NOTICE OF THE MEETING OF THE PLAN COMMISSION

The meeting of the Plan Commission is scheduled for June 3, 2021 beginning at 7:00 p.m.

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

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 clerksoffice@tinleypark.org or place requests in the Drop Box at the Village Hall by noon on June 3, 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

June 3, 2021 – 7:00 P.M. Council Chambers Village Hall – 16250 S. Oak Park Avenue

Regular Meeting Called to Order Roll Call Taken Communications

Approval of Minutes: Minutes of the May 20, 2021 Regular Meeting

ITEM#1 PUBLIC HEARING – FLOOR & DÉCOR REDEVELOPMENT, 7061-7063 159TH STREET – 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 inleudes Final Site Plan/Architectural Approval.

ITEM#2 WORKSHOP/PUBLIC HEARING – BETTINARDI HQ SITE CHANGES, 7800 GRAPHICS DRIVE – SITE PLAN APPROVAL AND SPECIAL USE FOR A SUBSTANTIAL DEVIATION FROM A PLANNED UNIT DEVELOPMENT

Consider recommending that the Village Board grant grant Robert Bettinardi, on behalf of X-Cel Technologies Inc (d/b/a as Bettinardi Golf) (Property Owner), an a Special Use Permit for a Substantial Deviation from the Planned Unit Development (PUD) with exceptions from the Zoning Ordnance for the property located at 7800 Graphics Drive in the ORI PUD (Office and Restricted Industrial, Hickory Creek PUD) zoning district. The request will include Site Plan Approval to allow a parking expansion in the front yard.

ITEM #3 PUBLIC HEARING – TINLEY PARK BUSINESS CENTER (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 20, 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 20, 2021.

CALL TO ORDER – PLAN COMMISSIONER CHAIRMAN GRAY called to order the Regular Meeting of the Plan Commission for May 20, 2021 at 7:08 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

Eduardo Mani Steven Vick James Gaskill Kehla West

Frank Loscuito

Absent Plan Commissioners: Angela Gatto

Mary Aitchison

Village Officials and Staff: Dan Ritter, Senior Planner

Kimberly Clarke, Comm. Dev. Dir. Kathy Congreve, Commission Secretary

Mayor Michael Glotz

Petitioners: Parker Lange, Development Mgr. with CenterPoint Integrated

Solutions (participated electronically)

Adam Silverman, 7061-7063 159th St. Property Owner (participated

electronically)

Conner Mullady - Jones Lang LaSalle (JLL)
Dan Harrington – Scannell Properties
Kevin Coughlin – Manhard Consulting

Chris Carlino – Scannell Properties (participated electronically)

Brian P. Liston - Liston and Tsantilis Law (participated electronically)

Monika Shamass – Liston and Tsantilis Law (participated

electronically)

Members of the Public: None

COMMUNICATIONS

None

APPROVAL OF MINUTES

Minutes of the May 6, 2021 Regular Meeting of the Plan Commission were presented for approval. A motion was made by COMMISSIONER MANI, seconded by COMMISSIONER GASKILL to approve the minutes as presented.

CHAIRMAN GRAY asked for a voice vote; all were in favor. 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 20, 2021 REGULAR MEETING

WORKSHOP - FLOOR & DÉCOR REDEVELOPMENT, 7061-7063 159TH STREET -**ITEM #1**

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 includes Final Site Plan/Architectural Approval.

Present Plan Commissioners: Chairman Garrett Gray

Eduardo Mani Steven Vick James Gaskill Kehla West Frank Loscuito

Absent Plan Commissioners: Angela Gatto

Mary Aitchison

Village Officials and Staff: Dan Ritter, Senior Planner

> Kimberly Clarke, Comm. Dev. Dir. Kathy Congreve, Commission Secretary

Mayor Michael Glotz

Parker Lange, Development Mgr. with CenterPoint Integrated Petitioners:

> Solutions and members of his team (participated electronically) Adam Silverman, 7061-7063 159th St. Property Owner (participated

electronically)

Members of the Public: None

CHAIRMAN GRAY recused himself from the discussion on this item to avoid any perception of proprietary gain as the company he works for does Geotech work for Floor & Décor. He would manage the meeting but not participate beyond that. He then invited staff to start with the workshop portion of this item.

DAN RITTER, Senior Planner, 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. Dan gave his presentation, summarizing the history of the site, the proposed use, and open items for review.

CHAIRMAN GRAY invited the petitioner to speak. Parker Lange with CenterPoint was on the line, representing Floor & Décor. His team was with him as well as the property owner, to answer any questions commissioners may have.

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

COMMISSIONER VICK stated that the recommended changes are good, he agrees with staff that the backside of the building be painted on color at one time. Referring to the circulation, he stated that the owner should look into the westbound travel on the road; the lot has been fixed and keeps collapsing. There's something structurally wrong with the ground that should be looked at. He sees no problem with the sign variance as it looks proportionate to the overall building.

COMMISSIONER MANI echoed Commissioner Vick's comments. He commented on the signage, stating that we're looking a 241% difference from code on the signs and wondered how the proportion will look. DAN RITTER stated that current Burlington and Hobby Lobby signs exceed the code (but doesn't know when it had been approved). So, the new sign will look very similar in size to the existing sign. If Hobby Lobby changes their sign or someone new moves in, they will try to keep a 1:1 ratio on the size, but a sign variance may be required at that time. For now, the new sign (Floor & Décor) and the current sign (Hobby Lobby) will be in proportion to the facade. COMMISSIONER MANI agrees that the façade should be updated overall to include the Hobby Lobby side; he likes what he sees on the plans.

COMMISSIONER WEST feels it will be a great addition to improve the traffic flow, as navigating that area on and off Oak Park Avenue and 159th Street can be tricky. She doesn't have any concerns about the sign and feels it's in balance due to the large setback from the roadway.

COMMISSIONER LOSCUITO stated that the Staff Report was well done. He likes how the parking lot and site plan are set up and he likes the cosmetic changes to the building. These are positive upgrades.

CHAIRMAN GRAY asked if there was anyone from the public wishing to speak; there were none and there had not been any comments submitted in writing.

DAN RITTER stated that they'll work with the Petitioner to work through two of the seven open items-- the suggestions for the rear façade, and a deadline for Phase 2 to be completed. Other than that, the commissioners seemed to like the overall site plan and look of the building.

CHAIRMAN GRAY announced that there will be a Public Hearing on this item at the June 3, 2021 regularly scheduled Plan Commission meeting.

TO: VILLAGE OF TINLEY PARK PRESIDENT AND BOARD OF TRUSTEES

FROM: VILLAGE OF TINLEY PARK PLAN COMMISSION

SUBJECT: MINUTES OF THE MAY 20, 2021 REGULAR MEETING

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.

Present Plan Commissioners: Chairman Garrett Gray

Eduardo Mani Steven Vick James Gaskill Kehla West Frank Loscuito

Absent Plan Commissioners: Angela Gatto

Mary Aitchison

Village Officials and Staff: Dan Ritter, Senior Planner

Kimberly Clarke, Comm. Dev. Dir. Kathy Congreve, Commission Secretary

Mayor Michael Glotz

Petitioners: Conner Mullady - Jones Lang LaSalle (JLL)

Dan Harrington – Scannell Properties Kevin Coughlin – Manhard Consulting

Chris Carlino – Scannell Properties (participated electronically) Brian P. Liston - Liston and Tsantilis Law (participated electronically)

Monika Shamass – Liston and Tsantilis Law (participated

electronically)

Members of the Public: None

CHAIRMAN GRAY invited staff to start with their presentation.

DAN RITTER, Senior Planner, 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. Dan gave his presentation which discussed the rezoning of a large industrial development on Harlem Avenue near the Amazon building in Matteson and also annexation and review of site plans. For now, Commission would just be approving the site plan and architecture of Building One. He noted that staff did have some preemptive meetings with Odyssey residents on the project to get their initial feedback and address their concerns.

DAN RITTER also noted there's a couple of slight changes that have come about since the preparation of the Staff Report. They had a call today with Scannell that worked through some more of the engineering, working with our Village Engineer and Consulting Engineers. Phase One will include the detention pond that is to the north of that building and anything that has to do with the wetlands in terms of remediation or plantings that will be required. Phase One will also include a berm along Harlem Avenue that going to run from the detention pond past building one past where building two is and end at Benton Drive.

Referring to Item #4, KIMBERLY CLARKE noted that Scannell is the type of developer that works in partnership listening to the Village concerns; they have really stepped up in getting this watermain which is a critical infrastructure need for the Village.

Referring to Item #5, DAN RITTER clarified that the north driveway will be a right-in/right-out and the second one down will actually be a full access point. The petitioner will be working with IDOT to try to get a signal at that intersection. KIMBERLY CLARKE noted that Village staff would like to pursue IDOT in partnership with the developer in getting a traffic light at that intersection of 195th/Lakeside, which would be helpful for the residents on the west side of Harlem especially with the increase in traffic.

Referring to Item #8, DAN RITTER notes that what the developer is proposing for parking falls right in line with standard practices. Phase One/Building One of the development is what we'll be approving at this time. With Phases Two and Three, typically a developer will have tenants and can build to suit with those future tenants in mind.

Referring to Item #9, DAN RITTER noted that the berm in the area of the first building may actually drop down to the 2 - 2½ foot range because on this building there aren't immediately adjacent docks or trailer storage.

Referring to Item #10, DAN RITTER noted that the petitioner is looking into lighting on Vollmer Road and Harlem Avenue; those will be subject to the jurisdictional approvals. It will be up to IDOT and Cook County if they put street lights there. But there will be lighting at the access driveways to the development.

Referring to Item #11, DAN RITTER stated that the final plat approval may change a little; the final plat is going to have cross access, utility, pathway and landscaping easements and the overall lot layouts.

DAN RITTER stated that the petitioner and developer have done a good job going far with our engineering compared to a lot of other projects that come before the Commission. Because of the floodplain and the size of the site, they've taken it a step further and it makes the Planning Staff more comfortable as well. Plans also have to go through MWRD, IDOT, Cook County, IEPA, US Army Corp of Engineers, and other jurisdictional approvals. Our engineers are fairly confident the site will work and be successful.

CHAIRMAN GRAY invited Petitioners to speak.

DAN HARRINGTON, Development Manager with Scannell Properties gave a brief presentation on his company. He stated that online shopping has created a huge demand for industrial development. This site is a great location because of its access to two major highways and should attract a diverse group of tenants to Tinley Park. They are looking forward to doing a project here; it has been a pleasure to work with staff and incorporate some of the things that they had requested.

CHAIRMAN GRAY asked for comments from each Commissioner allowing them to direct questions to the Petitioners. Comments were as follows:

COMMISSIONER LOSCUITO stated he likes the overall site plan and thinks it is great that the developer is working with the Village on improvements. He had a couple of questions. The first, asking who would be the target renter for the first building? DAN HARRINGTON replied, stating that because it is a smaller building, it could be a mix with an office component, a warehouse component, light assembly, machining or even technology. COMMISSIONER LOSCUITO's next question was whether the developer will start Phase 2 when Phase 1 is occupied or when Phase 1 is complete? DAN HARRINGTON replied, stating that since it is a different building attracting completely different tenants, they may start it even before Phase 1 is complete.

COMMISSIONER WEST asked about the yellow area outlined on the plans and if that will be left undisturbed. DAN HARRINGTON replied yes it will. She also asked when the sidewalk along Harlem will be constructed. DAN RITTER replied, stating that it is part of Phase 1.

COMMISSIONER MANI said he feels this is great for Tinley Park and appreciates the partnership between the developer and staff. He likes how the architecture looks. DAN HARRINGTON noted that they will create some architecture that ties the buildings together but also making them diverse so they don't all look like the same building.

COMMISSIONER VICK stated that the site plan is a good use of the property. He appreciates staff's part and the developer's part in developing buffering for the site. The plans solve a watermain problem that has been in existence for a while. He agrees with having a radio communication tower there. The additional stoplight will make everything a lot safer.

CHAIRMAN GRAY said he thinks it fits an ORI zoning district with the PUD approval. The landscape berm is great to screen with the three to four feet on the side that buffers Harlem. He asked if the north to south length would be just for building one now. DAN RITTER replied, stating it would, but the two and a half feet height will just be where Building One is. In later phases, it would extend south at a height of three to four feet. CHAIRMAN GRAY felt that the buffering to the east was sufficient. The building looks fine with precast panels. He likes the idea of a multipurpose path and hopes it will connect to other paths. He wanted clarification on the floodplains asking if it is going to get redirected to compensatory storage. KEVIN COUGHLIN with Manhard Consulting stepped up to answer the question, stating that they are the civil engineers, surveyors, and landscape architects on the project. The floodplain would be regraded, reconfigured and improved. The existing floodplain is further west and exists where the east side of building one is. He showed on the plans how they'll provide compensatory storage and widen the creek channel where it's better located from an ecological standpoint. And referring to the yellow areas Commissioner West asked about, he said those areas would be regraded and they'll stay out of the floodway which is the conveyance channel.

CHAIRMAN GRAY had concerns about the ratio of truck traffic to employee traffic, especially not knowing who the tenants would be. DAN HARRINGTON said that in terms of parking and in terms of employees on the smaller building, they're shooting for one per thousand parking stalls. As the buildings get larger, they start to look at one per 1,500 or one per 2,000. They try to build their road network so that it keeps cars from going through truck docks. KEVIN COUGHLIN added that the KLOA traffic engineer on the project has looked at the mix. You'll generally see the autos during the commute times in the morning and near the end of the day, whereas the trucks are typically intermittent throughout the day. CHAIRMAN GRAY had another question, stating that a lot of traffic backs up going south on Harlem in the left-hand turn lane at the Volmer intersection; he's curious how the traffic pattern will look with more trucks. KEVIN COUGHLIN stated that KLOA is also working across the street at the Amazon site an has accounted for those flows in their analysis and has been deemed to be acceptable. They will be looking at signal timing for the new lights to optimize the flow and avoid any bottlenecks. DAN RITTER added that the time of day will influence it too. And they have worked through stacking issues with the village engineer and the Manhard staff. KEVIN COUGHLIN stated that they have submittals in with IDOT and Cook County DOT and everything will be well coordinated with them. CHAIRMAN GRAY mentioned that he agrees with staff that if they need to tweak parking, they will have that opportunity later and that it is only the smallest building that is being final approved. DAN RITTER added that the number of parking spaces will be a driver in who they tenant will be. CHAIRMAN GRAY gave kudos to the Tinley Park staff for listening to the community and having the foresight to work with the developer and IDOT to revisit getting another intersection or signal changes in that area near the Lenny's gas station (195th/Lakeside).

DAN RITTER stated he received a lot of good feedback from the Commission and that they'll work with the developer and the petitioner to work through the open items based on the comments.

The Public Hearing for this will be at the June 3, 2021 Plan Commission Meeting.

GOOD OF THE ORDER -

DAN RITTER stated that the new Planner, Lori, has been appointed and will be starting on Monday. Paula is retiring from her regular hours, but will still be around as a Planning Consultant. There will be a special meeting on May 27, 2021; we will have four items to cover.

COMMENTS FROM THE PUBLIC – There were none.

A Motion was made by COMMISSIONER VICK, seconded by COMMISSIONER LOSCUITO to adjourn the May 20, 2021 Plan Commission meeting.

CHAIRMAN GRAY asked for a voice vote; all were in favor. He declared the motion carried and adjourned the meeting at 9:07 P.M.





May 20, 2021 - Public Hearing

Petitioner

Daniel Kelly, on behalf of CenterPoint Integrated Solutions

Property Location

7061-7063 159th Street

PIN

28-19-100-012-0000

Zoning

B-2 (Community Shopping)

Approvals Sought

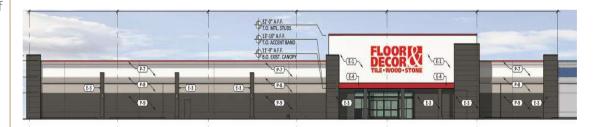
- **Variations**
- Site Plan & Architectural Approval

Project Planner

Daniel Ritter, AICP Senior Planner

Floor & Décor Redevelopment

7061-7063 159th Street



PLAN COMMISSION STAFF REPORT

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).

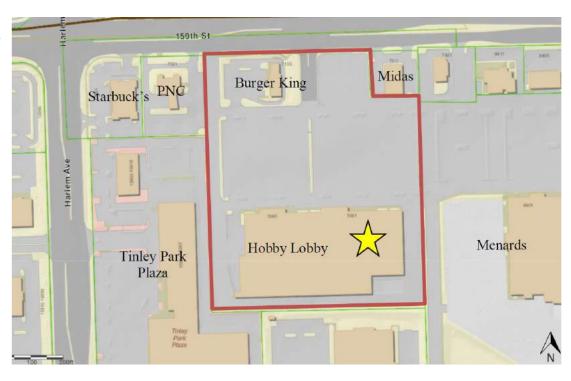
With many large commercial developments, there is some flexibility given to large anchor tenant signs since those tenants tend to take up a large amount of the building space and are often set back from roadways. Due to these issues, wall signage variations have been previously approved to allow for 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.

Changes to the May 20, 2021 Plan Commission Workshop Staff Report are indicated in RED.

EXISTING SITE & HISTORY

The subject site is located along the south side of 159th 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 occupied 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



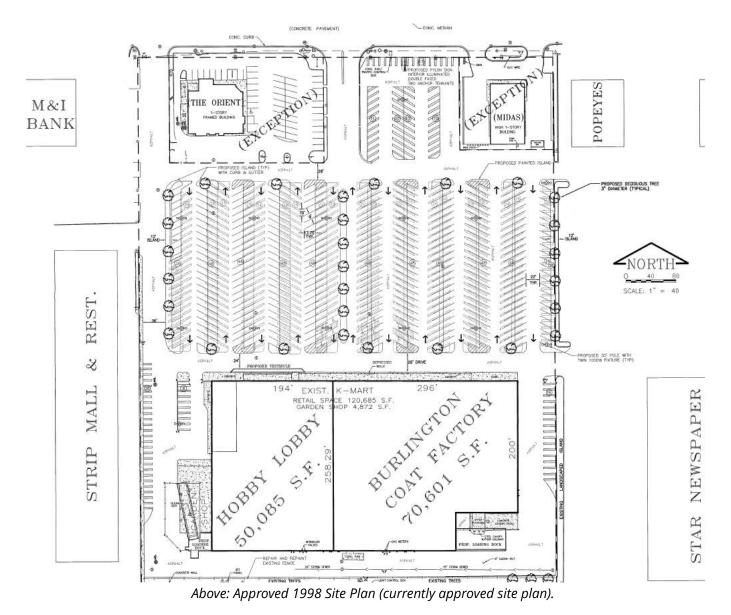
cross-access to the properties to the west (Tinley Park Plaza) and East (Menards/Bremen Towne Mini Mall). The property includes an outlot building (Burger King) located on the northwest corner of the lot and a small parking area along 159th Street that is currently being marketed for future development.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



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 cross-access between them. To the north of the subject property across 159th 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



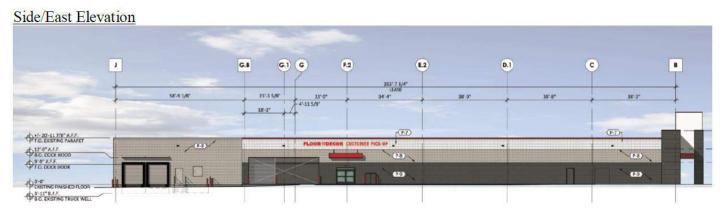
locations keep a large stock of product on-site and require high ceilings for rack storage systems. Floor & Décor is open to the public but has a strong returning customer base of construction professionals like designers and contractors. Many of their locations are near home improvement stores like 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





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.

Staff will be working with Hobby Lobby and the property owner on the changes to the Hobby Lobby portion of the front façade. The goal is not to have a uniform look since they are two large anchor tenant spaces, but instead to have a smooth transition between the two spaces and not have them contrast along the front façade. The Village's architectural standards in Section III.U.6. of the Zoning Ordinance have specific language that should guide the review and approval. Color or design coordination is recommended with minimal structural changes anticipated. A recommended condition has been included requiring permit submittal by the end of 2021 and completion of the work by 2022.

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.

A recommended condition has been added to require complete painting of the entire rear façade at the same time and in one color/shade to be completed with the Phase 1 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.

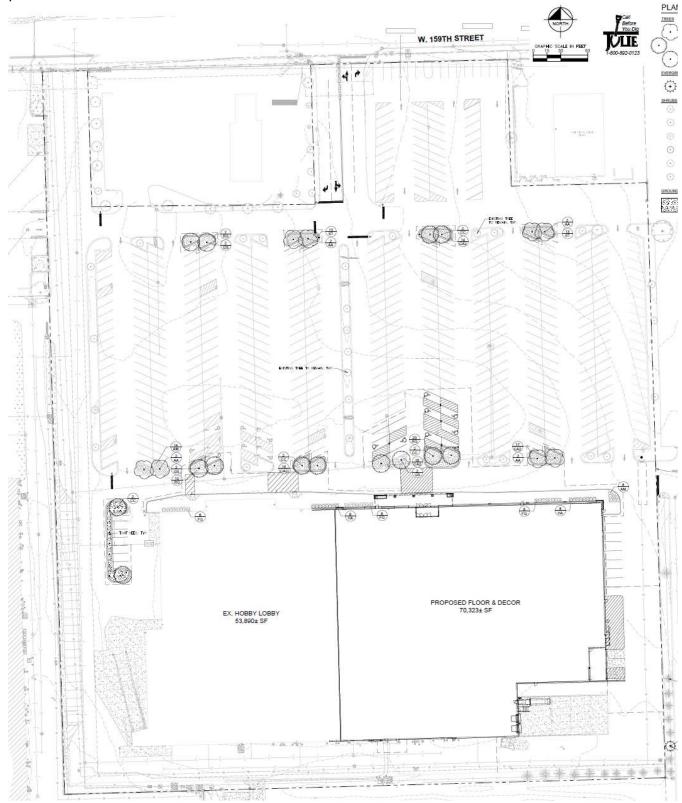
Open Item #4: Review overall site plan and site circulation based on Site Plan Standards.

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.

The overall site plan was seen as a big improvement to its overall appearance and in regards to traffic control and landscaping. A condition has been added requiring final engineering review and approval for the proposed changes.

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 a consistent light fixture style for



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.

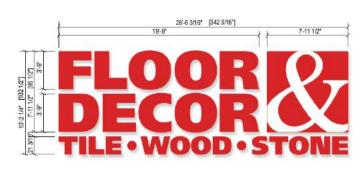
Open Item #6: Staff recommends revising the lighting plans be revised to include consistent lighting upgrades throughout the site to provide a consistent look and lighting intensity to the site.

A recommended condition has been added requiring that all light poles and light fixtures match and are replaced with Phase 1 work.

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



Floor & Décor Wall Sign Variation Requests			
	Size	Sign Ht. Max.	
Code Required	120 sq. ft.	7 ft	
Requested	290.5 ft	10′ 3″	

certain limits are needed, large commercial developments can present challenges that prevent signage from being visible and providing adequate wayfinding. Similar Variations in size (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 159th 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.



The Variation request was generally viewed as compatible with the previously approved signage and with regards to similar requests in the area. It was noted by Commissioners that the proposed size beyond the maximum of 120 sq. ft. is proportionate to the size of the tenant space and the overall façade area purposefully designed for the wall sign.

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.
 - If the sign met code would be difficult to read due to the distance from roadways and the size of the space. The proposed sign's size has been properly designed for and is proportionate to the size of the space and the façade area specifically designed for signage.
- 2. The plight of the owner is due to unique circumstances.
 - The property is existing and has had similar size signage for many years. The size of the signs remains compatible with the size allowance calculations, it just exceeds the maximum size. The overall floor area and frontage length is large compared to many shopping center tenants.
- 3. The Variation, if granted, will not alter the essential character of the locality.
 - An additional signage allowance has been approved for many surrounding commercial properties for their large anchor tenant properties. The sign request is proportionate to the size of the tenant space and façade. It is also similar to approvals from other neighboring commercial shopping centers and thus will not detract from the overall area.
- 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.

STANDARDS FOR SITE PLAN & ARCHITECTUAL APPROVAL

Section III.U.6. of the Zoning Ordinance requires that the conditions listed below must be met and reviewed for Site Plan and Architectural approval. Specific findings are not required but all standards shall be considered to have been met upon review from the Plan Commission.

Architectural

- 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.

Site Design

- 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.

MOTIONS TO CONSIDER

If the Plan Commission wishes to act on the Petitioner's requests, the appropriate wording of the motions is listed below. The protocol for the writing of a motion is to write it in the affirmative so that a positive or negative recommendation correlates to the Petitioner's proposal. By making a motion, it does not indicate a specific recommendation in support or against the plan, it simply brings the requested motion forward for a vote. The conditions listed below are recommended by staff, but can be added to, changed, or removed by the Commission based on their discussion and what they wish to approve or recommend.

Motion 1 (Sign Variation)

"...make a motion to recommend that the Village Board grant, Daniel Kelly on behalf of CenterPoint Integrated Solutions, a Variation from Section IX.F.1. (Wall Signs in Business Districts) of the Zoning Ordinance to permit a wall sign that is 290.5 sq. ft. instead of the maximum 120 sq. ft. and is 10' 3" in height instead of the maximum of 7 feet at 7061 159th Street in the B-2 (Community Shopping) zoning district, in accordance with the plans submitted and adopt Findings of Fact as proposed by Village Staff in the June 3, 2021 Staff Report."

Motion 2 (Site Plan):

"...make a motion to grant the Petitioner, Daniel Kelly on behalf of CenterPoint Integrated Solutions, Site Plan and Architectural Approval for proposed changes at 7061-7063 159th Street in the B-2 (Community Shopping) zoning district, in accordance with the plans submitted and subject to the following conditions:

- 1. Approval is subject to final engineering review and approval by the Village Engineer.
- 2. Approval is subject to the parking lot light poles/fixtures and building light fixtures matching and being replaced at the same time during the required Phase 1 work.
- 3. The rear façade shall be painted and completed in Phase 1 of work and be one color/shade.
- 4. The front façade upgrades that are part of Phase 2 work on the Hobby Lobby portion of the building shall have a permit submitted by December 31, 2021, and be completed by December 31, 2022. The façade changes shall be in conformance with all architectural review standards in Sec. II.U.6 of the Zoning Ordinance.



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

*Additional Information is Required for Specific Requests as Outlined in Specific Addendums				
✓ Variation ☐ Annexation ☐ Rezoning (M ☐ Plat (Subdivise) ✓ Site Plan ☐ Landscape (for:t Development (PUD) Conce Residential Commercial ap Amendment) From sion, Consolidation, Public Ease Change Approval	for <u>Signage Relief</u>	-	
PROJECT & PRO	OPERTY INFORMATION			
Project Name:	Floor and Decor	(* ×)		
Project Description:	D. T. and of Existing Detail Duilding			
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 Co	st: \$			
	CORD INFORMATION			
_	er documentation of ownership and/or			
Name of Owner:	hicago Trust Co, trust # 8-2120	Company: JMW P	roperties, LLC	
Street Address:		City, State & Zip:		
E-Mail Address:		Phone Number:		
APPLICANT INFORMATION		• •		
Same as Owner of		783		

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



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

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.
	n regards to the subject property and project, including modifying any project or request. I agree to ments made by the designated representative.
Property Owner Signature:	Alan Silverman
Property Owner Name (Print):	Alan Silverman, Mgr Partner, JMW Properties, LLC
Acknowledgements	
Village Manager, Corpor member or Chair, does nobligate the Village. Further limited to, motions, reso	, understands and agrees that under Illinois law, the Village President (Mayor), Village Trustees, ration Counsel and/or any employee or agent of the Village or any Planning and Zoning Commission not have the authority to bind or obligate the Village in any way and therefore cannot bind or ther, Applicant acknowledges, understands and agrees that only formal action (including, but not plutions, and ordinances) by the Board of Trustees, properly voting in an open meeting, can obligate or rights or entitlement on the applicant, legal, equitable, or otherwise.
of subject site(s) as part	mmission, Zoning Board of Appeals, Village Board as well as Village Staff may conduct inspections of the pre-hearing and fact finding review of requests. These individuals are given permission to regards to the request being made.
	igns will be obtained and installed by the Petitioner on their property for a minimum of 10 days ng. These may be provided by the Village or may need to be produced by the petitioner.
 The request is accompascheduling any public m 	nied by all addendums and required additional information and all applicable fees are paid before eetings or hearings.
 Applicant verifies that a 	Il outstanding fees and monies owed to the Village of Tinley Park have been paid.
	e, impact, engineering, contracted review or other required fees and donations shall be paid prior ing permits, occupancy permits, or business licenses.
	nt by signing this application certify that the above information and all supporting addendums and
Property Owner Signature:	Alan Silverman
Property Owner Name (Print):	JMW Properties, LLC
Applicant Signature: (If other than Owner)	Daniel Kelly
Applicant's Name (Brint). Daniel Kelly	

Applicant's Name (Print):

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.

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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.

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355 Union Boulevard, Suite 301 Lakewood, CO 80228 T 303.679.6978 CenterPoint-is.com



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 159th 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:

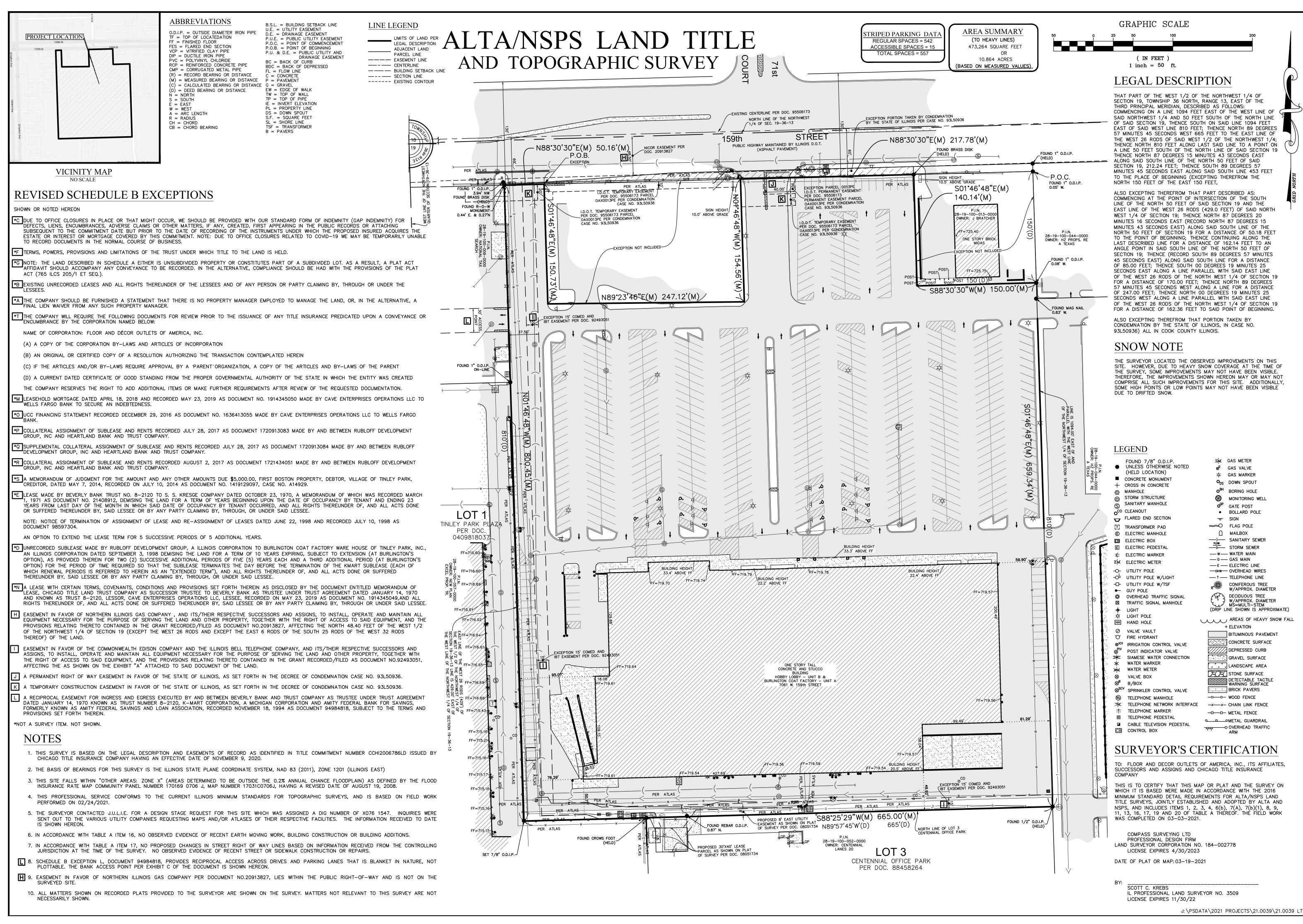
- Improvements to existing parking lot deficiencies (potholes, parking islands, ADA upgraded etc.)
- Flush Curb along front vestibule
- Installing Customer Pickup Area (CPU)
 - CPU area facilitates large quantity orders for both PRO and typical customers.
 The CPU area is serviced by a forklift to load 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 159th 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 dkelly@centerpoint-is.com or 585-329-4683.

Respectfully,

Daniel Kelly



now what's **below**. Call before you dig

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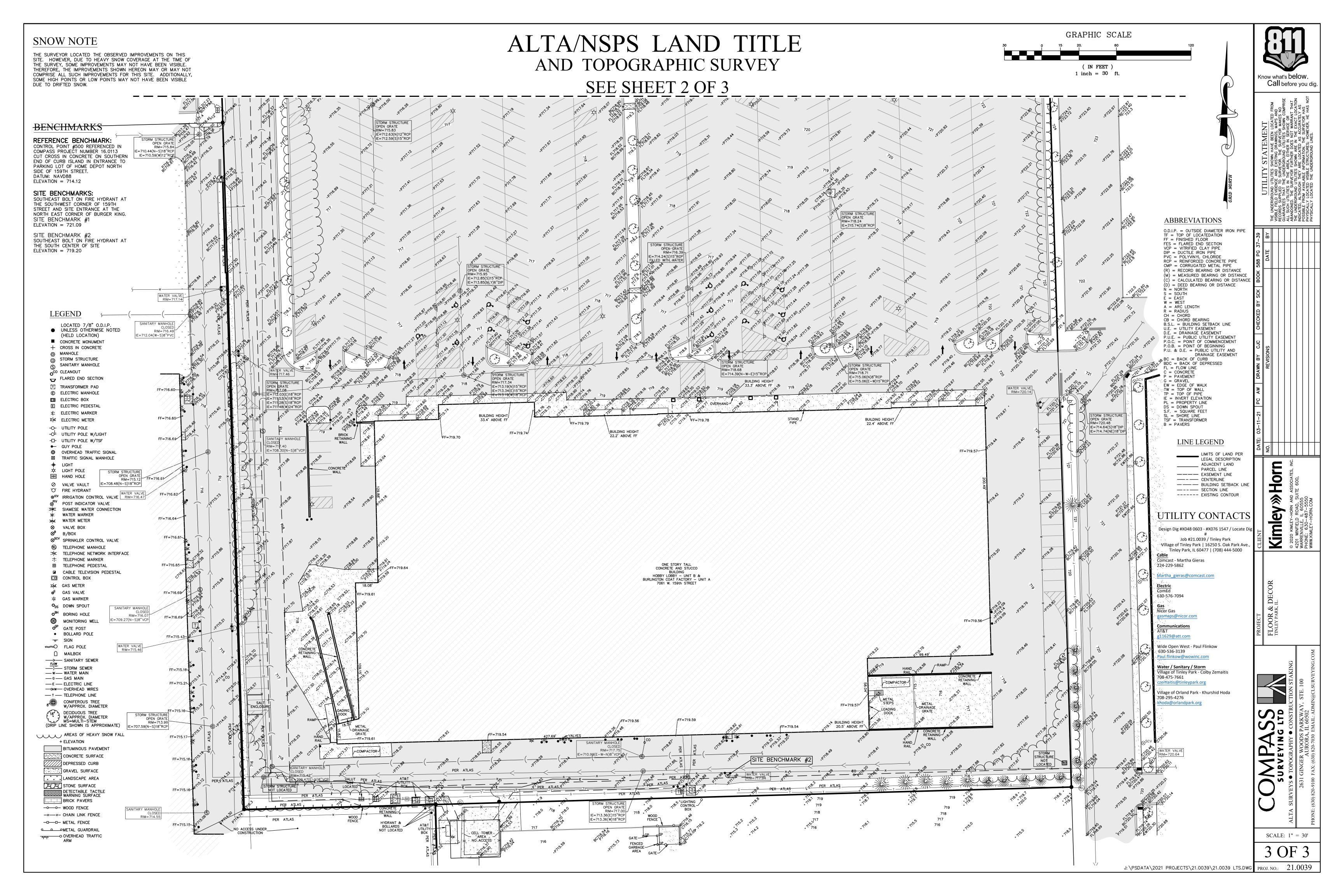
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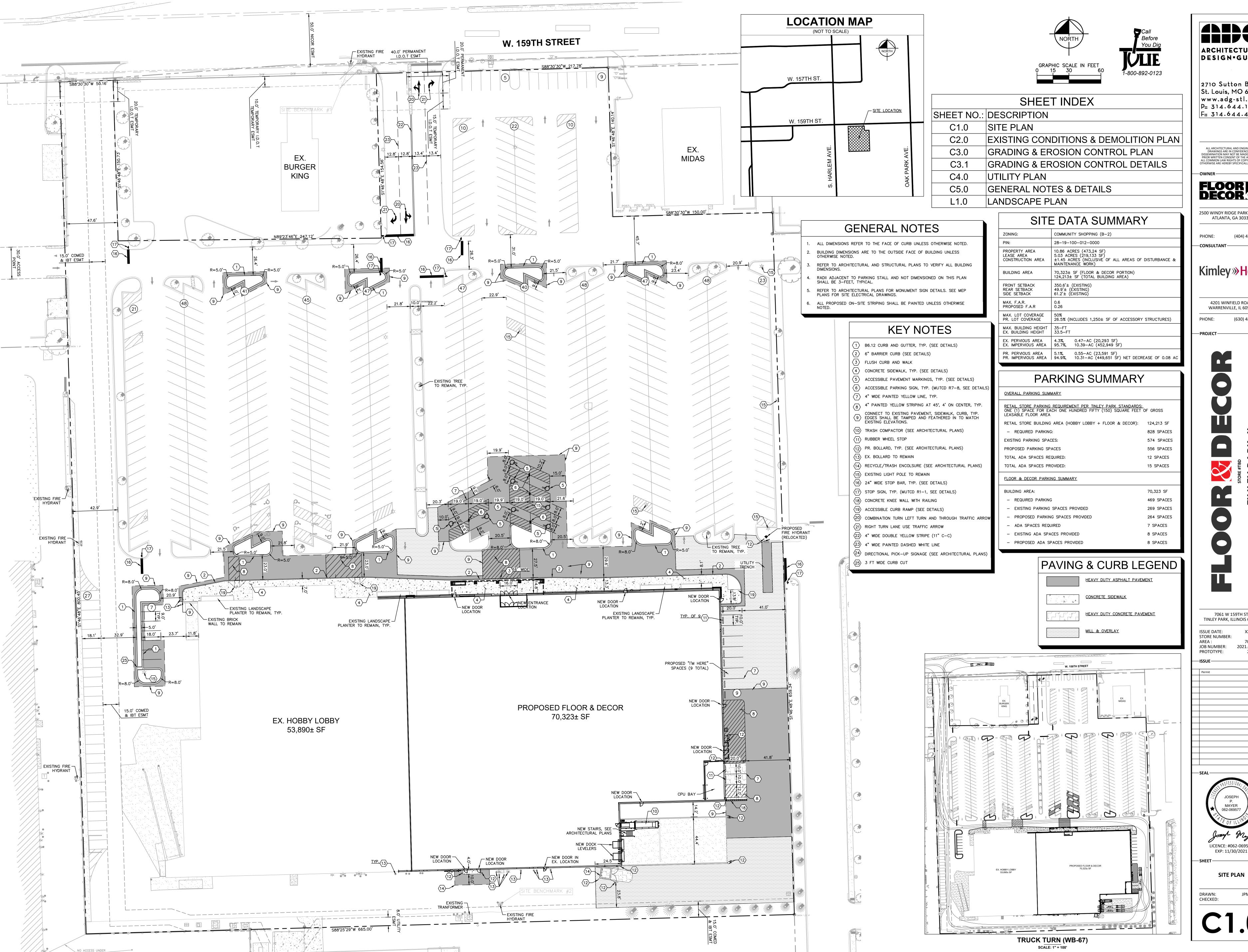
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St. Louis, MO 63143 www.adg-stl.com P:: 314.644.1234 F:: 314.644.4373

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ATLANTA, GA 30339

(404) 471-1634

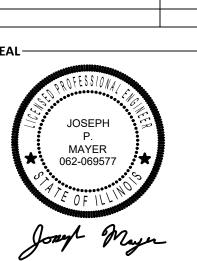
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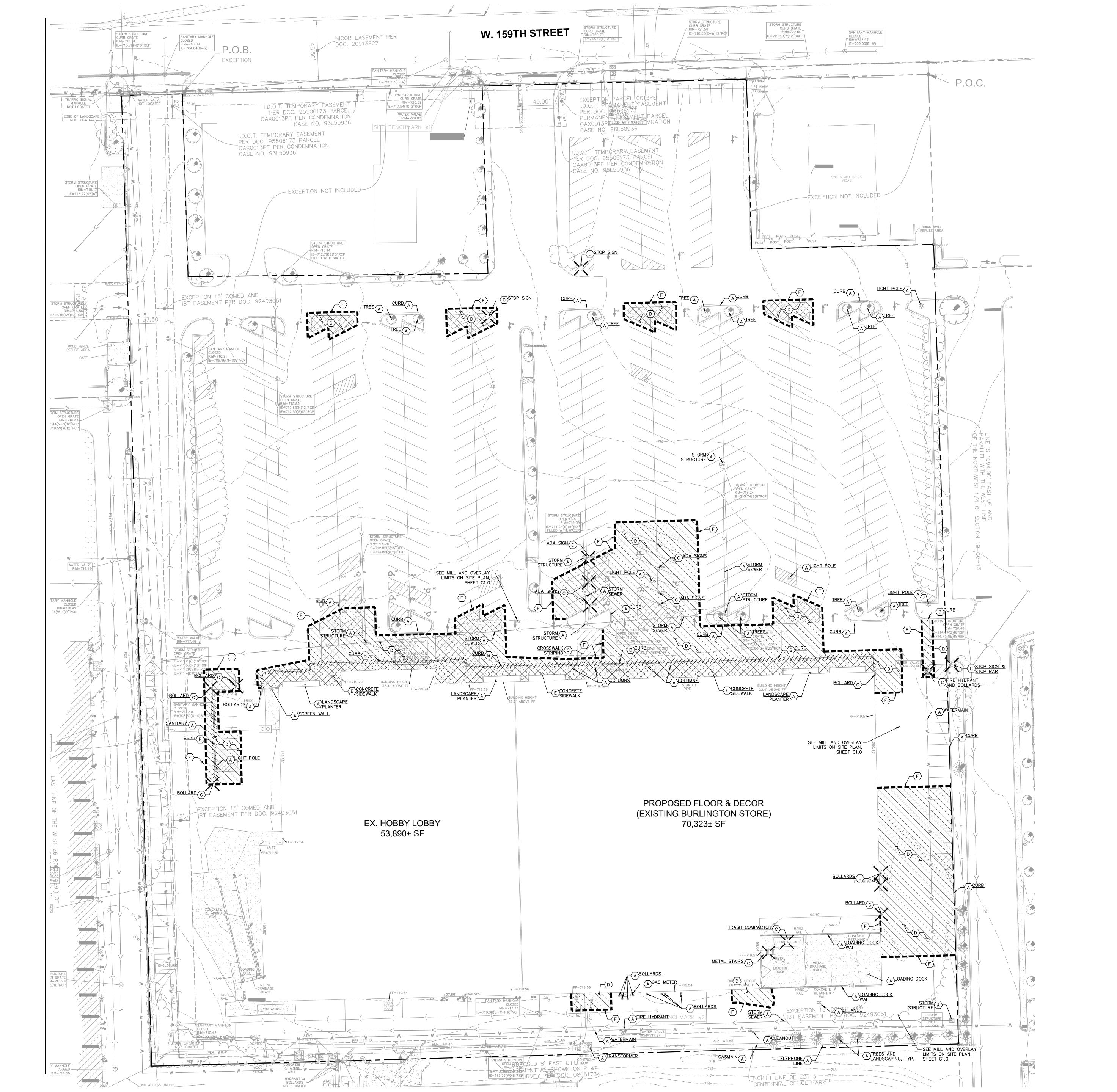
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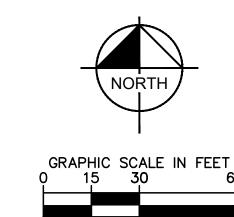
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7061 W 159TH ST TINLEY PARK, ILLINOIS 60477

T.B.D. 70,323 SF 2021.0302.00 2020 Q3









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FLOOR STORES TO SERVICE PARKWAY, SE

ATLANTA, GA 30339

4201 WINFIELD ROAD

(630) 487-5550

WARRENVILLE, IL 60555

PHONE: (404) 471-1634

-CONSULTANT-

-PROJECT-

IF DEMOLITION OR CONSTRUCTION ON SITE WILL INTERFERE WITH THE
ADJACENT PROPERTY OWNER'S TRAFFIC FLOW, THE CONTRACTOR SHALL
COORDINATE WITH ADJACENT PROPERTY OWNER, TO MINIMIZE THE IMPACT ON
TRAFFIC FLOW. TEMPORARY RE—ROUTING OF TRAFFIC IS TO BE ACCOMPLISHED
BY USING IDOT APPROVED TRAFFIC BARRICADES, BARRELS, AND/OR CONES.
TEMPORARY SIGNAGE AND FLAGMEN MAY BE ALSO NECESSARY.

Kimley >>> Horn

TEMPORARY SIGNAGE AND FLAGMEN MAY BE ALSO NECESSARY.

QUANTITIES DEPICTED ON THIS SHEET SHALL SERVE AS A GUIDE ONLY.

CONTRACTOR TO VERIFY ALL DEMOLITION QUANTITIES.

7. REFER TO GEOTECHNICAL REPORT PROVIDED BY OTHERS FOR ALL SUBSURFACE

DEMOLITION NOTES

CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE EXISTING

CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND

OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION

OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE

THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO

AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR SHALL NOT DEMOLISH ANYTHING OUTSIDE THE OWNERS LEASE/PROPERTY LINE UNLESS SPECIFICALLY MENTIONED ON THIS SHEET.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON

MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE

APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION

RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE,

TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

STRUCTURES, RELATED UTILITIES, PAVING, AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED.

AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

INFORMATION.

8. CONTRACTOR SHALL BEGIN CONSTRUCTION OF ANY LIGHT POLE BASES FOR RELOCATED LIGHT FIXTURES AND RELOCATION OF ELECTRICAL SYSTEM AS SOON

AS DEMOLITION BEGINS. CONTRACTOR SHALL BE AWARE THAT INTERRUPTION

OF POWER TO ANY LIGHT POLES OR SIGNS SHALL NOT EXCEED 24 HOURS.

9. EROSION CONTROL MUST BE ESTABLISHED PRIOR TO ANY WORK ON SITE INCLUDING DEMOLITION

INCLUDING DEMOLITION.

10. THE EXTENT OF SITE DEMOLITION WORK IS AS SHOWN ON THE CONTRACT

DOCUMENTS AND AS SPECIFIED HEREIN.

11. CONTRACTOR MUST RECEIVE APPROVAL FROM CIVIL ENGINEER AND GEOTECHNICAL ENGINEER FOR THE MATERIAL TYPE AND USE IF CONTRACTOR DESIRES TO REUSE DEMOLISHED SITE PAVEMENT AS STRUCTURAL FILL.

12. EXISTING UTILITIES, WHICH DO NOT SERVICE STRUCTURES BEING DEMOLISHED, ARE TO BE KEPT IN SERVICE AND PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS. CONTRACTOR SHALL ARRANGE FOR SHUT—OFF OF UTILITIES SERVING STRUCTURES TO BE DEMOLISHED. CONTRACTOR IS RESPONSIBLE FOR TURNING OFF, DISCONNECTING, AND SEALING INDICATED UTILITIES BEFORE STARTING DEMOLITION OPERATIONS. EXISTING UTILITIES TO BE ABANDONED ARE TO BE CAPPED AT BOTH ENDS AND FILLED WITH FA—1 OR APPROVED EQUAL. ALL UNDERGROUND UTILITIES TO BE REMOVED ARE TO BE BACKFILLED WITH ENGINEERED FILL OR SELECT EXCAVATED MATERIAL, AS APPROVED BY THE GEOTECHNICAL ENGINEER, TO 95% OF MODIFIED PROCTOR DENSITY WITHIN PAVED AREAS AND TO 90% OF MODIFIED PROCTOR DENSITY FOR GREEN SPACE AREAS, IN ACCORDANCE WITH THE EARTHWORK SPECIFICATIONS. ALL PRIVATE UTILITIES (ELECTRIC, CABLE, TELEPHONE, FIBER OPTIC, GAS) SHALL BE REMOVED AND RELOCATED PER THE UTILITY OWNER AND THE LOCAL MUNICIPALITY'S REQUIREMENTS.

13. UNDERGROUND UTILITIES SHOWN ARE BASED ON ATLASES AND AVAILABLE INFORMATION PRESENTED AT THE TIME OF SURVEY. CONTRACTOR SHOULD 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 LOCATE AND PROTECT EXISTING UNDERGROUND AND OVERHEAD UTILITIES DURING CONSTRUCTION. UTILITY PROTECTION SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY OWNER AND AS DIRECTED BY THE GOVERNING MUNICIPALITY. DAMAGED CABLES/CONDUITS SHALL BE REPLACED IMMEDIATELY. ALL EXISTING STRUCTURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PROCESS. ALL DAMAGED STRUCTURES SHALL BE REPLACED IN-KIND AND THEIR REPLACEMENT COST SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. PROPER NOTIFICATION TO THE OWNERS OF THE EXISTING UTILITIES SHALL BE MADE AT LEAST 48 HOURS BEFORE CONSTRUCTION COMMENCES.

14. USE WATER SPRINKLING, TEMPORARY ENCLOSURES, AND OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING IN THE AIR TO THE LOWEST LEVEL. COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION. SEE EROSION CONTROL SHEETS FOR FURTHER EROSION CONTROL REQUIREMENTS.

15. COMPLETELY FILL BELOW—GRADE AREAS AND VOIDS RESULTING FROM DEMOLITION OF STRUCTURES TO THE FINAL LINES AND GRADES SHOWN ON THE CONTRACT DOCUMENTS. BACKFILL MATERIAL SHALL BE IDOT APPROVED CRUSHED LIMESTONE (CA—6) OR APPROVED EQUAL. USE SATISFACTORY SOIL MATERIALS CONSISTING OF STONE, GRAVEL AND SAND, FREE FROM DEBRIS, TRASH, FROZEN MATERIALS, ROOTS AND OTHER ORGANIC MATTER. PRIOR TO PLACEMENT OF FILL MATERIALS, ENSURE THAT AREAS TO BE FILLED ARE FREE OF STANDING WATER, FROST, FROZEN MATERIAL, TRASH AND DEBRIS. PLACE FILL MATERIALS IN HORIZONTAL LAYERS NOT EXCEEDING 9" IN LOOSE DEPTH. COMPACT EACH LAYER AT OPTIMUM MOISTURE CONTENT OF FILL MATERIAL TO 95% OF MODIFIED PROCTOR DENSITY UNLESS SUBSEQUENT EXCAVATION FOR NEW WORK IS REQUIRED.

DEMOLITION LEGEND

(A) ITEM TO REMAIN, PROTECT DURING CONSTRUCTION
(B) //// CURB REMOVAL

ITEM TO BE REMO

FULL-DEPTH ASPHALT PAVEMENT REMOVAL

CONCRETE REMOVAL

SAWCUT LINE



TINLEY PARK, ILLINOIS 60477

ISSUE DATE: XX/XX/XX
STORE NUMBER: T.B.D.
AREA: 70,323 SF
JOB NUMBER: 2021.0302.00
PROTOTYPE: 2020 Q3

7061 W 159TH ST

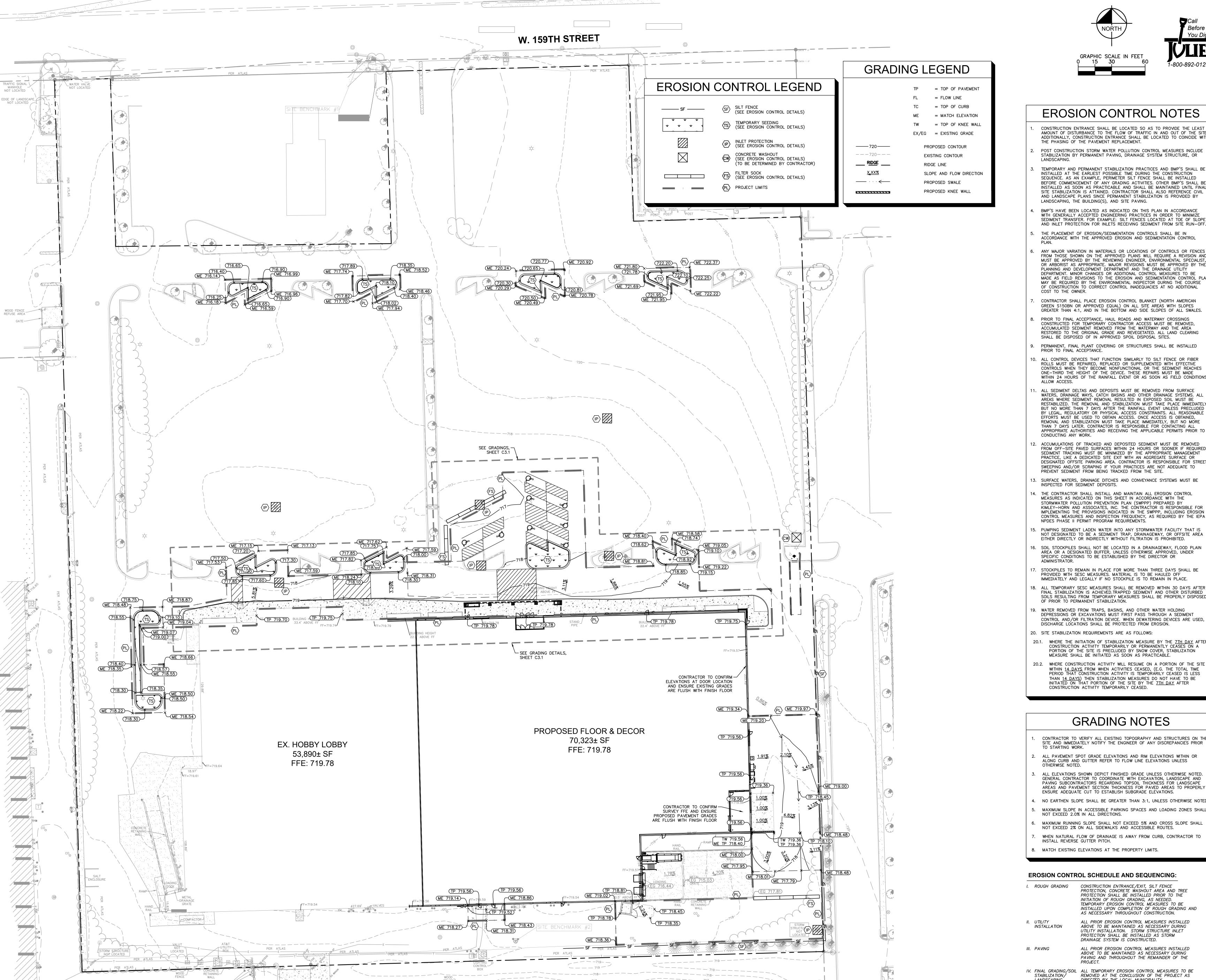
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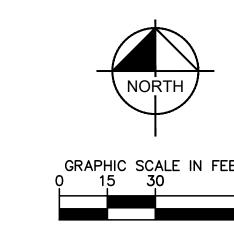
EXISTING CONDITIONS & DEMOLITION PLAN

DRAWN: JPM / BMH
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NO ACCESS UNDER____





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
- 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.
- 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
- 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
- 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 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
- 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
- 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 LOCATIONS 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 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. 8. MATCH EXISTING ELEVATIONS AT THE PROPERTY LIMITS.

EROSION CONTROL SCHEDULE AND SEQUENCING:

CONSTRUCTION ENTRANCE/EXIT, SILT FENCE PROTECTION, CONCRETE WASHOUT AREA AND TREE I. ROUGH GRADING PROTECTION SHALL BE INSTALLED PRIOR TO THE INITIATION OF ROUGH GRADING, AS NEEDED.

TEMPORARY EROSION CONTROL MEASURES TO BE INSTALLED UPON COMPLETION OF ROUGH GRADING AND AS NECESSARY THROUGHOUT CONSTRUCTION. ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING UTILITY INSTALLATION. STORM STRUCTURE INLET

> DRAINAGE SYSTEM IS CONSTRUCTED. ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING PAVING AND THROUGHOUT THE REMAINDER OF THE

PROTECTION SHALL BE INSTALLED AS STORM

IV. FINAL GRADING/SOIL ALL TEMPORARY EROSION CONTROL MEASURES TO BE STABILIZATION/ REMOVED AT THE CONCLUSION OF THE PROJECT AS DIRECTED BY THE LOCAL MUNICIPALITY.



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2500 WINDY RIDGE PARKWAY, SE ATLANTA, GA 30339

(404) 471-1634

-CONSULTANT-

Kimley » Horn

4201 WINFIELD ROAD WARRENVILLE, IL 60555

(630) 487-5550 -PROJECT-

7061 W 159TH ST TINLEY PARK, ILLINOIS 60477

T.B.D.

70,323 SF

2020 Q3

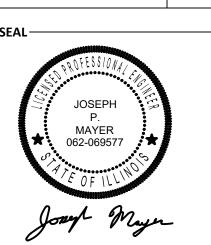
2021.0302.00

ISSUE DATE: STORE NUMBER:

JOB NUMBER:

PROTOTYPE:

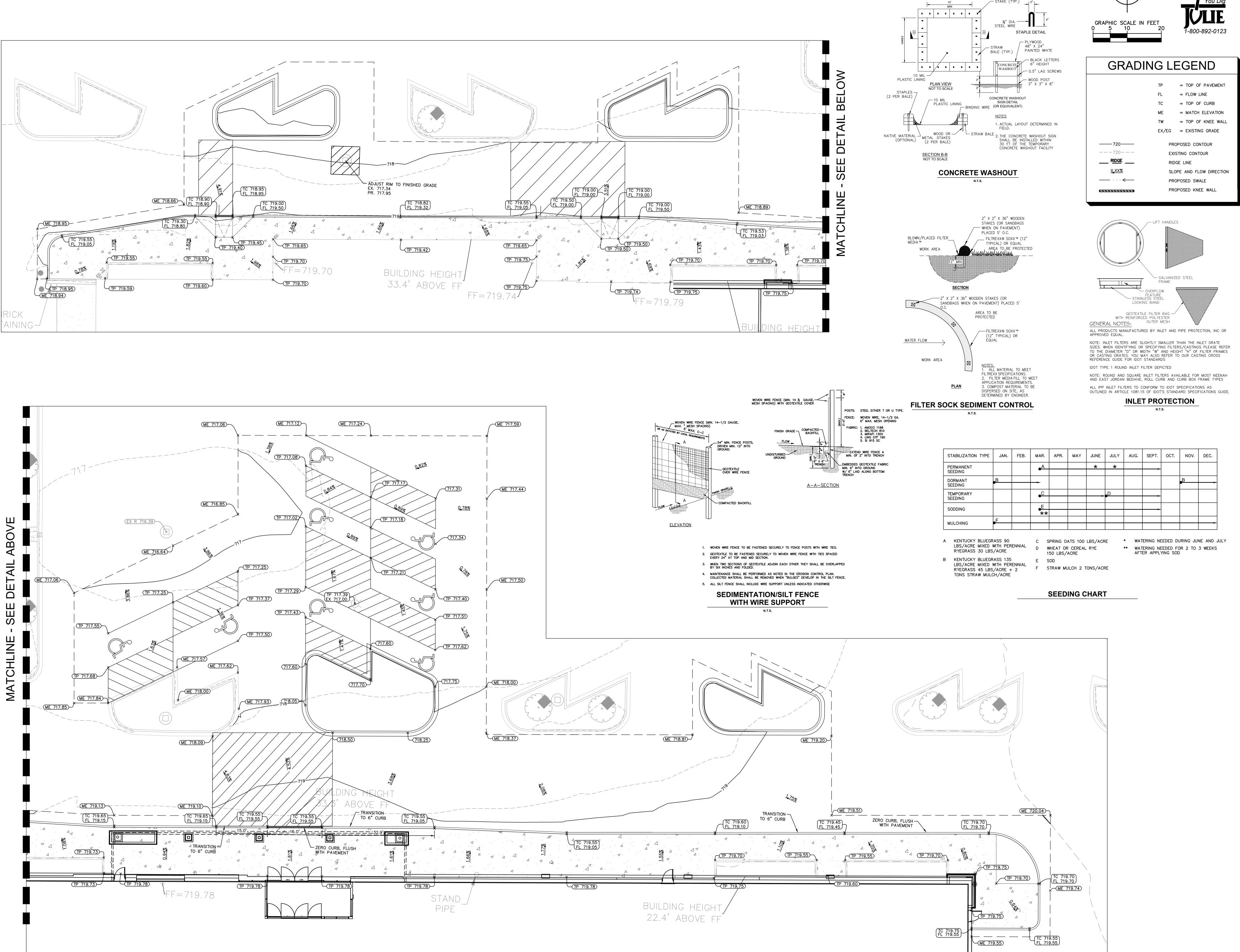
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LICENCE: #062-069577 EXP: 11/30/2021

GRADING & EROSION CONTROL PLAN

JPM / BMH CHECKED:



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PHONE: (404) 471-1634

-CONSULTANT-

Kimley»Horn

4201 WINFIELD ROAD WARRENVILLE, IL 60555

HONE: (630) 487-5550

—PROJECT

STORE #TBD

TINLEY PARK, IL

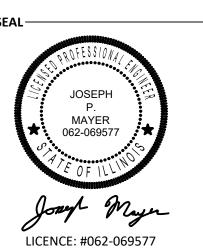
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ISSUE DATE: XX/XX/X

ISSUE DATE: XX/XX/XX
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AREA: 70,323 SF
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PROTOTYPE: 2020 Q3

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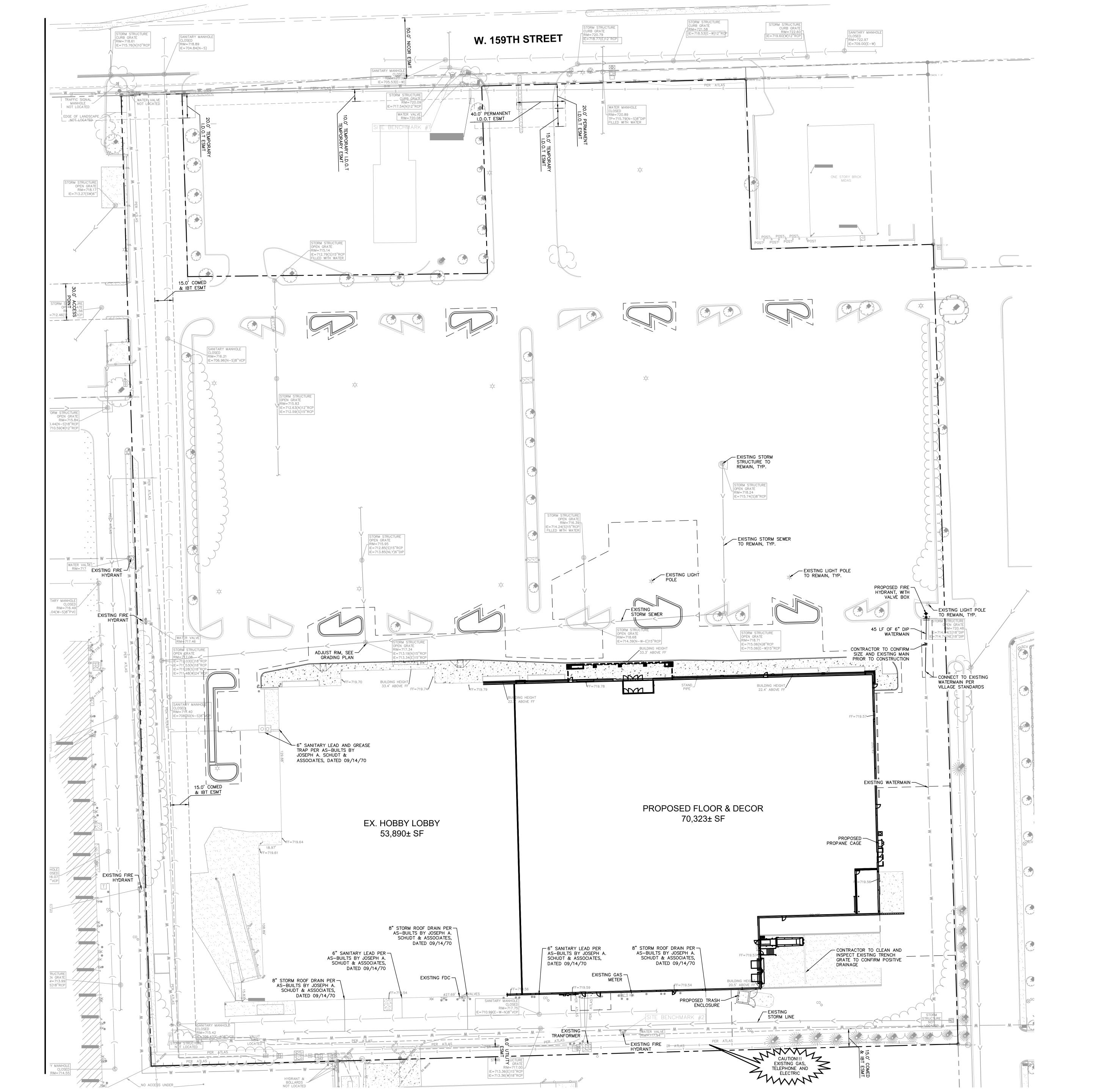


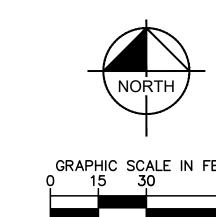
GRADING & EROSION
CONTROL DETAILS

EXP: 11/30/2021

DRAWN: JPM / BMH CHECKED: JPM

C3.1







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FLOOR CORCY 2500 WINDY RIDGE PARKWAY, SE

WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA. CONTRACTOR TO AVOID DISRUPTION OF ANY ADJACENT TENANT'S TRAFFIC OPERATIONS DURING INSTALLATION OF UTILITIES.

UTILITY NOTES

CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY

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

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

CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR

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

EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE

1. ALL WATER LINES ≥ 3" SHALL BE DUCTILE IRON PIPE, CLASS 52.

SERVICES WITH ADJACENT PROPERTY OWNERS.

BY THE ENGINEER.

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

10. SEE DETAILS FOR LOCATING STORM STRUCTURES WITHIN THE CURB LINE.

UTILITY LEGEND

w	W	—— Е	K. WATER LINE
	~		K. HYDRANT
	\otimes	EX	K. WATER VALVE
))_	EX	K. SANITARY SEWER LINE
	(\$)	EX	K. SANITARY SEWER MANHOLE
	o ^{co}	EX	K. SANITARY SEWER CLEANOUT
	->	EX	K. STORM DRAIN LINE
		EX	K. STORM STRUCTURE
G	G —	EX	K. GAS LINE
	ZG <mark>M</mark> C	EX	K. GAS METER
———Е——	Е —	EX	K. UNDERGROUND ELECTRIC LINE
		EX	K. TRANSFORMER PAD
	-0-	EX	K. UTILITY POLE
т —	т —	EX	K. UNDERGROUND TELEPHONE LINE
	TEL	EX	K. TELEPHONE MANHOLE
	*	EX	K. LIGHT POLE
w	w	—— PI	ROPOSED WATER LINE
	Θ	PI	ROPOSED VALVE BOX
1			

PROPOSED FIRE HYDRANT

ATLANTA, GA 30339

-CONSULTANT-

(404) 471-1634

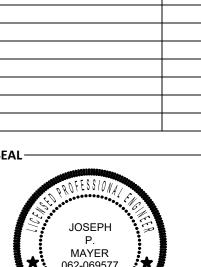
Kimley » Horn

4201 WINFIELD ROAD WARRENVILLE, IL 60555 (630) 487-5550

-PROJECT-

7061 W 159TH ST TINLEY PARK, ILLINOIS 60477 ISSUE DATE: STORE NUMBER: T.B.D. 70,323 SF JOB NUMBER: 2021.0302.00 PROTOTYPE:

-ISSUE-





UTILITY PLAN

JPM / BMH CHECKED:

GENERAL NOTES

AURORA, IL 60502

- EXISTING SITE TOPOGRAPHY, UTILITIES, RIGHT-OF-WAY AND HORIZONTAL CONTROL SHOWN ON THE DRAWINGS WERE OBTAINED FROM A SURVEY PREPARED BY: COMPASS SURVEYING, L 2631 GINGER WOODS PARKWAY, SUITE 100
- 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
- 2. 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. AN' ADDITIONAL SOILS DATA NEEDED TO CONFIRM THE CONTRACTOR'S OPINIONS OF THE SUBSOIL CONDITIONS SHALL 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. 3. 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
- 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 PROVISION 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

- 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 THE 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 ALI 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 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

- 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
- 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
- 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.

18. LIMB PRUNING SHALL BE PERFORMED UNDER THE SUPERVISION OF AN APPROVED LANDSCAPE ARCHITECT

- 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 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
- 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
- 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
- 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
- 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 EROSION 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
- 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 FNCOUNTERED, 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 AL 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 DEFICIENCIES IN THE SWPPP OR ANY VIOLATIONS RESULTING FROM INADEQUATE EROSION CONTROL PROTECTION AND/OR DOCUMENTATION. B. THE PAVEMENT SHALL BE KEPT FREE OF MUD AND DEBRIS AT ALL TIMES. IT MAY BE NECESSARY TO KEEP A SWEEPER ON-SITE AT ALL TIMES.
- 39. ALL DISTURBED AREAS OF THE RIGHT-OF-WAY SHALL BE FULLY RESTORED TO PRE-CONSTRUCTION CONDITIONS WITH A MINIMUM OF SIX (6) INCHES OF TOPSOIL, SEEDING, AND MULCH AS PER IDOT 40. ALL PROPOSED GRADES SHOWN ON PLANS ARE FINISHED SURFACE ELEVATIONS, UNLESS NOTED . ALL TESTING SHALL BE THE RESPONSIBILITY AND EXPENSE OF THE CONTRACTOR. IF REQUESTED B THE MUNICIPALITY OR ENGINEER, COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER
- 2. PROVIDE SMOOTH VERTICAL CURVES THROUGH HIGH AND LOW POINTS INDICATED BY SPOT ELEVATIONS. PROVIDE UNIFORM SLOPES BETWEEN NEW AND EXISTING GRADES. AVOID RIDGES AND DEPRESSIONS. 3. WHEN REQUIRED, THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN RECORD DRAWINGS CAN BE PREPARED. RECORD DRAWINGS SHALL INDICATE THE FINAL LOCATION AND LAYOUT OF ALL IMPROVEMENTS, INCLUDING VERIFICATION OF ALL CONCRETE PADS, INVERT, RIM, AND SPOT GRADE ELEVATIONS, AND INCORPORATE ALL FIELD DESIGN CHANGES APPROVED BY THE OWNER. 44. BEFORE ACCEPTANCE, ALL WORK SHALL BE INSPECTED BY THE MUNICIPALITY, AS NECESSARY.

EARTHWORK NOTES

EARTH EXCAVATION INCLUDES:

FOR REVIEW AND APPROVAL.

- 1.1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE SOIL AND GROUNDWATER CONDITIONS
- . ANY QUANTITIES IN THE BID PROPOSAL ARE INTENDED AS A GUIDE FOR THE CONTRACTOR'S USE IN DETERMINING THE SCOPE OF THE COMPLETED PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALL MATERIAL QUANTITIES AND BE KNOWLEDGEABLE OF ALL SITE CONDITIONS.
- I.3. THE CONTRACTOR WILL NOTE THAT THE ELEVATIONS SHOWN ON THE CONSTRUCTION PLANS ARE FINISHED GRADE AND THAT PAVEMENT THICKNESS, TOPSOIL, ETC., MUST BE ACCOUNTED FOR. 4. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND PREVENT STORMWATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS. THE FAILURE TO PROVIDE PROPER DRAINAGE WILL NEGATE ANY POSSIBLE ADDED COMPENSATION REQUESTED DUE TO DELAYS OR UNSUITABLE MATERIALS CREATED AS A RESULT THEREOF. FINAL GRADES SHALL BE PROTECTED
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES. THE INITIAL ESTABLISHMENT OF EROSION CONTROL PROCEDURES AND THE PLACEMENT OF SILT AND FILTER FENCING, ETC., TO PROTECT ADJACENT PROPERTY, WETLANDS, ETC., SHALL OCCUR BEFORE GRADING BEGINS.
- 6. PRIOR TO COMMENCEMENT OF GRADING ACTIVITIES, THE CONTRACTOR SHALL ERECT A CONSTRUCTION FENCE AROUND ANY TREE DESIGNATED TO BE PRESERVED. SAID FENCE SHALL BE PLACED IN A CIRCLE CENTERED AROUND THE TREE, THE DIAMETER OF WHICH SHALL BE SUCH THAT THE ENTIRE DRIP ZONE (EXTENT OF FURTHEST EXTENDING BRANCHES) SHALL BE WITHIN THE FENCE LIMITS. THE EXISTING GRADE WITHIN THE FENCED AREA SHALL NOT BE DISTURBED. TOPSOIL EXCAVATION INCLUDES
- EXCAVATION OF TOPSOIL AND OTHER STRUCTURALLY UNSUITABLE MATERIALS WITHIN THOSE AREAS THAT WILL REQUIRE EARTH EXCAVATION OR COMPACTED EARTH FILL MATERIAL. EXISTING VEGETATION SHALL BE REMOVED PRIOR TO STRIPPING TOPSOIL OR FILLING AREAS. 2.2. PLACEMENT OF EXCAVATED MATERIAL IN OWNER-DESIGNATED AREAS FOR FUTURE USE WITHIN AREAS
- TO BE LANDSCAPED AND THOSE AREAS NOT REQUIRING STRUCTURAL FILL MATERIAL. PROVIDE NECESSARY EROSION CONTROL MEASURES FOR STOCKPILE. 3. TOPSOIL STOCKPILED FOR RESPREAD SHALL BE FREE OF CLAY AND SHALL NOT CONTAIN ANY OF THE TRANSITIONAL MATERIAL BETWEEN THE TOPSOIL AND CLAY. THE TRANSITIONAL MATERIAL SHALL BE
- USED IN NON-STRUCTURAL FILL AREAS OR DISPOSED OF OFF-SITE. 2.4. TOPSOIL RESPREAD SHALL INCLUDE HAULING AND SPREADING SIX (6) INCHES OF TOPSOIL DIRECTLY OVER AREAS TO BE LANDSCAPED WHERE SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER. 2.5. MODERATE COMPACTION IS REQUIRED IN NON-STRUCTURAL FILL AREAS.
- 1. EXCAVATION OF SUBSURFACE MATERIALS WHICH ARE SUITABLE FOR USE AS STRUCTURAL FILL. THE EXCAVATION SHALL BE TO WITHIN A TOLERANCE OF 0.1 FEET OF THE PLAN SUBGRADE ELEVATIONS WHILE MAINTAINING PROPER DRAINAGE. THE TOLERANCE WITHIN PAVEMENT AREAS SHALL BE SUCH THAT THE EARTH MATERIALS SHALL "BALANCE" DURING THE FINE GRADING OPERATION.
- . PLACEMENT OF SUITABLE MATERIALS SHALL BE WITHIN THOSE AREAS REQUIRING STRUCTURAL FILL IN ORDER TO ACHIEVE THE PLAN SUBGRADE ELEVATIONS TO WITHIN A TOLERANCE OF 0.1 FEET. THE FILL MATERIALS SHALL BE PLACED IN LOOSE LIFTS THAT SHALL NOT EXCEED EIGHT (8) INCHES IN THICKNESS, AND THE WATER CONTENT SHALL BE ADJUSTED IN ORDER TO ACHIEVE REQUIRED
- STRUCTURAL FILL MATERIAL MAY BE PLACED WITHIN THOSE PORTIONS OF THE SITE NOT REQUIRING STRUCTURAL FILL, WITHIN SIX (6) INCHES OF THE PLAN FINISHED GRADE ELEVATION. IN AREAS REQUIRING STRUCTURAL FILL, HOWEVER, THIS MATERIAL SHALL NOT BE PLACED OVER TOPSOIL OR OTHER UNSUITABLE MATERIALS UNLESS SPECIFICALLY DIRECTED BY A SOILS ENGINEER WITH THE
- 3.4. COMPACTION OF SUITABLE MATERIALS SHALL BE TO AT LEAST 93% OF THE MODIFIED PROCTOR DRY DENSITY WITHIN PROPOSED PAVEMENT AREAS, SIDEWALK, ETC. COMPACTION SHALL BE AT LEAST 95% OF THE MODIFIED PROCTOR WITHIN PROPOSED BUILDING PAD AREAS. UNSUITABLE MATERIAL: UNSUITABLE MATERIALS SHALL BE CONSIDERED MATERIAL THAT IS NOT SUITABLE FOR THE SUPPORT OF PAVEMENT AND BUILDING CONSTRUCTION, AND IS ENCOUNTERED BELOW NORMAL TOPSOIL DEPTHS AND THE PROPOSED SUBGRADE ELEVATION. THE DECISION TO REMOVE SAID MATERIAL
- AND TO WHAT EXTENT SHALL BE MADE BY THE ENGINEER WITH THE CONCURRENCE OF THE OWNER. 5.1. SPREAD AND COMPACT UNIFORMLY TO THE DEGREE SPECIFIED ALL EXCESS TRENCH SPOIL AFTER
- COMPLETION OF THE UNDERGROUND IMPROVEMENTS 5.2. SCARIFY, DISC, AERATE, AND COMPACT, TO THE DEGREE SPECIFIED, THE UPPER TWELVE (12) INCHES
- OF THE SUITABLE SUBGRADE MATERIAL IN ALL AREAS THAT MAY BE SOFT DUE TO EXCESS MOISTURE CONTENT. THIS APPLIES TO CUT AREAS AS WELL AS FILL AREAS. 3. PROVIDE WATER TO ADD TO DRY MATERIAL IN ORDER TO ADJUST THE MOISTURE CONTENT FOR THE PURPOSE OF ACHIEVING THE SPECIFIED COMPACTION.
- 5.4. BACKFILL THE CURB AND GUTTER AFTER ITS CONSTRUCTION AND PRIOR TO THE PLACEMENT OF THE BASE COURSE MATERIAL.
- . THE CONTRACTOR SHALL PROVIDE AS A MINIMUM A FULLY LOADED SIX—WHEEL TANDEM AXLE TRUCK FOR PROOF ROLLING THE PAVEMENT SUBGRADE PRIOR TO THE PLACEMENT OF THE CURB AND GUTTER AND THE BASE MATERIAL. THIS SHALL BE WITNESSED BY THE ENGINEER AND THE OWNER. (SEE 6.2. ANY UNSUITABLE AREA ENCOUNTERED AS A RESULT OF PROOF ROLLING SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL OR OTHERWISE CORRECTED AND APPROVED BY THE ENGINEER. PAVING NOTES
- PAVING WORK INCLUDES FINAL SUBGRADE SHAPING, PREPARATION, AND COMPACTION; PLACEMENT OF SUBBASE OR BASE COURSE MATERIALS; BITUMINOUS BINDER AND/OR SURFACE COURSES; FORMING, FINISHING, AND CURING CONCRETE PAVEMENT, CURBS, AND WALKS; AND FINAL CLEAN-UP AND ALL
- COMPACTION REQUIREMENTS [REFERENCE ASTM D-1557 (MODIFIED PROCTOR)]: SUBGRADE = 93%; SUBBASE = 93%; AGGREGATE BASE COURSE = 95%; BITUMINOUS COURSES = 95% OF MAXIMUM DENSITY, PER ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) HIGHWAY STANDARDS. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE PROPER BARRICADING WARNING DEVICES, AND THE SAFE MANAGEMENT OF TRAFFIC WITHIN THE AREA OF CONSTRUCTION. ALL SUCH DEVICES AND THEIR INSTALLATION SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, AND IN ACCORDANCE WITH THE MUNICIPALITY CODE.
- EARTHWORK FOR PROPOSED PAVEMENT SUBGRADE SHALL BE FINISHED TO WITHIN 0.1 FOOT, PLUS OR MINUS, OF PLAN ELEVATION. THE CONTRACTOR SHALL CONFIRM THAT THE SUBGRADE HAS BEEN PROPERLY PREPARED AND THAT THE FINISHED TOP SUBGRADE ELEVATION HAS BEEN GRADED WITHIN TOLERANCES ALLOWED IN THESE SPECIFICATIONS, UNLESS THE CONTRACTOR ADVISES THE ENGINEER IN WRITING PRIOR TO FINE GRADING FOR BASE COURSE CONSTRUCTION. IT IS UNDERSTOOD THAT THE CONTRACTOR HAS APPROVED AND ACCEPTS THE RESPONSIBILITY FOR THE SUBGRADE.
- PRIOR TO THE PLACEMENT OF THE BASE COURSE, THE SUBGRADE MUST BE PROOF-ROLLED AND INSPECTED FOR UNSUITABLE MATERIALS AND/OR EXCESSIVE MOVEMENT. IF UNSUITABLE SUBGRADE IS ENCOUNTERED, IT SHALL BE CORRECTED. THIS MAY INCLUDE ONE OR MORE OF THE FOLLOWING
- 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.

COST OF THE RESPECTIVE CONCRETE ITEM.

MINIMUM COMPACTED THICKNESS.

TESTING AND FINAL ACCEPTANCE.

- MAXIMUM DEFLECTION ALLOWED IN ISOLATED AREAS MAY BE ONE-QUARTER (1/4) INCH TO ONE-HALF (1/2) INCH IF NO DEFLECTION OCCURS OVER THE MAJORITY OF THE AREA. MATERIAL, THE PAVEMENT AREA SHALL BE FINE-GRADED TO WITHIN 0.04 FEET (1/2 INCH) OF FINAL SUBGRADE ELEVATION. TO A POINT TWO (2) FEET BEYOND THE BACK OF THE CURB. SO AS T ENSURE THE PROPER THICKNESS OF PAVEMENT COURSES. NO CLAIMS FOR EXCESS QUANTITY OF BASE MATERIALS DUE TO IMPROPER SUBGRADE PREPARATION WILL BE HONORED.
- 4. PRIOR TO PLACEMENT OF THE BASE COURSE, THE SUBGRADE SHALL BE APPROVED BY THE TESTING
- ALL EXTERIOR CONCRETE SHALL BE PORTLAND CEMENT CONCRETE WITH AIR ENTRAINMENT OF NOT LESS THAN FIVE (5%) OR MORE THAN EIGHT (8%) PERCENT. CONCRETE SHALL BE A MINIMUM OF SIX (6) BAG MIX AND SHALL DEVELOP A MINIMUM OF 4,000 PSI COMPRESSIVE STRENGTH AT TWENTY-EIGHT (28) DAYS. ALL CONCRETE SHALL BE BROOM-FINISHED PERPENDICULAR TO THE
- CONCRETE CURB AND/OR COMBINATION CURB AND GUTTER SHALL BE OF THE TYPE SHOWN ON THI PLANS. THE CONTRACTOR IS CAUTIONED TO REFER TO THE CONSTRUCTION STANDARDS AND THE PAVEMENT CROSS SECTION TO DETERMINE THE GUTTER FLAG THICKNESS AND THE AGGREGATE BASE COURSE THICKNESS BENEATH THE CURB AND GUTTER. PRE-MOLDED FIBER EXPANSION JOINTS, WITH TWO 3/4-INCH BY 18-INCH EPOXY-COATED STEEL DOWEL BARS, SHALL BE GREASED AND FITTED WITH
- CURBS SHALL BE DEPRESSED AND MEET THE SLOPE REQUIREMENTS OF THE ILLINOIS ACCESSIBILITY CODE AT LOCATIONS WHERE PUBLIC WALKS INTERSECT CURB LINES AND OTHER LOCATIONS, AS DIRECTED, FOR THE PURPOSE OF PROVIDING ACCESSIBILITY.
- 3.4. THE CURBS SHALL BE BACKFILLED AFTER THEIR CONSTRUCTION AND PRIOR TO THE PLACEMENT OF
- 3.5. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH THE ABOVE AND THE PLANS. PROVIDE SCORED JOINTS AT 5-FOOT INTERVALS AND 1/2-INCH PRE-MOLDED FIBER EXPANSION JOINTS AT 20-FOOT INTERVALS AND ADJACENT TO CONCRETE CURBS, DRIVEWAYS, FOUNDATIONS, AND OTHER STRUCTURES. 3.6. CONCRETE CURING AND PROTECTION SHALL BE PER IDOT STANDARDS. TWO (2) COATS OF IDOT APPROVED CURING AGENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. 3.7. THE COST OF AGGREGATE BASE OR SUBBASE UNDER CONCRETE WORK SHALL BE INCLUDED IN THE
- THE PAVEMENT MATERIALS FOR BITUMINOUS STREETS. PARKING LOTS. AND DRIVE AISLES SHALL BE AS DETAILED ON THE PLANS. UNLESS OTHERWISE SHOWN ON THE PLANS, THE FLEXIBLE PAVEMENTS SHALL CONSIST OF AGGREGATE BASE COURSE, TYPE B, BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE,
- . ALL TRAFFIC SHALL BE KEPT OFF THE COMPLETED AGGREGATE BASE UNTIL THE BINDER COURSE IS LAID. THE AGGREGATE BASE SHALL BE UNIFORMLY PRIME COATED AT A RATE OF 0.4 TO 0.5 GALLONS PER SQUARE YARD PRIOR TO PLACING THE BINDER COURSE. PRIME COAT MATERIALS SHALL BE IDOT 4.3. PRIOR TO PLACEMENT OF THE SURFACE COURSE, THE BINDER COURSE SHALL BE CLEANED AND

IL-19, N50; AND BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX N50, OF THE THICKNESS

AND MATERIALS SPECIFIED ON THE PLANS. THICKNESSES SPECIFIED SHALL BE CONSIDERED TO BE THE

- TACK-COATED IF DUSTY OR DIRTY. ALL DAMAGED AREAS IN THE BINDER, BASE, OR CURB SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER PRIOR TO LAYING THE SURFACE COURSE. THE CONTRACTOR SHALL PROVIDE WHATEVER EQUIPMENT AND STAFF NECESSARY, INCLUDING THE USE OF 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.
- 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

- DRILL WHERE DIRECTED, FOR THE PURPOSE OF THICKNESS VERIFICATION WHEN REQUIRED BY THE MUNICIPALITY, THE CONTRACTOR SHALL OBTAIN SPECIMENS OF THE FULL DEPTH BITUMINOUS CONCRETE PAVEMENT STRUCTURE WITH A CORE DRILL WHERE DIRECTED IN ORDER TO CONFIRM THE PLAN THICKNESS. DEFICIENCIES IN THICKNESS SHALL BE ADJUSTED FOR BY THE
- METHOD REQUIRED BY IDOT STANDARDS. 5.4. FINAL ACCEPTANCE OF THE TOTAL PAVEMENT INSTALLATION SHALL BE SUBJECT TO THE TESTING AND CHECKING REQUIREMENTS CITED ABOVE. ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE MUNICIPALITY CODE. WHEN CONFLICTS

ARISE BETWEEN MUNICIPAL CODE, GENERAL NOTES AND SPECIFICATIONS, THE MORE STRINGENT SHALL

SIGNAGE AND PAVEMENT MARKING NOTES

- ALL SIGNING AND PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) SIGNS: SIGNS SHALL BE CONSTRUCTED OF 0.080-INCH THICK FLAT ALUMINUM PANELS WITH
- REFLECTORIZED LEGEND ON THE FACE. LEGEND SHALL BE IN ACCORDANCE WITH THE MUTCD. 3. POSTS: SIGN POSTS SHALL BE A HEAVY—DUTY STEEL "U" SHAPED CHANNEL WEIGHING 3.0 POUNDS/FOOT SUCH AS A TYPE B METAL POST, AS PER THE IDOT STANDARDS (OR 2-INCH PERFORATED STEEL TUBE). . SIGNS AND POSTS SHALL BE INSTALLED IN ACCORDANCE WITH IDOT STANDARDS.
- B. PAVEMENT MARKINGS ON BIKE PATHS, PARKING LOT STALLS, AND SIMILAR "LOW-WEAR" APPLICATIONS, SHALL BE PAINT IN ACCORDANCE WITH IDOT STANDARDS. 7. COLOR, WIDTH, STYLE, AND SIZE OF ALL MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND LOCAL CODE. STANDARD PARKING SPACES SHALL BE PAINTED WHITE OR YELLOW PER LOCAL CODE. THERMOPLASTIC MARKINGS SHALL BE INSTALLED WHEN THE PAVEMENT TEMPERATURE IS 55 DEGREES FAHRENHEIT AND RISING. PAINT MARKINGS MAY BE INSTALLED WHEN THE AIR TEMPERATURE IS 50

5. PAVEMENT MARKINGS: ALL PAVEMENT MARKINGS IN THE PUBLIC RIGHT-OF-WAY, SUCH AS STOP LINES, CENTERLINES, CROSSWALKS, AND DIRECTIONAL ARROWS, SHALL BE REFLECTORIZED THERMOPLASTIC ON

WATERMAIN NOTES

DEGREES FAHRENHEIT AND RISING.

JOINTS CONFORMING TO ANSI AS21.10 (AWWA C11

ON THE UTILITY PLAN. UNLESS OTHERWISE NOTED ON THE PLANS, ALL WATERMAIN PIPE SHALL BE CONSTRUCTED OF BITUMINOUS-COATED CEMENT-LINED DUCTILE IRON PIPE, CLASS 52, CONFORMING TO ANSI A21.51 (AWWA C151). CEMENT MORTAR LINING SHALL CONFORM TO ANSI A21.4 (AWWA C104). THE JOINTS SHALL BE PUSH-ON COMPRESSION GASKET JOINTS CONFORMING TO ANSI A21.11 (AWWA C111). ANY CHANGES TO THE PIPE MATERIAL, SIZE AND TYPE MUST BE APPROVED BY THE OWNER, ENGINEÉR AND MUNICIPALITY PRIOR TO ORDERING MATERIALS OR INSTALLING THE PIPE. ALL WATERMAIN PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:

- DUCTILE IRON PIPE, CLASS 52 (ANSI 21.51 AND AWWA C151) FITTINGS: ALL FITTINGS SHALL BE OF DUCTILE IRON WITH CEMENT MORTAR LINING AND MECHANICAL
- VALVES: GATE VALVES SHALL BE USED ON ALL WATERMAINS. ALL VALVES SHALL TURN COUNTER-CLOCKWISE TO OPEN. VALVES SHALL BE IRON BODY RESILIENT WEDGE GATE VALVES WITH BRONZE-MOUNTED SEATS AND NON-RISING STEMS CONFORMING TO AWWA C-509. THE VALVES SHALL THE MECHANICAL JOINTS AND ALL FASTENERS ON THE VALVE BODY SHALL HAVE STAINLESS STEEL NUTS
- VALVE VAULTS: VALVE VAULTS SHALL BE PRECAST CONCRETE STRUCTURES FIVE (5) FEET IN DIAMETER, AS NOTED ON THE PLANS. THE FRAME AND LID SHALL BE ACCORDING TO THE DETAIL ON THE PLANS, FIRE HYDRANTS: SEE PLANS FOR APPROVED FIRE HYDRANT DETAIL. FIRE HYDRANTS SHALL BE INSTALLED WITH AN AUXILIARY VALVE AND CAST IRON VALVE BOX. FIRE HYDRANTS SHALL HAVE AUXILIARY VALVES
- WITH A HYDRANT BARREL TO VALVE BOX RESTRAINING DEVICE. THE PUMPER CONNECTION SHALL FACE PROVIDE AND INSTALL FOUR MEGALUG JOINT RESTRAINTS AT EACH JOINT FROM THE MAINLINE TEE TO THE AUXILIARY VALVE AND BETWEEN THE AUXILIARY VALVE AND THE HYDRANT BARREL. THE BREAK FLANGE AND ALL BELOW-GRADE FITTING SHALL HAVE STAINLESS STEEL NUTS AND BOLTS
- CORPORATION STOPS: CORPORATION STOPS SHALL BE BRONZE BODY KEY STOPS CONFORMING TO AWWA C-800 AND SHALL INCLUDE "J" BEND, TAILPIECE, AND COMPRESSION FITTINGS. SIZE AND LOCATION AS . SERVICE BOX: PROVIDE CURB VALVE AND CURB BOX, AS INDICATED ON THE PLANS. BOX SHALL BE EXTENSION TYPE WITH FOOT PIECE AND STATIONARY RODS FOR SIX (6) FEET OF BURY. MAXIMUM DEFLECTION AT PIPE JOINTS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S CURRENT
- BEDDING: ALL WATERMAINS SHALL BE BEDDED ON FIRM GROUND, WITH BELLHOLES EXCAVATED SO THAT THE PIPE HAS AN EVEN BEDDING FOR ITS ENTIRE LENGTH. GRANULAR BEDDING MATERIAL OR GRANULAR BACKFILL MATERIAL SHALL BE CAREFULLY PLACED TO WELVE (12) INCHES OVER THE TOP OF THE PIPE BEFORE FINAL BACKFILLING AND COMPACTION A MINIMUM DEPTH OF COVER OF 5-FEET, 6-INCHES SHALL BE MAINTAINED OVER THE WATER LINES. TH MAXIMUM COVER SHALL BE EIGHT (8) FEET, EXCEPT AT SPECIAL CROSSINGS AND ONLY AS DESIGNATED
- . "MEGA—LUG" RETAINER GLANDS AND THRUST BLOCKING SHALL BE INSTALLED ON WATERMAINS AT ALL BENDS, FITTINGS, TEES, ELBOWS, ETC. "MEGA—LUG" RESTRAINED JOINTS ARE REQUIRED ON ALL VALVES AND ALL FITTINGS. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE UNIT PRICE FOR THE PIPE
- . ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) AND MUNICIPALITY WATERMAIN PROTECTION: 16.1. HORIZONTAL SEPARATION WATERMAINS SHALL BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR
- PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, OR SEWER SERVICES CONNECTION. 16.1.2. WATERMAINS MAY BE LAID CLOSER THAN TEN (10) FEET TO A SEWER LINE WHEN: 16.1.2.1. LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF TEN (10) FEET; 16.1.2.2. THE WATERMAIN INVERT IS AT LEAST EIGHTEEN (18) INCHES ABOVE THE CROWN OF THE
- 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. WHEN IT IS IMPOSSIBLE TO MEET (1) OR (2) ABOVE, BOTH THE WATERMAIN AND DRAIN O

SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON

PIPE, PRESTRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATERMAIN STANDARDS OF

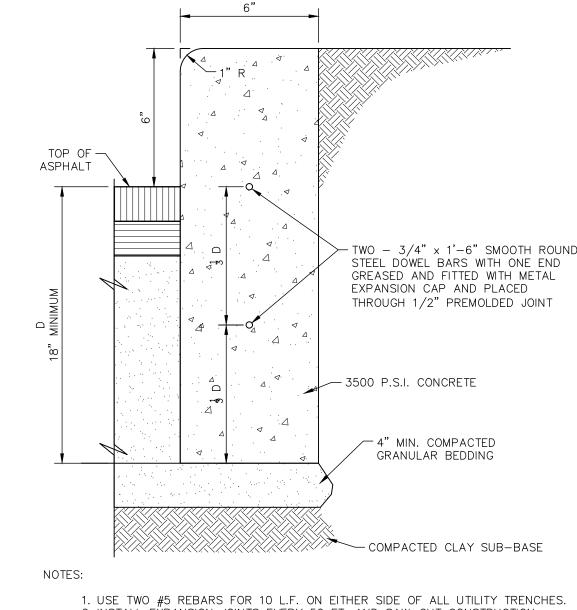
CONSTRUCTION AND IN CONFORMANCE WITH THE ILLINOIS STANDARDS FOR WATER AND SEWER

ANY SEWER OR DRAIN CROSSED. A LENGTH OF WATERMAIN PIPE SHALL BE CENTERED OVER

- CONSTRUCTION IN ILLINOIS. THE DRAIN OR SEWER SHALL BE PRESSURE—TESTED TO THE MAXIMUM EXPECTED SURCHARGE HEAD BEFORE BACKFILLING. A WATERMAIN SHALL BE LAID SO THAT ITS INVERT IS EIGHTEEN (18) INCHES ABOVE TH CROWN OF THE DRAIN OR SEWER WHENEVER WATERMAINS CROSS`SÍORM SEWERS, SANITAR SEWERS, OR SEWER SERVICE CONNECTIONS. THE VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATERMAIN LOCATED WITHIN TEN (10) FEET HORIZONTALLY OF
- THE SEWER TO BE CROSSED WITH JOINTS EQUIDISTANT FROM THE SEWER OR DRAIN. BOTH THE STORM SEWER AND SANITARY SEWER SHALL BE CONSTRUCTED WITH PIPE EQUIVALENT TO WATERMAIN STANDARDS OF CONSTRUCTION OR THE STORM SEWER SHALL BE CONSTRUCTED USING "O" RING GASKET JOINTS, PER ASTM C-443, OR THE WATERMAIN MAY BE IN ENCASED IN A WATERTIGHT CASING PIPE WHEN:
- 16.2.2.1. IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION, AS DESCRIBED ABOVE; OF 16.2.2.2. THE WATERMAIN PASSES UNDER A SEWER OR DRAIN. A VERTICAL SEPARATION OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE SEWER OR DRAIN AND THE CROWN OF THE WATERMAIN SHALL BE MAINTAINED WHERE A WATERMAIN CROSSES UNDER A SEWER. SUPPORT THE SEWER OR DRAIN LINES TO PREVENT SETTLING AND
- CONSTRUCTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE NORMAL DISTANCE FROM THE WATERMAIN TO THE SEWER OR DRAIN LINE IS AT LEAST TEN (10) FEET. ALL WATERMAINS SHALL BE PRESSURE-TESTED FOR A MIN. OF 2 HOURS AT 200 PSI, FLUSHED, AND DISINFECTED IN ACCORDANCE WITH AWWA AND MUNICIPALITY SPECIFICATIONS. EACH VALVE SECTION SHALL BE PRESSURE—TESTED FOR A MINIMUM OF ONE (1) HOUR. ALLOWABLE LEAKAGE IS TO BE ONLY

THAT WHICH IS PREDETERMINED BY THE MUNICIPALITY. AT NO TIME IS THERE TO BE ANY VISIBLE

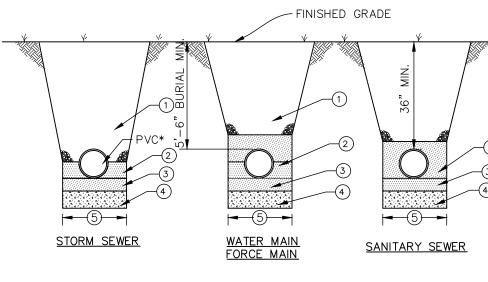
LEAKAGE FROM THE MAIN.



2. INSTALL EXPANSION JOINTS EVERY 50 FT. AND SAW-CUT CONSTRUCTION JOINTS EVERY 25 FT.

6" BARRIER CURB

N.T.S.



MECHANICALLY COMPACTED CA-6 CRUSHED STONE IN 6 INCH LIFTS UNDER OR WITHIN 2 FEET OF ANY PAVEMENT, CURB, GUTTER AND SIDEWALK, MACHINE COMPACTION OF EXCAVATED MATERIAL IN OTHER LOCATIONS WHERE SUITABLE.

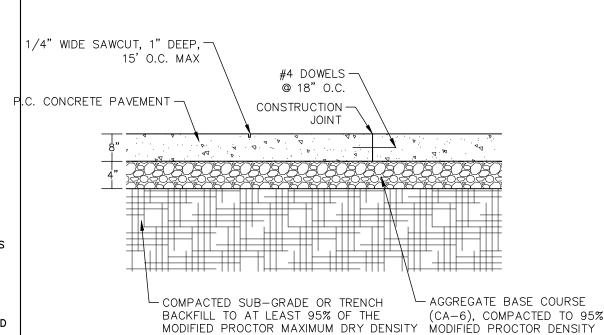
CA-11 OR CA-13 CRUSHED STONE TAMPED INTO PLACE TO SPRING LINE OF DUCTILE

STORM SEWER & SANITARY SEWER: CA-11 OR CA-13 CRUSHED STONE TAMPED INTO PLACE TO SPRING LINE OF PIPE *ADDITIONAL 12" OF CA-11 CRUSHED STONE ABOVE TOP OF PVC PIPE. (3) 4" BED MECHANICALLY COMPACTED CA-11 OR CA-13 CRUSHED STONE (4) UNSUITABLE MATERIAL TO BE REMOVED AND REPLACED.

IRON PIPE ALL AROUND

OUTSIDE DIAMETER + 18 IN.

PIPE BEDDING DETAIL



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.

