CITY OF NORTH ST. PAUL PLANNING COMMISSION
REGULAR MEETING AGENDA
THURSDAY, FEBRUARY 27th, 2020
6:15 PM

North St. Paul City Hall – Council Chambers
2400 Margaret Street

I. CALL TO ORDER

II. ROLL CALL

COMMISSION

Elaine Barton, Commission Chair
Patrick Blees, Commissioner
Rick Gelbmann, Commissioner - EXCUSED
Trisha Hamm, Commission Vice-Chair
John Monge, Commissioner
Tom Sonnek, Commission City Council Liaison
Michael Stahlmann, Commissioner
Allan Worm, Commissioner

STAFF

Erin Perdu, Planning Consultant
Olivia Boerschinger, Planning Secretary

III. ADOPT AGENDA

IV. APPROVAL OF MINUTES

A. Approval the February 6th, 2020 regular meeting minutes

V. MEETING OPEN TO THE PUBLIC

Note: This is a courtesy extended to persons wishing to address the Commission concerning issues that are not on the agenda. This discussion will be limited to 15 minutes.

VI. PUBLIC HEARING

A. Site Plan Review, Variance for Self-Storage Facility at 2300 McKnight Rd. N

VII. OLD BUSINESS

VIII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS

IX. REPORTS FROM STAFF

X. REPORTS FROM COMMISSIONERS

A. Update from City Council Liaison

XI. ADJOURNMENT

The next regularly scheduled Planning Commission Meeting is Thursday, March 5th, 2020 at 6:15 p.m.

CITY OF NORTH ST. PAUL
PLANNING COMMISSION
REGULAR MEETING MINUTES
THURSDAY, FEBRUARY 6, 2020
6:15 P.M.

North St. Paul City Hall – Council Chambers
2400 Margaret Street

I. CALL TO ORDER

Chair Barton called the meeting to order at 6:15 p.m.

II. ROLL CALL

COMMISSION
Elaine Barton, Commission Chair
Patrick Blees, Commissioner
Rick Gelbmann, Commissioner ABSENT AND EXCUSED
Trisha Hamm, Commission Vice Chair
John Monge, Commissioner
Tom Sonnek, Commission City Council Liaison
Michael Stahlmann, Commissioner
Allan Worm, Commissioner

STAFF
Erin Perdu, City Planner
Olivia Boerschinger, Planning Secretary

III. ADOPT AGENDA

Motion to adopt agenda by Commissioner Hamm, and seconded by Commissioner Stahlmann, with all present voting aye (6-0). Motion carried to adopt the February 6, 2020 Agenda.

IV. APPROVAL OF MINUTES

Chair Barton requested the following corrections to the January 2, 2020 meeting minutes:

-Page 3, last paragraph, 3rd sentence from the bottom: replace "City Council" with "Planning Commission"

-Page 5, 1st paragraph, first line should reflect that development should fit in a neighborhood

Motion to approve Minutes by Commissioner Worm, and seconded by Commissioner Hamm, with all present voting aye (6-0). Motion carried to approve the January 2, 2020 regular meeting minutes as amended.

V. MEETING OPEN TO THE PUBLIC

There were no comments.

VI. PUBLIC HEARING

A. Rezoning, Major Subdivision (preliminary plat), and Preliminary Planned Unit Development – 2242 7th Street N. and 2231 6th Street N.

City Planner Erin Perdu reviewed a proposal for a major subdivision on four existing parcels with frontage on 6th Street and 7th Street. She added 3 lots for single family homes and 18 owner-occupied townhomes are proposed for the property, a heavily wooded area totaling approximately 4.23 acres across from the Ecology Center.

Ms. Perdu stated the roadway proposal has changed to a 24-foot wide cul-de-sac with shared driveways. She added minimum lot sizes do not apply in the Planned Unite Development (PUD) overlay. Lots 1 and 18 are considered corner lots, as they front on two streets, as defined in City Code. Lot 18 is proposed to be setback 28.5 feet from the road. The comprehensive plan identifies a density of 6-12 units per acre, with single-family density between 3-5.5 units per acre, and variety of density within districts is allowed. Proposed building footprints are similar to that which would be allowed in a development of large single-family homes.

Ms. Perdu stated, with regard to the draft landscaping plan, a tree protection fence is proposed, although the Ordinance does not have a requirement for tree protection. She added tree preservation would be a logical trade-off for smaller lots with reduced setbacks. She noted 500 square feet of open space is required per townhome, or 18,000 square feet on the site, and preliminary calculations show that the development will exceed this amount.

Ms. Perdu stated no sidewalks are proposed in the development. She added the Planning Commission may wish to consider a sidewalk requirement along 7th Street, as sidewalk connections are a goal of the 2040 Comprehensive Plan. She noted an architectural review is not required until the final PUD.

City Engineer Sue Polka stated City Staff received the developer's revised stormwater plans. She added the revised plans have been reviewed and City Staff's previous comments stand, with the exception of the first three comments which were relatively insignificant and have been addressed. She noted City Staff are comfortable with conditional approval with comments referred to the City Council.

Ms. Perdu stated conditional approval of the preliminary plat and PUD is recommended, with the final plat to be presented to the Planning Commission at a future review. She added the remaining details can be addressed at the final PUD.

City Council Liaison Sonnek asked for clarification regarding why the townhomes were shifted to the north. The developer stated they wanted to save as many trees as possible along the southern lot line.

Chair Barton stated page 3 of the staff report states that there are no overlays guiding the subject site. She requested that the staff report be revised to reflect that the townhome portion would be guided by a PUD, which is an overlay district. Ms. Perdu agreed.

Chair Barton stated limitations should be placed on creation of impervious surface on a site. She asked whether that could be built into a development agreement. Ms. Perdu stated more detail on impervious surface can be provided at the final PUD.

City Council Liaison Sonnek stated, with regard to a sidewalk on 7th Street, it would make more sense to address that as part of a street reconstruction project, than to create a stretch of sidewalk that may or may not connect to another sidewalk.

Chair Barton stated Page 11 of the staff report refers to the proposed street design, which meets requirements to accommodate emergency vehicle access and trash haulers. City Engineer Morgan Dawley stated the proposed road is a private road and as such can be more narrow than the typical City street. He added there are many other private streets within the City of North St. Paul that are narrower than what is being proposed here. He noted, from an engineering standpoint, the proposals are acceptable.

Chair Barton opened the public hearing at 6:44 p.m.

Joann Kelly, 2243 6th Street, asked where water from the development will go. She added currently it drains into her home, and she has 2 sump pumps running, and a water barrier.

Ms. Kelly stated neighbors have discussed the possibility that there is an eagle's nest in the woods. She asked whether any consideration has been given to waiting for a review from the Minnesota Department of Natural Resources, who have been notified.

Ms. Kelly asked where the mailboxes for this development would be located. She asked where the stormwater retaining ponds will go, and whether there are still 2 ponds being recommended. She asked whether the barrier of trees on the eastern border is still being considered.

The developer stated every effort will be made to save trees, including all the trees along the southern edge and as many as possible next to the pond. He added the ponding areas will be split to save more trees.

Karen Hyers, 2202 Pondview Court stated the developer should ensure that underlying zoning requirements are met, including the front yard surface area and lot coverage percentages. She requested that the Planning Commission consider whether this property is appropriate for R-2 zoning.

Tom Wilson, 2279 6th Street, expressed concern about damage to the existing streets in the neighborhood from construction traffic. He asked who will be responsible for repair of the

streets. He asked whether vibrations from construction equipment will cause damage to the foundations of existing homes in the area.

Rob Aurelius 2271 7th Street North, stated there should be a complete list of all the trees that will be removed. He asked why there is a retaining wall shown next to the foundation of Unit 4. He added the southeast radius of the cul-de-sac appears to be too small for a trash hauler to turn. He noted the engineering plan does not meet the 2-year flood plan, as Sauer's Pond does not have an outlet, and the easement on 6th Street for 2 units is inadequate.

Mr. Aurelius stated 15-foot setbacks should be voted down at this meeting as they are irresponsible and unsightly and will have an undesirable impact on the surrounding area. He added front-facing public right-of-way minimum setback is 25 feet in the R-2 PUD. He noted the facades on 7th Street would change if everything were to be shifted 15 feet to the east. He requested that a condition be added supporting a 25-30-foot setback from the front lot line, in keeping with goals and standards of the City and to be respectful to the neighborhood.

Christopher Bay, 2180 7th Street N, stated he believes drainage will be inadequate. He added his home is on the south side of Sauer's Pond, and his basement has been flooding all year. He noted he is concerned about the effect that impervious surface will have on nearby property.

Jody Wittner, 2224 Pondview Court, asked where snow will be put when it is removed.

Mr. Aurelius stated drainage is being moved due to the results of soil borings that were done on the southern end of the property. He added boring and percolation testing should be done on the new drainage location as well.

Shannon Kusz, 2241 7th Street, expressed concern about large amounts of traffic coming in and out of the new development.

Chair Barton closed the public hearing at 7:05 p.m.

Mr. Dawley stated, with regard to construction traffic, damage to public roads will be addressed as part of construction activity by the developer, who would be responsible for any damage to public infrastructure. He added soil compaction can occur, and vibrations may be felt but they very rarely cause any damage. He noted the developer would address any damage due to construction.

Mr. Dawley stated the staff report referred to concerns regarding the rate requirement for a 2-year event that would not be met. He added the stormwater management plan has been revised, and the developer's engineer has been working with the Ramsey Washington Metro Watershed District. He noted the developer will be required to obtain a watershed permit, so there will be additional coverage.

Chair Barton stated many residents have expressed concerns about stormwater issues on the site. Mr. Dawley stated stormwater issues, and specifically sump pumps running, are related to groundwater, which is different than run-off. He added groundwater is not managed or governed by the City or the Watershed District, and if there are high water levels, they would be maintained whether or not there is development in this area. He noted the addition of impervious surface changes the speed of run-off but, as part of a stormwater management plan, stormwater rates can be maintained.

Chair Barton asked how snow removal will be handled. The developer stated there will be places to put snow.

Ms. Perdu stated a resident has asked about the location of mailboxes. The developer stated there will be a cluster of mailboxes on either side of the entrance to the private roadway.

Ms. Perdu asked whether the developer had any information about an eagle's nest on the site. The developer stated the MnDNR does not have a record of an eagle's nest on the site, and they will not be coming out to look for one. He added he and his partner went to the site and looked for an eagle's nest but did not see one. He noted there is an Ecology center across the street.

Ms. Perdu stated there is a process for reviewing issues of concern, which would not put a total stop on the project. She added she will have additional information before the final PUD is reviewed. She noted, if a nest is identified, there could be rules that apply.

Chair Barton stated a resident had comments regarding R-2 lot width, and lot coverage calculations. Ms. Perdu stated is an error in the staff report, which should state that the lot width requirement is 60 feet in the R-2 district. She added City Staff are reviewing whether private roadways are included in lot coverage and impervious surface for stormwater review.

Ms. Perdu stated, with regard to rezoning from R-1 to R-2, the City Council would take action on that item, as well as preliminary overlay and preliminary plat, after recommendation from the Planning Commission.

Chair Barton requested clarification on the issue of Code language pertaining to setbacks and corner lots. Ms. Perdu stated a corner lot is defined as a lot situated at two or more intersecting streets. She added the Code definition does not distinguish between public or private street. She noted a corner lot front lot line is the shortest frontage on a public street, or the shortest dimension of the lot.

City Council Liaison Sonnek stated Ms. Perdu mentioned a house to the south of the proposed development that has a setback that is only 1.5 feet different from these setbacks. He added he does not believe this would be a dramatic shift in the street scape. Ms. Perdu agreed, adding there is some basis for comparison.

Mr. Dawley stated City Staff can verify the property lines and setbacks. He added, from an engineering standpoint, corner lot setback requirements are more of a Zoning Ordinance and street scape issue, and less about whether the streets are public or private.

City Council Liaison Sonnek stated the issue of the eagle's nest reported on the site could be included as part of conditional approval. He asked whether a tree survey is required. Ms. Perdu stated there is a requirement for inventory of trees to be removed, and a drainage plan can be requested for conditional approval.

City Council Liaison Sonnek stated Mr. Aurelius mentioned restrictive conditions. He asked whether the PUD overlay would change that. Ms. Perdu confirmed that the PUD overlay supersedes if there the underlying zoning conflicts with regulations.

City Council Liaison Sonnek stated a resident had indicated that they felt a larger turning radius would be required for garbage trucks. He asked whether that is a concern. The developer stated the cul-de-sac radius will accommodate emergency vehicles and trash haulers.

Chair Barton requested feedback and comment on the issue of a potential sidewalk installation on 7th Street. Mr. Dawley stated the sidewalk issue, which is related to stormwater mitigation, can be discussed further as there is additional time for greater refinement.

Mr. Dawley stated, after reviewing existing survey contours, most of the surface run-off on the site currently works its way south to Sauer's Pond, as part of the overall watershed area. He added no more water would potentially leave the site than it does today.

Commissioner Stahlmann stated there are 18 townhome units in the current proposal. He asked how water runoff would be affected if two units, 13 and 14, were to be eliminated. Mr. Dawley stated that would not affect what is necessary to meet runoff rate control. He added elimination of units is a design issue.

Commissioner Blees stated a sidewalk on 7th Street could be part of a street reconstruction project. Commissioner Barton stated the developer would pay the cost if the sidewalk were installed as part of this development. He added a sidewalk could be added as a condition of approval if 7th Street is on the City's sidewalk connectivity plan.

City Council Liaison Sonnek stated a sidewalk would increase the overall cost of a project, and it seems like a trivial issue to be reviewing at this point in the process. Mr. Dawley agreed, stating the right time to install a sidewalk is when connections are being made as part of an overall project. He added the result could be an unnecessary random length of sidewalk. He noted City Staff can review and make recommendations.

Commissioner Worm asked where the cul-de-sac width is measured from. Ms. Perdu stated the width is measured at the required set-back, which is marked on the developer's plans. She added most of the cul-de-sac lots are substandard width, which is common for a cul-de-sac.

Commissioner Worm stated City Code requires a 30-foot setback. Ms. Perdu confirmed this, adding the narrowest lot is 27 feet, and they range up to 38 feet.

Chair Barton asked why placement of houses on the 3 single-family lots is not shown. Ms. Perdu stated the lot dimensions and drainage and utility easements are shown, but not the setbacks. She added that would be required of the developer, and the depth and width would need to comply with Ordinance.

Chair Barton requested that placement of the houses on the 3 single-family lots should be added as a condition.

Chair Barton requested a review of potential future limits on impervious surface creation, based on total lot coverage.

City Council Liaison Sonnek stated minimum lot width should be 60 feet for R-1, with potentially 15 structures in the development. He added considering this development under R-2 zoning, the density level would be below suggested minimum density for R-2, and above maximum density if it were to remain R-1.

Commissioner Stahlmann stated he feels the new cul-de-sac design would fit into the neighborhood better than the previous roadway plan.

Motion by Commissioner Hamm, and seconded by Commissioner Worm, with all present voting aye (6-0). Motion carried to recommend City Council approval of Rezoning, Major Subdivision (preliminary plat), and Preliminary Planned Unit Development – 2242 7th Street N. and 2231 6th Street N., with conditions listed in the Staff Report, and the following additional conditions:

-Architectural Standards Review
-Confirmation that open space outside of drainage areas meets minimum open space standards
-Required completion of an inventory of major trees that will be removed
-Adding building envelope to single family portion of preliminary plat
-Conformance with review process for eagle's nest

Commissioner Worm stated this project is limited to single-story units. He requested future consideration of a Code amendment to allow 2-story units in the R-2 zone.

VII. OLD BUSINESS

-None.

VIII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS

-None.

VIII. REPORTS FROM STAFF

A. 2020 Zoning Ordinance Updates

Ms. Perdu stated Ordinance updates required by the Metropolitan Council are being reviewed by City Staff for nonconformities. She added City Staff recommends that the Planning Commission also review permitted and conditional uses that might be out of date.

Ms. Perdu stated the Met Council has advised that the City's zoning map changes may not be necessary, as all the proposed areas may not require rezoning. She added the Met Council will be providing written guidance on this issue.

Chair Barton requested that PUDs that have already been approved be added to the zoning map.

Ms. Perdu stated the Comprehensive Plan Housing chapter may require some clarifications regarding what is allowable in the R-1 district, in terms of house sizes and locations, and small parcels.

Commissioner Worm expressed the importance of not creating limitations based on the size of a front yard.

City Council Liaison Sonnek stated the Planning Commission had discussed a potential bee and chicken Ordinance. He asked whether a public hearing will be required. Ms. Boerschinger stated this item will be addressed at a Planning Commission meeting in March 2020, to be included under the City's General Ordinances and not the Zoning Code.

Ms. Perdu stated there will be a public comment period.

Commissioner Worm asked whether City Staff can provide information about other local communities that have enacted similar Ordinances. Ms. Perdu agreed, adding City Staff have been working on that.

Commissioner Hamm stated the issue of a tree inventory Ordinance was discussed during tonight's public hearing. She asked whether the Planning Commission could review this issue at an upcoming meeting.

Ms. Perdu stated a tree inventory is included in the City's development application, which can be helpful in making development decisions. She added, however, it is not regulated by Ordinance, and it would be beneficial to discuss it as a potential policy.

Ms. Boerschinger stated the Planning Commission's next meeting will include consideration of a proposed bee and chicken ordinance, as well as two development applications for the Anchor Block site. She added City Staff are requesting Planning Commission consideration of a second meeting in February, to be held on February 27, 2020.

Motion by Commissioner Blees, and seconded by Commissioner Monge, with all present voting aye (6-0). Motion carried to set the date for the Planning Commission's next meeting to February 27, 2020 at 6:15 p.m.

IX. REPORTS FROM COMMISSIONERS

A. Update from City Council Liaison

City Council Liaison Sonnek stated new construction projects in the City of North St. Paul have totaled $53 million in value in 2019. He added more growth is expected in 2020, with the downtown street and utility project, the Anchor North site, and Uptown Commons apartments and Suite Living Senior Housing, as well as a new home for veterans and their families near Veteran's Park. He noted all of these developments will enhance the downtown streetscape.

Mr. Duddeck stated the Tuesday, February 11, 2020 Business Association meeting will feature a presentation of all development that has been going on in the community. He invited all residents and business owners interested in local development projects.

Chair Barton requested an update on the intersection signal on McKnight Road. Mr. Duddeck stated signals will be synchronized to prevent back-up. He added the intersection will become a right out only, with one new entrance that will align with the signal.

Commissioner Stahlmann requested an update on the purchase of the BP site. Mr. Duddeck stated the City is moving forward with the purchase. He added right of way will be needed from the property for the potential highway interchange at that location.

X. ADJOURNMENT

There being no further business, motion to adjourn by Commissioner Worm, and seconded by Commissioner Monge, with all present voting aye (6-0). Motion carried to adjourn the meeting at 8:45 p.m.

The next Planning Commission Meeting is scheduled for February 27, 2020 at 6:15 p.m.

Members, please notify any planned absences to:

Olivia Boerschinger
Planning Commission Secretary
651-747-2400
Olivia.boerschinger@northstpaul.org

MEMORANDUM

Date: 2/21/2020
To: Planning Commissioners
From: Erin Perdu, AICP, City Planner
Ryan Krzos, AICP, Planning Consultant
CC: Scott Duddeck, City Manager
Debra Gustafson, Administrative and Community Services Director
Re: Site Plan Review and Variance Request for Self-Storage Facility at 2300 McKnight Road N

BACKGROUND

Jim Adams of IP4 AF St. Paul LLC, has submitted applications on behalf of the property owner (currently the City of North St. Paul) for site plan review and a variance to facilitate the development of a self-storage facility at 2300 McKnight Road N.

In December of 2019 the City reviewed and approved a preliminary and final plat establishing the Anchor Block Commons subdivision. The subject requests would apply to lot 1, block 1, addressed as 2300 McKnight Road N. The site is currently zoned MU-3, Corridor Mixed-Use District and storage and warehousing uses are permitted in the zoning district. Site Plan Review is required for new commercial or industrial development projects. The proposed self-storage use would be within a three-story 101,400 square foot building, containing approximately 700 storage units.

The applicant is requesting a variance from the requirements of Section 154.010 (D)(47)(a) which states that (Warehousing/Storage) space shall not exceed more than 60% of the area of the principal building. As proposed, 74,000 square feet of the building would be rentable square footage, with the balance containing office, restroom, utility rooms, and common areas. The variance would allow for 73% of the building to be used for the self-storage purposes.

Figure 1: Location Map

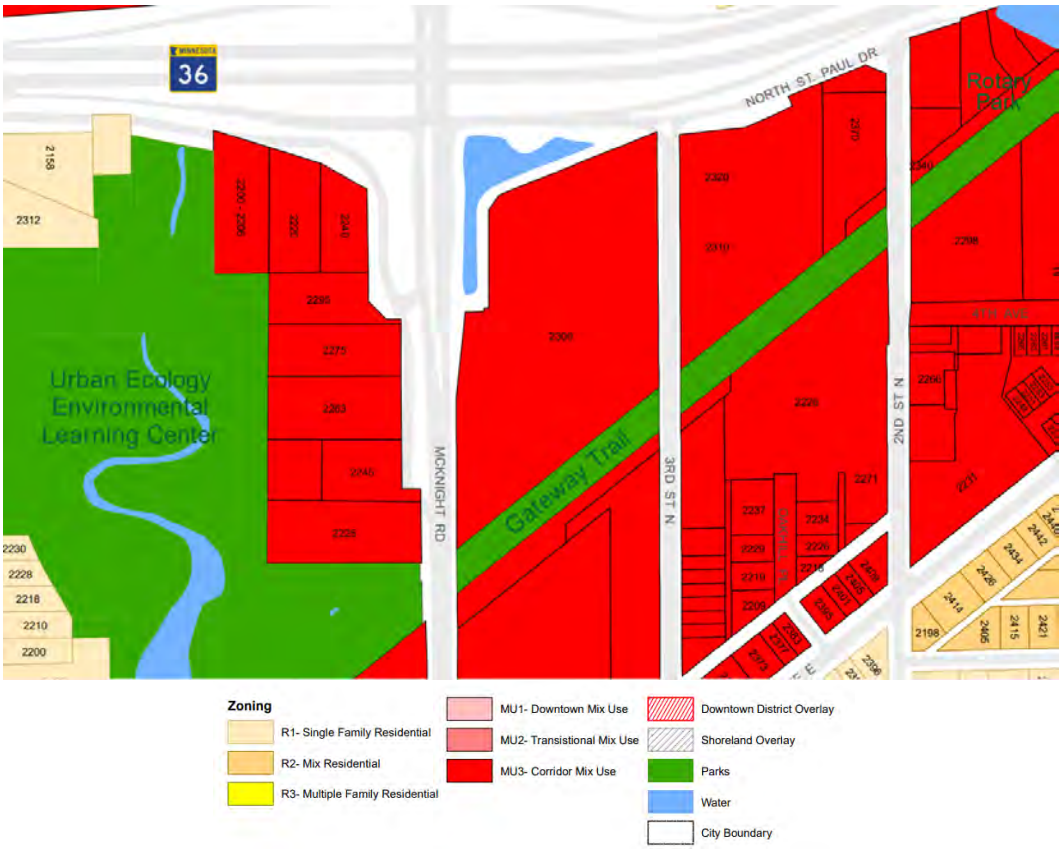


Figure 2: Zoning Map

GENERAL STAFF REVIEW

Consistency with the City Plans

- *154.004 (E)(2) Variance Standards (a) The variance is in harmony and consistent with the general purposes and intent of the Comprehensive Plan and this chapter.*
- *154.004(H)(2) Site Plan Review Standards (a) The proposal is consistent with the general purposes and intent of the Comprehensive Plan;*
- *154.004(H)(2) Site Plan Review Standards (i) If applicable, the proposal is consistent with officially adopted city plans and overlays.*

This site is guided for corridor mixed use in the 2040 Comprehensive Plan. This designation is established to encourage the development or redevelopment of mixed-use centers that combine retail development with a variety of housing, offices, live-work spaces, employment activities, and other complementary uses. The proposed project is part of a redevelopment of the site that would establish a combination of residential and commercial uses in the area known as the Anchor Block. The site was specially noted as being targeted for redevelopment in both the Comprehensive Plan and the Redevelopment Master Plan. Accordingly, the project is consistent with the vision and intent of the Comprehensive Plan for this area. The site is not subject to any overlay zoning districts.

Health, Safety, and General Welfare

- *154.004 (E)(2) Variance Standards (b) The variance will not adversely affect the health, safety, or general welfare of the city.*
- *154.004 (H)(2) Site Plan Review Standards (b) The proposal will not adversely affect the health, safety, or general welfare of the city.*

Development of the site is not likely to negatively impact the health, safety, or general welfare of the City. The project will utilize a site with remediated soils and will be developed with a use that is not associated with high amounts of traffic, noise, odors, or other similar nuisances.

Practical Difficulties/Special Conditions

- *154.004 (E)(2) Variance Standards (c) The variance is necessary due to special conditions applying to the structures or land in question that are particular to the property and do not apply generally to other land or structures in the district or vicinity in which the land in located.*
- *154.004 (E)(2) Variance Standards (d) The variance requested is the minimum variance necessary to alleviate the practical difficulty.*
- *154.004 (E)(2) Variance Standards (e) Practical difficulties are caused from the strict application of the Zoning Code as outlined below:*
  i. The property owner proposes to use the property in a reasonable manner not permitted by the Zoning Code;
  ii. The plight of the landowner is due to circumstances unique to the property not created by the landowner; and
  iii. The variance, if granted, will not alter the essential character of the locality.
  iv. Economic considerations alone do not constitute practical difficulties.

v. The variance is consistent with officially adopted city plans and overlays.

The applicant states that due to the remediated soils and surrounding industrial uses, development of the site for uses aside from storage would prove difficult. Additionally, the variance to allow 73% of the building to be used for storage is the minimum relief necessary as self-storage uses do not have a need for sizeable associated office space to operate the business.

The proposed storage facility allows the owner to use the property in a manner permitted by Ordinance as storage is a permitted use in the MU-3 District. A storage use in this location is compatible with surrounding industrial and commercial uses and will support future multi-family residential use of property to the south that is currently under application. Lastly, this use is part of a planned redevelopment as envisioned by the City's Comprehensive Plan.

<u>Compatibility with Surrounding Context</u>

- *154.004(H)(2) Site Plan Review Standards (c) The proposal is compatible with present and future land uses in the surrounding area and reasonably related to the overall needs of the city.*
- *154.004(H)(2) Site Plan Review Standards (d) The proposal or appearance of the proposal is compatible with adjacent properties.*
- *154.010(E)(3) General Architectural requirements (g) Protection of views. Buildings shall be designed and oriented so as not to detract from one another or to unduly restrict views to open spaces, plazas and vistas.*

The site is surrounded by commercial and industrial uses. Properties to the east include an asphalt recycling facility and a landscaping supplier. As such this use represents a logical transition between those uses, and the balance of the Anchor Block site, as well as the surrounding neighborhood context.

The site improvements are placed in a location that would not interfere with views of public open space, parks, or vistas.

<u>Proposed Uses</u>

- *154.004(H)(2) Site Plan Review Standards (h) The proposal is in harmony with the general purposes and intent of this chapter and the zoning district in which the applicant intends to locate the proposal.*
- *154.007(C)(1) Permitted, Conditional, and Interim Uses refers to Table 6 for allowed uses within the residential districts.*
- *154.010(D) Supplemental Standards (47) Warehousing/Storage (a) Space shall not exceed more than 60% of principal building.*

The proposed storage use is a permitted use in the MU-3 Zoning District. As previously mentioned, the site is within a larger redevelopment area known as the Anchor Block, which will establish a mix of residential and commercial uses, as envisioned for the site by the Comprehensive Plan and as intended within the MU-3 District. The applicant is requesting a variance to the requirement that no more than 60% of a building be occupied with warehousing/storage space. The proposal complies or could be conditioned upon demonstration of compliance with other applicable Ordinance requirements as noted herein.

Proposed Lot/Building Dimensional and Setback Requirements

- *154.007(C)(3) refers to Table 7 for the lot requirements within the mixed-use districts.*

Requirement	MU-3	Proposed
Minimum Lot Size	*35,000 sq. ft.*	2.04 ac
Minimum Lot Width	*120 ft*	225.59 ft
Front Yard Setback	*25 ft*	82 ft
Rear Yard Setback	*0 ft*	38.7 ft
Side Yard Setback	*0 ft*	10 ft (East) 44.3 ft (West)
Maximum Height	*Five (5) stories or 55 ft*	Three (3) Stories and 38 ft

The subject site was platted in December of 2019 under the current Zoning and Subdivision ordinances. Accordingly, the lot meets the size and width requirements for the MU-3 Zoning District. The proposed self-storage building would comply with all front, rear, and side yard setback requirements, and would be within the maximum building height limit.

Utilities and Municipal Services

- *154.004(H)(2) Site Plan Review Standards (e) The proposal can be adequately supported by public urban services including the water supply, transportation system and capacity, police and fire protection, utilities, and sanitary waste disposal and stormwater disposal systems.*
- *154.004(H)(2) Site Plan Review Standards (f) The proposal will not create an excessive burden on existing parks, schools, and other public facilities which serve or are proposed to serve the area;*
- *154.010(A) Development Standards (9) Utility installations. All on site utility installations shall be placed underground.*
- *154.010(E)(3) General Architectural requirements (b) Utilities. Building utility services and structures such as meters, transformers, refuse containers, including dumpsters, ancillary equipment and the like shall be either located inside the principal building, inside an accessory building, or, where outside be entirely screened from off-site views. For new buildings, all utilities shall be underground.*

The proposed use will not generate any additional demand on parks, schools, or other similar public facilities. The facility will be served by municipal water and sewer via underground connections. Stormwater management will be provided by a shared facility located at the northwest corner of the site. When the Anchor Drive roadway was platted and designed this use was contemplated for this location, therefore the surrounding transportation systems are adequate for the proposed use. No building utility structures, or ancillary equipment is proposed to be located outside of the building.

Open Space

- *154.010(B)(2)(b) Nonresidential Open Space Office/commercial/industrial. Each lot shall contain usable open space/plazas and shall not be less than 5% of the total lot area.*

Approximately 30% of the site will be pervious area, which includes landscape open areas to the rear, front and side of the building.

Landscaping

- *154.010(F)(3) Tree requirements. (a) Number of trees. Trees must be planted within the property lines and in a location as not to interfere with sight line visibility at maturity. The minimum number of trees of any given site shall be as follows: (iii.) MU-2 and MU-3 Districts. Whichever is greater: one tree per 1,000 square feet of gross building floor area or one tree per 50 lineal feet of site perimeter.*
- *154.010(F)(4) Landscape coverage. All residential district properties are encouraged to have diversified landscaping in addition to the landscaping required in setback areas for free-standing, detached structures. All landscaped areas are encouraged to be developed with live deciduous and coniferous plants, grass, trees, and shrubs which provide a variety of color, texture, height, and forms consistent with the needs of the site and other elements of the plan. The landscaped areas may contain, but not limited to, some decorative stones, wood, patio blocks, sculptures, and other appropriate ornamental features. Overall composition and location of landscaped areas shall complement the scale of the development and its surroundings. In general, larger, well-placed contiguous planting areas shall be preferred to smaller, disconnected areas. The following zoning classifications will have the following percentage of the lot landscaped: (e) MU-2 and MU-3 Districts. All areas, except for buildings, driveways and approved parking areas, shall be landscaped as described above. Where possible, a minimum of 2% of the site may provide for diversified landscaping that allows infiltration of stormwater. Screening shall be provided and established to protect and screen abutting residential districts.*
- *154.010(F)(5) Required yards and setbacks.*
  (a) All developed uses shall consist of, but not limited to, a landscaped yard, including grass, plantings, decorative stones, trees and shrubs, along all streets.
  (b) Except for driveways, the yard shall extend along the entire frontage of the lot, and along both streets in the case of a corner lot, such yard shall have a depth of at least ten feet.
  (c) Required yards and setback areas, except driveways and areas used for accessory structures, shall be graded to final elevations and sodded or seeded and landscaped with grass, plantings, decorative stones, trees and shrubs.

The landscaping plan shows a total of 36 trees. The building contains 101,400 sf of gross floor area, and 1,278 ft of frontage – equating to a total of 101 required trees. Section 154.010 (F)(2)(ii) states that landscaping requirements shall be enforced with the exception of when the review authority determines that the amount and/or locations of plantings pose a risk of overcrowding of plant materials. Therefore, staff recommends that the landscaping plan be revised to increase the number of trees as much as possible up to the 101 tree requirement; the applicant must demonstrate that additional trees would cause overcrowding to the satisfaction of the City's consulting landscape architect.

An area measuring approximately 1,987 square feet will be graded and seeded for use as a stormwater management facility located at the northwest corner of the site. The exceeds the 1,774 square feet required by ordinance.

The area located between the front property line and the parking area will be landscaped with lawn, and mulched areas containing trees and shrubs. This area would be in excess of 20 feet in width meeting the ten-foot minimum for the landscape yard.

Screening

- *154.004(H)(2) Site Plan Review Standards (g) The proposal will be sufficiently compatible or separated by distance or screening from adjacent residentially zoned land.*
- *154.010(E)(3) General Architectural requirements (c) Screening of rooftop equipment. All rooftop equipment, with the exception of solar and wind equipment, shall be screened from view from adjacent streets and public rights-of-way. Rooftop equipment shall be screened from view from adjacent buildings to the extent possible.*
- *154.010(J)(10) Off-street parking standards for non-residential districts. (d) Parking lots should be screened from streets and sidewalks by planters or plantings or both. If planters are used, their material should be compatible with adjacent buildings. Planters should be at least 18 inches high.*

The site does not adjoin any residentially zoned property. The submittal does not indicate that any roof mounted equipment is proposed. Accordingly, if rooftop equipment is proposed, the plans should be revised to depict how said equipment is to be screened.

Plantings including Linden trees and lilac shrubs are proposed along the frontage of the site, serving as a screen for the parking area. The lilac shrubs will be 24 inches in height.

Drainage/Natural Resources

- *154.010(F) Landscaping Standards (9) Drainage, access & utility easements. No landscape material other than grass, or retaining walls, shall be placed within a drainage, access or utility easement. Rock or riprap may be allowed upon review and approval by the Zoning Administrator provided the proposed material does not interfere with drainage, access or utilities.*

Drainage and utility easements are dedicated along most of the perimeter of the site. Accordingly, the landscaping plan must be revised to relocate the proposed planting outside the easement areas.

Streets and Sidewalks

- *154.010(A) Development Standards (21) Pedestrian circulation. Sidewalks or other designated pedestrian ways shall be clearly indicated and provided for the safety of pedestrians within nonresidential and mixed-use districts.*
- *154.010(A) Development Standards (22) Sidewalks and trails. Complete plans shall be provided for proposed sidewalks and trails to serve parking, recreation and service areas within developments and to link to the city's system.*

- *154.010(E)(3) General Architectural requirements (e) Pedestrian ways. Buildings shall be designed with proper provision and orientation for a pedestrian system to serve and link development.*

The plans show proposed walkways from the parking area to the front building. However, the site as proposed would lack a connection from the entrance or parking area to the sidewalks that will be constructed along both side of Anchor Drive. Accordingly, a walkway connection should be provided from the sidewalk to the front entryway area.

Parking

- *154.010(J)(3) General Parking Standards. (a) Minimum size regulations. Each space shall contain a minimum area of not less than 180 square feet, exclusive of access drives, a width of not less than nine feet and a depth of not less than 20 feet. Each space shall be adequately served by access drives as determined by the Zoning Administrator. All loading spaces shall be sufficient to meet the requirements of each use and shall provide adequate space for storage and maneuvering of the vehicles they are designed to serve. Parking ramps and underground parking may be allowed to have some reduction in the dimensions stated above.*
- *154.010(J)(10) Off-street parking standards for non-residential districts. (e) MU-3. Off-street parking may be reduced where it can be demonstrated that such reduction is justified due to joint use of facilities for dissimilar uses, provisions for transit facilities or other factors having impact on parking demand and capacity.*
- *154.010(J)(10) Off-street parking standards for non-residential districts. (g) Required number of off-street parking spaces. The minimum number of required off-street parking spaces for the following uses shall be as indicated on Table 8. Where a specific use is not listed, the Zoning Administrator shall determine the minimum number of required off-street parking spaces by considering functional similarities between uses listed and the use not listed.*
- *154.010(J)(10) Off-street parking standards for non-residential districts. (h) Yards. Off-street parking and loading facilities shall be subject to the front yard, side yard, and rear yard regulations for the use district in which the parking is located, except in the MU-1, MU-2, and MU-3 Districts, yard setbacks may be reduced if a substantial landscape setback is provided having a width meeting at least the minimum specified.*

A summary of the requirements in Table 8 is provided below for mini warehouse uses.

Use	**Requirement**	**Proposed**
Mini-Warehouse Warehousing as primary use of space Limited Production, Processing and Storage	0.25 per 1,000 square feet of building area. (101,400 sf equates to 25 required stalls)	**11 proposed**. The applicant is requesting a reduction per 154.010(J)(10)(e) based on low demand.

A surface parking area for employees and customers is provided in front of the building. 11 parking stalls are proposed. As currently shown the stalls would not meet the minimum 20-foot

length requirement. Accordingly, the plans should be revised to provide the additional depth. The building would contain an internal loading area for customers to utilize while at the facility. This area accommodates two vehicles per the applicant which would act as a supplement to the surface parking stalls. These spaces are not counted toward the requirement since they are not delineated.

A total of 25 stalls are required based on the amount of floor area for the mini-warehouse use. The Ordinance allows for a reduction in the minimum number of required stalls in the MU-3 Zoning District when factors are demonstrated as having an impact on parking demand and capacity. The applicant has provided observed trends for the frequency of storage unit visits suggesting a lower demand for parking that the Ordinance requires. Specifically, the applicant states that on average 40% of tenants visit their units a few times a year, 30% visit about once a month, 15% visit twice a month, 9% visit once a week, and 6% visit a few times a week. Their observation is that these visits are staggered such that no more than 7 vehicles are on site at any given time, which include employees, and is typically limited in duration. Staff concurs that self-storage uses are typically low generators of traffic and parking demand. Accordingly, staff supports the requested reduction.

The parking area would mostly comply with the 25 ft front yard setback requirement, except for a very small portion at the southeast corner. The setback may be reduced in this case since the 10-foot landscape yard is provided as specified in Section 154.010(F)(5)(b).

<u>Loading Area</u>

- *154.010(J)(5) Loading areas.*
  (a) Loading and unloading areas for goods, supplies and services shall be sufficient to meet the requirements of each use. At a minimum, one loading dock shall be provided for each nonresidential building having over 20,000 square feet of floor area if the use is retail sales or services. For all other uses, at least one loading dock shall be provided if the building has over 50,000 square feet of floor area.
  (b) Loading spaces shall be at least 35 feet long and ten feet wide, and shall have a height clearance of at least 13 feet.

The facility has an internal customer loading area. Additionally, the circulation area to the west of the building would accommodate the dimension noted in the standard above. Staff finds these loading areas to be adequate for the proposed use particularly since it is not associated with commercial semi-truck deliveries.

<u>Bicycle and Transit</u>

- *154.010(J)(7) Bicycle Parking Standards*
  (a) New development. Bicycle parking shall be provided for all new commercial, industrial, community service use, and multifamily residential development.
  (b) Number of spaces. The number of bicycle parking spaces shall be at least 10% of the minimum required vehicle parking for the use. In no case shall less than two spaces be provided.

(c) Location of facilities. Bicycle parking facilities shall be located within 50 feet of the main building entrance in a location that is visible to building occupants from the main parking lot.

- *154.010(A) Development Standards (25) Transit. Developments are to take into account the needs for transit and the transit rider and related pedestrian ways. Development of transit facilities and transit plazas are to be furnished on a cooperative basis with participation from property owners, the city and metro transit. New express transit is proposed on Highway 36 with on-line stop(s) with the possibility of a transit station between/near Margaret Street and McKnight Road.*

A bicycle rack with two spaces is provided near the front entrance of the facility. Two bicycle spaces are required based on the determined vehicle parking requirement of 11. The bicycle rack is with 50 feet of the facility's front entrance.

This site is not currently on transit route therefore a transit plaza is not required.

<u>Access and Circulation</u>

- 154.010(*F) Landscaping requirements (8) Traffic visibility. In order to provide a clear view of intersecting streets to motorists, a triangular area of clear vision formed by the two intersecting streets and driveways and a line connecting said centerlines, shall be kept clear of visual obstruction, as specified below.*
  (a) Within any vision clearance triangle, screening, plantings, walls, fences or other obstructions are not permitted between a height of 30 inches and ten feet above the curb level, with the exception of fences with a maximum of three feet in height and at least two-thirds open to vision.
  (c) At the intersection of a private drive or alley with a street, the line shall extend a minimum of ten feet from the intersection of the street and alley or drive property lines.
- *154.010(J)(3) General Parking Standards (e) Access.*
  i. Parking and loading space shall have proper access from a public right-of-way as determined by the Zoning Administrator.
  ii. The number and width of access drives shall be so located as to minimize traffic congestion and traffic hazard.

Vehicular access is proposed via a single driveway from Anchor Drive, which is appropriate given the low amount of traffic that is generated by the intended use. The width of said driveway can accommodate two vehicles traveling opposite directions.

The vision triangle at the entry way is clear of permanent obstructions but does appear to contain landscaping. Said landscaping will need to be in compliance with the above noted clearance standards.

<u>Architecture</u>

- *154.010(E)(3) General Architectural requirements (f) Pedestrian-oriented design. Building designs are encouraged to make the street enjoyable, visually interesting and comfortable. Individual buildings should be integrated with the streetscape to bring activity in the building in direct contact with the people on the street.*

- *154.010(E)(4) Architectural Control (d) Nonresidential and mixed-use buildings. The following standards are applicable after the effective date of this chapter to all new buildings and major expansions (50% or more of the building floor area). These standards shall apply only to the portion of the building or site that is undergoing alteration. Although, all buildings and structures and remodeling of either existing or new buildings shall take into account compatibility related to architectural quality and mass of the structures to be constructed.*

  i. Primary building entrances on all new buildings are encouraged to be oriented to the primary abutting public street. The entrance shall have a functional door. Additional secondary entrances may be oriented to a secondary street or parking area. Entries shall be clearly visible and identifiable from the street, and delineated with elements such as roof overhangs, recessed entries, landscaping, or similar design features. Barrier-free entrances are required.

  ii. Façade articulation. Consistent with the design of traditional storefront buildings, new buildings of more than 40 feet in width shall be divided into smaller increments, through articulation of the façade. This can be achieved through combinations of the following techniques, and others that may meet the intent of this section.

    A. Façade modulation. Stepping back or extending forward a portion of the façade.

    B. Vertical divisions using different textures or materials (although materials shall be drawn from a common palette).

    C. Division into storefronts, with separate display windows and entrances.

    D. Variation in roof lines by alternating dormers, stepped roofs, gables, or other roof elements to reinforce the modulation or articulation interval.

    E. Arcades, awnings, and window bays at intervals equal to the articulation interval.

  iii. Design of street-facing facades. No blank walls shall be permitted to face the public street, sidewalks, or other public spaces such as plazas. Elements such as windows, doors, columns, changes in material, and similar details shall be used to add visual interest.

  iv. Door and/or window openings.

    A. For all buildings.

      1. Glass on windows and doors shall be clear or slightly tinted, allowing views into and out of the interior. Spandrel glass may be used on service areas of the building.

      2. Displays may be placed within windows. Equipment within buildings shall be placed a minimum of five feet behind windows. To preserve views, within three feet of any window, not more than 30% of the view through the windows shall be blocked by merchandise, displays, shelving, or other obstructions.

      3. Window shape, size and patterns shall emphasize the intended organization of the façade and the definition of the building.

  v. Compatibility with traditional buildings. New development shall relate to the design of traditional buildings adjacent to the site, where present, in scale and character. This can be achieved by maintaining similar façade divisions, roof lines, rhythm, and proportions of openings, building materials and colors. Historic architectural styles are encouraged, but need not be replicated.

vi. Building alignment. Buildings shall be aligned with facades parallel with the street to create a well-defined street edge.
vii. Building articulation. Buildings shall have horizontal and vertical articulation, which may include dormers, cornice detailing, recesses and projections, step-backs of upper stories, changes in roof types and planes, building materials, and window patterns. The base of a building shall relate to the human scale, including doors and windows, texture, projections, awnings, canopies, and similar features.

The proposed building will be constructed with finishes including textured-metal panels, brick veneer, metal trim, and glass storefront windows. The front of the building is oriented towards Anchor Drive, and features storefront windows surrounding main entry doors. The front façade is articulated using material changes, variation in the cornice details along the roof line, a brick veneer wainscot, and second and third story windows. The rear elevation contains a similar architectural design but is without a storefront entrance. The east side elevation is articulated using vertical architectural piers containing differing color materials, varying cornice details, and second and third story windows. The west side elevation also contains the brick veneer wainscot and second and third story windows, but has several loading doors, and the covered loading bump-out. The site is not surrounding by any historical building styles. Staff finds that the building design would comply with the above noted standards.

