AGENDA FOR REGULAR MEETING
VILLAGE OF TINLEY PARK
PLAN COMMISSION

December 19, 2019 – 7:00 P.M.
Council Chambers
Village Hall – 16250 S. Oak Park Avenue

Regular Meeting Called to Order
Pledge of Allegiance
Roll Call Taken
Communications
Approval of Minutes: Minutes of the November 21, 2019 Regular Meeting

Item #1 **WORKSHOP: 7-11 – 171st & HARLEM AVENUE**
Consider a request to recommend that the Village Board consider granting Vequity, LLC (Contract Purchaser) a map amendment to rezone the subject properties from B-4 (Office and Service Business) and R-1 (Single-Family Residential) to a B-1 (Neighborhood Shopping) zoning district. Additionally, the Petitioner is requesting a special use for an automobile service (gas) station with a convenience store and a variation from the Zoning Ordinance to permit a reduced ground sign setback. The requests will permit a 7-Eleven gas station and convenience store to be constructed at the properties located at 17100 - 17110 Harlem Avenue. Site Plan and Final Plat approval will also be considered at the meeting.

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

November 21, 2019

The Regular Meeting of the Plan Commission was held in the Council Chambers of Village Hall on November 21, 2019 at 7:00 p.m.

PLEDGE OF ALLEGIANCE

ROLL CALL

Plan Commissioners:	Garrett Gray, Chairman Curt Fielder – Arrived at 7:16 James Gaskill Tim Stanton MaryAnn Aitchison Stephen Vick
Absent Plan Commissioner(s):	Eduardo Mani Lucas Engel Angela Gatto
Village Officials and Staff:	Paula Wallrich, Planning Manager Dan Ritter, Senior Planner Barbara Bennett, Commission Secretary

CALL TO ORDER

PLAN COMMISSION CHAIRMAN GRAY called to order the Regular Meeting of the Plan Commission for November 21, 2019 at 7:13 p.m.

COMMUNICATIONS

None

APPROVAL OF MINUTES

Minutes of the November 7, 2019 Regular Meeting of the Plan Commission were presented for approval. A Motion was made by COMMISSIONER GASKILL, seconded by COMMISSIONER AITCHISON to approve the minutes as presented. CHAIRMAN GRAY declared the Motion approved by voice call.

TO: VILLAGE OF TINLEY PARK PRESIDENT AND BOARD OF TRUSTEES

FROM: VILLAGE OF TINLEY PARK PLAN COMMISSION

SUBJECT: MINUTES OF THE NOVEMBER 21, 2019 REGULAR MEETING

Item #1 PUBLIC HEARING: LENNY'S FOOD N FUEL 183RD STREET, LLC, 7451 183rd Street

Consider a request to recommend that the Village Board grant Leonard McEnery on behalf of Lenny's Food N Fuel 183rd Street, LLC (Contract Purchaser) an amendment to the North Creek Business Park Planned Unit Development Ordinance (Ord. 91-O-083) to permit an automobile service (gas) station with a convenience store to be a permitted use on the subject property. Additionally, to grant a Special Use Permit for a Substantial Deviation with exceptions from the Zoning Ordnance for the property located at 7401 - 7451 183rd Street in the ORI PUD (Office and Restricted Industrial, North Creek Business Park PUD) zoning district. Site Plan and Final Plat approval will also be considered as well.

Present were the following:

Plan Commissioners:	Garrett Gray, Chairman Curt Fielder James Gaskill MaryAnn Aitchison Stephen Vick Tim Stanton
Absent Plan Commissioner(s):	Eduardo Mani Lucas Engel Angela Gatto
Guests:	Leonard McEnery, Petitioner Lyman Tieman, Attorney Michael Werthmann, Traffic Consultant, KLOA

A Motion was made by COMMISSIONER STANTON, seconded by COMMISSIONER VICK, to open the Public Hearing for Lenny's Food N Fuel 183rd Street, LLC. The Motion was approved by voice call. CHAIRMAN GRAY declared the Motion approved.

CHAIRMAN GRAY noted that Village Staff provided confirmation that appropriate notice regarding the Public Hearing was published in the local newspaper in accordance with State law and Village requirements.

CHAIRMAN GRAY requested anyone present in the audience, who wished to give testimony, comment, engage in cross-examination or ask questions during the Hearing stand and be sworn in.

Dan Ritter, Senior Planner gave a presentation as noted in the Staff Report. The Petitioner, Leonard McEnery on behalf of Lenny's Food N Fuel, 183rd Street, LLC is seeking an amendment to the existing North Creek Business Park Planned Unit Development, Special Use Permit for a Substantial Deviation from the PUD, Site Plan Approval and Final Plat of Consolidation Approval. The requests would allow for the construction of a new Food N Fuel gas station and convenience store on the property at 7451 183rd Street.

The property is zoned ORI (Office and Restricted Industrial) as part of the North Creek Business Park PUD. The PUD was originally approved and subdivided in 1991 with the ORI base zoning covering the full area with some commercial-oriented

use like hotels, restaurants, and daycares. In 1995, the PUD came back and a portion of the area included in the PUD that was most adjacent to Harlem Avenue was rezoned from the ORI base zoning to a B-3 (General Business) base zoning. Most of the PUD has been developed and includes a mixture of office, light industrial, educational, and commercial uses. This area has the area near I-80, Hollywood Casino Amphitheater Tinley Park Convention Center and a variety of shopping/service establishments. There is one existing gas station on the corner of Harlem and 183rd. All properties surrounding the subject site are in the same North Creek PUD.

This site is also located in the Urban Design Overlay District (UDOD), which promotes walkability, lesser front yard setbacks with parking in the back, and a more urbanized look. The PUD does not specifically mention automobile or gas stations as permitted uses. They are prohibited under the ORI zoning district, however, with this being in a PUD an amendment is possible to add in automobile/service stations as permitted. There is also Speedway in this area on the southwest corner of 183rd and Harlem in the area zoned B-3.

This is a 3-acre site. The property consists of two vacant parcels and a sliver of a third parcel on the southeast corner of West Creek Drive and 183rd Street. This site was chosen in Will County due to the high traffic counts, I-80 access, and it is one of the last sites available for a gas station. The property located to the east is Hamada of Japan Restaurant and north of the subdivision's retention pond. To the southeast is the site where the new Holiday Inn will be built. The property is zoned Office and Restricted Industrial (ORI) and is part of the North Creek Business Park PUD.

There will be a 9,100 sq. ft. convenience store building that sells vehicle fuel and typical retail items. There will also be a Dunkin Donuts with a drive-thru, a second food service vendor, and a separate area intended for video gaming. On the exterior, the site includes fueling stations for 18 vehicles and three large trucks. This will be similar to other Gas N Wash stations in the area. Recently there was a station annexed on Harlem Avenue that is a Food N Fuel with a car wash. There is also a Gas N Wash on 191st in Mokena. This proposed station will function similarly without a car wash.

The overall site will include the convenience store building, vehicle fueling area/canopy, truck fueling area/canopy, vehicle parking, a drive-thru lane, walkways, landscaping, a storage shed, and a dumpster enclosure. Additionally, new utilities will be provided to the building, such as water main, sewer lines, and lighting.

Access to the site will be right-in/right-out along 183rd Street. The access will have a raised median and signage as required by Cook County IDOT to ensure the right-in/right-out requirement is being followed. Full-access will still be available through West Creek Drive and North Creek Drive. The subdivision code requires that sidewalks are installed into any new developments that are proposed. The Petitioner will install sidewalks along both 183rd Street and West Creek Drive frontages.

A parking and traffic study was done by KLOA and is included in the packet. There are 68 parking stalls proposed on the site. This site is unique due to the mix of different uses proposed to be incorporated in the convenience store. Some of the demand may include overlapping customers. Someone getting gas may also purchase retail items and/or go to Dunkin Donuts. The proposed plan anticipates a need for 68 parking stalls following typical Zoning code parking requirements based on individual use.

- 34 parking stalls for retail use (1 space per 150 sq. ft.; 5,100 sq. ft. retail space/150 = 34).
- 17 parking stalls for dining/restaurant uses (1 space per 3 seats; 51 seats/3 = 17)
- 5 parking stalls for gaming machines (1 parking space per seat)
- 12 parking spaces for employees (1 parking space per maximum number of employees)

With 68 spaces (65 standard, 3 accessible) supplied based on the proposed plans, the parking requirements would meet the Zoning Code's minimum. Staff believes 68 spaces will be sufficient due to the unique mix of uses on the site.
The drive-thru has availability for ten vehicles. This exceeds the stacking at the majority of other Gas N Wash and Food N Fuel locations that have Dunkin Donuts which typically have eight. The menu board location will be determined.

The east bufferyard was revised to be in full compliance with the landscape code requirements. The north bufferyard shortage was revised to add approximately 14 shrubs and an understory planting. Staff believes the bufferyard and parkway landscaping combination will create an attractive front landscape buffer that exceeds the neighboring property's landscaping.

BUFFERYARD REQUIREMENTS						
Bufferyard Location	**Required Width**	**Proposed Width**	**Length**	**Required Plantings**	**Proposed Plantings**	**Deficit**
North ("C" Bufferyard)	10'	10'	462' (excluding entry aisle)	23 CT 10 US 93 SH	11 CT 10 US 64 SH	**-12 CT** **- US** **-29 SH**

The interior landscaping shortage is a result of the gas station fueling area being counted as a parking lot. The Plan Commission agreed there was limited ability to expand this landscaping without creating vehicle safety or maintenance issues.

PARKING LOT LANDSCAPING STANDARDS			
Requirement	**Provided**	**Deficit**	**Comments**
15% of parking lot area to be landscaped or 13,390 square feet	3,040 square feet	**10,350 square feet**	89,289 s.f. of parking lot shown on landscape plan and includes fueling area. Add shrubs to large island in the middle of the site that wraps drive thru / parking.

Mr. Ritter displayed renderings of the structures. The architecture is fairly simple on the building. It will be similar to the other Gas N Fuel stations. The front facade of the convenience store building was revised to include face brick (78.6% of exterior, excluding glazing) along the top of the building where there was previously EIFS with stone around the base (14.2% excluding glazing). The new revision exceeds the Comprehensive Building code's requirement for 75% face brick. This brick will be lighter in tone/color to give some contrast to the front façade. The building will have a red metal coping/cornice around the top of the structure. The two fueling canopies are also proposed to be red in color. All mechanical equipment will be screened by the rooftop parapet. There will be matching enclosures and maintenance shed on site.

There will be shingled canopies on the front facades. These canopies were previously placed over manual changeable copy signs on previous versions of the plan. The manual changeable copy wall signs were removed as they are a prohibited sign type. The signage areas were revised to include additional front façade windows.

All proposed signs meet the code requirements for size, number, and location.

The petitioner has proposed the following signs:

- Four wall signs (including one 15 sq. ft. interior tenant sign)
- Three gas station canopy signs
- Two directional "Trucks" canopy signs
- One Dunkin Donuts drive-thru menu board and clearance bar
- Four drive-thru directional signs (no logos)
- One monument sign 10' ft. tall

The lighting plan for the proposed development complies with the new lighting standards for fixture type, illumination intensity, and light intensity at the property lines.

The Petitioner has provided a Photometric Plan that indicates light spillage of less than one foot candle at the roadway and property lines. All light fixtures are full cut-off and downcast to prevent glare on adjacent properties and roadways.

Special approvals needed are:

PUD Ordinance Amendment

As noted in the Staff Report this will amend the 1991 Ordinance. The proposed amendment adds an "automobile service station with a convenience store to the list of permitted uses but only on the subject property.

Special Use Permit for a Substantial Deviation

As noted in the Staff Report deviations from the Village Zoning Ordinance are considered Exceptions rather than Variations when located within a PUD an do not require the standard Findings of Fact as required with a Variation. Alternatively Exceptions are looked at in terms of their conformance to their overall PUD's design and goals.

Below are the specific Exceptions and Deviations being requested as part of the Special Use:

1. Exceptions from the Urban Design Overlay District (Section V)
    a. Increased front yard setback (140.5' proposed)
    b. Allow parking in the front yard
    c. Maximum of one curb cut per site (two proposed)
    d. Required cross-access to adjacent properties (no cross-access to the south)

2. Deviations from the PUD Requirements and Sign Regulations (Section IX)
    a. Allow parking in the front and side yards
    b. Changes to the approved lots as indicated in the Final Plat of Subdivision

Additional cross-access was added to the Plat of Subdivision for a potential future department to the south. Whether this cross-access connection is utilized can be determined through site plan review when that development is proposed.

Final Plat of Resubdivision

The proposed Plat of Subdivision will consolidate two existing lots along 183rd Street. The proposed consolidated lot will also include a small portion (178.27 sq. ft.) of the lot to the south that will make the resulting lot a total of 3 acres in size. Existing drainage and utility easements will remain on the property. Easements for the public sidewalk and cross/access to east and south have been included in the Final Plat.

The last thing that was discussed at the Workshop was the addition of a traffic light on the corner of 183rd St. and either West Creek Drive or North Creek Drive. Staff has talked with the County and the State and it has not been considered due to the traffic count. With the addition of the hotels and the gas station, the Engineer will speak with them again to try and get the traffic light at this location. A study will be done to see if it meets the standards.

CHAIRMAN GRAY asked the Commissioners if they had comments or questions.

COMMISSIONER STANTON noted this a great thing for Tinley Park. All other Commissioners agreed.

CHAIRMAN GRAY inquired about the traffic within the gas station. He noted that it could be difficult with the flow in the interior of the station. There is a busy traffic issue at the Speedway on the corner of 183rd Street and Harlem Avenue. Also, there is an issue with the sidewalk crossing the access.

Michael Werthmann, KLOA Traffic Coordinator replied this area is a lot like the station at Rt.6 and Cedar and there is no problem there. Most people will be entering in the full-access rather than the right-in access. The crosswalk is common to cross the access. Most drivers are aware of the crosswalk. The site lines are clear.

Mr. Ritter noted there will be raised medians in this area and the sites islands and curbing will help the direct traffic flow and slow people down.

CHAIRMAN GRAY asked the Petitioner if he would like to speak.

Lyman Tieman, Attorney noted he believes they have covered everything that was brought up at the Workshop.

CHAIRMAN GRAY asked for comments from the public.

A Motion was made by COMMISSIONER STANTON, seconded by COMMISSIONER GASKILL, to close the Public Hearing for Lenny's Food N Fuel 183rd Street, LLC. The Motion was approved by voice call. CHAIRMAN GRAY declared the Motion approved.

Mr. Ritter went through the Standards for Special Use:

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 Special Use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare because the proposed project will encompass the development of an automobile service (gas) station and convenience store that will service for visitors and residents of the community. The project will be constructed meeting current Village building codes and compliment surrounding businesses and properties.*

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 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 because the proposed project will develop land that is currently vacant and provide services for visitors and residents of the community. The site will be well-landscaped and the building will be constructed with quality materials. This proposed use is similar and compatible with existing nearby uses.*

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;
   - *The Special Use will not impede the normal and orderly development and improvement of surrounding property for uses permitted in the district because the majority of the property within this area has already been developed. Landscape buffers and cross-access has been supplied for the vacant property to the south.*

d. That adequate utilities, access roads, drainage, and/or other necessary facilities have been or are being provided;

- *The proposed plans provide evidence of existing utilities, access roads, and drainage and show proposed plans for necessary modifications to existing utilities, access roads, and drainage to be accommodated on the Food N Fuel site. Drainage has been accounted for within the existing subdivision pond to the southwest of the proposed site.*

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
   - *The proposed plans include site access by utilizing two curb cuts on 183rd Street and West Creek Drive that allow for ingress/egress to the site and efficient site circulation. Cross-access for passenger vehicles is also provided by a cross-access easement to the east through the neighboring property that connects to North Creek Drive. Cross-access is also supplied to the vacant lot to the south for possible future cross-access as well. The site incorporates proposed public and private walkways for safe pedestrian travel to and from the site.*

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.
   - *The Special Use conforms to all other applicable regulations of the Planned Unit Development and the Village's ordinances and codes. This Special Use Permit is necessary to allow the deviation from the North Creek Business Park Planned Unit Development and allowing for exceptions from the Urban Design Overlay District to the front yard setback, location of parking, and the maximum of one curb cut. These exceptions are consistent with other properties within the North Creek Business Park and the intent of the regulations are met where possible.*

g. The extent to which the Special Use contributes directly or indirectly to the economic development of the community as a whole.
   - *The proposed Food N Fuel project will contribute directly to the economic development of the community by providing fuel, retail, and food services to visitors, providing additional jobs, and providing additional property and sales tax revenue where the existing vacant property is generating minimal tax revenue.*

Standards for Site Plan Approval:

a. That the proposed Use is a Permitted Use in the district in which the property is located.

b. That the proposed arrangement of buildings, off-street parking, access, lighting, landscaping, and drainage is compatible with adjacent land uses.

c. That the vehicular ingress and egress to and from the site and circulation within the site provides for safe, efficient, and convenient movement of traffic, not only within the site but on adjacent roadways as well.

d. That the Site Plan provides for the safe movement of pedestrians within the site.

e. That there is a sufficient mixture of grass, trees, and shrubs within the interior and perimeter (including public right-of-way) of the site so that the proposed development will be in harmony with adjacent land uses and will

provide a pleasing appearance to the public; any part of the Site Plan area not used for buildings, structures, parking, or access-ways shall be landscaped with a mixture of grass, trees, and shrubs.

f. That all outdoor trash storage areas are adequately screened.

CHAIRMAN GRAY asked for Motions.

Motion 1 (Site Plan)

A Motion was made by COMMISSIONER FIELDER, seconded by COMMISSIONER GASKILL to recommend the Village Board grant the Petitioner, Lenny's Food N Fuel 183rd Street LLC, Site Plan Approval to construct an automobile service (gas) station and a 9,100 sq. ft. convenience store building at 7451 183rd Street in the ORI PD (Office & Restricted Industrial, North Creek Business Park PUD) Zoning District, in accordance with the plans submitted and listed herein and subject to the following conditions:

1. Any changes in drive-thru or parking demand from what was presented would require a new traffic/drive-thru analysis and prior approval to ensure the on-site drive-thru stacking and parking is sufficient.
2. Site Plan approval is subject to final engineering review and approval.
3. Site Plan approval is subject to approval of the PUD Ordinance Amendment, Special Use for a Substantial Deviation with the PUD, and Final Plat approval.

AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call

Motion 2 (PUD/Special Use Ordinance Amendments):

A Motion was made by COMMISSIONER STANTON, seconded by COMMISSIONER AITCHISON to recommend the Village Board amend Section 4-A. in Ordinance 91-O-083 (Special Use for North Creek Business Park PUD) at the request of Lenny's Food N Fuel 183rd Street LLC to permit an "automobile service (gas) station with a convenience store" as a permitted use on Lot 1 of the North Creek Food N Fuel Resubdivision.

AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call**Motion 3 (Special Use for Substantial Deviation):**

A Motion was made by COMMISSIONER FIELDER, seconded by COMMISSIONER VICK to recommend that the Village Board grant a Special Use Permit for a Substantial Deviation from the North Creek Business Park PUD and Exceptions from the Zoning Ordinance (including reduced front yard setback, parking location and number of curb cuts) to the Petitioner, Lenny's Food N Fuel 183rd Street LLC, to permit an automobile service (gas) station and a 9,100 sq. ft. convenience store on the property located at 7451 183rd Street in the ORI PD (Office & Restricted Industrial, North Creek Business Park PUD) Zoning District, in accordance with the plans submitted and listed herein and adopt Findings of Fact as proposed by Village Staff in the Staff Report, subject to the following condition:

1. Any changes in drive-thru or parking demand from what was presented would require a new traffic/drive-thru analysis and prior approval to ensure the on-site drive-thru stacking and parking is sufficient.

AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call

Motion 4 (Final Plat):

A Motion was made by COMMISSIONER FIELDER, seconded by COMMISSIONER GASKILL to recommend that the Village Board grant approval to the Petitioner, Lenny's Food N Fuel 183rd Street LLC Final Plat Approval for North Creek Food N Fuel Resubdivision in accordance with the Final Plat submitted and listed herein, subject to the following condition:

1. The Final Plat approval is subject to Final Engineering approval by the Village Engineer.

AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call.

This will go before the Village Board on December 3, 2019.

TO: VILLAGE OF TINLEY PARK PRESIDENT AND BOARD OF TRUSTEES

FROM: VILLAGE OF TINLEY PARK PLAN COMMISSION

SUBJECT: MINUTES OF THE NOVEMBER 21, 2019 REGULAR MEETING

Item #2 **PUBLIC HEARING - MASONRY TEXT AMENDMENTS**
Consider recommending that the Village Board approve Text Amendments to Section II.B. (Definitions), Section III.U. (Site Plan Review), Section V.C.4. (Elevations and Facades), Section V.C.7 (General Requirements/All Business & Commercial Districts) and Section V.C.10 (Site Development Standards for Industrial Uses) of the Zoning Ordinance to incorporate masonry requirements for residential, commercial and industrial uses.

Present were the following:

Plan Commissioners:	Garrett Gray, Chairman Curt Fielder James Gaskill MaryAnn Aitchison Stephen Vick Tim Stanton
Absent Plan Commissioner(s):	Eduardo Mani Lucas Engel Angela Gatto
Guests:	None

A Motion was made by COMMISSIONER VICK, seconded by COMMISSIONER AITCHISON, to open the Public Hearing for Masonry Text Amendments. The Motion was approved by voice call. CHAIRMAN GRAY declared the Motion approved.

CHAIRMAN GRAY noted that Village Staff provided confirmation that appropriate notice regarding the Public Hearing was published in the local newspaper in accordance with State law and Village requirements.

CHAIRMAN GRAY requested anyone present in the audience, who wished to give testimony, comment, engage in cross-examination or ask questions during the Hearing stand and be sworn in.

Paula Wallrich, Planning Manager gave a presentation as noted in the Staff Report. Staff is currently working with a consultant to update the Tinley Park Comprehensive Building Code. As part of the process, certain sections of the Village's Code have been identified that are not typically addressed in a building code. Staff will be updating the building code and will be taking it out of the Building Code and entering it into the Zoning Code.

Staff is supporting the current brick masonry requirements for residential and commercial districts with some minor changes. Staff is recommending a change in the industrial districts that would continue to require masonry construction but not require the use of face brick on buildings larger than 80,000 sq. ft. In addition staff is recommending a change in the protocol for site plan review and is recommending architectural and site design standards to assist in the review of architectural and site plans proposed for non-residential structures.

These amendments will streamline the review process and result in regulations that support economic development rather than function as an encumbrance to industrial growth.

Staff has created standards for site and architectural reviewto provide for a more consistent review. Along with that staff has addressed some actual percentages of masonry and brick on commercial and industrial districts.

Ms. Wallrich displayed examples of several buildings in the Village that have met the brick requirements noting that commercial development has benefited from the brick requirements.

In reviewing the current masonry or brick requirements for commercial and industrial buildings staff reviewed the construction requirements of neighboring communities. Many of these communities are providing waivers of their brick requirements.

Community	Exterior Building Material Requirements by Building Type	
	Commercial	**Industrial**
Tinley Park	• 1-3,000 SF: 100% face brick • 3,001-40,000 SF: 75% face brick, 25% other masonry • 40,001-80,000 SF: 60% face brick, 40% other masonry • 80,001+ SF: 25% face brick, 75% other masonry	
Mokena	• 100% masonry and glass	• 100% of front elevation must be masonry and glass • 75% of all other elevations must be masonry and glass
New Lenox	• Architectural precast concrete (exposed aggregate, acid etched, polished, honed, thin brick, stone veneer); or • Solid masonry (face brick, stone, exposed aggregate) on front and sides. Rear elevations can be common brick.	• The total surface area of the front elevation shall be constructed of solid finish veneer, masonry or glass.
Orland Park	• Design Guidelines, does require brick from ground level to tops of windows	• Design Guidelines, does require brick from ground level to tops of windows
Lockport	• Design Guidelines with levels of classes of materials which require % of brick	• Design Guidelines with levels of classes of materials.
Plainfield	• Design guidelines encourage utility brick, sandstone, native stone or glass; concrete block, split face block, pre-cast	• Design guidelines require masonry materials including pre-cast concrete panels, split face block. No brick required.

	panels or EFIS are discouraged.	

Ms. Wallrich proceeded to outline the proposed text amendments:

1. Delete Section 305 Masonry from the Comprehensive Building Code;
2. Amend Section II.B. (Definitions) to include a definition for "*Masonry"*;
3. Amend Section III.U.(Site Plan Review) to include architectural review; provide architectural and site design standards;
4. Amend Section V. C. 4. (Elevations and Facades) to include masonry requirements for single-family detached, single-family attached, townhomes and all single-family semi-detached dwellings;
5. Amend Section V.C.7. (General Requirements/All Business & Commercial Districts) to include masonry requirements for all commercial districts including the Office and Restricted Industrial District and multi-family dwellings; and
6. Amend Section V.C.10. (Site Development Standards for Industrial Uses) to include masonry requirements for all industrial districts.

Ms. Wallrich provided an explanation of each amendment as outlined in the staff report and summarized as follows:

1. Delete Section 305 Masonry from the Comprehensive Building Code which will improve efficiencies and provide for a more comprehensive and consistent review of development.

2. Ms. Wallrich provided a recommended no definition for "Masonry". The proposed amendment explicitly defines what can be included under this definition which includes brick, stone and pre-cast masonry walls.

3. Amend Section III.U. (Site Plan Review) to include architectural review utilizing architectural and site design standards. Reviews will be completed by staff unless it includes a zoning request which will then trigger a Plan Commission review. The architectural and site design standards will help guide the review and allow for more consistent enforcement of the masonry requirements and provide assurances of quality architecture as outlined in the architectural standards.

4. The proposed amendment for Section V. C. 4. (Elevations and Facades) will remain substantially the same except for the addition of "townhomes" that are not addressed in the current code. Multi-family structures of 3 or more units are regulated as a non-residential structure and will be included in Section V.C.7. for purposes of regulating masonry requirements.

5. The proposed amendment for Section V.C.7. (General Requirements/All Business & Commercial Districts) will include masonry requirements for all commercial districts including Office and Restricted Industrial District and multi-family dwellings.

   Ms. Wallrich noted that the majority of the hotels in the village are located in the ORI districts and have been required to be constructed with brick since 2007 (with the exception of WoodSpring as discussed above). Areas such as the North Creek (south of 183rd at West Creek Drive) and Hickory Creek (south of 183rd at 76th Ave.) Planned Unit Developments are zoned ORI with few vacant lots left for construction. She noted that the largest area available for development that is zoned ORI is along 191st street at 80th Avenue, Rte. 45 north of I-80 and the Tinley Park Mental Health Center. Since these areas will most likely develop with professional offices or hotels, staff is recommending they be regulated similarly to commercial districts which require the majority of these structures to be constructed of brick. The size of the building impacts the amount of brick required and provides for the use of alternate masonry materials to comprise portions of the building not required to be constructed of brick. It also

provides for the use of alternate building materials to be used as accents. She noted that the use of design standards will assist in ensuring quality construction.

Ms. Wallrich went on to explain that the current Section V.C.7. (*General Regulations/All Business/Commercial Districts*) will remain generally intact with some minor changes for structures greater than 80,000 sq. ft.; instead of requiring 25% brick the amendment allows a choice of brick or decorative stone. Staff is recommending the current regulations for structures less than 40,000 remain as currently written with the addition of allowing the use of stone as a percentage of brick required.

She presented the following table which provides a comparison between existing and proposed masonry requirements.

B-1,B-2, B-3, B-4, B-5 & ORI ZONING DISTRICTS			
SIZE	EXISTING	PROPOSED*	Impact
≤ 3,000 SF	100 % Face Brick	100% Face Brick (Decorative stone allowed for 30% of the brick requirement)	None- but provides flexibility with brick
3,001 – 40,000 SF	75% Face Brick,25% other masonry (not defined)	75% Face Brick (Decorative stone allowed for 25% of the brick requirement), 25% other masonry as defined	None- but provides flexibility with brick with the use of stone and defines "other masonry"
40,001 – 80,000 SF	60% face brick, 40% other masonry (not defined)	60% face brick, (Decorative stone allowed for 20% of the brick requirement), 40% other masonry as defined.	None- but provides flexibility with brick with the use of stone and defines "other masonry"
≥ 80,000 SF	25% Face Brick, 75% other masonry (not defined)	25% Face Brick or decorative stone, 75% other masonry (not defined)	Less restrictive .No longer requires brick but does require 25% decorative stone in lieu of brick, defines "other masonry"

**15% of any one façade may use alternate building materials as defined in Section V.C.7.G. as architectural treatments, decorations or architectural accents*

Ms. Wallrich outlined the proposed text amendments which were included in the staff report. She also noted that these regulations will pertain to multi-family structures as well. She added that certain alternate building materials may be used for architectural treatments, decorations or architectural accents provided they do not constitute more than 15% of any façade. A list of the approved materials were included in the staff report. She noted a list of prohibited materials and the need for any additions to conform to the building materials used for the existing structure. If there is difficulty in matching the existing material, then the architectural design of the addition must provide an attractive transition to a new material that is consistent with current building material requirements.

6. Ms. Wallrich proceeded to discuss the recommended amendments to Section V.C.10. (Site Development Standards for Industrial Uses). She reviewed the current regulations and recommended the masonry requirements be incorporated into Section V. *(Supplementary District Regulations*) which provide General Regulations for Industrial Uses (Section V.C.10.). She noted that the current section references the "Industrial and Commercial

Commission" which no longer exists and therefore all references to this Commission has been deleted; sections duplicating Subdivision Regulations have also been deleted.

Ms. Wallrich discussed that the M-1 (General Manufacturing) districts are primarily located south of 183rd Street west of 80th Avenue (Tinley Crossings PUD, Mercury Business Center and Northstar Business Center) and south of I-80 east of Oak Park Avenue and north of Prosperi Drive and the Hollywood Casino Music Center (First Industrial Realty PUD). She noted that the MU-1 (Mixed–Use Duvan Drive Overlay) district is located east of Harlem Avenue north of the Metra tracks. There are a few in-fill developments or redevelopment opportunities but there are limited large scale development opportunities in these districts. Despite the limited development opportunities, the industry standard for these types of uses, especially with structures greater than 40,000 sq. ft. does not require brick as currently required by the Building Code. The proposed amendments lessen the brick requirement for buildings greater than 10,000 sq. ft. but less than 40,000 sq. ft. by only requiring 50% of each façade as face brick or decorative stone. For structures greater than 40,001 sq. ft. but less than 80,000 sq. ft. the proposed amendment reduces the requirement from a 60% brick requirement to 25% brick or decorative stone but on the front façade only. The remaining facades are required to be masonry as defined but not brick. The masonry definition includes pre-cast concrete tilt up construction which represents the majority of the village's current industrial building inventory as well as what our neighboring communities require. Structures greater than 80,001 sq. ft. in size are no longer required to have brick but are still required to be masonry as defined.

Ms. Wallrich then presented the following table which provides a comparison between existing and proposed masonry requirements. The breakdown of building sizes has been revised to add masonry requirements for structures of "3,001– 10,000 sq. ft. "and "10,001– 40,000 SF".

M-1 & MU-1 Districts			
SIZE	EXISTING	PROPOSED*	Impact
≤ 3,000 SF	100 % Face Brick	100% Face Brick (Decorative stone allowed for 30%)	None- but provides flexibility with brick
3,001 – 10,000 SF	75% Face Brick, 25% other masonry (not defined)	75% Face Brick (Decorative stone allowed for 25% of the required brick area) , 25% other masonry as defined	None- but provides flexibility with brick with the use of stone and defines "other masonry"
10,001 – 40,000 SF	75% Face Brick, 25% other masonry (not defined)	50% Face Brick or decorative stone- Balance of 50% masonry as defined	Less restrictive –No longer requires 50% brick; allows choice of 50% brick or decorative stone, defines "other masonry"
40,001 -80,000 SF	60% face brick, 40% other masonry(not defined)	25% Face Brick or decorative stone on front façade only. Remaining facades masonry as defined.	Less restrictive - No longer requires brick; allows choice of 25% brick or decorative stone on front façade , defines "other masonry"

≤ 80,001 SF	25% Face Brick, 75% other masonry (not defined)	No brick required, 100% approved masonry (defined)	Less restrictive- no brick required.

**15% of any one façade may use alternate building materials as defined in Section V.C.7.G. as architectural treatments, decorations or architectural accents*

The proposed text amendments and additions are identified in the staff report. In addition to the new regulations related to the amount of brick required the proposed amendments provide for alternate building materials that may be used for architectural treatments, decorations or architectural accents on the structure provided they do not constitute more than 15% of any façade; a list of prohibited materials was also presented and outlined in the staff report. Consistent with the amendments for commercial districts, Ms. Wallrich discussed how additions must conform to the building materials used for the existing structure. If there is difficulty in matching the existing material, then the architectural design of the addition must provide an attractive transition to a new material that is consistent with current building material requirements.

CHAIRMAN GRAY asked for comments from the Commissioners.

COMMISSIONER STANTON noted this is very thorough. All the Commissioners agreed.

CHAIRMAN GRAY noted he liked the idea of breaking up the 10,001 sq. ft. hopefully this will entice some businesses to come to the Village to set up shop. He also liked the fact that all the building materials are identified in the architectural review. Well Done

CHAIRMAN GRAY asked for comments from the public. There were none.

A Motion was made by COMMISSIONER FIELDER, seconded by COMMISSIONER AITCHISON, to open the Public Hearing for Masonry Text Amendments. The Motion was approved by voice call. CHAIRMAN GRAY declared the Motion approved.

CHAIRMAN GRAY asked for Motions.

Motion 1

A Motion was made by COMMISSIONER FIELDER, seconded by COMMISSIONER VICK to recommend the Village Board amend Section II.B (Definitions) to add (in alphabetical order) the following definition:

MASONRY*: Brick, stone, or architectural/decorative concrete block (split face, fluted or smooth). Tilt-up or pre-cast masonry walls (with face or thin brick inlay) are allowed where brick is required. Pre-cast concrete wall panels are included in this definition provided the structure includes architectural interest through the use of approved alternate building materials, use of alternate colors or scoring patterns as outlined in the Architectural and Site Design Standards.*

AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call.

Motion 2

A Motion was made by COMMISSIONER AITCHISON, seconded by COMMISSIONER GASKILL to recommend the Village Board amend Section III.U. (Site Plan Review) to include architectural review; provide architectural and site design standards as as outlined in the 11.21.2019 staff report.
AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call.

Motion 3

A Motion was made by COMMISSIONER STANTON, seconded by COMMISSIONER FIELDER to recommend the Village Board amend Section V. C. 4. (Elevations and Facades) to include masonry requirements for single-family detached, single-family attached, townhomes and all single-family semi-detached dwellings as outlined in the 11.21.2019 staff report.

AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call.

Motion 4

A Motion was made by COMMISSIONER VICK, seconded by COMMISSIONER AITCHISON to recommend the Village Board amend Section V.C.7. (General Requirements/All Business & Commercial Districts) to include masonry requirements for all commercial districts including Office and Restricted Industrial District and multi-family dwellings as outlined in the 11.21.2019 staff report.

AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call.

Motion 5

A Motion was made by COMMISSIONER FIELDER, seconded by COMMISSIONER STANTON to recommend the Village Board amend Section V.C.10. (Site Development Standards for Industrial Uses) to include masonry requirements for all industrial districts as outlined in the 11.21.2019 staff report.

AYES: STANTON, FIELDER, GASKILL, AITCHISON, VICK & CHAIRMAN GRAY

NAYS: NONE

CHAIRMAN GRAY declared the Motion unanimously approved by Roll Call.

This will be heard at the Village Board on December 3, 2019.

GOOD OF THE ORDER:

1. Paula is working on the Plaza – Budget crunch and value engineering prior to going out to bid.
2. Magnuson Apartments (191st Street) – A Permit has been submitted for Foundation only and is being reviewed.
3. The Boulevard/South Street work is in progress with the foundation being installed.
4. There is a lot of hotel interest out on Route 45. Submittal has been presented and being reviewed by staff now.

COMMENTS FROM THE COMMISSION

None at this time.

PUBLIC COMMENT:

None at this time.

ADJOURNMENT:

There being no further business, a Motion was made by PLAN COMMISSIONER GASKILL, seconded by PLAN COMMISSIONER FIELDER to adjourn the Regular Meeting of the Plan Commission of November 21, 2019 at 8:26 p.m. The Motion was unanimously approved by voice call. PLAN COMMISSION CHAIRMAN GRAY declared the meeting adjourned.

PLAN COMMISSION STAFF REPORT

December 19, 2019

7-Eleven Gas Station

17100 Harlem Ave

Petitioner
Vequity, LLC (Contract Purchaser)

Property Location
17100 & 17110 Harlem Avenue

PIN
27-25-403-013-0000 &
27-25-403-014-0000

Zoning
B-4 (Office & Service Business) &
R-1 (Single-Family Residential)

Approvals Sought
Rezoning
Special Use Permit
Site Plan Approval
Variation
Plat Approval

Project Planner
Daniel Ritter, AICP
Senior Planner

EXECUTIVE SUMMARY

The Petitioner, Vequity LLC (Contract Purchaser), is seeking approval to construct a 7-Eleven gas station and convenience store on the southwest corner of 171st Street and Harlem Avenue (17100 and 17110 Harlem Avenue). The proposal includes a 3,511 sq. ft. convenience store and canopy area with ten vehicle fueling stations. The project includes installation of a dumpster enclosure, fencing, landscaping, and a public sidewalk. The project requires Rezoning of the properties to the B-1 (Neighborhood Shopping) zoning district, Special Use Approval for an automobile service (gas) station with a convenience store, Site Plan Approval, Final Plat of Consolidation Approval and Variations for min. lot width, min. lot size and min. lot depth, ground sign setback, and min. drive aisle width.

The subject site area on the west side of Harlem Ave was originally developed in the county with single-family homes for the full block. Starting in the 1980s the area began to transition from residential to commercial uses; the Comprehensive Plan designates the area as a "commercial/office" use. As the homes have been demolished and new commercial buildings constructed, the properties have been rezoned to either B-1 (Neighborhood Shopping) or B-4 (Office and Service) due to their proximity to single-family residential homes. The petitioner revised a previous plan for a car wash to be constructed on the site due to staff review comments and a desire to minimize potential negative effects on the abutting residential properties. The petitioner has also added fencing, additional landscaping, and amended the lighting plan to avoid any off-site glare or light pollution.

EXISTING SITE & ZONING

The subject property consists of two lots on the southwest corner of Harlem Avenue and 171st Street. The lot furthest north is vacant and currently zoned B-4 (Office and Service Business). This site was previously home to an office building that was demolished in 2016. The south portion of the lot is zoned R-1 (Single-Family Residential) with a vacant single-family home and detached garage located on the property that are slated for demolition. There are two vacant single-family home lots zoned R-1 to the south of the subject properties as well, and while these are not part of the development, the homes are in deteriorating condition. The developer has agreed with the property owner (who is the current owner of all four lots) and staff to demolish those two homes as well as part of the 7-Eleven project and restore the lots (top soil, seed and blanket). Staff recommends this be a condition of the approval for the rezoning and special use requests. This would remove two vacant and deteriorating homes and would leave only one home occupied residentially on the block.

Open Item #1: Discuss recommended condition requiring the demolition and lot restoration of the two deteriorating vacant single-family homes south of the subject site (currently the same property owners).

The block where the gas station is proposed on the west side of Harlem Ave was originally developed with single-family homes in the 1950s-1960s. Starting in the 1980s this area began to transition from residential to commercial uses due to their frontage along a heavily traveled commercial corridor. The area is shown as a commercial/office use in the Village's Comprehensive Plan (2000). Due to the multiple curb cuts and difficulty of access, residential uses are not considered the highest and best use for this area. As the lots have been redeveloped with commercial buildings, the properties have been rezoned to either B-1 (Neighborhood Shopping) or B-4 (Office and Service) due to their proximity to the single-family residential to the west.

To the north of the subject property is the Tinley Park Post Office and to the west is bank, both zoned B-4 (Office and Service). To the northeast is a multi-tenant office building and car wash zoned B-3 (General Business). Directly to the east of the property is a Shell gas station/car wash and the Jewel-Osco and Tinley Park Commons Shopping Center zoned B-3 (General Business).

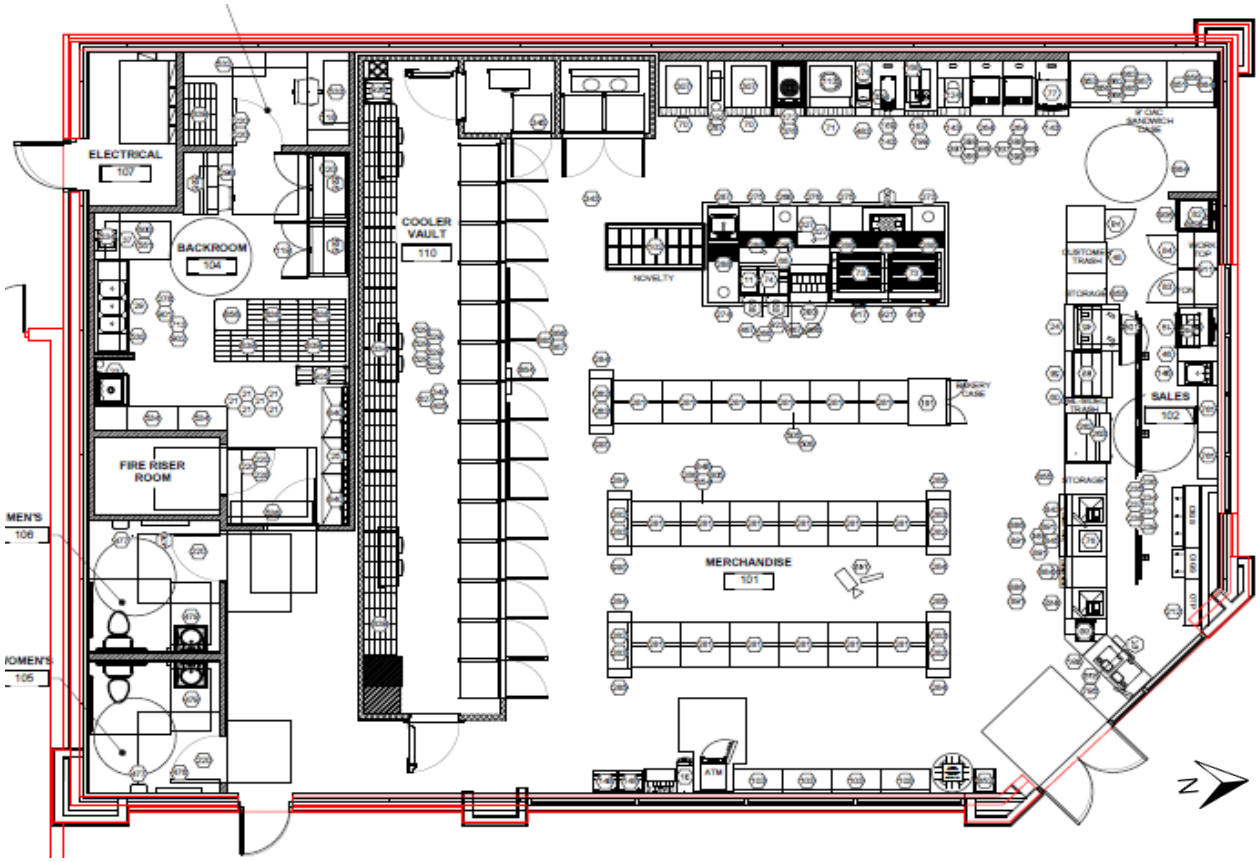
PROPOSED USE

The proposed gas station site includes fueling stations for ten vehicles. There will be a 3,511 sq. ft. convenience store building that sells vehicle fuel and typical retail items (food, drinks, snacks, tobacco, etc.) There will not be any truck fueling available at this location.

NEW CORPORATE 7ELEVEN PROTOTYPE (INTERIOR)

Vehicle service (gas) stations are a special use in all commercial zoning districts with the exception of B-5 (Automotive Service). One typical concern with gas stations is that they require a unique site design that accounts for safe/efficient access, proper circulation, sufficient parking and adequate lighting levels, among other things.

The Petitioner originally proposed an attached car wash as part of the proposal requiring B-3 (General Business and Commercial) zoning. Due to staff's concerns related to the more intense uses permitted in the B-3 zoning district and the possible noise from traffic and car wash equipment, the Petitioner agreed to remove the car wash from their proposal and revise their request to a B-1 zoning district.

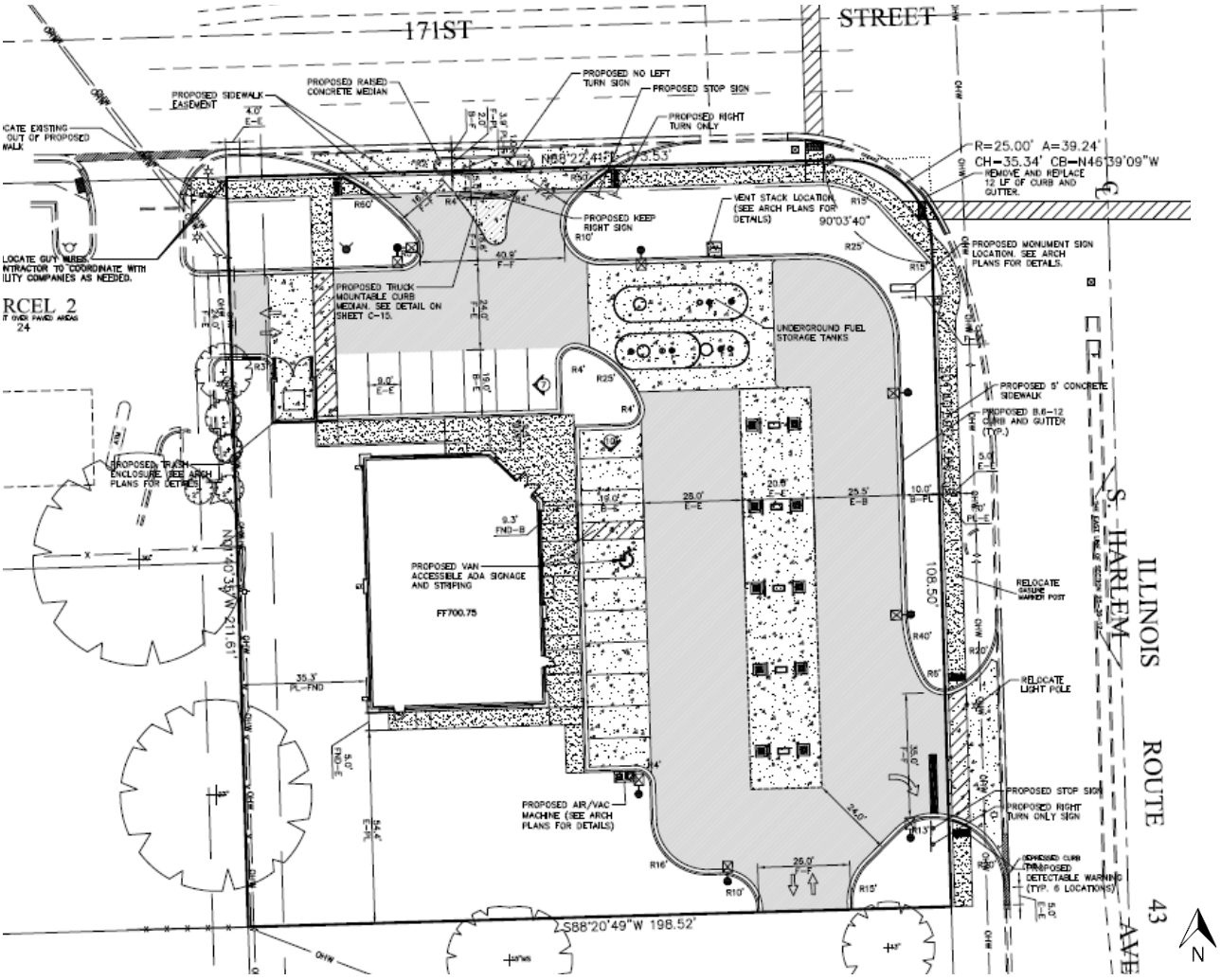


SITE PLAN

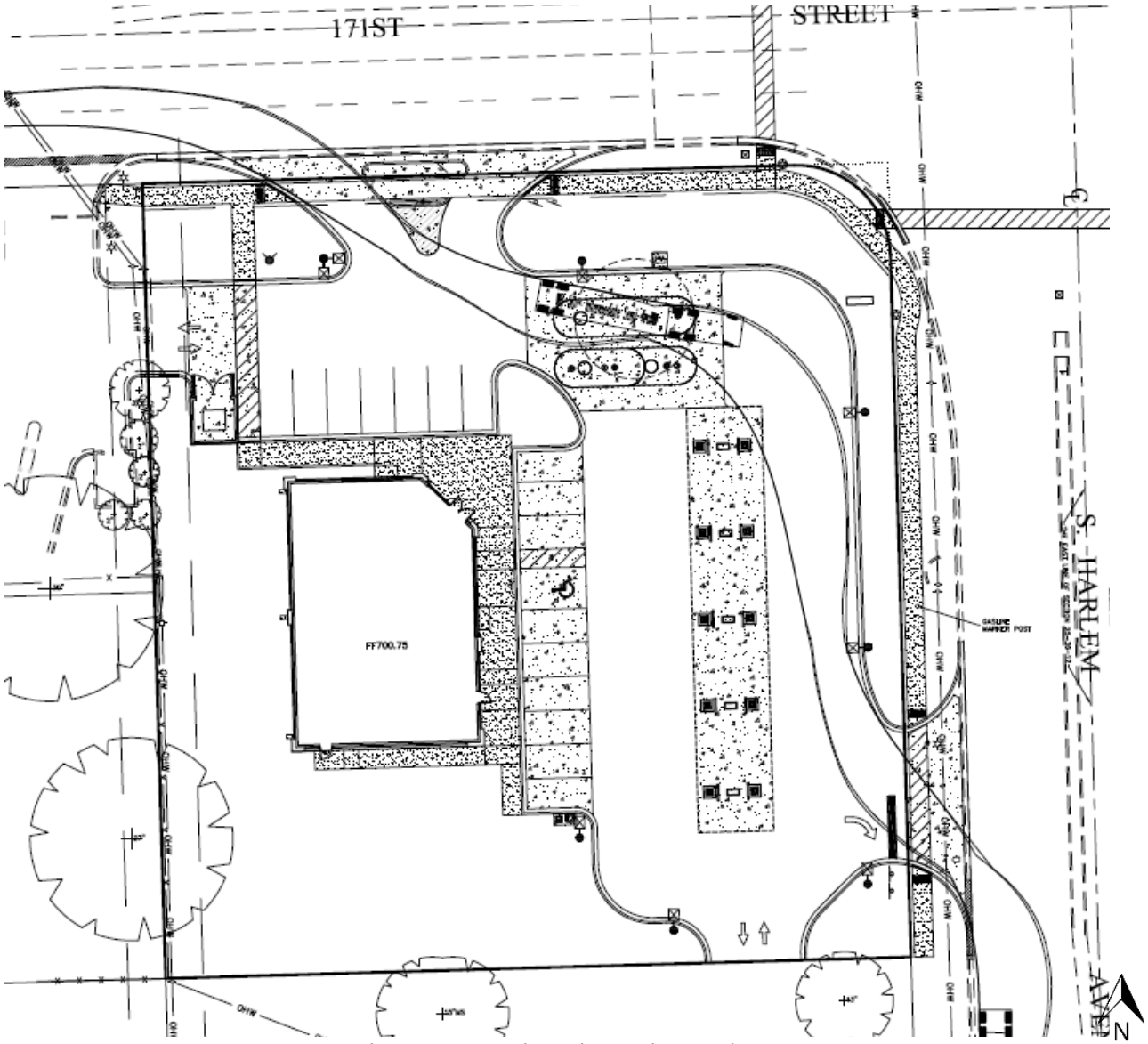
The site plan includes the convenience store building, vehicle fueling area/canopy, vehicle parking, walkways, exterior storage areas, landscaping, and a dumpster enclosure. Access to the site will primarily be through two curb cuts, one on Harlem Avenue and one on 171st Street. Additionally, there will be cross-access for vehicles to the west through the existing First Merchants Bank (7231 171st Street) and a future cross-access to the south. The cross-access through the bank will only be used for personal vehicles; truck access will be prohibited. Fueling trucks will primarily access the site from 171st Street and exit southbound onto Harlem Avenue.

The access points on both Harlem Avenue and 171st Street will be limited to right-in/right-out turns. The median at Harlem Avenue is likely to make any illegal turn unlikely at that location. The 171st Street access includes limited access and a raised island to discourage illegal or dangerous turning movements. The geometrics of the access have been altered slightly to allow for fuel truck and fire engine access. The access is still subject to Cook County Department of Transportation approval bur Village Staff believes the raised median and limited-access will help avoid causing any traffic issues at the intersection. Drive aisles all meet 26 foot width minimum with the exception of the one on the north of the property that connects to the existing bank cross-access. 24 feet is standard in many situations and staff has no concerns with matching the existing bank aisle width.

Open Item #2: Discuss Variation to reduce the minimum drive aisle width from 26 feet to 24 feet.



Above: Propose Site/Geometric Plan



Above: Proposed Truck Circulation Plan

The Subdivision Code requires that any new development or redevelopment install a public sidewalk on all public frontages. The other three corners of intersection have sidewalks and crossings installed. The six foot wide sidewalk is the standard width in commercial areas and runs along both the Harlem Avenue and 171st Street frontages. Due to the small parkway area along 171st Street and at the intersection, the sidewalk will encroach onto the development site and that portion of the sidewalk will need to be placed in a public sidewalk easement. IDOT is reviewing the plans currently and may require crosswalk upgrades to be completed with sidewalk installation.

Engineering has a number of outstanding comments and revisions on the preliminary/final engineering plans that will be addressed prior to permit submittal. Staff is recommending that the site plan approval be conditioned upon final engineering review and approval.

Open Item #3: Staff is recommending a condition that site plan approval be conditioned upon final engineering review and approval.

LANDSCAPE

The proposed Landscape Plan has been reviewed by the Village's Landscape Architect and finds it to be in general conformance with the Village's Landscape Ordinance with a few exceptions due to the site's constraints. The proposal requests a waiver from a few of the bufferyard requirements, parkway tree requirements, and interior landscaping requirements. The Petitioner has indicated that they have worked to meet the landscape requirements to the greatest extent possible and focused their available bufferyard width and landscaping to adequately buffer views from the residential properties to the west. Deficiencies are outlined in the table below.

Table A

Please note the following abbreviations: CT = Canopy Tree, US = Understory Tree, SH = Shrub, T = Tree.

BUFFERYARD REQUIREMENTS						
Bufferyard Location	**Required Width**	**Proposed Width**	**Length**	**Required Plantings**	**Proposed Plantings**	**Deficit**
North ("C" Bufferyard)	10'	10'	117'	6 CT 3 US 24 SH	4 CT 2 US 24 SH	**-2 CT** **-1 US** -
East ("C" Bufferyard)	10'	10'	149'	8 CT 3 US 30 SH	4 CT 3 US 30 SH	**-4 CT** - -
South ("B" Bufferyard)	20'	20'	154'	4 CT 1 US 19 SH	4 CT 3 US 8 SH	0 +2 US **-11 SH**
West (top) ("B" Bufferyard)	10'	10'	83'	3 CT 1 US 14 SH	3 CT 1 US 12 SH	- - **-2 SH**
West (bottom) ("D" Bufferyard)	30'	30'	82'	6 CT 3 US 23 SH	5 CT 1 US 23 SH	**-1 CT** **-2 US** -

PARKWAY STANDARDS					
Location	**Requirement**	**Required Trees**	**Proposed Trees**	**Deficit**	**Comments**
Parkway	1 tree per 25 lineal ft	9	0	**-9**	Adequate room does not exist. CT in bufferyards could be further upsized to compensate for this deficiency.

PARKING LOT LANDSCAPING STANDARDS				
Location	**Requirement**	**Provided**	**Deficit**	**Comments**
Parking Lot	15% of parking lot area to be landscaped or 3,130 sq. ft.	1,425 sq. ft.	**-1,705 sq. ft.**	20,870 sq. ft. of parking lot shown on landscape plan
Parking Lot	Screening of adjacent properties and streets.	Continuous screening not provided.	**~40 lineal ft**	Parking in northwest corner of site not screened along drive aisle – this could also help with Parking Lot deficit outlined above.

Staff has recognized the difficulty in meeting the Landscape Ordinance requirements for gas stations in recent reviews, especially on smaller sites. As an auto-oriented use, the fueling area needs to remain free from obstructions and allow room for vehicle movement throughout the site. Landscaping pots can be added but these are often hard to maintain throughout the year. The Petitioner has met the majority of the Landscape Ordinance, yet these few deficiencies remain due to site constraints. The proposed landscaping is similar in style and design with surrounding area properties and along Harlem Avenue. Below is a list of the landscaping deficiencies in the proposed plan. The species and variety of plantings are expected to increase the appeal of the property and overall area. The proposed plan shows a plethora of screening along the west property line to help buffer any views form the residential homes the property adjoins.

The Village's consultant supports the bufferyard and parkway requests with a couple of recommendations/changes listed below. Staff recommends these few revisions be made to reduce the landscape waivers were possible.

1. They have only upsized shade trees to a combination of 3" and 4" cal. It is recommended that all CT trees be increased to a minimum of 4.5" cal.

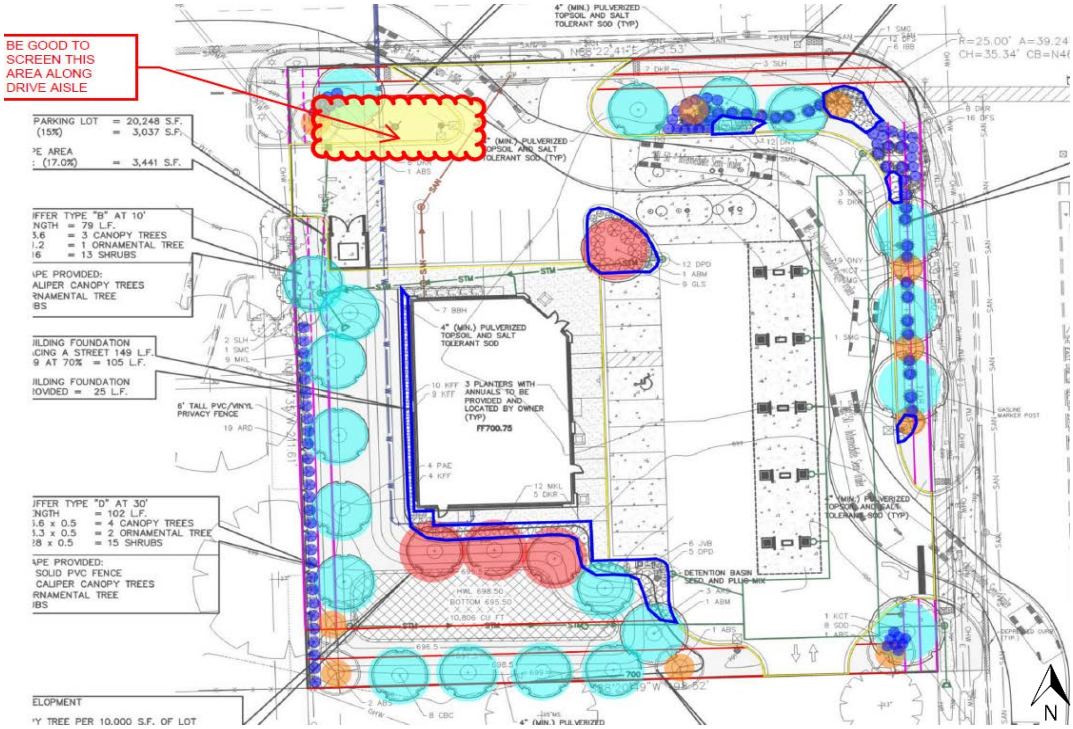
2. Add some shrubs along the north drive aisle in the NW corner of the site to help offset the deficiencies.

3. Revise the west bufferyard design to add two additional shrubs.

Open Item #4: Discuss the proposed landscape plan and requested Landscape Ordinance waivers. Discuss staff's recommendations to best offset deficiencies.

A fence is proposed running between the subject property and the parcels to the west. The fence is proposed to match the adjacent bank's fence (beige PVC fence). Plans currently show a six foot high fence proposed. However, the bank's existing fence is eight foot high. Eight foot high fences are recommended for separation of commercial and residential uses. It is believed this was indicated as six feet high in error. The petitioner will need to confirm this and revise the plans to indicate an eight foot fence matching the existing bank fence in color, height, and style.

Open Item #5: Revise plans to indicate that the fence between the subject site and residential properties to the west matches the existing bank's fence in height (eight feet), color (taupe/beige) and style (PVC privacy).

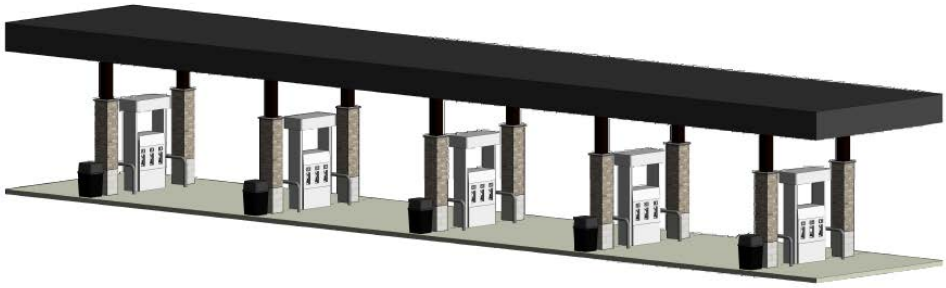


ARCHITECTURE

The design of the convenience store building and gas station canopy utilizes high-quality materials, including face brick (76% of exterior, excluding glazing) with fiber cement and metal cornice architectural treatments. All mechanical equipment will be screened by the rooftop parapet. The face brick will be a beige/grey color and the fiber cement accents will be dark brown/espresso in color (appears black in some renderings). The proposed structure will have metal architectural canopies on the front façade over windows and doors. The fueling canopy and dumpster enclosure are also proposed to match the building's materials, colors, and style.

Staff originally recommended a more residential roof for the convenience store building, utilizing more residential elements such as shingles and peaks. However, the architectural design is prototypical of 7-Eleven's new branding initiative. A peak was added to the front entrance and caps to the architectural treatments to give a more traditional look to the building.

Open Item #6: Review the proposed architectural design and materials used throughout the site.

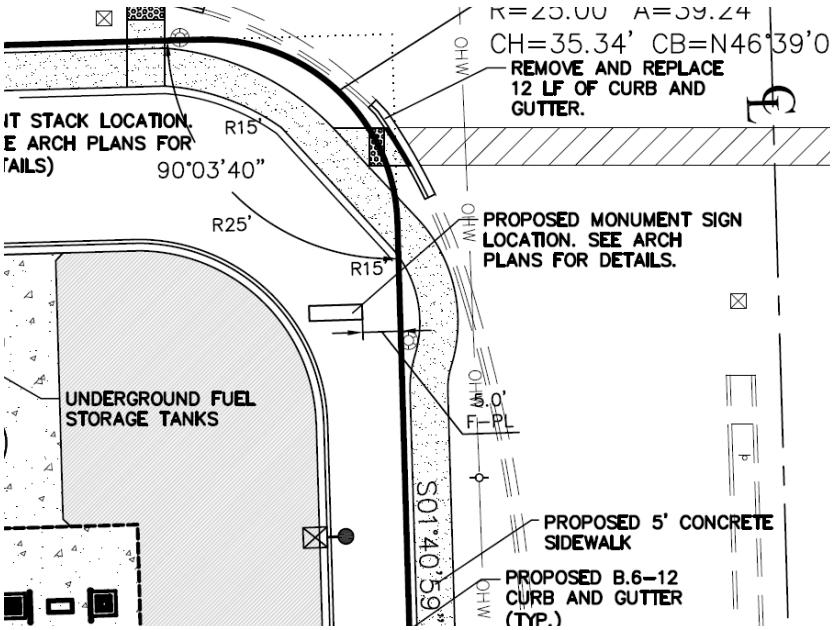


SIGNAGE

Specific wall, canopy, and ground signs are not proposed for the site at this time. The Petitioner has reviewed the Zoning Code's sign requirements and believes that they can comply with them. Wall signs will not be proposed on the south and west facades due to their proximity to residentially zoned property.

Due to the tight space, a ground sign size and location were proposed. The proposed location will require a five foot setback variation to allow the sign to be setback five feet from the property line instead of ten feet. The ground sign is required to have a base that matches the principal building and not exceed ten feet in height. Sign setback Variations are typically accompanied by a specific sign design. However, the petitioner has decided to leave the final proposal up to the operator. Staff is comfortable with the proposed variation request because of the tight site constraints. The request will be limited to the proposed location, but will avoid the need to request a separate Variation in the future.

Open Item #7: Discuss proposed ground sign setback Variation to permit a five foot setback.



Above: Not the actual ground sign proposal. For discussion purposes only. Example of a typical 7-Eleven gas station sign with a solid base.

PARKING

The Village Zoning ordinance provides some guidance for required parking for various uses; however, there is no specific reference for a convenience store associated with a gas station. In these situations where a specific use is not listed, the Plan Commission has authority to approve the parking based on the Petitioner's proposal and similar uses noted in the ordinance. A professional parking study is typically required to be supplied to assist the Plan Commission in their review.

Convenience stores are most commonly considered a "retail use" which requires one parking stall for every 150 sq. ft. With a total of 3,511 sq. ft. proposed, this results in a requirement of 23 parking spaces per the Zoning Ordinance requirements. The proposed site plan provides 17 total spaces total (deficient six parking spaces) based on the similar retail requirement. However, due to the unique nature of a gas station where some of the retail users may be stationed at the pumps (which is not included in the parking count) yields the potential for ten additional parking spaces. In addition, customers are usually on the site for short periods, resulting in high turnover and thereby lowering the demand for parking. The gas station exceeds the parking supply compared to other gas stations in Tinley Park that are similar in size. For example, the Shell gas station across the street (17101 Harlem Avenue) has 6 parking spaces and Mobil/7-Eleven (7601 159th Street) has 14 parking spaces. The existing 7-Eleven convenience store at 17055 Oak Park Avenue does not have fueling, but is comparable in size, and has 14 parking spaces.

The petitioner did supply a traffic analysis from their consultant (KLOA) but that analysis did not address the proposed parking. Staff believes that the parking supply is adequate on the proposed site, but if the Commission have any parking concerns, parking counts of comparable locations can be requested.

Open Item #8: Discussed proposed parking supply of 17 parking spaces and need for the traffic analysis to include parking information for similar locations.

LIGHTING

A new lighting ordinance was recently adopted in September 2019. The lighting plan for the proposed development complies with the new lighting standards in respect to fixture type, illumination intensity, and light intensity at the property lines.

The Petitioner has provided a Photometric Plan that provides lighting via 8 LED light poles, 12 LED canopy fixtures, and 6 LED wall mount fixtures throughout the site. The Photometric Plan indicates light spillage of less than one foot candle at the roadway and zero at the south and western property lines, which are adjacent to residential uses. All light fixtures are full cut-off and downcast to prevent glare on adjacent properties and roadways. Particular thought was put into the light placement and height (20' pole height) to avoid their visibility from the residential properties to the west. Between the thoughtful placement of lights, fence and landscape screening, no light or glare will be visible to the neighboring properties.

Above: Proposed wal-pac lighting will be attached to the building and downcast at a 90 degree angle.

Open Item #9: Discuss overall light plan and light fixture placement.

ABOUT THE SPECIAL APPROVALS NEEDED

Rezoning

The two existing properties are zoned B-4 (Office and Service Business) and R-1 (Single-Family Residential) and proposed to be rezoned to B-1 (Neighborhood Shopping). The Zoning Code's describes the zoning district as follows:

"The B-1 Neighborhood Shopping District is intended to provide areas for retail and service establishments to supply convenience goods or personal services for the daily needs of the residents living in adjacent residential neighborhoods. The district is designed to encourage shopping centers with planned off-street parking and loading and to provide for existing individual or small groups of local stores."

The Petitioner originally proposed an attached car wash as part of the proposal requiring B-3 (General Business and Commercial) zoning. Due to staff's concerns related to the more intense uses permitted in the B-3 zoning district and the possible noise from traffic and car wash equipment, the Petitioner agreed to remove the car wash from their proposal and revise their request to a B-1 zoning district.

The B-1 zoning district was chosen due to the cohesiveness with adjacent residential uses. The B-1 zoning district also allows for the petitioner to request a special use to permit an automobile service (gas) station to be constructed on the site. The other commercial zoning district traditionally used adjacent to residential properties is the B-4. However, the B-4 zoning district does not permit a gas station special use permit to be requested.

Open Item #10: Discuss the requested rezoning of the subject property to the B-1 (Neighborhood Shopping) zoning district.

Lot Variations

Due to the rezoning of the lots to a B-1 zoning district, three lot bulk variations are required for the following:

1. Lot size of .961 acres instead of the required min. of 4 acres.
2. Lot width of 186.53 feet instead of the required min. of 600 feet.
3. Lot depth of 198.52 feet instead of the required min. 250 feet.

These Variations are the result of their prior use and subdivision as residential lots. The area is shown as a commercial/office use in the Village's Comprehensive Plan (2000). Due to the multiple curb cuts and difficulty of access, residential uses are not considered the highest and best use for this area. Since the 1980s, the lots have been redeveloped in the area with commercial buildings and have been rezoned to either B-1 (Neighborhood Shopping) or B-4 (Office and Service) due to their proximity to the single-family residential to the west. The properties to the south of the subject property have similar lot dimensions as the proposed lot.

Open Item #11: Discuss the requested Variations associated with the lot dimensions and size.

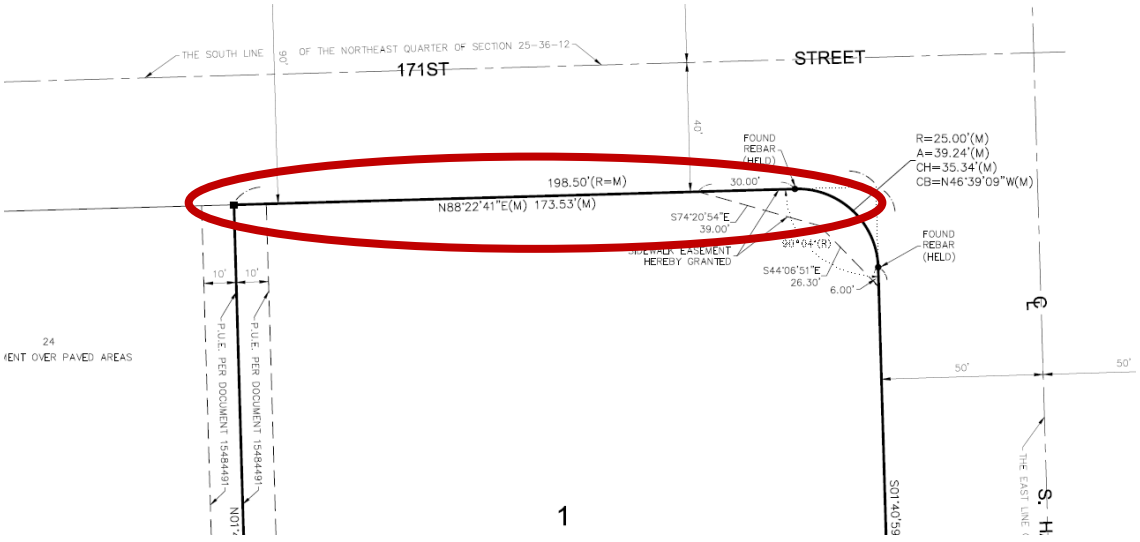
Special Use

An automobile service (gas) station is a special use in B-1 (Neighborhood Shopping), B-2 (Community Shopping), and B-3 (General Business) commercial zoning districts. Gas stations are only a permitted use in the B-5 (Automotive Service) zoning district. Gas stations are a special use in all commercial zoning districts with the exception of B-5 (Automotive Service). One typical concern with gas stations is that due to high traffic volumes, the sites require a unique site design that accounts for safe/efficient access, proper circulation, sufficient parking and adequate lighting levels. Gas stations

Open Item #12: Discuss the proposed special use for an Automobile Service (Gas) Station.

