



AGENDA FOR REGULAR MEETING VILLAGE OF TINLEY PARK PLAN COMMISSION

**January 2, 2020 – 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 December 19, 2019 Regular Meeting

ITEM #1 WORKSHOP: KIM MCAULIFFE, ON BEHALF OF AN ENGLISH GARDEN LLC (PROPERTY OWNER) - 16800 OAK PARK AVENUE

Consider recommending that the Village Board grant Kim McAuliffe, on behalf of An English Garden LLC (property owner), a Special Use Permit to convert a Heritage Site from a standalone commercial building to a mixed-use building with a second floor apartment at 16800 Oak Park Avenue in the NG (Neighborhood General) zoning district.

ITEM #2 PUBLIC HEARING: 7-ELEVEN GAS STATION – 171st STREET & HARLEM AVENUE

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**

December 19, 2019

The Regular Meeting of the Plan Commission was held in the Council Chambers of Village Hall on December 19, 2019 at 7:00 p.m.

PLEDGE OF ALLEGIANCE

ROLL CALL

Plan Commissioners: Curt Fielder, Acting Chairman
James Gaskill
Tim Stanton
Angela Gatto
Stephen Vick

Absent Plan Commissioner(s): Garrett Gray
Eduardo Mani
Lucas Engel
Mary Aitchison

Village Officials and Staff: Kimberly Clarke, Community Development Director
Dan Ritter, Senior Planner
Barbara Bennett, Commission Secretary

CALL TO ORDER

PLAN COMMISSION ACTING CHAIRMAN FIELDER called to order the Regular Meeting of the Plan Commission for December 19, 2019 at 7:00 p.m.

COMMUNICATIONS

None

APPROVAL OF MINUTES

Minutes of the November 21, 2019 Regular Meeting of the Plan Commission were presented for approval. A Motion was made by COMMISSIONER STANTON, seconded by COMMISSIONER GASKILL to approve the minutes as presented. ACTING CHAIRMAN FIELDER 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 DECEMBER 19, 2019 REGULAR MEETING

Item #1 WORKSHOP: 7-ELEVEN GAS STATION – 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.

Present were the following:

Plan Commissioners: Curt Fielder, Acting Chairman
James Gaskill
Stephen Vick
Tim Stanton
Angela Gatto

Absent Plan Commissioner(s): Garrett Gray
Eduardo Mani
Lucas Engel
MaryAnn Aitchison

Guests: David Sosin, Attorney
Dan Aykroyd, Sr. Real Estate Rep. – 7-Eleven
Ivan Nockov, Developer
William Perry, Engineer

Daniel Ritter, Senior Planner gave a presentation as noted in the Staff Report. The Petitioner is here with his design team; they will give a short presentation of their project and respond to any open items. The site will be a 7- Eleven convenience store and a gas station with 10 fueling stations. The site is on the southwest corner of 171st and Harlem Avenue. The subject property consists of two lots. The lot furthest north is vacant and is currently zoned B-4 (Office and Service Business). The site was previously home to an office building that was demolished in 2016. The south portion of the subject property is zoned R-1 (Single-Family Residential) with a vacant single-family home and detached garage located on the property, both slated for demolition. There are two vacant single-family home lots zoned R-1 to the south of the subject properties as well, and are not part of this development. The developer has agreed with the property owner (who is the owner of all four lots) and staff to demolish those two homes as well as part of the 7-Eleven project and the lots. Staff recommended the demolition be a condition of the approval for the rezoning and special use requests as a substitution for completing a concept plan approval for the remaining lots.

To the north of the subject property is the Tinley Park Post Office, and to the west is a bank. Both are 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). To the west is single-family residential.

Automobile service (gas) stations are a special use in all commercial zoning districts, with the exception of B-5 (Automotive Service). The proposed gas station site includes a 3,511 sq. ft. convenience store building, vehicle fueling area/canopy, vehicle parking, walkways, exterior storage areas, landscaping, and a dumpster enclosure. There will be no truck/diesel fueling available at this site. 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 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 turns 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 has been altered slightly to allow for fuel truck and fire engine access. Drive aisles will meet the 26 foot width minimum with the exception of 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.

The parking and traffic were a primary concern staff and the developer has been reviewing and revising the plans to best address those concerns. The intersection can be very busy and has a history of traffic issues. There was originally a full access on 171st Street. Staff did not feel this worked and pushed for the right-in/right-out with raised curbing to prevent vehicles to make turns they should not do and could create traffic issues on 171st Street. Staff feels this plan will work with Cook County Dept. of Transportation and the Village Engineer. This should control the access in and out. The Petitioner's transportation expert (KLOA) will be available at the Public Hearing to discuss their report and answer any other specific questions.

With the 3,511 sq. ft. proposed convenience store requires 23 parking spaces per the Zoning Ordinance requirements. The proposed site plan provides 17 total spaces based on the similar retail requirements. Due to the unique nature of a gas station where some of the retail users may be stationed at the pumps yields the potential for 10 additional parking spaces. Customers are usually on the site for short periods, resulting in high turnover and thereby lowering the demand for parking. Staff believes that the parking supply is adequate on the proposed site.

COMMISSIONER GASKILL inquired about the parking. He was not sure there is enough parking at this location. Mr. Sosin, Attorney replied that per the Petitioner's experience with his other locations, he is confident that this parking is adequate.

There are some deficiencies in the landscaping. The Village's Landscape Architect has reviewed the plan 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 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. The 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.

A fence is proposed running between the site 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. The bank's existing fence is eight foot high. Eight foot high fences are recommended for the separation of commercial and residential uses. The Petitioner will need to revise the plans to indicate an eight foot fence matching the existing bank fence in color, height, and style.

The design of the convenience store building and gas station canopy utilizes high-quality materials, including face brick with fiber cement and metal cornice architectural treatments. All mechanical equipment on the rooftop parapet will be screened. The architectural design is prototypical of 7-Eleven's new branding initiative. Staff recommended a more residential roof for the convenience store building, utilizing more residential elements such as shingles and peaks. A peak was added to the front entrance and caps to the architectural treatments to give a more traditional look to the building.

Due to the tight space, a ground sign size and location were presented. 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 Petitioner has decided to leave the final proposal up to the 7- Eleven operator. Staff is comfortable with the proposed five foot setback Variation.

The Petitioner has provided a Photometric Plan. Particular thought was put into the light placement and height (20' pole height) to avoid their visibility from the residential properties to the west. No light or glare (0 foot candle spillage) will be visible to the neighboring properties. The property will require rezoning. The existing properties are zoned B-4 (Office and Service Business) and R-1 (Single-Family Residential). 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.

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. of 250 feet.

An automobile service (gas) station is a special use in B-1, B-2, and B-3 commercial zoning districts. Gas stations are a special use in all commercial zoning districts except B-5. Gas stations are generally in high traffic areas and the sites require a unique site design that accounts for safe/efficient access, proper circulation, sufficient parking, and adequate light levels.

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.

ACTING CHAIRMAN FIELDER asked the Petitioner to speak.

David Sosin, Attorney for the Petitioner noted regarding the parking that most customers would only spend 3-5 minutes while they get gas and enter the store to pay for the gas and do minor shopping. 17 parking spaces are considered to be more than adequate due to their experience with the other 7-Eleven stores, of which they have many.

Mr. Sosin noted they have been working on this plan for over a year and have done 10 major changes to try and address the access and neighboring property issues. The car wash was eliminated due to the proximity of the residents to the west and that allowed for additional buffering. There is no Master Plan at this time but he is working with the developer on a use for the property to the south. The drive aisle of 24' is standard for other Villages and works well on this site.

Adding 2 feet in height to the fence is not a problem at all. Signage is important to any user and they will work with the Village to meet the code requirements. The houses will be buffered from Harlem Avenue with the 0 foot-candle lighting and the buffering from landscaping and an 8 foot fence. The site actually accepts stormwater from the residents to the west and will accommodate stormwater flow through their site. The stormwater in this area will be improved with the extensive engineering done. The traffic expert will be at the Public Hearing for any questions. As this is currently a busy area, they feel the traffic change will only be 1-2% more at most.

ACTING CHAIRMAN FIELDER asked for comments from the public. There were none.

COMMISSIONER STANTON inquired if you could make a left-hand turn and enter the station on 171st Street when going north on Harlem, then turn into the station. Mr. Ritter replied that it would not be possible to directly enter the gas station that way, you can only turn into the station when going south on Harlem Avenue and east on 171st Street. You could make a left turn at the Oconto Avenue intersection or enter at the bank due to the allowable cross-access between the properties.

COMMISSIONER STANTON inquired about the hours of operation. Mr. Sosin replied the hours of operation for most 7-elevens are 24 hours a day. There are no speakers or bells, and the lighting has been designed very well to avoid any issues off-site. They will be good neighbors. The pumps are close to Harlem Avenue and the entrance is on the east side with the thought of staying away from the residential area.

COMMISSIONER STANTON inquired if there was thought about a security system. Ivan Nockov, Developer replied there will be a camera system that is centrally monitored.

COMMISSIONER VICK inquired about Cook County allowing access on 171st Street. It seems that you are doing everything possible to restrict the left-hand turn. The parking seems to be fine and will work similarly to their other gas station location on 159th Street with quick customer turnover.

COMMISSIONER GATTO inquired about the properties to the south and who would maintain them after they are demolished. Mr. Sosin replied that the homes that are there now are a buffer to the residents to the west. It could be good to leave them there until there is something done with that property. Mr. Ritter replied that there is a demo plan in the contract with the Petitioner and they are in deteriorating condition with property maintenance issues. Staff does not want these properties to be reoccupied as residential as the 7-Eleven plan was designed assuming these would not be residential homes.

ACTING CHAIRMAN FIELDER inquired if the utility poles will remain or would they be burying the lines. If not, will any of the poles be moved. Mr. Ritter replied the poles will stay and they will not be buried. It is very expensive to bury them and there are poles in the area that connect to these. They will need to adjust the utility line height for safe access and it does appear one of the Harlem Avenue light poles needs to be relocated.

ACTING CHAIRMAN FIELDER inquired if the triangle at the right-in/right-out would be a choke point for cars entering and exiting. Mr. Nockov replied that the safety standard for 7-Eleven is to have fuel trucks enter from the back rather than around the front of the building. Mr. Ritter replied that the fuel trucks would be coming into the station at slow traffic times. Kimberly Clarke, Community Development Director noted that the entry to the station has been very challenging but they have come up with a plan that should work for all properties.

COMMISSIONER VICK noted that the entry is probably the best way that can be done. What are the changes to the buffer on the landscaping? Mr. Ritter replied they are short a couple trees and shrubs. Staff feels the landscape architect can make it work. Parkway trees are not able to be done. Mr. Sosin noted he would have the Petitioner's landscape architect work with the Village. A 4" tree is probably the best size.

COMMISSIONER VICK inquired if the lots to the south should be rezoned now. Mr. Ritter replied this would not be good to rezone at this time until there are plans for the development.

COMMISSIONER GATTO noted she liked the peak that has been added to the roof.

Ms. Clarke noted this has been a good team to work with.

Mr. Ritter went through all the open items:

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.

Mr. Ritter noted most of the open items are workable with minimal concerns.

Ms. Clarke noted the Traffic Consultant (KLOA) will be at the Public Hearing to talk about the improvements.

Mr. Sosin noted they are fairly certain they will be able to get a permit for a curb cut from IDOT and Cook County.

The Public Hearing will be on January 2, 2020.

GOOD OF THE ORDER:

1. The Village is working towards Property Acquisition for Harmony Plaza.
2. The Boulevard/South Street moving forward with the foundation. The weather has cooperated. They are close to the full permit being issued with hopefully one more set of revisions needed.
3. Lenny's Food N Fuel on 183rd Street was approved by the Village Board.
4. Banging Gavel got the incentive agreement amended and will be moving forward with their loan and start the reconstruction.
5. SIP Wine Bar has pretty much finished on the outside and they are working on the inside and opening soon.
6. The Masonry amendments have been approved at the Village Board. The Fee structure is being reviewed by Village Board currently and will take fees out of the zoning code and put them in a comprehensive fee schedule.
7. An English Garden, 16800 Oak Park Avenue will come before the Plan Commission at the next meeting for Special Use to convert commercial space to an apartment on the second floor. This will help with their taxes.

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 VICK to adjourn the Regular Meeting of the Plan Commission of December 19, 2019 at 8:16 p.m. The Motion was unanimously approved by voice call. ACTING PLAN COMMISSION CHAIRMAN FIELDER declared the meeting adjourned.

PLAN COMMISSION STAFF REPORT

January 2, 2020 – Workshop

An English Garden, Mixed-Use Apartment

16800 Oak Park Avenue

Petitioner

Kim McAuliffe, An English Garden LLC

Property Location

16800 Oak Park Avenue

PIN

28-30-107-007-0000

Zoning

NG, Neighborhood General

Approvals Sought

Special Use Permit



EXECUTIVE SUMMARY

The Petitioner, Kim McAuliffe of An English Garden LLC (Property Owner), is seeking approval of a Special Use Permit to convert a Heritage Site from a standalone commercial building to a mixed-use building with a second floor apartment at 16800 Oak Park Avenue in the NG (Neighborhood General) zoning district.

The property was originally constructed as a residential home in 1859 as the home of early Tinley Park settlers John and Jane Fulton. The property is considered a culturally and historically significant property in Tinley Park. Most recently, the property has functioned as a standalone commercial property (law office and GiGi's Playhouse). This property is classified as a Heritage Site in the Legacy Code since the standalone commercial use existed lawfully prior to the adoption of the Legacy Code. The site remains classified as a Heritage Site as long as any voluntary, private-owner initiated modifications to the property do not exceed 50% of the property's market value and does not expand the structure or use. The Legacy Code permits a special use to convert a Heritage Site in the NG district to a mixed-use building.

The Petitioner renovated the first floor of the building for their business, *An English Garden Florist & Gifts*, which opened in November 2019. Some minor interior modifications are required to meet the building code requirements for a second floor residential use and building permits will be applied for following the Special Use Permit approval. The second floor is difficult to rent out to other commercial tenants due to the existing residential layout and compliance with accessibility codes. The addition of an apartment will allow the Petitioner to collect rent on the unit and will allow the property's taxes to be assessed at a lower rate through Cook County. The one apartment will have three bedrooms and is approximately 1,214 sq. ft. in size.

Project Planner

Daniel Ritter, AICP
Senior Planner

EXISTING SITE, HISTORY & ZONING

The subject property was originally constructed as a residential home in 1859 as the home of early Tinley Park settlers, John and Jane Fulton. The structure is considered a culturally and historically significant property according to the Tinley Park Historical Society and the Legacy Plan. A residential addition was added to the original home in 1912. In 2001-2002 a Special Use Permit was approved for a bed & breakfast and the property was heavily renovated, but the business never formally opened. That renovation work included replacement of aluminum siding with more historically appropriate wood siding and a front “wrap-around” porch. Since 2006, the property has functioned as a standalone commercial property (law office and then GiGi’s Playhouse). In early 2019, *An English Garden* purchased the property to expand to its second florist and gift shop location (first location is in Mokena). Following a buildout, structure maintenance, and renovation work, the business opened in November 2019.



The property consists of one lot that is approximately 18,050 sq. ft. in size and consists of the two story principal structure and a two-car detached garage. The detached garage was mistakenly constructed off-site in 2005 and is located partially in the unimproved right-of-way to the north. There are no current concerns about the garage's location. There are five parking spaces (including garage spaces) located on the lot, however, the property is adjacent to a dead-end right-of-way with ten “on-street” parking spaces. The property has traditionally entered into a Private Parking Lease and Maintenance Agreement for the use of the stalls on the south side of the right-of-way for business parking. The new Parking Lease and Maintenance Agreement will be proposed to the Village Board at the same time as the Special Use request.



This subject property is located in the NG (Neighborhood General) zoning district and is classified as a “Heritage Site” because the commercial use existed lawfully prior to the adoption of the Legacy Code. The site will remain classified as a Heritage Site as long as any voluntary, private-owner initiated modification to the property does not exceed 50% of the property’s market value and does not expand the commercial use. The Legacy Code does permit that a Heritage Site in the NG district to be converted to a mixed-use building with approval of a Special Use. To the north of the subject property is a multi-tenant commercial building (Dairy Palace, Effective Signs, Metro Yellow Cab) zoned NG. To the south is a single-family home zoned NG. To the west is a single-family home zoned R-2, Single-Family Residential and to the east across Oak Park Avenue are single-family homes zoned R-4, Single-Family Residential.



PROPOSED USE & SPECIAL USE PERMIT

The Petitioner's proposal will convert the second floor of the structure to an apartment while the first floor remains commercial space. The building was originally constructed to be a single-family home, and the second floor was partially converted for use as a bed & breakfast, including installation of a bathroom and kitchen. The space has since been used as commercial office space for businesses occupying the first floor. Some renovation work will need to be completed to convert the space to an apartment use including adding a foyer area to the first floor, adding closets, and moving the electrical panel from the bedroom. Following zoning approval, the Petitioner will apply for a building permit, and has already hired an architect to design the construction documents. Staff recommends that a condition be added to the approval clarifying the compliance with any building code requirements prior to occupancy. The resulting apartment will be approximately 1,214 sq. ft. in size have three bedrooms, one bathroom, a kitchen, and a living room. It is expected that the residential tenant will utilize at least half of the existing detached garage to park their vehicles.

The NG zoning district is residentially-focused with a goal of providing sufficient density around the downtown area and train station. The homes help support the businesses within the Legacy District and specifically the Downtown Core. While the proposal will not bring the property completely into the vision of the Legacy Plan, it will help ensure the longevity of a historically significant property in the downtown. The mixed-use building is also closer to the Plan's intent than the standalone commercial building does currently. Staff believes the proposed mixed-use building is the best option to revitalize and preserve the structure for the future of the community.

The Special Use Permit is being requested because the Petitioner's business does not currently have a use for the second floor space. The second floor is difficult to use for other commercial businesses because it is designed like a residential unit (bedrooms, hallways, bathroom with tub, etc.) Additionally, any commercial tenants are unlikely to meet the Americans with Disabilities Act (ADA) or Illinois Accessibility Code requirements for their employees or customers based on the current layout.

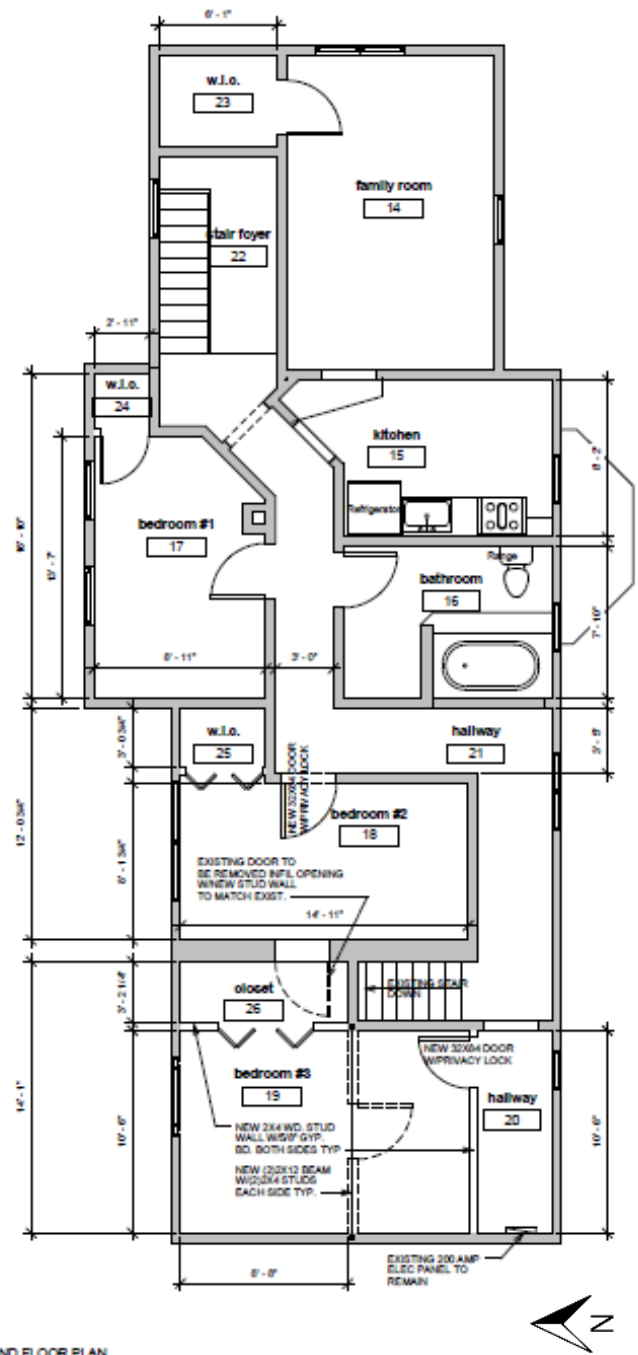
The Special Use Permit to convert Heritage Sites to mixed-use buildings serves a couple purposes. First, is to ensure that the commercial and residential uses being proposed work in harmony with each other and that the conversion is not creating substandard housing for future Tinley Park residents. This is particularly relevant in properties that were not specifically designed to have both residential and commercial uses. Staff does not have concerns with the mix of uses based on the use of the first floor as a florist and gift shop. The property was originally designed as a residential home and this will be reintroducing the residential use. Secondly, the request is in harmony with the intent and vision of the Legacy Plan. Similar to Variations for improvements that are greater than the 50% investment threshold, staff created the following standards when looking at particular properties for expansion or Special Uses.

- The condition of the existing building: The building is in sound condition, particularly for a historically and culturally significant building exceeding 100 years in age. The reuse of the property as mixed-use is expected to keep the property profitable in the future due to the lower tax rate for mixed-use buildings.
- The ownership of the property (owner-occupied): The new property owner will continue to operate florist and gift shop business at this location while renting the apartment out.
- The longevity of the existing non-conforming use: The property owner plans to occupy the first floor of the structure for the foreseeable future. A mixed-use building with commercial and residential uses can remain successful in the future and help to keep the historic structure in stable condition.
- The ability for the property to be converted to function as the permitted use and comply with other Legacy Code redevelopment requirements: While the structure is not entirely residential, the mixed-use design will permit an additional residential unit along Oak Park Avenue and help to promote the viability of the Downtown Core. The historic structure was originally designed as a single-family home and will remain in harmony with the surrounding area. The property otherwise complies with the Legacy Code's exterior requirements for heritage sites. The Special Use Permit does not prevent the first floor from being converted to residential (apartment) in the future and being in compliance with the Legacy Code's use allowances.
- The impact of the continuation of the non-conforming use on the redevelopment potential of the area: The property is located at the end of the block and a mixed-use property will not interfere with the rest of the block's ability to redevelop following the code requirements. The majority of the block has stable commercial uses and not expected to redevelop in the near future.

Based on the above factors, Staff supports a Special Use Permit to permit the commercial Heritage Site to be converted to a mixed-use building and allowing the property to continue to operate under the Heritage Site status.

Open Item #1: Discuss the proposed Special Use Permit to allow the conversion of a standalone commercial heritage site in the Neighborhood General (NG) zoning district to a mixed-use building with a second floor apartment.

② SECOND FLOOR PLAN
1/4" = 1'-0"



② SECOND FLOOR PLAN
1/4" = 1'-0"

SITE PLAN & EXTERIOR SITE IMPROVEMENTS

The exterior of the property is not expected to change with the addition of the second floor apartment unit, and all changes to convert the second floor to an apartment will happen internally to the structure. No exterior architectural or lighting changes are proposed. The landscaping was renovated with the commercial buildout for *An English Garden*. Two new parkway trees were installed along the Oak Park Avenue frontage to comply with the Landscape Code.

The permit for *An English Garden's* ground sign has been approved and is expected to be installed when weather permits. No wall signs are proposed at this time. No signage will be required for the addition of a residential unit, with the exception of a unit number on the door and mailbox, which is permitted by code.

Open Item #2: Discuss the existing site and the need for any additional changes to permit a residential use to be added.



SUMMARY OF OPEN ITEMS

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

1. Open Item #1: Discuss the proposed Special Use Permit to allow the conversion of a standalone commercial heritage site in the Neighborhood General (NG) zoning district to a mixed-use building with a second floor apartment.
2. Discuss the existing site and the need for any additional changes to permit a residential use to be added.

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.

ADDITIONAL LEGACY CODE STANDARDS

In addition to any other specific standards set forth herein the Plan Commission shall not recommend a Special Use, variance, appeal, or map amendment from the regulations of this ordinance unless it shall have made findings of fact, based upon evidence presented to it, in each specific case that:

- a. The proposed improvement meets the Legacy Plan and its Principles, as presented in Section 1.A-B: Purpose and Intent, of this ordinance;
- b. The new improvement is compatible with uses already developed or planned in this district and will not exercise undue detrimental influences upon surrounding properties;
- c. Any improvement meets the architectural standards set forth in the Legacy Code.
- d. The improvement will have the effect of protecting and enhancing the economic development of the Legacy Plan area.

RECOMMENDATION

Following a successful workshop, proceed to a Public Hearing at the January 16, 2020 Plan Commission meeting.

LIST OF REVIEWED PLANS

Submitted Sheet Name		Prepared By	Date On Sheet
	Application and Findings/Standards Responses	KM	10/9/2019
	Plat of Survey	Studnicka	6/26/2019
	Photos of Apartment	KM	N/A
A101	English Garden Plans, Details and Notes	PH	N/A
KM = Kim McAuliffe (Owner) Studnicka = Studnicka and Associates, LTD (Surveyor) PH = Paul C Hardison (Architect)			

OCT 9 2019

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: Mixed-use Building in NG
☐ Planned Unit Development (PUD) ☐ Concept ☐ Preliminary ☐ Final ☐ Deviation
☐ Variation ☐ Residential ☐ Commercial for _____
☐ Annexation
☐ Rezoning (Map Amendment) From _____ to _____
☐ Plat (Subdivision, Consolidation, Public Easement) ☐ Preliminary ☐ Final
☐ Site Plan
☐ Landscape Change Approval
☐ Other: _____

PROJECT & PROPERTY INFORMATION

Project Name: An English Garden - Mixed-use / Apartment
 Project Description: _____
 Project Address: 16800 Oak Park Ave. Property Index No. (PIN): 28-30-107-007-0000
 Zoning District: NG (Neighborhood General) Lot Dimensions & Area: 98.6' x 183' (~18,043 SF)
 Estimated Project Cost: \$ _____

OWNER OF RECORD INFORMATION

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

Name of Owner: Kimberly McAuliffe Company: An English Garden Flowers & Gift
 Street Address: 16800 Oak Park Ave City, State & Zip: Tinley Park IL 60477
 E-Mail Address: Kim@anenglishgarden.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: _____ Company: _____
 Relation To Project: _____
 Street Address: _____ City, State & Zip: _____
 E-Mail Address: _____ Phone Number: _____

VILLAGE OF TINLEY PARK, ILLINOIS
PLANNING AND ZONING GENERAL APPLICATION

Authorized Representative Consent

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

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

Property Owner Signature: _____

Property Owner Name (Print): _____

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: Kim McAuliffe

Property Owner Name (Print): Kim McAuliffe

Applicant Signature:
(If other than Owner) _____

Applicant's Name (Print): _____

Date: 10/7/19

VILLAGE OF TINLEY PARK, ILLINOIS SPECIAL USE ADDENDUM

APPLICATION & SUBMITTAL REQUIREMENTS

A complete application consists of the following items submitted in a comprehensive package. If materials are submitted separately or are incomplete they may not be accepted and may delay the review and hearing dates until a complete application package is received. The following information is being provided in order to assist applicants with the process of requesting a **Special Use** permit from the terms of the Zoning Ordinance (Section 5-B). This information is a summary of the application submittal requirements and may be modified based upon the particular nature and scope of the specific request.

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

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

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

☒ A written project narrative detailing the general nature and specific aspects of the proposal being requested. Details on any employee numbers, parking requirements, property changes, existing uses/tenants, hours of operation or any other business operations should be indicated. Any additional requests such as Site Plan approval or a Variation should be indicated in the narrative as well. *Interior & Entrance Pictures*

☒ A Plat of Survey of the property that is prepared by a registered land surveyor and has all up-to-date structures and property improvements indicated.

☒ Site Plan and/or Interior layout plans that indicate how the property and site will be utilized.

☒ Responses to all Standards for a Special Use on the following page (can be submitted separately along with the narrative, but all standards must be addressed).

☒ \$400 Special Use hearing fee.

STANDARDS AND CRITERIA FOR A SPECIAL USE

Section X.J. of the Village of Tinley Park Zoning Ordinance requires that no Special Use be recommended by the Plan Commission unless the Commission finds that all of the following statements, A-G listed below, are true and supported by facts. Petitioners must respond to and confirm each and every one of the following findings by providing the facts supporting such findings. The statements made on this sheet will be made part of the official public record, will be discussed in detail during the public meetings and will be provided to any interested party requesting a copy. Please provide factual evidence that the proposed Special Use meets the statements below. If additional space is required, you may provide the responses on a separate document or page.

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

Re-zoning the upstairs of our 1868 historic business house will enhance the downtown Tinley Park area by creating a business/home atmosphere

- 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.

mixed use will enhance and be in tune with the downtown Tinley area.

- 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 downtown historic area has many homes with business on 1st floor 2nd floor residential

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

The upstairs is already built out for residential living living room, kitchen, 4 bedrooms, Bathroom with tub.

- 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.

Building already has an entrance & exit on Oak Park Ave.

- 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.

this area is up to the Village Board & Plan Commission

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

to provide a nice safe living experience in a historic home with plenty of Restaurants shopping & Family oriented things to do.



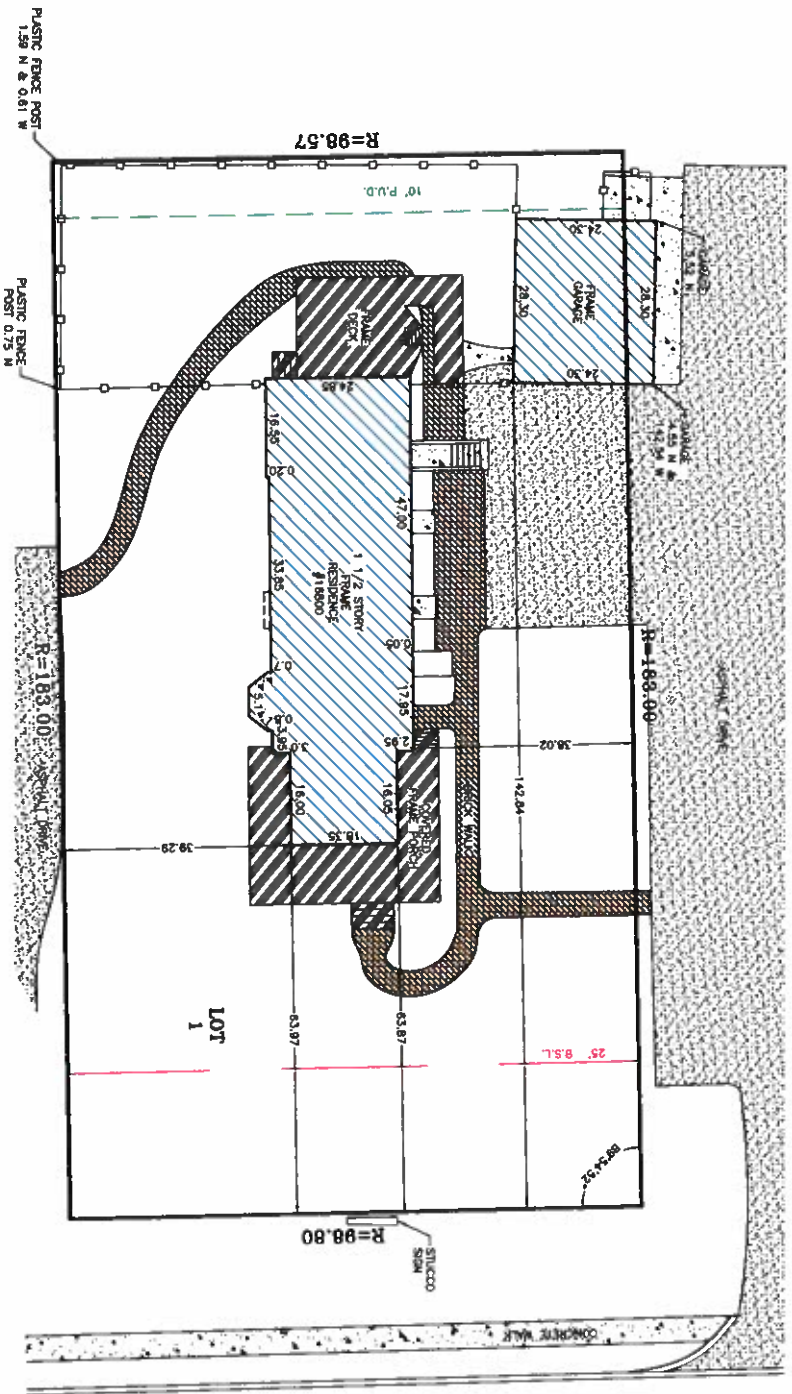
Residential
Commercial
ALTA

Tel. 815 485-0445
Fax 815 485-0528

PLAT OF SURVEY

Studnicka and Associates, Ltd.
studnicka2000@gmail.com

LOT 1 IN BLOCK 6 IN ELMORE'S OAK PARK AVENUE ESTATES, BEING A SUBDIVISION OF THE NORTHWEST FRACTIONAL QUARTER OF SECTION NORTH, RANGE 13, EAST OF THE THIRD PRINCIPAL MERIDIAN, (EXCEPT THAT PART OF THE DRAINAGE DITCH CONVEYED BY DOCUMENT NUM ACCORDING TO THE PLAT THEREOF RECORDED APRIL 25, 1929 AS DOCUMENT 10351098, IN COOK COUNTY, ILLINOIS.





7087074291@vzwplc.com
To anenglishgarden@comcast.net

10/4/2019 9:00 PM



Kitchen



Kitchen



① Bathroom

7087074291@vzwplix.com
To anenglishgarden@comcast.net

10/4/2019 9:01 PM



① Bathroom



Front room / Family room

7087074291@vzwplix.com

10/5/2019 11:27 AM

To anenglishgarden@comcast.net



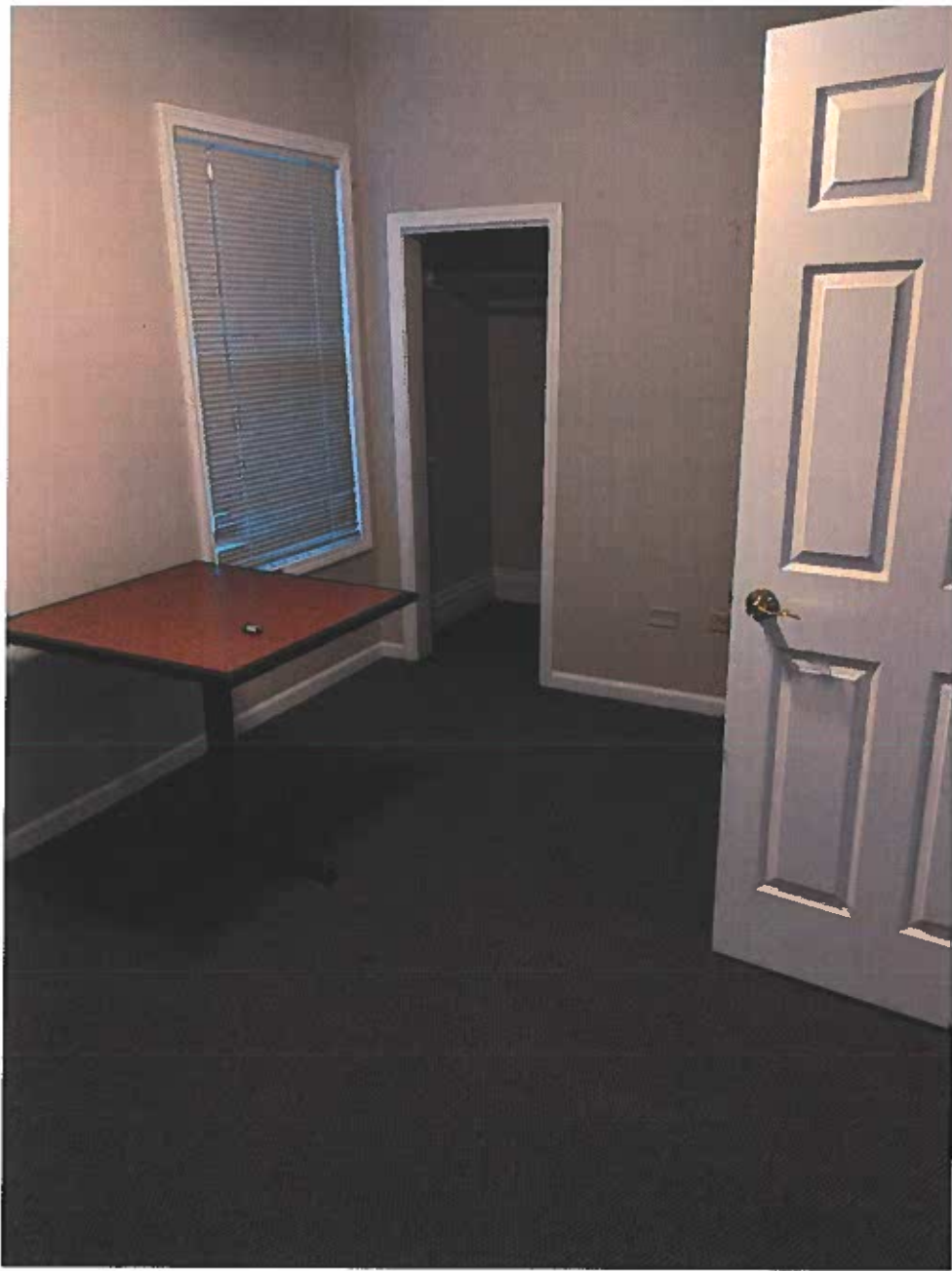
• image000000.jpg (2 MB)

2nd Hallway to
Kitchen
Bathroom
4 Bedrooms



- IMG_20191002_072854.jpg (330 KB)
- IMG_20191002_072848.jpg (329 KB)
- IMG_20191002_072836.jpg (337 KB)
- IMG_20191002_072912.jpg (310 KB)
- IMG_20191002_072903.jpg (337 KB)

1st Hallway to
Kitchen
Bathroom
& Bedrooms



Bedroom 1



Bedroom 2



Bedroom 3



Bedroom 4

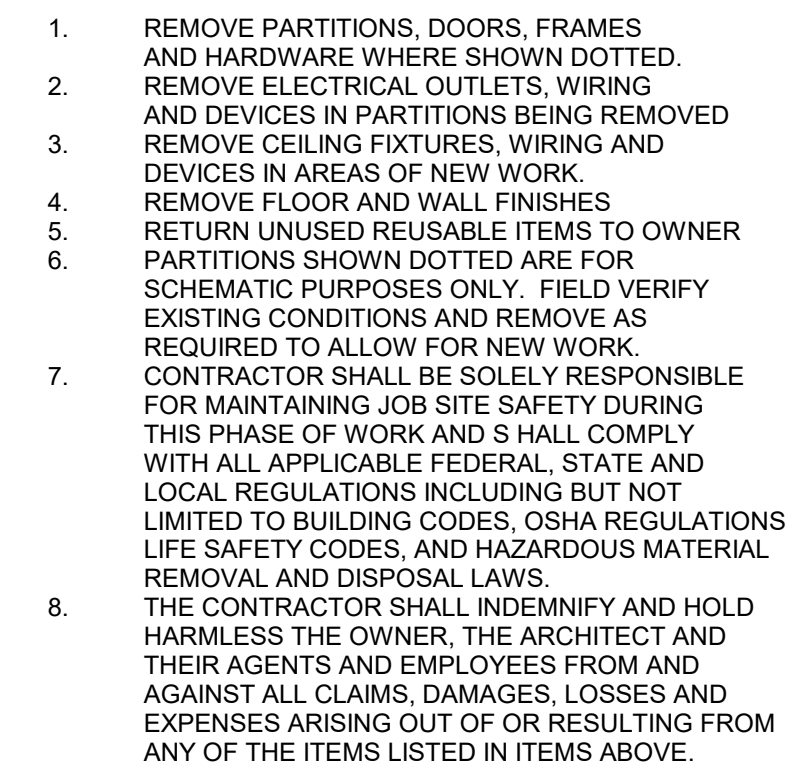
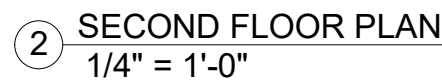
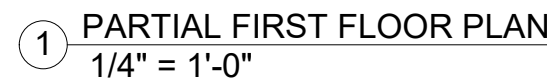


- IMG_20191002_072919.jpg (187 KB)
- IMG_20191002_072937.jpg (216 KB)
- IMG_20191002_072955.jpg (218 KB)
- IMG_20191002_073022.jpg (195 KB)
- IMG_20191002_073010.jpg (219 KB)
- IMG_20191002_073041.jpg (210 KB)
- IMG_20191002_072903.jpg (190 KB)
- IMG_20191002_072801.jpg (195 KB)

front fairway to go up
or go down



2nd stairway to go
up or down

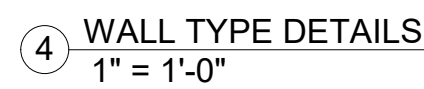


③ $12'' = 1'-0''$

THE FOLLOWING CODES ARE FOLLOWED BY THE VILLAGE OF TINLEY PARK ILLINOIS FOR ALL BUILDING PROJECTS AND WERE USED TO DESIGN THE ADDITION CONTAINED HEREIN.

2012 INTERNATIONAL BUILDING CODE WITH LOCAL AMENDMENTS
2012 INTERNATIONAL MECHANICAL CODE WITH LOCAL AMENDMENTS
2014 NATIONAL ELECTRICAL CODE (NFPA 70)
STATE OF ILLINOIS PLUMBING CODE 2014 EDITION
2012 PROPERTY MAINTENANCE CODE WITH LOCAL AMENDMENTS
2012 INTERNATIONAL FUEL GAS CODE
2015 INTERNATIONAL ENERGY CONSERVATION CODE

① $12'' = 1'-0''$



CERTIFICATION:
I HEREBY CERTIFY THAT THESE DRAWINGS
HAVE BEEN PREPARED UNDER MY DIRECT
SUPERVISION, AND WHEN THE WORK IS DONE
IN ACCORDANCE WITH THEM, IT WILL, TO THE
BEST OF MY KNOWLEDGE AND BELIEF,
COMPLY WITH ALL APPLICABLE VILLAGE OF
TINLEY PARK CODES, ORDINANCES AND THE
LAWS OF THE STATE OF ILLINOIS.

12" = 1'-0"

1. ALL WORK SHALL COMPLY WITH STATE, FEDERAL AND LOCAL CODES AND ORDINANCES, AND SHALL BE PERFORMED TO THE HIGHEST STANDARDS OF CRAFTSMANSHIP BY JOURNEMEN OF THE RESPECTIVE TRADE.
2. THE CONTRACTOR SHALL PROTECT ALL EXISTING PROPERTIES AND SHOULD DAMAGE OCCUR, SHALL REPAIR AND PAY FOR ALL WORK.
3. THE CONTRACTOR SHALL MAINTAIN THE SITE CLEAR OF ALL TRASH AND DEBRIS.
4. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME TOTALLY FAMILIAR WITH ALL CONDITIONS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS WITH THOSE AT THE SITE.
5. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO PERFORM ALL WORK SHOWN AS SPECIFIED, AND IS REQUIRED TO COMPLETE THE WORK. INSURANCE REQUIREMENTS WILL BE DETERMINED BY THE OWNER PRIOR TO THE START OF CONSTRUCTION. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS FOR THE PERIOD OF ONE (1) YEAR.
6. THE CONTRACTOR SHALL PROVIDE WAIVERS OF LEIN FROM ALL MAJOR MATERIAL SUPPLIERS AND PRIOR TO SUB-CONTRACTOR PAYMENTS WILL NOT BE MADE WITHOUT SUBSTANTIATING BACK-UP WAIVERS.
7. CONTRACTORS SHALL PROVIDE THE OWNER WITH A LIST OF ALL SUB-CONTRACTORS.
8. THESE DOCUMENTS DO NOT INCLUDE THE NECESSARY EQUIPMENT FOR CONSTRUCTION SAFETY, SAFETY AND CARE OF ADJACENT PROPERTIES DURING CONSTRUCTION, AND COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS REGARDING SAFETY IS AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
9. THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE DRAWINGS WITH EACH OTHER AND WITH SITE CONDITIONS AND REPORT ANY ERROR, DISCREPANCY OR OMISSION TO THE ARCHITECT. OBTAIN ANY NECESSARY CLARIFICATIONS FROM THE ARCHITECT BEFORE PROCEEDING WITH WORK.
10. THE ARCHITECT WILL NOT HAVE CONTROL OVER OR CHARGE OF AND WILL NOT BE RESPONSIBLE FOR CONSTRUCTION METHODS, METHODS, TECHNIQUES, SEQUENCES OF PROCEDURES, OR FOR COORDINATION OF THE WORK. IF THE WORK DOES NOT SCALE THE DRAWINGS, SHOULD AN INCONSISTENCY IN DIMENSIONING BECOME APPARENT, CONTACT THE ARCHITECT FOR CLARIFICATION.
11. ALL LUMBER TO HEMLOCK (F = 1,000 PSI) (SINGLE USE) F_b = 1,500 P.S.I. (REPETITIVE USE) E = 1,400,000 UNLESS NOTED OTHERWISE.
12. ALL LUMBER TO BE FIRE RETARDANT TREATED.