Lighting

- *154.010(A) Development Standards (7) Outdoor lighting. All outdoor lighting shall be directed away from adjoining property and from the street unless globe lighting is used. Bare incandescent light bulbs shall not be permitted in view of adjacent property or the public right-of-way, except decorative holiday lights having 7.5 watts or less. No exterior lighting shall exceed 0.4 foot candles at the lot line. Yard lights shall not be closer than five feet from the property line, provided the direct source of light is not visible from the public right-of-way or adjacent residential property.*

The submitted lighting plan shows one proposed pole mounted LED light near the parking lot entrance, and ten proposed wall mounted lights around the perimeter of the building. These lights would be directed downwards, and not towards any adjoining property. The lights would exceed the 0.4-footcandle threshold along the easterly property line. Therefore, the lighting plan will have to be revised to comply with this standard.

Engineering Comments:

Sheet C2.0:

1. Show sidewalk, curb, and driveway apron at Anchor Drive.
2. B612 Curb & Gutter, Typ. note is pointing to the wrong area.
3. The Fire Official shall review the turn-around for compliance with fire code.

Sheet C3.0:

1. Retaining walls over 4' in height require design by a registered engineer and a building permit.

Sheet C4.0:

1. Show location of fire hydrants adjacent to the site. Hydrant location to be reviewed by the Fire Chief.
2. Show pipe material for water service.
3. The private storm drain along the north side of the building should have a cleanout at the 90-degree bend.
4. Landscaping is not allowed in the drainage and utility easements.

RECOMMENDED ACTION

Based on the findings described in this report, staff recommends the following actions:

Approval of the requested variance to allow for 73% of the building to be used for the self-storage purposes.

Conditional Approval of the proposed Site Plan Review subject to the following conditions of approval:

1. Revised set of plans shall be submitted showing sidewalk, curb, and driveway apron at Anchor Drive.
2. Revised set of plans shall be submitted showing a corrected B612 Curb & Gutter, Typ. Note.
3. The Fire Official shall review the turn-around for compliance with fire code. Changes to the set of plans to comply with said requirements shall be submitted.
4. Revised set of plans shall be submitted which show the location of fire hydrants adjacent to the site. Hydrant location is subject to review and approval by the Fire Chief.
5. Revised set of plans shall be submitted showing pipe material for water service.
6. Revised set of plans shall be submitted showing storm drain along the north side of the building with a cleanout at the 90-degree bend.
7. Landscaping is not allowed in the drainage and utility easements.
8. Roof-mounted mechanicals or equipment shall be screened pursuant to the Zoning Ordnance standards. If screening is used a revised plan must show how said screening is achieved.
9. A sidewalk connection shall be added that connects the site to the sidewalk along Anchor Drive.
10. Revision of the landscaping plan to increase the number of trees as much as possible up to the 101 tree requirement; the applicant must demonstrate that additional trees would cause overcrowding to the satisfaction of the City's consulting landscape architect.

11. Plantings, walls, fences or other obstructions are not permitted between a height of 30 inches and ten feet above the curb level within the 30-feet vision triangle created that the development driveway.
12. All signage shall comply with Zoning Ordinance requirements and the applicant or property owner shall obtain permits prior to installation.
13. Revise parking stall depth to comply with the minimum 20-foot requirement.
14. Modification to the proposed lighting plan to achieve no more than 0.4-footcandles at the property line.

CITY OF NORTH ST. PAUL
NOTICE OF PUBLIC HEARING:
VARIANCE

NOTICE IS HEREBY GIVEN that the Planning Commission of the City of North St. Paul, Minnesota will hold a public hearing to accept public input on applications for a Variance at the property listed below:

Parcel Identification Number: 122922320015
Property Address: 2300 McKnight Rd. N, North St. Paul 55109
Legal Description: Lot 1 Block 1 of ANCHOR BLOCK COMMONS
Applicant/Address: IP4 AF St. Paul, LLC/9000 Keystone Crossing, Suite 660 Indianapolis, Indiana 46240

The application requests the approval of a variance at the property which would allow for more than 60% of the proposed building to be used for storage.

The public hearing will be conducted on Thursday, February 27th at approximately 6:15 p.m. or shortly thereafter at the City Council Chambers of City Hall, located at 2400 Margaret Street, North St. Paul.

Such persons with desire to be heard with reference to this matter will be heard at this meeting. Written comments for inclusion in the Planning Commission packet shall be delivered no later than February 20th. Written comments may be submitted until 6:00pm on the day of the public hearing, and shall be provided to the Planning Commission at the meeting. Please direct questions or written comment to the Planning Commission Secretary: planner@northstpaul.org or (651) 747-2595.

PUBLISH: February 16th, 2020

City of North St. Paul
2400 Margaret Street
North St. Paul, MN 55109
Phone (651) 747-2407
www.northstpaul.org

ZONING & LAND USE APPLICATION

Escrow:
$1,000 min.
(code 1.2044)

Application Fee:
$500.00
(code 1.3290)

APPLICATION FOR SITE/BUILDING PLAN APPROVAL

The site/building plan approval process must be scheduled through the Community Development Planning and Zoning Department. The lead-time for submittals shown on this application is necessary to allow City staff and consultants time to review and comment on documents provided. Additional lead-time will be required if the City determines that the potential impacts require more detailed study, or if review by other agencies is required. Incomplete application submittals will not be forwarded to the appropriate Commission or Council until all required information has been provided.

APPLICANT INFORMATION

Applicant Name: Jim Adams
Company, if applicable: IP4 AF St. Paul, LLC
Address: 9000 Keystone Xing, Suite 660
City, State, Zip: Indianapolis, Indiana, 46240
Phone Number: 317-733-6400
Email: jadams@filcoltd.com

Owner Name: City of North Saint Paul
Company, if applicable:
Address: 2400 Margaret Street
City, State, Zip: North Saint Paul MN 55109
Phone Number: 651-757-2407
Email: Scott.Duddeck@northstpaul.org

Are you the owner of the property? _____YES __X__ NO
(If no, you must supply property owner information)

PROPERTY INFORMATION

Street Location of Property (Address): 2300 McKnight Rd N, North Saint Paul MN 55109
Parcel Identification Number (PID) (see Ramsey County website): 122922320015
Legal Description of Property: Lot 1 Block 1 of ANCHOR BLOCK COMMONS
Present Zoning of Property (see City website): Industrial, Vacant Land
Size of Property (Acreage): 2.04
Property Desciption: _____ Residential _____ Commercial ___X__ Industrial _____ Institutional

PROPOSAL INFORMATION

Required for:
___ Expansions of 1,000 square feet or more of commercial, industrial, institutional, and multi-family development projects.
___ New commercial, industrial, institutional, and multi-family development projects.

On a separate sheet of paper, please answer the following questions in full detail:

1. Provide a project description.
2. Is the proposal consistent with the general purposes and intent of the Comprehensive Plan?
3. Will the proposal adversely affect the health, safety, or general welfare of the City?
4. Is the proposal compatible with present and future land uses in the surrounding area and reasonably related to the overall needs of the City?
5. Is the proposal or appearance of the proposal compatible with adjacent properties?
6. Can the proposal be adequately supported by public urban services including the water supply, transportation system and capacity, police and fire protection, utilities, and sanitary waste disposal and storm water disposal systems?
7. Will the proposal create an excessive burden on existing parks, schools, and other public facilities which serve or are proposed to serve the area?
8. Is the proposal sufficiently compatible or separated by distance or screening from adjacent residentially zoned land?
9. Is the proposal in harmony with the general purposes and intent of zoning codes and the zoning district in which the applicant intends to locate the proposal?
10. If applicable, is the proposal consistent with officially adopted City plans and overlays?

LAND USE PROCESS

Review Process

Step 1	→	Step 2	→	Step 3	→	Step 4
Initial meeting with City staff		Application submission/fee		Planning Commission		City Council action

	MONTH:					MONTH:				
App Submittal										
Design Review										
EAC										
Parks & Rec										
Planning Commission										
City Council										
WEEKS:	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**

Regular Scheduled City Meetings:

PLANNING COMMISSION
1st Thursday of the month (6:15 p.m.)
DESIGN REVIEW COMMISSION
4th Thursday of the month (5:00 p.m.)
ENVIRONMENTAL ADVISORY COMMISSION
4th Monday of the month (6:00 p.m.)
PARKS & RECREATION COMMISSION
4TH Wednesday of the month (6:30 p.m.)
ECONOMIC DEVELOPMENT AUTHORITY
2ND Tuesday of every odd month (4:00 p.m.)
CITY COUNCIL
1st and 3rd Tuesday of the month (6:30 p.m.)

APPLICATION SUBMITTALS

Required	Completed	
AFP	_____	Completed Application.
AFP	_____	Application Fee $500.00. Escrow $1,000.00 minimum.
AFP/CME	_____	Certificate of Survey. Please see Zoning Code, Table 2 Submittal Requirements.
CSG	_____	Site Plan. Please see Zoning Code, Table 2 Submittal Requirements.
CSG	_____	Parking and Circulation Plan. Please see Zoning Code, Table 2 Submittal Requirements.
CSG	_____	Grading/Storm Water Management Plan.
CSG	_____	Sanitary Sewer and Water Plan with estimated use per day.
AFP/CITY	_____	Soil Type and Soil Limitations. Please see Zoning Code, Table 2 Submittal Requirements.
CSG	_____	Landscaping Plan. Please see Zoning Code, Table 2 Submittal Requirements.
AFP	_____	Lighting Plan. Please see Zoning Code, Table 2 Submittal Requirements.
MH	_____	Architectural Detail Drawings. Please see Zoning Code, Table 2 Submittal Requirements.
MH	_____	Typical floor plan and room plan drawn to scale with a summary of square footage for each use or activity.
MH	_____	Sign Plan including the type, location, and size of all proposed signage.
MH	_____	Vicinity map showing the property in relation to nearby highways or major street intersections.
AFP	_____	Type of business or activity and proposed number of employees.
AFP	_____	Proof of ownership of the property.
CSG	_____	Map or plat showing the lands proposed to be changed and all lands within at least 350 feet of the boundaries of the property.
AFP	_____	Names and addresses of the owners of the lands within 350 feet as appear on the records of the County Auditor of Ramsey County.
_____	_____	Other submittals as required by specific zoning district.
_____	_____	Any additional data requested by the city: _____

NOTE TO APPLICANT

All completed application and accompanying materials are due 30 days prior to the scheduled Planning Commission meeting (if applicable). The purpose of this submittal requirement is to allow for:

1. Plan distribution to the City staff, consultants, and applicable government entities.
2. Project review time and generation of staff reports.
3. Project meetings between City staff and applicants.
4. Meeting materials preparation and distribution.

The North St. Paul City Codes guide and enable development activities within the City by ensuring proper and well-coordinated projects. The land use application is the mechanism that allows the City to examine proposed land uses to ensure compatibility with the City Codes, design and development standards, and the surrounding land uses and natural environments. The review is intended to ensure positive growth for the community. All applications are reviewed individually and are evaluated based on their own merit. Each land use request has an associated checklist of required items. Applicants are encouraged to participate in an initial meeting with City staff prior to submitting a formal land use application. The initial meeting is an opportunity to informally discuss the conceptual idea of the proposed project in an effort to reduce delays. Participation in the initial meeting does not provide approval, or guarantee approval of the project. The City shall not accept plans, drawings, or other information related to the project except upon submittal of a formal application. The City reserves the right to reject an incomplete application.

APPLICATION FEE STATEMENT

There may be additional expenses pertaining to project review that is the responsibility of the applicant. All applicable fees must be paid when submitting land use applications and accompanying materials. All fees, which are set annually by City Ordinance, help cover costs incurred by the City to review the application. The City of North St. Paul often uses consulting firms to assist in the review of projects. Please refer to the City's Fee Schedule for information on planning review fees and other applicable costs.

REVIEW REQUIREMENTS

Minnesota State Statute 15.99 requires local governments to review an application within 15 business days of submission to determine if an application is complete and/or if additional information is required to complete the review. Once complete, a formal 60-day review period begins. The City has the ability to extend the review period for an additional 60 days, if necessary, due to insufficient information or scheduling difficulties. Please review the corresponding checklist that goes with the request. All applications must be received by the deadline(s) attached hereto. Failure to submit by the date given may result in a delay of the review by the Planning Commission and City Council.

ACKNOWLEDGEMENT

I certify that all information submitted is true and correct and I fully understand that all information and a complete application must be submitted at least 30 days prior to a Planning Commission meeting to ensure review by the Planning commission on that date. By signing this form, I hereby acknowledge the receipt of the checklist and procedure for the project to be submitted for consideration. It is my responsibility to check all applicable ordinances pertaining to the application, comply with all ordinance requirements, and submit all required materials. All permit requests should be submitted in a timely manner so as not to cause project delays.

Applicant signature: James A. Adams - V.P. Date: 1/31/2020

Owner Signature: _____ Date: _____

PROPOSED MEETING DATES:

Design Review Commission: _____ Planning Commission _____ Parks & Rec Commission _____
Environmental Advisory Commission _____ City Council _____

FOR OFFICE USE ONLY

Date submitted: _____ Date complete: _____ If incomplete, date letter sent to applicant: _____
Date of public hearing: _____ Publication date: _____ Date notice sent to adjoining properties: _____
Amount fee paid: _____ Date fee paid: _____ Receipt #: _____ File #: _____

Planning Commission action: _____ Recommend approval: _____ Recommend denial: _____
Date applicant/property owner notified of Planning Commission action: _____

City Council action: _____ Recommend approval: _____ Recommend denial: _____
Date applicant/property owner notified of City Council action: _____

Date filed with Ramsey County Recorder office: _____

IP4 AF St. Paul, LLC

Proposal Information: 2300 McKnight Road North

1. Provide a project description.

IP4 AF St. Paul, LLC is proposing the development of the 2.04 acre parcel at 2300 McKnight Road North, North Saint Paul, Minnesota. IP4 AF St. Paul, LLC is seeking Site/Building Plan Approval for the development of a class A, fully climate controlled self-storage facility to serve the residents and businesses of North Saint Paul. A variance is also requested to allow more than 60% of the Supplemental Regulation that limits a Warehousing/Storage use to no more than 60% of a principal building in the MU-3 District.

The proposed facility will consist of a 3-story structure with a total building area of 101,400 gross square feet, that will yield roughly 74,000 rentable square feet of storage space. The structure will include an office area of approximately 1,000 SF on the south west corner of the building. The building is expected to house upwards of 700 storage units that will be accessible via a fully enclosed drive-thru tunnel on the west side of the building and by a secondary indoor loading bay also on the west side. There will be approximately 8 drive-up units on the west side of the building for customers who prefer drive-up access.

The existing site is vacant land that has had soil contamination remediated and grading performed by the City of North Saint Paul. The overall construction process is expected to run 10-12 months with the facility being fully finished and operational within this timeframe. Construction would likely start in the late spring of 2020.

We are requesting that the City approve the proposed 11 parking stalls for the project in lieu of the 25 spaces generally required by the Zoning Ordinance. In the MU-3 District, off-street parking may be reduced where it can be demonstrated that such reduction is justified due to joint use of facilities for dissimilar uses, provisions for transit facilities or other factors having impact on parking demand and capacity. Based on industry customer traffic data and anticipated demands of this particular site, the proposed parking capacity will more than satisfy parking demands at any time during operation.

To expound, self-storage facilities are a low intensity use compared to alternative commercial uses. Based on previous studies, on average 40% of self-storage tenants visit their rental unit only a few times a year, 30% visit about once a month, 15% visit twice a month, 9% once a week, and 6% visit a few times a week. We intend to have approximately 700 units in total for rent, so given the percentages above we should average 45 vehicles a day and between 3 to 4 per hour during the 15 hours that the facility is open. Of course, trips will not be so evenly dispersed and peak times for visits are expected to be greater, but not more than 7 vehicles at any one time, including employees. After a customer's first visit to their unit for initial unloading and storage, which can take an hour or longer, the length of time that customers are at the facility is generally brief, a half hour or less.

Self-storage properties encounter three types of vehicle flow. The first is employees. Most facilities utilize 2 management personnel on site and require 1 space of parking per employee. The second

contributor to vehicle flow is customers of the transactional type. These are customers who are making either their initial visit to complete a new lease agreement or their final visit to close one out. The needs of these customers are satisfied with 1 to 2 handicap parking spaces, and 2 to 4 standard parking spaces. Because the location of these parking spaces is usually kept close to the location of the on-site management office and are remote from the actual storage units, customers using these spaces are discouraged from loading and unloading storage units while occupying one of these spaces. Instead, they generally complete their office needs and then relocate their vehicles into a designated loading zone. The third contributor to vehicle flow is currently contracted customers loading and unloading actual storage spaces. These customers load and unload from vehicles that are stopped in designated areas such as loading zones, covered access, and at direct drive-up units. All their activity is completed within the footprint of the facility and/or designated loading areas.

We expect that this facility will perform in a manner typical of the industry and that 11 parking stalls and two indoor unloading areas will be more than adequate for the use.

ADDITIONAL FACTORS FOR CONSIDERATION OF SITE/BUILDING PLAN APPROVAL

2. Is the proposal consistent with the general purposes and intent of the Comprehensive Plan?

Yes, the proposal fits directly with the Comprehensive Plan set forth by the City of North Saint Paul. The project site is part of the larger "Anchor Block" site, which is guided on the Future Land Use Map as Corridor Mixed Use and is identified as an area likely to redevelop between 2020 - 2030. The Corridor Mixed-Use District is focused outside of the downtown area and provides for more flexibility in the redevelopment of existing commercial centers and the development of vacant sites. IP4 AF St. Paul, LLC is buying the land for development directly from the City in furtherance of the City's goals for redevelopment of the Anchor Block area and the TIF District Plan for the commercial component of the Anchor Block redevelopment. The southern part of the Anchor Block site is being redeveloped with residential use, consistent with the overall mixed-use character desired for the area. This proposed self-storage facility will serve the residents and commercial businesses in the Corridor Mixed-Use District and throughout the City, promoting new and existing development in the District.

3. Will the proposal adversely affect the health, safety, or general welfare of the City?

The proposed development will not adversely affect the health, safety, or general welfare of the City. The City has remediated soil contamination on the site. A self-storage facility is a good fit for redevelopment of contaminated sites and provides a viable solution to an environmentally challenged property. A self-storage use is a low traffic generator and does not create adverse noise, odor, light, vibration or other objectionable impacts. The facility will benefit the public welfare by providing a needed service to the community. This facility will promote health and safety by affording the residents of North Saint Paul a place to declutter and organize their homes, lives, and businesses.

4. **Is the proposal compatible with present and future land uses in the surrounding area and reasonably related to the overall needs of the City?**

Yes, the proposed facility is compatible with the present and future land uses in the surrounding area. Warehousing/Storage is a permitted use in the MU-3 Zoning District. The site is bordered by a highway interchange to the north, a proposed convenience store to the west, a new multi-family development to the south and an existing industrial asphalt recycling use to the east. A self-storage facility will not have off-site impacts that will negatively affect surrounding uses and it will not be negatively impacted by the adjacent highway, industrial and convenience store operations. It will provide storage space for new residents of the multifamily development to the south, while also acting as a buffer for those residents from the highway and the industrial uses to the east of the subject property. Self-storage is a quiet, and low traffic use by nature. With less than 50 trips per day on average, this is an ideal use next to residential development.

The City of North Saint Paul currently does not have any self-storage space for its more than 12,000 residents. Thus, it will fulfill a need an important need in the City, including the new residents of the several multifamily developments planned and under construction in the City.

5. **Is the proposal or appearance of the proposal compatible with adjacent properties?**

Yes, the proposed facility has been designed to exceed industry standards for the type of use to provide the highest quality facility possible. The design is compatible with the commercial character of the new convenience store and the multi-family development under construction to the south. As designed, the storage facility incorporates the primary branding elements of the storage brand while softening the modern look with brick accent elements, cornice details and color and texture variation that give the building a friendlier appeal overall. Glass is used strategically to create interest and focus at the office and feature corners and to break up the long wall on the east side of the building along Third Street N. The overall color palette incorporates various light, mid and dark grey tones with dark red brick accented with metal trim elements. The scale and massing of the major features of the building are broken down by using varied window mullion patterns, introducing canopy and banding elements, and developing material transitions to create hierarchy within each façade.

6. **Can the proposal be adequately supported by public urban services including the water supply, transportation system and capacity, police and fire protection, utilities, and sanitary waste disposal and storm water disposal systems?**

Yes, the proposed project will be adequately supported by all services listed above. Self-storage is a low impact business with limited needs from a public services standpoint. The facility has been designed in accordance with all police and fire protection regulations. The existing utilities that are adjacent to the site exceed the capacity needed for the entire proposed facility. The proximity of the site to Highway 36 and McKnight Road is beneficial to the project. Given the low traffic generation of the use, the surrounding transportation system is more than adequate.

7. **Will the proposal create an excessive burden on existing parks, schools, and other public facilities which serve or are proposed to serve the area?**

No, the proposed facility will not impact parks or schools and will not create any burden on other public facilities.

8. **Is the proposal sufficiently compatible or separated by distance or screening from adjacent residentially zoned land?**

As discussed above, the proposed self-storage use is compatible with the residential use to the south. The facility will be located across the new proposed road through the Anchor Block site with its own self-contained parking area. The facility also acts as a screen for those residential users from the adjacent highway and industrial users to the east. Landscaping will screen the facility's parking and drive areas from the public streets.

9. **Is the proposal in harmony with the general purposes and intent of zoning codes and the zoning district in which the applicant intends to locate the proposal?**

The MU-3 Corridor Mixed-use District is established to encourage the development or redevelopment of mixed-use centers that combine new or existing retail development with a variety of housing, offices, studios, live-work space, civic building, employment activities, research, limited industrial and other complementary uses which combine to create a lively environment consistent with the Comprehensive Plan. The district is also intended to: i.) encourage the integration of complementary and related uses in an aesthetically attractive and functional environment; ii.) encourage building and site design that advances the City's sustainability goals; and iii.) promote desirable economic development activities.

As part of the larger Anchor Block redevelopment, the proposed self-storage facility promotes the purpose of the zoning district and the mixed-use character of the area by providing a need service to residents and businesses in the district. With contemporary design and quality materials, the facility will be an attractive addition to the corridor, as well as serving as a buffer for the residential component of the redevelopment. Self-storage is a permitted use in the MU-3 District.

10. **If applicable, is the proposal consistent with officially adopted City plans and overlays?**

Yes, this facility is being developed to satisfy the last piece of a TIF District that has been undertaken by the City. This facility is consistent with all plans adopted by the City to make this development a reality.

ADDITIONAL FACTORS FOR CONSIDERATION OF VARIANCE APPROVAL

1. Provide a project description.

Please see the project description above.

2. Is the variance in harmony and consistent with the general purposes and intent of the Comprehensive Plan and Chapter 154?

As discussed above, the proposed self-storage use is in harmony and consistent with the purposes and intent of the Comprehensive Plan and Zoning Ordinances. In the particular context of the site and Anchor Block redevelopment, the variance to allow a facility that almost 100% storage use is appropriate. The Anchor Block redevelopment as a whole will have a mix of uses. The proposed self-storage facility will serve the residents and commercial businesses in the Corridor Mixed Use District and throughout the City, promoting new and existing development in the District.

3. Will the variance adversely affect the health, safety, or general welfare of the City?

As discussed above, the proposed use and facility will be beneficial to the health, safety and general welfare of the City. Allowing essentially 100% storage area instead of limiting that use to 60% of the building will not create any adverse effects.

4. Is the variance necessary due to special conditions applying to the structures or land in question that are particular to the property and do not apply generally to other land or structures in the district or vicinity in which the land in located?

The Anchor Block site has been vacant for many years, due, in large part, to environmental contamination. The City has remediated soil conditions on this lot to make it suitable for development with a storage facility.

In addition to the need for soil remediation, the site is adjacent to uses that make redevelopment with active uses difficult. To the north is a busy highway and, more impactful, to the east is a large asphalt recycling and landscape supply operation. That neighboring industrial use makes the site unfavorable for mixed use, office or residential uses. The proposed storage facility will buffer other new uses in the Anchor Block redevelopment from the industrial neighbor.

5. Is the variance requested, the minimum variance necessary to alleviate the practical difficulty? Practical Difficulties are caused from the strict application of the Zoning Code as outlined below:

- **The property owner proposes to use the property in a reasonable manner not permitted by the Zoning Code.**
- **The plight of the landowner is due to circumstances unique to the property not created by the landowner.**
- **The variance, if granted, will not alter the essential character of the locality.**
- **Economic considerations alone do not constitute practical difficulties.**
- **The variance is consistent with officially adopted City plans and overlays.**

The requested variance is the minimum necessary because there is no need for a larger office area for the storage facility and no practical opportunity to incorporate another use into the facility. The proposed storage facility is a reasonable use of this long vacant and formerly contaminated site adjacent to the highway and across the road from an asphalt operation. These circumstances are unique to the property, were not created by the landowner or applicant, and are not solely economic considerations. The building will be an attractive addition to complete the Anchor Block redevelopment and will be in character with the overall development plan. The project is also consistent with the mixed-use guidance for the site from the City's comprehensive plan and the City's TIF District objectives.

PROJECT

NORTH ST. PAUL STORAGE NEW CONSTRUCTION

MOHAGEN HANSEN
Architecture | Interiors

CLIENT

IP4 AF ST. PAUL, LLC.
9000 KEYSTONE CROSSING, SUITE 2300
INDIANAPOLIS, IN 46240

PROJECT ADDRESS

ANCHOR DRIVE
NORTH ST. PAUL, MN 55109

PROJ. NO. **19199.0ADA**

DATE **02/04/2020**

PROJECT PHASE

SITE PLAN REVIEW

PROJECT GENERAL NOTES

ARCHITECTURAL

1. GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, (AIA DOCUMENT A201, CURRENT EDITION) IN ITS ENTIRETY, ARE PART OF THESE DOCUMENTS. ADDITIONAL NOTES WITHIN THESE DOCUMENTS ARE NOT MEANT TO OVERRIDE ANY PART OF A201. CONTACT ARCHITECT FOR A COPY OF A201, IF REQUIRED.
2. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED PROJECT. UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE MEANS OR METHOD OF CONSTRUCTION.
3. THE CONTRACTOR SHALL OBTAIN SUFFICIENT LIABILITY INSURANCE TO COVER WORKMAN'S COMPENSATION, GENERAL LIABILITY AND CONTRACTUAL LIABILITY. A COPY SHALL BE FILED WITH THE OWNER.
4. THE CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS AS REQUIRED BY THE CONSTRUCTION DOCUMENTS AND IN FULL ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
5. THE CONTRACTOR WILL MAINTAIN BUILDER'S RISK INSURANCE ON THE FORM KNOWN AS "ALL RISK" OR "MULTIPLE PERIL". THE CONTRACTOR, ALL SUBCONTRACTORS, ARCHITECTS AND ENGINEERS SHALL BE INCLUDED IN EACH CAPACITY AS INSURED JOINTLY WITH THE OWNER IN ALL POLICIES.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND FIELD CONDITIONS PRIOR TO ANY DEMOLITION, FABRICATION, CONSTRUCTION OR INSTALLATION & NOTIFY ARCHITECT IF CONDITIONS, MATERIALS, SIZES AND DIMENSIONS ARE DIFFERENT FROM THOSE SHOWN.
7. CROSS REFERENCE ALL DIMENSIONS AND DETAILS WITH STRUCTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS BEFORE COMMENCING ANY FABRICATION AND/OR CONSTRUCTION.
8. CONTRACTORS SHALL INSTALL ALL MANUFACTURED ITEMS, MATERIALS AND EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED SPECIFICATIONS, EXCEPT WHERE THE SPECIFICATIONS HEREIN, ARE MORE STRINGENT, AND SHALL BE COMPLIED WITH.
9. MATERIALS WHICH ARE SHOWN ON THE DRAWINGS AND WHICH MAY NOT BE SPECIFICALLY DESCRIBED IN THE SPECIFICATIONS OR DRAWINGS, SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE SUITABLE FOR THE INTENDED USE. MATERIALS SHALL BE IN HARMONY WITH ADJACENT MATERIALS, AND SHALL BE SUBJECT TO REVIEW FOR CONFORMANCE WITH THE INTENT OF THE CONTRACT DOCUMENTS. WHERE INSTALLATION TECHNIQUES ARE NOT SPECIFIED, THEY SHALL BE IN ACCORDANCE WITH MANUFACTURER'S CURRENT INSTRUCTION AND INDUSTRY STANDARDS.
10. SHOP DRAWINGS PREPARED BY SUPPLIERS, SUBCONTRACTORS, ETC. SHALL BE REVIEWED, COORDINATED AND SIGNED AND STAMPED BY GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE ARCHITECT/ENGINEER.
11. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS, LICENSES AND CERTIFICATES AND PAY ALL FEES CONNECTED THEREWITH THE ABOVE REFERENCED PROJECT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE ALL SURFACES FOR PROPER INSTALLATION OF FINISHES. THIS IS TO INCLUDE, BUT IS NOT LIMITED TO: PATCHING, SANDING, FLOOR LEVELING, PRIMING, SEALING, SKIM COATING, ETC.
13. THE CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE FROM WASTE MATERIAL OR RUBBISH CAUSED BY THE WORK.
14. THE CONTRACTOR SHALL MINIMIZE ANY DAMAGE TO EXISTING CONSTRUCTION AND AREAS ON THE SITE OUTSIDE OF THE CONSTRUCTION LIMITS. CONTRACTOR TO CONSTRUCT TEMPORARY WALLS AND BARRIERS AS REQUIRED TO CONTAIN DUST AND DEBRIS AND TO PROVIDE SAFE PUBLIC ACCESS AND PASSAGE.
15. THE GENERAL CONTRACTOR SHALL LOCATE ALL NEW MECHANICAL UNITS OR RELOCATE ANY EXISTING UNITS OR ITEMS THAT CONFLICT WITH NEW OR EXISTING FRAMING AND FULL HEIGHT WALLS. THIS INCLUDES ACCESS FOR ALL CONTROLS, FILTERS, ETC. THIS WORK MUST BE COORDINATED AND VERIFIED PRIOR TO BIDDING.
16. THE GENERAL CONTRACTOR SHALL COORDINATE AND VERIFY WITH THE RESPECTIVE TRADES THE SIZES AND LOCATIONS OF MECHANICAL AND/OR ELECTRICAL PENETRATIONS, LOCATIONS OF FIRE TREATED BACKING/BLOCKING REQUIRED FOR MOUNTING ELECTRICAL AND/OR MECHANICAL EQUIPMENT, AS WELL AS CUTTING AND PATCHING FOR WORK REQUIRED BY MECHANICAL/ELECTRICAL.
17. WHEN WORK IS COMPLETED IN AN AREA, THOROUGHLY CLEAN THE SPACES, ITEMS & SURFACES OF SOIL, WASTE MATERIAL, SMUDGES, SPATTERS, MISAPPLIED MATERIAL, SPOTS, STAINS, AND THE LIKE, WITHOUT DAMAGING THE MATERIALS AND SURFACES INVOLVED.
18. PROVIDE SEMI RECESSED FIRE EXTINGUISHERS AS REQUIRED BY APPLICABLE CODES AND ORDINANCES UNLESS NOTED OTHERWISE.
19. ALL DOORS, FRAMES, HARDWARE, LIGHTING AND CEILING MATERIALS ARE TO FOLLOW BUILDING STANDARDS UNLESS OTHERWISE NOTED.
20. PROVIDE FIRE TREATED BLOCKING IN WALLS AS REQUIRED FOR INSTALLATION OF MILLWORK, FURNITURE AND ACCESSORIES.
21. THE GENERAL CONTRACTOR IS TO VERIFY BUILDING STANDARDS WITH BUILDING MANAGER. ALL HARDWARE SETS AND KEYING TO BE COORDINATED WITH BUILDING MANAGERS.
22. ALL INTERIOR GLASS MUST COMPLY W/ APPLICABLE CODES FOR DESIGN LOADS & SAFETY GLAZING.
23. ALL MATERIALS USED IN PLENUM AREAS MUST BE NON-COMBUSTIBLE AND / OR LISTED FOR PLENUM USE AS DEFINED BY THE STATE & LOCAL CODES. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO ADHERE TO THESE REQUIREMENTS.
24. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE TO FIRE CAULK ALL NEW AND EXISTING PENETRATIONS WITHIN WALL PARTITIONS, ABOVE THE CEILING, AS INDICATED BY THE APPLICABLE CODES.
25. DEFERRED SUBMITTALS: DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OF RECORD AND WILL BE REVIEWED FOR GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. SUBMITTALS FOUND TO BE IN CONFORMANCE WITH THE DESIGN INTENT WILL BE STAMPED AS REVIEWED AND FORWARDED TO THE AUTHORITY HAVING JURISDICTION IN KEEPING WITH MN CODE SECTION 1300.013 SUBSECTION 9B. SUBMITTALS NOT FOUND IN CONFORMANCE WITH THE DESIGN INTENT WILL BE RETURNED TO THE CONTRACTOR FOR REVISION AND RESUBMITTAL. REVISED DOCUMENTATION WILL BE REVIEWED BY THE ARCHITECT OF RECORD PRIOR TO ACCEPTANCE AND SUBMISSION TO THE AUTHORITY HAVING JURISDICTION.

    DEFERRED SUBMITTALS INCLUDE THE FOLLOWING:
    A. FIRE SUPPRESSION DRAWINGS (PREPARED BY DESIGN-BUILD CONTRACTOR)
    B. STRUCTURAL STEEL
    C. STEEL DECKING
    D. MISCELLANEOUS METALS STEEL STAIRS AND LANDINGS

PROJECT GENERAL NOTES CONTINUED

FINISHES

1. THE CONTRACTOR SHALL PATCH AND REPAIR ANY AND ALL FLOORS, WALLS, CEILINGS, ETC. IN A WORKMANSHIP-LIKE MANNER TO MATCH THE SURROUNDING SURFACE AREAS. SURFACES OR MATERIALS DAMAGED BY DEMOLITION OR CONSTRUCTION SHALL BE REPAIRED, RESTORED AND REFINISHED TO MATCH THE EXISTING, UNLESS NOTED OR SPECIFIED OTHERWISE. IN ADDITION THOSE EXISTING SURFACES OR MATERIALS (SERVING AS A SUBSTRATE FOR NEW MATERIALS OR FINISHES) WHICH HAVE BEEN DAMAGED FROM ANY CAUSE, SHALL BE REPAIRED, RESTORED, PROPERLY PREPARED AND CLEANED TO RECEIVE THE NEW MATERIALS AND FINISH WORK. ALL NEW MATERIALS & FINISH WORK TO BE FREE FROM FLAWS & DEFECTS.
2. PATCH AND REPAIR EXISTING FLOOR SLAB AS REQUIRED FOR A SMOOTH AND LEVEL SURFACE FREE OF DEFECTS. FILL ALL CRACKS AND HOLES AND LEVEL DEPRESSIONS WITH MATERIALS COMPATIBLE WITH THE FLOOR AND SLAB AS RECOMMENDED BY THE FLOORING MANUFACTURER.
3. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING LEAD TIMES OF ALL MATERIALS SUCH THAT MATERIALS ARE ON SITE WHEN REQUIRED FOR INSTALLATION.
4. ALL PREPARATION, STORING, INSTALLATION AND CLEANUP OF FINISHES TO CONFORM TO MANUFACTURER'S SPECIFICATIONS.
5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR TESTING THE CONCRETE SUBFLOOR FOR MOISTURE PRIOR TO THE FLOORING INSTALLATION. IN ADDITION, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR APPROVING AND VERIFYING THAT THE TESTS HAVE BEEN PERFORMED PER ASTM STANDARDS. SHOULD THE FLOORING SUBCONTRACTOR BE ASSIGNED TO TEST THE CONCRETE SUBFLOOR, THEY WILL NEED TO PROVIDE TO THE GENERAL CONTRACTOR ALL REQUIRED INFORMATION PERTAINING TO THESE TESTS, INCLUDING BUT NOT LIMITED TO:
    A. NUMBER OF TESTS
    B. DIAGRAM OF TEST LOCATIONS
    C. ACCLIMATION PERIOD BEFORE RESULTS ARE RECORDED
    D. TEST RESULTS, AND THE AMBIENT CONDITIONS THE TESTS WERE PERFORMED IN

    AFTER CONFIRMATION THAT THE TESTED CONDITIONS MEET BOTH THE REFERENCED AND MANUFACTURER'S STANDARDS, THE SUBCONTRACTOR MAY PROCEED WITH THE INSTALLATION OF THE FLOORING PER MANUFACTURER'S SPECIFICATIONS.

MECHANICAL - REFER TO MECHANICAL DRAWINGS

1. THE MECHANICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL NECESSARY MECHANICAL EQUIPMENT AND CONTROLS TO COMPLETE THE JOB. THE MECHANICAL CONTRACTOR IS TO COORDINATE W/ THE ELECTRICAL CONTRACTOR ALL THE NECESSARY WIRING TO COMPLETE THE JOB. THE WIRING IS TO BE COMPLETED BY THE ELECTRICAL CONTRACTOR.
2. PROVIDE WHITE SEMI RECESSED SPRINKLER HEADS W/ WHITE TRIM RING @ ALL ACT. CEILING AND FULLY RECESSED SPRINKLER HEADS W/ WHITE ESCUTCHEON PLATES @ ALL GYP. CEILING AS REQUIRED BY APPLICABLE CODES AND ORDINANCES.
3. VERIFY LOCATION AND SIZES OF ALL OPENINGS WITH GENERAL CONTRACTOR PRIOR TO COMMENCING WORK. THE GENERAL CONTRACTOR IS RESPONSIBLE TO CUT & PATCH OR ADD STRUCTURAL REINFORCING AS REQ'D FOR THE INSTALLATION OF MECHANICAL ROOFTOP EQUIPMENT.
4. ALL SINKS SHALL HAVE HOT AND COLD WATER PROVIDE PIPE INSULATION WRAP ON EXPOSED PIPING PER ADA GUIDELINES, WHERE ACCEPTABLE.
5. THE PLUMBING CONTRACTOR MUST PROVIDE A CLEAN-OUT PLAN FOR REVIEW AND APPROVAL BY THE ARCHITECT BEFORE PLUMBING LINES ARE INSTALLED.

ELECTRICAL - REFER TO ELECTRICAL DRAWINGS

1. THE ELECTRICAL CONTRACTOR IS TO COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT AND TO PROVIDE DISCONNECT AND POWER WIRING FOR ALL MECHANICAL EQUIPMENT.
2. THE ELECTRICAL CONTRACTOR IS TO PROVIDE EXIT AND EMERGENCY LIGHTS AS REQUIRED BY APPLICABLE CODES AND ORDINANCES - SEE ELECTRICAL DRAWINGS.
3. THE ELECTRICAL CONTRACTOR IS TO PROVIDE SMOKE DETECTION AND ALARM DEVICES AND WIRING OF THE SPACE AS REQUIRED BY APPLICABLE CODES AND ORDINANCES.
4. THE ELECTRICAL CONTRACTOR SHALL INSTALL JUNCTION BOXES W/ PULL STRING FOR ALL VOICE / DATA AND PHONE LOCATIONS. THE OWNER IS TO COORDINATE & PROVIDE ALL LOW VOLTAGE CABLING AND COVER PLATES AS REQUIRED.
5. NO OUTLETS ARE TO BE BACK TO BACK.
6. SITE LIGHTING CONTACT: TECHLITE 317-578-2626

CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

TODD MOHAGEN, AIA, NCARB

REGISTRATION NUMBER: 18074

CLIENT APPROVAL

AS A REPRESENTATIVE OF:

I ACCEPT AND APPROVE THE INFORMATION PRESENTED IN THIS DRAWING SET AS A REPRESENTATION OF OUR DESIGN INTENT. SHOULD OWNER INITIATE CHANGES THAT RESULT IN REVISIONS AND/OR MODIFICATIONS ADDITIONAL DESIGN SERVICE FEES WILL BE CHANGED.

TITLE:

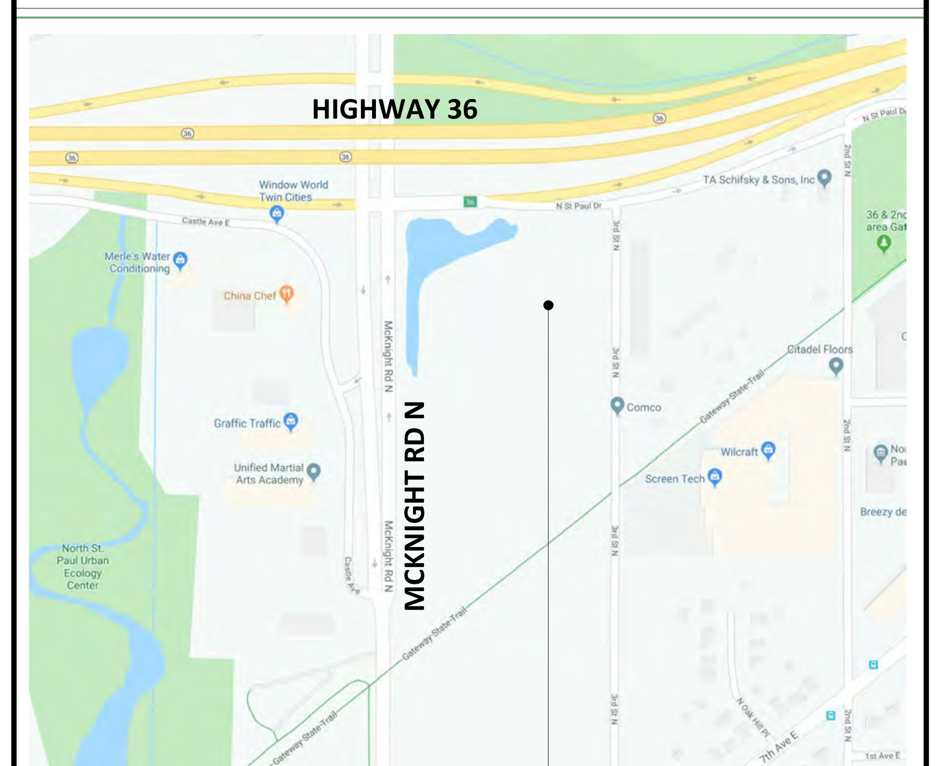
APPLICABLE CODES

STATE BUILDING CODE (MSBC)	2015
INTERNATIONAL BUILDING CODE (IBC)	2012
AMENDMENTS IN MSBC: CHAPTER 1300	2015
AMENDMENTS IN MSBC: CHAPTER 1341	2015
AMENDMENTS IN MSBC: CHAPTER 1307	2015
INTERNATIONAL FIRE CODE (IFC)	2012
INTERNATIONAL MECHANICAL AND FUEL GAS CODE	2012
AMENDMENTS IN MSBC: CHAPTER 1346	2015
MN PLUMBING CODE	2015
MN ENERGY CODE	2015
ASHRAE 90.1-2010 CRITERIA	
NATIONAL ELECTRICAL CODE	2017
MN STATE FIRE CODE	2015

OCCUPANCY REQUIREMENTS

FIRE SPRINKLER PROTECTION:	FULLY SPRINKLED
TYPE OF CONSTRUCTION:	IIB
BUILDING OCCUPANCY:	S-1, B
FIRE RESISTIVE CONSTRUCTION:	
CONSTRUCTION REQUIREMENTS:	
EXTERIOR BEARING WALLS	0
INTERIOR BEARING WALLS	0
EXTERIOR NON-BEARING WALLS	0
STRUCTURAL FRAME	0
PARTITIONS- PERMANENT	0
SHAFT ENCLOSURES	0
FLOOR- CEILINGS/FLOORS	0
ROOFS- CEILING/ROOFS	0
EXTERIOR DOORS & WINDOWS	N.A.