HEAVY DUTY CONCRETE PAVEMENT SECTION

- ROUNDED CONCRETE TOP

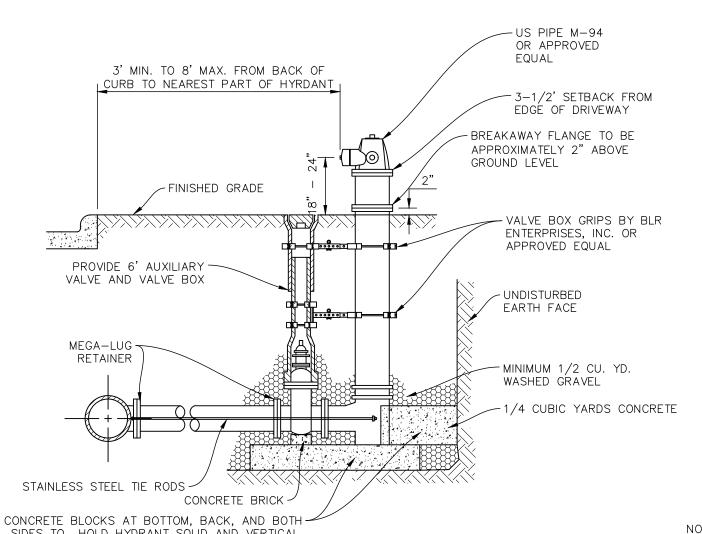
-FINISH GRADE/PAVEMEN

6" BOLLARD DETAIL

30" X 30" R1−1

STOP SIGN

N.T.S.



-HMA SURFACE COURSE, MIX "C", N50

AGGREGATE BASE COURSE

- HMA BINDER COURSE, IL-19.0, N50

(CA-6). COMPACTED TO 959

MODIFIÉD PROCTOR DENSITY

-SUBGRADE-SCARIFIED AND COMPACTED

TO AT LEAST 95% OF THE MODIFIED

PROCTOR MAXIMUM DRY DENSITY

PAVEMENT THICKNESS BASED ON GENERAL

WHICHEVER IS MORE STRINGENT.

UNDERSTANDING OF THE AREA. NO GEOTECHNICAL

SECTION OR THE RECOMMENDED SECTION ABOVE,

PAVEMENT THAT MATCHES THE EXISTING PAVEMENT

HEAVY DUTY

WIDTH VARIES - SEE PLAN

JOINTS SHALL HAVE #4 DOWELS, LUBRICATED, 18" LONG, AT 12" CENTERS, 6" FROM

3. WELDED WIRE FABRIC (6X6-6X6) SHALL BE INSTALLED THROUGH DRIVEWAYS AT 2"

4. PROVIDE 1/2" BITUMINOUS EXPANSION JOINT FILLER MATERIAL WHERE WALK ABUTS

6. AT DRIVE APPROACHES, SIDEWALK PCC AND BASE THICKNESS SHALL MATCH THAT OF

CONCRETE SIDEWALK

5. USE 2-#4 REINFORCING BARS, 10' LONG OVER ALL UTILITY TRENCHES FOR NEW

4. 4. 4

SUBGRADE-SCARIFIED AND COMPACTED -

ABOVE SLAB BOTTOM.

THE DRIVE.

TO AT LEAST 95% OF THE MODIFIED

PROCTOR MAXIMUM DRY DENSITY

2. PROVIDE 3/8" GROOVED CONTROL JOINTS AT 5' CENTERS.

EXISTING IMPROVEMENTS AND AT ALL CHANGES IN GRADE

SIDEWALK AND CONNECTIONS TO EXISTING SIDEWALK

ASPHALTIC PAVEMENT SECTION

ANALYSIS HAS BEEN PROVIDED. CONTRACTOR TO INSTALL

SIDES TO HOLD HYDRANT SOLID AND VERTICAL CONCRETE SHALL NOT BLOCK DRAIN **GENERAL NOTES:**

HOLE FOR 5/8 Ø DOWEL. 1 FT.

ACCESSIBLE PARKING SYMBOL

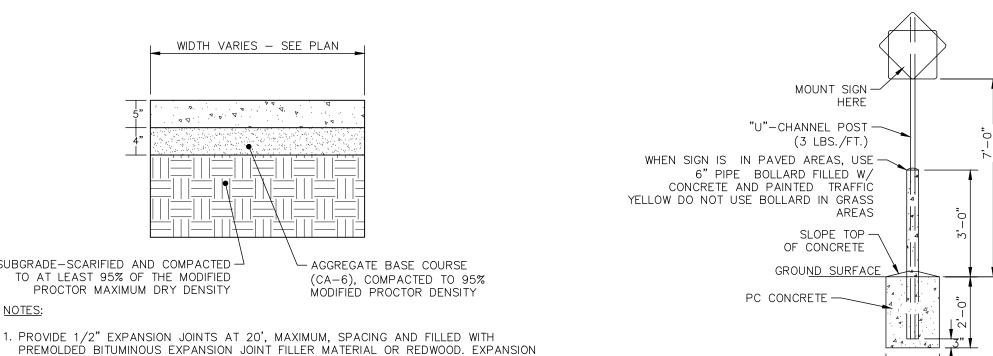
HOLES) DRILL HOLE THRU

FROM EACH END. (TYPICAL OF 2

- 1. MAXIMUM BARREL EXTENSIONS ARE 18 INCHES AND SHALL BE WATEROUS EXTENSION FOR WATEROUS HYDRANTS.
- 2. ALL HYDRANTS ARE TO BE SUPPLIED WITH A 6" FLANGED AND MECHANICAL JOINT AUXILIARY VALVE THAT CONFORMS TO AWWA 500-80. ALL TRIM BOLTS ARE TO BE STAINLESS STEEL. 3. ALL BELOW GRADE FASTENERS TO BE STAINLESS STEEL A. BOLTS AND THREADED RODS - GRADE #304
- 4. MEGA-LUG RETAINERS MUST BE INSTALLED ON ALL MECHANICAL FITTINGS.

B. NUTS AND WASHERS - GRADE #300 FIRE HYDRANT

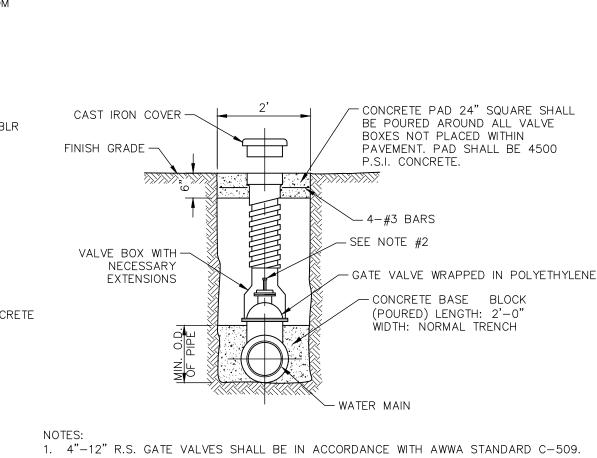
REVERSE GUTTER PITCH -3/4" PER FT -2" FOR DEPRESSED CURB AT DRIVE **FNTRANCES** 1/2" FOR SPECIAL DEPRESSED CURE AT ADA RAMPS → 3500 P.S.I. CONCRETE ─ 3" COMPACTED GRANULAR BEDDING - COMPACTED CLAY SUB-BASE NOTES: USE TWO - #5 REBARS FOR 10 L.F. ON EITHER SIDE OF ALL UTILITY TRENCHES. INSTALL EXPANSION JOINTS EVERY 50 FT. AND SAW-CUT CONSTRUCTION JOINTS EVERY 25 FT. **B6.12 CURB & GUTTER**



POLE AND SIGN TO BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR.

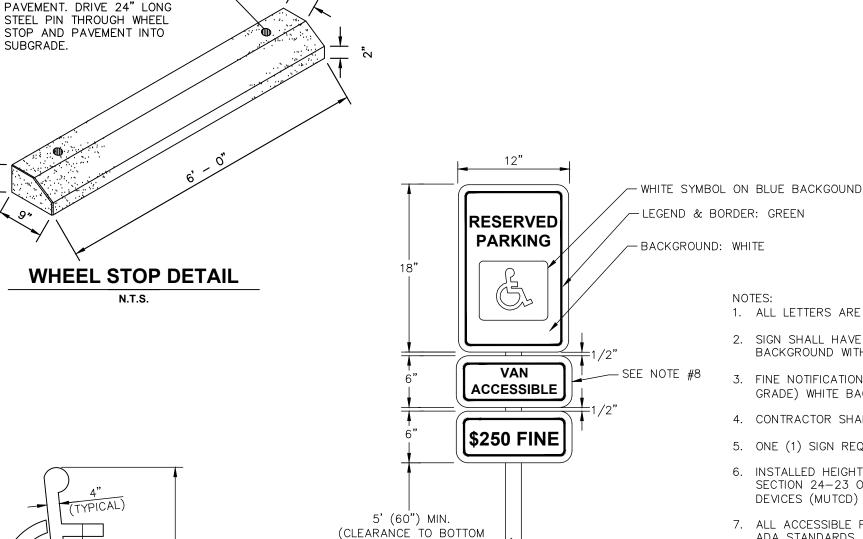
ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

STANDARD SIGN BASE



- 1. 4"-12" R.S. GATE VALVES SHALL BE IN ACCORDANCE WITH AWWA STANDARD C-509. 2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED IF THE OPERATING NUT FOR ANY VALVE IS LOCATED IN EXCESS OF 4' BELOW THE TOP OF THE VALVE BOX. THIS EXTENSION SHALL BE SUFFICIENT LENGTH TO ENSURE THAT THE TOP IS WITHIN 4' OF THE VALVE BOX LID.
- 3. DUCTILE IRON OR C-900 PVC PIPE SHALL BE USED FOR VALVE STACKS WITH VALVE BOX CASTING. 4. PLACE A BLUE DOT (3") ON NEAREST CURB FACE TO VALVE.
- 5. FOR GATE VALVES < 16" (FOR GATE VALVES \geq 16" USE HORIZONTAL GATE VALVE)

TYPICAL VALVE SETTING AND BOX



OF LOWEST SIGN)

IN. GRADE

<u>SIGNAGE</u>

1. ALL LETTERS ARE 1" SERIES "C" PER MUTCD. 2. SIGN SHALL HAVE A REFLECTIVE (ENGINEERING GRADE) WHITE

- BACKGROUND WITH GREEN REFLECTIVE LEGEND AND BORDER. 3. FINE NOTIFICATION SIGN SHALL HAVE A REFLECTIVE (ENGINEERING GRADE) WHITE BACKGROUND WITH GREEN LEGEND AND BORDER.
- 4. CONTRACTOR SHALL VERIFY FINE AMOUNT. 5. ONE (1) SIGN REQUIRED FOR EACH PARKING SPACE.
- 6. INSTALLED HEIGHT OF SIGN SHALL BE IN ACCORDANCE WITH SECTION 24-23 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND LOCAL ADA CODE.
- 7. ALL ACCESSIBLE FEATURES TO BE IN STRICT ACCORDANCE WITH ADA STANDARDS AND LOCAL LAWS. 8. AT LEAST ONE (1) FOR EVERY SIX (6) ACCESSIBLE SPACES
- MUST BE VAN ACCESSIBLE, WITH A MINIMUM OF ONE (1) VAN ACCESSIBLE SPACE PER SITE.

ACCESSIBLE PARKING SIGNAGE

N.T.S.

JPM / BMH CHECKED:

MAYER 062-069577

7061 W 159TH ST

TINLEY PARK, ILLINOIS 60477

T.B.C

70,323 SF

2021.0302.00

ISSUE DATE:

JOB NUMBER:

PROTOTYPE:

STORE NUMBER:

ARCHITECTURAL

DESIGN-GUILD

2710 Sutton Blvd.

St. Louis, MO 63143

|www.adg-stl.com

|P:: 314.644.1234|

|F:: 314.644.4373

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4201 WINFIELD ROAD

WARRENVILLE, IL 60555

-CONSULTANT

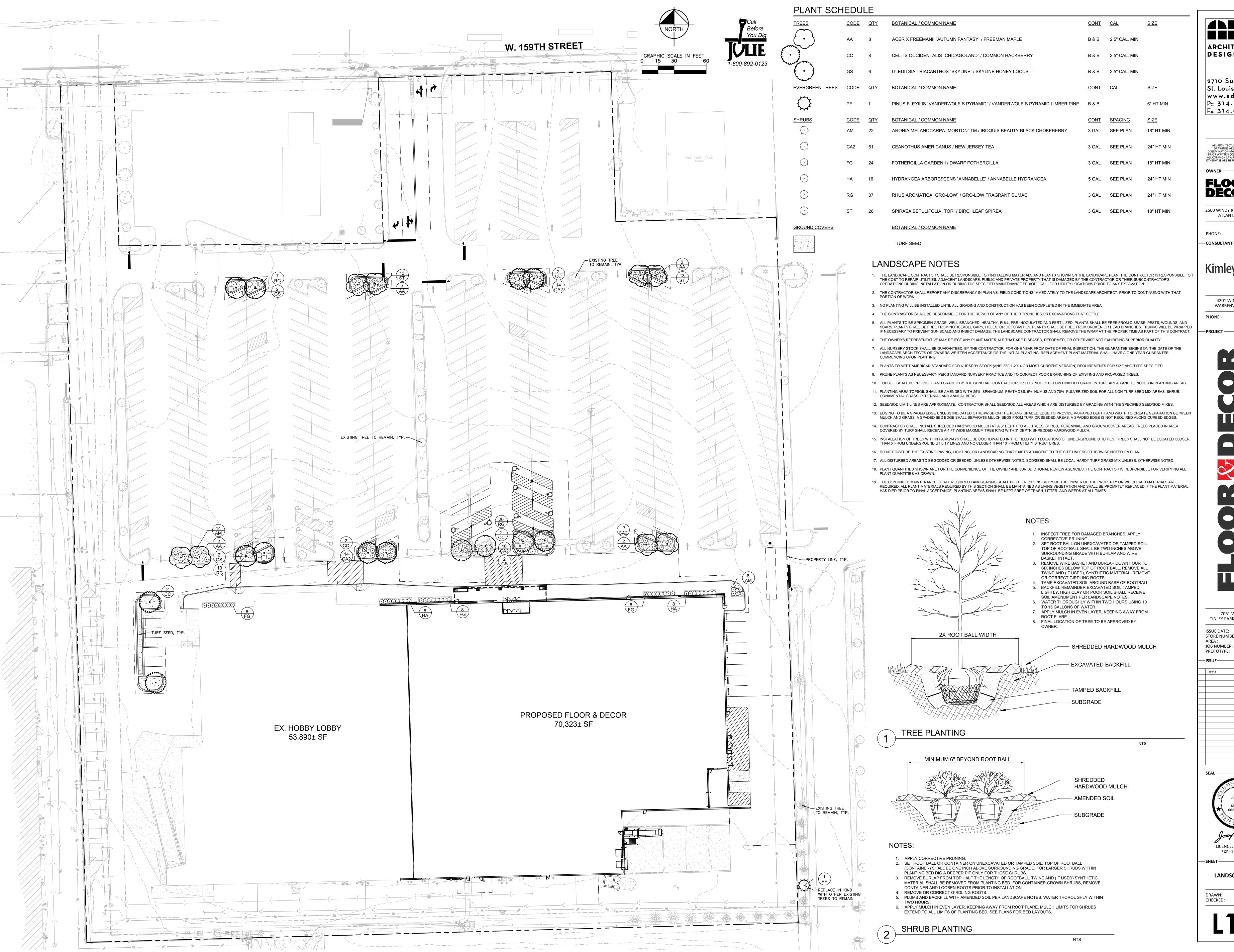
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(404) 471-1634

(630) 487-5550

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GENERAL NOTES & DETAILS



ARCHITECTURAL DESIGN-GUILD

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2500 WINDY RIDGE PARKWAY, SE

ATLANTA, GA 30339

(404) 471-1634

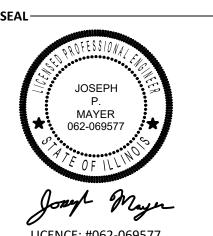
4201 WINFIELD ROAD WARRENVILLE, IL 60555

(630) 487-5550

—PROJECT —

7061 W 159TH ST TINLEY PARK, ILLINOIS 60477 ISSUE DATE: STORE NUMBER: T.B.D. 70,323 SF JOB NUMBER: 2021.0302.00

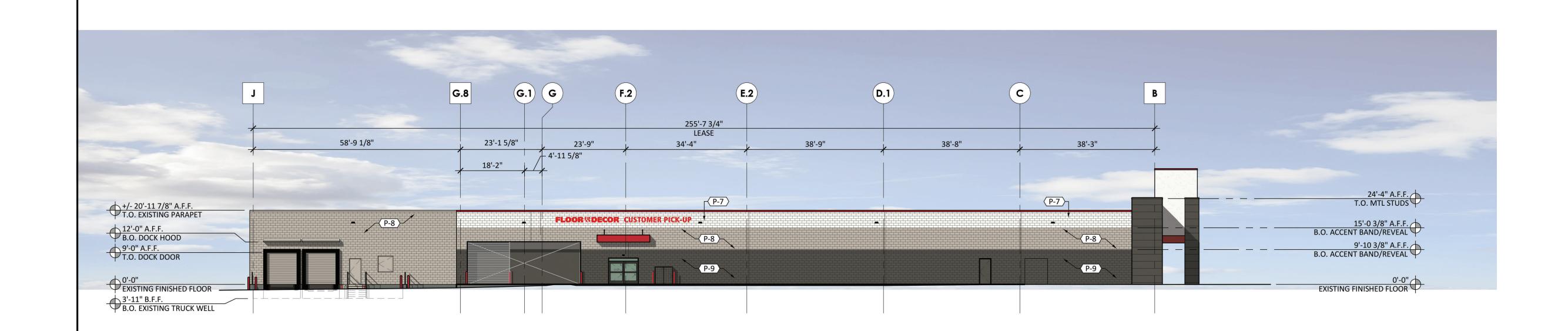
2020 Q3



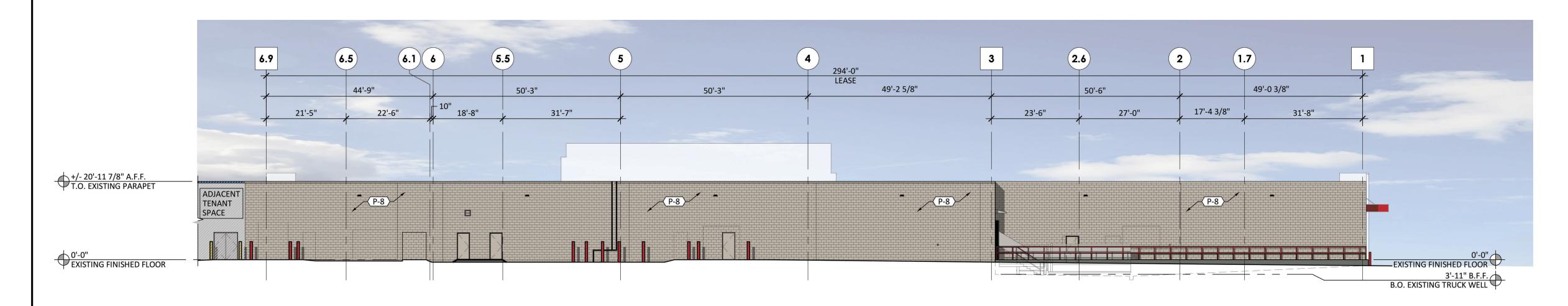
LANDSCAPE PLAN

JPM / BMH CHECKED:

EXP: 11/30/2021

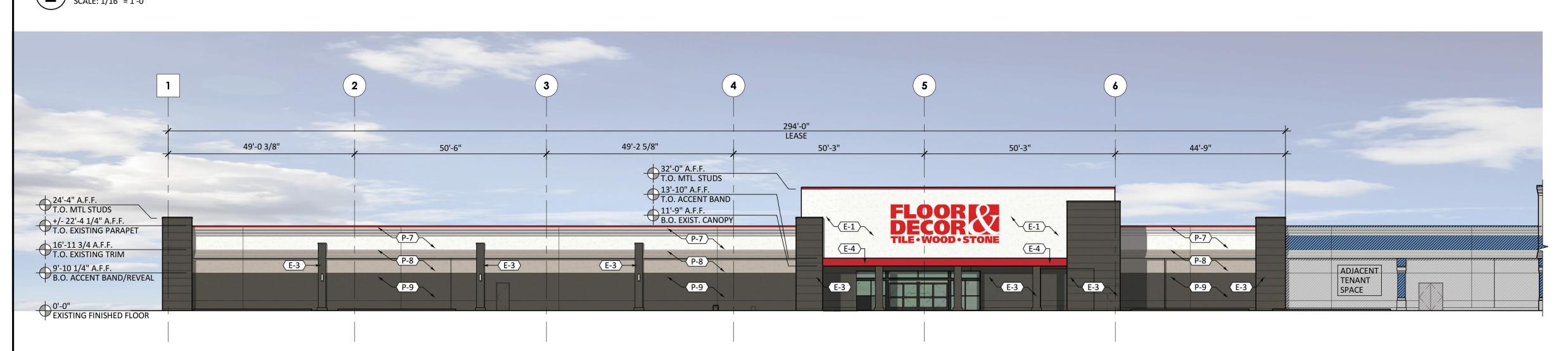


3 LEFT ELEVATION SCALE: 1/16" = 1'-0"



- **REAR ELEVATION NOTES:** - THE REAR ELEVATION IS TO BE PREPARED TO BE PAINTED BY EACH TENANT.
- EACH TENANT TO PRIME THEIR OWN WALL PER MANUFACTURE'S RECOMMENDATIONS (MATCH FINISH COLOR).
 - FLOOR AND DECOR TO PAINT FINISH COAT ON THE ENTIRE REAR WALL.

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



FRONT ELEVATION SCALE: 1/16" = 1'-0"

FINISH LEGEND SW = SHERWIN-WILLIAMS P-7 PAINT: SW HIGH REFLECTIVE WHITE $\overline{P-8}$ PAINT: SW AMAZING GRAY P-9 PAINT: SW URBANE BRONZE P-10 PAINT: SW REAL RED (E-1) EIFS: SW HIGH REFLECTIVE WHITE E-3 EIFS: SW URBANE BRONZE

VERSION INDEX

E-4 EIFS: SW REAL RED

_	INITIA	TED BY	CODE		(
REV#	F&D	ARCH	REQ'D	NARRATIVE	F
<u>\</u>	•			INITIAL ISSUE	_
1	•			WALL PACKS ADDED TO LEFT AND REAR ELEVATIONS, PAINT NOTES AT REAR ELEVATION ADDED	
<u>^2</u>	•			SIGNAGE ADDED TO FRONT AND LEFT ELEVATIONS	_
<u></u>	•			SIGN HEIGHTS ALTERED AT FRONT AND LEFT ELEVATIONS	



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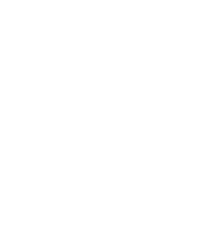
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FLOOR DECOR 2233 LAKE PARK DRIVE

SUITE 400 SMYRNA, GA 30080

PHONE: (404) 471-1634 PROJECT-





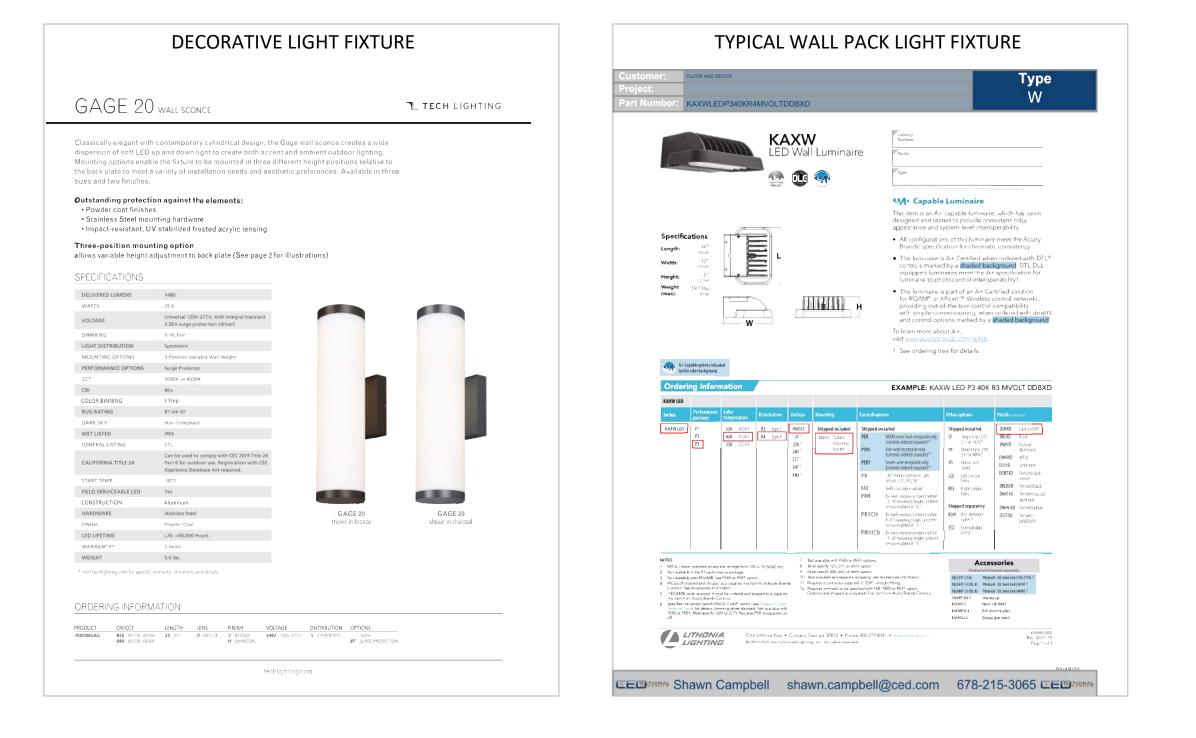
7061 W 159TH ST. TINLEY PARK, IL 60477

ISSUE DATE: STORE NUMBER: 79,611 SF JOB NUMBER: 2021.0302.00 2020 Q3 PROTOTYPE:

REVISION 3

COLORED EXTERIOR ELEVATIONS

DRAWN: CHECKED:





(P-8) PAINT: SW AMAZING GRAY (P-9) PAINT: SW URBANE BRONZE $\langle P-10 \rangle$ PAINT: SW REAL RED ⟨E-1⟩ EIFS: SW HIGH REFLECTIVE WHITE $\langle E-3 \rangle$ EIFS: SW URBANE BRONZE

VERSION INDEX

⟨E-4⟩ EIFS: SW REAL RED

			• •• •		
_	INITIA	TED BY	CODE		C.D.
REV#	F&D	ARCH	REQ'D	NARRATIVE	REV
	•			INITIAL ISSUE	
1	•			WALL PACKS ADDED TO LEFT AND REAR ELEVATIONS, PAINT NOTES AT REAR ELEVATION ADDED	

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FLOOR (2 DECOR

2500 WINDY RIDGE PARKWAY SE ATLANTA, GA 30339 PHONE: (404) 471-1634

-PROJECT



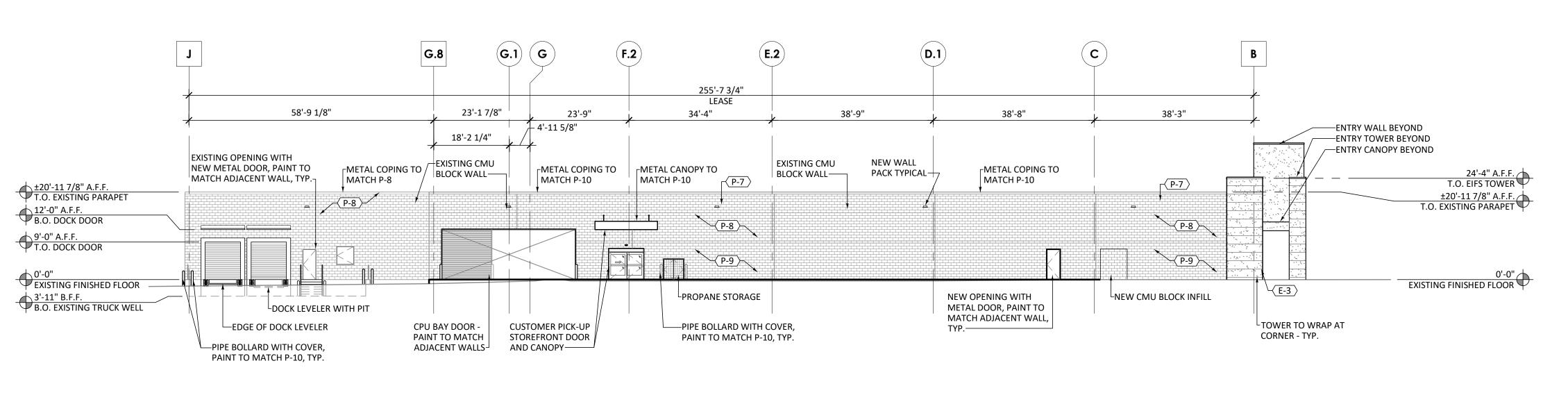
7061 W 159TH ST. TINLEY PARK, IL 60477

ISSUE DATE: STORE NUMBER: T.B.D. 70,323 SF JOB NUMBER: 2021.0302.00 PROTOTYPE:

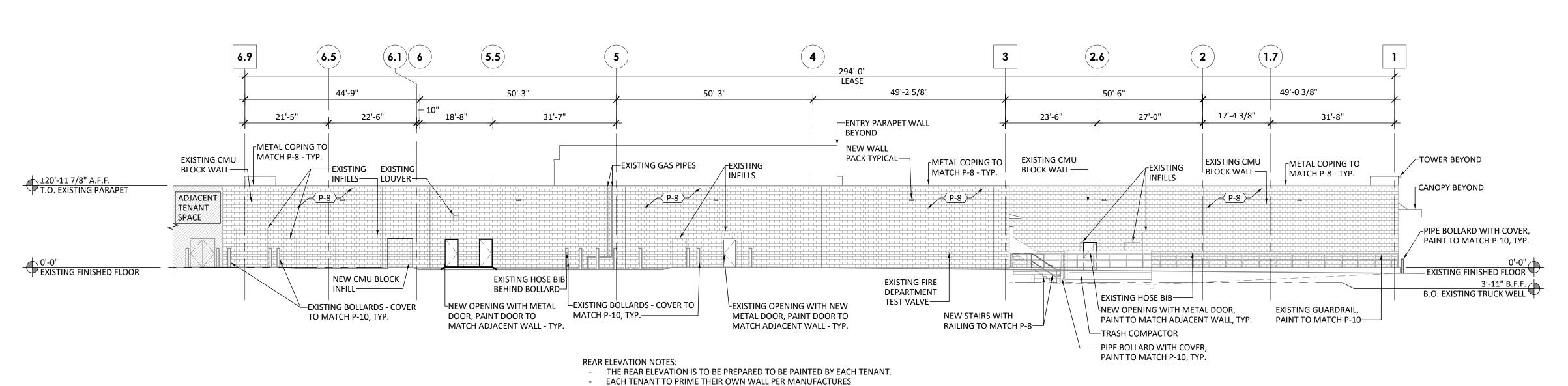
-ISSUE-

EXTERIOR ELEVATIONS

CHECKED:

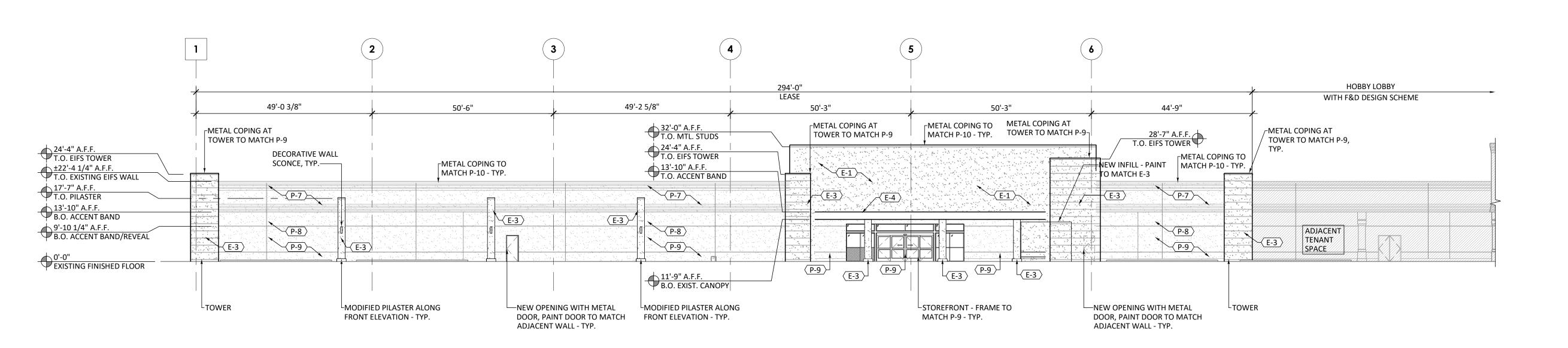


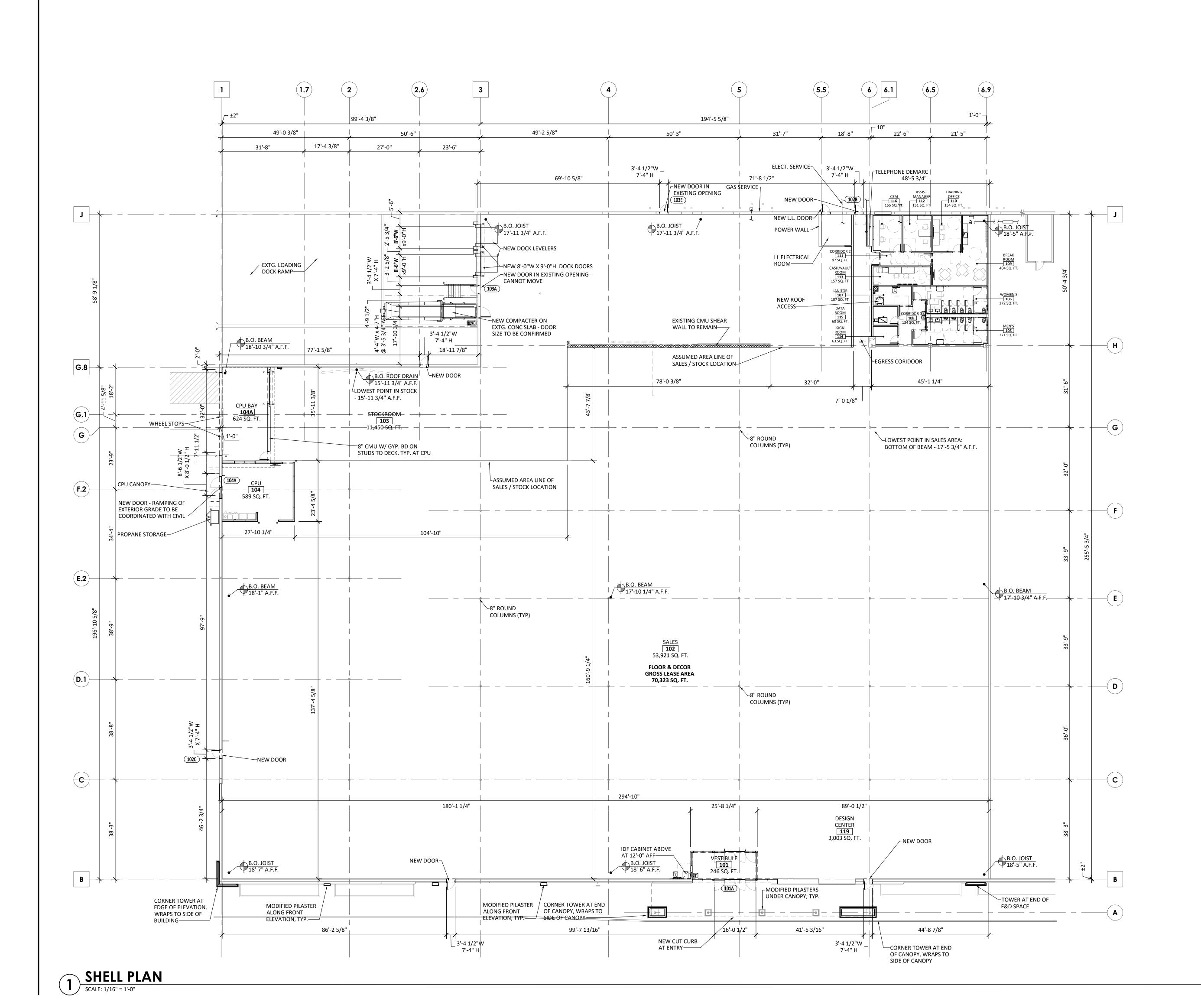




RECOMMENDATIONS (MATCH FINISH COLOR). FLOOR AND DECOR TO FINISH PAINT THE ENTIRE REAR WALL. REAR ELEVATION

SCALE: 1/16" = 1'-0"







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FLOOR DECOR

2500 WINDY RIDGE PARKWAY SE ATLANTA, GA 30339

OO WINDY RIDGE PARKWAY SE ATLANTA, GA 30339 ONE: (404) 471-1634

—PROJECT————

OOR STORE #TBD
TINLEY PARK, IL

7061 W 159TH ST TINLEY PARK, ILLINOIS 60477

 ISSUE DATE:
 03/04/2021

 STORE NUMBER:
 T.B.D.

 AREA:
 70,323 SF

 JOB NUMBER:
 2021.0302.00

 PROTOTYPE:
 2020 Q3

SUE XX.XX.X

SHEFT

C.D. REV

VERSION INDEX

REV # F&D ARCH REQ'D NARRATIVE

INITIAL ISSUE BASED ON SITE PLAN AND SIR

INITIATED BY CODE

SHELL PLAN

DRAWN: RM CHECKED:

SHELL 01

			T LITHONIA LDN6-20LM-40 LSS-MVOLT-U	0K-LO6AR- 277 21
+ + + + + + + + + + + + + + + + + + +		+ +	+ + + + + + + + + + + + + + + + + + +	VOLTAGE 29.9 VOLTAGE 2.5kV sur
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$		+ + + + + + + + + + + + + + + + + + + +	+ + + + + + + + + + + + + + + + + + + +	HARDWARE Stainless S
+ + + + + + + + + + + + + + + + + + +	ADJACENT TENANT		+	
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$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			+ + + + + +	SPEC SHEET - T
0.6 1.1 1.6 1.7 1.9 2.1 2/7 3.8 4.3 4.5 W M W M W M W M W T T T T T T W 0.6 1.1 1.6 1.9 2.3 2.6 3.4 4.3 5.3 5.9 6.2 6.9 6.9 6.9 6.9 6.8 6.8 7.2 6.9 6.7 5.9 4.6 8.6 3.9 4.1 4.4 4.2 3.5 2.7 1.7 1.0 0.5 0.3 0.2 0.5 1.0 1.7 2.0 2.5 3.0 3.9 4.8 5.5 6.1 6.2 6.6 7.1 6.9 7.1 7.2 7.3 7.2 6.7 5.9 5.0 4.0 3.2 3.0 3.2 3.3 2.9 2.4 1.8 1.0 0.5 0.2 0.1 0.	101	+ + + + + + + + + + + + + + + + + + + +	+ + + + + +	FEATURES & SPECIFICATI INTENDED USE — Typical applications include CONSTRUCTION — Galvanized steel mount
0.5 1.0 1.7 2.0 2.5 3.0 3.9 4.8 5.5 6.1 6.2 6.6 7.1 6.9 7.1 7.2 7.3 7.2 6.7 5.9 5.0 4.0 3.2 3.0 3.2 3.3 2.9 2.4 1.8 1.0 0.5 0.2 0.1 0.5 0.2 0.2 0.1 0.5 0.2 0.2 0.1 0.5 0.2 0.2 0.1 0.5 0.2 0.2 0.1 0.5		+ +	+ + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + +	bottom-hinged access covers and spring latch adjustable mounting brackets with commercia bination ½"-3/4" and four ½" knockouts for str. 12 AWG conductors, rated for 90°C. Accommodates 12"-24" joist spacing. Passive cooling thermal management for 25°C above or below ceiling. Ceiling thickness range 1/2" to 1-1/2". OPTICS — 55° cutoff 1.0 S/MH standard (wallwash reflector available 80CRI standard (90CRI optional) ELECTRICAL — Adjustable lumen output with MVOLT 120/277V 50/60Hz driver (0-10V & 120V dimming to 1% also available 100LPW typical FCC CFR Title 47 Part 15 Class A for 277V. FCC CF L80 @ 60,000 hours 3 SDCM LISTINGS — Certified to US and Canadian saf Wet location, covered ceiling. Wallwash suitable Star certified, please visit www.energystar.gov WARRANTY — 5-year limited warranty. Comp
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	+ + + + + + + + + + + + + + + + + + + +	+ + + + + + + + + + + + + + + + + + + +	+ + + + + + + + + + + + + + + + + + + +	SPEC SHEET - W
1.0	+ + + + + + + + + + + + + + + + + + + +	+ + + + + + + + + + + + + + + + + + + +	+ + + + + + + + + + + + + + + + + + + +	Specifications Length: 14" (85.6 cm) Width: 12" (85.6 cm) Height: 5"
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	+ + + + + +	+ + + + + + + + + + + + + + + + + + + +		
0.5 +0.8 +1.2 +1.3 +1.4 +1.4 +1.4 +1.4 +1.5 +1.5 +1.5 +1.4 +1.3 +1.0 +0.7 +0.4 +0.3 +0.2 +0.2 +0.2 +0.2 +0.1 +0.1 +0.1 +0.1 +0.1 +0.1 +0.1 +0.1	+ + + + + + +		+ + + + + +	
SCALE: 1/32" = 1'-0"			NORTH NORTH	

SITE LIGHT FIXTURE SCHEDULE

MARK	MAKE	MODEL	VOLT	WATT	BUG	MOUNTING	DESCRIPTION
M	TECH LIGHTING	7000WGAG-840-15-D-Z-UNV-S	277 /120	30		WALL 8'-9"	LED UP/DOWN DECORATIVE SCONCE
S5	LITHONIA	RSX3 LED-P4-40K-R5S-MVOLT- RPA-FAO-DDBXD	277 /120	312	B5-U0-G3	POLE	LED AREA LIGHT FOR PARKING LOT, TYPE #5 SHORT DISTRIBUTION, 42630 LUM ROUND POLE MOUNTING, FIELD ADJUSTABLE OUTPUT
Т	LITHONIA	LDN6-20LM-40K-LO6AR- LSS-MVOLT-UGZ	277 /120	21		CEILING RECESSED	LED 6" RECESSED CAN
W	LITHONIA	KAXW LED-P3-40K-R3-MVOLT- DDBXD-PIRH	277	79	B5-U0-G3	WALL 17'-0"	LED WALL PACK FOR EXTERIOR SITE LIGHTING ALONG SIDES AND REAR OF BUILDING, 4000K, DARK BRONZE, 11443 LUMENS, 70 CRI, OCCUPANCY SENSING

EC SHEET - M

DELIVERED LUMENS	1334	
WATTS	29.9	
VOLTAGE	Universal 120V-277V, with integral transient 2.5kV surge protection (driver)	
DIMMING	0-10, ELV	
LIGHT DISTRIBUTION	Symmetric	
MOUNTING OPTIONS	3-Position Variable Wall Height	
PERFORMANCE OPTIONS	Surge Protector	
CCT	3000K or 4000K	
CRI	80+	
COLOR BINNING	3 Step	
BUG RATING	B0-U4-G1	
DARK SKY	Non-Compliant	
WET LISTED	IP65	
GENERAL LISTING	ETL	
CALIFORNIA TITLE 24	Can be used to comply with CEC 2019 Title 24 Part 6 for outdoor use. Registration with CEC Appliance Database not required.	GAGE 15 Shown in bronz
START TEMP	-30°C	2טטאון ווז סוטווצ
FIELD SERVICEABLE LED	Yes	
CONSTRUCTION	Aluminum	
HARDWARE	Stainless Steel	
FINISH	Powder Coat	
LED LIFETIME	L70; >60,000 Hours	

EC SHEET - S5



RSX3 LED Area Luminaire

NIGHTITIAE CUS US PREEMIUM Type

The new RSX LED Area family delivers maximum

16.1" (40.9 cm) 48.0 lbs (21.8 kg)

Introduction

value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX3 delivers 25,000 to 41,000 lumens allowing it to replace 400W to 1000W HID luminaires. The RSX features an integral universal mounting

mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

GAGE 15 shown in charcoal

EC SHEET - T



FEATURES & SPECIFICATIONS INTENDED USE - Typical applications include corridors, lobbies, conference rooms and private offices.**CONSTRUCTION** — Galvanized steel mounting/plaster frame; galvanized steel junction box with bottom-hinged access covers and spring latches. Reflectors are retained by torsion springs. Vertically adjustable mounting brackets with commercial bar hangers provide 3-3/4" total adjustment. Two combination ½"-3/4" and four ½" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out). No. 12 AWG conductors, rated for 90°C.

Accommodates 12"-24" joist spacing. Passive cooling thermal management for 25°C standard. Light engine and drivers are accessible from above or below ceiling. Ceiling thickness range 1/2" to 1-1/2". OPTICS — 55° cutoff

1.0 S/MH standard (wallwash reflector available) 80CRI standard (90CRI optional) **ELECTRICAL** — Adjustable lumen output with three module options. MVOLT 120/277V 50/60Hz driver (0-10V & 120V Phase Dimming to 10% min dimming level). DALI driver dimming to 1% also available 100LPW typical FCC CFR Title 47 Part 15 Class A for 277V. FCC CFR Title 47 Part 15 Class B for 120V.

All values are design or typical values, measured under laboratory conditions at 25 °C.

L80 @ 60,000 hours LISTINGS — Certified to US and Canadian safety standards. Title 24 compliant (90CRI, up to 1000lm) $We tlocation, covered ceiling. Wallwash suitable for damp locations only. Some configurations are {\tt Energy} and {\tt Constant} and {\tt Constant} are {\tt Energy} and {\tt Constant}.$ Star certified, please visit www.energystar.gov for specific products. WARRANTY — 5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions Note: Actual performance may differ as a result of end-user environment and application.

LDN6 SWITCHABLE



EC SHEET - W

Specifications subject to change without notice.



\\$4 Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability. All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency

 This luminaire is A+ Certified when ordered with DTL® controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocontrol interoperability1

• This luminaire is part of an A+ Certified solution for ROAM® or XPoint™ 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

To learn more about A+, visit <u>www.acuitybrands.com/aplus</u>.

ARCHITECTURAL DESIGN•GUILD

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> FIRM: #XXXXXX EXP: ##/##/####

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-PROJECT-

-CONSULTANT

7061 W 159TH ST TINLEY PARK, ILLINOIS 60477

ISSUE DATE: STORE NUMBER: AREA : JOB NUMBER: T.B.D. 70,323 SF 2021.0302.00 PROTOTYPE: 2020 Q3 -ISSUE-

90% REVIEW



EXP: ##/##/####

PHOTOMETRIC PLAN CHECKED:

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 article 600.6 (A) (1) per NEC

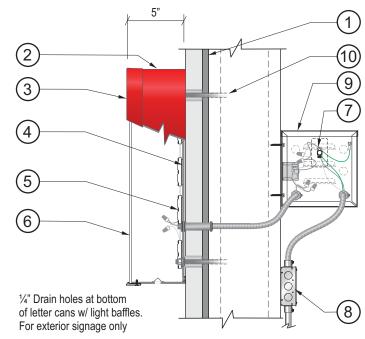
Specifications: Channel Letters

- 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 ltrs 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.



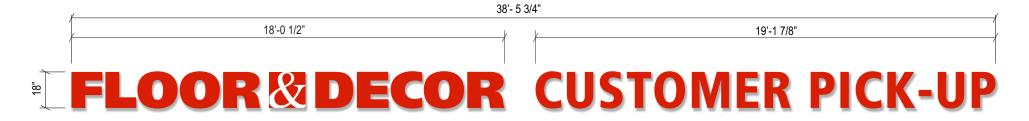
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Floor & Decor 7061 W 159th St Tinley Park, IL 60477-1646 Project ID#: 125990
Project Mgr: Rob Sciarra
Designer: Mike DeMarco
Created on: 03/22/2021

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

FLOOR& DECOR CUSTOMER PICK-UP



Sign Layout Detail

FD-CPU-18CL RED

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

Electrical Detail:

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



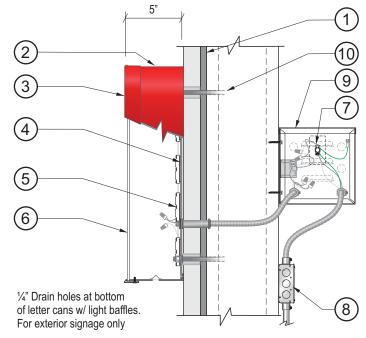
General Notes:

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
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- 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 article 600.6 (A) (1) per NEC

Specifications: Channel Letters

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- 3. 1"Jewelite trimcap (Red) bonded to face, #8 pan head screws to returns
- 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 Lexan w/ 3M 3630-33 red vinvl 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



Section @ LED Channel Letter
Scale: N.T.S.

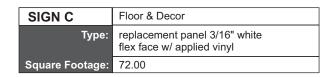


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Floor & Decor 7061 W 159th St Tinley Park, IL 60477-1646 Project ID#: 125990
Project Mgr: Rob Sciarra
Designer: Mike DeMarco
Created on: 03/22/2021

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





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)

Color Specifications:

3M 3630-33 Red



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







PLAN COMMISSION STAFF REPORT

June 3, 2021 – Workshop/Public Hearing

Petitioner

Robert Bettinardi, on behalf of X-Cel Technologies Inc (d/b/a as Bettinardi Golf)

Property Location

7800 Graphics Drive

PIN

19-09-01-176-001-0000

Zoning

ORI PD (Office & Restricted Industrial, Hickory Creek PUD)

UDOD (Urban Design Overlay District)

Approvals Sought

- Special Use Permit for a Substantial Deviation From PUD
- Site Plan Approval

Project Planner

Daniel Ritter, AICP Senior Planner

Bettinardi Golf Parking Expansion

7800 Graphics Drive



EXECUTIVE SUMMARY

The Petitioner, Robert Bettinardi, on behalf of X-Cel Technologies Inc (property owner), is seeking Site Plan Approval and a Special Use Permit for a Substantial Deviation from the Hickory Creek Planned Unit Development (PUD) to allow for site changes and installation of new parking stalls in the front yard at 7800 Graphics Drive.

The proposed changes are due to the growth experienced at Bettinardi Golf and a need for seven additional parking stalls for employees and guests. The majority of the property is already developed and the stalls are proposed in a small green space adjacent to the current parking lot. The request for a Substantial Deviation relates to an Exception to the Zoning Code that prohibits parking in front yards. Front yard parking is common in the PUD and surrounding area, and will not detract from the overall development area. The proposed front yard parking is also similar to the request recently approved at 7650 Graphics Drive (IGOR building) which they will be occupying once an addition is made to the building. Existing trees will be removed where the parking is proposed, but will be replaced in front of the building next to the detention pond. Other minor proposed changes at the entrance include modifications to allow for easier truck turning and a new parking light pole to light the entrance and parking lot.

EXISTING SITE & ZONING OVERVIEW

The subject property (shown with a star on the image on the right) consists of a 2.12-acre parcel on the north side of Graphics Drive. The property is zoned Office and Restricted Industrial (ORI) and is part of the Hickory Creek PUD. The existing site includes an approximately 32,780 sq. ft. building, parking lot areas, detention pond, and trash enclosure.

The subject site was originally approved in 1994 by Vernon Development and purchased by Bettinardi in 1996. The building was a ~20,000 sq. ft. office and warehouse building. In 2004 a ~12,000 sq. ft. addition was placed

Above: Zoning Map around subject property (indicated with star) in the Hickory Creek PUD (outlined in Red). Four lots (outlined in blue) were previously constructed before the PUD was established.

on the rear/north side of the building along with some site changes to increase the parking count.

In 2019, Bettinardi purchased a nearby property at 7650 Graphics Drive (two lots to the east referred to as the IGOR building). That site was approved in April 2021 for a building addition and site changes allowing Bettinardi/X-Cel to utilize the space along with IGOR remaining as a tenant. A request to expand the parking lot into the front yard was approved for that site as well.

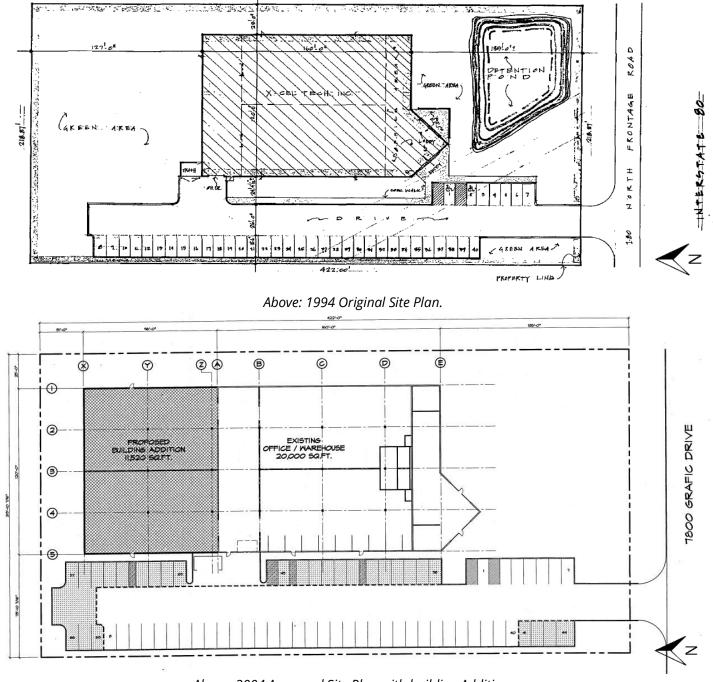
The Hickory Creek PUD was originally approved in 2006 (Ord. 2006-O-028) with the ORI base zoning covering the full area. The PUD was unique in that it included four previously constructed properties along Graphics Drive into the plan that allows for some flexibility in uses, dock locations, and other ORI district design requirements. Staff notes that the corner lot east of the subject site (A. Dinovi Heating & Cooling at 18650 76th Avenue) was rezoned as part of the PUD Ordinance, but is not shown as a PUD on the zoning map above. This error will be corrected going forward on the map. The Hickory Creek PUD has been entirely developed, and includes a mixture of office, light industrial, warehouse, and service uses. The majority of uses fit with the industrial/office park feel with limited traffic from the general public. The majority of people traveling through this park are employees or truck drivers.



Above: Aerial of subject property.

In PUDs, any changes to approved building sizes require a Special Use Permit for a Substantial Deviation from the approved PUD. Deviations from Village's Zoning Ordinance, when located in a PUD, are considered "Exceptions" rather than "Variations". Exceptions do not require the standard Findings of Fact as required with a Variation. A PUD Exception is typically viewed more specifically to how it relates to the goals and context of that specific PUD, rather than a Variation, that has a larger context which can affect requirements in the entire Village.

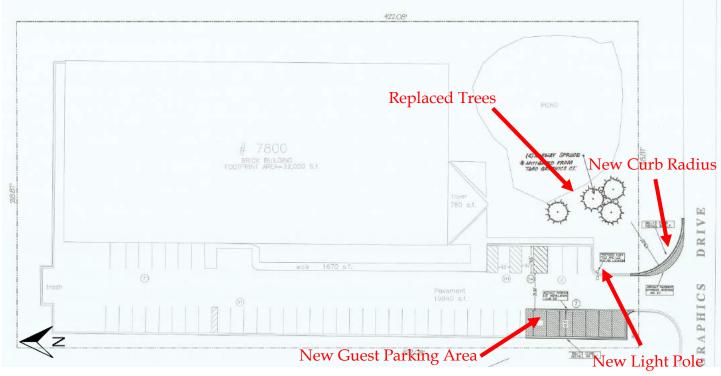
The site is also located within the Urban Design Overlay District (UDOD), which promotes walkability, lesser front yard setbacks, and a more urbanized look. The UDOD regulations do not apply to the existing building and layout of the site. However, any changes to the site do need to comply and cannot make the site further non-conforming in any way.



Above: 2004 Approved Site Plan with building Addition.

SITE PLAN

The primary purpose behind the plan is to increase the available parking on the site as much as possible. The additional parking has been needed due to growth in their business and increased production. The result is the addition of 8 new parking spaces at the southwest corner of the site where there is existing green space adjacent to the existing parking lot. One existing parking space will be converted to an access aisle for a net increase of 7 stalls.



Above: Plan of Proposed Site Changes.

Front Yard Parking

The new parking stalls are located in the front yard which is not permitted, except for single-family residences (who can park on driveways in the front yard). Parking in the front yard requires an exception to the code. The Petitioner has proposed this location for additional parking because it is the best location to add visitor parking near to the main entrance, separate from employee parking. The subject site already has existing front yard parking, and the proposed additional parking will just be extending the existing parking row on the west side of the site. Additionally, there are other sites in the area, including those that have front yard parking (see image below) that are existing or approved. The proposed front yard parking Exception will not negatively change the character of the overall PUD area or the street frontage.



Above: Nearby existing front yard parking (circled in Blue) and approved front yard parking (circled in Purple) on Graphics Drive.

Open Item #1: Review the overall site plan layout and Exception for front yard parking, where it is prohibited.

Since engineering and stormwater management aspects have not been fully submitted or reviewed by the Village Engineer, staff recommends the typical condition to clarify that the approvals are subject to final engineering review which will be submitted with the building permit.

Open Item #2: Staff is recommending the site plan approval be conditioned upon final engineering review and approval.

LANDSCAPE

The existing green space that will be lost due to the parking expansion includes 4 existing trees and some shrubs. Those trees will be replaced with similar species (spruce/evergreen) around the pond that is currently predominantly bare. Staff notes these locations may block views to the existing ground sign, and the exact tree locations may need to be revised with the permit. While there are landscape aspects of the site that are non-conforming, that is typical of existing sites developed under previous codes. It can be difficult to bring existing properties into precisive conformance with newer code requirements including the landscape code. This is even more difficult on industrial sites which are largely developed with impervious surfaces and require truck maneuvering that conflicts with landscaping. However, it has typically been the desire for the Village to bring non-conforming sites into closer compliance when possible and with a focus on public-facing frontages. The trees being replaced were not required originally but are required under the current code, so the focus was on maintaining the existing tree ratio already located on the site. A recommended condition has been added requiring comparable replacement of all existing landscaping on the site. This requirement will be reviewed by staff with the permit submittal.

Open Item #3: Review and discuss the proposed Landscape Plan.

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.

X.I.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;
 - The proposed parking exception is safe for the public and employees.
- 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;
 - The additional parking does not affect neighboring property enjoyment or impair property values.
- 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;
 - Neighboring properties are already developed and the proposal will not negatively affect any future development or redevelopment of the neighboring properties.
- d. That adequate utilities, access roads, drainage, and/or other necessary facilities have been or are being provided;
 - The site is already developed with adequate utilities and no additional utilities are needed for the parking lot.
- 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
 - Site layout is designed to allow for safe circulation by trucks, employees, and the general public.
- 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.
 - All other Village code requirements will be met.
- g. The extent to which the Special Use contributes directly or indirectly to the economic development of the community as a whole.
 - The addition allows for an existing successful business to continue to grow and employ people within the community.

STANDARDS FOR SITE PLAN APPROVAL

Section III.U.6. 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 and approval from the Plan Commission. Since no changes to the building are proposed, only the Site Plan Standards have been included.

Site Design

- 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.

MOTIONS TO CONSIDER

If the Plan Commission wishes to act on the Petitioner's requests, the appropriate wording of the motions is listed below. The protocol for the writing of a motion is to write it in the affirmative so that a positive or negative recommendation correlates to the Petitioner's proposal. By making a motion, it does not indicate a specific recommendation in support or against the plan.

Motion 1 (Special Use for Substantial Deviation):

"...make a motion to recommend that the Village Board grant a Special Use Permit for a Substantial Deviation from the Hickory Creek PUD with an Exception from the Zoning Ordinance for front yard parking location, to the Petitioner, Robert Bettinardi on behalf of X-Cel Technologies Inc, to permit site changes at 7800 Graphics Drive in the ORI PD (Office & Restricted Industrial, Hickory Creek PUD) zoning district, in accordance with the plans submitted and adopt Findings of Fact as proposed by Village Staff in the June 3, 2021 Staff Report."

[any conditions that the Commission would like to add]

Motion 2 (Site Plan):

"...make a motion to grant the Petitioner, Robert Bettinardi on behalf of X-Cel Technologies Inc, Site Plan Approval for proposed site changes at 7800 Graphics Drive in the ORI PD (Office & Restricted Industrial, Hickory Creek PUD) zoning district, in accordance with the plans submitted and subject to the following conditions:

- 1. Approval is subject to final engineering review and approval by the Village Engineer.
- 2. Approval is subject to the acceptance of the request for a Special Use for a Substantial Deviation to the PUD by the Village Board.
- 3. All landscaping removed shall be replaced with comparable landscaping around the front pond area, including the four trees and any shrubs or bushes.

[any conditions that the Commission would like to add]



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: Install/Expand Front Yard Parking Planned Unit Development (PUD) Concept Preliminary Final Deviation **□** Variation Residential Commercial for _____ ■ Annexation Rezoning (Map Amendment) From ______ to Plat (Subdivision, Consolidation, Public Easement) Landscape Change Approval PROJECT & PROPERTY INFORMATION Bettinardi Golf - Parking Expansion Project Name: Expand parking at south-west side of lot & widen east side entrance radius. Project Description: Property Index No. (PIN): 19-09-01-176-001-0000 7800 Graphics Drive Project Address: Lot Dimensions & Area: $422.08' \times 218.87' = 92.380.5a$. Ft. Zoning District: Estimated Project Cost: OWNER OF RECORD INFORMATION Please supply proper documentation of ownership and/or designated representative for any corporation. Name of Owner: Robert J Bettinardi Company: X-Cel Technologies Inc. Street Address: City, State & Zip: E-Mail Address: Phone Number: 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. Name of Applicant: Company: Relation To Project:

City, State & Zip:

Phone Number:

Street Address:

E-Mail Address:



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

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

		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.
to act a	-	RADA /உல்க்(print clearly) to act on my behalf and advise that they have full authority regards to the subject property and project, including modifying any project or request. I agree to
be boun	d by all terms and agreem	anka manda la shi a shifting was a sanga-mhaki
Propert	y Owner Signature:	
Propert	y Owner Name (Print):	Kobest I. Bettingun;
<u>Ackno</u>	owledgements	
٥	Village Manager, Corpora member or Chair, does no obligate the Village. Furth limited to, motions, resolu	understands and agrees that under Illinois law, the Village President (Mayor), Village Trustees, tion Counsel and/or any employee or agent of the Village or any Planning and Zoning Commission of have the authority to bind or obligate the Village in any way and therefore cannot bind or her, Applicant acknowledges, understands and agrees that only formal action (including, but not utions, and ordinances) by the Board of Trustees, properly voting in an open meeting, can obligate rights or entitlement on the applicant, legal, equitable, or otherwise.
ð	of subject site(s) as part o	nmission, Zoning Board of Appeals, Village Board as well as Village Staff may conduct inspections of the pre-hearing and fact finding review of requests. These individuals are given permission to gards to the request being made.
•		ns will be obtained and installed by the Petitioner on their property for a minimum of 10 days g. These may be provided by the Village or may need to be produced by the petitioner.
•	The request is accompanion scheduling any public med	ed by all addendums and required additional information and all applicable fees are paid before etings or hearings.
•	Applicant verifies that all	outstanding fees and monies owed to the Village of Tinley Park have been paid.
•		impact, engineering, contracted review or other required fees and donations shall be paid prior g permits, occupancy permits, or business licenses.
•	The Owner and Applicant documentation is true and	by signing this application certify that the above information and all supporting addendums and discorre
Property	Owner Signature:	
Property	Owner Name (Print):	Kibert J. Bettinano:
	t Signature: an Owner)	
Applican	t's Name (Print):	
Date:	-	4/26/2021

Updated 12/18/2018

Date:

STANDARDS AND CRITERIA FOR A SPECIAL USE

Section X.J. of the Village of Tinley Park Zoning Ordinance requires that no Special Use be recommended by the Plan Commission unless the Commission finds that all of the following statements, A-G listed below, are true and supported by facts. Petitioners

stater and w	respond to and confirm each and every one of the following findings by providing the facts supporting such findings. The nents made on this sheet will be made part of the official public record, will be discussed in detail during the public meetings ill be provided to any interested party requesting a copy. Please provide factual evidence that the proposed Special Use the statements below. If additional space is required, you may provide the responses on a separate document or page.
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.
	There will be no impact.
В.	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.
	There will be no impact to any neighboring property.
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.
	There will be no impact to any surrounding properties.
D.	That adequate utilities, access roads, drainage, and/or other necessary facilities have been or are being provided.
	We do not anticipate any additional drainage to be required but if necessary we will provide.
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.
	We are widening the radius of the entrance to accommodate this.
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.
	It will conform.
G.	The extent to which the Special Use contributes directly or indirectly to the economic development of the community as a whole.

Updated 12/18/2018

2 | Page

This project fixes a current road hazard and allows for additional employees to be hired.

Parking Expansion – 7800 Graphics Dr Project Narrative

This project involves the expansion of the west parking lot into the existing green area towards Graphics Drive, which results in the addition of 7 new employee parking stalls. We will remove four trees in this existing green area and replace them over by the pond area of the property. A new light pole is being added to adequately light the new parking stalls.

Also as part of the project we are removing the existing B6:12 curb and replacing it with a new B6:12 curb and increasing the radius into the property so semi trailers entering the property for their deliveries do not run over the curb (which is a safety hazard). This would result in a cleaner and safer entrance to the property as opposed to its current state below.



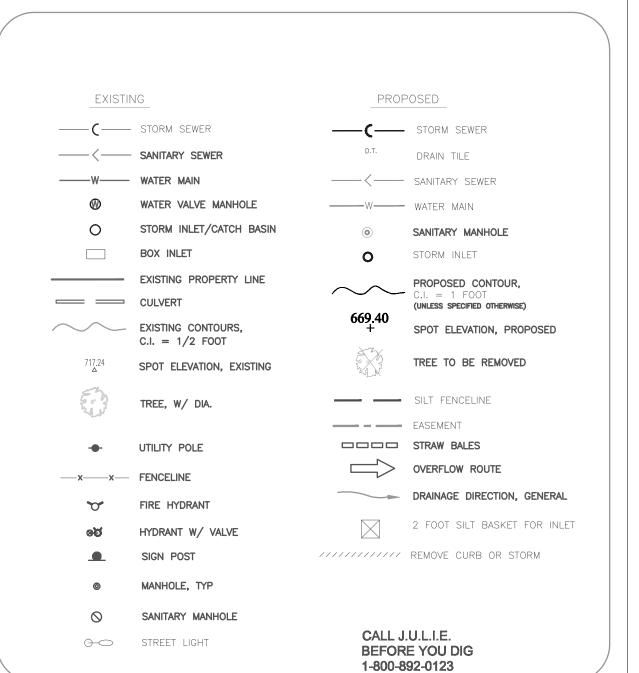
INDEX

- 1. Cover Sheet and Information
- 2. Existing Site
- 3. Demolition/S.E.S.C. Plan
- 4. Proposed Geometric Site
- 5. Proposed Drainage & Utility Plan
- 6. Details
- 7. Details

PROJECT PHASING

- a.) Follow Demolition and SESC plan;
- b.) Verify utilities, both known and unknown;
- d.) Install Asphalt Parking Lot additions; e.) Restoration of Turf;
- f.) Strip Parking Lot; g.) Remove Silt Control only once approved.

LEGEND



Lattitude & Longitude

Adjacent to: 7800 Graphics Court Tinely Park IL 60477 Will County P.I.N.

19-09-01-176-001

Lattitude: 41.553080 ° Longitude: -87,805690 °

Source: Latlong, net

~ COVER SHEET ~

X-Cel Technologies, Inc.

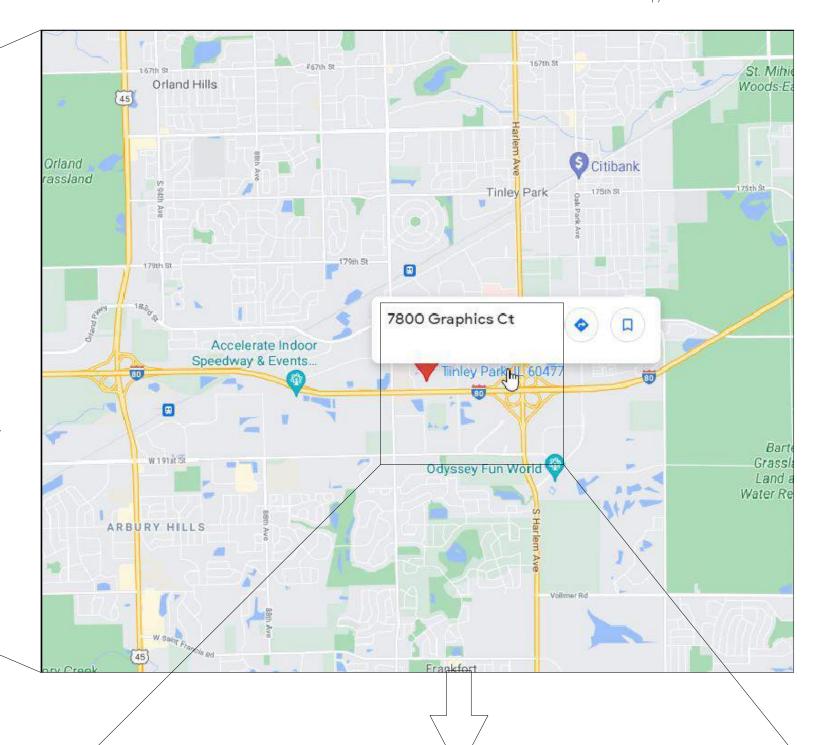
BETTINARDI

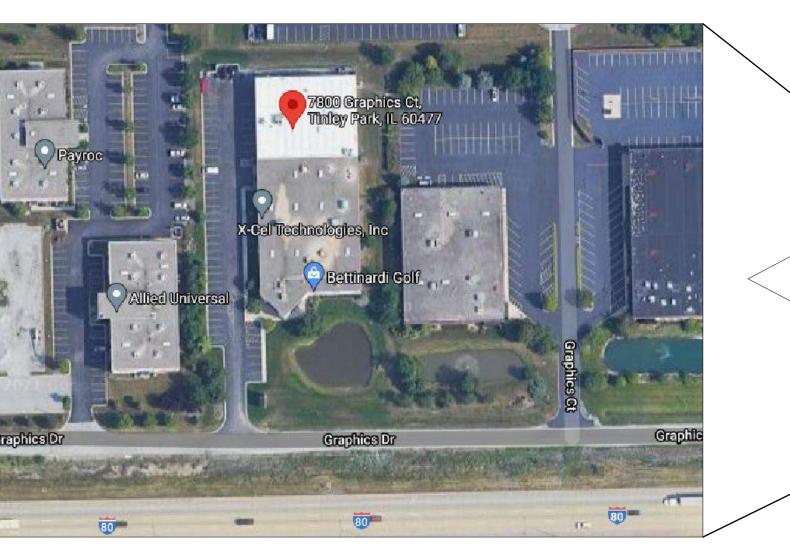
VISITOR PARKING ADDITION

Common Address: 7800 Graphics Court, Tinely Park IL 60477

PROJECT LOCATION MAP #1

PROJECTION LOCATION MAP #2



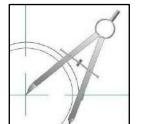




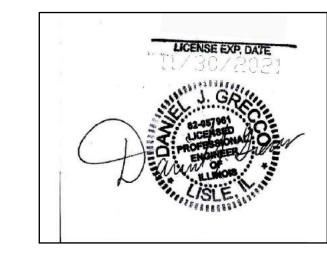


ENGINEER DAN GRECCO, P.E. Professional Civil Engineer 1042 Maple Avenue, Suite 130 Lisle, IL 60532 (630) 745-0524 dgreccod@aim.com

PROJECTION LOCATION MAP #3



PROFESSIONAL ENGINEER'S SEAL: EXPIRES 11/30/2021



TO THE BEST OF OUR KNOWLEDGE AND BELIEF THE DRAINAGE OF SURFACE WATERS WILL NOT BE CHANGED BY THE COSNTRUCTION OF THESE LOT IMPROVEMENTS OR ANY PART THEREOF, OR THAT IF SUCH SURFACE WATER DRAINAGE WILL BE CHANGED, REASONABLE PROVISIONS HAVE BEEN MADE FOR THE COLLECTIONA ND DIVERSION OF SUCH WATERS INTO PUBLIC AREAS OR DRAINS WHICH THE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES SO AS TO AVOID THE LIKELIHOOD OF DAMAGE TO THE ADJOINING PROPERTIES, BECAUSE OF THE CONSTRUCTION OF THESE LOT IMPROVEMENTS. I DENY THE PRESENCE, UTILIZING PUBLIC INFORMATION AVAILABLE, OF THE PRESENCE OF ANY LPDA, FLOODPLAIN, OR WETLAND PRESENT ON THIS SITE. NOTE: FEMA FLOODPLAIN PANEL 17197C0216G, EFFETIVE 2/15/2019 WAS REFERENCED.

AS SHOWN

Specifications

The latest edition of the water and sewer specification manual shall prevail, unless otherwise note by Village of Tinley Park Details provided.

The latest edition of the Illinois Standard Specifications For Road and Bridge construction shall prevail, unless otherwise noted by Village of Chicago Ridge Details provided.

CALL J.U.L.I.E. BEFORE YOU DIG 1-800-892-0123

SHEET ATION COVER NFORM

CALL J.U.L.I.E. BEFORE YOU DIG 1-800-892-0123

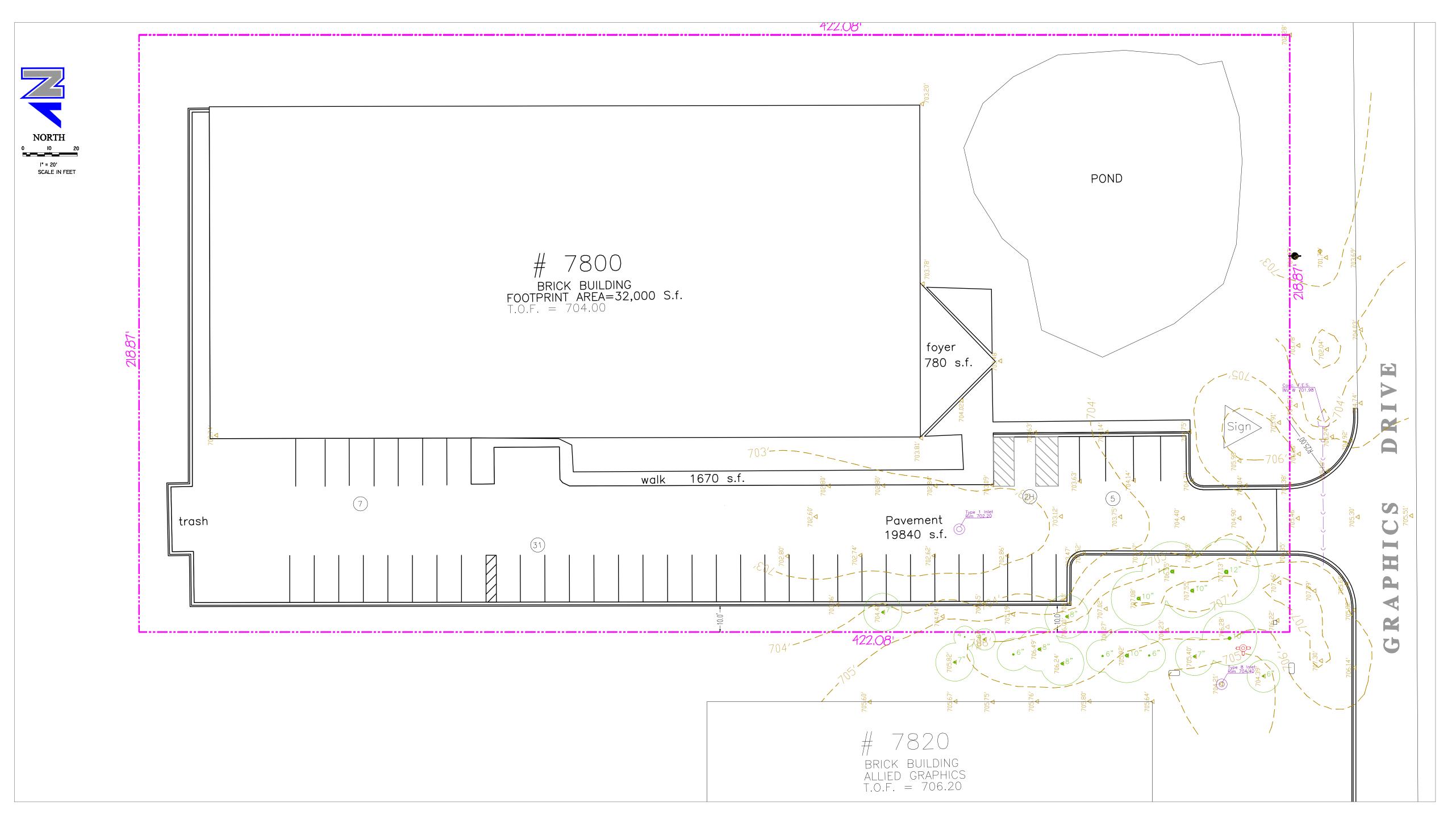
X-Cel Technologies, Inc.

Visitor Parking

BETTINARDI

Common Address: 7800 Graphics Court, Tinely Park IL 60477

EXISTING SITE

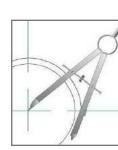




ENGINEER

DAN GRECCO, P.E.

Professional Civil Engineer 1042 Maple Avenue, Suite 130 Lisle, IL 60532 (630) 745-0524 dgreccod@aim.com





PIG® Frameless Storm Drain Filter FLT116 For Oil; Sediment, Trash; Debris, For

Drains 12" to 30" Dia., Trim to Fit

Storm Drains 12" to 36" W & 12" to 40" L; Round

In high-traffic areas with catch basins, there's no easier way to control oily runoff and sediment - and

 Below-grate design stays intact in areas with high vehicle traffic
 18"-deep accumulation pocket collects oil,

sediment and other contaminants but lets wate flow through - Features three excess flow ports to prevent

Surveyor of Record:

D. Warren Opperman
9455 Enterprise Ave
Mokena IL 60048
(708) 720-1000

1VIL ENGINEER: an Grecco, P.E. 042 Maple Ave, Suite isle, IL 60532 330-745-0524

SCALE AS SHOWN

SHEET C3

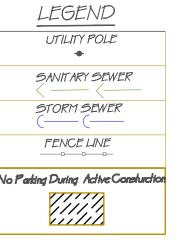
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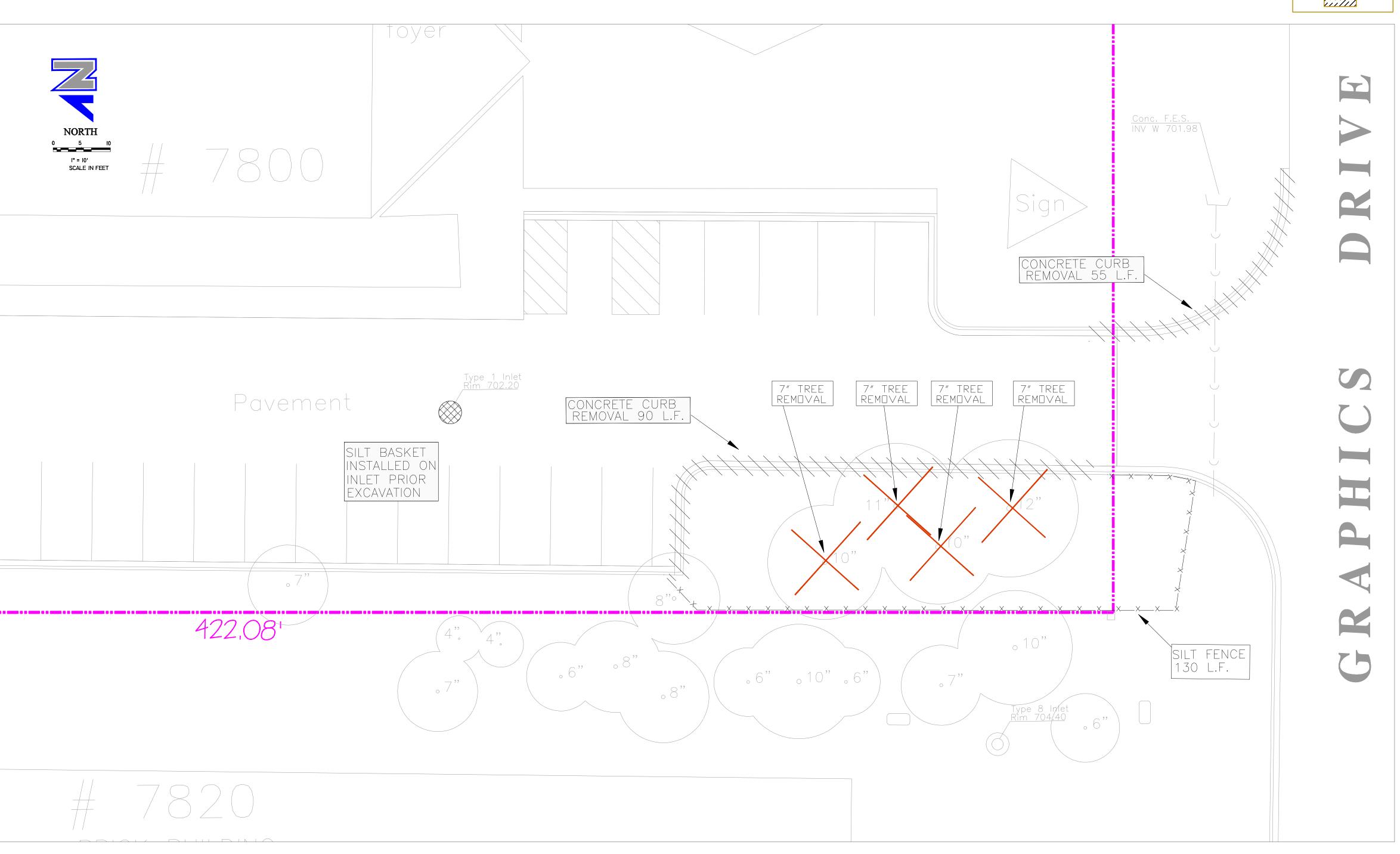
X-Cel Technologies, Inc.

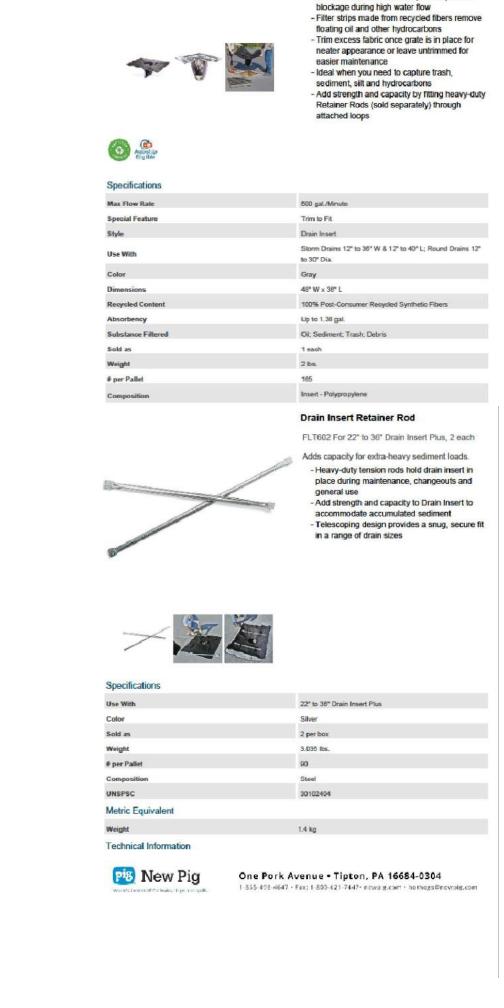
Visitor Parking

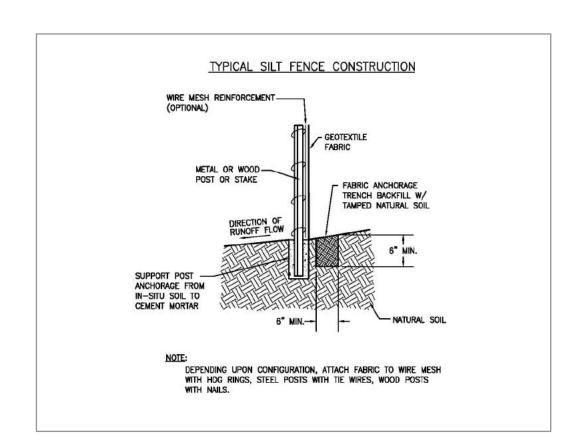
Common Address: 7800 Graphics Court, Tinely Park IL 60477

DEMOLITION PLAN/SESC PLAN









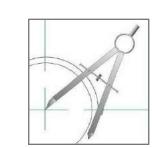
SESC NOTES

Concrete wash out must not occur within the right—of—way. The contractor/developer will have the responsibility to keep all public right—of—way free from dirt and debris. Trucks and other construction equipment should be cleaned onsite to prevent mud from being deposited on the public right—of—way. Stockpiles shall be for foundation backfill only. All other excavated materials shall be removed from the site immediately. Stockpiles of soil that will remain for a period of 7 days shall be stabilized and provided with the appropriate erosion and sedimentation control measures.

All construction traffic will utilize Graphics Drive. No debris, dirt, etc. will be tracked onto Graphics Drive or the northern access. It will be the Contractor's responsibility to folllow and maintain Graphics Drive during this construction.







CALL J.U.L.I.E. BEFORE YOU DIG 1-800-892-0123

IMPERVIOUS LOT COVERAGE

5-Apr-21 DJG

92000 S.F.

32000 S.F.

780 S.F.

1670 S.F.

19840 S.F.

54290 S.F.

32000 S.F. 780 S.F.

1670 S.F.

19840 S.F.

1245 S.F.

55535 S.F.

1245 S.F.

= 59.01%

= 60.36%

CALCULATIONS

LOT SQUARE FOOTAGE

WALK ON W. SIDE OF BLD

EXISTING IMPERVIOUS =

WALK ON W. SIDE OF BLD

PROPOSED IMPERVIOUS =

INCREASED IMPERVIOUS =

PROPOSED STORM

PARKING AREA

NEW PARKING AREA

STORMWATER

PARKING AREA

EXISTING

BUILDING

BUILDING

FOYERS

FOYERS

PARKING LOT PAVEMENT COMPOSITION DETAIL

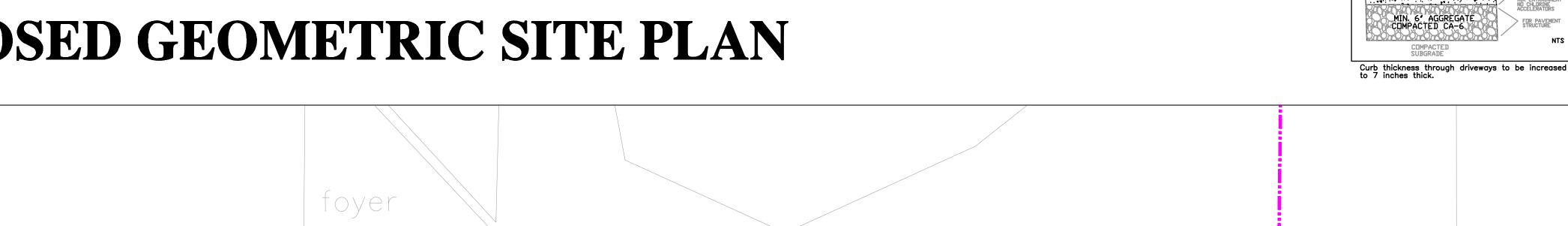
PROPOSED FEOMETRIC

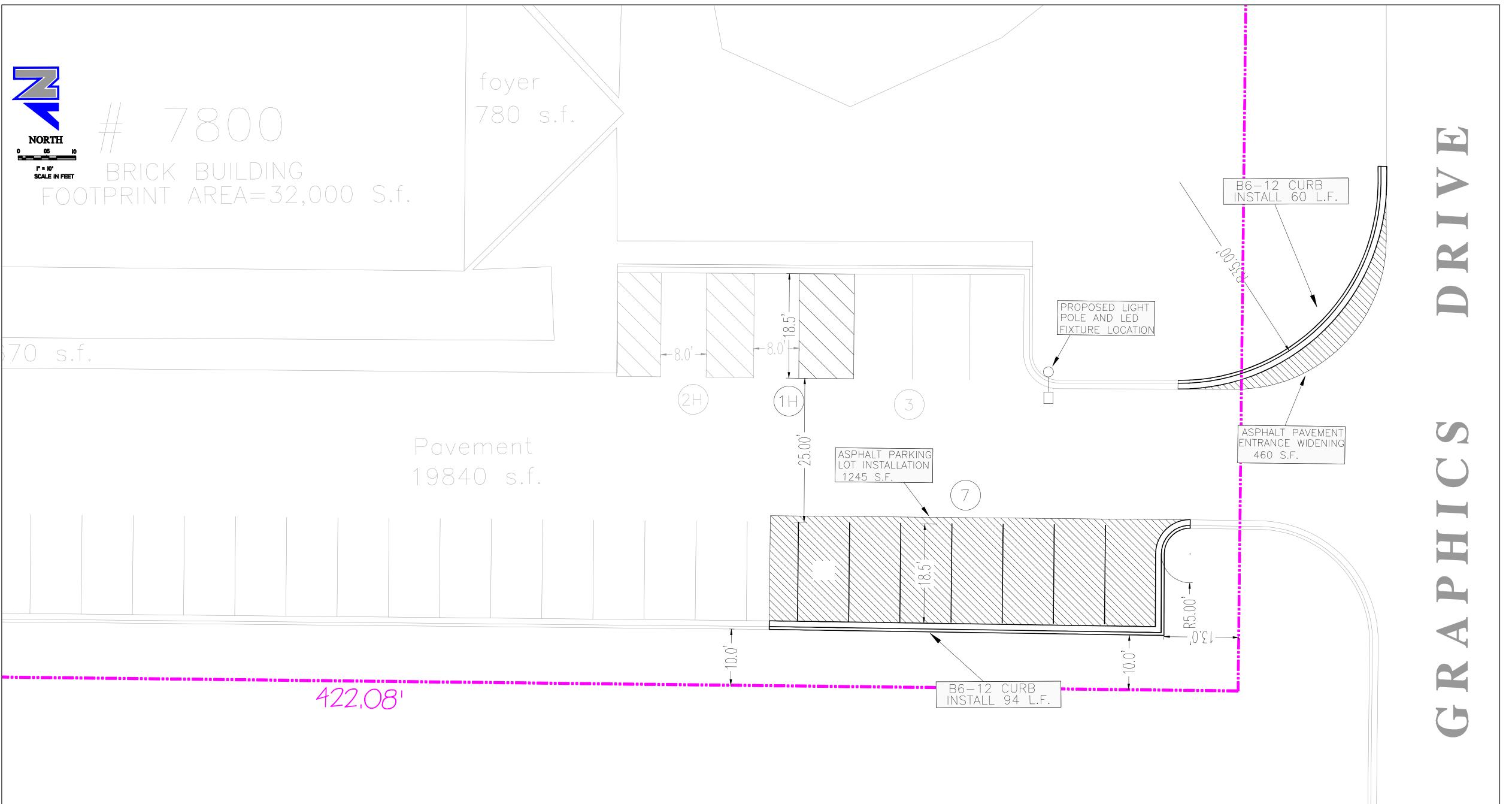
APRIL 22, 2021

BETTINARDI X-Cel Technologies, Inc. Visitor Parking

Common Address: 7800 Graphics Court, Tinely Park IL 60477

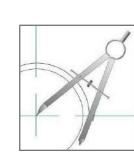
PROPOSED GEOMETRIC SITE PLAN











PROPOSED GRADE

UTILITY POLE

FENCE LINE

SILT FENCE LINE

STAKED COIR LOG

INLET SEDIMENT BASKET

IMPERVIOUS LOT COVERAGE

9-Mar-21 DJG

98697 S.F.

23996 S.F.

140 S.F.

670 S.F.

24390 S.F.

11000 S.F.

5000 S.F.

65196 S.F.

23996 S.F.

7176 S.F.

140 S.F.

670 S.F.

786 S.F.

16908 S.F.

10860 S.F.

1125 S.F.

5000 S.F.

66661 S.F.

1465 S.F.

= 67.54%

66.06%

CALCULATIONS

LOT SQUARE FOOTAGE

WALK ON W. SIDE OF BLD

NORTH PARKING AREA

WEST PARKING AREA

SHARED DRIVE HALF

PROPOSED STORM

BUILDING ADDITION

BUILDING

FOYERS

EXISTING IMPERVIOUS =

WALK ON W. SIDE OF BLDG

EAST LOT AISLE EXPANSION

NEW ENTRANCE PARKING

PROPOSED IMPERVIOUS =

INCREASED IMPERVIOUS =

NORTH PARKING AREA

WEST PARKING AREA

SHARED DRIVE HALF

STORMWATER EXISTING BUILDING

FOYERS

SCALE AS SHOWN

> re RIL 22, 2021

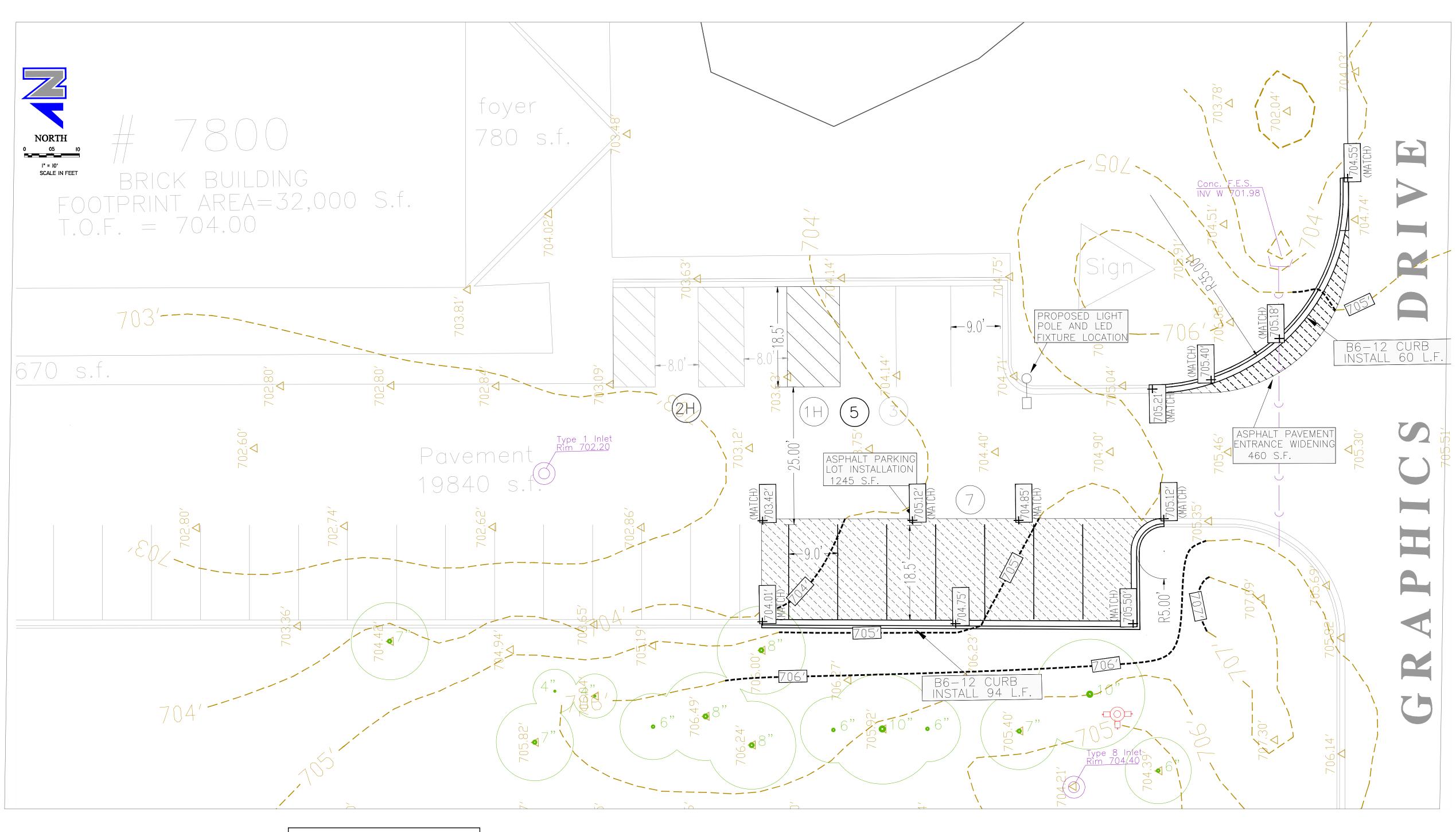
BETTINARDI

X-Cel Technologies, Inc.

Building Addition

Common Address: 7650 Graphics Court, Tinely Park IL 60477

PROPOSED GRADING & UTILITY SITE PLAN





ENGINEER

DAN GRECCO, P.E.

