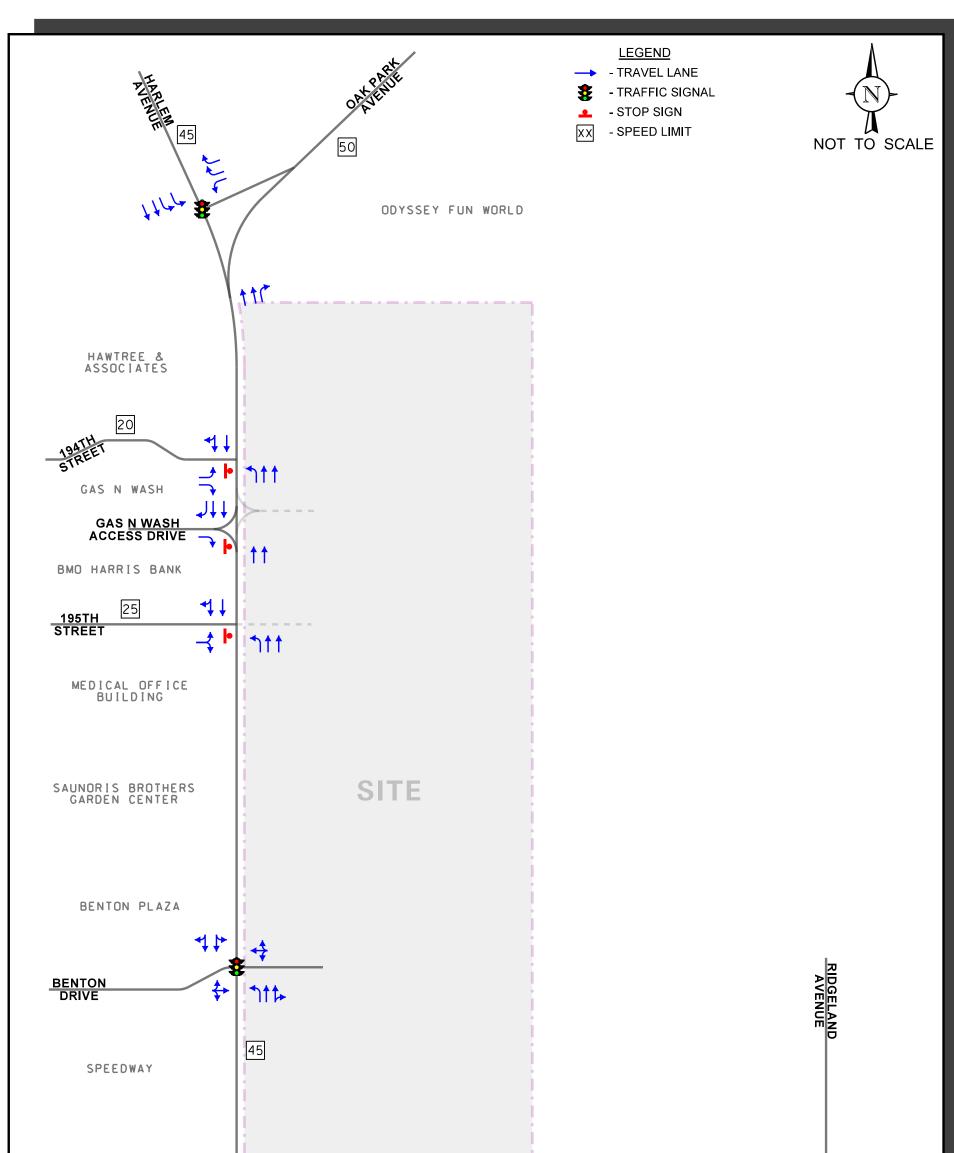
The site, which is currently vacant, is bounded by Odyssey Fun World to the north, the vacant land to the east, Vollmer Road to south, and Harlem Avenue to the west. Land uses in the site are primarily commercial and residential and include the Benton Plaza and Harlem Crossing retail developments as well as multiple other commercial developments on the west side of Harlem Avenue. The permanently closed Lincoln-Way North High School is located in the southwest quadrant of the intersection of Harlem Avenue with Vollmer Road. The Hollywood Casino Amphitheater is located east of the site between Oak Park Avenue and Ridgeland Avenue. The southeast quadrant of the intersection of Harlem Avenue with Vollmer Road is proposed to be developed with an Amazon Distribution Facility.

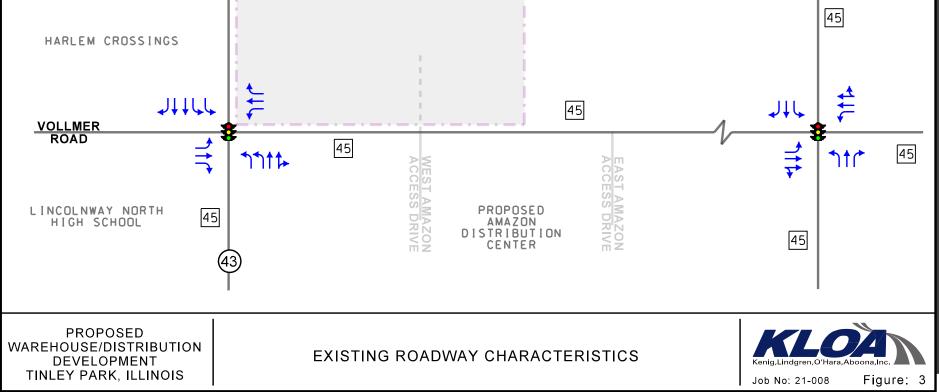
#### Existing Roadway System Characteristics

The characteristics of the existing roadways near the development are described below and illustrated in **Figure 3**.

Harlem Avenue (IL 43) is a north-south principal arterial roadway that has two lanes in each direction narrowing to one lane in each direction south of its intersection with Lincoln Highway. At its intersection with Vollmer Road and the Harlem Crossing shopping center access road, Harlem Avenue provides dual left-turn lanes, two through lanes, and an exclusive right-turn lane on the southbound approach and dual left-turn lanes, one through lane, and a shared through/rightturn lane on the northbound approach. At its signalized intersection with Benton Drive, Harlem Avenue provides one through lane and a shared through/right-turn lane on the southbound approach and an exclusive left-turn lane and two through lanes on the northbound approach. At its signalized intersection with Oak Park Avenue, Harlem Avenue provides dual left-turn lanes and two through lanes on the southbound approach and two through lanes and a free-flow right-turn lane on the northbound approach. At its unsignalized intersections with 194th Street and 195th Street, Harlem Avenue provides a through lane and a shared through/right-turn lane on the southbound approaches and an exclusive left-turn lane and two through lanes on the northbound approaches. At its unsignalized intersection with the Gas N Wash access drive, Harlem Avenue provides a southbound right-turn lane, and the access drive is restricted to right-turn only movements via signage, channelization, and the barrier median on Harlem Avenue. Harlem Avenue is under the jurisdiction of the Illinois Department of Transportation (IDOT), is designated as a Strategic Regional Arterial (SRA) route, and has a posted speed limit of 45 miles per hour. Harlem Avenue carries an annual average daily traffic (AADT) volume of 29,200 vehicles north of Vollmer Road and 16,200 vehicles south of Vollmer Road (IDOT 2019).







*Vollmer Road* is an east-west, minor arterial roadway that is aligned opposite the access road to the closed Lincoln-Way North High School and the Harlem Crossing shopping center at its intersection with Harlem Avenue. It provides two lanes in each direction divided by a mountable median within the vicinity of the site. At its signalized intersection with Harlem Avenue, Vollmer Road (westbound approach) and the access road (eastbound approach) both provide an exclusive left-turn lane, a through lane, and an exclusive right-turn lane. At its signalized intersection with Ridgeland Avenue, Vollmer Road provides an exclusive left-turn lane, a through lane, and a shared through/right-turn lane on both approaches. Vollmer Road is under the jurisdiction of CCDTH, has a posted speed limit of 45 miles per hour, and carries an AADT volume of 11,100 vehicles (IDOT 2018).

*Oak Park Avenue* is an east-west, major collector roadway that extends east from Harlem Avenue and provides two lanes in each direction. At its signalized intersection with Harlem Avenue, Oak Park Avenue provides an exclusive left-turn lane and dual right-turn lanes on the westbound approach. Oak Park Avenue is under the jurisdiction of IDOT, has a posted speed limit of 50 mph, and carries an AADT volume of 3,050 vehicles (IDOT 2018).

*Benton Drive* is an east-west, local road that extends west from Harlem Avenue and provides one lane in each direction. At its signalized intersection with Harlem Avenue, Benton Drive is aligned opposite an unpaved access road. Both approaches provide a shared left-turn/through/right-turn lane. Benton Drive has a posted speed limit of 25 miles per hour.

*194<sup>th</sup> Street* is an east-west, local roadway that extends west from Harlem Avenue and provides one lane in each direction. At its unsignalized intersection with Harlem Avenue, 194<sup>th</sup> Street provides an exclusive left-turn lane and an exclusive right-turn lane on the eastbound approach. 194<sup>th</sup> Street is under the jurisdiction of the Village of Tinley Park and has a posted speed limit of 20 mph.

*195<sup>th</sup> Street* is an east-west, local roadway that extends west from Harlem Avenue and provides one lane in each direction. At its unsignalized intersection with Harlem Avenue, 194<sup>th</sup> Street provides one lane on the eastbound approach. 194<sup>th</sup> Street is under the jurisdiction of Frankfort Township and has a posted speed limit of 20 mph.

#### Existing Traffic Volumes

In order to determine current traffic conditions within the study area, KLOA, Inc. utilized or conducted peak period traffic counts at area intersections as follows.

#### Tuesday January 19, 2021

• Harlem Avenue with Oak Park Avenue

#### Thursday December 17, 2019

- Harlem Avenue with Benton Drive
- Harlem Avenue with Vollmer Road
- Vollmer Road with Ridgeland Road



#### Thursday May 19, 2016

- Harlem Avenue with 194<sup>th</sup> Street
- Harlem Avenue with the Gas N Wash Access Drive
- Harlem Avenue with 195<sup>th</sup> Street

The traffic counts were generally conducted during the weekday morning (6:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods. The peak hour of traffic was determined individually for each set of counts in order to provide a conservative analysis. The peak hour of traffic for the 2021 traffic counts occurred from 7:45 A.M. to 8:45 A.M. during the weekday morning peak period and between 4:15 P.M. and 5:15 P.M. during the weekday evening peak period. Copies of the traffic count summary sheets are included in the Appendix. In order to accurately represent Year 2021 conditions due to the ongoing pandemic, the traffic volumes were increased as follows:

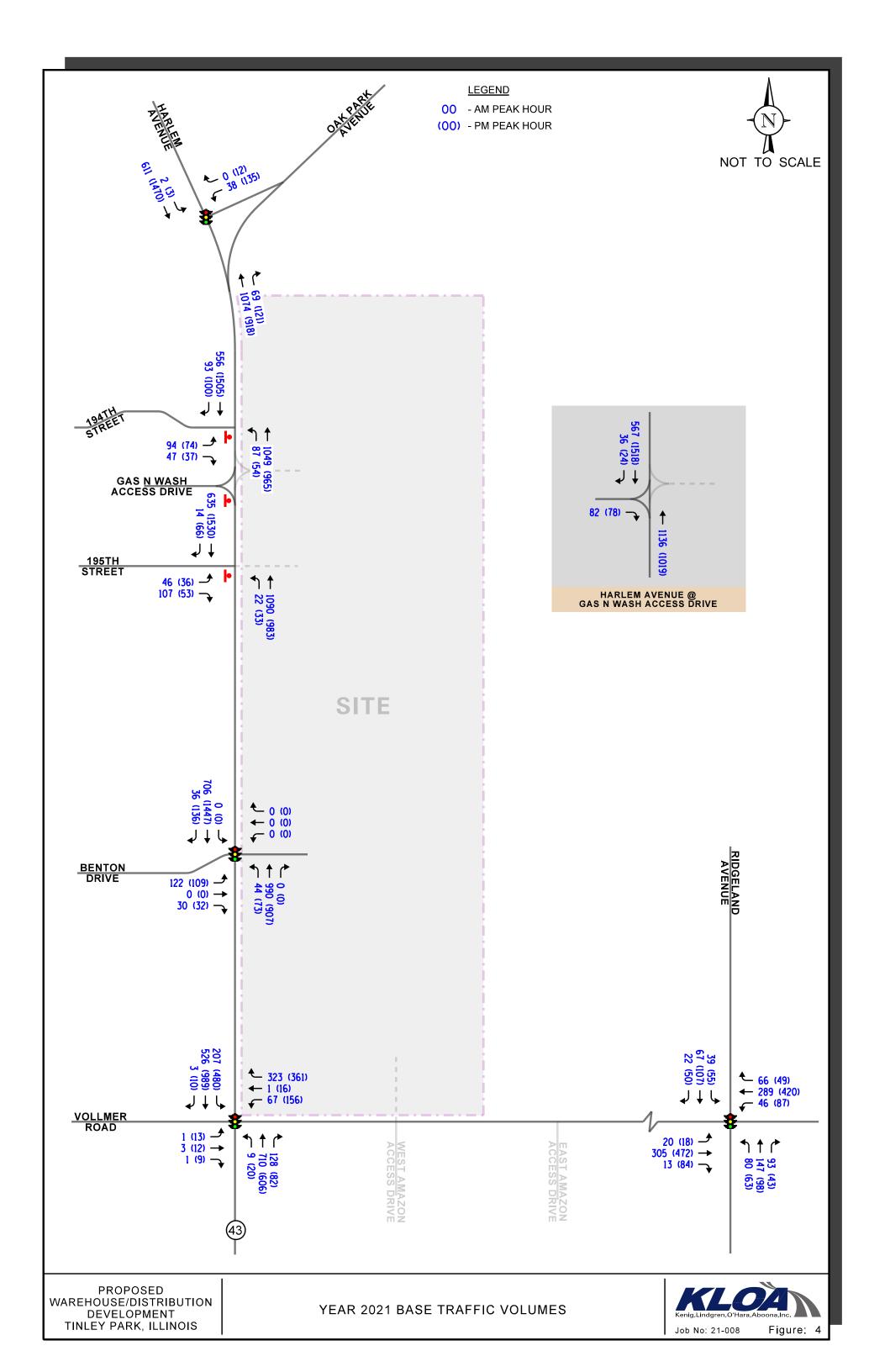
- The traffic volumes at the intersections of Harlem Avenue with Benton Drive, Harlem Avenue with Vollmer Road, and Vollmer Road with Ridgeland Road were increased by three percent based on CMAP projections, as discussed later in the report, to reflect Year 2021 conditions.
- From the traffic counts conducted at the intersections of Harlem Avenue with 194<sup>th</sup> Street, Harlem Avenue with the Gas N Wash access drive, and Harlem Avenue with 195<sup>th</sup> Street, only the turning movements to/from the local roads and access drive were used. Further, these counts were conducted as part of two proposed expansions to the Gas N Wash facility. As these expansions have since opened, these turning movements were increased based on the projected volumes from the original studies. Through movements at these intersections were determined by balancing with the increased volumes at the intersection of Harlem Avenue with Benton Avenue.
- The traffic volumes at the intersections of Harlem Avenue with Oak Park Avenue were proportionally increased to balance with the increased volumes at the intersection of Harlem Avenue with 194<sup>th</sup> Street. This increase equated to 10 to 15 percent during both peak hours.

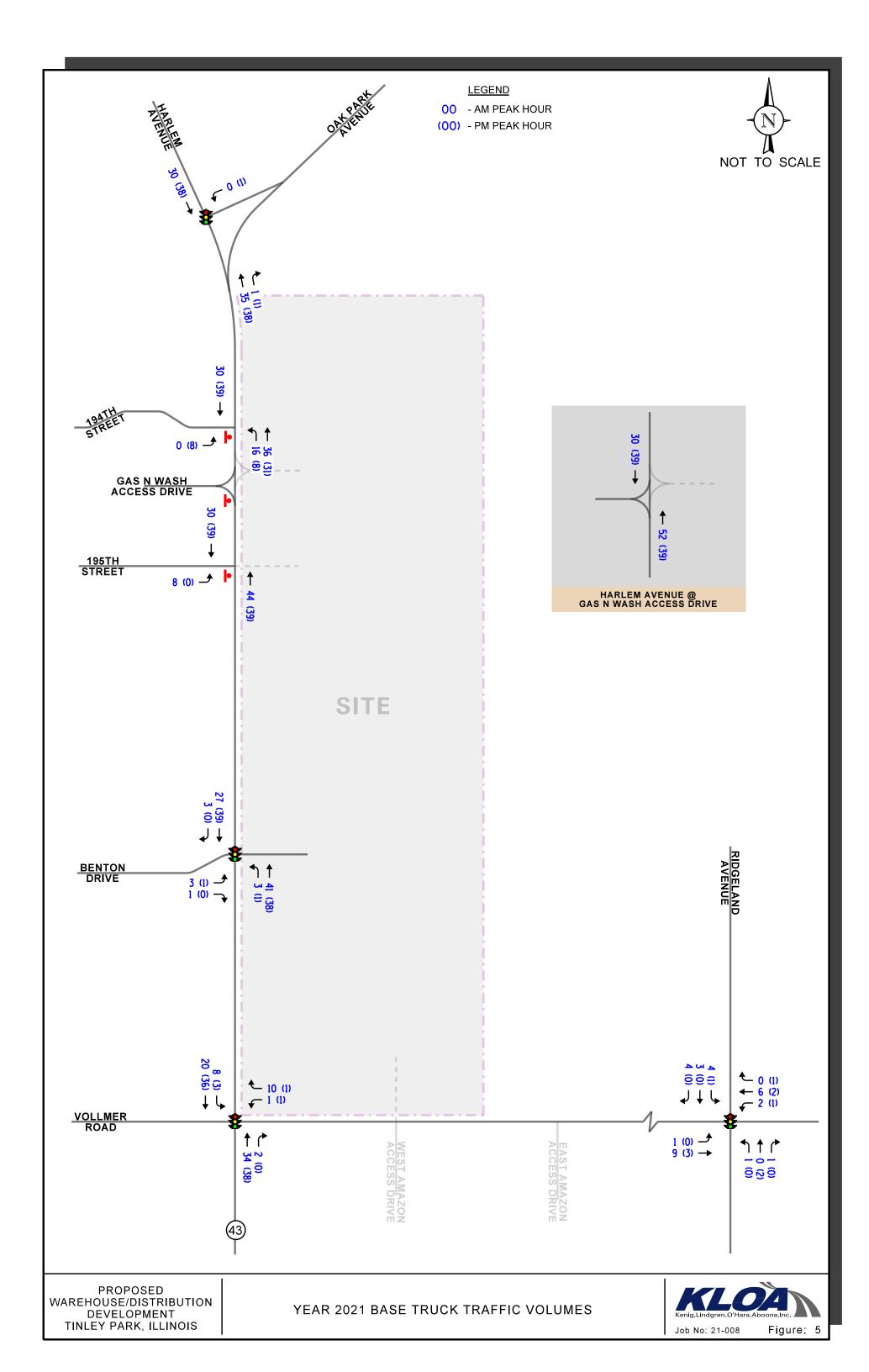
The Year 2021 base traffic volumes, inclusive of heavy vehicles, are illustrated in **Figure 4**. The Year 2021 base heavy traffic volumes are illustrated in **Figure 5**.

#### Proposed Amazon Distribution Development

As proposed, an approximate 3,800,000 square-foot amazon distribution center is proposed to be built in the southeast quadrant of the intersection of Harlem Avenue with Vollmer Road. Access to the development will be provided via two unsignalized access drives on Harlem Avenue south of Vollmer Road and via two proposed signalized intersections on Vollmer Road. The proposed signalized intersections are as follows:







- The *Vollmer Road Western Access Drive* is to be located on the south side of the road approximately 930 feet east of Harlem Avenue and will provide full access to the employee/visitor parking. This access drive will be designed with two inbound lanes and three outbound lanes with the outbound lanes striped to provide dual left-turn lanes and an exclusive right-turn lane. In addition, an exclusive left-turn lane (400 feet of stacking and a 220-foot taper) and an exclusive right-turn lane (215 feet of stacking and a 220-foot taper) will be provided on Vollmer Road serving this access drive.
- The *Vollmer Road Eastern Access Drive* is to be located on the south side of the road approximately 1,720 feet east of Harlem Avenue and 790 feet east of the western access drive and will provide full access to the employee/visitor parking and primary access to the loading docks and truck parking. This access drive will be designed with two inbound lanes and two outbound lanes with the outbound lanes striped to provide an exclusive left-turn lane and an exclusive right-turn lane. The intersection is proposed to be under traffic signal control. In addition, an exclusive left-turn lane (215 feet of stacking and a 220-foot taper) and an exclusive right-turn lane (215 feet of stacking and a 220-foot taper) will be provided on Vollmer Road serving this access drive.

In addition to the proposed access drives, the Vollmer Road approach at Harlem Avenue is proposed to be widened to provide westbound-to-southbound dual left-turn lanes. With the widening, the Vollmer Road approach will provide dual left-turn lanes, a through lane, and an exclusive right-turn lane. It should be noted that southbound Harlem Avenue pavement south of Vollmer Road is wide enough to accept the dual left-turn lanes. In addition, a northbound right-turn lane is proposed on Harlem Avenue at the Vollmer Road intersection.

#### Crash Analysis

KLOA, Inc. obtained crash data for the most recent available past five years (2014 to 2018) at the following intersections:

- Harlem Avenue with Oak Park Avenue
- Harlem Avenue with 194<sup>th</sup> Street
- Harlem Avenue with the Gas N Wash Access Drive
- Harlem Avenue with 195<sup>th</sup> Street
- Harlem Avenue with Vollmer Road
- Harlem Avenue with Benton Drive
- Vollmer Road with Ridgeland Road

A review of the crash data revealed no fatalities were reported at any of the study area intersections during the review period. A summary of the crash data for the intersections is shown in **Tables 1** through 7.<sup>1</sup>



<sup>&</sup>lt;sup>1</sup> IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s). Additionally, for coding years 2015 to present, the Bureau of Data Collection uses the exact latitude/longitude supplied by the investigating law enforcement agency to locate crashes. Therefore, location data may vary in previous years since data prior to 2015 was physically located by bureau personnel.

#### Table 1 HARLEM AVENUE WITH OAK PARK AVENUE - CRASH SUMMARY

|              |          |          | Type of .       | Accident Fre | quency   |          |          |
|--------------|----------|----------|-----------------|--------------|----------|----------|----------|
| Year         | Angle    | Object   | <b>Rear End</b> | Sideswipe    | Turning  | Other    | Total    |
| 2015         | 0        | 2        | 2               | 0            | 1        | 0        | 5        |
| 2016         | 1        | 1        | 3               | 0            | 2        | 0        | 7        |
| 2017         | 0        | 2        | 4               | 0            | 2        | 0        | 8        |
| 2018         | 0        | 1        | 2               | 0            | 0        | 0        | 3        |
| 2019         | <u>0</u> | <u>1</u> | <u>0</u>        | <u>0</u>     | <u>0</u> | <u>0</u> | <u>1</u> |
| Total        | 1        | 7        | 11              | 0            | 5        | 0        | 24       |
| Average/Year | <1.0     | 1.4      | 2.2             | <1.0         | 1.0      |          | 4.8      |

#### Table 2

### HARLEM AVENUE WITH 194<sup>TH</sup> STREET - CRASH SUMMARY

|              |          |          | Type of .       | Accident Fre | quency   |          |          |
|--------------|----------|----------|-----------------|--------------|----------|----------|----------|
| Year         | Angle    | Object   | <b>Rear End</b> | Sideswipe    | Turning  | Other    | Total    |
| 2015         | 0        | 0        | 0               | 1            | 1        | 0        | 2        |
| 2016         | 0        | 0        | 0               | 1            | 4        | 0        | 5        |
| 2017         | 2        | 0        | 2               | 0            | 5        | 0        | 9        |
| 2018         | 0        | 0        | 1               | 1            | 1        | 0        | 3        |
| 2019         | <u>0</u> | <u>0</u> | <u>0</u>        | <u>1</u>     | <u>3</u> | <u>0</u> | <u>4</u> |
| Total        | 2        | 0        | 3               | 4            | 14       | 0        | 23       |
| Average/Year | <1.0     |          | <1.0            | <1.0         | 2.8      |          | 4.6      |

Table 3

|              |          |          | Type of .       | Accident Fre | quency   |          |          |
|--------------|----------|----------|-----------------|--------------|----------|----------|----------|
| Year         | Angle    | Object   | <b>Rear End</b> | Sideswipe    | Turning  | Other    | Total    |
| 2015         | 0        | 0        | 0               | 1            | 0        | 0        | 1        |
| 2016         | 0        | 0        | 0               | 0            | 0        | 0        | 0        |
| 2017         | 1        | 0        | 0               | 0            | 0        | 0        | 1        |
| 2018         | 0        | 0        | 0               | 0            | 1        | 0        | 1        |
| 2019         | <u>0</u> | <u>0</u> | <u>1</u>        | <u>0</u>     | <u>1</u> | <u>0</u> | <u>2</u> |
| Total        | 1        | 0        | 1               | 1            | 2        | 0        | 5        |
| Average/Year | <1.0     |          | <1.0            | <1.0         | <1.0     |          | 1.0      |

#### HARLEM AVENUE WITH THE GAS N WASH ACCESS DRIVE - CRASH SUMMARY

#### Table 4 HARLEM AVENUE WITH 195<sup>TH</sup> STREET - CRASH SUMMARY

|              |          | Type of Accident Frequency |                 |           |          |          |          |  |  |  |  |  |  |
|--------------|----------|----------------------------|-----------------|-----------|----------|----------|----------|--|--|--|--|--|--|
| Year         | Angle    | Object                     | <b>Rear End</b> | Sideswipe | Turning  | Other    | Total    |  |  |  |  |  |  |
| 2015         | 0        | 0                          | 0               | 2         | 2        | 0        | 4        |  |  |  |  |  |  |
| 2016         | 0        | 0                          | 0               | 0         | 2        | 0        | 2        |  |  |  |  |  |  |
| 2017         | 0        | 0                          | 2               | 1         | 1        | 0        | 4        |  |  |  |  |  |  |
| 2018         | 0        | 0                          | 0               | 0         | 1        | 0        | 1        |  |  |  |  |  |  |
| 2019         | <u>0</u> | <u>0</u>                   | <u>0</u>        | <u>1</u>  | <u>2</u> | <u>0</u> | <u>3</u> |  |  |  |  |  |  |
| Total        | 0        | 0                          | 2               | 4         | 8        | 0        | 14       |  |  |  |  |  |  |
| Average/Year |          |                            | <1.0            | <1.0      | 1.6      |          | 2.8      |  |  |  |  |  |  |



#### Table 5 HARLEM AVENUE WITH BENTON DRIVE - CRASH SUMMARY

|              | Type of Accident Frequency |          |                 |           |          |          |          |  |  |  |  |  |
|--------------|----------------------------|----------|-----------------|-----------|----------|----------|----------|--|--|--|--|--|
| Year         | Angle                      | Object   | <b>Rear End</b> | Sideswipe | Turning  | Other    | Total    |  |  |  |  |  |
| 2015         | 1                          | 0        | 3               | 0         | 3        | 0        | 7        |  |  |  |  |  |
| 2016         | 0                          | 0        | 3               | 2         | 2        | 1        | 8        |  |  |  |  |  |
| 2017         | 0                          | 0        | 5               | 1         | 3        | 0        | 9        |  |  |  |  |  |
| 2018         | 0                          | 0        | 3               | 0         | 6        | 1        | 10       |  |  |  |  |  |
| 2019         | <u>0</u>                   | <u>1</u> | <u>1</u>        | <u>1</u>  | <u>2</u> | <u>0</u> | <u>5</u> |  |  |  |  |  |
| Total        | 1                          | 1        | 15              | 4         | 16       | 2        | 39       |  |  |  |  |  |
| Average/Year | <1.0                       | <1.0     | 3.0             | <1.0      | 2.8      | <1.0     | 7.8      |  |  |  |  |  |

#### Table 6 HARLEM AVENUE WITH VOLLMER ROAD - CRASH SUMMARY

|              |          | Type of Accident Frequency |          |           |          |          |           |  |  |  |  |  |  |
|--------------|----------|----------------------------|----------|-----------|----------|----------|-----------|--|--|--|--|--|--|
| Year         | Angle    | Object                     | Rear End | Sideswipe | Turning  | Other    | Total     |  |  |  |  |  |  |
| 2015         | 0        | 0                          | 10       | 0         | 4        | 0        | 14        |  |  |  |  |  |  |
| 2016         | 0        | 0                          | 5        | 0         | 2        | 0        | 7         |  |  |  |  |  |  |
| 2017         | 0        | 0                          | 3        | 0         | 5        | 0        | 8         |  |  |  |  |  |  |
| 2018         | 0        | 0                          | 5        | 1         | 0        | 0        | 6         |  |  |  |  |  |  |
| 2019         | <u>0</u> | <u>0</u>                   | <u>8</u> | <u>0</u>  | <u>4</u> | <u>0</u> | <u>12</u> |  |  |  |  |  |  |
| Total        | 0        | 0                          | 31       | 1         | 15       | 0        | 47        |  |  |  |  |  |  |
| Average/Year |          |                            | 6.2      | <1.0      | 3.0      |          | 9.4       |  |  |  |  |  |  |





#### Table 7 VOLLMER ROAD WITH RIDGELAND ROAD - CRASH SUMMARY

|              | Type of Accident Frequency |          |                 |           |          |          |          |  |  |  |  |  |
|--------------|----------------------------|----------|-----------------|-----------|----------|----------|----------|--|--|--|--|--|
| Year         | Angle                      | Object   | <b>Rear End</b> | Sideswipe | Turning  | Other    | Total    |  |  |  |  |  |
| 2015         | 2                          | 0        | 0               | 0         | 1        | 0        | 3        |  |  |  |  |  |
| 2016         | 0                          | 0        | 1               | 0         | 3        | 0        | 4        |  |  |  |  |  |
| 2017         | 1                          | 0        | 1               | 0         | 2        | 0        | 4        |  |  |  |  |  |
| 2018         | 0                          | 0        | 4               | 0         | 1        | 0        | 5        |  |  |  |  |  |
| 2019         | <u>1</u>                   | <u>0</u> | <u>3</u>        | <u>0</u>  | <u>2</u> | <u>0</u> | <u>6</u> |  |  |  |  |  |
| Total        | 4                          | 0        | 9               | 0         | 9        | 0        | 22       |  |  |  |  |  |
| Average/Year | <1.0                       |          | 1.8             |           | 1.8      |          | 4.4      |  |  |  |  |  |



### **3. Traffic Characteristics of the Proposed Development**

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

#### Proposed Site and Development Plan

As proposed, the development will be developed with approximately 1,262,300 square feet of warehouse/distribution space in three buildings. Access to both passenger and truck traffic will be accommodated via the following access drives:

- A right-in/right-out access drive on Harlem Avenue approximately 150 feet south of 194<sup>th</sup> Street and 500 feet north of 195<sup>th</sup> Street. This access drive will provide one inbound lane and one outbound lane restricted to right-turn only movements via signage, channelization, and the barrier median on Harlem Avenue. Outbound movements will be under stop sign control.
- A full movement access drive on Harlem Avenue aligned opposite 195<sup>th</sup> Street. This access drive will provide one inbound lane and two outbound lanes striped to provide a left-turn lane and a shared through/right-turn lane. Outbound movements will be under stop sign control. As part of this development, a northbound right-turn lane will be provided on Harlem Avenue and should provide 215 feet of storage a 220-foot taper. In addition, a southbound left-turn lane will be provided. Given the existing northbound left-turn lane on Harlem Avenue serving 194<sup>th</sup> Street, this turn lane should provide 200 feet of storage and a 130-foot shared taper.
- A proposed full movement access drive on Harlem Avenue that will form the fourth (east) leg of the signalized intersection of Harlem Avenue with Benton Drive. This access drive will provide one inbound lane and two outbound lanes striped to provide a left-turn lane and a shared through/right-turn lane. As part of this development, a northbound right-turn lane will be provided on Harlem Avenue and should provide 215 feet of storage a 220-foot taper. In addition, a southbound left-turn lane will be provided. Given the existing northbound left-turn lane on Harlem Avenue serving the Saunoris Brothers Garden Center, this turn lane should provide 150 feet of storage and a 100-foot shared taper. This access drive will replace an unpaved access road at this location.
- A proposed full movement access drive on Vollmer Road that will form the fourth (north) leg of the proposed signalized intersection of Vollmer Road with the west Amazon access drive. This access drive will provide one inbound lane and two outbound lanes striped to provide a left-turn lane and a shared through/right-turn lane. As part of this development, an eastbound right-turn lane and a westbound left-turn lane will be provided on Vollmer Road and should provide 215 feet of storage and a 220-foot taper.

A copy of the proposed site plan is included in the Appendix.



#### **Directional Distribution**

The directions from which employees and trucks will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. It is important to note that all outbound truck traffic is projected to exit the site via the signalized access drives. **Figure 6** illustrates the directional distribution of the site-generated traffic. Figure 5 also shows the distance, in feet, between the existing and proposed access intersections.

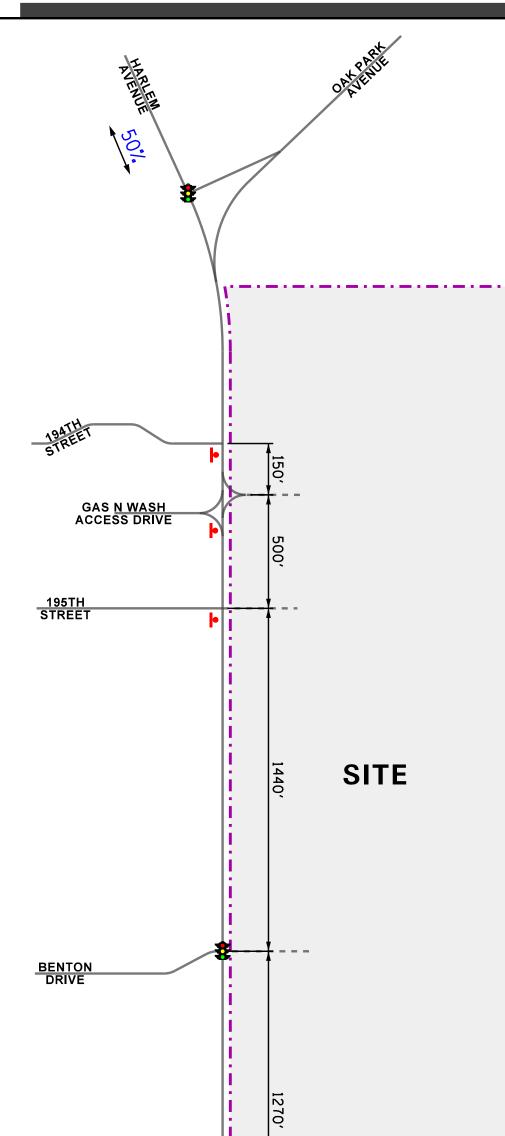
#### Development-Generated Traffic Volumes

The number of peak hour vehicle trips estimated to be generated by the proposed warehouse/distribution development was based on vehicle trip generation rates contained in *Trip Generation Manual*, 10<sup>th</sup> Edition, published by the Institute of Transportation Engineers (ITE). Further, based on other studies of warehouse/distribution centers, it is estimated that approximately 20 percent of the traffic approaching and department the development during the peak hours will be trucks with the remaining 80 percent consisting of passenger vehicles. Copies of the ITE trip generation sheets are included in the Appendix. **Table 8** shows the truck and passenger vehicle trips estimated to be generated for the proposed development during the weekday morning and weekday evening peak hours, as well as the two-way weekday daily traffic volumes.

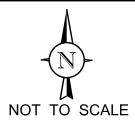
| ITE<br>Land- |                               |     | kday Mo<br>Peak Ho | 0     | Wee<br>I | Daily<br>Two- |       |              |
|--------------|-------------------------------|-----|--------------------|-------|----------|---------------|-------|--------------|
| Use<br>Code  | Type/Size                     | In  | Out                | Total | In       | Out           | Total | Way<br>Trips |
| 150          | Warehouse<br>(1,262,300 s.f.) | 136 | 41                 | 177   | 48       | 131           | 179   | 2,040        |
|              | Passenger Vehicles (80%)      | 109 | 33                 | 142   | 38       | 105           | 143   | 1,632        |
|              | Trucks (20%)                  | 27  | 8                  | 35    | 10       | 26            | 36    | 408          |

### Table 8 ESTIMATED DEVELOPMENT TRIP GENERATION

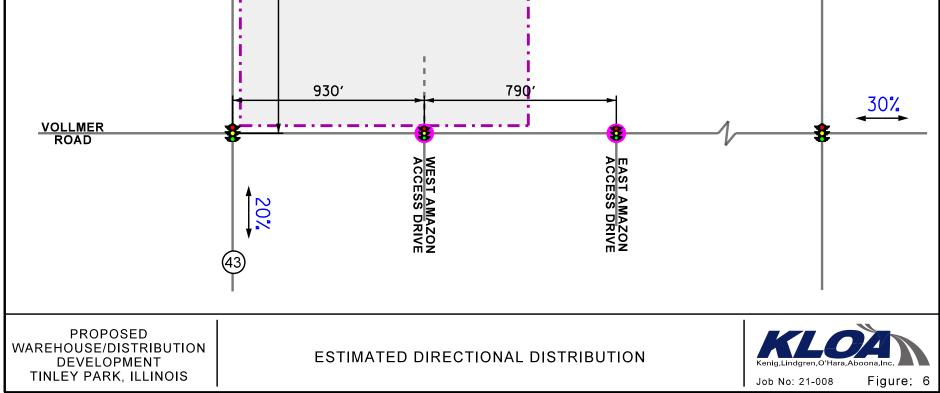




LEGEND 00% - PERCENT DISTRIBUTION 00′ - DISTANCE IN FEET



RIDGELAND AVENUE



### 4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes, increase in background traffic due to ambient growth, and the traffic estimated to be generated by the proposed subject development.

#### Development Traffic Assignment

The estimated weekday morning and evening traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 6). The new passenger traffic assignment for the proposed warehouse/distribution development is illustrated in **Figure 7** and the new truck traffic assignment is illustrated in **Figure 8**.

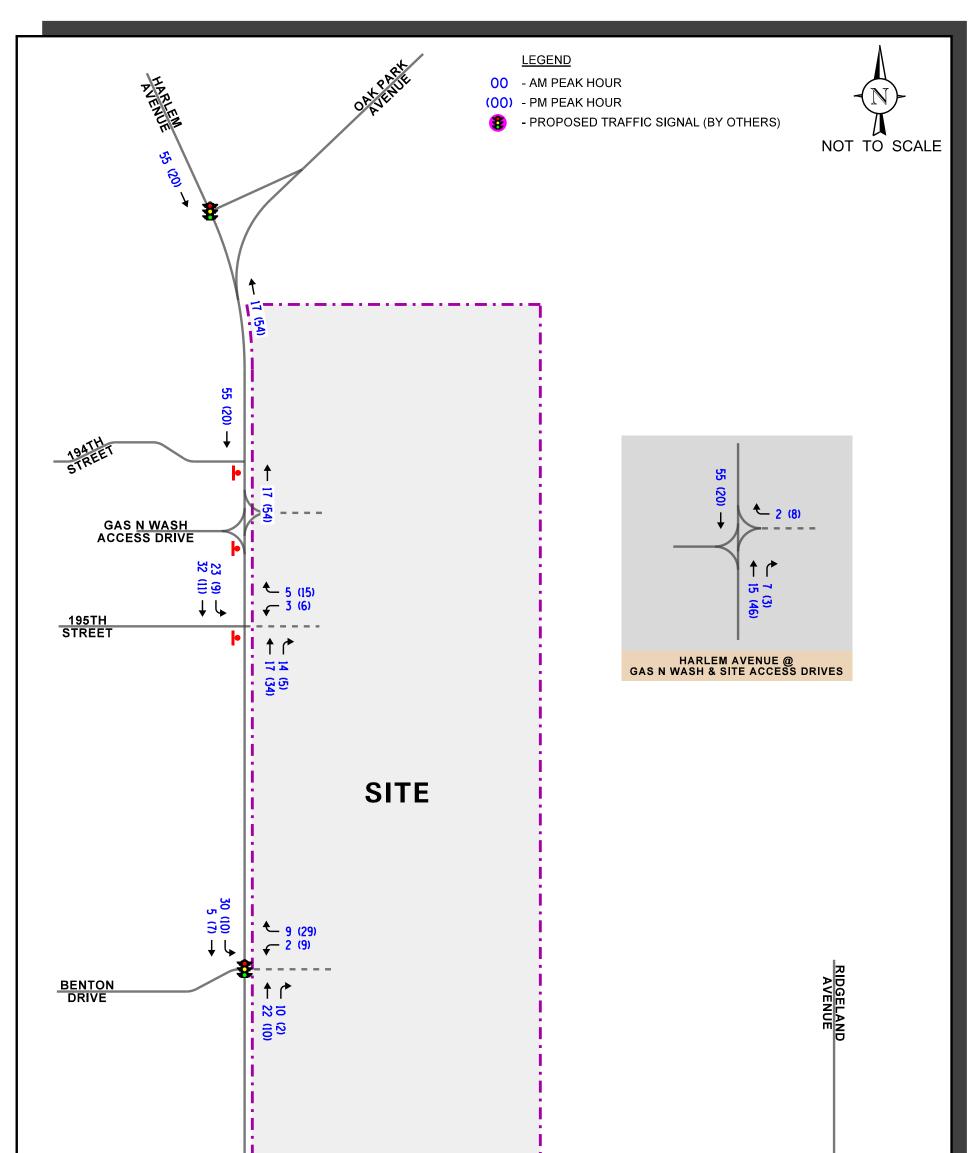
#### Background (No-Build) Traffic Conditions

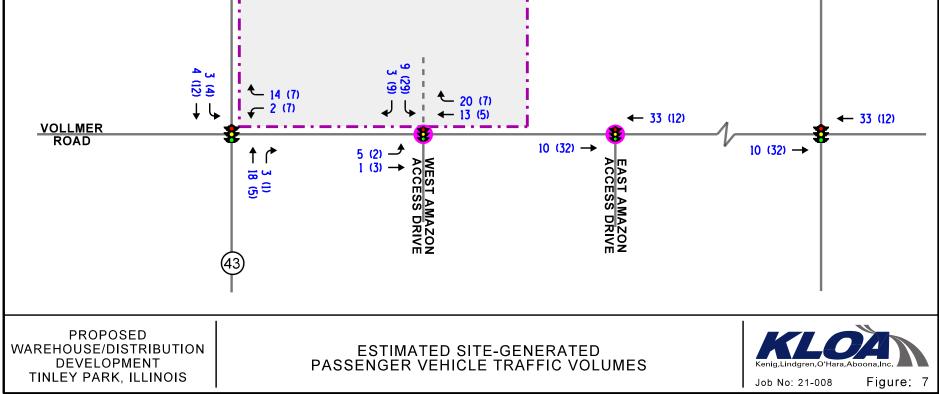
The Year 2020 base traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on AADT projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes were increased by an annually compounded growth rate of 1.4 percent per year for six years (buildout year plus five years) for a total of nine percent. In addition, the background traffic volumes include the traffic expected to be generated by the proposed Amazon distribution facility. The projected Year 2027 no-build traffic volumes are illustrated in **Figure 9**.

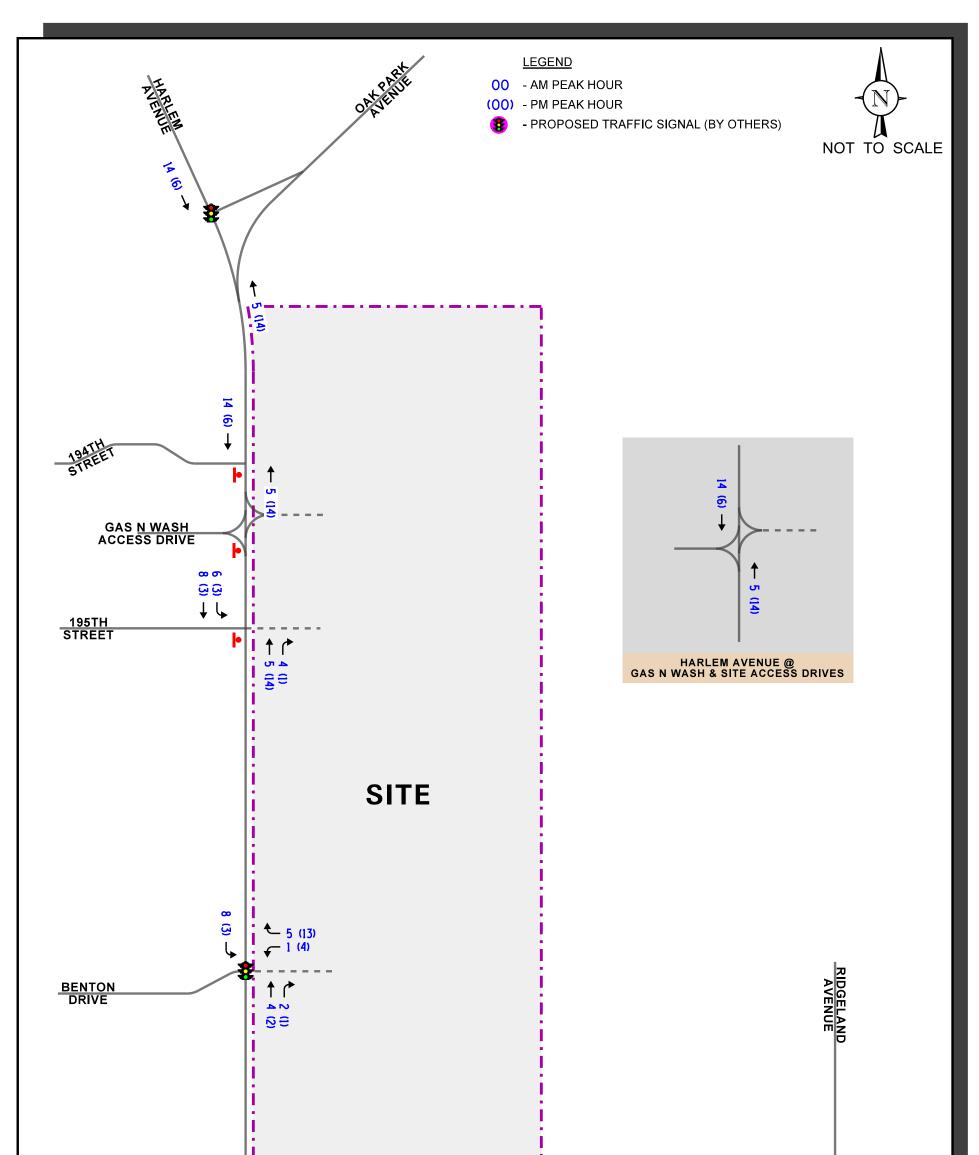
#### Total Projected Traffic Volumes

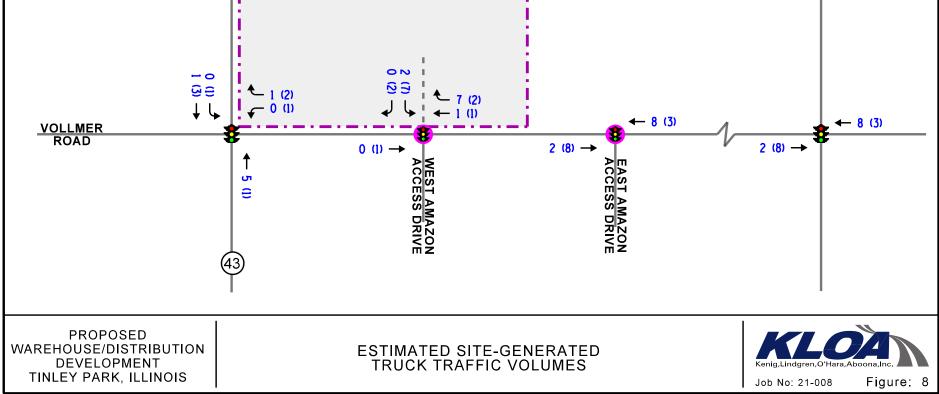
The development-generated traffic (Figures 7 and 8) was added to the Year 2027 no-build traffic volumes to determine the projected Year 2027 total projected traffic volumes, as shown in **Figure 10**.

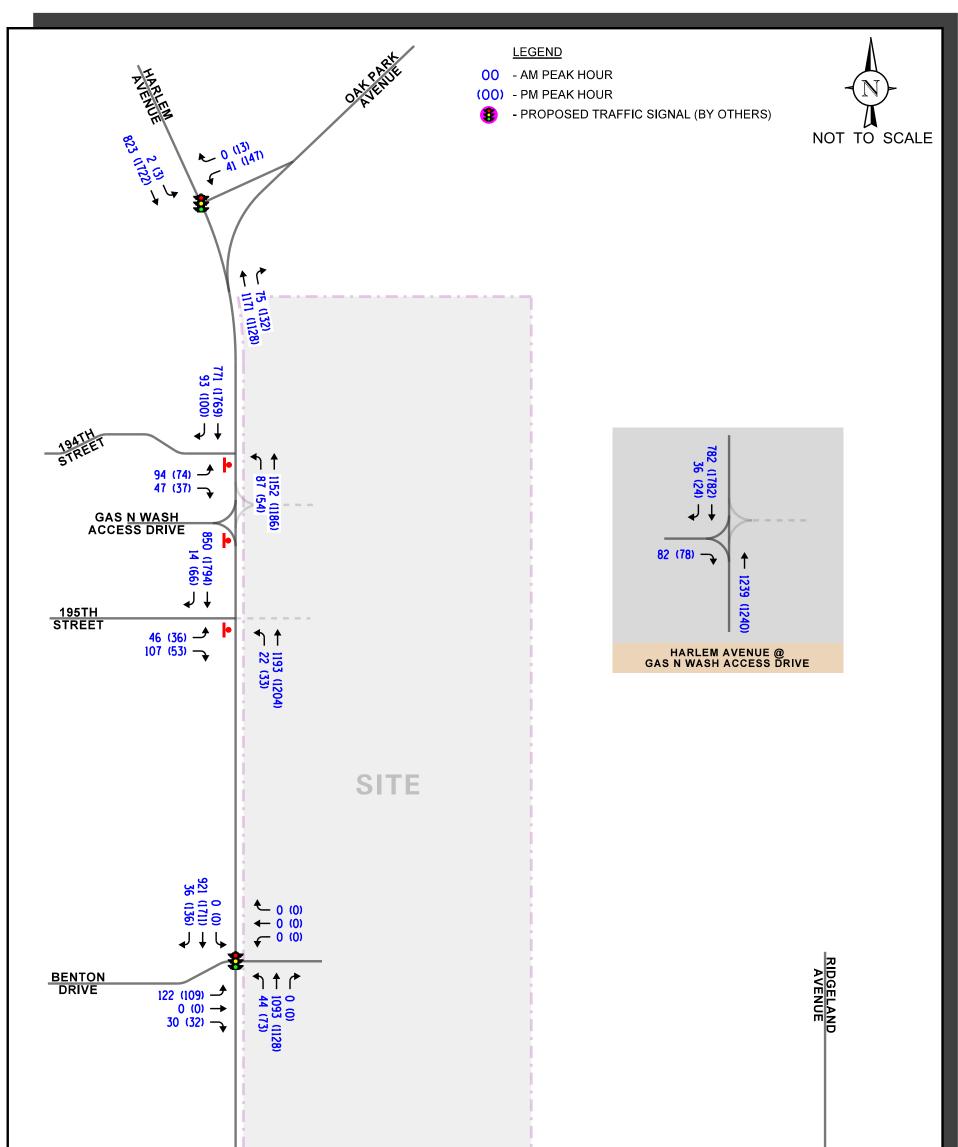


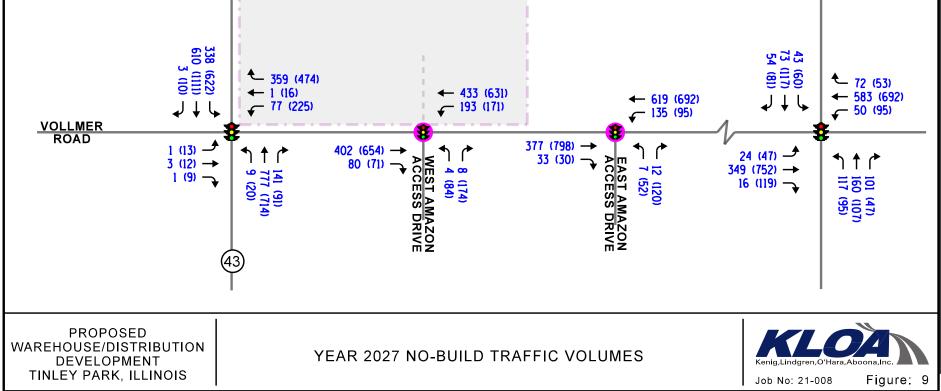


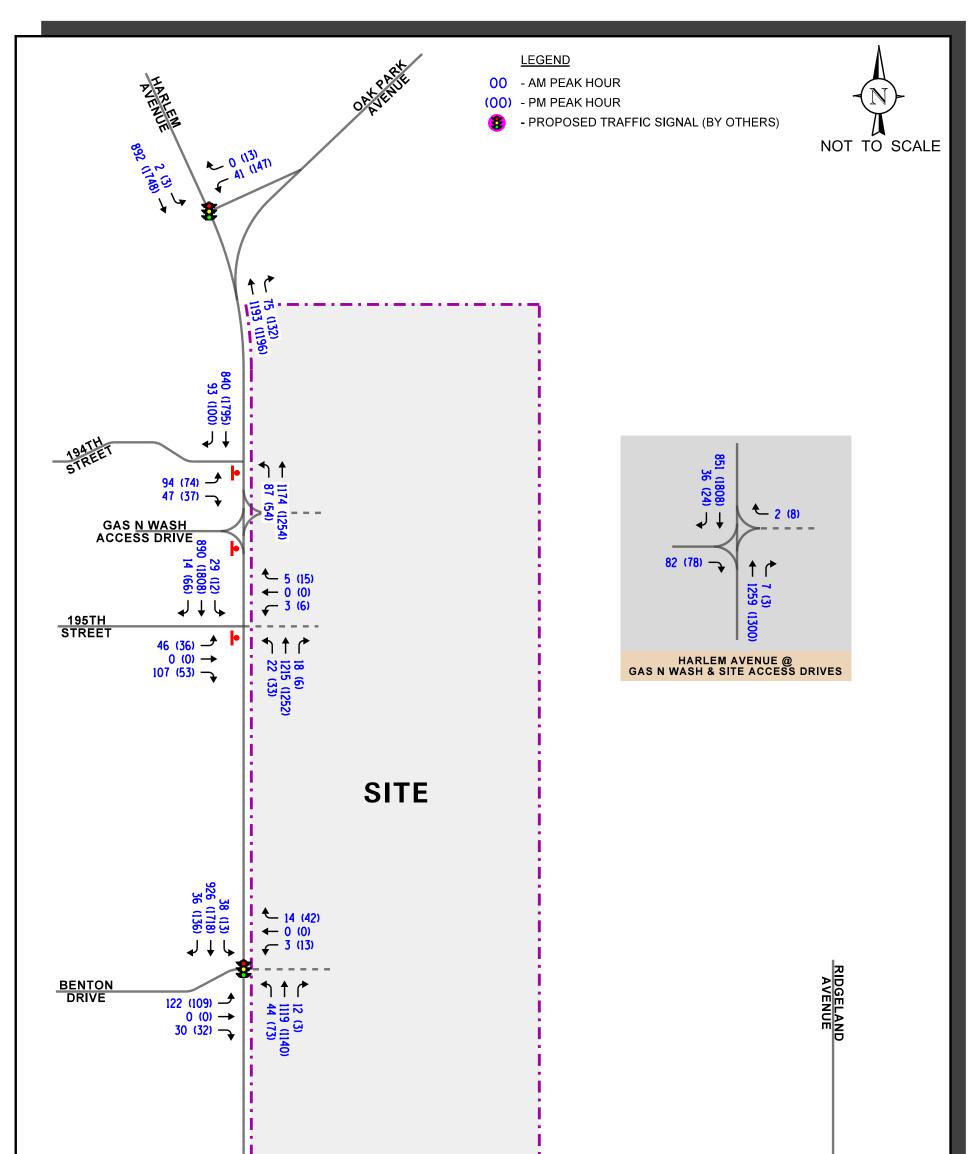


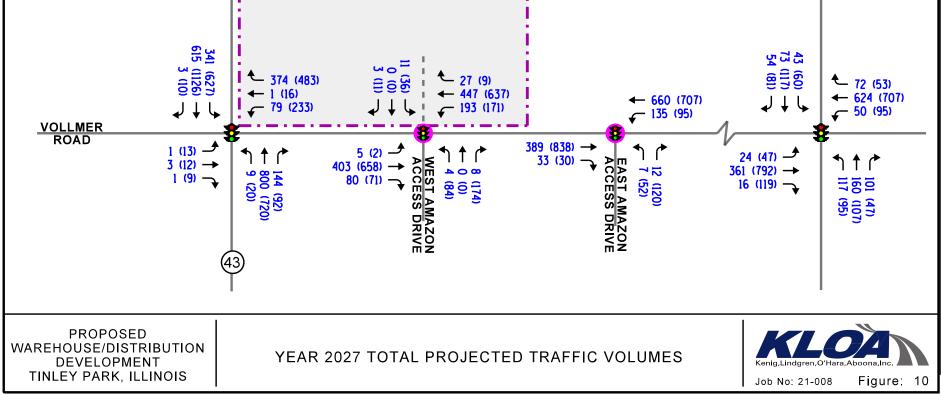












### 5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

#### Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and evening peak hours for the Year 2021 base, Year 2027 no build, and year 2027 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6<sup>th</sup> Edition and analyzed using Synchro/SimTraffic 10 software. The analysis for the traffic-signal controlled intersections were accomplished using field measured cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the projected Year 2021 base, Year 2027 no-build, and Year 2027 total projected conditions are presented in **Tables 9** through **17**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.



|                                                         | Peak              | E           | astboun      | d         | W        | estbour     | nd   | N        | orthbou    | nd    | So       | outhbou  | nd       |         |
|---------------------------------------------------------|-------------------|-------------|--------------|-----------|----------|-------------|------|----------|------------|-------|----------|----------|----------|---------|
|                                                         | Hour              | L           | Т            | R         | L        | Т           | R    | L        | Т          | R     | L        | Т        | R        | Overall |
| 70                                                      | Weekday           | D           | Е            | Е         | E        | E           | Е    | Е        |            | 3     | E        | A<br>3.2 | A<br>3.0 |         |
| l                                                       | Morning           | 55.0        | 63.0         | 56.0      | 69.9     | 61.0        | 63.8 | 65.0     | 14         | 1.9   | 69.1     | C        |          |         |
| Year 2021<br>Base Conditions                            | Peak<br>Hour      |             | E – 60.0     |           |          | E – 64.8    |      |          | B – 15.5   |       |          | C – 21.7 | ,        | 27.7    |
| ear<br>Co                                               | Weekday           | Е           | E            | Е         | F        | E           | D    | Е        | 0          |       | D        | А        | А        |         |
| Y                                                       | Evening           | 55.8        | 69.8         | 70.2      | 99+      | 64.6        | 43.7 | 71.0     | 27         | 7.6   | 52.1     | 2.3      | 1.1      | C       |
| B                                                       | Peak<br>Hour      |             | E – 64.5     |           |          | E – 67.6    |      |          | C – 28.8   |       |          | B – 18.5 |          | 31.2    |
|                                                         | Weekday           | E           | Е            | Е         | Е        | F           | Е    | Е        | В          | Α     | E        | Α        | А        |         |
|                                                         | Morning           | 65.0        | 63.0         | 56.0      | 77.5     | 83.0        | 65.4 | 65.0     | 16.2       | 8.5   | 63.8     | 3.1      | 3.0      | C       |
| Year 2027<br>No Build<br>Conditions <sup>1</sup>        | Peak<br>Hour      |             | E – 62.0     | 1         |          | E – 67.6    | i    |          | B – 15.5   |       |          | C – 24.7 | ,        | 29.2    |
| ear<br>[0 B<br>ndi                                      | Weekday           | Е           | E            | Е         | F        | E           | D    | Е        | C          | В     | D        | Α        | Α        |         |
| C N X                                                   | Evening           | 73.6        | 69.9         | 59.2      | 77.4     | 67.1        | 50.3 | 71.0     | 30.6       | 13.0  | 68.2     | 6.3      | 0.5      | D       |
|                                                         | Peak<br>Hour      |             | E – 68.5     |           |          | E – 59.2    |      | C – 29.6 |            |       | C - 28.4 |          |          | 35.7    |
|                                                         | Weekday           | Е           | Е            | Е         | Е        | F           | Е    | Е        | В          | А     | E        | Α        | А        |         |
| ted<br>1                                                | Morning           | 65.0        | 63.0         | 56.0      | 72.2     | 93.0        | 65.6 | 65.0     | 16.9       | 8.8   | 64.0     | 3.0      | 2.7      | С       |
| Year 2027<br>Total Projected<br>Conditions <sup>1</sup> | Peak<br>Hour      |             | E – 62.0     | 1         |          | E – 66.8    | 5    |          | B – 16.1   |       |          | 29.4     |          |         |
| ear<br>I P <sub>1</sub><br>ndi                          | Weekday           | Е           | Е            | Е         | F        | Е           | Е    | Е        | C          | В     | E        | Α        | А        |         |
| Y.<br>ota<br>Co                                         | Evening           | 73.6        | 69.9         | 59.2      | 67.7     | 56.3        | 70.7 | 71.0     | 31.4       | 13.1  | 70.1     | 6.3      | 0.6      | D       |
| Ĥ _                                                     | Peak<br>Hour      |             | E – 68.5     |           |          | E – 69.4    |      |          | C – 30.4   |       |          | C – 28.9 | )        | 38.5    |
|                                                         | otes Level of Ser |             |              |           |          |             |      |          | Left Turn  |       |          |          |          |         |
| 2                                                       | easured in secon  |             | as part of t | ha propag | ad Amera | n facility  |      |          | Through    |       |          |          |          |         |
| 1 - Include                                             | es planned impro  | overnents a | as part of t | ne propos | eu Amazo | in racinity |      | K –      | - Right Tu | TIS . |          |          |          |         |

## Table 9 CAPACITY ANALYSIS RESULTS – HARLEM AVENUE WITH VOLLMER ROAD – SIGNALIZED

Warehouse/Distribution Development Tinley Park, Illinois



## Table 10 CAPACITY ANALYSIS RESULTS – SIGNALIZED – HARLEM AVENUE WITH BENTON DRIVE

|                                            | Peak                                 | E | astboun                 | d | W         | estboun  | d              | No                                    | orthbou  | nd       | Se        | outhbou  | nd        | 0         |
|--------------------------------------------|--------------------------------------|---|-------------------------|---|-----------|----------|----------------|---------------------------------------|----------|----------|-----------|----------|-----------|-----------|
|                                            | Hour                                 | L | Т                       | R | L         | Т        | R              | L                                     | Т        | R        | L         | Т        | R         | Overall   |
| )21<br>litions                             | Weekday<br>Morning<br>Peak           |   | E<br>69.9               |   |           |          | A A<br>2.5 3.2 |                                       |          | A<br>8.5 |           |          | B<br>10.5 |           |
| Year 2021<br>Base Conditions               | Hour                                 |   |                         |   |           |          |                | A – 3.2<br>C A<br>21.1 3.1<br>A – 4.5 |          |          | В<br>17.9 |          |           | B<br>16.0 |
| Year 2027<br>No Build<br>Conditions        | Weekday<br>Morning<br>Peak<br>Hour   |   | E<br>69.9               |   |           |          |                | A<br>2.8                              | A - 3.8  |          |           | A<br>9.7 |           | B<br>10.8 |
| Year<br>No F<br>Cond                       | Weekday<br>Evening<br>Peak<br>Hour   |   | Е<br>75.6               |   |           |          |                | D<br>42.4                             | A - 5.9  | A<br>.6  | C<br>25.6 |          |           | С<br>20.4 |
| 7<br>sted<br>IS                            | Weekday<br>Morning<br>Peak           |   | Е<br>70.9               |   | D<br>46.0 | Г<br>48  |                | A<br>3.5                              | A<br>8.2 | A<br>5.7 | A<br>6.4  | H<br>11  | 3<br>8    | B<br>13.9 |
| 2027<br>rojec<br>ition                     | Hour                                 |   | 70.9                    |   | I         | D – 47.9 |                |                                       | A – 8.0  |          |           | B - 11.6 |           | 13.9      |
| Year 2027<br>Total Projected<br>Conditions | Weekday<br>Evening<br>Peak           |   | Е<br>                   |   | D<br>52.9 | E<br>57  |                | D<br>42.3                             | A<br>5.4 | A<br>6.7 | A<br>7.2  |          | C<br>).5  | C<br>24.4 |
|                                            | Peak<br>Hour                         |   | 77.7                    |   | I         | A – 7.6  |                |                                       | C - 30.4 |          |           | 24.4     |           |           |
|                                            | otes Level of Se<br>easured in secon |   | L – Left-'<br>T – Throu |   | R – Right | -Turns   |                |                                       |          |          |           |          |           |           |



## Table 11 CAPACITY ANALYSIS RESULTS – SIGNALIZED - HARLEM AVENUE WITH OAK PARK AVENUE

|                                            | Peak                                 |           | oound             | Northbound      | South     |          | 0 "     |
|--------------------------------------------|--------------------------------------|-----------|-------------------|-----------------|-----------|----------|---------|
|                                            | Hour                                 | L         | R                 | Т               | L         | Т        | Overall |
| l<br>ions                                  | Weekday<br>Morning                   | E<br>68.5 |                   | A               | Е<br>64.5 | A<br>2.2 | A       |
| 202]<br>nditj                              | Peak<br>Hour                         | E –       | 68.5              | 3.9             | A –       | 2.4      | 4.6     |
| Year 2021<br>Base Conditions               | Weekday<br>Evening                   | Е<br>77.4 | D<br>45.9         | A               | E<br>69.7 | A<br>6.3 | А       |
| B                                          | Peak<br>Hour                         | E – 74.7  |                   | 5.6             | A –       | 6.4      | 9.6     |
| 7<br>  <br>                                | Weekday<br>Morning                   | E<br>68.7 |                   | A               | Е<br>64.5 | A<br>2.6 | A       |
| 202'<br>Suild<br>ition                     | Peak<br>Hour                         | E –       | 68.7              | 4.0             | A –       | 2.7      | 4.6     |
| Year 2027<br>No-Build<br>Conditions        | Weekday<br>Evening                   | E<br>78.3 | D<br>45.4         | А               | E<br>69.7 | A<br>7.8 | В       |
|                                            | Peak<br>Hour                         | E –       | 75.8              | 5.6             | A –       | 7.9      | 10.2    |
| r<br>ted<br>s                              | Weekday<br>Morning                   | E<br>68.7 |                   | A               | Е<br>64.5 | A<br>2.7 | A       |
| 2027<br>ojec<br>ition                      | Peak<br>Hour                         | E –       | 68.7              | 2.1             | A –       | 2.8      | 3.5     |
| Year 2027<br>Total Projected<br>Conditions | Weekday<br>Evening                   | E<br>78.3 | D<br>45.4         | A               | E<br>69.7 | A<br>7.9 | B       |
| L                                          | Peak<br>Hour                         | E –       | 75.8              | 5.5             | A –       | 8.0      | 10.1    |
|                                            | tes Level of Ser<br>easured in secon |           | ft-Turns<br>rough | R – Right-Turns |           |          |         |



## Table 12 CAPACITY ANALYSIS RESULTS – VOLLMER ROAD WITH RIDGELAND ROAD – SIGNALIZED

|                                            | Peak                                 | Easth      | ound         | Wes                   | tbound    | N          | orthbou          | nd        | So                         | outhbou   | nd        | Overall   |
|--------------------------------------------|--------------------------------------|------------|--------------|-----------------------|-----------|------------|------------------|-----------|----------------------------|-----------|-----------|-----------|
|                                            | Hour                                 | L          | T/R          | $\mathbf{L}$          | T/R       | L          | Т                | R         | L                          | Т         | R         | Overall   |
| S                                          | Weekday                              | A          | B            | A                     | B         | B          | C                | C<br>25.7 | B                          | C         | C         | D         |
| Year 2021<br>Base Conditions               | Morning<br>Peak<br>Hour              | 8.8<br>B – | 16.2<br>15.7 | 8.8 14.4<br>B – 13.7  |           | 15.1       | 25.9<br>B – 23.1 | 25.7      | 15.2 26.3 26.5<br>C - 23.0 |           |           | В<br>17.8 |
| Year 2021<br>ise Conditi                   | Weekday<br>Evening                   | A<br>8.1   | В<br>17.0    | A<br>8.7              | B<br>11.3 | B<br>18.9  | C<br>31.7        | C<br>30.2 | B<br>18.4                  | C<br>29.9 | C<br>28.5 | В         |
| Βŝ                                         | Peak<br>Hour                         | B –        | 16.7         | B -                   | - 10.9    |            | C – 27.4         | Ļ         |                            | C – 26.6  | 5         | 17.4      |
|                                            | Weekday<br>Morning                   | A<br>9.0   | В<br>16.5    | A<br>9.1              | B<br>16.6 | B<br>17.9  | C<br>27.7        | C<br>27.4 | В<br>16.7                  | C<br>30.7 | C<br>31.3 | В         |
| Year 2027<br>No Build<br>Conditions        | Peak<br>Hour                         | B –        |              |                       | - 16.1    | B – 24.6   |                  | C – 27.4  |                            |           | 19.2      |           |
| Year 2027<br>No Build<br>Conditions        | Weekday<br>Evening                   | A<br>8.6   | C<br>20.4    | B<br>10.2             | B<br>15.9 | C<br>23.3  | C<br>37.3        | C<br>34.3 | B<br>21.4                  | C<br>34.4 | C<br>34.2 | С         |
|                                            | Peak<br>Hour                         | B –        | 19.8         | B -                   | - 15.3    |            | C – 31.4         | Ļ         |                            | C – 31.3  | 20.7      |           |
| ed                                         | Weekday<br>Morning                   | A<br>9.0   | В<br>16.5    | A<br>9.1              | В<br>17.0 | B<br>17.9  | C<br>27.8        | С<br>27.5 | В<br>16.7                  | C<br>30.8 | C<br>31.4 | В         |
| 2027<br>ojectu<br>itions                   | Peak<br>Hour                         | B –        | 16.0         | B -                   | - 16.5    |            | B – 24.6         | 5         |                            | 19.3      |           |           |
| Year 2027<br>Total Projected<br>Conditions | Weekday<br>Evening                   | A<br>8.6   | C<br>21.1    | B<br>10.4             | В<br>16.1 | C<br>23.3  | C<br>37.3        | C<br>34.3 | B<br>21.4                  | C<br>34.4 | C<br>34.2 | С         |
| To                                         | Peak<br>Hour                         | B –        | 20.5         | В -                   | - 15.4    | C – 31.4   |                  |           | C – 31.3                   |           |           | 21.0      |
|                                            | otes Level of Se<br>easured in secon |            |              | Left Turns<br>Through | R -       | - Right Tu | irns             |           |                            |           |           |           |



### Table 13 CAPACITY ANALYSIS RESULTS – VOLLMER ROAD WITH THE WEST AMAZON SIGNAL/SITE ACCESS DRIVE – SIGNALIZED

|                                                                                                                                                          | Peak               | E        | astboun   | d         | W         | estbour   | ıd        | No        | orthbou  | nd        | So        | outhbou  | nd       | 0 "     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|----------|----------|---------|
|                                                                                                                                                          | Hour               | L        | Т         | R         | L         | Т         | R         | L         | Т        | R         | L         | Т        | R        | Overall |
| 7<br>5 <sup>1</sup>                                                                                                                                      | Weekday<br>Morning | $\ge$    | A<br>1.2  | A<br>0.4  | A<br>2.0  | A<br>1.7  | $\ge$     | E<br>62.5 |          | D<br>50.2 |           |          |          | A       |
| 2027<br>Suild                                                                                                                                            | Peak<br>Hour       |          | A – 1.1   |           |           | A – 1.8   |           |           | D – 54.3 |           |           |          |          | 2.0     |
| Year 2027<br>No Build<br>Conditions <sup>1</sup>                                                                                                         | Weekday<br>Evening | $\ge$    | A<br>0.7  | A<br>0.2  | A<br>2.3  | A<br>1.7  | $\ge$     | Е<br>70.9 | $\ge$    | E<br>71.0 |           |          |          | В       |
|                                                                                                                                                          | Peak<br>Hour       |          | A – 0.6   |           | A – 1.8   |           |           | E-71.0    |          |           |           |          |          | 11.3    |
| p                                                                                                                                                        | Weekday<br>Morning | A<br>0.8 | A<br>1.4  | A<br>1.6  | A<br>2.2  | A<br>2.4  | A<br>3.5  | E<br>64.8 | E<br>64  |           | Е<br>67.1 |          | E<br>1.7 | А       |
| Year 2027<br>Total Projected<br>Conditions <sup>1</sup>                                                                                                  | Peak<br>Hour       |          | A – 1.4   |           |           | A – 2.4   |           |           | E – 64.6 |           |           | E – 66.0 |          | 3.4     |
| Year<br>Mal Pi<br>Condi                                                                                                                                  | Weekday<br>Evening | A<br>5.0 | B<br>13.8 | В<br>10.1 | В<br>11.7 | B<br>13.0 | В<br>13.1 | Е<br>57.5 | E<br>67  |           | Е<br>80.0 |          | D<br>3.7 | С       |
| Tc                                                                                                                                                       | Peak<br>Hour       |          |           | B – 12.7  |           |           |           |           |          | 7         | 21.7      |          |          |         |
| Letter denotes Level of ServiceL – Left TurnsDelay is measured in seconds.T – Through\1 – With improvements from proposed Amazon facilityR – Right Turns |                    |          |           |           |           |           |           |           |          |           |           |          |          |         |



### Table 14 CAPACITY ANALYSIS RESULTS – VOLLMER ROAD WITH THE EAST AMAZON SIGNAL – SIGNALIZED

|                                            |                                  | Easth    | oound                    | Westl    | oound          | North     | bound     |         |
|--------------------------------------------|----------------------------------|----------|--------------------------|----------|----------------|-----------|-----------|---------|
|                                            | Peak Hour                        | Т        | Т                        | L        | Т              | L         | R         | Overall |
| s                                          | Weekday<br>Morning               | A<br>0.8 | A<br>0.3                 | A<br>1.7 | A<br>1.7       | E<br>65.6 | D<br>51.3 | А       |
| 2027<br>Suild<br>itions                    | Peak Hour                        | A –      | 0.8                      | A –      | 1.7            | E -       | 56.3      | 2.3     |
| Year 2027<br>No Build<br>Conditions        | Weekday<br>Evening               | A<br>1.2 | A<br>0.7                 | A<br>2.7 | A<br>2.6       | E<br>75.9 | E<br>63.1 | А       |
|                                            | Peak Hour                        | A –      | 1.2                      | A –      | 2.7            | E –       | 67.0      | 7.9     |
| 7<br>ted<br>IS                             | Weekday<br>Morning               | A<br>1.2 | A<br>0.4                 | A<br>1.7 | A<br>1.7       | E<br>65.6 | D<br>50.0 | A       |
| 2027<br>roject<br>itions                   | Peak Hour                        | A –      | 1.1                      | A –      | 1.7            | E – .     | 55.5      | 2.3     |
| Year 2027<br>Total Projected<br>Conditions | Weekday<br>Evening               | A<br>0.7 | A<br>0.1                 | A<br>2.8 | A<br>2.7       | E<br>75.9 | E<br>63.1 | А       |
| T                                          | Peak Hour                        | A –      | 0.7                      | A –      | 2.7            | E-        | 67.0      | 7.5     |
| Letter denotes Delay is measu              | Level of Service red in seconds. |          | L – Left T<br>T – Throug |          | R – Right Turi | ns        |           |         |



Table 15

### CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS YEAR 2021 BASE TRAFFIC CONDITIONS

|                                                         |         | y Morning<br>Hour |     | v Evening<br>Hour |
|---------------------------------------------------------|---------|-------------------|-----|-------------------|
| Intersection                                            | LOS     | Delay             | LOS | Delay             |
| Harlem Avenue with 195 <sup>th</sup> Street             | -       |                   | -   | -                 |
| • Eastbound Approach                                    | С       | 17.8              | E   | 43.7              |
| • Northbound Left Turn                                  | А       | 9.0               | В   | 14.9              |
| Harlem Avenue with the Gas N Wash Acces                 | s Drive |                   |     |                   |
| • Eastbound Approach                                    | В       | 10.9              | С   | 18.8              |
| Harlem Avenue with 194 <sup>th</sup> Street             |         |                   |     |                   |
| • Eastbound Left Turn                                   | D       | 30.7              | F   | 99+               |
| • Eastbound Right Turn                                  | В       | 10.9              | С   | 18.0              |
| • Northbound Left Turn                                  | А       | 10.0              | С   | 18.3              |
| LOS = Level of Service<br>Delay is measured in seconds. |         |                   |     |                   |

#### Table 16

### CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS YEAR 2027 NO BUILD TRAFFIC CONDITIONS

|                                                         |         | y Morning<br>Hour |     | v Evening<br>Hour |
|---------------------------------------------------------|---------|-------------------|-----|-------------------|
| Intersection                                            | LOS     | Delay             | LOS | Delay             |
| Harlem Avenue with 195 <sup>th</sup> Street             | -       | -                 | -   | _                 |
| Eastbound Approach                                      | С       | 23.2              | F   | 77.5              |
| Northbound Left Turn                                    | А       | 9.9               | С   | 17.9              |
| Harlem Avenue with the Gas N Wash Access                | s Drive |                   |     |                   |
| Eastbound Approach                                      | В       | 12.1              | С   | 23.2              |
| Harlem Avenue with 194 <sup>th</sup> Street             |         |                   |     |                   |
| • Eastbound Left Turn                                   | E       | 43.7              | F   | 99+               |
| Eastbound Right Turn                                    | В       | 12.0              | С   | 21.6              |
| Northbound Left Turn                                    | В       | 11.3              | С   | 23.4              |
| LOS = Level of Service<br>Delay is measured in seconds. |         |                   |     |                   |



Table 17 CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS YEAR 2027 TOTAL PROJECTED TRAFFIC CONDITIONS

|                                                         |            | / Morning<br>Hour |     | v Evening<br>Hour |
|---------------------------------------------------------|------------|-------------------|-----|-------------------|
| Intersection                                            | LOS        | Delay             | LOS | Delay             |
| Harlem Avenue with 195 <sup>th</sup> Street             | -          | <u> </u>          | -   | -                 |
| Eastbound Approach                                      | D          | 32.2              | F   | 99+               |
| Westbound Left Turn                                     | Е          | 38.1              | F   | 54.6              |
| Westbound Right Turn                                    | В          | 13.7              | В   | 13.9              |
| Northbound Left Turn                                    | В          | 10.1              | С   | 18.1              |
| • Southbound Left Turn                                  | В          | 14.0              | В   | 13.8              |
| Harlem Avenue with the Gas N Wash Acces                 | s Drive    |                   |     |                   |
| Eastbound Approach                                      | В          | 12.6              | С   | 23.7              |
| Harlem Avenue with the Right-in/Right-out               | Access Dri | ive               |     |                   |
| Westbound Approach                                      | В          | 14.0              | В   | 14.1              |
| Harlem Avenue with 194 <sup>th</sup> Street             |            |                   |     |                   |
| • Eastbound Left Turn                                   | Е          | 50.0              | F   | 99+               |
| Eastbound Right Turn                                    | В          | 12.4              | С   | 22.0              |
| Northbound Left Turn                                    | В          | 11.9              | С   | 24.1              |
| LOS = Level of Service<br>Delay is measured in seconds. |            |                   |     |                   |

### **Discussion and Recommendations**

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the warehouse-generated traffic.