AREA MAP



SHEET INDEX

SHEET #	SHEET DESCRIPTION	SITE PLAN REVIEW - 02/04/2020
GENERAL		
A000	SHEET COVER	●
CIVIL		
C0.0	TITLE SHEET	●
C2.0	SITE PLAN	●
C3.0	GRADING PLAN	●
C4.0	UTILITY PLAN	●
C5.0	CIVIL DETAILS	●
C5.1	CIVIL DETAILS	●
C5.2	CIVIL DETAILS	●
L1.0	LANDSCAPE PLAN	●
L1.1	LANDSCAPE PLAN NOTES & DETAILS	●
W1.0	SWPPP - EXISTING CONDITIONS	●
W1.1	SWPPP - PROPOSED CONDITIONS	●
W1.2	SWPPP - DETAILS	●
W1.3	SWPPP - NARRATIVE	●
W1.4	SWPPP - ATTACHMENTS	●
W1.5	SWPPP - ATTACHMENTS	●
ARCHITECTURAL		
A201	FIRST LEVEL - FLOOR PLAN	●
A300	EXTERIOR BUILDING ELEVATIONS	●
A301	3D VIEWS	●
ELECTRICAL		
1 of 1	SITE PHOTOMETRY	●

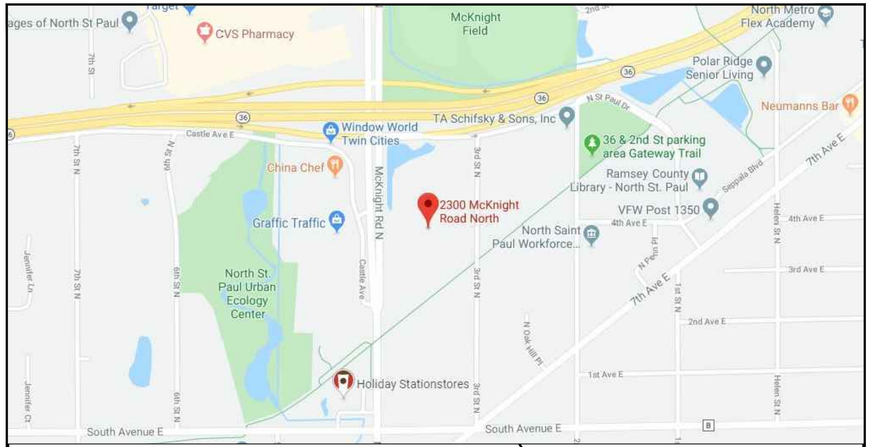
1000 Twelve Oaks Center Drive
Suite 200, Wayzata, MN 55391
T: 952-426-7400
F: 952-426-7440

IP4 AF ST. PAUL, LLC. / 19199.0ADA / SITE PLAN REVIEW / NORTH ST. PAUL STORAGE

ANCHOR BLOCK COMMONS SELF STORAGE

NORTH ST. PAUL, MINNESOTA

ISSUED FOR: CITY SUBMITTAL



SITE LOCATION MAP N

SITE LOCATION

ARCHITECT:

MOHAGEN HANSEN ARCHITECTURE INTERIORS
1000 TWELVE OAKS CENTER DRIVE,
SUITE 200
WAYZATA, MN 55391

DEVELOPER / PROPERTY OWNER:

IP4 AF ST. PAUL, LLC
9000 KEYSTONE CROSSING, SUITE 660
INDIANAPOLIS, MN 46240
317-733-6400

ENGINEER / LANDSCAPE ARCHITECT:

CIVIL SITE GROUP
4931 W 35TH STREET
SUITE 200
ST LOUIS PARK, MN 55416
612-615-0060

SURVEYOR:

CIVIL SITE GROUP
4931 W 35TH STREET
SUITE 200
ST LOUIS PARK, MN 55416
612-615-0060

GEOTECHNICAL ENGINEER:

TBD

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

SHEET INDEX

SHEET NUMBER	SHEET TITLE
C0.0	TITLE SHEET
EX1.0	EXISTING CONDITIONS PLAN
C2.0	SITE PLAN
C3.0	GRADING PLAN
C4.0	UTILITY PLAN
C5.0	CIVIL DETAILS
C5.1	CIVIL DETAILS
C5.2	CIVIL DETAILS
L1.0	LANDSCAPE PLAN
L1.1	LANDSCAPE PLAN NOTES & DETAILS
SW1.0	SWPPP - EXISTING CONDITIONS
SW1.1	SWPPP - PROPOSED CONDITIONS
SW1.2	SWPPP - DETAILS
SW1.3	SWPPP - NARRATIVE
SW1.4	SWPPP - ATTACHMENTS
SW1.5	SWPPP - ATTACHMENTS

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PROJECT
ANCHOR BLOCK COMMONS
2300 MCKNIGHT ROAD, NORTH ST PAUL, MN 55109

IP4 AF ST. PAUL, LLC
9000 KEYSTONE CROSSING, SUITE 2300, INDIANAPOLIS, IN 46240

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Matthew R. Pavek

DATE 02/04/20 LICENSE NO. 44263

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
02/04/20	CITY SUBMITTAL

DRAWN BY: JS REVIEWED BY: XX, XX
PROJECT NUMBER: 19384

REVISION SUMMARY

DATE	DESCRIPTION

TITLE SHEET

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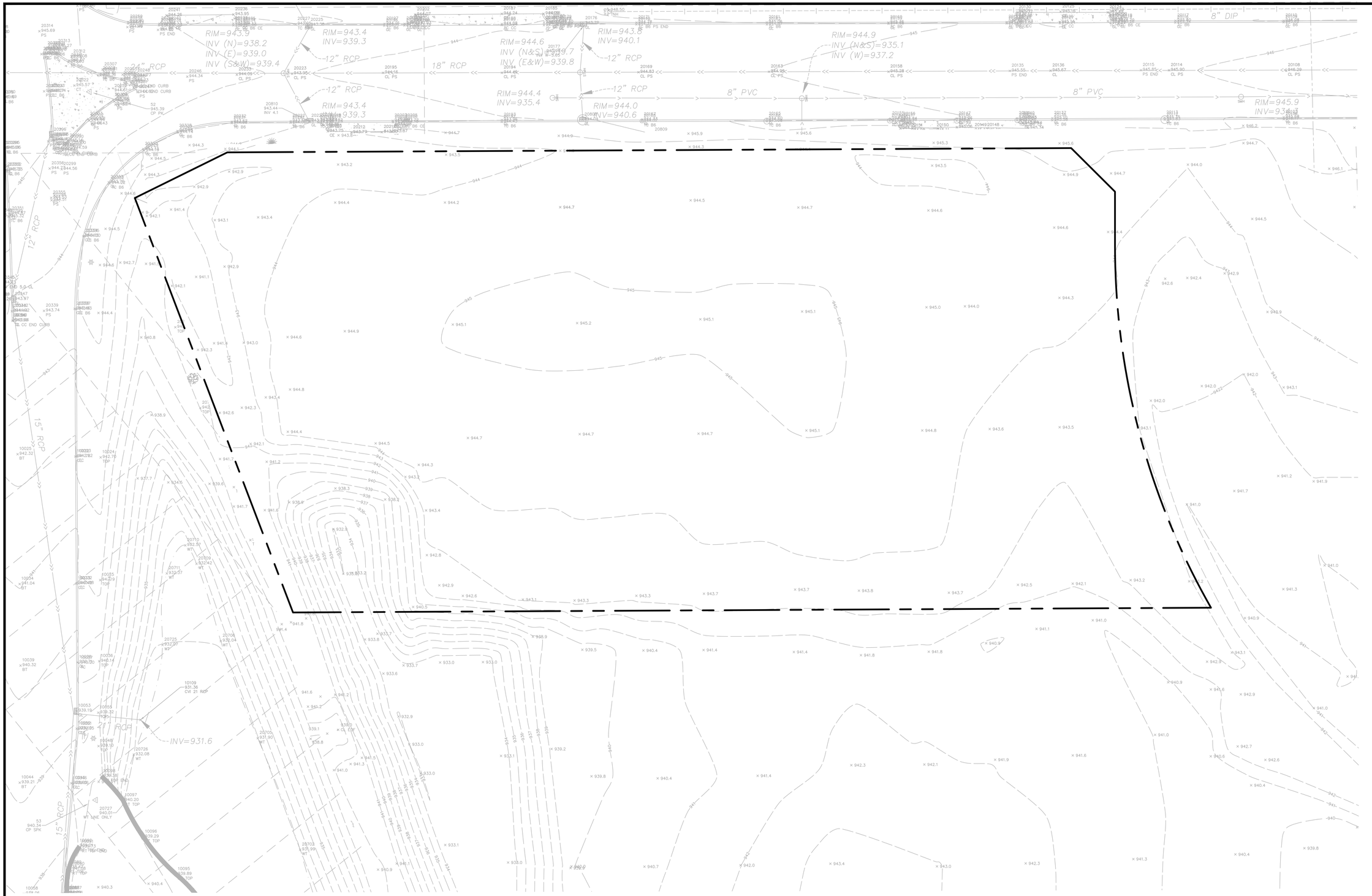

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EXISTING CONDITIONS PLAN

EX1.0

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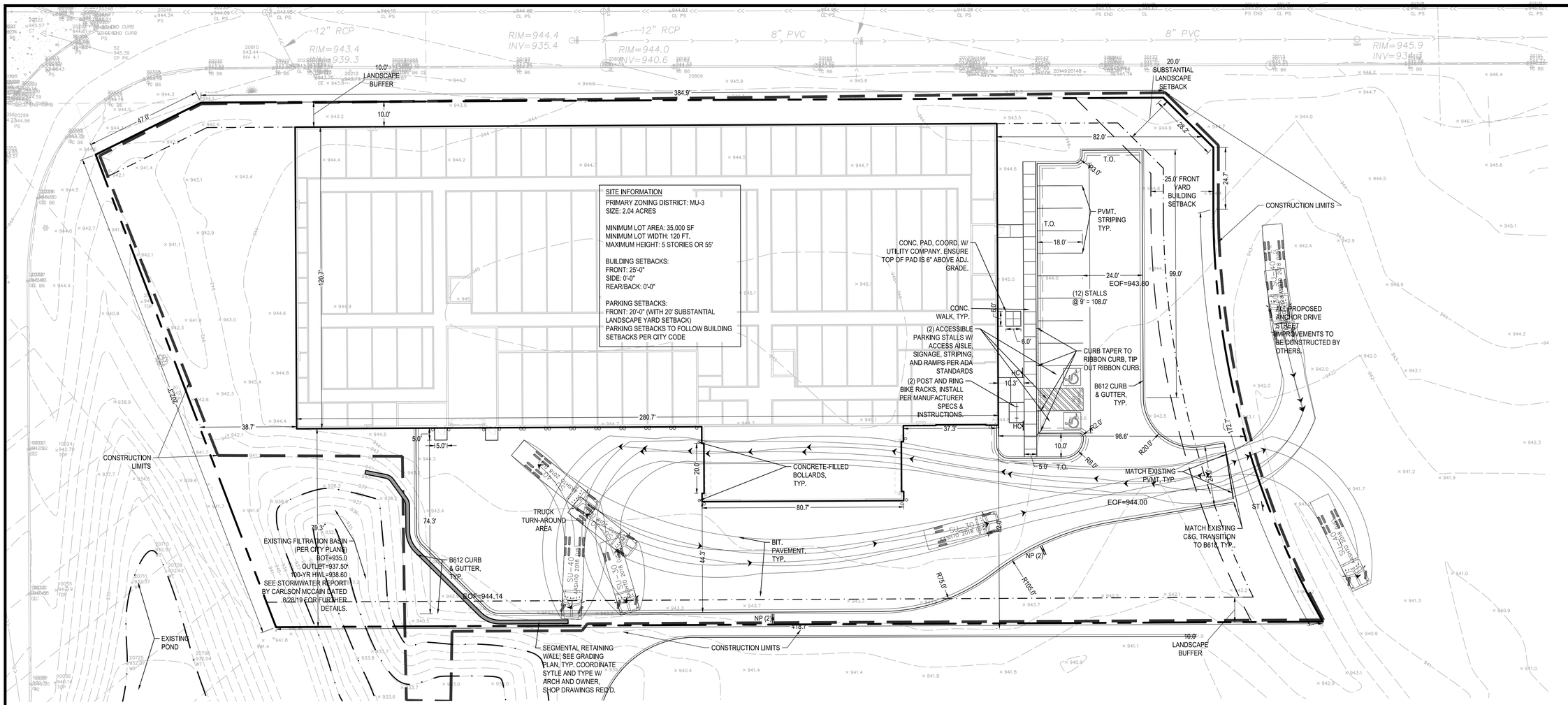

SITE LAYOUT NOTES:

1. CONTRACTOR SHALL VERIFY LOCATIONS AND LAYOUT OF ALL SITE ELEMENTS PRIOR TO BEGINNING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO, LOCATIONS OF EXISTING AND PROPOSED PROPERTY LINES, EASEMENTS, SETBACKS, UTILITIES, BUILDINGS AND PAVEMENTS. CONTRACTOR IS RESPONSIBLE FOR FINAL LOCATIONS OF ALL ELEMENTS FOR THE SITE. ANY REVISIONS REQUIRED AFTER COMMENCEMENT OF CONSTRUCTION, DUE TO LOCATIONAL ADJUSTMENTS SHALL BE CORRECTED AT NO ADDITIONAL COST TO OWNER. ADJUSTMENTS TO THE LAYOUT SHALL BE APPROVED BY THE ENGINEER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF MATERIALS. STAKE LAYOUT FOR APPROVAL.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, INCLUDING A RIGHT-OF-WAY AND STREET OPENING PERMIT.
3. THE CONTRACTOR SHALL VERIFY RECOMMENDATIONS NOTED IN THE GEO TECHNICAL REPORT PRIOR TO INSTALLATION OF SITE IMPROVEMENT MATERIALS.
4. CONTRACTOR SHALL FIELD VERIFY COORDINATES AND LOCATION DIMENSIONS OF THE BUILDING AND STAKE FOR REVIEW AND APPROVAL BY THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION OF FOOTING MATERIALS.
5. LOCATIONS OF STRUCTURES, ROADWAY PAVEMENTS, CURBS AND GUTTERS, BOLLARDS, AND WALKS ARE APPROXIMATE AND SHALL BE STAKED IN THE FIELD, PRIOR TO INSTALLATION, FOR REVIEW AND APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT.
6. CURB DIMENSIONS SHOWN ARE TO FACE OF CURB. BUILDING DIMENSIONS ARE TO FACE OF CONCRETE FOUNDATION. LOCATION OF BUILDING IS TO BUILDING FOUNDATION AND SHALL BE AS SHOWN ON THE DRAWINGS.
7. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR SAMPLES AS SPECIFIED FOR REVIEW AND APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT PRIOR TO FABRICATION FOR ALL PREFABRICATED SITE IMPROVEMENT MATERIALS SUCH AS, BUT NOT LIMITED TO THE FOLLOWING, FURNISHINGS, PAVEMENTS, WALLS, RAILINGS, BENCHES, FLAGPOLES, LANDING PADS FOR CURB RAMPS, AND LIGHT AND POLES. THE OWNER RESERVES THE RIGHT TO REJECT INSTALLED MATERIALS NOT PREVIOUSLY APPROVED.
8. PEDESTRIAN CURB RAMPS SHALL BE CONSTRUCTED WITH TRUNCATED DOME LANDING AREAS IN ACCORDANCE WITH A.D.A. REQUIREMENTS-SEE DETAIL.
9. CROSSWALK STRIPING SHALL BE 24" WIDE WHITE PAINTED LINE, SPACED 48" ON CENTER PERPENDICULAR TO THE FLOW OF TRAFFIC. WIDTH OF CROSSWALK SHALL BE 5' WIDE. ALL OTHER PAVEMENT MARKINGS SHALL BE WHITE IN COLOR UNLESS OTHERWISE NOTED OR REQUIRED BY ADA OR LOCAL GOVERNING BODIES.
10. SEE SITE PLAN FOR CURB AND GUTTER TYPE. TAPER BETWEEN CURB TYPES-SEE DETAIL.
11. ALL CURB RADII ARE MINIMUM 3' UNLESS OTHERWISE NOTED.
12. CONTRACTOR SHALL REFER TO FINAL PLAT FOR LOT BOUNDARIES, NUMBERS, AREAS AND DIMENSIONS PRIOR TO SITE IMPROVEMENTS.
13. FIELD VERIFY ALL EXISTING SITE CONDITIONS, DIMENSIONS.
14. PARKING IS TO BE SET PARALLEL OR PERPENDICULAR TO EXISTING BUILDING UNLESS NOTED OTHERWISE.
15. ALL PARKING LOT PAINT STRIPPING TO BE WHITE, 4" WIDE TYP.
16. BITUMINOUS PAVING TO BE "LIGHT DUTY" UNLESS OTHERWISE NOTED. SEE DETAIL SHEETS FOR PAVEMENT SECTIONS.
17. ALL TREES THAT ARE TO REMAIN ARE TO BE PROTECTED FROM DAMAGE WITH A CONSTRUCTION FENCE AT THE DRIP LINE. SEE LANDSCAPE DOCUMENTS.
18. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.
19. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY TEMPORARY CONSTRUCTION EASEMENTS REQUIRED FOR ANY REQUIRED OFF-SITE CONSTRUCTION WORK.

SITE AREA TABLE:

SITE AREA CALCULATIONS	EXISTING CONDITION		PROPOSED CONDITION	
BUILDING COVERAGE	0 SF	0.0%	36,249 SF	40.9%
ALL PAVEMENTS	0 SF	0.0%	23,892 SF	26.9%
ALL NON-PAVEMENTS	88,728 SF	100.0%	28,587 SF	32.2%
TOTAL SITE AREA	88,728 SF	100.0%	88,728 SF	100.0%
IMPERVIOUS SURFACE				
EXISTING CONDITION	0 SF	0.0%		
PROPOSED CONDITION	60,141 SF	67.8%		
DIFFERENCE (EX. VS PROP.)	60,141 SF	67.8%		

CITY OF NORTH ST. PAUL REMOVAL NOTES:

1. RESERVED FOR CITY SPECIFIC REMOVAL NOTES.

OPERATIONAL NOTES:

SNOW REMOVAL:

SNOW TO BE PLOWED TO LANDSCAPED AREAS OR REMOVED FROM SITE.

TRASH REMOVAL:

WEEKLY TRASH REMOVAL TO BE COORDINATED BY MANAGEMENT.

DELIVERIES:

DELIVERIES TO BE COORDINATED BY MANAGEMENT.

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SITE PLAN LEGEND:

LIGHT DUTY BITUMINOUS PAVEMENT, SEE GEOTECHNICAL REPORT FOR AGGREGATE BASE & WEAR COURSE DEPTH, SEE DEATIL.

CONCRETE PAVEMENT AS SPECIFIED (PAD OR WALK) SEE GEOTECHNICAL REPORT FOR AGGREGATE BASE & CONCRETE DEPTHS, SEE DETAIL.

PROPERTY LINE

CONSTRUCTION LIMITS

CURB AND GUTTER-SEE NOTES (T.O.) TIP OUT GUTTER WHERE APPLICABLE-SEE PLAN

TRAFFIC DIRECTIONAL ARROW PAVEMENT MARKINGS

SIGN AND POST ASSEMBLY. SHOP DRAWINGS REQUIRED.
HC = ACCESSIBLE SIGN
NP = NO PARKING FIRE LANE
ST = STOP
CP = COMPACT CAR PARKING ONLY

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SITE PLAN

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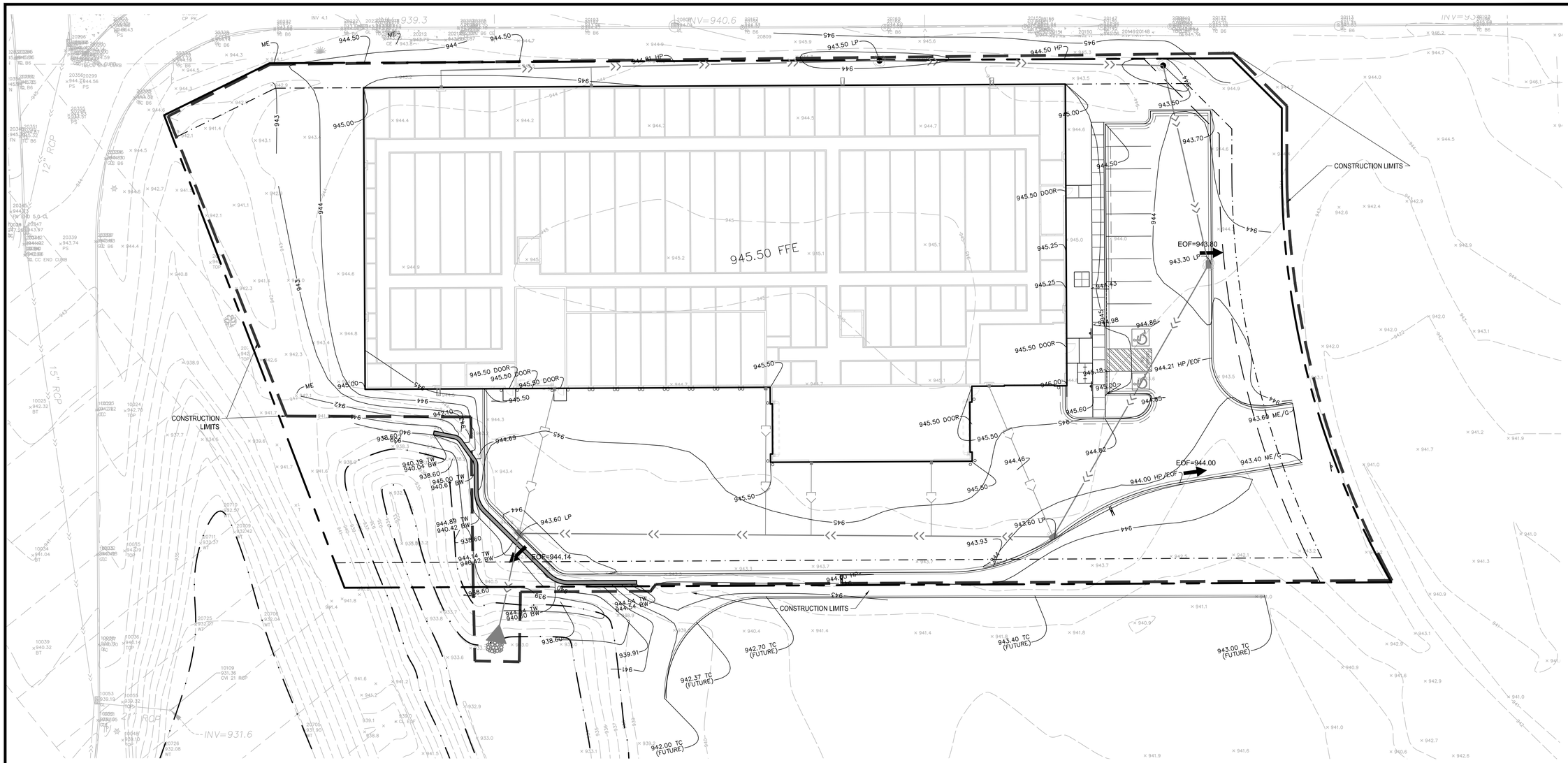

GENERAL GRADING NOTES:

1. SEE SITE PLAN FOR HORIZONTAL LAYOUT & GENERAL GRADING NOTES.
2. THE CONTRACTOR SHALL COMPLETE THE SITE GRADING CONSTRUCTION (INCLUDING BUT NOT LIMITED TO SITE PREPARATION, SOIL CORRECTION, EXCAVATION, EMBANKMENT, ETC.) IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER'S SOILS ENGINEER. ALL SOIL TESTING SHALL BE COMPLETED BY THE OWNER'S SOILS ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED SOIL TESTS AND INSPECTIONS WITH THE SOILS ENGINEER.
3. GRADING AND EXCAVATION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS & PERMIT REQUIREMENTS OF THE CITY.
4. PROPOSED SPOT GRADES ARE FLOW-LINE FINISHED GRADE ELEVATIONS, UNLESS OTHERWISE NOTED.
5. GRADES OF WALKS SHALL BE INSTALLED WITH 5% MAX. LONGITUDINAL SLOPE AND 1% MIN. AND 2% MAX. CROSS SLOPE, UNLESS OTHERWISE NOTED.
6. PROPOSED SLOPES SHALL NOT EXCEED 3:1 UNLESS INDICATED OTHERWISE ON THE DRAWINGS. MAXIMUM SLOPES IN MAINTAINED AREAS IS 4:1
7. PROPOSED RETAINING WALLS, FREESTANDING WALLS, OR COMBINATION OF WALL TYPES GREATER THAN 4' IN HEIGHT SHALL BE DESIGNED AND ENGINEERED BY A REGISTERED RETAINING WALL ENGINEER. DESIGN DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF GRADE STAKES THROUGHOUT THE DURATION OF CONSTRUCTION TO ESTABLISH PROPER GRADES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR A FINAL FIELD CHECK OF FINISHED GRADES ACCEPTABLE TO THE ENGINEER/LANDSCAPE ARCHITECT PRIOR TO TOPSOIL AND SODDING ACTIVITIES.
9. IF EXCESS OR SHORTAGE OF SOIL MATERIAL EXISTS, THE CONTRACTOR SHALL TRANSPORT ALL EXCESS SOIL MATERIAL OFF THE SITE TO AN AREA SELECTED BY THE CONTRACTOR, OR IMPORT SUITABLE MATERIAL TO THE SITE.
10. EXCAVATE TOPSOIL FROM AREAS TO BE FURTHER EXCAVATED OR REGRADED AND STOCKPILE IN AREAS DESIGNATED ON THE SITE. THE CONTRACTOR SHALL SALVAGE ENOUGH TOPSOIL FOR RESPREADING ON THE SITE AS SPECIFIED. EXCESS TOPSOIL SHALL BE PLACED IN EMBANKMENT AREAS, OUTSIDE OF BUILDING PADS, ROADWAYS AND PARKING AREAS. THE CONTRACTOR SHALL SUBCUT CUT AREAS, WHERE TURF IS TO BE ESTABLISHED, TO A DEPTH OF 6 INCHES. RESPREAD TOPSOIL IN AREAS WHERE TURF IS TO BE ESTABLISHED TO A MINIMUM DEPTH OF 6 INCHES.
11. FINISHED GRADING SHALL BE COMPLETED. THE CONTRACTOR SHALL UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING, INCLUDING ADJACENT TRANSITION AREAS. PROVIDE A SMOOTH FINISHED SURFACE WITHIN SPECIFIED TOLERANCES, WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. AREAS THAT HAVE BEEN FINISH GRADED SHALL BE PROTECTED FROM SUBSEQUENT CONSTRUCTION OPERATIONS, TRAFFIC AND EROSION. REPAIR ALL AREAS THAT HAVE BECOME RUTTED BY TRAFFIC OR ERODED BY WATER OR HAS SETTLED BELOW THE CORRECT GRADE. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO EQUAL OR BETTER THAN ORIGINAL CONDITION OR TO THE REQUIREMENTS OF THE NEW WORK.
12. PRIOR TO PLACEMENT OF THE AGGREGATE BASE, A TEST ROLL WILL BE REQUIRED ON THE STREET AND/OR PARKING AREA SUBGRADE. THE CONTRACTOR SHALL PROVIDE A LOADED TANDEM AXLE TRUCK WITH A GROSS WEIGHT OF 25 TONS. THE TEST ROLLING SHALL BE AT THE DIRECTION OF THE SOILS ENGINEER AND SHALL BE COMPLETED IN AREAS AS DIRECTED BY THE SOILS ENGINEER. THE SOILS ENGINEER SHALL DETERMINE WHICH SECTIONS OF THE STREET OR PARKING AREA ARE UNSTABLE. CORRECTION OF THE SUBGRADE SOILS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SOILS ENGINEER. NO TEST ROLL SHALL OCCUR WITHIN 10' OF ANY UNDERGROUND STORM RETENTION/DETENTION SYSTEMS.
13. TOLERANCES
    - 13.1. THE BUILDING SUBGRADE FINISHED SURFACE ELEVATION SHALL NOT VARY BY MORE THAN 0.30 FOOT ABOVE, OR 0.30 FOOT BELOW, THE PRESCRIBED ELEVATION AT ANY POINT WHERE MEASUREMENT IS MADE.
    - 13.2. THE STREET OR PARKING AREA SUBGRADE FINISHED SURFACE ELEVATION SHALL NOT VARY BY MORE THAN 0.05 FOOT ABOVE, OR 0.10 FOOT BELOW, THE PRESCRIBED ELEVATION OF ANY POINT WHERE MEASUREMENT IS MADE.
    - 13.3. AREAS WHICH ARE TO RECEIVE TOPSOIL SHALL BE GRADED TO WITHIN 0.30 FOOT ABOVE OR BELOW THE REQUIRED ELEVATION, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
    - 13.4. TOPSOIL SHALL BE GRADED TO PLUS OR MINUS 1/2 INCH OF THE SPECIFIED THICKNESS.
14. MAINTENANCE
    - 14.1. THE CONTRACTOR SHALL PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION, AND KEEP AREA FREE OF TRASH AND DEBRIS.
    - 14.2. CONTRACTOR SHALL REPAIR AND REESTABLISH GRADES IN SETTLED, ERODED AND RUTTED AREAS TO SPECIFIED TOLERANCES. DURING THE CONSTRUCTION, IF REQUIRED, AND DURING THE WARRANTY PERIOD, ERODED AREAS WHERE TURF IS TO BE ESTABLISHED SHALL BE RESEEDED AND MULCHED.
    - 14.3. WHERE COMPLETED COMPACTED AREAS ARE DISTURBED BY SUBSEQUENT CONSTRUCTION OPERATIONS OR ADVERSE WEATHER, CONTRACTOR SHALL SCARIFY, SURFACE, RESHAPE, AND COMPACT TO REQUIRED DENSITY PRIOR TO FURTHER CONSTRUCTION.

CITY OF NORTH ST. PAUL GRADING NOTES:

1. RESERVED FOR CITY SPECIFIC GRADING NOTES.

EROSION CONTROL NOTES:

SEE SWPPP ON SHEETS SW1.0-SW1.5

GROUNDWATER INFORMATION:

PER GEOTECHNICAL REPORT BY XXXXX, INC., DATED XX-XX-XX GROUNDWATER WAS OBSERVED AT ELEVATIONS RANGING FROM XXX.XX TO XXX.XX

THE BORINGS & GROUNDWATER ARE AS FOLLOWS:

B-1	XXX.XX
B-2	XXX.XX
B-3	XXX.XX
B-4	XXX.XX

PROPOSED FOOTING DRAIN TILE INVERT ELEVATION = XXX.XX

GRADING PLAN LEGEND:

1125	EX. 1' CONTOUR ELEVATION INTERVAL
1137	1.0' CONTOUR ELEVATION INTERVAL
41.26	SPOT GRADE ELEVATION (GUTTER/FLOW LINE UNLESS OTHERWISE NOTED)
891.00 G	SPOT GRADE ELEVATION GUTTER
891.00 TC	SPOT GRADE ELEVATION TOP OF CURB
891.00 BS/TS	SPOT GRADE ELEVATION BOTTOM OF STAIRS/TOP OF STAIRS
891.00 ME	SPOT GRADE ELEVATION MATCH EXISTING
GB	GRADE BREAK - HIGH POINTS
TO	CURB AND GUTTER (T.O = TIP OUT)
EOF=1135.52	EMERGENCY OVERFLOW

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GRADING PLAN

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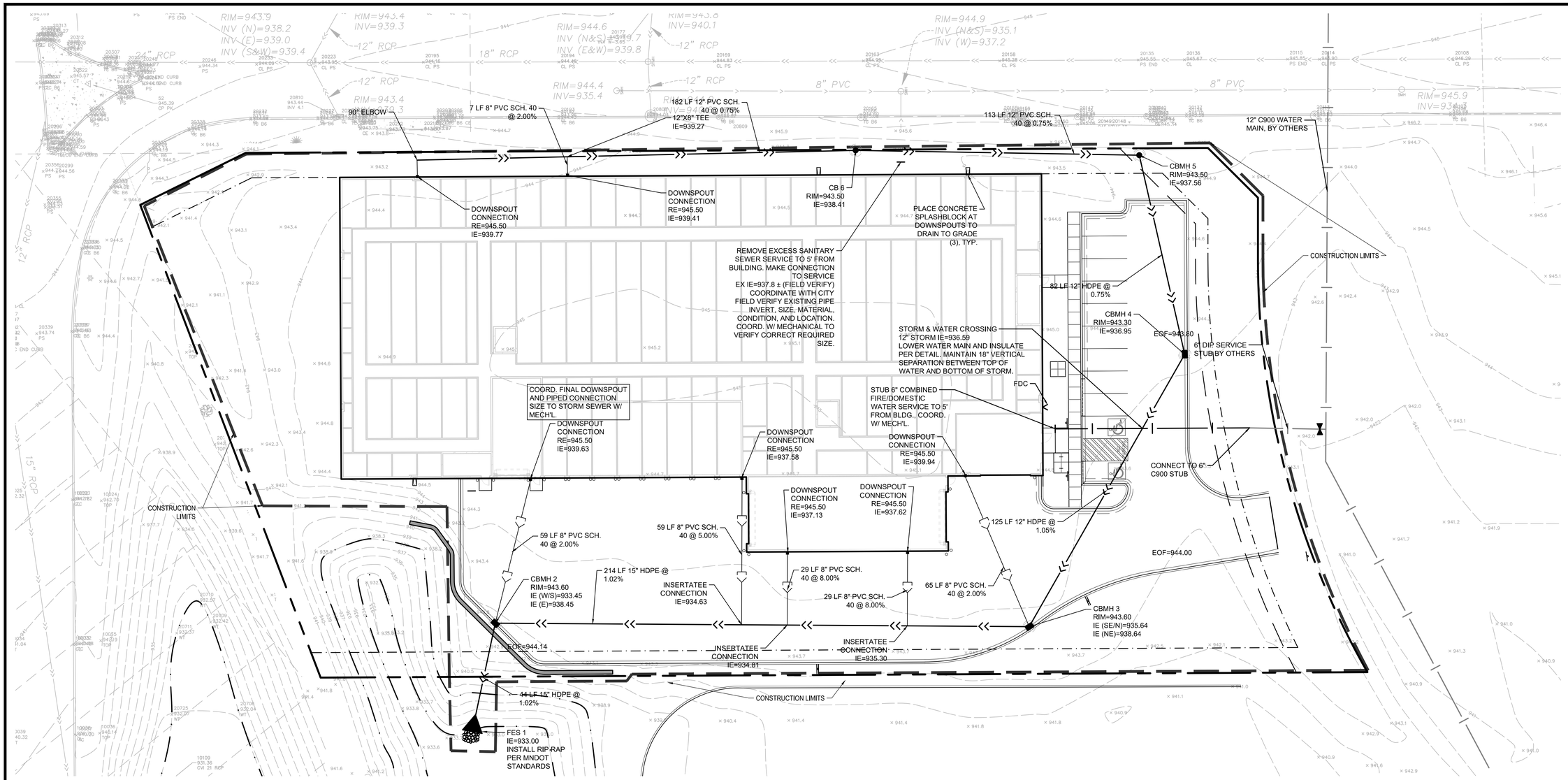

GENERAL UTILITY NOTES:

1. SEE SITE PLAN FOR HORIZONTAL DIMENSIONS AND LAYOUT.
2. CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF DISCREPANCIES OR VARIATIONS FROM THE PLANS.
3. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.
4. UTILITY INSTALLATION SHALL CONFORM TO THE CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR WATER MAIN AND SERVICE LINE INSTALLATION" AND "SANITARY SEWER AND STORM SEWER INSTALLATION" AS PREPARED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM), AND SHALL CONFORM WITH THE REQUIREMENTS OF THE CITY AND THE PROJECT SPECIFICATIONS.
5. CASTINGS SHALL BE SALVAGED FROM STRUCTURE REMOVALS AND RE-USED OR PLACED AT THE DIRECTION OF THE OWNER.
6. ALL WATER PIPE SHALL BE CLASS 52 DUCTILE IRON PIPE (DIP) AWWA C151, ASME B16.4, AWWA C110, AWWA C153 UNLESS OTHERWISE NOTED.
7. ALL SANITARY SEWER SHALL BE SDR 26 POLYVINYL CHLORIDE (PVC) ASTM D3034 & F679, OR SCH 40 ASTM D1785, 2665, ASTM F794, 1866) UNLESS OTHERWISE NOTED.
8. ALL STORM SEWER PIPE SHALL BE HDPE ASTM F714 & F2306 WITH ASTM D3212 SPEC FITTINGS UNLESS OTHERWISE NOTED.
9. PIPE LENGTHS SHOWN ARE FROM CENTER TO CENTER OF STRUCTURE OR TO END OF FLARED END SECTION.
10. UTILITIES ON THE PLAN ARE SHOWN TO WITHIN 5' OF THE BUILDING FOOTPRINT. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE FINAL CONNECTION TO BUILDING LINES. COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS.
11. CATCH BASINS AND MANHOLES IN PAVED AREAS SHALL BE SUMPED 0.04 FEET. ALL CATCH BASINS IN GUTTERS SHALL BE SUMPED 0.15 FEET PER DETAILS. RIM ELEVATIONS SHOWN ON THIS PLAN DO NOT REFLECT SUMPED ELEVATIONS.
12. ALL FIRE HYDRANTS SHALL BE LOCATED 5 FEET BEHIND BACK OF CURB UNLESS OTHERWISE NOTED.
13. HYDRANT TYPE, VALVE, AND CONNECTION SHALL BE IN ACCORDANCE WITH CITY REQUIREMENTS. HYDRANT EXTENSIONS ARE INCIDENTAL.
14. A MINIMUM OF 8 FEET OF COVER IS REQUIRED OVER ALL WATERMAIN, UNLESS OTHERWISE NOTED. EXTRA DEPTH MAY BE REQUIRED TO MAINTAIN A MINIMUM OF 18" VERTICAL SEPARATION TO SANITARY OR STORM SEWER LINES. EXTRA DEPTH WATERMAIN IS INCIDENTAL.
15. A MINIMUM OF 18 INCHES OF VERTICAL SEPARATION AND 10 FEET OF HORIZONTAL SEPARATION IS REQUIRED FOR ALL UTILITIES, UNLESS OTHERWISE NOTED.
16. ALL CONNECTIONS TO EXISTING UTILITIES SHALL BE IN ACCORDANCE WITH CITY STANDARDS AND COORDINATED WITH THE CITY PRIOR TO CONSTRUCTION.
17. CONNECTIONS TO EXISTING STRUCTURES SHALL BE CORE-DRILLED.
18. COORDINATE LOCATIONS AND SIZES OF SERVICE CONNECTIONS WITH THE MECHANICAL DRAWINGS.
19. COORDINATE INSTALLATION AND SCHEDULING OF THE INSTALLATION OF UTILITIES WITH ADJACENT CONTRACTORS AND CITY STAFF.
20. ALL STREET REPAIRS AND PATCHING SHALL BE PERFORMED PER THE REQUIREMENTS OF THE CITY. ALL PAVEMENT CONNECTIONS SHALL BE SAWCUT. ALL TRAFFIC CONTROLS SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE ESTABLISHED PER THE REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CITY. THIS SHALL INCLUDE BUT NOT BE LIMITED TO SIGNAGE, BARRICADES, FLASHERS, AND FLAGGERS AS NEEDED. ALL PUBLIC STREETS SHALL BE OPEN TO TRAFFIC AT ALL TIMES. NO ROAD CLOSURES SHALL BE PERMITTED WITHOUT APPROVAL BY THE CITY.
21. ALL STRUCTURES, PUBLIC AND PRIVATE, SHALL BE ADJUSTED TO PROPOSED GRADES WHERE REQUIRED. THE REQUIREMENTS OF ALL OWNERS MUST BE COMPLIED WITH. STRUCTURES BEING RESET TO PAVED AREAS MUST MEET OWNERS REQUIREMENTS FOR TRAFFIC LOADING.
22. CONTRACTOR SHALL COORDINATE ALL WORK WITH PRIVATE UTILITY COMPANIES.
23. CONTRACTOR SHALL COORDINATE CONNECTION OF IRRIGATION SERVICE TO UTILITIES. COORDINATE THE INSTALLATION OF IRRIGATION SLEEVES NECESSARY AS TO NOT IMPACT INSTALLATION OF UTILITIES.
24. CONTRACTOR SHALL MAINTAIN AS-BUILT PLANS THROUGHOUT CONSTRUCTION AND SUBMIT THESE PLANS TO ENGINEER UPON COMPLETION OF WORK.
25. ALL JOINTS AND CONNECTIONS IN STORM SEWER SYSTEM SHALL BE GASTIGHT OR WATERTIGHT. APPROVED RESILIENT RUBBER JOINTS MUST BE USED TO MAKE WATERTIGHT CONNECTIONS TO MANHOLES, CATCHBASINS, OR OTHER STRUCTURES.
26. ALL PORTIONS OF THE STORM SEWER SYSTEM LOCATED WITHIN 10 FEET OF THE BUILDING OR WATER SERVICE LINE MUST BE TESTED IN ACCORDANCE WITH MN RULES, CHAPTER 4714, SECTION 1109.0.

CITY OF NORTH ST. PAUL UTILITY NOTES:

1. RESERVED FOR CITY SPECIFIC UTILITY NOTES.

UTILITY LEGEND:

- CATCH BASIN
- MANHOLE
- GATE VALVE AND VALVE BOX
- PROPOSED FIRE HYDRANT
- WATER MAIN
- SANITARY SEWER
- STORM SEWER
- FES AND RIP RAP

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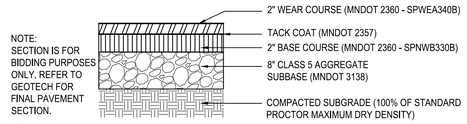
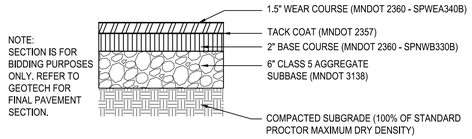
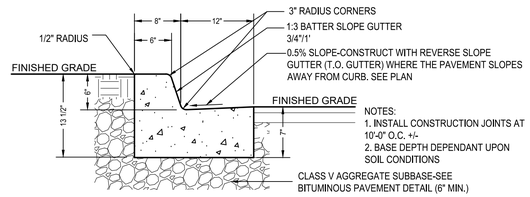


1 HEAVY DUTY BITUMINOUS PAVEMENT
N T S

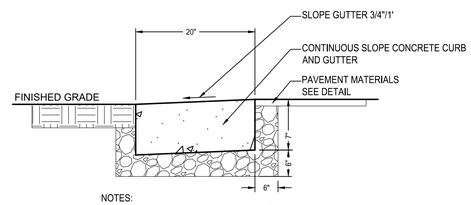


2 LIGHT DUTY BITUMINOUS PAVEMENT
N T S



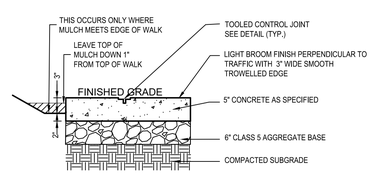
NOTES:
1. INSTALL CONSTRUCTION JOINTS AT 10'-0" O.C. +/-
2. BASE DEPTH DEPENDANT UPON SOIL CONDITIONS

3 B-612 CONCRETE CURB AND GUTTER
N T S



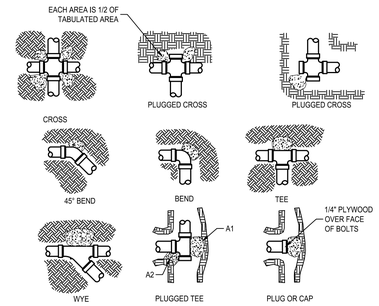
NOTES:
1. INSTALL CONSTRUCTION JOINTS AT 10'-0" O.C. +/-
2. BASE DEPTH DEPENDANT UPON SOIL CONDITIONS

4 RIBBON CURB
N T S



NOTES:
1. INSTALLATION SHALL BE CERTIFIED AND IN ACCORDANCE TO AN ON-SITE A.C.I. TECHNICIAN AS SPECIFIED.
2. SEE GEO-TECHNICAL RECOMMENDATIONS FOR GROSS WEIGHT REQUIREMENTS.
3. SEE LAYOUT DRAWINGS FOR LIMITS OF WALKS.
4. SEE CONCRETE JOINT DETAIL FOR REQUIREMENTS.
5. 1/2" WIDE EXPANSION JOINT AND SEALANT AT ALL CURBS.

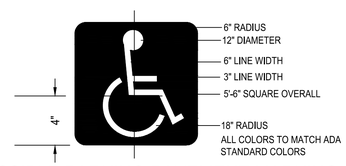
6 CONCRETE WALK/PAD
N T S (PRIVATE PROPERTY)



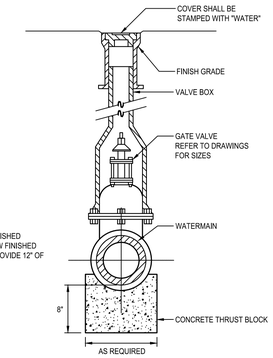
NOMINAL FITTING SIZE (INCHES)	TYE, WYE, PLUG, OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22.5° BEND	11.25° BEND
			A1	A2			
4	1.0	1.4	1.9	1.4	1.0	-	-
6	2.1	3.0	4.3	3.0	1.6	1.0	-
6	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.6	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.6
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

NOTES:
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. IF NOT SHOWN ON PLANS, REQUIRED BEARING AT FITTING SHALL BE AS INDICATED ABOVE, ADJUSTED IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS(ES).
4. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN THIS STANDARD DETAIL.
5. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 P.S.I. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150) X (200/SOIL BEARING STRESS) X (TABLE VALUE).