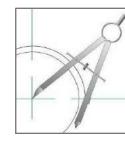
Professional Civil Engineer

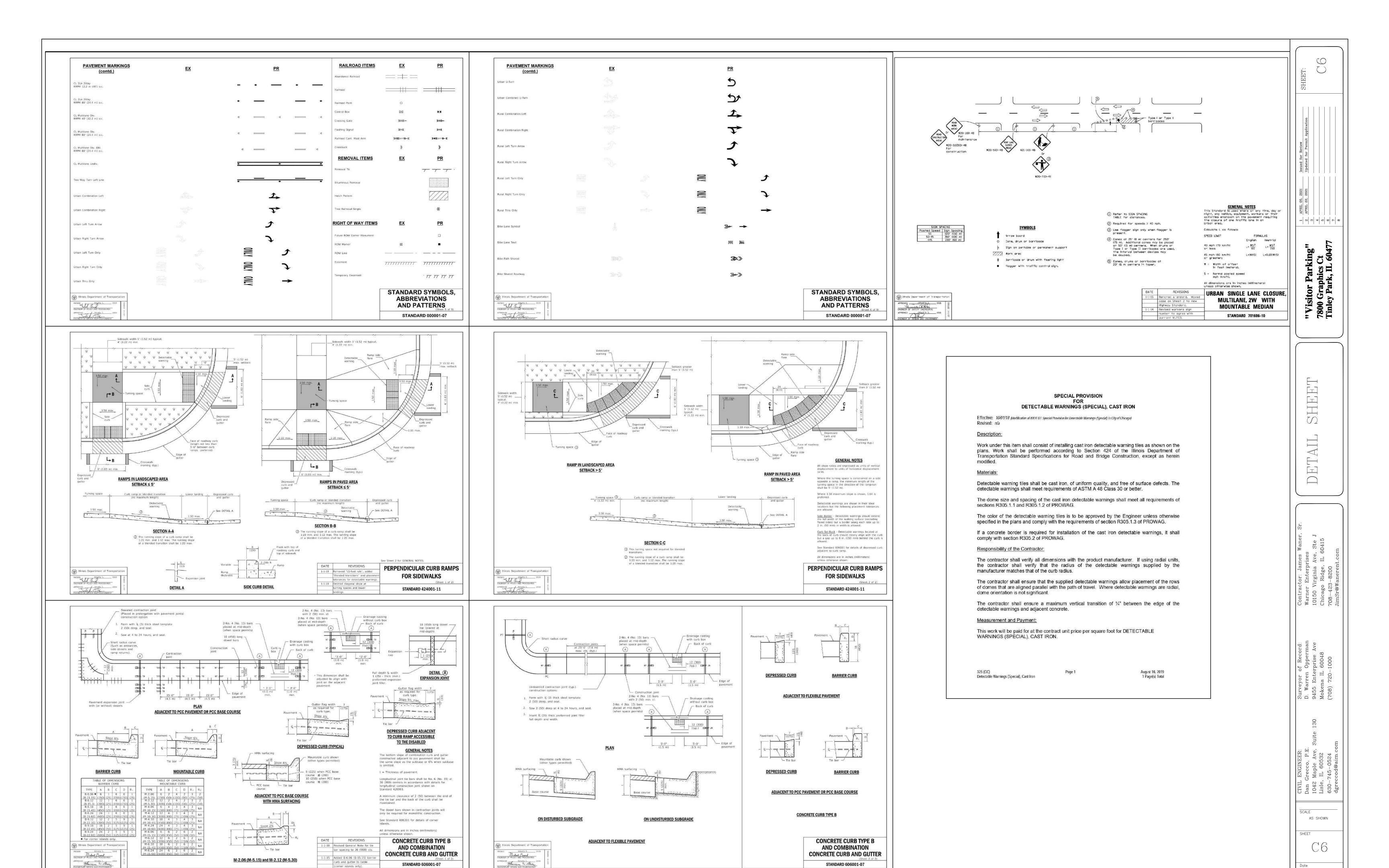
1042 Maple Avenue, Suite 130

Lisle, IL 60532

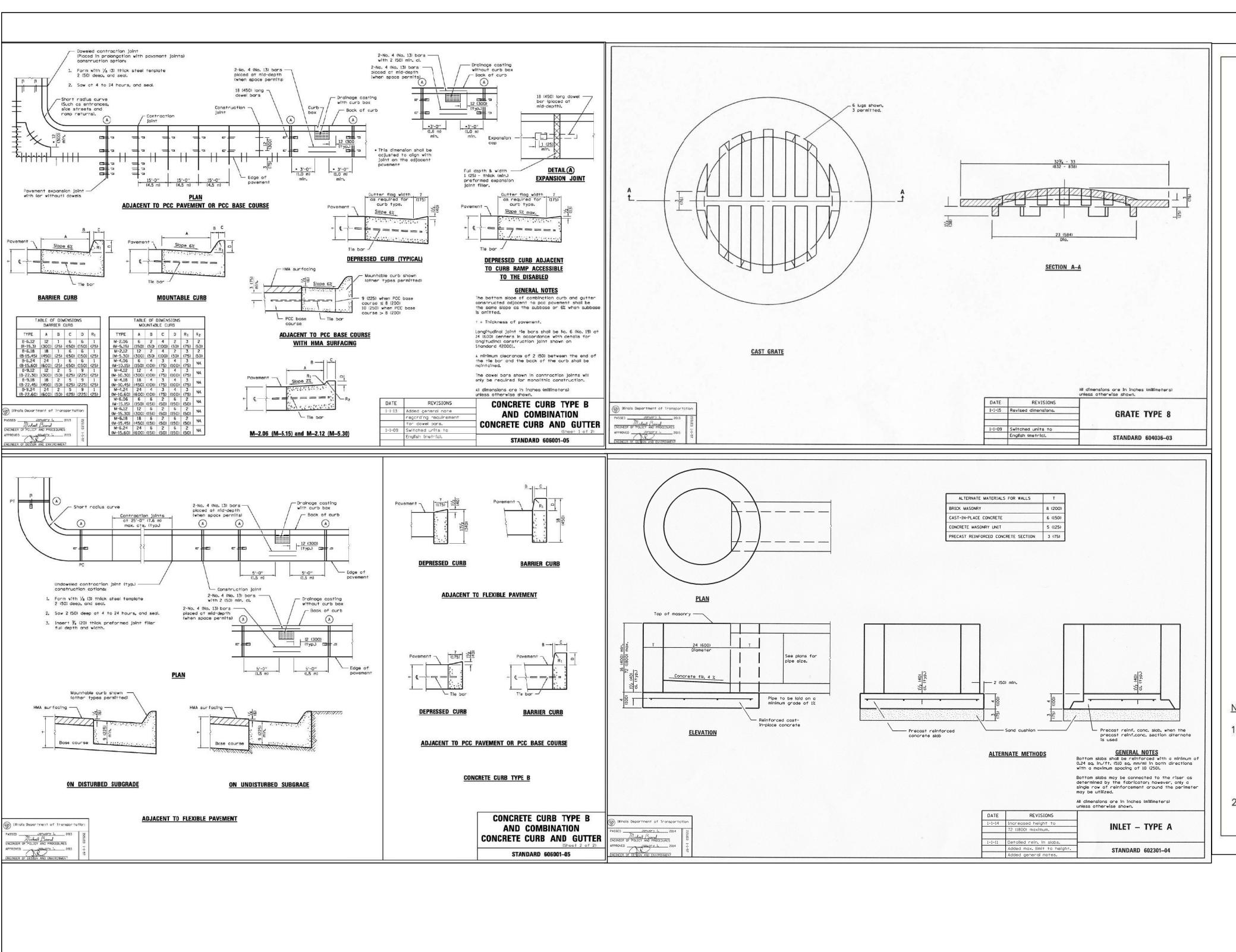
(630) 745-0524

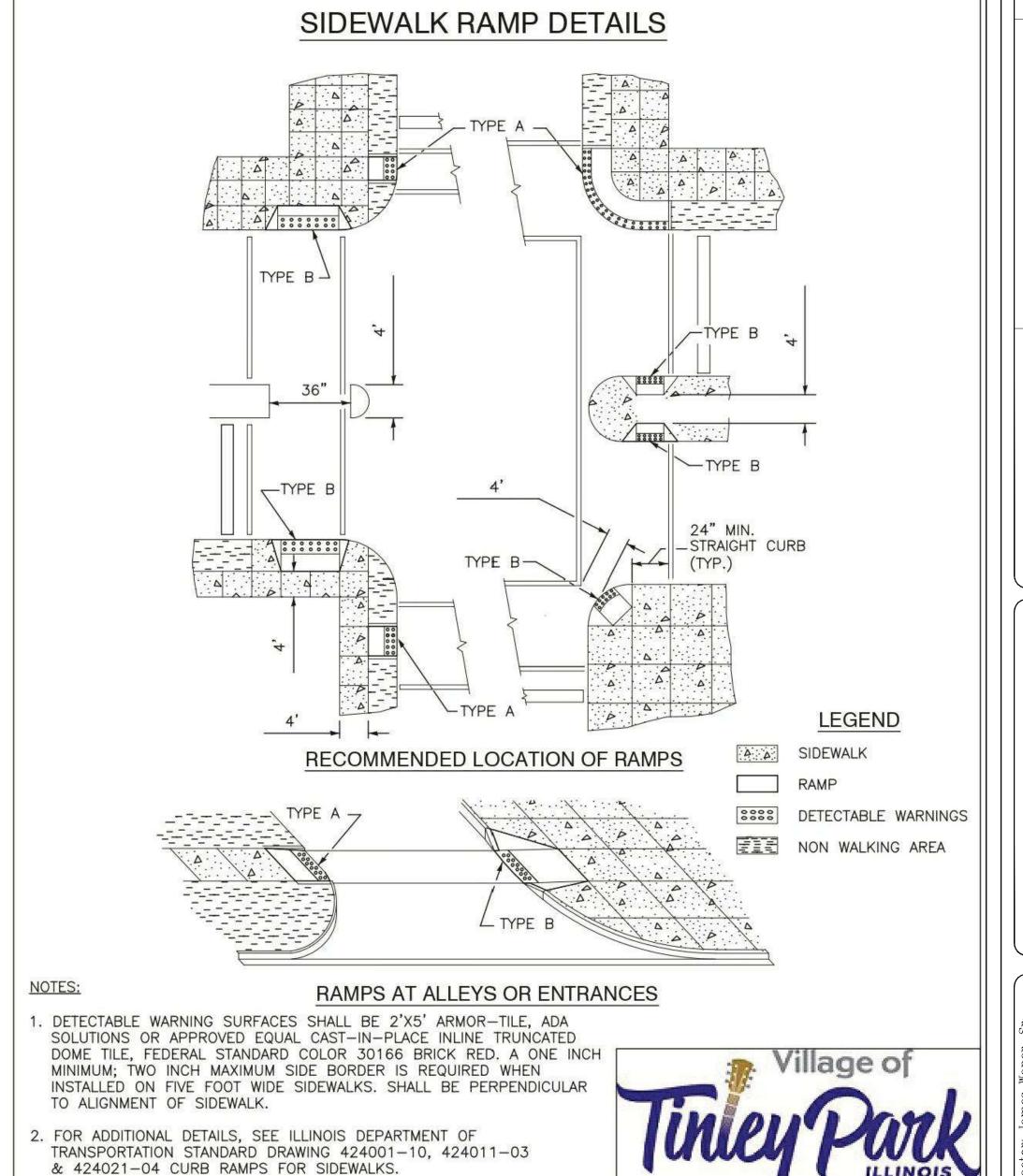
dgreccod@aim.com





APRIL 22, 2021





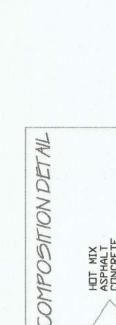
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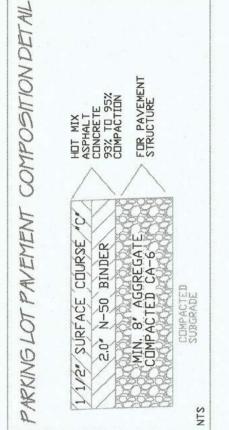
AS SHOWN

APRIL 22, 2021

JimSr@Wanerent.com dgreccod@aim.com 7800 Graphics Ct Tinley Park, IL 60477 CEOWELKIC 00S8-ES4-807 0001-027 (807) 4560-745-0584 G2 Chicago Ridge, IL 60415 Mokena IL 60048 Lisle, IL 60532 **b**KObozed Sile 10150 Virginia Ave, Ste J 9455 Enterprise Ave 1042 Maple Ave, Suite 130 "Visitor Parking" Warner Enterprises D. Warren Opperman Dan Grecco, P.E. SHEET: Surveyor of Record: 1 APRIL 05, 2021 Contractor: James Waner, Sr. CIAIT ENGINEEE:









60477

Park IL

Tinely

Court,

7800 Graphics

Address:

Common

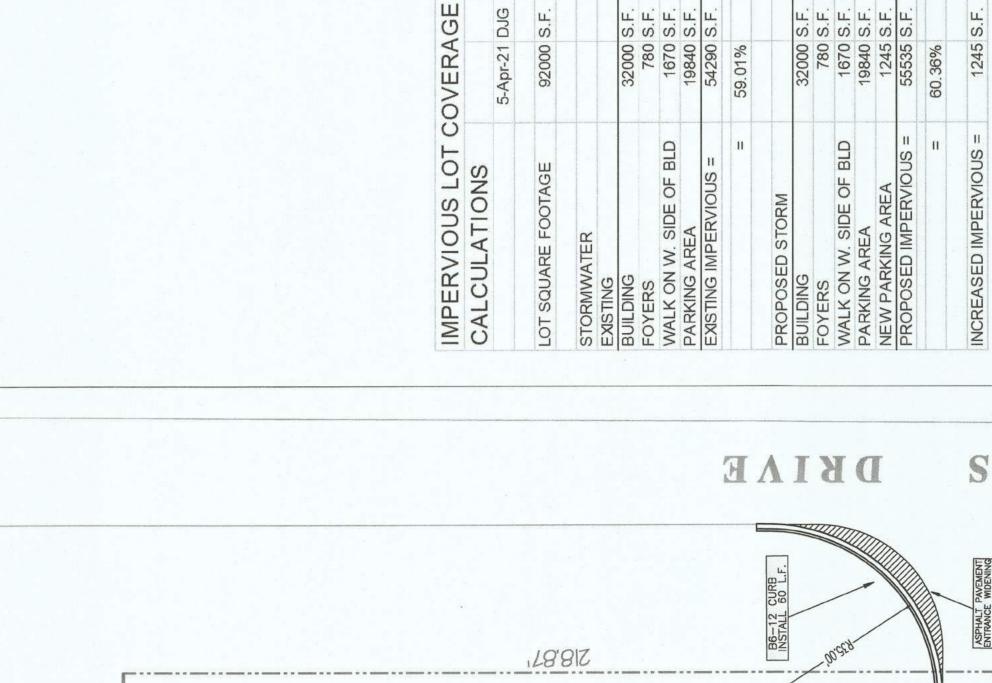
GEOME

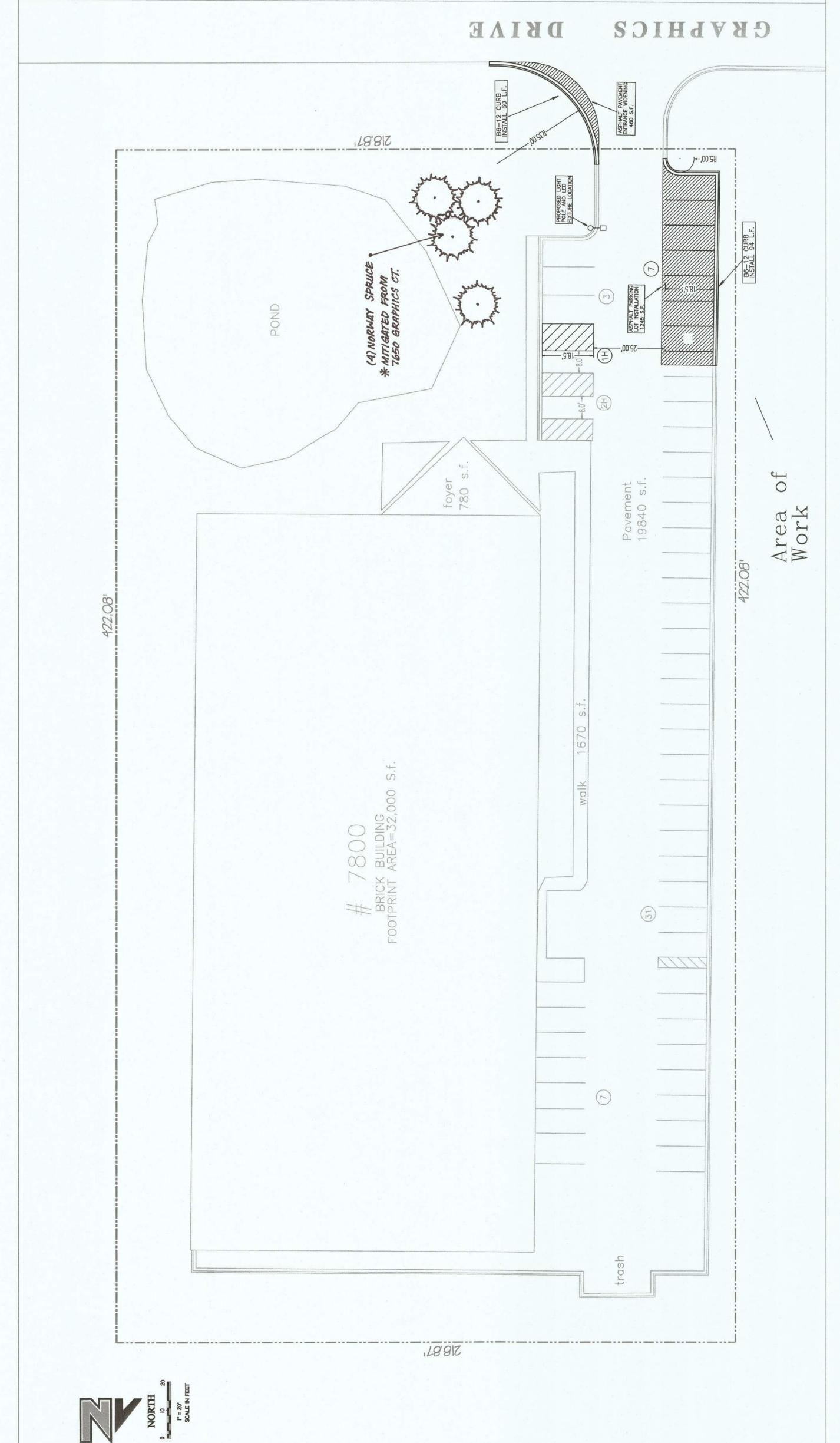
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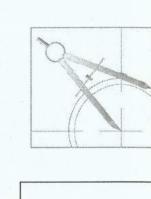
Technologies,

BETTINARD

Visitor Parking



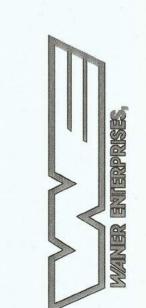


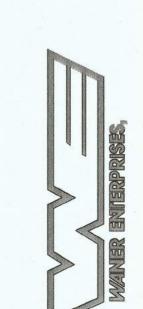


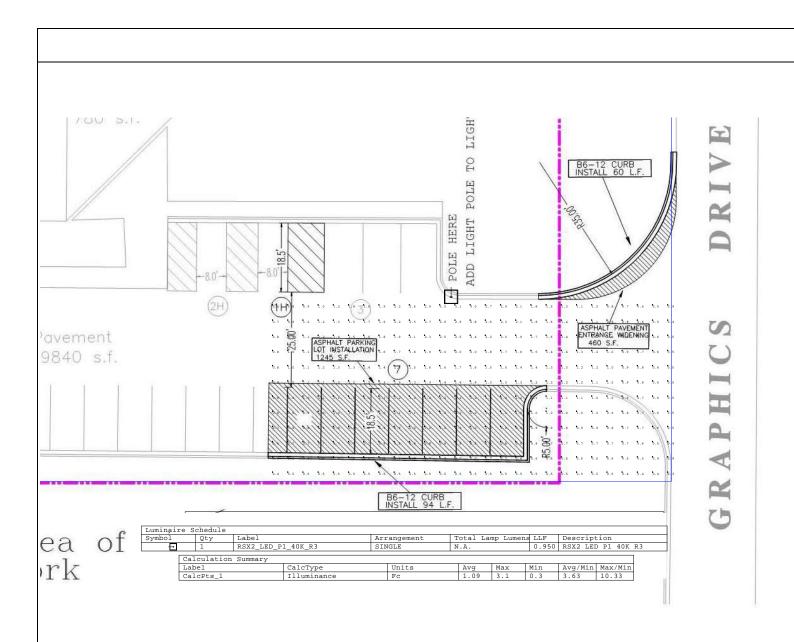
BY: LANDSCAPE.

PREPIRED HUBER













Page: 1 of 1

For Approval: For Record:

Submittal

To:

JOHNSON ELECTRIC CO. CRESTWOOD

4369 W. 136TH COURT

CRESTWOOD, IL 60418 Phone: 708-371-3377 Fax: 708-371-6670 Project: Bettinardi Golf

Job #: 56405

Quoter: LUKE HANSEN

Project Mgr:

Printed By: LUKE HANSEN

Type Quantity		Description	Manufacturer
	1	RSX2 LED P1 40K R3 MVOLT SPA DDBXD	LITHONIA
	1	SSS 25 4C DM19AS DDBXD	LITHONIA

From:

PARAMONT EO - WOODRIDGE OFFICE 708-345-0000 1000 DAVEY RD, SUITE 100 WOODRIDGE, IL 60517



RSX2 LED Area Luminaire













Specifications

EPA 0.69 ft² (0.06 m²) (ft2@0°):

29.3" (74.4 cm) Length: (SPA mount)

Width: 13.4" (34.0 cm)

3.0" (7.6 cm) Main Body Height: 7.2" (18.3 cm) Arm

Weight:

30.0 lbs (13.6 kg) (SPA mount)





Catalog Notes Туре

Hit the Tab key or mouse over the page to see all interactive elements

Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX2 delivers 11,000 to 31,000 lumens allowing it to replace 250W to 1000W HID luminaires.

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Ordering Information

EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DDBXD

RSX2 LED					
Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX2 LED	P1 P2 P3 P4 P5 P6	30K 3000K 40K 4000K 50K 5000K	R2 Type 2Wide R3 Type 3 Wide R3S Type 3 Short R4 Type 4 Wide R4S Type 4 Short R5 Type 5 Short 1 RFS Type 5 Short 1 AFR Automotive Front Row AFRR90 Automotive Front Row Right Rotated AFRL90 Automotive Front Row Left Rotated	MVOLT (120V-277V) ² HVOLT (347V-480V) ³ XVOLT (277V-480V) ⁴ (use specific voltage for options as noted) 120 ³ 277 ⁵ 208 ³ 347 ⁵ 240 ³ 480 ⁵	SPA Square pole mounting (3.0" min. SQ pole for 1 at 90°, 3.5" min. SQ pole for 2, 3, 4 at 90°) RPA Round pole mounting (3.2" min. dia. RND pole for 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2 at 180°, 3 at 120°) MA Mast arm adaptor (fits 2-3/8" 0D horizontal tenon) IS Adjustable slipfitter (fits 2-3/8" 0D tenon) 6 WBA Wall bracket ¹ WBASC Wall bracket with surface conduit box AASP Adjustable tilt arm square pole mounting 6 AARP Adjustable tilt arm round pole mounting 6 AAWB Adjustable tilt arm with wall bracket 6 AAWSC Adjustable tilt arm wall bracket and surface conduit box 6

Options			Finish	
Shipped I HS PE PEX PER7 CE34 SF DF	House-side shield ⁷ Photocontrol, button style ^{8,9} Photocontrol external threaded, adjustable ^{9,10} Seven-wire twist-lock receptacle only (no controls) ^{9,11,12,13} Conduit entry 3/4" NPT (Qty 2) Single fuse (120, 277, 347) ⁵ Double fuse (208, 240, 480) ⁵	*Standalone and Networked Sensors/Controls (factory default settings, see table page 9) NLTAIR2	DDBXD DBLXD DNAXD DWHXD DDBTXD DBLBXD DNATXD DWHGXD	Dark Bronze Black Natural Aluminum White Textured Dark Bronze Textured Black Textured Natural Aluminum Textured White
SPD20KV FAO DMG DS	20KV Surge pack (10KV standard) Field adjustable output ^{9,13} 0-10V dimming extend out back of housing for external control (control ordered separate) ^{9,13} Dual switching ^{9,14}	Shipped Separately (requires some field assembly) EGS External glare shield ⁶ EGFV External glare full visor (360° around light aperture) ⁷ BS Bird spikes ¹⁸		



Ordering Information

Accessories

RSX2HS RSX2 House side shield (includes 2 shields) RSX2EGS (FINISH) U

External glare shield (specify finish)

RSX2HSAFRR (FINISH) U RSX2 House side shields for AFR rotated optics (includes 2 shields)

RSX2EGEV (FINISH) U External glare full visor (specify finish)

RSXRPA (FINISH) U RSX Universal round pole adaptor plate (specify finish)

RSXWBA (FINISH) U RSX WBA wall bracket (specify finish) 1

RSX Surface conduit box (specify finish, for use with WBA, WBA not included) RSXSCB (FINISH) U Photocell -SSL twist-lock (120-277V) 11

DLL127F 1.5 JU DLL347F 1.5 CUL JU Photocell -SSL twist-lock (347V) 19 DLL480F 1.5 CUL JU Photocell -SSL twist-lock (480V) 19

DSHORT SBK U Shorting cap 19

NOTES

- TES

 Any Type 5 distribution, is not available with WBA.

 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).

 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).

 XVOLT driver not available with P1. XVOLT driver operates on any line voltage from 277V-480V (50/60 Hz).

 XVOLT driver not available with PE or PEX.

 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.

 Maximum tilt is 90° above horizontal.

 It may be ordered as an accessory.

- ne may be ordered as an accessory.
 Requires MVOLT or 347V.
 Not available in combination with other light sensing control options (following options cannot be combined: PE, PEX, PER7, FAO, DMG, DS, PIRHN).
- Requires 120V, 208V, 240V, or 277V.

- Twistlock photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included. Dimming leads capped for future use.
- For units with option PER7, the mounting must be restricted to +/- 45° from horizontal aim per ANSI C136.10-2010.

 Two or more of the following options cannot be combined including DMG, DS, PER7, FAO and PIRHN.
- DS only available on performance package P5 and P6. Must be ordered with PIRHN. Requires MVOLT or HVOLT.

- Must be ordered with NLTAIR2. For additional information on PIRHN
- vistn here.

 Must be ordered with fixture for factory pre-drilling.

 Requires luminaire to be specified with PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.

External Shields



House Side Shield



External Glare Shield

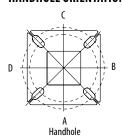


External 360 Full Visor

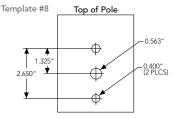
Pole/Mounting Informatiion

Accessories including bullhorns, cross arms and other adpaters are available under the accessories tab at Lithonia's Outdoor Poles and Arms product page. Click here to visit Accessories.

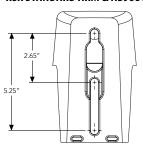
HANDHOLE ORIENTATION



RSX POLE DRILLING



RSX STANDARD ARM & ADJUSTABLE ARM



Round Tenon Mount - Pole Top Slipfitters

Tenon O.D.	RSX Mounting	Single	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2 - 3/8"	RPA, AARP	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 320	AS3-5 390	AS3-5 490
2 - 7/8"	RPA, AARP	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	RPA, AARP	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

Drill/Side Location by Configuration Type

		-		7		_1_	-1-
Drilling Template	Mounting Option	Single	2 @ 180	2 @ 90	3 @ 120	3 @ 90	4 @ 90
	Head Location	Side B	Side B & D	Side B & C	Round Pole Only	Side B, C & D	Side A, B, C & D
#8	Drill Nomenclature	DM19AS	DM28AS	DM29AS	DM32AS	DM39AS	DM49AS

RSX2 - Luminaire EPA

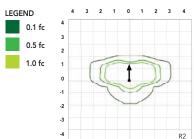
*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

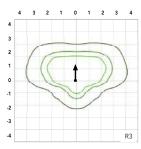
Fixture Quantity & Mounting Configuration		Single	2 @ 90	2 @ 180	3 @ 90	3 @ 120	4 @ 90	2 Side by Side	3 Side by Side	4 Side by Side
Mounting Type	Tilt	-	-1		<u>.</u>	*		-		•
SPA - Square Pole Adaptor	0°	0.69	1.22	1.27	1.8	1.61	2.39	1.37	2.06	2.74
RPA - Round Pole Adaptor		0.74	1.27	1.37	1.9	1.71	2.49	1.42	2.16	2.84
MA - Mast Arm Adaptor		0.61	1.14	1.11	1.64	1.45	2.23	1.29	1.9	2.58
	0°	0.69	1.22	1.27	1.8	1.61	2.39	1.37	2.06	2.74
	10°	0.53	1.06	1.05	1.58	1.37	2.08	1.06	1.59	2.12
	20°	0.52	1.02	1.03	1.52	1.33	2.02	1.03	1.55	2.07
	30°	0.64	1.11	1.18	1.63	1.45	2.21	1.27	1.91	2.54
IS - Integral Slipfitter	40°	0.81	1.21	1.35	1.74	1.65	2.39	1.62	2.43	3.23
AASP/AARP - Adjustable	45°	0.91	1.25	1.5	1.81	1.75	2.48	1.82	2.73	3.64
Arm Square/Round Pole	50°	1.34	1.83	2.17	2.61	2.56	3.62	2.68	4.02	5.36
	60°	2.2	2.97	3.57	4.24	4.17	5.89	4.41	6.61	8.82
	70°	2.86	4.13	4.7	5.89	5.71	8.21	5.71	8.57	11.42
	80°	3.4	5.13	5.67	7.34	7.09	10.21	6.79	10.19	13.59
	90°	3.85	5.96	6.55	8.58	8.31	11.88	7.70	11.56	15.41

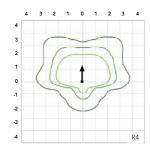
Photometric Diagrams

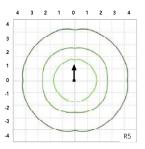
To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's RSX Area homepage.

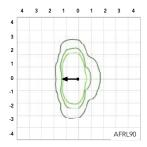
Isofootcandle plots for the RSX2 LED P6 40K. Distances are in units of mounting height (30').

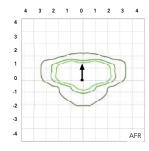


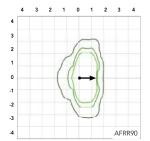












Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

Ambient	Ambient	Lumen Multiplier
0°C	32°F	1.05
5°C	41°F	1.04
10°C	50°F	1.03
15℃	59°F	1.02
20°C	68°F	1.01
25℃	77°F	1.00
30°C	86°F	0.99
35℃	95°F	0.98
40°C	104°F	0.97
45°C	113°F	0.96
50°C	122°F	0.95

Electrical Load

		Current (A)								
Performance Package	System Watts (W)	120V	208V	240V	277V	347V	480V			
P1	71W	0.59	0.34	0.30	0.26	0.20	0.15			
P2	111W	0.93	0.53	0.46	0.40	0.32	0.23			
P3	147W	1.23	0.70	0.61	0.53	0.42	0.31			
P4	187W	1.55	0.90	0.78	0.68	0.53	0.38			
P5	210W	1.75	1.01	0.87	0.76	0.60	0.44			
P6	244W	2.03	1.17	1.01	0.88	0.70	0.51			

Projected LED Lumen Maintenance

Operating Hours	50,000	75,000	100,000
Lumen Maintenance Factor	>0.97	>0.95	>0.92

Values calculated according to IESNA TM-21-11 methodology and valid up to $40^{\circ}\text{C}.$

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance	System Watts	Distribution.			30K K, 70 CR	ll)				40K K, 70 CR	I)				50K K, 70 CR	l)	
Package		Type	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW
		R2	10,040	2	0	1	139	11,031	2	0	1	153	11,031	2	0	1	153
		R3	10,005	2	0	2	141	10,992	2	0	2	155	10,992	2	0	2	155
		R3S	10,271	2	0	2	143	11,285	2	0	2	157	11,285	2	0	2	157
		R4	10,136	2	0	2	143	11,136	2	0	2	157	11,136	2	0	2	157
P1	71W	R4S	9,779	2	0	2	138	10,744	2	0	2	151	10,744	2	0	2	151
		R5	10,271	4	0	2	145	11,285	4	0	2	159	11,285	4	0	2	159
		R5S AFR	10,544 10,026	3	0	1	149 141	11,585 11,016	3	0	1	163 155	11,585 11,016	2	0	2	163 155
		AFRR90	10,020	3	0	2	140	11,121	3	0	2	154	11,121	3	0	2	154
		AFRL90	10,164	3	0	2	141	11,167	3	0	2	155	11,167	3	0	2	155
		R2	15,712	2	0	2	138	17,263	2	0	2	151	17,263	2	0	2	151
		R3	15,657	2	0	3	141	17,202	3	0	3	155	17,202	3	0	3	155
		R3S	16,075	2	0	2	141	17,661	2	0	2	155	17,661	2	0	2	155
		R4	15,862	2	0	3	143	17,427	2	0	3	157	17,427	2	0	3	157
P2	111W	R4S	15,304	2	0	2	138	16,815	2	0	2	151	16,815	2	0	2	151
		R5 R5S	16,075	4	0	2	145	17,661	5	0	3	159	17,661	5	0	3	159
		AFR	16,502 15,691	2	0	2	149 141	18,130 17,240	2	0	2	163 155	18,130 17,240	2	0	2	163 155
		AFRR90	15,841	3	0	3	139	17,240	4	0	3	153	17,240	4	0	3	153
		AFRL90	15,907	3	0	3	139	17,477	4	0	3	153	17,477	4	0	3	153
		R2	19,855	3	0	2	132	21,814	3	0	2	145	21,814	3	0	2	145
		R3	19,785	3	0	3	135	21,737	3	0	4	148	21,737	3	0	4	148
		R3S	20,312	3	0	3	135	22,317	3	0	3	149	22,317	3	0	3	149
		R4	20,044	3	0	3	136	22,022	3	0	4	150	22,022	3	0	4	150
P3	147W	R4S	19,339	3	0	3	132	21,247	3	0	3	145	21,247	3	0	3	145
.,		R5	20,313	5	0	3	138	22,317	5	0	3	152	22,317	5	0	3	152
		R5S	20,852	4	0	2	142	22,910	4	0	2	156	22,910	4	0	2	156
		AFR AFRR90	19,828 20,017	3	0	3	135 133	21,785 21,992	3	0	3	148 147	21,785 21,992	3	0	3	148 147
		AFRL90	20,017	4	0	3	134	22,084	4	0	3	147	22,084	4	0	3	147
		R2	22,836	3	0	2	120	25,090	3	0	2	132	25,090	3	0	2	132
		R3	22,756	3	0	4	122	25,002	3	0	4	134	25,002	3	0	4	134
		R3S	23,363	3	0	3	123	25,668	3	0	3	135	25,668	3	0	3	135
		R4	23,054	3	0	4	123	25,329	3	0	4	135	25,329	3	0	4	135
P4	187W	R4S	22,243	3	0	3	119	25,059	3	0	3	134	25,059	3	0	3	134
17	10/11	R5	23,363	5	0	3	125	25,669	5	0	4	137	25,669	5	0	4	137
		R5S	23,983	4	0	2	128	26,350	4	0	2	141	26,350	4	0	2	141
		AFR	22,806	3	0	2	122	25,056	3	0	2	134	25,056	3	0	2	134
		AFRR90 AFRL90	23,023 23,120	4	0	3	121 122	25,295 25,401	4	0	3	133 134	25,295 25,401	4	0	3	133 134
		R2	26,141	3	0	2	122	28,721	3	0	2	135	28,721	3	0	2	135
		R3	26,049	3	0	4	124	28,620	3	0	4	136	28,620	3	0	4	136
		R3S	26,744	3	0	3	125	29,383	3	0	4	138	29,383	3	0	4	138
		R4	26,390	3	0	4	126	28,994	3	0	4	138	28,994	3	0	4	138
P5	210W	R4S	25,462	3	0	3	121	27,974	3	0	3	133	27,974	3	0	3	133
1 12	21000	R5	26,744	5	0	4	127	29,383	5	0	4	140	29,383	5	0	4	140
		R5S	27,454	4	0	2	131	30,163	4	0	2	144	30,163	4	0	2	144
		AFR	26,106	3	0	2	124	28,682	3	0	2	137	28,682	3	0	2	137
		AFRR90	26,354	4	0	3	123	28,955	5	0	3	136	28,955	5	0	3	136
		AFRL90 R2	26,465 27,646	3	0	3	124 112	29,077 30,374	3	0	2	136 123	29,077 30,374	3	0	2	136 123
		R3	27,549	3	0	4	113	30,374	3	0	4	123	30,374	3	0	4	123
		R3S	28,283	3	0	3	115	31,075	3	0	4	126	31,075	3	0	4	126
		R4	27,909	3	0	4	114	30,663	3	0	4	126	30,663	3	0	4	126
DC.	244W	R4S	26,928	3	0	3	110	29,585	3	0	3	121	29,585	3	0	3	121
P6	244W	R5	28,284	5	0	4	116	31,075	5	0	4	127	31,075	5	0	4	127
		R5S	29,035	4	0	2	119	31,900	5	0	3	131	31,900	5	0	3	131
		AFR	27,608	3	0	2	112	30,332	3	0	2	123	30,332	3	0	2	123
		AFRR90	27,872	4	0	3	113	30,622	5	0	3	124	30,622	5	0	3	124
		AFRL90	27,989	4	0	3	113	30,751	5	0	3	125	30,751	5	0	3	125

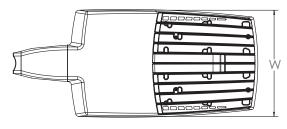


Dimensions & Weights

Luminaire Weight by Mounting Type

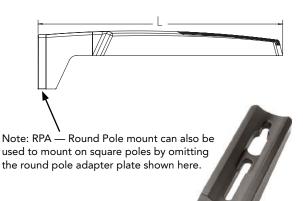
Mounting Configuration	Total Luminaire Weight					
SPA	30 lbs					
RPA	32 lbs					
MA	30 lbs					
WBA	33 lbs					
WBASC	36 lbs					
IS	33 lbs					
AASP	33 lbs					
AARP	35 lbs					
AAWB	36 lbs					
AAWSC	39 lbs					

RSX2 with Round Pole Adapter (RPA)



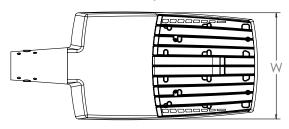
Length: 30.3" (77.0 cm) Width: 13.4" (34.0 cm)

Height: 3.0" (7.6 cm) Main Body 7.2" (18.3 cm) Arm

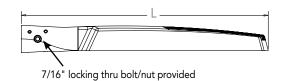




RSX2 with Mast Arm Adapter (MA)

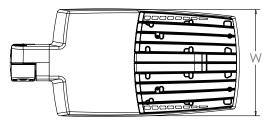


Length: 30.6" (77.7 cm) Width: 13.4" (34.0 cm) Height: 3.0" (7.6 cm) Main Body 3.5" (8.9 cm) Arm

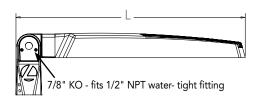


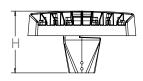


RSX2 with Adjustable Slipfitter (IS)

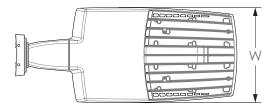


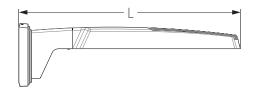
Length: 28.3" (71.9 cm) Width: 13.4" (34.0 cm) Height: 3.0" (7.6 cm) Main Body 7.6" (19.3 cm) Arm

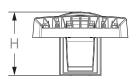




RSX2 with Wall Bracket (WBA)



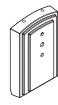




Wall Bracket (WBA) Mounting Detail



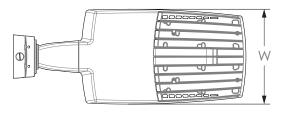


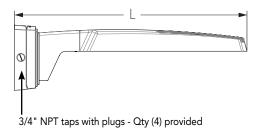


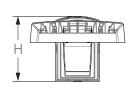
Length: 31.2" (79.2 cm) Width: 13.4" (41.7 cm)

Height: 3.0" (7.6 cm) Main Body 8.9" (22.6 cm) Arm

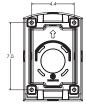
RSX2 with Wall Bracket with Surface Conduit Box (WBASC)

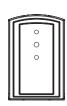


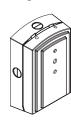




Surface Conduit Box (SCB) Mounting Detail





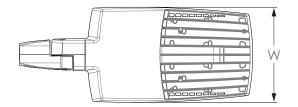


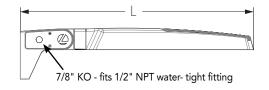
Length: 32.8" (83.3 cm) Width: 13.4" (41.7 cm) Height: 3.0" (7.6 cm) Main Body

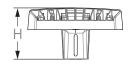
9.2" (23.4 cm) Arm



RSX2 with Adjustable Tilt Arm - Square or Round Pole (AASP or AARP)







Length: 32.8" (83.3 cm) AASP 33.8" (85.9 cm) AARP Width: 13.4" (34.0 cm) Height: 3.0" (7.6 cm) Main Body

7.2" (18.2 cm) Arm

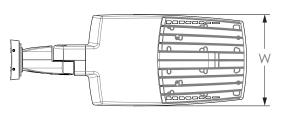


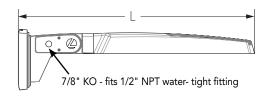
Notes

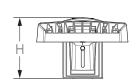
AASP: Requires 3.0" min. square pole for 1 at 90°. Requires 3.5" min. square pole for mounting 2, 3, 4 at 90°.

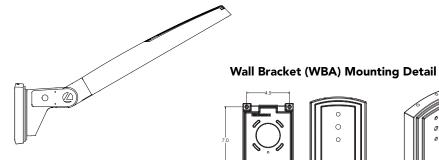
AARP: Requires 3.2" min. dia. round pole for 2, 3, 4 at 90°. Requires 3.0" min. dia. round pole for mounting 1 at 90°, 2 at 180°, 3 at 120°.

RSX2 with Adjustable Tilt Arm with Wall Bracket (AAWB)







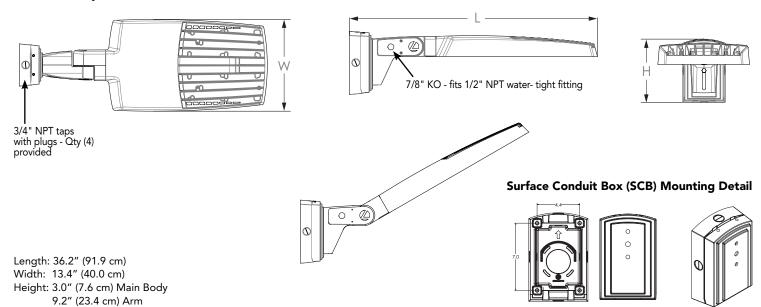


Length: 34.7" (88.0 cm) Width: 13.4" (34.0 cm)

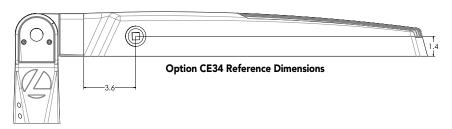
Height: 3.0" (7.6 cm) Main Body 8.9" (22.6 cm) Arm

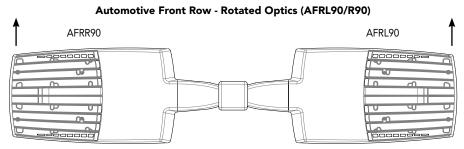


RSX2 with Adjustable Tilt Arm with Wall Bracket and Surface Conduit Box (AAWSC)



Additional Reference Drawings



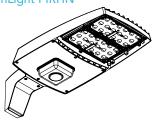


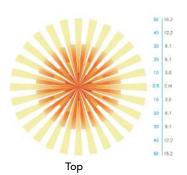
(Example: 2@180 - arrows indicate direction of light exiting the luminaire)

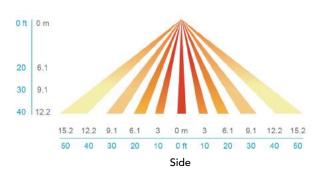
nLight Control - Sensor Coverage and Settings

NLTAIR2 PIRHN nLight Sensor Coverage Pattern

nLight PIRHN







	Motion Sensor Default Settings - Option PIRHN										
Option	Dimmed State (unoccupied)	High Level (when occupied)	Photocell Operation	Dwell Time (occupancy time delay)	Ramp-up Time (from unoccupied to occupied)	Ramp-down Time (from occupied)					
NLTAIR2 PIR	HN Approx. 30% Output	100% Output	Enabled @ 1.5FC	7.5 minutes	3 seconds	5 minutes					

*Note: NLTAIR2 PIRHN default settings including photocell set-point, high/low dim rates, and occupancy sensor time delay are all configurable using the Clairity Pro App. Sensor coverage pattern shown with luminaire at 0°. Sensor coverage pattern is affected when luminaire is titled.

FEATURES & SPECIFICATIONS

INTENDED USE

The RSX LED area family is designed to provide a long-lasting, energy-efficient solution for the one-forone replacement of existing metal halide or high pressure sodium lighting. The RSX2 delivers 11,000 to 31,000 lumens and is ideal for replacing 250W to 1000W HID pole-mounted luminaires in parking lots and other area lighting applications.

CONSTRUCTION AND DESIGN

The RSX LED area luminaire features a rugged die-cast aluminum main body that uses heat-dissipating fins and flow-through venting to provide optimal thermal management that both enhances LED performance and extends component life. Integral "no drill" mounting arm allows the luminaire to be mounted on existing pole drillings, greatly reducing installation labor. The light engines and housing are sealed against moisture and environmental contaminants to IP66. The low-profile design results in a low EPA, allowing pole optimization. Vibration rated per ANSI C136.31: 3G Mountings: Include SPA, RPA, MA, IS, AASP, AARP rated for 3G vibration. 1.5G Mountings: Include WBA, WBASC, AAWB and AAWSC rated for 1.5G vibration.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures superior adhesion as well as a minimum finish thickness of 3 mils. The result is a high-quality finish that is warrantied not to crack or peel.

OPTICS

Precision acrylic refractive lenses are engineered for superior application efficiency, distributing the light to where it is needed most. Available in short and wide pattern distributions including Type 2, Type 3, Type 45, Type 45, Type 5, Type 55, AFR (Automotive Front Row) and AFR rotated AFRR90 and ARFL90.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted on metal-core circuit boards and aluminum heat sinks to maximize heat dissipation. Light engines are IP66 rated. LED lumen maintenance is >L92/100,000 hours. CCT's of 3000K, 4000K and 5000K (minimum 70 CRI) are available. Class 1 electronic drivers ensure system power factor >90% and THD <20%. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The RSX LED area luminaire has a wide assortment of control options. Dusk to dawn controls include MVOLT and 347V button-type photocells and NEMA twist-lock photocell receptacles.

nLIGHT AIR CONTROLS

The RSX LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing with photocontrol functionality and is suitable for mounting heights up to 40 feet. No commissioning is required when using factory default settings that provide basic stand-alone motion occupancy dimming that is switched on and off with a built-in photocell. See chart above for motion sensor default out-of-box settings. For more advanced wireless functionality, such as group dimming, nLight AIR can be commissioned using a smartphone and the easy-to-use CLAIRITY app. nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION

Integral "no-drill" mounting arm allows for fast, easy mounting using existing pole drillings. Select the "SPA" option for square poles and the "RPA" option to mount to round poles. Note, the RPA mount can also be used for mounting to square poles by omitting the RPA adapter plate. Select the "MA" option to attach the luminaire to a 2 3/8" horizontal mast arm or the "IS" option for an adjustable slipfitter that mounts on a 2 3/8" OD tenon. The adjustable slipfitter has an integral junction box and offers easy installation. Can be tilted up to 90° above horizontal. Additional mountings are available including a wall bracket, adjustable tilt arm for direct-to-pole and wall and a surface conduit box for wall mount applications.

LISTINGS

CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at $25\,^{\circ}$ C. Specifications subject to change without notice.





FEATURES & SPECIFICATIONS

INTENDED USE — These specifications are for USA standards only. Square Straight Steel is a general purpose light pole for up to 39-foot mounting heights. This pole provides a robust yet cost effective option for mounting area lights and floodlights.

CONSTRUCTION — **Pole Shaft:** The pole shaft is of uniform dimension and wall thickness and is made of a weldable-grade, hot-rolled, commercial-quality steel tubing with a minimum yield of 55 KSI (11-gauge, .1196"), or 50 KSI (7-gauge, .1793"). Shaft is one-piece with a full-length longitudinal high-frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and excellent torsional qualities. Available shaft widths are 4", 5" and 6".

Pole Top: A flush non-metalic black top cap is provided for all poles that will receive drilling patterns for side-mount luminaire arm assemblies or when ordered with PT option.

Handhole: A reinforced handhole with grounding provision is provided at 18" from the base on side A. Positioning the handhole lower may not be possible and requires engineering review; consult Tech Support-Outdoor for further information. Every handhole includes a cover and cover attachment hardware. The handhole has a nominal dimension of 2.5" x 5".

Base Cover: A durable ABS plastic two-piece full base cover, finished to match the pole, is provided with each pole assembly. Additional base cover options are available upon request.

Anchor Base/ Bolts: Anchor base is fabricated from steel that meets ASTM A36 standards and can be altered to match existing foundations; consult factory for modifications. Anchor bolts are manufactured to ASTM F1554 Standards grade 55, (55 KSI minimum yield strength and tensile strength of 75-95 KSI). Top threaded portion (nominal 12") is hot-dipped galvanized per ASTM A-153.

HARDWARE – All structural fasteners are high-strength galvanized carbon steel. All non-structural fasteners are galvanized or zinc-plated carbon steel or stainless steel.

FINISH — Extra durable standard powder-coat finishes include Dark Bronze, White, Black, Medium Bronze and Natural Aluminum colors. Classic finishes include Sandstone, Charcoal Gray, Tennis Green, Bright Red and Steel Blue colors. Architectural Colors and Special Finishes are available by quote and include, but are not limited to Hot-dipped Galvanized, Paint over Hot-dipped Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes. Factory-applied primer paint finish is available for customer field-paint applications.

WARRANTY — 1-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

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Anchor Base Poles

SSS

SQUARE STRAIGHT STEEL

ORDERI	NG INFORMATION	Lead times will vary de	pending on options selected. Consult	with your sales representative	. Example	: SSS 20 5C DM19 DDB
SSS						
Series	Nominal fixture mounting height	Nominal shaft base size/wall thickness ¹	Mounting ²		Options	Finish ¹⁰
SSS	10'-39' (for 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.) See technical information table for complete ordering information.)	4C 4" 11g (.1196") 4G 4" 7g (.1793") 5C 5" 11g (.1196") 5G 5" 7g (.1793") 6G 6" 7g (.1793") See technical information table for complete ordering information.)	Tenon mounting PT Open top (includes top cap) T20 2-3/8" 0.D. (2" NPS) T25 2-7/8" 0.D. (2-1/2" NPS) T30 3-1/2" 0.D. (3" NPS) T35 4" 0.D. (3-1/2" NPS) KAC/KAD/KSE/KSF/KVR/KVF Drill mounting³ DM19 1 at 90° DM28 2 at 180° DM28 PL 2 at 180° with one side plugged DM29 2 at 90° DM39 3 at 90° DM49 4 at 90° CSX/DSX/RSX/AERIS™/OMERO™/HLA/KAX Drill mounting³ DM19AS 1 at 90° DM28AS 2 at 180° DM29AS 2 at 90° DM39AS 3 at 90° DM39AS 3 at 90° DM39AS 3 at 90° DM49AS 4 at 90° ENDM19RAD 1 at 90° DM28RAD 2 at 180° DM29RAD 2 at 180° DM29RAD 3 at 120° DM39RAD 3 at 120° DM39RAD 3 at 90° DM39RAD 4 at 90° ESX Drill mounting³ DM19ESX 1 at 90° DM29ESX 2 at 180° DM29ESX 2 at 180° DM29ESX 2 at 180° DM39ESX 3 at 90° DM39ESX 3 at 90° DM39ESX 3 at 90° DM39ESX 3 at 90° DM49ESX 4 at 90°	AERIS™ Suspend drill mounting ^{3,4} DM19AST_ 1 at 90° DM28AST_ 2 at 180° DM29AST_ 3 at 90° DM49AST_ 4 at 90° OMERO™ Suspend drill mounting ^{3,4} DM19MRT_ 1 at 90° DM28MRT_ 2 at 180° DM29MRT_ 3 at 90° DM49MRT_ 4 at 90°	Shipped installed L/AB Less anchor bolts (Include when anchor bolts are not needed) VD Vibration damper TP Tamper resistant handhole cover fasteners HAxy Horizontal arm bracket (1 fixture) ^{5,6} FDLxy Festoon outlet less electrical ⁵ CPL12/xy 1/2" coupling ⁵ CPL34/xy 3/4" coupling ⁵ CPL1/xy 1" coupling ⁵ NPL12/xy 1/2" threaded nipple ⁵ NPL12/xy 1/2" threaded nipple ⁵ NPL1/xy 1" threaded nipple ⁵ EHHxy Extra handhole ^{5,7} MAEX Match existing ⁸ USPOM United States point of manufacture ⁹ IC Interior coating ¹⁰ UL UL listed with label (Includes NEC compliant cover) NEC NEC 410.30 compliant gasketed handhole (Not UL Labeled) Shipped separately (replacement kit available) (blank) FBC Full base cover (plastic) (blank) HHC Handhole cover	DDBXD Dark bronze DWHXD White DBLXD Black DMBXD Medium bronze DNAXD Natural aluminum Classic colors DSS Sandstone DGC Charcoal gray DTG Tennis green DBR Bright red DSB Steel blue Architectural Colors and Special Finishes ¹¹ Galvanized, Paint over Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes available.

NOTES

- Wall thickness will be signified with a "C" (11 Gauge) or a "G" (7-Gauge) in nomenclature. "C" 0.1196" | "G" 0.1793".
- PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, follow this example: DM28/T20.
 - The combination includes a required extra handhole.
- 3. Refer to the fixture spec sheet for the correct drilling template pattern and orientation compatibility.
- 4. Insert "1" or "2" to designate fixture size; e.g. DM19AST**2**.
- 5. Specify location and orientation when ordering option.

For "x": Specify the height above the base of pole in feet or feet and inches; separate feet and inches with a "-".

Example: 5ft = 5 and 20ft 3in = 20-3

For "y": Specify orientation from handhole (A,B,C,D)
Refer to the Handhole Orientation diagram below.
Example: 1/2" coupling at 5'8", orientation C = CPL12/5-8C

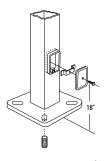
- Horizontal arm is 18" x 2-3/8" 0.D. tenon standard, with radius curve providing 12" rise and 2-3/8" 0.D. If ordering two horizontal arm at the same height, specify with HAxyy. Example: HA20BD.
- 7. Combination of tenon-top and drill mount includes extra handhole.
- 8. Must add original order number of existing pole(s).
- 9. Use when mill certifications are required.
- 10. Provides enhanced corrosion resistance.
- Additional colors available; see www.lithonia.com/archcolors or Architectural Colors brochure (Form No. 794.3). Available by formal quote only, consult factory for details.



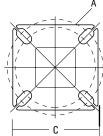
				TECHNIC	CAL INFORM	ATION — E	PA (ft2) wit	h 1.3 gust					
	Nominal	Pole Shaft Size					EPA (ft²) wi	ith 1.3 gust			Bolt		Approximate
Catalog Number	Shaft Length (ft.)*	(Base in. x Top in. x ft.)	Wall thick (in)	Gauge	80 MPH	Max. weight	90 MPH	Max. weight	100 MPH	Max. weight	circle (in)	Bolt size (in. x in. x in.)	ship weight (lbs.)
SSS 10 4C	10	4.0 x 10.0	0.1196	11	30.6	765	23.8	595	18.9	473	89	3/4 x 18 x 3	75
SSS 12 4C	12	4.0 x 12.0	0.1196	11	24.4	610	18.8	470	14.8	370	89	3/4 x 18 x 3	90
SSS 14 4C	14	4.0 x 14.0	0.1196	11	19.9	498	15.1	378	11.7	293	89	3/4 x 18 x 3	100
SSS 16 4C	16	4.0 x 16.0	0.1196	11	15.9	398	11.8	295	8.9	223	89	3/4 x 18 x 3	115
SSS 18 4C	18	4.0 x 18.0	0.1196	11	12.6	315	9.2	230	6.7	168	89	3/4 x 18 x 3	125
SSS 20 4C	20	4.0 x 20.0	0.1196	11	9.6	240	6.7	167	4.5	150	89	3/4 x 18 x 3	140
SSS 20 4G	20	4.0 x 20.0	0.1793	7	14	350	11	275	8	200	89	3/4 x 30 x 3	198
SSS 20 5C	20	5.0 x 20.0	0.1196	11	17.7	443	12.7	343	9.4	235	1012	1 x 36 x 4	185
SSS 20 5G	20	5.0 x 20.0	0.1793	7	28.1	703	21.4	535	16.2	405	1012	1 x 36 x 4	265
SSS 25 4C	25	4.0 x 25.0	0.1196	11	4.8	150	2.6	100	1	50	89	3/4 x 18 x 3	170
SSS 25 4G	25	4.0 x 25.0	0.1793	7	10.8	270	7.7	188	5.4	135	89	3/4 x 30 x 3	245
SSS 25 5C	25	5.0 x 25.0	0.1196	11	9.8	245	6.3	157	3.7	150	1012	1 x 36 x 4	225
SSS 25 5G	25	5.0 x 25.0	0.1793	7	18.5	463	13.3	333	9.5	238	1012	1 x 36 x 4	360
SSS 30 4G	30	4.0 x 30.0	0.1793	7	6.7	168	4.4	110	2.6	65	89	3/4 x 30 x 3	295
SSS 30 5C	30	5.0 x 30.0	0.1196	11	4.7	150	2	50			1012	1 x 36 x 4	265
SSS 30 5G	30	5.0 x 30.0	0.1793	7	10.7	267	6.7	167	3.9	100	1012	1 x 36 x 4	380
SSS 30 6G	30	6.0 x 30.0	0.1793	7	19	475	13.2	330	9	225	1113	1 x 36 x 4	520
SSS 35 5G	35	5.0 x 35.0	0.1793	7	5.9	150	2.5	100		-	1012	1 x 36 x 4	440
SSS 35 6G	35	6.0 x 35.0	0.1793	7	12.4	310	7.6	190	4.2	105	1113	1 x 36 x 4	540
SSS 39 6G	39	6.0 x 39.0	0.1793	7	7.2	180	3	75			1113	1 x 36 x 4	605

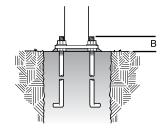
^{*}EPA values are based ASCE 7-93 wind map. For 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.

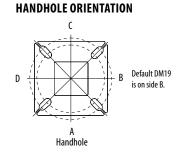
BASE DETAIL



POLE DATA								
Shaft base size	Bolt circle A	Bolt projection B	Base diameter C	Base plate thickness	Template description	Anchor bolt description	Anchor bolt and template number	Anchor bolt description
4"C	8" – 9"	3.25"- 3.75"	8"- 8.25"	0.75"	ABTEMPLATE PJ50004	AB18-0	ABSSS-4C	3/4"x18"x3"
4"G	8" – 9"	3.38"- 3.75"	8"- 8.25"	0.875"	ABTEMPLATE PJ50004	AB30-0	ABSSS-4G	3/4"x30"x3"
5"	10" – 12"	3.5"- 4"	11"	1"	ABTEMPLATE PJ50010	AB36-0	ABSSS-5	1"x36"x4"
6"	11" — 13"	4"- 4.50"	12.5"	1"	ABTEMPLATE PJ50011	AB36-0	N/A	1"x36"x4"







IMPORTANT INSTALLATION NOTES:

- **Do not** erect poles without having fixtures installed.
- Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates.
- If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage.
- Lithonia Lighting is not responsible for the foundation design.



Petitioner

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

PLAN COMMISSION STAFF REPORT

June 3, 2021 – Public Hearing

Tinley Park Business Center (Scannell) Industrial Development

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



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 Road 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.

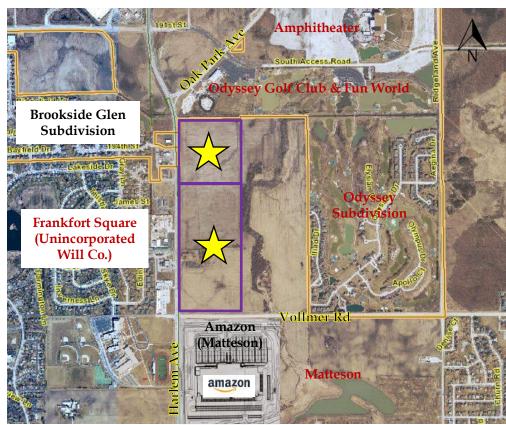
The approval and construction of a large Amazon Fulfillment Center in Matteson across from the Village's boundary has changed the vision for the area. The proposed development is expected to bring additional jobs to the area and property tax revenue to the various taxing districts. Staff has worked with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

Changes to the May 20, 2021 Plan Commission Workshop Staff Report are indicated in RED.

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 currently under the County 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.

In 1980, the Village of Tinley Park and Village of Matteson entered into a boundary agreement between, which designated Vollmer Road as the boundary separating the communities. The agreements typically use roads or other "breaks" that create a logical definable delineation and between different communities. Boundary agreements



Above: Overall Site Location (indicated in red).

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 subject property is on the north side of Vollmer Road directly across the street from 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



Above: Amazon Distribution Facility Rendering in Matteson.

developing floodplain and the 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 surrounded by undeveloped land and a creek to the east) 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 two or 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 starting construction with spec buildings, it provides some proof to potential future tenants that the area, utilities, community, and developer can quickly support their development (as it is similarly done with residential developments).. Spec industrial development has grown since it has been deemed relatively safe by investors with the demand fueled by a 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 consider. 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)

Annexation

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. A separate public hearing for the Annexation Agreement is held at the Village Board. 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.

Rezoning

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 183rd 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, landscape, etc.) for the development to properly work as designed. Any future changes to the Plat are "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.

Plan Commission agreed that the proposed zoning and use of a PUD to allow for certain uses required by the development was an effective route. This allows the Petitioner to move forward with market-driven plans, while also limiting some heavy industrial users that could produce negative external effects.

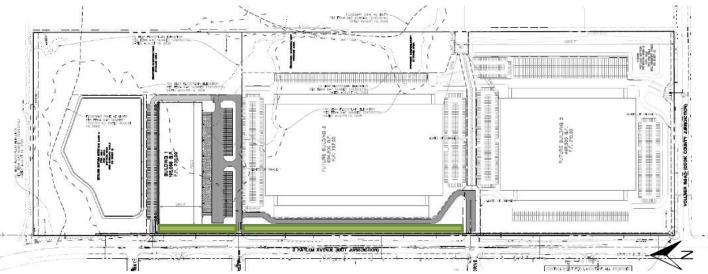
SITE PLAN

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 of the area shown for buildings 2 and 3 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 depending 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, utilities, and right-of-way improvements, and the landscape berm in front of building 1 and 2 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.

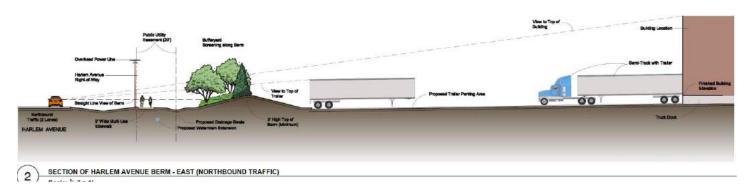
Harlem Avenue Berm

One concern based on the design was the location of truck docks and storage adjacent to Harlem Avenue. While the preference is typically 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 on this project. 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 the docks and trailers along Harlem avenue, a landscape berm has been proposed. The berm includes a 3 to 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 with the 3 to 4-foot-high berm.

A smaller berm will also exist adjacent to building 1. However, building 1 does not have docks or trailer storage parallel to the public roadway and the topography is harder to accomplish the berm height, so the berm height will be reduced to between 2 to 2.5 feet in some areas. The berm will be phased with the development in order to finalize a grading plan and accommodate utilities on the site. The berm will be installed in front of all developed land (in front of buildings 1 and 2) with phase 1. The berm in front of building 3 will be completed with that phase when the engineering and utility connections are known.

The landscape berms are covered by a "Landscape Easement" on the Final Plat of Subdivision requiring the be maintained per the approved plans. The easement provides the Village access to maintain the berm in the future if need be and can recoup any costs by mechanisms established in the Annexation Agreement. This insures the berm will be properly maintained beyond the original developer and owner of the land.



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 needs 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 residents. 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. 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 the development (purple), and additional extension beyond the development to create water system loop (red).

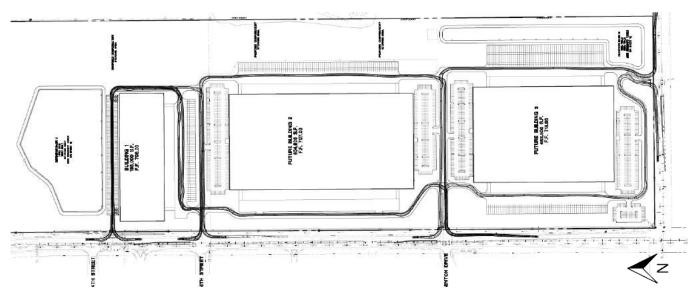
Open Item #4: Discuss proposed watermain extension and utility improvements.

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 development's 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. 24foot 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. The Vollmer Road entrance is anticipated to be used only by Building 3 (or building 2 if developed as one large building).

An important comment heard during previous developments and by residents in the area is that a light is desired at Lakeside Drive/195th Street. This light is also a preference This intersection has the most direct access to the subdivision to the west (Brookside Glen) and the wait to make a left turn out to go northbound on Harlem Avenue is difficult. The developer and the Village are committed to working on applying to IDOT for installation of this signal. Work on a Warrant Study would be completed by KLOA that shows the existing and projected traffic and wait time. The study and a formal request for the light will be submitted by the Village to IDOT. Ultimately the acceptance and allowance of a traffic signal on Harlem Avenue is at IDOT's discretion. However, the Village and Petitioner are committed to pursuing one as soon as possible at this location.

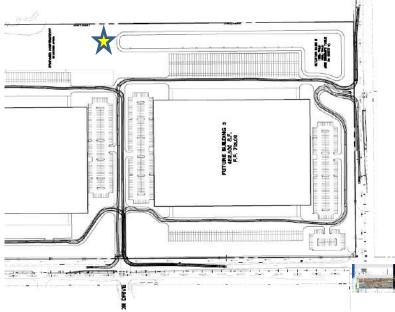


Sidewalks/Paths

An 8foot 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. To 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,

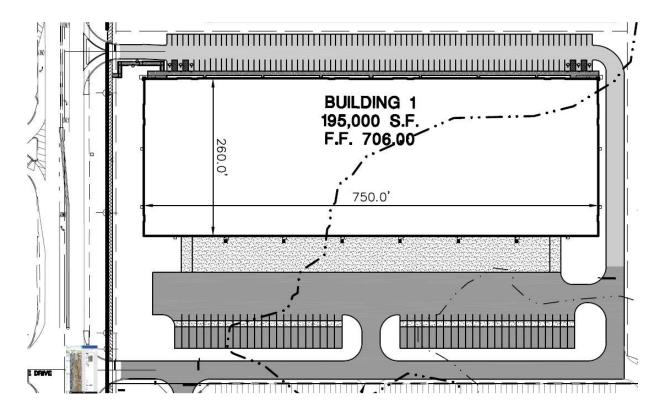


construction access and permanent cross-access to the site has been provided on the Final Plat of Subdivision.

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 2 to 2.5-foot-high landscape berm to help block views of the docks and trailer storage in front of building 1. The berm will then go up to 3 to 4 feet in height as it moves south where building 2 is proposed on the concept plan. All garbage will be kept internal to the building and placed outside on pickup days only.

Open Item #6: Discuss the final site plan approval for Building 1.



Engineering

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.

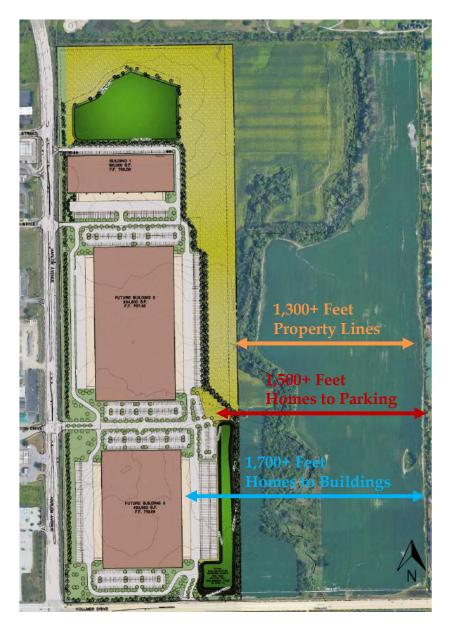
Plan commission overall noted at the workshop they felt comfortable with the parking proposed with building 1. Overall the future phase or phases can be reassessed with those final approvals.

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.

Commissioners at the workshop noted they were fairly comfortable with the proposed landscape plan and they appreciated the focus on the perimeter landscaping buffer that will make the development more attractive along the roadway and nearby properties.

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 off-site 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

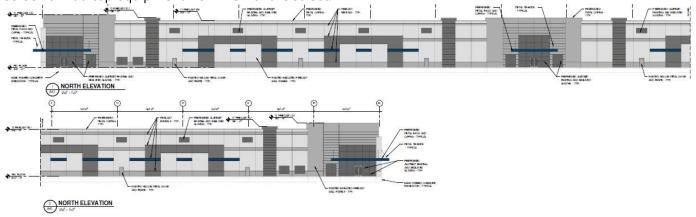
Overall Development - Concept

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.

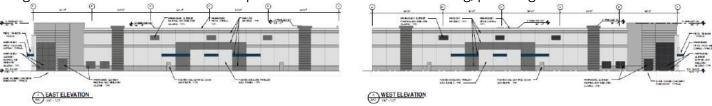
Overall the development's buildings are expected to be similar to the final building 1 approval outlined further below. However, buildings 1 and 2 will need to be reviewed and approved with their final site plan and architectural approvals. While there are not specific design standards in the PUD regulations, 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

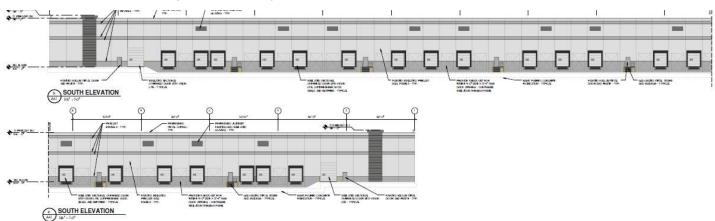
The building will be largely constructed of precast concrete panels. There are three glass architectural elements to anchor the building's two corners and the center for the north/front façade that will be most visible to Harlem Avenue. While the total number of tenants and internal layout will be determined 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 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 off-site 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.

The proposed Plat has been modified to include a breakout of three building lots and the fourth lot to be used for the Village's emergency radio tower. If lots 2 and 3 are developed as one, they will need to request a consolidation of the lots. The plats also include some changes to the utility, landscape and access easements.

STANDARDS FOR REZONING APPROVAL

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. The following "LaSalle Standards" have been supplied for the Commission to consider. Staff will prepare draft responses for these conditions within the next Staff Report.

- a. The existing uses and zoning of nearby property;
 - The area is in a transition from rural to commercial and industrial uses. The surrounding area has specifically changed with the approval and development of the neighboring Amazon Fulfillment Center at the property across Vollmer Road in the Village of Matteson. Other neighboring properties also include existing commercial development.
- b. The extent to which property values are diminished by the particular zoning;
 - The area along Harlem Avenue has mostly commercial and light-industrial uses existing or under construction. Views of docks and trailer storage will be screened from view by a landscape berm. Commercial or residential zoning both appear unlikely to generate development interest in the land. The purposeful and orderly development of vacant properties is expected to enhance area property values instead of diminishing them.
- c. The extent to which the destruction of property values of the complaining party benefits the health, safety, or general welfare of the public;
 - The new development creates orderly developed land that improves the look of the vacant land with an encumbrance of floodplain making it difficult to develop. The project will contribute directly to the economic development of the community by providing additional jobs and additional property tax revenue to various local governments where the existing vacant property is generating no benefits to the community.
- d. The relative gain to the public as compared to the hardship imposed on the individual property owner;
 - Perimeter landscape buffering is provided on all sides of the development that does not currently exist. The
 overall site layout and circulation patterns were designed to avoid any issues with the neighboring
 properties and minimize traffic issues. The roadways are major arterials that have been planned and
 designed as commercial routes. The project will contribute directly to the economic development of the
 community by providing additional jobs and additional property tax revenue to various local governments
 where the existing vacant property is generating no benefits to the community.
- e. The suitability of the property for the zoned purpose;
 - The proposed use as a multi-business light-industrial business center is suitable for the subject property due to the availability of high traffic volumes and available access points. The site is difficult to develop due to floodplain encumbrance and tax implications. Light industrial is the highest and best use of the property at this time.
- f. The length of time the property has been vacant as zoned, compared to development in the vicinity of the property;
 - The property was used as agricultural land but has otherwise been vacant for many (10+) years. Commercial or residential zoning both appear unlikely to generate development interest in the land.
- g. The public need for the proposed use; and
 - There is a high market demand for additional high-quality light industrial space in the area, particularly along the I-80 and I-57 corridors. The approval and construction of the Amazon Fulfillment Center has created even higher market demand for light-industrial users to be adjacent to that site.
- h. The thoroughness with which the municipality has planned and zoned its land use.
 - The property is shown as a mixed-use/PUD use in the Comprehensive Plan. The zoning of Office & Restrict Industrial and a request for a PUD is compatible with the past planning for this land.

STANDARDS FOR A SPECIAL USE FOR A PLANNED UNIT DEVELOPMENT

No Planned Unit Development shall be authorized by the Village Board unless the following standards and criteria are met. The Plan Commission is encouraged to consider these standards (listed below) when analyzing any request for a Planned Unit Development. Staff has provided draft Findings in the below for adoption by the Commission at the public hearing.

General Provisions for All Planned Unit Developments:

- 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 PUD is under a single control and over 110 acres in size. The PUD is otherwise developed in accordance with the PUD provisions.
- b. The Planned Unit 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 area along Harlem Avenue has mostly commercial and light-industrial uses existing or under construction. Views of docks and trailer storage will be screened from view by a landscape berm. Commercial or residential zoning both appear unlikely to generate development interest in the land. The purposeful and orderly development of vacant properties is expected to enhance area property values instead of diminishing them.
- c. The uses permitted in the development are necessary or desirable and that the need for such uses has been clearly demonstrated;
 - Light industrial uses permitted within the PUD are the highest and best use of the property due to the existing roadway with high traffic volumes, quick interstate access, and location of the adjacent Amazon Fulfillment Center in the Village of Matteson that is currently under construction. Alternative uses do not appear likely at this location.
- 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 site is being developed with all necessary utilities. The extension of the watermain beyond the development site will improve service and safety to the surrounding area. The dedication for land for a new emergency radio tower will also help improve emergency response in this area of town.
- e. The proposed development can be substantially completed within the period of time specified in the schedule of development submitted by the developer;
 - The development will begin with a speculative building to drive interest to the rest of the site. The high demand for the product should create a quick development timeline and full completion of the entire project. The site phasing has been designed to mitigate negative effects or unattractive views of the development if development occurs slower than anticipated.
- f. The street system serving the Planned Unit 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 Unit Development will be adequate to serve the residents or occupants of the proposed development;
 - The street system was determined to have adequate capacity per the submitted Traffic Impact Report
 and that was reviewed by the Village's engineering consultant. A traffic signal is being pursued through
 IDOT by the Village and developer at the intersection of Harlem Avenue and 195th St/Lakeside Drive.

- 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;
 - All roadways will be that specific property owner's responsibility to maintain. Easements have been established to ensure the landscape berm and bufferyards are maintained or can be maintained by the Village in the future through a Special Service Area (SSA).
- 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 Unit Development and the Village. All such covenants shall specifically provide for enforcement by the Village of Tinley Park in addition to the landowners within the development;
 - No covenants or private restrictions have been proposed. Any cross-access, utility, and landscape easements have been recorded with the plat for control and enforcement by the Village. Any private agreements or private association covenants can be recorded by the developer at a later date.
- 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 be 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; and
 - Typical project guarantees required by code (such as public right-of-way and utility guarantees) will be
 required with the permit. The phasing of the development aspects has been planned to avoid problems
 if the project stalls for an extended period of time by requiring landscape beaming, utilities, detention,
 and public roadway work to be completed with Phase 1.
- 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.
 - Code exceptions are similar to the surrounding developments that were previously approved and related to the unique nature and large scale of this specific and unique development.

It should be noted that Planned Unit Developments, unlike other Special Use requests, run covenant with the land and are not specific to a developer or the current ownership. While a PUD must be under single ownership at the start of the development, it can be sold off to different owners following the phasing plan or other documents regulating the development plan.

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.

Architectural

- 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.

Site Design

- 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.

MOTIONS TO CONSIDER

If the Plan Commission wishes to act on the Petitioner's requests, the appropriate wording of the motions are listed below. The protocol for the writing of a motion is to write it in the affirmative so that a positive or negative recommendation correlates to the Petitioner's proposal. By making a motion, it does not indicate a specific recommendation in support or against the plan, it only moves the request to a vote. The conditions listed below are recommended by staff but can be added to, changed, or removed by the Commission based on their discussion of the approval of recommendation.

Motion 1 (Rezoning):

"...make a motion to recommend that the Village Board grant the Petitioner, Chris Carlino on behalf of Scannell Properties (Contract Purchaser), a rezoning of the properties located at 19501 -19701 Harlem Avenue, upon annexation, from being unincorporated to the ORI (Office & Restricted Industrial) zoning district and adopt the Findings of Fact submitted by the applicant and as proposed by Village Staff in the June 3, 2021 Staff Report."

Motion 2 (Special Use for a PUD):

"...make a motion to recommend that the Village Board grant a Special Use Permit for a Planned Unit Development for the Tinley Park Business Park to the Petitioner, Chris Carlino on behalf of Scannell Properties (Contract Purchaser), for a 110.94-acre development with approximately 1,262,000 sq. ft. of light industrial floor space to be completed in up to 3 phases at 19501 -19701 Harlem Avenue upon rezoning to the ORI zoning district, in accordance with the plans submitted and listed herein and adopt Findings of Fact as proposed by Village Staff in the June 3, 2021 Staff Report."

Motion 3 (Site Plan):

"...make a motion to grant the Petitioner, Chris Carlino on behalf of Scannell Properties (Contract Purchaser), Final Site Plan Approval to construct Phase 1, including a 195,000 sq. ft. building and Concept Approval for the total 110.94-acre light industrial development with approximately 1,262,000 sq. ft. in floor space with 2 or 3 buildings at 19501 -19701 Harlem Avenue in the ORI PD (Office & Restricted Industrial, Tinley Park Business Center PUD) zoning district, in accordance with the plans submitted and listed herein and subject to the following conditions:

- 1. Site Plan Approval is subject to the approval of the Annexation, Rezoning, PUD and Final Plat by the Village Board.
- 2. Site Plan Approval is subject to final engineering plan review and approval.
- 3. The Harlem Avenue landscape berm shall be installed with Phase 1 from the start of building 1 to Benton Drive.
- 4. Site Plan Approval is subject to final Landscape Plan review which shall have specific species and planting details submitted with the final permits for each phase.

Motion 4 (Final Plat):

"...make a motion to recommend that the Village Board grant approval to the Petitioner, Chris Carlino on behalf of Scannell Properties (Contract Purchaser), Final Plat of Subdivision Approval for the Tinley Park Business Center Subdivision in accordance with the Final Plat submitted and listed herein, subject to the following conditions:

- 1. The approval is subject to Final Engineering Plan approval by the Village Engineer.
- 2. The Landscape Easement and Access Easement language and documents are located on the Final Plat or submitted as a separate document. The easement language shall be approved by Village staff and Village Attorney before Village Board consideration."



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 195th 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

SCPTPIL01

ALTA/NSPS LAND TITLE SURVEY

Square

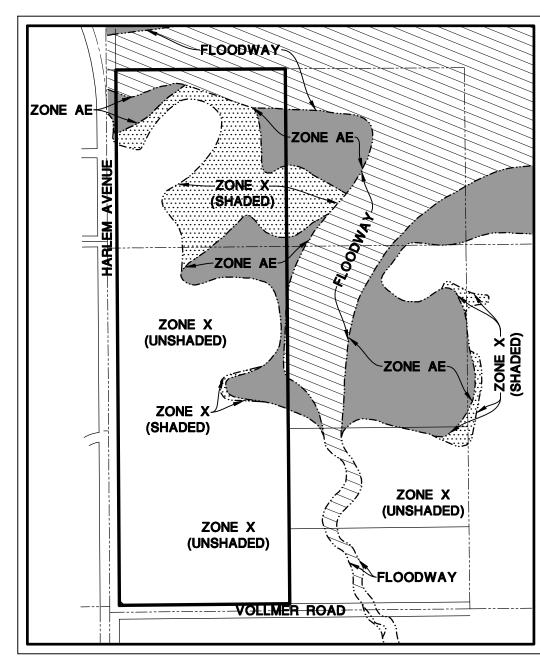
LOCATION MAP NOT TO SCALE

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



FLOOD MAP

NOT TO SCALE

FLOOD HAZARD NOTE:

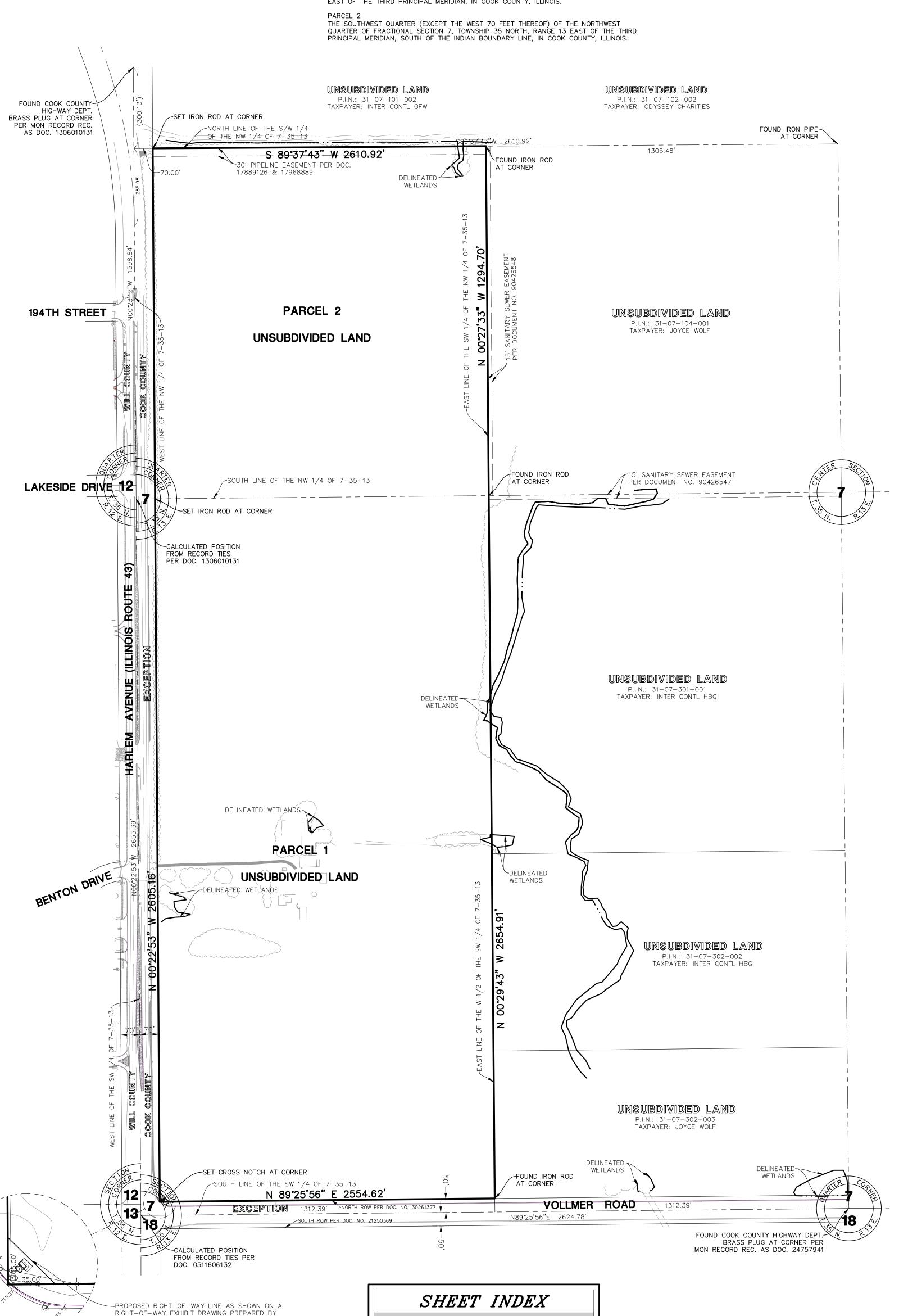
THE FEDERAL EMERGENCY MANAGEMENT AGENCY FIRM COMMUNITY PANEL NUMBERS 17031C0718J AND 17031C0716J BOTH WITH AN EFFECTIVE DATE OF JANUARY 19, 2008 INDICATES THAT THE ABOVE DESCRIBED PROPERTY LIES WITHIN AREAS DESIGNATED AS ZONE X (UNSHADED), ZONE X (SHADED), ZONE AE AND FLOODWAY AREAS IN ZONE AE. ZONE 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

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.



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.



LEGAL DESCRIPTION, BOUNDARY SURVEY,

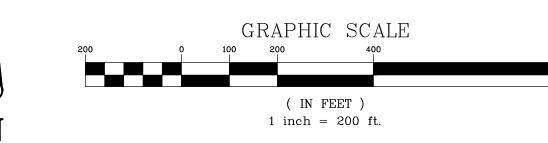
TITLE EXCEPTIONS, SURVEYOR'S NOTES &

DETAILS OF IMPROVEMENTS

SHEET 3 OF 3

W-T LAND SURVEYING, INC. DATED 2/22/2008





BASIS OF BEARINGS

BEARINGS ARE BASED UPON THE ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE (NAD 83), AS ESTABLISHED BY A REAL-TIME KINEMATIC (RTK) GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) UTILIZING THE TRIMBLE VRS NOW NETWORK.

PROPERTY ADDRESS

19401 & 19601 HARLEM AVENUE TINLEY PARK, ILLINOIS 60477 (ADDRESS IS BASED ON COOK COUNTY GIS DATA)

SURVEY PREPARED FOR

SCANNELL PROPERTIES 8801 RIVER CROSSING BLVD., SUITE 300 INDIANAPOLIS, INDIANA 46240

PROPERTY AREA

4,832,541 SQUARE FEET (110.940 ACRES ±)

SURVEYOR'S NOTES

- 1. DISTANCES ARE MARKED IN FEET AND DECIMAL PLACES THEREOF. NO DIMENSION SHALL BE ASSUMED BY SCALE MEASUREMENT HEREON. DISTANCES AND/OR BEARINGS SHOWN IN PARENTHESIS (456.67') ARE RECORD OR DEED VALUES, NOT FIELD MEASURED.
- 2. COMPARE THIS PLAT, LEGAL DESCRIPTION AND ALL SURVEY MONUMENTS BEFORE BUILDING, AND IMMEDIATELY REPORT ANY DISCREPANCIES TO THE SURVEYOR.
- 3. THE LOCATION OF THE PROPERTY LINES SHOWN ON THE FACE OF THIS PLAT ARE BASED ON THE LEGAL DESCRIPTION CONTAINED IN THE TITLE COMMITMENT AND SHOWN HEREON. THIS INFORMATION HAS BEEN FURNISHED BY THE CLIENT AND COMPARED TO RECORD DEEDS TO CHECK FOR GAPS AND/OR OVERLAPS. HOWEVER, THIS SURVEY MAY NOT REFLECT HISTORICAL MATTERS OF TITLE AND OWNERSHIP THAT HAVE NOT BEEN DISCLOSED BY THE TITLE COMMITMENT.
- 4. UNLESS OTHERWISE NOTED, ONLY THE IMPROVEMENTS WHICH WERE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY AND THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE ARE SHOWN ON THE FACE OF THIS PLAT. LAWN SPRINKLER SYSTEMS, IF ANY, ARE NOT SHOWN ON THIS SURVEY.
- 5. MANHOLES, INLETS AND OTHER UTILITY RIMS OR GRATES SHOWN HEREON ARE FROM FIELD LOCATION OF SUCH, AND ONLY REPRESENT SUCH UTILITY IMPROVEMENTS WHICH ARE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY, THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE. THE LABELING OF THESE MANHOLES (SANITARY, WATER, ETC.) IS BASED SOLELY ON THE "STAMPED" MARKINGS ON THE RIM. NO UNDERGROUND OBSERVATIONS HAVE BEEN MADE TO VERIFY THE ACTUAL USE OR EXISTENCE OF UNDERGROUND UTILITIES.
- 6. SURFACE INDICATIONS OF UTILITIES ON THE SURVEYED PARCEL HAVE BEEN SHOWN. UNDERGROUND AND OFFSITE OBSERVATIONS HAVE NOT BEEN MADE TO DETERMINE THE EXTENT OF UTILITIES SERVING OR EXISTING ON THE PROPERTY. PUBLIC AND/OR PRIVATE RECORDS HAVE NOT BEEN SEARCHED TO PROVIDE ADDITIONAL INFORMATION. OVERHEAD WIRES AND POLES (IF ANY) HAVE BEEN SHOWN, HOWEVER THEIR FUNCTION AND DIMENSIONS HAVE NOT BEEN SHOWN.
- 7. THIS SURVEY MAY NOT REFLECT ALL UTILITIES, OR IMPROVEMENTS, IF SUCH ITEMS ARE HIDDEN BY LANDSCAPING, OR ARE COVERED BY SUCH ITEMS AS DUMPSTERS OR TRAILERS, OR WHEN THE SITE WAS COVERED WITH SNOW. AT THE TIME OF SURVEY, THE SITE WAS NOT COVERED BY SNOW. OVERHEAD WIRES AND POLES (IF ANY) HAVE BEEN SHOWN, HOWEVER THEIR FUNCTION AND DIMENSIONS HAVE NOT BEEN SHOWN.
- 8. OTHER THAN VISIBLE OBSERVATIONS NOTED HEREON, THIS SURVEY MAKES NO STATEMENT REGARDING THE ACTUAL PRESENCE OR ABSENCE OF ANY SERVICE OR UTILITY LINE. CONTROLLED UNDERGROUND EXPLORATORY EFFORT TOGETHER WITH "JULIE" MARKINGS IS RECOMMENDED TO DETERMINE THE FULL EXTENT OF UNDERGROUND SERVICE AND UTILITY LINES. CONTACT J.U.L.I.E. AT 1-800-892-0123.
- SURVEYED OR SHOWN HEREON. IN ORDER TO DETERMINE IF A DRAINTILE SYSTEM DOES EXIST ON THE SUBJECT PROPERTY, AND TO WHAT EXTENT, A DETAILED DRAINTILE STUDY MUST BE COMPLETED BY THE APPROPRIATE PROFESSIONAL. 10. RESTRICTIONS THAT MAY BE FOUND IN LOCAL BUILDING AND/OR ZONING CODES HAVE

9. THE SURVEYED PROPERTY MAY HAVE A DRAINTILE SYSTEM, WHICH HAS NOT BEEN

- NOT BEEN SHOWN. HEIGHT AND BULK RESTRICTIONS (IF ANY) HAVE NOT BEEN SHOWN. ONLY THOSE SETBACK RESTRICTIONS SHOWN ON THE RECORDED SUBDIVISION PLAT OR IN THE TITLE COMMITMENT HAVE BEEN SHOWN.
- 11. THERE WAS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS ON THE SURVEYED PROPERTY AT THE TIME OF SURVEY. (PERTAINS TO TABLE A, ITEM 16)
- 12. THE COOK COUNTY DEPARTMENT OF TRANSPORTATION AND HIGHWAYS AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION HAVE BEEN CONTACTED WITH REGARDS TO PROPOSED CHANGES IN STREET RIGHT-OF-WAY LINES. AS OF THE DATE OF THIS SURVEY THE SURVEYOR HAS NOT BEEN PROVIDED ANY DOCUMENTS INDICATING ANY PROPOSED CHANGES IN THE STREET RIGHT-OF-WAY LINES. HOWEVER, UNRELATED TO THE ABOVE REQUEST, THE SURVEY SHOWS A PREVIOUSLY PROPOSED PLAN TO DEDICATE A 35'X35' CORNER CLIP OF LAND AT THE SOUTHWEST CORNER OF THE SURVEYED PROPERTY WHICH HAS BEEN SHOWN HEREON. THERE WAS NO OBSERVABLE EVIDENCE OF STREET REPAIRS OR CONSTRUCTION IMMEDIATELY ADJACENT TO THE PROPERTY ON HARLEM AVENUE AND VOLLMER ROAD. (PERTAINS TO TABLE A, ITEM 17)
- 13. THE SURVEYOR HAS NOT BEEN PROVIDED WITH AND HAS NOT OBTAINED ANY PLOTTABLE OFFSITE APPURTENANT EASEMENT DOCUMENTS. PLOTTABLE OFFSTE EASEMENTS, IF ANY, HAVE NOT BEEN SHOWN HEREON. (PERTAINS TO TABLE A, ITEM 18)

SURVEYOR CERTIFICATE:

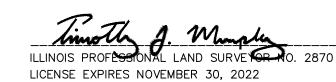
STATE OF ILLINOIS

COUNTY OF DUPAGE)

CERTIFIED TO: HARLEM AND VOLLMER HOLDINGS LLC, AN ILLINOIS LIMITED LIABILITY COMPANY AND: SCANNELL PROPERTIES, LLC AND: FIRST AMERICAN TITLE INSURANCE COMPANY

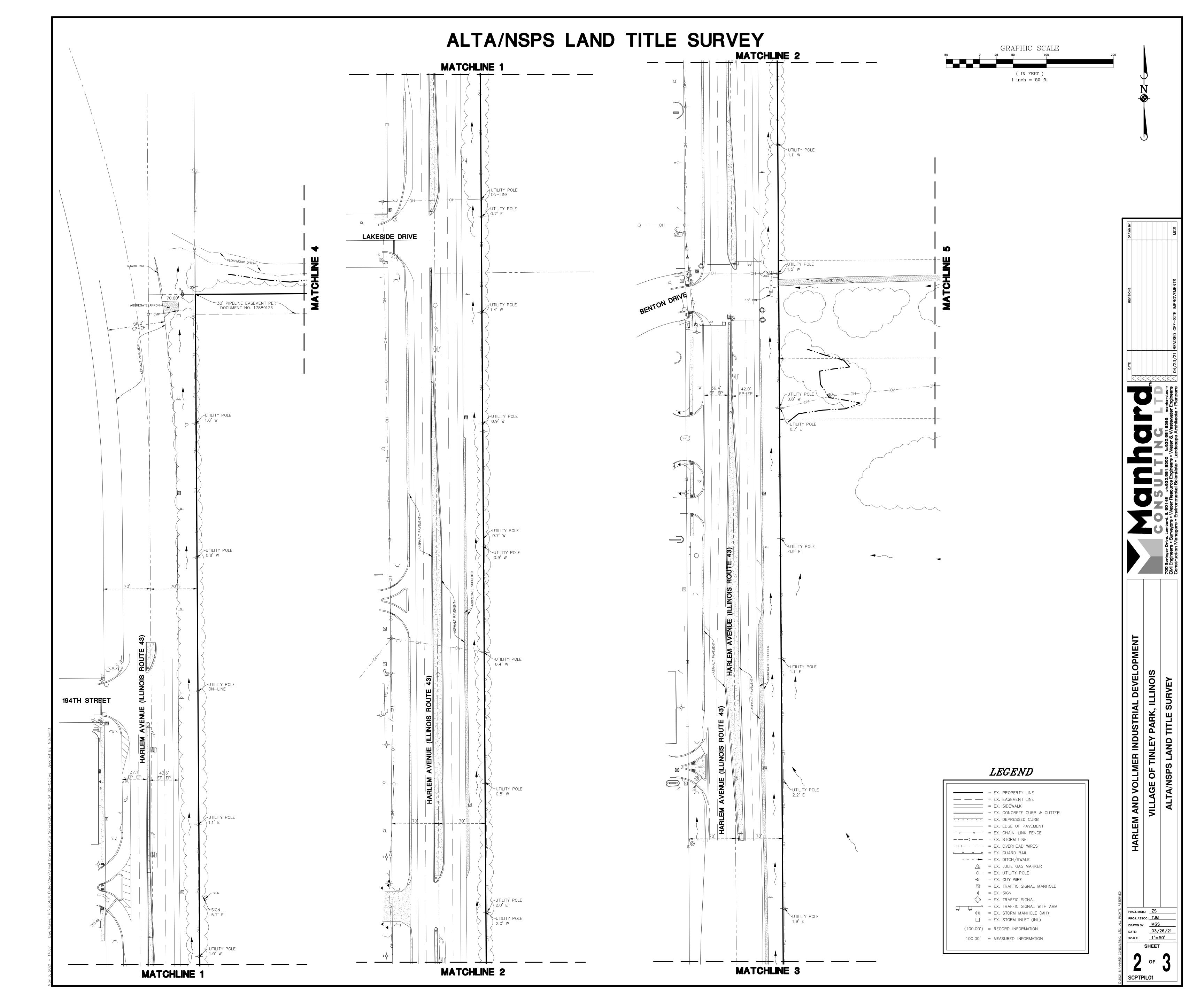
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 7(a), 8, 13, 16, 17, 18 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON MARCH 26, 2021 AND APRIL 23, 2021.

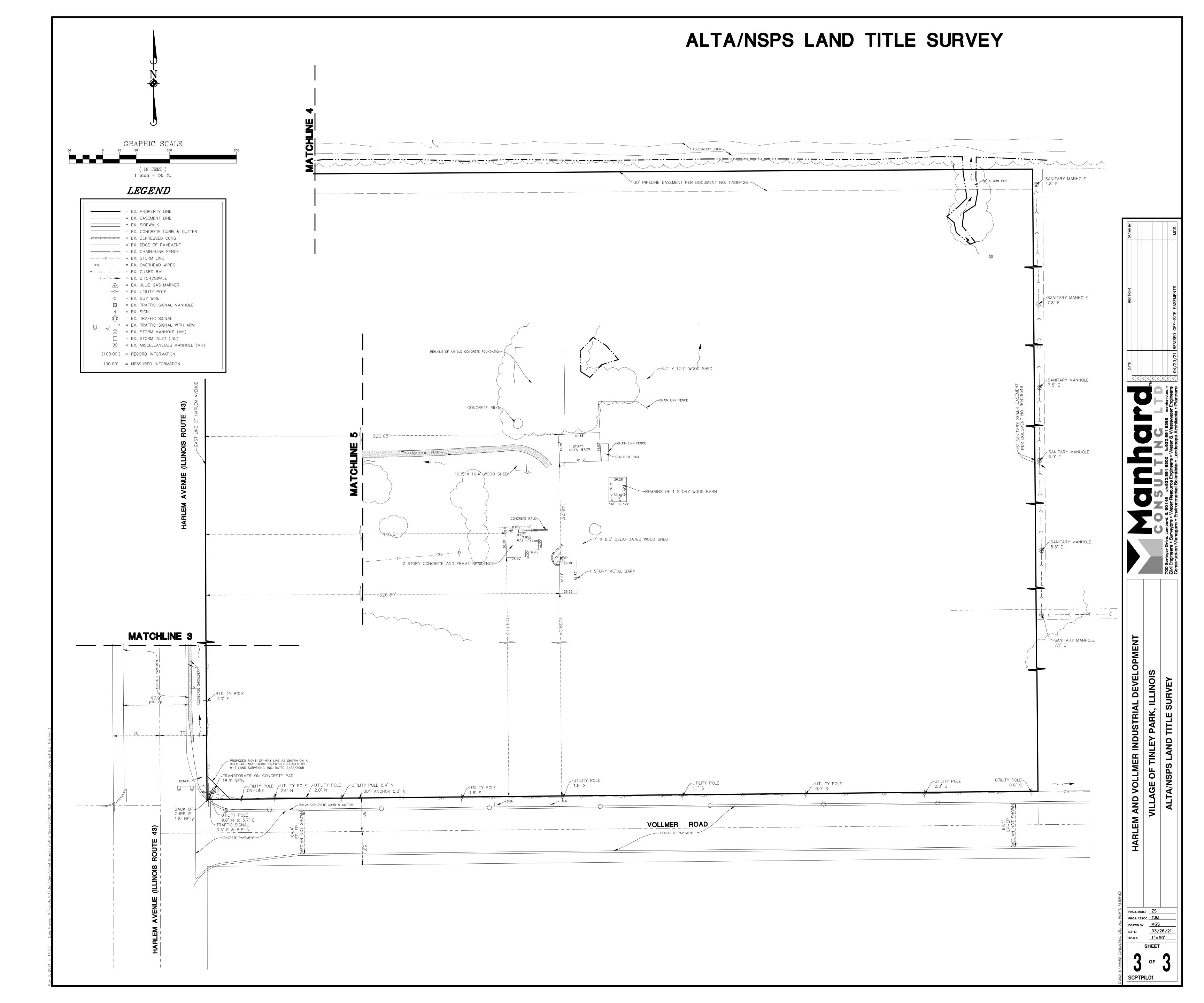
DATED THIS 6TH DAY OF MAY, A.D., 2021.



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







NOT TO SCALE

SHEET 4 SHEET 5 SHEET 6 SHEET 7 SHEET 8 SHEET 8

SHEET LEGEND

NOT TO SCALE

UTILITY NOTES

- 1. MANHOLES, INLETS AND OTHER UTILITY RIMS OR GRATES SHOWN HEREON ARE FROM FIELD LOCATION OF SUCH, AND ONLY REPRESENT SUCH UTILITY IMPROVEMENTS WHICH ARE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY, THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE.
- 2. UNDERGROUND UTILITIES INCLUDING, BUT NOT LIMITED TO, STORM AND SANITARY SEWERS, WATER MAINS, TELEPHONE AND ELECTRIC CABLES OR CONDUITS, GAS MAINS AND ALL SERVICE LINES SHOWN HEREON HAVE BEEN LOCATED BASED ON SOME OR ALL OF THE FOLLOWING:
- 2.1. ACTUAL FIELD OBSERVATIONS OF VISIBLE UTILITIES
- 2.2.PROPOSED ENGINEERING PLANS
- 2.3. UTILITY ATLASES FROM PRIVATE UTILITY COMPANIES AND/OR LOCAL MUNICIPALITIES
- 3. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THAT AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE/SHE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
- 4. OTHER THAN VISIBLE OBSERVATIONS NOTED AND/OR SHOWN HEREON, THIS SURVEY MAKES NO STATEMENT REGARDING THE ACTUAL PRESENCE OR ABSENCE OF ANY SERVICE OR UTILITY LINE. CONTROLLED UNDERGROUND EXPLORATORY EFFORT TOGETHER WITH "JULIE" MARKINGS IS RECOMMENDED TO DETERMINE THE FULL EXTENT OF UNDERGROUND SERVICE AND UTILITY LINES. CONTACT JULIE ONE-CALL SYSTEM AT 811

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, 202, 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.

SURVEYOR'S NOTES

DISTANCES ARE MARKED IN FEET AND DECIMAL PLACES THEREOF. NO DIMENSION SHALL BE ASSUMED BY SCALE MEASUREMENT HEREON.

- 2. COMPARE THIS PLAT, BENCHMARKS AND ALL SURVEY MONUMENTS BEFORE BUILDING, AND IMMEDIATELY REPORT ANY DISCREPANCIES TO THE SURVEYOR.
- 3. THIS SURVEY IS SUBJECT TO MATTERS OF TITLE, WHICH MAY BE REVEALED BY A CURRENT TITLE REPORT. EASEMENTS, SETBACKS AND OTHER RESTRICTIONS WHICH MAY BE FOUND IN A CURRENT TITLE REPORT, LOCAL ORDINANCES, DEEDS OR OTHER INSTRUMENTS OF RECORD MAY NOT BE SHOWN.
- 4. ONLY THE IMPROVEMENTS WHICH WERE VISIBLE FROM ABOVE GROUND AT THE TIME OF SURVEY AND THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE ARE SHOWN ON THE FACE OF THIS PLAT. LAWN SPRINKLER SYSTEMS, IF ANY, ARE NOT SHOWN ON THIS SURVEY.
- 5. THIS SURVEY MAY NOT REFLECT ALL UTILITIES, OR IMPROVEMENTS, IF SUCH ITEMS ARE HIDDEN BY LANDSCAPING OR ARE COVERED BY LEAVES OR OTHER OBSTRUCTIONS. THERE MAY BE ADDITIONAL UTILITIES OR IMPROVEMENTS THAT HAVE NOT BEEN SHOWN. 6. THIS SURVEY WAS PREPARED FOR SCANNELL PROPERTIES BASED ON A FIELD SURVEY
- ALTA SURVEY PREPARED BY MANHARD CONSULTING LTD. DATED MARCH 26, 2021. 7. THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A TOPOGRAPHIC SURVEY. MANHARD CONSULTING, LTD. IS A PROFESSIONAL DESIGN

FIRM, REGISTRATION NUMBER 184003350, EXPIRES APRIL 30, 2023.