Final Plat of Subdivision Approval

The proposed Plat of Subdivision will consolidate two existing lots (17100 and 17110 Harlem Avenue) resulting in a single lot that is .961 acres in size. Existing drainage and utility easements will remain on the property. Easements for the public sidewalk and cross-access to east and south have been included in the Final Plat of Subdivision. However, the public sidewalk easement need to be extended across the north property line. The Plat of Subdivision will need to be revised to add a sidewalk easement covering the full length of the sidewalk along the northern property line (see image below).



Open Item #13: Revise the Plat of Subdivision so that the public sidewalk easement encompasses the entire length of the sidewalk that runs on private property.

SUMMARY OF OPEN ITEMS

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

1. Discuss recommended condition requiring the demolition and lot restoration of the two deteriorating vacant single-family homes south of the subject site (currently the same property owners).

2. Discuss Variation to reduce the minimum drive aisle width from 26 feet to 24 feet.

3. Staff is recommending a condition that site plan approval be conditioned upon final engineering review and approval.

4. Discuss the proposed landscape plan and requested Landscape Ordinance waivers. Discuss staff's recommendations to best offset deficiencies.

5. Revise plans to indicate that the fence between the subject site and residential properties to the west matches the existing bank's fence in height (eight feet), color (taupe/beige) and style (PVC privacy).

6. Review the proposed architectural design and materials used throughout the site.

7. Discuss proposed ground sign setback Variation to permit a five foot setback.

8. Discussed proposed parking supply of 17 parking spaces and need for the traffic analysis to include parking information for similar locations.

9. Discuss overall light plan and light fixture placement.

10. Discuss the requested rezoning of the subject property to the B-1 (Neighborhood Shopping) zoning district.

11. Discuss the requested Variations associated with the lot dimensions and size.

12. Discuss the proposed special use for an Automobile Service (Gas) Station.

13. Revise the Plat of Subdivision so that the public sidewalk easement encompasses the entire length of the sidewalk that runs on private property.

STANDARDS FOR SITE PLAN APPROVAL

Section III.T.2. of the Zoning Ordinance requires that Planning Staff must find that the conditions listed below must be met. Staff will prepare draft responses for these conditions within the next Staff Report.

a. That the proposed Use is a Permitted Use in the district in which the property is located.

b. That the proposed arrangement of buildings, off-street parking, access, lighting, landscaping, and drainage is compatible with adjacent land uses.

c. That the vehicular ingress and egress to and from the site and circulation within the site provides for safe, efficient, and convenient movement of traffic, not only within the site but on adjacent roadways as well.

d. That the Site Plan provides for the safe movement of pedestrians within the site.

e. That there is a sufficient mixture of grass, trees, and shrubs within the interior and perimeter (including public right-of-way) of the site so that the proposed development will be in harmony with adjacent land uses and will provide a pleasing appearance to the public; any part of the Site Plan area not used for buildings, structures, parking, or access-ways shall be landscaped with a mixture of grass, trees, and shrubs.

f. That all outdoor trash storage areas are adequately screened.

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;

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

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

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

e. The suitability of the property for the zoned purpose;

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

g. The public need for the proposed use; and

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

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

a. That the establishment, maintenance, or operation of the Special Use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare;

b. That the Special Use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood;

c. That the establishment of the Special Use will not impede the normal and orderly development and improvement of surrounding property for uses permitted in the district;

d. That adequate utilities, access roads, drainage, and/or other necessary facilities have been or are being provided;

e. That adequate measures have been or will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public streets; and

f. That the Special Use shall, in all other respects, conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the Village Board pursuant to the recommendation of the Plan Commission. The Village Board shall impose such conditions and restrictions upon the premises benefited by a Special Use Permit as may be necessary to ensure compliance with the above standards, to reduce or minimize the effect of such permit upon other properties in the neighborhood, and to better carry out the general intent of this Ordinance. Failure to comply with such conditions or restrictions shall constitute a violation of this Ordinance.

g. The extent to which the Special Use contributes directly or indirectly to the economic development of the community as a whole.

It is also important to recognize that a Special Use Permit does not run with the land and instead the Special Use Permit is tied to the Petitioner. This is different from a process such as a variance, since a variance will forever apply to the property to which it is granted. Staff encourages the Plan Commission to refer to Section X.J.6. to examine the conditions where a Special Use Permit will expire.

STANDARDS FOR A VARIATION

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

1. The property in question cannot yield a reasonable return if permitted to be used only under the conditions allowed by the regulations in the district in which it is located.

2. The plight of the owner is due to unique circumstances.

3. The Variation, if granted, will not alter the essential character of the locality.

4. Additionally, the Plan Commission shall also, in making its determination whether there are practical difficulties or particular hardships, take into consideration the extent to which the following facts favorable to the Petitioner have been established by the evidence:

    a. The particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship upon the owner, as distinguished from a mere inconvenience, if the strict letter of the regulations were carried out;

    b. The conditions upon which the petition for a Variation is based would not be applicable, generally, to other property within the same zoning classification;

    c. The purpose of the Variation is not based exclusively upon a desire to make more money out of the property;

    d. The alleged difficulty or hardship has not been created by the owner of the property, or by a previous owner;

    e. The granting of the Variation will not be detrimental to the public welfare or injurious to other property or improvements in the neighborhood in which the property is located; and

    f. The proposed Variation will not impair an adequate supply of light and air to an adjacent property, or substantially increase the congestion in the public streets, or increase the danger of fire, or endanger the public safety, or substantially diminish or impair property values within the neighborhood.

RECOMMENDATION

Following a successful workshop, proceed to a Public Hearing at the **January 2, 2020 Plan Commission meeting**.

LIST OF REVIEWED PLANS

Submitted Sheet Name		Prepared By	Date On Sheet
	Project Narrative	Vequity	7/15/19
	LaSalle Standard Responses	Vequity	N/A
	Standards for a Special Use Responses	Vequity	N/A
AS1.01	Site Plan	Ilekis	11/22/19
AS1.02	Site Details	Ilekis	11/22/19
A1.01	Floor Plan	Ilekis	11/22/19
A3.01	Exterior Elevations and Schedule	Ilekis	11/22/19
A3.02	Exterior Color Elevations and Schedule	Ilekis	11/22/19
A3.03	Fuel Canopy Elevations	Ilekis	11/22/19
A3.04	3D Views	Ilekis	11/22/19
PH1.01	Photometric Plan	Ilekis	11/22/19
PH1.02	Photometric Schedules	Ilekis	11/22/19
C-1	Engineering Plan – Cover Sheet	Watermark	11/22/19
C-1.1	Demolition Plan	Watermark	11/22/19
C-2	Geometric Plan	Watermark	11/22/19
C-3	Grading Plan	Watermark	11/22/19
C-4	Accessible Route Grades and Details	Watermark	11/22/19
C-5	Utility Plan	Watermark	11/22/19
C-6	Phase 1 Soil Erosion Control Plan	Watermark	11/22/19
C-7	Phase 2 Soil Erosion Control Plan	Watermark	11/22/19
C-8	Soil Erosion Control Details and Specs	Watermark	11/22/19
C-9	Project Details	Watermark	11/22/19
C-10	Project Specifications	Watermark	11/22/19
C-11	MWRD General Notes	Watermark	11/22/19
C-12 – C-15	IDOT Details	Watermark	11/22/19
1	ALTA/NSPS Land Title & Topographic Survey	Compass	8/5/19
L-1	Landscape Plan	Watermark	11/22/19
L-2	Landscape Details and Specifications	Watermark	11/22/19
1 of 1	MWRD Drainage Exhibit	Watermark	11/22/19
2pg	Final Plat of Subdivision – Southlands First Consolidation	Compass	9/6/19
	Fire Truck Circulation Plan	Watermark	11/22/19
	Fuel Truck Circulation Plan	Watermark	11/22/19
	Traffic Impact Study – Proposed 7-Eleven Gas Station	KLOA	8/23/19

Vequity – Vequity Inc.
Ilekis – Ilekis Associates (Architect)
Watermark – Watermark Engineering Resources LTD
Compass – Compass Surveying LTD
KLOA – Kenig, Lindgren, O'Hara, Aboona, Inc.

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:** _____
☐ **Planned Unit Development (PUD)** ☐ **Concept** ☐ **Preliminary** ☐ **Final** ☐ **Deviation**
☐ **Variation** ☐ ***Residential*** ☐ ***Commercial*** **for** _____
☐ **Annexation**
☒ **Rezoning (Map Amendment) From** B4 + R1 **to** B3
☒ **Plat (Subdivision, Consolidation, Public Easement)** ☒ ***Preliminary*** ☒ ***Final***
☒ **Site Plan**
☐ **Landscape Change Approval**
☐ **Other:** _____

PROJECT & PROPERTY INFORMATION

Project Name: GAS + Convenience Store
Project Description: 3,500 Sf Gas + convenience store
Project Address: 17110 + 17100 Harlem Ave **Property Index No. (PIN):** 27-25-403-013 + 27-25-403
Zoning District: B4 + R1 **Lot Dimensions & Area:** 41,862 Sf
Estimated Project Cost: $ _____

OWNER OF RECORD INFORMATION

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

Name of Owne.. Mohammad Alzoubi **Company:** EMAAR Properties
Street Address: _____ **City, State & Zip:** _____
E-Mail Address: malzoubi2010@gmail.com **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: Vequity LLC series XLIX **Company:** Vequity
Relation To Project: Developer & future owner
Street Address: 450 N. State St. suite 450 **City, State & Zip:** Chicago, IL 60654
E-Mail Address: K.Ward@Vequity.com **Phone Number:** [redacted]

Tinley Park ILLINOIS
Life Amplified

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

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

Property Owner Signature: [redacted]

Property Owner Name (Print): [redacted] Emaar Properties llc

Acknowledgements

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

Property Owner Signature: [redacted]

Property Owner Name (Print): [redacted] Emaar Properties llc

Applicant Signature: (If other than Owner) [redacted]

Applicant's Name (Print): Kim Ward

Date: 7/15/19

VILLAGE OF TINLEY PARK

APPLICATION FOR SITE PLAN APPROVAL

PROJECT NAME: 7-11 Tinley Park **LOCATION:** 17100 S. Harlem Avenue

The undersigned hereby requests that the Plan Commission and/or the Village Board of the Village of Tinley Park, Illinois consider authorizing Site Plan Approval for the project described within.

APPLICANT INFORMATION

Name: Kim Ward
Company: Vequity LLC Series XLIX
Mailing Address: 400 N. State Street Suite 400, Chicago, IL 60654
Phone (Office): [redacted]
Phone (Cell):
Fax:
Email: k.ward@vequity.com

If the Applicant is not the property owner, describe the nature of the Applicant's interest in the property and/or the relationship to the property owner:

The applicant is a pursuant owner of this property

PROPERTY INFORMATION

Property Address: 17100 S. Harlem Avenue
PIN(s): 27-25-403-013 + 27-25-403-014
Existing Land Use: Land // house + garage
Zoning District: B4 + R1
Lot Dimensions: 198'.51" X 196'.6"
Property Owner(s): Mohammad Alzoubi // Emarr Properties
Mailing Address:

APPLICATION INFORMATION

Description of proposed project (use additional attachments as necessary):

3,500 SF Gas + Convenience Store with a car wash attached

Is the Applicant aware of any variations required from the terms of the Zoning Ordinance? If yes, please explain and note that a separate Variation Application is required with the submittal.

☐ No ☑ Yes: Special Use

The Applicant certifies that all of the above statements and other information submitted as part of this application are true and correct to the best of his or her knowledge.

[redacted]

Signature of Applicant 7/15/19 *Date*

VILLAGE OF TINLEY PARK

SITE PLAN APPROVAL
CONTACT INFORMATION

PROJECT NAME: 7-11 Tinley Park **LOCATION:** 17100 S. Harlem Avenue

In order to expedite your site plan submission through the planning process, the Village of Tinley Park requires the following contact information. Please provide the information requested and return to the Planning Department. Your prompt attention is greatly appreciated.

CURRENT PROPERTY OWNER OF RECORD

Name: Mohammad Alzoubi
Company: Emarr Properties
Address:
Phone:
Fax:
Email: malzoubi2010@gmail.com

PROJECT ARCHITECT

Name: Yousuf Ghori
Company: Ilekis Associates
Address: 226 W. Jackson Blvd Suite 1000, Chicago, IL
Phone:
Fax:
Email:

PROJECT ENGINEER

Name: Bill Perry
Company: Watermark Engineering
Address: 2631 Ginger Woods Pky, Suite 100, Aurora, IL
Phone: [redacted]
Fax:
Email: b-perry@watermark-engineering.com

PROJECT LANDSCAPE ARCHITECT

Name:
Company: Watermark Engineering
Address: 2631 Ginger Woods Pky, Suite 100, Aurora, IL
Phone: [redacted]
Fax:
Email: b-perry@watermark-engineering.com

ATTORNEY

Name: John Morse
Company: PFS
Address: 200 S. Wacker Drive, Suite 2700, Chicago, Il
Phone: [redacted]
Fax:
Email: jmorse@pfs-law.com

END USER

Name:
Company: 7Eleven
Address:
Phone:
Fax:
Email: Daniel.Aykroyd@7-11.com

VILLAGE OF TINLEY PARK

SITE PLAN APPROVAL
RESPONSIBLE PARTIES

PROJECT NAME: 7-11 Tinley Park **LOCATION:** 17100 S. Harlem Avenue

Please provide name, address and telephone number of the person/firm that will be responsible for payment of plan review, engineering, landscaping, attorney and building permit fees in the space provided below. If only one party will be responsible for all fees, please list that party's contact information under "General Billing."

GENERAL BILLING

Name:
Company: Vequity LLC Series XLIX
Address: 400 N. State Street Suite 400, Chicago, IL 60654
Phone: [redacted]
Fax: N/A
Email: k.ward@vequity.com

RESPONSIBLE FOR PLAN REVIEW FEES

Name:
Company: Vequity LLC Series XLIX
Address: 400 N. State Street Suite 400, Chicago, IL 60654
Phone: [redacted]
Fax:
Email: k.ward@vequity.com

RESPONSIBLE FOR BUILDING PERMIT FEES

Name:
Company: Vequity LLC Series XLIX
Address: 400 N. State Street Suite 400, Chicago, IL 60654
Phone:
Fax:
Email: k.ward@vequity.com

RESPONSIBLE FOR ATTORNEY FEES

Name:
Company: Vequity LLC Series XLIX
Address: 400 N. State Street Suite 400, Chicago, IL 60654
Phone: [redacted]
Fax:
Email: k.ward@vequity.com

RESPONSIBLE FOR ENGINEERING/ CONSTRUCTION OVERSIGHT FEES

Name:
Company: Vequity LLC Series XLIX
Address: 400 N. State Street Suite 400, Chicago, IL 60654
Phone: [redacted]
Fax:
Email: k.ward@vequity.com

RESPONSIBLE FOR LANDSCAPE REVIEW FEES

Name:
Company: Vequity LLC Series XLIX
Address: 400 N. State Street Suite 400, Chicago, IL 60654
Phone: [redacted]
Fax:
Email: k.ward@vequity.com

VEQUITY
400 N STATE STREET
SUITE 400
CHICAGO, IL 60654

www.vequity.com
312.985.0987

7/15/2019

Village of Tinley Park
16250 S. Oak Park Avenue
Tinley Park, IL 60477

RE: 17100 S Harlem Avenue, Tinley Park IL, Project Narrative

Vequity is proposing the development of a new 3,500 SF 7Eleven Gas + Convenience store with a car wash located at the intersection of Harlem and 171st Street in Tinley Park, IL. The building will be comprised of masonry face brick with a Cordova limestone wall base and Nichiha, fiber cement paneling as accents. The site will have 12 regular parking spaces and one additional handicap parking space per code. Vequity has added heavy landscaping and a 6' fence along the western portion of the site to act as a buffer between the proposed development and the residential neighborhood. The carwash will be a one-car, carwash bay attached to the building.

As the developer, we don't have access to operations of the future store but based on our conversations with the Tenant we are happy to share the details we have available.

7Eleven, the proposed Tenant, is the world's largest operator, franchisor, and licensor of convenience stores. The company operates, franchises and licenses close to 8,700 convenience stores in the US and Canada alone. Outside of the U.S. and Canada, there are some 45,600 7-Eleven stores in Japan, Taiwan, Thailand, South Korea, China, Malaysia, Mexico, Singapore, Australia, Philippines, Indonesia, Norway, Sweden, and Denmark. 7Eleven is listed as S&P AA (Investment Grade) Outlook Stable.

The proposed hours of operation are 24 hours a day and 7 days a week with approximately three to four employees in the store at any given peak period. The franchisee is given all rights to determine how many full-time and part-time employees are employed at each store but based off our real estate representatives experience it is somewhere between seven and ten people.

As for delivery schedules, this is something the store is unable to predict prior to opening. All delivery and vendor schedules are created closer to store opening. On average, stores have two main deliveries per vendor per week during business hours.

Vequity will be requesting a Special Use for this property for the gas/convenience store use. We will also be engaging a zoning attorney to rezone the property as B-3 from the current zoning of B-4/R-1.

LaSalle Standards – 7/11 Gas Station (171st Street & Harlem Ave.)

A.US Post Office to the north on 171st St., zoned B-4.
SFH to the south abutting property line, zoned R-1.
Shell gas station to the east on S. Harlem Ave, zoned B-3.
First Merchant Bank to the west, zoned B-4

B. Automobile service stations with attached carwashes are not permitted in B-4 or R-1 zoned districts. B-3 Districts are the only zoning districts in which automobile service stations are permitted. The current zoning classification diminishes the property value by restricting the permissible uses.

C. To no extent does the destruction of the complaining party's property value benefit the health, safety and welfare of the general public.

D. The public gains tax revenue contribution and job creation for the local economy. The hardship imposed on the property owner is that the current zoning is incompatible with the functional roadway classifications abutting the property. This parcel does not serve as a buffer or transition between residential and commercial uses as intended in the B-4 district.

E. A B-3 zoning designation is suitable to accommodate a wide range of specialized commercial uses, including highway-oriented services and commercial types of establishments to serve the needs of motorists. He parcel is bordered by southbound IL-43 S. Harlem Ave, Illinois Dept of Transportation (IDOT) ROW, to the east and 171st St., Cook County Department of Transportation and Highways (CCDOTH), to the north. The parcel is not compatible with the current B-4 and R-1 zoning.

F. The commercial property on the north parcel has been vacant since 2015. Between August and September of 2016, the building and parking lot were demolished. The residential building on the south parcel has been present on the property since at least 1962 and remains intact.

G. The proposed automobile service station development will serve motorists along southbound IL-43 S. Harlem Ave which is a Principal Arterial Roadway and eastbound along 171st St which is a Major Collector roadway, as designed in B-3 districts. Furthermore, the proposed development will meet modern requirements set by IDOT and CCDOTH in highway safety, the Metropolitan Water Reclamation District (MWRD) in stormwater management, site development and optimized energy performance referenced by current building and energy code.

H. Comprehensively, the municipality has addressed changes in population growth and density, commercial/residential use and urban planning by modernizing the zoning map with overlay districts. IL-43 S. Harlem Ave, a Principal Arterial roadway, which has 31,000+ vehicles per day and 171st St, a Major Collector roadway, which has 12,000+ vehicles per day, has a high number of SFH's in both R-1 and R-4 districts. It is appropriate to re-zone areas in and around this intersection to B-3 in order to accommodate motorists given the high volume of daily traffic.

LASALLE FACTORS/CRITERIA FOR REZONING (MAP AMENDMENT)

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

A. The existing uses and zoning of nearby property;

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

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

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

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

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

G. The public need for the proposed use; and

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

Standards for a Special Use – 7/11 Gas Station (171st & Harlem)

1. ***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 plan will allow the petitioner to redevelop a vacant piece of land which will in turn enhance the corner property at 171st St & Harlem Avenue. The proposed development will provide fueling services to residents, businesses, and visitors. The proposed use is in the interest of the public convenience and will contribute to the general welfare of the area as the petitioner will further invest in this property. Our tenant upholds the highest safety standards regarding truck refueling, the tenant only allows trucks refuel from one side of the tank, they do not allow extenders to reach the tanks and bollards are always used to protect the MEPs themselves.

2. ***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 with the neighborhood.***

   The proposed plan will not be injurious to the use and enjoyment of other property in the immediate vicinity. The petitioner has ensured that there will be a 6' privacy fence between the development and the residential area to the West. The petitioner has also added ample landscaping to the western portion of the building as an even larger buffer. The petitioner has also added several shrubs and trees through the site to enhance the corner visually.

3. ***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***

   The petitioner will not impede the normal and orderly development and improvement of the surrounding property as it fits in nicely with the surrounding uses. To the North of the building is a United States Postal Office, to the East is a Shell Gas Station, a Jewel Grocery as well as several other commercial uses, and to the South of the petitioner's building will be a new commercial development. We feel like the addition of a new gas + convenience store will only enhance this commercial corridor.

4. ***That adequate utilities, access roads, drainage, and/or necessary facilities have been or are being provided***

   The petitioner will be providing all new utilities to this site. They will also may every attempt to work with the building owner's to the West and South to ensure the properties have cross-access for ease of entrance. The new development has also been working with MWRD to make sure all storm detention and volume control measures have been addressed properly.

5. ***That adequate measures have been or will be taken to provide ingress and egress to designed as to minimize traffic congestion in the public streets.***

The petitioner has reached out and received feedback from IDOT and CCDOT which the petitioner has already built into the site plan that has been submitted for Special Use approval to ensure that the site plan meets or exceeds all ingress and egress requirements to minimize traffic and congestion to the corner of 171st and Harlem.

6. ***That the Special Use shall in all other respects confirm 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 to the recommendation of the Plan Commission.***

   The proposed plan will confirm to the applicable regulations of the district in which it resides.

7. ***The extent to which the Special Use contributes directly or indirectly to the economic development of the community as a whole.***

   The proposed plan will allow the petitioner to redevelop a piece of land that has been vacant. Once the development has been built and is open it will add not only a new attractive store to the corner of 171st and Harlem but it will also affect the economic development by adding tax revenues from both the gas and convenience store sales.

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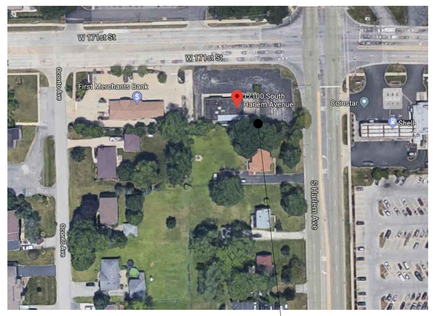
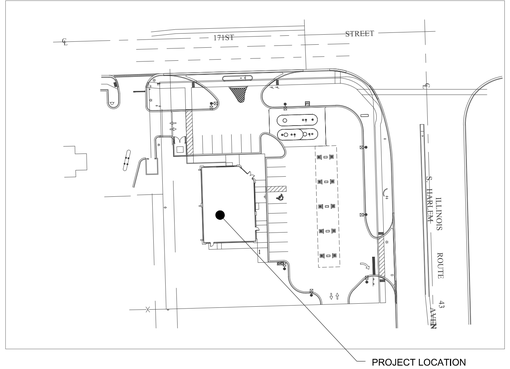
7- Eleven

17100 S HARLEM AVE
TINLEY PARK, IL 60477



PROJECT LOCATION

1 VICINITY AERIAL MAP
SCALE: NTS



PROJECT LOCATION

2 PROJECT KEY PLAN
SCALE: NTS

3 PERSPECTIVE VIEW
SCALE: NTS FOR REFERENCE ONLY

PROJECT DIRECTORY

OWNER
VEQUITY LLC
400 N. STATE ST.
SUITE 400
CHICAGO, IL 60654
P. 312-985-0987

ARCHITECT OF RECORD
ILEKIS ASSOCIATES
223 WEST JACKSON BLVD.
SUITE 1000
CHICAGO, IL 60606
P. 312-419-0009

CIVIL ENGINEER:
WATERMARK ENGINEERING RESOURCES, LTD
2631 GINGER WOODS PARKWAY SUITE 100
AURORA, IL 60502
P. 630-375-1800

PROJECT STATEMENTS

THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST OF MY KNOWLEDGE, COMPLY WITH ALL LOCAL BUILDING CODES.

ALPHONSE A. ILEKIS
LICENSE EXPIRES 11/30/18

ENERGY STATEMENT

I CERTIFY THAT I AM A REGISTERED ENERGY PROFESSIONAL (REP). I ALSO CERTIFY THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF THAT THE PLANS FOR
ADDRESS: 17100 S HARLEM AVE TINLEY PARK IL 60477
FULL COMPLY WITH THE REQUIREMENTS OF CHAPTER 18-13. ENERGY CONSERVATION OF THE MUNICIPAL CODE OF ARLINGTON HEIGHTS AS WELL AS THE STATE OF ILLINOIS ENERGY CONSERVATION AS REQUIRED BY STATE LEGISLATION

DATE: 07/15/19 ILLINOIS LICENSE # 01-8612
ALPHONSE A. ILEKIS (ARCHITECT)
LICENSE EXPIRES 11/30/20

CODE SUMMARY

- SEE AS1.01 FOR ALL REVIEW AND SUMMARIES.

DIGGING NOTICE

CONTRACTOR TO VERIFY ALL LOCAL REQUIREMENTS IF DIGGING IS REQUIRED.

SHEET INDEX				
REVISION				SHEET NAME
4	3	2	1	
				ARCHITECTURAL
				G0.00 COVER SHEET, DRAWING INDEX AND PROJECT INFO
				AS1.01 SITE PLAN
				AS1.02 SITE DETAILS
				A1.01 FLOOR PLAN
				A3.01 EXTERIOR COLOR ELEVATIONS AND SCHEDULE
				A3.02 EXTERIOR ELEVATIONS AND SCHEDULE
				A3.02 CANOPY ELEVATIONS
				A3.04 3D VIEWS
				PH1.01 PHOTOMETRIC PLAN
				PH1.02 PHOTOMETRIC PLAN

CITY APPROVAL

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Vequity
400 N. State
Suite 400
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312-985-0987
Email info@vequity.com
www.vequity.com

PROJECT TEAM:

ILEKIS
architects + planners
ILEKIS ASSOCIATES
223 W. JACKSON BLVD.
SUITE 1000
CHICAGO, IL 60606
312-419-0009 www.ILEKIS.com
THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST OF MY KNOWLEDGE, COMPLY WITH THE APPLICABLE CODES AND BUILDING REGULATIONS.
ALPHONSE A. ILEKIS, AIA

NOTE:

RETAIL BUILDING
PROJECT # 1814-20
17100 S HARLEM AVE
TINLEY PARK, IL 60477

DATE:	ISSUED FOR:
11/22/19	ISSUED FOR CITY REVIEW
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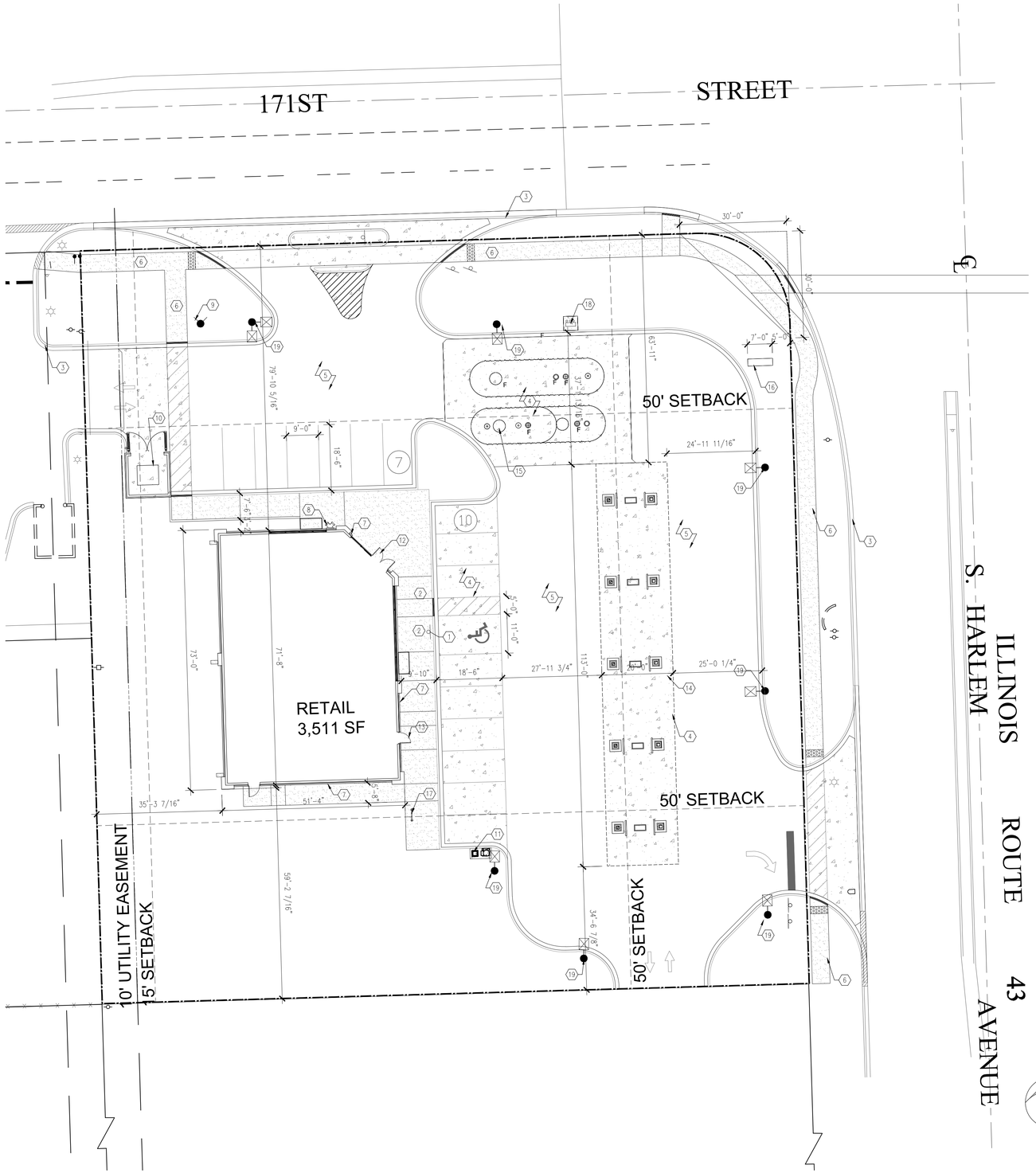
COVER SHEET, DRAWING INDEX & PROJECT INFO

G0.00



NORTH

1 SITE PLAN
SCALE: 1/16"=1'-0"
0 4' 8' 16' 32'

GOVERNING CODES OF TINLEY PARK
2012 INTERNATIONAL BUILDING CODE
2012 MECHANICAL CODE
2012 INTERNATIONAL FIRE GAS CODE INCLUDING APPENDIX A
2012 INTERNATIONAL FIRE CODE INCLUDING APPENDIX B AND D
2012 INTERNATIONAL PROPERTY MAINTANANCE CODE
2015 ENERGY CONSERVATION CODE
2014 ILLINOIS PLUMBING CODE
2011 NATIONAL ELECTRIC CODE

BUILDING INFORMATION			
ZONING:			
CONSTRUCTION TYPE:		V-B	
SPRINKLER SYSTEM:		SPRINKLED	
MAX TRAVEL DISTANCE PER 1016.1 TABLE:		250 FT	
PROPOSED USE GROUP:		M	
# STORIES:		1	
GROSS LEASE AREA:	3,511		SF
BUILDING GROSS AREA:	3,511		SF

SITE-BUILDING ANALYSIS				
ZONE:	TBD			
LOT AREA SF:	41,866	SF		
BUILDING AREA SF:	**3,511**	SF		
BUILDING AREA SF:	**3,511**	SF		
BUILDING SETBACKS:	REQUIRED		PROVIDED	VARIANCE
FRONT YARD	**50'**			
REAR YARD	**50'**			**Variance needed on Harlem Ave For Canopy**
SIDE YARD	**15'**			
SIDE YARD	**15'**			
NOTES:				

PARKING CALCULATION				
TENANT	**OCCUPANCY**	**AREA**	**PARKING/SF**	**PARKING REQUIRED**
BLDG A	RETAIL USE	**3,511**	1/150 SF	23.00
			AT THE PUMP	10.00
TOTAL BUILDING AREA		**3,511**	TOTAL REQUIRED	**23**
			TOTAL PROVIDED	27
			SURPLUS/(DEFICIT)	4

90 Degree
STALL : *9'X18.5'*
ADA STALL: *11' & 5'*
DRIVE AISLE: *ONE WAY* *26'* *TWO WAY*

		REQUIRED	PROVIDED
ADA PARKING SPACES :	5%	1	1
LOADING BERTH:			
BIKE PARKING :			
STACKING PARKING:			

NOTE:
- SITE PLAN SHOWN FOR REFERENCE ONLY. REFER TO CIVIL DRAWINGS.
- FUEL CANOPY AND UNDERGROUND TANKS UNDER SEPARATE PERMIT
- INTERIOR BUILD OUT UNDER SEPARATE PERMIT

GENERAL NOTES:

A. SEE CIVIL FOR GRADING PLAN. SEE CIVIL DRAWING FOR SITE DEMOLITION, NEW PAVEMENT, SITE UTILITIES, SIGNAGE AND FINAL SITE DIMENSIONS.
B. SEE AS1.02 FOR ADDITIONAL SITE DETAILS.
C. VERIFY THE EXISTENCE OF AND PROTECT ALL EXISTING UTILITY LINES. EXCAVATE WITH CARE.
D. INSTALL ADDRESS ON BUILDING AS REQUIRED BY LOCAL CODE.
E. PROVIDE KNOX BOX , PER FIRE DEPARTMENT REQUIREMENTS.
F. SEE CIVIL DRAWINGS FOR ADDITIONAL SITE SIGNAGE REQUIREMENTS.
G. CLEAN LOT AFTER SITE WORK AND AFTER CONSTRUCTION COMPLETION.
H. PROTECT ADJACENT PROPERTY. ANY DAMAGE IS TO BE REPAIRED AT CONTRACTOR EXPENSE WITH PERMISSION OF ADJACENT BUILDING OWNER. FOR EXAMPLE, IF SOD IS DAMAGED IT WILL BE REPLACED AND WATERED REGULARLY UNTIL ESTABLISHED.
I. PROVIDE EXPANSION JOINTS IN CONCRETE PAVING AND CURBS AS REQUIRED BY MFGR SPECS, OR 30FT SPACING WHICHEVER IS LESS. REFER TO CIVIL DRAWINGS FOR MORE INFORMATION AND DETAILS.

KEY NOTES:

1. ADA PARKING SIGN MOUNTED ON POST. SEE CIVIL FOR DETAILS.
2. ADA SIDEWALK RAMP TYP. SEE CIVIL.
3. EXISTING CONCRETE CURB AND GUTTER TO REMAIN.
4. NEW CONCRETE PAVEMENT TYP. SEE CIVIL.
5. PROVIDE ASPHALT PAVEMENT. SEE CIVIL PLANS FOR PAVING AND GRADING DETAILS.
6. CONCRETE SIDEWALK. REFER TO CIVIL DRAWINGS.
7. 1/2" ISOLATION JOINT ALONG PROFILE OF BUILDING AND WHERE INDICATED, USE BITUMINOUS FILLER AND SEALANT ALONG EDGE.
8. FD CONNECTION, SEE CIVIL
9. FIRE HYDRANT
10. PROVIDE TRASH ENCLOSURE. REFER TO AS1.02 FOR DETAILS.
11. AIR / VAC REFER TO CIVIL SHEETS FOR LOCATION.
12. MAIN DOOR
13. EXIT DOOR
14. PROPOSED FUEL CANOPY. REFER TO CIVIL.
15. PROPOSED UNDERGROUND FUEL TANKS. REFER TO CIVIL.
16. NEW PYLON SIGN UNDER SEPARATE PERMIT
17. NEW BIKE RACK
18. VENT STACK REFER TO CIVIL DRAWINGS
19. NEW LIGHT POLE , REFER TO PHOTOMETRIC PLAN.

LEGEND:

NEW CONCRETE
SIGNAGE
FDC FIRE DEPARTMENT CONNECTION

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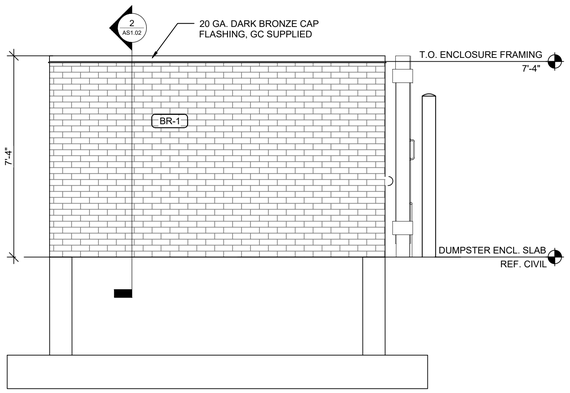
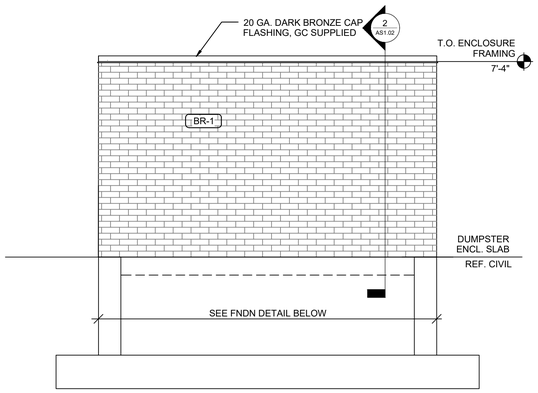
SITE PLAN

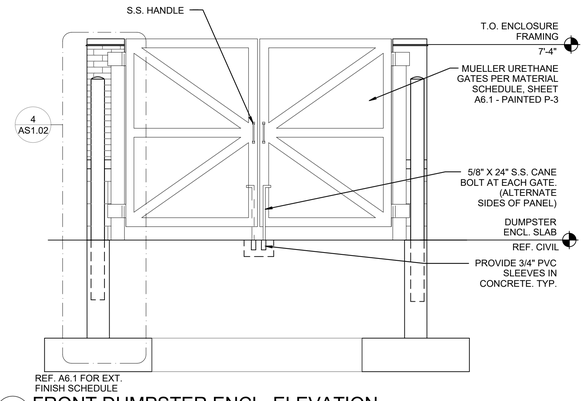
AS1.01



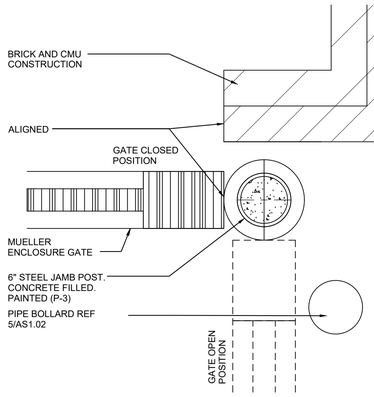
10 SIDE DUMPSTER ENCL. ELEVATION
3/8" = 1'-0"



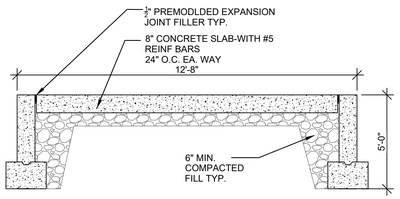
9 REAR DUMPSTER ENCL. ELEVATION
3/8" = 1'-0"



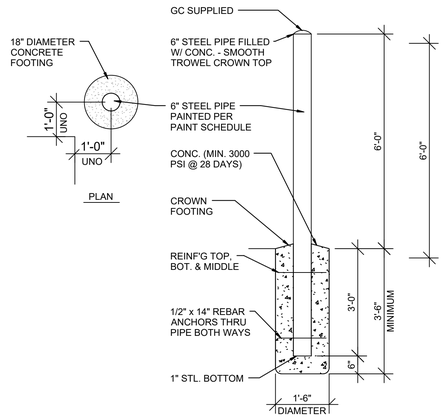
8 FRONT DUMPSTER ENCL. ELEVATION
3/8" = 1'-0"



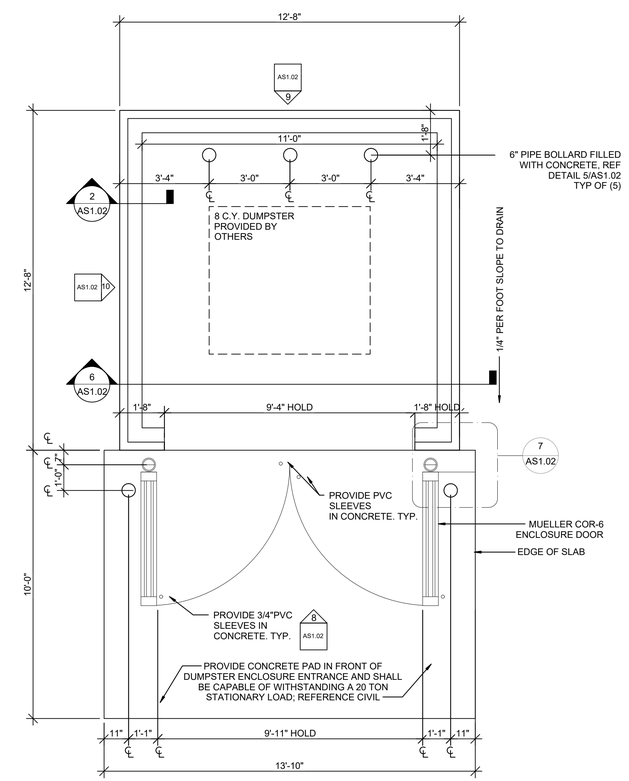
7 DETAIL - GATE
1 1/2" = 1'-0"



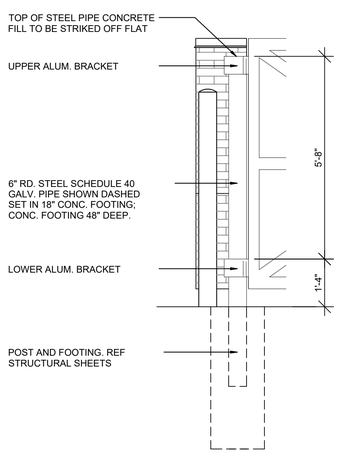
6 DUMPSTER ENCL. FOUNDATION SECTION
3/8" = 1'-0"



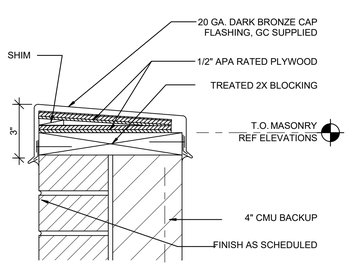
5 TYPICAL BOLLARD SECTION
1/2" = 1'-0"



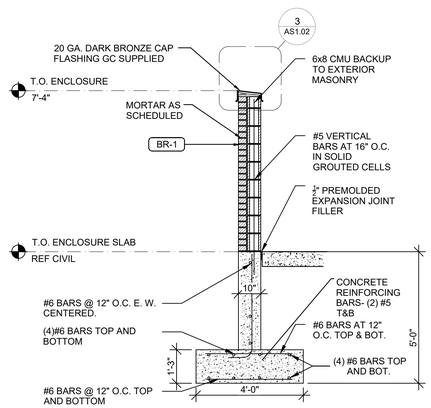
1 DUMPSTER ENCLOSURE PLAN
3/8" = 1'-0"



4 GATE BOLLARD DETAIL
1/2" = 1'-0"



3 DETAIL - COPING
3" = 1'-0"



2 DUMPSTER ENCL. WALL SECTION
3/8" = 1'-0"

CITY APPROVAL

CLIENT:
vequity | real estate. redefined.

Vequity
400 N. State
Suite 400
Chicago, IL 60654
312-985-0987
Email info@vequity.com
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PROJECT TEAM:

ILEKIS
architects + planners
ILEKIS ASSOCIATES
223 W. JACKSON BLVD.
SUITE 1000
CHICAGO, IL 60606
312-419-0009 www.ILEKIS.com

NOTE:

RETAIL BUILDING
PROJECT # 1814-20
17100 S HARLEM AVE
TINLEY PARK, IL 60477

DATE:	ISSUED FOR:
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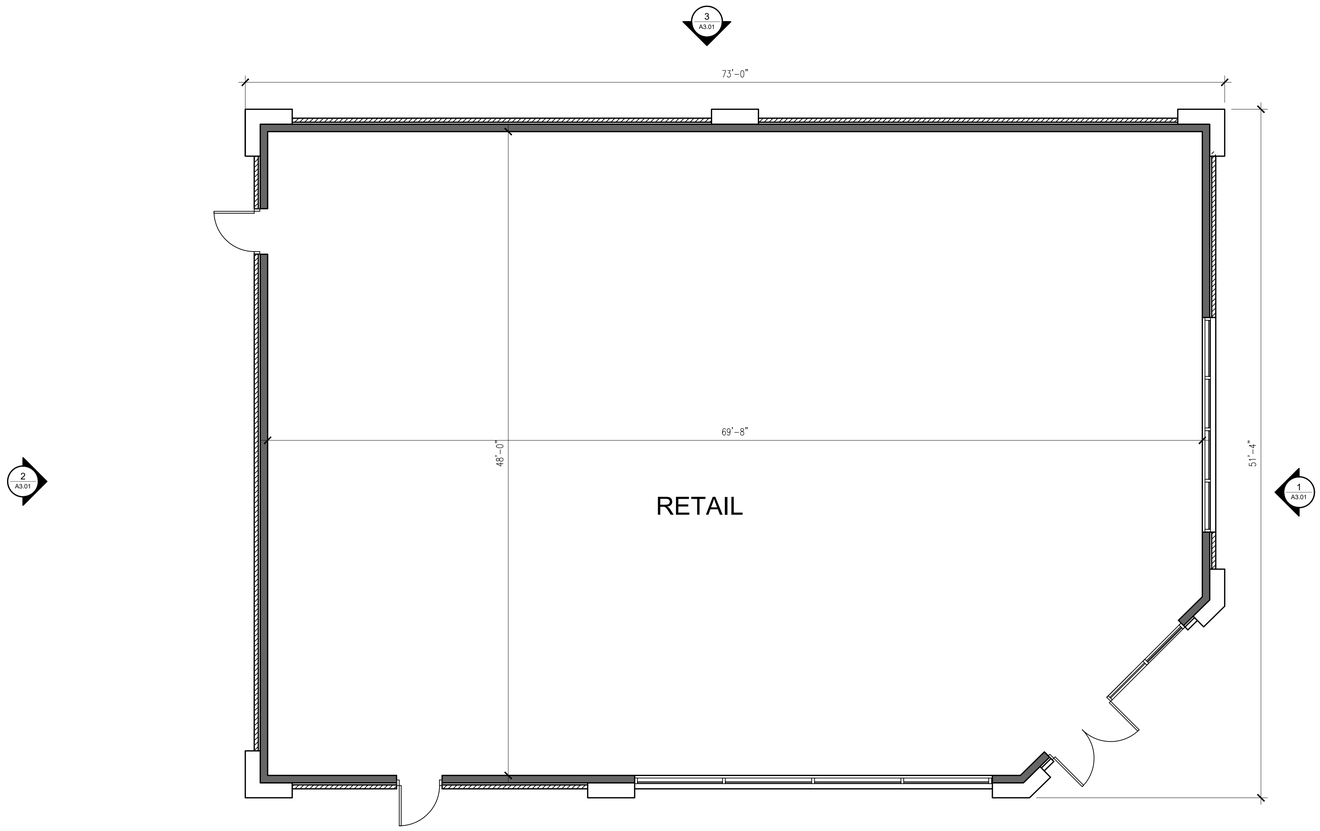
SITE DETAILS

AS1.02



NORTH

1 FLOOR PLAN

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

0 1' 2' 4' 8'

GENERAL NOTES

A. FIRE SAFE ALL PENETRATIONS THRU PARTITIONS.
B. PROVIDE ACCESSIBLE THRESHOLD AT EACH EXTERIOR DOOR-SEE DOOR SCHEDULE
C. PRIME INTERIOR WALLS, COLUMNS TRIM AND DOOR FRAMES
D. SEE STRUCTURAL FOR CONTROL AND ISOLATION JOINTS AT CONCRETE SLAB AND AROUND COLUMNS
E. CONTACT OWNER REGARDING HOW THEY WANT TO REKEY THE LOCK FOR THE MAIN ENTRY VS THE SERVICE DOOR, LANDLORD ROOM TO HAVE ELECTRONIC KEY PAD KEY LOCK.
F. ARABIC NUMERALS AT LEAST FOUR INCHES HIGH WITH A MINIMUM STROKE WIDTH OF 0.5 INCHES SHOWING THE ADDRESS OF THE BUILDING SHALL CONTRAST WITH THE BACKGROUND, SHALL BE CONSTRUCTED OF DURABLE MATERIALS, BE PERMANENTLY INSTALLED AND BE READILY VISIBLE. SCRIPT OR WRITTEN NUMBERS ARE NOT PERMITTED. ADDITIONAL NUMBERS SHALL ALSO BE PLACED ON THE SIDE OF THE BUILDINGS STREET ADDRESS.
G. AT SERVICE DOORS USED AS EXIT/ACCESS FOR FIRE FIGHTING, ARABIC NUMERALS A MINIMUM OF FOUR INCHES IN HEIGHT WITH A MINIMUM STROKE OF 0.5 INCH SHALL BE APPLIED TO THE ADDITIONAL DOOR TO INDICATE THE ADDRESS. THE ADDRESS SHALL BE VISIBLE FROM THE PARKING LOT OR FIRE APPARATUS ACCESS.
H. THIS IS A SPRINKLERED BUILDING PER REQUIREMENT OF VILLAGE OF TINLEY PARK SEE FP DRAWINGS FOR LAYOUT.
I. SEE STRUCTURAL FOR CONTROL JOINTS AND EXPANSION JOINTS.
J. ALL JOINT SYSTEMS IN RATED WALL ASSEMBLIES SHALL COMPLY WITH UL 2079.
K. ANY PENETRATIONS THROUGH RATED ASSEMBLIES SHALL COMPLY WITH UL 263.
L. PROVIDE A KNOX BOX TO ENABLE THE FIRE DISTRICT TO HAVE ACCESS TO THE BUILDING AND THE BUILDING'S FIRE PROTECTION FEATURES.
M. G.C. TO PROVIDE PORTABLE FIRE EXTINGUISHERS WITHIN THE BUILDING. THE TYPE, SIZE, AND SPACING MUST MATCH THE SPECIFIC HAZARD THEY ARE TO PROTECT. CONTACT THE FIRE DISTRICT FOR APPROVAL OF THE TYPES AND LOCATIONS OF PORTABLE FIRE EXTINGUISHERS TO BE USED PRIOR TO FINAL OCCUPANCY.

WALL LEGEND

NEW SIP WALL SYSTEM

MASONRY WALL

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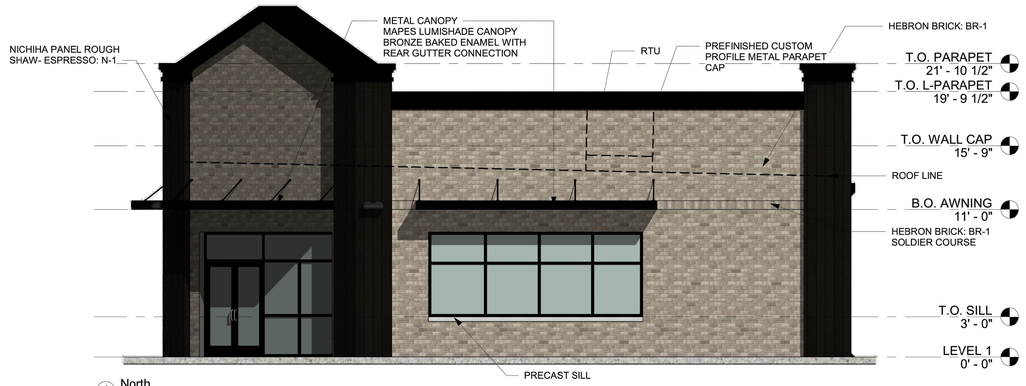
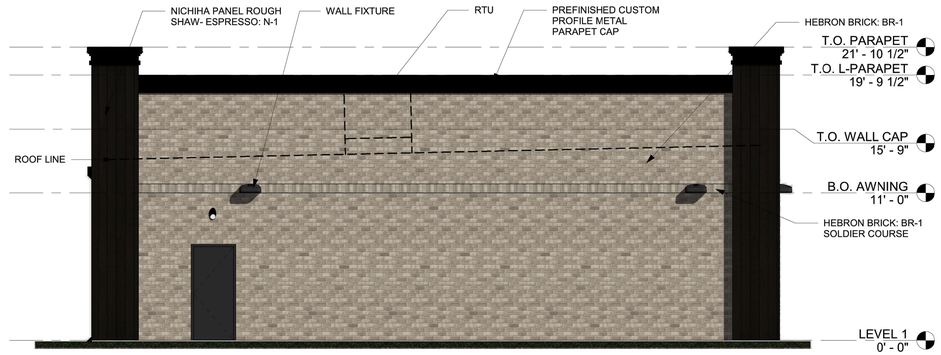
FLOOR PLAN

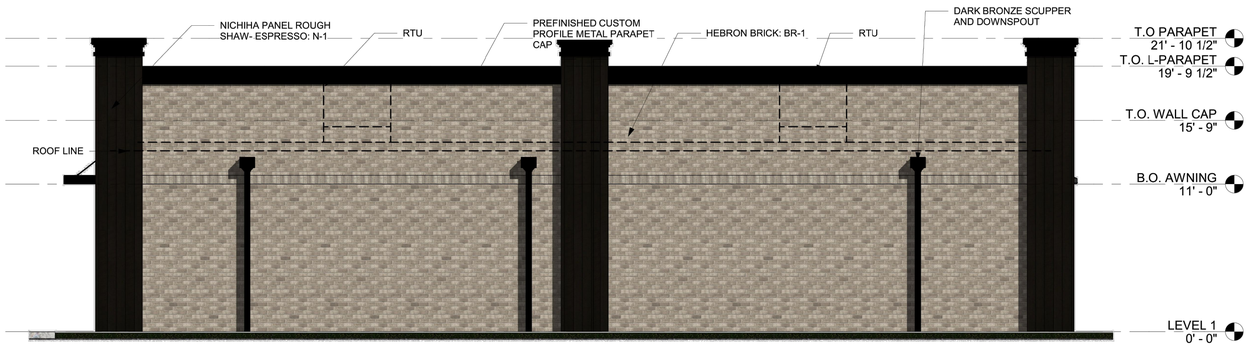
A1.01



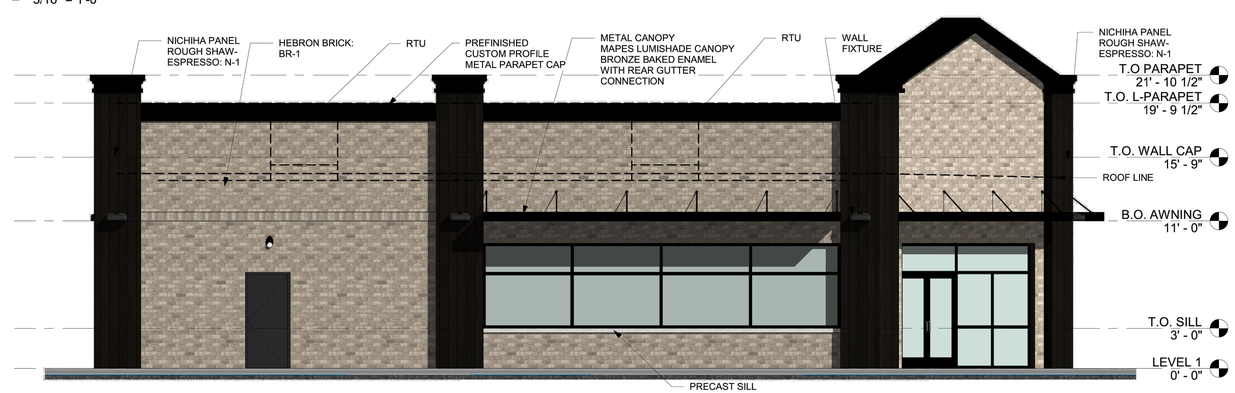
1 North
3/16" = 1'-0"



2 South
3/16" = 1'-0"

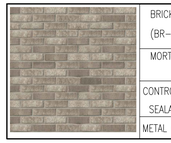
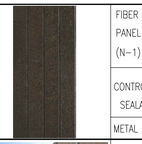


3 West
3/16" = 1'-0"



4 East
3/16" = 1'-0"

MATERIAL SCHEDULE

LEGEND	SYMBOL	COLOR	MANUFACTURER	TYPE
	BRICK (BR-1)	HARBOURTOWN	HARBOURTOWN BRICK BY HEBRON	3 5/8"X2 1/4"X7 5/8"-SMOOTH FACE & MONOTONE PALLETE
	MORTAR	SOLOMON COLORS: GRAY	BMI OR APPROVED EQUAL	950 TYPE S /W WATER REPELLENT
	CONTROL JOINT SEALANT	COLOR: GRAY	DOW CORNING	DOW CORNING 790
	METAL COPING	COLOR: DARK BRONZE	PAC-CLAD PETERSEN	
	FIBER CEMENT PANEL (N-1)	ESPRESSO	NICHIHA ROUGH SAWN	
	CONTROL JOINT SEALANT	COLOR: BRONZE	DOW CORNING	DOW CORNING 790
	METAL COPING	COLOR: DARK BRONZE	PAC-CLAD PETERSEN	
	METAL CANOPY	DARK BROWN	SUPERSHADE BY MAPES ARCHITECTURAL CANOPIES OR APPROVED EQUAL	4' PROJECTION
	WALL PACK	BROWN	GE	EXTERIOR LED WALL PACK # EWLS01_15AF750
	STOREFRONT	DARK BRONW ANODIZED		CLEAR ANODIZED STOREFRONT WITH 1" INSULATED GLASS
	METAL DOORS AND FRAME	SEALSKIN SW7675	SHERWIN WILLIAMS	

EXTERIOR MATERIAL AREAS

	NORTHEAST	EAST	WEST	NORTH	SOUTH	TOTAL:		
OVERALL ELEVATION SF	420	1111	1394	709	980	4614	**4165**	SF EXCLUDING GLAZING
GLAZING(INCLUDING DOORS)	131	193	0	101	24	449		
MASONRY	226	647	1090	435	749	3147	**76%**	
FIBER CEMENT PANEL	86	192	205	123	138	744	**18%**	
METAL CORNICE	21	79	99	50	69	318	**8%**	

CITY APPROVAL

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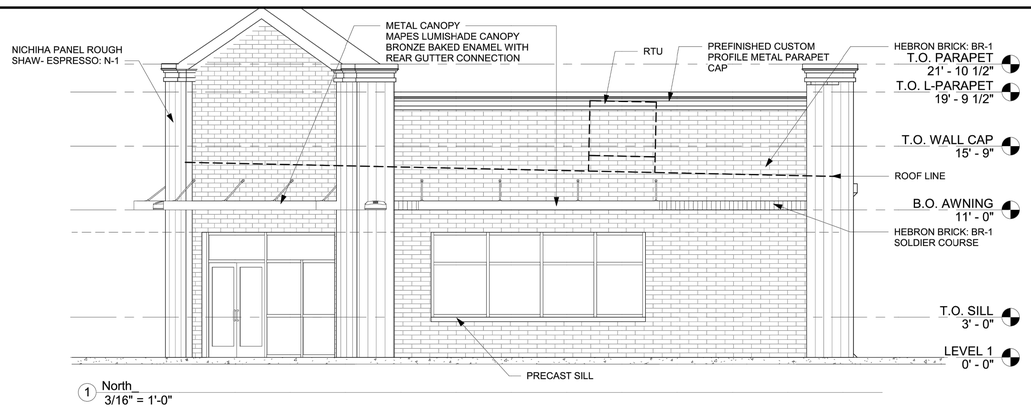
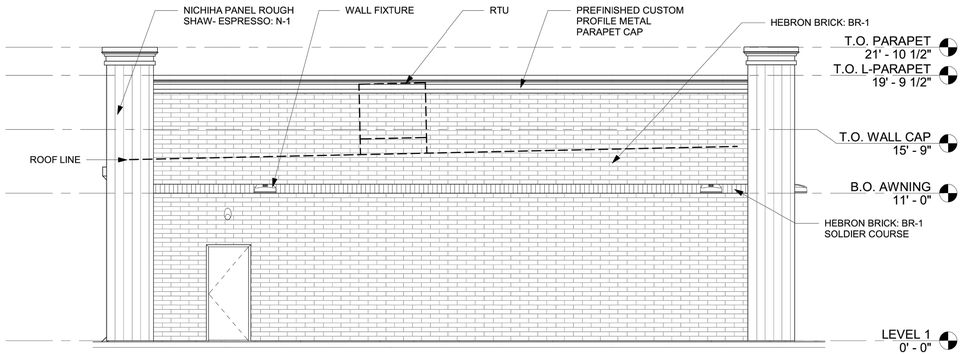
EXTERIOR ELEVATIONS AND SCHEDULE

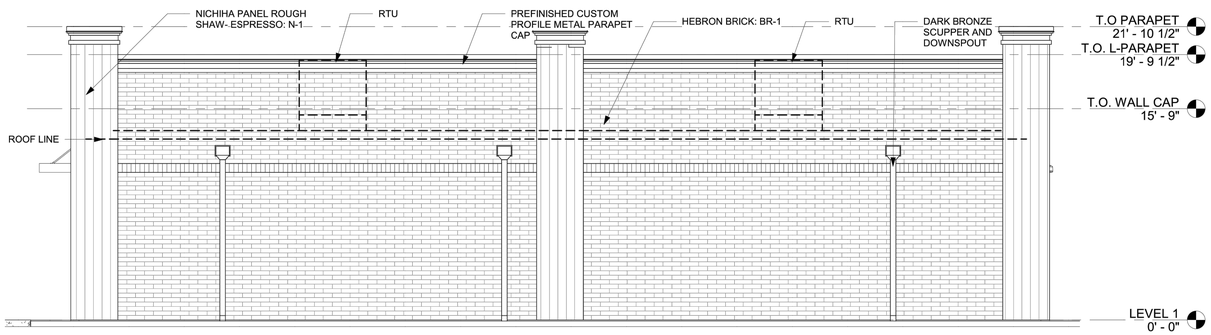
A3.01



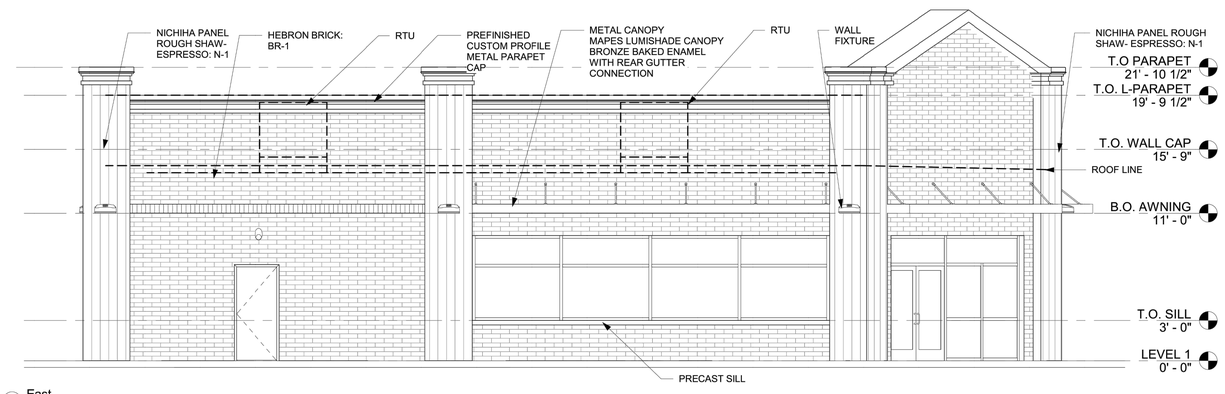
1 North_
3/16" = 1'-0"



2 South_
3/16" = 1'-0"



3 West_
3/16" = 1'-0"



4 East_
3/16" = 1'-0"

MATERIAL SCHEDULE

LEGEND	SYMBOL	COLOR	MANUFACTURER	TYPE
	BRICK (BR-1)	HARBOURTOWN	HARBOURTOWN BRICK BY HEBRON	3 5/8"X2 1/4"X7 5/8"-SMOOTH FACE & MONOTONE PALLETE
	MORTAR	SOLOMON COLORS: GRAY	BMI OR APPROVED EQUAL	950 TYPE S /W WATER REPELLENT
	CONTROL JOINT SEALANT	COLOR: GRAY	DOW CORNING	DOW CORNING 790
	METAL COPING	COLOR: DARK BRONZE	PAC-CLAD PETERSEN	
	FIBER CEMENT PANEL (N-1)	ESPRESSO	NICHIHA ROUGH SAWN	
	CONTROL JOINT SEALANT	COLOR: BRONZE	DOW CORNING	DOW CORNING 790
	METAL COPING	COLOR: DARK BRONZE	PAC-CLAD PETERSEN	
	METAL CANOPY	DARK BROWN	SUPERSHADE BY MAPES ARCHITECTURAL CANOPIES OR APPROVED EQUAL	4' PROJECTION
	WALL PACK	BROWN	GE	EXTERIOR LED WALL PACK # EWLS01_15AF750
	STOREFRONT	DARK BRONW ANODIZED		CLEAR ANODIZED STOREFRONT WITH 1" INSULATED GLASS
	METAL DOORS AND FRAME	SEALSKIN SW7675	SHERWIN WILLIAMS	

CITY APPROVAL

CLIENT:
vequity real estate. redefined.

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400 N. State
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PROJECT TEAM:

ILEKIS architects + planners

ILEKIS ASSOCIATES
223 W. JACKSON BLVD.
SUITE 1000
CHICAGO, IL 60606

312-419-0009 www.ILEKIS.com

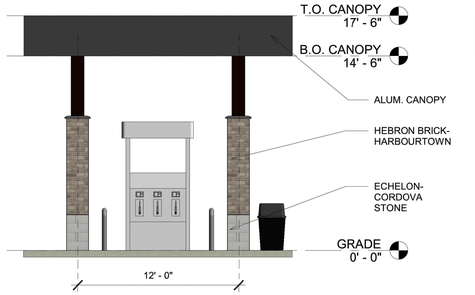
NOTE:

RETAIL BUILDING
PROJECT # 1814-20
17100 S HARLEM AVE
TINLEY PARK, IL 60477

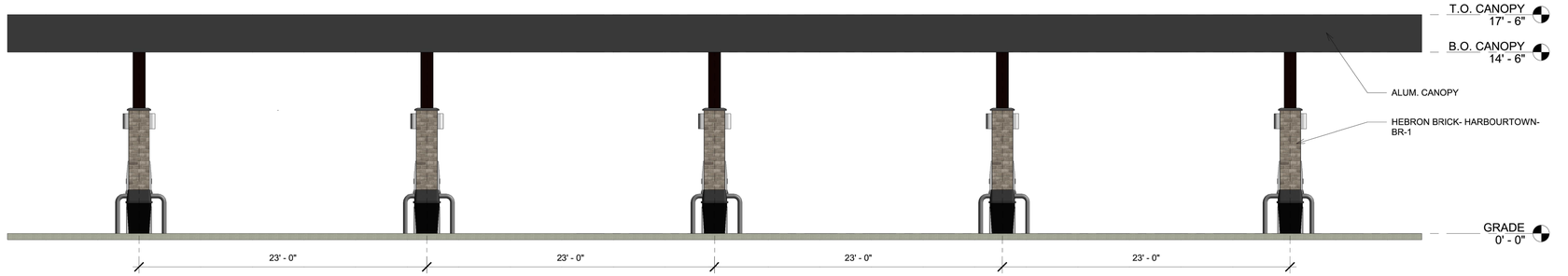
DATE:	ISSUED FOR:
11/22/19	ISSUED FOR CITY REVIEW
09/09/19	ISSUED FOR CITY REVIEW
08/22/19	ISSUED PER CITY COMMENTS
07/15/19	ISSUED FOR CITY REVIEW

EXTERIOR COLOR ELEVATIONS AND SCHEDULE

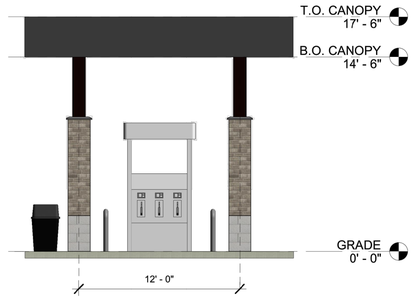
A3.02



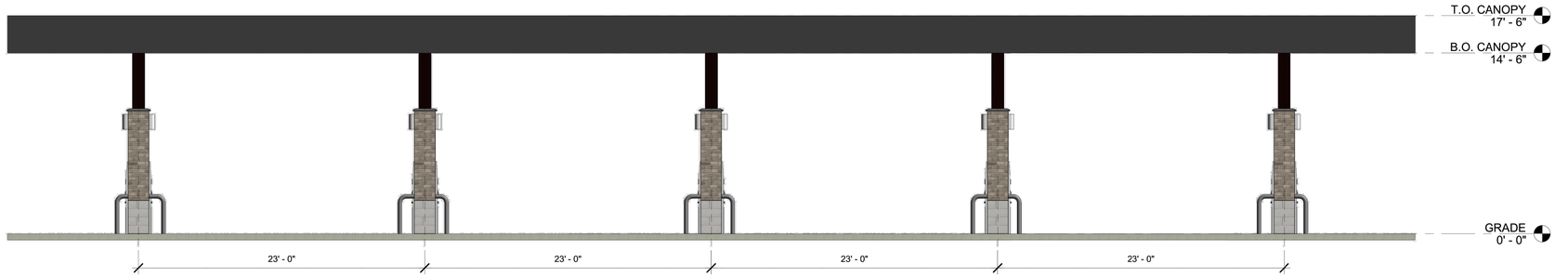
1 CANOPY - EAST ELEVATION
3/16" = 1'-0"



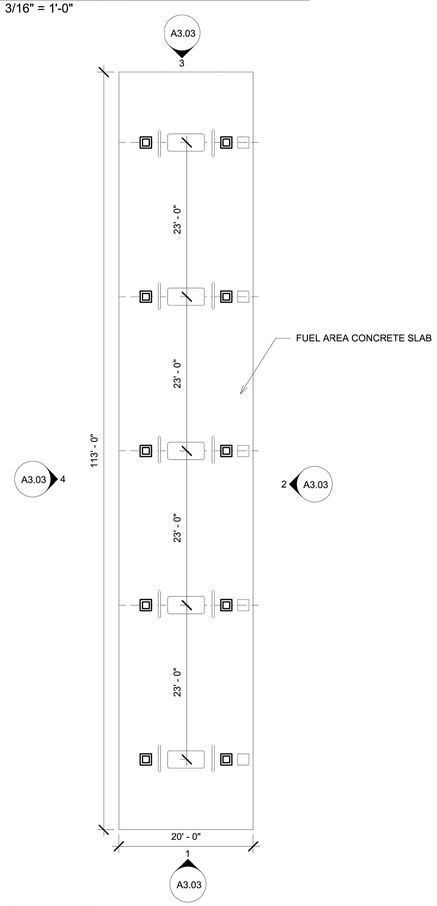
2 CANOPY - SOUTH ELEVATION
3/16" = 1'-0"



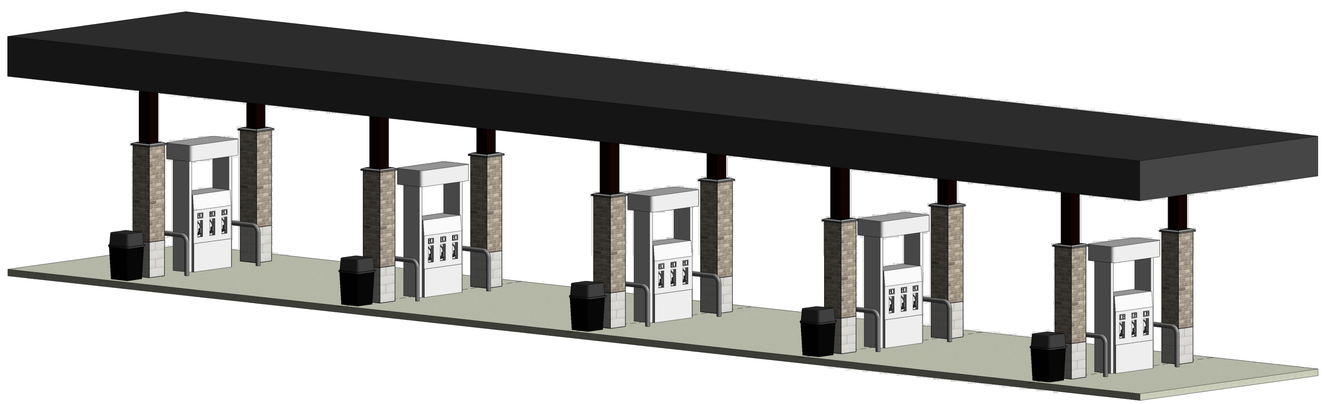
3 CANOPY - WEST ELEVATION
3/16" = 1'-0"



4 CANOPY - NORTH ELEVATION
3/16" = 1'-0"



5 CANOPY FLOOR PLAN
3/32" = 1'-0"



6 CANOPY PERSPECTIVE

NOTE: CANOPY UNDER SEPARATE PERMIT

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FUEL CANOPY ELEVATIONS

A3.03

1 3D VIEW
SCALE:

2 3D VIEW
SCALE:

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THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST OF MY KNOWLEDGE, COMPLY WITH THE APPLICABLE CODES AND BUILDING REGULATIONS.
ALPHONSE A. ILEKIS, AIA

NOTE:

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PROJECT # 1814-20
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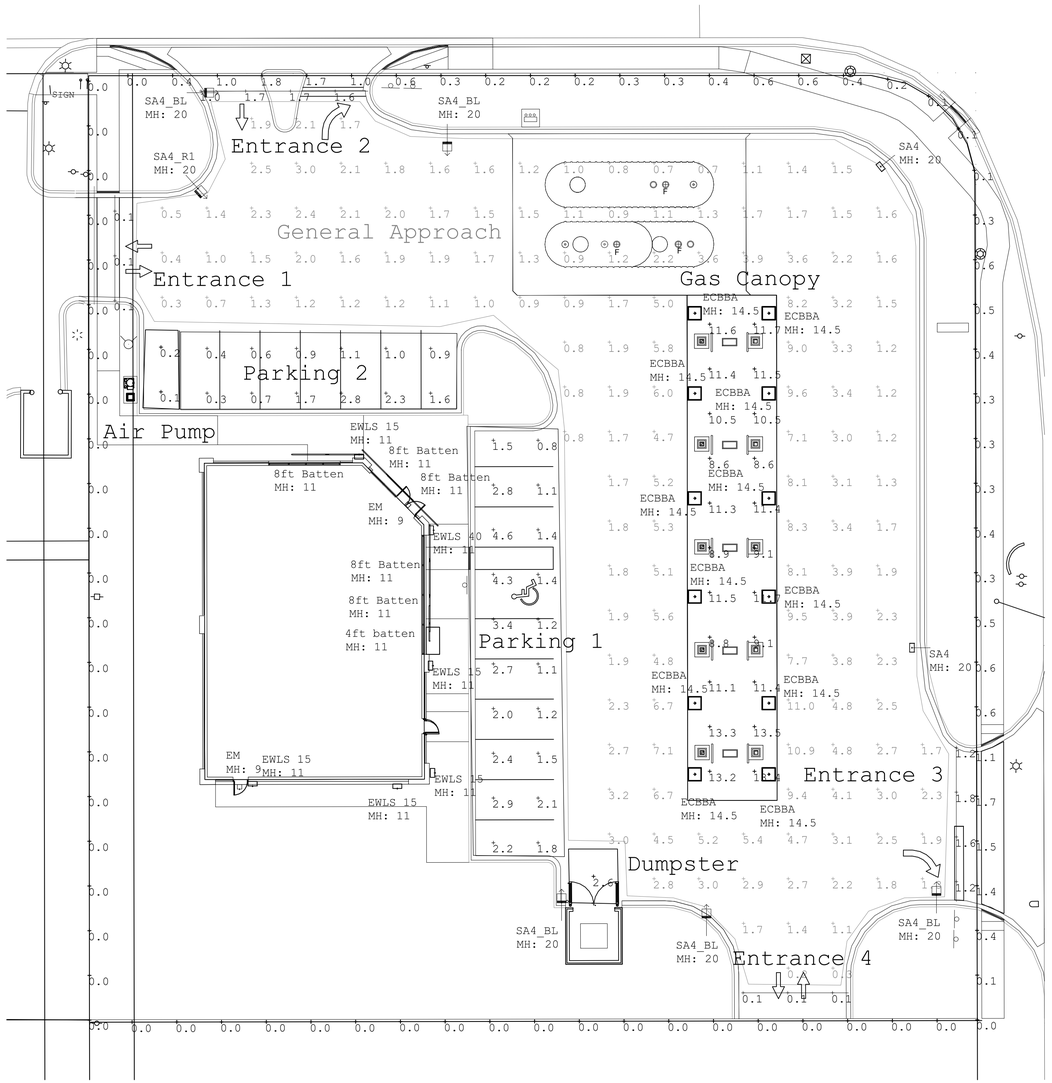
3D VIEWS

A3.04



NOTE: PHOTOMETRIC PLAN WAS DEVELOPED BY GE COMPANY.