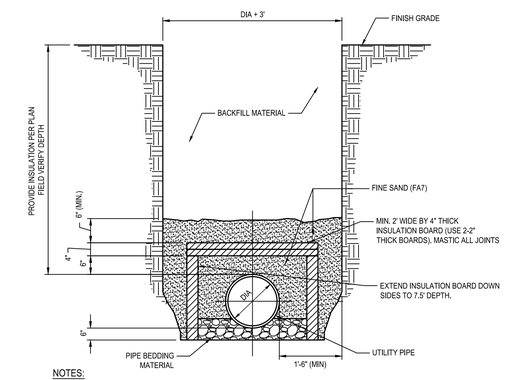
8 THRUST BLOCK
N T S



9 ACCESSIBLE PARKING PAVEMENT MARKING
N T S



10 GATE VALVE BOX
N T S



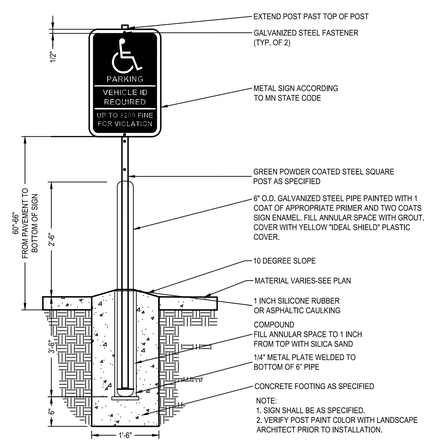
NOTES:

1. INSULATION BOARD TO BE CLOSED CELL. EXTRUDED POLYSTYRENE FOAM MEETING ASTM 578, TYPE VI, 40PSI COMPRESSING STRENGTH (ASTM D1621) 0.1%MAX. WATER ABSORPTION (ASTM C272).

2. BACKFILL MATERIAL AROUND INSULATION MUST BE FINE SAND FREE FROM ROOT, ORGANIC MATERIAL, OR OTHER INJURIOUS MATERIALS.

3. OVERLAP ALL INSULATION BOARD JOINTS.

11 UTILITY PIPE INSULATION DETAIL
N T S



NOTE:
1. SIGN SHALL BE AS SPECIFIED.
2. VERIFY POST PAINT COLOR WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

12 ACCESSIBLE SIGN AND POST
N T S

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ANCHOR BLOCK COMMONS
2300 MCKNIGHT ROAD, NORTH ST PAUL, MN 55109

IP4 AF ST. PAUL, LLC
9000 KEYSTONE CROSSING, SUITE 2300, INDIANAPOLIS, IN 46240

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Matthew R. Pavek
DATE 02/04/20 LICENSE NO. 44263

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
02/04/20	CITY SUBMITTAL

DRAWN BY: JS REVIEWED BY: XX, XX
PROJECT NUMBER: 19384

REVISION SUMMARY

DATE	DESCRIPTION

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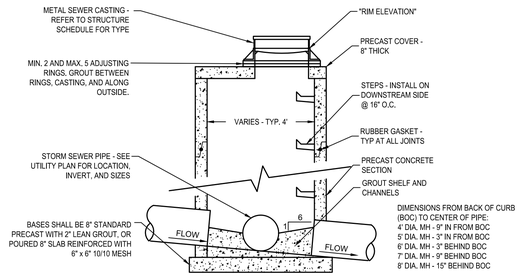
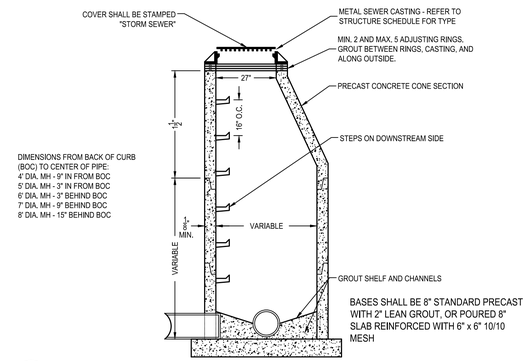
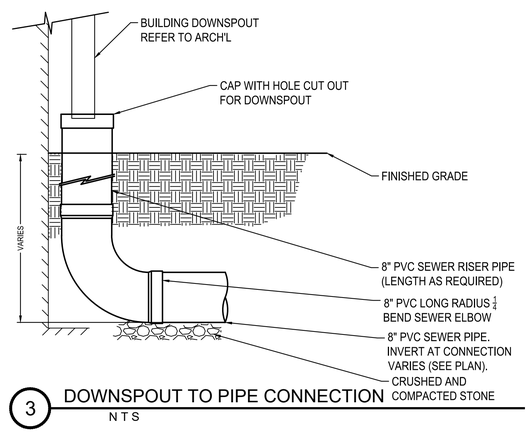


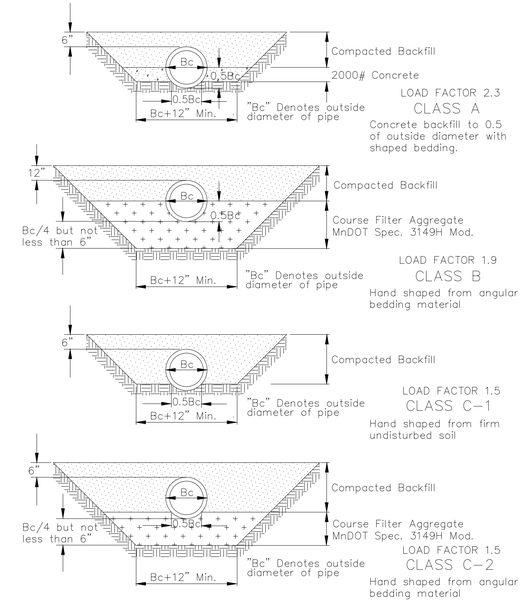
1 CATCH BASIN
NTS



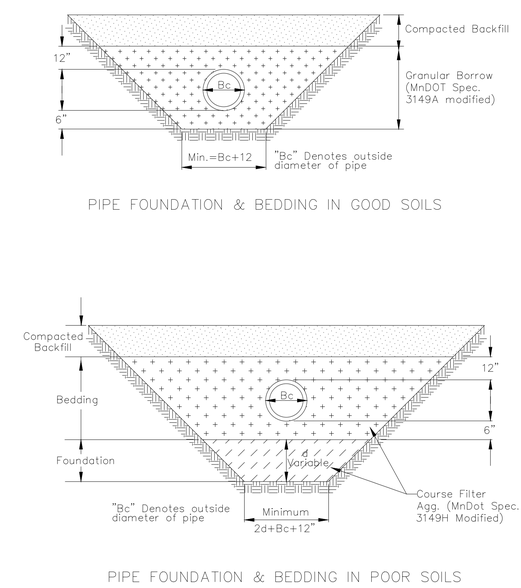
2 STORM MANHOLE
NTS



3 DOWNSPOUT TO PIPE CONNECTION
NTS



4 PIPE BEDDING - RCP & DIP
NTS



5 PIPE BEDDING - PVC
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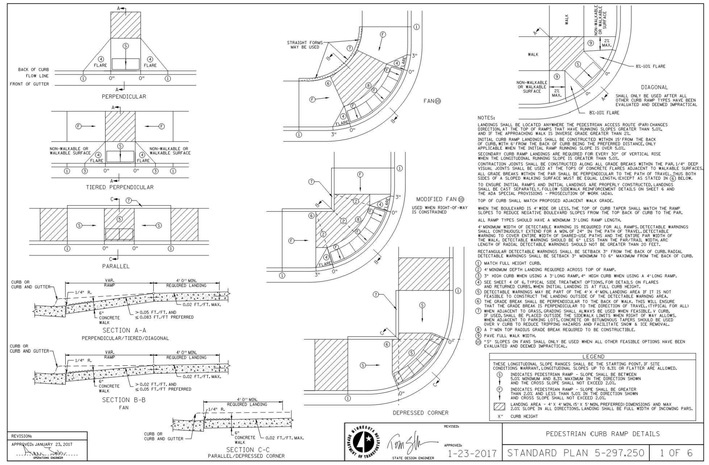

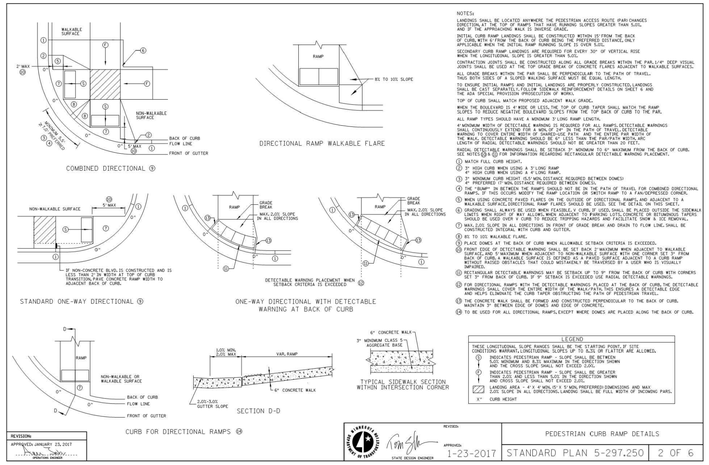

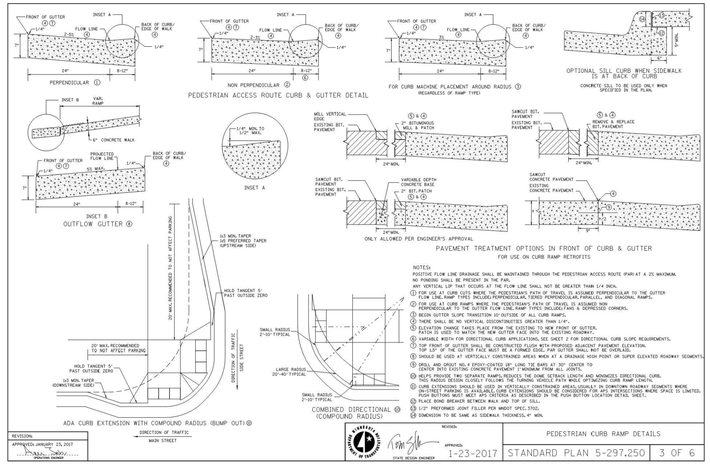

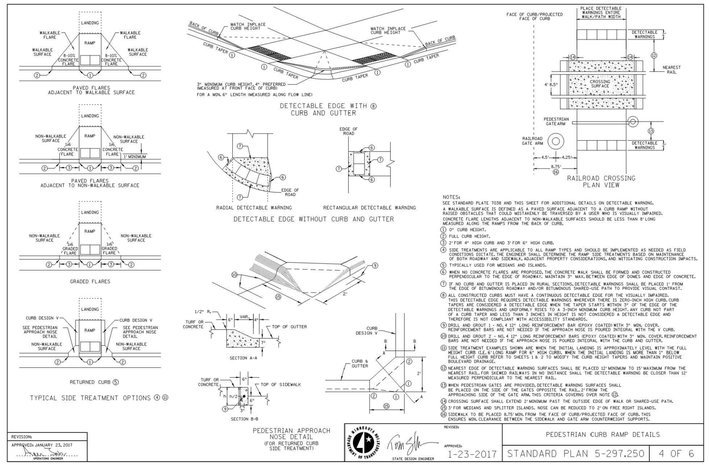

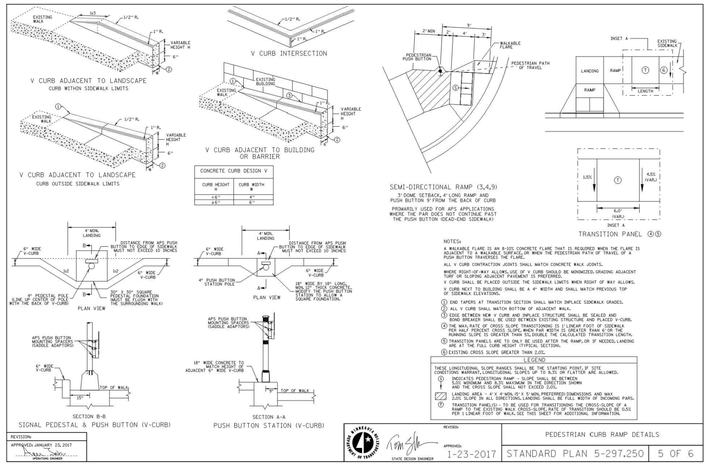

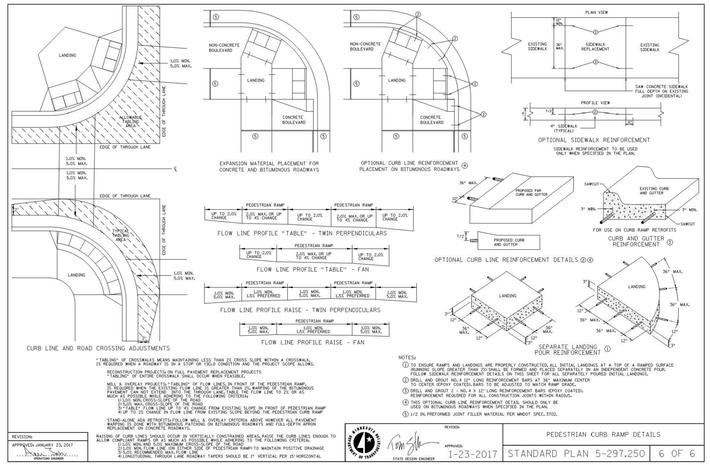

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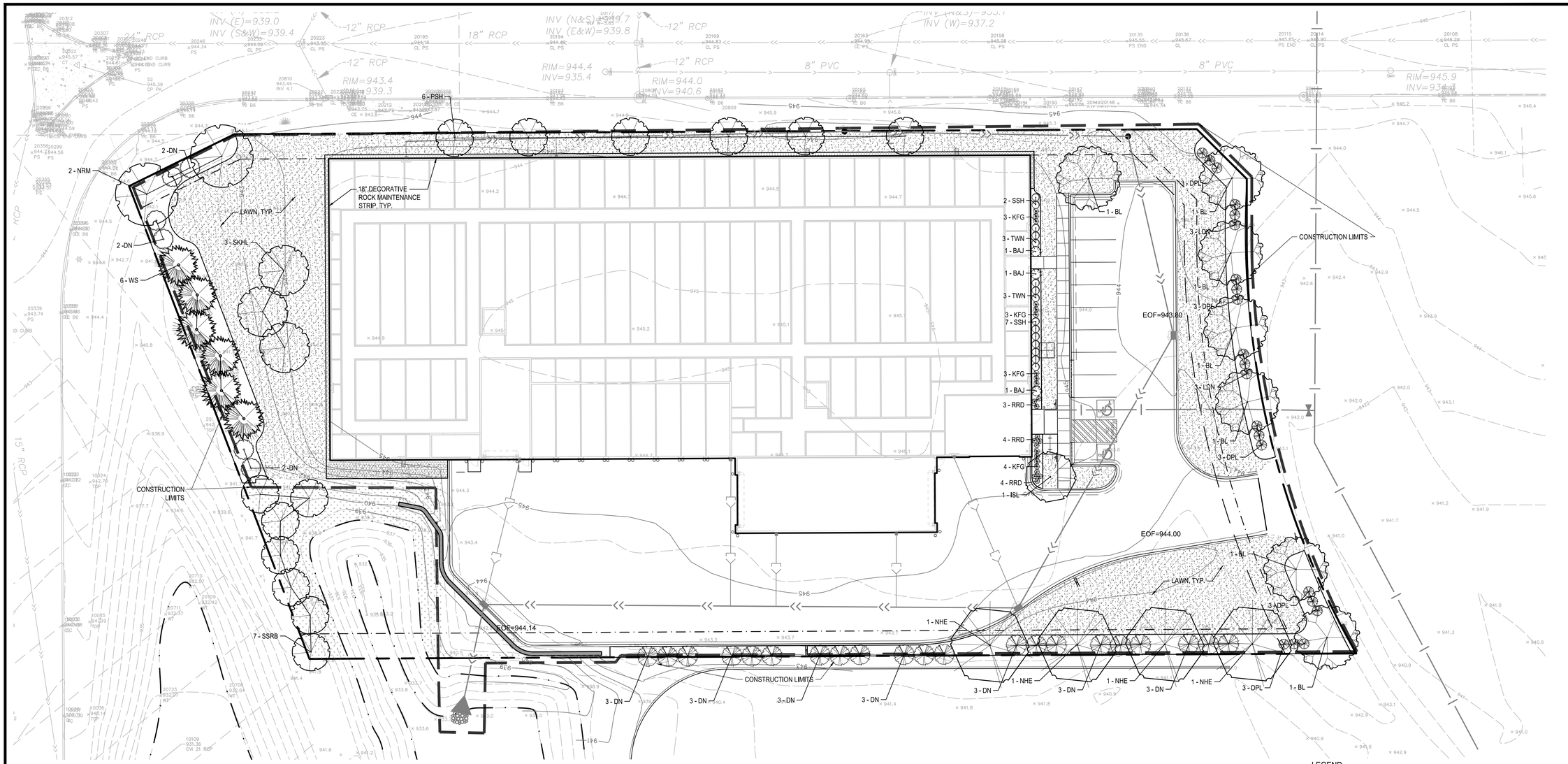

REQUIRED LANDSCAPE CALCULATIONS:

ZONE: (M-U 3) CORRIDOR MIXED-USE

YARD REQUIREMENTS

FRONT YARD - 10' WIDE LANDSCAPE YARD REQUIRED (PROVIDED)

LANDSCAPE COVERAGE

REQ'D IN ALL AREAS EXCEPT FOR BUILDINGS, DRIVEWAYS, AND APPROVED PARKING AREAS (PROVIDED)

MIN. 2% OF SITE FOR INFILTRATION OF STORMWATER

88,728 TOTAL SITE AREA X 2% = 1,774.56 SF REQ'D

TREE REQUIREMENTS

OF THE FOLLOWING, PROVIDE THE GREATER AMOUNT REQUIRED:

(1) TREE PER (1,000) SF OF GROSS BUILDING FLOOR AREA

36,287 SF / 1,000 = 36.287 TREES REQ'D* (36 TREES PROVIDED)*

(1) TREE PER (50) LF OF SITE PERIMETER

1,278.54 LF / 50 = 25.57 TREES REQ'D

PARKING LOT LANDSCAPING

PARKING LOT VEGETATIVE SCREEN REQUIRED (PROVIDED)

INTERIOR ISLAND LANDSCAPING:

(1) ISLAND PER (12) STALLS REQ'D (1 ISLAND PROVIDED)

1 TREE PER 200 SF OF REQ'D LANDSCAPE AREA (1 TREE PROVIDED)

BOUNDARY / PERIMETER SCREENING

OTHER REQUIREMENTS:

MIN. OF (2) BICYCLE PARKING SPACES REQ'D (2 PROVIDED)

*OF TWO OPTIONS, THIS (*) INDICATES THE SELECTED OPTION PROVIDED.

LANDSCAPE NOTES:

1. WHERE SHOWN, SHRUB & PERENNIAL BEDS SHALL BE MULCHED WITH 4" DEPTH (MINIMUM AFTER INSTALLATION AND/OR TOP DRESSING OPERATIONS) OF DECORATIVE ROCK.
2. ALL TREES SHALL BE MULCHED WITH SHREDDED CYPRESS MULCH TO OUTER EDGE OF SAUCER OR TO EDGE OF PLANTING BED, IF APPLICABLE. ALL MULCH SHALL BE KEPT WITHIN A MINIMUM OF 2" FROM TREE TRUNK.
3. IF SHOWN ON PLAN, RANDOM SIZED LIMESTONE BOULDERS COLOR AND SIZE TO COMPLIMENT NEW LANDSCAPING. OWNER TO APPROVE BOULDER SAMPLES PRIOR TO INSTALLATION.
4. PLANT MATERIALS SHALL CONFORM WITH THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS AND SHALL BE OF HARDY STOCK, FREE FROM DISEASE, DAMAGE AND DISFIGURATION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PLUMPNESS OF PLANT MATERIAL FOR DURATION OF ACCEPTANCE PERIOD.
5. UPON DISCOVERY OF A DISCREPANCY BETWEEN THE QUANTITY OF PLANTS SHOWN ON THE SCHEDULE AND THE QUANTITY SHOWN ON THE PLAN, THE PLAN SHALL GOVERN.
6. CONDITION OF VEGETATION SHALL BE MONITORED BY THE LANDSCAPE ARCHITECT THROUGHOUT THE DURATION OF THE CONTRACT. LANDSCAPE MATERIALS PART OF THE CONTRACT SHALL BE WARRANTED FOR ONE (1) FULL GROWING SEASONS FROM SUBSTANTIAL COMPLETION DATE.
7. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL RECEIVE 4" LAYER TOPSOIL AND SOD AS SPECIFIED UNLESS OTHERWISE NOTED ON THE DRAWINGS.
8. COORDINATE LOCATION OF VEGETATION WITH UNDERGROUND AND OVERHEAD UTILITIES, LIGHTING FIXTURES, DOORS AND WINDOWS. CONTRACTOR SHALL STAKE IN THE FIELD FINAL LOCATION OF TREES AND SHRUBS FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
9. ALL PLANT MATERIALS SHALL BE WATERED AND MAINTAINED UNTIL ACCEPTANCE.
10. REPAIR AT NO COST TO OWNER ALL DAMAGE RESULTING FROM LANDSCAPE CONTRACTOR'S ACTIVITIES.
11. SWEEP AND MAINTAIN ALL PAVED SURFACES FREE OF DEBRIS GENERATED FROM LANDSCAPE CONTRACTOR'S ACTIVITIES.
12. REPAIR AT NO COST TO THE OWNER IRRIGATION SYSTEM DAMAGED FROM LANDSCAPE CONSTRUCTION ACTIVITIES.
13. PROVIDE SITE WIDE IRRIGATION SYSTEM DESIGN AND INSTALLATION. SYSTEM SHALL BE FULLY PROGRAMMABLE AND CAPABLE OF ALTERNATE DATE WATERING. THE SYSTEM SHALL PROVIDE HEAD TO HEAD OR DRIP COVERAGE AND BE CAPABLE OF DELIVERING ONE INCH OF PRECIPITATION PER WEEK. SYSTEM SHALL EXTEND INTO THE PUBLIC RIGHT-OF-WAY TO THE EDGE OF PAVEMENT/BACK OF CURB.
14. CONTRACTOR SHALL SECURE APPROVAL OF PROPOSED IRRIGATION SYSTEM INLCUDING PRICING FROM OWNER, PRIOR TO INSTALLATION.

PLANT SCHEDULE - ENTIRE SITE

SYM	QUANT.	COMMON NAME	BOTANICAL NAME	SIZE		COMMENTS
		DECIDUOUS & EVERGREEN TREES				
BL	7	BOULEVARD LINDEN	Tilia americana 'Boulevard'	2.5" CAL.	B&B	STRAIGHT LEADER, FULL FORM
NHE	4	NEW HORIZON ELM	Ulmus 'New Horizon'	2.5" CAL.	B&B	STRAIGHT LEADER, FULL FORM
NRM	2	NORTHWOOD RED MAPLE	Acer rubrum 'Northwood'	2.5" CAL.	B&B	STRAIGHT LEADER, FULL FORM
PSH	6	PRAIRIE SENTINEL HACKBERRY	Celtis 'JFS-KSU1'	2.5" CAL.	B&B	STRAIGHT LEADER, FULL FORM
SKHL	3	STREET KEEPER HONEYLOCUST	Gleditsia triacanthos 'Draves'	2.5" CAL.	B&B	STRAIGHT LEADER, FULL FORM
SSRB	7	SHILOH SPLASH RIVER BIRCH	Betula nigra 'Shiloh Splash'	2.5" CAL.	B&B	STRAIGHT LEADER, FULL FORM
WS	6	WHITE SPRUCE	Picea glauca			
		ORNAMENTAL TREES				
ISL	1	IVORY SILK LILAC TREE	Syringa reticulata 'Ivory Silk'	1.5" CAL.	B&B	STRAIGHT LEADER, FULL FORM
	36	TOTAL TREES ON-SITE				
		SHRUBS - DECIDUOUS & EVERGREEN				
BAJ	3	BLUE ARROW JUNIPER	Juniperus scopulorum 'Blue Arrow'	36" HT.	CONT.	
DN	27	DIABOLO NINEBARK	Physocarpus opulifolius 'Monlo'	24" HT.	CONT.	
DPL	15	DWARF BLOOMERANG PURPLE LILAC	Syringa x 'SMNJRPU'	24" HT.	CONT.	
LDN	6	LITTLE DEVIL NINEBARK	Physocarpus opulifolius 'Donna May'	24" HT.	CONT.	
SSH	9	STRAWBERRY SUNDAE HYDRANGEA	Hydrangea paniculata 'Strawberry Sundae'	24" HT.	CONT.	
TWN	6	TINY WINE NINEBARK	Physocarpus opulifolius	24" HT.	CONT.	
	66	TOTAL SHRUBS ON-SITE				
				24" HT.	CONT.	
		PERENNIALS & GRASSES				
KFG	13	KARL FOERSTER GRASS	Calamagrostis x acutiflora "Karl Foerster"	#1	CONT.	
RRD	11	ROSY RETURNS DAYLILY	Hemerocallis 'Rosy Returns'	#1	CONT.	

LEGEND

- DECORATIVE ROCK MULCH, SAMPLES REQUIRED PROVIDE EDGING AS SHOWN ON PLAN
- LAWN - SOD
- SEED TYPE 1 - MNDOT 34-262 WET PRAIRIE, PER MNDOT SEEDING MANUAL SPECIFICATIONS (2014)
- 1" DIA. ROCK MAINTENANCE STRIP OVER FILTER FABRIC, SAMPLES REQUIRED. PROVIDE EDGING AS SHOWN ON PLAN
- PROPOSED CANOPY TREE SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES
- PROPOSED EVERGREEN TREE SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES
- PROPOSED ORNAMENTAL TREE SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES
- PROPOSED DECIDUOUS AND EVERGREEN SHRUB SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES
- PROPOSED PERENNIAL PLANT SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES
- EDGING
- DECORATIVE BOULDERS (ROUNDED & BLOCK STYLE), 18"-30" DIA.

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

N

1" = 20'-0"

10'-0" 0 20'-0"

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Patrick J. Sarver

DATE 02/04/20 LICENSE NO. 24904

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REVISION SUMMARY

DATE	DESCRIPTION

LANDSCAPE PLAN

L1.0

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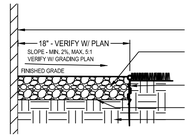
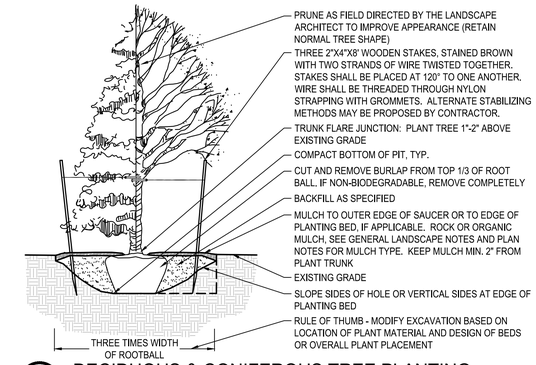


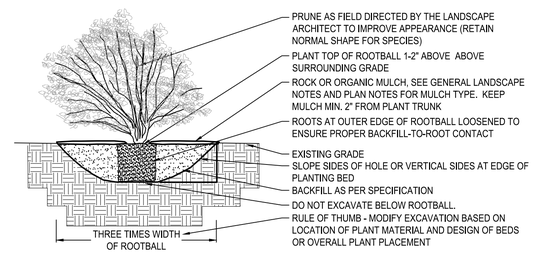
1 AGGREGATE MAINTANENCE STRIP

N T S



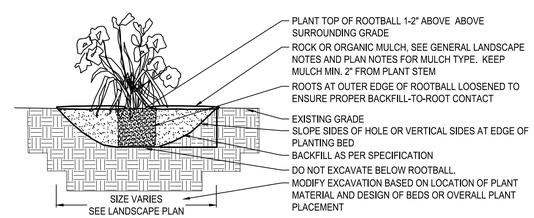
2 DECIDUOUS & CONIFEROUS TREE PLANTING

N T S



3 DECIDUOUS & CONIFEROUS SHRUB PLANTING

N T S



4 PERENNIAL BED PLANTING

N T S

IRRIGATION NOTES:

1. ENTIRE SITE SHALL BE FULLY IRRIGATED. THE CONTRACTOR SHALL SUBMIT IRRIGATION SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. SEE MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS FOR IRRIGATION WATER, METER, AND POWER CONNECTIONS.
3. CONTRACTOR TO VERIFY LOCATION OF ALL UNDERGROUND/ABOVE GROUND FACILITIES PRIOR TO ANY EXCAVATION/INSTALLATION. ANY DAMAGE TO UNDERGROUND/ABOVE GROUND FACILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COSTS ASSOCIATED WITH CORRECTING DAMAGES SHALL BE BORNE ENTIRELY BY THE CONTRACTOR.
4. SERVICE EQUIPMENT AND INSTALLATION SHALL BE PER LOCAL UTILITY COMPANY STANDARDS AND SHALL BE PER NATIONAL AND LOCAL CODES. EXACT LOCATION OF SERVICE EQUIPMENT SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT OR EQUIVALENT AT THE JOB SITE.
5. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY FOR THE PROPOSED ELECTRICAL SERVICE AND METERING FACILITIES.
6. IRRIGATION WATER LINE CONNECTION SIZE IS 1-½" AT BUILDING. VERIFY WITH MECHANICAL PLANS.COVAGE.
7. ALL MAIN LINES SHALL BE 18" BELOW FINISHED GRADE.
8. ALL LATERAL LINES SHALL BE 12" BELLOW FINISHED GRADE.
9. ALL EXPOSED PVC RISERS, IF ANY, SHALL BE GRAY IN COLOR.
10. CONTRACTOR SHALL LAY ALL SLEEVES AND CONDUIT AT 2'-0" BELOW THE FINISHED GRADE OF THE TOP OF PAVEMENT. EXTEND SLEEVES TO 2'-0" BEYOND PAVEMENT.
11. CONTRACTOR SHALL MARK THE LOCATION OF ALL SLEEVES AND CONDUIT WITH THE SLEEVING MATERIAL "ELLED" TO 2'-0" ABOVE FINISHED GRADE AND CAPPED.
12. FABRICATE ALL PIPE TO MANUFACTURE'S SPECIFICATIONS WITH CLEAN AND SQUARE CUT JOINTS. USE QUALITY GRADE PRIMER AND SOLVENT CEMENT FORMULATED FOR INTENDED TYPE OF CONNECTION.
13. BACKFILL ALL TRENCHES WITH SOIL FREE OF SHARP OBJECTS AND DEBRIS.
14. ALL VALVE BOXES AND COVERS SHALL BE BLACK IN COLOR.
15. GROUP VALVE BOXES TOGETHER FOR EASE WHEN SERVICE IS REQUIRED. LOCATE IN PLANT BED AREAS WHENEVER POSSIBLE.
16. IRRIGATION CONTROLLER LOCATION SHALL BE VERIFIED ON-SITE WITH OWNER'S REPRESENTATIVE.
17. CONTROL WIRES: 14 GAUGE DIRECT BURIAL, SOLID COPPER IRRIGATION WIRE. RUN UNDER MAIN LINE. USE MOISTURE-PROOF SPLICES AND SPLICE ONLY AT VALVES OR PULL BOXES. RUN SEPARATE HOT AND COMMON WIRE TO EACH VALVE AND ONE (1) SPARE WIRE AND GROUND TO FURTHEST VALVE FROM CONTROLLER. LABEL OR COLOR CODE ALL WIRES.
18. AVOID OVER SPRAY ON BUILDINGS, PAVEMENT, WALLS AND ROADWAYS BY INDIVIDUALLY ADJUSTING RADIUS OR ARC ON SPRINKLER HEADS AND FLOW CONTROL ON AUTOMATIC VALVE.
19. ADJUST PRESSURE REGULATING VALVES FOR OPTIMUM PRESSURE ON SITE.
20. USE SCREENS ON ALL HEADS.
21. A SET OF AS-BUILT DRAWINGS SHALL BE MAINTAINED ON-SITE AT ALL TIMES IN AN UPDATED CONDITION.
22. ALL PIPE 3" AND OVER SHALL HAVE THRUST BLOCKING AT EACH TURN.
23. ALL AUTOMATIC REMOTE CONTROL VALVES WILL HAVE 3" MINIMUM DEPTH OF 3/4" WASHED GRAVEL UNDERNEATH VALVE AND VALVE BOX. GRAVEL SHALL EXTENT 3" BEYOND PERIMETER OF VALVE BOX.
24. THERE SHALL BE 3" MINIMUM SPACE BETWEEN BOTTOM OF VALVE BOX COVER AND TOP OF VALVE STRUCTURE.

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PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
ANCHOR BLOCK COMMONS
2300 MCKNIGHT ROAD, NORTH ST PAUL, MN 55109

IP4 AF ST. PAUL, LLC
9000 KEYSTONE CROSSING, SUITE 2300, INDIANAPOLIS, IN 46240

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

Patrick J. Sarver
DATE 02/04/20 LICENSE NO. 24904

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
02/04/20	CITY SUBMITTAL

DRAWN BY: JS REVIEWED BY: XX, XX
PROJECT NUMBER: 19384

REVISION SUMMARY

DATE	DESCRIPTION

LANDSCAPE PLAN NOTES & DETAILS

L1.1

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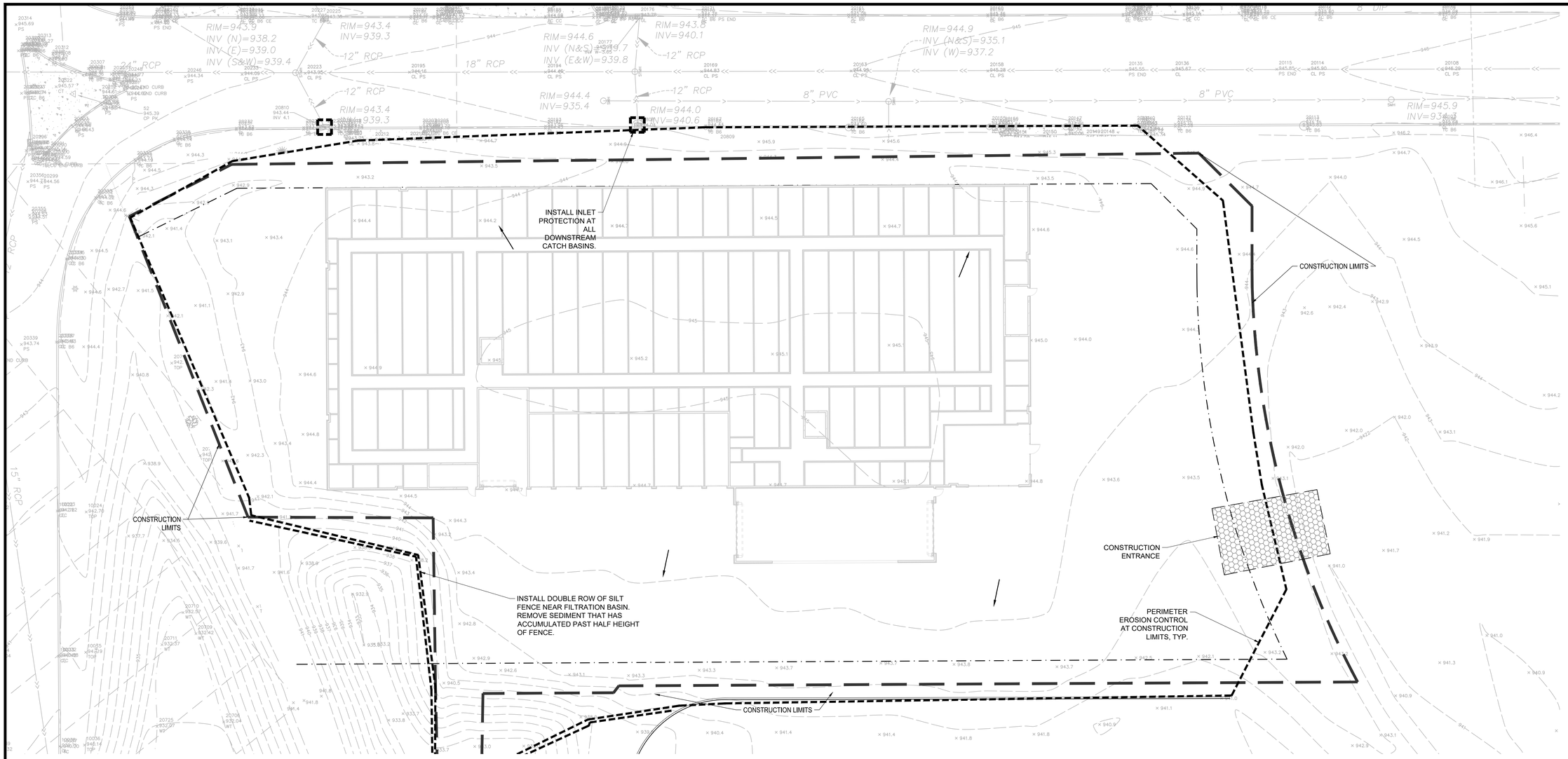

CITY OF NORTH ST. PAUL EROSION CONTROL NOTES:

1. RESERVED FOR CITY SPECIFIC EROSION CONTROL NOTES.

SWPPP NOTES:

1. THIS PROJECT IS GREATER THAN ONE ACRE AND WILL REQUIRE AN MPCA NPDES PERMIT. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY EROSION CONTROL PERMITS REQUIRED BY THE CITY.

2. SEE SHEETS SW1.0 - SW1.5 FOR ALL EROSION CONTROL NOTES, DESCRIPTIONS, AND PRACTICES.

3. SEE GRADING PLAN FOR ADDITIONAL GRADING AND EROSION CONTROL NOTES.

4. CONTRACTOR IS RESPONSIBLE FOR SWPPP IMPLEMENTATION, INSPECTIONS, AND COMPLIANCE WITH NPDES PERMIT.

ALL SPECIFIED EROSION AND SEDIMENT CONTROL PRACTICES, AND MEASURES CONTAINED IN THIS SWPPP ARE THE MINIMUM REQUIREMENTS. ADDITIONAL PRACTICES MAY BE REQUIRED DURING THE COURSE OF CONSTRUCTION.

LEGEND:

- 1125 — EX. 1' CONTOUR ELEVATION INTERVAL
- 1137 — 1.0' CONTOUR ELEVATION INTERVAL
- DRAINAGE ARROW
- SILT FENCE / BIOROLL - GRADING LIMIT
- INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET

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10'-0" 0 20'-0"

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Matthew R. Pavek
DATE 02/04/20 LICENSE NO. 44263

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DATE	DESCRIPTION
02/04/20	CITY SUBMITTAL

DRAWN BY: JS REVIEWED BY: XX, XX
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REVISION SUMMARY

DATE	DESCRIPTION

SWPPP - EXISTING CONDITIONS

SW1.0

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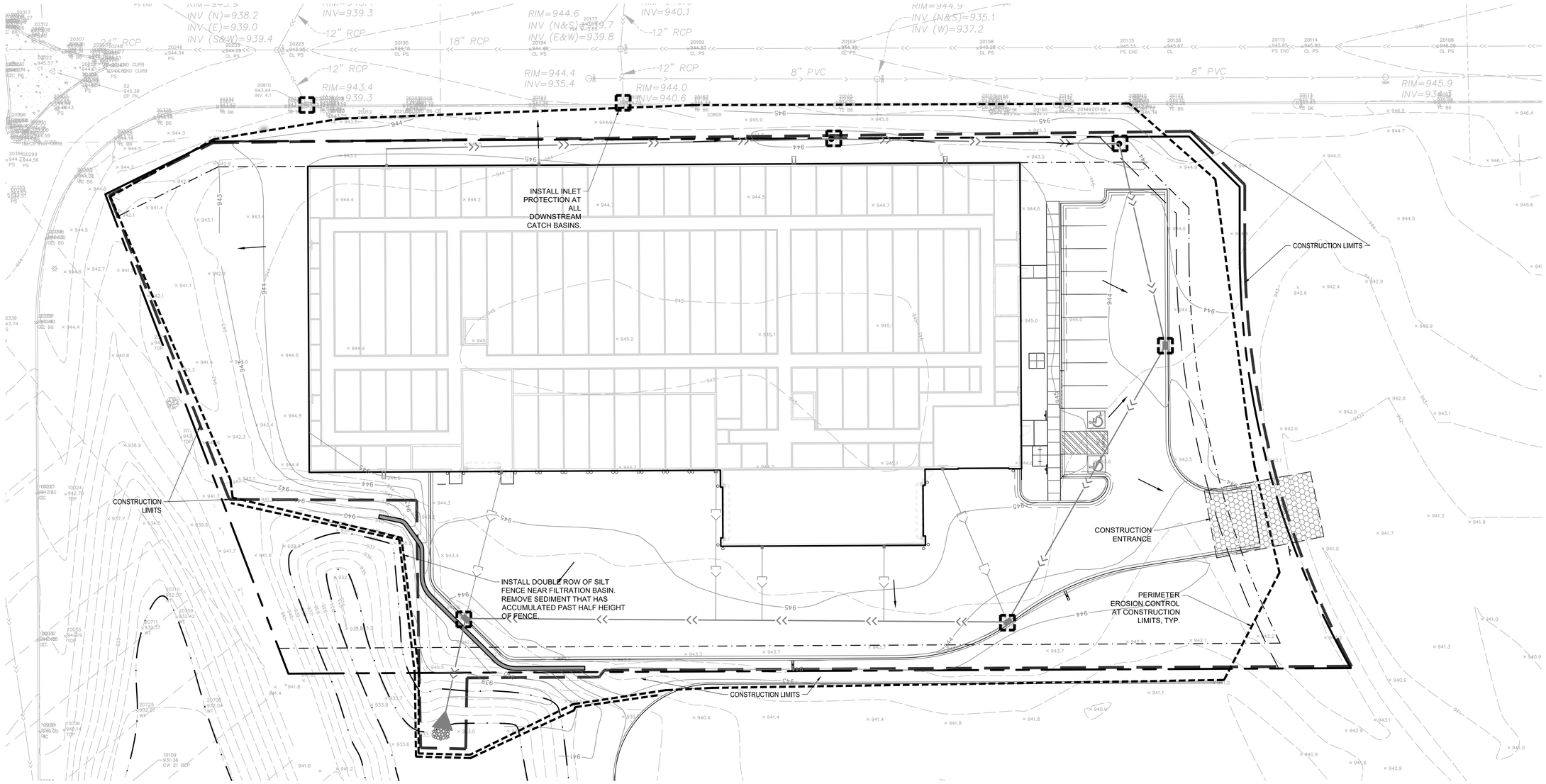

CITY OF NORTH ST. PAUL EROSION CONTROL NOTES:

1. RESERVED FOR CITY SPECIFIC EROSION CONTROL NOTES.

SWPPP NOTES:

1. THIS PROJECT IS GREATER THAN ONE ACRE AND WILL REQUIRE AN MPCA NPDES PERMIT. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY EROSION CONTROL PERMITS REQUIRED BY THE CITY.

2. SEE SHEETS SW1.0 - SW1.5 FOR ALL EROSION CONTROL NOTES, DESCRIPTIONS, AND PRACTICES.

3. SEE GRADING PLAN FOR ADDITIONAL GRADING AND EROSION CONTROL NOTES.

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LEGEND:

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- 1137 — 1.0' CONTOUR ELEVATION INTERVAL
- DRAINAGE ARROW
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SWPPP - PROPOSED CONDITIONS

SW1.1

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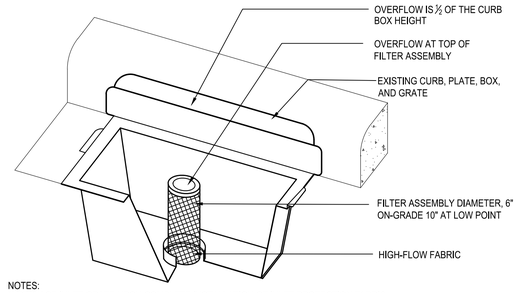
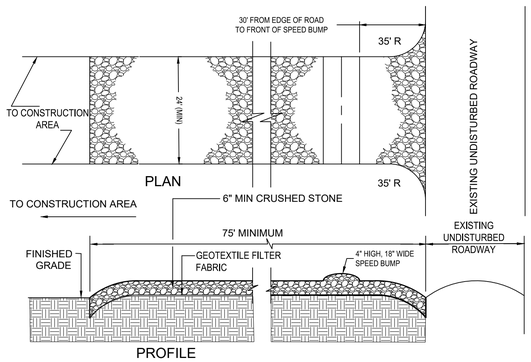


NOTES:
1. REPLACE INLET GRATE UPON COMPLETE INSTALLATION OF INLET PROTECTION FABRIC.
2. CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM THE SURFACE OF THE SYSTEM AFTER EACH STORM EVENT AND AT THE COMPLETION OF THE CONTRACT.
3. REFERENCE APPLE VALLEY STANDARD PLATE ERO-4C.