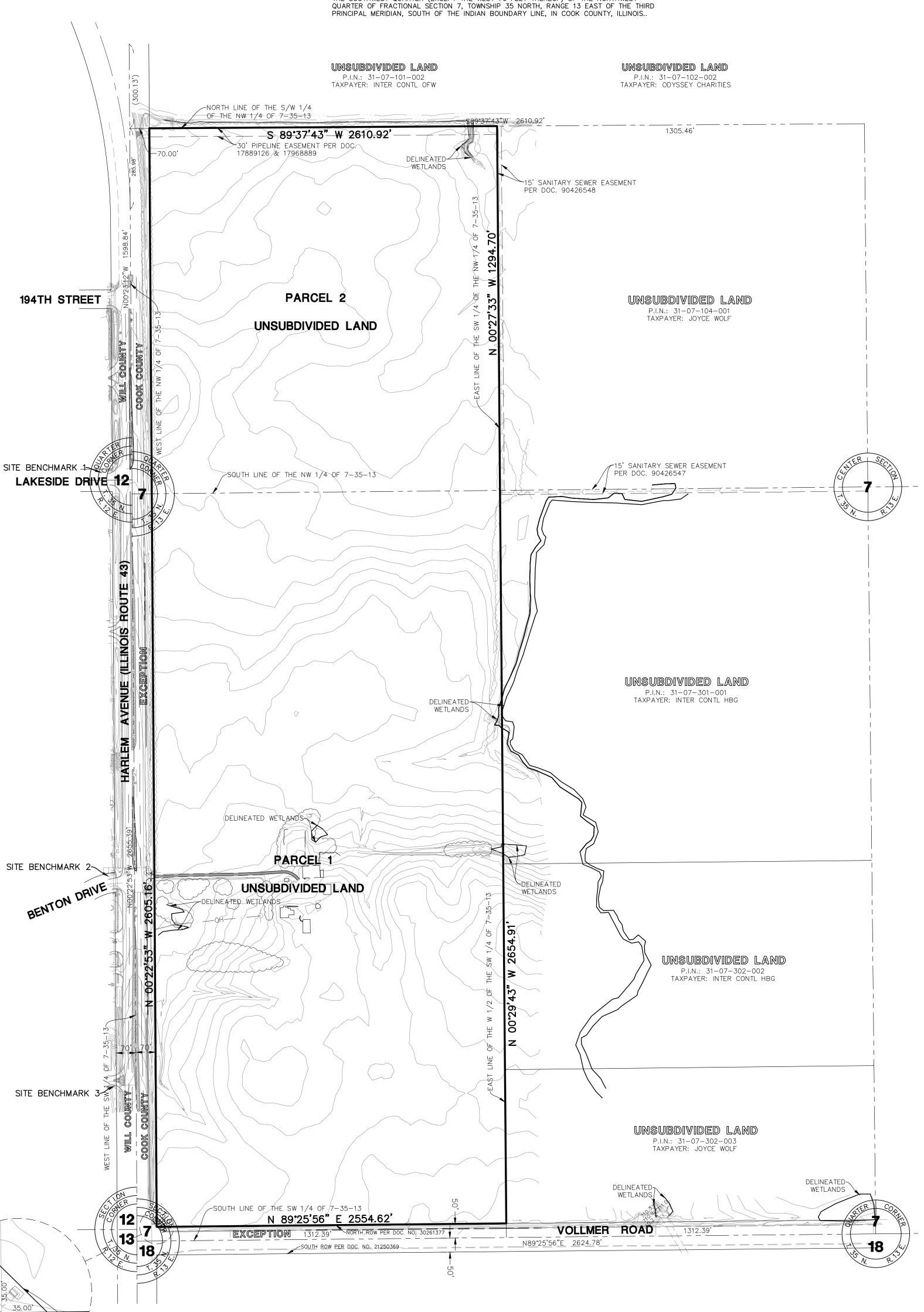
COMPLETED ON APRIL 23, 2021. BOUNDARY LINES SHOWN HEREON ARE BASED ON AN

TOPOGRAPHIC SURVEY

LEGAL DESCRIPTION

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.

THE SOUTHWEST QUARTER (EXCEPT THE WEST 70 FEET THEREOF) OF THE NORTHWEST



SHEET INDEX

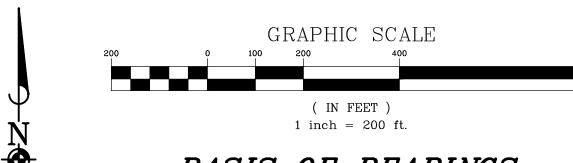
CERTIFICATION.

SHEETS 2 - 8 TOPOGRAPHIC INFORMATION AND LABELS

LEGAL DESCRIPTION, OVERALL BOUNDARY BENCHMARKS, SURVEYOR'S NOTES &

PROPOSED RIGHT-OF-WAY LINE AS SHOWN ON A RIGHT-OF-WAY EXHIBIT DRAWING PREPARED BY

W-T LAND SURVEYING, INC. DATED 2/22/2008



BASIS OF BEARINGS

BEARINGS ARE BASED UPON THE ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE (NAD 83), AS ESTABLISHED BY A REAL-TIME KINEMATIC (RTK) GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) UTILIZING THE TRIMBLE VRS NOW NETWORK.

CURRENT P.I.N.:

31-07-103-001 31-07-300-001

PROPERTY ADDRESS

19401 & 19601 HARLEM AVENUE TINLEY PARK, ILLINOIS 60477 (ADDRESS IS BASED ON COOK COUNTY GIS DATA)

SURVEY PREPARED FOR

SCANNELL PROPERTIES 8801 RIVER CROSSING BLVD., SUITE 300 INDIANAPOLIS, INDIANA 46240

PROPERTY AREA

4,832,541 SQUARE FEET (110.940 ACRES ±)

BENCHMARKS

REFERENCE 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). IN ADDITION, 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

SITE BENCHMARK: 1

DATUM (GEOID18).

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

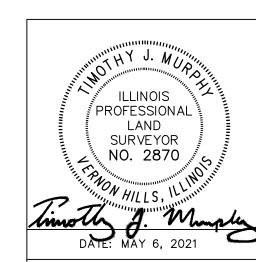
APPROXIMATELY 24 FEET NORTH OF THE CENTERLINE OF BENTON DRIVE AND 93 FEET WEST OF THE CENTERLINE OF

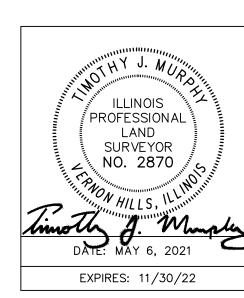
HARLEM AVENUE. ELEVATION=707.47

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 TOPOGRAPHIC FIELD WORK COMPLETED ON 04/23/2021

DATUM=NAVD88-GEOID18





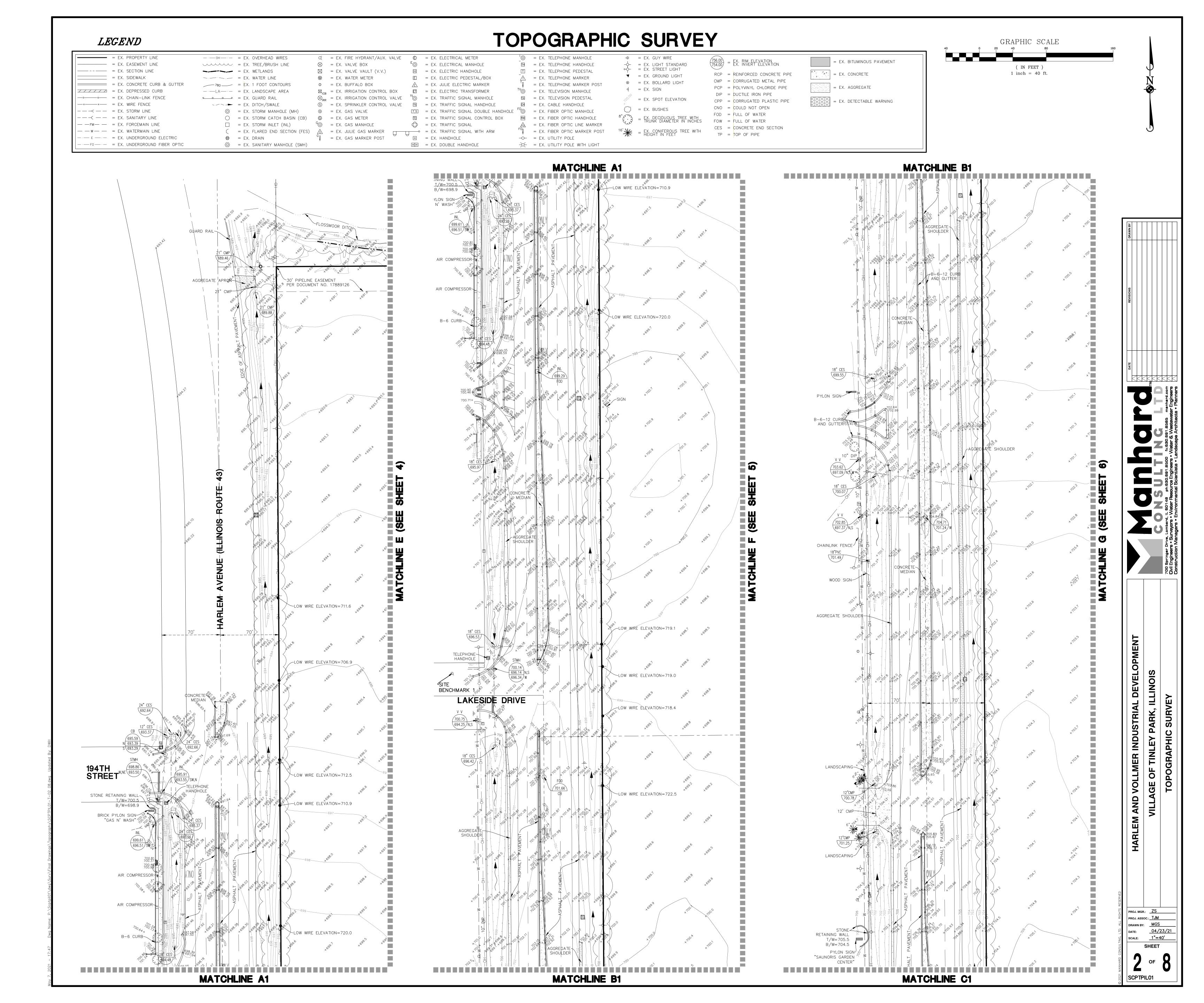
PROJ. MGR.: ZS PROJ. ASSOC.: TJM

ILLINOIS

OF

GE

04/23/21 <u>1"=200'</u> SCALE: SHEET SCPTPIL01



TOPOGRAPHIC SURVEY GRAPHIC SCALE 1 inch = 40 ft.MATCHLINE D1 MATCHLINE C1 **LEGEND** REAL ESTATE SIGN STONE CARETAINING WALL T/W=705.5 B/W=704.5 = EX. EASEMENT LINE ----- = EX. SECTION LINE = EX. SIDEWALK PYLON SIGN ("SAUNORIS GARDEN") == EX. CONCRETE CURB & GUTTER = EX. DEPRESSED CURB —∘——∘— = EX. CHAIN-LINK FENCE - - - < - - = EX. STORM LINE SIGN "FOR SALE" AGGREGATE SHOULDER---- (--- = EX. SANITARY LINE — —FM— — = EX. FORCEMAIN LINE --- w --- = EX. WATERMAIN LINE -----FO----- = EX. UNDERGROUND FIBER OPTIC = EX. TREE/BRUSH LINE = EX. WETLANDS = EX. WATER LINE 780 = EX. 1 FOOT CONTOURS $-\cdot$ —LA—·— = EX. LANDSCAPE AREA • • • = EX. GUARD RAIL = EX. DITCH/SWALE = EX. STORM CATCH BASIN (CB) STONE-RETAINING WALL T/W=705.5 B/W=703.5 \square = EX. STORM INLET (INL) = EX. FLARED END SECTION (FES) TRANSFORMER/ \bigcirc = EX. SANITARY MANHOLE (SMH) q = EX. FIRE HYDRANT/AUX. VALVE \otimes = EX. VALVE BOX \boxtimes = EX. VALVE VAULT (V.V.) ∅ = EX. WATER METER \boxtimes_{ICB} = EX. IRRIGATION CONTROL BOX \bigotimes_{IRR} = EX. IRRIGATION CONTROL VALVE S = EX. SPRINKLER CONTROL VALVE ⑤ = EX. GAS VALVE ♦ = EX. GAS METER ^G⊙ = EX. GAS MANHOLE = EX. JULIE GAS MARKER = EX. GAS MARKER POST ⟨₿ = EX. ELECTRICAL METER LOW WIRE ELEVATION = 721.9 EO = EX. ELECTRICAL MANHOLE E = EX. ELECTRIC PEDESTAL/BOX EX. ELECTRIC TRANSFORMER = EX. TRAFFIC SIGNAL MANHOLE STONE LANDSCAPING ■ EX. TRAFFIC SIGNAL HANDHOLE TS = EX. TRAFFIC SIGNAL DOUBLE HANDHOLE = EX. TRAFFIC SIGNAL CONTROL BOX = EX. TRAFFIC SIGNAL ☐ ☐ ☐ = EX. TRAFFIC SIGNAL WITH ARM H = EX. HANDHOLE HH = EX. DOUBLE HANDHOLE □ = EX. TELEPHONE MANHOLE Ⅲ = EX. TELEPHONE HANDHOLE \top = EX. TELEPHONE PEDESTAL = EX. TELEPHONE MARKER = EX. TELEPHONE MARKER POST ♥ = EX. TELEVISION MANHOLE ≡ EX. TELEVISION PEDESTAL = EX. CABLE HANDHOLE = EX. FIBER OPTIC MANHOLE = EX. FIBER OPTIC HANDHOLE = EX. FIBER OPTIC LINE MARKER = EX. FIBER OPTIC MARKER POST -AGGREGATE SHOULDER -O- = EX. UTILITY POLE = EX. UTILITY POLE WITH LIGHT -Ф = EX. GUY WIRE $-\phi$ - = EX. LIGHT STANDARD ∘ → = EX. STREET LIGHT ₹ = EX. GROUND LIGHT ⊕ = EX. BOLLARD LIGHT d = EX. SIGN \Rightarrow = EX. SPOT ELEVATION = EX. BUSHES NE RETAINING WALL-T/W=708.9 B/W=707.2 = EX. RIM ELEVATION EX. INVERT 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 WATERFOW = FULL OF WATER CES = CONCRETE END SECTION TP = TOP OF PIPE = EX. BITUMINOUS PAVEMENT = EX. CONCRETE REAL ESTATE SIGN-= EX. AGGREGATE = EX. DETECTABLE WARNING SIGN "FOR SALE" BARRIER CURB

MATCHLINE D1

ONSULT INCE TO FX:830.891.8585 manherd.com
s • Water Resource Engineers • Water & Wastewater Engineers
• Fruitnmental Scientists • Jandscape Architects • Planners

IER INDUSTRIAL DEVELOPMENT

VILLAGE OF TINLE

PROJ. MGR.: ZS
PROJ. ASSOC.: TJM

DRAWN BY: MGS

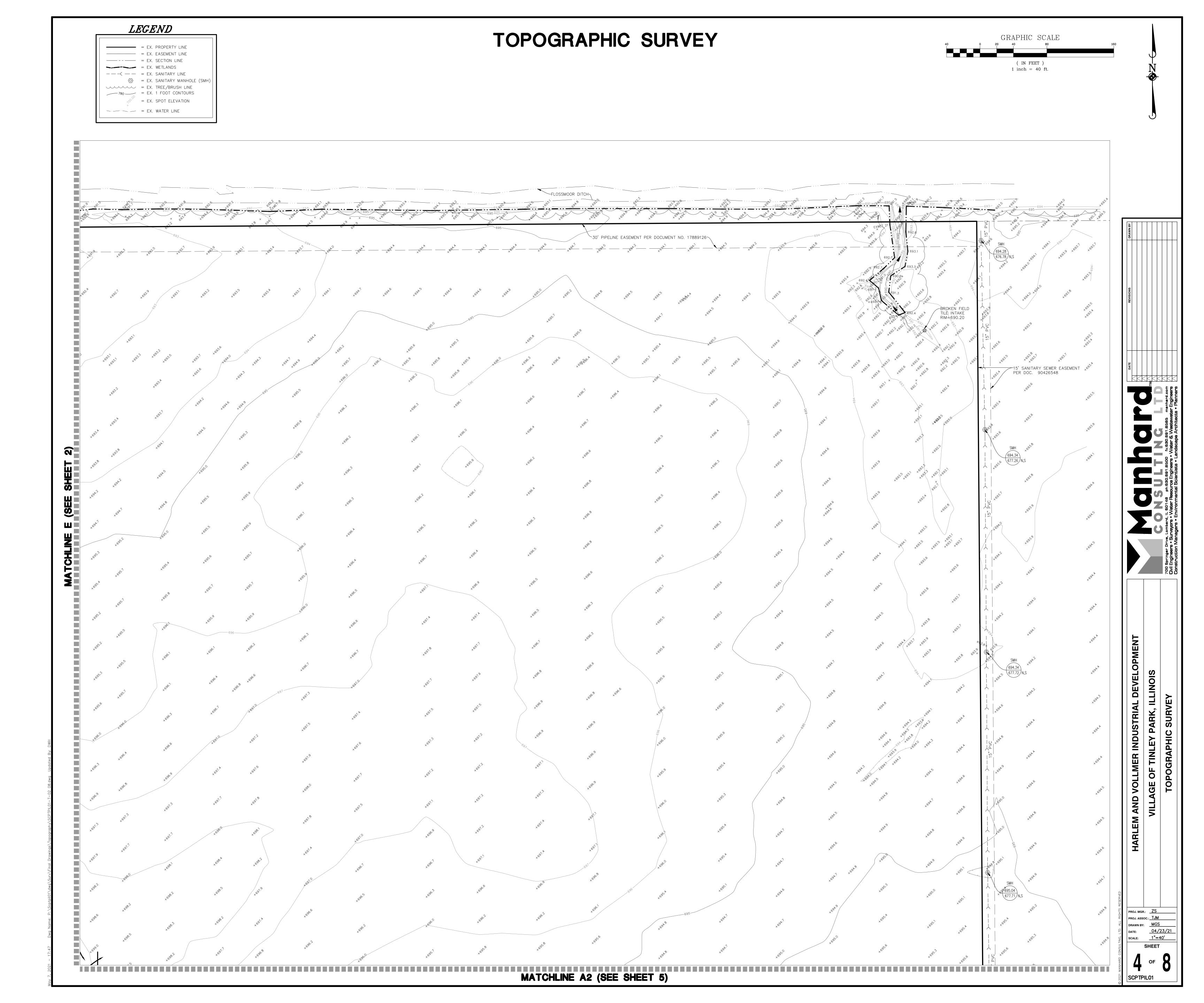
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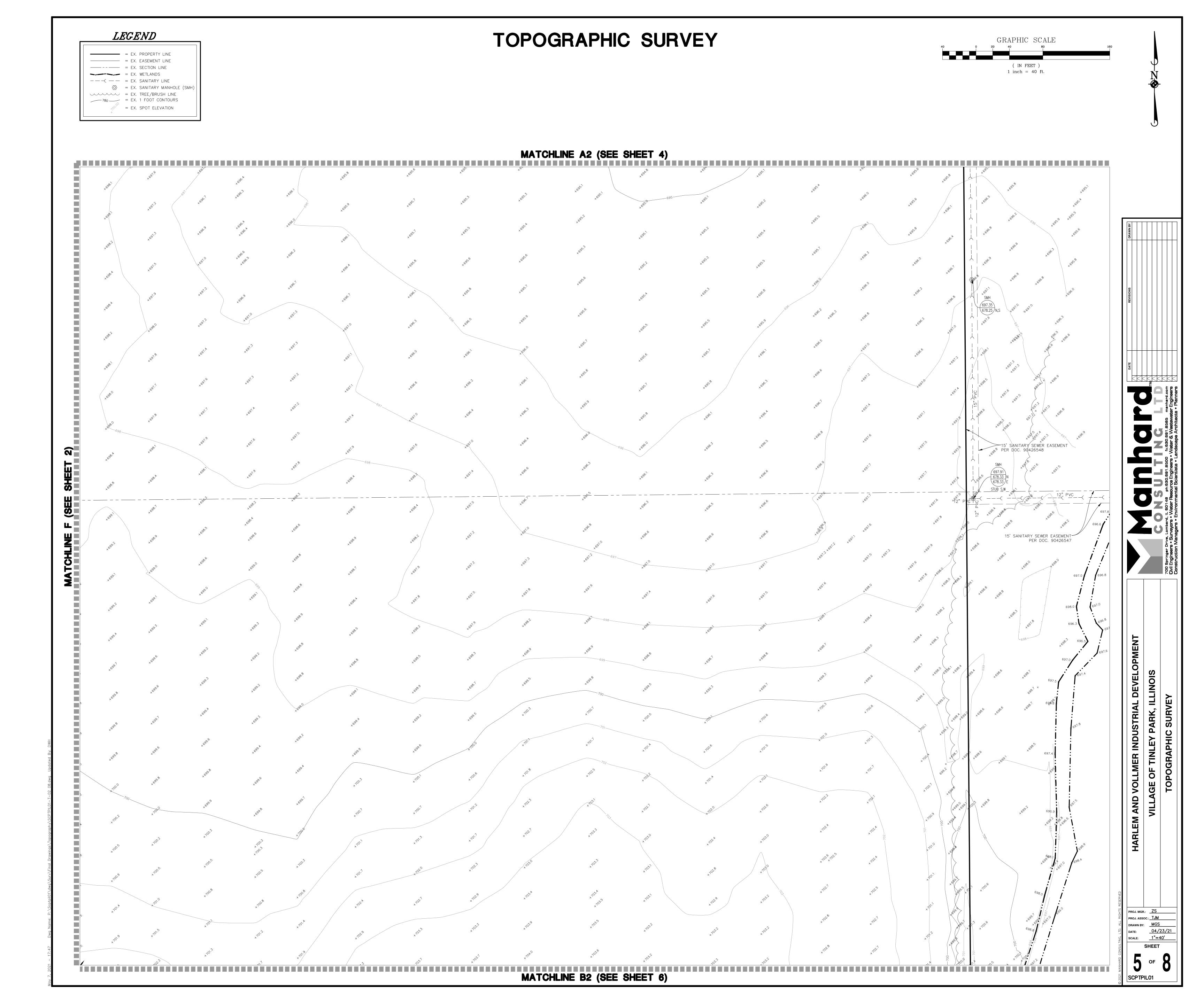
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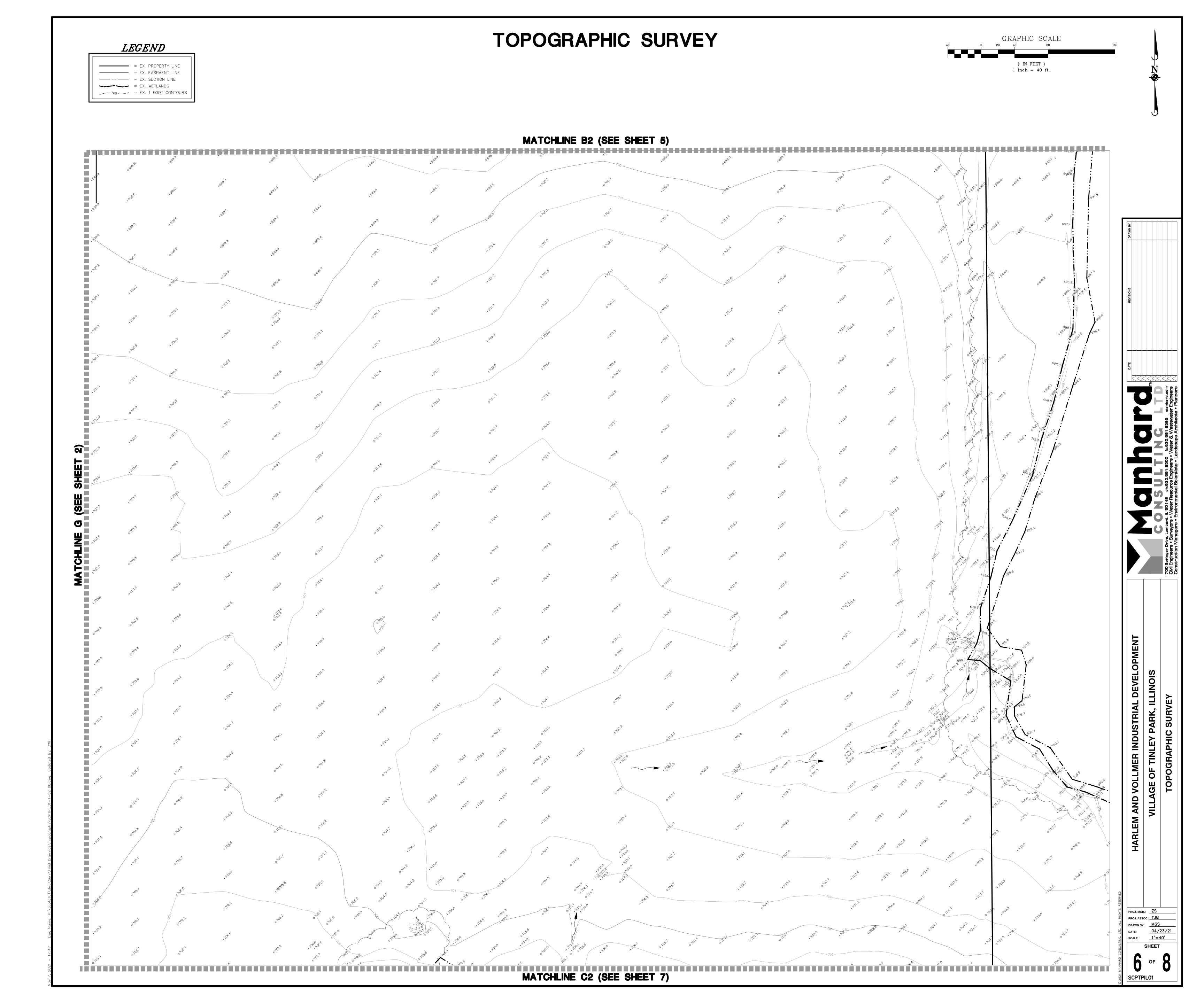
SHEET

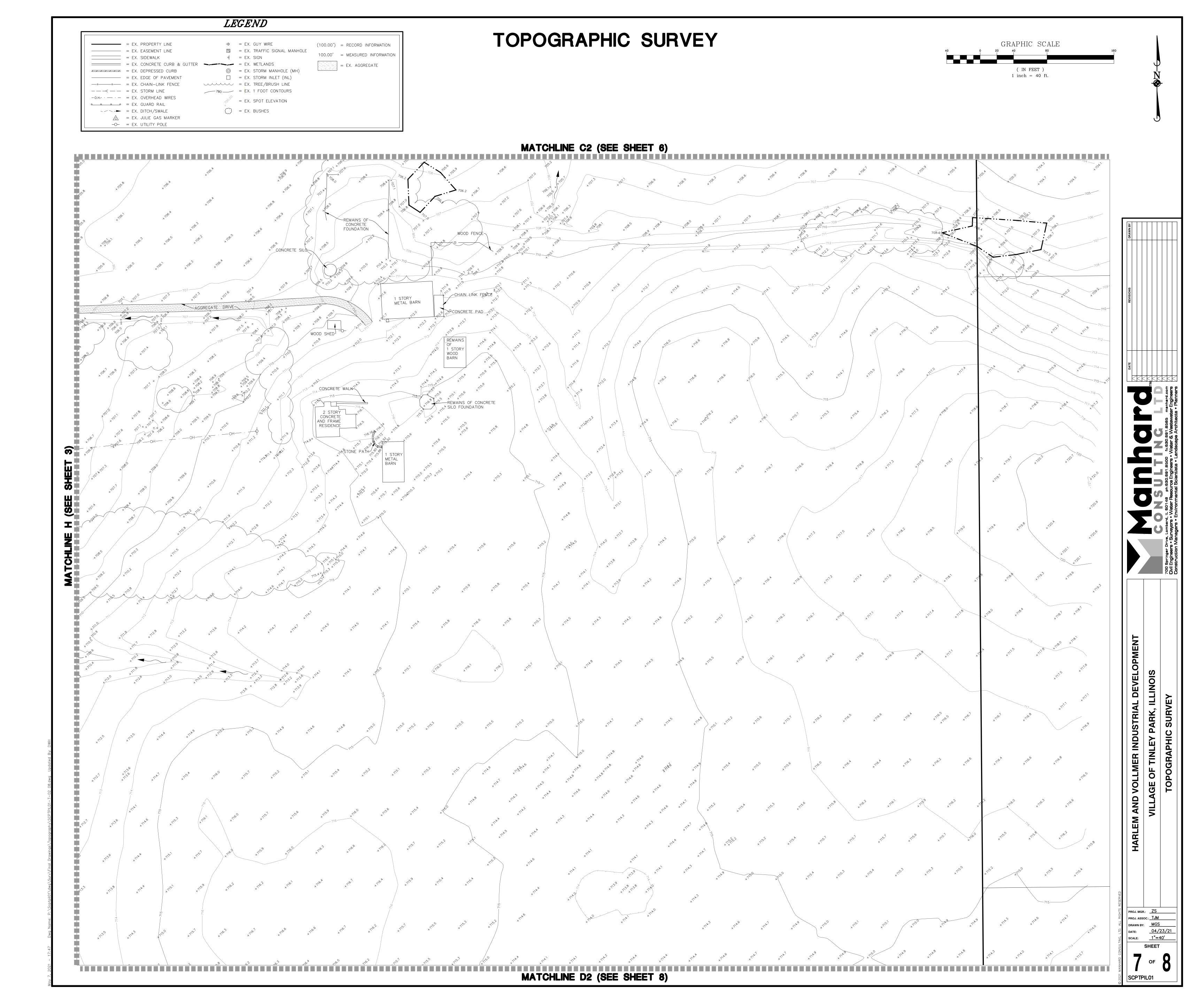
OF

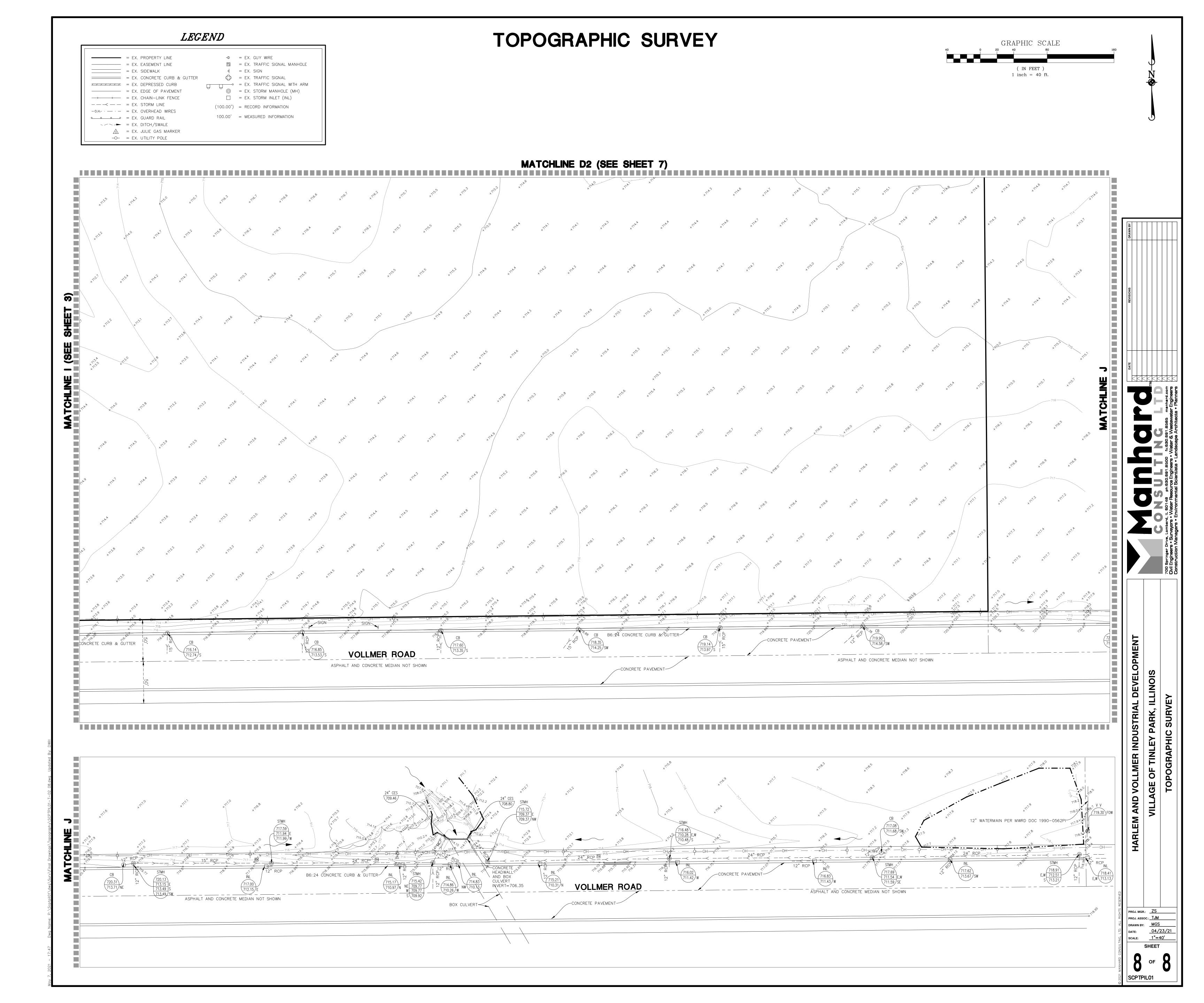
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0 75' 150'
SCALE: 1"=

0 75' 150' 300 SCALE: 1"=150' PROJ. MGR.: ZRS

PROJ. ASSOC.: MN

DRAWN BY: MN

DATE: 05/11/2021

SCALE: 1"=150'

19501-19701 HARLEM AVENUE, TINLEY PARK

OVERALL LANDSCAPE PLAN

TINLEY PARK BUSINESS CENTER

SCALE: 1"=150'
SHEET
OF
SCP.TPIL01

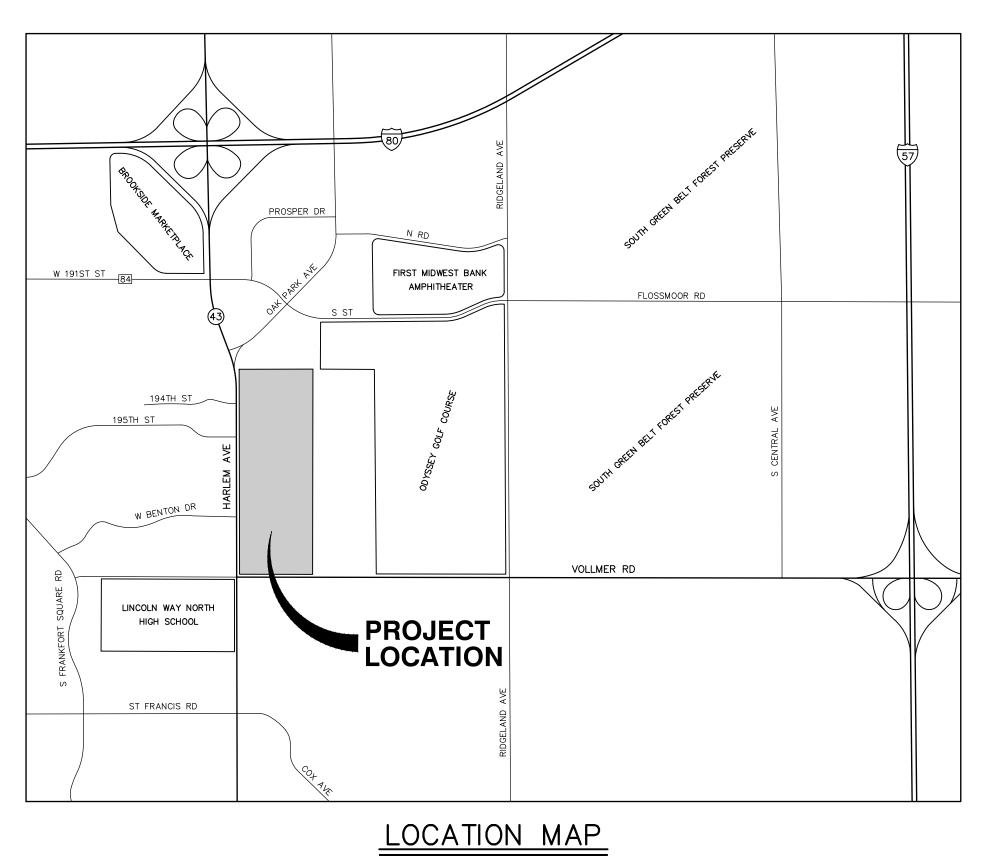
Proposed Improvements for

TINLEY PARK BUISNESS CENTER

STANDARD SYMBOLS

19501-19701 HARLEM AVENUE VILLAGE OF TINLEY PARK, ILLINOIS

EXISTING STORM SEWER SANITARY SEWER __ D___ D___ COMBINED SEWER FORCEMAIN DRAINTILE WATER MAIN **ELECTRIC** TELEPHONE 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 INVERT ELEVATION DITCH OR SWALE DIRECTION OF FLOW :::> OVERFLOW RELIEF SWALE 1 FOOT CONTOURS ========= CURB AND GUTTER REVERSE CURB AND GUTTER SIDEWALK DETECTABLE WARNINGS PROPERTY LINE EASEMENT LINE SETBACK LINE MAIL BOX TRAFFIC SIGNAL POWER POLE GUY WIRE GAS VALVE HANDHOLE ELECTRICAL EQUIPMENT TELEPHONE EQUIPMENT CHAIN-LINK FENCE 792.8 G SPOT ELEVATION \sim BRUSH/TREE LINE DECIDUOUS TREE WITH TRUNK DIA. IN INCHES (TBR) CONIFEROUS TREE WITH HEIGHT IN FEET (TBR) SILT FENCE RETAINING WALL WETLAND



N

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS AND DEMOLITION PLAN
3	OVERALL SITE DIMENSIONAL AND PAVING PLAN
4	SITE DIMENSIONAL AND PAVING PLAN - NORTH
5	SITE DIMENSIONAL AND PAVING PLAN - MID-NORT
6	SITE DIMENSIONAL AND PAVING PLAN - MID-SOUT
7	SITE DIMENSIONAL AND PAVING PLAN - SOUTH
8	GRADING PLAN - NORTH
9	GRADING PLAN - MID-NORTH
10	GRADING PLAN - MID-SOUTH
11	GRADING PLAN - SOUTH
12	GRADING CROSS SECTIONS
13	UTILITY PLAN - NORTH
14	UTILITY PLAN - MID-NORTH

0 UTILITY PLAN — SOUTH
UTILITY PLAN — OFFSITE
CONSTUCTION DETAILS
CONSTUCTION DETAILS

UTILITY PLAN - MID-SOUTH

20 CONSTRUCTION SPECIFICATIONS

NOTES:

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

ABBREVIATIONS

	00-01-10				
ADJ AGG. ARCH 3.A.M. 3-B 3/P 3-BOX 3-BOX 3-BOX DIP DIMM DIS DIP DIP DIP DIP DIP DIP DIP DIP DIP DIP	ADJUST AGGREGATE ARCHITECT BITUMINOUS AGGREGATE MIXTURE BACK TO BACK BACK OF CURB BOTTOM OF PIPE BACK OF WALK BUFFALO BOX BITUMINOUS BENCHMARK BY OTHERS COMMERCIAL ENTRANCE CATCH BASIN CENTERLINE CORRUGATED METAL PIPE CONTROL CLEANOUT CONCRETE CUBIC YARD DITCH DIAMETER DUCTILE IRON PIPE DUCTILE IRON WATER MAIN DOWNSPOUT DRAIN TILE ELECTRIC EDGE TO EDGE ELEVATION EDGE OF PAVEMENT EXISTING FIELD ENTRANCE FACE TO FACE FINISHED FLOOR FLARED END SECTION	F/M G G/W HHWDLV. X. MM/H N.E.C CL POPPER P.V. U. MM/H N.E.C CL P.	FLOW LINE FORCE MAIN GROUND GRADE AT FOUNDATION GUY WIRE HEADWALL HANDHOLE HIGH WATER LEVEL HYDRANT INLET INVERT IRON PIPE LEFT MAXIMUM MAILBOX MEET EXISTING MANHOLE MINIMUM NORMAL WATER LEVEL PRIVATE ENTRANCE POINT OF CURVATURE POINT OF COMPOUND CURVE PROFILE GRADE LINE POINT OF INTERSECTION PROPERTY LINE POWER POLE PROPOSED POINT OF VERTICAL CURVATURE POINT OF VERTICAL INTERSECTION POINT OF VERTICAL INTERSECTION POINT OF VERTICAL INTERSECTION POINT OF VERTICAL INTERSECTION POINT OF VERTICAL TANGENCY PAVEMENT PUBLIC UTILITY & DRAINAGE EASEMENT RADIUS	R.O.W. RCP REM REV RR RT SA SHLD. SHL STA. STD SY TF T/F T/WALL TEMP TRANS V.B. V.V. WM	RIGHT-OF-WAY REINFORCED CONCRETE PIPE REMOVAL REVERSE RAILROAD RIGHT SANITARY SQUARE FOOT SHOULDER STREET LIGHT SANITARY MANHOLE STORM STATION STANDARD SIDEWALK SQUARE YARDS TO BE REMOVED TELEPHONE TYPE A TOP OF CURB TOP OF FOUNDATION TOP OF PIPE TOP OF WALK

Manual Action of the Constitution of the Const

Construction Managers • Environmental Scientists • Landscape Architects • Planners

DEVELOPER: SCANNELL PROPERTIES

INDIANAPOLIS, INDIANA, 46240

8801 RIVER CROSSING BLVD., SUITE 300

PERMIT CONTACTS

ILLINOIS DEPARTMENT OF
TRANSPORTATION
201 CENTER COURT
SCHAUMBURG, IL

SCHAUMBURG, IL
(847) 705-4147
CONTACT: HASAN AL-GHOLEH
COOK COUNTY DEPARTMENT OF
TRANSPORTATION AND HIGHWAYS
69 W WASHINGTON ST, 24TH
FLOOR
CHICAGO, IL

(312) 603-1670 CONTACT: MICHAEL STERR METROPOLITAN WATER RECLAMATION DISTRICT 100 EAST ERIE ST CHICAGO, IL

ROBINSON ENGINEERING
10045 W LINCOLN HIGHWAY
FRANKFORT, IL
(815) 412-2702
CONTACT: DANA LUDWIG

(312) 751-5600 CONTACT: TBD

VILLAGE OF TINLEY PARK 16250 OAK PARK AVE TINLEY PARK, IL (708) 444-5516 CONTACT: COLBY ZEMAITIS



BENCHMARKS:

CONTACT: JOHN URBANSKI

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

CONTACT: LOUIS KRAUS

PROJ. MGR.: ZRS
PROJ. ASSOC.: EAF
DRAWN BY: EAF
DATE: 3-31-21
SCALE: N.T.S.

ILLINOIS

PARK,

OF

VILLAGE

BUISNESS

PARK

of 20

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.

MANHARD CONSULTING, LTD. IS NOT RESPONSIBLE FOR THE SAFETY OF ANY PARTY AT OR ON THE

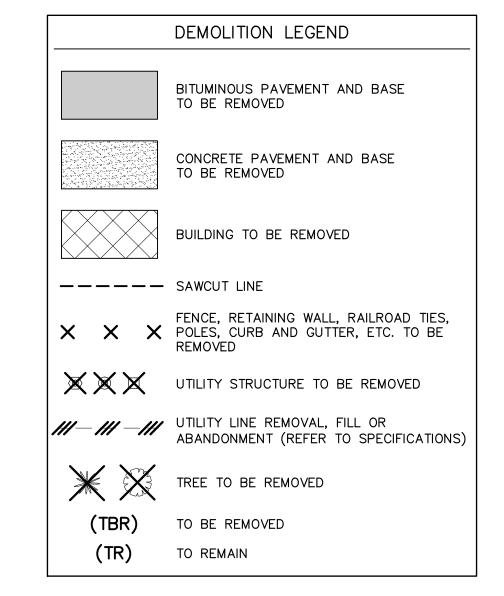
BENCHMARKS: SOURCE BENCHMARK: ELEVATIONS AND SITE BENCHMARKS SHOWN HEREON WERE ESTABLISHED UTILIZING A TRIMBLE RAPID STATIC GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) AND THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA'S) ONLINE POSITIONING USER SERVICE (OPUS). INADDITION, AN NGS BENCHMARK (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 ELEVATION=703.28 DATUM=NAVD88-GEOID18 SITE BENCHMARK: 2 FEET WEST OF THE CENTERLINE OF HARLEM AVENUE. ELEVATION=707.47 DATUM=NAVD88-GEOID18

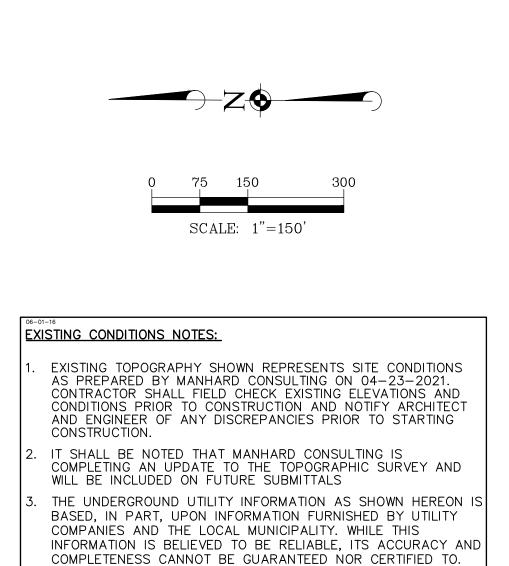
NORTHEAST ARROW BOLT ON HYDRANT LOCATED APPROXIMATELY 24 FEET NORTH OF THE CENTERLINE OF BENTON DRIVE AND 93

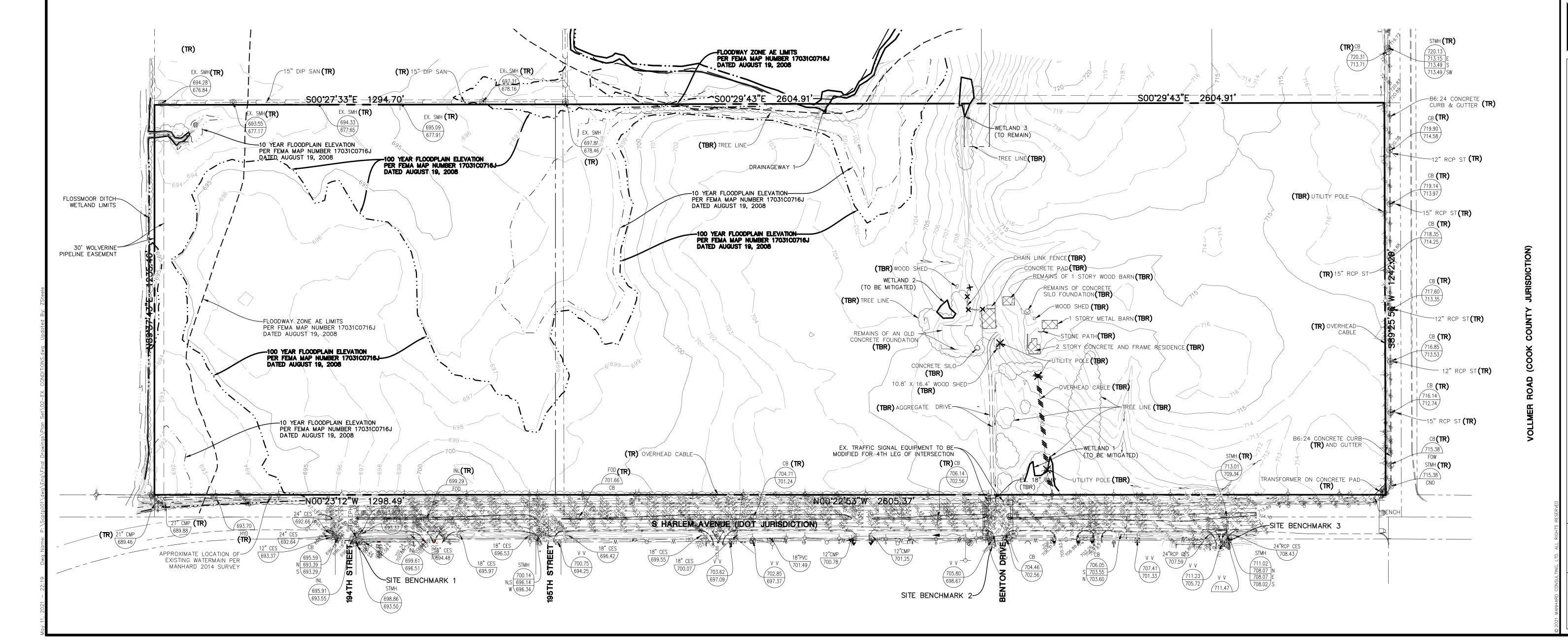
SITE BENCHMARK: 3 SOUTH ARROW BOLT ON HYDRANT LOCATED APPROXIMATELY 552 FEET NORTH OF THE CENTERLINE OF VOLLMER ROAD AND 80 FEET WEST OF THE CENTERLINE OF HARLEM AVENUE. ELEVATION=713.32 DATUM=NAVD88-GEOID18

DEMOLITION NOTES: THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF

- PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR 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
- 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 LAWFUL DISPOSAL (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, 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.







ILLINOIS $\mathbf{\Omega}$

OF

proj. mgr.: ZRS 3-31-21 <u>1"=150'</u> SCALE:

SCP.TIL01

SITE DIMENSIONAL AND PAVING NOTES:

- ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
- ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
- ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
- TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2-#6 BARS x 18" LONG DOWELED INTO
- BUILDING DIMENSIONS AND ADJACENT PARKING 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 NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
- IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
- LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIOR TO CONSTRUCTING THE SIDEWALKS.
- ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
- SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR
- D. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
- 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 IMPROVEMENT.

SITE DATA

SITE AREA 110.94 ACRES

VEHICLE PARKING PROVIDED 152 SPACES ADA PARKING REQUIRED 6 SPACES ADA PARKING PROVIDED 6 SPACES TRAILER PARKING PROVIDED 47 SPACES PARKING RATIO 0.78 SPACES/1000 S.F.

FUTURE BUILDING 2 AND 3 PARKING SHOWN FOR

REFERENCE OF THE OVERALL SITE CONCEPT

6 1/2" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF 6" COMPACTED AGGREGATE BASE, TYPE B CONCRETE SIDEWALK 5" PORTLAND CEMENT CONCRETE 4" COMPACTED AGGREGATE BASE COURSE, TYPE B BITUMINOUS MULTI-USE PATH 3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50 6" COMPACTED AGGREGATE BASE COURSE, TYPE B *RECOMMENDATIONS PROVIDED PER GEOTECHNICAL REPORT BY PIONEER ENGINEERING AND ENVIRONMENTAL SERVICES, LLC

PAVEMENT LEGEND

1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50

1 1/2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50

2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50

3" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50

STANDARD DUTY PAVEMENT*

HEAVY DUTY PAVEMENT*

CONCRETE PAVEMENT*

8" AGGREGATE BASE COURSE, TYPE B

10" AGGREGATE BASE COURSE, TYPE B

PAVEMENT MARKING LEGEND

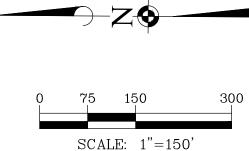
- A 24" WHITE STOP BAR
- B 4" YELLOW LINE
- © 4" YELLOW DIAGONAL AT 45° SPACED 3' O.C. W/ 4" YELLOW BORDER
- (D) LETTERS AND SYMBOLS PAVEMENT MARKINGS

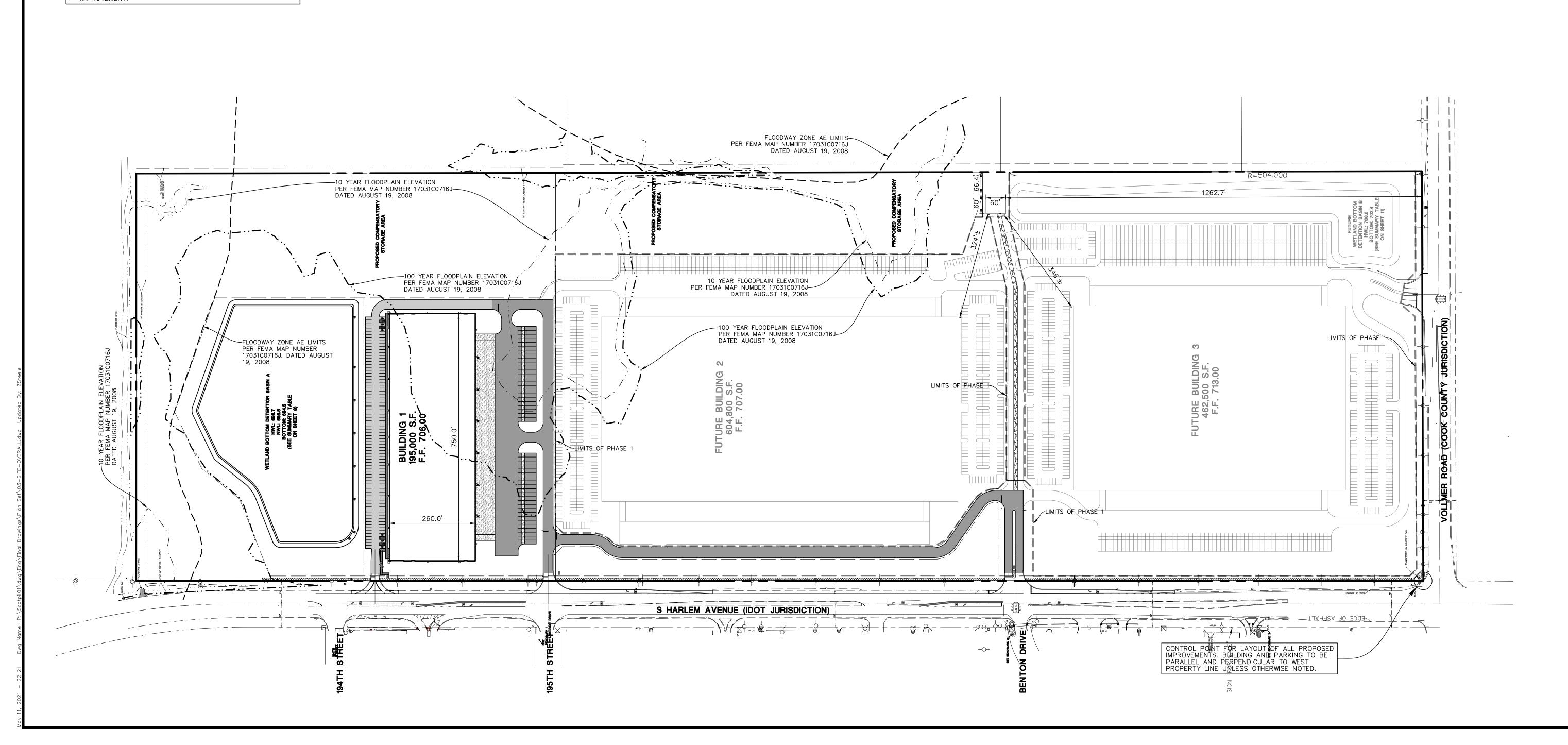
SIGN LEGEND

- (1) R1-1 STOP SIGN
- 2 R7-8 HANDICAP PARKING SIGN
- 3 MONUMENT SIGN
- 4 DIRECTIONAL SIGN

PHASE 1 WOULD INCLUDE SOME OVERALL SITE GRADING, FINAL DEVELOPMENT OF BUILDING 1, ALL DETENTION PONDS, HARLEM AVE. LANDSCAPE BERM, A PARTIAL INITIAL INTERNAL ROADWAY, VOLLMER AVE ENTRANCE, WALKWAY/PATH, DEMOLITION OF EXISTING STRUCTURES, TURN LANE WORK AND ENTRANCE/DEVELOPMENT SIGNAGE.

PHASE 2 WILL INCLUDE THE REMAINDER OF THE DEVELOLPMENT INCLUDING BUILDING 2 AND 3, ADDITIONAL ROADWAYS AND WETLAND BOTTOM DETENTION BASIN B.



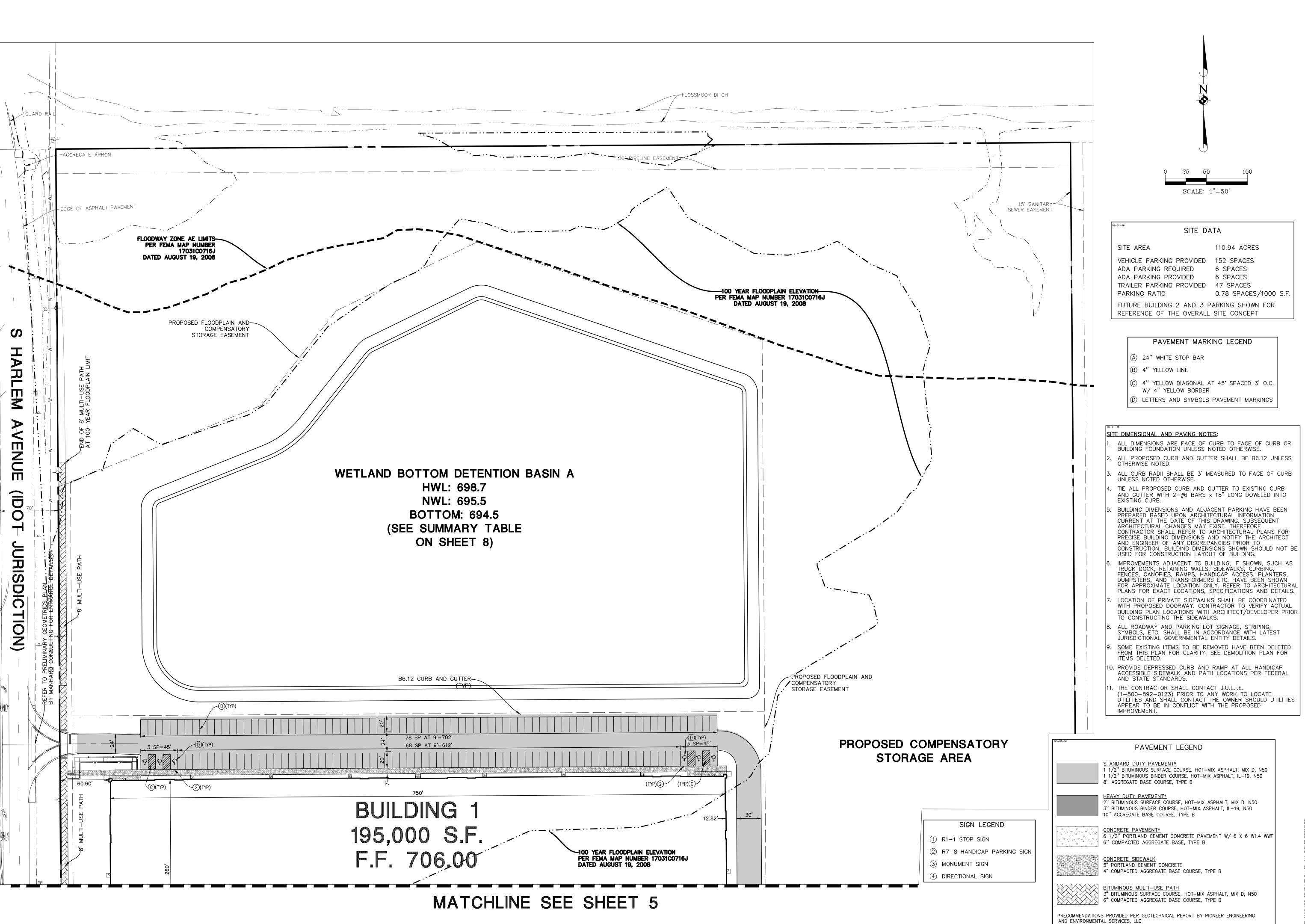


ILLINOIS

BUISNESS **OF TINLEY**

PROJ. MGR.: ZRS PROJ. ASSOC.: EAF 3-31-21 <u>1"=150'</u> SCALE:

SHEET SCP.TIL01



SCP.TIL01

proj. mgr.: ZRS

SCALE:

3-31-21

<u>1"=50'</u>

SHEET

ILLINOIS

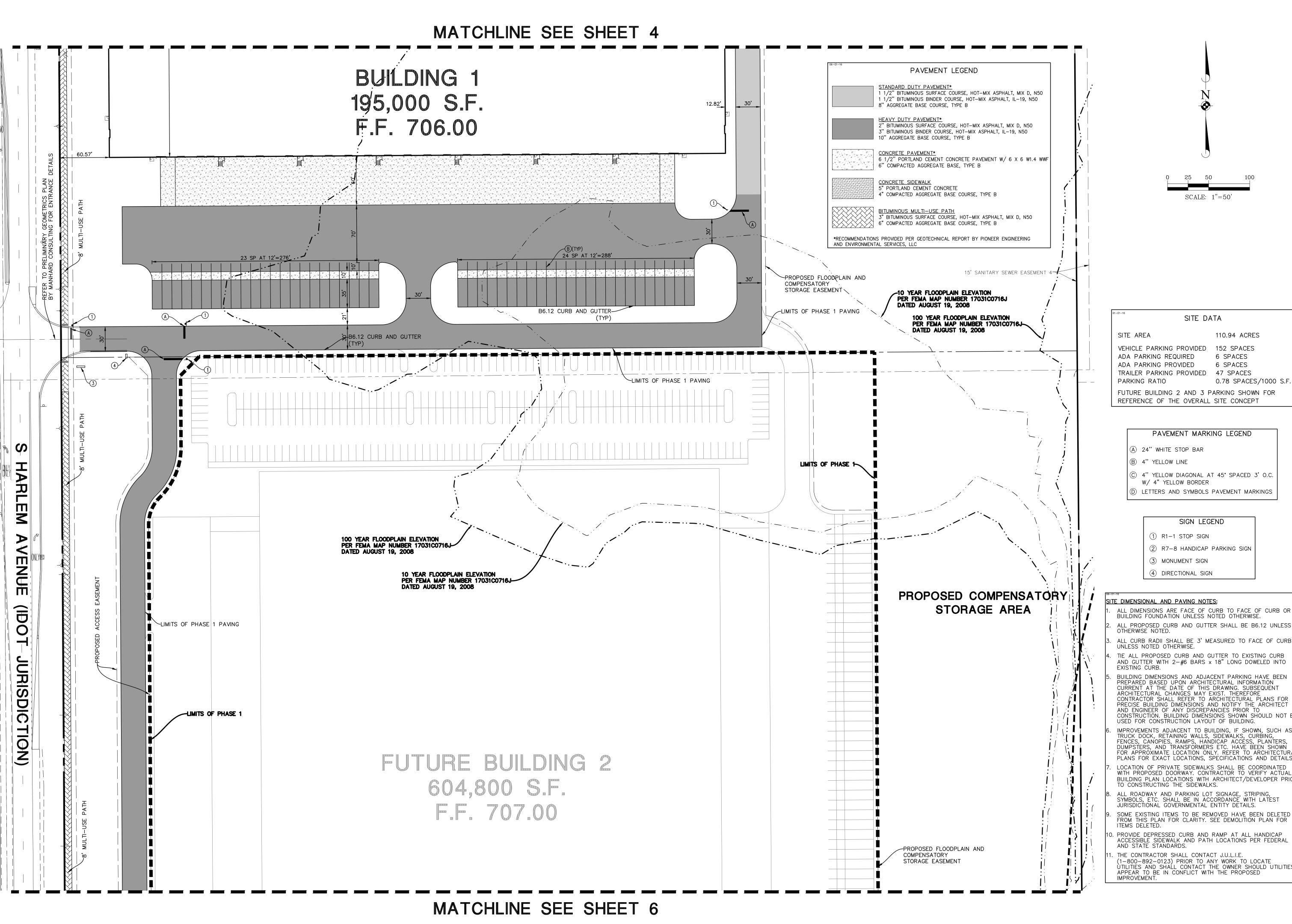
TINLEY PARK,

OF

VILLAGE

BUISNESS

TINLEY



SCALE: 1"=50'

SITE DATA

110.94 ACRES

VEHICLE PARKING PROVIDED 152 SPACES ADA PARKING REQUIRED 6 SPACES

ADA PARKING PROVIDED 6 SPACES TRAILER PARKING PROVIDED 47 SPACES

0.78 SPACES/1000 S.F FUTURE BUILDING 2 AND 3 PARKING SHOWN FOR

PAVEMENT MARKING LEGEND

A 24" WHITE STOP BAR

(B) 4" YELLOW LINE

(C) 4" YELLOW DIAGONAL AT 45" SPACED 3" O.C

 $|\!\!|\!\!| (\!\!|\!\!| (\!\!|\!\!|\!\!| (\!\!|\!\!|\!\!|\!\!|\!\!|))$ LETTERS AND SYMBOLS PAVEMENT MARKINGS

SIGN LEGEND

1) R1-1 STOP SIGN (2) R7-8 HANDICAP PARKING SIGN

(3) MONUMENT SIGN

TE DIMENSIONAL AND PAVING NOTES:

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TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB

AND GUTTER WITH 2-#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.

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SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.

. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.

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

3-31-21 1"=50'

PROJ. MGR.: ZRS

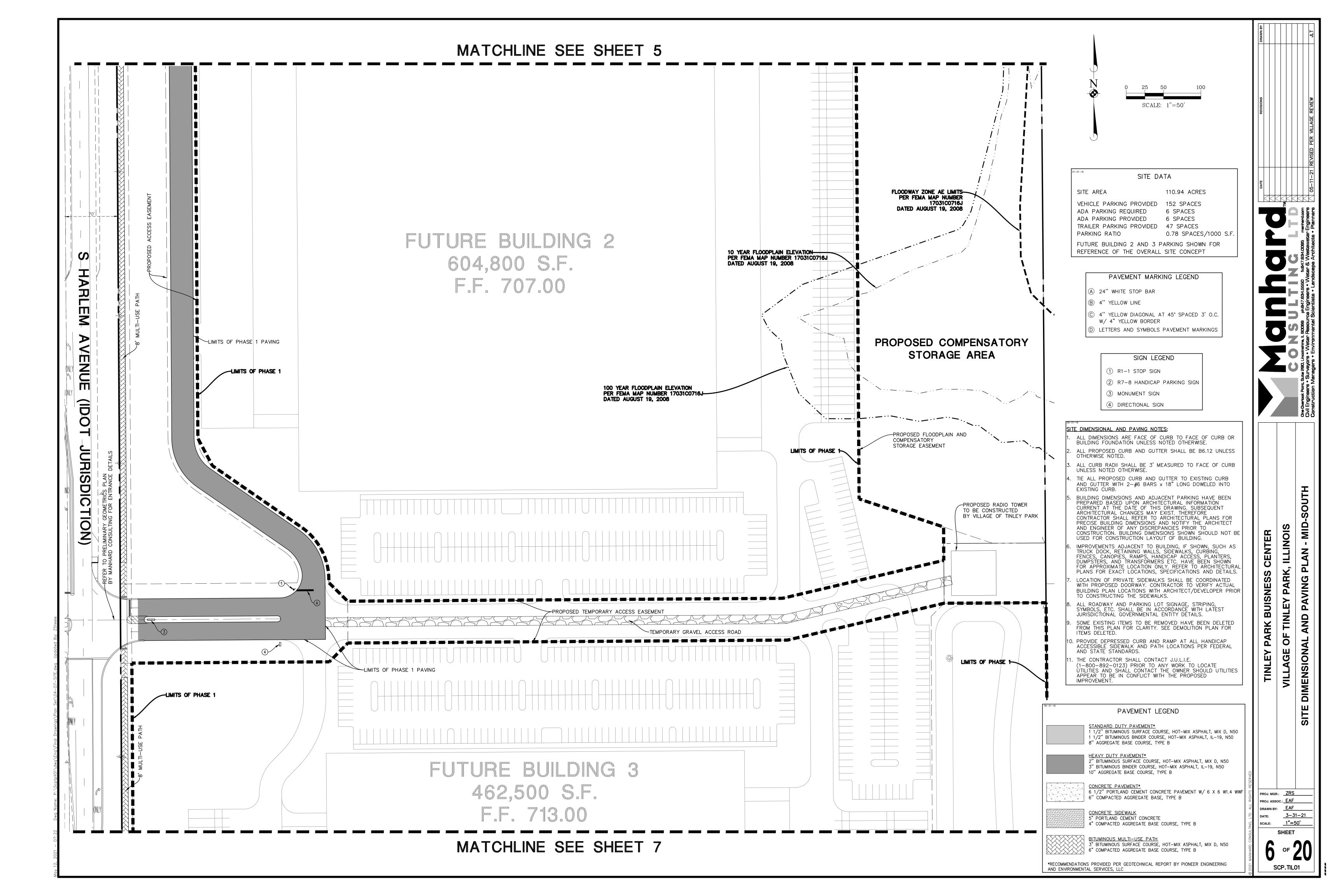
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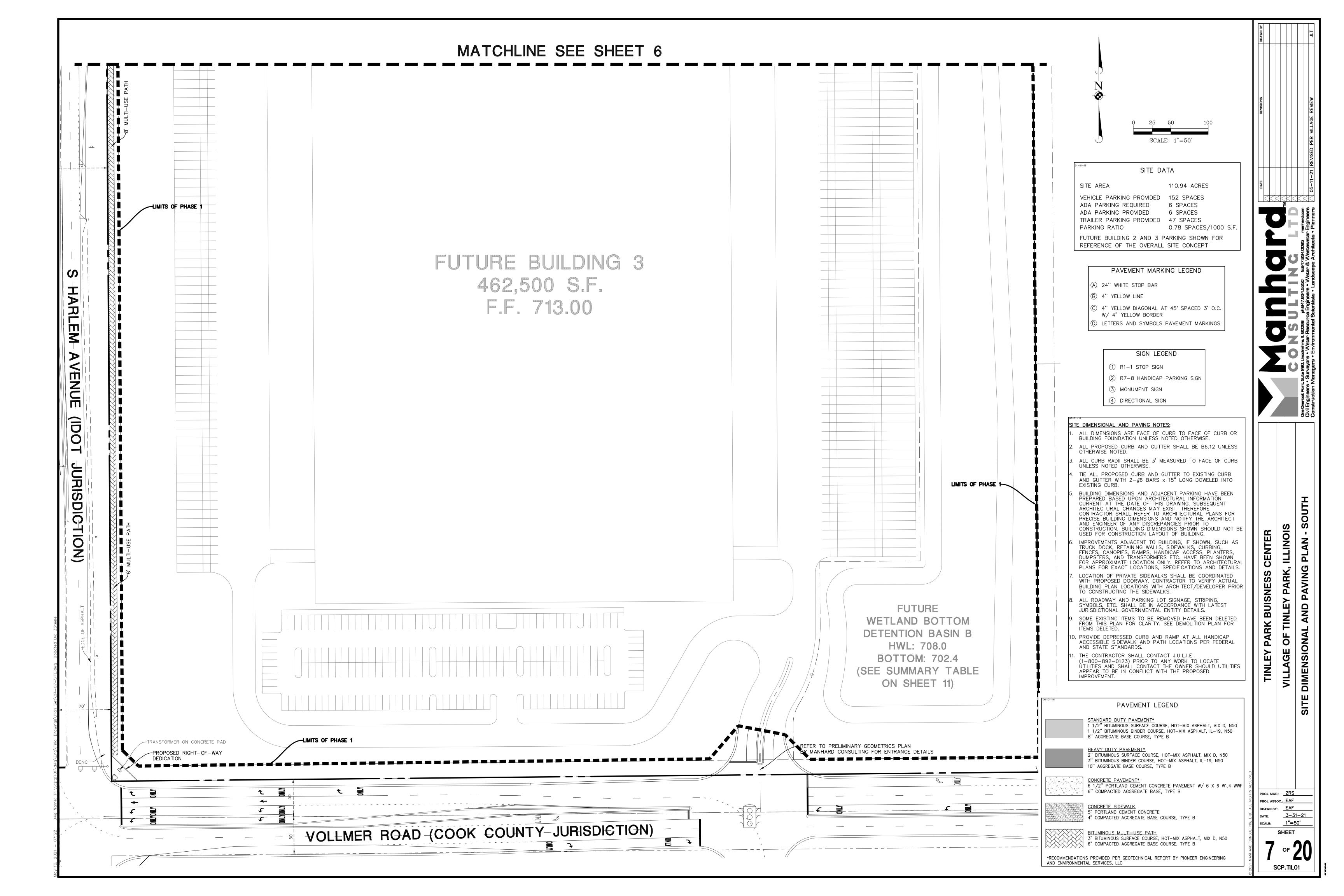
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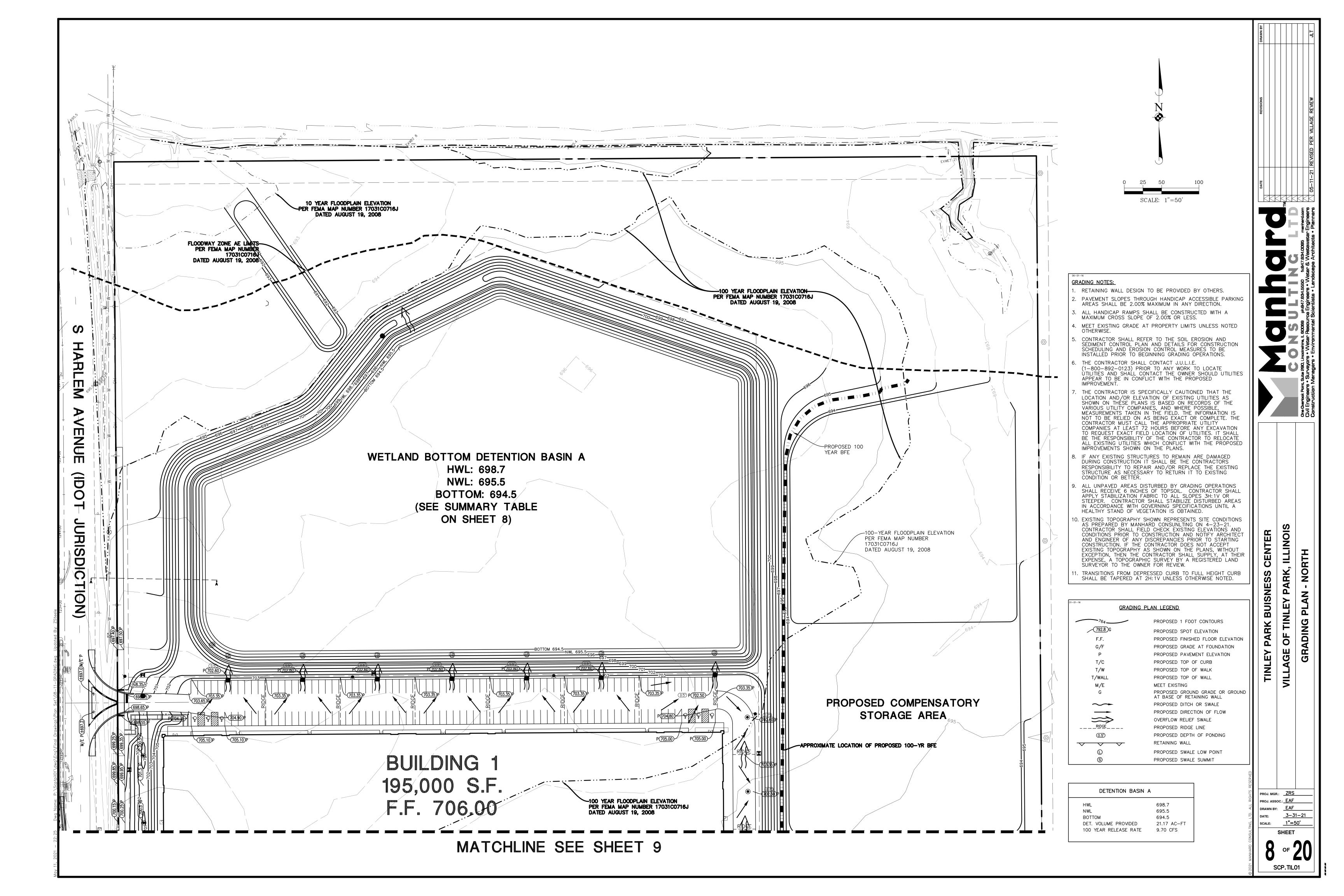
OF

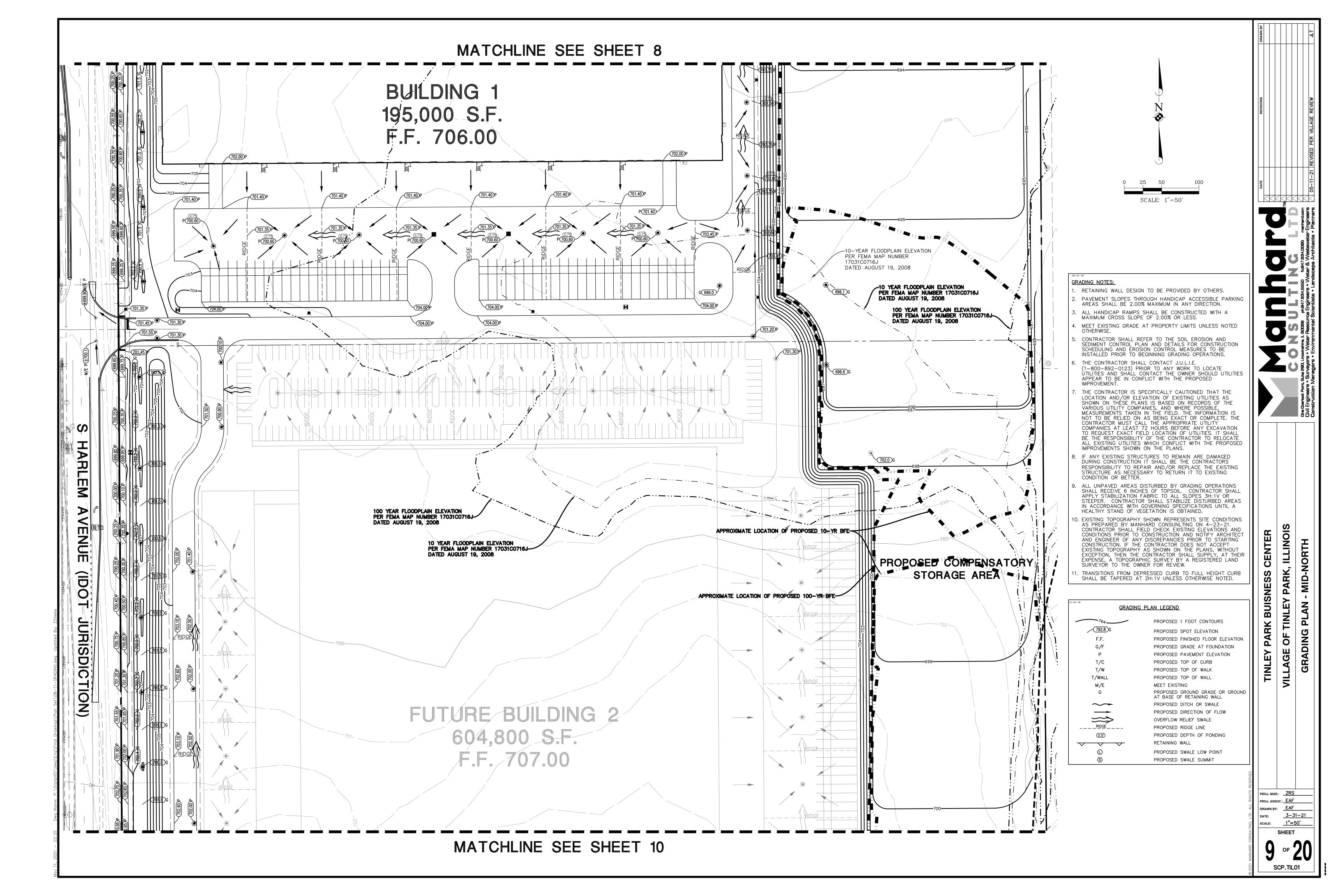
VILLAGE

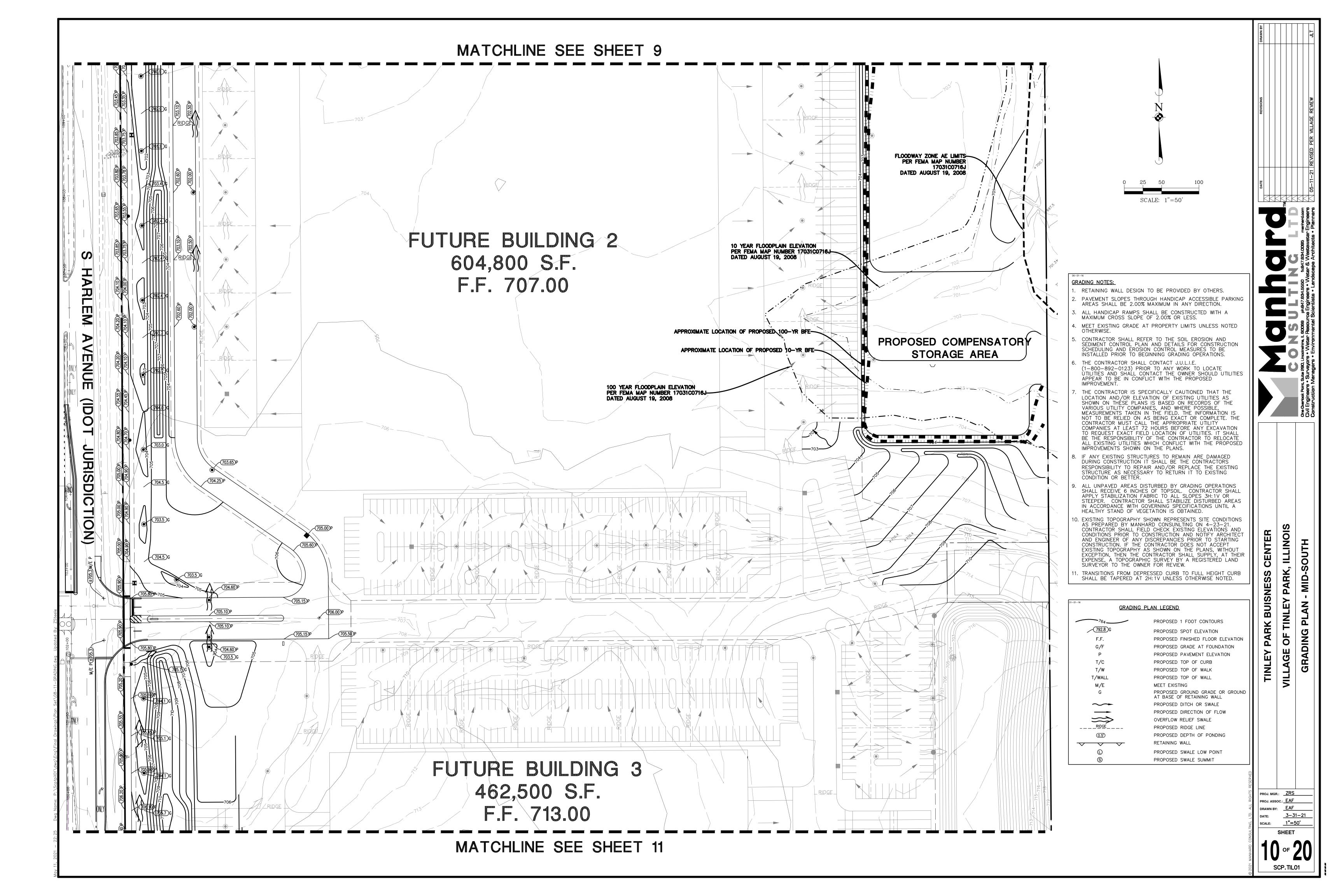
BUISNESS

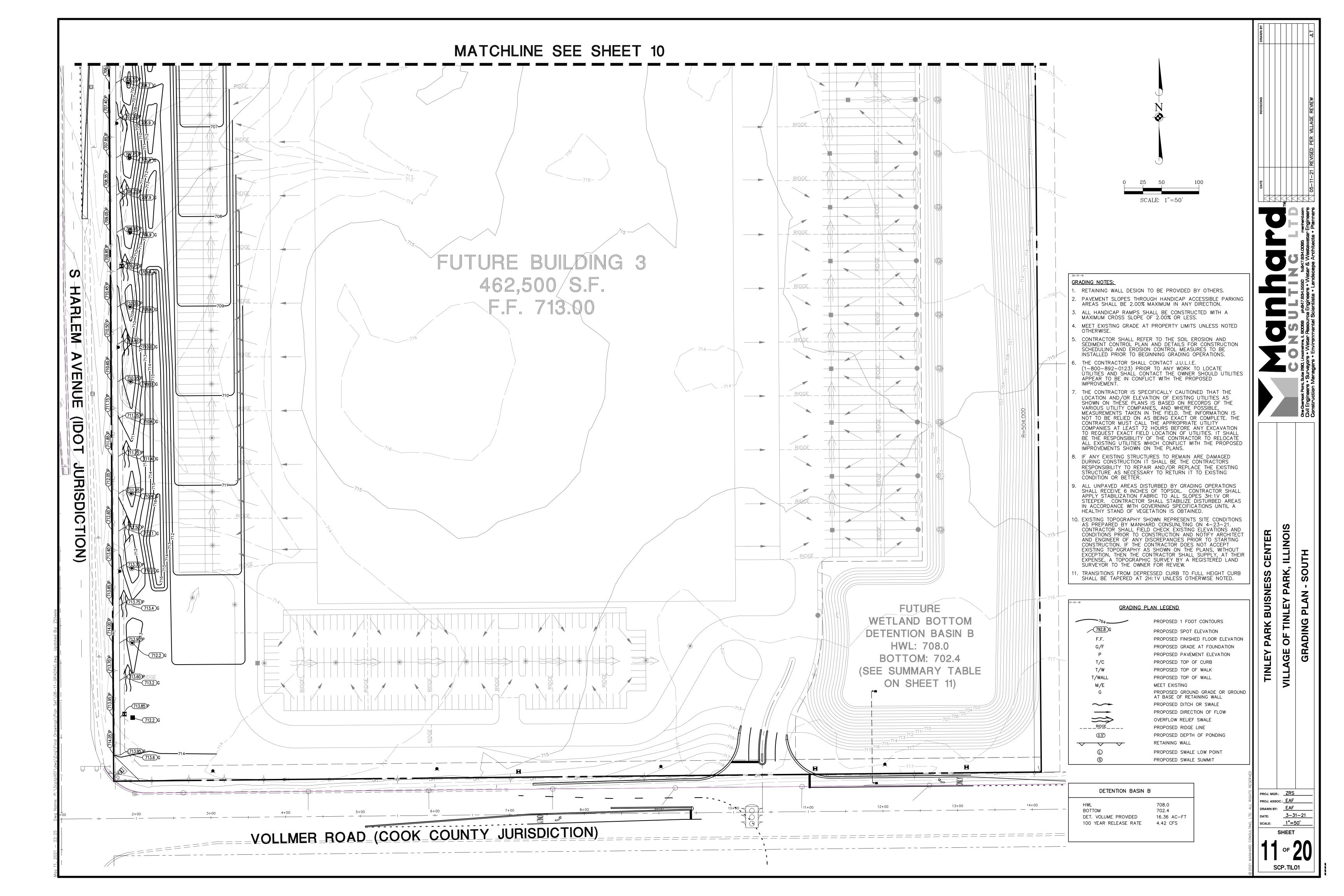


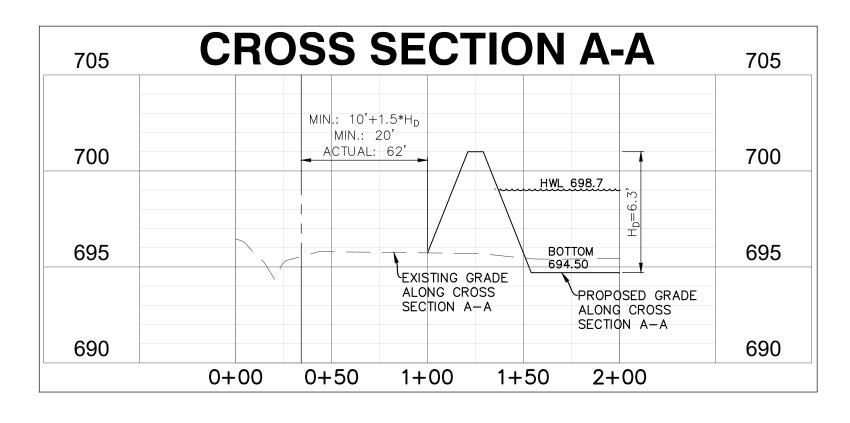


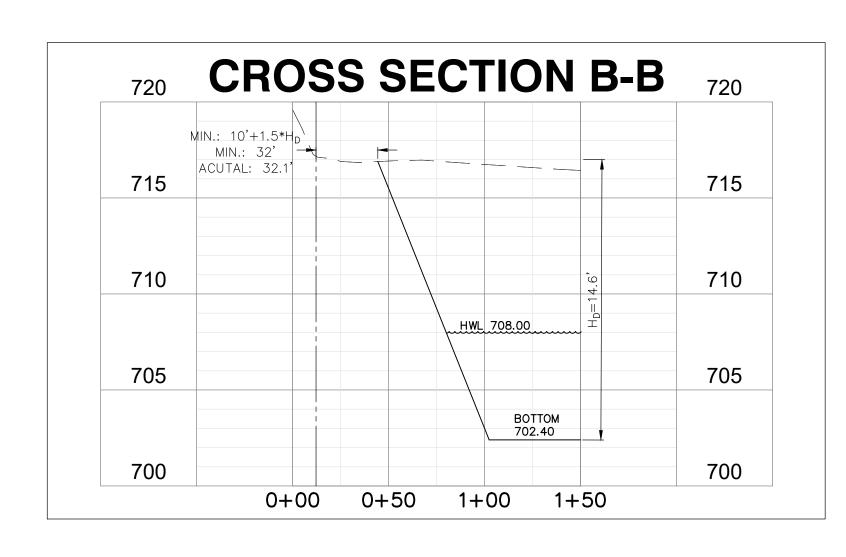


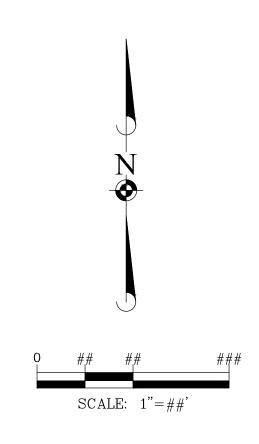












GRADING NOTES:

- RETAINING WALL DESIGN TO BE PROVIDED BY OTHERS.
 PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING
- AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.

 3. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
- 4. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED
- 5. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE

INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.

- 6. 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
 IMPROVEMENT.
- 7. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- 8. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER
- 9. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
- 10. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY

 CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
- 1. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

GRADING PLAN LEGEND				
764	PROPOSED 1 FOOT CONTOURS			
792.8 G	PROPOSED SPOT ELEVATION			
F.F.	PROPOSED FINISHED FLOOR ELEVATION			
G/F	PROPOSED GRADE AT FOUNDATION			
Р	PROPOSED PAVEMENT ELEVATION			
T/C	PROPOSED TOP OF CURB			
T/W	PROPOSED TOP OF WALK			
T/WALL	PROPOSED TOP OF WALL			
M/E	MEET EXISTING			
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL			
\sim	PROPOSED DITCH OR SWALE			
	PROPOSED DIRECTION OF FLOW			
	OVERFLOW RELIEF SWALE			
RIDGE	PROPOSED RIDGE LINE			
0.5)	PROPOSED DEPTH OF PONDING			
	RETAINING WALL			
©	PROPOSED SWALE LOW POINT			
(S)	PROPOSED SWALE SUMMIT			

Trw
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r Engineers
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- Planners

One Dverlook Point, Suite 290, Lincolnshire, IL 60069 ph:847.634.5550 fx847.634.0095 mar Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Er Construction Managers • Environmental Scientists • Landscape Architects • P

TINLEY PARK BUISNESS CENTER
VILLAGE OF TINLEY PARK, ILLINOIS
GRADING CROSS SECTIONS

PROJ. MGR.: ZRS

PROJ. ASSOC.: EAF

DRAWN BY: JLT

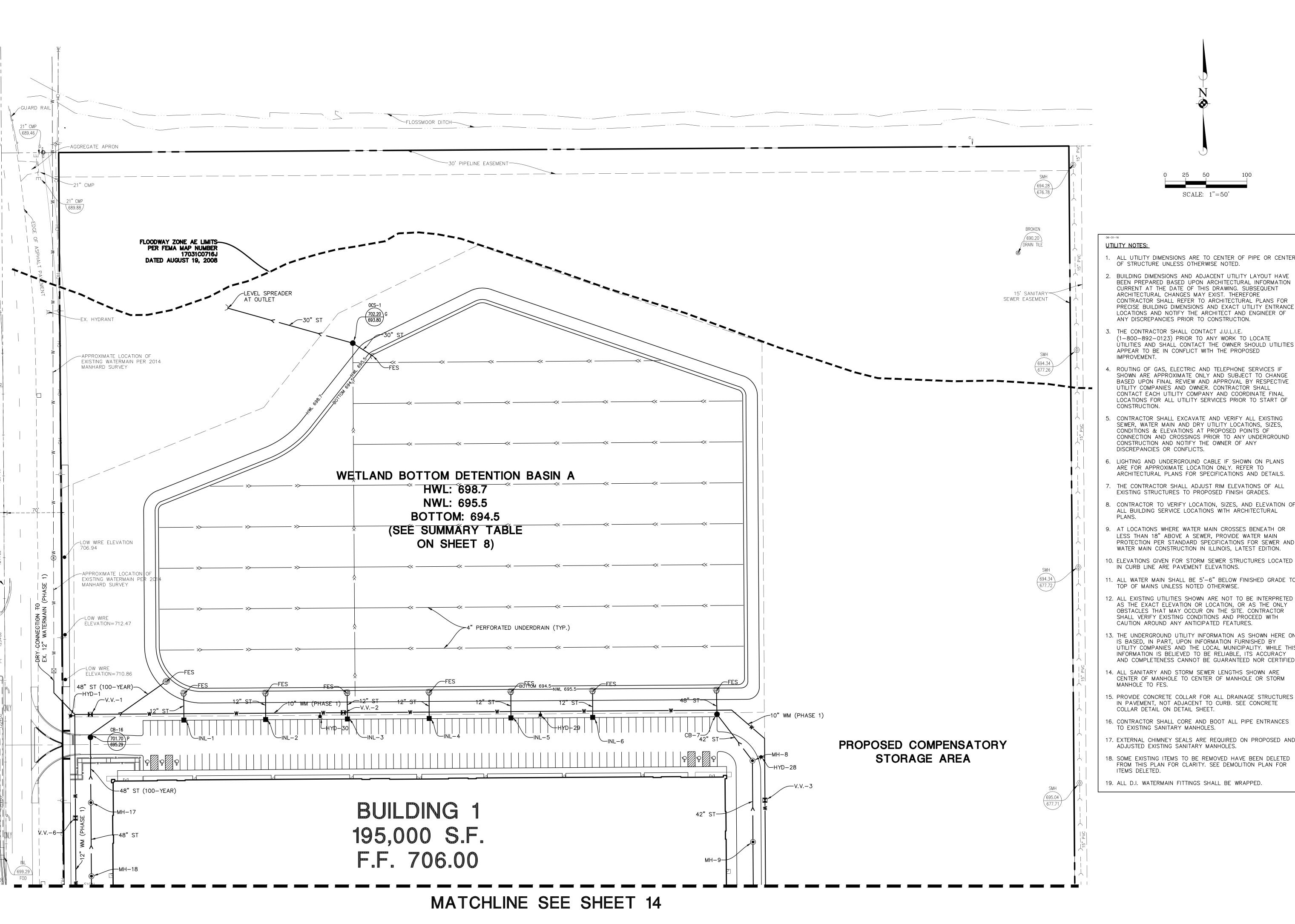
DATE: 3-31-21

SCALE: 1"=XX'

SHEET

12 of 20

SCP. TIL 01



OF STRUCTURE UNLESS OTHERWISE NOTED.

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 LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF

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6. LIGHTING AND UNDERGROUND CABLE IF SHOWN ON PLANS ARE FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATIONS AND DETAILS.

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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

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11. ALL WATER MAIN SHALL BE 5'-6" BELOW FINISHED GRADE TO

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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.