NORTH

1 PHOTOMETRIC PLAN

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

0 4' 8 16' 32'

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PHOTOMETRIC PLAN

PH1.01

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LLF	Description	Arr. Watts	Arr. Lum. Lumens
	12	ECBBA	SINGLE	1.000	ECBB0A5F5501AWHTE	35	4230
	1	EWLS 40	SINGLE	1.000	EWLS01_40AF750_____-120-277V	37	4000
	5	EWLS 15	SINGLE	1.000	EWLS01_15AF750_____-120-277V	12	1500
	2	EM	SINGLE	0.010	LEDPRS-BR-CL (Phillips)	20	32
	5	8ft Batten	SINGLE	1.000	GE 96 4100K Batten Strip GEWI109641BAT-SY	33	3073
	1	4ft batten	SINGLE	1.000	GE 48 4100K Batten Strip GEWI104841BAT-SY	16.68	1536
	2	SA4	SINGLE	1.000	EASC_A4F550_____	44	4200
	5	SA4_BL	SINGLE	1.000	1-EASC0A4F550DC____D with ELSEASXRBLBLCK	44	4000
	1	SA4_R1	SINGLE	1.000	1-EASC0A4F550DC____D with ELSEASXRS1BLCK (Right)	44	2400

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Air Pump	Illuminance	Fc	0.15	0.2	0.1	1.50	2.00
Dumpster	Illuminance	Fc	2.60	2.6	2.6	1.00	1.00
Entrance 1	Illuminance	Fc	0.10	0.1	0.1	1.00	1.00
Entrance 2	Illuminance	Fc	1.50	1.7	1.0	1.50	1.70
Entrance 3	Illuminance	Fc	1.45	1.8	1.2	1.21	1.50
Entrance 4	Illuminance	Fc	0.10	0.1	0.1	1.00	1.00
Gas Canopy	Illuminance	Fc	11.00	13.5	8.6	1.28	1.57
General Approach	Illuminance	Fc	2.88	11.0	0.2	14.40	55.00
Parking 1	Illuminance	Fc	2.12	4.6	0.8	2.65	5.75
Parking 2	Illuminance	Fc	1.19	2.8	0.3	3.97	9.33
Property Line	Illuminance	Fc	0.27	1.8	0.0	N.A.	N.A.

Poles cannot be placed in tree islands. Residential areas located to the West and South, therefore, the property line has to be 0FC.

Due to the above, this design does not meet 7-Eleven spec.

Standard 7-Eleven Lighting Specification	
Entrances	10FC AVG
Air Pump	10FC
Gasoline Canopy	30FC
Dumpster	10FC
Parking	10FC
General Approach	3FC
Sidewalk	NO SPEC
Property Line	NO SPEC
* Levels designed to be at initial output or 1.0LLF	

NOTE: PHOTOMETRIC PLAN WAS DEVELOPED BY GE COMPANY.

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NOTE:

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PHOTOMETRIC SCHEDULES

PH1.02

NEW CORPORATE 7ELEVEN PROTOTYPE (EXTERIOR)

NEW CORPORATE 7ELEVEN PROTOTYPE (INTERIOR)

FINAL ENGINEERING PLANS

FOR

PROPOSED FUEL CENTER - TINLEY PARK

AT

17100 S. HARLEM AVENUE
VILLAGE OF TINLEY PARK
COOK COUNTY, ILLINOIS

INDEX

CIVIL ENGINEERING PLANS		REVISIONS						
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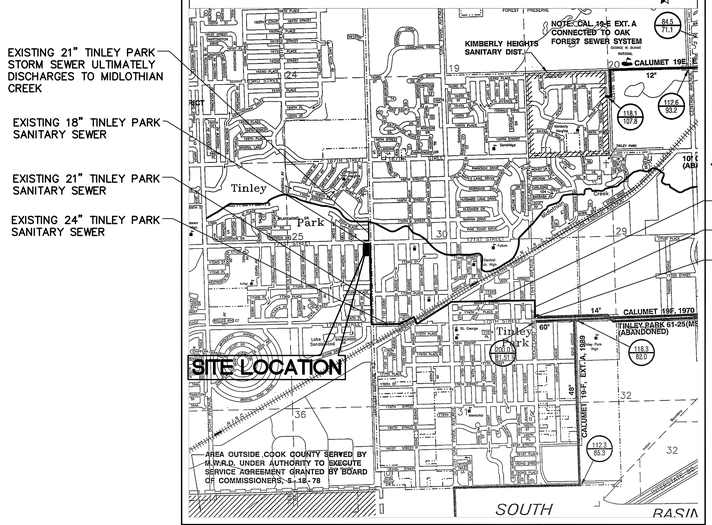
C-1.1	DEMOLITION PLAN	X		X				
C-2	GEOMETRIC PLAN	X	X	X				
C-3	GRADING PLAN	X	X	X				
C-4	ACCESSIBLE ROUTE GRADES AND DETAILS	X	X	X				
C-5	UTILITY PLAN	X	X	X				
C-6	PHASE 1 SOIL EROSION CONTROL PLAN			X				
C-7	PHASE 2 SOIL EROSION CONTROL PLAN		X	X				
C-8	SOIL EROSION CONTROL DETAILS AND SPECS							
C-9	PROJECT DETAILS	X						
C-10	PROJECT SPECIFICATIONS	X						
C-11	MWRD GENERAL NOTES							
C-12	IDOT DETAILS 1							
C-13	IDOT DETAILS 2							
C-14	IDOT DETAILS 3							
C-15	DOT DETAILS			X				

SUPPORTING DOCUMENTS		REVISIONS						
		1	2	3	4	5	6	7
1 of 1	LAND TITLE SURVEY	X						
L-1	LANDSCAPE PLAN	X	X	X				
L-2	LANDSCAPE DETAILS AND SPECIFICATIONS		X					
1 of 1	MWRD DRAINAGE EXHIBIT		X	X				

NOTE: THE DESIGNS CONTAINED IN THE ABOVE PLANS AND SUPPORTING DOCUMENTS WERE PREPARED WITH THE UNDERSTANDING THAT THEY WOULD BE USED AS A WHOLE PLAN SET. EACH CONSTRUCTION DISCIPLINE IS TO USE ALL THE PLANS AND SUPPORTING DOCUMENTS TOGETHER AS A WHOLE AND NOT AS SEPARATE DOCUMENTS. EACH CONTRACTOR IS TO BECOME COMPLETELY FAMILIAR WITH THE WHOLE PLAN SET AND THE EXISTING SITE CONDITIONS. SHOULD ANYTHING WITH ALL THESE PLANS AND SUPPORTING DOCUMENTS BE INCONSISTENT WITH THE SITE CONDITIONS THEN THE CONTRACTOR IS TO CONTACT THE ENGINEER IMMEDIATELY BEFORE ANY CONSTRUCTION IS STARTED.

LOCATION MAP



SECTION: 25	TOWNSHIP: 36N	RANGE: 12E

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	CATCH BASIN	
	INLET	
	STORM MANHOLE	
	SANITARY MANHOLE	
	VALVE VAULT	
	FIRE HYDRANT	
	FLARED END SECTION	
	ELECTRICAL POWER POLE	
	OVERHEAD TRAFFIC SIGNAL	
	TRAFFIC SIGNAL MANHOLE	
-OHW-	OVERHEAD ELECTRIC WIRES	-OHW-
	TRANSFORMER PAD	
	TELEPHONE PEDESTAL	
	TELEPHONE MANHOLE	
	CABLE TELEVISION PEDESTAL	
	COMMONWEALTH EDISON MANHOLE	
	B/BOX	
	LIGHT POLE	
	SIGN	
	BOLLARD POLE	
	GAS MARKER	
	ELECTRIC MARKER	
	TELEPHONE MARKER	
-W-	WATER MAIN	-W-
-G-	GAS MAIN	-G-
-E-	ELECTRIC LINE	-E-
-T-	TELEPHONE LINE	-T-
-C-	CABLE TV LINE	-C-
SAN	SANITARY SEWER	SAN
STM	STORM SEWER	STM
	GUY POLE	
	CONIFEROUS TREE W/DIAMETER	
	DECIDUOUS TREE W/DIAMETER	
	WOOD FENCE	
	CHAIN LINK FENCE	
	METAL GUARDRAIL	
	CONCRETE SURFACE	
XXX	CONTOUR LINE	XXX
	FINISHED FLOOR ELEVATION	FF
	PAVEMENT ELEVATION	P
	MATCH EXISTING ELEVATION	ME
	GROUND ELEVATION	G
	TOP OF WALK ELEVATION	TW
	TOP OF RETAINING WALL ELEVATION	TRW
	FLOW LINE ELEVATION	FL
	TOP OF CURB ELEVATION	TC
	RIM ELEVATION	R
	DOWNSPOUT LOCATION	D.S.
	PERVIOUS AREA SLOPE DIRECTION	
	PAVEMENT SLOPE DIRECTION	
	OVERLAND OVERFLOW DIRECTION	
	INLET PROTECTION	
	INLET BASKET FILTER	

BENCHMARK

REFERENCE BENCHMARK

NGS DESIGNATION – DK2006 DATUM: NAVD88

PIN – DN4693

STATION IS 39 FEET WEST OF THE CENTERLINE OF WILL/COOK ROAD, 54 FEET SOUTH OF THE CENTERLINE OF 167TH STREET, 10 FEET WEST OF A TRAFFIC SIGNAL HAND HOLE AND 1 FOOT NORTHEAST OF AN ORANGE CARSONITE MARKER. ACCESS TO THE DATUM POINT IS THROUGH A 6 INCH LOGO CAP AND THE ROD (DATUM POINT) IS SURROUNDED BY A FLOATING BRONZE DISK TO AID IN IDENTICATION.

ELEVATION = 751.92

SITE BENCHMARK

SITE BENCHMARK 1 – CROSS CUT ON TRAFFIC SIGNAL MANHOLE

ELEVATION = 700.19

SITE BENCHMARK 2 – SOUTHWEST BOLT OF FIRE HYDRANT

ELEVATION = 700.71

I, WILLIAM H. PERRY, HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THE DESIGN PLANS ARE IN COMPLIANCE WITH ALL APPLICABLE STATE, COUNTY AND VILLAGE ORDINANCES WITH REGARD TO DRAINAGE AND THAT THE PROJECT WILL NOT CHANGE DRAINAGE OF SURFACE WATERS, AND WILL NOT INCREASE THE LIKELIHOOD OF FLOODING THE NEIGHBORING PROPERTIES.

DATE:

STATE OF ILLINOIS) SS
COUNTY OF KANE)

I, WILLIAM H. PERRY, A LICENSED PROFESSIONAL ENGINEER OF ILLINOIS, HEREBY CERTIFY THAT THESE CIVIL ENGINEERING PLANS, NOT THE SUPPORTING DOCUMENTS, AS LISTED IN THE INDEX, HAVE BEEN PREPARED BY WATERMARK ENGINEERING RESOURCES, LTD. UNDER MY PERSONAL DIRECTION. THESE PLANS ARE INTENDED TO BE USED AS AN INTEGRAL PART OF THE PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS.

DATE:

ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 62-055801.
MY LICENSE EXPIRES ON 11-30-21.

UNLESS THIS DOCUMENT BEARS ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE DESIGN ENGINEER, IT IS NOT A VALID DOCUMENT.

ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO. 184.002989

Call Before You Dig
JULIE ILLINOIS ONE-CALL SYSTEM
Simply Call 811

NO.	REVISIONS	DATE
1	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	8/22/19
2	PER CLIENT REQUEST	9/5/19
3	PER CLIENT REQUEST	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

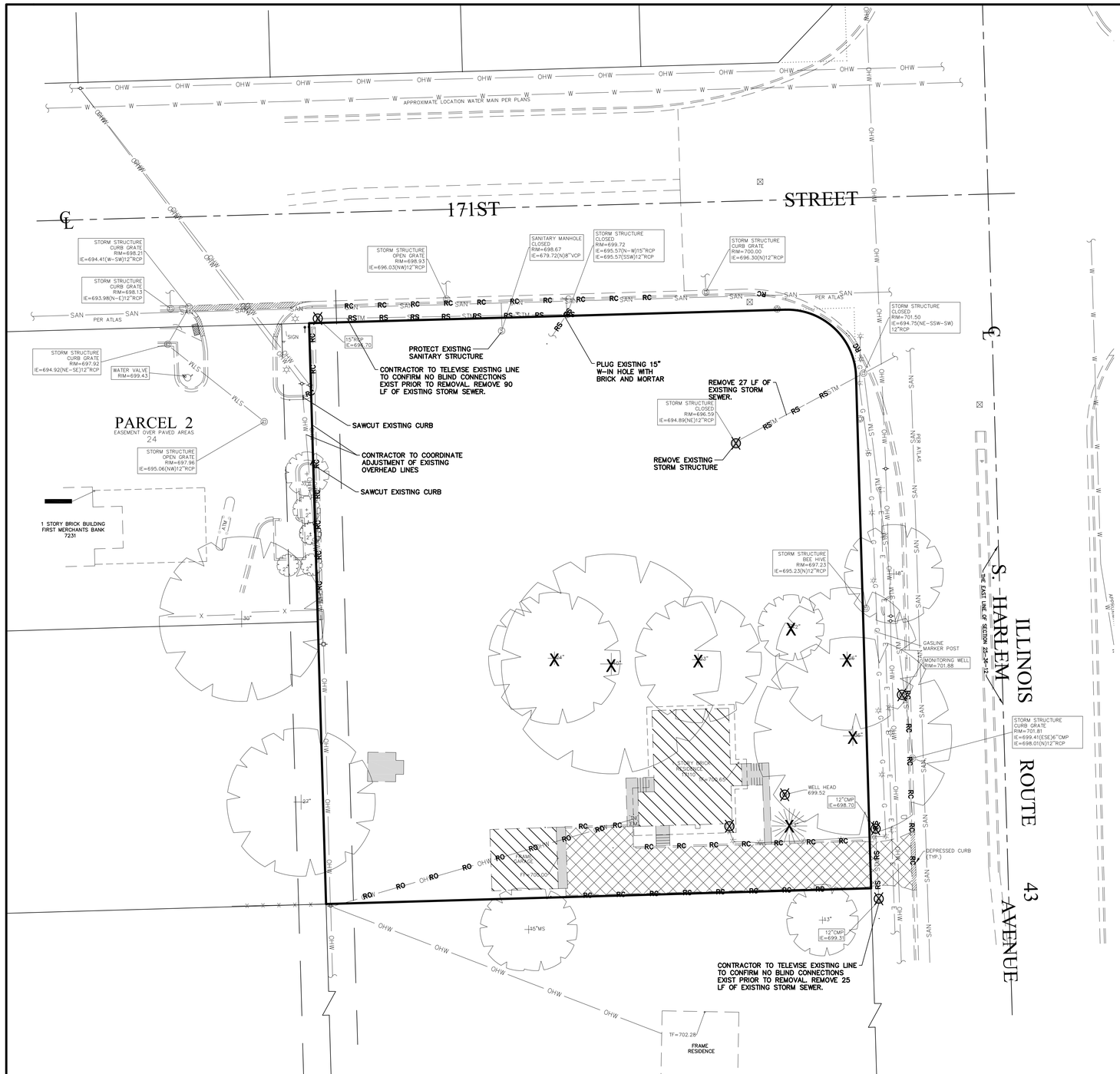
Prepared By:

Watermark Engineering Resources, LTD
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-9800 www.watermark-engineering.com

CHECKED BY:	B. PERRY
DESIGN BY:	S. SIMAK
DRAWN BY:	S. SIMAK
DATE:	JULY 5, 2019
SCALE:	NONE
PROJECT NO.:	19-005

COVER SHEET

C-1



DEMOLITION LEGEND

- REMOVE EXISTING ASPHALT (FULL DEPTH)
- REMOVE EXISTING CONCRETE (FULL DEPTH)
- REMOVE EX. BUILDING AND FOUNDATION (COMPLETE)
- RC RC RC RC RC RC RC = REMOVE EXISTING CURB AND GUTTER (TYP.)
- RE RE RE RE RE RE RE = REMOVE EXISTING ELECTRIC LINE (TYP.)
- RG RG RG RG RG RG RG = REMOVE EXISTING GAS LINE (TYP.)
- RO RO RO RO RO RO RO = REMOVE EXISTING OVERHEAD WIRES (TYP.)
- RS RS RS RS RS RS RS = REMOVE EXISTING SEWER LINE (TYP.)
- RT RT RT RT RT RT RT = REMOVE EXISTING TELEPHONE LINE (TYP.)
- RW RW RW RW RW RW RW = REMOVE EXISTING WATERLINE (TYP.)
- = REMOVE EXISTING OBJECT (UTILITY POLES, GUY WIRES, LIGHTS, MANHOLES, SIGNS, ETC.) (TYP.)
- X = REMOVE EXISTING TREE INCLUDING STUMP AND STUMP GRINDINGS/REMOVE BUSH. SEE LATEST TREE PRESERVATION PLAN FOR DETAILS.
- P = PROTECT EXISTING TREE. SEE LATEST TREE PRESERVATION PLAN FOR DETAILS.

GENERAL NOTES:

1. THESE PLANS ARE BASED ON THE ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY (SURVEY PROJECT #19.0018 DATED 01/22/19) PREPARED BY: COMPASS SURVEYING LTD 2631 GINGER WOODS PARKWAY, STE 100, AURORA, IL 60502 (630) 820-9100
2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY IF STOCKPILES WILL BE ALLOWED ON SITE. COORDINATE WITH PROJECT MANAGER FOR THE PLACEMENT OF MATERIAL STOCKPILES IF PERMITTED. ALL MATERIALS ARE TO BE STOCKPILED SEPARATELY FOR USE IN PREPARING THE BUILDING PAD AND PAVEMENT SUB-BASE IF APPROVED BY TESTING COMPANY AS SUPPLIED BY THE OWNER.
2. USE OF CONCRETE AS BACKFILL SHALL BE APPROVED BY THE VILLAGE ENGINEER BASED ON THE TEST RESULTS SUBMITTED CONFIRMING IT MEETS THE PROPER GRADATION. ALL CONCRETE TO BE PULVERIZED TO 3" MAXIMUM PIECES. MATERIALS MAY BE STOCKPILED (SEPARATELY) AND USED FOR BACKFILL AT A LATER DATE IF APPROVED BY TESTING COMPANY IF FUNDED BY THE OWNER.
3. USE OF MILLINGS IN UNDERCUT AREAS SHALL BE APPROVED BY THE VILLAGE ENGINEER BASED ON THE TEST RESULTS SUBMITTED CONFIRMING IT MEETS THE PROPER GRADATION. ASPHALT MILLINGS MAY BE USED IN UNDERCUT AREAS ONLY IF THEIR GRADATION EQUALS CA-6 AND IF APPROVED BY TESTING COMPANY IF FUNDED BY THE OWNER.
4. ALL EXISTING UTILITIES ARE TO BE REMOVED WHERE INDICATED.
5. CONTRACTOR TO COORDINATE WITH ALL UTILITY COMPANIES.
6. CONTRACTOR IS TO PREVENT MATERIALS FROM ENTERING THE STORM EXISTING STORM AND SANITARY SEWERS. REQUIRED FABRICS SHALL BE PLACED OVER ALL DRAINAGE STRUCTURES PRIOR TO BEGINNING WORK.
7. MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION.
8. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR DEMOLITION INCLUDING, BUT NOT LIMITED TO WORK IN COOK COUNTY RIGHT OF WAY, NPDES, VILLAGE OF TINLEY PARK, IDOT RIGHT OF WAY.
9. CONTRACTOR TO VERIFY ALL QUANTITIES PRIOR TO BIDDING AND SHALL INFORM OWNER/ENGINEER OF ANY DISCREPANCIES.
10. CONTRACTOR TO CONTACT OWNER/ENGINEER TO DISCUSS ANY QUESTIONS OR DISCREPANCIES FOUND ON SITE PRIOR TO ANY CONSTRUCTION. EXISTING UTILITIES ENCOUNTERED THAT ARE NOT SHOWN ON THIS PLAN SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER/OWNER IMMEDIATELY IN ORDER TO MAKE A DECISION. PROVIDE ITEMIZED FEE FOR UTILITY REMOVAL (LINEAL FOOT) IN BID.
11. CONTRACTOR SHALL REMOVE ALL ABOVE GROUND STRUCTURES TO GRADE.
12. CONTRACTOR SHALL REMOVE ALL FOOTINGS, FOUNDATIONS, AND BELOW GRADE CONCRETE OR OTHER OBSTRUCTIONS TO FULL DEPTH. ALL ITEMS SHALL BE REMOVED FROM THE JOB SITE.
13. ALL SANITARY AND WATER SERVICES SHALL BE REMOVED AND CAPPED AT THE PROPERTY LINE UNLESS OTHERWISE NOTED.
14. CONTRACTOR SHALL REFERENCE LANDSCAPE PLAN AND/OR TREE PRESERVATION PLAN FOR ALL PLANT MATERIAL. NOTES SHOWN ON THIS PLAN REGARDING LANDSCAPING ARE FOR REFERENCE ONLY. DETAILED INFORMATION REGARDING THE EXISTING PLANT MATERIALS IS SHOWN ON THOSE PLANS AND SHALL BE FOLLOWED.
15. ALL ITEMS LABELED "PROTECT" SHALL BE PROTECTED AND SHALL NOT BE REMOVED OR ALTERED AS THEY ARE TO BE RE-USED IN THE PROPOSED DEVELOPMENT.
16. THE PLAN IS NOT INTENDED TO DICTATE MEANS AND METHODS, BUT RATHER CLARIFY WHICH EXISTING IMPROVEMENTS SHALL BE PROTECTED AND WHICH SHALL BE REMOVED OR ABANDONED AND THE EXTENT TO WHICH THEY SHALL BE REMOVED OR ABANDONED.

IDOT ROW IL-43 (HARLEM AVENUE)

REMOVALS	
ASPHALT	260 SF
CURB AND GUTTER	100 LF
STORM SEWER	25 LF
REPLACEMENTS	
SIDEWALK	730 SF
CONCRETE	630 SF
CURB AND GUTTER	100 LF

20 0 10 20 40 80

DEMOLITION PLAN

NO.	REVISIONS	DATE
1	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	8/22/19
2	NO REVISIONS	9/5/19
3	PER CLIENT REQUEST	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

Watermark Engineering Resources, LTD
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
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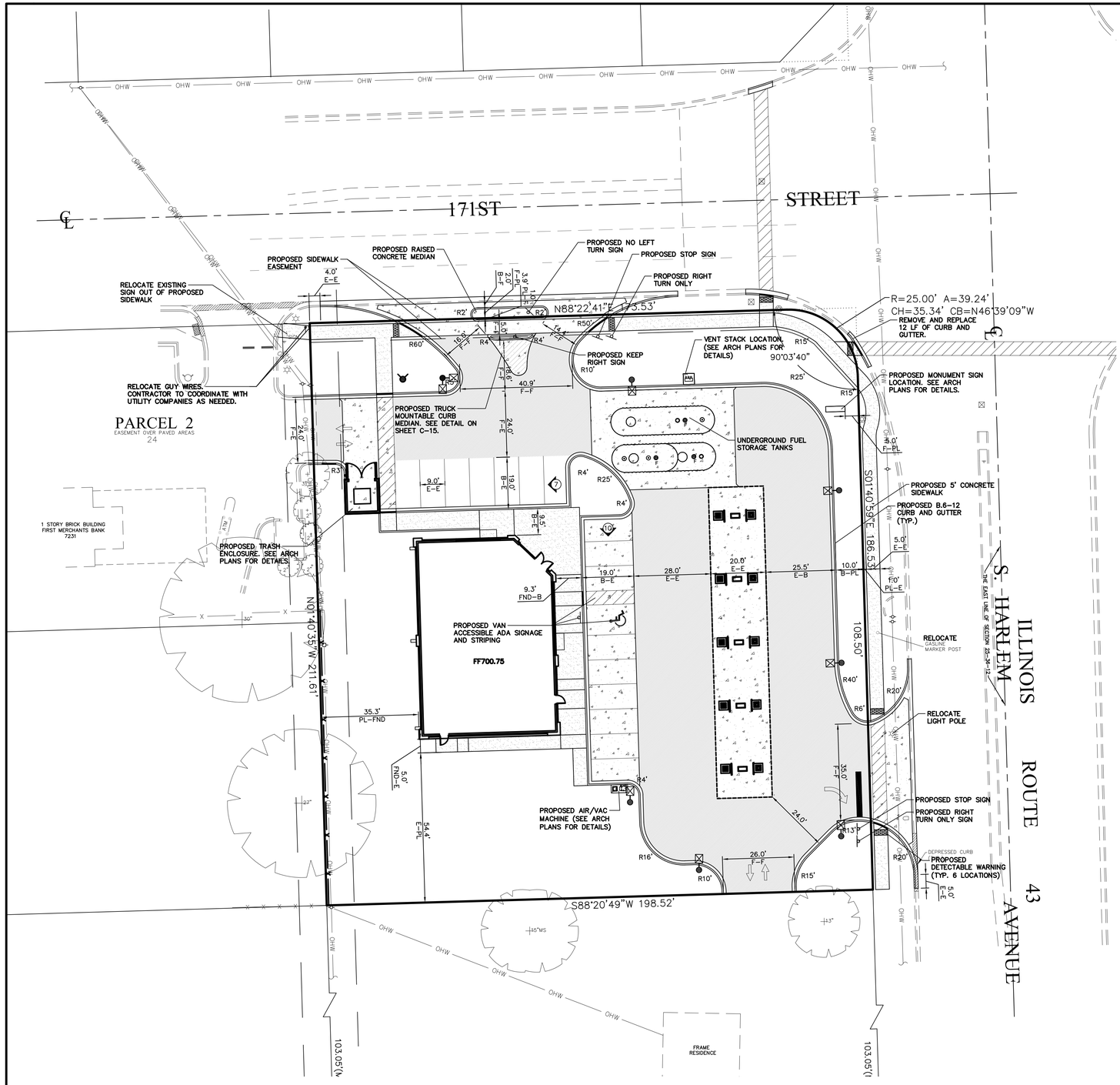
CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: 1" = 20'
PROJECT NO.: 19-005

C-1.1

DEMOLITION PLAN



GENERAL NOTES:
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2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

ON SITE PARKING DATA

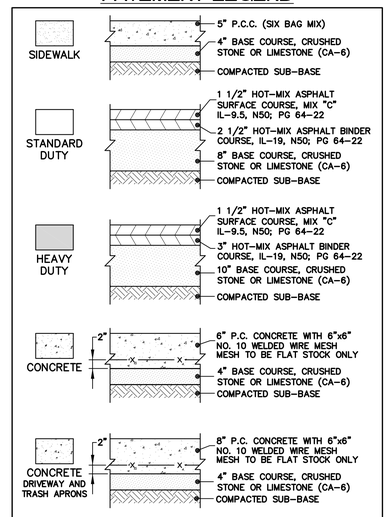
REGULAR SPACES	16
ADA ACCESSIBLE SPACES	1
TOTAL SPACES	17

SITE DATA

LOT AREA	=	41,852 S.F.	(.961 AC.)
IMPERVIOUS AREA	=	27,222 S.F.	(.625 AC.)(65%)
PERVIOUS AREA	=	14,630 S.F.	(.336 AC.)(35%)
BUILDING AREA	=	3,500 S.F.	

GEOMETRIC PLAN NOTES:
1. PROPOSED IMPROVEMENTS ARE PARALLEL AND PERPENDICULAR TO THE WESTERN PROPERTY LINE.
2. ALL RADIUS DIMENSIONS ARE TO BACK OF CURB.
3. SEE ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
4. ALL STRIPING TO BE DOUBLE COATED 4" YELLOW PAINT UNLESS OTHERWISE NOTED.
5. WHERE PEDESTRIANS HAVE TO CROSS A TAPERING RAMP OR CURB RAMP THE FACE AND TOP OF CURB ARE TO BE PAINTED USING YELLOW, SLIP RESISTANT PAINT.

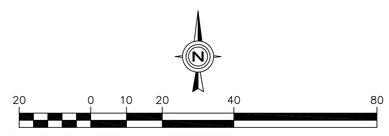
PAVEMENT LEGEND



NOTES:
1. REFERENCE I.D.O.T. STANDARD SPECIFICATIONS (LATEST EDITION) SECTION 406 FOR BINDER & SURFACE COURSES AND SECTION 351 FOR AGGREGATE BASE COURSE.
2. THE APPLICATION RATES FOR THE PRIME COAT AND TACK COAT ARE TO BE 0.30 AND 0.10 GALLONS PER SQUARE YARD, RESPECTIVELY.
3. SEE PROJECT SPECIFICATIONS FOR SUB-BASE AND BASE COURSE COMPACTION.
4. ALL CONCRETE FLATWORK TO INCLUDE A JOINTING PATTERN SUBMITTAL TO THE CONSTRUCTION MANAGER. CONTRACTOR TO STAY AS CLOSE TO 9'x9' SQUARE PANELS IN LARGE CONCRETE FLATWORK AREAS AS POSSIBLE.
5. FOR SIDEWALKS, PROVIDE TOOLED JOINTS AT 5' O.C., CONTRACTION JOINTS AT 15' O.C., EXPANSION JOINTS AT 45' O.C.
6. PROVIDE AN EXPANSION JOINT ADJACENT TO ALL STRUCTURES. THESE JOINTS SHOULD BE SEALED WITH A TOOL-FINISHED SILICONE SEALANT PER I.D.O.T. STANDARD.

DIMENSION LEGEND

F	= FACE	FNC	= FENCE
FND	= FOUNDATION	R	= RADIUS
B	= BACK	C	= CENTER
E	= EDGE	PL	= PROPERTY LINE



GEOMETRIC PLAN

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Prepared For:

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Prepared By:

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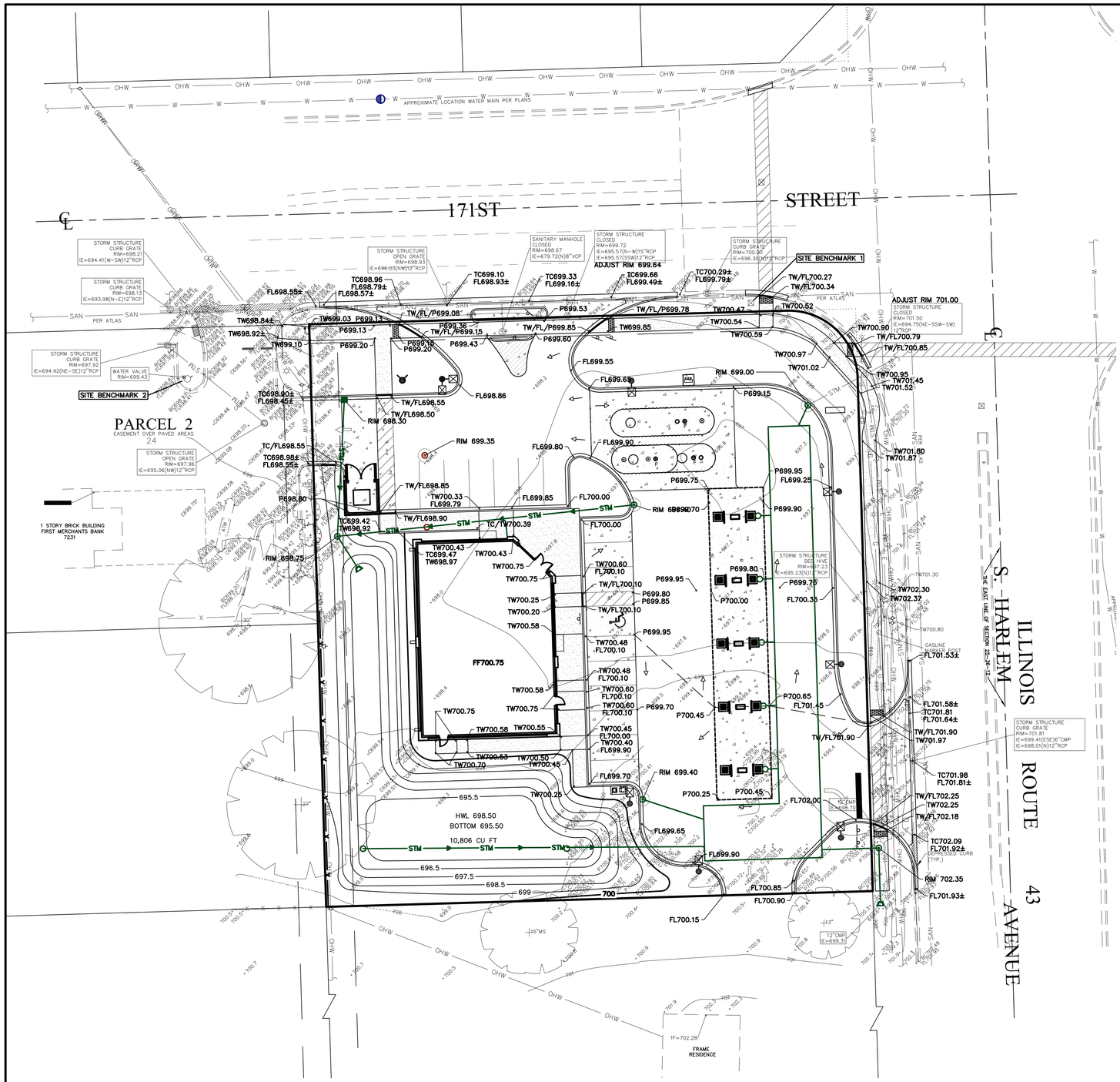
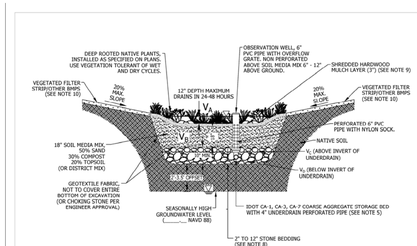
CHECKED BY: B. PERRY
DESIGN BY: S. SMAK
DRAWN BY: S. SMAK
DATE: JULY 5, 2019
SCALE: 1" = 20'
PROJECT NO.: 19-005

C-2

GEOMETRIC PLAN





BOTTOM OF THE FACILITY:	ELEV. 695.50
SEASONALLY HIGH GROUNDWATER:	ELEV. _____
SEPARATION:	FEET _____

VOLUME TYPE	SURFACE AREA	DEPTH	POROSITY	STORAGE VOLUME	VOLUME PROVIDED
V_A : SURFACE STORAGE	2,304	1	1.00	1.00 X V_A	2,304
V_B : SOIL MEDIA MIX			0.25	0.50 X 0.25 X V_B	
V_C : COARSE AGGREGATE (ABOVE INVERT)			0.36	0.50 X 0.36 X V_C	
V_D : COARSE AGGREGATE (BELOW INVERT)			0.36	0.36 X V_D	
				TOTAL	2,304

NOTES:
1. THE PERIMETER OF THE VOLUME CONTROL FACILITY SHALL MAINTAIN THE MINIMUM HORIZONTAL SEPARATION DISTANCE OF: 10-FEET FROM FOUNDATIONS, UNLESS WATERPROOFED; 20-FEET FROM ROADWAY GRAVEL SHOULDER; AND 100-FEET FROM POTABLE WATER WELLS, SEPTIC TANKS/FIELDS, OR OTHER UNDERGROUND TANKS.
2. SANITARY OR COMBINED SEWERS SHALL NOT BE LOCATED WITHIN THE VOLUME CONTROL FACILITY. SANITARY OR COMBINED SEWERS SHALL NOT BE LOCATED BELOW THE FOOTPRINT OF THE VOLUME CONTROL FACILITY. WHEN LOCAL CONDITIONS PREVENT THE SEWER FROM BEING LOCATED OUTSIDE THE FOOTPRINT OF THE FACILITY THE SEWER SHALL BE CONSTRUCTED TO WATER MAIN QUALITY STANDARDS, OR IT SHALL BE ENCASED WITH A WATER MAIN QUALITY CARRIER PIPE WITH THE ENDS SEALED.
3. AVOID INSTALLATION ON SLOPES GREATER THAN 3.00%. AVOID COMPACTING NATIVE SOILS. SCARIFY ANY COMPACTED SOIL.
4. GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS OF IDM MATERIAL SPECIFICATION 592. FOR WOVEN: APPARENT OPENING SIZE OF 0.50 MM (TABLE 1, CLASS I). FOR NON WOVEN: APPARENT OPENING SIZE OF 0.30 MM (TABLE 2, CLASS II).
5. STONE STORAGE OPTIONS ARE IDOT CA-1, CA-3, CA-7, DISTRICT VULCAN MIX, OR APPROVED ALTERNATE. NO RECYCLED MATERIALS.
6. MINIMUM DISTANCE OF 2 FEET (3.5 FEET IN COMBINED SEWER AREAS) BETWEEN BOTTOM OF BMP AND SEASONALLY HIGH GROUNDWATER LEVEL.
7. UNDERDRAINS ARE REQUIRED IN TYPICAL CLAYEY SOILS WHERE INFILTRATION RATES ARE LESS THAN 0.5 INCH/HOUR. NO MORE THAN 1 UNDERDRAIN EVERY 30 FEET ON CENTER. PROVIDE A SOIL REPORT DOCUMENTING NATIVE INFILTRATION RATE TO FOREGO UNDERDRAINS. NO FILTER FABRIC OVER/SOCK.
8. MINIMUM UNDERDRAIN BEDDING OF 2 INCHES, MAXIMUM OF 12 INCHES.
9. MULCH LAYER SHALL BE HARDWOOD MULCH OR OTHER NON-FLOATING GROUND COVER.
10. FOLLOW THE REQUIRED PRETREATMENT MEASURES LISTED ON THE VOLUME CONTROL PRETREATMENT MEASURES DETAIL.

NOT TO SCALE

TECHNICAL GUIDANCE MANUAL — 10/1/19
BIORETENTION FACILITY DETAIL — STD. DWG. NO.1
PAGE NO.1

GENERAL NOTES:

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REFERENCE BENCHMARK

NGS DESIGNATION – DK2006 PIN – DN4691

STATION IS 39 FEET WEST OF THE CENTERLINE OF WILL/COOK ROAD, 54 FEET SOUTH OF THE CENTERLINE OF 167TH STREET, 10 FEET WEST OF A TRAFFIC SIGNAL HAND HOLE AND 1 FOOT NORTHEAST OF AN ORANGE CARSONITE MARKER. ACCESS TO THE DATUM POINT IS THROUGH A 6 INCH LOGO CAP AND THE ROD (DATUM POINT) IS SURROUNDED BY A FLOATING BRONZE DISK TO AID IN IDENTIFICATION.

DATUM: NAVD 88 ELEVATION = 751.92

SITE BENCHMARKS

1. SITE BENCHMARK 1 – CROSS CUT ON TRAFFIC SIGNAL MANHOLE. ELEVATION = 700.19
2. SITE BENCHMARK 2 – SOUTHWEST BOLT OF FIRE HYDRANT ELEVATION = 700.71

GRADING PLAN NOTES:

1. UNLESS OTHERWISE SPECIFIED, TOP OF CURB (TC) AND/OR TOP OF WALK ELEVATIONS ARE 0.5' HIGHER THAN THE ADJACENT FLOW LINE (FL) OR PAVEMENT (P) ELEVATIONS.
2. IN ALL LOCATIONS WHERE ELEVATIONS ARE SHOWN AS ±, THE ELEVATION HAS BEEN DETERMINED BASED ON INTERPOLATED GRADES FROM THE SURVEY. CONTRACTOR IS TO VERIFY THESE GRADES PRIOR TO CONSTRUCTION OF ANY IMPROVEMENTS WITHIN THE PROXIMITY OF THESE INTERPOLATED GRADES AND REPORT THEM TO THE DESIGN ENGINEER FOR VERIFICATION OF PROPOSED SLOPES PRIOR TO INSTALLATION OF PROPOSED IMPROVEMENTS. DESIGN ENGINEER IS NOT RESPONSIBLE FOR SLOPES OF PROPOSED IMPROVEMENTS BASED ON THESE ± GRADES WITHOUT CONFIRMATION OF EXISTING ELEVATIONS AT TIME OF CONSTRUCTION.
3. PAVING, SIDEWALK, AND CURBING IS NOT TO BE INSTALLED IN SUCH A WAY THAT IT WILL BLOCK THE FLOW OF WATER AWAY FROM THE BUILDING INCLUDING BUT NOT LIMITED TO WEEP HOLES, WICKS, DRAINAGE SCUPPERS OR PIPES, AND LANDSCAPING.

MWRD BMP CALCULATION

PER MWRD REGULATIONS, STORMWATER DETENTION IS NOT REQUIRED FOR THIS SITE AS THE TOTAL CONTIGUOUS OWNERSHIP IS LESS THAN 3 ACRES. THE DEVELOPMENT INCLUDES A DISTURBED AREA OF GREATER THAN 0.5 ACRES. THEREFORE, VOLUME CONTROL IS REQUIRED. THE PROPOSED USE IS A FUEL CENTER. PER MWRD CRITERIA, THE AREAS THAT COULD RECEIVE FUEL SPILLS ARE TO BE CONTROLLED WITH A FLOW THROUGH DEVICE. A SNOUT WITH SKIRT ARE PROVIDED FOR THIS PURPOSE. VOLUME CONTROL FOR THE AREAS THAT WOULD NOT SEE FUEL SPILLS (ROOF, CANOPY, PAVEMENT NORTH OF THE RIDGELINE) IS PROVIDED IN THE BIOSWALE LOCATED EAST OF THE BUILDING.

* SITE AREA = 0.961 ACRES
  PROPOSED IMPERVIOUS AREA = 0.625 AC

* FUEL CENTER AREA SHALL BE CAPTURED WITHIN STORM SEWERS AND TREATED WITH A FLOW THROUGH DEVICE BEFORE ENTERING THE DOWNSTREAM STORM SEWER.

* BIOINFILTRATION TRENCH PROVIDES VOLUME CONTROL
  AREA = 27,222 SF
  CAPTURE DEPTH = 1 INCH
  VOLUME REQUIRED = 27,222 X 1/12 = 2,269 CF
  VOLUME PROVIDED = 3,210 CF
  *SEE DETAIL ON THIS SHEET FOR DETAILS.

*TOTAL VOLUME CONTROL
  VOLUME CONTROL REQUIRED = 2,269 CF
  TOTAL VOLUME CONTROL PROVIDED = 2,304 CF

20 0 10 20 40 80

GRADING PLAN

NO.	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	DATE
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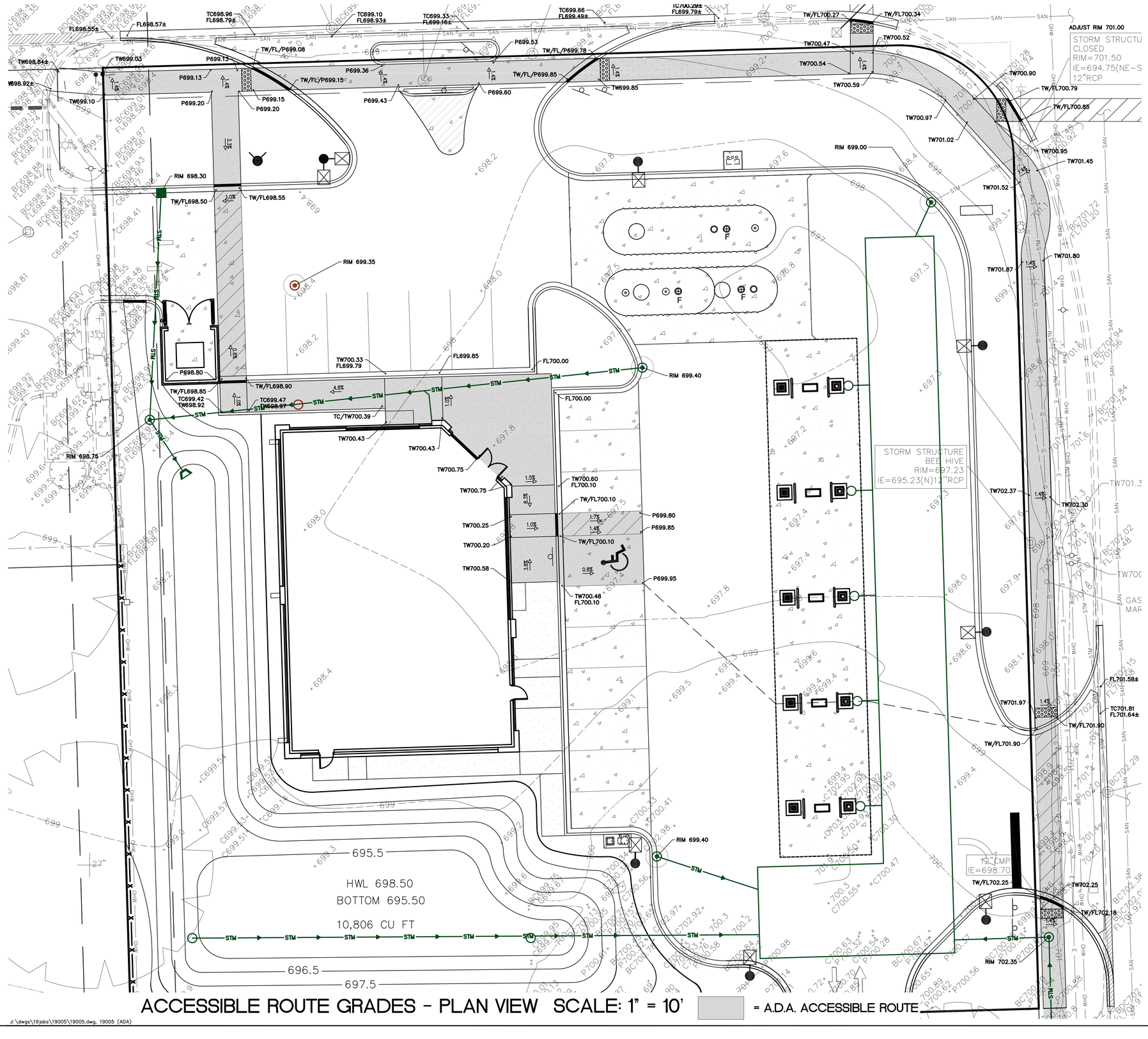
CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: 1" = 20'
PROJECT NO.: 19-005

C-3

GRADING PLAN



ACCESSIBLE ROUTE GRADES - PLAN VIEW SCALE: 1" = 10'

= A.D.A. ACCESSIBLE ROUTE

J:\dwgs\19jobs\19005\19005.dwg, 19005 (ADA)

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DATUM: NAVD 88 ELEVATION = 751.92

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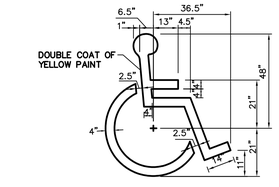
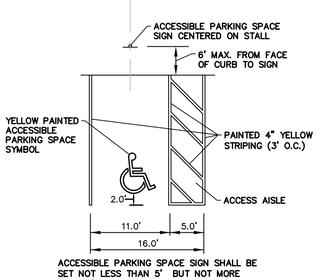


ACCESSIBLE PARKING SPACE SYMBOL

1. SYMBOL IS CENTERED ON WIDTH OF PARKING STALL AND 2' FROM THE END OF THE STALL.



ACCESSIBLE PARKING SPACE DETAIL

10 0 5 10 20 40

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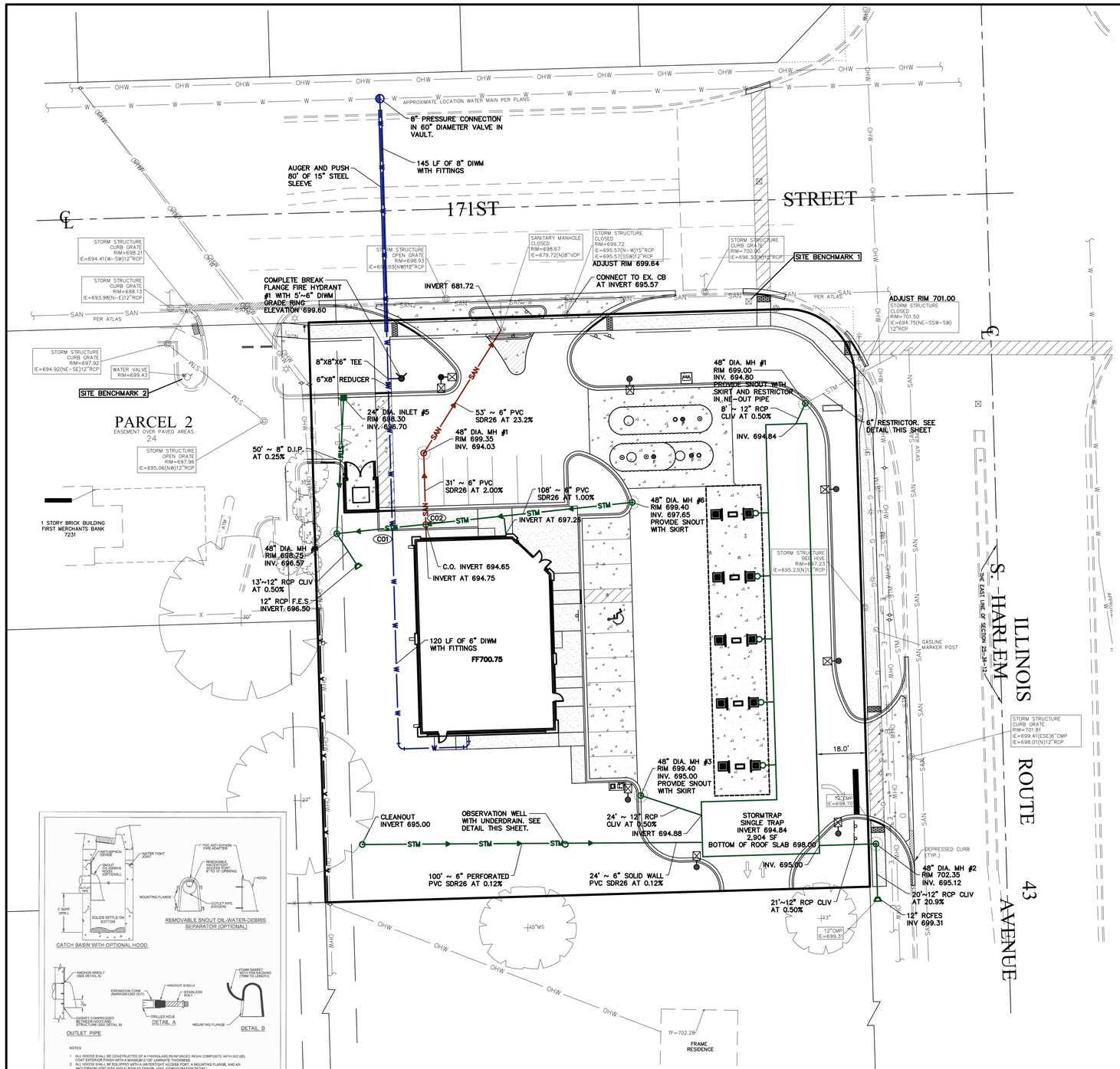
ACCESSIBLE ROUTE GRADES AND DETAILS

C-4



IDOT STORMWATER REQUIREMENTS

EXISTING RELEASE RATE	= 2.77 CFS
EXISTING AREA TO RIGHT OF WAY	= .737 ACRES
ADJUSTED C VALUE	= .64
10-YEAR STORM AT 10 MINUTES	= 5.88 IN/HR
PROPOSED RELEASE RATE – NO RESTRICTOR	= 4.12 CFS
RESTRICTOR REQUIRED	
HWL = 698.50	
INVERT = 694.80	
AREA = .961 ACRES	
Cd = 0.73	
REQUIRED STORAGE PER EXISTING RELEASE RATE	= 2,933 CF
STORAGE PROVIDED IN BIORETENTION FACILITY	= 10,806 CF
STORAGE PROVIDED IN UNDERGROUND UNIT	= 9,176 CF
TOTAL STORAGE PROVED	= 19,982 CF
RESTRICTOR SIZE	= 6 INCHES
PROPOSED 6" RESTRICTOR	= 2.57 CFS

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SITE BENCHMARKS

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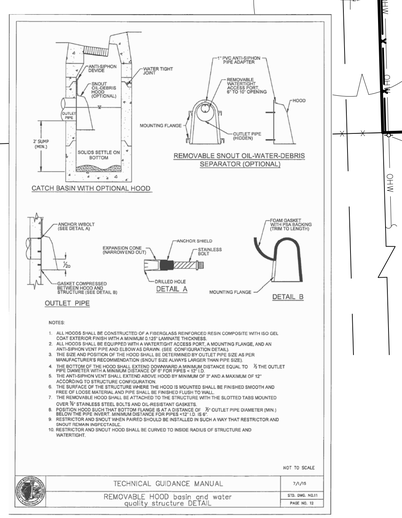
2. SITE BENCHMARK 2 – SOUTHWEST BOLT OF FIRE HYDRANT ELEVATION = 700.71

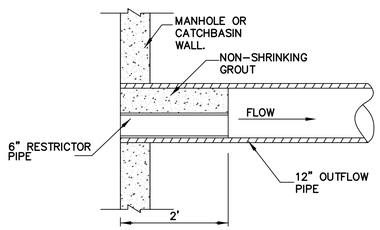
UTILITY PLAN NOTES:

1. PRIOR TO CONSTRUCTION OF ANY UTILITIES, CONTRACTOR IS TO VERIFY THAT THE PROPOSED UTILITIES SHOWN ON THIS PLAN THAT ENTER THE PROPOSED BUILDING(S) CORRESPOND WITH THE UTILITIES ON THE PLUMBING PLANS AS THEY EXIT THE BUILDING(S). CONTRACTOR TO REPORT IN WRITING ANY DISCREPANCIES IN SIZE, LOCATION, OR INVERT ELEVATION TO THE DESIGN ENGINEER IMMEDIATELY FOR RESOLUTION OF THE CONFLICT IN WRITING.
2. GENERAL CONTRACTOR TO COORDINATE THE INSTALLATION AND PERMITTING OF THE PUBLIC UTILITIES, SUCH AS GAS, ELECTRIC, TELEPHONE, CABLE AND FIBER OPTICS, WITH THE PUBLIC UTILITY COMPANIES AND ARCHITECT PRIOR TO CONSTRUCTION. THE INSTALLATION OF THE PUBLIC UTILITIES AND NECESSARY SLEEVING TO BE INCLUDED AS PART OF GENERAL CONTRACTOR'S SCOPE OF WORK FOR THIS PROJECT.

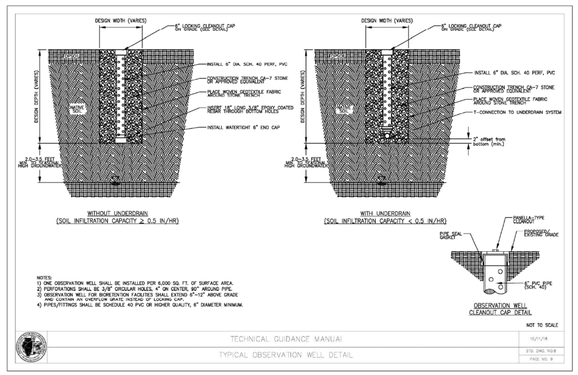
UTILITY CROSSINGS

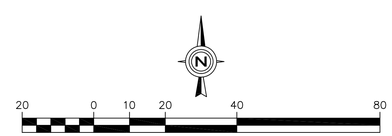
C01	BOTTOM OF 6" STORM	= 696.77
	TOP OF 6" WATER	= 693.10
C02	BOTTOM OF 6" STORM	= 696.89
	TOP OF 6" SANITARY	= 695.22





2' LONG GROUTED RESTRICTOR





UTILITY PLAN

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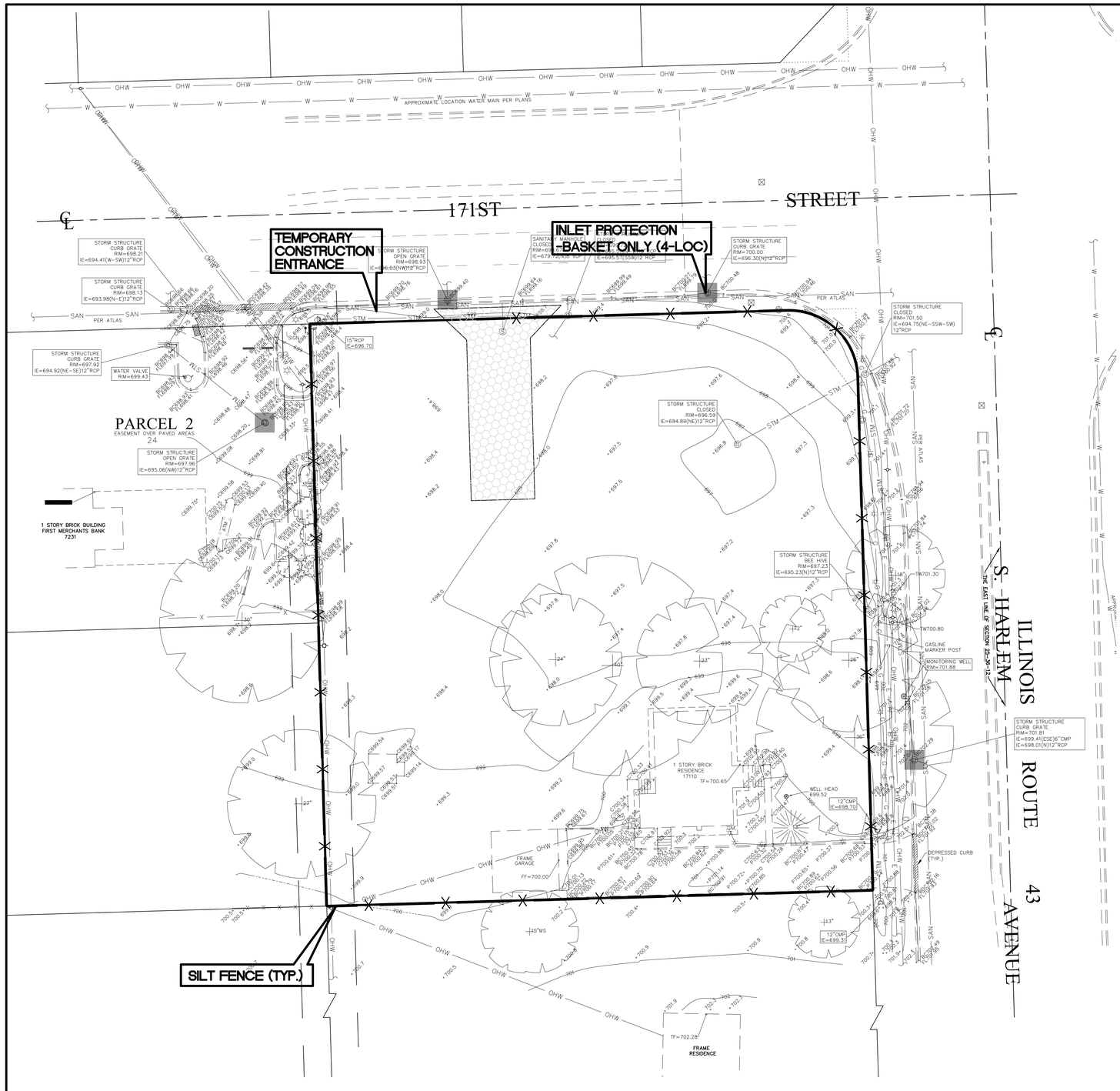
C-5

UTILITY PLAN



LEGEND

- SILT FENCE
- INLET FILTER BASKET
- INLET PROTECTION

GENERAL NOTES:

1. THESE PLANS ARE BASED ON THE ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY (SURVEY PROJECT #19.0018 DATED 01/22/19) PREPARED BY: COMPASS SURVEYING LTD 2631 GINGER WOODS PARKWAY, STE 100, AURORA, IL 60502 (630) 820-9100
2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

20 0 10 20 40 80

PHASE I SOIL EROSION CONTROL PLAN

NO.	REVISIONS	DATE
1	NONE	8/22/19
2	NONE	9/5/19
3	PER CLIENT REQUEST	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

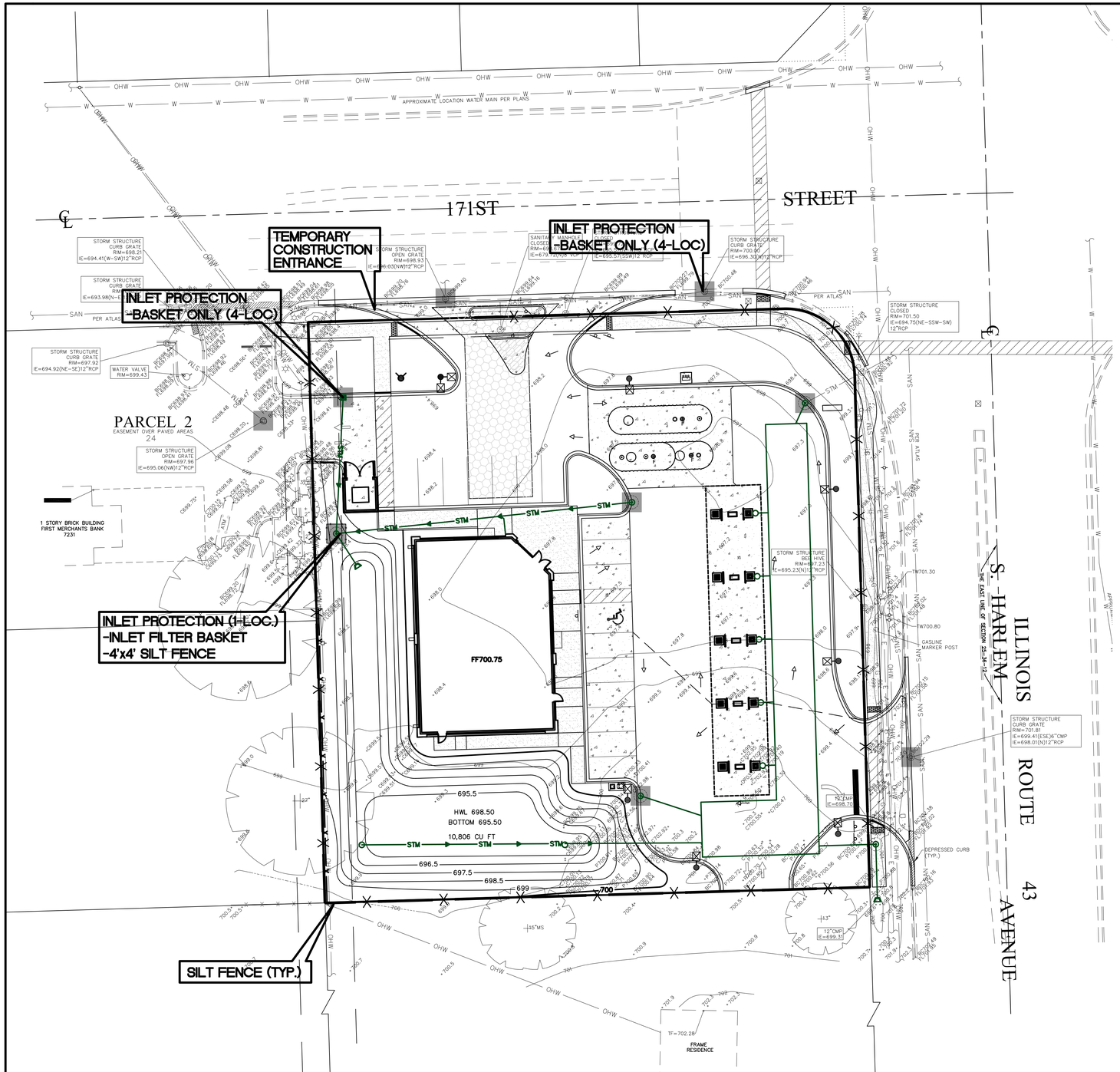
Prepared By:

Watermark Engineering RESOURCES, LTD
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-9800 www.watermark-engineering.com

CHECKED BY:	B. PERRY
DESIGN BY:	S. SIMAK
DRAWN BY:	S. SIMAK
DATE:	JULY 5, 2019
SCALE:	1" = 20'
PROJECT NO.:	19-005

C-6

PHASE I SOIL EROSION CONTROL PLAN



LEGEND

- SILT FENCE
- INLET FILTER BASKET
- INLET PROTECTION

GENERAL NOTES:

1. THESE PLANS ARE BASED ON THE ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY (SURVEY PROJECT #19.0018 DATED 01/22/19) PREPARED BY: COMPASS SURVEYING LTD 2631 GINGER WOODS PARKWAY, STE 100, AURORA, IL 60502 (630) 820-9100
2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

REFERENCE BENCHMARK

NGS DESIGNATION – DK2006 PIN – DN4691

STATION IS 39 FEET WEST OF THE CENTERLINE OF WILL/COOK ROAD, 54 FEET SOUTH OF THE CENTERLINE OF 167TH STREET, 10 FEET WEST OF A TRAFFIC SIGNAL HAND HOLE AND 1 FOOT NORTHEAST OF AN ORANGE CARSONITE MARKER. ACCESS TO THE DATUM POINT IS THROUGH A 6 INCH LOGO CAP AND THE ROD (DATUM POINT) IS SURROUNDED BY A FLOATING BRONZE DISK TO AID IN IDENTIFICATION.

DATUM: NAVD 88 ELEVATION = 751.92

SITE BENCHMARKS

1. SITE BENCHMARK 1 – CROSS CUT ON TRAFFIC SIGNAL MANHOLE. ELEVATION = 700.19
2. SITE BENCHMARK 2 – SOUTHWEST BOLT OF FIRE HYDRANT ELEVATION = 700.71

20 0 10 20 40 80

PHASE II SOIL EROSION CONTROL PLAN

NO.	REVISIONS	DATE
1	NONE	8/22/19
2	PER CLIENT REQUEST	9/5/19
3	PER CLIENT REQUEST	11/22/19

Prepared For:

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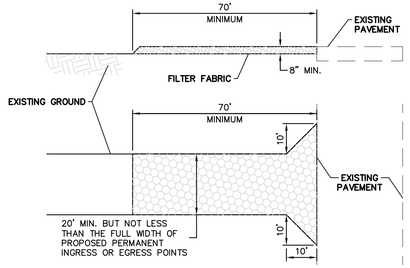
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: 1" = 20'
PROJECT NO.: 19-005

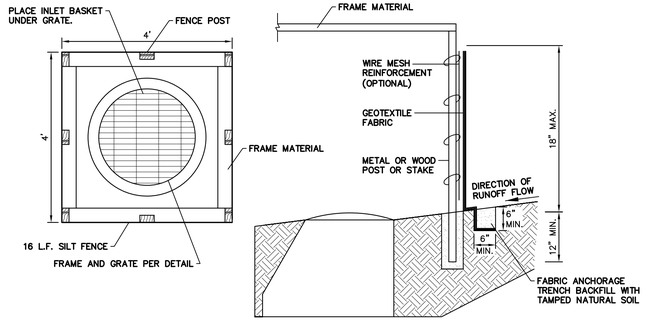
C-7

PHASE II SOIL EROSION CONTROL PLAN



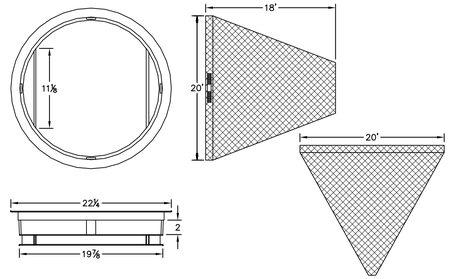
NOTES:
1. STONE SIZE – IDOT COARSE AGGREGATE GRADATIONS: CA–1, CA–2, CA–3 OR CA–4.
2. THICKNESS – NOT LESS THAN EIGHT (8) INCHES.
3. FILTER FABRIC – SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL CLASS I, II OR IV IN THE ILLINOIS URBAN MANUAL.
4. STONE PLACEMENT – THE STONES IN THE ENTRANCE SHALL BE PLACED ACCORDING TO ILLINOIS URBAN MANUAL CONSTRUCTION SPECIFICATION 25 (ROCKFILL). PLACEMENT WILL BE BY METHOD 1 AND COMPACTION WILL BE CLASS III.
5. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT–OF–WAY MUST BE REMOVED IMMEDIATELY.
6. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHS, WATERCOURSES, OR SURFACE WATERS INCLUDING WETLANDS.
7. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE



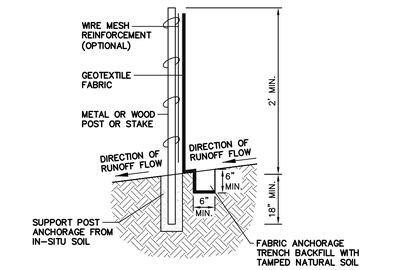
NOTES:
1. FENCE POSTS SHALL BE EITHER STANDARD STEEL POST OR WOOD POST WITH A MINIMUM CROSS–SECTIONAL AREA OF 3.0 SQ. IN.
2. STEEL POSTS SHALL BE STANDARD T AND U SECTIONS WEIGHING NOT LESS THAN 1.33 POUNDS PER LINEAR FOOT OR OTHER STEEL POSTS HAVING EQUIVILENT STRENGTH AND BENDING RESISTANCE.
3. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 (GEOTEXTILE) TABLE 1 OR 2, CLASS I IN THE ILLINOIS URBAN MANUAL, CURRENT EDITION. THE FABRIC SHALL HAVE AN AOS OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN MATERIAL.
4. STAKES ARE TO BE PLACED A MAXIMUM OF 3 FEET APART.
5. JOINTS IN GEOTEXTILE FABRIC ARE TO BE MADE AT STAKES.