1 CURB INLET FILTER
N T S



NOTES:
1. PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND UNDISTURBED ROADWAY.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO UNDISTURBED ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDING STONE TO THE LENGTH OF THE ENTRANCE.
3. REPAIR AND CLEANOUT MEASURES USED TO TRAP SEDIMENT.
4. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO UNDISTURBED ROADWAY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.
5. FINAL LOCATION AND INSTALLATION SHALL BE COORDINATED WITH THE CITY PRIOR TO CONSTRUCTION ACTIVITIES.
6. CRUSHED STONE SHALL BE 1-1/2" DIA. CLOSE GRADED, AND IN ACCORDANCE TO MNDOT SECTION 2118.

2 STABILIZED CONSTRUCTION ACCESS
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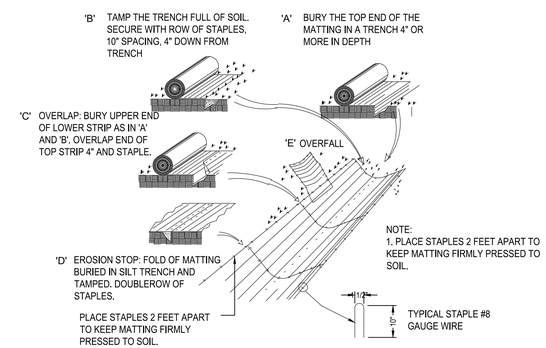
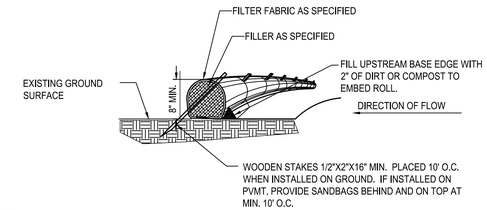


NOTE:
1. PLACE STAPLES 2 FEET APART TO KEEP MATTING FIRMLY PRESSED TO SOIL.

3 EROSION BLANKET
N T S



NOTE:
1. COMPOST FILTER LOGS (BIO ROLLS) SHALL BE FILTREXX EROSION CONTROL SOXX OR APPROVED EQUAL.
2. COMPOST FILLER TO BE MADE FROM A COMPOST BLEND 30%-40% GRADE 2 (SPEC 3890) AND 60%-70% PARTIALLY DECOMPOSED WOOD CHIPS, PER MNDOT SPEC 3897.
3. FILTER FABRIC SHALL BE GEOTEXTILE KNITTED MATERIAL WITH MAX. OPENINGS OF 3/8".
4. IF MULTIPLE ROLLS NEEDED, OVERLAP BY MIN. 12" AT ENDS AND STAKE.
5. SILT SHALL BE REMOVED ONCE IT REACHES 80% OF THE HEIGHT OF THE ROLL OR AS DEEMED NECESSARY BY SITE CONTRACTOR TO MAINTAIN PROPER FUNCTION.

4 SEDIMENT BIO-ROLL / COMPOST FILTER LOG
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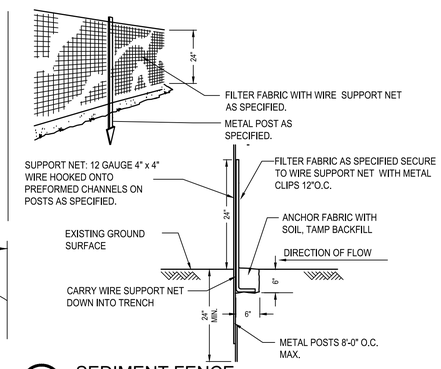

5 SEDIMENT FENCE
N T S

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REVISION SUMMARY

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SWPPP - DETAILS

SW1.2

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THE CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED WITH A CONSTRUCTION ACTIVITY THAT DISTURBS SITE SOIL OR WHO IMPLEMENT A POLLUTANT CONTROL MEASURE IDENTIFIED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT (DATED AUGUST 1, 2018 # MNR100001) AND ANY LOCAL GOVERNING AGENCY HAVING JURISDICTION CONCERNING EROSION AND SEDIMENTATION CONTROL.

STORMWATER DISCHARGE DESIGN REQUIREMENTS

SWPPP

THE NATURE OF THIS PROJECT WILL BE CONSISTENT WITH WHAT IS REPRESENTED IN THIS SET OF CONSTRUCTION PLANS AND SPECIFICATIONS. SEE THE SWPPP PLAN SHEETS AND SWPPP NARRATIVE (ATTACHMENT A: CONSTRUCTION SWPPP TEMPLATE) FOR ADDITIONAL SITE SPECIFIC SWPPP INFORMATION. THE PLANS SHOW LOCATIONS AND TYPES OF ALL TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL BMP'S. STANDARD DETAILS ARE ATTACHED TO THIS SWPPP DOCUMENT.

THE INTENDED SEQUENCING OF MAJOR CONSTRUCTION ACTIVITIES IS AS FOLLOWS:

1. INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCE
2. INSTALLATION OF SILT FENCE AROUND SITE
3. INSTALL ORANGE CONSTRUCTION FENCING AROUND INFILTRATION AREAS.
4. CLEAR AND GRUB FOR TEMPORARY SEDIMENT BASIN / POND INSTALL
5. CONSTRUCT TEMPORARY SEDIMENT BASIN / POND (SECTION 14)
6. CLEAR AND GRUB REMAINDER OF SITE
7. STRIP AND STOCKPILE TOPSOIL
8. ROUGH GRADING OF SITE
9. STABILIZE DENUDED AREAS AND STOCKPILES
10. INSTALL SANITARY SEWER, WATER MAIN STORM SEWER AND SERVICES
11. INSTALL SILT FENCE / INLET PROTECTION AROUND CB'S
12. INSTALL STREET SECTION
13. INSTALL CURB AND GUTTER
14. BITUMINOUS ON STREETS
15. FINAL GRADE BOULEVARD, INSTALL SEED AND MULCH
16. REMOVE ACCUMULATED SEDIMENT FROM BASIN / POND
17. FINAL GRADE POND / INFILTRATION BASINS (DO NOT COMPACT SOILS IN INFILTRATION AREAS.)
18. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED BY EITHER SEED OR SOD/LANDSCAPING, REMOVE SILT FENCE AND RESEED ANY AREAS DISTURBED BY THE REMOVAL.

RECORDS RETENTION:

THE SWPPP (ORIGINAL OR COPIES) INCLUDING, ALL CHANGES TO IT, AND INSPECTIONS AND MAINTENANCE RECORDS MUST BE KEPT AT THE SITE DURING CONSTRUCTION BY THE PERMITTEE WHO HAS OPERATIONAL CONTROL OF THAT PORTION OF THE SITE. THE SWPPP CAN BE KEPT IN EITHER THE FIELD OFFICE OR IN AN ON SITE VEHICLE DURING NORMAL WORKING HOURS.

ALL OWNER(S) MUST KEEP THE SWPPP, ALONG WITH THE FOLLOWING ADDITIONAL RECORDS, ON FILE FOR THREE (3) YEARS AFTER SUBMITTAL OF THE NOT AS OUTLINED IN SECTION 4. THIS DOES NOT INCLUDE ANY RECORDS AFTER SUBMITTAL OF THE NOT.

1. THE FINAL SWPPP;
2. ANY OTHER STORMWATER RELATED PERMITS REQUIRED FOR THE PROJECT;
3. RECORDS OF ALL INSPECTION AND MAINTENANCE CONDUCTED DURING CONSTRUCTION (SEE SECTION 11, INSPECTIONS AND MAINTENANCE);
4. ALL PERMANENT OPERATION AND MAINTENANCE AGREEMENTS THAT HAVE BEEN IMPLEMENTED, INCLUDING ALL RIGHT OF WAY, CONTRACTS, COVENANTS AND OTHER BINDING REQUIREMENTS REGARDING PERPETUAL MAINTENANCE; AND
5. ALL REQUIRED CALCULATIONS FOR DESIGN OF THE TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS.

SWPPP IMPLEMENTATION RESPONSIBILITIES:

1. THE OWNER AND CONTRACTOR ARE PERMITTEE(S) AS IDENTIFIED BY THE NPDES PERMIT.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE IMPLEMENTATION OF THE SWPPP, INCLUDING THE ACTIVITIES OF ALL OF THE CONTRACTOR'S SUBCONTRACTORS.
3. CONTRACTOR SHALL PROVIDE A PERSON(S) KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO OVERSEE ALL INSTALLATION AND MAINTENANCE OF BMPS AND IMPLEMENTATION OF THE SWPPP.
4. CONTRACTOR SHALL PROVIDE PERSON(S) MEETING THE TRAINING REQUIREMENTS OF THE NPDES PERMIT TO CONDUCT INSPECTION AND MAINTENANCE OF ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT. ONE OF THESE INDIVIDUAL(S) MUST BE AVAILABLE FOR AN ONSITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY MPCA. CONTRACTOR SHALL PROVIDE TRAINING DOCUMENTATION FOR THESE INDIVIDUAL(S) AS REQUIRED BY THE NPDES PERMIT. THIS TRAINING DOCUMENTATION SHALL BE RECORDED IN OR WITH THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS THE PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED. DOCUMENTATION SHALL INCLUDE:
   - 4.1. NAMES OF THE PERSONNEL ASSOCIATED WITH THE PROJECT THAT ARE REQUIRED TO BE TRAINED PER SECTION 21 OF THE PERMIT.
   - 4.2. DATES OF TRAINING AND NAME OF INSTRUCTOR AND ENTITY PROVIDING TRAINING.
   - 4.3. CONTENT OF TRAINING COURSE OR WORKSHOP INCLUDING THE NUMBER OF HOURS OF TRAINING.
5. FOLLOWING FINAL STABILIZATION AND THE TERMINATION OF COVERAGE FOR THE NPDES PERMIT, THE OWNER IS EXPECTED TO FURNISH LONG TERM OPERATION AND MAINTENANCE (O & M) OF THE PERMANENT STORM WATER MANAGEMENT SYSTEM.

CONSTRUCTION ACTIVITY REQUIREMENTS

SWPPP AMENDMENTS (SECTION 6):

1. ONE OF THE INDIVIDUALS DESCRIBED IN ITEM 21.2.A OR ITEM 21.2.B OR ANOTHER QUALIFIED INDIVIDUAL MUST COMPLETE ALL SWPPP CHANGES. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP MUST INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.
2. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER.
3. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER INSPECTIONS OR INVESTIGATIONS BY THE SITE OWNER OR OPERATOR, USEPA OR MPCA OFFICIALS INDICATE THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER OR THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCES (E.G., NUISANCE CONDITIONS AS DEFINED IN MINN. R. 7050.0210, SUBP. 2) OR THE SWPPP IS NOT CONSISTENT WITH THE OBJECTIVES OF A USEPA APPROVED TMDL.

BMP SELECTION AND INSTALLATION (SECTION 7):

1. PERMITTEES MUST SELECT, INSTALL, AND MAINTAIN THE BMPS IDENTIFIED IN THE SWPPP AND IN THIS PERMIT IN AN APPROPRIATE AND FUNCTIONAL MANNER AND IN ACCORDANCE WITH RELEVANT MANUFACTURER SPECIFICATIONS AND ACCEPTED ENGINEERING PRACTICES.

EROSION PREVENTION (SECTION 8):

1. BEFORE WORK BEGINS, PERMITTEES MUST DELINEATE THE LOCATION OF AREAS NOT TO BE DISTURBED.
2. PERMITTEES MUST MINIMIZE THE NEED FOR DISTURBANCE OF PORTIONS OF THE PROJECT WITH STEEP SLOPES. WHEN STEEP SLOPES MUST BE DISTURBED, PERMITTEES MUST USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES (E.G., SLOPE DRAINING AND TERRACING).
3. PERMITTEES MUST STABILIZE ALL EXPOSED SOIL AREAS, INCLUDING STOCKPILES. STABILIZATION MUST BE INITIATED IMMEDIATELY TO LIMIT SOIL EROSION WHEN CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION MUST BE COMPLETED NO LATER THAN 14 CALENDAR DAYS AFTER THE CONSTRUCTION ACTIVITY HAS CEASED. STABILIZATION IS NOT REQUIRED ON CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS AND SIMILAR SURFACES. STABILIZATION IS NOT REQUIRED ON TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS (E.G., CLEAN AGGREGATE STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) BUT PERMITTEES MUST PROVIDE SEDIMENT CONTROLS AT THE BASE OF THE STOCKPILE.
4. FOR PUBLIC WATERS THAT THE MINNESOTA DNR HAS PROMULGATED "WORK IN WATER RESTRICTIONS" DURING SPECIFIED FISH SPAWNING TIME FRAMES, PERMITTEES MUST COMPLETE STABILIZATION OF ALL EXPOSED SOIL AREAS WITHIN 200 FEET OF THE WATER'S EDGE, AND THAT DRAIN TO THESE WATERS, WITHIN 24 HOURS DURING THE RESTRICTION PERIOD.
5. PERMITTEES MUST STABILIZE THE NORMAL WETTED PERIMETER OF THE LAST 200 LINEAR FEET OF TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALES THAT DRAIN WATER FROM THE SITE WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE. PERMITTEES MUST COMPLETE STABILIZATION OF REMAINING PORTIONS OF TEMPORARY OR PERMANENT DITCHES OR SWALES WITHIN 14 CALENDAR DAYS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE AND CONSTRUCTION IN THAT PORTION OF THE DITCH TEMPORARILY OR PERMANENTLY CEASES.
6. TEMPORARY OR PERMANENT DITCHES OR SWALES BEING USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION (WITH PROPERLY DESIGNED ROCK-DITCH CHECKS, BIO ROLLS, SILT DIKES, ETC.) DO NOT NEED TO BE STABILIZED. PERMITTEES MUST STABILIZE THESE AREAS WITHIN 24 HOURS AFTER THEIR USE AS A SEDIMENT CONTAINMENT SYSTEM CEASES
7. PERMITTEES MUST NOT USE MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES WITHIN ANY PORTION OF THE NORMAL WETTED PERIMETER OF A TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.
8. PERMITTEES MUST PROVIDE TEMPORARY OR PERMANENT ENERGY DISSIPATION AT ALL PIPE OUTLETS WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER OR PERMANENT STORMWATER TREATMENT SYSTEM.
9. PERMITTEES MUST NOT DISTURB MORE LAND (I.E., PHASING) THAN CAN BE EFFECTIVELY INSPECTED AND MAINTAINED IN ACCORDANCE WITH SECTION 11.

SEDIMENT CONTROL (SECTION 9):

1. PERMITTEES MUST ESTABLISH SEDIMENT CONTROL BMPS ON ALL DOWNGRADIENT PERIMETERS OF THE SITE AND DOWNGRADIENT AREAS OF THE SITE THAT DRAIN TO ANY SURFACE WATER, INCLUDING CURB AND GUTTER SYSTEMS. PERMITTEES MUST LOCATE SEDIMENT CONTROL PRACTICES UPGRADIENT OF ANY BUFFER ZONES. PERMITTEES MUST INSTALL SEDIMENT CONTROL PRACTICES BEFORE ANY UPGRADIENT LAND-DISTURBING ACTIVITIES BEGIN AND MUST KEEP THE SEDIMENT CONTROL PRACTICES IN PLACE UNTIL THEY ESTABLISH PERMANENT COVER.
2. IF DOWNGRADIENT SEDIMENT CONTROLS ARE OVERLOADED, BASED ON FREQUENT FAILURE OR EXCESSIVE MAINTENANCE REQUIREMENTS, PERMITTEES MUST INSTALL ADDITIONAL UPGRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPS TO ELIMINATE THE OVERLOADING AND AMEND THE SWPPP TO IDENTIFY THESE ADDITIONAL PRACTICES AS REQUIRED IN ITEM 6.3.
3. TEMPORARY OR PERMANENT DRAINAGE DITCHES AND SEDIMENT BASINS DESIGNED AS PART OF A SEDIMENT CONTAINMENT SYSTEM (E.G., DITCHES WITH ROCK-CHECK DAMS) REQUIRE SEDIMENT CONTROL PRACTICES ONLY AS APPROPRIATE FOR SITE CONDITIONS.
4. A FLOATING SILT CURTAIN PLACED IN THE WATER IS NOT A SEDIMENT CONTROL BMP TO SATISFY ITEM 9.2 EXCEPT WHEN WORKING ON A SHORELINE OR BELOW THE WATERLINE. IMMEDIATELY AFTER THE SHORT TERM CONSTRUCTION ACTIVITY (E.G., INSTALLATION OF RIP RAP ALONG THE SHORELINE) IN THAT AREA IS COMPLETE, PERMITTEES MUST INSTALL AN UPLAND PERIMETER CONTROL PRACTICE IF EXPOSED SOILS STILL DRAIN TO A SURFACE WATER.
5. PERMITTEES MUST RE-INSTALL ALL SEDIMENT CONTROL PRACTICES ADJUSTED OR REMOVED TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING OR GRUBBING, OR PASSAGE OF VEHICLES, IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY IS COMPLETED. PERMITTEES MUST RE-INSTALL SEDIMENT CONTROL PRACTICES BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.
6. PERMITTEES MUST PROTECT ALL STORM DRAIN INLETS USING APPROPRIATE BMPS DURING CONSTRUCTION UNTIL THEY ESTABLISH PERMANENT COVER ON ALL AREAS WITH POTENTIAL FOR DISCHARGING TO THE INLET.
7. PERMITTEES MAY REMOVE INLET PROTECTION FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (E.G. STREET FLOODING/FREEZING) IS IDENTIFIED BY THE PERMITTEES OR THE JURISDICTIONAL AUTHORITY (E.G., CITY/COUNTY/TOWNSHIP/MINNESOTA DEPARTMENT OF TRANSPORTATION ENGINEER). PERMITTEES MUST DOCUMENT THE NEED FOR REMOVAL IN THE SWPPP.
8. PERMITTEES MUST PROVIDE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS AT THE BASE OF STOCKPILES ON THE DOWNGRADIENT PERIMETER.
9. PERMITTEES MUST LOCATE STOCKPILES OUTSIDE OF NATURAL BUFFERS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS UNLESS THERE IS A BYPASS IN PLACE FOR THE STORMWATER.
10. PERMITTEES MUST INSTALL A VEHICLE TRACKING BMP TO MINIMIZE THE TRACK OUT OF SEDIMENT FROM THE CONSTRUCTION SITE OR ONTO PAVED ROADS WITHIN THE SITE.
11. PERMITTEES MUST USE STREET SWEEPING IF VEHICLE TRACKING BMPS ARE NOT ADEQUATE TO PREVENT SEDIMENT TRACKING ONTO THE STREET.
12. PERMITTEES MUST INSTALL TEMPORARY SEDIMENT BASINS AS REQUIRED IN SECTION 14.
13. IN ANY AREAS OF THE SITE WHERE FINAL VEGETATIVE STABILIZATION WILL OCCUR, PERMITTEES MUST RESTRICT VEHICLE AND EQUIPMENT USE TO MINIMIZE SOIL COMPACTION.
14. PERMITTEES MUST PRESERVE TOPSOIL ON THE SITE, UNLESS INFEASIBLE.
15. PERMITTEES MUST DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS UNLESS INFEASIBLE.
16. PERMITTEES MUST PRESERVE A 50 FOOT NATURAL BUFFER OR, IF A BUFFER IS INFEASIBLE ON THE SITE, PROVIDE REDUNDANT (DOUBLE) PERIMETER SEDIMENT CONTROLS WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF THE PROJECT'S EARTH DISTURBANCES AND STORMWATER FLOWS TO THE SURFACE WATER. PERMITTEES MUST INSTALL PERIMETER SEDIMENT CONTROLS AT LEAST 5 FEET APART UNLESS LIMITED BY LACK OF AVAILABLE SPACE. NATURAL BUFFERS ARE NOT REQUIRED ADJACENT TO ROAD DITCHES, JUDICIAL DITCHES, COUNTY DITCHES, STORMWATER CONVEYANCE CHANNELS, STORM DRAIN INLETS, AND SEDIMENT BASINS. IF PRESERVING THE BUFFER IS INFEASIBLE, PERMITTEES MUST DOCUMENT THE REASONS IN THE SWPPP. SHEET PILING IS A REDUNDANT PERIMETER CONTROL IF INSTALLED IN A MANNER THAT RETAINS ALL STORMWATER.
17. PERMITTEES MUST USE POLYMERS, FLOCCULANTS, OR OTHER SEDIMENTATION TREATMENT CHEMICALS IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES, DOSING SPECIFICATIONS AND SEDIMENT REMOVAL DESIGN SPECIFICATIONS PROVIDED BY THE MANUFACTURER OR SUPPLIER. THE PERMITTEES MUST USE CONVENTIONAL EROSION AND SEDIMENT CONTROLS PRIOR TO CHEMICAL ADDITION AND MUST DIRECT TREATED STORMWATER TO A SEDIMENT CONTROL SYSTEM FOR FILTRATION OR SETTLEMENT OF THE FLOC PRIOR TO DISCHARGE.

DEWATERING AND BASIN DRAINING (SECTION 10):

1. PERMITTEES MUST DISCHARGE TURBID OR SEDIMENT-LADEN WATERS RELATED TO DEWATERING OR BASIN DRAINING (E.G., PUMPED DISCHARGES, TRENCH/DITCH CUTS FOR DRAINAGE) TO A TEMPORARY OR PERMANENT SEDIMENT BASIN ON THE PROJECT SITE UNLESS INFEASIBLE. PERMITTEES MAY DEWATER TO SURFACE WATERS IF THEY VISUALLY CHECK TO ENSURE ADEQUATE TREATMENT HAS BEEN OBTAINED AND NUISANCE CONDITIONS (SEE MINN. R. 7050.0210, SUBP. 2) WILL NOT RESULT FROM THE DISCHARGE. IF PERMITTEES CANNOT DISCHARGE THE WATER TO A SEDIMENTATION BASIN PRIOR TO ENTERING A SURFACE WATER, PERMITTEES MUST TREAT IT WITH APPROPRIATE BMPS SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE SURFACE WATER OR DOWNSTREAM PROPERTIES.
2. IF PERMITTEES MUST DISCHARGE WATER CONTAINING OIL OR GREASE, THEY MUST USE AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE (E.G., CARTRIDGE FILTERS, ABSORBENTS PADS) PRIOR TO DISCHARGE.
3. PERMITTEES MUST DISCHARGE ALL WATER FROM DEWATERING OR BASIN-DRAINING ACTIVITIES IN A MANNER THAT DOES NOT CAUSE EROSION OR SCOUR IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS OR INUNDATION OF WETLANDS IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS THAT CAUSES SIGNIFICANT ADVERSE IMPACT TO THE WETLAND.
4. IF PERMITTEES USE FILTERS WITH BACKWASH WATER, THEY MUST HAUL THE BACKWASH WATER AWAY FOR DISPOSAL, RETURN THE BACKWASH WATER TO THE BEGINNING OF THE TREATMENT PROCESS, OR INCORPORATE THE BACKWASH WATER INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION.

INSPECTIONS AND MAINTENANCE (SECTION 11):

1. PERMITTEES MUST ENSURE A TRAINED PERSON, AS IDENTIFIED IN ITEM 21.2.B, WILL INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 1/2 INCH IN 24 HOURS.
2. PERMITTEES MUST INSPECT AND MAINTAIN ALL PERMANENT STORMWATER TREATMENT BMPS.
3. PERMITTEES MUST INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS AND POLLUTION PREVENTION MANAGEMENT MEASURES TO ENSURE INTEGRITY AND EFFECTIVENESS. PERMITTEES MUST REPAIR, REPLACE OR SUPPLEMENT ALL NONFUNCTIONAL BMPS WITH FUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY UNLESS ANOTHER TIME FRAME IS SPECIFIED IN ITEM 11.5 OR 11.6. PERMITTEES MAY TAKE ADDITIONAL TIME IF FIELD CONDITIONS PREVENT ACCESS TO THE AREA.
4. DURING EACH INSPECTION, PERMITTEES MUST INSPECT SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS BUT NOT CURB AND GUTTER SYSTEMS, FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. PERMITTEES MUST REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS AND RESTABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. PERMITTEES MUST COMPLETE REMOVAL AND STABILIZATION WITHIN SEVEN (7) CALENDAR DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. PERMITTEES MUST USE ALL REASONABLE EFFORTS TO OBTAIN ACCESS. IF PRECLUDED, REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN SEVEN (7) DAYS OF OBTAINING ACCESS. PERMITTEES ARE RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND RECEIVING ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.
5. PERMITTEES MUST INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS, STREETS AND CURB AND GUTTER SYSTEMS WITHIN AND ADJACENT TO THE PROJECT FOR SEDIMENTATION FROM EROSION OR TRACKED SEDIMENT FROM VEHICLES. PERMITTEES MUST REMOVE SEDIMENT FROM ALL PAVED SURFACES WITHIN ONE (1) CALENDAR DAY OF DISCOVERY OR, IF APPLICABLE, WITHIN A SHORTER TIME TO AVOID A SAFETY HAZARD TO USERS OF PUBLIC STREETS.
6. PERMITTEES MUST REPAIR, REPLACE OR SUPPLEMENT ALL PERIMETER CONTROL DEVICES WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE DEVICE.
7. PERMITTEES MUST DRAIN TEMPORARY AND PERMANENT SEDIMENTATION BASINS AND REMOVE THE SEDIMENT WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME.
8. PERMITTEES MUST ENSURE THAT AT LEAST ONE INDIVIDUAL PRESENT ON THE SITE (OR AVAILABLE TO THE PROJECT SITE IN THREE (3) CALENDAR DAYS) IS TRAINED IN THE JOB DUTIES DESCRIBED IN ITEM 21.2.B.
9. PERMITTEES MAY ADJUST THE INSPECTION SCHEDULE DESCRIBED IN ITEM 11.2 AS FOLLOWS:
   - a. INSPECTIONS OF AREAS WITH PERMANENT COVER CAN BE REDUCED TO ONCE PER MONTH, EVEN IF CONSTRUCTION ACTIVITY CONTINUES ON OTHER PORTIONS OF THE SITE; OR
   - b. WHERE SITES HAVE PERMANENT COVER ON ALL EXPOSED SOIL AND NO CONSTRUCTION ACTIVITY IS OCCURRING ANYWHERE ON THE SITE, INSPECTIONS CAN BE REDUCED TO ONCE PER MONTH AND, AFTER 12 MONTHS, MAY BE SUSPENDED COMPLETELY UNTIL CONSTRUCTION ACTIVITY RESUMES. THE MPCA MAY REQUIRE INSPECTIONS TO RESUME IF CONDITIONS WARRANT; OR
   - c. WHERE CONSTRUCTION ACTIVITY HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, INSPECTIONS MAY BE SUSPENDED. INSPECTIONS MUST RESUME WITHIN 24 HOURS OF RUNOFF OCCURRING, OR UPON RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.
10. PERMITTEES MUST RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES WITHIN 24 HOURS OF BEING CONDUCTED AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP. THESE RECORDS MUST INCLUDE:
    - a. DATE AND TIME OF INSPECTIONS; AND
    - b. NAME OF PERSONS CONDUCTING INSPECTIONS; AND
    - c. ACCURATE FINDINGS OF INSPECTIONS, INCLUDING THE SPECIFIC LOCATION WHERE CORRECTIVE ACTIONS ARE NEEDED; AND
    - d. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); AND
    - e. DATE OF ALL RAINFALL EVENTS GREATER THAN 1/2 INCHES IN 24 HOURS, AND THE AMOUNT OF RAINFALL FOR EACH EVENT. PERMITTEES MUST OBTAIN RAINFALL AMOUNTS BY EITHER A PROPERLY MAINTAINED RAIN GAUGE INSTALLED ONSITE, A WEATHER STATION THAT IS WITHIN ONE (1) MILE OF YOUR LOCATION, OR A WEATHER REPORTING SYSTEM THAT PROVIDES SITE SPECIFIC RAINFALL DATA FROM RADAR SUMMARIES; AND
    - f. IF PERMITTEES OBSERVE A DISCHARGE DURING THE INSPECTION, THEY MUST RECORD AND SHOULD PHOTOGRAPH AND DESCRIBE THE LOCATION OF THE DISCHARGE (I.E., COLOR, ODOR, SETTLED OR SUSPENDED SOLIDS, OIL SHEEN, AND OTHER OBVIOUS INDICATORS OF POLLUTANTS); AND
    - g. ANY AMENDMENTS TO THE SWPPP PROPOSED AS A RESULT OF THE INSPECTION MUST BE DOCUMENTED AS REQUIRED IN SECTION 6 WITHIN SEVEN (7) CALENDAR DAYS.

POLLUTION PREVENTION MANAGEMENT (SECTION 12):

1. PERMITTEES MUST PLACE BUILDING PRODUCTS AND LANDSCAPE MATERIALS UNDER COVER (E.G., PLASTIC SHEETING OR TEMPORARY ROOFS) OR PROTECT THEM BY SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE CONTACT WITH STORMWATER. PERMITTEES ARE NOT REQUIRED TO COVER OR PROTECT PRODUCTS WHICH ARE EITHER NOT A SOURCE OF CONTAMINATION TO STORMWATER OR ARE DESIGNED TO BE EXPOSED TO STORMWATER.
2. PERMITTEES MUST PLACE PESTICIDES, FERTILIZERS AND TREATMENT CHEMICALS UNDER COVER (E.G., PLASTIC SHEETING OR TEMPORARY ROOFS) OR PROTECT THEM BY SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE CONTACT WITH STORMWATER.
3. PERMITTEES MUST STORE HAZARDOUS MATERIALS AND TOXIC WASTE, (INCLUDING OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM-BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH. 7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.
4. PERMITTEES MUST PROPERLY STORE, COLLECT AND DISPOSE SOLID WASTE IN COMPLIANCE WITH MINN. R. CH. 7035.
5. PERMITTEES MUST POSITION PORTABLE TOILETS SO THEY ARE SECURE AND WILL NOT TIP OR BE KNOCKED OVER. PERMITTEES MUST PROPERLY DISPOSE SANITARY WASTE IN ACCORDANCE WITH MINN. R. CH. 7041.
6. PERMITTEES MUST TAKE REASONABLE STEPS TO PREVENT THE DISCHARGE OF SPILLED OR LEAKED CHEMICALS, INCLUDING FUEL, FROM ANY AREA WHERE CHEMICALS OR FUEL WILL BE LOADED OR UNLOADED INCLUDING THE USE OF DRIP PANS OR ABSORBENTS UNLESS INFEASIBLE. PERMITTEES MUST ENSURE ADEQUATE SUPPLIES ARE AVAILABLE AT ALL TIMES TO CLEAN UP DISCHARGED MATERIALS AND THAT AN APPROPRIATE DISPOSAL METHOD IS AVAILABLE FOR RECOVERED SPILLED MATERIALS. PERMITTEES MUST REPORT AND CLEAN UP SPILLS IMMEDIATELY AS REQUIRED BY MINN. STAT. 115.061, USING DRY CLEAN UP MEASURES WHERE POSSIBLE.
7. PERMITTEES MUST LIMIT VEHICLE EXTERIOR WASHING AND EQUIPMENT TO A DEFINED AREA OF THE SITE. PERMITTEES MUST CONTAIN RUNOFF FROM THE WASHING AREA IN A SEDIMENT BASIN OR OTHER SIMILARLY EFFECTIVE CONTROLS AND MUST DISPOSE WASTE FROM THE WASHING ACTIVITY PROPERLY. PERMITTEES MUST PROPERLY USE AND STORE SOAPS, DETERGENTS, OR SOLVENTS.
8. PERMITTEES MUST PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OPERATIONS (E.G., CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS) RELATED TO THE CONSTRUCTION ACTIVITY. PERMITTEES MUST PREVENT LIQUID AND SOLID WASHOUT WASTES FROM CONTACTING THE GROUND AND MUST DESIGN THE CONTAINMENT SO IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR AREAS. PERMITTEES MUST PROPERLY DISPOSE LIQUID AND SOLID WASTES IN COMPLIANCE WITH MPCA RULES. PERMITTEES MUST INSTALL A SIGN INDICATING THE LOCATION OF THE WASHOUT FACILITY.

PERMIT TERMINATION (SECTION 4 AND SECTION 13):

1. PERMITTEES MUST SUBMIT A NOT WITHIN 30 DAYS AFTER ALL TERMINATION CONDITIONS LISTED IN SECTION 13 ARE COMPLETE.
2. PERMITTEES MUST SUBMIT A NOT WITHIN 30 DAYS AFTER SELLING OR OTHERWISE LEGALLY TRANSFERRING THE ENTIRE SITE, INCLUDING PERMIT RESPONSIBILITY FOR ROADS (E.G., STREET SWEEPING) AND STORMWATER INFRASTRUCTURE FINAL CLEAN OUT, OR TRANSFERRING PORTIONS OF A SITE TO ANOTHER PARTY. THE PERMITTEES' COVERAGE UNDER THIS PERMIT TERMINATES AT MIDNIGHT ON THE SUBMISSION DATE OF THE NOT.
3. PERMITTEES MUST COMPLETE ALL CONSTRUCTION ACTIVITY AND MUST INSTALL PERMANENT COVER OVER ALL AREAS PRIOR TO SUBMITTING THE NOT. VEGETATIVE COVER MUST CONSIST OF A UNIFORM PERENNIAL VEGETATION WITH A DENSITY OF 70 PERCENT OF ITS EXPECTED FINAL GROWTH. VEGETATION IS NOT REQUIRED WHERE THE FUNCTION OF A SPECIFIC AREA DICTATES NO VEGETATION, SUCH AS IMPERVIOUS SURFACES OR THE BASE OF A SAND FILTER.
4. PERMITTEES MUST CLEAN THE PERMANENT STORMWATER TREATMENT SYSTEM OF ANY ACCUMULATED SEDIMENT AND MUST ENSURE THE SYSTEM MEETS ALL APPLICABLE REQUIREMENTS IN SECTION 15 THROUGH 19 AND IS OPERATING AS DESIGNED.
5. PERMITTEES MUST REMOVE ALL SEDIMENT FROM CONVEYANCE SYSTEMS PRIOR TO SUBMITTING THE NOT.
6. PERMITTEES MUST REMOVE ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPS PRIOR TO SUBMITTING THE NOT. PERMITTEES MAY LEAVE BMPS DESIGNED TO DECOMPOSE ON-SITE IN PLACE.
7. FOR RESIDENTIAL CONSTRUCTION ONLY, PERMIT COVERAGE TERMINATES ON INDIVIDUAL LOTS IF THE STRUCTURES ARE FINISHED AND TEMPORARY EROSION PREVENTION AND DOWNGRADIENT PERIMETER CONTROL IS COMPLETE, THE RESIDENCE SELLS TO THE HOMEOWNER, AND THE PERMITTEE DISTRIBUTES THE MPCA'S "HOMEOWNER FACT SHEET" TO THE HOMEOWNER.
8. FOR CONSTRUCTION PROJECTS ON AGRICULTURAL LAND (E.G., PIPELINES ACROSS CROPLAND), PERMITTEES MUST RETURN THE DISTURBED LAND TO ITS PRECONSTRUCTION AGRICULTURAL USE PRIOR TO SUBMITTING THE NOT.

SEED NOTES:

ALL SEED MIXES AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MNDOT SEEDING MANUAL.

GENERAL RECOMMENDATIONS:
THE CONTRACTOR IS RESPONSIBLE TO SALVAGE AND PRESERVE EXISTING TOPSOIL NECESSARY FOR FINAL STABILIZATION AND TO ALSO MINIMIZE COMPACTION IN ALL LANDSCAPE AREAS. IMMEDIATELY BEFORE SEEDING THE SOIL SHALL BE TILLED TO A MINIMUM DEPTH OF 3 INCHES.

TEMPORARY EROSION CONTROL SEEDING, MULCHING & BLANKET.

SEED

- TEMPORARY SEED SHALL BE MNDOT SEED MIX 21-112 (WINTER WHEAT COVER CROP) FOR WINTER AND 21-111 (OATS COVER CROP) FOR SPRING/SUMMER APPLICATIONS. BOTH SEED MIXES SHALL BE APPLIED AT A SEEDING RATE OF 100 LBS/ACRE.

MULCH

- IMMEDIATELY AFTER SEEDING, WITHIN 24 HOURS, MNDOT TYPE 1 MULCH SHOULD BE APPLIED TO PROTECT AND ENHANCE SEED GERMINATION. MULCH SHALL BE APPLIED AT 90% COVERAGE (2 TONS PER ACRE OF STRAW MULCH)

SLOPES

- 3:1 (HORIZ/VERT.) OR FLATTER MUCH SHALL BE COVERED WITH MULCH
- SLOPES STEEPER THAN 3:1 OR DITCH BOTTOMS SHALL BE COVERED WITH EROSION CONTROL BLANKET.
- SEE PLAN FOR MORE DETAILED DITCH AND STEEP SLOPE EROSION CONTROL TREATMENTS.

TRAINING SECTION 21

DESIGN ENGINEER: MATTHEW R. PAVEK P.E.
TRAINING COURSE: DESIGN OF SWPPP
TRAINING ENTITY: UNIVERSITY OF MINNESOTA
INSTRUCTOR: JOHN CHAPMAN
DATES OF TRAINING COURSE: 5/15/2011 - 5/16/2011
TOTAL TRAINING HOURS: 12
RE-CERTIFICATION: 3/16/2017 (8 HOURS), EXP. 5/31/2020

OWNER INFORMATION

OWNER:
XXXXXX
XXXXXX
XXXXXX

CONTACT:

AREAS AND QUANTITIES:

SITE AREA CALCULATIONS	EXISTING CONDITION		PROPOSED CONDITION	
BUILDING COVERAGE	**0 SF**	**0.0%**	**36,249 SF**	**40.9%**
ALL PAVEMENTS	**0 SF**	**0.0%**	**23,892 SF**	**26.9%**
ALL NON-PAVEMENTS	**88,728 SF**	**100.0%**	**28,587 SF**	**32.2%**
TOTAL SITE AREA	**88,728 SF**	**100.0%**	**88,728 SF**	**100.0%**
IMPERVIOUS SURFACE				
EXISTING CONDITION	**0 SF**	**0.0%**		
PROPOSED CONDITION	**60,141 SF**	**67.8%**		
DIFFERENCE (EX. VS PROP.)	**60,141 SF**	**67.8%**		
EROSION CONTROL QUANTITIES				
DISTURBED AREA	87,113 SF	2.00		
SILT FENCE/BIO-ROLL	±1500 LF			
EROSION CONTROL BLANKET	0 SF			
INLET PROTECTION DEVICES	7 EA			

NOTE: QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL DETERMINE FOR THEMSELVES THE EXACT QUANTITIES FOR BIDDING AND CONSTRUCTION.

SWPPP CONTACT PERSON

CONTRACTOR:

SWPPP INSPECTOR TRAINING:
ALL SWPPP INSPECTIONS MUST BE PERFORMED BY A PERSON THAT MEETS THE TRAINING REQUIREMENTS OF THE NPDES CONSTRUCTION SITE PERMIT.
TRAINING CREDENTIALS SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON SITE WITH THE SWPPP

PARTY RESPONSIBLE FOR LONG TERM OPERATION AND MAINTENANCE OF PERMANENT STORM WATER MANAGEMENT SYSTEM

PERMANENT STORMWATER MANAGEMENT IS NOT REQUIRED AS PART OF THIS PROJECT TO MEET NPDES PERMIT REQUIREMENTS. THE PROPERTY OWNER IS RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PROPOSED STORMWATER SYSTEM.

SWPPP ATTACHMENTS (ONLY APPLICABLE IF SITE IS 1 ACRE OR GREATER):

CONTRACTOR SHALL OBTAIN A COPY OF THE FOLLOWING SWPPP ATTACHMENTS WHICH ARE A PART OF THE OVERALL SWPPP PACKAGE:
ATTACHMENT A. CONSTRUCTION SWPPP TEMPLATE - SITE SPECIFIC SWPPP DOCUMENT
ATTACHMENT B. CONSTRUCTION STORMWATER INSPECTION CHECKLIST
ATTACHMENT C. MAINTENANCE PLAN FOR PERMANENT STORM WATER TREATMENT SYSTEMS
ATTACHMENT D: STORMWATER MANAGEMENT REPORT - ON FILE AT THE OFFICE OF PROJECT ENGINEER. AVAILABLE UPON REQUEST.
ATTACHMENT E: GEOTECHNICAL EVALUATION REPORT - ON FILE AT THE OFFICE OF PROJECT ENGINEER. AVAILABLE UPON REQUEST.

SUPPLEMENTARY SITE SPECIFIC EROSION CONTROL NOTES:

THESE NOTES SUPERCEDE ANY GENERAL SWPPP NOTES.

THIS PROJECT IS GREATER THAN 1.0 ACRES SO AN NPDES PERMIT IS REQUIRED AND NEEDS TO BE SUBMITTED TO THE MPCA. THE CONTRACTOR IS REQUIRED TO FOLLOW THE GUIDELINES IN THE NPDES PERMIT THROUGHOUT CONSTRUCTION.

PROJECT NARRATIVE:

PROJECT IS A REDEVELOPMENT OF A VACANT INDUSTRIAL USE INTO A STORAGE FACILITY. CLEANUP AND MASS GRADING COMPLETED BY OTHERS. STORAGE FACILITY WILL HAVE STORMWATER, PARKING, GRADING, UTILITIES, AND LANDSCAPING IMPROVEMENTS.

NATIVE BUFFER NARRATIVE:

PRESERVING A 50' NATURAL BUFFER AROUND WATER BODIES IS NOT REQUIRED AS PART OF THIS PROJECT BECAUSE WATER BODIES ARE NOT LOCATED ON SITE.

INFILTRATION NARRATIVE:

INFILTRATION IS REQUIRED, BUT IS PROVIDED REGIONALLY.

SOIL CONTAMINATION NARRATIVE:

SOILS ONSITE HAVE NOT BEEN IDENTIFIED AS CONTAMINATED.

SPECIAL TMDL BMP REQUIREMENTS SITE SPECIFIC (IF REQUIRED):

THIS PROJECT IS NOT WITHIN ONE MILE OF ANY IMPAIRED WATER PER THE MPCA'S 303(D) IMPAIRED WATERS LIST.

PERMANENT STABILIZATION NOTES SITE SPECIFIC:

PERMANENT SEED MIX

- FOR THIS PROJECT ALL AREAS THAT ARE NOT TO BE SODDED OR LANDSCAPED SHALL RECEIVE A NATIVE PERMANENT SEED MIX.
  - AREAS IN BUFFERS AND ADJACENT TO OR IN WET AREAS MNDOT SEED MIX 33-261 (STORMWATER SOUTH AND WEST) AT 35 LBS PER ACRE.
  - DRY AREAS MNDOT SEED MIX 35-221 (DRY PRAIRIE GENERAL) AT 40 LBS PER ACRE.
- MAINTENANCE SHALL BE IN ACCORDANCE TO THE MNDOT SEEDING MANUAL.

CivilSite GROUP
Civil Engineering · Surveying · Landscape Architecture
4931 W. 35th Street, Suite 200
St. Louis Park, MN 55416
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
ANCHOR BLOCK COMMONS
2300 MCKNIGHT ROAD, NORTH ST PAUL, MN 55109

IP4 AF ST. PAUL, LLC
9000 KEYSTONE CROSSING, SUITE 2300, INDIANAPOLIS, IN 46240

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Matthew R. Pavek
DATE 02/04/20 LICENSE NO. 44263

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
02/04/20	CITY SUBMITTAL

DRAWN BY: JS REVIEWED BY: XX, XX
PROJECT NUMBER: 19384

REVISION SUMMARY

DATE	DESCRIPTION

SWPPP - NARRATIVE

SW1.3

2/3/2020 7:02 PM

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ATTACHMENT A: SITE SPECIFIC SWPPP DOCUMENT

PROJECT NAME: ANCHOR BLOCK COMMONS SELF STORAGE
PROJECT LOCATION (BRIEFLY DESCRIBE WHERE CONSTRUCTION ACTIVITY OCCURS. INCLUDE ADDRESS IF AVAILABLE.)
ADDRESS: 2300 MCKNIGHT RD N
CITY OR TOWNSHIP: NORTH ST. PAUL
STATE: MN
ZIP CODE: 55109
LATITUDE/LOGITUDE OF APPROXIMATE CENTROID OF PROJECT: 45.011287 N, 93.002966 W
METHOD OF LAT/LONG COLLECTION (CIRCLE ONE): GPS ONLINE TOOL USGS TOPOGRAPHIC
ALL CITIES WHERE CONSTRUCTION WILL OCCUR: NORTH ST. PAUL
ALL COUNTIES WHERE CONSTRUCTION WILL OCCUR: RAMSEY
ALL TOWNSHIPS WHERE CONSTRUCTION WILL OCCUR: N/A

PROJECT SIZE (NUMBER OF ACRES TO BE DISTURBED): 2.0

PROJECT TYPE (CIRCLE ONE): RESIDENTIAL COMMERCIAL/INDUSTRIAL ROAD CONSTRUCTION
RESIDENTIAL & RD CONSTRUCTION OTHER (DESCRIBE): XXXXX

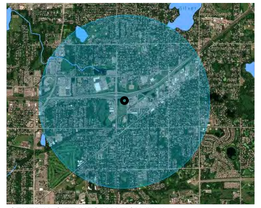
CUMULATIVE IMPERVIOUS SURFACE (TO THE NEAREST TENTH ACRE)
EXISTING AREA OF IMPERVIOUS SURFACE : 0.0
POST CONSTRUCTION AREA OF IMPERVIOUS SURFACE: 1.40
TOTAL NEW AREA OF IMPERVIOUS SURFACE: 1.40

RECEIVING WATERS

WATER BODY ID	NAME OF WATER BODY	WATER BODY TYPE	SPECIAL WATER? (Y/N)	IMPARIED WATER (Y/N)
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.