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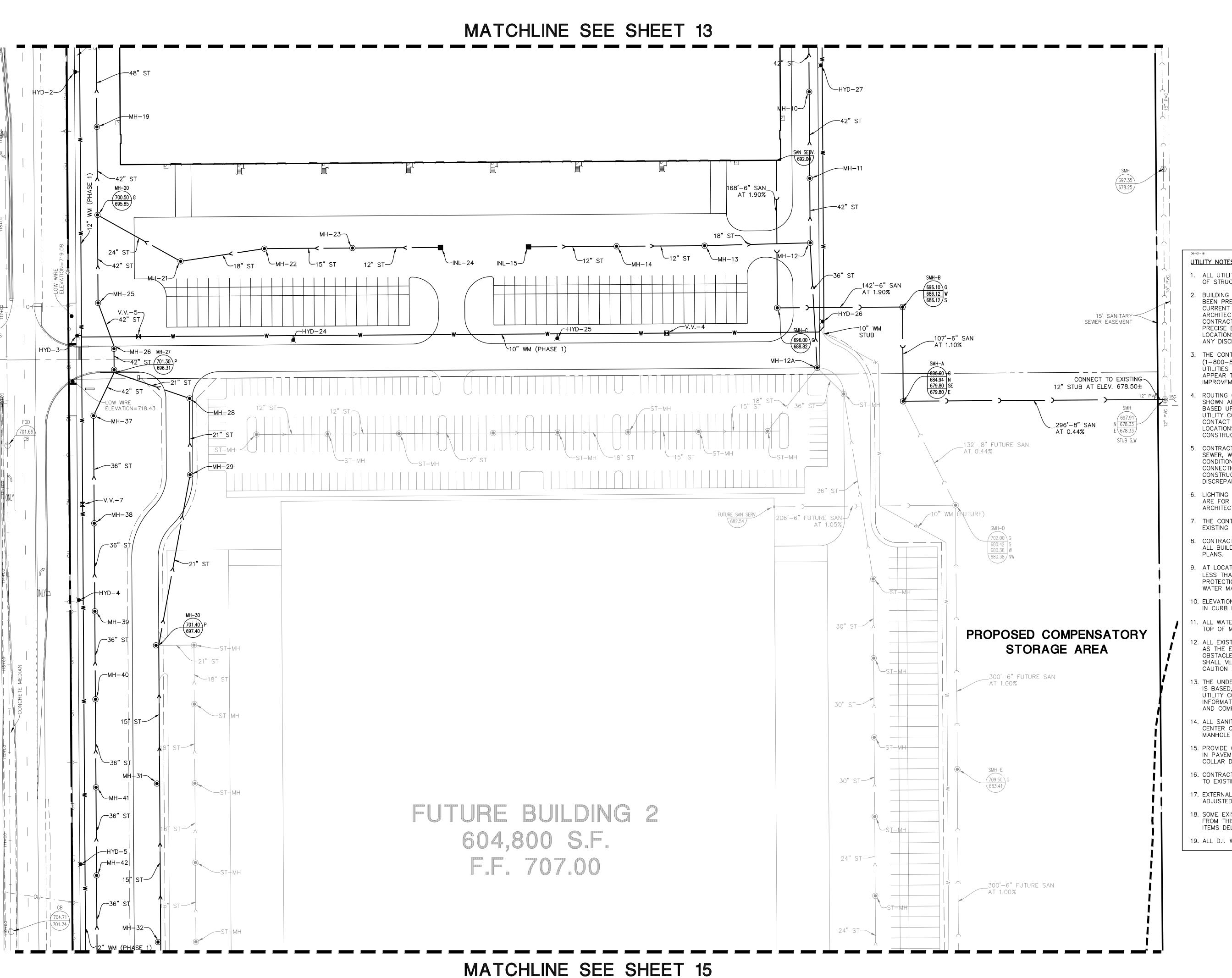
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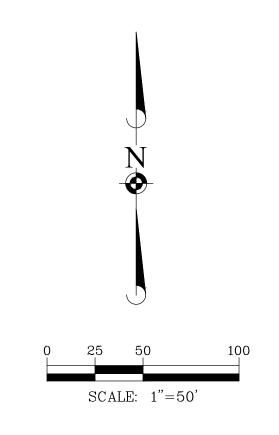
ILLINOIS

OF TINLEY PARK,

BUISNESS

PARK





UTILITY NOTES:

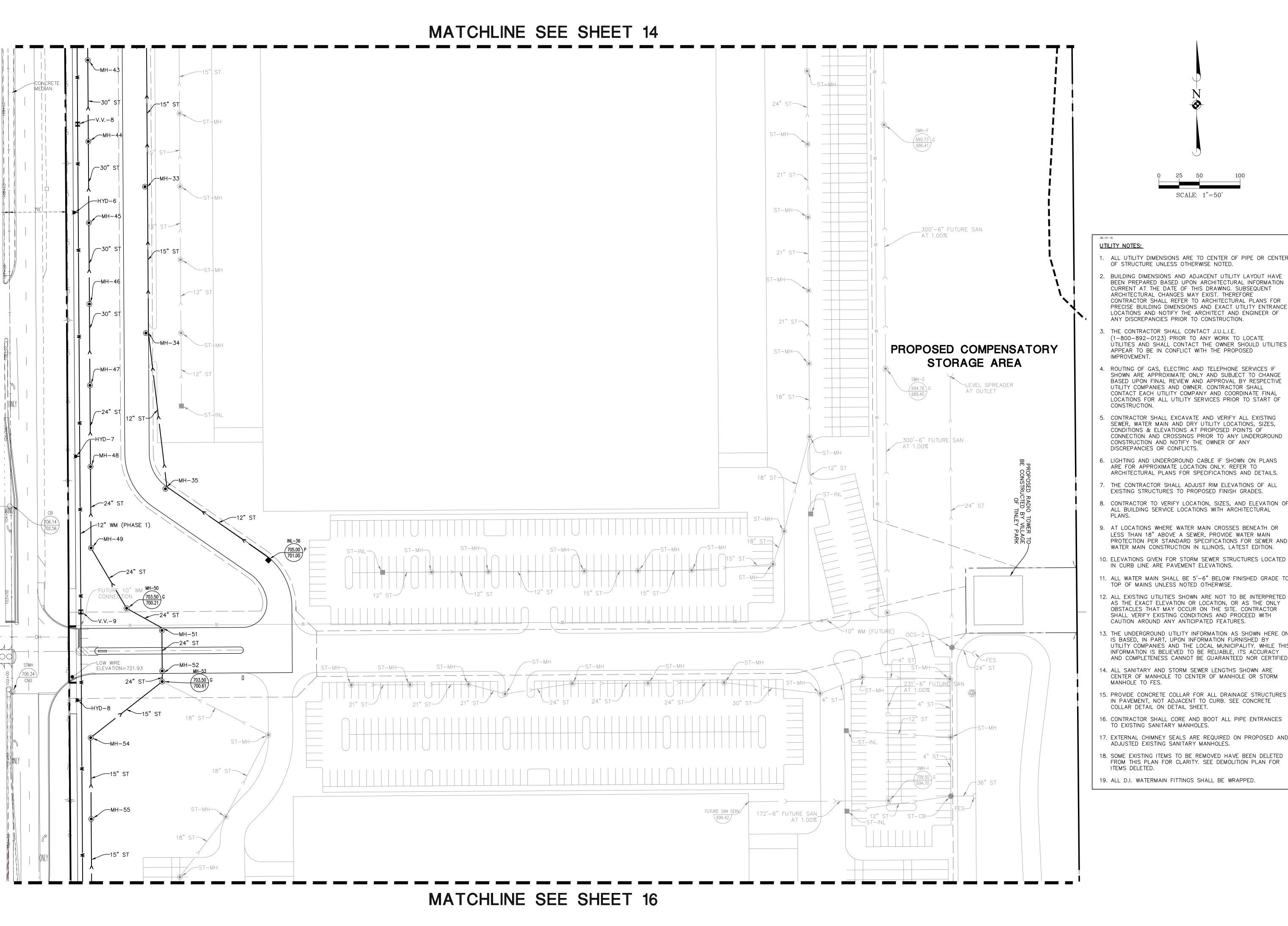
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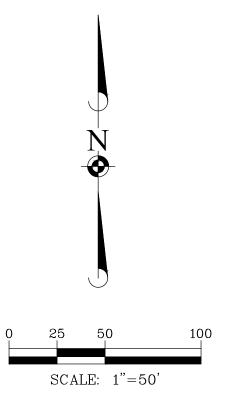
ILLINOIS OF VILLAGE

BUISNESS

PARK

PROJ. MGR.: ZRS 3-31-21 <u>1"=50'</u>





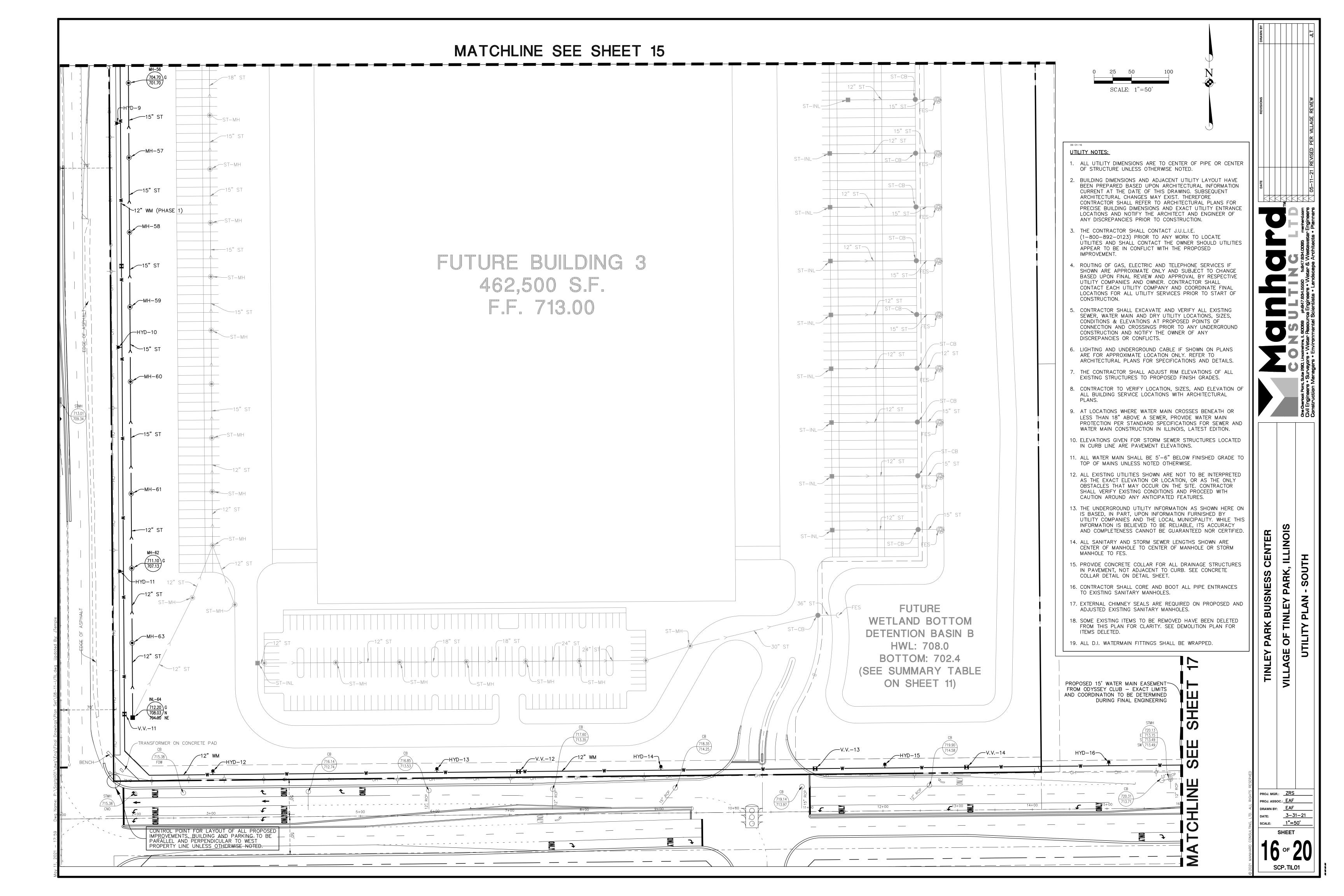
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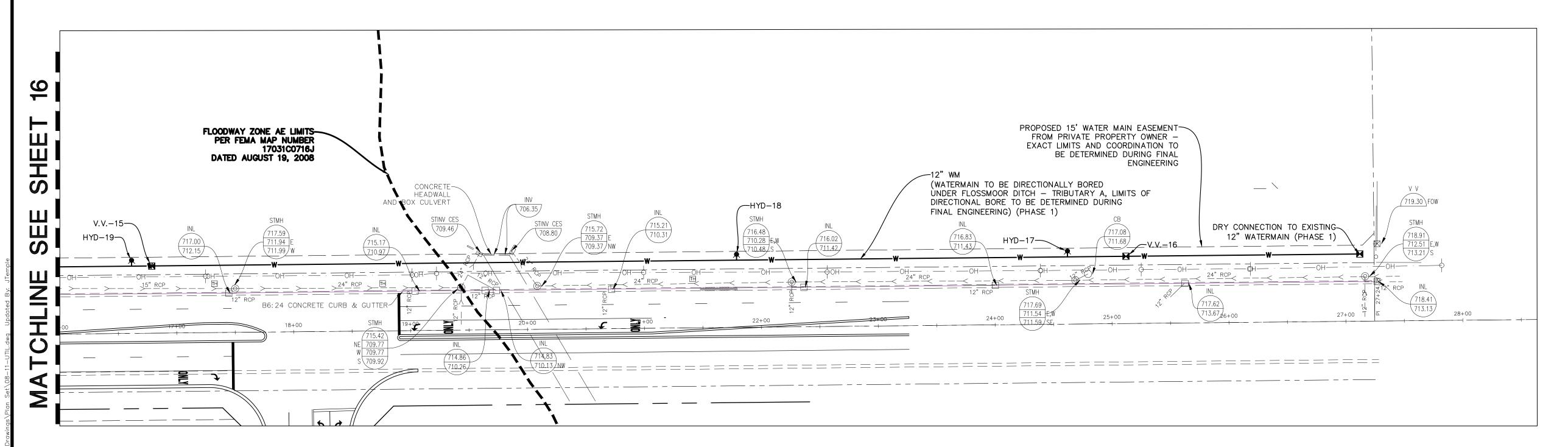
ILLINOIS TINLEY PARK, OF VILLAGE

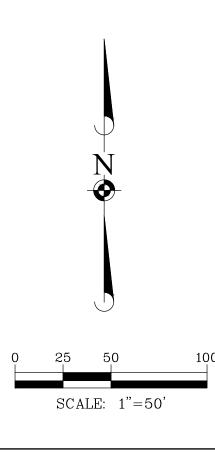
BUISNESS

PARK

PROJ. MGR.: ZRS 3-31-21 <u>1"=50'</u>







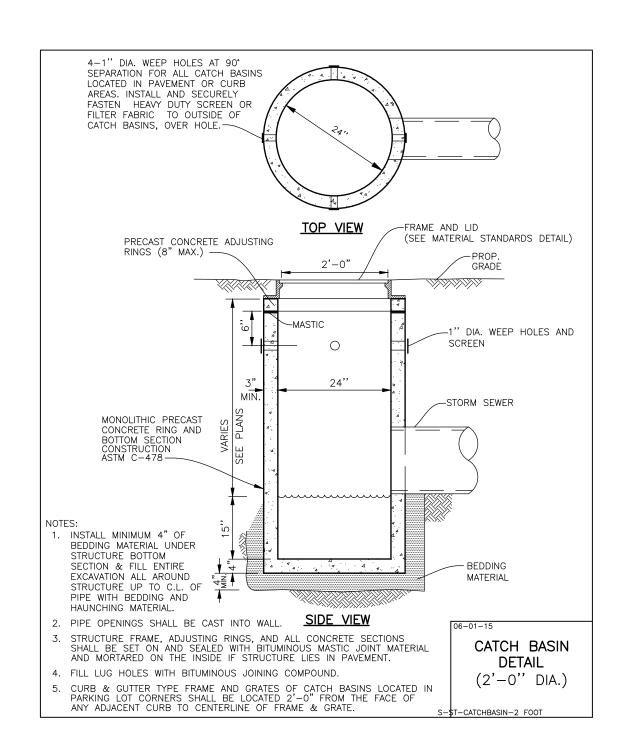
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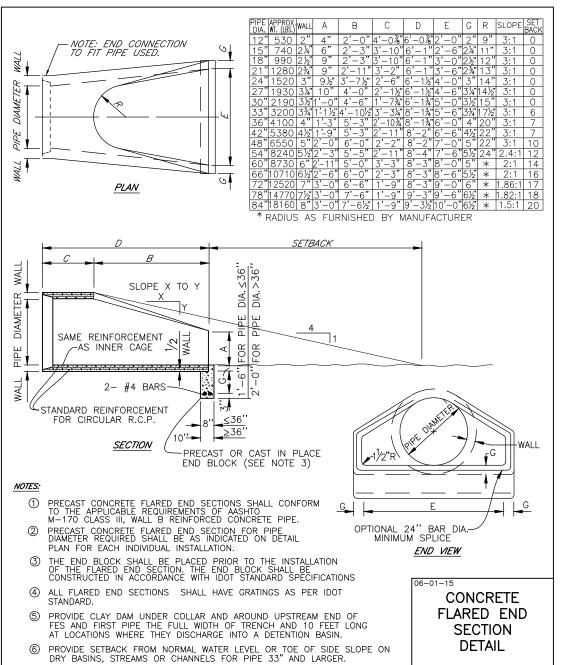
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ILLINOIS OFFSITE PARK, **BUISNESS** TINLEY **PARK** OF GE

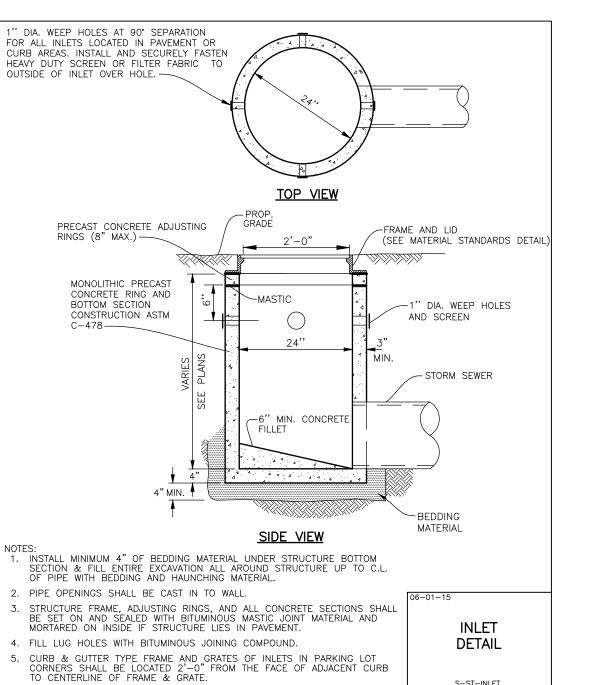
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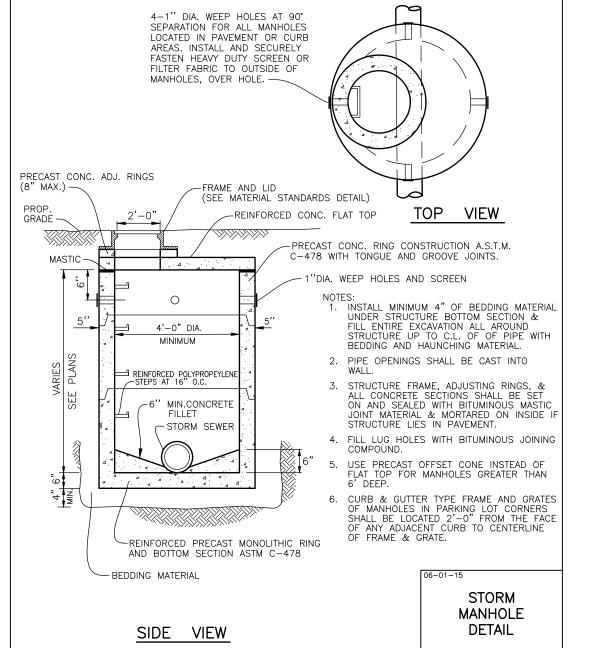
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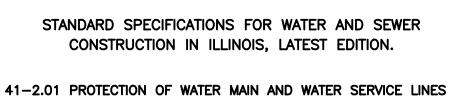




S-ST-FLARED-END





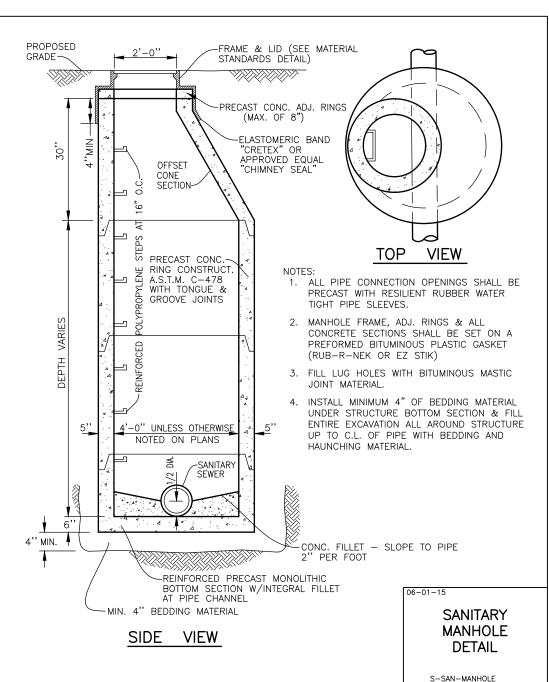


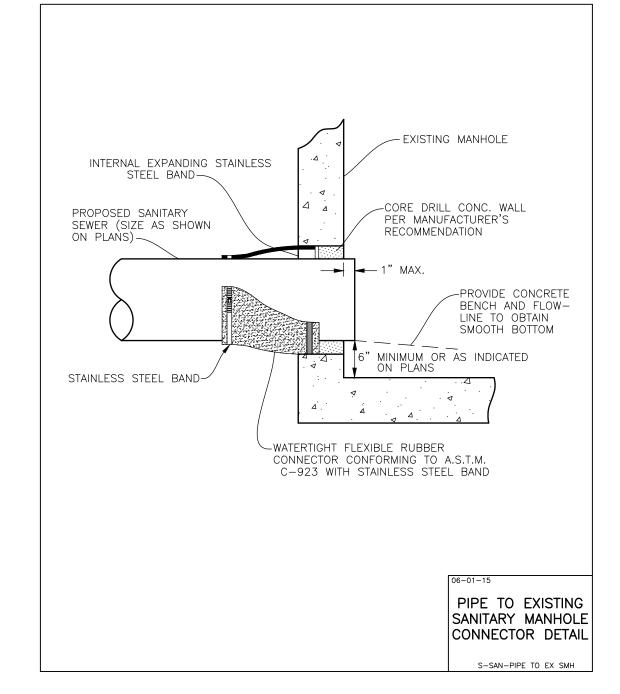
41-2.01A GENERAL Water mains and water service lines shall be protected from sanitary sewers, storm sewers, combined sewers, house sewer service connections

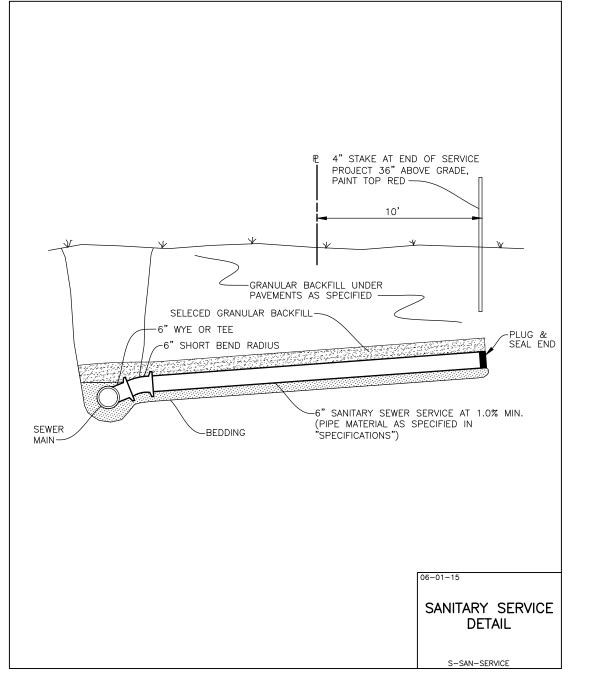
and drains as follows: 41-2.01B HORIZONTAL SEPARATION - WATER MAINS AND SEWERS

- (1.) Water mains shall be located at least ten (10) feet (3.1 m) horizontally from any existing or proposed drain, storm sewer, sanitary sewer, combined sewer or sewer service connection.
- (2.) Water mains may be located closer than ten (10) feet (3.1 m) to a sewer line when:
 - (a) local conditions prevent a lateral separation of ten (10) feet (3.1 m);
 - (b) the water main invert is at least eighteen (18) inches (460 mm) above the crown of the sewer; and
- (c) the water main is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.
- (3.) When it is impossible to meet (1) or (2) above, both the water main and drain or sewer shall be constructed of slip—on or mechanical joint cast or ductile iron pipe, prestressed concrete pipe, or PVC pipe equivalent to water main standards of construction. The drain or sewer shall be pressure tested to the maximum expected surcharge head before backfilling. See Standard Drawing No. 18.







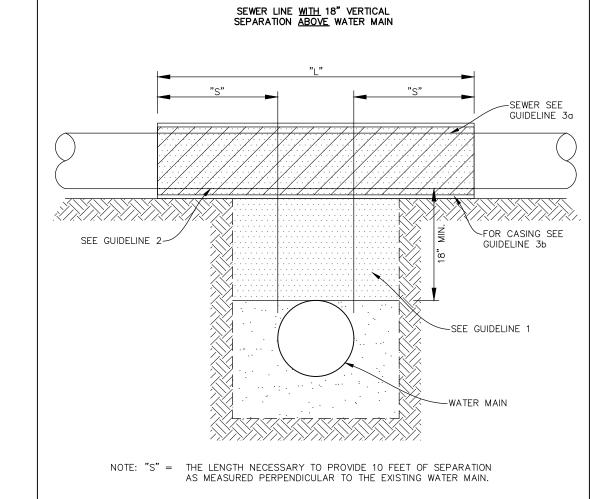


STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS, LATEST EDITION.

41-2.01C VERTICAL SEPARATION - WATER MAINS AND SEWERS

- (1.) A water main shall be separated from a sewer so that its invert is a minimum of eighteen (18) inches (460mm) above the crown of the drain or sewer whenever water mains cross storm sewers, sanitary sewers or sewer service connections. The vertical separation shall be maintained for that portion of the water main located within ten (10) feet (3.1m) horizontally of any sewer or drain crossed. A length of water main pipe shall be centered over the sewer to be crossed with joints equidistant from the sewer or drain.
- (2.) Both the water main and sewer shall be constructed of slip—on or mechanical joint cast or ductile iron pipe, prestressed concrete pipe, or PVC pipe equivalent to water main standards of construction when:
 - (a) it is impossible to obtain the proper vertical separation as described in (1) above; or
 - (b) the water main passes under a sewer or drain.
- (3.) A vertical separation of eighteen (18) inches (460 mm) between the invert of the sewer or drain and the crown of the water main shall be maintained where a water main crosses under a sewer. Support the sewer or drain lines to prevent settling and breaking the main, as shown on the Plans or as approved by the ENGINEER.
- (4.) Construction of water main quality pipe shall extend on each side of the crossing until the perpendicular distance from the water main to the sewer or drain line is at least ten (10) feet (3.1 m) See Standard Drawings

WATER AND SEWER SEPARATION REQUIREMENTS (VERTICAL SEPARATION)



- IF SELECT GRANULAR BACKFILL EXISTS: REMOVE WITHIN WIDTH OF SEWER TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV)
- OMIT SELECT GRANULAR EMBEDMENT AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF SEWER AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT THE LENGTH OF "L" FEET.

. (a) CONSTRUCT "L" FEET OF SEWER OF WATER MAIN MATERIAL AND PRESSURE TEST, OR: (b) USE "L" FEET OF WATER MAIN MATERIAL FOR CASING OF SEWER AND

WATER AND SEWER SEPARATION REQUIREMENTS

(VERTICAL SEPARATION)

FRAME & LID SEE MATERIAL ADJUSTING RINGS STANDARDS DETAIL (8" MAX.) PROPOSED GRADE OFFSET CONE~ THAN 3" FROM EDGE OF FRAME OPENING CONSTRUCTION A.S.T.M. C-478 WITH TONGUE AND GROOVE JOINTS ~PIPE OPENING SHALL I SLEEVE RUBBER WATER TIGHT EX. WATER MAIN-BEDDING MATERIAL-UNLESS OTHERWISE MASONRY THRUST BLOCK--REINFORCED PRECAST FOR FULL WIDTH OF SLEEVE CONC. BOTTOM SECTION INSTALL MINIMUM 4" OF BEDDING MATERIAL UNDER STRUCTURE BOTTOM SECTION & FILL ENTIRE EXCAVATION ALL AROUND STRUCTURE UP TO C.L. OF PIPE WITH BEDDING AND HAUNCHING MATERIAL. PIPE OPENINGS SHALL BE CAST INTO WALL WITH RESILIENT RUBBER PRESSURE

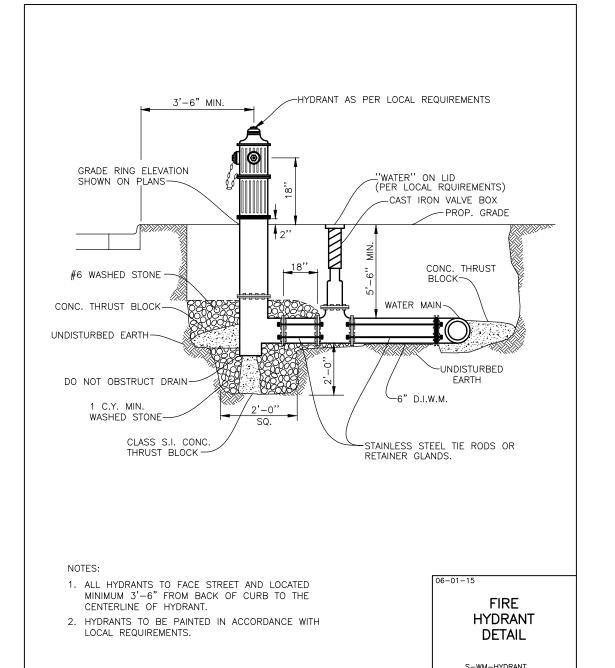
. STRUCTURE FRAME, ADJUSTING RINGS, & ALL CONCRETE SECTIONS SHALL

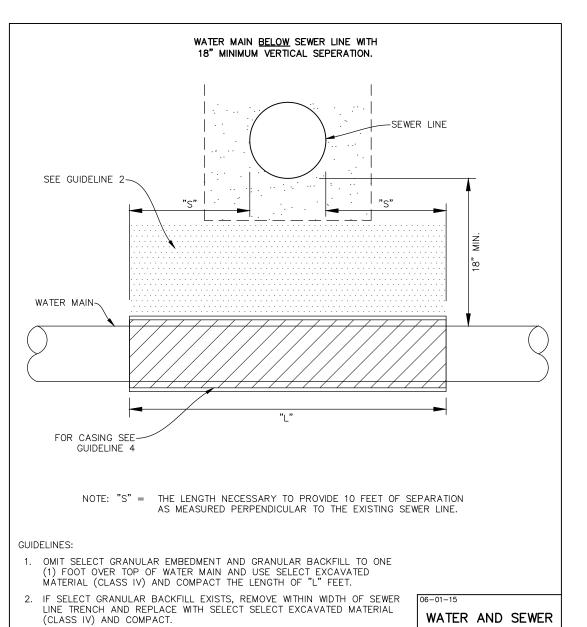
BE SET ON AND SEALED WITH BITUMINOUS MASTIC JOINT MATERIAL.

4. FILL LUG HOLES WITH BITUMINOUS JOINING COMPOUND.

CONNECTION

VAULT DETAIL





PROVIDE ADEQUATE SUPPORT FOR SEWER LINE TO PREVENT DAMAGE DUE

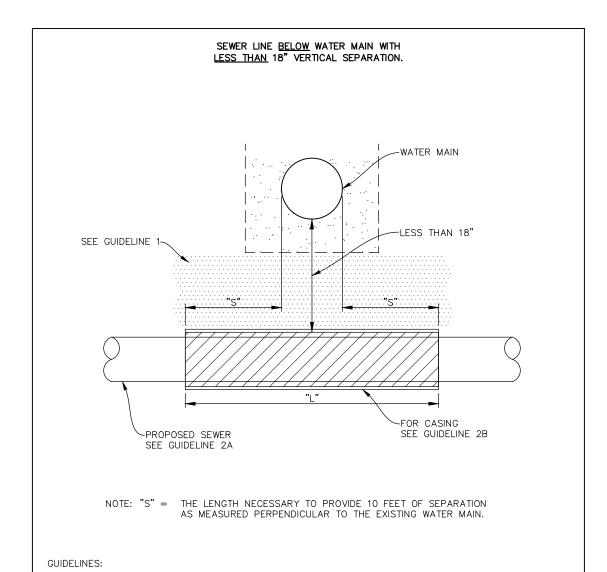
4. USE "L" FEET OF WATER MAIN MATERIAL FOR CASING OF WATER MAIN AND SEAL ENDS OF CASING.

SEPARATION

REQUIREMENTS

(VERTICAL SEPARATION)

S-WM-SEP-VERTICAL-2



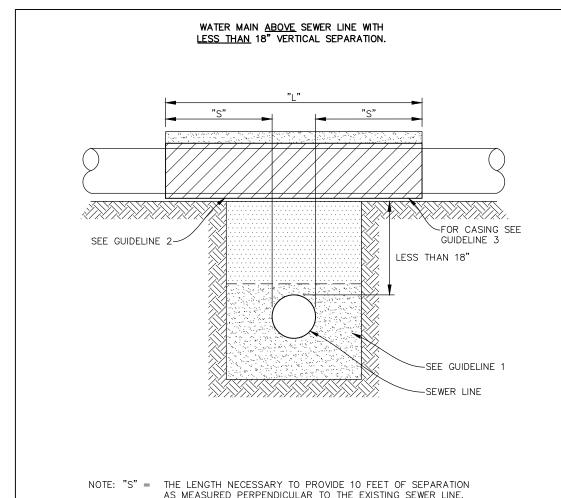
. OMIT SELECT GRANULAR EMBEDMENT AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF SEWER AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT FOR "S" FEET ON EACH SIDE OD WATER MAIN.

SÉWER AND SEAL ENDS OF CASING.

DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH.

- a) CONSTRUCT "L" FEET OF PROPOSED SEWER OF WATER MAIN MATERIAL | WATER AND SEWER AND PRESSURE TEST, OR: b) USE "L" FEET OF WATER MAIN MATERIAL FOR CASING OF PROPOSED
- PROVIDE ADEQUATE SUPPORT FOR EXCAVATING WATER MAIN TO PREVENT

SEPARATION REQUIREMENTS (VERTICAL SEPARATION)



NOTE: "S" = THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPENDICULAR TO THE EXISTING SEWER LINE.

- OMIT SELECT GRANULAR EMBEDMENT AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF WATER MAIN AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT THE LENGTH OF "L".
- IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF EXISTING SEWER LINE TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.

USE "L" FEET OF WATER MAIN MATERIAL FOR CASING OF PROPOSED WATER MAIN AND SEAL ENDS OF CASING. POINT LOADS SHALL NOT BE ALLOWED BETWEEN WATER MAIN CASING AND

PROJ. ASSOC.: <u>EAF</u> SCALE: WATER AND SEWER (VERTICAL SEPARATION)

SEPARATION

REQUIREMENTS

3-31-21 <u>N.T.S.</u> SHEET SCP.TIL01

proj. mgr.: ZRS

ILLINO

TINLEY

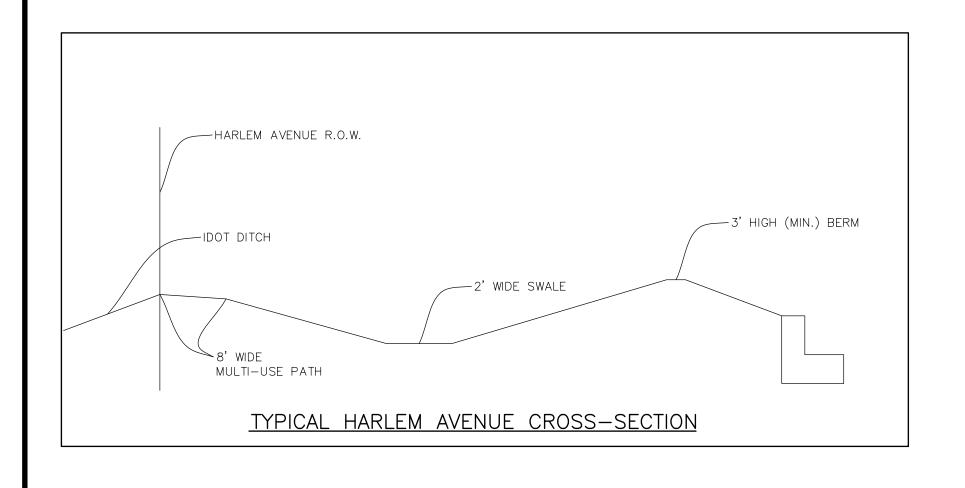
OF

GE

SS

NIS

 $\mathbf{\Omega}$



9.0' (TYP.) HA

90° STALL

TYPICAL 90°

PARKING

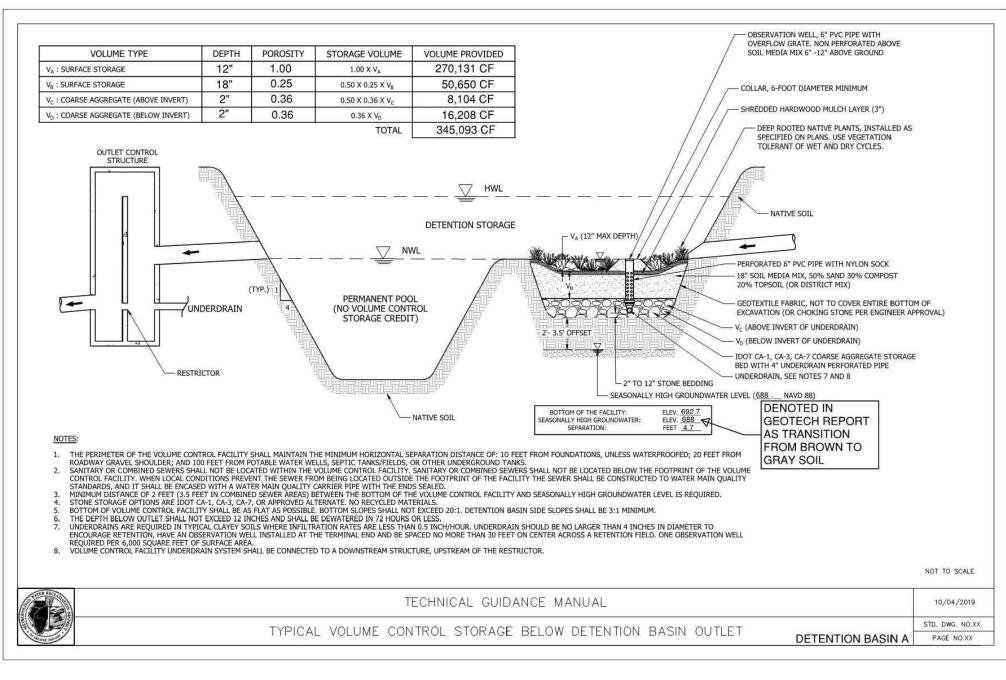
STRIPING DETAIL

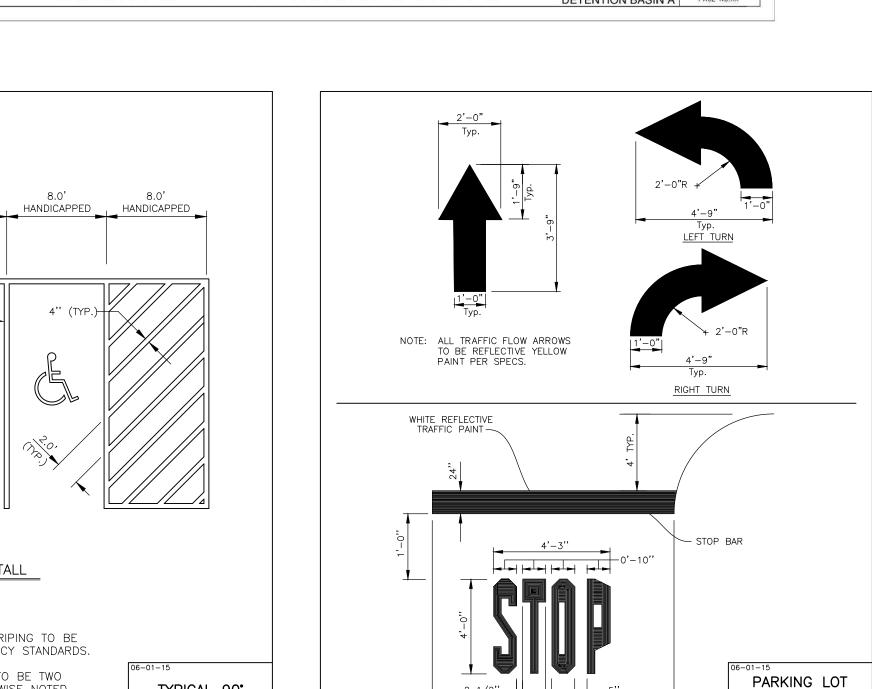
1. HANDICAPPED STALL AND SYMBOL STRIPING TO BE

2. STANDARD PARKING STALL STRIPING TO BE TWO

PER JURISDICTION GOVERNMENT AGENCY STANDARDS.

COATS YELLOW PAINT UNLESS OTHERWISE NOTED.



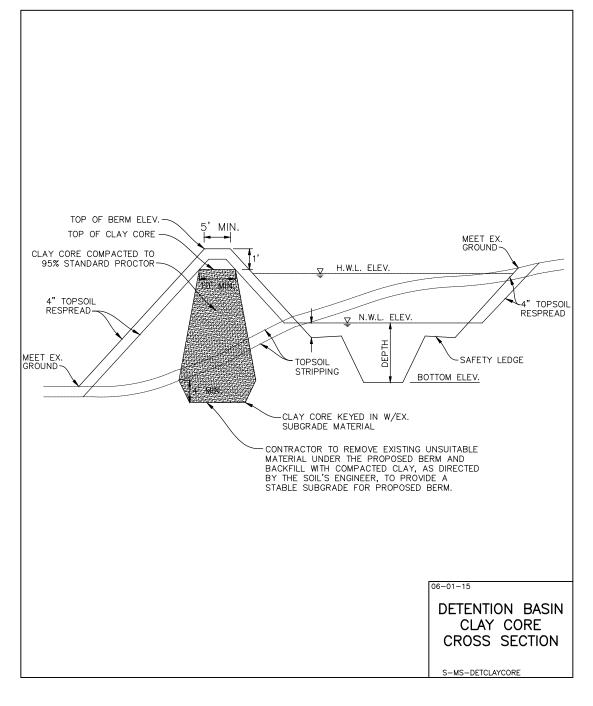


2 1/2"-

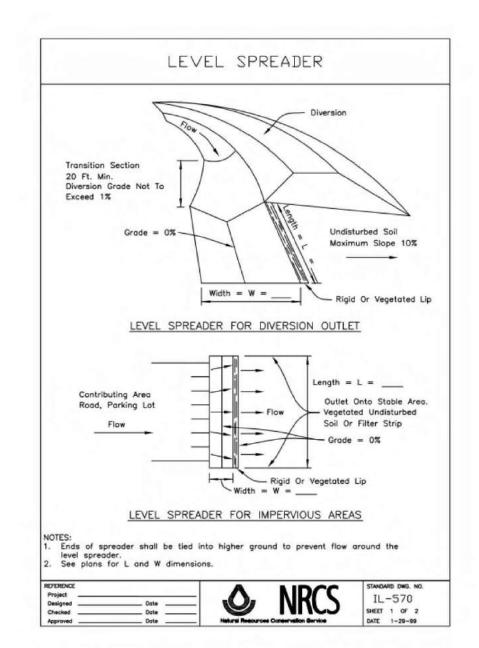
& DRIVE

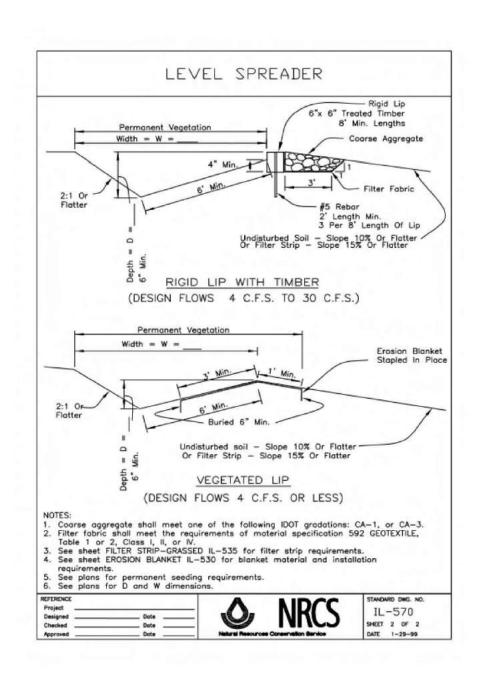
PAVEMENT

MARKING DETAIL



MATE	ERIAL STANDARDS	
ITEM	BRAND	PRODUCT
FIRE HYDRANTS (TRAFFIC MODEL)	MUELLER SUPER CENTURION WATEROUS PACER	A-423 WB-67
GATE VALVES SPECIFY SIZE NON— RISING STEM, 2" NUT, M.J., OPEN LEFT	MUELLER (SIZE) AMERICAN FLOW CONTROL	A-2360-20L SERIES 2500
VALVE BOXES 3 PIECE	EAST JORDAN TYLER/UNION	SCREW ADJUSTING EXTENSION TYPE
CURB STOPS (SPECIFY SIZE)	MUELLER FORD	300 BALL VALVE BALL VALVE
CORPORATION VALVE (SPECIFY SIZE)	MUELLER FORD	H-15000 FB600 (AWWA/CC THREAD)
MANHOLES/CATCHBASINS/INLETS IN OPEN AREAS AND PAVEMENT	NEENAH	
IN OPEN AREAS AND PAVEMENT (SELF-SEALING LID WITH PROPER UTILITY MARKINGS)	CLOSED LID	R-1772
FROFER OTHER MARKINGS)	OPEN LID *1 SWALES AND DITCHES	R-2502 C R-4340 B
MANHOLES/CATCH BASINS/INLETS IN COMBINATION CURB & GUTTER (BICYCLE SAFE)	NEENAH ROLL/MOUNTABLE CURB B6.12 CURB	R-3501-D2A R-3281A *-3281-AL
WATER SERVICE SADDLES (ALL SERVICE SADDLES SHALL BE DOUBLE STRAP; BRONZE, NYLON COATED OR STAINLESS STEEL)	MUELLER FORD SMITH-BLAIR 3/4" & 1"	DR2S FS 303 # 317
<u>B-BOX</u> (AT LEAST 1 1/4" TOP SECTION) ARCH PATTERN PLUG STYLE LID	FORD MUELLER	EA2 CURB BOX
*1 WHEREVER STORMWATER COULD POSSIBLY ENTER STORM STRUCTURE		MATERIAL STANDARDS
	S-MS-MATERIALSTNDS	







TINLEY PARK BUISNESS CENTER
VILLAGE OF TINLEY PARK, ILLINOIS
CONSTUCTION DETAILS

SHEET

19 of 20

SCP.TIL01

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
- 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.

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.

HOLD HARMLESS

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.

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.

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.

services. The CONTRACTOR is responsible for paying for all fees and charges.

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

DETAILED SPECIFICATIONS

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.

CONTRACTOR shall maintain all existing parking areas, 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 with the facility manager to minimize disturbance and inconvenience to facility operations.

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 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

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

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 JURISDICTIONAL GOVERNING ENTITY as requested

The CONTRACTOR shall coordinate all demolition with the JURISDICTIONAL GOVERNING ENTITY and CLIENT to ensure protection and maintenance of sanitary sewer and water utilities as necessary and to provide stormwater conveyance until new facilities are constructed, tested and placed into operation 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

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. 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

II.EARTHWORK

information given in the results thereof.

for work to be performed.

SEEDING

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

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 quarantee 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 The site shall be cleared, grubbed, and trees and stumps removed where designated on the PLANS. Trees designated to remain shall be protected from 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** 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 designated on landscape drawings and specifications provided by the CLIENT.

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

EXCAVATION AND EMBANKMENT 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

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).

oved by the CLIEN	NT HECESSALY IO OD	tairi tilis compa	ction (i.e., soil lac
	Percent		
	Compaction	Pavement &	
Type Material	Standard	Floor Slabs	Grass Areas
Sandy Soils	Modified Proctor	95%	90%
Clayey Soils	Standard Proctor	95%	90%

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%. 2. Any cohesive soil with an unconfined compressive strength of 1.5 tons per square foot or less.
- 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. 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 joints wrapped with fabric, the CONTRACTOR shall install the same.

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 believes that the earthwork will not balance

CONTRACTOR shall construct and maintain any temporary ditches or swales that are necessary to accomplish this prior to beginning mass excavation. **EROSION CONTROL** Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and

It is the intent of these PLANS that storm waters falling on the site be diverted into sedimentation / lake / detention basins during construction. The

Sedimentation Control ordinances and the PLANS.

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

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 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

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.

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 ½" steel reinforcement as manufactured by MA Industries, or approved equal.

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 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.

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

HORIZONTAL AND VERTICAL SEPARATION OF WATER AND SEWER MAINS

B. SANITARY SEWERS AND APPURTENANCES

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 C111/A21 11
- (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.

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".

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

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

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

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

SERVICES

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

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

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

JURISDICTIONAL GOVERNING ENTITY. Videotapes and written report of all television inspections shall be provided to the CLIENT. The form of report and

completion thereof, the sewer shall be retested and such further inspection made as may appear warranted by the CLIENT.

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 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.

mains 16" diameter and larger. Valves shall be non-rising stem and shall close by turning clockwise.

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

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 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.

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

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.

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.

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.

TRACER WIRE 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 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
- (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.

MANHOLES, INLETS & CATCH BASINS

FOUNDATION, BEDDING AND HAUNCHING

CONNECTION FOR STORM SERVICE TO STORM MAIN

Storm sewer shall include bedding and trench backfill.

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

FLARED END SECTION

CA-7, CA-11, CA-14 or CA-15).

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.

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

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,

- 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.

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

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.

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

IV. ROADWAY AND PARKING LOT IMPROVEMENTS

STANDARDS 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

AGGREGATE BASE COURSE TYPE 'B'

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 shall be limited to CA-6 or CA-10 gradation. Aggregate base courses shall be proof rolled as outlined below. PROOF ROLL 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 ½" 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

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

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

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

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

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

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

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. 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 3/4" expansion joint shall be provided when meeting existing sidewalk. **CURB AND GUTTER**

pouring operation will not be allowed.

CONTRACTOR at the CONTRACTOR's expense.

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 ¾" (#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.

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.

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

PAVEMENT MARKING - PAINT

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.

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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proj. mgr.: ZRS PROJ. ASSOC.: EAF

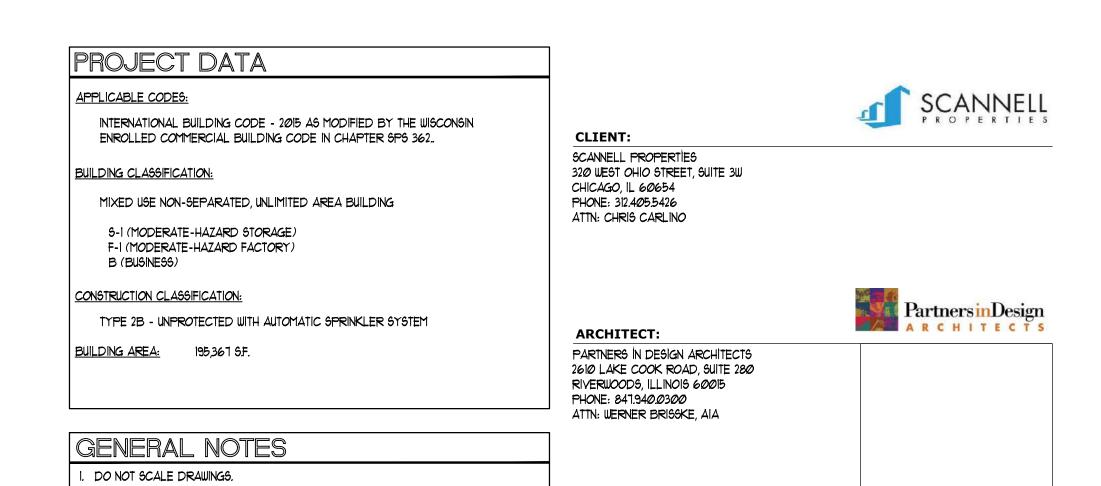
3-31-21 <u>N.T.S.</u> SCALE:



HARLEM AND VOLLMER INDUSTRIAL DEVELOPMENT

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



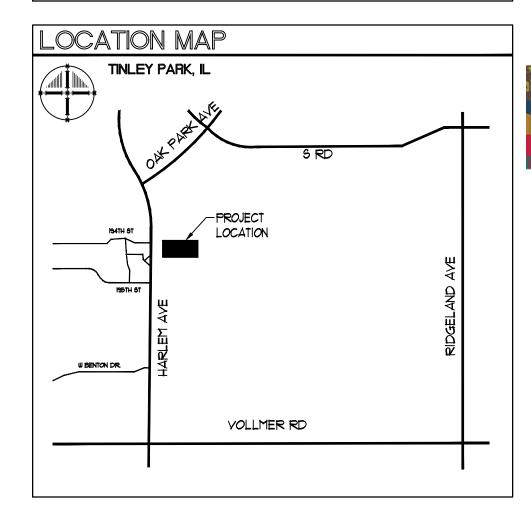


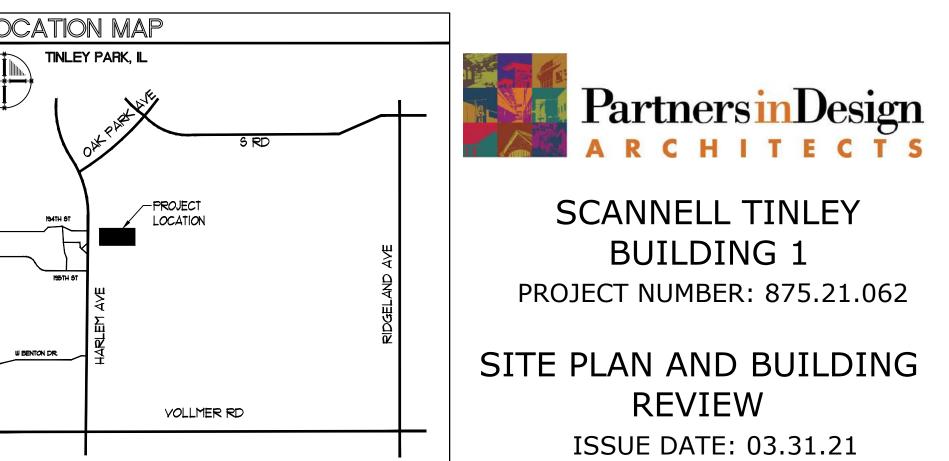
3. EACH CONTRACTOR SHALL REVIEW COMPLETE PLANS FOR RELATED WORK. 4. ALL WORK SHALL BE IN COMPLINCE WITH STATE AND LOCAL CODES FOR RESPECTIVE TRADES. SHEET INDEX TI TITLE SHEET ARCHITECTURAL AI.I SITE PLAN A3.1 OVERALL BUILDING PLAN A4.1 EXTERIOR ELEVATIONS

. CONTRACTOR SHALL FIELD VERIFY AND BECOME THOROUGHLY FAMILIAR WITH ALL

CONDITIONS AND DIMENSIONS.

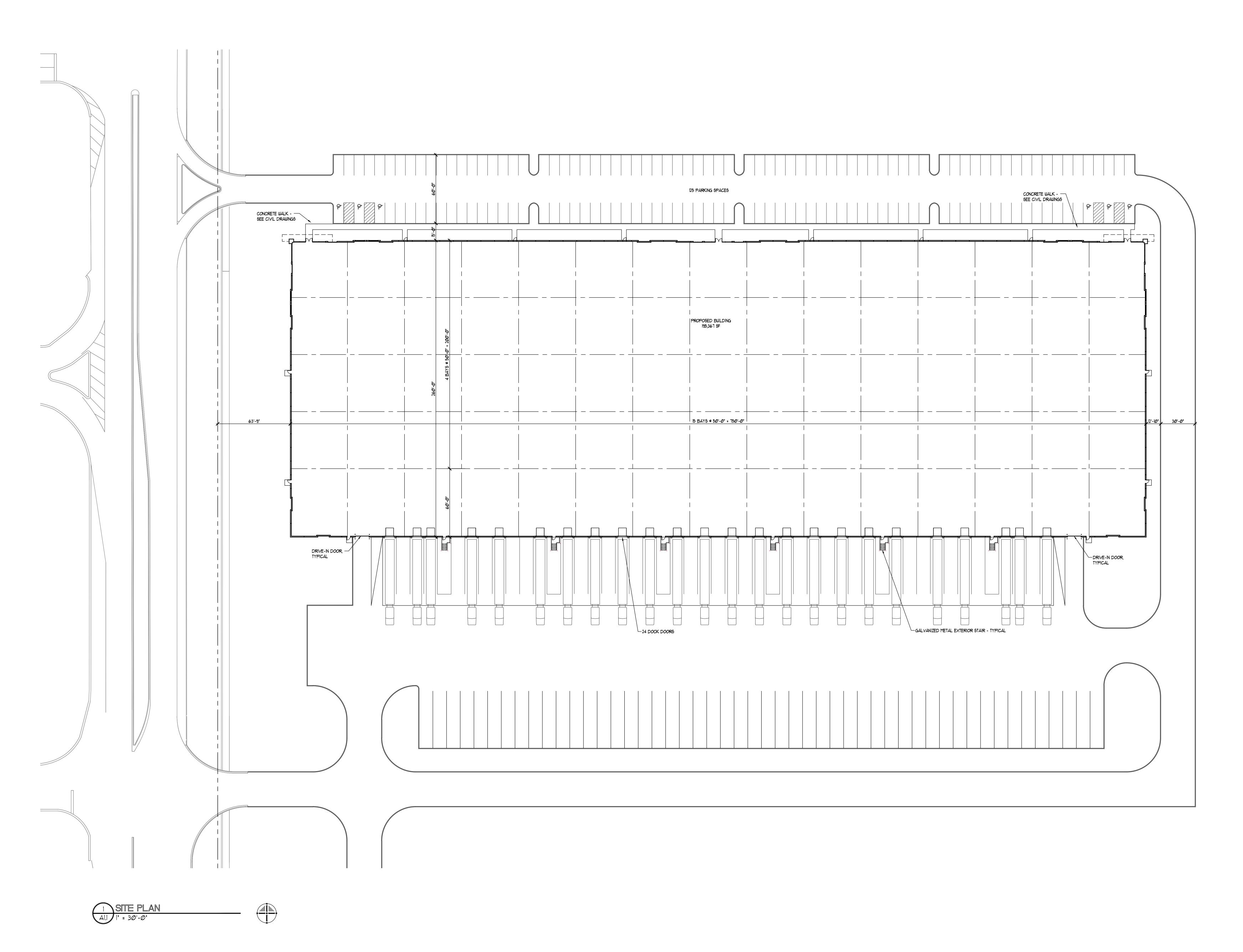
ABBREVIATIONS ARCHITECT/ENGINEER HOLLOW METAL ABOVE FINISH FLOOR HOT WATER INTERIOR INSULATION JOINT CENTER LINE LAVATORY MANUFACTURER CONTROL JOINT CONCRETE MASONRY UNIT MASONRY OPENING NOT IN CONTRACT CONTINUOUS CLEAN OUT NOT TO SCALE COLD WATER ON CENTER CERAMIC TILE OWNER FURNISHED, DOUBLE CONTRACTOR TO DRINKING FOUNTAIN

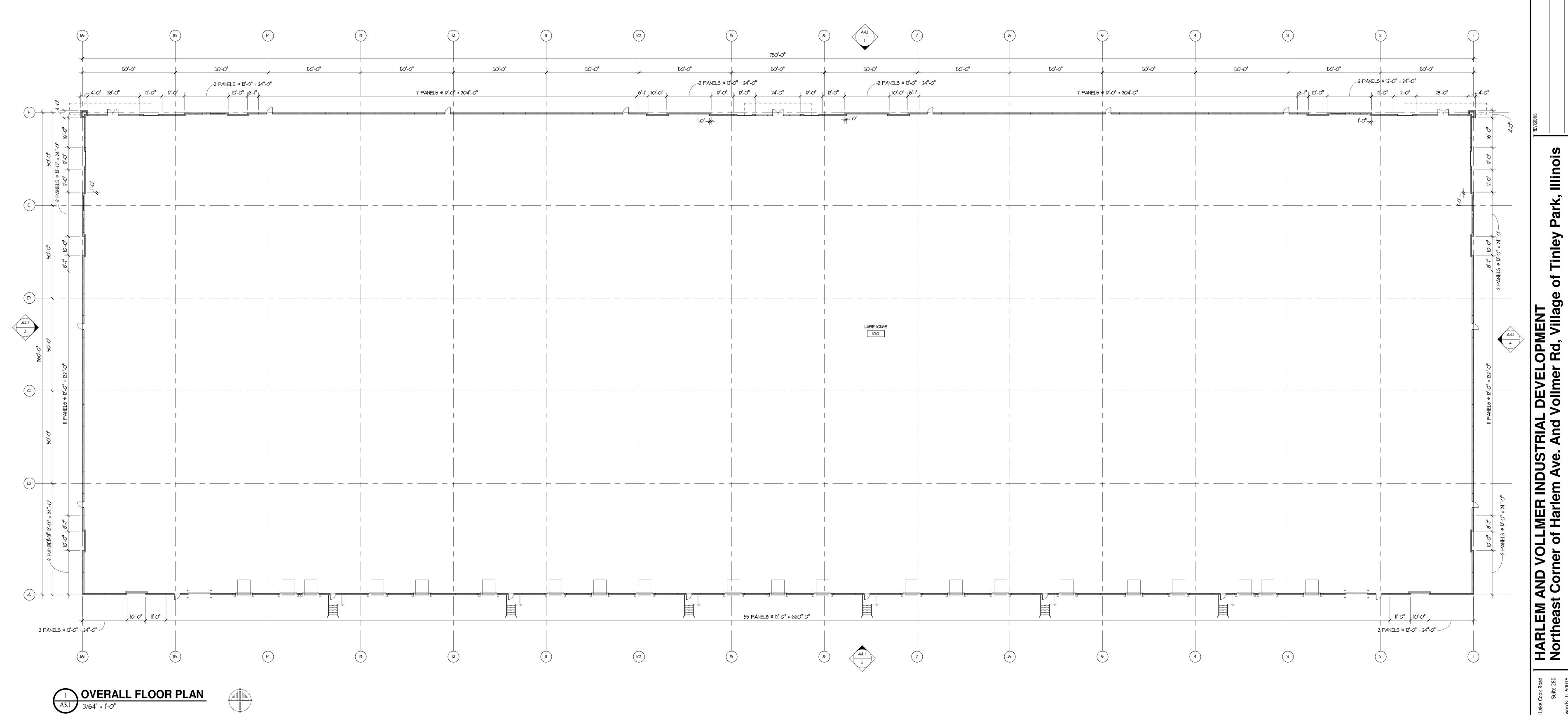




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SHEET NO.:





2610 Lake Cook Road

Suite 280

Riverwoods, 1L 60015

C T S Ph.: (847)940-0300

PartnersinDe

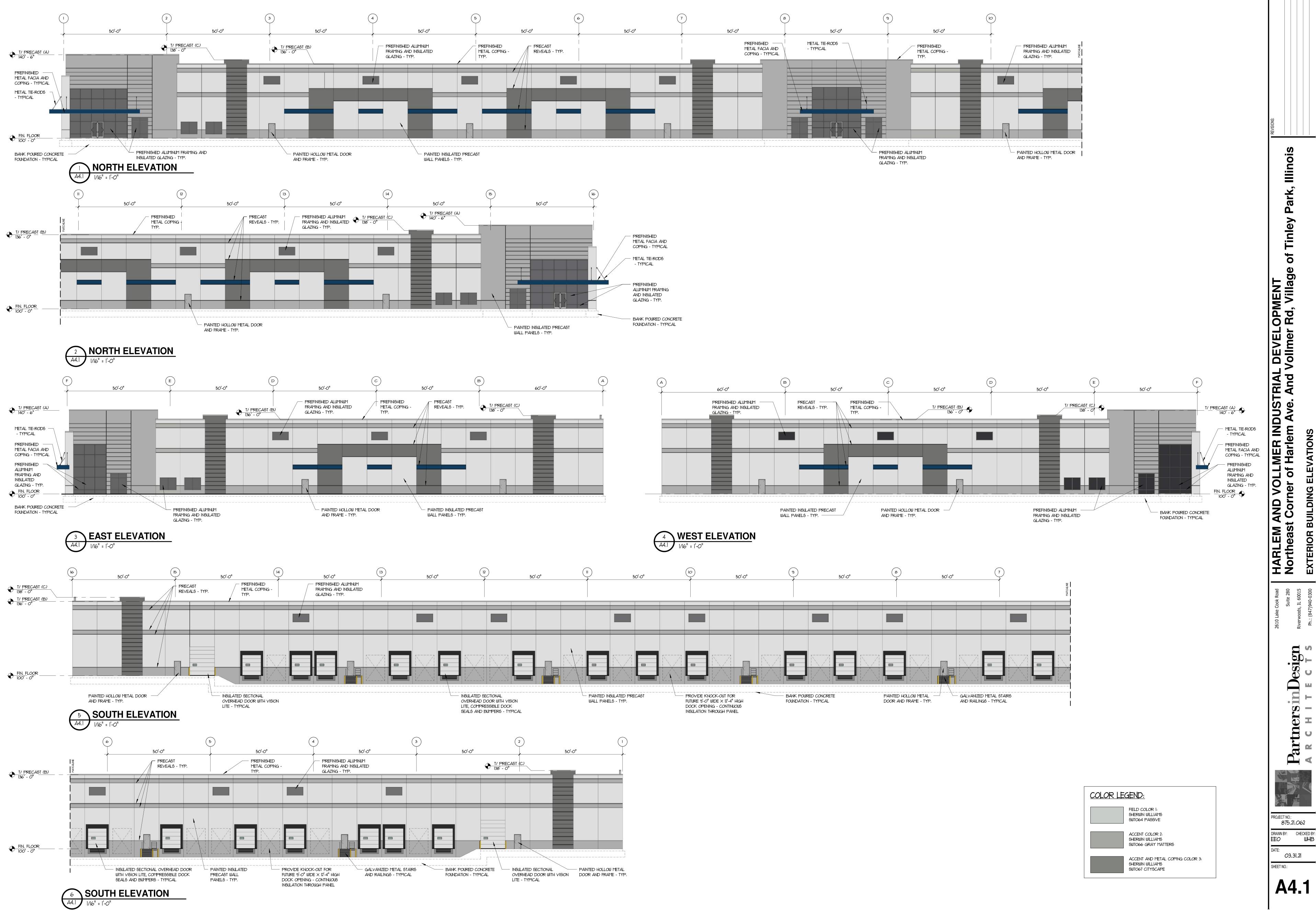


PROJECT NO.:
875.21.062

DRAWN BY: CHECKED BY:
YMS WHB

DATE:
03.31.21

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PRELIMINARY LANDSCAPE PLAN for

TINLEY PARK BUSINESS CENTER

19501-19701 HARLEM AVENUE, TINLEY PARK VILLAGE OF TINLEY PARK, ILLINOIS

	INDEX OF SHEETS		
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

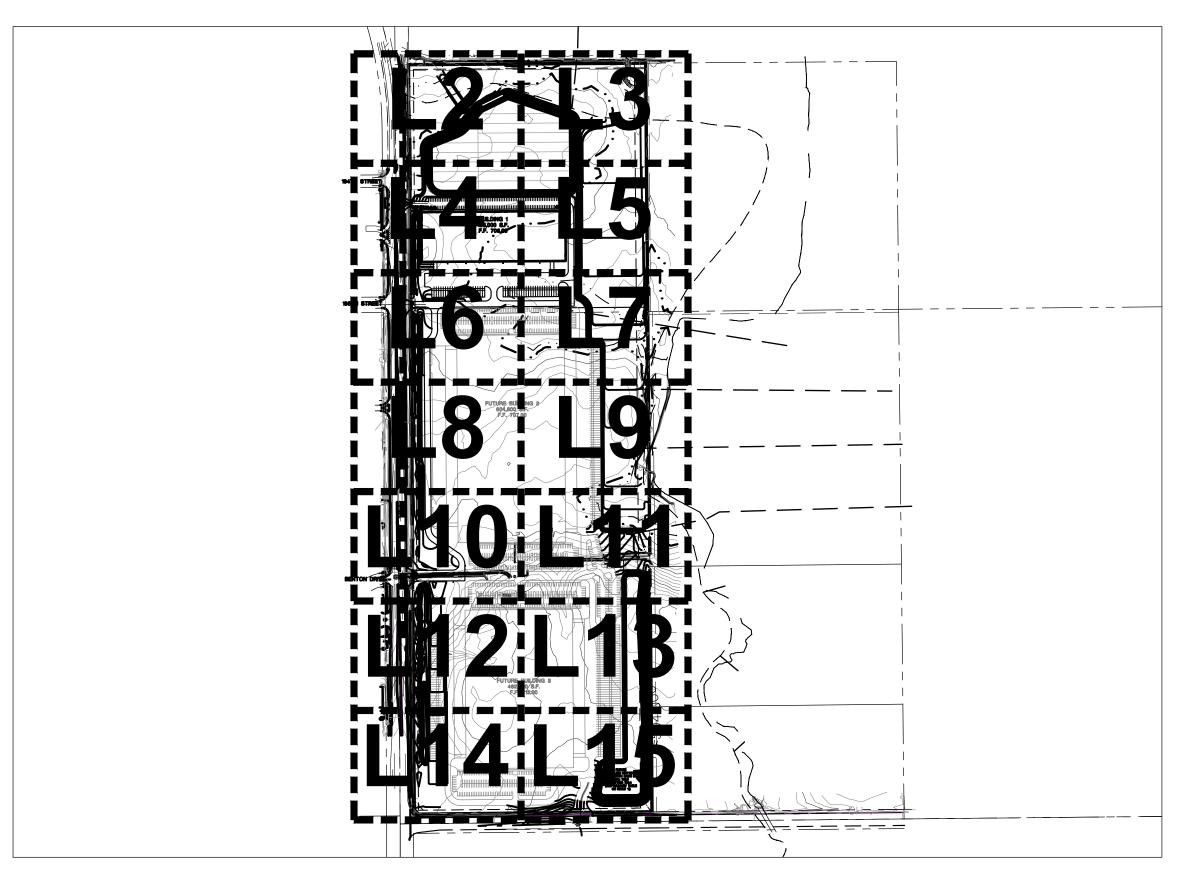
West: 3,413' (3,523'-110' Drives)= 34.13 100' Sections = 120 CT, 48 UT, 478 SH

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.)

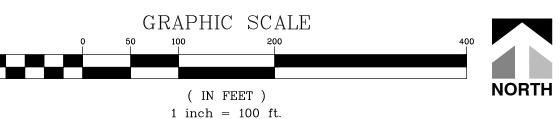
INTERIOR LOT LANDSCAPING

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:

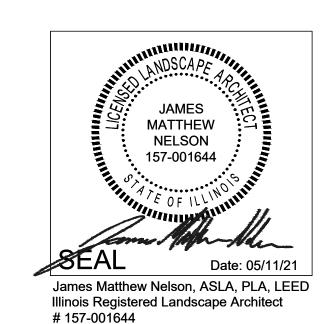
- . Seed/ Sod limit line is approximate. Seed/ Sod to limits of grading and disturbance. Contractor responsible for restoration of any unauthorized disruption outside of designated construction area.
- Contractor responsible for erosion control in all seeded/ sodded areas.
- 3. Tree mulch rings in turf 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.
- 5. All planting, beds shall receive top dressing of mulch. Landscape fabric shall <u>not</u> be installed under mulch.

 6. Do not locate plants within 10' of utility structures or within 5' horizontally of underground utility lines unless otherwise.
- 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 Lymp Sym Contracts, plants and other materials are quantified and symmetrized for the convenience of the Owner and jurisdictional agencies.
- 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 required to complete the work as drawn and specified.
- 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,
 - The request will be accompanied by at least three notices from plant material suppliers that the plant material specified is not available and will
 not be available prior to construction.
- 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 resulting from his work at no additional cost to the owner.
- 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.

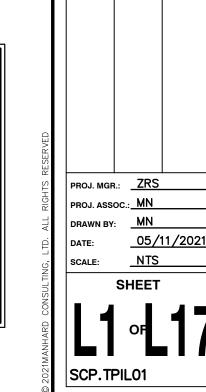
CONCEPT PLANT SCHEDULE

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



Expires 08/31/2021





PARK

TINLEY

AVENUE,

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HARLEI

-19701

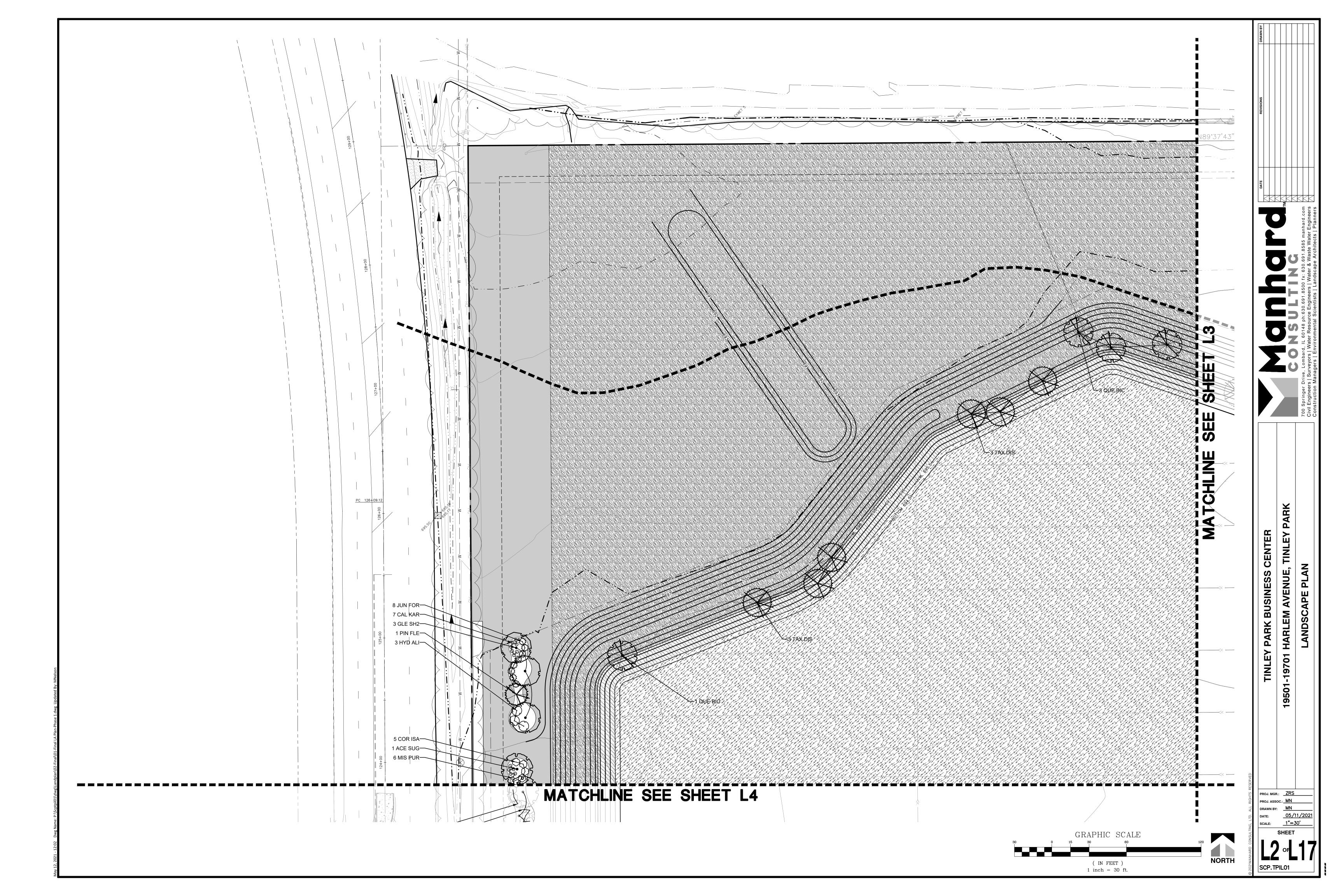
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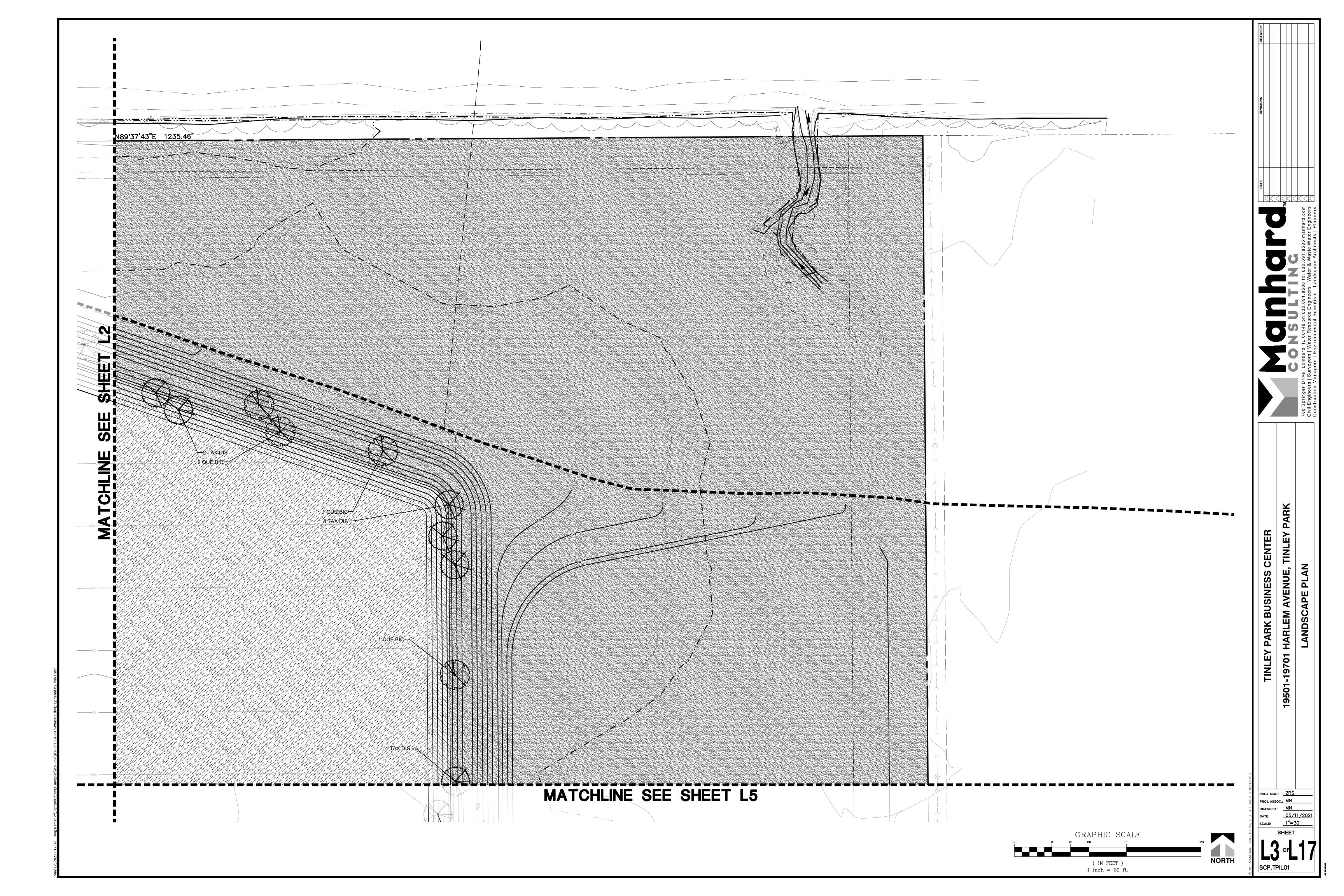
BUSINESS

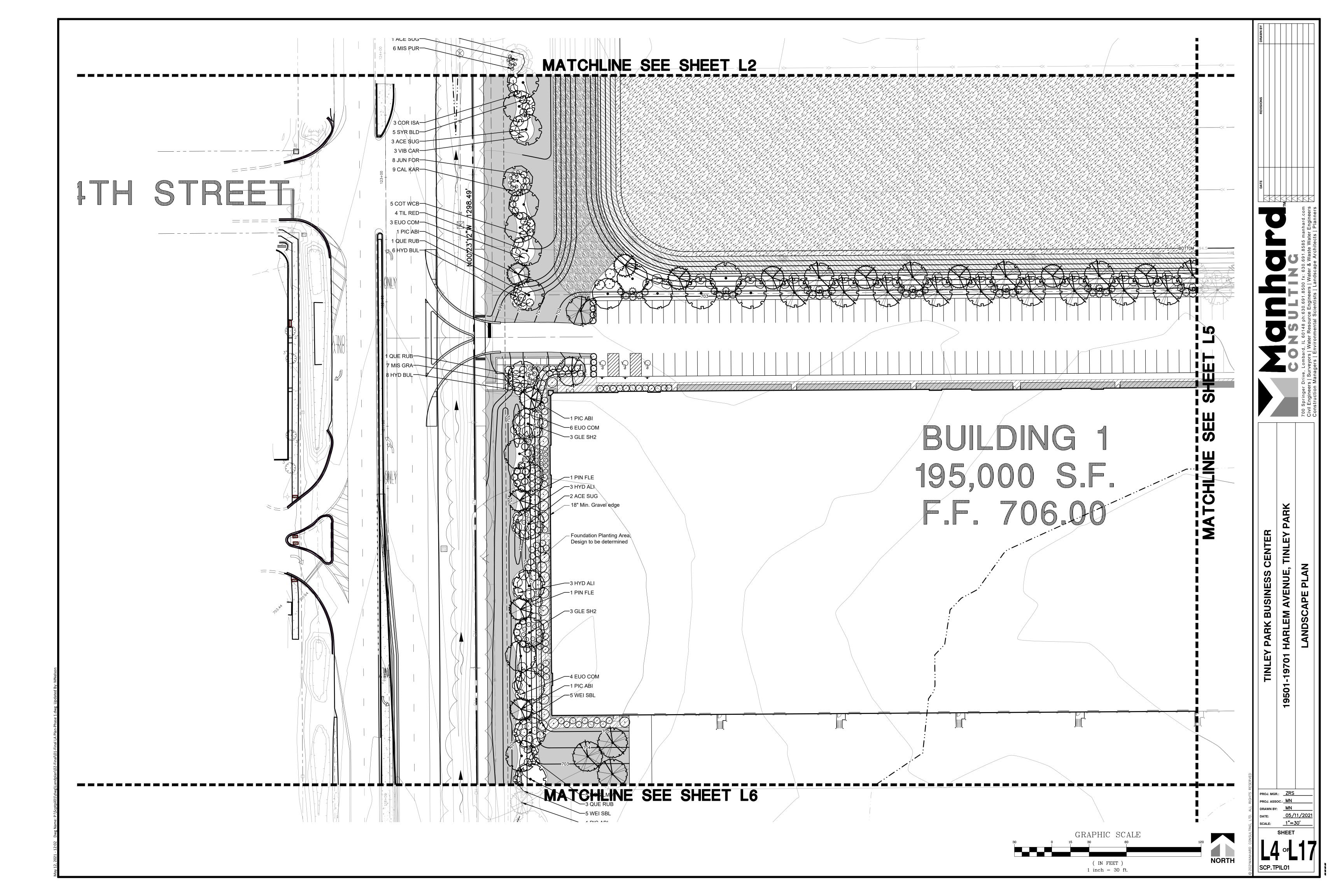
PARK

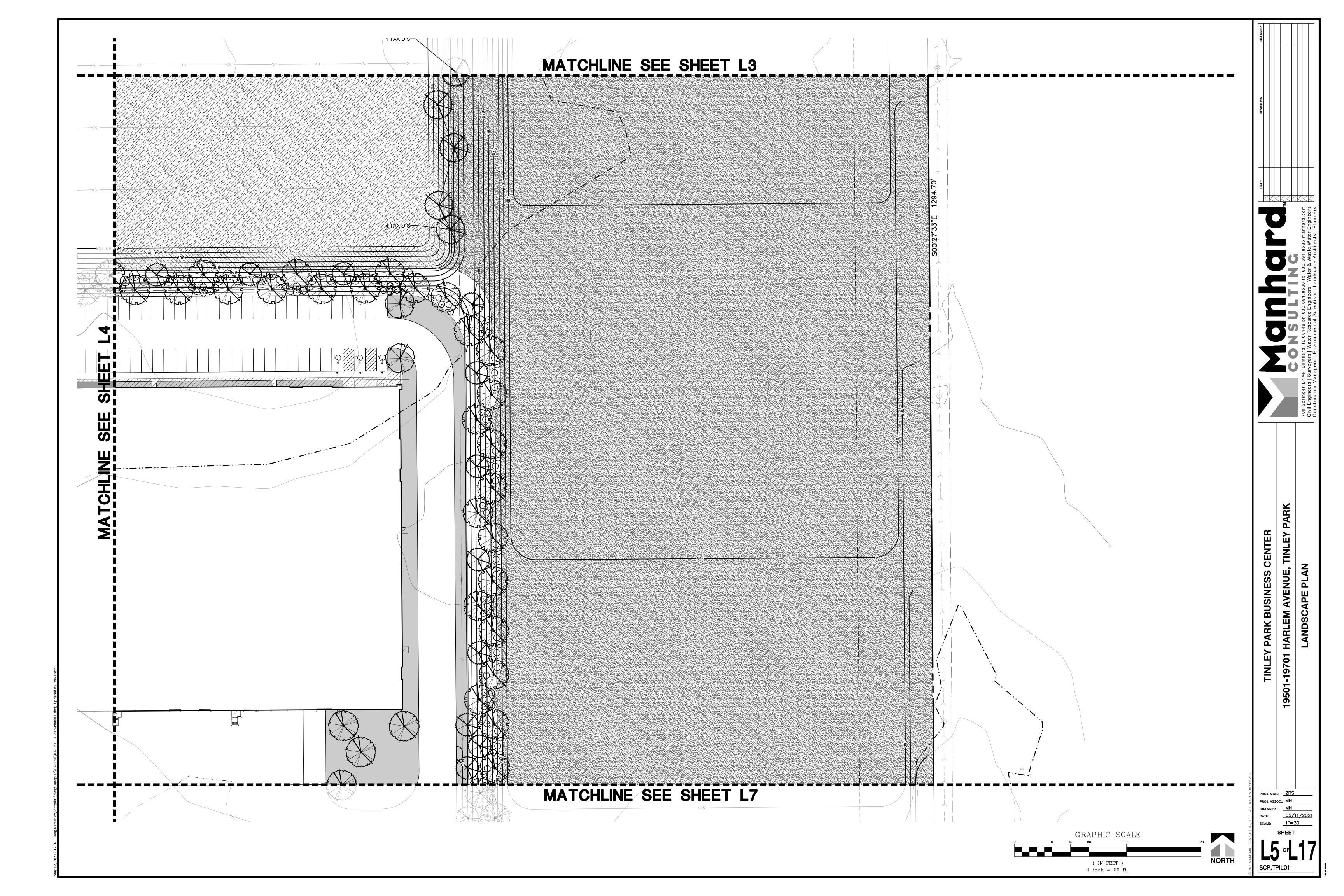
SUMM

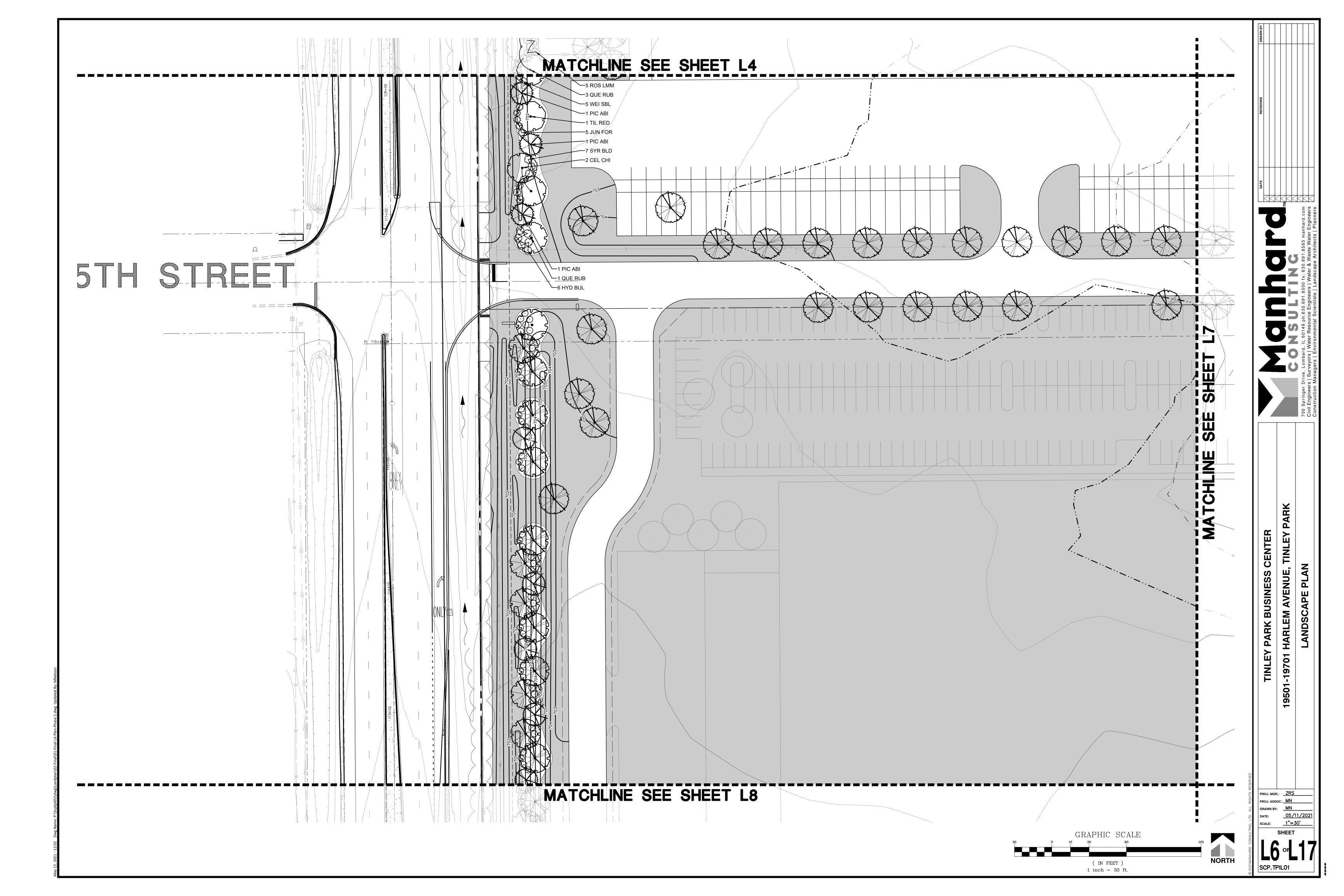
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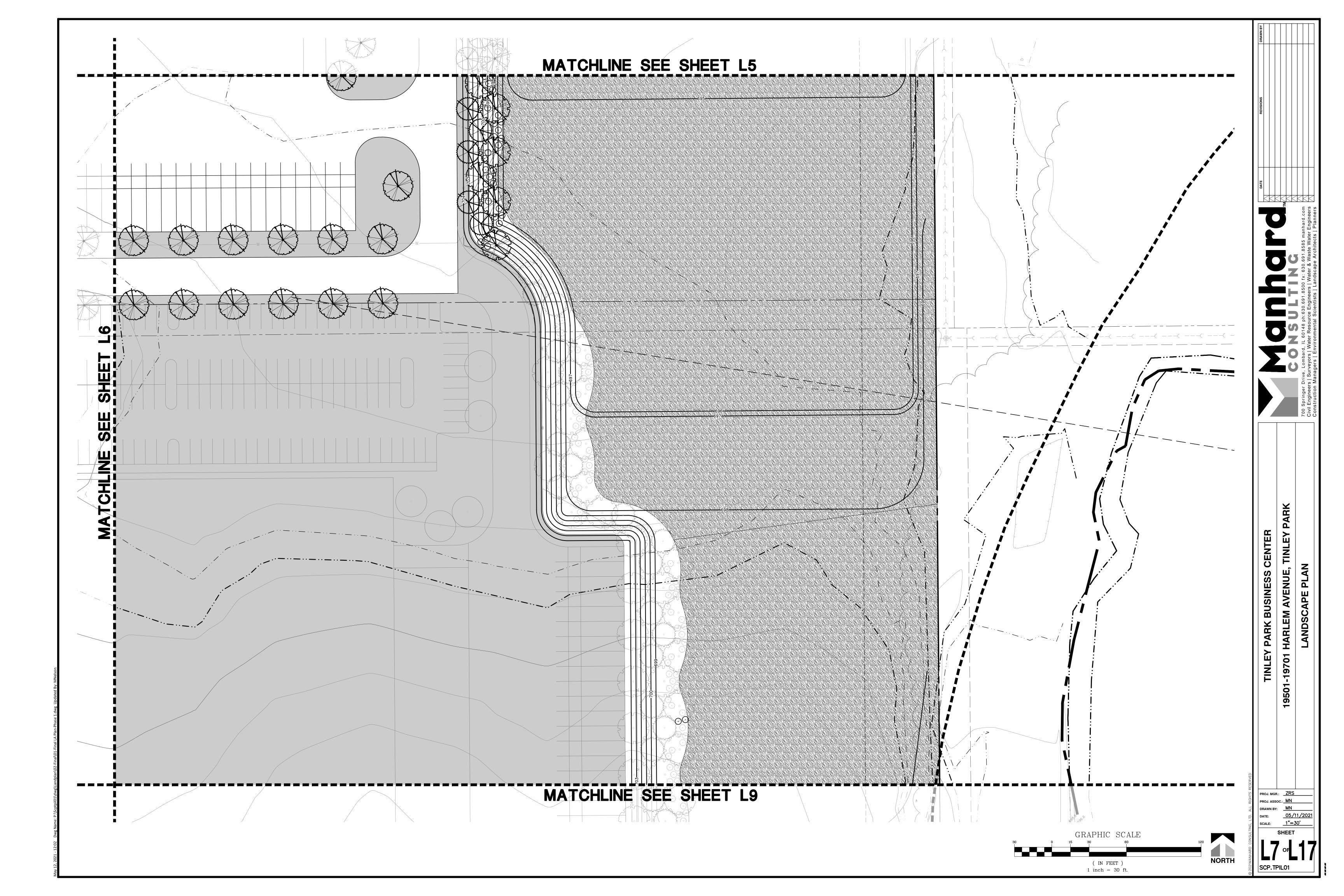