#### Harlem Avenue with Vollmer Road

The results of the capacity analysis indicate that overall this intersection currently operates at LOS C during the weekday morning and weekday evening peak hours. It should be noted that the eastbound and westbound movements currently operate at LOS D to F during both peak hours. This is due to the long cycle length at the intersection and the fact that Harlem Avenue is the major roadway at this intersection and is designated as an SRA route and, as a result, receives a majority of the green time. Further, northbound and southbound left-turn movements currently operate at LOS E during both peak hours. This is due in part to the fact that the left-turn movements are only permitted to make a left turn during the protected left-turn green phase, which receives minimal green time.

Under Year 2027 no-build conditions and assuming the proposed improvements at this intersection that are part of the Amazon distribution development, this intersection is projected to operate at LOS C during the weekday morning peak hour and LOS D during the weekday evening peak hours with increases in delay of approximately two and five seconds, respectively. The eastbound and westbound movements as well as the northbound and southbound left-turn movements will continue to operate at LOS D to F during both peak hours. Further, northbound and southbound through movements are projected to operate at LOS C or better

Under Year 2027 total projected conditions, this intersection is projected to continue to operate at LOS C during the weekday morning peak hour and LOS D during the weekday evening peak hour with increases in delay of approximately one and three seconds, respectively. Further, all movements are projected to generally operate at the same level of service during both peak hours as compared to no build conditions, and through movements on Harlem Avenue are projected to continue to operate at LOS C or better. In addition, the development is projected to increase the volume of traffic traversing this intersection by only one to two percent during the peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the development and no additional roadway improvements and/or traffic control modifications are required.

### Harlem Avenue with Benton Drive and the Site Access Drive

The results of the capacity analysis indicate that overall this intersection currently operates at LOS B during the weekday morning and weekday evening peak hours. It should be noted that the eastbound approach currently operates at LOS E during both peak hours. This is due to the long cycle length at the intersection and the fact that Harlem Avenue is the major roadway at this intersection and is designated as an SRA route and, as a result, receives a majority of the green time. All of the other movements operate at LOS C or better during the peak hours.



Under Year 2027 no-build conditions, this intersection is projected to operate at LOS B during the weekday morning peak hour and LOS C during the weekday evening peak hour with increases in delay of approximately one and four seconds, respectively. The eastbound approach will continue to operate at LOS E during both peak hours and all other movements are projected to operate at LOS D or better during both peak hours.

As proposed, a full movement access drive serving the site will be provided opposite Benton Drive and will form the fourth (east) leg of this intersection. This access drive will provide one inbound lane and two outbound lanes striped to provide a left-turn lane and a shared through/right-turn lane. As part of this development, a northbound right-turn lane will be provided on Harlem Avenue and should provide 215 feet of storage and a 220-foot taper. In addition, a southbound left-turn lane will also be provided. Given the existing northbound left-turn lane on Harlem Avenue serving the Saunoris Brothers Garden Center, this turn lane should provide 150 feet of storage and a 100foot shared taper.

Under Year 2027 total projected conditions, this intersection is projected to continue to operate at LOS B during the weekday morning peak hour and LOS C during the weekday evening peak hour with increases in delay of approximately three and four seconds, respectively. Further, through movements on Harlem Avenue are projected to operate at LOS C or better during both peak hours. Similar to the Benton Drive (eastbound) approach, outbound movements from the access drive are projected to operate at LOS D or E during both peak hours. This is also due to the long cycle length and traffic signal timings and is typical for minor road or access road approaches that intersect higher volume roads such as Harlem Avenue. It is important to note that 95<sup>th</sup> percentile queues for the southbound left turn movement into the site are not projected to exceed one to two vehicles and can be accommodated within the proposed turn lane. As such, the proposed access drive will adequately accommodate site generated traffic with a limited impact on the existing traffic signal.

### Harlem Avenue with Oak Park Avenue

The results of the capacity analysis indicate that overall this intersection currently operates at LOS A during the weekday morning and weekday evening peak hours. It should be noted that the westbound approach currently operates at LOS E during both peak hours. This is due to the long cycle length at the intersection and the fact that Harlem Avenue is the major roadway at this intersection and is designated as an SRA route and, as a result, receives a majority of the green time. Further, the southbound left-turn movements currently operate at LOS E during both peak hours. This is due in part to the fact that left-turn movements are only permitted to make a left turn during the protected left-turn green phase, which receives minimal green time.

Under Year 2027 no-build conditions, this intersection is projected to operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hours with increases in delay less than one second over existing conditions. The westbound approach as well as the southbound left-turn movement will continue to operate at LOS E during both peak hours.



Under Year 2027 total projected conditions, this intersection is projected to continue to operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour with increases in delay of less than one second over existing conditions. Further, all movements are projected to generally operate at the same level of service during both peak hours as compared to existing conditions. As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the development and no roadway improvements and/or traffic control modifications are required.

### Vollmer Road with Ridgeland Avenue

The results of the capacity analysis indicate that overall this intersection currently operates at LOS B during the weekday morning and weekday evening peak hours. Further, all of the movements at this intersection operate at LOS C or better during both peak hours. Under Year 2027 no-build conditions, this intersection is projected to operate at LOS B during the weekday morning peak hour and LOS C during weekday evening peak hour with increases in delay less than three seconds. Further, all of the intersection movements are projected to continue to operate at LOS C or better during both peak hours.

Under Year 2027 total projected conditions, this intersection is projected to continue to operate at LOS C during the weekday morning and weekday evening peak hours with increases in delay of less than one second. Further, all of the intersection movements are projected to operate at LOS C or better during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the development-generated traffic and no geometric improvements and/or traffic control modifications are required.

### Vollmer Road with Western Amazon Access Drive and the Site Access Drive

As part of the proposed Amazon distribution facility, a signalized access drive will be provided approximately 930 feet east of Harlem Avenue. This access drive will be designed with two inbound lanes and three outbound lanes with the outbound lanes striped to provide dual left-turn lanes and an exclusive right-turn lane. In addition, an exclusive left-turn lane (400 feet of stacking and a 220-foot taper) and an exclusive right-turn lane (215 feet of stacking and a 220-foot taper) will be provided on Vollmer Road serving this access drive.

Assuming Year 2027 no build conditions, this intersection is projected to operate at LOS A during the weekday morning and LOS B during the weekday morning and weekday evening peak hours. The Vollmer Road movements are projected to operate at LOS A during birth peak hour. Outbound movements from the access drive are projected to operate at LOS D or E during both peak hours. Similar to the other traffic signals in the vicinity of the site, this is due to the long cycle length at the intersection and the fact that Vollmer Road is the major roadway at this intersection and receives the majority of the green time. This is typical for minor road or access road approaches that intersect higher volume roads such as Vollmer Road.



As proposed, a full movement access drive serving the site will be provided opposite the Amazon access drive and will form the fourth (north) leg of this intersection. This access drive will provide one inbound lane and two outbound lanes striped to provide a left-turn lane and a shared through/right-turn lane. As part of this development, an eastbound right-turn lane and a westbound left-turn lane will be provided on Vollmer Road and should each provide 215 feet of storage and a 220-foot taper.

Under Year 2027 total projected conditions, this intersection is projected to operate at LOS A during the weekday morning peak hour and LOS C during the weekday evening peak hour with increases in delay of approximately one and ten seconds, respectively. Further, through movements on Vollmer Road are projected to operate at LOS B or better during both peak hours. Similar to the Amazon access drive (northbound) approach, outbound movements from the site access drive are projected to operate at LOS D or E during both peak hours. This is also due to the long cycle length and traffic signal timings and is typical for minor road or access road approaches that intersect higher volume roads such as Vollmer Road. It is important to note that 95<sup>th</sup> percentile queues for the eastbound left turn movement into the site are not projected to exceed one to two vehicles and can be accommodated within the proposed turn lane. As such, the proposed access drive will adequately accommodate site generated traffic with a limited impact on the proposed traffic signal.

### Vollmer Road with Eastern Amazon Access Drive

As part of the proposed Amazon distribution facility, a signalized access drive will be provided approximately 1,720 feet east of Harlem Avenue and 790 feet east of the western access drive. This access drive will be designed with two inbound lanes and two outbound lanes with the outbound lanes striped to provide an exclusive left-turn lane and an exclusive right-turn lane. The intersection is proposed to be under traffic signal control. In addition, an exclusive left-turn lane (215 feet of stacking and a 220-foot taper) and an exclusive right-turn lane (215 feet of stacking and a 220-foot taper) will be provided on Vollmer Road serving this access drive.

Assuming the Year 2027 total projected conditions, this intersection is projected to operate at LOS A or better during the weekday morning and weekday evening peak hours. All of the Vollmer Road movements are projected to operate at LOS A during both peak hours. However, the outbound movements from the access drive are projected to operate at LOS D or E. This is due to the long cycle length at the intersection and the fact that Vollmer Road is the major roadway at this intersection and receives the majority of the green time. This is typical for minor road or access road approaches that intersect higher volume roads such as Vollmer Road.

Under Year 2027 total projected conditions, this intersection is projected to continue to operate at LOS A during both peak hours with increases in delay of less than one second. Further, through movements on Vollmer Road are projected to operate at LOS A or better during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the development-generated traffic and no additional geometric improvements and/or traffic control modifications are required.



### Harlem Avenue with 195<sup>th</sup> Street and the Proposed Access Drive

The results of the capacity analyses indicate that under existing conditions the eastbound approach operates at LOS C during the weekday morning peak hour and LOS E during the weekday evening peak hour. However, this delay is typical and expected at the unsignalized intersection of a local roadway with a major arterial such as Harlem Avenue. Further, this analysis does not take into consideration the signalized intersections to the north and south on Harlem Avenue which will create gaps in the traffic stream, allowing vehicles to exit. The northbound left-turn movement operates at LOS B or better during both peak hours.

Under Year 2027 no build conditions, the eastbound approach is projected to operate at LOS C during the weekday morning peak hour and LOS F during the weekday evening peak hour. Further, the northbound left-turn movement is projected to continue to operate at LOS C or better during both peak hours.

As proposed, a full movement access drive serving the site will be provided on Harlem Avenue aligned opposite 195<sup>th</sup> Street. This access drive will provide one inbound lane and two outbound lanes striped to provide a left-turn lane and a shared through/right-turn lane. Outbound movements will be under stop sign control. As part of this development, a northbound right-turn lane will be provided on Harlem Avenue and should provide 215 feet of storage a 220-foot taper. In addition, as southbound left-turn lane will be provided. Given the existing northbound left-turn lane on Harlem Avenue serving 194<sup>th</sup> Street, this turn lane should provide 200 feet of storage and a 130-foot shared taper.

Under year 2027 total projected conditions, eastbound approach will operate at LOS D during the weekday morning peak hour and LOS F during the weekday evening peak hour and the westbound left turn movement will operate at LOS E during weekday morning peak hour and LOS F during the weekday evening peak hour. While eastbound and westbound vehicles at this intersection may experience some delay, a volume to capacity (v/c) ratio of less than one indicates that these vehicles will be able to turn onto Harlem Avenue more efficiently. Furthermore, the northbound and southbound left turn movements are projected to operate at LOS C or better during both peak hours with 95<sup>th</sup> percentile queues of one to two vehicles, which can be accommodated within the existing and proposed turn lanes. As such, this intersection can adequately accommodate site generated traffic and no additional geometric or traffic control improvements will be required as part of the development.

#### Harlem Avenue with Gas N Wash Access Drive

The results of the capacity analyses indicate that under existing conditions outbound movements operate at LOS C or better during both peak hours. Under Year 2027 no build and Year 2027 total projected conditions, outbound movements are projected to operate at the same LOS during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the development-generated traffic and no geometric improvements and/or traffic control modifications are required.



### Harlem Avenue with the Right-in/Right-out Access Drive

As proposed, A right-in/right-out access drive will be provided on Harlem Avenue serving the site located approximately 150 feet south of 194<sup>th</sup> Street and 500 feet north of 195<sup>th</sup> Street. This access drive will provide one inbound lane and one outbound lane restricted to right-turn only movements via signage, channelization, and the barrier median on Harlem Avenue. Outbound movements will be under stop sign control.

Under Year 2027 total projected conditions, outbound movements from this access drive are projected to operate at LOS B during both peak hours. When the total projected traffic volumes are compared to the turn lane warrant guidelines published in Chapter 36 of the IDOT *Bureau of Design and Environment* (BDE) Manual, included in the Appendix, a northbound right-turn lane will not be warranted serving the access drive. As such, the proposed access drive will adequately accommodate site generated traffic.

### Harlem Avenue with 194<sup>th</sup> Street

The results of the capacity analyses indicate that under existing conditions eastbound left-turn movements operate at LOS D during the weekday morning peak and LOS F during the weekday evening peak hour and the eastbound right-turn movement operates at LOS B during the weekday morning peak hour and LOS C during the weekday evening peak hour. However, this delay is typical and expected at the unsignalized intersection of a local roadway with a major arterial such as Harlem Avenue. Further, this analysis does not take into consideration the signalized intersection to the north and south on Harlem Avenue which will create gaps in the traffic stream, allowing vehicles to exit. The northbound left-turn movement operate at LOS C or better during both peak hours.

Under Year 2027 no build conditions, eastbound left-turn movements are projected to operate at LOS E during the weekday morning peak and LOS F during the weekday evening peak hour and the eastbound right-turn movement is projected to operate at LOS B during the weekday morning peak hour and LOS C during the weekday evening peak hour. Further, the northbound left-turn movement is projected to continue to operate at LOS C or better during both peak hours.

Under Year 2027 total projected conditions, all movements are projected to operate at the same LOS as no build conditions during both peak hours. As such, this intersection has sufficient reserve capacity to accommodate the development-generated traffic and no geometric improvements and/or traffic control modifications are required.



### 6. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- The roadway system has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development and no additional roadway improvements or traffic control modifications are required at the intersection of Harlem Avenue with Vollmer Road.
- The proposed access system on Harlem Avenue and Vollmer Road will be adequate in accommodating the development-generated traffic and will ensure that efficient and flexible access is provided.
- The signalized intersections of Harlem Avenue with Benton Drive and Vollmer Road with Amazon's western access drive will have to be modified to accommodate the addition of the proposed access drive (fourth leg) to these intersections.
- The traffic entering the proposed development at the full movement access drives will be accommodated via proposed left and/or right turn lanes.
- A northbound right-turn lane will not be warranted on Harlem Avenue serving the proposed right-in/right-out access drive.



# Appendix

Traffic Count Summary Sheets Preliminary Site Plan ITE Trip Generation Worksheets CMAP 2050 Projections Letter Level of Service Criteria Capacity Analysis Summary Sheets Turn Lane Warrant

### **Traffic Count Summary Sheets**



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Harlem Avenue with Oak Park Avenue Site Code: Start Date: 01/19/2021 Page No: 1

### **Turning Movement Data**

|                      |        | (    | Oak Park Avenue | e    |            |        | -    | Harlem Avenue |      |            |        |      | Harlem Avenue |      |            |            |
|----------------------|--------|------|-----------------|------|------------|--------|------|---------------|------|------------|--------|------|---------------|------|------------|------------|
| Start Time           |        |      | Westbound       |      |            |        |      | Northbound    |      |            |        |      | Southbound    |      |            | l          |
|                      | U-Turn | Left | Right           | Peds | App. Total | U-Turn | Thru | Right         | Peds | App. Total | U-Turn | Left | Thru          | Peds | App. Total | Int. Total |
| 6:00 AM              | 0      | 1    | 0               | 0    | 1          | 0      | 97   | 2             | 0    | 99         | 0      | 0    | 36            | 0    | 36         | 136        |
| 6:15 AM              | 0      | 2    | 0               | 0    | 2          | 0      | 116  | 1             | 0    | 117        | 0      | 1    | 63            | 0    | 64         | 183        |
| 6:30 AM              | 0      | 3    | 0               | 0    | 3          | 0      | 158  | 3             | 0    | 161        | 0      | 0    | 68            | 0    | 68         | 232        |
| 6:45 AM              | 0      | 4    | 0               | 0    | 4          | 0      | 145  | 12            | 0    | 157        | 0      | 0    | 114           | 0    | 114        | 275        |
| Hourly Total         | 0      | 10   | 0               | 0    | 10         | 0      | 516  | 18            | 0    | 534        | 0      | 1    | 281           | 0    | 282        | 826        |
| 7:00 AM              | 0      | 2    | 0               | 0    | 2          | 0      | 176  | 8             | 0    | 184        | 0      | 0    | 89            | 0    | 89         | 275        |
| 7:15 AM              | 0      | 13   | 1               | 0    | 14         | 0      | 190  | 4             | 0    | 194        | 0      | 0    | 147           | 0    | 147        | 355        |
| 7:30 AM              | 0      | 14   | 0               | 0    | 14         | 0      | 170  | 7             | 0    | 177        | 0      | 0    | 161           | 0    | 161        | 352        |
| 7:45 AM              | 0      | 12   | 0               | 0    | 12         | 0      | 197  | 12            | 0    | 209        | 0      | 0    | 165           | 0    | 165        | 386        |
| Hourly Total         | 0      | 41   | 1               | 0    | 42         | 0      | 733  | 31            | 0    | 764        | 0      | 0    | 562           | 0    | 562        | 1368       |
| 8:00 AM              | 0      | 6    | 0               | 0    | 6          | 0      | 181  | 8             | 0    | 189        | 0      | 0    | 141           | 0    | 141        | 336        |
| 8:15 AM              | 0      | 9    | 0               | 0    | 9          | 0      | 224  | 7             | 0    | 231        | 0      | 2    | 134           | 0    | 136        | 376        |
| 8:30 AM              | 0      | 7    | 0               | 0    | 7          | 0      | 283  | 34            | 0    | 317        | 0      | 0    | 147           | 0    | 147        | 471        |
| 8:45 AM              | 0      | 13   | 2               | 0    | 15         | 0      | 248  | 27            | 0    | 275        | 0      | 0    | 150           | 0    | 150        | 440        |
| Hourly Total         | 0      | 35   | 2               | 0    | 37         | 0      | 936  | 76            | 0    | 1012       | 0      | 2    | 572           | 0    | 574        | 1623       |
| *** BREAK ***        | -      | -    | -               | -    | -          | -      | -    | -             | -    | -          | -      | -    | -             | -    | -          | -          |
| 4:00 PM              | 0      | 43   | 1               | 0    | 44         | 0      | 196  | 28            | 0    | 224        | 0      | 0    | 248           | 0    | 248        | 516        |
| 4:15 PM              | 0      | 44   | 4               | 0    | 48         | 0      | 237  | 17            | 0    | 254        | 0      | 1    | 279           | 0    | 280        | 582        |
| 4:30 PM              | 0      | 26   | 1               | 0    | 27         | 0      | 265  | 31            | 0    | 296        | 0      | 0    | 297           | 0    | 297        | 620        |
| 4:45 PM              | 0      | 24   | 3               | 0    | 27         | 0      | 216  | 25            | 0    | 241        | 0      | 0    | 308           | 0    | 308        | 576        |
| Hourly Total         | 0      | 137  | 9               | 0    | 146        | 0      | 914  | 101           | 0    | 1015       | 0      | 1    | 1132          | 0    | 1133       | 2294       |
| 5:00 PM              | 0      | 28   | 3               | 0    | 31         | 0      | 219  | 36            | 0    | 255        | 0      | 2    | 301           | 0    | 303        | 589        |
| 5:15 PM              | 0      | 28   | 3               | 0    | 31         | 0      | 249  | 23            | 0    | 272        | 1      | 4    | 300           | 0    | 305        | 608        |
| 5:30 PM              | 0      | 25   | 2               | 0    | 27         | 0      | 237  | 36            | 0    | 273        | 0      | 1    | 339           | 0    | 340        | 640        |
| 5:45 PM              | 0      | 40   | 2               | 0    | 42         | 0      | 237  | 24            | 0    | 261        | 1      | 2    | 292           | 0    | 295        | 598        |
| Hourly Total         | 0      | 121  | 10              | 0    | 131        | 0      | 942  | 119           | 0    | 1061       | 2      | 9    | 1232          | 0    | 1243       | 2435       |
| Grand Total          | 0      | 344  | 22              | 0    | 366        | 0      | 4041 | 345           | 0    | 4386       | 2      | 13   | 3779          | 0    | 3794       | 8546       |
| Approach %           | 0.0    | 94.0 | 6.0             | -    | -          | 0.0    | 92.1 | 7.9           | -    | -          | 0.1    | 0.3  | 99.6          | -    | -          | -          |
| Total %              | 0.0    | 4.0  | 0.3             | -    | 4.3        | 0.0    | 47.3 | 4.0           | -    | 51.3       | 0.0    | 0.2  | 44.2          | -    | 44.4       | -          |
| Lights               | 0      | 337  | 21              | -    | 358        | 0      | 3878 | 342           | -    | 4220       | 2      | 12   | 3639          | -    | 3653       | 8231       |
| % Lights             | -      | 98.0 | 95.5            | -    | 97.8       | -      | 96.0 | 99.1          | -    | 96.2       | 100.0  | 92.3 | 96.3          | -    | 96.3       | 96.3       |
| Buses                | 0      | 1    | 0               | -    | 1          | 0      | 5    | 1             | -    | 6          | 0      | 0    | 6             | -    | 6          | 13         |
| % Buses              | -      | 0.3  | 0.0             | -    | 0.3        | -      | 0.1  | 0.3           | -    | 0.1        | 0.0    | 0.0  | 0.2           | -    | 0.2        | 0.2        |
| Single-Unit Trucks   | 0      | 5    | 1               | -    | 6          | 0      | 83   | 0             | -    | 83         | 0      | 0    | 71            | -    | 71         | 160        |
| % Single-Unit Trucks | -      | 1.5  | 4.5             | -    | 1.6        | -      | 2.1  | 0.0           | -    | 1.9        | 0.0    | 0.0  | 1.9           | -    | 1.9        | 1.9        |
| Articulated Trucks   | 0      | 1    | 0               | -    | 1          | 0      | 75   | 2             | -    | 77         | 0      | 1    | 63            | -    | 64         | 142        |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Harlem Avenue with Oak Park Avenue Site Code: Start Date: 01/19/2021 Page No: 3

### Turning Movement Peak Hour Data (7:45 AM)

| Start Time           |        |       | Oak Park Avenue<br>Westbound | e    | ·          | -      |       | Harlem Avenue<br>Northbound | ,    | ,          |        |       | Harlem Avenue<br>Southbound |      |            |            |
|----------------------|--------|-------|------------------------------|------|------------|--------|-------|-----------------------------|------|------------|--------|-------|-----------------------------|------|------------|------------|
| Start Time           | U-Turn | Left  | Right                        | Peds | App. Total | U-Turn | Thru  | Right                       | Peds | App. Total | U-Turn | Left  | Thru                        | Peds | App. Total | Int. Total |
| 7:45 AM              | 0      | 12    | 0                            | 0    | 12         | 0      | 197   | 12                          | 0    | 209        | 0      | 0     | 165                         | 0    | 165        | 386        |
| 8:00 AM              | 0      | 6     | 0                            | 0    | 6          | 0      | 181   | 8                           | 0    | 189        | 0      | 0     | 141                         | 0    | 141        | 336        |
| 8:15 AM              | 0      | 9     | 0                            | 0    | 9          | 0      | 224   | 7                           | 0    | 231        | 0      | 2     | 134                         | 0    | 136        | 376        |
| 8:30 AM              | 0      | 7     | 0                            | 0    | 7          | 0      | 283   | 34                          | 0    | 317        | 0      | 0     | 147                         | 0    | 147        | 471        |
| Total                | 0      | 34    | 0                            | 0    | 34         | 0      | 885   | 61                          | 0    | 946        | 0      | 2     | 587                         | 0    | 589        | 1569       |
| Approach %           | 0.0    | 100.0 | 0.0                          | -    | -          | 0.0    | 93.6  | 6.4                         | -    | -          | 0.0    | 0.3   | 99.7                        | -    | -          | -          |
| Total %              | 0.0    | 2.2   | 0.0                          | -    | 2.2        | 0.0    | 56.4  | 3.9                         | -    | 60.3       | 0.0    | 0.1   | 37.4                        | -    | 37.5       | -          |
| PHF                  | 0.000  | 0.708 | 0.000                        | -    | 0.708      | 0.000  | 0.782 | 0.449                       | -    | 0.746      | 0.000  | 0.250 | 0.889                       | -    | 0.892      | 0.833      |
| Lights               | 0      | 33    | 0                            | -    | 33         | 0      | 850   | 60                          | -    | 910        | 0      | 2     | 557                         | -    | 559        | 1502       |
| % Lights             | -      | 97.1  | -                            | -    | 97.1       | -      | 96.0  | 98.4                        | -    | 96.2       | -      | 100.0 | 94.9                        | -    | 94.9       | 95.7       |
| Buses                | 0      | 0     | 0                            | -    | 0          | 0      | 3     | 1                           | -    | 4          | 0      | 0     | 3                           | -    | 3          | 7          |
| % Buses              | -      | 0.0   | -                            | -    | 0.0        | -      | 0.3   | 1.6                         | -    | 0.4        | -      | 0.0   | 0.5                         | -    | 0.5        | 0.4        |
| Single-Unit Trucks   | 0      | 1     | 0                            | -    | 1          | 0      | 23    | 0                           | -    | 23         | 0      | 0     | 17                          | -    | 17         | 41         |
| % Single-Unit Trucks | -      | 2.9   | -                            | -    | 2.9        | -      | 2.6   | 0.0                         | -    | 2.4        | -      | 0.0   | 2.9                         | -    | 2.9        | 2.6        |
| Articulated Trucks   | 0      | 0     | 0                            | -    | 0          | 0      | 9     | 0                           | -    | 9          | 0      | 0     | 10                          | -    | 10         | 19         |
| % Articulated Trucks | -      | 0.0   | -                            | -    | 0.0        | -      | 1.0   | 0.0                         | -    | 1.0        | -      | 0.0   | 1.7                         | -    | 1.7        | 1.2        |
| Bicycles on Road     | 0      | 0     | 0                            | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0          |
| % Bicycles on Road   | -      | 0.0   | -                            | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | 0.0        |
| Pedestrians          | -      | -     | -                            | 0    | -          | -      | -     | -                           | 0    | -          | -      | -     | -                           | 0    | -          | -          |
| % Pedestrians        | -      | -     | -                            | -    | -          | -      | -     | -                           | -    | -          | -      | _     | -                           | -    | -          | -          |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Harlem Avenue with Oak Park Avenue Site Code: Start Date: 01/19/2021 Page No: 4

### Turning Movement Peak Hour Data (4:15 PM)

|                      |        |       | Oak Park Avenue<br>Westbound | e    | ·          |        |       | Harlem Avenue<br>Northbound | •    | ,          |        |       | Harlem Avenue<br>Southbound |      |            |            |
|----------------------|--------|-------|------------------------------|------|------------|--------|-------|-----------------------------|------|------------|--------|-------|-----------------------------|------|------------|------------|
| Start Time           | U-Turn | Left  | Right                        | Peds | App. Total | U-Turn | Thru  | Right                       | Peds | App. Total | U-Turn | Left  | Thru                        | Peds | App. Total | Int. Total |
| 4:15 PM              | 0      | 44    | 4                            | 0    | 48         | 0      | 237   | 17                          | 0    | 254        | 0      | 1     | 279                         | 0    | 280        | 582        |
| 4:30 PM              | 0      | 26    | 1                            | 0    | 27         | 0      | 265   | 31                          | 0    | 296        | 0      | 0     | 297                         | 0    | 297        | 620        |
| 4:45 PM              | 0      | 24    | 3                            | 0    | 27         | 0      | 216   | 25                          | 0    | 241        | 0      | 0     | 308                         | 0    | 308        | 576        |
| 5:00 PM              | 0      | 28    | 3                            | 0    | 31         | 0      | 219   | 36                          | 0    | 255        | 0      | 2     | 301                         | 0    | 303        | 589        |
| Total                | 0      | 122   | 11                           | 0    | 133        | 0      | 937   | 109                         | 0    | 1046       | 0      | 3     | 1185                        | 0    | 1188       | 2367       |
| Approach %           | 0.0    | 91.7  | 8.3                          | -    | -          | 0.0    | 89.6  | 10.4                        | -    | -          | 0.0    | 0.3   | 99.7                        | -    | -          | -          |
| Total %              | 0.0    | 5.2   | 0.5                          | -    | 5.6        | 0.0    | 39.6  | 4.6                         | -    | 44.2       | 0.0    | 0.1   | 50.1                        | -    | 50.2       | -          |
| PHF                  | 0.000  | 0.693 | 0.688                        | -    | 0.693      | 0.000  | 0.884 | 0.757                       | -    | 0.883      | 0.000  | 0.375 | 0.962                       | -    | 0.964      | 0.954      |
| Lights               | 0      | 122   | 11                           | -    | 133        | 0      | 899   | 108                         | -    | 1007       | 0      | 3     | 1147                        | -    | 1150       | 2290       |
| % Lights             | -      | 100.0 | 100.0                        | -    | 100.0      | -      | 95.9  | 99.1                        | -    | 96.3       | -      | 100.0 | 96.8                        | -    | 96.8       | 96.7       |
| Buses                | 0      | 0     | 0                            | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0          |
| % Buses              | -      | 0.0   | 0.0                          | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | 0.0        |
| Single-Unit Trucks   | 0      | 0     | 0                            | -    | 0          | 0      | 22    | 0                           | -    | 22         | 0      | 0     | 24                          | -    | 24         | 46         |
| % Single-Unit Trucks | -      | 0.0   | 0.0                          | -    | 0.0        | -      | 2.3   | 0.0                         | -    | 2.1        | -      | 0.0   | 2.0                         | -    | 2.0        | 1.9        |
| Articulated Trucks   | 0      | 0     | 0                            | -    | 0          | 0      | 16    | 1                           | -    | 17         | 0      | 0     | 14                          | -    | 14         | 31         |
| % Articulated Trucks | -      | 0.0   | 0.0                          | -    | 0.0        | -      | 1.7   | 0.9                         | -    | 1.6        | -      | 0.0   | 1.2                         | -    | 1.2        | 1.3        |
| Bicycles on Road     | 0      | 0     | 0                            | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0          |
| % Bicycles on Road   | -      | 0.0   | 0.0                          | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | 0.0        |
| Pedestrians          | -      | -     | -                            | 0    | -          | -      | -     | -                           | 0    | -          | -      | -     | -                           | 0    | -          | -          |
| % Pedestrians        | -      | -     | -                            | -    | -          | -      | -     | -                           | -    | -          | -      | -     | -                           | -    | -          | -          |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Harlem Avenue with Vollmer Road Site Code: Start Date: 12/17/2019 Page No: 1

### **Turning Movement Data**

|                  |        |      |      |         |      |               |        |      |      |         |      |               |        | - 410 |       |        |      |               |        |      |       |        |      |               |            |
|------------------|--------|------|------|---------|------|---------------|--------|------|------|---------|------|---------------|--------|-------|-------|--------|------|---------------|--------|------|-------|--------|------|---------------|------------|
|                  |        |      |      | er Road |      |               |        |      |      | er Road |      |               |        |       |       | Avenue |      |               |        |      |       | Avenue |      |               |            |
| 0 <del>.</del> . |        |      | East | bound   |      |               |        |      | West | bound   |      |               |        |       | North | bound  |      |               |        |      | South | bound  |      |               |            |
| Start Time       | U-Turn | Left | Thru | Right   | Peds | App.<br>Total | U-Turn | Left | Thru | Right   | Peds | App.<br>Total | U-Turn | Left  | Thru  | Right  | Peds | App.<br>Total | U-Turn | Left | Thru  | Right  | Peds | App.<br>Total | Int. Total |
| 6:00 AM          | 0      | 0    | 0    | 1       | 0    | 1             | 0      | 15   | 1    | 43      | 0    | 59            | 1      | 1     | 96    | 8      | 0    | 106           | 0      | 17   | 57    | 0      | 0    | 74            | 240        |
| 6:15 AM          | 0      | 0    | 0    | 0       | 0    | 0             | 0      | 16   | 1    | 66      | 0    | 83            | 0      | 0     | 103   | 16     | 0    | 119           | 0      | 29   | 84    | 0      | 0    | 113           | 315        |
| 6:30 AM          | 0      | 0    | 0    | 0       | 0    | 0             | 0      | 17   | 0    | 72      | 0    | 89            | 0      | 2     | 137   | 24     | 0    | 163           | 0      | 47   | 126   | 0      | 0    | 173           | 425        |
| 6:45 AM          | 0      | 0    | 0    | 0       | 0    | 0             | 0      | 21   | 0    | 81      | 0    | 102           | 1      | 0     | 185   | 24     | 0    | 210           | 0      | 48   | 135   | 0      | 0    | 183           | 495        |
| Hourly Total     | 0      | 0    | 0    | 1       | 0    | 1             | 0      | 69   | 2    | 262     | 0    | 333           | 2      | 3     | 521   | 72     | 0    | 598           | 0      | 141  | 402   | 0      | 0    | 543           | 1475       |
| 7:00 AM          | 0      | 1    | 1    | 0       | 0    | 2             | 0      | 14   | 1    | 72      | 0    | 87            | 1      | 3     | 170   | 33     | 0    | 207           | 0      | 44   | 119   | 1      | 0    | 164           | 460        |
| 7:15 AM          | 0      | 0    | 2    | 1       | 0    | 3             | 0      | 13   | 0    | 89      | 0    | 102           | 0      | 2     | 197   | 33     | 0    | 232           | 0      | 47   | 131   | 2      | 0    | 180           | 517        |
| 7:30 AM          | 0      | 2    | 0    | 1       | 0    | 3             | 0      | 19   | 1    | 95      | 0    | 115           | 1      | 1     | 227   | 24     | 0    | 253           | 0      | 39   | 188   | 2      | 0    | 229           | 600        |
| 7:45 AM          | 0      | 1    | 1    | 0       | 0    | 2             | 0      | 37   | 0    | 108     | 0    | 145           | 0      | 3     | 207   | 17     | 0    | 227           | 0      | 49   | 151   | 0      | 0    | 200           | 574        |
| Hourly Total     | 0      | 4    | 4    | 2       | 0    | 10            | 0      | 83   | 2    | 364     | 0    | 449           | 2      | 9     | 801   | 107    | 0    | 919           | 0      | 179  | 589   | 5      | 0    | 773           | 2151       |
| 8:00 AM          | 0      | 0    | 0    | 0       | 0    | 0             | 0      | 17   | 1    | 111     | 0    | 129           | 0      | 4     | 144   | 30     | 0    | 178           | 0      | 45   | 151   | 1      | 0    | 197           | 504        |
| 8:15 AM          | 0      | 1    | 1    | 0       | 1    | 2             | 0      | 30   | 1    | 104     | 0    | 135           | 2      | 1     | 118   | 12     | 0    | 133           | 0      | 48   | 121   | 0      | 0    | 169           | 439        |
| 8:30 AM          | 0      | 1    | 0    | 0       | 0    | 1             | 0      | 17   | 1    | 115     | 0    | 133           | 0      | 1     | 160   | 17     | 0    | 178           | 0      | 39   | 149   | 0      | 0    | 188           | 500        |
| 8:45 AM          | 0      | 4    | 0    | 0       | 0    | 4             | 0      | 27   | 0    | 96      | 0    | 123           | 0      | 1     | 160   | 20     | 0    | 181           | 0      | 31   | 162   | 3      | 0    | 196           | 504        |
| Hourly Total     | 0      | 6    | 1    | 0       | 1    | 7             | 0      | 91   | 3    | 426     | 0    | 520           | 2      | 7     | 582   | 79     | 0    | 670           | 0      | 163  | 583   | 4      | 0    | 750           | 1947       |
| *** BREAK ***    | -      | -    | -    | -       | -    | -             | -      | -    | -    | -       | -    | -             | -      | -     | -     | -      | -    | -             | -      | -    | -     | -      | -    | -             | -          |
| 4:00 PM          | 0      | 3    | 2    | 4       | 0    | 9             | 0      | 63   | 0    | 100     | 0    | 163           | 0      | 2     | 188   | 27     | 0    | 217           | 0      | 125  | 244   | 4      | 0    | 373           | 762        |
| 4:15 PM          | 0      | 0    | 5    | 2       | 0    | 7             | 0      | 62   | 4    | 115     | 0    | 181           | 0      | 1     | 206   | 21     | 0    | 228           | 0      | 119  | 275   | 0      | 0    | 394           | 810        |
| 4:30 PM          | 0      | 0    | 2    | 1       | 0    | 3             | 0      | 49   | 4    | 126     | 0    | 179           | 0      | 2     | 210   | 46     | 0    | 258           | 1      | 126  | 310   | 0      | 0    | 437           | 877        |
| 4:45 PM          | 0      | 0    | 2    | 1       | 0    | 3             | 0      | 58   | 1    | 139     | 0    | 198           | 0      | 2     | 182   | 25     | 0    | 209           | 0      | 129  | 279   | 2      | 0    | 410           | 820        |
| Hourly Total     | 0      | 3    | 11   | 8       | 0    | 22            | 0      | 232  | 9    | 480     | 0    | 721           | 0      | 7     | 786   | 119    | 0    | 912           | 1      | 499  | 1108  | 6      | 0    | 1614          | 3269       |
| 5:00 PM          | 0      | 4    | 5    | 1       | 0    | 10            | 0      | 43   | 2    | 85      | 0    | 130           | 0      | 3     | 170   | 20     | 0    | 193           | 0      | 111  | 308   | 3      | 0    | 422           | 755        |
| 5:15 PM          | 0      | 1    | 4    | 4       | 0    | 9             | 0      | 33   | 1    | 107     | 0    | 141           | 0      | 6     | 174   | 22     | 0    | 202           | 0      | 158  | 285   | 10     | 0    | 453           | 805        |
| 5:30 PM          | 0      | 8    | 3    | 4       | 0    | 15            | 0      | 42   | 2    | 108     | 0    | 152           | 1      | 6     | 171   | 29     | 0    | 207           | 0      | 128  | 286   | 3      | 0    | 417           | 791        |
| 5:45 PM          | 0      | 2    | 4    | 1       | 0    | 7             | 0      | 31   | 5    | 102     | 0    | 138           | 1      | 3     | 132   | 17     | 0    | 153           | 0      | 116  | 235   | 4      | 0    | 355           | 653        |
| Hourly Total     | 0      | 15   | 16   | 10      | 0    | 41            | 0      | 149  | 10   | 402     | 0    | 561           | 2      | 18    | 647   | 88     | 0    | 755           | 0      | 513  | 1114  | 20     | 0    | 1647          | 3004       |
| 6:00 PM          | 0      | 1    | 2    | 1       | 0    | 4             | 0      | 28   | 2    | 67      | 0    | 97            | 0      | 4     | 138   | 14     | 0    | 156           | 0      | 124  | 226   | 3      | 0    | 353           | 610        |
| 6:15 PM          | 0      | 2    | 3    | 3       | 0    | 8             | 0      | 39   | 7    | 50      | 0    | 96            | 1      | 3     | 147   | 20     | 0    | 171           | 0      | 98   | 213   | 0      | 0    | 311           | 586        |
| 6:30 PM          | 0      | 3    | 3    | 0       | 0    | 6             | 0      | 31   | 1    | 67      | 0    | 99            | 0      | 2     | 127   | 27     | 0    | 156           | 0      | 62   | 211   | 11     | 0    | 284           | 545        |
| 6:45 PM          | 0      | 6    | 1    | 1       | 0    | 8             | 0      | 23   | 0    | 59      | 0    | 82            | 6      | 2     | 109   | 23     | 0    | 140           | 0      | 76   | 178   | 4      | 0    | 258           | 488        |
| Hourly Total     | 0      | 12   | 9    | 5       | 0    | 26            | 0      | 121  | 10   | 243     | 0    | 374           | 7      | 11    | 521   | 84     | 0    | 623           | 0      | 360  | 828   | 18     | 0    | 1206          | 2229       |
| Grand Total      | 0      | 40   | 41   | 26      | 1    | 107           | 0      | 745  | 36   | 2177    | 0    | 2958          | 15     | 55    | 3858  | 549    | 0    | 4477          | 1      | 1855 | 4624  | 53     | 0    | 6533          | 14075      |
| Approach %       | 0.0    | 37.4 | 38.3 | 24.3    | -    | _             | 0.0    | 25.2 | 1.2  | 73.6    | -    |               | 0.3    | 1.2   | 86.2  | 12.3   | -    | -             | 0.0    | 28.4 | 70.8  | 0.8    | _    | -             | -          |
| Total %          | 0.0    | 0.3  | 0.3  | 0.2     | -    | 0.8           | 0.0    | 5.3  | 0.3  | 15.5    | -    | 21.0          | 0.1    | 0.4   | 27.4  | 3.9    | -    | 31.8          | 0.0    | 13.2 | 32.9  | 0.4    | -    | 46.4          | -          |
| Lights           | 0      | 40   | 41   | 26      | -    | 107           | 0      | 737  | 35   | 2148    | -    | 2920          | 15     | 55    | 3737  | 543    | -    | 4350          | 1      | 1832 | 4505  | 53     | -    | 6391          | 13768      |
|                  |        |      |      |         |      |               | · · ·  |      |      |         | -    |               |        |       |       |        |      |               |        |      |       |        | -    |               |            |

|                         |   |       |       |       |       |       |   |      |      |      |   |      |       |       |      |      |   |      | · · · · · · |      |      |       |   |      |      |
|-------------------------|---|-------|-------|-------|-------|-------|---|------|------|------|---|------|-------|-------|------|------|---|------|-------------|------|------|-------|---|------|------|
| % Lights                | - | 100.0 | 100.0 | 100.0 | -     | 100.0 | - | 98.9 | 97.2 | 98.7 | - | 98.7 | 100.0 | 100.0 | 96.9 | 98.9 | - | 97.2 | 100.0       | 98.8 | 97.4 | 100.0 | - | 97.8 | 97.8 |
| Buses                   | 0 | 0     | 0     | 0     | -     | 0     | 0 | 0    | 0    | 5    | - | 5    | 0     | 0     | 9    | 1    | - | 10   | 0           | 1    | 16   | 0     | - | 17   | 32   |
| % Buses                 | - | 0.0   | 0.0   | 0.0   | -     | 0.0   | - | 0.0  | 0.0  | 0.2  | - | 0.2  | 0.0   | 0.0   | 0.2  | 0.2  | - | 0.2  | 0.0         | 0.1  | 0.3  | 0.0   | - | 0.3  | 0.2  |
| Single-Unit Trucks      | 0 | 0     | 0     | 0     | -     | 0     | 0 | 7    | 1    | 19   | - | 27   | 0     | 0     | 62   | 5    | - | 67   | 0           | 19   | 63   | 0     | - | 82   | 176  |
| % Single-Unit<br>Trucks | - | 0.0   | 0.0   | 0.0   | -     | 0.0   | - | 0.9  | 2.8  | 0.9  | - | 0.9  | 0.0   | 0.0   | 1.6  | 0.9  | - | 1.5  | 0.0         | 1.0  | 1.4  | 0.0   | - | 1.3  | 1.3  |
| Articulated Trucks      | 0 | 0     | 0     | 0     | -     | 0     | 0 | 1    | 0    | 5    | - | 6    | 0     | 0     | 50   | 0    | - | 50   | 0           | 3    | 40   | 0     | - | 43   | 99   |
| % Articulated<br>Trucks | - | 0.0   | 0.0   | 0.0   | -     | 0.0   | - | 0.1  | 0.0  | 0.2  | - | 0.2  | 0.0   | 0.0   | 1.3  | 0.0  | - | 1.1  | 0.0         | 0.2  | 0.9  | 0.0   | - | 0.7  | 0.7  |
| Bicycles on Road        | 0 | 0     | 0     | 0     | -     | 0     | 0 | 0    | 0    | 0    | - | 0    | 0     | 0     | 0    | 0    | - | 0    | 0           | 0    | 0    | 0     | - | 0    | 0    |
| % Bicycles on<br>Road   | - | 0.0   | 0.0   | 0.0   | -     | 0.0   | - | 0.0  | 0.0  | 0.0  | - | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | - | 0.0  | 0.0         | 0.0  | 0.0  | 0.0   | - | 0.0  | 0.0  |
| Pedestrians             | - | -     | -     | -     | 1     | -     | - | -    | -    | -    | 0 | -    | -     | -     | -    | -    | 0 | -    | -           | -    | -    | -     | 0 | -    | -    |
| % Pedestrians           | - | -     | -     | -     | 100.0 | -     | - | -    | -    | -    | - | -    | -     | -     | -    | -    | - | -    | -           | -    | -    | -     | - | -    | -    |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Harlem Avenue with Vollmer Road Site Code: Start Date: 12/17/2019 Page No: 3

### Turning Movement Peak Hour Data (6:30 AM)

|                         |        |       |       | er Road<br>bound |      |               |        |       | Vollme<br>Westt |       |      |               |        |       | Harlem | Avenue<br>bound |      |               |        |       | Harlem<br>South |       |      |               |            |
|-------------------------|--------|-------|-------|------------------|------|---------------|--------|-------|-----------------|-------|------|---------------|--------|-------|--------|-----------------|------|---------------|--------|-------|-----------------|-------|------|---------------|------------|
| Start Time              | U-Turn | Left  | Thru  | Right            | Peds | App.<br>Total | U-Turn | Left  | Thru            | Right | Peds | App.<br>Total | U-Turn | Left  | Thru   | Right           | Peds | App.<br>Total | U-Turn | Left  | Thru            | Right | Peds | App.<br>Total | Int. Total |
| 6:30 AM                 | 0      | 0     | 0     | 0                | 0    | 0             | 0      | 17    | 0               | 72    | 0    | 89            | 0      | 2     | 137    | 24              | 0    | 163           | 0      | 47    | 126             | 0     | 0    | 173           | 425        |
| 6:45 AM                 | 0      | 0     | 0     | 0                | 0    | 0             | 0      | 21    | 0               | 81    | 0    | 102           | 1      | 0     | 185    | 24              | 0    | 210           | 0      | 48    | 135             | 0     | 0    | 183           | 495        |
| 7:00 AM                 | 0      | 1     | 1     | 0                | 0    | 2             | 0      | 14    | 1               | 72    | 0    | 87            | 1      | 3     | 170    | 33              | 0    | 207           | 0      | 44    | 119             | 1     | 0    | 164           | 460        |
| 7:15 AM                 | 0      | 0     | 2     | 1                | 0    | 3             | 0      | 13    | 0               | 89    | 0    | 102           | 0      | 2     | 197    | 33              | 0    | 232           | 0      | 47    | 131             | 2     | 0    | 180           | 517        |
| Total                   | 0      | 1     | 3     | 1                | 0    | 5             | 0      | 65    | 1               | 314   | 0    | 380           | 2      | 7     | 689    | 114             | 0    | 812           | 0      | 186   | 511             | 3     | 0    | 700           | 1897       |
| Approach %              | 0.0    | 20.0  | 60.0  | 20.0             | -    | -             | 0.0    | 17.1  | 0.3             | 82.6  | -    | -             | 0.2    | 0.9   | 84.9   | 14.0            | -    | -             | 0.0    | 26.6  | 73.0            | 0.4   | -    | -             | -          |
| Total %                 | 0.0    | 0.1   | 0.2   | 0.1              | -    | 0.3           | 0.0    | 3.4   | 0.1             | 16.6  | -    | 20.0          | 0.1    | 0.4   | 36.3   | 6.0             | -    | 42.8          | 0.0    | 9.8   | 26.9            | 0.2   | -    | 36.9          | -          |
| PHF                     | 0.000  | 0.250 | 0.375 | 0.250            | -    | 0.417         | 0.000  | 0.774 | 0.250           | 0.882 | -    | 0.931         | 0.500  | 0.583 | 0.874  | 0.864           | -    | 0.875         | 0.000  | 0.969 | 0.946           | 0.375 | -    | 0.956         | 0.917      |
| Lights                  | 0      | 1     | 3     | 1                | -    | 5             | 0      | 64    | 1               | 307   | -    | 372           | 2      | 7     | 680    | 112             | -    | 801           | 0      | 179   | 496             | 3     | -    | 678           | 1856       |
| % Lights                | -      | 100.0 | 100.0 | 100.0            | -    | 100.0         | -      | 98.5  | 100.0           | 97.8  | -    | 97.9          | 100.0  | 100.0 | 98.7   | 98.2            | -    | 98.6          | -      | 96.2  | 97.1            | 100.0 | -    | 96.9          | 97.8       |
| Buses                   | 0      | 0     | 0     | 0                | -    | 0             | 0      | 0     | 0               | 0     | -    | 0             | 0      | 0     | 2      | 0               | -    | 2             | 0      | 0     | 3               | 0     | -    | 3             | 5          |
| % Buses                 | -      | 0.0   | 0.0   | 0.0              | -    | 0.0           | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | 0.0    | 0.0   | 0.3    | 0.0             | -    | 0.2           | -      | 0.0   | 0.6             | 0.0   | -    | 0.4           | 0.3        |
| Single-Unit Trucks      | 0      | 0     | 0     | 0                | -    | 0             | 0      | 1     | 0               | 5     | -    | 6             | 0      | 0     | 4      | 2               | -    | 6             | 0      | 7     | 8               | 0     | -    | 15            | 27         |
| % Single-Unit<br>Trucks | -      | 0.0   | 0.0   | 0.0              | -    | 0.0           | -      | 1.5   | 0.0             | 1.6   | -    | 1.6           | 0.0    | 0.0   | 0.6    | 1.8             | -    | 0.7           | -      | 3.8   | 1.6             | 0.0   | -    | 2.1           | 1.4        |
| Articulated Trucks      | 0      | 0     | 0     | 0                | -    | 0             | 0      | 0     | 0               | 2     | -    | 2             | 0      | 0     | 3      | 0               | -    | 3             | 0      | 0     | 4               | 0     | -    | 4             | 9          |
| % Articulated<br>Trucks | -      | 0.0   | 0.0   | 0.0              | -    | 0.0           | -      | 0.0   | 0.0             | 0.6   | -    | 0.5           | 0.0    | 0.0   | 0.4    | 0.0             | -    | 0.4           | -      | 0.0   | 0.8             | 0.0   | -    | 0.6           | 0.5        |
| Bicycles on Road        | 0      | 0     | 0     | 0                | -    | 0             | 0      | 0     | 0               | 0     | -    | 0             | 0      | 0     | 0      | 0               | -    | 0             | 0      | 0     | 0               | 0     | -    | 0             | 0          |
| % Bicycles on<br>Road   | -      | 0.0   | 0.0   | 0.0              | -    | 0.0           | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | 0.0    | 0.0   | 0.0    | 0.0             | -    | 0.0           | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | 0.0        |
| Pedestrians             | -      | -     | -     | -                | 0    | -             | -      | -     | -               | -     | 0    | -             | -      | -     | -      | -               | 0    | -             | -      | -     | -               | -     | 0    | -             | -          |
| % Pedestrians           | -      | -     | -     | -                | -    | -             | -      | -     | -               | -     | -    | -             | -      | -     | -      | -               | -    | -             | -      | -     | -               | -     | -    | -             | -          |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Harlem Avenue with Vollmer Road Site Code: Start Date: 12/17/2019 Page No: 4

### Turning Movement Peak Hour Data (5:30 PM)

|                         |        |       | Vollme<br>Eastt |       |      |               |        |       | Vollme | er Road<br>bound |      |               |        |       | Harlem | Avenue<br>bound |      |               |        |       | Harlem<br>South |       |      |               |            |
|-------------------------|--------|-------|-----------------|-------|------|---------------|--------|-------|--------|------------------|------|---------------|--------|-------|--------|-----------------|------|---------------|--------|-------|-----------------|-------|------|---------------|------------|
| Start Time              | U-Turn | Left  | Thru            | Right | Peds | App.<br>Total | U-Turn | Left  | Thru   | Right            | Peds | App.<br>Total | U-Turn | Left  | Thru   | Right           | Peds | App.<br>Total | U-Turn | Left  | Thru            | Right | Peds | App.<br>Total | Int. Total |
| 5:30 PM                 | 0      | 8     | 3               | 4     | 0    | 15            | 0      | 42    | 2      | 108              | 0    | 152           | 1      | 6     | 171    | 29              | 0    | 207           | 0      | 128   | 286             | 3     | 0    | 417           | 791        |
| 5:45 PM                 | 0      | 2     | 4               | 1     | 0    | 7             | 0      | 31    | 5      | 102              | 0    | 138           | 1      | 3     | 132    | 17              | 0    | 153           | 0      | 116   | 235             | 4     | 0    | 355           | 653        |
| 6:00 PM                 | 0      | 1     | 2               | 1     | 0    | 4             | 0      | 28    | 2      | 67               | 0    | 97            | 0      | 4     | 138    | 14              | 0    | 156           | 0      | 124   | 226             | 3     | 0    | 353           | 610        |
| 6:15 PM                 | 0      | 2     | 3               | 3     | 0    | 8             | 0      | 39    | 7      | 50               | 0    | 96            | 1      | 3     | 147    | 20              | 0    | 171           | 0      | 98    | 213             | 0     | 0    | 311           | 586        |
| Total                   | 0      | 13    | 12              | 9     | 0    | 34            | 0      | 140   | 16     | 327              | 0    | 483           | 3      | 16    | 588    | 80              | 0    | 687           | 0      | 466   | 960             | 10    | 0    | 1436          | 2640       |
| Approach %              | 0.0    | 38.2  | 35.3            | 26.5  | -    | -             | 0.0    | 29.0  | 3.3    | 67.7             | -    | -             | 0.4    | 2.3   | 85.6   | 11.6            | -    | -             | 0.0    | 32.5  | 66.9            | 0.7   | -    | -             | -          |
| Total %                 | 0.0    | 0.5   | 0.5             | 0.3   | -    | 1.3           | 0.0    | 5.3   | 0.6    | 12.4             | -    | 18.3          | 0.1    | 0.6   | 22.3   | 3.0             | -    | 26.0          | 0.0    | 17.7  | 36.4            | 0.4   | -    | 54.4          | -          |
| PHF                     | 0.000  | 0.406 | 0.750           | 0.563 | -    | 0.567         | 0.000  | 0.833 | 0.571  | 0.757            | -    | 0.794         | 0.750  | 0.667 | 0.860  | 0.690           | -    | 0.830         | 0.000  | 0.910 | 0.839           | 0.625 | -    | 0.861         | 0.834      |
| Lights                  | 0      | 13    | 12              | 9     | -    | 34            | 0      | 139   | 16     | 327              | -    | 482           | 3      | 16    | 571    | 80              | -    | 670           | 0      | 463   | 948             | 10    | -    | 1421          | 2607       |
| % Lights                | -      | 100.0 | 100.0           | 100.0 | -    | 100.0         | -      | 99.3  | 100.0  | 100.0            | -    | 99.8          | 100.0  | 100.0 | 97.1   | 100.0           | -    | 97.5          | -      | 99.4  | 98.8            | 100.0 | -    | 99.0          | 98.8       |
| Buses                   | 0      | 0     | 0               | 0     | -    | 0             | 0      | 0     | 0      | 0                | -    | 0             | 0      | 0     | 1      | 0               | -    | 1             | 0      | 0     | 0               | 0     | -    | 0             | 1          |
| % Buses                 | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | -      | 0.0   | 0.0    | 0.0              | -    | 0.0           | 0.0    | 0.0   | 0.2    | 0.0             | -    | 0.1           | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | 0.0        |
| Single-Unit Trucks      | 0      | 0     | 0               | 0     | -    | 0             | 0      | 1     | 0      | 0                | -    | 1             | 0      | 0     | 6      | 0               | -    | 6             | 0      | 2     | 5               | 0     | -    | 7             | 14         |
| % Single-Unit<br>Trucks | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | -      | 0.7   | 0.0    | 0.0              | -    | 0.2           | 0.0    | 0.0   | 1.0    | 0.0             | -    | 0.9           | -      | 0.4   | 0.5             | 0.0   | -    | 0.5           | 0.5        |
| Articulated Trucks      | 0      | 0     | 0               | 0     | -    | 0             | 0      | 0     | 0      | 0                | -    | 0             | 0      | 0     | 10     | 0               | -    | 10            | 0      | 1     | 7               | 0     | -    | 8             | 18         |
| % Articulated<br>Trucks | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | -      | 0.0   | 0.0    | 0.0              | -    | 0.0           | 0.0    | 0.0   | 1.7    | 0.0             | -    | 1.5           | -      | 0.2   | 0.7             | 0.0   | -    | 0.6           | 0.7        |
| Bicycles on Road        | 0      | 0     | 0               | 0     | -    | 0             | 0      | 0     | 0      | 0                | -    | 0             | 0      | 0     | 0      | 0               | -    | 0             | 0      | 0     | 0               | 0     | -    | 0             | 0          |
| % Bicycles on<br>Road   | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | -      | 0.0   | 0.0    | 0.0              | -    | 0.0           | 0.0    | 0.0   | 0.0    | 0.0             | -    | 0.0           | -      | 0.0   | 0.0             | 0.0   | -    | 0.0           | 0.0        |
| Pedestrians             | -      | -     | -               | -     | 0    | -             | -      | -     | -      | -                | 0    | -             | -      | -     | -      | -               | 0    | -             | -      | -     | -               | -     | 0    | -             | -          |
| % Pedestrians           | -      | -     | -               | -     | -    | -             | -      | -     | -      | -                | -    | -             | -      | -     | -      | -               | -    | -             | -      | -     | -               | -     | -    | -             | -          |



Rosemont, Illinois, United States 60018 (847)518-9990

Count Name: Harlem Avenue with Benton Drive Site Code: Start Date: 12/17/2019 Page No: 1

### Turning Movement Data

|               |        |      | Benton Drive<br>Eastbound |      |            |        | -    | Vement L<br>Harlem Avenue<br>Northbound |      |            |        |      | Harlem Avenue<br>Southbound |      |            |            |
|---------------|--------|------|---------------------------|------|------------|--------|------|-----------------------------------------|------|------------|--------|------|-----------------------------|------|------------|------------|
| Start Time    | U-Turn | Left | Right                     | Peds | App. Total | U-Turn | Left | Thru                                    | Peds | App. Total | U-Turn | Thru | Right                       | Peds | App. Total | Int. Total |
| 6:00 AM       | 0      | 29   | 6                         | 0    | 35         | 0      | 7    | 142                                     | 0    | 149        | 0      | 57   | 3                           | 0    | 60         | 244        |
| 6:15 AM       | 0      | 26   | 6                         | 0    | 32         | 0      | 11   | 167                                     | 0    | 178        | 0      | 109  | 2                           | 0    | 111        | 321        |
| 6:30 AM       | 0      | 30   | 8                         | 0    | 38         | 0      | 9    | 197                                     | 0    | 206        | 0      | 166  | 10                          | 0    | 176        | 420        |
| 6:45 AM       | 0      | 34   | 6                         | 0    | 40         | 0      | 9    | 233                                     | 0    | 242        | 0      | 177  | 7                           | 0    | 184        | 466        |
| Hourly Total  | 0      | 119  | 26                        | 0    | 145        | 0      | 36   | 739                                     | 0    | 775        | 0      | 509  | 22                          | 0    | 531        | 1451       |
| 7:00 AM       | 0      | 22   | 6                         | 0    | 28         | 0      | 13   | 232                                     | 0    | 245        | 0      | 154  | 11                          | 0    | 165        | 438        |
| 7:15 AM       | 0      | 32   | 9                         | 0    | 41         | 0      | 12   | 268                                     | 0    | 280        | 0      | 186  | 7                           | 0    | 193        | 514        |
| 7:30 AM       | 0      | 32   | 10                        | 0    | 42         | 0      | 12   | 314                                     | 0    | 326        | 0      | 224  | 6                           | 0    | 230        | 598        |
| 7:45 AM       | 0      | 27   | 11                        | 0    | 38         | 0      | 10   | 313                                     | 0    | 323        | 0      | 192  | 8                           | 0    | 200        | 561        |
| Hourly Total  | 0      | 113  | 36                        | 0    | 149        | 0      | 47   | 1127                                    | 0    | 1174       | 0      | 756  | 32                          | 0    | 788        | 2111       |
| 8:00 AM       | 0      | 30   | 5                         | 0    | 35         | 0      | 12   | 258                                     | 0    | 270        | 0      | 188  | 6                           | 0    | 194        | 499        |
| 8:15 AM       | 0      | 14   | 8                         | 0    | 22         | 0      | 11   | 228                                     | 0    | 239        | 0      | 165  | 12                          | 0    | 177        | 438        |
| 8:30 AM       | 0      | 19   | 5                         | 0    | 24         | 0      | 16   | 273                                     | 0    | 289        | 0      | 181  | 16                          | 0    | 197        | 510        |
| 8:45 AM       | 0      | 27   | 9                         | 0    | 36         | 0      | 11   | 252                                     | 0    | 263        | 0      | 203  | 9                           | 0    | 212        | 511        |
| Hourly Total  | 0      | 90   | 27                        | 0    | 117        | 0      | 50   | 1011                                    | 0    | 1061       | 0      | 737  | 43                          | 0    | 780        | 1958       |
| *** BREAK *** | -      | -    | -                         | -    | -          | -      | -    | -                                       | -    | -          | -      | -    | -                           | -    | -          | -          |
| 4:00 PM       | 0      | 27   | 9                         | 0    | 36         | 0      | 21   | 247                                     | 0    | 268        | 0      | 351  | 38                          | 0    | 389        | 693        |
| 4:15 PM       | 0      | 22   | 14                        | 0    | 36         | 1      | 30   | 284                                     | 0    | 315        | 0      | 382  | 31                          | 0    | 413        | 764        |
| 4:30 PM       | 0      | 31   | 7                         | 0    | 38         | 0      | 29   | 304                                     | 0    | 333        | 0      | 407  | 30                          | 0    | 437        | 808        |
| 4:45 PM       | 0      | 30   | 10                        | 0    | 40         | 0      | 25   | 282                                     | 0    | 307        | 0      | 390  | 50                          | 0    | 440        | 787        |
| Hourly Total  | 0      | 110  | 40                        | 0    | 150        | 1      | 105  | 1117                                    | 0    | 1223       | 0      | 1530 | 149                         | 0    | 1679       | 3052       |
| 5:00 PM       | 0      | 32   | 8                         | 0    | 40         | 1      | 21   | 261                                     | 0    | 283        | 0      | 431  | 26                          | 0    | 457        | 780        |
| 5:15 PM       | 0      | 30   | 12                        | 0    | 42         | 1      | 19   | 273                                     | 0    | 293        | 1      | 429  | 34                          | 0    | 464        | 799        |
| 5:30 PM       | 0      | 30   | 11                        | 0    | 41         | 0      | 17   | 267                                     | 0    | 284        | 0      | 420  | 29                          | 0    | 449        | 774        |
| 5:45 PM       | 0      | 26   | 5                         | 0    | 31         | 0      | 22   | 226                                     | 0    | 248        | 0      | 354  | 29                          | 0    | 383        | 662        |
| Hourly Total  | 0      | 118  | 36                        | 0    | 154        | 2      | 79   | 1027                                    | 0    | 1108       | 1      | 1634 | 118                         | 0    | 1753       | 3015       |
| 6:00 PM       | 0      | 24   | 8                         | 0    | 32         | 0      | 14   | 206                                     | 0    | 220        | 0      | 332  | 51                          | 0    | 383        | 635        |
| 6:15 PM       | 0      | 26   | 7                         | 0    | 33         | 1      | 17   | 177                                     | 0    | 195        | 0      | 292  | 23                          | 0    | 315        | 543        |
| 6:30 PM       | 0      | 19   | 7                         | 0    | 26         | 0      | 18   | 188                                     | 0    | 206        | 0      | 288  | 25                          | 0    | 313        | 545        |
| 6:45 PM       | 0      | 15   | 9                         | 0    | 24         | 0      | 13   | 167                                     | 0    | 180        | 0      | 235  | 27                          | 0    | 262        | 466        |
| Hourly Total  | 0      | 84   | 31                        | 0    | 115        | 1      | 62   | 738                                     | 0    | 801        | 0      | 1147 | 126                         | 0    | 1273       | 2189       |
| Grand Total   | 0      | 634  | 196                       | 0    | 830        | 4      | 379  | 5759                                    | 0    | 6142       | 1      | 6313 | 490                         | 0    | 6804       | 13776      |
| Approach %    | 0.0    | 76.4 | 23.6                      | _    | -          | 0.1    | 6.2  | 93.8                                    | _    | -          | 0.0    | 92.8 | 7.2                         | -    | -          | -          |
| Total %       | 0.0    | 4.6  | 1.4                       | -    | 6.0        | 0.0    | 2.8  | 41.8                                    | -    | 44.6       | 0.0    | 45.8 | 3.6                         | -    | 49.4       | -          |
| Lights        | 0      | 621  | 190                       | -    | 811        | 4      | 364  | 5607                                    | -    | 5975       | 1      | 6162 | 481                         | -    | 6644       | 13430      |
| % Lights      | -      | 97.9 | 96.9                      | -    | 97.7       | 100.0  | 96.0 | 97.4                                    | -    | 97.3       | 100.0  | 97.6 | 98.2                        | -    | 97.6       | 97.5       |

| Buses                | 0 | 0   | 3   | - | 3   | 0   | 3   | 16  | - | 19  | 0   | 14  | 1   | - | 15  | 37  |
|----------------------|---|-----|-----|---|-----|-----|-----|-----|---|-----|-----|-----|-----|---|-----|-----|
| % Buses              | - | 0.0 | 1.5 | - | 0.4 | 0.0 | 0.8 | 0.3 | - | 0.3 | 0.0 | 0.2 | 0.2 | - | 0.2 | 0.3 |
| Single-Unit Trucks   | 0 | 11  | 2   | - | 13  | 0   | 10  | 83  | - | 93  | 0   | 92  | 5   | - | 97  | 203 |
| % Single-Unit Trucks | - | 1.7 | 1.0 | - | 1.6 | 0.0 | 2.6 | 1.4 | - | 1.5 | 0.0 | 1.5 | 1.0 | - | 1.4 | 1.5 |
| Articulated Trucks   | 0 | 2   | 1   | - | 3   | 0   | 2   | 53  | - | 55  | 0   | 45  | 3   | - | 48  | 106 |
| % Articulated Trucks | - | 0.3 | 0.5 | - | 0.4 | 0.0 | 0.5 | 0.9 | - | 0.9 | 0.0 | 0.7 | 0.6 | - | 0.7 | 0.8 |
| Bicycles on Road     | 0 | 0   | 0   | - | 0   | 0   | 0   | 0   | - | 0   | 0   | 0   | 0   | - | 0   | 0   |
| % Bicycles on Road   | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians          | - | -   | -   | 0 | -   | -   | -   | -   | 0 | -   | -   | -   | -   | 0 | -   | -   |
| % Pedestrians        | - | -   | -   | - | -   | -   | -   | -   | - | -   | -   | -   | -   | - | -   | -   |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Harlem Avenue with Benton Drive Site Code: Start Date: 12/17/2019 Page No: 3

### Turning Movement Peak Hour Data (6:30 AM)

| Otert Time           |        |       | Benton Drive<br>Eastbound |      |            |        |       | Harlem Avenue<br>Northbound | ,    |            |        |       | Harlem Avenue<br>Southbound |      |            |            |
|----------------------|--------|-------|---------------------------|------|------------|--------|-------|-----------------------------|------|------------|--------|-------|-----------------------------|------|------------|------------|
| Start Time           | U-Turn | Left  | Right                     | Peds | App. Total | U-Turn | Left  | Thru                        | Peds | App. Total | U-Turn | Thru  | Right                       | Peds | App. Total | Int. Total |
| 6:30 AM              | 0      | 30    | 8                         | 0    | 38         | 0      | 9     | 197                         | 0    | 206        | 0      | 166   | 10                          | 0    | 176        | 420        |
| 6:45 AM              | 0      | 34    | 6                         | 0    | 40         | 0      | 9     | 233                         | 0    | 242        | 0      | 177   | 7                           | 0    | 184        | 466        |
| 7:00 AM              | 0      | 22    | 6                         | 0    | 28         | 0      | 13    | 232                         | 0    | 245        | 0      | 154   | 11                          | 0    | 165        | 438        |
| 7:15 AM              | 0      | 32    | 9                         | 0    | 41         | 0      | 12    | 268                         | 0    | 280        | 0      | 186   | 7                           | 0    | 193        | 514        |
| Total                | 0      | 118   | 29                        | 0    | 147        | 0      | 43    | 930                         | 0    | 973        | 0      | 683   | 35                          | 0    | 718        | 1838       |
| Approach %           | 0.0    | 80.3  | 19.7                      | -    | -          | 0.0    | 4.4   | 95.6                        | -    | -          | 0.0    | 95.1  | 4.9                         | -    | -          | -          |
| Total %              | 0.0    | 6.4   | 1.6                       | -    | 8.0        | 0.0    | 2.3   | 50.6                        | -    | 52.9       | 0.0    | 37.2  | 1.9                         | -    | 39.1       | -          |
| PHF                  | 0.000  | 0.868 | 0.806                     | -    | 0.896      | 0.000  | 0.827 | 0.868                       | -    | 0.869      | 0.000  | 0.918 | 0.795                       | -    | 0.930      | 0.894      |
| Lights               | 0      | 115   | 28                        | -    | 143        | 0      | 40    | 908                         | -    | 948        | 0      | 658   | 32                          | -    | 690        | 1781       |
| % Lights             | -      | 97.5  | 96.6                      | -    | 97.3       | -      | 93.0  | 97.6                        | -    | 97.4       | -      | 96.3  | 91.4                        | -    | 96.1       | 96.9       |
| Buses                | 0      | 0     | 1                         | -    | 1          | 0      | 1     | 1                           | -    | 2          | 0      | 2     | 0                           | -    | 2          | 5          |
| % Buses              | -      | 0.0   | 3.4                       | -    | 0.7        | -      | 2.3   | 0.1                         | -    | 0.2        | -      | 0.3   | 0.0                         | -    | 0.3        | 0.3        |
| Single-Unit Trucks   | 0      | 3     | 0                         | -    | 3          | 0      | 2     | 16                          | -    | 18         | 0      | 20    | 1                           | -    | 21         | 42         |
| % Single-Unit Trucks | -      | 2.5   | 0.0                       | -    | 2.0        | -      | 4.7   | 1.7                         | -    | 1.8        | -      | 2.9   | 2.9                         | -    | 2.9        | 2.3        |
| Articulated Trucks   | 0      | 0     | 0                         | -    | 0          | 0      | 0     | 5                           | -    | 5          | 0      | 3     | 2                           | -    | 5          | 10         |
| % Articulated Trucks | -      | 0.0   | 0.0                       | -    | 0.0        | -      | 0.0   | 0.5                         | -    | 0.5        | -      | 0.4   | 5.7                         | -    | 0.7        | 0.5        |
| Bicycles on Road     | 0      | 0     | 0                         | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0          |
| % Bicycles on Road   | -      | 0.0   | 0.0                       | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | 0.0        |
| Pedestrians          | -      | -     | -                         | 0    | -          | -      | -     | -                           | 0    | -          | -      | -     | -                           | 0    | -          | -          |
| % Pedestrians        | -      | -     | -                         | -    | -          | -      | -     | -                           | -    | -          | -      | -     | -                           | -    | -          | -          |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Harlem Avenue with Benton Drive Site Code: Start Date: 12/17/2019 Page No: 4

### Turning Movement Peak Hour Data (5:30 PM)

| Otact Time           |        |       | Benton Drive<br>Eastbound |      |            |        |       | Harlem Avenue<br>Northbound | ,    |            |        |       | Harlem Avenue<br>Southbound |      |            |            |
|----------------------|--------|-------|---------------------------|------|------------|--------|-------|-----------------------------|------|------------|--------|-------|-----------------------------|------|------------|------------|
| Start Time           | U-Turn | Left  | Right                     | Peds | App. Total | U-Turn | Left  | Thru                        | Peds | App. Total | U-Turn | Thru  | Right                       | Peds | App. Total | Int. Total |
| 5:30 PM              | 0      | 30    | 11                        | 0    | 41         | 0      | 17    | 267                         | 0    | 284        | 0      | 420   | 29                          | 0    | 449        | 774        |
| 5:45 PM              | 0      | 26    | 5                         | 0    | 31         | 0      | 22    | 226                         | 0    | 248        | 0      | 354   | 29                          | 0    | 383        | 662        |
| 6:00 PM              | 0      | 24    | 8                         | 0    | 32         | 0      | 14    | 206                         | 0    | 220        | 0      | 332   | 51                          | 0    | 383        | 635        |
| 6:15 PM              | 0      | 26    | 7                         | 0    | 33         | 1      | 17    | 177                         | 0    | 195        | 0      | 292   | 23                          | 0    | 315        | 543        |
| Total                | 0      | 106   | 31                        | 0    | 137        | 1      | 70    | 876                         | 0    | 947        | 0      | 1398  | 132                         | 0    | 1530       | 2614       |
| Approach %           | 0.0    | 77.4  | 22.6                      | -    | -          | 0.1    | 7.4   | 92.5                        | -    | -          | 0.0    | 91.4  | 8.6                         | -    | -          | -          |
| Total %              | 0.0    | 4.1   | 1.2                       | -    | 5.2        | 0.0    | 2.7   | 33.5                        | -    | 36.2       | 0.0    | 53.5  | 5.0                         | -    | 58.5       | -          |
| PHF                  | 0.000  | 0.883 | 0.705                     | -    | 0.835      | 0.250  | 0.795 | 0.820                       | -    | 0.834      | 0.000  | 0.832 | 0.647                       | -    | 0.852      | 0.844      |
| Lights               | 0      | 105   | 31                        | -    | 136        | 1      | 69    | 862                         | -    | 932        | 0      | 1381  | 132                         | -    | 1513       | 2581       |
| % Lights             | -      | 99.1  | 100.0                     | -    | 99.3       | 100.0  | 98.6  | 98.4                        | -    | 98.4       | -      | 98.8  | 100.0                       | -    | 98.9       | 98.7       |
| Buses                | 0      | 0     | 0                         | -    | 0          | 0      | 0     | 1                           | -    | 1          | 0      | 0     | 0                           | -    | 0          | 1          |
| % Buses              | -      | 0.0   | 0.0                       | -    | 0.0        | 0.0    | 0.0   | 0.1                         | -    | 0.1        | -      | 0.0   | 0.0                         | -    | 0.0        | 0.0        |
| Single-Unit Trucks   | 0      | 1     | 0                         | -    | 1          | 0      | 1     | 3                           | -    | 4          | 0      | 8     | 0                           | -    | 8          | 13         |
| % Single-Unit Trucks | -      | 0.9   | 0.0                       | -    | 0.7        | 0.0    | 1.4   | 0.3                         | -    | 0.4        | -      | 0.6   | 0.0                         | -    | 0.5        | 0.5        |
| Articulated Trucks   | 0      | 0     | 0                         | -    | 0          | 0      | 0     | 10                          | -    | 10         | 0      | 9     | 0                           | -    | 9          | 19         |
| % Articulated Trucks | -      | 0.0   | 0.0                       | -    | 0.0        | 0.0    | 0.0   | 1.1                         | -    | 1.1        | -      | 0.6   | 0.0                         | -    | 0.6        | 0.7        |
| Bicycles on Road     | 0      | 0     | 0                         | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0      | 0     | 0                           | -    | 0          | 0          |
| % Bicycles on Road   | -      | 0.0   | 0.0                       | -    | 0.0        | 0.0    | 0.0   | 0.0                         | -    | 0.0        | -      | 0.0   | 0.0                         | -    | 0.0        | 0.0        |
| Pedestrians          | -      | -     | -                         | 0    | -          | -      | -     | -                           | 0    | -          | -      | -     | -                           | 0    | -          | -          |
| % Pedestrians        | -      | -     | -                         | -    | -          | -      | -     | -                           | -    | -          | -      | -     | -                           | -    | -          | -          |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Vollmer Road with Ridgeland Avenue Site Code: Start Date: 12/17/2019 Page No: 1