DATES OF CONSTRUCTION
CONSTRUCTION START DATE: 05/01/20
ESTIMATED COMPLETION DATE: 10/01/21
GENERAL CONSTRUCTION PROJECT INFORMATION
DESCRIBE THE CONSTRUCTION ACTIVITY (WHAT WILL BE BUILT, GENERAL TIMELINE, ETC): SELF STORAGE FACILITY WITH GRADING, STORMWATER, PARKING, AND LANDSCAPING IMPROVEMENTS. ASSUMED 17 MONTH CONSTRUCTION TIMELINE.
DESCRIBE SOIL TYPES FOUND AT THE PROJECT: IN MAY OF 2019, WSB DRILLED 18 SOILS BORINGS TO APPROXIMATE SOIL CONDITIONS ONSITE. THE BORINGS INDICATE A SOMEWHAT VARIABLE SOIL PROFILE, BUT GENERALLY SHOW CLAYEY SAND AND SILTY SAND FILL OVERLAYING NATIVE SILTY SAND.

SITE LOCATION MAP - ATTACH MAPS (U.S. GEOLOGIC SURVEY 7.5 MINUTE QUADRANGLE, NATIONAL WETLAND INVENTORY MAPS OR EQUIVALENT) SHOWING THE LOCATION AND TYPE OF ALL RECEIVING WATERS, INCLUDING WETLANDS, DRAINAGE DITCHES, STORMWATER PONDS, OR BASINS, ETC. THAT WILL RECEIVE RUNOFF FROM THE PROJECT. USE ARROWS SHOWING THE DIRECTION OF FLOW AND DISTANCE TO THE WATER BODY.



GENERAL SITE INFORMATION (III.A)
1. DESCRIBE THE LOCATION AND TYPE OF ALL TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICIES (BMP'S). INCLUDE THE TIMING FOR INSTALLATION AND PROCEDURES USED TO ESTABLISH ADDITIONAL TEMPORARY BMP'S AS NECESSARY. (III.A.4.A)
THE PROJECT IS PROTECTED BY TWO (W) MAIN BMP'S, SILT FENCE AND INLET PROTECTION DEVICES. THE SILT FENCE WILL BE INSTALLED AT THE DOWNHILL LOCATIONS OF THE SITE AND MONITORED AS NECESSARY. INLET PROTECTION DEVIDES WILL BE INSTALLED IN ALL CATCH BASINS ON THE SITE AND ANY OFF SITE THAT WILL RECEIVE STORMWATER RUNOFF FROM THIS SITE. AS THE PROJECT PROGRESSES ADDITIONAL BMP'S SUCH AS EROSION CONTROL BLANKET MAY BE UTILITZED.
2. ATTACH TO THIS SWPPP A TABLE WITH THE ANTICIPATED QUANTITIES FOR THE LIFE OF THE PROJECT FOR ALL EROSION PREVENTION AND SEDIMENT CONTROL BMP'S (III.A.4.B) SEE PAGE SW1.3
3. ATTACH TO THIS SWPPP A SITE MAP THAT INCLUDES THE FOLLOWING FEATURES (III.A.3.B-F);
EXIST AND FINAL GRADES, INCLUDING DIVIDING LINES AND DIRECTION OF FLOW FOR ALL PRE AND POST-CONSTRUCTION STORMRWATER RUNOFF DRAINAGE AREAS LOCATED WITHIN THE PROJECT LIMITS.

LOCATIONS OF IMPERVIOUS SURFACES AND SOIL TYPES.
- EXISTING AND FINAL GRADES, INCLUDING DIVIDING LINES AND DIRECTION OF FLOW FOR ALL PRE AND POST-CONSTRUCTION STORMWATER RUNOFF DRAINAGE AREAS LOCATED WITHIN PROJECT LIMITS.
- LOCATIONS OF AREAS NOT TO BE DISTURBED.
- LOCATION OF AREAS OF PHASED CONSTRUCTION.
- ALL SURFACE WATERS AND EXISTING WETLANDS WITHIN ONE MILE FROM THE PROJECT BOUNDARIES THAT WILL RECEIVE STORMWATER RUNOFF FROM THE SITE (IDENTIFIABLE ON MAPS SUCH AS USGS 7.5 MINUTE QUADRANGLE MAPS OR EQUIVALENT. WHERE SURFACE WATERS RECEIVING RUNOFF ASSOCIATED WITH CONSTRUCTION ACTIVITY WILL NOT FIT ON THE PLAN SHEET, THEY MUST BE IDENTIFIED WITH AN ARROW, INDICATING BOTH DIRECTION AND DISTANCE TO THE SURFACE WATER.
- METHODS TO BE USED FOR FINAL STABILIZATION OF ALL EXPOSED SOIL AREA

4. WERE STORMWATER MITIGATION MEASURES REQUIRED AS THE RESULT OF AN ENVIRONMENTAL, ARCHAEOLOGICAL, OR OTHER REQUIRED LOCAL, STATE OR FEDERAL REVIEW OF THE PROJECT? NO
IF YES, DESCRIBE HOW THESE MEASURES WERE ADDRESSED IN THE SWPPP. (III.A.6)
N/A
5. IS THE PROJECT LOCATED IN A KARST AREA SUCH THAT ADDITIONAL MEASURES WOULD BE NECESSARY TO PROJECT DRINKING WATER SUPPLY MANAGEMENT AREAS AS DESCRIBED IN MINN. R. CHAPTERS 7050 AND 7060? NO
IF YES, DESCRIBE THE ADDITIONAL MEASURES TO BE USED. (III.A.7)
N/A
6. DOES THE SITE DISCHARGE TO A CALCEREOUS FEN LISTED IN MINN. R. 7050.0180, SUBP. 6 B? NO
IF YES, A LETTER OF APPROVAL FROM THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES MUST BE OBTAINED PRIOR TO APPLICATION FOR THIS PERMIT. (PART I B.6 AND PART III.A.8)
7. DOES THE SITE DISCHARGE TO A WATER THAT IS LISTED AS IMPARED FOR THE FOLLOWING POLLUTANT(S) OR STRESSOR(S): PHOSPHORUS, TURBIDITY, DISSOLVED OXYGEN OR BIOTIC IMPAIRMENT? USE THE SPECIAL AND IMPAIRED WATERS SEARCH TOOL AT: WWW.PCA.STATE.MN.US/WATER/STORMWATER/STORMWATER-C.HTML
NO
IF NO, SKIP TO TRAINING
DOES THE IMPAIRED WATER HAVE AN APPROVED TOTAL MAXIMUM DAILY LOADS (TMDL) WITH AN APPROVED WASTE LOAD ALLOCATION FOR CONSTRUCTION ACTIVITY? NO
IF YES:
A. LIST THE RECEIVING WATER, THE AREAS OF THE SITE DISCHARGING TO IT, AND THE POLLUTANT(S) IDENTIFIED IN THE TMDL.
B. LIST THE BMP'S AND ANY OTHER SPECIFIC CONSTRUCTION STORMWATER RELATED IMPLEMENTATION ACTIVITIES IDENTIFIED IN THE TMDL.

IF THE SITE HAS A DISCHARGE POINT WITHIN ONE MILE OF THE IMPAIRED WATER AND THE WATER FLOWS TO THE IMPAIRED WATER BUT NO SPECIFIC BMPS FOR CONSTRUCTION ARE IDENTIFIED IN THE TMDL, THE ADDITIONAL BMPS IN APPENDIX A (C.1, C.2, C.3 & (C.4-TROUT STREAM)) MUST BE ADDED TO THE SWPPP AND IMPLEMENTED. (III.A.7). THE ADDITIONAL BMPS ONLY APPLY TO THOSE PORTIONS OF THE PROJECT THAT DRAIN TO ONE OF THE IDENTIFIED DISCHARGE POINTS.

N/A

8. IDENTIFY ADJACENT PUBLIC WATERS WHERE THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES (DNR) HAS DECLARED "WORK IN WATER RESTRICTIONS" DURING FISH SPAWNING TIMEFRAMES

N/A

SELECTION OF A PERMANENT STORMWATER MANAGEMENT SYSTEM (III.D.)

1. WILL THE PROJECT CREATE A NEW CUMULATIVE IMPERVIOUS SURFACE GREATER THAN OR EQUAL TO ONE ACRE? YES OR NO

IF YES, A WATER QUALITY VOLUME OF ONE INCH OF RUNOFF FROM THE CUMULATIVE NEW IMPERVIOUS SURFACES MUST BE RETAINED ON SITE (SEE PART III.D OF THE PERMIT) THROUGH INFILTRATION UNLESS PROHIBITED DUE TO ONE OF THE REASONS IN PART III.D.1.J. IF INFILTRATION IS PROHIBITED IDENTIFY OTHER METHOD OF OTHER VOLUME REDUCTION (E.G., FILTRATION SYSTEM, WET SEDIMENTATION BASIN, REGIONAL PONDING OR EQUIVALENT METHOD

2. DESCRIBE WHICH METHOD WILL BE USED TO TREAT RUNOFF FROM THE NEW IMPERVIOUS SURFACES CREATED BY THE PROJECT (III.D):

- WET SEDIMENTATION BASIN
- INFILTRATION/FILTRATION
- REGIONAL PONDS
- COMBINATION OF PRACTICES

INCLUDE ALL CALCULATIONS AND DESIGN INFORMATION FOR THE METHOD SELECTED. SEE PART III.D OF THE PERMIT FOR SPECIFIC REQUIREMENTS ASSOCIATED WITH EACH METHOD.

INFILTRATION / FILTRATION / REGIONAL PONDING

CALCULATIONS ARE WITHIN THE SITE STORM WATER MANAGEMENT REPORT AND PART OF THIS SWPPP AS ATTACHMENT D.

3. IF IT IS NOT FEASIBLE TO MEET THE TREATMENT REQUIREMENT FOR THE WATER QUALITY VOLUME, DESCRIBE WHY. THIS CAN INCLUDE PROXIMITY TO BEDROCK OR ROAD PROJECTS WHERE THE LACK OF RIGHT OF WAY PRECLUDES THE INSTALLATION OF ANY PERMANENT STORMWATER MANAGEMENT PRACTICES. DESCRIBE WHAT OTHER TREATMENT, SUCH AS GRASSES SWALES, SMALLER PONDS, OR GRIT CHAMBERS, WILL BE IMPLEMENTED TO TREAT RUNOFF PRIOR TO DISCHARGE TO SURFACE WATERS. (III.C)

IT IS FEASIBLE TO MEET REQUIREMENT FOR WATER QUALITY VOLUME.

4. FOR PROJECTS THAT DISCHARGE TO TROUT STREAMS, INCLUDING TRIBUTARIES TO TROUT STREAMS, IDENTIFY METHOD OF INCORPORATING TEMPERATURE CONTROLS INTO THE PERMANENT STORMWATER MANAGEMENT SYSTEM.

N/A

EROSION PREVENTION PRACTICES (IV.B)
DESCRIBE THE TYPES OF TEMPORARY EROSION PREVENTION BMP'S EXPECTED TO BE IMPLEMENTED ON THIS SITE DURING CONSTRUCITON:
1. DESCRIBE CONSTRUCTION PHASING, VEGETATIVE BUFFER STRIPS, HORIZONTAL SLOPE GRADING, AND OTHER CONSTRUCTION PRACTICES TO MINIMIZE EROSION. DELINEATE AREAS NOT TO BE DISTURBED (E.G., WITH FLAGS, STAKES, SIGNS, SILT FENCE, ETC.) BEFORE WORK BEGINS.
SILT FENCE WILL BE INSTALLED AT ATHE DOWNHILL LOCATIONS OF THE SITE.
2. DESCRIBE METHODS OF TEMPORARILY STABILIZING SOILS AND SOIL STOCKPILES (E.G., MULCHES, HYDRAULIC TACKIFIERS, EROSION BLANKETS, ETC.):
TEMPORARY EROSION PROTECTION WILL BE SEED AND MULCH AND EROSION BLANKETS WHERE REQUIRED, WITH PERMANENT COVER BEING EITHER SOD OR LANDSCAPE FEATURES.
3. DESCRIBE METHODS OF DISSIPATING VELOCITY ALONG STORMWATER CONVEYANCE CHANNELS AND AT CHANNEL OUTLETS (E.G., CHECK DAMS, SEDIMENT TRAPS, RIP RAP, ETC.):
SOD WILL BE UTILIZED ALONG CHANNELS AND RIP RAP AT CHANNEL.
4. DESCRIBE METHODS TO BE USED FOR STABILIZATION OF DITCH AND SWALE WETTED PERIMETERS (NOTE THAT MULCH, HYDRAULIC SOIL TACKIFIERS, HYDROMULCHES, ETC. ARE NOT ACCEPTABLE SOIL STABILIZATION METHODS FOR ANY PART OF A DRAINAGE DITCH OR SWALE)
FINAL STABILIZATION OF SWALES WILL BE SOD
5. DESCRIBE METHODS TO BE USED FOR ENERGY DISSIPATION AT PIPE OUTLETS (E.G., RIP RAP, SPLASH PADS, GABIONS, ETC.)
RIP RAP WILL BE UTILIZED AT PIPE OUTLETS
6. DESCRIBE METHODS TO BE USED TO PROMOTE INFILTRATION AND SEDIMENT REMOVAL ON THE SITE PRIOR TO OFFSITE DISCHARGE, UNLESS INFEASIBLE (E.G., DIRECT STORMWATER FLOW TO VEGETATED AREAS):
DISCONNECTED IMPERVIOUS AREA AND INFILTRATION AREAS WILL BE UTILIZED
7. FOR DRAINAGE OR DIVERSION DITCHES, DESCRIBE PRACTICES TO STABILIZE THE NORMAL WETTED PERIMETER WITHIN 200 LINEAL FEET OF THE PROPERTY EDGE OR POINT OF DISCHARGE TO SURFACE WATER. THE LAST 200 LINEAL FEET MUST BE STABILIZED WITHIN **24 HOURS** AFTER CONNECTING TO SURFACE WATERS AND CONSTRUCTION IN THAT PORTION OF THE DITCH HAS TEMPORARILY OR PERMANENTLY CEASED FOR ALL DISCHARGES TO SPECIAL, IMPAIRED OR "WORK IN WATER RESTRICTIONS". ALL OTHER REMAINING PORTIONS OF THE TEMPORARY OR PERMANENT DITCHES OR SWALES WITHIN 14 CALENDAR DAYS AFTER CONNECTING TO A SURFACE WATER, PROPERTY EDGE AND CONSTRUCTION IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED.
N/A, NO DITCHES ON SITE
8. DESCRIBE ADDITIONAL EROSION PREVENTION MEASURES THAT WILL BE IMPLEMENTED AT THE SITE DURING CONSTRUCTION (E.G., CONSTRUCTION PHASING, MINIMIZING SOIL DISTURBANCE, VEGETATIVE BUFFERS, HORIZONTAL SLOPE GRADING, SLOPE DRAINING/TERRACING, ETC.):
OTHER EROSION CONTROL PRACTICES INCLUDE BUT ARE NOT LIMITED TO; MINIMIZING SITE EXPOSURE WHEN POSSIBLE.
9. IF APPLICABLE, INCLUDE ADDITIONAL REQUIREMENTS IN APPENDIX A PART C.3 REGARDING MAINTAINING A 100-FOOT BUFFER ZONE OR INSTALLING REDUNDANT BMPS FOR PORTIONS OF THE SITE THAT DRAIN TO SPECIAL WATERS).
N/A
10. IF APPLICABLE, DESCRIBE ADDITIONAL EROSION PREVENTION BMPS TO BE IMPLEMENTED AT THE SITE TO PROTECT PLANNED INFILTRATION AREAS
MINIMIZE SITE EXPOSURE IN AREAS ADJACENT TO INFILTRATION AREAS.

SEDIMENT CONTROL PRACTICIES (IV.C)
DESCRIBE THE METHODS OF SEDIMENT CONTROL BMPS TO BE IMPLEMENTED AT THIS SITE DURING CONSTRUCTION TO MINIMIZE SEDIMENT IMPACTS TO SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS
1. DESCRIBE METHODS TO BE USED FOR DOWN GRADIENT PERIMETER CONTROL:
SILT FENCE WILL BE INSTALLED AROUND THE ENTIRE PERIMETER OF THE SITE
2. DESCRIBE METHODS TO BE USED TO CONTAIN SOIL STOCKPILES:
SEED AND MULCH AS WELL AS EROSION CONTROL BLANKETS WILL BE UTILIZED AS NECESSARY
3. DESCRIBE METHODS TO BE USED FOR STORM DRAIN INLET PROTECTION:
SEE INLET PROTECTION DETAILS
4. DESCRIBE METHODS TO MINIMIZE VEHICLE TRACKING AT CONSTRUCTION EXITS AND STREET SWEEPING ACTIVITIES:
THE PROJECT WILL UTILIZE A ROCK CONSTRUCTION ENTRANCE.
5. DESCRIBE METHODS, IF APPLICABLE, ADDITIONAL SEDIMENT CONTROLS (E.G., DIVERSION BERMS) TO BE INSTALLED TO KEEP RUNOFF AWAY FROM PLANNED INFILTRATION AREAS WHEN EXCAVATED PRIOR TO FINAL STABILIZATION OF THE CONTRIBUTING DRAINAGE AREA:
SILT FENCE TO BE INSTALLED IMMEDIATELY AFTER GRADING TO PROTECT INFILTRATION AREAS.
6. DESCRIBE METHODS TO BE USED TO MINIMIZE SOIL COMPACTION AND PRESERVE TOP SOIL (UNLESS INFEASIBLE) AT THIS SITE:
LIGHT TRACKED EQUIPMENT WILL BE USED, TOPSOIL WILL BE STRIPPED AND STOCKPILED
7. DESCRIBE PLANS TO PRESERVE A 50-FOOT NATURAL BUFFER BETWEEN THE PROJECT'S SOIL DISTURBANCE AND A SURFACE WATER OR PLANS FOR REDUNDANT SEDIMENT CONTROLS IF A BUFFER IS INFEASIBLE:
DOUBLE ROW OF SILT FENCE WILL BE INSTALLED ALONG WETLAND. PROJECT WILL NOT DISTURB WITHIN 200 FEET OF WETLAND.
8. DESCRIBE PLANS FOR USE OF SEDIMENTATION TREATMENT CHEMICALS (E.G., POLYMERS, FLOCCULANTS, ETC.) SEE PART IV.C.10 OF THE PERMIT:
N/A
9. IS THE PROJECT REQUIRED TO INSTALL A TEMPORARY SEDIMENT BASIN DUE TO 10 OR MORE ACRES DRAINING TO A COMMON LOCATION OR 5 ACRES OR MORE IF THE SITE IS WITHIN 1 MILE OF A SPECIAL OR IMPAIRED WATER?
NO
IF YES, DESCRIBE (OR ATTACH PLANS) SHOWING HOW THE BASIN WILL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH PART III.C OF THE PERMIT.
N/A

DEWATERING AND BASIN DRAINING (IV.D)
1. WILL THE PROJECT INCLUDE DEWATERING OR BASIN DRAINING? NO
IF YES, DESCRIBE MEASURES TO BE USED TO TREAT/DISPOSE OF TURBID OR SEDIMENT-LADEN WATER AND METHOD TO PREVENT EROSION OR SCOUR OF DISCHARGE POINTS (SEE PART IV. D OF THE PERMIT):
N/A
2. WILL THE PROJECT INCLUDE USE OF FILTERS FOR BACKWASH WATER? NO
IF YES, DESCRIBE HOW FILTER BACKWASH WATER WILL BE MANAGED ON THE SITE OR PROPERLY DISPOSED (SEE PART III.D.3. OF THE PERMIT):
N/A

ADDITIONAL BMP'S FOR SPECIAL WATERS AND DISCHARGES TO WETLANDS (APPENDIX A, PARTS C AND D)
1. SPECIAL WATERS. DOES YOUR PROJECT DISCHARGE TO SPECIAL WATERS? NO
2. IF PROXIMITY TO BEDROCK OR ROAD PROJECTS WHERE THE LACK OF RIGHT OF WAY PRECLUDES THE INSTALLATION OF ANY OF THE PERMANENT STORMWATER MANAGEMENT PRACTICES, THEN OTHER TREATMENT SUCH AS GRASSED SWALES, SMALLER PONDS, OR GRIT CHAMBERS IS REQUIRED PRIOR TO DISCHARGE TO SURFACE WATERS. DESCRIBE WHAT OTHER TREATMENT WILL BE PROVIDED.
N/A
3. DESCRIBE EROSION AND SEDIMENT CONTROLS FOR EXPOSED SOIL AREAS WITH A CONTINUOUS POSITIVE SLOPE TO A SPECIAL WATERS, AND TEMPORARY SEDIMENT BASINS FOR AREAS THAT DRAIN FIVE OR MORE ACRES DISTURBED AT ONE TIME.
N/A
4. DESCRIBE THE UNDISTURBED BUFFER ZONE TO BE USED (NOT LESS THAN 100 LINEAR FEET FROM THE SPECIAL WATER).
N/A
5. DESCRIBE HOW THE PERMANENT STORMWATER MANAGEMENT SYSTEM WILL ENSURE THAT THE PRE AND POST PROJECT RUNOFF RATE AND VOLUME FROM THE 1, AND 2-YEAR 24-HOUR PRECIPITATION EVENTS REMAINS THE SAME.
N/A
6. DESCRIBE HOW THE PERMANENT STORMWATER MANAGEMENT SYSTEM WILL MINIMIZE ANY INCREASE IN THE TEMPERATURE OF TROUT STREAM RECEIVING WATERS RESULTING IN THE 1, AND 2-YEAR 24-HOUR PRECIPITATION EVENTS.
N/A
7. **WETLANDS.** DOES YOUR PROJECT DISCHARGE STORMWATER WITH THE POTENTIAL FOR SIGNIFICANT ADVERSE IMPACTS TO A WETLAND (E.G., CONVERSION OF A NATURAL WETLAND TO A STORMWATER POND)? YES OR NO
IF YES, DESCRIBE THE WETLAND MITIGATION SEQUENCE THAT WILL BE FOLLOWED IN ACCORDANCE WITH PART D OF APPENDIX A.
N/A

INSPECTIONS AND MAINTENANCE (IV.E)
DESCRIBE PROCEDURES TO ROUTINELY INSPECT THE CONSTRUCTION SITE:
- ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND
- WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS, AND WITHIN (7) DAYS AFTER THAT

INSPECTIONS MUST INCLUDE STABILIZED AREAS, EROSION PREVENTION,AND SEDIMENT CONTROL BMP'S AND INFILTRATION AREAS.
INSPECTOR WILL FOLLOW REQUIREMENTS SPECIFIED ABOVE AND FILL OUT "ATTACHMENT B - CONSTRUCTION STORMWATER INSPECTION CHECKLIST"
1. Describe practices for storage of building products with a potential to leach pollutants to minimize exposure to stormwater:
ALL BUILDING PRODUCTS WILL BE SEALED AND STORED IN A MANNER TO MINIMIZE EXPOSURE
2. Describe practices for storage of pesticides, herbicides, insecticides, fertilizers, treatment chemical, and landscape materials:
ALL LANDSCAPE TREATMENT CHEMICALS WILL BE SEALED AND STORED IN A MANNER TO MINIMIZED EXPOSURE
3. Describe practices for storage and disposal of hazardous materials or toxic waste (e.g., oil, fuel, hydraulic fluids, paint solvents, petroleum-based products, wood preservative, additives, curing compounds, and acids) according to Minn. R. ch. 7045, including restricted access and secondary containment:
ALL HAZARDOUS WASTE WILL BE APPROPRIATELY DISPOSED OF OFF SITE ACCORDING TO LOCAL AND STATE LAWS.
4. Describe collection, storage and disposal of solid waste in compliance with Minn. R. ch. 7035:
ALL CONSTRUCTION DEBRIS AND SOLID WASTER WILL BE APPROPRIATELY DISPOSED OF OFF SITE ACCORDING TO LOCAL AND STATE LAWS
5. Describe management of portable toilets to prevent tipping and disposal of sanitary wastes in accordance with Minn. R. ch. 7040:
SANITARY AND SEPTIC SERVICES WILL BE PROVIDED TO WORKERS WITH PORTABLE FACILITIES MAINTAINED AS NEEDED BY THE PROVIDER.
6. Describe spill prevention and response for fueling and equipment or vehicle maintenance:
EMPLOYEES WILL BE TRAINED IN TECHNIQUES DESIGNED TO MINIMIZE SPILLS. VEHICLES AND EQUIPMENT SHALL BE CHECKED FOR LEAKS.
7. Describe containment and disposal of vehicle and equipment wash water and prohibiting engine degreasing on the site:
ALL CONSTRUCTION VEHICLES SHALL BE WASHED OFF SITE
8. Describe storage and disposal of concrete and other washout wastes so that wastes do not contact the ground:
ALL CONCRETE WASHOUT SHALL OCCUR OFF SITE.

FINAL STABILIZATION (IV.G)
1. DESCRIBE METHOD OF FINAL STABILIZATION (PERMANENT COVER) OF ALL DISTURBED AREAS:
FINAL STABILIZATION WILL BE ACCOMPLISHED WITH PAVEMENT, SOD AND LANDSCAPE MATERIALS.
2. DESCRIBE PROCEDURES FOR COMPLETING FINAL STABILIZATION AND TERMINATING PERMIT COVERAGE (SEE PART IV.G.1-5):
UPON STABILIZATION DESCRIBED ABOVE, THE CONTRCTOR AND OWNER SHALL MUTUALLY TRANSFER THE NPDES PERMIT TO THE NEXT OWNER WITH DOCUMENTS DESCRIBING THE NATURE OF TERMINATION PROCEDURE.

DOCUMENTATION OF INFEASIBILITY: (IF APPLICABLE)

2/3/2020 7:02 PM

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Civil Engineering · Surveying · Landscape Architecture
4931 W. 35th Street, Suite 200
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PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
ANCHOR BLOCK COMMONS
2300 MCKNIGHT ROAD, NORTH ST PAUL, MN 55109

IP4 AF ST. PAUL, LLC
9000 KEYSTONE CROSSING, SUITE 2300, INDIANAPOLIS, IN 46240

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Matthew R. Pavek
DATE 02/04/20 LICENSE NO. 44263

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
02/04/20	CITY SUBMITTAL

DRAWN BY: JS REVIEWED BY: XX, XX
PROJECT NUMBER: 19384

REVISION SUMMARY

DATE	DESCRIPTION
.	.

SWPPP - ATTACHMENTS

SW1.4

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ATTACHMENT B: SWPPP INSPECTION FORM

NOTE: THIS INSPECTION REPORT DOES NOT ADDRESS ALL ASPECTS OF THE NATIONAL APOLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM (NPDES/SDS) CONSTRUCTION STORMWATER PERMIT ISSUED ON AUGUST 1, 2013. THE COMPLETION OF THIS CHECKLIST DOES NOT GUARANTEE THAT ALL PERMIT REQUIREMENTS ARE IN COMPLIANCE; IT IS THE RESPONSIBILITY OF THE PERMITTEE(S) TO READ AND UNDERSTAND THE PERMIT REQUIREMENTS.

FACILITY INFORMATION
SITE NAME:
FACILITY ADDRESS: PERMIT NUMBER:
CITY: STATE: ZIP CODE:

INSPECTION INFORMATION
INSPECTOR NAME: _____ PHONE NUMBER: _____
DATE (MM/DD/YYYY): _____ TIME: _____ AM / PM
IS THE INSPECTOR CERTIFIED IN SEDIMENT AND EROSION CONTROL AND IS IT DOCUMENTED IN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP)?
IS THIS INSPECTION ROUTINE OR IN RESPONSE TO A STORM EVENT:
RAINFALL AMOUNT (IF APPLICABLE): _____
IS THE SITE WITHIN ONE AERIAL MILE OF A SPECIAL OR IMPARED WATER?
IF YES, FOLLOW APPENDIX A AND OTHER APPLICABLE PERMIT REQUIREMENTS

NOTE: IF N/A IS SELECTED AT ANY TIME, SPECIFY WHY IN THE COMMENT AREA FOR THAT SECTION.

EROSION CONTROL REQUIREMENT (PART IV.B)

	Y	N	N/A
1. SOIL STABILIZATION WHERE NO CONSTRUCTION ACTIVITY FOR 14 DAYS? (7 DAYS WHERE APPLICABLE)	☐	☐	☐
2. HAS THE NEED TO DISTURB STEEP SLOPES BEEN MINIMIZED?	☐	☐	☐
3. ALL DITCHES STABILIZED 200; BACK FROM POINT OF DISCHARGE WITHIN 24 HOURS? (NOT MULCH)	☐	☐	☐
4. ARE THERE BMP'S FOR ONSITE STOCKPILES?	☐	☐	☐
5. ARE APPROPRIATE BMP'S INSTALLED PROTECTING INLETS/OUTLETS?	☐	☐	☐
6. DO PIPE OUTLETS HAVE ENERGY DISSIPATION?	☐	☐	☐

COMMENTS:

SEDIMENT CONTROL REQUIREMENT (PART IV.C)

	Y	N	N/A
1. PERIMETER CONTROL INSTALLED ON ALL DOWN GRADIENT PERIMETERS?	☐	☐	☐
2. PERIMETER CONTROL TRENCHED IN WHERE APPROPRIATE?	☐	☐	☐
3. 50 FOOT NATURAL BUFFER MAINTAINED AROUND ALL SURFACE WATERS?	☐	☐	☐
3.1. IF NO, HAVE REDUNDANT SEDIMENT CONTROLS BEEN INSTALLED?	☐	☐	☐
4. INLET PROTECTION ON ALL CATCH BASINS AND CULVERT INLETS?	☐	☐	☐
5. VEHICLE TRACKING BEST MANAGEMENT PRACTICES (BMP'S) AT ALL SITE EXITS?	☐	☐	☐
6. ALL TRACKED SEDIMENT REMOVED WITHIN 24 HOURS?	☐	☐	☐
7. ARE ALL INFILTRATION SYSTEMS STAKED AND MARKED TO AVOID COMPACTION?	☐	☐	☐
8. ARE ALL INFILTRATION AREAS PROTECTED WITH A PRETREATMENT DEVICE?	☐	☐	☐
9. DO ALL STOCKPILES HAVE PERIMETER CONTROLS?	☐	☐	☐

COMMENTS:

MAINTENANCE-EROSION AND SEDIMENT CONTROL BMP'S (PART IV.E.)	Y	N	N/A
1. ARE ALL PREVIOUSLY STABILIZED AREAS MAINTAINING 90% GROUND COVER?	☐	☐	☐
2. ANY DITCH EROSION OBSERVED?	☐	☐	☐
3. PERIMETER CONTROL--HAS SEDIMENT REACHED ONE HALF THE HEIGHT OF THE DEVICE?	☐	☐	☐
4. ARE INLET PROTECTION DEVICES MAINTAINED AND FUNCTIONING PROPERLY?	☐	☐	☐

COMMENTS:

OTHER	Y	N	N/A
1. ARE ALL MATERIALS THAT CAN LEACH POLLUTANTS UNDER COVER?	☐	☐	☐
2. HAS ACCESS BEEN RESTRICTED TO ONSITE HAZARDOUS MATERIALS?	☐	☐	☐
3. DOES ON-SITE FUELING ONLY OCCUR IN A CONTAINED AREA?	☐	☐	☐
4. ARE ALL SOLID WASTES BEING PROPERLY DISPOSED OF?	☐	☐	☐
5. IS THE CONCRETE WASHOUT AREA COMPLETELY CONTAINED?	☐	☐	☐
6. IS THE CONCRETE WASHOUT AREA MARKED WITH SIGN?	☐	☐	☐

COMMENTS:

	Y	N	N/A
7. WERE ANY DISCHARGES SEEN DURING THIS INSPECTION, SEDIMENT, WATER, OR OTHERWISE?	☐	☐	☐

7.1. IF YES, STATE THE EXACT LOCATION OF ALL POINTS OF DISCHARGE. PHOTOGRAPH THE DISCHARGE AND DESCRIBE THE DISCHARGE (COLOR, ODOR, FOAM, OIL SHEEN, ETC). HOW WILL IT BE REMOVED? HOW DID THE DISCHARGE HAPPEN? HOW MUCH WAS DISCHARGED? HOW WILL IT BE STOPPED, AND HOW LONG WILL IT TAKE TO STOP? IS THE DISCHARGE GOING INTO AN ADJACENT SITE? WAS THE DISCHARGE A SEDIMENT DELTA? IF YES, WILL THE DELTA BE RECOVERED WITHIN 7 DAYS?

8. WILL A PERMANENT STORMWATER MANAGEMENT SYSTEM BE UTILIZED IN THIS PROJECT AS REQUIRED AND IN ACCORDANCE WITH PART III.D OF THE PERMIT? DESCRIBE:

	Y	N	N/A
9. IS ANY DEWATERING OCCURRING ON SITE?	☐	☐	☐

9.1. IF YES, WHERE? WHAT BMP IS BEING USED? HOW MUCH WATER IS BEING DEWATERED? IS THE WATER CLEAR? WHERE IS THE WATER BEING DISCHARGED TO?

	Y	N	N/A
10. IS A COPY OF THE SWPPP LOCATED ON THE CONSTRUCTION SITE?	☐	☐	☐
11. HAS THE SWPPP BEEN FOLLOWED AND IMPLEMENTED ON SITE?	☐	☐	☐
12. IS A SEDIMENTATION BASIN REQUIRED FOR THIS PROJECT AS SPECIFIED IN THE PERMIT?	☐	☐	☐
12.1. IF YES, ARE THEY MAINTAINED AS SPECIFIED IN THE PERMIT?	☐	☐	☐
13. IS THE TOPSOIL ON THIS PROJECT BEING PRESERVED?	☐	☐	☐

13.1. IF YES, EXPLAIN HOW THE TOP SOIL IS BEING PRESERVED. IF NO, EXPLAIN WHY IT WAS INFEASIBLE.

	Y	N	N/A
14. ARE ALL INFILTRATION SYSTEMS MARKED TO AVOID COMPACTION?	☐	☐	☐
14.1. DO ALL INFILTRATION AREAS HAVE PRETREATMENT DEVICES?	☐	☐	☐

15. DESCRIPTION OF AREAS OF NON-COMPLIANCE NOTED DURING THE INSPECTION, REQUIRED CORRECTIVE ACTIONS, AND RECOMMENDED DATE OF COMPLETION OF CORRECTIVE ACTIONS:

16. PROPOSED AMENDMENTS TO THE SWPPP:

17. POTENTIAL AREAS OF FUTURE CONCERN:

18. ADDITIONAL COMMENTS

DISCLOSURES:
- AFTER DISCOVERY, THE PERMIT REQUIRES MANY OF THE DEFICIENCIES THAT MAY BE FOUND IN THIS CHECKLIST BE CORRECTED WITHIN A SPECIFIED PERIOD OF TIME. SEE PERMIT FOR MORE DETAILS.
- THIS INSPECTION CHECKLIST IS AN OPTION FOR SMALL CONSTRUCTION SITES. LARGE CONSTRUCTION SITES AND LINEAR PROJECTS REQUIRE MORE EXTENSIVE/MORE LOCATION SPECIFIC INSPECTION REQUIREMENTS.
- THE PERMITTEE(S) IS/ARE RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT BMP'S AS WELL AS EROSION PREVENTION AND SEDIMENT CONTROL BMP'S UNTIL ANOTHER PERMITTEE HAS OBTAINED COVERAGE UNDER THIS PERMIT ACCORDING TO PART II.B.5., OR THE PROJECT HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MPCA.

ATTACHMENT C: MAINTENANCE PLAN FOR PERMANENT STORM WATER TREATMENT SYSTEM

CivilSite GROUP
Civil Engineering · Surveying · Landscape Architecture
4931 W. 35th Street, Suite 200
St. Louis Park, MN 55416
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
ANCHOR BLOCK COMMONS
2300 MCKNIGHT ROAD, NORTH ST PAUL, MN 55109
IP4 AF ST. PAUL, LLC
9000 KEYSTONE CROSSING, SUITE 2300, INDIANAPOLIS, IN 46240

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Matthew R. Pavek
DATE 02/04/20 LICENSE NO. 44263

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
02/04/20	CITY SUBMITTAL

DRAWN BY: JS REVIEWED BY: XX, XX
PROJECT NUMBER: 19384

REVISION SUMMARY

DATE	DESCRIPTION

SWPPP - ATTACHMENTS

SW1.5

2/3/2020 7:02 PM

© COPYRIGHT 2018 CIVIL SITE GROUP INC.

1 A201 **1ST LEVEL - FLOOR PLAN**

3/32" = 1'-0"

UNIT MIX - 1ST LEVEL W/ S.F.

UNIT SIZE	COUNT	Unit Type Percentage	UNIT CLASS S.F.	UNIT CLASS TOTAL AREA
5x5	11	6.8%	25	275
5x10	28	17.3%	50	1400
10x10	30	18.5%	100	3000
10x15	12	7.4%	150	1800
10x20	43	26.5%	200	8600
10x25	14	8.6%	250	3500
10x30	24	14.8%	300	7200
Grand total	162			25775

FLOOR PLAN KEYNOTES

TAG	KEYNOTE
1	-
2	-

GENERAL PROJECT NOTES

1. OWNER FURNISHED EQUIPMENT SUPPLIERS ARE TO COORDINATE FINAL LOCATION OF EQUIPMENT AND INSTALLATION WITH THE OWNER.
2. ELECTRICAL CONTRACTOR & CABLE CONTRACTOR ARE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED TO WALLS, FINISHES, CEILINGS ETC. IN THE COURSE OF THEIR CONSTRUCTION. IF CONTRACTORS BEGIN WORK IN AN AREA WITH EXISTING DAMAGE THEY ARE TO IMMEDIATELY NOTIFY THE OWNER OR ASSUME RESPONSIBILITY OF SUCH DAMAGE.

C:\Revit Projects\19199_Adams_French_North_St_Paul - Building_jvielMH.rvt

PROJECT NAME

IP4 AF ST. PAUL, LLC.

NORTH ST. PAUL STORAGE
NEW CONSTRUCTION

ANCHOR DRIVE
NORTH ST. PAUL, MN
55109

ARCHITECT

MOHAGEN HANSEN Architecture | Interiors
1000 Twelve Oaks Center Dr.
Suite 200
Wayzata MN 55391
Tel 952-426-7400
Fax 952-426-7440

REGISTRATION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

TODD MOHAGEN, AIA, NCARB

REGISTRATION NUMBER: 18074

THE ARCHITECT SHALL BE DEEMED THE AUTHORS AND OWNERS OF THEIR RESPECTIVE INSTRUMENTS OF SERVICE AND SHALL RETAIN ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING COPYRIGHTS OF THE ATTACHED DOCUMENTS.

ISSUE RECORD

NO.	DESCRIPTION	DATE
	SITE PLAN REVIEW	02/03/2020

DRAWING INFORMATION

PROJECT NUMBER: 19199.0ADA
DRAWN BY: Author
CHECKED BY: Checker
DATE: 02/04/2020
COMPUTER DIRECTORY: K:\Jobs\Adams French Properties\North St Paul 19199

SHEET DESCRIPTION

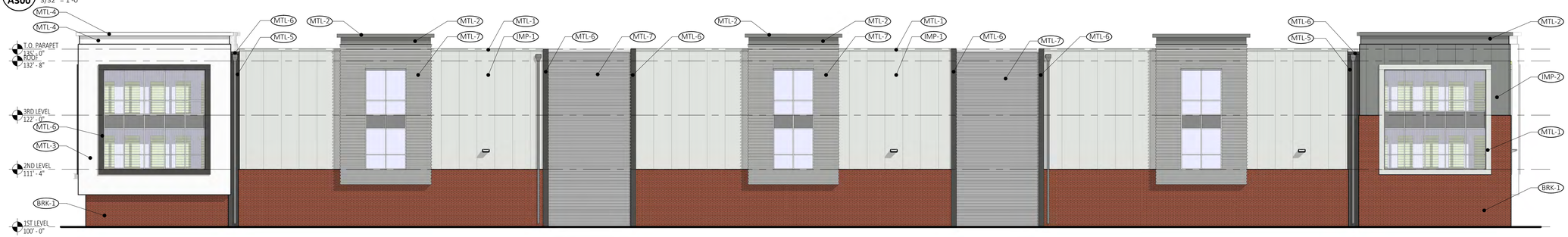
FIRST LEVEL - FLOOR PLAN

PHASE

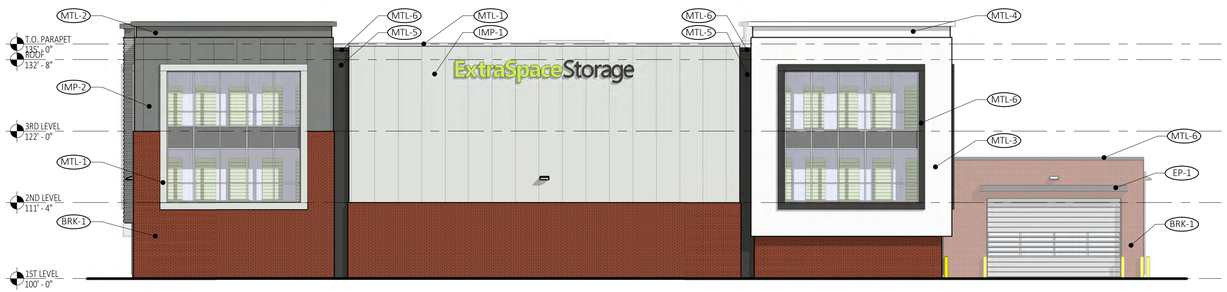
SITE PLAN REVIEW

A201

1 A300 **SOUTH ELEVATION**
3/32" = 1'-0"



2 A300 **EAST ELEVATION**
3/32" = 1'-0"



3 A300 **NORTH ELEVATION**
3/32" = 1'-0"

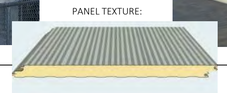
4 A300 **WEST ELEVATION**
3/32" = 1'-0"

EXTERIOR MATERIALS MATERIAL SAMPLES

IMP-1: WHITE STRIATED METAL PANEL

IMP-2: GRAY STRIATED METAL PANEL

PANEL TEXTURE:



BRK-1: RED THIN BRICK - METROBRICK MAINSTREET - FLASHED

MTL-1: METAL TRIM
COLOR TO MATCH IMP-1

Stone White

MTL-2: METAL TRIM
COLOR TO MATCH IMP-2

Slate Gray

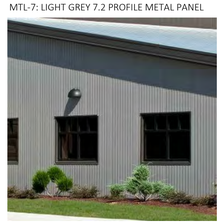
MTL-3: WHITE ACM PANELS
MTL-4: WHITE TRIM/FEATURES

Bright White

MTL-5: DARK GRAY ACM PANELS
MTL-6: DARK GRAY TRIM/FEATURES

(MATCHING SHERWIN WILLIAMS IRON ORE)

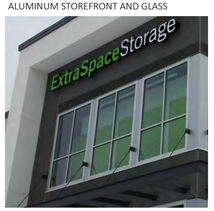
MTL-7: LIGHT GREY 7.2 PROFILE METAL PANEL



(MATCH SHERWIN WILLIAMS ARGOS)

EP-1: DARK GREY EXTERIOR PAINT -
SHERWIN WILLIAMS IRON ORE

ALUMINUM STOREFRONT AND GLASS



CLASS 1 CLEAR ANODIZED ALUMINUM
STOREFRONT FRAMING; CLEAR GLASS

C:\Revit Projects\19199_Adams_French_North_St_Paul - Building_jvilet\MH.rvt

PROJECT NAME

IP4 AF ST. PAUL, LLC.