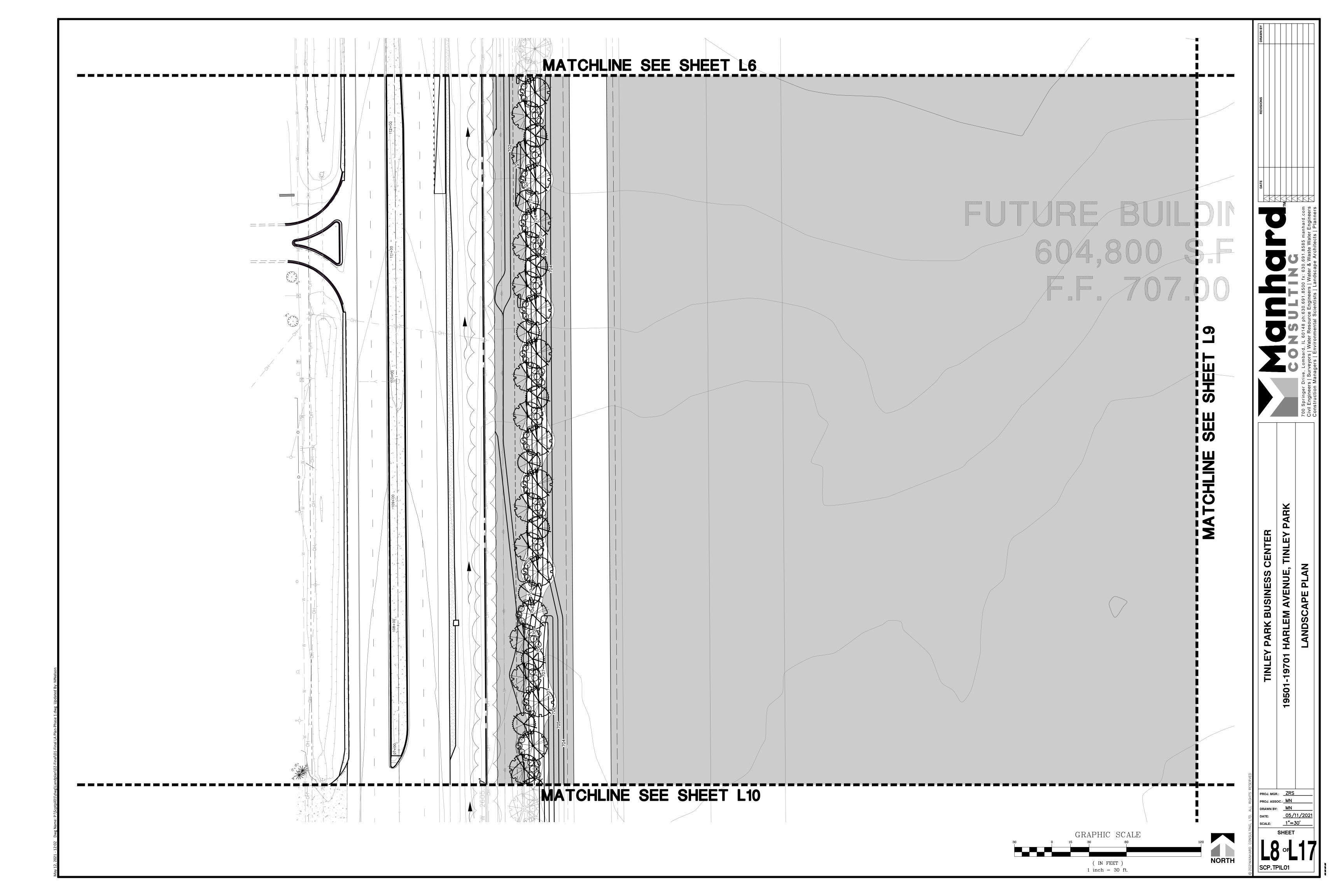


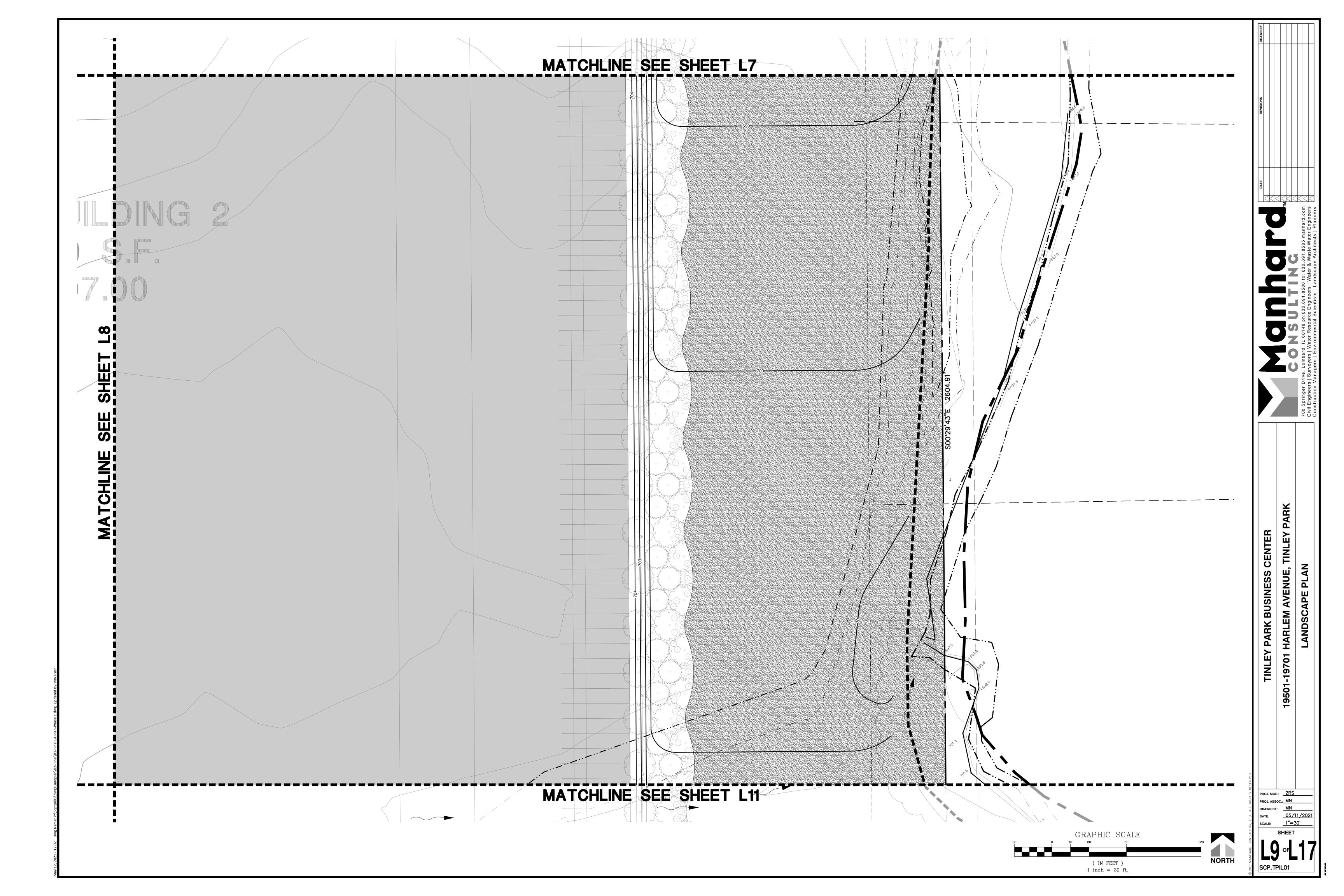


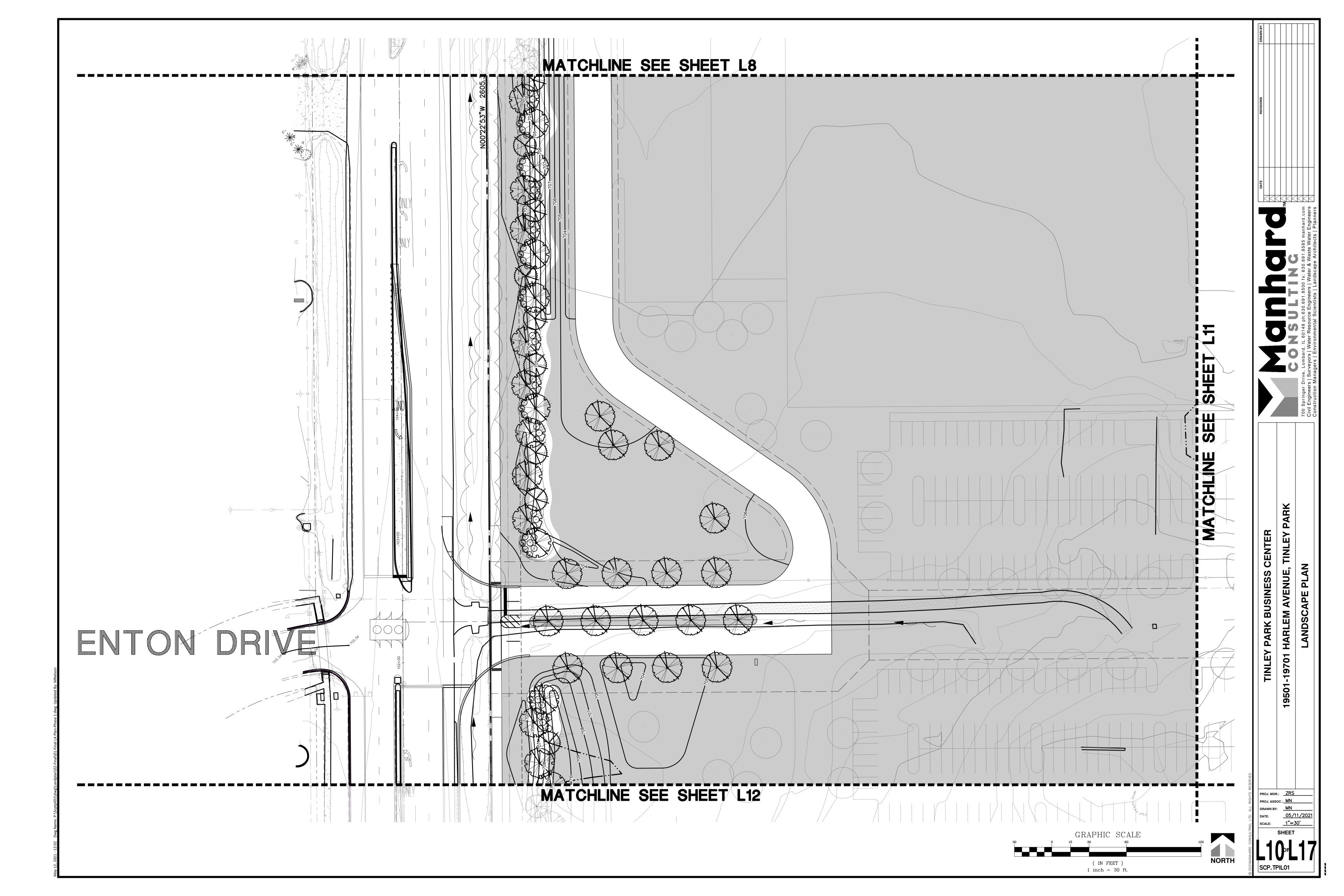


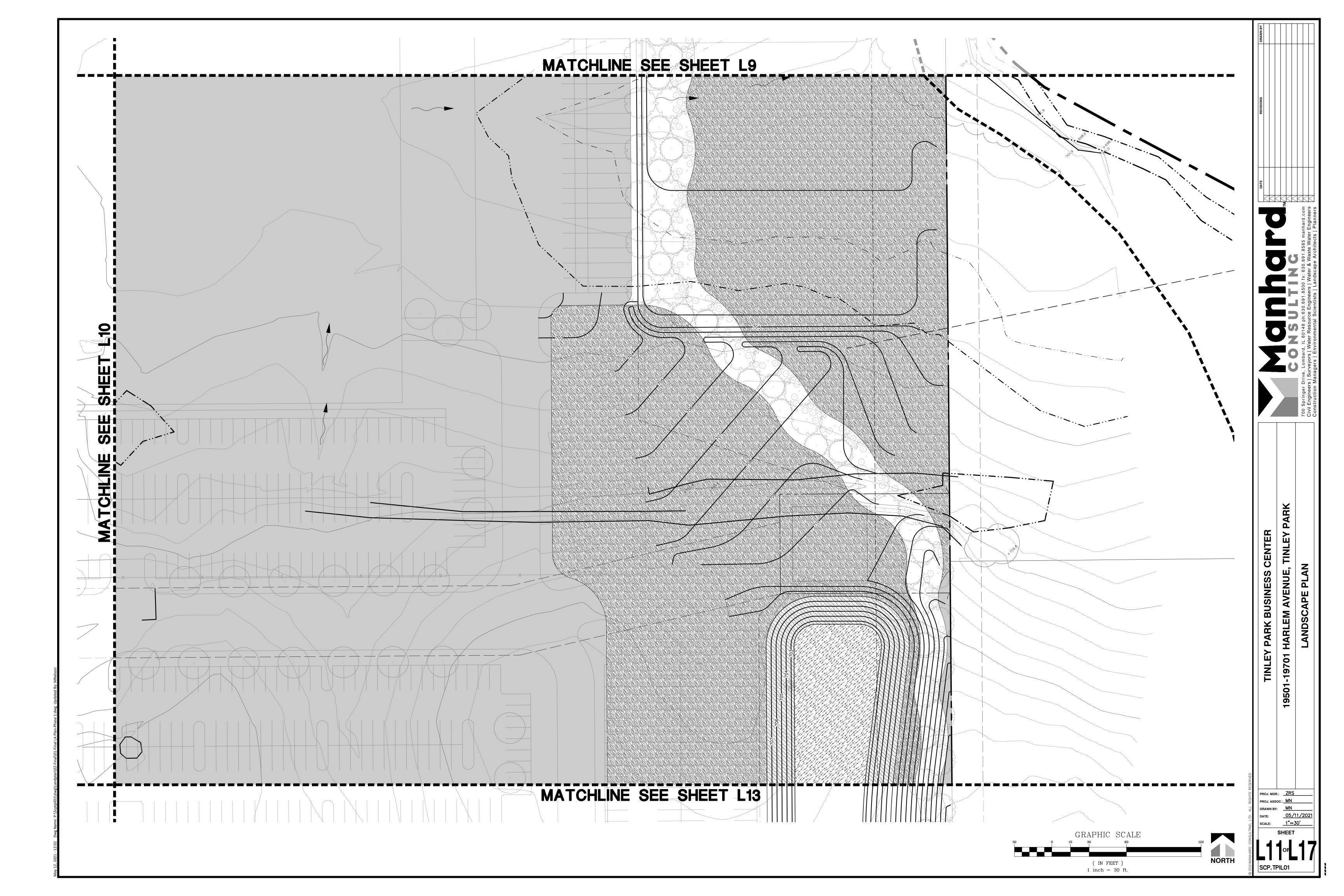


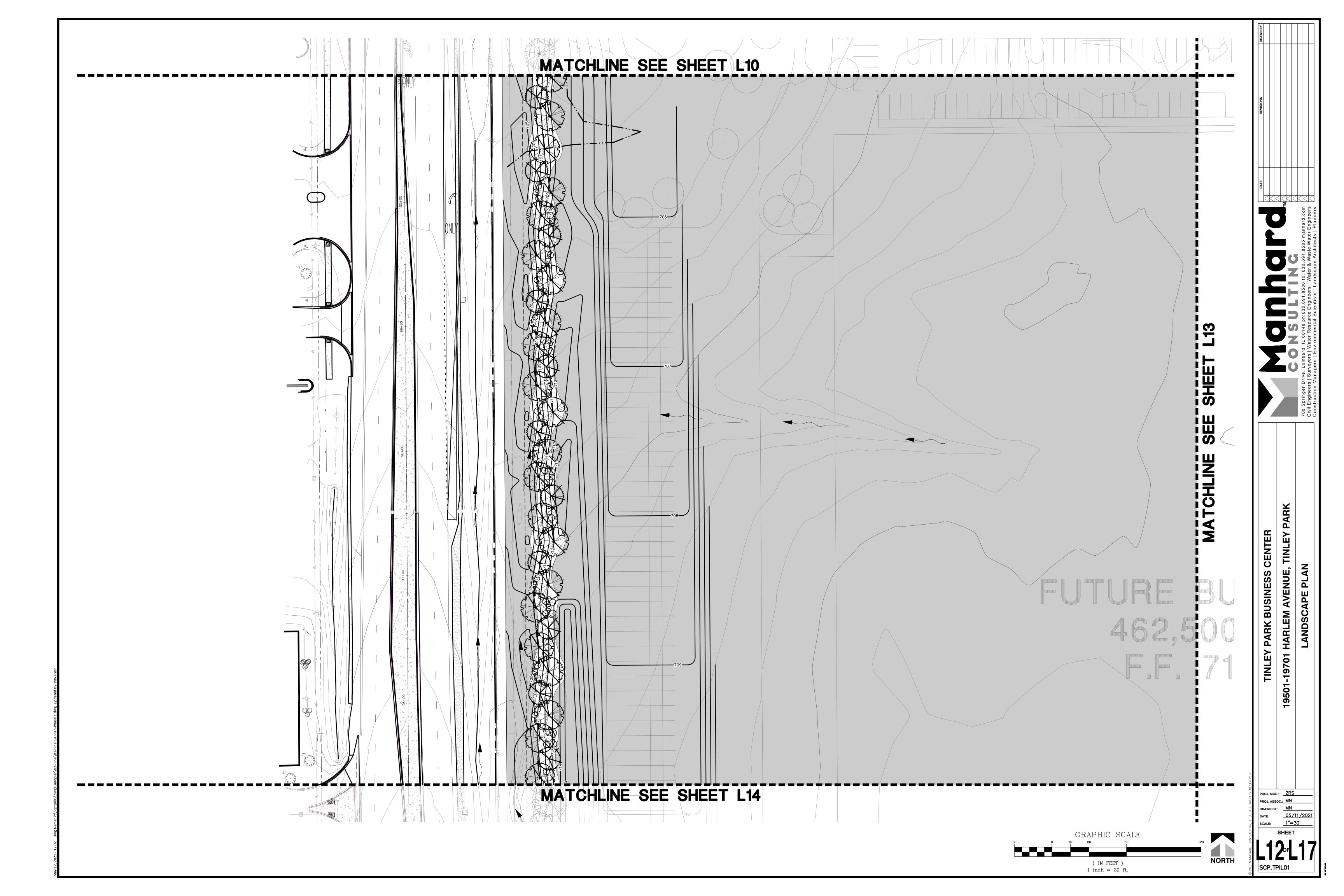


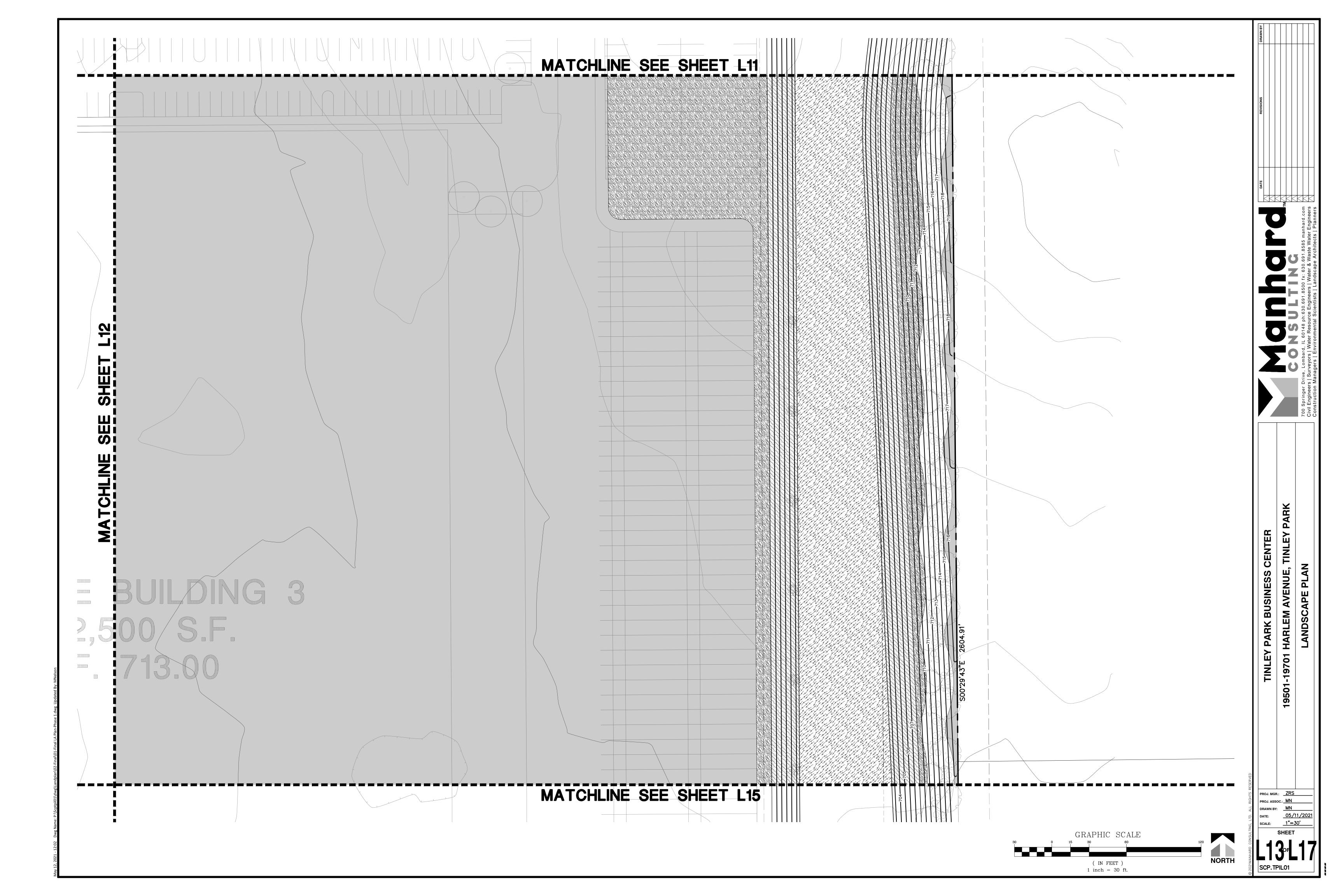


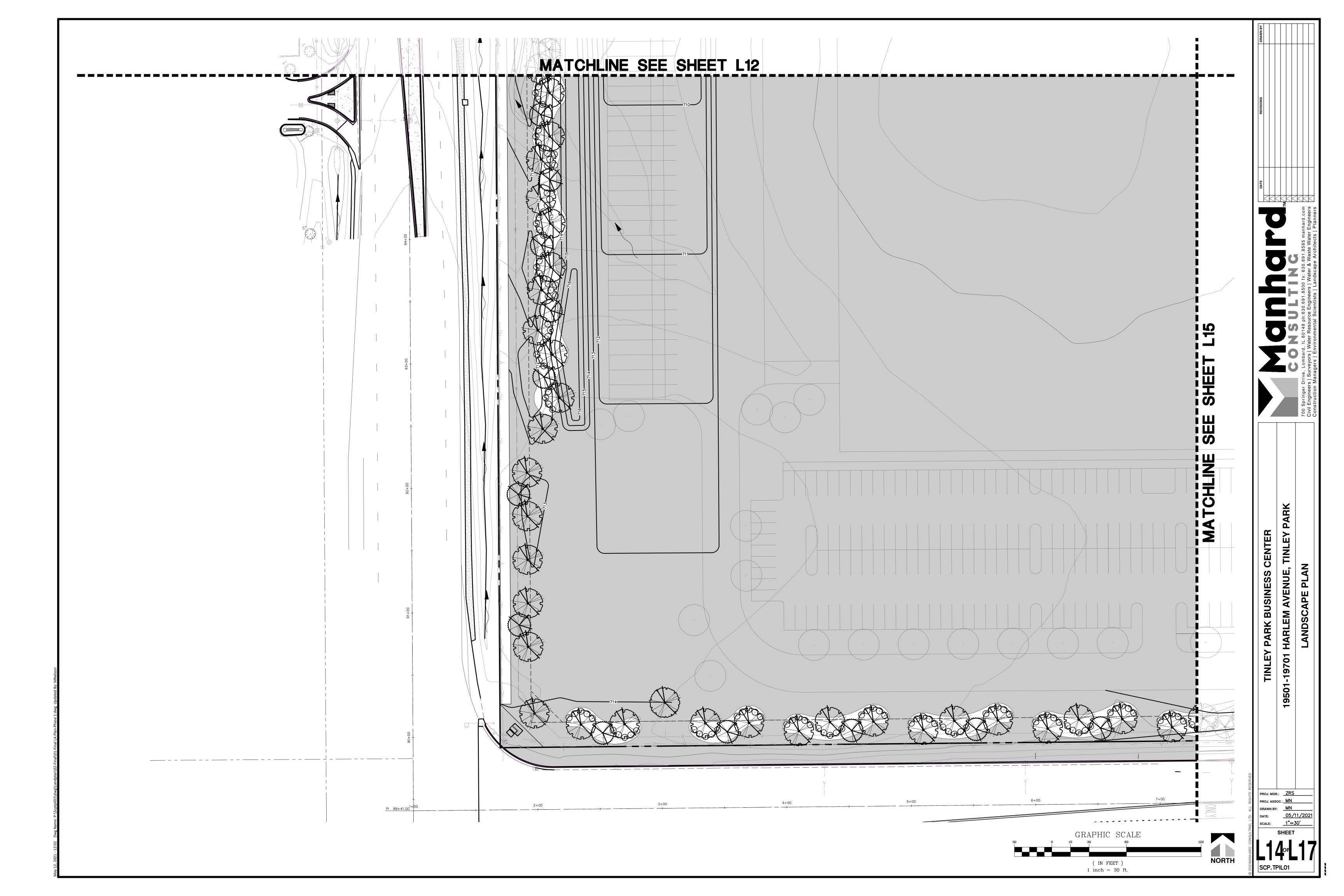


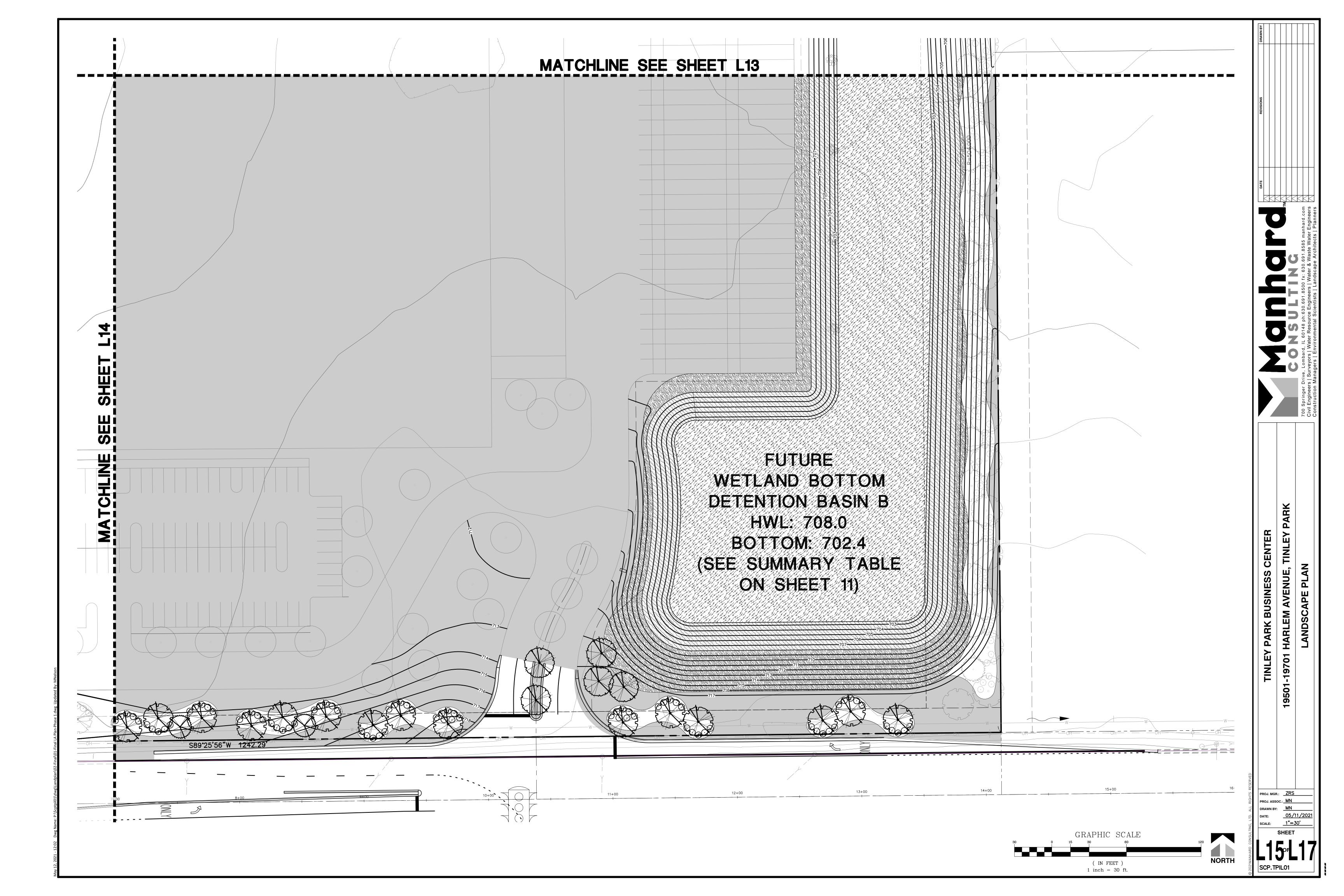


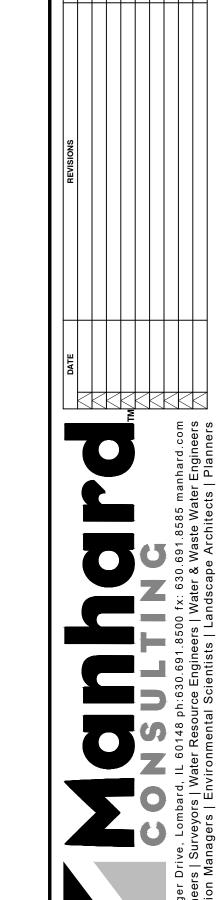














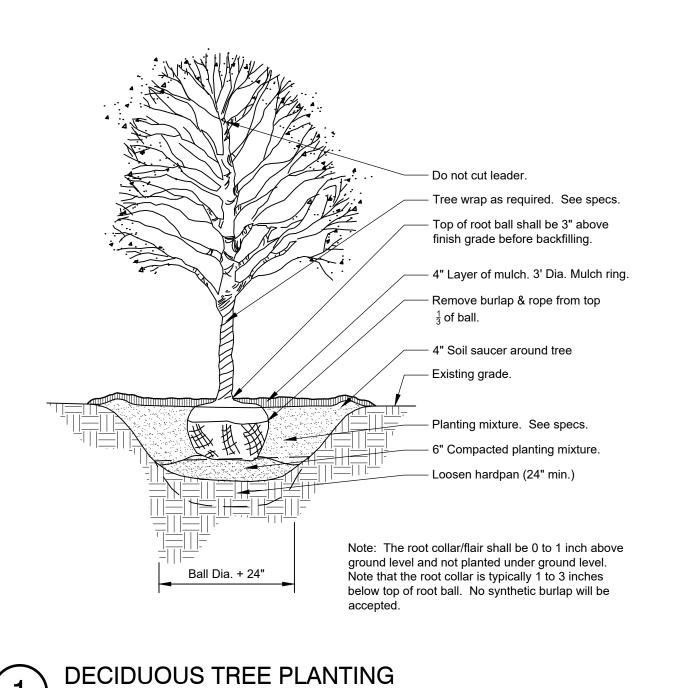
PARK TINLEY AVENUE, **TINLEY PARK BUSINESS**

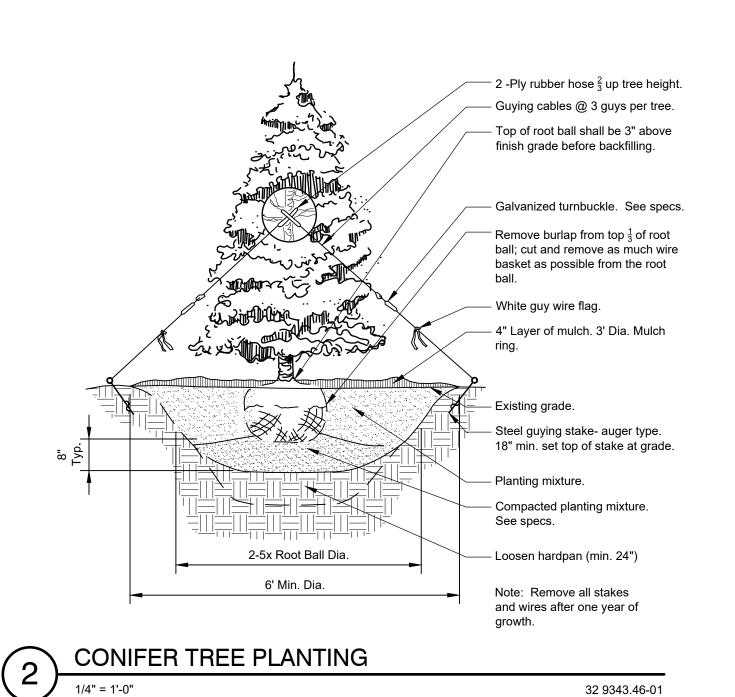
9501-19701 HARLEM

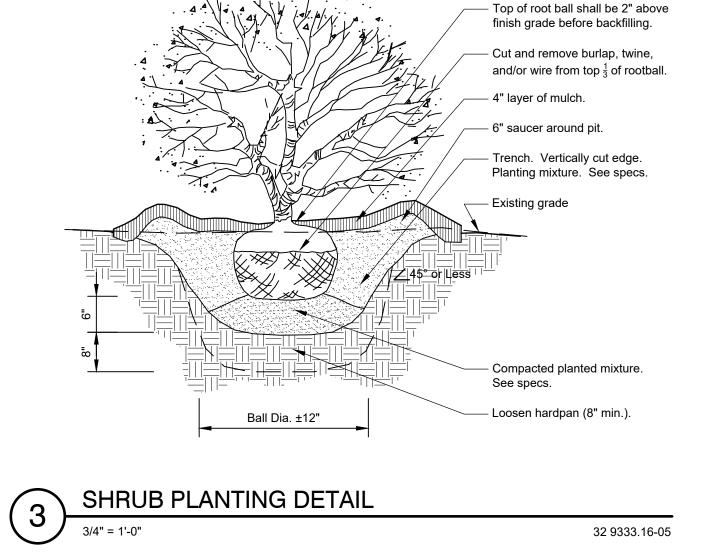
PROJ. MGR.: ZRS PROJ. ASSOC.: MN

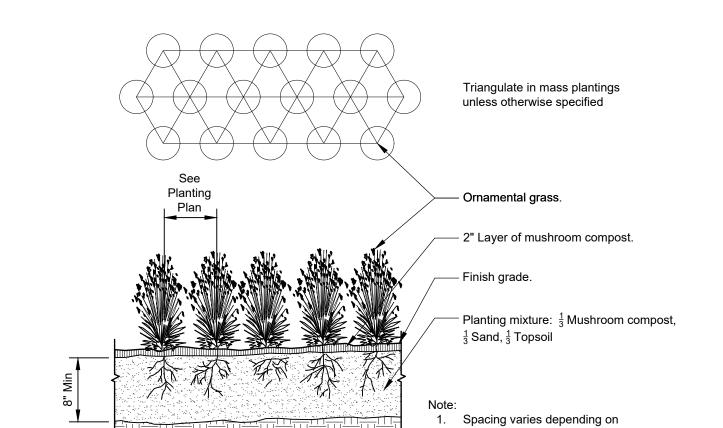
AS NOTED SCALE:

SCP.TPIL01









32 9343.33-20

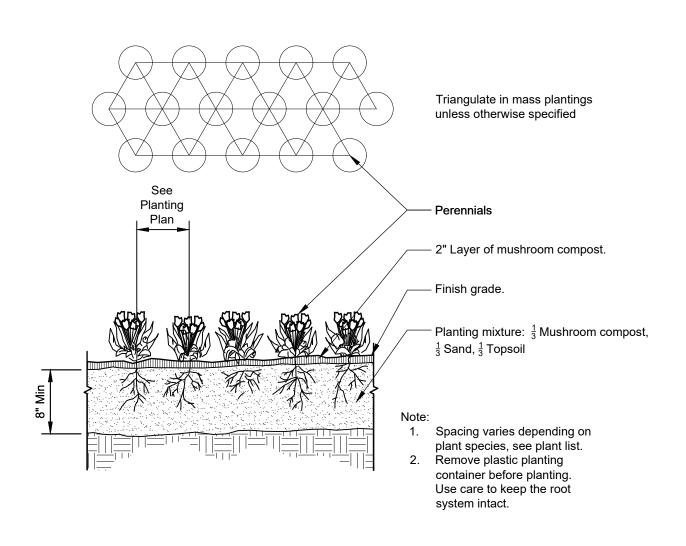
plant species, see plant list.

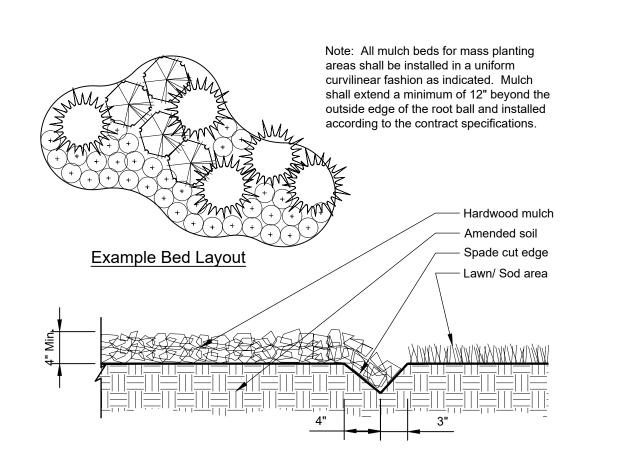
32 9313-01

Remove plastic planting

system intact.

container before planting. Use care to keep the root







PERENNIAL / ANNUAL PLANTING

32 9313-02

CONTINUOUS MULCH EDGING

32 9113.26-01

GENERAL PLANTING SPECIFICATIONS:

PART 1 - GENERAL

1-01 DESCRIPTION:

- A. Provide trees, shrubs, perennials and groundcovers as shown and specified. This work includes:
- Spreading of topsoil or soil preparation
- 2. Trees, shrubs, perennials and groundcovers3. Planting mixes
- 4. Mulch and planting accessories
- 5. Fertilizer and herbicide6. Maintenance
- 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
- 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:
- 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:
 - 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
- E. Herbicide:1. Round-Up or approved equal
- F. Mulch:
 - 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:
 - 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 Landscape Contractor.
- H. Guvina:
- . Guying: 1. Stakes: 5/8" x 40" steel eye anchor with 4" helix
- 2. 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.
- 3. Turnbuckles: 5/16", eye and eye, with 4" takeup.
- 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.
- C. All underground utilities must be located and marked clearly.
- 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.

- 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.
- I. 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.
- F. 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 <u>Premium</u> 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
 - 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
 - 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.
 - 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.
- Sodding of specified lawn areas on plans will be completed as follows:
 Rake soil surface to receive sod to completely remove any soil crust no more than one day prior to laving sod.
- 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.

CONSTITUTE TO THE PROPERTY OF THE PROPERTY OF

PARK

BUSINESS CENTER M AVENUE, TINLEY

TION

ECIFICA

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LANDSCAPE

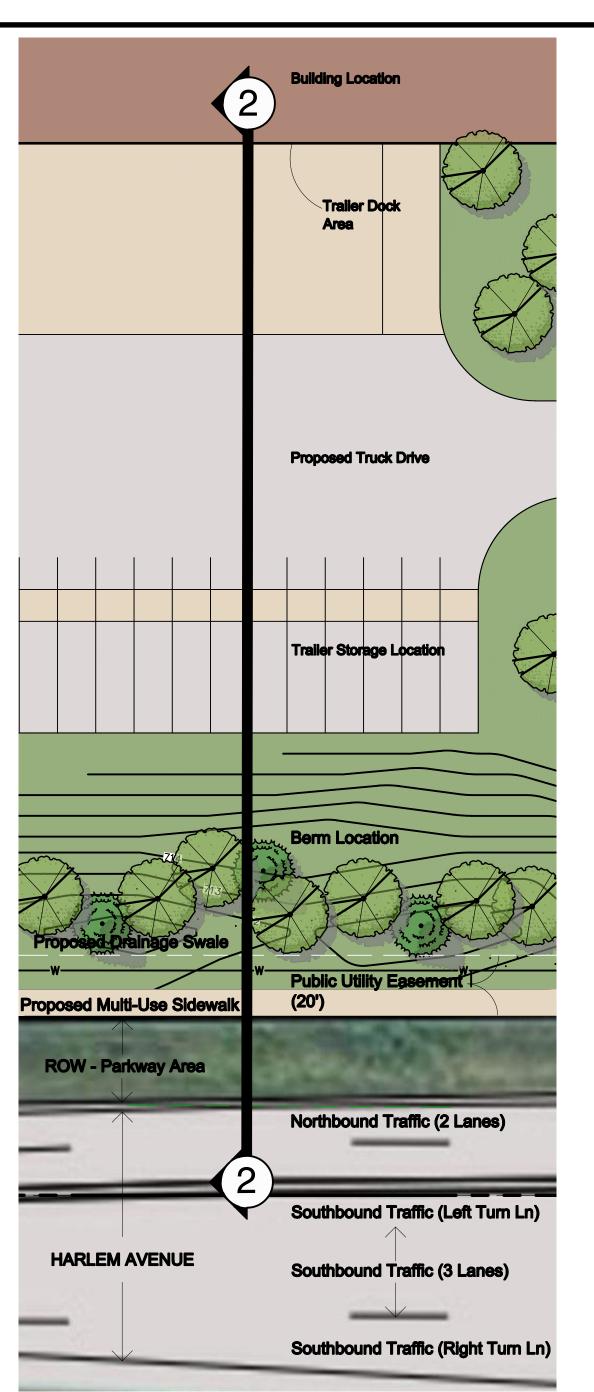
TINLEY PARK BI 9501-19701 HARLEM

PROJ. MGR.: ZRS
PROJ. ASSOC.: MN
DRAWN BY: MN

DATE: 05/11/2021 SCALE: NTS

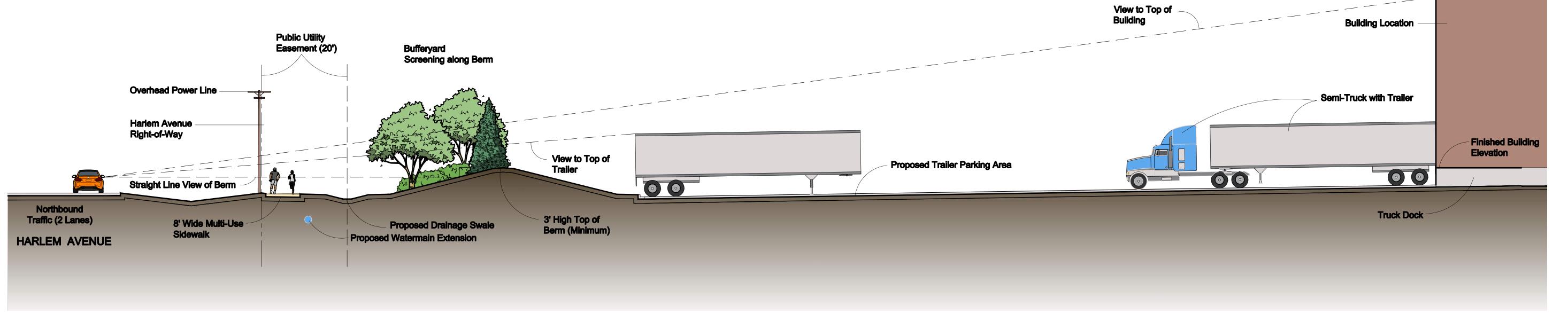
SHEET

TOPIC OF THE OF



SECTION OF HARLEM BERM - EAST (NORTHBOUND TRAFFIC)

Scale: 1" = 20'



SECTION OF HARLEM AVENUE BERM - EAST (NORTHBOUND TRAFFIC)

Scale: $\frac{1}{12}$ " = 1'

ZRS
DC: MDE
JBD
03-10-21
1/8"= 1'

(NORTHBOUND T

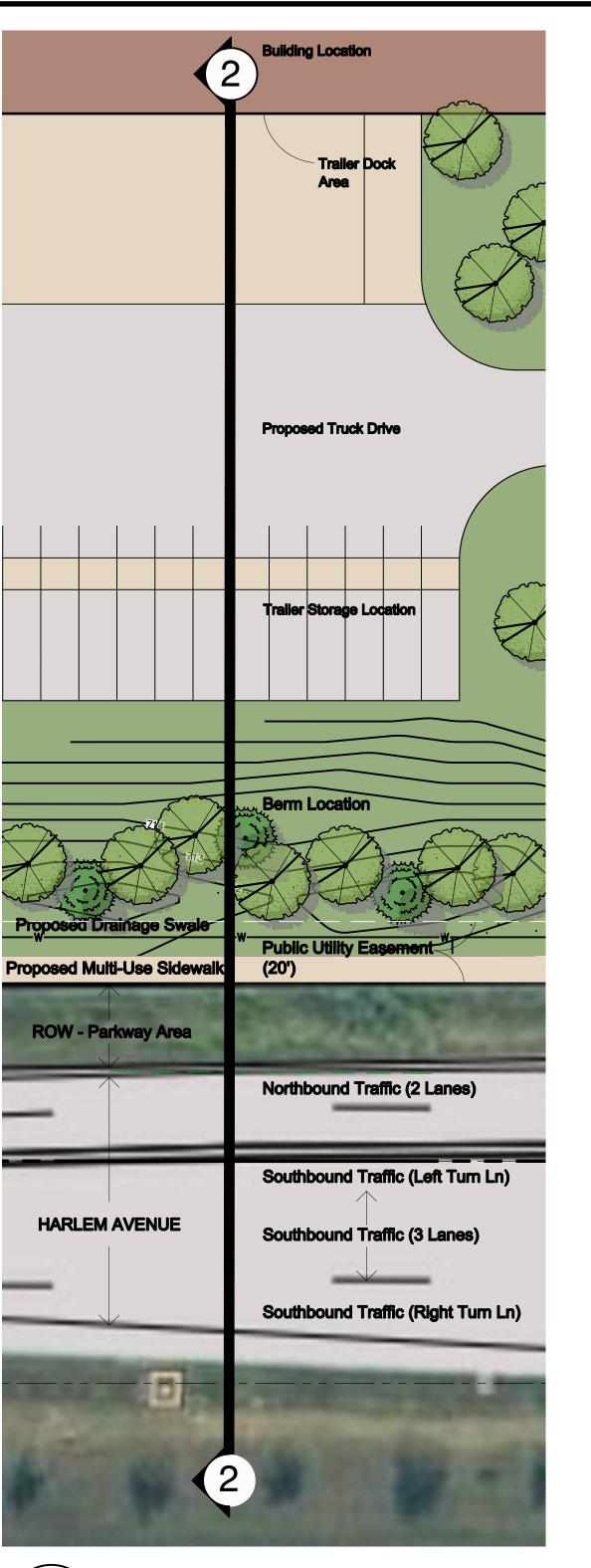
VILLAGE OF TINLEY PARK, ILLINOIS

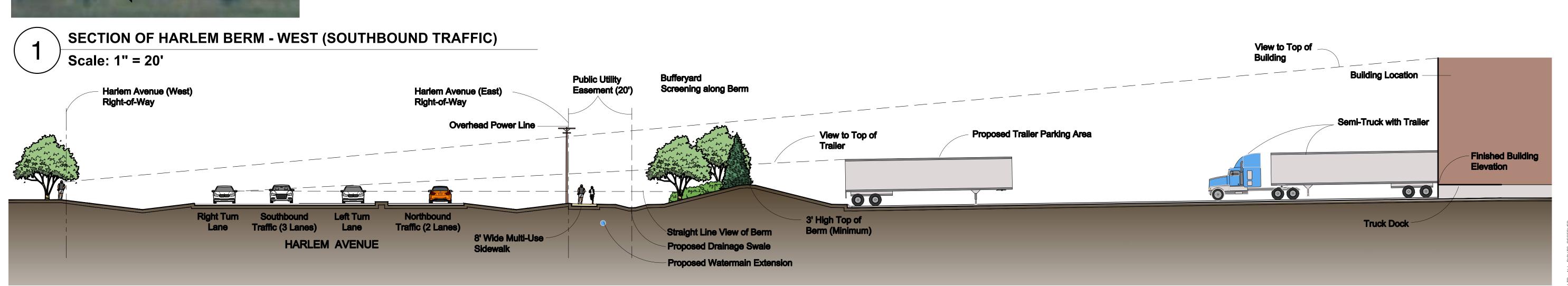
HARLEM AND VOLLMER

ALONG EAST HARLEM AVENUE

SCALE: 1/8"= 1'
SHEET

OF 2





SECTION OF HARLEM AVENUE BERM - WEST (SOUTHBOUND TRAFFIC)

Scale: ½ " = 1"

SECTION OF BERM ALONG WEST HARLEN

(SOUTHBOUND

HARLEM AND VOLLMER
VILLAGE OF TINLEY PARK, ILLINOIS

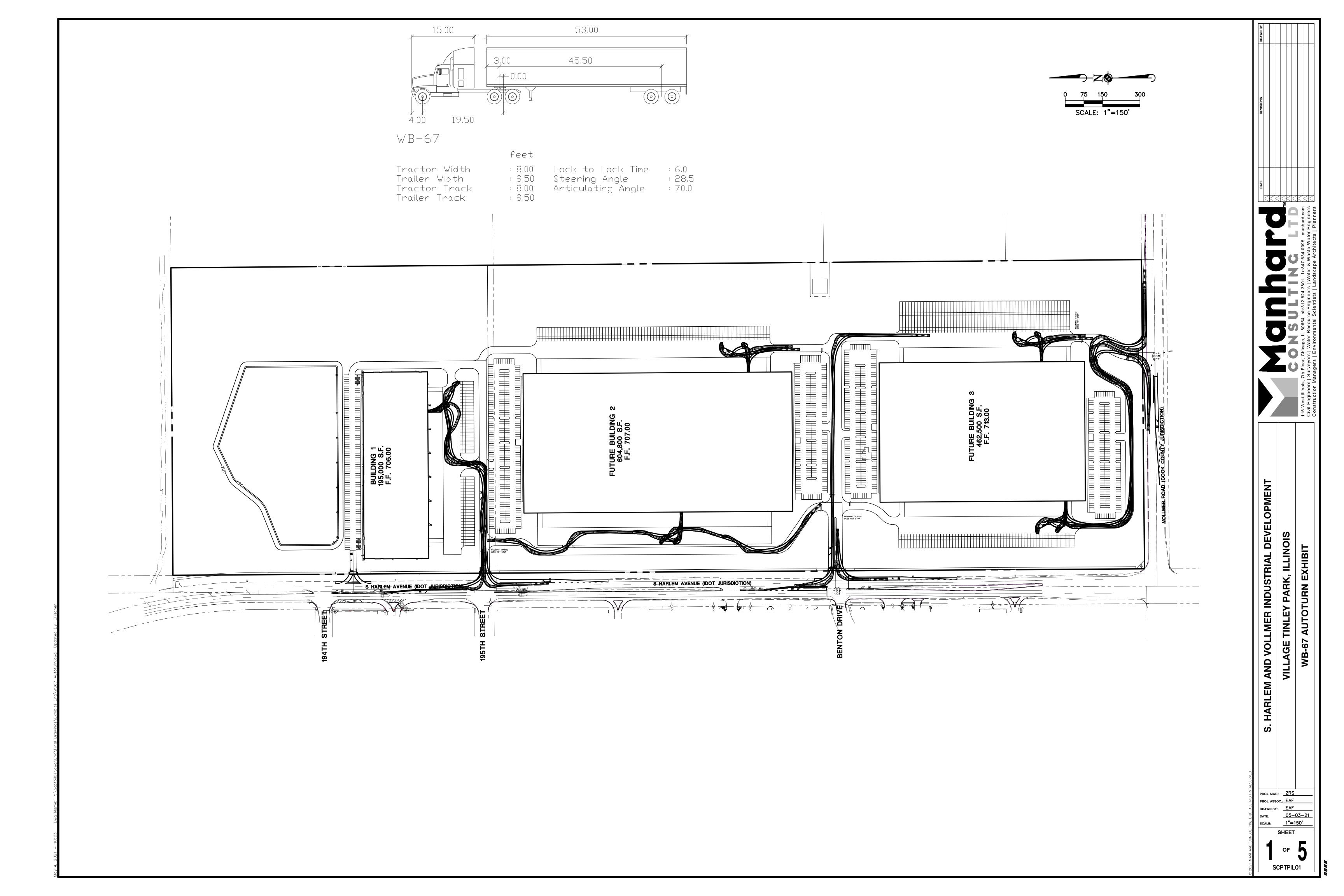
PROJ. MGR.: ZRS
PROJ. ASSOC.: MDE

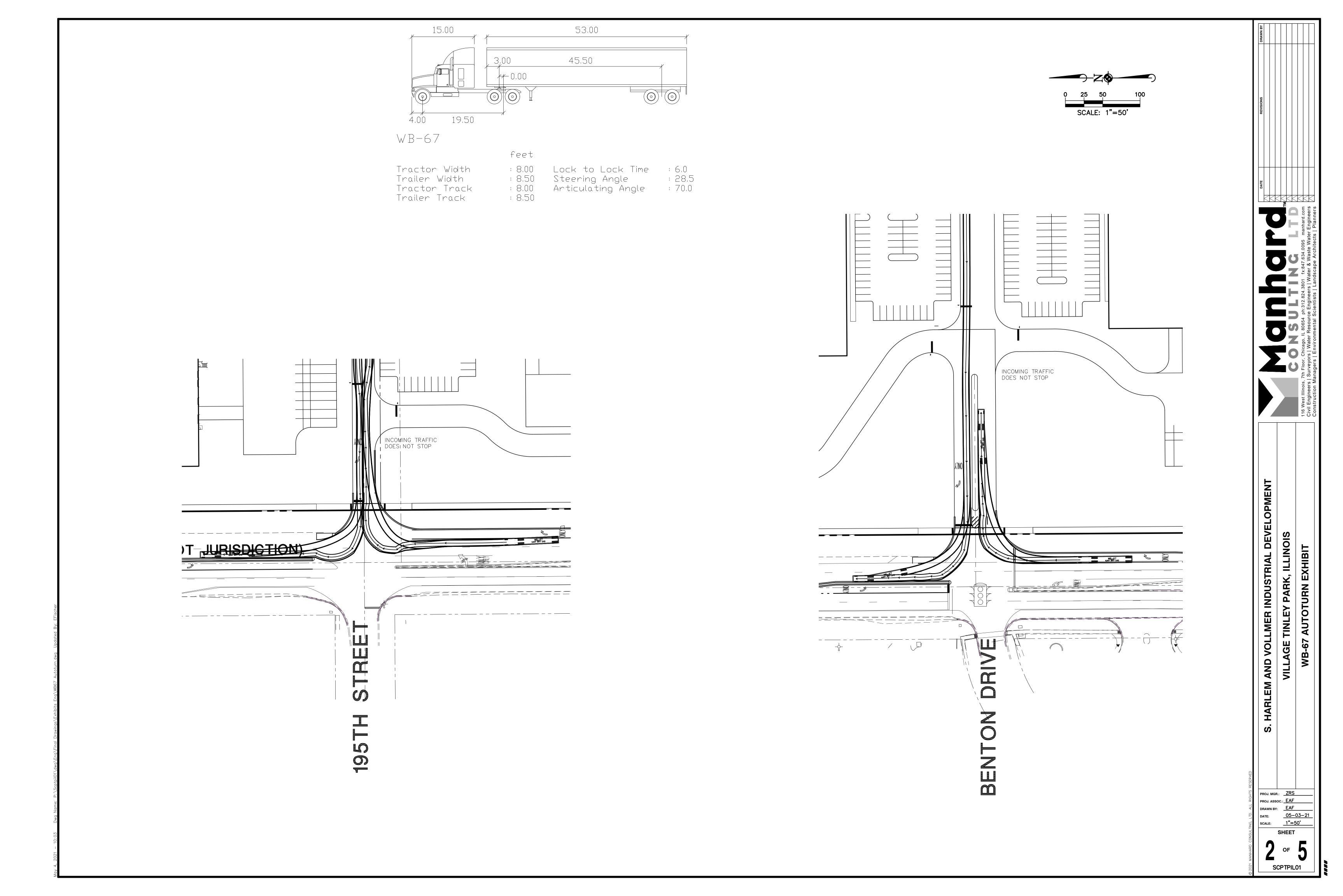
DRAWN BY: JBD

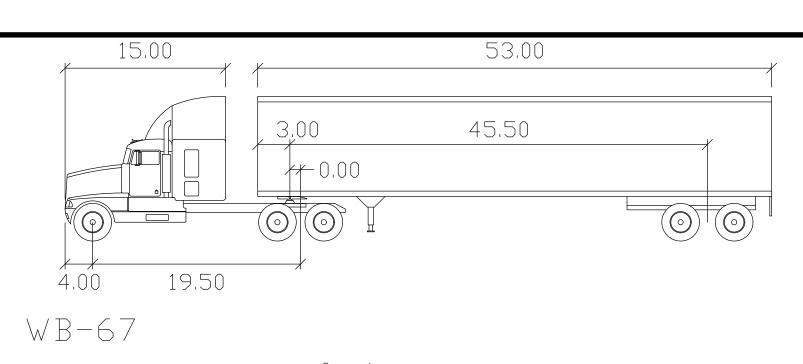
DATE: 03-10-21

SCALE: 1/8"= 1'

2 of 2

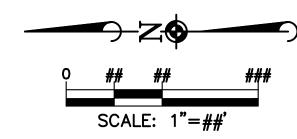


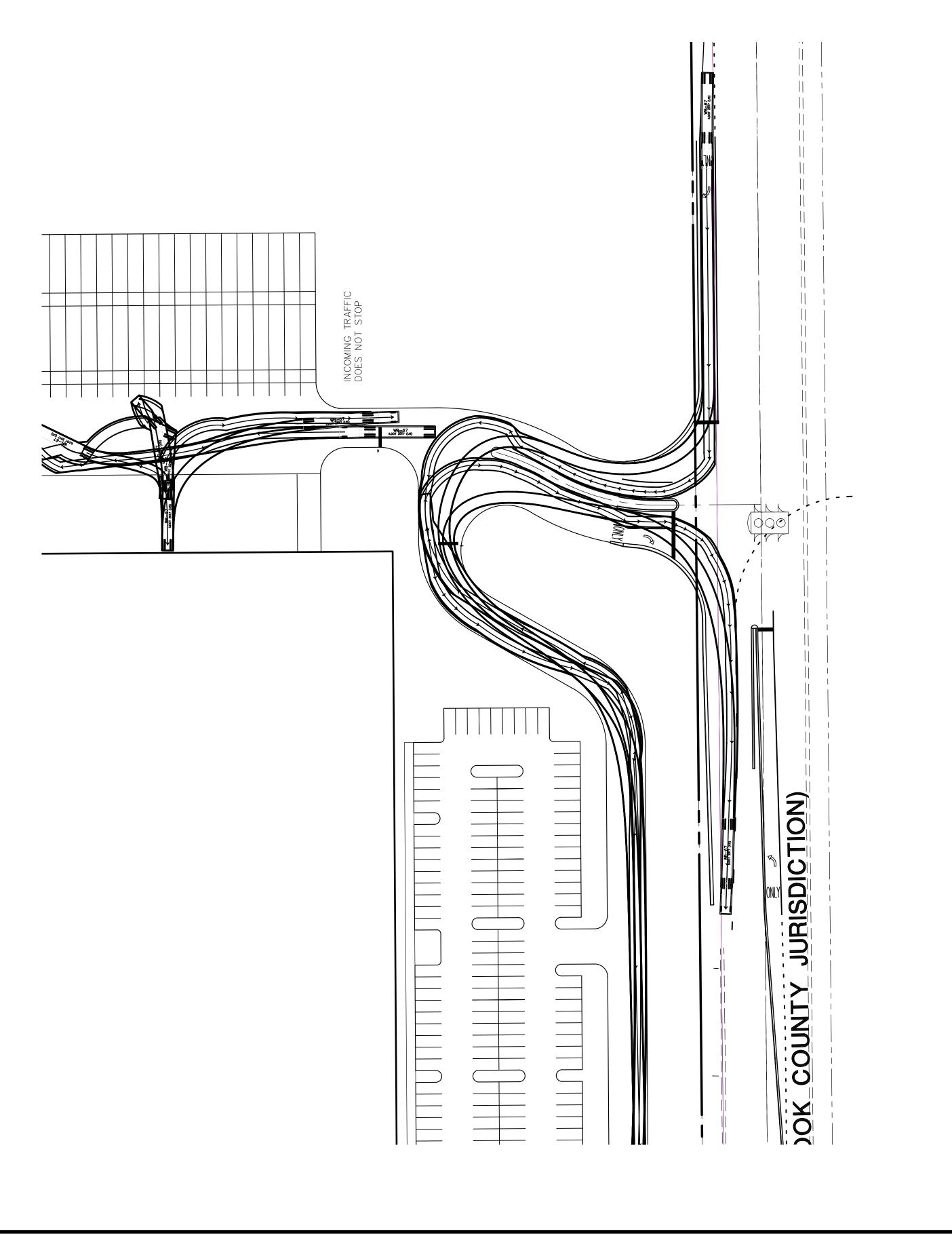


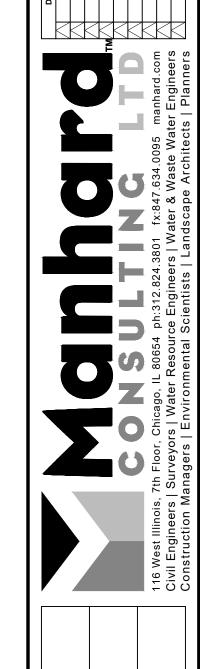


feet

:8.00 Lock to Lock Time :6.0 :8.50 Steering Angle :28.5 :8.00 Articulating Angle :70.0 :8.50 Tractor Width Trailer Width Tractor Track Trailer Track







VILLAGE TINLEY PARK, ILLINOIS WB-67 AUTOTURN EXHIBIT

S. HARLEM AND VOLLMER INDUSTRIAL DEVELOPMENT

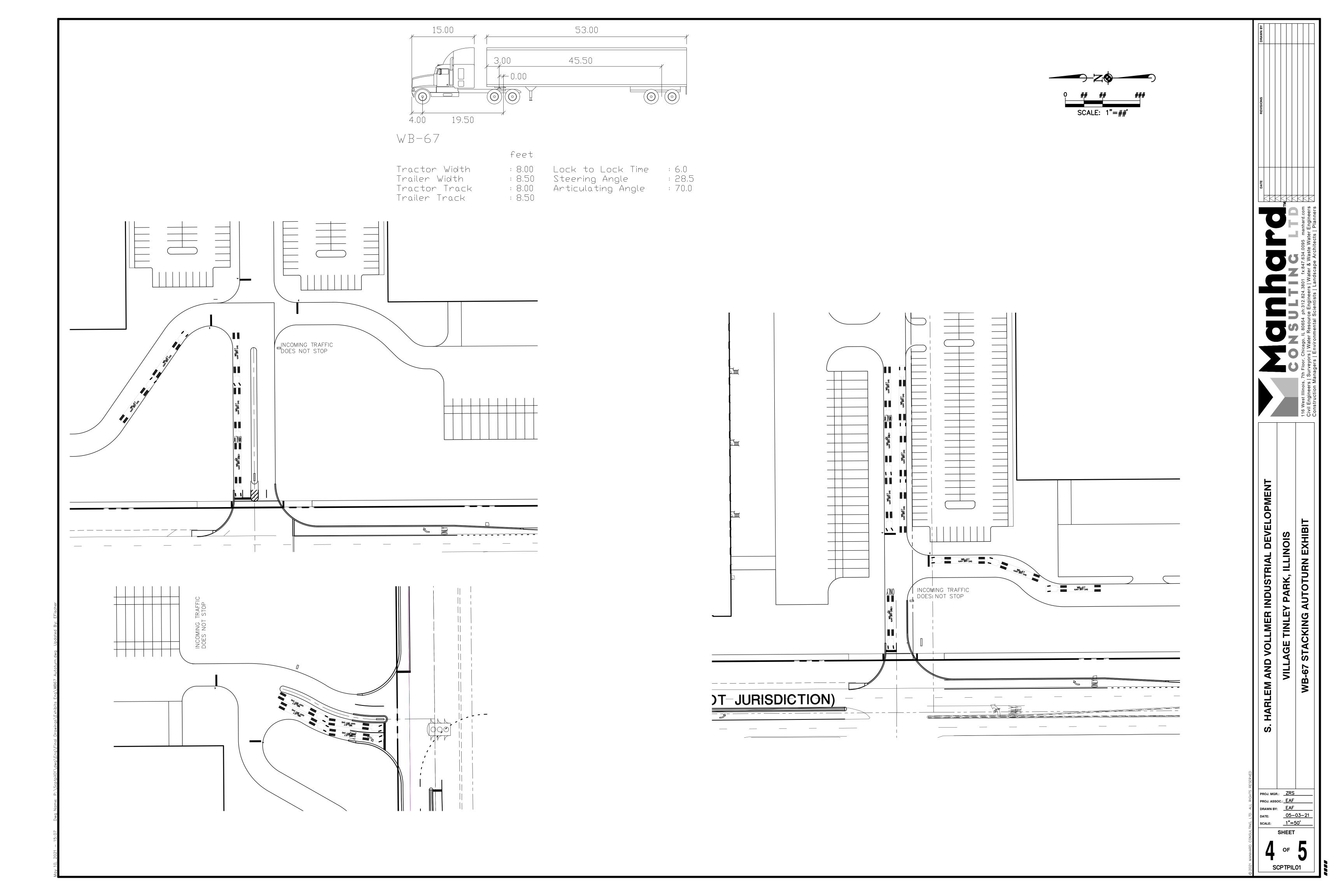
PROJ. MGR.: ZRS

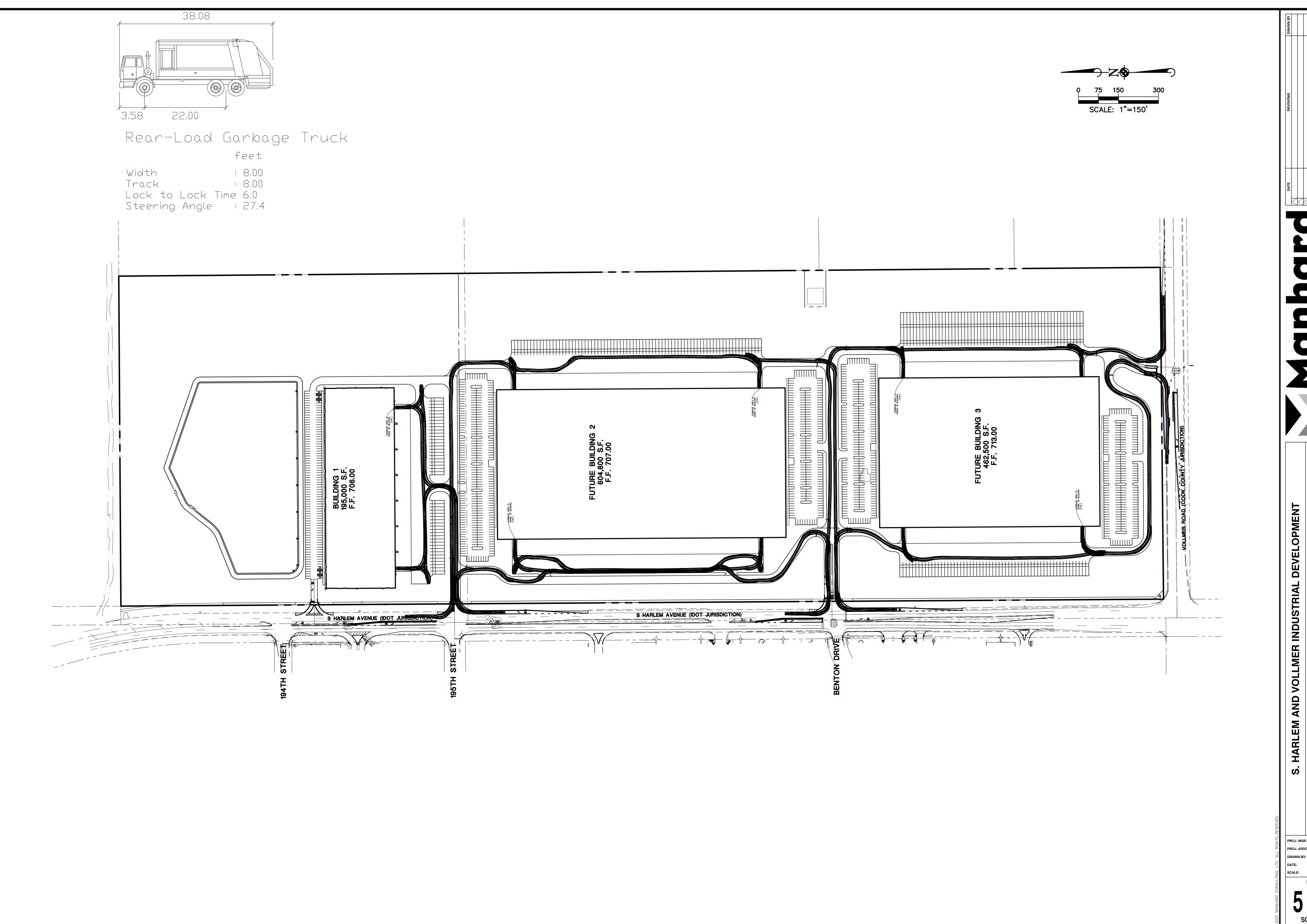
PROJ. ASSOC.: EAF

DRAWN BY: EAF

DATE: 05-03-21

SCALE: 1"=50'

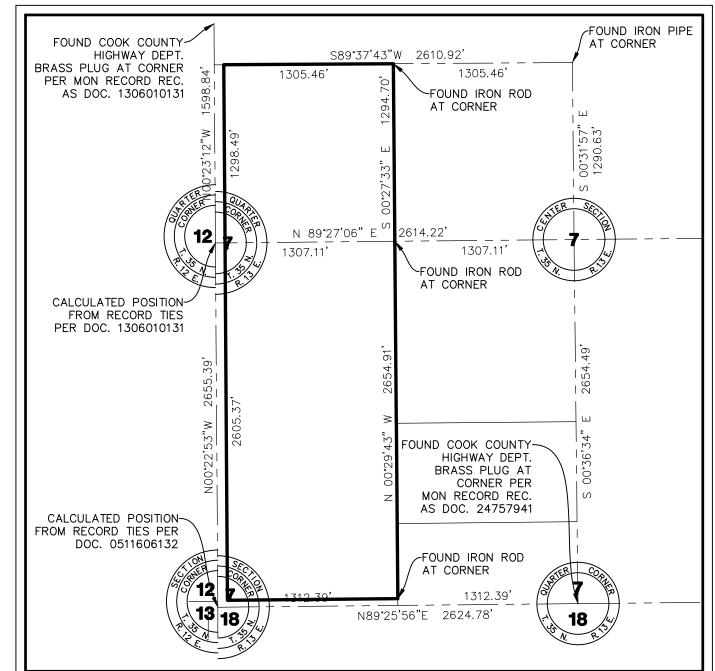




PROJ. MGR.: ZRS <u>1"=150'</u>

LOCATION MAP

NOT TO SCALE



SECTION CORNER DETAIL NOT TO SCALE

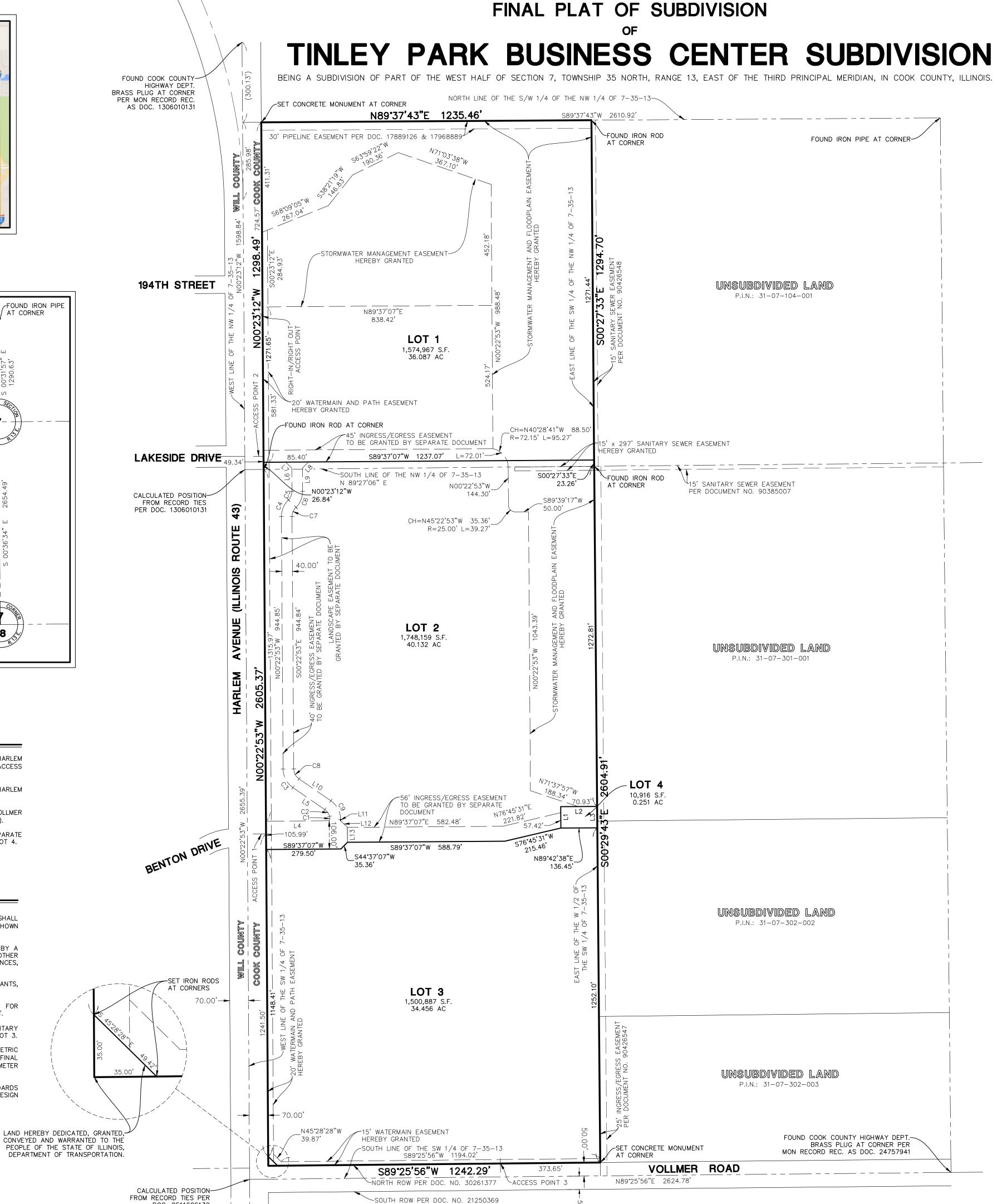
ACCESS NOTES

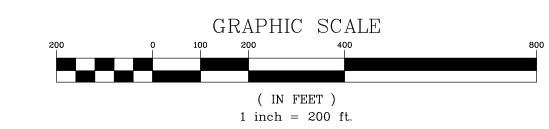
- 1. THERE SHALL BE AT MOST TWO (2) FULL VEHICULAR ACCESS POINTS ONTO HARLEM AVENUE (ILLINOIS ROUTE 43) FROM LOT 1 AND LOT 2 AS SHOWN HEREON (ACCESS POINTS 1 AND 2).
- THERE SHALL BE ONE (1) RIGHT—IN, RIGHT—OUT ONLY VEHICULAR ACCESS TO HARLEM AVENUE (ILLINOIS ROUTE 43) FROM LOT 1 AS SHOWN HEREON.
- 3. THERE SHALL BE AT MOST ONE (1) FULL VEHICULAR ACCESS POINT ONTO VOLLMER ROAD (COUNTY HIGHWAY B66) FROM LOT 3 AS SHOWN HEREON (ACCESS POINT 3).
 4. ACCESS TO AND FROM LOT 4 SHALL BE VIA INTERNAL CIRCULATION. A SEPARATE DOCUMENT SHALL GOVERN ALL INTERNAL ACCESS TO LOT 1, LOT 2, LOT 3 AND LOT 4.

SURVEYOR'S NOTES

- 1. DIMENSIONS ARE MARKED IN FEET AND DECIMAL PLACES THEREOF. NO DIMENSION SHALL BE ASSUMED BY SCALE MEASUREMENT HEREON. DISTANCES AND/OR BEARINGS SHOWN IN PARENTHESIS (456.67') ARE RECORD OR DEED VALUES.
- 2. SUBDIVISION MAY BE SUBJECT TO MATTERS OF TITLE, WHICH MAY BE REVEALED BY A CURRENT TITLE REPORT. PRE-EXISTING EASEMENTS, SETBACKS AND OTHER RESTRICTIONS WHICH MAY BE FOUND IN A CURRENT TITLE REPORT, LOCAL ORDINANCES, DEEDS OR OTHER INSTRUMENTS OF RECORD MAY NOT BE SHOWN.
- 3. SUBDIVISION MAY BE SUBJECT TO A CERTAIN DECLARATION OF PROTECTIVE COVENANTS, CONDITIONS AND RESTRICTIONS RECORDED SEPARATELY FROM THIS PLAT.
- 4. INGRESS/EGRESS EASEMENTS AND LANDSCAPE EASEMENT SHOWN HEREON ARE FOR INFORMATION PURPOSES ONLY AND SHALL BE GRANTED BY A SEPARATE DOCUMENT.
- 5. LOT 3 EASEMENTS FOR INGRESS/EGRESS, LANDSCAPE, STORMWATER AND SANITARY SHALL BE GRANTED BY A SEPARATE DOCUMENT PRIOR TO THE DEVELOPMENT OF LOT 3.
- 4. MONUMENTS SHALL BE SET AT ALL PROPERTY CORNERS AND POINTS OF GEOMETRIC CHANGE IN ACCORDANCE WITH 765 ILCS 205/1 UPON THE RECORDATION OF THE FINAL PLAT OF SUBDIVISION. UNLESS OTHERWISE NOTED, MONUMENTS SET ARE 5/8" DIAMETER BY 24" LONG REBARS.
- 5. THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A SUBDIVISION SURVEY. MANHARD CONSULTING, LTD. IS A PROFESSIONAL DESIGN FIRM, REGISTRATION NUMBER 184003350, EXPIRES APRIL 30, 2023.

DOC. 0511606132





BASIS OF BEARINGS

BEARINGS ARE BASED UPON THE ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE (NAD 83), AS ESTABLISHED BY A REAL-TIME KINEMATIC (RTK) GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) UTILIZING THE TRIMBLE VRS NOW NETWORK.

OWNER/DEVELOPER

SCANNELL PROPERTIES 8801 RIVER CROSSING BLVD., SUITE 300 INDIANAPOLIS, INDIANA 46240

SUBMITTED BY/RETURN TO:

VILLAGE OF TINLEY PARK 16250 S. OAK PARK AVE. TINLEY PARK, IL 60477

PIN'S

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

PROPOSED PROPERTY AREA

LOT 1 = 1,571,967 SQ. FT. (36.087 ACRES) LOT 2 = 1,748,159 SQ. FT. (40.132 ACRES) LOT 3 = 1,500,887 SQ. FT. (34.456 ACRES) LOT 4 = 10,916 SQ. FT. (0.251 ACRES) ROW DEDICATION = 612 SQ. FT. (0.014 ACRES) TOTAL AREA = 4,832,541 SQ. FT. (110.940 ACRES)

SHEET INDEX SHEET 1: BOUNDARY, LOT AND EASEMENT DETAILS

SHEET 2: LEGAL DESCRIPTION AND CERTIFICATES

LINE TABLE						
LINE	BEARING	LENGTH				
L1	S 00°29'37" E	80.00'				
L2	S 89*42'38" W	136.45				
L3	S 00°29'43" E	80.00'				
L4	N 89°36'56" E	236.76				
L5	N 55°22'53" W	144.91'				
L6	N 00°22'53" W	86.86'				
L7	N 45°23'06" W	32.11'				
L8	S 44°37'07" W	32.10'				
L9	S 00°22'53" E	86.86'				
L10	S 55°22'53" E	144.91'				
L11	S 00°22'53" E	4.94'				
L12	S 45°22'45" E	35.36'				
L13	N 00°22'57" W	56.00'				

	CURVE TABLE							
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD			
C1	C1 38"17"21" 25.00' 16.71' C2 40"18'53" 45.00' 31.66'		16.71	N 04°04'41" E	16.40'			
C2			N 35°13'26" W	31.01'				
С3	55*00'00"	85.00'	81.59'	N 27°52'53" W	78.50'			
C4			69.56'	N 23°01'36" E	67.65'			
C5			35.27'	N 22 ° 04'12" E	34.37'			
C6	45°05'11"	85.00'	66.89'	S 22°09'43" W	65.17'			
C7	47°51'37"	45.43'	37.95'	S 23°39'31" W	36.85'			
C8	55*00'00"	45.00'	43.20'	S 27°52'53" E	41.56'			
C9	55*00'00"	85.00'	81.59'	S 27°52'53" E	78.50'			
C10	31°25'48"	50.00'	27.43'	N 15°08'50" E	27.09'			
C11	31°14'37"	206.00'	112.33'	N 15°14'25" E	110.95'			

PROJ. MGR.: ZRS
PROJ. ASSOC.: TJM

SUBDIVISIO

DATE: 03/31/21
SCALE: 1"=200'

SHEET

OF

SCPTPIL01

TINLEY PARK BUSINESS CENTER SUBDIVISION

BEING 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.

OWNER'S CERTIFICATE

PRINTED NAME AND TITLE

THIS IS TO CERTIFY THAT HARLEM AND VOLLMER HOLDINGS LLC, AN ILLINOIS LIMITED LIABILITY COMPANY IS THE LEGAL OWNER OF THE LAND DESCRIBED ON THE ATTACHED PLAT, AND HAS CAUSED THE SAME TO BE SURVEYED, SUBDIVIDED AND THE PLATTED AS SHOWN BY THE PLAT FOR THE USES AND PURPOSES INDICATED THEREON AND DOES HEREBY ACKNOWLEDGE AND ADOPT THE SAME UNDER THE STYLE AND TITLE THEREON INDICATED.

THIS IS TO ALSO CERTIFY THAT THE UNDERSIGNED, AS OWNER OF THE PROPERTY DESCRIBED AS THE TINLEY PARK BUSINESS CENTER SUBDIVISION AND LEGALLY DESCRIBED ON THE PLAT OF THE SAME NAME, HAVE DETERMINED TO THE BEST OF OUR KNOWLEDGE THE SCHOOL DISTRICT IN WHICH EACH OF THE FOLLOWING LOTS LIE.

LOT NUMBER(S)	SCHOOL DISTRICT
ALL	ELEMENTARY SCHOOL DISTRICT NO. 159 (MATTESON) RICH TOWNSHIP HIGH SCHOOL DISTRICT NO. 227 PRAIRIE ST COMMUNITY COLLEGE 515 (CHICAGO HEIGHTS)
DATED THIS	Y OF, A.D., 2021.
BY:	OWNER'S NAME AND AL

		
NOTARY PUBLIC STATE OF)) ss	
COUNTY OF)) 33	
l,	_, A NOTARY PUBLIC IN AND FOR THE COUNTY AND STAT	E
PERSONALLY KNOWN TO ME TO BE APPEARED BEFORE ME THIS DAY IN	HATTHE SAME WHOSE NAME IS SUBSCRIBED TO THE FOREGO N PERSON AND ACKNOWLEDGED THAT THEY DID SIGN AND DLUNTARY ACT FOR THE PURPOSES THEREIN SET FORTH.	ING CERTIFICATE

GIVEN UNDER MY HAND AND NOTORIAL SEAL THIS ____ DAY OF _____, A.D., 2021.

NOTARY PUBLIC

MORTGAGEE CONSENT						
THE UNDERSIGNED, AS MOR	TGAGEE, UNDER THE PR	OVISIONS OF CERTA	AIN MORTGA	GE DATE	:D	
	AND RECORDED IN THE	RECORDER'S OFFI	CE OF COOK	COUNT	Υ,	
COUNTY, ILLINOIS, ON THIS	DAY OF	, A.D.,	,	AS DOC	JMENT	
NUMBER	, HEREBY CONSENTS	TO THE SUBDIVISION	ON STATED	HEREIN.		
DATED:	, ,	A.D., 20				
BY:						
PRINTED NAME AND TITLE			TGAGEE'S			
ATTEST:						
PRINTED NAME AND TITLE						

MORTGAGEE NOTARY PUBLIC

I,, PUBLIC IN AND FOR THE COUNTY AND STATE AFORESAID, DO HEREBY CERTIFY T	A NOTARY HAT
AND	
OF WHO ARE PERSONALLY KNOWN TO ME SAME WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING CERTIFICATE, APPEAR THIS DAY IN PERSON AND ACKNOWLEDGED THAT THEY DID SIGN AND DELIVER THINSTRUMENT AS A FREE AND VOLUNTARY ACT FOR THE USES AND PURPOSES H FORTH.	ED BEFORE ME HS
GIVEN UNDER MY HAND AND NOTORIAL SEAL THIS DAY OF	_, A.D. 20
NOTARY PUBLIC	

PLAN COMMISSION CERTIFICATE	
STATE OF ILLINOIS)	
)S.S. COUNTY OF COOK)	
APPROVED BY THE PLAN COMMISSION OF THE VILLAGE OF TINLEY PARK, COOK COUNTILLINOIS.	Υ,
DATED THIS, A.D., 2021.	
CHAIRMAN OF PLAN COMMISSION	

ILLINOIS STATE ROUTE 43 (HARLEM AVENUE) DEDICATION

THAT PART OF THE WEST HALF OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 35 NORTH, RANGE 13 EAST OF THE THIRD PRINCIPAL MERIDIAN IN COOK COUNTY, ILLINOIS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTH RIGHT-OF-WAY LINE OF VOLLMER ROAD AS DEDICATED ON A PLAT RECORDED PER DOCUMENT NUMBER 30261377, SAID LINE ALSO BEING 50 FEET NORTH OF AND PARALLEL WITH THE SOUTH LINE OF SAID SOUTHWEST QUARTER AND THE EAST RIGHT-OF-WAY LINE OF ILLINOIS ROUTE 43 (HARLEM AVENUE), SAID LINE ALSO BEING 70 FEET EAST OF AND PARALLEL WITH THE WEST LINE OF SAID SOUTHWEST QUARTER;

THENCE NORTH OO DEGREES 22 MINUTES 53 SECONDS WEST, ALONG THE EAST RIGHT-OF-WAY LINE OF SAID ILLINOIS ROUTE 43 (HARLEM AVENUE), A DISTANCE OF 35.00 FEET, THENCE SOUTH 45 DEGREES 28 MINUTES 28 SECONDS EAST, A DISTANCE OF 49.42 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF SAID VOLLMER ROAD. THENCE SOUTH 89 DEGREES 25 MINUTES 56 SECONDS WEST, A DISTANCE OF 35.00 TO THE POINT OF BEGINNING.

ILLINOIS DEPARTMENT OF TRANSPORTATION ACCEPTANCE
THE PROPOSED DEDICATION TO THE PEOPLE OF THE STATE OF ILLINOIS, DEPARTMENT OF TRANSPORTATION IS HEREBY ACCEPTED.
BY:, 20 JOSE RIOS, P.E. REGION ONE ENGINEER

ILLINOIS DEPARTMENT OF TRANSPORTATION CERTIFICATE

THIS PLAT HAS BEEN APPROVED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION WITH RESPECT TO ROADWAY ACCESS PURSUANT TO PARAGRAPH 2 OF "AN ACT TO REVISE THE LAW IN RELATION TO PLATS." AS AMENDED. A PLAN THAT MEETS THE REQUIREMENTS CONTAINED IN THE DEPARTMENT'S "POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS" WILL, BE REQUIRED BY THE DEPARTMENT.

JOSE RIOS, P.E. REGION ONE ENGINEER

- 1. THERE SHALL BE AT MOST TWO (2) FULL VEHICULAR ACCESS POINTS ONTO HARLEM AVENUE (ILLINOIS ROUTE 43) FROM LOT 1 AND LOT 2 AS SHOWN HEREON (ACCESS POINTS 1 AND 2).
- 2. THERE SHALL BE ONE (1) RIGHT-IN, RIGHT-OUT ONLY VEHICULAR ACCESS TO HARLEM AVENUE (ILLINOIS
- 3. ACCESS TO AND FROM LOT 3 AND LOT 4 SHALL BE VIA INTERNAL CIRCULATION.

VILLAGE TREASURER'S CERTIFICATE

STATE OF ILLINOIS))S.S.
)S.S. COUNTY OF COOK)
HEREBY CERTIFY THAT THERE ARE NO DELINQUENT SPECIAL ASSESSMENTS OR UNPAID CURRENT SPECIAL ASSESSMENTS ON THE ABOVE DESCRIBED PROPERTY.
DATED THISDAY OF, A.D., 2021.
VILLAGE TREASURER
VILLAGE BOARD CERTIFICATE
STATE OF ILLINOIS)
)S.S. COUNTY OF COOK)
,
APPROVED BY THE VILLAGE PRESIDENT AND BOARD OF TRUSTEES OF THE VILLAGE OF TINLEY PARK, ILLINOIS.
DATED THISDAY OF, A.D., 2021.
BY: VILLAGE PRESIDENT
ATTEST: CLERK
OLLINA

VILLAGE ENGINEER'S CERTIFICATE

VILLAGE ENGINEER

COUNTY OF COOK)		
APPROVED BY THE VILLAGE ENGINEER OF THE VILLAGE OF ILLINOIS.	TINLEY PARK, COO	< COUNT
DATED THISDAY OF,	, A.D., 2021.	

SANITARY SEWER EASEMENT PROVISIONS

A PERMANENT, NON-EXCLUSIVE EASEMENT IS HEREBY RESERVED FOR AND GRANTED TO THE VILLAGE OF TINLEY PARK, TOGETHER WITH THEIR RESPECTIVE 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 SANITARY SEWER SERVICE. THIS EASEMENT SHALL EXTEND IN, UNDER, ACROSS, ALONG AND UPON THE SURFACE OF THE PROPERTY SHOWN AND LABELED "SANITARY SEWER EASEMENT". THE EASEMENT SHALL INCLUDE THE RIGHT OF UNOBSTRUCTED ACCESS FOR INGRESS AND EGRESS TO ALL SANITARY SEWER 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 GARDENS, SHRUBS, 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 GRASSY AREAS.

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 EASEMENT" AND/OR "WATERMAIN AND PATH EASEMENT", 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.

COOK COUNTY HIGHWAY DEPARTMENT CERTIFICATE

THIS PLAT HAS BEEN APPROVED BY THE COOK COUNTY HIGHWAY DEPARTMENT WITH RESPEC TO ROADWAY ACCESS PURSUANT TO 765 ILCS 205/2. HOWEVER, A HIGHWAY PERMIT, CONFORMING TO THE STANDARDS OF COOK COUNTY HIGHWAY DEPARTMENT IS REQUIRED BY THE OWNER OF THE PROPERTY FOR THIS ACCESS. (RESTRICTED ACCESS)
TO ROADWAY ACCESS PURSUANT TO 765 ILCS 205/2. HOWEVER, A HIGHWAY PERMIT,
CONFORMING TO THE STANDARDS OF COOK COUNTY HIGHWAY DEPARTMENT IS REQUIRED BY
THE OWNER OF THE PROPERTY FOR THIS ACCESS. (RESTRICTED ACCESS)

COOK COUNTY, ILLINOIS SUPERINTENDENT OF HIGHWAYS

THERE SHALL BE AT MOST ONE (1) FULL VEHICULAR ACCESS POINT ONTO VOLLMER ROAD (COUNTY HIGHWAY B66) FROM LOT 3 AS SHOWN HEREON (ACCESS POINT 3).

DRAINAGE CERTIFICATE

STATE OF ILLINOIS COUNTY OF COOK

TO THE BEST OF OUR KNOWLEDGE AND BELIEF THE DRAINAGE OF SURFACE WATERS WILL NOT BE CHANGED BY THE CONSTRUCTION OF SUCH SUBDIVISION OR ANY PART THEREOF. OR. THAT IF SUCH SURFACE WATER DRAINAGE WILL BE CHANGED, REASONABLE PROVISION HAS BEEN MADE FOR THE COLLECTION AND DIVERSION OF SUCH SURFACE WATERS INTO PUBLIC AREAS, OR DRAINS WHICH THE SUBDIVIDER HAS A RIGHT TO USE, AND THAT SUCH SURFACE WATERS WILL BE PLANNED FOR IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES SO AS TO REDUCE THE LIKELIHOOD OF DAMAGE TO THE ADJOINING PROPERTY BECAUSE OF THE CONSTRUCTION OF THE SUBDIVISION.

DATED THIS _____, DAY OF _______, 2021.

OWNER/ATTORNEY: _____

PRINTED NAME AND TITLE

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

PERMISSION TO RECORD

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 26TH DAY OF MAY, A.D. 2021.

LICENSE EXPIRES NOVEMBER 30, 2022



SURVEYORS CERTIFICATE

COUNTY OF DUPAGE)

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

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

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,

GIVEN UNDER MY HAND AND SEAL THIS 26TH DAY OF MAY, A.D. 2021.



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.



SUBDIVI S

ILLINO SION BDIV PARK INIT.

OF LAGE

BUSINE

PROJ. MGR.: ZRS PROJ. ASSOC.: TJM

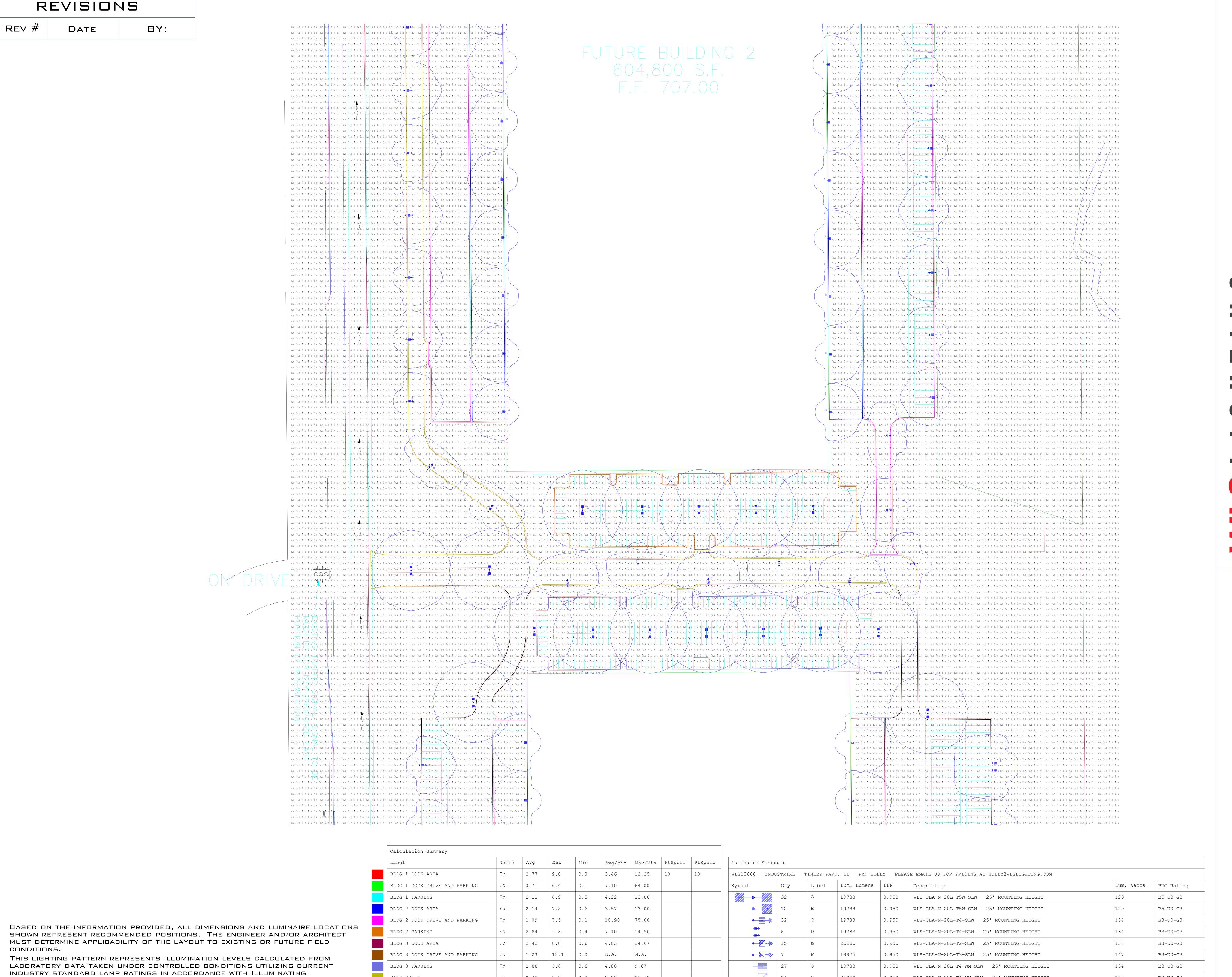
03/31/21 SCALE:

SHEET

SCPTPIL01



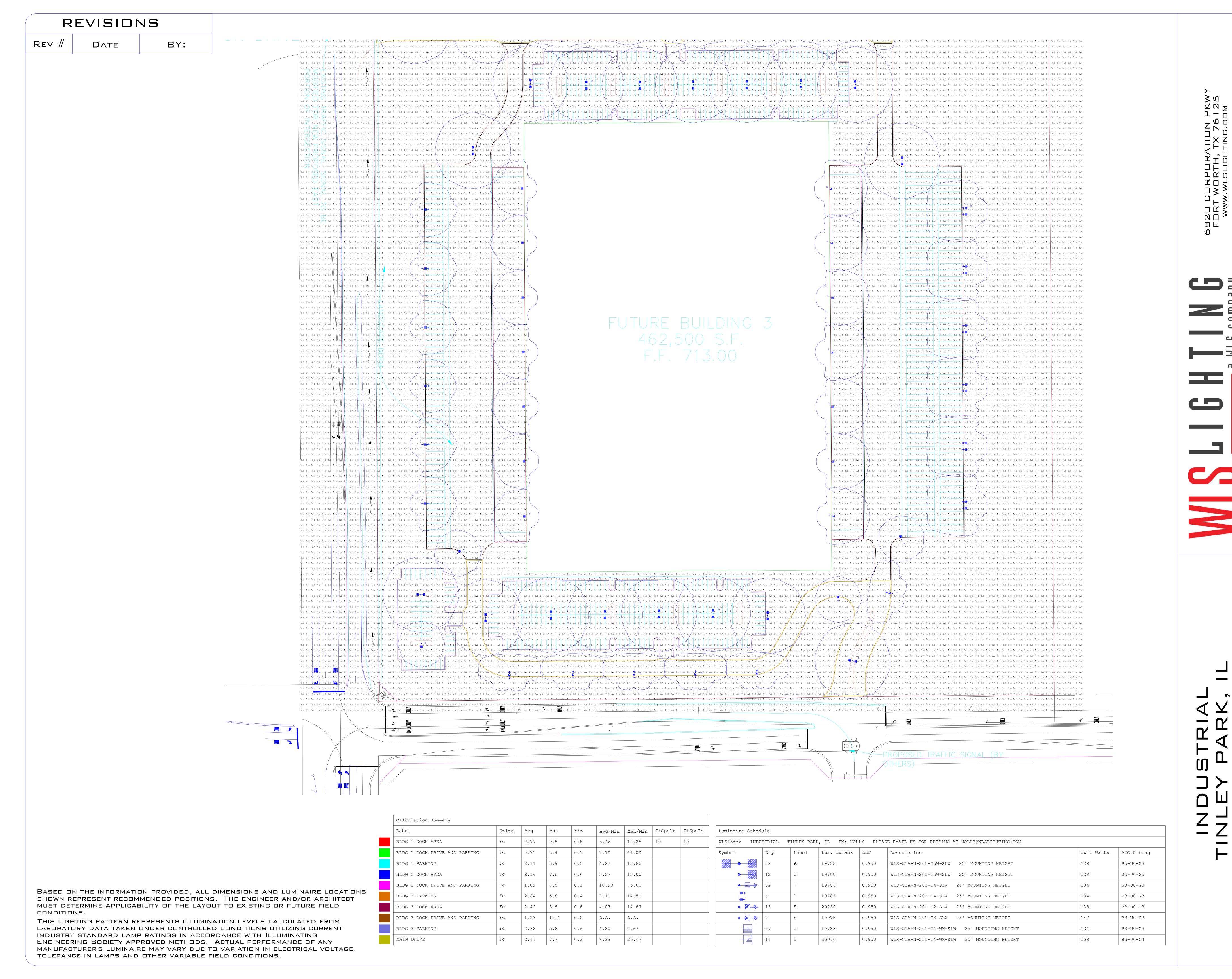
TOLERANCE IN LAMPS AND OTHER VARIABLE FIELD CONDITIONS.



ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS AND OTHER VARIABLE FIELD CONDITIONS.

	Calculation Summary								
	Label	Units	Avg	Max	Min	Avg/Min	Max/Min	PtSpcLr	PtSpcTb
	BLDG 1 DOCK AREA	Fc	2.77	9.8	0.8	3.46	12.25	10	10
	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		
ıs	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 PARKING	Fc	2.88	5.8	0.6	4.80	9.67		
	MAIN DRIVE	FC	2.47	7.7	0.3	8.23	25.67		
		•	•						

Symbol	Qty	Label	Lum. Lumens	LLF	Description	Lum. Watts	BUG Rating
	32	A	19788	0.950	WLS-CLA-N-20L-T5W-SLW 25' MOUNTING HEIGHT	129	B5-U0-G3
	12	В	19788	0.950	WLS-CLA-N-20L-T5W-SLW 25' MOUNTING HEIGHT	129	B5-U0-G3
•	№ 32	С	19783	0.950	WLS-CLA-N-20L-T4-SLW 25' MOUNTING HEIGHT	134	B3-U0-G3
■ →	6	D	19783	0.950	WLS-CLA-N-20L-T4-SLW 25' MOUNTING HEIGHT	134	B3-U0-G3
•	15	E	20280	0.950	WLS-CLA-N-20L-T2-SLW 25' MOUNTING HEIGHT	138	B3-U0-G3
•	7	F	19975	0.950	WLS-CLA-N-20L-T3-SLW 25' MOUNTING HEIGHT	147	B3-U0-G3
	27	G	19783	0.950	WLS-CLA-N-20L-T4-WM-SLW 25' MOUNTING HEIGHT	134	B3-U0-G3
	14	Н	25070	0.950	WLS-CLA-N-25L-T4-WM-SLW 25' MOUNTING HEIGHT	158	B3-U0-G4



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MEMORANDUM TO: Kevinn Coughlin

Manhard Consulting

FROM: Luay Aboona, PE, PTOE

Principal

Andrew Bowen Consultant

DATE: May 27, 2021

SUBJECT: Traffic Study Addendum

Proposed Warehouse Distribution Development

Wheaton, Illinois

This memorandum is an addendum to the traffic study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the 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, at full build out, the site is to be developed with approximately 1,262,300 square feet of warehouse/distribution space in three buildings.

The purpose of the addendum is to evaluate the traffic impact of Phase One of the proposed development on traffic conditions in the area and determine the adequacy of the proposed access drives.

Proposed Phase One Development Plan

Phase One is to consist of the northern most portion of the site which will be developed with a single 195,000 square-foot warehouse/distribution building. 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 194th Street and 500 feet north of 195th 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 195th 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 194th 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 copy of the proposed Phase One site plan is included in the Appendix.

Phase One 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*, 10th 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.

Table 1 shows the truck and passenger vehicle trips estimated to be generated by Phase One of the development during the weekday morning and weekday evening peak hours, as well as the two-way weekday daily traffic volumes.

Table 1
ESTIMATED PHASE ONE DEVELOPMENT TRIP GENERATION

ITE Land-			kday M Peak Ho		Wee	Daily Two-		
Use Code	Type/Size	In	Out	Total	In	Out	Total	Way Trips
150	Phase One Warehouse (195,000 s.f.)	20	5	25	7	19	26	314
	Passenger Vehicles (80%)	16	4	20	6	15	21	252
	Trucks (20%)	4	1	5	1	4	5	62

Traffic Assignment and Projected Traffic Volumes

The estimated weekday morning and evening traffic volumes that will be generated by Phase One of the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 6). The new site traffic assignment is illustrated in **Figure 1**. The Phase One development-generated traffic was added to the Year 2027 no-build traffic volumes contained in the original report to determine the Phase One Year 2027 total projected traffic volumes, as shown in **Figure 2**.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and evening peak hours for the Year 2027 total projected traffic volumes in the same manner as is described in the original report. Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) are presented in **Tables 2** through **5**. Summary sheets for the capacity analyses are included in the Appendix.

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 under Year 2027 total projected conditions, this intersection is projected to operate at LOS C during the weekday morning peak hour and LOS D during the weekday evening peak hour. 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, Phase One of the development is projected to increase the volume of traffic traversing this intersection by less than one percent during the peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by Phase One of the development and no 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 under Year 2027 total projected 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. 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. As such, the proposed access drive will adequately accommodate Phase One site generated traffic with a limited impact on the existing traffic signal.

Table 2 CAPACITY ANALYSIS RESULTS – HARLEM AVENUE WITH VOLLMER ROAD – SIGNALIZED – PHASE ONE

	Peak	Eastbound			Westbound			Northbound			Southbound			
	Hour	L	T	R	L	T	R	L	T	R	L	Т	R	Overall
	Weekday	Е	Е	Е	Е	F	Е	Е	В	A	Е	A	A	
ed	Morning	65.0	63.0	56.0	71.6	94.0	64.3	65.0	16.3	8.5	63.2	3.1	2.7	C
Year 2027 otal Projected Conditions ¹	Peak Hour	E – 62.0		E – 65.6		B – 15.6		C – 24.5			28.8			
	Weekday	Е	Е	Е	F	Е	Е	Е	C	В	Е	A	A	
Yes Total Con	Evening	73.6	69.9	59.2	68.5	56.5	72.1	71.0	31.0	13.1	69.9	6.2	0.5	D
T	Peak Hour		E – 68.5		E – 70.6		C – 30.0		C – 29.0			38.6		
	Letter denotes Level of Service L – Left Turns													
	Delay is measured in seconds. $T-$ Through													
1 – Include	s planned impro	vements a	is part of t	he propose	ed Amazo	n facility		R –	Right Tur	ns				

Table 3
CAPACITY ANALYSIS RESULTS – SIGNALIZED – HARLEM AVENUE WITH BENTON DRIVE – PHASE ONE

	Peak	Eastbound		Westbound			Northbound			Southbound			0		
	Hour	L	Т	R	L	T	R	L	T	R	L	Т	R	Overall	
Year 2027 Total Projected Conditions	Weekday Morning		Е		D 46.0			A 3.4	A 4.7	A 4.0		H 11	3 .3	B 12.0	
	Peak Hour	71.1			D – 46.0				A - 4.7			B - 11.3			
	Weekday Evening		E		D 51.8	51		D 42.0	A 4.1	-		29	_	C	
1	Peak Hour	77.2			D – 51.7			A – 7.6			C – 29.5			22.9	
					R – Right	-Turns									

Table 4
CAPACITY ANALYSIS RESULTS – SIGNALIZED - HARLEM AVENUE WITH OAK PARK AVENUE – PHASE ONE

	Peak	Easth	ound	Northbound	South	Overall		
	Hour	L	R	T	L	T	Overan	
ted	Weekday Morning	E 68.7		A	E 64.5	A 2.6	A	
ar 2027 Projected nditions	Peak Hour	E –	68.7	3.3	A –	4.2		
Year 2027 Total Projecte Conditions	Weekday Evening	E 78.3	D 45.4	A	E 69.7	A 7.8	A	
1	Peak Hour	E –	75.8	4.6	A – 7.9		10.0	
	es Level of Ser asured in secon			R – Right-Turns				

Table 5 CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS YEAR 2027 TOTAL PROJECTED TRAFFIC CONDITIONS – PHASE ONE

		Morning Hour	Weekday Evening Peak Hour		
Intersection	LOS	Delay	LOS	Delay	
Harlem Avenue with 195 th Street	-	-	_	-	
Eastbound Approach	D	28.0	F	99+	
Westbound Left Turn	E	35.5	E	49.6	
Westbound Right Turn	C	19.6	В	13.2	
Northbound Left Turn	В	9.9	C	17.9	
Southbound Left Turn	В	13.2	В	13.2	
Harlem Avenue with the Gas N Wash Access	s Drive				
Eastbound Approach	В	12.2	C	23.3	
Harlem Avenue with the Right-in/Right-out	Access Dri	ive			
Westbound Approach	В	13.8	В	13.7	
Harlem Avenue with 194th Street					
Eastbound Left Turn	Е	44.9	F	99+	
Eastbound Right Turn	В	12.1	C	21.7	
Northbound Left Turn	В	11.4	C	23.5	
LOS = Level of Service Delay is measured in seconds.					

Harlem Avenue with Oak Park Avenue

The results of the capacity analysis indicate that under Year 2027 total projected conditions, this intersection is projected to operate at LOS A during the weekday morning and weekday evening peak hours. 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 Phase One of the development and no roadway improvements and/or traffic control modifications are required.

Harlem Avenue with 195th Street and the Proposed Access Drive

The results of the capacity analyses indicate that under year 2027 total projected conditions, the 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 and weekday evening peak hours. 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 95th 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 Phase One 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 and Harlem Avenue with 194th Street

The results of the capacity analyses indicate that under Year 2027 total projected conditions, all movements at theses intersections 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 Phase One development-generated traffic and no geometric improvements and/or traffic control modifications are required.

Harlem Avenue with the Right-in/Right-out Access Drive

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.

Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- Phase One of the development will account for a small percentage of the full buildout of the site and will generate a limited volume of traffic.
- The roadway system has sufficient reserve capacity to accommodate the traffic projected to be generated by Phase One of the proposed development.
- The proposed access system on Harlem Avenue will be adequate in accommodating the Phase One development-generated traffic and will ensure that efficient and flexible access is provided.
- A northbound right-turn lane will not be warranted on Harlem Avenue serving the proposed right-in/right-out access drive.

Appendix

SITE DIMENSIONAL AND PAVING NOTES:

- ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
- ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
- ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
- TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2-#6 BARS x 18'' LONG DOWELED INTO EXISTING CURB.
- EXISTING CURB.

 BUILDING DIMENSIONS AND ADJACENT PARKING 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 NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION LEVOUT OF BUILDING.
- USED FOR CONSTRUCTION LAYOUT OF BUILDING.

 IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS
 TRUCK DCCK, RETAINING WALLS, SIDEWALKS, CURRING,
 FENCES, CANOPIES, KAMPS, HANDLORAP, ACCESS, PLANIFES,
 FUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN
 FOR APPROXIMATE LOCATION, ONLY, REFER TO ARCHITECTURE,
 PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
- LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING, PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIO TO CONSTRUCTING THE SIDEWALKS.
- ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
- SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
- PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
- THE CONTRACTOR SHALL CONTACT JULLIE.

 (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE

 UTILITES AND SHALL CONTACT THE OWNER SHOULD UTILITIES

 APPEAR TO BE IN CONFLICT WITH THE PROPOSED

 IMPROVEMENT.

SITE DATA

SITE AREA

VEHICLE PARKING PROVIDED 152 SPACES ADA PARKING REQUIRED 6 SPACES ADA PARKING PROVIDED 6 SPACES TRAILER PARKING PROVIDED PARKING RATIO 47 SPACES 0.78 SPACES/1000 S.F

FUTURE BUILDING 2 AND 3 PARKING SHOWN FOR

STANDARD DUTY PAVEMENT*
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
1 1/2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
8" AGGREGATE BASE COURSE, TYPE B HEAVY DUTY PAVEMENT*
2" BITUMNOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
3" BITUMNOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
10" AGGREGATE BASE COURSE, TYPE B

PAVEMENT LEGEND

CONCRETE PAVEMENT*
6 1/2" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF
6" COMPACTED AGGREGATE BASE, TYPE B CONCRETE SIDEWALK 5" PORTLAND CEMENT CONCRETE F" COMPACTED AGGREGATE BASE COURSE, TYPE B

BITUMINOUS MULTI-USE PATH
3" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
6" COMPACTED AGGREGATE BASE COURSE, TYPE B

*RECOMMENDATIONS PROVIDED PER GEOTECHNICAL REPORT BY PIONEER ENGINEERING AND ENVIRONMENTAL SERVICES, LLC

PAVEMENT MARKING LEGEND

- (A) 24" WHITE STOP BAR
- B 4" YELLOW LINE
- © 4" YELLOW DIAGONAL AT 45' SPACED 3' O.C. W/ 4" YELLOW BORDER
- (D) LETTERS AND SYMBOLS PAVEMENT MARKINGS

SIGN LEGEND

1 R1-1 STOP SIGN (2) R7-8 HANDICAP PARKING SIGN

4 DIRECTIONAL SIGN

3 MONUMENT SIGN

NOTE:

PHASE 1 WOULD INCLUDE SOME OVERALL SITE GRADING, FINAL DEVELOPMENT OF BUILDING 1, ALL DETENTION PONDS, HARLEM AVE. LANDSCAPE BERM, A PARTIAL INITIAL INTERNAL ROADWAY AVE. LANDSCAPE BERM, A PARTIAL INITIAL INTERNAL ROAL VOLLMER AVE ENTRANCE, WALKWAY/PATH, DEMOLITION OF EXISTING STRUCTURES, TURN LANE WORK AND ENTRANCE/DEVELOPMENT SIGNAGE.