#### **Turning Movement Data**

|               |        |      | Vollme<br>Eastt | er Road |      |               |        |      |      | er Road<br>bound | 5    |               |        |      | •    | d Avenue<br>bound |      |               |        |      | •    | d Avenue<br>bound |      |               |            |
|---------------|--------|------|-----------------|---------|------|---------------|--------|------|------|------------------|------|---------------|--------|------|------|-------------------|------|---------------|--------|------|------|-------------------|------|---------------|------------|
| Start Time    | U-Turn | Left | Thru            | Right   | Peds | App.<br>Total | U-Turn | Left | Thru | Right            | Peds | App.<br>Total | U-Turn | Left | Thru | Right             | Peds | App.<br>Total | U-Turn | Left | Thru | Right             | Peds | App.<br>Total | Int. Total |
| 6:00 AM       | 0      | 2    | 29              | 2       | 0    | 33            | 0      | 2    | 43   | 8                | 0    | 53            | 0      | 17   | 28   | 10                | 0    | 55            | 0      | 9    | 10   | 7                 | 0    | 26            | 167        |
| 6:15 AM       | 0      | 2    | 40              | 2       | 0    | 44            | 0      | 4    | 65   | 12               | 0    | 81            | 0      | 23   | 24   | 15                | 0    | 62            | 0      | 20   | 12   | 1                 | 0    | 33            | 220        |
| 6:30 AM       | 0      | 5    | 62              | 1       | 0    | 68            | 0      | 11   | 62   | 8                | 0    | 81            | 0      | 21   | 32   | 17                | 0    | 70            | 0      | 5    | 16   | 7                 | 0    | 28            | 247        |
| 6:45 AM       | 0      | 1    | 84              | 2       | 0    | 87            | 0      | 11   | 69   | 16               | 0    | 96            | 0      | 18   | 30   | 21                | 0    | 69            | 0      | 16   | 16   | 1                 | 0    | 33            | 285        |
| Hourly Total  | 0      | 10   | 215             | 7       | 0    | 232           | 0      | 28   | 239  | 44               | 0    | 311           | 0      | 79   | 114  | 63                | 0    | 256           | 0      | 50   | 54   | 16                | 0    | 120           | 919        |
| 7:00 AM       | 0      | 7    | 76              | 6       | 0    | 89            | 0      | 7    | 69   | 13               | 0    | 89            | 0      | 18   | 29   | 19                | 0    | 66            | 0      | 11   | 11   | 5                 | 0    | 27            | 271        |
| 7:15 AM       | 0      | 6    | 74              | 4       | 0    | 84            | 0      | 16   | 71   | 27               | 0    | 114           | 0      | 21   | 52   | 33                | 0    | 106           | 0      | 6    | 22   | 8                 | 0    | 36            | 340        |
| 7:30 AM       | 0      | 7    | 59              | 6       | 0    | 72            | 0      | 9    | 95   | 20               | 0    | 124           | 0      | 26   | 63   | 29                | 0    | 118           | 0      | 18   | 20   | 3                 | 0    | 41            | 355        |
| 7:45 AM       | 0      | 6    | 60              | 5       | 0    | 71            | 0      | 13   | 118  | 19               | 0    | 150           | 0      | 19   | 33   | 31                | 0    | 83            | 0      | 14   | 32   | 12                | 0    | 58            | 362        |
| Hourly Total  | 0      | 26   | 269             | 21      | 0    | 316           | 0      | 45   | 353  | 79               | 0    | 477           | 0      | 84   | 177  | 112               | 0    | 373           | 0      | 49   | 85   | 28                | 0    | 162           | 1328       |
| 8:00 AM       | 0      | 6    | 70              | 6       | 0    | 82            | 0      | 8    | 90   | 9                | 0    | 107           | 0      | 26   | 38   | 12                | 0    | 76            | 0      | 15   | 12   | 5                 | 0    | 32            | 297        |
| 8:15 AM       | 0      | 3    | 61              | 7       | 0    | 71            | 0      | 15   | 85   | 13               | 0    | 113           | 1      | 30   | 26   | 10                | 0    | 67            | 0      | 9    | 14   | 10                | 0    | 33            | 284        |
| 8:30 AM       | 0      | 2    | 53              | 5       | 0    | 60            | 0      | 12   | 100  | 8                | 0    | 120           | 0      | 26   | 27   | 17                | 0    | 70            | 0      | 15   | 13   | 12                | 0    | 40            | 290        |
| 8:45 AM       | 0      | 3    | 68              | 5       | 0    | 76            | 0      | 15   | 91   | 15               | 0    | 121           | 0      | 18   | 24   | 11                | 0    | 53            | 0      | 6    | 17   | 9                 | 0    | 32            | 282        |
| Hourly Total  | 0      | 14   | 252             | 23      | 0    | 289           | 0      | 50   | 366  | 45               | 0    | 461           | 1      | 100  | 115  | 50                | 0    | 266           | 0      | 45   | 56   | 36                | 0    | 137           | 1153       |
| *** BREAK *** | -      | -    | -               | -       | -    | -             | -      | -    | -    | -                | -    | -             | -      | -    | -    | -                 | -    | -             | -      | -    | -    | -                 | -    | -             | -          |
| 4:00 PM       | 0      | 12   | 117             | 19      | 1    | 148           | 0      | 27   | 142  | 27               | 0    | 196           | 0      | 17   | 36   | 15                | 1    | 68            | 0      | 20   | 29   | 20                | 0    | 69            | 481        |
| 4:15 PM       | 0      | 13   | 104             | 14      | 0    | 131           | 0      | 24   | 144  | 17               | 0    | 185           | 0      | 27   | 36   | 16                | 0    | 79            | 0      | 20   | 26   | 18                | 0    | 64            | 459        |
| 4:30 PM       | 0      | 25   | 143             | 21      | 0    | 189           | 0      | 35   | 139  | 16               | 0    | 190           | 0      | 17   | 45   | 11                | 0    | 73            | 0      | 17   | 43   | 22                | 0    | 82            | 534        |
| 4:45 PM       | 0      | 11   | 115             | 23      | 0    | 149           | 0      | 27   | 119  | 13               | 0    | 159           | 0      | 28   | 32   | 17                | 0    | 77            | 0      | 16   | 33   | 14                | 0    | 63            | 448        |
| Hourly Total  | 0      | 61   | 479             | 77      | 1    | 617           | 0      | 113  | 544  | 73               | 0    | 730           | 0      | 89   | 149  | 59                | 1    | 297           | 0      | 73   | 131  | 74                | 0    | 278           | 1922       |
| 5:00 PM       | 0      | 4    | 105             | 21      | 0    | 130           | 0      | 30   | 113  | 14               | 0    | 157           | 0      | 19   | 38   | 11                | 0    | 68            | 0      | 18   | 33   | 11                | 0    | 62            | 417        |
| 5:15 PM       | 0      | 6    | 142             | 24      | 0    | 172           | 0      | 31   | 130  | 12               | 0    | 173           | 0      | 15   | 29   | 13                | 0    | 57            | 0      | 14   | 27   | 14                | 0    | 55            | 457        |
| 5:30 PM       | 0      | 6    | 123             | 24      | 0    | 153           | 0      | 24   | 118  | 17               | 0    | 159           | 0      | 20   | 22   | 10                | 0    | 52            | 0      | 17   | 26   | 16                | 0    | 59            | 423        |
| 5:45 PM       | 0      | 7    | 111             | 20      | 0    | 138           | 0      | 20   | 120  | 10               | 0    | 150           | 0      | 10   | 24   | 16                | 0    | 50            | 0      | 10   | 27   | 15                | 0    | 52            | 390        |
| Hourly Total  | 0      | 23   | 481             | 89      | 0    | 593           | 0      | 105  | 481  | 53               | 0    | 639           | 0      | 64   | 113  | 50                | 0    | 227           | 0      | 59   | 113  | 56                | 0    | 228           | 1687       |
| 6:00 PM       | 0      | 0    | 108             | 16      | 0    | 124           | 0      | 22   | 87   | 16               | 0    | 125           | 0      | 13   | 23   | 4                 | 0    | 40            | 0      | 17   | 24   | 9                 | 0    | 50            | 339        |
| 6:15 PM       | 0      | 4    | 101             | 22      | 0    | 127           | 0      | 18   | 82   | 5                | 0    | 105           | 0      | 18   | 26   | 12                | 0    | 56            | 0      | 9    | 27   | 9                 | 0    | 45            | 333        |
| 6:30 PM       | 0      | 2    | 88              | 17      | 0    | 107           | 0      | 21   | 84   | 7                | 0    | 112           | 0      | 19   | 25   | 16                | 0    | 60            | 0      | 15   | 20   | 9                 | 0    | 44            | 323        |
| 6:45 PM       | 0      | 5    | 77              | 14      | 0    | 96            | 0      | 14   | 75   | 11               | 0    | 100           | 0      | 15   | 14   | 10                | 0    | 39            | 0      | 9    | 19   | 4                 | 0    | 32            | 267        |
| Hourly Total  | 0      | 11   | 374             | 69      | 0    | 454           | 0      | 75   | 328  | 39               | 0    | 442           | 0      | 65   | 88   | 42                | 0    | 195           | 0      | 50   | 90   | 31                | 0    | 171           | 1262       |
| Grand Total   | 0      | 145  | 2070            | 286     | 1    | 2501          | 0      | 416  | 2311 | 333              | 0    | 3060          | 1      | 481  | 756  | 376               | 1    | 1614          | 0      | 326  | 529  | 241               | 0    | 1096          | 8271       |
| Approach %    | 0.0    | 5.8  | 82.8            | 11.4    | -    | -             | 0.0    | 13.6 | 75.5 | 10.9             | -    | -             | 0.1    | 29.8 | 46.8 | 23.3              | -    | -             | 0.0    | 29.7 | 48.3 | 22.0              | -    | -             | -          |
| Total %       | 0.0    | 1.8  | 25.0            | 3.5     | -    | 30.2          | 0.0    | 5.0  | 27.9 | 4.0              | -    | 37.0          | 0.0    | 5.8  | 9.1  | 4.5               | -    | 19.5          | 0.0    | 3.9  | 6.4  | 2.9               | -    | 13.3          | -          |
| Lights        | 0      | 144  | 2046            | 284     | -    | 2474          | 0      | 407  | 2278 | 326              | -    | 3011          | 1      | 477  | 740  | 370               | -    | 1588          | 0      | 311  | 521  | 233               | -    | 1065          | 8138       |

|                         |   |      |      |      | -     |      |   | -    | -    |      |   | -    |       |      | -    |      | -     | -    |   | -    | -    |      | - | -    |      |
|-------------------------|---|------|------|------|-------|------|---|------|------|------|---|------|-------|------|------|------|-------|------|---|------|------|------|---|------|------|
| % Lights                | - | 99.3 | 98.8 | 99.3 | -     | 98.9 | - | 97.8 | 98.6 | 97.9 | - | 98.4 | 100.0 | 99.2 | 97.9 | 98.4 | -     | 98.4 | - | 95.4 | 98.5 | 96.7 | - | 97.2 | 98.4 |
| Buses                   | 0 | 0    | 2    | 0    | -     | 2    | 0 | 4    | 6    | 1    | - | 11   | 0     | 1    | 5    | 5    | -     | 11   | 0 | 2    | 2    | 2    | - | 6    | 30   |
| % Buses                 | - | 0.0  | 0.1  | 0.0  | -     | 0.1  | - | 1.0  | 0.3  | 0.3  | - | 0.4  | 0.0   | 0.2  | 0.7  | 1.3  | -     | 0.7  | - | 0.6  | 0.4  | 0.8  | - | 0.5  | 0.4  |
| Single-Unit Trucks      | 0 | 1    | 16   | 0    | -     | 17   | 0 | 5    | 22   | 4    | - | 31   | 0     | 3    | 9    | 1    | -     | 13   | 0 | 9    | 5    | 6    | - | 20   | 81   |
| % Single-Unit<br>Trucks | - | 0.7  | 0.8  | 0.0  | -     | 0.7  | - | 1.2  | 1.0  | 1.2  | - | 1.0  | 0.0   | 0.6  | 1.2  | 0.3  | -     | 0.8  | - | 2.8  | 0.9  | 2.5  | - | 1.8  | 1.0  |
| Articulated Trucks      | 0 | 0    | 2    | 0    | -     | 2    | 0 | 0    | 5    | 2    | - | 7    | 0     | 0    | 2    | 0    | -     | 2    | 0 | 3    | 1    | 0    | - | 4    | 15   |
| % Articulated<br>Trucks | - | 0.0  | 0.1  | 0.0  | -     | 0.1  | - | 0.0  | 0.2  | 0.6  | - | 0.2  | 0.0   | 0.0  | 0.3  | 0.0  | -     | 0.1  | - | 0.9  | 0.2  | 0.0  | - | 0.4  | 0.2  |
| Bicycles on Road        | 0 | 0    | 4    | 2    | -     | 6    | 0 | 0    | 0    | 0    | - | 0    | 0     | 0    | 0    | 0    | -     | 0    | 0 | 1    | 0    | 0    | - | 1    | 7    |
| % Bicycles on<br>Road   | - | 0.0  | 0.2  | 0.7  | -     | 0.2  | - | 0.0  | 0.0  | 0.0  | - | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | -     | 0.0  | - | 0.3  | 0.0  | 0.0  | - | 0.1  | 0.1  |
| Pedestrians             | - | -    | -    | -    | 1     | -    | - | -    | -    | -    | 0 | -    | -     | -    | -    | -    | 1     | -    | - | -    | -    | -    | 0 | -    | -    |
| % Pedestrians           | - | -    | -    | -    | 100.0 | -    | - | -    | -    | -    | - | -    | -     | -    | -    | -    | 100.0 | -    | - | -    | -    | -    | - | -    | -    |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Vollmer Road with Ridgeland Avenue Site Code: Start Date: 12/17/2019 Page No: 3

### Turning Movement Peak Hour Data (6:30 AM)

|                         |        |       |       | er Road |      |               |        | -     |       | er Road |      |               |        |       | •     | d Avenue |      |               |        |       | U     | d Avenue |      |               |            |
|-------------------------|--------|-------|-------|---------|------|---------------|--------|-------|-------|---------|------|---------------|--------|-------|-------|----------|------|---------------|--------|-------|-------|----------|------|---------------|------------|
|                         |        |       | East  | bound   |      |               |        |       | West  | bound   |      |               |        |       | North | bound    |      |               |        |       | South | bound    |      |               |            |
| Start Time              | U-Turn | Left  | Thru  | Right   | Peds | App.<br>Total | U-Turn | Left  | Thru  | Right   | Peds | App.<br>Total | U-Turn | Left  | Thru  | Right    | Peds | App.<br>Total | U-Turn | Left  | Thru  | Right    | Peds | App.<br>Total | Int. Total |
| 6:30 AM                 | 0      | 5     | 62    | 1       | 0    | 68            | 0      | 11    | 62    | 8       | 0    | 81            | 0      | 21    | 32    | 17       | 0    | 70            | 0      | 5     | 16    | 7        | 0    | 28            | 247        |
| 6:45 AM                 | 0      | 1     | 84    | 2       | 0    | 87            | 0      | 11    | 69    | 16      | 0    | 96            | 0      | 18    | 30    | 21       | 0    | 69            | 0      | 16    | 16    | 1        | 0    | 33            | 285        |
| 7:00 AM                 | 0      | 7     | 76    | 6       | 0    | 89            | 0      | 7     | 69    | 13      | 0    | 89            | 0      | 18    | 29    | 19       | 0    | 66            | 0      | 11    | 11    | 5        | 0    | 27            | 271        |
| 7:15 AM                 | 0      | 6     | 74    | 4       | 0    | 84            | 0      | 16    | 71    | 27      | 0    | 114           | 0      | 21    | 52    | 33       | 0    | 106           | 0      | 6     | 22    | 8        | 0    | 36            | 340        |
| Total                   | 0      | 19    | 296   | 13      | 0    | 328           | 0      | 45    | 271   | 64      | 0    | 380           | 0      | 78    | 143   | 90       | 0    | 311           | 0      | 38    | 65    | 21       | 0    | 124           | 1143       |
| Approach %              | 0.0    | 5.8   | 90.2  | 4.0     | -    | -             | 0.0    | 11.8  | 71.3  | 16.8    | -    | -             | 0.0    | 25.1  | 46.0  | 28.9     | -    | -             | 0.0    | 30.6  | 52.4  | 16.9     | -    | -             | -          |
| Total %                 | 0.0    | 1.7   | 25.9  | 1.1     | -    | 28.7          | 0.0    | 3.9   | 23.7  | 5.6     | -    | 33.2          | 0.0    | 6.8   | 12.5  | 7.9      | -    | 27.2          | 0.0    | 3.3   | 5.7   | 1.8      | -    | 10.8          | -          |
| PHF                     | 0.000  | 0.679 | 0.881 | 0.542   | -    | 0.921         | 0.000  | 0.703 | 0.954 | 0.593   | -    | 0.833         | 0.000  | 0.929 | 0.688 | 0.682    | -    | 0.733         | 0.000  | 0.594 | 0.739 | 0.656    | -    | 0.861         | 0.840      |
| Lights                  | 0      | 18    | 287   | 13      | -    | 318           | 0      | 43    | 265   | 64      | -    | 372           | 0      | 77    | 143   | 89       | -    | 309           | 0      | 34    | 62    | 17       | -    | 113           | 1112       |
| % Lights                | -      | 94.7  | 97.0  | 100.0   | -    | 97.0          | -      | 95.6  | 97.8  | 100.0   | -    | 97.9          | -      | 98.7  | 100.0 | 98.9     | -    | 99.4          | -      | 89.5  | 95.4  | 81.0     | -    | 91.1          | 97.3       |
| Buses                   | 0      | 0     | 1     | 0       | -    | 1             | 0      | 2     | 1     | 0       | -    | 3             | 0      | 0     | 0     | 1        | -    | 1             | 0      | 0     | 1     | 1        | -    | 2             | 7          |
| % Buses                 | -      | 0.0   | 0.3   | 0.0     | -    | 0.3           | -      | 4.4   | 0.4   | 0.0     | -    | 0.8           | -      | 0.0   | 0.0   | 1.1      | -    | 0.3           | -      | 0.0   | 1.5   | 4.8      | -    | 1.6           | 0.6        |
| Single-Unit Trucks      | 0      | 1     | 8     | 0       | -    | 9             | 0      | 0     | 2     | 0       | -    | 2             | 0      | 1     | 0     | 0        | -    | 1             | 0      | 3     | 1     | 3        | -    | 7             | 19         |
| % Single-Unit<br>Trucks | -      | 5.3   | 2.7   | 0.0     | -    | 2.7           | -      | 0.0   | 0.7   | 0.0     | -    | 0.5           | -      | 1.3   | 0.0   | 0.0      | -    | 0.3           | -      | 7.9   | 1.5   | 14.3     | -    | 5.6           | 1.7        |
| Articulated Trucks      | 0      | 0     | 0     | 0       | -    | 0             | 0      | 0     | 3     | 0       | -    | 3             | 0      | 0     | 0     | 0        | -    | 0             | 0      | 1     | 1     | 0        | -    | 2             | 5          |
| % Articulated<br>Trucks | -      | 0.0   | 0.0   | 0.0     | -    | 0.0           | -      | 0.0   | 1.1   | 0.0     | -    | 0.8           | -      | 0.0   | 0.0   | 0.0      | -    | 0.0           | -      | 2.6   | 1.5   | 0.0      | -    | 1.6           | 0.4        |
| Bicycles on Road        | 0      | 0     | 0     | 0       | -    | 0             | 0      | 0     | 0     | 0       | -    | 0             | 0      | 0     | 0     | 0        | -    | 0             | 0      | 0     | 0     | 0        | -    | 0             | 0          |
| % Bicycles on<br>Road   | -      | 0.0   | 0.0   | 0.0     | -    | 0.0           | -      | 0.0   | 0.0   | 0.0     | -    | 0.0           | -      | 0.0   | 0.0   | 0.0      | -    | 0.0           | -      | 0.0   | 0.0   | 0.0      | -    | 0.0           | 0.0        |
| Pedestrians             | -      | -     | -     | -       | 0    | -             | -      | -     | -     | -       | 0    | -             | -      | -     | -     | -        | 0    | -             | -      | -     | -     | -        | 0    | -             | -          |
| % Pedestrians           | -      | -     | -     | -       | -    | -             | -      | -     | -     | -       | -    | -             | -      | -     | -     | -        | -    | -             | -      | -     | -     | -        | -    | -             | -          |



Rosemont, Illinois, United States 60018 (847)518-9990 Count Name: Vollmer Road with Ridgeland Avenue Site Code: Start Date: 12/17/2019 Page No: 4

### Turning Movement Peak Hour Data (5:30 PM)

|                         |        |       |       | er Road<br>bound |      |               |        |       | Vollme<br>Westl | er Road |      |               |        |       | •     | d Avenue<br>bound |      |               |        |       | U     | d Avenue<br>bound |      |               |            |
|-------------------------|--------|-------|-------|------------------|------|---------------|--------|-------|-----------------|---------|------|---------------|--------|-------|-------|-------------------|------|---------------|--------|-------|-------|-------------------|------|---------------|------------|
| Start Time              | U-Turn | Left  | Thru  | Right            | Peds | App.<br>Total | U-Turn | Left  | Thru            | Right   | Peds | App.<br>Total | U-Turn | Left  | Thru  | Right             | Peds | App.<br>Total | U-Turn | Left  | Thru  | Right             | Peds | App.<br>Total | Int. Total |
| 5:30 PM                 | 0      | 6     | 123   | 24               | 0    | 153           | 0      | 24    | 118             | 17      | 0    | 159           | 0      | 20    | 22    | 10                | 0    | 52            | 0      | 17    | 26    | 16                | 0    | 59            | 423        |
| 5:45 PM                 | 0      | 7     | 111   | 20               | 0    | 138           | 0      | 20    | 120             | 10      | 0    | 150           | 0      | 10    | 24    | 16                | 0    | 50            | 0      | 10    | 27    | 15                | 0    | 52            | 390        |
| 6:00 PM                 | 0      | 0     | 108   | 16               | 0    | 124           | 0      | 22    | 87              | 16      | 0    | 125           | 0      | 13    | 23    | 4                 | 0    | 40            | 0      | 17    | 24    | 9                 | 0    | 50            | 339        |
| 6:15 PM                 | 0      | 4     | 101   | 22               | 0    | 127           | 0      | 18    | 82              | 5       | 0    | 105           | 0      | 18    | 26    | 12                | 0    | 56            | 0      | 9     | 27    | 9                 | 0    | 45            | 333        |
| Total                   | 0      | 17    | 443   | 82               | 0    | 542           | 0      | 84    | 407             | 48      | 0    | 539           | 0      | 61    | 95    | 42                | 0    | 198           | 0      | 53    | 104   | 49                | 0    | 206           | 1485       |
| Approach %              | 0.0    | 3.1   | 81.7  | 15.1             | -    | -             | 0.0    | 15.6  | 75.5            | 8.9     | -    | -             | 0.0    | 30.8  | 48.0  | 21.2              | -    | -             | 0.0    | 25.7  | 50.5  | 23.8              | -    | -             | -          |
| Total %                 | 0.0    | 1.1   | 29.8  | 5.5              | -    | 36.5          | 0.0    | 5.7   | 27.4            | 3.2     | -    | 36.3          | 0.0    | 4.1   | 6.4   | 2.8               | -    | 13.3          | 0.0    | 3.6   | 7.0   | 3.3               | -    | 13.9          | -          |
| PHF                     | 0.000  | 0.607 | 0.900 | 0.854            | -    | 0.886         | 0.000  | 0.875 | 0.848           | 0.706   | -    | 0.847         | 0.000  | 0.763 | 0.913 | 0.656             | -    | 0.884         | 0.000  | 0.779 | 0.963 | 0.766             | -    | 0.873         | 0.878      |
| Lights                  | 0      | 17    | 437   | 80               | -    | 534           | 0      | 83    | 405             | 47      | -    | 535           | 0      | 61    | 93    | 42                | -    | 196           | 0      | 51    | 104   | 49                | -    | 204           | 1469       |
| % Lights                | -      | 100.0 | 98.6  | 97.6             | -    | 98.5          | -      | 98.8  | 99.5            | 97.9    | -    | 99.3          | -      | 100.0 | 97.9  | 100.0             | -    | 99.0          | -      | 96.2  | 100.0 | 100.0             | -    | 99.0          | 98.9       |
| Buses                   | 0      | 0     | 0     | 0                | -    | 0             | 0      | 0     | 0               | 0       | -    | 0             | 0      | 0     | 2     | 0                 | -    | 2             | 0      | 0     | 0     | 0                 | -    | 0             | 2          |
| % Buses                 | -      | 0.0   | 0.0   | 0.0              | -    | 0.0           | -      | 0.0   | 0.0             | 0.0     | -    | 0.0           | -      | 0.0   | 2.1   | 0.0               | -    | 1.0           | -      | 0.0   | 0.0   | 0.0               | -    | 0.0           | 0.1        |
| Single-Unit Trucks      | 0      | 0     | 2     | 0                | -    | 2             | 0      | 1     | 2               | 1       | -    | 4             | 0      | 0     | 0     | 0                 | -    | 0             | 0      | 0     | 0     | 0                 | -    | 0             | 6          |
| % Single-Unit<br>Trucks | -      | 0.0   | 0.5   | 0.0              | -    | 0.4           | -      | 1.2   | 0.5             | 2.1     | -    | 0.7           | -      | 0.0   | 0.0   | 0.0               | -    | 0.0           | -      | 0.0   | 0.0   | 0.0               | -    | 0.0           | 0.4        |
| Articulated Trucks      | 0      | 0     | 0     | 0                | -    | 0             | 0      | 0     | 0               | 0       | -    | 0             | 0      | 0     | 0     | 0                 | -    | 0             | 0      | 1     | 0     | 0                 | -    | 1             | 1          |
| % Articulated<br>Trucks | -      | 0.0   | 0.0   | 0.0              | -    | 0.0           | -      | 0.0   | 0.0             | 0.0     | -    | 0.0           | -      | 0.0   | 0.0   | 0.0               | -    | 0.0           | -      | 1.9   | 0.0   | 0.0               | -    | 0.5           | 0.1        |
| Bicycles on Road        | 0      | 0     | 4     | 2                | -    | 6             | 0      | 0     | 0               | 0       | -    | 0             | 0      | 0     | 0     | 0                 | -    | 0             | 0      | 1     | 0     | 0                 | -    | 1             | 7          |
| % Bicycles on<br>Road   | -      | 0.0   | 0.9   | 2.4              | -    | 1.1           | -      | 0.0   | 0.0             | 0.0     | -    | 0.0           | -      | 0.0   | 0.0   | 0.0               | -    | 0.0           | -      | 1.9   | 0.0   | 0.0               | -    | 0.5           | 0.5        |
| Pedestrians             | -      | -     | -     | -                | 0    | -             | -      | -     | -               | -       | 0    | -             | -      | -     | -     | -                 | 0    | -             | -      | -     | -     | -                 | 0    | -             | -          |
| % Pedestrians           | -      | -     | -     | -                | -    | -             | -      | -     | -               | -       | -    | -             | -      | -     | -     | -                 | -    | -             | -      | -     | -     | -                 | -    | -             | -          |

| Type of peak h                                                                      |                                 |                   |                            |                                      |                | еак                |                                  |               |                 |             | Me                          | thod fo       | or deter       | mining                           |                                 |               |                               | ing Volum                          |
|-------------------------------------------------------------------------------------|---------------------------------|-------------------|----------------------------|--------------------------------------|----------------|--------------------|----------------------------------|---------------|-----------------|-------------|-----------------------------|---------------|----------------|----------------------------------|---------------------------------|---------------|-------------------------------|------------------------------------|
| LOCATION<br>CITY/STAT                                                               |                                 |                   |                            | 94th S                               | St             |                    |                                  |               |                 |             |                             |               |                |                                  |                                 |               | <b>#:</b> 13815<br>iu, May 1  |                                    |
| 116 <sup>◆</sup> 64<br>0<br>99 <u>◆ 3</u> 4                                         | ↓<br>₄   •<br>•<br>•            | 957 (             |                            | <ul> <li>◆ 0</li> <li>◆ 0</li> </ul> |                |                    | Peak-H<br>eak 15                 | -Min:         | T:30            | AM T        | 7:45 A                      | M<br>ts       |                | 6.0 ← 1.<br>0.<br>3.0 <u>→ 5</u> | ↓<br>.0 ↓<br>.0 ↓               |               | 0<br>0.0<br>0.0<br>0.0<br>0.0 | 0.0                                |
| 1                                                                                   |                                 | 0<br>7<br>0       |                            | _                                    |                | _                  |                                  | d ↑           |                 |             | STOP                        | _             |                | 0<br>0<br>0                      | 0<br>0<br>0<br>0<br>0<br>0<br>0 |               | • 0<br>• 0                    |                                    |
| ◆<br>N                                                                              | +<br>+<br>•<br>•<br>•<br>•<br>• | NA<br>NA          | NA                         | *<br>*                               |                | _                  |                                  |               | •               | ) † †  <br> |                             | _             |                | <br>                             | • [<br>• •<br>• •<br>• •<br>• • | NA            | ► NA                          |                                    |
| 15-Min Count<br>Period                                                              |                                 |                   | m Ave<br>bound)            |                                      |                |                    | m Ave<br>nbound)                 |               |                 |             | h St<br>bound)              |               |                | 194t<br>(Westl                   | h St<br>bound)                  |               | Total                         | Hourly<br>Totals                   |
| Beginning At<br>7:00 AM                                                             | Left<br>9                       | Thru<br>329       | Right<br>0                 | <b>U</b><br>0                        | Left<br>0      | <b>Thru</b><br>196 | Right<br>12                      | <b>U</b><br>0 | Left<br>21      | Thru<br>0   | Right<br>5                  | <b>U</b><br>0 | Left<br>0      | <u>Thru</u>                      | Right<br>0                      | <b>U</b><br>0 | 572                           |                                    |
| 7:15 AM                                                                             | 14                              | 333               | 0                          | 0                                    | 0              | 209                | 22                               | 0             | 14              | 0           | 6                           | 0             | 0              | 0                                | 0                               | 0             | 598                           |                                    |
| 7:30 AM<br>7:45 AM                                                                  | <u>15</u><br>16                 | 377<br>352        | 0                          | 0<br>0                               | 0              | 221<br>240         | <u>14</u><br>13                  | 0             | 23<br>19        | 0           | <u>9</u><br>11              | 0<br>0        | 0              | 0                                | 0                               | 0<br>0        | 659<br>651                    | 2480                               |
| 8:00 AM                                                                             | 12                              | 305               | 0                          | 0                                    | 0              | 287                | 10                               | 0             | 8               | 0           | 9                           | 0             | 0              | 0                                | 0                               | 0             | 631                           | 2539                               |
| 8:15 AM<br>8:30 AM<br>8:45 AM                                                       | 10<br>10<br>14                  | 279<br>270<br>251 | 0<br>0<br>0                | 0<br>0<br>0                          | 0<br>0<br>0    | 225<br>250<br>243  | 16<br>13<br>15                   | 0<br>0<br>0   | 10<br>19<br>17  | 0<br>0<br>0 | 12<br>5<br>9                | 0<br>0<br>0   | 0<br>0<br>0    | 0<br>0<br>0                      | 0<br>0<br>0                     | 0<br>0<br>0   | 552<br>567<br>549             | 2493<br>2401<br>2299               |
| Peak 15-Min<br>Flowrates<br>All Vehicles<br>Heavy Trucks<br>Pedestrians<br>Bicycles | Left<br>60<br>16<br>0           |                   | orthbou<br>Right<br>0<br>0 | nd<br>U<br>0                         | Left<br>0<br>0 |                    | outhbou<br>Right<br>56<br>0<br>0 | nd<br>U<br>0  | Left<br>92<br>0 |             | astbour<br>Right<br>36<br>0 | id<br>U<br>O  | Left<br>0<br>0 |                                  | estbour<br>Right<br>0<br>0      | nd<br>U<br>O  | 26<br>8                       | <b>otal</b><br>336<br>44<br>0<br>0 |
| Railroad<br>Stopped Buses                                                           |                                 |                   |                            |                                      |                |                    |                                  |               |                 |             |                             |               |                |                                  |                                 |               |                               |                                    |
|                                                                                     |                                 |                   |                            |                                      |                |                    |                                  |               |                 |             |                             |               |                |                                  |                                 |               |                               |                                    |

Comments:

Report generated on 5/31/2016 9:36 AM

| Type of peak nour being reported: interse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                         | Method fo                                                                                                                                           | or determining peak nour: 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LOCATION: Harlem Ave 194th S<br>CITY/STATE: Frankfort, IL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | St                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>t:</b> 13815002<br>u, May 19 2016                                                                                                                                             |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Peak 15-Min: 4                                                                                                                                          | 100 PM 5:00 PM<br>1:30 PM 4:45 PM<br>1:30 PM 4:45 PM                                                                                                | 2.5 4.<br>1.5 2.5 0.<br>5.1 9.1 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                         | SUB                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | • 0<br>• 0                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                         | <b>1</b> ↑ ↑ <b> </b>                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NA NA                                                                                                                                                                            |
| 15-Min Count Harlem Ave                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Harlem Ave                                                                                                                                              | 194th St                                                                                                                                            | 194th St                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total Hourly                                                                                                                                                                     |
| Period (Northbound)<br>Beginning At Left Thru Right U                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (Southbound)<br>Left Thru Right U                                                                                                                       | (Eastbound)<br>Left Thru Right U                                                                                                                    | (Westbound)<br>Left Thru Right U                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Totals                                                                                                                                                                           |
| 4:00 PM         10         304         0         0           4:15 PM         11         303         0         0           4:30 PM         6         314         0         0           4:45 PM         7         316         0         0           4:45 PM         7         316         0         0           5:00 PM         8         262         0         0           5:15 PM         9         303         0         0           5:30 PM         11         283         0         0           5:45 PM         5         261         0         0 | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$                                                                                                   | $\begin{array}{cccccccccccccccccccccccccccccccccccc$                                                                                                | 0 0 0 0 0<br>0 0 0<br>0 0 0 0<br>0 0<br>0 0 0<br>0 0 0<br>0 0 0<br>0 0<br>0 0 0<br>0 0 0<br>0 0<br>0 0 br>0 0 0<br>0 0 0<br>0 0 0<br>0 0<br>0 0 0 0 | 799           770           828           776           3173           760           3134           785           3149           769           3090           739           3053 |
| Peak 15-Min<br>Flowrates     Northbound       Left     Thru     Right     U       All Vehicles     24     1256     0     0       Heavy Trucks     8     76     0     0                                                                                                                                                                                                                                                                                                                                                                               | Southbound           Left         Thru         Right         U           0         1872         76         0           0         60         0         0 | Eastbound           Left         Thru         Right         U           44         0         40         0           8         0         0         0 | Westbound           Left         Thru         Right         U           0         0         0         0           0         0         0         0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u>Total</u><br>3312<br>152                                                                                                                                                      |

Comments: Report generated on 5/31/2016 9:36 AM

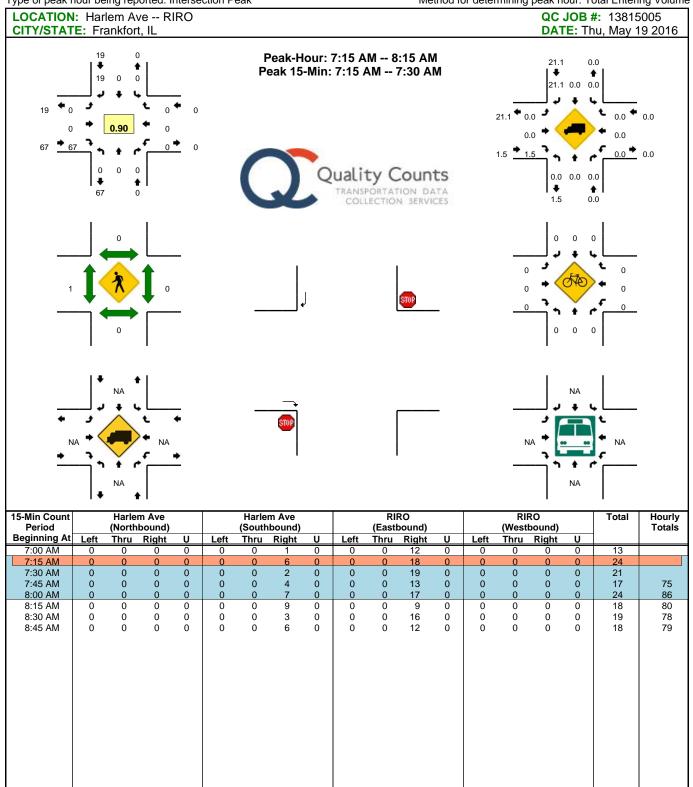
| LOCATION: Harlem Ave 195th S<br>CITY/STATE: Frankfort, IL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | #: 13815003<br>nu, May 19 2016                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\begin{array}{c} 1034 & 1420 \\ 12 & 1021 & 1 \\ 12 & 1021 & 1 \\ 30 & 46 & 0 & 0 \\ 0 & 0 & 0.94 & 0 \\ 150 & 104 & 0 & 0 \\ 18 & 1373 & 0 & 0 \\ 1125 & 1391 & 0 \\ \end{array}$                                                                                                                                                                                                                                                                                                                                                                             | Peak 15-Min:                                                                                                                                                                                                                                                                                                                                                                                                                                          | 115 AM 8:15 AM<br>8:00 AM 8:15 AM<br>uality Counts                                                                                                                                                                                                                                                                                                                                                     | $6.7  \bullet \\ 6.7  \bullet \\ 11.1  4.0  0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | • 0.0 ● 0.0<br>● 0.0<br>• 0.0<br>• 0.0                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ↓                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5005                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ¶↑↑↑                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NA                                                                                                                                                                   |
| 5-Min Count Harlem Ave<br>Period (Northbound)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Harlem Ave<br>(Southbound)                                                                                                                                                                                                                                                                                                                                                                                                                            | 195th St<br>(Eastbound)                                                                                                                                                                                                                                                                                                                                                                                | 195th St<br>(Westbound)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Total Hourly<br>Totals                                                                                                                                               |
| Beginning At         Left         Thru         Right         U           7:00 AM         3         310         0         0           7:15 AM         2         334         0         0           7:30 AM         4         370         0         0           7:45 AM         4         357         0         0           8:00 AM         8         312         0         0           8:15 AM         14         273         0         0           8:30 AM         8         275         0         0           8:45 AM         4         257         0         0 | Left         Thru         Right         U           0         213         2         0           0         211         3         0           0         251         3         0           0         252         4         0           0         254         3         1           0         304         2         0           0         265         3         0           0         265         3         0           0         249         9         0 | Left         Thru         Right         U           15         0         16         0           13         0         17         0           15         0         17         0           15         0         23         0           10         0         47         0           6         0         12         0           10         0         7         0           5         0         10         0 | Left         Thru         Right         U           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0 | 559           580         662           650         2451           683         2575           537         2532           568         2438           534         2322 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                      |

Report generated on 5/31/2016 9:36 AM

| Type of peak hour being reported: Inters<br>LOCATION: Harlem Ave 195th                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                            | Ivietnod f                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>#:</b> 13815004                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 <b>• 0.97</b> • 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Peak 15-Min:                                                                                                                                                                                                                                                                                                                                                                                               | 4:00 PM 5:00 PM<br>4:30 PM 4:45 PM                                                                                                                                                                                                                                                                                      | 2.0 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0.0 + 0. |                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ↓                                                                                                                                                                                                                                                                                                                                                                                                          | STOP                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                |
| 15-Min Count Harlem Ave                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Harlem Ave                                                                                                                                                                                                                                                                                                                                                                                                 | *) ↑ ↑ [                                                                                                                                                                                                                                                                                                                | NA<br>NA<br>NA<br>195th St                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | NA<br>Total Hourly                                                                                                                                             |
| Period (Northbound)<br>Beginning At Left Thru Right U                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | (Southbound)<br>Left Thru Right U                                                                                                                                                                                                                                                                                                                                                                          | (Eastbound)<br>Left Thru Right U                                                                                                                                                                                                                                                                                        | (Westbound)<br>Left Thru Right U                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Totals                                                                                                                                                         |
| 4:00 PM         8         293         0         0           4:15 PM         8         314         0         0           4:30 PM         6         302         0         0           4:45 PM         10         321         0         0           4:45 PM         10         321         0         0           5:00 PM         12         255         0         0           5:15 PM         6         316         0         0           5:30 PM         12         287         0         0           5:45 PM         8         262         0         0 | 0         454         19         0           0         417         13         0           0         468         19         0           0         468         19         0           0         420         15         0           0         452         15         0           0         432         14         0           0         441         12         0           0         434         17         0 | 10       0       13       0         10       0       14       0         12       0       13       0         4       0       11       0         4       0       12       0         11       0       12       0         11       0       12       0         9       0       11       0         5       0       12       0 | 0     0     0     0       0     0     0     0       0     0     0     0       0     0     0     0       0     0     0     0       0     0     0     0       0     0     0     0       0     0     0     0       0     0     0     0       0     0     0     0       0     0     0     0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 797         776           820         781         3174           750         3127         791         3142           772         3094         738         3051 |
| Peak 15-Min       Northbound         Flowrates       Left       Thru       Right       U         All Vehicles       24       1208       0       0         Heavy Trucks       0       68       0       0         Pedestrians       0       0       0       1         Railroad       0       0       0       0                                                                                                                                                                                                                                          | Southbound           Left         Thru         Right         U           0         1872         76         0           0         64         0         0           0         0         0         0           0         0         0         0                                                                                                                                                                | Eastbound           Left         Thru         Right         U           48         0         52         0           0         0         0         0           0         0         0         0           0         0         0         0                                                                                 | Westbound           Left         Thru         Right         U           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0           0         0         0         0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <u>Total</u><br>3280<br>132<br>0<br>0                                                                                                                          |

Comments:

Report generated on 6/7/2016 2:43 PM



Northbound

0

0

0

Left

0

0

0

Thru

0

0

0

0

Right

Thru

0

0

0

0

Left

0

0

0

Southbound

Right

24

0

0

0

Left

0

0

0

Peak 15-Min

Flowrates

All Vehicles

Heavy Trucks

Pedestrians

**Bicycles** 

Railroad Stopped Buses Comments: Thru

0

0

0

0

Left

0

0

0

Westbound

Right

0

0

0

Total

96

0

0

0

Eastbound

Right

72

0

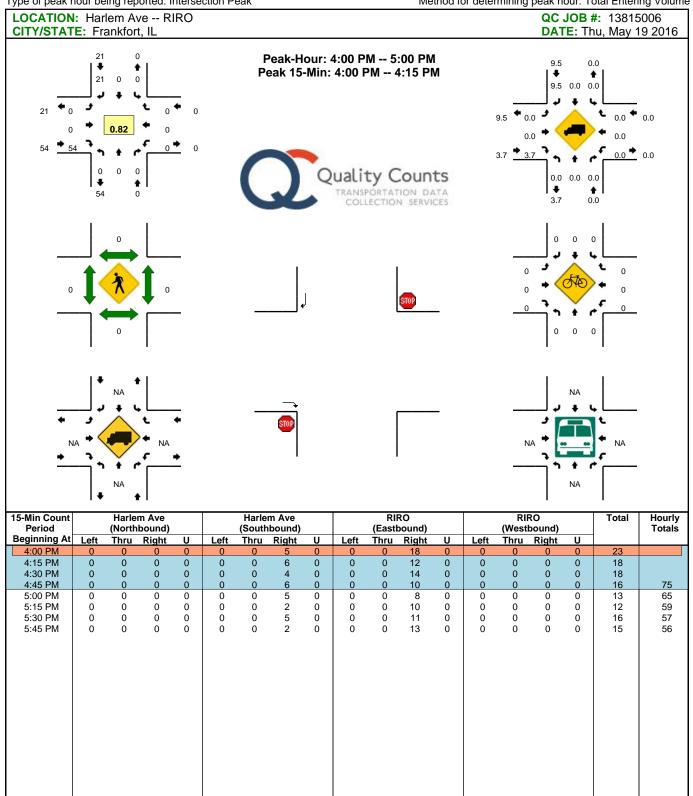
0

Thru

0

0

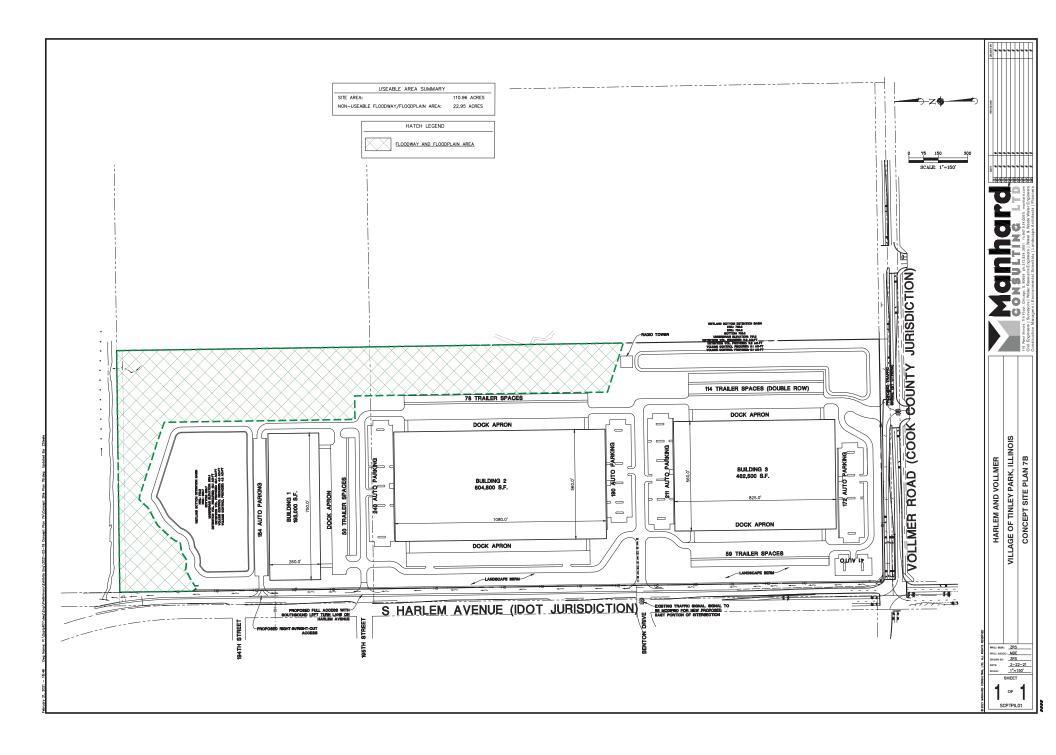
0



| Peak 15-Min   |      | N    | orthbour | nd |      | S    | outhbou | nd |      | E    | astboun | d |      | N    | /estbour | d |       |
|---------------|------|------|----------|----|------|------|---------|----|------|------|---------|---|------|------|----------|---|-------|
| Flowrates     | Left | Thru | Right    | U  | Left | Thru | Right   | U  | Left | Thru | Right   | U | Left | Thru | Right    | U | Total |
| All Vehicles  | 0    | 0    | 0        | 0  | 0    | 0    | 20      | 0  | 0    | 0    | 72      | 0 | 0    | 0    | 0        | 0 | 92    |
| Heavy Trucks  | 0    | 0    | 0        |    | 0    | 0    | 0       |    | 0    | 0    | 0       |   | 0    | 0    | 0        |   | 0     |
| Pedestrians   |      | 0    |          |    |      | 0    |         |    |      | 0    |         |   |      | 0    |          |   | 0     |
| Bicycles      | 0    | 0    | 0        |    | 0    | 0    | 0       |    | 0    | 0    | 0       |   | 0    | 0    | 0        |   | 0     |
| Railroad      |      |      |          |    |      |      |         |    |      |      |         |   |      |      |          |   |       |
| Stopped Buses |      |      |          |    |      |      |         |    |      |      |         |   |      |      |          |   |       |
| Comments:     |      |      |          |    |      |      |         |    |      |      |         |   |      |      |          |   |       |

Report generated on 5/31/2016 9:36 AM

## Preliminary Site Plan



### ITE Trip Generation Worksheets

# Warehousing (150)

### Vehicle Trip Ends vs: 1000 Sq. Ft. GFA On a: Weekday

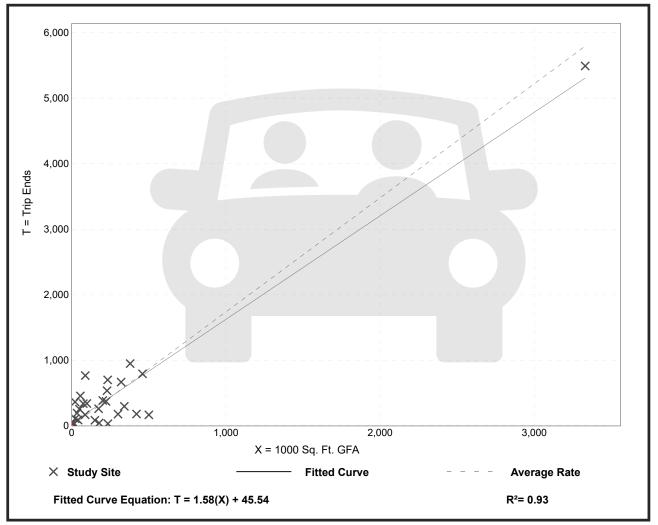
| Setting/Location: | General Urban/Suburban |
|-------------------|------------------------|
|-------------------|------------------------|

| Number of Studies:        | 29                        |
|---------------------------|---------------------------|
| Avg. 1000 Sq. Ft. GFA:    | 285                       |
| Directional Distribution: | 50% entering, 50% exiting |

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 1.74         | 0.15 - 16.93   | 1.55               |

### **Data Plot and Equation**



Trip Gen Manual, 10th Ed + Supplement • Institute of Transportation Engineers

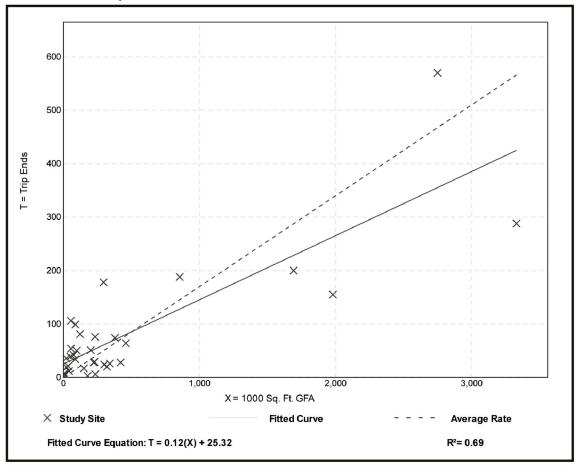
# Warehousing (150)

| Vehicle Trip Ends vs:<br>On a: | 1000 Sq. Ft. GFA<br>Weekday,<br>Peak Hour of Adjacent Street Traffic,<br>One Hour Between 7 and 9 a.m. |
|--------------------------------|--------------------------------------------------------------------------------------------------------|
| Setting/Location:              | General Urban/Suburban                                                                                 |
| Number of Studies:             | 34                                                                                                     |
| 1000 Sq. Ft. GFA:              | 451                                                                                                    |
| Directional Distribution:      | 77% entering, 23% exiting                                                                              |
|                                |                                                                                                        |

#### Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.17         | 0.02 - 1.93    | 0.20               |

#### **Data Plot and Equation**



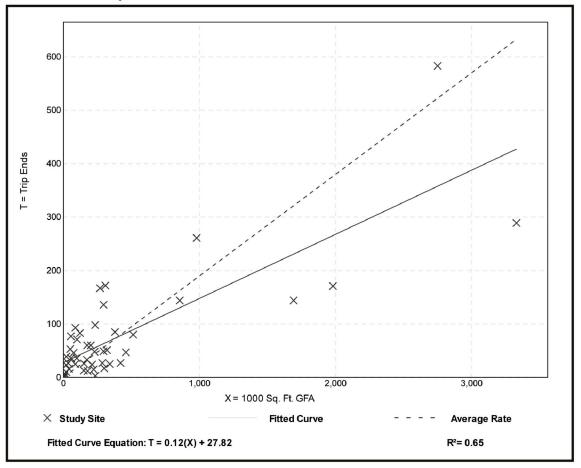
# Warehousing (150)

| Vehicle Trip Ends vs:<br>On a: | 1000 Sq. Ft. GFA<br>Weekday,<br>Peak Hour of Adjacent Street Traffic,<br>One Hour Between 4 and 6 p.m. |
|--------------------------------|--------------------------------------------------------------------------------------------------------|
| Setting/Location:              | General Urban/Suburban                                                                                 |
| Number of Studies:             | 47                                                                                                     |
| 1000 Sq. Ft. GFA:              | 400                                                                                                    |
| Directional Distribution:      | 27% entering, 73% exiting                                                                              |
|                                |                                                                                                        |

#### Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.19         | 0.01 - 1.80    | 0.18               |

#### **Data Plot and Equation**



# CMAP 2050 Projections Letter



433 West Van Buren Street Suite 450 Chicago, IL 60607

> 312-454-0400 cmap.illinois.gov

March 5, 2021

Andrew Bowen Traffic Engineer Kenig, Lindgren, O'Hara and Aboona, Inc. 9575 West Higgins Road Suite 400 Rosemont, IL 60018

#### Subject: Harlem Avenue from 191st Street to Vollmer Road IDOT

Dear Mr. Bowen:

In response to a request made on your behalf and dated March 5, 2021, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

| ROAD SEGMENT                           | <b>Current Volumes</b> | Year 2050 ADT |
|----------------------------------------|------------------------|---------------|
| Harlem Ave north of 191st St           | 27,800                 | 40,600        |
| Harlem Ave from 191st St to Vollmer Rd | 29,200                 | 42,700        |
| Harlem Ave south of Vollmer Rd         | 16,200                 | 26,100        |
| 191st St west of Harlem Ave            | 16,000                 | 23,400        |
| Oak Park Ave east of Harlem Ave        | 3,050                  | 5,600         |
| Vollmer Rd east of Harlem Ave          | 11,100                 | 20,400        |

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2020 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

2R

Jose Rodriguez, PTP, AICP Senior Planner, Research & Analysis

cc: Quigley (IDOT) 2021\_CY\_TrafficForecast\TinleyPark\ck-28-21\ck-28-21.docx

# Level of Service Criteria

### LEVEL OF SERVICE CRITERIA

|                     | S                                                                                                                                                                                                                                                                                                   | ignalized Intersections            |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|                     |                                                                                                                                                                                                                                                                                                     | Average Control                    |
| Level of<br>Service | Interpretation                                                                                                                                                                                                                                                                                      | Delay<br>(seconds per vehicle)     |
| A                   | Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping                                                                                                                                                                        | e ≤10                              |
| В                   | Good progression, with more vehicles stopping than for<br>Level of Service A                                                                                                                                                                                                                        |                                    |
| C                   | Individual cycle failures (i.e., one or more queued<br>vehicles are not able to depart as a result of insufficien<br>capacity during the cycle) may begin to appear<br>Number of vehicles stopping is significant, although many<br>vehicles still pass through the intersection withou<br>stopping | t<br>t                             |
| D                   | The volume-to-capacity ratio is high and either<br>progression is ineffective or the cycle length is too long<br>Many vehicles stop and individual cycle failures are<br>noticeable                                                                                                                 | ?                                  |
| E                   | Progression is unfavorable. The volume-to-capacity ratio<br>is high and the cycle length is long. Individual cycle<br>failures are frequent                                                                                                                                                         | 2                                  |
| F                   | The volume-to-capacity ratio is very high, progression is<br>very poor, and the cycle length is long. Most cycles fai<br>to clear the queue                                                                                                                                                         | l                                  |
|                     |                                                                                                                                                                                                                                                                                                     | ignalized Intersections            |
|                     | Level of Service Average                                                                                                                                                                                                                                                                            | Fotal Delay (SEC/VEH)              |
|                     | А                                                                                                                                                                                                                                                                                                   | 0 - 10                             |
|                     | В                                                                                                                                                                                                                                                                                                   | > 10 - 15                          |
|                     | С                                                                                                                                                                                                                                                                                                   | > 15 - 25                          |
|                     | D                                                                                                                                                                                                                                                                                                   | > 25 - 35                          |
|                     | E                                                                                                                                                                                                                                                                                                   | > 35 - 50                          |
|                     | F<br>Source: <i>High</i>                                                                                                                                                                                                                                                                            | > 50<br>way Capacity Manual, 2010. |

# Capacity Analysis Summary Sheets Existing Weekday Morning Peak Hour Conditions

|                         | *          | ۰.    | 1          | 1     | 1          | ţ       |
|-------------------------|------------|-------|------------|-------|------------|---------|
| Lane Group              | WBL        | WBR   | NBT        | NBR   | SBL        | SBT     |
| Lane Configurations     | <u> </u>   | 11    | <b>†</b> † | 101   | <u>ነ</u> ካ | <u></u> |
| Traffic Volume (vph)    | 38         | 0     | 1074       | 69    | 2          | 611     |
| Future Volume (vph)     | 38         | 0     | 1074       | 69    | 2          | 611     |
| Ideal Flow (vphpl)      | 1900       | 1900  | 2000       | 1900  | 1900       | 2000    |
| Lane Width (ft)         | 12         | 12    | 12         | 12    | 12         | 12      |
| Grade (%)               | 0%         | 12    | 0%         | 12    | 12         | 0%      |
| Storage Length (ft)     | 150        | 0     | 070        | 100   | 310        | 070     |
| Storage Lanes           | 130        | 2     |            | 100   | 2          |         |
| Taper Length (ft)       | 150        | ۷     |            | 1     | 235        |         |
| Lane Util. Factor       | 1.00       | 0.88  | 0.95       | 1.00  | 0.97       | 0.95    |
|                         | 1.00       | 0.88  | 0.95       | 1.00  | 0.97       | 0.95    |
| Ped Bike Factor         |            |       |            |       |            |         |
| Frt<br>Elt Drotoctod    | 0.050      |       |            | 0.850 | 0.050      |         |
| Flt Protected           | 0.950      | 0011  | 0/00       | 4500  | 0.950      | 0/40    |
| Satd. Flow (prot)       | 1805       | 3344  | 3689       | 1599  | 3502       | 3619    |
| Flt Permitted           | 0.950      |       |            |       | 0.950      |         |
| Satd. Flow (perm)       | 1805       | 3344  | 3689       | 1599  | 3502       | 3619    |
| Right Turn on Red       |            | No    |            | No    |            |         |
| Satd. Flow (RTOR)       |            |       |            |       |            |         |
| Link Speed (mph)        | 50         |       | 45         |       |            | 45      |
| Link Distance (ft)      | 1356       |       | 1018       |       |            | 970     |
| Travel Time (s)         | 18.5       |       | 15.4       |       |            | 14.7    |
| Confl. Peds. (#/hr)     |            |       |            |       |            |         |
| Confl. Bikes (#/hr)     |            |       |            |       |            |         |
| Peak Hour Factor        | 0.83       | 0.83  | 0.83       | 0.83  | 0.83       | 0.83    |
| Growth Factor           | 100%       | 100%  | 100%       | 100%  | 100%       | 100%    |
| Heavy Vehicles (%)      | 0%         | 0%    | 3%         | 1%    | 0%         | 5%      |
| Bus Blockages (#/hr)    | 070        | 070   | 0          | 0     | 0,0        | 0       |
|                         | 0          | 0     | 0          | 0     | 0          | 0       |
| Parking (#/hr)          | 00/        |       | 00/        |       |            | 00/     |
| Mid-Block Traffic (%)   | 0%         |       | 0%         |       |            | 0%      |
| Shared Lane Traffic (%) |            | 0     | 100.4      | 0.0   | 0          | 70/     |
| Lane Group Flow (vph)   | 46         | 0     | 1294       | 83    | 2          | 736     |
| Turn Type               | Prot       | pm+ov | NA         | Free  | Prot       | NA      |
| Protected Phases        | 8          | 1     | 2          |       | 1          | 6       |
| Permitted Phases        |            | 8     |            | Free  |            |         |
| Detector Phase          | 8          | 1     | 2          |       | 1          | 6       |
| Switch Phase            |            |       |            |       |            |         |
| Minimum Initial (s)     | 8.0        | 3.0   | 15.0       |       | 3.0        | 15.0    |
| Minimum Split (s)       | 14.0       | 7.5   | 21.0       |       | 7.5        | 21.0    |
| Total Split (s)         | 21.0       | 15.4  | 103.6      |       | 15.4       | 119.0   |
| Total Split (%)         | 15.0%      | 11.0% | 74.0%      |       | 11.0%      | 85.0%   |
| Yellow Time (s)         | 4.0        | 3.5   | 4.0        |       | 3.5        | 4.0     |
| All-Red Time (s)        | 2.0        | 1.0   | 2.0        |       | 1.0        | 2.0     |
| Lost Time Adjust (s)    | 0.0        | 0.0   | 0.0        |       | 0.0        | 0.0     |
| Total Lost Time (s)     | 6.0        | 4.5   | 6.0        |       | 4.5        | 6.0     |
| • • •                   | 0.0        |       |            |       |            | 0.0     |
| Lead/Lag                |            | Lead  | Lag        |       | Lead       |         |
| Lead-Lag Optimize?      | <b>N</b> 1 | Yes   | Yes        |       | Yes        | 0.14    |
| Recall Mode             | None       | None  | C-Min      |       | None       | C-Min   |
| Act Effct Green (s)     | 10.2       |       | 119.7      | 140.0 | 5.6        | 121.8   |
| Actuated g/C Ratio      | 0.07       |       | 0.86       | 1.00  | 0.04       | 0.87    |

Existing Morning Peak Hour 01/06/2020 21-008 Tinley Park

| 03/10/2021 |
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|                              | <             | ×         | 1        | 1         | 1          | Ļ          |
|------------------------------|---------------|-----------|----------|-----------|------------|------------|
| Lane Group                   | WBL           | WBR       | NBT      | NBR       | SBL        | SBT        |
| v/c Ratio                    | 0.35          |           | 0.41     | 0.05      | 0.01       | 0.23       |
| Control Delay                | 68.5          |           | 3.9      | 0.1       | 64.5       | 2.2        |
| Queue Delay                  | 0.0           |           | 0.0      | 0.0       | 0.0        | 0.0        |
| Total Delay                  | 68.5          |           | 3.9      | 0.1       | 64.5       | 2.2        |
| LOS                          | E             |           | А        | А         | E          | А          |
| Approach Delay               | 68.5          |           | 3.7      |           |            | 2.4        |
| Approach LOS                 | E             |           | А        |           |            | А          |
| Queue Length 50th (ft)       | 41            |           | 190      | 0         | 1          | 53         |
| Queue Length 95th (ft)       | 75            |           | 210      | 0         | 5          | 72         |
| Internal Link Dist (ft)      | 1276          |           | 938      |           |            | 890        |
| Turn Bay Length (ft)         | 150           |           |          | 100       | 310        |            |
| Base Capacity (vph)          | 193           |           | 3154     | 1599      | 272        | 3148       |
| Starvation Cap Reductn       | 0             |           | 0        | 0         | 0          | 0          |
| Spillback Cap Reductn        | 0             |           | 0        | 0         | 0          | 0          |
| Storage Cap Reductn          | 0             |           | 0        | 0         | 0          | 0          |
| Reduced v/c Ratio            | 0.24          |           | 0.41     | 0.05      | 0.01       | 0.23       |
| Intersection Summary         |               |           |          |           |            |            |
| Area Type:                   | Other         |           |          |           |            |            |
| Cycle Length: 140            |               |           |          |           |            |            |
| Actuated Cycle Length: 14    |               |           |          |           |            |            |
| Offset: 109.2 (78%), Refer   | renced to pha | ise 2:NBT | Fand 6:S | BT, Start | of Green   |            |
| Natural Cycle: 50            |               |           |          |           |            |            |
| Control Type: Actuated-Co    | oordinated    |           |          |           |            |            |
| Maximum v/c Ratio: 0.41      |               |           |          |           |            |            |
| Intersection Signal Delay:   |               |           |          |           | tersectior |            |
| Intersection Capacity Utiliz | zation 44.9%  |           |          | IC        | U Level o  | of Service |
| Analysis Period (min) 15     |               |           |          |           |            |            |
|                              |               |           |          |           |            |            |

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue

| Ø1     | f Ø2 (R) |      |
|--------|----------|------|
| 15.4 s | 103.6 s  |      |
| Ø6 (R) |          | ✓Ø8  |
| 119 s  |          | 21 s |

Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Driveway

03/10/2021

|                         | ۶     | <b>→</b> | $\mathbf{r}$ | 4     | Ļ     | •    | •           | 1           | 1    | 1     | Ŧ     | ~    |
|-------------------------|-------|----------|--------------|-------|-------|------|-------------|-------------|------|-------|-------|------|
| Lane Group              | EBL   | EBT      | EBR          | WBL   | WBT   | WBR  | NBL         | NBT         | NBR  | SBL   | SBT   | SBR  |
| Lane Configurations     |       | \$       |              |       | \$    |      | <u>ار ا</u> | <b>∱</b> î≽ |      |       | 4î b  |      |
| Traffic Volume (vph)    | 122   | 0        | 30           | 0     | 0     | 0    | 44          | 990         | 0    | 0     | 706   | 36   |
| Future Volume (vph)     | 122   | 0        | 30           | 0     | 0     | 0    | 44          | 990         | 0    | 0     | 706   | 36   |
| Ideal Flow (vphpl)      | 1900  | 1900     | 1900         | 1900  | 1900  | 1900 | 1900        | 1900        | 1900 | 1900  | 1900  | 1900 |
| Lane Width (ft)         | 12    | 16       | 12           | 12    | 12    | 12   | 12          | 12          | 12   | 12    | 12    | 12   |
| Grade (%)               |       | 0%       |              |       | 0%    |      |             | 0%          |      |       | 0%    |      |
| Storage Length (ft)     | 0     |          | 0            | 0     |       | 0    | 95          |             | 0    | 0     |       | 0    |
| Storage Lanes           | 0     |          | 0            | 0     |       | 0    | 1           |             | 0    | 0     |       | 0    |
| Taper Length (ft)       | 0     |          |              | 0     |       |      | 160         |             |      | 0     |       |      |
| Lane Util. Factor       | 1.00  | 1.00     | 1.00         | 1.00  | 1.00  | 1.00 | 1.00        | 0.95        | 0.95 | 0.95  | 0.95  | 0.95 |
| Ped Bike Factor         |       |          |              |       |       |      |             |             |      |       |       |      |
| Frt                     |       | 0.973    |              |       |       |      |             |             |      |       | 0.993 |      |
| Flt Protected           |       | 0.961    |              |       |       |      | 0.950       |             |      |       |       |      |
| Satd. Flow (prot)       | 0     | 1970     | 0            | 0     | 1900  | 0    | 1687        | 3471        | 0    | 0     | 3453  | 0    |
| Flt Permitted           |       | 0.961    |              |       |       |      | 0.305       |             |      |       |       |      |
| Satd. Flow (perm)       | 0     | 1970     | 0            | 0     | 1900  | 0    | 542         | 3471        | 0    | 0     | 3453  | 0    |
| Right Turn on Red       |       |          | No           |       |       | No   |             |             | No   |       |       | No   |
| Satd. Flow (RTOR)       |       |          |              |       |       |      |             |             |      |       |       |      |
| Link Speed (mph)        |       | 30       |              |       | 30    |      |             | 45          |      |       | 45    |      |
| Link Distance (ft)      |       | 318      |              |       | 201   |      |             | 468         |      |       | 1401  |      |
| Travel Time (s)         |       | 7.2      |              |       | 4.6   |      |             | 7.1         |      |       | 21.2  |      |
| Confl. Peds. (#/hr)     |       |          |              |       |       |      |             |             |      |       |       |      |
| Confl. Bikes (#/hr)     |       |          |              |       |       |      |             |             |      |       |       |      |
| Peak Hour Factor        | 0.89  | 0.89     | 0.89         | 0.89  | 0.89  | 0.89 | 0.89        | 0.89        | 0.89 | 0.89  | 0.89  | 0.89 |
| Growth Factor           | 100%  | 100%     | 100%         | 100%  | 100%  | 100% | 100%        | 100%        | 100% | 100%  | 100%  | 100% |
| Heavy Vehicles (%)      | 2%    | 0%       | 3%           | 0%    | 0%    | 0%   | 7%          | 4%          | 0%   | 0%    | 4%    | 0%   |
| Bus Blockages (#/hr)    | 0     | 0        | 0            | 0     | 0     | 0    | 0           | 0           | 0    | 0     | 0     | 0    |
| Parking (#/hr)          |       |          |              |       |       |      |             |             |      |       |       |      |
| Mid-Block Traffic (%)   |       | 0%       |              |       | 0%    |      |             | 0%          |      |       | 0%    |      |
| Shared Lane Traffic (%) |       |          |              |       |       |      |             |             |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 171      | 0            | 0     | 0     | 0    | 49          | 1112        | 0    | 0     | 833   | 0    |
| Turn Type               | Split | NA       |              |       |       |      | pm+pt       | NA          |      |       | NA    |      |
| Protected Phases        | 4     | 4        |              |       | 8     |      | 5           | 2           |      |       | 6     |      |
| Permitted Phases        |       |          |              | 8     |       |      | 2           |             |      | 6     |       |      |
| Detector Phase          | 4     | 4        |              | 8     | 8     |      | 5           | 2           |      | 6     | 6     |      |
| Switch Phase            |       |          |              |       |       |      |             |             |      |       |       |      |
| Minimum Initial (s)     | 8.0   | 8.0      |              | 8.0   | 8.0   |      | 3.0         | 15.0        |      | 15.0  | 15.0  |      |
| Minimum Split (s)       | 14.0  | 14.0     |              | 14.0  | 14.0  |      | 6.5         | 21.0        |      | 21.0  | 21.0  |      |
| Total Split (s)         | 37.8  | 37.8     |              | 16.8  | 16.8  |      | 12.6        | 85.4        |      | 72.8  | 72.8  |      |
| Total Split (%)         | 27.0% | 27.0%    |              | 12.0% | 12.0% |      | 9.0%        | 61.0%       |      | 52.0% | 52.0% |      |
| Yellow Time (s)         | 4.0   | 4.0      |              | 4.0   | 4.0   |      | 3.5         | 4.0         |      | 4.0   | 4.0   |      |
| All-Red Time (s)        | 2.0   | 2.0      |              | 2.0   | 2.0   |      | 0.0         | 2.0         |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0      |              |       | 0.0   |      | 0.0         | 0.0         |      |       | 0.0   |      |
| Total Lost Time (s)     |       | 6.0      |              |       | 6.0   |      | 3.5         | 6.0         |      |       | 6.0   |      |
| Lead/Lag                |       | 0.0      |              |       | 0.0   |      | Lead        | 0.0         |      | Lag   | Lag   |      |
| Lead-Lag Optimize?      |       |          |              |       |       |      | Yes         |             |      | Yes   | Yes   |      |
| Recall Mode             | None  | None     |              | None  | None  |      | None        | C-Min       |      | C-Min | C-Min |      |
| Act Effct Green (s)     |       | 18.4     |              |       |       |      | 112.1       | 109.6       |      |       | 101.6 |      |
| Actuated g/C Ratio      |       | 0.13     |              |       |       |      | 0.80        | 0.78        |      |       | 0.73  |      |
|                         |       |          |              |       |       |      | 2.00        |             |      |       |       |      |

Existing Morning Peak Hour 01/06/2020 21-008 Tinley Park

# Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Driveway

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|--------------------------------|---------------|-----------|--------------|-----------|-------------|------------|------|------|-----|-----|------|-----|
| Lane Group                     | EBL           | EBT       | EBR          | WBL       | WBT         | WBR        | NBL  | NBT  | NBR | SBL | SBT  | SBR |
| v/c Ratio                      |               | 0.66      |              |           |             |            | 0.10 | 0.41 |     |     | 0.33 |     |
| Control Delay                  |               | 69.9      |              |           |             |            | 2.5  | 3.2  |     |     | 8.5  |     |
| Queue Delay                    |               | 0.0       |              |           |             |            | 0.0  | 0.0  |     |     | 0.0  |     |
| Total Delay                    |               | 69.9      |              |           |             |            | 2.5  | 3.2  |     |     | 8.5  |     |
| LOS                            |               | E         |              |           |             |            | А    | А    |     |     | А    |     |
| Approach Delay                 |               | 69.9      |              |           |             |            |      | 3.2  |     |     | 8.5  |     |
| Approach LOS                   |               | E         |              |           |             |            |      | А    |     |     | А    |     |
| Queue Length 50th (ft)         |               | 150       |              |           |             |            | 5    | 69   |     |     | 156  |     |
| Queue Length 95th (ft)         |               | 217       |              |           |             |            | m8   | 68   |     |     | 190  |     |
| Internal Link Dist (ft)        |               | 238       |              |           | 121         |            |      | 388  |     |     | 1321 |     |
| Turn Bay Length (ft)           |               |           |              |           |             |            | 95   |      |     |     |      |     |
| Base Capacity (vph)            |               | 447       |              |           |             |            | 508  | 2718 |     |     | 2505 |     |
| Starvation Cap Reductn         |               | 0         |              |           |             |            | 0    | 0    |     |     | 0    |     |
| Spillback Cap Reductn          |               | 0         |              |           |             |            | 0    | 0    |     |     | 0    |     |
| Storage Cap Reductn            |               | 0         |              |           |             |            | 0    | 0    |     |     | 0    |     |
| Reduced v/c Ratio              |               | 0.38      |              |           |             |            | 0.10 | 0.41 |     |     | 0.33 |     |
| Intersection Summary           |               |           |              |           |             |            |      |      |     |     |      |     |
| Ji -                           | Other         |           |              |           |             |            |      |      |     |     |      |     |
| Cycle Length: 140              |               |           |              |           |             |            |      |      |     |     |      |     |
| Actuated Cycle Length: 140     |               |           |              |           |             |            |      |      |     |     |      |     |
| Offset: 80 (57%), Reference    | d to phase    | 2:NBTL a  | and 6:SB     | TL, Start | of Green    |            |      |      |     |     |      |     |
| Natural Cycle: 60              |               |           |              |           |             |            |      |      |     |     |      |     |
| Control Type: Actuated-Cool    | rdinated      |           |              |           |             |            |      |      |     |     |      |     |
| Maximum v/c Ratio: 0.66        |               |           |              |           |             |            |      |      |     |     |      |     |
| Intersection Signal Delay: 10  |               |           |              |           | tersection  |            |      |      |     |     |      |     |
| Intersection Capacity Utilizat | tion 55.2%    |           |              | IC        | CU Level of | of Service | В    |      |     |     |      |     |
| Analysis Period (min) 15       |               |           |              |           |             |            |      |      |     |     |      |     |
| m Volume for 95th percent      | tile queue is | s metered | l by upstr   | eam sign  | al.         |            |      |      |     |     |      |     |

Splits and Phases: 2: Harlem Avenue & Benton Drive/Driveway

| 1 Ø2 (R)                         | <b>A</b> <sub>Ø4</sub> | ₹ø8    |  |
|----------------------------------|------------------------|--------|--|
| 85.4s                            | 37.8 s                 | 16.8 s |  |
| ▲ Ø5 ♥ ♥ Ø6 (R)<br>12.6 s 72.8 s |                        |        |  |

# Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

03/10/2021

|                         | ٦     | -     | *     | 4     | Ļ        | •     | •     | 1     | 1    | *     | ţ        | ~     |
|-------------------------|-------|-------|-------|-------|----------|-------|-------|-------|------|-------|----------|-------|
| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT      | WBR   | NBL   | NBT   | NBR  | SBL   | SBT      | SBR   |
| Lane Configurations     | 5     | 1     | 1     | ሻ     | <b>†</b> | 1     | ሻሻ    | A⊅    |      | ካካ    | <b>^</b> | 1     |
| Traffic Volume (vph)    | 1     | 3     | 1     | 67    | 1        | 323   | 9     | 710   | 128  | 207   | 526      | 3     |
| Future Volume (vph)     | 1     | 3     | 1     | 67    | 1        | 323   | 9     | 710   | 128  | 207   | 526      | 3     |
| Ideal Flow (vphpl)      | 1900  | 2000  | 1900  | 1900  | 2000     | 1900  | 1900  | 1900  | 1900 | 1900  | 2000     | 1900  |
| Lane Width (ft)         | 12    | 12    | 12    | 12    | 12       | 12    | 12    | 12    | 12   | 12    | 12       | 12    |
| Grade (%)               |       | 0%    |       |       | 0%       |       |       | 0%    |      |       | 0%       |       |
| Storage Length (ft)     | 95    |       | 100   | 235   |          | 0     | 225   |       | 0    | 325   |          | 215   |
| Storage Lanes           | 1     |       | 0     | 1     |          | 1     | 2     |       | 0    | 2     |          | 1     |
| Taper Length (ft)       | 135   |       |       | 220   |          |       | 300   |       |      | 300   |          |       |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00  | 0.97  | 0.95  | 0.95 | 0.97  | 0.95     | 1.00  |
| Ped Bike Factor         |       |       |       |       |          |       |       |       |      |       |          |       |
| Frt                     |       |       | 0.850 |       |          | 0.850 |       | 0.977 |      |       |          | 0.850 |
| Flt Protected           | 0.950 |       |       | 0.950 |          |       | 0.950 |       |      | 0.950 |          |       |
| Satd. Flow (prot)       | 1805  | 2000  | 1615  | 1787  | 2000     | 1568  | 3502  | 3374  | 0    | 3367  | 3654     | 1615  |
| Flt Permitted           |       |       |       | 0.784 |          |       | 0.950 |       |      | 0.950 |          |       |
| Satd. Flow (perm)       | 1900  | 2000  | 1615  | 1475  | 2000     | 1568  | 3502  | 3374  | 0    | 3367  | 3654     | 1615  |
| Right Turn on Red       |       |       | No    |       |          | No    |       |       | No   |       |          | No    |
| Satd. Flow (RTOR)       |       |       |       |       |          |       |       |       |      |       |          |       |
| Link Speed (mph)        |       | 30    |       |       | 45       |       |       | 45    |      |       | 45       |       |
| Link Distance (ft)      |       | 957   |       |       | 5259     |       |       | 2713  |      |       | 854      |       |
| Travel Time (s)         |       | 21.8  |       |       | 79.7     |       |       | 41.1  |      |       | 12.9     |       |
| Confl. Peds. (#/hr)     |       | 2110  |       |       |          |       |       |       |      |       |          |       |
| Confl. Bikes (#/hr)     |       |       |       |       |          |       |       |       |      |       |          |       |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92  | 0.92  | 0.92     | 0.92  | 0.92  | 0.92  | 0.92 | 0.92  | 0.92     | 0.92  |
| Growth Factor           | 100%  | 100%  | 100%  | 100%  | 100%     | 100%  | 100%  | 100%  | 100% | 100%  | 100%     | 100%  |
| Heavy Vehicles (%)      | 0%    | 0%    | 0%    | 1%    | 0%       | 3%    | 0%    | 5%    | 2%   | 4%    | 4%       | 0%    |
| Bus Blockages (#/hr)    | 0     | 0     | 0     | 0     | 0        | 0     | 0     | 0     | 0    | 0     | 0        | 0     |
| Parking (#/hr)          | -     | -     | -     | -     | -        | -     | -     | -     | -    | -     | -        | -     |
| Mid-Block Traffic (%)   |       | 0%    |       |       | 0%       |       |       | 0%    |      |       | 0%       |       |
| Shared Lane Traffic (%) |       | 0,0   |       |       | 0,10     |       |       | 070   |      |       | 0,0      |       |
| Lane Group Flow (vph)   | 1     | 3     | 1     | 73    | 1        | 351   | 10    | 911   | 0    | 225   | 572      | 3     |
| Turn Type               | pm+pt | NĂ    | pm+ov | pm+pt | NA       | pm+ov | Prot  | NA    | Ű    | Prot  | NA       | pm+ov |
| Protected Phases        | 7     | 4     | 5     | 3     | 8        | 1     | 5     | 2     |      | 1     | 6        | 7     |
| Permitted Phases        | 4     |       | 4     | 8     | Ū        | 8     | 0     | _     |      | ·     | Ŭ        | 6     |
| Detector Phase          | 7     | 4     | 5     | 3     | 8        | 1     | 5     | 2     |      | 1     | 6        | 7     |
| Switch Phase            |       |       | 0     | 0     | Ū        |       | 0     | _     |      | ·     | Ŭ        |       |
| Minimum Initial (s)     | 3.0   | 8.0   | 3.0   | 3.0   | 8.0      | 3.0   | 3.0   | 15.0  |      | 3.0   | 15.0     | 3.0   |
| Minimum Split (s)       | 6.5   | 14.0  | 7.5   | 6.5   | 14.0     | 7.5   | 7.5   | 21.0  |      | 7.5   | 21.0     | 6.5   |
| Total Split (s)         | 12.6  | 26.6  | 30.8  | 12.6  | 26.6     | 30.8  | 30.8  | 70.0  |      | 30.8  | 70.0     | 12.6  |
| Total Split (%)         | 9.0%  | 19.0% | 22.0% | 9.0%  | 19.0%    | 22.0% | 22.0% | 50.0% |      | 22.0% | 50.0%    | 9.0%  |
| Yellow Time (s)         | 3.5   | 4.5   | 3.5   | 3.5   | 4.5      | 3.5   | 3.5   | 4.5   |      | 3.5   | 4.5      | 3.5   |
| All-Red Time (s)        | 0.0   | 1.5   | 1.0   | 0.0   | 1.5      | 1.0   | 1.0   | 1.5   |      | 1.0   | 1.5      | 0.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0   | 0.0   | 0.0   |      | 0.0   | 0.0      | 0.0   |
| Total Lost Time (s)     | 3.5   | 6.0   | 4.5   | 3.5   | 6.0      | 4.5   | 4.5   | 6.0   |      | 4.5   | 6.0      | 3.5   |
| Lead/Lag                | Lead  | Lag   | Lead  | Lead  | Lag      | Lead  | Lead  | Lag   |      | Lead  | Lag      | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes      | Yes   | Yes   | Yes   |      | Yes   | Yes      | Yes   |
| Recall Mode             | None  | None  | None  | None  | None     | None  | None  | C-Min |      | None  | C-Min    | None  |
| Act Effct Green (s)     | 7.8   | 8.0   | 8.7   | 12.3  | 8.7      | 37.9  | 5.9   | 89.7  |      | 26.0  | 117.0    | 126.4 |
| Actuated g/C Ratio      | 0.06  | 0.06  | 0.06  | 0.09  | 0.06     | 0.27  | 0.04  | 0.64  |      | 0.19  | 0.84     | 0.90  |
|                         | 0.00  | 0.00  | 0.00  | 0.09  | 0.00     | 0.27  | 0.04  | 0.04  |      | 0.17  | 0.04     | 0.70  |