⑤ $12'' = 1'-0''$

PLANS, DETAILS AND NOTES

En English Garden Apartment

16800 Oak Park Ave.
Tinley Park, IL



DATE:	Issue Date
SCALE:	As indicated
CHECKED BY:	
DRAWN BY:	Author
JOB NO:	2019-0009

PLAN COMMISSION STAFF REPORT

January 2, 2020 – Public Hearing

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.

Changes to the December 19, 2019 Plan Commission Workshop Staff Report are indicated in red.

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).~~

Petitioner has indicated they agree to demolish the vacant and deteriorating homes and that it is in their purchase contract for their project.

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).



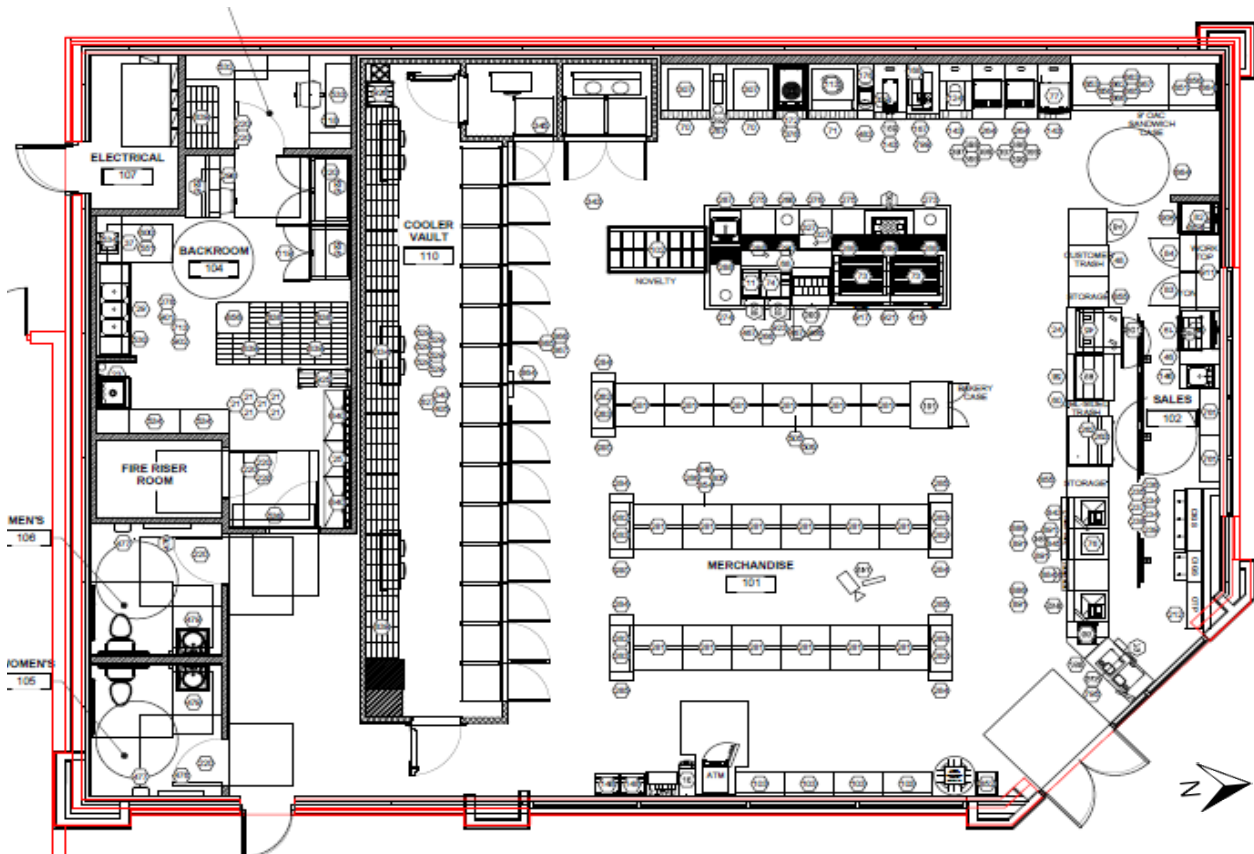
PROPOSED USE

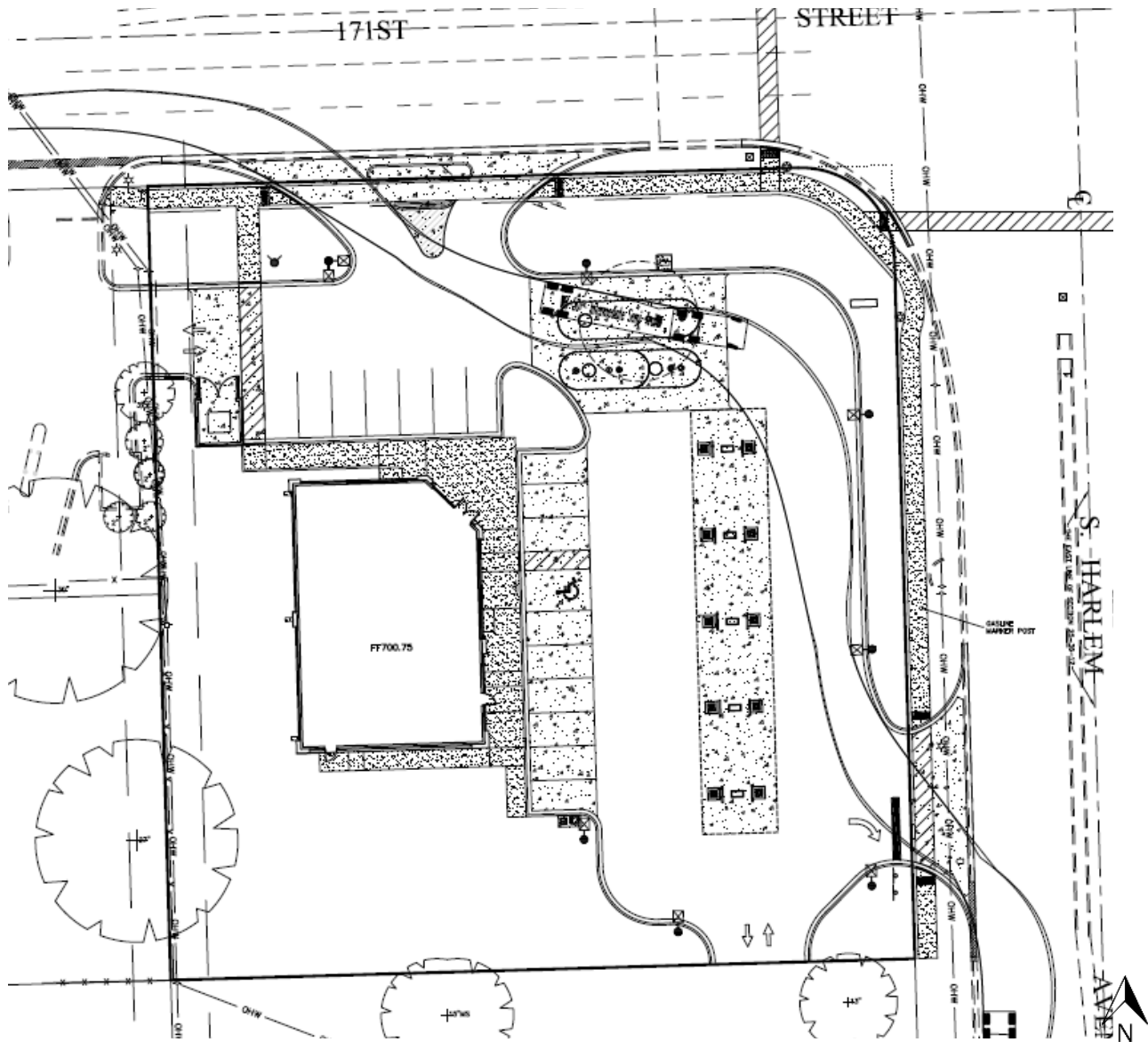
The proposed gas station site includes fueling stations for ten vehicles. There will be a 3,511 sq. ft. convenience store building that sells vehicle fuel and typical retail items (food, drinks, snacks, tobacco, etc.) There will not be any truck fueling available at this location.

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.

NEW CORPORATE 7-ELEVEN PROTOTYPE (INTERIOR)





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 3 US 33 SH	-2 CT - +9 SH
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 15 SH	- - +1 SH
West (bottom) ("D" Bufferyard)	30'	30'	82'	6 CT 3 US 23 SH	5 CT 2 US 23 SH	-1 CT -1 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 from 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.

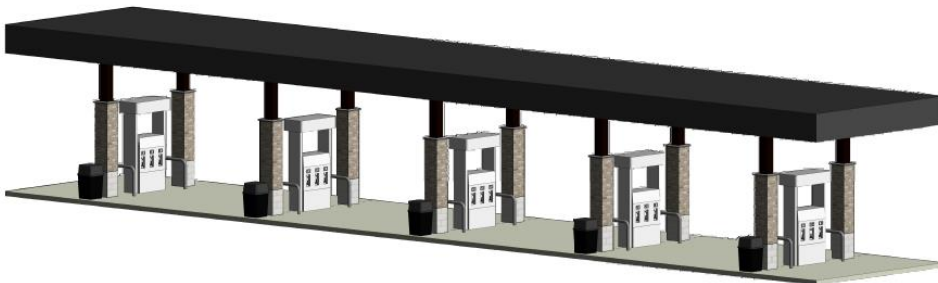
~~Open Item #5: Revise plans to indicate that the fence between the subject site and residential properties to the west matches the existing bank's fence in height (eight feet), color (taupe/beige) and style (PVC privacy).~~

The north and west bufferyards were revised to better meet the Landscape Code's requirements. The revised waivers are listed in the table above. The Petitioner agreed to utilize a minimum tree caliber of 4-inches at installation to help offset some of the deficiencies and ensure a buffer is established quickly. They also agreed to revise the fence height to 8 feet and to match the existing bank. These two changes (tree caliber and fencing) were made in the plan details, but there are also some contradicting notes left on the plans due to the quick resubmittal timeframe. To clarify, the requirements were added as recommended conditions of Site Plan Approval and will be revised prior to permitting. The Plan Commission did not have concerns at the Workshop in regards to the interior landscaping and parkway tree waivers due to the limited space on the site and auto-oriented use. The proposed landscaping is expected to meet or exceed the neighboring commercial properties.

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.

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

Page 8 of 20

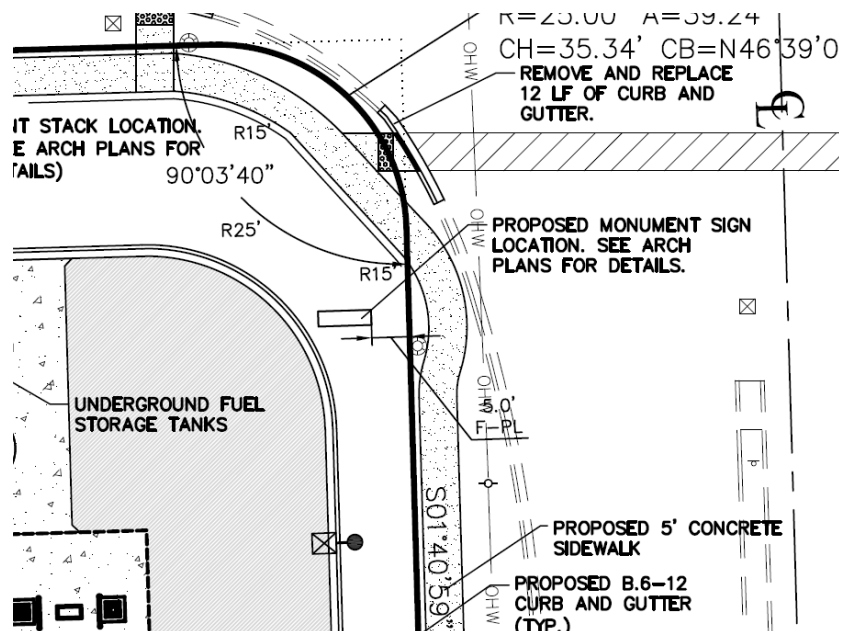


SIGNAGE

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.

The Plan Commission did not have concerns about the parking supply on the site due to the experiences with other locations and the expected quick turnover of customers. The Commission did request a review of the traffic analysis findings by the Petitioner's traffic consultant (KLOA) at the Public Hearing.

~~**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.**~~

Lighting appeared to be placed approximately to avoid off-site light spillage and glare.

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.~~

The Final Plat of Subdivision was revised with the appropriate public sidewalk easements in place. Staff has not further concerns.

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 has provided the following draft Findings for the Commission’s review.

- a. The existing uses and zoning of nearby property;
 - *The area is in a transition from residential to commercial uses. The surrounding areas and other corners of the intersection are all commercial zoning districts (B-4 and B-3). The area south of the subject property has similar infill/redevelopment properties that have been rezoned to similar low-intensity commercial districts (B-1 and B-4) upon their redevelopment.*
- b. The extent to which property values are diminished by the particular zoning;
 - *The area along Harlem Avenue transitioning from residential to commercial uses and is indicated as commercial/office in the Village’s Comprehensive Plan. The development of the vacant properties will not diminish property values.*
- c. The extent to which the destruction of property values of the complaining party benefits the health, safety, or general welfare of the public;
 - *No negative effects on property values are expected. The 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 and convenience for residents and visitors.*
- d. The relative gain to the public as compared to the hardship imposed on the individual property owner;
 - *No hardship is expected from neighboring properties due to the landscape and fence buffering provided. Lighting, dumpster locations, and overall site design was designed to avoid any issues with the neighboring residential properties. The 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 and convenience for residents and visitors.*
- e. The suitability of the property for the zoned purpose;
 - *The proposed use as a convenience store and gas station is suitable for the subject property due to the availability of high traffic volumes and available access points.*
- f. The length of time the property has been vacant as zoned, compared to development in the vicinity of the property;
 - *The existing R-1 zoning house has remained vacant for 4-5 years and is not expected to be suitable for residential use. The B-4 zoned parcel had a vacant office building on it from 2014-2016 and has been vacant since the building’s demolition in 2016.*
- g. The public need for the proposed use; and
 - *There is a demand for additional automotive service (gas) stations and convenience stores in the area. Competition is limited at the two nearest gas stations (Shell and Speedway).*
- h. The thoroughness with which the municipality has planned and zoned its land use.
 - *The property is shown as a Commercial/Office use in the Comprehensive Plan. The rezoning as a B-1, Neighborhood Shopping zoning district limits the ability for non-desirable uses to be located adjacent to residential properties.*

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 has provided the following draft Findings for the Commission's review.

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;
 - *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 is among the highest and best uses of a parcel at a heavily traveled intersection.*
- 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 will have an eight-foot fence to buffer the property from the residential homes to the west. The building will be constructed with quality materials. This proposed use is similar and compatible with existing nearby uses along Harlem Avenue.*
- 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 have been supplied to the west and cross-access has been supplied for the vacant lots 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, roads, and drainage facilities and any necessary modifications to be accommodated on the 7-Eleven site. Drainage has been accounted for on the site and utilizes the existing storm sewer system. All on-site and accepted existing off-site drainage has been accounted for within the plans.*
- 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 Harlem Avenue and 171st Street 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 bank property. Cross-access is also supplied to the vacant lots 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 Zoning Ordinance and Village regulations except for certain Variations applied herein related to the redevelopment of an existing infill site. These Variations are consistent with other properties within along Harlem Avenue 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 7-Eleven 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.*

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 has provided the following draft Findings of the Statutorily required Standards for the Commission's review.

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.
 - *The property is an infill site with limited ability to expand its size, dimensions, and setbacks. The overall area on the west side of Harlem Avenue will eventually meet the intent of the Zoning Code's minimum lot requirements upon its full redevelopment. The Variations allow the fairly small and limited sized lot to be reasonably developed with a commercial use.*
2. The plight of the owner is due to unique circumstances.
 - *The small properties offer a challenging situation for redevelopment as they were originally residential lots. Residential uses on the lots are no longer preferred or marketable along the heavily traveled Harlem Avenue commercial corridor.*
3. The Variation, if granted, will not alter the essential character of the locality.
 - *The lot Variations will be similar to other properties that have redeveloped along Harlem Avenue in regards to the lot size and sign setbacks. The drive aisle width is a standard width in many other municipalities and is not expected to be noticeable.*
4. Additionally, the Plan Commission shall also, in making its determination whether there are practical difficulties or particular hardships, take into consideration the extent to which the following facts favorable to the Petitioner have been established by the evidence:

- a. The particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship upon the owner, as distinguished from a mere inconvenience, if the strict letter of the regulations were carried out;
- b. The conditions upon which the petition for a Variation is based would not be applicable, generally, to other property within the same zoning classification;
- c. The purpose of the Variation is not based exclusively upon a desire to make more money out of the property;
- d. The alleged difficulty or hardship has not been created by the owner of the property, or by a previous owner;
- e. The granting of the Variation will not be detrimental to the public welfare or injurious to other property or improvements in the neighborhood in which the property is located; and
- f. The proposed Variation will not impair an adequate supply of light and air to an adjacent property, or substantially increase the congestion in the public streets, or increase the danger of fire, or endanger the public safety, or substantially diminish or impair property values within the neighborhood.

STANDARDS FOR SITE PLAN APPROVAL

Section III.T.2. of the Zoning Ordinance requires that Planning Staff must find that the conditions listed below must be met prior to presenting the proposal to the Plan Commission. The Standards are listed below for the Commission's consideration for reviewing the site plan as well.

- 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.

MOTIONS TO CONSIDER

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

Motion 1 (Site Plan):

"...make a motion to grant the Petitioner, Vequity LLC, Site Plan Approval to construct an automobile service (gas) station and a 3,511 sq. ft. 7-Eleven convenience store building at 17100 Harlem Avenue in the B-1 (Neighborhood Shopping) Zoning District, in accordance with the plans submitted and listed herein and subject to the following conditions:

- 1. The two vacant single-family homes to the south of the subject property (17118 & 17130 Harlem Avenue) owned by the same property owner shall be demolished as proposed by the Petitioner.*
- 2. The proposed fence shall be a minimum of 8 feet in height and match the existing fence on the neighboring bank property (7231 171st Street) in height, color, and style.*
- 3. All Canopy Trees on the site shall be installed at a minimum of 4" trunk caliper.*
- 4. Site Plan Approval is subject to approval of the Rezoning, Special Use, and Variations by the Village Board.*
- 5. Site Plan Approval is subject to final engineering plan review and approval."*

[any conditions that the Commission would like to add]

Motion 2 (Rezoning):

"...make a motion to recommend that the Village Board grant the Petitioner, Vequity LLC, a rezoning of the properties located at 17100 and 17110 Harlem Avenue from their existing B-4 (Office and Service Business) and R-1 (Single-Family Residential) zoning districts to the B-1 (Neighborhood Shopping) zoning district and adopt the Findings of Fact submitted by the applicant and as proposed by Village Staff in the Staff Report."

Motion 3 (Variations):

"...make a motion to recommend that the Village Board grant the following Variations to the Petitioner, Vequity LLC, at the property located at 17100 Harlem Avenue in the B-1 (Neighborhood Shopping) 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.

- 1. A five foot Variation from Section IX-D-2-c. to permit a freestanding sign to be located five feet from the property instead of the required minimum of ten feet.*
- 2. A two foot Variation from Section VIII-C-Table 2 (Parking Lot Dimension Guidelines) to permit a 24 foot wide two-way drive aisle instead of the required 26 foot minimum.*
- 3. A 3.039 sq. ft. Variation from Section V-B-Schedule II (Schedule of District Requirements) to permit a lot size of .961 acres, instead of the required minimum of 4 acres.*
- 4. A 413.47 foot Variation from Section V-B-Schedule II (Schedule of District Requirements) to permit a lot width of 186.53 feet instead of the required minimum of 600 feet.*
- 5. A 51.48 foot Variation from Section V-B-Schedule II (Schedule of District Requirements) to permit a lot depth of 198.52 feet instead of the required minimum of 250 feet.*

[any conditions that the Commissioners would like to add]

Motion 4 (Special Use):

“...make a motion to recommend that the Village Board grant a Special Use Permit to the Petitioner, Vequity LLC, to permit an automobile service (gas) station and a 3,511 sq. ft. convenience store on the property located at 17100 Harlem Avenue in the B-1 (Neighborhood Shopping) 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.

[any conditions that the Commission would like to add]

Motion 5 (Final Plat):

“...make a motion to recommend that the Village Board grant approval to the Petitioner, Vequity LLC, Final Plat of Subdivision Approval for Southlands First Consolidation 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 Plan approval by the Village Engineer.”*

[any conditions that the Commissioners would like to add]

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 <i>(Revised)</i>	Watermark	12/27/19
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 <i>(Revised)</i>	Compass	12/27/19
	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 Owner: Mohammad Alzoubi Company: EMARR Properties
Street Address: _____ City, State & Zip: _____
E-Mail Address: malzoubi@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: 400 N. State St. suite 400 City, State & Zip: Chicago, IL 60654
E-Mail Address: K.WARD@VEQUITY.COM Phone Number: _____

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, proposed improvements, special conditions attached to recommendations among other aspects of any formal request. The representative present must have knowledge of the property and all aspects of the project. They must have the authority to make commitments related to the project and property. Failure to have the property owner or designated representative present at the public meeting can lead to substantial delays to the project approval. If the owner cannot be present or does not wish to speak at the public meeting, the following statement must be signed by the owner for an authorized representative.

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

Property Owner Signature: _____

Property Owner Name (Print): Emcar 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: _____

Property Owner Name (Print): Emcar Properties LLC

Applicant Signature:
(if other than Owner) _____

Applicant's Name (Print): NIM 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): [REDACTED]
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 Ghorl
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: [REDACTED]
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: [REDACTED]
Email: b-perry@watermark-engineering.com

ATTORNEY

Name: John Morse
Company: PFS
Address: 200 S. Wacker Drive, Suite 2700, Chicago, IL
Phone: [REDACTED]
Fax: [REDACTED]
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. The 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.***

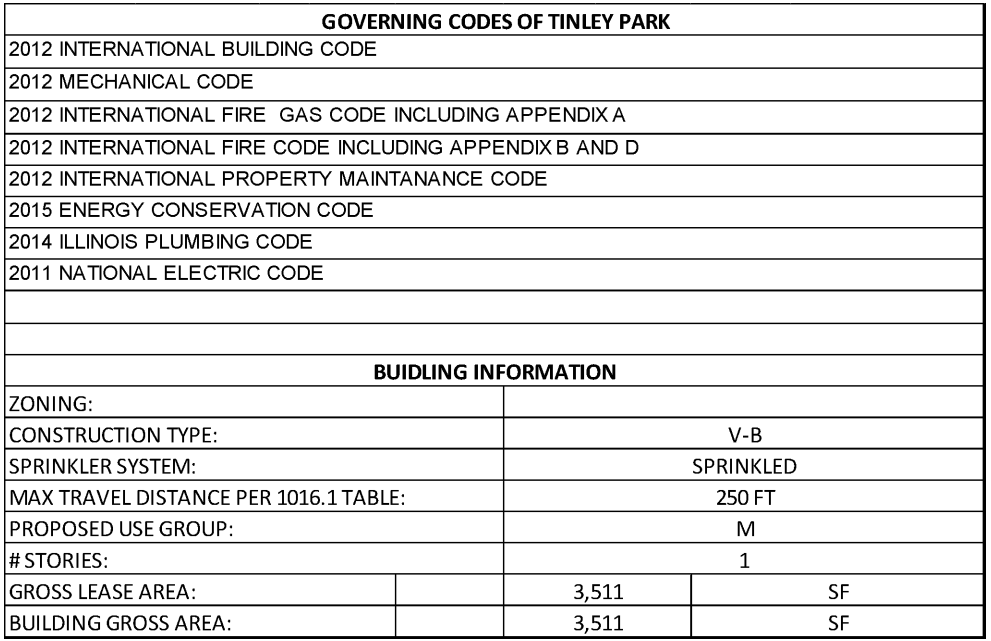
The petitioner has reached out and received feedback from IDOT and CCDOT which the petitioner has already built into the site plan that has been submitted for Special Use approval to ensure that the site plan meets or exceeds all ingress and egress requirements to minimize traffic and congestion to the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



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'			Varianc 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	
STALL :	90 Degree				
ADA STALL:	9'X18.5'				
DRIVE AISLE:	11' & 5'				
	26'	ONE WAY			
		TWO WAY			
ADA PARKING SPACES :			50%	REQUIRED	PROVIDED
				1	1
LOADING BERTH:					
BIKE PARKING :					
STACKING PARKING:					

- 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 REMOVE ALL 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. REPAIR PAVED DRIVEWAYS IN CONCRETE PAVED AREAS AS REQUIRED BY MFG SPEC'S, 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

FIRE DEPARTMENT CONNECTION

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

The site plan shows a building footprint with a total width of 32 feet. The building is divided into three sections with widths of 4 feet, 8 feet, and 16 feet. There are two parking spaces, each 8 feet wide, located on the right side of the building. The total length of the site is 32 feet.

CLIENT: **vequity** | real estate. redefined

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

PROJECT TEAM:



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
© COPYRIGHT 2017 ILEKIS ASSOCIATES-ALL RIGHTS RESERVED

NOTE:

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

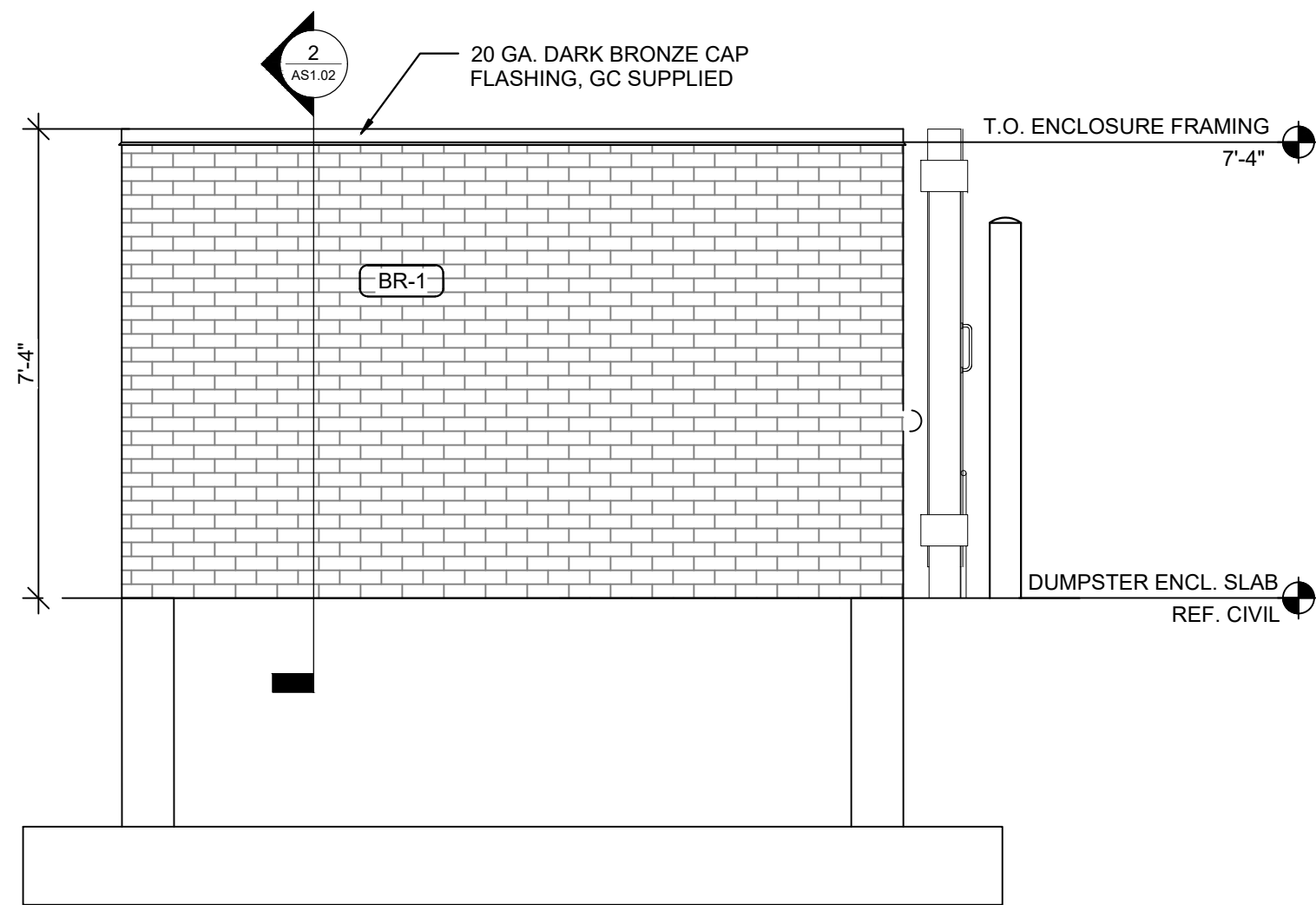
THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST OF MY KNOWLEDGE, COMPLY WITH THE ALL APPLICABLE CODES.

COPYRIGHT 2017 ILEKIS ASSOCIATES, ALL RIGHTS RESERVED

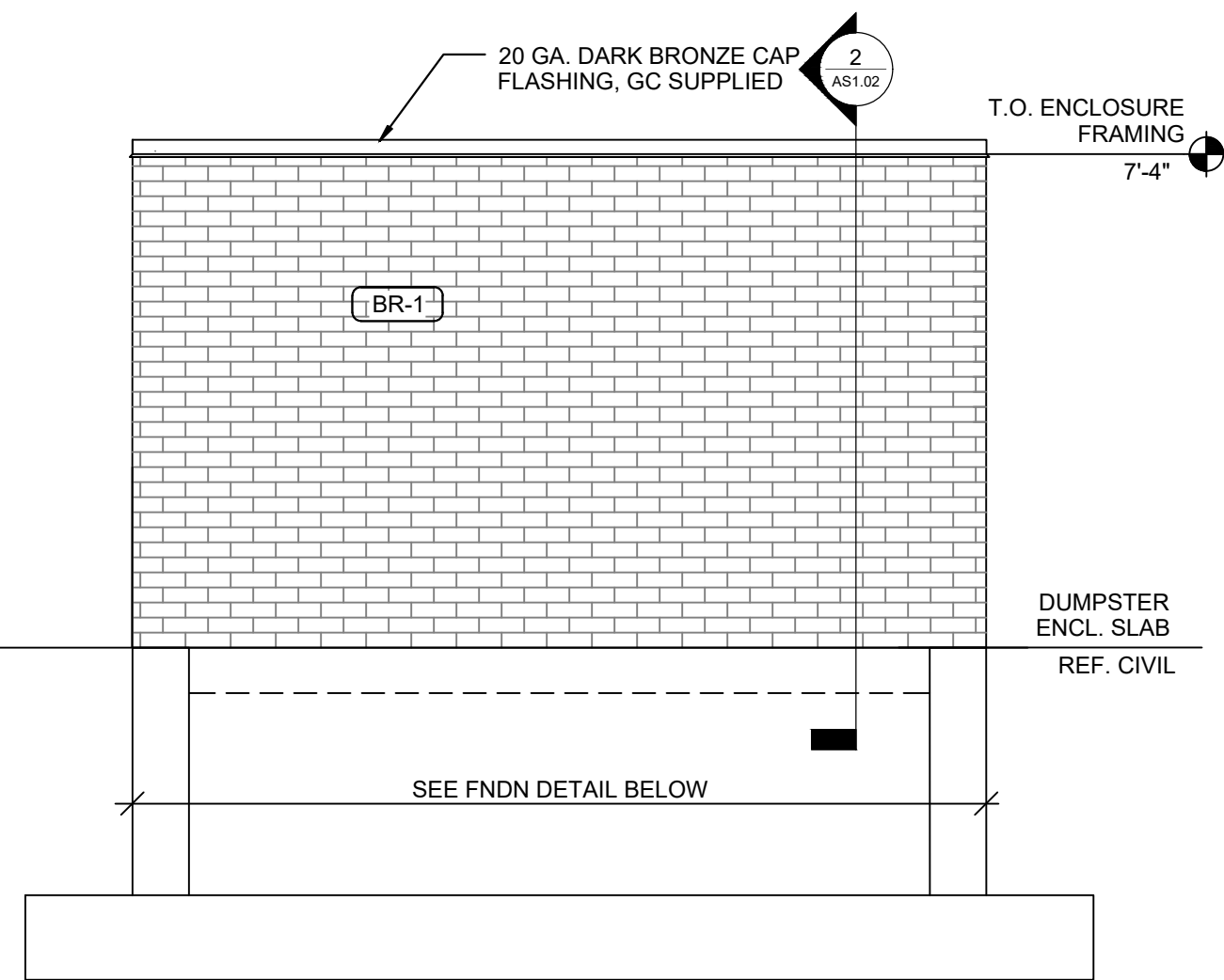
DATE:	ISSUED FOR:
11/22/19	ISSUED FOR CITY REVIEW
09/09/19	ISSUED FOR CITY REVIEW
08/22/19	ISSUED PER CITY COMMENTS
07/15/19	ISSUED FOR CITY REVIEW

SITE PLAN

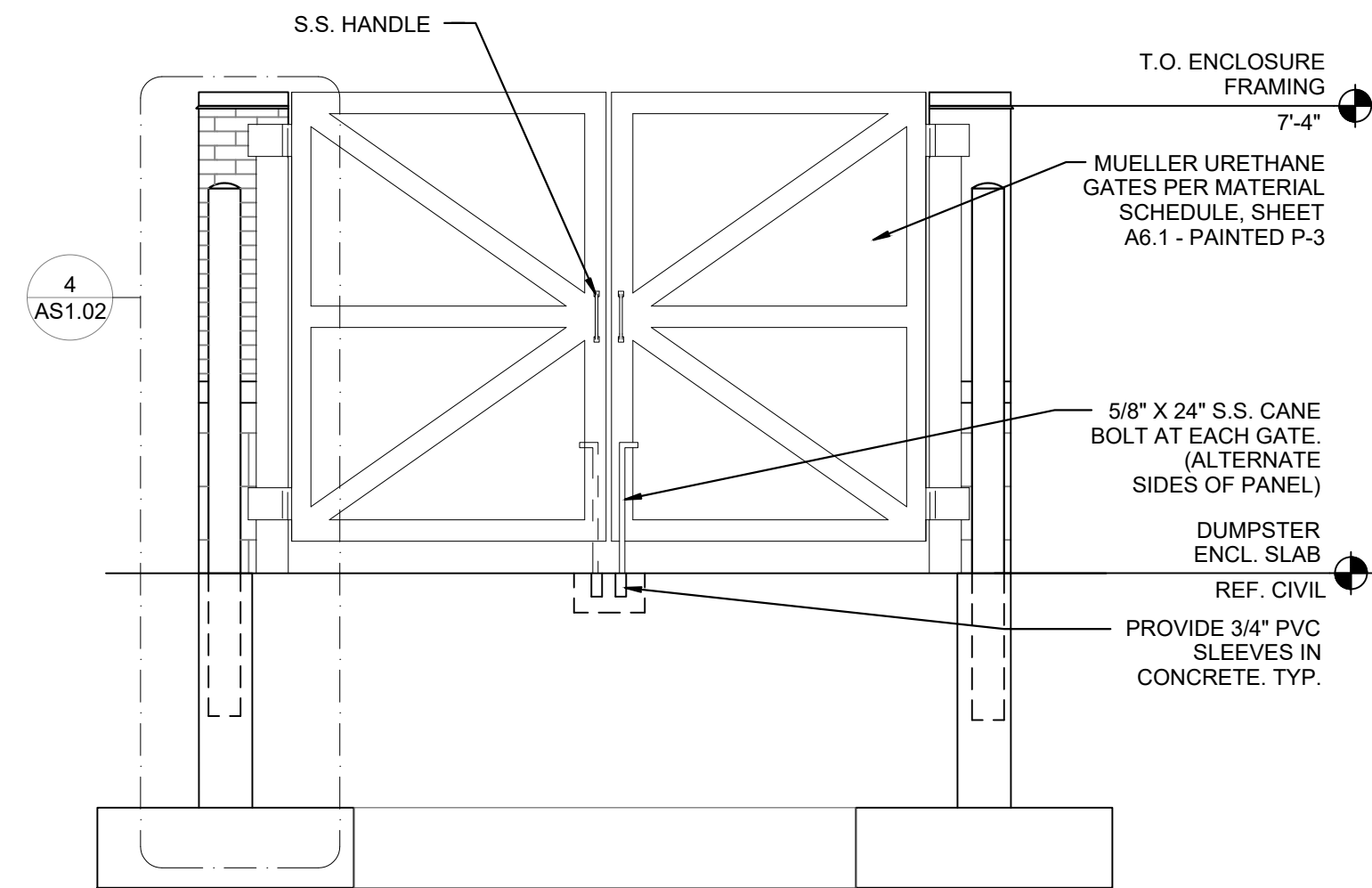
AS1.01



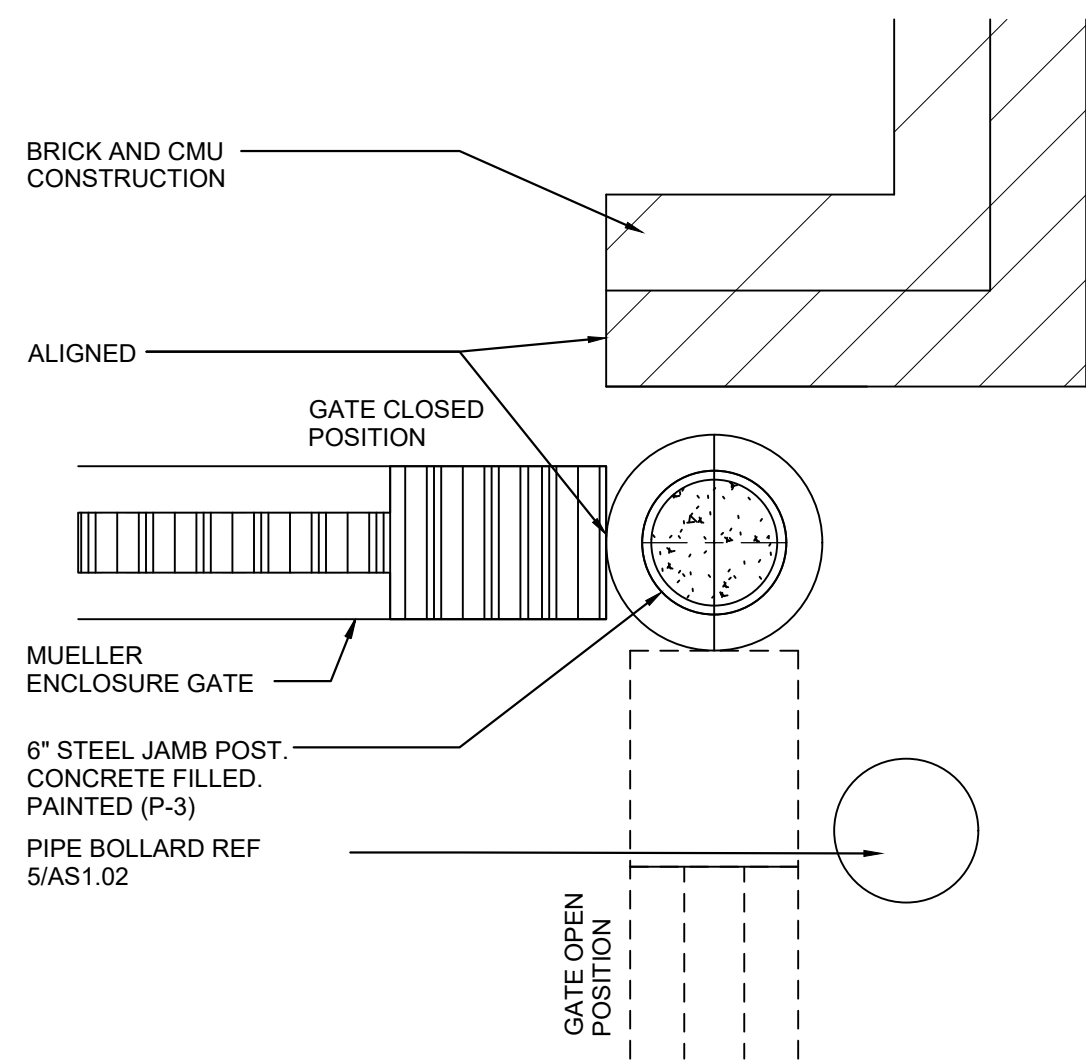
10 SIDE DUMPSTER ENCL. ELEVATION
3/8" = 1'-0"



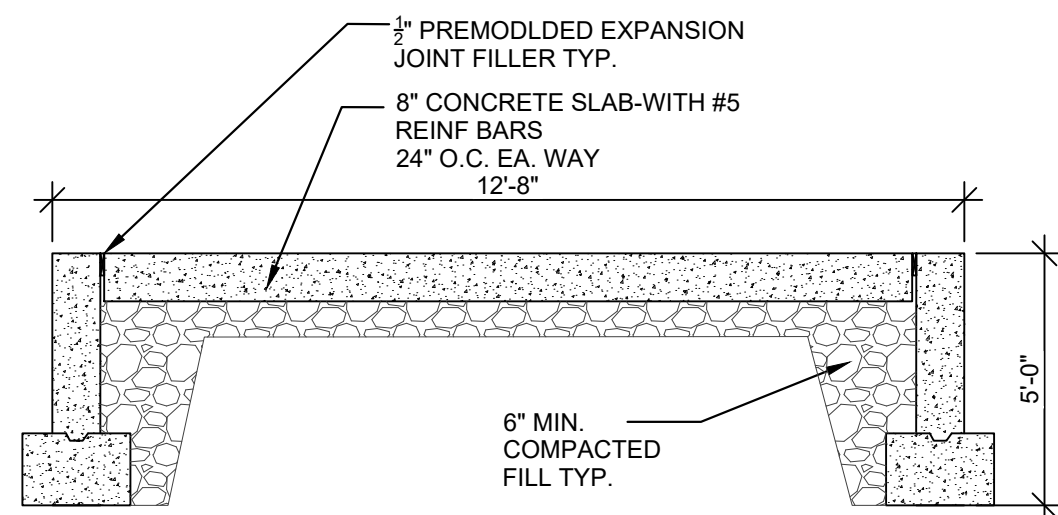
9 REAR DUMPSTER ENCL. ELEVATION
3/8" = 1'-0"