INLET PROTECTION



NOTES:
1. TOP FLANGE FABRICATED FROM 1 1/4" x 1 1/4" x 1/8" ANGLE BASE RIM FABRICATED FROM 1 1/2" x 1/2" x 1/8" CHANNEL. HANDLES AND SUSPENSION BRACKETS FABRICATED FROM 1 1/4" x 1/4" FLAT STOCK
2. ALL DOMESTIC STEEL IS TO CONFORM TO ASTM–A36.
3. SEDIMENT BAG IS TO BE FABRICATED FROM 4 OZ./SQ.YD. NON–WOVEN POLYPROPYLENE GEOTEXTILE REINFORCED WITH POLYESTER MESH WITH A MINIMUM FLOW RATE OF 145 GAL/MIN/SQ. FT. BAG IS TO BE DESIGNED FOR A MINIMUM SILT AND DEBRIS CAPACITY OF 2 CU. FT. BAG IS TO BE SECURED TO BASE RIM WITH A STAINLESS STEEL STRAP AND LOCK.

INLET BASKET FILTER FOR TYPE 1 INLETS



NOTES:
1. TEMPORARY SEDIMENT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. THEY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
2. FENCE POSTS SHALL BE EITHER STANDARD STEEL POST OR WOOD POST WITH A MINIMUM CROSS–SECTIONAL AREA OF 3.0 SQ. IN.
3. STEEL POSTS SHALL BE STANDARD T AND U SECTIONS WEIGHING NOT LESS THAN 1.33 POUNDS PER LINEAR FOOT OR OTHER STEEL POSTS HAVING EQUIVILENT STRENGTH AND BENDING RESISTANCE.
4. WIRE FENCE SHALL BE A MINIMUM 12 GAGE WIRE WITH A 6 INCH MAXIMUM OPENING.
5. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 (GEOTEXTILE) TABLE 1 OR 2, CLASS I IN THE FABRIC SHALL HAVE AN AOS OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN MATERIAL.

MAINTENENCE NOTES:
1. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL GREATER THAN 1/2" AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
5. AT A MINIMUM, SILT FENCE AND OTHER EROSION CONTROL MEASURES SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PHASE I AND PHASE II SOIL EROSION CONTROL PLANS. THEY SHALL ALSO BE INSTALLED ANYWHERE THAT THEY ARE NEEDED DURING CONSTRUCTION IN ORDER TO PREVENT EROSION AND SEDIMENT FROM BEING CARRIED DOWN STREAM. THIS IS THE GENERAL CONTRACTOR'S RESPONSIBILITY AND SHALL BE INSTALLED, RELOCATED, MAINTAINED, ETC. AS DIRECTED BY THE APPOINTED SWPPP INSPECTOR. EROSION CONTROL INSTALLATION AND MAINTENANCE IS TO BE A PART OF THE CONTRACT AND IS NOT AN EXTRA TO THE OWNER.

SILT FENCE DETAIL

EROSION CONTROL

1. CONTRACTOR IS TO FOLLOW THE REQUIREMENTS OF THE "ILLINOIS PROCEDURES AND STANDARDS FOR URBAN SOIL EROSION AND SEDIMENTATION CONTROL" CURRENT EDITION AND THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES).
2. SOIL EROSION CONTROL SYSTEMS SHALL BE CONSTRUCTED AS SHOWN ON THE SOIL EROSION CONTROL PLANS AND/OR AS SPECIFIED BY THE DESIGN ENGINEER, VILLAGE ENGINEER, APPOINTED SWPPP INSPECTOR, OR MUNICIPAL INSPECTOR.
3. PERIMETER EROSION BARRIER SHALL BE PLACED IN A MANNER THAT WILL INTERCEPT WATER BORNE SILT AND PREVENT IT FROM LEAVING THE AREA OF CONSTRUCTION. ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE WITH THE ENDS EXTENDING UPSLOPE. THE MAXIMUM SPACING OF POSTS SHALL BE 5 FEET. WHEN WIRE OR OTHER FORM OF APPROVED BACKING IS USED THE MAXIMUM SPACING MAY BE INCREASED TO 8 FEET. SPACING MAY NEED TO BE ADJUSTED SO THAT POSTS ARE LOCATED IN LOW AREAS WHERE WATER MAY POND. THE FILTER FABRIC AND WIRE SUPPORT, IF USED, MUST BE SECURELY FASTENED TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST ONE INCH LONG OR TIE WIRES (10 GAGE MINIMUM). THE FABRIC SHALL NOT BE STAPLED OR WIRED TO THE WIRE SUPPORT OR TO EXISTING TREES. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 (GEOTEXTILE) TABLE 1 OR 2, CLASS I IN THE ILLINOIS URBAN MANUAL, CURRENT EDITION. THE FABRIC SHALL HAVE AN AOS OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN MATERIAL.
4. INLET FILTERS SHALL BE CONSTRUCTED OF A REPLACEABLE REINFORCED FILTER BAG SUSPENDED FROM A RETAINER RING OR FRAME. INLET FILTER SYSTEMS SHALL BE THE CATCH–ALL WITH OVERFLOW, AS FURNISHED BY MARATHON MATERIALS INC., OR PRE–APPROVED EQUAL. CARE SHOULD BE TAKEN WHEN MAINTAINING OR REMOVING THIS FILTER FABRIC BAG TO NOT ALLOW THE PREVIOUSLY TRAPPED DEBRIS TO ENTER THE STORM SEWER SYSTEM.
5. THE BED FOR RIP RAP SHALL BE TRIMMED AND SHAPED TO ALLOW THE FINISHED SURFACE TO CONFORM TO THE LINES SPECIFIED. AT THE TOE OF THE SLOPE, THE RIP RAP SHALL COMMENCE ON A CONTINUATION OF THE SLOPE AFTER EXCAVATION TO ACCOMMODATE THE FULL DEPTH OF FABRIC, BEDDING LAYER, AND RIP RAP SPECIFIED.
6. FILTER FABRIC IS REQUIRED UNDER STONE RIP RAP GRADATION 4, 5, 6 AND 7 FOR ALL USES, AND UNDER CONCRETE BLOCK, BROKEN CONCRETE, AND STONE OR BROKEN CONCRETE DUMPED RIP RAP WHEN USED FOR SOIL EROSION PROTECTION.
7. STREETS ARE TO BE CLEARED OF DEBRIS, AND SWEPT CLEAN OF SILT AND MUD DAILY.
8. SOIL EROSION CONTROL MEASURES ARE TO BE CHECKED BY QUALIFIED PERSONNEL AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER OR EQUIVALENT SNOWFALL AND REPAIRED IF NECESSARY.
9. ALL EROSION CONTROL PROTECTION SHALL BE KEPT IN PLACE UNTIL THE GROUND HAS BEEN STABILIZED AND THE PAVEMENT HAS BEEN INSTALLED.
10. ANY DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE STOPPED (PERMANENTLY OR TEMPORARILY) FOR 7 DAYS, MUST BE STABILIZED IN ACCORDANCE WITH NPDES REQUIREMENTS.
11. BUILT UP SEDIMENT SHALL BE REMOVED FROM THE SILT FENCE WHEN IT HAS REACHED ONE– THIRD THE HEIGHT OF THE FENCE.
12. SILT FENCES SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, ETC., TO SEE IF FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND THAT THE FENCE POSTS ARE SECURELY IN THE GROUND.
13. THE SEDIMENT BASIN, IF PRESENT, SHALL BE INSPECTED FOR DEPTH OF SEDIMENT AT LEAST ONCE A WEEK. BUILD UP SEDIMENT SHALL BE REMOVED WHEN IT REACHES 25 PERCENT OF THE DESIGN CAPACITY.
14. CONTRACTOR TO COMPLY WITH FINAL STABILIZATION AND TERMINATION REQUIREMENTS OF THE SWPPP.
15. AT A MINIMUM, SILT FENCE AND OTHER EROSION CONTROL MEASURES SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PHASE I AND PHASE II SOIL EROSION CONTROL PLANS. THEY SHALL ALSO BE INSTALLED ANYWHERE THAT THEY ARE NEEDED DURING CONSTRUCTION IN ORDER TO PREVENT EROSION AND SEDIMENT FROM BEING CARRIED DOWN STREAM. THIS IS THE GENERAL CONTRACTOR'S RESPONSIBILITY AND SHALL BE INSTALLED, RELOCATED, MAINTAINED, ETC. AS DIRECTED BY THE APPOINTED SWPPP INSPECTOR. EROSION CONTROL INSTALLATION AND MAINTENANCE IS TO BE A PART OF THE CONTRACT AND IS NOT AN EXTRA TO THE OWNER.

SOIL PROTECTION CHART

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDING			•						→			
SODDING			•						→			
TEMPORARY SEEDING			•						→			
MULCHING	←	←										→

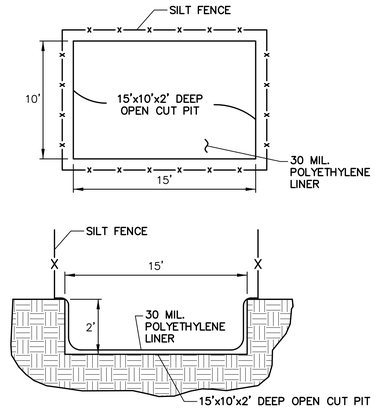
NOTES:
1. PERMANENT VEGETATION SHALL BE PLANTED ACCORDING TO THE APPROVED LANDSCAPE PLAN AND SHALL FOLLOW ILLINOIS URBAN MANUAL PRACTICE STANDARD 880 FOR PERMANENT SEEDING AND 925 FOR SODDING AT A MINIMUM.
2. TEMPORARY SEEDING SHALL BE APPLIED ACCORDING TO THE ILLINOIS URBAN MANUAL PRACTICE STANDARD 965. THIS PRACTICE APPLIES TO ALL CLEARED, UNVEGETATED, OR SPARSELY VEGETATED SOIL SURFACES WHERE VEGETATIVE COVER IS NEEDED FOR LESS THAN 1 YEAR.
   A. WHERE THE PH OF THE SOIL IS BELOW 5.5, APPLY ONE AND ONE HALF TO TWO TONS PER ACRE OF FINELY GROUND AGRICULTURAL LIMESTONE. IF THE SEEDING PERIOD IS LESS THAN 30 DAYS, LIMING WILL NOT BE REQUIRED.
   B. APPLY 500 POUNDS PER ACRE OF 10–10–10 FERTILIZER OR EQUIVALENT. INCORPORATE LIME AND FERTILIZER INTO THE TOP 2–4 INCHES OF SOIL. IF THE SEEDING PERIOD IS LESS THAN 30 DAYS, FERTILIZER WILL NOT BE REQUIRED.
   C. PREPARE A TOPSOIL SEEDBED OF LOOSE SOIL TO A DEPTH OF 3 TO 4 INCHES. IF RECENT TILLAGE OR GRADING OPERATIONS HAVE RESULTED IN A LOOSE SURFACE, ADDITIONAL TILLAGE OR ROUGHENING MAY NOT BE REQUIRED EXCEPT TO BREAK UP LARGE CLODS. IF RAINFALL CAUSED THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING, OR OTHER SUITABLE METHODS. GROVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING.
   D. SEED SHALL BE EVENLY APPLIED WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN ONE INCH DEEP. GRASSES SHALL BE PLANTED NO MORE THAN ONE HALF INCH DEEP.
   E. COVER BROADCAST SEEDINGS BY CULTIPACKING, DRAGGING A HARROW, OR RAKING.
   F. OATS SHALL BE APPLIED AT 90 LBS PER ACRE AND SHALL ONLY BE APPLIED EARLY SPRING TO JULY 1.
   G. CEREAL RYE SHALL BE APPLIED AT 90 LBS PER ACRE AND SHALL ONLY BE APPLIED EARLY SPRING TO SEPTEMBER 30.
   H. WHEAT SHALL BE APPLIED AT 90 LBS PER ACRE AND SHALL ONLY BE APPLIED EARLY SPRING TO SEPTEMBER 30.
   I. PERENNIAL RYE GRASS SHALL BE APPLIED AT 25 LBS PER ACRE AND SHALL ONLY BE APPLIED EARLY SPRING TO SEPTEMBER 30.
3. TEMPORARY MULCHES ARE TO BE APPLIED TO:
   A. AREAS THAT HAVE BEEN SEEDED TO PROVIDE A TEMPORARY OR PERMANENT SEEDING;
   B. AREAS THAT CANNOT BE SEEDED BECAUSE OF THE SEASON OF THE YEAR AND NEED FOR SOIL SURFACE PROTECTION;
   C. FOR MUD AND DUST CONTROL;
   D. PROVIDE PROTECTION DURING PERIODS WHEN CONSTRUCTION OR SEEDING CANNOT BE DONE; AND SHALL BE CONSTRUCTED ACCORDING TO THE ILLINOIS URBAN MANUAL PRACTICE STANDARD 875.

PHASE I CONSTRUCTION SEQUENCE:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. PREPARE TEMPORARY PARKING AND STORAGE AREA.
3. CONSTRUCT THE SILT FENCES ON THE SITE.
4. INSTALL INLET PROTECTION AROUND ALL EXISTING STORM SEWER STRUCTURES.
5. CONSTRUCT THE SEDIMENTATION BASINS.
6. CONSTRUCT DIVERSION DITCHES AND AGGREGATE DITCH CHECKS TO DIRECT WATER TO THE SEDIMENTATION BASINS.
7. HOLD PRE–CONSTRUCTION MEETING TO DISCUSS THE STORM WATER POLLUTION PLAN WITH ENGINEER, ALL CONTRACTORS AND JURISDICTIONAL INSPECTION AGENCIES.
8. CLEAR AND GRUB THE SITE.
9. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES.
10. BEGIN MASS GRADING OPERATIONS FOR THE SITE.

PHASE II CONSTRUCTION SEQUENCE:

1. TEMPORARILY SEED DENUDED AREAS.
2. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
3. INSTALL RIP RAP AROUND OUTLET STRUCTURES.
4. INSTALL INLET PROTECTION AROUND ALL STORM SEWER STRUCTURES.
5. PREPARE SITE FOR PAVING.
6. PAVE SITE.
7. INSTALL INLET PROTECTION DEVICES.
8. COMPLETE GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
9. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED).



NOTE: OPTIONAL USE OF A PORTABLE CONCRETE WASHOUT CONTAINER IS ACCEPTABLE WITH 30 MIL. POLYETHYLENE LINER.

CONCRETE WASHOUT AREA DETAIL

NO.	REVISIONS	DATE
1	NONE	8/22/19
2	NONE	9/5/19
3	NONE	11/22/19

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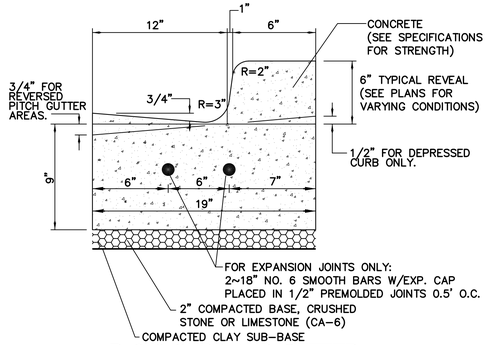
CHECKED BY:	B. PERRY
DESIGN BY:	S. SIMAK
DRAWN BY:	S. SIMAK
DATE:	JULY 5, 2019
SCALE:	NONE
PROJECT NO.:	19–005

C–8

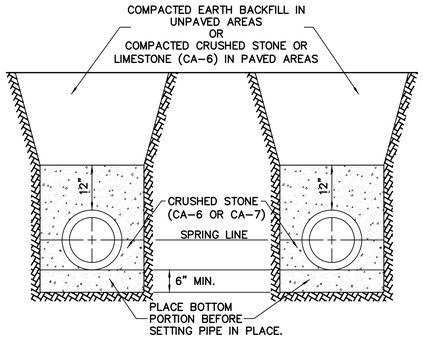
SOIL EROSION CONTROL DETAILS AND SPECS

SOIL EROSION CONTROL DETAILS AND SPECS



B-6.12 CURB AND GUTTER

NOTES:
1. PROVIDE 1/2" EXPANSION JOINTS EVERY 45' O.C.
2. PROVIDE HAND TOOLED CONTRACTION JOINTS EVERY 15' O.C.
3. THE MINIMUM LONGITUDINAL CURB SLOPE SHALL BE 0.3%.

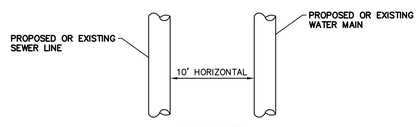


CLASS 1A (FLEXIBLE PIPE, ASTM 2321-89) TYPE B (RIGID PIPE)

NOTES:
1. GRANULAR BEDDING IS NOT REQUIRED FOR WATER MAIN; HOWEVER, SOIL BASE BEDDING MUST BE COMPACTED AND STABLE MATERIAL.
2. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION.
3. MAXIMUM WIDTH OF TRENCH AT TOP OF PIPE FOR ALL CLASSES IS TO BE 4/3 INTERNAL DIAMETER PLUS 10" UNLESS SHEETING IS USED.
4. MINIMUM COVER FOR PVC, HDPE, AND CMP IS 12" FROM THE TOP OF THE PIPE TO THE BOTTOM OF ASPHALT/OR TO BOTTOM OF CONCRETE PAVEMENT, OR TO FINISHED GRADE ELEVATION IN LANDSCAPED AREAS.
5. TRENCH BACKFILL MUST BE WELL SPADED ON BOTH SIDES OF PIPE.
6. TRENCH BACKFILL AND BEDDING MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95% OF STANDARD LABORATORY DENSITY PER ASTM D698.

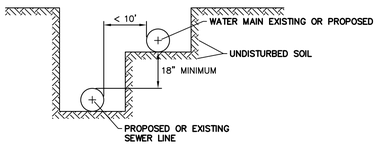
TRENCH DETAIL

WHEN PROPOSED SEWER (OR WATER) IS LOCATED 10 FEET OR MORE FROM EXISTING WATER (OR SEWER), NO SPECIAL CONSTRUCTION REQUIRED. SEE ARTICLE 41-2.01A (1)

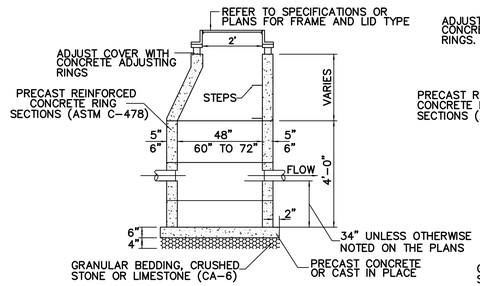


PLAN VIEW

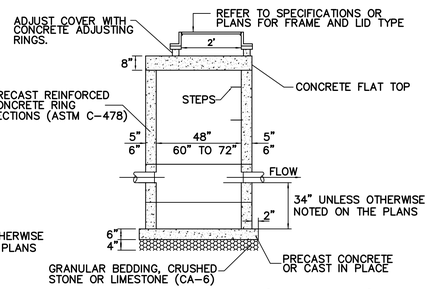
WHEN PROPOSED SEWER (OR WATER) IS LOCATED LESS THAN 10 FEET FROM EXISTING WATER (OR SEWER), DETAILS BELOW SHALL APPLY. SEE ARTICLE 41-2.01B (2)



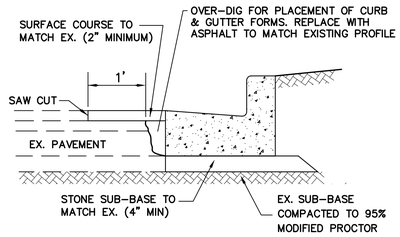
WATER AND SEWER SEPARATION REQUIREMENTS HORIZONTAL SEPARATION



CATCHBASIN 48" TO 72" (I.D.O.T TYPE "A")

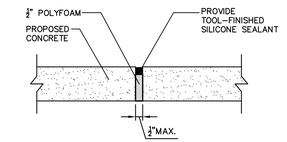


CATCHBASIN 48" TO 72" (FLAT TOP)

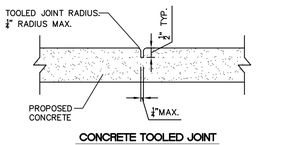


PAVEMENT PATCH DETAIL AT NEW CURB AND GUTTER

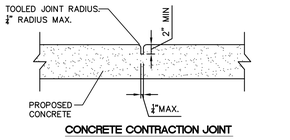
NOTE: IF CONCRETE BASE IS ENCOUNTERED, IT IS TO BE DOWELED INTO THE PROPOSED CURB AS WELL AS THE ADJACENT CONCRETE PAVEMENT.



CONCRETE EXPANSION JOINT



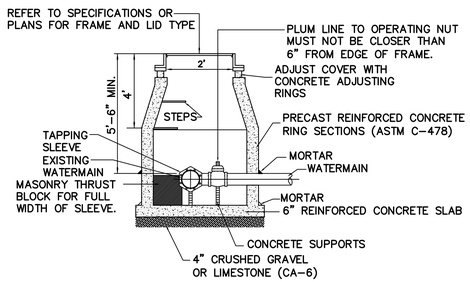
CONCRETE TOOLED JOINT



CONCRETE CONTRACTION JOINT

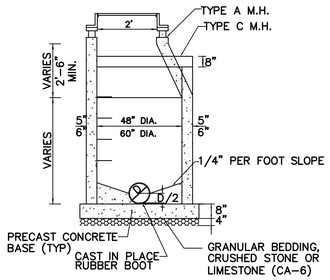
CONCRETE SIDEWALK JOINTS

N.T.S.



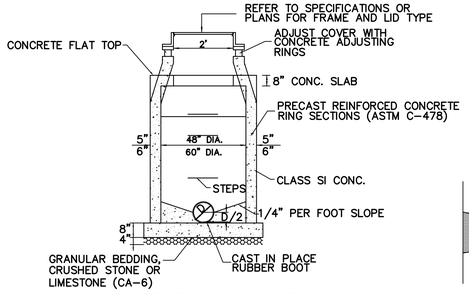
PRESSURE CONNECTION

NOTES:
1. 60" MINIMUM DIAMETER FOR ALL PRESSURE CONNECTIONS.
2. PIPE OPENINGS TO BE CAST INTO WALL.



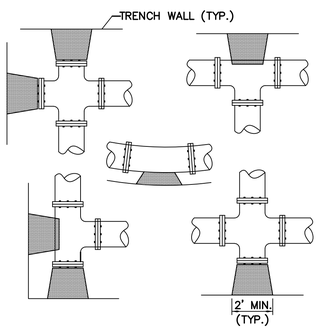
SANITARY MANHOLE (IEPA TYPES A AND C)

NOTES:
1. PROVIDE EXTERNAL CHIMNEY SEAL ON ALL SANITARY MANHOLES.
2. USE TYPE A UNLESS SPECIFIED IN SEWER CALLOUT.
3. OUTSIDE OF SANITARY MANHOLE SHALL BE MOISTURE PROOFED WITH TWO COATS OF BITUMINOUS MATERIAL.



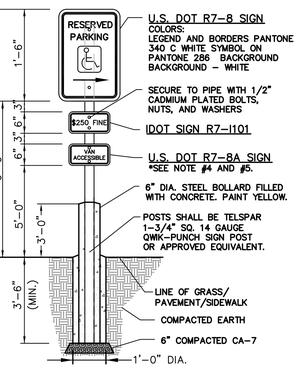
SANITARY MANHOLE (CONCENTRIC)

NOTES:
1. PROVIDE EXTERNAL CHIMNEY SEAL ON ALL SANITARY MANHOLES.
2. USE TYPE A UNLESS SPECIFIED IN SEWER CALLOUT.
3. OUTSIDE OF SANITARY MANHOLE SHALL BE MOISTURE PROOFED WITH TWO COATS OF BITUMINOUS MATERIAL.



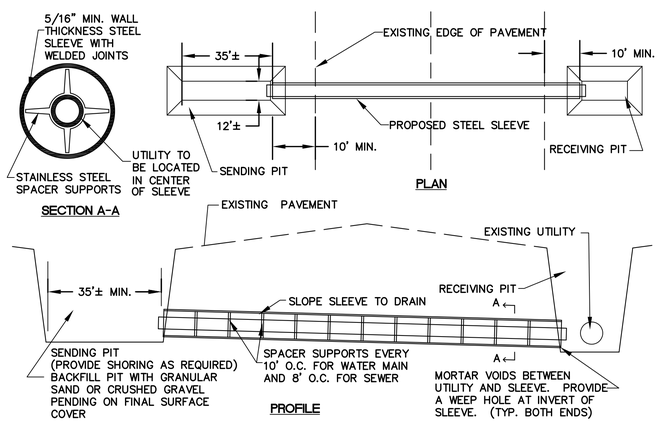
NOTES:
1. ALL BLOCKS SHALL BE WITH POURED CONCRETE AGAINST UNDISTURBED EARTH.
2. AREA OF UNDISTURBED EARTH SHALL CONFORM TO MANUFACTURERS RECOMMENDATIONS AND THE SOILS ENGINEERS INSTRUCTIONS.

THRUST BLOCK INSTALLATION

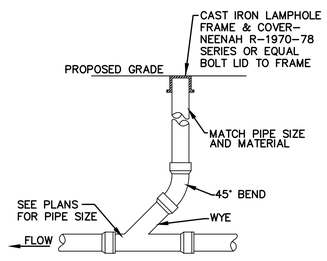


1. WHERE A FINE IN EXCESS OF $250 IS ESTABLISHED BY A MUNICIPALITY BY ORDINANCE IN ACCORDANCE WITH THE STATUTES, THE ACTUAL AMOUNT OF THE FINE SHOULD BE SHOWN.
2. THIS PLATE MAY BE MOUNTED DIRECTLY BELOW THE R7-8 SIGN OR COMBINED WITH THAT SIGN ON A SINGLE 12 INCH BY 24 INCH PANEL.
3. ON THE RESERVED PARKING SIGN, THE ARROW SHOULD BE OMITTED WHERE THERE IS ONLY ONE SPACE. THE ARROW MAY ALSO BE MADE TO POINT IN ONLY ONE DIRECTION. THE ARROW MAY ALSO BE REPLACED BY "TIME" SUCH AS 9 AM-5 PM WHERE A PART TIME RESTRICTION EXISTS.
4. ONE IN EVERY SIX ACCESSIBLE SPACES, BUT NOT LESS THAN ONE, SHALL BE SERVED BY AN ACCESS AISLE 8 FEET WIDE MINIMUM AND SHALL BE DESIGNATED "VAN ACCESSIBLE".
5. THE LOWEST BOTTOM EDGE OF THE LOWEST REQUIRED SIGN SHALL BE MOUNTED AT 60" ABOVE FINISHED GRADE.
6. COLORS FOR BOTH IDOT SIGN R7-1101 AND USDOT R7-8A, LEGEND AND BORDERS-GREEN NON-REFLECTORIZED (PANTONE 340C) BACKGROUND-WHITE REFLECTORIZED

ACCESSIBLE PARKING SPACE BOLLARD SIGN DETAIL



AUGERING DETAIL



CLEANOUT DETAIL

PROJECT DETAILS

C-9

NO.	REVISIONS	DATE
1	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	8/22/19
2	NONE	9/5/19
3	NONE	11/22/19

Prepared For:

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CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: NONE
PROJECT NO.: 19-005

PROJECT DETAILS

PROJECT SPECIFICATIONS

1. CONTRACTOR IS TO FOLLOW ALL ORDINANCES AND REQUIREMENTS OF THE STATE, COMMUNITY, LOCAL DISTRICTS AND THE ILLINOIS ACCESSIBILITY CODE (IAC). ALL PROPOSED IMPROVEMENTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS WELL AS THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS" CURRENT EDITIONS.
2. THE CONTRACTOR SHALL INDEMNIFY WATERMARK ENGINEERING RESOURCES, LTD (THE DESIGN ENGINEER), ARCHITECT AND OWNER, THEIR AGENTS, ETC., FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONDUCTING WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THIS DEVELOPMENT.
3. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL PERMITS THAT ARE REQUIRED BY THE LOCAL AGENCIES.
4. PRIOR TO BID AND PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL INSPECT THE SITE TO VERIFY THAT THERE ARE NO DISCREPANCIES BETWEEN THE PLANS AND THE ACTUAL CONDITIONS AT THE SITE. IF ANY DISCREPANCIES ARE FOUND, AT ANY TIME BEFORE OR DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY (BEFORE ANY ADDITIONAL IMPROVEMENTS ARE INSTALLED) IN ORDER TO OBTAIN WRITTEN CONFIRMATION BY THE DESIGN ENGINEER AS TO ANY REVISIONS THAT MAY NEED TO BE MADE TO THE PLANS.
5. PRIOR TO CONSTRUCTION, CONTRACTOR IS TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS. FINAL APPROVED PLAN SETS SHALL BE LABELED "FOR CONSTRUCTION."
6. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER, ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION, AND ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION 2 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE APPROPRIATE CONSTRUCTION INSPECTIONS.
7. THE MUNICIPALITY SHALL HAVE THE AUTHORITY TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION OF THE IMPROVEMENTS. ALL WORK IN THE 171ST STREET RIGHT OF WAY SHALL BE UNDER AUTHORITY OF COOK COUNTY DOT.
8. PRIOR TO CONSTRUCTION OF ANY IMPROVEMENTS, THE CONTRACTOR MUST CALL J.U.L.I.E. FOR THE LOCATION AND STAKING OF EXISTING UNDERGROUND UTILITIES (GAS, ELECTRIC, TELEPHONE) AT 1-800-892-0123, 48 HOURS PRIOR TO DIGGING.
9. PRIOR TO THE OCCUPANCY PERMIT BEING ISSUED, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING RECORD DRAWINGS PER THE MUNICIPALITY AND/OR ANY OTHER AGENCY REQUIREMENTS. ANY CHANGES TO THE DRAWINGS MUST BE REPORTED TO THE DESIGN ENGINEER BEFORE WORK PROGRESSES.
10. THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS AS APPROVED BY THE MUNICIPALITY.
11. ALL QUANTITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE TO BE VERIFIED PRIOR TO CONSTRUCTION. IF DISCREPANCIES OCCUR, THE CONTRACTOR IS TO CONTACT THE DESIGN ENGINEER IMMEDIATELY AND NO WORK IS TO BE DONE UNTIL APPROVED BY THE DESIGN ENGINEER.
12. ANY RESTORATION NEEDED BECAUSE OF CONSTRUCTION SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.
13. TRENCH BACKFILL MATERIAL, CRUSHED STONE OR LIMESTONE (CA-6) IS REQUIRED UNDER AND WITHIN TWO FEET (2') OF SIDEWALKS AND PAVED AREAS. THIS BACKFILL SHALL BE IN SIX INCH (6") LIFTS AND COMPACTED TO 95% STANDARD PROCTOR.
14. CONTRACTOR IS TO PROVIDE ALL TEMPORARY SIGNAGE AS REQUIRED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION AND LOCAL MUNICIPALITIES.
15. ALL EXISTING DRAIN TILES THAT ARE ENCOUNTERED ARE TO BE RESTORED TO THEIR ORIGINAL CONDITION OR REROUTED TO THE PROPOSED STORM SEWER SYSTEM.
16. RESTORATION OF EXISTING RIGHT-OF-WAYS IS TO BE COMPLETED WITH FOUR INCH (4") MINIMUM TOPSOIL AND SALT TOLERANT SOD UNLESS OTHERWISE NOTED.
17. THE WATER SYSTEM CANNOT BE TURNED ON OR SHUT DOWN WITHOUT CONSENT BY THE OWNER OF THE SYSTEM.
18. ALL FRAME ADJUSTMENTS SHALL BE MADE WITH PRE-CAST CONCRETE RINGS CONFORMING TO ASTM C-39 AND CANNOT EXCEED TWELVE INCHES (12").
19. FRAMES SHALL BE SET WITH EZ STIK8 (OR EQUAL) MATERIAL TO PREVENT LEAKAGE.
20. THE REINFORCED CONCRETE SECTIONS SHALL BE LAID IN MORTAR, SEALED WITH EXTERNAL SEALING BANDS, OR SEALED USING MASTIC JOINT SEALER. WHEN MASTIC JOINT SEALER IS USED, THE MATERIAL SHALL COMPLETELY FILL THE JOINT AFTER THE UNITS HAVE BEEN BROUGHT TOGETHER.
21. STEPS IN STRUCTURES SHALL BE MADE OF COPOLYMER POLYPROPYLENE PLASTIC WITH CONTINUOUS ONE HALF INCH (1/2") GRADE SIXTY (60) STEEL REINFORCEMENT, STEP PSI-PF, AS MANUFACTURED BY M.A. INDUSTRIES, INC., OR APPROVED EQUAL. STEPS TO BE SPACED SIXTEEN INCHES (16") ON-CENTER.
22. ALL INSTRUMENTS ARE TO BE PROPERLY CALIBRATED PRIOR TO CONSTRUCTION USE.
23. ALL PARKING LOT LIGHT POLES ARE TO BE CONSTRUCTED AT THE INTERSECTION OF PARKING LOT STRIPING OR IN LANDSCAPE AREAS WITH A MINIMUM OF 2' CLEARANCE BETWEEN THE BACK OF CURB AND THE EDGE OF THE PARKING LOT LIGHT BASE UNLESS OTHERWISE SPECIFIED.
24. GENERAL CONTRACTOR TO BECOME FAMILIAR WITH AND APPLY THE ADA MINIMAL REQUIREMENTS AND REPORT TO ARCHITECT/DESIGN ENGINEER ANY DISCREPANCIES BEFORE CONSTRUCTION. THIS INCLUDES, BUT NOT LIMITED TO, TRANSITIONS TO EXISTING CONDITIONS.
25. CONSTRUCTION MEANS, METHODS AND JOB SITE SAFETY IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR.
26. PAVING, SIDEWALK, AND CURBING IS NOT TO BE INSTALLED IN SUCH A WAY THAT IT WILL BLOCK THE FLOW OF WATER AWAY FROM THE BUILDING INCLUDING BUT NOT LIMITED TO WEEP HOLES, WICKS, DRAINAGE SCUPPERS OR PIPES, AND LANDSCAPE.

PAVEMENT

1. ALL PAVEMENTS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING REFERENCES AS THEY APPLY: STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ILLINOIS DEPARTMENT OF TRANSPORTATION, LATEST EDITION; MANUAL FOR STRUCTURAL DESIGN OF PORTLAND CEMENT CONCRETE PAVEMENT, ILLINOIS DEPARTMENT OF TRANSPORTATION, LATEST EDITION; DESIGN MANUAL, ILLINOIS DEPARTMENT OF TRANSPORTATION, LATEST EDITION.
2. ALL BASE COURSE AND SUB-BASE AREAS SHALL BE COMPACTED TO 95% STANDARD LABORATORY DENSITY, PER I.D.O.T. SECTION 301. BEFORE THE BASE COURSE MATERIALS ARE INSTALLED, THE SUB-BASE SHALL BE PROOF-ROLLED TO THE SATISFACTION OF THE ENGINEER, HIS AGENT, AND/OR THE SOILS ENGINEER. COMPACTION AND DENSITY TESTS SHALL BE TAKEN AT THE OWNER'S OPTION.
3. ALL CONCRETE TO BE MINIMUM 3500 PSI, SALT TOLERANT, 6 BAG MIX WITH A SPRAY ON SEALER.
4. EXPANSION AND CONTRACTION JOINTS SHALL BE TOOL FINISHED.
5. BINDER COURSE TO BE PLACED WHEN TEMPERATURE IS AT LEAST 40°F AND RISING. SURFACE COURSE TO BE PLACED WHEN TEMPERATURE IS AT LEAST 45°F AND RISING.
6. ALL PROPOSED PAVEMENT, SIDEWALKS, AND CURBS ARE TO BE CONSTRUCTED TO WITHIN A TOLERANCE OF 0.05' OF THE PROPOSED ELEVATIONS EXCEPT IN THE ACCESSIBLE STALLS OR ACCESSIBLE ROUTES.
7. PRIOR TO SEAL COATING, ALL ASPHALT AREAS ARE TO BE CLEAN AND DRY. ALL LOOSE MATERIALS ARE TO BE REMOVED. ALL GREASE TO BE REMOVED. ALL CRACKS ARE TO BE FILLED PER IDOT STANDARDS. ALL PAINTED STRIPING TO BE MODIFIED SHALL BE "BLACKED OUT" WITH BLACK PAINT (1 COAT MINIMUM, 2 COATS IF NECESSARY), ALLOWED TO THOROUGHLY DRY PER PAINT MANUFACTURER, PRIOR TO SEAL COATING. ALL AREAS THAT ARE ADJACENT TO THE SEAL COATED AREA ARE TO BE MASKED (I.E. SIDEWALKS, CONCRETE SURFACES, BRICK SURFACES, GUTTERS, CATCHBASINS/INLETS, ETC.) PRIOR TO SEAL COATING TO BE APPLIED. AIR TEMPERATURE TO BE 50°F AND RISING. APPLICATION RATE TO BE SUCH THAT ALL SURFACES OF THE ASPHALT BEING COATED IS THOROUGHLY COVERED IN ONE COAT. SPRAYING IS NOT ALLOWED. ALL SEAL COATING SHOULD BE APPLIED BY SQUEEGEE OR BRUSHES. THE BITUMINOUS SEAL COATING MATERIAL SHOULD NOT BE ALLOWED TO ENTER STORM SEWERS AND SHOULD BE ALLOWED TO DRY AT LEAST 18 HOURS PRIOR TO VEHICULAR USE. CRACK FILLER AND SEAL COATING MATERIALS ARE TO BE FREE OF COAL TAR.

GRADING

1. GEOTECHNICAL REPORTS AS PREPARED BY OWNER (OR REPRESENTATIVE) SHALL BE REFERRED TO PRIOR TO EARTH MOVING AND/OR UTILITY CONSTRUCTION.
2. UNSTABLE SOIL SHALL BE REMOVED OR STABILIZED.
3. CONTRACTOR IS TO MAINTAIN A POSITIVE DRAINAGE PATTERN AT THE END OF EACH DAY. CARE SHOULD BE TAKEN TO INSURE THAT DRAINAGE IS NOT REROUTED OR BLOCKED IN A WAY THAT MAY BE INJURIOUS TO ADJACENT LAND.
4. THE SUB-BASE BELOW STRUCTURES, PAVEMENTS OR NEW STRUCTURAL FILL SHALL BE PROOF ROLLED. IF SOIL RUTS, PUMPS, DEFLECTS EXCESSIVELY OR EXHIBITS EXCESSIVE MOVEMENT OR MOISTURE, THEN THE UNSTABLE SOIL SHALL BE UNDERCUT AND REPLACED WITH STRUCTURAL FILL OR DISCING AND DRYING TO NEAR OPTIMUM MOISTURE SO SOIL CAN BE PROPERLY COMPACTED. THIS PROCESS IS TO BE OBSERVED BY A GEOTECHNICAL ENGINEER.
5. ALL FILLS SHALL BE PLACED IN 6" LIFTS COMPACTED TO A MINIMUM OF 98% STANDARD LABORATORY DENSITY PER ASTM D698 UNDER AND WITHIN INFLUENCE OF THE BUILDING, A MINIMUM OF 95% STANDARD LABORATORY DENSITY PER ASTM D698 UNDER AND WITHIN THE INFLUENCE OF ALL OTHER IMPERVIOUS AREAS, AND A MINIMUM OF 90% STANDARD LABORATORY DENSITY PER ASTM D698 IN ALL LANDSCAPE AREAS.
6. EROSION CONTROL SHALL BE PROVIDED PRIOR TO ANY DISTURBANCES. SEE EROSION CONTROL PLANS FOR ADDITIONAL SPECIFICATIONS AND DETAILS.
7. PROVIDE TOPSOIL RESPREAD PER THE FOLLOWING UNLESS OTHERWISE NOTED:
   A. 4" MINIMUM IN GRASS OR SOD AREAS.
   B. 6" MINIMUM IN PLANTING AREAS.
   C. 12" MINIMUM IN LANDSCAPE ISLANDS.
8. ALL TOPSOIL TO BE FRIABLE (NOT COHESIVE), WEED FREE, AND FREE OF ROCKS, LARGE ROOTS AND UNNATURAL DEBRIS.
9. ALL GRADING IS TO BE CONSTRUCTED TO WITHIN A TOLERANCE OF 0.10' OF THE PROPOSED ELEVATIONS. SEE PAVEMENT SPECIFICATIONS FOR PAVEMENT TOLERANCES.

SANITARY SEWER SPECIFICATIONS

1. ALL SANITARY SEWER PIPE SHALL BE P.V.C. PIPE CONFORMING TO ASTM D-3034 SPECIFICATIONS, SDR26 WALL THICKNESS AND ASTM D-3212 GASKET TYPE JOINTS OR ASTM D-2855 SOLVENT WELDED JOINTS WITH A TRACER WIRE ON THE TOP.
2. ALL WATERMAIN QUALITY PLASTIC PIPE SHALL BE P.V.C. CONFORMING TO NSF STANDARD 14 AND: ASTM STANDARD D 1784 OR AWWA STANDARD C900 OR C905. JOINTING SHALL BE PRESSURE SLIP JOINTED. ELASTOMERIC SEALS (GASKETS) USED FOR PUSH-ON JOINTS SHALL COMPLY WITH ASTM STANDARD F477, AND SHALL BE PRESSURE RATED IN ACCORDANCE WITH ASTM D3139.
3. DEFLECTION OF POLYVINYL CHLORIDE (PVC) PIPE SHALL NOT EXCEED 5.0% OF THE "BASE I.D." (INTERNAL DIAMETER) OF THE PIPE. "BASE I.D." SHALL BE CALCULATED IN ACCORDANCE WITH THE FOLLOWING:
   AVG ID = AVG OD − 2(1.06)T
   TOLERANCE PACKAGE = (A^2 + B^2 + C^2)^(1/2)
   WHERE:
   A = OD TOLERANCE (ASTM D-3034)
   B = EXCESS WALL THICKNESS TOLERANCE = 0.06T
   C = OUT-OF-ROUNDNESS TOLERANCE = 0.015 (AVG OD)
   T = MINIMUM WALL THICKNESS (ASTM D-3034)
   BASE ID = AVG ID − TOLERANCE PACKAGE
   DEFLECTION OF COMPOSITE PIPE ("TRUSS" PIPE) SHALL NOT EXCEED 3.0% OF THE AVERAGE INSIDE DIAMETER (ID) OF THE PIPE IN ACCORDANCE WITH ASTM D-2680. THE PIPE LINE SHALL BE TESTED FOR EXCESS DEFLECTING BY PULLING A "GO − NO GO" MANDREL THROUGH THE PIPE FROM MANHOLE TO MANHOLE. THE MANDREL SHALL BE SIZED IN ACCORDANCE WITH SECTION 31-1.11C (4), AND AS SPECIFIED IN THE SPECIAL PROVISIONS. A "DEFLECTOMETER" MAY ALSO BE USED TO CHECK AND RECORD DEFLECTION. WHENEVER POSSIBLE AND PRACTICAL, THE TESTING SHALL INITIATE AT THE DOWNSTREAM LINES AND PROCEED TOWARDS THE UPSTREAM LINES. WHERE THE DEFLECTION IS FOUND TO BE IN EXCESS OF ALLOWABLE TESTING LIMITS, THE CONTRACTOR SHALL EXCAVATE TO THE POINT OF EXCESS DEFLECTION AND CAREFULLY COMPACT AROUND THE POINT WHERE EXCESS DEFLECTION WAS FOUND. THE LINE SHALL THEN BE RETESTED FOR DEFLECTION. HOWEVER, SHOULD AFTER THE INITIAL TESTING THE DEFLECTED PIPE FAIL TO RETURN TO THE ORIGINAL SIZE (INSIDE DIAMETER) THE LINE SHALL BE REPLACED.
4. INFILTRATION OR EXFILTRATION SHALL NOT EXCEED 100 GALLONS PER TWENTY-FOUR (24) HOURS PER MILE PER INCH-DIAMETER OF THE SEWER PIPE, FOR ANY SECTION OF THE SYSTEM AND AT ANY TIME DURING ITS SERVICE LIFE. TESTING IS REQUIRED PER THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS" CURRENT EDITIONS.
5. LEAKAGE TESTING FOR MANHOLES FOR WATER TIGHTNESS SHALL BE DONE IN ACCORDANCE WITH ASTM C969-94(2000) "STANDARD PRACTICE FOR INFILTRATION AND EXFILTRATION ACCEPTANCE TESTING OF INSTALLED PRECAST CONCRETE PIPE SEWER LINES", VOL. 04.05, CHEMICAL RESISTANT MATERIALS, VITRIFIED CLAY, CONCRETE, FIBER-CEMENT PRODUCTS; MORTARS; MASONRY (1996)(NO LATER EDITIONS OR AMENDMENTS) OR ASTM C1244-93 "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY THE NEGATIVE PRESSURE (VACUUM) TEST", VOL. 04.05, CHEMICAL RESISTANT MATERIALS, VITRIFIED CLAY, CONCRETE, FIBER-CEMENT PRODUCTS; MORTARS; MASONRY (1996)(NO LATER EDITIONS OR AMENDMENTS) PRIOR TO PLACING INTO SERVICE.
6. ALL STRUCTURE LIDS SHALL BE IMPRINTED "SANITARY" AND "VILLAGE OF TINLEY PARK".
7. ALL WATERTIGHT FRAMES AND LIDS SHALL BE EAST JORDAN IRON WORKS 1020.
8. ALL FRAMES AND LIDS SHALL CONFORM TO ASTM A-48.
9. ALL SEWERS ARE TO BE INSTALLED FROM THE DOWNSTREAM END UPSTREAM. IF ANY CONFLICTS ARE ENCOUNTERED, THE DESIGN ENGINEER IS TO BE CONTACTED PRIOR TO TO THE INSTALLATION OF ANY PIPE.
10. FOR A DROP CONNECTION, THE DIAMETER OF THE DROP PIPE SHALL PREFERABLY BE LARGER THAN, OR OF THE SAME DIAMETER AS, THE ENTERING SEWER. THE MINIMUM DIAMETER OF THE DROP PIPE SHALL NOT BE SMALLER THAN THE DIAMETER OF THE ENTERING SEWER BY MORE THAN TWO NOMINAL DIAMETERS, PROVIDED THAT THE MINIMUM DIAMETER OF THE DROP PIPE SHALL NOT BE LESS THAN EIGHT INCHES (8").
11. ALL FLOOR DRAINS SHALL DISCHARGE TO THE SANITARY SEWER.
12. ALL SANITARY SEWER BEDDING SHALL BE IN ACCORDANCE WITH THE TRENCH DETAIL AS INCLUDED IN THE PLANS.

STORM SEWER SPECIFICATIONS

1. ALL REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM C-76 SPECIFICATIONS WITH ASTM C-443 FLAT GASKET JOINTS, OR ASTM C-361 "O-RING" JOINTS WHEN WATER MAIN QUALITY JOINTS ARE REQUIRED.
2. ALL PLASTIC PIPE SHALL BE P.V.C. WITH SDR26 WALL THICKNESS AND CONFORM TO D-3034 SPECIFICATIONS WITH ASTM D-3212 GASKET TYPE JOINTS.
3. ALL WATERMAIN QUALITY PLASTIC PIPE SHALL BE P.V.C. CONFORMING TO NSF STANDARD 14 AND: ASTM STANDARD B 1784 OR AWWA STANDARD C900 OR C905. JOINTING SHALL BE PRESSURE SLIP JOINTED. ELASTOMERIC SEALS (GASKETS) USED FOR PUSH-ON JOINTS SHALL COMPLY WITH ASTM STANDARD F477, AND SHALL BE PRESSURE RATED IN ACCORDANCE WITH ASTM D3139.
4. ALL STRUCTURE LIDS SHALL BE IMPRINTED "STORM" AND "VILLAGE OF TINLEY PARK".
5. ALL FRAMES AND LIDS SHALL CONFORM TO ASTM A-48.
6. ALL SEWERS ARE TO BE INSTALLED FROM THE DOWNSTREAM END UPSTREAM. IF ANY CONFLICTS OR INFORMATION INCONSISTENT WITH SITE CONDITIONS ARE ENCOUNTERED, THE DESIGN ENGINEER IS TO BE CONTACTED PRIOR TO THE INSTALLATION OF ANYTHING.
7. IN PAVED AREAS, ALL FRAMES AND LIDS SHALL BE: EAST JORDAN IRON WORK 1050z1 WITH TYPE M1 GRATES AT LOW POINTS AND CURB LINES.
8. IN NON-PAVED AREAS, ALL FRAMES AND LIDS SHALL BE: EAST JORDAN IRON WORK 1050z1 WITH TYPE M1 GRATES AT LOW POINTS AND CURB LINES.
9. ALL DOWNSPOUTS AND FOOTING DRAINS SHALL DISCHARGE TO THE STORM SEWER.
10. ALL FLARED END SECTIONS (FES) ARE TO BE INSTALLED WITH TRASH GRATES.

WATER MAIN SPECIFICATIONS

1. HORIZONTAL SEPARATION
   A. WATER MAINS AND SEWERS: WATER MAINS SHALL BE LAID AT LEAST TEN FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, COMBINED SEWER OR SEWER SERVICE CONNECTION.
   B. WATER MAINS MAY BE LAID CLOSER THAN TEN FEET TO A SEWER LINE OR SEWER SERVICE CONNECTION WHEN:
      i) LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF TEN FEET;
      ii) THE WATER MAIN INVERT IS AT LEAST EIGHTEEN INCHES (18") ABOVE THE CROWN OF THE SEWER; AND
      ii) 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.
   C. BOTH THE WATER MAIN AND SEWER PIPE SHALL BE CONSTRUCTED OF PUSH JOINT OR MECHANICAL JOINT DUCTILE IRON PIPE, PRESSURE PIPE, PRESTRESSED CONCRETE PIPE, OR PVC SDR18 PIPE WITH AWWA C-900 JOINTS, MEETING THE REQUIREMENTS OF SECTION 653.111 OF THE IEPA'S TITLE 35 SUBTITLE F, WHEN IT IS IMPOSSIBLE TO MEET (A) OR (B) ABOVE. THE DRAIN OR SEWER SHALL BE PRESSURE TESTED TO THE MAXIMUM EXPECTED SURCHARGE HEAD BEFORE BACKFILLING.
2. VERTICAL SEPARATION
   A. A WATER MAIN SHALL BE LAID SO THAT ITS INVERT IS EIGHTEEN INCHES (18") 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 FEET 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.
   B. BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF PUSH JOINT OR MECHANICAL JOINT DUCTILE PIPE, PRESTRESSED CONCRETE PIPE, OR PVC PIPE MEETING THE REQUIREMENTS OF SECTION 635.111 OF THE IEPA'S TITLE F, SUBTITLE F, AND CONSTRUCTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE PERPENDICULAR DISTANCE FROM THE WATER MAIN TO THE SEWER DRAIN LINE IS AT LEAST TEN FEET (10') WHEN:
      i) IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION AS DESCRIBED IN (A) ABOVE; OR
      ii) THE WATER MAIN PASSES UNDER A SEWER OR DRAIN.
   C. A VERTICAL SEPARATION OF EIGHTEEN INCHES (18") 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 WATER MAIN.
3. WATER MAINS AND SERVICES SHALL BE CONSTRUCTED SO THAT THE MINIMUM DEPTH IS FIVE AND ONE HALF FEET (5 1/2') MEASURED FROM FINISHED GRADE TO THE TOP OF THE PIPE, UNLESS OTHERWISE SPECIFIED AND/OR APPROVED BY THE REVIEW ENGINEER.
4. ALL WATER MAIN FITTINGS MAY OR MAY NOT BE SHOWN ON THE PLANS AND SHOULD BE INCLUDED IN THE COST OF THE WATER MAIN ITSELF FOR BIDDING PURPOSES. ALL WATER MAIN SHALL BE DUCTILE IRON CLASS 52 CEMENT LINED CONFORMING TO ANSI A-21.51 WITH ANSI A-21.11 JOINTS, OR TYPE "K" COPPER PIPE WITH SWEATED JOINTS.
5. FIRE HYDRANTS SHALL MEET AWWA C-502 AND BE EAST JORDAN IRON WORKS WATERMASTER 5BR250, WITH FIVE AND ONE QUARTER INCH (5 1/4")VALVE OPENING, TWO TWO AND ONE HALF INCH (2 1/2") HOSE NOZZLES AND ONE FIVE INCH (4 1/2") PUMPER NOZZLE. FIRE HYDRANT SHALL BE EQUIPPED WITH AN AUXILIARY RESILIENT SEAL GATE VALVE COMPLETE WITH ROADWAY BOX, TYLER, 6850 SERIES, ITEM 668-S. FIRE HYDRANTS MUST HAVE THEIR DISCHARGE AT LEAST 18 INCHES BUT NOT MORE THAN TWENTY-FOUR INCHES (24") FROM THE SURFACE OF THE ADJACENT GROUND.
6. HYDRANTS SHALL BE INSTALLED NO CLOSER THAN THREE FEET (3') NOR FURTHER THAN EIGHT FEET (8') FROM THE BACK OF CURB OR EDGE OF PAVEMENT TO THE FIVE INCH (5") STEAMER NUT. NO BARRIERS, TREES, SHRUBS, WALLS OR OTHER OBSTACLES WHICH MAY HIDE OR IMPEDE THE USE OF A FIRE HYDRANT SHALL BE INSTALLED, MAINTAINED, CONSTRUCTED, OR ENLARGED, WITHIN FORTY-EIGHT INCHES (48") OF A HYDRANT.
7. ALL STRUCTURE LIDS SHALL BE IMPRINTED "WATER" AND "VILLAGE OF TINLEY PARK".
8. ALL WATERTIGHT FRAMES AND LIDS SHALL BE EAST JORDAN IRON WORKS 1020a WITH TYPE A LIDS..
9. BEFORE BEING PLACED INTO SERVICE, ALL NEW MAINS AND REPAIRED PORTIONS OF, OR EXTENSIONS TO EXISTING MAINS SHALL BE CHLORINATED SO THAT THE INITIAL CHLORINE RESIDUAL IS NOT LESS THAN FIFTY (50) mg/L AND THAT A CHLORINE RESIDUAL OF NOT LESS THAN TWENTY-FIVE (25) mg/L REMAINS IN THE WATER AFTER STANDING TWENTY-FOUR (24) HOURS IN THE PIPE.
10. A HYDROSTATIC PRESSURE TEST SHALL BE DONE WITH NO LESS THAN 150 PSI OF PRESSURE BEING HELD FOR A FOUR (4) HOUR PERIOD. VILLAGE HAS THE RIGHT TO EXTEND THE DURATION UP TO 6 HOURS. A PUBLIC WORKS REPRESENTATIVE SHALL BE CONTACTED PRIOR TO THE START OF THE TEST.
11. VALVE VAULTS SHALL PASS A VACUUM TEST TO ENSURE INFILTRATION CANNOT AND WILL NOT OCCUR. A PUBLIC WORKS REPRESENTATIVE SHALL BE CONTACT AND AT THE SITE PRIOR TO THE START OF THE TEST.

"AMERICANS WITH DISABILITIES ACT" (ADA) MINIMAL REQUIREMENTS:

1. GENERAL CONTRACTOR TO BECOME FAMILIAR WITH AND APPLY THE ADA MINIMAL REQUIREMENTS AND REPORT TO ARCHITECT/ENGINEER ANY DISCREPANCIES BEFORE CONSTRUCTION.
2. ACCESSIBLE ROUTES ON AN ACCESSIBLE SITE AND FOR ANY NEW SITE IMPROVEMENTS SHALL BE PROVIDED TO SERVE ALL ACCESSIBLE SPACES OR ELEMENTS.
3. THE MINIMUM CLEAR WIDTH OF AN ACCESSIBLE ROUTE PER CODE IS 48".
4. EACH ACCESSIBLE PARKING SPACE IS TO BE:
   4.1. CAR:
   A MINIMUM OF 192" WIDE, CONSISTING OF A 96" WIDE ACCESS AISLE AND A 96" WIDE PARKING SPACE, UNLESS OTHERWISE NOTED. (SEE DETAIL). THE ACCESS AISLE SHALL BE PERMITTED TO BE PLACED ON EITHER SIDE OF THE PARKING SPACE. SEE DETAIL FOR REQUIRED DEPTH.
   4.2 VAN:
   A MINIMUM OF 192" WIDE, CONSISTING OF A 96" WIDE ACCESS AISLE AND A 96" WIDE PARKING SPACE, UNLESS OTHERWISE NOTED (SEE DETAIL). WHEN VAN ACCESSIBLE PARKING SPACES ARE ANGLED, THE ACCESS AISLE SHALL BE LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACE. SEE DETAIL FOR REQUIRED DEPTH.
5. ACCESSIBLE PARKING SPACES ARE TO BE LOCATED AS CLOSE TO THE BUILDING ENTRANCE AS POSSIBLE AND SHALL BE IDENTIFIED WITH A SIGN.
6. RAMPS MUST NOT EXTEND OUT FROM THE CURB INTO THE ACCESS AISLE OF ANY ACCESSIBLE PARKING SPACE.
7. ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING IN THEM. (SEE DETAIL)
8. ALL ADA PARKING STALLS, ACCESS AISLES AND CROSSWALKS SHALL BE STRIPED USING 4" WIDE DOUBLE LAYER OF HIGH QUALITY YELLOW PAINT, UNLESS OTHERWISE NOTED.
9. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED A SLOPE OF 1:50 (2.00%) IN ANY DIRECTION.
10. EACH ACCESSIBLE PARKING SPACE SHALL HAVE AN IDENTIFICATION SIGN (SEE DETAIL).

RAMPS

11. AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 1:20 (5.00%) IS A RAMP AND SHALL COMPLY WITH THE RAMP REQUIREMENTS.
12. AN ACCESSIBLE ROUTE MAY CROSS OPEN PAVEMENT OR FOLLOW A RAMP AS REQUIRED BY SITE-SPECIFIC CONDITIONS. THE RUNNING SLOPE OF AN ACCESSIBLE ROUTE ACROSS OPEN PAVEMENT MUST NOT EXCEED 1:20 (5.00%), WITH A CROSS SLOPE NOT EXCEEDING 1:50 (2.00%). SLOPES EXCEEDING 1:20 (5.00%), BUT LESS THAN 1:12 (8.33%), CONSTITUTE RAMPS AND MUST CONFORM TO THE REQUIREMENTS FOR RAMP DESIGN (HANDRAILS, CURBS, LANDINGS, RISE AND RUN LIMITS, ETC.) AS DETAILED ON THE CIVIL AND ARCHITECTURAL PLANS. NO RAMP SHALL HAVE A RUNNING SLOPE EXCEEDING 1:12 (8.33%), NOR HAVE A CROSS SLOPE EXCEEDING 1:50 (2.00%).
13. THE GENERAL CONTRACTOR/CONTRACTOR SHALL MEASURE THE SUBGRADE AND ACROSS FORMS PRIOR TO INSTALLATION OF ASPHALT OR CONCRETE IMPROVEMENTS TO ASSURE THE FINAL IMPROVEMENTS WILL MEET THESE MINIMAL ADA REQUIREMENTS. ANY DISCREPANCIES SHALL BE REPORTED TO THE CIVIL ENGINEER PRIOR TO INSTALLATION OF THE IMPROVEMENTS.

CURB RAMPS

14. A CURB RAMP SHALL BE PROVIDED WHEREVER AN ACCESSIBLE ROUTE CROSSES A CURB.
15. CURB RAMPS HAVE A MAXIMUM SLOPE OF 1:12 (8.33%) AND DO NOT REQUIRE HANDRAILS.
16. IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS, OR GUARDRAILS, IT SHALL HAVE FLARED SIDES; THE MAXIMUM SLOPE OF THE FLARE SHALL BE 1:12 (8.33%).

NO.	REVISIONS	DATE
1	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	8/22/19
2	NONE	9/5/19
3	NONE	11/22/19

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SCALE:	NONE
PROJECT NO.:	19-005

C-10

PROJECT SPECIFICATIONS

PROJECT SPECIFICATIONS

A. REFERENCED SPECIFICATIONS

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE FOLLOWING, EXCEPT AS MODIFIED HEREIN OR ON THE PLANS:
   * STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT SS) FOR ALL IMPROVEMENTS EXCEPT SANITARY SEWER AND WATER MAIN CONSTRUCTION;
   * STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION (SSWS) FOR SANITARY SEWER AND WATER MAIN CONSTRUCTION;
   * VILLAGE OF TINLEY PARK MUNICIPAL CODE;
   * THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO (MWRD) WATERSHED MANAGEMENT ORDINANCE AND TECHNICAL GUIDANCE MANUAL;
   * IN CASE OF CONFLICT BETWEEN THE APPLICABLE ORDINANCES NOTED, THE MORE STRINGENT SHALL TAKE PRECEDENCE AND SHALL CONTROL ALL CONSTRUCTION.

B. NOTIFICATIONS

1. THE MWRD LOCAL SEWER SYSTEMS SECTION FIELD OFFICE MUST BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF ANY WORK (CALL 708-588-4055).

2. THE VILLAGE OF TINLEY PARK ENGINEERING DEPARTMENT AND PUBLIC MUST BE NOTIFIED AT LEAST 24 HOURS PRIOR TO THE START OF CONSTRUCTION AND PRIOR TO EACH PHASE OF WORK. CONTRACTOR SHALL DETERMINE ITEMS REQUIRING INSPECTION PRIOR TO START OF CONSTRUCTION OR EACH WORK PHASE.

3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION FOR THE EXACT LOCATIONS OF UTILITIES AND FOR THEIR PROTECTION DURING CONSTRUCTION. IF EXISTING UTILITIES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, IMMEDIATELY NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED. CALL J.U.L.I.E. AT 1-800-892-0123.

C. GENERAL NOTES

1. ALL ELEVATIONS SHOWN ON PLANS REFERENCE THE NGVD 1929. SUBTRACT 0.42' FROM ALL ELEVATIONS SHOWN HEREON TO OBTAIN NAVD88 DATUM.

2. MWRD, THE MUNICIPALITY AND THE OWNER OR OWNER'S REPRESENTATIVE SHALL HAVE THE AUTHORITY TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION IMPROVEMENTS.

3. THE CONTRACTOR(S) SHALL INDEMNIFY THE OWNER, ENGINEER, MUNICIPALITY, MWRD, AND THEIR AGENTS, ETC., FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, OR TESTING OF THIS WORK ON THE PROJECT.

4. THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS AS APPROVED BY MWRD AND THE MUNICIPALITY UNLESS CHANGES ARE APPROVED BY MWRD, THE MUNICIPALITY, OR AUTHORIZED AGENT. THE CONSTRUCTION DETAILS, AS PRESENTED ON THE PLANS, MUST BE FOLLOWED. PROPER CONSTRUCTION TECHNIQUES MUST BE FOLLOWED ON THE IMPROVEMENTS INDICATED ON THE PLANS.

5. THE LOCATION OF VARIOUS UNDERGROUND UTILITIES WHICH ARE SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND REPRESENT THE BEST KNOWLEDGE OF THE ENGINEER. VERIFY LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING THE CONSTRUCTION OPERATIONS.

6. ANY EXISTING PAVEMENT, SIDEWALK, DRIVEWAY, ETC., DAMAGED DURING CONSTRUCTION OPERATIONS AND NOT CALLED FOR TO BE REMOVED SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

7. MATERIAL AND COMPACTION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MUNICIPALITY, MWRD, AND OWNER.

8. THE UNDERGROUND CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS TO NOTIFY ALL INSPECTION AGENCIES.

9. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS DISTURBED DURING CONSTRUCTION SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO FINAL INSPECTION.

10. RECORD DRAWINGS SHALL BE KEPT BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER AS SOON AS UNDERGROUND IMPROVEMENTS ARE COMPLETED. FINAL PAYMENTS TO THE CONTRACTOR SHALL BE HELD UNTIL THEY ARE RECEIVED. ANY CHANGES IN LENGTH, LOCATION OR ALIGNMENT SHALL BE SHOWN IN RED. ALL WYES OR BENDS SHALL BE LOCATED FROM THE DOWNSTREAM MANHOLE. ALL VALVES, B-BOXES, TEES OR BENDS SHALL BE TIED TO A FIRE HYDRANT.

D. SANITARY SEWER

1. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT ANY POLLUTED WATER, SUCH AS GROUND AND SURFACE WATER, FROM ENTERING THE EXISTING SANITARY SEWERS.

2. A WATER-TIGHT PLUG SHALL BE INSTALLED IN THE DOWNSTREAM SEWER PIPE AT THE POINT OF SEWER CONNECTION PRIOR TO COMMENCING ANY SEWER CONSTRUCTION. THE PLUG SHALL REMAIN IN PLACE UNTIL REMOVAL IS AUTHORIZED BY THE MUNICIPALITY AND/OR MWRD AFTER THE SEWERS HAVE BEEN TESTED AND ACCEPTED.

3. DISCHARGING ANY UNPOLLUTED WATER INTO THE SANITARY SEWER SYSTEM FOR THE PURPOSE OF SEWER FLUSHING OF LINES FOR THE DEFLECTION TEST SHALL BE PROHIBITED WITHOUT PRIOR APPROVAL FROM THE MUNICIPALITY OR MWRD.

4. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS (LATEST EDITION).

5. ALL FLOOR DRAINS SHALL DISCHARGE TO THE SANITARY SEWER SYSTEM.

6. ALL DOWNSPOUTS AND FOOTING DRAINS SHALL DISCHARGE TO THE STORM SEWER SYSTEM.

7. ALL SANITARY SEWER PIPE MATERIALS AND JOINTS (AND STORM SEWER PIPE MATERIALS AND JOINTS IN A COMBINED SEWER AREA) SHALL CONFORM TO THE FOLLOWING:

PIPE MATERIAL	PIPE SPECIFICATIONS	JOINT SPECIFICATIONS
VITRIFIED CLAY PIPE	ASTM C-700	ASTM C-425
REINFORCED CONCRETE SEWER PIPE	ASTM C-76	ASTM C-443
CAST IRON SOIL PIPE	ASTM A-74	ASTM C-564
DUCTILE IRON PIPE	ANSI A21.51	ANSI A21.11
POLYVINYL CHLORIDE (PVC) PIPE		
6-INCH TO 15-INCH DIAMETER SDR 26	ASTM D-3034	ASTM D-3212
18-INCH TO 27-INCH DIAMETER F/DY=46	ASTM F-679	ASTM D-3212
HIGH DENSITY POLYETHYLENE (HDPE)	ASTM D-3350 ASTM D-3035	ASTM D-3261,F-2620 (HEAT FUSION) ASTM D-3212,F-477 (GASKETED)
WATER MAIN QUALITY PVC		
4-INCH TO 36-INCH	ASTM D-2241	ASTM D-3139
4-INCH TO 12-INCH	AWWA C900	ASTM D-3139
14-INCH TO 48-INCH	AWWA C905	ASTM D-3139

THE FOLLOWING MATERIALS ARE ALLOWED ON A QUALIFIED BASIS SUBJECT TO DISTRICT REVIEW AND APPROVAL PRIOR TO PERMIT ISSUANCE. A SPECIAL CONDITION WILL BE ADDED TO THE PERMIT WHEN THE PIPE MATERIAL BELOW IS USED FOR SEWER CONSTRUCTION OR A CONNECTION IS MADE.

PIPE MATERIAL	PIPE SPECIFICATIONS	JOINT SPECIFICATIONS
POLYPROPYLENE (PP) PIPE		
12-INCH TO 24-INCH DOUBLE WALL	ASTM F-2736	D-3212, F-477
30-INCH TO 60-INCH TRIPLE WALL	ASTM F-2764	D3212, F-477

8. ALL SANITARY SEWER CONSTRUCTION (AND STORM SEWER CONSTRUCTION IN COMBINED SEWER AREAS), REQUIRES STONE BEDDING WITH STONE ¼" TO 1" IN SIZE, WITH MINIMUM BEDDING THICKNESS EQUAL TO ¼ THE OUTSIDE DIAMETER OF THE SEWER PIPE, BUT NOT LESS THAN FOUR (4) INCHES NOR MORE THAN EIGHT (8) INCHES. MATERIAL SHALL BE CA-7, CA-11 OR CA-13 AND SHALL BE EXTENDED AT LEAST 12" ABOVE THE TOP OF THE PIPE WHEN USING PVC.

9. NON-SHEAR FLEXIBLE-TYPE COUPLINGS SHALL BE USED IN THE CONNECTION OF SEWER PIPES OF DISSIMILAR PIPE MATERIALS.

10. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS. SANITARY LIDS SHALL BE CONSTRUCTED WITH A CONCEALED PICKHOLE AND WATERTIGHT GASKET WITH THE WORD "SANITARY" CAST INTO THE LID.

11. WHEN CONNECTING TO AN EXISTING SEWER MAIN BY MEANS OTHER THAN AN EXISTING WYE, TEE, OR AN EXISTING MANHOLE, ONE OF THE FOLLOWING METHODS SHALL BE USED:
    a) A CIRCULAR SAW-CUT OF SEWER MAIN BY PROPER TOOLS ("SHEWER-TAP" MACHINE OR SIMILAR) AND PROPER INSTALLATION OF HUBWYE SADDLE OR HUB-TEE SADDLE.
    b) REMOVE AN ENTIRE SECTION OF PIPE (BREAKING ONLY THE TOP OF ONE BELL) AND REPLACE WITH A WYE OR TEE BRANCH SECTION.
    c) WITH PIPE CUTTER, NEATLY AND ACCURATELY CUT OUT DESIRED LENGTH OF PIPE FOR INSERTION OF PROPER FITTING, USING "BAND SEAL" OR SIMILAR COUPLINGS TO HOLD IT FIRMLY IN PLACE.

12. WHENEVER A SANITARY/COMBINED SEWER CROSSES UNDER A WATERMAIN, THE MINIMUM VERTICAL DISTANCE FROM THE TOP OF THE SEWER TO THE BOTTOM OF THE WATERMAIN SHALL BE 18 INCHES. FURTHERMORE, A MINIMUM HORIZONTAL DISTANCE OF 10 FEET BETWEEN SANITARY/COMBINED SEWERS AND WATERMAINS SHALL BE MAINTAINED UNLESS: THE SEWER IS LAID IN A SEPARATE TRENCH, KEEPING A MINIMUM 18" VERTICAL SEPARATION; OR THE SEWER IS LAID IN THE SAME TRENCH WITH THE WATERMAIN LOCATED AT THE OPPOSITE SIDE ON A BENCH OF UNDISTURBED EARTH, KEEPING A MINIMUM 18" VERTICAL SEPARATION. IF EITHER THE VERTICAL OR HORIZONTAL DISTANCES DESCRIBED CANNOT BE MAINTAINED, OR THE SEWER CROSSES ABOVE THE WATER MAIN, THE SEWER SHALL BE CONSTRUCTED TO WATER MAIN STANDARDS OR IT SHALL BE ENCASED WITH A WATER MAIN QUALITY CARRIER PIPE WITH THE ENDS SEALED.