Existing Morning Peak Hour 01/06/2020 21-008 Tinley Park

# Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 |
|------------|
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|                              | ٦             | -         | $\mathbf{r}$ | ∢        | -          | •          | 1    | Ť    | 1   | 1    | ţ    | ~    |
|------------------------------|---------------|-----------|--------------|----------|------------|------------|------|------|-----|------|------|------|
| Lane Group                   | EBL           | EBT       | EBR          | WBL      | WBT        | WBR        | NBL  | NBT  | NBR | SBL  | SBT  | SBR  |
| v/c Ratio                    | 0.01          | 0.03      | 0.01         | 0.49     | 0.01       | 0.83       | 0.07 | 0.42 |     | 0.36 | 0.19 | 0.00 |
| Control Delay                | 55.0          | 63.0      | 56.0         | 69.9     | 61.0       | 63.8       | 65.0 | 14.9 |     | 69.1 | 3.2  | 3.0  |
| Queue Delay                  | 0.0           | 0.0       | 0.0          | 0.0      | 0.0        | 0.0        | 0.0  | 0.0  |     | 0.0  | 0.0  | 0.0  |
| Total Delay                  | 55.0          | 63.0      | 56.0         | 69.9     | 61.0       | 63.8       | 65.0 | 14.9 |     | 69.1 | 3.2  | 3.0  |
| LOS                          | D             | E         | E            | E        | E          | E          | E    | В    |     | E    | А    | A    |
| Approach Delay               |               | 60.0      |              |          | 64.8       |            |      | 15.5 |     |      | 21.7 |      |
| Approach LOS                 |               | E         |              |          | E          |            |      | В    |     |      | С    |      |
| Queue Length 50th (ft)       | 1             | 3         | 1            | 65       | 1          | 305        | 4    | 189  |     | 108  | 30   | 0    |
| Queue Length 95th (ft)       | 6             | 13        | 6            | 108      | 7          | 369        | 14   | 362  |     | 154  | 80   | m1   |
| Internal Link Dist (ft)      |               | 877       |              |          | 5179       |            |      | 2633 |     |      | 774  |      |
| Turn Bay Length (ft)         | 95            |           | 100          | 235      |            |            | 225  |      |     | 325  |      | 215  |
| Base Capacity (vph)          | 145           | 294       | 335          | 156      | 294        | 446        | 657  | 2161 |     | 672  | 3054 | 1489 |
| Starvation Cap Reductn       | 0             | 0         | 0            | 0        | 0          | 0          | 0    | 0    |     | 0    | 0    | 0    |
| Spillback Cap Reductn        | 0             | 0         | 0            | 0        | 0          | 0          | 0    | 0    |     | 0    | 0    | 0    |
| Storage Cap Reductn          | 0             | 0         | 0            | 0        | 0          | 0          | 0    | 0    |     | 0    | 0    | 0    |
| Reduced v/c Ratio            | 0.01          | 0.01      | 0.00         | 0.47     | 0.00       | 0.79       | 0.02 | 0.42 |     | 0.33 | 0.19 | 0.00 |
| Intersection Summary         |               |           |              |          |            |            |      |      |     |      |      |      |
| Area Type:                   | Other         |           |              |          |            |            |      |      |     |      |      |      |
| Cycle Length: 140            |               |           |              |          |            |            |      |      |     |      |      |      |
| Actuated Cycle Length: 14    |               |           |              |          |            |            |      |      |     |      |      |      |
| Offset: 84 (60%), Referenc   | ed to phase   | 2:NBT ar  | nd 6:SBT,    | Start of | Green      |            |      |      |     |      |      |      |
| Natural Cycle: 60            |               |           |              |          |            |            |      |      |     |      |      |      |
| Control Type: Actuated-Co    | ordinated     |           |              |          |            |            |      |      |     |      |      |      |
| Maximum v/c Ratio: 0.83      |               |           |              |          |            |            |      |      |     |      |      |      |
| Intersection Signal Delay: 2 |               |           |              |          | tersectior |            |      |      |     |      |      |      |
| Intersection Capacity Utiliz | ation 59.1%   |           |              | IC       | U Level o  | of Service | B    |      |     |      |      |      |
| Analysis Period (min) 15     |               |           |              |          |            |            |      |      |     |      |      |      |
| m Volume for 95th perce      | ntile queue i | s metered | d by upstr   | eam sign | al.        |            |      |      |     |      |      |      |

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road

| Ø1           | \$\floor\$ \$\floor\$ \$\vee\$ \$\ | <b>√</b> Ø3              | <b>₩</b> Ø4    |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------|
| 30.8 s       | 70 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 12.6 s                   | 26.6 s         |
| <b>\$</b> Ø5 | ●                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ₽ <b>₽</b> <sub>Ø7</sub> | <b>4</b><br>Ø8 |
| 30.8 s       | 70 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 12.6 s                   | 26.6 s         |

# Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

| Ŭ                       |       |              |              |          |             |      | _        |          |             | ,     |          |       |
|-------------------------|-------|--------------|--------------|----------|-------------|------|----------|----------|-------------|-------|----------|-------|
|                         | ≯     | -            | $\mathbf{r}$ | 1        | -           |      | 1        | T        | -           | •     | ŧ        | *     |
| Lane Group              | EBL   | EBT          | EBR          | WBL      | WBT         | WBR  | NBL      | NBT      | NBR         | SBL   | SBT      | SBR   |
| Lane Configurations     | - ከ   | <b>∱</b> ⊅   |              | <u> </u> | <b>≜</b> ⊅p |      | <u> </u> | <b>↑</b> | 1           | - ሽ   | <b>↑</b> | 1     |
| Traffic Volume (vph)    | 20    | 305          | 13           | 46       | 289         | 66   | 80       | 147      | 93          | 39    | 67       | 22    |
| Future Volume (vph)     | 20    | 305          | 13           | 46       | 289         | 66   | 80       | 147      | 93          | 39    | 67       | 22    |
| Ideal Flow (vphpl)      | 1900  | 1900         | 1900         | 1900     | 1900        | 1900 | 1900     | 2000     | 1900        | 1900  | 2000     | 1900  |
| Lane Width (ft)         | 12    | 12           | 12           | 12       | 12          | 12   | 12       | 12       | 12          | 12    | 12       | 12    |
| Grade (%)               |       | 0%           |              |          | 0%          |      |          | 0%       |             |       | 0%       |       |
| Storage Length (ft)     | 160   |              | 0            | 160      |             | 0    | 170      |          | 170         | 170   |          | 170   |
| Storage Lanes           | 1     |              | 0            | 2        |             | 0    | 1        |          | 1           | 1     |          | 1     |
| Taper Length (ft)       | 190   |              |              | 185      |             |      | 170      |          |             | 190   |          |       |
| Lane Util. Factor       | 1.00  | 0.95         | 0.95         | 1.00     | 0.95        | 0.95 | 1.00     | 1.00     | 1.00        | 1.00  | 1.00     | 1.00  |
| Ped Bike Factor         |       |              |              |          |             |      |          |          |             |       |          |       |
| Frt                     |       | 0.994        |              |          | 0.972       |      |          |          | 0.850       |       |          | 0.850 |
| Flt Protected           | 0.950 |              |              | 0.950    |             |      | 0.950    |          |             | 0.950 |          |       |
| Satd. Flow (prot)       | 1719  | 3488         | 0            | 1805     | 3509        | 0    | 1787     | 2000     | 1599        | 1641  | 1923     | 1369  |
| Flt Permitted           | 0.505 |              | -            | 0.494    |             | -    | 0.494    |          |             | 0.647 |          |       |
| Satd. Flow (perm)       | 914   | 3488         | 0            | 939      | 3509        | 0    | 929      | 2000     | 1599        | 1118  | 1923     | 1369  |
| Right Turn on Red       | ,     | 0100         | No           | ,0,      | 0007        | No   | ,,,,,    | 2000     | No          | 1110  | 1720     | No    |
| Satd. Flow (RTOR)       |       |              | 110          |          |             | 110  |          |          | NO          |       |          |       |
| Link Speed (mph)        |       | 45           |              |          | 45          |      |          | 45       |             |       | 45       |       |
| Link Distance (ft)      |       | 5259         |              |          | 1976        |      |          | 2983     |             |       | 1684     |       |
| Travel Time (s)         |       | 79.7         |              |          | 29.9        |      |          | 45.2     |             |       | 25.5     |       |
| Confl. Peds. (#/hr)     |       | 17.1         |              |          | 27.7        |      |          | 4J.Z     |             |       | 23.5     |       |
| Confl. Bikes (#/hr)     |       |              |              |          |             |      |          |          |             |       |          |       |
| Peak Hour Factor        | 0.84  | 0.84         | 0.84         | 0.84     | 0.84        | 0.84 | 0.84     | 0.84     | 0.84        | 0.84  | 0.84     | 0.84  |
| Growth Factor           | 100%  | 100%         | 100%         | 100%     | 100%        | 100% | 100%     | 100%     | 100%        | 100%  | 100%     | 100%  |
| Heavy Vehicles (%)      | 5%    | 3%           | 0%           | 0%       | 0%          | 0%   | 100 %    | 0%       | 100 %       | 100%  | 4%       | 18%   |
|                         | 0     | 3 <i>1</i> 0 | 070          | 070      | 078         | 078  | 0        | 078      | 0           | 0     | 4 /0     | 0     |
| Bus Blockages (#/hr)    | 0     | 0            | 0            | 0        | 0           | 0    | U        | 0        | 0           | 0     | 0        | 0     |
| Parking (#/hr)          |       | 0%           |              |          | 0%          |      |          | 0%       |             |       | 0%       |       |
| Mid-Block Traffic (%)   |       | 0%           |              |          | 0%          |      |          | 0%       |             |       | 0%       |       |
| Shared Lane Traffic (%) | 24    | 270          | 0            |          | 400         | 0    | 05       | 170      | 111         | 47    | 00       | 27    |
| Lane Group Flow (vph)   | 24    | 378          | 0            | 55       | 423         | 0    | 95       | 175      | 111<br>Dorm | 46    | 80       | 26    |
| Turn Type               | pm+pt | NA           |              | pm+pt    | NA          |      | pm+pt    | NA       | Perm        | pm+pt | NA       | Perm  |
| Protected Phases        | 5     | 2            |              | 1        | 6           |      | 3        | 8        | 0           | 7     | 4        | 4     |
| Permitted Phases        | 2     | 2            |              | 6        | /           |      | 8        | 0        | 8           | 4     | 4        | 4     |
| Detector Phase          | 5     | 2            |              | 1        | 6           |      | 3        | 8        | 8           | 7     | 4        | 4     |
| Switch Phase            | 2.0   | 15.0         |              | 2.0      | 15.0        |      | 2.0      | 0.0      | 0.0         | 2.0   | 0.0      | 0.0   |
| Minimum Initial (s)     | 3.0   | 15.0         |              | 3.0      | 15.0        |      | 3.0      | 8.0      | 8.0         | 3.0   | 8.0      | 8.0   |
| Minimum Split (s)       | 6.5   | 21.0         |              | 6.5      | 21.0        |      | 6.5      | 14.0     | 14.0        | 6.5   | 14.0     | 14.0  |
| Total Split (s)         | 15.0  | 35.0         |              | 15.0     | 35.0        |      | 15.0     | 30.0     | 30.0        | 10.0  | 25.0     | 25.0  |
| Total Split (%)         | 16.7% | 38.9%        |              | 16.7%    | 38.9%       |      | 16.7%    | 33.3%    | 33.3%       | 11.1% | 27.8%    | 27.8% |
| Yellow Time (s)         | 3.5   | 4.0          |              | 3.5      | 4.0         |      | 3.5      | 4.0      | 4.0         | 3.5   | 4.0      | 4.0   |
| All-Red Time (s)        | 0.0   | 2.0          |              | 0.0      | 2.0         |      | 0.0      | 2.0      | 2.0         | 0.0   | 2.0      | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0          |              | 0.0      | 0.0         |      | 0.0      | 0.0      | 0.0         | 0.0   | 0.0      | 0.0   |
| Total Lost Time (s)     | 3.5   | 6.0          |              | 3.5      | 6.0         |      | 3.5      | 6.0      | 6.0         | 3.5   | 6.0      | 6.0   |
| Lead/Lag                | Lead  | Lag          |              | Lead     | Lag         |      | Lead     | Lag      | Lag         | Lead  | Lag      | Lag   |
| Lead-Lag Optimize?      | Yes   | Yes          |              | Yes      | Yes         |      | Yes      | Yes      | Yes         | Yes   | Yes      | Yes   |
| Recall Mode             | None  | None         |              | None     | None        |      | None     | None     | None        | None  | None     | None  |
| Act Effct Green (s)     | 26.1  | 20.2         |              | 27.4     | 22.3        |      | 19.1     | 12.1     | 12.1        | 15.2  | 10.7     | 10.7  |
| Actuated g/C Ratio      | 0.47  | 0.36         |              | 0.49     | 0.40        |      | 0.34     | 0.22     | 0.22        | 0.27  | 0.19     | 0.19  |

Existing Morning Peak Hour 01/06/2020 21-008 Tinley Park

# Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

|                               | ٦           | -    | $\mathbf{F}$ | 4    | -          | •          | 1    | 1    | 1    | 1    | ţ    | ~    |
|-------------------------------|-------------|------|--------------|------|------------|------------|------|------|------|------|------|------|
| Lane Group                    | EBL         | EBT  | EBR          | WBL  | WBT        | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                     | 0.05        | 0.30 |              | 0.10 | 0.30       |            | 0.20 | 0.41 | 0.32 | 0.12 | 0.22 | 0.10 |
| Control Delay                 | 8.8         | 16.2 |              | 8.8  | 14.4       |            | 15.1 | 25.9 | 25.7 | 15.2 | 26.3 | 26.5 |
| Queue Delay                   | 0.0         | 0.0  |              | 0.0  | 0.0        |            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                   | 8.8         | 16.2 |              | 8.8  | 14.4       |            | 15.1 | 25.9 | 25.7 | 15.2 | 26.3 | 26.5 |
| LOS                           | А           | В    |              | А    | В          |            | В    | С    | С    | В    | С    | С    |
| Approach Delay                |             | 15.7 |              |      | 13.7       |            |      | 23.1 |      |      | 23.0 |      |
| Approach LOS                  |             | В    |              |      | В          |            |      | С    |      |      | С    |      |
| Queue Length 50th (ft)        | 4           | 58   |              | 10   | 48         |            | 22   | 59   | 37   | 10   | 26   | 8    |
| Queue Length 95th (ft)        | 15          | 95   |              | 26   | 103        |            | 55   | 119  | 83   | 32   | 67   | 30   |
| Internal Link Dist (ft)       |             | 5179 |              |      | 1896       |            |      | 2903 |      |      | 1604 |      |
| Turn Bay Length (ft)          | 160         |      |              | 160  |            |            | 170  |      | 170  | 170  |      | 170  |
| Base Capacity (vph)           | 647         | 2143 |              | 674  | 2156       |            | 532  | 960  | 767  | 376  | 730  | 520  |
| Starvation Cap Reductn        | 0           | 0    |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn         | 0           | 0    |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn           | 0           | 0    |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio             | 0.04        | 0.18 |              | 0.08 | 0.20       |            | 0.18 | 0.18 | 0.14 | 0.12 | 0.11 | 0.05 |
| Intersection Summary          |             |      |              |      |            |            |      |      |      |      |      |      |
| Area Type:                    | Other       |      |              |      |            |            |      |      |      |      |      |      |
| Cycle Length: 90              |             |      |              |      |            |            |      |      |      |      |      |      |
| Actuated Cycle Length: 55.    | 7           |      |              |      |            |            |      |      |      |      |      |      |
| Natural Cycle: 50             |             |      |              |      |            |            |      |      |      |      |      |      |
| Control Type: Actuated-Une    | coordinated |      |              |      |            |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.41       |             |      |              |      |            |            |      |      |      |      |      |      |
| Intersection Signal Delay: 1  |             |      |              |      | tersectior |            |      |      |      |      |      |      |
| Intersection Capacity Utiliza | ation 43.6% |      |              | IC   | CU Level o | of Service | A    |      |      |      |      |      |
| Analysis Period (min) 15      |             |      |              |      |            |            |      |      |      |      |      |      |

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road

| <b>Ø</b> 1 | A <sub>02</sub> | <b>1</b> Ø3 | <b>↓</b> ∞ <sub>Ø4</sub> |
|------------|-----------------|-------------|--------------------------|
| 15 s       | 35 s            | 15 s        | 25 s                     |
|            | <b>★</b> ø6     | Ø7          | <b>√</b> <sub>Ø8</sub>   |
| 15 s       | 35 s            | 10 s        | 30 s                     |

| Int Delay, s/veh       | 2.2   |      |      |          |               |      |
|------------------------|-------|------|------|----------|---------------|------|
| Movement               | EBL   | EBR  | NBL  | NBT      | SBT           | SBR  |
| Lane Configurations    | ٦     | 1    | ٦    | <b>^</b> | - <b>†</b> 1- |      |
| Traffic Vol, veh/h     | 94    | 47   | 87   | 1049     | 556           | 93   |
| Future Vol, veh/h      | 94    | 47   | 87   | 1049     | 556           | 93   |
| Conflicting Peds, #/hr | 0     | 0    | 0    | 0        | 0             | 0    |
| Sign Control           | Stop  | Stop | Free | Free     | Free          | Free |
| RT Channelized         | -     | None | -    | None     | -             | None |
| Storage Length         | 70    | 0    | 210  | -        | -             | -    |
| Veh in Median Storage  | , # 1 | -    | -    | 0        | 0             | -    |
| Grade, %               | 0     | -    | -    | 0        | 0             | -    |
| Peak Hour Factor       | 96    | 96   | 96   | 96       | 96            | 96   |
| Heavy Vehicles, %      | 0     | 0    | 18   | 3        | 5             | 0    |
| Mvmt Flow              | 98    | 49   | 91   | 1093     | 579           | 97   |

| Major/Minor          | Minor2 | Ν   | /lajor1 | Majo | or2 |   |  |  |  |
|----------------------|--------|-----|---------|------|-----|---|--|--|--|
| Conflicting Flow All | 1357   | 338 | 676     | 0    | -   | 0 |  |  |  |
| Stage 1              | 628    | -   | -       | -    | -   | - |  |  |  |
| Stage 2              | 729    | -   | -       | -    | -   | - |  |  |  |
| Critical Hdwy        | 6.8    | 6.9 | 4.46    | -    | -   | - |  |  |  |
| Critical Hdwy Stg 1  | 5.8    | -   | -       | -    | -   | - |  |  |  |
| Critical Hdwy Stg 2  | 5.8    | -   | -       | -    | -   | - |  |  |  |
| Follow-up Hdwy       | 3.5    | 3.3 | 2.38    | -    | -   | - |  |  |  |
| Pot Cap-1 Maneuver   | 143    | 664 | 812     | -    | -   | - |  |  |  |
| Stage 1              | 500    | -   | -       | -    | -   | - |  |  |  |
| Stage 2              | 444    | -   | -       | -    | -   | - |  |  |  |
| Platoon blocked, %   |        |     |         | -    | -   | - |  |  |  |
| Mov Cap-1 Maneuver   |        | 664 | 812     | -    | -   | - |  |  |  |
| Mov Cap-2 Maneuver   | 236    | -   | -       | -    | -   | - |  |  |  |
| Stage 1              | 444    | -   | -       | -    | -   | - |  |  |  |
| Stage 2              | 444    | -   | -       | -    | -   | - |  |  |  |
|                      |        |     |         |      |     |   |  |  |  |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 24.1 | 0.8 | 0  |
| HCM LOS              | С    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h)      | 812   | -   | 236   | 664   | -   | -   |
| HCM Lane V/C Ratio    | 0.112 | -   | 0.415 | 0.074 | -   | -   |
| HCM Control Delay (s) | 10    | -   | 30.7  | 10.9  | -   | -   |
| HCM Lane LOS          | А     | -   | D     | В     | -   | -   |
| HCM 95th %tile Q(veh) | 0.4   | -   | 1.9   | 0.2   | -   | -   |

| Int Delay, s/veh       | 0.5  |      |      |      |              |      |  |
|------------------------|------|------|------|------|--------------|------|--|
| Movement               | EBL  | EBR  | NBL  | NBT  | SBT          | SBR  |  |
| Lane Configurations    |      | 1    |      | - 11 | - <b>†</b> † | 1    |  |
| Traffic Vol, veh/h     | 0    | 82   | 0    | 1136 | 567          | 36   |  |
| Future Vol, veh/h      | 0    | 82   | 0    | 1136 | 567          | 36   |  |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0            | 0    |  |
| Sign Control           | Stop | Stop | Free | Free | Free         | Free |  |
| RT Channelized         | -    | Stop | -    | None | -            | Free |  |
| Storage Length         | -    | 0    | -    | -    | -            | 120  |  |
| Veh in Median Storage  | ,# 0 | -    | -    | 0    | 0            | -    |  |
| Grade, %               | 0    | -    | -    | 0    | 0            | -    |  |
| Peak Hour Factor       | 94   | 94   | 94   | 94   | 94           | 94   |  |
| Heavy Vehicles, %      | 0    | 0    | 0    | 5    | 5            | 0    |  |
| Mvmt Flow              | 0    | 87   | 0    | 1209 | 603          | 38   |  |

| Major/Minor          | Minor2 | M   | ajor1 | Ма | ijor2 |   |
|----------------------|--------|-----|-------|----|-------|---|
| Conflicting Flow All | -      | 302 | -     | 0  | -     | 0 |
| Stage 1              | -      | -   | -     | -  | -     | - |
| Stage 2              | -      | -   | -     | -  | -     | - |
| Critical Hdwy        | -      | 6.9 | -     | -  | -     | - |
| Critical Hdwy Stg 1  | -      | -   | -     | -  | -     | - |
| Critical Hdwy Stg 2  | -      | -   | -     | -  | -     | - |
| Follow-up Hdwy       | -      | 3.3 | -     | -  | -     | - |
| Pot Cap-1 Maneuver   | 0      | 700 | 0     | -  | -     | 0 |
| Stage 1              | 0      | -   | 0     | -  | -     | 0 |
| Stage 2              | 0      | -   | 0     | -  | -     | 0 |
| Platoon blocked, %   |        |     |       | -  | -     |   |
| Mov Cap-1 Maneuver   |        | 700 | -     | -  | -     | - |
| Mov Cap-2 Maneuver   | -      | -   | -     | -  | -     | - |
| Stage 1              | -      | -   | -     | -  | -     | - |
| Stage 2              | -      | -   | -     | -  | -     | - |
|                      |        |     |       |    |       |   |
| Approach             | EB     |     | NB    |    | SB    |   |
| HCM Control Delay, s |        |     | 0     |    | 0     |   |
| HCM LOS              | В      |     |       |    |       |   |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
|-----------------------|-----------|-----|
| Capacity (veh/h)      | - 700     | -   |
| HCM Lane V/C Ratio    | - 0.125   | -   |
| HCM Control Delay (s) | - 10.9    | -   |
| HCM Lane LOS          | - B       | -   |
| HCM 95th %tile Q(veh) | - 0.4     | -   |

| Int Delay, s/veh       | 1.5   |      |      |          |               |      |     |
|------------------------|-------|------|------|----------|---------------|------|-----|
| Movement               | EBL   | EBR  | NBL  | NBT      | SBT           | SBR  | t i |
| Lane Configurations    | Y     |      | ٦    | <b>^</b> | _ <b>∱</b> î⊧ |      |     |
| Traffic Vol, veh/h     | 46    | 107  | 22   | 1090     | 635           | 14   | ł   |
| Future Vol, veh/h      | 46    | 107  | 22   | 1090     | 635           | 14   | ł   |
| Conflicting Peds, #/hr | 0     | 0    | 0    | 0        | 0             | 0    | )   |
| Sign Control           | Stop  | Stop | Free | Free     | Free          | Free | ţ   |
| RT Channelized         | -     | None | -    | None     | -             | None | ÷   |
| Storage Length         | 0     | -    | 130  | -        | -             | -    |     |
| Veh in Median Storage  | , # 1 | -    | -    | 0        | 0             | -    |     |
| Grade, %               | 0     | -    | -    | 0        | 0             | -    |     |
| Peak Hour Factor       | 94    | 94   | 94   | 94       | 94            | 94   | ł   |
| Heavy Vehicles, %      | 17    | 0    | 0    | 4        | 5             | 0    | )   |
| Mvmt Flow              | 49    | 114  | 23   | 1160     | 676           | 15   | ;   |

| Major/Minor          | Minor2 | Ν   | 1ajor1 | Maj | or2 |   |  |
|----------------------|--------|-----|--------|-----|-----|---|--|
| Conflicting Flow All | 1310   | 346 | 691    | 0   | -   | 0 |  |
| Stage 1              | 684    | -   | -      | -   | -   | - |  |
| Stage 2              | 626    | -   | -      | -   | -   | - |  |
| Critical Hdwy        | 7.14   | 6.9 | 4.1    | -   | -   | - |  |
| Critical Hdwy Stg 1  | 6.14   | -   | -      | -   | -   | - |  |
| Critical Hdwy Stg 2  | 6.14   | -   | -      | -   | -   | - |  |
| Follow-up Hdwy       | 3.67   | 3.3 | 2.2    | -   | -   | - |  |
| Pot Cap-1 Maneuver   | 132    | 656 | 913    | -   | -   | - |  |
| Stage 1              | 424    | -   | -      | -   | -   | - |  |
| Stage 2              | 456    | -   | -      | -   | -   | - |  |
| Platoon blocked, %   |        |     |        | -   | -   | - |  |
| Mov Cap-1 Maneuver   | 129    | 656 | 913    | -   | -   | - |  |
| Mov Cap-2 Maneuver   | 252    | -   | -      | -   | -   | - |  |
| Stage 1              | 413    | -   | -      | -   | -   | - |  |
| Stage 2              | 456    | -   | -      | -   | -   | - |  |
|                      |        |     |        |     |     |   |  |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 17.8 | 0.2 | 0  |
| HCM LOS              | С    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT EBLn1 | SBT | SBR |
|-----------------------|-------|-----------|-----|-----|
| Capacity (veh/h)      | 913   | - 443     | -   | -   |
| HCM Lane V/C Ratio    | 0.026 | - 0.367   | -   | -   |
| HCM Control Delay (s) | 9     | - 17.8    | -   | -   |
| HCM Lane LOS          | А     | - C       | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | - 1.7     | -   | -   |

# Capacity Analysis Summary Sheets Existing Weekday Evening Peak Hour Conditions

|                         | *        | ۰.    | 1          | 1     | 1           | ţ            |
|-------------------------|----------|-------|------------|-------|-------------|--------------|
| Lane Group              | WBL      | WBR   | NBT        | NBR   | SBL         | SBT          |
| Lane Configurations     | <u> </u> | 11    | <b>†</b> † | 101   | <u></u>     | <b>^</b>     |
| Traffic Volume (vph)    | 135      | 12    | 918        | 121   | 3           | 1470         |
| Future Volume (vph)     | 135      | 12    | 918        | 121   | 3           | 1470         |
| Ideal Flow (vphpl)      | 1900     | 1900  | 2000       | 1900  | 1900        | 2000         |
| Lane Width (ft)         | 1700     | 1900  | 12         | 1300  | 1700        | 12           |
| Grade (%)               | 0%       | 12    | 0%         | 12    | 12          | 0%           |
| Storage Length (ft)     | 150      | 0     | 070        | 100   | 310         | 070          |
| Storage Lanes           | 130      | 2     |            | 100   | 2           |              |
| Taper Length (ft)       | 150      | 2     |            | I     | 235         |              |
| Lane Util. Factor       | 1.00     | 0.88  | 0.95       | 1.00  | 235<br>0.97 | 0.95         |
|                         | 1.00     | 0.88  | 0.95       | 1.00  | 0.97        | 0.95         |
| Ped Bike Factor         |          |       |            |       |             |              |
| Frt<br>Elt Drotoctod    | 0.050    | 0.850 |            | 0.850 | 0.050       |              |
| Flt Protected           | 0.950    | 00.40 | 0/54       | 1500  | 0.950       | 0/00         |
| Satd. Flow (prot)       | 1787     | 2842  | 3654       | 1599  | 3502        | 3689         |
| Flt Permitted           | 0.950    |       |            |       | 0.950       |              |
| Satd. Flow (perm)       | 1787     | 2842  | 3654       | 1599  | 3502        | 3689         |
| Right Turn on Red       |          | No    |            | No    |             |              |
| Satd. Flow (RTOR)       |          |       |            |       |             |              |
| Link Speed (mph)        | 50       |       | 45         |       |             | 45           |
| Link Distance (ft)      | 1356     |       | 1018       |       |             | 970          |
| Travel Time (s)         | 18.5     |       | 15.4       |       |             | 14.7         |
| Confl. Peds. (#/hr)     |          |       |            |       |             |              |
| Confl. Bikes (#/hr)     |          |       |            |       |             |              |
| Peak Hour Factor        | 0.95     | 0.95  | 0.95       | 0.95  | 0.95        | 0.95         |
| Growth Factor           | 100%     | 100%  | 100%       | 100%  | 100%        | 100%         |
| Heavy Vehicles (%)      | 1%       | 0%    | 4%         | 1%    | 0%          | 3%           |
| Bus Blockages (#/hr)    | 0        | 078   | 470        | 0     | 070         | 3 <i>1</i> 0 |
|                         | U        | U     | U          | U     | U           | U            |
| Parking (#/hr)          | 00/      |       | 00/        |       |             | 00/          |
| Mid-Block Traffic (%)   | 0%       |       | 0%         |       |             | 0%           |
| Shared Lane Traffic (%) | 4.40     | 40    | 0//        | 407   | 0           | 45 47        |
| Lane Group Flow (vph)   | 142      | 13    | 966        | 127   | 3           | 1547         |
| Turn Type               | Prot     | pm+ov | NA         | Free  | Prot        | NA           |
| Protected Phases        | 8        | 1     | 2          |       | 1           | 6            |
| Permitted Phases        |          | 8     |            | Free  |             |              |
| Detector Phase          | 8        | 1     | 2          |       | 1           | 6            |
| Switch Phase            |          |       |            |       |             |              |
| Minimum Initial (s)     | 8.0      | 3.0   | 15.0       |       | 3.0         | 15.0         |
| Minimum Split (s)       | 14.0     | 7.5   | 21.0       |       | 7.5         | 21.0         |
| Total Split (s)         | 30.0     | 15.0  | 105.0      |       | 15.0        | 120.0        |
| Total Split (%)         | 20.0%    | 10.0% | 70.0%      |       | 10.0%       | 80.0%        |
| Yellow Time (s)         | 4.0      | 3.5   | 4.0        |       | 3.5         | 4.0          |
| All-Red Time (s)        | 2.0      | 1.0   | 2.0        |       | 1.0         | 2.0          |
| Lost Time Adjust (s)    | 0.0      | 0.0   | 0.0        |       | 0.0         | 0.0          |
|                         |          |       |            |       |             |              |
| Total Lost Time (s)     | 6.0      | 4.5   | 6.0        |       | 4.5         | 6.0          |
| Lead/Lag                |          | Lead  | Lag        |       | Lead        |              |
| Lead-Lag Optimize?      |          | Yes   | Yes        |       | Yes         | 0.1.1        |
| Recall Mode             | None     | None  | C-Min      |       | None        | C-Min        |
| Act Effct Green (s)     | 18.0     | 29.7  | 115.8      | 150.0 | 5.7         | 120.0        |
| Actuated g/C Ratio      | 0.12     | 0.20  | 0.77       | 1.00  | 0.04        | 0.80         |

Existing Evening Peak Hour 01/06/2020 21-008 Tinley Park

| 03/10/2021 |
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|                              | 4            | •        | Ť        | 1         | 1          | ţ          |
|------------------------------|--------------|----------|----------|-----------|------------|------------|
| Lane Group                   | WBL          | WBR      | NBT      | NBR       | SBL        | SBT        |
| v/c Ratio                    | 0.66         | 0.02     | 0.34     | 0.08      | 0.02       | 0.52       |
| Control Delay                | 77.4         | 45.9     | 5.6      | 0.1       | 69.7       | 6.3        |
| Queue Delay                  | 0.0          | 0.0      | 0.0      | 0.0       | 0.0        | 0.0        |
| Total Delay                  | 77.4         | 45.9     | 5.6      | 0.1       | 69.7       | 6.3        |
| LOS                          | E            | D        | А        | А         | E          | А          |
| Approach Delay               | 74.7         |          | 5.0      |           |            | 6.4        |
| Approach LOS                 | E            |          | А        |           |            | А          |
| Queue Length 50th (ft)       | 135          | 5        | 129      | 0         | 1          | 234        |
| Queue Length 95th (ft)       | 203          | 16       | 194      | 0         | 7          | 338        |
| Internal Link Dist (ft)      | 1276         |          | 938      |           |            | 890        |
| Turn Bay Length (ft)         | 150          |          |          | 100       | 310        |            |
| Base Capacity (vph)          | 285          | 654      | 2821     | 1599      | 245        | 2950       |
| Starvation Cap Reductn       | 0            | 0        | 0        | 0         | 0          | 0          |
| Spillback Cap Reductn        | 0            | 0        | 0        | 0         | 0          | 0          |
| Storage Cap Reductn          | 0            | 0        | 0        | 0         | 0          | 0          |
| Reduced v/c Ratio            | 0.50         | 0.02     | 0.34     | 0.08      | 0.01       | 0.52       |
| Intersection Summary         |              |          |          |           |            |            |
| Area Type:                   | Other        |          |          |           |            |            |
| Cycle Length: 150            |              |          |          |           |            |            |
| Actuated Cycle Length: 15    |              |          |          |           |            |            |
| Offset: 145.5 (97%), Refere  | enced to pha | ase 2:NB | Fand 6:S | BT, Start | of Green   |            |
| Natural Cycle: 45            |              |          |          |           |            |            |
| Control Type: Actuated-Co    | ordinated    |          |          |           |            |            |
| Maximum v/c Ratio: 0.66      |              |          |          |           |            |            |
| Intersection Signal Delay:   |              |          |          |           | tersectior |            |
| Intersection Capacity Utiliz | ation 56.1%  |          |          | IC        | U Level o  | of Service |
| Analysis Period (min) 15     |              |          |          |           |            |            |
|                              |              |          |          |           |            |            |

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Driveway

03/10/2021

|                         | ≯     | <b>→</b>     | *    | 4    | Ļ    | *    | •        | 1     | 1    | *     | Ŧ     | ~    |
|-------------------------|-------|--------------|------|------|------|------|----------|-------|------|-------|-------|------|
| Lane Group              | EBL   | EBT          | EBR  | WBL  | WBT  | WBR  | NBL      | NBT   | NBR  | SBL   | SBT   | SBR  |
| Lane Configurations     |       | \$           |      |      | \$   |      | <u>۲</u> | A     |      |       | 4î b  |      |
| Traffic Volume (vph)    | 109   | 0            | 32   | 0    | 0    | 0    | 73       | 907   | 0    | 0     | 1447  | 136  |
| Future Volume (vph)     | 109   | 0            | 32   | 0    | 0    | 0    | 73       | 907   | 0    | 0     | 1447  | 136  |
| Ideal Flow (vphpl)      | 1900  | 1900         | 1900 | 1900 | 1900 | 1900 | 1900     | 1900  | 1900 | 1900  | 1900  | 1900 |
| Lane Width (ft)         | 12    | 16           | 12   | 12   | 12   | 12   | 12       | 12    | 12   | 12    | 12    | 12   |
| Grade (%)               |       | 0%           |      |      | 0%   |      |          | 0%    |      |       | 0%    |      |
| Storage Length (ft)     | 0     |              | 0    | 0    |      | 0    | 95       |       | 0    | 0     |       | 0    |
| Storage Lanes           | 0     |              | 0    | 0    |      | 0    | 1        |       | 0    | 0     |       | 0    |
| Taper Length (ft)       | 0     |              | U    | 0    |      | Ū    | 160      |       | Ū    | 0     |       | Ŭ    |
| Lane Util. Factor       | 1.00  | 1.00         | 1.00 | 1.00 | 1.00 | 1.00 | 1.00     | 0.95  | 0.95 | 0.95  | 0.95  | 0.95 |
| Ped Bike Factor         | 1.00  | 1.00         | 1.00 | 1.00 | 1.00 | 1.00 | 1.00     | 0.70  | 0.70 | 0.70  | 0.70  | 0.70 |
| Frt                     |       | 0.969        |      |      |      |      |          |       |      |       | 0.987 |      |
| Flt Protected           |       | 0.963        |      |      |      |      | 0.950    |       |      |       | 0.707 |      |
| Satd. Flow (prot)       | 0     | 1994         | 0    | 0    | 1900 | 0    | 1787     | 3471  | 0    | 0     | 3468  | 0    |
| Flt Permitted           | U     | 0.963        | 0    | U    | 1700 | 0    | 0.065    | 5471  | U    | 0     | 3400  | U    |
| Satd. Flow (perm)       | 0     | 1994         | 0    | 0    | 1900 | 0    | 122      | 3471  | 0    | 0     | 3468  | 0    |
| Right Turn on Red       | 0     | 1774         | No   | 0    | 1700 | No   | 122      | 5471  | No   | 0     | 5400  | No   |
| Satd. Flow (RTOR)       |       |              | NO   |      |      | NU   |          |       | NO   |       |       | NO   |
| Link Speed (mph)        |       | 30           |      |      | 30   |      |          | 45    |      |       | 45    |      |
| Link Distance (ft)      |       | 318          |      |      | 201  |      |          | 45    |      |       | 1401  |      |
| Travel Time (s)         |       | 7.2          |      |      | 4.6  |      |          | 400   |      |       | 21.2  |      |
| Confl. Peds. (#/hr)     |       | 1.Z          |      |      | 4.0  |      |          | 7.1   |      |       | Z1.Z  |      |
| Confl. Bikes (#/hr)     |       |              |      |      |      |      |          |       |      |       |       |      |
| Peak Hour Factor        | 0.04  | 0.84         | 0.84 | 0.04 | 0.04 | 0.84 | 0.04     | 0.84  | 0.04 | 0.04  | 0.04  | 0.04 |
|                         | 0.84  | 0.84<br>100% |      | 0.84 | 0.84 |      | 0.84     |       | 0.84 | 0.84  | 0.84  | 0.84 |
| Growth Factor           | 100%  |              | 100% | 100% | 100% | 100% | 100%     | 100%  | 100% | 100%  | 100%  | 100% |
| Heavy Vehicles (%)      | 1%    | 0%           | 0%   | 0%   | 0%   | 0%   | 1%       | 4%    | 0%   | 0%    | 3%    | 0%   |
| Bus Blockages (#/hr)    | 0     | 0            | 0    | 0    | 0    | 0    | 0        | 0     | 0    | 0     | 0     | 0    |
| Parking (#/hr)          |       | 00/          |      |      | 00/  |      |          | 00/   |      |       | 00/   |      |
| Mid-Block Traffic (%)   |       | 0%           |      |      | 0%   |      |          | 0%    |      |       | 0%    | _    |
| Shared Lane Traffic (%) | 0     | 1/0          | 0    | 0    | 0    | 0    | 07       | 1000  | 0    | 0     | 1005  | 0    |
| Lane Group Flow (vph)   | 0     | 168          | 0    | 0    | 0    | 0    | 87       | 1080  | 0    | 0     | 1885  | 0    |
| Turn Type               | Split | NA           |      | 0    | 0    |      | pm+pt    | NA    |      |       | NA    |      |
| Protected Phases        | 4     | 4            |      | 8    | 8    |      | 5        | 2     |      | ,     | 6     |      |
| Permitted Phases        |       |              |      | 0    | 0    |      | 2        |       |      | 6     | ,     |      |
| Detector Phase          | 4     | 4            |      | 8    | 8    |      | 5        | 2     |      | 6     | 6     |      |
| Switch Phase            | 0.0   | 0.0          |      | 0.0  | 0.0  |      | 0.0      | 45.0  |      | 45.0  | 45.0  |      |
| Minimum Initial (s)     | 8.0   | 8.0          |      | 8.0  | 8.0  |      | 3.0      | 15.0  |      | 15.0  | 15.0  | _    |
| Minimum Split (s)       | 14.0  | 14.0         |      | 14.0 | 14.0 |      | 7.5      | 21.0  |      | 21.0  | 21.0  |      |
| Total Split (s)         | 33.0  | 33.0         |      | 14.0 | 14.0 |      | 19.0     | 103.0 |      | 84.0  | 84.0  |      |
| Total Split (%)         | 22.0% | 22.0%        |      | 9.3% | 9.3% |      | 12.7%    | 68.7% |      | 56.0% | 56.0% |      |
| Yellow Time (s)         | 4.0   | 4.0          |      | 4.0  | 4.0  |      | 3.5      | 4.0   |      | 4.0   | 4.0   |      |
| All-Red Time (s)        | 2.0   | 2.0          |      | 2.0  | 2.0  |      | 0.0      | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0          |      |      | 0.0  |      | 0.0      | 0.0   |      |       | 0.0   |      |
| Total Lost Time (s)     |       | 6.0          |      |      | 6.0  |      | 3.5      | 6.0   |      |       | 6.0   |      |
| Lead/Lag                |       |              |      |      |      |      | Lead     |       |      | Lag   | Lag   |      |
| Lead-Lag Optimize?      |       |              |      |      |      |      | Yes      |       |      | Yes   | Yes   |      |
| Recall Mode             | None  | None         |      | None | None |      | None     | C-Min |      | C-Min | C-Min |      |
| Act Effct Green (s)     |       | 18.8         |      |      |      |      | 121.7    | 119.2 |      |       | 107.7 |      |
| Actuated g/C Ratio      |       | 0.13         |      |      |      |      | 0.81     | 0.79  |      |       | 0.72  |      |

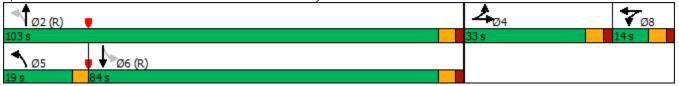
Existing Evening Peak Hour 01/06/2020 21-008 Tinley Park

# Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Driveway

| 03/10/2021 |
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|                                 | ۶           | -         | $\mathbf{r}$ | 4          | -          | *          | 1    | 1    | 1   | 1   | ţ    | ~   |
|---------------------------------|-------------|-----------|--------------|------------|------------|------------|------|------|-----|-----|------|-----|
| Lane Group                      | EBL         | EBT       | EBR          | WBL        | WBT        | WBR        | NBL  | NBT  | NBR | SBL | SBT  | SBR |
| v/c Ratio                       |             | 0.67      |              |            |            |            | 0.47 | 0.39 |     |     | 0.76 |     |
| Control Delay                   |             | 75.6      |              |            |            |            | 21.1 | 3.1  |     |     | 17.9 |     |
| Queue Delay                     |             | 0.0       |              |            |            |            | 0.0  | 0.0  |     |     | 0.0  |     |
| Total Delay                     |             | 75.6      |              |            |            |            | 21.1 | 3.1  |     |     | 17.9 |     |
| LOS                             |             | E         |              |            |            |            | С    | А    |     |     | В    |     |
| Approach Delay                  |             | 75.6      |              |            |            |            |      | 4.5  |     |     | 17.9 |     |
| Approach LOS                    |             | E         |              |            |            |            |      | А    |     |     | В    |     |
| Queue Length 50th (ft)          |             | 160       |              |            |            |            | 18   | 75   |     |     | 466  |     |
| Queue Length 95th (ft)          |             | 213       |              |            |            |            | m52  | 111  |     |     | 715  |     |
| Internal Link Dist (ft)         |             | 238       |              |            | 121        |            |      | 388  |     |     | 1321 |     |
| Turn Bay Length (ft)            |             |           |              |            |            |            | 95   |      |     |     |      |     |
| Base Capacity (vph)             |             | 358       |              |            |            |            | 271  | 2758 |     |     | 2490 |     |
| Starvation Cap Reductn          |             | 0         |              |            |            |            | 0    | 0    |     |     | 0    |     |
| Spillback Cap Reductn           |             | 0         |              |            |            |            | 0    | 0    |     |     | 0    |     |
| Storage Cap Reductn             |             | 0         |              |            |            |            | 0    | 0    |     |     | 0    |     |
| Reduced v/c Ratio               |             | 0.47      |              |            |            |            | 0.32 | 0.39 |     |     | 0.76 |     |
| Intersection Summary            |             |           |              |            |            |            |      |      |     |     |      |     |
|                                 | )ther       |           |              |            |            |            |      |      |     |     |      |     |
| Cycle Length: 150               |             |           |              |            |            |            |      |      |     |     |      |     |
| Actuated Cycle Length: 150      |             |           |              |            |            |            |      |      |     |     |      |     |
| Offset: 116 (77%), Reference    | ed to phase | e 2:NBTL  | and 6:SI     | 3TL, Starl | t of Greer | า          |      |      |     |     |      |     |
| Natural Cycle: 90               |             |           |              |            |            |            |      |      |     |     |      |     |
| Control Type: Actuated-Coord    | dinated     |           |              |            |            |            |      |      |     |     |      |     |
| Maximum v/c Ratio: 0.76         |             |           |              |            |            |            |      |      |     |     |      |     |
| Intersection Signal Delay: 16.  |             |           |              |            | tersectior |            |      |      |     |     |      |     |
| Intersection Capacity Utilizati | on 78.7%    |           |              | IC         | U Level    | of Service | D    |      |     |     |      |     |
| Analysis Period (min) 15        |             |           |              |            |            |            |      |      |     |     |      |     |
| m Volume for 95th percenti      | le queue is | s meterec | l by upsti   | eam sign   | al.        |            |      |      |     |     |      |     |

Splits and Phases: 2: Harlem Avenue & Benton Drive/Driveway



# Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 | 03/1 | 0/2021 |
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|                         | ٦     | <b>→</b> | *     | 4     | Ļ     | •     | •     | †     | 1    | 1     | ţ          | ~     |
|-------------------------|-------|----------|-------|-------|-------|-------|-------|-------|------|-------|------------|-------|
| Lane Group              | EBL   | EBT      | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR  | SBL   | SBT        | SBR   |
| Lane Configurations     | ۲     | <b>†</b> | 1     | 1     | 1     | 1     | ሻሻ    | A⊅    |      | ኘኘ    | <b>†</b> † | 1     |
| Traffic Volume (vph)    | 13    | 12       | 9     | 156   | 16    | 361   | 20    | 606   | 82   | 480   | 989        | 10    |
| Future Volume (vph)     | 13    | 12       | 9     | 156   | 16    | 361   | 20    | 606   | 82   | 480   | 989        | 10    |
| Ideal Flow (vphpl)      | 1900  | 2000     | 1900  | 1900  | 2000  | 1900  | 1900  | 1900  | 1900 | 1900  | 2000       | 1900  |
| Lane Width (ft)         | 12    | 12       | 12    | 12    | 12    | 12    | 12    | 12    | 12   | 12    | 12         | 12    |
| Grade (%)               |       | 0%       |       |       | 0%    |       |       | 0%    |      |       | 0%         |       |
| Storage Length (ft)     | 95    |          | 100   | 235   |       | 0     | 225   |       | 0    | 325   |            | 215   |
| Storage Lanes           | 1     |          | 0     | 1     |       | 1     | 2     |       | 0    | 2     |            | 1     |
| Taper Length (ft)       | 135   |          |       | 220   |       |       | 300   |       |      | 300   |            |       |
| Lane Util. Factor       | 1.00  | 1.00     | 1.00  | 1.00  | 1.00  | 1.00  | 0.97  | 0.95  | 0.95 | 0.97  | 0.95       | 1.00  |
| Ped Bike Factor         |       |          |       |       |       |       |       |       |      |       |            |       |
| Frt                     |       |          | 0.850 |       |       | 0.850 |       | 0.982 |      |       |            | 0.850 |
| Flt Protected           | 0.950 |          |       | 0.950 |       |       | 0.950 |       |      | 0.950 |            |       |
| Satd. Flow (prot)       | 1805  | 2000     | 1615  | 1787  | 2000  | 1599  | 3502  | 3367  | 0    | 3467  | 3654       | 1615  |
| Flt Permitted           | 0.784 |          |       | 0.465 |       |       | 0.950 |       |      | 0.950 |            |       |
| Satd. Flow (perm)       | 1490  | 2000     | 1615  | 875   | 2000  | 1599  | 3502  | 3367  | 0    | 3467  | 3654       | 1615  |
| Right Turn on Red       |       |          | No    |       |       | No    |       |       | No   |       |            | No    |
| Satd. Flow (RTOR)       |       |          |       |       |       |       |       |       |      |       |            |       |
| Link Speed (mph)        |       | 30       |       |       | 45    |       |       | 45    |      |       | 45         |       |
| Link Distance (ft)      |       | 957      |       |       | 5259  |       |       | 2713  |      |       | 854        |       |
| Travel Time (s)         |       | 21.8     |       |       | 79.7  |       |       | 41.1  |      |       | 12.9       |       |
| Confl. Peds. (#/hr)     |       |          |       |       |       |       |       |       |      |       |            |       |
| Confl. Bikes (#/hr)     |       |          |       |       |       |       |       |       |      |       |            |       |
| Peak Hour Factor        | 0.83  | 0.83     | 0.83  | 0.83  | 0.83  | 0.83  | 0.83  | 0.83  | 0.83 | 0.83  | 0.83       | 0.83  |
| Growth Factor           | 100%  | 100%     | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100% | 100%  | 100%       | 100%  |
| Heavy Vehicles (%)      | 0%    | 0%       | 0%    | 1%    | 0%    | 1%    | 0%    | 6%    | 0%   | 1%    | 4%         | 0%    |
| Bus Blockages (#/hr)    | 0     | 0        | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0          | 0     |
| Parking (#/hr)          |       |          |       |       |       |       |       |       |      |       |            |       |
| Mid-Block Traffic (%)   |       | 0%       |       |       | 0%    |       |       | 0%    |      |       | 0%         |       |
| Shared Lane Traffic (%) |       |          |       |       |       |       |       |       |      |       |            |       |
| Lane Group Flow (vph)   | 16    | 14       | 11    | 188   | 19    | 435   | 24    | 829   | 0    | 578   | 1192       | 12    |
| Turn Type               | pm+pt | NA       | Perm  | pm+pt | NA    | pm+ov | Prot  | NA    |      | Prot  | NA         | Perm  |
| Protected Phases        | 7     | 4        |       | 3     | 8     | . 1   | 5     | 2     |      | 1     | 6          |       |
| Permitted Phases        | 4     |          | 4     | 8     |       | 8     |       |       |      |       |            | 6     |
| Detector Phase          | 7     | 4        | 4     | 3     | 8     | 1     | 5     | 2     |      | 1     | 6          | 6     |
| Switch Phase            |       |          |       |       |       |       |       |       |      |       |            |       |
| Minimum Initial (s)     | 3.0   | 8.0      | 8.0   | 3.0   | 8.0   | 3.0   | 3.0   | 15.0  |      | 3.0   | 15.0       | 15.0  |
| Minimum Split (s)       | 6.5   | 14.0     | 14.0  | 6.5   | 14.0  | 7.5   | 7.5   | 21.0  |      | 7.5   | 21.0       | 21.0  |
| Total Split (s)         | 28.5  | 36.0     | 36.0  | 13.5  | 21.0  | 15.0  | 19.5  | 85.5  |      | 15.0  | 81.0       | 81.0  |
| Total Split (%)         | 19.0% | 24.0%    | 24.0% | 9.0%  | 14.0% | 10.0% | 13.0% | 57.0% |      | 10.0% | 54.0%      | 54.0% |
| Yellow Time (s)         | 3.5   | 4.5      | 4.5   | 3.5   | 4.5   | 3.5   | 3.5   | 4.5   |      | 3.5   | 4.5        | 4.5   |
| All-Red Time (s)        | 0.0   | 1.5      | 1.5   | 0.0   | 1.5   | 1.0   | 1.0   | 1.5   |      | 1.0   | 1.5        | 1.5   |
| Lost Time Adjust (s)    | 0.0   | 0.0      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      | 0.0   | 0.0        | 0.0   |
| Total Lost Time (s)     | 3.5   | 6.0      | 6.0   | 3.5   | 6.0   | 4.5   | 4.5   | 6.0   |      | 4.5   | 6.0        | 6.0   |
| Lead/Lag                | Lead  | Lag      | Lag   | Lead  | Lag   | Lead  | Lead  | Lag   |      | Lead  | Lag        | Lag   |
| Lead-Lag Optimize?      | Yes   | Yes      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |      | Yes   | Yes        | Yes   |
| Recall Mode             | None  | None     | None  | None  | None  | None  | None  | C-Min |      | None  | C-Min      | C-Min |
| Act Effct Green (s)     | 13.4  | 8.3      | 8.3   | 20.2  | 13.7  | 63.1  | 6.5   | 71.9  |      | 43.3  | 112.8      | 112.8 |
| Actuated g/C Ratio      | 0.09  | 0.06     | 0.06  | 0.13  | 0.09  | 0.42  | 0.04  | 0.48  |      | 0.29  | 0.75       | 0.75  |
|                         | 0.07  | 2.00     | 2.00  | 2.1.5 | 5.67  | 5     | 5.61  |       |      |       | 20         |       |

Existing Evening Peak Hour 01/06/2020 21-008 Tinley Park

# Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 |
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| 55.8         | 69.8                                                                                                                                                                 | 70.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 123.3                                                                                                  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| 55.8         | 69.8                                                                                                                                                                 | 70.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 123.3                                                                                                  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   877       5179       2633       95       100       235       225       301       400       323       191       217       672       350       1784         0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0</td> <td>0.11       0.13       0.12       0.98       0.10       0.65       0.16       0.51         55.8       69.8       70.2       123.3       64.6       43.7       71.0       27.6         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0         55.8       69.8       70.2       123.3       64.6       43.7       71.0       27.6         E       E       E       F       E       D       E       C         64.5       67.6       28.8       28.8       E       C       13       13       10       175       16       349       11       259         34       35       31       #292       42       484       25       281         877       5179       2633       95       100       235       225         301       400       323       191       217       672       350       1784         0       0       0       0       0       0       0       0       0         0.05       0.04       0.03       0.98       0.09       0.65       0.07       0.46          2</td> <td>0.11         0.13         0.12         0.98         0.10         0.65         0.16         0.51         0.58           55.8         69.8         70.2         123.3         64.6         43.7         71.0         27.6         52.1           0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0           55.8         69.8         70.2         123.3         64.6         43.7         71.0         27.6         52.1           E         E         E         F         E         D         E         C         D           64.5         67.6         28.8        </td> <td>0.11         0.13         0.12         0.98         0.10         0.65         0.16         0.51         0.58         0.43           55.8         69.8         70.2         123.3         64.6         43.7         71.0         27.6         52.1         2.3           0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0</td> | 0.11       0.13       0.12       0.98       0.10       0.65       0.16       0.51         55.8       69.8       70.2       123.3       64.6       43.7       71.0       27.6         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0         55.8       69.8       70.2       123.3       64.6       43.7       71.0       27.6         E       E       F       F       D       E       C       64.5       67.6       28.8         E       E       F       E       D       E       C       13       13       10       175       16       349       11       259         34       35       31       #292       42       484       25       281         877       5179       2633       95       100       235       225       301       400       323       191       217       672       350       1784         0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 | 0.11       0.13       0.12       0.98       0.10       0.65       0.16       0.51         55.8       69.8       70.2       123.3       64.6       43.7       71.0       27.6         0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0         55.8       69.8       70.2       123.3       64.6       43.7       71.0       27.6         E       E       E       F       E       D       E       C         64.5       67.6       28.8       28.8       E       C       13       13       10       175       16       349       11       259         34       35       31       #292       42       484       25       281         877       5179       2633       95       100       235       225         301       400       323       191       217       672       350       1784         0       0       0       0       0       0       0       0       0         0.05       0.04       0.03       0.98       0.09       0.65       0.07       0.46          2 | 0.11         0.13         0.12         0.98         0.10         0.65         0.16         0.51         0.58           55.8         69.8         70.2         123.3         64.6         43.7         71.0         27.6         52.1           0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0           55.8         69.8         70.2         123.3         64.6         43.7         71.0         27.6         52.1           E         E         E         F         E         D         E         C         D           64.5         67.6         28.8 | 0.11         0.13         0.12         0.98         0.10         0.65         0.16         0.51         0.58         0.43           55.8         69.8         70.2         123.3         64.6         43.7         71.0         27.6         52.1         2.3           0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0 |

#### Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road

| Ø1     | 🕇 Ø2 (R) | <b>√</b> ø3     | 4 <sub>04</sub> |             |  |
|--------|----------|-----------------|-----------------|-------------|--|
| 15 s   | 85.5 s   | 13.5 s          | 36 s            |             |  |
| ▲ ø5   | ●        | ▶ <sub>Ø7</sub> |                 | <b>₽</b> Ø8 |  |
| 19.5 s | 81s      | 28.5 s          |                 | 21 s        |  |

# Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

|                         |       |             |              |              |             |      |              |          |        |                |          | <u> </u>    |
|-------------------------|-------|-------------|--------------|--------------|-------------|------|--------------|----------|--------|----------------|----------|-------------|
|                         | ٦     | -           | $\mathbf{r}$ | •            | -           | •    | 1            | Ť        | 1      | •              | Ŧ        | -           |
| Lane Group              | EBL   | EBT         | EBR          | WBL          | WBT         | WBR  | NBL          | NBT      | NBR    | SBL            | SBT      | SBR         |
| Lane Configurations     | - ካ   | <b>∱1</b> ≽ |              | - ሽ          | <b>≜1</b> ≱ |      | <u>۲</u>     | <b>↑</b> | 1      | <u>۲</u>       | <b>↑</b> | 1           |
| Traffic Volume (vph)    | 18    | 472         | 84           | 87           | 420         | 49   | 63           | 98       | 43     | 55             | 107      | 50          |
| Future Volume (vph)     | 18    | 472         | 84           | 87           | 420         | 49   | 63           | 98       | 43     | 55             | 107      | 50          |
| Ideal Flow (vphpl)      | 1900  | 1900        | 1900         | 1900         | 1900        | 1900 | 1900         | 2000     | 1900   | 1900           | 2000     | 1900        |
| Lane Width (ft)         | 12    | 12          | 12           | 12           | 12          | 12   | 12           | 12       | 12     | 12             | 12       | 12          |
| Grade (%)               |       | 0%          |              |              | 0%          |      |              | 0%       |        |                | 0%       |             |
| Storage Length (ft)     | 160   |             | 0            | 160          |             | 0    | 170          |          | 170    | 170            |          | 170         |
| Storage Lanes           | 1     |             | 0            | 2            |             | 0    | 1            |          | 1      | 1              |          | 1           |
| Taper Length (ft)       | 190   |             |              | 185          |             |      | 170          |          |        | 190            |          |             |
| Lane Util. Factor       | 1.00  | 0.95        | 0.95         | 1.00         | 0.95        | 0.95 | 1.00         | 1.00     | 1.00   | 1.00           | 1.00     | 1.00        |
| Ped Bike Factor         |       |             |              |              |             |      |              |          |        |                |          |             |
| Frt                     |       | 0.977       |              |              | 0.984       |      |              |          | 0.850  |                |          | 0.850       |
| Flt Protected           | 0.950 |             |              | 0.950        |             |      | 0.950        |          |        | 0.950          |          |             |
| Satd. Flow (prot)       | 1805  | 3497        | 0            | 1787         | 3517        | 0    | 1805         | 1961     | 1615   | 1787           | 2000     | 1615        |
| Flt Permitted           | 0.454 |             | -            | 0.340        |             | -    | 0.679        |          |        | 0.608          |          |             |
| Satd. Flow (perm)       | 863   | 3497        | 0            | 640          | 3517        | 0    | 1290         | 1961     | 1615   | 1144           | 2000     | 1615        |
| Right Turn on Red       | 000   | 0177        | No           | 0.0          |             | No   | / 0          | .,       | No     |                | 2000     | No          |
| Satd. Flow (RTOR)       |       |             | 110          |              |             | 110  |              |          | 110    |                |          | 110         |
| Link Speed (mph)        |       | 45          |              |              | 45          |      |              | 45       |        |                | 45       |             |
| Link Distance (ft)      |       | 5259        |              |              | 1976        |      |              | 2983     |        |                | 1684     |             |
| Travel Time (s)         |       | 79.7        |              |              | 29.9        |      |              | 45.2     |        |                | 25.5     |             |
| Confl. Peds. (#/hr)     |       | 17.1        |              |              | 27.7        |      |              | 40.2     |        |                | 20.0     |             |
| Confl. Bikes (#/hr)     |       |             |              |              |             |      |              |          |        |                |          |             |
| Peak Hour Factor        | 0.88  | 0.88        | 0.88         | 0.88         | 0.88        | 0.88 | 0.88         | 0.88     | 0.88   | 0.88           | 0.88     | 0.88        |
| Growth Factor           | 100%  | 100%        | 100%         | 100%         | 100%        | 100% | 100%         | 100%     | 100%   | 100%           | 100%     | 100%        |
| Heavy Vehicles (%)      | 0%    | 1%          | 0%           | 1%           | 1%          | 1%   | 0%           | 2%       | 0%     | 1%             | 0%       | 0%          |
| Bus Blockages (#/hr)    | 070   | 0           | 0/0          | 0            | 0           | 0    | 0/0          | 0        | 0/0    | 0              | 0/0      | 070         |
| Parking (#/hr)          | 0     | 0           | 0            | 0            | 0           | 0    | 0            | 0        | 0      | 0              | 0        | U           |
| Mid-Block Traffic (%)   |       | 0%          |              |              | 0%          |      |              | 0%       |        |                | 0%       |             |
| Shared Lane Traffic (%) |       | 070         |              |              | 070         |      |              | 070      |        |                | 070      |             |
| Lane Group Flow (vph)   | 20    | 631         | 0            | 99           | 533         | 0    | 72           | 111      | 49     | 63             | 122      | 57          |
| Turn Type               | pm+pt | NA          | 0            | pm+pt        | NA          | 0    | pm+pt        | NA       | Perm   | pm+pt          | NA       | Perm        |
| Protected Phases        | 5     | 2           |              | - μπ+μι<br>1 | 6           |      | 9111+pt<br>3 | 8        | FCIIII | - ριτι+ρι<br>7 | 4        | FCIII       |
| Permitted Phases        | 2     | Z           |              | 6            | 0           |      | 8            | 0        | 8      | 4              | 4        | 1           |
| Detector Phase          | 5     | 2           |              | 1            | 6           |      | 3            | 8        | 8      | 7              | 4        | 4           |
| Switch Phase            | 5     | Z           |              | 1            | 0           |      | 3            | 0        | 0      | 1              | 4        | 4           |
| Minimum Initial (s)     | 3.0   | 15.0        |              | 3.0          | 15.0        |      | 3.0          | 8.0      | 8.0    | 3.0            | 8.0      | 8.0         |
| Minimum Split (s)       | 6.5   | 21.0        |              | 6.5          | 21.0        |      | 5.0<br>6.5   | 14.0     | 14.0   | 6.5            | 14.0     | 0.0<br>14.0 |
|                         | 10.0  | 35.0        |              | 20.0         | 45.0        |      | 10.0         | 25.0     | 25.0   | 20.0           | 35.0     | 35.0        |
| Total Split (s)         |       |             |              |              |             |      |              |          |        |                |          |             |
| Total Split (%)         | 10.0% | 35.0%       |              | 20.0%        | 45.0%       |      | 10.0%        | 25.0%    | 25.0%  | 20.0%          | 35.0%    | 35.0%       |
| Yellow Time (s)         | 3.5   | 4.0         |              | 3.5          | 4.0         |      | 3.5          | 4.0      | 4.0    | 3.5            | 4.0      | 4.0         |
| All-Red Time (s)        | 0.0   | 2.0         |              | 0.0          | 2.0         |      | 0.0          | 2.0      | 2.0    | 0.0            | 2.0      | 2.0         |
| Lost Time Adjust (s)    | 0.0   | 0.0         |              | 0.0          | 0.0         |      | 0.0          | 0.0      | 0.0    | 0.0            | 0.0      | 0.0         |
| Total Lost Time (s)     | 3.5   | 6.0         |              | 3.5          | 6.0         |      | 3.5          | 6.0      | 6.0    | 3.5            | 6.0      | 6.0         |
| Lead/Lag                | Lead  | Lag         |              | Lead         | Lag         |      | Lead         | Lag      | Lag    | Lead           | Lag      | Lag         |
| Lead-Lag Optimize?      | Yes   | Yes         |              | Yes          | Yes         |      | Yes          | Yes      | Yes    | Yes            | Yes      | Yes         |
| Recall Mode             | None  | None        |              | None         | None        |      | None         | None     | None   | None           | None     | None        |
| Act Effct Green (s)     | 36.3  | 32.4        |              | 40.0         | 38.8        |      | 17.3         | 12.4     | 12.4   | 19.2           | 13.4     | 13.4        |
| Actuated g/C Ratio      | 0.56  | 0.50        |              | 0.62         | 0.60        |      | 0.27         | 0.19     | 0.19   | 0.30           | 0.21     | 0.21        |

Existing Evening Peak Hour 01/06/2020 21-008 Tinley Park

# Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

| 03/10/2021 |
|------------|
|------------|

|                               | ٦           | -    | $\mathbf{F}$ | 4    | -           | •          | 1    | 1    | 1    | 1    | ţ    | ~    |
|-------------------------------|-------------|------|--------------|------|-------------|------------|------|------|------|------|------|------|
| Lane Group                    | EBL         | EBT  | EBR          | WBL  | WBT         | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                     | 0.03        | 0.36 |              | 0.18 | 0.25        |            | 0.18 | 0.29 | 0.16 | 0.15 | 0.29 | 0.17 |
| Control Delay                 | 8.1         | 17.0 |              | 8.7  | 11.3        |            | 18.9 | 31.7 | 30.2 | 18.4 | 29.9 | 28.5 |
| Queue Delay                   | 0.0         | 0.0  |              | 0.0  | 0.0         |            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                   | 8.1         | 17.0 |              | 8.7  | 11.3        |            | 18.9 | 31.7 | 30.2 | 18.4 | 29.9 | 28.5 |
| LOS                           | А           | В    |              | А    | В           |            | В    | С    | С    | В    | С    | С    |
| Approach Delay                |             | 16.7 |              |      | 10.9        |            |      | 27.4 |      |      | 26.6 |      |
| Approach LOS                  |             | В    |              |      | В           |            |      | С    |      |      | С    |      |
| Queue Length 50th (ft)        | 3           | 106  |              | 18   | 62          |            | 23   | 46   | 20   | 20   | 50   | 23   |
| Queue Length 95th (ft)        | 14          | 176  |              | 44   | 137         |            | 52   | 98   | 52   | 47   | 100  | 55   |
| Internal Link Dist (ft)       |             | 5179 |              |      | 1896        |            |      | 2903 |      |      | 1604 |      |
| Turn Bay Length (ft)          | 160         |      |              | 160  |             |            | 170  |      | 170  | 170  |      | 170  |
| Base Capacity (vph)           | 611         | 1815 |              | 768  | 2204        |            | 422  | 729  | 601  | 685  | 1025 | 828  |
| Starvation Cap Reductn        | 0           | 0    |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn         | 0           | 0    |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn           | 0           | 0    |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio             | 0.03        | 0.35 |              | 0.13 | 0.24        |            | 0.17 | 0.15 | 0.08 | 0.09 | 0.12 | 0.07 |
| Intersection Summary          |             |      |              |      |             |            |      |      |      |      |      |      |
| Area Type:                    | Other       |      |              |      |             |            |      |      |      |      |      |      |
| Cycle Length: 100             |             |      |              |      |             |            |      |      |      |      |      |      |
| Actuated Cycle Length: 64.    | 4           |      |              |      |             |            |      |      |      |      |      |      |
| Natural Cycle: 50             |             |      |              |      |             |            |      |      |      |      |      |      |
| Control Type: Actuated-Une    | coordinated |      |              |      |             |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.36       |             |      |              |      |             |            |      |      |      |      |      |      |
| Intersection Signal Delay: 1  |             |      |              |      | tersectior  |            |      |      |      |      |      |      |
| Intersection Capacity Utiliza | ation 44.0% |      |              | IC   | CU Level of | of Service | A    |      |      |      |      |      |
| Analysis Period (min) 15      |             |      |              |      |             |            |      |      |      |      |      |      |

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road

| <b>√</b> Ø1                     |      | Ø3   | <b>↓</b> Ø4 |
|---------------------------------|------|------|-------------|
| 20 s                            | 35 s | 10 s | 35 s        |
| ▶ <sub>Ø5</sub> ★ <sub>Ø6</sub> |      | Ø7   | <b>1</b> 08 |
| 10 s 45 s                       |      | 20 s | 25 s        |

| Int Delay, s/veh       | 4.6  |      |      |      |               |      |   |
|------------------------|------|------|------|------|---------------|------|---|
| Movement               | EBL  | EBR  | NBL  | NBT  | SBT           | SBR  |   |
| Lane Configurations    | ۳    | 1    | ٦    | - 11 | - <b>†</b> 14 |      |   |
| Traffic Vol, veh/h     | 74   | 37   | 54   | 965  | 1505          | 100  |   |
| Future Vol, veh/h      | 74   | 37   | 54   | 965  | 1505          | 100  |   |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0             | 0    |   |
| Sign Control           | Stop | Stop | Free | Free | Free          | Free |   |
| RT Channelized         | -    | None | -    | None | -             | None |   |
| Storage Length         | 70   | 0    | 210  | -    | -             | -    |   |
| Veh in Median Storage, | # 1  | -    | -    | 0    | 0             | -    |   |
| Grade, %               | 0    | -    | -    | 0    | 0             | -    |   |
| Peak Hour Factor       | 96   | 96   | 96   | 96   | 96            | 96   | 1 |
| Heavy Vehicles, %      | 11   | 0    | 15   | 3    | 3             | 0    |   |
| Mvmt Flow              | 77   | 39   | 56   | 1005 | 1568          | 104  |   |

| Major/Minor          | Minor2  | Ν     | Najor1 | Ν       | Major2 |     |     |      |  |
|----------------------|---------|-------|--------|---------|--------|-----|-----|------|--|
| Conflicting Flow All | 2235    |       | 1672   | 0       | -      | 0   |     |      |  |
| Stage 1              | 1620    | -     | -      | -       | -      | -   |     |      |  |
| Stage 2              | 615     | -     | -      | -       | -      | -   |     |      |  |
| Critical Hdwy        | 7.02    | 6.9   | 4.4    | -       | -      | -   |     |      |  |
| Critical Hdwy Stg 1  | 6.02    | -     | -      | -       | -      | -   |     |      |  |
| Critical Hdwy Stg 2  | 6.02    | -     | -      | -       | -      | -   |     |      |  |
| Follow-up Hdwy       | 3.61    | 3.3   | 2.35   | -       | -      | -   |     |      |  |
| Pot Cap-1 Maneuver   |         | 315   | 326    | -       | -      | -   |     |      |  |
| Stage 1              | 134     | -     | -      | -       | -      | -   |     |      |  |
| Stage 2              | 478     | -     | -      | -       | -      | -   |     |      |  |
| Platoon blocked, %   |         |       |        | -       | -      | -   |     |      |  |
| Mov Cap-1 Maneuve    |         | 315   | 326    | -       | -      | -   |     |      |  |
| Mov Cap-2 Maneuve    |         | -     | -      | -       | -      | -   |     |      |  |
| Stage 1              | 111     | -     | -      | -       | -      | -   |     |      |  |
| Stage 2              | 478     | -     | -      | -       | -      | -   |     |      |  |
|                      |         |       |        |         |        |     |     |      |  |
| Approach             | EB      |       | NB     |         | SB     |     |     | <br> |  |
| HCM Control Delay,   | s 104.7 |       | 1      |         | 0      |     |     |      |  |
| HCM LOS              | F       |       |        |         |        |     |     |      |  |
|                      |         |       |        |         |        |     |     |      |  |
| Minor Lane/Major M   | /mt     | NBL   | NBT E  | EBLn1 E | EBLn2  | SBT | SBR |      |  |
| Capacity (veh/h)     |         | 326   | -      | 88      | 315    | -   | -   |      |  |
| HCM Lane V/C Ratio   | )       | 0.173 | -      | 0.876   |        | -   | -   |      |  |
| HCM Control Delay (  |         | 18.3  | -      | 148     | 18     | -   | -   |      |  |
| HCM Lane LOS         |         | С     | -      | F       | С      | -   | -   |      |  |
| HCM 95th %tile Q(ve  | eh)     | 0.6   | -      | 4.7     | 0.4    | -   | -   |      |  |

#### Notes

~: Volume exceeds capacity

\$: Delay exceeds 300s

+: Computation Not Defined \*: All major volume in platoon

| Intersection           |      |      |      |      |      |      |   |
|------------------------|------|------|------|------|------|------|---|
| Int Delay, s/veh       | 0.6  |      |      |      |      |      |   |
| Movement               | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |   |
| Lane Configurations    |      | 1    |      | - 11 | - 11 | 1    |   |
| Traffic Vol, veh/h     | 0    | 78   | 0    | 1019 | 1518 | 24   |   |
| Future Vol, veh/h      | 0    | 78   | 0    | 1019 | 1518 | 24   | ; |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0    | 0    | ) |
| Sign Control           | Stop | Stop | Free | Free | Free | Free | ; |
| RT Channelized         | -    | Stop | -    | None | -    | Free |   |
| Storage Length         | -    | 0    | -    | -    | -    | 120  | ) |
| Veh in Median Storage  | ,# 0 | -    | -    | 0    | 0    | -    |   |
| Grade, %               | 0    | -    | -    | 0    | 0    | -    |   |
| Peak Hour Factor       | 97   | 97   | 97   | 97   | 97   | 97   |   |
| Heavy Vehicles, %      | 0    | 0    | 0    | 4    | 3    | 0    | ) |
| Mvmt Flow              | 0    | 80   | 0    | 1051 | 1565 | 25   | ļ |

| Major/Minor          | Minor2 | М   | ajor1 | Ма | ijor2 |   |
|----------------------|--------|-----|-------|----|-------|---|
| Conflicting Flow All | -      | 783 | -     | 0  | -     | 0 |
| Stage 1              | -      | -   | -     | -  | -     | - |
| Stage 2              | -      | -   | -     | -  | -     | - |
| Critical Hdwy        | -      | 6.9 | -     | -  | -     | - |
| Critical Hdwy Stg 1  | -      | -   | -     | -  | -     | - |
| Critical Hdwy Stg 2  | -      | -   | -     | -  | -     | - |
| Follow-up Hdwy       | -      | 3.3 | -     | -  | -     | - |
| Pot Cap-1 Maneuver   | 0      | 341 | 0     | -  | -     | 0 |
| Stage 1              | 0      | -   | 0     | -  | -     | 0 |
| Stage 2              | 0      | -   | 0     | -  | -     | 0 |
| Platoon blocked, %   |        |     |       | -  | -     |   |
| Mov Cap-1 Maneuver   |        | 341 | -     | -  | -     | - |
| Mov Cap-2 Maneuver   | · -    | -   | -     | -  | -     | - |
| Stage 1              | -      | -   | -     | -  | -     | - |
| Stage 2              | -      | -   | -     | -  | -     | - |
|                      |        |     |       |    |       |   |
| Approach             | EB     |     | NB    |    | SB    |   |
| HCM Control Delay, s | 18.8   |     | 0     |    | 0     |   |
| HCM LOS              | С      |     |       |    |       |   |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
|-----------------------|-----------|-----|
| Capacity (veh/h)      | - 341     | -   |
| HCM Lane V/C Ratio    | - 0.236   | -   |
| HCM Control Delay (s) | - 18.8    | -   |
| HCM Lane LOS          | - C       | -   |
| HCM 95th %tile Q(veh) | - 0.9     | -   |

| Int Delay, s/veh       | 1.6  |      |      |      |                |      |
|------------------------|------|------|------|------|----------------|------|
| Movement               | EBL  | EBR  | NBL  | NBT  | SBT            | SBR  |
| Lane Configurations    | Y    |      | ľ    | - 11 | - <b>†</b> 1,- |      |
| Traffic Vol, veh/h     | 36   | 53   | 33   | 983  | 1530           | 66   |
| Future Vol, veh/h      | 36   | 53   | 33   | 983  | 1530           | 66   |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0              | 0    |
| Sign Control           | Stop | Stop | Free | Free | Free           | Free |
| RT Channelized         | -    | None | -    | None | -              | None |
| Storage Length         | 0    | -    | 130  | -    | -              | -    |
| Veh in Median Storage, | # 1  | -    | -    | 0    | 0              | -    |
| Grade, %               | 0    | -    | -    | 0    | 0              | -    |
| Peak Hour Factor       | 97   | 97   | 97   | 97   | 97             | 97   |
| Heavy Vehicles, %      | 0    | 0    | 0    | 4    | 3              | 0    |
| Mvmt Flow              | 37   | 55   | 34   | 1013 | 1577           | 68   |

| Major/Minor          | Minor2  | Ν      | /lajor1 | Ν       | lajor2 |         |                     |                                |
|----------------------|---------|--------|---------|---------|--------|---------|---------------------|--------------------------------|
| Conflicting Flow All | 2186    | 823    | 1645    | 0       | -      | 0       |                     |                                |
| Stage 1              | 1611    | -      | -       | -       | -      | -       |                     |                                |
| Stage 2              | 575     | -      | -       | -       | -      | -       |                     |                                |
| Critical Hdwy        | 6.8     | 6.9    | 4.1     | -       | -      | -       |                     |                                |
| Critical Hdwy Stg 1  | 5.8     | -      | -       | -       | -      | -       |                     |                                |
| Critical Hdwy Stg 2  | 5.8     | -      | -       | -       | -      | -       |                     |                                |
| Follow-up Hdwy       | 3.5     | 3.3    | 2.2     | -       | -      | -       |                     |                                |
| Pot Cap-1 Maneuver   | 40      | 321    | 398     | -       | -      | -       |                     |                                |
| Stage 1              | 152     | -      | -       | -       | -      | -       |                     |                                |
| Stage 2              | 532     | -      | -       | -       | -      | -       |                     |                                |
| Platoon blocked, %   |         |        |         | -       | -      | -       |                     |                                |
| Nov Cap-1 Maneuve    | r ~ 37  | 321    | 398     | -       | -      | -       |                     |                                |
| Nov Cap-2 Maneuve    | r 110   | -      | -       | -       | -      | -       |                     |                                |
| Stage 1              | 139     | -      | -       | -       | -      | -       |                     |                                |
| Stage 2              | 532     | -      | -       | -       | -      | -       |                     |                                |
|                      |         |        |         |         |        |         |                     |                                |
| Approach             | EB      |        | NB      |         | SB     |         |                     |                                |
| HCM Control Delay, s | s 43.7  |        | 0.5     |         | 0      |         |                     |                                |
| HCM LOS              | E       |        |         |         |        |         |                     |                                |
|                      |         |        |         |         |        |         |                     |                                |
| Minor Lane/Major Mv  | mt      | NBL    | NBT E   | EBLn1   | SBT    | SBR     |                     |                                |
| Capacity (veh/h)     |         | 398    | -       | 181     | -      | -       |                     |                                |
| HCM Lane V/C Ratio   |         | 0.085  | -       | 0.507   | -      | -       |                     |                                |
| ICM Control Delay (s | s)      | 14.9   | -       | 43.7    | -      | -       |                     |                                |
| ICM Lane LOS         |         | В      | -       | Е       | -      | -       |                     |                                |
| HCM 95th %tile Q(ve  | h)      | 0.3    | -       | 2.5     | -      | -       |                     |                                |
| Notes                |         |        |         |         |        |         |                     |                                |
| ~: Volume exceeds c  | apacity | \$: De | lay exc | eeds 30 | )0s    | +: Comp | utation Not Defined | *: All major volume in platoon |