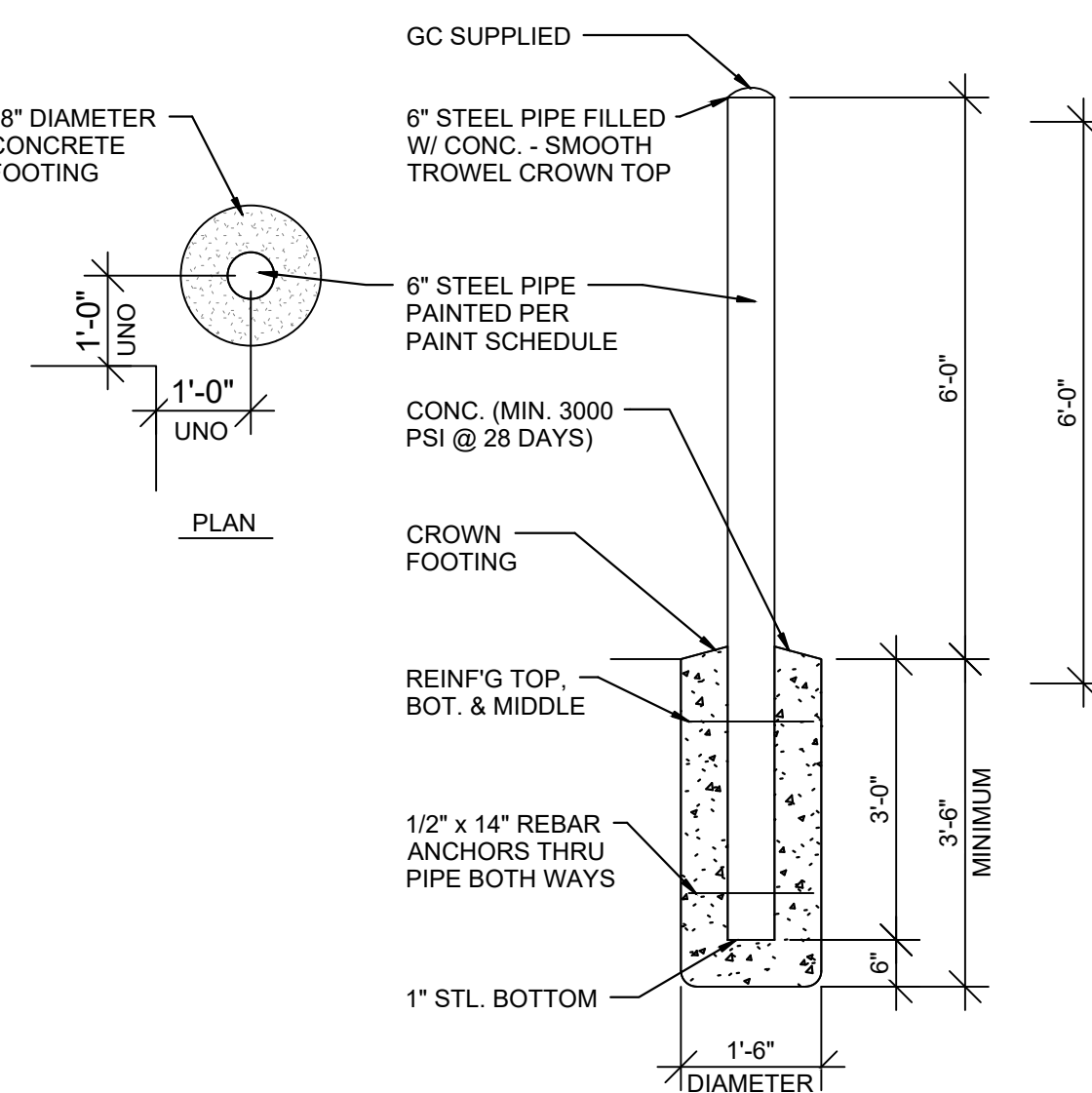
8 FRONT DUMPSTER ENCL. ELEVATION
3/8" = 1'-0"



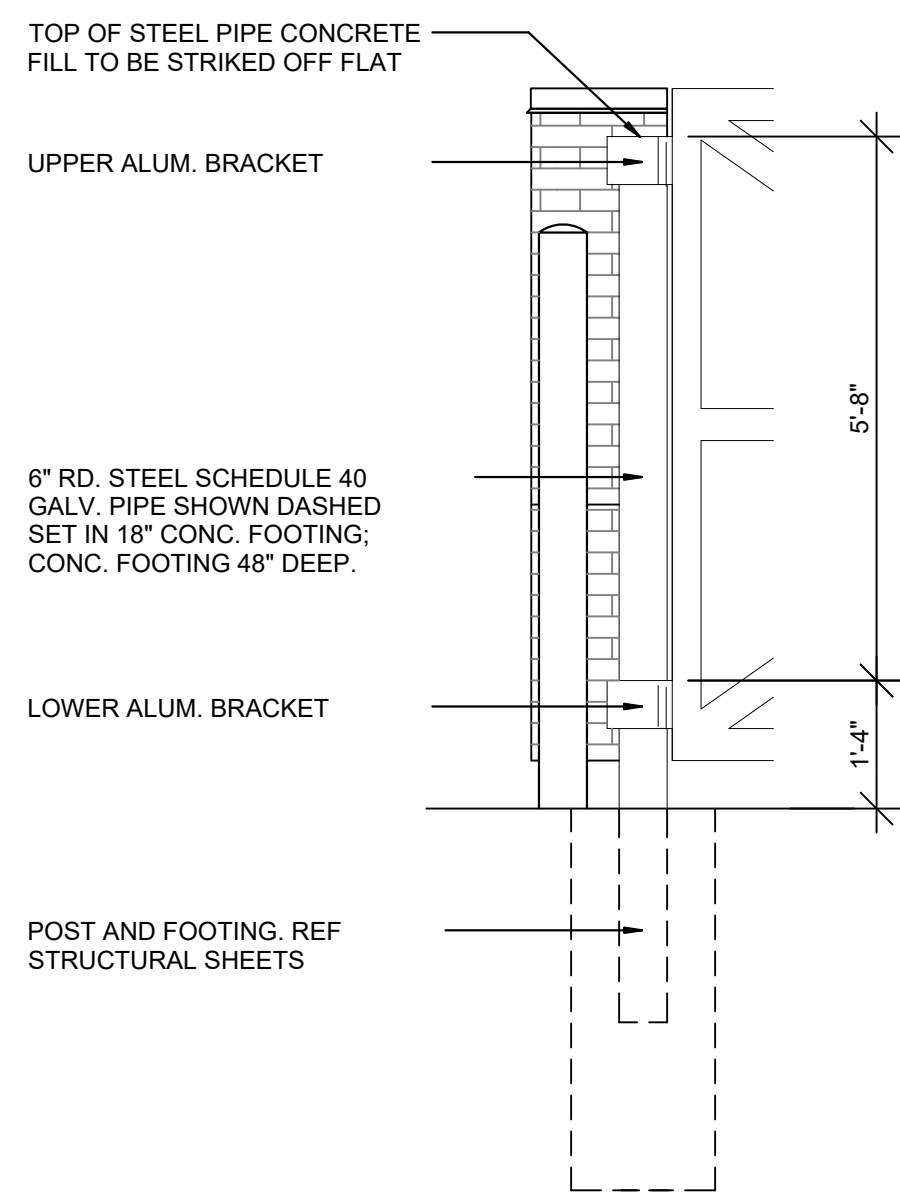
7 DETAIL - GATE
1 1/2" = 1'-0"



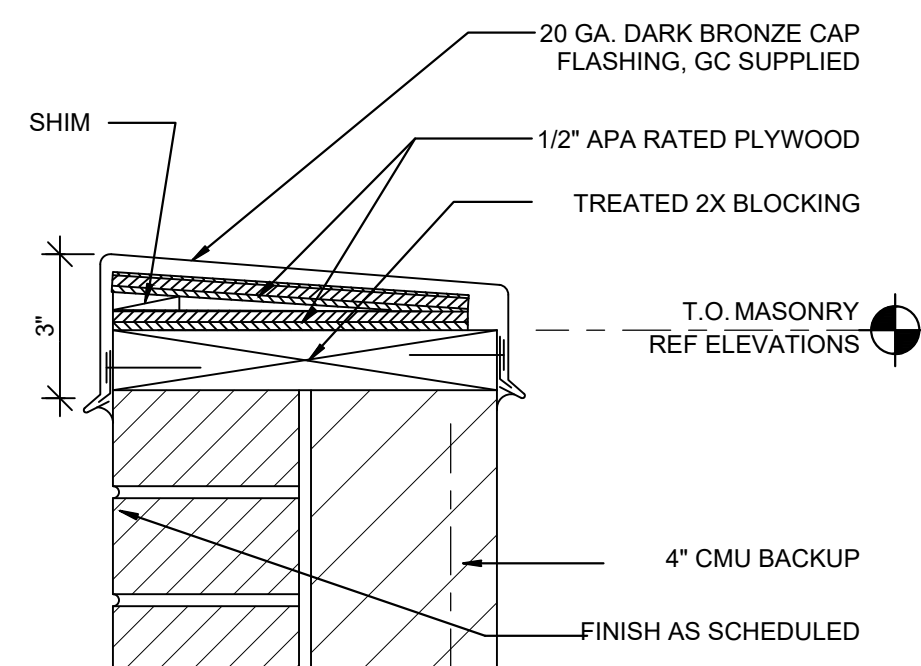
6 DUMPSTER ENCL. FOUNDATION SECTION
3/8" = 1'-0"



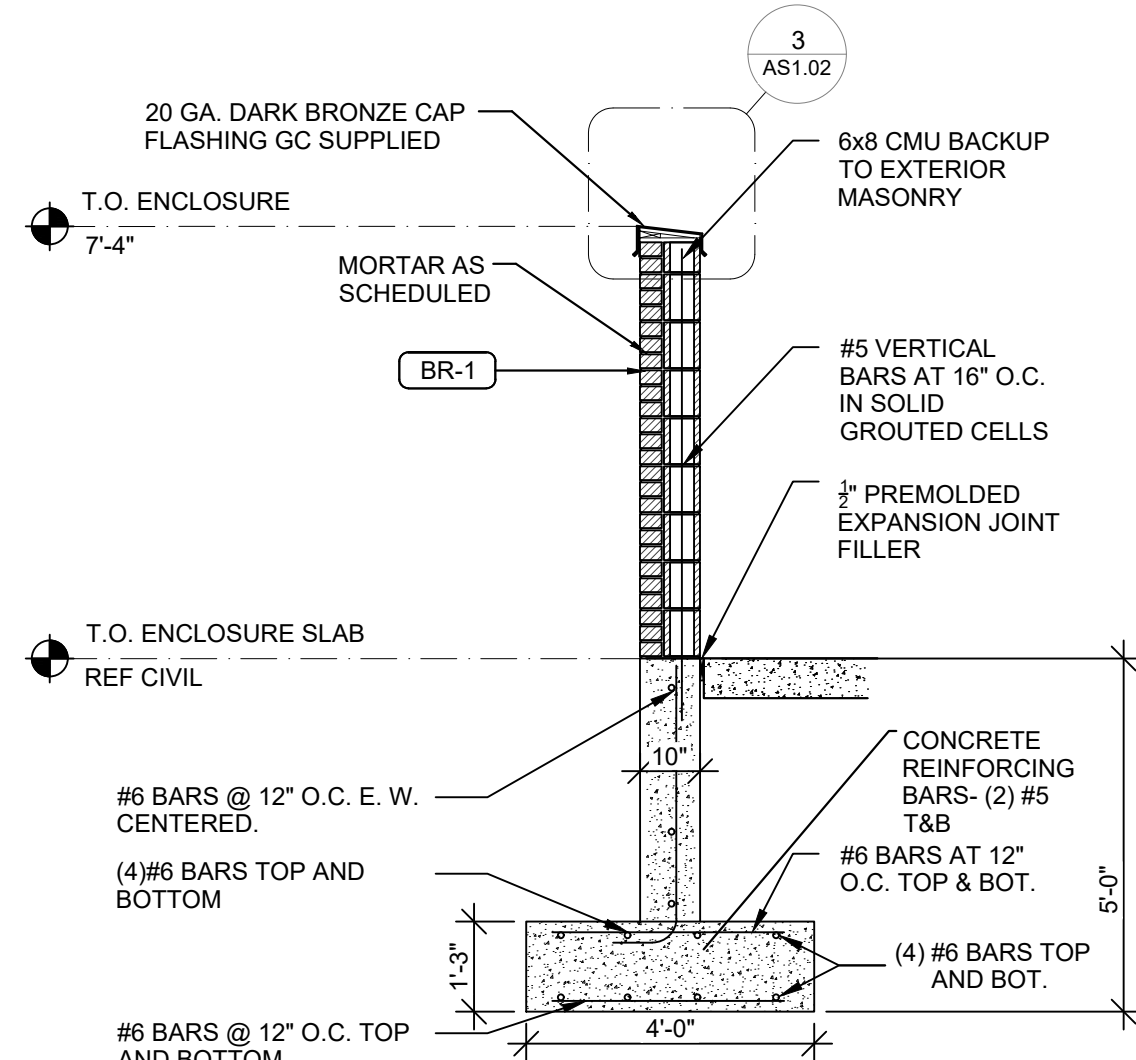
5 TYPICAL BOLLARD SECTION
1/2" = 1'-0"



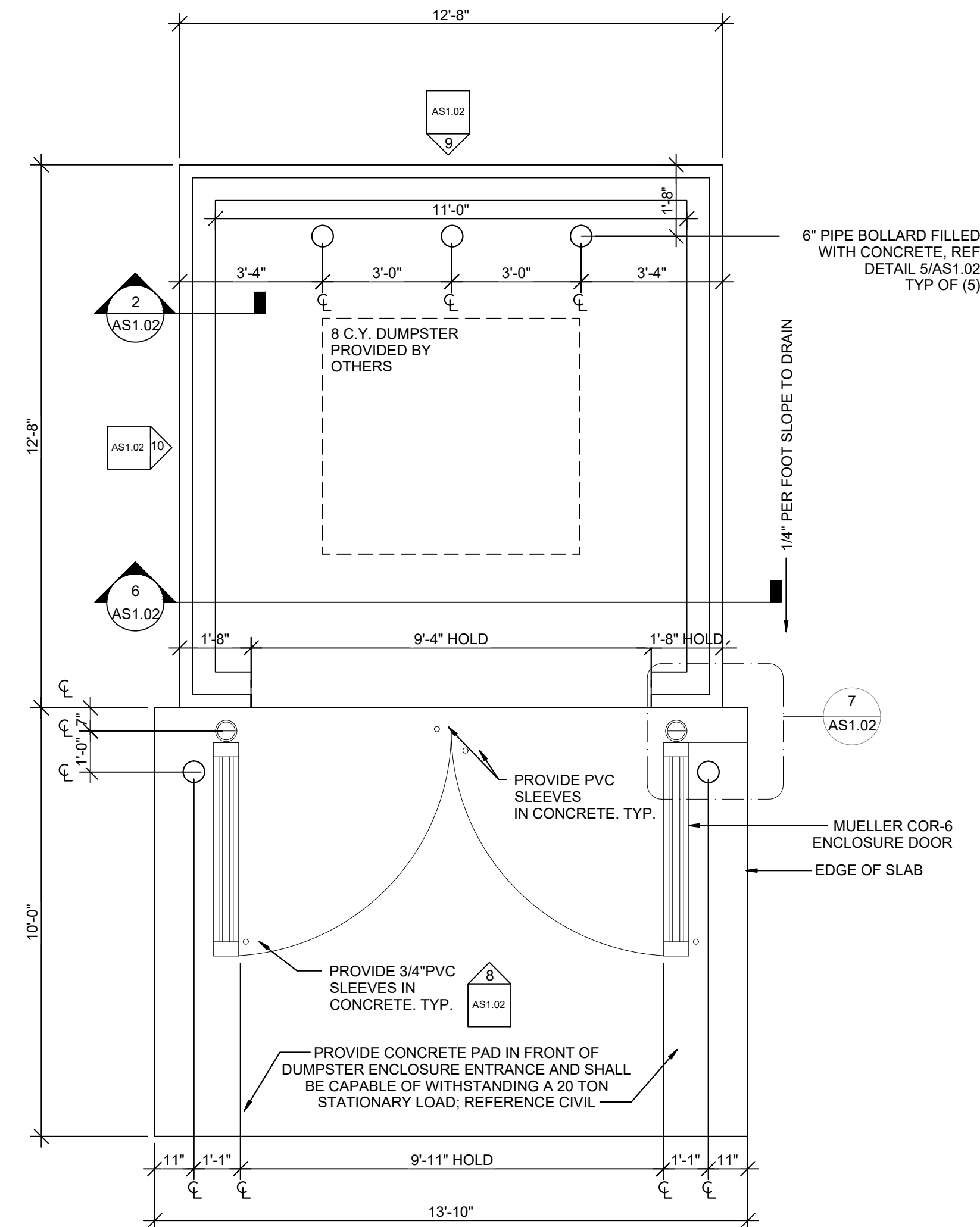
4 GATE BOLLARD DETAIL
1/2" = 1'-0"



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



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



1 DUMPSTER ENCLOSURE PLAN
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
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
© COPYRIGHT 2017 ILEKIS ASSOCIATES-ALL RIGHTS RESERVED

NOTE:

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

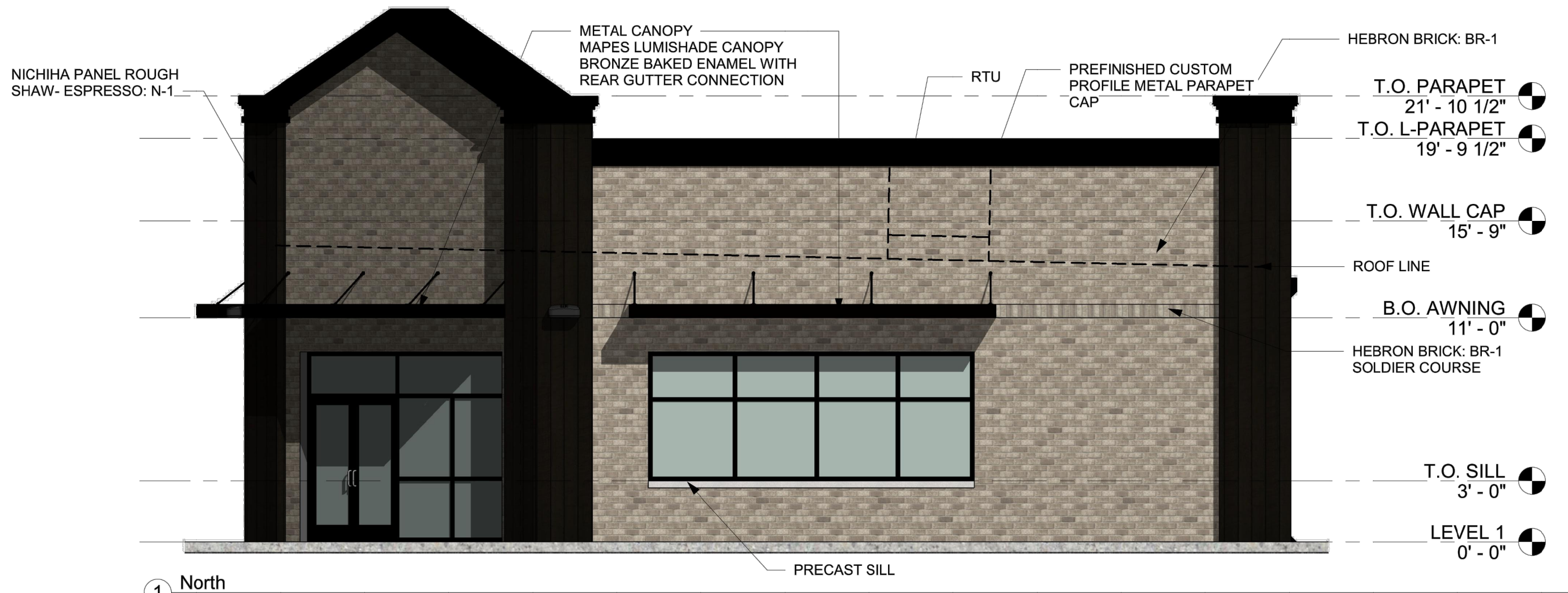
THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST
OF MY KNOWLEDGE, COMPLY WITH THE ALL APPLICABLE CODES.
COPYRIGHT 2017 ILEKIS ASSOCIATES. ALL RIGHTS RESERVED

DATE: ISSUED FOR:

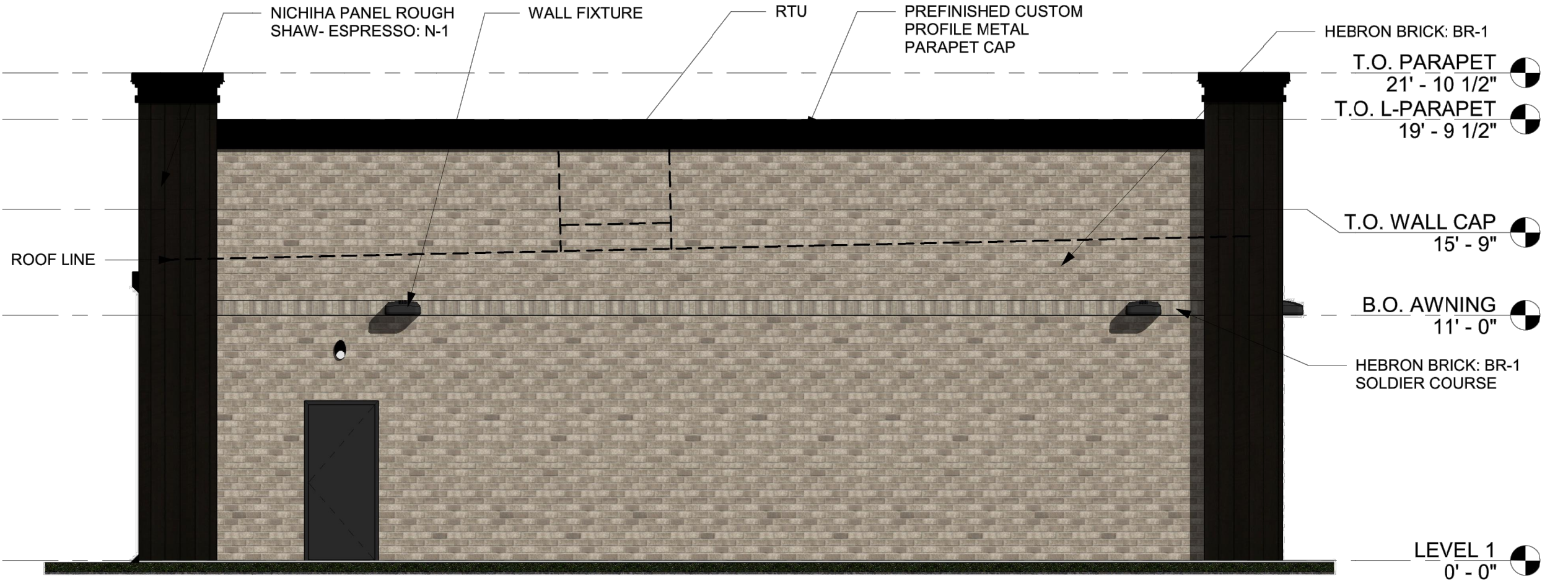
11/22/19 ISSUED FOR CITY REVIEW
09/09/19 ISSUED FOR CITY REVIEW
08/22/19 ISSUED PER CITY COMMENTS
07/15/19 ISSUED FOR CITY REVIEW

SITE DETAILS

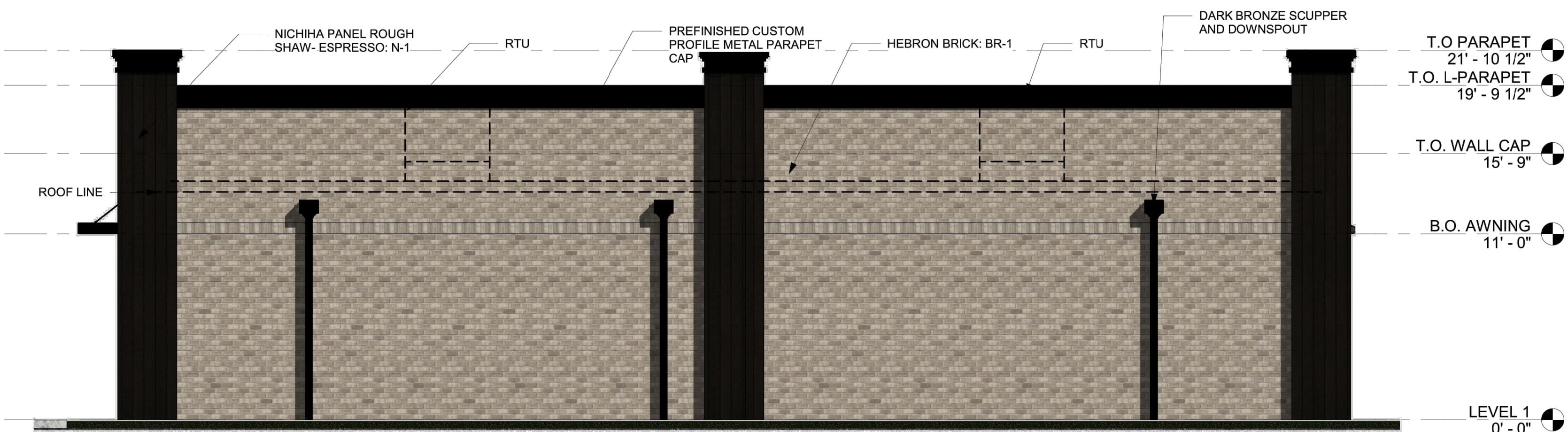
AS1.02



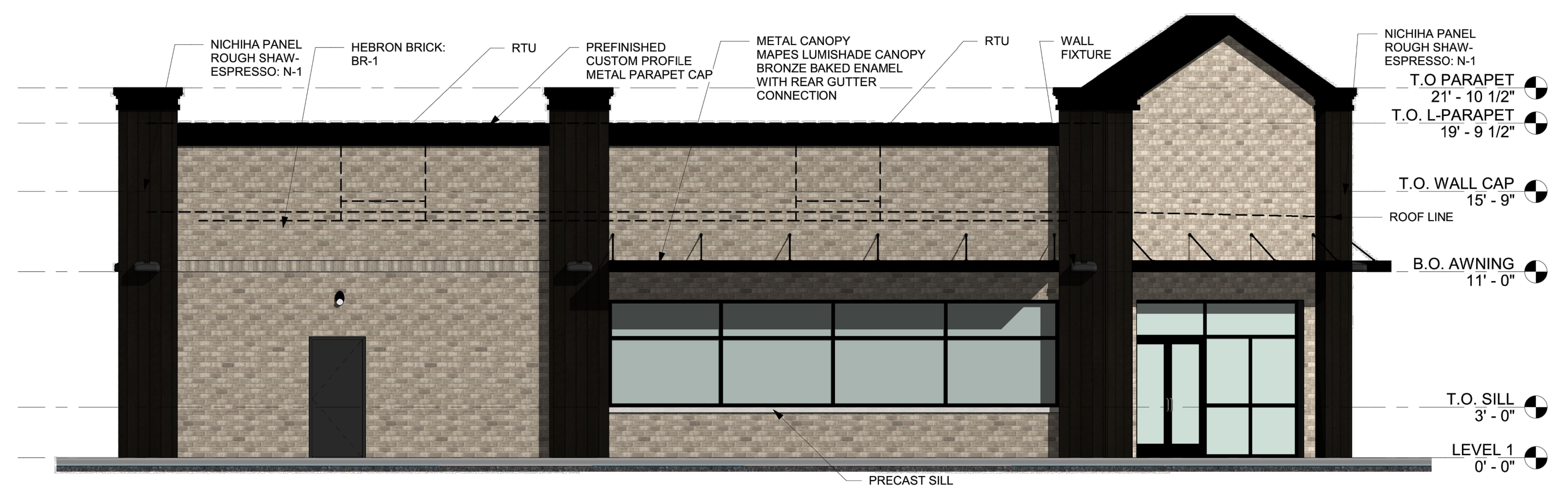
① North
3/16" = 1'-0"



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 PALLETTE
	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 # EWL501_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

CLIENT:
vequity | real estate.redefined.

Vequity
400 N. State
Suite 400
Chicago, IL 60654
312-965-0987
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

© COPYRIGHT 2017 ILEKIS ASSOCIATES. ALL RIGHTS RESERVED

NOTE:

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

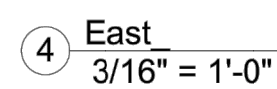
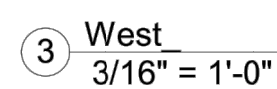
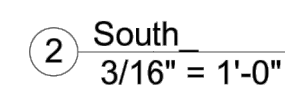
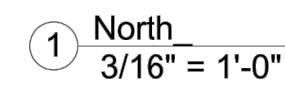
THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST OF MY KNOWLEDGE, COMPLY WITH THE ALL APPLICABLE CODES.
COPYRIGHT 2017 ILEKIS ASSOCIATES. ALL RIGHTS RESERVED

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
ELEVATIONS AND
SCHEDULE

A3.01

CITY APPROVAL

CLIENT: **vequity** | real estate. redefined.

Vequity
400 N. State
Suite 400
Chicago, IL 60654
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
© COPYRIGHT 2017 ILEKIS ASSOCIATES-ALL RIGHTS RESERVED

NOTE:

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

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

COPYRIGHT 2017 ILEKS ASSOCIATES. ALL RIGHTS RESERVED

DATE: ISSUED FOR

11/22/19 ISSUED FOR CITY REVIEW

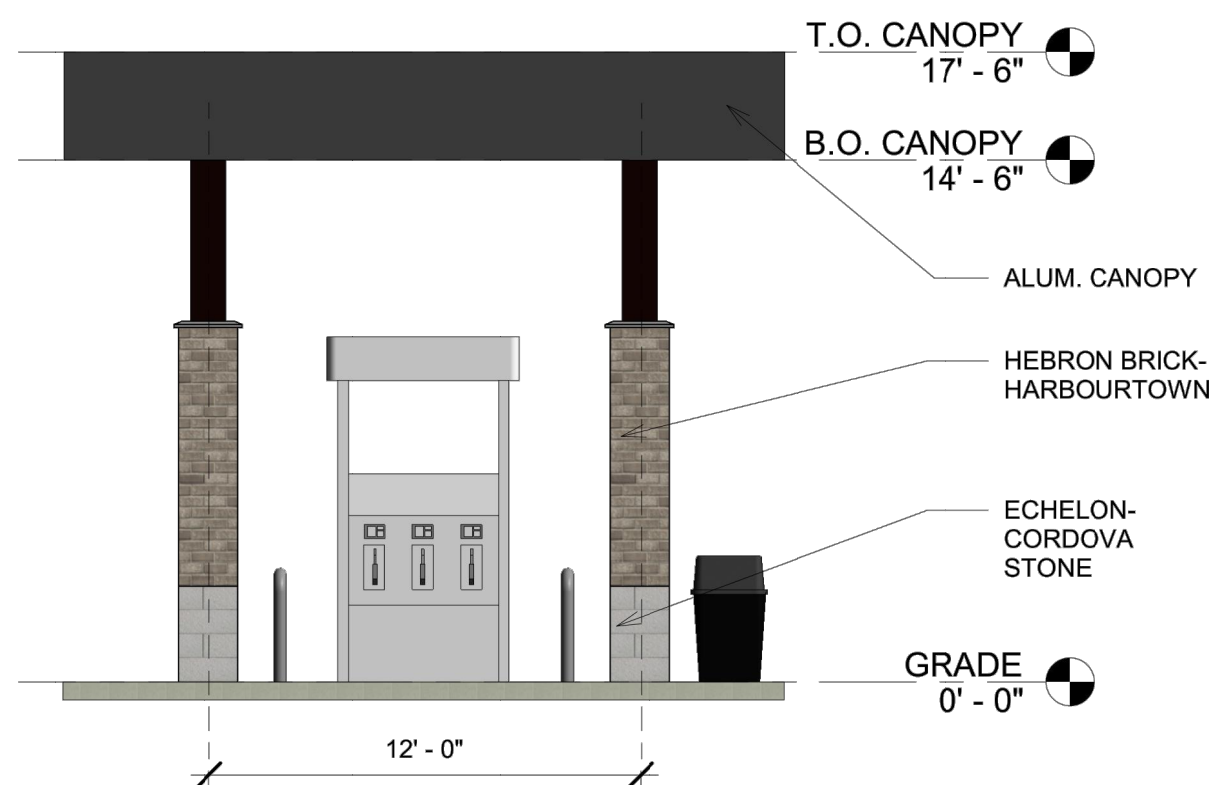
09/09/19	ISSUED FOR CITY REVIEW
----------	------------------------

08/22/19	ISSUED PER CITY COMMENTS
----------	--------------------------

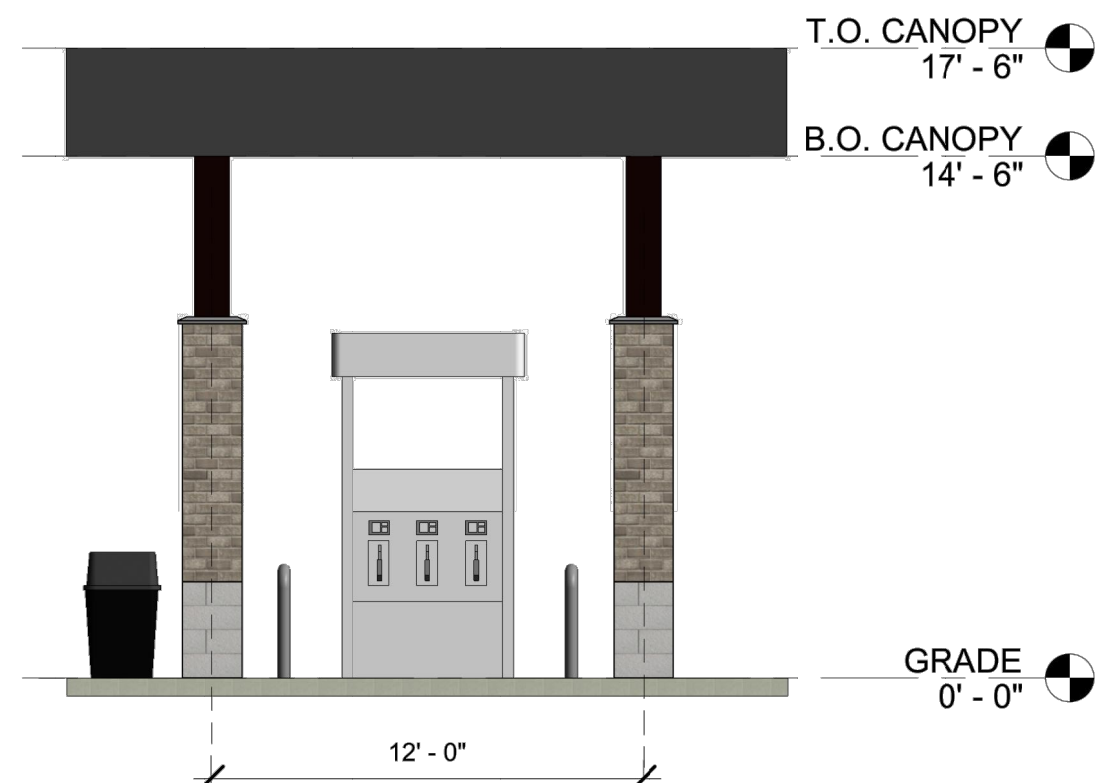
07/15/19	ISSUED FOR CITY REVIEW
----------	------------------------

EXTERIOR COLOR ELEVATIONS AND SCHEDULE

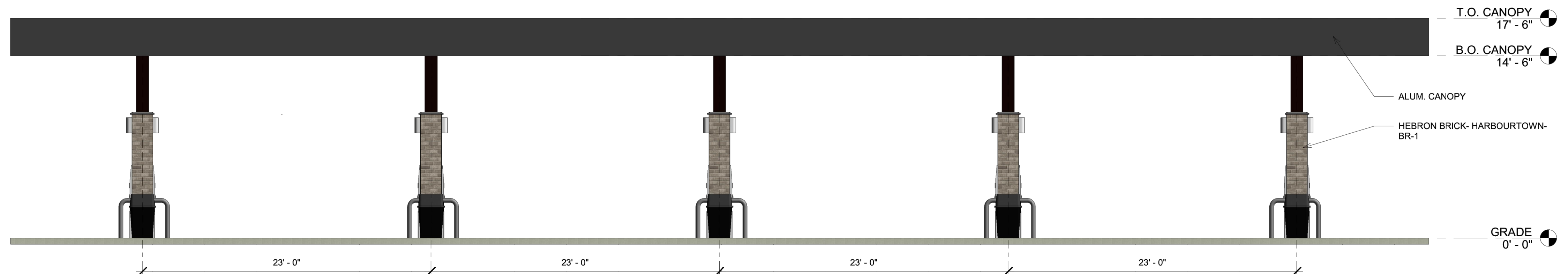
A3.02



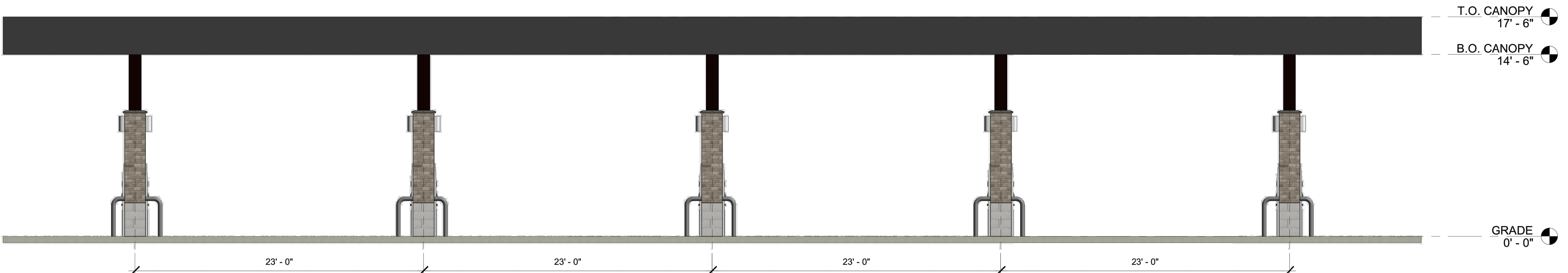
1 CANOPY - EAST ELEVATION
3/16" = 1'-0"



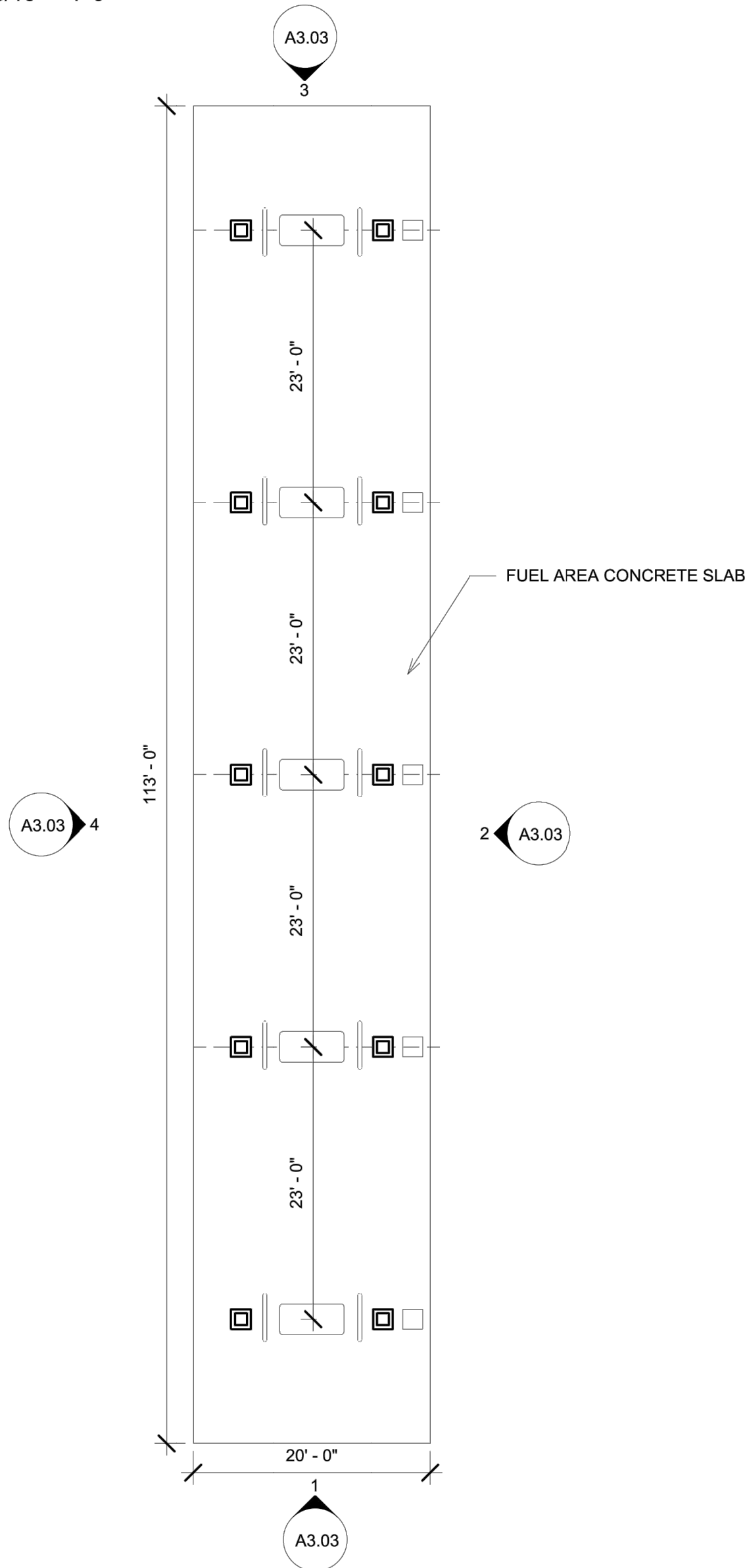
3 CANOPY - WEST ELEVATION
3/16" = 1'-0"



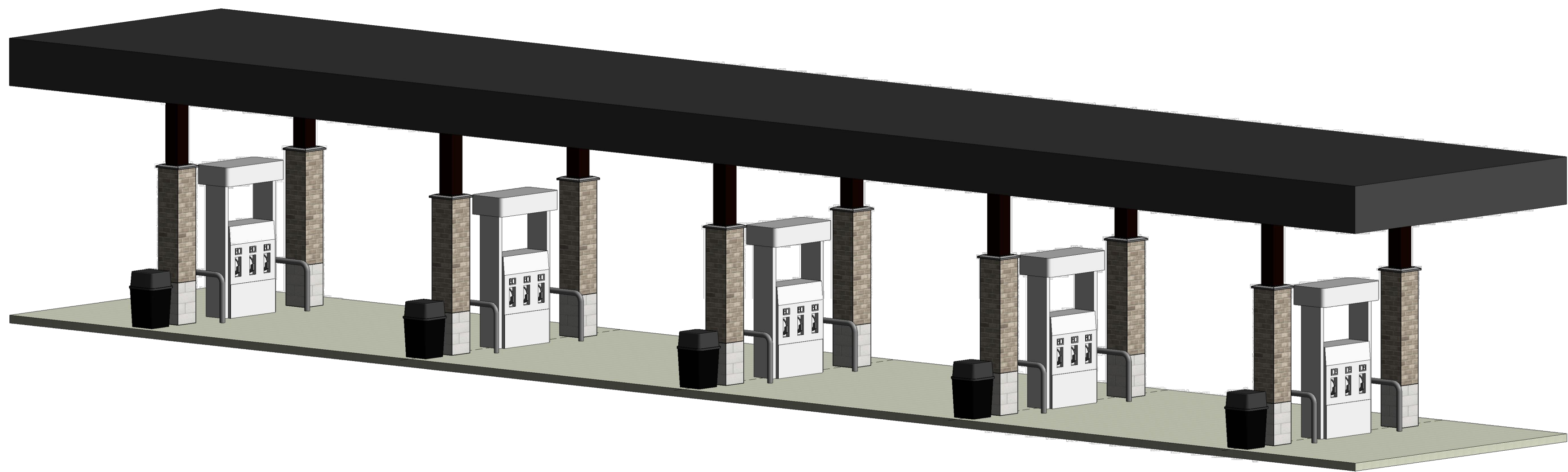
2 CANOPY - SOUTH ELEVATION
3/16" = 1'-0"



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



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



6 CANOPY PERSPECTIVE

NOTE: CANOPY UNDER SEPARATE PERMIT

CITY APPROVAL

CLIENT:
vequity | real estate. redefined.