13. ALL EXISTING SEPTIC SYSTEMS SHALL BE ABANDONED. ABANDONED TANKS SHALL BE FILLED WITH GRANULAR MATERIAL OR REMOVED.

14. ALL SANITARY MANHOLES, (AND STORM MANHOLES IN COMBINED SEWER AREAS), SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48 INCHES, AND SHALL BE CAST IN PLACE OR PRE-CAST REINFORCED CONCRETE.

15. ALL SANITARY MANHOLES, (AND STORM MANHOLES IN COMBINED SEWER AREAS), SHALL HAVE PRECAST "RUBBER BOOTS" THAT CONFORM TO ASTM C-923 FOR ALL PIPE CONNECTIONS. PRECAST SECTIONS SHALL CONSIST OF MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS.

16. ALL ABANDONED SANITARY SEWERS SHALL BE PLUGGED AT BOTH ENDS WITH AT LEAST 2 FEET LONG NON-SHRINK CONCRETE OR MORTAR PLUG.

17. EXCEPT FOR FOUNDATION/FOOTING DRAINS PROVIDED TO PROTECT BUILDINGS, OR PERFORATED PIPES ASSOCIATED WITH VOLUME CONTROL FACILITIES, DRAIN TILES/FIELD TILES/UNDERDRAINS/PERFORATED PIPES ARE NOT ALLOWED TO BE CONNECTED TO OR TRIBUTARY TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS IN COMBINED SEWER AREAS. CONSTRUCTION OF NEW FACILITIES OF THIS TYPE IS PROHIBITED; AND ALL EXISTING DRAIN TILES AND PERFORATED PIPES ENCOUNTERED WITHIN THE PROJECT AREA SHALL BE PLUGGED OR REMOVED, AND SHALL NOT BE CONNECTED TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS.

18. A BACKFLOW PREVENTER IS REQUIRED FOR ALL DETENTION BASINS TRIBUTARY TO COMBINED SEWERS. REQUIRED BACKFLOW PREVENTERS SHALL BE INSPECTED AND EXERCISED ANNUALLY BY THE PROPERTY OWNER TO ENSURE PROPER OPERATION, AND ANY NECESSARY MAINTENANCES SHALL BE PERFORMED TO ENSURE FUNCTIONALITY. IN THE EVENT OF A SEWER SURCHARGE INTO AN OPEN DETENTION BASIN TRIBUTARY TO COMBINED SEWERS, THE PERMITTEE SHALL ENSURE THAT CLEAN UP AND WASH OUT OF SEWAGE TAKES PLACE WITHIN 48 HOURS OF THE STORM EVENT.

E. EROSION AND SEDIMENT CONTROL

1. THE CONTRACTOR SHALL INSTALL THE EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

2. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE FUNCTIONAL PRIOR TO HYDROLOGIC DISTURBANCE OF THE SITE.

3. ALL DESIGN CRITERIA, SPECIFICATIONS, AND INSTALLATION OF EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL.

4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

5. INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:
   a) UPON COMPLETION OF INITIAL EROSION AND SEDIMENT CONTROL MEASURES, PRIOR TO ANY SOIL DISTURBANCE.
   b) ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.

6. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE CO-PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.

7. A STABILIZED MAT OF CRUSHED STONE MEETING THE STANDARDS OF THE ILLINOIS URBAN MANUAL SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

8. CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL AND SHALL BE INSTALLED PRIOR TO ANY ON SITE CONSTRUCTION ACTIVITIES INVOLVING CONCRETE.

9. MORTAR WASHOUT FACILITIES SHALL BE CONSTRUCTED IN ADDITION TO CONCRETE WASHOUT FACILITIES FOR ANY BRICK AND MORTAR BUILDING ENVELOPE CONSTRUCTION ACTIVITIES.

10. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN. VOLUME CONTROL FACILITIES SHALL NOT BE USED AS TEMPORARY SEDIMENT BASINS.

12. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) DAYS.

13. ALL FLOOD PROTECTION AREAS AND VOLUME CONTROL FACILITIES SHALL, AT A MINIMUM, BE PROTECTED WITH A DOUBLE-ROW OF SILT FENCE (OR EQUIVALENT).

14. VOLUME CONTROL FACILITIES SHALL NOT BE CONSTRUCTED UNTIL ALL OF THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

15. SOIL STOCKPILES SHALL, AT A MINIMUM, BE PROTECTED WITH PERIMETER SEDIMENT CONTROLS. SOIL STOCKPILES SHALL NOT BE PLACED IN FLOOD PROTECTION AREAS OR THEIR BUFFERS.

16. EARTHEN EMBANKMENT SIDE SLOPES SHALL BE STABILIZED WITH APPROPRIATE EROSION CONTROL BLANKET.

17. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY APPROPRIATE SEDIMENT CONTROL MEASURES.

18. THE CONTRACTOR SHALL EITHER REMOVE OR REPLACE ANY EXISTING DRAIN TILES AND INCORPORATE THEM INTO THE DRAINAGE PLAN FOR THE DEVELOPMENT. DRAIN TILES CANNOT BE TRIBUTARY TO A SANITARY OR COMBINED SEWER. DRAIN TILES ALLOWED IN COMBINED SEWER AREA FOR GREEN INFRASTRUCTURE PRACTICES.

19. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE SITE INSPECTOR MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.

20. THE CONTRCTOR SHALL BE RESPONSIBLE FOR TRENCH DEWATERING AND EXCAVATION FOR THE INSTALLATION OF SANITARY SEWERS, STORM SEWERS, WATERMAINS AS WELL AS THEIR SERVICES AND OTHER APPURTENANCES. ANY TRENCH DEWATERING, WHICH CONTAINS SEDIMENT SHALL PASS THROUGH A SEDIMENT SETTLING POND OR EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE. ALTERNATIVES MAY INCLUDE DEWATERING INTO A SUMP PIT, FILTER BAG OR EXISTING VEGETATED UPSLOPE AREA. SEDIMENT LADEN WATERS SHALL NOT BE DISCHARGE TO WATERWAYS, FLOOD PROTECTION AREAS OR THE COMBINED SEWER SYSTEM.

21. ALL PERMANENT EROSION CONTROL PRACTICES SHALL BE INITIATED WITHIN SEVEN (7) DAYS FOLLOWING THE COMPLETION OF SOIL DISTURBING ACTIVITIES.

22. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AND REPAIRED AS NEEDED ON A YEAR-ROUND BASIS DURING CONSTRUCTION AND ANY PERIODS OF CONSTRUCTION SHUTDOWN UNTIL PERMANENT STABILIZATION IS ACHIEVED.

23. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER PERMANENT SITE STABILIZATION.

24. THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, SITE INSPECTOR, OR MWRD.

MWRD GENERAL NOTES

NO.	REVISIONS	DATE
1	NONE	8/22/19
2	NONE	9/5/19
3	NONE	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

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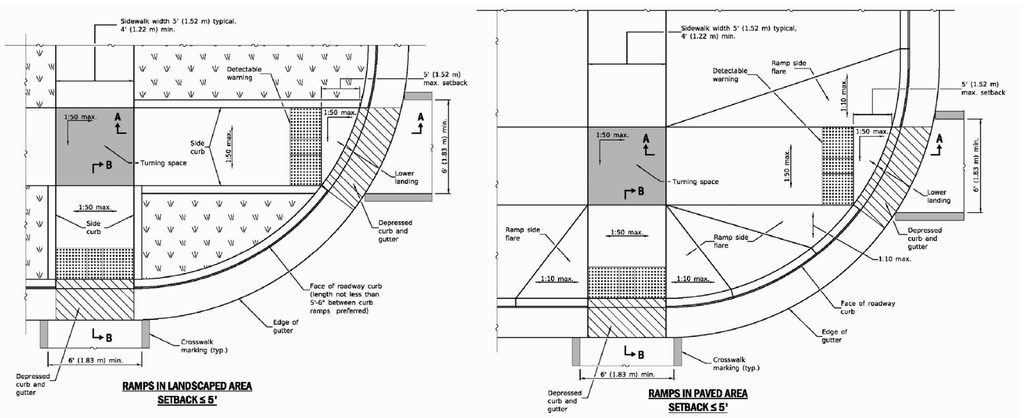
CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: NONE
PROJECT NO.: 19-005

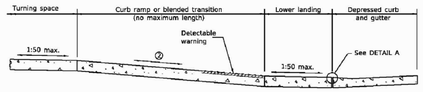
C-11

MWRD GENERAL NOTES



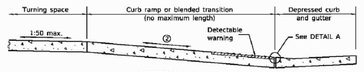
RAMPS IN LANDSCAPED AREA
SETBACK ≤ 5'

RAMPS IN PAVED AREA
SETBACK ≤ 5'



SECTION A-A

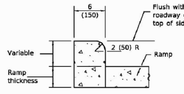
② The running slope of a curb ramp shall be 1:20 min. and 1:12 max. The running slope of a blended transition shall be 1:20 max.



SECTION B-B

② The running slope of a curb ramp shall be 1:20 min. and 1:12 max. The running slope of a blended transition shall be 1:20 max.

DETAIL A



SIDE CURB DETAIL

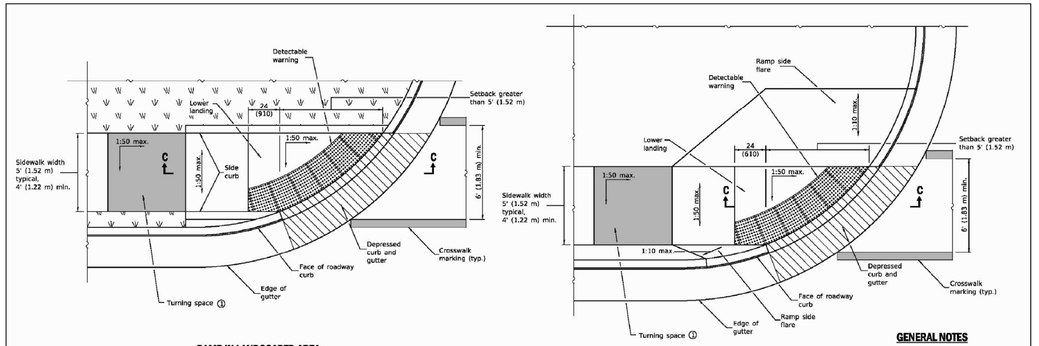
See Sheet 2 for GENERAL NOTES.

DATE	REVISIONS
1-1-19	Removed "15-foot rule", added "Blended transitions" and placement tolerances for detectable warnings.
1-1-18	Omitted diagonal slope at turning spaces and lower landings.

PERPENDICULAR CURB RAMPS FOR SIDEWALKS
(Sheet 1 of 2)

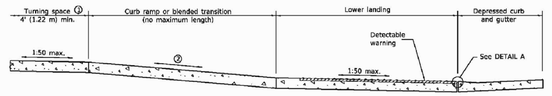
STANDARD 424001-11

Illinois Department of Transportation
PASSED January 1, 2019 — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2019 — ENGINEER OF DESIGN AND ENVIRONMENT
424001 - CD002



RAMP IN LANDSCAPED AREA
SETBACK > 5'

RAMP IN PAVED AREA
SETBACK > 5'



SECTION C-C

① This turning space not required for blended transitions.

② The running slope of a curb ramp shall be 1:20 min. and 1:12 max. The running slope of a blended transition shall be 1:20 max.

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

Where the turning space is constrained on a side opposite a ramp, the minimum length of the turning space in the direction of the ramp-run shall be 5' (1.52 m).

Where 1:50 maximum slope is shown, 1:64 is preferred.

Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.

Side Border - Detectable warnings should extend the full width of the walking surface (excluding flared sides) but a border along each side up to 2 in. (50 mm) in width is allowed.

Curb Set-Back - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

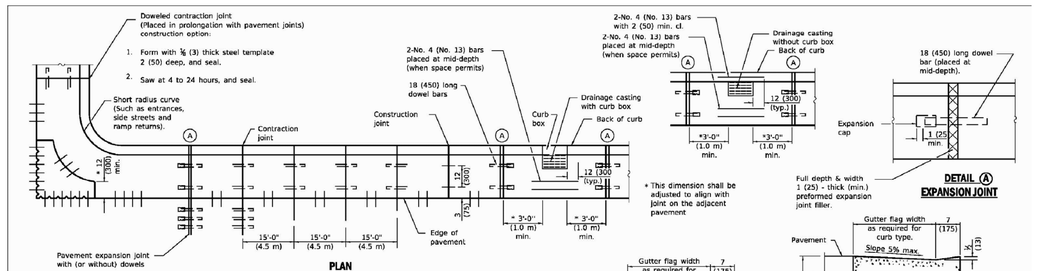
See Standard 606001 for details of depressed curb adjacent to curb ramp.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED January 1, 2019 — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2019 — ENGINEER OF DESIGN AND ENVIRONMENT
424001 - CD002

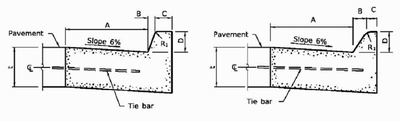
PERPENDICULAR CURB RAMPS FOR SIDEWALKS
(Sheet 2 of 2)

STANDARD 424001-11



PLAN
ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE

DETAIL Ⓐ EXPANSION JOINT



BARRIER CURB

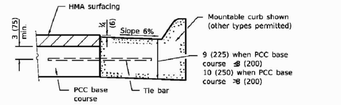
MOUNTABLE CURB

TABLE OF DIMENSIONS BARRIER CURB						
TYPE	A	B	C	D	R_1	
B-6.06 ✱	6	1	6	6	1	
(B-15.15)	(150)	(25)	(150)	(150)	(25)	
B-6.12	12	1	6	6	1	
(B-15.3)	(300)	(25)	(150)	(150)	(25)	
B-6.18	18	1	6	6	1	
(B-15.45)	(450)	(25)	(150)	(150)	(25)	
B-6.24	24	1	6	6	1	
(B-15.60)	(600)	(25)	(150)	(150)	(25)	
B-9.12	12	2	5	9	1	
(B-22.30)	(300)	(50)	(125)	(225)	(25)	
B-9.18	18	2	5	9	1	
(B-22.45)	(450)	(50)	(125)	(225)	(25)	
B-9.24	24	2	5	9	1	
(B-22.60)	(600)	(50)	(125)	(225)	(25)	

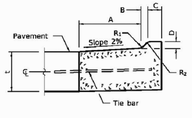
✱ For corner islands only.

TABLE OF DIMENSIONS MOUNTABLE CURB							
TYPE	A	B	C	D	R_1	R_2	
M-2.06	6	2	4	2	3	2	
(M-5.15)	(150)	(50)	(100)	(50)	(75)	(50)	
M-2.12	12	2	4	2	3	2	
(M-5.30)	(300)	(50)	(100)	(50)	(75)	(50)	
M-4.06	6	4	3	4	3		NA
(M-10.15)	(150)	(100)	(75)	(100)	(75)		
M-4.12	12	4	3	4	3		NA
(M-10.30)	(300)	(100)	(75)	(100)	(75)		
M-4.18	18	4	3	4	3		NA
(M-10.45)	(450)	(100)	(75)	(100)	(75)		
M-4.24	24	4	3	4	3		NA
(M-10.60)	(600)	(100)	(75)	(100)	(75)		
M-6.06	6	6	2	6	2		NA
(M-15.15)	(150)	(150)	(50)	(150)	(50)		
M-6.12	12	6	2	6	2		NA
(M-15.30)	(300)	(150)	(50)	(150)	(50)		
M-6.18	18	5	2	5	2		NA
(M-15.45)	(450)	(150)	(50)	(150)	(50)		
M-6.24	24	6	2	6	2		NA
(M-15.60)	(600)	(150)	(50)	(150)	(50)		

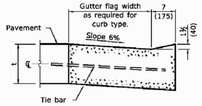
MOUNTABLE CURB



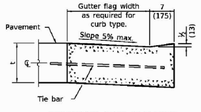
ADJACENT TO PCC BASE COURSE WITH HMA SURFACING



M-2.06 (M-5.15) and M-2.12 (M-5.30)



DEPRESSED CURB (TYPICAL)



DEPRESSED CURB ADJACENT TO CURB RAMP ACCESSIBLE TO THE DISABLED

GENERAL NOTES

The bottom slope of combination curb and gutter constructed adjacent to pcc pavement shall be the same slope as the subbase or 6% when subbase is omitted.

t = Thickness of pavement.

Longitudinal joint tie bars shall be No. 6 (No. 19) at 36 (900) centers in accordance with details for longitudinal construction joint shown on Standard 420001.

A minimum clearance of 2 (50) between the end of the tie bar and the back of the curb shall be maintained.

The dowel bars shown in contraction joints will only be required for monolithic construction.

See Standard 606301 for details of corner islands.

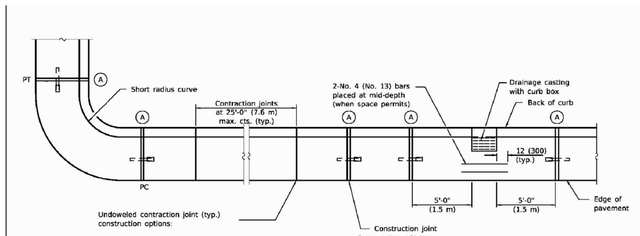
All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-18	Revised General Note for tie bar spacing to 36 (900) cts.
1-1-15	Added B-6.06 (B-15.15) barrier curb and gutter to table (corner islands only).

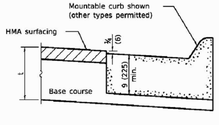
CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
(Sheet 1 of 2)

STANDARD 606001-07

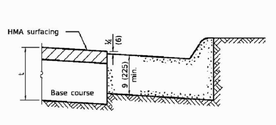
Illinois Department of Transportation
PASSED January 1, 2018 — ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2018 — ENGINEER OF DESIGN AND ENVIRONMENT
606001 - CD002



PLAN

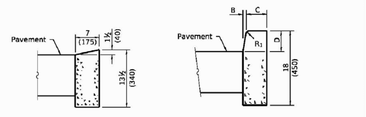


ON DISTURBED SUBGRADE



ON UNDISTURBED SUBGRADE

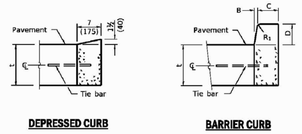
ADJACENT TO FLEXIBLE PAVEMENT



DEPRESSED CURB

BARRIER CURB

ADJACENT TO FLEXIBLE PAVEMENT



DEPRESSED CURB

BARRIER CURB

ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE

CONCRETE CURB TYPE B

CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
(Sheet 2 of 2)

STANDARD 606001-07

DATE	REVISIONS
6/22/19	NONE
9/5/19	NONE
11/22/19	

Prepared For:

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400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
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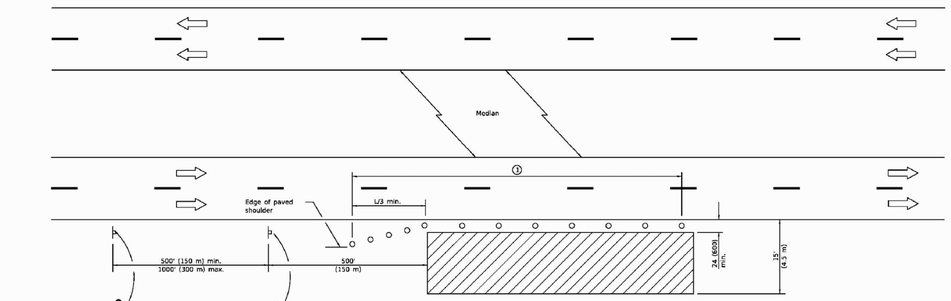
CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: NONE
PROJECT NO.: 19-005

IDOT DETAILS 1

C-12



TYPICAL APPLICATIONS

Utility operations
Culvert extensions
Side slope changes
Guardrail installation and maintenance
Delineator installation
Landscaping operations
Shoulder repair
Sign installation and maintenance

① When the work operation exceeds one hour, cones, drums or barricades shall be placed at 25' (8 m) centers for L/3 distance, and at 50' (15 m) centers through the remainder of the work area.

SYMBOLS

- Work area
- Sign
- Cone, drum or barricade

GENERAL NOTES

This Standard is used where any vehicles, equipment, workers or their activities will encroach in the area 15' (4.5 m) to 24 (600) from the edge of pavement.

Calculate L as follows:

SPEED LIMIT	FORMULAS English	(Metric)
40 mph (70 km/h) or less:	$L=\frac{WS^2}{60}$	$L=\frac{WS^2}{150}$
45 mph (80 km/h) or greater:	L=(W)(S)	L=0.65(W)(S)

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

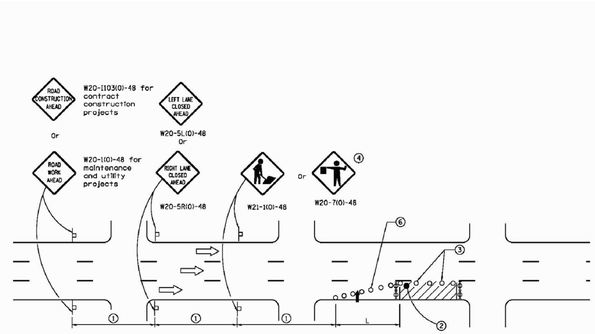
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED April 1, 2016 ENGINEER OF SAFETY ENGINEERING
APPROVED April 1, 2016 ENGINEER OF DESIGN AND ENVIRONMENT
DIST. CROSS

DATE	REVISIONS
4-1-16	Corrected typo in title.
1-1-14	Revised workers sign
	number to agree with
	current MUTCD.

OFF-RD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE

STANDARD 701101-05



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

- Arrow board
- Cone, drum or barricade
- Sign on portable or permanent support
- Work area
- Barricade or drum with flashing light
- Type III barricade with flashing lights
- Flagger with traffic control sign.

① Refer to SIGN SPACING TABLE for distances.

② Required for speeds > 40 MPH

③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.

④ Use flagger sign only when flagger is present.

⑤ For approved sideroad closures.

⑥ Cones, drums or barricades at 20' (6 m) in taper.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in urban areas.

Calculate L as follows:

SPEED LIMIT	FORMULAS English	(Metric)
40 mph (70 km/h) or less:	$L=\frac{WS^2}{60}$	$L=\frac{WS^2}{150}$
45 mph (80 km/h) or greater:	L=(W)(S)	L=0.65(W)(S)

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

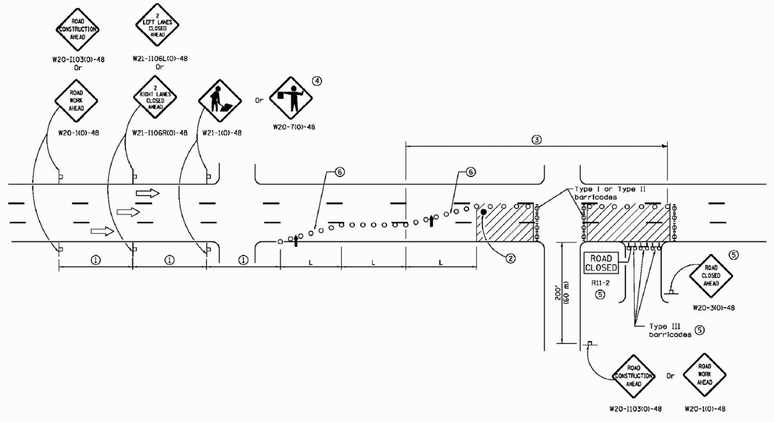
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
APPROVED January 1, 2014 ENGINEER OF SAFETY ENGINEERING
APPROVED January 1, 2014 ENGINEER OF DESIGN AND ENVIRONMENT
DIST. CROSS

DATE	REVISIONS
1-1-14	Revised workers sign
	number to agree with
	current MUTCD.
1-1-13	Omitted text "(WORKERS)"
	align.

URBAN LANE CLOSURE, MULTILANE, 1W OR 2W WITH NONTRAVERSABLE MEDIAN
(Sheet 1 of 2)

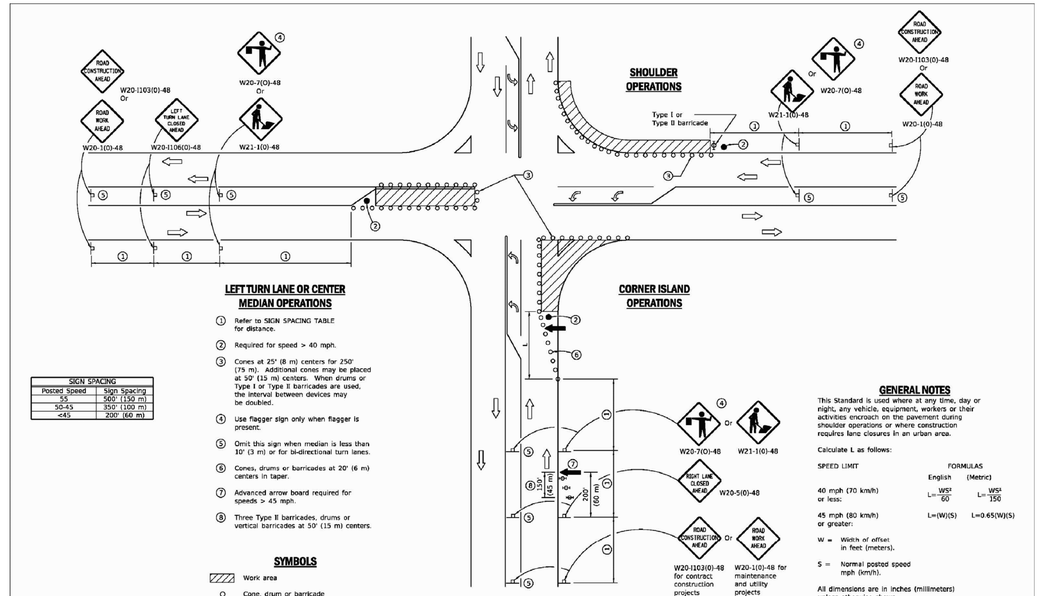
STANDARD 701601-09



Illinois Department of Transportation
APPROVED January 1, 2014 ENGINEER OF SAFETY ENGINEERING
APPROVED January 1, 2014 ENGINEER OF DESIGN AND ENVIRONMENT
DIST. CROSS

URBAN LANE CLOSURE, MULTILANE, 1W OR 2W WITH NONTRAVERSABLE MEDIAN
(Sheet 2 of 2)

STANDARD 701601-09



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

① Refer to SIGN SPACING TABLE for distance.

② Required for speed > 40 mph.

③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.

④ Use flagger sign only when flagger is present.

⑤ Omit this sign when median is less than 10' (3 m) or for bi-directional turn lanes.

⑥ Cones, drums or barricades at 20' (6 m) centers in taper.

⑦ Advanced arrow board required for speeds > 45 mph.

⑧ Three Type II barricades, drums or vertical barricades at 50' (15 m) centers.

SYMBOLS

- Work area
- Cone, drum or barricade
- Sign on portable or permanent support
- Arrow board
- Barricade or drum with flashing light
- Flagger with traffic control sign

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in an urban area.

Calculate L as follows:

SPEED LIMIT	FORMULAS English	(Metric)
40 mph (70 km/h) or less:	$L=\frac{WS^2}{60}$	$L=\frac{WS^2}{150}$
45 mph (80 km/h) or greater:	L=(W)(S)	L=0.65(W)(S)

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
4-1-16	Corrected sign number for
	LEFT TURN LANE CLOSED
	AHEAD.
1-1-14	Added devices at arrow
	board upstream from taper.
	Rev. workers sign number.

URBAN LANE CLOSURE, MULTILANE INTERSECTION

STANDARD 701701-10

IDOT DETAILS 2

NO.	REVISIONS	DATE
1	NONE	8/22/19
2	NONE	9/5/19
3	NONE	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

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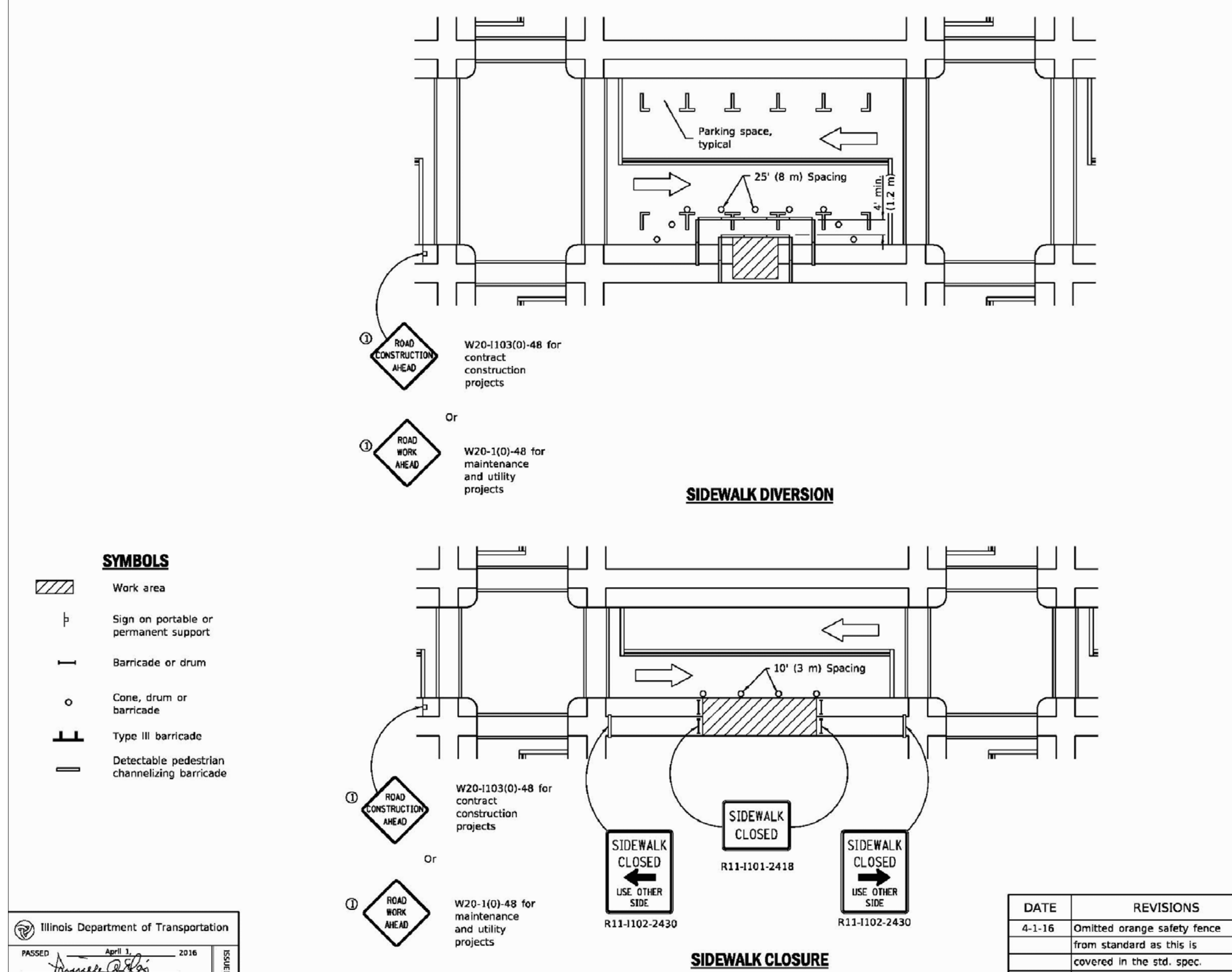
CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: NONE
PROJECT NO.: 19-005

C-13

IDOT DETAILS 2



GENERAL NOTES

This Standard is used where, at any time, pedestrian traffic must be rerouted due to work being performed.

This Standard must be used in conjunction with other Traffic Control & Protection Standards when roadway traffic is affected.

Temporary facilities shall be detectable and accessible.

The temporary pedestrian facilities shall be provided on the same side of the closed facilities whenever possible.

The SIDEWALK CLOSED / USE OTHER SIDE sign shall be placed at the nearest crosswalk or intersection to each end of the closure. Where the closure occurs at a corner, the signs shall be erected on the corners across the street from the closure. The SIDEWALK CLOSED signs shall be used at the ends of the actual closures.

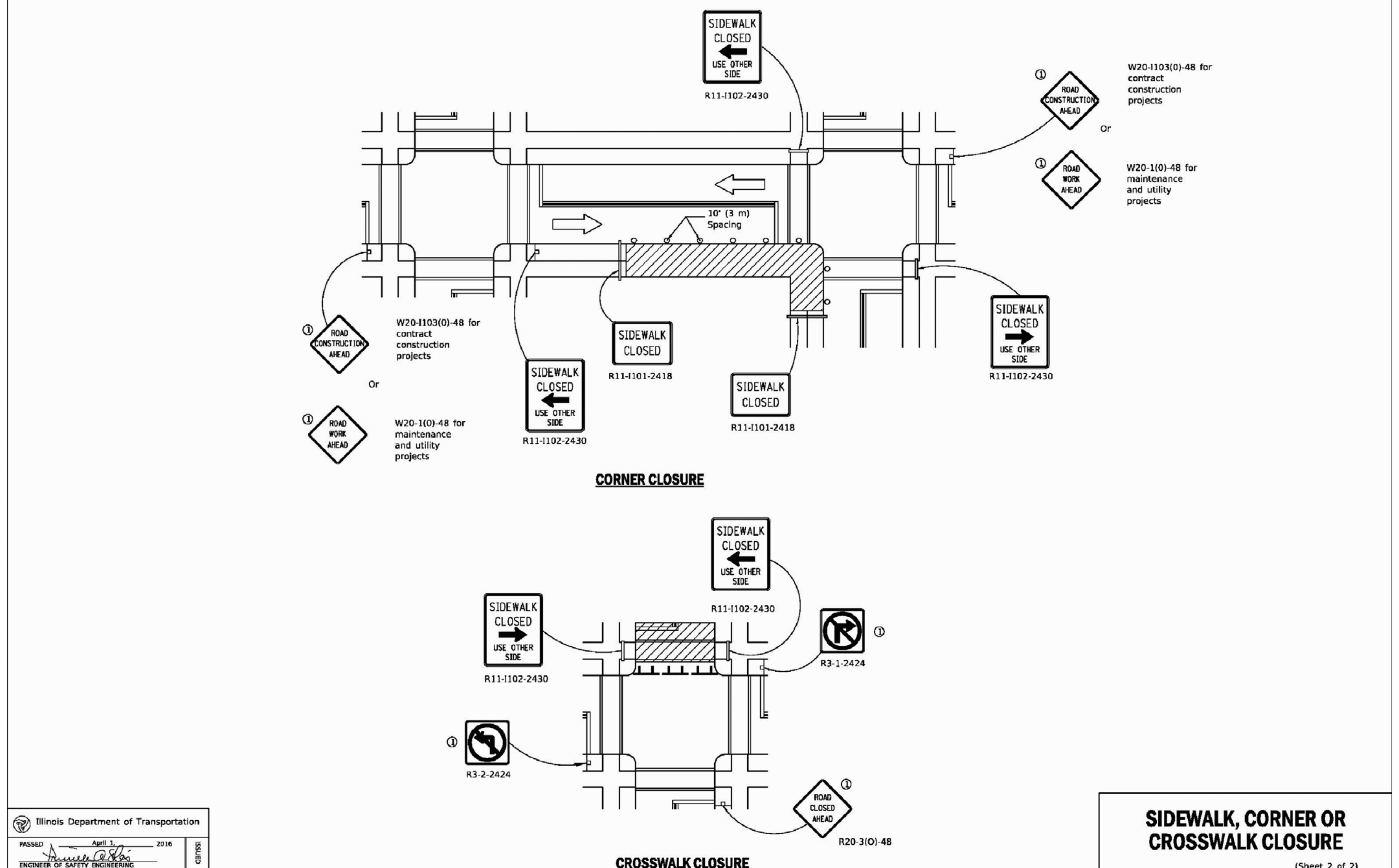
Type III barricades and R11-2-4830 signs shall be positioned as shown in "ROAD CLOSED TO ALL TRAFFIC" detail on Standard 701901.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
PASSED April 1, 2016
ENGINEER OF SAFETY ENGINEERING
APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

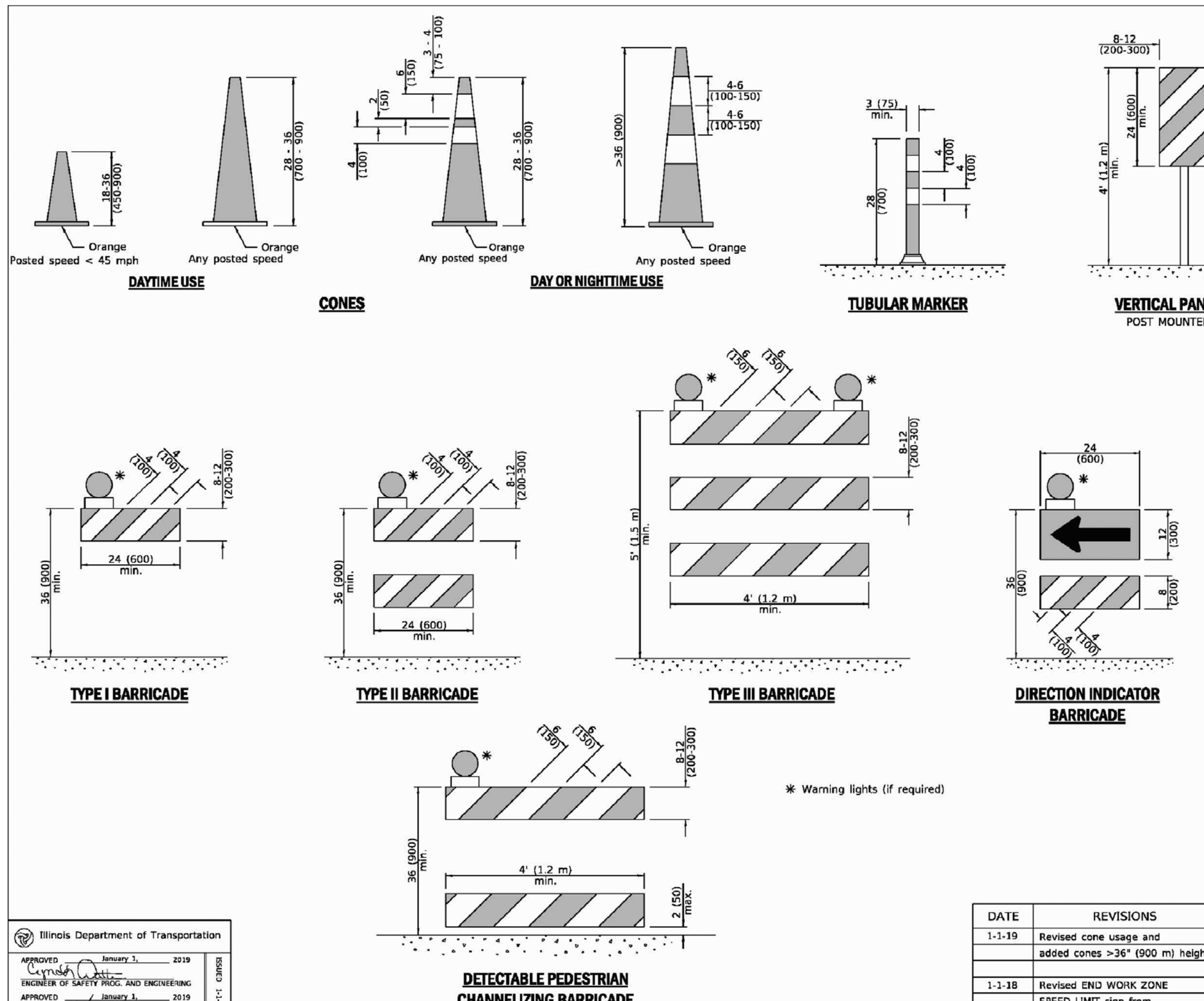
DATE	REVISIONS
4-1-16	Omitted orange safety fence from standard as this is covered in the std. spec.
1-1-12	Added SIDEWALK DIVERSION. Modified appearance of plan views. Renamed Std.

SIDEWALK, CORNER OR CROSSWALK CLOSURE
(Sheet 1 of 2)
STANDARD 701801-06



Illinois Department of Transportation
PASSED April 1, 2016
ENGINEER OF SAFETY ENGINEERING
APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

SIDEWALK, CORNER OR CROSSWALK CLOSURE
(Sheet 2 of 2)
STANDARD 701801-06



GENERAL NOTES

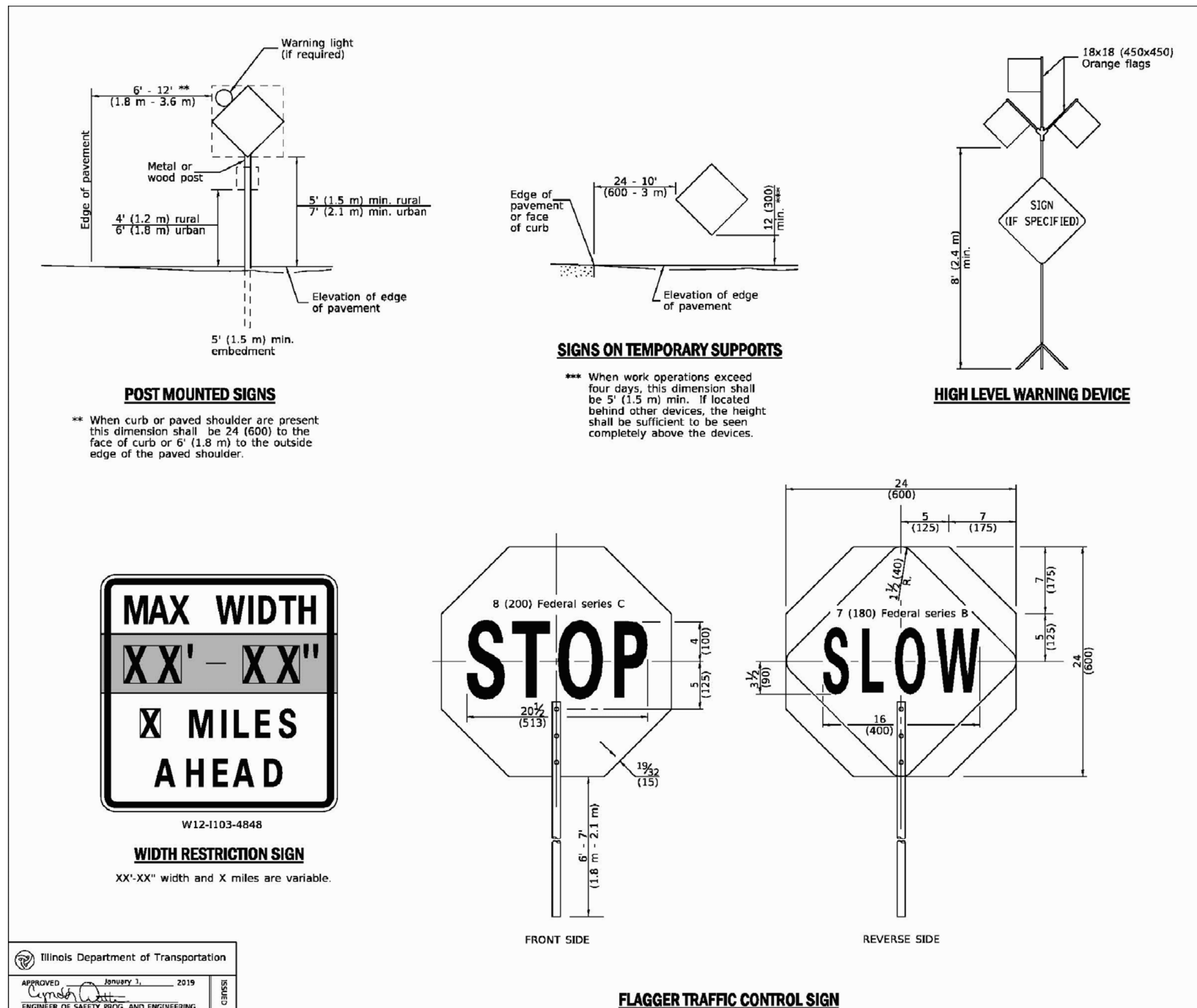
All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING
APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-19	Revised cone usage and added cones >36" (900 m) height.
1-1-18	Revised END WORK ZONE SPEED LIMIT sign from orange to white background.

TRAFFIC CONTROL DEVICES
(Sheet 1 of 3)
STANDARD 701901-08



ROAD CONSTRUCTION NEXT X MILES — G20-I104(0)-6036

END CONSTRUCTION — G20-I105(0)-6024

This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING

WORK ZONE — W21-I115(0)-3618

SPEED LIMIT XX — R2-1-3648

PHOTO ENFORCED — R10-I108p-3618 ****

$XXX FINE MINIMUM — R2-I106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.

END WORK ZONE SPEED LIMIT — G20-I103-6036

This sign shall be used when the above sign assembly is used.

HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

**** R10-I108p shall only be used along roadways under the juristiction of the State.

Illinois Department of Transportation
APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING
APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

TRAFFIC CONTROL DEVICES
(Sheet 2 of 3)
STANDARD 701901-08

NO.	REVISIONS	DATE
1	NONE	8/22/19
2	NONE	9/5/19
3	NONE	11/22/19

Prepared For:
Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

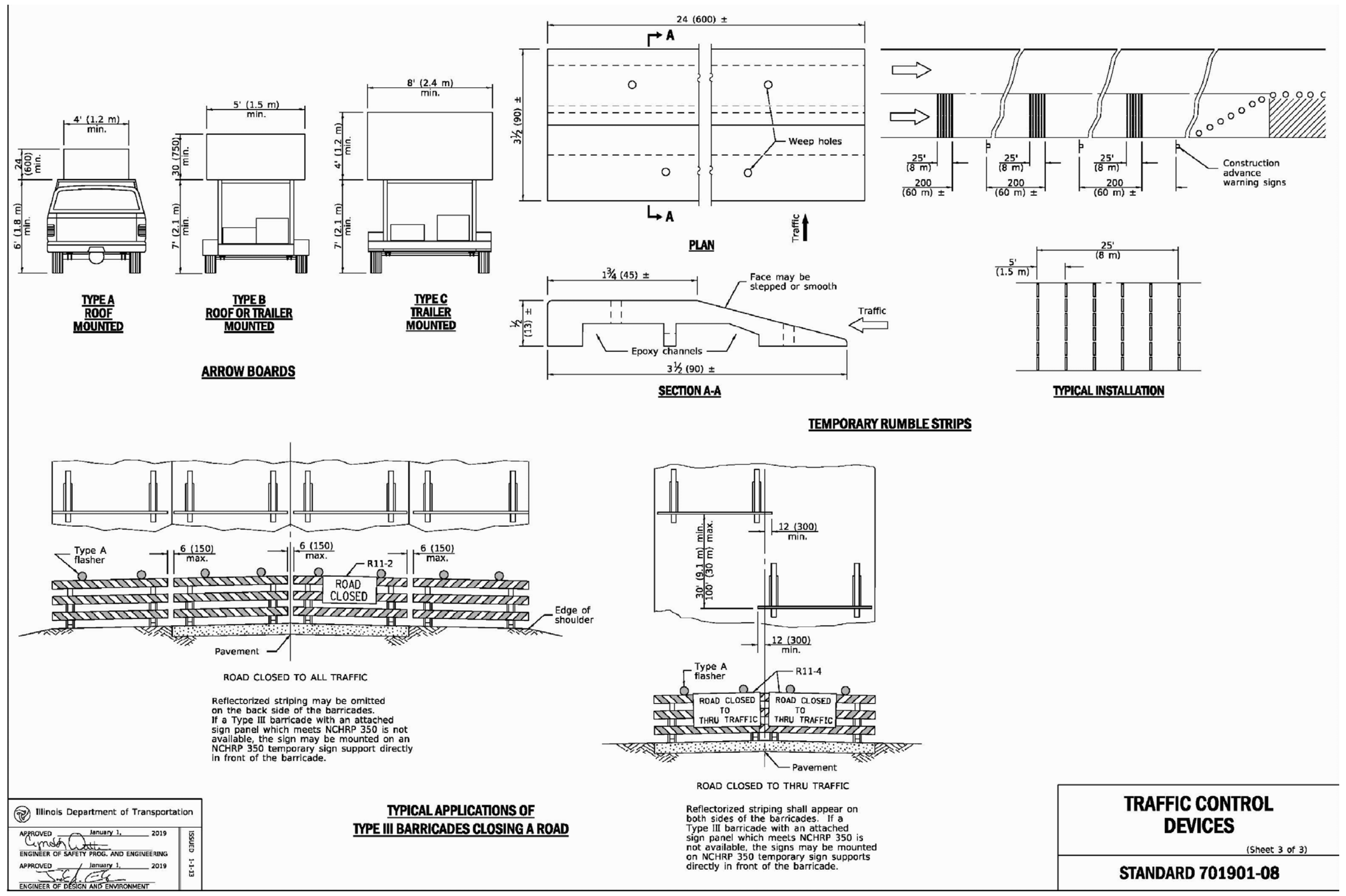
Prepared By:

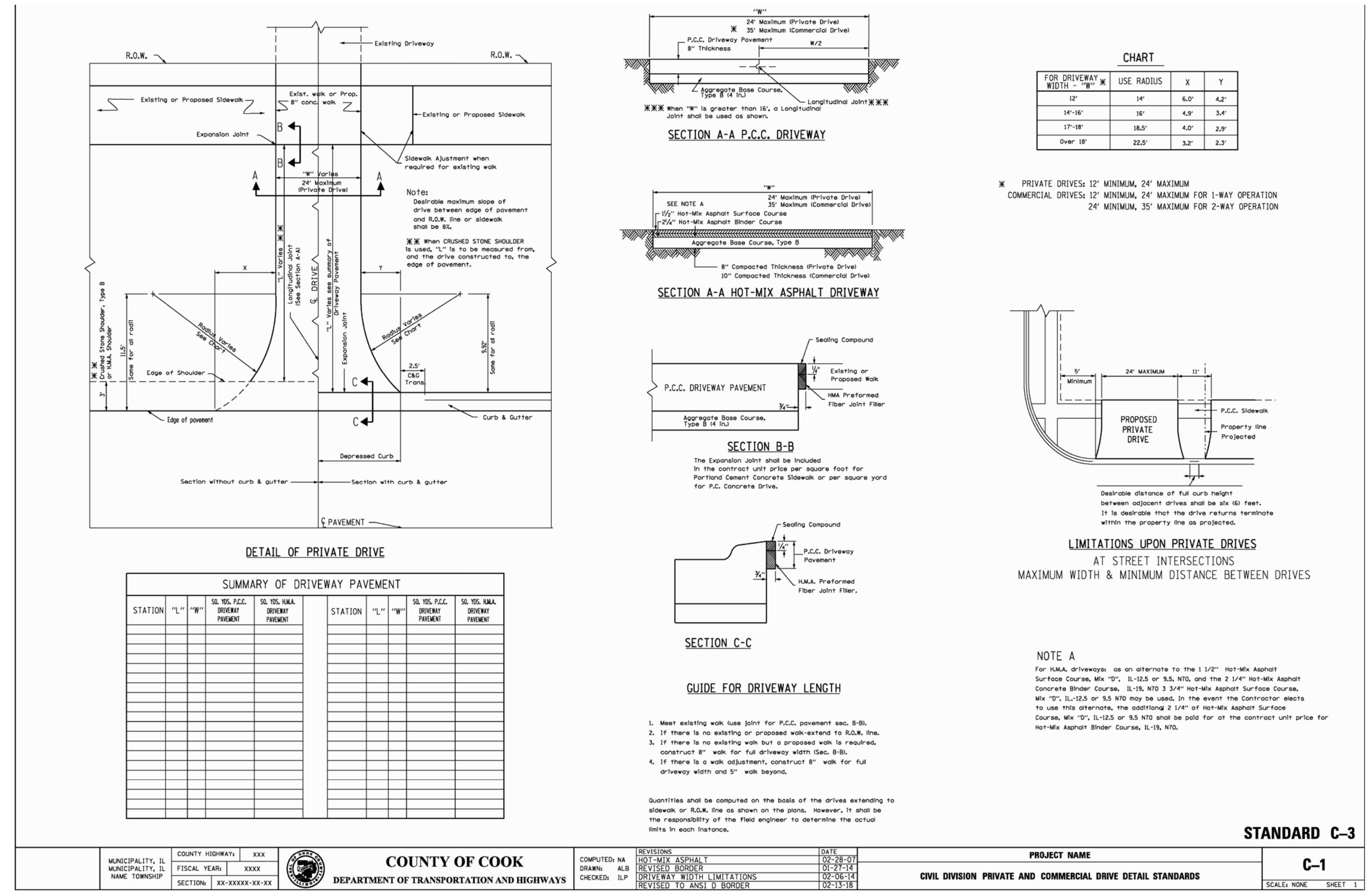
Watermark Engineering Resources, LTD
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-9800 www.watermark-engineering.com

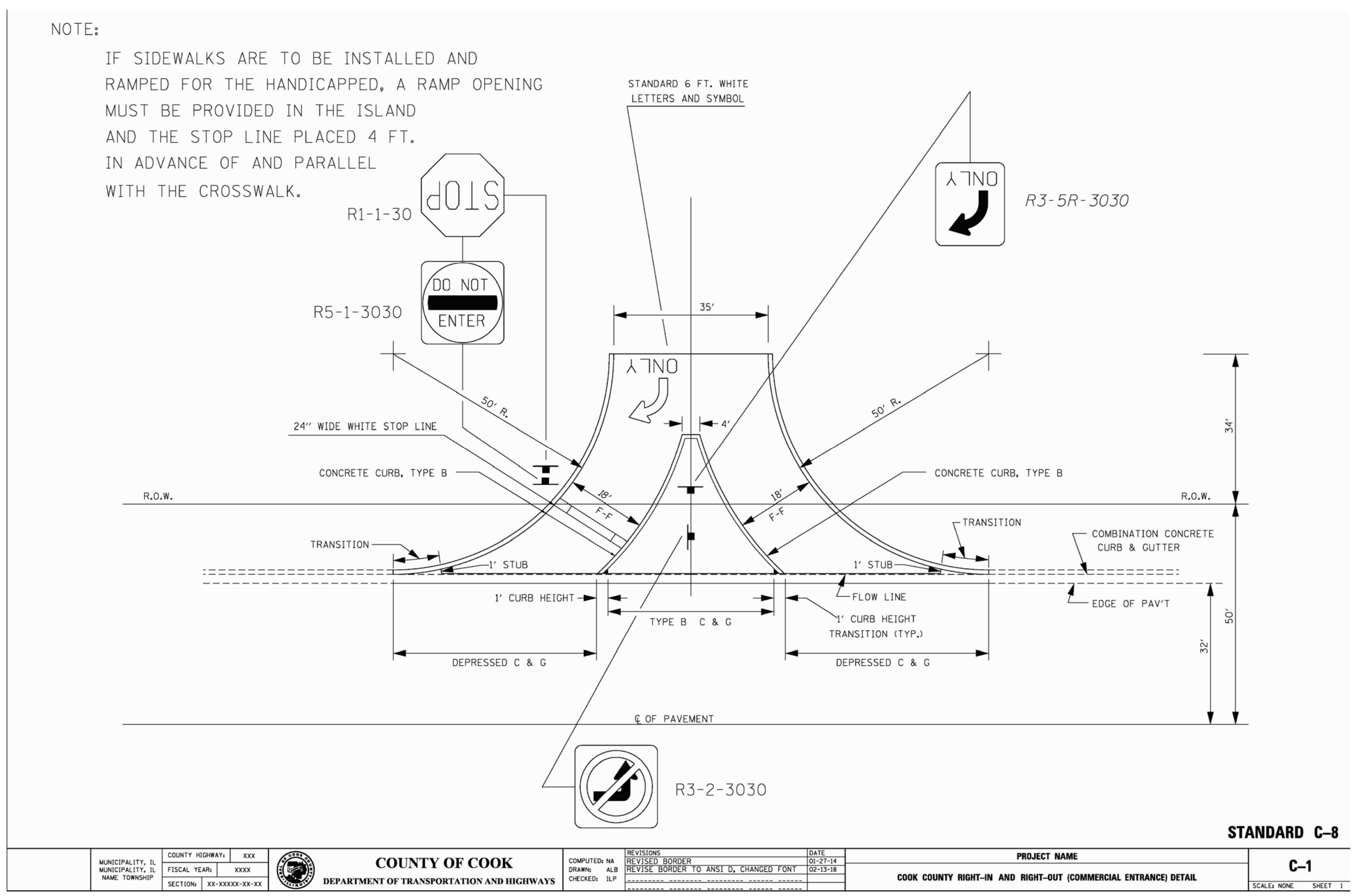
CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: NONE
PROJECT NO.: 19-005

IDOT DETAILS 3

C-14


ARROW BOARDS
TYPE A ROOF MOUNTED
TYPE B ROOF OR TRAILER MOUNTED
TYPE C TRAILER MOUNTED
PLAN
Weep holes
SECTION A-A
Face may be stepped or smooth
Epoxy channels
Traffic
TYPICAL INSTALLATION
Construction advance warning signs
TEMPORARY RUMBLE STRIPS
Type A flasher
ROAD CLOSED
Edge of shoulder
Pavement
ROAD CLOSED TO ALL TRAFFIC
Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.
ROAD CLOSED TO THRU TRAFFIC
Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.
TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD
Illinois Department of Transportation
TRAFFIC CONTROL DEVICES
(Sheet 3 of 3)
STANDARD 701901-08


DETAIL OF PRIVATE DRIVE
SUMMARY OF DRIVEWAY PAVEMENT
SECTION A-A P.C.C. DRIVEWAY
SECTION A-A HOT-MIX ASPHALT DRIVEWAY
SECTION B-B
SECTION C-C
GUIDE FOR DRIVEWAY LENGTH
CHART
PRIVATE DRIVES: 12' MINIMUM, 24' MAXIMUM
COMMERCIAL DRIVES: 12' MINIMUM, 24' MAXIMUM FOR 1-WAY OPERATION
24' MINIMUM, 35' MAXIMUM FOR 2-WAY OPERATION
LIMITATIONS UPON PRIVATE DRIVES
AT STREET INTERSECTIONS
MAXIMUM WIDTH & MINIMUM DISTANCE BETWEEN DRIVES
NOTE A
STANDARD C-3
COUNTY OF COOK
DEPARTMENT OF TRANSPORTATION AND HIGHWAYS
CIVIL DIVISION PRIVATE AND COMMERCIAL DRIVE DETAIL STANDARDS
C-1


NOTE:
IF SIDEWALKS ARE TO BE INSTALLED AND RAMPED FOR THE HANDICAPPED, A RAMP OPENING MUST BE PROVIDED IN THE ISLAND AND THE STOP LINE PLACED 4 FT. IN ADVANCE OF AND PARALLEL WITH THE CROSSWALK.
STANDARD 6 FT. WHITE LETTERS AND SYMBOL
R1-1-30
R5-1-3030
R3-5R-3030
R3-2-3030
DO NOT ENTER
35'
50' R.
24" WIDE WHITE STOP LINE
CONCRETE CURB, TYPE B
R.O.W.
TRANSITION
COMBINATION CONCRETE CURB & GUTTER
1' STUB
1' CURB HEIGHT
TYPE B C & G
FLOW LINE
1' CURB HEIGHT TRANSITION (TYP.)
EDGE OF PAV'T
DEPRESSED C & G
℄ OF PAVEMENT
STANDARD C-8
COUNTY OF COOK
DEPARTMENT OF TRANSPORTATION AND HIGHWAYS
COOK COUNTY RIGHT-IN AND RIGHT-OUT (COMMERCIAL ENTRANCE) DETAIL
C-1

NO.	REVISIONS	DATE
1	NONE	8/22/19
2	NONE	9/5/19
3	PER CLIENT REQUEST	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

Watermark Engineering Resources LTD
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-6800 www.watermark-engineering.com

CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: NONE
PROJECT NO.: 19-005

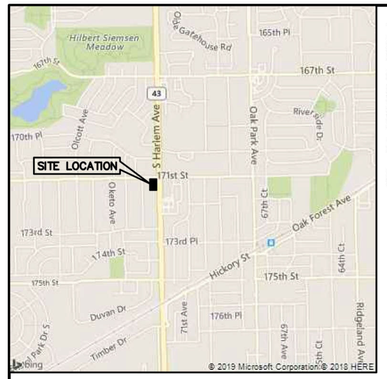
DOT DETAILS

C-15

DOT DETAILS

J:\dwgs\19jobs\19005\19005.dwg, 19005 (Details)

ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY



VICINITY MAP
NO SCALE

LEGAL DESCRIPTION

PARCEL 1: LOT 1 IN BLOCK 1 IN ARTHUR T. MCINTOSH AND COMPANY'S SOUTHLANDS IN THE SOUTHEAST 1/4 OF SECTION 25, TOWNSHIP 36 NORTH, RANGE 12, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

PARCEL 2: NON-EXCLUSIVE EASEMENT FOR THE BENEFIT OF PARCEL 1 AS CREATED BY THE RECIPROCAL EASEMENT AGREEMENT DATED JULY 13, 2005 AND RECORDED AUGUST 1, 2005 AS DOCUMENT 0521308051 BY AND BETWEEN CITIZENS FINANCIAL SERVICES, FSB AND PALOS BANK AND TRUST COMPANY, AS TRUSTEE UNDER TRUST AGREEMENT DATED JANUARY 19, 1977 AND KNOWN AS TRUST NUMBER 1-1037 FOR THE PURPOSES OF INGRESS AND EGRESS OVERALL PAVED DRIVEWAYS, ROADWAYS AND WALKWAYS AS THEN OR THEREAFTER CONSTRUCTED OVER THE FOLLOWING DESCRIBED LAND:

LOT 24 IN BLOCK 1 IN ARTHUR T. MCINTOSH AND COMPANY'S SOUTHLANDS IN THE SOUTHEAST 1/4 OF SECTION 25, TOWNSHIP 36 NORTH, RANGE 12, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

PARCEL 3: LOT 2 IN BLOCK 1 IN ARTHUR MCINTOSH AND COMPANY'S SOUTHLANDS IN THE SOUTHEAST 1/4 OF SECTION 25, TOWNSHIP 36 NORTH, RANGE 12, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

SCHEDULE B EXCEPTIONS

7. EASEMENT FOR PUBLIC UTILITIES AND THE EASEMENT PROVISIONS AND GRANTEES AS SET FORTH ON THE PLAT OF SUBDIVISION OVER THE FOLLOWING:

THE REAR 10 FEET OF PARCELS 1 AND 3 AND THE EAST 10 FEET OF PARCEL2

8. COVENANTS AND RESTRICTIONS (BUT OMITTING ANY SUCH COVENANT OR RESTRICTIONS, IF ANY, BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW) CONTAINED IN DOCUMENT RECORDED AS DOCUMENT NO. 18686756, RELATING TO SIZE, AREA AND USE OF THE LAND, WHICH DOES NOT CONTAIN A REVERSIONARY OR FORFEITURE CLAUSE.

PARCEL 1

10. CONSTRUCTION EASEMENT FOR THE BENEFIT OF THE PROPERTY WEST AND ADJOINING FOR CONSTRUCTION OF A DRIVEWAY, THE CLOSING OF A DRIVEWAY AND RELATED WORK AS DESCRIBED IN THE EASEMENT AGREEMENT RECORDED AS DOCUMENT 0521308051

11. (A) TERMS, PROVISIONS AND CONDITIONS RELATING TO THE EASEMENT DESCRIBED AS PARCEL 2 CONTAINED IN THE INSTRUMENT CREATING SAID EASEMENT.

(B) RIGHTS OF THE ADJOINING OWNER OR OWNERS TO THE CONCURRENT USE OF SAID EASEMENT.

12. COVENANTS AND RESTRICTIONS (BUT OMITTING ANY SUCH COVENANT OR RESTRICTIONS, IF ANY, BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW) CONTAINED IN DOCUMENT RECORDED AS DOCUMENT NO. 17258814, RELATING TO SIZE, AREA AND USE OF THE LAND, WHICH DOES NOT CONTAIN A REVERSIONARY OR FORFEITURE CLAUSE.

PARCEL 3

SCHEDULE B EXCEPTIONS 3, 4, 5, 6, 9, 13, 14, 15 AND 16 ARE NOT SURVEY RELATED AND THEREFORE NOT SHOWN.

NOTES

1. THIS SURVEY IS BASED ON THE LEGAL DESCRIPTION AND EASEMENTS OF RECORD AS IDENTIFIED IN TITLE COMMITMENT NUMBER 67176O5 ISSUED BY FREEDOM TITLE CORPORATION HAVING AN EFFECTIVE DATE OF DECEMBER 20, 2018.
2. THE BASIS OF BEARINGS FOR THIS SURVEY IS THE ILLINOIS STATE PLANE COORDINATE SYSTEM, NAD 83 (2011), ZONE 1201 (ILLINOIS EAST)
3. THIS SITE FALLS WITHIN "OTHER AREAS: ZONE X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DEFINED BY THE FLOOD INSURANCE RATE MAP, MAP NUMBER 17031C0708J, HAVING A REVISED DATE OF AUGUST 19, 2008.
4. THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR TOPOGRAPHIC SURVEYS, AND IS BASED ON FIELD WORK PERFORMED ON JANUARY 18, 2019.
5. THE SURVEYOR CONTACTED J.U.L.I.E. (JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS) FOR AN ON-SITE LOCATE WHICH WAS ASSIGNED A DIG NUMBER OF A015 0911. THE UTILITIES AS MARKED ON-SITE AT THE TIME OF THE SURVEY ARE SHOWN HEREON. ADDITIONALLY, THE SURVEYOR CONTACTED J.U.L.I.E. FOR A DESIGN STAGE REQUEST FOR THIS SITE WHICH WAS ASSIGNED A DIG NUMBER OF 018 0777. INQUIRIES WERE SENT OUT TO THE VARIOUS UTILITY COMPANIES REQUESTING MAPS AND/OR ATLASES OF THEIR RESPECTIVE FACILITIES. THE INFORMATION RECEIVED TO DATE IS SHOWN HEREON.

PARCEL 1 8 6. WARRANTY DEED RECORDED AS DOCUMENT 18686756 CONTAINS THE FOLLOWING:

a. THE AREA OF THE FIRST FLOOR OF ANY MAIN BUILDING SHALL NOT BE LESS THAN 800 SQUARE FEET.
b. RESTRICTIONS REGARDING USE OF THE LAND WHICH ARE NOT SURVEY RELATED.

PARCEL 2 10 11 7. DOCUMENT 0521308051 CREATES THE FOLLOWING:
a. EASEMENT FOR ACCESS "OVER ALL PAVED DRIVEWAYS, ROADWAYS AND WALKWAYS AS PRESENTLY OR HEREAFTER CONSTRUCTED". BLANKET IN NATURE OVER PARCEL 1 AND LOT 24 IN BLOCK 1 WHICH IS WEST OF PARCEL 1.
b. CONSTRUCTION EASEMENT. BLANKET IN NATURE.

PARCEL 3 12 8. WARRANTY DEED RECORDED AS DOCUMENT 17258814 CONTAINS THE FOLLOWING:

a. THE AREA OF THE FIRST FLOOR OF ANY MAIN BUILDING SHALL NOT BE LESS THAN 800 SQUARE FEET.
b. RESTRICTIONS REGARDING USE OF THE LAND WHICH ARE NOT SURVEY RELATED.

LEGEND

- FOUND 7/8" O.D.I.P. UNLESS OTHERWISE NOTED (HELD LOCATION)
- CONCRETE MONUMENT
- CROSS IN CONCRETE
- MANHOLE
- STORM STRUCTURE
- SANITARY MANHOLE
- CLEANOUT
- FLARED END SECTION
- TRANSFORMER PAD
- ELECTRIC MANHOLE
- ELECTRIC BOX
- ELECTRIC PEDESTAL
- ELECTRIC MARKER
- ELECTRIC METER
- UTILITY POLE
- UTILITY POLE W/LIGHT
- UTILITY POLE W/TSF
- GUY POLE
- OVERHEAD TRAFFIC SIGNAL
- TRAFFIC SIGNAL MANHOLE
- LIGHT
- LIGHT POLE
- HAND HOLE
- VALVE VAULT
- FIRE HYDRANT
- IRRIGATION CONTROL VALVE
- POST INDICATOR VALVE
- SIAMESE WATER CONNECTION
- WATER MARKER
- WATER METER
- VALVE BOX
- B/BOX
- TELEPHONE MANHOLE
- TELEPHONE NETWORK INTERFACE
- TELEPHONE MARKER
- TELEPHONE PEDESTAL
- CABLE TELEVISION PEDESTAL
- GAS METER
- GAS VALVE
- GAS MARKER
- DOWN SPOUT
- BORING HOLE
- MONITORING WELL
- GATE POST
- BOLLARD POLE
- SIGN
- FLAG POLE
- MAILBOX
- SANITARY SEWER — SAN —
- STORM SEWER — STM —
- WATER MAIN
- GAS MAIN
- ELECTRIC LINE
- OVERHEAD WIRES
- TELEPHONE LINE
- CONIFEROUS TREE W/APPROX. DIAMETER
- DECIDUOUS TREE W/APPROX. DIAMETER MS=MULTI-STEM (DRIP LINE SHOWN IS APPROXIMATE)
- ELEVATION
- BITUMINOUS PAVEMENT
- CONCRETE SURFACE
- DEPRESSED CURB
- GRAVEL SURFACE
- LANDSCAPE AREA
- STONE SURFACE
- DETECTABLE TACTILE WARNING SURFACE
- WOOD FENCE
- CHAIN LINK FENCE
- PLASTIC FENCE
- METAL GUARDRAIL
- OVERHEAD TRAFFIC ARM

LINE LEGEND

- LIMITS OF LAND PER LEGAL DESCRIPTION
- ADJACENT LAND
- PARCEL LINE
- EASEMENT LINE
- CENTERLINE
- BUILDING SETBACK LINE
- SECTION LINE
- EXISTING CONTOUR

ABBREVIATIONS

O.D.I.P. = OUTSIDE DIAMETER IRON PIPE
TF = TOP OF FOUNDATION
FF = FINISHED FLOOR
FES = FLARED END SECTION
VCP = VITRIFIED CLAY PIPE
DIP = DUCTILE IRON PIPE
PVC = POLYVINYL CHLORIDE
RCP = REINFORCED CONCRETE PIPE
CMP = CORRUGATED METAL PIPE
(R) = RECORD BEARING OR DISTANCE
(M) = MEASURED BEARING OR DISTANCE
(C) = CALCULATED BEARING OR DISTANCE
(D) = DEED BEARING OR DISTANCE
A = ARC LENGTH
R = RADIUS
CH = CHORD
CB = CHORD BEARING
B.S.L. = BUILDING SETBACK LINE
U.E. = UTILITY EASEMENT
D.E. = DRAINAGE EASEMENT
P.U.E. = PUBLIC UTILITY EASEMENT
P.O.C. = POINT OF COMMENCEMENT
P.O.B. = POINT OF BEGINNING
BC = BACK OF CURB
BDC = BACK OF DEPRESSED
FL = FLOW LINE
C = CONCRETE
P = PAVEMENT
G = GRAVEL
EW = EDGE OF WALK
TW = TOP OF WALL
TP = TOP OF PIPE
IE = INVERT ELEVATION
PL = PROPERTY LINE
DS = DOWN SPOUT
S.F. = SQUARE FEET
SL = SHORE LINE
TSF = TRANSFORMER
B = PAVERS
P.U. & D.E. = PUBLIC UTILITY AND DRAINAGE EASEMENT

BENCHMARKS

REFERENCE BENCHMARK:
NGS DESIGNATION - DK2606
PID = DN4691

STATION IS 39 FEET WEST OF THE CENTERLINE OF WILL/COOK ROAD, 54 FEET SOUTH OF THE CENTERLINE OF 167TH STREET, 10 FEET WEST OF A TRAFFIC SIGNAL HAND HOLE AND 1 FOOT NORTHEAST OF AN ORANGE CARSONITE MARKER. ACCESS TO THE DATUM POINT IS THROUGH A 6 INCH LOGO CAP AND THE ROD (DATUM POINT) IS SURROUNDED BY A FLOATING BRONZE DISK TO AID IN IDENTIFICATION.