PHASE 2 WILL INCLUDE THE REMAINDER OF THE DEVELOLPMENT INCLUDING BUILDING 2 AND 3, ADDITIONAL ROADWAYS AND WETLAND BOTTOM DETENTION BASIN B.



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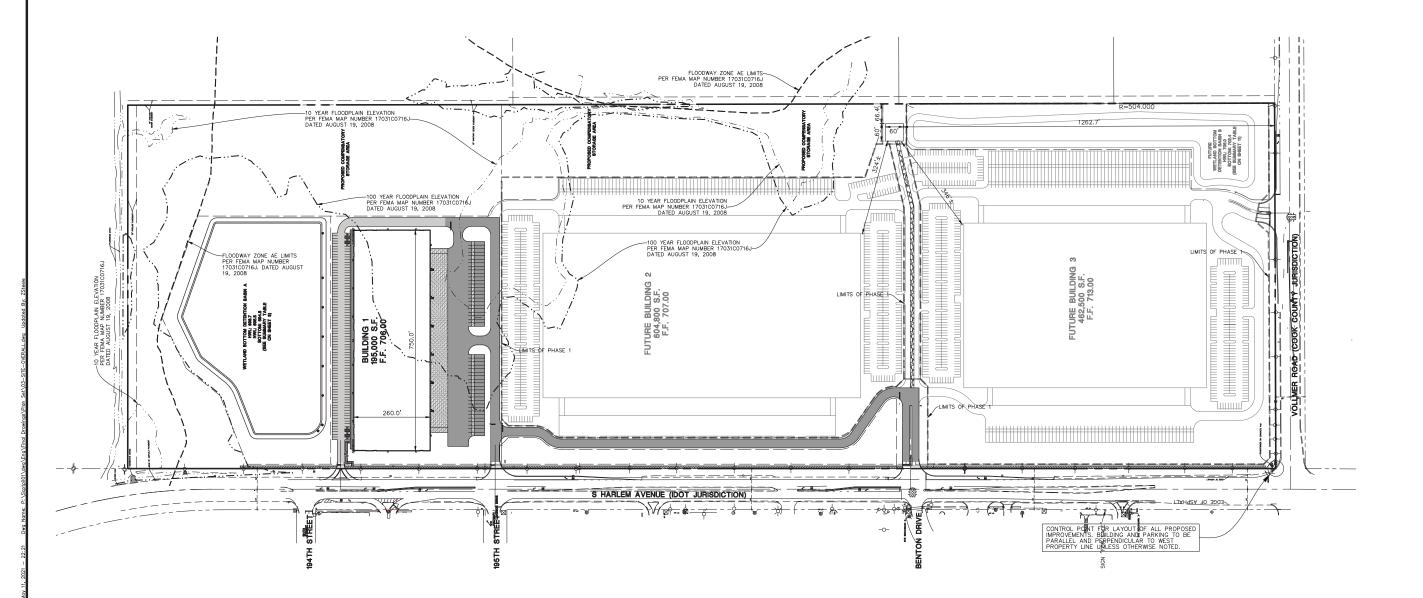
PLAN OVERALL SITE DIMENSIONAL AND PAVING VILLAGE OF TINLEY PARK, ILLINOIS PARK BUISNESS CENTER TINLEY

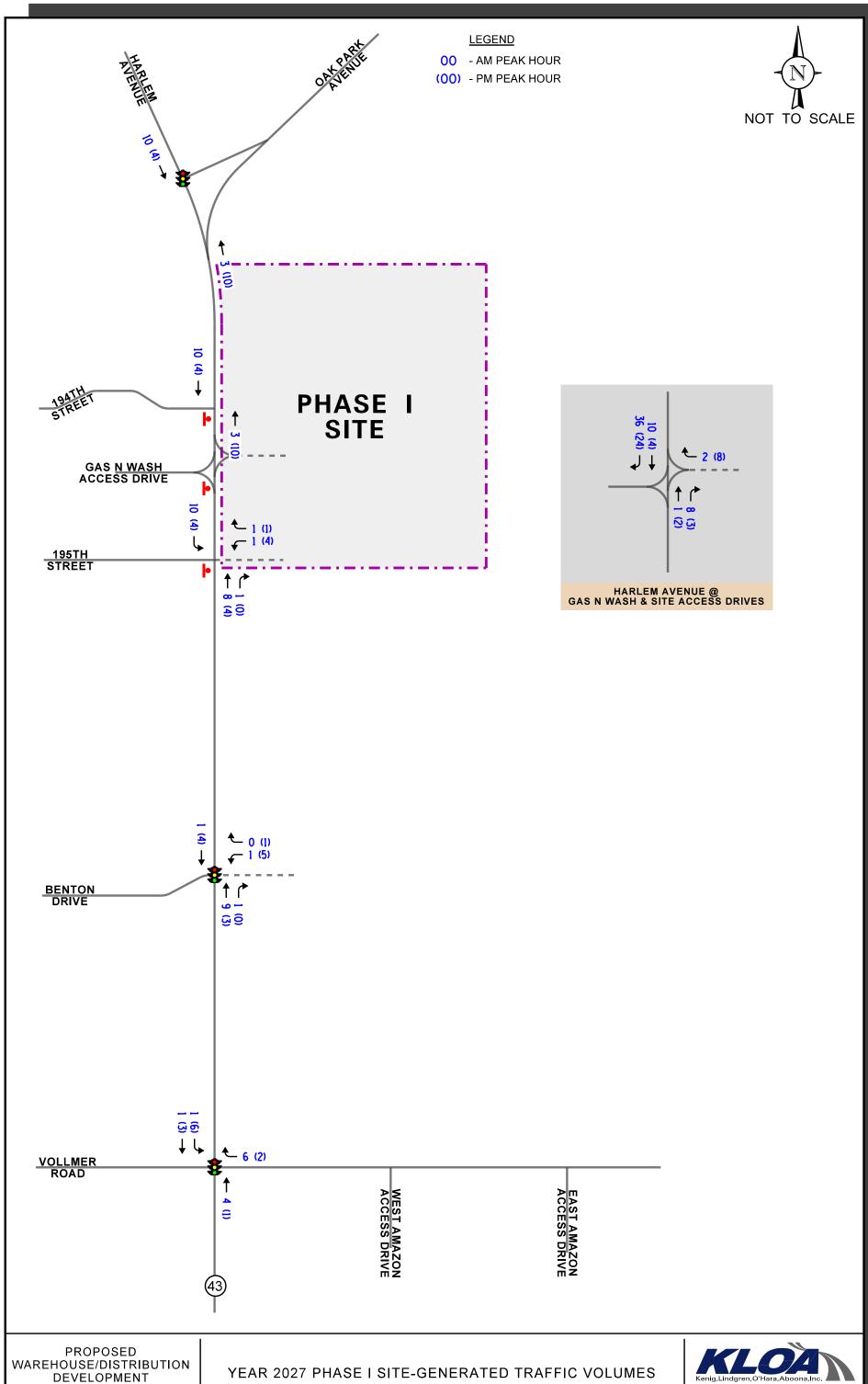
ROJ. MGR.: ZRS ROJ. ASSOC.: EAF DRAWN BY: EAF

DATE: 3-31-21

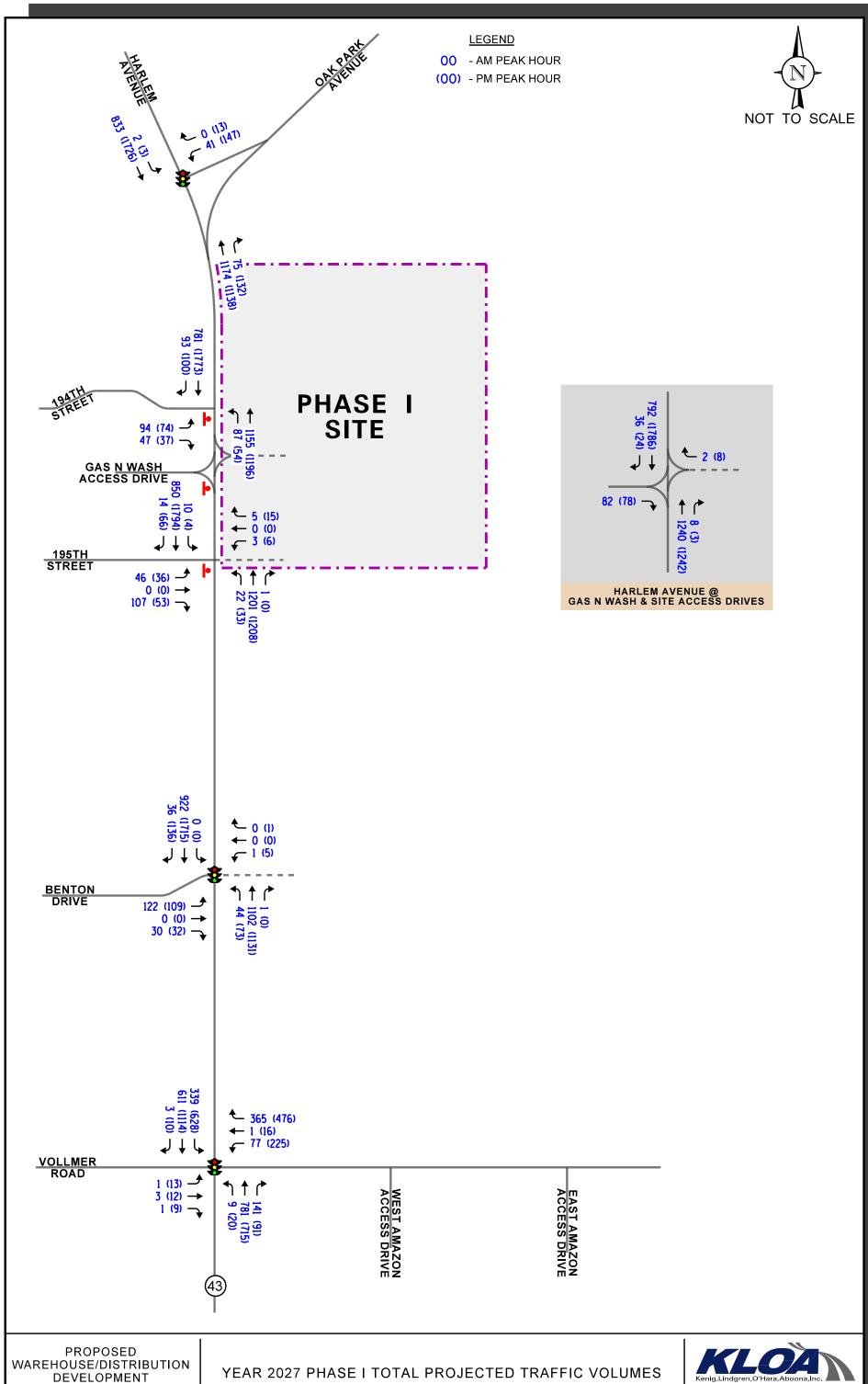
SCALE: 1"=150'

SHEET of **20** 3 SCP.TIL01





TINLEY PARK, ILLINOIS



TINLEY PARK, ILLINOIS

	•	•	†	/	-	ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	77	^	7	ሻሻ	†
Traffic Volume (vph)	41	0	1174	75	2	833
Future Volume (vph)	41	0	1174	75	2	833
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	2000
Lane Width (ft)	1900	1900	12	1900	1900	12
	0%	12	0%	12	12	0%
Grade (%)		0	0%	100	210	0%
Storage Length (ft)	150	0		100	310	
Storage Lanes	1	2		1	2	
Taper Length (ft)	150	0.00	0.05	1.00	235	0.05
Lane Util. Factor	1.00	0.88	0.95	1.00	0.97	0.95
Ped Bike Factor						
Frt				0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3344	3654	1599	3502	3619
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3344	3654	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)	10.3		13.4			14.7
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%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	0	1414	90	2	1004
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	<u> </u>		_		•	
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
1 , ,						119.0
Total Split (s)	21.0	15.4	103.6		15.4	
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
Actuated 9/0 Ratio	0.07		0.00	1.00	0.04	0.07

1: Harlem Avenue & Oak Park Avenue

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.37		0.45	0.06	0.01	0.32
Control Delay	68.7		3.4	0.1	64.5	2.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	68.7		3.4	0.1	64.5	2.6
LOS	Е		Α	Α	Е	Α
Approach Delay	68.7		3.2			2.7
Approach LOS	Е		Α			Α
Queue Length 50th (ft)	43		65	0	1	82
Queue Length 95th (ft)	78		228	0	5	106
Internal Link Dist (ft)	1276		938			890
Turn Bay Length (ft)	150			100	310	
Base Capacity (vph)	193		3119	1599	272	3143
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	0.32
Intersection Summary						
Area Type:	Other					
Cycle Length: 140						
Actuated Cycle Length: 14						
Offset: 100 2 (78%) Refe	ranced to nha	SA 2-MRT	2.4 has	RT Start	of Groon	

Offset: 109.2 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

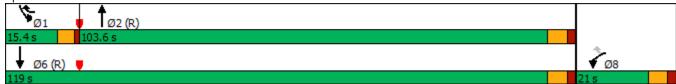
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection LOS: A Intersection Signal Delay: 4.3 Intersection Capacity Utilization 47.5% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Proposed Site Access

	۶	→	•	€	+	•	•	†	~	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	f)		ሻ	^	7	ሻ	↑ Ъ	,
Traffic Volume (vph)	122	0	30	1	0	0	44	1102	1	0	922	36
Future Volume (vph)	122	0	30	1	0	0	44	1102	1	0	922	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	070	0	0	070	0	95	070	215	150	070	0
Storage Lanes	0		0	1		0	1		1	1		0
Taper Length (ft)	0		· ·	0		J	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	1.00	1.00	0.70	0.70
Frt		0.973							0.850		0.994	
Flt Protected		0.961		0.950			0.950		0.000		0.774	
Satd. Flow (prot)	0	1970	0	1805	1900	0	1687	3654	808	1900	3445	0
Flt Permitted	U	0.768	U	0.730	1700	U	0.221	3034	000	1700	3773	U
Satd. Flow (perm)	0	1574	0	1387	1900	0	392	3654	808	1900	3445	0
Right Turn on Red	U	1374	No	1307	1700	No	372	3034	No	1700	3443	No
Satd. Flow (RTOR)			INO			INO			INU			NO
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	
. ,		1.2			4.0			7.1			21.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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%	100%	0%	4%	8%
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 (%)		171	0	1	0	0	40	1000		0	107/	0
Lane Group Flow (vph)	0	171	0	1	0	0	49	1238	1	0	1076	0
Turn Type	Perm	NA		Perm	0		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		0	8		5	2	2		6	
Permitted Phases	4	4		8	0		2	2	2	6	,	
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase	0.0	0.0		0.0	0.0		0.0	45.0	45.0	0.0	45.0	
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)	54.6	54.6		54.6	54.6		12.6	72.8	72.8	12.6	72.8	
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	2.0		2.0	2.0		0.0	2.0	2.0	0.0	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	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	
Act Effct Green (s)		21.6		21.6			108.9	106.4	106.4		98.1	
Actuated g/C Ratio		0.15		0.15			0.78	0.76	0.76		0.70	

2: Harlem Avenue & Benton Drive/Proposed Site Access

	•	-	•	•	•	•	4	†	/	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.70		0.00			0.13	0.45	0.00		0.45	
Control Delay		71.1		46.0			3.6	5.1	4.0		11.3	
Queue Delay		0.0		0.0			0.0	0.0	0.0		0.0	
Total Delay		71.1		46.0			3.6	5.1	4.0		11.3	
LOS		Е		D			Α	А	Α		В	
Approach Delay		71.1			46.0			5.0			11.3	
Approach LOS		Ε			D			Α			В	
Queue Length 50th (ft)		150		1			7	175	0		204	
Queue Length 95th (ft)		215		6			m8	98	m0		340	
Internal Link Dist (ft)		238			121			388			1321	
Turn Bay Length (ft)							95		215			
Base Capacity (vph)		546		481			389	2776	613		2414	
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		0.31		0.00			0.13	0.45	0.00		0.45	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 80 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

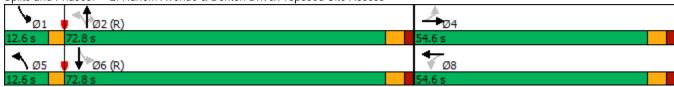
Intersection Signal Delay: 12.1
Intersection Capacity Utilization 60.9%

Intersection LOS: B ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 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
Lane Configurations	*	†	7	ሻሻ	†	7	ሻሻ	^	1	1,1	^	7
Traffic Volume (vph)	1	3	1	77	1	365	9	781	141	339	611	3
Future Volume (vph)	1	3	1	77	1	365	9	781	141	339	611	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	3400	2000	1553	3502	3619	1583	3367	3654	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1805	2000	1615	3400	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%	3%	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	397	10	849	153	368	664	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	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)	5.7	8.0	8.7	9.3	8.5	42.1	5.9	85.3	100.6	27.6	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

3: Harlem Avenue & Access Road/Vollmer Road

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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	0.85	0.07	0.39	0.13	0.56	0.23	0.00
Control Delay	65.0	63.0	56.0	71.6	94.0	64.3	65.0	16.3	8.5	63.2	3.1	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	71.6	94.0	64.3	65.0	16.3	8.5	63.2	3.1	2.7
LOS	Е	Е	Е	Ε	F	Е	Е	В	Α	Е	Α	Α
Approach Delay		62.0			65.6			15.6			24.5	
Approach LOS		Е			Е			В			С	
Queue Length 50th (ft)	1	3	1	38	1	364	4	186	36	176	22	0
Queue Length 95th (ft)	7	13	6	72	m7	257	14	345	105	236	72	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	488	657	2205	1137	711	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	0.81	0.02	0.39	0.13	0.52	0.23	0.00

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 84 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

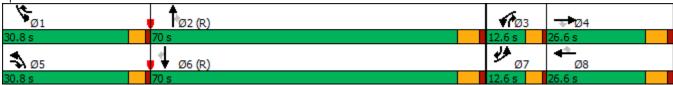
Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.8 Intersection LOS: C
Intersection Capacity Utilization 58.9% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road



Intersection								
Int Delay, s/veh	2.6							
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	*	7	ሻ	^	↑ ⊅			
Traffic Vol, veh/h	94	47	87	1155	781	93		
Future Vol, veh/h	94	47	87	1155	781	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		-	-	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	1203	814	97		
IVIVIIII I IOW	70	47	71	1203	014	71		
Major/Minor	Minor2	N	/lajor1	N	Major2			
Conflicting Flow All	1647	456	911	0	- viajoi 2	0		
Stage 1	863	430	711	-	_	-		
Stage 2	784	_	_	_	_	_		
Critical Hdwy	6.8	6.9	4.46		_			
Critical Hdwy Stg 1	5.8	0.7	4.40			_		
Critical Hdwy Stg 2	5.8	-	_		_			
Follow-up Hdwy	3.5	3.3	2.38	-	_	-		
Pot Cap-1 Maneuver	~ 92	5.5 557	651	-	-	-		
Stage 1	378	33 <i>1</i>	001	-	-	-		
Stage 2	416	-	-	-	-	-		
Platoon blocked, %	410	-	-	-	-	•		
Mov Cap-1 Maneuver	~ 79	557	651	-	-	-		
Mov Cap-1 Maneuver		55 <i>1</i>	001	-	-	-		
Stage 1	325	-	-	-		-		
•	416	-	-	-	-	•		
Stage 2	410	-	-	-	-	-		
Approach	EB		NB		SB			
HCM Control Delay, s			0.8		0			
HCM LOS	D		0.0		U			
I IGIVI EUS	D							
Minor Lane/Major Mvn	nt	NBL	NRT	EBLn1 l	-RI n2	SBT	SBR	
Capacity (veh/h)		651	NDI	184	557	JDT	- -	
HCM Lane V/C Ratio		0.139	-	0.532		-		
	١		-			-	-	
HCM Lang LOS)	11.4	-	44.9	12.1	-	-	
HCM Lane LOS	.)	В	-	E 2.7	В	-	-	
HCM 95th %tile Q(veh	IJ	0.5	-	2.7	0.3	-	-	
Votes								
~: Volume exceeds ca	pacity	\$: De	lay exc	ceeds 30	00s	+: Com	outation Not Defined	*: All major volume in platoon

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			1			7		ተ ኈ			^	7
Traffic Vol, veh/h	0	0	82	0	0	2	0	1240	8	0	792	36
Future Vol, veh/h	0	0	82	0	0	2	0	1240	8	0	792	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	5	0
Mvmt Flow	0	0	87	0	0	2	0	1319	9	0	843	38
Major/Minor N	1inor2		N	Minor1		Λ	/lajor1		Λ	/lajor2		
Conflicting Flow All	-	-	422	-	-	660	-	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	586	0	0	410	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	-	-	586	-	-	410	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	12.2			13.8			0			0		
HCM LOS	В			В								
Minor Lane/Major Mvmt	<u> </u>	NBT E	EBLn1V	VBLn1	SBT							
Capacity (veh/h)			586	410	-							
HCM Lane V/C Ratio		-	0.149		-							
HCM Control Delay (s)		-	12.2	13.8	-							
HCM Lane LOS		-	В	В	-							
HCM 95th %tile Q(veh)		-	0.5	0	-							
, ,												

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			f		*	^	7	ች	† 1>	
Traffic Vol, veh/h	46	0	107	1	0	1	22	1201	1	10	850	14
Future Vol, veh/h	46	0	107	1	0	1	22	1201	1	10	850	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	100	0	4	100	20	4	0
Mvmt Flow	49	0	114	1	0	1	23	1278	1	11	904	15
Major/Minor N	1inor2			Minor1		ı	Major1		N	Major2		
Conflicting Flow All	1619	2259	460	1798	2265	639	919	0	0	1279	0	0
Stage 1	934	934	-	1324	1324	-	-	-	-	-	-	-
Stage 2	685	1325	-	474	941	-	_	_	_	-	-	-
Critical Hdwy	7.84	6.5	6.9	7.5	6.5	8.9	4.1	-	-	4.5	-	-
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	4.3	2.2	-	-	2.4	-	-
Pot Cap-1 Maneuver	59	42	554	51	41	247	751	-	-	451	-	-
Stage 1	258	347	-	167	227	-	-	-	-	-	-	-
Stage 2	371	227	-	545	345	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	56	40	554	39	39	247	751	-	-	451	-	-
Mov Cap-2 Maneuver	157	135	-	119	135	-	-	-	-	-	-	-
Stage 1	250	339	-	162	220	-	-	-	-	-	-	-
Stage 2	358	220	-	422	337	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	28			27.6			0.2			0.2		
HCM LOS	D			D								
Minor Lane/Major Mvmt		NBL	NBT	NBR I	EBLn1V	WBLn1V	VBLn2	SBL	SBT	SBR		
Capacity (veh/h)		751	-	-	315	119	247	451	-	-		
HCM Lane V/C Ratio		0.031	-	-					-	-		
HCM Control Delay (s)		9.9	-	-	28	35.5	19.6	13.2	-	-		
HCM Lane LOS		Α	-	-	D	Е	С	В	-	-		
HCM 95th %tile Q(veh)		0.1	-	-	2.8	0	0	0.1	-	-		

	•	•	†	/	>	ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	**************************************	77.77	↑ ↑	7	ሻሻ	†
Traffic Volume (vph)	147	12	1138	132	3	1726
Future Volume (vph)	147	12	1138	132	3	1726
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	2000
Lane Width (ft)	1700	1700	12	1700	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	Z		I	235	
Lane Util. Factor	1.00	0.88	0.95	1.00	0.97	0.95
Ped Bike Factor	1.00	0.88	0.95	1.00	0.97	0.95
Frt		0.850		0.850		
FIt Protected	0.950	0.830		0.650	0.950	
		20.42	2654	1500		2600
Satd. Flow (prot)	1787	2842	3654	1599	3502	3689
Flt Permitted	0.950	20.42	2/54	1500	0.950	2/00
Satd. Flow (perm)	1787	2842	3654	1599	3502	3689
Right Turn on Red		No		No		
Satd. Flow (RTOR)	F.6		4-			
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	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	155	13	1198	139	3	1817
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
` ,	0.0					0.0
Lead/Lag Ontimize?		Lead	Lag		Lead	
Lead-Lag Optimize?	Mane	Yes	Yes		Yes	C 1 1!:-
Recall Mode	None	None	C-Min	150.0	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

1: Harlem Avenue & Oak Park Avenue

	•	•	†	~	-	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.69	0.02	0.43	0.09	0.02	0.62
Control Delay	78.3	45.4	5.1	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	5.1	0.1	69.7	7.8
LOS	Е	D	Α	Α	Е	Α
Approach Delay	75.8		4.6			7.9
Approach LOS	Е		Α			Α
Queue Length 50th (ft)	147	5	86	0	1	330
Queue Length 95th (ft)	220	16	257	0	7	451
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	0.43	0.09	0.01	0.62
Intersection Summary						

Area Type: Other

Cycle Length: 150 Actuated Cycle Length: 150

Offset: 145.5 (97%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

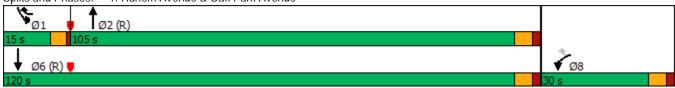
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69 Intersection Signal Delay: 10.0 Intersection Capacity Utilization 63.5%

Intersection LOS: A ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Proposed Site Access

	٠	→	•	•	←	•	1	†	~	/	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	f)		ሻ	^	7	ሻ	↑ ↑	
Traffic Volume (vph)	109	0	32	5	0	1	73	1131	0	0	1715	136
Future Volume (vph)	109	0	32	5	0	1	73	1131	0	0	1715	136
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		0.969			0.850						0.989	
Flt Protected		0.963		0.950			0.950					
Satd. Flow (prot)	0	1994	0	1289	808	0	1787	3654	1900	1900	3474	0
Flt Permitted		0.774		0.720			0.037					
Satd. Flow (perm)	0	1603	0	977	808	0	70	3654	1900	1900	3474	0
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	0%	0%	40%	0%	100%	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	6	1	0	87	1346	0	0	2204	0
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	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		12.7%	56.0%	56.0%	12.7%	56.0%	
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	2.0		2.0	2.0		0.0	2.0	2.0	0.0	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	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	
Act Effct Green (s)		22.0		22.0	22.0		118.5	116.0			104.5	
Actuated g/C Ratio		0.15		0.15	0.15		0.79	0.77			0.70	

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		0.04	0.01		0.59	0.48			0.91	
Control Delay		77.2		51.8	51.0		42.4	4.1			29.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay		77.2		51.8	51.0		42.4	4.1			29.5	
LOS		Е		D	D		D	Α			С	
Approach Delay		77.2			51.7			6.4			29.5	
Approach LOS		Е			D			Α			С	
Queue Length 50th (ft)		159		5	1		38	87			810	
Queue Length 95th (ft)		211		18	6		m73	138			#985	
Internal Link Dist (ft)		238			580			388			1321	
Turn Bay Length (ft)							95					
Base Capacity (vph)		438		267	220		232	2825			2419	
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		0.38		0.02	0.00		0.38	0.48			0.91	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 116 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Intersection Capacity Utilization 83.8%

Maximum v/c Ratio: 0.91 Intersection Signal Delay: 22.9

Intersection LOS: C
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Harlem Avenue & Benton Drive/Proposed Site Access



	۶	→	•	•	←	4	•	†	~	/	+	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	↑	7	ሻሻ	†	7	ሻሻ	^	7	ሻሻ	^	7
Traffic Volume (vph)	13	12	9	225	16	476	20	715	91	628	1114	10
Future Volume (vph)	13	12	9	225	16	476	20	715	91	628	1114	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	0,0	100	235	0,0	0	225	0,0	215	325	0,0	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				0.77			0.77	0170		0.77	0,70	1100
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950		0.000	0.950		3.333
Satd. Flow (prot)	1805	2000	1615	3467	2000	1599	3502	3585	1583	3467	3654	1615
Flt Permitted	0.950	2000	.0.0	0.950	2000	.0,,	0.950	0000	.000	0.950	0001	
Satd. Flow (perm)	1805	2000	1615	3467	2000	1599	3502	3585	1583	3467	3654	1615
Right Turn on Red	.000	2000	No	0.107	2000	No	0002	0000	No	0.07	0001	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)		21.0			17.7						12.7	
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)												J
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)		070			070			070			070	
Lane Group Flow (vph)	16	14	11	271	19	573	24	861	110	757	1342	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	61.4	6.5	70.8	94.5	40.6	108.9	121.8
Actuated g/C Ratio	0.05	0.06	0.08	0.12	0.10	0.41	0.04	0.47	0.63	0.27	0.73	0.81
Actuated y/C Kallo	U.UO	0.00	U.Uŏ	0.12	U. 1U	U.4 I	0.04	0.47	0.03	0.27	0.73	υ.δ Ι

3: Harlem Avenue & Access Road/Vollmer Road

	•	-	•	1	•	•	•	†	/	-	↓	4
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	0.51	0.11	0.81	0.51	0.01
Control Delay	73.6	69.9	59.2	68.5	56.5	72.1	71.0	31.0	13.1	69.9	6.2	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	68.5	56.5	72.1	71.0	31.0	13.1	69.9	6.2	0.5
LOS	Е	Е	Е	Ε	Е	Е	Е	С	В	Ε	Α	Α
Approach Delay		68.5			70.6			30.0			29.0	
Approach LOS		Е			Е			С			С	
Queue Length 50th (ft)	15	13	11	131	19	501	11	321	42	314	110	0
Queue Length 95th (ft)	38	35	27	166	42	656	25	381	73	358	114	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	653	315	1692	1048	937	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	0.51	0.10	0.81	0.51	0.01

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 143 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

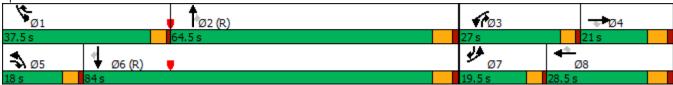
Intersection Signal Delay: 38.6
Intersection Capacity Utilization 64.1%

Intersection LOS: D
ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road



Delay, s/veh 8.6 Nexement EB EBR NBI NBT SBT SBR	Intersection								
Series		8.6							
ne Configurations									
affic Vol. veh/h 74 37 54 1196 1773 100 uniter Vol. veh/h 74 37 54 1196 1773 100 pn Control Stop Stop Free Free Free Channelized None None None None rage Length 70 0 210 - - h in Median Storage, # 1 - 0 0 0 - ake, % 0 - 0 0 - - 0 - ake, % 0 - 0 0 - - 0 - mic Flow 77 39 56 96 96 96 96 avy Vehicles, % 11 0 15 3 3 0 mic Flow 77 39 56 1951 0 0 Slage 1 1899 - - - - - Slage 2 735 - - - - - S							SBR		
ture Vol, vel/h 74 37 54 1196 1773 100 militring Peds, #hr 70 0 0 0 0 0 0 0 militring Peds, #hr 70 0 0 0 0 0 0 0 militring Peds, #hr 70 0 210 h in Median Storage, # 1									
Inflicting Peds, #/hr									
gn Control Stop Stop Free Free Free Free Free Free Free Channelized None No									
Channelized None None None None None or none o									
prage Length 70 0 210	Sign Control								
h in Median Storage, # 1					None	-	None		
ade, % 0 0 0 alt Hour Factor 96 96 96 96 96 96 96 96 97 96 alt Hour Factor 96 96 96 96 96 96 96 96 96 96 96 96 96	Storage Length			210			-		
ak Hour Factor 96 96 96 96 96 96 96 96 96 97 any Vehicles, % 11 0 15 3 3 0 mmt Flow 77 39 56 1246 1847 104 mmt Flow 78 361 1899		•	-	-			-		
Procedure of the second	Grade, %								
Infiliting Flow All 2634 976 1951 0 - 0 Stage 1 1899	Peak Hour Factor								
Stage 1 1899 - - - - - - - - -	Heavy Vehicles, %								
Inflicting Flow All 2634 976 1951 0 - 0 Stage 1 1899	Mvmt Flow	77	39	56	1246	1847	104		
Inflicting Flow All 2634 976 1951 0 - 0 Stage 1 1899									
Inflicting Flow All 2634 976 1951 0 - 0 Stage 1 1899	Major/Minor	Minor2	N	/lajor1	N	Major2			
Stage 1							0		
Stage 2				-					
Itical Hdwy 7.02 6.9 4.4 -				_	_				
titical Hdwy Stg 1 6.02					_				
itical Hdwy Stg 2 6.02					_				
Stage 1									
Cap-1 Maneuver				2 35	_				
Stage 1 93					-	-			
Stage 2				250	-	-			
Section blocked, % Section Sec			-	-	-	-			
ov Cap-1 Maneuver ~ 13 254 250 - </td <td></td> <td>412</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td>		412	-	-	-	-			
Stage 1		12	25/	250	-	-			
Stage 1 ~72 - - - Stage 2 412 - - - - Stage 2 412 - - - - Improach EB NB SB CM Control Delay, s 238.9 1 0 CM LOS F Improach NBT EBLn1 EBLn2 SBT SBR Improach NBT EBLn1 EBLn2 SBT SBR Improach 250 - 58 254 - CM Lane V/C Ratio 0.225 - 1.329 0.152 - - CM Control Delay (s) 23.5 -\$ 347.5 21.7 - - CM Lane LOS C - F C - - CM 95th %tile Q(veh) 0.8 - 6.7 0.5 - - - SM 95th %tile Q(veh) 0.8 - 6.7 0.5 - - -				250	-	-			
Stage 2 412			-	-	-	-			
Description			-	-	-	-	-		
M Control Delay, s 238.9 1 0 M Cos F M Los F M Los F M Los F M Los F M Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR M Lane V/C Ratio 0.225 - 1.329 0.152 CM Control Delay (s) 23.5 -\$ 347.5 21.7 CM Lane LOS C - F C CM 95th %tile Q(veh) 0.8 - 6.7 0.5 M stes	Staye 2	412	-	-	-	-	-		
M Control Delay, s 238.9 1 0 M Cos F M Los F M Los F M Los F M Los F M Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR M Lane V/C Ratio 0.225 - 1.329 0.152 CM Control Delay (s) 23.5 -\$ 347.5 21.7 CM Lane LOS C - F C CM 95th %tile Q(veh) 0.8 - 6.7 0.5 M stes									
CM LOS F nor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR pacity (veh/h) 250 - 58 254 CM Lane V/C Ratio 0.225 - 1.329 0.152 CM Control Delay (s) 23.5 -\$ 347.5 21.7 CM Lane LOS C - F C CM 95th %tile Q(veh) 0.8 - 6.7 0.5 ottes	Approach			NB					
CM LOS F nor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR pacity (veh/h) 250 - 58 254 CM Lane V/C Ratio 0.225 - 1.329 0.152 CM Control Delay (s) 23.5 -\$ 347.5 21.7 CM Lane LOS C - F C CM 95th %tile Q(veh) 0.8 - 6.7 0.5 ottes	HCM Control Delay, s	238.9		1		0			
pacity (veh/h) 250 - 58 254	HCM LOS								
pacity (veh/h) 250 - 58 254									
pacity (veh/h) 250 - 58 254	Minor Lane/Maior Myn	nt	NRI	MRT	FBI n1 F	-Bl n2	SBT	SBR	
CM Lane V/C Ratio 0.225 - 1.329 0.152 CM Control Delay (s) 23.5 -\$ 347.5 21.7 CM Lane LOS C - F C CM 95th %tile Q(veh) 0.8 - 6.7 0.5 ottes		111		NOTI				OBIN .	
CM Control Delay (s) 23.5 -\$ 347.5 21.7 CM Lane LOS C - F C CM 95th %tile Q(veh) 0.8 - 6.7 0.5 ottes				-				•	
CM Lane LOS C - F C CM 95th %tile Q(veh) 0.8 - 6.7 0.5 tes		١ -							
CM 95th %tile Q(veh) 0.8 - 6.7 0.5 Ites)							
tes		,)							
	now your wille Q(ver	IJ	U.ŏ	-	0.7	0.5	-	-	
Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon	Notes								
	~: Volume exceeds ca	pacity	\$: De	lay exc	eeds 30	00s	+: Com	outation Not Defined	*: All major volume in platoon

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			1			7		∱ }			^	7
Traffic Vol, veh/h	0	0	78	0	0	8	0	1242	3	0	1786	24
Future Vol, veh/h	0	0	78	0	0	8	0	1242	3	0	1786	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	1280	3	0	1841	25
Major/Minor N	/linor2		N	Minor1		N	/lajor1		ı	/lajor2		
Conflicting Flow All	-		921	-	_	640	//ajui i -	0		najurz	_	0
Stage 1	-	-	921	-	-	040	-	-	-	-	-	-
Stage 2	-	•	-		-	-	-	-	•	-	-	-
Critical Hdwy	-	-	6.9	-	-	6.9	-	-	-	-	-	-
Critical Hdwy Stg 1	-	•	0.9	-	-	0.9	-	-	•	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	
Follow-up Hdwy	-		3.3		-	3.3	-	-	-		-	-
Pot Cap-1 Maneuver		-	276	0	0	423	0	-	0	0		0
	0	0	2/0	0	0	423	0	-	0	0	-	0
Stage 1	0	0	-	0	0	-	0	-	0	0	-	0
Stage 2 Platoon blocked, %	U	U	-	U	U	-	U		U	U		U
			274			122		-			-	
Mov Cap-1 Maneuver	-	-	276	-	-	423	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	23.3			13.7			0			0		
HCM LOS	С			В								
Minor Lane/Major Mvmi	t	NBT E	EBLn1V	VBLn1	SBT							
Capacity (veh/h)			276	423	-							
HCM Lane V/C Ratio		-	0.291		-							
HCM Control Delay (s)		-	23.3	13.7	-							
HCM Lane LOS		_	С	В	-							
HCM 95th %tile Q(veh)		_	1.2	0.1	-							
				3.1								

Intersection													
Int Delay, s/veh	4.1												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		ሻ	ĵ.		ሻ	^	7	ች	ħβ		
Traffic Vol, veh/h	36	0	53	4	0	1	33	1208	0	4	1794	66	
Future Vol, veh/h	36	0	53	4	0	1	33	1208	0	4	1794	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	e,# -	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	100	0	4	0	25	2	0	
Mvmt Flow	37	0	55	4	0	1	34	1245	0	4	1849	68	
Major/Minor	Minor2		<u> </u>	Minor1			Major1		N	Major2			
Conflicting Flow All	2582	3204	959	2246	3238	623	1917	0	0	1245	0	0	
Stage 1	1891	1891	-	1313	1313	-	-	-	-	-	-	-	
Stage 2	691	1313	-	933	1925	-	-	-	-	-	-	-	
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	8.9	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	4.3	2.2	-	-	2.45	-	-	
Pot Cap-1 Maneuver	~ 13	10	261	24	10	254	313	-	-	444	-	-	
Stage 1	74	120	-	170	230	-	-	-	-	-	-	-	
Stage 2	406	230	-	290	115	-	-	-	-	-	-	-	
Platoon blocked, %								-	-		-	-	
Mov Cap-1 Maneuver	~ 12	9	261	17	9	254	313	-	-	444	-	-	
Mov Cap-2 Maneuver	54	72	-	85	56	-	-	-	-	-	-	-	
Stage 1	66	119	-	151	205	-	-	-		-	-	-	
Stage 2	360	205	-	227	114	-	-	-	-	-	-	-	
Approach	EB			WB			NB			SB			
HCM Control Delay, s	139.3			43.5			0.5			0			
HCM LOS	F			Е									
Minor Lane/Major Mvr	nt	NBL	NBT	NBR I	EBLn1V	WBLn1V	VBLn2	SBL	SBT	SBR			
Capacity (veh/h)		313	-	-	102	85	254	444		-			
HCM Lane V/C Ratio		0.109	-	-		0.051	0.004	0.01	-	-			
HCM Control Delay (s)	17.9	-	-	139.3	49.6	19.2	13.2	-	-			
HCM Lane LOS		С	-	-	F	E	С	В	-	-			
HCM 95th %tile Q(veh	1)	0.4	-	-	5.3	0.2	0	0	-	-			
Notes													
~: Volume exceeds ca	pacity	\$: De	elav exc	eeds 3	00s	+: Com	putation	Not De	efined	*: All	maior v	/olume ir	n platoon
Joiding onocous cu	Paorty	Ψ. DC	onc	.5045 0		50111	ratatioi		- miou	. / 🚻	ajoi	Jianio II	platooil

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.

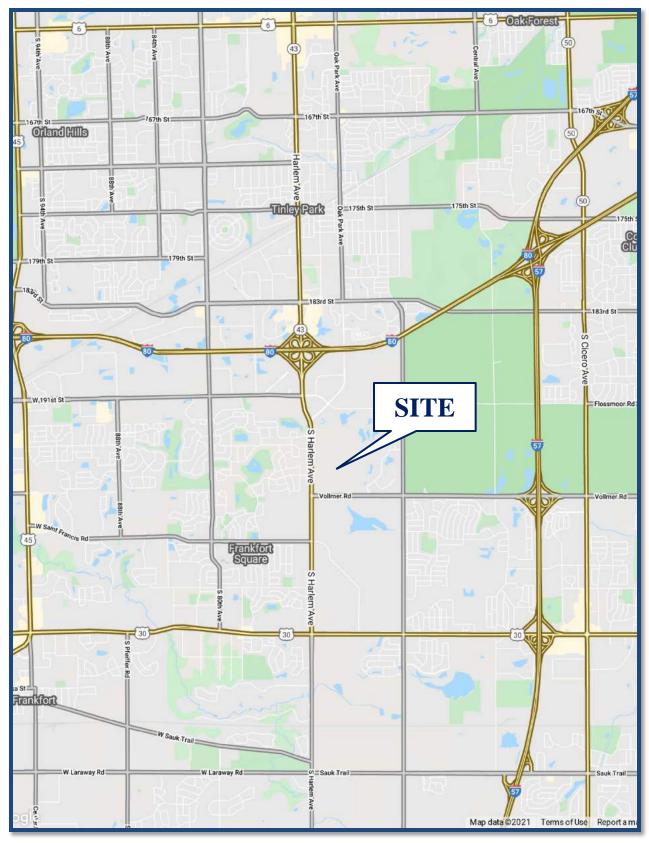
The sections of this report present the following:

- 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





Aerial View of Site Figure 2



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

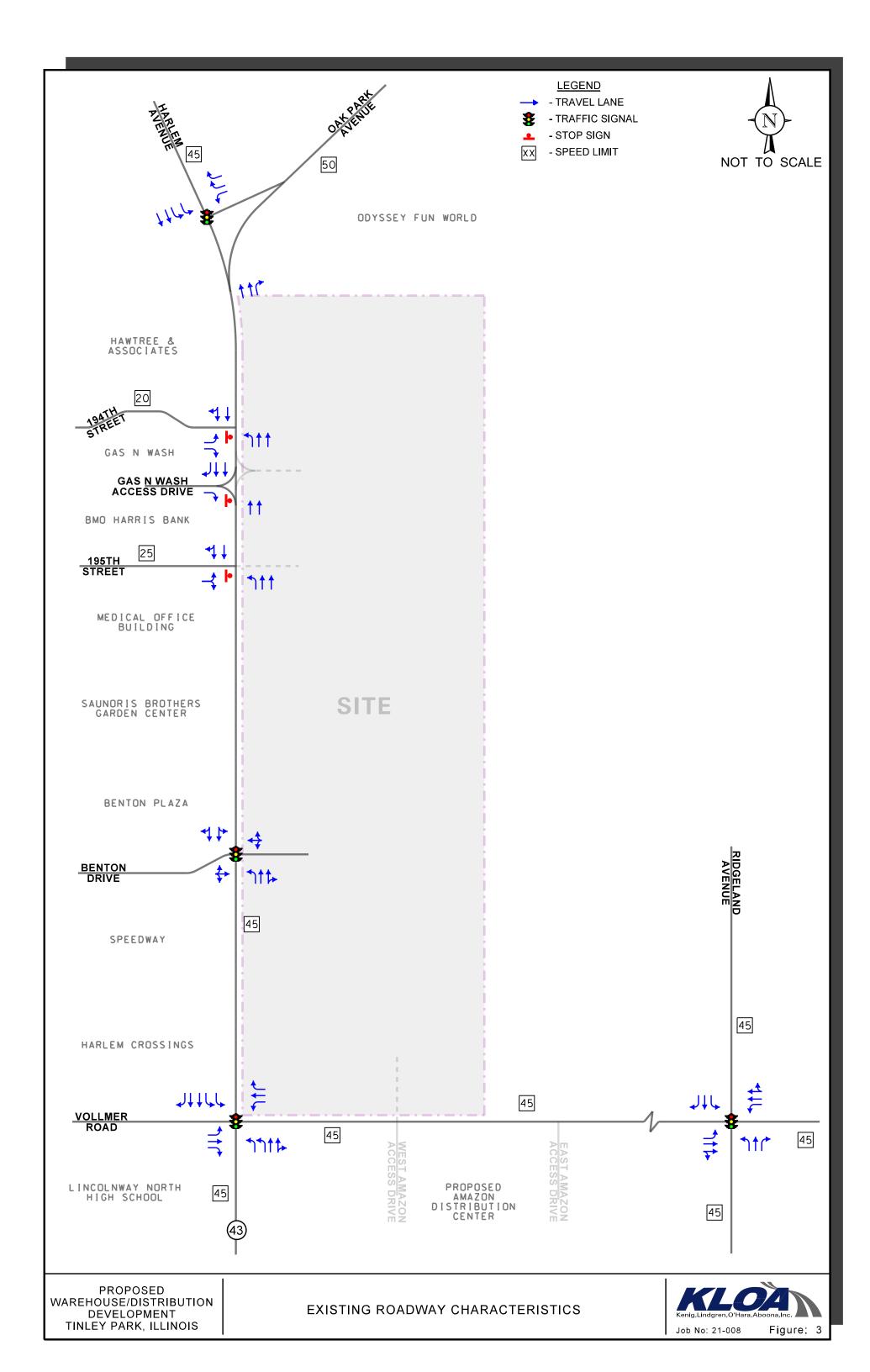
The site, which is currently vacant, is bounded by Odyssey Fun World to the north, the vacant land to the east, Vollmer Road to south, and Harlem Avenue to the west. Land uses in the site are primarily commercial and residential and include the Benton Plaza and Harlem Crossing retail developments as 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, Volmer 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.

194th 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, 194th Street provides an exclusive left-turn lane and an exclusive right-turn lane on the eastbound approach. 194th Street is under the jurisdiction of the Village of Tinley Park and has a posted speed limit of 20 mph.

195th 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, 194th Street provides one lane on the eastbound approach. 194th 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 194th Street
- Harlem Avenue with the Gas N Wash Access Drive
- Harlem Avenue with 195th 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:

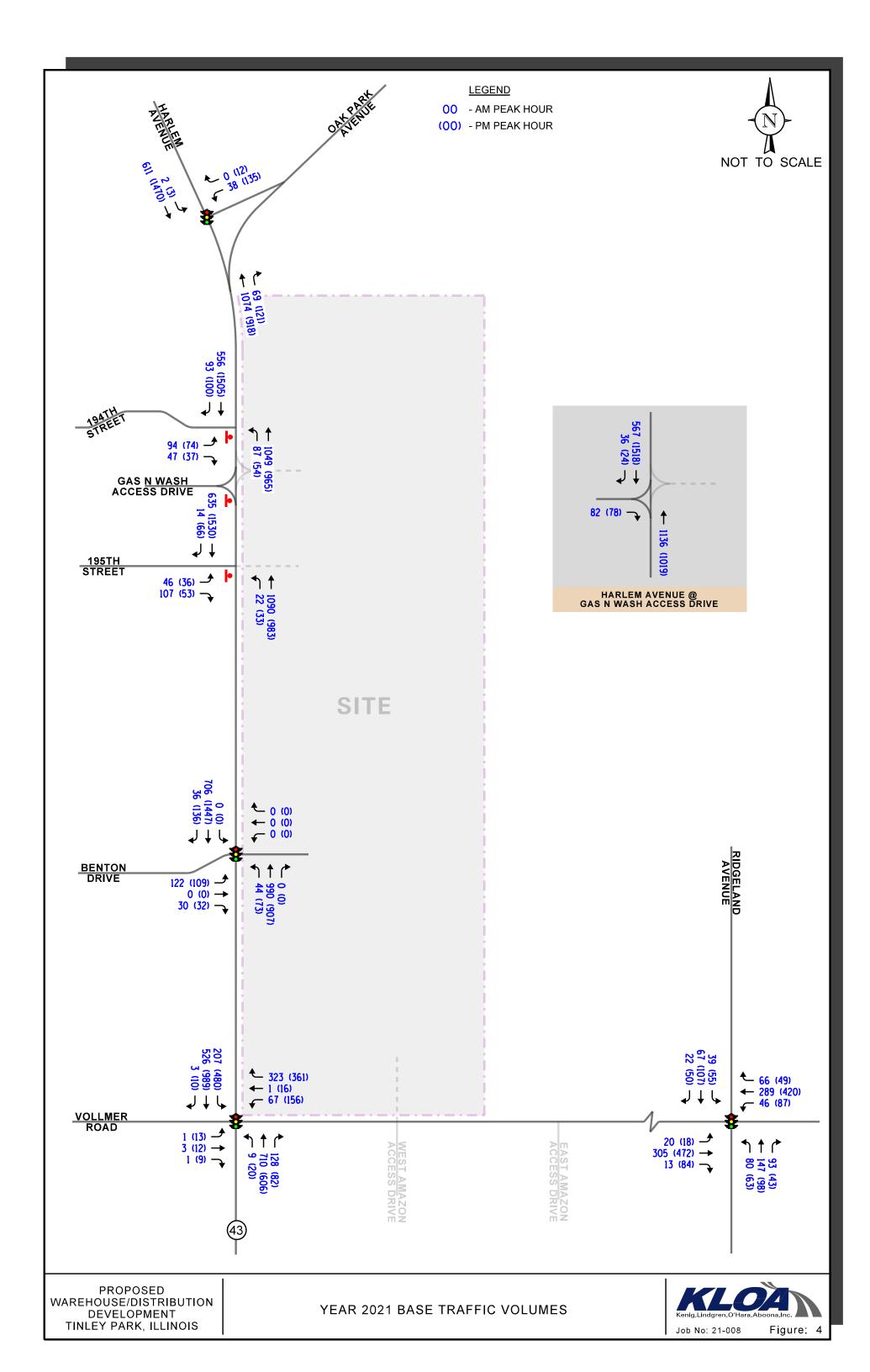
- The traffic volumes at the intersections of Harlem Avenue with Benton Drive, Harlem Avenue with Vollmer Road, and Vollmer Road with Ridgeland Road were increased by three percent based on CMAP projections, as discussed later in the report, to reflect Year 2021 conditions.
- From the traffic counts conducted at the intersections of Harlem Avenue with 194th Street, Harlem Avenue with the Gas N Wash access drive, and Harlem Avenue with 195th 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 194th Street. This increase equated to 10 to 15 percent during both peak hours.

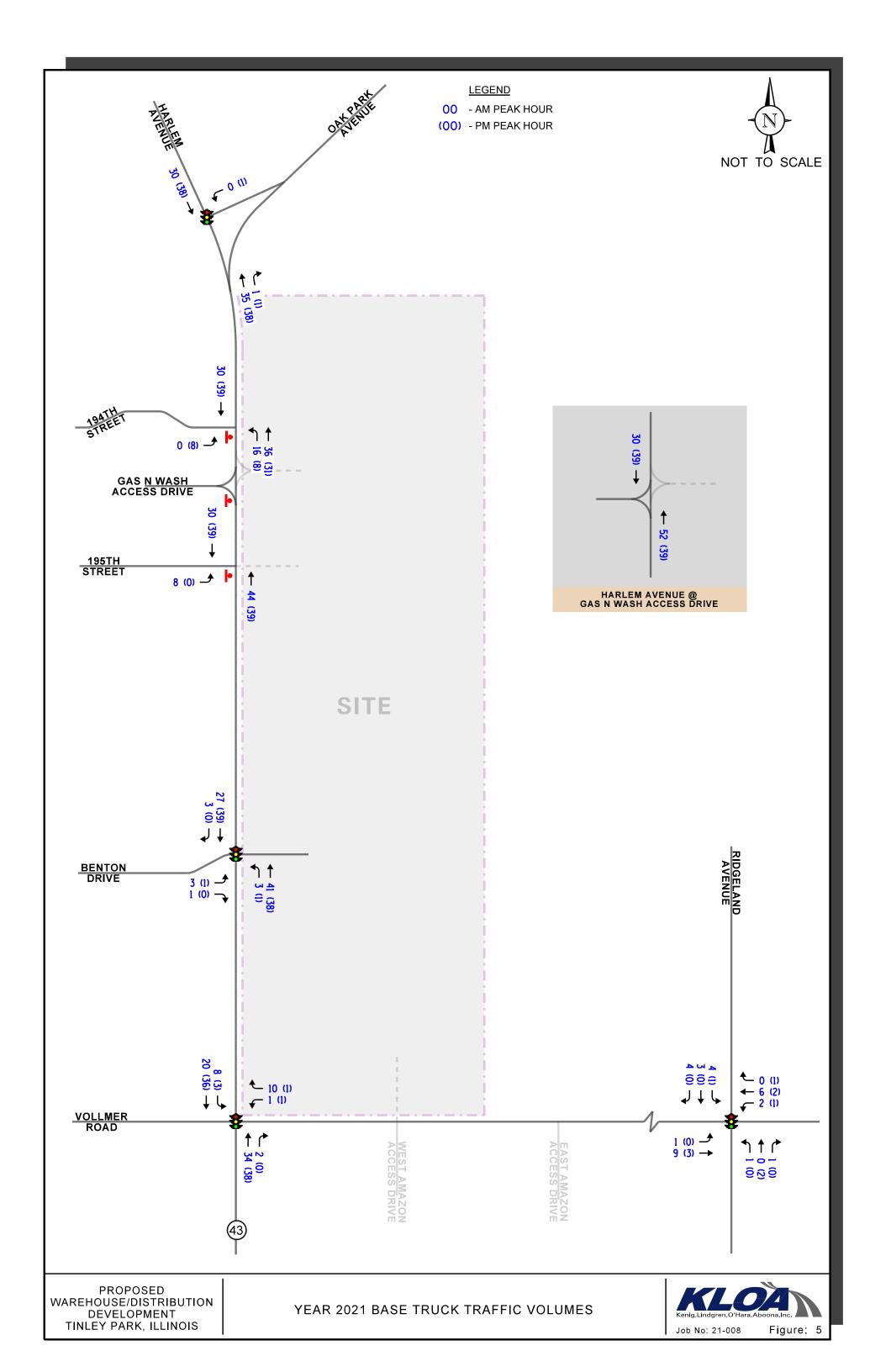
The Year 2021 base traffic volumes, inclusive of heavy vehicles, are illustrated in **Figure 4**. The Year 2021 base heavy traffic volumes are illustrated in **Figure 5**.

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 194th Street
- Harlem Avenue with the Gas N Wash Access Drive
- Harlem Avenue with 195th 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. ¹

¹ 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 Frequency											
Year	Angle	Object	Rear End	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 194TH STREET - CRASH SUMMARY

	Type of Accident Frequency											
Year	Angle	Object	Rear End	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 HARLEM AVENUE WITH THE GAS N WASH ACCESS DRIVE - CRASH SUMMARY

	Type of Accident Frequency											
Year	Angle	Object	Rear End	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					

Table 4 HARLEM AVENUE WITH 195TH STREET - CRASH SUMMARY

	Type of Accident Frequency										
Year	Angle	Object	Rear End	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	Rear End	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	Rear End	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 194th Street and 500 feet north of 195th 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 195th 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 194th 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.

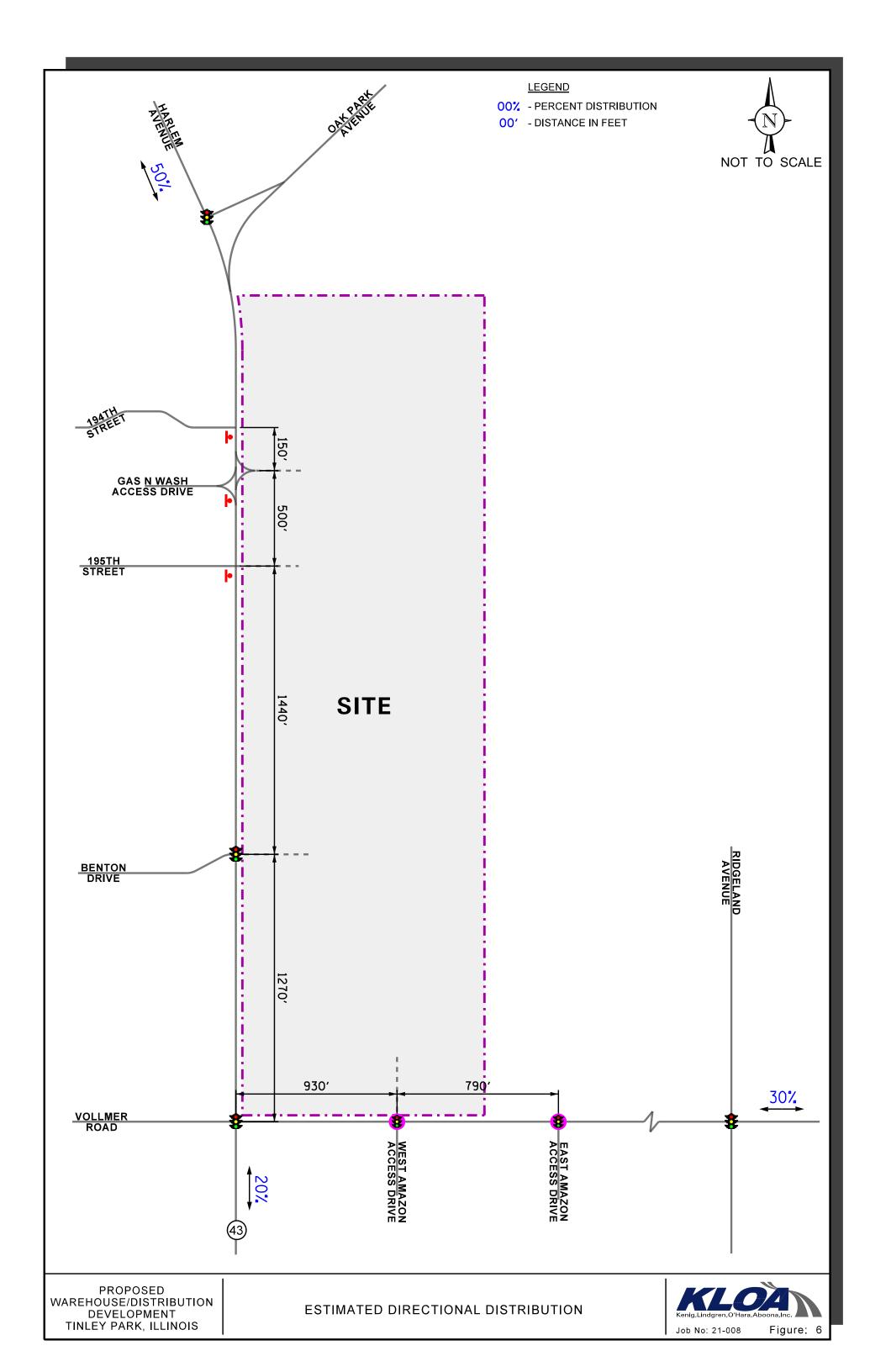
Development-Generated Traffic Volumes

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*, 10th 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.

Table 8
ESTIMATED DEVELOPMENT TRIP GENERATION

ITE Land-			kday Mo Peak Ho	_		kday Ev Peak Ho	_	Daily Two-
Use Code	Type/Size	In	Out	Total	In	Out	Total	Way Trips
150	Warehouse (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





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**.

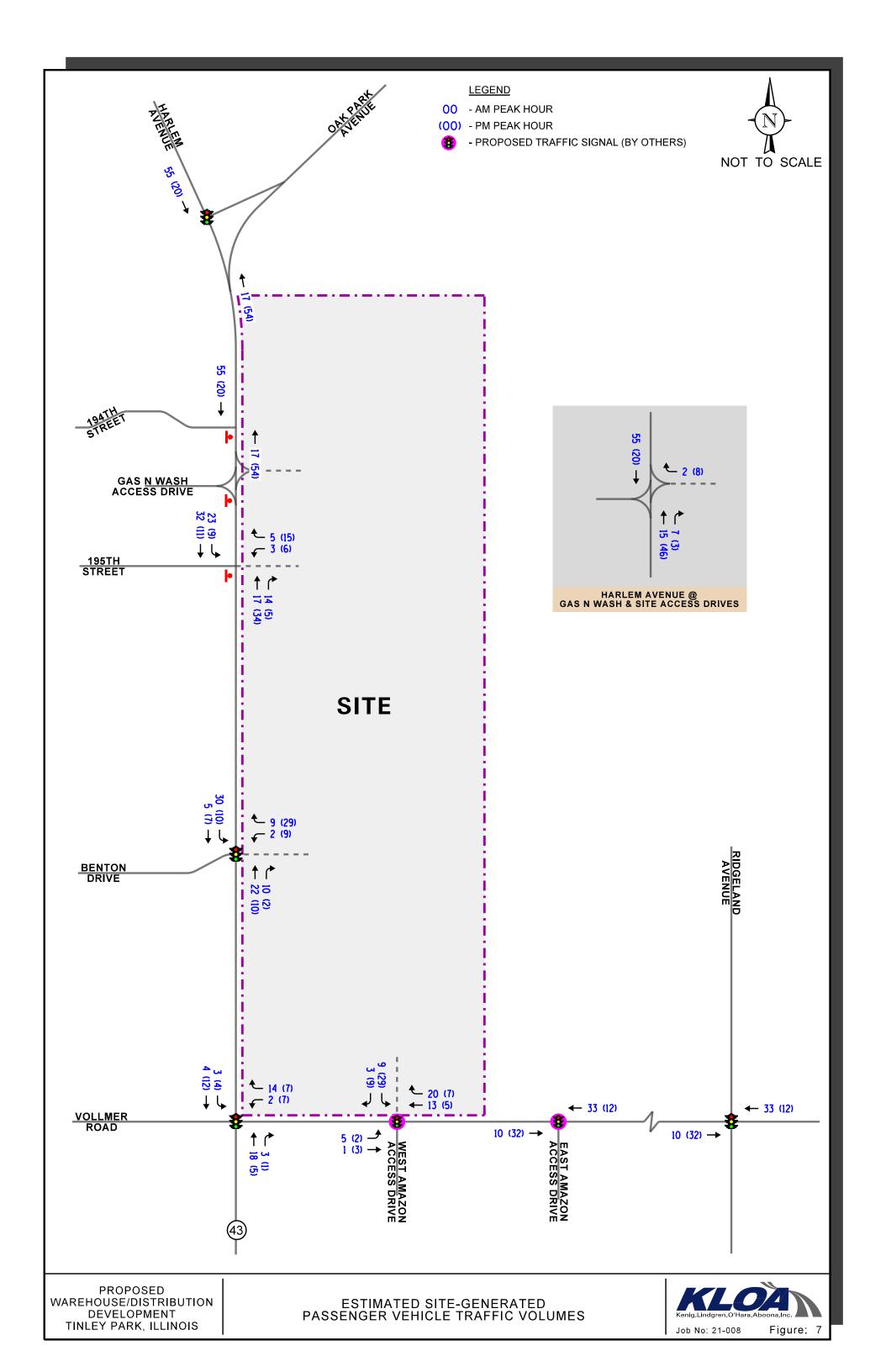
Background (No-Build) Traffic Conditions

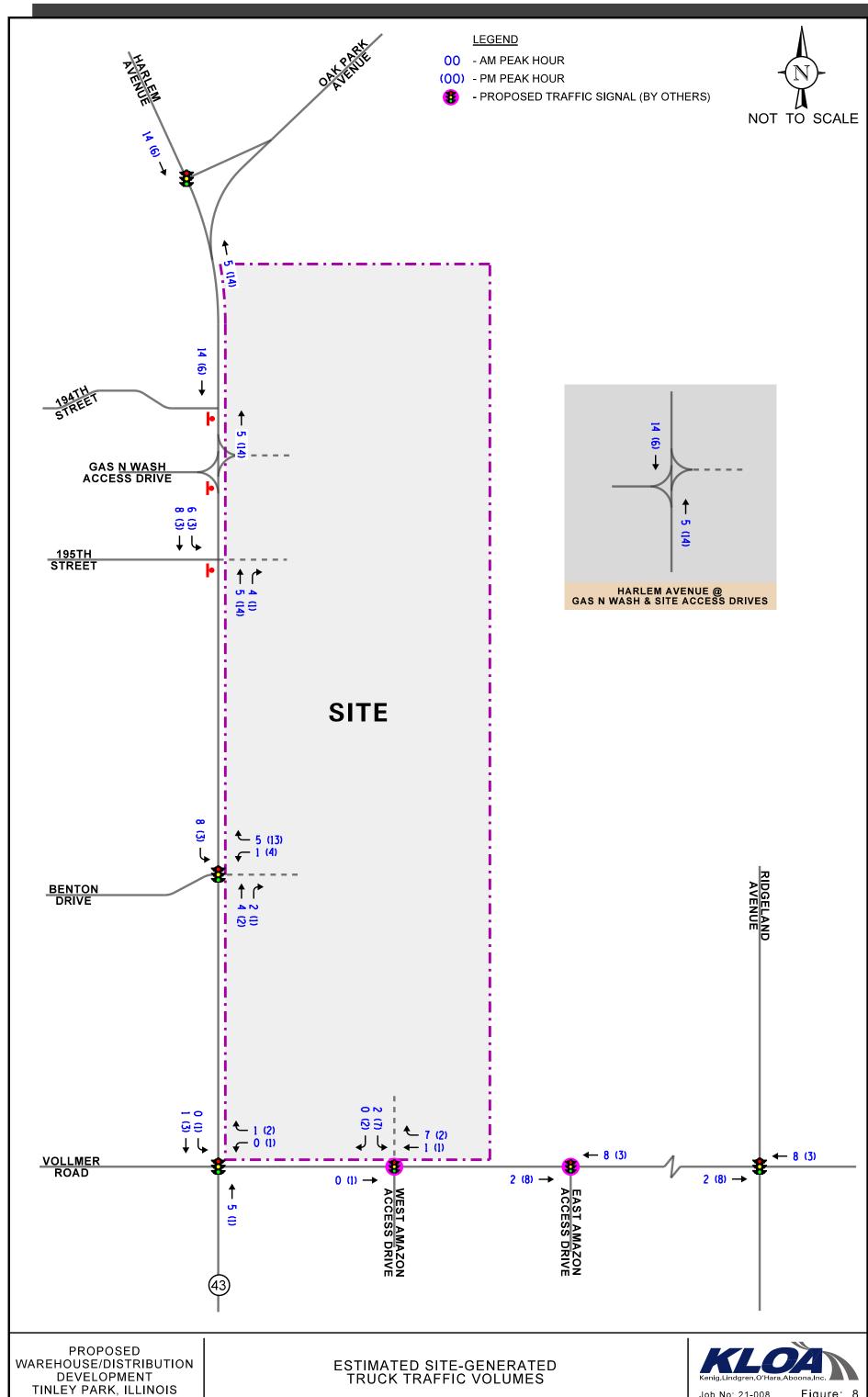
The Year 2020 base traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on AADT projections provided by the Chicago Metropolitan 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**.

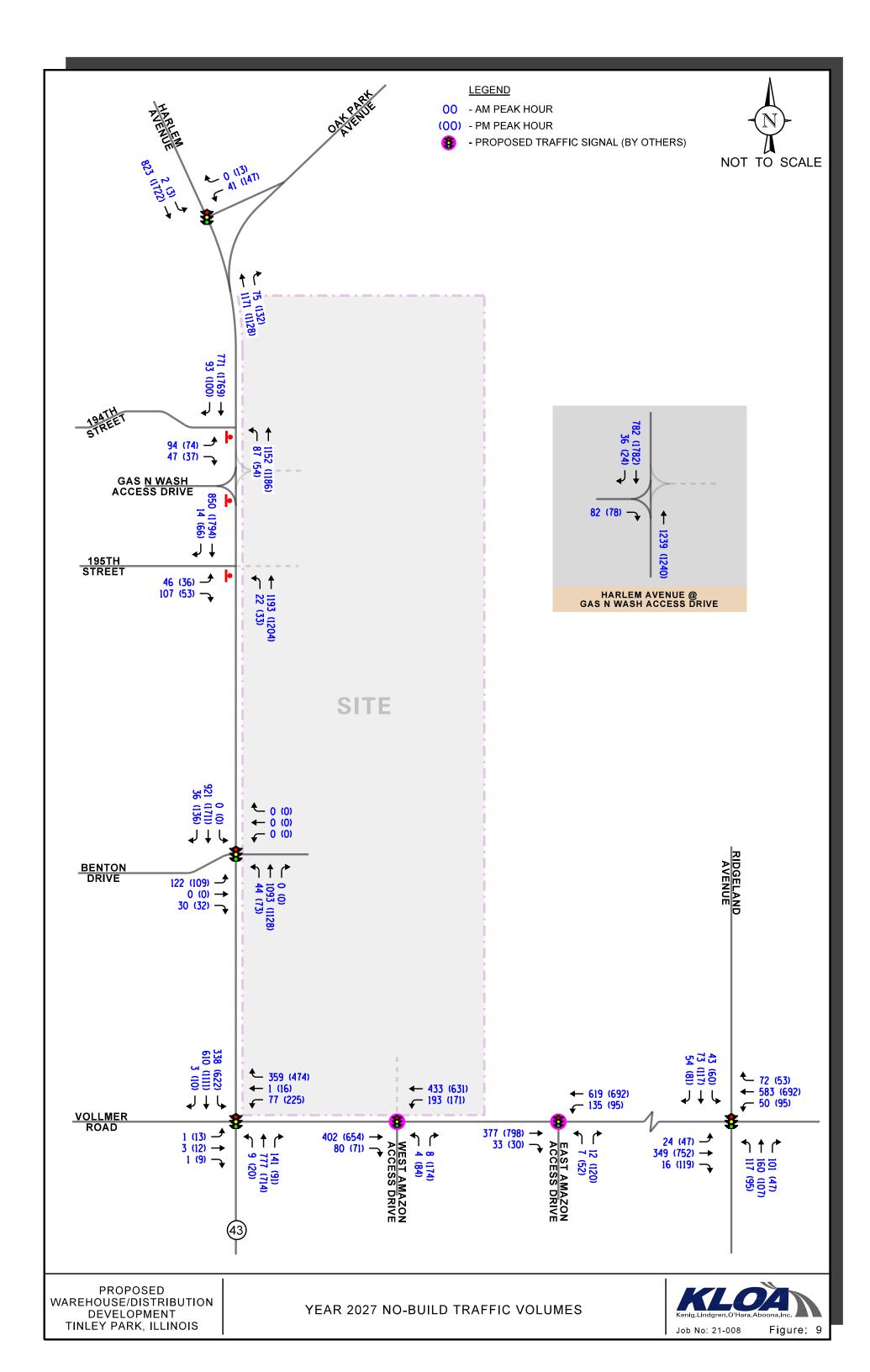
Total Projected Traffic Volumes

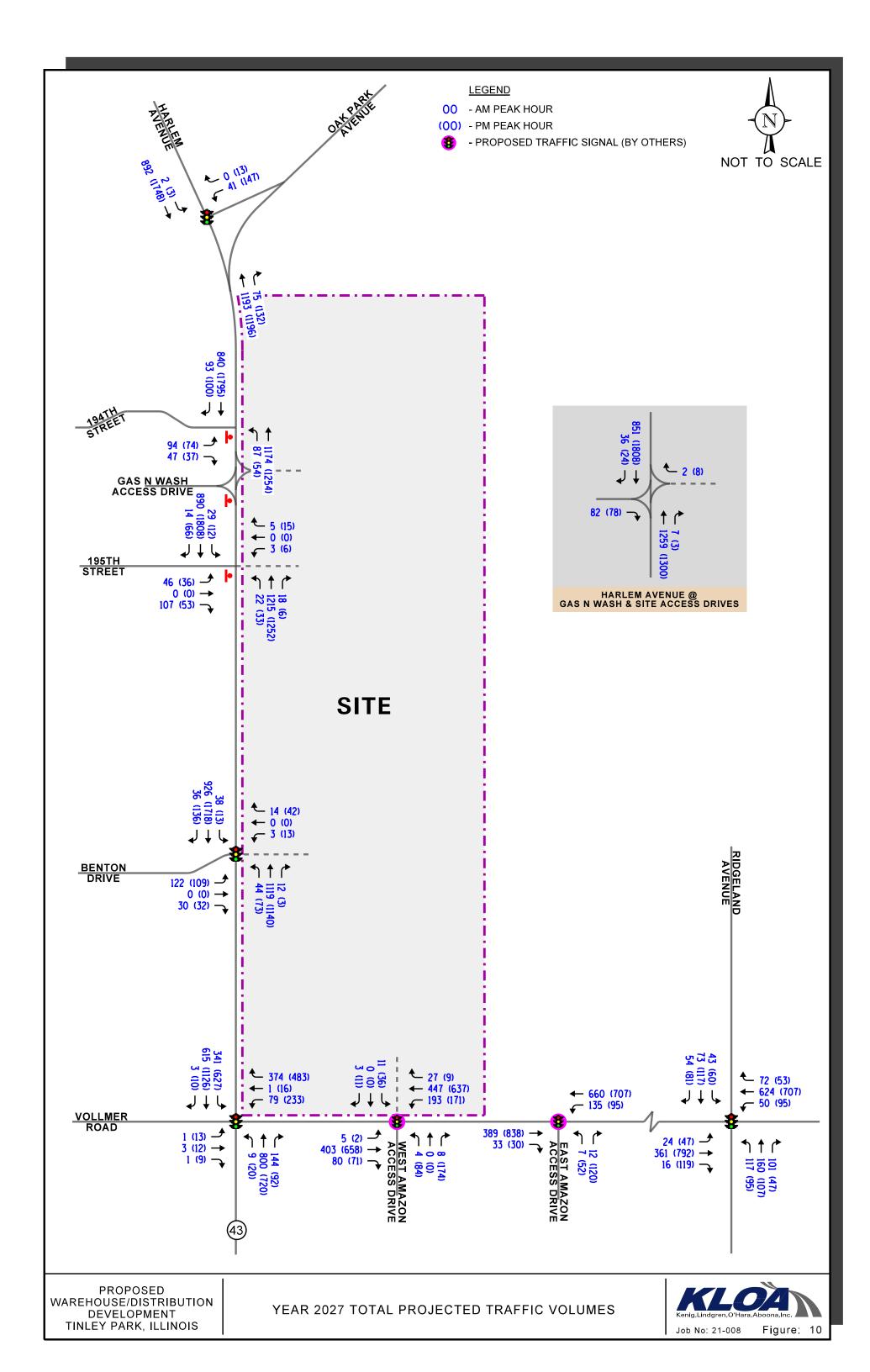
The development-generated traffic (Figures 7 and 8) was added to the Year 2027 no-build traffic volumes to determine the projected Year 2027 total projected traffic volumes, as shown in **Figure 10**.











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)*, 6th 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.



Table 9
CAPACITY ANALYSIS RESULTS – HARLEM AVENUE WITH VOLLMER ROAD – SIGNALIZED

	Peak	E	Castboun	d	W	/estbour	ıd	No	orthbou	nd	So	outhbou	nd		
	Hour	L	Т	R	L	Т	R	L	Т	R	L	Т	R	Overall	
ns	Weekday Morning	D 55.0	E 63.0	E 56.0	E 69.9	E 61.0	E 63.8	E 65.0		3 1.9	E 69.1	A 3.2	A 3.0	С	
2021 nditio	Peak Hour		E – 60.0			E – 64.8	Į		B – 15.5			C – 21.7		27.7	
Year 2021 Base Conditions	Weekday Evening	E 55.8	E 69.8	E 70.2	F 99+	E 64.6	D 43.7	E C 71.0 27.6		D 52.1	A 2.3	A 1.1	С		
Ba	Peak Hour		E – 64.5 E E E			E – 67.6			C – 28.8	}		B – 18.5		31.2	
	Weekday Morning	E 65.0	E 63.0	E 56.0	E 77.5	F 83.0	E 65.4	E 65.0	B 16.2	A 8.5	E 63.8	A 3.1	A 3.0	C	
2027 Suild (tions ¹	Peak Hour		E – 62.0		E – 67.6			B – 15.5				C – 24.7		29.2	
Year 2027 No Build Conditions ¹	Weekday Evening	E 73.6	E 69.9	E 59.2	F 77.4	E 67.1	D 50.3	E 71.0	C B 13.0		D A 68.2 6.3		A 0.5	D	
	Peak Hour		E – 68.5		E – 59.2			C – 29.6				35.7			
ed	Weekday Morning	E 65.0	E 63.0	E 56.0	E 72.2	F 93.0	E 65.6	E 65.0	B 16.9	A 8.8	E 64.0	A 3.0	A 2.7	C	
Year 2027 tal Project Sonditions	Peak Hour		E – 62.0	ı		E – 66.8			B – 16.1			C – 24.7	,	29.4	
$ m Year~2027$ Total Projected $ m Conditions^1$	Weekday Evening	E 73.6			F 67.7	E 56.3	E 70.7	E 71.0	C 31.4	B 13.1			A 0.6	D	
TC	Peak Hour		E – 68.5		E - 69.4 C - 30.4 C - 28.9							38.5			
Delay is m	Letter denotes Level of Service L − Left Turns Delay is measured in seconds. T − Through\ 1 − Includes planned improvements as part of the proposed Amazon facility R − Right Turns														

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Table 10 CAPACITY ANALYSIS RESULTS – SIGNALIZED – HARLEM AVENUE WITH BENTON DRIVE

	Peak	E	astboun	d	W	estbour	ıd	No	orthbou	nd	So	outhbou	nd	
	Hour	L	T	R	L	T	R	L	T	R	L	Т	R	Overall
121 litions	Weekday Morning Peak		E 69.9					A 2.5	$\begin{array}{c c} A \\ 3. \end{array}$ $A - 3.2$		A 8.5			B 10.5
Year 2021 Base Conditions	Hour Weekday Evening Peak Hour		E 75.6					C 21.1	$ \begin{array}{ c c c } \hline A - 3.2 \\ \hline A - 3.5 \\ \hline A - 4.5 \end{array} $			B 17.9		B 16.0
Year 2027 No Build Conditions	Weekday Morning Peak Hour		E 69.9					A 2.8	A - 3.8			A 9.7		B 10.8
Year No B Cond	Weekday Evening Peak Hour		E 75.6					D A 3.6 A - 5.9			C 25.6			C 20.4
7 cted ns	Weekday Morning Peak		E 70.9		D 46.0		3.3	A 3.5	A 8.2	A 5.7	A B 11.8			B 13.9
202 roje itio	Hour		70.5		Γ) – 47.9			A - 8.0			B - 11.6		13.7
Year 2027 Total Projected Conditions	Weekday Evening Peak		E 77.7		D 52.9		E 7.8	D 42.3	A 5.4	A 6.7	A 7.2	30		C 24.4
1	Hour		//./		E – 56.7			A – 7.6			C – 30.4			24.4
	otes Level of Se easured in secon		L – Left- T – Throu		R – Right	-Turns								



Table 11 CAPACITY ANALYSIS RESULTS – SIGNALIZED - HARLEM AVENUE WITH OAK PARK AVENUE

	Peak		ound	Northbound	South		0 11
	Hour	L	R	T	L	T	Overall
1 ions	Weekday Morning	E 68.5		A 2.0	E 64.5	A 2.2	A
202 nditi	Peak Hour	E –	68.5	3.9	A –	2.4	4.6
Year 2021 Base Conditions	Weekday Evening	E 77.4	D 45.9	A	E 69.7	A 6.3	A
B	Peak Hour	E –	74.7	5.6	A –	6.4	9.6
7 	Weekday Morning	E 68.7		A	E 64.5	A 2.6	A
202' 3uild ition	Peak Hour	E –	68.7	4.0	A –	4.6	
Year 2027 No-Build Conditions	Weekday Evening	E 78.3	D 45.4	A	E 69.7	A 7.8	В
	Peak Hour	E –	75.8	5.6	A –	7.9	10.2
r ted s	Weekday Morning	E 68.7		A	E 64.5	A 2.7	A
2027 ojec ition	Peak Hour	E –	68.7	2.1	A –	2.8	3.5
Year 2027 Total Projected Conditions	Weekday Evening	E 78.3	D 45.4	A	E 69.7	A 7.9	B
T	Peak Hour	E –	75.8	5.5	A –	8.0	10.1
	tes Level of Servasured in second		t-Turns ough	R – Right-Turns			



Table 12 CAPACITY ANALYSIS RESULTS – VOLLMER ROAD WITH RIDGELAND ROAD – SIGNALIZED

	Peak	Easth	ound	Wes	tbound	N	orthbou	nd	So	nd		
	Hour	\mathbf{L}	T/R	L	T/R	L	Т	R	L	Т	R	Overall
Suc	Weekday Morning	A 8.8	B 16.2	A 8.8	B 14.4	B 15.1	C 25.9	C 25.7	B 15.2	C 26.3	C 26.5	В
2021 nditio	Peak Hour	В –	15.7	B – 13.7		B – 23.1			C – 23.0			17.8
Year 2021 Base Conditions	Weekday Evening	A 8.1	B 17.0	A 8.7	B 11.3	B 18.9	C 31.7	C 30.2	B 18.4	C 29.9	C 28.5	В
Ba	Peak Hour	B – 16.7		В -	- 10.9	C – 27.4				17.4		
	Weekday Morning	A 9.0	B 16.5	A 9.1	В 16.6	B 17.9	C 27.7	C 27.4	B 16.7	C 30.7	C 31.3	В
Year 2027 No Build Conditions	Peak Hour	В –	16.0	В -	- 16.1	B – 24.6				19.2		
Year No B Cond	Weekday Evening	A 8.6	C 20.4	B 10.2	B 15.9	C 23.3	C 37.3	C 34.3	B 21.4	C 34.4	C 34.2	С
	Peak Hour	В –	19.8	В -	- 15.3	C – 31.4				20.7		
pa	Weekday Morning	A 9.0	B 16.5	A 9.1	B 17.0	B 17.9	C 27.8	C 27.5	B 16.7	C 30.8	C 31.4	В
Year 2027 tal Project Conditions	Peak Hour	В –	16.0	В -	- 16.5		B – 24.6	ó		C – 27.5	5	19.3
Year 2027 Total Projected Conditions	Weekday Evening	A 8.6	C 21.1	B 10.4	B 16.1	C 23.3	C 37.3	C 34.3	B 21.4	C 34.4	C 34.2	С
To	Peak Hour		B – 20.5		B – 15.4		C – 31.4			C – 31.3		
	otes Level of Ser easured in secon			Left Turns Through	R -	- Right Tu	ırns					



Table 13 CAPACITY ANALYSIS RESULTS – VOLLMER ROAD WITH THE WEST AMAZON SIGNAL/SITE ACCESS DRIVE – SIGNALIZED

	Peak	E	Eastbound			estbour	ıd	No	orthbou	nd	Southbound			
	Hour	L	T	R	L	Т	R	L	T	R	L	T	R	Overall
1	Weekday Morning		A 1.2	A 0.4	A 2.0	A 1.7		E 62.5		D 50.2				A
2027 Suild itions	Peak Hour		A – 1.1			A – 1.8		D – 54.3					2.0	
$egin{array}{ll} { m Year} & 2027 \\ { m No Build} \\ { m Conditions}^1 \end{array}$	Weekday Evening		A A 0.7 0.2			A 1.7	>	E 70.9 E 71.0						В
	Peak Hour		A – 0.6			A – 1.8			E – 71.0					11.3
d	Weekday Morning	A 0.8	A 1.4	A 1.6	A 2.2	A 2.4	A 3.5	E 64.8	64		E 67.1	61	E 1 7	A
$egin{array}{ll} { m Year} & 2027 \\ { m Fotal Projected} \\ { m Conditions}^1 \\ \end{array}$	Peak Hour		A – 1.4	1.0	A – 2.4			E – 64.6			E – 66.0			3.4
Year otal Pr Condi	Weekday Evening	A 5.0	A B B			B 13.0	B 13.1	E 57.5	F 67		E D 53			С
Te	Peak Hour		B – 13.4			11.7 13.0 13.1 57.5 67.5 B – 12.7 E – 64.3							21.7	
Delay is m	otes Level of Ser easured in secon approvements from	n facility	L – Left Turns T – Through∖ R – Right Turns											

Table 14 CAPACITY ANALYSIS RESULTS – VOLLMER ROAD WITH THE EAST AMAZON SIGNAL – SIGNALIZED

	Dook House	Easth	ound	Westl	oound	North	bound	Owarall
	Peak Hour	T	T	L	T	L	R	Overall
Z S	Weekday Morning	A 0.8	A 0.3	A 1.7	A 1.7	E 65.6	D 51.3	A
2027 uild ition	Peak Hour	A –	0.8	A –	1.7	E –	56.3	2.3
Year 2027 No Build Conditions	Weekday Evening	A 1.2	A 0.7	A 2.7	A 2.6	E 75.9	E 63.1	A
	Peak Hour	A –	1.2	A –	2.7	E –	7.9	
7 :ted :S	Weekday Morning	A 1.2	A 0.4	A 1.7	A 1.7	E 65.6	D 50.0	A
2027 roject itions	Peak Hour	A –	1.1	A –	1.7	E –	2.3	
Year otal Pı Cond	Lotal Projected Conditions Conditions Conditions Weekday Peak Hour Weekday Evening Peak Hour		A 0.1	A 2.8	A 2.7	E 75.9	E 63.1	A
Ţ	Peak Hour		A – 0.7		A – 2.7		67.0	7.5
	Level of Service ared in seconds.		L – Left T T – Throug		R – Right Tur	ns		



Table 15 CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS YEAR 2021 BASE TRAFFIC CONDITIONS

	•	Morning Hour	•	y Evening K Hour	
Intersection	LOS	Delay	LOS	Delay	
Harlem Avenue with 195 th Street	-	-	-	-	
Eastbound Approach	C	17.8	Е	43.7	
Northbound Left Turn	A	9.0	В	14.9	
Harlem Avenue with the Gas N Wash Access	s Drive				
Eastbound Approach	В	10.9	C	18.8	
Harlem Avenue with 194th Street					
Eastbound Left Turn	D	30.7	F	99+	
Eastbound Right Turn	В	10.9	C	18.0	
Northbound Left Turn	A	10.0	C	18.3	
LOS = Level of Service Delay is measured in seconds.					

Table 16 CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS YEAR 2027 NO BUILD TRAFFIC CONDITIONS

	•	Morning Hour	·	y Evening Hour
Intersection	LOS	Delay	LOS	Delay
Harlem Avenue with 195th Street	-	-		-
Eastbound Approach	C	23.2	F	77.5
Northbound Left Turn	A	9.9	C	17.9
Harlem Avenue with the Gas N Wash Access	s Drive			
Eastbound Approach	В	12.1	C	23.2
Harlem Avenue with 194th Street				
Eastbound Left Turn	E	43.7	F	99+
Eastbound Right Turn	В	12.0	C	21.6
Northbound Left Turn	В	11.3	C	23.4
LOS = Level of Service Delay is measured in seconds.				



Table 17 CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS YEAR 2027 TOTAL PROJECTED TRAFFIC CONDITIONS

	•	y Morning Hour	ing Weekday Evenii Peak Hour		
Intersection	LOS	Delay	LOS	Delay	
Harlem Avenue with 195th Street	-	_	-	-	
Eastbound Approach	D	32.2	F	99+	
Westbound Left Turn	E	38.1	F	54.6	
Westbound Right Turn	В	13.7	В	13.9	
Northbound Left Turn	В	10.1	C	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	C	23.7	
Harlem Avenue with the Right-in/Right-out	Access Dri	ive			
Westbound Approach	В	14.0	В	14.1	
Harlem Avenue with 194th Street					
Eastbound Left Turn	Е	50.0	F	99+	
Eastbound Right Turn	В	12.4	C	22.0	
Northbound Left Turn	В	11.9	C	24.1	
LOS = Level of Service 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 100-foot 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 95th 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 95th 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 195th 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 195th 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 194th 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 95th 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 194th Street and 500 feet north of 195th 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 194th 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

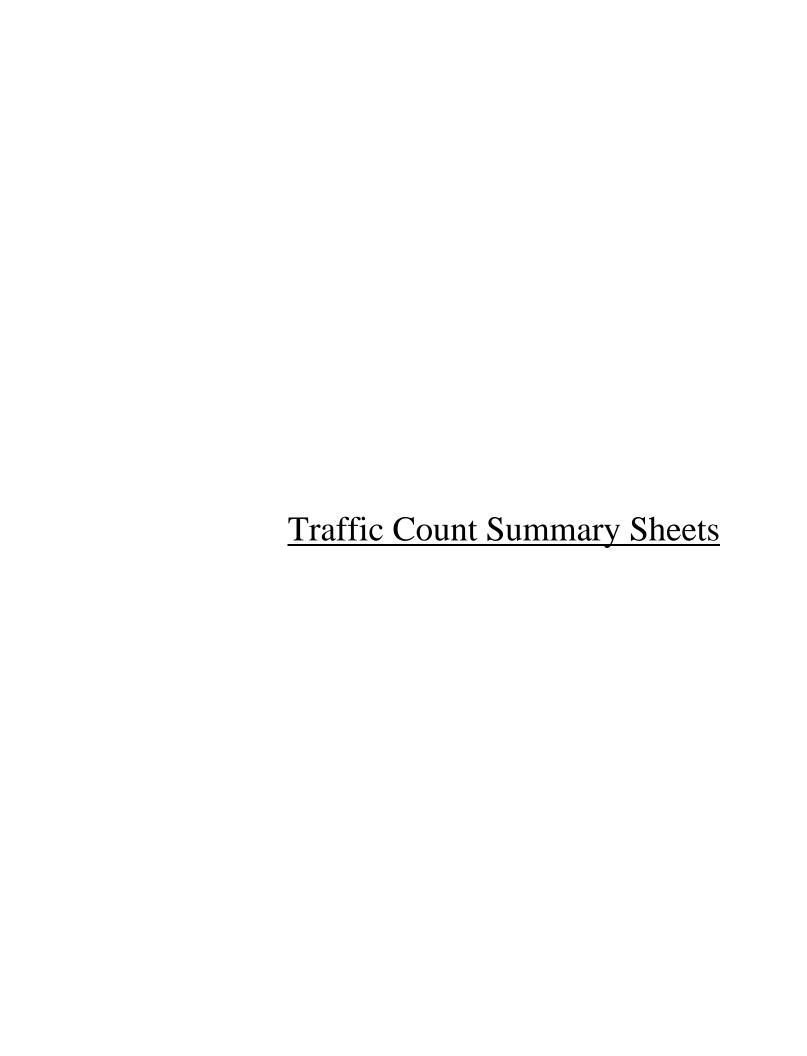
Based on the preceding analyses and recommendations, the following conclusions have been made:

- 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





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

	1		Oak Park Avenue	_		1011	iii ig ivio	V CITICITE L			1		Llowleys Aug.			1
		,		е				Harlem Avenue Northbound					Harlem Avenue Southbound			
Start Time	U-Turn	Left	Westbound 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	0 	0	231	0	2	134	0	136	376
8:30 AM	0	9	0	0	<u>9</u>	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 ***	-	-	-	-	- -	-	- 930	-	-	- 1012	-	-	- 372	-	- 574	-
4:00 PM	0	43	<u> </u>	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	0.0	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	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
, il libulated Tracks	_ ·				- '		,,,				· · · · · ·					174



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)

					runni	j moven	IEIII FE	ak Houi	Jaia (7.	.43 AIVI)						ı
		(Oak Park Avenu	е				Harlem Avenue					Harlem Avenue			
Ctart Time			Westbound					Northbound					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)

					1 01111111	9 1410 4 611	ICITE I CO	an i ioui	Dula (T	. 10 1 141)						
			Oak Park Avenu	Э				Harlem Avenue					Harlem Avenue			
Start Time			Westbound					Northbound					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

			Vollme	er Road			1		Vollme	er Road	9			utu	Harlem	Avenue			I		Harlem	Avenue			
				oound						bound						bound			1			bound			
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. 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 Trucks	-	0.0	0.0	0.0	-	0.0	1	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 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 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)

								ı un	iii ig iv	IOVEII	ICIIL I	Can	ioui i	Jala	(0.50	\neg ivi j									
			Vollme	er Road					Vollme	r Road					Harlem	Avenue					Harlem	Avenue			
			Easth	oound					Westl	oound					North	bound					South	bound			
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. 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	-		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 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 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 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	-		-	-	-	-	-	-	-	-	-		-	-					-	-	-	-	-	-	-
Pedestrians					0		-				0		-		-		0		-				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: 4

Turning Movement Peak Hour Data (5:30 PM)

	1							ı anı	mig iv	IOVCII	iciti i	can	, IOUI I	Jala	(5.50	1 1V1 <i>)</i>									1
			Vollme	er Road					Vollme	r Road					Harlem	Avenue					Harlem	Avenue			
			Easth	oound					Westl	bound					North	bound					South	bound			
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. 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 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 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 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	-	_	_	_	_		-	_	_	_	-		-	-		_			-	_	_	_	-	<u> </u>	-



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				iii ig ivio	Harlem Avenue					Harlem Avenue			
			Eastbound					Northbound			1		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)

					runni	J MIOVELL		ak i loui	Dala (U	30 AIVI	•					
			Benton Drive					Harlem Avenue					Harlem Avenue			
Ota et Tierra			Eastbound					Northbound					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)

					ı ummi	y ivioveii	HOIR I G	ak i loui l	Jaia (J.	.50 1 101)	i					
			Benton Drive					Harlem Avenue					Harlem Avenue			
Otant Time			Eastbound					Northbound					Southbound			1
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 Eastb							er Road bound	J				Ü	d Avenue bound					-	d Avenue bound			
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. 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

-	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
0	0	2	0	-	2	0	4	6	1	-	11	0	1	5	5	-	11	0	2	2	2	-	6	30
-	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
0	1	16	0	-	17	0	5	22	4	-	31	0	3	9	1	-	13	0	9	5	6	-	20	81
-	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
0	0	2	0	-	2	0	0	5	2	-	7	0	0	2	0	-	2	0	3	1	0	-	4	15
-	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
0	0	4	2	-	6	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	7
-	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
-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-
	0 - 0 - 0	0 0 0 - 0.0 0 1 - 0.0 0 0 - 0.0 0 - 0.0 0.0	0 0 2 - 0.0 0.1 0 1 16 - 0.7 0.8 0 0 2 - 0.0 0.1 0 0 4 - 0.0 0.2	0 0 2 0 - 0.0 0.1 0.0 0 1 16 0 - 0.7 0.8 0.0 0 0 2 0 - 0.0 0.1 0.0 0 0 4 2 - 0.0 0.2 0.7 - - - -	0 0 2 0 - - 0.0 0.1 0.0 - 0 1 16 0 - - 0.7 0.8 0.0 - 0 0 2 0 - - 0.0 0.1 0.0 - 0 0 4 2 - - 0.0 0.2 0.7 - - - - 1	0 0 2 0 - 2 - 0.0 0.1 0.0 - 0.1 0 1 16 0 - 17 - 0.7 0.8 0.0 - 0.7 0 0 2 0 - 2 - 0.0 0.1 0.0 - 0.1 0 0 4 2 - 6 - 0.0 0.2 0.7 - 0.2 - - - - 1 -	0 0 2 0 - 2 0 - 0.0 0.1 0.0 - 0.1 - 0 1 16 0 - 17 0 - 0.7 0.8 0.0 - 0.7 - 0 0 2 0 - 2 0 - 0.0 0.1 0.0 - 0.1 - 0 0 4 2 - 6 0 - 0.0 0.2 0.7 - 0.2 - - - - 1 - - -	0 0 2 0 - 2 0 4 - 0.0 0.1 0.0 - 0.1 - 1.0 0 1 16 0 - 17 0 5 - 0.7 0.8 0.0 - 0.7 - 1.2 0 0 2 0 - 2 0 0 - 0.0 0.1 0.0 - 0.1 - 0.0 0 0 4 2 - 6 0 0 - 0.0 0.2 0.7 - 0.2 - 0.0 - - - 1 - - - -	0 0 2 0 - 2 0 4 6 - 0.0 0.1 0.0 - 0.1 - 1.0 0.3 0 1 16 0 - 17 0 5 22 - 0.7 0.8 0.0 - 0.7 - 1.2 1.0 0 0 2 0 - 2 0 0 5 - 0.0 0.1 0.0 - 0.1 - 0.0 0.2 0 0 4 2 - 6 0 0 0 - 0.0 0.2 0.7 - 0.2 - 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6 0 0 0 0 - 0.0 0.0 - 0.0 0.2 0.7 - <	0 0 2 0 - 2 0 4 6 1 - 11 0 1 - 0.0 0.1 0.0 - 0.1 - 1.0 0.3 0.3 - 0.4 0.0 0.2 0 1 16 0 - 17 0 5 22 4 - 31 0 3 - 0.7 0.8 0.0 - 0.7 - 1.2 1.0 1.2 - 1.0 0.0 0.6 0 0 2 0 - 2 0 0 5 2 - 7 0 0 - 0.0 0.1 - 0.1 - 0.0 0.2 0.6 - 0.2 0.0 0.0 - 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 - 0.0 0.1 0.0 - 0.1 - 1.0 0.3 0.3 - 0.4 0.0 0.2 0.7 0 1 16 0 - 17 0 5 22 4 - 31 0 3 9 - 0.7 0.8 0.0 - 0.7 - 1.2 1.0 1.2 - 1.0 0.0 0.6 1.2 0 0 2 0 - 2 0 0 5 2 - 7 0 0 2 - 0.0 0.1 - 0.0 0.2 0.6 - 0.2 0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 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 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - 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 0 2 0 - 2 1.0 1.2 - 1.0 0.0 0.6 1.2 0.3 0 0 2 0 0 5 2 - 7 0 0 2 0 - 0.0 0.1 - 0.0 0.2	0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - - 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 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - - 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 0 2 0 - 2 1.0 1.2 - 1.0 0.0 0.6 1.2 0.3 - - 0.0 0.1 0.0 0 5 2 - 7 0 0 0 0 0 0	0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 11 - 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 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - 13 - 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 0 0 2 0 - 1.2 1.0 1.2 - 1.0 0.0 0.6 1.2 0.3 - 0.8 0 0 2 0 0 5 2 - 7 0	0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 11 0 - 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 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - 13 0 - 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 - 0 0 2 0 0 5 2 - 7 0 0 2 0 0 - 2 0 - 0.0 0.1 - 0.0 0	0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 11 0 2 - 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 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - 13 0 9 - 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 0 2 0 0 5 2 - 7 0 0 2 0 3 0.0 - 0.1 - 0.9 <	0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 11 0 2 2 - 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 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - 13 0 9 5 - 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 0 0 2 0 - 2 0 0 0 0 0 0 0 0 0 <td< th=""><th>0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 11 0 2 2 2 2 2 - 0.4 0.0 0.2 0.7 1.3 - 0.7 - 0.6 0.4 0.8 0 0 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - 13 0 9 5 6 - 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 0 0 2 0 - 2 0 0 2 0 - 2.8 0.9 2.5 0 0 0 0 0 0<!--</th--><th>0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 11 0 2 2 2 2 - - - - 11 0 2 2 2 2 - - - 11 0 2 2 2 2 - - 0.4 0.0 0.2 0.7 1.3 - 0.7 - 0.6 0.4 0.8 - 0</th><th>0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 11 0 2 2 2 - 6 - 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 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - 13 0 9 5 6 - 20 - 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 - 0.0 0</th></th></td<>	0 0 2 0 - 2 0 4 6 1 - 11 0 1 5 5 - 11 0 2 2 2 2 2 - 0.4 0.0 0.2 0.7 1.3 - 0.7 - 0.6 0.4 0.8 0 0 1 16 0 - 17 0 5 22 4 - 31 0 3 9 1 - 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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)

								run	iii ig iv	/IOVCII	ICITE I	can	loui	Dala	(0.50	\neg ivi j									
			Vollme	er Road					Vollme	er Road					Ridgelan	d Avenue					Ridgelan	d Avenue			
			East	bound					West	bound					North	bound					South	bound			
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. 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 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 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 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	-	-	-	<u>-</u>	0	_	-	-	-	-	0	-	-	-	-	-	0	-	-	_	_	-	0	-	-
% Pedestrians	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	-	-
	-				-		-	-	-	-	-	-		-	-		-		-		<u> </u>	-	-		-

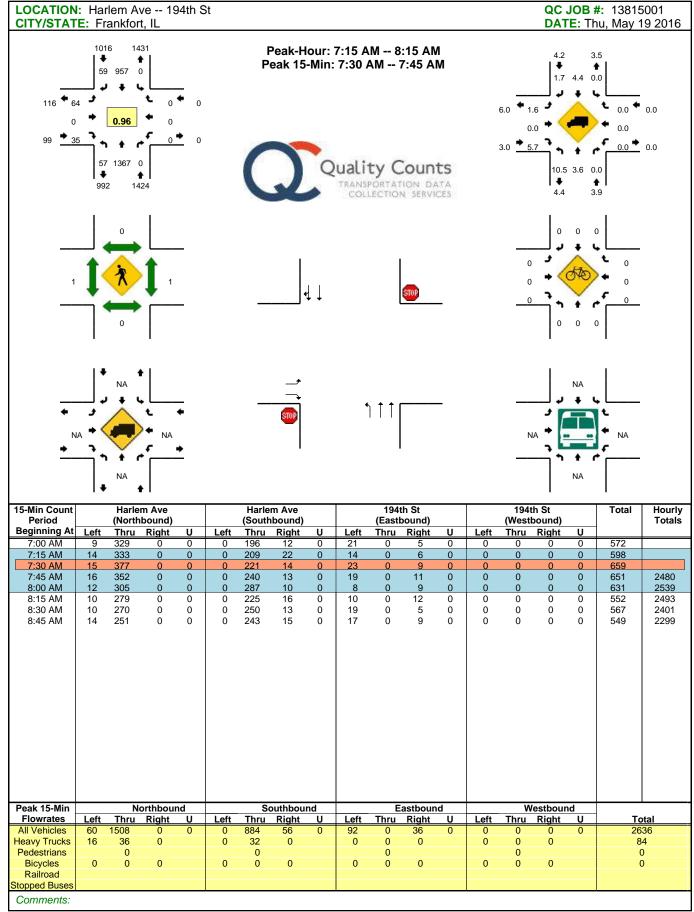


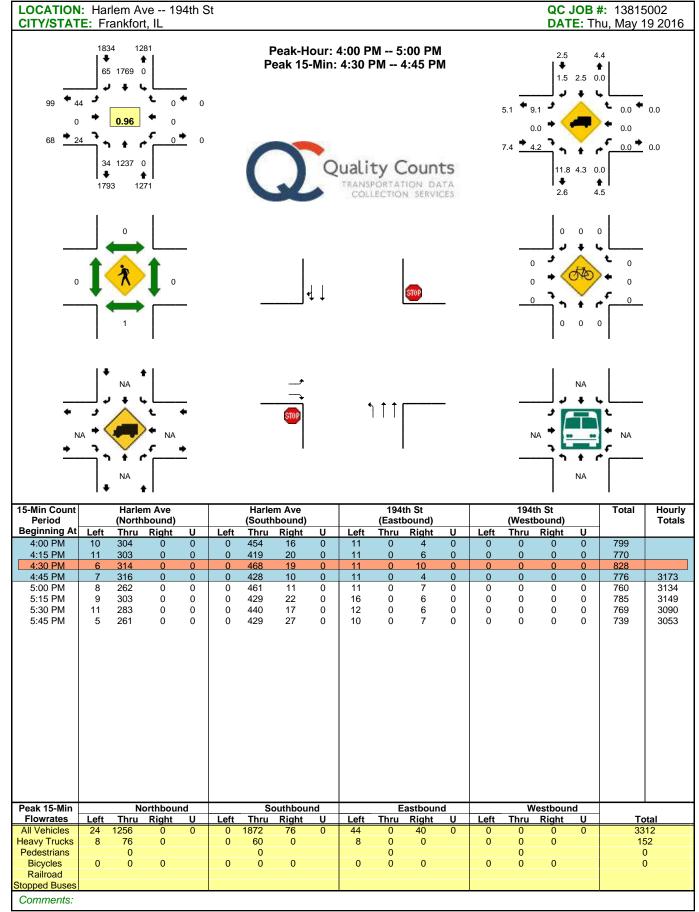
Rosemont, Illinois, United States 60018 (847)518-9990

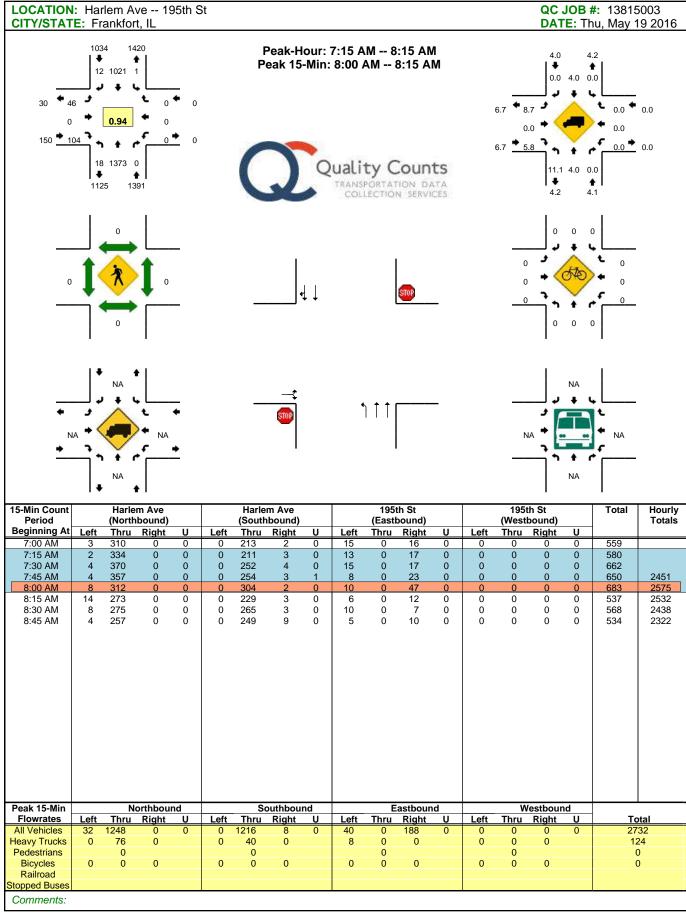
Count Name: Vollmer Road with Ridgeland Avenue Site Code: Start Date: 12/17/2019 Page No: 4

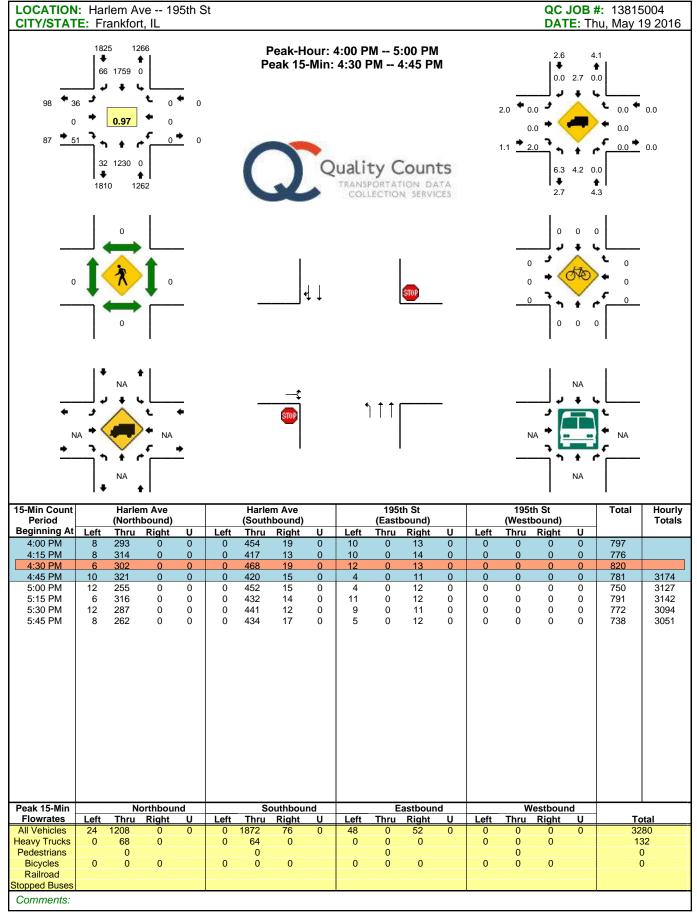
Turning Movement Peak Hour Data (5:30 PM)

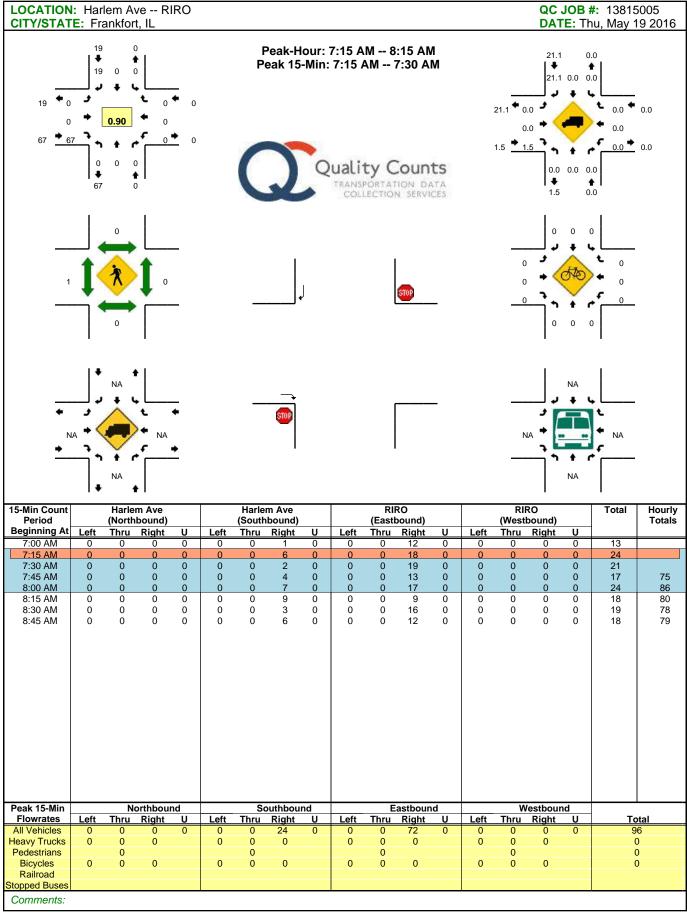
Variable Variable								1	iuii	mig iv	/IO VEII	ICHT I	can	ļioui i	Dala	(5.50	1 1VI <i>)</i>									
Start Time				Vollme	r Road					Vollme	er Road					Ridgelan	nd Avenue					Ridgelan	d Avenue			
Figure Color Col				Easth	oound			İ		West	bound					North	bound			ĺ		South	bound			
5:45 PM	Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 PM 6:15 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 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 33 - 13.9 - PHF 0.000 0.607 0.900 0.854 0.086 0.00 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 - Lights 0 17 437 80 - 534 0 83 405 47 - 535 0 61 93 42 - 186 0 51 104 49 - 204 1469 % Lights - 1000 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 0 0 0 0 0 0	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
Color Colo	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
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	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
Approach % 0.0 3.1 81.7 15.1 0.0 15.6 76.5 8.9 0.0 30.8 48.0 21.2 0.0 25.7 50.5 23.8	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 % 0.0 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 9 6.2 100.0 100.0 - 99.0 99.0 99.0 Buses 0 0 0 0 0 0 - 0 0 0 0 0 0 0 0 0 0 0 0	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
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 0.856 - 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 99.0 100.0 - 99.0 99.0 99.0 99.0 99.0 99.0 Buses 0 0 0 0 0 0 - 0 0 0 0 0 0 0 0 0 0 0 0	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	-	-	-
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 - 99.0 100.0 - 99.0 - 99.0 98.9 98.9 98.9 99.9 - 99.3 - 100.0 97.9 100.0 - 99.0 - 96.2 100.0 100.0 - 99.0 98.9 98.9 98.9 99.9 99.3 - 100.0 0 90.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		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	-
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 98.9 98.9 99.9 - 100.0 99.0 - 96.2 100.0 100.0 100.0 - 99.0 98.9 99.0 98.9 98.9 99.0 98.9 99.0 - 96.2 100.0 100.0 0	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 - 100.0 98.6 97.6 - 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 99.0 98.9 99.0 - 99.0 - 96.2 100.0 100.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 - 99.0 99.0 99.0 - 99.0 0	Lights	0	17	437	80	-	534	0	83	405	47	-	535	0	61	93	42	-	196	0	51	104	49	-	204	
Buses 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		-	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 <td></td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>-</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>-</td> <td>0</td> <td>0</td> <td>0</td> <td>2</td> <td>0</td> <td>-</td> <td>2</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>-</td> <td>0</td> <td>2</td>		0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	0	0	-	0	2
Single-Unit Trucks 0 0 2 0 - 2 0 1 2 1 - 4 0		_	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 0.5 0.0 - 0.4 - 1.2 0.5 2.1 - 0.7 - 0.0 0.0 - 0.0 0.		0		•		-		0	1		1	-	4	0				-		0				-		
Articulated Trucks 0		-	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
Bicycles on Road 0 0 4 2 - 6 0		0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
Bicycles on Road 0 0 4 2 - 6 0	% Articulated 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
Road -	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 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	Pedestrians	-	-	-	-	0	-	-		-		0	-	-	-	-	-	0	-	-			-	0	-	-
	% Pedestrians	-				_		-		-		-		-	-		-	-		-				-		-

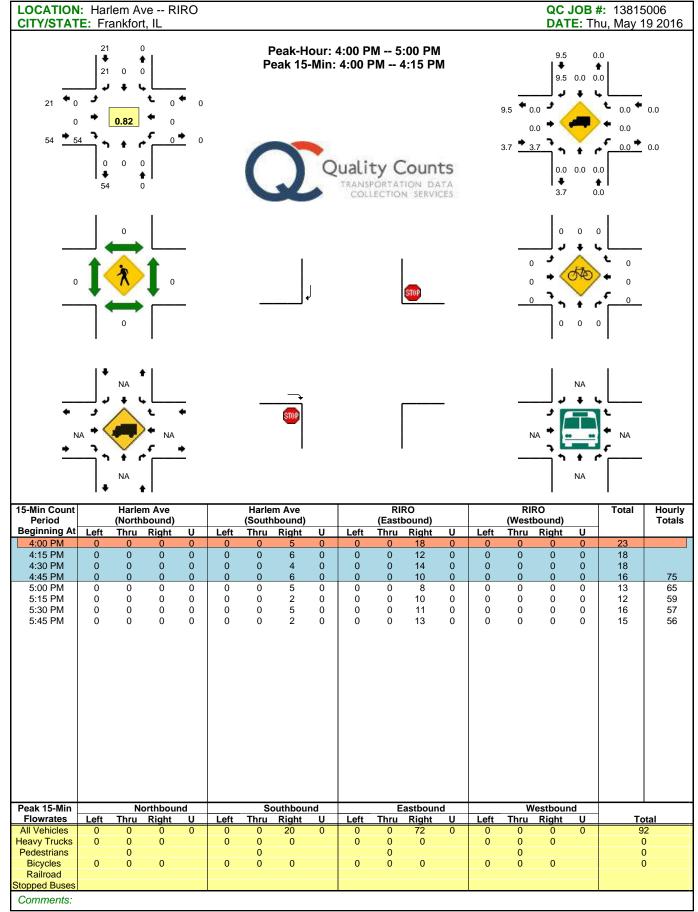




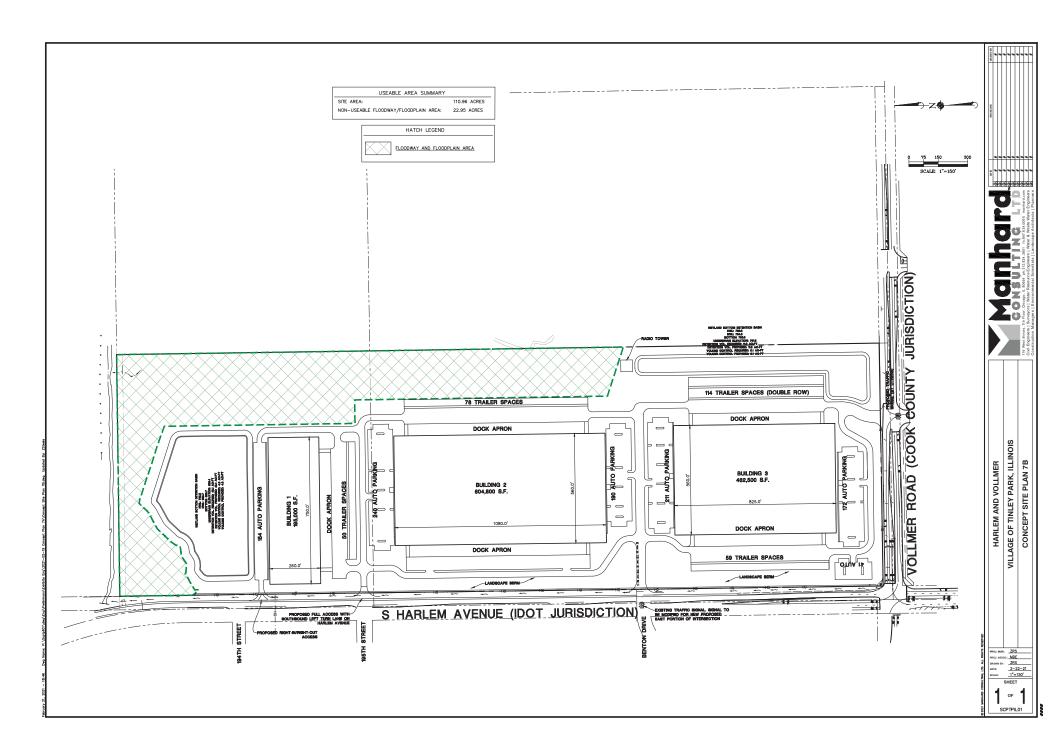


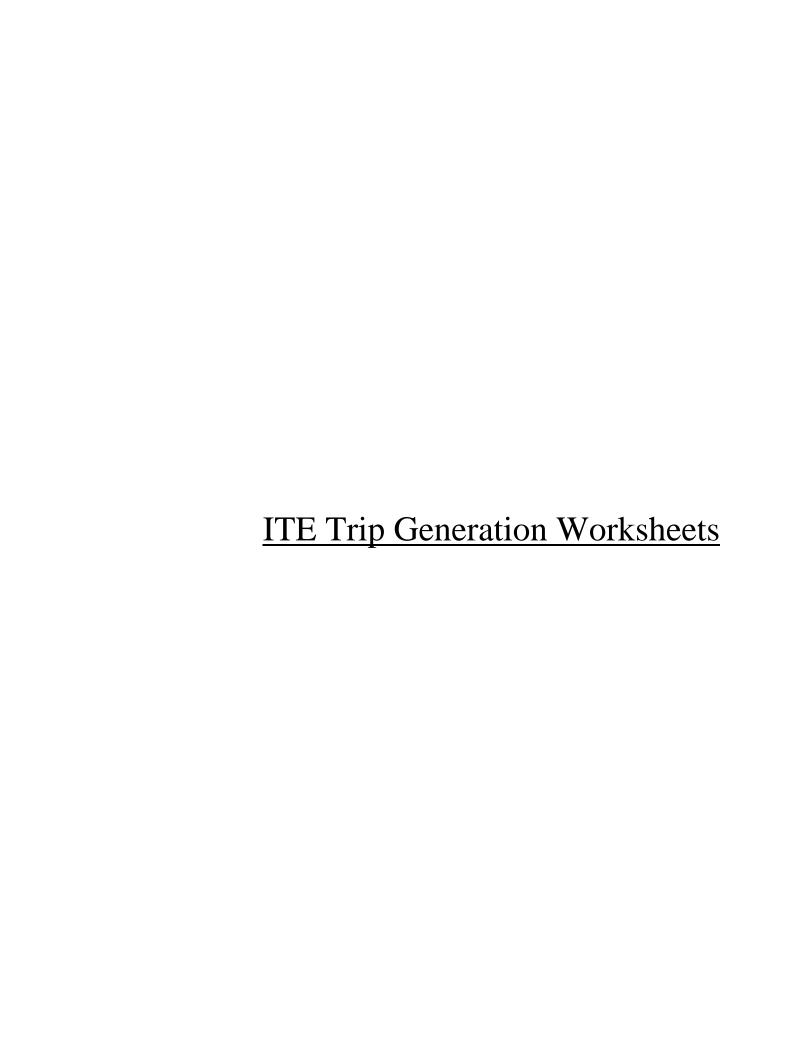






Preliminary Site Plan





Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday

Setting/Location: General Urban/Suburban

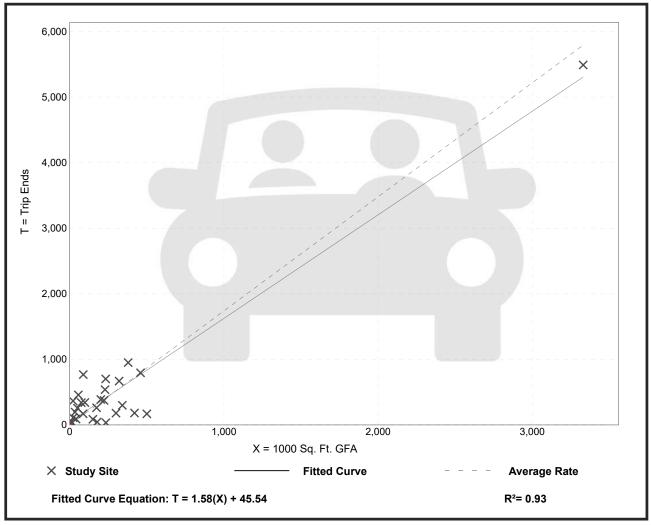
Number of Studies: 29 Avg. 1000 Sq. Ft. GFA: 285

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



Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

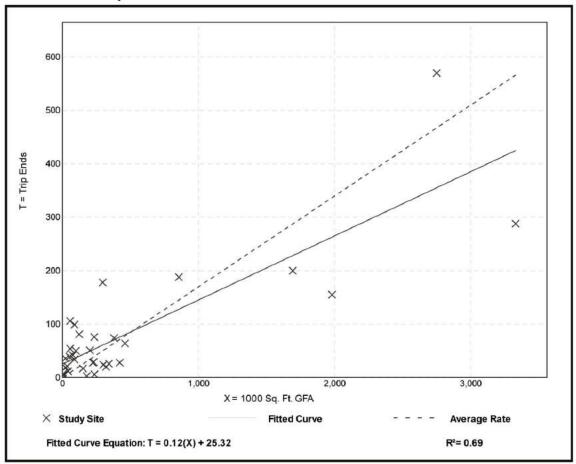
Number of Studies: 1000 Sq. Ft. GFA: 451

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: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

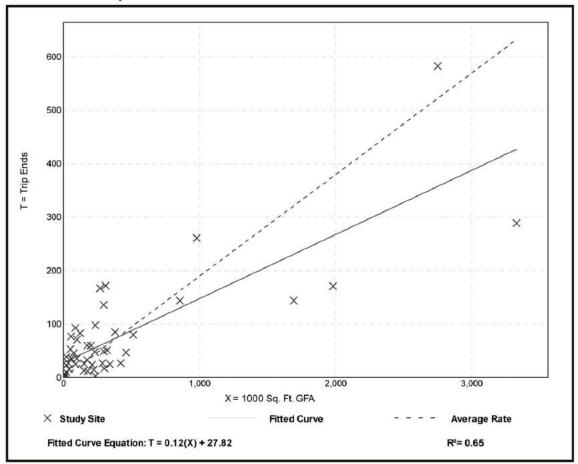
Number of Studies: 47 1000 Sq. Ft. GFA: 400

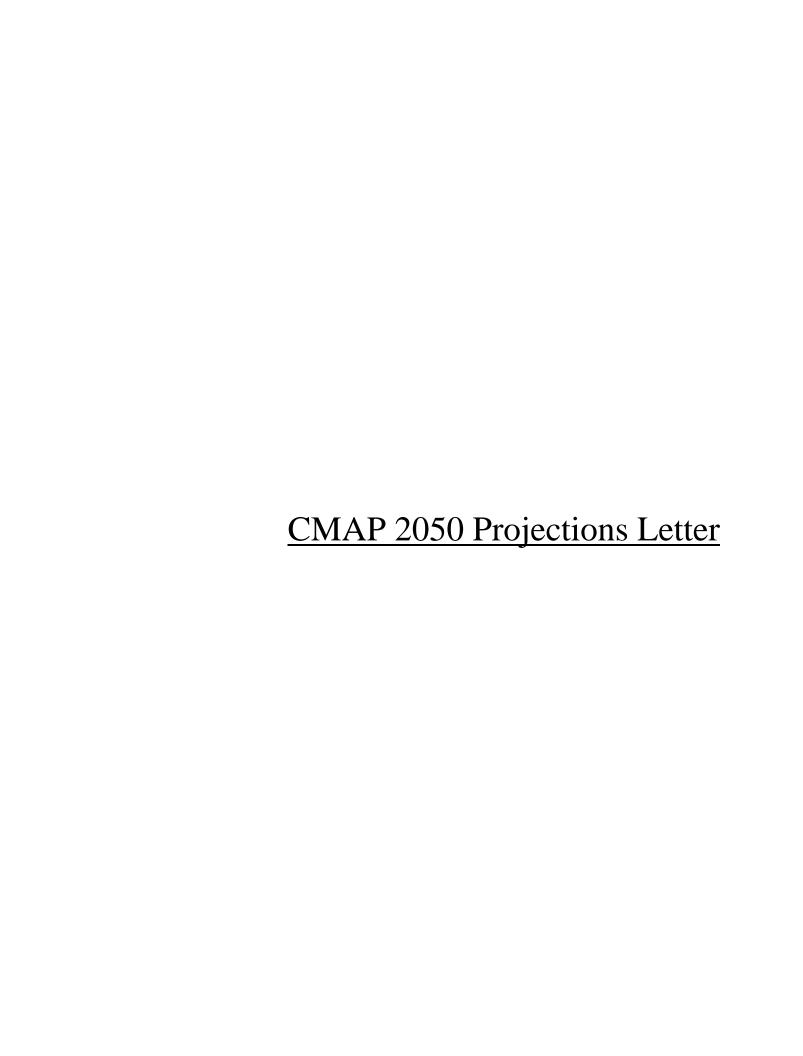
Directional Distribution: 27% entering, 73% exiting

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







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	Current Volumes	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.

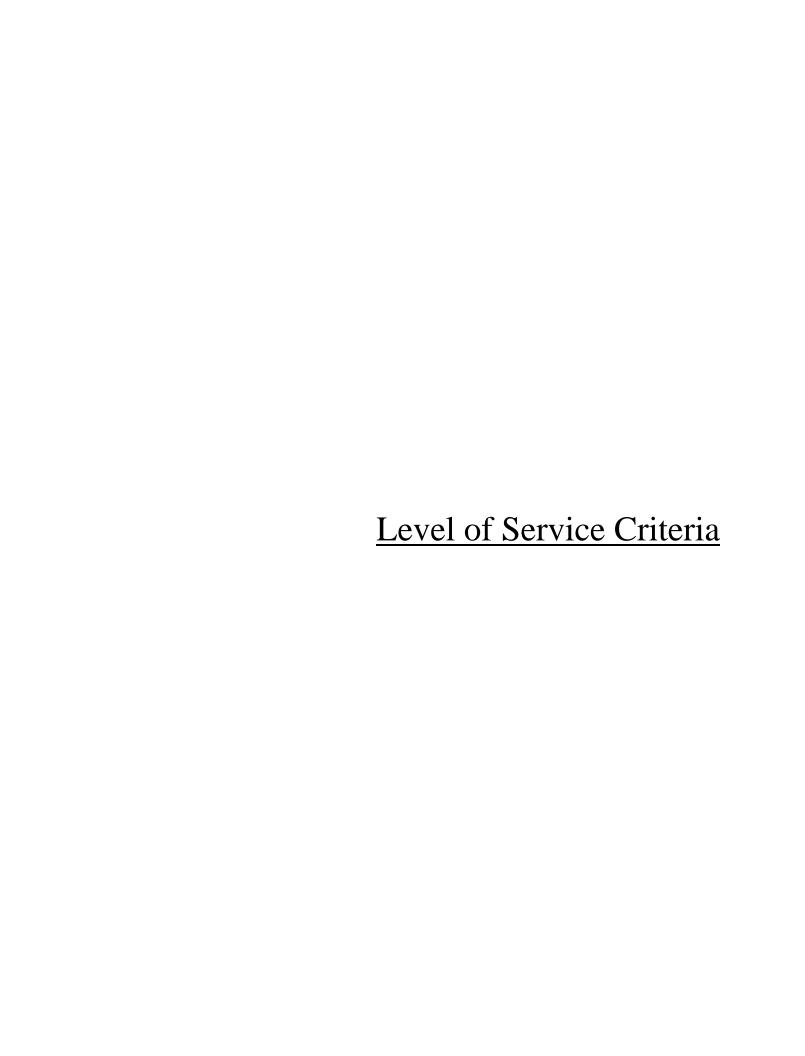
Sincerely,

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

	EE V EE V	Signalized Intersections
		Average Control
Level of		Delay
Service	Interpretat	
A	Favorable progression. Most vehicles arrive during green indication and travel through the intersect without stoppi	ion
В	Good progression, with more vehicles stopping than Level of Service	
C	Individual cycle failures (i.e., one or more quevehicles are not able to depart as a result of insufficion capacity during the cycle) may begin to apper Number of vehicles stopping is significant, although may vehicles still pass through the intersection with stopping	ent ear. any out
D	The volume-to-capacity ratio is high and eit progression is ineffective or the cycle length is too lo Many vehicles stop and individual cycle failures noticeal	ng. are
Е	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cy failures are frequent	rcle
F	The volume-to-capacity ratio is very high, progression very poor, and the cycle length is long. Most cycles to clear the que	fail
		Insignalized Intersections
	Level of Service Average	ge Total Delay (SEC/VEH)
	A	0 - 10
	В	> 10 - 15
	C	> 15 - 25
	D	> 25 - 35
	Е	> 35 - 50
	F Source: H	> 50 ighway Capacity Manual, 2010.

Capacity Analysis Summary Sheets
Existing Weekday Morning Peak Hour Conditions

	•	•	†	/	>	ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	77.77	^	7	ሻሻ	*
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)	1700	1700	12	1700	1700	12
Grade (%)	0%	12	0%	12	12	0%
,		0	U%	100	210	0%
Storage Length (ft)	150	0		100	310	
Storage Lanes	1	2		1	2	
Taper Length (ft)	150	0.00	0.05	4.00	235	2.05
Lane Util. Factor	1.00	0.88	0.95	1.00	0.97	0.95
Ped Bike Factor						
Frt				0.850		
Flt Protected	0.950				0.950	
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)	10.5		13.4			14.7
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)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
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
						119.0
Total Split (s)	21.0	15.4	103.6		15.4	
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)	10.2		119.7	140.0	5.6	121.8
Actuated g/C Ratio	0.07		0.86	1.00	0.04	0.87
notation gro Italio	0.07		0.00	1.00	0.04	0.07

1: Harlem Avenue & Oak Park Avenue

	•	•	†	/	-	↓
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	Е		Α	Α	Е	А
Approach Delay	68.5		3.7			2.4
Approach LOS	Е		Α			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: 140

Offset: 109.2 (78%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 50

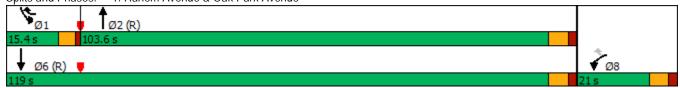
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection LOS: A Intersection Signal Delay: 4.6 Intersection Capacity Utilization 44.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



	ၨ	→	•	•	←	•	4	†	<i>></i>	/	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	† }			€Î}	
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							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	

2: Harlem Avenue & Benton Drive/Driveway

	•	-	•	•	←	•	1	†	/	-	ţ	4
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		Е					Α	Α			Α	
Approach Delay		69.9						3.2			8.5	
Approach LOS		Е						Α			Α	
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

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 80 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

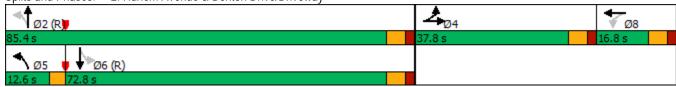
Maximum v/c Ratio: 0.66

Intersection Signal Delay: 10.5 Intersection LOS: B
Intersection Capacity Utilization 55.2% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Harlem Avenue & Benton Drive/Driveway



	ၨ	→	•	•	←	•	4	†	/	/	ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	†	7	ኻ	†	7	ሻሻ	4 1>		1,1	^	7
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)												
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 (%)												
Lane Group Flow (vph)	1	3	1	73	1	351	10	911	0	225	572	3
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases	4		4	8		8						6
Detector Phase	7	4	5	3	8	1	5	2		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	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		8.7	37.9	5.9	89.7		26.0	117.0	126.4
• •	1.0	0.0	0.7	12.3	0.7	31.9	0.7	07.7		20.0	117.0	120.4

3: Harlem Avenue & Access Road/Vollmer Road

	ၨ	-	•	•	←	•	•	†	/	-	ļ	4
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	Е	Е	Е	Е	Е	Е	В		Е	Α	Α
Approach Delay		60.0			64.8			15.5			21.7	
Approach LOS		Е			Е			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: 140

Offset: 84 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 27.7

Intersection LOS: C
ICU Level of Service B

Intersection Capacity Utilization 59.1%

Analysis Period (min) 15

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road



m Volume for 95th percentile queue is metered by upstream signal.

	•	→	\rightarrow	•	←	•	4	†	<i>></i>	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	∱ 1≽		ሻ	∱ }		ሻ	†	7	ሻ	†	7
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			No			No			No			No
Satd. Flow (RTOR)												
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)												
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%	1%	0%	1%	10%	4%	18%
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 (%)	0.4	070			100		0.5	475	444		00	0.4
Lane Group Flow (vph)	24	378	0	55	423	0	95	175	111	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 38.9%		15.0	30.0	30.0	10.0	25.0	25.0
Total Split (%)	16.7%	38.9%		16.7%			16.7%	33.3%	33.3%	11.1%	27.8%	27.8%
Yellow Time (s) All-Red Time (s)	3.5 0.0	4.0		3.5	4.0 2.0		3.5	4.0 2.0	4.0 2.0	3.5 0.0	4.0	4.0
. ,		2.0		0.0			0.0				2.0	2.0
Lost Time Adjust (s)	0.0 3.5	0.0 6.0		0.0 3.5	0.0 6.0		0.0 3.5	0.0 6.0	0.0 6.0	0.0 3.5	0.0 6.0	0.0 6.0
Total Lost Time (s)												
Lead/Lag Lead-Lag Optimize?	Lead Yes	Lag Yes		Lead Yes	Lag Yes		Lead Yes	Lag Yes	Lag	Lead Yes	Lag Yes	Lag Yes
Recall Mode				None					Yes	None		None
Act Effct Green (s)	None 26.1	None 20.2		27.4	None 22.3		None 19.1	None 12.1	None 12.1	15.2	None 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

4: Ridgeland Avenue & Vollmer Road

	۶	-	•	•	←	•	•	†	~	-	↓	4
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	Α	В		Α	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

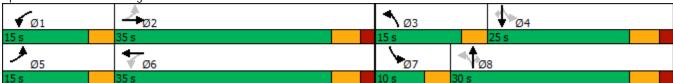
Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 17.8 Intersection LOS: B
Intersection Capacity Utilization 43.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road



Intersection							
Int Delay, s/veh	2.2						
		EDD	NDI	NDT	CDT	CDD	Ī
Movement Configurations	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	<u>ነ</u>	7	\	^	∱ }	00	
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,		-	-	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 N	/linor2	N	Major1	-	Major2		
						^	
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	127	664	812	-	-	-	
Mov Cap-2 Maneuver	236	-	-	-	-	-	
Stage 1	444	-	-	-	-	-	
Stage 2	444	-	-	-	_	_	
J. J.							
Approach	EB		NB		SB		
HCM Control Delay, s	24.1		0.8		0		
HCM LOS	С						
Minor Lane/Major Mvm	t	NBL	MRT	EBLn1 I	FRI n2	SBT	
						301	
Capacity (veh/h)		812	-	200	664	-	
HCM Control Polov (a)		0.112		0.415		-	
HCM Control Delay (s)		10	-	30.7	10.9	-	
HCM Lane LOS		A 0.4	-	D 1.9	B 0.2	-	
HCM 95th %tile Q(veh)			_		(11)	_	

Intersection Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		^↑	^	7
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
Mymt Flow	0	87	0	1209	603	38
IVIVIIIL FIOW	U	0/	U	1209	003	30
Major/Minor M	linor2	N	Najor1	N	/lajor2	
Conflicting Flow All	_	302		0		0
Stage 1	-	-	_	_	-	_
Stage 2	_	_	_	_	_	_
Critical Hdwy	_	6.9	_	_		_
Critical Hdwy Stg 1	_	- 0.7	_	_	_	_
	-	-	-	-	-	-
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	-	-				
Stage 2	-	-				
	-	-	ND		0.0	
Approach	EB		NB		SB	
Approach HCM Control Delay, s	10.9		NB 0		SB 0	
Approach						
Approach HCM Control Delay, s	10.9					
Approach HCM Control Delay, s HCM LOS	10.9 B	NDT	0	CDT		
Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvmt	10.9 B	NBT E	0 EBLn1	SBT		
Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvmt Capacity (veh/h)	10.9 B	-	0 EBLn1 700	-		
Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio	10.9 B	-	0 EBLn1 700 0.125	SBT -		
Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s)	10.9 B	-	700 0.125 10.9	-		
Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvmt Capacity (veh/h) HCM Lane V/C Ratio	10.9 B	-	0 EBLn1 700 0.125	-		

Intersection						
Int Delay, s/veh	1.5					
		EDD	NDL	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	¥	107	ነ	^	† }	1.4
Traffic Vol, veh/h	46	107	22	1090	635	14
Future Vol, veh/h	46	107	22	1090	635	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		-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	17	0	0	4	5	0
Mvmt Flow	49	114	23	1160	676	15
Major/Minor I	Minor2	N	/lajor1	IV.	Major2	
Conflicting Flow All	1310	346	691	0	<u> </u>	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	17.6 C		0.2		U	
HCIVI LU3	C					
Minor Lane/Major Mvm	nt	NBL	NBTI	EBLn1	SBT	SBR
Capacity (veh/h)		913	-		-	-
HCM Lane V/C Ratio		0.026	-	0.367	-	-
HCM Control Delay (s)		9	-		-	-
		Α	-	С	-	-
HCM Lane LOS HCM 95th %tile Q(veh))	A 0.1	-	C 1.7	-	-

Capacity Analysis Summary Sheets
Existing Weekday Evening Peak Hour Conditions

	•	•	†	/	-	ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	VVDL	VVDIX	↑ ↑	NDIX 7	<u>为</u> 为	† †
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)	1900	1900	12	1900	1900	12
	0%	12	0%	12	12	0%
Grade (%)	150	0	U%	100	310	0%
Storage Length (ft)		0 2		100		
Storage Lanes	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2			2	
Taper Length (ft)	150	0.00	0.05	1.00	235	0.05
Lane Util. Factor	1.00	0.88	0.95	1.00	0.97	0.95
Ped Bike Factor		0.050		0.050		
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
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	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)	070		070			070
, ,	142	13	966	127	3	1547
Lane Group Flow (vph)					Prot	
Turn Type	Prot	pm+ov	NA	Free		NA
Protected Phases	8	1	2	Γ	1	6
Permitted Phases	_	8	_	Free	4	,
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	
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
Actuated y/C Kallo	U. IZ	0.20	U.//	1.00	0.04	U.8U

1: Harlem Avenue & Oak Park Avenue

	•	•	†	1	-	↓
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	Е	D	Α	Α	Е	А
Approach Delay	74.7		5.0			6.4
Approach LOS	Е		Α			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: 150

Offset: 145.5 (97%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 45

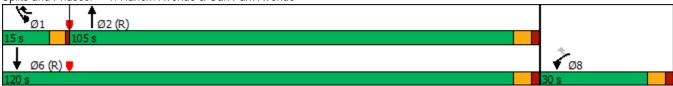
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66 Intersection Signal Delay: 9.6 Intersection Capacity Utilization 56.1%

Intersection LOS: A ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	↑ ↑			4Te	
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			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									0.987	
Flt Protected		0.963					0.950					
Satd. Flow (prot)	0	1994	0	0	1900	0	1787	3471	0	0	3468	0
Flt Permitted		0.963					0.065					
Satd. Flow (perm)	0	1994	0	0	1900	0	122	3471	0	0	3468	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	1080	0	0	1885	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		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	

2: Harlem Avenue & Benton Drive/Driveway

	•	-	•	•	•	•	1	†	~	-	ţ	4
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		Е					С	Α			В	
Approach Delay		75.6						4.5			17.9	
Approach LOS		Ε						Α			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

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 116 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

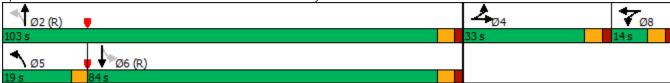
Maximum v/c Ratio: 0.76

Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 78.7% ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.





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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	†	7	*	↑	7	ሻሻ	↑ Ъ		767	^	7
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 (%)	4.	4.4		100	- 10	405		200		-7 0	1100	10
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	0	8	_			1	,	6
Detector Phase	7	4	4	3	8	1	5	2		1	6	6
Switch Phase	2.0	0.0	0.0	2.0	0.0	2.0	2.0	15.0		2.0	15.0	15.0
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 1.5	3.5	3.5	4.5		3.5	4.5	4.5
All-Red Time (s)	0.0	1.5	1.5	0.0		1.0	1.0	1.5		1.0	1.5	1.5
Lost Time Adjust (s)	0.0 3.5	0.0	0.0	0.0 3.5	0.0	0.0	0.0	0.0 6.0		4.5	0.0	0.0 6.0
Total Lost Time (s)		6.0	6.0		6.0	4.5	4.5				6.0	
Lead/Lag Lead-Lag Optimize?	Lead Yes	Lag Yes	Lag Yes	Lead	Lag Yes	Lead Yes	Lead Yes	Lag Yes		Lead Yes	Lag Yes	Lag Yes
Recall Mode		None		Yes None	None			C-Min			C-Min	C-Min
Act Effct Green (s)	None 13.4	8.3	None 8.3	20.2	13.7	None 63.1	None 6.5	71.9		None 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

3: Harlem Avenue & Access Road/Vollmer Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.11	0.13	0.12	0.98	0.10	0.65	0.16	0.51		0.58	0.43	0.01
Control Delay	55.8	69.8	70.2	123.3	64.6	43.7	71.0	27.6		52.1	2.3	1.1
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	55.8	69.8	70.2	123.3	64.6	43.7	71.0	27.6		52.1	2.3	1.1
LOS	Е	Е	Е	F	Е	D	Е	С		D	Α	Α
Approach Delay		64.5			67.6			28.8			18.5	
Approach LOS		Е			Е			С			В	
Queue Length 50th (ft)	13	13	10	175	16	349	11	259		239	179	1
Queue Length 95th (ft)	34	35	31	#292	42	484	25	281		297	26	m0
Internal Link Dist (ft)		877			5179			2633			774	
Turn Bay Length (ft)	95		100	235			225			325		215
Base Capacity (vph)	301	400	323	191	217	672	350	1784		1001	2747	1214
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	0.05	0.04	0.03	0.98	0.09	0.65	0.07	0.46		0.58	0.43	0.01

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 31.2
Intersection Capacity Utilization 62.1%

Intersection LOS: C ICU Level of Service B

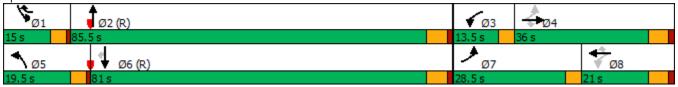
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road



	•	-	\rightarrow	•	←	•	4	†	<i>></i>	>	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	∱ }		ች	↑ ↑		ሻ	↑	7	ሻ	†	7
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			No			No			No			No
Satd. Flow (RTOR)												
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)												
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)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	631	0	99	533	0	72	111	49	63	122	57
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)	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

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	0.03	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		Α	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

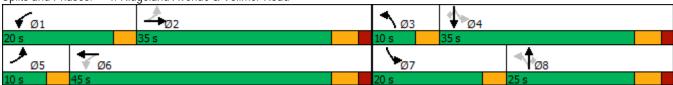
Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 44.0% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road



Second S	Intersection								
The Configurations	Int Delay, s/veh	4.6							
Affic Vol, veh/h 74 37 54 965 1505 100 Ture Vol, veh/h 74 37 54 965 1505 100 In Control Stop Stop Free Free Free Free Channelized - None - None - None - None rage Length 70 0 210	Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Affic Vol, veh/h 74 37 54 965 1505 100 Ture Vol, veh/h 74 37 54 965 1505 100 In Control Stop Stop Free Free Free Free Channelized - None - None - None - None rage Length 70 0 210	Lane Configurations				^	∳ ሴ			
Inflicting Peds, #/hr 0 0 0 0 0 0 0 0 0 Channelized - None	Traffic Vol, veh/h						100		
Control Stop Stop Free	Future Vol, veh/h	74	37	54	965	1505	100		
Control Stop Stop Free	Conflicting Peds, #/h	r 0	0	0	0	0	0		
Channelized	Sign Control		Stop	Free	Free	Free	Free		
h in Median Storage, # 1	RT Channelized			-	None	-	None		
h in Median Storage, # 1	Storage Length	70	0	210	-	-	-		
ak Hour Factor 96 96 96 96 96 96 96 96 96 97 any Vehicles, % 11 0 15 3 3 3 0 mt Flow 77 39 56 1005 1568 104		ge, # 1	-	-	0	0	-		
avy Vehicles, % 11 0 15 3 3 3 0 mt Flow 77 39 56 1005 1568 104 Jor/Minor Minor2 Major1 Major2 Major3 Major4 Major5 Major4 Major5 Major5 Major5 Major5 Major6 Major6 Major6 Major6 Major6 Major6 Major6 Major6 Major7 Major8 Major8	Grade, %	•	-	-	0	0	-		
Minor Minor Major Majo	Peak Hour Factor	96	96	96	96	96	96		
Minor Minor Minor Major Major Major Major	Heavy Vehicles, %	11	0	15	3	3	0		
Stage 1 1620	Mvmt Flow	77	39	56	1005	1568	104		
Stage 1 1620									
Stage 1 1620	Major/Minor	Minor2	N	/laior1	N	Maior2			
Stage 1 1620							0		
Stage 2									
tical Hdwy			_	_	_	_	_		
tical Hdwy Stg 1 6.02	Critical Hdwy		6.9	4.4	_	-	-		
tical Hdwy Stg 2 6.02					_	_	_		
Cap-1 Maneuver			_	-	_	-	-		
Cap-1 Maneuver			3.3	2.35	_	_	_		
Stage 1 134 -					_	-	-		
Stage 2 478 -				-	-	-	-		
toon blocked, % v Cap-1 Maneuver			-	-	-	-	-		
v Cap-1 Maneuver	Platoon blocked, %				-	-	-		
v Cap-2 Maneuver 88 - - - - Stage 1 111 - - - - Stage 2 478 - - - - proach EB NB SB M Control Delay, s 104.7 1 0 M LOS F The stage of the stag		r ~ 26	315	326	-	_	-		
Stage 1 111 -	Mov Cap-2 Maneuve				-	-	_		
Stage 2 478			-	-	-	-	-		
proach EB NB SB M Control Delay, s 104.7 1 0 M LOS F nor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR pacity (veh/h) 326 - 88 315 M Lane V/C Ratio 0.173 - 0.876 0.122 M Control Delay (s) 18.3 - 148 18 M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4 tes	•		-	-	-	-	-		
M Control Delay, s 104.7 1 0 M LOS F nor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR pacity (veh/h) 326 - 88 315 M Lane V/C Ratio 0.173 - 0.876 0.122 M Control Delay (s) 18.3 - 148 18 M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4	J								
M Control Delay, s 104.7 1 0 M LOS F nor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR pacity (veh/h) 326 - 88 315 M Lane V/C Ratio 0.173 - 0.876 0.122 M Control Delay (s) 18.3 - 148 18 M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4	Approach	FR		NB		SB			
M LOS F nor Lane/Major Mvmt									
nor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR pacity (veh/h) 326 - 88 315 M Lane V/C Ratio 0.173 - 0.876 0.122 M Control Delay (s) 18.3 - 148 18 M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4	HCM LOS					- 0			
pacity (veh/h) 326 - 88 315 M Lane V/C Ratio 0.173 - 0.876 0.122 M Control Delay (s) 18.3 - 148 18 M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4	HOW LOS	ı							
pacity (veh/h) 326 - 88 315 M Lane V/C Ratio 0.173 - 0.876 0.122 M Control Delay (s) 18.3 - 148 18 M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4	Minor Lanc/Major M	ımt	NDI	NDT	EDI 51 I	EDI n2	CDT	CDD	
M Lane V/C Ratio 0.173 - 0.876 0.122 M Control Delay (s) 18.3 - 148 18 M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4 tes		rifit		INRII			SRI	SDK	
M Control Delay (s) 18.3 - 148 18 M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4 tes				-			-	-	
M Lane LOS C - F C M 95th %tile Q(veh) 0.6 - 4.7 0.4 tes									
M 95th %tile Q(veh) 0.6 - 4.7 0.4 tes		5)							
tes		, b.\							
	HCIVI 95th %tile Q(ve	en)	0.6	-	4.7	0.4	-	-	
Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon	Notes								
	~: Volume exceeds of	apacity	\$: De	lay exc	ceeds 30	00s	+: Com	outation Not Defined	*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		^	^	7
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
Mymt Flow	0	80	0	1051	1565	25
WWIIICTIOW	· ·	00	U	1001	1000	20
	/linor2		/lajor1		/lajor2	
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, %	0		U	-	-	U
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	C					
TOW EOO	J					
Minor Lane/Major Mvm	i	NBT E	EBLn1	SBT		
Capacity (veh/h)		-	341	-		
HCM Lane V/C Ratio		-	0.236	-		
HCM Control Delay (s)		-	18.8	-		
HCM Lane LOS		-	С	-		
HCM 95th %tile Q(veh)		-	0.9	-		
, 5 , 5 5 (1011)			3.7			

Intersection								
Int Delay, s/veh	1.6							
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	W		- ሻ	^	Λħ			
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		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	-	None		None	-	None		
Storage Length	0	-	130	-	-	-		
Veh in Median Storag	e, # 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	N	Major1	N	Major2			
			1645			0		
Conflicting Flow All	2186		1045	0	-	0		
Stage 1	1611	-	-	-	-	-		
Stage 2	575	- 4.0	- 11	-	-	-		
Critical Hdwy	6.8 5.8	6.9	4.1	-	-	-		
Critical Hdwy Stg 1		-	-	-	-	-		
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, %	0.7	201	200	-	-	-		
Mov Cap-1 Maneuver		321	398	-	-	-		
Mov Cap-2 Maneuver		-	-	-	-	-		
Stage 1	139	-	-	-	-	-		
Stage 2	532	-	-	-	-	-		
Approach	EB		NB		SB			
HCM Control Delay, s	43.7		0.5		0			
HCM LOS	E							
Minor Long/Markey NA		NDI	NDT	EDL 1	CDT	CDD		
Minor Lane/Major Mvr	nt	NBL		EBLn1	SBT	SBR		
Capacity (veh/h)		398	-		-	-		
HCM Lane V/C Ratio	,	0.085		0.507	-	-		
HCM Control Delay (s	5)	14.9	-		-	-		
HCM Lane LOS		В	-	Е	-	-		
HCM 95th %tile Q(veh	1)	0.3	-	2.5	-	-		
Notes								
~: Volume exceeds ca	anacity	\$· De	elav evo	eeds 30	00s	+. Com	outation Not Defined	*: All major volume in platoor
. Volume exceeds co	apacity	ψ. DC	hay CAL	iccus 3	003	i. Cuili	Jatation Not Delineu	. All major volume in platoon

Capacity Analysis Summary Sheets
No Build Weekday Morning Peak Hour Conditions

	•	•	†	<i>></i>	>	ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y N	777	↑ ↑	7	ሻሻ	*
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	0 70
Storage Lanes	100	2		100	2	
Taper Length (ft)	150	Z			235	
Lane Util. Factor	1.00	0.88	0.95	1.00	0.97	0.95
Ped Bike Factor	1.00	0.88	0.95	1.00	0.97	0.90
Frt				0.850		
FIt Protected	0.050			0.830	0.050	
	0.950	2244	2654	1500	0.950	2454
Satd. Flow (prot)	1805	3344	3654	1599	3502	3654
Flt Permitted	0.950	22.4.4	2/54	1500	0.950	2/54
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
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	0	1411	90	2	992
Turn Type	Prot	pm+ov	NA	Free	Prot	NA
Protected Phases	8	1	2	. 100	1	6
Permitted Phases	<u> </u>	8		Free	•	J
Detector Phase	8	1	2	1100	1	6
Switch Phase	U	ı			ı	U
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

1: Harlem Avenue & Oak Park Avenue

	•	•	†	/	\	↓
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	Е		Α	Α	Е	Α
Approach Delay	68.7		3.7			2.7
Approach LOS	Е		Α			Α
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	40					
Offset: 109.2 (78%), Refe		se 2:NB1	and 6:S	BT, Start	of Green	
Natural Cycle: 55						
Control Type: Actuated-Co	oordinated					

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 4.6 Intersection Capacity Utilization 47.4%

Intersection LOS: A ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	† }			€Î}	
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	
Recall Mode Act Effct Green (s)	None	None 18.4		None	None		None 112.1	C-Min 109.6		C-Min	C-Min 101.6	

2: Harlem Avenue & Benton Drive/Driveway

	•	-	•	•	•	•	1	†	/	-	ţ	4
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		Е					Α	Α			Α	
Approach Delay		69.9						3.8			9.7	
Approach LOS		Е						Α			Α	
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

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 80 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

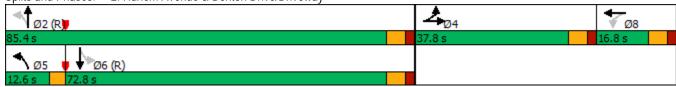
Maximum v/c Ratio: 0.66

Intersection Signal Delay: 10.8 Intersection LOS: B
Intersection Capacity Utilization 55.2% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Harlem Avenue & Benton Drive/Driveway



	۶	→	•	•	+	•	•	†	~	/	↓	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	†	7	ሻሻ	†	7	ሻሻ	^	7	ሻሻ	^	7
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	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)	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
Actuated gro Italio	0.04	0.00	0.00	0.07	0.00	0.50	0.04	0.01	0.72	0.20	0.01	0.07

3: Harlem Avenue & Access Road/Vollmer Road

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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	Е	Е	Е	Е	F	Е	Е	В	Α	Е	Α	Α
Approach Delay		62.0			67.6			15.5			24.7	
Approach LOS		Е			Е			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)	95		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%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

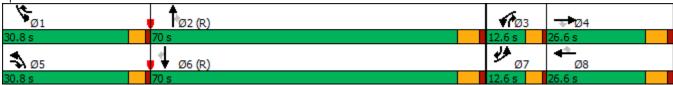
Maximum v/c Ratio: 0.84

Intersection Signal Delay: 29.2 Intersection LOS: C
Intersection Capacity Utilization 58.5% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	† Ъ		ሻ	† }		ሻ	1	7	ሻ	1	7
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

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		Α	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

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 64.8

Natural Cycle: 55

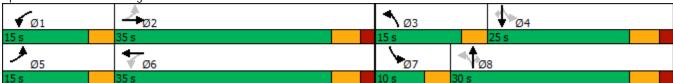
Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 19.2 Intersection LOS: B
Intersection Capacity Utilization 51.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road



	→	•	1	←	1	1
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u>↑</u>	T T	NDL 1	<u></u> ↑↑	NDE.	TADIC
Traffic Volume (vph)	402	80	193	433	4	8
Future Volume (vph)	402	80	193	433	4	8
Ideal Flow (vphpl)	2000	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%	12	12	0%	0%	12
Storage Length (ft)	0 70	215	215	070	070	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	0.73	1.00	1.00	0.73	0.77	1.00
Frt		0.850				0.850
FIt Protected		0.000	0.950		0.950	0.000
	2654	1415		3654	3502	1415
Satd. Flow (prot)	3654	1615	1805	3004		1615
Flt Permitted	2/54	1/15	0.489	2/54	0.950	1/15
Satd. Flow (perm)	3654	1615	929	3654	3502	1615
Right Turn on Red		No				No
Satd. Flow (RTOR)	45			45	20	
Link Speed (mph)	45			45	30	
Link Distance (ft)	1111			1210	387	
Travel Time (s)	16.8			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	6	8	1
Permitted Phases		2	6			8
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)	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	0.0	Lead	0.0	0.0	Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	C-Min	Min		C-Min	Min	None
			None		Min	
Act Effet Green (s)	108.8	122.8	122.5	120.0	8.0	21.7
Actuated g/C Ratio	0.78	0.88	0.88	0.86	0.06	0.16

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Lane Group	EBT	EBR	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	Α	Α	Α	Е	D	
Approach Delay	1.1			1.8	54.3		
Approach LOS	А			Α	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: 140							
Offset: 105 (75%), Reference	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: 0.24							
Intersection Signal Delay: 2					ersection		
Intersection Capacity Utiliza	ation 43.2%			IC	U Level c	of Service A	ı
Analysis Period (min) 15							
Culita and Dhases		۸ 0	Malles as	Daad			
Splits and Phases: 5: Pro	posed Full A	Access &	volimer	Road			
€ rø1		⊕ Ø2 (I	٦)				



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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	<u>†</u>	LDK 7	VVDL	<u>₩</u>	NDL 7	NDK ř
Traffic Volume (vph)	377	33	135	619	7	12
Future Volume (vph)	377	33	135	619	7	12
` 1 '	2000	1900	1900	2000	1900	1900
Ideal Flow (vphpl)	12	1900	1900	12	1900	1900
Lane Width (ft)		12	12			12
Grade (%)	0%	215	215	0%	0%	0
Storage Length (ft)		215	215		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)	0.05	4.00	220	0.05	25	1.00
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		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)						
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)	U	U	U	U	U	U
	0%			0%	0%	
Mid-Block Traffic (%)	U%			U%	U%	
Shared Lane Traffic (%)	207	ar.	140	/50	7	10
Lane Group Flow (vph)	397	35	142	652	7 Drot	13
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	2	8	1	6	8	1
Permitted Phases		2	6			8
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	None	None	C-Min	None	None
Act Effet 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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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	Α	Α	Α	Е	D
Approach Delay	0.8			1.7	56.3	
Approach LOS	А			Α	Е	
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)	00.10	215	215	0001	0.7-	000
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-Co	ordinated					
Maximum v/c Ratio: 0.20						
Intersection Signal Delay: 2					tersection	
Intersection Capacity Utilization	ation 40.0%			IC	U Level c	of Service A
Analysis Period (min) 15						
Splits and Phases: 6: Pro	oposed Truc	k Access	& Vollme	er Road		
→ Ø2 (R)						ۯ1
79 s						30 s
+						
▼ Ø6 (R)						

ntersection								
nt Delay, s/veh	2.5							
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	ች	7	ሻ	^	ΦÞ			
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		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	- -	None	-	None	-	None		
Storage Length	70	0	210	-	_	-		
eh in Median Storag		-	-	0	0	_		
Grade, %	0	_	_	0	0	_		
Peak Hour Factor	96	96	96	96	96	96		
leavy Vehicles, %	0	0	18	4	5	0		
Nomt Flow	98	49	91	1200	803	97		
WIVIIIL I IOW	70	47	71	1200	003	71		
Major/Minor	Minor2	Λ	Major1	ı	Major2			
conflicting Flow All	1634	450	900	0	- viajoi <u>-</u>	0		
Stage 1	852	-	-	-	_	-		
Stage 2	782	_	_	_	_	_		
ritical Hdwy	6.8	6.9	4.46	_	_	_		
itical Hdwy Stg 1	5.8	-		_	_	_		
ritical Hdwy Stg 2	5.8	_	_	-	_			
ollow-up Hdwy	3.5	3.3	2.38	-	-	-		
onow-up nawy ot Cap-1 Maneuver		562	658	-	-	-		
	383	502	000	-	_	-		
Stage 1 Stage 2	417		-	-		-		
Platoon blocked, %	417	-	-	-	-	-		
	r 01	562	450			-		
Mov Cap-1 Maneuver			658	-	-	-		
Nov Cap-2 Maneuver		-	-	-	-	-		
Stage 1	330	-	-	-	-	-		
Stage 2	417	-	-	-	-	-		
.pproach	EB		NB		SB			
			0.8		<u> </u>			
HCM Control Delay, s	S 33.1		U.ŏ		U			
ICM LOS	U							
				EDI p1 I	EDI no	SBT	SBR	
linor Lang/Major Mu	mt	NIDL	MD I			SDI	אטכ	
	mt	NBL	NBT					
apacity (veh/h)		658	-	187	562	-	-	
apacity (veh/h) CM Lane V/C Ratio		658 0.138	-	187 0.524	562 0.087	-	-	
apacity (veh/h) CM Lane V/C Ratio CM Control Delay (s		658 0.138 11.3	-	187 0.524 43.7	562 0.087 12	-	-	
Minor Lane/Major Mvl Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s	s)	658 0.138 11.3 B	-	187 0.524 43.7 E	562 0.087 12 B	-	- - -	
apacity (veh/h) CM Lane V/C Ratio CM Control Delay (s CM Lane LOS CM 95th %tile Q(vel	s)	658 0.138 11.3	-	187 0.524 43.7	562 0.087 12	-	-	
Capacity (veh/h) ICM Lane V/C Ratio ICM Control Delay (s	s)	658 0.138 11.3 B	-	187 0.524 43.7 E	562 0.087 12 B	-	- - -	

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		^	^	7
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
WWIIICTIOW	U	01	U	1010	002	00
	/linor2		/lajor1	N	/lajor2	
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, %	U	-	U	_	-	U
		E01		-		
Mov Cap-1 Maneuver	-	591	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.1		0		0	
HCM LOS	12.1 B		U		- 0	
TIGIVI EUS	D					
Minor Lane/Major Mvm		NBT E	EBL _{n1}	SBT		
Capacity (veh/h)		-	591			
HCM Lane V/C Ratio		-	0.148	-		
HCM Control Delay (s)		-		-		
HCM Lane LOS		-	В	_		
HCM 95th %tile Q(veh)		-	0.5	-		
/ 0111 / 01110 (2(1011)			5.0			

Intersection						
Int Delay, s/veh	1.7					
		EDD	NDI	NDT	CDT	CDD
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y	107	<u>ነ</u>	^	↑ }	1.4
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		-	-	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 N	Minor2	N	/lajor1	N	/lajor2	
Conflicting Flow All	1593	460	919	0	- najuiz	0
Stage 1	912	400	717	-	-	-
	681	-	-	_	-	-
Stage 2			11	-		-
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	81	554	751	-	-	-
M O O M						
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	196 308	-	-	-	-	-
			-	-	-	-
Stage 1	308	-	-	- - -	-	- - -
Stage 1 Stage 2	308 426	-	- - -	-	- - -	-
Stage 1 Stage 2 Approach	308 426 EB	-	- - - NB	-	- - - SB	-
Stage 1 Stage 2 Approach HCM Control Delay, s	308 426 EB 23.2	-	NB 0.2	-	- - - SB 0	-
Stage 1 Stage 2 Approach	308 426 EB	-		-		-
Stage 1 Stage 2 Approach HCM Control Delay, s	308 426 EB 23.2	-				-
Stage 1 Stage 2 Approach HCM Control Delay, s	308 426 EB 23.2 C	-	0.2	- - - EBLn1		- - - SBR
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm	308 426 EB 23.2 C	-	0.2		0	SBR
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS	308 426 EB 23.2 C	- - NBL 751	0.2 NBT I	358	0 SBT	
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm Capacity (veh/h) HCM Lane V/C Ratio	308 426 EB 23.2 C	NBL 751 0.031	0.2 NBT I	358 0.455	0 SBT	-
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s)	308 426 EB 23.2 C	NBL 751 0.031 9.9	0.2 NBT I	358 0.455 23.2	O SBT -	-
Stage 1 Stage 2 Approach HCM Control Delay, s HCM LOS Minor Lane/Major Mvm Capacity (veh/h) HCM Lane V/C Ratio	308 426 EB 23.2 C	NBL 751 0.031	0.2 NBT I	358 0.455	0 SBT - -	- - -

Capacity Analysis Summary Sheets
No Build Weekday Evening Peak Hour Conditions

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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	77	^	T T	ሻሻ	*
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
Storage Lanes	130	2		100	2	
Taper Length (ft)	150				235	
Lane Util. Factor	1.00	0.88	0.95	1.00	0.97	0.95
Ped Bike Factor	1.00	0.00	0.93	1.00	0.97	0.93
Frt		0.850		0.050		
	0.050	0.830		0.850	0.050	
Flt Protected	0.950	20.42	2/54	1500	0.950	2/00
Satd. Flow (prot)	1787	2842	3654	1599	3502	3689
Flt Permitted	0.950	20.40	0/54	1500	0.950	2/22
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	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	155	13	1187	139	3	1813
Turn Type	Prot	pm+ov	NA	Free	Prot	NA
Protected Phases	8	1	2	. 100	1	6
Permitted Phases	<u> </u>	8		Free		J
Detector Phase	8	1	2	1100	1	6
Switch Phase	U	ı			'	U
Minimum Initial (s)	8.0	3.0	15.0		3.0	15.0
. ,	14.0	7.5	21.0		7.5	21.0
Minimum Split (s)						
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	
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

1: Harlem Avenue & Oak Park Avenue

	€	•	†	~	-	↓
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	Е	D	Α	Α	Ε	Α
Approach Delay	75.8		5.0			7.9
Approach LOS	Е		А			Α
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: 150

Offset: 145.5 (97%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

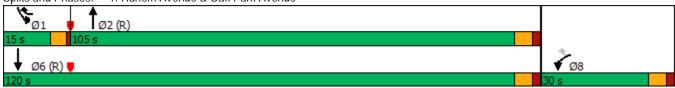
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69 Intersection Signal Delay: 10.2 Intersection Capacity Utilization 63.4%

Intersection LOS: B ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		ሻ	† }			4Te	
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	

2: Harlem Avenue & Benton Drive/Driveway

	•	\rightarrow	•	•	•	•	1	†	/	-	ļ	4
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		Е					D	Α			С	
Approach Delay		75.6						5.9			25.6	
Approach LOS		Ε						Α			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

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 116 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

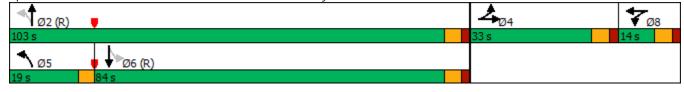
Maximum v/c Ratio: 0.88

Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 78.7% ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.





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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	↑	7	ሻሻ	†	7	ሻሻ	^	7	ሻሻ	^	7
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%		· <u>-</u>	0%		<u> </u>	0%		<u> </u>	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
Actuated g/C Ratio	0.05	0.06	0.08	0.12	0.10	0.40	0.04	0.48	0.63	0.27	0.73	0.81

3: Harlem Avenue & Access Road/Vollmer Road

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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	Е	Е	Е	Е	Е	D	Е	С	В	Е	Α	Α
Approach Delay		68.5			59.2			29.6			28.4	
Approach LOS		Е			Е			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

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 143 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

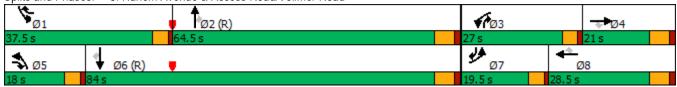
Maximum v/c Ratio: 0.88

Intersection Signal Delay: 35.7
Intersection Capacity Utilization 63.9%

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road



Intersection LOS: D

ICU Level of Service B

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	∱ }		ሻ	∱ ∱		ሻ	†	7	7	†	7
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)												
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)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)			_			_						
Lane Group Flow (vph)	53	990	0	108	846	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	0.0	45.0		0.0	45.0		0.0	0.0	0.0	0.0	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)	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 Effet 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

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	Α	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-Uncoordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 20.7 Intersection LOS: C
Intersection Capacity Utilization 55.1% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road



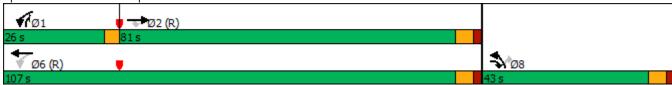
	-	•	•	←	1	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	^	7	ሻ	**	ሻሻ	7
Traffic Volume (vph)	654	71	171	631	84	174
Future Volume (vph)	654	71	171	631	84	174
Ideal Flow (vphpl)	2000	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%	12	12	0%	0%	12
Storage Length (ft)	070	215	215	070	0.70	0
Storage Lanes		1	1		2	1
Taper Length (ft)			220		25	I
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Ped Bike Factor	0.93	1.00	1.00	0.93	0.97	1.00
		0.050				0.050
Frt		0.850	0.050		0.050	0.850
Flt Protected	07/0	1/15	0.950	2000	0.950	1/15
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		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	30	
Link Distance (ft)	1311			1120	390	
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 (%)	370			370	370	
Lane Group Flow (vph)	688	75	180	664	88	183
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	2	piii+0v 8	•		8	•
Protected Phases Permitted Phases	2	2	1 6	6	ð	1 8
	2			,	0	
Detector Phase	2	8	1	6	8	1
Switch Phase	45.0	0.0	0.0	45.0	0.0	0.0
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
riciaaica gro Mailo	0.77	0.00	0.07	0.03	0.07	0.17

	-	•	•	•	1	/
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	Α	Α	Α	Α	Е	Е
Approach Delay	0.6			1.8	71.0	
Approach LOS	А			Α	Е	
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						
Jr.	Other					
Cycle Length: 150						
Actuated Cycle Length: 150						
Offset: 11 (7%), Referenced	d to phase 2	2:EBT and	6:WBTL	, Start of	Green	
Natural Cycle: 45						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.68						
Intersection Signal Delay: 1					tersection	
Intersection Capacity Utiliza	ation 46.6%			IC	U Level c	of Service A

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Proposed Full Access & Vollmer Road

Analysis Period (min) 15



	→	•	•	•	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	^	7	ሻ	^	*	7
Traffic Volume (vph)	798	30	118	750	52	120
Future Volume (vph)	798	30	118	750	52	120
Ideal Flow (vphpl)	2000	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%	14	14	0%	0%	14
Storage Length (ft)		215	215	070	0.70	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	0.73	1.00	1.00	0.75	1.00	1.00
Frt		0.850				0.850
Fit Protected		0.000	0.950		0.950	0.000
Satd. Flow (prot)	3762	1429	1752	3762	1671	1568
Fit Permitted	3/02	1429	0.312	3/02	0.950	1008
	27/2	1420		27/2		15/0
Satd. Flow (perm)	3762	1429	576	3762	1671	1568
Right Turn on Red		No				No
Satd. Flow (RTOR)	45			45	20	
Link Speed (mph)	45			45	30	
Link Distance (ft)	1120			2828	384	
Travel Time (s)	17.0			42.8	8.7	
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%	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			8
Detector Phase	2	8	1	6	8	1
Switch Phase		J		J		
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
	65.3%	22.0%	12.7%	78.0%	22.0%	12.7%
Total Split (%)						
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

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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	Α	Α	Α	Е	Е
Approach Delay	1.2			2.7	67.0	
Approach LOS	А			Α	Е	
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						
<i>3</i> i	Other					
Cycle Length: 150						
Actuated Cycle Length: 150						
Offset: 142 (95%), Reference	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: 0.49						
Intersection Signal Delay: 7					tersection	
Intersection Capacity Utiliza	ation 47.5%			IC	U Level c	f Service
Analysis Period (min) 15						
Snlite and Dhases A: Dro	nocod Truc	k Accord	9. Vollma	or Dood		

Splits and Phases: 6: Proposed Truck Access & Vollmer Road



Intersection									
Int Delay, s/veh	8.6								
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations		7	ች	^	ተ ኈ				
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			
Storage Length	70	0	210	-	_	-			
Veh in Median Storage		-	-	0	0	_			
Grade, %	0	-	_	0	0	-			
Peak Hour Factor	96	96	96	96	96	96			
	11	0	15	3	3				
Heavy Vehicles, %	77					104			
Mvmt Flow	11	39	56	1235	1843	104			
	Minor2		Major1		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	~ 13	255	251	-	-	-			
Mov Cap-2 Maneuver	~ 58	-		-	_	_			
Stage 1	~ 73	_	_	_	_	_			
Stage 2	415	_	_	_	_	_			
Olago 2	110								
Approach	EB		NB		SB				
HCM Control Delay, s			1		0				
HCM LOS	238.9 F				U				
TICIVI LUS	Г								
Minor Lane/Major Mvm	nt	NBL	NBT	EBLn1 I		SBT	SBR		
Capacity (veh/h)		251	-	58	255	-	-		
HCM Lane V/C Ratio		0.224		1.329		-	-		
HCM Control Delay (s)		23.4	-\$	347.5	21.6	-	-		
HCM Lane LOS		С	-	F	С	-	-		
HCM 95th %tile Q(veh))	8.0	-	6.7	0.5	-	-		
Notes									
~: Volume exceeds cap	pacity	\$: De	elay exc	ceeds 3	00s	+: Com	outation Not Defined	*: All major volume in plato	on
	J		,					,	

0.6					
	EDE	ND	NDT	ODT	CDD
EBL		NBL			SBR
					7
					24
					24
					0
Stop		Free		Free	Free
-		-	None	-	Free
-	0	-	-	-	120
# 0	-	-	0	0	-
0	-	-	0	0	-
97	97	97	97	97	97
0	0	0	4	2	0
			1278		25
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-	919	-	0	-	0
-	-	-	-	-	-
-	-	-	-	-	-
-	6.9	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	3.3	-	-	-	-
0	277	0	-	-	0
		0	-	-	0
	-		_	-	0
			-		
_	277	_	_	_	_
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EB		NB		SB	
23.2		0		0	
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t	NBT E		SBT		
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	-	0.29	-		
		0.29 23.2	-		
	-	0.29			
	EBL 0 0 0 Stop ,# 0 0 97 0 0 Minor2 0 0 0 5 EBB 23.2 C	EBL EBR 0 78 0 78 0 78 0 0 78 0 0 Stop Stop - Stop - O - O - O - O - O - O - O O O O O O O	EBL EBR NBL 7 0 78 0 0 78 0 0 0 0 0 Stop Stop Free - Stop O O O O O O O O 0 0 0 Minor2 Major1 - 919 6.9 3.3 - 0 277 0 0 - 0 0 - 0 EB NB 23.2 0 C	EBL EBR NBL NBT Image: Control of the control	EBL EBR NBL NBT SBT 0 78 0 1240 1782 0 78 0 1240 1782 0 0 0 0 0 Stop Free Free Free Free - Stop - None - - 0 - - 0 0 - - 0 0 97 97 97 97 97 0 0 0 4 2 0 80 0 1278 1837 Alinor2 Major1 Major2 - 919 - 0 - - - - - - - - - - - - - - - - - - - - - - - -

Intersection								
Int Delay, s/veh	2.4							
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	¥			^	∱ 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		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	-	None	-	None	-	None		
Storage Length	0	-	130	-		-		
Veh in Median Storag		_	-	0	0	_		
Grade, %	0	_	_	0	0	_		
Peak Hour Factor	97	97	97	97	97	97		
Heavy Vehicles, %	0	0	0	4	2	0		
Mymt Flow	37	55	34	1241	1849	68		
VIVIAL FIUW	31	55	34	1241	1049	00		
Major/Minor	Minor2	N	/lajor1	, , , , ,	Major2			
Conflicting Flow All	2572		1917	0	-	0		
Stage 1	1883	909	1917	-	-	-		
	689		-	-	-	-		
Stage 2		6.9	4.1					
ritical Hdwy	6.8			-	-	-		
ritical Hdwy Stg 1	5.8	-	-	-	-	-		
Critical Hdwy Stg 2	5.8	-	-	-	-	-		
ollow-up Hdwy	3.5	3.3	2.2	-	-	-		
Pot Cap-1 Maneuver	~ 22	261	313	-	-	-		
Stage 1	108	-	-	-	-	-		
Stage 2	465	-	-	-	-	-		
Platoon blocked, %	0.5	0/1	010	-	-	-		
Mov Cap-1 Maneuver		261	313	-	-	-		
Mov Cap-2 Maneuver		-	-	-	-	-		
Stage 1	96	-	-	-	-	-		
Stage 2	465	-	-	-	-	-		
Approach	EB		NB		SB			
HCM Control Delay, s	77.5		0.5		0			
HCM LOS	F							
Minor Lane/Major Mvi	mt	NBL	NBT I	EBLn1	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		C	_	77.5 F	_	_		
HCM 95th %tile Q(vel	h)	0.4	_	3.8	_	_		
•	'')	0.7		3.0				
Votes								
-: Volume exceeds ca		φ -		eeds 30	20	^	outation Not Defined	*: All major volume in platoon

<u>Capacity Analysis Summary Sheets</u> Total Projected Weekday Morning Peak Hour Conditions

	•	•	†	<i>></i>	-	ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	<u> </u>	77.77	^	₹ T	ሻሻ	†
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)	1900	1900	12	1900	1900	12
	0%	12	0%	12	12	0%
Grade (%)		0	U%	100	210	0%
Storage Length (ft)	150	0		100	310	
Storage Lanes	1	2		1	2	
Taper Length (ft)	150	0.00	0.05	1.00	235	0.05
Lane Util. Factor	1.00	0.88	0.95	1.00	0.97	0.95
Ped Bike Factor						
Frt				0.850		
Flt Protected	0.950				0.950	
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)	10.0		13.4			14.7
, ,						
Confl. Bikes (#/hr)	0.00	0.02	0.02	0.00	0.00	0.02
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%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
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	3	8	<u> </u>	Free		<u> </u>
Detector Phase	8	1	2	1100	1	6
Switch Phase	0	ı	۷		I	U
	0.0	2.0	15.0		2.0	15.0
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
nciualeu y/C Kallu	0.07		0.00	1.00	0.04	0.07

1: Harlem Avenue & Oak Park Avenue

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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	Е		Α	Α	Е	Α
Approach Delay	68.7		2.0			2.8
Approach LOS	E		Α			Α
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: 1						
Offset: 109.2 (78%), Refe	erenced to pha	ise 2:NBT	and 6:S	BT, Start	of Green	
Natural Cycle: 55						

Control Type: Actuated-Coordinated

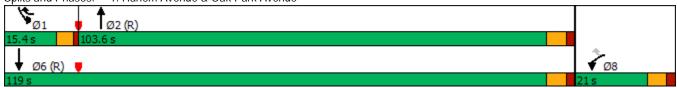
Maximum v/c Ratio: 0.46

Intersection Signal Delay: 3.5
Intersection Capacity Utilization 48.0%

Intersection LOS: A ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Proposed Site Access

	۶	→	•	•	←	•	1	†	/	/	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	f)		ሻ	^	7	ሻ	↑ ↑	
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	1100	1100	1100			1100		0.70	1100	1100	0170	0.70
Frt		0.973			0.850				0.850		0.994	
Flt Protected		0.961		0.950	0.000		0.950		0.000	0.950	0.771	
Satd. Flow (prot)	0	1970	0	1357	1188	0	1687	3619	1380	1492	3455	0
Flt Permitted	U	0.758	O .	0.729	1100	U	0.227	0017	1000	0.179	0 100	U
Satd. Flow (perm)	0	1554	0	1041	1188	0	403	3619	1380	281	3455	0
Right Turn on Red	U	1001	No	1011	1100	No	100	0017	No	201	0 100	No
Satd. Flow (RTOR)			110			110			140			140
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)		7.2			٦.٥			7.1			21.2	
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	0
Parking (#/hr)	U	U	U	U	U	U	U	U	U	U	U	U
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)		070			070			070			070	
Lane Group Flow (vph)	0	171	0	3	16	0	49	1257	13	43	1080	0
Turn Type	Perm	NA	U	Perm	NA	U	pm+pt	NA	Perm	pm+pt	NA	U
Protected Phases	F CIIII	4		r Cilli	8		рит+рі 5	2	r Cilli	ριτι - μι 1	6	
Permitted Phases	4	4		8	U		2		2	6	U	
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase	4	4		Ü	U		5			ı	U	
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)	54.6	54.6		54.6	54.6		12.6	72.8	72.8	12.6	72.8	
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	2.0		2.0	2.0		0.0	2.0	2.0	0.0	2.0	
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	
` ,		0.0		0.0	0.0							
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Nama	Mona		Mona	Mona		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	
Act Effet Green (s)		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	0.70	

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		Е		D	D		Α	Α	Α	Α	В	
Approach Delay		70.9			47.9			8.0			11.6	
Approach LOS		Е			D			Α			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

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 80 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

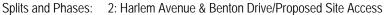
Control Type: Actuated-Coordinated

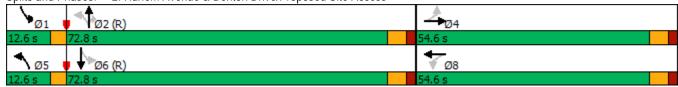
Maximum v/c Ratio: 0.71

Intersection Signal Delay: 13.9 Intersection LOS: B
Intersection Capacity Utilization 61.3% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.





	•	→	•	•	+	•	•	†	/	/	+	-√
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	†	7	ሻሻ	1	7	44	^	7	ሻሻ	^	7
Traffic Volume (vph)	1	3	1	79	1	374	9	800	144	341	615	3
Future Volume (vph)	1	3	1	79	1	374	9	800	144	341	615	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	86	1	407	10	870	157	371	668	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	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)	5.7	8.0	8.7	9.2	8.4	42.8	5.9	84.6	99.8	28.4	113.1	124.8
Actuated g/C Ratio	0.04	0.06	0.06	0.07	0.06	0.31	0.04	0.60	0.71	0.20	0.81	0.89

3: Harlem Avenue & Access Road/Vollmer Road

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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	0.38	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	Е	Е	Е	Е	F	Е	Е	В	Α	Е	Α	Α
Approach Delay		62.0			66.8			16.1			24.7	
Approach LOS		Е			Е			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

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 84 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 29.4 Intersection LOS: C
Intersection Capacity Utilization 60.0% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road



	•	-	•	•	←	•	4	†	<i>></i>	/	ţ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	† Ъ		ሻ	† }		ሻ	1	7	ሻ	1	7
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)												
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)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	449	0	60	829	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)	32.8	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

4: Ridgeland Avenue & Vollmer Road

	۶	-	•	•	•	•	4	†	/	\	↓	4
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		Α	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

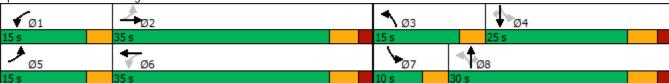
Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 19.3 Intersection LOS: B
Intersection Capacity Utilization 52.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road



	•	→	•	•	←	•	•	†	~	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	† †	7	*	^	7	77	f)		*	₽	
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 (%)												
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		Prot	NA	
Protected Phases	5	2		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)	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%	
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)	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	

5: Proposed Full Access & Vollmer Road

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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	8.0	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	Α	Α	Α	Α	Α	Е	Е		Е	Е	
Approach Delay		1.4			2.4			64.6			66.0	
Approach LOS		Α			А			Е			Е	
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%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

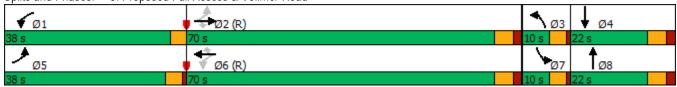
Maximum v/c Ratio: 0.22

Intersection Signal Delay: 3.4 Intersection Capacity Utilization 43.8% Intersection LOS: A ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Proposed Full Access & Vollmer Road



	→	•	•	•	•	/
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	^	7	ሻ	^	*	7
Traffic Volume (vph)	389	33	135	660	7	12
Future Volume (vph)	389	33	135	660	7	12
Ideal Flow (vphpl)	2000	1900	1900	2000	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%	12	14	0%	0%	12
Storage Length (ft)	070	215	215	070	0.70	0
Storage Lanes		1	1		1	1
Taper Length (ft)		T.	220		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor	0.75	1.00	1.00	0.75	1.00	1.00
Frt		0.850				0.850
FIt Protected		0.000	0.950		0.950	0.000
	2400	1440		2400		1077
Satd. Flow (prot)	3689	1442	1736	3689	1150	1077
Flt Permitted	2/00	1440	0.512	2/00	0.950	1077
Satd. Flow (perm)	3689	1442	935	3689	1150	1077
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)						
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%	3%	57%	50%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)	<u> </u>	J	J	J	<u> </u>	J
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)	U /0			U /0	U /0	
· ,	400)E	140	40E	7	10
Lane Group Flow (vph)	409	35	142	695	7 Drot	13
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	2	8	1	6	8	1
Permitted Phases		2	6			8
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
		Mono		CMin	Mono	
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

	-	•	•	←	•	/	
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	
LOS	А	Α	Α	Α	Е	D	
Approach Delay	1.1			1.7	55.5		
Approach LOS	А			Α	Е		
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		
Turn Bay Length (ft)		215	215				
Base Capacity (vph)	2931	1264	1080	3260	205	204	
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	0.14	0.03	0.13	0.21	0.03	0.06	
Intersection Summary							
Area Type:	Other						
Cycle Length: 140							
Actuated Cycle Length: 14							
Offset: 115 (82%), Referen	nced to phase	e 2:EBT a	and 6:WB	TL, Start	of Green		
Natural Cycle: 45							
Control Type: Actuated-Co	oordinated						
Maximum v/c Ratio: 0.21							
Intersection Signal Delay:				In	tersection	LOS: A	
Intersection Capacity Utiliz	zation 40.0%			IC	U Level c	of Service A	
Analysis Period (min) 15							
Splits and Phases: 6: Pr	roposed Truc	k Access	& Vollme	er Road			
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79 s						₩r/Ø1	
*							★
♥ Ø6 (R)							→ N*Ø8

Intersection								J
Int Delay, s/veh	2.7							
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	ሻ	7	*	^	† 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 N	Minor2	N	/lajor1		Major2			
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, %	711			_	_	_		
Mov Cap-1 Maneuver	~ 70	533	615		_			
Mov Cap-1 Maneuver	173	-	015	-		_		
Stage 1	300	-	-	-		-		
•	411		-	-	-	-		
Stage 2	411	-	-	-	-	-		
Approach	EB		NB		SB			
HCM Control Delay, s	37.5		0.8		0			
HCM LOS	Е							
Minor Lane/Major Mvm	ıt	NBL	NBT	EBLn1 I	EBLn2	SBT	SBR	
Capacity (veh/h)		615	-	173	533	-	-	
HCM Lane V/C Ratio		0.147	_	0.566		_	-	
HCM Control Delay (s)		11.9	-	50	12.4	-	-	
HCM Lane LOS		В	_	F	В	_	-	
HCM 95th %tile Q(veh)		0.5	-	3	0.3	-	-	
		3.0			0.0			
Notes	!!	Φ.D.	1		00-		and all and No. 1	
~: Volume exceeds cap	pacity	\$: De	elay exc	ceeds 30	UUS	+: Com	outation Not Defined	*

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			1			7		∱ }			^	7
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 N	linor2			/linor1		N	/lajor1		N	/lajor2		
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	559	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	-	-	559	-	-	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 Mvmt	t _	NBT E	EBLn1V	VBLn1	SBT							
Capacity (veh/h)			559	404	-							
HCM Lane V/C Ratio		-	0.156		-							
HCM Control Delay (s)		-	12.6	14	-							
HCM Lane LOS		-	В	В	-							
HCM 95th %tile Q(veh)		-	0.6	0	-							
. ,												

Intersection													
Int Delay, s/veh	2.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		ች	f)		ች	^	7		† }		
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	-	<u> </u>	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	0	-	-	215	-	215	200	-	-	
Veh in Median Storage	e,# -	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	Minor1		ı	Major1		N	Major2			
		2375	481	1875	2363	647	962	0		1312	0	0	
Conflicting Flow All Stage 1	1710 1017	1017	481	1339	1339	047	902	-	0	1312	0	-	
O O	693	1358		536	1024			-	-	-			
Stage 2	7.84	6.5	6.9	7.5	6.5	6.9	4.1	-	-	4.52	-	-	
Critical Hdwy	6.84	5.5		6.5	5.5		4.1	-	-	4.32			
Critical Hdwy Stg 1	6.84		-			-		-	-	-	-	-	
Critical Hdwy Stg 2		5.5	- 2 2	6.5 3.5	5.5	3.3	2.2	-	-	2.41	-	-	
Follow-up Hdwy	3.67	35	3.3 537	3.5 45	36	418	724	-	-	432	-	-	
Pot Cap-1 Maneuver	228	318		164	224	410	724	-	-	432	-	-	
Stage 1	367	219	-	501	315	-	-	-	-	-	-	-	
Stage 2 Platoon blocked, %	307	219	-	301	313	-	-	-	-	-	-		
	~ 46	31	537	33	32	418	724	-	-	432	-	-	
Mov Cap-1 Maneuver Mov Cap-2 Maneuver	140	116		112	124	410	724	-	-		-		
	221	295	-	159	217	-	-	-	-	-	-	-	
Stage 1	351	295	-	366	292	-	-	-	-	-	-	-	
Stage 2	331	212	-	300	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 Mvn	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	-	-			0.013		-	-			
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)	0.1	-	-	3.2	0.1	0	0.2	-	-			
Notes	n n n ! !	ф D	Jourse	0.00	200		nute!:	a Met D	ofine of	*. 1	ma ole m	volume e !	n plotaar
~: Volume exceeds ca	pacity	\$: D€	elay exc	eeds 3	JUS	+: Com	putation	n Not De	ennea	: All	major v	/olume II	n platoon

<u>Capacity Analysis Summary Sheets</u> Total Projected Weekday Evening Peak Hour Conditions

	•	•	†	<i>></i>	>	ļ
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y DE	77.77	↑ ↑	T T	ሻሻ	^
Traffic Volume (vph)	147	12	1196	132	3	174 8
Future Volume (vph)	147	12	1196	132	3	1748
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	2000
Lane Width (ft)	1900	1900	12	1900	1900	12
	0%	12		12	12	0%
Grade (%)		0	0%	100	210	0%
Storage Length (ft)	150	0		100	310	
Storage Lanes	1	2		1	2	
Taper Length (ft)	150				235	
Lane Util. Factor	1.00	0.88	0.95	1.00	0.97	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
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
	10.3		13.4			14.7
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%	0%	5%	1%	0%	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)	155	13	1259	139	3	1840
Turn Type	Prot	pm+ov	NA	Free	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases	<u> </u>	8		Free		J
Detector Phase	8	1	2	1100	1	6
Switch Phase	0	I			ı	U
	0.0	2.0	15.0		2.0	15.0
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	
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
Actuated g/C Ratio	U. 13	0.20	U. / /	1.00	0.04	0.79

1: Harlem Avenue & Oak Park Avenue

	•	•	†	~	-	↓
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	Е	D	Α	Α	Е	А
Approach Delay	75.8		4.9			8.0
Approach LOS	Е		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						

Area Type: Other

Cycle Length: 150 Actuated Cycle Length: 150

Offset: 145.5 (97%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

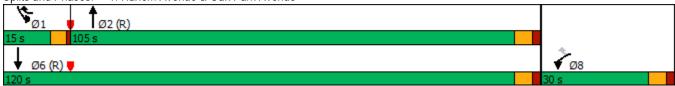
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69 Intersection Signal Delay: 10.1 Intersection Capacity Utilization 64.0%

Intersection LOS: B ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & Oak Park Avenue



Lanes, Volumes, Timings 2: Harlem Avenue & Benton Drive/Proposed Site Access

	۶	→	•	•	+	•	•	†	~	/		✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	f)		ሻ	^	7	ሻ	↑ ↑	
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	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		0.969			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	0
Flt Permitted		0.741		0.718			0.037			0.171		
Satd. Flow (perm)	0	1534	0	1041	1233	0	70	3654	1214	264	3474	0
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
Growth Factor	100%	100%	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	0
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	
Total Split (%)	31.3%	31.3%		31.3%	31.3%		12.7%	56.0%	56.0%	12.7%	56.0%	
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	2.0		2.0	2.0		0.0	2.0	2.0	0.0	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	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	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	111.4	112.1	103.7	
Actuated g/C Ratio		0.15		0.15	0.15		0.78	0.74	0.74	0.75	0.69	

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		0.72		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		Е		D	Е		D	Α	Α	Α	С	
Approach Delay		77.7			56.7			7.6			30.4	
Approach LOS		Е			Е			Α			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

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 116 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 24.4 Intersection Capacity Utilization 83.9% Intersection LOS: C
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 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
Lane Configurations	ሻ	1	7	ሻሻ	^	7	ሻሻ	^	1	767	^	7
Traffic Volume (vph)	13	12	9	233	16	483	20	720	92	627	1126	10
Future Volume (vph)	13	12	9	233	16	483	20	720	92	627	1126	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	3433	2000	1599	3502	3585	1583	3467	3654	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1805	2000	1615	3433	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%	2%	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	281	19	582	24	867	111	755	1357	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	18.2	15.2	61.8	6.5	70.4	94.5	40.6	108.5	121.4
Actuated g/C Ratio	0.05	0.06	0.08	0.12	0.10	0.41	0.04	0.47	0.63	0.27	0.72	0.81

3: Harlem Avenue & Access Road/Vollmer Road

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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	Е	Е	Е	Е	Е	Е	Е	С	В	Е	Α	Α
Approach Delay		68.5			69.4			30.4			28.9	
Approach LOS		Е			Е			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%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

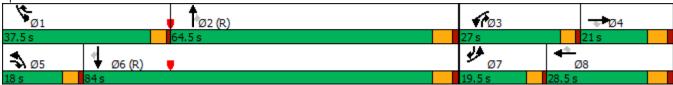
Maximum v/c Ratio: 0.88

Intersection Signal Delay: 38.5 Intersection LOS: D
Intersection Capacity Utilization 64.6% ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Harlem Avenue & Access Road/Vollmer Road



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	† Ъ		ሻ	↑ ↑		ሻ	1	7	ሻ		7
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

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	0.66		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-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 21.0 Intersection LOS: C Intersection Capacity Utilization 56.2% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Ridgeland Avenue & Vollmer Road



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^	7	ሻ	^	7	ሻሻ	^}		*	ĥ	
Traffic Volume (vph)	2	658	71	171	637	9	84	0	174	36	0	11
Future Volume (vph)	2	658	71	171	637	9	84	0	174	36	0	11
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)	25			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	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			No			No			No			No
Satd. Flow (RTOR)												
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)												
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%	100%
Heavy Vehicles (%)	0%	1%	0%	0%	1%	22%	0%	0%	0%	19%	0%	18%
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)	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		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	

5: Proposed Full Access & Vollmer Road

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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	Е	Е		Е	D	
Approach Delay		13.4			12.7			64.3			73.7	
Approach LOS		В			В			Е			Е	
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	80.0	0.30	0.27	0.01	0.14	0.64		0.24	0.06	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 11 (7%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

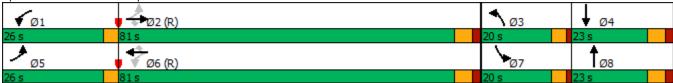
Maximum v/c Ratio: 0.64

Intersection Signal Delay: 21.7 Intersection LOS: C
Intersection Capacity Utilization 57.9% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Proposed Full Access & Vollmer Road



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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	^	7	7	↑ ↑	NDE T	7
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
Grade (%)	0%	12	14	0%	0%	14
Storage Length (ft)		215	215	070	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	0.73	1.00	1.00	0.75	1.00	1.00
Frt		0.850				0.850
FIt Protected		0.050	0.950		0.950	0.000
	3762	1429	1752	3762	1671	1568
Satd. Flow (prot) Flt Permitted	3/02	1429	0.297	3/02	0.950	1300
	2742	1429	548	3762		1568
Satd. Flow (perm)	3762		348	3/02	1671	
Right Turn on Red		No				No
Satd. Flow (RTOR)	ΔГ			4 [20	
Link Speed (mph)	45			45	30	
Link Distance (ft)	1120			2828	384	
Travel Time (s)	17.0			42.8	8.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)	0.0=		0.0=	0.55	0.00	0.00
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)	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	6			8
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)	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	0.0	Lead	0.0	0.0	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
, ,			0.86			
Actuated g/C Ratio	0.77	0.89	U.გჹ	0.84	0.08	0.16

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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	Α	Α	Α	Α	Е	Е
Approach Delay	0.7			2.7	67.0	
Approach LOS	Α			Α	Е	
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						
JI	Other					
Cycle Length: 150						
Actuated Cycle Length: 150						
Offset: 142 (95%), Reference	ced to phase	e 2:EBT a	ind 6:WB	TL, Start	of Green	
Natural Cycle: 45						
Control Type: Actuated-Coo	rdinated					
Maximum v/c Ratio: 0.49						
Intersection Signal Delay: 7.				Int	tersection	LOS: A
Intersection Capacity Utiliza	tion 48.5%			IC	U Level c	of Service A

m Volume for 95th percentile queue is metered by upstream signal.

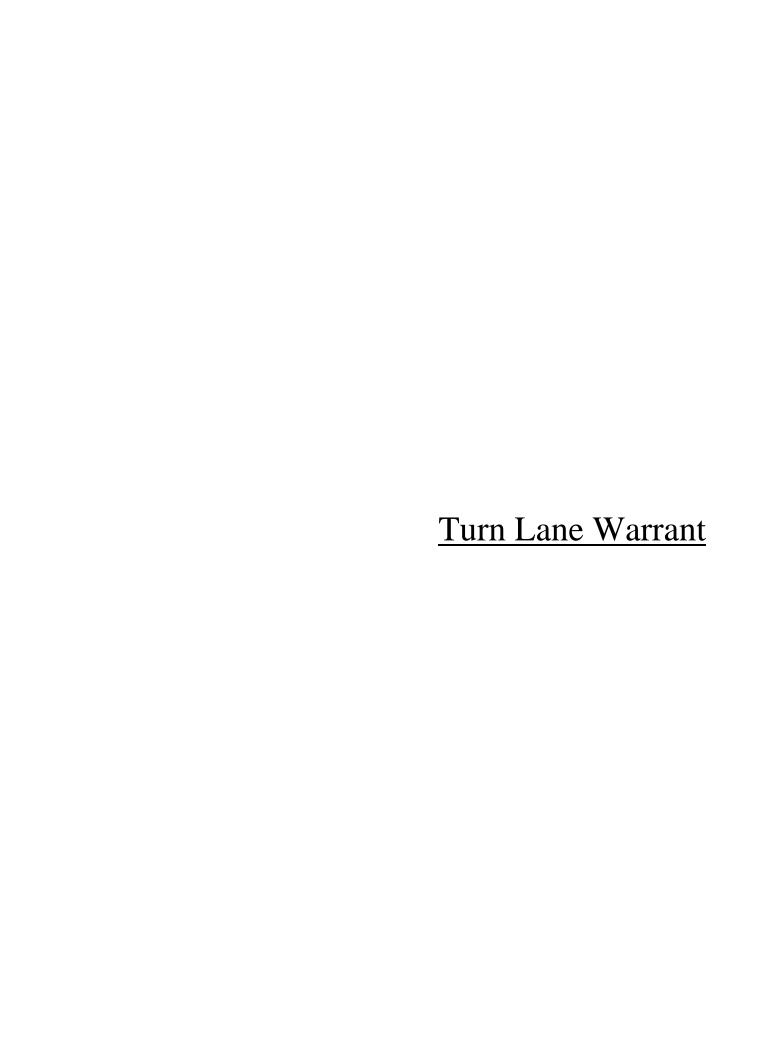
Splits and Phases: 6: Proposed Truck Access & Vollmer Road

Analysis Period (min) 15



Intersection								
Int Delay, s/veh	9.2							
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	ሻ	7	ች	^	ħβ			
Traffic Vol, veh/h	74	37	54	1254	1795	100		
Future Vol, veh/h	74	37	54	1254	1795	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		-	-	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		
VIVIII FIOW	11	39	50	1300	1070	104		
Major/Minor I	Minor2		/lajor1	N	Major2			
Conflicting Flow All	2687		1974	0	<u>viajoi 2</u> -	0		
Stage 1	1922	901			-	-		
	765		-	-		-		
Stage 2	7.02	6.9	1 1	-	-	-		
Critical Hdwy	6.02	0.9	4.4	-	-	-		
Critical Hdwy Stg 1			-			-		
Critical Hdwy Stg 2	6.02	-	-	-	-	-		
Follow-up Hdwy	3.61	3.3	2.35	-	-	-		
Pot Cap-1 Maneuver	~ 15	250	244	-	-	-		
Stage 1	90	-	-	-	-	-		
Stage 2	397	-	-	-	-	-		
Platoon blocked, %		0=0	0	-	-	-		
Mov Cap-1 Maneuver	~ 12	250	244	-	-	-		
Mov Cap-2 Maneuver	~ 55	-	-	-	-	-		
Stage 1	~ 69	-	-	-	-	-		
Stage 2	397	-	-	-	-	-		
Approach	EB		NB		SB			
HCM Control Delay, s	262.8		1		0			
HCM LOS	F							
Minor Lane/Major Mvm	nt	NBL	NBT	EBLn1 l	EBLn2	SBT	SBR	
Capacity (veh/h)		244	_	55	250	-	-	
HCM Lane V/C Ratio		0.231	_	1.402		-	-	
HCM Control Delay (s)		24.1		383.2	22	-	-	
HCM Lane LOS		С		F	C	_	-	
HCM 95th %tile Q(veh))	0.9	_	6.9	0.5	-	-	
	,	3.7		3.7	0.0			
Notes	! !	φ. Γ.	lass se		00-	0	autotion Not Defin	* All made and burned by the late
~: Volume exceeds cap	pacity	\$: De	elay exc	ceeds 30	UUS	+: Com	outation Not Defined	*: All major volume in platoon

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			7			1		ተ ኈ			^	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 N	/linor2		N	/linor1		N	/lajor1		N	/lajor2		
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	23.7			14.1			0			0		
HCM LOS	С			В								
Minor Lane/Major Mvmt	t	NBT E	EBLn1W	/BLn1	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		-	С	В	-							
HCM 95th %tile Q(veh)		-	1.2	0.1	-							



Harlem Avenue with the Proposed Full Movement Access Drive

Right Turn Lane Guidelines INTERSECTIONS

DHV, In One Direction (VPH)

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

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).

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 Interval	Standard Deviation (Coeff. of Variation)
0.39	0.03 - 1.96	0.34 / 1.11	0.31 - 0.47	0.22 (56%)

Data Plot and Equation