Vequity
400 N. State
Suite 400
Chicago, IL 60654
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
© COPYRIGHT 2017 ILEKIS ASSOCIATES-ALL RIGHTS RESERVED

NOTE:

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

THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST
OF MY KNOWLEDGE, COMPLY WITH THE ALL APPLICABLE CODES.
COPYRIGHT 2017 ILEKIS ASSOCIATES. ALL RIGHTS RESERVED

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

FUEL CANOPY
ELEVATIONS

A3.03



1 3D VIEW
SCALE:



2 3D VIEW
SCALE:

CITY APPROVAL

CLIENT:
vequity | real estate. redefined.
Vequity
400 N. State
Suite 400
Chicago, IL 60654
312-965-0987
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
© COPYRIGHT 2017 ILEKIS ASSOCIATES ALL RIGHTS RESERVED

NOTE:

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

THESE DOCUMENTS WERE PREPARED UNDER MY SUPERVISION AND, TO THE BEST
OF MY KNOWLEDGE, COMPLY WITH THE ALL APPLICABLE CODES.
COPYRIGHT 2017 ILEKIS ASSOCIATES. ALL RIGHTS RESERVED

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

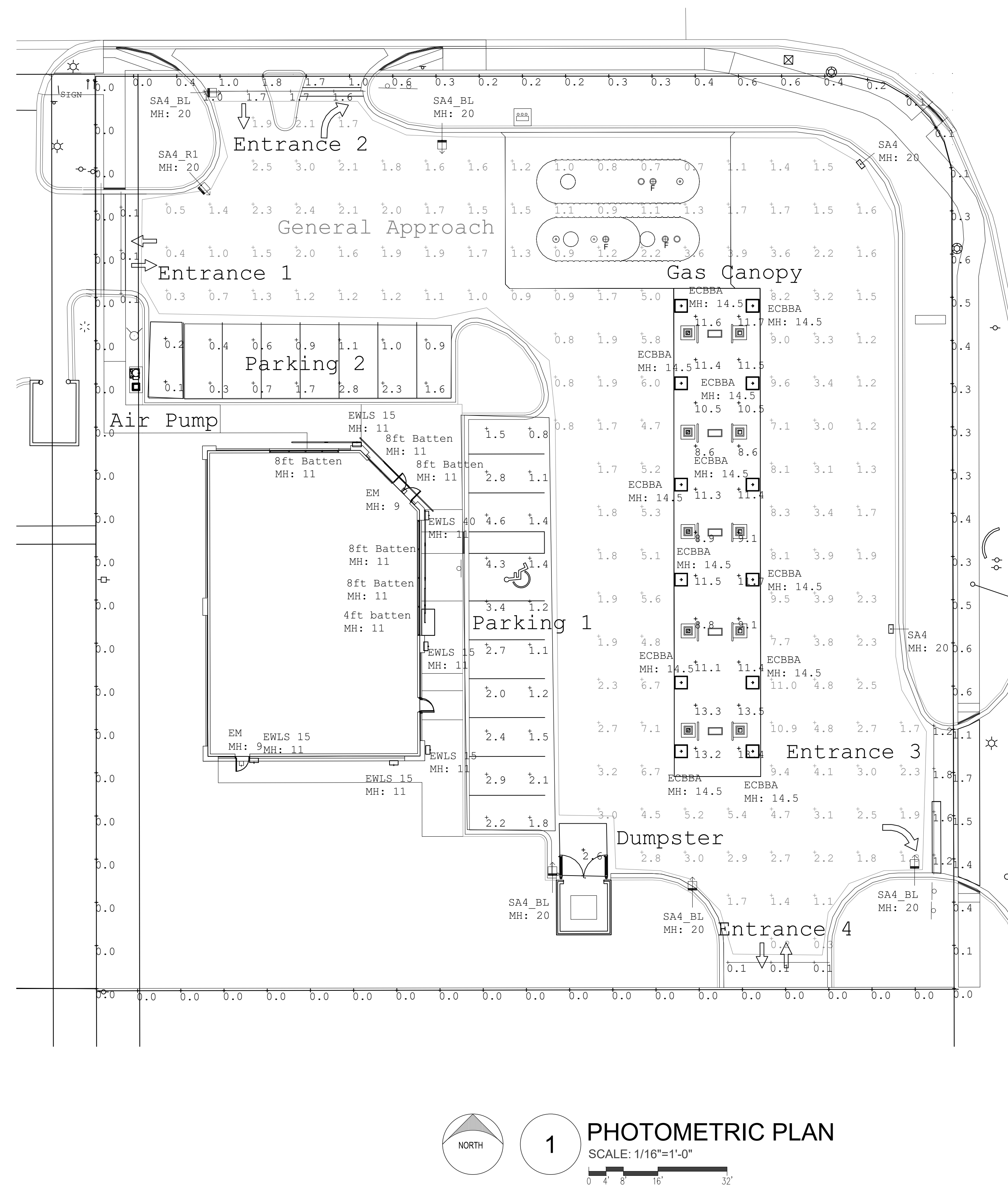
3D VIEWS

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

COPYRIGHT 2017 ILEKIS ASSOCIATES, ALL RIGHTS RESERVED

[illegible]

PH1.01



NEW CORPORATE 7ELEVEN PROTOTYPE (EXTERIOR)



NEW CORPORATE 7ELEVEN PROTOTYPE (INTERIOR)



FINAL ENGINEERING PLANS
FOR
PROPOSED FUEL CENTER - TINLEY PARK

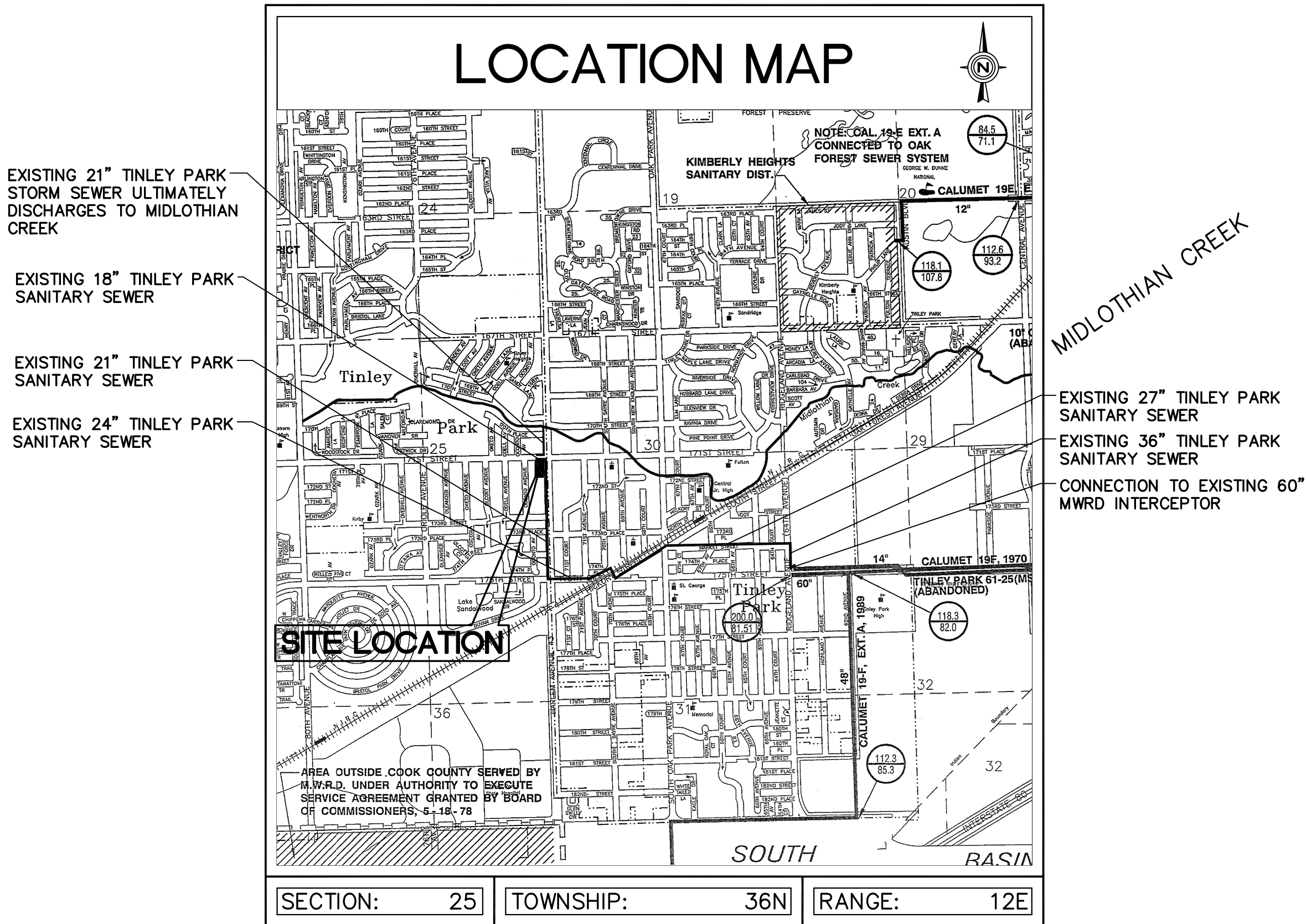
AT
17100 S. HARLEM AVENUE
VILLAGE OF TINLEY PARK
COOK COUNTY, ILLINOIS

INDEX

CIVIL ENGINEERING PLANS		REVISIONS						
		1	2	3	4	5	6	7
C-1	COVER SHEET							
C-11	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	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



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	
	OVERHEAD ELECTRIC WIRES	
	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	
	WATER MAIN	
	GAS MAIN	
	ELECTRIC LINE	
	TELEPHONE LINE	
	CABLE TV LINE	
	SANITARY SEWER	
	STORM SEWER	
	GUY POLE	
	CONIFEROUS TREE W/DIAMETER	
	DECIDUOUS TREE W/DIAMETER	
	WOOD FENCE	
	CHAIN LINK FENCE	
	METAL GUARDRAIL	
	CONCRETE SURFACE	
	CONTOUR LINE	
	FINISHED FLOOR ELEVATION	
	PAVEMENT ELEVATION	
	MATCH EXISTING ELEVATION	
	GROUND ELEVATION	
	TOP OF WALK ELEVATION	
	TOP OF RETAINING WALL ELEVATION	
	FLOW LINE ELEVATION	
	TOP OF CURB ELEVATION	
	RIM ELEVATION	
	DOWNSPOUT LOCATION	
	PERVIOUS AREA SLOPE DIRECTION	
	PAVEMENT SLOPE DIRECTION	
	OVERLAND OVERFLOW DIRECTION	
	INLET PROTECTION	
	INLET BASKET FILTER	

BENCHMARK

REFERENCE BENCHMARK
NGS DESIGNATION - DK2006
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 IDENTIFICATION.
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

COVER SHEET

Prepared For:
Vequity
400 N. State Street
Chicago, IL 60654
PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

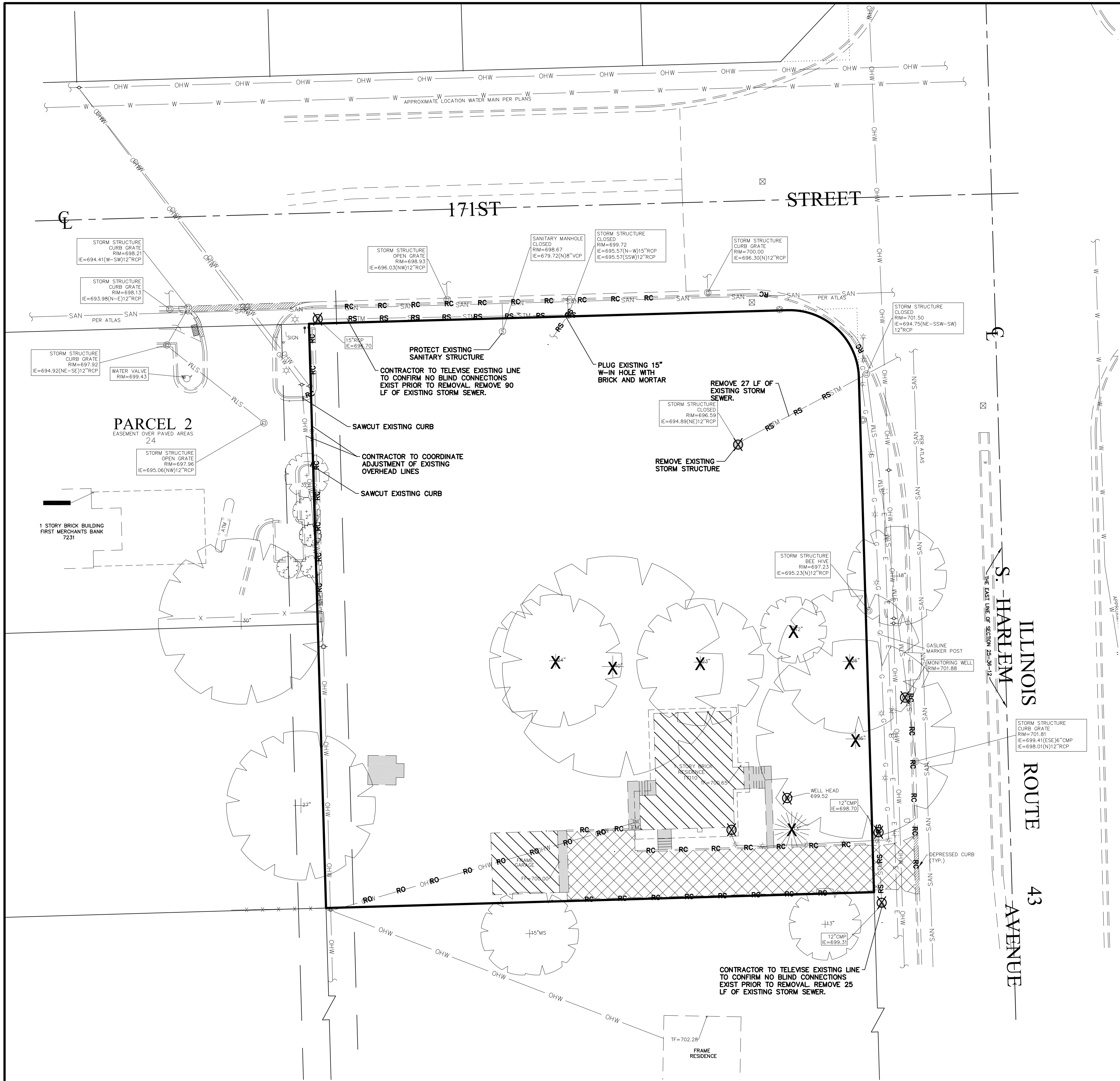
Watermark Engineering Resources, Ltd.
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-375-1800 fax 630-236-9600 www.watermark-engineering.com

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

C-1

COVER SHEET





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 RC
= REMOVE EXISTING CURB AND GUTTER (TYP.)

RE RE RE RE RE RE RE RE
= REMOVE EXISTING ELECTRIC LINE (TYP.)

RG RG RG RG RG RG RG RG
= REMOVE EXISTING GAS LINE (TYP.)

RO RO RO RO RO RO RO RO
= REMOVE EXISTING OVERHEAD WIRES (TYP.)

RS RS RS RS RS RS RS RS
= REMOVE EXISTING SEWER LINE (TYP.)

RT RT RT RT RT RT RT RT
= REMOVE EXISTING TELEPHONE LINE (TYP.)

RW RW RW RW RW RW RW RW
= REMOVE EXISTING WATERLINE (TYP.)

= REMOVE EXISTING OBJECT (UTILITY POLES, GUY WIRES, LIGHTS, MANHOLES, SIGNS, ETC.) (TYP.)

= REMOVE EXISTING TREE INCLUDING STUMP AND STUMP GRINDINGS/REMOVE BUSH. SEE LATEST TREE PRESERVATION PLAN FOR DETAILS.

= 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.

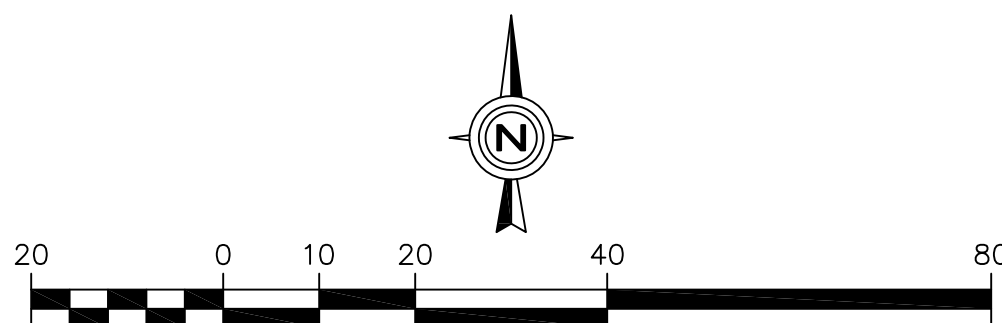
14. CONTRACTOR SHALL REFERENCE LANDSCAPE PLAN AND/OR TREE PRESERVATION PLAN FOR ALL PLANT MATERIAL. NOTES SHOWN ON THIS PLAN REGARDING LANDSCAPING ARE FOR REFERENCE ONLY. DETAILED INFORMATION REGARDING THE EXISTING PLANT MATERIALS IS SHOWN ON THOSE PLANS AND SHALL BE FOLLOWED.

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



DEMOLITION PLAN

NO.	REVISIONS	DATE
1	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	8/22/19
2	NO REVISIONS	9/15/19
3	PER CLIENT REQUEST	11/22/19
4	NO REVISIONS	12/27/19

Prepared For:

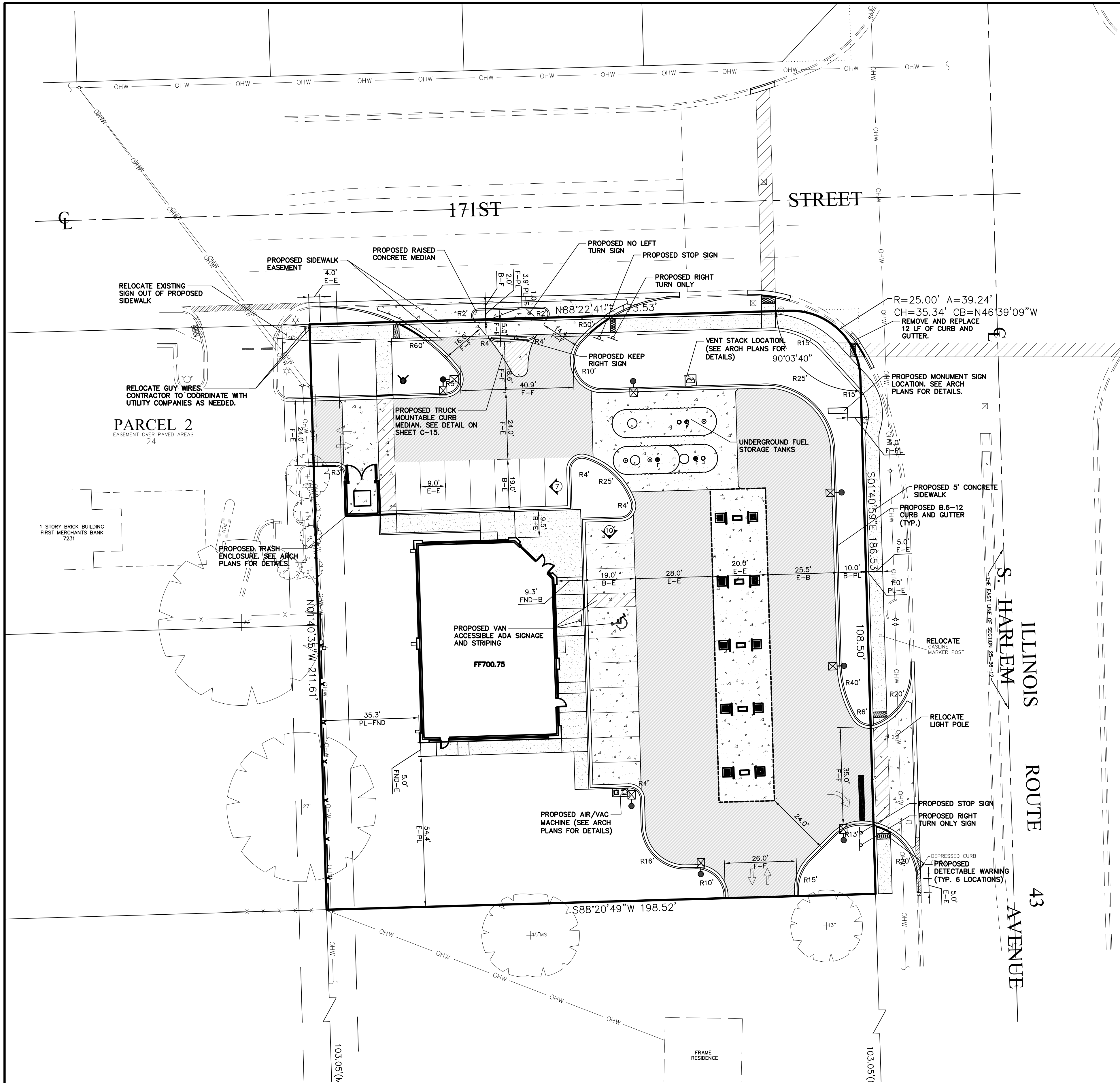
Vequity
400 N. State Street
Chicago, IL 60654
PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

Watermark Engineering
RESOURCES, LTD
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502
phone 630-575-1800 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-1.1



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	16
ADA ACCESSIBLE SPACES	1
TOTAL SPACES	17

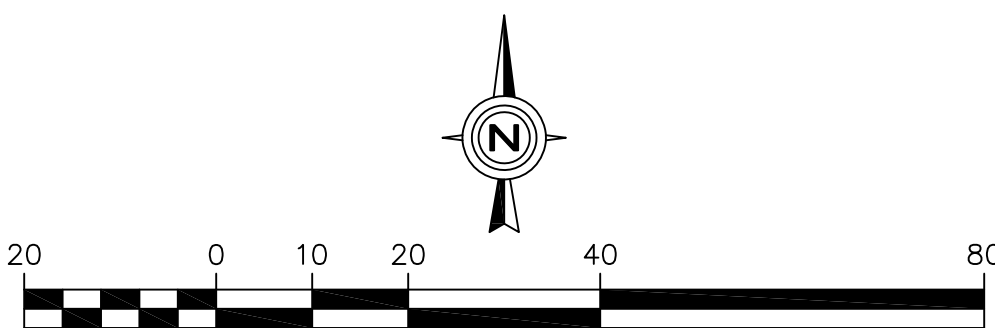
SITE DATA	
LOT AREA	= 41,852 S.F. (.961 AC.)
IMPERVIOUS AREA	= 27,222 S.F. (.625 AC.)(65%)
PERVIOUS AREA	= 14,630 S.F. (.336 AC.)(35%)
BUILDING AREA	= 3,500 S.F.

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	
SIDEWALK	5" P.C.C. (SIX BAG MIX) 4" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE
STANDARD DUTY	1 1/2" HOT-MIX ASPHALT SURFACE COURSE, MIX "C" IL-9.5, N50; PG 64-22 2 1/2" HOT-MIX ASPHALT BINDER COURSE, IL-19, N50; PG 64-22 8" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE
HEAVY DUTY	1 1/2" HOT-MIX ASPHALT SURFACE COURSE, MIX "C" IL-9.5, N50; PG 64-22 3" HOT-MIX ASPHALT BINDER COURSE, IL-19, N50; PG 64-22 10" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE
CONCRETE	6" P.C. CONCRETE WITH 6"x6" NO. 10 WELDED WIRE MESH MESH TO BE FLAT STOCK ONLY 4" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE
CONCRETE DRIVEWAY AND TRASH APRONS	8" P.C. CONCRETE WITH 6"x6" NO. 10 WELDED WIRE MESH MESH TO BE FLAT STOCK ONLY 4" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE

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	8/22/19
REVISIONS	1
REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	2
PER CLIENT REQUEST	3
PER CLIENT REQUEST	4
NO REVISIONS	

Prepared For:

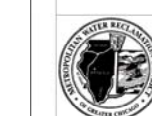
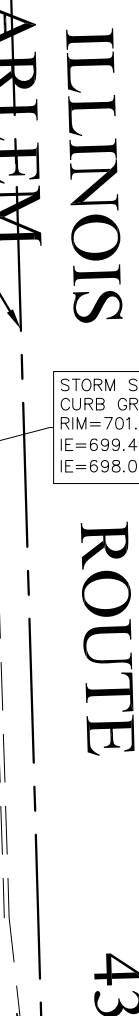
Vequity
400 N. State Street
Chicago, IL 60654
PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

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

C-2



REFERENCE BENCHMARK	
NGS DESIGNATION - DK2006	PIN - DN4691

DATUM: NAVD 88 ELEVATION = 751.92

GRADING PLAN NOTES:

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 BY FLOW THROUGH A CURB, SNOOUT WITH SKIRT ARE PROVIDED FOR THIS PROPOSED VOLUME CONTROL FOR THE AREAS THAT WOULD NOT SEE FUEL SPILLS (ROOF, CANOPY, PAVEMENT NORTH OF THE RIDGELINE) IS PROVIDED IN THE BIOSLAVE LOCATED EAST OF THE BUILDING.

	(continued)
--	-------------



400 N. State Street
Chicago, IL 60654

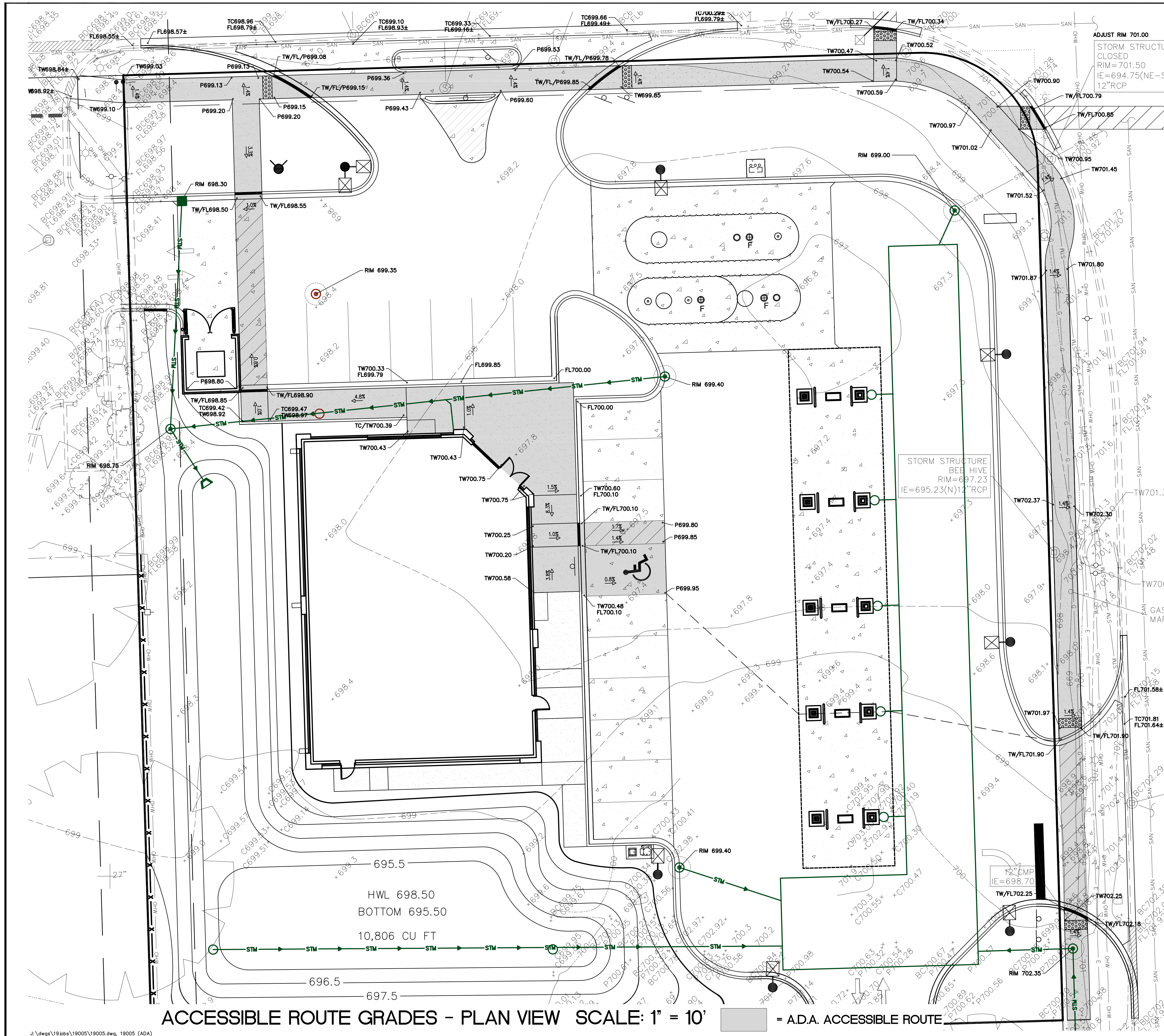
PROPOSED FUEL CENTER

17100 S. Harlem Avenue
Tinley Park, Illinois

Prepared By:

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

GRADING PLAN



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

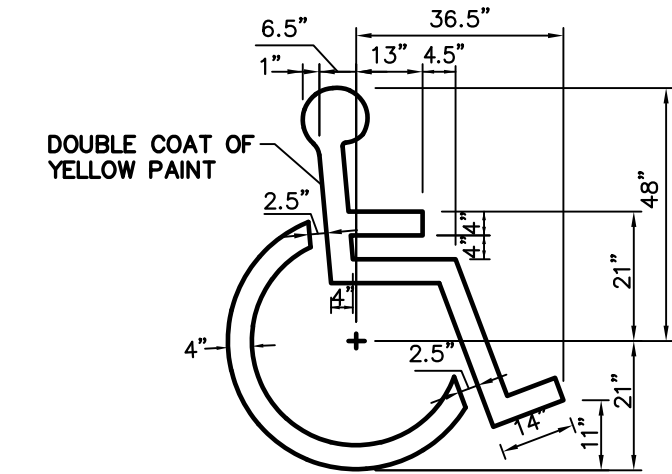
█ = A.D.A. ACCESSIBLE ROUTE

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

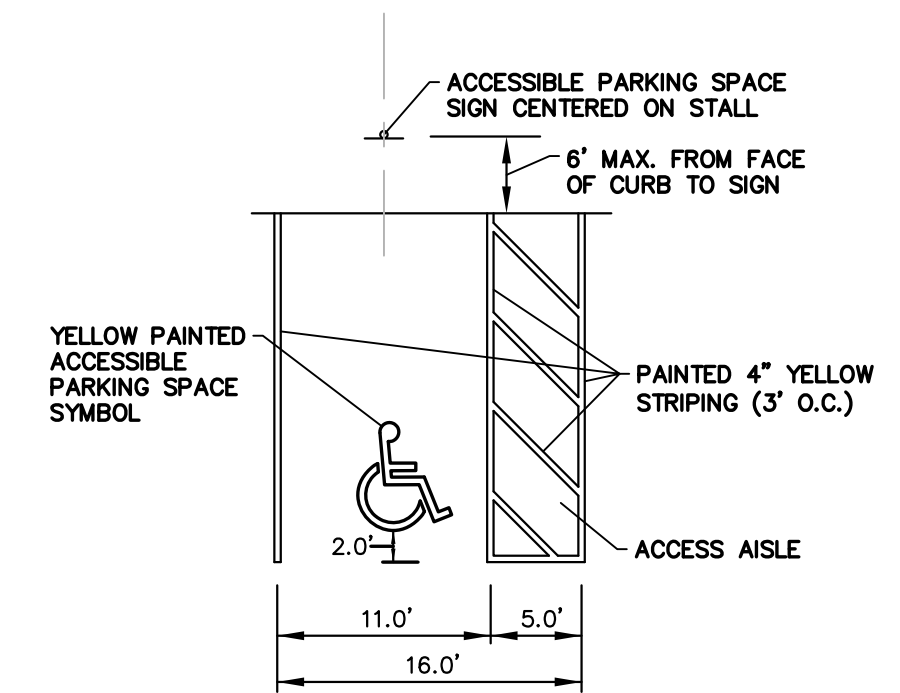
SITE BENCHMARKS
1. SITE BENCHMARK 1 - CROSS CUT ON TRAFFIC SIGNAL MANHOLE. ELEVATION = 700.19
2. SITE BENCHMARK 2 - SOUTHWEST BOLT OF FIRE HYDRANT ELEVATION = 700.71

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.

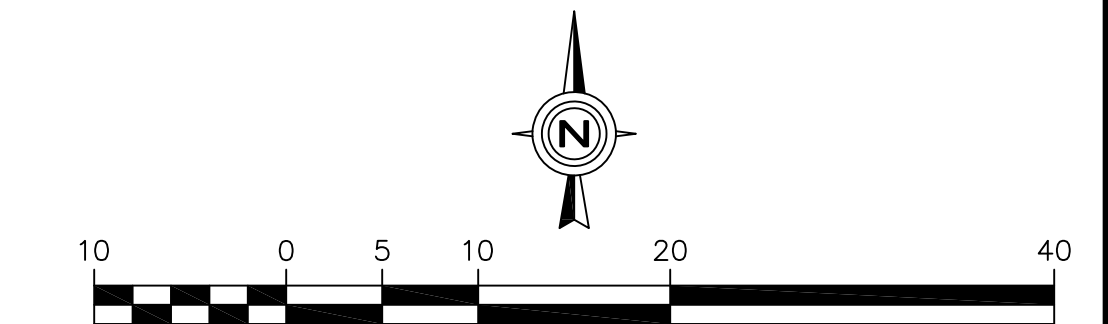


ACCESSIBLE PARKING SPACE SYMBOL

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



ACCESSIBLE PARKING SPACE DETAIL



ACCESSIBLE ROUTE GRADES AND DETAILS

DATE	8/22/19	8/22/19	8/22/19	8/22/19	8/22/19
REVISIONS	1	2	3	4	5
REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19					
PER CLIENT REQUEST					
PER CLIENT REQUEST					
NO REVISIONS					

Prepared For:

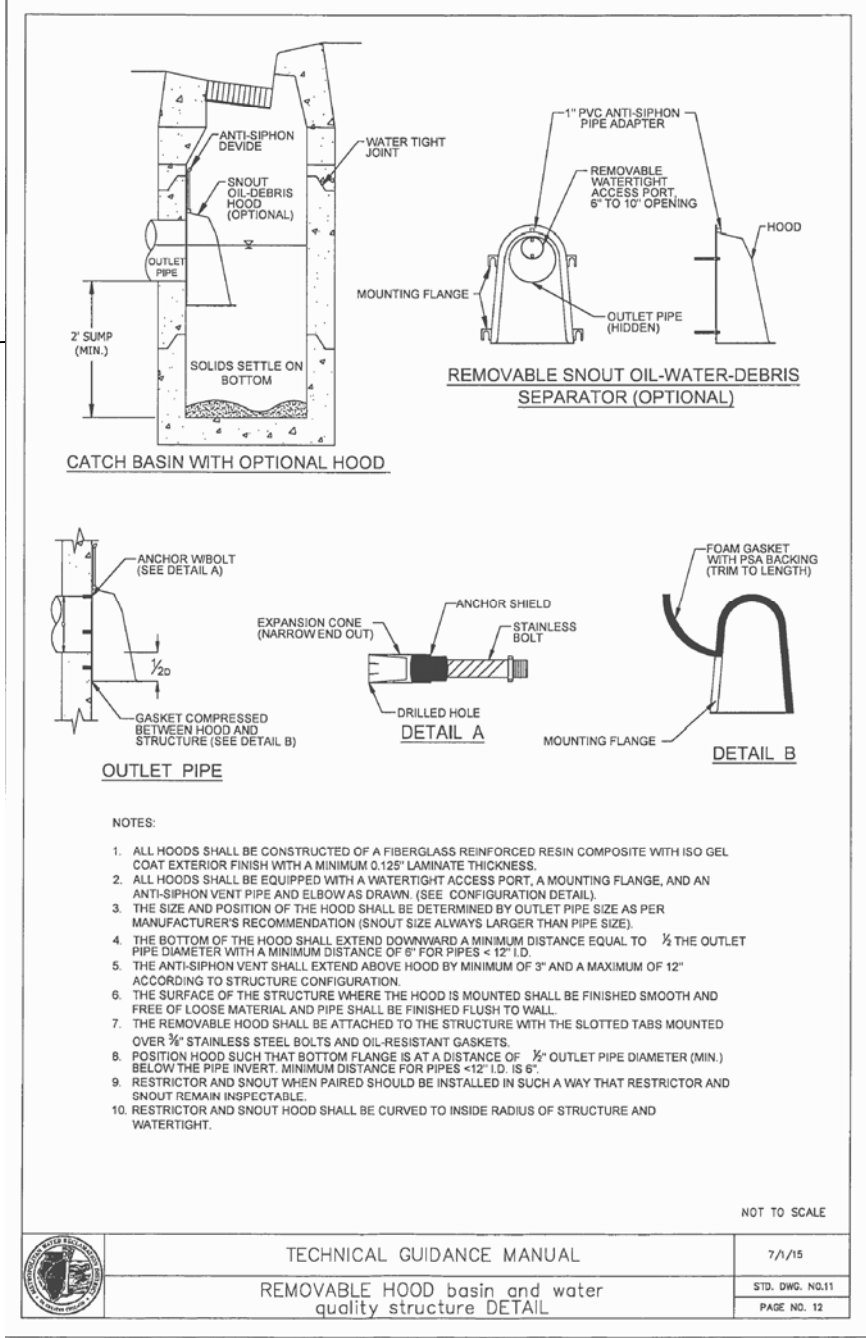
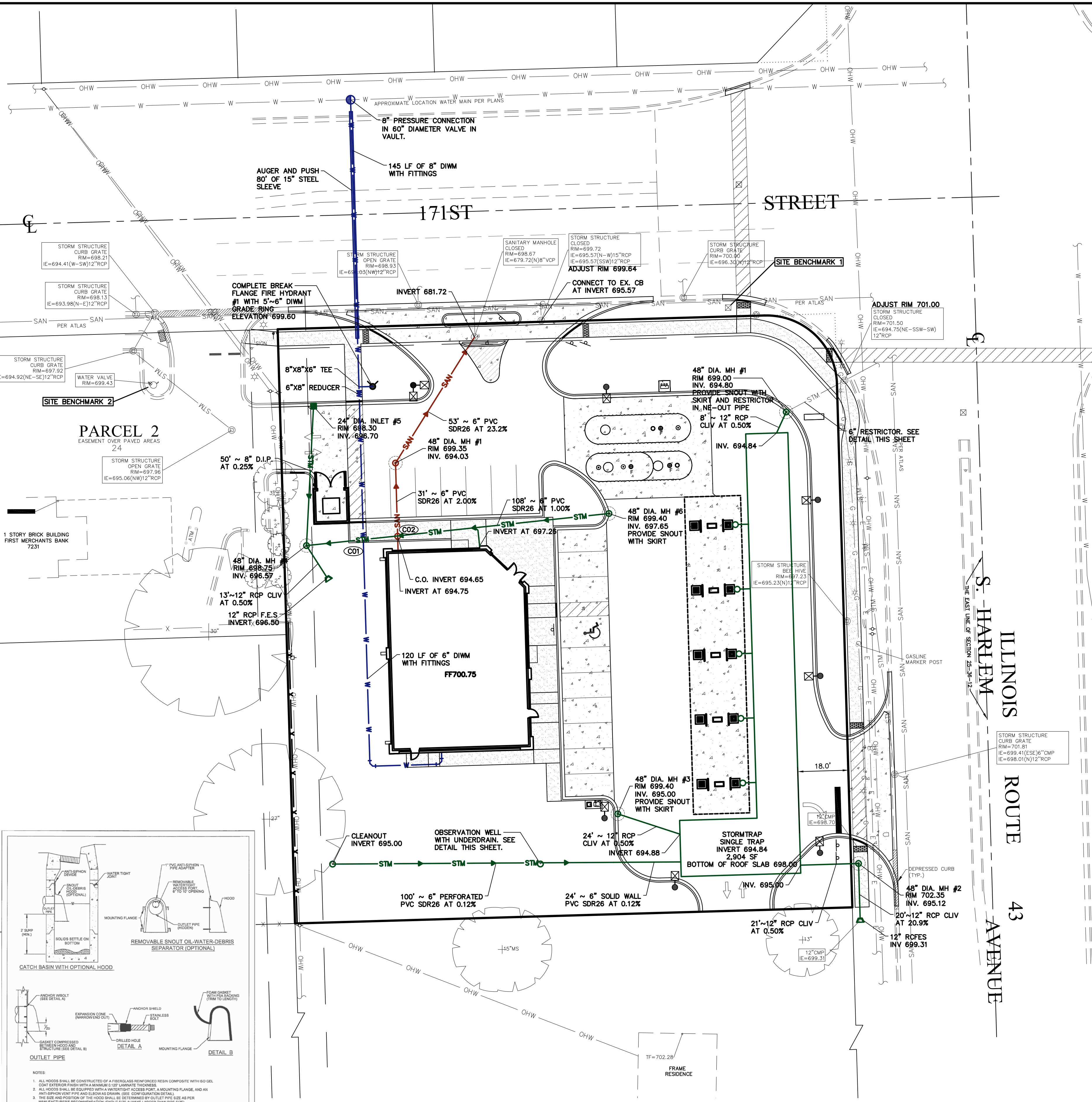
Vequity
400 N. State Street
Chicago, IL 60654
PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

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-4					

ACCESSIBLE ROUTE GRADES AND DETAILS



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 PROVIDED = 19,982 CF

RESTRICTOR SIZE = 6 INCHES
PROPOSED 6" RESTRICTOR = 2.57 CFS

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

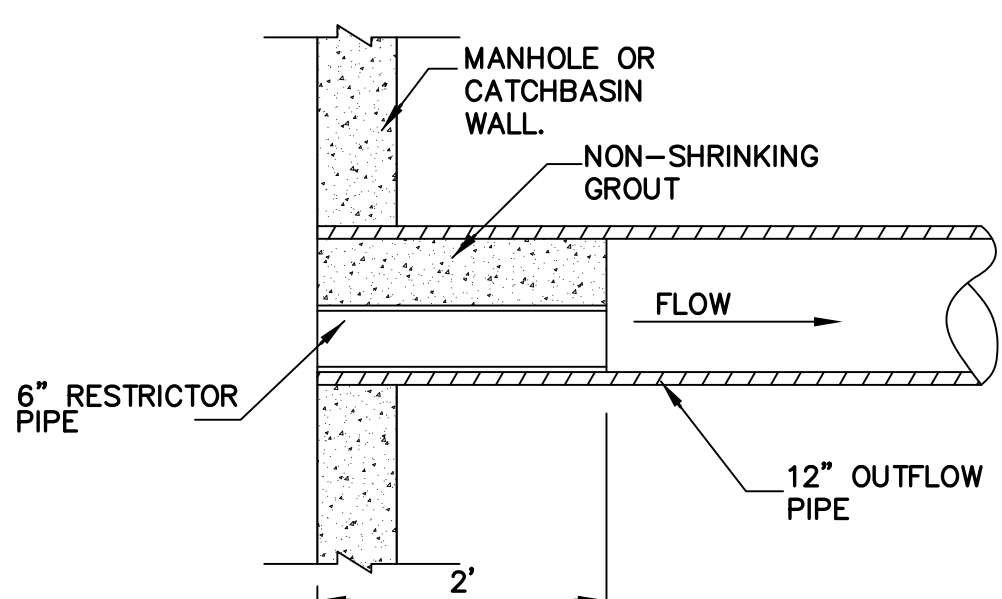
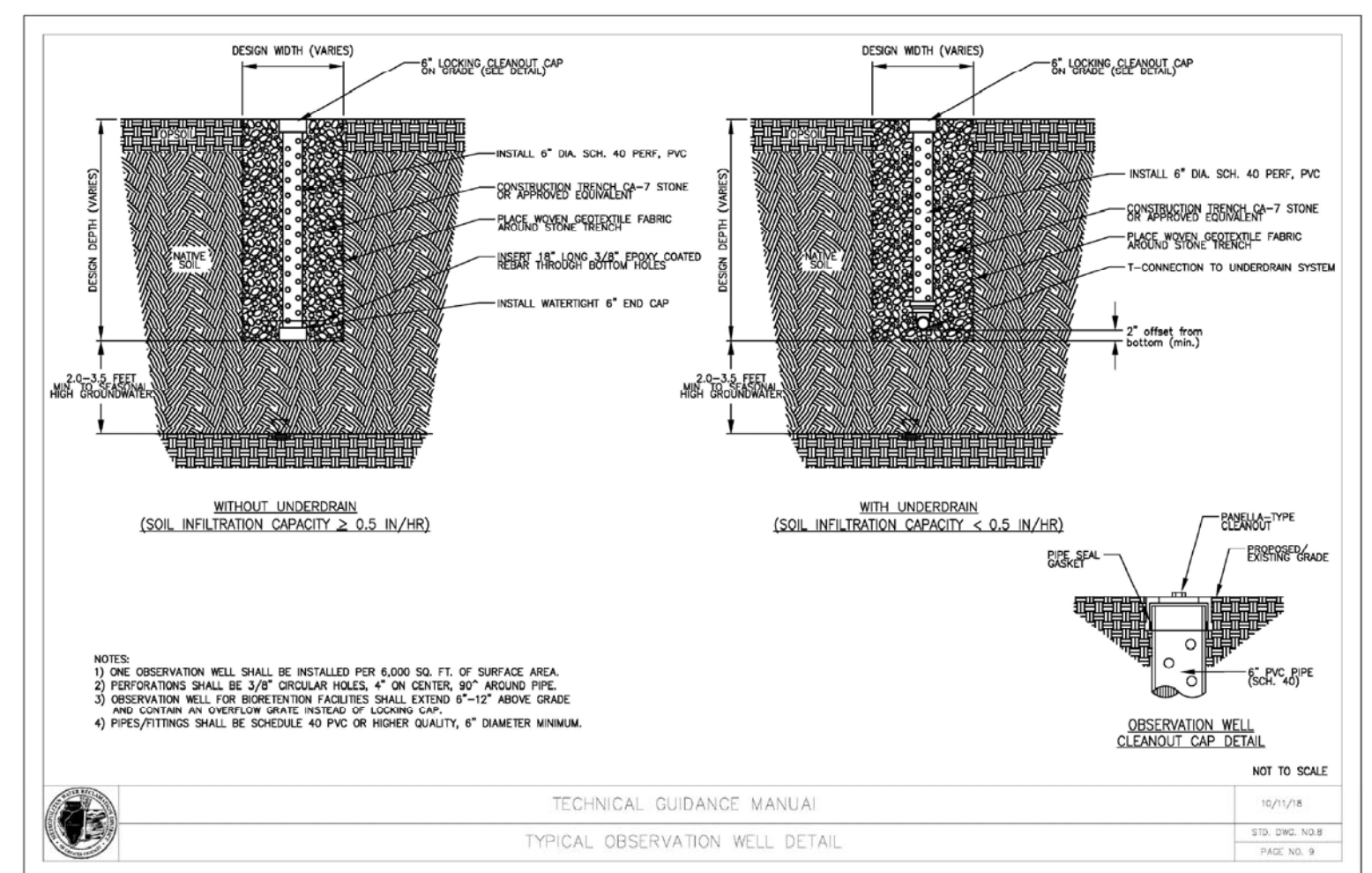
UTILITY PLAN NOTES:

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.

UTILITY CROSSINGS

CO1	BOTTOM OF 6" STORM	= 696.77
	TOP OF 6" WATER	= 693.10
CO2	BOTTOM OF 6" STORM	= 696.89
	TOP OF 6" SANITARY	= 695.22



2' LONG GROUTED RESTRICTOR



UTILITY PLAN

DATE
8/22/19
9/15/19
11/22/19
12/27/19

REVISIONS
REVISED PER VILLAGE REVIEW LETTER DATED 8/5/19
PER CLIENT REQUEST
PER CLIENT REQUEST
NO REVISIONS

NO.
1
2
3
4

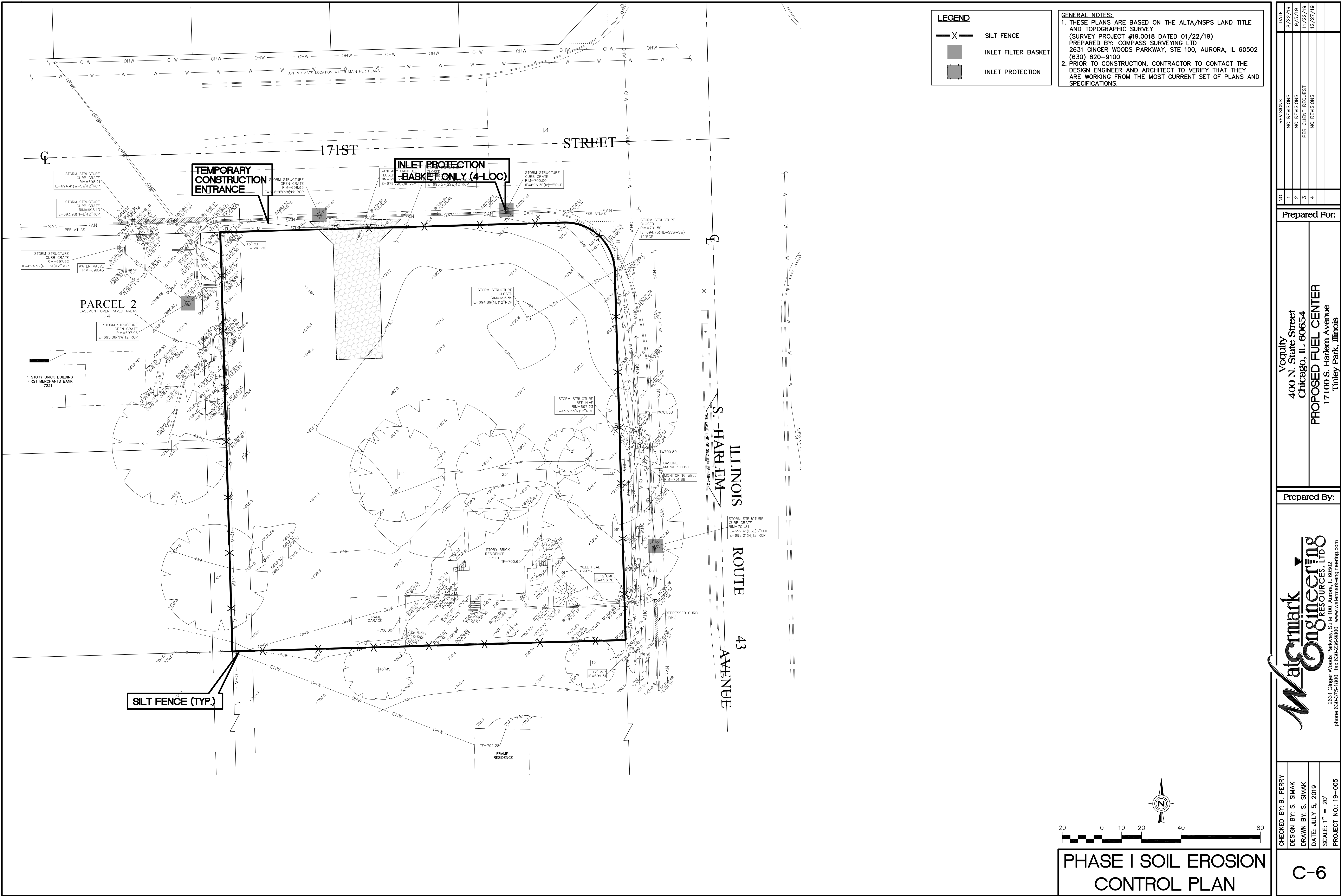
Prepared For:
Vequity
400 N. State Street
Chicago, IL 60654
PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

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

C-5

UTILITY PLAN

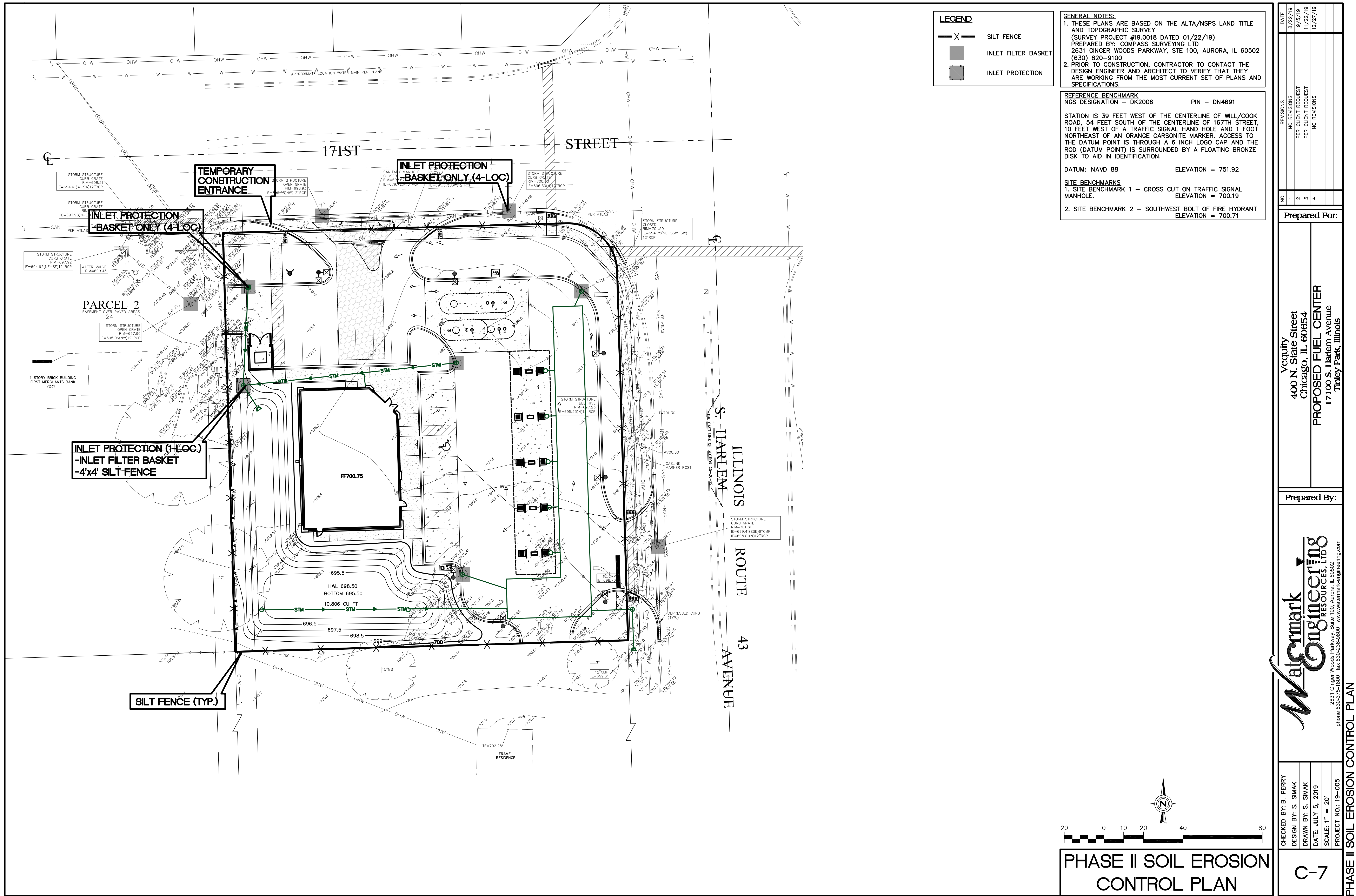


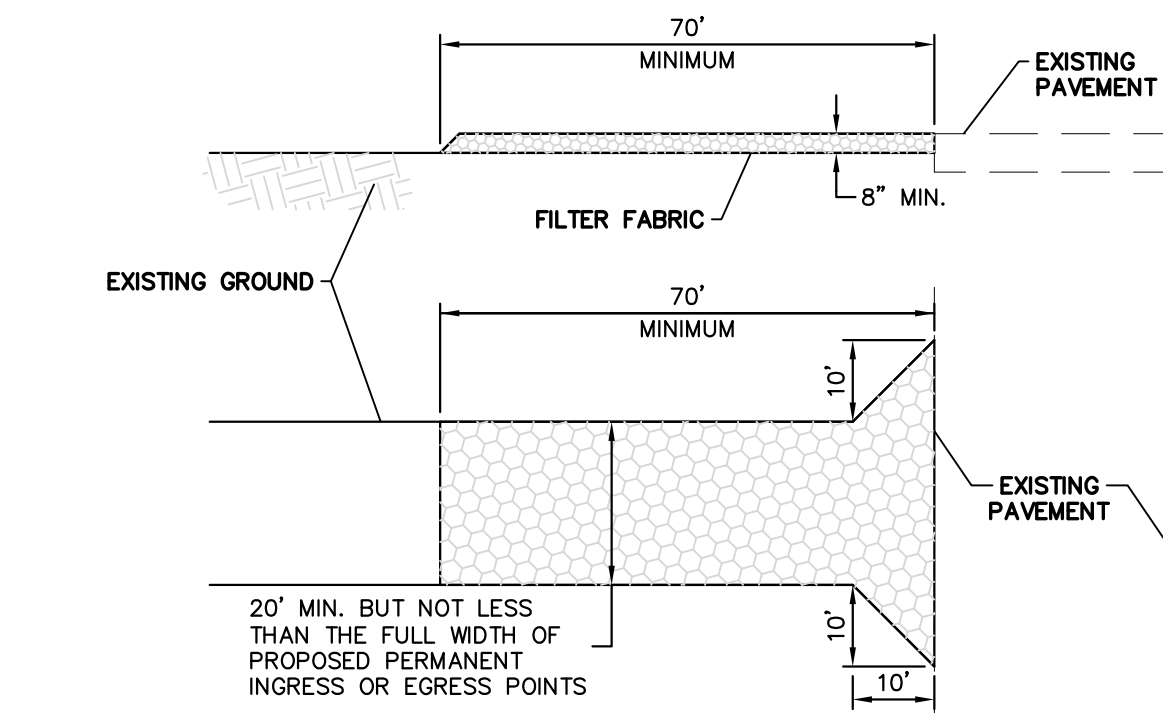
LEGEND

- 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.

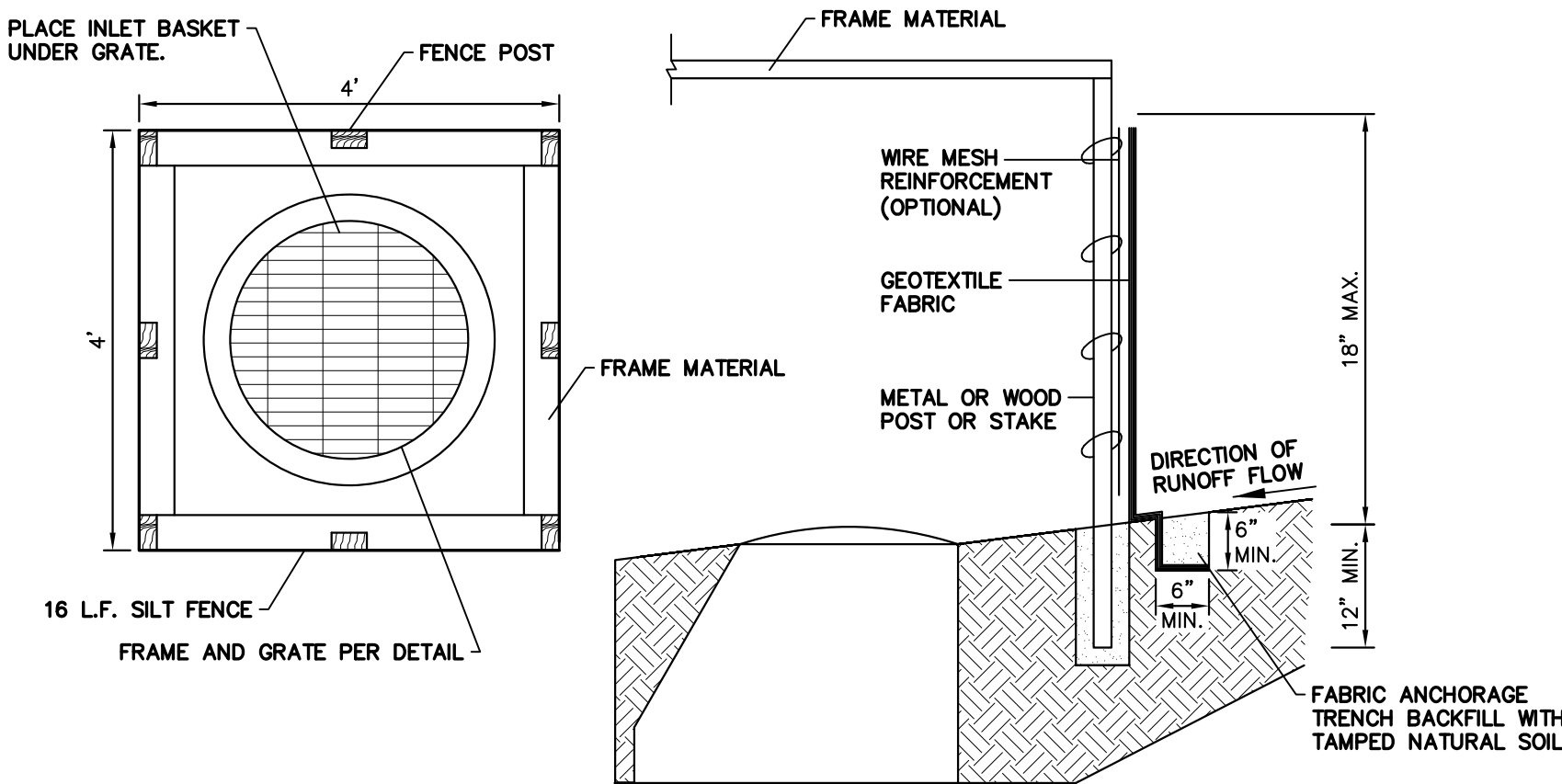
Table with project details including Date, Revisions, Prepared For (Vequity, 400 N. State Street, Chicago, IL 60654, PROPOSED FUEL CENTER), Prepared By (Watermark Engineering Resources, Ltd.), and Project No. (C-6). Includes a title 'PHASE I SOIL EROSION CONTROL PLAN'.





- NOTES:
- STONE SIZE - IDOT COARSE AGGREGATE GRADATIONS: CA-1, CA-2, CA-3 OR CA-4.
 - THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
 - 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.
 - 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.
 - 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.
 - 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, DITCHES, WATERCOURSES, OR SURFACE WATERS INCLUDING WETLANDS.
 - PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE



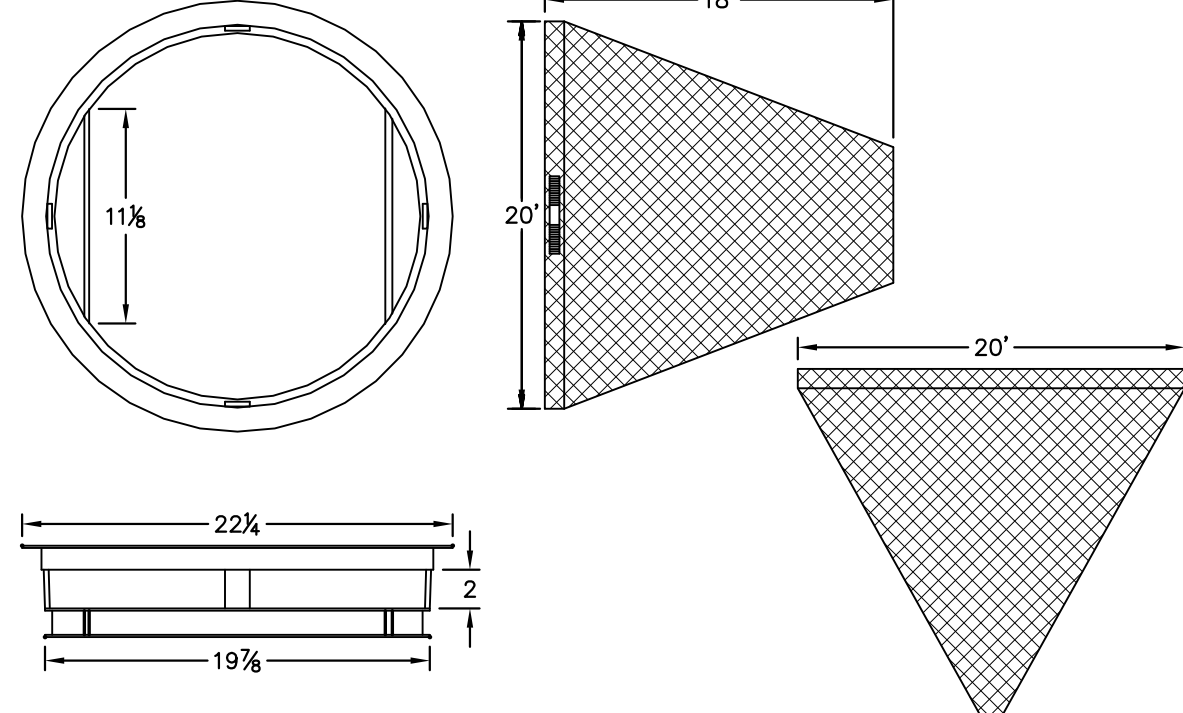
- NOTES:
- FENCE POSTS SHALL BE EITHER STANDARD STEEL POST OR WOOD POST WITH A MINIMUM CROSS-SECTIONAL AREA OF 3.0 SQ. IN.
 - STEEL POSTS SHALL BE STANDARD T AND U SECTIONS WEIGHING NOT LESS THAN 1.33 POUNDS PER LINEAR FOOT OR OTHER STEEL POSTS HAVING EQUIVALENT STRENGTH AND BENDING RESISTANCE.
 - GEOTEXTILE 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.
 - STAKES ARE TO BE PLACED A MAXIMUM OF 3 FEET APART.
 - JOINTS IN GEOTEXTILE FABRIC ARE TO BE MADE AT STAKES.

INLET PROTECTION

SOIL PROTECTION CHART

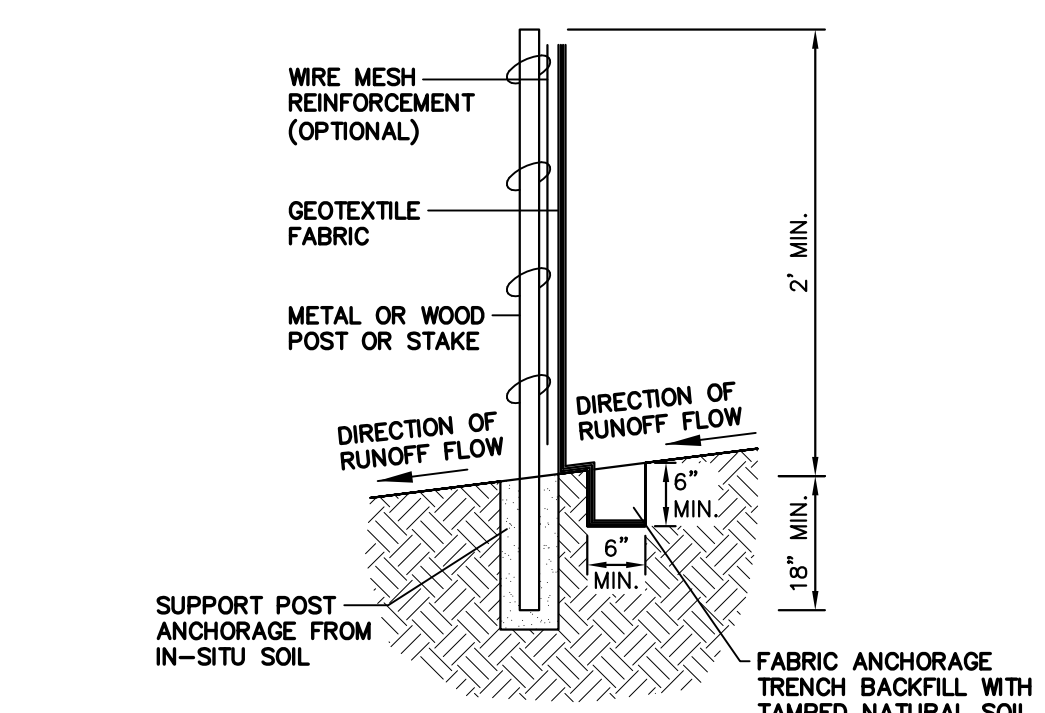
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDING												
SODDING												
TEMPORARY SEEDING												
MULCHING												

- NOTES:
- 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.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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.
 - COVER BROADCAST SEEDINGS BY CULTIPACKING, DRAGGING A HARROW, OR RAKING.
 - OATS SHALL BE APPLIED AT 90 LBS PER ACRE AND SHALL ONLY BE APPLIED EARLY SPRING TO JULY 1.
 - CEREAL RYE SHALL BE APPLIED AT 90 LBS PER ACRE AND SHALL ONLY BE APPLIED EARLY SPRING TO SEPTEMBER 30.
 - WHEAT SHALL BE APPLIED AT 90 LBS PER ACRE AND SHALL ONLY BE APPLIED EARLY SPRING TO SEPTEMBER 30.
 - PERENNIAL RYE GRASS SHALL BE APPLIED AT 25 LBS PER ACRE AND SHALL ONLY BE APPLIED EARLY SPRING TO SEPTEMBER 30.
 - TEMPORARY MULCHES ARE TO BE APPLIED TO:
 - AREAS THAT HAVE BEEN SEED TO PROVIDE A TEMPORARY OR PERMANENT SEEDING;
 - AREAS THAT CANNOT BE SEEDDED BECAUSE OF THE SEASON OF THE YEAR AND NEED FOR SOIL SURFACE PROTECTION;
 - FOR MUD AND DUST CONTROL;
 - PROVIDE PROTECTION DURING PERIODS WHEN CONSTRUCTION OR SEEDING CANNOT BE DONE; AND SHALL BE CONSTRUCTED ACCORDING TO THE ILLINOIS URBAN MANUAL PRACTICE STANDARD 875.



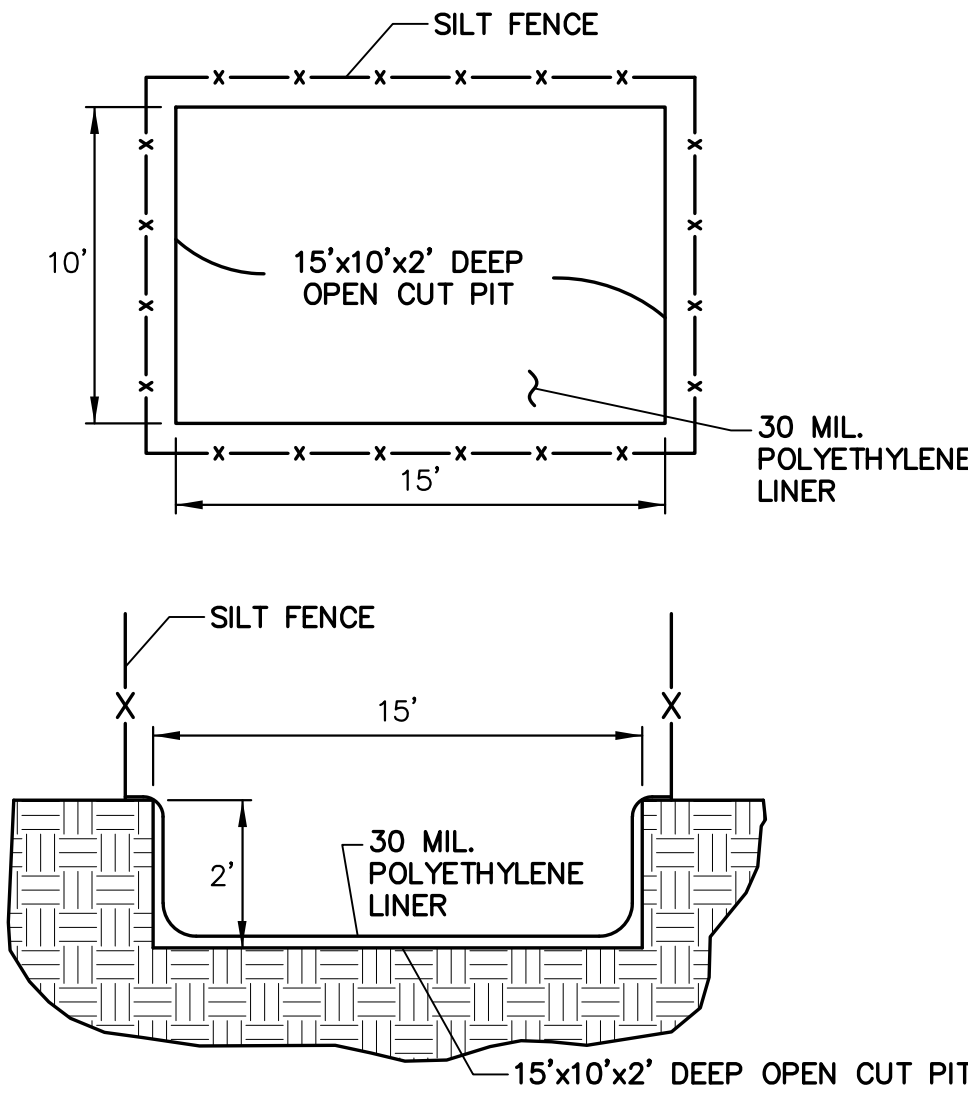
- NOTES:
- TOP FLANGE FABRICATED FROM 1 1/4" x 1 1/4" x 1/8" ANGLE BASE RIM FABRICATED FROM 1 1/2" x 1/2" x 1/8" CHANNEL HANDLES AND SUSPENSION BRACKETS FABRICATED FROM 1 1/4" x 1/4" FLAT STOCK
 - ALL DOMESTIC STEEL IS TO CONFORM TO ASTM-A36.
 - SEDIMENT BAG IS TO BE FABRICATED FROM 4 OZ./SQ.YD. NON-WOVEN 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:
- 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.
 - FENCE POSTS SHALL BE EITHER STANDARD STEEL POST OR WOOD POST WITH A MINIMUM CROSS-SECTIONAL AREA OF 3.0 SQ. IN.
 - STEEL POSTS SHALL BE STANDARD T AND U SECTIONS WEIGHING NOT LESS THAN 1.33 POUNDS PER LINEAR FOOT OR OTHER STEEL POSTS HAVING EQUIVALENT STRENGTH AND BENDING RESISTANCE.
 - WIRE FENCE SHALL BE A MINIMUM 12 GAGE WIRE WITH A 6 INCH MAXIMUM OPENING.
 - 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.
- MAINTENANCE NOTES:
- 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.
 - SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
 - SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
 - 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 SEEDDED.
 - 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



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

CONCRETE WASHOUT AREA DETAIL

PHASE 1 CONSTRUCTION SEQUENCE:

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

PHASE II CONSTRUCTION SEQUENCE:

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

EROSION CONTROL

- 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).
- 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.
- 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.
- 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.
- 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.
- 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.
- STREETS ARE TO BE CLEARED OF DEBRIS, AND SWEEP CLEAN OF SILT AND MUD DAILY.
- 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.
- ALL EROSION CONTROL PROTECTION SHALL BE KEPT IN PLACE UNTIL THE GROUND HAS BEEN STABILIZED AND THE PAVEMENT HAS BEEN INSTALLED.
- ANY DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE STOPPED (PERMANENTLY OR TEMPORARILY) FOR 7 DAYS, MUST BE STABILIZED IN ACCORDANCE WITH NPDES REQUIREMENTS.
- BUILT UP SEDIMENT SHALL BE REMOVED FROM THE SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE.
- 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.
- 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.
- CONTRACTOR TO COMPLY WITH FINAL STABILIZATION AND TERMINATION REQUIREMENTS OF THE SWPPP.
- 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.

DATE	REVISIONS	NO.
8/22/19	NO REVISIONS	1
9/15/19	NO REVISIONS	2
11/22/19	NO REVISIONS	3
12/27/19	NO REVISIONS	4

Prepared For:

Vequity
400 N. State Street
Chicago, IL 60654
PROPOSED FUEL CENTER
17100 S. Harlem Avenue
Tinley Park, Illinois

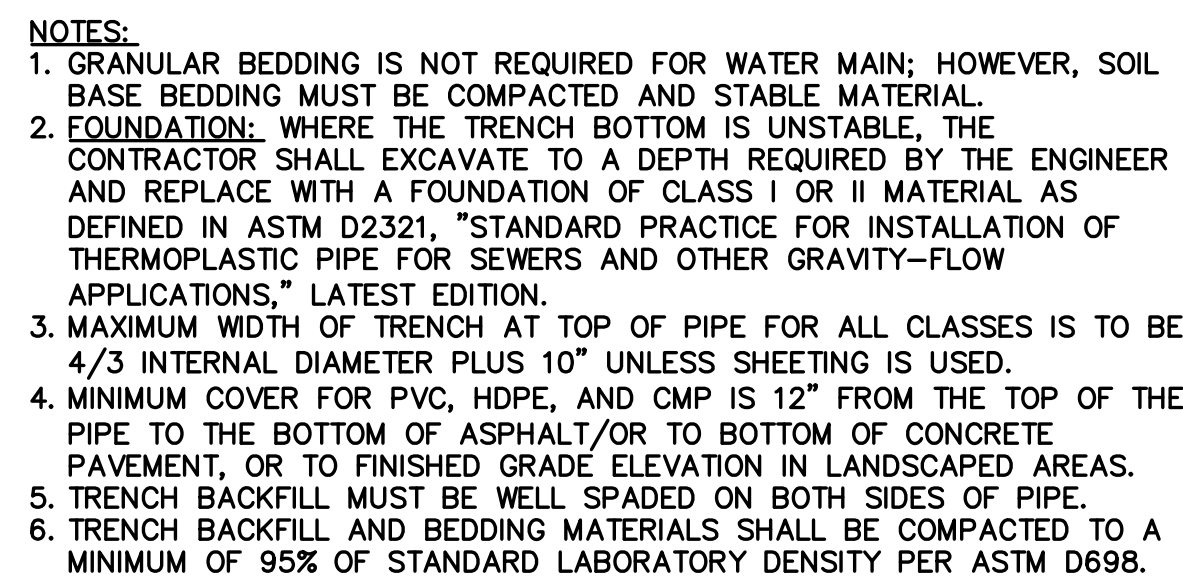
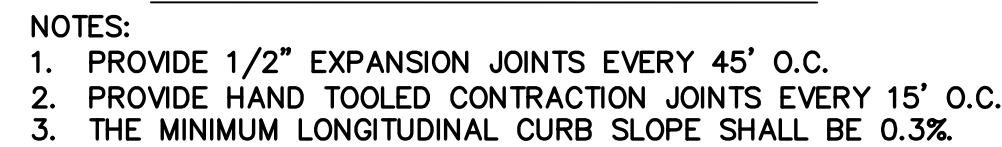
Prepared By:

Watermark
Engineering
RESOURCES, LTD.
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60002
phone 630-375-1800 fax 630-236-9800 www.watermark-engineering.com

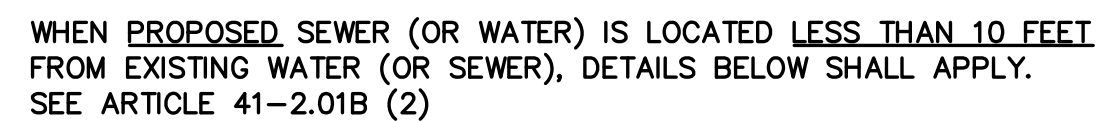
CHECKED BY: B. PERRY
DESIGN BY: S. SIMAK
DRAWN BY: S. SIMAK
DATE: JULY 5, 2019
SCALE: NONE
PROJECT NO.: 19-005

SOIL EROSION CONTROL DETAILS AND SPECS

C-8



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)



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



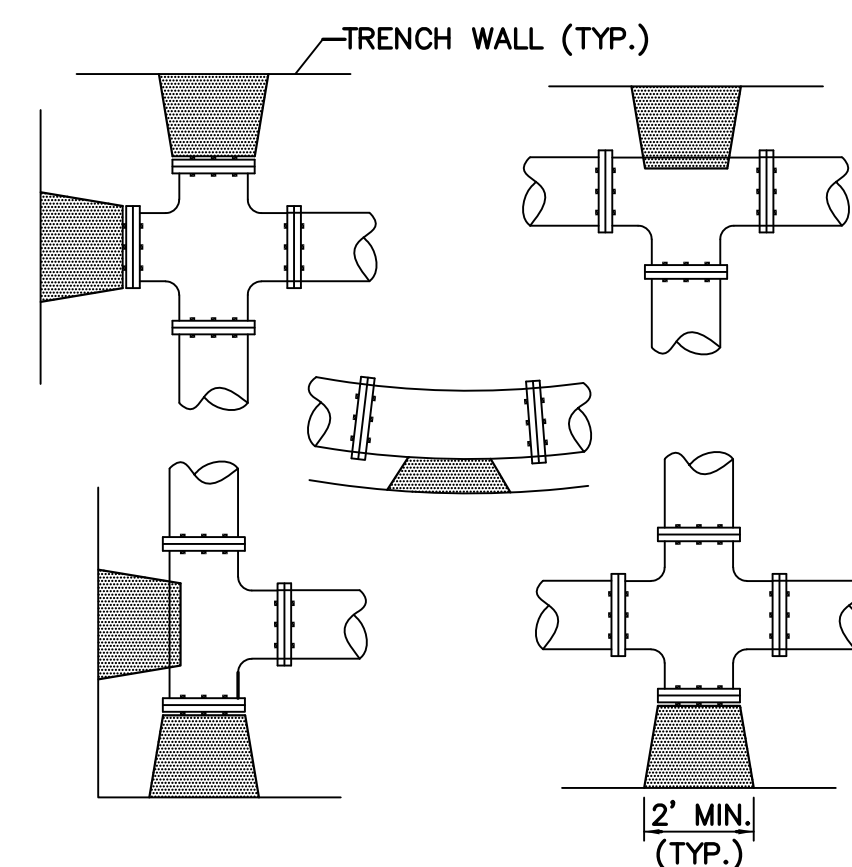
- NOTES:
1. PROVIDE EXTERNAL CHIMNEY SEAL ON ALL SANITARY MANHOLES.
 2. USE TYPE A UNLESS SPECIFIED IN SEWER CALLOUT.
 3. OUTSIDE OF SANITARY MANHOLE SHALL BE MOISTURE PROOFED WITH TWO COATS OF BITUMINOUS MATERIAL.



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



- 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.

CLEANOUT DETAIL

PROJECT DETAILS

NO.	REVISIONS	DATE
1	REVISIONS PER VILLAGE REVIEW LETTER DATED 8/5/19	8/22/19
2	NO REVISIONS	9/5/19
3	NO REVISIONS	11/22/19
4	NO REVISIONS	12/27/19

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 630-375-1600 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

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, THE 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. RESTORATIONS 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 STIK® (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-PP, AS MANUFACTURED BY W.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 BEARING 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 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 1020g 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%).

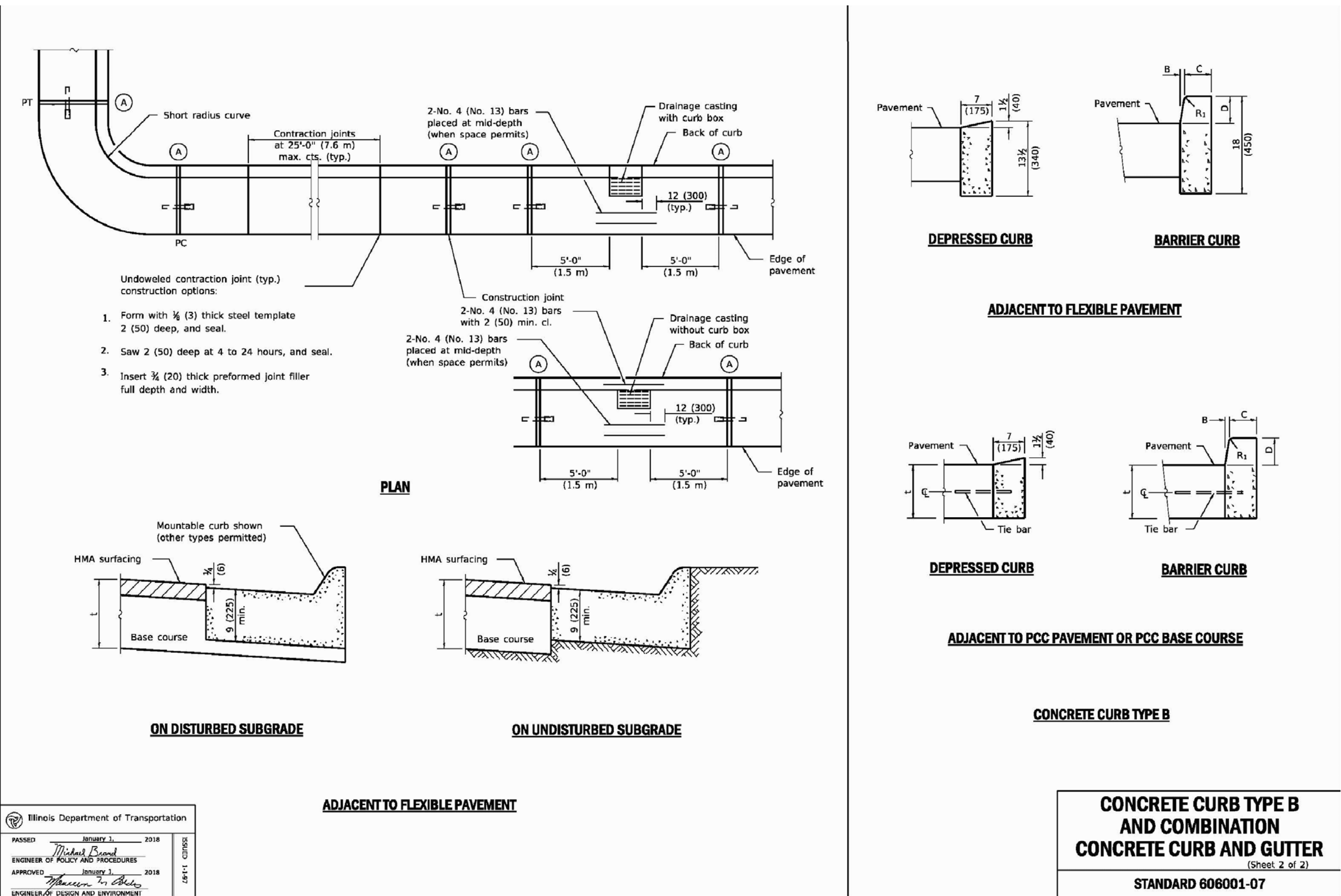
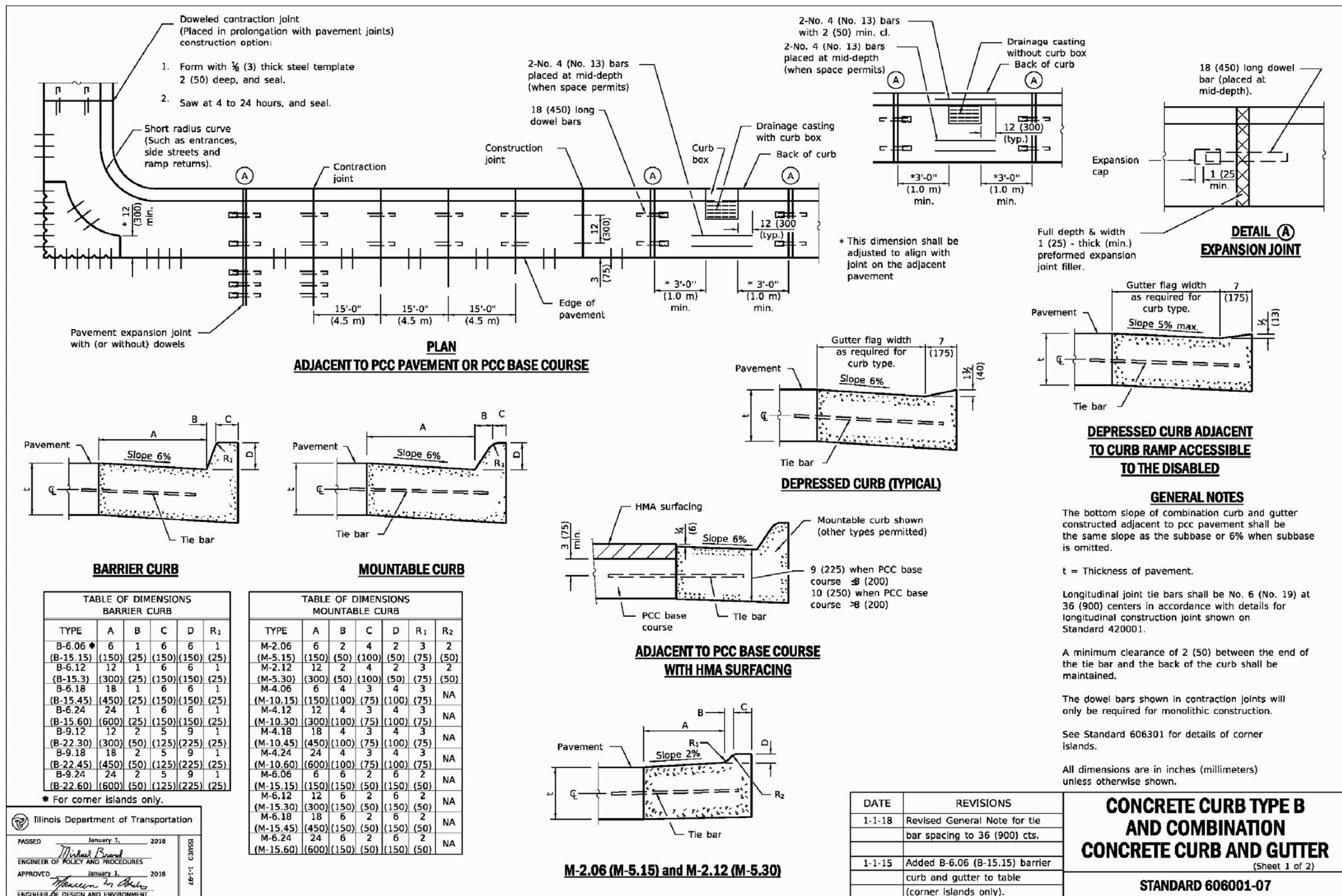
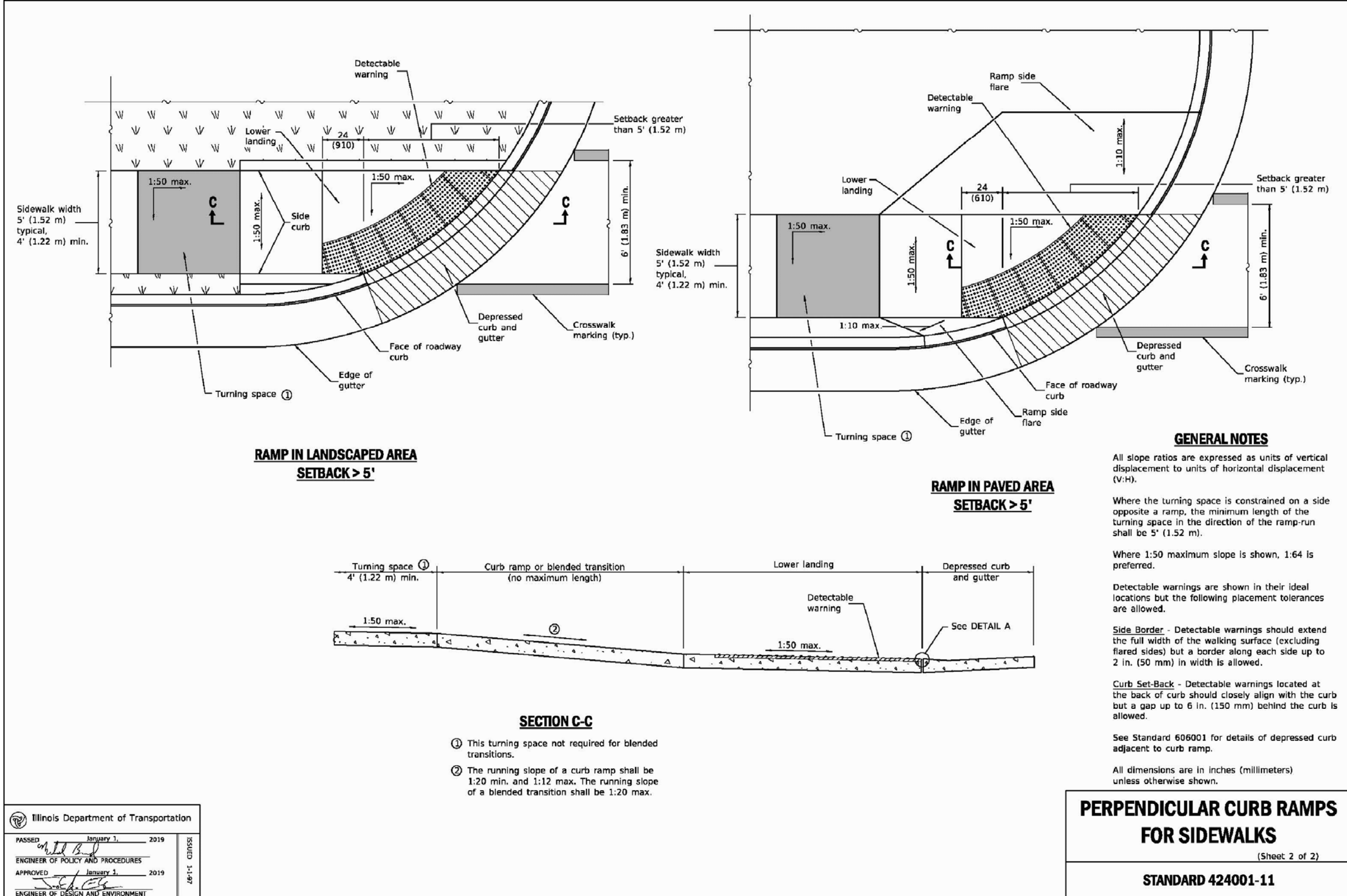
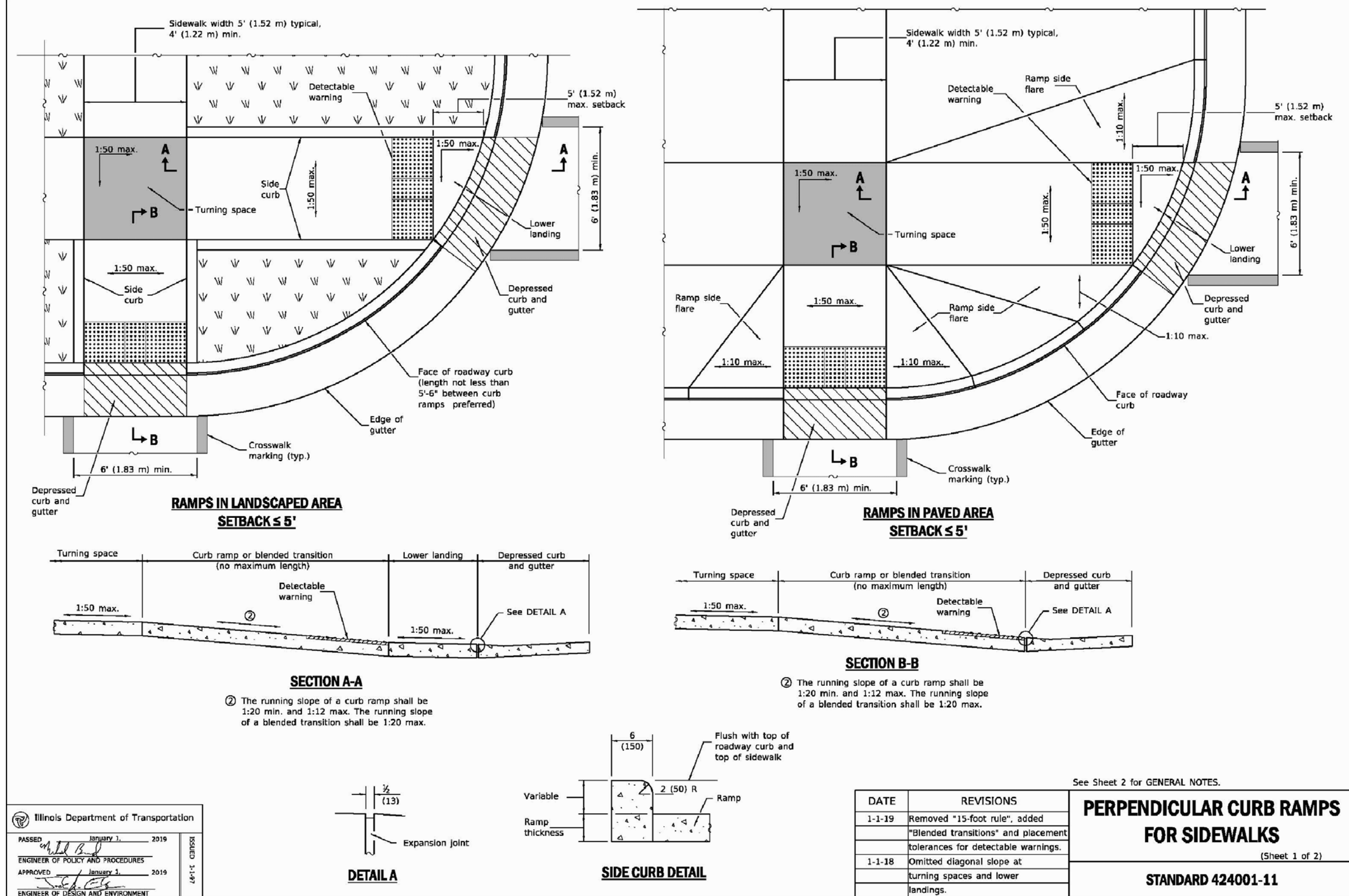
CHECKED BY: B. PERRY	DESIGN BY: S. SINAK	DRAWN BY: S. SINAK	DATE: JULY 5, 2019	SCALE: NONE	PROJECT NO.: 19-005
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502 phone 630-375-1800 fax 630-236-9600 www.watermark-engineering.com					
PROJECT SPECIFICATIONS					
C-10					

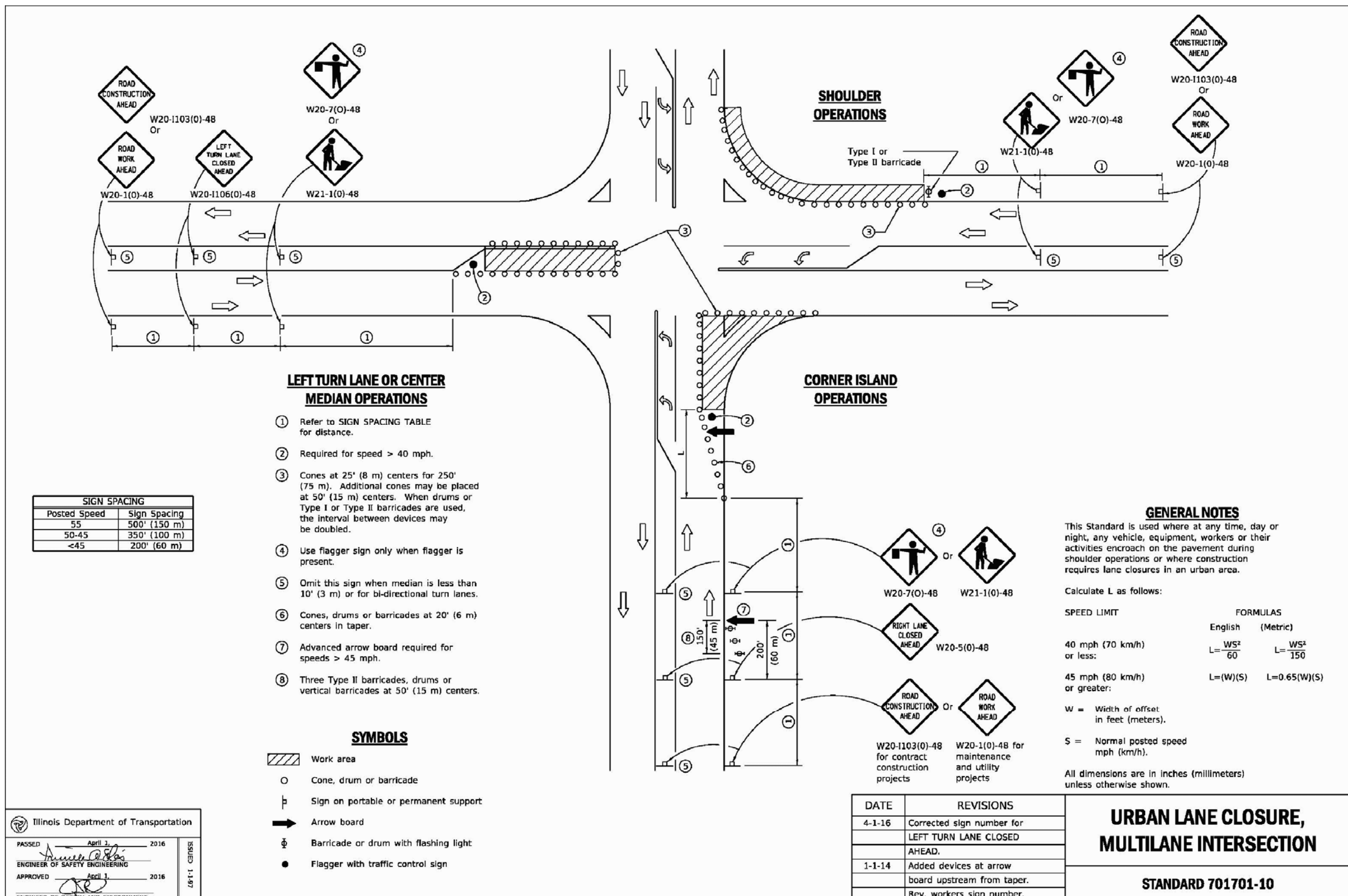
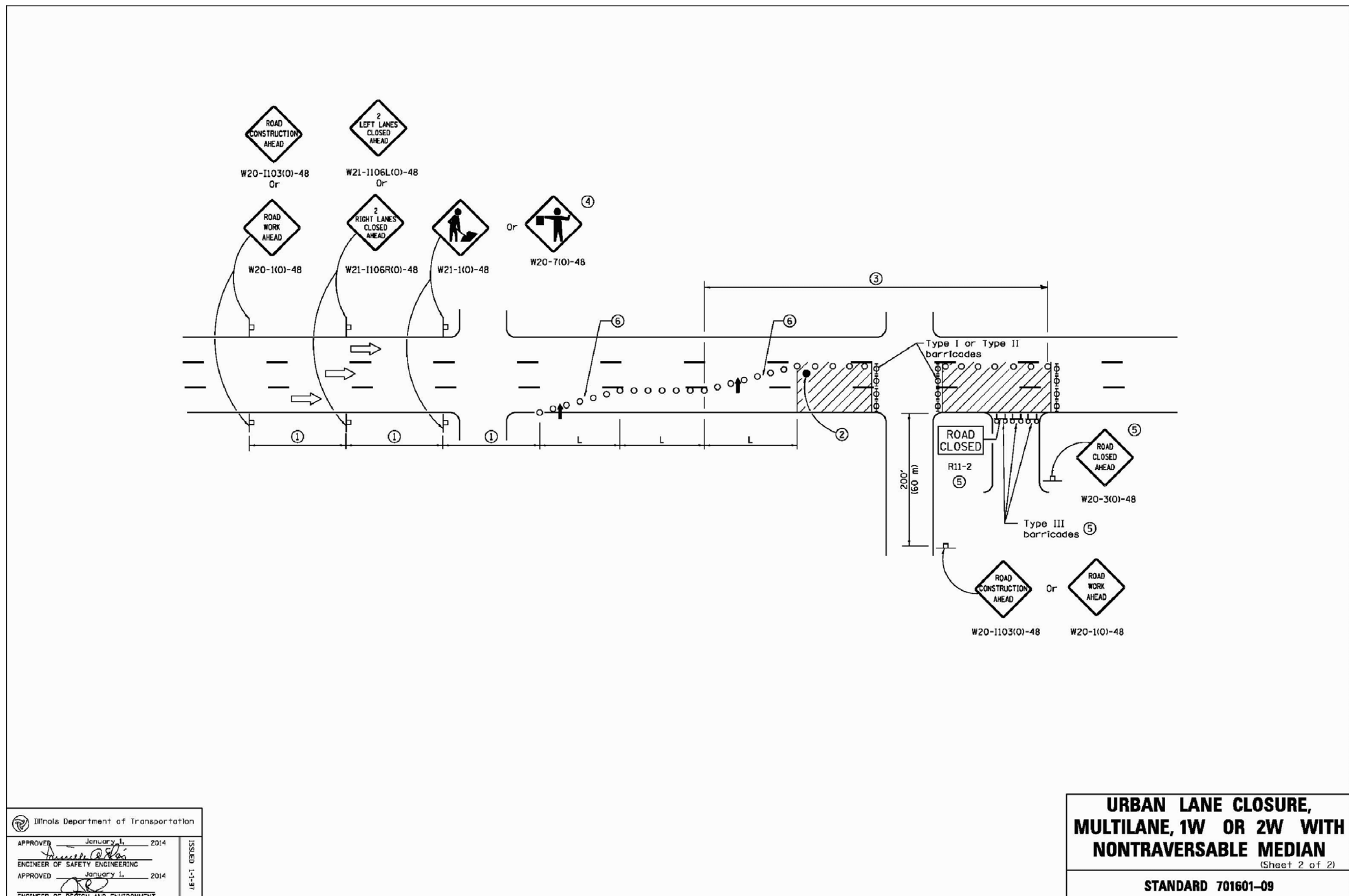
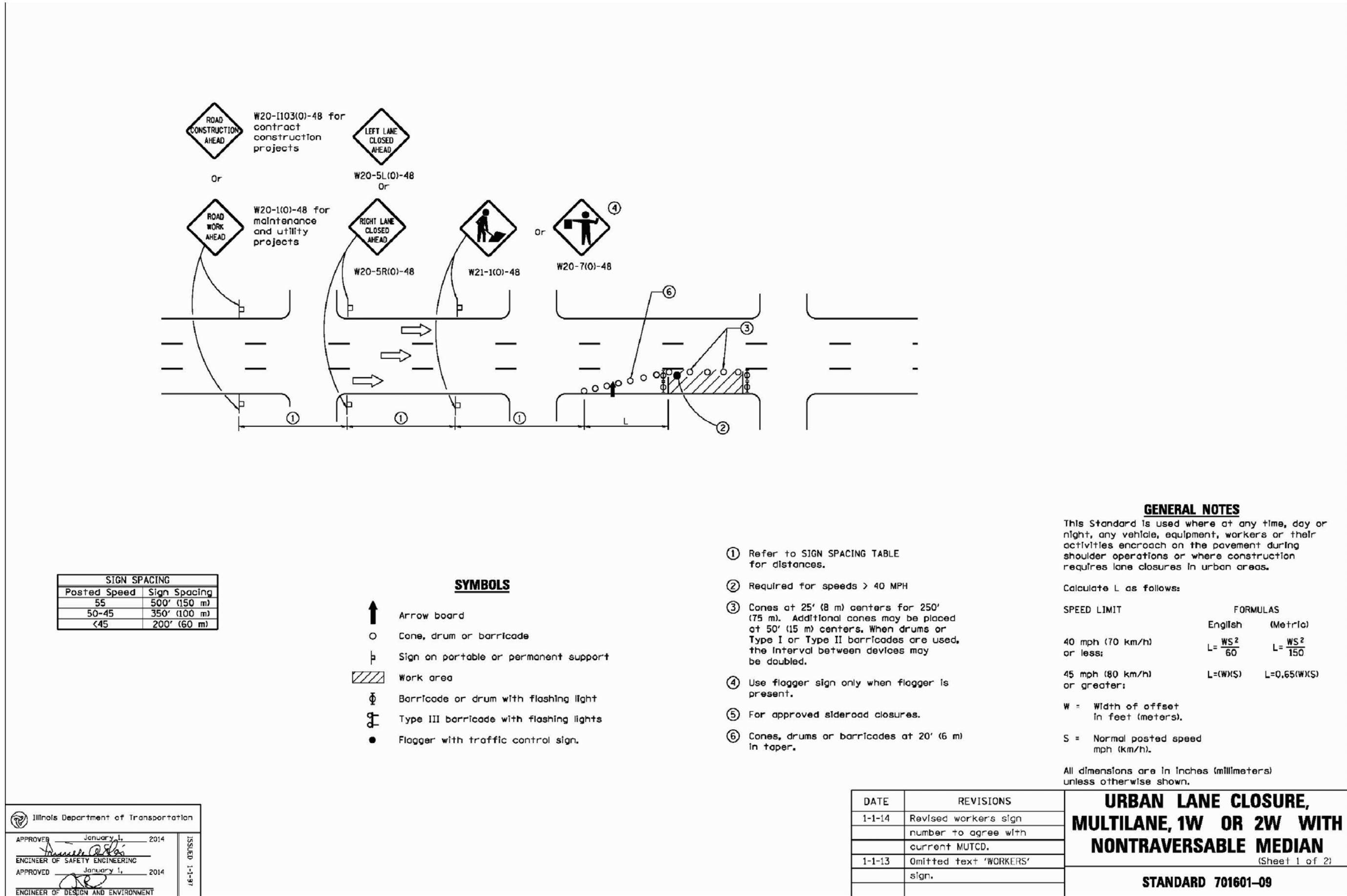
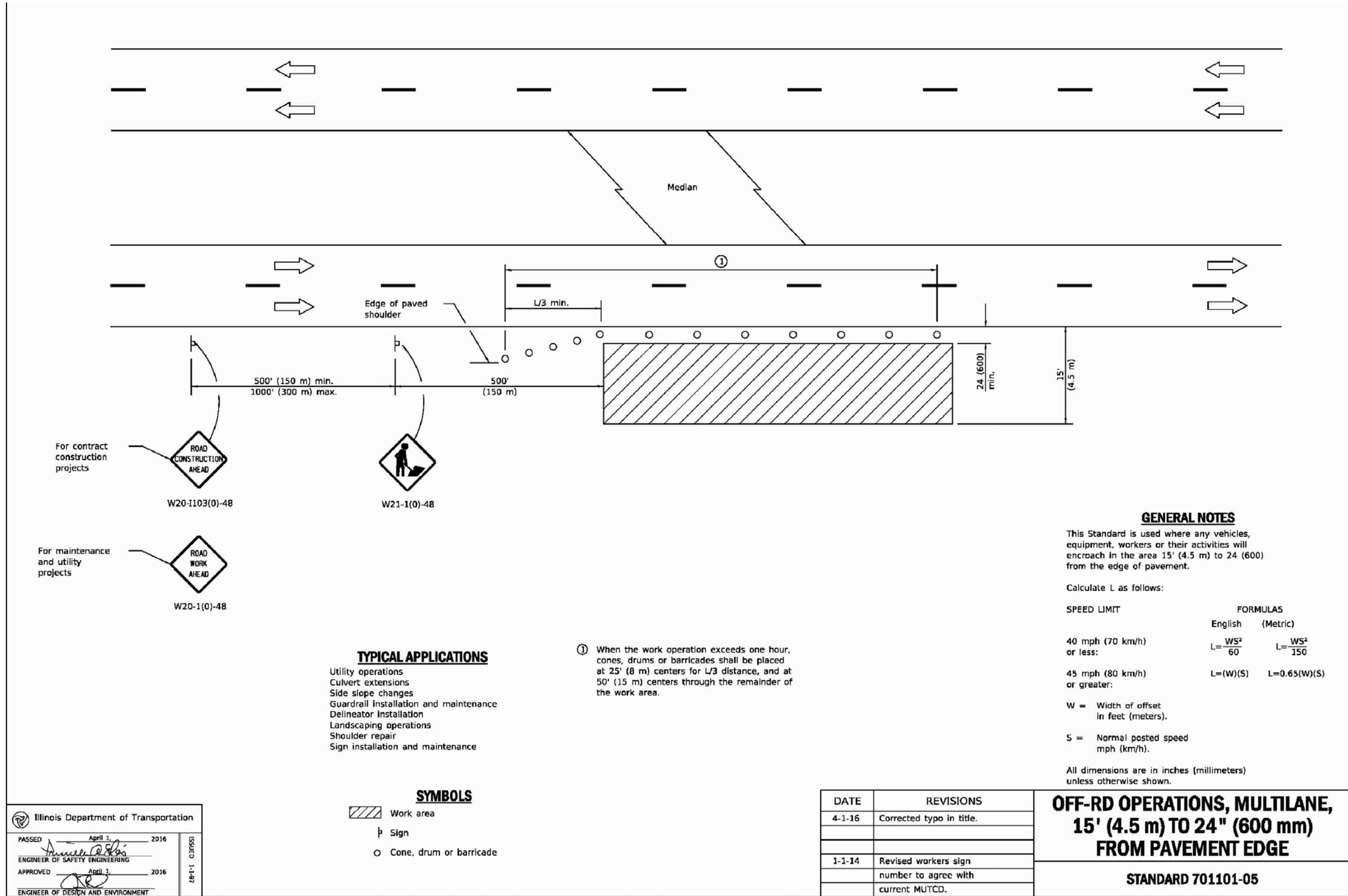
Prepared For:

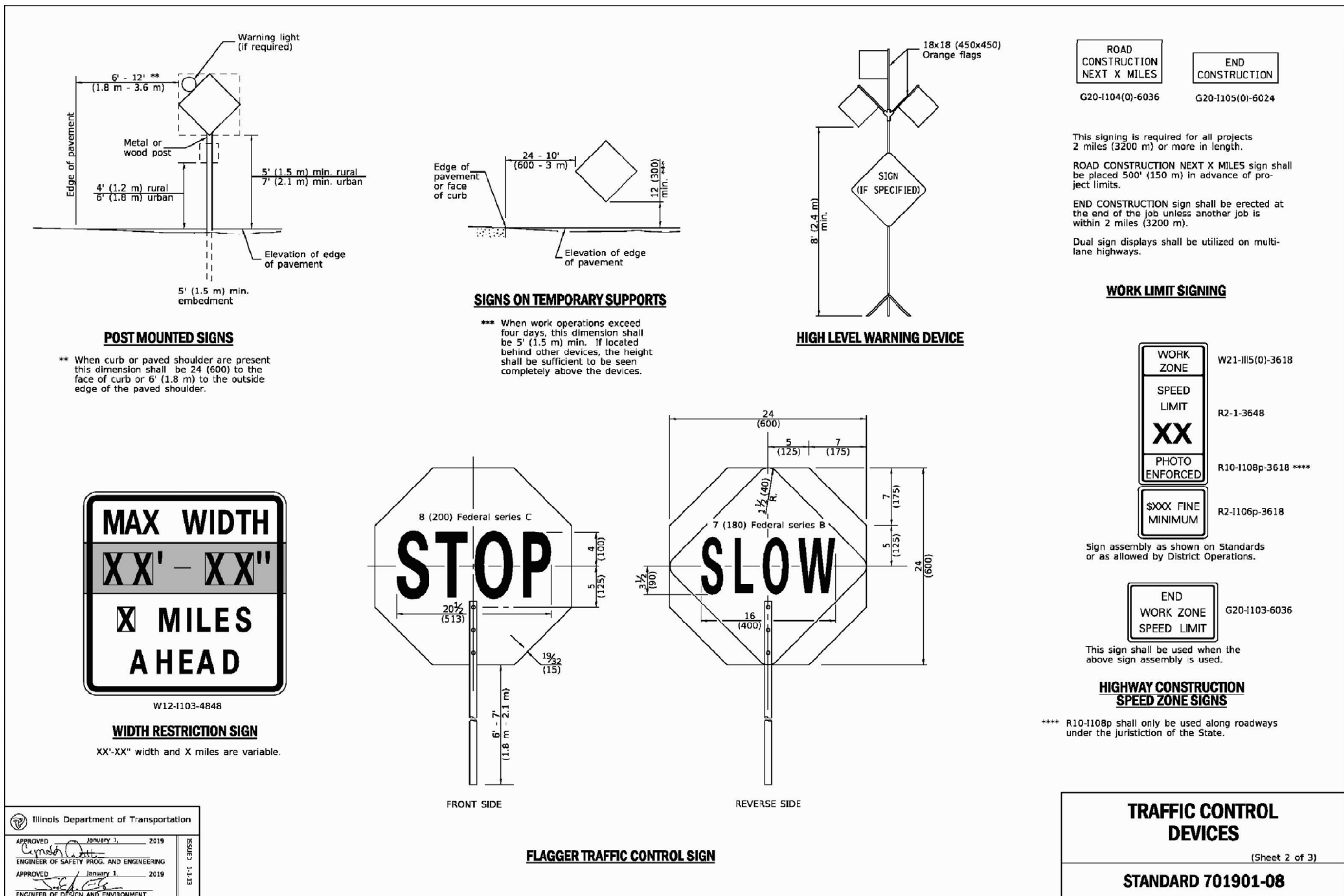
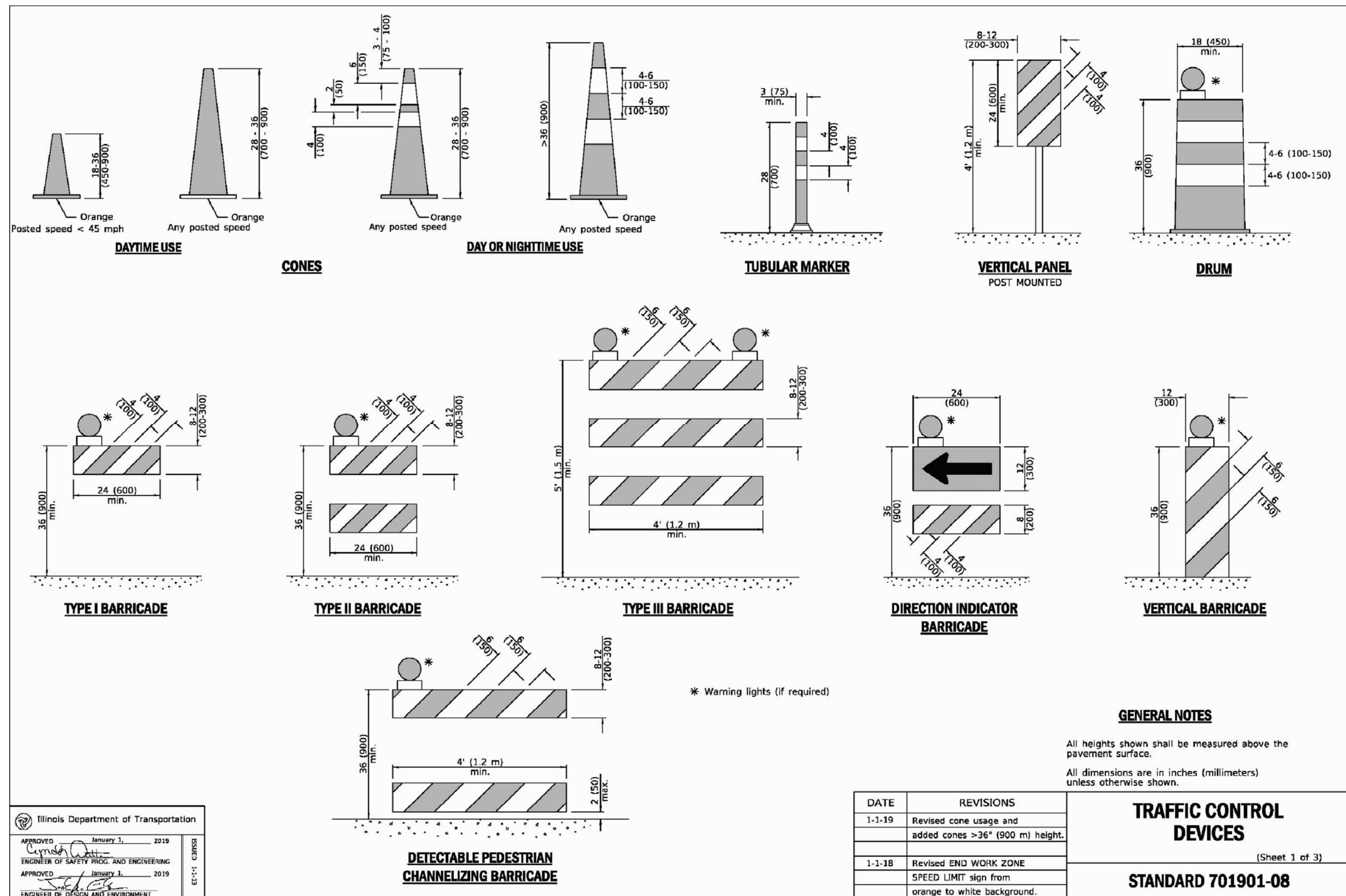
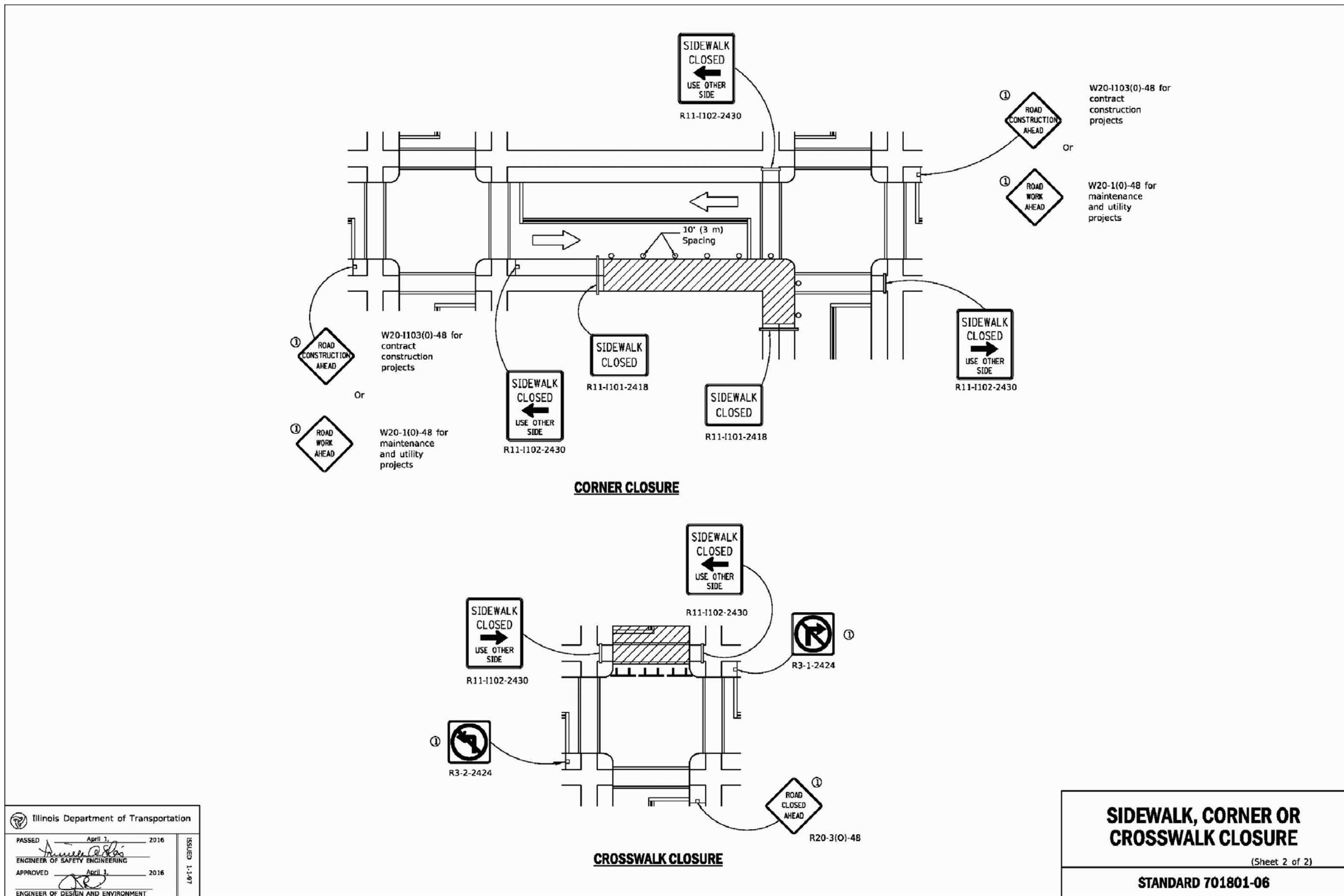
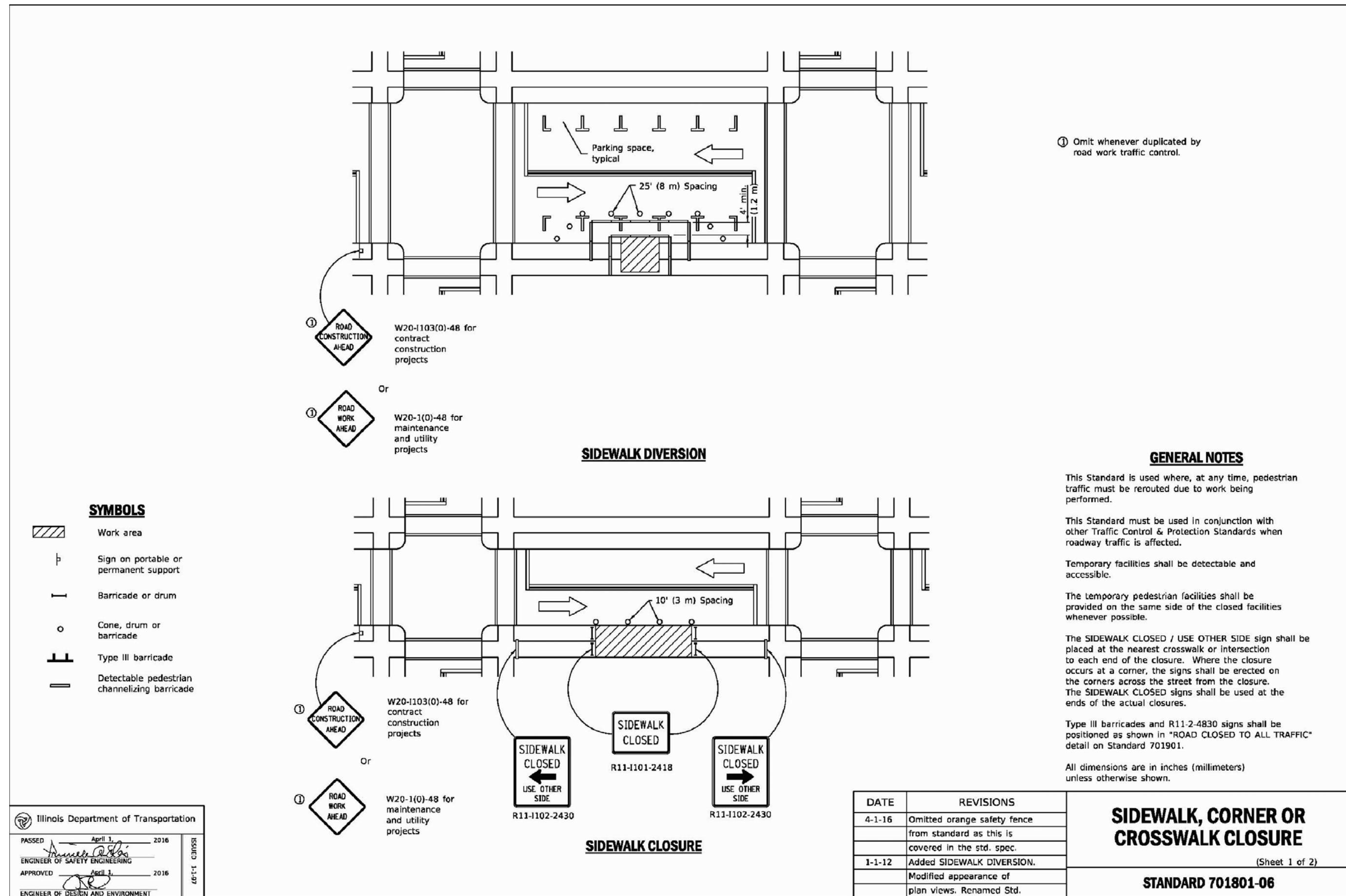
Prepared By:

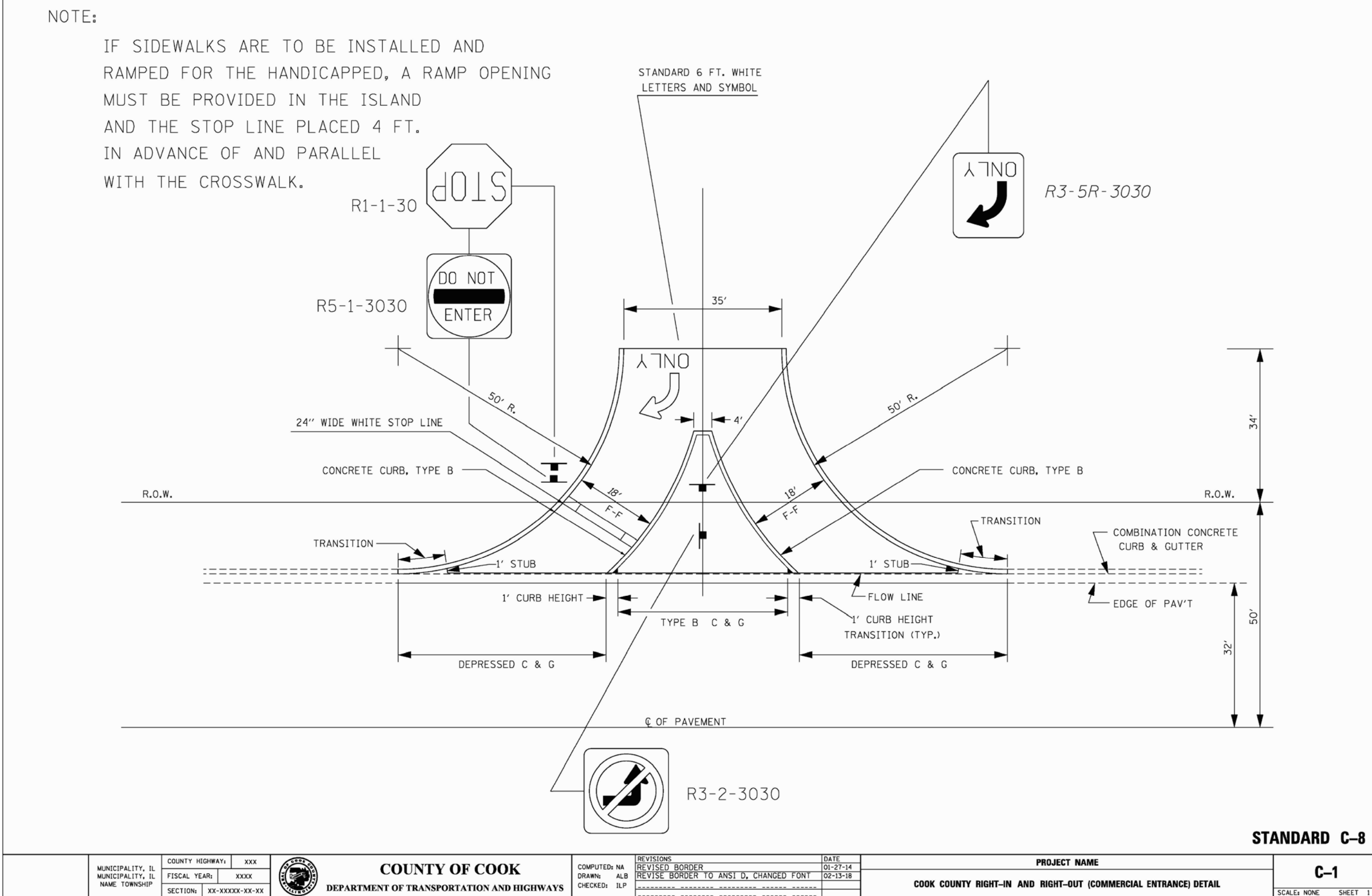
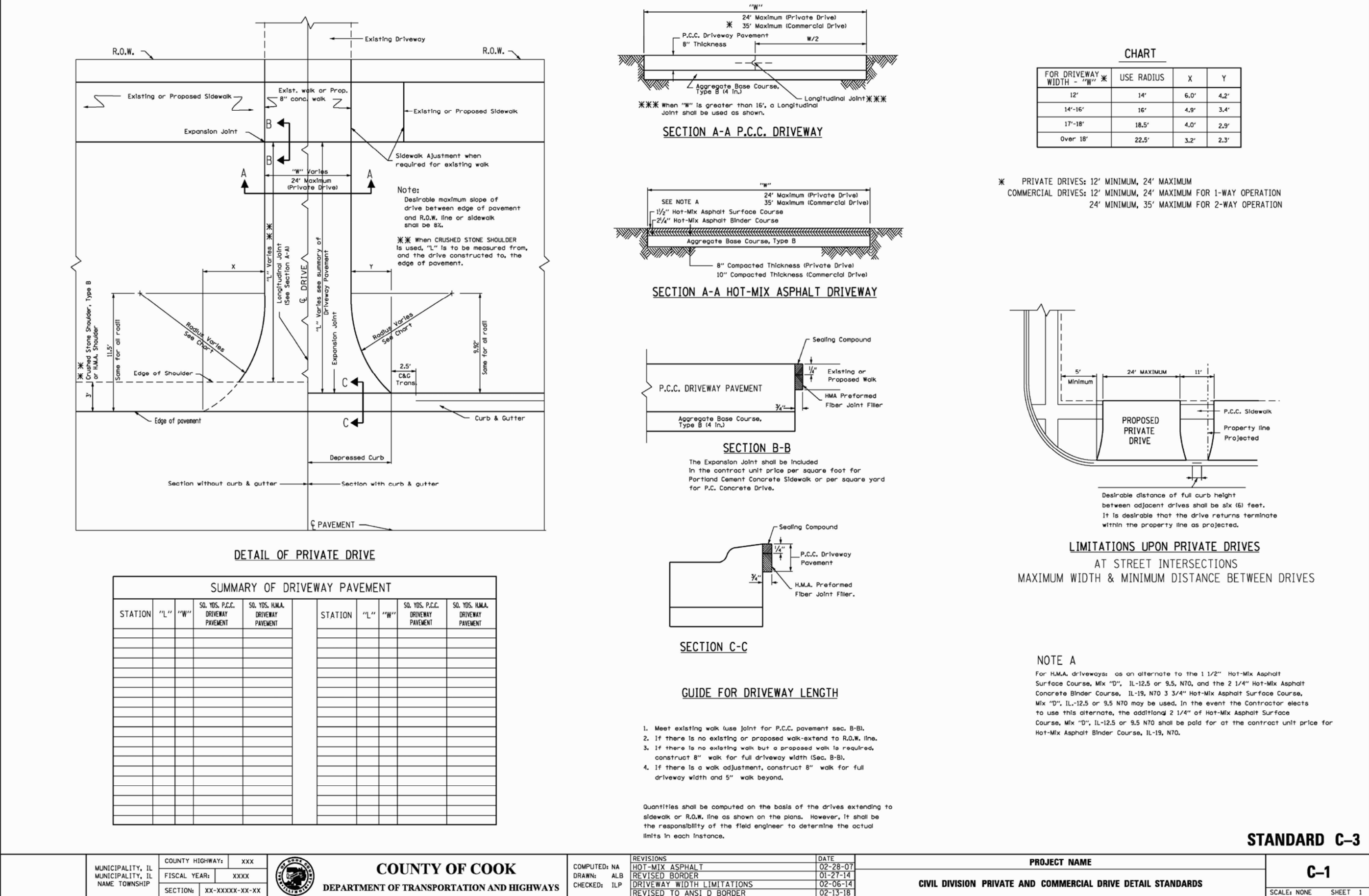
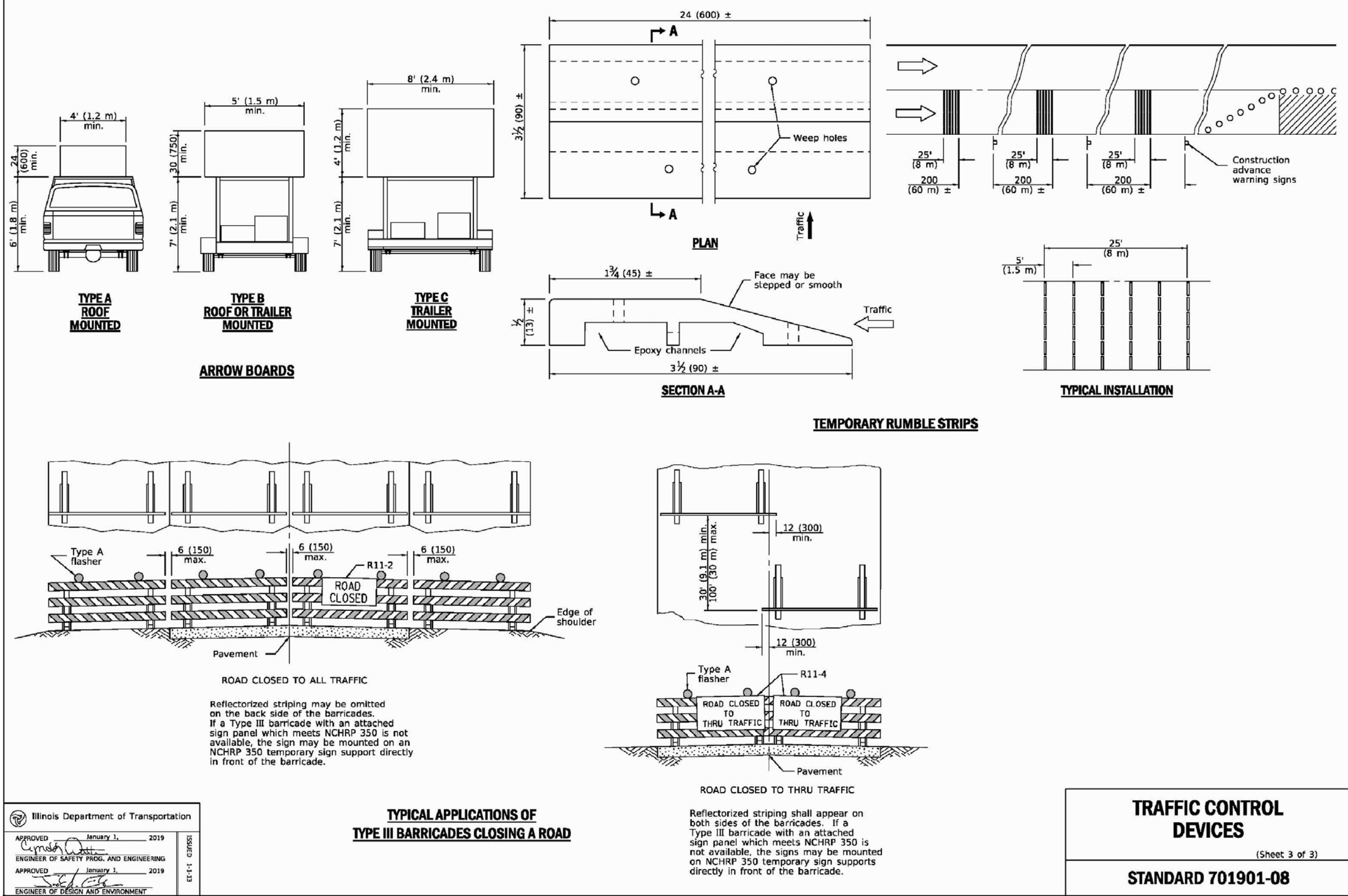
Vequity
400 N. State Street
Chicago, IL 60654

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









DATE
8/22/19
9/15/19
11/22/19
12/27/19

REVISIONS
NO REVISIONS
NO REVISIONS
PEE CLIENT REQUEST
NO REVISIONS

NO.
1
2
3
4

Prepared For:

Prepared By:

C-15

Checked By: B. PERRY
Design By: S. SIMAK
Drawn By: S. SIMAK
Date: JULY 5, 2019
Scale: NONE
Project No.: 19-005

Watermark Engineering
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60002
phone 630-375-1800 fax 630-236-9800 www.watermark-engineering.com



Pizzo Native Plant Nursery, LLC • 10729 Pine Road • Leland, IL 60531 • P: 815.981.8000 • F: 815-498-4406 • www.pizzonursery.com
© 2015 Pizzo Native Plant Nursery, LLC

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'	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 stormwater 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.
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%)	

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	<i>Andropogon gerardii</i>	BIG BLUESTEM GRASS	5	0	FAC	6-8' (7')	N/A						10,000	64,000	4.00	13.20%	4.91%		
CXBEBB	<i>Carex bebbii</i>	BEBB'S OVAL SEDGE	6	-5	OBL	2-4' (3')	N/A						34,000	2,000	0.13	0.41%	0.52%		
CXBREV	<i>Carex brevior</i>	PLAINS OVAL SEDGE	4	0	FAC	6'-18" (12")	N/A						29,000	4,000	0.25	0.82%	0.89%		
CXYST	<i>Carex hystericina</i>	PORCUPINE SEDGE	5	-5	OBL	2-4' (3')	N/A						30,000	4,000	0.25	0.82%	0.92%		
CXYULP	<i>Carex vulpinoidea</i>	BROWN FOX SEDGE	2	-3	FACW	2-4' (3')	N/A						100,000	8,000	0.50	1.65%	6.13%		
ELPAL	<i>Elaecharis palustris</i>	GREAT SPIKE RUSH	10	-5	OBL	6'-18" (12")	N/A						51,000	4,000	0.25	0.82%	1.56%		
ELVCAN	<i>Elymus canadensis</i>	CANADA WILD RYE	4	3	FACU	2-5' (3.5')	N/A						5,200	32,000	2.00	6.60%	1.28%		
ELVIR	<i>Elymus virginicus</i>	VIRGINIA WILD RYE	4	-3	FACW	3-5' (4')	N/A						4,200	48,000	3.00	9.90%	1.55%		
JUNDUD	<i>Juncus dudleyi</i>	DUDLEY'S RUSH	4	-3	FACW	1-3' (2')	N/A						3,200,000	1,000	0.06	0.21%	24.54%		
PANVIR	<i>Panicum virgatum</i>	SWITCH GRASS	5	0	FAC	3-5' (4')	N/A						14,000	80,000	5.00	16.49%	8.59%		
SCHSCO	<i>Schizachyrium scoparium</i>	LITTLE BLUESTEM GRASS	5	3	FACU	2-3' (3')	N/A						15,000	64,000	4.00	13.20%	7.36%		
SORNUOT	<i>Sorghastrum nutans</i>	INDIAN GRASS	5	3	FACU	3-7' (6')	N/A						12,000	16,000	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	4,000	0.25	0.82%	0.23%	
ASCINC	Asclepias incarnata	SWAMP MILKWEED	4	-5	OBL	3-5' (4')	Magenta							4,800	24,000	1.50	4.95%	0.88%	
CHAFAS	Chamaecrista fasciculata	PARTRIDGE PEA	5	3	FACU	1-3' (2')	Yellow							2,700	16,000	1.00	3.30%	0.33%	
CORTRP	Coreopsis tripteris	TALL COREOPSIS	5	0	FAC	5-8' (7')	Yellow							14,000	6,000	0.38	1.24%	0.64%	
DESCAA	Desmodium canadense	SHOWY TICK TREFLOI	4	3	FACU	3-6' (5')	Purple							5,500	4,000	0.25	0.82%	0.17%	
ECHPUR	Echinacea purpurea	PURPLE CONEFLOWER	3	5	UPL	2-5' (4')	Purple							6,600	16,000	1.00	3.30%	0.81%	
ERYVUC	Eryngium yuccifolium	RATTLESNAKE MASTER	9	0	FAC	2-5' (4')	White							7,500	12,000	0.75	2.47%	0.69%	
EUPPER	Eupatorium perfoliatum	COMMON BONESET	4	-5	OBL	3-6' (4')	White							160,000	0,500	0.03	0.10%	0.61%	
EUTGRA	Euthamia graminifolia	COMMON GRASS-LEAVED GOLDENROD	4	-3	FACW	2-4' (3')	Yellow							350,000	1,000	0.06	0.21%	2.68%	
EUTMAC	Eutrachium maculatum	SPOTTED JOE PYE WEED	4	-5	OBL	4-7' (5')	Pink							95,000	2,000	0.13	0.41%	1.46%	
HELAUT	Helianthus autumnale	SNEEZEWEED	5	-3	FACW	2-5' (4')	Yellow							130,000	3,000	0.19	0.62%	2.99%	
KUHEUC	Kuhnia eupatorioides corymbulosa	FALSE BONESET	6	5	UPL	2-5' (3')	White							32,000	4,000	0.25	0.82%	0.98%	
MONFIS	Monarda fistulosa	WILD BERGAMOT	4	3	FACU	3-5' (4')	Purple							70,000	4,000	0.25	0.82%	2.15%	
PENDIG	Penstemon digitalis	FOXGLOVE BEARD TONGUE	4	0	FAC	2.5-5' (3.5')	White							130,000	4,000	0.25	0.82%	3.99%	
PYCVIR	Pycnanthemum virginianum	COMMON MOUNTAIN MINT	5	-3	FACW	1-4' (3')	White							220,000	2,000	0.13	0.41%	3.37%	
RUDHIR	Rudbeckia hirta	BLACK-EYED SUSAN	1	3	FACU	2-3' (2.5')	Yellow							92,000	8,000	0.50	1.65%	5.64%	
RUDSUB	Rudbeckia subtomentosa	SWEET BLACK-EYED SUSAN	9	3	FACU	3-6' (5')	Yellow							43,000	4,000	0.25	0.82%	1.32%	
RUDTRI	Rudbeckia triloba	BROWN-EYED SUSAN	3	3	FACU	4-6' (5')	Yellow							34,000	3,000	0.19	0.62%	0.78%	
SILLAC	Silphium laciniatum	COMPASS PLANT	5	5	UPL	6-9' (8')	Yellow							660	1,000	0.06	0.21%	0.01%	
SOLRID	Solidago riddellii	RIDDELL'S GOLDENROD	7	-5	OBL	2-4' (3')	Yellow							93,000	2,000	0.13	0.41%	1.43%	
SOLRIG	Solidago rigida	STIFF GOLDENROD	4	3	FACU	3-6' (4')	Yellow							41,000	1,500	0.09	0.31%	0.47%	
SYMNOV	Symphoricarpon novae-angliae	NEW ENGLAND ASTER	4	-3	FACW	4-6' (5')	Purple							65,000	6,000	0.38	1.24%	2.99%	
THADAD	Thalictrum dasycarpum	PURPLE MEADOW RUE	5	-3	FACW	4-7' (6')	Cream							11,000	4,000	0.25	0.82%	0.34%	
VERFAS	Vernonia fasciculata	COMMON IRONWEED	5	-3	FACW	4-6' (5')	Purple							24,000	6,000	0.38	1.24%	1.10%	
VERHAS	Verbena hastata	BLUE VERVAIN	4	-3	FACW	4-7' (5')	Blue							93,000	4,000	0.25	0.82%	2.85%	
ZIZAUR	Zizia aurea	GOLDEN ALEXANDERS	7	0	FAC	2-4' (3')	Yellow							11,000	16,000	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	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
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%)	

- Notes:
- 1.) Pizzo recommends installing a Mycorrhizal Inoculant 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 RELATED 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. THE 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

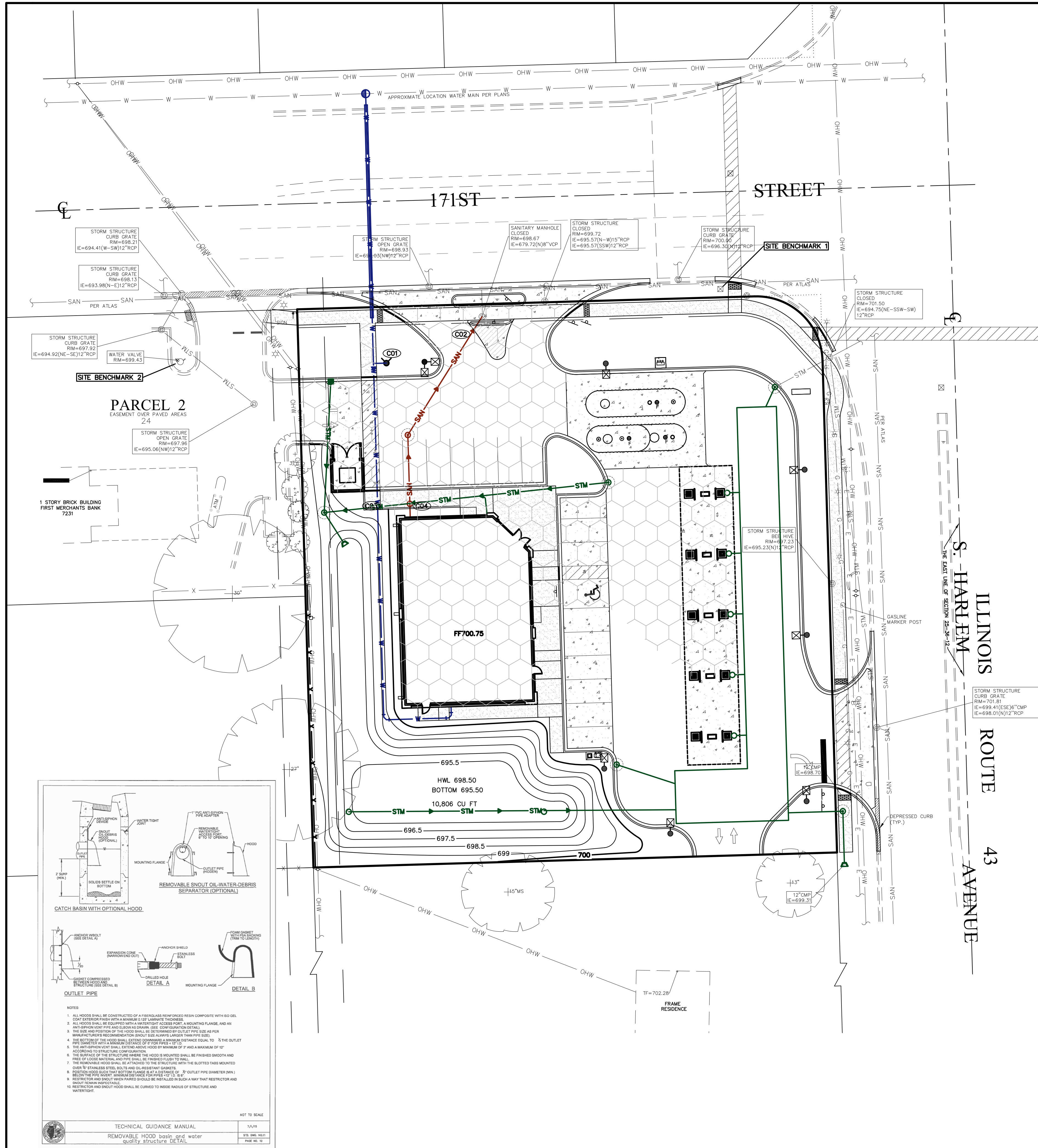
12. ALL SEEDS, PLUGS AND PLANTS SHALL BE GUARANTEED TO BE TRUE TO BOTANICAL NAME AND VARIETIES.
13. SEED MIX PERCENTAGES SHALL MATCH SEED COUNT AND PERCENTAGES SPECIFIED.
14. SEED MIX PERCENTAGES/ QUANTITY INDICATED PER ACRE SHALL MEAN THE TOTAL AMOUNT OF PLS (PURE LIVE SEED) PER ACRE FOR ALL SPECIES 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 RHIZOBIUM 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 PERENNIAL 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 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, GLODS, 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.
37. MAINTENANCE AND MANAGEMENT
38. 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 MAINTENANCE 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.

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



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

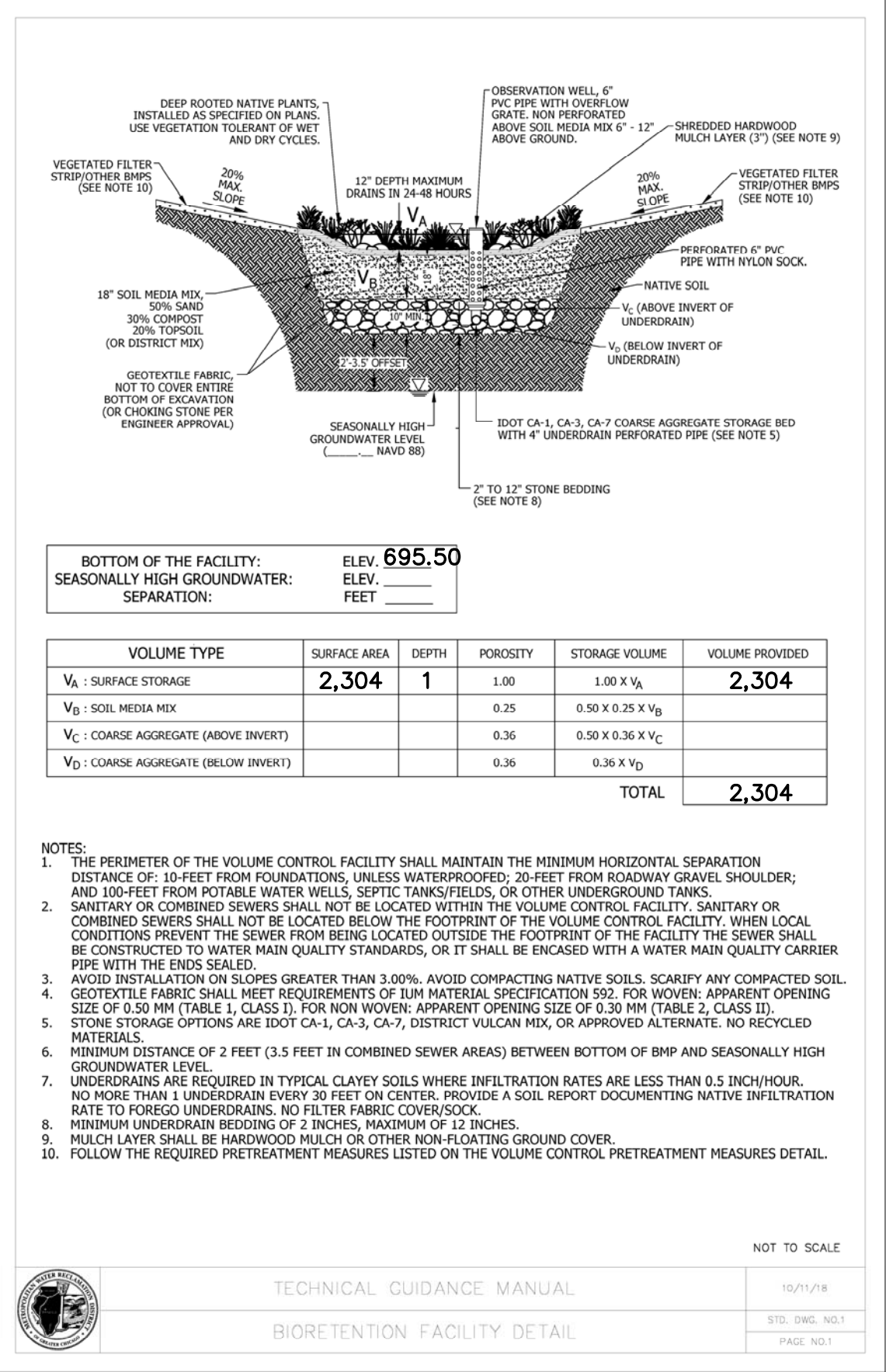
CONVEYANCE SYSTEM
SOUTH DRIVEWAY ACTS AS WEIR, 29' IN LENGTH

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 (SNOT 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.



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 MILL/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

DATE
8/22/19
9/15/19
11/22/19
12/27/19

REVISIONS
NO REVISIONS
PER CLIENT REQUEST
PER CLIENT REQUEST
NO REVISIONS

NO
1
2
3
4

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

MWRD DRAINAGE EXHIBIT

1 of 1



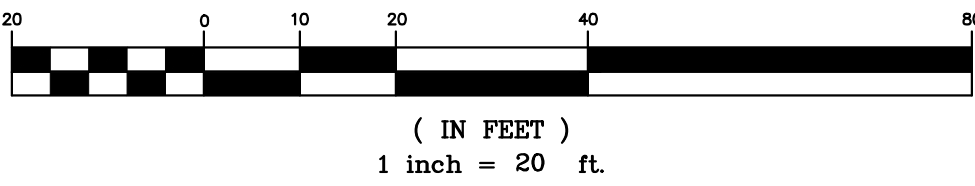
VICINITY MAP
NO SCALE

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

GRAPHIC SCALE



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)			

NOTE

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

LEGEND

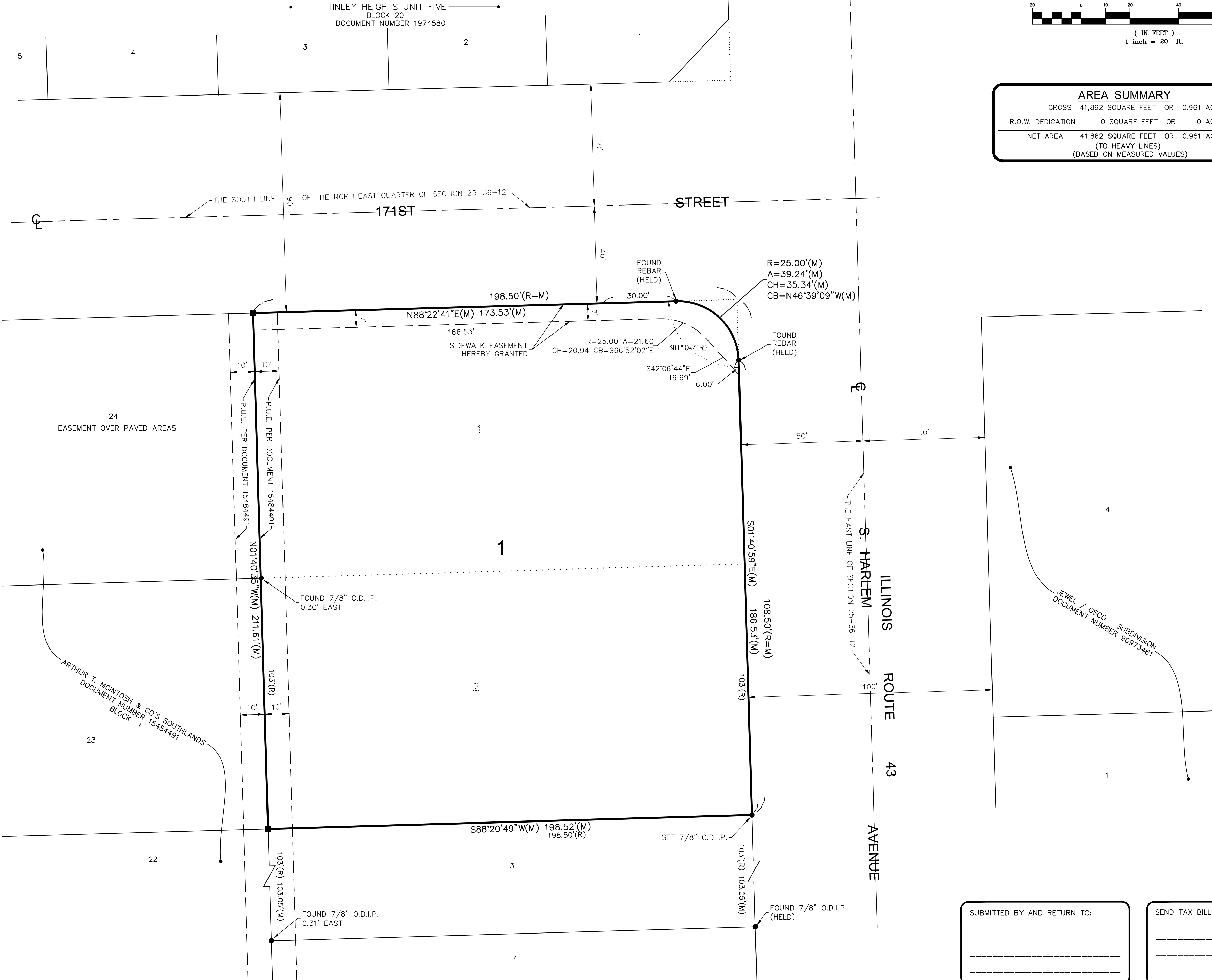
- SET 7/8" O.D.I.P.
UNLESS OTHERWISE NOTED
- SET CONCRETE MONUMENT
UNLESS OTHERWISE NOTED
- SET CROSS IN CONCRETE
UNLESS OTHERWISE NOTED

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:

DATE	7/16/2019	PC	TK	DRAWN BY	MRA	CHECKED BY	DW	BOOK	N/A	PG	N/A
NO.	1										
REVISIONS											
PER LETTER DATED	8/5/19										
PER LETTER DATED	9/6/19										
PER LETTER DATED	12/20/19										

PROJECT	SOUTHLANDS FIRST CONSOLIDATION
CLIENT	Tinley Park, Illinois
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 60002	PHONE: (630) 820-9100 FAX: (630) 820-9100 EMAIL: ADMIN@CCLSURVEYING.COM

SCALE: 1" = 20'

1 OF 2

PROJ. NO.: 19.0018-01

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

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 _____ }
COUNTY OF _____ } SS

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 _____ }
COUNTY OF _____ } SS

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 }
COUNTY OF COOK } SS

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 }
COUNTY OF COOK } SS

REVIEWED AND APPROVED BY THE PLAN COMMISSION

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

CHAIRMAN

VILLAGE BOARD OF TRUSTEES

STATE OF ILLINOIS }
COUNTY OF COOK } SS

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 }
COUNTY OF KANE } SS

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 17031C07081J, 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 }
COUNTY OF KANE } SS

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

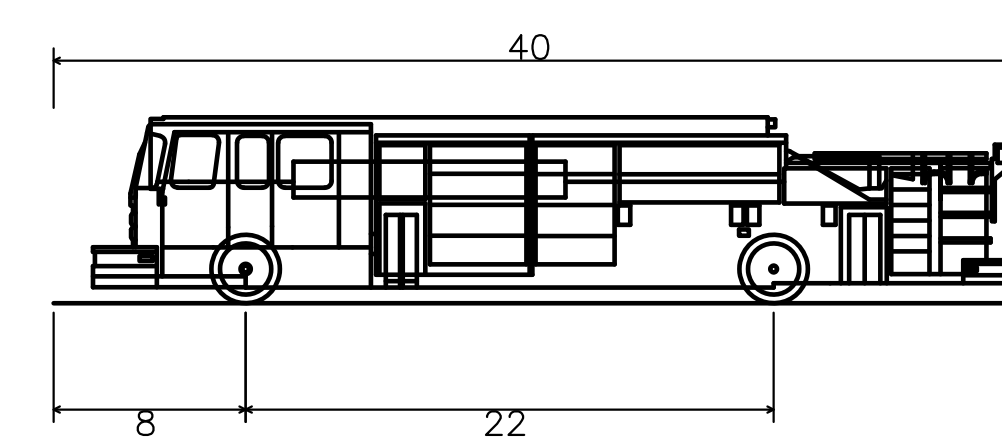
DATE: 7/16/2019	PC	TK	DRAWN BY	MRA	CHECKED BY	DW	BOOK	N/A	PG	N/A
NO.	1	2	3	4	5	6	7	8	9	10
REVISIONS										
PER LETTER DATED 8/5/19										
PER LETTER DATED 8/5/19										
PER LETTER DATED 9/6/19										
PER LETTER DATED 12/20/19										

PROJECT	SOUTHLANDS FIRST CONSOLIDATION
TINLEY PARK, ILLINOIS	
CLIENT	VEQUITY
400 N. State Street, Suite 400 Chicago, Illinois 60654	

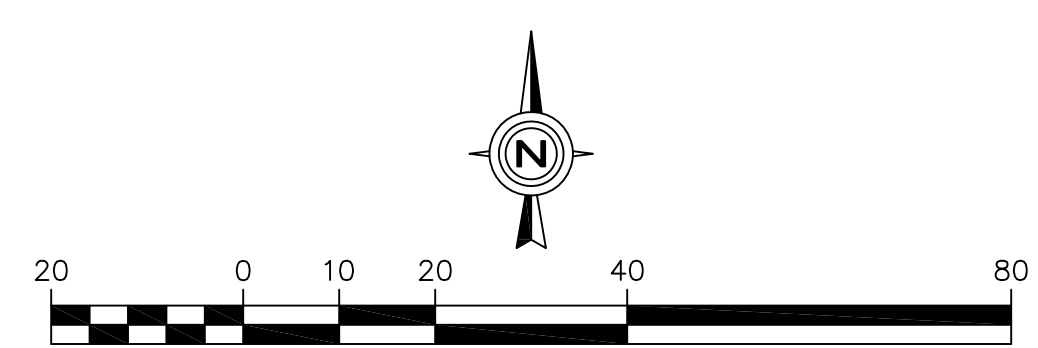
COMPASS SURVEYING LTD	ALTA SURVEYS • TOPOGRAPHY • CONSTRUCTION STAKING
2631 GINGER WOODS PARKWAY, STE. 100 AURORA, IL 60502 PHONE: (630) 820-9100 FAX: (630) 820-7030 EMAIL: ADMIN@CLSURVEYING.COM	

SCALE: NONE


2 OF 2

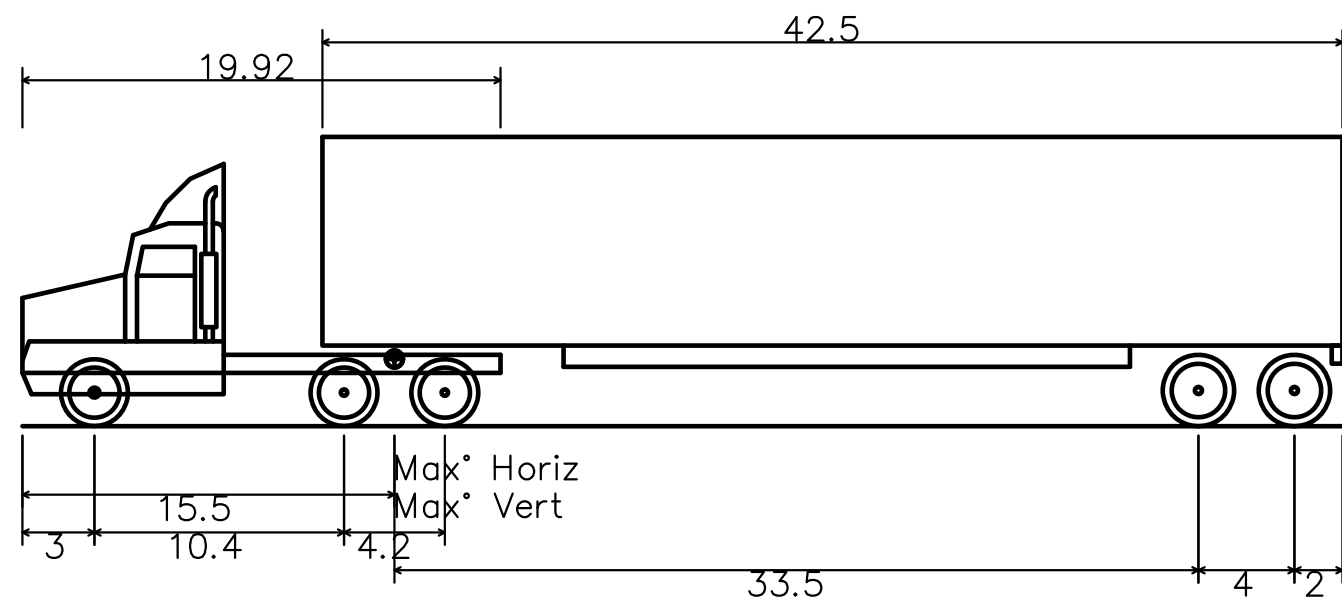
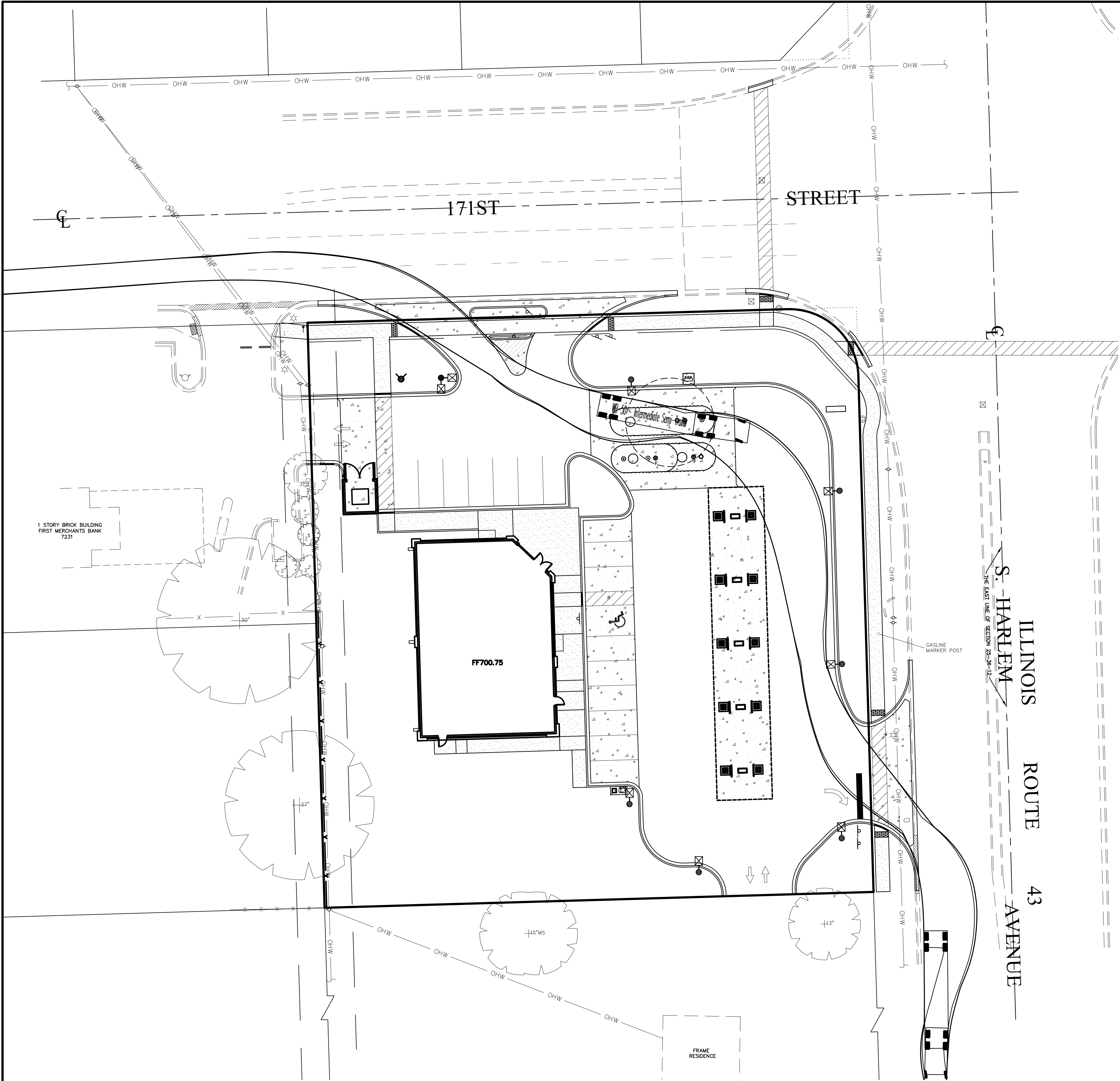


Fire Truck 45' Turning Radius	
Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	45.000ft

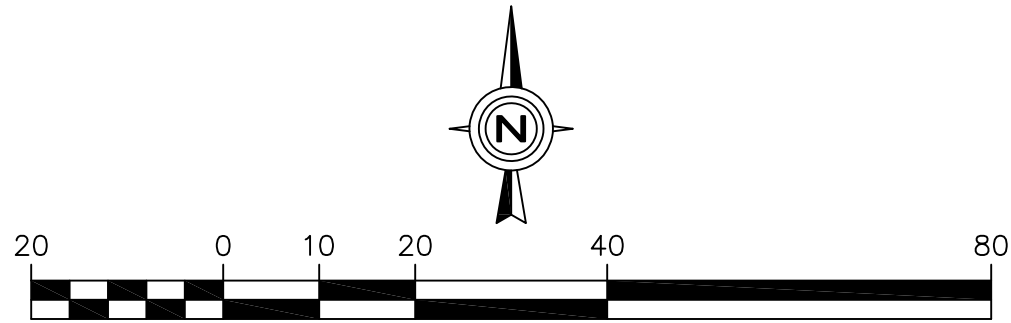


FIRE TRUCK CIRCULATION PLAN

 <p>2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502 phone 630.490.0000</p>		<p>CHECKED BY: B. PERRY</p> <p>DESIGN BY: S. SIMAK</p> <p>DRAWN BY: S. SIMAK</p> <p>DATE: AUGUST 22, 2019</p> <p>SCALE: 1" = 20'</p> <p>PROJECT NO.: 19-005</p>	
<p>1 of 1</p>		<p>Prepared By:</p>	
<p>Vegetivity</p> <p>400 N. State Street</p> <p>Chicago, IL 60654</p> <p>PROPOSED FUL CENTER</p> <p>17100 S. Harlem Avenue</p> <p>DuPage Park, Illinois</p>		<p>Prepared For:</p>	
<p>NO.</p>		<p>REVISIONS</p>	
<p>1</p>		<p>PER SITE PLAN REVISIONS</p>	
<p>DATE</p>		<p>11/22/19</p>	



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



FUEL TRUCK
CIRCULATION PLAN

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		Vequity		400 N. State Street		Chicago, IL 60654		PROPOSED FUEL CENTER		17100 S. Harlem Avenue	
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502		phone 630-575-1800		fax 630-236-9800		www.watermark-engineering.com		The East Line of Section 25-36-12		Prepared For:	
Watermark Engineering		RESOURCES, LTD		Prepared By:		NO.		1		REVISIONS	
11/22/19		PER CLIENT REQUEST		DATE		11/22/19		1		11/22/19	

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.

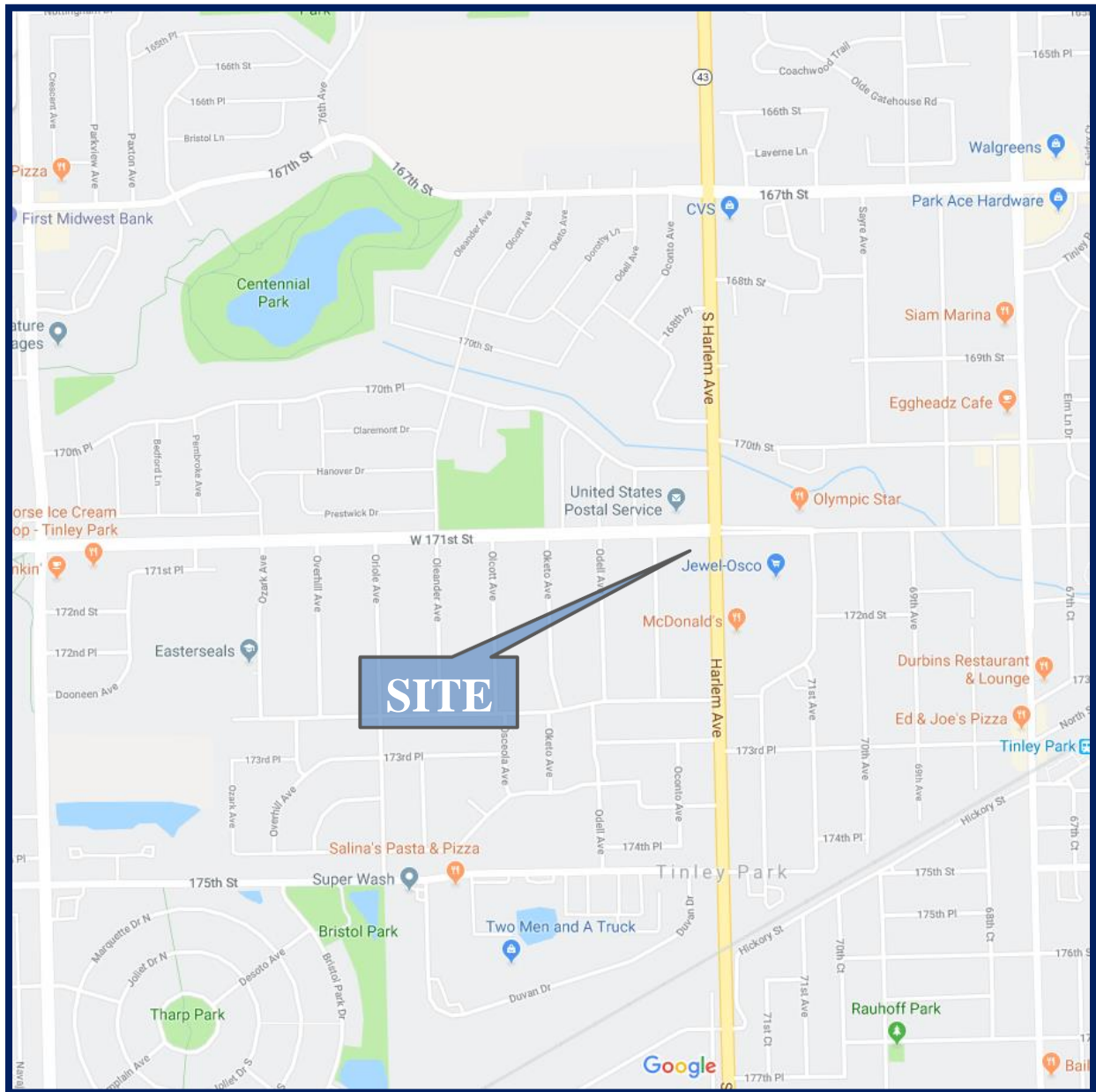
Figure 1 shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site.

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

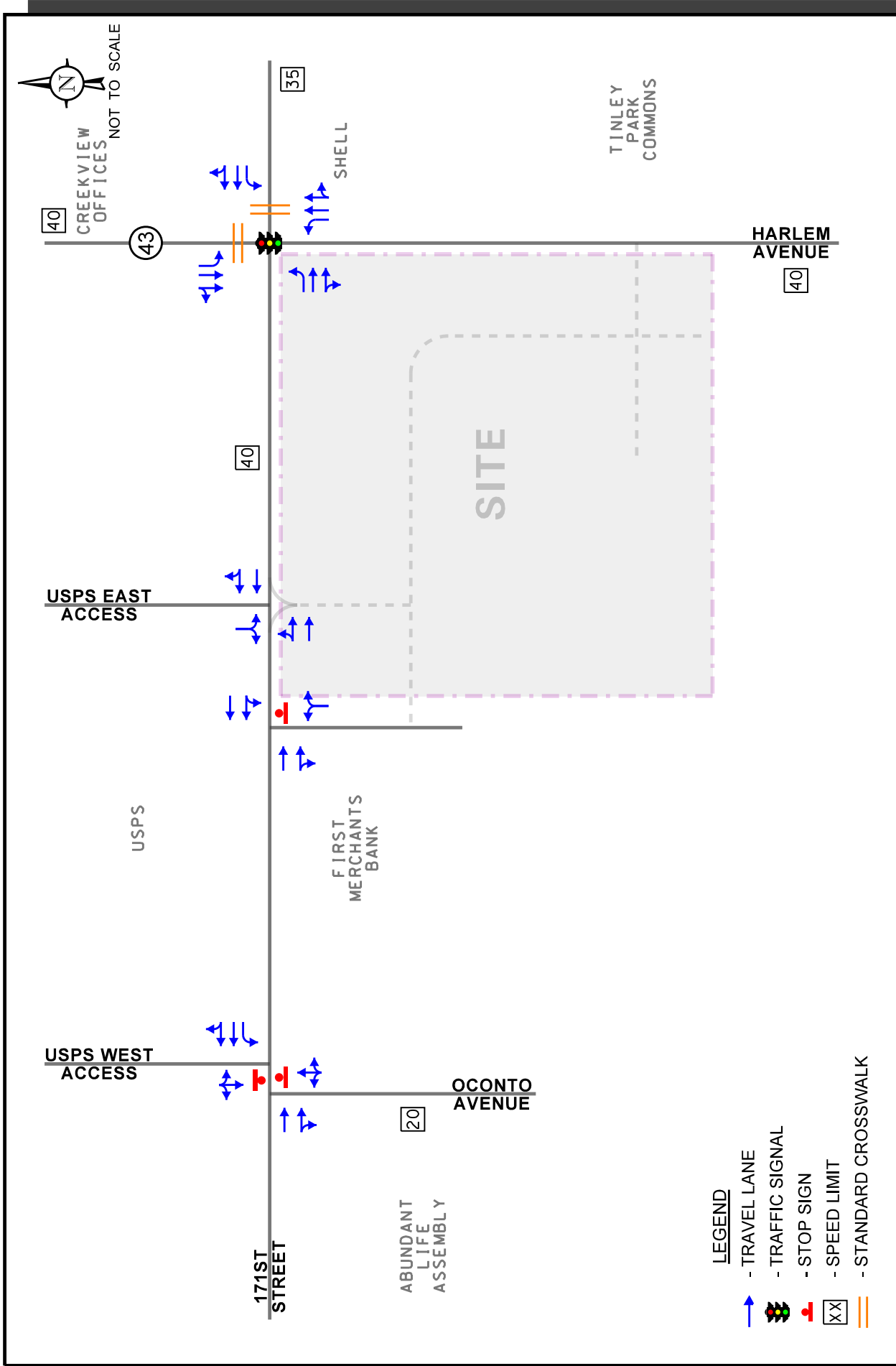
The site, which is currently occupied by a single-family home, is located in the southwest quadrant of the intersection of Harlem Avenue with 171st Street and is bounded by First Merchants Bank to the west and a single-family home to the south. Land uses in the area include single family homes to the 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/stripped 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

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:

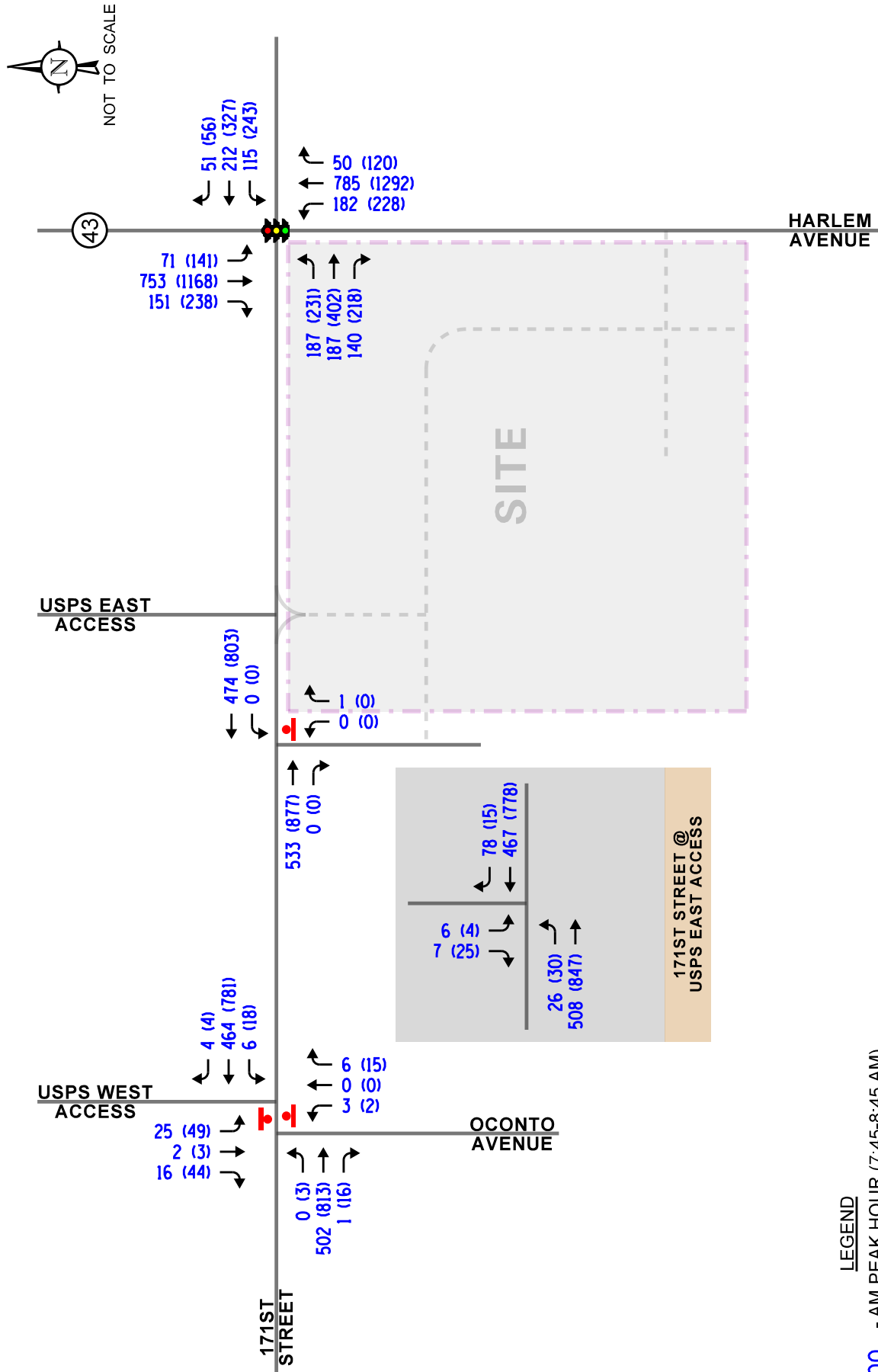
- Harlem Avenue with 171st Street
- 171st Street with the First Merchants Bank Access Drive
- 171st Street with Oconto Avenue/USPS Westerly Access Drive
- 171st Street with USPS Easterly Access Drive

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 data¹ 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.



7 Eleven
Gas Station
Tinley Park, Illinois

Existing Traffic Volumes

Table 1

HARLEM AVENUE WITH 171st STREET - CRASH SUMMARY

Year	Type of Accident Frequency						Total
	Angle	Object	Rear End	Sideswipe	Turning	Other	
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

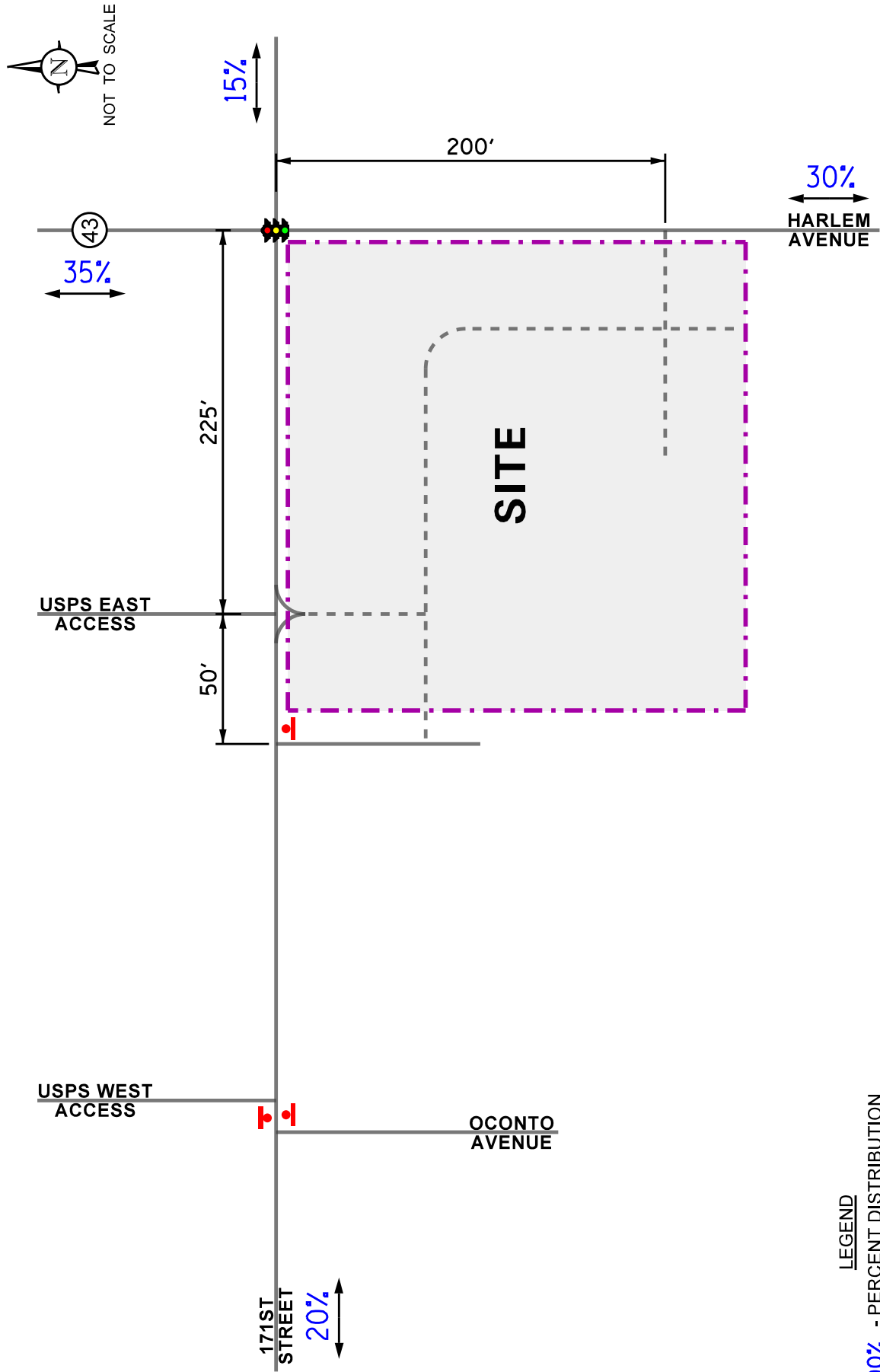
As proposed, the site will be developed with a 7-Eleven gas station with an approximately 3,500 square-foot convenience store with 20 fueling positions and an automated car wash. Access to the gas station will be provided via the following:

- 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

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
	<i>60% Pass-By Reduction</i>	-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

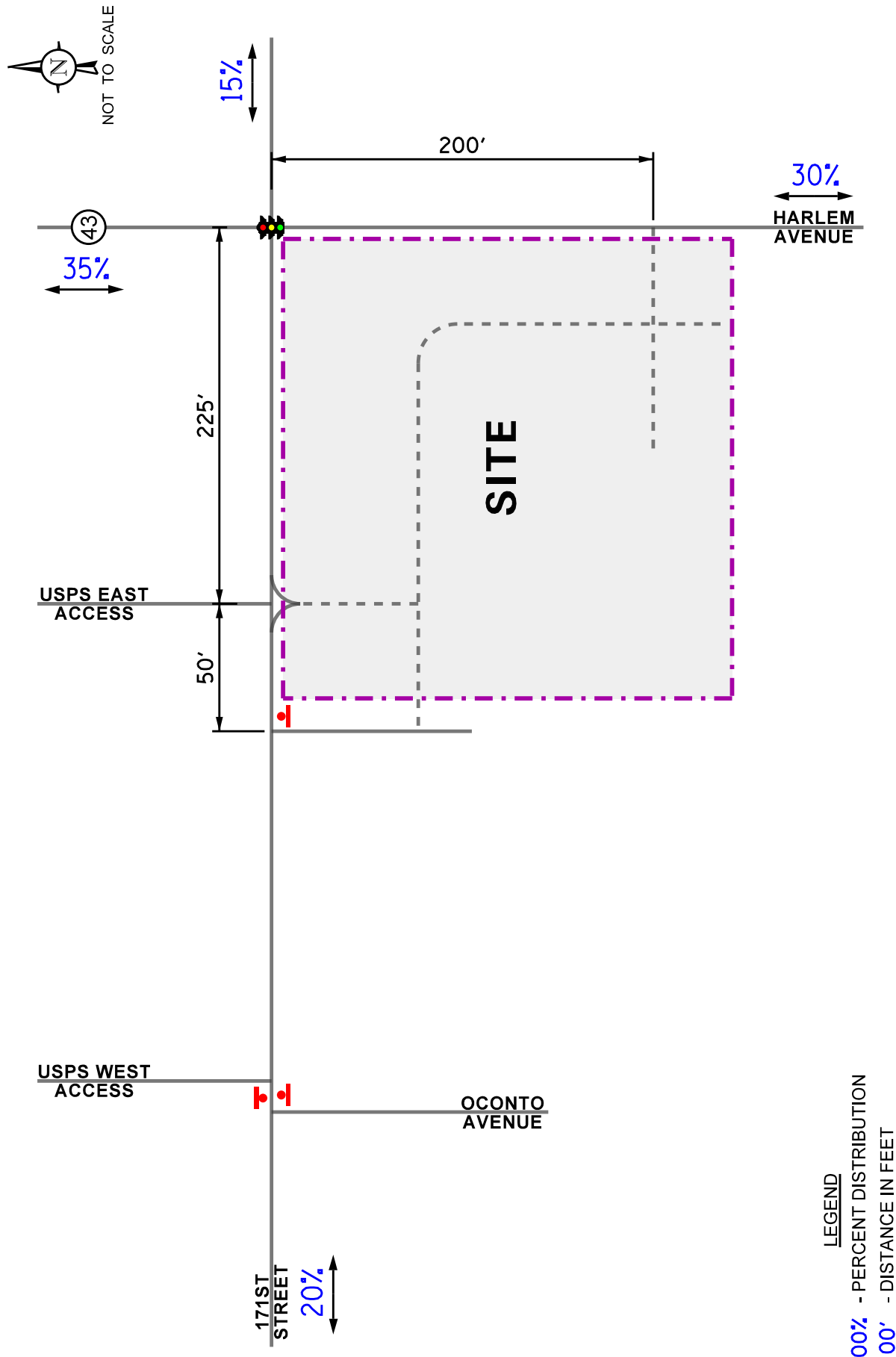
The estimated weekday morning and evening peak hour traffic volumes that will be generated by the proposed gas station were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). **Figure 6** illustrates the traffic assignment of the new passenger 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.

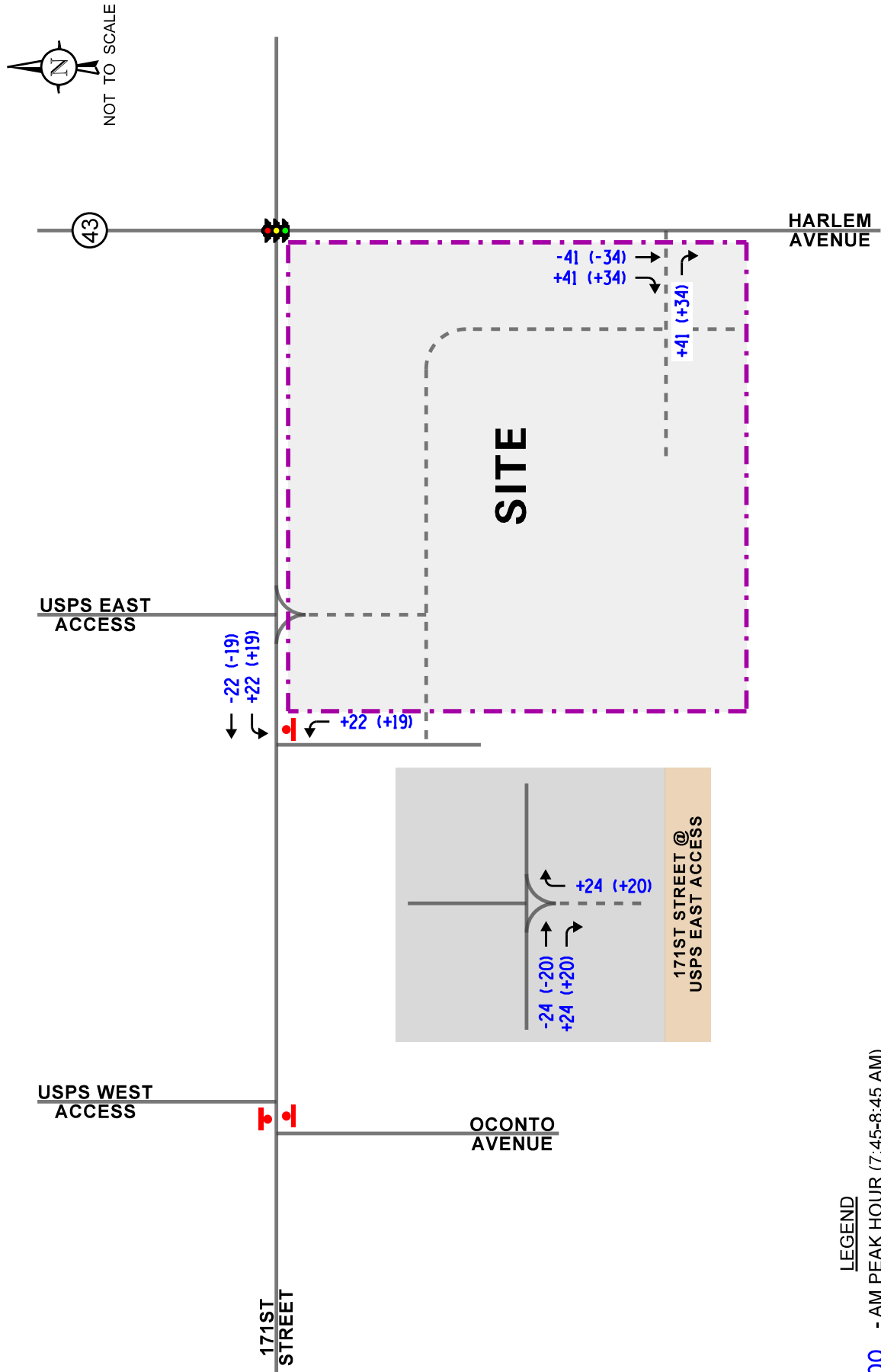
Total Projected Traffic Volumes

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**.



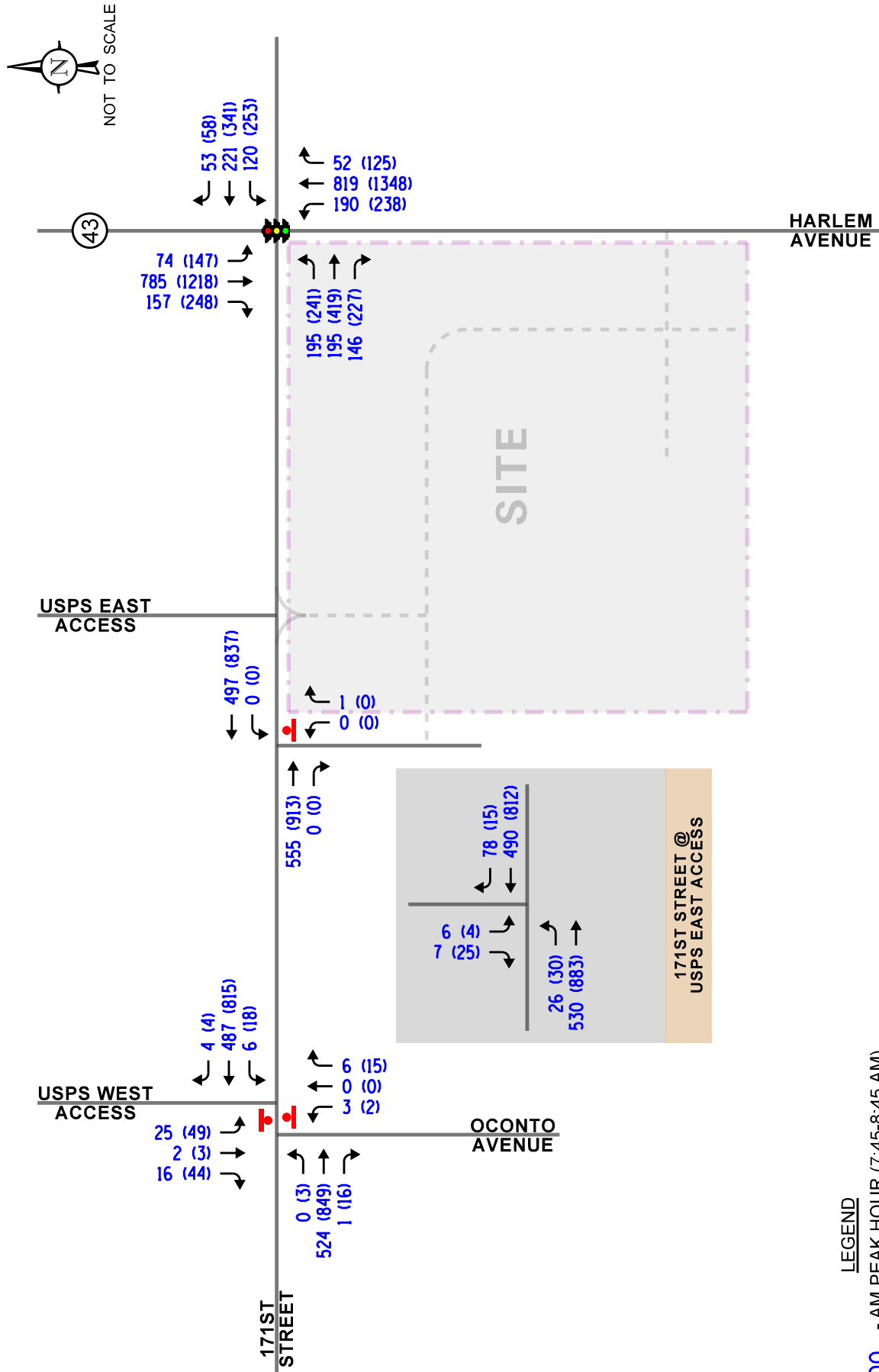
7 Eleven
 Gas Station
 Tinley Park, Illinois

Estimated Directional Distribution



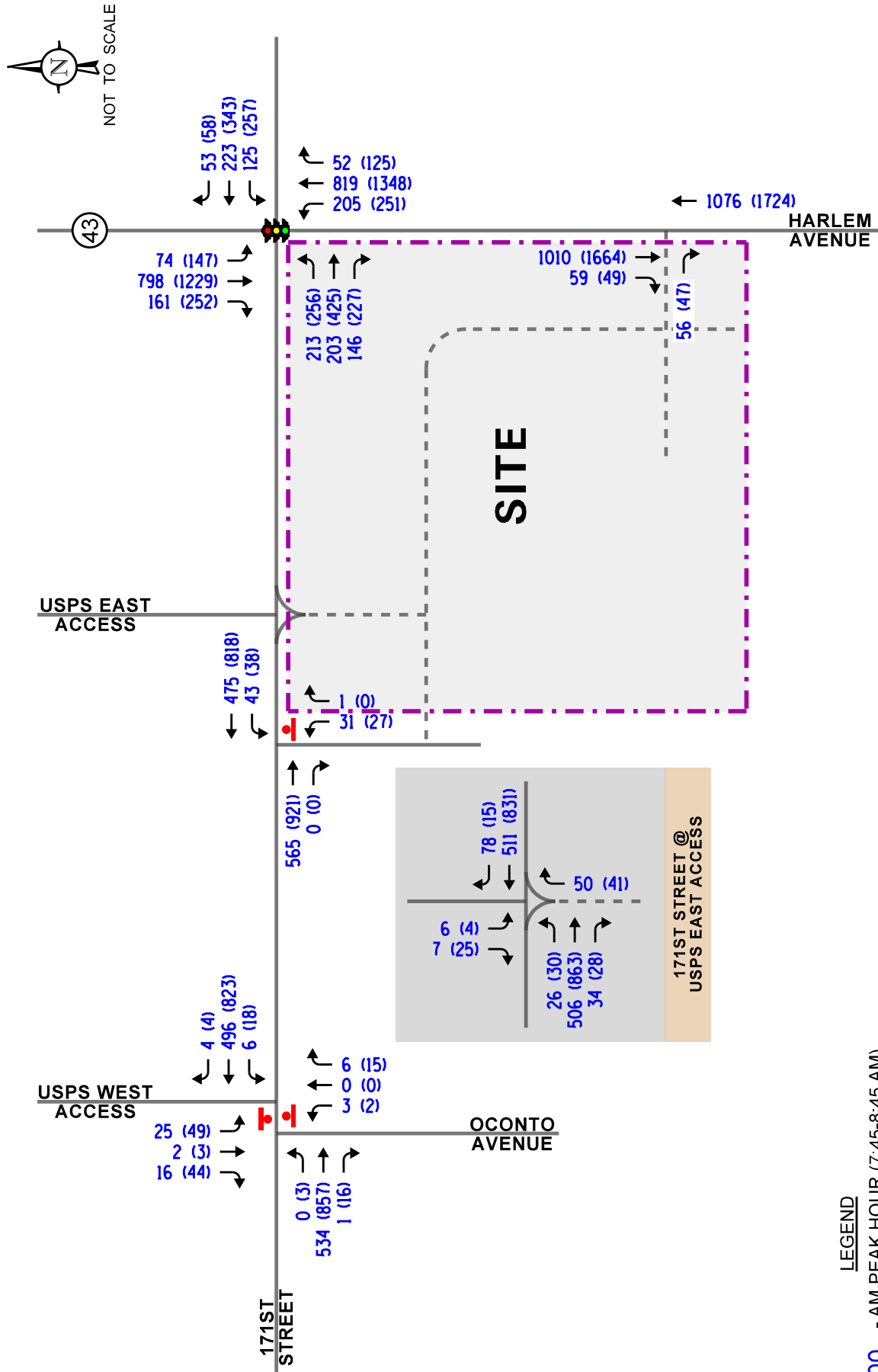
7 Eleven
Gas Station
Tinley Park, Illinois

Pass-By Site Traffic Assignment



7 Eleven
Gas Station
Tinley Park, Illinois

Year 2025 No-Build Traffic Volumes



Year 2025 Total Projected Traffic Volumes

7 Eleven
Gas Station
Tinley Park, Illinois

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 the 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.

Proposed 7-Eleven Gas Station Tinley Park, Illinois

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 and 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 on 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

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

Turning Movement Data

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

[illegible]



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
Page No: 3

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
Page No: 4

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	365	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	-	-
% 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
Page No: 1

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	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	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	0.5	
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	

[illegible]



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
Page No: 3

Turning Movement Peak Hour Data (7:45 AM)

Start Time	171st Street Eastbound							171st Street Westbound							Oconto Avenue Northbound							USPS Access Drive 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
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
Page No: 4

Turning Movement Peak Hour Data (5:00 PM)

Start Time	171st Street Eastbound							171st Street Westbound							Oconto Avenue Northbound							USPS Access Drive 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	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
Page No: 1

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	0	1	0	1	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	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	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	0	2	0	2	0	4	273
Hourly Total	0	16	440	0	0	456	0	0	364	31	0	395	0	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	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	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	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	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	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	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	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	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	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	31	1585
5:00 PM	0	7	197	0	0	204	0	0	175	18	0	193	0	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	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	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	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	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	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	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	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	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	0.0	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	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	0.0	0.8
Articulated Trucks	0	0	12	0	-	12	0	0	8	2	-	10	0	0	0	0	-	0	0	0	0	0	-	0	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	0.0	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	0

	-	0.0	0.0	-	0.0	-	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	-	-	-	-	-	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
Page No: 3

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						
	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
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

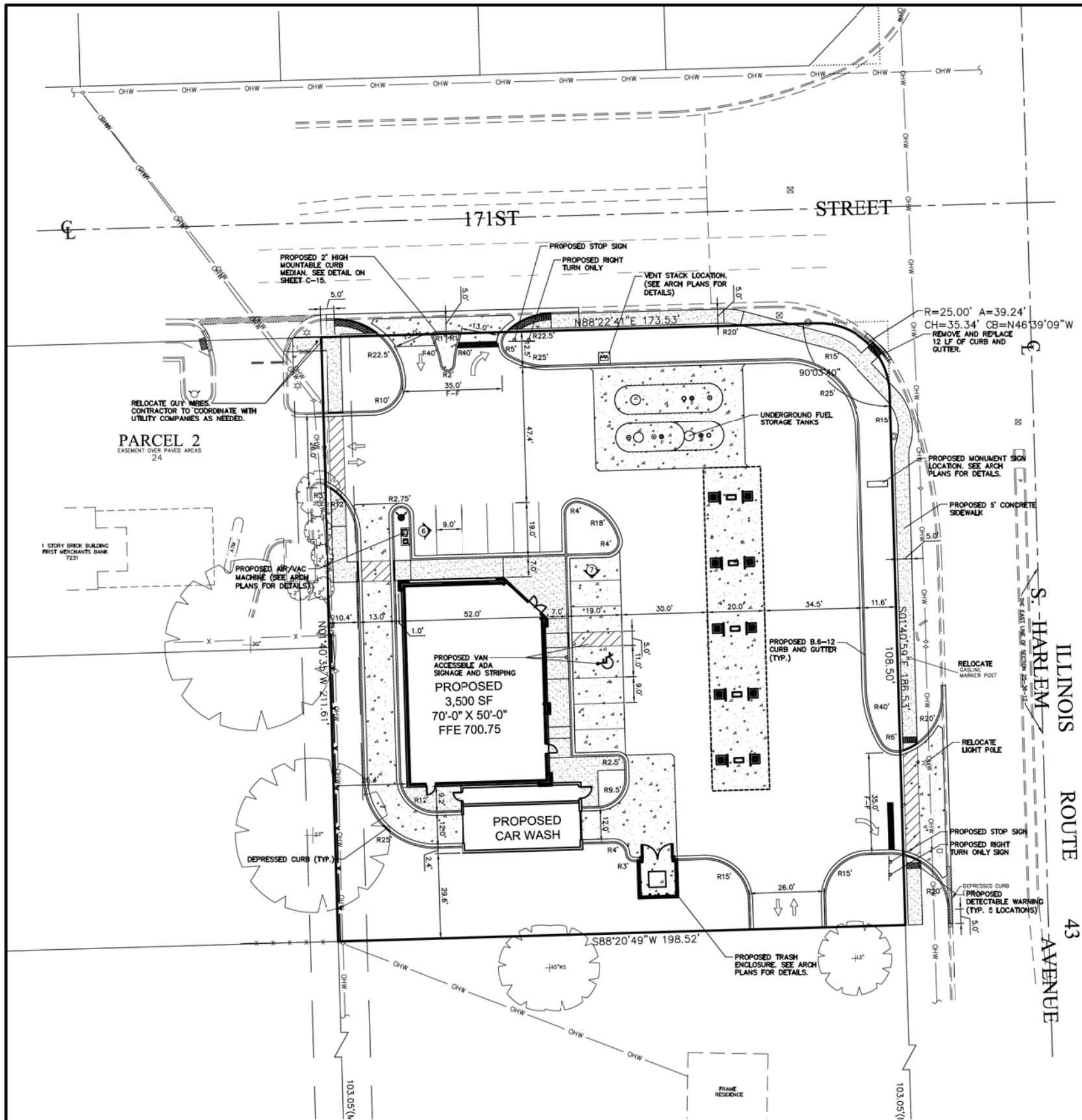
Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: 171st Street with USPS/First
Merchants Bank Access Drives
Site Code:
Start Date: 08/06/2019
Page No: 4

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						
	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	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	0.2	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	0.500	0.000	0.893	-	0.806	0.977
Lights	0	30	833	0	-	863		0	0	745	74	-	819		0	0	0	0	-	-		0	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	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	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	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
% 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

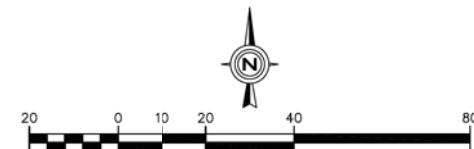
SIDEWALK	5" P.C.C. (SIX BAG MIX) 4" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE
STANDARD DUTY	1 1/2" HOT-MIX ASPHALT SURFACE COURSE, MIX "C" IL-9.5, N50; PG 64-22 2 1/2" HOT-MIX ASPHALT BINDER COURSE, IL-19, N50; PG 64-22 8" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE
HEAVY DUTY	1 1/2" HOT-MIX ASPHALT SURFACE COURSE, MIX "C" IL-9.5, N50; PG 64-22 3" HOT-MIX ASPHALT BINDER COURSE, IL-19, N50; PG 64-22 10" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE
CONCRETE	6" P.C. CONCRETE WITH 6"x6" NO. 10 WELDED WIRE MESH TO BE FLAT STOCK ONLY 4" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE
CONCRETE DRIVEWAY AND TRASH APRONS	8" P.C. CONCRETE WITH 6"x6" NO. 10 WELDED WIRE MESH TO BE FLAT STOCK ONLY 4" BASE COURSE, CRUSHED STONE OR LESTONE (CA-6) COMPACTED SUB-BASE

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

REVISIONS

NO.

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 630-296-9800 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-2

GEOMETRIC PLAN

ITE Trip Generation Sheets

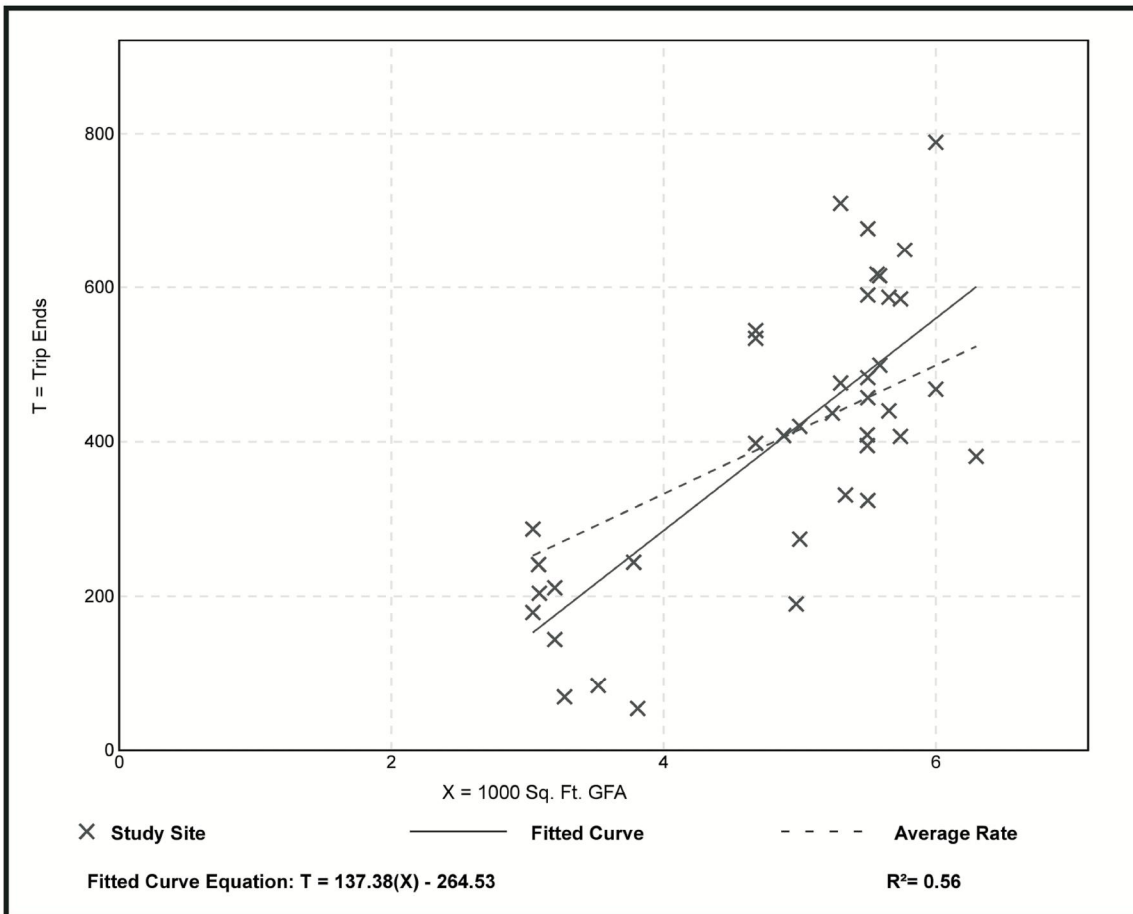
Super Convenience Market/Gas Station (960)

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



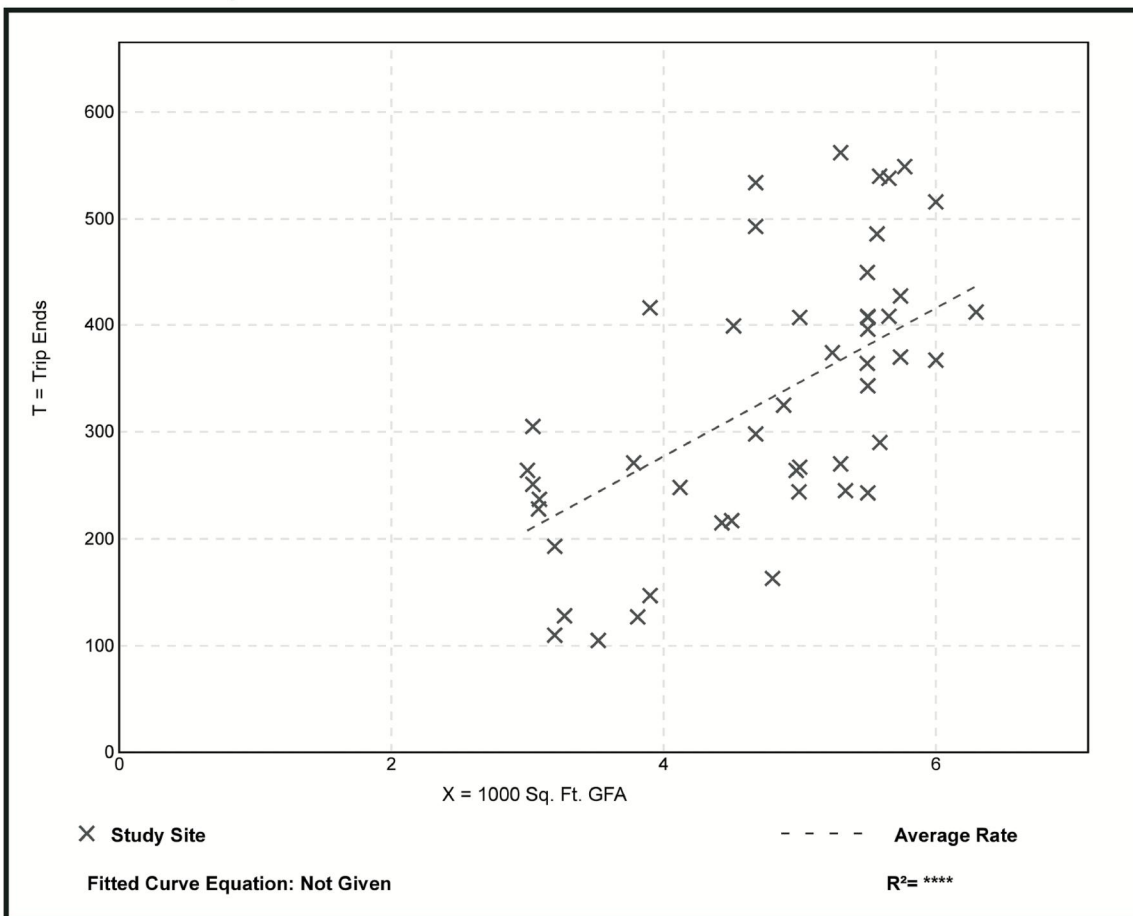
Super Convenience Market/Gas Station (960)

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 171 st St	32,500	42,800
Harlem Avenue South of 171 st St	35,300	43,200
171 st Street West of Harlem Avenue	16,000	20,700
171 st 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

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street













08/21/2019

												
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 Effect 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	

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street

08/21/2019

												
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

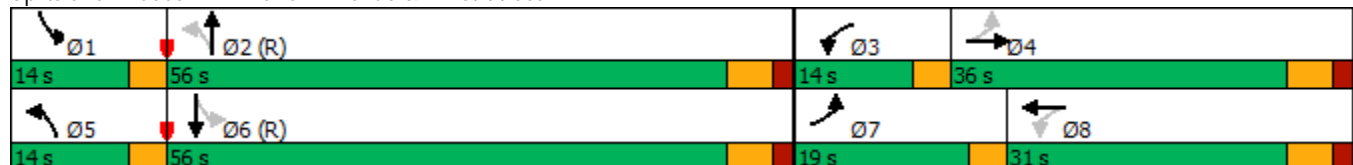
Intersection LOS: C

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & 171st Street






HCM 6th TWSC
2: 171st Street & USPS Easterly Access Drive

08/20/2019

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
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	988	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	988	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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
Stage 1	-	-	-	-	586
Stage 2	-	-	-	-	261
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	999	-	305
Stage 1	-	-	-	-	525
Stage 2	-	-	-	-	765
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	999	-	305
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

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street













08/20/2019

												
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 Effect 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	

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street

08/20/2019

												
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

 Ø1	 Ø2 (R)	 Ø3	 Ø4
18 s	73 s	20 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	67 s	20 s	29 s

HCM 6th TWSC
2: 171st Street & USPS Easterly Access Drive

08/20/2019

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	

HCM 6th TWSC

3: First Merchant Bank Access Drive & 171st Street

08/20/2019

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
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	767
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	767
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street













08/22/2019

												
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 Effect 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	

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street

08/22/2019

												
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




														
Ø1	Ø2 (R)		Ø3	Ø4		Ø5	Ø6 (R)	Ø7	Ø8					
14 s	56 s		14 s	36 s		14 s	56 s	19 s	31 s					

HCM 6th TWSC
2: 171st Street & USPS Easterly Access Drive

08/22/2019

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	930
Stage 1	-	-	581
Stage 2	-	-	349
Critical Hdwy	4.1	-	6.8
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	967	-	270
Stage 1	-	-	528
Stage 2	-	-	691
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	967	-	258
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

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street













08/22/2019

												
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 Effect 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	

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street

08/22/2019

												
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

 Ø1	 Ø2 (R)	 Ø3	 Ø4
18 s	73 s	20 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	67 s	20 s	29 s

HCM 6th TWSC
2: 171st Street & USPS Easterly Access Drive

08/22/2019

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













Lanes, Volumes, Timings
1: Harlem Avenue & 171st Street

08/22/2019

												
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 Effect 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	

Lanes, Volumes, Timings
1: Harlem Avenue & 171st Street

08/22/2019

												
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

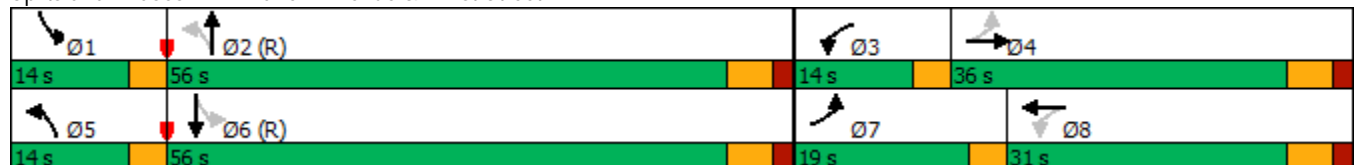
Intersection LOS: C

Intersection Capacity Utilization 74.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Harlem Avenue & 171st Street



HCM 6th TWSC

2: Proposed Right-In/Right-Out Access Drive/USPS Easterly Access Drive & 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					

HCM 6th TWSC

3: First Merchant Bank Access Drive & 171st Street

08/22/2019

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
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	969
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	969
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street













08/22/2019

												
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 Effect 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	

Lanes, Volumes, Timings

1: Harlem Avenue & 171st Street

08/22/2019

												
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

 Ø1	 Ø2 (R)	 Ø3	 Ø4
18 s	73 s	20 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	67 s	20 s	29 s

HCM 6th TWSC

2: Proposed Right-In/Right-Out Access Drive/USPS Easterly Access Drive & 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	-	-		