DATUM: NAVD88
ELEVATION = 751.92

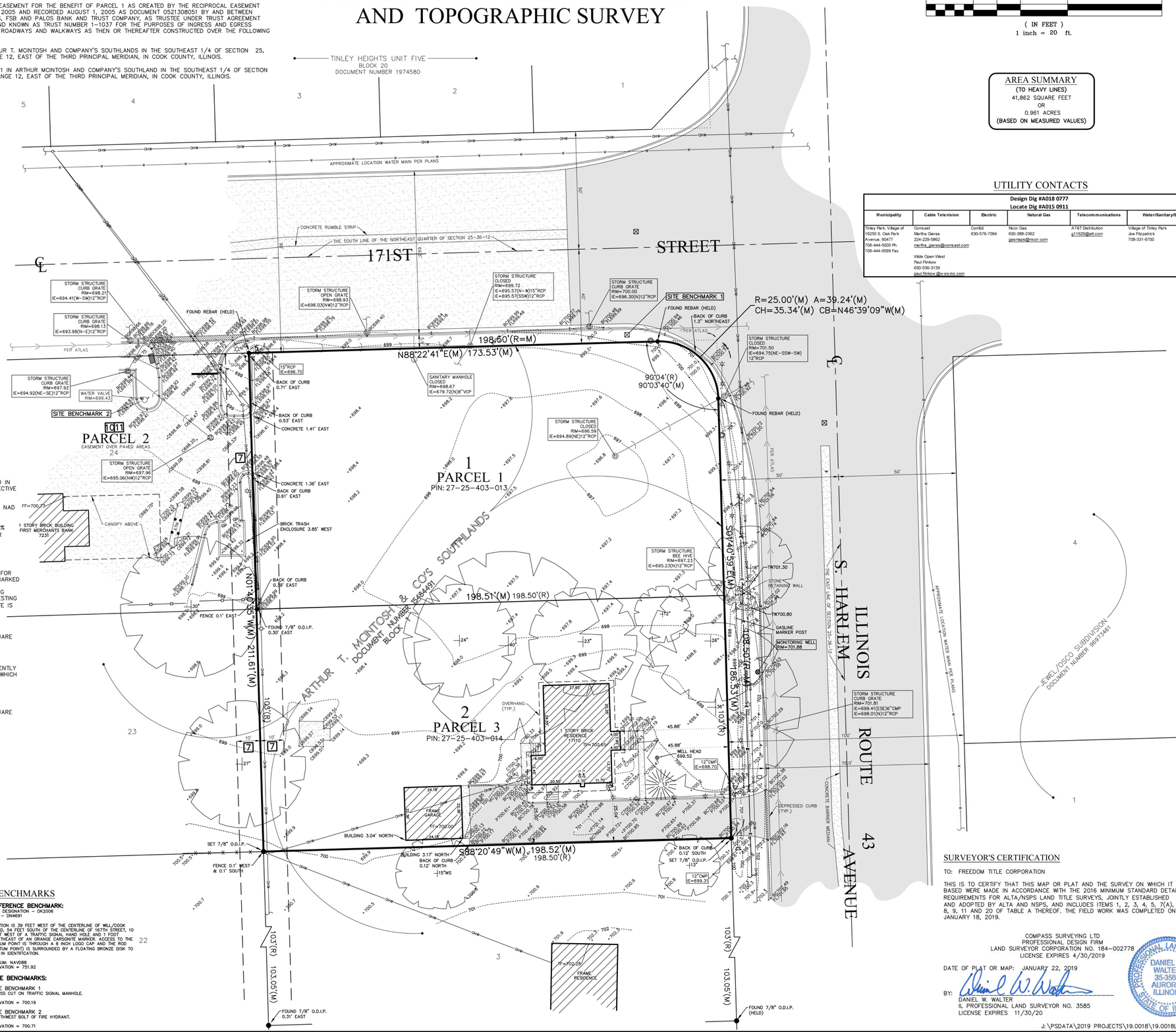
SITE BENCHMARKS:

SITE BENCHMARK 1
CROSS CUT ON TRAFFIC SIGNAL MANHOLE.

ELEVATION = 700.19

SITE BENCHMARK 2
SOUTHWEST BOLT OF FIRE HYDRANT.

ELEVATION = 700.71



GRAPHIC SCALE

20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GRID NORTH

AREA SUMMARY

(TO HEAVY LINES)
41,862 SQUARE FEET
OR
0.961 ACRES
(BASED ON MEASURED VALUES)

UTILITY CONTACTS

Design Dig #A018 0777
Locate Dig #A015 0911

Municipality	Cable Television	Electric	Natural Gas	Telecommunications	Water/Sanitary/Storm
Tinley Park, Village of 16250 S. Oak Park Avenue, 60477 708-444-5000 Ph 708-444-5099 Fax	Comcast Martha Geras 224-229-5862 martha_geras@comcast.com Wide Open West Paul Flinkow 630-536-3139 paul.flinkow@wowinc.com	ComEd 630-576-7094	Nicor Gas 630-388-2362 gasmaps@nicor.com	AT&T Distribution g11529@att.com	Village of Tinley Park Joe Fitzpatrick 708-331-6700

SURVEYOR'S CERTIFICATION

TO: FREEDOM TITLE CORPORATION

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 7(A), 8, 9, 11 AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JANUARY 18, 2019.

COMPASS SURVEYING LTD
PROFESSIONAL DESIGN FIRM
LAND SURVEYOR CORPORATION NO. 184-002778
LICENSE EXPIRES 4/30/2019

DATE OF PLAT OR MAP: JANUARY 22, 2019

BY: _____
DANIEL W. WALTER
IL PROFESSIONAL LAND SURVEYOR NO. 3585
LICENSE EXPIRES 11/30/20

DANIEL W. WALTER 35-3585 AURORA, ILLINOIS PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS

J:\PSDATA\2019 PROJECTS\19.0018\19.0018LTSTOPO.DWG

811 Know what's below. Call before you dig.

UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE 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 DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM AVAILABLE INFORMATION. THE SURVEYOR HAS PHYSICALLY LOCATED THE UNDERGROUND LINES.

NO.	REVISIONS	DATE	BY
	IN-HOUSE REVIEW	2-18-19	TFS
1	PER TINLEY PARK LETTER DATED 8/5/19	8-21-19	MRA
2			

DATE: 1-22-19 | PC: TK | DRAWN BY: TFS | CHECKED BY: DW | BOOK 547 PG 29

PROJECT
17100 S. HARLEM AVENUE
Tinley Park, Illinois

CLIENT
VEQUITY
400 N. State Street, Suite 400
Chicago, Illinois 60654

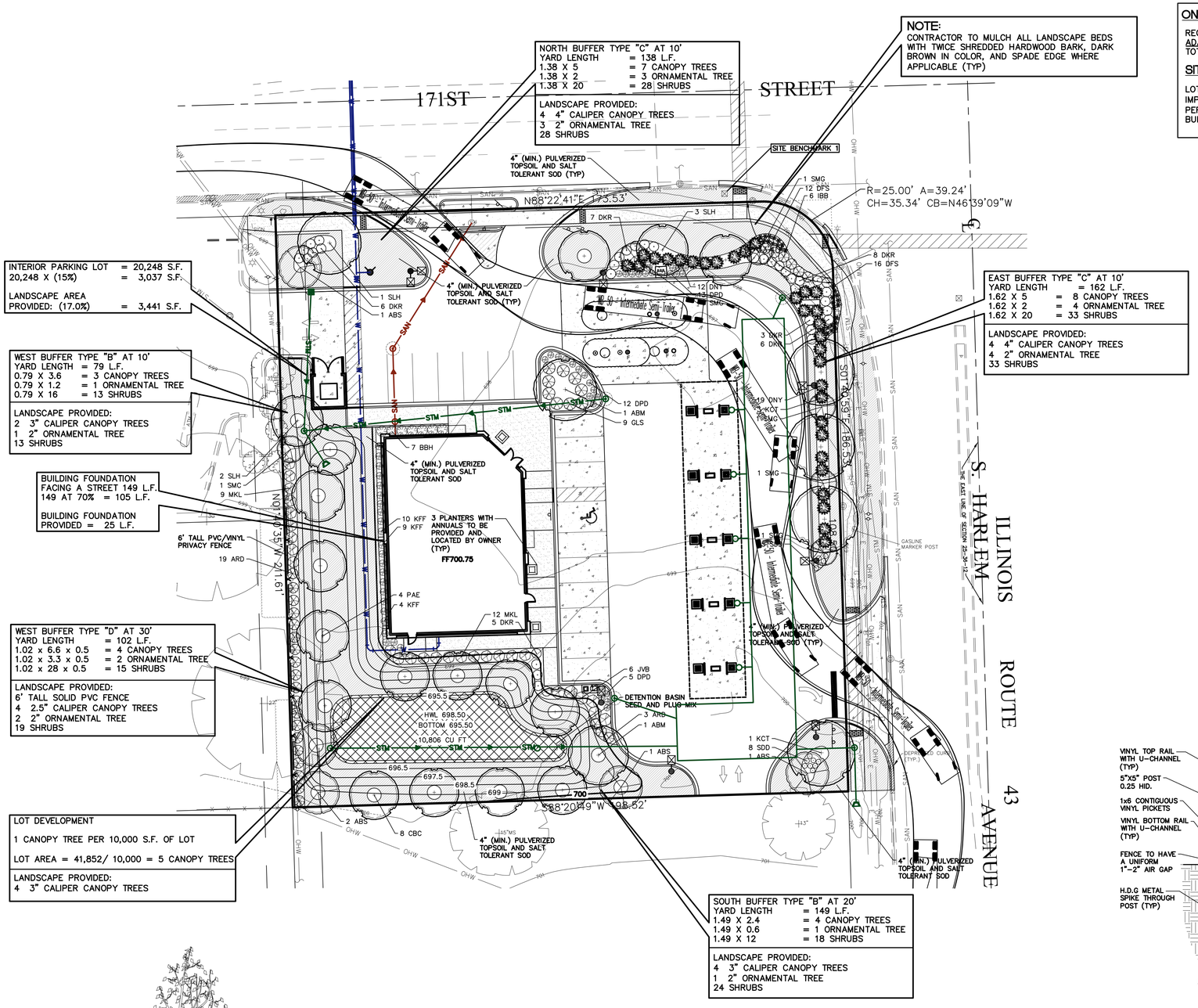
COMPASS SURVEYING LTD
ALTA SURVEYS ● TOPOGRAPHY ● CONSTRUCTION STAKING
2631 GINGER WOODS PARKWAY, STE. 100
AURORA, IL 60502
PHONE: (630) 820-9100 FAX: (630) 820-9181 EMAIL: ADMIN@CLSURVEYING.COM

SCALE: 1" = 20'

1 OF 1

PROJ. NO.: 19.0018

J:\Psdata\2019 Projects\19.0018\19.0018LTSTOPO.dwg, 8/21/2019 2:11:50 PM



ON SITE PARKING DATA

REGULAR SPACES	16
ADA ACCESSIBLE SPACES	1
TOTAL SPACES	17

SITE DATA

LOT AREA	=	41,852 S.F.	(.961 AC.)
IMPERVIOUS AREA	=	27,222 S.F.	(.625 AC.)(65%)
PERVIOUS AREA	=	14,630 S.F.	(.336 AC.)(35%)
BUILDING AREA	=	3,500 S.F.	

GENERAL NOTES:
1. THESE PLANS ARE BASED ON THE ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY (SURVEY PROJECT #19.0018 DATED 01/22/19) PREPARED BY: COMPASS SURVEYING LTD 2631 GINGER WOODS PARKWAY, STE 100, AURORA, IL 60502 (630) 820-9100
2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

PLANT LIST

SHADE, ORNAMENTAL AND CONIFEROUS TREES

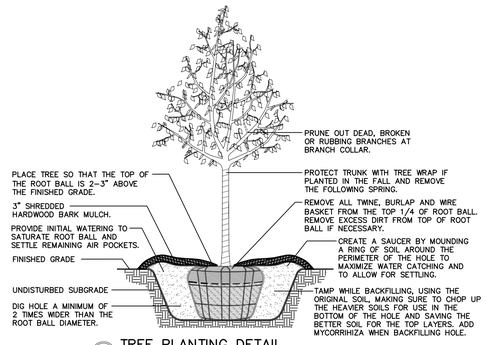
QTY.	ABRV.	BOTANICAL NAME	COMMON NAME	SIZE
2	ABM	Acer x fremanii 'Jeffersred'	Autumn Blaze Maple	3" Cal.
2	SLH	Gleditsia triacanthos var. inermis 'Skyline'	Skyline Honeylocust	3" Cal.
4	SLH	Gleditsia triacanthos var. inermis 'Skyline'	Skyline Honeylocust	4" Cal.
4	KCT	Gymnocladus dioicus (Male Only)	Kentucky Coffee Tree	4" Cal.
8	CBC	Taxodium distichum	Common Bald Cypress	3" Cal.
4	PAE	Ulmus 'New Horizons'	New Horizon Elm	3" Cal.
5	ABS	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	6'
6	SMG	Magnolia stellata	Star Magnolia	6'

FLOWERING AND EVERGREEN SHRUBS

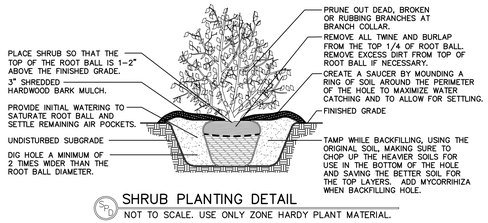
QTY.	ABRV.	BOTANICAL NAME	COMMON NAME	SIZE
6	IBB	Aronia melanocarpa 'Morton'	Iriquois Beauty Black Chokeberry	5 Gal.
22	ARD	Cornus sericea 'Alleman'	Alleman Compact Redosier Dogwood	5 Gal.
7	BBH	Hydrangea paniculata 'Bobo'	Bobo Hydrangea	5 Gal.
9	GLS	Rhus aromatica 'Grow-Low'	Grow-Low Sumac	5 Gal.
36	DKR	Rosa 'Radtko'	Double Knock Out Rose	3 Gal.
21	MKL	Syringa patula 'Miss Kim'	Miss Kim Lilac	5 Gal.
6	JVB	Viburnum x juddii	Judd Viburnum	36"
31	DNY	Taxus x media 'Densiformis'	Densiformis Yew	5 Gal.

PERENNIALS, ORNAMENTAL GRASS AND GROUNDCOVERS

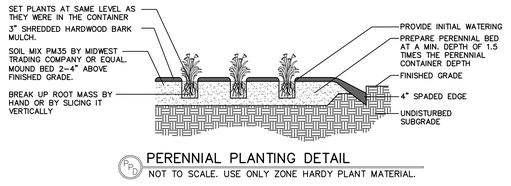
QTY.	ABRV.	BOTANICAL NAME	COMMON NAME	SIZE
28	DFS	Heliopsis helianthoides 'Tuscan Sun'	Tuscan Sun False Sunflower	1 Gal.
13	SDD	Hemerocallis 'Stella de' Oro	Stella de Oro Daylily	1 Gal.
23	KFF	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	1 Gal.
30	DPD	Sporobolus heterolepis 'Tara'	Dwarf Prairie Dropseed	1 Gal.



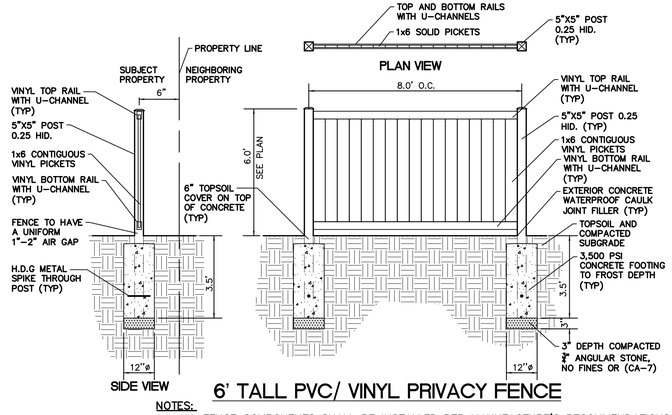
TPD TREE PLANTING DETAIL
NOT TO SCALE. USE ONLY ZONE HARDY PLANT MATERIAL.



SPD SHRUB PLANTING DETAIL
NOT TO SCALE. USE ONLY ZONE HARDY PLANT MATERIAL.



PPD PERENNIAL PLANTING DETAIL
NOT TO SCALE. USE ONLY ZONE HARDY PLANT MATERIAL.



6' TALL PVC/ VINYL PRIVACY FENCE

NOTES:
1. ALL FENCE COMPONENTS SHALL BE INSTALLED PER MANUFACTURE'S RECOMMENDATIONS AND SPECIFICATIONS.
2. ALL FENCE MATERIALS TO BE FREE FROM ANY DEFECTS.
3. DO NOT USE TOOLS, HARDWARE, OR FASTENERS THAT ARE NOT COMPATIBLE WITH EXTERIOR VINYL FENCE.
4. CONTRACTOR TO COORDINATE COLOR AND TEXTURE OPTIONS WITH OWNER.
5. TOP OF FENCE TO BE A SMOOTH AND UNIFORM ELEVATION, POST TO BE PLUM
6. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR FENCE.
7. ALL POSTS TO HAVE A FLAT CAP.

LICENSED LANDSCAPE ARCHITECT
KENNETH M. PRICE
157-001488
STATE OF ILLINOIS

LANDSCAPE PLAN
DESIGNED BY
KENNETH M. PRICE, RLA

20 0 10 20 40 80

LANDSCAPE PLAN

L-1

NO.	REVISIONS	DATE
1	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	8/22/19
2	PER CLIENT REQUEST	9/5/19
3	PER VILLAGE COMMENTS	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

Watermark Engineering RESOURCES, LTD
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-9800 www.watermark-engineering.com

CHECKED BY: B. PERRY
DESIGN BY: K. PRICE
DRAWN BY: K. PRICE
DATE: JULY 5, 2019
SCALE: 1" = 20'
PROJECT NO.: 19-005

LANDSCAPE PLAN

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Pizzo Native Plant Nursery, LLC • 10729 Pine Road • Leland, IL 60531 • P: 815.981.8000 • F: 815-498-4406 • www.pizzonursery.com

Dry-Bottom Detention Basin Seed Mix (Mesic-Wet Soils at the Bottom of Basins or Swales)

MIX STATISTICS

Base Mix Without Supplemental Plugs

Average Mix Height	4.0'
Median Mix Height	4.0'
Mix Height Mode (# of Occurrences in Mix)	3.0' (10), 4.0' (9), 5.0' (7), 2.0' (2), 3.5' (2), 6.0' (2), 7.0' (2), 1.0' (1), 1.5' (1), 2.5 (1), 8.0' (1)
Number of Native Species in Mix	38
Lbs/Acre of *Native Seed*	30.3
Propagules per Square Foot	0.0
Native FQI	30.2
Native Mean C Value	4.9
Native Mean W Value	-0.4
National Wetland Category	Facultative - Equally likely to occur in wetlands or non-wetlands (estimated probability 34 - 66%)

Mix Description: Pizzo's Dry Bottom Detention Basin Mix is designed for sunny areas that flood periodically for short periods of time, ranging from 24-48 hours, but remain mesic-dry for most of the growing season. It is composed of species that tolerate fluctuating water levels & poor water quality, and is ideal for planting in the bottom of dry-bottom detention basins, within the "Bounce Zone" on detention basin slopes, dry-bottom bioswales, large rain gardens, and within open floodplains. This is a medium height prairie with over 56% of seeds typically averaging 3.0' high or less at maturity and about 18% of seeds typically averaging 5.0' high or more. While this mix does provide flowering species from April-October, it is designed to be a bit grass heavy (particularly long-term) with nearly 60% of seeds being grass & sedge species. Pizzo designed the mix in this fashion to ensure excellent erosion control when used in stromwater applications. This mix can be supplemented with the recommended plug list provided below to add diversity, color, and resilience to the long-term health of your naturalized basin.

Grasses, Sedges, & Rushes

ACRONYM	SCIENTIFIC NAME	COMMON NAME	C-Value	W-Value	WETNESS	HEIGHT	COLOR	BLOOM TIME							SEEDS/OZ	OZ/ACRE	LB/ACRE	% OF MIX	
						Min-Max (Typical)		A	M	J	J	A	S	O				by Weight	by Seed Count
ANDGER	*Andropogon gerardii*	BIG BLUESTEM GRASS	5	0	FAC	6-8' (7')	N/A				▨	▨	▨		10,000	64.0000	4.00	13.20%	4.91%
CXBEBB	*Carex bebbii*	BEBB'S OVAL SEDGE	6	-5	OBL	2-4' (3')	N/A		▨	▨					34,000	2.0000	0.13	0.41%	0.52%
CXBREV	*Carex brevior*	PLAINS OVAL SEDGE	4	0	FAC	6"-18" (12")	N/A		▨	▨					29,000	4.0000	0.25	0.82%	0.89%
CXHYST	*Carex hystericina*	PORCUPINE SEDGE	5	-5	OBL	2-4' (3')	N/A		▨	▨					30,000	4.0000	0.25	0.82%	0.92%
CXVULP	*Carex vulpinoidea*	BROWN FOX SEDGE	2	-3	FACW	2-4' (3')	N/A		▨	▨					100,000	8.0000	0.50	1.65%	6.13%
ELEPAL	*Eleocharis palustris*	GREAT SPIKE RUSH	10	-5	OBL	6"-18" (12")	N/A		▨	▨	▨	▨	▨	▨	51,000	4.0000	0.25	0.82%	1.56%
ELYCAN	*Elymus canadensis*	CANADA WILD RYE	4	3	FACU	2-5' (3.5')	N/A			▨	▨				5,200	32.0000	2.00	6.60%	1.28%
ELYVIR	*Elymus virginicus*	VIRGINIA WILD RYE	4	-3	FACW	3-5' (4')	N/A			▨	▨				4,200	48.0000	3.00	9.90%	1.55%
JUNDUD	*Juncus dudleyi*	DUDLEY'S RUSH	4	-3	FACW	1-3' (2')	N/A		▨	▨	▨				3,200,000	1.0000	0.06	0.21%	24.54%
PANVIR	*Panicum virgatum*	SWITCH GRASS	5	0	FAC	3-5' (4')	N/A			▨	▨	▨	▨	▨	14,000	80.0000	5.00	16.49%	8.59%
SCHSCO	*Schizachyrium scoparium*	LITTLE BLUESTEM GRASS	5	3	FACU	2-3' (3')	N/A					▨	▨		15,000	64.0000	4.00	13.20%	7.36%
SORNUT	*Sorghastrum nutans*	INDIAN GRASS	5	3	FACU	3-7' (6')	N/A					▨	▨		12,000	16.0000	1.00	3.30%	1.47%
															Grass/Sedge Subtotals		20.44	67.42%	59.72%

Flowers & Other Broadleaves

ACRONYM	SCIENTIFIC NAME	COMMON NAME	C-Value	W-Value	WETNESS	HEIGHT	COLOR	BLOOM TIME							SEEDS/OZ	OZ/ACRE	LB/ACRE	% OF MIX	
						Min-Max (Typical)		A	M	J	J	A	S	O				by Weight	by Seed Count
ALLCER	*Allium cernuum*	NODDING WILD ONION	7	3	FACU	1-2' (1.5')	Pink		▨	▨	▨				7,600	4.0000	0.25	0.82%	0.23%
ASCINC	*Asclepias incarnata*	SWAMP MILKWEED	4	-5	OBL	3-5' (4')	Magenta			▨	▨	▨			4,800	24.0000	1.50	4.95%	0.88%
CHAFAS	*Chamaecrista fasciculata*	PARTRIDGE PEA	5	3	FACU	1-3' (2')	Yellow				▨	▨	▨		2,700	16.0000	1.00	3.30%	0.33%
CORTRP	*Coreopsis tripteris*	TALL COREOPSIS	5	0	FAC	5-8' (7')	Yellow			▨	▨	▨			14,000	6.0000	0.38	1.24%	0.64%
DESCAA	*Desmodium canadense*	SHOWY TICK TREFOIL	4	3	FACU	3-6' (5')	Purple				▨	▨			5,500	4.0000	0.25	0.82%	0.17%
ECHPUR	*Echinacea purpurea*	PURPLE CONEFLOWER	3	5	UPL	2-5' (4')	Purple				▨	▨	▨		6,600	16.0000	1.00	3.30%	0.81%
ERYYUC	*Eryngium yuccifolium*	RATTLESNAKE MASTER	9	0	FAC	2-5' (4')	White				▨	▨	▨		7,500	12.0000	0.75	2.47%	0.69%
EUPPER	*Eupatorium perfoliatum*	COMMON BONESET	4	-5	OBL	3-6' (4')	White				▨	▨	▨		160,000	0.5000	0.03	0.10%	0.61%
EUTGRA	*Euthamia graminifolia*	COMMON GRASS-LEAVED GOLDENROD	4	-3	FACW	2-4' (3')	Yellow				▨	▨	▨		350,000	1.0000	0.06	0.21%	2.68%
EUTMAC	*Eutrochium maculatum*	SPOTTED JOE PYE WEED	4	-5	OBL	4-7' (5')	Pink			▨	▨	▨			95,000	2.0000	0.13	0.41%	1.46%
HELAUT	*Helenium autumnale*	SNEEZEWEED	5	-3	FACW	2-5' (4')	Yellow					▨	▨	▨	130,000	3.0000	0.19	0.62%	2.99%
KUHEUC	*Kuhnia eupatorioides corymbulosa*	FALSE BONESET	6	5	UPL	2-5' (3')	White					▨	▨		32,000	4.0000	0.25	0.82%	0.98%
MONFIS	*Monarda fistulosa*	WILD BERGAMOT	4	3	FACU	3-5' (4')	Purple				▨	▨	▨		70,000	4.0000	0.25	0.82%	2.15%
PENDIG	*Penstemon digitalis*	FOXGLOVE BEARD TONGUE	4	0	FAC	2.5-5' (3.5')	White		▨	▨					130,000	4.0000	0.25	0.82%	3.99%
PYCVIR	*Pycnanthemum virginianum*	COMMON MOUNTAIN MINT	5	-3	FACW	1-4' (3')	White			▨	▨	▨			220,000	2.0000	0.13	0.41%	3.37%
RUDHIR	*Rudbeckia hirta*	BLACK-EYED SUSAN	1	3	FACU	2-3' (2.5')	Yellow		▨	▨	▨	▨	▨	▨	92,000	8.0000	0.50	1.65%	5.64%
RUDSUB	*Rudbeckia subtomentosa*	SWEET BLACK-EYED SUSAN	9	3	FACU	3-6' (5')	Yellow					▨	▨	▨	43,000	4.0000	0.25	0.82%	1.32%
RUDTRI	*Rudbeckia triloba*	BROWN-EYED SUSAN	3	3	FACU	4-6' (5')	Yellow				▨	▨	▨		34,000	3.0000	0.19	0.62%	0.78%
SILLAC	*Silphium laciniatum*	COMPASS PLANT	5	5	UPL	6-9' (8')	Yellow			▨	▨	▨	▨		660	1.0000	0.06	0.21%	0.01%
SOLRID	*Solidago riddellii*	RIDDELL'S GOLDENROD	7	-5	OBL	2-4' (3')	Yellow					▨	▨		93,000	2.0000	0.13	0.41%	1.43%
SOLRIG	*Solidago rigida*	STIFF GOLDENROD	4	3	FACU	3-6' (4')	Yellow					▨	▨	▨	41,000	1.5000	0.09	0.31%	0.47%
SYMNOV	*Symphyotrichum novae-angliae*	NEW ENGLAND ASTER	4	-3	FACW	4-6' (5')	Purple					▨	▨	▨	65,000	6.0000	0.38	1.24%	2.99%
THADAD	*Thalictrum dasycarpum*	PURPLE MEADOW RUE	5	-3	FACW	4-7' (6')	Cream			▨	▨				11,000	4.0000	0.25	0.82%	0.34%
VERFAS	*Vernonia fasciculata*	COMMON IRONWEED	5	-3	FACW	4-6' (5')	Purple				▨	▨	▨		24,000	6.0000	0.38	1.24%	1.10%
VERHAS	*Verbena hastata*	BLUE VERVAIN	4	-3	FACW	4-7' (5')	Blue				▨	▨	▨		93,000	4.0000	0.25	0.82%	2.85%
ZIZAUR	*Zizia aurea*	GOLDEN ALEXANDERS	7	0	FAC	2-4' (3')	Yellow	▨	▨	▨					11,000	16.0000	1.00	3.30%	1.35%
															Broadleaf Subtotals		9.88	32.58%	40.28%
															SEED MIX TOTALS		30.31	100.00%	100.00%

SUPPLEMENTED MIX STATISTICS

Base Seed Mix Including Supplemental Plugs

Number of Native Species in Mix	50
Native FQI	37.5
Native Mean C Value	5.3
Native Mean W Value	-0.7
National Wetland Category	Facultative Wetland / Facultative - Usually occur in wetlands (estimated probability 67 - 99%), but occasionally found in non-wetlands (estimated probability 34 - 66%)

Some species are not appropriate for inclusion into a seed mix, however they may be very desirable to have as part of the permanent plant matrix because of their ecological, habitat, and/or aesthetic value. The plug species listed above are appropriate for supplementing this seed mix. Following are the common reasons for not including these species within the seed mix: 1-Does not germinate well from seed in the field, 2-Seed is very expensive, 3-Low number of seeds per ounce, 4-Requires specialized microclimate, 5-Seed is not commercially available or is only available in small quantities

Notes:

1.) Pizzo recommends installing a Mycorrhizal Inocculant with the above seed mix at 40 lbs/acre

2.) For spring planting, Pizzo recommends installing a cover crop of Seed Oats (Avena sativa) with the above seed mix at 40 lbs/acre

3.) For fall planting, Pizzo recommends installing a cover crop of ReGreen (a Winter Wheat x Wheatgrass Sterile Hybrid) with the above mix at 50 lbs/acre

4.) **At no time should Annual nor Perennial Rye (Lolium multiflorum or perenne) be utilized as a cover crop**

NATIVE SEED MIX INFORMATION

ECOLOGY + VISION, LLC
ECOLOGYLLC.COM
815-981-8003
P.O. BOX 601
LELAND, IL 60531

CONTRACTOR TO INSTALL NATIVE SEED MIXES AND BLANKET PER SUPPLIERS SPECIFICATIONS, INSTRUCTIONS AND RECOMMENDATIONS INCLUDING SEED BED PREPARATION, SOIL AMENDMENTS, AND PH LEVELS. ALL BLANKETS SHALL BE STAKED AS NECESSARY TO PROPERLY ANCHOR BLANKETS IN PLACE.

SEPARATE BID ITEM:

CONTRACTOR TO PROVIDE A SEPARATE BID FOR A MAINTENANCE CONTRACT FOR THE NATIVE AREAS AS REQUIRED.

NOTES:

1. **CONTRACTOR TO PROVIDE AT LEAST 75% OF THE RECOMMENDED SPECIES BASED ON AVAILABILITY AND INSTALL AS NEEDED TO COVER DESIGNATED AREAS.**

NATIVE PLANTING SPECIFICATIONS FOR STORMWATER B.M.P.S

DESCRIPTION AND GENERAL REQUIREMENTS

1. WORK SHALL CONSIST OF PROVIDING, DELIVERING, AND INSTALLING ALL SEEDS, PLUGS, PLANTS, OR OTHER MATERIALS REQUIRED FOR THE ESTABLISHMENT OF THE PROPOSED STORMWATER BMP. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POST–PLANTING MAINTENANCE UNTIL RELEASED BY THE LANDSCAPE ARCHITECT/ DESIGNER OR OWNER'S REPRESENTATIVE, AND ANY TASKS AND OPERATIONS IN COMPLIANCE WITH THE PLANS AS SPECIFIED IN THIS PROVISION OR AS DEEMED NECESSARY BY THE LANDSCAPE ARCHITECT/DESIGNER OR OWNER'S REPRESENTATIVE.
2. COMPLIANCE WITH LOCAL REQUIREMENTS AS RELATED TO THE WORK AS DESCRIBED HEREIN INCLUDING PERFORMANCE AND MAINTENANCE STANDARDS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND/ OR SUB–CONTRACTORS.
3. WORK SHALL BE PERFORMED ONLY BY A COMPANY SPECIALIZING IN NATIVE/ WETLAND INSTALLATION AND MAINTENANCE WITH A MINIMUM OF 7 YEARS OF EXPERIENCE. PERSONAL ASSIGNED TO SITE SHALL HAVE A MINIMUM OF 3 YEARS OF PROFESSIONAL EXPERIENCE IN ASSIGNED WORK. IN NO CASE SHALL ANYONE WORK ON–SITE WITHOUT A QUALIFIED SUPERVISOR.
4. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL PERMITS THAT ARE REQUIRED BY THE APPLICABLE AGENCIES.
5. THE CONTRACTOR SHALL NOTIFY THE DESIGNER, ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION, AND ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION 2 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE APPROPRIATE CONSTRUCTION INSPECTIONS.
6. THE MUNICIPALITY SHALL HAVE THE AUTHORITY TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION OF THE IMPROVEMENTS.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS TO CONTACT THE DESIGNER TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.
8. THE CONTRACTOR IS TO FOLLOW ALL ORDINANCES AND REQUIREMENTS OF THE STATE, COMMUNITY, AND LOCAL DISTRICTS. ALL PROPOSED IMPROVEMENTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS FOR THE PROJECT. PRIOR TO BID AND PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL INSPECT THE SITE TO VERIFY THAT THERE ARE NO DISCREPANCIES BETWEEN THE PLANS AND THE ACTUAL CONDITIONS AT THE SITE. IF ANY DISCREPANCIES ARE FOUND, AT ANY TIME BEFORE OR DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY (BEFORE ANY ADDITIONAL IMPROVEMENTS ARE INSTALLED) IN ORDER TO OBTAIN WRITTEN CONFIRMATION BY THE LANDSCAPE ARCHITECT/DESIGNER AS TO ANY REVISIONS/SUBSTITUTIONS THAT MAY NEED TO BE MADE TO THE PLANS.
9. CONTRACTOR SHALL GUARANTEE ALL SEED, PLUGS, PLANTS, LABOR AND ANY MATERIAL FOR THE DURATION OF ANY AND ALL INSTALLATION AND MAINTENANCE CONTRACT OR 1 YEAR, WHICHEVER IS GREATER.
10. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES ON AND OFF–SITE AND THE CONTRACTOR SHALL PROVIDE A WRITTEN STATEMENT TO HOLD HARMLESS THE OWNER AND ANY OTHER AGENTS OF THE PROJECT.
11. THE CONTRACTOR SHALL INDEMNIFY WATERMARK ENGINEERING RESOURCES, LTD (THE ENGINEER), ARCHITECT AND OWNER, THEIR AGENTS, ETC., FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION.

SEEDS, PLUGS AND PLANTS

12. ALL SEEDS, PLUGS AND PLANTS SHALL BE GUARANTEED TO BE TRUE TO BOTANICAL NAME AND VARIETIES.
13. SEED MIX PERCENTAGES SHALL MATCH SEED COUNT AND PERCENTAGES SPECIFIED.
14. SEED MIX PERCENTAGES/ QUANTITY INDICATED PER ACRE SHALL MEAN THE TOTAL AMOUNT OF PLS (PURE LIVE SEED) PER ACRE FOR ALL SPECIES EXCLUDING FORBS.
15. SEED MIXTURES TAGS SHALL BE SUBMITTED A MINIMUM OF 2 WEEKS PRIOR TO SEEDING TIME FOR APPROVAL BY THE LANDSCAPE ARCHITECT/ DESIGNER OR OWNER'S REPRESENTATIVE.
16. ALL SEEDS SHALL HAVE THE PROPER STRATIFICATION AND/OR SCARIFICATIONS TO BREAK SEEDS OUT OF DORMANCY FOR ANY PLANTING TO OCCUR OTHER THAN FALL PLANTING.
17. LEGUMES SHALL BE INOCULATED WITH THE PROPER RHIZOBIA AS NECESSARY FOR SCHEDULED PLANTING TIME.
18. IF NOT ALREADY INCLUDED IN THE SEED MIX, PLANT A TEMPORARY COVER CROP ALONG WITH THE SEED TO STABILIZE THE SOIL WHILE THE PERMANENT NATIVE SPECIES GERMINATE AND BECOME ESTABLISHED, ESPECIALLY IN HIGHLY ERODIBLE AREAS.
19. SEEDS AND PLUGS SHALL BE FROM A SOURCE WITHIN A MAXIMUM OF 200 MILES FROM THE PROJECT LOCATION.
20. ALL QUANTITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE TO BE VERIFIED PRIOR TO CONSTRUCTION. IF DISCREPANCIES OCCUR, THE CONTRACTOR IS TO CONTACT THE LANDSCAPE ARCHITECT/ DESIGNER OR OWNER'S REPRESENTATIVE IMMEDIATELY AND NO WORK IS TO BE DONE UNTIL APPROVED BY THE LANDSCAPE ARCHITECT/ DESIGNER OR OWNER'S REPRESENTATIVE.

INSTALLATION

21. CONSTRUCTION REQUIREMENTS AND TIMELINES SHALL BE SCHEDULED WITH THE GENERAL CONTRACTOR.
22. MOW ANY EXCESS EXISTING VEGETATION SCHEDULED TO REMAIN TO A HEIGHT OF 6" MAXIMUM
23. APPLY BROAD SPECTRUM OR TARGETED HERBICIDE, DEPENDING ON SPECIES PRESENT. HERBICIDE APPLICATION MUST BE PERFORMED BY A LICENSED PESTICIDE APPLICATOR.CONTRACTOR TO VERIFY EXISTING TOPSOIL PH AND ORGANIC MATTER.
24. SOIL PH SHALL BE MONITORED AND ADJUSTED AS NEEDED FOR VIGOROUS PLANT HEALTH
25. CONTRACTOR IS RESPONSIBLE FOR ALL TESTING AND LABOR FOR ANNUAL SOIL TESTS AND AS NEEDED TO DIAGNOSE ANY PROBLEMATIC AREAS.
26. CONTRACTOR TO VERIFY WITH SEED SOURCE FOR APPROPRIATE PLANTING TIMES AND CONDITIONS AS NEEDED.
27. CONTRACTOR SHALL AVOID THE USE OF HEAVY EQUIPMENT AND ANY OTHER ACTIVITY THAT WILL RESULT IN OVER COMPACTION OF THE AREAS TO BE PLANTED.
28. WHEN APPLICABLE, CONTRACTOR SHALL INSTALL THE AMENDED SOIL MIX PER PLAN. MATERIALS MAKING UP AMENDED SOIL MIXTURE SHALL BE WELL BLENDED AND SHALL NOT INSTALLED SEPARATELY IN "LAYERS".
29. TOPSOIL SHALL BE TILLED AS NECESSARY TO COINCIDE WITH SEEDING METHODOLOGY WHETHER IT BE BROADCAST, DRILL, HYDRO–SEEDING, OR NO–TILL TYPES. SEEDING METHODOLOGY SHALL BE AT THE DISCRETION OF THE CONTRACTOR BUT SHALL BE IN A MANNER NECESSARY TO MAXIMIZE PLANT ESTABLISHMENT, UNIFORM COVERAGE AND THE PREVENTION OF SOIL EROSION.
30. TOPSOIL AND FINISH GRADE SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR FOR SUPPLY, QUALITY, QUANTITY AND PLACEMENT OF TOPSOIL.
31. THE FINISH GRADE WILL BE SHAPED TO THE ELEVATION SHOWN ON THE PLANS. TOPSOIL WILL BE FREE OF DEBRIS, CLODS, STONES, ROOTS, STICKS, WASHOUTS, CRUSTING/ CAKING, WITH SOIL PARTICLES NOT TO EXCEED 2" IN DIAMETER. A TEMPORARY COVER CROP WILL BE REQUIRED TO BE ESTABLISHED AFTER THE FIRST FULL GROWING SEASON PER PLAN.
32. IF BROADCAST SEEDING IN DORMANCY, INSTALL WHEN THE EVENING TEMPERATURES DROP BELOW FREEZING. USE APPROPRIATE EROSION CONTROL MEASURES TO PROVIDE STABILIZATION UNTIL THE FOLLOWING GROWING SEASON.
33. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING AND IMPLEMENTING THE MEANS AND METHODS NECESSARY FOR THE SAFE AND SUCCESSFUL EXECUTION OF THE APPROVED PLANS. THIS INCLUDES BUT IS NOT LIMITED TO;
34. SEED INSTALLATION METHODS AND EQUIPMENT, PROTECTION OF PLANT MATERIAL/SEED FROM WILDLIFE AND OTHER ENVIRONMENTAL FACTORS DURING ESTABLISHMENT, APPROPRIATE MAINTENANCE TIMING AND TECHNIQUES ETC.
35. THIS SHALL BE DONE IN ACCORDANCE WITH THE PROVIDED DETAILS, SPECIFICATIONS AND PERFORMANCE STANDARDS WHICH ARE INTEGRAL TO THE APPROVED PLANS.
36. ANY RESTORATION NEEDED BECAUSE OF CONSTRUCTION SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.

MAINTENANCE AND MANAGEMENT

37. TO ENSURE PROPER ESTABLISHMENT, A MAINTENANCE AND MANAGEMENT PLAN SHALL BE REQUIRED TO SUPPORT SITE DEVELOPMENT GOALS. THEREFORE REGULAR MAINTENANCE AND MONITORING CONTROLS TO PREVENT INVASIVE SPECIES AND MAINTAIN OPTIMAL MOISTURE LEVELS ARE NECESSARY MANAGEMENT ACTIONS ITEMS FOR DURATIONS AS SPECIFIED. SELECTION OF MAINTENANCE METHODS PARTLY DEPENDS UPON TIMING AND OTHER FACTORS SUCH AS AESTHETIC GOALS, PROJECT SIZE, AND BUDGET TO DETERMINE WHAT TECHNIQUES WILL BE USED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING FAMILIAR WITH THE PERFORMANCE STANDARDS AND, IN CONJUNCTION WITH THE OWNER, DEVELOPING THE APPROPRIATE MAINTENANCE TECHNIQUES AND SCHEDULE IN ORDER TO MEET THE CRITERIA AS DEFINED IN THE AFOREMENTIONED PERFORMANCE STANDARDS.
38. THE MAINTENANCE OF A NATIVE LANDSCAPE INCLUDES MANY DIFFERENT ACTIONS: REGULAR SITE INSPECTION AND MONITORING, MOWING, SELECTIVE HERBICIDE/ PESTICIDE APPLICATION, OVER–SEEDING AND SUPPLEMENTAL PLANTING, WATER CONTROL AND TEMPORARY IRRIGATION AND PRESCRIBED BURNING.

LANDSCAPE NOTES

1. ALL PLANT MATERIAL SHALL BE HARDY TO THE ZONE IT IS BEING PLANTED IN. ALL TREES AND SHRUBS ARE TO BE BALLED AND BURLAPED UNLESS OTHERWISE NOTED AND SHALL BE GROWN IN ACCORDANCE WITH THE STANDARDS SET FORTH BY THE LATEST EDITION OF AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORT.
2. PLANT SIZES CALLED OUT ON THIS PLAN ARE THE MINIMUM SIZE REQUIRED. PLANTS WHICH FAIL TO MEET THE SIZES LISTED, SHALL BE REJECTED AT THE EXPENSE OF THE CONTRACTOR.
3. CONTRACTOR MUST VERIFY ALL MATERIAL QUANTITIES AS DEPICTED ON THE DRAWING. THE PLANT LIST PROVIDED ON THIS PLAN IS FOR CONVENIENCE ONLY.
4. SUBSTITUTIONS MAY NOT BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT/DESIGNER.
5. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES AND UTILITY LOCATORS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOT BEGIN ANY WORK ON–SITE UNTIL ALL UTILITIES HAVE BEEN LOCATED. CONTRACTOR SHALL OBTAIN "AS–BUILT" PLANS FOR ALL IRRIGATION AND LIGHTING PRIOR TO CONSTRUCTION.
6. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL UTILITIES INCLUDING IRRIGATION AND LIGHTING. ALL DAMAGE SHALL BE REPAIRED TO A NEW CONDITION IN ACCORDANCE WITH ALL CODES AT NO COST TO THE OWNER – SEE NOTE 5.
7. ALL UNSUITABLE MATERIAL (CONCRETE, AGGREGATE STONE, CRUSHED ASPHALT, BRICK ETC.) SHALL BE REMOVED, INCLUDING HAUL OFF, PRIOR TO PLANTING AND SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
8. SOIL MIX PM35 BY MIDWEST TRADING COMPANY OR EQUAL SHALL BE ROTOTILLED INTO ALL PERENNIAL AND ANNUAL PLANTING BEDS PRIOR TO THE INSTALLATION OF THE PLANT MATERIAL. A SLOW RELEASE, GRANULAR FERTILIZER SHALL BE APPLIED TO ALL ANNUAL AND PERENNIAL PLANTING BEDS AT THE RECOMMENDED RATE, AND SHALL BE ROTOTILLED IN WITH THE ABOVE SOIL MIXTURE BEFORE THE PLANT MATERIAL IS INSTALLED.
9. CONTRACTOR TO PROVIDE THOROUGH INITIAL WATERING OF ALL PLANTINGS WITHIN 12 HOURS OF INSTALLATION TO ENSURE ALL AIR POCKETS HAVE BEEN REMOVED AROUND ROOT BALL.
10. ALL PLANT BED AREAS ARE TO BE MULCHED WITH 3" OF DOUBLE SHREDDED HARDWOOD MULCH AND SHALL BE SEPARATED WITH A SPADE EDGE ALONG PERIMETERS ADJACENT TO TURF AREAS. FINAL GRADE (AFTER SETTLING) SHALL BE 1" BELOW ADJACENT CURBS.
11. ALL TURF AREAS ARE TO BE A MINIMUM OF A FIVE WAY BLUEGRASS BLEND, UNLESS OTHERWISE NOTED. CONTRACTOR IS RESPONSIBLE FOR WATERING ALL INSTALLED TURF AREAS UNTIL TIME OF KNITTING. IF TURF SEED AND SOD OCCUR ON THE SAME PROJECT, CONTRACTOR SHALL VERIFY AND USE SEED MIXTURES TO MATCH SOD.
12. AREAS TO BE SODDED SHALL BE WITH AN "APPROVED TURFGRASS SOD" OF PREMIUM GRADE. SOD SHALL BE A 5 WAY BLEND OF IMPROVED KENTUCKY BLUEGRASS VARIETIES THAT HAS BEEN GROWN LOCALLY TO THE PROJECT SITE. SOD MUST BE MATURED FOR 2 FULL GROWING SEASONS PRIOR TO HARVEST CUTTING AND BE HEALTHY WITH WELL ESTABLISHED ROOTS. SOD SHALL BE FREE OF DISEASE, INSECTS AND DEBRIS. SOD SHALL BE UNIFORM IN LEAF COLOR, TEXTURE, AND DENSITY. SOD SHALL BE DELIVERED, INSTALLED, AND WATERED WITHIN 24 HOURS OF HARVEST IN WHICH TEMPERATURES DO NOT EXCEED 90 DEGREES (F) NOR LESS THAN 55 DEGREES (F). SOD SHALL BE MACHINE–CUT AT A MINIMUM UNIFORM SOIL THICKNESS (1.5" OF SOD IS DESIRED) BUT SOD THICKNESS SHALL BE A THICKNESS NECESSARY FOR PLANT VIABILITY. SOD SHALL BE LAID IN STAGGERED STRAIGHT LINES, TIGHTLY AGAINST EACH OTHER WITHOUT STRETCHING OR OVERLAPPING. SOD STAKES SHALL USED ON ALL SLOPES 4:1 OR GREATER.
13. CONTRACTOR SHALL REPAIR ALL DISTURBED AREAS (INTENDED OR UNINTENDED) AT A MINIMUM, TO THE ORIGINAL CONDITION UNLESS OTHERWISE NOTED.
14. THE EXISTING PLANT MATERIAL SHOWN ON THIS PLAN IS INTENDED SOLELY TO IDENTIFY THEM AS OBSERVED IN THE FIELD. THIS PLAN DOES NOT MAKE ANY CLAIMS ABOUT THE CONDITION OR SAFETY OF ANY OF THE PLANT MATERIAL DESCRIBED HEREIN OR OBSERVED IN THE FIELD.
15. ALL TRANSPLANTED PLANT MATERIAL MUST BE INSTALLED IMMEDIATELY UPON EXTRACTION FROM IT'S ORIGINAL LOCATION, UNLESS SPECIFIC ARRANGEMENTS HAVE BEEN MADE WITH THE LANDSCAPE ARCHITECT/DESIGNER. SHOULD IT BECOME UNREASONABLE TO TRANSPLANT ANY OF THE PLANT MATERIAL AS DESCRIBED IN THIS PLAN, DUE TO SITE CONSTRAINTS OR OTHERWISE, CONTRACTOR IS RESPONSIBLE FOR CONTACTING LANDSCAPE ARCHITECT/DESIGNER TO MAKE ALTERNATIVE ARRANGEMENTS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE HEALTH AND VIABILITY OF THE PROPOSED PLANT MATERIAL INCLUDING WATERING, PROTECTION FROM PHYSICAL DAMAGE FROM THE TIME PLANT IS SELECTED THROUGH IT'S INSTALLATION.
17. CONTRACTOR IS RESPONSIBLE FOR ALL PLANT MATERIAL REMAINING PLUMB UNTIL THE END OF THE GUARANTEE PERIOD. PLANTS MAY NOT BE STAKED UNLESS APPROVED BY THE LANDSCAPE ARCHITECT/DESIGNER.
18. CONTRACTOR TO GUARANTEE PLANT MATERIAL AND LABOR FOR A MINIMUM OF ONE YEAR FROM THE TIME OF INSTALLATION.
19. THE CONTRACTOR IS RESPONSIBLE FOR BECOMING FAMILIAR WITH AND ABIDING BY THE LANDSCAPE ORDINANCES FOR THE SPECIFIC JURISDICTION IN WHICH THE WORK IS TAKING PLACE.
20. BIDDERS SHALL BE RESPONSIBLE FOR EXAMINING THE SITE, PRIOR TO PREPARING BID, TO BECOME FAMILIAR WITH THE SPECIFIC SITE CONSTRAINTS.
21. ALL EXISTING ON–SITE PLANT MATERIAL NOT EFFECTED BY CONSTRUCTION OR THE PROPOSED LANDSCAPE, SHALL BE BE PROTECTED AS PART OF THIS PLAN. EXISTING LANDSCAPE IN AREAS OF CONSTRUCTION AND PROPOSED LANDSCAPE SHALL BE REMOVED AS PART OF THIS PLAN.
22. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF ALL THE ITEMS SHOWN ON THE PLANS.
23. IF IRRIGATION IS DEEMED NECESSARY, THE DESIGN AND INSTALLATION OF THE IRRIGATION SYSTEM SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. AN IRRIGATION PLAN ALONG WITH AN AS BUILT OF THE IRRIGATION SYSTEM SHALL BE PREPARED FOR OWNER REVIEW AND APPROVAL. CONTRACTOR SHALL GUARANTEE PERFORMANCE, PARTS, AND LABOR FOR A PERIOD OF 1 YEAR FROM THE DATE OF FINAL APPROVAL.
24. IF EXISTING IRRIGATION IS PRESENT ON SITE, CONTRACTOR SHALL ADJUST, ADD TO, OR SUBTRACT FROM, THE EXISTING IRRIGATION SYSTEM TO ACCOMMODATE ANY PROPOSED ALTERATIONS/ADDITIONS TO THE EXISTING LANDSCAPE. CONTRACTOR SHALL PROVIDE THE OWNER AN AS BUILT OF THE IRRIGATION SYSTEM AND ALL CHANGES TO THE SYSTEM AFFECTED BY THIS PROJECT.
25. PROVIDE TOPSOIL RE–SPREAD PER THE FOLLOWING UNLESS OTHERWISE NOTED:
    - A. 4" MINIMUM IN GRASS OR SOD AREAS
    - B. 6" MINIMUM IN PLANTING AREAS
    - C. 12" MINIMUM IN LANDSCAPE ISLANDS

NO.	REVISIONS	DATE
1	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	8/22/19
2	PER CLIENT REQUEST	9/5/19
3	PER VILLAGE COMMENTS	11/22/19

Prepared For:

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400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
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Tinley Park, Illinois

Prepared By:

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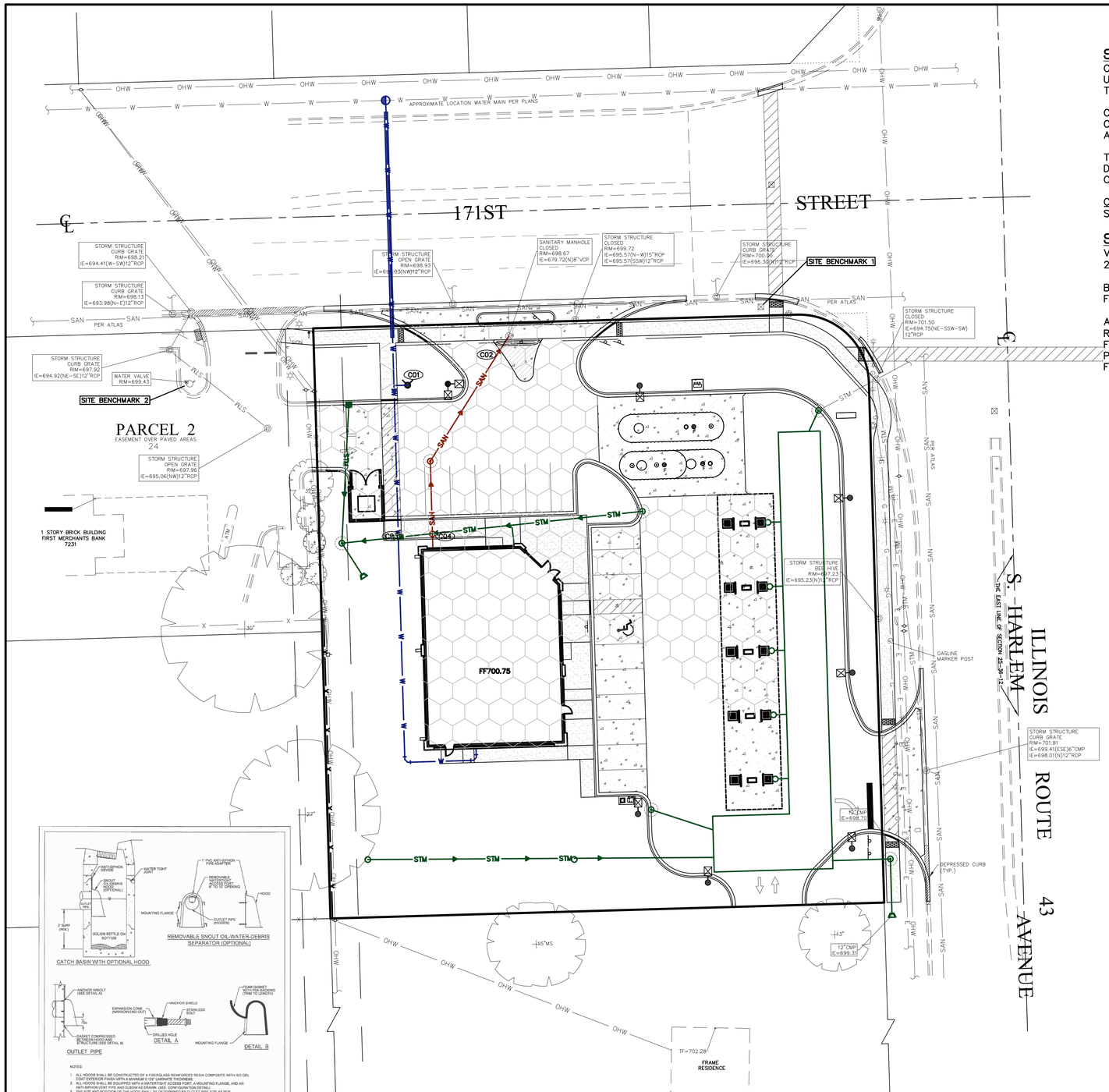
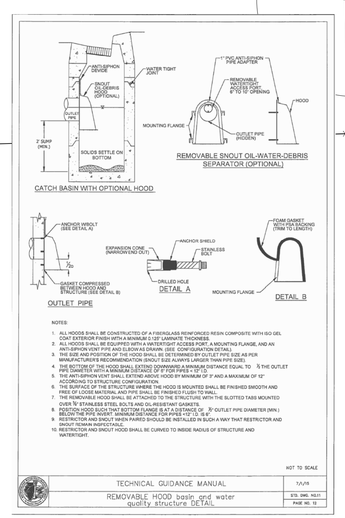
CHECKED BY: B. PERRY
DESIGN BY: K. PRICE
DRAWN BY: K. PRICE
DATE: JULY 5, 2019
SCALE: N.T.S.
PROJECT NO.: 19-005

LANDSCAPE DETAILS AND SPECIFICATIONS

LANDSCAPE DETAILS AND SPECIFICATIONS

L-2





NOTES:

1. ALL HOODS SHALL BE CONSTRUCTED OF A FIBERGLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
2. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW AS DRAWN. (SEE CONFIGURATION DETAIL)
3. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON THE CONFIGURATION DETAIL.
4. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO ¾ THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 9" FOR PIPES ≤ 10" I.D.
5. THE TOP OF THE HOOD SHALL EXTEND ABOVE THE HOOD BY MINIMUM OF 9" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION.
6. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
7. THE REMOVABLE HOOD SHALL BE ATTACHED TO THE STRUCTURE WITH THE SLOTTED TABS MOUNTED OVER TO STAINLESS BOLTS WITH WASHERS AND NUTS.
8. HOOD SHALL BE INSTALLED SO THAT BOTTOM OF HOOD IS AT A DISTANCE, 9" OUTLET PIPE DIAMETER (MIN.) BELOW THE PIPE INVERT. MINIMUM DISTANCE FOR PIPES >12" I.D. IS 9".
9. RESTRICTOR AND SNOUT WHEN PAIRED SHOULD BE INSTALLED IN SUCH A WAY THAT RESTRICTOR AND SNOUT REMAIN INSPECTABLE.
10. THE OPENING AND SNOUT HOOD SHALL BE CURVED TO INSIDE RADIUS OF STRUCTURE AND WATERTIGHT.

NOT TO SCALE

TECHNICAL GUIDANCE MANUAL	7/1/19
REMOVABLE HOOD basin and water quality structure DETAIL	STS. DWG. NO.11
	PAGE NO. 13

MWRD SUMMARY

SITE RUNOFF REQUIREMENTS

ONSITE AREA TRIBUTARY TO OVERLAND CONVEYANCE	– 0.961 ACRES
UPSTREAM OFF–SITE TRIBUTARY	– 0 ACRES
TOTAL TRIBUTARY AREA	– 0.961 ACRES
CN IMPERVIOUS AREA	– 98
CN PERVIOUS AREA	– 74
ADJUSTED CN VALUE	– 91
TIME OF CONCENTRATION	– 5 MINUTES
DESIGN 100–YEAR PEAK FLOW RATE	– 9.82 CFS
OVERLAND CONVEYANCE CAPACITY	– 12.18 CFS

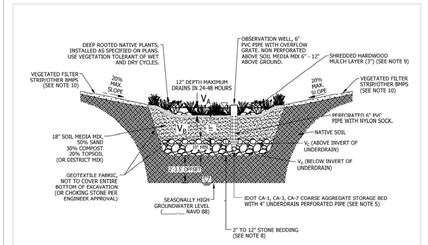
CONVEYANCE SYSTEM
SOUTH DRIVEWAY ACTS AS WEIR, 29' IN LENGTH

SITE VOLUME CONTROL REQUIREMENTS

VOLUME CONTROL REQUIRED:
27,222 S.F. X 1/12 = 2,269 CF

BIORETENTION FACILITY HAS BEEN PROVIDED FOR AREAS NOT RECEIVING FUEL SPILLS IN THE AMOUNT OF 2,304 CF.

A FLOW THROUGH DEVICE (SNOUT WITH SKIRT) HAS BEEN PROVIDED, TO REMOVE SOLIDS, PRIOR TO RUNOFF ENTERING THE VOLUME CONTROL FACILITIES, DUE TO THE POSSIBILITY OF OIL AND GAS RUNOFF POTENTIALLY ENTERED THE SYSTEM FROM THE PROPOSED USE AS A FUEL STATION.



BOTTOM OF THE FACILITY:	ELEV.	695.50	
SEASONALLY HIGH GROUNDWATER:	ELEV.	_____	
SEPARATION:	FEET	_____	

VOLUME TYPE	SURFACE AREA	DEPTH	POROSITY	STORAGE VOLUME	VOLUME PROVIDED
V_A : SURFACE STORAGE	2,304	1	1.00	1.00 X V_A	2,304
V_B : SOIL MEDIA MIX			0.25	0.50 X 0.25 X V_B	
V_C : COARSE AGGREGATE (ABOVE INVERT)			0.36	0.50 X 0.36 X V_C	
V_D : COARSE AGGREGATE (BELOW INVERT)			0.36	0.36 X V_D	
				TOTAL	2,304

NOTES:
1. THE PERIMETER OF THE VOLUME CONTROL FACILITY SHALL MAINTAIN THE MINIMUM HORIZONTAL SEPARATION DISTANCE OF: 10-FEET FROM FOUNDATIONS, UNLESS WATERPROOFED; 20-FEET FROM ROADWAY GRAVEL SHOULDER; AND 100-FEET FROM POTABLE WATER WELLS, SEPTIC TANKS/FIELDS, OR OTHER UNDERGROUND TANKS.
2. SANITARY OR COMBINED SEWERS SHALL NOT BE LOCATED WITHIN THE VOLUME CONTROL FACILITY. SANITARY OR COMBINED SEWERS SHALL NOT BE LOCATED BELOW THE FOOTPRINT OF THE VOLUME CONTROL FACILITY. WHEN LOCAL CONDITIONS PREVENT THE SEWER FROM BEING LOCATED OUTSIDE THE FOOTPRINT OF THE FACILITY THE SEWER SHALL BE CONSTRUCTED TO THE WATER MAIN QUALITY STANDARDS, OR IT SHALL BE ENCASED WITH A WATER MAIN QUALITY CARRIER PIPE WITH ENDS SEALED.
3. AVOID INSTALLATION ON SLOPES GREATER THAN 3.00%. AVOID COMPACTING NATIVE SOILS. SCARIFY ANY COMPACTED SOIL.
4. GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS OF IUM MATERIAL SPECIFICATION 910. FOR WOVEN: APPARENT OPENING SIZE OF 0.50 MM (TABLE 1, CLASS I). FOR NON WOVEN: APPARENT OPENING SIZE OF 0.30 MM (TABLE 2, CLASS II).
5. STONE STORAGE OPTIONS ARE IDOT CA-1, CA-3, CA-7, DISTRICT VULCAN MIX, OR APPROVED ALTERNATE. NO RECYCLED MATERIALS.
6. MINIMUM DISTANCE OF 2 FEET (3.5 FEET IN COMBINED SEWER AREAS) BETWEEN BOTTOM OF BMP AND SEASONALLY HIGH GROUNDWATER LEVEL.
7. UNDERDRAINS ARE REQUIRED IN TYPICAL CLAYEY SOILS WHERE INFILTRATION RATES ARE LESS THAN 0.5 INCH/HOUR. NO MORE THAN 1 UNDERDRAIN EVERY 30 FEET ON CENTER. PROVIDE A SOIL REPORT DOCUMENTING NATIVE INFILTRATION RATE TO FOREGO UNDERDRAINS. NO FILTER FABRIC COVER/SOCK.
8. MINIMUM UNDERDRAIN BEDDING OF 2 INCHES, MAXIMUM OF 12 INCHES.
9. MULCH LAYER SHALL BE HARDWOOD MULCH OR OTHER NON-FLOATING GROUND COVER.
10. FOLLOW THE REQUIRED PRETREATMENT MEASURES LISTED ON THE VOLUME CONTROL PRETREATMENT MEASURES DETAIL.

NOT TO SCALE

TECHNICAL GUIDANCE MANUAL	10/7/19
BIORETENTION FACILITY DETAIL	STD. DWG. NO.7
	PAGE NO.7

GENERAL NOTES:
1. THESE PLANS ARE BASED ON THE ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY (SURVEY PROJECT #19.0018 DATED 01/22/19) PREPARED BY: COMPASS SURVEYING LTD 2631 GINGER WOODS PARKWAY, STE 100, AURORA, IL 60502 (630) 820–9100
2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

REFERENCE BENCHMARK
NGS DESIGNATION – DK2006 PIN – DN4691

STATION IS 39 FEET WEST OF THE CENTERLINE OF WILL/COOK ROAD, 54 FEET SOUTH OF THE CENTERLINE OF 167TH STREET, 10 FEET WEST OF A TRAFFIC SIGNAL HAND HOLE AND 1 FOOT NORTHEAST OF AN ORANGE CARSONITE MARKER. ACCESS TO THE DATUM POINT IS THROUGH A 6 INCH LOGO CAP AND THE ROD (DATUM POINT) IS SURROUNDED BY A FLOATING BRONZE DISK TO AID IN IDENTIFICATION.

DATUM: NAVD 88 ELEVATION = 751.92

SITE BENCHMARKS
1. SITE BENCHMARK 1 – CROSS CUT ON TRAFFIC SIGNAL MANHOLE. ELEVATION = 700.19
2. SITE BENCHMARK 2 – SOUTHWEST BOLT OF FIRE HYDRANT ELEVATION = 700.71

UTILITY PLAN NOTES:
1. PRIOR TO CONSTRUCTION OF ANY UTILITIES, CONTRACTOR IS TO VERIFY THAT THE PROPOSED UTILITIES SHOWN ON THIS PLAN THAT ENTER THE PROPOSED BUILDING(S) CORRESPOND WITH THE UTILITIES ON THE PLUMBING PLANS AS THEY EXIT THE BUILDING(S). CONTRACTOR TO REPORT IN WRITING ANY DISCREPANCIES IN SIZE, LOCATION, OR INVERT ELEVATION TO THE DESIGN ENGINEER IMMEDIATELY FOR RESOLUTION OF THE CONFLICT IN WRITING.
2. GENERAL CONTRACTOR TO COORDINATE THE INSTALLATION AND PERMITTING OF THE PUBLIC UTILITIES, SUCH AS GAS, ELECTRIC, TELEPHONE, CABLE AND FIBER OPTICS, WITH THE PUBLIC UTILITY COMPANIES AND ARCHITECT PRIOR TO CONSTRUCTION. THE INSTALLATION OF THE PUBLIC UTILITIES AND NECESSARY SLEEVING TO BE INCLUDED AS PART OF GENERAL CONTRACTOR'S SCOPE OF WORK FOR THIS PROJECT.

EXISTING SITE DATA

LOT AREA	=	41,852 S.F.	(0.961 AC.)
EXISTING IMPERVIOUS AREA	=	36,932 S.F.	(0.848 AC.)
EXISTING PERVIOUS AREA	=	4,920 S.F.	(0.113 AC.)

PROPOSED SITE DATA

LOT AREA	=	41,852 S.F.	(0.961 AC.)
IMPERVIOUS AREA	=	27,222 S.F.	(0.625 AC.)
PERVIOUS AREA	=	14,630 S.F.	(0.336 AC.)

IMPERVIOUS AREA SENT TO BIORETENTION SWALE VOLUME CONTROL FACILITY 14,487 SF

20 0 10 20 40 80

MWRD DRAINAGE EXHIBIT

NO.	REVISIONS	DATE
1	NONE	8/22/19
2	PER CLIENT REQUEST	9/5/19
3	PER CLIENT REQUEST	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
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Tinley Park, Illinois

Prepared By:

Watermark Engineering RESOURCES, LTD
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CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: 1" = 20'
PROJECT NO.: 19–005

1 of 1

MWRD DRAINAGE EXHIBIT

FINAL PLAT OF SUBDIVISION
SOUTHLANDS FIRST CONSOLIDATION

IN THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

P.I.N. 27-25-403-013-0000 LOT 1
P.I.N. 27-25-403-014-0000 LOT 2

VICINITY MAP
NO SCALE

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GRID NORTH

AREA SUMMARY

GROSS	41,862 SQUARE FEET OR	0.961 ACRES
R.O.W. DEDICATION	0 SQUARE FEET OR	0 ACRES
NET AREA	41,862 SQUARE FEET OR	0.961 ACRES

(TO HEAVY LINES)
(BASED ON MEASURED VALUES)

TINLEY HEIGHTS UNIT FIVE
BLOCK 20
DOCUMENT NUMBER 1974580

THE SOUTH LINE OF THE NORTHEAST QUARTER OF SECTION 25-36-12

171ST STREET

50'
90'
40'

FOUND REBAR (HELD)
R=25.00'(M)
A=39.24'(M)
CH=35.34'(M)
CB=N46°39'09"W(M)
198.50'(R=M)
30.00'
N88°22'41"E(M) 173.53'(M)
S74°20'54"E 39.00'
SIDEWALK EASEMENT HEREBY GRANTED
90°04'(R)
S44°06'51"E 26.30'
6.00'
FOUND REBAR (HELD)

10' 10'
P.U.E. PER DOCUMENT 15484491
P.U.E. PER DOCUMENT 15484491

24
EASEMENT OVER PAVED AREAS

50' 50'

S. HARLEM AVENUE
ILLINOIS ROUTE 43
THE EAST LINE OF SECTION 25-36-12

S01°40'59"E(M)
108.50'(R=M)
186.53'(M)
103'(R)
100'

JEWEL / OSCO SUBDIVISION
DOCUMENT NUMBER 96973461

1

N01°40'35"W(M) 211.61'(M)
FOUND 7/8" O.D.I.P. 0.30' EAST

ARTHUR T. MCINTOSH & CO'S SOUTHLANDS
DOCUMENT NUMBER 15484491
BLOCK 1

103'(R)
10' 10'

23

22

S88°20'49"W(M) 198.52'(M)
198.50'(R)

SET 7/8" O.D.I.P.

103'(R) 103.05'(M)
FOUND 7/8" O.D.I.P. 0.31' EAST

3

4

FOUND 7/8" O.D.I.P. (HELD)

NOTE

BLANKET ACCESS EASEMENT IS HEREBY GRANTED OVER ALL PAVED DRIVEWAYS, ROADWAYS AND WALKWAYS AS PRESENTLY OR HEREAFTER CONSTRUCTED ON LOT 1.

LEGEND

- ● SET 7/8" O.D.I.P. UNLESS OTHERWISE NOTED
- ■ SET CONCRETE MONUMENT UNLESS OTHERWISE NOTED
- \+ SET CROSS IN CONCRETE UNLESS OTHERWISE NOTED

ABBREVIATIONS

O.D.I.P. = OUTSIDE DIAMETER IRON PIPE
(R) = RECORD BEARING OR DISTANCE
(M) = MEASURED BEARING OR DISTANCE
(C) = CALCULATED BEARING OR DISTANCE
(D) = DEED BEARING OR DISTANCE
B.S.L. = BUILDING SETBACK LINE
U.E. = UTILITY EASEMENT
D.E. = DRAINAGE EASEMENT
P.U.E. = PUBLIC UTILITY EASEMENT
P.O.C. = POINT OF COMMENCEMENT
P.O.B. = POINT OF BEGINNING
P.U. & D.E. = PUBLIC UTILITY AND DRAINAGE EASEMENT

LINE LEGEND

- SUBDIVISION BOUNDARY LINE
- ADJACENT LAND PARCEL LINE
- LOT LINE
- EASEMENT LINE
- CENTERLINE
- BUILDING SETBACK LINE
- SECTION LINE

SUBMITTED BY AND RETURN TO:

SEND TAX BILL TO:

J:\PSDATA\2019 PROJECTS\19.0018\19.0018-01 PLAT OF SUBDIVISION\19.0018-01 POSUBD.DWG

DATE: 7/16/2019 | PC TK | DRAWN BY MRA | CHECKED BY DW | BOOK N/A PG N/A

NO.	REVISIONS	DATE	BY
1	PER LETTER DATED 8/5/19	8/20/19	MRA
2	PER LETTER DATED 9/6/19	11/22/19	MRA

PROJECT
SOUTHLANDS FIRST CONSOLIDATION
Tinley Park, Illinois

CLIENT
VEQUITY
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SCALE: 1" = 20'

1 OF 2

PROJ. NO.: 19.0018-01

FINAL PLAT OF SUBDIVISION
SOUTHLANDS FIRST CONSOLIDATION

IN THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

OWNER'S CERTIFICATE

STATE OF _____)
) SS
COUNTY OF _____)

THIS IS TO CERTIFY THAT _____, LLC, A _____ LIMITED LIABILITY COMPANY, IS THE OWNER OF THE PROPERTY DESCRIBED AND SHOWN HEREON AND AS SUCH OWNER, HAS CAUSED THE PROPERTY TO BE SURVEYED AND SUBDIVIDED AS SHOWN HEREON, FOR THE USES AND PURPOSES THEREIN SET FORTH AND AS ALLOWED AND PROVIDED BY STATUTES, AND SAID LIMITED LIABILITY COMPANY DOES HEREBY ACKNOWLEDGE AND ADOPT THE SAME UNDER THE STYLE AND TITLE AFORESAID.

ALSO, THIS IS TO CERTIFY THAT THE PROPERTY BEING SUBDIVIDED AFORESAID AND, TO THE BEST OF OWNER'S KNOWLEDGE AND BELIEF, SAID SUBDIVISION LIES ENTIRELY WITHIN THE LIMITS OF SCHOOL DISTRICT _____.

DATED AT _____, _____, THIS _____ DAY OF _____, A.D., 20 ___.

OWNER NAME: _____ ADDRESS: _____

BY: _____
SIGNATURE

TITLE: _____
PRINT TITLE

NOTARY'S CERTIFICATE

STATE OF _____)
) SS
COUNTY OF _____)

I, _____ , A NOTARY PUBLIC IN AND FOR THE SAID COUNTY IN THE STATE AFORESAID, DO HEREBY CERTIFY THAT _____(PRINT NAME), _____ (TITLE) OF SAID LIMITED LIABILITY COMPANY, WHO ARE PERSONALLY KNOWN TO ME TO BE THE SAME PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AS SUCH _____, APPEARED BEFORE ME THIS DAY IN PERSON AND ACKNOWLEDGED THAT THEY SIGNED AND DELIVERED THE SAID INSTRUMENT AS THEIR OWN FREE AND VOLUNTARY ACT AND AS THE FREE AND VOLUNTARY ACT OF SAID LIMITED LIABILITY COMPANY, FOR THE USES AND PURPOSES THEREIN SET FORTH.

GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS _____ DAY OF _____ A.D., 20___

_____
NOTARY PUBLIC SIGNATURE

_____
(PRINT NAME)

VILLAGE ENGINEER

STATE OF ILLINOIS)
)SS
COUNTY OF COOK)

APPROVED BY THE VILLAGE ENGINEER OF THE VILLAGE OF TINLEY PARK, COOK COUNTY, ILLINOIS.

DATED THIS _____ DAY OF _____ , 20___

_____
VILLAGE ENGINEER

DRAINAGE CERTIFICATE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF OUR KNOWLEDGE AND BELIEF, THE DRAINAGE OF SURFACE WATERS WILL NOT BE CHANGED BY THIS CONSOLIDATION OR THAT, IF SUCH SURFACE WATER DRAINAGE WILL BE CHANGED, REASONABLE PROVISION WILL BE MADE FOR COLLECTION AND DIVERSION OF SUCH SURFACE WATERS INTO PUBLIC AREAS OR DRAINS THAT THE OWNER HAS A RIGHT TO USE, AND THAT SUCH SURFACE WATERS WILL BE PLANNED FOR IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES SO AS TO ELIMINATE THE LIKELIHOOD OF DAMAGE TO ADJOINING PROPERTY OWNERS BECAUSE OF THIS CONSOLIDATION. THE EXISTING OVERLAND FLOW ROUTES WILL CONFORM TO THE ORIGINAL SUBDIVISION GRADING PLAN AND ACCEPTED ENGINEERING DESIGN. SHOULD ANY PONDING OCCUR ON-SITE, IT WILL BE OUR RESPONSIBILITY TO ADDRESS AS PER ALL REQUIREMENTS OF THE VILLAGE'S CODES, ORDINANCES AND REGULATIONS RELATED TO STORMWATER MANAGEMENT, SOIL EROSION CONTROL AND SITE GRADING.

DATED THIS _____ DAY OF _____, 20___

_____
OWNER

_____
ENGINEER

VILLAGE PLAN COMMISSION

STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

REVIEWED AND APPROVED BY THE PLAN COMMISSION

THIS _____ DAY OF _____, A.D. 20___.

_____
CHAIRMAN

VILLAGE BOARD OF TRUSTEES

STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

APPROVED AND ACCEPTED BY THE BOARD OF TRUSTEES

THIS _____ DAY OF _____, A.D. 20___.

_____
PRESIDENT

_____
VILLAGE CLERK

SIDEWALK EASEMENT PROVISIONS

A PERMANENT NON-EXCLUSIVE EASEMENT IS HEREBY RESERVED FOR AND GRANTED TO THE VILLAGE OF TINLEY PARK, ITS HEIRS, SUCCESSORS AND ASSIGNS OVER ALL AREAS HEREON PLATTED AND DESIGNATED "SIDEWALK EASEMENT" FOR THE PERPETUAL RIGHT, PRIVILEGE AND AUTHORITY TO CONSTRUCT, RECONSTRUCT, REPAIR, REPLACE AND MAINTAIN A PATHWAY WITHIN THE SUBJECT EASEMENT AREA, TOGETHER WITH THE RIGHT OF ACCESS FOR THE NECESSARY PERSONS AND OR EQUIPMENT TO COMPLETE ANY OF THE ABOVE WORK, TOGETHER WITH THE RIGHT OF TRANSFER FOR PEDESTRIAN AND NON-MOTORIZED VEHICULAR TRAFFIC ALONG THE EASEMENT. THE RIGHT IS ALSO GRANTED TO CUT DOWN, TRIM OR REMOVE ANY TREES OR SHRUBS ON THE EASEMENT THAT INTERFERE WITH THE OPERATION OF THE PUBLIC PATHWAYS. NO PERMANENT BUILDINGS SHALL BE PLACED ON SAID EASEMENT, BUT THE SAME MAY BE USED FOR DRIVEWAYS CROSSING THE EASEMENT AREA, LAWNS AND LANDSCAPING AND OTHER PURPOSES THAT DO NOT THEN OR LATER INTERFERE WITH THE AFORESAID USES OR RIGHTS.

ACCESS EASEMENT PROVISIONS

AN ACCESS EASEMENT IS RESERVED FOR AND GRANTED TO THE OWNERS OF LOTS 3, 4 AND 24 IN BLOCK 1 ARTHUR T. MCINTOSH & COMPANY'S SOUTHLANDS SUBDIVISION, THEIR HEIRS, SUCCESSORS, ASSIGNS AND VISITORS OVER ALL PAVED DRIVEWAYS, ROADWAYS AND WALKWAYS AS PRESENTLY OR HEREAFTER CONSTRUCTED ON LOT 1, SO AS TO PROVIDE FOR THE PASSAGE OF MOTOR VEHICLES AND PEDESTRIANS TO AND FROM ALL ABUTTING STREETS OR RIGHTS OF WAY.

SURVEYOR'S CERTIFICATE

STATE OF ILLINOIS)
)SS
COUNTY OF KANE)

I, DANIEL W. WALTER, ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 3585, HAVE SURVEYED AND SUBDIVIDED THE FOLLOWING PROPERTY:

LOTS 1 AND 2 IN BLOCK 1 IN ARTHUR T. MCINTOSH AND COMPANY'S SOUTHLANDS IN THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

AS SHOWN BY THE ATTACHED PLAT WHICH IS A REPRESENTATION OF SAID SURVEY AND SUBDIVISION. ALL DISTANCES ARE SHOWN IN FEET AND DECIMALS THEREOF. THIS SUBDIVISION IS WITHIN THE VILLAGE OF TINLEY PARK WHICH HAS ADOPTED AN OFFICIAL COMPREHENSIVE PLAN AND IS EXERCISING THE SPECIAL POWERS AUTHORIZED BY THE STATE OF ILLINOIS ACCORDING TO 65 ILCS 5/11-12-6 AS HERETOFORE AND HEREAFTER AMENDED, AND THIS SITE FALLS WITHIN "OTHER AREAS: ZONE X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DEFINED BY THE FLOOD INSURANCE RATE MAP, MAP NUMBER 17031C0708lJ, HAVING A REVISED DATE OF AUGUST 19, 2008.

GIVEN UNDER MY HAND AND SEAL AT AURORA , ILLINOIS

THIS_____ DAY OF _____, 20_____.

COMPASS SURVEYING LTD
PROFESSIONAL DESIGN FIRM
LAND SURVEYOR CORPORATION NO. 184-002778
LICENSE EXPIRES 4/30/2021

BY: _____
DANIEL W. WALTER
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 3585
LICENSE EXPIRES 11/30/2020

SURVEYOR'S AUTHORIZATION TO RECORD

STATE OF ILLINOIS)
) SS
COUNTY OF KANE)

I HEREBY DESIGNATE _____, AND/OR REPRESENTATIVES THEREOF, TO RECORD THIS PLAT, A TRUE COPY OF WHICH HAS BEEN RETAINED BY ME TO ASSURE NO CHANGES HAVE BEEN MADE TO SAID PLAT.

DATED THIS _____DAY OF_____, 20_____, AT AURORA, KANE COUNTY, ILLINOIS.

COMPASS SURVEYING LTD
PROFESSIONAL DESIGN FIRM
LAND SURVEYOR CORPORATION NO. 184-002778
LICENSE EXPIRES 4/30/2021

BY: _____
DANIEL W. WALTER
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 3585
EXPIRES 11/30/2020

DATE: 7/16/2019 | PC TK | DRAWN BY MRA | CHECKED BY DW | BOOK N/A PG N/A

NO.	REVISIONS	DATE	BY
1	PER LETTER DATED 8/5/19	8/20/19	MRA
2	PER LETTER DATED 9/6/19	11/22/19	MRA

PROJECT
SOUTHLANDS FIRST CONSOLIDATION
Tinley Park, Illinois

CLIENT
VEQUITY
400 N. State Street, Suite 400
Chicago, Illinois 60654

COMPASS SURVEYING LTD
ALTA SURVEYS • TOPOGRAPHY • CONSTRUCTION STAKING
2631 GINGER WOODS PARKWAY, STE. 100
AURORA, ILLINOIS 60502
PHONE: (630) 820-9100 FAX: (630) 820-7030 EMAIL: ADMIN@CLSURVEYING.COM

SCALE: NONE

2 OF 2

PROJ. NO.: 19.0018-01

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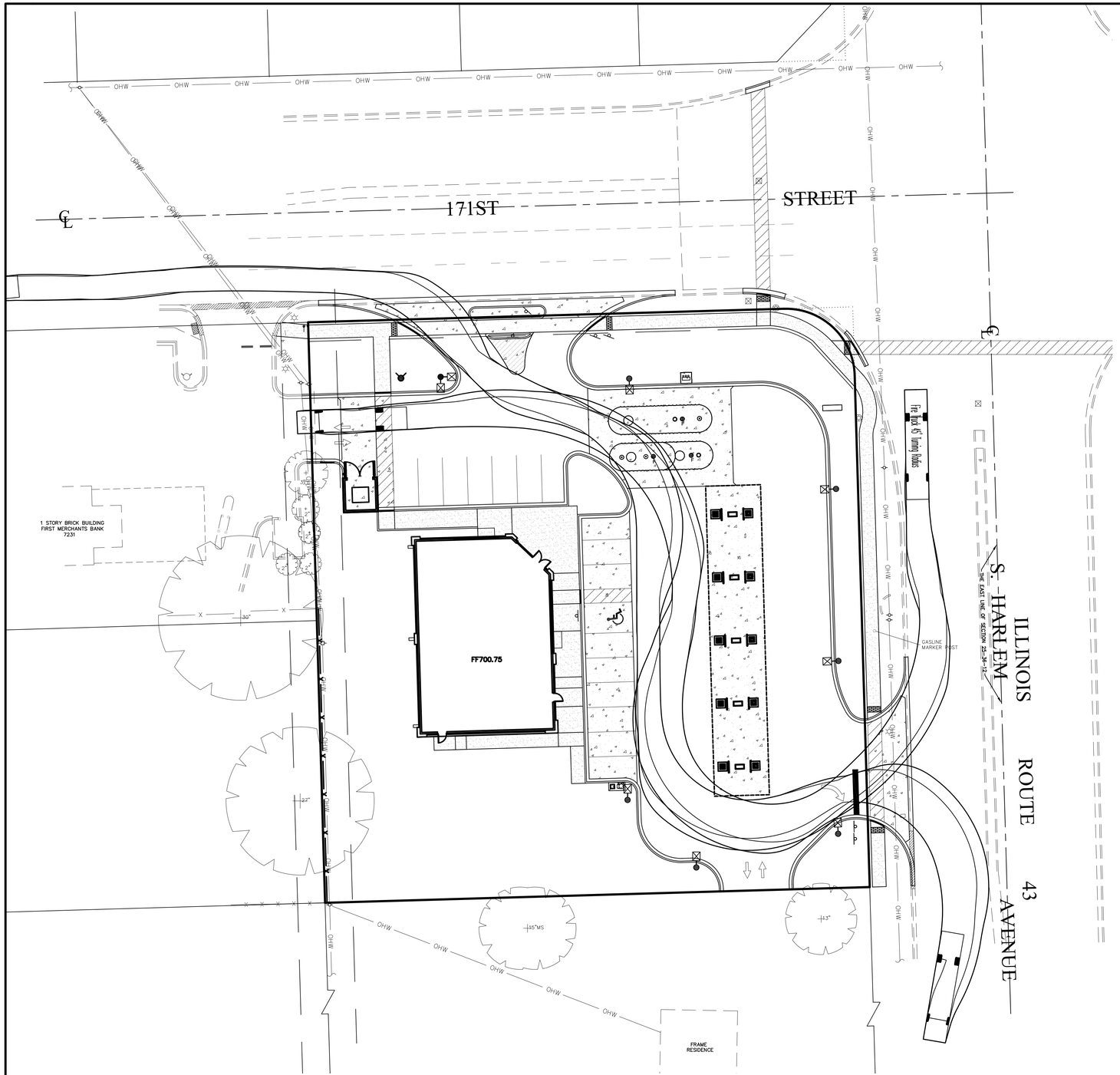
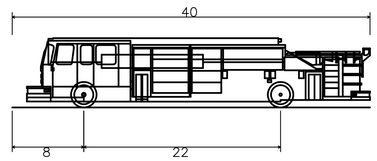




Fire Truck 45' Turning Radius	
Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	45.000ft

20 0 10 20 40 80

FIRE TRUCK CIRCULATION PLAN

NO.	REVISIONS	DATE
1	PER SITE PLAN REVISIONS	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

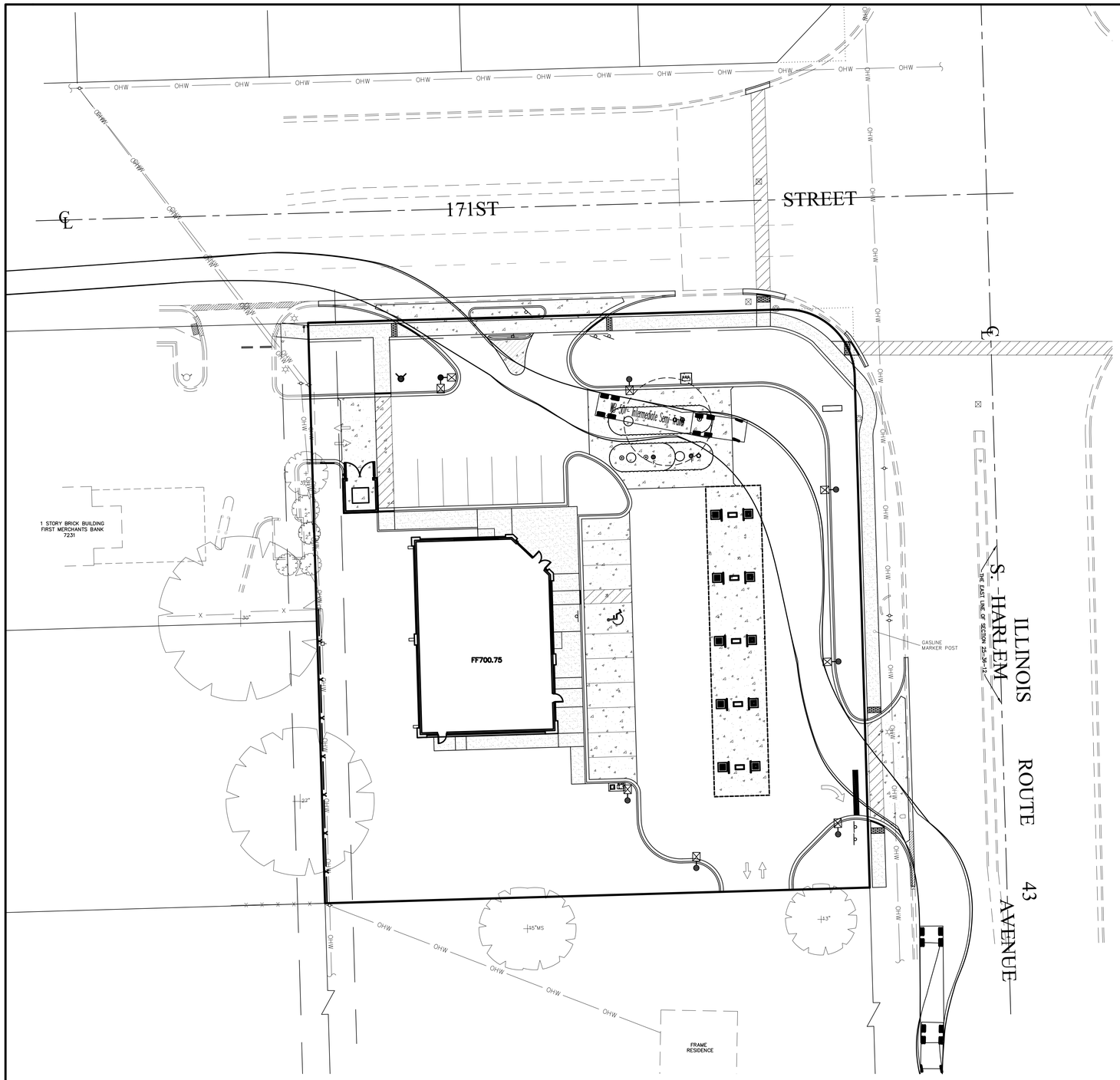
Prepared By:

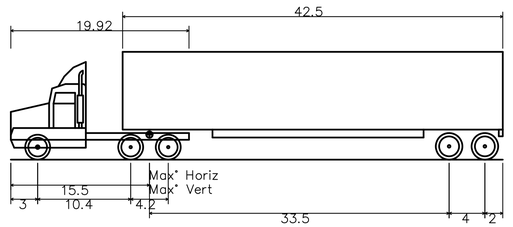
Watermark Engineering RESOURCES, LTD
2831 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-9800 www.watermark-engineering.com

CHECKED BY:	B. PERRY
DESIGN BY:	S. SIMAK
DRAWN BY:	S. SIMAK
DATE:	AUGUST 22, 2019
SCALE:	1" = 20'
PROJECT NO.:	19-005

1 of 1

FIRE TRUCK CIRCULATION PLAN





WB-50 - Intermediate Semi-Trailer

Overall Length	55.000ft
Overall Width	8.500ft
Overall Body Height	12.052ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	45.000ft

20 0 10 20 40 80

FUEL TRUCK CIRCULATION PLAN

NO.	REVISIONS	DATE
1	PER CLIENT REQUEST	11/22/19

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

Watermark Engineering RESOURCES, LTD
2831 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-9800 www.watermark-engineering.com

CHECKED BY:	B. PERRY
DESIGN BY:	S. SIMAK
DRAWN BY:	S. SIMAK
DATE:	AUGUST 22, 2019
SCALE:	1" = 20'
PROJECT NO.:	19-005

1 of 1

FUEL TRUCK CIRCULATION PLAN

Traffic Impact Study
Proposed 7-Eleven Gas Station

Tinley Park, Illinois

Prepared For:

vequity

Prepared By:

KLOA

Kenig, Lindgren, O'Hara, Aboona, Inc.

August 23, 2019

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 7-Eleven gas station to be located in Tinley Park, Illinois. The site, which is currently occupied by a single-family home, is located in the southwest quadrant of the intersection of Harlem Avenue (IL Route 43) with 171st Street. As proposed, the site will be developed with a 7-Eleven convenience store with 20 fueling positions and an automated car wash. Access to the gas station will be provided via a proposed right-in/right-out access drive off Harlem Avenue, a right-in/right-out access drive off 171st Street, and a cross connection to the existing First Merchants Bank.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed gas station will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate the traffic generated by the proposed gas station.

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 gas station
- Directional distribution of the gas station traffic
- Vehicle trip generation for the gas station
- Future traffic conditions including access to the gas station
- Traffic analyses for the weekday morning and weekday 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. Existing Conditions – Analyze the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area.

2. No-Build Conditions – Analyze the capacity of the future roadway system using background traffic volumes that include the existing traffic volumes increased by an ambient growth factor.

3. Projected Conditions – Analyze the capacity of the future roadway system using the projected traffic volumes that include the existing traffic volumes, ambient traffic growth, and the traffic estimated to be generated by the full buildout of the proposed gas station.

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

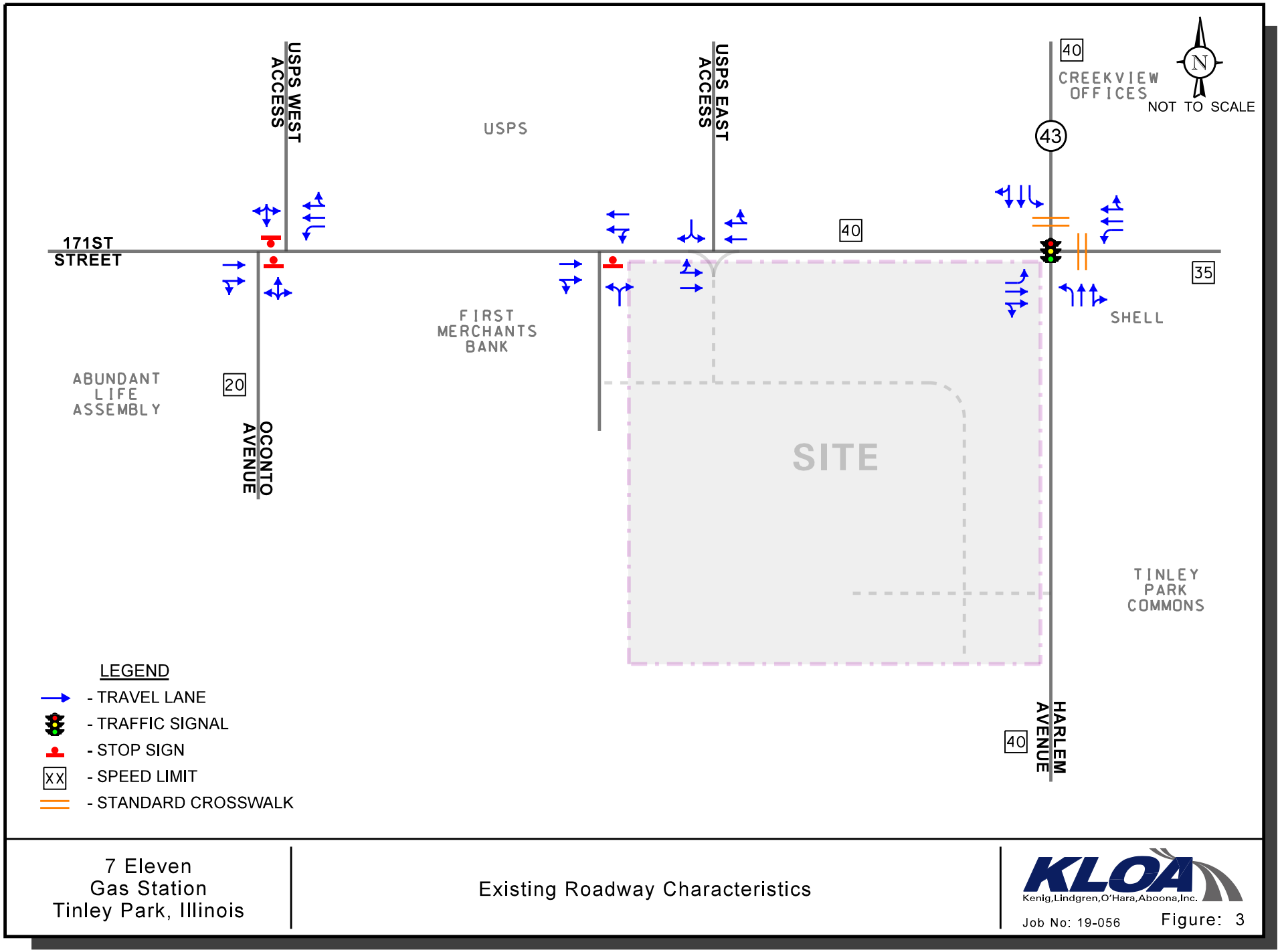
The site, which is currently occupied by a single-family home, is located in the southwest quadrant of the intersection of Harlem Avenue with 171st Street and is bounded by First Merchants Bank to the west and a single-family home to the south. Land uses in the area include single family homes to the west, the United States Postal Service (USPS) to the north, Creekview Offices, Montego Bay Car Wash, and Tinley Park Commons to the west and DuPage Medical Group and single-family homes to the south.

Existing Roadway System Characteristics

The characteristics of the existing roadways near the gas station are described below and illustrated in **Figure 3**.

Harlem Avenue (IL Route 43) is a north-south arterial roadway that in the vicinity of the site provides two through lanes in each direction separated by a raised barrier median. At its signalized intersection with 171st Street, Harlem avenue provides an exclusive left-turn lane, a through lane and a shared through/right-turn lane on the northbound and southbound approaches. The north leg of the intersection provides a standard style crosswalk and pedestrian countdown signals. Harlem Avenue is under the jurisdiction of the Illinois Department of Transportation (IDOT), is classified as a Strategic Regional Arterial (SRA) route, carries an annual average daily traffic (AADT) volume of 32,500 vehicles north of 171st Street and an AADT volume of 35,300 vehicles south of 171st Street (IDOT AADT 2017) and has a posted speed limit of 40 miles per hour.

171st Street is an east-west collector roadway that in the vicinity of the site provides two through lanes in each direction separated by a mountable/striped median. At its signalized intersection with Harlem Avenue, 171st Street provides an exclusive left-turn lane, a through lane and a shared through/right-turn lane on the eastbound and westbound approaches. The east leg provides a standard style crosswalks and pedestrian countdown signals. At its unsignalized intersection with Oconto Avenue, 171st Street provides a through lane and a shared through/right-turn lane on the eastbound approach and an exclusive left-turn lane, a through lane and a shared through/right-turn lane on the westbound approach. West of Harlem Avenue, 171st Street is under the jurisdiction of the Cook County Department of Transportation and Highways, carries an AADT volume of 16,00 vehicles (IDOT AADT 2018) and has a posted speed limit of 40 miles per hour. East of Harlem Avenue, 171st Street is under the jurisdiction of the Village of Tinley Park, carries an AADT volume of 11,800 vehicles (IDOT AADT 2018) and has a posted speed limit of 35 miles per hour.



7 Eleven
Gas Station
Tinley Park, Illinois

Existing Roadway Characteristics

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 19-056

Figure: 3

Oconto Avenue is a north-south local roadway that provides one through lane in each direction and extends from 171st Street to its terminus at 173rd Street approximately 1,300 feet to the south. At its unsignalized intersection with 171st Street, Oconto Avenue provides a shared left/right-turn lane under stop-sign control. Oconto Avenue is under the jurisdiction of the Village of Tinley Park and has a posted speed limit of 20 miles per hour.

Traffic Signal Interconnect

The intersection of Harlem Avenue with 171st Street is part of a 16-signal interconnect system that extends along Harlem Avenue from 175th Street (located one-half mile to the south) to 151st Street (approximately 2.5 miles to the north) and also includes the traffic signals along US Route 6 (159th Street) between the Park Center/Home Depot Signalized Access Drives and Laramie Avenue. These traffic signals are maintained by IDOT.

Existing Traffic Volumes

In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. conducted peak period traffic counts utilizing Miovision Scout Collection Units during the weekday morning (7:00 to 9:00 A.M.) and evening (4:00 to 6:00 P.M.) peak periods on Tuesday, August 6, 2019 at the following intersections:

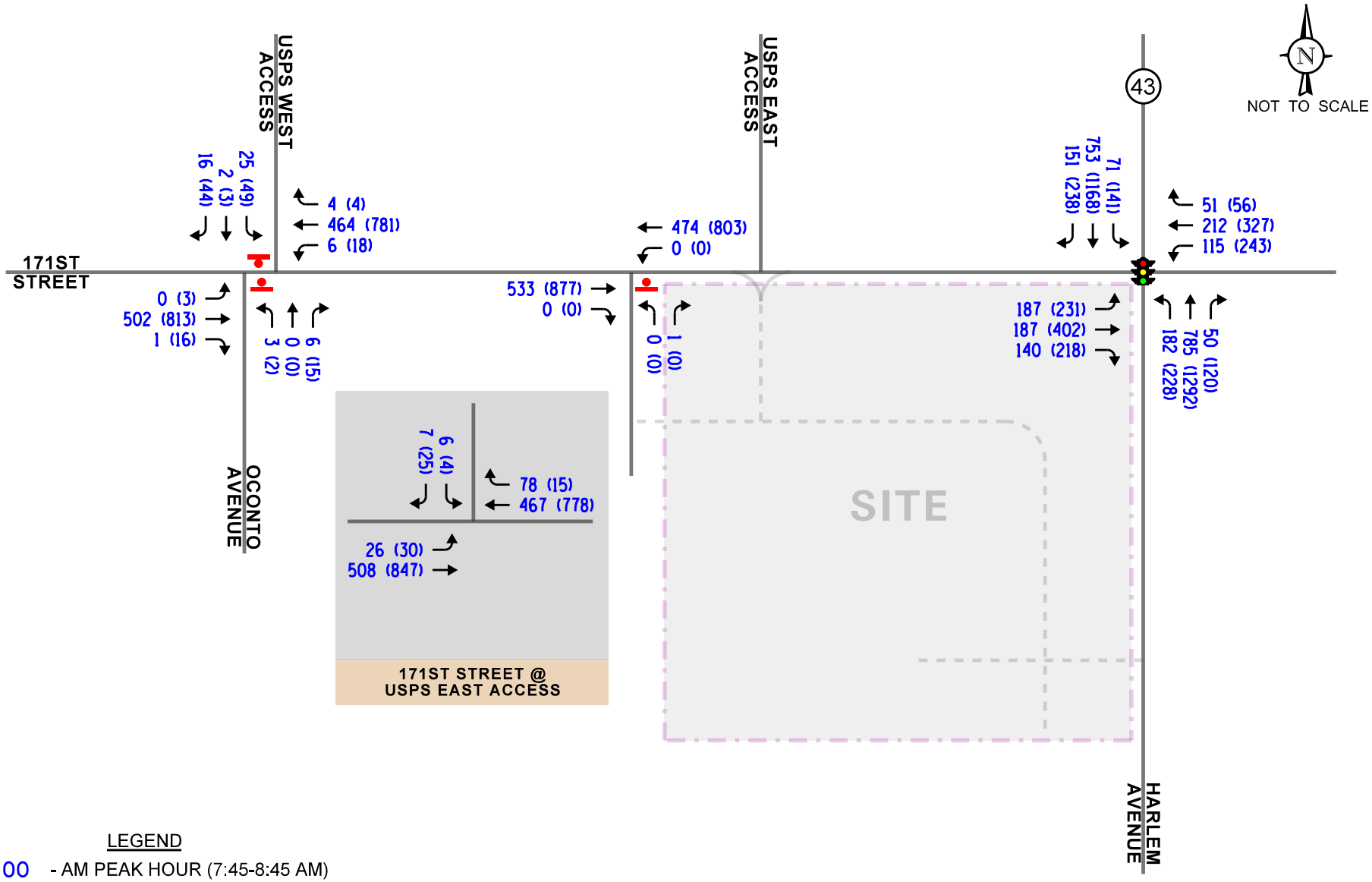
- Harlem Avenue with 171st Street
- 171st Street with the First Merchants Bank Access Drive
- 171st Street with Oconto Avenue/USPS Westerly Access Drive
- 171st Street with USPS Easterly Access Drive

The results of the traffic counts indicated that the weekday morning peak hour of traffic occurs from 7:45 A.M. to 8:45 A.M. and the weekday evening peak hour of traffic occurs from 5:00 P.M. to 6:00 P.M. **Figure 4** illustrates the existing peak hour traffic volumes. Copies of the traffic count summary sheets are included in the Appendix.

Crash Analysis

KLOA, Inc. obtained crash data[1] for the most recent available past five years (2013 to 2017) for the intersection of Harlem Avenue with 171st Street as summarized in **Table 1.** A review of the crash data indicated that no fatalities were reported.

[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.



LEGEND

00 - AM PEAK HOUR (7:45-8:45 AM)

(00) - PM PEAK HOUR (5:00-6:00 PM)

7 Eleven Gas Station Tinley Park, Illinois	Existing Traffic Volumes	KLOA Kenig,Lindgren,O'Hara,Aboona,Inc. Job No: 19-056 Figure: 4

Table 1
HARLEM AVENUE WITH 171st STREET - CRASH SUMMARY

	Type of Accident Frequency						
Year	**Angle**	**Object**	**Rear End**	**Sideswipe**	**Turning**	**Other**	**Total**
2013	2	1	21	3	8	0	35
2014	1	0	12	2	4	0	19
2015	2	1	14	3	10	0	30
2016	2	1	23	5	5	1	37
2017	1	0	6	2	7	1	17
Total	**8**	**3**	**76**	**15**	**34**	**2**	**138**
Average/Year	**1.6**	**< 1**	**15.2**	**3**	**6.8**	**< 1**	**27.6**

3. Traffic Characteristics of the Proposed Gas Station

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed gas station, including the directional distribution and volumes of traffic that it will generate.

Proposed Site and Development Plan

As proposed, the site will be developed with a 7-Eleven gas station with an approximately 3,500 square-foot convenience store with 20 fueling positions and an automated car wash. Access to the gas station will be provided via the following:

- A right-in/right-out access drive off Harlem Avenue located approximately 200 feet south of 171st Street. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop-sign control. Turning movements at this access drive will be restricted to right-turns only via the existing raised median along Harlem Avenue and will be supplemented with appropriate striping and signage.

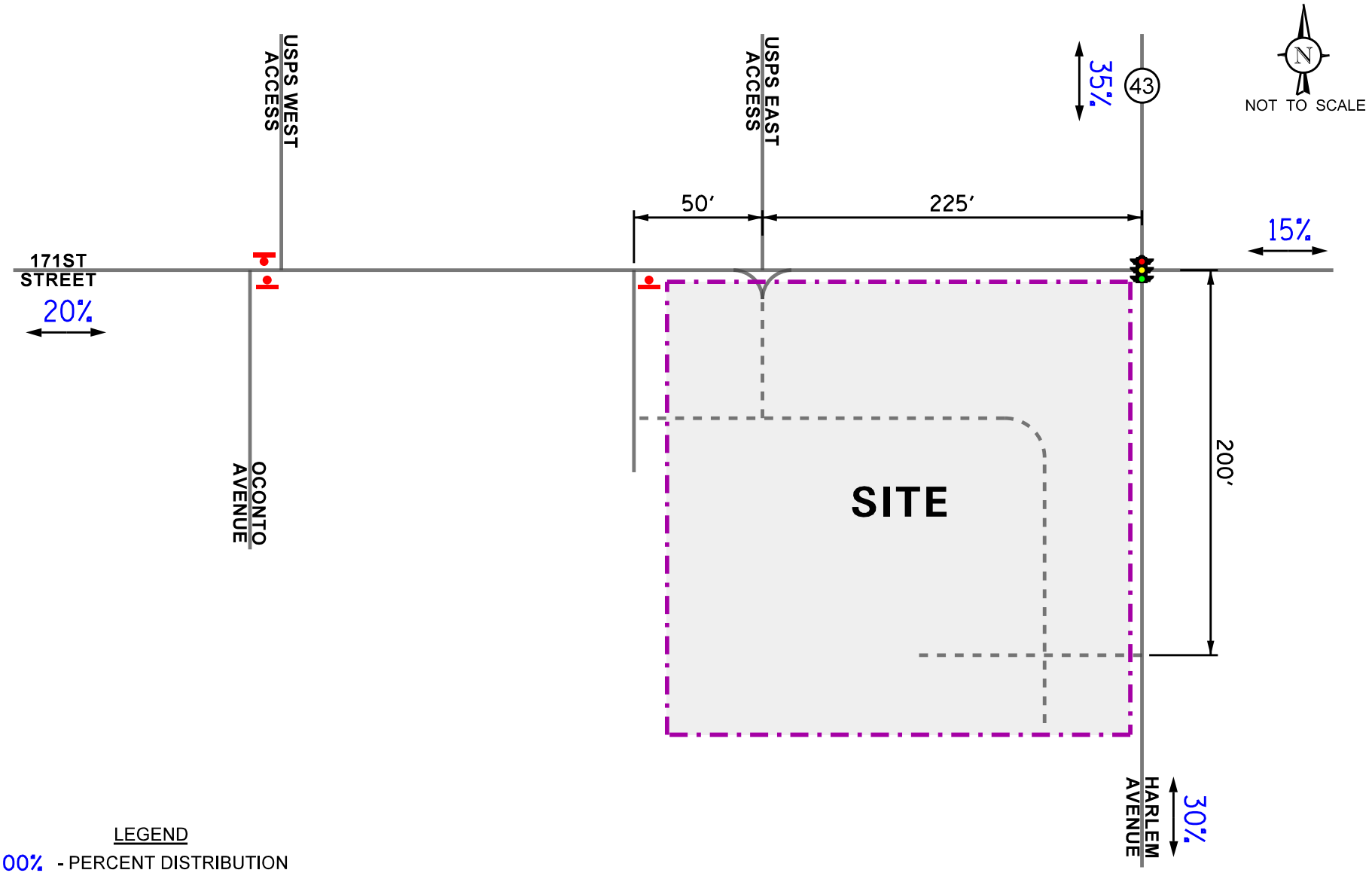
- A right-in/right-out access drive off 171st Street located approximately 225 feet west of Harlem Avenue. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop-sign control. Turning movements at this access drive will be physically restricted to right-turns only via a raised triangular median, striping and signage.

- A cross access to the existing First Merchants Bank site that borders the west side of the site. This cross access will allow traffic generated by the subject site to access the existing full movement access drive serving the bank that is located approximately 275 feet west of Harlem Avenue and the existing three-quarter (rights in, rights out, lefts in) access drive off Oconto Avenue that is located approximately 110 feet south of 171st Street.

It should be noted that the site will be developed with an additional cross access curb cut along the southern frontage to provide additional site connectivity to the future development of the two residential homes located south of the site. A site plan depicting the proposed gas station layout and access is included in the Appendix.

Directional Distribution

The directions from which patrons and employees will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 5** illustrates the directional distribution of the gas station-generated traffic.



7 Eleven
Gas Station
Tinley Park, Illinois

Estimated Directional Distribution

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 19-056

Figure: 5

Peak Hour Traffic Volumes

The number of peak hour trips estimated to be generated by the proposed gas station was based on vehicle trip generation rates contained in *Trip Generation Manual*, 10th Edition, published by the Institute of Transportation Engineers (ITE). The "Convenience Market/Gas Station" (Land-Use Code 960) rate was utilized. In addition, it is important to note that surveys conducted by ITE have shown that approximately 60 percent of trips made to gas stations are diverted from the existing traffic on the roadway system. This is particularly true during the weekday morning and evening peak hours when traffic is diverted from the home-to-work and work-to-home trips. Such diverted trips are referred to as pass-by traffic. **Table 2** summarizes the trips projected to be generated by the proposed gas station.

Table 2
PROJECTED SITE-GENERATED TRAFFIC VOLUMES

ITE Land Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		In	Out	Total	In	Out	Total
960	Convenience Market/Gas Station (3,500 s.f.)	146	145	291	121	121	242
	60% Pass-By Reduction	*-87*	*-87*	*-174*	*-73*	*-73*	*-146*
	Total New Trips	**49**	**50**	**99**	**42**	**42**	**84**

4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed subject gas station.

Gas Station Traffic Assignment

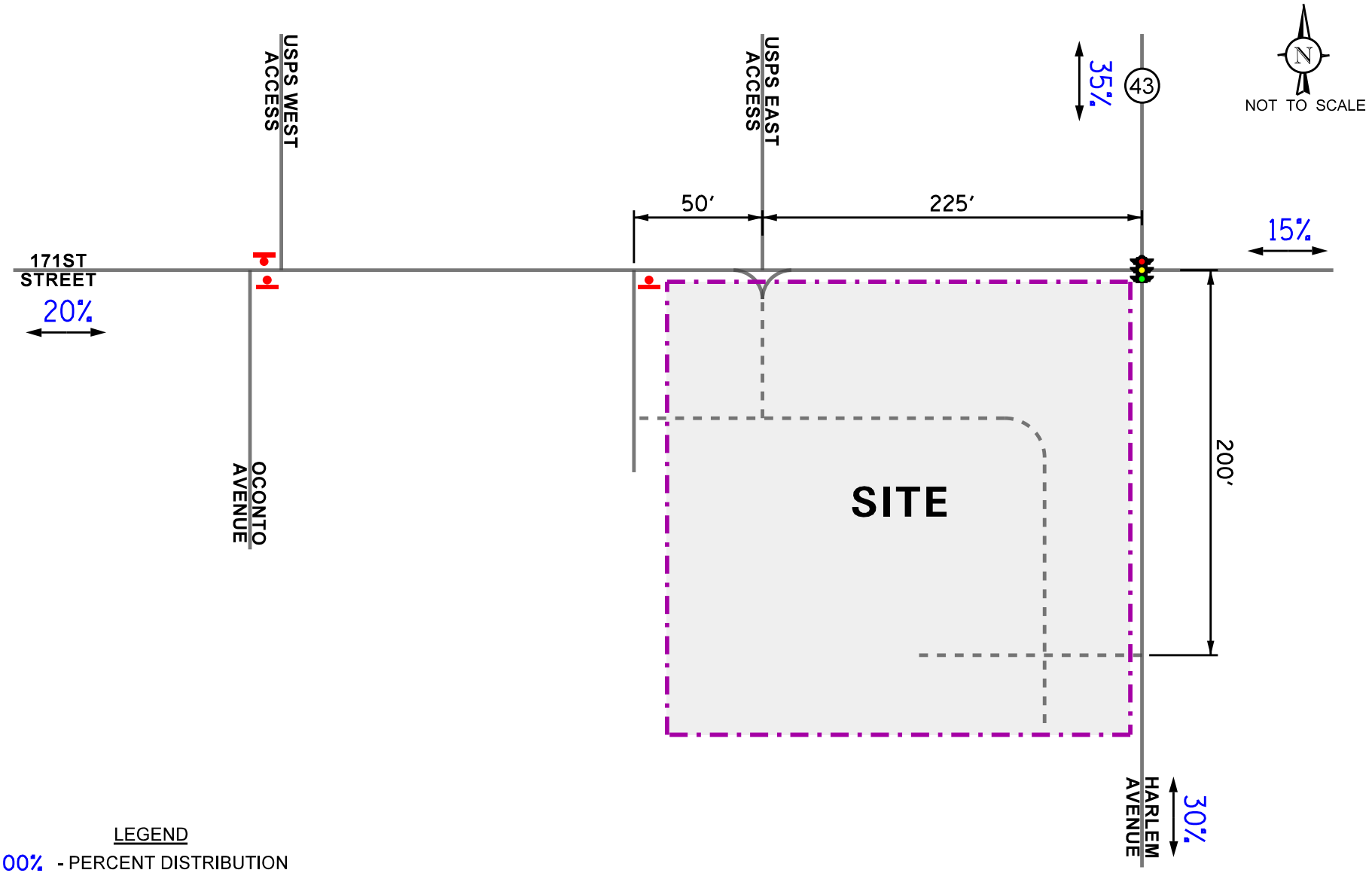
The estimated weekday morning and evening peak hour traffic volumes that will be generated by the proposed gas station were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). **Figure 6** illustrates the traffic assignment of the new passenger vehicle trips. As previously indicated, a 60 percent pass-by reduction was applied, and **Figure 7** illustrates the traffic assignment of the pass-by trips.

Background Traffic Conditions

The existing 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 Average Daily Traffic (ADT) projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes are projected to increase by a total of 4.3 percent (0.7 percent compounded annually) to represent Year 2025 total projected conditions (one-year buildout plus five years). **Figure 8** illustrates the Year 2025 no-build traffic volumes. A copy of the CMAP projections letter is included in the Appendix.

Total Projected Traffic Volumes

The gas station-generated traffic (Figures 6 and 7) was added to the existing traffic volumes increased by the regional growth factor (Figure 8) to determine the Year 2025 total projected traffic volumes, shown in **Figure 9**.



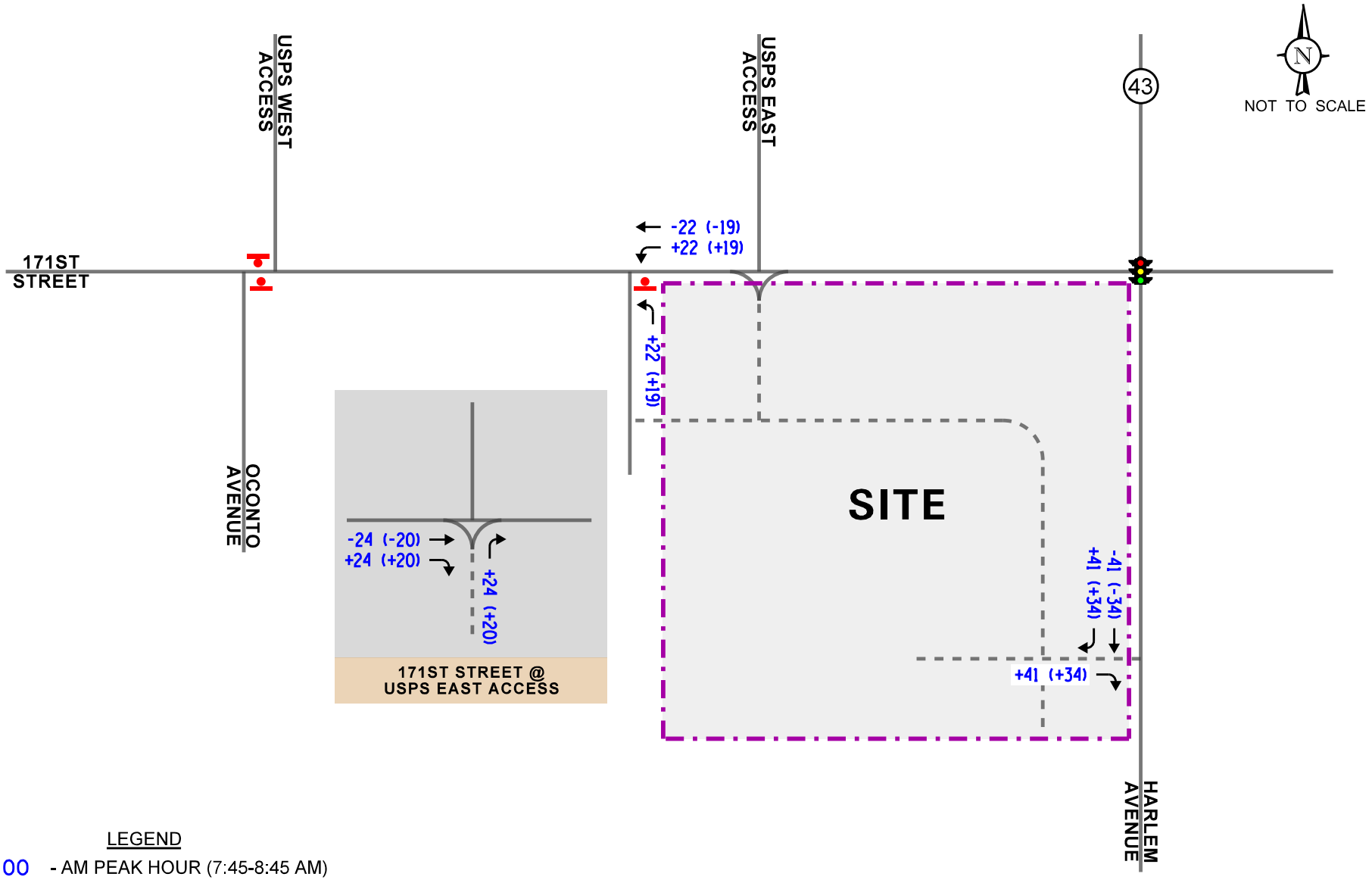
7 Eleven
Gas Station
Tinley Park, Illinois

Estimated Directional Distribution

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 19-056

Figure: 6

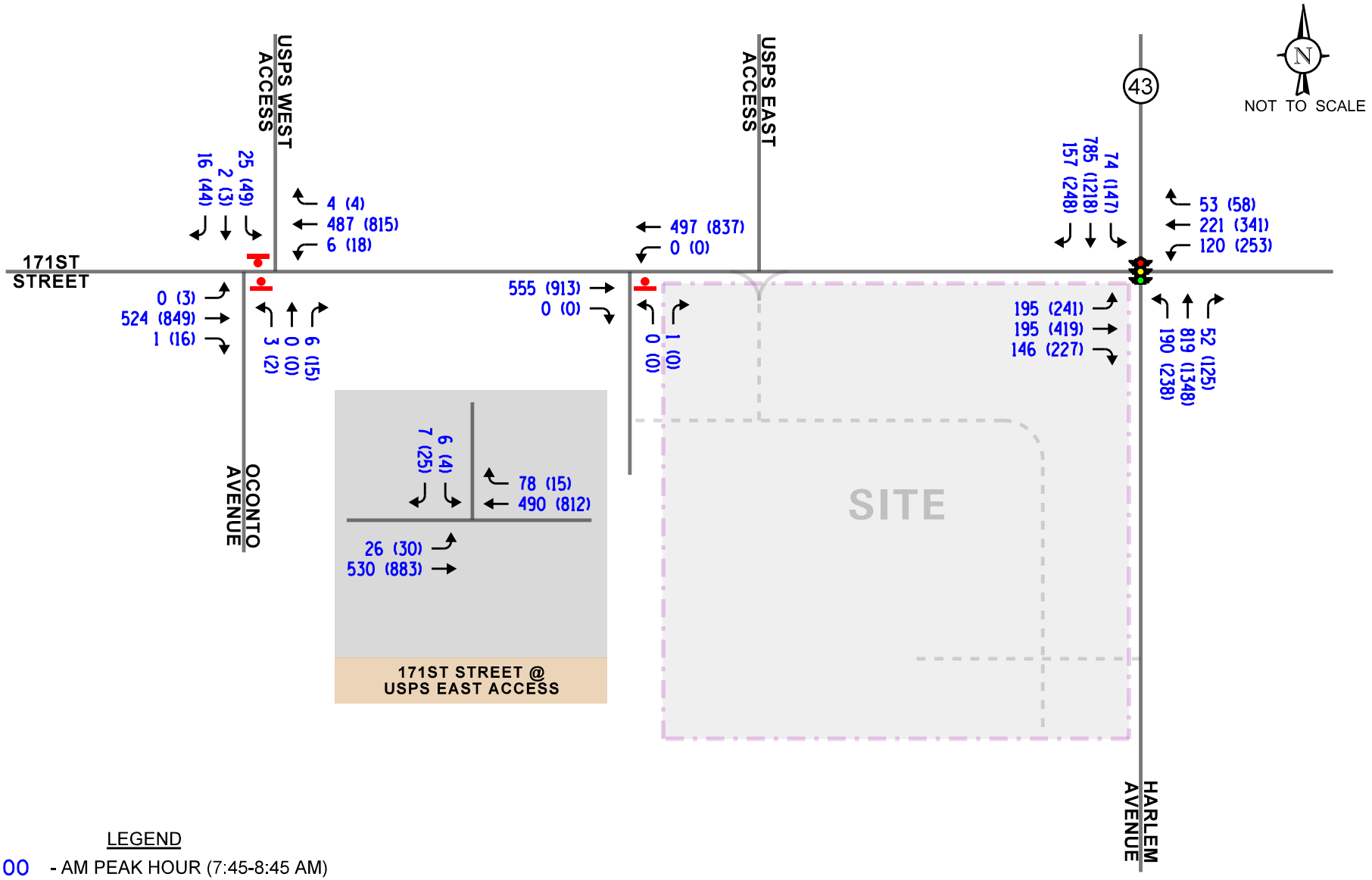


7 Eleven
Gas Station
Tinley Park, Illinois

Pass-By Site Traffic Assignment

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 19-056 Figure: 7

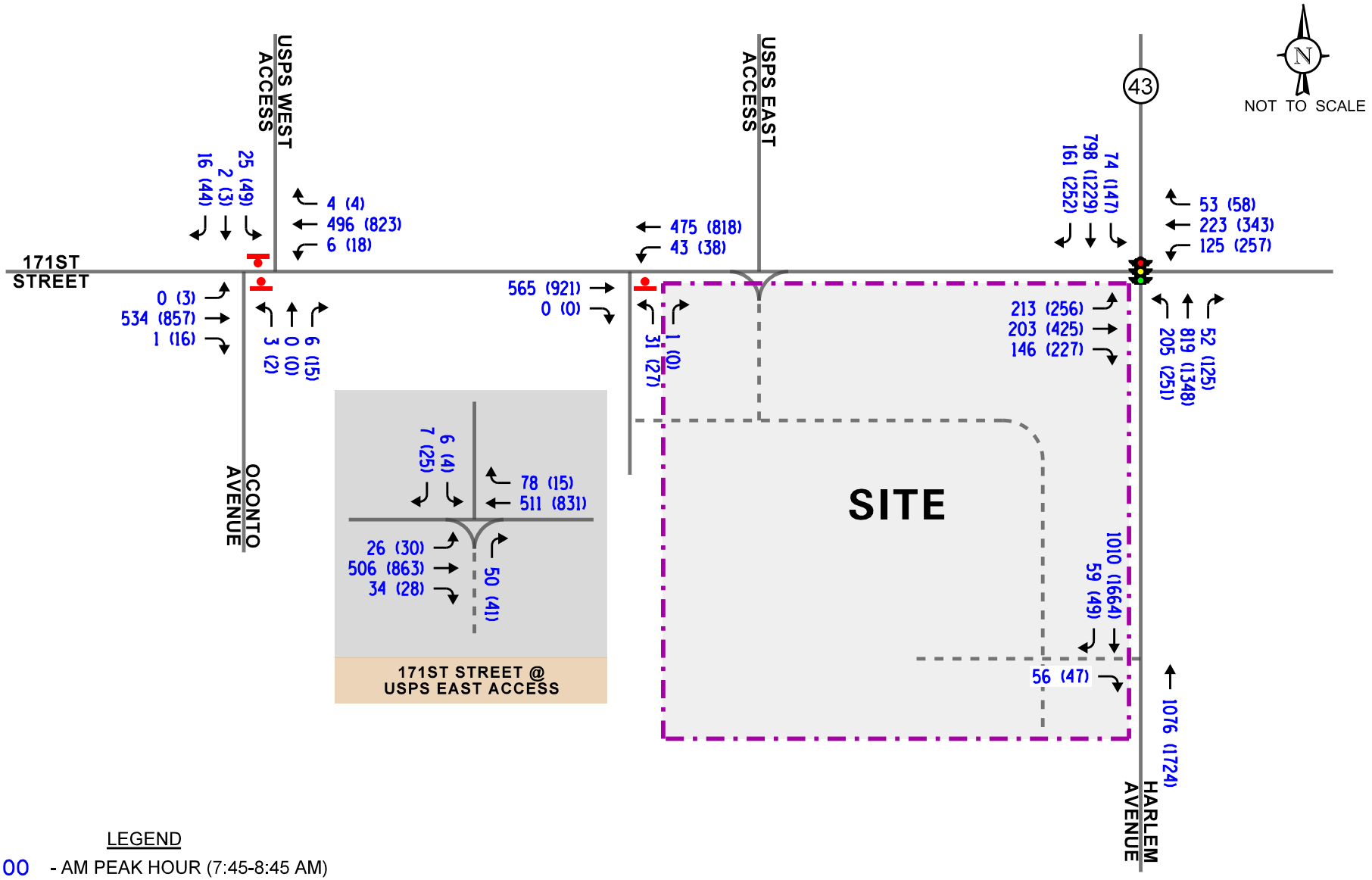


7 Eleven
Gas Station
Tinley Park, Illinois

Year 2025 No-BuildTraffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 19-056 Figure: 8



7 Eleven
Gas Station
Tinley Park, Illinois

Year 2025 Total Projected Traffic Volumes

KLOA
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Job No: 19-056 Figure: 9

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday 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 existing (Year 2019) and Year 2025 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 the Synchro/SimTraffic 10 software. The analysis for the traffic-signal controlled intersections were accomplished using actual 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 existing and total projected conditions are presented in **Tables 3** through **6**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 3
CAPACITY ANALYSIS RESULTS – HARLEM AVENUE WITH 171st STREET – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Year 2019 Existing Conditions	Weekday Morning Peak Hour	D 40.2	D 50.2		C 34.9	D 54.8		B 16.4	C 20.3		B 11.2	C 25.9		C – 30.0
		D – 46.5			D – 48.7			B – 19.6			C – 24.9			
	Weekday Evening Peak Hour	E 64.4	F 99+		F 92.4	E 64.7		E 67.0	D 43.7		D 54.0	E 63.8		E – 72.3
		F – 99+			E – 75.5			D – 46.9			E – 62.9			
Year 2025 No-Build Traffic Volumes	Weekday Morning Peak Hour	D 40.2	D 49.6		C 34.7	D 54.2		B 19.3	C 21.5		B 11.8	C 27.5		C – 30.9
		D – 46.2			D – 48.2			C – 21.1			C – 26.3			
	Weekday Evening Peak Hour	E 73.9	F 99+		F 99+	E 66.8		E 69.7	D 50.4		E 55.8	E 78.8		F – 82.5
		F – 99+			F – 80.4			D – 53.0			E – 76.7			
Year 2025 Total Projected Conditions	Weekday Morning Peak Hour	D 42.4	D 49.5		C 34.9	D 54.2		C 22.8	C 21.7		B 12.0	C 29.1		C – 31.9
		D – 46.8			D – 48.2			C – 21.9			C – 27.9			
	Weekday Evening Peak Hour	F 85.2	F 99+		F 99+	E 67.0		E 74.0	D 50.4		E 55.3	F 87.2		F – 86.7
		F – 156.6			F – 82.1			D – 53.8			F – 84.4			

Delay is measured in seconds.
L – Left T – Through R – Right

Table 4
CAPACITY ANALYSIS RESULTS – EXISTING CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
171st Street with Oconto Avenue/USPS Westerly Access Drive				
• Northbound Approach	B	13.7	C	15.0
• Southbound Approach	C	17.6	E	47.0
• Eastbound Left Turn	--	--	B	10.7
• Westbound Left Turn	A	8.6	A	9.9
171st Street with First Merchants Bank Full Access Drive				
• Northbound Approach	B	10.1	--	--
• Westbound Left Turn	--	--	--	--
171st Street with USPS Easterly Access Drive				
• Southbound Approach	B	14.2	C	15.3
• Eastbound Left Turn	A	8.8	A	9.8

LOS = Level of Service
Delay is measured in seconds.

Table 5
CAPACITY ANALYSIS RESULTS – NO-BUILD CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
171st Street with Oconto Avenue/USPS Westerly Access Drive				
• Northbound Approach	B	14.1	C	15.6
• Southbound Approach	C	18.6	F	55.7
• Eastbound Left Turn	--	--	B	10.9
• Westbound Left Turn	A	8.7	B	10.1
171st Street with First Merchants Bank Full Access Drive				
• Northbound Approach	B	10.2	--	--
• Westbound Left Turn	--	--	--	--
171st Street with USPS Easterly Access Drive				
• Southbound Approach	B	14.6	C	15.9
• Eastbound Left Turn	A	8.8	B	10.0

LOS = Level of Service
Delay is measured in seconds.

Table 6
CAPACITY ANALYSIS RESULTS – PROJECTED CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
171st Street with Oconto Avenue/USPS Westerly Access Drive				
• Northbound Approach	B	14.2	C	15.8
• Southbound Approach	C	19.0	F	57.7
• Eastbound Left Turn	--	--	B	11.0
• Westbound Left Turn	A	8.7	B	10.1
171st Street with First Merchants Bank Full Access Drive				
• Northbound Approach	C	22.6	E	46.4
• Westbound Left Turn	A	8.9	B	10.2
171st Street with USPS Easterly Access Drive/Proposed Right-In/Right-Out				
• Northbound Approach	B	10.5	B	12.4
• Southbound Approach	C	16.8	C	18.4
• Eastbound Left Turn	A	8.9	B	10.1
Harlem Avenue with Proposed Right-In/Right-Out Access Drive				
• Eastbound Approach	B	13.7	C	20.3

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 gas station-generated traffic.

Harlem Avenue with 171st Street

The results of the capacity analysis indicate that overall this intersection currently operates at Level of Service (LOS) LOS C during the weekday morning peak hour and at LOS E during the weekday evening peak hour. The level of service during the weekday evening peak hours is a result of the eastbound approach which operates at LOS F and the westbound and southbound approaches which operate at LOS E during the peak hour.

Under Year 2025 no-build conditions, this intersection overall is projected to operate at LOS C during the weekday morning peak hour and at LOS F during the weekday evening peak hour with increases in delay of less than one second and approximately 10 seconds, respectively. The eastbound and westbound approaches are projected to continue operating at LOS F and the southbound approach is projected to continue operating at LOS E during the weekday evening peak hour.

Under Year 2025 total projected conditions, the intersection overall is projected to continue operating at LOS C during the weekday morning peak hour and at LOS F during th weekday evening peak hour with increases in delay of approximately one second and four seconds over no build conditions.

Overall, the proposed development is only projected to increase the traffic traversing this intersection by approximately two percent during the weekday morning peak hour and approximately one percent during the weekday evening peak hour. As such, the proposed development traffic will have a limited impact on the operations of this intersection.

171st Street with Oconto Avenue/USPS Westerly Access Drive

The results of the capacity analysis indicate that the northbound approach currently operates at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour. Outbound movements from the westerly USPS access drive onto 171st Street currently operate at LOS C during the weekday morning peak hour and at LOS E during the weekday evening peak hour.

Under Year 2025 no-build conditions, the northbound approach is projected to continue operating at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour with increases in delay of less than one second. Outbound movements from the westerly USPS access drive onto 171st Street are projected to operate at LOS C during the weekday morning peak hour and at LOS F during the weekday evening peak hour with increases in delay of approximately one and eight seconds, respectively. This level of service is expected for an access driveway that has an intersection with a major roadway such as 171st Street and the increases in delay are attributed to the background traffic growth.

Under Year 2025 total projected conditions, the northbound approach is projected to continue operating at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour with increases in delay of less than one second over no build conditions. Outbound movements from the westerly USPS access drive onto 171st Street are projected to operate at LOS C during the weekday morning peak hour and at LOS F during the weekday evening peak hour with increases in delay of less than one and approximately two seconds, respectively. As previously indicated, this level of service is expected for an access driveway that has an intersection with a major roadway such as 171st Street and the increases in delay are attributed to the background traffic growth. Eastbound and westbound left-turns onto the access drive/Oconto Avenue are projected to continue operating at LOS B or better during the peak hours with 95th percentile queues of one to two vehicles. As such, the traffic projected to be generated by the proposed gas station will have a limited impact on the operations of this intersection an no roadway or traffic control improvements will be required.

171st Street with First Merchants Bank

The results of the capacity analysis indicate that outbound movements from the First Merchants Bank access drive onto 171st Street currently operate at LOS B during the weekday morning peak hour. Under Year 2025 no-build conditions, outbound movements from the access drive onto 171st Street are projected to continue operate at LOS B during the weekday morning peak hour with increases in delay of less than one second.

Under Year 2025 total projected conditions outbound movements from the access drive onto 171st Street are projected to operate at LOS C to the weekday morning peak hour and at LOS E during the weekday evening peak hour. However, this level of service is expected for an access driveway that has an unsignalized intersection with a major roadway such as 171st Street. Furthermore, it should be noted that this access drive will primarily accommodate left-turning movements to/from 171st Street given the proposed right-in/right-out access drive that serves the site directly. Westbound left-turning movements from 171st Street onto the access drive are projected to operate at LOS B or better during the peak hours with 95th percentile queues of one to two vehicles.

Overall, the traffic estimated to be generated by the proposed gas station will have a limited impact on the operations of First Merchants Bank, as the bank will generate a minimal volume of traffic during the peak hours. As such, this access drive will be adequate in accommodating the traffic estimated to be generated by the proposed development and will ensure efficient and flexible access is provided.

171st Street with USPS Easterly Access Drive/Proposed Right-In/Right-Out Access Drive

The results of the capacity analysis indicate that outbound movements from the easterly USPS access drive currently operate at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour. Under Year 2025 no-build conditions, outbound movements from the easterly USPS access drive are projected to continue operating at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour with increases in delay of less than one second.

Under Year 2025 total projected conditions, outbound movements from the easterly USPS access drive are projected to continue operating at LOS C during the weekday morning peak hour weekday evening peak hours with increases in delay of approximately two seconds or less. Eastbound left-turning movements onto the access drive are projected to continue operating at LOS B or better during the peak hours with 95th percentile queues of one to two vehicles.

Outbound movements from the proposed right-in/right-out access drive onto 171st Street are projected to operate at LOS B during the peak hours with 95th percentile queues of one to two vehicles. As such, the proposed right-in/right-out access drive will be adequate in accommodating the traffic estimated to be generated by the proposed development and will have a limited impact n the operations of the USPS easterly access drive.

Harlem Avenue with Proposed Right-In/Right-Out Access Drive

The results of the capacity analysis indicate that outbound movements from the proposed access drive onto Harlem Avenue are projected to operate at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour with 95th percentile queues of one to two vehicles. As such, this access drive will be adequate in accommodating the traffic estimated to be generated by the proposed development and will ensure efficient and flexible access is provided.

6. Conclusion

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

- The traffic projected to be generated by the proposed gas station will be reduced due to the volume of pass-by traffic generated by the gas station.

- The proposed access system, including cross access to the First Merchants Bank, will be adequate in accommodating the traffic projected to be generated by the proposed gas station with limited impact on the external roadway system.

- The proposed gas station is only projected to increase the traffic traversing the intersection of Harlem Avenue with 171st Street by approximately two percent during the weekday morning peak hour and approximately one percent during the weekday evening peak hour and as such will have a limited impact on the operations of the intersection.

Appendix

Traffic Count Summary Sheets
Preliminary Site Plan
ITE Trip Generation Sheets
CMAP Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets

Traffic Count Summary Sheets

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: Harlem Avenue with 171st Street
Site Code:
Start Date: 08/06/2019

Turning Movement Data

Start Time	171st Street Eastbound						171st Street Westbound						Harlem Avenue Northbound						Harlem Avenue Southbound						Int. 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	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	35	42	23	0	100	0	31	31	9	0	71	0	29	136	2	0	167	0	11	156	15	0	182	520
7:15 AM	0	22	45	40	0	107	0	30	25	8	0	63	0	28	211	13	0	252	0	7	205	24	0	236	658
7:30 AM	0	34	53	26	0	113	0	34	36	12	0	82	1	27	177	11	0	216	0	16	220	26	1	262	673
7:45 AM	0	39	46	35	0	120	0	27	47	12	0	86	0	46	208	14	0	268	0	25	240	46	0	311	785
Hourly Total	0	130	186	124	0	440	0	122	139	41	0	302	1	130	732	40	0	903	0	59	821	111	1	991	2636
8:00 AM	0	35	27	32	0	94	0	24	63	13	0	100	0	42	194	10	0	246	0	13	157	28	0	198	638
8:15 AM	0	51	49	36	0	136	0	31	31	7	0	69	0	52	205	13	0	270	0	17	211	38	0	266	741
8:30 AM	0	62	59	37	0	158	0	33	60	19	0	112	0	42	178	13	0	233	0	16	145	39	0	200	703
8:45 AM	0	30	41	31	0	102	0	26	43	20	0	89	0	48	195	11	0	254	0	9	166	41	0	216	661
Hourly Total	0	178	176	136	0	490	0	114	197	59	0	370	0	184	772	47	0	1003	0	55	679	146	0	880	2743
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	51	93	35	0	179	0	37	92	16	0	145	0	41	277	23	0	341	0	36	269	56	0	361	1026
4:15 PM	0	62	81	52	0	195	0	42	86	29	0	157	0	36	262	28	0	326	0	31	256	51	0	338	1016
4:30 PM	0	50	92	41	0	183	1	55	80	14	0	150	0	62	332	33	0	427	0	28	289	58	0	375	1135
4:45 PM	0	55	86	65	0	206	0	68	80	22	0	170	0	53	302	36	0	391	0	35	267	43	0	345	1112
Hourly Total	0	218	352	193	0	763	1	202	338	81	0	622	0	192	1173	120	0	1485	0	130	1081	208	0	1419	4289
5:00 PM	0	50	90	46	0	186	0	57	71	17	0	145	0	40	325	38	0	403	0	30	313	61	0	404	1138
5:15 PM	0	66	107	52	0	225	0	64	86	14	0	164	0	57	314	31	0	402	0	47	295	66	0	408	1199
5:30 PM	0	54	85	59	0	198	0	61	89	15	0	165	0	69	303	22	0	394	0	30	273	52	0	355	1112
5:45 PM	0	61	87	61	0	209	0	61	81	10	0	152	1	62	350	29	0	442	0	34	287	59	0	380	1183
Hourly Total	0	231	369	218	0	818	0	243	327	56	0	626	1	228	1292	120	0	1641	0	141	1168	238	0	1547	4632
Grand Total	0	757	1083	671	0	2511	1	681	1001	237	0	1920	2	734	3969	327	0	5032	0	385	3749	703	1	4837	14300
Approach %	0.0	30.1	43.1	26.7	-	-	0.1	35.5	52.1	12.3	-	-	0.0	14.6	78.9	6.5	-	-	0.0	8.0	77.5	14.5	-	-	-
Total %	0.0	5.3	7.6	4.7	-	17.6	0.0	4.8	7.0	1.7	-	13.4	0.0	5.1	27.8	2.3	-	35.2	0.0	2.7	26.2	4.9	-	33.8	-
Lights	0	740	1072	656	-	2468	1	674	985	230	-	1890	2	719	3858	319	-	4898	0	382	3641	685	-	4708	13964
% Lights	-	97.8	99.0	97.8	-	98.3	100.0	99.0	98.4	97.0	-	98.4	100.0	98.0	97.2	97.6	-	97.3	-	99.2	97.1	97.4	-	97.3	97.7
Buses	0	5	4	0	-	9	0	0	4	1	-	5	0	5	11	2	-	18	0	0	9	8	-	17	49
% Buses	-	0.7	0.4	0.0	-	0.4	0.0	0.0	0.4	0.4	-	0.3	0.0	0.7	0.3	0.6	-	0.4	-	0.0	0.2	1.1	-	0.4	0.3
Single-Unit Trucks	0	5	6	8	-	19	0	6	10	5	-	21	0	3	54	5	-	62	0	2	59	7	-	68	170
% Single-Unit Trucks	-	0.7	0.6	1.2	-	0.8	0.0	0.9	1.0	2.1	-	1.1	0.0	0.4	1.4	1.5	-	1.2	-	0.5	1.6	1.0	-	1.4	1.2
Articulated Trucks	0	7	1	7	-	15	0	1	2	1	-	4	0	7	46	1	-	54	0	1	40	3	-	44	117
% Articulated Trucks	-	0.9	0.1	1.0	-	0.6	0.0	0.1	0.2	0.4	-	0.2	0.0	1.0	1.2	0.3	-	1.1	-	0.3	1.1	0.4	-	0.9	0.8
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	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: Harlem Avenue with 171st Street
Site Code:
Start Date: 08/06/2019

Turning Movement Peak Hour Data (7:45 AM)

Start Time	171st Street Eastbound						171st Street Westbound						Harlem Avenue Northbound						Harlem Avenue Southbound						Int. 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	U-Turn	Left	Thru	Right	Peds	App. Total	
7:45 AM	0	39	46	35	0	120	0	27	47	12	0	86	0	46	208	14	0	268	0	25	240	46	0	311	785
8:00 AM	0	35	27	32	0	94	0	24	63	13	0	100	0	42	194	10	0	246	0	13	157	28	0	198	638
8:15 AM	0	51	49	36	0	136	0	31	31	7	0	69	0	52	205	13	0	270	0	17	211	38	0	266	741
8:30 AM	0	62	59	37	0	158	0	33	60	19	0	112	0	42	178	13	0	233	0	16	145	39	0	200	703
Total	0	187	181	140	0	508	0	115	201	51	0	367	0	182	785	50	0	1017	0	71	753	151	0	975	2867
Approach %	0.0	36.8	35.6	27.6	-	-	0.0	31.3	54.8	13.9	-	-	0.0	17.9	77.2	4.9	-	-	0.0	7.3	77.2	15.5	-	-	-
Total %	0.0	6.5	6.3	4.9	-	17.7	0.0	4.0	7.0	1.8	-	12.8	0.0	6.3	27.4	1.7	-	35.5	0.0	2.5	26.3	5.3	-	34.0	-
PHF	0.000	0.754	0.767	0.946	-	0.804	0.000	0.871	0.798	0.671	-	0.819	0.000	0.875	0.944	0.893	-	0.942	0.000	0.710	0.784	0.821	-	0.784	0.913
Lights	0	179	177	139	-	495	0	114	192	50	-	356	0	177	747	47	-	971	0	71	709	140	-	920	2742
% Lights	-	95.7	97.8	99.3	-	97.4	-	99.1	95.5	98.0	-	97.0	-	97.3	95.2	94.0	-	95.5	-	100.0	94.2	92.7	-	94.4	95.6
Buses	0	4	1	0	-	5	0	0	4	0	-	4	0	4	3	1	-	8	0	0	5	7	-	12	29
% Buses	-	2.1	0.6	0.0	-	1.0	-	0.0	2.0	0.0	-	1.1	-	2.2	0.4	2.0	-	0.8	-	0.0	0.7	4.6	-	1.2	1.0
Single-Unit Trucks	0	2	3	1	-	6	0	1	4	1	-	6	0	1	20	2	-	23	0	0	19	3	-	22	57
% Single-Unit Trucks	-	1.1	1.7	0.7	-	1.2	-	0.9	2.0	2.0	-	1.6	-	0.5	2.5	4.0	-	2.3	-	0.0	2.5	2.0	-	2.3	2.0
Articulated Trucks	0	2	0	0	-	2	0	0	1	0	-	1	0	0	15	0	-	15	0	0	20	1	-	21	39
% Articulated Trucks	-	1.1	0.0	0.0	-	0.4	-	0.0	0.5	0.0	-	0.3	-	0.0	1.9	0.0	-	1.5	-	0.0	2.7	0.7	-	2.2	1.4
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	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: Harlem Avenue with 171st Street
Site Code:
Start Date: 08/06/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	171st Street Eastbound						171st Street Westbound						Harlem Avenue Northbound						Harlem Avenue Southbound						
	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
5:00 PM	0	50	90	46	0	186	0	57	71	17	0	145	0	40	325	38	0	403	0	30	313	61	0	404	1138
5:15 PM	0	66	107	52	0	225	0	64	86	14	0	164	0	57	314	31	0	402	0	47	295	66	0	408	1199
5:30 PM	0	54	85	59	0	198	0	61	89	15	0	165	0	69	303	22	0	394	0	30	273	52	0	355	1112
5:45 PM	0	61	87	61	0	209	0	61	81	10	0	152	1	62	350	29	0	442	0	34	287	59	0	380	1183
Total	0	231	369	218	0	818	0	243	327	56	0	626	1	228	1292	120	0	1641	0	141	1168	238	0	1547	4632
Approach %	0.0	28.2	45.1	26.7	-	-	0.0	38.8	52.2	8.9	-	-	0.1	13.9	78.7	7.3	-	-	0.0	9.1	75.5	15.4	-	-	-
Total %	0.0	5.0	8.0	4.7	-	17.7	0.0	5.2	7.1	1.2	-	13.5	0.0	4.9	27.9	2.6	-	35.4	0.0	3.0	25.2	5.1	-	33.4	-
PHF	0.000	0.875	0.862	0.893	-	0.909	0.000	0.949	0.919	0.824	-	0.948	0.250	0.826	0.923	0.789	-	0.928	0.000	0.750	0.933	0.902	-	0.948	0.966
Lights	0	228	368	211	-	807	0	239	327	56	-	622	1	226	1272	118	-	1617	0	141	1155	237	-	1533	4579
% Lights	-	98.7	99.7	96.8	-	98.7	-	98.4	100.0	100.0	-	99.4	100.0	99.1	98.5	98.3	-	98.5	-	100.0	98.9	99.6	-	99.1	98.9
Buses	0	1	0	0	-	1	0	0	0	0	-	0	0	0	2	0	-	2	0	0	1	0	-	1	4
% Buses	-	0.4	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.2	0.0	-	0.1	-	0.0	0.1	0.0	-	0.1	0.1
Single-Unit Trucks	0	0	0	3	-	3	0	3	0	0	-	3	0	1	10	1	-	12	0	0	7	1	-	8	26
% Single-Unit Trucks	-	0.0	0.0	1.4	-	0.4	-	1.2	0.0	0.0	-	0.5	0.0	0.4	0.8	0.8	-	0.7	-	0.0	0.6	0.4	-	0.5	0.6
Articulated Trucks	0	2	1	4	-	7	0	1	0	0	-	1	0	1	8	1	-	10	0	0	5	0	-	5	23
% Articulated Trucks	-	0.9	0.3	1.8	-	0.9	-	0.4	0.0	0.0	-	0.2	0.0	0.4	0.6	0.8	-	0.6	-	0.0	0.4	0.0	-	0.3	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: 171st Street with Oconto Avenue
Site Code:
Start Date: 08/06/2019

Turning Movement Data

Start Time	171st Street Eastbound						171st Street Westbound						Oconto Avenue Northbound						USPS Access Drive Southbound						Int. 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	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	93	0	0	93	0	0	75	1	0	76	0	0	0	1	0	1	0	3	0	3	0	6	176
7:15 AM	0	0	114	1	0	115	0	0	72	0	0	72	0	1	0	0	0	1	0	4	0	1	0	5	193
7:30 AM	0	1	104	1	0	106	0	1	81	0	0	82	0	2	0	2	0	4	0	5	0	4	0	9	201
7:45 AM	0	0	120	0	0	120	0	0	130	0	0	130	0	0	0	2	0	2	0	5	1	3	0	9	261
Hourly Total	0	1	431	2	0	434	0	1	358	1	0	360	0	3	0	5	0	8	0	17	1	11	0	29	831
8:00 AM	0	0	84	0	0	84	1	0	107	3	0	111	0	1	0	1	0	2	0	3	0	4	0	7	204
8:15 AM	0	0	138	1	0	139	1	4	98	0	0	103	0	1	0	2	0	3	0	8	1	4	0	13	258
8:30 AM	0	0	150	0	0	150	0	0	121	1	0	122	0	1	0	1	0	2	0	9	0	5	0	14	288
8:45 AM	0	0	116	2	1	118	0	2	123	0	0	125	0	0	0	0	0	0	0	3	0	4	0	7	250
Hourly Total	0	0	488	3	1	491	2	6	449	4	0	461	0	3	0	4	0	7	0	23	1	17	0	41	1000
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	2	169	3	0	174	0	2	180	0	0	182	0	3	0	3	0	6	0	13	0	14	0	27	389
4:15 PM	0	0	177	5	0	182	0	1	149	1	0	151	0	2	0	4	0	6	0	15	0	11	0	26	365
4:30 PM	0	3	187	4	0	194	0	5	184	0	0	189	0	1	0	2	0	3	0	9	1	18	1	28	414
4:45 PM	0	4	189	7	0	200	0	4	170	0	0	174	0	1	0	3	0	4	0	11	0	19	0	30	408
Hourly Total	0	9	722	19	0	750	0	12	683	1	0	696	0	7	0	12	0	19	0	48	1	62	1	111	1576
5:00 PM	0	2	203	2	0	207	0	8	166	1	0	175	0	1	0	10	0	11	0	11	2	10	1	23	416
5:15 PM	0	0	200	2	0	202	0	3	181	0	0	184	0	0	0	5	0	5	0	13	0	14	0	27	418
5:30 PM	1	1	202	7	0	211	0	4	204	1	0	209	0	1	0	0	0	1	0	14	1	8	0	23	444
5:45 PM	0	0	208	5	0	213	2	3	185	2	0	192	0	0	0	0	0	0	0	11	0	12	0	23	428
Hourly Total	1	3	813	16	0	833	2	18	736	4	0	760	0	2	0	15	0	17	0	49	3	44	1	96	1706
Grand Total	1	13	2454	40	1	2508	4	37	2226	10	0	2277	0	15	0	36	0	51	0	137	6	134	2	277	5113
Approach %	0.0	0.5	97.8	1.6	-	-	0.2	1.6	97.8	0.4	-	-	0.0	29.4	0.0	70.6	-	-	0.0	49.5	2.2	48.4	-	-	-
Total %	0.0	0.3	48.0	0.8	-	49.1	0.1	0.7	43.5	0.2	-	44.5	0.0	0.3	0.0	0.7	-	1.0	0.0	2.7	0.1	2.6	-	5.4	-
Lights	1	10	2410	40	-	2461	4	35	2182	10	-	2231	0	14	0	35	-	49	0	134	6	134	-	274	5015
% Lights	100.0	76.9	98.2	100.0	-	98.1	100.0	94.6	98.0	100.0	-	98.0	-	93.3	-	97.2	-	96.1	-	97.8	100.0	100.0	-	98.9	98.1
Buses	0	0	8	0	-	8	0	0	19	0	-	19	0	0	0	1	-	1	0	0	0	0	-	0	28
% Buses	0.0	0.0	0.3	0.0	-	0.3	0.0	0.0	0.9	0.0	-	0.8	-	0.0	-	2.8	-	2.0	-	0.0	0.0	0.0	-	0.0	0.5
Single-Unit Trucks	0	3	26	0	-	29	0	2	17	0	-	19	0	1	0	0	-	1	0	0	0	0	-	0	49
% Single-Unit Trucks	0.0	23.1	1.1	0.0	-	1.2	0.0	5.4	0.8	0.0	-	0.8	-	6.7	-	0.0	-	2.0	-	0.0	0.0	0.0	-	0.0	1.0
Articulated Trucks	0	0	10	0	-	10	0	0	8	0	-	8	0	0	0	0	-	0	0	3	0	0	-	3	21
% Articulated Trucks	0.0	0.0	0.4	0.0	-	0.4	0.0	0.0	0.4	0.0	-	0.4	-	0.0	-	0.0	-	0.0	-	2.2	0.0	0.0	-	1.1	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	0.0
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: 171st Street with Oconto Avenue
Site Code:
Start Date: 08/06/2019

Turning Movement Peak Hour Data (7:45 AM)

Start Time	171st Street Eastbound						171st Street Westbound						Oconto Avenue Northbound						USPS Access Drive Southbound						Int. 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	U-Turn	Left	Thru	Right	Peds	App. Total	
7:45 AM	0	0	120	0	0	120	0	0	130	0	0	130	0	0	0	2	0	2	0	5	1	3	0	9	261
8:00 AM	0	0	84	0	0	84	1	0	107	3	0	111	0	1	0	1	0	2	0	3	0	4	0	7	204
8:15 AM	0	0	138	1	0	139	1	4	98	0	0	103	0	1	0	2	0	3	0	8	1	4	0	13	258
8:30 AM	0	0	150	0	0	150	0	0	121	1	0	122	0	1	0	1	0	2	0	9	0	5	0	14	288
Total	0	0	492	1	0	493	2	4	456	4	0	466	0	3	0	6	0	9	0	25	2	16	0	43	1011
Approach %	0.0	0.0	99.8	0.2	-	-	0.4	0.9	97.9	0.9	-	-	0.0	33.3	0.0	66.7	-	-	0.0	58.1	4.7	37.2	-	-	-
Total %	0.0	0.0	48.7	0.1	-	48.8	0.2	0.4	45.1	0.4	-	46.1	0.0	0.3	0.0	0.6	-	0.9	0.0	2.5	0.2	1.6	-	4.3	-
PHF	0.000	0.000	0.820	0.250	-	0.822	0.500	0.250	0.877	0.333	-	0.896	0.000	0.750	0.000	0.750	-	0.750	0.000	0.694	0.500	0.800	-	0.768	0.878
Lights	0	0	480	1	-	481	2	4	433	4	-	443	0	3	0	5	-	8	0	24	2	16	-	42	974
% Lights	-	-	97.6	100.0	-	97.6	100.0	100.0	95.0	100.0	-	95.1	-	100.0	-	83.3	-	88.9	-	96.0	100.0	100.0	-	97.7	96.3
Buses	0	0	4	0	-	4	0	0	16	0	-	16	0	0	0	1	-	1	0	0	0	0	-	0	21
% Buses	-	-	0.8	0.0	-	0.8	0.0	0.0	3.5	0.0	-	3.4	-	0.0	-	16.7	-	11.1	-	0.0	0.0	0.0	-	0.0	2.1
Single-Unit Trucks	0	0	7	0	-	7	0	0	6	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	13
% Single-Unit Trucks	-	-	1.4	0.0	-	1.4	0.0	0.0	1.3	0.0	-	1.3	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	1.3
Articulated Trucks	0	0	1	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	1	0	0	-	1	3
% Articulated Trucks	-	-	0.2	0.0	-	0.2	0.0	0.0	0.2	0.0	-	0.2	-	0.0	-	0.0	-	0.0	-	4.0	0.0	0.0	-	2.3	0.3
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
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: 171st Street with Oconto Avenue
Site Code:
Start Date: 08/06/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	171st Street Eastbound						171st Street Westbound						Oconto Avenue Northbound						USPS Access Drive Southbound						Int. 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	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	2	203	2	0	207	0	8	166	1	0	175	0	1	0	10	0	11	0	11	2	10	1	23	416
5:15 PM	0	0	200	2	0	202	0	3	181	0	0	184	0	0	0	5	0	5	0	13	0	14	0	27	418
5:30 PM	1	1	202	7	0	211	0	4	204	1	0	209	0	1	0	0	0	1	0	14	1	8	0	23	444
5:45 PM	0	0	208	5	0	213	2	3	185	2	0	192	0	0	0	0	0	0	0	11	0	12	0	23	428
Total	1	3	813	16	0	833	2	18	736	4	0	760	0	2	0	15	0	17	0	49	3	44	1	96	1706
Approach %	0.1	0.4	97.6	1.9	-	-	0.3	2.4	96.8	0.5	-	-	0.0	11.8	0.0	88.2	-	-	0.0	51.0	3.1	45.8	-	-	-
Total %	0.1	0.2	47.7	0.9	-	48.8	0.1	1.1	43.1	0.2	-	44.5	0.0	0.1	0.0	0.9	-	1.0	0.0	2.9	0.2	2.6	-	5.6	-
PHF	0.250	0.375	0.977	0.571	-	0.978	0.250	0.563	0.902	0.500	-	0.909	0.000	0.500	0.000	0.375	-	0.386	0.000	0.875	0.375	0.786	-	0.889	0.961
Lights	1	2	802	16	-	821	2	17	736	4	-	759	0	2	0	15	-	17	0	48	3	44	-	95	1692
% Lights	100.0	66.7	98.6	100.0	-	98.6	100.0	94.4	100.0	100.0	-	99.9	-	100.0	-	100.0	-	100.0	-	98.0	100.0	100.0	-	99.0	99.2
Buses	0	0	0	0	-	0	0	0	0	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	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	1	7	0	-	8	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	9
% Single-Unit Trucks	0.0	33.3	0.9	0.0	-	1.0	0.0	5.6	0.0	0.0	-	0.1	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.5
Articulated Trucks	0	0	4	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	5
% Articulated Trucks	0.0	0.0	0.5	0.0	-	0.5	0.0	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	2.0	0.0	0.0	-	1.0	0.3
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	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: 171st Street with USPS/First Merchants Bank Access Drives
Site Code:
Start Date: 08/06/2019

Turning Movement Data

Start Time	171st Street Eastbound						171st Street Westbound						First Merchants Bank Access Drive Northbound						USPS Access Drive Southbound						Int. 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	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	3	95	0	0	98	0	0	79	6	0	85	0	0	0	1	0	1	0	0	0	0	0	0	184
7:15 AM	0	4	117	0	0	121	0	0	71	5	0	76	0	0	0	0	0	0	0	2	0	1	0	3	200
7:30 AM	0	5	106	0	0	111	0	0	84	7	0	91	0	0	0	0	0	0	0	1	0	1	0	2	204
7:45 AM	0	4	122	0	0	126	0	0	130	13	0	143	0	0	0	0	0	0	0	2	0	2	0	4	273
Hourly Total	0	16	440	0	0	456	0	0	364	31	0	395	0	0	0	1	0	1	0	5	0	4	0	9	861
8:00 AM	0	5	91	0	0	96	1	0	111	21	0	133	0	0	0	0	0	0	0	2	0	3	0	5	234
8:15 AM	0	9	145	0	0	154	0	0	102	26	0	128	0	0	0	0	0	0	0	1	0	1	0	2	284
8:30 AM	0	8	149	0	0	157	0	0	124	18	0	142	0	0	0	1	0	1	0	1	0	1	0	2	302
8:45 AM	0	5	122	0	0	127	0	0	121	11	0	132	0	0	0	1	0	1	0	0	0	2	0	2	262
Hourly Total	0	27	507	0	0	534	1	0	458	76	0	535	0	0	0	2	0	2	0	4	0	7	0	11	1082
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	10	175	0	0	185	0	0	170	27	0	197	0	0	0	0	0	0	0	2	0	4	0	6	388
4:15 PM	0	7	202	0	0	209	0	0	148	23	0	171	0	0	0	0	0	0	0	5	0	1	0	6	386
4:30 PM	0	7	182	0	0	189	0	0	175	26	0	201	0	0	0	2	0	2	0	3	1	8	1	12	404
4:45 PM	0	17	196	0	0	213	0	0	165	20	0	185	0	0	1	1	0	2	0	2	0	5	0	7	407
Hourly Total	0	41	755	0	0	796	0	0	658	96	0	754	0	0	1	3	0	4	0	12	1	18	1	31	1585
5:00 PM	0	7	197	0	0	204	0	0	175	18	0	193	0	0	0	0	0	0	0	1	0	7	1	8	405
5:15 PM	0	10	223	0	0	233	0	0	178	24	0	202	0	0	0	0	0	0	0	1	0	5	0	6	441
5:30 PM	0	7	198	0	0	205	0	0	207	18	0	225	0	0	0	0	0	0	0	2	0	7	0	9	439
5:45 PM	0	6	228	0	0	234	0	0	187	15	0	202	0	0	0	0	0	0	0	0	0	6	0	6	442
Hourly Total	0	30	846	0	0	876	0	0	747	75	0	822	0	0	0	0	0	0	0	4	0	25	1	29	1727
Grand Total	0	114	2548	0	0	2662	1	0	2227	278	0	2506	0	0	1	6	0	7	0	25	1	54	2	80	5255
Approach %	0.0	4.3	95.7	0.0	-	-	0.0	0.0	88.9	11.1	-	-	0.0	0.0	14.3	85.7	-	-	0.0	31.3	1.3	67.5	-	-	-
Total %	0.0	2.2	48.5	0.0	-	50.7	0.0	0.0	42.4	5.3	-	47.7	0.0	0.0	0.0	0.1	-	0.1	0.0	0.5	0.0	1.0	-	1.5	-
Lights	0	114	2502	0	-	2616	1	0	2183	275	-	2459	0	0	1	6	-	7	0	25	1	54	-	80	5162
% Lights	-	100.0	98.2	-	-	98.3	100.0	-	98.0	98.9	-	98.1	-	-	100.0	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	98.2
Buses	0	0	10	0	-	10	0	0	18	0	-	18	0	0	0	0	-	0	0	0	0	0	-	0	28
% Buses	-	0.0	0.4	-	-	0.4	0.0	-	0.8	0.0	-	0.7	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.5
Single-Unit Trucks	0	0	24	0	-	24	0	0	18	1	-	19	0	0	0	0	-	0	0	0	0	0	-	0	43
% Single-Unit Trucks	-	0.0	0.9	-	-	0.9	0.0	-	0.8	0.4	-	0.8	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.8
Articulated Trucks	0	0	12	0	-	12	0	0	8	2	-	10	0	0	0	0	-	0	0	0	0	0	-	0	22
% Articulated Trucks	-	0.0	0.5	-	-	0.5	0.0	-	0.4	0.7	-	0.4	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	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
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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

Count Name: 171st Street with USPS/First Merchants Bank Access Drives
Site Code:
Start Date: 08/06/2019

Turning Movement Peak Hour Data (7:45 AM)

Start Time	171st Street Eastbound						171st Street Westbound						First Merchants Bank Access Drive Northbound						USPS Access Drive Southbound						Int. 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	U-Turn	Left	Thru	Right	Peds	App. Total	
7:45 AM	0	4	122	0	0	126	0	0	130	13	0	143	0	0	0	0	0	0	0	2	0	2	0	4	273
8:00 AM	0	5	91	0	0	96	1	0	111	21	0	133	0	0	0	0	0	0	0	2	0	3	0	5	234
8:15 AM	0	9	145	0	0	154	0	0	102	26	0	128	0	0	0	0	0	0	0	1	0	1	0	2	284
8:30 AM	0	8	149	0	0	157	0	0	124	18	0	142	0	0	0	1	0	1	0	1	0	1	0	2	302
Total	0	26	507	0	0	533	1	0	467	78	0	546	0	0	0	1	0	1	0	6	0	7	0	13	1093
Approach %	0.0	4.9	95.1	0.0	-	-	0.2	0.0	85.5	14.3	-	-	0.0	0.0	0.0	100.0	-	-	0.0	46.2	0.0	53.8	-	-	-
Total %	0.0	2.4	46.4	0.0	-	48.8	0.1	0.0	42.7	7.1	-	50.0	0.0	0.0	0.0	0.1	-	0.1	0.0	0.5	0.0	0.6	-	1.2	-
PHF	0.000	0.722	0.851	0.000	-	0.849	0.250	0.000	0.898	0.750	-	0.955	0.000	0.000	0.000	0.250	-	0.250	0.000	0.750	0.000	0.583	-	0.650	0.905
Lights	0	26	495	0	-	521	1	0	444	77	-	522	0	0	0	1	-	1	0	6	0	7	-	13	1057
% Lights	-	100.0	97.6	-	-	97.7	100.0	-	95.1	98.7	-	95.6	-	-	-	100.0	-	100.0	-	100.0	-	100.0	-	100.0	96.7
Buses	0	0	5	0	-	5	0	0	16	0	-	16	0	0	0	0	-	0	0	0	0	0	-	0	21
% Buses	-	0.0	1.0	-	-	0.9	0.0	-	3.4	0.0	-	2.9	-	-	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	1.9
Single-Unit Trucks	0	0	5	0	-	5	0	0	6	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	11
% Single-Unit Trucks	-	0.0	1.0	-	-	0.9	0.0	-	1.3	0.0	-	1.1	-	-	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	1.0
Articulated Trucks	0	0	2	0	-	2	0	0	1	1	-	2	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	-	0.0	0.4	-	-	0.4	0.0	-	0.2	1.3	-	0.4	-	-	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	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
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

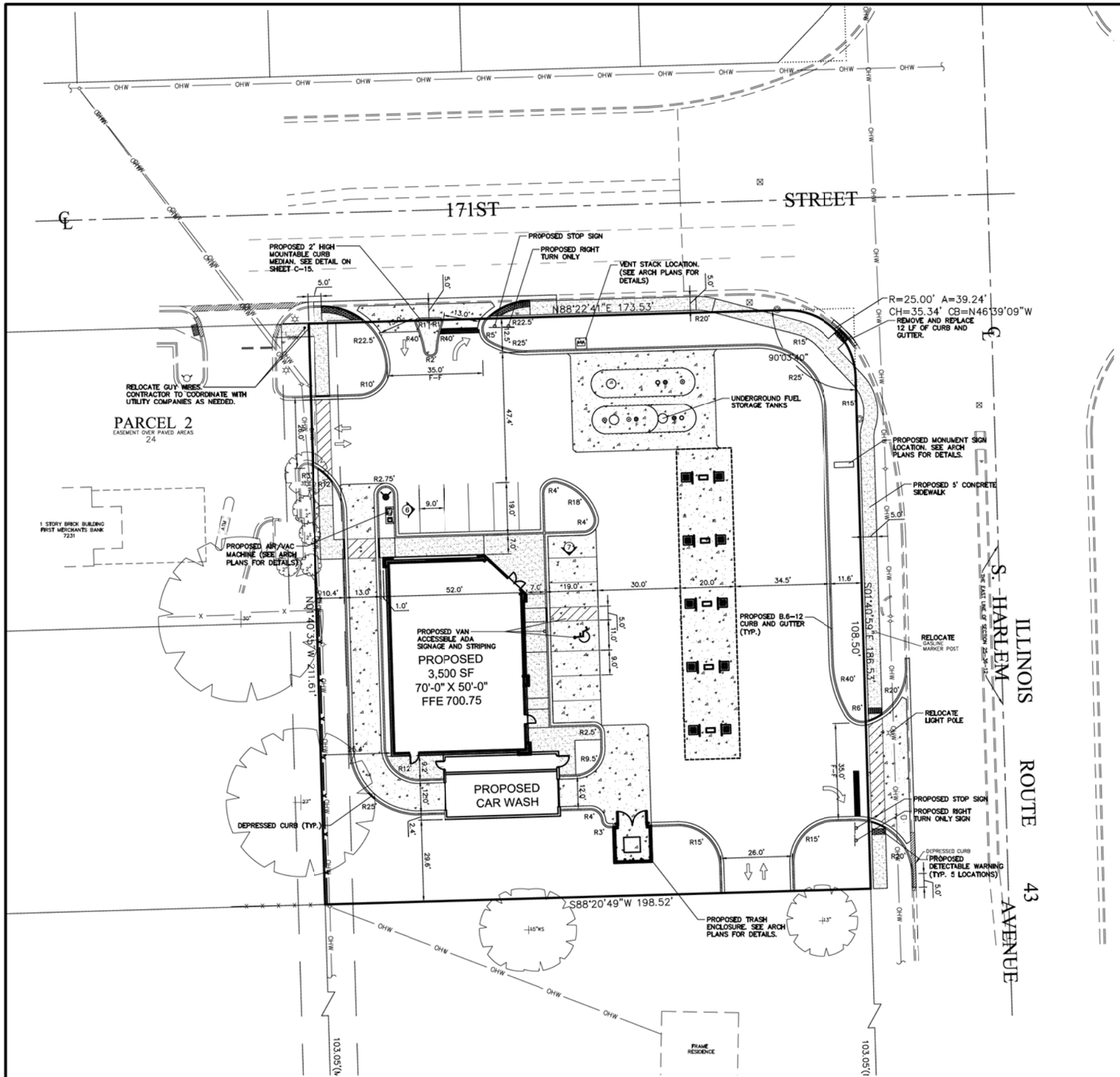
Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: 171st Street with USPS/First Merchants Bank Access Drives
Site Code:
Start Date: 08/06/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	171st Street Eastbound						171st Street Westbound						First Merchants Bank Access Drive Northbound						USPS Access Drive Southbound						Int. 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	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	7	197	0	0	204	0	0	175	18	0	193	0	0	0	0	0	0	0	1	0	7	1	8	405
5:15 PM	0	10	223	0	0	233	0	0	178	24	0	202	0	0	0	0	0	0	0	1	0	5	0	6	441
5:30 PM	0	7	198	0	0	205	0	0	207	18	0	225	0	0	0	0	0	0	0	2	0	7	0	9	439
5:45 PM	0	6	228	0	0	234	0	0	187	15	0	202	0	0	0	0	0	0	0	0	0	6	0	6	442
Total	0	30	846	0	0	876	0	0	747	75	0	822	0	0	0	0	0	0	0	4	0	25	1	29	1727
Approach %	0.0	3.4	96.6	0.0	-	-	0.0	0.0	90.9	9.1	-	-	0.0	0.0	0.0	0.0	-	-	0.0	13.8	0.0	86.2	-	-	-
Total %	0.0	1.7	49.0	0.0	-	50.7	0.0	0.0	43.3	4.3	-	47.6	0.0	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	1.4	-	1.7	-
PHF	0.000	0.750	0.928	0.000	-	0.936	0.000	0.000	0.902	0.781	-	0.913	0.000	0.000	0.000	0.000	-	0.000	0.000	0.500	0.000	0.893	-	0.806	0.977
Lights	0	30	833	0	-	863	0	0	745	74	-	819	0	0	0	0	-	0	0	4	0	25	-	29	1711
% Lights	-	100.0	98.5	-	-	98.5	-	-	99.7	98.7	-	99.6	-	-	-	-	-	-	-	100.0	-	100.0	-	100.0	99.1
Buses	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	-	0.0	0.1	-	-	0.1	-	-	0.0	0.0	-	0.0	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	0.1
Single-Unit Trucks	0	0	7	0	-	7	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	9
% Single-Unit Trucks	-	0.0	0.8	-	-	0.8	-	-	0.3	0.0	-	0.2	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	0.5
Articulated Trucks	0	0	5	0	-	5	0	0	0	1	-	1	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	-	0.0	0.6	-	-	0.6	-	-	0.0	1.3	-	0.1	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	0.3
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
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Preliminary Site Plan



GENERAL NOTES:

1. THESE PLANS ARE BASED ON THE ALTA/NSPS LAND TITLE AND TOPOGRAPHIC SURVEY (SURVEY PROJECT #19.0018 DATED 01/22/19) PREPARED BY: COMPASS SURVEYING LTD 2631 GINGER WOODS PARKWAY, STE 100, AURORA, IL 60502 (630) 820-9100
2. PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT THE DESIGN ENGINEER AND ARCHITECT TO VERIFY THAT THEY ARE WORKING FROM THE MOST CURRENT SET OF PLANS AND SPECIFICATIONS.

ON SITE PARKING DATA

REGULAR SPACES	12
ADA ACCESSIBLE SPACES	1
TOTAL SPACES	13

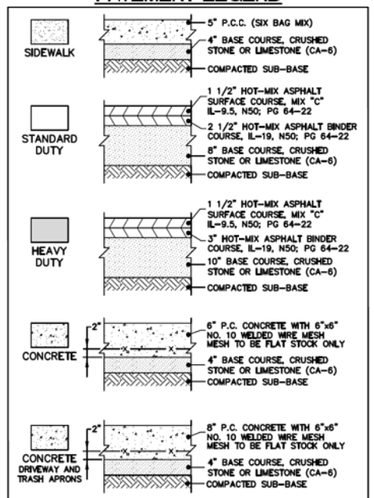
SITE DATA

LOT AREA	=	41,852 S.F. (.961 AC.)
IMPERVIOUS AREA	=	31,931 S.F. (.733 AC.)(76%)
PERVIOUS AREA	=	9,921 S.F. (.228 AC.)(24%)
BUILDING AREA	=	3,500 S.F.

GEOMETRIC PLAN NOTES:

1. PROPOSED IMPROVEMENTS ARE PARALLEL AND PERPENDICULAR TO THE WESTERN PROPERTY LINE.
2. ALL RADIUS DIMENSIONS ARE TO BACK OF CURB.
3. SEE ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
4. ALL STRIPING TO BE DOUBLE COATED 4" YELLOW PAINT UNLESS OTHERWISE NOTED.
5. WHERE PEDESTRIANS HAVE TO CROSS A TAPERING RAMP OR CURB RAMP THE FACE AND TOP OF CURB ARE TO BE PAINTED USING YELLOW, SLIP RESISTANT PAINT.

PAVEMENT LEGEND

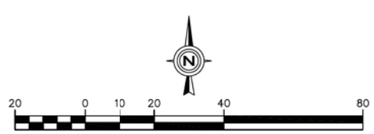


NOTES:

1. REFERENCE I.D.O.T. STANDARD SPECIFICATIONS (LATEST EDITION) SECTION 406 FOR BINDER & SURFACE COURSES AND SECTION 351 FOR AGGREGATE BASE COURSE.
2. THE APPLICATION RATES FOR THE PRIME COAT AND TACK COAT ARE TO BE 0.30 AND 0.10 GALLONS PER SQUARE YARD, RESPECTIVELY.
3. SEE PROJECT SPECIFICATIONS FOR SUB-BASE AND BASE COURSE COMPACTION.
4. ALL CONCRETE FLATWORK TO INCLUDE A JOINTING PATTERN SUBMITTAL TO THE CONSTRUCTION MANAGER. CONTRACTOR TO STAY AS CLOSE TO 9'x9' SQUARE PANELS IN LARGE CONCRETE FLATWORK AREAS AS POSSIBLE.
5. FOR SIDEWALKS, PROVIDE TOOLED JOINTS AT 5' O.C., CONTRACTION JOINTS AT 15' O.C., EXPANSION JOINTS AT 45' O.C.
6. PROVIDE AN EXPANSION JOINT ADJACENT TO ALL STRUCTURES. THESE JOINTS SHOULD BE SEALED WITH A TOOL-FINISHED SILICONE SEALANT PER I.D.O.T. STANDARD.

DIMENSION LEGEND

F	= FACE	FNC	= FENCE
FND	= FOUNDATION	R	= RADIUS
B	= BACK	C	= CENTER
E	= EDGE	PL	= PROPERTY LINE



GEOMETRIC PLAN

DATE | NO. | REVISIONS

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654

PROPOSED FUEL CENTER AND CAR WASH
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

Watermark Engineering Resources, Ltd.
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-8600 www.watermark-engineering.com

CHECKED BY: B. PERRY
DESIGN BY: S. SMAK
DRAWN BY: S. SMAK
DATE: JULY 5, 2019
SCALE: 1" = 20'
PROJECT NO.: 19-005

C-2

GEOMETRIC PLAN

ITE Trip Generation Sheets

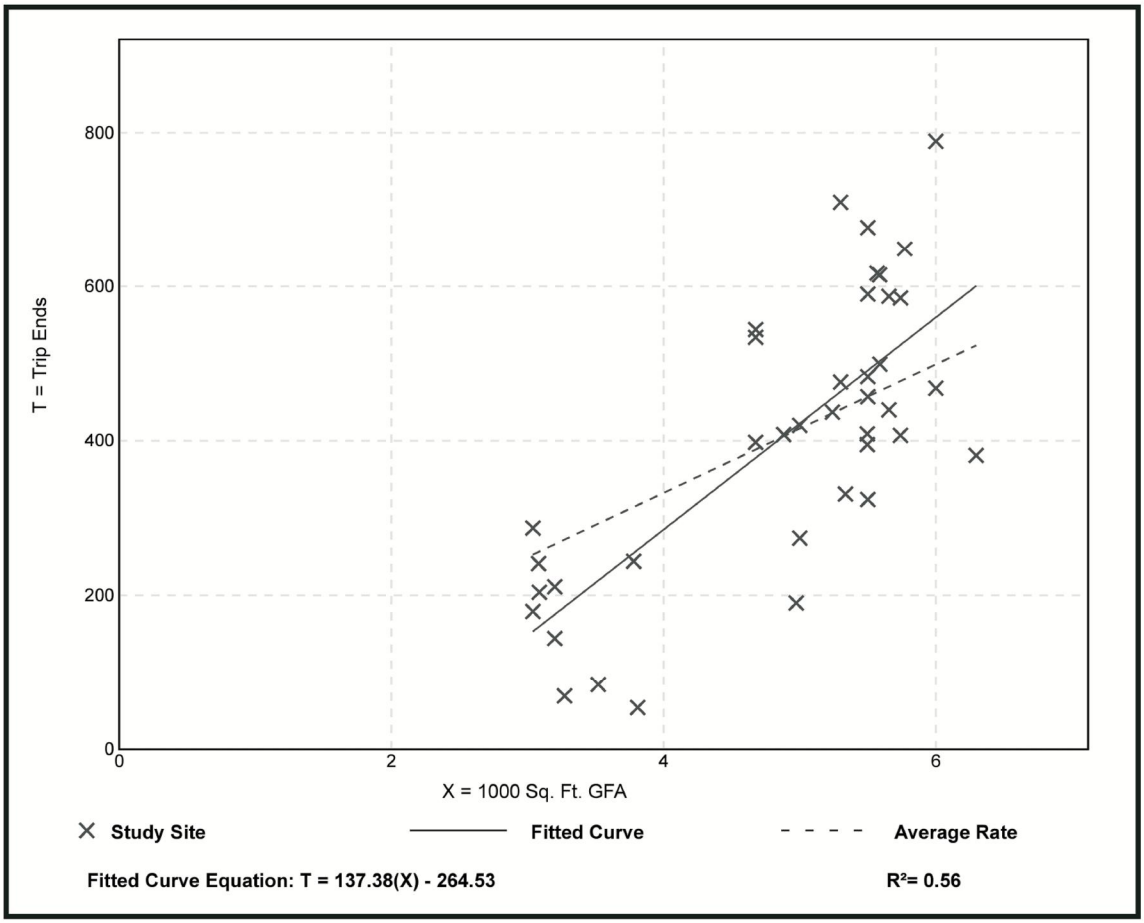
Super Convenience Market/Gas Station
(960)

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:	39
1000 Sq. Ft. GFA:	5
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
83.14	14.17 - 133.96	28.07

Data Plot and Equation



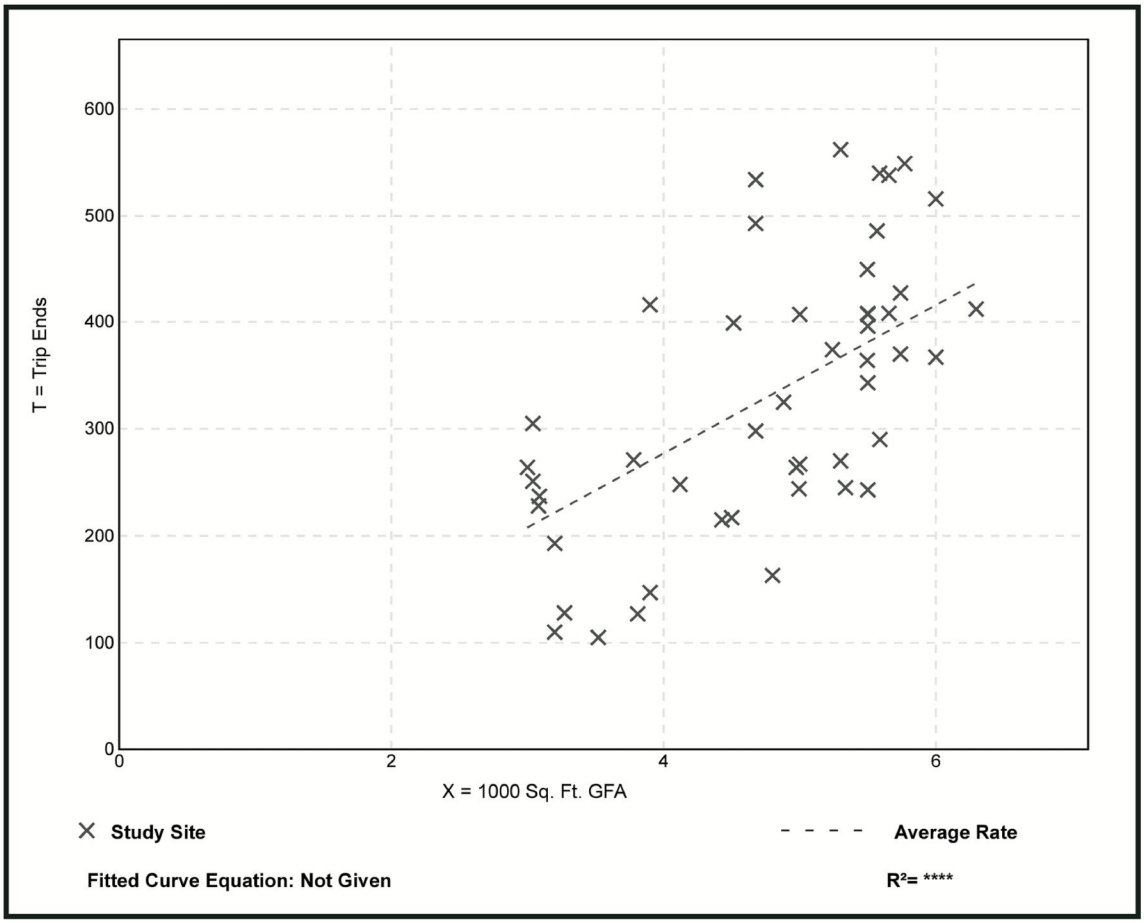
Super Convenience Market/Gas Station
(960)

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: 48
1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
69.28	29.83 - 114.20	21.07

Data Plot and Equation



CMAP Projections Letter

Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

August 21, 2019

Brendan May
Consultant
Kenig Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: Harlem Avenue (IL 43) @ 171st Street
IDOT

Dear Mr. May:

In response to a request made on your behalf and dated August 20, 2019, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current Volumes	Year 2050 ADT
Harlem Avenue North of 171st St	32,500	42,800
Harlem Avenue South of 171st St	35,300	43,200
171st Street West of Harlem Avenue	16,000	20,700
171st Street East of Harlem Avenue	11,800	14,100

Traffic projections are developed using existing ADT data provided in the request letter and the results from the March 2019 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)
S:\AdminGroups\ResearchAnalysis\2019_ForecastsTraffic\TinleyPark\ck-108-19\ck-108-19.docx

Level of Service Criteria

LEVEL OF SERVICE CRITERIA

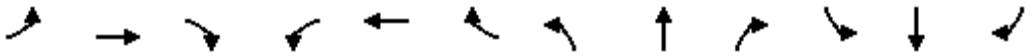
Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0

Unsignalized Intersections	
Level of Service	Average Total Delay (SEC/VEH)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 2010.

Capacity Analysis Summary Sheets

Existing Weekday Morning Peak Hour Conditions

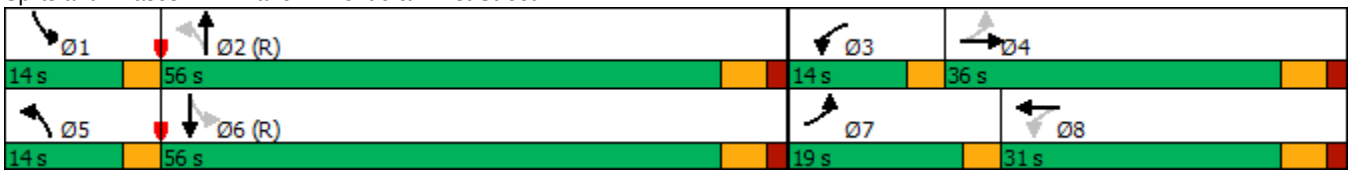


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	187	140	115	212	51	182	785	50	71	753	151
Future Volume (vph)	187	187	140	115	212	51	182	785	50	71	753	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	160		0	150		0	160		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	145			145			125			125		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.936			0.971			0.991			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3327	0	1787	3383	0	1752	3405	0	1805	3315	0
Flt Permitted	0.371			0.504			0.183			0.261		
Satd. Flow (perm)	678	3327	0	948	3383	0	338	3405	0	496	3315	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		212			789			383			516	
Travel Time (s)		3.6			15.4			6.5			8.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	2%	1%	1%	4%	2%	3%	5%	6%	0%	6%	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)	205	359	0	126	289	0	200	918	0	78	993	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		9.5	24.0		9.5	24.0	
Total Split (s)	19.0	36.0		14.0	31.0		14.0	56.0		14.0	56.0	
Total Split (%)	15.8%	30.0%		11.7%	25.8%		11.7%	46.7%		11.7%	46.7%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	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)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	36.9	21.0		28.8	16.4		76.1	64.4		68.5	58.4	
Actuated g/C Ratio	0.31	0.18		0.24	0.14		0.63	0.54		0.57	0.49	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.61	0.62		0.43	0.63		0.57	0.50		0.21	0.62	
Control Delay	40.2	50.2		34.9	54.8		16.4	20.3		11.2	25.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.2	50.2		34.9	54.8		16.4	20.3		11.2	25.9	
LOS	D	D		C	D		B	C		B	C	
Approach Delay		46.5			48.7			19.6			24.9	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	123	136		72	112		61	240		22	294	
Queue Length 95th (ft)	182	180		115	154		105	335		46	411	
Internal Link Dist (ft)		132			709			303			436	
Turn Bay Length (ft)	160			150			160			190		
Base Capacity (vph)	344	831		305	704		358	1827		409	1613	
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	0.60	0.43		0.41	0.41		0.56	0.50		0.19	0.62	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 30.0		Intersection LOS: C	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Harlem Avenue & 171st Street



Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	508	467	78	6	7
Future Vol, veh/h	26	508	467	78	6	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	5	1	0	0
Mvmt Flow	29	558	513	86	7	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	599	0	-	0	893	300
Stage 1	-	-	-	-	556	-
Stage 2	-	-	-	-	337	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	988	-	-	-	285	702
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	988	-	-	-	273	702
Mov Cap-2 Maneuver	-	-	-	-	273	-
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	988	-	-	-	407
HCM Lane V/C Ratio	0.029	-	-	-	0.035
HCM Control Delay (s)	8.8	0.2	-	-	14.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	533	0	0	474	0	1
Future Vol, veh/h	533	0	0	474	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	5	0	0
Mvmt Flow	586	0	0	521	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	586	0	847	293
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	999	-	305	709
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	999	-	305	709
Mov Cap-2 Maneuver	-	-	-	-	305	-
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	765	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	709	-	-	999	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	10.1	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	502	1	6	464	4	3	0	6	25	2	16
Future Vol, veh/h	0	502	1	6	464	4	3	0	6	25	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	5	0	0	0	17	4	0	0
Mvmt Flow	0	570	1	7	527	5	3	0	7	28	2	18

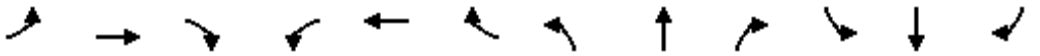
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	532	0	0	571	0	0	850	1117	286	829	1115	266
Stage 1	-	-	-	-	-	-	571	571	-	544	544	-
Stage 2	-	-	-	-	-	-	279	546	-	285	571	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	7.24	7.58	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.47	3.54	4	3.3
Pot Cap-1 Maneuver	1046	-	-	1012	-	-	257	209	668	260	210	738
Stage 1	-	-	-	-	-	-	478	508	-	486	522	-
Stage 2	-	-	-	-	-	-	710	521	-	693	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1046	-	-	1012	-	-	247	208	668	256	209	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	208	-	256	209	-
Stage 1	-	-	-	-	-	-	478	508	-	486	518	-
Stage 2	-	-	-	-	-	-	685	517	-	686	508	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	13.7	17.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	426	1046	-	-	1012	-	-	334
HCM Lane V/C Ratio	0.024	-	-	-	0.007	-	-	0.146
HCM Control Delay (s)	13.7	0	-	-	8.6	-	-	17.6
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.5

Capacity Analysis Summary Sheets

Existing Weekday Evening Peak Hour Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	402	218	243	327	56	228	1292	120	141	1168	238
Future Volume (vph)	231	402	218	243	327	56	228	1292	120	141	1168	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	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)	160		0	150		0	160		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	145			145			125			125		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.947			0.978			0.987			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3407	0	1787	3423	0	1770	3385	0	1770	3395	0
Flt Permitted	0.279			0.173			0.060			0.063		
Satd. Flow (perm)	515	3407	0	325	3423	0	112	3385	0	117	3395	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		212			789			346			516	
Travel Time (s)		3.6			15.4			5.9			8.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	1%	1%	3%	4%	2%	5%	8%	2%	4%	2%
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)	254	682	0	267	421	0	251	1552	0	155	1546	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		9.5	24.0		9.5	24.0	
Total Split (s)	20.0	29.0		20.0	29.0		24.0	73.0		18.0	67.0	
Total Split (%)	14.3%	20.7%		14.3%	20.7%		17.1%	52.1%		12.9%	47.9%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	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)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	41.9	23.0		42.1	23.1		87.5	69.4		77.7	63.1	
Actuated g/C Ratio	0.30	0.16		0.30	0.16		0.62	0.50		0.56	0.45	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.85	1.22		0.99	0.75		0.87	0.92		0.75	1.01	
Control Delay	64.4	162.5		92.4	64.7		67.0	43.7		54.0	63.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	64.4	162.5		92.4	64.7		67.0	43.7		54.0	63.8	
LOS	E	F		F	E		E	D		D	E	
Approach Delay		135.9			75.5			46.9			62.9	
Approach LOS		F			E			D			E	
Queue Length 50th (ft)	183	~400		193	194		170	687		86	~802	
Queue Length 95th (ft)	#283	#527		#376	256		#305	#878		163	#942	
Internal Link Dist (ft)		132			709			266			436	
Turn Bay Length (ft)	160			150			160			190		
Base Capacity (vph)	300	559		269	565		312	1678		238	1530	
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	0.85	1.22		0.99	0.75		0.80	0.92		0.65	1.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay: 72.3		Intersection LOS: E	
Intersection Capacity Utilization 100.7%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Harlem Avenue & 171st Street

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	847	778	15	4	25
Future Vol, veh/h	30	847	778	15	4	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	1	2	0	0
Mvmt Flow	33	931	855	16	4	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	871	0	-	0	1395	436
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	532	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	783	-	-	-	135	574
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	783	-	-	-	123	574
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	783	-	-	-	381
HCM Lane V/C Ratio	0.042	-	-	-	0.084
HCM Control Delay (s)	9.8	0.4	-	-	15.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	877	0	0	803	0	0
Future Vol, veh/h	877	0	0	803	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	1	0	0
Mvmt Flow	895	0	0	819	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	895	0	1305	448
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	410	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	767	-	154	564
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	767	-	154	564
Mov Cap-2 Maneuver	-	-	-	-	154	-
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	644	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	767	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	813	16	18	781	4	2	0	15	49	3	44
Future Vol, veh/h	3	813	16	18	781	4	2	0	15	49	3	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	33	1	0	6	0	0	0	0	0	2	0	0
Mvmt Flow	3	847	17	19	814	4	2	0	16	51	3	46

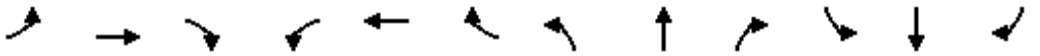
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	818	0	0	864	0	0	1309	1718	432	1284	1724	409
Stage 1	-	-	-	-	-	-	862	862	-	854	854	-
Stage 2	-	-	-	-	-	-	447	856	-	430	870	-
Critical Hdwy	4.76	-	-	4.22	-	-	7.5	6.5	6.9	7.54	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Follow-up Hdwy	2.53	-	-	2.26	-	-	3.5	4	3.3	3.52	4	3.3
Pot Cap-1 Maneuver	634	-	-	750	-	-	119	91	577	122	90	597
Stage 1	-	-	-	-	-	-	320	375	-	320	378	-
Stage 2	-	-	-	-	-	-	566	377	-	574	372	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	634	-	-	750	-	-	104	88	577	116	87	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	88	-	116	87	-
Stage 1	-	-	-	-	-	-	317	372	-	317	369	-
Stage 2	-	-	-	-	-	-	505	368	-	553	369	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	15	47
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	376	634	-	-	750	-	-	181
HCM Lane V/C Ratio	0.047	0.005	-	-	0.025	-	-	0.552
HCM Control Delay (s)	15	10.7	0	-	9.9	-	-	47
HCM Lane LOS	C	B	A	-	A	-	-	E
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	2.9

Capacity Analysis Summary Sheets

No-Build Weekday Morning Peak Hour Conditions

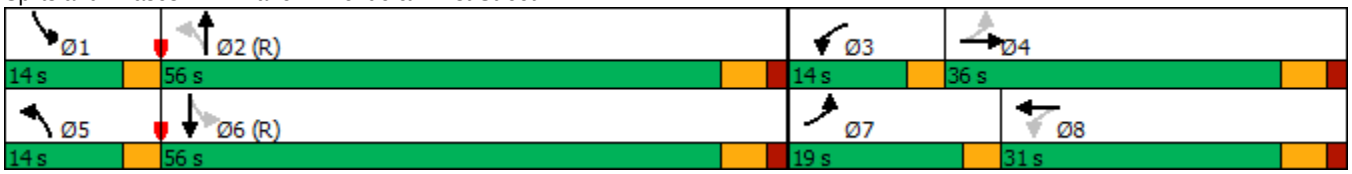


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	195	146	120	221	53	190	819	52	74	785	157
Future Volume (vph)	195	195	146	120	221	53	190	819	52	74	785	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	160		0	150		0	160		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	145			145			125			125		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.936			0.971			0.991			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3327	0	1787	3357	0	1752	3405	0	1805	3315	0
Flt Permitted	0.365			0.485			0.164			0.242		
Satd. Flow (perm)	667	3327	0	912	3357	0	303	3405	0	460	3315	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		212			789			383			516	
Travel Time (s)		3.6			15.4			6.5			8.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	2%	1%	1%	5%	2%	3%	5%	6%	0%	6%	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)	214	374	0	132	301	0	209	957	0	81	1036	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		9.5	24.0		9.5	24.0	
Total Split (s)	19.0	36.0		14.0	31.0		14.0	56.0		14.0	56.0	
Total Split (%)	15.8%	30.0%		11.7%	25.8%		11.7%	46.7%		11.7%	46.7%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	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)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	37.7	21.8		29.6	17.1		75.3	63.5		67.6	57.4	
Actuated g/C Ratio	0.31	0.18		0.25	0.14		0.63	0.53		0.56	0.48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.63	0.62		0.44	0.63		0.63	0.53		0.23	0.65	
Control Delay	40.2	49.6		34.7	54.2		19.3	21.5		11.8	27.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.2	49.6		34.7	54.2		19.3	21.5		11.8	27.5	
LOS	D	D		C	D		B	C		B	C	
Approach Delay		46.2			48.2			21.1			26.3	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	128	141		75	117		65	257		23	318	
Queue Length 95th (ft)	186	184		118	157		115	364		49	436	
Internal Link Dist (ft)		132			709			303			436	
Turn Bay Length (ft)	160			150			160			190		
Base Capacity (vph)	347	831		305	699		338	1800		387	1585	
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	0.62	0.45		0.43	0.43		0.62	0.53		0.21	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 30.9		Intersection LOS: C	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Harlem Avenue & 171st Street



Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	530	490	78	6	7
Future Vol, veh/h	26	530	490	78	6	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	5	1	0	0
Mvmt Flow	29	582	538	86	7	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	624	0	-	0	930	312
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	967	-	-	-	270	690
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	967	-	-	-	258	690
Mov Cap-2 Maneuver	-	-	-	-	258	-
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	691	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	967	-	-	-	389
HCM Lane V/C Ratio	0.03	-	-	-	0.037
HCM Control Delay (s)	8.8	0.2	-	-	14.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	555	0	0	497	0	1
Future Vol, veh/h	555	0	0	497	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	5	0	0
Mvmt Flow	610	0	0	546	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	610	0	883	305
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	979	-	289	697
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	754	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	979	-	289	697
Mov Cap-2 Maneuver	-	-	-	-	289	-
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	754	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	697	-	-	979	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	10.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	524	1	6	487	4	3	0	6	25	2	16
Future Vol, veh/h	0	524	1	6	487	4	3	0	6	25	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	5	0	0	0	17	4	0	0
Mvmt Flow	0	595	1	7	553	5	3	0	7	28	2	18

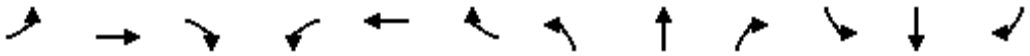
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	558	0	0	596	0	0	888	1168	298	868	1166	279
Stage 1	-	-	-	-	-	-	596	596	-	570	570	-
Stage 2	-	-	-	-	-	-	292	572	-	298	596	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	7.24	7.58	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.47	3.54	4	3.3
Pot Cap-1 Maneuver	1023	-	-	990	-	-	241	195	656	243	196	724
Stage 1	-	-	-	-	-	-	462	495	-	469	509	-
Stage 2	-	-	-	-	-	-	697	508	-	680	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1023	-	-	990	-	-	232	194	656	239	195	724
Mov Cap-2 Maneuver	-	-	-	-	-	-	232	194	-	239	195	-
Stage 1	-	-	-	-	-	-	462	495	-	469	505	-
Stage 2	-	-	-	-	-	-	672	504	-	673	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14.1	18.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	408	1023	-	-	990	-	-	314
HCM Lane V/C Ratio	0.025	-	-	-	0.007	-	-	0.156
HCM Control Delay (s)	14.1	0	-	-	8.7	-	-	18.6
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.5

Capacity Analysis Summary Sheets

No-Build Weekday Evening Peak Hour Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	419	227	253	341	58	238	1348	125	147	1218	248
Future Volume (vph)	241	419	227	253	341	58	238	1348	125	147	1218	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	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)	160		0	150		0	160		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	145			145			125			125		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.947			0.978			0.987			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3407	0	1787	3423	0	1770	3385	0	1770	3395	0
Flt Permitted	0.254			0.174			0.061			0.064		
Satd. Flow (perm)	469	3407	0	327	3423	0	114	3385	0	119	3395	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		212			789			346			516	
Travel Time (s)		3.6			15.4			5.9			8.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	1%	1%	3%	4%	2%	5%	8%	2%	4%	2%
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)	265	709	0	278	439	0	262	1618	0	162	1611	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		9.5	24.0		9.5	24.0	
Total Split (s)	20.0	29.0		20.0	29.0		24.0	73.0		18.0	67.0	
Total Split (%)	14.3%	20.7%		14.3%	20.7%		17.1%	52.1%		12.9%	47.9%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	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)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	42.0	23.0		42.0	23.0		87.5	69.1		77.5	62.6	
Actuated g/C Ratio	0.30	0.16		0.30	0.16		0.62	0.49		0.55	0.45	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.91	1.27		1.03	0.78		0.89	0.97		0.77	1.06	
Control Delay	73.9	180.7		101.8	66.8		69.7	50.4		55.8	78.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	73.9	180.7		101.8	66.8		69.7	50.4		55.8	78.8	
LOS	E	F		F	E		E	D		E	E	
Approach Delay		151.7			80.4			53.0			76.7	
Approach LOS		F			F			D			E	
Queue Length 50th (ft)	192	~426		~212	204		180	750		91	~866	
Queue Length 95th (ft)	#323	#555		#398	267		#326	#943		#179	#1005	
Internal Link Dist (ft)		132			709			266			436	
Turn Bay Length (ft)	160			150			160			190		
Base Capacity (vph)	291	559		270	562		313	1671		238	1518	
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	0.91	1.27		1.03	0.78		0.84	0.97		0.68	1.06	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.27			
Intersection Signal Delay: 82.5		Intersection LOS: F	
Intersection Capacity Utilization 104.3%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Harlem Avenue & 171st Street

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	883	812	15	4	25
Future Vol, veh/h	30	883	812	15	4	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	1	2	0	0
Mvmt Flow	33	970	892	16	4	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	908	0	-	0	1451	454
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	551	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	758	-	-	-	124	559
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	758	-	-	-	112	559
Mov Cap-2 Maneuver	-	-	-	-	112	-
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	15.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	758	-	-	-	361
HCM Lane V/C Ratio	0.043	-	-	-	0.088
HCM Control Delay (s)	10	0.4	-	-	15.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	913	0	0	837	0	0
Future Vol, veh/h	913	0	0	837	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	1	0	0
Mvmt Flow	932	0	0	854	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	932	0	1359	466
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	427	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	743	-	142	549
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	743	-	142	549
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	632	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	743	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	849	16	18	815	4	2	0	15	49	3	44
Future Vol, veh/h	3	849	16	18	815	4	2	0	15	49	3	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	33	1	0	6	0	0	0	0	0	2	0	0
Mvmt Flow	3	884	17	19	849	4	2	0	16	51	3	46

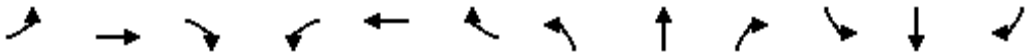
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	853	0	0	901	0	0	1363	1790	451	1337	1796	427
Stage 1	-	-	-	-	-	-	899	899	-	889	889	-
Stage 2	-	-	-	-	-	-	464	891	-	448	907	-
Critical Hdwy	4.76	-	-	4.22	-	-	7.5	6.5	6.9	7.54	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Follow-up Hdwy	2.53	-	-	2.26	-	-	3.5	4	3.3	3.52	4	3.3
Pot Cap-1 Maneuver	612	-	-	725	-	-	109	82	561	111	81	582
Stage 1	-	-	-	-	-	-	304	360	-	304	364	-
Stage 2	-	-	-	-	-	-	553	363	-	560	357	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	612	-	-	725	-	-	95	79	561	105	78	582
Mov Cap-2 Maneuver	-	-	-	-	-	-	95	79	-	105	78	-
Stage 1	-	-	-	-	-	-	301	356	-	301	355	-
Stage 2	-	-	-	-	-	-	492	354	-	539	353	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	15.6	55.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	356	612	-	-	725	-	-	165
HCM Lane V/C Ratio	0.05	0.005	-	-	0.026	-	-	0.606
HCM Control Delay (s)	15.6	10.9	0.1	-	10.1	-	-	55.7
HCM Lane LOS	C	B	A	-	B	-	-	F
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	3.3

Capacity Analysis Summary Sheets

Projected Weekday Morning Peak Hour Conditions

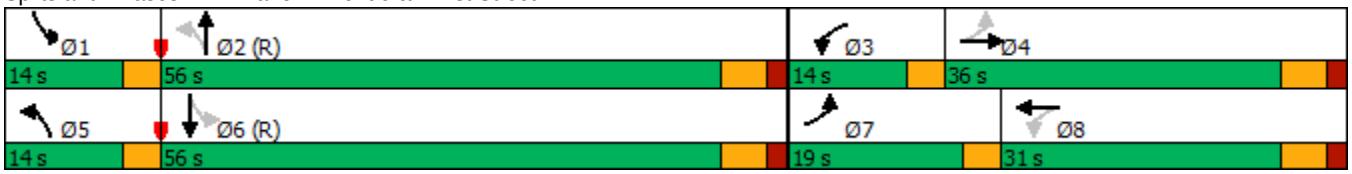


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	203	146	125	223	53	205	819	52	74	798	161
Future Volume (vph)	213	203	146	125	223	53	205	819	52	74	798	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	160		0	150		0	160		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	145			145			125			125		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.937			0.971			0.991			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3330	0	1787	3357	0	1752	3405	0	1805	3315	0
Flt Permitted	0.362			0.481			0.152			0.247		
Satd. Flow (perm)	661	3330	0	905	3357	0	280	3405	0	469	3315	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		212			789			218			516	
Travel Time (s)		3.6			15.4			3.7			8.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	2%	1%	1%	5%	2%	3%	5%	6%	0%	6%	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)	234	383	0	137	303	0	225	957	0	81	1054	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		9.5	24.0		9.5	24.0	
Total Split (s)	19.0	36.0		14.0	31.0		14.0	56.0		14.0	56.0	
Total Split (%)	15.8%	30.0%		11.7%	25.8%		11.7%	46.7%		11.7%	46.7%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	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)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	38.1	22.1		29.7	17.2		74.9	63.1		66.0	55.8	
Actuated g/C Ratio	0.32	0.18		0.25	0.14		0.62	0.53		0.55	0.46	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.68	0.63		0.46	0.63		0.67	0.53		0.24	0.68	
Control Delay	42.4	49.5		34.9	54.2		22.8	21.7		12.0	29.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.4	49.5		34.9	54.2		22.8	21.7		12.0	29.1	
LOS	D	D		C	D		C	C		B	C	
Approach Delay		46.8			48.2			21.9			27.9	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	142	145		78	117		71	258		23	335	
Queue Length 95th (ft)	203	188		121	158		144	364		49	447	
Internal Link Dist (ft)		132			709			138			436	
Turn Bay Length (ft)	160			150			160			190		
Base Capacity (vph)	349	832		304	699		336	1790		386	1542	
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	0.67	0.46		0.45	0.43		0.67	0.53		0.21	0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 31.9		Intersection LOS: C	
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Harlem Avenue & 171st Street



Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	506	34	0	511	78	0	0	50	6	0	7
Future Vol, veh/h	26	506	34	0	511	78	0	0	50	6	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	2	0	0	5	1	0	0	0	0	0	0
Mvmt Flow	29	556	37	0	562	86	0	0	55	7	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	648	0	0	-	-	0	-	-	297	941	1256	324
Stage 1	-	-	-	-	-	-	-	-	-	605	605	-
Stage 2	-	-	-	-	-	-	-	-	-	336	651	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	947	-	-	0	-	-	0	0	705	221	173	678
Stage 1	-	-	-	0	-	-	0	0	-	456	491	-
Stage 2	-	-	-	0	-	-	0	0	-	657	468	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	947	-	-	-	-	-	-	-	705	197	165	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	197	165	-
Stage 1	-	-	-	-	-	-	-	-	-	435	491	-
Stage 2	-	-	-	-	-	-	-	-	-	578	446	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	10.5	16.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	705	947	-	-	-	-	319
HCM Lane V/C Ratio	0.078	0.03	-	-	-	-	0.045
HCM Control Delay (s)	10.5	8.9	0.2	-	-	-	16.8
HCM Lane LOS	B	A	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	565	0	43	475	31	1
Future Vol, veh/h	565	0	43	475	31	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	5	0	0
Mvmt Flow	621	0	47	522	34	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	621	0	976	311
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	355	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	969	-	252	691
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	969	-	235	691
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	22.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	240	-	-	969	-
HCM Lane V/C Ratio	0.147	-	-	0.049	-
HCM Control Delay (s)	22.6	-	-	8.9	0.3
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	534	1	6	496	4	3	0	6	25	2	16
Future Vol, veh/h	0	534	1	6	496	4	3	0	6	25	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	2	0	0	5	0	0	0	17	4	0	0
Mvmt Flow	0	607	1	7	564	5	3	0	7	28	2	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	569	0	0	608	0	0	905	1191	304	885	1189	285
Stage 1	-	-	-	-	-	-	608	608	-	581	581	-
Stage 2	-	-	-	-	-	-	297	583	-	304	608	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	7.24	7.58	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.47	3.54	4	3.3
Pot Cap-1 Maneuver	1013	-	-	980	-	-	235	189	649	236	190	718
Stage 1	-	-	-	-	-	-	454	489	-	462	503	-
Stage 2	-	-	-	-	-	-	693	502	-	675	489	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1013	-	-	980	-	-	226	188	649	232	189	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	226	188	-	232	189	-
Stage 1	-	-	-	-	-	-	454	489	-	462	499	-
Stage 2	-	-	-	-	-	-	668	498	-	668	489	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14.2	19
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	400	1013	-	-	980	-	-	306
HCM Lane V/C Ratio	0.026	-	-	-	0.007	-	-	0.16
HCM Control Delay (s)	14.2	0	-	-	8.7	-	-	19
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	56	0	1076	1010	59
Future Vol, veh/h	0	56	0	1076	1010	59
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	5	5	0
Mvmt Flow	0	59	0	1133	1063	62

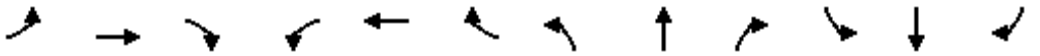
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	563	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	475	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	475	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	475	-	-
HCM Lane V/C Ratio	-	0.124	-	-
HCM Control Delay (s)	-	13.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-

Capacity Analysis Summary Sheets

Projected Weekday Evening Peak Hour Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	425	227	257	343	58	251	1348	125	147	1229	252
Future Volume (vph)	256	425	227	257	343	58	251	1348	125	147	1229	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		0	150		0	160		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	145			145			125			125		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.948			0.978			0.987			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3410	0	1787	3423	0	1770	3385	0	1770	3392	0
Flt Permitted	0.252			0.174			0.061			0.065		
Satd. Flow (perm)	465	3410	0	327	3423	0	114	3385	0	121	3392	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			35			40			40	
Link Distance (ft)		212			789			218			516	
Travel Time (s)		3.6			15.4			3.7			8.8	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	0%	1%	1%	3%	4%	2%	5%	8%	2%	4%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	281	716	0	282	441	0	276	1618	0	162	1628	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	9.5	24.0		9.5	24.0		9.5	24.0		9.5	24.0	
Total Split (s)	20.0	29.0		20.0	29.0		24.0	73.0		18.0	67.0	
Total Split (%)	14.3%	20.7%		14.3%	20.7%		17.1%	52.1%		12.9%	47.9%	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	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)	3.5	6.0		3.5	6.0		3.5	6.0		3.5	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	42.0	23.0		42.0	23.0		87.5	69.1		76.8	62.0	
Actuated g/C Ratio	0.30	0.16		0.30	0.16		0.62	0.49		0.55	0.44	
v/c Ratio	0.97	1.28		1.04	0.78		0.92	0.97		0.76	1.08	
Control Delay	85.2	184.6		105.7	67.0		74.0	50.4		55.3	87.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	85.2	184.6		105.7	67.0		74.0	50.4		55.3	87.2	
LOS	F	F		F	E		E	D		E	F	
Approach Delay		156.6			82.1			53.8			84.4	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	206	~433		~220	205		195	750		90	~884	
Queue Length 95th (ft)	#358	#561		#408	268		#359	#943		#173	#1024	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		132			709			138			436	
Turn Bay Length (ft)	160			150			160			190		
Base Capacity (vph)	291	560		270	562		313	1671		239	1501	
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	0.97	1.28		1.04	0.78		0.88	0.97		0.68	1.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.28			
Intersection Signal Delay: 86.7		Intersection LOS: F	
Intersection Capacity Utilization 105.8%		ICU Level of Service G	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Harlem Avenue & 171st Street

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	863	28	0	831	15	0	0	41	4	0	25
Future Vol, veh/h	30	863	28	0	831	15	0	0	41	4	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	2	0	0	1	2	0	0	0	0	0	0
Mvmt Flow	33	948	31	0	913	16	0	0	45	4	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	929	0	0	-	-	0	-	-	490	1461	1966	465
Stage 1	-	-	-	-	-	-	-	-	-	921	921	-
Stage 2	-	-	-	-	-	-	-	-	-	540	1045	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	744	-	-	0	-	-	0	0	529	92	64	550
Stage 1	-	-	-	0	-	-	0	0	-	295	352	-
Stage 2	-	-	-	0	-	-	0	0	-	499	308	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	744	-	-	-	-	-	-	-	529	78	58	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	78	58	-
Stage 1	-	-	-	-	-	-	-	-	-	266	352	-
Stage 2	-	-	-	-	-	-	-	-	-	412	278	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	12.4	18.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	529	744	-	-	-	-	300
HCM Lane V/C Ratio	0.085	0.044	-	-	-	-	0.106
HCM Control Delay (s)	12.4	10.1	0.5	-	-	-	18.4
HCM Lane LOS	B	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	921	0	38	818	27	0
Future Vol, veh/h	921	0	38	818	27	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	1	0	0
Mvmt Flow	940	0	39	835	28	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	940	0	1436	470
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	496	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	737	-	127	545
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	583	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	737	-	114	545
Mov Cap-2 Maneuver	-	-	-	-	114	-
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	583	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	46.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	114	-	-	737	-
HCM Lane V/C Ratio	0.242	-	-	0.053	-
HCM Control Delay (s)	46.4	-	-	10.2	0.5
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	0.9	-	-	0.2	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	857	16	18	823	4	2	0	15	49	3	44
Future Vol, veh/h	3	857	16	18	823	4	2	0	15	49	3	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	33	1	0	6	0	0	0	0	0	2	0	0
Mvmt Flow	3	893	17	19	857	4	2	0	16	51	3	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	910	0	0	1376	1807	455	1350	1813	431
Stage 1	-	-	-	-	-	-	908	908	-	897	897	-
Stage 2	-	-	-	-	-	-	468	899	-	453	916	-
Critical Hdwy	4.76	-	-	4.22	-	-	7.5	6.5	6.9	7.54	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.54	5.5	-
Follow-up Hdwy	2.53	-	-	2.26	-	-	3.5	4	3.3	3.52	4	3.3
Pot Cap-1 Maneuver	608	-	-	720	-	-	106	80	558	109	79	578
Stage 1	-	-	-	-	-	-	301	357	-	301	361	-
Stage 2	-	-	-	-	-	-	550	360	-	556	354	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	608	-	-	720	-	-	92	77	558	103	76	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	92	77	-	103	76	-
Stage 1	-	-	-	-	-	-	298	353	-	298	352	-
Stage 2	-	-	-	-	-	-	489	351	-	535	350	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	15.8	57.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	350	608	-	-	720	-	-	162
HCM Lane V/C Ratio	0.051	0.005	-	-	0.026	-	-	0.617
HCM Control Delay (s)	15.8	11	0.1	-	10.1	-	-	57.7
HCM Lane LOS	C	B	A	-	B	-	-	F
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	3.4

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	47	0	1724	1664	49
Future Vol, veh/h	0	47	0	1724	1664	49
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	49	0	1815	1752	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	902	-	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	285	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	285	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	285	-	-
HCM Lane V/C Ratio	-	0.174	-	-
HCM Control Delay (s)	-	20.3	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-