NORTH ST. PAUL STORAGE
NEW CONSTRUCTION

ANCHOR DRIVE
NORTH ST. PAUL, MN
55109

ARCHITECT

MOHAGEN HANSEN
Architecture | Interiors
1000 Twelve Oaks Center Dr.
Suite 200
Wayzata MN 55391
Tel 952-426-7400
Fax 952-426-7440

REGISTRATION

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ISSUE RECORD

NO.	DESCRIPTION	DATE
	SITE PLAN REVIEW	02/03/2020

DRAWING INFORMATION

PROJECT NUMBER:	19199.0ADA
DRAWN BY:	N. MISSLING
CHECKED BY:	S. OLIVER
DATE:	02/04/2020

COMPUTER DIRECTORY:
K:\Jobs\Adams French Properties\North St Paul 19199

SHEET DESCRIPTION

EXTERIOR BUILDING ELEVATIONS

PHASE

SITE PLAN REVIEW

A300

3D - BIRD'S EYE VIEW

3D - VIEW FROM 3RD ST N

3D - VIEW FROM HIGHWAY 36

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DRAWN BY: Author
CHECKED BY: Checker
DATE: 02/04/2020
COMPUTER DIRECTORY: K:\Jobs\Adams French Properties\North St Paul 19199

SHEET DESCRIPTION

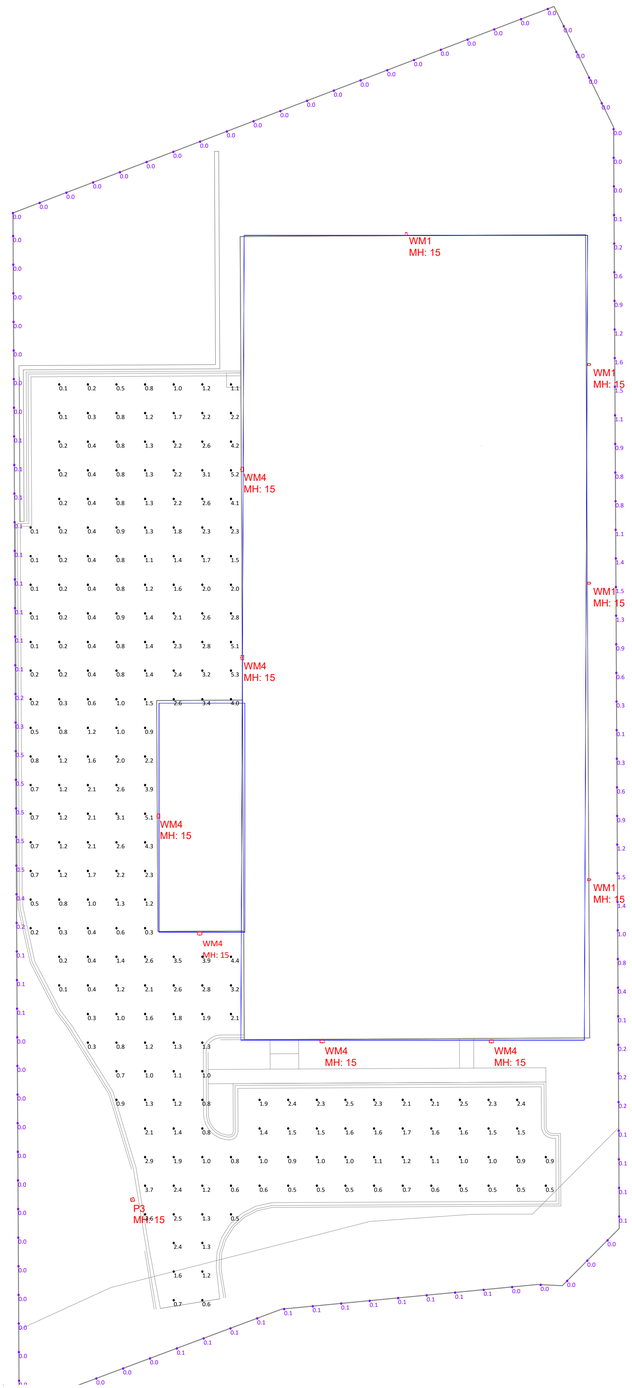
3D VIEWS

PHASE

SITE PLAN REVIEW

A301

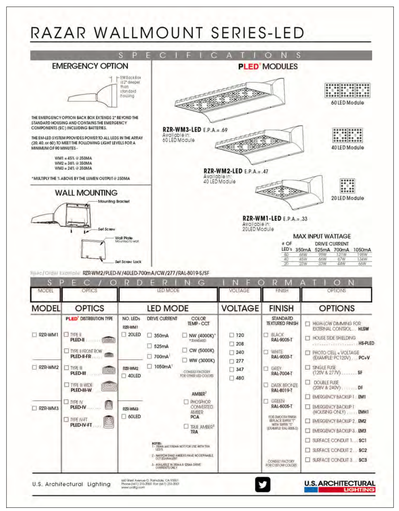
C:\Revit Projects\19199_Adams_French_North_St_Paul - Building_jvielMH.rvt



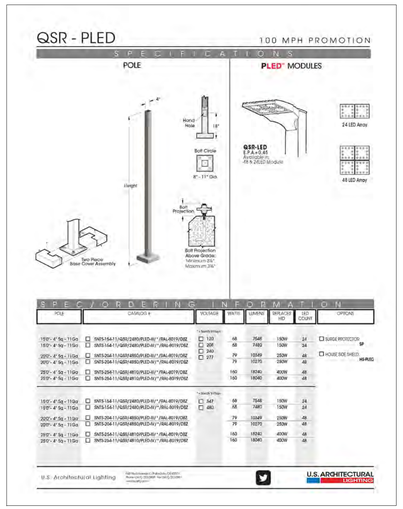
Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LLF	Description	Arr. Watts	Total Watts
	6	WM4	SINGLE	0.920	USA RZR-WM2-IV-FT-40PLED-700mA-NW-VOLT-FINISH	86.7	520.2
	4	WM1	SINGLE	0.920	USA RZR-WM1-II-20PLED-350mA-NW-VOLT-FINISH	22.4	89.6
	1	P3	SINGLE	0.920	USA SNTS-154-11/QSR-LED-2480-PLED-III/VOLT/RAL8019-DBZ	65	65

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING AND DRIVE	Illuminance	Fc	1.44	5.3	0.1	14.40	53.00
PROPERTY LINE	Illuminance	Fc	0.25	1.6	0.0	N.A.	N.A.

NOTES:
-Contact Techlite for pricing. (317) 578-2626
-All readings taken at grade
-Buildings included as blocking entities
-This drawing shows suggested fixtures and mounting locations based on the information provided.
-Techlite assumes no responsibility for variation of light levels that result from changes in project parameters not reported at the time of design.
- MH on drawing indicates mounting height from finished grade



WMx CUTSHEET



P3 CUTSHEET

Techlite Corporation
7721 Lantern Court
Fishers, IN 46038
317.578.2626 P
317.578.2727 F
www.techlitecorp.com

TECHLITE
ILLUMINATING SINCE 1987

#	Date	Comments

Revisions

Drawn By: SLB
Checked By: MB&PM
Date:2/4/2020
Scale: 1"=25'

Site Photometry

North St. Paul Storage Facility

GEOTECHNICAL REPORT

FORMER ANCHOR BLOCK NORTH REDEVELOPMENT

NORTH ST PAUL, MN

June 21, 2019
REVISED June 24, 2019

Prepared for:
City of North St. Paul
2400 Margaret Street North
North St. Paul, MN 55109

WSB PROJECT NO. 014065-000

REVISED GEOTECHNICAL REPORT

FORMER ANCHOR BLOCK NORTH REDEVELOPMENT

FOR
CITY OF NORTH ST PAUL

June 21, 2019
REVISED June 24, 2019

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Mark W. Osborn, PE

Date: June 24, 2019 Lic. No. 41362

June 24, 2019

Mr. Scott Duddeck
City Manager – City of North St. Paul
2400 Margaret Street North
North St. Paul, MN 55109

Re: Revised Geotechnical Report
Former Anchor Block North – Redevelopment
North St. Paul, Minnesota
WSB Project No.: 014065-000

Dear Mr. Duddeck:

We have conducted a geotechnical subsurface exploration program for the above referenced project. This report contains our soil boring logs, an evaluation of the conditions encountered in the borings and our recommendations for suitable foundation type, allowable soil bearing pressure for footing design, and other geotechnical related design and construction considerations.

If you have any questions concerning this report or our recommendations, or for construction material testing for this project, please call us at (952) 737-4660.

Sincerely,

WSB

Mark Osborn, PE
Geotechnical Project Engineer

Darin Hyatt, PE
Senior Geotechnical Engineer

Attachment:
Geotechnical Report

MWO/tw

540 GATEWAY BLVD | BURNSVILLE, MN | 55337 | 952.737.4660 | WSBENG.COM

TABLE OF CONTENTS

TITLE SHEET
CERTIFICATION SHEET
LETTER OF TRANSMITTAL
TABLE OF CONTENTS
1. INTRODUCTION 1
1.1 Project Location 1
1.2 Previous Site Evaluation 1
1.3 Project Description 1
1.4 Purpose and Project Scope of Services 1
2. PROCEDURES 3
2.1 Boring Layout and Soil Sampling Procedures 3
2.2 Groundwater Measurements and Borehole Abandonment 3
2.3 Boring Log Procedures and Qualifications 3
3. EXPLORATION RESULTS 4
3.1 Site and Geology 4
3.2 Subsurface Soil and Groundwater Conditions 4
3.3 Strength Characteristics 4
3.4 Groundwater Conditions 5
4. ENGINEERING ANALYSIS AND RECOMMENDATIONS 7
4.1 Discussion 7
4.2 Building, Fuel Island, Fuel Tanks, and Canopy Area Preparation 7
4.3 Foundation Recommendations 8
4.4 Exterior/Unheated Slabs 9
4.5 Below-Grade/Retaining Walls 9
4.6 Backfill and Fill Selection and Compaction 9
4.7 Pavement Subgrade Preparation and Stability 10
4.8 Pavement Area 10
4.9 Frost Free Pavement Design Option 12
4.10 Underground Tanks 12
4.11 Dewatering 12
4.12 Construction Considerations 12
4.13 Construction Safety 13
4.14 Cold Weather Construction 13
4.15 Field Observation and Testing 13
4.16 Plan Review and Remarks 14
5. STANDARD OF CARE 15

Appendix A
Soil Boring Exhibit
Logs of Test Borings
Symbols and Terminology on Test Boring Log
Notice to Report Users Boring Log Information
Unified Soil Classification System (USCS)

1. INTRODUCTION

1.1 Project Location

The site is located to the southeast of the intersection of McKnight Road and County Highway 36 in North St. Paul, Minnesota. The approximate soil boring locations can be found on the Soil Boring Exhibit in ***Appendix A***.

1.2 Previous Site Evaluation

We were provided with a Response Action Plan for this site prepared by Braun Intertec on April 22, 2015, (Braun project #: 22056.13). The report was intended for environmental discussion and included groundwater information and a description of the soils encountered.

WSB issued a report for this project dated June 21, 2019. After issuance of that report, we were made aware that the proposed storage facility would have 3-stories. This revised report acknowledges that change and addresses any recommendations that may be affected.

1.3 Project Description

It is proposed to construct a 3-story wood framed apartment building. The building will include an underground parking garage if site conditions are acceptable for it. Structural loads for the apartments were not provided, but we estimate that they could be in the range of five (5) to eight (8) kips per lineal foot along the bearing walls of the building, with column loads of up to 100 kips. The finished floor elevation of the building was unknown at the time of drilling but we anticipate it will be near existing grade. We assumed an elevation of 944 for finished floor elevations. We understand that underground parking is be planned to depths of approximately 10 feet below existing grade. We estimated this would be near an elevation of about 934 feet.

We understand the gas station / convenience store located in the northwest area of the site is planned to include a 1-story wood framed building, fuel pumps, and underground fuel tanks. We also anticipated that this building would be constructed with a finished floor elevation near existing grade of 943 feet. The fuel pump canopy loads are anticipated to be less than 50 kips per column, and the 1-story building is anticipated to have perimeter wall loads of two (2) to four (4) kips per lineal foot.

The northeast area of the site is planned for a storage facility. We understand this facility will consist of a 3-story building. The finished floor elevation of the building is anticipated to be near existing grade of about 943 feet. Perimeter wall loads were assumed to be in the range of five (5) to eight (8) kips per lineal foot and column loads of up to 200 kips.

Bituminous paved parking lots and roadways will be constructed as well, with underground utilities including watermain, sanitary, and storm sewers.

WSB has developed foundation recommendations for this project in consideration of the proposed layout, loadings, and structural configurations as understood at this time. When the designer develops additional information about final design structural loadings, building configuration, or other significant factors, the recommendations presented herein may no longer apply. WSB must be made aware of the revised or additional information in order to evaluate the recommendations for continued applicability.

1.4 Purpose and Project Scope of Services

Mr. Scott Duddeck with the City of North St. Paul (City) authorized this scope of service. In order to assist the design team in preparing plans and specifications, we have developed recommendations for designing foundations, retaining walls, slabs and pavements. As such, we have completed a subsurface exploration program and prepared a geotechnical report for the referenced site. This stated purpose was a significant factor in determining the scope and level of service provided. Should the purpose of the report change the report immediately ceases to be valid and use of it without WSB's prior review and written authorization shall be at the user's sole risk.

Our authorized scope of work has been limited to:

1. Clearing underground utilities utilizing Gopher State One Call.
2. Mobilization / demobilization of a truck mounted drill rig.
3. Drilling 18 standard penetration borings to depths of about 20 to 30 feet below grade.
4. Drilling 4 vapor test locations.
5. Sealing the borings per Minnesota Department of Health procedures.
6. Perform soil classification and analysis.
7. Review of readily available project information and geologic data.
8. Providing this geotechnical report containing:
    a. Summary of our findings.
    b. Discussion of subsurface soil and groundwater conditions and how they may affect the proposed basement and foundations.
    c. Estimated allowable bearing capacity of the soils.
    d. Estimated excavation depths to suitable soils.
    e. Estimated R-value of the soils.
    f. Recommended pavement section.
    g. A discussion of soils for use as structural fill and site fill.

2. PROCEDURES

2.1 Boring Layout and Soil Sampling Procedures

WSB proposed to complete 18 standard penetration soil borings across the site and 4 vapor test locations. WSB recommended the boring depths and selected the desired locations. Based on site conditions the 4 pavement borings were changed to geotube sampling. Due to shallow groundwater conditions in the borings, the 30 foot borings were drilled as standard penetration borings only to 20 foot depths, and geotube sampling was completed to 30 foot depths. Our field crew staked the borings by estimating from existing site features using an aerial map. The approximate boring locations are shown on the Soil Boring Exhibit in ***Appendix A*** which is an aerial photo. The ground surface elevations at the borings were determined based on a review of online data from MnTOPO, which is provided by the Minnesota Department of Natural Resources. These maps should be accurate to within +/- one foot (1') provided ground surface modifications at this site have not been completed since LIDAR data was obtained.

We completed the borings between May 20 and May 29, 2019 with a truck-mounted CME-55 drill rig operated by a two-person crew. The drill crew advanced the borings using continuous hollow stem augers. The drilling information is provided on the boring logs.

Generally, the drill crew sampled the soil in advance of the auger tip at two and one-half (2 ½) foot intervals to a depth of 15 feet and then at five (5) foot intervals thereafter to the termination depth of the boring. The soil samples were obtained using a split-barrel sampler which was driven into the ground during standard penetration tests in accordance with ASTM D 1586, Standard Method of Penetration Test and Split-Barrel Sampling of Soils. The geotube borings were continuously sampled with 5 foot long geotubes. The materials encountered were described on field logs and representative samples were containerized, and transported to our laboratory for further examination and testing.

The samples were visually examined to estimate the distribution of grain sizes, plasticity, consistency, moisture condition, color, presence of lenses and seams, and apparent geologic origin. We classified the soils according to type using the Unified Soil Classification System (USCS). A chart describing the USCS is included in ***Appendix A***.

It should be noted that environmental soil screening was performed concurrently with the geotechnical drilling and sampling. The results of the environmental screening will be reported under separate cover.

2.2 Groundwater Measurements and Borehole Abandonment

The drill crew observed the borings for free groundwater while drilling and after completion of the borings. These observations and measurements are noted on the boring logs. The crew then backfilled the borings to comply with Minnesota Department of Health regulations.

2.3 Boring Log Procedures and Qualifications

The subsurface conditions encountered by the borings are illustrated on the Logs of Test Borings in ***Appendix A***. Similar soils were grouped into the strata shown on the boring logs, and the appropriate estimated USCS classification symbols were also added. The depths and thickness of the subsurface strata indicated on the boring logs were estimated from the drilling results.

The transition between materials (horizontal and vertical) is approximate and is usually far more gradual than shown. Information on actual subsurface conditions exists only at the specific locations indicated and is relevant only to the time exploration was performed. Subsurface conditions and groundwater levels at other locations may differ from conditions found at the indicated locations. The nature and extent of these conditions would not become evident until exposed by construction excavation. These stratification lines were used for our analytical purposes and, due to the aforementioned limitations, should not be used as a basis of design or construction cost estimates.

3. EXPLORATION RESULTS

3.1 Site and Geology

Boring elevations ranged from 941.78 to 944.54 feet.

The Ramsey County Geologic Atlas indicates the surficial geology of the area is mostly glacial till deposits consisting of silty sands, clayey sands, and clays. The tills are gray, and oxidize to yellowish brown. The till is commonly banded with reddish brown tills or sands. In areas, the glacial tills are overlain by alluvial deposits.

3.2 Subsurface Soil and Groundwater Conditions

The boring profile generally consisted of fill materials and topsoil overlying glacial till. We also noted some alluvial deposits above the glacial till in areas.

Fills

The fills encountered in the borings generally consisted of silty sand, clayey sand, sand with clay, silty clay, and lean clays. Fill depths ranged from about 2 to 13 feet. Organics were encountered in borings B-1, B-3, B-8, and B-15, and fills were placed over organic and peat soils at borings B-1, B-6, B-8, B-9, B-14, B-15, B-16, and B-17.

Topsoil

Topsoil was encountered at borings B-1, B-4, B-8, B-9, B-14, B-15, B-16 and B-17. These organic soils generally consisted of organic clays, or clayey sands with organics. These soils were dark brown to black in color. The depth of organics in the borings ranged from about 1 to 3 feet.

Peat

Peat deposits were encountered at boring B-6. These peat deposits were about 1 foot in thickness and black in color.

Alluvial Deposits

Borings B-3, B-6, B-10, B-12, B-13, B-14, B-16, and B-17 noted alluvial deposits. These alluvial deposits are likely stream deposits and consisted of fine alluvial silts and clays as well as coarse alluvial sands. These soils were generally brown in color and wet to waterbearing/saturated.

Glacial Till

The glacial tills encountered consisted of clayey sands, silty sand, lean clays with sand, and sandy clays. These soils were brown to reddish brown to gray in color and were moist to wet to saturated.

3.3 Strength Characteristics

The penetration resistance N-values of the materials encountered were recorded during drilling and are indicated as blows per foot (BPF). Those values provide an indication of soil strength characteristics and are located on the boring log sheets. Also, visual-manual classification techniques and apparent moisture contents were also utilized to make an engineering judgment of the consistency of the materials.

Table 1 presents a summary of the penetration resistances in the soils for the borings completed and remarks regarding the material strengths of the soils.

Table 1: Penetration Resistances

Soil Type	Classification	Penetration Resistances	Remarks
Fill	SM, SC, CL, ML, SP-SC, SP, SP-SM	4 to 20 BPF	Variable compaction
Topsoil	SC, CL, OL	6 to 14 BPF	Soft to firm
Fine Alluvium	ML, CL	2 to 12 BPF Average 7 BPF	Very soft/loose to firm/medium dense Generally soft/loose
Coarse Alluvium	SP, SM	WH* – 22 BPF Average 9 BPF	Very loose to medium dense Generally loose
Glacial Till	SC, SP-SC, CL, SM, SP-SM, SP	3 to 39 BPF Average 15 BPF	Very loose to dense Generally medium dense

*WH indicates the weight of hammer was sufficient to drive the sampler 18 inches.

The preceding is a generalized description of soil conditions at this site. Variations from the generalized profile exist and should be assessed from the boring logs, the normal geologic character of the deposits, and the soils uncovered during site excavation.

3.4 Groundwater Conditions

WSB took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of the report. Note that groundwater levels may fluctuate due to seasonal variations (e.g. precipitation, snowmelt and rainfall) and/or other factors not evident at the time of measurement. The bore holes were only left open a short period of time, and groundwater levels may not have stabilized.

Table 2 below is a summary of the estimated water levels at our borings.

Table 2: Groundwater Measurements

Boring No.	Ground Surface Elevation	Estimated Depth to Groundwater	Estimated Groundwater Elevation
B-1	943.53	4	940
B-2	944.30	4	940 ½
B-3	943.46	3	940 ½
B-4	943.49	2	941 ½
B-5	943.72	2	942
B-6	942.01	3	939 ½
B-7	943.09	4	939 ½
B-8	941.78	5	937
B-9	943.85	3	941
B-10	944.54	1	944
B-11	943.30	2	941 ½
B-12	943.25	5	938 ½

Boring No.	Ground Surface Elevation	Estimated Depth to Groundwater	Estimated Groundwater Elevation
B-13	943.41	10	933 ½
B-14	942.87	2	941
B-15	942.45	2	940 ½
B-16	943.96	10	934
B-17	942.93	5	938
B-18	943.03	1	942 ½

Elevations are rounded to the highest ½ foot.

Groundwater was encountered at all boring locations. Groundwater ranged from about 1 to 10 feet below grade and was generally encountered within the upper 5 feet. Borings B-2, B-3, B-4, B-5, and B-8 were left open for additional time to obtain a more stable groundwater elevation. The borings likely better reflect the onsite groundwater elevations. Based on the borings that were left open for an extended amount of time, it is our opinion that groundwater levels could be encountered at an elevation of about 941 or 942 feet.

The Response Action Plan completed in 2015 by Braun indicated groundwater depths of 7.2 to 8.1 below grade. The recent borings indicate a high groundwater table. It should be noted that rainfall in the Twin Cities area was 6.5 inches above average for 2019 at the time of drilling.

The groundwater could present an issue to excavations and placement of foundations and basements.

The best option to determine the long-term subsurface groundwater elevation at this site is to install piezometers and monitor groundwater levels over several months. Ideally this would occur over March to May when groundwater levels are typically higher due to spring melt. Monitoring of the groundwater table elevation could occur up to the time of construction. This work was outside our scope of services.

4. ENGINEERING ANALYSIS AND RECOMMENDATIONS

4.1 Discussion

Fills

No information was provided to us regarding density tests or excavation observations for the existing fills encountered at the boring locations. Generally, fills that are not documented are considered uncontrolled fills and are recommended for removal and replacement with an engineered fill. Our borings encountered deleterious materials (organics) within or beneath the fill in several of the borings. It is our opinion that the fills at this site were not placed to support foundations, slabs, or fuel tanks, and should be excavated below these areas and replaced with an engineered fill.

In the pavement areas, the best option is complete removal of all existing fill materials. However, a partial subcut and replacement with an engineered fill may be an alternative option to reduce costs. This alternate option will have higher maintenance costs and increased risk of detrimental settlements.

Organics

Organic soils, vegetated root zones, and peat are not suitable for structural support, and should be removed from beneath all building, slab, and engineered fill areas.

In the pavement areas, the best option is complete removal of all existing organic materials. However, a partial subcut and replacement with an engineered fill may be an alternative option to reduce costs. This alternate option will have higher maintenance costs and increased risk of detrimental settlements.

Alluvial Deposits

The fine alluvial deposits generally consisted of silts and clays and are poorly suited for support of foundations, slabs, or pavements. These soils would only be suitable to support light foundation loads and below foundations, slabs, or pavements may require a partial subcut to remove wet soils.

The coarse alluvial deposits encountered in the borings generally would be suitable to support light to moderate foundation loads, as well as slab and pavement areas.

Glacial Deposits

Based on the results of our borings, the glacially deposited soils generally appear capable of supporting the foundations, floor slabs, and pavement areas. Where till soils are encountered that are wet and soft/loose, we recommend a partial subcut and replacement with an engineered fill.

General

It is our opinion that groundwater will be encountered by shallow excavations at this site. Construction of underground basements or parking facilities will be difficult and likely require waterproofing, drain tiles, sump pumps, and warning systems in case of potential flooding. Underground fuel tanks will need to be ballasted. Foundations will require drain tile and waterproofing methods.

Generally, the soils in the upper 4 feet of the subgrade influence pavement performance the most. The soils within the pavement subgrade included clays and silts, which are frost susceptible soils. Consideration should be given to partially subcutting these soils and replacing with a non-frost susceptible granular fill to reduce the potential frost heave below the pavement section.

4.2 Building, Fuel Island, Fuel Tanks, and Canopy Area Preparation

We recommend removal of the fill/organics from the construction area.

Based on the borings, recommended excavation depths are indicated in Table 3.

Table 3: Estimated Excavation Depths

Boring	Surface Elevation	Estimated Excavation depth to suitable soils	Estimated Bottom of Excavation Elevation to suitable soils*
B-1	943.53	12 ½	931
B-2	944.30	0	944
B-3	943.46	5	938
B-4	943.49	2	941
B-5	943.72	0	943 ½
B-10	944.54	7	937 ½
B-11	943.30	0	943
B-12	943.25	0	943
B-13	943.41	10	933
B-14	942.87	7	935 ½
B-15	942.45	7	935
B-16	943.96	7	936 ½
B-17	942.93	4 ½	938
B-18	943.03	5	938

*Elevations rounded to the lowest ½ foot.

If clayey or silty soils at the base of footing excavations are wet and soft/loose they should be subcut. We recommend the soils be subcut a minimum of two feet (2') below the base of wall footings and below column footings to a depth of half (1/2) the width of the column footings. The sub-excavations should be oversized by at least one foot (1') beyond the edge of footings for each foot of depth below the bottom of footing elevations (1-horizontal to 1-vertical lateral oversizing). Because the depth and lateral extent of the sub-excavations will vary away from our borings, we recommend a qualified engineering technician working under the direction of a registered professional geotechnical engineer observe and test the excavation bases during construction.

Based on the borings, it appears that the on-site non-organic soil can generally be reused as structural backfill provided it is moisture conditioned and can be compacted to project specifications. Silt (ML) soils are poor fill materials and should not be used below foundation, slab, pavement, and oversize areas.

The underground fuel tanks will likely need to be ballasted to prevent groundwater from pushing them to the surface.

The site should be graded to prevent water from ponding on silty soils and potentially softening them.

4.3 Foundation Recommendations

We recommend that the building be supported on conventional spread footings bearing on naturally occurring firm / medium dense glacial tills, coarse alluvial soils, or upon an engineered fill. Based on the borings, it is our opinion the footings throughout may be designed for a net allowable soil bearing pressure not to exceed 3,000 pounds per square foot (psf).

Frost protection should follow Minnesota Administrative Rules 1305.1809. Perimeter building footings should be based at least 42 inches below adjacent exterior grade for frost protection. We recommend unheated garage or deck footings should be placed at least five feet (5') below adjacent exterior grade.

The factor of safety against shear or bearing capacity failure for this footing design would be three (3) or greater. If the site is prepared as recommended, we estimate that total and differential settlements corresponding to our assumed structural loads would be less than one inch (1") and one-half inch (1/2"), respectively, provided the bearing soils are not frozen or disturbed at the time of construction.

4.4 Exterior/Unheated Slabs

After removal of the vegetation and root zone, we anticipate that clayey or silty soils will be present in the subgrades which are frost susceptible. We anticipate that heave could occur if such soils are wet and then freeze. Heaving slabs or stoops are not only an annoyance, especially in front of doorways, but can also create a tripping hazard.

In order to reduce potential frost heave at those critical areas, several options exist such as:

1. Removing the frost susceptible soils to frost depth and replacing it with relatively clean sand [not more than ten percent (10%) passing a #200 sieve] and providing sub-drainage.
2. Designing the slabs or steps to be supported on frost depth footings with a void form.
3. Placing insulating foam beneath and slightly beyond slabs.

4.5 Below-Grade/Retaining Walls

To help prevent water from accumulating behind any below-grade/retaining walls in clayey or silty soils, we recommend drain tiles be placed at the base of the footings. To promote water migration to the drain tile, we recommend either a drainage composite be placed against the back side of the wall or at least two feet (2') (horizontally) of clean coarse sand be placed along the back of the wall. We recommend the upper foot of backfill consist of clayey soils to act as a "cap" and reduce water infiltration into the backfill soils. The drain tile should be connected to the storm sewer system or "daylighted" to suitable disposal areas.

To assist in below-grade/retaining wall design Table 4 presents estimated soil parameters for common backfill soils. The coefficients presented below assume a level backfill at the top of wall. If the backfill is sloped, these values may change significantly. Silt (ML) is not recommended as backfill for walls.

Table 4: Estimated Soil Parameters for Below Grade/Retaining Wall Design

Soil Type	Unit Weight pcf	Cohesion	Adhesion	Angle of Internal Friction	Equivalent Fluid Weight (psf/ft)^2		
					Active	Passive	At-Rest
SP, SP-SM	120	---	---	32	35	400	55
SM, SC	125	---	---	30	40	375	65
CL	115	1000	700	18	60	220	80

* - Parameters do not include safety factors.

4.6 Backfill and Fill Selection and Compaction

The on-site non-organic soils may be reused as backfill and fill provided they are moisture conditioned and can be compacted to their specified densities. Any wet soils excavated would need to be dried before reuse as an engineered fill. We recommend use of a minimum of 2 feet of clean coarse sand with less than 50 percent passing the #40 sieve and less than 5 percent passing the #200 sieve when backfilling the bottom of a wet excavation.

Backfills with cobbles larger than six inches (6") should not be placed within 3 feet of foundations, slabs, grading grade or in contact with utilities. We recommend that sandy soils be moisture conditioned to

meet compaction specifications as determined from their standard Proctor tests (ASTM D-698). Fill should be spread in lifts of 8 to 12 inches, depending on the size and type of compaction equipment used.

Table 5 provides the recommended compaction levels.

Table 5: Recommended Level of Compaction for Backfill and Fill

Area	Percent of Standard Proctor Maximum Dry Density
Beneath Structures (Foundations/Slabs)	98
Pavement: Within 3 feet of bottom of aggregate base Within 3-foot radius of vertical utility structure	100
Pavement: Greater than 3 feet below bottom of aggregate base	95
Utility Trench	95
Landscaping (non-structural)	90

4.7 Pavement Subgrade Preparation and Stability

We recommend excavation of organics below the pavement areas. This will provide the best design for pavement areas.

Alternately, if the city is willing to accept a higher risk of settlement in the pavement areas, organic deposits that are greater than 4 feet below the aggregate base can be left in place and bridged over with granular soils and geofabric. This option could significantly lower costs for construction in pavement areas.

The soils at the bottom of the excavation should be prepared in accordance with MnDOT Specification 2112, Subgrade Preparation. If the subgrade preparation operations encounter unstable soils, we recommend removing these unsuitable materials and replacing them with Select Grading Material (MnDOT 2015.1.A.6). If the on-site soils cannot be properly moisture conditioned and compacted, additional measures, such as placement of additional sand subbase or a section of coarse breaker run aggregate, may be required to provide a firm base for subsequent fill placement.

Before placement of the sand subbase, the final subgrade should have proper stability within three vertical feet of grading grade (grade which contacts the bottom of the aggregate base). This will generally be achieved in fill areas with proper compaction of embankment materials and in cut areas through proper subgrade preparation. The stability of the pavement subgrade should be evaluated prior to placement of the sand subbase using the test roll procedure (MnDOT 2111), except a fully loaded tandem axle dump truck or a full water truck should be utilized for the proof roll. If unstable soils are found under the test roll, these soils should be improved by means of scarification, moisture conditioning, and re-compaction, or by subcutting and replacement.

We recommend placement of a geotextile fabric meeting the requirements of MnDOT Specification 3733, Type V beneath the sand subbase and above the on-site silt soils to limit mixing of the granular materials with the underlying fine-grained subgrade.

4.8 Pavement Area

Once the site has been prepared as recommended, we anticipate the prepared subgrade soils will consist mostly of silty sands and clayey sands, as well as some lean clays, sands with silt, and sands with clay. Based on the MnDOT Flexible Pavement Guide from 2017, the R-values of the subgrade soils would range between 12 and 30. We used a design R-value of 12 for the pavement areas.

Heavy Duty Pavement

No traffic data was provided. Based on a 3-story apartment building, gas station, and warehouse building, we estimated the Annual Average Daily Traffic (AADT) to be approximately 150,000 Equivalent Single Axle Loads (ESAL's) for pavement design in the roadway and main drive areas. Our design is based on a standard twenty (20) year design life of the pavement section.

Based on MnDOT's FlexPave excel design utilizing granular equivalent charts, we recommend the pavement section indicated below in Table 6.

Table 6: Heavy Duty Pavement - Recommended Flexible Pavement Section

Section	Thickness (inches)	Granular Equivalent
Bituminous Course, MnDOT 2360 SPWEB240C	2	4.5
Bituminous Course, MnDOT 2360 SPWEB240C	2	4.5
Aggregate Base, MnDOT 3138 (Class 5, 5Q, or 6)	11	11
Geotextile Fabric Type V, MnDOT Spec 3733	Yes	-
Subgrade Preparation, MnDOT 2122	Yes	-
TOTAL	-	20

Light Duty Pavement

No traffic data was provided. We estimated the Annual Average Daily Traffic (AADT) to be less than 75,000 Equivalent Single Axle Loads (ESAL's) for parking lot areas. Our design is based on a standard twenty (20) year design life of the pavement section.

Based on MnDOT's FlexPave excel design utilizing granular equivalent charts, we recommend the pavement section indicated below in Table 7.

Table 7: Light Duty Pavement - Recommended Flexible Pavement Section

Section	Thickness (inches)	Granular Equivalent
Bituminous Course, MnDOT 2360 SPWEA430C	2	4.5
Bituminous Course, MnDOT 2360 SPWEA430C	2	4.5
Aggregate Base, MnDOT 3138 (Class 5, 5Q, or 6)	7	7
Geotextile Fabric Type V, MnDOT Spec 3733	Yes	-
Subgrade Preparation, MnDOT 2122	Yes	-
TOTAL	-	16

"A" type aggregate is recommended in the bituminous course to yield a smooth tight surface. Level 4 super pave is recommended to increase the percentage of crushed aggregate and help limit depressions in the parking stalls.

General

We recommend limiting Recycled Asphalt Pavement (RAP) within the upper wear course to a maximum of 10 percent in order to minimize cracking.

Aggregate base placement for pavement support should meet the gradation and quality requirements for Class 5, 5Q, or 6 per MnDOT Specification 3138. All aggregate base material should be compacted to 100 percent of its standard Proctor maximum dry density.

Within several years after initial paving, some thermal shrinkage cracks will develop. We recommend routine maintenance be performed to improve pavement performance and increase pavement life. Pavement should be sealed with a liquid bitumen sealer to retard water intrusion into the base course and subgrade. Localized patch failures may also develop where trucks or buses turn on the pavement. When these occur, they should be cut out and patch repaired.

The pavement sections above provide options to meet the ESAL requirements. Other pavement design options would be acceptable as well as long as they meet the minimum requirements for bituminous thickness, aggregate base thickness, and can meet the ESAL requirements.

4.9 Frost Free Pavement Design Option

Optionally, the use of a non-frost susceptible sand cushion below the pavement in Section 4.8 will help reduce the effects of frost heave. In our opinion, placement of 15 inches of select granular fill below the Aggregate Base should generally provide for a non-frost susceptible subgrade. It should be noted that any sand cushion placed below the pavement section will provide positive benefits for reduced potential frost heave. The owner should evaluate the costs and benefit of this option to determine if it should be incorporated into the pavement design.

Drainage of the sand cushion will be necessary. Drainage of the sand cushion may be accomplished by daylighting to adjacent ditches or the use of drain tile. Drain tile wrapped in a sock should be placed at the base of the sand cushion and tied into catch basins. We recommend the sand cushion contain a select granular sand with less than 12% passing the #200 sieve. Alternately, a 3 inch minus rock fill could be placed instead of a select granular sand.

For transitioning the thickness of the sand subbase along the profile of the roadway, we recommend the thickness have a longitudinal taper of no steeper than 10H:1V. A taper of 4H:1V can be used perpendicular to the centerline for cross street/driveway connections. The placement of the sand subbase should extend slightly beyond the outer edge of the curbs to maintain subgrade uniformity for frost movement.

4.10 Underground Tanks

With assumed tank invert at elevations of about 930 to 935, and groundwater observed at an elevation as high as 944 feet, dewatering will be necessary for tank installation. Dewatering with sand points or wells, prior to excavation, is recommended.

To prevent the tanks from being lifted out of the ground due to the buoyant forces of water we recommend the tanks be ballasted. We recommend assuming the water table will rise above the top of the tanks.

We recommend sand be used as backfill around the tanks. To prevent backfill from settling around the tanks, we recommend special attention be paid during placing and compacting of backfill around the tanks.

4.11 Dewatering

Groundwater was encountered in the borings at very shallow excavations. Groundwater is expected to enter the excavations for soil corrections, utilities, and underground tanks. Dewatering will likely require sand well points, and preferably would occur prior to excavation.

4.12 Construction Considerations

Good surface drainage should be maintained throughout the work so that the site is not vulnerable to ponding during or after a rainfall. If water enters the excavations, it should be promptly removed prior to further construction activities. Under no circumstances should fill or concrete be placed into standing water.

Soil corrections at this site for foundations and pavement subgrades may not be continuous in all areas. We recommend tapering the fills back to native soils at a 10H:1V slope.

It is important to review the fill limits and total depth of fill when placing structures upon compacted materials and when filling the excavation. The location of the footings must allow for at least a one to one (1:1) slope from the bottom of the footing to the outside limits of the engineered fill.

It is important to check this at the time of construction and to assure that during filling, unsuitable soils do not encroach within the one to one (1:1) slope limits and extending downward and outward from future footings.

4.13 Construction Safety

All excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P "Excavations and Trenches". This document states that excavation safety is the responsibility of the contractor. Reference to this OSHA requirement should be included in the job specifications.

The responsibility to provide safe working conditions on this site, for earthwork, building construction, or any associated operations is solely that of the contractor. This responsibility is not borne in any manner by WSB.

4.14 Cold Weather Construction

It is our understanding that construction is unlikely to occur during the winter months. However, if the construction does continue into the winter months we recommend the following guidelines.

Pavement areas should not be constructed during periods when the subgrade material freezes while being placed and compacted, nor should any material be placed on soil that is frozen to a depth greater than 4 inches. When the soils are frozen to a depth exceeding 4 inches, at a time when weather conditions are such that construction could be continued without the material freezing as it is being placed and compacted, the contractor may be permitted to excavate the frozen soil and proceed with the embankment construction for so long as the weather will permit. The frozen soils should be pulverized or replaced with other suitable soils, as may be necessary to construct as specified. Only unfrozen fill should be used.

Placement of fill and/or foundation concrete must not be permitted on frozen soil, and the bearing soils under footings or under the floor slab should not be allowed to freeze after concrete is placed, because excessive post-construction settlement could occur as the frozen soils thaw.

4.15 Field Observation and Testing

The soil conditions illustrated on the Logs of Test Borings in ***Appendix A*** are indicative of the conditions only at the boring locations. For this reason, we recommend that all excavations at this site be observed by a soil engineer or technician prior to fill or backfill placement or construction of any foundation elements to determine if the soils are capable of supporting the fill backfill and/or foundation loads. These observations are necessary to judge if all unsuitable materials have been removed from within the planned construction area and an appropriate degree of lateral oversize has been provided.

WSB also recommends a representative number of field density tests be taken in all engineered fill and backfill placed to aid in judging its suitability. Fill placement and compaction should be monitored and tested to determine that the resulting fill and backfill conforms to specified density, strength or compressibility requirements. We recommend at least one compaction test for every 2,000 square feet of building area at vertical intervals not exceeding two (2) feet. Prior to use, any proposed fill and backfill material should be submitted to the WSB laboratory for testing to verify compliance with recommendations and project specifications.

Dynamic Cone Penetrometer (DCP) tests can be completed in the aggregate base in lieu of density testing. We recommend following MnDOT Specification 2211.3.D.2.c.

WSB would be pleased to provide the necessary field observation, monitoring and testing services during construction.

4.16 Plan Review and Remarks

The observations, recommendations and conclusions described in this report are based primarily on information provided to WSB, obtained from our subsurface exploration, our experience, several necessary assumptions and the scopes of service developed for this project and are for the sole use of our client. We recommend that WSB be retained to perform a review of final design drawing and specifications to evaluate that the geotechnical engineering report has not been misinterpreted. Should there be any changes in the design or location of the structures related to this project or if there are any uncertainties in the report we should be notified. We would be pleased to review any project changes and modify the recommendations in this report (if necessary) or provide any clarification in writing.

The entire report should be kept together; for example, boring logs should not be removed and placed in the specifications separately.

The boring logs and related information included in this report are indicators of the subsurface conditions only at the specific locations indicated on the Soil Boring Exhibit and times noted on the Logs of Test Boring sheets in ***Appendix A***. The subsurface conditions, including groundwater levels, at other locations on the site may differ significantly from conditions that existed at the time of sampling and at the boring locations.

Environmental testing completed at this project was reported under separate cover.

WSB has not performed any observations, investigations, studies or testing that is not specifically listed in the scope of service. WSB shall not be liable for failing to discover any condition whose discovery required the performance of services not authorized by the Agreement.

5. STANDARD OF CARE

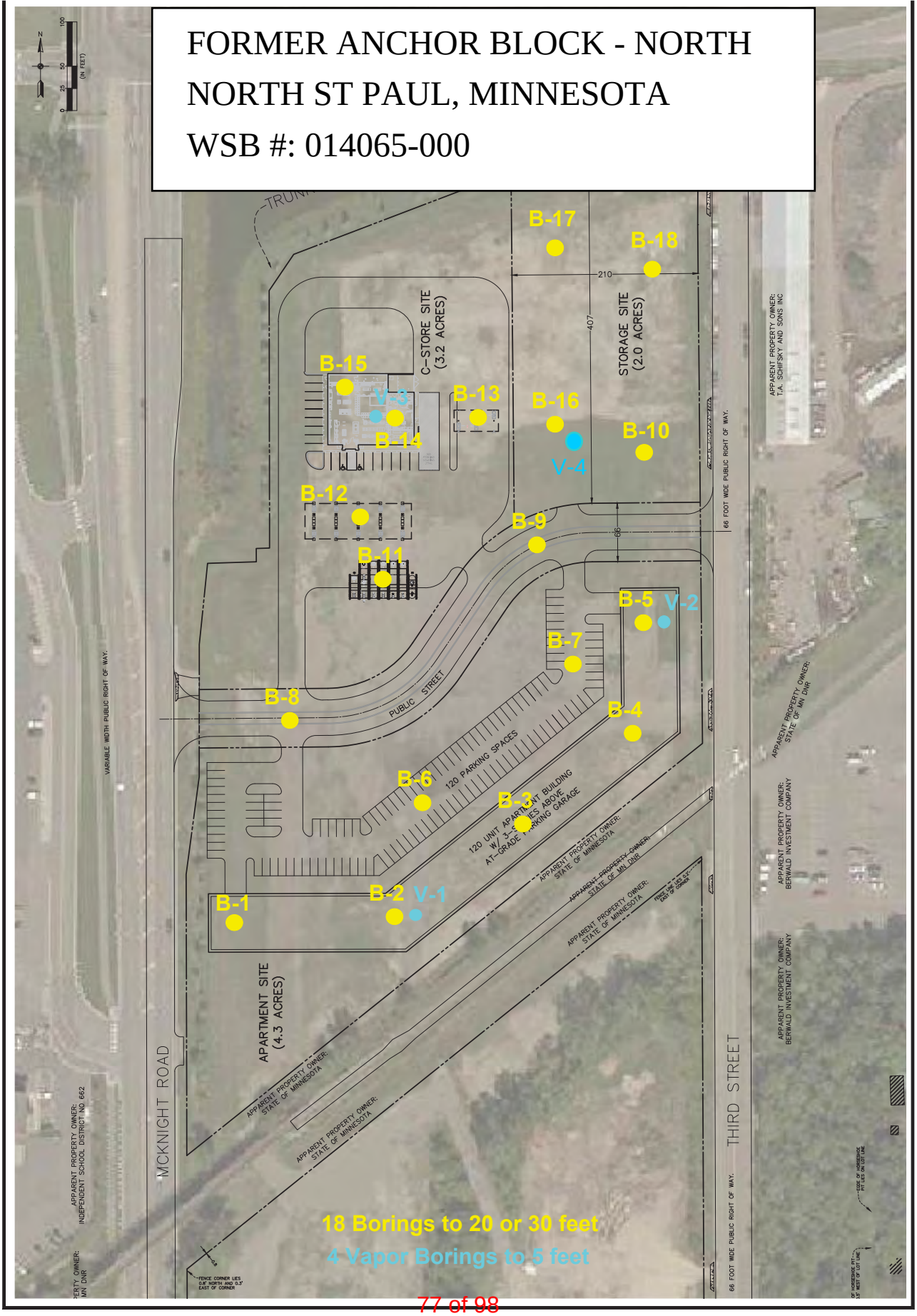
The recommendations and opinions contained in this report are based on our professional judgment. The soil testing and geotechnical engineering services performed for this project have been performed with the level of skill and diligence ordinarily exercised by reputable members of the same profession under similar circumstances, at the same time and in the same or a similar locale. No warranty, either expressed or implied, is made.