# Capacity Analysis Summary Sheets No Build Weekday Morning Peak Hour Conditions

|                         | *            | ×.    | 1          | 1     | 1         | ţ     |
|-------------------------|--------------|-------|------------|-------|-----------|-------|
| Lane Group              | WBL          | WBR   | NBT        | NBR   | SBL       | SBT   |
| Lane Configurations     | <u>, 102</u> | 11    | <b>†</b> † | 1     | ኘ         | 1     |
| Traffic Volume (vph)    | 41           | 0     | 1171       | 75    | 2         | 823   |
| Future Volume (vph)     | 41           | 0     | 1171       | 75    | 2         | 823   |
| Ideal Flow (vphpl)      | 1900         | 1900  | 2000       | 1900  | 1900      | 2000  |
| Lane Width (ft)         | 12           | 12    | 12         | 12    | 12        | 12    |
| Grade (%)               | 0%           | 12    | 0%         | 12    | 12        | 0%    |
| Storage Length (ft)     | 150          | 0     | 070        | 100   | 310       | 070   |
| Storage Lanes           | 130          | 2     |            | 100   | 2         |       |
| Taper Length (ft)       | 150          | Z     |            | 1     | 235       |       |
| Lane Util. Factor       | 1.00         | 0.88  | 0.95       | 1.00  | 0.97      | 0.95  |
|                         | 1.00         | 0.00  | 0.95       | 1.00  | 0.97      | 0.95  |
| Ped Bike Factor         |              |       |            | 0.050 |           |       |
| Frt<br>Elt Drotostad    | 0.050        |       |            | 0.850 | 0.050     |       |
| Fit Protected           | 0.950        | 2244  |            | 1500  | 0.950     | 2/54  |
| Satd. Flow (prot)       | 1805         | 3344  | 3654       | 1599  | 3502      | 3654  |
| Flt Permitted           | 0.950        |       |            |       | 0.950     |       |
| Satd. Flow (perm)       | 1805         | 3344  | 3654       | 1599  | 3502      | 3654  |
| Right Turn on Red       |              | No    |            | No    |           |       |
| Satd. Flow (RTOR)       |              |       |            |       |           |       |
| Link Speed (mph)        | 50           |       | 45         |       |           | 45    |
| Link Distance (ft)      | 1356         |       | 1018       |       |           | 970   |
| Travel Time (s)         | 18.5         |       | 15.4       |       |           | 14.7  |
| Confl. Peds. (#/hr)     |              |       |            |       |           |       |
| Confl. Bikes (#/hr)     |              |       |            |       |           |       |
| Peak Hour Factor        | 0.83         | 0.83  | 0.83       | 0.83  | 0.83      | 0.83  |
| Growth Factor           | 100%         | 100%  | 100%       | 100%  | 100%      | 100%  |
| Heavy Vehicles (%)      | 0%           | 0%    | 4%         | 1%    | 0%        | 4%    |
| Bus Blockages (#/hr)    | 0,0          | 0     | 0          | 0     | 0         | 0     |
| Parking (#/hr)          | 0            | 0     | 0          | 0     | 0         | 0     |
| Mid-Block Traffic (%)   | 0%           |       | 0%         |       |           | 0%    |
| Shared Lane Traffic (%) | U 70         |       | 070        |       |           | U 70  |
| . ,                     | 40           | 0     | 1/11       | 00    | 2         | 992   |
| Lane Group Flow (vph)   | 49<br>Drot   | 0     | 1411       | 90    | 2<br>Drot |       |
| Turn Type               | Prot         | pm+ov | NA         | Free  | Prot      | NA    |
| Protected Phases        | 8            | 1     | 2          | _     | 1         | 6     |
| Permitted Phases        |              | 8     |            | Free  |           |       |
| Detector Phase          | 8            | 1     | 2          |       | 1         | 6     |
| Switch Phase            |              |       |            |       |           |       |
| Minimum Initial (s)     | 8.0          | 3.0   | 15.0       |       | 3.0       | 15.0  |
| Minimum Split (s)       | 14.0         | 7.5   | 21.0       |       | 7.5       | 21.0  |
| Total Split (s)         | 21.0         | 15.4  | 103.6      |       | 15.4      | 119.0 |
| Total Split (%)         | 15.0%        | 11.0% | 74.0%      |       | 11.0%     | 85.0% |
| Yellow Time (s)         | 4.0          | 3.5   | 4.0        |       | 3.5       | 4.0   |
| All-Red Time (s)        | 2.0          | 1.0   | 2.0        |       | 1.0       | 2.0   |
| Lost Time Adjust (s)    | 0.0          | 0.0   | 0.0        |       | 0.0       | 0.0   |
| Total Lost Time (s)     | 6.0          | 4.5   | 6.0        |       | 4.5       | 6.0   |
| Lead/Lag                | 0.0          | Lead  |            |       | Lead      | 0.0   |
|                         |              | Yes   | Lag<br>Yes |       | Yes       |       |
| Lead-Lag Optimize?      | None         |       |            |       |           | C Min |
| Recall Mode             | None         | None  | C-Min      | 140.0 | None      | C-Min |
| Act Effct Green (s)     | 10.4         |       | 119.5      | 140.0 | 5.6       | 121.6 |
| Actuated g/C Ratio      | 0.07         |       | 0.85       | 1.00  | 0.04      | 0.87  |

No Build Morning Peak Hour 01/06/2020 21-008 Tinley Park

|                              | ✓             | *        | 1         | 1         | 1          | ţ          |
|------------------------------|---------------|----------|-----------|-----------|------------|------------|
| Lane Group                   | WBL           | WBR      | NBT       | NBR       | SBL        | SBT        |
| v/c Ratio                    | 0.37          |          | 0.45      | 0.06      | 0.01       | 0.31       |
| Control Delay                | 68.7          |          | 4.0       | 0.1       | 64.5       | 2.6        |
| Queue Delay                  | 0.0           |          | 0.0       | 0.0       | 0.0        | 0.0        |
| Total Delay                  | 68.7          |          | 4.0       | 0.1       | 64.5       | 2.6        |
| LOS                          | E             |          | А         | А         | E          | А          |
| Approach Delay               | 68.7          |          | 3.7       |           |            | 2.7        |
| Approach LOS                 | E             |          | А         |           |            | А          |
| Queue Length 50th (ft)       | 43            |          | 223       | 0         | 1          | 80         |
| Queue Length 95th (ft)       | 78            |          | 221       | 0         | 5          | 104        |
| Internal Link Dist (ft)      | 1276          |          | 938       |           |            | 890        |
| Turn Bay Length (ft)         | 150           |          |           | 100       | 310        |            |
| Base Capacity (vph)          | 193           |          | 3119      | 1599      | 272        | 3173       |
| Starvation Cap Reductn       | 0             |          | 0         | 0         | 0          | 0          |
| Spillback Cap Reductn        | 0             |          | 0         | 0         | 0          | 0          |
| Storage Cap Reductn          | 0             |          | 0         | 0         | 0          | 0          |
| Reduced v/c Ratio            | 0.25          |          | 0.45      | 0.06      | 0.01       | 0.31       |
| Intersection Summary         |               |          |           |           |            |            |
| Area Type:                   | Other         |          |           |           |            |            |
| Cycle Length: 140            |               |          |           |           |            |            |
| Actuated Cycle Length: 14    |               |          |           |           |            |            |
| Offset: 109.2 (78%), Refer   | renced to pha | ase 2:NB | F and 6:S | BT, Start | of Green   |            |
| Natural Cycle: 55            |               |          |           |           |            |            |
| Control Type: Actuated-Co    | pordinated    |          |           |           |            |            |
| Maximum v/c Ratio: 0.45      |               |          |           |           |            |            |
| Intersection Signal Delay:   |               |          |           |           | tersectior |            |
| Intersection Capacity Utiliz | zation 47.4%  |          |           | IC        | U Level o  | of Service |
| Analysis Period (min) 15     |               |          |           |           |            |            |
|                              |               |          |           |           |            |            |

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue

| Ø1     | ∎ ¶ø2 (R) |             |
|--------|-----------|-------------|
| 15.4 s | 103.6 s   |             |
| Ø6 (R) |           | <b>₹</b> Ø8 |
| 119 s  |           | 21 s        |

Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Driveway

03/10/2021

|                         | ≯     | +     | $\mathbf{F}$ | 4     | Ļ     | •    | •     | t     | 1    | 1     | Ļ     | ~    |
|-------------------------|-------|-------|--------------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Group              | EBL   | EBT   | EBR          | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
| Lane Configurations     |       | 4     |              |       | \$    |      | ۲     | A     |      |       | 4î b  |      |
| Traffic Volume (vph)    | 122   | 0     | 30           | 0     | 0     | 0    | 44    | 1093  | 0    | 0     | 921   | 36   |
| Future Volume (vph)     | 122   | 0     | 30           | 0     | 0     | 0    | 44    | 1093  | 0    | 0     | 921   | 36   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900         | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Lane Width (ft)         | 12    | 16    | 12           | 12    | 12    | 12   | 12    | 12    | 12   | 12    | 12    | 12   |
| Grade (%)               |       | 0%    |              |       | 0%    |      |       | 0%    |      |       | 0%    |      |
| Storage Length (ft)     | 0     |       | 0            | 0     |       | 0    | 95    |       | 0    | 0     |       | 0    |
| Storage Lanes           | 0     |       | 0            | 0     |       | 0    | 1     |       | 0    | 0     |       | 0    |
| Taper Length (ft)       | 0     |       |              | 0     |       |      | 160   |       |      | 0     |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00         | 1.00  | 1.00  | 1.00 | 1.00  | 0.95  | 0.95 | 0.95  | 0.95  | 0.95 |
| Ped Bike Factor         |       |       |              |       |       |      |       |       |      |       |       |      |
| Frt                     |       | 0.973 |              |       |       |      |       |       |      |       | 0.994 |      |
| Flt Protected           |       | 0.961 |              |       |       |      | 0.950 |       |      |       |       |      |
| Satd. Flow (prot)       | 0     | 1970  | 0            | 0     | 1900  | 0    | 1687  | 3471  | 0    | 0     | 3455  | 0    |
| Flt Permitted           | -     | 0.961 | -            | -     |       | -    | 0.227 |       | -    | -     |       | _    |
| Satd. Flow (perm)       | 0     | 1970  | 0            | 0     | 1900  | 0    | 403   | 3471  | 0    | 0     | 3455  | 0    |
| Right Turn on Red       | -     |       | No           | -     |       | No   |       |       | No   | -     |       | No   |
| Satd. Flow (RTOR)       |       |       |              |       |       |      |       |       |      |       |       |      |
| Link Speed (mph)        |       | 30    |              |       | 30    |      |       | 45    |      |       | 45    |      |
| Link Distance (ft)      |       | 318   |              |       | 201   |      |       | 468   |      |       | 1401  |      |
| Travel Time (s)         |       | 7.2   |              |       | 4.6   |      |       | 7.1   |      |       | 21.2  |      |
| Confl. Peds. (#/hr)     |       |       |              |       |       |      |       |       |      |       |       |      |
| Confl. Bikes (#/hr)     |       |       |              |       |       |      |       |       |      |       |       |      |
| Peak Hour Factor        | 0.89  | 0.89  | 0.89         | 0.89  | 0.89  | 0.89 | 0.89  | 0.89  | 0.89 | 0.89  | 0.89  | 0.89 |
| Growth Factor           | 100%  | 100%  | 100%         | 100%  | 100%  | 100% | 100%  | 100%  | 100% | 100%  | 100%  | 100% |
| Heavy Vehicles (%)      | 2%    | 0%    | 3%           | 0%    | 0%    | 0%   | 7%    | 4%    | 0%   | 0%    | 4%    | 0%   |
| Bus Blockages (#/hr)    | 0     | 0     | 0            | 0     | 0     | 0    | 0     | 0     | 0    | 0     | 0     | 0    |
| Parking (#/hr)          |       |       |              |       |       |      |       |       |      |       |       |      |
| Mid-Block Traffic (%)   |       | 0%    |              |       | 0%    |      |       | 0%    |      |       | 0%    |      |
| Shared Lane Traffic (%) |       |       |              |       |       |      |       |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 171   | 0            | 0     | 0     | 0    | 49    | 1228  | 0    | 0     | 1075  | 0    |
| Turn Type               | Split | NA    |              |       |       |      | pm+pt | NA    |      |       | NA    |      |
| Protected Phases        | 4     | 4     |              |       | 8     |      | 5     | 2     |      |       | 6     |      |
| Permitted Phases        |       |       |              | 8     |       |      | 2     |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |              | 8     | 8     |      | 5     | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |              |       |       |      |       |       |      |       |       |      |
| Minimum Initial (s)     | 8.0   | 8.0   |              | 8.0   | 8.0   |      | 3.0   | 15.0  |      | 15.0  | 15.0  |      |
| Minimum Split (s)       | 14.0  | 14.0  |              | 14.0  | 14.0  |      | 6.5   | 21.0  |      | 21.0  | 21.0  |      |
| Total Split (s)         | 37.8  | 37.8  |              | 16.8  | 16.8  |      | 12.6  | 85.4  |      | 72.8  | 72.8  |      |
| Total Split (%)         | 27.0% | 27.0% |              | 12.0% | 12.0% |      | 9.0%  | 61.0% |      | 52.0% | 52.0% |      |
| Yellow Time (s)         | 4.0   | 4.0   |              | 4.0   | 4.0   |      | 3.5   | 4.0   |      | 4.0   | 4.0   |      |
| All-Red Time (s)        | 2.0   | 2.0   |              | 2.0   | 2.0   |      | 0.0   | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |              |       | 0.0   |      | 0.0   | 0.0   |      |       | 0.0   |      |
| Total Lost Time (s)     |       | 6.0   |              |       | 6.0   |      | 3.5   | 6.0   |      |       | 6.0   |      |
| Lead/Lag                |       |       |              |       |       |      | Lead  |       |      | Lag   | Lag   |      |
| Lead-Lag Optimize?      |       |       |              |       |       |      | Yes   |       |      | Yes   | Yes   |      |
| Recall Mode             | None  | None  |              | None  | None  |      | None  | C-Min |      | C-Min | C-Min |      |
| Act Effct Green (s)     |       | 18.4  |              |       |       |      | 112.1 | 109.6 |      |       | 101.6 |      |
| Actuated g/C Ratio      |       | 0.13  |              |       |       |      | 0.80  | 0.78  |      |       | 0.73  |      |

No Build Morning Peak Hour 01/06/2020 21-008 Tinley Park

# Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Driveway

|                                | ۶             | -         | $\mathbf{F}$ | ∢         | +          | *          | •    | 1    | 1   | 1   | ţ    | ~   |
|--------------------------------|---------------|-----------|--------------|-----------|------------|------------|------|------|-----|-----|------|-----|
| Lane Group                     | EBL           | EBT       | EBR          | WBL       | WBT        | WBR        | NBL  | NBT  | NBR | SBL | SBT  | SBR |
| v/c Ratio                      |               | 0.66      |              |           |            |            | 0.13 | 0.45 |     |     | 0.43 |     |
| Control Delay                  |               | 69.9      |              |           |            |            | 2.8  | 3.8  |     |     | 9.7  |     |
| Queue Delay                    |               | 0.0       |              |           |            |            | 0.0  | 0.0  |     |     | 0.0  |     |
| Total Delay                    |               | 69.9      |              |           |            |            | 2.8  | 3.8  |     |     | 9.7  |     |
| LOS                            |               | E         |              |           |            |            | А    | А    |     |     | А    |     |
| Approach Delay                 |               | 69.9      |              |           |            |            |      | 3.8  |     |     | 9.7  |     |
| Approach LOS                   |               | E         |              |           |            |            |      | А    |     |     | А    |     |
| Queue Length 50th (ft)         |               | 150       |              |           |            |            | 6    | 156  |     |     | 186  |     |
| Queue Length 95th (ft)         |               | 217       |              |           |            |            | m8   | 75   |     |     | 303  |     |
| Internal Link Dist (ft)        |               | 238       |              |           | 121        |            |      | 388  |     |     | 1321 |     |
| Turn Bay Length (ft)           |               |           |              |           |            |            | 95   |      |     |     |      |     |
| Base Capacity (vph)            |               | 447       |              |           |            |            | 406  | 2718 |     |     | 2506 |     |
| Starvation Cap Reductn         |               | 0         |              |           |            |            | 0    | 0    |     |     | 0    |     |
| Spillback Cap Reductn          |               | 0         |              |           |            |            | 0    | 0    |     |     | 0    |     |
| Storage Cap Reductn            |               | 0         |              |           |            |            | 0    | 0    |     |     | 0    |     |
| Reduced v/c Ratio              |               | 0.38      |              |           |            |            | 0.12 | 0.45 |     |     | 0.43 |     |
| Intersection Summary           |               |           |              |           |            |            |      |      |     |     |      |     |
|                                | Other         |           |              |           |            |            |      |      |     |     |      |     |
| Cycle Length: 140              |               |           |              |           |            |            |      |      |     |     |      |     |
| Actuated Cycle Length: 140     |               |           |              |           |            |            |      |      |     |     |      |     |
| Offset: 80 (57%), Reference    | d to phase    | 2:NBTL a  | and 6:SB     | TL, Start | of Green   |            |      |      |     |     |      |     |
| Natural Cycle: 60              |               |           |              |           |            |            |      |      |     |     |      |     |
| Control Type: Actuated-Coor    | rdinated      |           |              |           |            |            |      |      |     |     |      |     |
| Maximum v/c Ratio: 0.66        |               |           |              |           |            |            |      |      |     |     |      |     |
| Intersection Signal Delay: 10  |               |           |              |           | tersectior |            |      |      |     |     |      |     |
| Intersection Capacity Utilizat | tion 55.2%    |           |              | IC        | U Level o  | of Service | В    |      |     |     |      |     |
| Analysis Period (min) 15       |               |           |              |           |            |            |      |      |     |     |      |     |
| m Volume for 95th percent      | tile queue is | s meterec | l by upstr   | eam sign  | al.        |            |      |      |     |     |      |     |

Splits and Phases: 2: Harlem Avenue & Benton Drive/Driveway

| 1 Ø2 (R)                         | <b>A</b> <sub>Ø4</sub> | ₹ø8    |  |
|----------------------------------|------------------------|--------|--|
| 85.4 s                           | 37.8 s                 | 16.8 s |  |
| ▲ Ø5 ♥ ♥ Ø6 (R)<br>12.6 s 72.8 s |                        |        |  |

# Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 | 03/1 | 0/2021 |
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|-------------------------|-------|-------|-------|-------|-------|-------|-------|-----------|-------|-------|----------|-------|
| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT       | NBR   | SBL   | SBT      | SBR   |
| Lane Configurations     | ۲     | 1     | 1     | ሻሻ    | 1     | 1     | ሻሻ    | <b>††</b> | 1     | ካካ    | <b>^</b> | 1     |
| Traffic Volume (vph)    | 1     | 3     | 1     | 77    | 1     | 359   | 9     | 777       | 141   | 338   | 610      | 3     |
| Future Volume (vph)     | 1     | 3     | 1     | 77    | 1     | 359   | 9     | 777       | 141   | 338   | 610      | 3     |
| Ideal Flow (vphpl)      | 1900  | 2000  | 1900  | 1900  | 2000  | 1900  | 1900  | 2000      | 1900  | 1900  | 2000     | 1900  |
| Lane Width (ft)         | 12    | 12    | 12    | 12    | 12    | 12    | 12    | 12        | 12    | 12    | 12       | 12    |
| Grade (%)               |       | 0%    |       |       | 0%    |       |       | 0%        |       |       | 0%       |       |
| Storage Length (ft)     | 95    |       | 100   | 235   |       | 0     | 225   |           | 215   | 325   |          | 215   |
| Storage Lanes           | 1     |       | 1     | 2     |       | 1     | 2     |           | 1     | 2     |          | 1     |
| Taper Length (ft)       | 135   |       |       | 220   |       |       | 300   |           |       | 300   |          |       |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00  | 0.97  | 1.00  | 1.00  | 0.97  | 0.95      | 1.00  | 0.97  | 0.95     | 1.00  |
| Ped Bike Factor         |       |       |       |       |       |       |       |           |       |       |          |       |
| Frt                     |       |       | 0.850 |       |       | 0.850 |       |           | 0.850 |       |          | 0.850 |
| Flt Protected           | 0.950 |       |       | 0.950 |       |       | 0.950 |           |       | 0.950 |          |       |
| Satd. Flow (prot)       | 1805  | 2000  | 1615  | 3433  | 2000  | 1553  | 3502  | 3619      | 1583  | 3367  | 3654     | 1615  |
| Flt Permitted           | 0.950 |       |       | 0.950 |       |       | 0.950 |           |       | 0.950 |          |       |
| Satd. Flow (perm)       | 1805  | 2000  | 1615  | 3433  | 2000  | 1553  | 3502  | 3619      | 1583  | 3367  | 3654     | 1615  |
| Right Turn on Red       |       |       | No    |       |       | No    |       |           | No    |       |          | No    |
| Satd. Flow (RTOR)       |       |       |       |       |       |       |       |           |       |       |          |       |
| Link Speed (mph)        |       | 30    |       |       | 45    |       |       | 45        |       |       | 45       |       |
| Link Distance (ft)      |       | 957   |       |       | 1111  |       |       | 2713      |       |       | 854      |       |
| Travel Time (s)         |       | 21.8  |       |       | 16.8  |       |       | 41.1      |       |       | 12.9     |       |
| Confl. Peds. (#/hr)     |       |       |       |       |       |       |       |           |       |       |          |       |
| Confl. Bikes (#/hr)     |       |       |       |       |       |       |       |           |       |       |          |       |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92      | 0.92  | 0.92  | 0.92     | 0.92  |
| Growth Factor           | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%  | 100%      | 100%  | 100%  | 100%     | 100%  |
| Heavy Vehicles (%)      | 0%    | 0%    | 0%    | 2%    | 0%    | 4%    | 0%    | 5%        | 2%    | 4%    | 4%       | 0%    |
| Bus Blockages (#/hr)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0         | 0     | 0     | 0        | 0     |
| Parking (#/hr)          |       |       |       |       |       |       |       |           |       |       |          |       |
| Mid-Block Traffic (%)   |       | 0%    |       |       | 0%    |       |       | 0%        |       |       | 0%       |       |
| Shared Lane Traffic (%) |       |       |       |       |       |       |       |           |       |       |          |       |
| Lane Group Flow (vph)   | 1     | 3     | 1     | 84    | 1     | 390   | 10    | 845       | 153   | 367   | 663      | 3     |
| Turn Type               | Prot  | NA    | pm+ov | Prot  | NA    | pm+ov | Prot  | NA        | pm+ov | Prot  | NA       | pm+ov |
| Protected Phases        | 7     | 4     | 5     | 3     | 8     | 1     | 5     | 2         | 3     | 1     | 6        | 7     |
| Permitted Phases        |       |       | 4     |       |       | 8     |       |           | 2     |       |          | 6     |
| Detector Phase          | 7     | 4     | 5     | 3     | 8     | 1     | 5     | 2         | 3     | 1     | 6        | 7     |
| Switch Phase            |       |       |       |       |       |       |       |           |       |       |          |       |
| Minimum Initial (s)     | 3.0   | 8.0   | 3.0   | 3.0   | 8.0   | 3.0   | 3.0   | 15.0      | 3.0   | 3.0   | 15.0     | 3.0   |
| Minimum Split (s)       | 7.5   | 14.0  | 7.5   | 7.5   | 14.0  | 7.5   | 7.5   | 21.0      | 7.5   | 7.5   | 21.0     | 7.5   |
| Total Split (s)         | 12.6  | 26.6  | 30.8  | 12.6  | 26.6  | 30.8  | 30.8  | 70.0      | 12.6  | 30.8  | 70.0     | 12.6  |
| Total Split (%)         | 9.0%  | 19.0% | 22.0% | 9.0%  | 19.0% | 22.0% | 22.0% | 50.0%     | 9.0%  | 22.0% | 50.0%    | 9.0%  |
| Yellow Time (s)         | 3.5   | 4.5   | 3.5   | 3.5   | 4.5   | 3.5   | 3.5   | 4.5       | 3.5   | 3.5   | 4.5      | 3.5   |
| All-Red Time (s)        | 1.0   | 1.5   | 1.0   | 1.0   | 1.5   | 1.0   | 1.0   | 1.5       | 1.0   | 1.0   | 1.5      | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0       | 0.0   | 0.0   | 0.0      | 0.0   |
| Total Lost Time (s)     | 4.5   | 6.0   | 4.5   | 4.5   | 6.0   | 4.5   | 4.5   | 6.0       | 4.5   | 4.5   | 6.0      | 4.5   |
| Lead/Lag                | Lead  | Lag   | Lead  | Lead  | Lag   | Lead  | Lead  | Lag       | Lead  | Lead  | Lag      | Lead  |
| Lead-Lag Optimize?      | Yes       | Yes   | Yes   | Yes      | Yes   |
| Recall Mode             | None  | C-Min     | None  | None  | C-Min    | None  |
| Act Effct Green (s)     | 5.7   | 8.0   | 8.7   | 9.3   | 8.5   | 41.7  | 5.9   | 85.6      | 100.9 | 27.3  | 113.0    | 124.7 |
| Actuated g/C Ratio      | 0.04  | 0.06  | 0.06  | 0.07  | 0.06  | 0.30  | 0.04  | 0.61      | 0.72  | 0.20  | 0.81     | 0.89  |

No Build Morning Peak Hour 01/06/2020 21-008 Tinley Park

### Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 |
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|-------------------------------|---------------|-----------|--------------|------------|------------|------------|------|------|------|--------------|------|------|
| Lane Group                    | EBL           | EBT       | EBR          | WBL        | WBT        | WBR        | NBL  | NBT  | NBR  | SBL          | SBT  | SBR  |
| v/c Ratio                     | 0.01          | 0.03      | 0.01         | 0.37       | 0.01       | 0.84       | 0.07 | 0.38 | 0.13 | 0.56         | 0.22 | 0.00 |
| Control Delay                 | 65.0          | 63.0      | 56.0         | 77.5       | 83.0       | 65.4       | 65.0 | 16.2 | 8.5  | 63.8         | 3.1  | 3.0  |
| Queue Delay                   | 0.0           | 0.0       | 0.0          | 0.0        | 0.0        | 0.0        | 0.0  | 0.0  | 0.0  | 0.0          | 0.0  | 0.0  |
| Total Delay                   | 65.0          | 63.0      | 56.0         | 77.5       | 83.0       | 65.4       | 65.0 | 16.2 | 8.5  | 63.8         | 3.1  | 3.0  |
| LOS                           | E             | E         | E            | E          | F          | E          | E    | В    | А    | E            | А    | А    |
| Approach Delay                |               | 62.0      |              |            | 67.6       |            |      | 15.5 |      |              | 24.7 |      |
| Approach LOS                  |               | E         |              |            | E          |            |      | В    |      |              | С    |      |
| Queue Length 50th (ft)        | 1             | 3         | 1            | 41         | 1          | 351        | 4    | 184  | 36   | 170          | 22   | 0    |
| Queue Length 95th (ft)        | 7             | 13        | 6            | 72         | m5         | 367        | 14   | 343  | 105  | 213          | 75   | m1   |
| Internal Link Dist (ft)       |               | 877       |              |            | 1031       |            |      | 2633 |      |              | 774  |      |
| Turn Bay Length (ft)          | <b>9</b> 5    |           | 100          | 235        |            |            | 225  |      | 215  | 325          |      | 215  |
| Base Capacity (vph)           | 104           | 294       | 335          | 227        | 294        | 487        | 657  | 2213 | 1141 | 708          | 2950 | 1466 |
| Starvation Cap Reductn        | 0             | 0         | 0            | 0          | 0          | 0          | 0    | 0    | 0    | 0            | 0    | 0    |
| Spillback Cap Reductn         | 0             | 0         | 0            | 0          | 0          | 0          | 0    | 0    | 0    | 0            | 0    | 0    |
| Storage Cap Reductn           | 0             | 0         | 0            | 0          | 0          | 0          | 0    | 0    | 0    | 0            | 0    | 0    |
| Reduced v/c Ratio             | 0.01          | 0.01      | 0.00         | 0.37       | 0.00       | 0.80       | 0.02 | 0.38 | 0.13 | 0.52         | 0.22 | 0.00 |
| Intersection Summary          |               |           |              |            |            |            |      |      |      |              |      |      |
| Area Type:                    | Other         |           |              |            |            |            |      |      |      |              |      |      |
| Cycle Length: 140             |               |           |              |            |            |            |      |      |      |              |      |      |
| Actuated Cycle Length: 140    | )             |           |              |            |            |            |      |      |      |              |      |      |
| Offset: 84 (60%), Reference   | ed to phase   | 2:NBT ar  | nd 6:SBT,    | Start of ( | Green      |            |      |      |      |              |      |      |
| Natural Cycle: 60             |               |           |              |            |            |            |      |      |      |              |      |      |
| Control Type: Actuated-Coo    | ordinated     |           |              |            |            |            |      |      |      |              |      |      |
| Maximum v/c Ratio: 0.84       |               |           |              |            |            |            |      |      |      |              |      |      |
| Intersection Signal Delay: 2  |               |           |              |            | tersectior |            |      |      |      |              |      |      |
| Intersection Capacity Utiliza | ation 58.5%   |           |              | IC         | U Level o  | of Service | В    |      |      |              |      |      |
| Analysis Period (min) 15      |               |           |              |            |            |            |      |      |      |              |      |      |
| m Volume for 95th percer      | ntile queue i | s metered | l by upstr   | eam sign   | al.        |            |      |      |      |              |      |      |

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road

| Ø1           | Ø2 (R)     | <b>€</b> Ø3    | <b>™</b> Ø4                 |
|--------------|------------|----------------|-----------------------------|
| 30.8 s       | 70 s       | 12.6 s         | 26.6 s                      |
| <b>\$</b> Ø5 | ● ↓ Ø6 (R) | <b>₽</b><br>Ø7 | <b>4</b> <sup>⊕</sup><br>Ø8 |
| 30.8 s       | 70 s       | 12.6 s         | 26.6 s                      |

# Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

|                         |       |             | _    |          | -             |      |          |          |       | 、     |          |       |
|-------------------------|-------|-------------|------|----------|---------------|------|----------|----------|-------|-------|----------|-------|
|                         | ٦     | -           | •    | 1        | -             |      |          | T        | 1     | *     | ŧ        | *     |
| Lane Group              | EBL   | EBT         | EBR  | WBL      | WBT           | WBR  | NBL      | NBT      | NBR   | SBL   | SBT      | SBR   |
| Lane Configurations     | - ስ   | <b>≜</b> †⊅ |      | <u> </u> | - <b>†</b> 12 |      | <u> </u> | <b>↑</b> | 1     | - ካ   | <b>↑</b> | 1     |
| Traffic Volume (vph)    | 24    | 349         | 16   | 50       | 583           | 72   | 117      | 160      | 101   | 43    | 73       | 54    |
| Future Volume (vph)     | 24    | 349         | 16   | 50       | 583           | 72   | 117      | 160      | 101   | 43    | 73       | 54    |
| Ideal Flow (vphpl)      | 1900  | 1900        | 1900 | 1900     | 1900          | 1900 | 1900     | 2000     | 1900  | 1900  | 2000     | 1900  |
| Lane Width (ft)         | 12    | 12          | 12   | 12       | 12            | 12   | 12       | 12       | 12    | 12    | 12       | 12    |
| Grade (%)               |       | 0%          |      |          | 0%            |      |          | 0%       |       |       | 0%       |       |
| Storage Length (ft)     | 160   |             | 0    | 160      |               | 0    | 170      |          | 170   | 170   |          | 170   |
| Storage Lanes           | 1     |             | 0    | 2        |               | 0    | 1        |          | 1     | 1     |          | 1     |
| Taper Length (ft)       | 190   |             |      | 185      |               |      | 170      |          |       | 190   |          |       |
| Lane Util. Factor       | 1.00  | 0.95        | 0.95 | 1.00     | 0.95          | 0.95 | 1.00     | 1.00     | 1.00  | 1.00  | 1.00     | 1.00  |
| Ped Bike Factor         |       |             |      |          |               |      |          |          |       |       |          |       |
| Frt                     |       | 0.993       |      |          | 0.983         |      |          |          | 0.850 |       |          | 0.850 |
| Flt Protected           | 0.950 |             |      | 0.950    |               |      | 0.950    |          |       | 0.950 |          |       |
| Satd. Flow (prot)       | 1736  | 3421        | 0    | 1736     | 3487          | 0    | 1787     | 2000     | 1599  | 1656  | 1923     | 1509  |
| Flt Permitted           | 0.303 |             |      | 0.472    |               |      | 0.531    |          |       | 0.638 |          |       |
| Satd. Flow (perm)       | 554   | 3421        | 0    | 862      | 3487          | 0    | 999      | 2000     | 1599  | 1112  | 1923     | 1509  |
| Right Turn on Red       |       |             | No   |          |               | No   |          |          | No    |       |          | No    |
| Satd. Flow (RTOR)       |       |             |      |          |               |      |          |          |       |       |          |       |
| Link Speed (mph)        |       | 45          |      |          | 45            |      |          | 45       |       |       | 45       |       |
| Link Distance (ft)      |       | 2938        |      |          | 1976          |      |          | 2983     |       |       | 1684     |       |
| Travel Time (s)         |       | 44.5        |      |          | 29.9          |      |          | 45.2     |       |       | 25.5     |       |
| Confl. Peds. (#/hr)     |       |             |      |          |               |      |          |          |       |       |          |       |
| Confl. Bikes (#/hr)     |       |             |      |          |               |      |          |          |       |       |          |       |
| Peak Hour Factor        | 0.84  | 0.84        | 0.84 | 0.84     | 0.84          | 0.84 | 0.84     | 0.84     | 0.84  | 0.84  | 0.84     | 0.84  |
| Growth Factor           | 100%  | 100%        | 100% | 100%     | 100%          | 100% | 100%     | 100%     | 100%  | 100%  | 100%     | 100%  |
| Heavy Vehicles (%)      | 4%    | 5%          | 0%   | 4%       | 2%            | 0%   | 1%       | 0%       | 1%    | 9%    | 4%       | 7%    |
| Bus Blockages (#/hr)    | 0     | 0           | 0    | 0        | 0             | 0    | 0        | 0        | 0     | 0     | 0        | 0     |
| Parking (#/hr)          |       |             |      |          |               |      |          |          |       |       |          |       |
| Mid-Block Traffic (%)   |       | 0%          |      |          | 0%            |      |          | 0%       |       |       | 0%       |       |
| Shared Lane Traffic (%) |       |             |      |          |               |      |          |          |       |       |          |       |
| Lane Group Flow (vph)   | 29    | 434         | 0    | 60       | 780           | 0    | 139      | 190      | 120   | 51    | 87       | 64    |
| Turn Type               | pm+pt | NA          |      | pm+pt    | NA            |      | pm+pt    | NA       | Perm  | pm+pt | NA       | Perm  |
| Protected Phases        | 5     | 2           |      | 1        | 6             |      | 3        | 8        |       | 7     | 4        |       |
| Permitted Phases        | 2     |             |      | 6        |               |      | 8        |          | 8     | 4     |          | 4     |
| Detector Phase          | 5     | 2           |      | 1        | 6             |      | 3        | 8        | 8     | 7     | 4        | 4     |
| Switch Phase            |       |             |      |          |               |      |          |          |       |       |          |       |
| Minimum Initial (s)     | 3.0   | 15.0        |      | 3.0      | 15.0          |      | 3.0      | 8.0      | 8.0   | 3.0   | 8.0      | 8.0   |
| Minimum Split (s)       | 6.5   | 21.0        |      | 6.5      | 21.0          |      | 6.5      | 14.0     | 14.0  | 6.5   | 14.0     | 14.0  |
| Total Split (s)         | 15.0  | 35.0        |      | 15.0     | 35.0          |      | 15.0     | 30.0     | 30.0  | 10.0  | 25.0     | 25.0  |
| Total Split (%)         | 16.7% | 38.9%       |      | 16.7%    | 38.9%         |      | 16.7%    | 33.3%    | 33.3% | 11.1% | 27.8%    | 27.8% |
| Yellow Time (s)         | 3.5   | 4.0         |      | 3.5      | 4.0           |      | 3.5      | 4.0      | 4.0   | 3.5   | 4.0      | 4.0   |
| All-Red Time (s)        | 0.0   | 2.0         |      | 0.0      | 2.0           |      | 0.0      | 2.0      | 2.0   | 0.0   | 2.0      | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0         |      | 0.0      | 0.0           |      | 0.0      | 0.0      | 0.0   | 0.0   | 0.0      | 0.0   |
| Total Lost Time (s)     | 3.5   | 6.0         |      | 3.5      | 6.0           |      | 3.5      | 6.0      | 6.0   | 3.5   | 6.0      | 6.0   |
| Lead/Lag                | Lead  | Lag         |      | Lead     | Lag           |      | Lead     | Lag      | Lag   | Lead  | Lag      | Lag   |
| Lead-Lag Optimize?      | Yes   | Yes         |      | Yes      | Yes           |      | Yes      | Yes      | Yes   | Yes   | Yes      | Yes   |
| Recall Mode             | None  | None        |      | None     | None          |      | None     | None     | None  | None  | None     | None  |
| Act Effct Green (s)     | 32.5  | 26.3        |      | 33.9     | 28.7          |      | 22.4     | 14.7     | 14.7  | 17.7  | 10.3     | 10.3  |
| Actuated g/C Ratio      | 0.50  | 0.41        |      | 0.52     | 0.44          |      | 0.35     | 0.23     | 0.23  | 0.27  | 0.16     | 0.16  |
|                         | 0.00  | 5.11        |      | 0.02     | 5.11          |      | 0.00     | 0.20     | 0.20  | 0.27  | 0.10     |       |

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### Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

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|-----------------------------------------------------------|------------|------|--------------|------|------------|------------|------|------|------|------|------|------|
| Lane Group                                                | EBL        | EBT  | EBR          | WBL  | WBT        | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                                                 | 0.07       | 0.31 |              | 0.11 | 0.51       |            | 0.31 | 0.42 | 0.33 | 0.14 | 0.28 | 0.27 |
| Control Delay                                             | 9.0        | 16.5 |              | 9.1  | 16.6       |            | 17.9 | 27.7 | 27.4 | 16.7 | 30.7 | 31.3 |
| Queue Delay                                               | 0.0        | 0.0  |              | 0.0  | 0.0        |            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                                               | 9.0        | 16.5 |              | 9.1  | 16.6       |            | 17.9 | 27.7 | 27.4 | 16.7 | 30.7 | 31.3 |
| LOS                                                       | А          | В    |              | А    | В          |            | В    | С    | С    | В    | С    | С    |
| Approach Delay                                            |            | 16.0 |              |      | 16.1       |            |      | 24.6 |      |      | 27.4 |      |
| Approach LOS                                              |            | В    |              |      | В          |            |      | С    |      |      | С    |      |
| Queue Length 50th (ft)                                    | 5          | 70   |              | 11   | 104        |            | 36   | 68   | 42   | 12   | 31   | 23   |
| Queue Length 95th (ft)                                    | 17         | 112  |              | 29   | 202        |            | 80   | 132  | 91   | 36   | 75   | 60   |
| Internal Link Dist (ft)                                   |            | 2858 |              |      | 1896       |            |      | 2903 |      |      | 1604 |      |
| Turn Bay Length (ft)                                      | 160        |      |              | 160  |            |            | 170  |      | 170  | 170  |      | 170  |
| Base Capacity (vph)                                       | 518        | 1621 |              | 626  | 1681       |            | 501  | 784  | 627  | 363  | 597  | 468  |
| Starvation Cap Reductn                                    | 0          | 0    |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn                                     | 0          | 0    |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn                                       | 0          | 0    |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio                                         | 0.06       | 0.27 |              | 0.10 | 0.46       |            | 0.28 | 0.24 | 0.19 | 0.14 | 0.15 | 0.14 |
| Intersection Summary                                      |            |      |              |      |            |            |      |      |      |      |      |      |
| JP -                                                      | Other      |      |              |      |            |            |      |      |      |      |      |      |
| Cycle Length: 90                                          |            |      |              |      |            |            |      |      |      |      |      |      |
| Actuated Cycle Length: 64.8                               | 3          |      |              |      |            |            |      |      |      |      |      |      |
| Natural Cycle: 55                                         |            |      |              |      |            |            |      |      |      |      |      |      |
| Control Type: Actuated-Unc                                | oordinated |      |              |      |            |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.51                                   |            |      |              |      |            |            |      |      |      |      |      |      |
| Intersection Signal Delay: 1                              |            |      |              |      | tersectior |            |      |      |      |      |      |      |
| Intersection Capacity Utiliza<br>Analysis Period (min) 15 | tion 51.6% |      |              | IC   | CU Level o | of Service | A    |      |      |      |      |      |

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road

| Ø1   | <u>→</u> <sub>102</sub> | <b>1</b> Ø3 | <b>↓</b> ∞ <sub>Ø4</sub> |
|------|-------------------------|-------------|--------------------------|
| 15 s | 35 s                    | 15 s        | 25 s                     |
|      | <b>₩</b> Ø6             | Ø7          | <b>√</b> \$Ø8            |
| 15 s | 35 s                    | 10 s        | 30 s                     |

|                         | -                | $\mathbf{r}$ | 4         | -                | 1          | ۲             |
|-------------------------|------------------|--------------|-----------|------------------|------------|---------------|
| Lane Group              | EBT              | EBR          | WBL       | WBT              | NBL        | NBR           |
| Lane Configurations     | <u></u>          |              |           | ***              | ካካ         |               |
| Traffic Volume (vph)    | <b>TT</b><br>402 | r<br>80      | 193       | <b>TT</b><br>433 | 4          | <b>r</b><br>8 |
| Future Volume (vph)     | 402              | 80           | 193       | 433              | 4          | 8             |
|                         |                  |              | 193       |                  | 4          | 1900          |
| Ideal Flow (vphpl)      | 2000             | 1900         |           | 2000             |            |               |
| Lane Width (ft)         | 12               | 12           | 12        | 12               | 12         | 12            |
| Grade (%)               | 0%               | 045          | 045       | 0%               | 0%         |               |
| Storage Length (ft)     |                  | 215          | 215       |                  | 0          | 0             |
| Storage Lanes           |                  | 1            | 1         |                  | 2          | 1             |
| Taper Length (ft)       |                  |              | 220       |                  | 25         |               |
| Lane Util. Factor       | 0.95             | 1.00         | 1.00      | 0.95             | 0.97       | 1.00          |
| Ped Bike Factor         |                  |              |           |                  |            |               |
| Frt                     |                  | 0.850        |           |                  |            | 0.850         |
| Flt Protected           |                  |              | 0.950     |                  | 0.950      |               |
| Satd. Flow (prot)       | 3654             | 1615         | 1805      | 3654             | 3502       | 1615          |
| Flt Permitted           |                  |              | 0.489     |                  | 0.950      |               |
| Satd. Flow (perm)       | 3654             | 1615         | 929       | 3654             | 3502       | 1615          |
| Right Turn on Red       | 0001             | No           | ,         | 0001             | 0002       | No            |
| Satd. Flow (RTOR)       |                  | 110          |           |                  |            | 110           |
| Link Speed (mph)        | 45               |              |           | 45               | 30         |               |
| Link Distance (ft)      | 40<br>1111       |              |           | 1210             | 387        |               |
| Travel Time (s)         | 16.8             |              |           | 1210             | 387<br>8.8 |               |
|                         | 10.8             |              |           | 18.3             | 8.8        |               |
| Confl. Peds. (#/hr)     |                  |              |           |                  |            |               |
| Confl. Bikes (#/hr)     |                  |              |           |                  |            |               |
| Peak Hour Factor        | 0.95             | 0.95         | 0.95      | 0.95             | 0.95       | 0.95          |
| Growth Factor           | 100%             | 100%         | 100%      | 100%             | 100%       | 100%          |
| Heavy Vehicles (%)      | 4%               | 0%           | 0%        | 4%               | 0%         | 0%            |
| Bus Blockages (#/hr)    | 0                | 0            | 0         | 0                | 0          | 0             |
| Parking (#/hr)          |                  |              |           |                  |            |               |
| Mid-Block Traffic (%)   | 0%               |              |           | 0%               | 0%         |               |
| Shared Lane Traffic (%) |                  |              |           |                  |            |               |
| Lane Group Flow (vph)   | 423              | 84           | 203       | 456              | 4          | 8             |
| Turn Type               | NA               | pm+ov        | pm+pt     | NA               | Prot       | pm+ov         |
| Protected Phases        | 2                | 8            | 1 pini pi | 6                | 8          | 1             |
| Permitted Phases        | 2                | 2            | 6         | 0                | U          | 8             |
| Detector Phase          | 2                | 2            | 1         | 6                | 8          | 0             |
|                         | Z                | Ó            | I         | U                | ð          | I             |
| Switch Phase            | 15.0             | 0.0          | 2.0       | 15.0             | 0.0        | 2.0           |
| Minimum Initial (s)     | 15.0             | 8.0          | 3.0       | 15.0             | 8.0        | 3.0           |
| Minimum Split (s)       | 21.0             | 14.0         | 6.5       | 21.0             | 14.0       | 6.5           |
| Total Split (s)         | 70.0             | 32.0         | 38.0      | 108.0            | 32.0       | 38.0          |
| Total Split (%)         | 50.0%            | 22.9%        | 27.1%     | 77.1%            | 22.9%      | 27.1%         |
| Yellow Time (s)         | 4.0              | 4.0          | 3.5       | 4.0              | 4.0        | 3.5           |
| All-Red Time (s)        | 2.0              | 2.0          | 0.0       | 2.0              | 2.0        | 0.0           |
| Lost Time Adjust (s)    | 0.0              | 0.0          | 0.0       | 0.0              | 0.0        | 0.0           |
| Total Lost Time (s)     | 6.0              | 6.0          | 3.5       | 6.0              | 6.0        | 3.5           |
| Lead/Lag                | Lag              |              | Lead      |                  |            | Lead          |
| Lead-Lag Optimize?      | Yes              |              | Yes       |                  |            | Yes           |
| Recall Mode             | C-Min            | Min          | None      | C-Min            | Min        | None          |
| Act Effct Green (s)     | 108.8            | 122.8        | 122.5     | 120.0            | 8.0        | 21.7          |
|                         | 0.78             | 0.88         | 0.88      |                  |            | 0.16          |
| Actuated g/C Ratio      | U.78             | 0.00         | 0.88      | 0.86             | 0.06       | U. 10         |

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#### Lanes, Volumes, Timings 5: Proposed Full Access & Vollmer Road

|                                   | -            | $\mathbf{i}$ | •        | -         | 1          | ~          |
|-----------------------------------|--------------|--------------|----------|-----------|------------|------------|
| Lane Group                        | EBT          | EBR          | -<br>WBL | WBT       | NBL        | NBR        |
| v/c Ratio                         | 0.15         | 0.06         | 0.24     | 0.15      | 0.02       | 0.03       |
| Control Delay                     | 1.2          | 0.4          | 2.0      | 1.7       | 62.5       | 50.2       |
| Queue Delay                       | 0.0          | 0.0          | 0.0      | 0.0       | 0.0        | 0.0        |
| Total Delay                       | 1.2          | 0.4          | 2.0      | 1.7       | 62.5       | 50.2       |
| LOS                               | А            | А            | А        | А         | E          | D          |
| Approach Delay                    | 1.1          |              |          | 1.8       | 54.3       |            |
| Approach LOS                      | А            |              |          | А         | D          |            |
| Queue Length 50th (ft)            | 12           | 2            | 18       | 26        | 2          | 6          |
| Queue Length 95th (ft)            | 16           | 4            | 28       | 34        | 8          | 23         |
| Internal Link Dist (ft)           | 1031         |              |          | 1130      | 307        |            |
| Turn Bay Length (ft)              |              | 215          | 215      |           |            |            |
| Base Capacity (vph)               | 2839         | 1614         | 1028     | 3132      | 650        | 559        |
| Starvation Cap Reductn            | 0            | 0            | 0        | 0         | 0          | 0          |
| Spillback Cap Reductn             | 0            | 0            | 0        | 0         | 0          | 0          |
| Storage Cap Reductn               | 0            | 0            | 0        | 0         | 0          | 0          |
| Reduced v/c Ratio                 | 0.15         | 0.05         | 0.20     | 0.15      | 0.01       | 0.01       |
| Intersection Summary              |              |              |          |           |            |            |
| Area Type:                        | Other        |              |          |           |            |            |
| Cycle Length: 140                 |              |              |          |           |            |            |
| Actuated Cycle Length: 14         |              |              |          |           |            |            |
| Offset: 105 (75%), Referen        | ced to phase | e 2:EBT a    | and 6:WB | TL, Start | of Green   |            |
| Natural Cycle: 45                 |              |              |          |           |            |            |
| Control Type: Actuated-Co         | ordinated    |              |          |           |            |            |
| Maximum v/c Ratio: 0.24           |              |              |          |           |            |            |
| Intersection Signal Delay: 2      |              |              |          |           | tersectior |            |
| Intersection Capacity Utilization | ation 43.2%  |              |          | IC        | U Level o  | of Service |
| Analysis Period (min) 15          |              |              |          |           |            |            |

Splits and Phases: 5: Proposed Full Access & Vollmer Road

| <b>√</b> Ø1 | ₩ ₩ Ø2 (R) |              |
|-------------|------------|--------------|
| 38 s        | 70 s       |              |
| ✓ Ø6 (R)    |            | <b>\$</b> ï8 |
| 108 s       |            | 32 s         |

|                         | -                | $\mathbf{r}$ | 4           | ←     | •            | ۲            |
|-------------------------|------------------|--------------|-------------|-------|--------------|--------------|
| Lane Group              | EBT              | EBR          | WBL         | WBT   | NBL          | NBR          |
| Lane Configurations     | <u></u>          | <u></u>      |             | ***   | <u>الالا</u> |              |
| Traffic Volume (vph)    | <b>TT</b><br>377 | 33           | 135         | 619   |              | 12           |
| Future Volume (vph)     | 377              | 33           | 135         | 619   | 7            | 12           |
| Ideal Flow (vphpl)      | 2000             | 33<br>1900   | 1900        | 2000  | 1900         | 1900         |
| Lane Width (ft)         | 2000             | 1900         | 1900        | 2000  | 1900         | 1900         |
| ,,                      |                  | IZ           | 12          |       |              | 12           |
| Grade (%)               | 0%               | 015          | 015         | 0%    | 0%           | 0            |
| Storage Length (ft)     |                  | 215          | 215         |       | 0            | 0            |
| Storage Lanes           |                  | 1            | 1           |       | 1            | 1            |
| Taper Length (ft)       |                  |              | 220         |       | 25           |              |
| Lane Util. Factor       | 0.95             | 1.00         | 1.00        | 0.95  | 1.00         | 1.00         |
| Ped Bike Factor         |                  |              |             |       |              |              |
| Frt                     |                  | 0.850        |             |       |              | 0.850        |
| Flt Protected           |                  |              | 0.950       |       | 0.950        |              |
| Satd. Flow (prot)       | 3689             | 1442         | 1736        | 3725  | 1150         | 1077         |
| Flt Permitted           | ,                |              | 0.518       |       | 0.950        |              |
| Satd. Flow (perm)       | 3689             | 1442         | 946         | 3725  | 1150         | 1077         |
| Right Turn on Red       | 3007             | No           | 710         | 5125  | 1150         | No           |
| Satd. Flow (RTOR)       |                  | NU           |             |       |              | NU           |
| Link Speed (mph)        | 45               |              |             | 45    | 30           |              |
|                         |                  |              |             |       |              |              |
| Link Distance (ft)      | 1210             |              |             | 2938  | 579          |              |
| Travel Time (s)         | 18.3             |              |             | 44.5  | 13.2         |              |
| Confl. Peds. (#/hr)     |                  |              |             |       |              |              |
| Confl. Bikes (#/hr)     |                  |              | _           | _     |              | _            |
| Peak Hour Factor        | 0.95             | 0.95         | 0.95        | 0.95  | 0.95         | 0.95         |
| Growth Factor           | 100%             | 100%         | 100%        | 100%  | 100%         | 100%         |
| Heavy Vehicles (%)      | 3%               | 12%          | 4%          | 2%    | 57%          | 50%          |
| Bus Blockages (#/hr)    | 0                | 0            | 0           | 0     | 0            | 0            |
| Parking (#/hr)          |                  |              |             |       |              |              |
| Mid-Block Traffic (%)   | 0%               |              |             | 0%    | 0%           |              |
| Shared Lane Traffic (%) | 0.0              |              |             | 2.0   | 5.0          |              |
| Lane Group Flow (vph)   | 397              | 35           | 142         | 652   | 7            | 13           |
| Turn Type               | NA               | pm+ov        | pm+pt       | NA    | Prot         | pm+ov        |
| Protected Phases        | 2                | 9111+0V<br>8 | ріп+рі<br>1 | 6     | 8            | piii+0v<br>1 |
|                         | Z                | 2            | -           | U     | ð            | 8            |
| Permitted Phases        | 0                |              | 6           | ,     | 0            | U            |
| Detector Phase          | 2                | 8            | 1           | 6     | 8            | 1            |
| Switch Phase            |                  |              |             |       |              |              |
| Minimum Initial (s)     | 15.0             | 8.0          | 3.0         | 15.0  | 8.0          | 3.0          |
| Minimum Split (s)       | 21.0             | 14.0         | 6.5         | 21.0  | 14.0         | 6.5          |
| Total Split (s)         | 79.0             | 31.0         | 30.0        | 109.0 | 31.0         | 30.0         |
| Total Split (%)         | 56.4%            | 22.1%        | 21.4%       | 77.9% | 22.1%        | 21.4%        |
| Yellow Time (s)         | 4.0              | 4.0          | 3.5         | 4.0   | 4.0          | 3.5          |
| All-Red Time (s)        | 2.0              | 2.0          | 0.0         | 2.0   | 2.0          | 0.0          |
| Lost Time Adjust (s)    | 0.0              | 0.0          | 0.0         | 0.0   | 0.0          | 0.0          |
| Total Lost Time (s)     | 6.0              | 6.0          | 3.5         | 6.0   | 6.0          | 3.5          |
| Lead/Lag                | Lead             | 0.0          | Lag         | 0.0   | 0.0          | Lag          |
| Lead-Lag Optimize?      | Yes              |              | Yes         |       |              | Yes          |
| Recall Mode             | C-Min            | Nono         |             | C-Min | Nono         | None         |
|                         |                  | None         | None        |       | None         |              |
| Act Effct Green (s)     | 111.9            | 123.4        | 125.0       | 123.7 | 8.3          | 18.6         |
| Actuated g/C Ratio      | 0.80             | 0.88         | 0.89        | 0.88  | 0.06         | 0.13         |

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|                               | -            | $\mathbf{r}$ | ∢        | ←         | •          | 1          |
|-------------------------------|--------------|--------------|----------|-----------|------------|------------|
| Lane Group                    | EBT          | EBR          | WBL      | WBT       | NBL        | NBR        |
| v/c Ratio                     | 0.13         | 0.03         | 0.16     | 0.20      | 0.10       | 0.09       |
| Control Delay                 | 0.8          | 0.3          | 1.7      | 1.7       | 65.6       | 51.3       |
| Queue Delay                   | 0.0          | 0.0          | 0.0      | 0.0       | 0.0        | 0.0        |
| Total Delay                   | 0.8          | 0.3          | 1.7      | 1.7       | 65.6       | 51.3       |
| LOS                           | А            | А            | А        | А         | E          | D          |
| Approach Delay                | 0.8          |              |          | 1.7       | 56.3       |            |
| Approach LOS                  | А            |              |          | А         | E          |            |
| Queue Length 50th (ft)        | 7            | 1            | 12       | 40        | 6          | 10         |
| Queue Length 95th (ft)        | 10           | 1            | 22       | 55        | 23         | 31         |
| Internal Link Dist (ft)       | 1130         |              |          | 2858      | 499        |            |
| Turn Bay Length (ft)          |              | 215          | 215      |           |            |            |
| Base Capacity (vph)           | 2948         | 1271         | 1093     | 3291      | 205        | 203        |
| Starvation Cap Reductn        | 0            | 0            | 0        | 0         | 0          | 0          |
| Spillback Cap Reductn         | 0            | 0            | 0        | 0         | 0          | 0          |
| Storage Cap Reductn           | 0            | 0            | 0        | 0         | 0          | 0          |
| Reduced v/c Ratio             | 0.13         | 0.03         | 0.13     | 0.20      | 0.03       | 0.06       |
| Intersection Summary          |              |              |          |           |            |            |
| Area Type:                    | Other        |              |          |           |            |            |
| Cycle Length: 140             |              |              |          |           |            |            |
| Actuated Cycle Length: 140    |              |              |          |           |            |            |
| Offset: 115 (82%), Referen    | ced to phase | e 2:EBT a    | and 6:WB | TL, Start | of Green   |            |
| Natural Cycle: 45             |              |              |          |           |            |            |
| Control Type: Actuated-Coo    | ordinated    |              |          |           |            |            |
| Maximum v/c Ratio: 0.20       | _            |              |          |           |            |            |
| Intersection Signal Delay: 2  |              |              |          |           | tersection |            |
| Intersection Capacity Utiliza | ation 40.0%  |              |          | IC        | U Level c  | of Service |
| Analysis Period (min) 15      |              |              |          |           |            |            |

Splits and Phases: 6: Proposed Truck Access & Vollmer Road

| 🐨 🕺 🖉 2 (R) | <b>€</b> ¶ø1 |              |
|-------------|--------------|--------------|
| 79 s        | 30 s         |              |
| 🗸 🗸 Ø6 (R)  |              | <b>\$</b> ï8 |
| 109 s       |              | 31 s         |

| Int Delay, s/veh       | 2.5   |      |      |          |             |      |
|------------------------|-------|------|------|----------|-------------|------|
| Movement               | EBL   | EBR  | NBL  | NBT      | SBT         | SBR  |
| Lane Configurations    | ۲     | 1    | ٦    | <b>^</b> | <b>↑</b> ĵ≽ |      |
| Traffic Vol, veh/h     | 94    | 47   | 87   | 1152     | 771         | 93   |
| Future Vol, veh/h      | 94    | 47   | 87   | 1152     | 771         | 93   |
| Conflicting Peds, #/hr | 0     | 0    | 0    | 0        | 0           | 0    |
| Sign Control           | Stop  | Stop | Free | Free     | Free        | Free |
| RT Channelized         | -     | None | -    | None     | -           | None |
| Storage Length         | 70    | 0    | 210  | -        | -           | -    |
| Veh in Median Storage  | , # 1 | -    | -    | 0        | 0           | -    |
| Grade, %               | 0     | -    | -    | 0        | 0           | -    |
| Peak Hour Factor       | 96    | 96   | 96   | 96       | 96          | 96   |
| Heavy Vehicles, %      | 0     | 0    | 18   | 4        | 5           | 0    |
| Mvmt Flow              | 98    | 49   | 91   | 1200     | 803         | 97   |

| Major/Minor          | Minor2 | Ν     | Najor1 | ]     | Major2 |     |     |      |  |
|----------------------|--------|-------|--------|-------|--------|-----|-----|------|--|
| Conflicting Flow All | 1634   | 450   | 900    | 0     | -      | 0   |     |      |  |
| Stage 1              | 852    | -     | -      | -     | -      | -   |     |      |  |
| Stage 2              | 782    | -     | -      | -     | -      | -   |     |      |  |
| Critical Hdwy        | 6.8    | 6.9   | 4.46   | -     | -      | -   |     |      |  |
| Critical Hdwy Stg 1  | 5.8    | -     | -      | -     | -      | -   |     |      |  |
| Critical Hdwy Stg 2  | 5.8    | -     | -      | -     | -      | -   |     |      |  |
| Follow-up Hdwy       | 3.5    | 3.3   | 2.38   | -     | -      | -   |     |      |  |
| Pot Cap-1 Maneuver   | ~ 94   | 562   | 658    | -     | -      | -   |     |      |  |
| Stage 1              | 383    | -     | -      | -     | -      | -   |     |      |  |
| Stage 2              | 417    | -     | -      | -     | -      | -   |     |      |  |
| Platoon blocked, %   |        |       |        | -     | -      | -   |     |      |  |
| Mov Cap-1 Maneuver   |        | 562   | 658    | -     | -      | -   |     |      |  |
| Mov Cap-2 Maneuver   |        | -     | -      | -     | -      | -   |     |      |  |
| Stage 1              | 330    | -     | -      | -     | -      | -   |     |      |  |
| Stage 2              | 417    | -     | -      | -     | -      | -   |     |      |  |
|                      |        |       |        |       |        |     |     |      |  |
| Approach             | EB     |       | NB     |       | SB     |     |     | <br> |  |
| HCM Control Delay, s | 33.1   |       | 0.8    |       | 0      |     |     |      |  |
| HCM LOS              | D      |       |        |       |        |     |     |      |  |
|                      |        |       |        |       |        |     |     |      |  |
| Minor Lane/Major Mv  | mt     | NBL   | NBTI   | EBLn1 | EBLn2  | SBT | SBR |      |  |
| Capacity (veh/h)     |        | 658   | -      | 187   | 562    | -   | -   |      |  |
| HCM Lane V/C Ratio   |        | 0.138 | -      | 0.524 |        | -   | -   |      |  |
| HCM Control Delay (s | 5)     | 11.3  | -      | 43.7  | 12     | -   | -   |      |  |
| HCM Lane LOS         | /      | В     | -      | E     | В      | -   | -   |      |  |
| HCM 95th %tile Q(vel | h)     | 0.5   | -      | 2.7   | 0.3    | -   | -   |      |  |
|                      |        |       |        |       |        |     |     |      |  |

#### Notes

~: Volume exceeds capacity

+: Computation Not Defined \$: Delay exceeds 300s

\*: All major volume in platoon

| Int Delay, s/veh       | 0.5  |      |      |          |      |      |
|------------------------|------|------|------|----------|------|------|
| Movement               | EBL  | EBR  | NBL  | NBT      | SBT  | SBR  |
| Lane Configurations    |      | 1    |      | <b>^</b> | - 11 | 1    |
| Traffic Vol, veh/h     | 0    | 82   | 0    | 1239     | 782  | 36   |
| Future Vol, veh/h      | 0    | 82   | 0    | 1239     | 782  | 36   |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0        | 0    | 0    |
| Sign Control           | Stop | Stop | Free | Free     | Free | Free |
| RT Channelized         | -    | Stop | -    | None     | -    | Free |
| Storage Length         | -    | 0    | -    | -        | -    | 120  |
| Veh in Median Storage  | ,# 0 | -    | -    | 0        | 0    | -    |
| Grade, %               | 0    | -    | -    | 0        | 0    | -    |
| Peak Hour Factor       | 94   | 94   | 94   | 94       | 94   | 94   |
| Heavy Vehicles, %      | 0    | 0    | 0    | 5        | 5    | 0    |
| Mvmt Flow              | 0    | 87   | 0    | 1318     | 832  | 38   |

| Major/Minor          | Minor2 | Μ   | lajor1 | Ma | ajor2 |   |
|----------------------|--------|-----|--------|----|-------|---|
| Conflicting Flow All | -      | 416 | -      | 0  | -     | 0 |
| Stage 1              | -      | -   | -      | -  | -     | - |
| Stage 2              | -      | -   | -      | -  | -     | - |
| Critical Hdwy        | -      | 6.9 | -      | -  | -     | - |
| Critical Hdwy Stg 1  | -      | -   | -      | -  | -     | - |
| Critical Hdwy Stg 2  | -      | -   | -      | -  | -     | - |
| Follow-up Hdwy       | -      | 3.3 | -      | -  | -     | - |
| Pot Cap-1 Maneuver   | 0      | 591 | 0      | -  | -     | 0 |
| Stage 1              | 0      | -   | 0      | -  | -     | 0 |
| Stage 2              | 0      | -   | 0      | -  | -     | 0 |
| Platoon blocked, %   |        |     |        | -  | -     |   |
| Mov Cap-1 Maneuve    |        | 591 | -      | -  | -     | - |
| Mov Cap-2 Maneuver   | r -    | -   | -      | -  | -     | - |
| Stage 1              | -      | -   | -      | -  | -     | - |
| Stage 2              | -      | -   | -      | -  | -     | - |
|                      |        |     |        |    |       |   |
| Approach             | EB     |     | NB     |    | SB    |   |

| Approach             | EB   | NB | SB |  |
|----------------------|------|----|----|--|
| HCM Control Delay, s | 12.1 | 0  | 0  |  |
| HCM LOS              | В    |    |    |  |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
|-----------------------|-----------|-----|
| Capacity (veh/h)      | - 591     | -   |
| HCM Lane V/C Ratio    | - 0.148   | -   |
| HCM Control Delay (s) | - 12.1    | -   |
| HCM Lane LOS          | - B       | -   |
| HCM 95th %tile Q(veh) | - 0.5     | -   |

| Int Delay, s/veh       | 1.7   |      |      |      |               |      |
|------------------------|-------|------|------|------|---------------|------|
| Movement               | EBL   | EBR  | NBL  | NBT  | SBT           | SBR  |
| Lane Configurations    | ۰¥    |      | - ኘ  | - 11 | - <b>†</b> 12 |      |
| Traffic Vol, veh/h     | 46    | 107  | 22   | 1193 | 850           | 14   |
| Future Vol, veh/h      | 46    | 107  | 22   | 1193 | 850           | 14   |
| Conflicting Peds, #/hr | 0     | 0    | 0    | 0    | 0             | 0    |
| Sign Control           | Stop  | Stop | Free | Free | Free          | Free |
| RT Channelized         | -     | None | -    | None | -             | None |
| Storage Length         | 0     | -    | 130  | -    | -             | -    |
| Veh in Median Storage  | , # 1 | -    | -    | 0    | 0             | -    |
| Grade, %               | 0     | -    | -    | 0    | 0             | -    |
| Peak Hour Factor       | 94    | 94   | 94   | 94   | 94            | 94   |
| Heavy Vehicles, %      | 17    | 0    | 0    | 4    | 4             | 0    |
| Mvmt Flow              | 49    | 114  | 23   | 1269 | 904           | 15   |

| Major/Minor          | Minor2 | Ν   | 1ajor1 | Maj | or2 |   |
|----------------------|--------|-----|--------|-----|-----|---|
| Conflicting Flow All | 1593   | 460 | 919    | 0   | -   | 0 |
| Stage 1              | 912    | -   | -      | -   | -   | - |
| Stage 2              | 681    | -   | -      | -   | -   | - |
| Critical Hdwy        | 7.14   | 6.9 | 4.1    | -   | -   | - |
| Critical Hdwy Stg 1  | 6.14   | -   | -      | -   | -   | - |
| Critical Hdwy Stg 2  | 6.14   | -   | -      | -   | -   | - |
| Follow-up Hdwy       | 3.67   | 3.3 | 2.2    | -   | -   | - |
| Pot Cap-1 Maneuver   | 84     | 554 | 751    | -   | -   | - |
| Stage 1              | 318    | -   | -      | -   | -   | - |
| Stage 2              | 426    | -   | -      | -   | -   | - |
| Platoon blocked, %   |        |     |        | -   | -   | - |
| Mov Cap-1 Maneuver   |        | 554 | 751    | -   | -   | - |
| Mov Cap-2 Maneuver   | 196    | -   | -      | -   | -   | - |
| Stage 1              | 308    | -   | -      | -   | -   | - |
| Stage 2              | 426    | -   | -      | -   | -   | - |
|                      |        |     |        |     |     |   |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 23.2 | 0.2 | 0  |
| HCM LOS              | С    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT EBLn1 | SBT | SBR |
|-----------------------|-------|-----------|-----|-----|
| Capacity (veh/h)      | 751   | - 358     | -   | -   |
| HCM Lane V/C Ratio    | 0.031 | - 0.455   | -   | -   |
| HCM Control Delay (s) | 9.9   | - 23.2    | -   | -   |
| HCM Lane LOS          | А     | - C       | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | - 2.3     | -   | -   |

# Capacity Analysis Summary Sheets No Build Weekday Evening Peak Hour Conditions

|                                        | ∢          | ۰.    | 1          | 1     | 1           | ţ      |
|----------------------------------------|------------|-------|------------|-------|-------------|--------|
| Lane Group                             | WBL        | WBR   | NBT        | NBR   | SBL         | SBT    |
| Lane Configurations                    | <u>102</u> | 11    | <b>†</b> † | 101   | <u>ነ</u> ካ  | 1      |
| Traffic Volume (vph)                   | 147        | 12    | 1128       | 132   | 3           | 1722   |
| Future Volume (vph)                    | 147        | 12    | 1128       | 132   | 3           | 1722   |
| Ideal Flow (vphpl)                     | 1900       | 1900  | 2000       | 1900  | 1900        | 2000   |
| Lane Width (ft)                        | 12         | 12    | 12         | 12    | 12          | 12     |
| Grade (%)                              | 0%         | 12    | 0%         | 12    | 12          | 0%     |
| Storage Length (ft)                    | 150        | 0     | 070        | 100   | 310         | 070    |
|                                        | 150        | 2     |            | 100   | 2           |        |
| Storage Lanes                          | 150        | 2     |            |       | 235         |        |
| Taper Length (ft)<br>Lane Util. Factor | 1.00       | 0.88  | 0.95       | 1.00  | 235<br>0.97 | 0.95   |
|                                        | 1.00       | 0.88  | 0.95       | 1.00  | 0.97        | 0.95   |
| Ped Bike Factor                        |            | 0.050 |            | 0.050 |             |        |
| Frt<br>Fly Destanted                   | 0.050      | 0.850 |            | 0.850 | 0.050       |        |
| Flt Protected                          | 0.950      | 00.10 | 0/51       | 4500  | 0.950       | 0 ( 00 |
| Satd. Flow (prot)                      | 1787       | 2842  | 3654       | 1599  | 3502        | 3689   |
| Flt Permitted                          | 0.950      |       |            |       | 0.950       |        |
| Satd. Flow (perm)                      | 1787       | 2842  | 3654       | 1599  | 3502        | 3689   |
| Right Turn on Red                      |            | No    |            | No    |             |        |
| Satd. Flow (RTOR)                      |            |       |            |       |             |        |
| Link Speed (mph)                       | 50         |       | 45         |       |             | 45     |
| Link Distance (ft)                     | 1356       |       | 1018       |       |             | 970    |
| Travel Time (s)                        | 18.5       |       | 15.4       |       |             | 14.7   |
| Confl. Peds. (#/hr)                    |            |       |            |       |             |        |
| Confl. Bikes (#/hr)                    |            |       |            |       |             |        |
| Peak Hour Factor                       | 0.95       | 0.95  | 0.95       | 0.95  | 0.95        | 0.95   |
| Growth Factor                          | 100%       | 100%  | 100%       | 100%  | 100%        | 100%   |
| Heavy Vehicles (%)                     | 1%         | 0%    | 4%         | 1%    | 0%          | 3%     |
| Bus Blockages (#/hr)                   | 0          | 070   | 470        | 0     | 0,0         | 0      |
| Parking (#/hr)                         | U          | 0     | 0          | 0     | 0           | 0      |
|                                        | 00/        |       | 00/        |       |             | 00/    |
| Mid-Block Traffic (%)                  | 0%         |       | 0%         |       |             | 0%     |
| Shared Lane Traffic (%)                | 455        | 10    | 4407       | 100   | 0           | 1010   |
| Lane Group Flow (vph)                  | 155        | 13    | 1187       | 139   | 3           | 1813   |
| Turn Type                              | Prot       | pm+ov | NA         | Free  | Prot        | NA     |
| Protected Phases                       | 8          | 1     | 2          |       | 1           | 6      |
| Permitted Phases                       |            | 8     |            | Free  |             |        |
| Detector Phase                         | 8          | 1     | 2          |       | 1           | 6      |
| Switch Phase                           |            |       |            |       |             |        |
| Minimum Initial (s)                    | 8.0        | 3.0   | 15.0       |       | 3.0         | 15.0   |
| Minimum Split (s)                      | 14.0       | 7.5   | 21.0       |       | 7.5         | 21.0   |
| Total Split (s)                        | 30.0       | 15.0  | 105.0      |       | 15.0        | 120.0  |
| Total Split (%)                        | 20.0%      | 10.0% | 70.0%      |       | 10.0%       | 80.0%  |
| Yellow Time (s)                        | 4.0        | 3.5   | 4.0        |       | 3.5         | 4.0    |
| All-Red Time (s)                       | 2.0        | 1.0   | 2.0        |       | 1.0         | 2.0    |
| Lost Time Adjust (s)                   | 0.0        | 0.0   | 0.0        |       | 0.0         | 0.0    |
|                                        | 6.0        | 4.5   | 6.0        |       | 4.5         | 6.0    |
| Total Lost Time (s)                    | 0.0        |       |            |       |             | 0.0    |
| Lead/Lag                               |            | Lead  | Lag        |       | Lead        |        |
| Lead-Lag Optimize?                     | N 1        | Yes   | Yes        |       | Yes         | 0.14   |
| Recall Mode                            | None       | None  | C-Min      |       | None        | C-Min  |
| Act Effct Green (s)                    | 18.9       | 30.5  | 115.0      | 150.0 | 5.7         | 119.1  |
| Actuated g/C Ratio                     | 0.13       | 0.20  | 0.77       | 1.00  | 0.04        | 0.79   |

No Build Evening Peak Hour 01/06/2020 21-008 Tinley Park

|                              | •            | -         |          | 1         | *          | ŧ          |
|------------------------------|--------------|-----------|----------|-----------|------------|------------|
| Lane Group                   | WBL          | WBR       | NBT      | NBR       | SBL        | SBT        |
| v/c Ratio                    | 0.69         | 0.02      | 0.42     | 0.09      | 0.02       | 0.62       |
| Control Delay                | 78.3         | 45.4      | 5.6      | 0.1       | 69.7       | 7.8        |
| Queue Delay                  | 0.0          | 0.0       | 0.0      | 0.0       | 0.0        | 0.0        |
| Total Delay                  | 78.3         | 45.4      | 5.6      | 0.1       | 69.7       | 7.8        |
| LOS                          | E            | D         | А        | А         | E          | А          |
| Approach Delay               | 75.8         |           | 5.0      |           |            | 7.9        |
| Approach LOS                 | E            |           | А        |           |            | А          |
| Queue Length 50th (ft)       | 147          | 5         | 130      | 0         | 1          | 328        |
| Queue Length 95th (ft)       | 220          | 16        | 253      | 0         | 7          | 449        |
| Internal Link Dist (ft)      | 1276         |           | 938      |           |            | 890        |
| Turn Bay Length (ft)         | 150          |           |          | 100       | 310        |            |
| Base Capacity (vph)          | 285          | 670       | 2801     | 1599      | 245        | 2930       |
| Starvation Cap Reductn       | 0            | 0         | 0        | 0         | 0          | 0          |
| Spillback Cap Reductn        | 0            | 0         | 0        | 0         | 0          | 0          |
| Storage Cap Reductn          | 0            | 0         | 0        | 0         | 0          | 0          |
| Reduced v/c Ratio            | 0.54         | 0.02      | 0.42     | 0.09      | 0.01       | 0.62       |
| Intersection Summary         |              |           |          |           |            |            |
| Area Type:                   | Other        |           |          |           |            |            |
| Cycle Length: 150            |              |           |          |           |            |            |
| Actuated Cycle Length: 15    |              |           |          |           |            |            |
| Offset: 145.5 (97%), Refere  | enced to pha | ase 2:NB1 | Fand 6:S | BT, Start | of Green   |            |
| Natural Cycle: 55            |              |           |          |           |            |            |
| Control Type: Actuated-Co    | ordinated    |           |          |           |            |            |
| Maximum v/c Ratio: 0.69      |              |           |          |           |            |            |
| Intersection Signal Delay: 7 |              |           |          | In        | tersectior | LOS: B     |
| Intersection Capacity Utiliz | ation 63.4%  |           |          | IC        | U Level o  | of Service |
| Analysis Period (min) 15     |              |           |          |           |            |            |

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Driveway

|                         | ٦     | -     | $\mathbf{r}$ | 4    | +    | *    | 1        | 1     | 1    | 1     | ţ     | ~    |
|-------------------------|-------|-------|--------------|------|------|------|----------|-------|------|-------|-------|------|
| Lane Group              | EBL   | EBT   | EBR          | WBL  | WBT  | WBR  | NBL      | NBT   | NBR  | SBL   | SBT   | SBR  |
| Lane Configurations     |       | \$    |              |      | 4    |      | <u> </u> | A     |      |       | đ þ   |      |
| Traffic Volume (vph)    | 109   | 0     | 32           | 0    | 0    | 0    | 73       | 1128  | 0    | 0     | 1711  | 136  |
| Future Volume (vph)     | 109   | 0     | 32           | 0    | 0    | 0    | 73       | 1128  | 0    | 0     | 1711  | 136  |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900         | 1900 | 1900 | 1900 | 1900     | 1900  | 1900 | 1900  | 1900  | 1900 |
| Lane Width (ft)         | 12    | 16    | 12           | 12   | 12   | 12   | 12       | 12    | 12   | 12    | 12    | 12   |
| Grade (%)               |       | 0%    |              |      | 0%   |      |          | 0%    |      |       | 0%    |      |
| Storage Length (ft)     | 0     |       | 0            | 0    |      | 0    | 95       |       | 0    | 0     |       | 0    |
| Storage Lanes           | 0     |       | 0            | 0    |      | 0    | 1        |       | 0    | 0     |       | 0    |
| Taper Length (ft)       | 0     |       |              | 0    |      |      | 160      |       |      | 0     |       |      |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00         | 1.00 | 1.00 | 1.00 | 1.00     | 0.95  | 0.95 | 0.95  | 0.95  | 0.95 |
| Ped Bike Factor         |       |       |              |      |      |      |          |       |      |       |       |      |
| Frt                     |       | 0.969 |              |      |      |      |          |       |      |       | 0.989 |      |
| Flt Protected           |       | 0.963 |              |      |      |      | 0.950    |       |      |       |       |      |
| Satd. Flow (prot)       | 0     | 1994  | 0            | 0    | 1900 | 0    | 1787     | 3471  | 0    | 0     | 3474  | 0    |
| Flt Permitted           |       | 0.963 |              |      |      |      | 0.036    |       |      |       |       |      |
| Satd. Flow (perm)       | 0     | 1994  | 0            | 0    | 1900 | 0    | 68       | 3471  | 0    | 0     | 3474  | 0    |
| Right Turn on Red       |       |       | No           |      |      | No   |          |       | No   |       |       | No   |
| Satd. Flow (RTOR)       |       |       |              |      |      |      |          |       |      |       |       |      |
| Link Speed (mph)        |       | 30    |              |      | 30   |      |          | 45    |      |       | 45    |      |
| Link Distance (ft)      |       | 318   |              |      | 201  |      |          | 468   |      |       | 1401  |      |
| Travel Time (s)         |       | 7.2   |              |      | 4.6  |      |          | 7.1   |      |       | 21.2  |      |
| Confl. Peds. (#/hr)     |       |       |              |      |      |      |          |       |      |       |       |      |
| Confl. Bikes (#/hr)     |       |       |              |      |      |      |          |       |      |       |       |      |
| Peak Hour Factor        | 0.84  | 0.84  | 0.84         | 0.84 | 0.84 | 0.84 | 0.84     | 0.84  | 0.84 | 0.84  | 0.84  | 0.84 |
| Growth Factor           | 100%  | 100%  | 100%         | 100% | 100% | 100% | 100%     | 100%  | 100% | 100%  | 100%  | 100% |
| Heavy Vehicles (%)      | 1%    | 0%    | 0%           | 0%   | 0%   | 0%   | 1%       | 4%    | 0%   | 0%    | 3%    | 0%   |
| Bus Blockages (#/hr)    | 0     | 0     | 0            | 0    | 0    | 0    | 0        | 0     | 0    | 0     | 0     | 0    |
| Parking (#/hr)          |       |       |              |      |      |      |          |       |      |       |       |      |
| Mid-Block Traffic (%)   |       | 0%    |              |      | 0%   |      |          | 0%    |      |       | 0%    |      |
| Shared Lane Traffic (%) |       |       |              |      |      |      |          |       |      |       |       |      |
| Lane Group Flow (vph)   | 0     | 168   | 0            | 0    | 0    | 0    | 87       | 1343  | 0    | 0     | 2199  | 0    |
| Turn Type               | Split | NA    |              |      |      |      | pm+pt    | NA    |      |       | NA    |      |
| Protected Phases        | . 4   | 4     |              | 8    | 8    |      | 5        | 2     |      |       | 6     |      |
| Permitted Phases        |       |       |              |      |      |      | 2        |       |      | 6     |       |      |
| Detector Phase          | 4     | 4     |              | 8    | 8    |      | 5        | 2     |      | 6     | 6     |      |
| Switch Phase            |       |       |              |      |      |      |          |       |      |       |       |      |
| Minimum Initial (s)     | 8.0   | 8.0   |              | 8.0  | 8.0  |      | 2.0      | 15.0  |      | 15.0  | 15.0  |      |
| Minimum Split (s)       | 14.0  | 14.0  |              | 14.0 | 14.0 |      | 6.5      | 21.0  |      | 21.0  | 21.0  |      |
| Total Split (s)         | 33.0  | 33.0  |              | 14.0 | 14.0 |      | 19.0     | 103.0 |      | 84.0  | 84.0  |      |
| Total Split (%)         | 22.0% | 22.0% |              | 9.3% | 9.3% |      | 12.7%    | 68.7% |      | 56.0% | 56.0% |      |
| Yellow Time (s)         | 4.0   | 4.0   |              | 4.0  | 4.0  |      | 3.5      | 4.0   |      | 4.0   | 4.0   |      |
| All-Red Time (s)        | 2.0   | 2.0   |              | 2.0  | 2.0  |      | 0.0      | 2.0   |      | 2.0   | 2.0   |      |
| Lost Time Adjust (s)    |       | 0.0   |              |      | 0.0  |      | 0.0      | 0.0   |      |       | 0.0   |      |
| Total Lost Time (s)     |       | 6.0   |              |      | 6.0  |      | 3.5      | 6.0   |      |       | 6.0   |      |
| Lead/Lag                |       |       |              |      |      |      | Lead     |       |      | Lag   | Lag   |      |
| Lead-Lag Optimize?      |       |       |              |      |      |      | Yes      |       |      | Yes   | Yes   |      |
| Recall Mode             | None  | None  |              | None | None |      | None     | C-Min |      | C-Min | C-Min |      |
| Act Effct Green (s)     |       | 18.8  |              |      |      |      | 121.7    | 119.2 |      |       | 107.7 |      |
| Actuated g/C Ratio      |       | 0.13  |              |      |      |      | 0.81     | 0.79  |      |       | 0.72  |      |

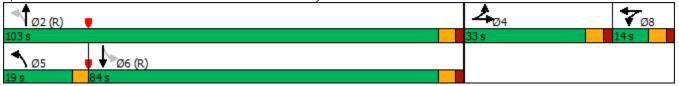
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### Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Driveway

| 03/10/2021 |
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|                                | ۶           | -         | $\mathbf{F}$ | ∢         | -          | •          | 1    | 1    | 1   | 1   | ţ    | ~   |
|--------------------------------|-------------|-----------|--------------|-----------|------------|------------|------|------|-----|-----|------|-----|
| Lane Group                     | EBL         | EBT       | EBR          | WBL       | WBT        | WBR        | NBL  | NBT  | NBR | SBL | SBT  | SBR |
| v/c Ratio                      |             | 0.67      |              |           |            |            | 0.60 | 0.49 |     |     | 0.88 |     |
| Control Delay                  |             | 75.6      |              |           |            |            | 42.4 | 3.6  |     |     | 25.6 |     |
| Queue Delay                    |             | 0.0       |              |           |            |            | 0.0  | 0.0  |     |     | 0.0  |     |
| Total Delay                    |             | 75.6      |              |           |            |            | 42.4 | 3.6  |     |     | 25.6 |     |
| LOS                            |             | E         |              |           |            |            | D    | А    |     |     | С    |     |
| Approach Delay                 |             | 75.6      |              |           |            |            |      | 5.9  |     |     | 25.6 |     |
| Approach LOS                   |             | E         |              |           |            |            |      | А    |     |     | С    |     |
| Queue Length 50th (ft)         |             | 160       |              |           |            |            | 39   | 80   |     |     | 799  |     |
| Queue Length 95th (ft)         |             | 213       |              |           |            |            | m77  | 137  |     |     | 961  |     |
| Internal Link Dist (ft)        |             | 238       |              |           | 121        |            |      | 388  |     |     | 1321 |     |
| Turn Bay Length (ft)           |             |           |              |           |            |            | 95   |      |     |     |      |     |
| Base Capacity (vph)            |             | 358       |              |           |            |            | 232  | 2758 |     |     | 2494 |     |
| Starvation Cap Reductn         |             | 0         |              |           |            |            | 0    | 0    |     |     | 0    |     |
| Spillback Cap Reductn          |             | 0         |              |           |            |            | 0    | 0    |     |     | 0    |     |
| Storage Cap Reductn            |             | 0         |              |           |            |            | 0    | 0    |     |     | 0    |     |
| Reduced v/c Ratio              |             | 0.47      |              |           |            |            | 0.38 | 0.49 |     |     | 0.88 |     |
| Intersection Summary           |             |           |              |           |            |            |      |      |     |     |      |     |
| J1                             | Other       |           |              |           |            |            |      |      |     |     |      |     |
| Cycle Length: 150              |             |           |              |           |            |            |      |      |     |     |      |     |
| Actuated Cycle Length: 150     |             |           |              |           |            |            |      |      |     |     |      |     |
| Offset: 116 (77%), Reference   | ed to phase | e 2:NBTL  | and 6:SE     | 3TL, Star | t of Greer | ו          |      |      |     |     |      |     |
| Natural Cycle: 110             |             |           |              |           |            |            |      |      |     |     |      |     |
| Control Type: Actuated-Coor    | rdinated    |           |              |           |            |            |      |      |     |     |      |     |
| Maximum v/c Ratio: 0.88        |             |           |              |           |            |            |      |      |     |     |      |     |
| Intersection Signal Delay: 20  |             |           |              |           | tersection |            |      |      |     |     |      |     |
| Intersection Capacity Utilizat | ion 78.7%   |           |              | IC        | CU Level   | of Service | D    |      |     |     |      |     |
| Analysis Period (min) 15       |             |           |              |           |            |            |      |      |     |     |      |     |
| m Volume for 95th percent      | ile queue i | s metered | l by upstr   | eam sign  | ial.       |            |      |      |     |     |      |     |

Splits and Phases: 2: Harlem Avenue & Benton Drive/Driveway



# Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

|                         | ≯     | +     | 7     | 4     | Ļ        | •     | •     | Ť       | *     | 1     | ţ       | -∢    |
|-------------------------|-------|-------|-------|-------|----------|-------|-------|---------|-------|-------|---------|-------|
| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT      | WBR   | NBL   | NBT     | NBR   | SBL   | SBT     | SBR   |
| Lane Configurations     | ۲     | 1     | 1     | ኘ     | <b>†</b> | 1     | ኘኘ    | <u></u> | 1     | ኘኘ    | <u></u> | 1     |
| Traffic Volume (vph)    | 13    | 12    | 9     | 225   | 16       | 474   | 20    | 714     | 91    | 622   | 1111    | 10    |
| Future Volume (vph)     | 13    | 12    | 9     | 225   | 16       | 474   | 20    | 714     | 91    | 622   | 1111    | 10    |
| Ideal Flow (vphpl)      | 1900  | 2000  | 1900  | 1900  | 2000     | 1900  | 1900  | 2000    | 1900  | 1900  | 2000    | 1900  |
| Lane Width (ft)         | 12    | 12    | 12    | 12    | 12       | 12    | 12    | 12      | 12    | 12    | 12      | 12    |
| Grade (%)               |       | 0%    |       |       | 0%       |       |       | 0%      |       |       | 0%      |       |
| Storage Length (ft)     | 95    |       | 100   | 235   |          | 0     | 225   |         | 215   | 325   |         | 215   |
| Storage Lanes           | 1     |       | 1     | 2     |          | 1     | 2     |         | 1     | 2     |         | 1     |
| Taper Length (ft)       | 135   |       |       | 220   |          |       | 300   |         |       | 300   |         |       |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00  | 0.97  | 1.00     | 1.00  | 0.97  | 0.95    | 1.00  | 0.97  | 0.95    | 1.00  |
| Ped Bike Factor         |       |       |       |       |          |       |       |         |       |       |         |       |
| Frt                     |       |       | 0.850 |       |          | 0.850 |       |         | 0.850 |       |         | 0.850 |
| Flt Protected           | 0.950 |       |       | 0.950 |          |       | 0.950 |         |       | 0.950 |         |       |
| Satd. Flow (prot)       | 1805  | 2000  | 1615  | 3467  | 2000     | 1599  | 3502  | 3585    | 1583  | 3467  | 3654    | 1615  |
| Flt Permitted           | 0.950 |       |       | 0.950 |          |       | 0.950 |         |       | 0.950 |         |       |
| Satd. Flow (perm)       | 1805  | 2000  | 1615  | 3467  | 2000     | 1599  | 3502  | 3585    | 1583  | 3467  | 3654    | 1615  |
| Right Turn on Red       |       |       | No    |       |          | No    |       |         | No    |       |         | No    |
| Satd. Flow (RTOR)       |       |       |       |       |          |       |       |         |       |       |         |       |
| Link Speed (mph)        |       | 30    |       |       | 45       |       |       | 45      |       |       | 45      |       |
| Link Distance (ft)      |       | 957   |       |       | 1311     |       |       | 2713    |       |       | 854     |       |
| Travel Time (s)         |       | 21.8  |       |       | 19.9     |       |       | 41.1    |       |       | 12.9    |       |
| Confl. Peds. (#/hr)     |       |       |       |       |          |       |       |         |       |       |         |       |
| Confl. Bikes (#/hr)     |       |       |       |       |          |       |       |         |       |       |         |       |
| Peak Hour Factor        | 0.83  | 0.83  | 0.83  | 0.83  | 0.83     | 0.83  | 0.83  | 0.83    | 0.83  | 0.83  | 0.83    | 0.83  |
| Growth Factor           | 100%  | 100%  | 100%  | 100%  | 100%     | 100%  | 100%  | 100%    | 100%  | 100%  | 100%    | 100%  |
| Heavy Vehicles (%)      | 0%    | 0%    | 0%    | 1%    | 0%       | 1%    | 0%    | 6%      | 2%    | 1%    | 4%      | 0%    |
| Bus Blockages (#/hr)    | 0     | 0     | 0     | 0     | 0        | 0     | 0     | 0       | 0     | 0     | 0       | 0     |
| Parking (#/hr)          |       |       |       |       |          |       |       |         |       |       |         |       |
| Mid-Block Traffic (%)   |       | 0%    |       |       | 0%       |       |       | 0%      |       |       | 0%      |       |
| Shared Lane Traffic (%) |       |       |       |       |          |       |       |         |       |       |         |       |
| Lane Group Flow (vph)   | 16    | 14    | 11    | 271   | 19       | 571   | 24    | 860     | 110   | 749   | 1339    | 12    |
| Turn Type               | Prot  | NA    | pm+ov | Prot  | NA       | pm+ov | Prot  | NA      | pm+ov | Prot  | NA      | pm+ov |
| Protected Phases        | 7     | 4     | 5     | 3     | 8        | 1     | 5     | 2       | . 3   | 1     | 6       | . 7   |
| Permitted Phases        |       |       | 4     |       |          | 8     |       |         | 2     |       |         | 6     |
| Detector Phase          | 7     | 4     | 5     | 3     | 8        | 1     | 5     | 2       | 3     | 1     | 6       | 7     |
| Switch Phase            |       |       |       |       |          |       |       |         |       |       |         |       |
| Minimum Initial (s)     | 3.0   | 8.0   | 3.0   | 3.0   | 8.0      | 3.0   | 3.0   | 15.0    | 3.0   | 3.0   | 15.0    | 3.0   |
| Minimum Split (s)       | 7.5   | 14.0  | 7.5   | 7.5   | 14.0     | 7.5   | 7.5   | 21.0    | 7.5   | 7.5   | 21.0    | 7.5   |
| Total Split (s)         | 19.5  | 21.0  | 18.0  | 27.0  | 28.5     | 37.5  | 18.0  | 64.5    | 27.0  | 37.5  | 84.0    | 19.5  |
| Total Split (%)         | 13.0% | 14.0% | 12.0% | 18.0% | 19.0%    | 25.0% | 12.0% | 43.0%   | 18.0% | 25.0% | 56.0%   | 13.0% |
| Yellow Time (s)         | 3.5   | 4.5   | 3.5   | 3.5   | 4.5      | 3.5   | 3.5   | 4.5     | 3.5   | 3.5   | 4.5     | 3.5   |
| All-Red Time (s)        | 1.0   | 1.5   | 1.0   | 1.0   | 1.5      | 1.0   | 1.0   | 1.5     | 1.0   | 1.0   | 1.5     | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0   | 0.0   | 0.0     | 0.0   | 0.0   | 0.0     | 0.0   |
| Total Lost Time (s)     | 4.5   | 6.0   | 4.5   | 4.5   | 6.0      | 4.5   | 4.5   | 6.0     | 4.5   | 4.5   | 6.0     | 4.5   |
| Lead/Lag                | Lead  | Lag   | Lead  | Lead  | Lag      | Lead  | Lead  | Lag     | Lead  | Lead  | Lag     | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes      | Yes   | Yes   | Yes     | Yes   | Yes   | Yes     | Yes   |
| Recall Mode             | None  | None  | None  | None  | None     | None  | None  | C-Min   | None  | None  | C-Min   | None  |
| Act Effct Green (s)     | 6.9   | 8.3   | 12.4  | 17.7  | 14.8     | 60.7  | 6.5   | 71.5    | 95.2  | 39.9  | 108.9   | 121.8 |
|                         |       |       |       |       |          | 0.40  |       | 0.48    | 0.63  | 0.27  |         | 0.81  |

No Build Evening Peak Hour 01/06/2020 21-008 Tinley Park

### Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 |
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|                               | ٦              | -         | $\mathbf{F}$ | •           | -          | •          | 1    | 1    | 1    | 1    | ţ    | ~    |
|-------------------------------|----------------|-----------|--------------|-------------|------------|------------|------|------|------|------|------|------|
| Lane Group                    | EBL            | EBT       | EBR          | WBL         | WBT        | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                     | 0.20           | 0.13      | 0.08         | 0.66        | 0.10       | 0.88       | 0.16 | 0.50 | 0.11 | 0.81 | 0.50 | 0.01 |
| Control Delay                 | 73.6           | 69.9      | 59.2         | 77.4        | 67.1       | 50.3       | 71.0 | 30.6 | 13.0 | 68.2 | 6.3  | 0.5  |
| Queue Delay                   | 0.0            | 0.0       | 0.0          | 0.0         | 0.0        | 0.0        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                   | 73.6           | 69.9      | 59.2         | 77.4        | 67.1       | 50.3       | 71.0 | 30.6 | 13.0 | 68.2 | 6.3  | 0.5  |
| LOS                           | E              | E         | E            | E           | E          | D          | E    | С    | В    | E    | А    | А    |
| Approach Delay                |                | 68.5      |              |             | 59.2       |            |      | 29.6 |      |      | 28.4 |      |
| Approach LOS                  |                | E         |              |             | E          |            |      | С    |      |      | С    |      |
| Queue Length 50th (ft)        | 15             | 13        | 11           | 128         | 17         | 529        | 11   | 318  | 42   | 298  | 109  | 0    |
| Queue Length 95th (ft)        | 38             | 35        | 27           | 167         | 40         | 502        | 25   | 381  | 73   | 359  | 108  | m0   |
| Internal Link Dist (ft)       |                | 877       |              |             | 1231       |            |      | 2633 |      |      | 774  |      |
| Turn Bay Length (ft)          | 95             |           | 100          | 235         |            |            | 225  |      | 215  | 325  |      | 215  |
| Base Capacity (vph)           | 180            | 200       | 208          | 520         | 300        | 647        | 315  | 1707 | 1054 | 922  | 2653 | 1398 |
| Starvation Cap Reductn        | 0              | 0         | 0            | 0           | 0          | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn         | 0              | 0         | 0            | 0           | 0          | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn           | 0              | 0         | 0            | 0           | 0          | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio             | 0.09           | 0.07      | 0.05         | 0.52        | 0.06       | 0.88       | 0.08 | 0.50 | 0.10 | 0.81 | 0.50 | 0.01 |
| Intersection Summary          |                |           |              |             |            |            |      |      |      |      |      |      |
| J1                            | Other          |           |              |             |            |            |      |      |      |      |      |      |
| Cycle Length: 150             |                |           |              |             |            |            |      |      |      |      |      |      |
| Actuated Cycle Length: 150    |                |           |              |             |            |            |      |      |      |      |      |      |
| Offset: 143 (95%), Reference  | ced to phase   | e 2:NBT a | and 6:SB     | F, Start of | Green      |            |      |      |      |      |      |      |
| Natural Cycle: 80             |                |           |              |             |            |            |      |      |      |      |      |      |
| Control Type: Actuated-Coc    | ordinated      |           |              |             |            |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.88       |                |           |              |             |            |            |      |      |      |      |      |      |
| Intersection Signal Delay: 3  |                |           |              |             | tersectior |            |      |      |      |      |      |      |
| Intersection Capacity Utiliza | tion 63.9%     |           |              | IC          | U Level o  | of Service | В    |      |      |      |      |      |
| Analysis Period (min) 15      |                |           |              |             |            |            |      |      |      |      |      |      |
| m Volume for 95th percen      | ntile queue is | s metereo | d by upstr   | eam sign    | al.        |            |      |      |      |      |      |      |

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road

| S <sub>Ø1</sub> | Ø2 (R) | <b>€</b> Ø3    | ₩04               |
|-----------------|--------|----------------|-------------------|
| 37.5 s          | 64.5 s | 27 s           | 21 s              |
| 🗙 Ø5 🕴 Ø6 (R)   | •      | <b>₽</b><br>Ø7 | ▲ <sup>4</sup> Ø8 |
| 18 s 84 s       |        | 19.5 s         | 28.5 s            |

# Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

|                         |              |              | louu          |              |       |      |       |       |        |       |          | <u> </u> |
|-------------------------|--------------|--------------|---------------|--------------|-------|------|-------|-------|--------|-------|----------|----------|
|                         | ٭            | -            | $\rightarrow$ | 1            | +     | •    | 1     | Ť     | 1      | •     | Ŧ        | -        |
| Lane Group              | EBL          | EBT          | EBR           | WBL          | WBT   | WBR  | NBL   | NBT   | NBR    | SBL   | SBT      | SBR      |
| Lane Configurations     | ሻ            | At≯          |               | ኘ            | A1⊅   |      | ሻ     | •     | 1      | ٦     | <b>↑</b> | 1        |
| Traffic Volume (vph)    | 47           | 752          | 119           | 95           | 692   | 53   | 95    | 107   | 47     | 60    | 117      | 81       |
| Future Volume (vph)     | 47           | 752          | 119           | 95           | 692   | 53   | 95    | 107   | 47     | 60    | 117      | 81       |
| Ideal Flow (vphpl)      | 1900         | 1900         | 1900          | 1900         | 1900  | 1900 | 1900  | 2000  | 1900   | 1900  | 2000     | 1900     |
| Lane Width (ft)         | 12           | 12           | 12            | 12           | 12    | 12   | 12    | 12    | 12     | 12    | 12       | 12       |
| Grade (%)               |              | 0%           |               |              | 0%    |      |       | 0%    |        |       | 0%       |          |
| Storage Length (ft)     | 160          |              | 0             | 160          |       | 0    | 170   |       | 170    | 170   |          | 170      |
| Storage Lanes           | 1            |              | 0             | 2            |       | 0    | 1     |       | 1      | 1     |          | 1        |
| Taper Length (ft)       | 190          |              |               | 185          |       |      | 170   |       |        | 190   |          |          |
| Lane Util. Factor       | 1.00         | 0.95         | 0.95          | 1.00         | 0.95  | 0.95 | 1.00  | 1.00  | 1.00   | 1.00  | 1.00     | 1.00     |
| Ped Bike Factor         |              |              |               |              |       |      |       |       |        |       |          |          |
| Frt                     |              | 0.980        |               |              | 0.989 |      |       |       | 0.850  |       |          | 0.850    |
| Flt Protected           | 0.950        |              |               | 0.950        |       |      | 0.950 |       |        | 0.950 |          |          |
| Satd. Flow (prot)       | 1805         | 3508         | 0             | 1787         | 3535  | 0    | 1805  | 1961  | 1615   | 1787  | 2000     | 1615     |
| Flt Permitted           | 0.290        |              |               | 0.182        |       |      | 0.672 |       |        | 0.606 |          |          |
| Satd. Flow (perm)       | 551          | 3508         | 0             | 342          | 3535  | 0    | 1277  | 1961  | 1615   | 1140  | 2000     | 1615     |
| Right Turn on Red       |              |              | No            |              |       | No   |       |       | No     |       |          | No       |
| Satd. Flow (RTOR)       |              |              |               |              |       |      |       |       |        |       |          |          |
| Link Speed (mph)        |              | 45           |               |              | 45    |      |       | 45    |        |       | 45       |          |
| Link Distance (ft)      |              | 2828         |               |              | 1976  |      |       | 2983  |        |       | 1684     |          |
| Travel Time (s)         |              | 42.8         |               |              | 29.9  |      |       | 45.2  |        |       | 25.5     |          |
| Confl. Peds. (#/hr)     |              | 12.0         |               |              | 27.7  |      |       | 10.2  |        |       | 20.0     |          |
| Confl. Bikes (#/hr)     |              |              |               |              |       |      |       |       |        |       |          |          |
| Peak Hour Factor        | 0.88         | 0.88         | 0.88          | 0.88         | 0.88  | 0.88 | 0.88  | 0.88  | 0.88   | 0.88  | 0.88     | 0.88     |
| Growth Factor           | 100%         | 100%         | 100%          | 100%         | 100%  | 100% | 100%  | 100%  | 100%   | 100%  | 100%     | 100%     |
| Heavy Vehicles (%)      | 0%           | 1%           | 0%            | 1%           | 1%    | 1%   | 0%    | 2%    | 0%     | 1%    | 0%       | 0%       |
| Bus Blockages (#/hr)    | 0            | 0            | 0             | 0            | 0     | 0    | 0     | 0     | 0      | 0     | 0        | 0        |
| Parking (#/hr)          | 0            | Ű            | Ū             | Ű            | Ŭ     | 0    | Ű     | Ū     | Ű      | Ū     | Ū        | Ű        |
| Mid-Block Traffic (%)   |              | 0%           |               |              | 0%    |      |       | 0%    |        |       | 0%       |          |
| Shared Lane Traffic (%) |              | 070          |               |              | 070   |      |       | 070   |        |       | 070      |          |
| Lane Group Flow (vph)   | 53           | 990          | 0             | 108          | 846   | 0    | 108   | 122   | 53     | 68    | 133      | 92       |
| Turn Type               | pm+pt        | NA           | Ū             | pm+pt        | NA    | 0    | pm+pt | NA    | Perm   | pm+pt | NA       | Perm     |
| Protected Phases        | 5            | 2            |               | 1            | 6     |      | 3     | 8     | 1 0111 | 7     | 4        | 1 01111  |
| Permitted Phases        | 2            | -            |               | 6            | Ŭ     |      | 8     | U     | 8      | 4     | •        | 4        |
| Detector Phase          | 5            | 2            |               | 1            | 6     |      | 3     | 8     | 8      | 7     | 4        | 4        |
| Switch Phase            | 0            | -            |               | •            | Ŭ     |      | Ū     | U     | Ű      | ,     | •        |          |
| Minimum Initial (s)     | 3.0          | 15.0         |               | 3.0          | 15.0  |      | 3.0   | 8.0   | 8.0    | 3.0   | 8.0      | 8.0      |
| Minimum Split (s)       | 6.5          | 21.0         |               | 6.5          | 21.0  |      | 6.5   | 14.0  | 14.0   | 6.5   | 14.0     | 14.0     |
| Total Split (s)         | 10.0         | 35.0         |               | 20.0         | 45.0  |      | 10.0  | 25.0  | 25.0   | 20.0  | 35.0     | 35.0     |
| Total Split (%)         | 10.0%        | 35.0%        |               | 20.0%        | 45.0% |      | 10.0% | 25.0% | 25.0%  | 20.0% | 35.0%    | 35.0%    |
| Yellow Time (s)         | 3.5          | 4.0          |               | 3.5          | 4.0   |      | 3.5   | 4.0   | 4.0    | 3.5   | 4.0      | 4.0      |
| All-Red Time (s)        | 0.0          | 2.0          |               | 0.0          | 2.0   |      | 0.0   | 2.0   | 2.0    | 0.0   | 2.0      | 2.0      |
| Lost Time Adjust (s)    | 0.0          | 0.0          |               | 0.0          | 0.0   |      | 0.0   | 0.0   | 0.0    | 0.0   | 0.0      | 0.0      |
| Total Lost Time (s)     | 3.5          | 6.0          |               | 3.5          | 6.0   |      | 3.5   | 6.0   | 6.0    | 3.5   | 6.0      | 6.0      |
| Lead/Lag                | Lead         | Lag          |               | Lead         | Lag   |      | Lead  | Lag   | Lag    | Lead  | Lag      | Lag      |
| Lead-Lag Optimize?      | Yes          | Yes          |               | Yes          | Yes   |      | Yes   | Yes   | Yes    | Yes   | Yes      | Yes      |
| Recall Mode             | None         | None         |               | None         | None  |      | None  | None  | None   | None  | None     | None     |
| Act Effct Green (s)     | 41.9         | 34.6         |               | 45.1         | 37.9  |      | 19.0  | 11.6  | 11.6   | 21.7  | 13.0     | 13.0     |
| Actuated g/C Ratio      | 41.9<br>0.55 | 34.0<br>0.45 |               | 45.1<br>0.59 | 0.50  |      | 0.25  | 0.15  | 0.15   | 0.28  | 0.17     | 0.17     |
| Actualeu y/C Kallu      | 0.00         | 0.40         |               | 0.59         | 0.50  |      | 0.25  | 0.15  | 0.15   | U.2ŏ  | 0.17     | 0.17     |

No Build Evening Peak Hour 01/06/2020 21-008 Tinley Park

### Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

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|-----------------------------------|-------------|----------|--------------|------|------------|------------|------|------|------|------|------|------|
| Lane Group                        | EBL         | EBT      | EBR          | WBL  | WBT        | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                         | 0.13        | 0.62     |              | 0.31 | 0.48       |            | 0.30 | 0.41 | 0.22 | 0.17 | 0.39 | 0.34 |
| Control Delay                     | 8.6         | 20.4     |              | 10.2 | 15.9       |            | 23.3 | 37.3 | 34.3 | 21.4 | 34.4 | 34.2 |
| Queue Delay                       | 0.0         | 0.0      |              | 0.0  | 0.0        |            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                       | 8.6         | 20.4     |              | 10.2 | 15.9       |            | 23.3 | 37.3 | 34.3 | 21.4 | 34.4 | 34.2 |
| LOS                               | А           | С        |              | В    | В          |            | С    | D    | С    | С    | С    | С    |
| Approach Delay                    |             | 19.8     |              |      | 15.3       |            |      | 31.4 |      |      | 31.3 |      |
| Approach LOS                      |             | В        |              |      | В          |            |      | С    |      |      | С    |      |
| Queue Length 50th (ft)            | 10          | 201      |              | 21   | 157        |            | 42   | 60   | 25   | 26   | 64   | 44   |
| Queue Length 95th (ft)            | 28          | 310      |              | 49   | 234        |            | 78   | 112  | 59   | 54   | 113  | 85   |
| Internal Link Dist (ft)           |             | 2748     |              |      | 1896       |            |      | 2903 |      |      | 1604 |      |
| Turn Bay Length (ft)              | 160         |          |              | 160  |            |            | 170  |      | 170  | 170  |      | 170  |
| Base Capacity (vph)               | 416         | 1592     |              | 534  | 1904       |            | 366  | 514  | 423  | 519  | 800  | 646  |
| Starvation Cap Reductn            | 0           | 0        |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn             | 0           | 0        |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn               | 0           | 0        |              | 0    | 0          |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio                 | 0.13        | 0.62     |              | 0.20 | 0.44       |            | 0.30 | 0.24 | 0.13 | 0.13 | 0.17 | 0.14 |
| Intersection Summary              |             |          |              |      |            |            |      |      |      |      |      |      |
| Area Type:                        | Other       |          |              |      |            |            |      |      |      |      |      |      |
| Cycle Length: 100                 |             |          |              |      |            |            |      |      |      |      |      |      |
| Actuated Cycle Length: 76.        | 2           |          |              |      |            |            |      |      |      |      |      |      |
| Natural Cycle: 60                 |             |          |              |      |            |            |      |      |      |      |      |      |
| Control Type: Actuated-Une        | coordinated |          |              |      |            |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.62           |             |          |              |      |            |            |      |      |      |      |      |      |
| Intersection Signal Delay: 2      |             |          |              |      | tersectior |            |      |      |      |      |      |      |
| Intersection Capacity Utilization | ation 55.1% |          |              | IC   | U Level    | of Service | В    |      |      |      |      |      |
| Analysis Period (min) 15          |             |          |              |      |            |            |      |      |      |      |      |      |

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road

| <b>√</b> Ø1                     | A 102 | <b>↑</b> ø3 | ₩ Ø4 |
|---------------------------------|-------|-------------|------|
| 20 s                            | 35 s  | 10 s        | 35 s |
| ▶ <sub>Ø5</sub> ★ <sub>Ø6</sub> |       | Ø7          | 1 Ø8 |
| 10 s 45 s                       |       | 20 s        | 25 s |

|                         | -           | $\mathbf{r}$   | 4            | -                | 1          | ۲          |
|-------------------------|-------------|----------------|--------------|------------------|------------|------------|
| Lane Group              | EBT         | EBR            | WBL          | WBT              | NBL        | NBR        |
| Lane Configurations     | <u></u>     | 1              | 5            | 1                | ኘ          | 101        |
| Traffic Volume (vph)    | <b>6</b> 54 | <b>1</b><br>71 | 171          | <b>TT</b><br>631 | 84         | 174        |
| Future Volume (vph)     | 654         | 71             | 171          | 631              | 04<br>84   | 174        |
| Ideal Flow (vphpl)      | 2000        | 1900           | 1900         | 2000             | 1900       | 1900       |
|                         | 12          | 1900           | 1900         | 12               | 1900       | 1900       |
| Lane Width (ft)         |             | IZ             | IZ           |                  |            | IZ         |
| Grade (%)               | 0%          | 215            | 015          | 0%               | 0%         | 0          |
| Storage Length (ft)     |             | 215            | 215          |                  | 0          | 0          |
| Storage Lanes           |             | 1              | 1            |                  | 2          | 1          |
| Taper Length (ft)       |             |                | 220          |                  | 25         |            |
| Lane Util. Factor       | 0.95        | 1.00           | 1.00         | 0.95             | 0.97       | 1.00       |
| Ped Bike Factor         |             |                |              |                  |            |            |
| Frt                     |             | 0.850          |              |                  |            | 0.850      |
| Flt Protected           |             |                | 0.950        |                  | 0.950      |            |
| Satd. Flow (prot)       | 3762        | 1615           | 1805         | 3800             | 3502       | 1615       |
| Flt Permitted           |             |                | 0.370        |                  | 0.950      |            |
| Satd. Flow (perm)       | 3762        | 1615           | 703          | 3800             | 3502       | 1615       |
| Right Turn on Red       | 0702        | No             | 100          | 0000             | 0002       | No         |
| Satd. Flow (RTOR)       |             | NU             |              |                  |            | NU         |
| Link Speed (mph)        | 45          |                |              | 45               | 30         |            |
| 1 1 1                   | 45<br>1311  |                |              |                  | 30         |            |
| Link Distance (ft)      |             |                |              | 1120             | 390<br>8.9 |            |
| Travel Time (s)         | 19.9        |                |              | 17.0             | 8.9        |            |
| Confl. Peds. (#/hr)     |             |                |              |                  |            |            |
| Confl. Bikes (#/hr)     |             |                |              |                  |            |            |
| Peak Hour Factor        | 0.95        | 0.95           | 0.95         | 0.95             | 0.95       | 0.95       |
| Growth Factor           | 100%        | 100%           | 100%         | 100%             | 100%       | 100%       |
| Heavy Vehicles (%)      | 1%          | 0%             | 0%           | 0%               | 0%         | 0%         |
| Bus Blockages (#/hr)    | 0           | 0              | 0            | 0                | 0          | 0          |
| Parking (#/hr)          |             |                |              |                  |            |            |
| Mid-Block Traffic (%)   | 0%          |                |              | 0%               | 0%         |            |
| Shared Lane Traffic (%) |             |                |              |                  |            |            |
| Lane Group Flow (vph)   | 688         | 75             | 180          | 664              | 88         | 183        |
| Turn Type               | NA          | pm+ov          | pm+pt        | NA               | Prot       | pm+ov      |
| Protected Phases        | 2           | 900∓00<br>8    | - μπ+μι<br>1 | 6                | 8          | pm+0v<br>1 |
| Permitted Phases        | ۷           | 2              | 6            | U                | 0          | 8          |
|                         | n           |                | 0            | 4                | 0          | Ũ          |
| Detector Phase          | 2           | 8              | I            | 6                | 8          | 1          |
| Switch Phase            | 15.0        | 0.0            | 2.0          | 15.0             | 0.0        | 2.0        |
| Minimum Initial (s)     | 15.0        | 8.0            | 3.0          | 15.0             | 8.0        | 3.0        |
| Minimum Split (s)       | 21.0        | 14.0           | 6.5          | 21.0             | 14.0       | 6.5        |
| Total Split (s)         | 81.0        | 43.0           | 26.0         | 107.0            | 43.0       | 26.0       |
| Total Split (%)         | 54.0%       | 28.7%          | 17.3%        | 71.3%            | 28.7%      | 17.3%      |
| Yellow Time (s)         | 4.0         | 4.0            | 3.5          | 4.0              | 4.0        | 3.5        |
| All-Red Time (s)        | 2.0         | 2.0            | 0.0          | 2.0              | 2.0        | 0.0        |
| Lost Time Adjust (s)    | 0.0         | 0.0            | 0.0          | 0.0              | 0.0        | 0.0        |
| Total Lost Time (s)     | 6.0         | 6.0            | 3.5          | 6.0              | 6.0        | 3.5        |
| Lead/Lag                | Lag         |                | Lead         |                  |            | Lead       |
| Lead-Lag Optimize?      | Yes         |                | Yes          |                  |            | Yes        |
| Recall Mode             | C-Min       | None           | None         | C-Min            | None       | None       |
| Act Effct Green (s)     | 115.3       | 131.5          | 130.3        | 127.8            | 10.2       | 25.2       |
| Actuated g/C Ratio      | 0.77        | 0.88           | 0.87         | 0.85             | 0.07       | 0.17       |
| Actualeu y/C Rallu      | 0.77        | 0.00           | U.ŏ/         | 0.00             | 0.07       | U. I /     |

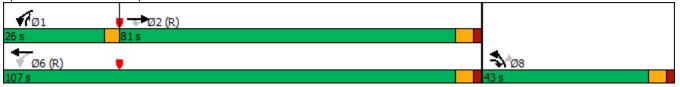
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#### Lanes, Volumes, Timings 5: Proposed Full Access & Vollmer Road

|                               | -             | $\mathbf{r}$ | 4          | ←           | 1          | ۲          |
|-------------------------------|---------------|--------------|------------|-------------|------------|------------|
| Lane Group                    | EBT           | EBR          | WBL        | WBT         | NBL        | NBR        |
| v/c Ratio                     | 0.24          | 0.05         | 0.27       | 0.21        | 0.37       | 0.68       |
| Control Delay                 | 0.7           | 0.2          | 2.3        | 1.7         | 70.9       | 71.0       |
| Queue Delay                   | 0.0           | 0.0          | 0.0        | 0.0         | 0.0        | 0.0        |
| Total Delay                   | 0.7           | 0.2          | 2.3        | 1.7         | 70.9       | 71.0       |
| LOS                           | А             | А            | А          | А           | E          | E          |
| Approach Delay                | 0.6           |              |            | 1.8         | 71.0       |            |
| Approach LOS                  | А             |              |            | А           | E          |            |
| Queue Length 50th (ft)        | 9             | 1            | 14         | 42          | 43         | 171        |
| Queue Length 95th (ft)        | 13            | m1           | 24         | 45          | 72         | 247        |
| Internal Link Dist (ft)       | 1231          |              |            | 1040        | 310        |            |
| Turn Bay Length (ft)          |               | 215          | 215        |             |            |            |
| Base Capacity (vph)           | 2892          | 1615         | 776        | 3238        | 863        | 416        |
| Starvation Cap Reductn        | 0             | 0            | 0          | 0           | 0          | 0          |
| Spillback Cap Reductn         | 0             | 0            | 0          | 0           | 0          | 0          |
| Storage Cap Reductn           | 0             | 0            | 0          | 0           | 0          | 0          |
| Reduced v/c Ratio             | 0.24          | 0.05         | 0.23       | 0.21        | 0.10       | 0.44       |
| Intersection Summary          |               |              |            |             |            |            |
| Area Type:                    | Other         |              |            |             |            |            |
| Cycle Length: 150             |               |              |            |             |            |            |
| Actuated Cycle Length: 150    |               |              |            |             |            |            |
| Offset: 11 (7%), Reference    | d to phase 2  | EBT and      | d 6:WBTL   | ., Start of | Green      |            |
| Natural Cycle: 45             |               |              |            |             |            |            |
| Control Type: Actuated-Co     | ordinated     |              |            |             |            |            |
| Maximum v/c Ratio: 0.68       |               |              |            |             |            |            |
| Intersection Signal Delay: 1  | 1.3           |              | In         | tersectior  | LOS: B     |            |
| Intersection Capacity Utiliza | ation 46.6%   |              |            | IC          | CU Level o | of Service |
| Analysis Period (min) 15      |               |              |            |             |            |            |
| m Volume for 95th percer      | ntile aueue i | s metered    | d by upstr | ream sign   | al.        |            |

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Proposed Full Access & Vollmer Road



|                         | -                | $\mathbf{r}$   | 4     | ←           | •             | ۲     |
|-------------------------|------------------|----------------|-------|-------------|---------------|-------|
| Lane Group              | EBT              | EBR            | WBL   | WBT         | NBL           | NBR   |
| Lane Configurations     | <u></u>          |                |       | ***         | <u>الالال</u> |       |
| Traffic Volume (vph)    | <b>TT</b><br>798 | <b>r</b><br>30 | 118   | <b>7</b> 77 | 52            | 120   |
| Future Volume (vph)     | 798              | 30             | 110   | 750         | 52            | 120   |
|                         | 2000             | 1900           | 1900  | 2000        | 52<br>1900    | 1900  |
| Ideal Flow (vphpl)      | 2000             |                |       |             |               |       |
| Lane Width (ft)         |                  | 12             | 12    | 12          | 12            | 12    |
| Grade (%)               | 0%               | 045            | 045   | 0%          | 0%            | 0     |
| Storage Length (ft)     |                  | 215            | 215   |             | 0             | 0     |
| Storage Lanes           |                  | 1              | 1     |             | 1             | 1     |
| Taper Length (ft)       |                  |                | 220   |             | 25            |       |
| Lane Util. Factor       | 0.95             | 1.00           | 1.00  | 0.95        | 1.00          | 1.00  |
| Ped Bike Factor         |                  |                |       |             |               |       |
| Frt                     |                  | 0.850          |       |             |               | 0.850 |
| Flt Protected           |                  |                | 0.950 |             | 0.950         |       |
| Satd. Flow (prot)       | 3762             | 1429           | 1752  | 3762        | 1671          | 1568  |
| Flt Permitted           |                  |                | 0.312 |             | 0.950         |       |
| Satd. Flow (perm)       | 3762             | 1429           | 576   | 3762        | 1671          | 1568  |
| Right Turn on Red       | 0.01             | No             | 2.0   |             |               | No    |
| Satd. Flow (RTOR)       |                  |                |       |             |               |       |
| Link Speed (mph)        | 45               |                |       | 45          | 30            |       |
| Link Distance (ft)      | 1120             |                |       | 2828        | 384           |       |
| Travel Time (s)         | 17.0             |                |       | 42.8        | 304<br>8.7    |       |
| .,                      | 17.0             |                |       | 42.0        | 0.7           |       |
| Confl. Peds. (#/hr)     |                  |                |       |             |               |       |
| Confl. Bikes (#/hr)     | 0.05             | 0.05           | 0.05  | 0.05        | 0.05          | 0.05  |
| Peak Hour Factor        | 0.95             | 0.95           | 0.95  | 0.95        | 0.95          | 0.95  |
| Growth Factor           | 100%             | 100%           | 100%  | 100%        | 100%          | 100%  |
| Heavy Vehicles (%)      | 1%               | 13%            | 3%    | 1%          | 8%            | 3%    |
| Bus Blockages (#/hr)    | 0                | 0              | 0     | 0           | 0             | 0     |
| Parking (#/hr)          |                  |                |       |             |               |       |
| Mid-Block Traffic (%)   | 0%               |                |       | 0%          | 0%            |       |
| Shared Lane Traffic (%) |                  |                |       |             |               |       |
| Lane Group Flow (vph)   | 840              | 32             | 124   | 789         | 55            | 126   |
| Turn Type               | NA               | pm+ov          | pm+pt | NA          | Prot          | pm+ov |
| Protected Phases        | 2                | 8              | 1     | 6           | 8             | 1     |
| Permitted Phases        | -                | 2              | 6     | 5           | 5             | 8     |
| Detector Phase          | 2                | 8              | 1     | 6           | 8             | 1     |
| Switch Phase            | Z                | 0              | 1     | 0           | 0             | 1     |
|                         | 15.0             | 0.0            | 2.0   | 15.0        | 0.0           | 2.0   |
| Minimum Initial (s)     | 15.0             | 8.0            | 3.0   | 15.0        | 8.0           | 3.0   |
| Minimum Split (s)       | 21.0             | 14.0           | 6.5   | 21.0        | 14.0          | 6.5   |
| Total Split (s)         | 98.0             | 33.0           | 19.0  | 117.0       | 33.0          | 19.0  |
| Total Split (%)         | 65.3%            | 22.0%          | 12.7% | 78.0%       | 22.0%         | 12.7% |
| Yellow Time (s)         | 4.0              | 4.0            | 3.5   | 4.0         | 4.0           | 3.5   |
| All-Red Time (s)        | 2.0              | 2.0            | 0.0   | 2.0         | 2.0           | 0.0   |
| Lost Time Adjust (s)    | 0.0              | 0.0            | 0.0   | 0.0         | 0.0           | 0.0   |
| Total Lost Time (s)     | 6.0              | 6.0            | 3.5   | 6.0         | 6.0           | 3.5   |
| Lead/Lag                | Lag              |                | Lead  |             |               | Lead  |
| Lead-Lag Optimize?      | Yes              |                | Yes   |             |               | Yes   |
| Recall Mode             | C-Min            | Min            | None  | C-Min       | Min           | None  |
| Act Effct Green (s)     | 115.9            | 133.4          | 129.1 | 126.6       | 11.4          | 24.6  |
| Actuated g/C Ratio      | 0.77             | 0.89           | 0.86  | 0.84        | 0.08          | 0.16  |
|                         | 0.77             | 0.07           | 0.00  | 0.04        | 0.00          | 0.10  |

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### Lanes, Volumes, Timings <u>6: Proposed Truck Access & Vollmer Road</u>

|                              | -             | $\mathbf{r}$ | 4                   | -         | •         | ۲          |  |  |
|------------------------------|---------------|--------------|---------------------|-----------|-----------|------------|--|--|
| Lane Group                   | EBT           | EBR          | WBL                 | WBT       | NBL       | NBR        |  |  |
| v/c Ratio                    | 0.29          | 0.03         | 0.23                | 0.25      | 0.43      | 0.49       |  |  |
| Control Delay                | 1.2           | 0.7          | 2.7                 | 2.6       | 75.9      | 63.1       |  |  |
| Queue Delay                  | 0.0           | 0.0          | 0.0                 | 0.0       | 0.0       | 0.0        |  |  |
| Total Delay                  | 1.2           | 0.7          | 2.7                 | 2.6       | 75.9      | 63.1       |  |  |
| LOS                          | А             | А            | А                   | А         | E         | E          |  |  |
| Approach Delay               | 1.2           |              |                     | 2.7       | 67.0      |            |  |  |
| Approach LOS                 | А             |              |                     | А         | E         |            |  |  |
| Queue Length 50th (ft)       | 7             | 0            | 14                  | 63        | 52        | 114        |  |  |
| Queue Length 95th (ft)       | 79            | 7            | 28                  | 94        | 99        | 175        |  |  |
| Internal Link Dist (ft)      | 1040          |              |                     | 2748      | 304       |            |  |  |
| Turn Bay Length (ft)         |               | 215          | 215                 |           |           |            |  |  |
| Base Capacity (vph)          | 2907          | 1409         | 617                 | 3174      | 300       | 344        |  |  |
| Starvation Cap Reductn       | 0             | 0            | 0                   | 0         | 0         | 0          |  |  |
| Spillback Cap Reductn        | 0             | 0            | 0                   | 0         | 0         | 0          |  |  |
| Storage Cap Reductn          | 0             | 0            | 0                   | 0         | 0         | 0          |  |  |
| Reduced v/c Ratio            | 0.29          | 0.02         | 0.20                | 0.25      | 0.18      | 0.37       |  |  |
| Intersection Summary         |               |              |                     |           |           |            |  |  |
| Area Type:                   | Other         |              |                     |           |           |            |  |  |
| Cycle Length: 150            |               |              |                     |           |           |            |  |  |
| Actuated Cycle Length: 15    |               |              |                     |           |           |            |  |  |
| Offset: 142 (95%), Referer   | nced to phase | e 2:EBT a    | and 6:WB            | TL, Start | of Green  |            |  |  |
| Natural Cycle: 45            |               |              |                     |           |           |            |  |  |
| Control Type: Actuated-Co    | ordinated     |              |                     |           |           |            |  |  |
| Maximum v/c Ratio: 0.49      |               |              |                     |           |           |            |  |  |
| Intersection Signal Delay:   |               |              | Intersection LOS: A |           |           |            |  |  |
| Intersection Capacity Utiliz | ation 47.5%   |              |                     | IC        | U Level o | of Service |  |  |
| Analysis Period (min) 15     |               |              |                     |           |           |            |  |  |

Splits and Phases: 6: Proposed Truck Access & Vollmer Road

| ₩ø1      |      |               |
|----------|------|---------------|
| 19 s     | 98 s |               |
| 🗸 Ø6 (R) |      | <b>\$</b> ∕Ø8 |
| 117 s    |      | 33 s          |

| Int Delay, s/veh       | 8.6   |      |      |      |               |      |          |
|------------------------|-------|------|------|------|---------------|------|----------|
| Movement               | EBL   | EBR  | NBL  | NBT  | SBT           | SBR  | l        |
| Lane Configurations    | ۳     | 1    | ٦    | - 11 | - <b>†</b> 1- |      |          |
| Traffic Vol, veh/h     | 74    | 37   | 54   | 1186 | 1769          | 100  | )        |
| Future Vol, veh/h      | 74    | 37   | 54   | 1186 | 1769          | 100  | )        |
| Conflicting Peds, #/hr | 0     | 0    | 0    | 0    | 0             | 0    |          |
| Sign Control           | Stop  | Stop | Free | Free | Free          | Free | •        |
| RT Channelized         | -     | None | -    | None | -             | None | <b>!</b> |
| Storage Length         | 70    | 0    | 210  | -    | -             | -    |          |
| Veh in Median Storage  | , # 1 | -    | -    | 0    | 0             | -    |          |
| Grade, %               | 0     | -    | -    | 0    | 0             | -    |          |
| Peak Hour Factor       | 96    | 96   | 96   | 96   | 96            | 96   | )        |
| Heavy Vehicles, %      | 11    | 0    | 15   | 3    | 3             | 0    |          |
| Mvmt Flow              | 77    | 39   | 56   | 1235 | 1843          | 104  |          |

| Major/Minor          | Minor2  | Ν     | Najor1 | Major2      |     |     |  |  |
|----------------------|---------|-------|--------|-------------|-----|-----|--|--|
| Conflicting Flow All | 2625    | 974   | 1947   | 0 -         | 0   |     |  |  |
| Stage 1              | 1895    | -     | -      |             | -   |     |  |  |
| Stage 2              | 730     | -     | -      |             | -   |     |  |  |
| Critical Hdwy        | 7.02    | 6.9   | 4.4    |             | -   |     |  |  |
| Critical Hdwy Stg 1  | 6.02    | -     | -      |             | -   |     |  |  |
| Critical Hdwy Stg 2  | 6.02    | -     | -      |             | -   |     |  |  |
| Follow-up Hdwy       | 3.61    | 3.3   | 2.35   |             | -   |     |  |  |
| Pot Cap-1 Maneuver   | ~ 17    | 255   | 251    |             | -   |     |  |  |
| Stage 1              | 94      | -     | -      |             | -   |     |  |  |
| Stage 2              | 415     | -     | -      |             | -   |     |  |  |
| Platoon blocked, %   |         |       |        |             | -   |     |  |  |
| Mov Cap-1 Maneuver   |         | 255   | 251    |             | -   |     |  |  |
| Mov Cap-2 Maneuver   |         | -     | -      |             | -   |     |  |  |
| Stage 1              | ~ 73    | -     | -      |             | -   |     |  |  |
| Stage 2              | 415     | -     | -      |             | -   |     |  |  |
|                      |         |       |        |             |     |     |  |  |
| Approach             | EB      |       | NB     | SB          |     |     |  |  |
| HCM Control Delay, s | 3 238.9 |       | 1      | 0           |     |     |  |  |
| HCM LOS              | F       |       |        |             |     |     |  |  |
|                      |         |       |        |             |     |     |  |  |
| Minor Lane/Major Mv  | mt      | NBL   | NBT E  | EBLn1 EBLn2 | SBT | SBR |  |  |
| Capacity (veh/h)     |         | 251   | -      | 58 255      | -   | -   |  |  |
| HCM Lane V/C Ratio   |         | 0.224 | -      | 1.329 0.151 | -   | -   |  |  |

| ~: Volume exceeds capacity | \$: Dela |       | ade 20 | 06    | L. Compi | utation Not | Dofined | *: All maior volume in platoon |  |
|----------------------------|----------|-------|--------|-------|----------|-------------|---------|--------------------------------|--|
| Notes                      |          |       |        |       |          |             |         |                                |  |
| HCM 95th %tile Q(veh)      | 0.8      | -     | 6.7    | 0.5   | -        | -           |         |                                |  |
| HCM Lane LOS               | С        | -     | F      | С     | -        | -           |         |                                |  |
| HCM Control Delay (s)      | 23.4     | -\$ 3 | 47.5   | 21.6  | -        | -           |         |                                |  |
| HCM Lane V/C Ratio         | 0.224    | - 1   | .329   | 0.151 | -        | -           |         |                                |  |

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| Int Delay, s/veh       | 0.6  |      |      |      |      |      |
|------------------------|------|------|------|------|------|------|
| Movement               | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations    |      | 1    |      | - 11 | - 11 | 1    |
| Traffic Vol, veh/h     | 0    | 78   | 0    | 1240 | 1782 | 24   |
| Future Vol, veh/h      | 0    | 78   | 0    | 1240 | 1782 | 24   |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control           | Stop | Stop | Free | Free | Free | Free |
| RT Channelized         | -    | Stop | -    | None | -    | Free |
| Storage Length         | -    | 0    | -    | -    | -    | 120  |
| Veh in Median Storage  | ,# 0 | -    | -    | 0    | 0    | -    |
| Grade, %               | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor       | 97   | 97   | 97   | 97   | 97   | 97   |
| Heavy Vehicles, %      | 0    | 0    | 0    | 4    | 2    | 0    |
| Mvmt Flow              | 0    | 80   | 0    | 1278 | 1837 | 25   |

| Major/Minor          | Minor2 | Μ   | lajor1 | Ma | ijor2 |   |
|----------------------|--------|-----|--------|----|-------|---|
| Conflicting Flow All | -      | 919 | -      | 0  | -     | 0 |
| Stage 1              | -      | -   | -      | -  | -     | - |
| Stage 2              | -      | -   | -      | -  | -     | - |
| Critical Hdwy        | -      | 6.9 | -      | -  | -     | - |
| Critical Hdwy Stg 1  | -      | -   | -      | -  | -     | - |
| Critical Hdwy Stg 2  | -      | -   | -      | -  | -     | - |
| Follow-up Hdwy       | -      | 3.3 | -      | -  | -     | - |
| Pot Cap-1 Maneuver   | 0      | 277 | 0      | -  | -     | 0 |
| Stage 1              | 0      | -   | 0      | -  | -     | 0 |
| Stage 2              | 0      | -   | 0      | -  | -     | 0 |
| Platoon blocked, %   |        |     |        | -  | -     |   |
| Mov Cap-1 Maneuver   |        | 277 | -      | -  | -     | - |
| Mov Cap-2 Maneuver   | · -    | -   | -      | -  | -     | - |
| Stage 1              | -      | -   | -      | -  | -     | - |
| Stage 2              | -      | -   | -      | -  | -     | - |
|                      |        |     |        |    |       |   |
| <b>A</b>             | 50     |     | ND     |    | 00    |   |

| Approach             | EB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 23.2 | 0  | 0  |
| HCM LOS              | С    |    |    |

| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
|-----------------------|-----------|-----|
| Capacity (veh/h)      | - 277     | -   |
| HCM Lane V/C Ratio    | - 0.29    | -   |
| HCM Control Delay (s) | - 23.2    | -   |
| HCM Lane LOS          | - C       | -   |
| HCM 95th %tile Q(veh) | - 1.2     | -   |

| Int Delay, s/veh       | 2.4   |      |      |      |                |      |
|------------------------|-------|------|------|------|----------------|------|
| Movement               | EBL   | EBR  | NBL  | NBT  | SBT            | SBR  |
| Lane Configurations    | Y     |      | 5    | - 11 | - <b>†</b> 1,- |      |
| Traffic Vol, veh/h     | 36    | 53   | 33   | 1204 | 1794           | 66   |
| Future Vol, veh/h      | 36    | 53   | 33   | 1204 | 1794           | 66   |
| Conflicting Peds, #/hr | 0     | 0    | 0    | 0    | 0              | 0    |
| Sign Control           | Stop  | Stop | Free | Free | Free           | Free |
| RT Channelized         | -     | None | -    | None | -              | None |
| Storage Length         | 0     | -    | 130  | -    | -              | -    |
| Veh in Median Storage, | , # 1 | -    | -    | 0    | 0              | -    |
| Grade, %               | 0     | -    | -    | 0    | 0              | -    |
| Peak Hour Factor       | 97    | 97   | 97   | 97   | 97             | 97   |
| Heavy Vehicles, %      | 0     | 0    | 0    | 4    | 2              | 0    |
| Mvmt Flow              | 37    | 55   | 34   | 1241 | 1849           | 68   |

| Major/Minor          | Minor2      | N   | Najor1 | Ν    | /lajor2 |     |
|----------------------|-------------|-----|--------|------|---------|-----|
| Conflicting Flow All | 2572        | 959 | 1917   | 0    | -       | 0   |
| Stage 1              | 1883        | -   | -      | -    | -       | -   |
| Stage 2              | 689         | -   | -      | -    | -       | -   |
| Critical Hdwy        | 6.8         | 6.9 | 4.1    | -    | -       | -   |
| Critical Hdwy Stg 1  | 5.8         | -   | -      | -    | -       | -   |
| Critical Hdwy Stg 2  | 5.8         | -   | -      | -    | -       | -   |
| Follow-up Hdwy       | 3.5         | 3.3 | 2.2    | -    | -       | -   |
| Pot Cap-1 Maneuver   | ~ 22        | 261 | 313    | -    | -       | -   |
| Stage 1              | 108         | -   | -      | -    | -       | -   |
| Stage 2              | 465         | -   | -      | -    | -       | -   |
| Platoon blocked, %   |             |     |        | -    | -       | -   |
| Mov Cap-1 Maneuve    | r ~ 20      | 261 | 313    | -    | -       | -   |
| Mov Cap-2 Maneuve    | r 77        | -   | -      | -    | -       | -   |
| Stage 1              | 96          | -   | -      | -    | -       | -   |
| Stage 2              | 465         | -   | -      | -    | -       | -   |
|                      |             |     |        |      |         |     |
| Approach             | EB          |     | NB     |      | SB      |     |
| HCM Control Delay, : |             |     | 0.5    |      | 0       |     |
| HCM LOS              | s 77.5<br>F |     | 0.5    |      | 0       |     |
|                      | г           |     |        |      |         |     |
|                      |             |     |        |      |         |     |
| Minor Lane/Major Mv  | /mt         | NBL | NBT E  | BLn1 | SBT     | SBR |

| Minor Lane/Major Mvmt      | NBL                    | NBT E | BLn1 | SBT  | SBR     |                      |                                |  |
|----------------------------|------------------------|-------|------|------|---------|----------------------|--------------------------------|--|
| Capacity (veh/h)           | 313                    | -     | 133  | -    | -       |                      |                                |  |
| HCM Lane V/C Ratio         | 0.109                  | -     | 0.69 | -    | -       |                      |                                |  |
| HCM Control Delay (s)      | 17.9                   | -     | 77.5 | -    | -       |                      |                                |  |
| HCM Lane LOS               | С                      | -     | F    | -    | -       |                      |                                |  |
| HCM 95th %tile Q(veh)      | 0.4                    | -     | 3.8  | -    | -       |                      |                                |  |
| Notes                      |                        |       |      |      |         |                      |                                |  |
| ~: Volume exceeds capacity | \$: Delay exceeds 300s |       |      | 0s - | +: Comp | outation Not Defined | *: All major volume in platoon |  |

No Build Evening Peak Hour 01/06/2020 21-008 Tinley Park

# <u>Capacity Analysis Summary Sheets</u> Total Projected Weekday Morning Peak Hour Conditions

|                                    | 1            | ۰.      | 1          | 1       | 1           | ţ     |
|------------------------------------|--------------|---------|------------|---------|-------------|-------|
| Lane Group                         | WBL          | WBR     | NBT        | NBR     | SBL         | SBT   |
| Lane Configurations                | <u>, 102</u> | 11      | <b>†</b> † | 101     | ኘ           | 1     |
| Traffic Volume (vph)               | 41           | 0       | 1193       | 75      | 2           | 892   |
| Future Volume (vph)                | 41           | 0       | 1193       | 75      | 2           | 892   |
| Ideal Flow (vphpl)                 | 1900         | 1900    | 2000       | 1900    | 1900        | 2000  |
| Lane Width (ft)                    | 1700         | 1900    | 12         | 1300    | 1300        | 12    |
| Grade (%)                          | 0%           | 12      | 0%         | 12      | 12          | 0%    |
| Storage Length (ft)                | 150          | 0       | 070        | 100     | 310         | 070   |
|                                    | 150          | 2       |            | 100     | 2           |       |
| Storage Lanes<br>Taper Length (ft) | 150          | Z       |            |         | 235         |       |
| Lane Util. Factor                  |              | 0.00    | 0.95       | 1.00    | 235<br>0.97 | 0.95  |
|                                    | 1.00         | 0.88    | 0.95       | 1.00    | 0.97        | 0.95  |
| Ped Bike Factor                    |              |         |            |         |             |       |
| Frt<br>Fly Destanted               | 0.050        |         |            | 0.850   | 0.050       |       |
| Flt Protected                      | 0.950        | 0.5.4.6 |            | 4 5 6 6 | 0.950       | 0505  |
| Satd. Flow (prot)                  | 1805         | 3344    | 3654       | 1599    | 3502        | 3585  |
| Flt Permitted                      | 0.950        |         |            |         | 0.950       |       |
| Satd. Flow (perm)                  | 1805         | 3344    | 3654       | 1599    | 3502        | 3585  |
| Right Turn on Red                  |              | No      |            | No      |             |       |
| Satd. Flow (RTOR)                  |              |         |            |         |             |       |
| Link Speed (mph)                   | 50           |         | 45         |         |             | 45    |
| Link Distance (ft)                 | 1356         |         | 1018       |         |             | 970   |
| Travel Time (s)                    | 18.5         |         | 15.4       |         |             | 14.7  |
| Confl. Peds. (#/hr)                | 1010         |         | 1011       |         |             |       |
| Confl. Bikes (#/hr)                |              |         |            |         |             |       |
| Peak Hour Factor                   | 0.83         | 0.83    | 0.83       | 0.83    | 0.83        | 0.83  |
| Growth Factor                      | 100%         | 100%    | 100%       | 100%    | 100%        | 100%  |
| Heavy Vehicles (%)                 | 0%           | 0%      | 4%         | 100 %   | 0%          | 6%    |
|                                    |              |         | 4%<br>0    |         |             |       |
| Bus Blockages (#/hr)               | 0            | 0       | U          | 0       | 0           | 0     |
| Parking (#/hr)                     | 00/          |         | 00/        |         |             | 00/   |
| Mid-Block Traffic (%)              | 0%           |         | 0%         |         |             | 0%    |
| Shared Lane Traffic (%)            |              |         |            |         |             |       |
| Lane Group Flow (vph)              | 49           | 0       | 1437       | 90      | 2           | 1075  |
| Turn Type                          | Prot         | pm+ov   | NA         | Free    | Prot        | NA    |
| Protected Phases                   | 8            | 1       | 2          |         | 1           | 6     |
| Permitted Phases                   |              | 8       |            | Free    |             |       |
| Detector Phase                     | 8            | 1       | 2          |         | 1           | 6     |
| Switch Phase                       |              |         |            |         |             |       |
| Minimum Initial (s)                | 8.0          | 3.0     | 15.0       |         | 3.0         | 15.0  |
| Minimum Split (s)                  | 14.0         | 7.5     | 21.0       |         | 7.5         | 21.0  |
| Total Split (s)                    | 21.0         | 15.4    | 103.6      |         | 15.4        | 119.0 |
| Total Split (%)                    | 15.0%        | 11.0%   | 74.0%      |         | 11.0%       | 85.0% |
| Yellow Time (s)                    | 4.0          | 3.5     | 4.0        |         | 3.5         | 4.0   |
| All-Red Time (s)                   | 2.0          | 1.0     | 2.0        |         | 1.0         | 2.0   |
|                                    |              |         |            |         |             |       |
| Lost Time Adjust (s)               | 0.0          | 0.0     | 0.0        |         | 0.0         | 0.0   |
| Total Lost Time (s)                | 6.0          | 4.5     | 6.0        |         | 4.5         | 6.0   |
| Lead/Lag                           |              | Lead    | Lag        |         | Lead        |       |
| Lead-Lag Optimize?                 |              | Yes     | Yes        |         | Yes         |       |
| Recall Mode                        | None         | None    | C-Min      |         | None        | C-Min |
| Act Effct Green (s)                | 10.4         |         | 119.5      | 140.0   | 5.6         | 121.6 |
| Actuated g/C Ratio                 | 0.07         |         | 0.85       | 1.00    | 0.04        | 0.87  |

Projected Morning Peak Hour 01/06/2020 21-008 Tinley Park

|                              | <            | *         | Ť        | 1         | 1          | ţ          |
|------------------------------|--------------|-----------|----------|-----------|------------|------------|
| Lane Group                   | WBL          | WBR       | NBT      | NBR       | SBL        | SBT        |
| v/c Ratio                    | 0.37         |           | 0.46     | 0.06      | 0.01       | 0.35       |
| Control Delay                | 68.7         |           | 2.1      | 0.1       | 64.5       | 2.7        |
| Queue Delay                  | 0.0          |           | 0.0      | 0.0       | 0.0        | 0.0        |
| Total Delay                  | 68.7         |           | 2.1      | 0.1       | 64.5       | 2.7        |
| LOS                          | E            |           | А        | А         | E          | А          |
| Approach Delay               | 68.7         |           | 2.0      |           |            | 2.8        |
| Approach LOS                 | E            |           | А        |           |            | А          |
| Queue Length 50th (ft)       | 43           |           | 52       | 0         | 1          | 90         |
| Queue Length 95th (ft)       | 78           |           | 83       | 0         | 5          | 116        |
| Internal Link Dist (ft)      | 1276         |           | 938      |           |            | 890        |
| Turn Bay Length (ft)         | 150          |           |          | 100       | 310        |            |
| Base Capacity (vph)          | 193          |           | 3119     | 1599      | 272        | 3113       |
| Starvation Cap Reductn       | 0            |           | 0        | 0         | 0          | 0          |
| Spillback Cap Reductn        | 0            |           | 0        | 0         | 0          | 0          |
| Storage Cap Reductn          | 0            |           | 0        | 0         | 0          | 0          |
| Reduced v/c Ratio            | 0.25         |           | 0.46     | 0.06      | 0.01       | 0.35       |
| Intersection Summary         |              |           |          |           |            |            |
| Area Type:                   | Other        |           |          |           |            |            |
| Cycle Length: 140            |              |           |          |           |            |            |
| Actuated Cycle Length: 14    |              |           |          |           |            |            |
| Offset: 109.2 (78%), Refer   | enced to pha | ise 2:NBT | Fand 6:S | BT, Start | of Green   |            |
| Natural Cycle: 55            |              |           |          |           |            |            |
| Control Type: Actuated-Co    | oordinated   |           |          |           |            |            |
| Maximum v/c Ratio: 0.46      |              |           |          |           |            |            |
| Intersection Signal Delay:   |              |           |          | In        | tersectior | LOS: A     |
| Intersection Capacity Utiliz | zation 48.0% |           |          | IC        | U Level o  | of Service |
| Analysis Period (min) 15     |              |           |          |           |            |            |
|                              |              |           |          |           |            |            |

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue

| Se 1 🖡 🕇 02 (R) |      |
|-----------------|------|
| 15.4s 103.6s    |      |
| 🛡 Ø6 (R) 🌹      | ✓Ø8  |
| 119 s           | 21 s |

| Lanes, Volumes, Timings                              |
|------------------------------------------------------|
| 2: Harlem Avenue & Benton Drive/Proposed Site Access |

03/10/2021

|                                     | ≯            | -            | $\mathbf{F}$ | 4     | +        | *    | 1           | 1            | 1            | 1           | ŧ            | ~    |
|-------------------------------------|--------------|--------------|--------------|-------|----------|------|-------------|--------------|--------------|-------------|--------------|------|
| Lane Group                          | EBL          | EBT          | EBR          | WBL   | WBT      | WBR  | NBL         | NBT          | NBR          | SBL         | SBT          | SBR  |
| Lane Configurations                 |              | \$           |              | ľ     | el<br>el |      | ľ           | <u></u>      | 1            | ľ           | A1⊅          |      |
| Traffic Volume (vph)                | 122          | 0            | 30           | 3     | 0        | 14   | 44          | 1119         | 12           | 38          | 926          | 36   |
| Future Volume (vph)                 | 122          | 0            | 30           | 3     | 0        | 14   | 44          | 1119         | 12           | 38          | 926          | 36   |
| Ideal Flow (vphpl)                  | 1900         | 1900         | 1900         | 1900  | 1900     | 1900 | 1900        | 2000         | 1900         | 1900        | 1900         | 1900 |
| Lane Width (ft)                     | 12           | 16           | 12           | 12    | 12       | 12   | 12          | 12           | 12           | 12          | 12           | 12   |
| Grade (%)                           |              | 0%           |              |       | 0%       |      |             | 0%           |              |             | 0%           |      |
| Storage Length (ft)                 | 0            |              | 0            | 0     |          | 0    | 95          |              | 215          | 150         |              | 0    |
| Storage Lanes                       | 0            |              | 0            | 1     |          | 0    | 1           |              | 1            | 1           |              | 0    |
| Taper Length (ft)                   | 0            |              |              | 0     |          |      | 160         |              |              | 100         |              |      |
| Lane Util. Factor                   | 1.00         | 1.00         | 1.00         | 1.00  | 1.00     | 1.00 | 1.00        | 0.95         | 1.00         | 1.00        | 0.95         | 0.95 |
| Ped Bike Factor                     |              |              |              |       |          |      |             |              |              |             |              |      |
| Frt                                 |              | 0.973        |              |       | 0.850    |      |             |              | 0.850        |             | 0.994        |      |
| Flt Protected                       |              | 0.961        |              | 0.950 |          |      | 0.950       |              |              | 0.950       |              |      |
| Satd. Flow (prot)                   | 0            | 1970         | 0            | 1357  | 1188     | 0    | 1687        | 3619         | 1380         | 1492        | 3455         | 0    |
| Flt Permitted                       |              | 0.758        |              | 0.729 |          |      | 0.227       |              |              | 0.179       |              |      |
| Satd. Flow (perm)                   | 0            | 1554         | 0            | 1041  | 1188     | 0    | 403         | 3619         | 1380         | 281         | 3455         | 0    |
| Right Turn on Red                   |              |              | No           |       |          | No   |             |              | No           |             |              | No   |
| Satd. Flow (RTOR)                   |              |              |              |       |          |      |             |              |              |             |              |      |
| Link Speed (mph)                    |              | 30           |              |       | 30       |      |             | 45           |              |             | 45           |      |
| Link Distance (ft)                  |              | 318          |              |       | 201      |      |             | 468          |              |             | 1401         |      |
| Travel Time (s)                     |              | 7.2          |              |       | 4.6      |      |             | 7.1          |              |             | 21.2         |      |
| Confl. Peds. (#/hr)                 |              |              |              |       |          |      |             |              |              |             |              |      |
| Confl. Bikes (#/hr)                 |              |              |              |       |          |      |             |              |              |             |              |      |
| Peak Hour Factor                    | 0.89         | 0.89         | 0.89         | 0.89  | 0.89     | 0.89 | 0.89        | 0.89         | 0.89         | 0.89        | 0.89         | 0.89 |
| Growth Factor                       | 100%         | 100%         | 100%         | 100%  | 100%     | 100% | 100%        | 100%         | 100%         | 100%        | 100%         | 100% |
| Heavy Vehicles (%)                  | 2%           | 0%           | 3%           | 33%   | 0%       | 36%  | 7%          | 5%           | 17%          | 21%         | 4%           | 0%   |
| Bus Blockages (#/hr)                | 0            | 0            | 0            | 0     | 0        | 0    | 0           | 0            | 0            | 0           | 0            | 0    |
| Parking (#/hr)                      |              | 00/          |              |       | 0.04     |      |             | 001          |              |             | 00/          |      |
| Mid-Block Traffic (%)               |              | 0%           |              |       | 0%       |      |             | 0%           |              |             | 0%           |      |
| Shared Lane Traffic (%)             | 0            | 171          | 0            | 2     | 1/       | 0    | 10          | 1057         | 10           | 40          | 1000         | 0    |
| Lane Group Flow (vph)               | 0            | 171          | 0            | 3     | 16       | 0    | 49          | 1257         | 13           | 43          | 1080         | 0    |
| Turn Type                           | Perm         | NA           |              | Perm  | NA       |      | pm+pt       | NA           | Perm         | pm+pt       | NA           |      |
| Protected Phases                    | 1            | 4            |              | 0     | 8        |      | 5           | 2            | C            | 1           | 6            |      |
| Permitted Phases                    | 4            | 4            |              | 8     | 0        |      | 2           | 2            | 2            | 6           | /            |      |
| Detector Phase                      | 4            | 4            |              | 8     | 8        |      | 5           | 2            | 2            | 1           | 6            |      |
| Switch Phase<br>Minimum Initial (s) | 8.0          | 8.0          |              | 8.0   | 8.0      |      | 2.0         | 15.0         | 15.0         | 2.0         | 15.0         |      |
| .,                                  | 14.0         | 0.0<br>14.0  |              | 14.0  | 14.0     |      | 3.0         | 15.0<br>21.0 | 15.0<br>21.0 | 3.0<br>6.5  | 21.0         |      |
| Minimum Split (s)                   | 14.0<br>54.6 | 14.0<br>54.6 |              | 54.6  | 54.6     |      | 6.5<br>12.6 | 72.8         | 72.8         | 0.5<br>12.6 | 72.8         |      |
| Total Split (s)<br>Total Split (%)  | 39.0%        | 39.0%        |              | 39.0% | 39.0%    |      | 9.0%        | 52.0%        | 52.0%        | 9.0%        | 52.0%        |      |
| Yellow Time (s)                     | 4.0          | 4.0          |              | 4.0   | 4.0      |      | 3.5         | 4.0          | 4.0          | 3.5         | 4.0          |      |
| All-Red Time (s)                    | 2.0          | 4.0          |              | 2.0   | 2.0      |      | 0.0         | 2.0          | 2.0          | 0.0         | 4.0          |      |
| Lost Time Adjust (s)                | 2.0          | 0.0          |              | 0.0   | 0.0      |      | 0.0         | 0.0          | 0.0          | 0.0         | 0.0          |      |
| Total Lost Time (s)                 |              | 6.0          |              | 6.0   | 6.0      |      | 3.5         | 6.0          | 6.0          | 3.5         | 6.0          |      |
| Lead/Lag                            |              | 0.0          |              | 0.0   | 0.0      |      | Lead        |              | Lag          | Lead        | Lag          |      |
| Lead-Lag Optimize?                  |              |              |              |       |          |      | Yes         | Lag<br>Yes   | Yes          | Yes         | Yes          |      |
| Recall Mode                         | None         | None         |              | None  | None     |      | None        | C-Min        | C-Min        | None        | C-Min        |      |
| Act Effct Green (s)                 | NULLE        | 21.9         |              | 21.9  | 21.9     |      | 105.8       | 97.9         | 97.9         | 105.8       | 97.9         |      |
| Actuated g/C Ratio                  |              | 0.16         |              | 0.16  | 0.16     |      | 0.76        | 0.70         | 0.70         | 0.76        | 97.9<br>0.70 |      |
| Actualeu y/C Kallu                  |              | 0.10         |              | 0.10  | 0.10     |      | 0.70        | 0.70         | 0.70         | 0.70        | 0.70         |      |

Projected Morning Peak Hour 01/06/2020 21-008 Tinley Park

| Lanes, Volumes, Timings                              |
|------------------------------------------------------|
| 2: Harlem Avenue & Benton Drive/Proposed Site Access |

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|------------------------------------------|-------------|-----------|--------------|-------------|------------|------------|------|------|------|------|------|-----|
| Lane Group                               | EBL         | EBT       | EBR          | WBL         | WBT        | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR |
| v/c Ratio                                |             | 0.71      |              | 0.02        | 0.09       |            | 0.13 | 0.50 | 0.01 | 0.16 | 0.45 |     |
| Control Delay                            |             | 70.9      |              | 46.0        | 48.3       |            | 3.5  | 8.2  | 5.7  | 6.4  | 11.8 |     |
| Queue Delay                              |             | 0.0       |              | 0.0         | 0.0        |            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |     |
| Total Delay                              |             | 70.9      |              | 46.0        | 48.3       |            | 3.5  | 8.2  | 5.7  | 6.4  | 11.8 |     |
| LOS                                      |             | E         |              | D           | D          |            | А    | А    | А    | А    | В    |     |
| Approach Delay                           |             | 70.9      |              |             | 47.9       |            |      | 8.0  |      |      | 11.6 |     |
| Approach LOS                             |             | E         |              |             | D          |            |      | А    |      |      | В    |     |
| Queue Length 50th (ft)                   |             | 150       |              | 2           | 13         |            | 7    | 239  | 3    | 7    | 207  |     |
| Queue Length 95th (ft)                   |             | 215       |              | 11          | 33         |            | m8   | 185  | m5   | 23   | 353  |     |
| Internal Link Dist (ft)                  |             | 238       |              |             | 121        |            |      | 388  |      |      | 1321 |     |
| Turn Bay Length (ft)                     |             |           |              |             |            |            | 95   |      | 215  | 150  |      |     |
| Base Capacity (vph)                      |             | 539       |              | 361         | 412        |            | 393  | 2531 | 965  | 294  | 2416 |     |
| Starvation Cap Reductn                   |             | 0         |              | 0           | 0          |            | 0    | 0    | 0    | 0    | 0    |     |
| Spillback Cap Reductn                    |             | 0         |              | 0           | 0          |            | 0    | 0    | 0    | 0    | 0    |     |
| Storage Cap Reductn                      |             | 0         |              | 0           | 0          |            | 0    | 0    | 0    | 0    | 0    |     |
| Reduced v/c Ratio                        |             | 0.32      |              | 0.01        | 0.04       |            | 0.12 | 0.50 | 0.01 | 0.15 | 0.45 |     |
| Intersection Summary                     |             |           |              |             |            |            |      |      |      |      |      |     |
| Ji J | )ther       |           |              |             |            |            |      |      |      |      |      |     |
| Cycle Length: 140                        |             |           |              |             |            |            |      |      |      |      |      |     |
| Actuated Cycle Length: 140               |             |           |              |             |            |            |      |      |      |      |      |     |
| Offset: 80 (57%), Referenced             | I to phase  | 2:NBTL a  | and 6:SB     | FL, Start ( | of Green   |            |      |      |      |      |      |     |
| Natural Cycle: 60                        |             |           |              |             |            |            |      |      |      |      |      |     |
| Control Type: Actuated-Coord             | dinated     |           |              |             |            |            |      |      |      |      |      |     |
| Maximum v/c Ratio: 0.71                  |             |           |              |             |            |            |      |      |      |      |      |     |
| Intersection Signal Delay: 13.           |             |           |              |             | tersectior |            |      |      |      |      |      |     |
| Intersection Capacity Utilizati          | on 61.3%    |           |              | IC          | CU Level o | of Service | В    |      |      |      |      |     |
| Analysis Period (min) 15                 |             |           |              |             |            |            |      |      |      |      |      |     |
| m Volume for 95th percenti               | le queue is | s metereo | l by upstr   | eam sign    | ial.       |            |      |      |      |      |      |     |

Splits and Phases: 2: Harlem Avenue & Benton Drive/Proposed Site Access

| ▶ø1 • • • • • • • • • • • • • • • • • • • | <i>₽</i> <sub>Ø4</sub> |
|-------------------------------------------|------------------------|
| 12.6 s 72.8 s                             | 54.6 s                 |
| ▲ ø5 🖕 ₩ø6 (R)                            | <b>₩</b> Ø8            |
| 12.6 s 72.8 s                             | 54.6 s                 |

# Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 | 10/2021 |
|------------|---------|
|------------|---------|

| T SBR<br>↑ 7<br>5 3<br>5 3<br>0 1900<br>2 12<br>%<br>215<br>1                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 3<br>5 3<br>0 1900<br>2 12<br>%<br>215                                                                                                                           |
| 5 3<br>5 3<br>0 1900<br>2 12<br>%<br>215                                                                                                                           |
| 5 3<br>0 1900<br>2 12<br>%<br>215                                                                                                                                  |
| 0 1900<br>2 12<br>%<br>215                                                                                                                                         |
| 2 12<br>%<br>215                                                                                                                                                   |
| %<br>215                                                                                                                                                           |
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| 5 1.00                                                                                                                                                             |
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| 0.850                                                                                                                                                              |
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| 4 1615                                                                                                                                                             |
|                                                                                                                                                                    |
| 4 1615                                                                                                                                                             |
| No                                                                                                                                                                 |
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| 5                                                                                                                                                                  |
| 4                                                                                                                                                                  |
| 9                                                                                                                                                                  |
|                                                                                                                                                                    |
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| 2 0.92                                                                                                                                                             |
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| A pm+ov                                                                                                                                                            |
| 6 7                                                                                                                                                                |
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| 6 7                                                                                                                                                                |
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| 0 3.0                                                                                                                                                              |
| 0 7.5                                                                                                                                                              |
| 0 12.6                                                                                                                                                             |
| % 9.0%                                                                                                                                                             |
| 5 3.5                                                                                                                                                              |
| 5 1.0                                                                                                                                                              |
| 0.0                                                                                                                                                                |
| 0 4.5                                                                                                                                                              |
|                                                                                                                                                                    |
| es Yes                                                                                                                                                             |
| n None                                                                                                                                                             |
| 1 124.8                                                                                                                                                            |
| 1 0.89                                                                                                                                                             |
| 52.<br>99)99<br>60)99<br>60,00<br>55.<br>1.<br>0,0<br>9<br>7<br>6,0<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9 |

Projected Morning Peak Hour 01/06/2020 21-008 Tinley Park

### Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 |
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|                               | ٦            | -         | $\mathbf{F}$ | ∢          | +          | •          | 1    | Ť    | 1    | 1    | ţ    | ~    |
|-------------------------------|--------------|-----------|--------------|------------|------------|------------|------|------|------|------|------|------|
| Lane Group                    | EBL          | EBT       | EBR          | WBL        | WBT        | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                     | 0.01         | 0.03      | 0.01         | 0.38       | 0.01       | 0.86       | 0.07 | 0.40 | 0.14 | 0.54 | 0.23 | 0.00 |
| Control Delay                 | 65.0         | 63.0      | 56.0         | 72.2       | 93.0       | 65.6       | 65.0 | 16.9 | 8.8  | 64.0 | 3.0  | 2.7  |
| Queue Delay                   | 0.0          | 0.0       | 0.0          | 0.0        | 0.0        | 0.0        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                   | 65.0         | 63.0      | 56.0         | 72.2       | 93.0       | 65.6       | 65.0 | 16.9 | 8.8  | 64.0 | 3.0  | 2.7  |
| LOS                           | E            | E         | E            | E          | F          | E          | E    | В    | А    | E    | А    | A    |
| Approach Delay                |              | 62.0      |              |            | 66.8       |            |      | 16.1 |      |      | 24.7 |      |
| Approach LOS                  |              | E         |              |            | E          |            |      | В    |      |      | С    |      |
| Queue Length 50th (ft)        | 1            | 3         | 1            | 39         | 1          | 384        | 4    | 194  | 38   | 180  | 21   | 0    |
| Queue Length 95th (ft)        | 7            | 13        | 6            | 73         | m7         | 265        | 14   | 355  | 108  | 0    | 70   | m1   |
| Internal Link Dist (ft)       |              | 877       |              |            | 1031       |            |      | 2633 |      |      | 774  |      |
| Turn Bay Length (ft)          | 95           |           | 100          | 235        |            |            | 225  |      | 215  | 325  |      | 215  |
| Base Capacity (vph)           | 104          | 294       | 335          | 225        | 294        | 494        | 657  | 2186 | 1128 | 725  | 2952 | 1467 |
| Starvation Cap Reductn        | 0            | 0         | 0            | 0          | 0          | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn         | 0            | 0         | 0            | 0          | 0          | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn           | 0            | 0         | 0            | 0          | 0          | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio             | 0.01         | 0.01      | 0.00         | 0.38       | 0.00       | 0.82       | 0.02 | 0.40 | 0.14 | 0.51 | 0.23 | 0.00 |
| Intersection Summary          |              |           |              |            |            |            |      |      |      |      |      |      |
| 51                            | Other        |           |              |            |            |            |      |      |      |      |      |      |
| Cycle Length: 140             |              |           |              |            |            |            |      |      |      |      |      |      |
| Actuated Cycle Length: 140    |              |           |              |            |            |            |      |      |      |      |      |      |
| Offset: 84 (60%), Reference   | ed to phase  | 2:NBT ar  | nd 6:SBT,    | Start of ( | Green      |            |      |      |      |      |      |      |
| Natural Cycle: 60             |              |           |              |            |            |            |      |      |      |      |      |      |
| Control Type: Actuated-Coc    | ordinated    |           |              |            |            |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.86       |              |           |              |            |            |            |      |      |      |      |      |      |
| Intersection Signal Delay: 2  |              |           |              |            | tersectior |            |      |      |      |      |      |      |
| Intersection Capacity Utiliza | tion 60.0%   |           |              | IC         | U Level o  | of Service | В    |      |      |      |      |      |
| Analysis Period (min) 15      |              |           |              |            |            |            |      |      |      |      |      |      |
| m Volume for 95th percen      | tile queue i | s metereo | d by upstr   | eam sign   | al.        |            |      |      |      |      |      |      |

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road

| S <sub>Ø1</sub> | ● 1 Ø2 (R) | <b>1</b> 03            | <b>™</b> Ø4                 |
|-----------------|------------|------------------------|-----------------------------|
| 30.8 s          | 70 s       | 12.6 s                 | 26.6 s                      |
| <b>\$</b> Ø5    | ♥ ♥ Ø6 (R) | <b>₽</b> <sub>Ø7</sub> | <b>4</b> <sup>∞</sup><br>Ø8 |
| 30.8 s          | 70 s       | 12.6 s                 | 26.6 s                      |

# Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

|                         |            |              | louu         |            |               | •    |            | •        |         | ,     |          |            |
|-------------------------|------------|--------------|--------------|------------|---------------|------|------------|----------|---------|-------|----------|------------|
|                         | ٭          | -            | $\mathbf{r}$ | 1          | -             | •    | 1          | Ť        | 1       | •     | Ŧ        | -          |
| Lane Group              | EBL        | EBT          | EBR          | WBL        | WBT           | WBR  | NBL        | NBT      | NBR     | SBL   | SBT      | SBR        |
| Lane Configurations     | - ካ        | - <b>†</b> Ъ |              | ሻ          | - <b>†</b> 12 |      | <u>۲</u>   | <b>↑</b> | 1       | ሻ     | <b>↑</b> | 1          |
| Traffic Volume (vph)    | 24         | 361          | 16           | 50         | 624           | 72   | 117        | 160      | 101     | 43    | 73       | 54         |
| Future Volume (vph)     | 24         | 361          | 16           | 50         | 624           | 72   | 117        | 160      | 101     | 43    | 73       | 54         |
| Ideal Flow (vphpl)      | 1900       | 1900         | 1900         | 1900       | 1900          | 1900 | 1900       | 2000     | 1900    | 1900  | 2000     | 1900       |
| Lane Width (ft)         | 12         | 12           | 12           | 12         | 12            | 12   | 12         | 12       | 12      | 12    | 12       | 12         |
| Grade (%)               |            | 0%           |              |            | 0%            |      |            | 0%       |         |       | 0%       |            |
| Storage Length (ft)     | 160        |              | 0            | 160        |               | 0    | 170        |          | 170     | 170   |          | 170        |
| Storage Lanes           | 1          |              | 0            | 2          |               | 0    | 1          |          | 1       | 1     |          | 1          |
| Taper Length (ft)       | 190        |              |              | 185        |               |      | 170        |          |         | 190   |          |            |
| Lane Util. Factor       | 1.00       | 0.95         | 0.95         | 1.00       | 0.95          | 0.95 | 1.00       | 1.00     | 1.00    | 1.00  | 1.00     | 1.00       |
| Ped Bike Factor         |            |              |              |            |               |      |            |          |         |       |          |            |
| Frt                     |            | 0.994        |              |            | 0.984         |      |            |          | 0.850   |       |          | 0.850      |
| Flt Protected           | 0.950      |              |              | 0.950      |               |      | 0.950      |          |         | 0.950 |          |            |
| Satd. Flow (prot)       | 1736       | 3424         | 0            | 1736       | 3459          | 0    | 1787       | 2000     | 1599    | 1656  | 1923     | 1509       |
| Flt Permitted           | 0.278      |              |              | 0.462      |               |      | 0.531      |          |         | 0.638 |          |            |
| Satd. Flow (perm)       | 508        | 3424         | 0            | 844        | 3459          | 0    | 999        | 2000     | 1599    | 1112  | 1923     | 1509       |
| Right Turn on Red       |            |              | No           |            |               | No   |            |          | No      |       |          | No         |
| Satd. Flow (RTOR)       |            |              |              |            |               |      |            |          |         |       |          |            |
| Link Speed (mph)        |            | 45           |              |            | 45            |      |            | 45       |         |       | 45       |            |
| Link Distance (ft)      |            | 2938         |              |            | 1976          |      |            | 2983     |         |       | 1684     |            |
| Travel Time (s)         |            | 44.5         |              |            | 29.9          |      |            | 45.2     |         |       | 25.5     |            |
| Confl. Peds. (#/hr)     |            | 11.0         |              |            | 27.7          |      |            | 10.2     |         |       | 20.0     |            |
| Confl. Bikes (#/hr)     |            |              |              |            |               |      |            |          |         |       |          |            |
| Peak Hour Factor        | 0.84       | 0.84         | 0.84         | 0.84       | 0.84          | 0.84 | 0.84       | 0.84     | 0.84    | 0.84  | 0.84     | 0.84       |
| Growth Factor           | 100%       | 100%         | 100%         | 100%       | 100%          | 100% | 100%       | 100%     | 100%    | 100%  | 100%     | 100%       |
| Heavy Vehicles (%)      | 4%         | 5%           | 0%           | 4%         | 3%            | 0%   | 1%         | 0%       | 1%      | 9%    | 4%       | 7%         |
| Bus Blockages (#/hr)    | 0          | 0            | 0            | 0          | 0             | 0    | 0          | 0        | 0       | 0     | 0        | 0          |
| Parking (#/hr)          | 0          | 0            | 0            | 0          | U             | 0    | 0          | 0        | 0       | 0     | 0        | U          |
| Mid-Block Traffic (%)   |            | 0%           |              |            | 0%            |      |            | 0%       |         |       | 0%       |            |
| Shared Lane Traffic (%) |            | 070          |              |            | 070           |      |            | 070      |         |       | 070      |            |
| Lane Group Flow (vph)   | 29         | 449          | 0            | 60         | 829           | 0    | 139        | 190      | 120     | 51    | 87       | 64         |
| Turn Type               | pm+pt      | NA           | 0            | pm+pt      | NA            | 0    | pm+pt      | NA       | Perm    | pm+pt | NA       | Perm       |
| Protected Phases        | 5          | 2            |              | 1          | 6             |      | 3          | 8        | I CIIII | 7     | 4        | I CIIII    |
| Permitted Phases        | 2          | Z            |              | 6          | 0             |      | 8          | 0        | 8       | 4     | т        | 4          |
| Detector Phase          | 5          | 2            |              | 1          | 6             |      | 3          | 8        | 8       | 7     | 4        | 4          |
| Switch Phase            | 5          | Z            |              |            | 0             |      | 5          | 0        | 0       | 1     | т        | -          |
| Minimum Initial (s)     | 3.0        | 15.0         |              | 3.0        | 15.0          |      | 3.0        | 8.0      | 8.0     | 3.0   | 8.0      | 8.0        |
| Minimum Split (s)       | 6.5        | 21.0         |              | 6.5        | 21.0          |      | 6.5        | 14.0     | 14.0    | 6.5   | 14.0     | 14.0       |
| Total Split (s)         | 15.0       | 35.0         |              | 15.0       | 35.0          |      | 15.0       | 30.0     | 30.0    | 10.0  | 25.0     | 25.0       |
| Total Split (%)         | 16.7%      | 38.9%        |              | 16.7%      | 38.9%         |      | 16.7%      | 33.3%    | 33.3%   | 11.1% | 27.8%    | 27.8%      |
| Yellow Time (s)         | 3.5        | 4.0          |              | 3.5        | 4.0           |      | 3.5        | 4.0      | 4.0     | 3.5   | 4.0      | 4.0        |
| All-Red Time (s)        | 3.5<br>0.0 | 4.0          |              | 3.5<br>0.0 | 4.0           |      | 3.5<br>0.0 | 4.0      | 4.0     | 0.0   | 4.0      | 4.0        |
| Lost Time Adjust (s)    | 0.0        | 0.0          |              | 0.0        | 0.0           |      | 0.0        | 0.0      | 2.0     | 0.0   | 2.0      | 2.0<br>0.0 |
| Total Lost Time (s)     | 0.0<br>3.5 | 6.0          |              | 3.5        | 6.0           |      | 3.5        | 6.0      | 6.0     | 3.5   | 6.0      | 6.0        |
|                         |            |              |              |            |               |      |            |          |         |       |          |            |
| Lead/Lag                | Lead       | Lag          |              | Lead       | Lag           |      | Lead       | Lag      | Lag     | Lead  | Lag      | Lag        |
| Lead-Lag Optimize?      | Yes        | Yes          |              | Yes        | Yes           |      | Yes        | Yes      | Yes     | Yes   | Yes      | Yes        |
| Recall Mode             | None       | None         |              | None       | None          |      | None       | None     | None    | None  | None     | None       |
| Act Effct Green (s)     | 32.8       | 26.7         |              | 34.3       | 29.1          |      | 22.4       | 14.7     | 14.7    | 17.6  | 10.2     | 10.2       |
| Actuated g/C Ratio      | 0.50       | 0.41         |              | 0.53       | 0.45          |      | 0.34       | 0.23     | 0.23    | 0.27  | 0.16     | 0.16       |

Projected Morning Peak Hour 01/06/2020 21-008 Tinley Park

### Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

| 03/10/2021 | 03/1 | 0/2021 |
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|-------------------------------|-------------|------|--------------|------|-------------|------------|------|------|------|------|------|------|
| Lane Group                    | EBL         | EBT  | EBR          | WBL  | WBT         | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                     | 0.08        | 0.32 |              | 0.11 | 0.54        |            | 0.31 | 0.42 | 0.33 | 0.14 | 0.29 | 0.27 |
| Control Delay                 | 9.0         | 16.5 |              | 9.1  | 17.0        |            | 17.9 | 27.8 | 27.5 | 16.7 | 30.8 | 31.4 |
| Queue Delay                   | 0.0         | 0.0  |              | 0.0  | 0.0         |            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                   | 9.0         | 16.5 |              | 9.1  | 17.0        |            | 17.9 | 27.8 | 27.5 | 16.7 | 30.8 | 31.4 |
| LOS                           | А           | В    |              | А    | В           |            | В    | С    | С    | В    | С    | С    |
| Approach Delay                |             | 16.0 |              |      | 16.5        |            |      | 24.6 |      |      | 27.5 |      |
| Approach LOS                  |             | В    |              |      | В           |            |      | С    |      |      | С    |      |
| Queue Length 50th (ft)        | 5           | 73   |              | 11   | 113         |            | 36   | 68   | 42   | 13   | 31   | 23   |
| Queue Length 95th (ft)        | 17          | 115  |              | 29   | 218         |            | 80   | 132  | 91   | 36   | 75   | 60   |
| Internal Link Dist (ft)       |             | 2858 |              |      | 1896        |            |      | 2903 |      |      | 1604 |      |
| Turn Bay Length (ft)          | 160         |      |              | 160  |             |            | 170  |      | 170  | 170  |      | 170  |
| Base Capacity (vph)           | 501         | 1604 |              | 621  | 1652        |            | 497  | 775  | 620  | 359  | 590  | 463  |
| Starvation Cap Reductn        | 0           | 0    |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn         | 0           | 0    |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn           | 0           | 0    |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio             | 0.06        | 0.28 |              | 0.10 | 0.50        |            | 0.28 | 0.25 | 0.19 | 0.14 | 0.15 | 0.14 |
| Intersection Summary          |             |      |              |      |             |            |      |      |      |      |      |      |
| Area Type:                    | Other       |      |              |      |             |            |      |      |      |      |      |      |
| Cycle Length: 90              |             |      |              |      |             |            |      |      |      |      |      |      |
| Actuated Cycle Length: 65.    | 1           |      |              |      |             |            |      |      |      |      |      |      |
| Natural Cycle: 50             |             |      |              |      |             |            |      |      |      |      |      |      |
| Control Type: Actuated-Unc    | coordinated |      |              |      |             |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.54       |             |      |              |      |             |            |      |      |      |      |      |      |
| Intersection Signal Delay: 1  |             |      |              |      | tersectior  |            |      |      |      |      |      |      |
| Intersection Capacity Utiliza | ation 52.7% |      |              | IC   | CU Level of | of Service | A    |      |      |      |      |      |
| Analysis Period (min) 15      |             |      |              |      |             |            |      |      |      |      |      |      |

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road

| Ø1   | <u>→</u> <sub>Ø2</sub> | <b>▲</b> Ø3 | <b>♦</b> Ø4 |
|------|------------------------|-------------|-------------|
| 15 s | 35 s                   | 15 s        | 25 s        |
|      | ₩<br>Ø6                | <b>1</b> 07 | 08          |
| 15 s | 35 s                   | 10 s 30 s   |             |

## Lanes, Volumes, Timings 5: Proposed Full Access & Vollmer Road

|                         | ٨        |           | ~     |       | +        | ×.      | •        | +     | *    | 6     | T     |      |
|-------------------------|----------|-----------|-------|-------|----------|---------|----------|-------|------|-------|-------|------|
|                         | _        |           |       |       |          |         | ۱<br>NDI |       | /    |       |       |      |
| Lane Group              | EBL      | EBT       | EBR   | WBL   | WBT      | WBR     | NBL      | NBT   | NBR  | SBL   | SBT   | SBR  |
| Lane Configurations     | <u> </u> | <b>††</b> | 1     | 100   | <b>^</b> | 1       | ሻሻ       | •     | 0    | 11    | •     | 2    |
| Traffic Volume (vph)    | 5        | 403       | 80    | 193   | 447      | 27      | 4        | 0     | 8    | 11    | 0     | 3    |
| Future Volume (vph)     | 5        | 403       | 80    | 193   | 447      | 27      | 4        | 0     | 8    | 11    | 0     | 3    |
| Ideal Flow (vphpl)      | 1900     | 2000      | 1900  | 1900  | 2000     | 1900    | 1900     | 1900  | 1900 | 1900  | 1900  | 1900 |
| Lane Width (ft)         | 12       | 12        | 12    | 12    | 12       | 12      | 12       | 12    | 12   | 12    | 12    | 12   |
| Grade (%)               |          | 0%        |       |       | 0%       |         | -        | 0%    |      | -     | 0%    |      |
| Storage Length (ft)     | 215      |           | 215   | 215   |          | 215     | 0        |       | 0    | 0     |       | 0    |
| Storage Lanes           | 1        |           | 1     | 1     |          | 1       | 2        |       | 0    | 1     |       | 0    |
| Taper Length (ft)       | 220      |           |       | 220   |          |         | 25       |       |      | 25    |       |      |
| Lane Util. Factor       | 1.00     | 0.95      | 1.00  | 1.00  | 0.95     | 1.00    | 0.97     | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Ped Bike Factor         |          |           |       |       |          |         |          |       |      |       |       |      |
| Frt                     |          |           | 0.850 |       |          | 0.850   |          | 0.850 |      |       | 0.850 |      |
| Flt Protected           | 0.950    |           |       | 0.950 |          |         | 0.950    |       |      | 0.950 |       |      |
| Satd. Flow (prot)       | 1805     | 3654      | 1615  | 1805  | 3654     | 1282    | 3502     | 1615  | 0    | 1530  | 1615  | 0    |
| Flt Permitted           | 0.482    |           |       | 0.488 |          |         | 0.950    |       |      | 0.950 |       |      |
| Satd. Flow (perm)       | 916      | 3654      | 1615  | 927   | 3654     | 1282    | 3502     | 1615  | 0    | 1530  | 1615  | 0    |
| Right Turn on Red       |          |           | No    |       |          | No      |          |       | No   |       |       | No   |
| Satd. Flow (RTOR)       |          |           |       |       |          |         |          |       |      |       |       |      |
| Link Speed (mph)        |          | 45        |       |       | 45       |         |          | 30    |      |       | 30    |      |
| Link Distance (ft)      |          | 1111      |       |       | 1210     |         |          | 387   |      |       | 373   |      |
| Travel Time (s)         |          | 16.8      |       |       | 18.3     |         |          | 8.8   |      |       | 8.5   |      |
| Confl. Peds. (#/hr)     |          |           |       |       |          |         |          |       |      |       |       |      |
| Confl. Bikes (#/hr)     |          |           |       |       |          |         |          |       |      |       |       |      |
| Peak Hour Factor        | 0.92     | 0.95      | 0.95  | 0.95  | 0.95     | 0.92    | 0.95     | 0.92  | 0.95 | 0.92  | 0.92  | 0.92 |
| Growth Factor           | 100%     | 100%      | 100%  | 100%  | 100%     | 100%    | 100%     | 100%  | 100% | 100%  | 100%  | 100% |
| Heavy Vehicles (%)      | 0%       | 4%        | 0%    | 0%    | 4%       | 26%     | 0%       | 0%    | 0%   | 18%   | 0%    | 0%   |
| Bus Blockages (#/hr)    | 0        | 0         | 0     | 0     | 0        | 0       | 0        | 0     | 0    | 0     | 0     | 0    |
| Parking (#/hr)          | -        | -         | -     | -     | -        | -       | -        | -     | -    | -     | -     |      |
| Mid-Block Traffic (%)   |          | 0%        |       |       | 0%       |         |          | 0%    |      |       | 0%    |      |
| Shared Lane Traffic (%) |          | 0,0       |       |       | 070      |         |          | 070   |      |       | 070   |      |
| Lane Group Flow (vph)   | 5        | 424       | 84    | 203   | 471      | 29      | 4        | 8     | 0    | 12    | 3     | 0    |
| Turn Type               | pm+pt    | NA        | Perm  | pm+pt | NA       | Perm    | Prot     | NA    | Ū    | Prot  | NĂ    | Ű    |
| Protected Phases        | 5        | 2         | 1 Onn | 1     | 6        | 1 OIIII | 3        | 8     |      | 7     | 4     |      |
| Permitted Phases        | 2        | 2         | 2     | 6     | 0        | 6       | 5        | 0     |      | 1     | Т     |      |
| Detector Phase          | 5        | 2         | 2     | 1     | 6        | 6       | 3        | 8     |      | 7     | 4     |      |
| Switch Phase            | 5        | 2         | 2     |       | 0        | 0       | 5        | 0     |      | ,     | т.    |      |
| Minimum Initial (s)     | 5.0      | 15.0      | 15.0  | 3.0   | 15.0     | 15.0    | 3.0      | 8.0   |      | 3.0   | 8.0   |      |
| Minimum Split (s)       | 9.5      | 21.0      | 21.0  | 6.5   | 21.0     | 21.0    | 7.5      | 14.0  |      | 7.5   | 14.0  |      |
| Total Split (s)         | 38.0     | 70.0      | 70.0  | 38.0  | 70.0     | 70.0    | 10.0     | 22.0  |      | 10.0  | 22.0  |      |
| Total Split (%)         | 27.1%    | 50.0%     | 50.0% | 27.1% | 50.0%    | 50.0%   | 7.1%     | 15.7% |      | 7.1%  | 15.7% |      |
|                         | 3.5      |           |       |       |          |         | 3.5      | 4.0   |      | 3.5   | 4.0   |      |
| Yellow Time (s)         |          | 4.0       | 4.0   | 3.5   | 4.0      | 4.0     |          |       |      |       |       |      |
| All-Red Time (s)        | 1.0      | 2.0       | 2.0   | 0.0   | 2.0      | 2.0     | 1.0      | 2.0   |      | 1.0   | 2.0   |      |
| Lost Time Adjust (s)    | 0.0      | 0.0       | 0.0   | 0.0   | 0.0      | 0.0     | 0.0      | 0.0   |      | 0.0   | 0.0   |      |
| Total Lost Time (s)     | 4.5      | 6.0       | 6.0   | 3.5   | 6.0      | 6.0     | 4.5      | 6.0   |      | 4.5   | 6.0   |      |
| Lead/Lag                | Lead     | Lag       | Lag   | Lead  | Lag      | Lag     | Lead     | Lag   |      | Lead  | Lag   |      |
| Lead-Lag Optimize?      | Yes      | Yes       | Yes   | Yes   | Yes      | Yes     | Yes      | Yes   |      | Yes   | Yes   |      |
| Recall Mode             | None     | C-Min     | C-Min | None  | C-Min    | C-Min   | None     | None  |      | None  | None  | _    |
| Act Effct Green (s)     | 118.6    | 111.5     | 111.5 | 128.2 | 127.2    | 127.2   | 5.7      | 8.1   |      | 7.2   | 8.6   |      |
| Actuated g/C Ratio      | 0.85     | 0.80      | 0.80  | 0.92  | 0.91     | 0.91    | 0.04     | 0.06  |      | 0.05  | 0.06  |      |

Projected Morning Peak Hour 01/06/2020 21-008 Tinley Park

## Lanes, Volumes, Timings 5: Proposed Full Access & Vollmer Road

| 03/10/2021 | 03/1 | 0/2021 |
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|------------|------|--------|

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|-------------------------------|--------------|-----------|--------------|-----------|-------------|------------|------|------|-----|------|------|-----|
| Lane Group                    | EBL          | EBT       | EBR          | WBL       | WBT         | WBR        | NBL  | NBT  | NBR | SBL  | SBT  | SBR |
| v/c Ratio                     | 0.01         | 0.15      | 0.07         | 0.22      | 0.14        | 0.02       | 0.03 | 0.09 |     | 0.15 | 0.03 |     |
| Control Delay                 | 0.8          | 1.4       | 1.6          | 2.2       | 2.4         | 3.5        | 64.8 | 64.5 |     | 67.1 | 61.7 |     |
| Queue Delay                   | 0.0          | 0.0       | 0.0          | 0.0       | 0.0         | 0.0        | 0.0  | 0.0  |     | 0.0  | 0.0  |     |
| Total Delay                   | 0.8          | 1.4       | 1.6          | 2.2       | 2.4         | 3.5        | 64.8 | 64.5 |     | 67.1 | 61.7 |     |
| LOS                           | А            | А         | А            | А         | А           | А          | E    | E    |     | E    | E    |     |
| Approach Delay                |              | 1.4       |              |           | 2.4         |            |      | 64.6 |     |      | 66.0 |     |
| Approach LOS                  |              | А         |              |           | А           |            |      | E    |     |      | E    |     |
| Queue Length 50th (ft)        | 0            | 7         | 3            | 0         | 0           | 0          | 2    | 7    |     | 11   | 3    |     |
| Queue Length 95th (ft)        | m1           | 26        | 14           | 61        | 78          | 17         | 8    | 26   |     | 33   | 13   |     |
| Internal Link Dist (ft)       |              | 1031      |              |           | 1130        |            |      | 307  |     |      | 293  |     |
| Turn Bay Length (ft)          | 215          |           | 215          | 215       |             | 215        |      |      |     |      |      |     |
| Base Capacity (vph)           | 1044         | 2909      | 1285         | 1065      | 3320        | 1165       | 142  | 184  |     | 78   | 184  |     |
| Starvation Cap Reductn        | 0            | 0         | 0            | 0         | 0           | 0          | 0    | 0    |     | 0    | 0    |     |
| Spillback Cap Reductn         | 0            | 0         | 0            | 0         | 0           | 0          | 0    | 0    |     | 0    | 0    |     |
| Storage Cap Reductn           | 0            | 0         | 0            | 0         | 0           | 0          | 0    | 0    |     | 0    | 0    |     |
| Reduced v/c Ratio             | 0.00         | 0.15      | 0.07         | 0.19      | 0.14        | 0.02       | 0.03 | 0.04 |     | 0.15 | 0.02 |     |
| Intersection Summary          |              |           |              |           |             |            |      |      |     |      |      |     |
| Area Type:                    | Other        |           |              |           |             |            |      |      |     |      |      |     |
| Cycle Length: 140             |              |           |              |           |             |            |      |      |     |      |      |     |
| Actuated Cycle Length: 140    |              |           |              |           |             |            |      |      |     |      |      |     |
| Offset: 105 (75%), Reference  | ed to phas   | e 2:EBTL  | and 6:W      | BTL, Star | t of Gree   | n          |      |      |     |      |      |     |
| Natural Cycle: 55             |              |           |              |           |             |            |      |      |     |      |      |     |
| Control Type: Actuated-Coo    | rdinated     |           |              |           |             |            |      |      |     |      |      |     |
| Maximum v/c Ratio: 0.22       |              |           |              |           |             |            |      |      |     |      |      |     |
| Intersection Signal Delay: 3. |              |           |              |           | tersection  |            |      |      |     |      |      |     |
| Intersection Capacity Utiliza | tion 43.8%   |           |              | IC        | CU Level of | of Service | А    |      |     |      |      |     |
| Analysis Period (min) 15      |              |           |              |           |             |            |      |      |     |      |      |     |
| m Volume for 95th percen      | tile queue i | s metered | d by upstr   | eam sign  | al.         |            |      |      |     |      |      |     |

Splits and Phases: 5: Proposed Full Access & Vollmer Road

| <b>√</b> Ø1 | 🚽 🛟 Ø2 (R) | <b>★</b> Ø3 ↓ Ø4 |
|-------------|------------|------------------|
| 38 s        | 70 s       | 10 s 22 s        |
|             | ● ♥ Ø6 (R) | ►ø7 <b>†</b> ø8  |
| 38 s        | 70 s       | 10 s 22 s        |

| Lane Conigurations         FBT         EBR         WBL         WBT         NBL         NBR           Lane Configurations         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑ <td< th=""></td<>                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lane Configurations         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓         ↓                                                                                                                                                                                 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Future Volume (vph)         389         33         135         660         7         12           Ideal Flow (vphpl)         2000         1900         1900         1900         1900           Lane Width (ft)         12         12         12         12         12         12           Grade (%)         0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Ideal Flow (vphpl)         2000         1900         1900         2000         1900         1900           Lane Width (tt)         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12<                                                                                                                          |
| Lane Width (ft)         12         12         12         12         12         12         12           Grade (%)         0%         0%         0%         0%         0%           Storage Length (ft)         215         215         0         0           Storage Lanes         1         1         1         1         1           Taper Length (ft)         220         25         -         -         -           Lane Util, Factor         0.95         1.00         1.00         0.95         -         0.850           Fit         Fret         0.950         0.950         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -                                                                                                                                                                           |
| Grade (%)         0%         0%         0%           Storage Length (ft)         215         215         0         0           Storage Lanes         1         1         1         1         1           Taper Length (ft)         220         25         25           Lane Util. Factor         0.95         1.00         0.95         1.00           Ped Bike Factor         0.950         0.950         0.850           Fit Protected         0.951         3689         1150         1077           Stat. Flow (prot)         3689         1442         935         3689         150         1077           Right Turn on Red         No         No         No         Satd. Flow (perm)         3689         1442         935         3689         1150         1077           Right Turn on Red         No         No         Satd. Flow (RTOR)         Satd. Flow (RTOR)         Satd. Flow (RTO                                          |
| Storage Length (ft)         215         215         0         0           Storage Lanes         1         1         1         1         1           Taper Length (ft)         220         25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Storage Lanes         1         1         1         1           Taper Length (ft)         220         25           Lane Util. Factor         0.95         1.00         1.00         0.95         1.00           Ped Bike Factor         0.950         0.950         0.950         0.950           Satd. Flow (prot)         3689         1442         1736         3689         1150         1077           Fil Protected         0.950         0.950         0.950         0.950         0.950           Satd. Flow (port)         3689         1442         935         3689         1150         1077           Right Turn on Red         No         No         No         No         No         No           Satd. Flow (RTOR)         111         2938         579         Travel Time (s)         18.3         44.5         13.2           Confl. Peds. (#/hr)         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0         0           Park Hour F                                                                                                               |
| Taper Length (ft)         220         25           Lane Util. Factor         0.95         1.00         1.00         0.95         1.00         1.00           Ped Bike Factor         0.950         0.950         0.850         0.850           Fit Protected         0.950         0.950         0.950         0.850           Satd. Flow (prot)         3689         1442         1736         3689         1150         1077           Rith Permitted         0.512         0.950         0.850         0.52         0.53         3689         1150         1077           Right Turn on Red         No         No         Satd. Flow (RTOR)         No         Satd. Flow (RTOR)         No         Satd. Flow (RTOR)         No         Satd. Flow (RTOR)         Confl. Neds. (#/hr)         13.2         Confl. Peds. (#/hr)         Confl. Neds. (#/hr)         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%                                       |
| Lane Util. Factor         0.95         1.00         1.00         0.95         1.00         1.00           Ped Bike Factor         0.850         0.850         0.850           Fit         0.850         0.950         0.950           Satd. Flow (prot)         3689         1442         1736         3689         1150         1077           Rip Fremitted         0.512         0.950         0.950         0.950         0.950           Satd. Flow (perm)         3689         1442         935         3689         1150         1077           Right Turn on Red         No          No         No         Satd. Flow (RTOR)         Satd. Flow (RTOR)         No         Satd. Flow (RTOR)         Satd. Flow (RTOR)         Satd. Flow (RTOR) |
| Ped Bike Factor         0.850         0.850           Frt         0.850         0.950         0.950           Satd. Flow (prot)         3689         1442         1736         3689         1150         1077           Filt Permitted         0.512         0.950         0.950         0.950         0.950           Satd. Flow (perm)         3689         1442         935         3689         1150         1077           Right Turn on Red         No         No         Satd. Flow (RTOR)         No         Satd. Flow (RTOR)         1017           Link Speed (mph)         45         45         30         1007           Travel Time (s)         18.3         44.5         13.2         1007           Confl. Bikes (#/hr)         2038         579         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%                                                                                |
| Frt         0.850         0.850           Flt Protected         0.950         0.950           Satd. Flow (prot)         3689         1442         1736         3689         1150         1077           Flt Permitted         0.512         0.950         0.950         0.950         0.950           Satd. Flow (perm)         3689         1442         935         3689         1150         1077           Right Turn on Red         No         0.512         0.950         No           Satd. Flow (RTOR)         1210         2938         579         17742           Link Speed (mph)         45         45.5         30         1007           Travel Time (s)         18.3         44.5         13.2         1007           Confl. Peds. (#/hr)         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0           Parking (#/hr)         0 <t< td=""></t<>                                                                                                              |
| Filt Protected         0.950         0.950           Satd. Flow (prot)         3689         1442         1736         3689         1150         1077           Filt Permitted         0.512         0.950         0.950         0.950         0.950           Satd. Flow (perm)         3689         1442         935         3689         1150         1077           Right Turn on Red         No         No         No         No         No           Satd. Flow (RTOR)         1210         2938         579         Travel Time (s)         18.3         44.5         13.2         Confl. Bikes (#/hr)           Confl. Bikes (#/hr)         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         <                                                           |
| Satd. Flow (prot)         3689         1442         1736         3689         1150         1077           Flt Permitted         0.512         0.950         0.950         0.950         0.950         0.950           Satd. Flow (perm)         3689         1442         935         3689         1150         1077           Right Turn on Red         No         No         No         No         Satd. Flow (RTOR)         1170         2938         579           Link Distance (ft)         1210         2938         579         1150         1077           Groffl. Peds. (#/hr)         200         18.3         44.5         13.2         1006           Confl. Bikes (#/hr)         0         0.95         0.95         0.95         0.95         0.95           Growth Factor         0.95         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0 <td< td=""></td<>                                                                                     |
| Fit Permitted         0.512         0.950           Satd. Flow (perm)         3689         1442         935         3689         1150         1077           Right Turn on Red         No         No         No         No         No           Satd. Flow (RTOR)         1210         2938         579         Travel Time (s)         18.3         44.5         13.2           Confl. Peds. (#/hr)         Confl. Bikes (#/hr)         2938         579         50.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95 <t< td=""></t<>                                               |
| Satd. Flow (perm)         3689         1442         935         3689         1150         1077           Right Turn on Red         No         No         No           Satd. Flow (RTOR)         45         45         30           Link Distance (ft)         1210         2938         579           Travel Time (s)         18.3         44.5         13.2           Confl. Peds. (#/hr)         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0           Parking (#/hr)         0         0         0         0         0         0           Mid-Block Traffic (%)         0%         0%         0%         0%         0%         Stared Lane Traffic (%)         13.1           Lane Group Flow (vph)         409         35         142         695         7         13           Turn Type         NA         pm+ov         pm+pt         NA                                                                                                                             |
| Right Turn on Red         No         No           Satd. Flow (RTOR)         Link Speed (mph)         45         45         30           Link Distance (ft)         1210         2938         579           Travel Time (s)         18.3         44.5         13.2           Confl. Peds. (#/hr)         0.95         0.95         0.95         0.95         0.95           Growth Factor         0.95         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0           Parking (#/hr)         0         0         0         0         0         0           Lane Group Flow (vph)         409         35         142         695         7         13           Turn Type         NA         pm+ov         pm+pt         NA         Prot         pm+ov           Protected Phases         2         8         1         6         8         1 </td                                                                                                                               |
| Right Turn on Red         No         No           Satd. Flow (RTOR)         Link Speed (mph)         45         45         30           Link Distance (ft)         1210         2938         579           Travel Time (s)         18.3         44.5         13.2           Confl. Peds. (#/hr)         0         0.95         0.95         0.95         0.95           Growth Factor         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0           Parking (#/hr)         0         0         0         0         0         0           Lane Group Flow (vph)         409         35         142         695         7         13           Turn Type         NA         pm+ov         pm+pt         NA         Prot         pm+ov           Proteted Phases         2         8         1         6         8         1           Permitted Phases                                                                                                                                       |
| Satd. Flow (RTOR)           Link Speed (mph)         45         45         30           Link Distance (ft)         1210         2938         579           Travel Time (s)         18.3         44.5         13.2           Confl. Peds. (#/hr)         0         0.95         0.95         0.95         0.95         0.95           Growth Factor         0.05         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0           Mid-Block Traffic (%)         0%         0%         0%         0%         Stared Lane Traffic (%)         0%         0%         Stared Lane Traffic (%)         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0                                                                                                                     |
| Link Speed (mph)         45         45         30           Link Distance (ft)         1210         2938         579           Travel Time (s)         18.3         44.5         13.2           Confl. Peds. (#/hr)           13.2           Confl. Bikes (#/hr)          0.95         0.95         0.95         0.95           Peak Hour Factor         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0           Mid-Block Traffic (%)         0%         0%         0%         0%         Stared Lane Traffic (%)         0%         0%         Stared Lane Traffic (%)         0%         Menvo         Prot         pm+ov           Protected Phases         2         8         1         6         8         1           Permitted Phases         2         8         1         6         8         1           Switch Phase         15.0                                                                                                                                               |
| Link Distance (ft)         1210         2938         579           Travel Time (s)         18.3         44.5         13.2           Confl. Peds. (#/hr)         Confl. Bikes (#/hr)         50.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95                                                    |
| Travel Time (s)       18.3       44.5       13.2         Confl. Peds. (#/hr)       Confl. Bikes (#/hr)       5       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       0.95       13.0 <t< td=""></t<>                                                                                                                       |
| Confl. Peds. (#/hr)           Confl. Bikes (#/hr)           Peak Hour Factor         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         3%         12%         4%         3%         57%         50%           Bus Blockages (#/hr)         0         0         0         0         0         0           Parking (#/hr)         0         0         0         0         0         0         0           Mid-Block Traffic (%)         0%         0%         0%         0%         0%         0%           Lane Group Flow (vph)         409         35         142         695         7         13           Turn Type         NA         pm+ov         pm+pt         NA         Prot         pm+ov           Protected Phases         2         8         1         6         8         1           Permitted Phases         2         8         1         6         8         1           Switch Phase         11.0         14.0         6.5         21.0         14.0         6.5 <t< td=""></t<>                                                                                                                                       |
| Confl. Bikes (#/hr)         Peak Hour Factor       0.95       0.95       0.95       0.95       0.95         Growth Factor       100%       100%       100%       100%       100%       100%         Heavy Vehicles (%)       3%       12%       4%       3%       57%       50%         Bus Blockages (#/hr)       0       0       0       0       0       0         Parking (#/hr)       0       0%       0%       0%       0%         Mid-Block Traffic (%)       0%       0%       0%       0%         Lane Group Flow (vph)       409       35       142       695       7       13         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Switch Phase       79.0       31.0       30.0       15.0       8.0       3.0         Minimum Initial (s)       15.0       8.0       3.0       14.0                                                                                                                                                                                                                                  |
| Peak Hour Factor         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95                                               |
| Growth Factor100%100%100%100%100%100%Heavy Vehicles (%)3%12%4%3%57%50%Bus Blockages (#/hr)000000Parking (#/hr)0%0%0%0%0%Mid-Block Traffic (%)0%0%0%0%Lane Group Flow (vph)40935142695713Turn TypeNApm+ovpm+ptNAProtpm+ovProtected Phases281681Permitted Phases281681Switch Phase281681Switch Phase21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.00.00.0Lost Time Adjust (s)0.00.00.00.00.00.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Heavy Vehicles (%)3%12%4%3%57%50%Bus Blockages (#/hr)000000Parking (#/hr)0%0%0%0%0%Mid-Block Traffic (%)0%0%0%0%Shared Lane Traffic (%)0%0%0%0%Lane Group Flow (vph)40935142695713Turn TypeNApm+ovpm+ptNAProtpm+ovProtected Phases281681Permitted Phases281681Switch Phase281681Switch Phase21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.00.00.00.00.00.0Total Lost Time Adjust (s)0.00.00.00.00.00.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Bus Blockages (#/hr)         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0                                                                                                                                                                                |
| Parking (#/hr)       Mid-Block Traffic (%)       0%       0%       0%         Mid-Block Traffic (%)       0%       0%       0%       0%         Shared Lane Traffic (%)       409       35       142       695       7       13         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Switch Phase       21.0       14.0       6.5       21.0       14.0       6.5         Total Split (s)       79.0       31.0       30.0       109.0       31.0       30.0         Total Split (%)       56.4%       22.1%       21.4%       77.9%       22.1%       21.4%         Yellow Time (s)       4.0       4.0       3.5       4.0       4.0       3.5         All-Red Time (s)       2.0       0.0       0.0       0.0       0.0       0.0 </td                                                                                                                                                                                                              |
| Mid-Block Traffic (%)0%0%0%Shared Lane Traffic (%)40935142695713Lane Group Flow (vph)40935142695713Turn TypeNApm+ovpm+ptNAProtpm+ovProtected Phases281681Permitted Phases281681Detector Phase281681Switch Phase281681Switch Phase283.015.08.03.0Minimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.00.00.00.00.00.0Lost Time Adjust (s)0.00.00.00.00.00.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Shared Lane Traffic (%)         Lane Group Flow (vph)       409       35       142       695       7       13         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Detector Phase       2       8       1       6       8       1         Switch Phase       2       8       3.0       15.0       8.0       3.0       3.0         Minimum Initial (s)       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Split (s)       79.0       31.0       30.0       109.0       31.0       30.0         Total Split (s)       79.0       31.0       30.0       109.0       31.0       3.5         All-Red Time (s)       4.0       4.0       3.5       4.0       4.0       3.5         All-Red Time (s)       2.0       0.0       0.0       0.0       0.0       0.0       0.0                                                                                                                                                                                                                               |
| Lane Group Flow (vph)40935142695713Turn TypeNApm+ovpm+ptNAProtpm+ovProtected Phases281681Permitted Phases281681Detector Phase281681Switch Phase281681Switch Phase281681Minimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.00.00.00.0Lost Time Adjust (s)6.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Turn TypeNApm+ovpm+ptNAProtpm+ovProtected Phases281681Permitted Phases2688Detector Phase281681Switch Phase281681Switch Phase281681Minimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.00.00.00.00.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Protected Phases         2         8         1         6         8         1           Permitted Phases         2         6         8         1         6         8         1           Detector Phase         2         8         1         6         8         1           Switch Phase         2         8         1         6         8         1           Minimum Initial (s)         15.0         8.0         3.0         15.0         8.0         3.0           Minimum Split (s)         21.0         14.0         6.5         21.0         14.0         6.5           Total Split (s)         79.0         31.0         30.0         109.0         31.0         30.0           Total Split (%)         56.4%         22.1%         21.4%         77.9%         22.1%         21.4%           Yellow Time (s)         4.0         4.0         3.5         4.0         4.0         3.5           All-Red Time (s)         2.0         2.0         0.0         2.0         2.0         0.0           Lost Time Adjust (s)         0.0         0.0         0.0         0.0         0.0         3.5           Hotal Lost Time (s)         6.0         6                                                                                                                                  |
| Permitted Phases268Detector Phase281681Switch Phase58.03.015.08.03.0Minimum Initial (s)15.08.03.015.08.03.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.00.00.00.00.03.5All Lost Time (s)6.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Detector Phase281681Switch PhaseMinimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Detector Phase281681Switch PhaseMinimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.00.00.0Lost Time Adjust (s)0.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Switch PhaseMinimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Minimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.00.00.00.03.5All-Rot Time (s)6.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Minimum Split (s)21.014.06.521.014.06.5Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.00.00.00.00.03.5Total Lost Time (s)6.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Total Split (s)79.031.030.0109.031.030.0Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Total Split (%)56.4%22.1%21.4%77.9%22.1%21.4%Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.00.00.00.00.00.0Total Lost Time (s)6.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Yellow Time (s)4.04.03.54.04.03.5All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.00.00.00.00.00.0Total Lost Time (s)6.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| All-Red Time (s)2.02.00.02.02.00.0Lost Time Adjust (s)0.00.00.00.00.00.0Total Lost Time (s)6.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Lost Time Adjust (s)0.00.00.00.00.0Total Lost Time (s)6.06.03.56.06.03.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Total Lost Time (s) 6.0 6.0 3.5 6.0 6.0 3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Lead/Lag Lead Lag Lag                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Lead-Lag Optimize? Yes Yes Yes Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Recall Mode C-Min None None C-Min None None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Act Effct Green (s) 111.3 122.7 125.0 123.7 8.3 19.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Actuated g/C Ratio 0.80 0.88 0.89 0.88 0.06 0.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

Projected Morning Peak Hour 01/06/2020 21-008 Tinley Park

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -            | $\mathbf{r}$ | 4        | -         | 1         | 1          |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|----------|-----------|-----------|------------|--|--|--|--|--|
| Lane Group                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EBT          | EBR          | WBL      | WBT       | NBL       | NBR        |  |  |  |  |  |
| v/c Ratio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.14         | 0.03         | 0.16     | 0.21      | 0.10      | 0.09       |  |  |  |  |  |
| Control Delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.2          | 0.4          | 1.7      | 1.7       | 65.6      | 50.0       |  |  |  |  |  |
| Queue Delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0          | 0.0          | 0.0      | 0.0       | 0.0       | 0.0        |  |  |  |  |  |
| Total Delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1.2          | 0.4          | 1.7      | 1.7       | 65.6      | 50.0       |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | А            | А            | А        | А         |           | D          |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1.1          |              |          | 1.7       | 55.5      |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | А            |              |          |           | E         |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | 1            |          |           | 6         |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | 2            | 22       |           |           | 30         |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1130         |              |          | 2858      | 499       |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0001         |              |          | 00/0      | 0.05      |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |              |          |           |           |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |              |          |           |           |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -            |              | -        | -         | -         |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |              |          |           |           |            |  |  |  |  |  |
| Reduced v/c Ratio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.14         | 0.03         | 0.13     | 0.21      | 0.03      | 0.06       |  |  |  |  |  |
| Intersection Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |              |          |           |           |            |  |  |  |  |  |
| Area Type:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Other        |              |          |           |           |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |              |          |           |           |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |              |          |           |           |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ced to phase | e 2:EBT a    | and 6:WB | TL, Start | of Green  |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |              |          |           |           |            |  |  |  |  |  |
| 31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ordinated    |              |          |           |           |            |  |  |  |  |  |
| Total Delay       1.2       0.4       1.7       1.7       65.6       50.0         LOS       A       A       A       A       E       D         Approach Delay       1.1       1.7       55.5         Approach LOS       A       A       E         Queue Length 50th (ft)       13       1       12       43       6       10         Queue Length 95th (ft)       15       2       22       59       23       30         Internal Link Dist (ft)       1130       2858       499       9         Turn Bay Length (ft)       215       215       5         Base Capacity (vph)       2931       1264       1080       3260       205       204         Starvation Cap Reductn       0       0       0       0       0       0       0         Storage Cap Reductn       0       0       0       0       0       0       0         Reduced v/c Ratio       0.14       0.03       0.13       0.21       0.03       0.06         Intersection Summary                                                                                                                                                                                                         |              |              |          |           |           |            |  |  |  |  |  |
| Queue Delay         0.0         0.0         0.0         0.0         0.0         0.0           Total Delay         1.2         0.4         1.7         1.7         65.6         50.0           LOS         A         A         A         A         E         D           Approach Delay         1.1         1.7         55.5         Approach LOS         A         E         D           Queue Length 50th (ft)         13         1         12         43         6         10           Queue Length 95th (ft)         15         2         22         59         23         30           Internal Link Dist (ft)         1130         2858         499         1         100         2858         499           Turn Bay Length (ft)         215         215         Ease Capacity (vph)         2931         1264         1080         3260         205         204           Starvation Cap Reductn         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 |              |              |          |           |           |            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ation 40.0%  |              |          | IC        | U Level c | of Service |  |  |  |  |  |
| Analysis Period (min) 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |              |          |           |           |            |  |  |  |  |  |

Splits and Phases: 6: Proposed Truck Access & Vollmer Road

| ₩ 102 (R)  | <b>€</b> Ø1 |               |
|------------|-------------|---------------|
| 79 s       | 30 s        |               |
| 🗸 🖉 Ø6 (R) |             | <b>\$</b> ∕Ø8 |
| 109 s      |             | 31 s          |

| Intersection |
|--------------|
|--------------|

| Int Delay, s/veh       | 2.7   |      |           |          |               |      |
|------------------------|-------|------|-----------|----------|---------------|------|
| Movement               | EBL   | EBR  | NBL       | NBT      | SBT           | SBR  |
| Lane Configurations    | 1     | 1    | <u>ار</u> | <b>^</b> | - <b>†</b> 1- |      |
| Traffic Vol, veh/h     | 94    | 47   | 87        | 1174     | 840           | 93   |
| Future Vol, veh/h      | 94    | 47   | 87        | 1174     | 840           | 93   |
| Conflicting Peds, #/hr | 0     | 0    | 0         | 0        | 0             | 0    |
| Sign Control           | Stop  | Stop | Free      | Free     | Free          | Free |
| RT Channelized         | -     | None | -         | None     | -             | None |
| Storage Length         | 70    | 0    | 210       | -        | -             | -    |
| Veh in Median Storage  | , # 1 | -    | -         | 0        | 0             | -    |
| Grade, %               | 0     | -    | -         | 0        | 0             | -    |
| Peak Hour Factor       | 96    | 96   | 96        | 96       | 96            | 96   |
| Heavy Vehicles, %      | 0     | 0    | 18        | 4        | 6             | 0    |
| Mvmt Flow              | 98    | 49   | 91        | 1223     | 875           | 97   |

| Major/Minor          | Minor2 | Ν     | /lajor1 | M       | ajor2 |     |     |      | <br> |   |
|----------------------|--------|-------|---------|---------|-------|-----|-----|------|------|---|
| Conflicting Flow All | 1718   | 486   | 972     | 0       | -     | 0   |     |      |      |   |
| Stage 1              | 924    | -     | -       | -       | -     | -   |     |      |      |   |
| Stage 2              | 794    | -     | -       | -       | -     | -   |     |      |      |   |
| Critical Hdwy        | 6.8    | 6.9   | 4.46    | -       | -     | -   |     |      |      |   |
| Critical Hdwy Stg 1  | 5.8    | -     | -       | -       | -     | -   |     |      |      |   |
| Critical Hdwy Stg 2  | 5.8    | -     | -       | -       | -     | -   |     |      |      |   |
| Follow-up Hdwy       | 3.5    | 3.3   | 2.38    | -       | -     | -   |     |      |      |   |
| Pot Cap-1 Maneuver   | ~ 82   | 533   | 615     | -       | -     | -   |     |      |      |   |
| Stage 1              | 352    | -     | -       | -       | -     | -   |     |      |      |   |
| Stage 2              | 411    | -     | -       | -       | -     | -   |     |      |      |   |
| Platoon blocked, %   |        |       |         | -       | -     | -   |     |      |      |   |
| Mov Cap-1 Maneuver   |        | 533   | 615     | -       | -     | -   |     |      |      |   |
| Mov Cap-2 Maneuver   |        | -     | -       | -       | -     | -   |     |      |      |   |
| Stage 1              | 300    | -     | -       | -       | -     | -   |     |      |      |   |
| Stage 2              | 411    | -     | -       | -       | -     | -   |     |      |      |   |
|                      |        |       |         |         |       |     |     |      |      |   |
| Approach             | EB     |       | NB      |         | SB    |     |     | <br> | <br> |   |
| HCM Control Delay, s | 37.5   |       | 0.8     |         | 0     |     |     |      |      |   |
| HCM LOS              | E      |       |         |         |       |     |     |      |      |   |
|                      |        |       |         |         |       |     |     |      |      |   |
| Minor Lane/Major Mvi | mt     | NBL   | NBT I   | EBLn1 E | BLn2  | SBT | SBR |      |      |   |
| Capacity (veh/h)     |        | 615   | -       | 173     | 533   | -   | -   |      |      |   |
| HCM Lane V/C Ratio   |        | 0.147 | -       | 0.566 ( | 0.092 | -   | -   |      |      |   |
| HCM Control Delay (s | 5)     | 11.9  | -       | 50      | 12.4  | -   | -   |      |      |   |
| HCM Lane LOS         |        | В     | -       | F       | В     | -   | -   |      |      |   |
| HCM 95th %tile Q(vel | h)     | 0.5   | -       | 3       | 0.3   | -   | -   |      |      |   |
| Notes                |        |       |         |         |       |     |     |      |      |   |
|                      |        |       |         |         |       |     |     |      |      | _ |

\$: Delay exceeds 300s +: Computation Not Defined \*: All major volume in platoon ~: Volume exceeds capacity

Int Delay, s/veh

0.5

| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT         | NBR  | SBL  | SBT      | SBR  |  |
|------------------------|------|------|------|------|------|------|------|-------------|------|------|----------|------|--|
| Lane Configurations    |      |      | 1    |      |      | 1    |      | <b>∱</b> î≽ |      |      | <b>^</b> | 1    |  |
| Traffic Vol, veh/h     | 0    | 0    | 82   | 0    | 0    | 2    | 0    | 1259        | 7    | 0    | 851      | 36   |  |
| Future Vol, veh/h      | 0    | 0    | 82   | 0    | 0    | 2    | 0    | 1259        | 7    | 0    | 851      | 36   |  |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0           | 0    | 0    | 0        | 0    |  |
| Sign Control           | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free        | Free | Free | Free     | Free |  |
| RT Channelized         | -    | -    | Stop | -    | -    | Stop | -    | -           | Free | -    | -        | Free |  |
| Storage Length         | -    | -    | 0    | -    | -    | 0    | -    | -           | -    | -    | -        | 120  |  |
| Veh in Median Storage, | ,# - | 0    | -    | -    | 0    | -    | -    | 0           | -    | -    | 0        | -    |  |
| Grade, %               | -    | 0    | -    | -    | 0    | -    | -    | 0           | -    | -    | 0        | -    |  |
| Peak Hour Factor       | 94   | 94   | 94   | 94   | 94   | 94   | 94   | 94          | 94   | 94   | 94       | 94   |  |
| Heavy Vehicles, %      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 5           | 0    | 0    | 8        | 0    |  |
| Mvmt Flow              | 0    | 0    | 87   | 0    | 0    | 2    | 0    | 1339        | 7    | 0    | 905      | 38   |  |

| Major/Minor          | Minor2 |       | Ν           | 1inor1 |     | N   | lajor1 |   | M | ajor2 |   |   |  |
|----------------------|--------|-------|-------------|--------|-----|-----|--------|---|---|-------|---|---|--|
| Conflicting Flow All | -      | -     | 453         | -      | -   | 670 | -      | 0 | - | -     | - | 0 |  |
| Stage 1              | -      | -     | -           | -      | -   | -   | -      | - | - | -     | - | - |  |
| Stage 2              | -      | -     | -           | -      | -   | -   | -      | - | - | -     | - | - |  |
| Critical Hdwy        | -      | -     | 6.9         | -      | -   | 6.9 | -      | - | - | -     | - | - |  |
| Critical Hdwy Stg 1  | -      | -     | -           | -      | -   | -   | -      | - | - | -     | - | - |  |
| Critical Hdwy Stg 2  | -      | -     | -           | -      | -   | -   | -      | - | - | -     | - | - |  |
| Follow-up Hdwy       | -      | -     | 3.3         | -      | -   | 3.3 | -      | - | - | -     | - | - |  |
| Pot Cap-1 Maneuver   | 0      | 0     | 55 <b>9</b> | 0      | 0   | 404 | 0      | - | 0 | 0     | - | 0 |  |
| Stage 1              | 0      | 0     | -           | 0      | 0   | -   | 0      | - | 0 | 0     | - | 0 |  |
| Stage 2              | 0      | 0     | -           | 0      | 0   | -   | 0      | - | 0 | 0     | - | 0 |  |
| Platoon blocked, %   |        |       |             |        |     |     |        | - |   |       | - |   |  |
| Mov Cap-1 Maneuver   |        | -     | 55 <b>9</b> | -      | -   | 404 | -      | - | - | -     | - | - |  |
| Mov Cap-2 Maneuver   | -      | -     | -           | -      | -   | -   | -      | - | - | -     | - | - |  |
| Stage 1              | -      | -     | -           | -      | -   | -   | -      | - | - | -     | - | - |  |
| Stage 2              | -      | -     | -           | -      | -   | -   | -      | - | - | -     | - | - |  |
|                      |        |       |             |        |     |     |        |   |   |       |   |   |  |
| Approach             | EB     |       |             | WB     |     |     | NB     |   |   | SB    |   |   |  |
| HCM Control Delay, s | 12.6   |       |             | 14     |     |     | 0      |   |   | 0     |   |   |  |
| HCM LOS              | В      |       |             | В      |     |     |        |   |   |       |   |   |  |
|                      |        |       |             |        |     |     |        |   |   |       |   |   |  |
| Minor Lane/Major Mvr | nt     | NBT E | EBLn1W      | /BLn1  | SBT |     |        |   |   |       |   |   |  |
|                      |        |       | 550         | 10.1   |     |     |        |   |   |       |   |   |  |

| Capacity (veh/h)      | - 559   | 404   | - |  |
|-----------------------|---------|-------|---|--|
| HCM Lane V/C Ratio    | - 0.156 | 0.005 | - |  |
| HCM Control Delay (s) | - 12.6  | 14    | - |  |
| HCM Lane LOS          | - B     | В     | - |  |
| HCM 95th %tile Q(veh) | - 0.6   | 0     | - |  |

Int Delay, s/veh

2.4

| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL      | NBT      | NBR  | SBL  | SBT         | SBR  |  |
|------------------------|------|------|------|------|------|------|----------|----------|------|------|-------------|------|--|
| Lane Configurations    |      | 4    |      | ۲.   | ¢Î,  |      | <u> </u> | <b>^</b> | 1    | ٦    | <b>≜</b> †₽ |      |  |
| Traffic Vol, veh/h     | 46   | 0    | 107  | 3    | 0    | 5    | 22       | 1215     | 18   | 29   | 890         | 14   |  |
| Future Vol, veh/h      | 46   | 0    | 107  | 3    | 0    | 5    | 22       | 1215     | 18   | 29   | 890         | 14   |  |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0    | 0    | 0        | 0        | 0    | 0    | 0           | 0    |  |
| Sign Control           | Stop | Stop | Stop | Stop | Stop | Stop | Free     | Free     | Free | Free | Free        | Free |  |
| RT Channelized         | -    | -    | None | -    | -    | None | -        | -        | None | -    | -           | None |  |
| Storage Length         | -    | -    | -    | 0    | -    | -    | 215      | -        | 215  | 200  | -           | -    |  |
| Veh in Median Storage, | # -  | 1    | -    | -    | 1    | -    | -        | 0        | -    | -    | 0           | -    |  |
| Grade, %               | -    | 0    | -    | -    | 0    | -    | -        | 0        | -    | -    | 0           | -    |  |
| Peak Hour Factor       | 94   | 94   | 94   | 94   | 94   | 94   | 94       | 94       | 94   | 94   | 94          | 94   |  |
| Heavy Vehicles, %      | 17   | 0    | 0    | 0    | 0    | 0    | 0        | 5        | 22   | 21   | 5           | 0    |  |
| Mvmt Flow              | 49   | 0    | 114  | 3    | 0    | 5    | 23       | 1293     | 19   | 31   | 947         | 15   |  |

| Major/Minor          | Minor2 |       | N   | Ainor1  |        | ſ      | Major1 |       | Ν          | /lajor2  |         |   |      |  |
|----------------------|--------|-------|-----|---------|--------|--------|--------|-------|------------|----------|---------|---|------|--|
| Conflicting Flow All | 1710   | 2375  | 481 | 1875    | 2363   | 647    | 962    | 0     | 0          | 1312     | 0       | 0 |      |  |
| Stage 1              | 1017   | 1017  | -   | 1339    | 1339   | -      | -      | -     | -          | -        | -       | - |      |  |
| Stage 2              | 693    | 1358  | -   | 536     | 1024   | -      | -      | -     | -          | -        | -       | - |      |  |
| Critical Hdwy        | 7.84   | 6.5   | 6.9 | 7.5     | 6.5    | 6.9    | 4.1    | -     | -          | 4.52     | -       | - |      |  |
| Critical Hdwy Stg 1  | 6.84   | 5.5   | -   | 6.5     | 5.5    | -      | -      | -     | -          | -        | -       | - |      |  |
| Critical Hdwy Stg 2  | 6.84   | 5.5   | -   | 6.5     | 5.5    | -      | -      | -     | -          | -        | -       | - |      |  |
| Follow-up Hdwy       | 3.67   | 4     | 3.3 | 3.5     | 4      | 3.3    | 2.2    | -     | -          | 2.41     | -       | - |      |  |
| Pot Cap-1 Maneuver   | 50     | 35    | 537 | 45      | 36     | 418    | 724    | -     | -          | 432      | -       | - |      |  |
| Stage 1              | 228    | 318   | -   | 164     | 224    | -      | -      | -     | -          | -        | -       | - |      |  |
| Stage 2              | 367    | 219   | -   | 501     | 315    | -      | -      | -     | -          | -        | -       | - |      |  |
| Platoon blocked, %   |        |       |     |         |        |        |        | -     | -          |          | -       | - |      |  |
| Mov Cap-1 Maneuver   |        | 31    | 537 | 33      | 32     | 418    | 724    | -     | -          | 432      | -       | - |      |  |
| Mov Cap-2 Maneuver   |        | 116   | -   | 112     | 124    | -      | -      | -     | -          | -        | -       | - |      |  |
| Stage 1              | 221    | 295   | -   | 159     | 217    | -      | -      | -     | -          | -        | -       | - |      |  |
| Stage 2              | 351    | 212   | -   | 366     | 292    | -      | -      | -     | -          | -        | -       | - |      |  |
|                      |        |       |     |         |        |        |        |       |            |          |         |   |      |  |
| Approach             | EB     |       |     | WB      |        |        | NB     |       |            | SB       |         |   |      |  |
| HCM Control Delay, s | 32.2   |       |     | 22.9    |        |        | 0.2    |       |            | 0.4      |         |   |      |  |
| HCM LOS              | D      |       |     | С       |        |        |        |       |            |          |         |   |      |  |
|                      |        |       |     |         |        |        |        |       |            |          |         |   |      |  |
| Minor Lane/Major Mvr | nt     | NBL   | NBT | NBR I   | EBLn1V | VBLn1V | VBLn2  | SBL   | SBT        | SBR      |         |   |      |  |
| Capacity (veh/h)     |        | 724   | -   | -       | 290    | 112    | 418    | 432   | -          | -        |         |   |      |  |
| HCM Lane V/C Ratio   |        | 0.032 | -   | -       | 0.561  | 0.028  | 0.013  | 0.071 | -          | -        |         |   |      |  |
| HCM Control Delay (s | )      | 10.1  | -   | -       | 32.2   | 38.1   | 13.7   | 14    | -          | -        |         |   |      |  |
| HCM Lane LOS         |        | В     | -   | -       | D      | E      | В      | В     | -          | -        |         |   |      |  |
| HCM 95th %tile Q(veh | ו)     | 0.1   | -   | -       | 3.2    | 0.1    | 0      | 0.2   | -          | -        |         |   |      |  |
| Notes                |        |       |     |         |        |        |        |       |            |          |         |   |      |  |
|                      |        | ¢ D.  | 1   | anda Ju | 0.0.   | 0      |        | Not D | <i>c</i> 1 | * ^ !! . | malarya |   | <br> |  |

-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined \*: All major volume in platoon

## Capacity Analysis Summary Sheets Total Projected Weekday Evening Peak Hour Conditions

|                         | *        | ۰.    | 1          | 1     | 1           | ţ            |
|-------------------------|----------|-------|------------|-------|-------------|--------------|
| Lane Group              | WBL      | WBR   | NBT        | NBR   | SBL         | SBT          |
| Lane Configurations     | <u> </u> | 11    | <b>†</b> † | 1011  | <u></u>     | <b>^</b>     |
| Traffic Volume (vph)    | 147      | 12    | 1196       | 132   | 3           | 1748         |
| Future Volume (vph)     | 147      | 12    | 1196       | 132   | 3           | 1748         |
| Ideal Flow (vphpl)      | 1900     | 1900  | 2000       | 1900  | 1900        | 2000         |
| Lane Width (ft)         | 1700     | 1900  | 12         | 1300  | 1700        | 12           |
| Grade (%)               | 0%       | 12    | 0%         | 12    | 12          | 0%           |
| Storage Length (ft)     | 150      | 0     | 070        | 100   | 310         | 070          |
| Storage Lanes           | 150      | 2     |            | 100   | 2           |              |
| Taper Length (ft)       | 150      | Z     |            | I     | 235         |              |
| Lane Util. Factor       |          | 0.00  | 0.05       | 1.00  | 235<br>0.97 | 0.95         |
|                         | 1.00     | 0.88  | 0.95       | 1.00  | 0.97        | 0.95         |
| Ped Bike Factor         |          |       |            |       |             |              |
| Frt<br>Elt Droto etc.d  | 0.050    | 0.850 |            | 0.850 | 0.050       |              |
| Flt Protected           | 0.950    | 00.46 | 0/10       | 4500  | 0.950       | 0 ( 00       |
| Satd. Flow (prot)       | 1787     | 2842  | 3619       | 1599  | 3502        | 3689         |
| Flt Permitted           | 0.950    |       |            |       | 0.950       |              |
| Satd. Flow (perm)       | 1787     | 2842  | 3619       | 1599  | 3502        | 3689         |
| Right Turn on Red       |          | No    |            | No    |             |              |
| Satd. Flow (RTOR)       |          |       |            |       |             |              |
| Link Speed (mph)        | 50       |       | 45         |       |             | 45           |
| Link Distance (ft)      | 1356     |       | 1018       |       |             | 970          |
| Travel Time (s)         | 18.5     |       | 15.4       |       |             | 14.7         |
| Confl. Peds. (#/hr)     |          |       |            |       |             |              |
| Confl. Bikes (#/hr)     |          |       |            |       |             |              |
| Peak Hour Factor        | 0.95     | 0.95  | 0.95       | 0.95  | 0.95        | 0.95         |
| Growth Factor           | 100%     | 100%  | 100%       | 100%  | 100%        | 100%         |
| Heavy Vehicles (%)      | 1%       | 0%    | 5%         | 1%    | 0%          | 3%           |
| Bus Blockages (#/hr)    | 0        | 0 /8  | 0          | 0     | 070         | 3 <i>1</i> 0 |
|                         | U        | U     | U          | U     | U           | U            |
| Parking (#/hr)          | 00/      |       | 00/        |       |             | 00/          |
| Mid-Block Traffic (%)   | 0%       |       | 0%         |       |             | 0%           |
| Shared Lane Traffic (%) | 465      | 40    | 1050       | 400   | 0           | 10.40        |
| Lane Group Flow (vph)   | 155      | 13    | 1259       | 139   | 3           | 1840         |
| Turn Type               | Prot     | pm+ov | NA         | Free  | Prot        | NA           |
| Protected Phases        | 8        | 1     | 2          |       | 1           | 6            |
| Permitted Phases        |          | 8     |            | Free  |             |              |
| Detector Phase          | 8        | 1     | 2          |       | 1           | 6            |
| Switch Phase            |          |       |            |       |             |              |
| Minimum Initial (s)     | 8.0      | 3.0   | 15.0       |       | 3.0         | 15.0         |
| Minimum Split (s)       | 14.0     | 7.5   | 21.0       |       | 7.5         | 21.0         |
| Total Split (s)         | 30.0     | 15.0  | 105.0      |       | 15.0        | 120.0        |
| Total Split (%)         | 20.0%    | 10.0% | 70.0%      |       | 10.0%       | 80.0%        |
| Yellow Time (s)         | 4.0      | 3.5   | 4.0        |       | 3.5         | 4.0          |
| All-Red Time (s)        | 2.0      | 1.0   | 2.0        |       | 1.0         | 2.0          |
| Lost Time Adjust (s)    | 0.0      | 0.0   | 0.0        |       | 0.0         | 0.0          |
|                         |          |       |            |       |             |              |
| Total Lost Time (s)     | 6.0      | 4.5   | 6.0        |       | 4.5         | 6.0          |
| Lead/Lag                |          | Lead  | Lag        |       | Lead        |              |
| Lead-Lag Optimize?      |          | Yes   | Yes        |       | Yes         | 0.1.1        |
| Recall Mode             | None     | None  | C-Min      |       | None        | C-Min        |
| Act Effct Green (s)     | 18.9     | 30.5  | 115.0      | 150.0 | 5.7         | 119.1        |
| Actuated g/C Ratio      | 0.13     | 0.20  | 0.77       | 1.00  | 0.04        | 0.79         |

Projected Evening Peak Hour 01/06/2020 21-008 Tinley Park

|                               | •            | •         | 1        | 1         | 1          | Ļ          |
|-------------------------------|--------------|-----------|----------|-----------|------------|------------|
| Lane Group                    | WBL          | WBR       | NBT      | NBR       | SBL        | SBT        |
| v/c Ratio                     | 0.69         | 0.02      | 0.45     | 0.09      | 0.02       | 0.63       |
| Control Delay                 | 78.3         | 45.4      | 5.5      | 0.1       | 69.7       | 7.9        |
| Queue Delay                   | 0.0          | 0.0       | 0.0      | 0.0       | 0.0        | 0.0        |
| Total Delay                   | 78.3         | 45.4      | 5.5      | 0.1       | 69.7       | 7.9        |
| LOS                           | E            | D         | А        | А         | E          | А          |
| Approach Delay                | 75.8         |           | 4.9      |           |            | 8.0        |
| Approach LOS                  | E            |           | А        |           |            | А          |
| Queue Length 50th (ft)        | 147          | 5         | 154      | 0         | 1          | 338        |
| Queue Length 95th (ft)        | 220          | 16        | 123      | 0         | 7          | 462        |
| Internal Link Dist (ft)       | 1276         |           | 938      |           |            | 890        |
| Turn Bay Length (ft)          | 150          |           |          | 100       | 310        |            |
| Base Capacity (vph)           | 285          | 670       | 2774     | 1599      | 245        | 2930       |
| Starvation Cap Reductn        | 0            | 0         | 0        | 0         | 0          | 0          |
| Spillback Cap Reductn         | 0            | 0         | 0        | 0         | 0          | 0          |
| Storage Cap Reductn           | 0            | 0         | 0        | 0         | 0          | 0          |
| Reduced v/c Ratio             | 0.54         | 0.02      | 0.45     | 0.09      | 0.01       | 0.63       |
| Intersection Summary          |              |           |          |           |            |            |
|                               | Other        |           |          |           |            |            |
| Cycle Length: 150             |              |           |          |           |            |            |
| Actuated Cycle Length: 150    |              |           |          |           |            |            |
| Offset: 145.5 (97%), Refere   | enced to pha | ase 2:NBT | Fand 6:S | BT, Start | of Green   |            |
| Natural Cycle: 55             |              |           |          |           |            |            |
| Control Type: Actuated-Coc    | ordinated    |           |          |           |            |            |
| Maximum v/c Ratio: 0.69       |              |           |          |           |            |            |
| Intersection Signal Delay: 1  |              |           |          |           | tersectior |            |
| Intersection Capacity Utiliza | ation 64.0%  |           |          | IC        | U Level o  | of Service |
| Analysis Period (min) 15      |              |           |          |           |            |            |

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



| Lanes, Volumes, Timings                              |
|------------------------------------------------------|
| 2: Harlem Avenue & Benton Drive/Proposed Site Access |

03/10/2021

| Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SBT SBF   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Lane Configurations 🚓 🎽 🍺 🎽 🛉                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | At≱       |
| Traffic Volume (vph) 109 0 32 13 0 42 73 1140 3 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1718 136  |
| Future Volume (vph) 109 0 32 13 0 42 73 1140 3 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1718 136  |
| Ideal Flow (vphpl) 1900 1900 1900 1900 1900 1900 1900 2000 1900 19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1900 1900 |
| Lane Width (ft) 12 16 12 12 12 12 12 12 12 12 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 12 12     |
| Grade (%) 0% 0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0%        |
| Storage Length (ft) 0 0 0 0 95 215 150                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | (         |
| Storage Lanes 0 0 1 0 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | (         |
| Taper Length (ft) 0 0 160 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |
| Lane Util. Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 1.00 1.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.95 0.95 |
| Ped Bike Factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |           |
| Frt 0.969 0.850 0.850                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.989     |
| Flt Protected 0.963 0.950 0.950 0.950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |
| Satd. Flow (prot) 0 1994 0 1378 1233 0 1787 3654 1214 1467                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 3474 (    |
| Flt Permitted 0.741 0.718 0.037 0.171                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |           |
| Satd. Flow (perm) 0 1534 0 1041 1233 0 70 3654 1214 264                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3474 (    |
| Right Turn on Red No No No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No        |
| Satd. Flow (RTOR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |
| Link Speed (mph) 30 30 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45        |
| Link Distance (ft) 318 660 468                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1401      |
| Travel Time (s) 7.2 15.0 7.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 21.2      |
| Confl. Peds. (#/hr)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |
| Confl. Bikes (#/hr)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |
| Peak Hour Factor         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84         0.84 | 0.84 0.84 |
| Growth Factor 100% 100% 100% 100% 100% 100% 100% 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 100% 100% |
| Heavy Vehicles (%) 1% 0% 0% 31% 0% 31% 1% 4% 33% 23%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3% 0%     |
| Bus Blockages (#/hr) 0 0 0 0 0 0 0 0 0 0 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 (       |
| Parking (#/hr)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |
| Mid-Block Traffic (%) 0% 0% 0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0%        |
| Shared Lane Traffic (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |
| Lane Group Flow (vph) 0 168 0 15 50 0 87 1357 4 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2207 (    |
| Turn Type Perm NA Perm NA pm+pt NA Perm pm+pt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NA        |
| Protected Phases 4 8 5 2 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 6         |
| Permitted Phases 4 8 2 2 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |
| Detector Phase         4         4         8         8         5         2         2         1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6         |
| Switch Phase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |
| Minimum Initial (s)         8.0         8.0         8.0         8.0         3.0         15.0         15.0         3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 15.0      |
| Minimum Split (s) 14.0 14.0 14.0 14.0 6.5 21.0 21.0 6.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 21.0      |
| Total Split (s)         47.0         47.0         47.0         47.0         19.0         84.0         84.0         19.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 84.0      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 56.0%     |
| Yellow Time (s)         4.0         4.0         4.0         3.5         4.0         3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.0       |
| All-Red Time (s)2.02.02.02.00.02.02.00.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2.0       |
| Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.0       |
| Total Lost Time (s)         6.0         6.0         6.0         3.5         6.0         6.0         3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 6.0       |
| Lead/Lag Lead Lag Lead                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Lag       |
| Lead-Lag Optimize? Yes Yes Yes Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes       |
| Recall Mode None None None None C-Min C-Min None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | C-Min     |
| Act Effct Green (s)         22.7         22.7         22.7         117.7         111.4         112.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 103.7     |
| Actuated g/C Ratio         0.15         0.15         0.78         0.74         0.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.69      |

Projected Evening Peak Hour 01/06/2020 21-008 Tinley Park

| Lanes, Volumes, Timings                              |
|------------------------------------------------------|
| 2: Harlem Avenue & Benton Drive/Proposed Site Access |

03/10/2021

|                                | ٦             | -        | $\mathbf{F}$ | ∢          | -          | *          | •    | 1    | 1    | 1    | ŧ     | ~   |
|--------------------------------|---------------|----------|--------------|------------|------------|------------|------|------|------|------|-------|-----|
| Lane Group                     | EBL           | EBT      | EBR          | WBL        | WBT        | WBR        | NBL  | NBT  | NBR  | SBL  | SBT   | SBR |
| v/c Ratio                      |               | 0.72     |              | 0.10       | 0.27       |            | 0.59 | 0.50 | 0.00 | 0.06 | 0.92  |     |
| Control Delay                  |               | 77.7     |              | 52.9       | 57.8       |            | 42.3 | 5.4  | 6.7  | 7.2  | 30.5  |     |
| Queue Delay                    |               | 0.0      |              | 0.0        | 0.0        |            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   |     |
| Total Delay                    |               | 77.7     |              | 52.9       | 57.8       |            | 42.3 | 5.4  | 6.7  | 7.2  | 30.5  |     |
| LOS                            |               | E        |              | D          | E          |            | D    | А    | А    | А    | С     |     |
| Approach Delay                 |               | 77.7     |              |            | 56.7       |            |      | 7.6  |      |      | 30.4  |     |
| Approach LOS                   |               | E        |              |            | E          |            |      | А    |      |      | С     |     |
| Queue Length 50th (ft)         |               | 159      |              | 13         | 44         |            | 37   | 88   | 0    | 3    | 823   |     |
| Queue Length 95th (ft)         |               | 211      |              | 32         | 76         |            | m72  | 212  | m1   | m9   | #1170 |     |
| Internal Link Dist (ft)        |               | 238      |              |            | 580        |            |      | 388  |      |      | 1321  |     |
| Turn Bay Length (ft)           |               |          |              |            |            |            | 95   |      | 215  | 150  |       |     |
| Base Capacity (vph)            |               | 419      |              | 284        | 337        |            | 232  | 2713 | 901  | 331  | 2402  |     |
| Starvation Cap Reductn         |               | 0        |              | 0          | 0          |            | 0    | 0    | 0    | 0    | 0     |     |
| Spillback Cap Reductn          |               | 0        |              | 0          | 0          |            | 0    | 0    | 0    | 0    | 0     |     |
| Storage Cap Reductn            |               | 0        |              | 0          | 0          |            | 0    | 0    | 0    | 0    | 0     |     |
| Reduced v/c Ratio              |               | 0.40     |              | 0.05       | 0.15       |            | 0.38 | 0.50 | 0.00 | 0.05 | 0.92  |     |
| Intersection Summary           |               |          |              |            |            |            |      |      |      |      |       |     |
|                                | Other         |          |              |            |            |            |      |      |      |      |       |     |
| Cycle Length: 150              |               |          |              |            |            |            |      |      |      |      |       |     |
| Actuated Cycle Length: 150     |               |          |              |            |            |            |      |      |      |      |       |     |
| Offset: 116 (77%), Reference   | ed to phase   | 2:NBTL   | and 6:SE     | BTL, Start | t of Green | ו          |      |      |      |      |       |     |
| Natural Cycle: 90              |               |          |              |            |            |            |      |      |      |      |       |     |
| Control Type: Actuated-Cool    | rdinated      |          |              |            |            |            |      |      |      |      |       |     |
| Maximum v/c Ratio: 0.92        |               |          |              |            |            |            |      |      |      |      |       |     |
| Intersection Signal Delay: 24  |               |          |              |            | tersectior |            |      |      |      |      |       |     |
| Intersection Capacity Utilizat | tion 83.9%    |          |              | IC         | U Level o  | of Service | E    |      |      |      |       |     |
| Analysis Period (min) 15       |               |          |              |            |            |            |      |      |      |      |       |     |
| # 95th percentile volume e     |               |          | eue may      | be longer  | ·          |            |      |      |      |      |       |     |
| Queue shown is maximul         |               |          |              |            |            |            |      |      |      |      |       |     |
| m Volume for 95th percent      | tile queue is | meterec  | l by upstr   | eam sign   | al.        |            |      |      |      |      |       |     |
| Splits and Phases: 2: Harl     | lem Avenue    | R. Ronto | n Drivo/E    | Pronosod   | Sito Acco  | 100        |      |      |      |      |       |     |
| Spiils and Fliases. Z. Hall    | ICHI AVEIIUE  |          |              | roposeu    | JILE ALLE  | :33        |      |      |      |      |       |     |

| Ø1   | ■ ¶ø2 (R) | <u></u>     |
|------|-----------|-------------|
| 19 s | 84 s      | 47 s        |
| ▲ ø5 | ■ ₩Ø6 (R) | <b>₩</b> Ø8 |
| 19 s | 84 s      | 47 s        |

## Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 |
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| Lane Group         EBL         EBT         EBR         WBL         WBT         WBR         NBL         NBT         NBR         SBL         SB           Lane Configurations         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑ <t< th=""><th>10<br/>10<br/>1900</th></t<> | 10<br>10<br>1900 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Traffic Volume (vph)13129233164832072092627112Future Volume (vph)13129233164832072092627112Ideal Flow (vphpl)1900200019002000190019002000190019002000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10<br>10<br>1900 |
| Traffic Volume (vph)13129233164832072092627112Future Volume (vph)13129233164832072092627112Ideal Flow (vphpl)1900200019002000190019002000190019002000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10<br>10<br>1900 |
| Future Volume (vph)13129233164832072092627112Ideal Flow (vphpl)1900200019001900200019001900200019002000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1900             |
| Ideal Flow (vphpl) 1900 2000 1900 1900 2000 1900 1900 2000 1900 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |
| Lane Width (ft) 12 12 12 12 12 12 12 12 12 12 12 12 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |
| Grade (%) 0% 0% 0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |
| Storage Length (ft) 95 100 235 0 225 215 325                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 215              |
| Storage Lanes 1 1 2 1 2 1 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                |
| Taper Length (ft) 135 220 300 300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |
| Lane Util. Factor 1.00 1.00 1.00 0.97 1.00 1.00 0.97 0.95 1.00 0.97 0.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1.00             |
| Ped Bike Factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |
| Frt 0.850 0.850 0.850                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.850            |
| Flt Protected 0.950 0.950 0.950 0.950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  |
| Satd. Flow (prot) 1805 2000 1615 3433 2000 1599 3502 3585 1583 3467 365                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1615             |
| Flt Permitted 0.950 0.950 0.950 0.950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  |
| Satd. Flow (perm) 1805 2000 1615 3433 2000 1599 3502 3585 1583 3467 365                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1615             |
| Right Turn on Red No No No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | No               |
| Satd. Flow (RTOR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |
| Link Speed (mph) 30 45 45 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |
| Link Distance (ft) 957 1311 2713 85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |
| Travel Time (s) 21.8 19.9 41.1 12.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |
| Confl. Peds. (#/hr)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |
| Confl. Bikes (#/hr)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                  |
| Peak Hour Factor 0.83 0.83 0.83 0.83 0.83 0.83 0.83 0.83                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.83             |
| Growth Factor 100% 100% 100% 100% 100% 100% 100% 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 100%             |
| Heavy Vehicles (%) 0% 0% 0% 2% 0% 1% 0% 6% 2% 1% 4%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0%               |
| Bus Blockages (#/hr) 0 0 0 0 0 0 0 0 0 0 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| Parking (#/hr)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Mid-Block Traffic (%) 0% 0% 0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Shared Lane Traffic (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |
| Lane Group Flow (vph) 16 14 11 281 19 582 24 867 111 755 135                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 12               |
| Turn Type Prot NA pm+ov Prot NA pm+ov Prot NA pm+ov Prot NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | pm+ov            |
| Protected Phases 7 4 5 3 8 1 5 2 3 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | . 7              |
| Permitted Phases 4 8 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6                |
| Detector Phase 7 4 5 3 8 1 5 2 3 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |
| Switch Phase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |
| Minimum Initial (s) 3.0 8.0 3.0 3.0 8.0 3.0 3.0 15.0 3.0 15.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3.0              |
| Minimum Split (s) 7.5 14.0 7.5 7.5 14.0 7.5 7.5 21.0 7.5 7.5 21.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7.5              |
| Total Split (s) 19.5 21.0 18.0 27.0 28.5 37.5 18.0 64.5 27.0 37.5 84.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 19.5             |
| Total Split (%) 13.0% 14.0% 12.0% 18.0% 19.0% 25.0% 12.0% 43.0% 18.0% 25.0% 56.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 13.0%            |
| Yellow Time (s) 3.5 4.5 3.5 3.5 4.5 3.5 4.5 3.5 4.5 3.5 4.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3.5              |
| All-Red Time (s) 1.0 1.5 1.0 1.0 1.5 1.0 1.0 1.5 1.0 1.0 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.0              |
| Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.0              |
| Total Lost Time (s) 4.5 6.0 4.5 4.5 6.0 4.5 4.5 6.0 4.5 4.5 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Lead/Lag Lead Lag Lead Lead Lag Lead Lead Lead Lead Lead La                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lead             |
| Lead-Lag Optimize? Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| Recall Mode None None None None None None C-Min None None C-Mi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |
| Act Effct Green (s) 6.9 8.3 12.4 18.2 15.2 61.8 6.5 70.4 94.5 40.6 108.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |
| Actuated g/C Ratio 0.05 0.06 0.08 0.12 0.10 0.41 0.04 0.47 0.63 0.27 0.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |

Projected Evening Peak Hour 01/06/2020 21-008 Tinley Park

## Lanes, Volumes, Timings 3: Harlem Avenue & Access Road/Vollmer Road

| 03/10/2021 |
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|                                                     | ۶            | -         | $\mathbf{F}$ | ∢           | -         | *          | 1    | Ť    | 1    | 1    | ţ    | ~    |
|-----------------------------------------------------|--------------|-----------|--------------|-------------|-----------|------------|------|------|------|------|------|------|
| Lane Group                                          | EBL          | EBT       | EBR          | WBL         | WBT       | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                                           | 0.20         | 0.13      | 0.08         | 0.68        | 0.09      | 0.88       | 0.16 | 0.52 | 0.11 | 0.80 | 0.51 | 0.01 |
| Control Delay                                       | 73.6         | 69.9      | 59.2         | 67.7        | 56.3      | 70.7       | 71.0 | 31.4 | 13.1 | 70.1 | 6.3  | 0.6  |
| Queue Delay                                         | 0.0          | 0.0       | 0.0          | 0.0         | 0.0       | 0.0        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                                         | 73.6         | 69.9      | 59.2         | 67.7        | 56.3      | 70.7       | 71.0 | 31.4 | 13.1 | 70.1 | 6.3  | 0.6  |
| LOS                                                 | E            | E         | E            | E           | E         | E          | E    | С    | В    | E    | А    | A    |
| Approach Delay                                      |              | 68.5      |              |             | 69.4      |            |      | 30.4 |      |      | 28.9 |      |
| Approach LOS                                        |              | E         |              |             | E         |            |      | С    |      |      | С    |      |
| Queue Length 50th (ft)                              | 15           | 13        | 11           | 136         | 19        | 481        | 11   | 333  | 44   | 307  | 111  | 0    |
| Queue Length 95th (ft)                              | 38           | 35        | 27           | 170         | 41        | 663        | 25   | 384  | 73   | 360  | 117  | m0   |
| Internal Link Dist (ft)                             |              | 877       |              |             | 1231      |            |      | 2633 |      |      | 774  |      |
| Turn Bay Length (ft)                                | 95           |           | 100          | 235         |           |            | 225  |      | 215  | 325  |      | 215  |
| Base Capacity (vph)                                 | 180          | 200       | 208          | 514         | 300       | 659        | 315  | 1681 | 1043 | 938  | 2643 | 1394 |
| Starvation Cap Reductn                              | 0            | 0         | 0            | 0           | 0         | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn                               | 0            | 0         | 0            | 0           | 0         | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn                                 | 0            | 0         | 0            | 0           | 0         | 0          | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio                                   | 0.09         | 0.07      | 0.05         | 0.55        | 0.06      | 0.88       | 0.08 | 0.52 | 0.11 | 0.80 | 0.51 | 0.01 |
| Intersection Summary                                |              |           |              |             |           |            |      |      |      |      |      |      |
| Area Type:                                          | Other        |           |              |             |           |            |      |      |      |      |      |      |
| Cycle Length: 150                                   |              |           |              |             |           |            |      |      |      |      |      |      |
| Actuated Cycle Length: 150                          |              |           |              |             |           |            |      |      |      |      |      |      |
| Offset: 143 (95%), Reference                        | ced to phase | e 2:NBT a | and 6:SB     | Γ, Start of | Green     |            |      |      |      |      |      |      |
| Natural Cycle: 80                                   |              |           |              |             |           |            |      |      |      |      |      |      |
| Control Type: Actuated-Coo                          | ordinated    |           |              |             |           |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.88                             |              |           |              |             |           |            |      |      |      |      |      |      |
| Intersection Signal Delay: 38.5 Intersection LOS: D |              |           |              |             |           |            |      |      |      |      |      |      |
| Intersection Capacity Utiliza                       | tion 64.6%   |           |              | IC          | U Level o | of Service | С    |      |      |      |      |      |
| Analysis Period (min) 15                            |              |           |              |             |           |            |      |      |      |      |      |      |
| m Volume for 95th percen                            | tile queue i | s metered | l by upstr   | eam sign    | al.       |            |      |      |      |      |      |      |

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road

| S <sub>Ø1</sub> | Ø2 (R) | <b>€</b> Ø3    | ₩04               |
|-----------------|--------|----------------|-------------------|
| 37.5 s          | 64.5 s | 27 s           | 21 s              |
| 🗙 Ø5 🕴 Ø6 (R)   | •      | <b>₽</b><br>Ø7 | ▲ <sup>4</sup> Ø8 |
| 18 s 84 s       |        | 19.5 s         | 28.5 s            |

## Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

|                         |       |            |      |       | -            |      |          |          |       | 1     | 1        |       |
|-------------------------|-------|------------|------|-------|--------------|------|----------|----------|-------|-------|----------|-------|
|                         | ٦     | -          | •    | 1     | -            |      |          | T        | 1     | *     | ŧ        | *     |
| Lane Group              | EBL   | EBT        | EBR  | WBL   | WBT          | WBR  | NBL      | NBT      | NBR   | SBL   | SBT      | SBR   |
| Lane Configurations     | - ከ   | <b>≜</b> ⊅ |      |       | - <b>†</b> Þ |      | <u> </u> | <b>↑</b> | 1     | ሻ     | <b>↑</b> | 1     |
| Traffic Volume (vph)    | 47    | 792        | 119  | 95    | 707          | 53   | 95       | 107      | 47    | 60    | 117      | 81    |
| Future Volume (vph)     | 47    | 792        | 119  | 95    | 707          | 53   | 95       | 107      | 47    | 60    | 117      | 81    |
| Ideal Flow (vphpl)      | 1900  | 1900       | 1900 | 1900  | 1900         | 1900 | 1900     | 2000     | 1900  | 1900  | 2000     | 1900  |
| Lane Width (ft)         | 12    | 12         | 12   | 12    | 12           | 12   | 12       | 12       | 12    | 12    | 12       | 12    |
| Grade (%)               |       | 0%         |      |       | 0%           |      |          | 0%       |       |       | 0%       |       |
| Storage Length (ft)     | 160   |            | 0    | 160   |              | 0    | 170      |          | 170   | 170   |          | 170   |
| Storage Lanes           | 1     |            | 0    | 2     |              | 0    | 1        |          | 1     | 1     |          | 1     |
| Taper Length (ft)       | 190   |            |      | 185   |              |      | 170      |          |       | 190   |          |       |
| Lane Util. Factor       | 1.00  | 0.95       | 0.95 | 1.00  | 0.95         | 0.95 | 1.00     | 1.00     | 1.00  | 1.00  | 1.00     | 1.00  |
| Ped Bike Factor         |       |            |      |       |              |      |          |          |       |       |          |       |
| Frt                     |       | 0.980      |      |       | 0.990        |      |          |          | 0.850 |       |          | 0.850 |
| Flt Protected           | 0.950 |            |      | 0.950 |              |      | 0.950    |          |       | 0.950 |          |       |
| Satd. Flow (prot)       | 1805  | 3477       | 0    | 1787  | 3539         | 0    | 1805     | 1961     | 1615  | 1787  | 2000     | 1615  |
| Flt Permitted           | 0.282 |            |      | 0.166 |              |      | 0.672    |          |       | 0.606 |          |       |
| Satd. Flow (perm)       | 536   | 3477       | 0    | 312   | 3539         | 0    | 1277     | 1961     | 1615  | 1140  | 2000     | 1615  |
| Right Turn on Red       |       |            | No   |       |              | No   |          |          | No    |       |          | No    |
| Satd. Flow (RTOR)       |       |            |      |       |              |      |          |          |       |       |          |       |
| Link Speed (mph)        |       | 45         |      |       | 45           |      |          | 45       |       |       | 45       |       |
| Link Distance (ft)      |       | 2828       |      |       | 1976         |      |          | 2983     |       |       | 1684     |       |
| Travel Time (s)         |       | 42.8       |      |       | 29.9         |      |          | 45.2     |       |       | 25.5     |       |
| Confl. Peds. (#/hr)     |       |            |      |       |              |      |          |          |       |       |          |       |
| Confl. Bikes (#/hr)     |       |            |      |       |              |      |          |          |       |       |          |       |
| Peak Hour Factor        | 0.88  | 0.88       | 0.88 | 0.88  | 0.88         | 0.88 | 0.88     | 0.88     | 0.88  | 0.88  | 0.88     | 0.88  |
| Growth Factor           | 100%  | 100%       | 100% | 100%  | 100%         | 100% | 100%     | 100%     | 100%  | 100%  | 100%     | 100%  |
| Heavy Vehicles (%)      | 0%    | 2%         | 0%   | 1%    | 1%           | 1%   | 0%       | 2%       | 0%    | 1%    | 0%       | 0%    |
| Bus Blockages (#/hr)    | 0     | 0          | 0    | 0     | 0            | 0    | 0        | 0        | 0     | 0     | 0        | 0     |
| Parking (#/hr)          |       |            |      |       |              |      |          |          |       |       |          |       |
| Mid-Block Traffic (%)   |       | 0%         |      |       | 0%           |      |          | 0%       |       |       | 0%       |       |
| Shared Lane Traffic (%) |       |            |      |       |              |      |          |          |       |       |          |       |
| Lane Group Flow (vph)   | 53    | 1035       | 0    | 108   | 863          | 0    | 108      | 122      | 53    | 68    | 133      | 92    |
| Turn Type               | pm+pt | NA         |      | pm+pt | NA           |      | pm+pt    | NA       | Perm  | pm+pt | NA       | Perm  |
| Protected Phases        | 5     | 2          |      | 1     | 6            |      | 3        | 8        |       | 7     | 4        |       |
| Permitted Phases        | 2     |            |      | 6     |              |      | 8        |          | 8     | 4     |          | 4     |
| Detector Phase          | 5     | 2          |      | 1     | 6            |      | 3        | 8        | 8     | 7     | 4        | 4     |
| Switch Phase            |       |            |      |       |              |      |          |          |       |       |          |       |
| Minimum Initial (s)     | 3.0   | 15.0       |      | 3.0   | 15.0         |      | 3.0      | 8.0      | 8.0   | 3.0   | 8.0      | 8.0   |
| Minimum Split (s)       | 6.5   | 21.0       |      | 6.5   | 21.0         |      | 6.5      | 14.0     | 14.0  | 6.5   | 14.0     | 14.0  |
| Total Split (s)         | 10.0  | 35.0       |      | 20.0  | 45.0         |      | 10.0     | 25.0     | 25.0  | 20.0  | 35.0     | 35.0  |
| Total Split (%)         | 10.0% | 35.0%      |      | 20.0% | 45.0%        |      | 10.0%    | 25.0%    | 25.0% | 20.0% | 35.0%    | 35.0% |
| Yellow Time (s)         | 3.5   | 4.0        |      | 3.5   | 4.0          |      | 3.5      | 4.0      | 4.0   | 3.5   | 4.0      | 4.0   |
| All-Red Time (s)        | 0.0   | 2.0        |      | 0.0   | 2.0          |      | 0.0      | 2.0      | 2.0   | 0.0   | 2.0      | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0        |      | 0.0   | 0.0          |      | 0.0      | 0.0      | 0.0   | 0.0   | 0.0      | 0.0   |
| Total Lost Time (s)     | 3.5   | 6.0        |      | 3.5   | 6.0          |      | 3.5      | 6.0      | 6.0   | 3.5   | 6.0      | 6.0   |
| Lead/Lag                | Lead  | Lag        |      | Lead  | Lag          |      | Lead     | Lag      | Lag   | Lead  | Lag      | Lag   |
| Lead-Lag Optimize?      | Yes   | Yes        |      | Yes   | Yes          |      | Yes      | Yes      | Yes   | Yes   | Yes      | Yes   |
| Recall Mode             | None  | None       |      | None  | None         |      | None     | None     | None  | None  | None     | None  |
| Act Effct Green (s)     | 41.9  | 34.6       |      | 45.1  | 37.9         |      | 19.0     | 11.6     | 11.6  | 21.7  | 13.0     | 13.0  |
| Actuated g/C Ratio      | 0.55  | 0.45       |      | 0.59  | 0.50         |      | 0.25     | 0.15     | 0.15  | 0.28  | 0.17     | 0.17  |

Projected Evening Peak Hour 01/06/2020 21-008 Tinley Park

## Lanes, Volumes, Timings 4: Ridgeland Avenue & Vollmer Road

| 03/10/2021 |
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|                                                     | ٦           | <b>→</b> | $\mathbf{F}$ | 4    | +           | *          | •    | 1    | 1    | 1    | Ļ    | ~    |
|-----------------------------------------------------|-------------|----------|--------------|------|-------------|------------|------|------|------|------|------|------|
| Lane Group                                          | EBL         | EBT      | EBR          | WBL  | WBT         | WBR        | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| v/c Ratio                                           | 0.13        | 0.66     |              | 0.32 | 0.49        |            | 0.30 | 0.41 | 0.22 | 0.17 | 0.39 | 0.34 |
| Control Delay                                       | 8.6         | 21.1     |              | 10.4 | 16.1        |            | 23.3 | 37.3 | 34.3 | 21.4 | 34.4 | 34.2 |
| Queue Delay                                         | 0.0         | 0.0      |              | 0.0  | 0.0         |            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay                                         | 8.6         | 21.1     |              | 10.4 | 16.1        |            | 23.3 | 37.3 | 34.3 | 21.4 | 34.4 | 34.2 |
| LOS                                                 | А           | С        |              | В    | В           |            | С    | D    | С    | С    | С    | С    |
| Approach Delay                                      |             | 20.5     |              |      | 15.4        |            |      | 31.4 |      |      | 31.3 |      |
| Approach LOS                                        |             | С        |              |      | В           |            |      | С    |      |      | С    |      |
| Queue Length 50th (ft)                              | 10          | 214      |              | 21   | 161         |            | 42   | 60   | 25   | 26   | 64   | 44   |
| Queue Length 95th (ft)                              | 28          | 330      |              | 49   | 240         |            | 78   | 112  | 59   | 54   | 113  | 85   |
| Internal Link Dist (ft)                             |             | 2748     |              |      | 1896        |            |      | 2903 |      |      | 1604 |      |
| Turn Bay Length (ft)                                | 160         |          |              | 160  |             |            | 170  |      | 170  | 170  |      | 170  |
| Base Capacity (vph)                                 | 409         | 1578     |              | 523  | 1906        |            | 366  | 514  | 423  | 519  | 800  | 646  |
| Starvation Cap Reductn                              | 0           | 0        |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn                               | 0           | 0        |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn                                 | 0           | 0        |              | 0    | 0           |            | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio                                   | 0.13        | 0.66     |              | 0.21 | 0.45        |            | 0.30 | 0.24 | 0.13 | 0.13 | 0.17 | 0.14 |
| Intersection Summary                                |             |          |              |      |             |            |      |      |      |      |      |      |
| Area Type:                                          | Other       |          |              |      |             |            |      |      |      |      |      |      |
| Cycle Length: 100                                   |             |          |              |      |             |            |      |      |      |      |      |      |
| Actuated Cycle Length: 76.                          | 2           |          |              |      |             |            |      |      |      |      |      |      |
| Natural Cycle: 60                                   |             |          |              |      |             |            |      |      |      |      |      |      |
| Control Type: Actuated-Une                          | coordinated |          |              |      |             |            |      |      |      |      |      |      |
| Maximum v/c Ratio: 0.66                             |             |          |              |      |             |            |      |      |      |      |      |      |
| Intersection Signal Delay: 21.0 Intersection LOS: C |             |          |              |      |             |            |      |      |      |      |      |      |
| Intersection Capacity Utiliza                       | ation 56.2% |          |              | IC   | CU Level of | of Service | В    |      |      |      |      |      |
| Analysis Period (min) 15                            |             |          |              |      |             |            |      |      |      |      |      |      |

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road

| <b>√</b> Ø1                     | A 102 | <b>↑</b> Ø3 | ₩ Ø4 |
|---------------------------------|-------|-------------|------|
| 20 s                            | 35 s  | 10 s        | 35 s |
| ▶ <sub>Ø5</sub> ★ <sub>Ø6</sub> |       | Ø7          | 1 Ø8 |
| 10 s 45 s                       |       | 20 s        | 25 s |

## Lanes, Volumes, Timings 5: Proposed Full Access & Vollmer Road

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|----------------------------------------|----------|------------------|-----------------|----------|-------------|---------------|-----------------|----------|-----------------|-------------|----------|------|
| Lane Group                             | EBL      | EBT              | <b>▼</b><br>EBR | ▼<br>WBL | WBT         | WBR           | NBL             | NBT      | <b>r</b><br>NBR | SBL         | ▼<br>SBT | SBR  |
| Lane Configurations                    | <u> </u> |                  |                 |          | ***         |               | <u>ነው</u><br>ካካ |          | NDI             | <u></u>     |          | JDI  |
|                                        | 2        | <b>↑↑</b><br>658 | <b>1</b><br>71  | 171      | <b>6</b> 37 | <b>r</b><br>9 | 84              | <b>1</b> | 174             | 36          | <b>₽</b> | 11   |
| Traffic Volume (vph)                   | 2        |                  | 71              | 171      |             |               |                 |          | 174             |             |          | 11   |
| Future Volume (vph)                    |          | 658              |                 |          | 637         | 9             | 84              | 0        |                 | 36          | 0        |      |
| Ideal Flow (vphpl)                     | 1900     | 2000             | 1900            | 1900     | 2000        | 1900          | 1900            | 1900     | 1900            | 1900        | 1900     | 1900 |
| Lane Width (ft)                        | 12       | 12               | 12              | 12       | 12          | 12            | 12              | 12       | 12              | 12          | 12       | 12   |
| Grade (%)                              | 015      | 0%               | 015             | 215      | 0%          | 015           | 0               | 0%       | 0               | 0           | 0%       |      |
| Storage Length (ft)                    | 215      |                  | 215             | 215      |             | 215           | 0               |          | 0               | 0           |          | 0    |
| Storage Lanes                          | 1        |                  | 1               | 1        |             | 1             | 2               |          | 0               | 1           |          | 0    |
| Taper Length (ft)                      | 25       | 0.05             | 1 0 0           | 220      | 0.05        | 1 00          | 25              | 1 00     | 1 00            | 25          | 1 00     | 1.00 |
| Lane Util. Factor                      | 1.00     | 0.95             | 1.00            | 1.00     | 0.95        | 1.00          | 0.97            | 1.00     | 1.00            | 1.00        | 1.00     | 1.00 |
| Ped Bike Factor                        |          |                  |                 |          |             |               |                 |          |                 |             |          |      |
| Frt                                    |          |                  | 0.850           |          |             | 0.850         |                 | 0.850    |                 |             | 0.850    |      |
| Flt Protected                          | 0.950    |                  |                 | 0.950    |             |               | 0.950           |          |                 | 0.950       |          |      |
| Satd. Flow (prot)                      | 1805     | 3762             | 1615            | 1805     | 3762        | 1324          | 3502            | 1615     | 0               | 1517        | 1369     | 0    |
| Flt Permitted                          | 0.397    |                  |                 | 0.320    |             |               | 0.950           |          |                 | 0.950       |          |      |
| Satd. Flow (perm)                      | 754      | 3762             | 1615            | 608      | 3762        | 1324          | 3502            | 1615     | 0               | 1517        | 1369     | 0    |
| Right Turn on Red<br>Satd. Flow (RTOR) |          |                  | No              |          |             | No            |                 |          | No              |             |          | No   |
| Link Speed (mph)                       |          | 45               |                 |          | 45          |               |                 | 30       |                 |             | 30       |      |
| Link Distance (ft)                     |          | 1311             |                 |          | 1120        |               |                 | 390      |                 |             | 407      |      |
| Travel Time (s)                        |          | 19.9             |                 |          | 17.0        |               |                 | 8.9      |                 |             | 9.3      |      |
| Confl. Peds. (#/hr)                    |          | 19.9             |                 |          | 17.0        |               |                 | 0.9      |                 |             | 9.5      |      |
| Confl. Bikes (#/hr)                    |          |                  |                 |          |             |               |                 |          |                 |             |          |      |
| Peak Hour Factor                       | 0.95     | 0.95             | 0.95            | 0.95     | 0.95        | 0.95          | 0.95            | 0.95     | 0.95            | 0.95        | 0.95     | 0.95 |
| Growth Factor                          | 100%     | 100%             | 100%            | 100%     | 100%        | 100%          | 100%            | 100%     | 100%            |             | 100%     | 100% |
|                                        | 0%       | 100%             | 0%              | 0%       | 100%        | 22%           | 0%              | 0%       | 0%              | 100%<br>19% | 0%       |      |
| Heavy Vehicles (%)                     |          |                  |                 |          |             |               |                 |          |                 |             |          | 18%  |
| Bus Blockages (#/hr)                   | 0        | 0                | 0               | 0        | 0           | 0             | 0               | 0        | 0               | 0           | 0        | 0    |
| Parking (#/hr)                         |          | 00/              |                 |          | 00/         |               |                 | 00/      |                 |             | 00/      |      |
| Mid-Block Traffic (%)                  |          | 0%               |                 |          | 0%          |               |                 | 0%       |                 |             | 0%       |      |
| Shared Lane Traffic (%)                | 0        | (0)              | 75              | 100      | (71         | 0             | 00              | 100      | 0               | 20          | 10       |      |
| Lane Group Flow (vph)                  | 2        | 693              | 75              | 180      | 671         | 9             | 88              | 183      | 0               | 38          | 12       | 0    |
| Turn Type                              | pm+pt    | NA               | Perm            | pm+pt    | NA          | Perm          | Prot            | NA       |                 | Prot        | NA       |      |
| Protected Phases                       | 5        | 2                | 0               | 1        | 6           | ,             | 3               | 8        |                 | 7           | 4        |      |
| Permitted Phases                       | 2        |                  | 2               | 6        |             | 6             |                 |          |                 | _           |          |      |
| Detector Phase                         | 5        | 2                | 2               | 1        | 6           | 6             | 3               | 8        |                 | 7           | 4        |      |
| Switch Phase                           |          |                  |                 |          |             |               |                 |          |                 |             |          |      |
| Minimum Initial (s)                    | 3.0      | 15.0             | 15.0            | 3.0      | 15.0        | 15.0          | 3.0             | 8.0      |                 | 3.0         | 8.0      |      |
| Minimum Split (s)                      | 6.5      | 21.0             | 21.0            | 6.5      | 21.0        | 21.0          | 7.5             | 14.0     |                 | 7.5         | 14.0     |      |
| Total Split (s)                        | 26.0     | 81.0             | 81.0            | 26.0     | 81.0        | 81.0          | 20.0            | 23.0     |                 | 20.0        | 23.0     |      |
| Total Split (%)                        | 17.3%    | 54.0%            | 54.0%           | 17.3%    | 54.0%       | 54.0%         | 13.3%           | 15.3%    |                 | 13.3%       | 15.3%    |      |
| Yellow Time (s)                        | 3.5      | 4.0              | 4.0             | 3.5      | 4.0         | 4.0           | 3.5             | 4.0      |                 | 3.5         | 4.0      |      |
| All-Red Time (s)                       | 0.0      | 2.0              | 2.0             | 0.0      | 2.0         | 2.0           | 1.0             | 2.0      |                 | 1.0         | 2.0      |      |
| Lost Time Adjust (s)                   | 0.0      | 0.0              | 0.0             | 0.0      | 0.0         | 0.0           | 0.0             | 0.0      |                 | 0.0         | 0.0      |      |
| Total Lost Time (s)                    | 3.5      | 6.0              | 6.0             | 3.5      | 6.0         | 6.0           | 4.5             | 6.0      |                 | 4.5         | 6.0      |      |
| Lead/Lag                               | Lead     | Lag              | Lag             | Lead     | Lag         | Lag           | Lead            | Lag      |                 | Lead        | Lag      |      |
| Lead-Lag Optimize?                     | Yes      | Yes              | Yes             | Yes      | Yes         | Yes           | Yes             | Yes      |                 | Yes         | Yes      |      |
| Recall Mode                            | None     | C-Min            | C-Min           | None     | C-Min       | C-Min         | None            | None     |                 | None        | None     |      |
| Act Effct Green (s)                    | 93.1     | 85.0             | 85.0            | 102.1    | 97.8        | 97.8          | 25.4            | 26.7     |                 | 9.2         | 16.8     |      |
| Actuated g/C Ratio                     | 0.62     | 0.57             | 0.57            | 0.68     | 0.65        | 0.65          | 0.17            | 0.18     |                 | 0.06        | 0.11     |      |
|                                        | -        | -                | -               |          |             |               |                 | -        |                 |             |          |      |

Projected Evening Peak Hour 01/06/2020 21-008 Tinley Park

## Lanes, Volumes, Timings 5: Proposed Full Access & Vollmer Road

| 03/1  | 0/2021 |  |
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| 0.0/1 | 0/2021 |  |

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|--------------------------------|--------------|-----------|--------------|------------|------------|------------|------|------|-----|------|------|-----|
| Lane Group                     | EBL          | EBT       | EBR          | WBL        | WBT        | WBR        | NBL  | NBT  | NBR | SBL  | SBT  | SBR |
| v/c Ratio                      | 0.00         | 0.33      | 0.08         | 0.36       | 0.27       | 0.01       | 0.15 | 0.64 |     | 0.41 | 0.08 |     |
| Control Delay                  | 5.0          | 13.8      | 10.1         | 11.7       | 13.0       | 13.1       | 57.5 | 67.5 |     | 80.0 | 53.7 |     |
| Queue Delay                    | 0.0          | 0.0       | 0.0          | 0.0        | 0.0        | 0.0        | 0.0  | 0.0  |     | 0.0  | 0.0  |     |
| Total Delay                    | 5.0          | 13.8      | 10.1         | 11.7       | 13.0       | 13.1       | 57.5 | 67.5 |     | 80.0 | 53.7 |     |
| LOS                            | А            | В         | В            | В          | В          | В          | E    | E    |     | E    | D    |     |
| Approach Delay                 |              | 13.4      |              |            | 12.7       |            |      | 64.3 |     |      | 73.7 |     |
| Approach LOS                   |              | В         |              |            | В          |            |      | E    |     |      | E    |     |
| Queue Length 50th (ft)         | 0            | 277       | 28           | 70         | 155        | 3          | 32   | 168  |     | 37   | 11   |     |
| Queue Length 95th (ft)         | m1           | 429       | m86          | 120        | 247        | 15         | 73   | 248  |     | 76   | 29   |     |
| Internal Link Dist (ft)        |              | 1231      |              |            | 1040       |            |      | 310  |     |      | 327  |     |
| Turn Bay Length (ft)           | 215          |           | 215          | 215        |            | 215        |      |      |     |      |      |     |
| Base Capacity (vph)            | 671          | 2150      | 923          | 593        | 2452       | 863        | 636  | 287  |     | 156  | 203  |     |
| Starvation Cap Reductn         | 0            | 0         | 0            | 0          | 0          | 0          | 0    | 0    |     | 0    | 0    |     |
| Spillback Cap Reductn          | 0            | 0         | 0            | 0          | 0          | 0          | 0    | 0    |     | 0    | 0    |     |
| Storage Cap Reductn            | 0            | 0         | 0            | 0          | 0          | 0          | 0    | 0    |     | 0    | 0    |     |
| Reduced v/c Ratio              | 0.00         | 0.32      | 0.08         | 0.30       | 0.27       | 0.01       | 0.14 | 0.64 |     | 0.24 | 0.06 |     |
| Intersection Summary           |              |           |              |            |            |            |      |      |     |      |      |     |
| 51                             | Other        |           |              |            |            |            |      |      |     |      |      |     |
| Cycle Length: 150              |              |           |              |            |            |            |      |      |     |      |      |     |
| Actuated Cycle Length: 150     |              |           |              |            |            |            |      |      |     |      |      |     |
| Offset: 11 (7%), Referenced    | to phase 2   | 2:EBTL ar | d 6:WBT      | L, Start o | f Green    |            |      |      |     |      |      |     |
| Natural Cycle: 55              |              |           |              |            |            |            |      |      |     |      |      |     |
| Control Type: Actuated-Coo     | rdinated     |           |              |            |            |            |      |      |     |      |      |     |
| Maximum v/c Ratio: 0.64        |              |           |              |            |            |            |      |      |     |      |      |     |
| Intersection Signal Delay: 21  |              |           |              |            | tersectior |            |      |      |     |      |      |     |
| Intersection Capacity Utilizat | tion 57.9%   |           |              | IC         | U Level    | of Service | В    |      |     |      |      |     |
| Analysis Period (min) 15       |              |           |              |            |            |            |      |      |     |      |      |     |
| m Volume for 95th percent      | tile queue i | s metered | l by upstr   | eam sign   | al.        |            |      |      |     |      |      |     |

Splits and Phases: 5: Proposed Full Access & Vollmer Road

| <b>√</b> Ø1 | ♥ 📌 Ø2 (R) | <b>1</b> Ø3 | <b>↓</b> Ø4 |
|-------------|------------|-------------|-------------|
| 26 s        | 81s        | 20 s        | 23 s        |
|             | ♥ ♥ Ø6 (R) | Ø7          | Ø8          |
| 26 s        | 81s        | 20 s        | 23 s        |

| Lane Group         EBT         EBR         WBL         WBT         NBL         NBR           Lane Configurations         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑         ↑                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lane Configurations         Image: Configurations         < |
| Traffic Volume (vph)         838         30         118         765         52         120           Future Volume (vph)         838         30         118         765         52         120           Ideal Flow (vphpl)         2000         1900         1900         2000         1900         1900           Lane Width (ft)         12         12         12         12         12         12         12         12           Grade (%)         0%         0%         0%         0%         0%         0         0         0           Storage Length (ft)         215         215         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Future Volume (vph)         838         30         118         765         52         120           Ideal Flow (vphpl)         2000         1900         1900         2000         1900         1900           Lane Width (ft)         12         12         12         12         12         12         12           Grade (%)         0%         0%         0%         0%         0         0           Storage Lanes         1         1         1         1         1         1           Taper Length (ft)         220         25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ideal Flow (vphp)         2000         1900         1900         2000         1900         1900           Lane Width (ft)         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12         12 </td                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Lane Width (ft)12121212121212Grade (%)0%0%0%0%Storage Length (ft)21521500Storage Lanes1111Taper Length (ft)22025Lane Util. Factor0.951.000.951.00Ped Bike Factor0.9500.9500.850Fit0.8500.9500.950Satd. Flow (prot)3762142917523762Satd. Flow (perm)3762142954837621671Satd. Flow (perm)3762142954837621671Link Speed (mph)454530NoSatd. Flow (RTOR)11202828384Travel Time (s)Link Speed (mph)454530100%Link Speed (mph)454530100%Link Speed (mph)4545300.95Confl. Peds. (#/hr)0000Confl. Peds. (#/hr)0000Peak Hour Factor0.950.950.950.95Shared Lane Traffic (%)0%0%0%Bus Blockages (#/hr)000O0000Parking (#/hr)133331%Minimum Initial (s)15.08.03.015.0Minimum Split (s)21.014.06.521.0Minimum Split (s)51.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Grade (%)         0%         0%         0%           Storage Length (ft)         215         215         0         0           Storage Lanes         1         1         1         1         1           Taper Length (ft)         220         25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Storage Length (ft)         215         215         0         0           Storage Lanes         1         1         1         1         1           Taper Length (ft)         220         25         -         -           Lane Util, Factor         0.95         1.00         1.00         0.95         1.00         1.00           Ped Bike Factor         0.950         0.950         0.850         0.850         -         0.850           Fit Protected         0.950         0.950         0.950         -         -         0.850         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Storage Lanes         1         1         1         1         1           Taper Length (ft)         220         25           Lane Util. Factor         0.95         1.00         1.00         0.95         1.00         1.00           Ped Bike Factor         0.850         0.950         0.950         0.850           Fit         0.850         0.950         0.950         0.850           Flt Protected         0.972         0.950         0.950           Satd. Flow (port)         3762         1429         548         3762         1671         1568           Right Turn on Red         No         No         No         Satd. Flow (RTOR)         No         No           Link Speed (mph)         45         45         30         Link No         No         Satd. Flow (RTOR)         No         Satd. Flow (RTOR)         Ventals         No         Satd. Flow (RTOR)         No         Satd. Flow (No         No         Satd. Flow (No         No         Satd. Flow (No         No         No                                                                                                                                                                                                                                                                                                                                                                       |
| Taper Length (ft)         220         25           Lane Util. Factor         0.95         1.00         1.00         0.95         1.00         1.00           Ped Bike Factor         0.850         0.950         0.950         0.850           Frt         0.850         0.950         0.950         0.850           Satd. Flow (prot)         3762         1429         1752         3762         1671         1568           Right Turn on Red         0.297         0.950         0.950         0.850           Satd. Flow (perm)         3762         1429         548         3762         1671         1568           Right Turn on Red         No         No         No         No         Satd. Flow (RTOR)         No         Satd. Flow (RTOR)         Uink Distance (ft)         1120         2828         384         Travel Time (s)         17.0         42.8         8.7           Confl. Peds. (#/hr)         Confl. Peds. (#/hr)         0         0         0         0         0         0           Growth Factor         0.95         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%                                                                                                                                                                                                                                                                                                                                                                                                            |
| Lane Util. Factor         0.95         1.00         1.00         0.95         1.00         1.00           Ped Bike Factor         0.850         0.850         0.850           Fit         0.850         0.950         0.950           Satd. Flow (prot)         3762         1429         1752         3762         1671         1568           Fit Permitted         0.297         0.950         0.950         0.950           Satd. Flow (perm)         3762         1429         548         3762         1671         1568           Right Turn on Red         No         No         No         No         No         Satd. Flow (RTOR)         1120         2828         384           Link Distance (ft)         1120         2828         384         Travel Time (s)         17.0         42.8         8.7           Confl. Bikes (#/hr)         0         0.95         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         1%         13%         3%         1%         8%         3%           Bus Blockages (#/hr)         0                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Ped Bike Factor         0.850         0.850           Frt         0.850         0.950         0.950           Satd. Flow (prot)         3762         1429         1752         3762         1671         1568           Fil Permitted         0.297         0.950         0.950         0.950           Satd. Flow (perm)         3762         1429         548         3762         1671         1568           Right Turn on Red         No         No         No         No         No         No           Satd. Flow (RTOR)         1120         2828         384         Travel Time (s)         17.0         42.8         8.7           Confl. Peds. (#/hr)         0         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         1%         13%         3%         1%         8%         3%           Bus Blockages (#/hr)         0         0         0         0         0         0           Parking (#/hr)         13%         3%         1%         8%         3%         3%           Bus Blockages (#/hr)                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Frt         0.850         0.850           Filt Protected         0.950         0.950           Satd. Flow (prot)         3762         1429         1752         3762         1671         1568           Filt Permitted         0.297         0.950         0.950         0.950           Satd. Flow (perm)         3762         1429         548         3762         1671         1568           Right Turn on Red         No         No         Satd. Flow (RTOR)         No         No           Link Speed (mph)         45         45         30         Itank         Satd. Flow (RTOR)         No           Link Distance (ft)         1120         2828         384         Travel Time (s)         17.0         42.8         8.7           Confl. Bikes (#/hr)         0         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%         100%                                                                                                                                                                                                                                                                                                                                                                                                        |
| Flt Protected       0.950       0.950         Satd. Flow (prot)       3762       1429       1752       3762       1671       1568         Flt Permitted       0.297       0.950       0.950       0.950         Satd. Flow (perm)       3762       1429       548       3762       1671       1568         Right Turn on Red       No       No       No       No         Satd. Flow (RTOR)       1120       2828       384       1429       548       3.72       1671       1568         Link Distance (ft)       1120       2828       384       1774       1568       1671       1569         Confl. Peds. (#/hr)       17.0       42.8       8.7       1671       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%       100%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Satd. Flow (prot)       3762       1429       1752       3762       1671       1568         Flt Permitted       0.297       0.950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Fit Permitted       0.297       0.950         Satd. Flow (perm)       3762       1429       548       3762       1671       1568         Right Turn on Red       No       No       No       No         Satd. Flow (RTOR)       1120       2828       384         Link Speed (mph)       45       45       30         Link Distance (ft)       1120       2828       384         Travel Time (s)       17.0       42.8       8.7         Confl. Peds. (#/hr)       0       0.95       0.95       0.95       0.95         Growth Factor       0.95       0.95       0.95       0.95       0.95         Growth Factor       100%       100%       100%       100%       100%         Heavy Vehicles (%)       1%       13%       3%       1%       8%       3%         Bus Blockages (#/hr)       0       0       0       0       0       0         Mid-Block Traffic (%)       0%       0%       0%       0%       S5       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6 <td< td=""></td<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Satd. Flow (perm)       3762       1429       548       3762       1671       1568         Right Turn on Red       No       No       No       No         Satd. Flow (RTOR)       Iink Speed (mph)       45       30       Iink Distance (ft)       1120       2828       384         Travel Time (s)       17.0       42.8       8.7       Confl. Peds. (#hr)       Volume       <                                                                                                                                                                                                                                                                                                                                                                                                |
| Right Turn on Red         No         No           Satd. Flow (RTOR)         Link Speed (mph)         45         30           Link Distance (ft)         1120         2828         384           Travel Time (s)         17.0         42.8         8.7           Confl. Peds. (#hr)          42.8         8.7           Confl. Peds. (#hr)          0.95         0.95         0.95         0.95         0.95           Growth Factor         0.95         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         1%         13%         3%         1%         8%         3%           Bus Blockages (#/hr)         0         0         0         0         0         0           Parking (#/hr)         0         0%         0%         55         126           Turn Type         NA         pm+ov         pm+pt         NA         Prot           Lane Group Flow (vph)         882         32         124         805         55         126           Turn Type         NA         pm+ov         <                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Said. Flow (RTOR)         Link Speed (mph)       45       45       30         Link Distance (ft)       1120       2828       384         Travel Time (s)       17.0       42.8       8.7         Confl. Peds. (#/hr)         42.8       8.7         Confl. Bikes (#/hr)          0.95       0.95       0.95       0.95       0.95         Growth Factor       100%       100%       100%       100%       100%       100%       100%         Heavy Vehicles (%)       1%       13%       3%       1%       8%       3%         Bus Blockages (#/hr)       0       0       0       0       0       0         Parking (#/hr)       0       0       0       0       0       0         Mid-Block Traffic (%)       0%       0%       0%       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Link Speed (mph)         45         45         30           Link Distance (ft)         1120         2828         384           Travel Time (s)         17.0         42.8         8.7           Confl. Peds. (#/hr)          42.8         8.7           Confl. Bikes (#/hr)          9.95         0.95         0.95         0.95           Growth Factor         0.95         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         1%         13%         3%         1%         8%         3%           Bus Blockages (#/hr)         0         0         0         0         0         0           Mid-Block Traffic (%)         0%         0%         0%         55         126           Turn Type         NA         pm+ov         pm+pt         NA         Prot         pm+ov           Protected Phases         2         8         1         6         8         1           Permitted Phases         2         8         1         6         8         1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Link Speed (mph)         45         45         30           Link Distance (ft)         1120         2828         384           Travel Time (s)         17.0         42.8         8.7           Confl. Peds. (#/hr)          42.8         8.7           Confl. Bikes (#/hr)          9.95         0.95         0.95         0.95           Growth Factor         0.95         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         1%         13%         3%         1%         8%         3%           Bus Blockages (#/hr)         0         0         0         0         0         0           Mid-Block Traffic (%)         0%         0%         0%         55         126           Turn Type         NA         pm+ov         pm+pt         NA         Prot         pm+ov           Protected Phases         2         8         1         6         8         1           Permitted Phases         2         8         1         6         8         1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Link Distance (ft)         1120         2828         384           Travel Time (s)         17.0         42.8         8.7           Confl. Peds. (#/hr)               Confl. Bikes (#/hr)           0.95         0.95         0.95         0.95           Growth Factor         0.95         0.95         0.95         0.95         0.95         0.95           Growth Factor         100%         100%         100%         100%         100%         100%           Heavy Vehicles (%)         1%         13%         3%         1%         8%         3%           Bus Blockages (#/hr)         0         0         0         0         0         0           Parking (#/hr)         0         0         0         0         0         0           Mid-Block Traffic (%)         0%         0%         0%         55         126           Turn Type         NA         pm+ov         pm+pt         NA         Prot         pm+ov           Protected Phases         2         8         1         6         8         1           Permitted Phases         2         8         1         6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Travel Time (s)       17.0       42.8       8.7         Confl. Peds. (#/hr)       0.95       0.95       0.95       0.95       0.95         Confl. Bikes (#/hr)       0.95       0.95       0.95       0.95       0.95       0.95         Growth Factor       100%       100%       100%       100%       100%       100%       100%         Heavy Vehicles (%)       1%       13%       3%       1%       8%       3%         Bus Blockages (#/hr)       0       0       0       0       0       0         Parking (#/hr)       0       0       0       0       0       0         Mid-Block Traffic (%)       0%       0%       0%       55       126         Lane Group Flow (vph)       882       32       124       805       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2       8       3.0       15.0       8.0       3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Confl. Peds. (#/hr)         Confl. Bikes (#/hr)         Peak Hour Factor       0.95       0.95       0.95       0.95       0.95         Growth Factor       100%       100%       100%       100%       100%       100%         Heavy Vehicles (%)       1%       13%       3%       1%       8%       3%         Bus Blockages (#/hr)       0       0       0       0       0       0         Parking (#/hr)       0       0       0       0       0       0         Mid-Block Traffic (%)       0%       0%       0%       0%       0%         Shared Lane Traffic (%)       0%       0%       0%       0%       126         Lane Group Flow (vph)       882       32       124       805       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Switch Phase       21.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Confl. Bikes (#/hr)         Peak Hour Factor       0.95       0.95       0.95       0.95       0.95         Growth Factor       100%       100%       100%       100%       100%       100%         Heavy Vehicles (%)       1%       13%       3%       1%       8%       3%         Bus Blockages (#/hr)       0       0       0       0       0       0         Parking (#/hr)       0       0       0       0       0       0         Mid-Block Traffic (%)       0%       0%       0%       0%       0%         Shared Lane Traffic (%)       0%       0%       0%       0%       0%         Lane Group Flow (vph)       882       32       124       805       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Minimum Initial (s)       15.0       8.0       3.0 <td< td=""></td<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Peak Hour Factor         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95         0.95                                                                                                                                                                                                                                                                                                                                                                         |
| Growth Factor100%100%100%100%100%100%Heavy Vehicles (%)1%13%3%1%8%3%Bus Blockages (#/hr)000000Parking (#/hr)0%0%0%0%0%Mid-Block Traffic (%)0%0%0%0%Shared Lane Traffic (%)0%0%0%100%Lane Group Flow (vph)8823212480555126Turn TypeNApm+ovpm+ptNAProtpm+ovProtected Phases281681Permitted Phases281681Switch Phase281681Switch Phase21.014.06.521.014.06.5Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Heavy Vehicles (%)       1%       13%       3%       1%       8%       3%         Bus Blockages (#/hr)       0       0       0       0       0       0       0         Parking (#/hr)       0%       0%       0%       0%       0%       0%       0%         Mid-Block Traffic (%)       0%       0%       0%       0%       0%       0%         Shared Lane Traffic (%)       0%       0%       0%       0%       0%       0%         Lane Group Flow (vph)       882       32       124       805       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Minimum Initial (s)       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Split (s)       21.0       14.0       6.5       21.0       14.0       6.5         Total Split (%)       65.3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Bus Blockages (#/hr)       0       0       0       0       0       0         Parking (#/hr)       0%       0%       0%       0%       0%         Mid-Block Traffic (%)       0%       0%       0%       0%         Shared Lane Traffic (%)       0%       0%       0%       0%         Lane Group Flow (vph)       882       32       124       805       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Minimum Initial (s)       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Split (s)       21.0       14.0       6.5       21.0       14.0       6.5         Total Split (%)       65.3%       22.0%       12.7%       78.0%       22.0%       12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Parking (#/hr)       Mid-Block Traffic (%)       0%       0%       0%         Shared Lane Traffic (%)       0%       0%       0%       0%         Lane Group Flow (vph)       882       32       124       805       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Detector Phase       2       8       1       6       8       1         Switch Phase       2       8.0       3.0       15.0       8.0       3.0         Minimum Initial (s)       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Split (s)       21.0       14.0       6.5       21.0       14.0       6.5         Total Split (%)       65.3%       22.0%       12.7%       78.0%       22.0%       12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Mid-Block Traffic (%)       0%       0%       0%         Shared Lane Traffic (%)       882       32       124       805       55       126         Lane Group Flow (vph)       882       32       124       805       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Detector Phase       2       8       1       6       8       1         Switch Phase       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Initial (s)       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Split (s)       21.0       14.0       6.5       21.0       14.0       6.5         Total Split (%)       65.3%       22.0%       12.7%       78.0%       22.0%       12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Shared Lane Traffic (%)         Lane Group Flow (vph)       882       32       124       805       55       126         Turn Type       NA       pm+ov       pm+pt       NA       Prot       pm+ov         Protected Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Permitted Phases       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Switch Phase       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Initial (s)       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Split (s)       21.0       14.0       6.5       21.0       14.0       6.5         Total Split (%)       65.3%       22.0%       12.7%       78.0%       22.0%       12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Lane Group Flow (vph)8823212480555126Turn TypeNApm+ovpm+ptNAProtpm+ovProtected Phases281681Permitted Phases281681Detector Phase281681Switch Phase281681Switch Phase283.015.08.03.0Minimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Turn TypeNApm+ovpm+ptNAProtpm+ovProtected Phases281681Permitted Phases2688Detector Phase281681Switch Phase281681Switch Phase283.015.08.03.0Minimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)98.033.019.0117.033.019.0Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Protected Phases       2       8       1       6       8       1         Permitted Phases       2       6       8       8         Detector Phase       2       8       1       6       8       1         Switch Phase       2       8       1       6       8       1         Switch Phase       2       8.0       3.0       15.0       8.0       3.0         Minimum Initial (s)       15.0       8.0       3.0       15.0       8.0       3.0         Minimum Split (s)       21.0       14.0       6.5       21.0       14.0       6.5         Total Split (s)       98.0       33.0       19.0       117.0       33.0       19.0         Total Split (%)       65.3%       22.0%       12.7%       78.0%       22.0%       12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Permitted Phases268Detector Phase281681Switch Phase58.03.015.08.03.0Minimum Initial (s)15.08.03.015.08.03.03.014.06.5Minimum Split (s)21.014.06.521.014.06.56.5Total Split (s)98.033.019.0117.033.019.0Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Detector Phase281681Switch PhaseMinimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)98.033.019.0117.033.019.0Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Detector Phase281681Switch Phase15.08.03.015.08.03.0Minimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)98.033.019.0117.033.019.0Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Switch PhaseMinimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)98.033.019.0117.033.019.0Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Minimum Initial (s)15.08.03.015.08.03.0Minimum Split (s)21.014.06.521.014.06.5Total Split (s)98.033.019.0117.033.019.0Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Minimum Split (s)21.014.06.521.014.06.5Total Split (s)98.033.019.0117.033.019.0Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Total Split (s)98.033.019.0117.033.019.0Total Split (%)65.3%22.0%12.7%78.0%22.0%12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Total Split (%) 65.3% 22.0% 12.7% 78.0% 22.0% 12.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Yellow Time (s) 4.0 4.0 3.5 4.0 4.0 3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ()                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| All-Red Time (s)         2.0         2.0         0.0         2.0         2.0         0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Total Lost Time (s)         6.0         6.0         3.5         6.0         6.0         3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Lead/Lag Lag Lead Lead                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lead-Lag Optimize? Yes Yes Yes Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Recall Mode C-Min Min None C-Min Min None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Act Effct Green (s) 115.9 133.4 129.1 126.6 11.4 24.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Actuated g/C Ratio 0.77 0.89 0.86 0.84 0.08 0.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Projected Evening Peak Hour 01/06/2020 21-008 Tinley Park

|                               | -            | $\mathbf{F}$ | 4        | +         | •          | 1          |
|-------------------------------|--------------|--------------|----------|-----------|------------|------------|
| Lane Group                    | EBT          | EBR          | WBL      | WBT       | NBL        | NBR        |
| v/c Ratio                     | 0.30         | 0.03         | 0.23     | 0.25      | 0.43       | 0.49       |
| Control Delay                 | 0.7          | 0.1          | 2.8      | 2.7       | 75.9       | 63.1       |
| Queue Delay                   | 0.0          | 0.0          | 0.0      | 0.0       | 0.0        | 0.0        |
| Total Delay                   | 0.7          | 0.1          | 2.8      | 2.7       | 75.9       | 63.1       |
| LOS                           | А            | А            | А        | А         | E          | E          |
| Approach Delay                | 0.7          |              |          | 2.7       | 67.0       |            |
| Approach LOS                  | А            |              |          | А         | E          |            |
| Queue Length 50th (ft)        | 8            | 0            | 14       | 64        | 52         | 114        |
| Queue Length 95th (ft)        | 10           | m0           | 28       | 96        | 99         | 175        |
| Internal Link Dist (ft)       | 1040         |              |          | 2748      | 304        |            |
| Turn Bay Length (ft)          |              | 215          | 215      |           |            |            |
| Base Capacity (vph)           | 2907         | 1409         | 595      | 3174      | 300        | 344        |
| Starvation Cap Reductn        | 0            | 0            | 0        | 0         | 0          | 0          |
| Spillback Cap Reductn         | 0            | 0            | 0        | 0         | 0          | 0          |
| Storage Cap Reductn           | 0            | 0            | 0        | 0         | 0          | 0          |
| Reduced v/c Ratio             | 0.30         | 0.02         | 0.21     | 0.25      | 0.18       | 0.37       |
| Intersection Summary          |              |              |          |           |            |            |
| Area Type:                    | Other        |              |          |           |            |            |
| Cycle Length: 150             |              |              |          |           |            |            |
| Actuated Cycle Length: 150    |              |              |          |           |            |            |
| Offset: 142 (95%), Referen    | ced to phase | e 2:EBT a    | and 6:WB | TL, Start | of Green   |            |
| Natural Cycle: 45             |              |              |          |           |            |            |
| Control Type: Actuated-Co     | ordinated    |              |          |           |            |            |
| Maximum v/c Ratio: 0.49       |              |              |          |           |            |            |
| Intersection Signal Delay: 7  |              |              |          |           | tersection |            |
| Intersection Capacity Utiliza | ation 48.5%  |              |          | IC        | U Level o  | of Service |
| Analysis Period (min) 15      |              |              |          |           |            |            |

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Proposed Truck Access & Vollmer Road



03/10/2021

| Int Delay, s/veh       | 9.2   |      |      |      |               |      |   |
|------------------------|-------|------|------|------|---------------|------|---|
| Movement               | EBL   | EBR  | NBL  | NBT  | SBT           | SBR  | Į |
| Lane Configurations    | ٦     | 1    | ٦    | - 11 | _ <b>∱</b> î⊧ |      |   |
| Traffic Vol, veh/h     | 74    | 37   | 54   | 1254 | 1795          | 100  | 1 |
| Future Vol, veh/h      | 74    | 37   | 54   | 1254 | 1795          | 100  | ) |
| Conflicting Peds, #/hr | 0     | 0    | 0    | 0    | 0             | 0    | 1 |
| Sign Control           | Stop  | Stop | Free | Free | Free          | Free | ÷ |
| RT Channelized         | -     | None | -    | None | -             | None | ļ |
| Storage Length         | 70    | 0    | 210  | -    | -             | -    |   |
| Veh in Median Storage, | , # 1 | -    | -    | 0    | 0             | -    |   |
| Grade, %               | 0     | -    | -    | 0    | 0             | -    |   |
| Peak Hour Factor       | 96    | 96   | 96   | 96   | 96            | 96   | , |
| Heavy Vehicles, %      | 11    | 0    | 15   | 4    | 3             | 0    | ) |
| Mvmt Flow              | 77    | 39   | 56   | 1306 | 1870          | 104  | ł |

| Major/Minor          | Minor2  | Ν     | Major1 | Ν       | /lajor2 |     |     |
|----------------------|---------|-------|--------|---------|---------|-----|-----|
| Conflicting Flow All | 2687    |       | 1974   | 0       | -       | 0   |     |
| Stage 1              | 1922    | -     | -      | -       | -       | -   |     |
| Stage 2              | 765     | -     | -      | -       | -       | -   |     |
| Critical Hdwy        | 7.02    | 6.9   | 4.4    | -       | -       | -   |     |
| Critical Hdwy Stg 1  | 6.02    | -     | -      | -       | -       | -   |     |
| Critical Hdwy Stg 2  | 6.02    | -     | -      | -       | -       | -   |     |
| Follow-up Hdwy       | 3.61    | 3.3   | 2.35   | -       | -       | -   |     |
| Pot Cap-1 Maneuver   |         | 250   | 244    | -       | -       | -   |     |
| Stage 1              | 90      | -     | -      | -       | -       | -   |     |
| Stage 2              | 397     | -     | -      | -       | -       | -   |     |
| Platoon blocked, %   |         |       |        | -       | -       | -   |     |
| Mov Cap-1 Maneuve    |         | 250   | 244    | -       | -       | -   |     |
| Mov Cap-2 Maneuve    |         | -     | -      | -       | -       | -   |     |
| Stage 1              | ~ 69    | -     | -      | -       | -       | -   |     |
| Stage 2              | 397     | -     | -      | -       | -       | -   |     |
|                      |         |       |        |         |         |     |     |
| Approach             | EB      |       | NB     |         | SB      |     |     |
| HCM Control Delay,   | s 262.8 |       | 1      |         | 0       |     |     |
| HCM LOS              | F       |       |        |         |         |     |     |
|                      |         |       |        |         |         |     |     |
| Minor Lane/Major My  | /mt     | NBL   | NBT E  | EBLn1 E | EBLn2   | SBT | SBR |
| Capacity (veh/h)     |         | 244   | -      | 55      | 250     | -   | -   |
| HCM Lane V/C Ratio   | )       | 0.231 | -      | 1.402   |         | -   | -   |
| HCM Control Delay    |         | 24.1  |        | 383.2   | 22      | -   | -   |
| HCM Lane LOS         |         | С     | -      | F       | С       | -   | -   |
| HCM 95th %tile Q(ve  | eh)     | 0.9   | -      | 6.9     | 0.5     | -   | -   |

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined \*: All major volume in platoon

Int Delay, s/veh

0.6

| Movement               | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT         | NBR  | SBL  | SBT      | SBR  |
|------------------------|------|------|------|------|------|------|------|-------------|------|------|----------|------|
| Lane Configurations    |      |      | 1    |      |      | 1    |      | <b>∱</b> î≽ |      |      | <b>^</b> | 1    |
| Traffic Vol, veh/h     | 0    | 0    | 78   | 0    | 0    | 8    | 0    | 1300        | 3    | 0    | 1808     | 24   |
| Future Vol, veh/h      | 0    | 0    | 78   | 0    | 0    | 8    | 0    | 1300        | 3    | 0    | 1808     | 24   |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0           | 0    | 0    | 0        | 0    |
| Sign Control           | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free        | Free | Free | Free     | Free |
| RT Channelized         | -    | -    | Stop | -    | -    | Stop | -    | -           | Free | -    | -        | Free |
| Storage Length         | -    | -    | 0    | -    | -    | 0    | -    | -           | -    | -    | -        | 120  |
| Veh in Median Storage, | ,# - | 0    | -    | -    | 0    | -    | -    | 0           | -    | -    | 0        | -    |
| Grade, %               | -    | 0    | -    | -    | 0    | -    | -    | 0           | -    | -    | 0        | -    |
| Peak Hour Factor       | 97   | 97   | 97   | 97   | 97   | 97   | 97   | 97          | 97   | 97   | 97       | 97   |
| Heavy Vehicles, %      | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 4           | 0    | 0    | 3        | 0    |
| Mvmt Flow              | 0    | 0    | 80   | 0    | 0    | 8    | 0    | 1340        | 3    | 0    | 1864     | 25   |

| Major/Minor          | Minor2 |   | N   | linor1 |   | Μ   | ajor1 |   | Ma | ajor2 |   |   |  |  |
|----------------------|--------|---|-----|--------|---|-----|-------|---|----|-------|---|---|--|--|
| Conflicting Flow All | -      | - | 932 | -      | - | 670 | -     | 0 | -  | -     | - | 0 |  |  |
| Stage 1              | -      | - | -   | -      | - | -   | -     | - | -  | -     | - | - |  |  |
| Stage 2              | -      | - | -   | -      | - | -   | -     | - | -  | -     | - | - |  |  |
| Critical Hdwy        | -      | - | 6.9 | -      | - | 6.9 | -     | - | -  | -     | - | - |  |  |
| Critical Hdwy Stg 1  | -      | - | -   | -      | - | -   | -     | - | -  | -     | - | - |  |  |
| Critical Hdwy Stg 2  | -      | - | -   | -      | - | -   | -     | - | -  | -     | - | - |  |  |
| Follow-up Hdwy       | -      | - | 3.3 | -      | - | 3.3 | -     | - | -  | -     | - | - |  |  |
| Pot Cap-1 Maneuver   | 0      | 0 | 272 | 0      | 0 | 404 | 0     | - | 0  | 0     | - | 0 |  |  |
| Stage 1              | 0      | 0 | -   | 0      | 0 | -   | 0     | - | 0  | 0     | - | 0 |  |  |
| Stage 2              | 0      | 0 | -   | 0      | 0 | -   | 0     | - | 0  | 0     | - | 0 |  |  |
| Platoon blocked, %   |        |   |     |        |   |     |       | - |    |       | - |   |  |  |
| Mov Cap-1 Maneuver   |        | - | 272 | -      | - | 404 | -     | - | -  | -     | - | - |  |  |
| Mov Cap-2 Maneuver   | · -    | - | -   | -      | - | -   | -     | - | -  | -     | - | - |  |  |
| Stage 1              | -      | - | -   | -      | - | -   | -     | - | -  | -     | - | - |  |  |
| Stage 2              | -      | - | -   | -      | - | -   | -     | - | -  | -     | - | - |  |  |
|                      |        |   |     |        |   |     |       |   |    |       |   |   |  |  |
| Approach             | EB     |   |     | WB     |   |     | NB    |   |    | SB    |   |   |  |  |
| HCM Control Delay, s | 5 23.7 |   |     | 14.1   |   |     | 0     |   |    | 0     |   |   |  |  |
| HCM LOS              | С      |   |     | В      |   |     |       |   |    |       |   |   |  |  |
|                      |        |   |     |        |   |     |       |   |    |       |   |   |  |  |

| Minor Lane/Major Mvmt | NBT EBLn1WBLn1 | SBT |
|-----------------------|----------------|-----|
| Capacity (veh/h)      | - 272 404      | -   |
| HCM Lane V/C Ratio    | - 0.296 0.02   | -   |
| HCM Control Delay (s) | - 23.7 14.1    | -   |
| HCM Lane LOS          | - C B          | -   |
| HCM 95th %tile Q(veh) | - 1.2 0.1      | -   |

Int Delay, s/veh

4.8

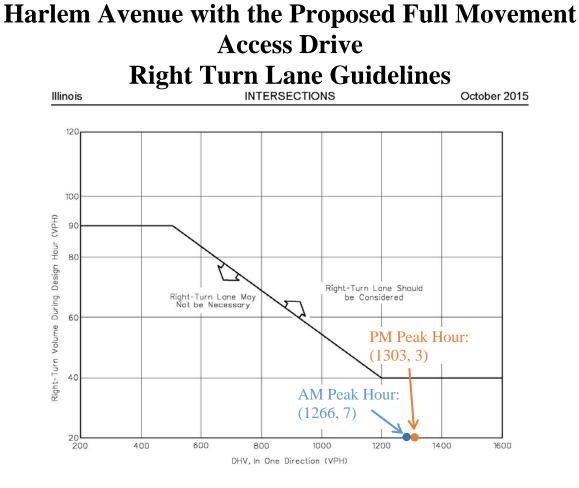
| Movement               | EBL  | EBT  | EBR  | WBL  | WBT     | WBR  | NBL  | NBT      | NBR  | SBL  | SBT         | SBR  |  |
|------------------------|------|------|------|------|---------|------|------|----------|------|------|-------------|------|--|
| Lane Configurations    |      | \$   |      | 5    | et<br>F |      | ľ    | <b>^</b> | 1    | ľ    | <b>∱î</b> ≽ |      |  |
| Traffic Vol, veh/h     | 36   | 0    | 53   | 6    | 0       | 15   | 33   | 1252     | 6    | 12   | 1808        | 66   |  |
| Future Vol, veh/h      | 36   | 0    | 53   | 6    | 0       | 15   | 33   | 1252     | 6    | 12   | 1808        | 66   |  |
| Conflicting Peds, #/hr | 0    | 0    | 0    | 0    | 0       | 0    | 0    | 0        | 0    | 0    | 0           | 0    |  |
| Sign Control           | Stop | Stop | Stop | Stop | Stop    | Stop | Free | Free     | Free | Free | Free        | Free |  |
| RT Channelized         | -    | -    | None | -    | -       | None | -    | -        | None | -    | -           | None |  |
| Storage Length         | -    | -    | -    | 0    | -       | -    | 215  | -        | 215  | 200  | -           | -    |  |
| Veh in Median Storage, | # -  | 1    | -    | -    | 1       | -    | -    | 0        | -    | -    | 0           | -    |  |
| Grade, %               | -    | 0    | -    | -    | 0       | -    | -    | 0        | -    | -    | 0           | -    |  |
| Peak Hour Factor       | 97   | 92   | 97   | 92   | 92      | 92   | 97   | 97       | 92   | 92   | 97          | 97   |  |
| Heavy Vehicles, %      | 0    | 0    | 0    | 0    | 0       | 0    | 0    | 5        | 17   | 25   | 3           | 0    |  |
| Mvmt Flow              | 37   | 0    | 55   | 7    | 0       | 16   | 34   | 1291     | 7    | 13   | 1864        | 68   |  |

| Major/Minor          | Minor2  |        | N        | /linor1 |        | ſ      | Major1  |          | Ν     | /lajor2  |           |              |    |  |
|----------------------|---------|--------|----------|---------|--------|--------|---------|----------|-------|----------|-----------|--------------|----|--|
| Conflicting Flow All | 2638    | 3290   | 966      | 2317    | 3317   | 646    | 1932    | 0        | 0     | 1298     | 0         | 0            |    |  |
| Stage 1              | 1924    | 1924   | -        | 1359    | 1359   | -      | -       | -        | -     | -        | -         | -            |    |  |
| Stage 2              | 714     | 1366   | -        | 958     | 1958   | -      | -       | -        | -     | -        | -         | -            |    |  |
| Critical Hdwy        | 7.5     | 6.5    | 6.9      | 7.5     | 6.5    | 6.9    | 4.1     | -        | -     | 4.6      | -         | -            |    |  |
| Critical Hdwy Stg 1  | 6.5     | 5.5    | -        | 6.5     | 5.5    | -      | -       | -        | -     | -        | -         | -            |    |  |
| Critical Hdwy Stg 2  | 6.5     | 5.5    | -        | 6.5     | 5.5    | -      | -       | -        | -     | -        | -         | -            |    |  |
| Follow-up Hdwy       | 3.5     | 4      | 3.3      | 3.5     | 4      | 3.3    | 2.2     | -        | -     | 2.45     | -         | -            |    |  |
| Pot Cap-1 Maneuver   | ~ 12    | 9      | 258      | 21      | 9      | 419    | 309     | -        | -     | 421      | -         | -            |    |  |
| Stage 1              | 70      | 115    | -        | 159     | 219    | -      | -       | -        | -     | -        | -         | -            |    |  |
| Stage 2              | 393     | 217    | -        | 280     | 111    | -      | -       | -        | -     | -        | -         | -            |    |  |
| Platoon blocked, %   |         |        |          |         |        |        |         | -        | -     |          | -         | -            |    |  |
| Mov Cap-1 Maneuver   | ~ 10    | 8      | 258      | 15      | 8      | 419    | 309     | -        | -     | 421      | -         | -            |    |  |
| Mov Cap-2 Maneuver   | 50      | 66     | -        | 79      | 52     | -      | -       | -        | -     | -        | -         | -            |    |  |
| Stage 1              | 62      | 111    | -        | 142     | 195    | -      | -       | -        | -     | -        | -         | -            |    |  |
| Stage 2              | 336     | 193    | -        | 214     | 108    | -      | -       | -        | -     | -        | -         | -            |    |  |
|                      |         |        |          |         |        |        |         |          |       |          |           |              |    |  |
| Approach             | EB      |        |          | WB      |        |        | NB      |          |       | SB       |           |              |    |  |
| HCM Control Delay, s | 159.9   |        |          | 25.5    |        |        | 0.5     |          |       | 0.1      |           |              |    |  |
| HCM LOS              | F       |        |          | D       |        |        |         |          |       |          |           |              |    |  |
|                      |         |        |          |         |        |        |         |          |       |          |           |              |    |  |
| Minor Lane/Major Mvr | nt      | NBL    | NBT      | NBR I   | EBLn1V | VBLn1V | VBLn2   | SBL      | SBT   | SBR      |           |              |    |  |
| Capacity (veh/h)     |         | 309    | -        | -       | 96     | 79     | 419     | 421      | -     | -        |           |              |    |  |
| HCM Lane V/C Ratio   |         | 0.11   | -        | -       |        |        | 0.039   | 0.031    | -     | -        |           |              |    |  |
| HCM Control Delay (s | 5)      | 18.1   | -        | -       | 159.9  | 54.6   | 13.9    | 13.8     | -     | -        |           |              |    |  |
| HCM Lane LOS         |         | С      | -        | -       | F      | F      | В       | В        | -     | -        |           |              |    |  |
| HCM 95th %tile Q(veh | n)      | 0.4    | -        | -       | 5.6    | 0.3    | 0.1     | 0.1      | -     | -        |           |              |    |  |
| Notes                |         |        |          |         |        |        |         |          |       |          |           |              |    |  |
| ~: Volume exceeds ca | anacity | \$∙ De | elav exc | eeds 3  | 005    | + Com  | nutatio | n Not De | fined | *· All I | maior vol | ume in plato | on |  |

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined \*: All major volume in platoon

Projected Evening Peak Hour 01/06/2020 21-008 Tinley Park

## Turn Lane Warrant



Note: For speeds less than 50 mph (80 km/hr), see Section 36-3.01(a).

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTION ON FOUR-LANE HIGHWAYS (Design Speed of 50 mph (80 km/hr) or Greater)

Figure 36-3.B

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36-3.3

### Land Use: 150 Warehousing

#### Description

A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas.

#### Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a weekday at 11 general urban/suburban study sites.

| Hour Beginning  | Percent of Weekday Peak Parking Demand |
|-----------------|----------------------------------------|
| 12:00-4:00 a.m. | 1                                      |
| 5:00 a.m.       | 3                                      |
| 6:00 a.m.       | 8                                      |
| 7:00 a.m.       | 27                                     |
| 8:00 a.m.       | 57                                     |
| 9:00 a.m.       | 79                                     |
| 10:00 a.m.      | 83                                     |
| 11:00 a.m.      | 87                                     |
| 12:00 p.m.      | 91                                     |
| 1:00 p.m.       | 91                                     |
| 2:00 p.m.       | 97                                     |
| 3:00 p.m.       | 100                                    |
| 4:00 p.m.       | 91                                     |
| 5:00 p.m.       | 74                                     |
| 6:00 p.m.       | 47                                     |
| 7:00 p.m.       | 26                                     |
| 8:00 p.m.       | 20                                     |
| 9:00 p.m.       | 17                                     |
| 10:00 p.m.      | 1                                      |
| 11:00 p.m.      | 1                                      |

#### Additional Data

For eight of the study sites, data were also collected for trucks parked at the site. The average truck parking demand ratio was 0.11 trucks per 1,000 sq. ft. GFA with a range between 0.04 and 0.25 trucks per 1,000 sq. ft. GFA.

The average parking supply ratio for the study sites with parking supply information is 0.6 spaces per 1,000 square feet GFA (15 sites) and 1.1 spaces per employee (12 sites).

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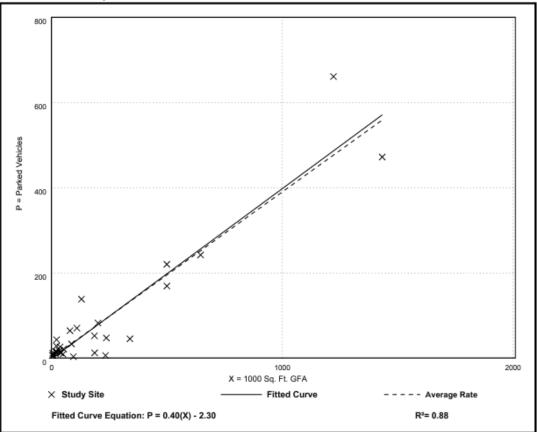
# Warehousing (150)

Peak Period Parking Demand vs: 1000 Sq. Ft. GFA On a: Weekday (Monday - Friday) Setting/Location: General Urban/Suburban Peak Period of Parking Demand: 11:00 a.m. - 4:00 p.m. Number of Studies: 31 Avg. 1000 Sq. Ft. GFA: 212

#### Peak Period Parking Demand per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | 33rd / 85th Percentile | 95% Confidence<br>Interval | Standard Deviation<br>(Coeff. of Variation) |
|--------------|----------------|------------------------|----------------------------|---------------------------------------------|
| 0.39         | 0.03 - 1.96    | 0.34 / 1.11            | 0.31 - 0.47                | 0.22 ( 56% )                                |

#### **Data Plot and Equation**



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