APPENDIX A

Soil Borings Exhibit
Logs of Test Borings
Symbols and Terminology on Test Boring Log
Notice to Report Users Boring Log Information
Unified Soil Classification Sheet (USCS)

SOIL BORING EXHIBIT

FORMER ANCHOR BLOCK - NORTH
NORTH ST PAUL, MINNESOTA
WSB #: 014065-000



LOG OF TEST BORING

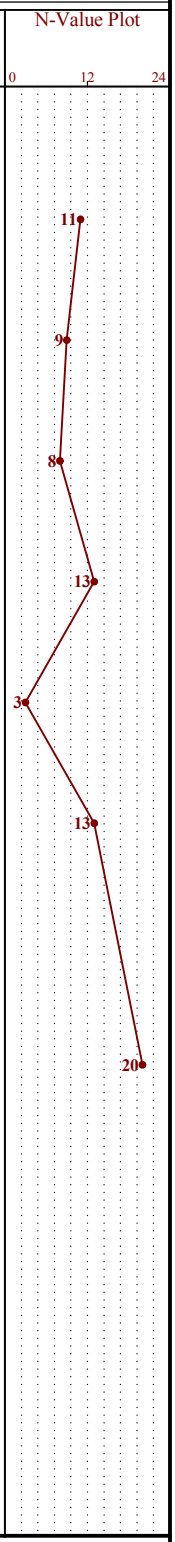
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.53 ft

BORING NUMBER B-01

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
1	943	FILL, Mixture of Silty Sand and Clayey Sand and Organic Silty Sand, brown and black, moist and wet	Fill	Fill			HSA				0
2	942										
3	941						SB	1	11		
4	940				▼		HSA				1.2
5	939				▽		SB	2	9		
6	938						HSA				0
7	937										
8	936	FILL, Silty Sand, fine grained, brown, waterbearing	Fill				SB	3	8		
9	935						HSA				0
10	934	CLAYEY SAND, a few Roots, brown and dark brown, saturated, medium dense	SC	Topsoil			SB	4	13	14	
11	933										
12	932						HSA				0
13	931	SAND WITH SILT AND GRAVEL, fine grained, brown, waterbearing, very loose to medium dense	SP-SM	Glacial Till			SB	5	3		
14	930						HSA				0.1
15	929						SB	6	13	15	
16	928										0
17	927										
18	926						HSA				
19	925										0.1
20	924						SB	7	20		
21	923										0
22	922										
23	921						SH	8			
24	920										0.1
25	919										
26	918										0.1
27	917										
28	916						SH	9			
29	915										0.1
30	914										

End of Boring 30.0 ft.



WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD
5/28/2019	10:00 am	21	19.5		5.0	938.53	3 1/4" HSA 0' - 21'
5/28/2019	10:15 am	30	21	15	4.0	939.53	1" GeoTube 21' - 30'

START: 5/28/2019 END: 5/28/2019

Crew Chief: R. Kurth
Logged By: MWO

Notes:

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:57 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

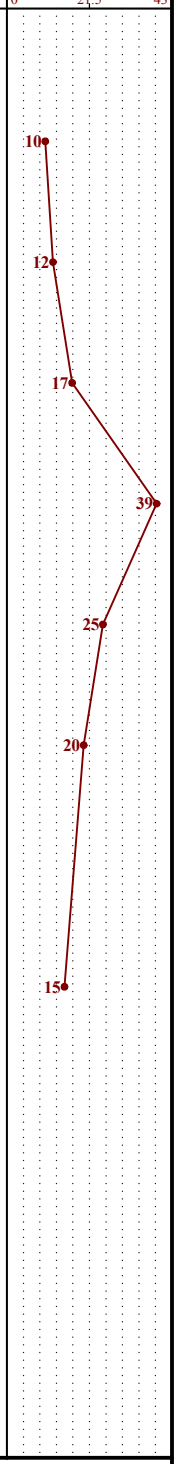
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 944.3 ft

BORING NUMBER B-02

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
1	943	FILL, Clayey Sand and Lean Clay with Sand, brown, moist	Fill	Fill			HSA				0
							SB	1	10		
4	940	SILT WITH SAND, brown, wet, medium dense	ML	Mixed Alluvium	▼		HSA				0
					▽		SB	2	12	15	
							HSA				0.1
7	937	CLAYEY SAND WITH GRAVEL, brown, wet, medium dense	SC	Glacial Till			SB	3	17	10	
9	935	SAND WITH CLAY, a little Gravel, brown, dense to medium dense	SP-SC				HSA				0
							SB	4	39	10	
							HSA				0.2
							SB	5	25		
							HSA				0.2
							SB	6	20	9	
							HSA				0.1
											0.2
							SB	7	15		
							SH	8			0.2
24	920	CLAYEY SAND, gray, moist	SC								0
							SH	9		12	0
											0
30	914	End of Boring 30.0 ft.									

N-Value Plot



WATER LEVEL MEASUREMENTS							START: 5/28/2019	END: 5/28/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/28/2019	10:00 am	21	19.5		5.0	939.3	3 1/4" HSA 0' - 21'	Notes:
5/28/2019	10:15 am	30	21	15	4.0	940.3	1" GeoTube 21' - 30'	

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:57 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

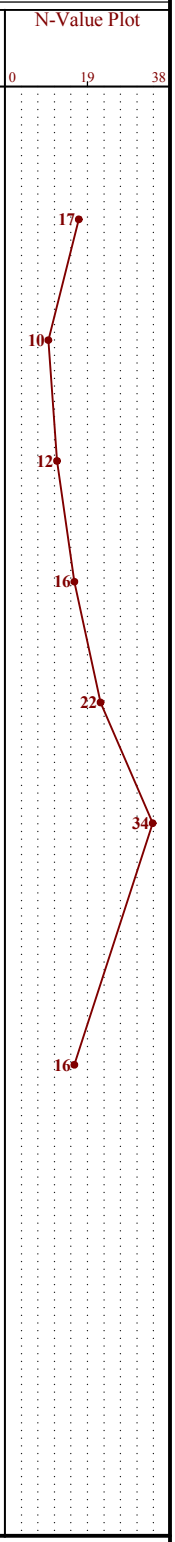
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.46 ft

BORING NUMBER B-03

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
1	942	FILL, Silty Sand and Clayey Sand, slightly Organic, brown and dark brown, moist	Fill	Fill			HSA				0
2	941										
3	940				▼		SB	1	17		
4	939						HSA				0
5	938	SILTY CLAY, olive brown, saturated, firm	CL	Fine Alluvium	▽		SB	2	10	21	
6	937						HSA				0
7	936	SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense	SP	Coarse Alluvium			SB	3	12	15	
8	935										
9	934						HSA				0
10	933						SB	4	16		
11	932										0.1
12	931						HSA				
13	930	SAND WITH CLAY, a little Gravel, fine to medium grained, brown, medium dense to dense	SC	Glacial Till			SB	5	22		
14	929						HSA				0.1
15	928						SB	6	34		
16	927										0.2
17	926										
18	925						HSA				
19	924										0.2
20	923						SB	7	16		
21	922										0.3
22	921	LEAN CLAY WITH SAND AND GRAVEL, gray, wet	CL								
23	920						SH	8		15	
24	919										0.4
25	918										
26	917										0.3
27	916						SH	9		12	
28	915	WEATHERED DOLOSTONE, Lean Clay with Sand, pieces of Dolostone, tan, wet		Prairie Du Chien							
29	914										0.2
30	913										

End of Boring 30.0 ft.



WATER LEVEL MEASUREMENTS							START: 5/28/2019	END: 5/28/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/28/2019	12:00 pm	21	19.5		5.0	938.46	3 1/4" HSA 0' - 21'	Notes:
5/28/2019	12:15 pm	30	21	8	3.0	940.46	1" GeoTube 21' - 30'	

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:57 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

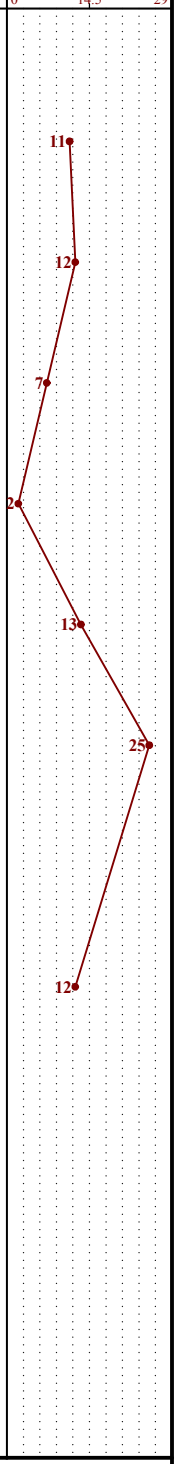
PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.49 ft

BORING NUMBER B-04

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
1	942	LEAN CLAY, slightly Organic, dark brown, wet	CL	Topsoil			HSA				0.1
2	941	FILL, Clayey Sand, brown and gray, wet	Fill	Fill							
3	940						SB	1	11		
4	939						HSA				0.3
5	938	SILT WITH CLAY, olive brown, moist, loose	ML	Fine Alluvium			SB	2	12	12	
6	937						HSA				0.4
7	936	SILTY SAND, fine grained, brown, waterbearing, very loose to medium dense	SM	Glacial Till	▽						
8	935						SB	3	7	15	
9	934						HSA				0.1
10	933						SB	4	2		
11	932										0.1
12	931						HSA				
13	930						SB	5	13		
14	929						HSA				0.1
15	928						SB	6	25		
16	927										0
17	926										
18	925						HSA				
19	924										0.1
20	923						SB	7	12		
21	922										0
22	921										
23	920						SH	8			
24	919										0.1
25	918										
26	917										0.1
27	916	CLAYEY SAND, brown, saturated, loose	SC				SH	9		12	
28	915										
29	914										0
30	913										

End of Boring 30.0 ft.

N-Value Plot



WATER LEVEL MEASUREMENTS							START: 5/28/2019	END: 5/28/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/28/2019	1:00 pm	21	19.5		7.0	936.49	3 1/4" HSA 0' - 21'	Notes:
5/28/2019	1:15 pm	30	21	4	None		1" GeoTube 21' - 30'	

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:57 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

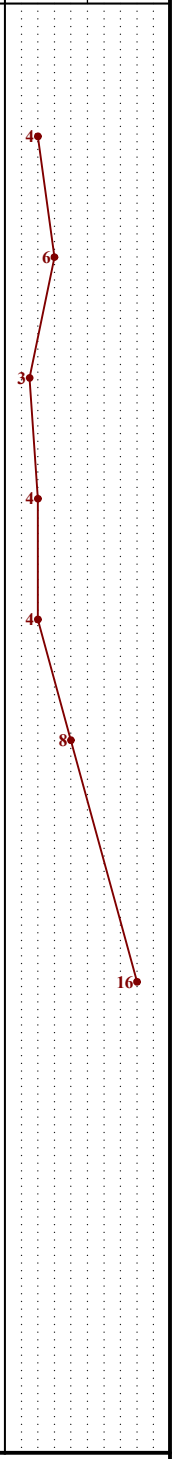
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.72 ft

BORING NUMBER B-05

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
1	943	SILTY SAND, fine grained, brown, wet	SM	Coarse Alluvium			HSA				0.1
2	942	SAND WITH GRAVEL, medium to coarse grained, brown, wet to waterbearing, very loose to loose	SP		▽						
3	941						SB	1	4		
4	940						HSA				0
5	939						SB	2	6		
6	938						HSA				0
7	937										
8	936						SB	3	3		
9	935						HSA				0
10	934						SB	4	4		
11	933						HSA				0
12	932										
13	931						SB	5	4	13	
14	930	SAND WITH CLAY, a little Gravel, brown, saturated, loose	SP-SC	Glacial Till			HSA				0
15	929						SB	6	8		
16	928	SAND WITH SILT, a little Gravel, fine to medium grained, brown, waterbearing, medium dense	SP-SM								0.1
17	927										
18	926						HSA				
19	925										0
20	924						SB	7	16	15	
21	923										0.2
22	922										
23	921						SH	8		12	
24	920	CLAYEY SAND, brown, moist, lenses of Clay	SC								0.2
25	919										
26	918										0.1
27	917										
28	916						SH	9			
29	915										0.1
30	914										

End of Boring 30.0 ft.



WATER LEVEL MEASUREMENTS

START: 5/28/2019 END: 5/28/2019

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD
5/28/2019	12:00 pm	21	19.5		3.0	940.72	3 1/4" HSA 0' - 21'
5/28/2019	12:15 pm	30	21	2	None		1" GeoTube 21' - 30'

Crew Chief: R. Kurth
Logged By: MWO
Notes:

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:57 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 942.01 ft

BORING NUMBER B-06

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	MC %	PID (ppm)	N-Value Plot
1	941	FILL, Clayey Sand and Silty Sand, brown and dark brown, miost to wet	Fill	Fill						0	
2	940						SH	1			
3	939										
4	938	PEAT, black, wet	PT	Swamp Deposits					39	0.1	
5	937	SILTY CLAY, olive brown, wet	CL	Fine Alluvium	▽						
6	936								30	0	
7	935						SH	2			
8	934	SAND WITH SILT, a little Gravel, brown, fine grained, waterbearing	SP-SM	Glacial Till							
9	933									0	
10	932										
11	931									0	
12	930						SH	3			
13	929										
14	928									0.1	
15	927										
16	926									0.2	
17	925						SH	4			
18	924										
19	923									0.1	
20	922	End of Boring 20.0 ft.									

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD
5/20/2019	10:00 am	20			5.0	937.01	1" GeoTube 0' - 20'
5/20/2019	10:15 am	20		3	None		

START: 5/20/2019 END: 5/20/2019

Crew Chief: R. Kurth
Logged By: MWO

Notes:

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:57 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.09 ft

BORING NUMBER B-07

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	MC %	PID (ppm)	N-Value Plot
		CLAYEY SAND WITH ORGANICS, dark brown, moist	SC	Topsoil							
1	942	SAND WITH GRAVEL, fine to medium grained, brown, wet to waterbearing	SP	Coarse Alluvium						0.1	
2	941						SH	1			
3	940	SAND WITH GRAVEL, medium grained, brown, waterbearing	SP								
4	939				▽					0	
5	938										
6	937									0.1	
7	936						SH	2			
8	935										
9	934									0.1	
10	933										
11	932									0	
12	931						SH	3			
13	930										
14	929									0.1	
15	928										
16	927	CLAYEY SAND, brown, saturated	SC	Glacial Till						1.7	
17	926						SH	4	12		
18	925	SAND WITH GRAVEL, fine to medium grained, brown, waterbearing	SP								
19	924									0.1	
20	923										

End of Boring 20.0 ft.

WATER LEVEL MEASUREMENTS							START: 5/20/2019	END: 5/20/2019	
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth	Logged By: MWO
5/20/2019	11:30 am	20		4.5	4.0	939.09	1" GeoTube 0' - 20'	Notes:	

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:57 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 941.78 ft

BORING NUMBER B-08

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	MC %	PID (ppm)	N-Value Plot
		FILL, Clayey Sand, brown, moist	Fill	Fill							
1	941									0.1	
2	940						SH	1			
3	939	FILL, Silty Clay, brown to gray, wet, a few Roots	Fill								
4	938									0.1	
5	937								29		
6	936									0.1	
7	935				▽		SH	2			
8	934	FILL, Sand with Clay and Gravel, brown, waterbearing	Fill								
9	933									0.1	
10	932								13		
11	931									0.1	
12	930						SH	3			
13	929	ORGANIC CLAY, black, wet	OL	Topsoil							
14	928	SILTY SAND, a little Gravel, brown, waterbearing	SM	Glacial Till						0	
15	927										
16	926									0.2	
17	925						SH	4			
18	924										
19	923									0.9	
20	922										

End of Boring 20.0 ft.

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD
5/21/2019	12:30 pm	20			7.5	934.28	1" GeoTube 0' - 20'
5/21/2019	12:45 pm	20		5	None		

START: 5/21/2019 END: 5/21/2019

Crew Chief: R. Kurth
Logged By: MWO

Notes:

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:57 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.85 ft

BORING NUMBER B-09

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	MC %	PID (ppm)	N-Value Plot
		FILL, Sand with Gravel, fine to medium grained, brown, moist to wet to waterbearing	Fill	Fill							
1	943									0	
2	942						SH	1			
3	941										
4	940									0	
5	939				▽						
6	938									0.1	
7	937						SH	2			
8	936										
9	935									0	
10	934										
11	933									0.2	
12	932						SH	3			
13	931	ORGANIC CLAY, black, wet	OL	Topsoil					11		
14	930	SILTY SAND, a little Gravel, fine grained, brown, waterbearing	SM	Glacial Till						0.1	
15	929										
16	928									0	
17	927						SH	4	15		
18	926										
19	925									0.1	
20	924										

End of Boring 20.0 ft.

WATER LEVEL MEASUREMENTS

START: 5/21/2019 END: 5/21/2019

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD
5/21/2019	4:00 pm	20			5.5	938.35	1" GeoTube 0' - 20'
5/21/2019	4:15 pm	20		3	None		

Crew Chief: R. Kurth
Logged By: MWO
Notes:

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

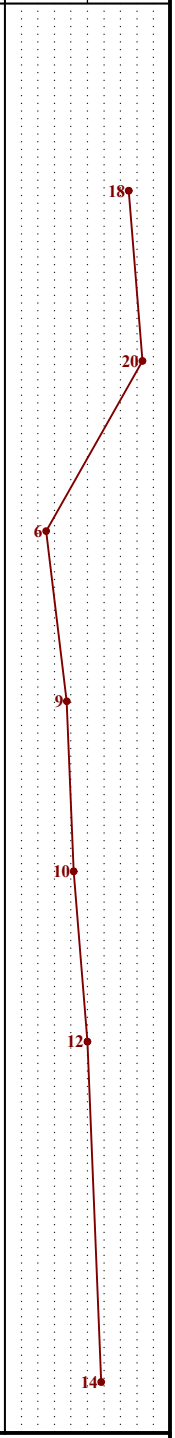
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 944.54 ft

BORING NUMBER B-10

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		FILL, Clayey Sand, a few Roots, brown, wet	Fill	Fill			HSA				0.4
1	944										
2	943	FILL, Clayey Sand, brown and dark brown and gray, wet	Fill				SB	1	18	11	
3	942										
4	941						HSA				0.1
5	940	- a few Roots					SB	2	20		
6	939						HSA				0.1
7	938	SILT WITH CLAY, gray with brown streaks, wet, loose	ML	Fine Alluvium			SB	3	6	21	
8	937										
9	936						HSA				0
10	935	SAND WITH GRAVEL, medium to coarse grained, brown, waterbearing, loose	SP	Coarse Alluvium	▽		SB	4	9		
11	934						HSA				0.1
12	933										
13	932						SB	5	10		
14	931	SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense	SP				HSA				0.1
15	930						SB	6	12		
16	929										0.2
17	928						HSA				
18	927	CLAYEY SAND, a little Gravel, brown, saturated, medium dense	SC	Glacial Till							0.2
19	926										
20	925						SB	7	14		
21	924	End of Boring 21.0 ft.									

N-Value Plot



WATER LEVEL MEASUREMENTS							START: 5/29/2019	END: 5/29/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/29/2019	12:30 pm	21	19.5		10.0	934.54	3 1/4" HSA 0' - 21'	Notes:
5/29/2019	12:45 pm	30	21	1	None			

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

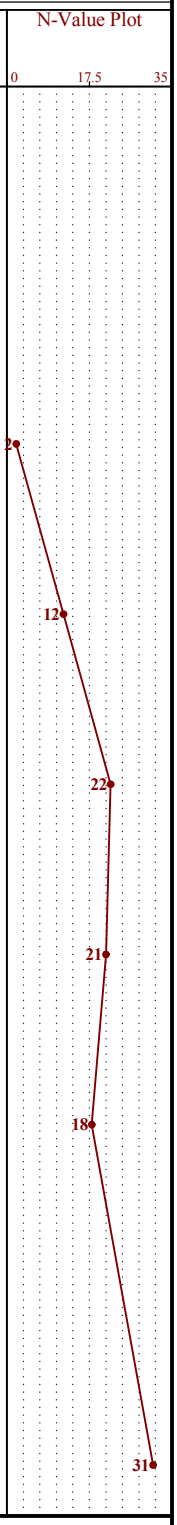
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.3 ft

BORING NUMBER B-11

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		SAND WITH GRAVEL, fine to medium grained, brown, moist	SP	Coarse Alluvium							
1	942						HSA				0
2	941	SAND WITH SILT AND GRAVEL, fine grained, brown, wet to waterbearing, very loose	SP-SM								
							SB	1	WH		
3	940										
4	939				▽		HSA				0
5	938						SB	2	2		
6	937						HSA				0
7	936	SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense	SP	Glacial Till							
							SB	3	12		
8	935										
9	934						HSA				16.8
10	933						SB	4	22		
11	932						HSA				0.3
12	931	SAND WITH CLAY AND GRAVEL, fine to medium grained, brown, saturated, medium dense	SP-SC								
							SB	5	21	15	
13	930										
14	929	SAND WTIH GRAVEL, fine to medium grained, brown, waterbearing, medium dense	SP				HSA				5
							SB	6	18		
15	928										
16	927						HSA				0
17	926										
18	925										
19	924	CLAYEY SAND, a little Gravel, fine grained, brown, saturated, very dense	SC								0
20	923						SB	7	31		
21	922										

End of Boring 21.0 ft.



WATER LEVEL MEASUREMENTS							START: 5/29/2019	END: 5/29/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/29/2019	10:25 am	21	19.5		4.0	939.3	3 1/4" HSA 0' - 21'	Notes:
5/29/2019	10:35 am	30	21	2	None			

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

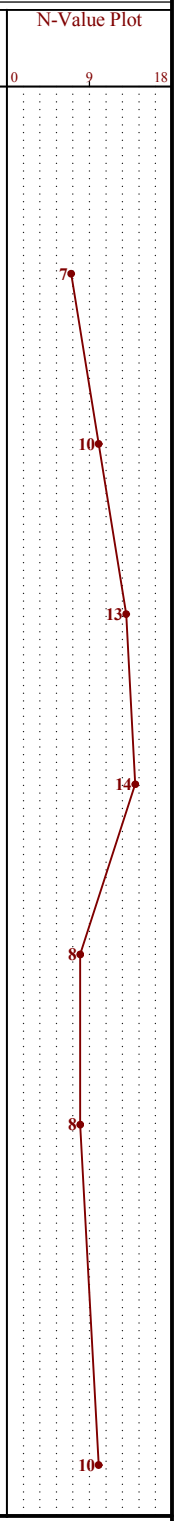
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.25 ft

BORING NUMBER B-12

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		SAND WITH SILT, a little Gravel, a few Roots, fine to medium grained, brown, moist	SP-SM	Coarse Alluvium			HSA				0
1	942										
2	941	SAND WITH A LITTLE GRAVEL, fine to medium grained, brown, wet to waterbearing, loose to medium dense	SP				SB	1	7		
3	940										
4	939						HSA				0
5	938						SB	2	10		
6	937						HSA				0
7	936				▽						
8	935						SB	3	13		
9	934						HSA				0
10	933						SB	4	14		
11	932						HSA				0
12	931	CLAYEY SAND, a little Gravel, brown, saturated, loose	SC	Glacial Till			SB	5	8	12	
13	930										
14	929						HSA				0
15	928						SB	6	8	13	
16	927										0
17	926						HSA				
18	925										
19	924										0
20	923						SB	7	10		
21	922										

End of Boring 21.0 ft.



WATER LEVEL MEASUREMENTS							START: 5/29/2019	END: 5/29/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/29/2019	11:14 am	21	19.5		7.0	936.25	3 1/4" HSA 0' - 21'	Notes:
5/29/2019	11:30 am	30	21	5	None			

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

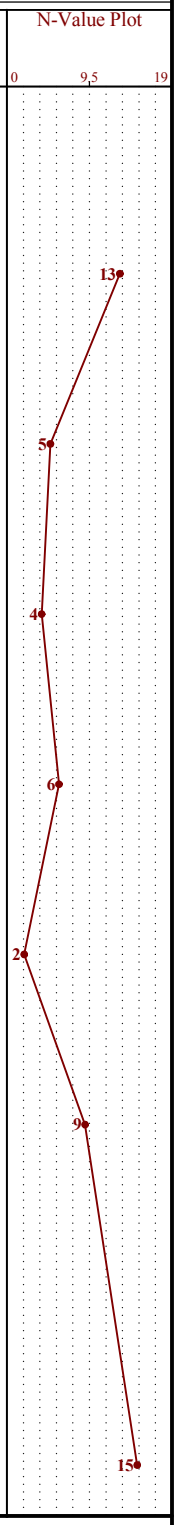
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.41 ft

BORING NUMBER B-13

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		FILL, Sand with Clay and Gravel, a few Roots, miost	Fill	Fill			HSA				0
1	942										
2	941	FILL, Sand with a little Gravel, fine grained, brown, moist	Fill				SB	1	13		
3	940										
4	939						HSA				0
5	938	FILL, Sand with Clay and Gravel, brown, saturated	Fill				SB	2	5		
6	937						HSA				0
7	936										
8	935						SB	3	4		
9	934						HSA				0
10	933	SILT WITH CLAY, brown, saturated, loose to very loose	ML	Fine Alluvium			SB	4	6	25	
11	932						HSA				0
12	931										
13	930						SB	5	2	24	
14	929				▽		HSA				0
15	928	SAND WITH A LITTLE GRAVEL, fine to medium grained, waterbearing, loose	SP	Coarse Alluvium			SB	6	9		
16	927										0
17	926										
18	925						HSA				
19	924	CLAYEY SAND, brown, saturated, medium dense	SC	Glacial Till							0
20	923						SB	7	15		
21	922										

End of Boring 21.0 ft.



WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD
5/29/2019	2:35 pm	21	19.5		14.0	929.41	3 1/4" HSA 0' - 21'
5/29/2019	2:50 pm	30	21	10	None		

START: 5/29/2019
END: 5/29/2019

Crew Chief: R. Kurth
Logged By: MWO

Notes:

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

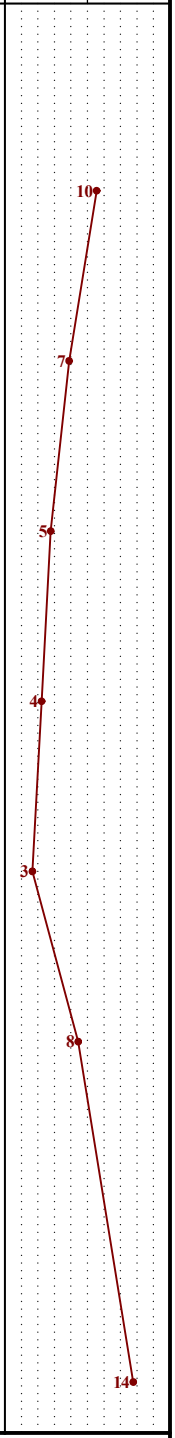
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 942.87 ft

BORING NUMBER B-14

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		FILL, Sand with Clay and Gravel, brown to dark brown, wet	Fill	Fill			HSA				0
1	942										
2	941				▼						
3	940						SB	1	10		
4	939						HSA				0
5	938						SB	2	7		
6	937	ORGANIC CLAY, black, wet	OL	Topsoil			HSA				0
7	936	SILTY CLAY, olive brown, wet, soft to very soft	CL	Fine Alluvium			SB	3	5	32	
8	935										
9	934						HSA				0
10	933						SB	4	4		
11	932						HSA				0
12	931	CLAYEY SILT, brown, saturated, very loose	ML		▽						
13	930						SB	5	3	26	
14	929	SAND WITH CLAY, a little Gravel, brown, saturated, loose to very loose	SP-SC	Glacial Till			HSA				0
15	928						SB	6	8		
16	927						HSA				0
17	926										
18	925										
19	924										0
20	923						SB	7	14		
21	922	End of Boring 21.0 ft.									

N-Value Plot



WATER LEVEL MEASUREMENTS							START: 5/29/2019	END: 5/29/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/29/2019	3:30 pm	21	19.5		12.0	930.87	3 1/4" HSA 0' - 21'	Notes:
5/29/2019	3:40 pm	30	21	8	2.0	940.87		

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

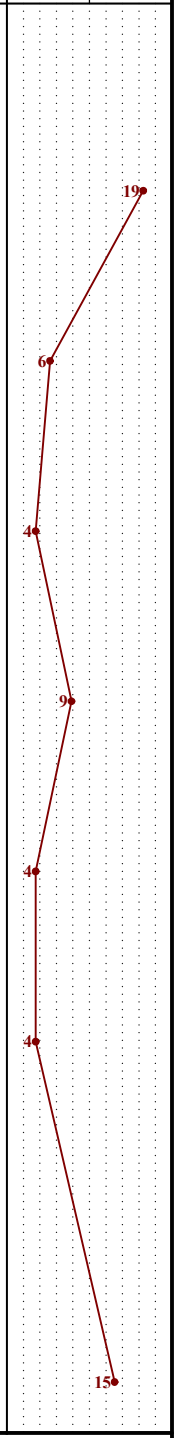
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 942.45 ft

BORING NUMBER B-15

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		FILL, Clayey Sand, slightly Organic, dark brown, moist	Fill	Fill		HSA				0
1	941									
2	940	FILL, Clayey Sand, pieces of Concrete, brown, moist	Fill			SB	1	19		
3	939									
4	938	ORGANIC CLAY, black, wet, soft 13% Organics	OL	Topsoil		HSA				0
5	937					SB	2	6		
6	936					HSA				0
7	935	SAND WITH CLAY, fine grained, brown to olive brown, saturated, very loose to loose	SP-SC	Glacial Till		SB	3	4		
8	934									
9	933					HSA				0
10	932					SB	4	9		
11	931					HSA				0
12	930	LEAN CLAY WITH SAND, brown, saturated, very soft	CL			SB	5	4		
13	929									
14	928					HSA				0
15	927					SB	6	4		
16	926									0
17	925					HSA				
18	924									
19	923	CLAYEY SAND, brown, wet, medium dense	SC							0
20	922					SB	7	15	8	
21	921									

End of Boring 21.0 ft.



WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD
5/29/2019	4:27 pm	21	19.5		9.0	933.45	3 1/4" HSA 0' - 21'
5/29/2019	4:38 pm	30	21	10	2.0	940.45	

START: 5/29/2019
END: 5/29/2019

Crew Chief: R. Kurth
Logged By: MWO

Notes:

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

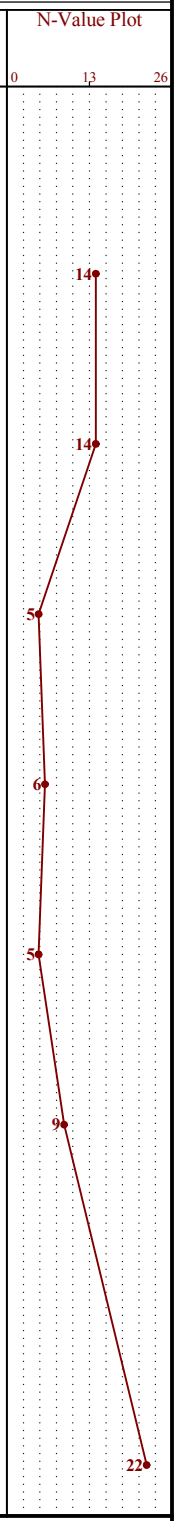
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.96 ft

BORING NUMBER B-16

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		FILL, Sand with Clay and Gravel, light brown, moist, a few Roots	Fill	Fill						
1	943					HSA				0
2	942	FILL, Clayey Sand, dark brown and browb, moist	Fill							
3	941					SB	1	14	9	
4	940					HSA				0
5	939					SB	2	14	10	
6	938	ORGANIC CLAY, black, wet	OL	Topsoil		HSA				0
7	937	SILTY CLAY, olive brown, wet, soft	CL	Fine Alluvium		SB	3	5	27	
8	936									
9	935					HSA				0
10	934					SB	4	6		
11	933					HSA				0
12	932	SAND WITH A LITTLE GRAVEL, fine to medium grained, dark brown, waterbearing, loose	SP	Coarse Alluvium						
13	931					SB	5	5		
14	930					HSA				0
15	929	SAND WITH GRAVEL, fine grained, brown, waterbearing, loose to medium dense	SP			SB	6	9		
16	928									0
17	927									
18	926					HSA				
19	925									0
20	924					SB	7	22		
21	923									

End of Boring 21.0 ft.



WATER LEVEL MEASUREMENTS							START: 5/29/2019	END: 5/29/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/29/2019	1:17 pm	21	19.5		12.0	931.96	3 1/4" HSA 0' - 21'	Notes:
5/29/2019	1:30 pm	30	21	10	10.0	933.96		

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

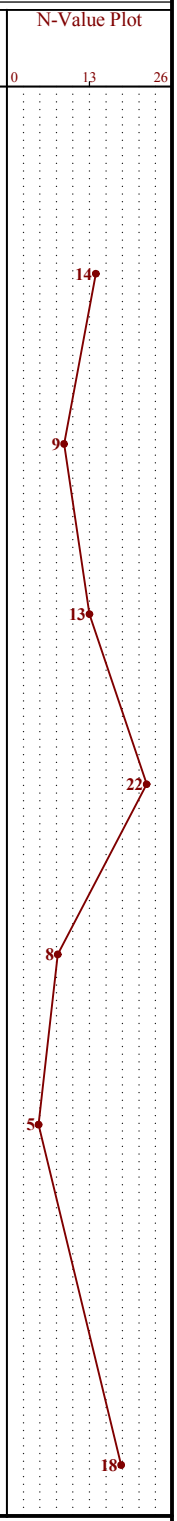
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 942.93 ft

BORING NUMBER B-17

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		FILL, Clayey Sand with Gravel, brown and dark brown, wet	Fill	Fill			HSA				0
1	942										
2	941	ORGANIC CLAY, black, moist, firm	OL	Topsoil			SB	1	14		
3	940										
4	939						HSA				0
		SILTY CLAY, olive brown, wet, firm	CL	Fine Alluvium			SB	2	9	29	
5	938										
6	937						HSA				0
7	936	SAND WITH SILT AND GRAVEL, fine grained, brown, waterbearing, medium dense	SP-SM	Glacial Till	▽		SB	3	13		
8	935										
9	934						HSA				0
10	933						SB	4	22		
11	932						HSA				0
12	931	CLAYEY SAND, brown, wet, loose	SC				SB	5	8		
13	930										
14	929	SANDY LEAN CLAY, brown, saturated, soft	CL				HSA				0
15	928						SB	6	5	22	
16	927										0
17	926						HSA				
18	925										
19	924	SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense	SP								0
20	923						SB	7	18		
21	922										

End of Boring 21.0 ft.



WATER LEVEL MEASUREMENTS							START: 5/29/2019	END: 5/29/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/29/2019	10:51 am	21	19.5		7.0	935.93	3 1/4" HSA 0' - 21'	Notes:
5/29/2019	11:00 am	30	21	5	None			

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

LOG OF TEST BORING

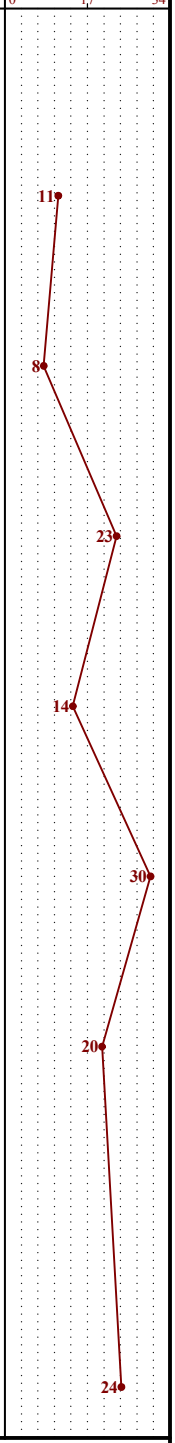
PROJECT NAME: Former Anchor Block
CLIENT/WSB #: 014065-000

PROJECT LOCATION: North St Paul, Minnesota
SURFACE ELEVATION: 943.03 ft

BORING NUMBER B-18

DEPTH (ft)	ELEV. (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	WL	Drilling Operation	SAMPLE TYPE	SAMPLE No.	N	MC %	PID (ppm)
		FILL, Sand with Clay and Gravel, brown, wet	Fill	Fill			HSA				0
1	942										
2	941	FILL, Clayey Sand, pieces of Brick, brown and dark brown and red, saturated	Fill				SB	1	11	14	
3	940										
4	939						HSA				0
5	938	CLAYEY SAND WITH GRAVEL, brown, satured, loose to dense	SC	Glacial Till			SB	2	8		
6	937						HSA				0
7	936										
8	935						SB	3	23		
9	934						HSA				0
10	933						SB	4	14		
11	932						HSA				0
12	931										
13	930	- cobbly					SB	5	30		
14	929						HSA				0
15	928						SB	6	20		
16	927										0
17	926						HSA				
18	925										
19	924										0
20	923						SB	7	24		
21	922	End of Boring 21.0 ft.									

N-Value Plot



WATER LEVEL MEASUREMENTS							START: 5/29/2019	END: 5/29/2019
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief: R. Kurth / Logged By: MWO
5/29/2019	12:02 pm	21	19.5		10.0	933.03	3 1/4" HSA 0' - 21'	Notes:
5/29/2019	12:12 pm	30	21	9	1.0	942.03		

N-VALUE + ENVIRONMENTAL - WSB.GDT - 6/19/19 10:58 - C:\USERS\TMEYERS\DESKTOP\014065-000 NORTH ST PAUL - FORMER ANCHOR BLOCK.GPJ

SYMBOLS AND TERMINOLOGY ON TEST BORING LOG

SYMBOLS

Drilling and Sampling

Symbol	Description
HSA	3 1/4" LD. Hollow Stem Auger
FA	Flight Auger
HA	Hand Auger
RC	Size A, B, or N rotary casing
CS	Continuous split barrel sampling
DM	Drilling Mud
JW	Jetting Water
SB	2" O.D. split barrel sampling
_L	2 1/2" or 3 1/2" OD split barrel liner sampler
_T	2" or 3" thin walled tube sample
W	Wash sample
B	Bag sample
P	Test Pit sample
_Q	BQ, NQ, or PQ wire line system
_X	AX, BX, or NX double tube barrel
N	Standard penetration test, blow per foot
CR	Core recovery, percent
WL	Water level
n/a	no measurement recorded

Laboratory Testing

Symbol	Description
MC	Moisture content, % (ASTM D2216)
DD	Dry Density, pcf
LL	Liquid Limit (ASTM D4318)
PL	Plastic Limit (ASTM D4318)
	- Inserts in last column
Qu	Unconfined compressive strength, psf (ASTM D2166)
Pq	Penetrometer Reading, tsf (ASTM D1558)
Ts	Torvane Reading, ts
G	Specific Gravity (ASTM D854)
SL	Shrinkage limits (ASTM D427)
OC	Organic Contenct (ASTM D2974)
SP	Swell Pressure, tsf (ASTM D4546)
PS	Percent swell under pressure (ASTM D4546)
FS	Free swell, % (ASTM D4546)
SS	Shrink swell, % (ASTM D4546)
pH	
SC	Sulfate content, parts/million or mg/l
CC	Chloride content, parts/million or mg/l
C	One dimensional consolidation (ASTM D2435)
Qc	Triaxial compression (ASTM D2850 and D4767)
DS	Direct Shear (ASTM D3080)
K	Coefficient of permeability, cm/sec (ASTM D2434)
P	Pinhole Test (ASTM D4647)
DH	Double hydrometer (ASTM D4221)
MA	Particle size analysis (ASTM D422)
R	Laboratory electreical resistivity, ohm-cm (ASTM G57)
VS	Field vane shear (ASTM D2573)
RQD	Rock quality designation, percent
IR	Infiltration Test (ASTM D3385)

TERMINOLOGY

Particle Sizes

Type	Size Range
Boulders	> 12"
Cobbles	3" - 12"
Coarse gravel	3/4" - 3"
Fine gravel	#4 sieve - 3/4"
Coarse sand	#4 sieve - #10 sieve
Medium sand	#10 sieve - #40 sieve
Fine sand	#40 sieve - #200 sieve
Silt	100% passing #200 sieve, and > 0.002mm
Clay	100% passing #200 sieve, and < 0.002mm

Soil Layering and Moisture

Term	Visual Observation
Lenses	Small pockets of different soils
Lamination	< 1/4" thick stratum
Layer	1/4" - 12" thick stratum
Stratified	Altering lenses of varying materials or colors
Varved	Altering laminations of clay, silt, fine sand, or colors
Dry	Powdery, no noticeable water
Moist	Damp, below saturation
Wet	MC above plastic limit
Waterbearing	Pervious soil below water table
Saturated	Cohesive soil with MC above liquit limit

Gravel Content

Coarse-Grained Soils		Fine-Grained Soils	
% Gravel	Description	% Gravel	Description
2 - 15	A little gravel	2 -5	Trace of gravel
16 - 30	With gravel	5 -15	a little gravel
31 - 49	Gravelly	16 - 30	with gravel
		31 - 49	Gravelly

Standard Pentration Resistance (N-value)

Cohesionless Soils		Cohesive Soils	
N-Value	Relative Density	N-Value	Consistency
0 - 4	Very loose	0 - 4	Very soft
5 - 10	Loose	5 - 8	Soft
11 - 30	Medium dense	9 - 15	Firm
31 - 50	Dense	16 - 30	Hard
>50	Very dense	>30	Very hard

NOTICE TO REPORT USERS BORING LOG INFORMATION

Subsurface Profiles

The subsurface stratification lines on the graphic representation of the test borings show an approximate boundary between soil types or rock. The transition between materials is approximate and is usually far more gradual than shown. Estimating excavation depths, soil volumes, and other computations relying on the subsurface strata may not be possible to any degree of accuracy.

Water Level

WSB & Associates, Inc. took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of this report. The groundwater level may fluctuate due to seasonal variations caused by precipitation, snowmelt, rainfalls, construction or remediation activities, and/or other factors not evident at the time of measurement.

The actual determination of the subsurface water level is an interpretive process. Subsurface water level may not be accurately depicted by the levels indicated on the boring logs. Normally, a subsurface exploration obtains general information regarding subsurface features for design purposes. An accurate determination of subsurface water levels is not possible with a typical scope of work. The use of the subsurface water level information provided for estimating purposes or other site review can present a moderate to high risk of error.

The following information is obtained in the field and noted under "Water Level Measurements" at the bottom of the log.

Sample Depth:	The lowest depth of soil sampling at the time a water level measurement is taken.
Casing Depth:	The depth to the bottom of the casing or hollow stem auger at the time of water level measurement.
Cave-in Depth:	The depth at which a measuring tape stops in the bore hole.
Water Level:	The point in the bore hole at which free-standing water is encountered by a measure device from the surface.

Obstruction Depths

Obstructions and/or obstruction depths may be noted on the boring logs. Obstruction indicates the sampling equipment encountered resistance to penetration. It must be realized that continuation of drilling, the use of other drilling equipment or further exploration may provide information other than that depicted on the logs. The correlation of obstruction depths on the log with construction features such as rock excavation, foundation depths, or buried debris cannot normally be determined with any degree of accuracy. For example, penetration of weathered rock by soil sampling equipment may not correlate with removal by certain types of construction equipment. Using this information for estimating purposes often results in a high degree of misinterpretation.

Accurately identifying the obstruction or estimating depths where hard rock is present over the site requires a scope of service beyond the normal geotechnical exploration program. The risk of using the information noted on the boring logs for estimating purposes must be understood.

wsb

UNIFIED SOIL CLASSIFICATION SYSTEM

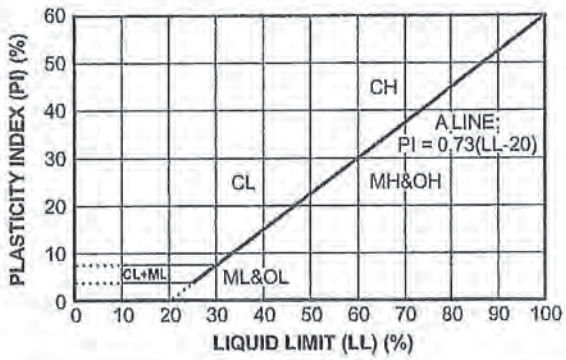
UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART