AGENDA
Planning Commission Meeting
In Person Meeting with Public Electronic Access
July 20, 2021 | 6:30 p.m.
City Hall Council Chambers

- ***Attend the meeting in Person:*** *Members of the public may attend the meeting in person. Attendees who are not vaccinated are encouraged to wear masks and comply with social distancing parameters.*
- ***Watch the meeting electronically:*** *To observe the meeting electronically, visit www.newbrightonmn.gov or tune into CTV Channel 8023 (CenturyLink) or Channel 16 (Comcast).*
- ***Join the meeting electronically:*** *If you need to interact with our elected officials or staff but are not comfortable attending the meeting in person, you may join the meeting electronically. Visit:* https://us02web.zoom.us/j/81603862779?pwd=K1FUSlNzQ0FNM2M5WktFU1hZbDFEZz09 (*no app needed) or use your Zoom app to join by entering: Meeting ID: 816 0386 2779 and Passcode: 985059.*

I. Call to Order

II. Roll Call*

- *Chair Erin Nichols-Matkaiti*
- *Commissioner Liza Allen*
- *Commissioner Todd Biedenfeld*
- *Commissioner Youssef Enanaa*
- *Commissioner Jeanne Frischman*
- *Commissioner Tim McQuillan*
- *Commissioner Eric Nelsen*

III. Approval of Agenda

IV. Approval of Minutes

1. June 15th, 2020

V. Report from City Council Liaison

VI. Public Hearings

1. **Special Use Permit:** Request from Daniel Marquardt and Susan Schwichtenberg at 2554 Eastman Drive to build a new garage exceeding 624 square feet in size – PID 18-30-23-12-0028.

**** A quorum of the City Council may be present.***

2. **Special Use Permit:** Request from Fed Ex at 50 14th St NW to construct a special purposed fence to provide light and sound protection for nearby residential properties – PID 20-30-23-14-0011.
3. **Comprehensive Plan Amendment:** Request from US Bank National Association and North Shore Development Partners to provide an avenue for the maximum residential density in the Mixed Use Regional land use designation to reach 60 units per acre.

VII. Business Items

1. None

VIII. Adjournment

MINUTES
PLANNING COMMISSION
June 15, 2021 City Hall
Council Chambers 6:30 p.m.

I. Call to Order

The meeting was called to order at 6:30 p.m. by Vice Chairperson Jeanne Frischman. Due to the COVID-19 pandemic this meeting was held virtually.

II. Roll Call

Members Present.....Vice Chairperson Jeanne Frischman, (lost internet connection at 6:58) and Commissioners Liza Allen (joined the meeting at 6:48), Todd Biedenfeld, Youssef Enanaa, Tim McQuillan, and Eric Nelsen

Members Absent.....Chairperson Erin Nichols-Matkaiti

Also Present .....Ben Gozola (Assistant Director of Community Assets and Development)

III. Approval of Agenda

Motion by Commissioner Biedenfeld, seconded by Commissioner McQuillan, to approve the June 15, 2021 agenda as presented.

A roll call vote was taken. Approved 5-0.

IV. Approval of Minutes

Minutes from May 18, 2021

Motion by Commissioner McQuillan, seconded by Commissioner Biedenfeld, to approve the May 18, 2021 meeting minutes as presented.

A roll call vote was taken. Approved 5-0.

V. Report from City Council Liaison

There was no update from the City Council.

VI. Public Hearing

(A) Special Use Permit Amendment: Request from NBMN TT, LLC to add an allowance for operating a "trucking terminal" on the property at 201 5th Avenue SW – PID 32-30-23-14-0014.

Assistant Director of Community Assets and Development Gozola reported NBMN TT, LLC has purchased the property at 201 5th Avenue SW, and is looking to amend the existing Special Use Permit on the property to add "trucking terminal" as a permitted use. Previous special use permit approvals for this site have already authorized truck and trailer sales, truck and trailer repair, and outdoor storage; all of which would continue under this new ownership following the proposed SUP amendment. Staff provided further comment on the request and recommended approval of the SUP Amendment, based on the findings of fact and subject to the following conditions:

1. Adherence to all engineering requirements outlined in the Engineering memo dated 6/7/21.

2. To ensure the parking plan is followed, the applicants shall have the parking lot restriped per City specs in the proposed configuration. Restriping shall be completed prior to launching the new trucking terminal use.

3. Lighting on the site and buildings shall be directed downward and installed so as to prevent direct light from being detectable from surrounding properties. Lighting is also not to shine directly into the public right-of-way. Any problems with existing lighting that is later identified shall be brought into compliance with code requirements.

4. The manhole located within the parking lot shall be cleaned and properly maintained throughout the life of the SUP.

5. The applicant shall address storm water concerns if unforeseen issues arise (or become foreseeable) as a result of the revised on-site parking and storage plan.

6. The landowners shall show all previously required improvements from past SUPs for fire safety have been implemented. Alternatively, the applicants may schedule an in-person inspection of the property with the fire chief, and implement all fire safety improvements identified at that meeting.

7. All activities related to this business shall remain on-site in accordance with the approved parking and site plan, and no activities shall block vehicle access to 299 5th Avenue NW.

8. A sign permit shall be obtained for any future signage changes requested on the property.

9. Reconfiguration of the approved parking and storage layout, which does not substantially change or increase overall storage or parking on the property, may be administratively approved by City staff provided the amended storage pattern is approved by public safety, will always allow for emergency access to all areas of the site, and is restriped in accordance with City specifications

Mike Singhem, attorney for NBMN TT, LLC, introduced himself to the Commission and noted he was available for comments or questions. He thanked staff for providing the Commission with a thorough report. He explained his client was in the process of purchasing this property and would like to operate a trucking terminal on this property.

Todd Johnson, Bay and Bay representative, explained refrigerated trucking would be the main use on this property along with any technical work that may be needed on the trucks.

Mr. Singhem reported loading and unloading would not occur on this site.

Commissioner Allen joined the meeting at 6:48 p.m.

Commissioner Biedenfeld questioned how many employees would be located at this site. Mr. Singhem indicated there would be 12 to 16 full time employees.

Commissioner Enanaa asked if the applicant spoke with the neighboring company regarding the fence. Mr. Singhem indicated he was in the process of purchasing the property and he has been in talks with the seller's attorney to learn more about the history of the fence. He commented the location of the fire hydrant may be why the fence was jutting out.

Commissioner McQuillan indicated he was comfortable with the proposed use.

Commissioner Nelson requested further information regarding the screening that would be placed on the property. Assistant Director of Community Assets and Development Gozola reported the proposed use was authorized and therefore additional screening was not required.

Vice Chair Frischman opened the Public Hearing at 6:53 p.m.

Motion by Commissioner McQuillan, seconded by Commissioner Allen to close the Public Hearing.

A roll call vote was taken. Approved 6-0.

Commissioner Biedenfeld stated he supported the request moving forward.

Commissioner McQuillan reported there would be a lot of truck traffic moving through this area of the City.

Acting Chair Frischman left the meeting due to technical difficulties at 6:58 p.m.

Motion by Commissioner Biedenfeld, seconded by Commissioner Nelson, to recommend the City Council approve staff recommendation.

A roll call vote was taken. Approved 5-0.

VII. Business Items

(A) Preliminary Plat: Request from Ibiza LLC to subdivide the existing parcel at 2221 7th Street NW into four lots meeting R-1 zoning standards – PID 30-30-23-13-0001.

Assistant Director of Community Assets and Development Gozola reported Ibiza LLC proposes to subdivide the existing property at 2221 7th St NW into four lots. The existing home would be retained on one of the proposed lots. Each of the proposed lots is conforming to minimum code standards for R-1 zoned lots. Provided suggested conditions of approval are agreed to, staff finds the preliminary plat should be approved. Staff reviewed three emails he received from the public regarding the proposed plat. Staff provided further comment on the request and recommended approval of the Preliminary Plat, based on the findings of fact and subject to the following conditions:

1. Engineering comments in the 6/7/21 Engineering Memo shall be addressed.

2. Future access to Lots 2, 3, and 4 shall come off of Inca Lane and not off 7th St NW.

3. Curb cut permits shall be obtained for each building site if a dropdown curb is required.

4. All drainage and utility easements (or others), as required by the City Engineer, shall be provided on the future final plat application.

5. Existing water services that are shown for re-use (Lots 1 and 4) must be determined to be operable before they can be used. One or both shall be replaced at the developer's expense if deemed necessary by DCAD.

6. An existing senior deferred assessment for a previously installed water stub ($993.90) shall be paid prior to acceptance of a final plat application.

7. A NPDES permit and project SWPPP will be required.

8. Tracking of dirt into the street shall be monitored and addressed in a timely manner, or the developer must agree to paying for street sweeping services when directed to do so by the City.

9. All new utilities (i.e. telephone, electric, gas service lines, etc) shall be placed underground in accordance with the provisions of all applicable City ordinances.

10. Lighting on any of the proposed lots shall be directed downward, and installed so as to prevent direct light from being detectable at the lot line of the site on which the source is located.

11. Lighting shall not shine directly into the public right-of-way or onto any adjacent residential lot.

12. Details on street lighting, if determined to be needed at this intersection, shall be worked out with the City Engineer prior to final plan approval.

13. Reference monuments shall be placed in the subdivision as required by state law.

14. As part of the Final Plat Approval, a Development Agreement shall be negotiated which mandates that building proposals on Lots 2, 3, and 4 shall demonstrate sensitivity to preserving existing tree cover in as much as possible. Building permits for all lots shall be subject to required updates including but not limited to grading plan adjustments to preserve trees, required tree protection fencing, agreements to replace threatened trees, etc.

15. Any trees removed should be done at the appropriate time of year to avoid the potential spread of disease for the species in question.

16. All construction times and activities shall comply with New Brighton City Code especially relating to parking and hours of work.

17. All necessary permits must be provided to the City. (RCWD, NPDES, MDH, etc. as may be applicable).

18. Park dedication in the amount of $5,475 in lieu of a land dedication shall be paid in full prior to the final plat being signed by the City.

19. Additional soil tests, if deemed necessary by DCAD, shall be submitted to the City prior to a future final plat approval.

Commissioner Allen commented she understood more housing would be great, but she also understood there would be a large number of trees lost along with the habitat for wildlife.

Commissioner Biedenfeld questioned what the average lot size was for the neighboring lots. Assistant Director of Community Assets and Development Gozola reported the lots across the street were slightly bigger, but noted the criteria these lots were being measured against was the R-1 zoning standards. He noted each of the proposed lots met the R-1 standards.

Commissioner Biedenfeld stated he believed three lots felt better than four lots and commented this would also protect more trees.

Commissioner Enanaa stated the lot owner was not responsible for preserving the natural habitat and should be allowed to develop his property. However, he also understood the need to create a balance and preserve more of the trees.

Commissioner Nelson indicated he too was conflicted on this application. He understood the request was straight forward, but encouraged the City Council to consider the density further along with the importance of preserving trees and greenspace. Assistant Director of Community Assets and Development Gozola expected the Council would discuss how the City Code interplays with this lot, given the fact this was a unique lot. He stated staff would work with the builder to protect trees. However, he noted the City had to enforce the rules that were on the books at this time.

Commissioner Biedenfeld agreed this was a tough call given the number of trees on this lot. He understood the applicant had the right to develop this property and was meeting all of the City's requirements. He asked if the applicant had anything to offer at this point.

Aleksey Derevyanko, owner of the lot, thanked the Commission for their consideration. He stated based on the feedback received from the Commission and the neighbors, he clarified that not every tree would be removed from the property. He understood the value of the trees on the lot. He discussed the location of the potential house pads and noted the majority of the trees would not be touched. He commented all of the trees on Lot 1 would remain and noted Lot 4 was oversized, which meant a lot of the trees could be saved. He reported this was not a forested area or a park and he was uncertain what type of wildlife was on the property. He was of the opinion the proposed plat would nicely compliment the neighborhood.

Motion by Commissioner Nelson, seconded by Commissioner Enanaa, to recommend the City Council approve staff recommendation.

A roll call vote was taken. Approved 5-0.

VIII. Adjournment

Motion by Commissioner Allen, seconded by Commissioner Biedenfeld, to adjourn the meeting.

A roll call vote was taken. Approved 5-0.

Meeting adjourned at 7:28 PM

Respectfully submitted,

Ben Gozola
Assistant Director of Community Assets and Development

Agenda Section:	**VI**
Item:	**1**
Report Date:	**7/15/21**
Commission Meeting Date:	**7/20/21**

REQUEST FOR COMMISISON CONSIDERATION

ITEM DESCRIPTION:	**Special Use Permit:** Request from Daniel Marquardt and Susan Schwichtenberg at 2554 Eastman Drive to build a new garage exceeding 624 square feet in size – PID 18-30-23-12-0028.
DEPARTMENT HEAD'S APPROVAL:	
CITY MANAGER'S APPROVAL:	
No comments to supplement this report ___	**Comments attached ___**

15.99 Deadline: 8/10/21

Recommendations:
- **Staff believes the SUP can be approved with conditions.**
- **Template motions, recommended findings, and suggested conditions can be found on page 7.**

Legislative History:
- Application received on 6/11/21
- Planning Commission review scheduled for 7/20/21

Financial Impact: None

Summary: Dan Marquardt and Sue Schwichtenberg are seeking approval to relocate their existing single car garage to the NE corner of their lot (to become a storage shed), and to build a new 24' x 32' two-car garage in its place. The new two-car garage will be 768 square feet in size and will include a parking space for their car and a personal woodworking work shop. This new garage will have a complimentary style and color to their home, and both accessory structures will be well within setbacks.

Attachments:
1) *Staff Report by Jillian Cady*
2) *Engineering Memo*
3) *Draft Resolution*
4) *City Maps*
5) *Applicant's supporting documentation*

Ben Gozola, AICP
Assistant Director of Community Assets and Development

Planning Report

Special Use Permit Review

To: **Planning Commission**

From: Jillian Cady, DCAD Technician

Meeting Date: **7-20-21**

Applicants: **Daniel Marquardt & Susan Schwichtenberg**

Main Contacts: Susan Schwichtenberg

Location: 2554 Eastman Dr

Zoning: **R-1**

Introductory Information

Project: Dan Marquardt and Sue Schwichtenberg are seeking the City's approval to relocate their existing single car garage to the NE corner of their lot (to become a storage shed), and to build a new 24' x 32' two-car garage in its place. The new two-car garage will be 768 square feet in size and will include a parking space for their car and a personal woodworking work shop for Dan who is a carpenter. This new garage will have a complimentary style and color to their home, and both accessory structures will be well within setbacks.

History:

- None

Request(s):

- **The applicant is requesting a special use permit to authorize an accessory structure (detached garage) in excess of 624 square feet.**

General Findings

Site Data:

- Existing Lot Size ≈ 0.39 acres (17,244 sq ft)
- Existing Use – Single car garage
- Existing Zoning – R-1
- Property Identification Number (PID): 18-30-23-12-00282

Comp Plan Guidance:

- The comprehensive plan guides this property for Single Family Residential use. The proposed garage addition is an appropriate use under this zoning classification.


COUNTY ROAD H
EASTMAN DRIVE
SILVER LAKE ROAD
2605
2577
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2378
2552
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2654
2630
2578
2539
2527
2515
2503
2579
2468
2021 Aerial Photo
Site Location
Location within the City of New Brighton
SITE IDENTIFICATION MAP
2554 Eastman Dr.
NEW BRIGHTON
building tomorrow today

Notable Code Definitions:

- ***Garage, Private.*** *A building used primarily for the storage or care of large motor vehicles including but not limited to automobiles, pickup trucks, and campers*

Applicable Codes:

- **Chapter 5, Article 7, Section 4-530 Accesory Buildings in Residential Districts.**
  - Sub (1)(B): Requires accessory buildings to complement the existing primary structure in height and materials, and conform to all setback requirements.
  - Sub (1)(D): Limits detached garages to 1,064 square feet, and requires an SUP for garages larger than 624 sq ft.
  - Sub (1)(E): Establishes special SUP criteria for garages in excess of 624 sq ft.
- **Chapter 8, Article 2, Special Use Permit and Variance.**
  - Identifies the process by which a special use request is to be reviewed and decided.

Existing & Proposed Setbacks:

R-1	*Required*	*New Garage*	*Relocated Single Garage*
Front (Eastman Dr)	*30*	*72'*	*139'*
Side (east)	*5*	*6'*	*6'*
Side (west)	*5*	*78'*	*80'*
Rear	*5*	*55'*	*6'*

- The proposed accessory buildings will both meet setbacks.

Coverage / Hardcover Analysis:

- Building coverage is not an issue (13.3% out of a maximum of 30%)
- Impervious surface coverage is also not an issue (19.04% out of a maximum 50%).

FAR Analysis:

- There is no FAR requirement in the R-1 zoning district.

Flood Plain Analysis:

- No floodplain concerns at this address

Shoreland Issues:

- No shoreland regulations apply at this address.

Building Height:

- The maximum height of structures in the R-1district is 2.5 stories or 30 feet, whichever is less.
- The proposed garage addition will be conforming to the height maximum.

Special Use Permit Review:

In General:

- The need for a Special Use Permit is triggered by the size of the garage. All accessory structures in a residential zone in excess of 624 square feet require approval of a special use permit.

Criteria Analysis:

Zoning Code Section 8-130 contains five standards the City must review prior to making a decision on any specially permitted use. The applicant and staff analysis of these standards is shown below:

1. **That the establishment, maintenance, or operations of the special use will not be detrimental to or endanger the public health, safety, morals, comfort or general welfare.**

   APPLICANT COMMENTS: Should not endanger anyone or anything. It's a 2-car detached garage.

   Staff Analysis: The location of the garage addition conforms to all code requirements, and will match the style of exsisting home. **Criteria met.**

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

   APPLICANT COMMENTS: Replacing the single car garage with a two-car garage should have a positive impact on the neighborhood properties.

   Staff Analysis: Detached garages are an expected accessory structure in residential districts, and investments in properties such as this tend to improve rather than detract from area property values. **Criteria met.**

(cont.)

3. That the establishment of the special use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.

APPLICANT COMMENTS: Should no have any effect on said properties.

Staff Analysis: The surrounding properties are fully developed. The proposed addition will have no impact on future development. **Criteria met.**

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

APPLICANT COMMENTS: The location of the new garage should not have any effect on utilities or drainage, we're not changing any grade.

Staff Analysis: Public Works/Engineering has reviewed the plans and offered no comments or concerns. **Criteria met.**

5. That the special use shall in all other respects conform to the applicable regulations of the district in which it is located.

APPLICANT COMMENTS: The new garage will be similar to the style and construction of the existing house; roof line,exterior finish, etc.

Staff Analysis: The proposed garage will not bring the property out of conformity in any way. **Criteria met.**

In addition to the standard SUP criteria, Section 4-530(1)(E) establishes the following three additional requirements for this type of request:

6. Roof and exterior color and material must be consistent and complimentary with the principal structure.

Staff Analysis: The applicants have already agreed (as part of the current building permit) to remodel the garage exterior to match the new home. **Criteria met.**

7. If deemed necessary by the City Council, landscape screening shall be provided to lessen visual impact from adjacent properties.

Staff Analysis: Staff sees no reason to recommend additional landscaping for this proposed garage addition. The Planning Commission or City Council can certainly recommend otherwise if deemed necessary.

(cont.)

8. No commercial or home occupation activity shall be conducted within the accessory building.

Staff Analysis: As a condition of approval, staff is recommending prohibiting commercial and home occupation activities from the oversized garage.

Additional Information:

- None.

Engineering Review:

- Engineering reviewed the proposed plans and provided the following comment which can be addressed via conditon:

  Drainage patterns and existing utilities need to be verified and shown on plans to demonstrate that no adverse impacts will occur.

Public Safety Review:

- No comments or concerns

Public Comment:

- No comments have been received either for or against this request.

Conclusion:

The application is requesting a Special Use Permit to authorize construction of a residential garage in excess of 624 square feet.

Staff Recommendation: Per the analysis outlined in the report, staff is recommending APPROVAL with conditions

Commission Options:

The Planning Commission has the following options:

A) RECOMMEND APPROVAL OF THE REQUEST based on the applicant's submittals and findings of fact.

B) RECOMMEND DENIAL OF THE REQUEST based on the applicant's submittals and findings of fact.

C) TABLE THE ITEM and request additional information.

Based on an application date of 6/11/21, the 60-day review period for this application expires on 8/10/21. This deadline can be extended an additional 60 days if more time is necessary.

Template Denial Motion:

(<u>not</u> recommended)

- "I move that we recommend the City Council deny the requested special use permit based on the following findings of fact:"
  - *(provide findings to support your conclusion)*

Template Approval Motion:

RECOMMENDED

- "I move we recommend the City Council approve the requested special use permit based on the findings of fact and recommended conditions listed on page 7 of the staff report as may have been amended here tonight."

Suggested Findings of Fact:

1. The subject property is guided for residential use by the comprehensive plan, and a detached garage in excess of 624 square feet can be permitted via a special use permit in the corresponding R-1 zoning district.
2. Construction of the proposed garage will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare.
3. The new conforming garage will not be detrimental to uses on the subject property or on surrounding lands.
4. Construction of the proposed garage addition will not have a detrimental impact on area property values.
5. The subject site is adequately served by public utilities, roads, and drainage facilities to accommodate the proposed addition.
6. The special use will be in conformance with all underlying zoning district requirements.

Recommended Conditions:

1. The Special Use Permit shall authorize the location and size of garage as shown on the Certificate of Survey for 2554 Eastman Dr dated June 11, 2021; any changes to the location or size of the garage addition shall require an amendment to this permit.
2. Roof and exterior color and material(s) must be consistent and complimentary with the principal structure.
3. No commercial or home occupation activity shall be conducted within the detached garage.
4. Final building plans must show the resulting drainage patterns around the structures will not adversely impact neighboring properties.
5. Failure to adhere to conditions of approval shall be grounds for revocation of the special use permit by the City Council.

interoffice
MEMORANDUM

to:	Ben Gozola, Assistant Director of Community Assets and Development/City Planner
from:	Dustin Lind, Engineering Supervisor
subject:	2554 Eastman Drive
date:	July 12, 2021

The Engineering Department has reviewed the site plan for the property at 2554 Eastman Drive and we offer the following comments:

1) Drainage patterns and existing utilities need to be verified and shown on plans to demonstrate that no adverse impacts will occur.

RESOLUTION NO. _____
STATE OF MINNESOTA
COUNTY OF RAMSEY
CITY OF NEW BRIGHTON

RESOLUTION MAKING FINDINGS OF FACT AND APPROVING A SPECIAL USE PERMIT FOR 2554 EASTMAN DRIVE TO AUTHORIZE CONSTRUCTION OF AN ACCESSORY BUILDING IN EXCESS OF 624 SQUARE FEET

WHEREAS, the City of New Brighton is a municipal corporation, organized and existing under the laws of the State of Minnesota; and,

WHEREAS, the City Council of the City of the New Brighton has adopted a comprehensive plan and corresponding zoning regulations to promote orderly development and utilization of land within the city; and,

WHEREAS, Daniel Marquardt and Susan Schwichtenberg (the "Applicants") made application to the City on 6/11/21 for a special use permit to authorize construction of an accessory structure (garage) in excess of 624 square feet for the property at 2554 Eastman Drive which is legally describe as:

From Certificate of Title No. 572589
(Torrens Property)
South 160 feet of Lot 3, Knollwood Park No. 2

and

WHEREAS, the garage addition will meet all required setbacks and will be conforming to codes in every way; and

WHEREAS, staff fully reviewed the request and prepared a report for consideration by the Planning Commission on July 20, 2021; and

WHEREAS, the Planning Commission held a public hearing on the request at the July 20th meeting and considered input from residents; and

WHEREAS, the Planning Commission recommended approval of the request based on the applicant's submittals and findings of fact; and

WHEREAS, the City Council considered on July 27th, 2021, the recommendations of the Planning Commission, staff, the Applicant's submissions, the contents of the staff report, and other evidence available to the Council.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of New Brighton hereby approves the requested special use permit based on the following findings of fact:

1. *The subject property is guided for residential use by the comprehensive plan, and a detached garage in excess of 624 square feet can be permitted via a special use permit in the corresponding R-1 zoning district.*
2. *Construction of the proposed garage will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare.*
3. *The new conforming garage will not be detrimental to uses on the subject property or on surrounding lands.*
4. *Construction of the proposed garage addition will not have a detrimental impact on area property values.*
5. *The subject site is adequately served by public utilities, roads, and drainage facilities to accommodate the proposed addition.*
6. *The special use will be in conformance with all underlying zoning district requirements..*

BE IT FURTHER RESOLVED, that approval of the special use permit shall be subject to the following conditions:

1. *The Special Use Permit shall authorize the location and size of garage as shown on the Certificate of Survey for 2554 Eastman Dr dated June 11, 2021; any changes to the location or size of the garage addition shall require an amendment to this permit.*
2. *Roof and exterior color and material(s) must be consistent and complimentary with the principal structure.*
3. *No commercial or home occupation activity shall be conducted within the detached garage.*
4. *Final building plans must show the resulting drainage patterns around the structures will not adversely impact neighboring properties.*
5. *Failure to adhere to conditions of approval shall be grounds for revocation of the special use permit by the City Council.*

ADOPTED this 27th day of July, 2021 by the New Brighton City Council with a vote of __ ayes and __ nays.

_____
Kari Niedfeldt-Thomas, Mayor

_____
Devin Massopust, City Manager

ATTEST:

_____
Terri Spangrud, City Clerk

The undersigned Applicants have read, understand and hereby agree to the terms of this resolution and on behalf of himself/herself, his/her heirs, successors and assigns, hereby agree to the conditions set forth above, and to the recording of this resolution and attachments in the chain of title of the property.

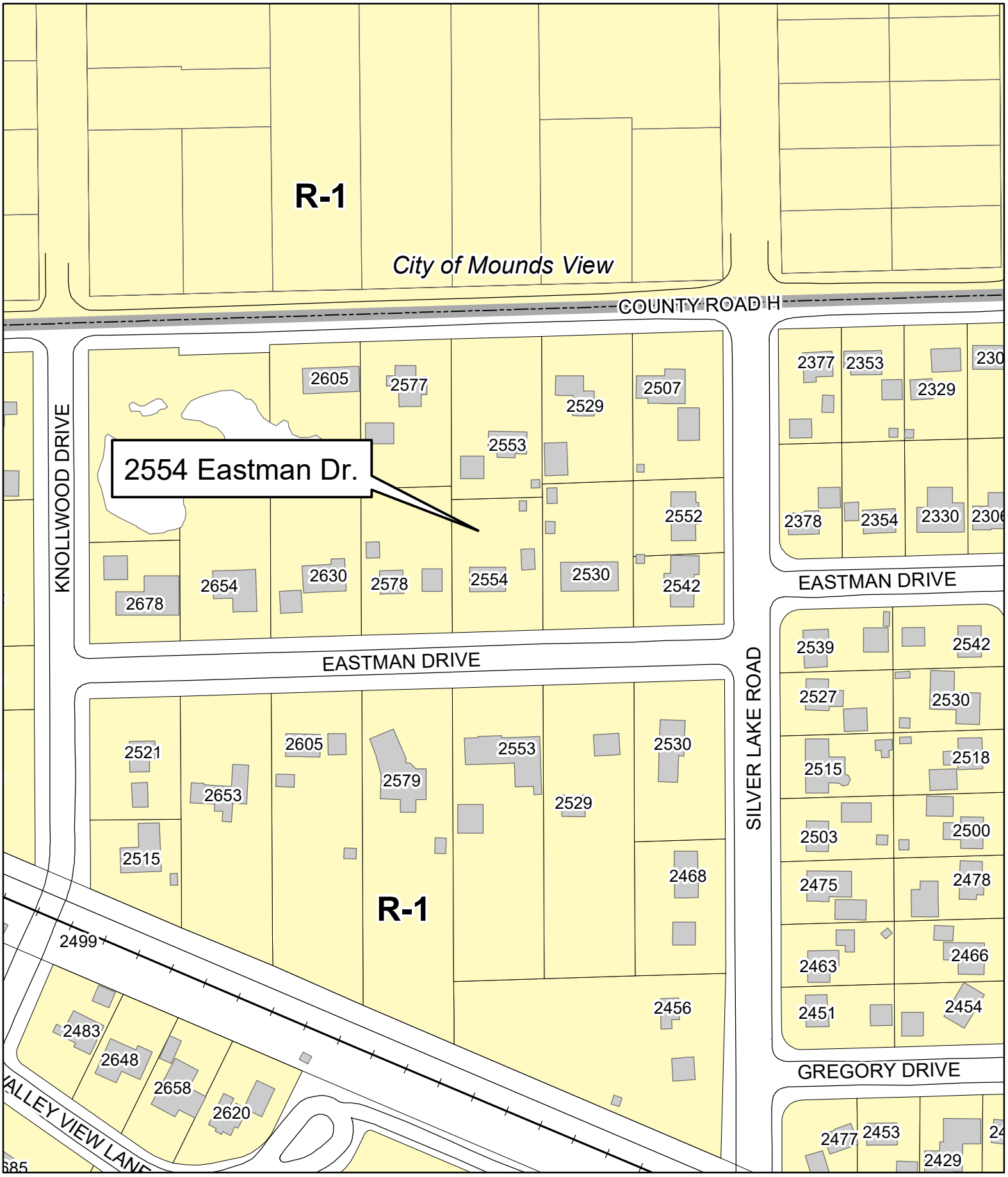
Dated _____ _____

Susan Schwichtenberg <*or authorized representative*>

Subscribed and sworn to before me this _____ day of _____, 2021.

_____

Notary Public


R-1
City of Mounds View
COUNTY ROAD H
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VALLEY VIEW LANE
685
R-1, Single Family Residential
N
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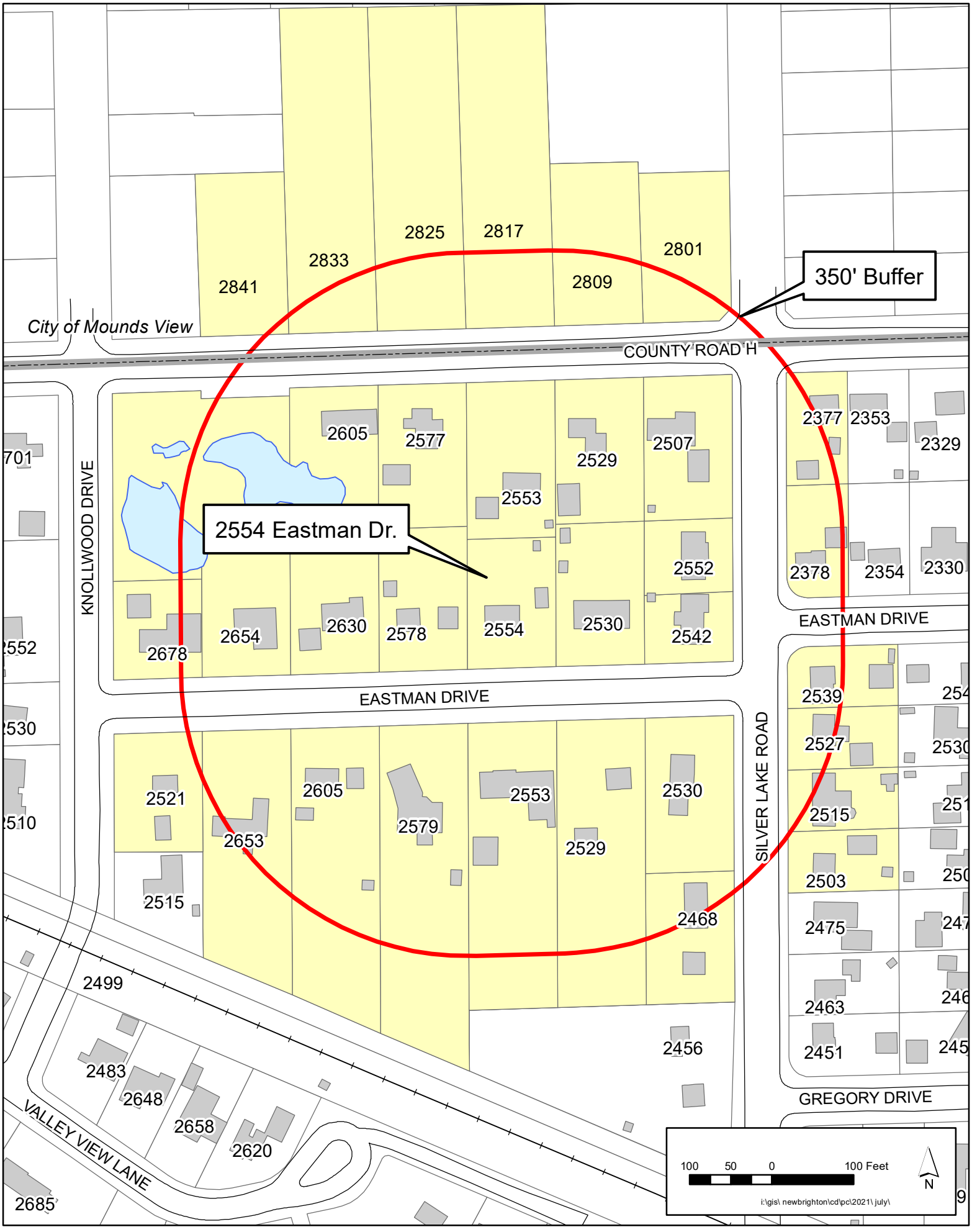
NEW BRIGHTON
Building tomorrow today
Current Zoning
2554 Eastman Dr.
R-1, Single Family Residential
i:\gis\ newbrighton data\comm dev\pc\2021\ july\

2554 Eastman Dr. - 350' Mailing Buffer



THE MARQUARDT RESIDENCE

2554 EASTMAN DRIVE NE

CITY OF NEW BRIGHTON, RAMSEY COUNTY, MINNESOTA

(PROPOSED GARAGE AND SHED CONFIGURATION – JUNE 2021)

REAR OF 2554 EASTMAN DRIVE NE,
CITY OF NEW BRIGHTON, RAMSEY COUNTY, MN

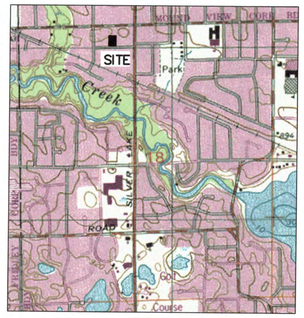
FRONT OF 2554 EASTMAN DRIVE NE,
CITY OF NEW BRIGHTON, RAMSEY COUNTY, MN

BASIS FOR BEARINGS:
RAMSEY COUNTY
COORDINATE SYSTEM
(NAD 83, 1996)

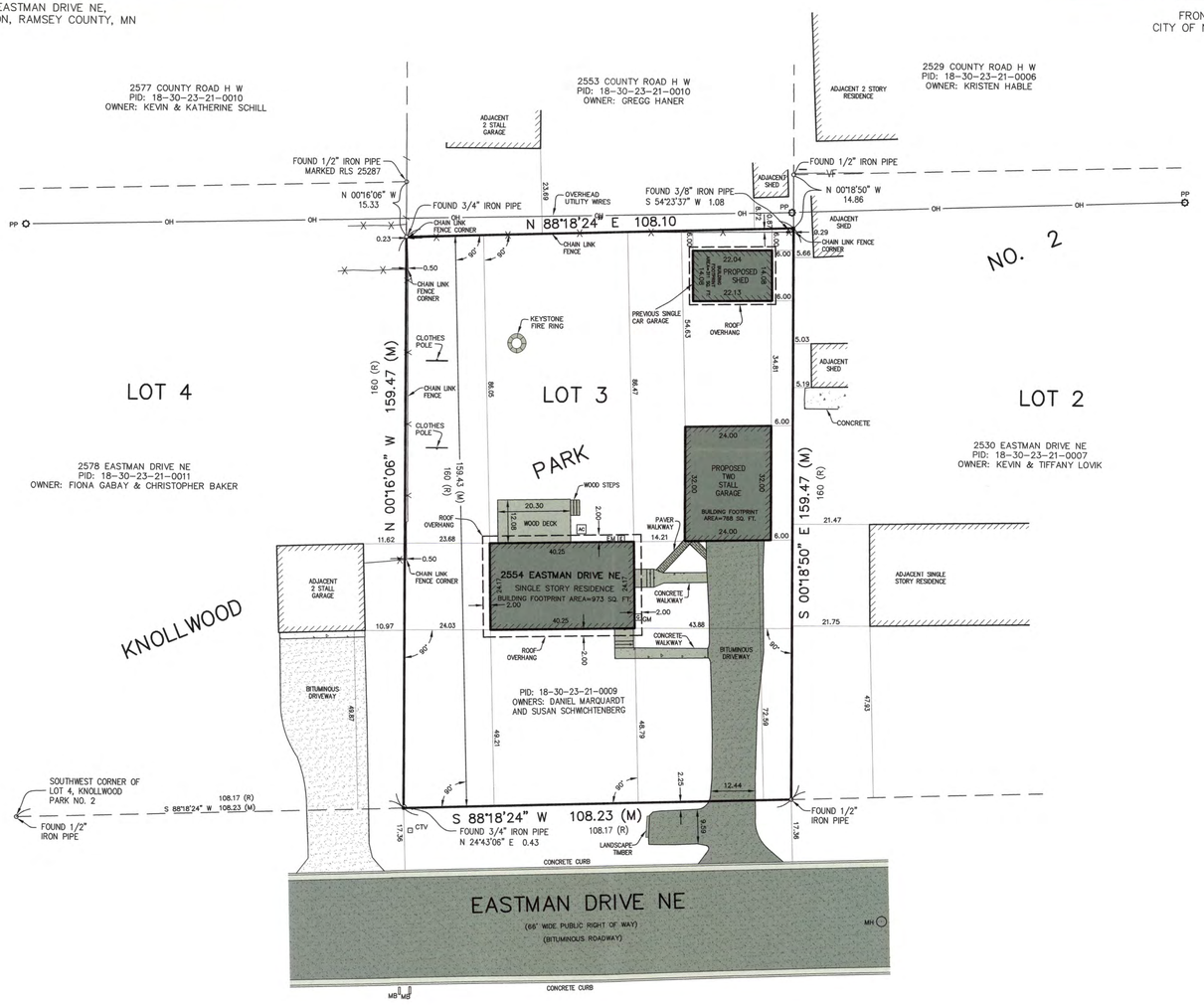
(VIA REAL TIME GPS
MEASUREMENTS UTILIZING
MINNESOTA DEPARTMENT
OF TRANSPORTATION
VRS NETWORK)

0 5 20
1 INCH EQUALS 20 FEET

SECTION 18, T30N, R23W



VICINITY MAP
(NO SCALE)



HARDCOVER SUMMARY (PROPOSED)

EXISTING HOUSE = 973 SQ. FT.
SHED = 311 SQ. FT.
PROPOSED GARAGE = 768 SQ. FT.
BITUMINOUS DRIVEWAY = 1,021 SQ. FT.
PAVER AND CONCRETE WALKWAYS = 211 SQ. FT.

TOTAL IMPERVIOUS SURFACE COVERAGE = 3,284 SQ. FT.
(19.04% OF TOTAL PROPERTY AREA)

LEGAL DESCRIPTION

FROM CERTIFICATE OF TITLE NO. 572589:
(TORRENS PROPERTY)

SOUTH 160 FEET OF LOT 3, KNOLLWOOD PARK NO. 2.

SUBJECT PROPERTY =
17,244 SQ. FT. OR
0.3959 ACRES

ZONING REQUIREMENTS

ZONED R1 – SINGLE FAMILY RESIDENTIAL

MINIMUM LOT AREA – 10,000 SQ. FT.

MINIMUM LOT WIDTH – 75 FEET AT BUILDING SETBACK MINIMUM LOT WIDTH – 45 FEET AT FRONT LOT LINE
LOT COVERAGE:

PRINCIPAL AND ACCESSORY BUILDINGS	MAX. 30%
IMPERVIOUS SURFACE	MAX. 50%
MAXIMUM HEIGHT:	2-1/2 STORIES OR 30 FEET

BUILDING SETBACKS:

FRONT YARD:	30 FEET
STREET SIDE	30 FEET
SIDE	5 FEET
REAR	5 FEET

NOTE:

OWNER, CONTRACTOR, ARCHITECT TO VERIFY ZONING AND SETBACKS PRIOR TO DESIGN AND CONSTRUCTION. ZONING SETBACKS SHOWN ARE THE BEST INFORMATION AVAILABLE TO THIS SURVEYOR AT THE TIME OF THIS SURVEY

LEGEND

MB	MAIL BOX
PP	POWER POLE
FH	FIRE HYDRANT
MH	MANHOLE
	SIGN
LP	LIGHT POLE
CTV	CABLE TV RISER
EM	ELECTRIC METER
GM	GAS METER
	AIR CONDITIONER
— OH —	OVERHEAD UTILITY LINES
	WIRE FENCE
	WOOD FENCE
	CHAIN LINK FENCE
	BITUMINOUS SURFACE
	CONCRETE SURFACE
•	DENOTES SET REBAR WITH CAP MARKED "KEMPER 18407"
○	DENOTES FOUND SURVEY MONUMENT MARKED AS NOTED
(M)	DENOTES DIMENSION MEASURED DURING THE COURSE OF THIS SURVEY
(R)	DENOTES RECORD DIMENSION AS PER PLAT OR LEGAL DESCRIPTION

KEMPER & ASSOCIATES INC.
PROFESSIONAL LAND SURVEYORS

721 OLD HIGHWAY 8 N.W.
NEW BRIGHTON, MINNESOTA 55112
651-631-0351
FAX 651-631-8805
email: kemper@pro-ns.net
www.kempersurveys.com

CERTIFICATE OF SURVEY

16100 (16100_R2.DWG) D.B. JEREMY BRUNELL R2 EDITS: ROTATED PROPOSED SHED, 6-12-2021.

PREPARED FOR:

DAN MARQUARDT
2554 EASTMAN DRIVE NE,
NEW BRIGHTON, MN 55112
PHONE: 651-766-9363

STATE OF MINNESOTA
PROFESSIONAL LAND SURVEYOR
18407
MARK D. KEMPER

CERTIFICATION

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

Mark D. Kemper

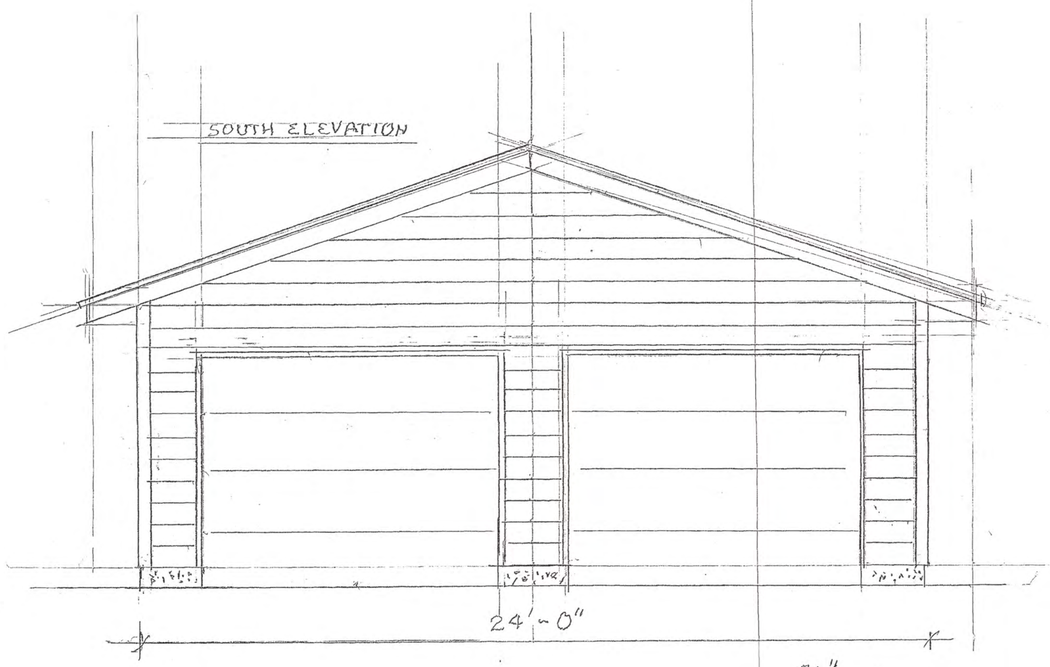
MARK D. KEMPER, PLS 18407

DATED THIS 12TH DAY OF JUNE, 2021.

KEMPER & ASSOCIATES, INC. ©

Schwichtenberg/Marquardt
2554 Eastman Dr
New Brighton, MN 55112
24' x 32' 2-car garage

SOUTH ELEVATION

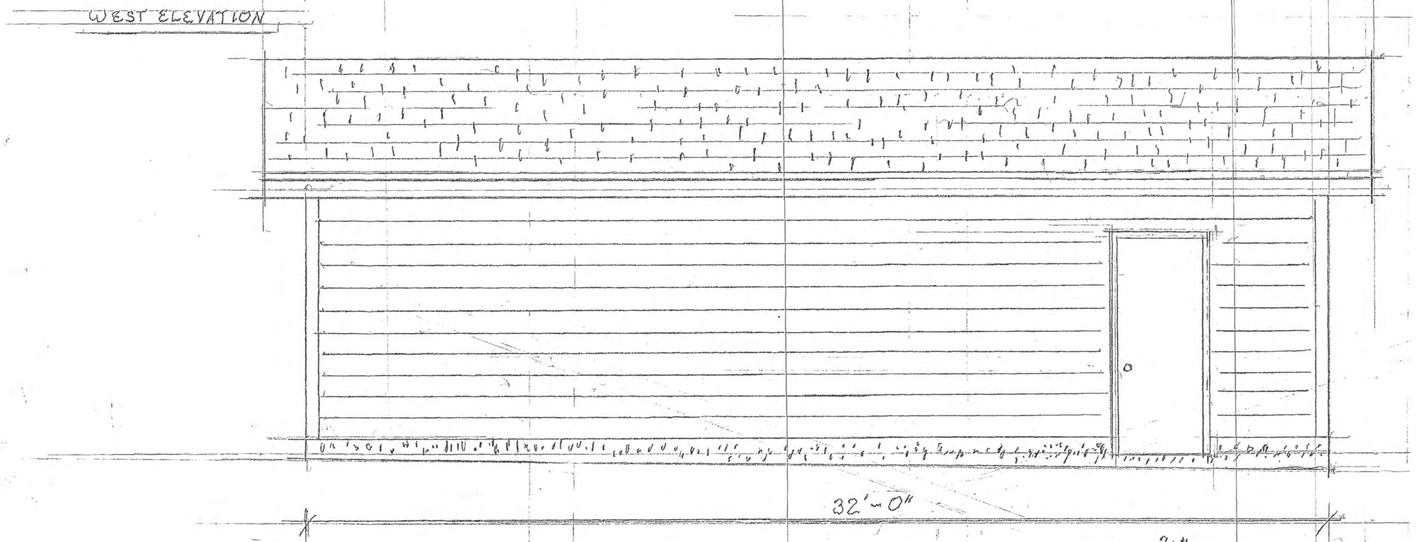


SCALE 3/8" = 1'-0"

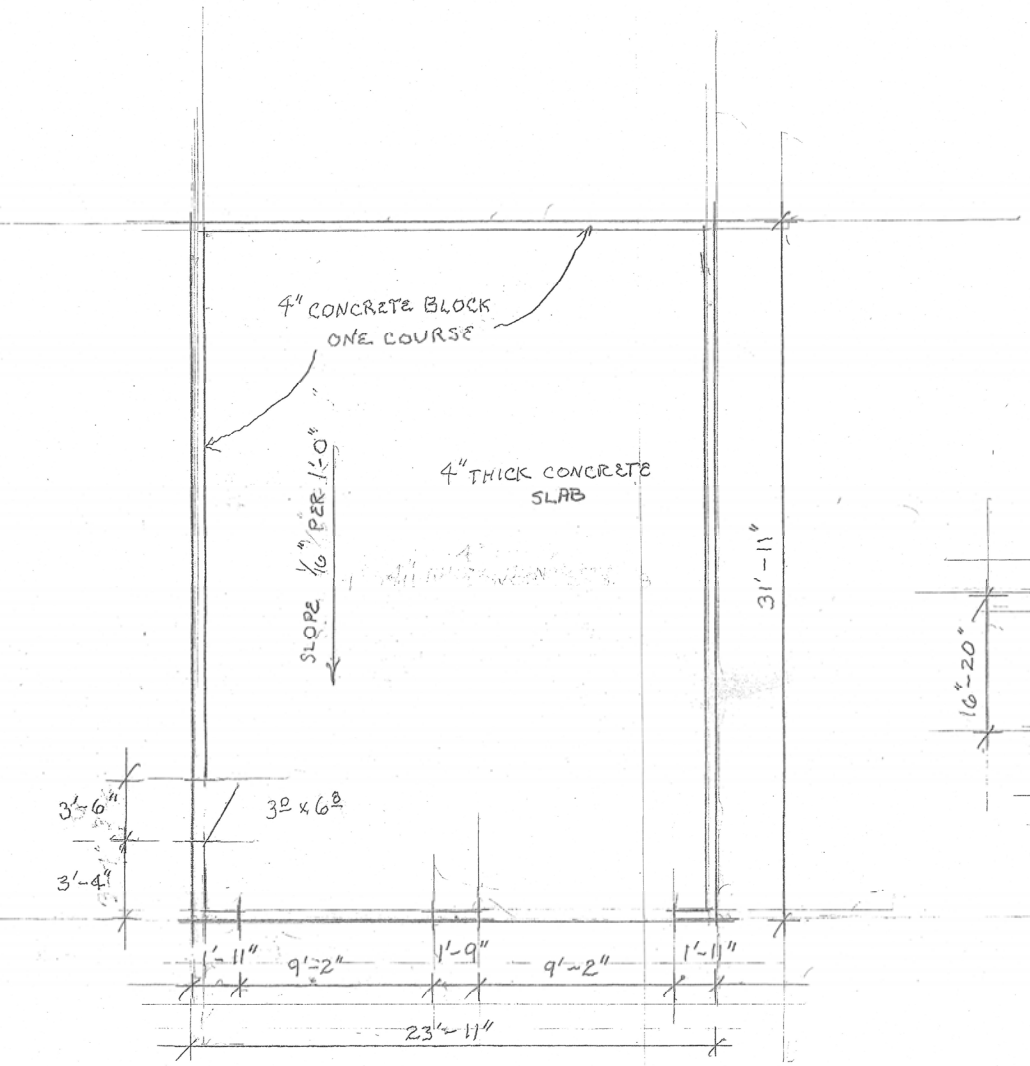
Wood frame construction
Walls
2x4 16 OC
Pressure treated sole plate
1/2" OSB sheathing
#15 Asphalt felt
8" vinyl lap siding

Roof
4/12 Energy heel roof trusses 24 OC
5/8" CDX roof decking
2 courses 12" water shield
#30 Asphalt felt
25 yr Architectural shingles

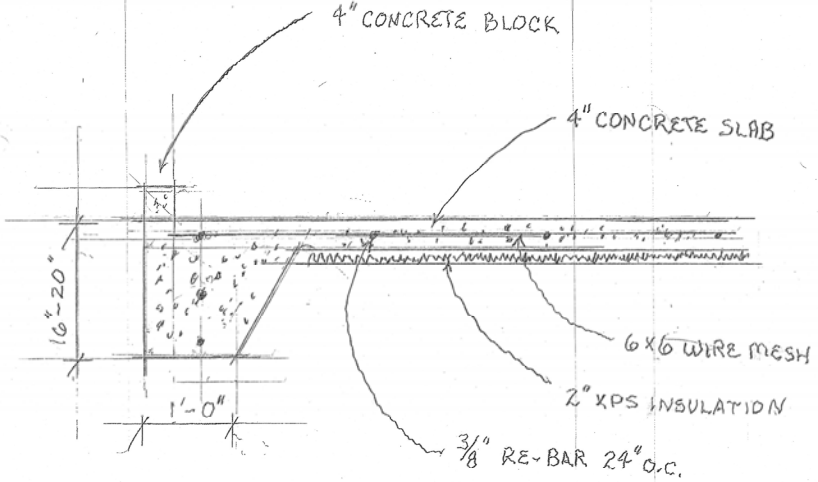
WEST ELEVATION



SCALE 3/8" = 1'-0"



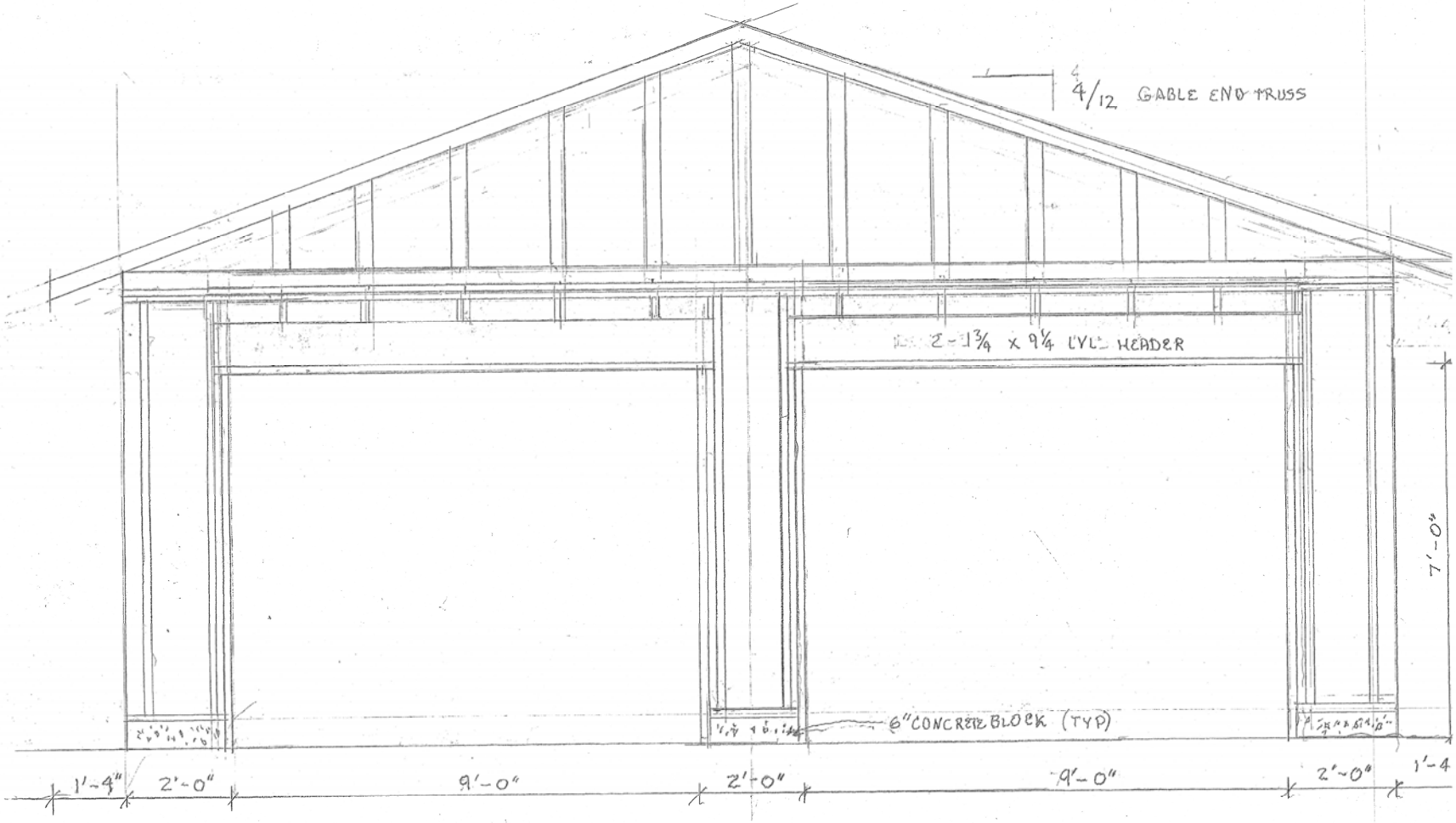
CONCRETE SLAB PLAN 1/4" = 1'-0"

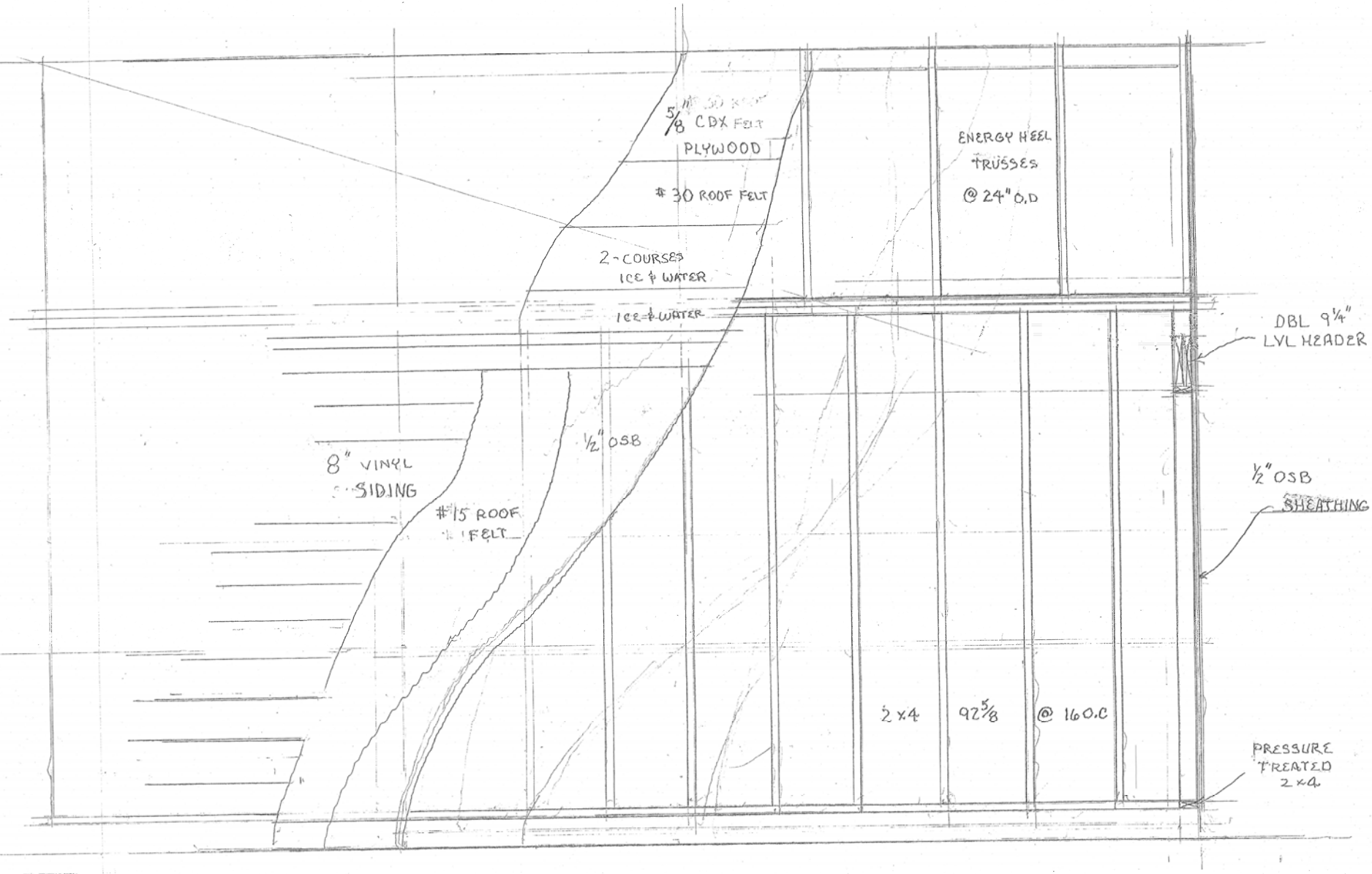


CONCRETE SLAB DETAIL 1" = 1'-0"

SCHWICHTENBERG/MARQUARDT
TWO-CAR GARAGE
2554 EASTMAN DRIVE
NEW BRIGHTON, MN 55112
14 JULY 2021

SCHWICHTENBERG/MARQUAR
24x32 2-CAR GARGE
SOUTH ELEVATION
FRAMING DETAIL
2554 EASTMAN DRIVE
NEW BRIGHTON, MN




5/8 CDX FELT
PLYWOOD
30 ROOF FELT
2 - COURSES
ICE & WATER
ICE & WATER
ENERGY HEEL
TRUSSES
@ 24" O.D
DBL 9 1/4"
LVL HEADER
1/2" OSB
8" VINYL
SIDING
#15 ROOF
FELT
1/2" OSB
SHEATHING
2 x 4
92 5/8
@ 16 O.C
PRESSURE
TREATED
2 x 4

SCALE 1" = 1'-0"

6/11/2021

Greetings,

When we purchased our home in 2008, our hope was to someday relocate the existing single car garage to the NE corner of our lot to use as storage for lawn mower, snow blower, camping gear, etc. Thus, making way for a new 2-car garage in the same location which will allow us to park both vehicles inside.

In 2020, we worked with Xcel Energy & Comcast to bury the overhead lines in preparation for the relocation and construction.

We are requesting the SUP to build a 24'x32' 2-car garage – wide enough to open the car doors without hitting the walls and deep enough to accommodate a workshop for woodworking and crafting. Dan's a self-employed carpenter and this will also give him much needed space to store his tools and equipment.

The new structure will be similar in design as our house – 8' walls, low pitched roof, wide lap siding, paint, trim & shingles to match existing.

We have ample room in the yard to accommodate the larger garage without encroaching the 5' setback.

Thank you for considering the SUP for our project. We look forward to your positive decision.

Dan Marquardt and Sue Schwichtenberg

2554 Eastman Drive

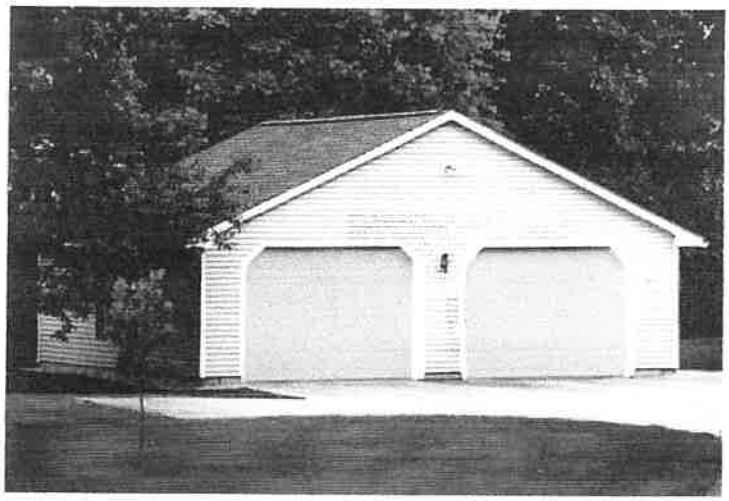
New Brighton, MN 55112

651-766-9363 612-770-2164

Dexter 2-Car Garage 24' x 32' x 8' Material List

Advanced House Plans Plan #30095

Model Number: 1954782 | Menards ® SKU: 1954782



Variation: Vinyl siding

* Mail-in Rebate is in the form of merchandise credit check, valid in-store only. Merchandise credit check is not valid towards purchases made on MENARDS.COM®.

Description & Documents

Dexter 2-Car Garage 24' x 32' x 8' Material List

Dimensions: 24' W x 32' L x 8' H
Shipping Weight: 1.0 lbs

Brand Name: **Menards**

Features

- Cutting and assembly required
- 1/2" OSB roof sheathing
- Vinyl soffit and fascia included
- Includes roof edge, nails and hardware
- Building plans included

Specifications

Product Type	Garage	Garage Type	2 Car	Foundation Type
Slab	Entry Style	Gable	Overall Width	24 foot
Overall Length	32 foot	Sidewall Height	8 foot	Square Footage
768 square foot	Exterior Wall Framing	2x4 Stud	Roof Framing Type	Truss
Rafter/Truss Spacing	2 foot	Roof Pitch	4/12	Roofing Type
Architectural Shingles	Siding Type	D4 Vinyl	Soffit Type	Vinyl
Overhead Door Quantity	2	Overhead Door Size	9 x 7	Service Door Quantity
1	Service Door Size	36 x 80	Window Quantity	1
Window Size	24 x 36	Includes	Materials Include Framing, 24" On Center Trusses, Roofing, Siding, Soffit, Fascia, Two 9x7 Overhead Doors, One Prehung Entry Door, Window, and Plans	Return Policy
Handling and Packaging (view Return Policy)				

Please Note: Prices, promotions, styles and availability may vary by store and online. Inventory is sold and received continuously throughout the day; therefore, the quantity shown may not be available when you get to the store. This inventory may include a store display unit. Online orders and products purchased in-store qualify for rebate redemption. Mail-in Rebate is in the form of merchandise credit check, valid in-store only. Merchandise credit check is not valid towards purchases made on MENARDS.COM®. By submitting this rebate form, you agree to resolve any disputes related to rebate redemption by binding arbitration and you waive any right to file or participate in a class action. Terms and conditions available at www.rebateinternational.com®

Design Name: 1954782
Design ID: 318858760408
Estimate ID: 74586

MENARDS
Design&Buy GARAGE

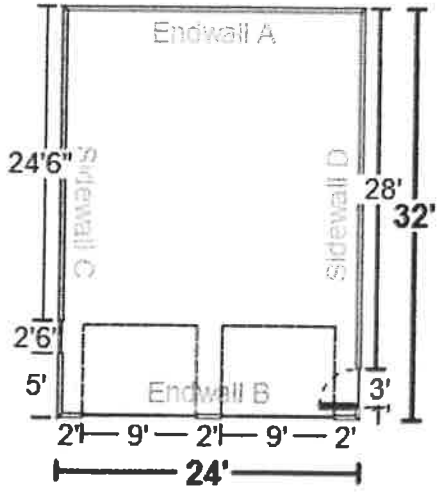
How to purchase at the store

1. Take this packet to any Menards store.
2. Have a building materials team member enter the design number into the Garage Estimator Search Saved Designs page.
3. Apply the design to System V to create the material list.
4. Take the purchase documents to the register and pay.

How to recall and purchase a saved design at home

1. Go to Menards.com.
2. Select the Garage Estimator from the Project Center.
3. Select Search Saved Design.
4. Log into your account.
5. Select the saved design to load back into the estimator.
6. Add your Garage to the cart and purchase.

Garage Image



Estimated Price: $15,109.63

* Today's estimated price, future pricing may go up or down. Tax, labor, and delivery not included.

Floor type (concrete, dirt, gravel) is NOT included in estimated price. The floor type is used in the calculation of materials needed. Labor, foundation, steel beams, paint, electrical, heating, plumbing, and delivery are also NOT included in estimated price. This is an estimate. It is only for general price information. This is not an offer and there can be no legally binding contract between the parties based on this estimate. The prices stated herein are subject to change depending upon the market conditions. The prices stated on this estimate are not firm for any time period unless specifically written otherwise on this form. The availability of materials is subject to inventory conditions.

MENARDS IS NOT RESPONSIBLE FOR ANY LOSS INCURRED BY THE GUEST WHO RELIES ON PRICES SET FORTH HEREIN OR ON THE AVAILABILITY OF ANY MATERIALS STATED HEREIN. All information on this form, other than price, has been provided by the guest and Menards is not responsible for any errors in the information on this estimate, including but not limited to quantity, dimension and quality. Please examine this estimate carefully.

MENARDS MAKES NO REPRESENTATIONS, ORAL, WRITTEN OR OTHERWISE THAT THE MATERIALS LISTED ARE SUITABLE FOR ANY PURPOSE BEING CONSIDERED BY THE GUEST. BECAUSE OF WIDE VARIATIONS IN CODES, THERE ARE NO REPRESENTATIONS THAT THE MATERIALS LISTED HEREIN MEET YOUR CODE REQUIREMENTS. THE PLANS AND/OR DESIGNS PROVIDED ARE NOT ENGINEERED. LOCAL CODE OR ZONING REGULATIONS MAY REQUIRE SUCH STRUCTURES TO BE PROFESSIONALLY ENGINEERED AND CERTIFIED PRIOR TO CONSTRUCTION.

Materials

Building Info

Building Width:	24'
Building Length:	32'
Building Height:	8'
Wall Framing Stud:	2" x 4"
Roof Framing:	Truss Construction
Truss Type:	Common
Roof Pitch:	4/12 Pitch
Eave Overhang:	1'
Gable Overhang:	1'
Concrete Block Option:	None
Anchor bolt:	Grip Fast 1/2" x 10" HDG Anchor Bolt w/ Nut & Washer
Custom Garage Plan:	Yes I need a custom building plan

Wall Info

Siding Material Types:	Vinyl
Vinyl Siding:	ABCTO® Cedar Creek™ Double 4" - White
Accent Material Type:	None
Wainscot Material Type:	None
Wall Sheathing:	7/16" OSB (Oriented Strand Board)
House Wrap:	Kimberly-Clark BLOCK-IT®9'x75'House Wrap
Gable Vents:	None

Special Use Permit Criteria Worksheet

A special use permit cannot be approved unless the Planning Commission and City Council find that the following criteria have been met. Please provide a response on how/why your project meets the below stated criteria. Use additional sheets if necessary and consult with the Planning Director at the time of your Pre-Application Meeting as some items may not be applicable for your project.

1) That the establishment, maintenance, or operations of the special use will not be detrimental to or endanger the public health, safety, morals, comfort or general welfare.

Should not endanger anyone or anything. It's a 2-car detached garage

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

Replacing the single car garage with a 2-car garage should have a positive on the neighborhood properties

3) That the establishment of the special use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.

Should not have any effect on said properties

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

The location of the new garage should not have any effect on utilities or drainage. We're not changing any grade.

5) That the special use shall in all other respects conform to the applicable regulations of the district in which it is located.

The new garage will be similar to the style & construction of the existing house; roofline, exterior finish, etc.

NEW BRIGHTON
building tomorrow today

City of New Brighton Application Form

(Land use applications, Subdivision applications, and vacation requests will not be considered complete and will not be accepted until all property owners have signed)

I. Property Owner #1

Daniel Marquardt (name) | 2554 Eastman Dr (mailing address) | New Brighton (st) MN | 55112 (zip)

651-766-9363 (phone #) | (fax #) | dan-marq@outlook.com (email)

Signature: Daniel Marquardt

II. Property Owner #2 *For more than two owners, please provide their information and signature(s) on a separate sheet*

Susan Schwichtenberg (name) | 2554 Eastman Dr (mailing address) | New Brighton (st) MN | 55112 (zip)

612-770-2164 (phone #) | (fax #) | sschwichten@comcast.net (email)

Signature: SCSchwichtenberg

III. Please identify the request(s) for which you are applying:

☒ **LAND USE APPLICATION** (subject to MN State Statute 15.99 timelines)

- ☐ Variance
- ☒ Special Use Permit
- ☐ Site Plan Review
- ☐ Zoning Code Amendment / Rezoning
- ☐ Comprehensive Plan Amendment
- ☐ Non-conforming Use Permit
- ☐ Grading Permit
- ☐ Moving/Relocating Structures Permit
- ☐ Sign Permit
- ☐ Other:

☐ **SUBDIVISION APPLICATION** (subject to MN State Statue 462.358, subd. 3b timelines)

- ☐ Administrative Lot Split / Minor Subd.
- ☐ PUD or PRD
- ☐ Preliminary Plat
- ☐ Final Plat

☐ **GENERAL APPLICATION** (not subject to any state mandated timelines)

- ☐ Right of Way Vacation
- ☐ Easement / Utility Vacation
- ☐ Administrative Appeal
- ☐ Deadline Extension Request
- ☐ Municipal Site Work Authorization
- ☐ Zoning Letter
- ☐ Temporary Use Permit
- ☐ Other:

FEES

Fees for individual application types are established on a yearly basis by the City Council.

Please see the attached fee schedule for the applicable costs (and possibly escrow requirements) for your request(s)

Briefly describe your request below *(If additional space is needed, please attach a narrative to this application)*

To build a 24' x 32' 2-car garage

IV. Property & Contractor Information:

Street Location/Address of Property: 2554 Eastman Dr New Brighton MN 55112

Property Identification Number (PID): 18-30-23-21-0009 Zoning District: R-1

Legal Description (From Deed or Certificate of Title): ☐ *Please see attached*

Lot: 3 Block: SOUTH 160 Ft of Lot 3, Addition: Knollwood Park No. 2

Property described is by: ☐ Abstract ☒ Torrens – Certificate #: 572589

Location of Certificate: _____

Architect (if applicable): _____ Phone: _____

Surveyor/Engineer (if applicable): Kemper + Assoc Phone: 651-631-0351

Builder (if applicable): _____ Phone: _____

V. Main Contact Person

☒ Property Owners

☐ Other (if other, please fill out the information below)

Title (Position or relation to property owners): _____

(name) (address) (st) (zip)

(phone #) (fax #) (email)

VI. Notice of Fees

As set forth in the City Fee Schedule and pursuant to applicable law, the property owner shall be responsible to reimburse the city for all related miscellaneous costs incurred pursuant to the processing of this application. Note that these reimbursements may exceed the amount of the original land use application fee. Such expenses may include, but are not limited to, direct city payroll and overhead costs, fees paid to consultants and other professionals, and the cost of printing, mailing, and supplies. These miscellaneous fees are due immediately upon notification by the City. The City shall provide, upon request, an itemized statement of the various expenses incurred by the City. The City may withhold final action on a land use application and/or rescind prior action until all miscellaneous fees are paid. The City may require additional deposits, if deemed necessary. The property owner agrees to allow city staff and commission members to access the property per this application for inspection.

I acknowledge that I have read the above statement and fully understand that I am responsible for all costs incurred by the City in the processing and reviewing of this application.

Property Owners Signature: David Marquardt ***Date:*** 6/16/2021

ADMINISTRATIVE USE ONLY:

Date Application Received: _____ *PC Date:* _____

Fee Paid: _____ *CC Date:* _____

Escrow Paid: _____

Receipt Number: _____ *Form Last Updated 03.08.21*

Agenda Section:	**VI**
Item:	**2**
Report Date:	**7/14/21**
Commission Meeting Date:	**7/20/21**

REQUEST FOR COMMISISON CONSIDERATION

ITEM DESCRIPTION:	**Special Use Permit:** Request from Fed Ex at 50 14th St NW to construct a special purposed fence to provide light and sound protection for nearby residential properties – PID 20-30-23-14-0011.
DEPARTMENT HEAD'S APPROVAL:	
CITY MANAGER'S APPROVAL:	
No comments to supplement this report ___	**Comments attached ___**

15.99 Deadline: 8/30/21

Recommendations:
- **Staff believes the SUP can be approved with conditions.**
- **Template motions, recommended findings, and suggested conditions can be found on pages 11 & 12.**

Legislative History:
- Application received on 7/1/21
- Planning Commission review scheduled for 7/20/21

Financial Impact: None

Summary: Within the last year, FedEx acquired the property at 50 14th St NW which has been the site of a legal nonconforming trucking operation dating back to the 1970's. While the use is allowed to continue under state law, its impacts cannot be expanded. Accordingly, FedEx is currently before the City seeking approval of a special purpose fence to address lighting and sound concerns from the nearby Enclave neighborhood. The special purposed fence would be the last component of corrective actions needed to address the problem(s).

Attachments:
1) *Staff Report*
2) *Engineering Memo*
3) *Draft Resolution*
4) *City Maps*
5) *Applicant's supporting documentation*

Ben Gozola, AICP
Assistant Director of Community Assets and Development

Planning Report

Special Use Permit Review

To: **Planning Commission**

From: Ben Gozola, Assistant Director DCAD

Meeting Date: **7-20-21**

Applicants: **RLF II Central, LLC (Fed Ex Site Owner)**

Main Contact: Tom Greeninger, TMG Construction

Location: 50 14th St NW

Zoning: **I-1**

Introductory Information

Project: Fed Ex is seeking approval of a special purpose fence to address lighting and sound concerns from the nearby Enclave neighborhood.

History:

- **Early 1970's:** Available aerials of the site show the land has been used as a trucking terminal since at least 1974.
- **2020:** Fed Ex acquires the property and continues the legal nonconforming trucking terminal use. Neighbors in the nearby Enclave development begin complaining about light and noise shortly thereafter. Fed Ex makes adjustments to address glaring light issues and undertakes a noise study.
- **2021:** To address all issues, Fed Ex determines their data supports construction of a privacy wall to block both light and sound from the nearby homes.

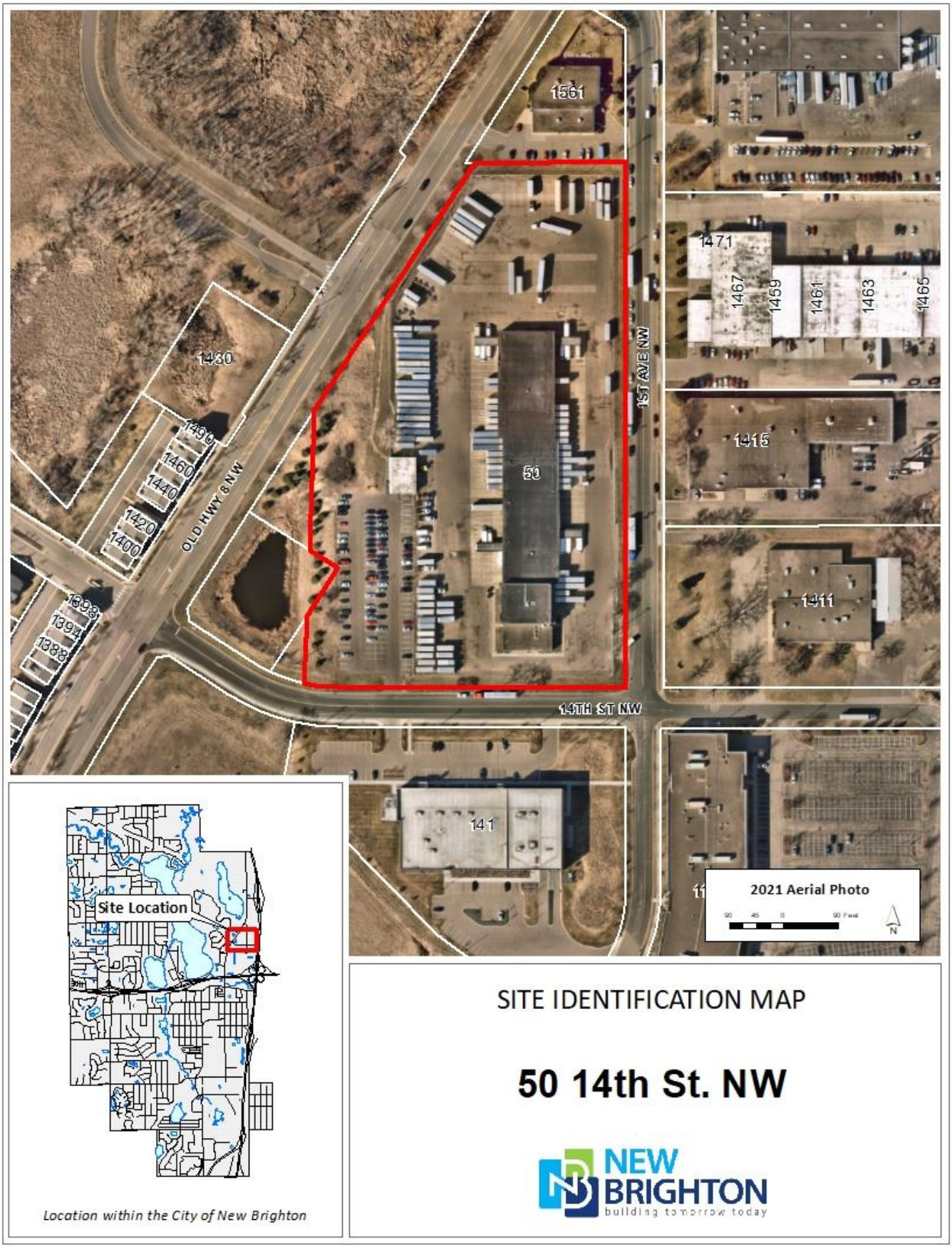
Request(s):

- **SUP to authorize a "special purpose fence" on the property at 50 14th St NW.**

General Findings

Site Data:

- Existing Lot Size ≈ 9.18 acres
- Existing Uses – Trucking Terminal.
- Existing Zoning – Mixed Use (MX)
- Property Identification Number (PID): 20-30-23-14-0011


1561
1430
1490
1460
1440
1420
1400
OLD HWY 8 NW
50
1ST AVE NW
14TH ST NW
1471
1467
1459
1461
1463
1465
1415
1411
1398
1391
1388
141
2021 Aerial Photo
Site Location
Location within the City of New Brighton
SITE IDENTIFICATION MAP
50 14th St. NW
NEW BRIGHTON
building tomorrow today

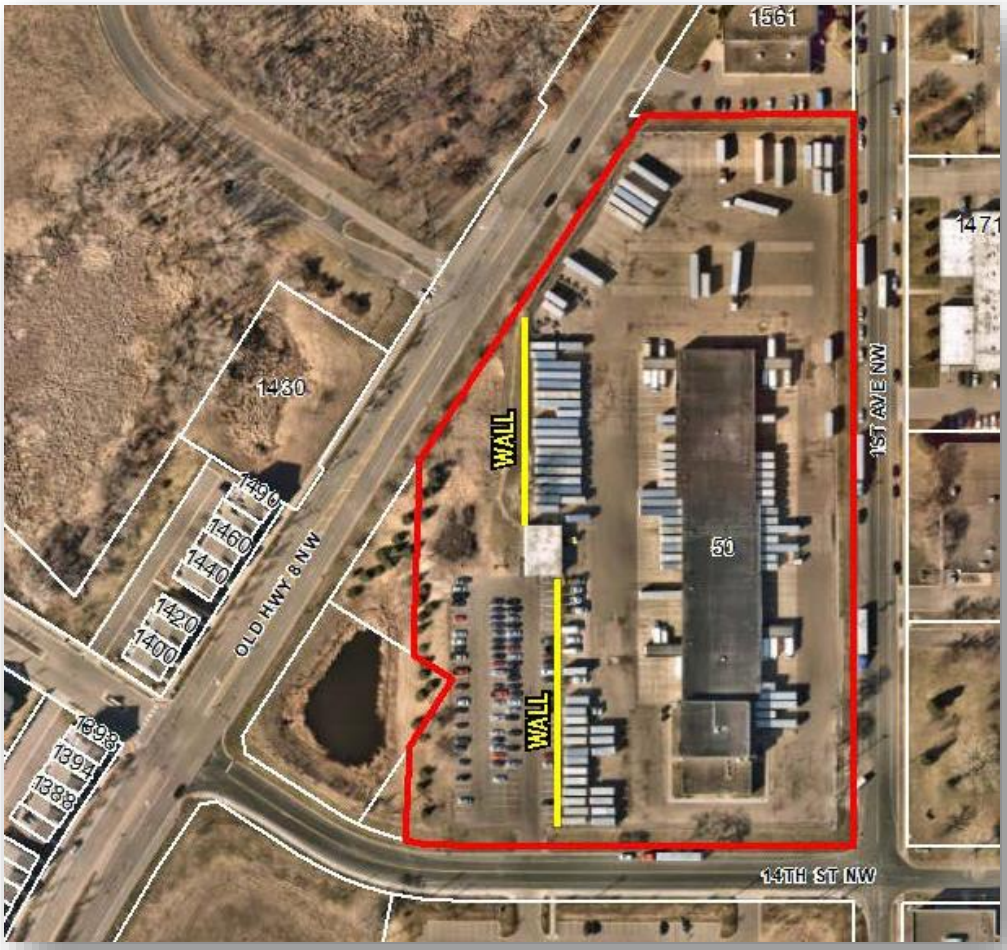
Comp Plan Guidance:	▪ The 2040 Comprehensive Plan guides this property for Mixed Use City Center development. The proposed use is legal nonconforming, and cannot be terminated unless redevelopment occurs or the use is discontinued for more than one year.
Notable Code Definitions:	▪ None
Applicable Codes:	▪ **Chapter 4, Article 8, General Requirements, Section 4-560. <u>Fences</u>.** Identifies all fencing regulations including allowances for "special purpose fences" allowable by special use permit.
Applicant's Narrative:	The City of New Brighton has requested action be taken to address noise complaints from the west side neighboring residential community around FedEx's use of the property as a truck terminal during business operations. A sound evaluation was commissioned by FedEx and RLF II Central, LLC and performed by Cavanaugh Tocci upon which recommendations were made to reduce the sound levels experienced at the neighboring west side community. The requested project consists of installing a sound fence at the western perimeter of the truck yard where the existing chain link fence is located.

Site Review

In General:	▪ No new buildings are proposed, so a formal site plan review is not required. However, examining the existing characteristics of the site is important to understand what (if any) conditions might be needed for the new use should the SUP be approved.
Existing Conditions:	▪ The building has been freshly painted and the site has seen multiple lighting and pavement improvements since FedEx's arrival. Beyond that though, the site is largely unchanged from its historical appearance and use.
Proposed Site Plan Updates:	▪ The proposed special purpose fence will be the final component of sound and light mitigation being completed on behalf of the nearby neighbors in the Enclave development.

(cont.)

- The two walls (locations shown here) would screen off the trucking operation, its lighting, and its sounds from the nearest residential units.



Fence Materials:

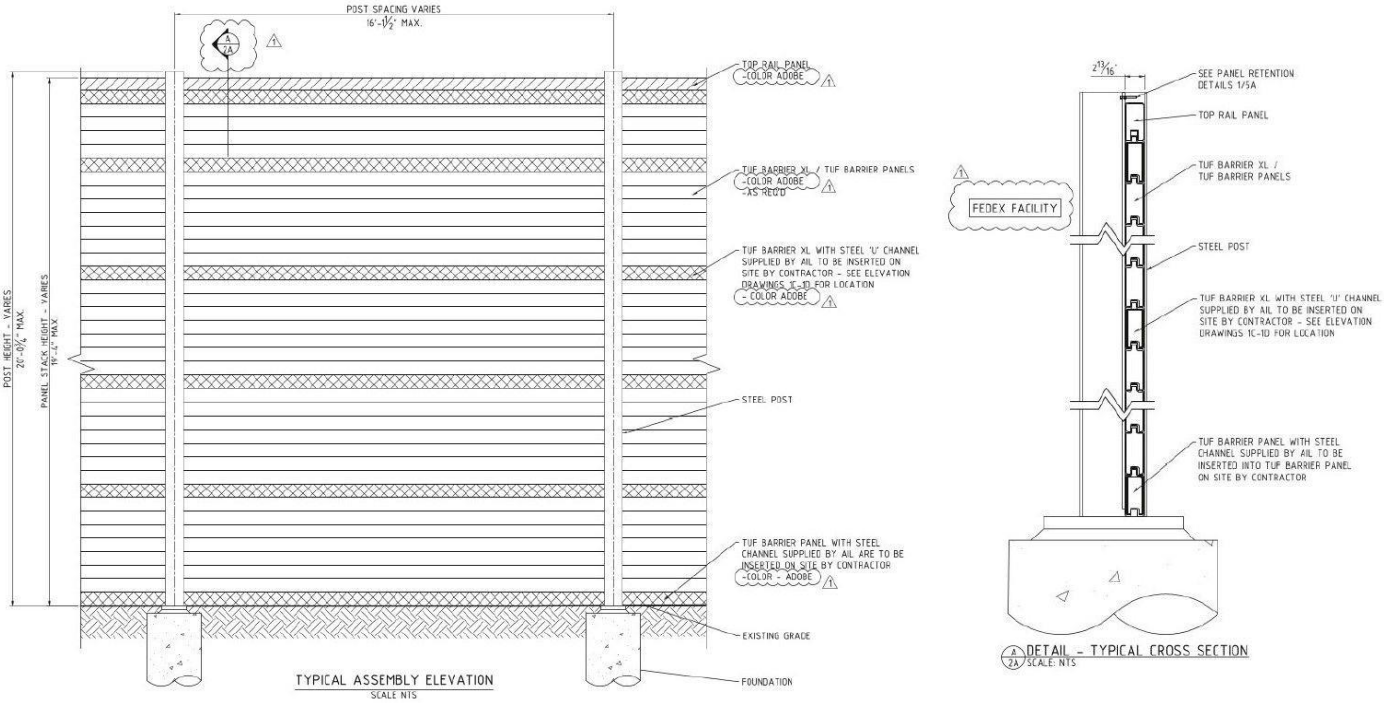
- From the AIL Website regarding the TUF Barrier Reflective Sound Wall:

PVC Reflective Sound Barrier Wall System
Lightweight and easy-to-install, our Tuf-Barrier Sound Walls are engineered for the maximum reflection of ambient or environmental noise such as industrial, manufacturing, traffic or commercial noise. Our walls not only block and reflect unwanted noise, they're also built in a way that makes it easy for graffiti and tagging to be removed.

(cont.)

Tuf-Barrier's smooth surface is designed to reflect unwanted noise in railway or highway noise barrier walls and many other applications. With an overall density of more than four pounds per square foot, and the ability to withstand a considerable wind live load, AIL's Tuf-Barrier reflective sound wall system is known for its strength and sound reduction performance.

Reflective sound mitigation for highway noise barriers and other applications
With their easy-to-install panels and construction versatility in narrow job sites, Tuf-Barrier is the go-to sound barrier solution for demanding sound mitigation jobs like railway or highway noise barriers and other applications.



Fence Height:	▪ The wall design is based on a sound study conducted by Cavanaugh Tocci Associates, a consulting company specializing in sound analysis. Per their findings, the northern barrier should be 19' tall and 255' long, and the southern barrier should be 17' tall and 350' long.
Landscaping:	▪ No additional landscaping is required for this type of improvement.
Lighting:	▪ On-site lighting has already seen significant adjustments to address neighborhood concerns to the point that staff has not received any complaints about lighting at the facility for months. That said, the proposed special purpose fence should address any/all remaining issues.
Lot Access:	▪ The access points to the property will not change from existing conditions.
Water System(s):	▪ The site has access to Municipal water, and there are no engineering or public works concerns regarding water usage.
Sanitary System(s):	▪ The site has access to Municipal sewer, and there are no engineering or public works concerns regarding sewer usage.
Storm water / Grading / Erosion:	▪ The RCWD and Engineering have reviewed the proposed plans and have no concerns. ▪ Per the RCWD: *"The proposed fence does not infringe on the stormwater basin constructed on Outlot G of the New Brighton Exchange 1st Addition (as-built attached). Based off the site plan, we presume the wall will be installed above ground and won't be affecting drainage. It appears land disturbance and proposed new/reconstructed impervious surface will also be under 10,000 sq. ft. If proposed land disturbance exceeds 10,000 sq. ft a RCWD Rule D, Erosion and Sediment Control Plan permit application will be required. If new and/or reconstructed impervious surface exceeds 10,000 sq. ft a Rule C, Stormwater Management application will be required.*
Signage	▪ Signs on this site must be updated via the City's sign permitting process.
Fire/Safety:	▪ Public safety reviewed the plans and had no concerns.

Hours of Operations:	▪ Not applicable. This use does not cater to daily customers coming on-site.
Parking & Traffic:	▪ The construction of this special purpose fence will have no impact on site parking or traffic.
Sidewalks & Trails:	▪ No new sidewalks are proposed, nor are any needed. Employees utilizing the employee parking lot west of the fence will access the Fed Ex site through the existing building at the center of the two walls.
Development Phasing:	▪ The fence will be constructed in a single phase.
Nonconforming Use Permit:	▪ Buildings, parking lots, and other site features appear to be conforming to code.

Special Use Permit Review

In General:	▪ The need for a Special Use Permit is triggered by the proposed height and purpose of the wall. "Special Purposes Fences" like the one proposed are permissible if authorized via SUP.
SUP Standards Review:	Issuance of an SUP requires an analysis of the proposed use against the specific review criteria established in code. Staff has reviewed the City's criteria for special use permits, and we offer the following analysis for consideration: General review Criteria (Section 8-130): ***1. That the establishment, maintenance, or operations of the special use will not be detrimental to or endanger the public health, safety, morals, comfort or general welfare.*** *APPLICANT COMMENTS: The sound fence will be installed on the private property of the facility it will be located on. It will be a pre-engineered fence with low maintenance colored materials.* Staff Analysis: The special purpose fence is specifically intended to protect and enhance the general public welfare of the area. Staff has not identified any detrimental issues that could result from the proposal. **Criteria met.**

(cont.)

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

APPLICANT COMMENTS: The fence should not have an affect on the property values of the neighboring property as the installation of the fence is intended to reduce the noise affecting the neighboring townhouse community..

Staff Analysis: If anything, the proposed fence will have a positive impact on area property values as it is the final component for addressing noise and sound concerns. **Criteria met.**

3. That the establishment of the special use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.

APPLICANT COMMENTS: The sound fence should not impede on developments and improvements of adjacent properties.

Staff Analysis: The proposed special purpose fence will have no impact on the development of surrounding property. **Criteria met.**

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

APPLICANT COMMENTS: Not applicable.

Staff Analysis: There are no access or utility issues at question with this application. **Criteria met.**

5. That the special use shall in all other respects conform to the applicable regulations of the district in which it is located.

APPLICANT COMMENTS: This project should conform to the applicable regulations.

Staff Analysis: With the exception of height being approved by the SUP, the fence will conform to all other code standards. **Criteria met.**

(cont.) In addition to the five standard SUP Criteria, special purpose fences must also meet the following three additional standards per section 4-540(3)(F):

6. ***The fence is necessary to protect and buffer the premises for which such fences are intended;***

   Staff Analysis: The fence is specifically being built to protect and buffer the adjacent neighborhood from sound and lights emanating from the Fed Ex site. **Criteria met.**

7. ***The fence will not be deleterious to adjacent property nor to the general public health, safety, or welfare;***

   Staff Analysis: Just as we found under general SUP criteria #1, this fence will have no negative impacts on the health, safety, or welfare of the surrounding area. Glad we double checked though. **Criteria (still) met.**

8. ***Would be consistent with the intent and purpose of the fence regulations as stated in Section 4-540(1) of the Zoning Code.***

   Staff Analysis: The intent of this fence is to "ensure orderly development," through the mitigation of sound and lighting impact between residential and industrial land uses. Other intents of the fence code (allowing a free flow of air and prohibiting unreasonable view restrictions) would run counter to the purpose of this fence and are therefore not applicable. Staff believes the proposal is compliant with the intent of City's fence regulations. **Criteria met.**

Supplementary Review & Public Comment

Additional Information:

- None

Engineering Review: Engineering comments that must be addressed are denoted in their 7/12/21 memo attached to this report. General comments are as follows:

1) Existing utilities (private and public) need to be shown on plans. Additional details are needed where north wall crosses storm sewer and in the proximity to water services.
2) Additional information needed to demonstrate the wall(s) will not impact site drainage.

(cont.)

3) It is unclear if there will be pedestrian openings in the south wall between parking lots.

Conditions, as needed, to address each of the above concerns have been outlined in this report.

Public Safety Review:

- No public safety concerns on this application.

Public Comment:

- No feedback as of 7/12/21.

Planning Commission Review:

- The Planning Commission is scheduled to review this application on 7/20/21.

Conclusion:

The application is requesting a Special Use Permit to authorize construction of a special purpose fence in excess of six (6) feet to provide greater sound and light mitigation between differing land uses.

<u>Staff Recommendation</u>: Per the analysis outlined in the report, staff is recommending APPROVAL with conditions

Commission Options:

The Planning Commission has the following options:

A) RECOMMEND APPROVAL OF THE REQUEST based on the applicant's submittals and findings of fact.

B) RECOMMEND DENIAL OF THE REQUEST based on the applicant's submittals and findings of fact.

C) TABLE THE ITEM and request additional information.

Based on an application date of 7/1/21, the 60-day review period for this application expires on 8/30/21. This deadline can be extended an additional 60 days if more time is necessary.

Template Denial Motion:

(<u>not</u> recommended)

- "I move that we recommend the City Council deny the requested special use permit based on the following findings of fact:"
  - *(provide findings to support your conclusion)*

Template Approval Motion:

RECOMMENDED

- "I move we recommend the City Council approve the requested special use permit based on the findings of fact and conditions listed on page 11 of the report as may have been amended here tonight."

Suggested Findings of Fact:

1. The subject property is guided for Mixed Use City Center by the comprehensive plan, and the existing trucking operation is a legal nonconforming use with rights to operate until redeveloped or discontinued.
2. Erection of the proposed fence will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare of the community.
3. The proposed fence will have no impact on development of adjacent land.
4. The new fence will not create any access issues, nor are there concerns about its impact on City utilities.
5. The proposed fence will conform to all other underlying zoning requirements.
6. The applicant has demonstrated the fence is necessary to provide a buffer between residential and industrial land uses.
7. The purpose for the fence is consistent with the intent and purpose regulations for fences spelled out in the New Brighton zoning ordinance.

Recommended Conditions:

1. The Special Use Permit shall authorize a northern barrier which is 19' tall and approximately 255' long, and a southern barrier that is 17' tall and approximately 350' long.
2. Plans shall be updated to show existing utilities (private and public). Adjustments, if needed, shall be made to address any engineering concerns to protect utilities or to ensure proper drainage.
3. Additional minor adjustments to the fence location and length may be administratively approved by staff, but major adjustments shall only be authorized via an SUP amendment.

(cont.) 4. The sound barrier shall be properly maintained and in place while the legal nonconforming trucking use is in operation. Removal of the wall or failure to maintain the wall aesthetically or operationally will be deemed an illegal expansion of the legal nonconformity.

cc: *Tom Greeninger, Applicant's Representative*

interoffice
MEMORANDUM

to:	Ben Gozola, Assistant Director of Community Assets and Development/City Planner
from:	Dustin Lind, Engineering Supervisor
subject:	FedEx Soundwall
date:	July 12, 2021

The Engineering Department has reviewed the site plan for the property at 50 14th Street NW and we offer the following comments:

1) Existing utilities (private and public) need to be shown on plans. Additional details are needed where north wall crosses storm sewer and in the proximity to water services.

2) Additional information needed to demonstrate the wall(s) will not impact site drainage.

3) It is unclear if there will be pedestrian openings in the south wall between parking lots.

RESOLUTION _____
CITY COUNCIL
CITY OF NEW BRIGHTON

RESOLUTION MAKING FINDINGS OF FACT AND APPROVING A SPECIAL USE PERMIT ALLOWING CONSTRUCTION OF A SPECIAL PURPOSE FENCE AT 50 14TH STREET NW

WHEREAS, the City of New Brighton is a municipal corporation, organized and existing under the laws of the State of Minnesota; and,

WHEREAS, the City Council of the City of the New Brighton has adopted a comprehensive plan and corresponding zoning regulations to promote orderly development and utilization of land within the city; and,

WHEREAS, RLF II Central, LLC, has purchased the property at 50 14th Street NW legally described as:

The part of the Southeast 1/4 of the Northeast 1/4 of Section 20, Township 30 North, Range 23 West, Ramsey County, Minnesota, lying Southeast of the Old State Trunk Highway 8-63 and Northeast of The Minnesota Transfer Railway Company's Butchers Spur right of way, except the North 450 feet and further excepting the following 4 described tracts:

1. Beginning at the point of intersection of the Southeasterly line of Old State Trunk Highway 8-63 and the Northeasterly line of Butchers Spur right of way; thence Northeasterly along the Southeasterly line of Old State Trunk Highway 8-63 a distance of 220 feet; thence deflect 90 degrees to the right a distance of 185 feet; thence deflect 90 degrees to the right and thence Southwesterly on said deflection to the North line of 14th Street North; thence West on the North line of said 14th Street North to the Northeasterly line of Butchers Spur right of way; thence Northwesterly on the Northeasterly line of said Butchers Spur right of way to place of beginning;

2. That part which lies southerly of a line described as commencing at the southeast corner of said Southeast Quarter of the Northeast Quarter; thence on an assumed bearing of South 89 degrees, 57 minutes, 27 seconds West along the south line of said Southeast Quarter of the Northeast Quarter 511.15 feet to the point of beginning of the line to be described; thence westerly 152.08 feet along a tangential curve concave to the north having a central angle of 32 degrees, 38 minutes, 08 seconds and a radius of 267.00 feet and said line there terminating.

3. That part which lies southeasterly of a line parallel with and distant 51.21 feet southeasterly from the centerline of said Old State Trunk Highway 8-63 as described in Document No. 1797275 and which lies northerly of Line "A" as described below and which lies westerly of Line "B" as described below:

Line A:
Commencing at the southeast corner of said Southeast Quarter of the Northeast Quarter; thence on an assumed bearing of South 89 degrees, 57 minutes, 27 seconds West along the south line of said Southeast Quarter of the Northeast Quarter 511.15 feet to the point of beginning of the line to be described; thence westerly 152.08 feet along a tangential curve concave to the north having a central angle of 32 degrees, 38 minutes, 08 seconds and a radius of 267.00 feet and said line there terminating.

Line B:
Commencing at the southeast corner of said Southeast Quarter of the Northeast Quarter; thence on an assumed bearing of South 89 degrees, 57 minutes, 27 seconds West along the south line of said Southeast Quarter of the Northeast Quarter 566.81 feet to the point of beginning of the line to be described; thence North 01 degree, 58 minutes, 35 seconds East 480.00 feet and said line there terminating.

4. That part which lies northwesterly of a line parallel with and distant 51.21 feet southeasterly from the centerline of said Old State Trunk Highway 8-63 as described in said Document No. 1797275. Abstract.

WHEREAS, the property at 50 14th Street NW has been the site of a legal nonconforming trucking use which dates back to the 1970's; and

WHEREAS, RLF II Central, LLC, has allowed FedEx to make improvements to the property in order to continue the legal nonconforming use; and

WHEREAS, the introduction of FedEx site improvements led to new complaints regarding lighting and noise emanating from the site; and

WHEREAS, FedEx hired Cavanaugh Tocci Associates, a consulting company specializing in sound analysis, to study the lighting and noise concerns; and

WHEREAS, the Cavanaugh Tocci Associates study identified a solution to the complaints in the form of a 19' barrier and a 17' barrier to replace an existing chain link fence on the property; and

WHEREAS, fences greater than 6' in height are allowed as special purposed fences if authorized by special use permit; and

WHEREAS, RLF II Central, LLC (the "Applicants") made application to the City on 7/1/21 for a Special Use Permit (SUP) to add the recommended special purposed fences on the property at 50 14th Street NW; and

WHEREAS, staff fully reviewed the request and prepared a report for consideration by the Planning Commission at their meeting on July 20, 2021; and

WHEREAS, the Planning Commission held a public hearing on the request at the July 20, 2021, meeting and considered input from residents; and recommended approval of the request based on the applicant's submittals and findings of fact; and

WHEREAS, the City Council considered on July 27, 2021, the recommendations of the Planning Commission, Staff, the Applicant's submissions, the contents of the staff report, and other evidence available to the Council.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of New Brighton hereby approves the requested special use permit based on the following findings of fact:

1. The subject property is guided for Mixed Use City Center by the comprehensive plan, and the existing trucking operation is a legal nonconforming use with rights to operate until redeveloped or discontinued.

2. Erection of the proposed fence will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare of the community.

3. The proposed fence will have no impact on development of adjacent land.

4. The new fence will not create any access issues, nor are there concerns about its impact on City utilities.

5. The proposed fence will conform to all other underlying zoning requirements.

6. The applicant has demonstrated the fence is necessary to provide a buffer between residential and industrial land uses.

7. The purpose for the fence is consistent with the intent and purpose regulations for fences spelled out in the New Brighton zoning ordinance.

BE IT FURTHER RESOLVED, that approval of the special use permit shall be subject to the following conditions:

1. The Special Use Permit shall authorize a northern barrier which is 19' tall and approximately 255' long, and a southern barrier that is 17' tall and approximately 350' long.
2. Plans shall be updated to show existing utilities (private and public). Adjustments, if needed, shall be made to address any engineering concerns to protect utilities or to ensure proper drainage.
3. Additional minor adjustments to the fence location and length may be administratively approved by staff, but major adjustments shall only be authorized via an SUP amendment.
4. The sound barrier shall be properly maintained and in place while the legal nonconforming trucking use is in operation. Removal of the wall or failure to maintain the wall aesthetically or operationally will be deemed an illegal expansion of the legal nonconformity.

ADOPTED this 27th day of July, 2021 by the New Brighton City Council with a vote of __ ayes and __ nays.

_____
Kari Niedfeldt-Thomas, Mayor

_____
Devin Massopust, City Manager

ATTEST:

_____
Terri Spangrud, City Clerk

The undersigned Applicants have read, understand and hereby agree to the terms of this resolution and on behalf of himself/herself, his/her heirs, successors and assigns, hereby agree to the conditions set forth above, and to the recording of this resolution and attachments in the chain of title of the property.

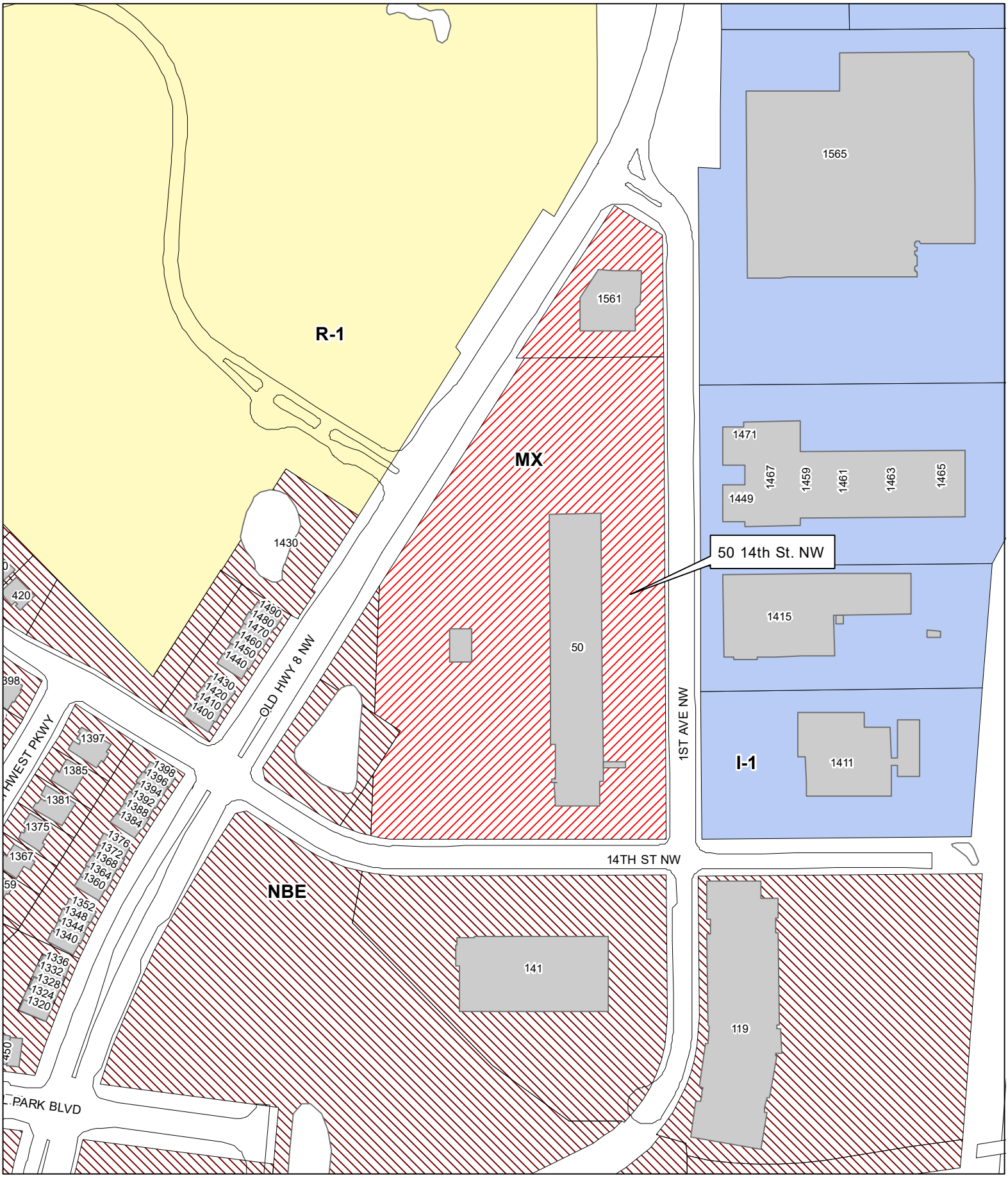
Dated _____ _____

<authorized representative>

Subscribed and sworn to before me this _____ day of _____, 2021.

_____

Notary Public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OLD HWY 8 NW
1ST AVE NW
14TH ST NW
HWEST PKWY
PARK BLVD
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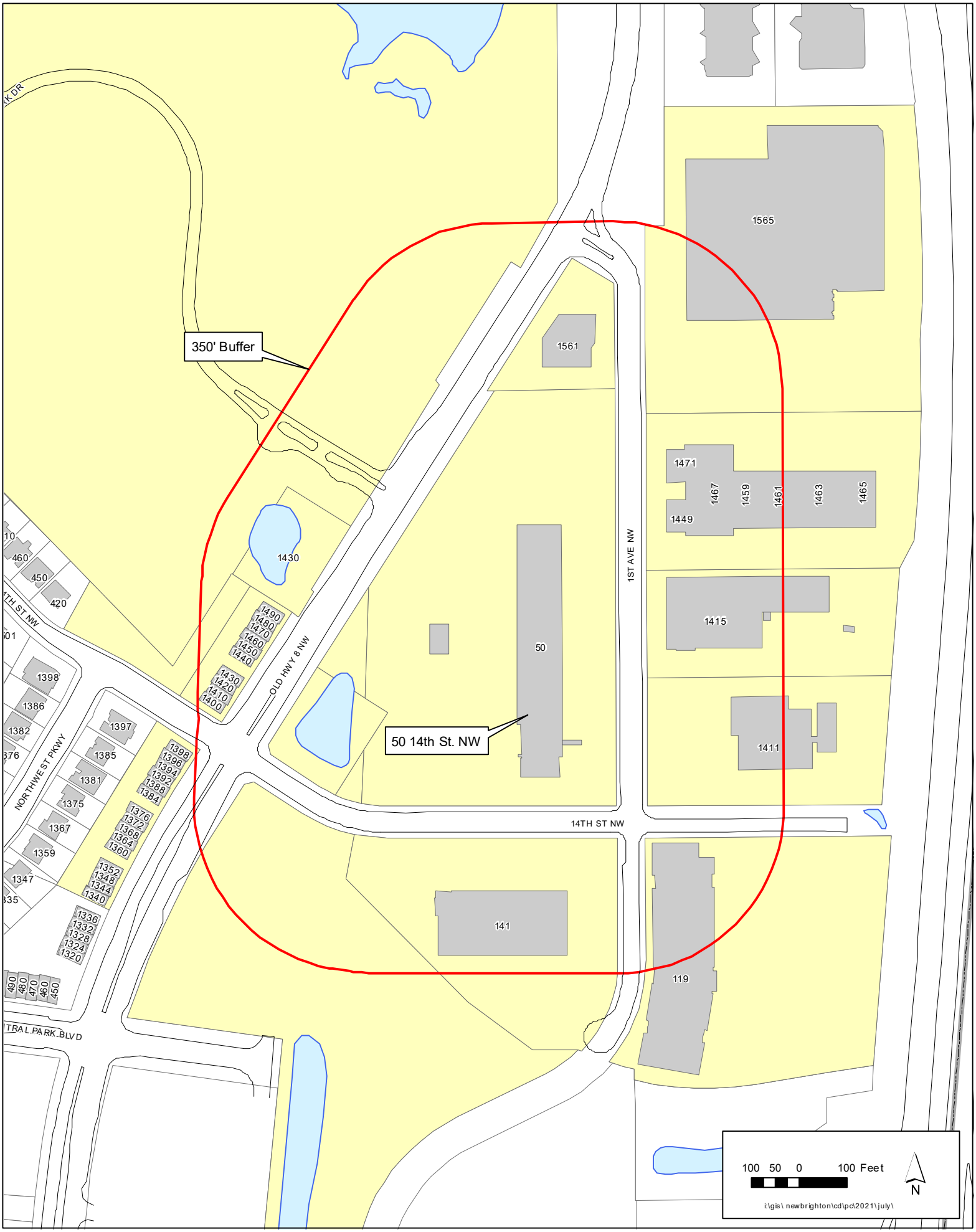
119
MX, Mixed Use
NBE
R-1, Single Family Residential
I-1, Light Industrial
N
100 50 0 100 Feet
NEW BRIGHTON
Current Zoning
50 14th St. NW
MX, Mixed Use
i:\gis\ newbrighton data\comm dev\pc\2021\ july\

50 14th St. NW - 350' Buffer



NEW BRIGHTON
building tomorrow today

City of New Brighton Application Form

(Land use applications, Subdivision applications, and vacation requests will not be considered complete and will not be accepted until all property owners have signed)

I. Property Owner #1

RLF II Central, LLC (name) | 201 West Street (mailing address) | Annapolis, MD (st) | 21401 (zip)

312-724-9718 (phone #) | _____ (fax #) | pbateman@realterm.com (email)

Signature: _____

II. Property Owner #2

For more than two owners, please provide their information and signature(s) on a separate sheet.

_____ (name) | _____ (mailing address) | _____ (st) | _____ (zip)

_____ (phone #) | _____ (fax #) | _____ (email)

Signature: _____

III. Please identify the request(s) for which you are applying:

☒ **LAND USE APPLICATION** (subject to MN State Statute 15.99 timelines)

- ☐ Variance
- ☒ Special Use Permit
- ☐ Site Plan Review
- ☐ Zoning Code Amendment / Rezoning
- ☐ Comprehensive Plan Amendment
- ☐ Non-conforming Use Permit
- ☐ Grading Permit
- ☐ Moving/Relocating Structures Permit
- ☐ Sign Permit
- ☐ Other:

☐ **SUBDIVISION APPLICATION** (subject to MN State Statue 462.358, subd. 3b timelines)

- ☐ Administrative Lot Split / Minor Subd.
- ☐ PUD or PRD
- ☐ Preliminary Plat
- ☐ Final Plat

☐ **GENERAL APPLICATION** (not subject to any state mandated timelines)

- ☐ Right of Way Vacation
- ☐ Easement / Utility Vacation
- ☐ Administrative Appeal
- ☐ Deadline Extension Request
- ☐ Municipal Site Work Authorization
- ☐ Zoning Letter
- ☐ Temporary Use Permit
- ☐ Other:

FEES

Fees for individual application types are established on a yearly basis by the City Council.

Please see the attached fee schedule for the applicable costs (and possibly escrow requirements) for your request(s)

Briefly describe your request below *(If additional space is needed, please attach a narrative to this application)*

Installation of a new sound barrier fence at the west perimeter of the truck yard to reduce noise transmission to neighboring property

IV. Property & Contractor Information:

Street Location/Address of Property: 50 14th street NW, New Brighton, MN 55112

Property Identification Number (PID): 20-30-23-14-0011 Zoning District: _____

Legal Description (From Deed or Certificate of Title): ☐ *Please see attached*

Lot: _____ Block: _____ Addition: _____

Property described is by: ☐ Abstract ☐ Torrens – Certificate #: _____

Location of Certificate: _____

Architect (if applicable): _____ Phone: _____

Surveyor/Engineer (if applicable): Stabilty Engineering Phone: (404)-377-9316

Builder (if applicable): TMG Construction Inc Phone: (651)-789-0028

V. Main Contact Person

☐ Property Owners

☒ Other (if other, please fill out the information below)

Title (Position or relation to property owners): General Contractor

(name)	(address)	(st)	(zip)
TMG Construction Inc, Tom Greeninger	576 Front Avenue, Saint Paul, MN 55117		

(phone #)	(fax #)	(email)
(651)-789-0028	(651)-789-0582	tom@tmgcinc.us

VI. Notice of Fees

As set forth in the City Fee Schedule and pursuant to applicable law, the property owner shall be responsible to reimburse the city for all related miscellaneous costs incurred pursuant to the processing of this application. Note that these reimbursements may exceed the amount of the original land use application fee. Such expenses may include, but are not limited to, direct city payroll and overhead costs, fees paid to consultants and other professionals, and the cost of printing, mailing, and supplies. These miscellaneous fees are due immediately upon notification by the City. The City shall provide, upon request, an itemized statement of the various expenses incurred by the City. The City may withhold final action on a land use application and/or rescind prior action until all miscellaneous fees are paid. The City may require additional deposits, if deemed necessary. The property owner agrees to allow city staff and commission members to access the property per this application for inspection.

I acknowledge that I have read the above statement and fully understand that I am responsible for all costs incurred by the City in the processing and reviewing of this application.

Property Owners Signature: _____ ***Date:*** _____

ADMINISTRATIVE USE ONLY:

Date Application Received: _____ *PC Date:* _____

Fee Paid: _____ *CC Date:* _____

Escrow Paid: _____

Receipt Number: _____

Form Last Updated 03.08.21

TMG Construction, Inc
General Contractor

Sound Fence Installation

50 14th Street NW

New Brighton, MN 55112

RE: Narrative of project

The City of New Brighton has requested action to be taken to address noise complaints from the westside neighboring residential community around FedEx's use of the property as a truck terminal during business operations.

A sound evaluation was commissioned by FedEx and RLF II Central, LLC and performed by CavanaughTocci upon which recommendations were made to reduce the sound levels experienced at the neighboring westside community. The requested project consists of installing a sound fence at the western perimeter of the truck yard where the existing chain link fence is located.

Sincerely,

Tom Greeninger

President

TMG Construction Inc.

February 9, 2021

Mr. Glenn High
REALTERM LOGISTICS
201 West Street
Annapolis, MD 21401

Direct: (443) 321-2654
Cell: (410) 206-8401
e-Mail: ghigh@realterm.com

Subject: Acoustical Analysis—FXG New Brighton MN

Dear Mr. High,

FXG New Brighton MN is a FedEx Ground station located just off Old Hwy 8 in New Brighton. On December 2, 2020, the station manager received a letter from the City of New Brighton Code Compliance Inspector citing a "nuisance violation-noise" prohibited by Chapter 17 of its Zoning Regulation. The violation, as described in the letter, is as follows:

> The City has received an official complaint that during FedEx late hour shifts (post 8 or 9 pm) noise from trucks backing up can be heard throughout the night in our residential area to your west. The complaint also mentioned loud mechanical noises (perhaps loading and unloading?), but that portion of the concern was less clear than the trucks portion of the complaint.

Cavanaugh Tocci has completed sound measurements and computer modeling of existing FedEx activity sound transmitted to nearest residences. Measured data have been used to develop a design goal that would minimize community annoyance and provide a means to quantify the required noise reduction needed. Figure 1 shows the location of FXG New Brighton MN, the nearest residence across Old Hwy 8, and the one location (SM1) where sound levels have been monitored.

Figure 1. Google Earth image showing existing site
FXG New Brighton MN

The following discusses applicable noise limits, sound level measurements conducted in December 2020, design goals intended to minimize community annoyance produced by backup alarms specifically cited in the City letter, and sound controls needed to achieve design goal objectives.

Regulatory Limits

State of Minnesota

Minnesota Administrative Rules §7030.0040 Noise Standards[1] provides daytime (7:00 AM to 10:00 PM) and nighttime (10:00 PM to 7:00 AM) 10th percentile and 50th percentile A-weighted sound pressure level limits for land uses NAC (noise area classification) 1, 2, and 3. The 10th and 50th percentile A-weighted sound levels are the levels exceeded cumulative durations of 10% and 50% of each one-hour period, i.e., for cumulative periods of 6 and 30 minutes within each one-hour interval. The daytime and nighttime limits are provided in §7030.0040 Subpart 2 Noise standards and are shown in Table 1 below.

Noise Area Classification (NAS)[1]	Daytime (7:00 to 10:00 PM)		Nighttime (10:00 PM to 7:00 AM)	
	$LA_{50,1\text{-hr}}$ (dBA)	$LA_{10,1\text{-hr}}$ (dBA)	$LA_{50,1\text{-hr}}$ (dBA)	$LA_{10,1\text{-hr}}$ (dBA)
1	60	65	50	55
2	65	70	65	70
3	75	80	75	80

[1] NAS 1 includes residences, entertainment, and religious land uses.
NAS 2 includes travel facilities, retail, business, public assembly, sports.
NAS 3 includes manufacturing, agriculture, racetracks, utilities.
NAS 4, not having sound level limits, includes undeveloped lands, construction sites, and water areas.

Table 1. Minnesota Administrative Rule §7030.0040 Subpart 2 Noise standards

Ramsey County

We have reviewed the Ramsey County Public Health Nuisance Ordinance 2006-371[2], which primarily addresses health and nuisance issues other than noise, and the Ramsey County 2040 Land Use[3] document intended to assist in land use and zoning decisions. Neither these nor other documents set specific, measurable limits on sound produced by FXG activity and equipment sound.

[1] https://www.revisor.mn.gov/rules/7030.0040/
[2] https://www.ramseycounty.us/sites/default/files/Ordinances/Public_Health_Nuisance%20Ordinance.pdf
[3] https://www.ramseycounty.us/sites/default/files/Departments/Policy%20and%20Planning/RamseyCounty2040_Land%20Use.pdf

City of New Brighton

The New Brighton City Code §17-3[4] includes unreasonable noise as constituting "...*a public nuisance affecting the peace*..." §17-12 (1) Noises Prohibited-General provisions more specifically states:

(1) General Provisions. No person shall make or cause to be made any distinctly and loudly audible noise that unreasonably annoys, disturbs, injures, or endangers the comfort, repose, health, peace, safety, or welfare of any person or precludes their enjoyment of property or affects their property's value. This general prohibition is not limited by the specific restrictions of the subsections of this Section.

Summary

With respect to nearest residential property, both the City of New Brighton and Ramsey County prohibit facilities producing a noise nuisance condition, but neither provide specific, measurable limits on sound produced by FedEx Ground activities. However, the State of Minnesota Admirative Rule §7030.0040 limits FedEx on-site activity sound to 50th and 10th percentile A-weighted sound levels not exceeding 60 and 65 dBA during the day and 50 and 55 dBA at night.

Zoning

Figure 3 is an excerpt from the City of New Brighton zoning map[5] showing the facility located on I-1 light industrial zoned land adjacent to NBX New Brighton Exchange (primarily residential) parcels.

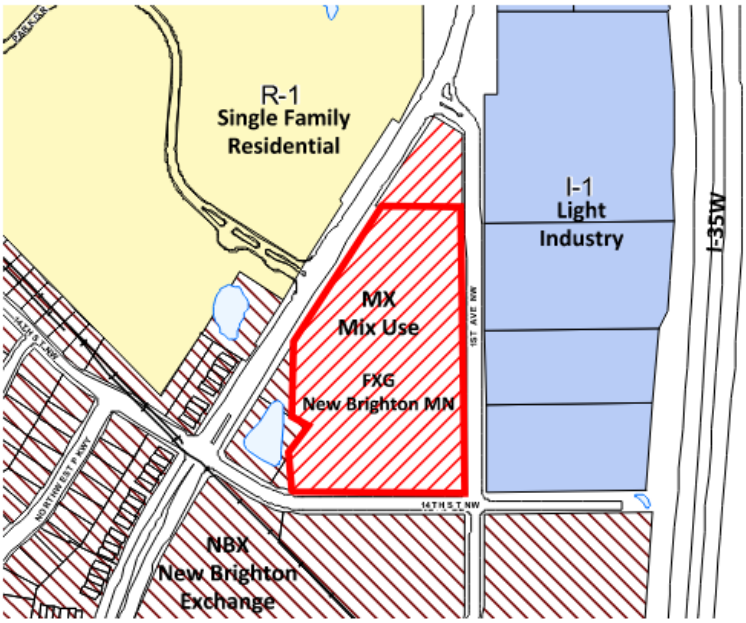


Figure 2. City of New Brighton zoning map showing existing facility site FXG New Brighton MN

[4] https://www.newbrightonmn.gov/media/CityCode/chap17f%20Nuisances%202019.10.09%20Update.pdf
[5] https://www.newbrightonmn.gov/media/GIS/Zoning%20(11x17).pdf

Sound Monitoring

Existing ambient sound levels were measured over an approximate four-day period beginning Friday, December 11, 2020 at the location identified as SM1 in Figure 1. Measured data have been used to develop design goals for facility sound to minimize annoyance at nearby residential receptors, and to conform to applicable noise limits. Transient sound levels at SM1 were dominated by FedEx activities, followed by occasional vehicle pass-bys on Old Highway 8. Background sound, the low level of relatively constant sound heard between transients, is dominated by traffic on I-35 and other area roads.

The meter used to monitor sound at SM1 was calibrated before shipment to Minnesota and installed with a windscreen on a tripod. The instrument and its use conform to IEC 61672 for Class 1 precision sound measurement instrumentation. The meter recorded sound level data onto a flash card that, after the completion of measurements, was removed from the unit and downloaded into a PC.

The monitor was programmed to measure several fast meter-response hourly A-weighted sound level descriptors including the 50th percentile hourly A-weighted sound level ($LAF_{50,1\text{-}hr}$) and the 10th percentile hourly A-weighted sound level ($LAF_{10,1\text{-}hr}$), which are used in the Minnesota Noise Standards. Also measured and reported below is the 90th percentile hourly A-weighted sound level ($LAF_{90,1\text{-}hr}$) used to develop a design goal for FedEx backup alarm sound at nearest residences as explained.

- The 50th percentile sound level (LAF_{50}) is the median sound level. It has been measured to assess compliance with the Minnesota noise standards.
- The 10th percentile sound level (LAF_{10}) is the measured of transient sound levels used by in the Minnesota noise standards.
- The 90th percentile sound level (LA_{90}) is the baseline sound level used to establish design goals or objectives for FedEx sound at nearest residences. It is the lowest level of sound typically occurring and is the A-weighted sound level exceeded 90% of each hour monitored.

Sound monitoring data measured at SM1 shown in Figures 3a and 3b. Figure 3a reports the median sound level, i.e., the 50th percentile hourly A-weighted sound level ($LAF_{50,1\text{-}hr}$); Figure 3b reports the "transient" sound level, i.e., the 10th percentile hourly A-weighted sound level ($LAF_{10,1\text{-}hr}$). Both figures show the day and night Minnesota Administrative Rules §7030.0040 Noise Standards and the amounts that sound measured at SM1 are higher than these limits. At SM1, the measured $LAF_{50,1\text{-}hr}$ higher than the limit by up to 3 dBA; the $LAF_{10,1\text{-}hr}$ is higher by up to 5 dBA. Measurement location SM1 is closer to sources of FedEx sound than are nearest residences, so that sound levels at nearest residences are approximately 5 dBA lower than measured at SM1. Hence, FedEx facility sound levels at nearest residences likely comply with Minnesota state limits.

Weather data also have been shown alongside sound monitoring data to identify any occasions when weather conditions might have influenced sound levels. These data are as obtained from the National Weather Service's (NWS) Automated Surface Observing Systems (ASOS) program for station ANE-Minneapolis Blaine[6].

[6] https://mesonet.agron.iastate.edu/request/download.phtml?network=MN_ASOS

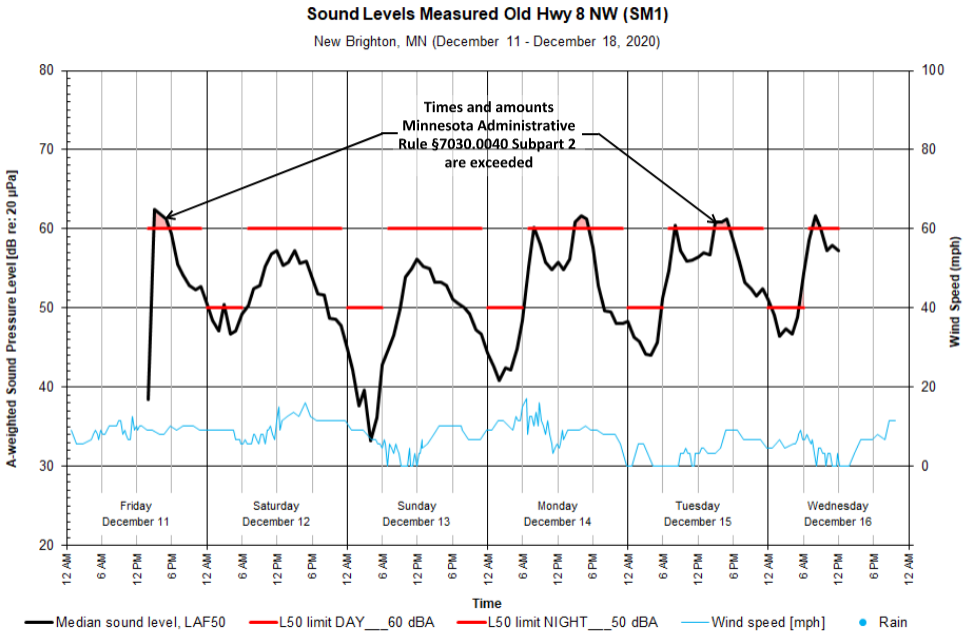


Figure 3b. 50th percentile hourly A-weighted sound level ($LAF_{50,1\text{-}hr}$) measured at SM1
Median sound level
FXG New Brighton MN

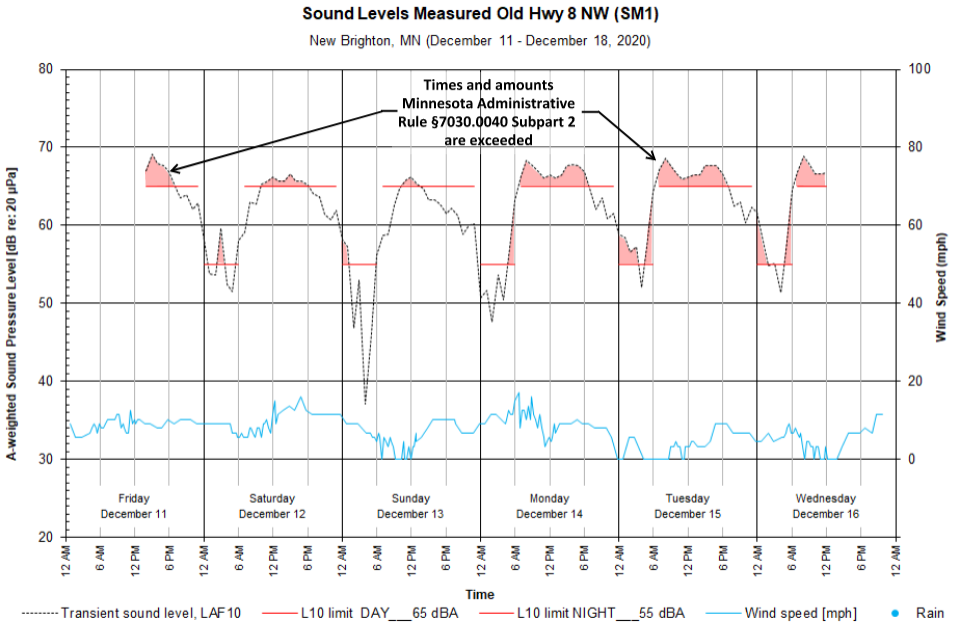


Figure 3b. 10th percentile hourly A-weighted sound level ($LAF_{50,1\text{-}hr}$) measured at SM1
Transient sound level
FXG New Brighton MN

Design Goals

Backup alarm sound, being intermittent, likely has a greater effect on the 10th percentile sound level and probably does not contribute to the 50th percentile sound level. The Minnesota Noise Standard limit on 10th percentile sound at residences is 55 dBA. Currently, backup alarm sound at residences is below this limit.

Fixed limits such as those of the State are sufficiently protective under most circumstances. However, FedEx facility neighbors have complained of tonal sound produced by vehicle backup alarms and, to a lesser extent, impact sound produced by trailer connects and disconnects and similar events. Community complaints of sound most often relate to the amount by which facility sound exceeds the existing ambient in the absence of the facility. Sound produced by a similar trucking facility, in a more urban area having a higher ambient sound level, would be less potentially annoying as the higher ambient sound would mask (cover-up) facility sound, rendering it less audible.

As an objective, we recommend that tonal backup alarm sound be reduced to not more than 5 dBA above the background sound level. For this project, we have defined the background sound level, or baseline, as the average of the lowest 90th percentile A-weighted sound levels ($LAF_{90,1\text{-}hr}$) measured each day in December 2020 at location SM1 during times when the facility was in operation. The hourly measured 90th percentile A-weighted sound levels are shown in Figure 4. The 90th percentile statistic was selected to filter-out or remove transient sound, i.e., most if not all the sound produced by FedEx operations. This design goal is an objective, not a legal limit. The baseline sound level is 40 dBA. <u>The design goal for tonal backup alarm sound is then 45 dBA.</u>

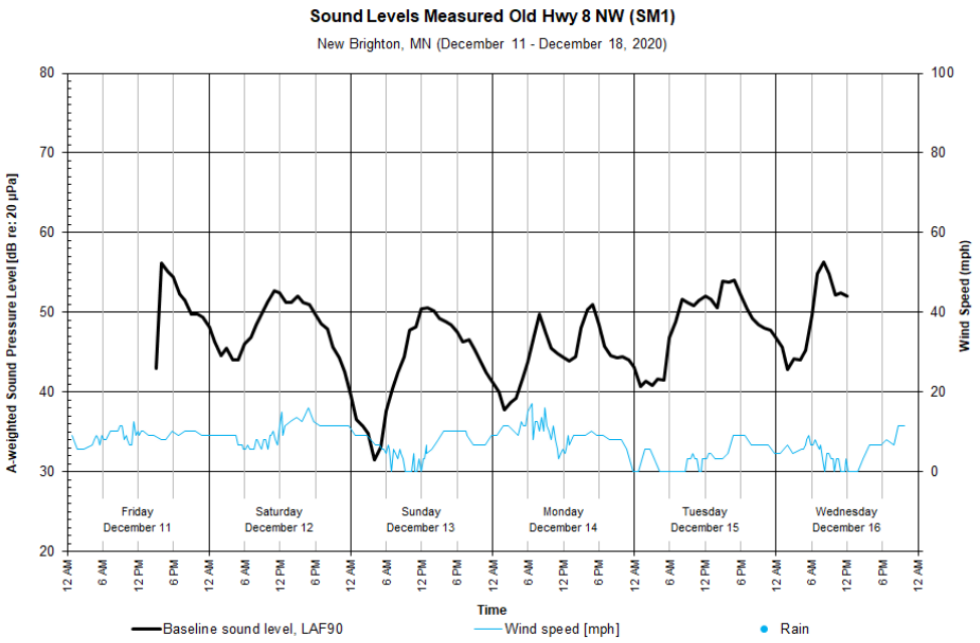


Figure 4. 90th percentile hourly A-weighted sound level ($LAF_{90,1\text{-}hr}$) measured at SM1
Used for establishing baseline for setting design goals
FXG New Brighton MN

Computer Modeling

The purpose of computer modeling is to determine sound barrier heights, lengths, and positions that will reduce existing facility sound levels to the recommended design goals for sound at nearest residences.

Modeling Technique

Modeling of facility sound was completed using Cadna/A (Datakustik GmbH, Version 2021 MR 1, 32-bit). Cadna/A is a computer program that implements the modeling techniques of ISO 9613-1 and ISO 9613-2 to estimate source sound levels at community receptor locations. In calculating sound levels at receptor locations, the Cadna model accounts for reductions in facility sound pressure levels associated with propagation distance, shielding by intervening structures and topography, and absorption of sound by the atmosphere and porous surfaces.

Sound Power

The Cadna model requires sound power levels for all sources modeled. Sound power level quantifies the amount of sound energy produced by a source and is expressed in decibels referenced to 1 picoWatt (pW or 10^{-12} watts). The distinction between "sound power" and "sound pressure" is quite important. *Sound power* is analogous to the power rating in watts of a light bulb. *Sound pressure* is analogous to the light intensity (perceived as brightness) at a given distance from a light bulb. The shorter the distance from the bulb, the greater the light intensity or perceived brightness at a particular location. Conversely, the longer the distance from the bulb, the less the light intensity or perceived brightness at a particular location. Note that the bulb's power rating does not change with viewing distance from the bulb; however, the light intensity and apparent brightness do. Similarly, the sound power of a source does not change with distance from the source, but the sound pressure does.

FXG Sound Power Data

Sound power level is determined from calibrated measurements of sound pressure combined with measurement distance and other conditions influencing sound propagation. Sound power levels for common FXG facility equipment and activities have been determined through sound measurements made at an FXG facility in Willington, CT. The equipment studied at the Willington facility is the same as that at the New Brighton facility. Sound power levels produced by facility sources are presented in Table 2.

Name	Sound power spectrum									
	31.5	63	125	250	500	1000	2000	4000	8000	dBA
Truck high idle	100	104	102	103	103	99	97	92	85	105
Backup alarm, tonal	54	68	78	79	89	107	91	86	77	107
Truck pass-by	107	104	110	109	107	105	101	98	94	110
Trailer disconnect	105	110	113	115	111	112	106	99	93	115

Table 2. Sound power level (dB re: 1 pW) spectra of facility sound sources
FXG New Brighton MN

FXG Source and Community Receptor Locations

The computer modeling of receptor sound levels requires that the location of sources, receptors, and attenuating elements be defined. Figure 5a shows eleven facility sound source groups SL1-SL11 used in computer modeling. A source group is the location of one or more specific sources. For example, a source group may have a trailer disconnect, back-up alarm, and truck pass-by, all occurring at about the same physical location on-site. For modeling, sources groups have been distributed throughout the trucking yard.

Figure 5b shows ten receptor locations R1-R10 used in facility computer modeling, as well as the locations where ambient sound was monitored (location R11).

Figure 5a. Google Earth image showing sound source locations used in computer modeling
FXG New Brighton MN

Figure 5b. Aerial photo showing sound monitoring and receptor locations used in computer modeling
FXG New Brighton MN

Estimated Source Sound Levels

No Sound Controls

Table 3 presents estimated maximum sound levels at residential receptor locations R1-R10 and at the sound monitoring location SM1 (R11). Data presented in the table have been computed with no sound mitigation measures such as barrier walls or acoustic enclosures. Tonal backup alarm sound levels in **red** text indicate levels exceeding our recommended design goal.

No Controls			**Ave. tonal backup alarm at R1-R3: 55 dBA**										
Source	**Source Type**	**Design Goal**	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**	**R10**	**R11 (SM1)**
Backup Alarm Tonal	Tonal	45	**56**	**55**	**54**	**53**	**51**	**50**	**49**	**50**	45	**46**	64
Trailer Disconnect	Transient	—	64	63	62	61	60	58	57	56	54	52	70
Truck High Idle	Continuous	—	53	52	52	50	49	48	47	45	43	41	62
Truck Pass-by	Continuous	—	57	56	55	54	53	53	52	50	49	47	65

Table 3. Estimated sound levels at residential study locations R1-R10 and at the sound monitoring location SM1 (R11): No Sound Controls
FXG New Brighton MN

The average existing backup alarm sound level at R1, R2, and R3 from Table 3 is 55 dBA, 10 dBA over the average of 45 dBA recommended as a design goal. To reduce sound levels at nearest residences, we have added barriers to the model. The two barrier locations, northern and southern, and their heights

are indicated in Figure 6. The northern barrier is 19 feet tall by 255 feet long; the southern barrier is 17 feet tall by 350 feet long. Barrier heights are referenced to the nearest pavement grades. Estimated sound levels, source types, design goals, and sound levels at receptor locations R1-R10 and at the sound monitoring location SM1 (R11) are reported in Table 4.

Barriers 19 and 17 feet tall			**Ave. tonal backup alarm sound level at R1-R3: 45 dBA**										
Source	**Source Type**	**Design Goal**	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**	**R10**	**R11 (SM1)**
Backup Alarm Tonal	Tonal	45	46	44	44	43	41	41	40	43	42	39	47
Trailer Disconnect	Transient	—	55	54	54	53	52	50	50	54	53	51	57
Truck High Idle	Continuous	—	47	44	43	42	41	40	39	44	43	41	46
Truck Pass-by	Continuous	—	48	48	48	46	45	43	43	48	47	45	51

Table 4. Estimated sound levels at residential study locations R1-R10 and at the sound monitoring location SM1 (R11): With Sound Control Barriers— Northern (19' tall by 255' long) and Southern (17' tall by 350' long) FXG New Brighton MN

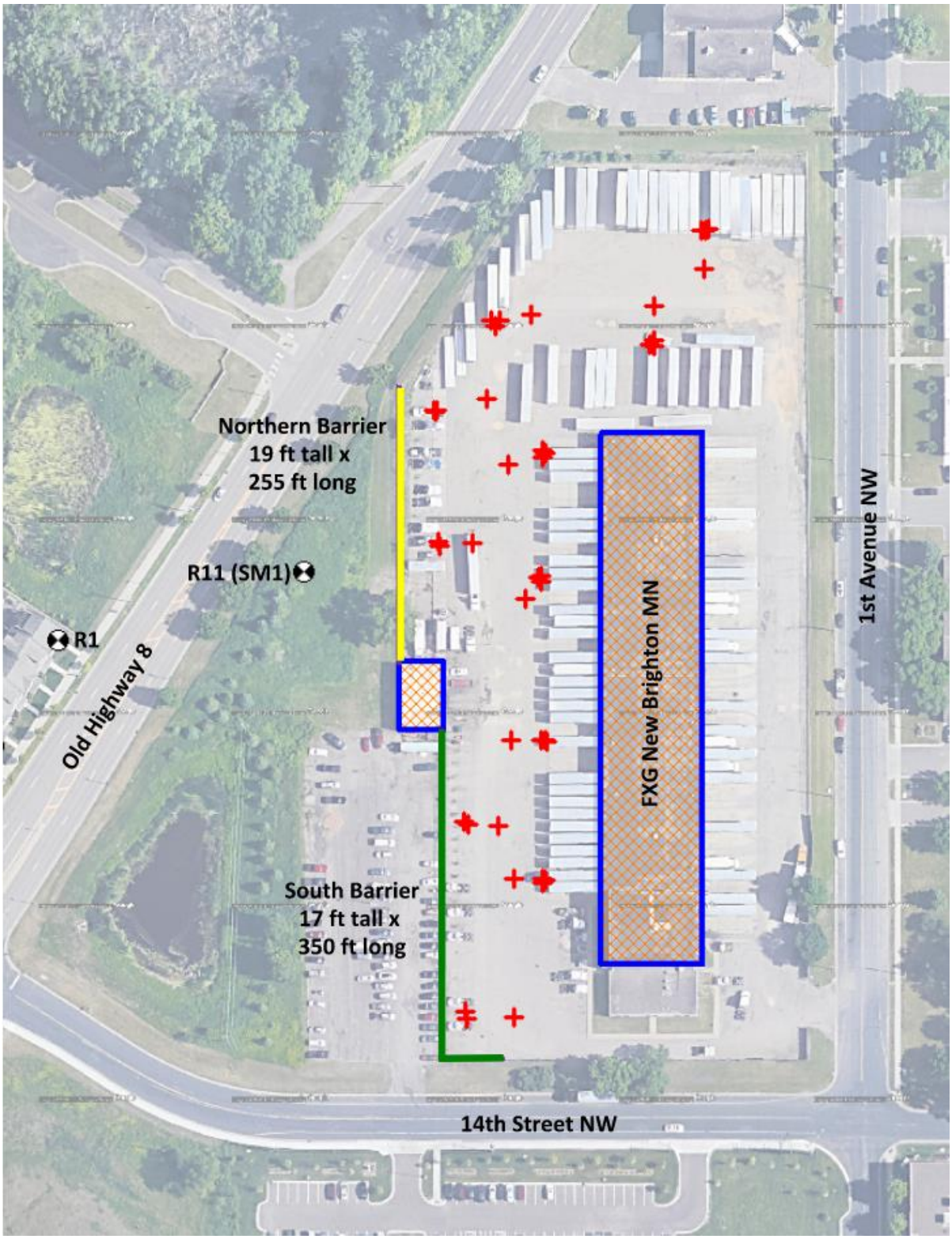


Figure 6. Google Earth image showing locations of barriers North (19' tall x 255' long), South (17' tall x 350' long) FXG New Brighton MN

Conclusions

This study is in response to the City of New Brighton letter citing complaints of noise produced by FedEx Ground operations at its facility bordering Old Highway 8. The study describes applicable limits, noise measurements conducted in December 2020, status of compliance with Minnesota Noise Standards, and computer modeling of sound propagation used to develop barrier concepts for controlling FedEx sound transmitted to nearest residences. Study findings are as follows:

- Only the State of Minnesota Noise Standards provide specific, measurable limits applicable to sound produced by FedEx operations on its site. County and City limits prohibit creating a noise nuisance condition, but do not define limits that can be used for acoustical design.

- Existing FedEx facility sound levels at nearest residences are generally in compliance with Minnesota Administrative Noise Standards.

- To address complaints of sound, measured sound level data have been used to develop design goals for sound to minimize predominant complaints of noise produced by vehicle backup alarms operating on the FedEx Ground site.

- The recommended control concept is for the construction of two barriers on the west side of the facility. These barriers would screen residences from FedEx site activities, reducing backup alarm sound and sound produced by other equipment and activities at nearest residences to levels further below Minnesota Noise Standards, and eliminating or minimizing noise complaints.

* * *

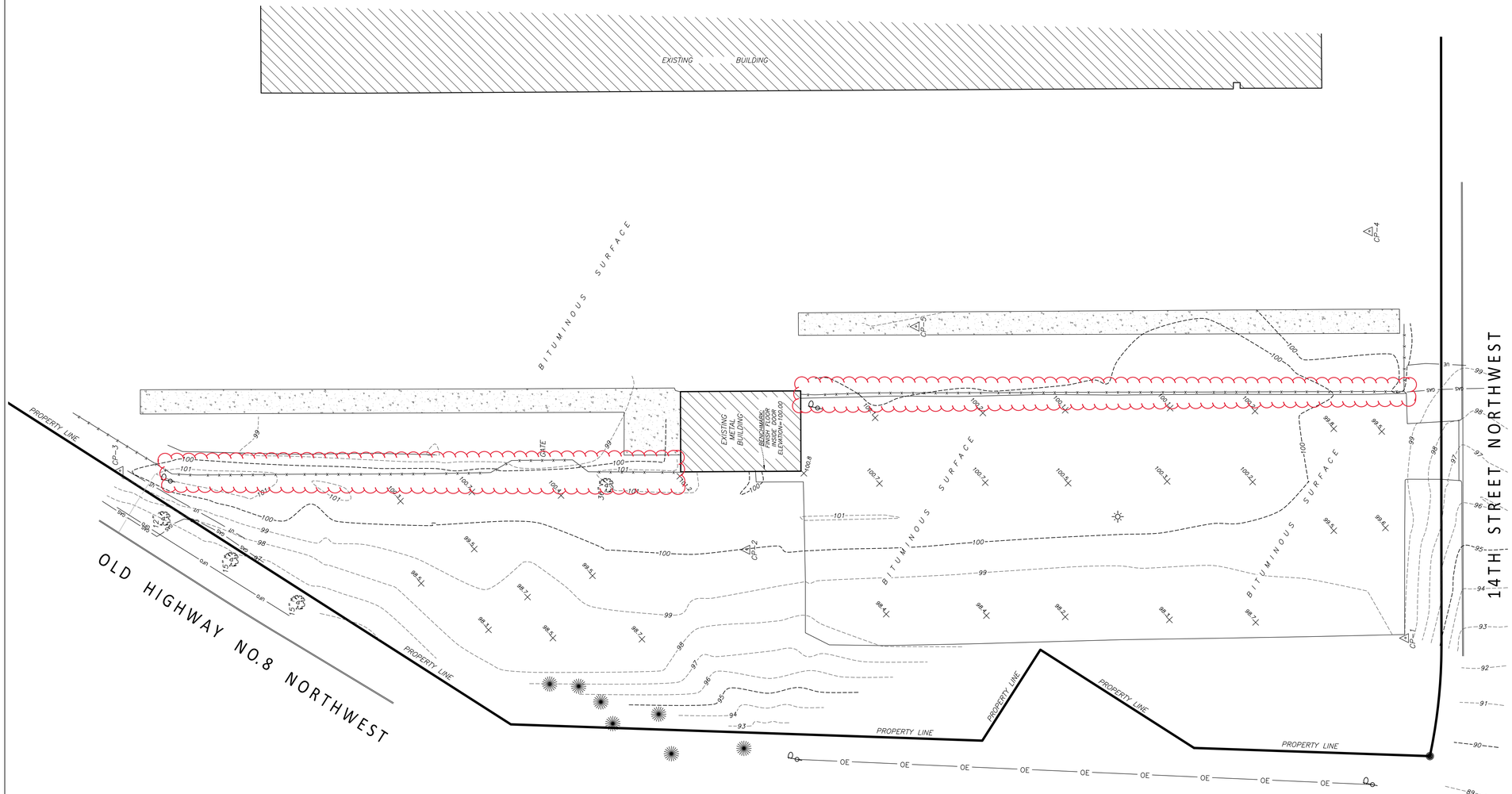
Do not hesitate to contact me to discuss or if you require any further information. Thank you.

Sincerely,
CAVANAUGH TOCCI

Gregory C. Tocci, *Sr. Principal Consultant*

FXG New Brighton MN 2a

EXISTING CONDITION SURVEY



LEGEND OF SYMBOLS & ABBREVIATIONS

- TELEPHONE PEDESTAL
- VAULT
- LIGHT POLE
- GAS METER
- POWER POLE
- PVC VENT PIPE
- ELECTRIC METER
- AIR CONDITIONER UNIT
- CABLE BOX
- WELL HEAD
- WATER VALVE
- FIRE HYDRANT
- SANITARY MANHOLE
- STORM DRAIN MANHOLE
- STORM DRAIN INLET
- TREE–DECIDUOUS
- TREE–EVERGREEN
- SET RED PLASTIC CAP CONTROL POINT
- FOUND IRON (AS NOTED)

- UE — UNDERGROUND ELECTRIC LINE
- UFO — UNDERGROUND FIBER–OPTIC LINE
- UT — UNDERGROUND TELEPHONE
- UNDERGROUND WATER LINE
- OE — OVERHEAD ELECTRIC LINE
- GAS — UNDERGROUND GAS LINE
- EXISTING CHAIN LINK FENCE

BENCHMARK

1. ELEVATIONS ARE ASSUMED AND SET TO THE FINISHED FLOOR OF THE METAL BUILDING INSIDE THE SOUTH DOOR AS SHOWN HEREON. THE FINISH FLOOR ELEVATION IS ASSUMED TO BE 100.00 FOR THE PURPOSE OF THIS EXISTING CONDITION SURVEY AND ALL ELEVATIONS HEREON ARE RELATED THERETO.

NOTES

1. NORTHWESTERN SURVEYING AND ENGINEERING, INC. DID NOT PERFORM A BOUNDARY SURVEY FOR THIS EXISTING CONDITION SURVEY. THE PROPERTY LINES SHOWN HEREON ARE SHOWN FOR REFERENCE ONLY.

UTILITY NOTES

UNDERGROUND UTILITIES
GOPHER STATE ONE CALL
2 WORKING DAYS
BEFORE YOU DIG
CALL 1–800–252–1166 (TOLL FREE)
UTILITY NOTIFICATION CENTER OF MINNESOTA

THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES AND GROUND MARKINGS. THE SURVEYOR WAS NOT PROVIDED WITH UNDERGROUND PLANS TO DETERMINE THE LOCATION OF ANY SUBTERRANEAN USES, AND A "ONE CALL" WAS NOT PERFORMED AS PART OF THIS SURVEY.

Control Point No.	Northing	Easting	Elevation
CP-1	202431.69	549911.60	98.83
CP-2	202760.50	549955.71	99.60
CP-3	203073.34	549995.06	99.51
CP-4	202449.73	550114.59	101.56
CP-5	202676.01	550067.06	99.08

N E S W

SCALE
1" = 30'

30 0 30 60

BEARINGS ARE BASED ON NAD83(2011) HENNEPIN COUNTY COORDINATE SYSTEM

NORTHWESTERN SURVEYING & ENGINEERING, INC.
P.O. Box 3067 – Bemidji Minnesota – 56619

TMG CONSTRUCTION – FED–EX BUILDING
50 14TH ST. W.
NEW BRIGHTON, MN 55112
RAMSEY COUNTY, MN

JOB# 21346 DRAWN BY: TS
FILENAME: 21346_EXISTCOND.DWG

REV#	DESCRIPTION	DATE

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

KALEB J. KADELBACH (LIC. NO. 57070) DATE: 4/19/2021

FEDEX CORPORATION

FXG - NEW BRIGHTON, MN

TUF BARRIER®
REFLECTIVE SOUND WALL

DRAWING INDEX

	DRAWING No.	DRAWING TITLE	REV.	ISSUE DATE
1	2021-00216A-000	COVER SHEET	1	29 JUN 2021
		REFLECTIVE SOUND WALL DRAWINGS		
	2021-00216A-NP	NOTES	0	20 MAY 2021
1	2021-00216A-1A	PLAN VIEW - NORTH WALL	1	29 JUN 2021
	2021-00216A-1B	PLAN VIEW - SOUTH WALL	1	29 JUN 2021
	2021-00216A-1C	ELEVATION - SOUTH WALL	1	29 JUN 2021
	2021-00216A-1D	ELEVATION - NORTH WALL	1	29 JUN 2021
	2021-00216A-1E	SCHEDULE	1	29 JUN 2021
	2021-00216A-2A	TYPICAL ASSEMBLY ELEVATION AND SECTION	1	29 JUN 2021
	2021-00216A-3A	POST DETAILS PT-A	1	29 JUN 2021
	2021-00216A-3B	POST DETAILS PT-B	1	29 JUN 2021
	2021-00216A-3C	POST DETAILS PT-C	1	29 JUN 2021
	2021-00216A-3D	POST DETAILS PT-D	1	29 JUN 2021
	2021-00216A-3E	POST DETAILS PT-E	1	29 JUN 2021
	2021-00216A-3F	POST DETAILS PT-F	1	29 JUN 2021
	2021-00216A-3G	POST DETAILS PT-G	1	29 JUN 2021
	2021-00216A-3H	POST DETAILS PT-H	1	29 JUN 2021
	2021-00216A-3J	POST DETAILS PT-J	1	29 JUN 2021
	2021-00216A-3K	POST DETAILS PT-K	1	29 JUN 2021
	2021-00216A-3L	POST DETAILS PT-L	1	29 JUN 2021
	2021-00216A-3M	POST DETAILS PT-M	1	29 JUN 2021
	2021-00216A-3N	POST DETAILS PT-N	1	29 JUN 2021
	2021-00216A-3O	POST DETAILS PT-O	1	29 JUN 2021
	2021-00216A-4A	TYPICAL FOUNDATION DETAILS FOR GROUND MOUNTED POSTS	0	20 MAY 2021
	2021-00216A-4B	TYPICAL ANCHOR ROD DETAILS FOR GROUND MOUNTED POSTS	0	20 MAY 2021
	2021-00216A-4C	STRUCTURE MOUNTING DETAILS	0	20 MAY 2021
	2021-00216A-5A	GENERAL PANEL RETENTION DETAILS	0	20 MAY 2021
1	2021-00216A-6A	BILL OF MATERIALS	1	29 JUN 2021

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.

SIGNATURE: _____

NAME: JAMES T. BREEDEN

DATE: 06-29-21 LICENSE NUMBER: 58090

STABILITY ENGINEERING
1376 Church Street, Suite 200, Decatur, GA 30030 Ph/Fax: 404-377-9316

SE# 21289

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REV NO.	DATE	BY	DESCRIPTION
1	29 JUN 21	PAS	RE-ISSUED FOR APPROVAL
0	20 MAY 21	PAS	ISSUED FOR APPROVAL

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www.ailsoundwalls.com www.ail.ca

FEDEX CORPORATION
FXG - NEW BRIGHTON, MN
COVER SHEET

DESIGNED	CM	19 MAY 21
DES. CHK	PAS	19 MAY 21
DRAWN BY	ATT	19 MAY 21
DWG. CHK	PAS	19 MAY 21

BRANCH P.O.	CUSTOMER REF.	TOTAL DWGS
-	-	27

PROJECT NUMBER 2021-00216A | DWG NO. 000 | REV. 1

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June 29, 2021 12:49:46 PM ALBIN TOM

DESIGN:
1. The structures and their components have been designed in accordance with IBC 2018 & ASCE 7-2016 for the following loads.
   a. Wind load:
      Risk Category = II; Exposure Category = C
      Nominal Wind Speed, V_{ASD} = 85 mph
      Ultimate (Basic) Wind Speed, V_{ULT} = 110 mph
      Velocity Pressure, q_h = 23.0 psf
      Maximum Factored Wind Load (LRFD) = 56.3 psf

2. All dimensions and sizes are given in inches (in), unless noted otherwise.
3. Footing design is based on the following soil properties below from geotechnical engineering report "MP215072 Georeport DBM" prepared by Terrcon Consultants, Inc:
   Allowable Soil Bearing Pressure = 3000 psf
   Soil Properties: N_{SPT} = 5, γ = 110 pcf, μ = 0.30, ϕ = 28°, Kp = 2.77
4. It is the contractor's responsibility to test and verify that the soil parameters and site geometry meet the requirements listed above. AIL's representative shall be notified of discrepancies prior to commencing construction.
5. Any deviations from these drawings, required as a result of deferring site conditions, shall be immediately discussed with the design engineer prior to any changes to the design.
6. Calculations by Atlantic Industries Limited are available upon request.
7. Ad-freeze effects is not considered in the design. The contractor and the geotechnical engineer shall take appropriate measures to eliminate ad-freeze forces.
8. The base building structure has not been analyzed in the design of the sound barrier wall. As such, it is the responsibility of the building owner to ensure that the base building structure is capable of supporting the wind and gravity loads imposed by the sound barrier wall addition.

CONCRETE:
1. All concrete work shall conform to all requirements of ACI 301, "Specification for Structural Concrete", except as notified by the requirements of these structural drawings.
   - Concrete cylinder strength at 29 days shall be minimum 4000 psi with a 4" (±1") slump unless noted otherwise.
2. Concrete coarse aggregate, with a maximum size of 1" may be used in foundations. All other concrete shall have a coarse aggregate with a maximum size of $\frac{3}{4}$".
3. Concrete mixing, transporting, placing, and curing shall be done in accordance with the recommendations of ACI 301. Ready-mixed concrete shall be mixed and delivered in accordance with the requirements of ASTM C94 or ASTM C685.

COLD WEATHER INSTALLATION:
1. Foundation holes shall not be allowed to freeze.
2. If predicted weather within 24 hours of installation is below 41 degree Fahrenheit, pour concrete at temperature of +59 degree, and trap with polyethylene drop sheet for 3 days after placement.
3. If predicted weather within 24 hours of installation is below 32 degree Fahrenheit, pour concrete at temperature of +59 degree, trap as above and pack with 3" straw and provide heat. Maintain heat and insulation for 3 days after placement.

REINFORCEMENT:
1. Reinforcing steel shall be deformed bars conforming to ACI 315, latest edition.
2. Reinforcement cage shall be assembled from deformed bars as per these drawings
3. The clear distance between reinforcing bars, bundled bars, pre-stressing tendons, and ducts shall be in accordance with the limitations of ACI 318.
4. Cover to reinforcement in caisson:
   a. 3" for caisson side and bottom
   b. 2" for caisson top

STRUCTURAL STEEL:
1. All structural steel work shall comply with AISC Standards.
2. All steel posts shall be ASTM A992 Grade 50 U.N.O.
3. All structural steel, other than steel posts (base plates, bearing plate washers, etc.), shall be ASTM A36 U.N.
4. All structural plates shall be gas cut, plasma cut, laser cut or water jet cut. No sheared edge is permitted.
5. Fabrication of steel posts shall be in accordance with appropriate shop drawing. Shop drawings shall be submitted to Atlantic Industries Limited (7) days prior to start of fabrication. Shop drawings must be signed and sealed by a professional engineer. Only shop drawings with "no comment" or "see comments" shall be used for fabrication. If the fabricator choses to start fabrication without reviewed drawings, he does so at his own risk.
6. Welding of structural steel shall comply with AWS Class E70. Weld electrodes shall be E49XX or ER49XX.
7. All structural steel components shall be hot dip galvanized after fabrication in accordance with ASTM A123.
8. If on-site welding is required, it shall be approved by design engineer prior to commencing the work.
9. It is the contractor's responsibility to inspect all structural steel for any galvanized coat or weld damage. Galvanized coat damage shall be completed in accordance with ASTM A780 method 2, prior to installation. Structural steel with damaged weld (structural or tack weld) shall not be installed and shall be reported to the AIL's representative.

FOUNDATIONS:
1. Depth of drilled shaft foundations are shown on drilled shaft schedule.
2. Footing concrete shall be cast entirely against undisturbed soil, rock or compacted soil with minimum 95% SPD.
3. Post installation shall be done per these drawings.
4. It is the responsibility of the contractor to design and install temporary post bracing as required until concrete cures
5. The contractor shall maintain 1" clearance from the top of the concrete to the bottom of the flat bar.
6. No pour break is permitted in the caissons.
7. Station points shown on elevation chart are approximate. Wall alignment shall be done as per contract drawings.
8. Contractor shall locate and confirm the location of all underground services and structures prior to start of any excavation. Should any post require relocation, the contractor shall inform AIL's representative prior to commencing the work.
9. The contractor shall verify all dimensions on site and correlate them with construction drawings. AIL's representative shall be notified of any discrepancies prior to commencing construction

EPOXY FOR ANCHORS:
1. All anchors shall be HILTI HIT-HY 270 chemical adhesive with HIT-SC SCREEN TUBE with embedment as shown on drawings.
2. Anchors shall be installed (drilling and installation) per manufacturer's installation manuals.
3. It is the responsibility of the contractor to check and verify the condition of the existing masonry. If the masonry is deteriorated, or proposed connection is not suitable, the contractor shall notify the AIL's representative prior to commencing the work.

INSTALLATION:
1. Post installation shall be done per these drawings.
2. Concrete in caissons shall reach minimum 70% of maximum strength, but not less than 3650 psi, before panel installation.
3. Posts shall be installed plumb to within +/- $\frac{3}{8}$". The posts shall be located to the lines and grades specified on the shop drawings to within a tolerance of +/- $\frac{3}{8}$".
4. Handling of panels, moving or storing, shall provide for adequate care and protection to prevent any damage. Additional care shall be taken to keep unpackaged, uninstalled panels clean and to prevent water infiltration.
5. To protect wall panels and anchor connection from damage of any kind and to allow the free flow of ground water, the contractor shall place a free draining material on each side of the wall. Dimensions of the free-draining strip shall be based on the expected amount of ground water and slope of the terrain and shall be determined by others, but shall not be less than 8" on each side of the wall.
6. At no time shall the final grade be higher on one side of the wall than the other when completing grading. The final grade on each side of the sound wall, must be the same elevation.
7. Grout under base plate with Dayton Superior 1107 Advantage Grout per manufacturer's instructions prior to installation of panels. Allow grout to cure per instructions prior to installation of panels.
8. Construction shall be in accordance with federal, state, and local ordinances, and IBC, 2018 ED.
9. The contractor shall follow the AISC "Turn-of-nut" installation procedure.

ANCHORS:
1. All anchors shall be per ASTM F1554 GRADE 55 or equivalent.
2. All nuts shall be per ASTM A563-DH or equivalent.
3. All washers shall be per ASTM F436 or equivalent.
4. Anchors shall be hot dip galvanized after fabrication.
5. Anchors shall be installed with a tolerance of ± $\frac{1}{16}$" from centre. Anchor bolt groups shall be installed ± $\frac{1}{4}$" from the specified centre. A maximum accumulation of delineation of $\frac{1}{4}$" per 100' along the line of multiple anchor groups but shall not exceed a total of 1".
6. Anchor installation shall be done by use of an appropriate template (steel or plywood). The template shall be secured in place during concrete pouring. Template anchor holes shall be $\frac{1}{16}$" bigger than the anchor, to allow proper tolerance. Anchor locations shall be as per these drawings. Design and supply of the templates is contractor's responsibility. Template shall be removed before post installation.
7. No corrective actions (hammering, twisting, etc.) shall be performed on anchors after the concrete is cured.
8. The contractor shall verify all dimensions on site and correlate them with construction drawings. AIL's representative shall be notified of any discrepancies prior to commencing construction.
9. 'Turn of nut' is method for bolt pretension. During installation, all (8) nuts (4 leveling and 4 top nuts) shall be properly installed and tightened. Refer to AISC for 'turn of nut' installation procedure. Contact surfaces, washers and base plate, shall be hot-dip galvanized and wire-brushed. The gap between the underside of base plate and top of cassion shall not be more than 2".

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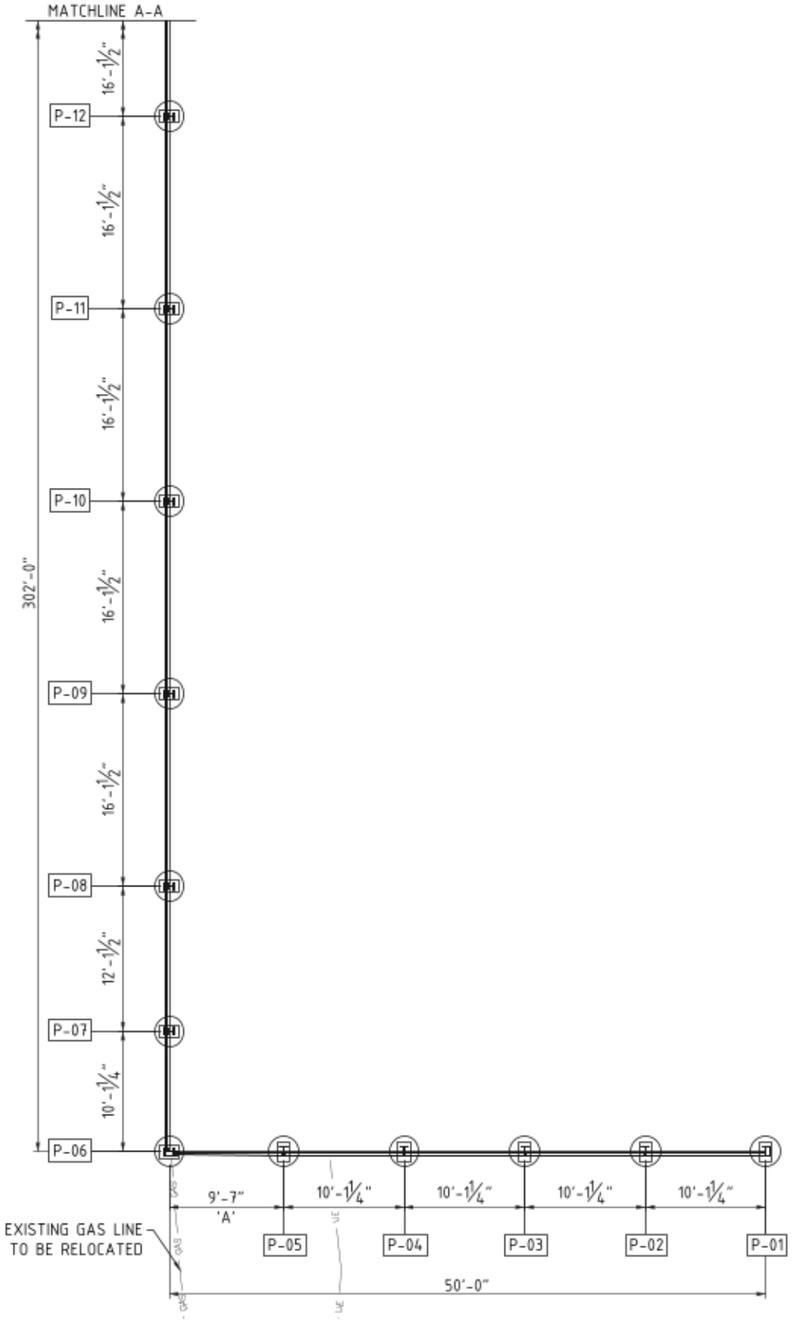
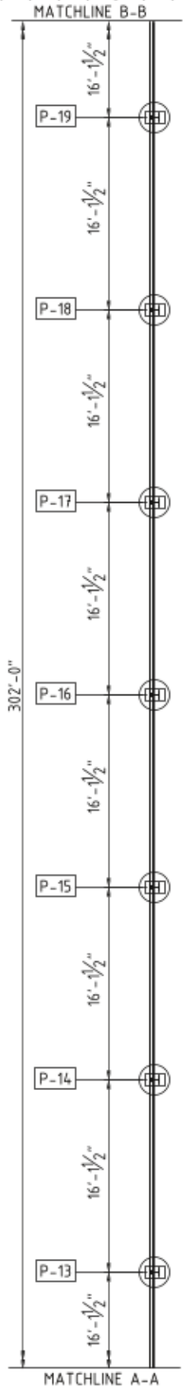
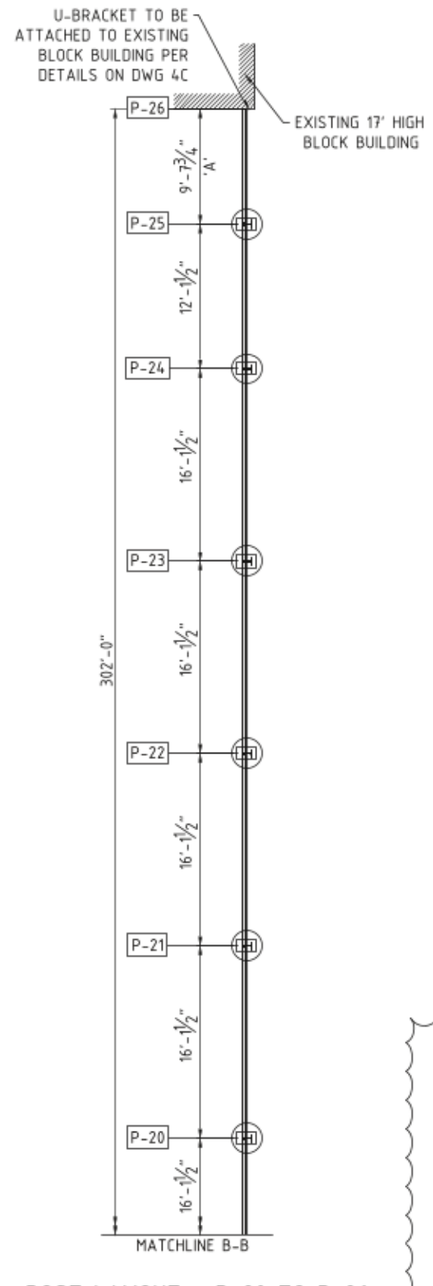


A 1A POST LAYOUT - P-01 TO P-12
SCALE: NTS

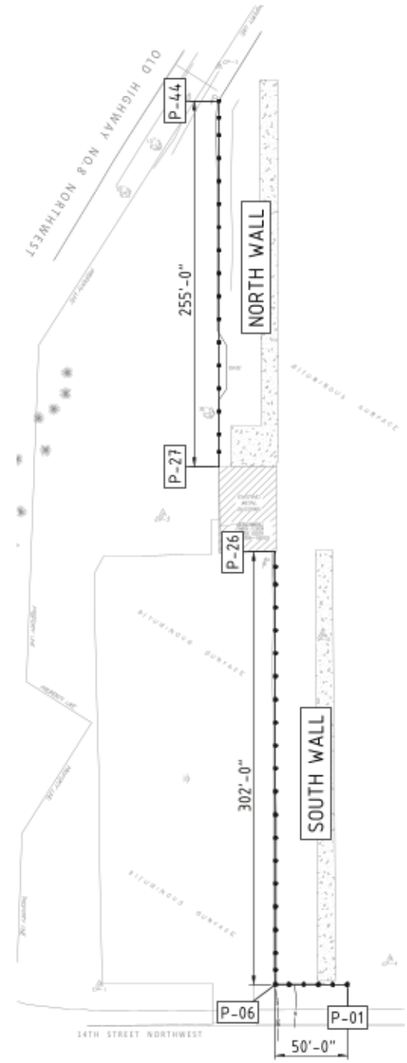


B 1A POST LAYOUT - P-13 TO P-19
SCALE: NTS

FIELD CUT PANEL NOTE
'A' - CUT FROM ON END OF 119.5" PANEL.
'B' - CUT FROM ON END OF 143.5" PANEL.



C 1A POST LAYOUT - P-20 TO P-26
SCALE: NTS



KEY PLAN
SCALE NTS

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SIGNATURE:

NAME: JAMES T. BREEDEN

DATE: 06-29-21 LICENSE NUMBER: 58090

REV NO.	DATE	BY	DESCRIPTION
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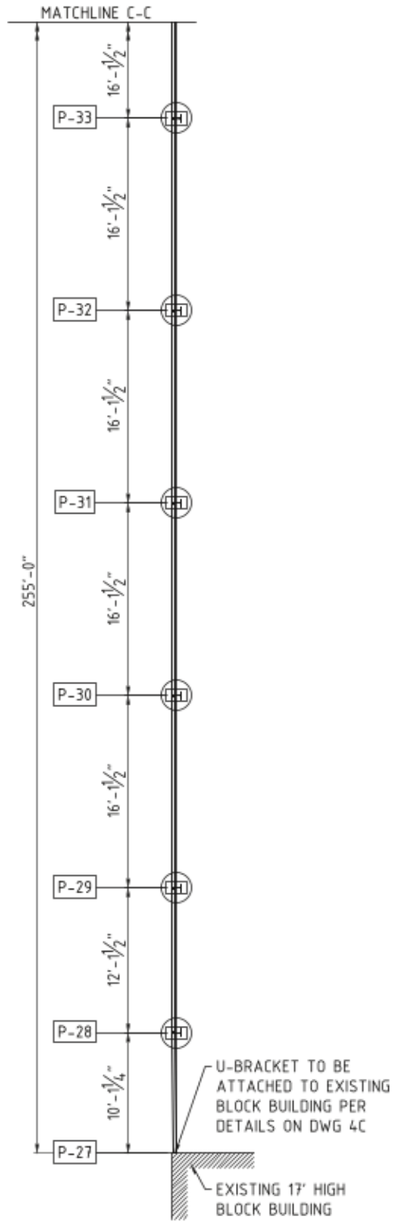
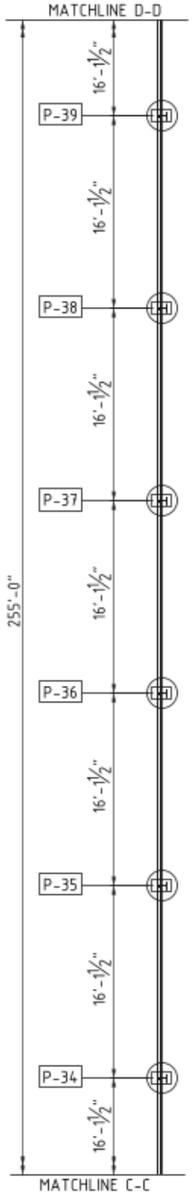
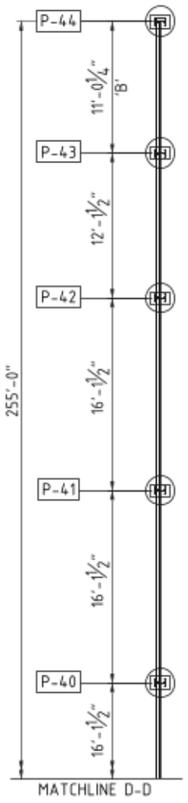


A 1B POST LAYOUT - P27 TO P-33
SCALE: NTS

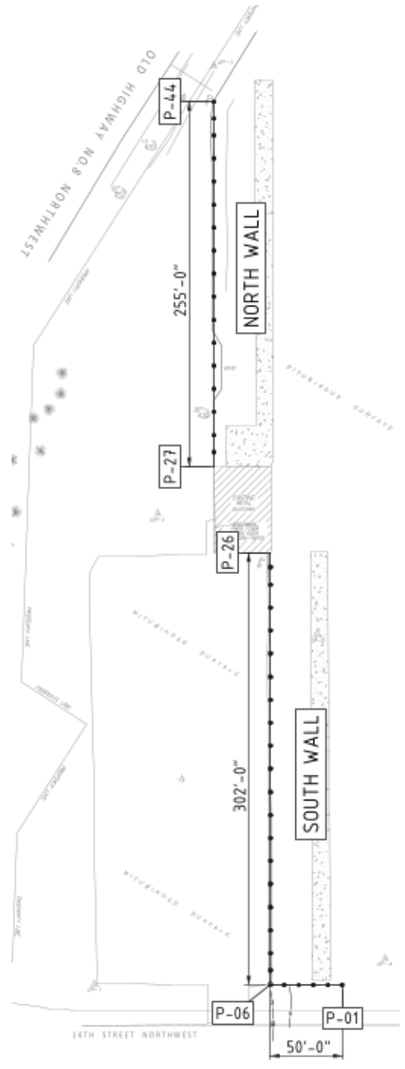


B 1B POST LAYOUT - P-34 TO P-39
SCALE: NTS



C 1B POST LAYOUT - P-40 TO P-44
SCALE: NTS

FIELD CUT PANEL NOTE
'A' - CUT FROM ON END OF 119.5" PANEL.
'B' - CUT FROM ON END OF 143.5" PANEL.



KEY PLAN
SCALE NTS

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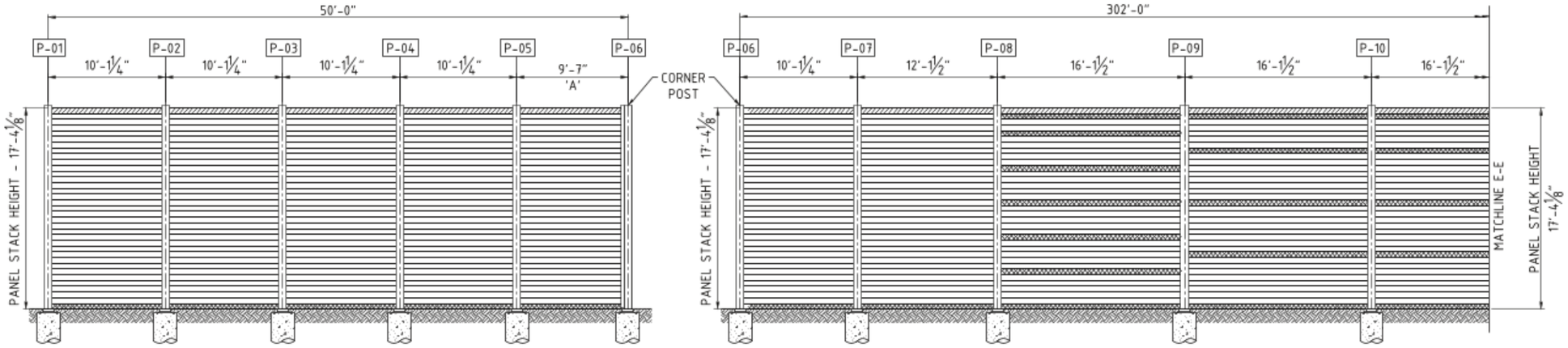
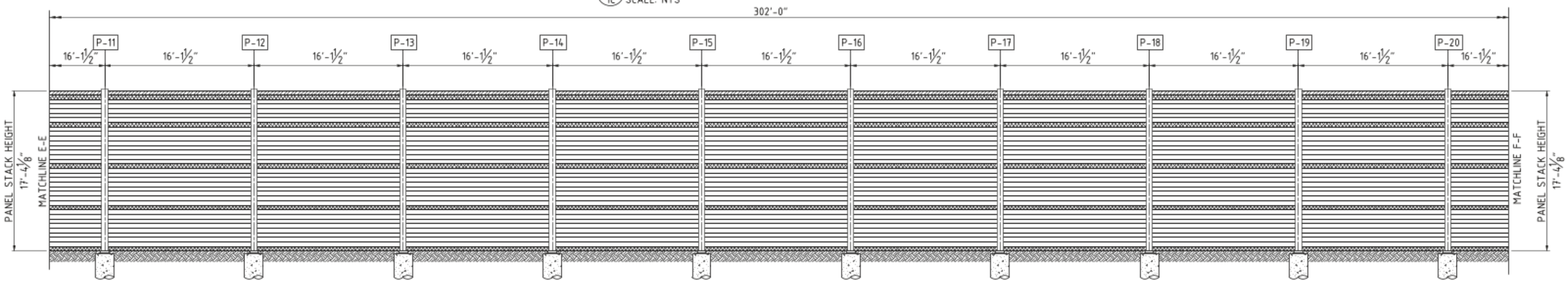
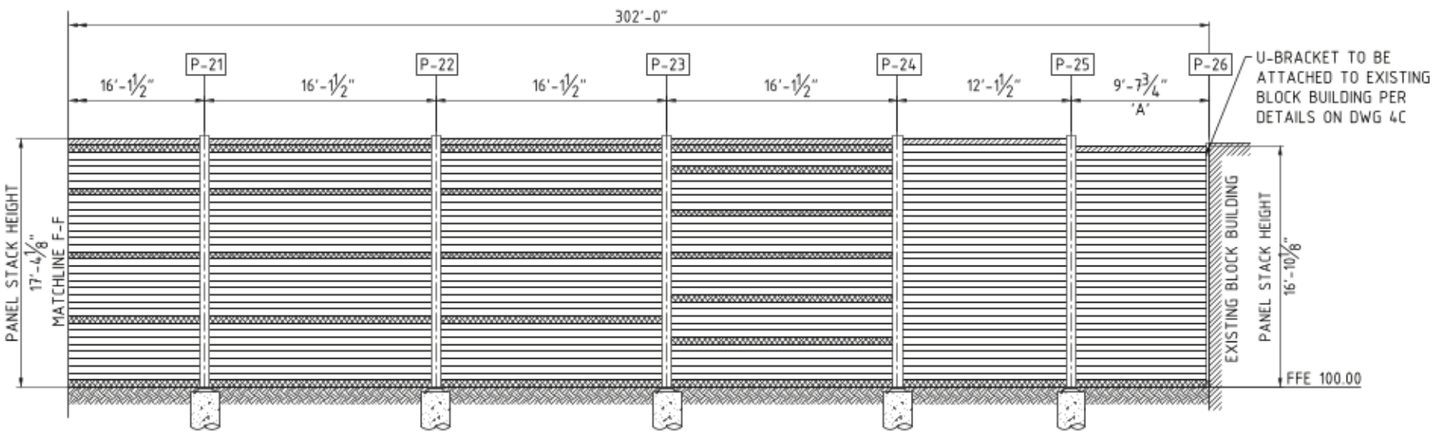


A/1C ELEVATION - P-01 TO P-10
SCALE: NTS



B/1C ELEVATION - P-11 TO P-20
SCALE: NTS



B/1C ELEVATION - P-21 TO P-26
SCALE: NTS

⚠1
NOTE:
ELEVATION VIEW IS SHOWN AS LOOKING AT THE SOUND WALL FROM THE FEDEX FACILITY

FIELD CUT PANEL NOTE
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'B' - CUT FROM ON END OF 143.5" PANEL.

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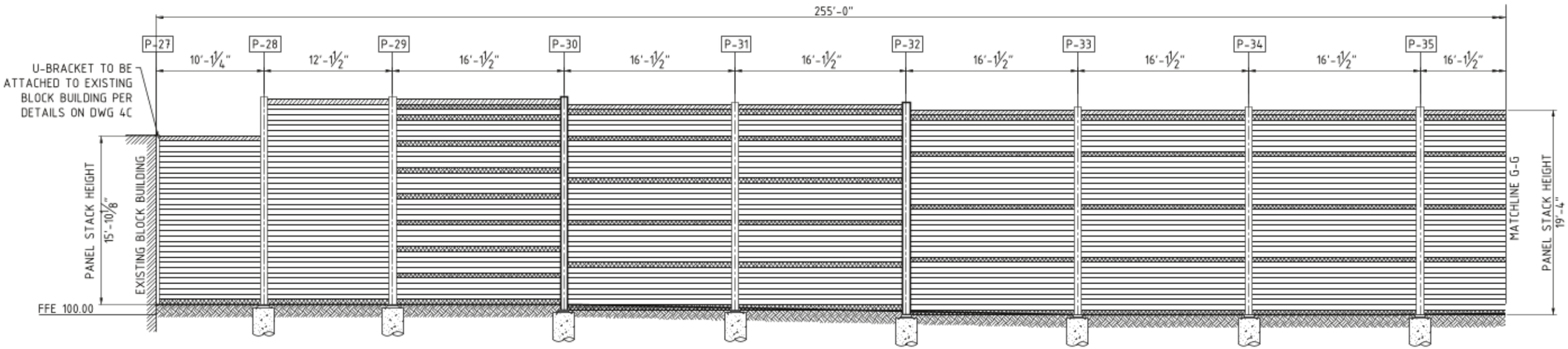
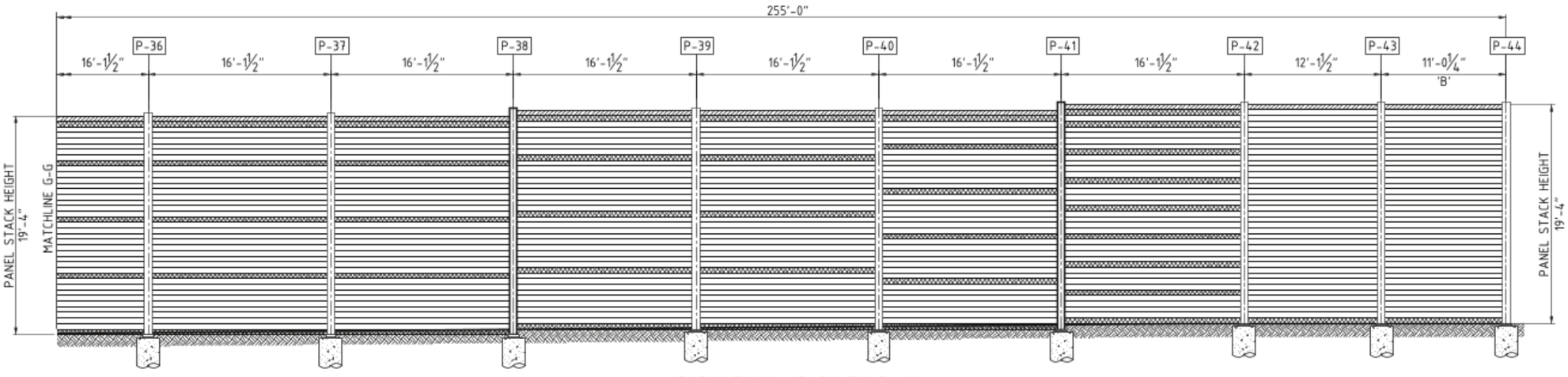


A/10 ELEVATION - P-27 TO P-35
SCALE: NTS



B/10 ELEVATION - P-36 TO P-44
SCALE: NTS

1

NOTE:
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SCHEDULE (SOUTH WALL)

COL. #1	COL. #2	COL. #3	COL. #4	COL. #5	COL. #6	COL. #7	COL. #8	COL. #9	COL. #10	COL. #11	COL. #12	COL. #13	COL. #14	COL. #15	COL. #16
POST ID	T/FDN ELEV. (FT)	FDN. TYPE	PIER DIA. (IN)	FDN. DEPTH (FT)	ANCHOR ROD TYPE	POST SIZE	POST TYPE	POST LENGTH	BASE PLATE TYPE	FLAT BAR LEFT SIZE	FLAT BAR LEFT LENGTH	FLAT BAR RIGHT SIZE	FLAT BAR RIGHT LENGTH	SEAT PLATE LEFT HEIGHT	SEAT PLATE RIGHT HEIGHT
P-01	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-A	17'-6 3/4"	BP-1	1/4"X8 3/4"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-02	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-03	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-04	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-05	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-06**	99.708	FT-2	30	11-0"	AR-1	W10x45	PT-C	17'-6 3/4"	BP-2	(2)3/8"X3" (1)1/4"X8 3/4"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	1 -	-
P-07	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-08	99.708	FT-3	30	12-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-09	99.708	FT-3	30	12-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-10	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-11	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-12	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-13	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-14	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-15	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-16	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-17	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-18	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-19	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-20	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-21	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-22	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-23	99.708	FT-3	30	12-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-24	99.708	FT-3	30	12-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-25	99.708	FT-1	30	11-0"	AR-1	W10x33	PT-B	17'-6 3/4"	BP-1	3/8"X3"	17'-5 3/4"	3/8"X3"	17'-5 3/4"	-	-
P-26	-	-	-	-	-	CUSTOM BRACKET	PT-D	17'-0 1/2"	-	-	-	-	-	0'-0 5/8"	-

SCHEDULE (NORTH WALL)

COL. #1	COL. #2	COL. #3	COL. #4	COL. #5	COL. #6	COL. #7	COL. #8	COL. #9	COL. #10	COL. #11	COL. #12	COL. #13	COL. #14	COL. #15	COL. #16
POST ID	T/FDN ELEV. (FT)	FDN. TYPE	PIER DIA. (IN)	FDN. DEPTH (FT)	ANCHOR ROD TYPE	POST SIZE	POST TYPE	POST LENGTH	BASE PLATE TYPE	FLAT BAR LEFT SIZE	FLAT BAR LEFT LENGTH	FLAT BAR RIGHT SIZE	FLAT BAR RIGHT LENGTH	SEAT PLATE LEFT HEIGHT	SEAT PLATE RIGHT HEIGHT
P-27	-	-	-	-	-	CUSTOM BRACKET	PT-E	16'-0 1/2"	-	-	-	-	-	-	0'-0 5/8"
P-28	100.660	FT-4	30	15-0"	AR-2	W10x45	PT-F	19'-6 3/4"	BP-3	3/8"X3"	15'-11 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-29	100.660	FT-5	30	13-6"	AR-2	W10x39	PT-G	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-30	100.163	FT-5	30	13-6"	AR-2	W10x39	PT-H	20'-0 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-11 3/4"	0'-6"	-
P-31	100.163	FT-6	30	12-0"	AR-2	W10x33	PT-J	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-32	99.667	FT-6	30	12-0"	AR-2	W10x33	PT-K	20'-0 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-11 3/4"	0'-6"	-
P-33	99.667	FT-6	30	12-0"	AR-2	W10x33	PT-J	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-34	99.667	FT-6	30	12-0"	AR-2	W10x33	PT-J	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-35	99.667	FT-6	30	12-0"	AR-2	W10x33	PT-J	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-36	99.667	FT-6	30	12-0"	AR-2	W10x33	PT-J	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-37	99.667	FT-6	30	12-0"	AR-2	W10x33	PT-J	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-38	99.667	FT-6	30	12-0"	AR-2	W10x33	PT-L	20'-0 3/4"	BP-3	3/8"X3"	19'-11 3/4"	3/8"X3"	19'-5 3/4"	-	0'-6"
P-39	100.163	FT-6	30	12-0"	AR-2	W10x33	PT-J	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-40	100.163	FT-6	30	12-0"	AR-2	W10x33	PT-J	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-41	100.163	FT-5	30	13-6"	AR-2	W10x39	PT-M	20'-0 3/4"	BP-3	3/8"X3"	19'-11 3/4"	3/8"X3"	19'-5 3/4"	-	0'-6"
P-42	100.660	FT-5	30	13-6"	AR-2	W10x39	PT-G	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-43	100.660	FT-4	30	15-0"	AR-2	W10x45	PT-N	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	3/8"X3"	19'-5 3/4"	-	-
P-44	100.660	FT-6	30	12-0"	AR-2	W10x33	PT-O	19'-6 3/4"	BP-3	3/8"X3"	19'-5 3/4"	1/4"X8 3/4"	19'-5 3/4"	-	-

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SIGNATURE: _____

NAME: JAMES T. BREEDEN

DATE: 06-29-21 LICENSE NUMBER: 58090

ALBIN TOM

June 29, 2021 12:49:52 PM

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DWG NO. 1E
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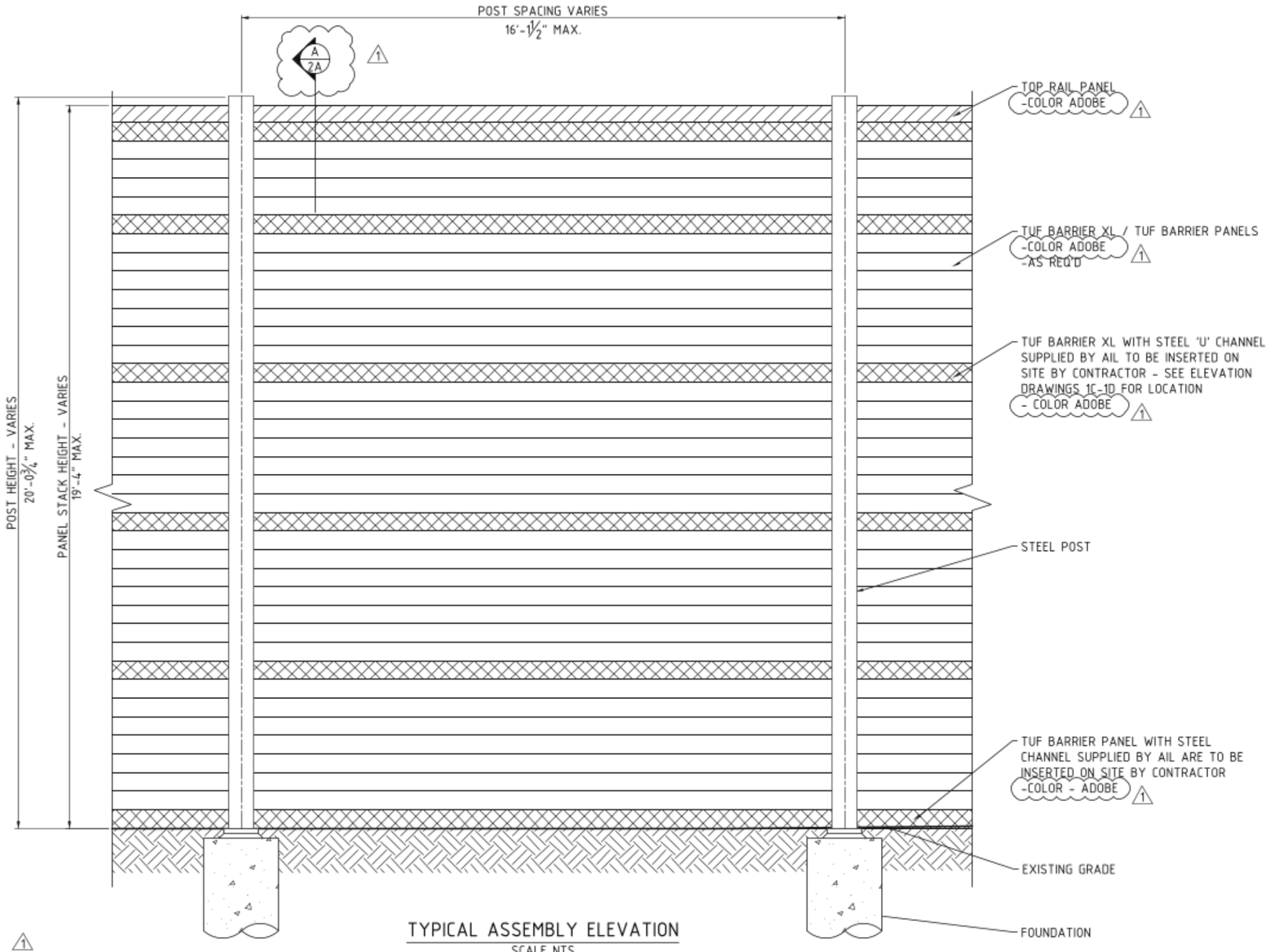
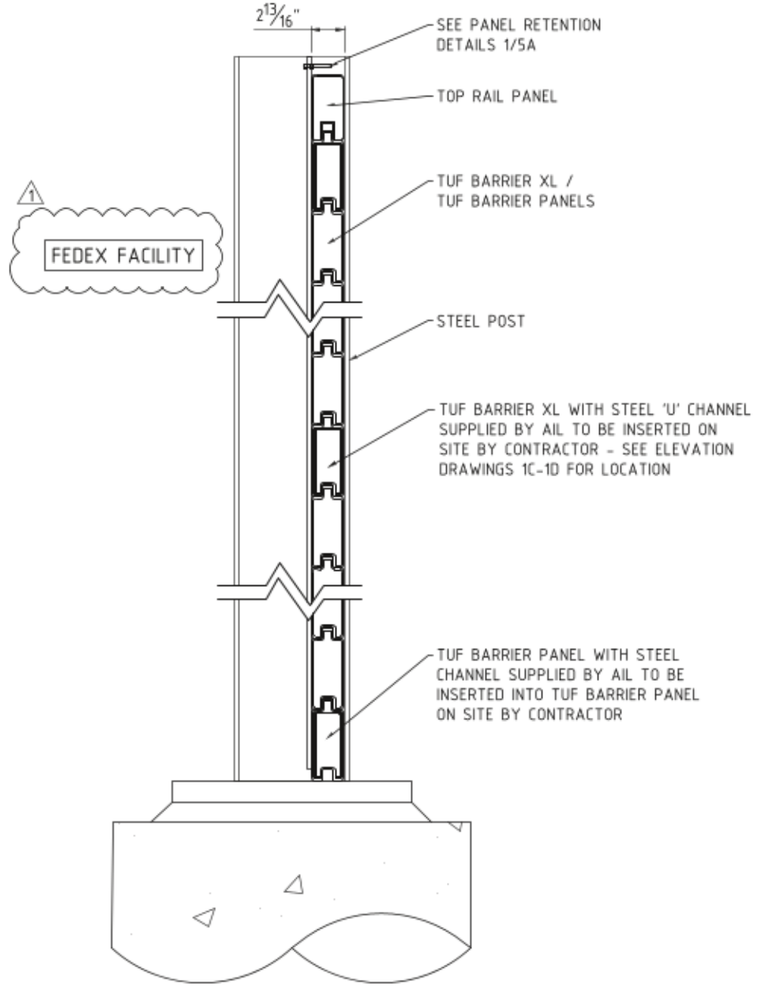


TYPICAL ASSEMBLY ELEVATION
SCALE NTS

1
NOTE:
ELEVATION VIEW IS SHOWN AS LOOKING AT THE SOUND WALL FROM THE FEDEX FACILITY



A
2A
DETAIL - TYPICAL CROSS SECTION
SCALE: NTS

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SIGNATURE:

NAME: JAMES T. BREEDEN

DATE: 06-29-21 LICENSE NUMBER: 58090

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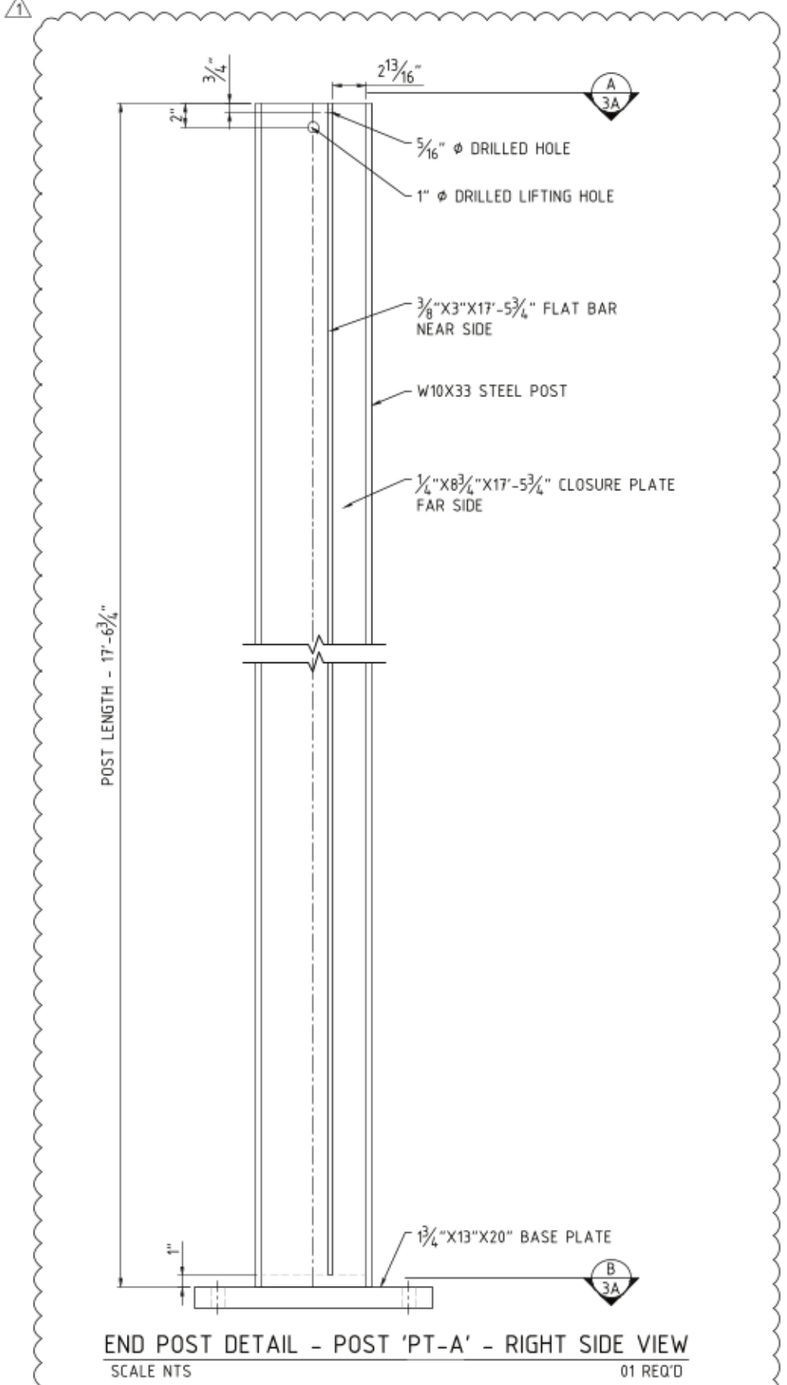
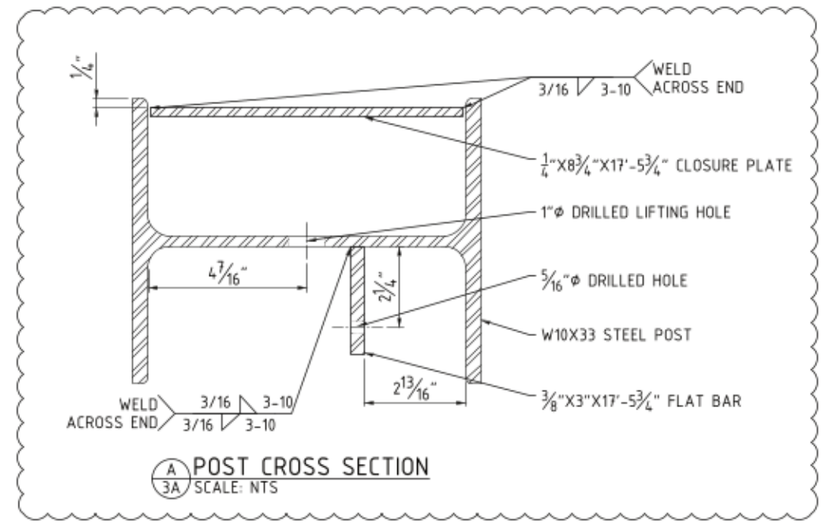


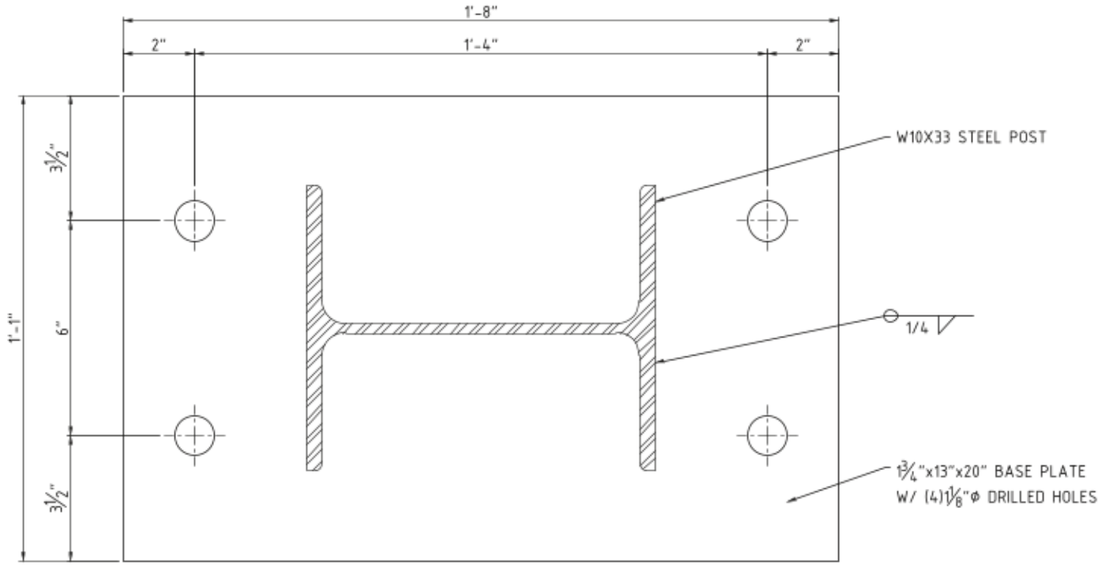
END POST DETAIL - POST 'PT-A' - RIGHT SIDE VIEW

SCALE NTS 01 REQ'D



A 3A POST CROSS SECTION

SCALE: NTS



B 3A SECTION - BASE PLATE - BP1

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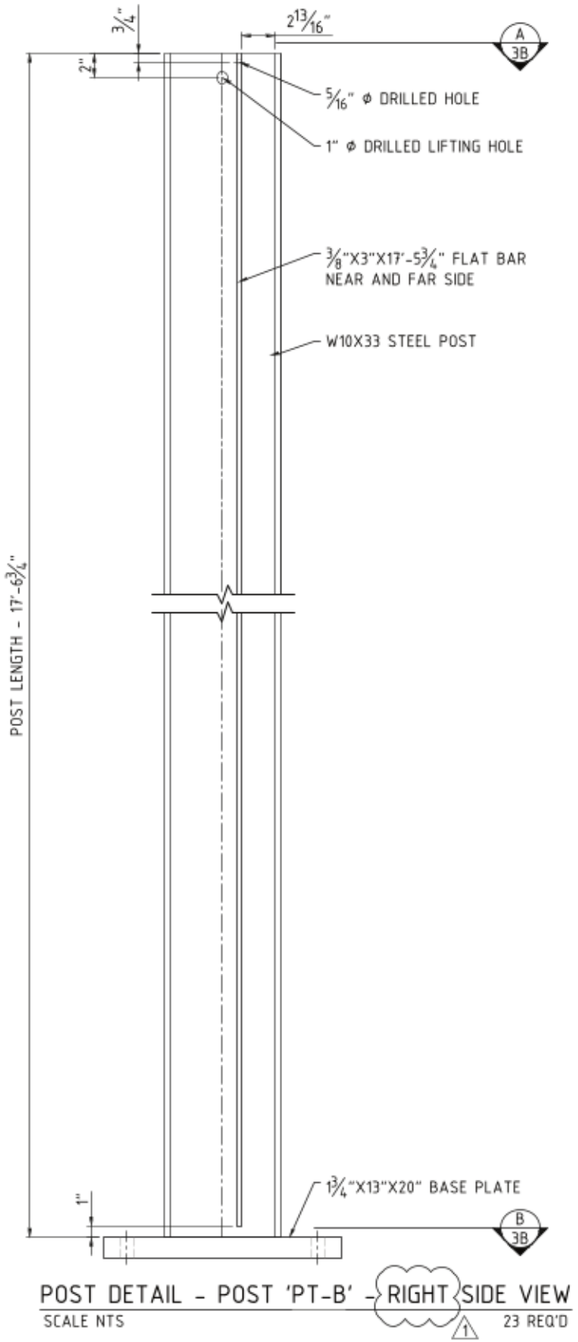
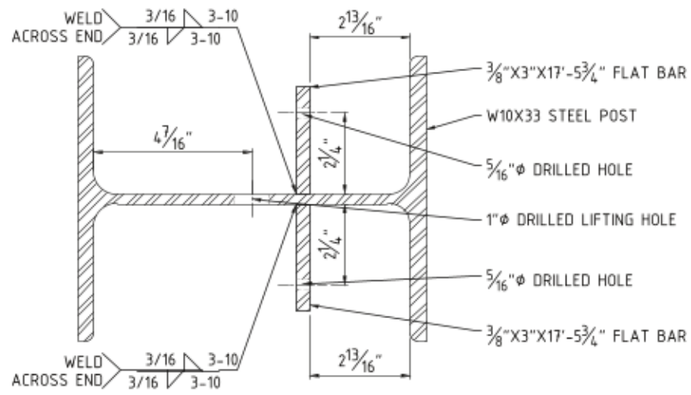


POST DETAIL - POST 'PT-B' - RIGHT SIDE VIEW
SCALE NTS
23 REQ'D



A 3B POST CROSS SECTION
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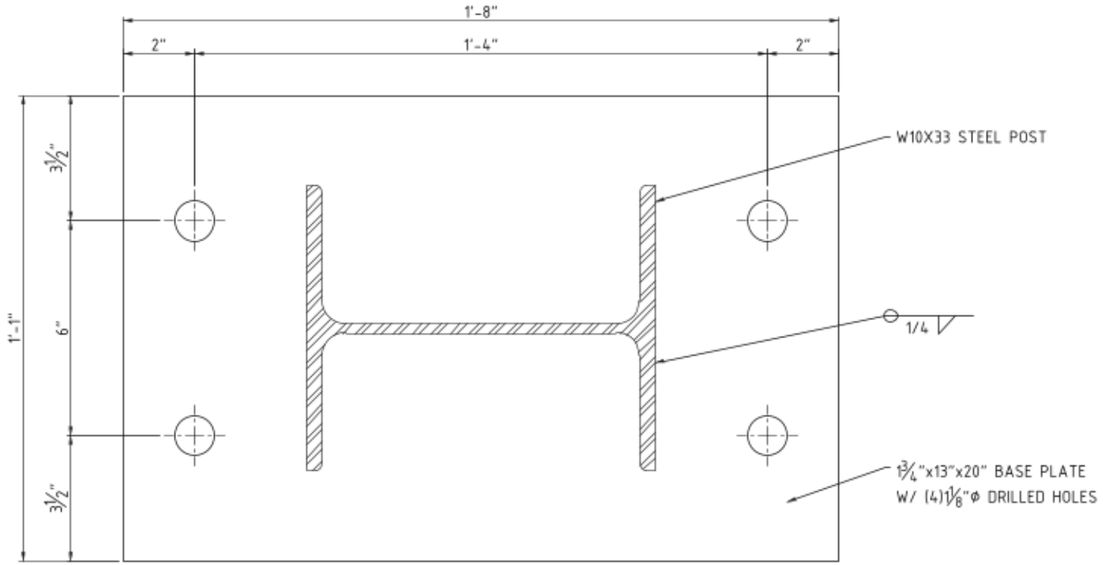

B 3B SECTION - BASE PLATE - BP1
SCALE: NTS

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NAME: JAMES T. BREEDEN

DATE: 06-29-21 LICENSE NUMBER: 58090

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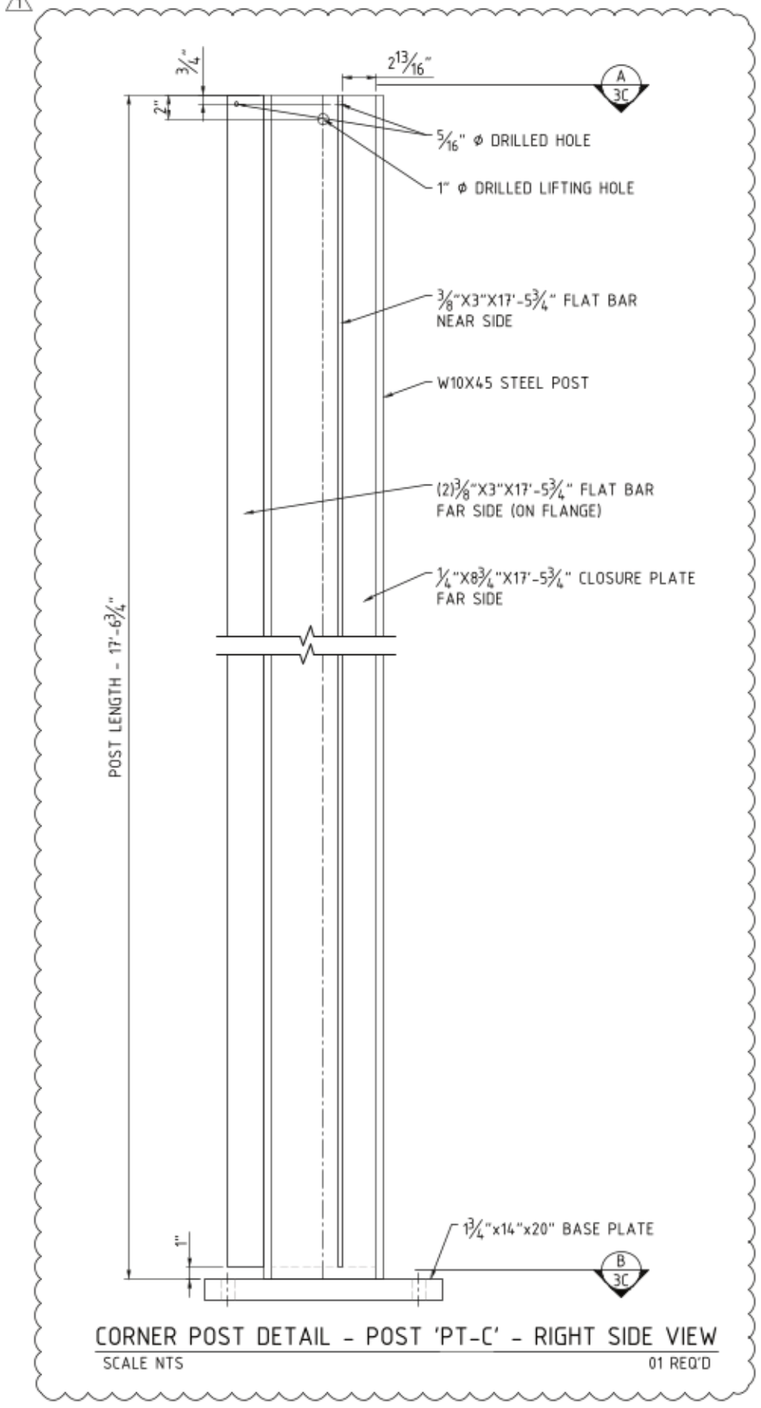
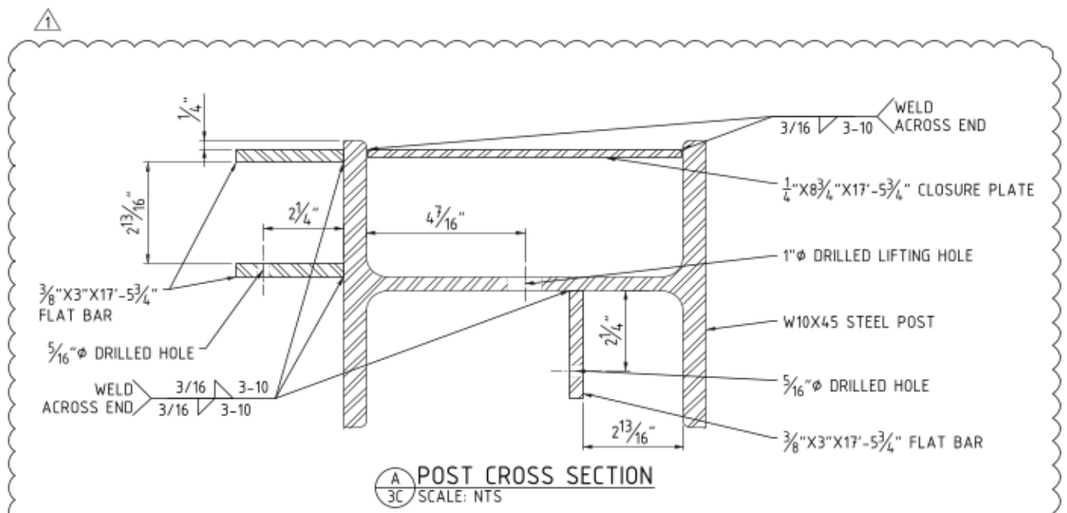


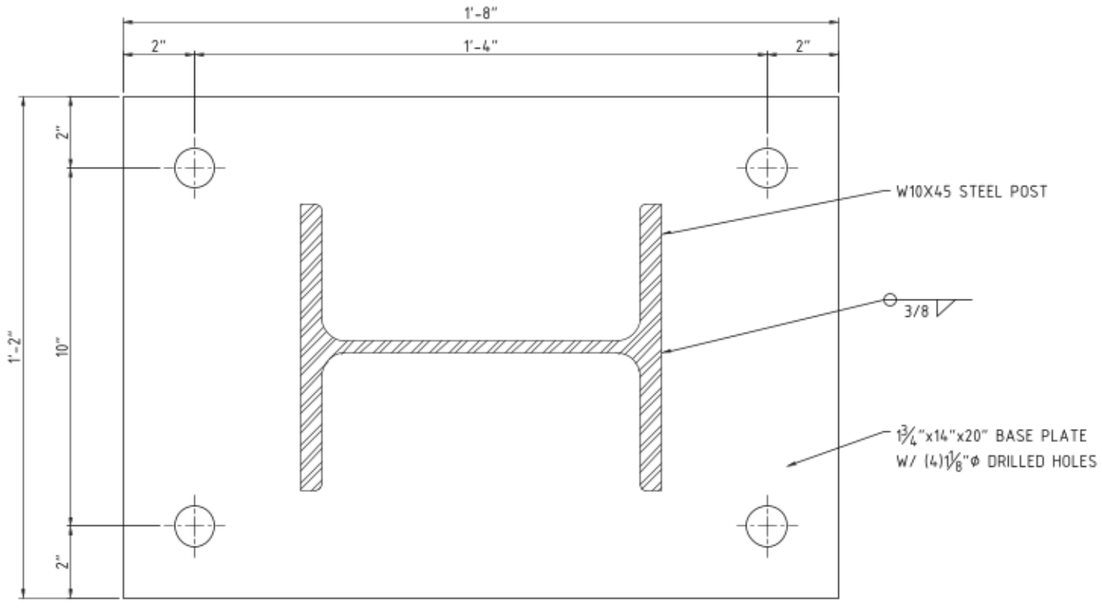
CORNER POST DETAIL - POST 'PT-C' - RIGHT SIDE VIEW

SCALE NTS 01 REQ'D



A 3C POST CROSS SECTION

SCALE: NTS



B 3C SECTION - BASE PLATE - BP2

SCALE: NTS

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DWG. CHK	PAS	19 MAY 21

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PROJECT NUMBER 2021-00216A

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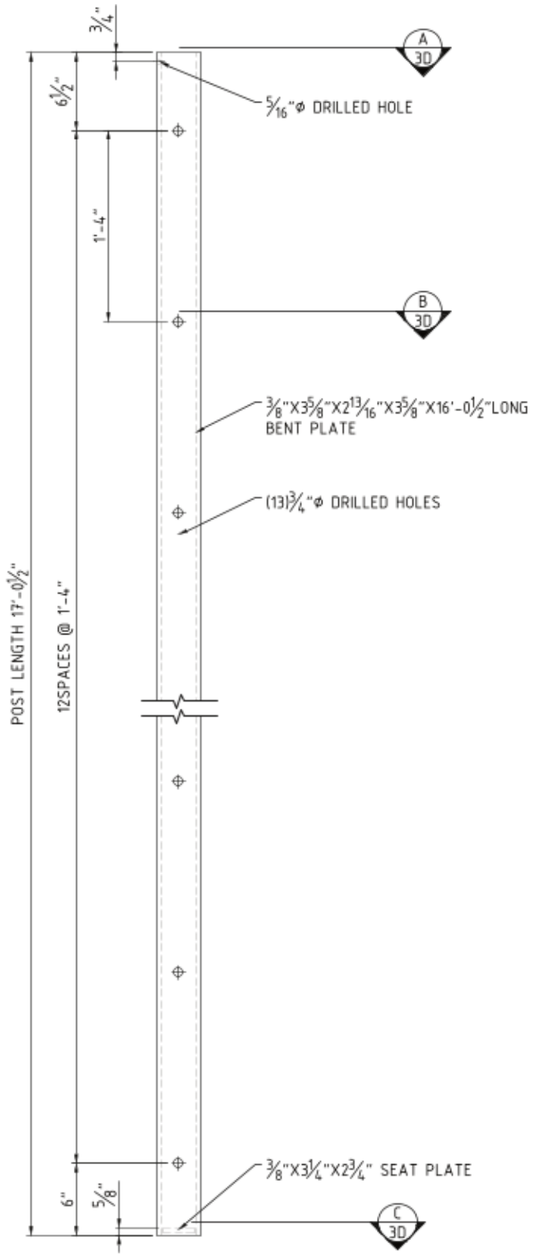
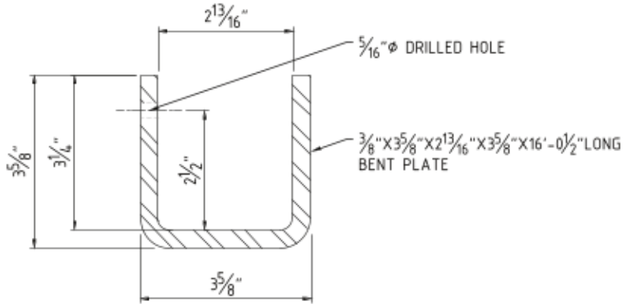
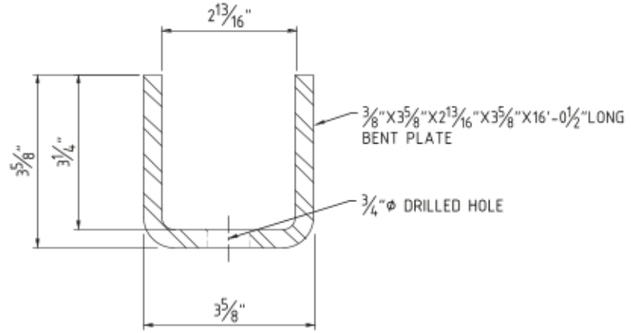


BRACKET POST DETAIL - POST 'PT-D' - RIGHT SIDE VIEW

SCALE NTS 01 REQ'D



A 3D POST CROSS SECTION
SCALE: NTS



B 3D POST CROSS SECTION
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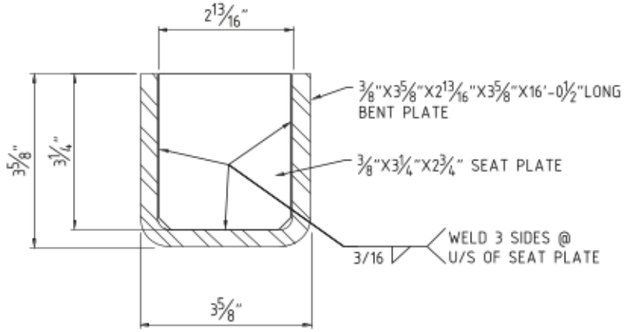

C 3D POST CROSS SECTION
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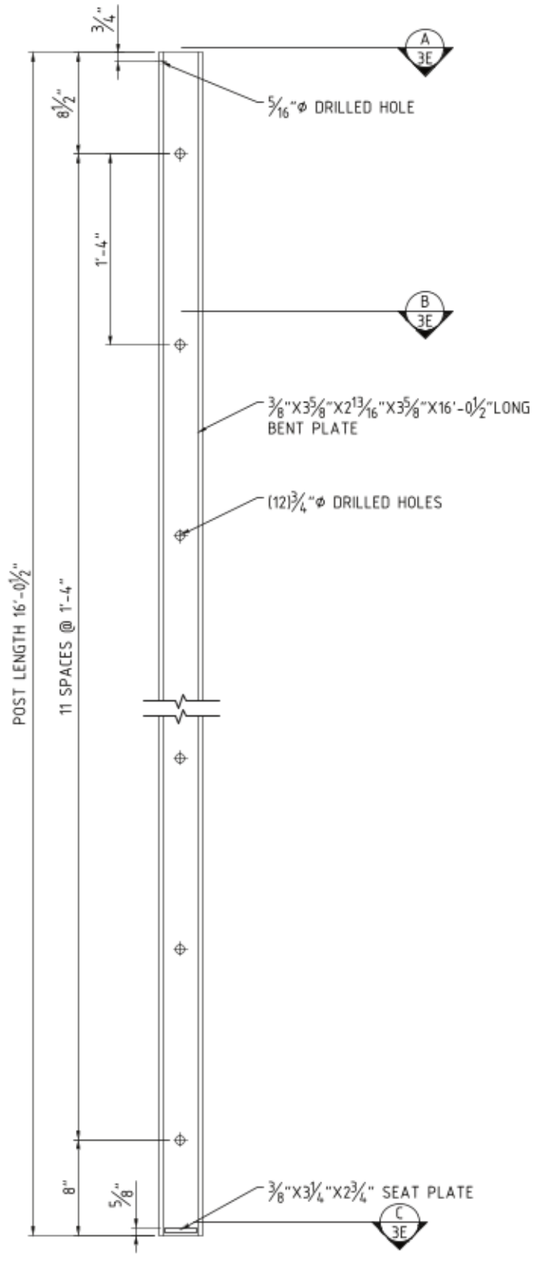
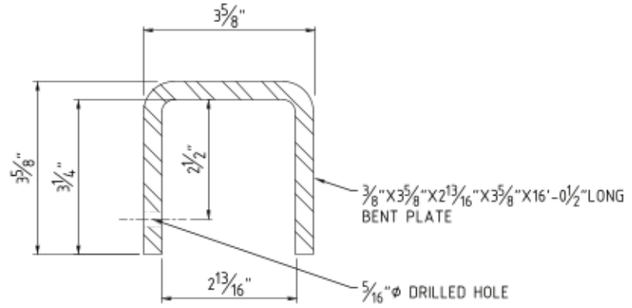


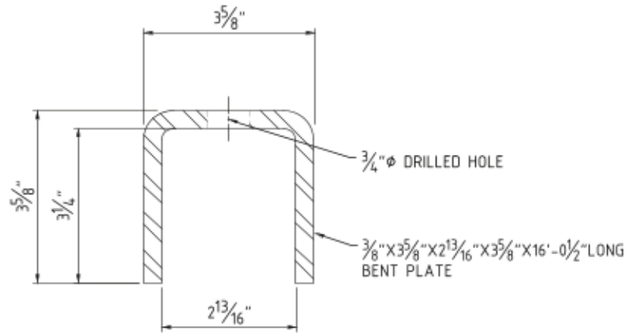
BRACKET POST DETAIL - POST 'PT-E' - RIGHT SIDE VIEW

SCALE NTS 01 REQ'D



A 3E POST CROSS SECTION

SCALE: NTS



B 3E POST CROSS SECTION

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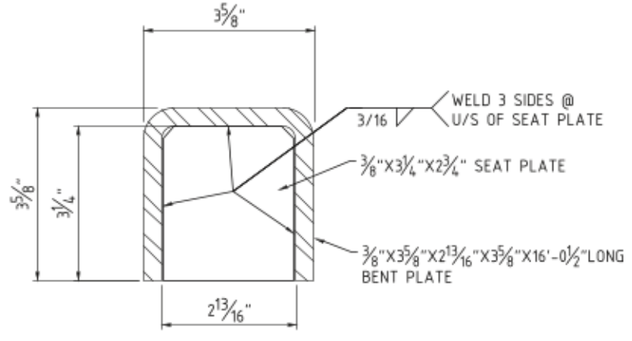

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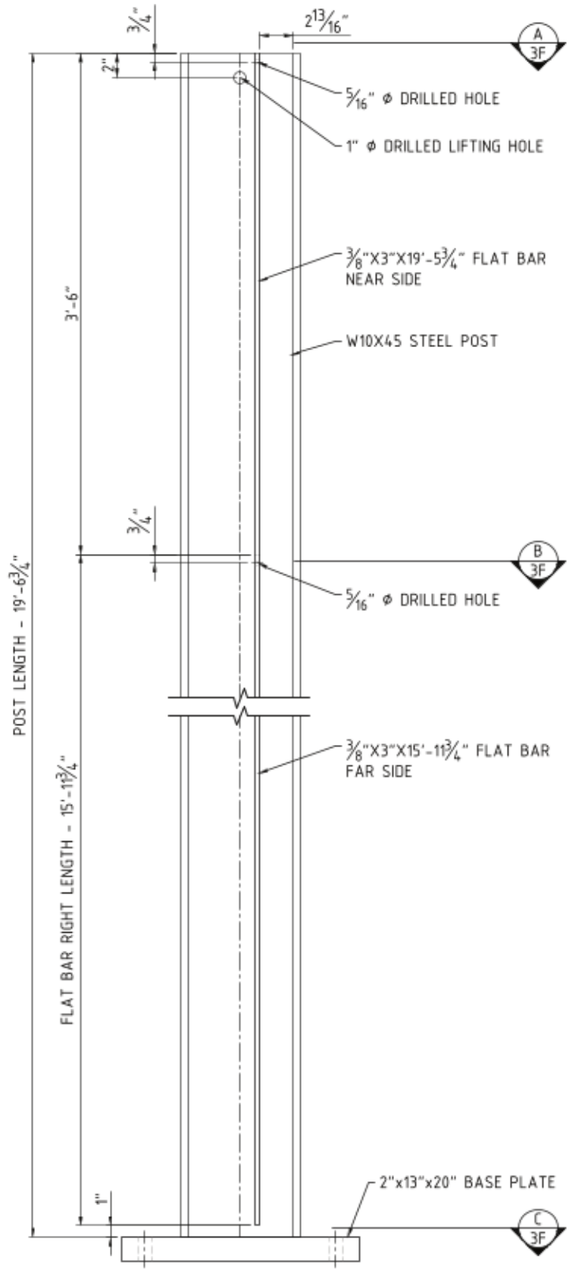
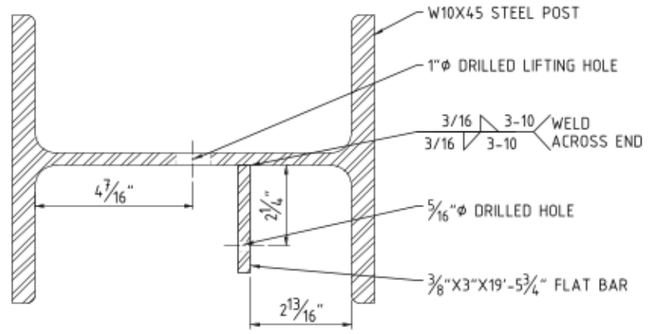


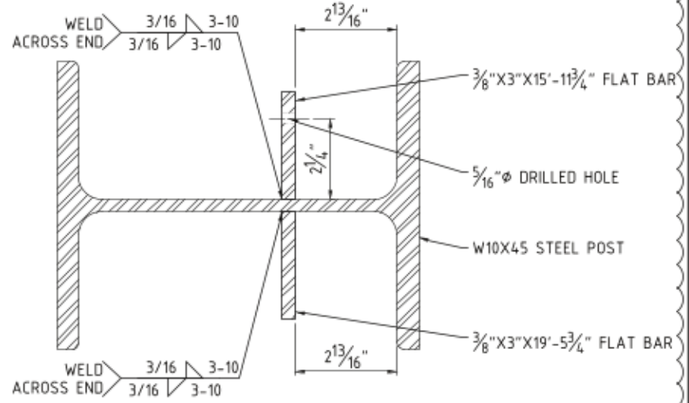
POST DETAIL - POST 'PT-F' - RIGHT SIDE VIEW

SCALE NTS 1 REQ'D



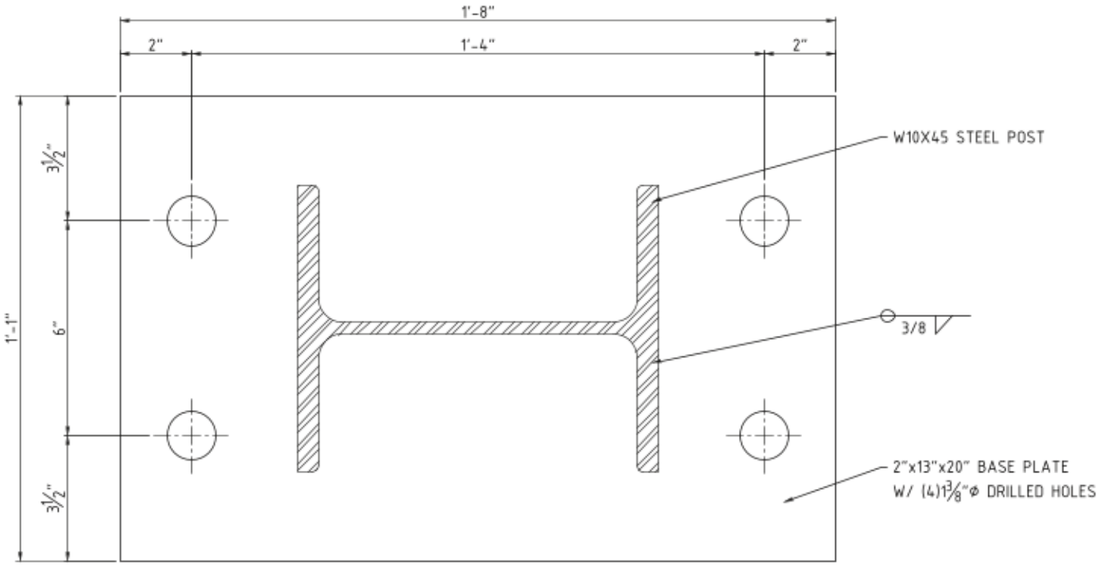
A 3F POST CROSS SECTION

SCALE: NTS



B 3F POST CROSS SECTION

SCALE: NTS



C 3F SECTION - BASE PLATE - BP3

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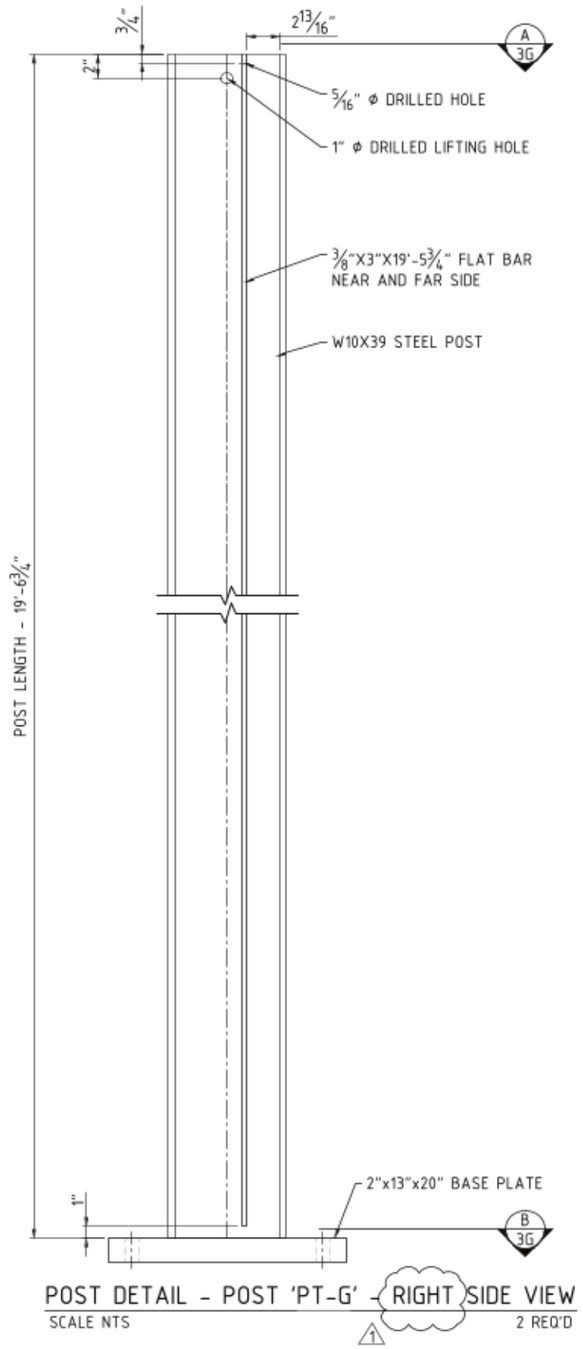

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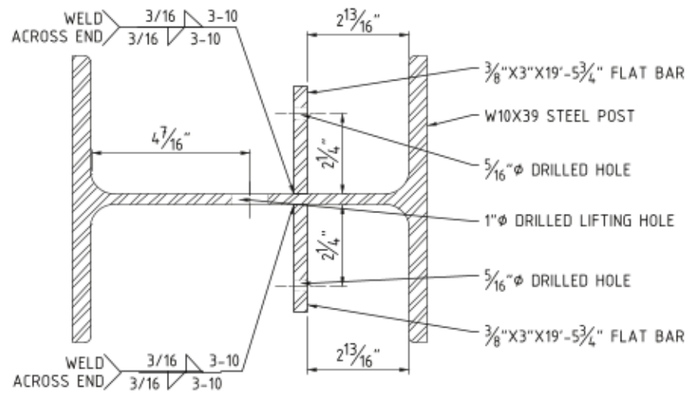
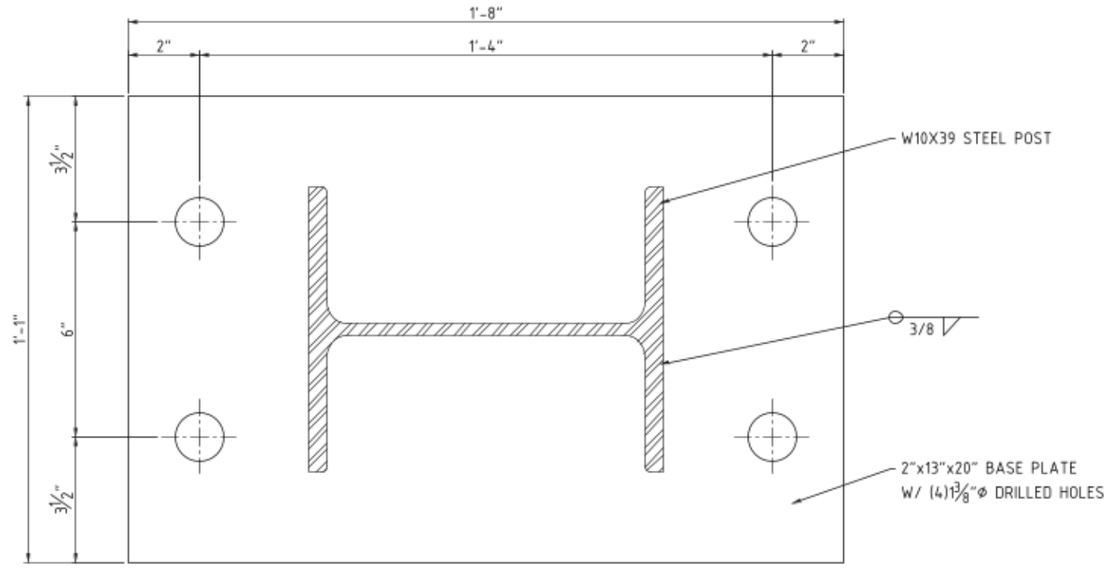
2 REQ'D



A 3G POST CROSS SECTION
SCALE: NTS



B 3G SECTION - BASE PLATE - BP3
SCALE: NTS

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NAME: JAMES T. BREEDEN

DATE: 06-29-21 LICENSE NUMBER: 58090

REV NO.	DATE	BY	DESCRIPTION
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DES. CHK	PAS	19 MAY 21	
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PROJECT NUMBER 2021-00216A
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June 29, 2021 12:50:22 PM ALBIN TOM

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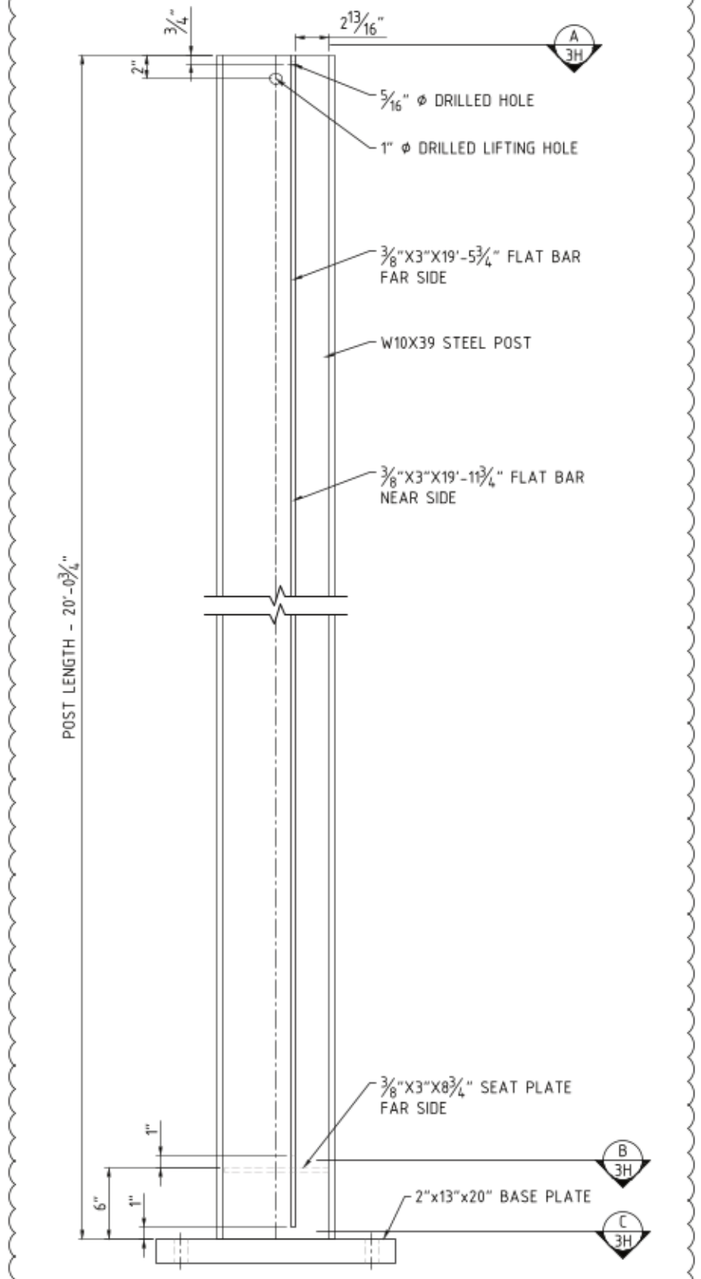
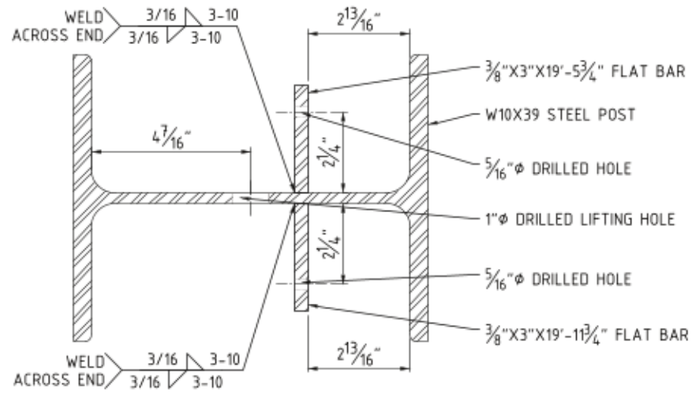


POST DETAIL - POST 'PT-H' - RIGHT SIDE VIEW

SCALE NTS 1 REQ'D



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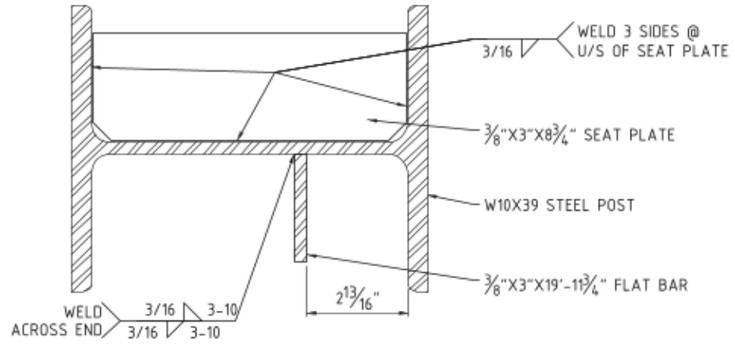

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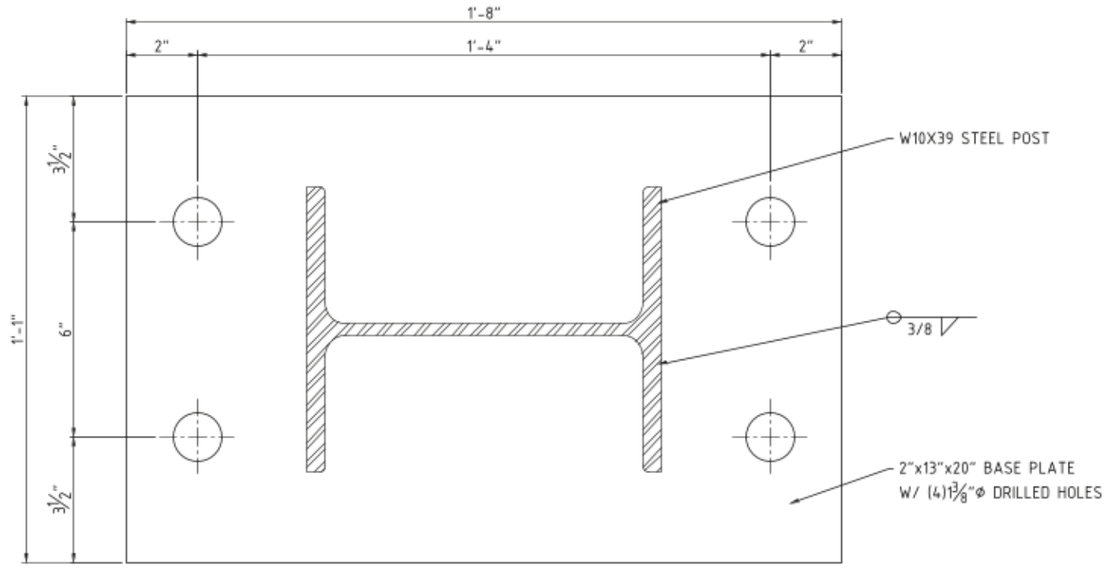

C 3H SECTION - BASE PLATE - BP3

SCALE: NTS

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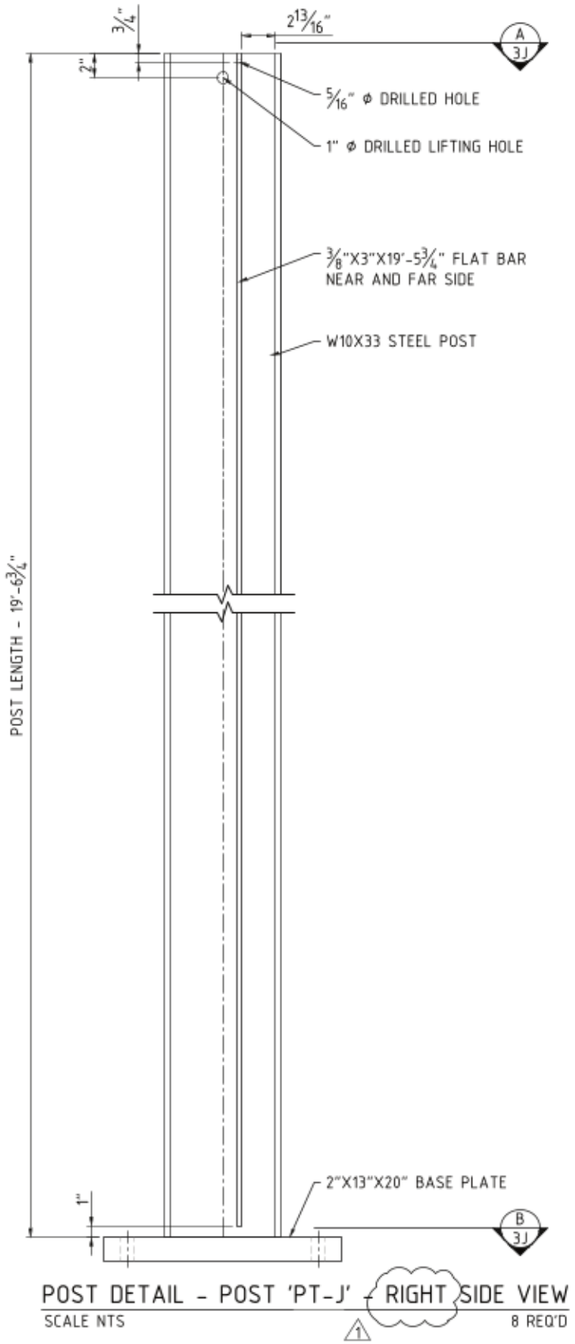
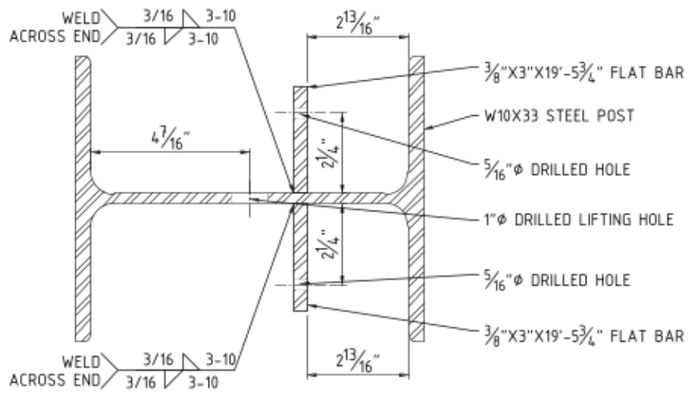


POST DETAIL - POST 'PT-J' - RIGHT SIDE VIEW

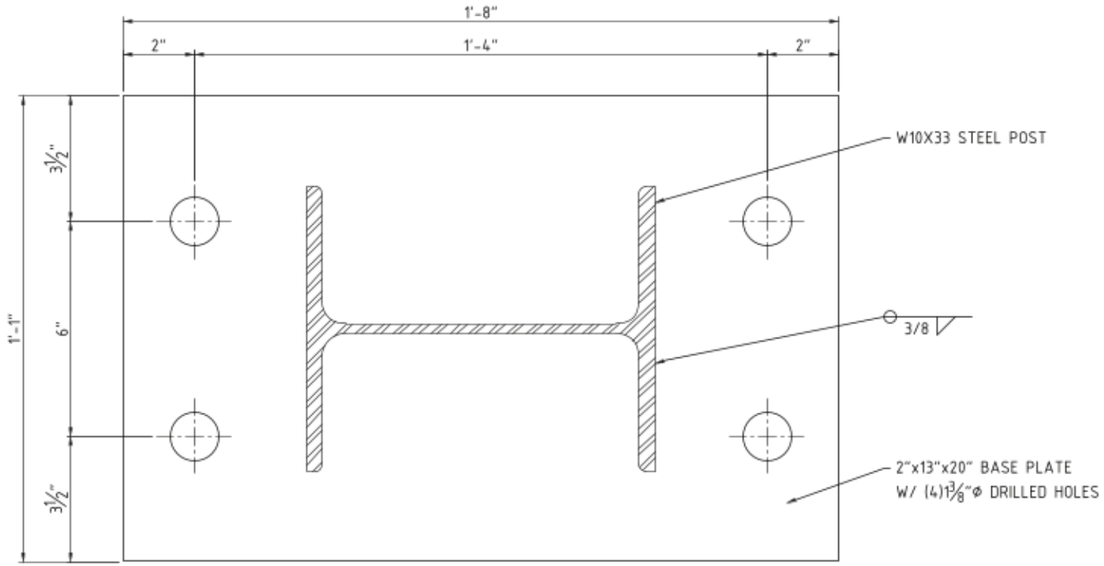
SCALE NTS

1 8 REQ'D



A 3J POST CROSS SECTION

SCALE: NTS



B 3J SECTION - BASE PLATE - BP3

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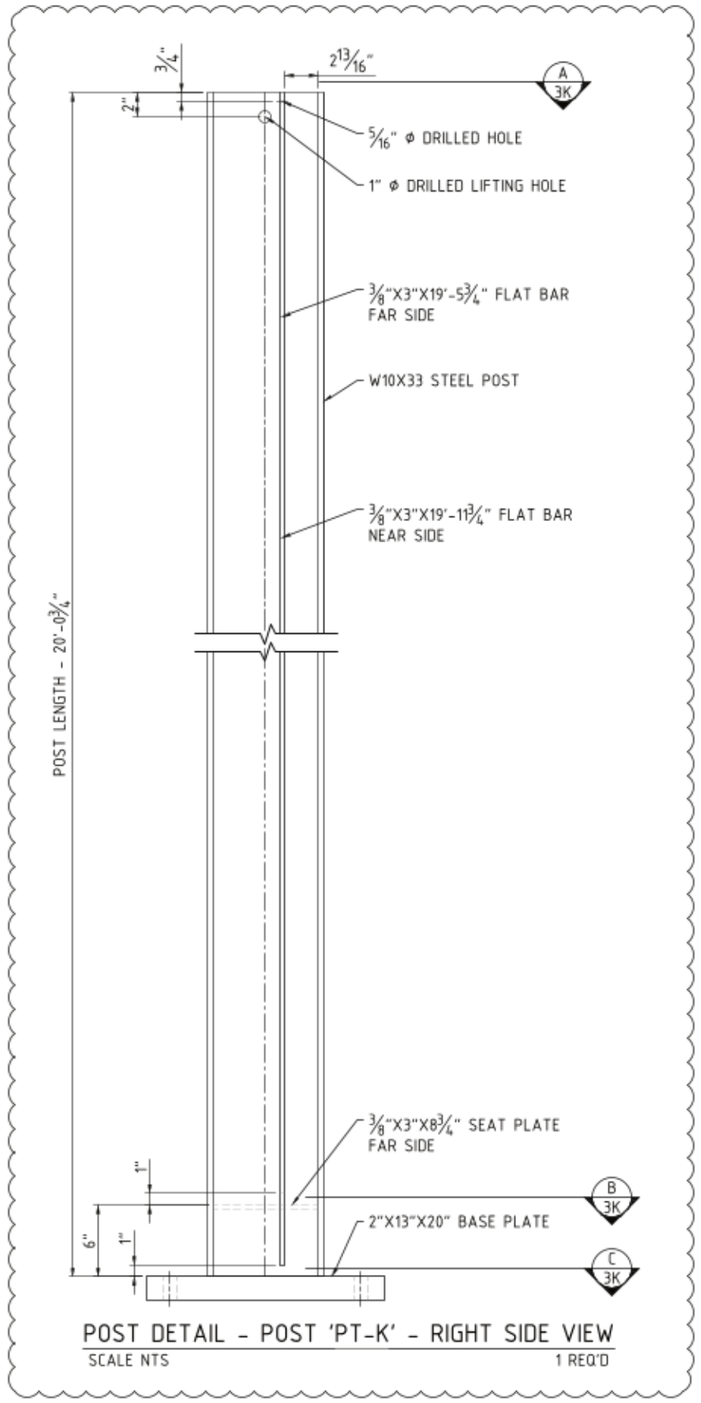
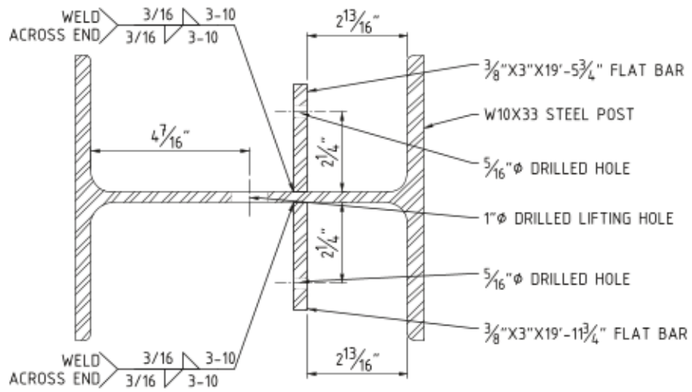


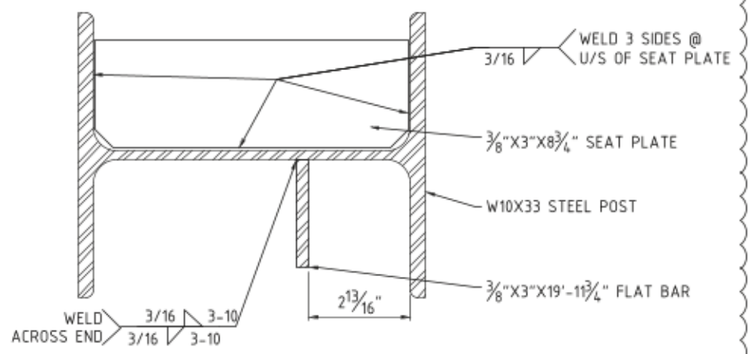
POST DETAIL - POST 'PT-K' - RIGHT SIDE VIEW

SCALE NTS 1 REQ'D



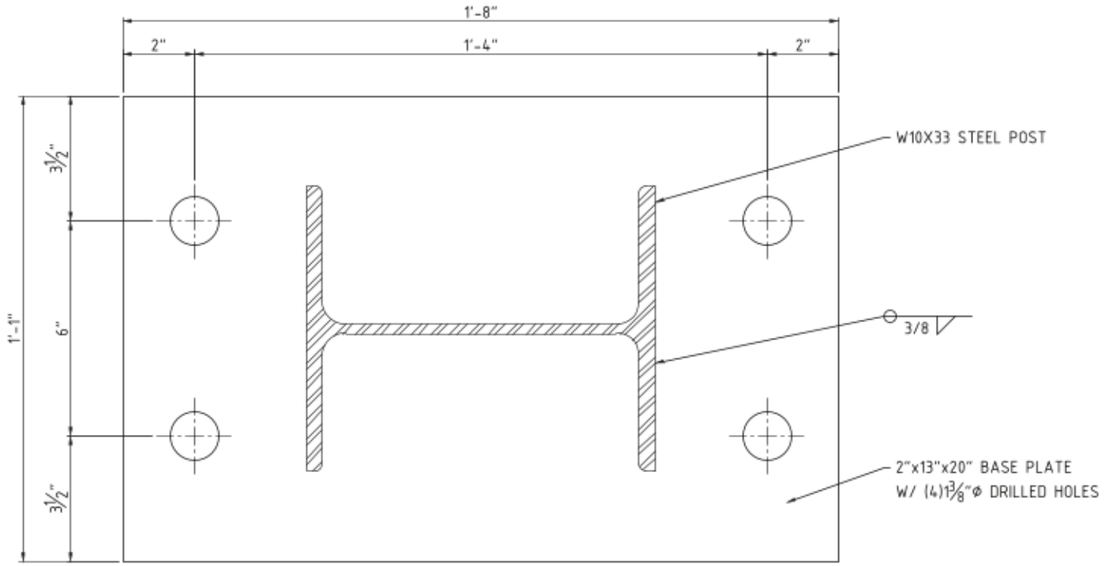
A 3K POST CROSS SECTION

SCALE: NTS



B 3K POST CROSS SECTION

SCALE: NTS



C 3K SECTION - BASE PLATE - BP3

SCALE: NTS

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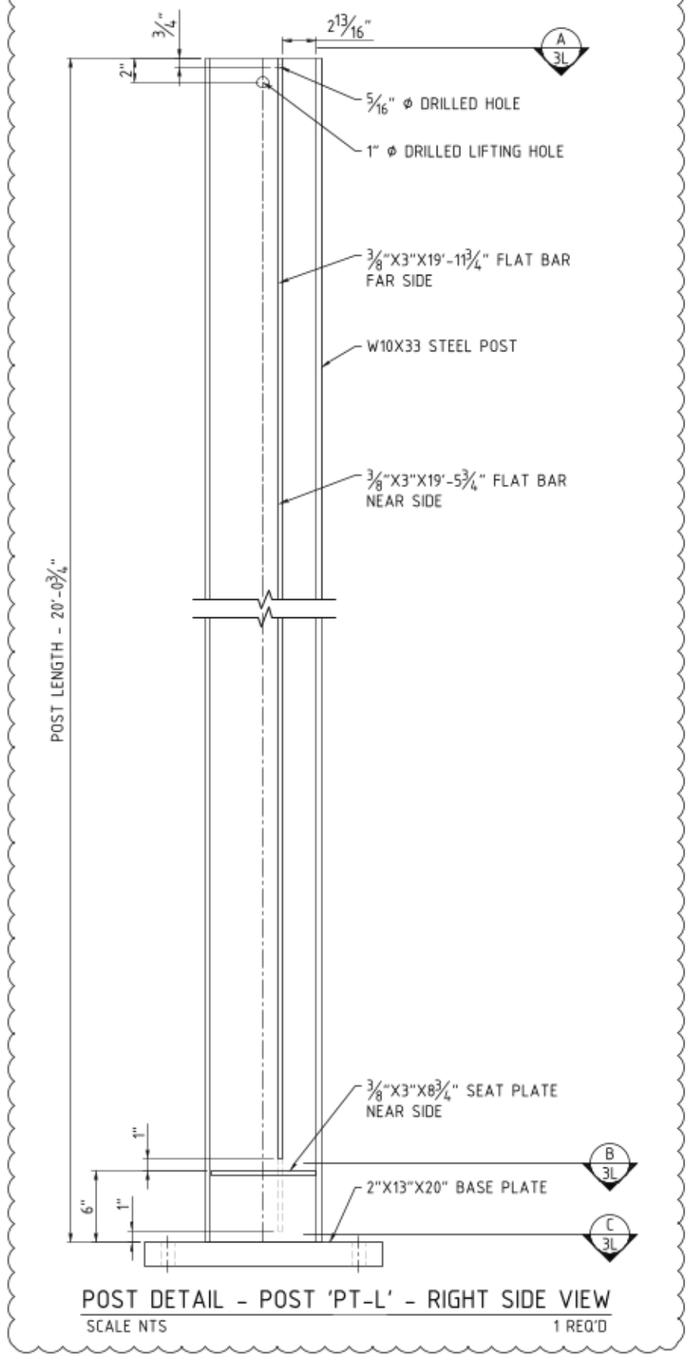
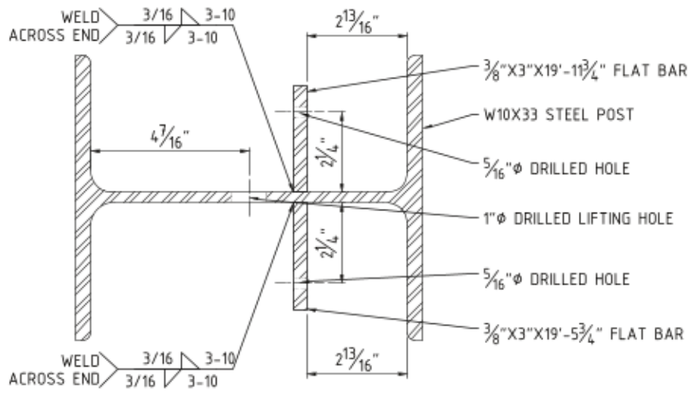


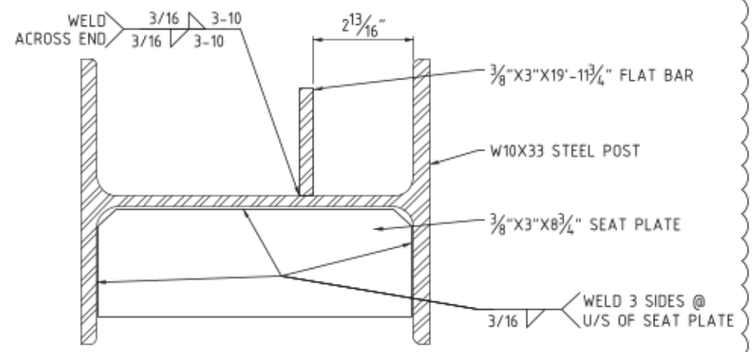
POST DETAIL - POST 'PT-L' - RIGHT SIDE VIEW

SCALE NTS 1 REQ'D



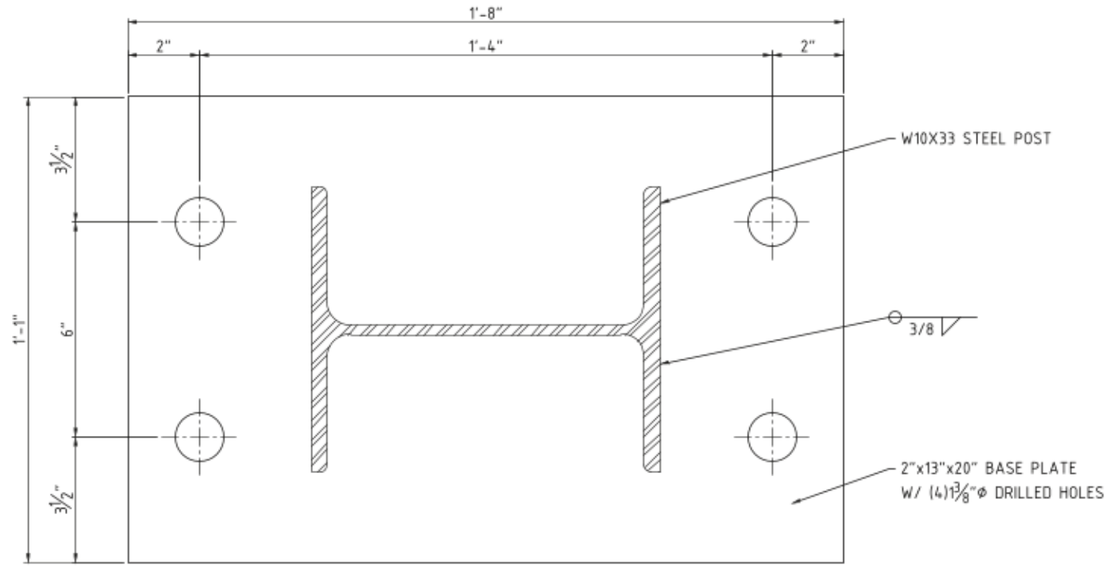
A 3L POST CROSS SECTION

SCALE: NTS



B 3L POST CROSS SECTION

SCALE: NTS



C 3L SECTION - BASE PLATE - BP3

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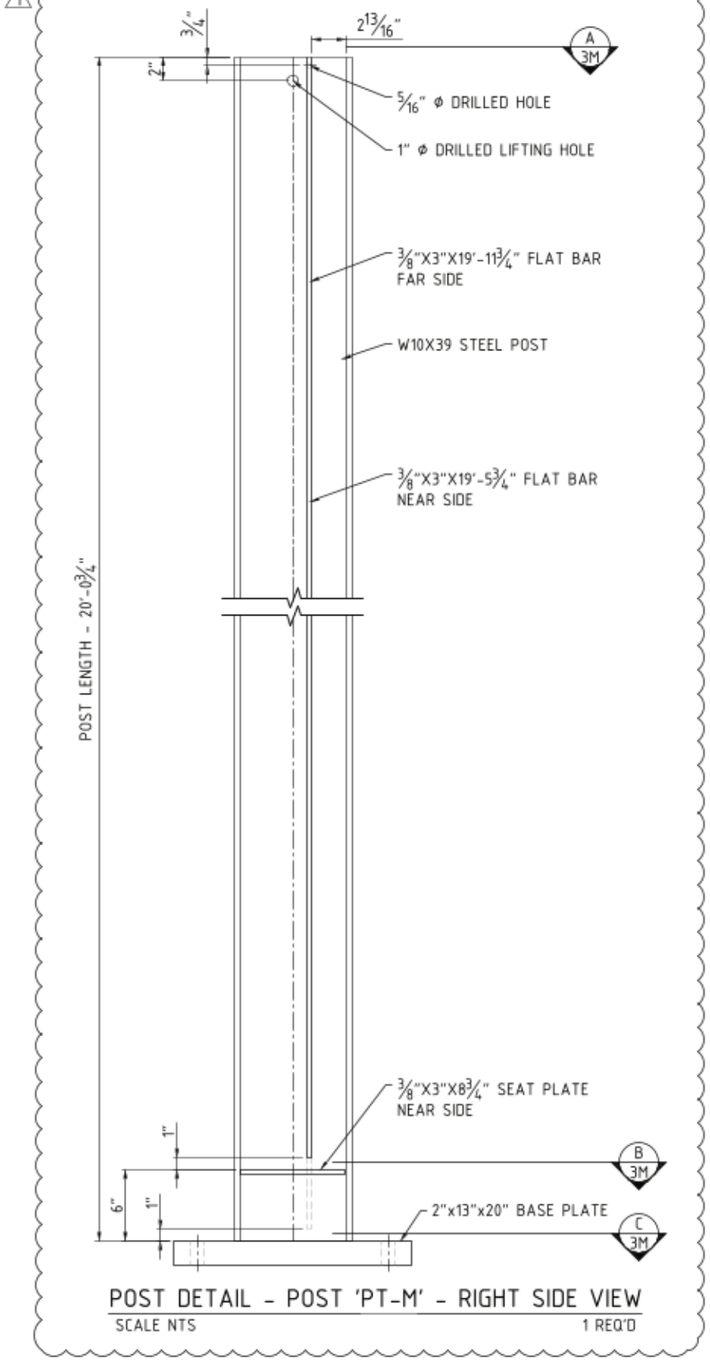
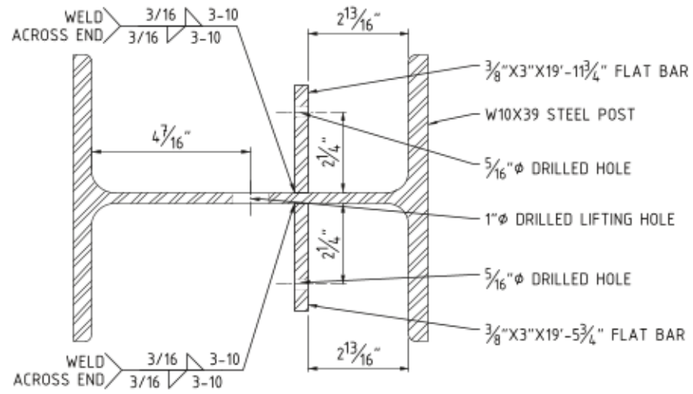


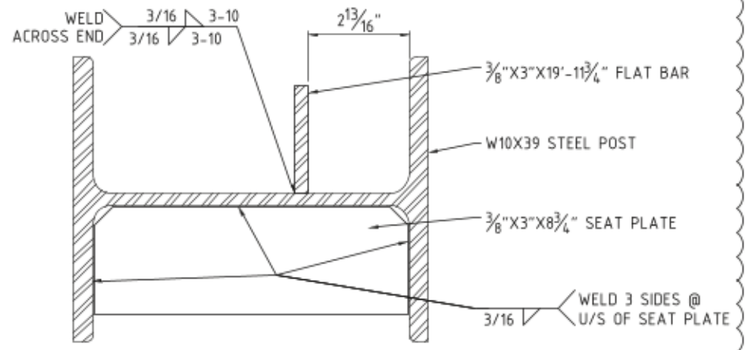
POST DETAIL - POST 'PT-M' - RIGHT SIDE VIEW

SCALE NTS 1 REQ'D



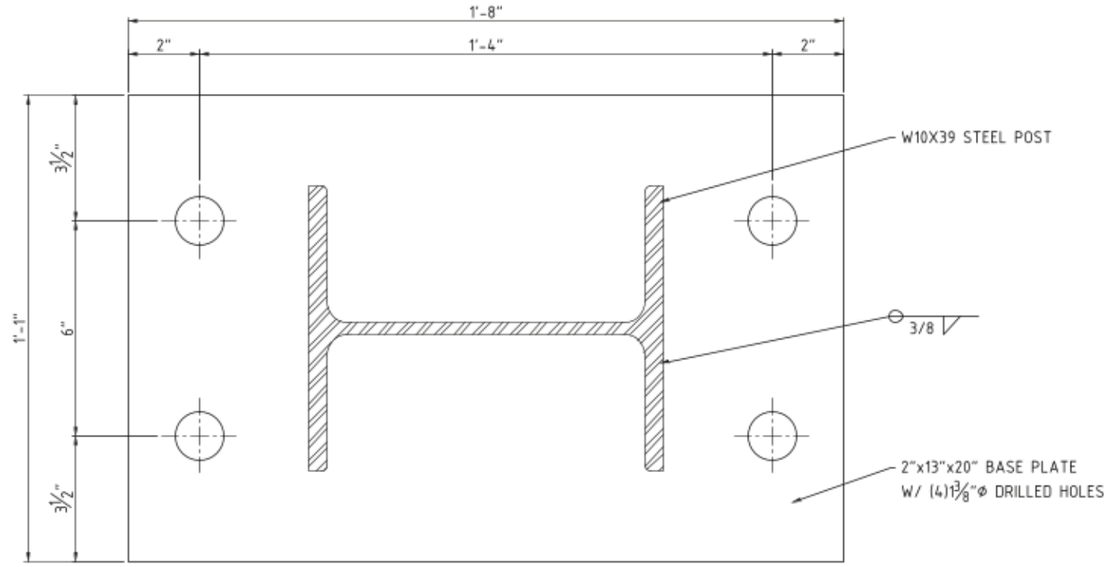
A 3M POST CROSS SECTION

SCALE: NTS



B 3M POST CROSS SECTION

SCALE: NTS



C 3M SECTION - BASE PLATE - BP3

SCALE: NTS

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DWG NO. 3M

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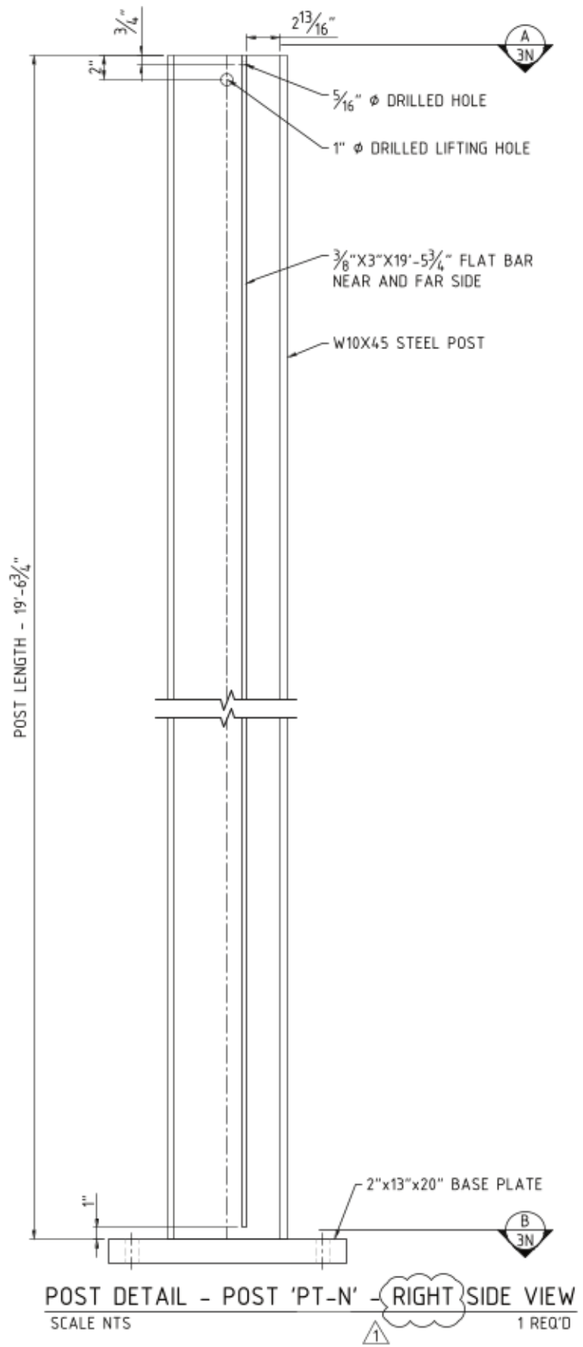
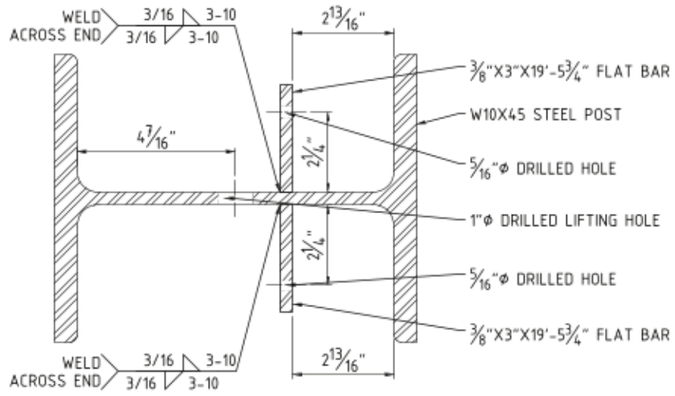
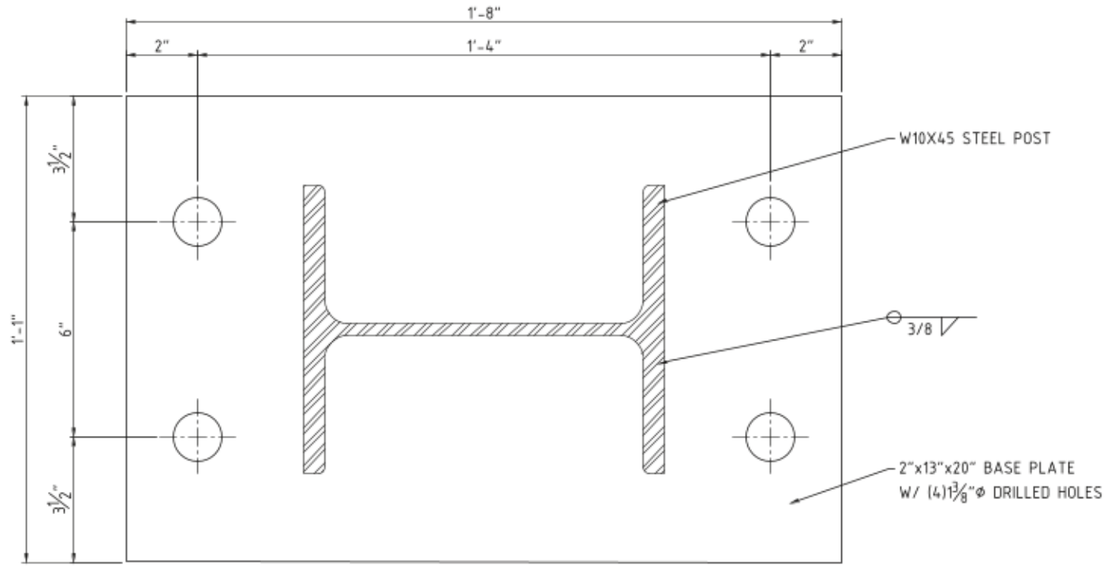


POST DETAIL - POST 'PT-N' - RIGHT SIDE VIEW
SCALE NTS
1 REQ'D
1



A 3N POST CROSS SECTION
SCALE: NTS



B 3N SECTION - BASE PLATE - BP3
SCALE: NTS

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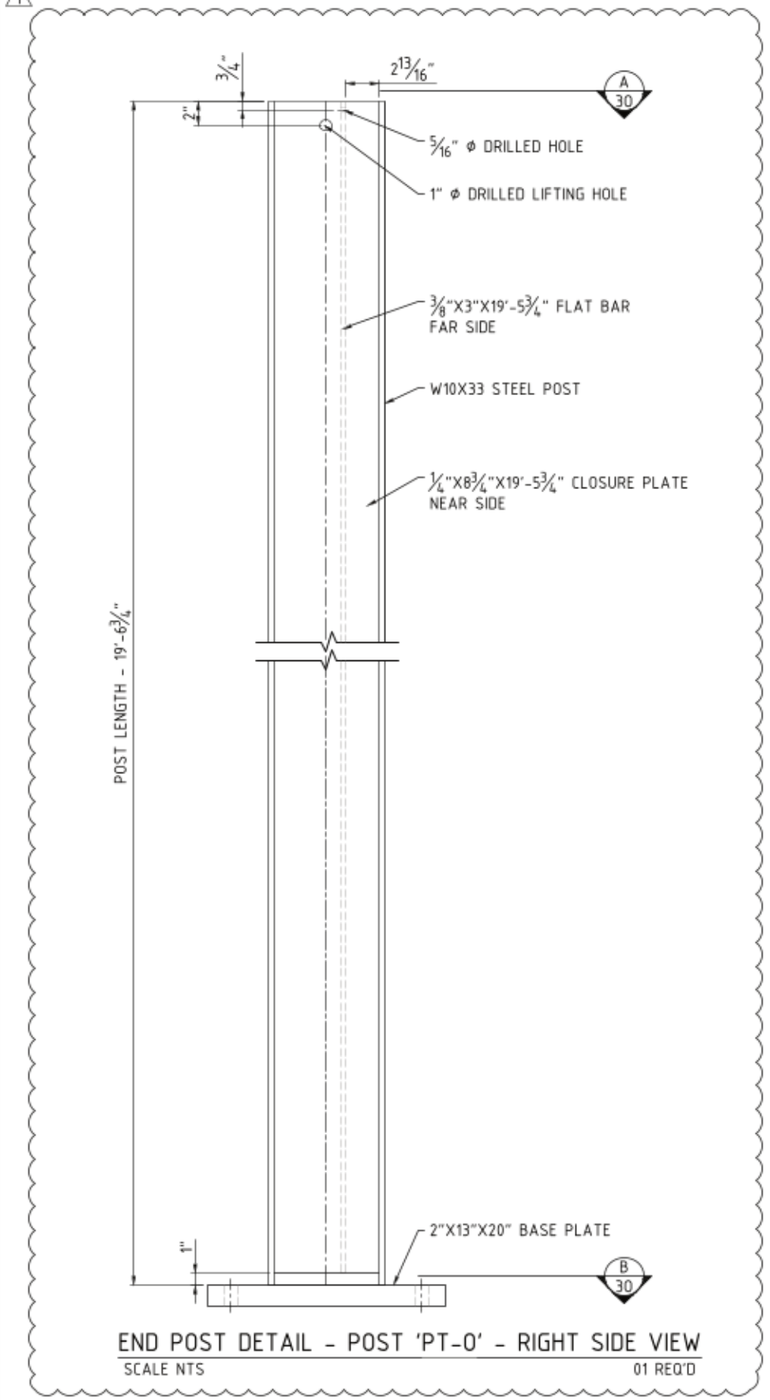
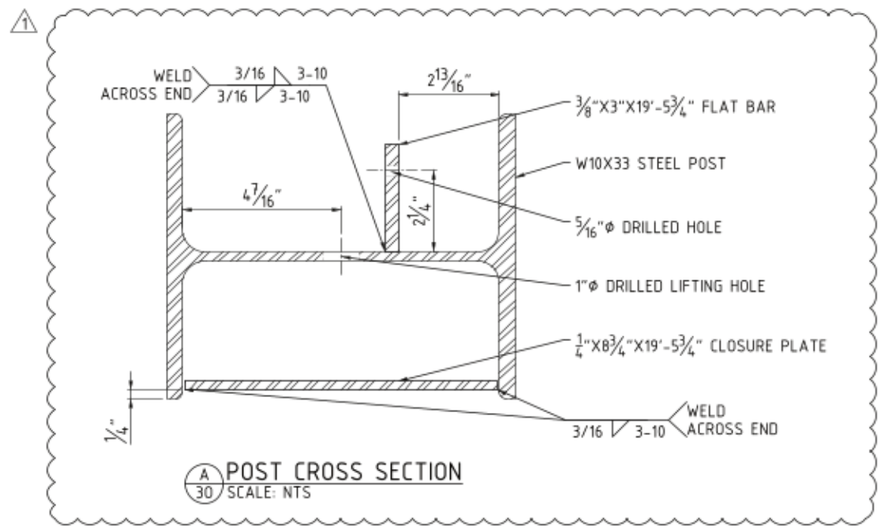


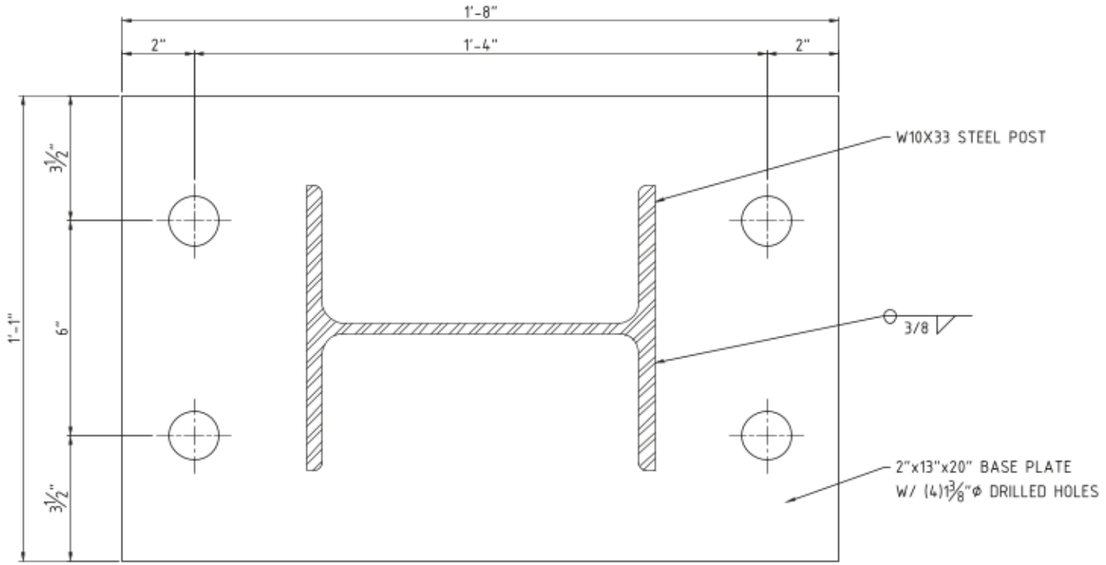
END POST DETAIL - POST 'PT-0' - RIGHT SIDE VIEW

SCALE NTS 01 REQ'D



A 30 POST CROSS SECTION

SCALE: NTS



B 30 SECTION - BASE PLATE - BP3

SCALE: NTS

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DWG. CHK	PAS	19 MAY 21	

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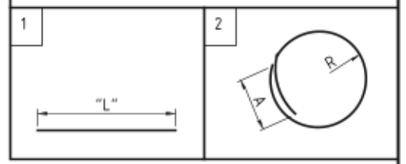
DRILLED SHAFT SCHEDULE

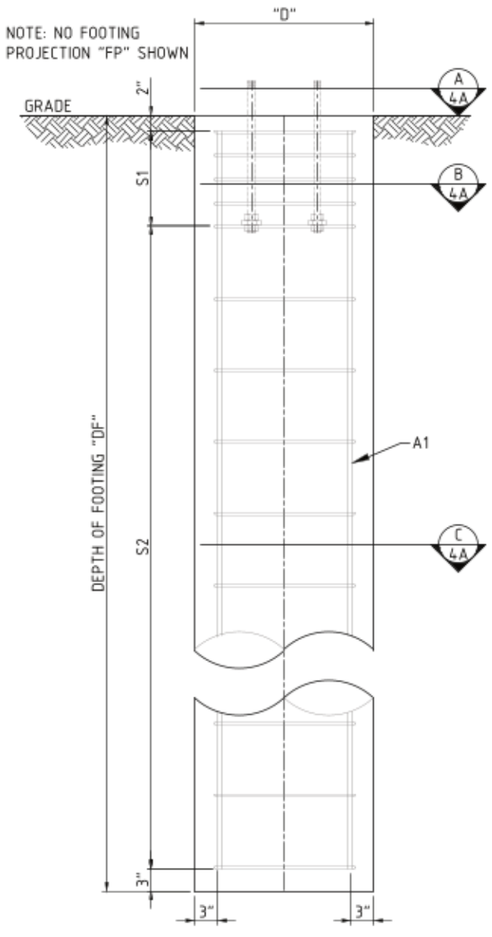
FOUNDATION IDENTIFICATION	"D"	"DF"	"FP"	ANCHOR ROD TYPE	"C1"	"C2"
FT-1	30"	11'-0"	0	AR-1	6"	16"
FT-2	30"	11'-0"	0	AR-1	10"	16"
FT-3	30"	12'-0"	0	AR-1	6"	16"
FT-4	30"	15'-0"	0	AR-2	6"	16"
FT-5	30"	13'-6"	0	AR-2	6"	16"
FT-6	30"	12'-0"	0	AR-2	6"	16"

REINFORCEMENT SCHEDULE

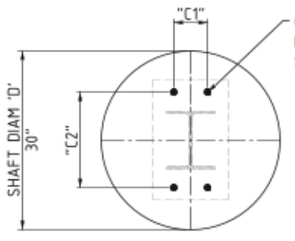
STEEL IDENTIFICATION	TYPE	SPACING	"A"	"R"	LENGTH "L"	BAR SIZE	QUANTITY
A1	1	-	-	-	10'-7"	#8	8
S1	2	4"	20"	12"	8'-0"	#4	5
S2	2	12"	20"	12"	8'-0"	#4	10
A1	1	-	-	-	10'-7"	#8	8
S1	2	4"	20"	12"	8'-0"	#4	5
S2	2	12"	20"	12"	8'-0"	#4	10
A1	1	-	-	-	11'-7"	#8	8
S1	2	4"	20"	12"	8'-0"	#4	5
S2	2	12"	20"	12"	8'-0"	#4	11
A1	1	-	-	-	14'-7"	#8	8
S1	2	4"	20"	12"	8'-0"	#4	5
S2	2	12"	20"	12"	8'-0"	#4	14
A1	1	-	-	-	13'-1"	#8	8
S1	2	4"	20"	12"	8'-0"	#4	5
S2	2	12"	20"	12"	8'-0"	#4	12
A1	1	-	-	-	11'-7"	#8	8
S1	2	4"	20"	12"	8'-0"	#4	5
S2	2	12"	20"	12"	8'-0"	#4	11

REINFORCEMENT TYPE





1 4A FOUNDATION DETAIL
SCALE: N.T.S



A 4A FOUNDATION DETAIL
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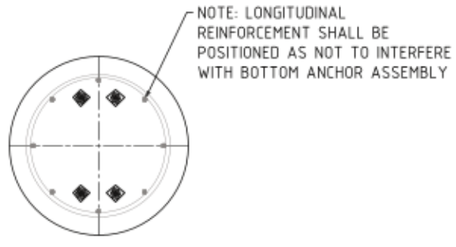

B 4A FOUNDATION DETAIL
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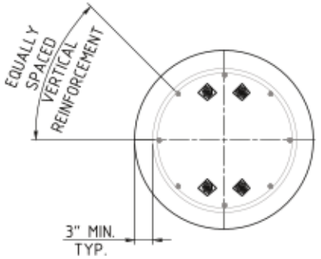

C 4A FOUNDATION DETAIL
SCALE: NTS

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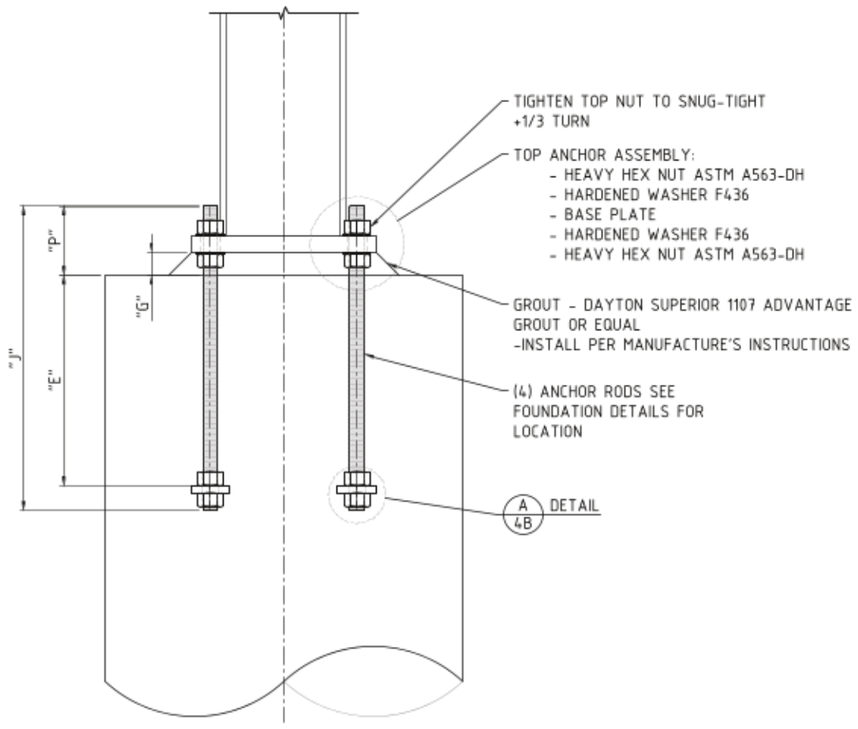
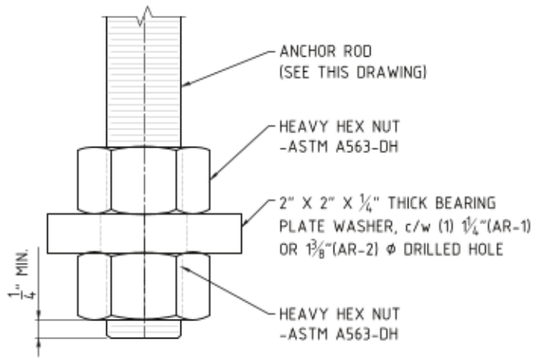
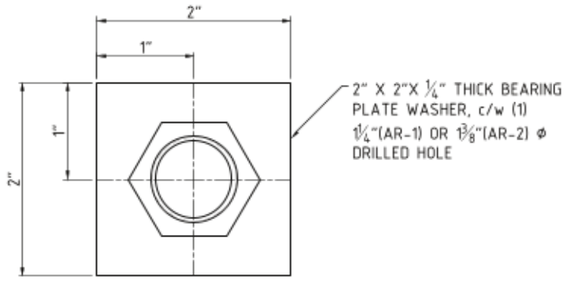
ANCHOR ROD SCHEDULE						
ANCHOR ROD IDENTIFICATION	TYPE	ϕ	"J"	"E" MIN.	"P"	"G" MAX.
AR-1	ASTM F1554 GR 55	1"	25"	18"	5"	1½"
AR-2	ASTM F1554 GR 55	1¼"	29"	21"	6"	1¾"



1 4B TYPICAL ANCHOR ROD DETAIL
SCALE N.T.S.



A 4B BOTTOM ANCHOR ASSEMBLY DETAIL
SCALE: NTS



A 4B BOTTOM ANCHOR ASSEMBLY DETAIL
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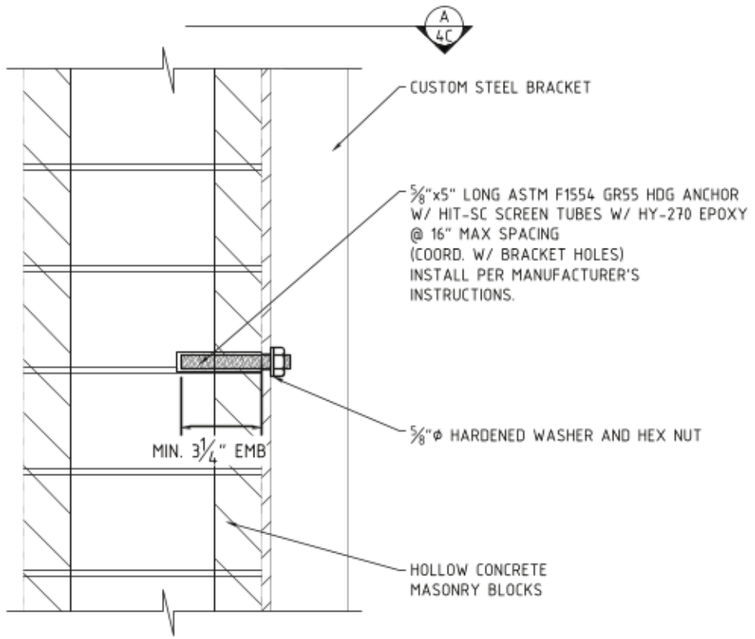
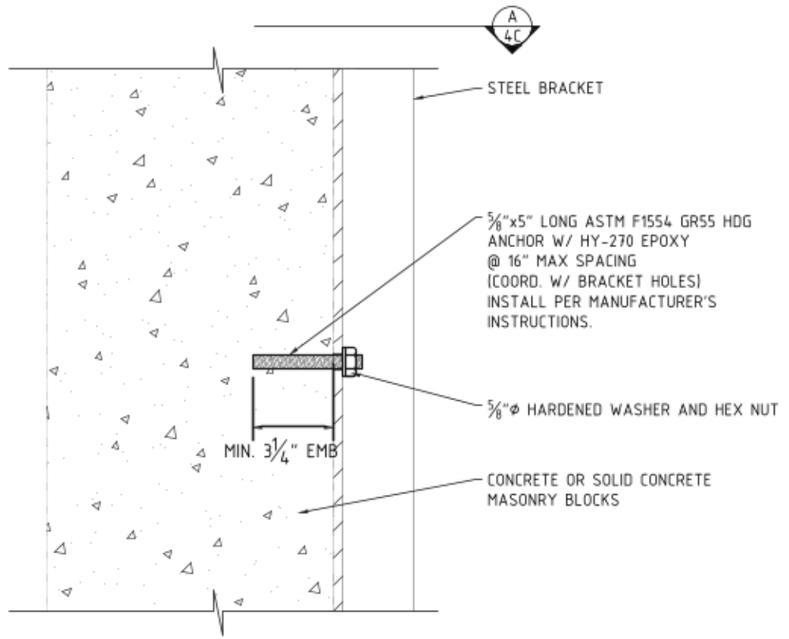
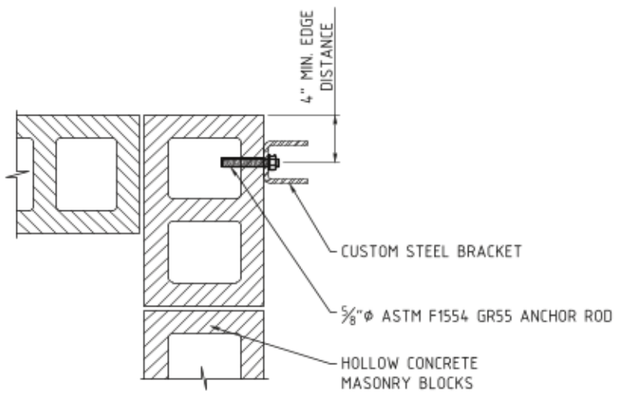


1 4A BRACKET DETAILS FOR MOUNTING TO HOLLOW CONCRETE BLOCKS
SCALE: N.T.S



2 4A BRACKET DETAILS FOR MOUNTING TO SOLID CONCRETE
SCALE: N.T.S



A 4C CROSS SECTION
SCALE: NTS

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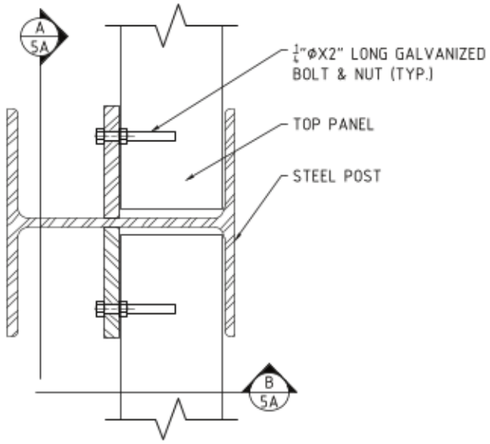
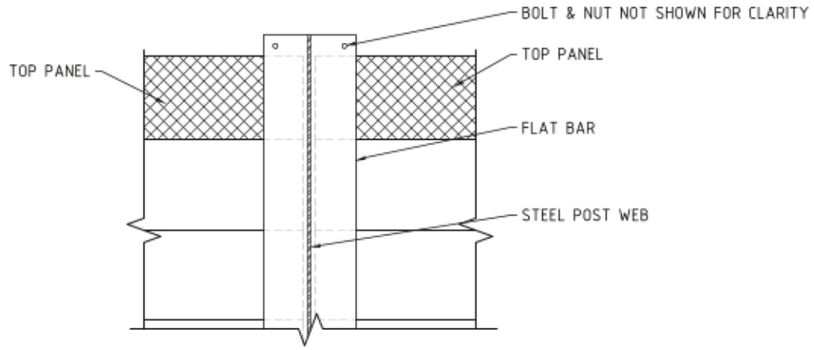
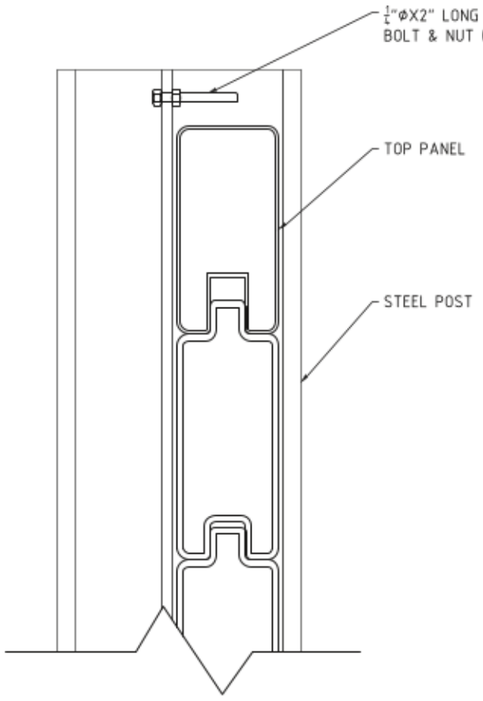


PANEL RETENTION DETAIL - PLAN VIEW
SCALE N.T.S.



A 5A CROSS SECTION
SCALE N.T.S.

NOTE:
USE THE HOLE ABOVE THE TOP PANEL FOR PANEL RETENTION ASSEMBLY



B 5A SECTIOIN - SIDE VIEW
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BILL OF MATERIALS

QTY	PART ID	ITEM DESCRIPTION	DIMENSIONS	SPECIFICATION	GRADE	COMMENTS
				PVC PANELS		
8		TOP RAIL 119.5" (COLOR-ADOBE)	119 ½"			
5		TOP RAIL 143.5" (COLOR-ADOBE)	143½"			
29		TOP RAIL XL 191.5" (COLOR-ADOBE)	191½"			
268		TUF BARRIER 119.5" (COLOR-ADOBE)	119 ½"			
182		TUF BARRIER 143.5" (COLOR-ADOBE)	143½"			
1038		TUF BARRIER XL 191.5" (COLOR-ADOBE)	191½"			
8		STEEL CHANNEL 119" (GALV)	119"			
5		STEEL CHANNEL 143" (GALV)	143"			
160		STEEL CHANNEL 191" (GALV)	191"			
				STEEL POSTS		
24	IBEAMCUSTOM	W10X33	17'-6¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A992, GR50	
9	IBEAMCUSTOM	W10X33	19'-6¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A992, GR50	
2	IBEAMCUSTOM	W10X33	20'-0¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A992, GR50	
2	IBEAMCUSTOM	W10X39	19'-6¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A992, GR50	
2	IBEAMCUSTOM	W10X39	20'-0¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A992, GR50	
1	IBEAMCUSTOM	W10X45	17'-6¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A992, GR50	
2	IBEAMCUSTOM	W10X45	19'-6¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A992, GR50	
1		⅜"X3⅝"X2$^{13}/_{16}$"X3⅝" BENT PLATE	16'-0¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
1		⅜"X3⅝"X2$^{13}/_{16}$"X3⅝" BENT PLATE	16'-0¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
24		1¾"X13" BASE PLATE	20"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
1		1¾"X14" BASE PLATE	20"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
17		2"X13" BASE PLATE	20"			
1		⅜"X3" FLATBAR	15'-11¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
50		⅜"X3" FLATBAR	17'-5¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
28		⅜"X3" FLATBAR	19'-5¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
4		⅜"X3" FLATBAR	19'-11¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
1		¼"X8¾" CLOSURE PLATE	17'-5¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
1		¼"X8¾" CLOSURE PLATE	19'-5¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
1		¼"X8¾" CLOSURE PLATE	17'-5¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
4		⅜"X3"X8¾"" SEAT PLATE	8¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
2		⅜"X3¼"X2¾"" SEAT PLATE	3¾"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	
				ANCHOR HARDWARE		
400		1"Ø HEAVY HEX NUT		HOT DIPPED GALVANIZED PER ASTM A123	ASTM A563-DH	
200		1"Ø HARDENED WASHER		HOT DIPPED GALVANIZED PER ASTM A123	ASTM F436	
100		1"Ø ANCHOR ROD	25"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM F1554 GR55	
100		2"x2"x¼" BEARING PLATE WASHER	2"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	WITH 1⅛"Ø DRILLED HOLE
272		1¼"Ø HEAVY HEX NUT		HOT DIPPED GALVANIZED PER ASTM A123	ASTM A563-DH	
136		1¼"Ø HARDENED WASHER		HOT DIPPED GALVANIZED PER ASTM A123	ASTM F436	
68		1¼"Ø ANCHOR ROD	29"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM F1554 GR55	
68		2"x2"x¼" BEARING PLATE WASHER	2"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A36	WITH 1⅜"Ø DRILLED HOLE
25		⅝"Ø ANCHOR ROD	5"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM F1554 GR55	
25		⅝"Ø HEAVY HEX NUT		HOT DIPPED GALVANIZED PER ASTM A123	ASTM A563-DH	
25		⅝"Ø HARDENED WASHER		HOT DIPPED GALVANIZED PER ASTM A123	ASTM F436	
25		⅝"Ø HILTI HIT-SC SCREEN TUBE	3⅜"			
5		HITLI HIT-HY 270	11.16 fl oz			
				OTHER HARDWARE		
85		¼"Ø BOLT AND NUT	2"	HOT DIPPED GALVANIZED PER ASTM A123	ASTM A307	

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NAME: JAMES T. BREEDEN

DATE: 06-29-21 LICENSE NUMBER: 58090

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Geotechnical Engineering Report

New Brighton Sound Fence
New Brighton, MN
May 14, 2021
Terracon Project No. MP215072

Prepared for:
TMG Construction Inc
St. Paul, MN

Prepared by:
Terracon Consultants, Inc.
Minneapolis, Minnesota

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.

Dan B. Mahrt, PE
May 14, 2021
Reg No. 42729

May 14, 2021

TMG Construction
576 Front Avenue
St. Paul, MN 55117

Attn: Mr. Tom Greeninger
P: (612) 986-5291
E: tom@tmgcinc.us

Re: Geotechnical Engineering Report
New Brighton Sound Fence
50 14th Street NW
New Brighton, MN
Terracon Project No. MP215072

Dear Mr. Greeninger:

We have performed geotechnical engineering services for the referenced project in general accordance with Terracon Proposal No. PMP215072 dated April 5, 2021. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Dannah Marsolek
Staff Engineer

Dan B. Mahrt, P.E.
Geotechnical Department Manager

REPORT TOPICS

Note: This report was also delivered in a web-based format. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report

New Brighton Sound Fence

50 14th St. NW

New Brighton, MN

Terracon Project No. MP215072

May 14, 2021

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed sound fence to be located at 50 14th St NW in New, Brighton, Minnesota. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Foundation design and construction
- Lateral earth pressures

The geotechnical engineering Scope of Services for this project included the advancement of four test borings to depths of approximately 25 feet below existing site grades.

Maps showing the site and boring locations are shown in the **Site Location and Exploration Plan** section. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs in **Exploration Results**.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located at 50 14th Street NW in New Brighton, MN Latitude/Longitude: 45.072942°, -93.189326° (approximate) See **Site Location**
Existing Improvements	Parking and drive areas and lightly vegetated areas
Existing Topography	Approximate elevation is around 900 feet mean sea level (MSL).
Geology	Our experience in this area indicate subsurface conditions consist of sand, silt and clay lake sediments and till associated with the Grantsburg Sublobe.

PROJECT DESCRIPTION

Our final understanding of the project conditions is as follows:

Item	Description
Information Provided	We were provided a soil boring location map as well as a site plan by TMG.
Project Description	Project will consist of installation of a 17 foot tall, 350 foot long section and a 19 foot tall, 255 foot long section of sound fence running parallel to the parking lot. We understand the foundations will typically consist of drilled shaft foundations, however, cast-in-place concrete spread footings may be considered in some areas.

GEOTECHNICAL CHARACTERIZATION

Subsurface Profile

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical recommendations. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs and Geomodel can be found in **Exploration Results**.

Stratification boundaries on the GeoModel, and boring logs represent the approximate location of changes in soil types; in situ, the transition between materials may be gradual. As noted in **General Comments**, the characterizations are based on widely spaced exploration points across the site, and variations are likely.

Model Layer	Layer Name	General Description
1	Topsoil/Asphalt	Topsoil or asphalt
2	Sand	Poorly graded, fine grained sand
3	Clayey Sand	Fine grained, clayey sand

Groundwater Conditions

The boreholes were observed while drilling for the presence and level of groundwater. The water levels observed in the boreholes can be found on the boring logs in **Exploration Results**. Groundwater was not observed in any of the borings while drilling; however, this does not necessarily mean the boring terminated above groundwater. A relatively long period is often necessary for a groundwater level to develop and stabilize in a borehole. Long term observations in piezometers or observation wells, sealed from the influence of surface water, are recommended if it is necessary to define groundwater levels.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure will vary. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

GEOTECHNICAL OVERVIEW

Based on the results of the borings, the geotechnical considerations and recommendations presented in this report are summarized below, with additional details included in the following sections.

- Poorly graded sands were encountered to depths ranging from 5 to 8.5 feet in each of the borings. Sands ranged in density from very loose to medium dense.
- Clayey sands with a wide range of densities underlie the poorly graded sands.
- Generally, the onsite soils appear to be suitable to use/reuse as structural fill provided they meet the requirements in **Fill Material Types.**
- Based on the conditions encountered, it is our opinion that the native sands and clayey sands appear suitable to support the drilled shaft or cast-in-place concrete spread footings foundations bearing on or within the native soils. If spread footings are utilized, we recommend that the bearing soils be surface compacted prior to placing concrete.

EARTHWORK

Site Preparation

Site preparation should include stripping of all vegetation, organic soils, root systems, and any soft, frozen or otherwise unsuitable materials from the site surface. Generally, stripping of all vegetation, root systems, and organic soils is required before new fill can be placed to support

structures, or generating suitable soils from cut areas to use as new structural fill. Based on the provided site plans and scope of the project, we do not anticipate significant changes to the existing site grades.

Structural Fill Material Types

The native sandy soils encountered on the site appear suitable for use as new structural fill. A sample of each material type should be submitted to Terracon for evaluation prior to use on this site.
Structural fill should meet the following material property requirements.

Fill Type [1, 3]	Soil Classification	Acceptable Location for Placement
On-site soils	Poorly Graded Sand (SP) Clayey Sand (SC)	■ Below foundations if placed on stable subgrades ■ Backfill adjacent to and above foundations
On-site and imported material [2,3]	Sands with <20% P200 (typically SW, SW-SM, SP-SM, SW-SC, SP-SC, SM, SC)	■ Below foundations where overexcavations are needed. ■ Backfill adjacent to and above foundations
	Gravels with <15% P200 (Typically GW, GP, GW-GM, GP-GM)	■ As a stabilization layer in excavations.
Unsuitable material	CL, CH, MH, OL, OH, PT	Green (non-structural) locations

1. Structural fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the geotechnical engineer for evaluation prior to use on this site.
2. Specific material requirements will need to be satisfied based on the intended use. Specific material requirements will also need to be satisfied based on near-surface native soils such that fill soils are similar to the native subgrade soils.
3. Sorting of topsoil and on-site soils containing debris, organics, etc., will be necessary. Delineation of unsuitable on-site soils should be performed in the field by a Terracon representative. Moisture conditioning of the on-site soils will be necessary to facilitate compaction.

Appropriate laboratory tests, including standard Proctor (ASTM D698) moisture-density relationship tests and gradation tests should be performed on proposed fill materials prior to their use as structural fill. Further evaluation of fill materials should be performed by Terracon prior to their use in compacted fill sections.

Structural Fill Compaction Requirements

Structural fill should meet the following compaction requirements.

Item	Structural Fill
Maximum Lift Thickness	■ 9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used ■ 4 inches in loose thickness when hand-guided equipment (i.e., jumping jack or plate compactor) is used
Minimum Compaction Requirements [1, 2,]	■ 98% of max. below foundations 95% of max. above foundations
Water Content Range [1]	■ Granular: -3% to +3% of optimum [3]

1. Maximum density and optimum water content as determined by the standard Proctor test (ASTM D 698).
2. If the granular material is a coarse sand or gravel, or of a uniform size, or has a low fines content, compaction comparison to relative density may be more appropriate. In this case, granular materials should be compacted to at least 70% relative density (ASTM D 4253 and D 4254).
3. Specifically, moisture levels should be maintained low enough to allow for satisfactory compaction to be achieved without the cohesionless fill material pumping when proofrolled or containing excess water (ponding).

Terracon should be retained to observe subgrades prior to fill placement, monitor fill placement and to perform field density tests as each lift of fill is placed in order to evaluate compliance with the design requirements. Terracon should be retained to observe and test floor slab and pavement subgrades immediately prior to paving.

Construction Observation and Testing

The earthwork efforts should be monitored by Terracon personnel. Monitoring should include documentation of adequate removal of vegetation and topsoil, proof-rolling and mitigation of areas delineated by the proof-roll to require mitigation.

Bearing soils exposed in foundation excavations should be observed and tested by Terracon personnel. In the event that unanticipated conditions are encountered, Terracon should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, retaining Terracon to provide observation and testing into the construction phase of the project provides the continuity to maintain our evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

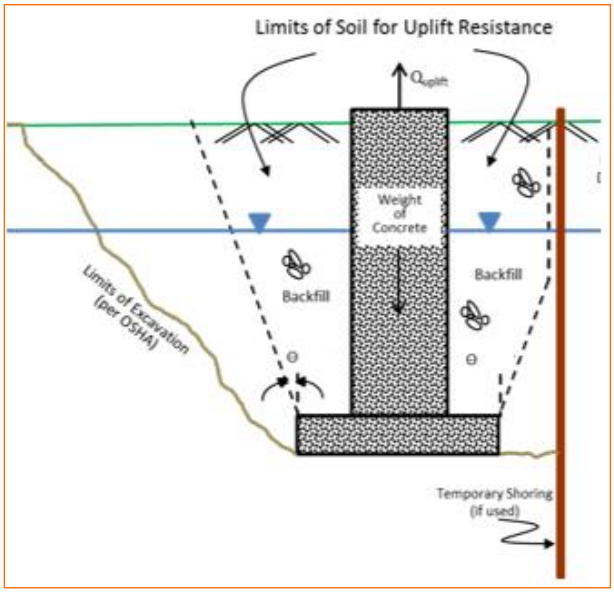
Spread Footing Foundation Design Recommendations

Item	Description
Required bearing materials [1]	■ Poorly graded native sands or native clayey sands **that have been surface compacted** ■ New structural fill extending to native sand soils ○ Over-excavations and backfill during foundation installation
Maximum net allowable bearing pressure [2, 3]	3,000 psf
Minimum foundation dimensions	■ Column footings: 30 inches ■ Continuous footings: 18 inches
Minimum Embedment below finished grade [4]	Exterior footings in unheated areas: 60 inches
Estimated total settlement [3, 5]	1 inch or less
Estimated differential settlement [3, 5, 6]	About ⅔ of total settlement
Ultimate passive pressure [7, 8] (equivalent fluid density)	For compacted fill placed adjacent to foundation: ■ 360 pcf
Ultimate coefficient of sliding friction [8, 9]	On suitable bearing material: 0.35

1. Unsuitable or soft soils should be undercut and replaced according to the recommendations presented in the **Earthwork** section.
2. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation.
3. Values provided are for maximum loads noted in the **Project Description** section.
4. Embedment necessary to minimize the effects of frost and/or seasonal water content variations.
5. Foundation settlement will depend on the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of structural fill, and the quality of the earthwork operations.
6. Frequent control joints in the structure and sufficiently flexible connections are recommended help to accommodate differential settlement across the length of the structure.
7. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. Passive resistance in the upper 3½ feet of the soil profile in exterior locations should be neglected due to frost effects.
8. Some horizontal movement of the foundation must occur to mobilize passive and sliding resistance.
9. Should be neglected for foundations subject to net uplift conditions.

Design Parameters - Uplift Loads

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils. As illustrated on the subsequent figure, the effective weight of the soil prism defined by diagonal planes extending up from the top of the perimeter of the foundation to the ground surface at an angle, θ, of 20 degrees from the vertical can be included in uplift resistance. The maximum allowable uplift capacity should be taken as a sum of the effective weight of soil plus the dead weight of the foundation, divided by an appropriate factor of safety. A maximum total unit weight of 110 pcf should be used for the backfill.

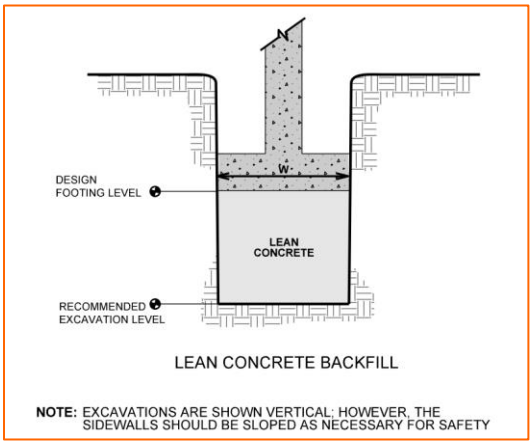


Spread Footing Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, and should be surface-compacted prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

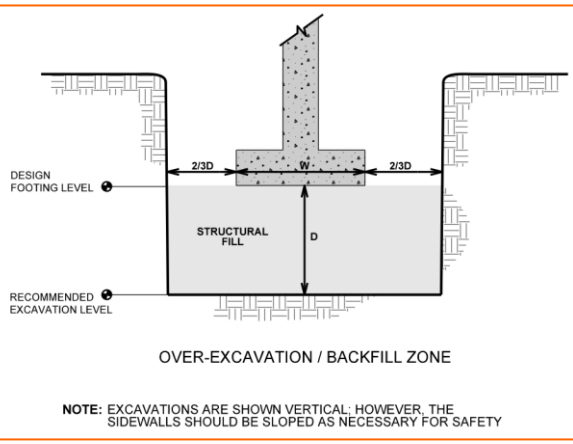
If unsuitable bearing soils (i.e., low strength native soils) are encountered at the base of the planned footing excavation, corrective measures will be required. The footing excavations could be extended deeper to suitable soils and the footings could bear directly on these soils at the lower level, on lean concrete backfill placed in the excavations to the design footing level, or

undercut and widened to allow for structural fill placement below the footings, as shown on the following sketches. The over-excavation should be backfilled up to the footing base elevation with coarse-grained structural fill placed as recommended in the **Earthwork** section.



LEAN CONCRETE BACKFILL

NOTE: EXCAVATIONS ARE SHOWN VERTICAL; HOWEVER, THE SIDEWALLS SHOULD BE SLOPED AS NECESSARY FOR SAFETY



OVER-EXCAVATION / BACKFILL ZONE

NOTE: EXCAVATIONS ARE SHOWN VERTICAL; HOWEVER, THE SIDEWALLS SHOULD BE SLOPED AS NECESSARY FOR SAFETY

DEEP FOUNDATIONS

Drilled Shaft Design Parameters

The proposed sound fence can also be supported on drilled shaft foundations. Soil design parameters are provided below in the **Drilled Shaft Design Parameters Table.** The design parameters are based on an individual drilled shaft (i.e., where drilled shafts are spaced at least 3 diameters apart, center-to-center). A reduction in design parameters would be necessary if an adjacent shaft is located within 3 diameters. In designing to resist uplift loading, no more than ⅔ of the allowable side friction values provided for compressive loading should be used along with the effective weight of the shaft concrete. Buoyant unit weights of the soil and concrete should be used in the calculations below the highest anticipated groundwater elevation.

Depth (feet)	Effective Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)	Allowable Side Friction [2, 3] (psf) (FS = 2)	Allowable End Bearing [4] (psf) (FS = 3)	Static Lateral Subgrade Modulus, k[5] (pci)	ε_{50} [5]
0 to 4[1]	90	26	0	---	---	80	---
4 to 5.5	120	31	0	200-300	---	110	---
5.5 to 8.5	125	34	0	300-500	---	170	---
8.5 to 12	90	30	0	100-200	2000	95	---
12 to 20	60[6]	30	0	600-900	4000	95	---

Depth (feet)	Effective Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)	Allowable Side Friction [2, 3] (psf) (FS = 2)	Allowable End Bearing [4] (psf) (FS = 3)	Static Lateral Subgrade Modulus, k^5 (pci)	ε_{50} [5]

1. Frost induced adhesion/heave of 1,500 psf is assumed for the perimeter surface area of drilled shafts in the upper 4 feet.
2. Ranges of values increase linearly with depth. Side friction should be ignored for a distance of about one shaft diameter from the base of a shaft when a combination of side friction and end bearing are being used to develop the required capacity.
3. In designing to resist uplift loading, ⅔ of the allowable side friction values provided for compressive loading could be used along with the effective weight of the drilled shaft. Buoyant unit weights of the concrete should be used below the maximum water level in the calculations.
4. Drilled shaft excavations should penetrate at least one shaft diameter into the bearing stratum when designing for the allowable end bearing pressures provided.
5. The values provided for lateral subgrade modulus, k, and strain, ε_{50}, are based on empirical correlation with shear strength and density of the material as presented and are for use as input in the computer program L-Pile.
6. Groundwater assumed to be present seasonally as shallow as 12 feet.

Drilled shafts should have a minimum (center-to-center) spacing of three diameters. Closer spacing may require a reduction in axial load capacity due to group effects. Axial capacity reduction can be determined by comparing the allowable axial capacity determined from the sum of individual piles in a group versus the capacity calculated using the perimeter and base of the pile group acting as a unit. The lesser of the two capacities should be used in design.

Post-construction settlements of drilled shafts designed and constructed as described in this report are estimated to be less than ½ inch. Differential settlement between individual shafts is expected to be less than ¼ inch.

Drilled Shaft Lateral Loading

For the case of a single row of shafts supporting a laterally loaded grade beam, group action for lateral resistance of shafts would need to be considered when spacing is less than three shaft diameters (measured center-to-center). However, spacing closer than 3D (where D is the diameter of the shaft) is not recommended, due to potential for the installation of a new shaft disturbing an adjacent installed shaft, likely resulting in axial capacity reduction.

Lateral deflections of the drilled shaft should be evaluated using an appropriate analysis procedure and would be dependent on the physical characteristics of the drilled shaft, subsurface conditions, applied loading, restraint conditions at the bottom and top of the shaft and ground slope. We can provide analyses of lateral deflections upon request.

The drilled shafts for this project should have a minimum diameter sufficient to provide adequate cover over steel reinforcement. The drilled shaft diameter should not be less than 24 inches in

order to accommodate temporary casing and equipment for removal of water and for concrete placement.

Drilled shaft foundations designed and constructed as recommended in this report would be expected to experience settlement on the order of ½ inch or less (not including elastic compression of the shaft). Proper reinforcing steel should be included in the drilled shaft designs for the combined axial and lateral loading, as well as internal bending moments.

A formed top of the drilled shafts should be used so that the shaft diameter will not increase within 4 feet of the lowest adjacent finished grade to reduce the potential for uplift loads caused by frost action that could develop beneath broader or "mushroomed" tops of drilled shafts. If pier caps are used, the base of the cap should extend at least 3½ feet below lowest adjacent finished grade.

Drilled Shaft Construction Considerations

Groundwater was not observed in the borings. However, perched or trapped water can develop when lenses or layers of cohesive (silt and/or clay) soils are present within an overall granular (sand) subgrade. The drilled shaft contractor and foundation design engineer should be informed of these risks.

Drilled shaft foundations should be augered and constructed in a continuous manner. Concrete should be placed in the shaft excavations following drilling and evaluation for proper bearing stratum, embedment, and cleanliness. The shafts should not be allowed to remain open overnight before concrete placement.

Conventional drilling equipment should be able to penetrate the overburden materials. The drilled shaft foundation should be designed with a shaft diameter of at least 30 inches to facilitate clean out and possible dewatering of the shaft excavation. Temporary steel casing should also be installed if personnel plan to enter the shaft excavation. The bottom of the shaft should be free of loose soil or debris prior to reinforcing steel and concrete placement.

The sides of the drilled shaft excavation should be protected from disturbance during shaft excavation and concrete placement. The shaft bottom should be cleaned of loose or disturbed material prior to concrete placement. If water or drilling fluid is present in the shaft excavation, concrete should be placed using a tremie or concrete pump hose extended to within 6 inches of the shaft base. Concrete should be placed as soon as possible after the foundation excavation is completed to reduce the potential for disturbance.

Where temporary casing is used, care should be taken during removal of the casing as concrete is placed. During casing removal, a sufficient concrete level should be maintained to counteract hydrostatic pressure on the annular space outside of the casing. We recommend the concrete mixture be designed to have a slump in the range of 5 to 7 inches to facilitate removal of temporary

casing. Arching of the concrete, loss of seal and other problems can occur during casing removal and result in contamination of the drilled shaft. Placement of loose backfill or cave-in material in the perimeter annulus around the casing should not be permitted.

We recommend a Terracon representative observe the drilled shaft excavation to evaluate the suitability of the bearing materials and to verify that conditions in the drilled shaft excavation are consistent with those encountered in the boring. If unsuitable materials are encountered at planned depths, it may be necessary to redesign the shaft

Backfill placed against structures should consist of granular soils or low plasticity cohesive soils. For the granular values to be valid, the granular backfill must extend out and up from the base of the wall at an angle of at least 45 and 60 degrees from vertical for the active/at-rest and passive cases, respectively.

GENERAL COMMENTS

Our analysis and opinions are based on our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon should be retained to provide observation and testing services during grading, excavation, foundation construction, and other earth-related construction phases of the project. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third party beneficiaries intended. Any third party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance on the services and any work product is limited to our client, and is not intended for third

parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Boring Numbers	Boring Depths (feet)	Location
1 through 4	25	Planned sound fence

Boring Layout and Elevations: Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±10 feet), and ground surface elevations were estimated using MnTOPO. The boring locations are shown on the **Exploration Plan**. The coordinates of the borings are indicated on the boring logs.

The locations and elevations of the borings are considered accurate only to the degree implied by the means and methods used to define them.

Subsurface Exploration Procedures: The borings were drilled with a truck-mounted drilling rig using continuous flight hollow-stem augers. Soil sampling was performed using split-barrel sampling procedures. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon is driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. The samples were placed in appropriate containers and taken to our laboratory for testing. We observed and recorded groundwater levels during, and after drilling and sampling. The borings were backfilled with auger cuttings and bentonite grout after drilling.

The drill crew prepared a field log of each boring to record field data including visual descriptions of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. The boring logs included with this report represent an interpretation of the subsurface conditions at each boring location based on field and laboratory data, and observation of the samples.

Laboratory Testing

In the laboratory, water content tests were performed on portions of the recovered samples. Grain size analysis testing was performed on a select sample from Boring 3. The results of the laboratory tests are shown on the boring logs at their corresponding sample depths in **Exploration Results**.

The samples were described in the laboratory based on visual observation, texture and plasticity, and the laboratory testing described above. The descriptions of the soils indicated on the boring

logs are in general accordance with the General Notes and Unified Soil Classification System (USCS) summarized and included in **Supporting Information**.

SITE LOCATION AND EXPLORATION PLAN

Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless noted above.

SITE LOCATION

New Brighton Sound Fence ■ New Brighton, MN
May 14, 2021 ■ Terracon Project No. MP215072

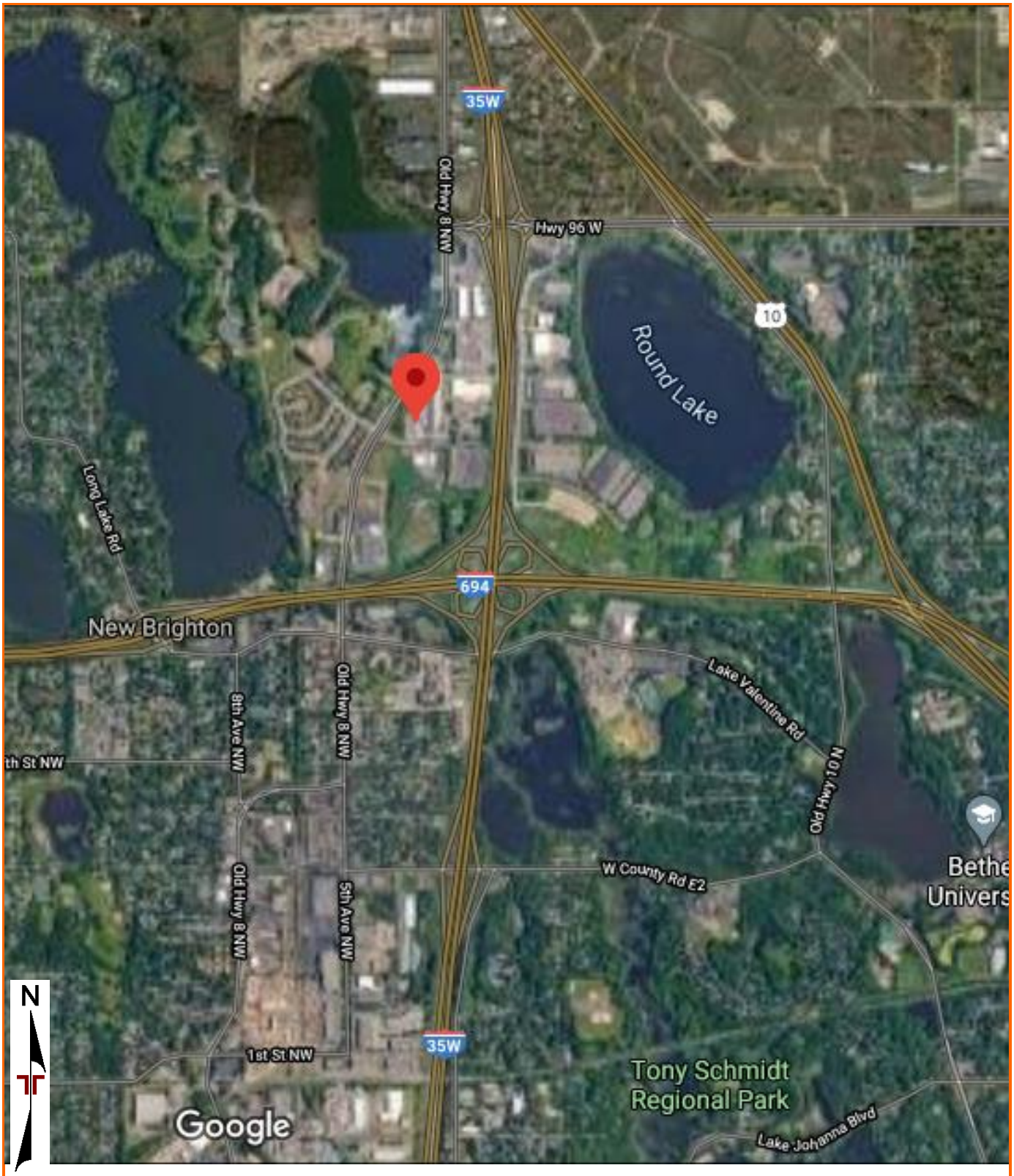


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN

New Brighton Sound Fence ■ New Brighton, MN
May 14, 2021 ■ Terracon Project No. MP215072

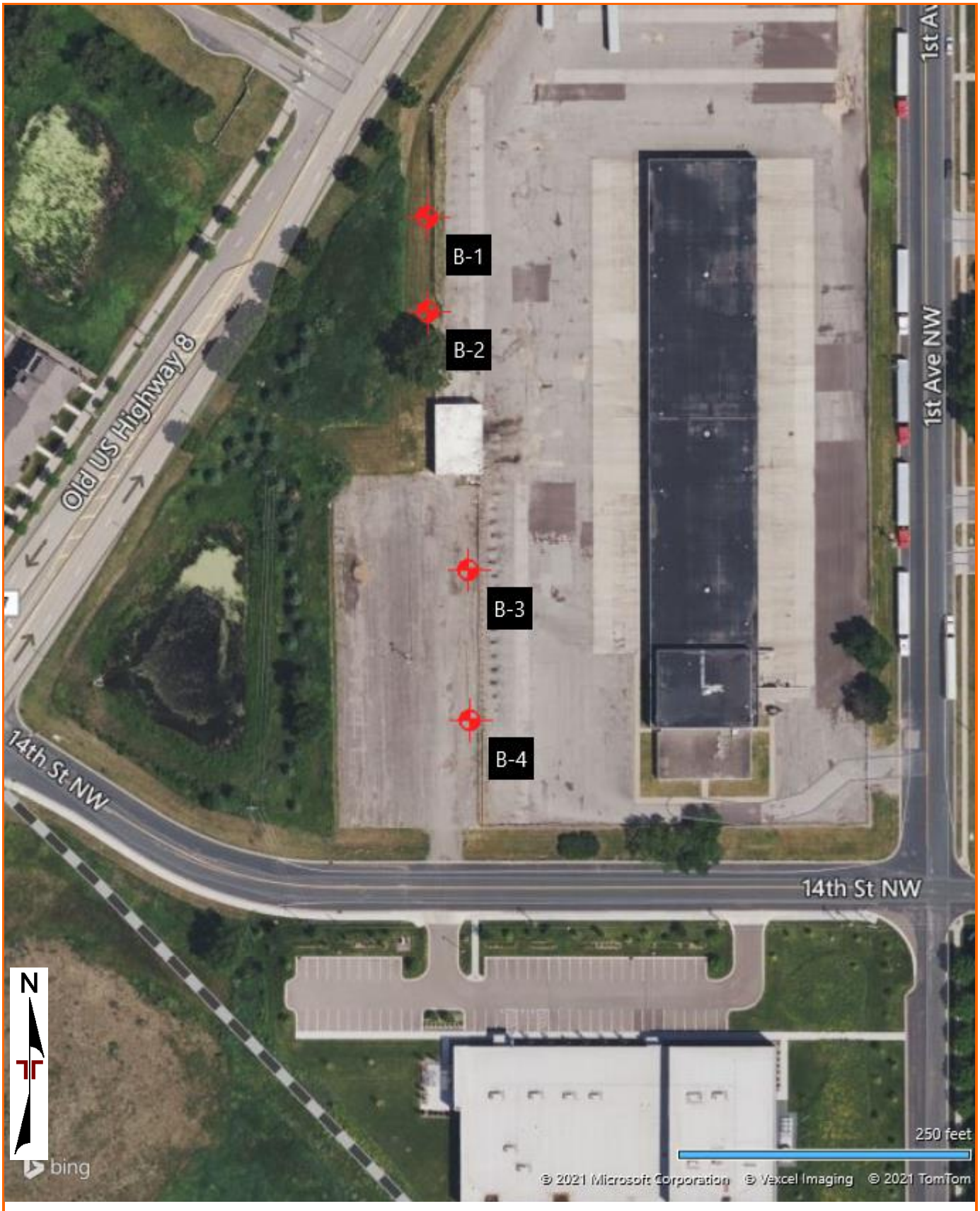


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

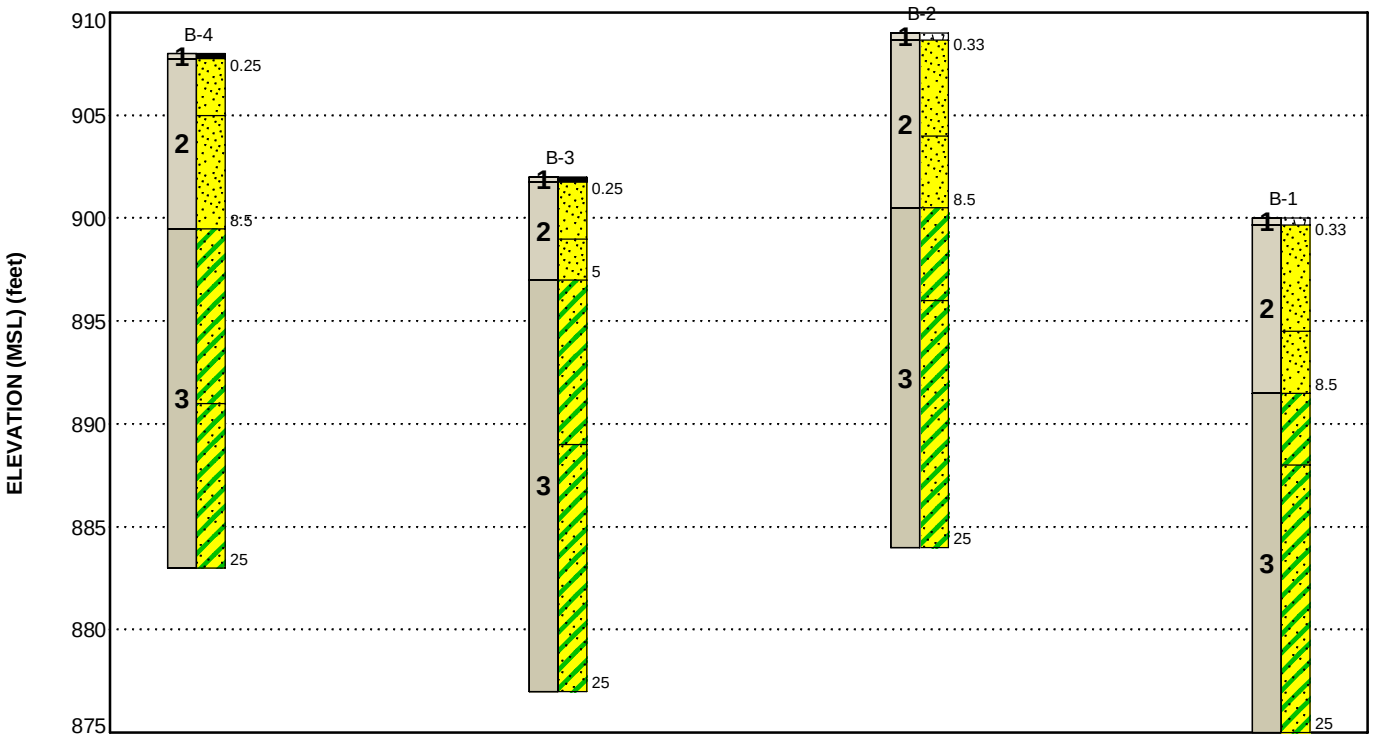
EXPLORATION RESULTS

Contents:

Note: All attachments are one page unless noted above.

GEOMODEL

New Brighton Sound Fence ■ New Brighton, MN
Terracon Project No. MP215072



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	**Topsoil/Asphalt**	Topsoil or asphalt
2	**Sand**	Poorly graded, fine grained sand
3	**Clayey Sand**	Fine grained, clayey sand

LEGEND

Topsoil
Asphalt
Poorly-graded Sand
Clayey Sand

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

BORING LOG NO. B-1

PROJECT: New Brighton Sound Fence

CLIENT: TMG Construction Inc
St Paul, MN

SITE: 50 14th St NW
New Brighton, MN

LOCATION See Exploration Plan

Latitude: 45.0733° Longitude: -93.1899°

Approximate Surface Elev.: 900 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	WATER CONTENT (%)	PERCENT FINES
1		0.3	899.5+/-							
			TOPSOIL							
2			**POORLY GRADED SAND (SP)**, trace clay, fine grained, dark brown, very loose to medium dense, trace gravel							
						X	12	1-2-1 N=3	26.8	
						X	12	11-6-8 N=14	7.8	
		5.5	894.5+/-	5						
			POORLY GRADED SAND (SP), fine grained, brown, medium dense							
						X	12	11-12-14 N=26	12.8	
		8.5	891.5+/-							
3			**CLAYEY SAND (SC)**, brown, very loose			X	12	3-1-2 N=3	19.3	
		12.0	888+/-	10						
			CLAYEY SAND (SC), trace gravel, dark gray, medium dense							
				15		X	12	5-4-7 N=11	14.6	
						X	12	4-5-6 N=11	14.8	
				20						
						X	12	9-11-10 N=21	16.8	
		25.0	875+/-	25						
			Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0-25': Hollow Stem Auger

Abandonment Method:
Boring backfilled with bentonite grout upon completion

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
13400 15th Ave N
Plymouth, MN

Boring Started: 04-16-2021 | Boring Completed: 04-16-2021

Drill Rig: 453 | Driller: TK

Project No.: MP215072

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL MP215072 NEW BRIGHTON SOUN.GPJ TERRACON_DATATEMPLATE.GDT 5/10/21

BORING LOG NO. B-2

PROJECT: New Brighton Sound Fence

CLIENT: TMG Construction Inc
St Paul, MN

SITE: 50 14th St NW
New Brighton, MN

LOCATION See Exploration Plan

Latitude: 45.0731° Longitude: -93.1899°

Approximate Surface Elev.: 909 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS		WATER CONTENT (%)	PERCENT FINES
1		0.3	908.5+/-								
			TOPSOIL								
			POORLY GRADED SAND (SP), trace clay, fine grained, dark brown, medium dense, trace gravel			X	12	3-2-8 N=10		8.9	
2		5.0	904+/-			X	12	4-4-8 N=12		11.2	
			POORLY GRADED SAND (SP), trace gravel, fine grained, brown, medium dense	5							
						X	12	11-11-8 N=19		6.2	
		8.5	900.5+/-								
			CLAYEY SAND (SC), trace gravel, brown, medium dense			X	12	3-4-6 N=10		16.9	
				10							
		13.0	896+/-								
3			**CLAYEY SAND (SC)**, trace gravel, dark gray, loose to medium dense			X	12	4-4-6 N=10		14.2	
				15							
						X	12	4-4-5 N=9		15.5	
				20							
						X	12	8-10-9 N=19		16.4	
		25.0	884+/-	25							
			Boring Terminated at 25 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0-25': Hollow Stem Auger

Abandonment Method:
Boring backfilled with bentonite grout upon completion

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
13400 15th Ave N
Plymouth, MN

Boring Started: 04-16-2021 | Boring Completed: 04-16-2021

Drill Rig: 453 | Driller: TK

Project No.: MP215072

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL MP215072 NEW BRIGHTON SOUN.GPJ TERRACON_DATATEMPLATE.GDT 5/10/21

BORING LOG NO. B-3

PROJECT: New Brighton Sound Fence

CLIENT: TMG Construction Inc
St Paul, MN

SITE: 50 14th St NW
New Brighton, MN

LOCATION See Exploration Plan

Latitude: 45.0725° Longitude: -93.1897°

Approximate Surface Elev.: 902 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	WATER CONTENT (%)	PERCENT FINES
1		0.3	902+/-							
			ASHALT							
			POORLY GRADED SAND (SP), trace gravel, fine grained, dark brown, loose			X	12	6-3-3 N=6	8.2	
2		3.0	899+/-							
			POORLY GRADED SAND (SP), trace gravel, fine grained, brown, very loose			X	12	1-1-2 N=3	9.4	
		5.0	897+/-	5						
			CLAYEY SAND (SC), trace gravel, brown, loose to very dense			X	12	2-2-3 N=5	16.0	
						X	12	2-24-45 N=69		43
		13.0	889+/-	10						
3			**CLAYEY SAND (SC)**, trace gravel, dark gray, loose to medium dense			X	12	3-3-5 N=8	14.5	
				15						
						X	12	2-4-6 N=10	17.0	
				20						
						X	12	8-8-9 N=17	16.5	
		25.0	877+/-	25						
			Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0-25': Hollow Stem Auger

Abandonment Method:
Boring backfilled with bentonite grout upon completion

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
13400 15th Ave N
Plymouth, MN

Boring Started: 04-16-2021 | Boring Completed: 04-16-2021

Drill Rig: 453 | Driller: TK

Project No.: MP215072

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL MP215072 NEW BRIGHTON SOUN.GPJ TERRACON_DATATEMPLATE.GDT 5/10/21

BORING LOG NO. B-4

PROJECT: New Brighton Sound Fence

CLIENT: TMG Construction Inc
St Paul, MN

SITE: 50 14th St NW
New Brighton, MN

LOCATION See Exploration Plan

Latitude: 45.0721° Longitude: -93.1897°

Approximate Surface Elev.: 908 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	WATER CONTENT (%)	PERCENT FINES
1		0.3	908+/-							
			ASPHALT							
			POORLY GRADED SAND (SP), trace gravel, fine grained, dark brown, medium dense							
						X	12	7-5-5 N=10	7.6	
		3.0	905+/-							
2			**POORLY GRADED SAND (SP)**, trace gravel, fine grained, brown, loose to medium dense			X	12	3-2-3 N=5	6.7	
				5						
						X	12	5-6-8 N=14	10.1	
		8.5	899.5+/-							
			CLAYEY SAND (SC), trace gravel, brown, loose			X	12	3-2-5 N=7	14.8	
				10						
						X	12	2-3-5 N=8	13.7	
3				15						
		17.0	891+/-							
			CLAYEY SAND (SC), trace gravel, dark gray, loose to medium dense			X	12	2-3-5 N=8	16.1	
				20						
						X	12	6-5-5 N=10	15.9	
		25.0	883+/-	25						
			Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0-25': Hollow Stem Auger

Abandonment Method:
Boring backfilled with bentonite grout upon completion

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
13400 15th Ave N
Plymouth, MN

Boring Started: 04-16-2021 | Boring Completed: 04-16-2021

Drill Rig: 453 | Driller: TK

Project No.: MP215072

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL MP215072 NEW BRIGHTON SOUN.GPJ TERRACON_DATATEMPLATE.GDT 5/10/21

SUPPORTING INFORMATION

Contents:

Note: All attachments are one page unless noted above.

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS
New Brighton Sound Fence ■ New Brighton, MN
Terracon Project No. MP215072

Terracon GeoReport

SAMPLING	WATER LEVEL	FIELD TESTS
Split Spoon	**Water Initially Encountered** **Water Level After a Specified Period of Time** **Water Level After a Specified Period of Time** **Cave In Encountered** Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	**N** Standard Penetration Test Resistance (Blows/Ft.) **(HP)** Hand Penetrometer **(T)** Torvane **(DCP)** Dynamic Cone Penetrometer **UC** Unconfined Compressive Strength **(PID)** Photo-Ionization Detector **(OVA)** Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

LOCATION AND ELEVATION NOTES

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (tsf)**	**Standard Penetration or N-Value Blows/Ft.**
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

RELEVANCE OF SOIL BORING LOG

The soil boring logs contained within this document are intended for application to the project as described in this document. Use of these soil boring logs for any other purpose may not be appropriate.

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu ≥ 4 and 1 ≤ Cc ≤ 3 [E]		GW	Well-graded gravel [F]
			Cu < 4 and/or [Cc<1 or Cc>3.0] [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu ≥ 6 and 1 ≤ Cc ≤ 3 [E]		SW	Well-graded sand [I]
			Cu < 6 and/or [Cc<1 or Cc>3.0] [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A"		CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K, L, M]
			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
			Liquid limit - not dried			Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

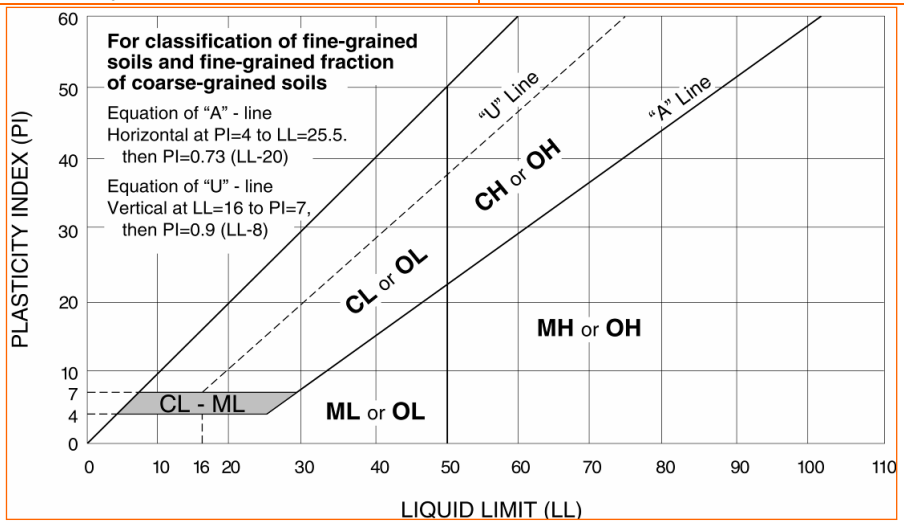
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



AIL SOUNDWALLS

FULL GROUND MOUNTED INSTALLATION GUIDELINES

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INSTALLATION GUIDE
TUF BARRIER® AND SILENT PROTECTOR®

Ground Mounted Sound Walls

The AIL Group of Companies
PO Box 6161 • Sackville, New Brunswick • Canada E4L 1G6 • Tel: +1-506-364-4600

NOTE: USE OF THIS GUIDE IS SUBJECT TO THE DISCLAIMERS OF LIABILITY IN SECTION 8.0 ON PAGE 18.

Table of Contents

1. Introduction

1.1 Purpose

The purpose of this guide is to provide the Owner, Engineer, Contractor and Inspection Staff information to assist them to properly assemble and install Atlantic Industries Ltd. (AIL) Sound Wall Structures. AIL Issued for Construction (IFC) drawings must be obtained from AIL for the specific location at which the AIL Sound Wall is to be installed, and shall govern in all cases. Contractor and Inspection Staff shall ensure the Installation conforms to all the requirements of the AIL IFC drawings.

THIS GUIDELINE DOES NOT APPLY TO UNIQUE APPLICATIONS SUCH AS COLD WEATHER CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE OWNER, ENGINEER, CONTRACTOR AND INSPECTION STAFF TO CONSULT WITH AIL TO CONFIRM WHETHER A PARTICULAR APPLICATION IS A UNIQUE APPLICATION AND, IF SO, TO OBTAIN FROM AIL ADDITIONAL INSTALLATION REQUIREMENTS AND ANY RESTRICTIONS OR SPECIAL INSTALLATION CONDITIONS THAT MUST BE SATISFIED.

NOTE: USE OF THIS GUIDE IS SUBJECT TO THE DISCLAIMERS OF LIABILITY IN SECTION 8.0 ON PAGE 18.

1.2 Plans and Specifications

It is the responsibility of the Contractor to ensure that onsite personnel have the most recent AIL IFC drawings for the specific location at which the AIL Sound Wall Structure is to be installed. These drawings are typically sent via email, but may also be obtained from an AIL representative.

1.3 Responsibility

It is the sole responsibility of the Contractor to install the structure in conformance to the AIL IFC drawings. All quality inspection and quality assurance shall be the sole responsibility of the Contractor unless otherwise expressly stated in the contract documents between the Contractor and AIL. AIL is not responsible in any event for construction related quality control or quality assurance. Construction shall conform to the contract requirements and shall satisfy applicable health and safety regulations.

AIL shall not be responsible or have any liability whatsoever if the installation is in a different location than that for which the AIL IFC drawings were issued.

It is the responsibility of the Contractor to inspect all the materials against the bill of lading upon arrival at the site to ensure complete delivery is in good order. Any damaged materials must be set aside and AIL shall be notified immediately.

2. Materials, Tools and Equipment

2.1 Materials and Tools Supplied by AIL

Materials and tools supplied by AIL include:

1) AIL IFC engineering drawings of the Tuf Barrier or Silent Protector structure for the specific site at which the structure is to be installed.
2) Tuf Barrier and/or Silent Protector Panels.
3) Galvanized or painted steel posts (if required as a part of contract).
4) Galvanized Steel C Channel.
5) Galvanized panel retention hardware (nut and bolt).
6) Man door / gates as required by design (if required as a part of contract).
7) Galvanized anchor rod hardware (rods, nuts, bolts, and bearing plate washer) (if required as a part of design/contract).
8) Epoxy compound (if required for the design)
9) Flange covers (if required as a part of contract).
10) Post Caps (if required as a part of contract).
11) Paint for touchups (on painted posts only).
12) Other miscellaneous items as noted on the drawing bill of materials (indicating that they are supplied by AIL) Found on the last page of drawing set.

Figure 1 through Figure 7 show how the AIL materials are typically shipped to the site.

Figure 1 - Typical Bundle of Panels

Figure 2 – Panel Bundle Label

Figure 3 – Galvanized or Painted Steel Posts

Figure 4 – Galvanized Anchor Rod Pieces

Figure 5 – Galvanized Steel C Channel Bundles

Figure 6 – Post Flange Covers

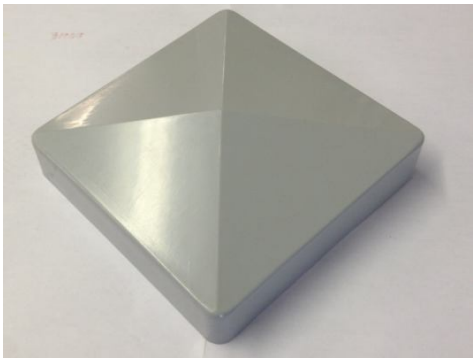

Figure 7 – Post Cap

2.2 Equipment Supplied by Contractor

Typical equipment required to install a structure includes:

1) All PPE required by law.
2) Forklift or properly equipped front-end loader to unload bundles of panels, posts and skids without causing damage (fork sleeve/socks recommended)
3) Properly equipped drilling equipment to auger foundations.
4) Lifting equipment such as a mobile crane or crane truck to lift steel posts into place.
5) Excavation/earth moving equipment to remove spoils throughout soil drilling process.
6) Manlift to install panels in higher wall sections.
7) Any equipment pertaining to placing of new concrete.

2.3 Tools Supplied by Contractor

Typical tools required to install a structure include:

1) Properly rated nylon slings are required to lift the steel posts. Steel chains should not be used to avoid damaging the galvanized coating or painted coatings on the steel.
2) Standard wood construction materials. Wood serves the purpose of bracing anchor rod assemblies and posts during installation.
3) Hammer drill for drilling holes for epoxy anchors (if required by design)
4) Wrenches to tighten nuts on anchor rods and panel retention bolt.
5) Four foot levels (magnetic is helpful)
6) Total Station to ensure accurate layout
7) Wood or steel bracing
8) Vertical laser level (Recommended)
9) Compound miter saw with fine tooth blade for cutting PVC
10) Saw capable of cutting steel channel (as required)
11) String line
12) Siding removal tool if using flange covers

2.4 Materials Supplied by Contractor

Typical materials not supplied by AIL required to install a structure include:

1) Concrete for foundations
2) Reinforcement for foundations
3) Anchor rod templates
4) Sonotubes
5) Wood (for bracing)
6) Galvanizing paint for touchups
7) Grout for under base plates (if required by design)

2.5 Typical Crew

1) One working foreman.
2) Equipment operator(s) for auger equipment, material handling equipment, crane, etc.
3) Labourers to:
    a. Assemble rebar cages (if required)
    b. Assemble anchor rod assemblies (if required)
    c. Drill anchor holes for epoxy anchor applications
    d. Place concrete
    e. Erect steel
    f. Install sound barrier panels
    g. Attach panel retention device

2.6 Handling Steel Posts

The steel posts are typically delivered on a Flat Deck or Super B tractor-trailer. The Contractor must provide an area for post unloading that is easily accessible and in close proximity to the wall site. Posts are typically delivered in various size bundles

depending on post height and post weight. Bundles are lifted independent of each other, unless strapped together in a bundle. Caution must be taken when unloading the posts as they may have shifted during transport. It is IMPORTANT to handle posts with care throughout unloading and transporting process as not to compromise the galvanized or painted coating. Avoid abrasions from forks or chains when unloading and moving posts, and avoid collisions with the structure when moving posts into place. Painted coatings are particularly sensitive to scratching from mishandling. It is recommended that posts are lifted and handled with forks covered with protective sleeve or socks. Avoid dragging the forks along the product as the forks should be free and clear of the posts as the forks are removed.

Scratches can compromise the coating and expose the steel to oxidization which results in corrosion. Any damage that occurs to the steel can be repaired with two coats of zinc rich galvanized paint meeting Canadian and American Standards or touched up with paint of the same colour as the rest of the post.

Posts are typically identified on the bottom of the base plate or on the post flange indicating the Post Type to make it easy to identify for installation. If posts are not identified, it could mean:

1) All the posts on the project are the same.
2) The only variation is the length of the post, so on site measuring is required for determination.
3) There are only a few posts on the project (less than 10) and easily identifiable.
4) In some cases if most of the posts are the same, they will not all be identified, only the ones that are unique are identified as above.

Figure 8 – Post Identification Labelling Examples

Never insert a finger through an empty rod hole in the steel, as the post may shift and cause injury.

2.7 Handling Tuf Barrier and Silent Protector Panel Bundles

The panels are typically delivered on a flat deck or super B tractor trailer. Panels are on pallets and forks are required for unloading. Panels are typically stacked 2 bundles high and it is recommended that this is the maximum stacking height. Arrangement can be made to ensure that panels are delivered to the site in the order required. It is the responsibility of the Contractor to let AIL know the order in which they intend to construct the wall. A level area adjacent to the site is required to store panels during construction.

Panels should NOT be lifted using strapping or chains and instead must be lifted using a forklift device. It is recommended to move the panels the shortest distance possible and handle as infrequently as possible during construction to minimize risk of damage to the panels.

Figure 9 – Forklift Device Handling Panels

Typically, there is a two-hour unloading time limit for each shipment of panels and posts.

Table Panel Information				
Panel Size (mm/ft)	**Weight (kg/lbs)**	**L (mm/in)**	**W (m/in)**	**H (m/in)**
2438 / 8	915 / 2018	2438 / 96	1220 / 48	1220 / 48
3048 / 10	1142 / 2518	3028 / 120	1220 / 48	1220 / 48
3657 / 12	1371 / 3024	3658 / 144	1220 / 48	1220 / 48

Table 1 – Panel Bundle Information

3. Installation

The following is a guideline which, together with the AIL IFC drawings, provides the minimum requirements that must be met for installation. Prior to assembly, refer to the AIL IFC drawings. The schedules within the AIL IFC drawings provide the proper foundation, anchor rod, post, and panel identification and location for each component and must be used and followed for assembly.

Prior to any underground work, contractor shall locate and confirm location of all underground services. Should relocation of any post be required as a result of the locates, the contractor shall contact AIL for direction on how to proceed.

3.1 Layout

Layout should be carried out by a licensed professional surveyor to ensure accurate mapping of the project site and correct location of the foundations. The surveyor should work in accordance to the AIL IFC drawings issued by AIL.

It is possible to curve the AIL sound wall system without designing specific posts to do so. The system has the ability to turn a 4-5 degree angle without having to fabricate a special post. Thus, large sweeping curves are possible without much effort as shown below.

Figure 10 – Curved Wall

3.2 Types of Foundation Options for Ground Mounted Sound Walls

There are various types of foundations types for projects. This manual will discuss the installation of new poured concrete foundations with anchor rods or direct bury post applications.

The construction and installation of a ground mounted sound wall structure is a straight forward process when planned correctly. The process begins with the project site layout previously discussed. This is followed by drilling of drilled shafts / excavating for foundations, excavation along the length of the wall (if required), placement of reinforcement in the drilled shaft (if required), setting of the anchor rod assemblies (if required) and placement of concrete.

It may also involve the installation of epoxied anchors. This involves drilling anchor holes into the concrete and attaching an anchor into epoxy.

It is the responsibility of the owner's structural engineer or an engineer retained by the Contractor to verify the existing structural integrity of the structure the sound wall is being attached to and verify that the existing or new structure can safely handle the loads the sound wall will apply to it. The AIL IFC drawings will have the loads and concrete parameters used in the design and are being applied to the structure on the Notes Page (NP) in the drawing package. The Contractor must notify AIL immediately for consultation prior to any changes of the design.

3.2.1 New Drilled Shaft Foundations

Drilling the footings require the use of conventional methods. Drill foundations to match the diameter, depth, and location outlined in the AIL IFC drawings. A steel sleeve may be required to act as reinforcement for the drilled shaft walls in order to prevent soil from collapsing into the drilled shaft during drilling.

The Contractor is responsible for verifying that existing soil conditions meet the design requirements laid out on the AIL IFC drawings. Foundation inspection, construction and quality assurance to satisfy all AIL drawings requirements is the responsibility of the Contractor. Any foundation material that does not meet the design assumptions on the AIL IFC drawings

as determined by the Owner's Geotechnical Engineer, the Contractor must notify AIL immediately for consultation prior to any changes of the design.

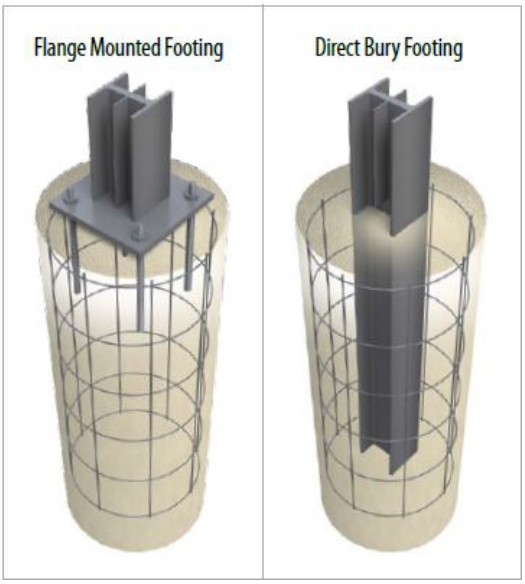

Figure 11 – Type of Drilled Shaft Foundations

It is recommended a sonotube be used in the top 600 mm to 1200 mm (24-48") of the top of the drilled shaft foundation. A sonotube will help control the final elevation of the concrete at the top of the footing. This will prevent any issues with panel alignment in future steps.

Figure 12 – Sonotube

3.2.2 New Spread Footing or Slab Cast Foundations with Cast In Anchors

Spread footings or slab cast foundations are done using conventional methods. These types of foundations are to match the size, depth, and location outlined in the AIL IFC drawings. Excavations must be completed in a safe manner according to local labour codes.

The Contractor is responsible for verifying that existing soil conditions meet the design requirements laid out on the AIL IFC drawings. Foundation inspection, construction and quality assurance to satisfy all AIL drawings requirements is the responsibility of the Contractor. Any foundation material that does not meet the design assumptions on the AIL IFC drawings as determined by the Owner's Geotechnical Engineer, the Contractor must notify AIL immediately for consultation prior to any changes of the design.

In these types of applications it is essential to have a form or form line which terminates at the required elevations as stipulated on the AIL IFC drawings.

3.2.3 Existing Concrete Slab Foundations with Epoxied Anchors

In some instances the posts will be attached to an existing slab. In cases like this, the design will require drilling and setting anchors using an epoxy compound. .

It is the responsibility of the owners structural engineer or an engineer retained by the contractor to verify the existing conditions of the existing concrete slab the sound wall is being attached to and verify that the existing structure can safely handle the loads the new sound wall will apply to it. The AIL IFC drawings will have the loads and concrete parameters used that are being applied to the existing structure on the Notes Page (NP) in the drawing package. The Contractor must notify AIL immediately for consultation prior to any changes of the design.

3.3 Installing Cast in Anchors

If your project does not have cast in anchors, please proceed to next section.

Assemble the reinforcing cages and place into drilled shaft or spread foundation footprint providing required concrete cover on the reinforcement as outlined on the AIL IFC drawings.

Figure 13 – Assembled Reinforcing Cages

Figure 14 – Anchor Rod Template

Anchor rods will require assembly on site. Contractor shall assemble the anchor rod assemblies as laid out in the AIL IFC drawings. Anchor rod templates will be required to ensure consistent anchor rod positioning. Anchor rod templates can be constructed from steel or plywood. The template shall have satisfactory strength to hold the anchor rods in vertical and horizontal position during concrete placement. The template holes shall be drilled vertically and 1.5 mm (1/16") larger in diameter than the anchor rod to prevent the anchors from misalignment during the next stages. Insert anchor assemblies into template and adjust to correct elevation as required.

Set templates laterally and vertically in the correct position as per AIL IFC drawings. Secure such that they do not move during the placement of concrete. Double check alignment of anchor rods and ensure they are vertical, in the correct position and the correct type according to the AIL IFC drawings.

Anchors shall be installed within the tolerances outlined on the AIL IFC drawings.

3.4 Installing Direct Bury Posts

If your project does not have direct bury posts, please proceed to next section.

Assemble the reinforcing cages (if required) and place into drilled shaft providing required concrete cover on the reinforcement. Align the steel post in the correct location (laterally and vertically) and secure tightly into place using cribbing and supports all while ensuring the steel post is vertical. Tolerances for the post location and vertical alignment are given on the AIL IFC drawings.

Figure 15 – Direct Bury Post Support

With a direct bury post, it is critical to ensure that the correct post type has been selected and the direction of the post (front vs. back) is verified prior to placing of any concrete. This information is available on the AIL IFC drawings. A post incorrectly selected or placed in the incorrect direction is not an easy fix with this installation method.

3.5 Installing Epoxied Anchors

If your project does not have epoxied anchors, please proceed to next section.

Using a template for the layout of the anchors, drill the holes into the concrete to the correct depth and diameter as instructed on the AIL IFC drawings. Ensure the holes are drilled perpendicular in all directions to the surface the steel post is to be attached to unless otherwise noted on the drawings. Accuracy of the hole locations is critical in all applications, so the Contractor should ensure the template is correct and located in the correct position prior to starting to drill the concrete. Accuracy of the anchor group location is listed on the AIL IFC drawings.

Following the epoxy manufacturer's instructions, clean the drilled hole as required, apply the epoxy to the hole as required and set the anchor rod to the depth required. Follow the manufacturer's instructions on all aspects of the drilling, cleaning applying epoxy and setting of anchor. Typically the epoxy sets very quickly, so work quickly to avoid mistakes.

3.6 Concrete Placement

If your project has epoxied anchors, please proceed to the next section.

Once all reinforcing and anchor installation or post alignment is completed per sections 3.3 or 3.4, it is time to place the concrete. All concrete work is to conform to standard concrete placement practices and specifications in Canada and/or the United States and as stipulated on the AIL IFC drawings. The concrete placement shall continue until the desired elevation of each foundation is achieved. Tolerance of the concrete placement shall be +/- 3 mm (1/8") from finished elevation. The top of the concrete shall be trowel finished with a flat area a minimum of 75 mm (3") from the post in between the web of the post. The remainder of the top shall be sloped away at 1% from the post to promote the movement of water away from the post.

Concrete placed in cold weather shall be done in accordance with the specifications and procedures laid out according ASTM or CSA Standard Practices.

3.7 Steel Post Erection

If your application is a direct bury option, go to next section for instruction on panel placement.

Concrete shall reach a minimum of 70% of the maximum strength but not less than 25 MPa (3,500 psi) before erection of steel posts can commence. Epoxy anchors shall have reached 100% of their maximum strength as stipulated by the epoxy manufacturer before erection of steel posts can commence.

It is recommended that each foundation elevation is taken and recorded. In a flange mounted application, there is a maximum allowable distance between the underside of the base plate and the top of the concrete foundation outlined on the AIL IFC drawings. The contractor shall set the elevation of the base plates such that all posts can be erected and the measurement between the underside of the base plate and the top of the concrete foundation does not exceed this value while at the same time keeping the alignment of the sound wall panels horizontal and level.

All posts are labelled with the post type to identify the position that they are to go on site as previously mentioned. The posts are labelled on the underside of the base plate and correspond to the schedule on the AIL IFC drawings. Using the appropriate lifting equipment, erect each post into place. Ensure the posts are erected according to the AIL IFC drawings keeping in mind post direction orientation. **The PVC panels fit into the 71 mm (2 ¾") space available between the flange and the flatbar, so ensure this space is in the desired direction the panels are to face.**

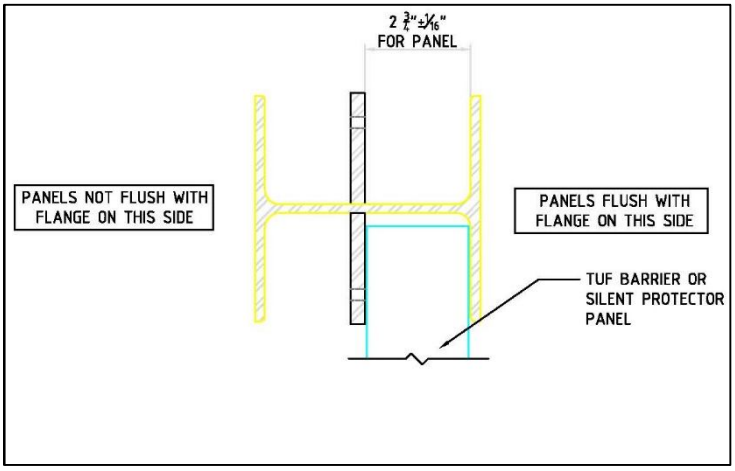

Figure 16 – Post Direction Illustration

Posts shall be installed within the tolerances provided on the AIL IFC drawings. The posts shall be located to the lines and grades specified on the drawings.

Tightening of nuts on a flange mounted post shall be done as follows: After installation and levelling of the base plate, install all four top nuts and tighten them to snug-tight. Add 1/3 turn to each nut, "Turn-of-Nut" method. **No use of impact gun is permitted.**

In the case that the anchor rods have been damaged or are not installed in the correct locations, please contact AIL representative for reparation method. This may involve additional cost.

Figure 17 – Tightening of Anchor Rod Nuts

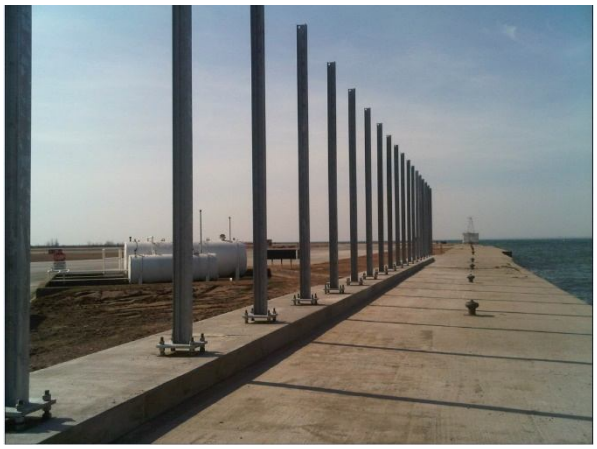

Figure 18 - Erected Steel Posts

Depending on the design, it may be required to grout the space between the base plate and the top of the foundation. This requirement is provided on the AIL IFC drawings. The grout should be installed and allowed to cure per manufacturer's recommendations **prior** to the stacking of sound wall panels and should be given the required time to cure.

Any galvanizing that is damaged or scratched should be sprayed with two coats of zinc rich paint or recoated with the approved paint meeting Canadian and American standards. Any painted surface that is damaged or scratched should be touched up with the paint supplied by AIL.

3.8 PVC Flange Covers

Projects that require flange covers shall have the flange covers installed prior to the installation of the panels. Typically flange covers need to be cut to length in the field. They should be cut to the length of the steel post they are covering. They can be cut using a fine tooth blade in a skill saw or a mitre saw. A fine tooth blade ensures the material does not crack or chip as it is being cut.

Flange covers are installed by sliding one side of the flange cover over one side of the flange and using a siding removal tool to pull the edge around the other flange. Start at the bottom of the post and work towards the top.

Flange covers should not be installed in weather less than 10 degrees C (50 degrees F) as there is a chance they will crack/tear under the duress of bending around the second flange in the cold. The warmer the flange cover, the easier it is to install.

Flange covers **are not to be used** on sound walls that are erected with **high elevation differences** (rooftops, bridges, etc.). Posts should be painted in applications where the post needs to match the panel colour and is above the ground.

DO NOT install the panels then try to fit the flange covers on as it **will not work**.

DO NOT put the flange cover on while the post is not erected if a sling is being used to lift the post. If the post is being lifted by the end or a hole in the end of the post, it is ok to put them on first. If the post is lifted with a sling when the flange covers are on, it is an extreme safety risk as the flange cover can slide off and the post will fall and cause potential serious injury.

3.9 Panel Erection

When handling panels individually, it is best to pick the panels up from the middle or have a person at each end lifting the panel. **Panels should not be dragged across one another as the panels will scratch if there happens to be any delertious material in the bundles**. PVC panel cut edges can be sharp. It is strongly recommended that installers wear Kevlar gloves and long sleeve shirts to protect their hands and arms from potential cuts and scrapes.

The first panel installed is installed between the steel flat bar that is welded to the post web and the post flange. The first panel is a TUF-Barrier panel (solid panel) reinforced with a steel “C” channel. Tuf Barrier and the C channel arrive to site separated and must be assembled. Slide the steel channel into the cavity of the panel. Typically, the steel “C” channel is approximately 12 mm (1/2”) shorter than the length of the panel. Select the Tuf Barrier panel in the color as specified on the AIL IFC drawings. Cut the panel and the C channel as required on the shop drawings. If the panel and the steel C channel are required to be cut, cut them individually, not assembled as the heat of cutting the steel will compromise the PVC. The panel should be installed so that it is completely seated at the base and level from end to end. The panel must be installed so that the tongue of the panel extends upwards.

Figure 19 – Inserting C Channel in Bottom Panel

Figure 20 –Panels Installed Near Ground by Hand

The second and subsequent panels to be installed shall be of the color and type specified on the AIL IFC drawings. They shall be installed with the tongue portion facing upwards and assembled tight to the panel below it. The tongue and groove joints shall mesh fully and be free from foreign material and there should not be any visible gaps. Add steel “C” channel in the panels as required in subsequent layers at the specified locations on the AIL IFC drawings.

The final panel of the sound wall to be installed has no rib on the top and serves as the cap unit. The cap unit shall be installed with the groove join meshed fully with the tongue of the panel below and be free from foreign material and should not have any visible gaps.

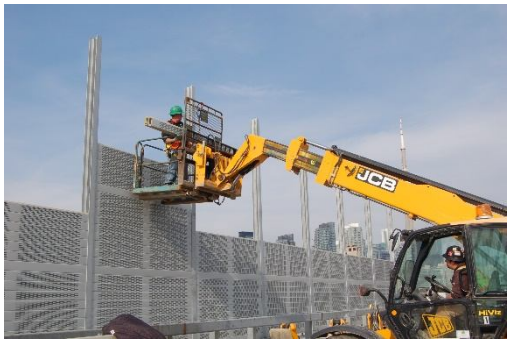

Figure 21 – Lift For Installing Panels at Heights

3.10 Cutting PVC Panels

Panels can be installed by hand while within reaching distance of the ground. For panels that need to be installed at higher elevations, a man lift should be used to safely install panels.

Panels may be cut on site as required by design and these are identified on the AIL IFC drawings. It is recommended that panels are cut individually on a compound miter saw. The saw blade should have as many teeth per inch as possible to avoid tearing the PVC (like a plywood blade). Safety glasses and an approved dust mask/ventilator should be worn while cutting the PVC panels. The hazards attributed to PVC dust can be found in the MSDS Sheets.

It is important to limit the number of cuts in a Silent Protector panel. Panels should not be cut through the perforations unless otherwise detailed on the AIL IFC drawings. Panels should **NEVER** be cut at both ends through the perforations. When Silent Protector panels are cut through the perforations, additional steel reinforcing is required in the cut end of the panel. There should be no less than 75 mm (3”) of un-perforated surface at the end of each Silent Protector panel once cut otherwise additional reinforcement is required as outlined on the AIL IFC drawings.

If cutting through the perforations, insert 150 mm (6”) long piece of steel “C” channel in the cut end of each piece as detailed on the AIL IFC drawings and on Figure 22.

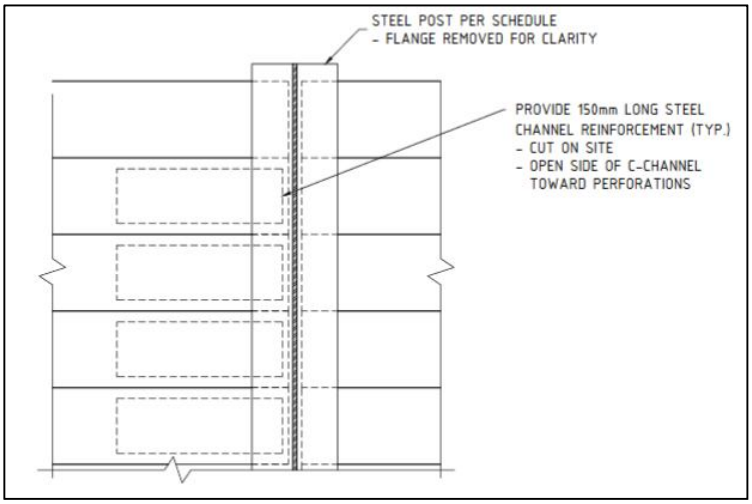

Figure 22 – Perforated Panel Cutting Detail

Panels shall have enough room at the ends to expand and contract. There is approximately 6 to 12 mm (1/4” to ½”) of expansion and contraction that can occur in the panel (depending on the length of the panel). The size of the finished panel is affected by the temperature of the panel at the time of cutting. If a panel is cut to the exact space on a very cold winter day, there will be no room for it to expand on a hot summer day. As a general rule, a panel at 20 degrees Celsius (70 degrees Fahrenheit) should have between 6 and 10 mm (1/4” to 3/8”) of free movement back and forth between the posts but shall not exceed 19 mm (3/4”). The panel should be cut considering the panel will expand or contract approximately 6 mm (1/4”) depending on the direction of the temperature change. At no time should the gap at each end exceed 19 mm (3/4”). Should this occur, a longer panel is required.

Figure 23 – Cut Panel Used as Step

When panels are required to step between steel posts, a 150 mm (6”) piece of panel can be cut and inserted between the flange and the flatbar as shown on Figure 23. For steps greater than 150 mm (6”) the post will be fabricated to accommodate a larger step.

3.11 Panel Retention Bolt

At the top of the sound wall post (W100x19 and W4x13 excluded), there is a hole that is fabricated approximately 20 mm (3/4”) below the top of the flat bar. Using a 6 mm (1/4”) x 50 mm (2”) galvanized steel bolt and nut (provided by AIL) insert the bolt such that the long end of the bolt extends above the top panel like shown in Figure 14. Secure bolt by tightening nut with wrench. Post caps (if required) are screwed or glued into place as shown on the AIL IFC drawings.

Figure 24:Installed Retention Bolt

If no hole is provided in the post then field drilling is required. Cover any exposed steel with two coats of zinc rich galvanizing paint meeting Canadian and American standards.

A panel retention system must be employed on walls to ensure panels cannot be easily removed by the wind.

3.12 Gates and Doors

When required by design, gates and doors can be integrated into the sound wall. This is completed on a site specific basis and its design, fabrication, and installation shall be done according to the AIL IFC drawings. Typically gates and doors are fabricated for relative easy installation once received on site. Some on site drilling and or welding maybe required to mount the gate to the posts.

Doors can be premanufactured doors or fabricated from steel and AIL sound wall materials.

Figure 25: Installed Gate/Door

3.13 Penetrations and Openings (Fire Hose Access, Cable Trays, Pipes, etc.)

Penetrations and openings through the wall shall be detailed on the AIL IFC drawings. Larger openings such as fire hose access ports will be designed and fabricated as a part of the AIL IFC drawing package. Smaller penetrations of 150 mm (6") or less can be done on site. It is important to note that the panels above and below the penetration will require reinforcement by use of a steel "C" channel in these panels. See the AIL IFC drawings for further details if this is a requirement.

4. Final Grading and Drainage

In order to protect the wall panels and anchor connection from damage of and to allow the free flow of ground water, the contractor shall place free draining material on each side of the wall. Dimensions of the free-draining strip shall be determined by others, but shall not be less than 200 mm (8") on each side of the wall.

It is important to note that at no time should the final grade be higher on one side of the wall than the other when completing grading unless otherwise shown on AIL IFC drawings. The final grade on each side of the sound wall must be the same elevation.

5. Dismantling Panel Sections

Sections of panels can be dismantled and reassembled by simply reversing the steps taken to assemble the walls (removing the panel retention device, then removing the panels, etc.). Care should be taken to ensure panels do not get scratched and that the acoustic mineral wool is not lost during removal.

6. Maintenance

AIL Sound Walls are low maintenance systems. Below are a few items that can be checked on a two year cycle to ensure the long term performance of the wall.

6.1 Graffiti Removal / Wall Washing

AIL sound walls are more resistant to graffiti as well as other forms of tagging than concrete products. Since PVC has low permeability; paints, etc. do not penetrate the surface of the material as well as they do on other materials (concrete, wood, steel, etc.). Graffiti can be removed through the use common detergents and or light chemicals designed for use on PVC. For small areas, the wall can be scrubbed with a rag and a detergent. For larger areas, we recommend the use of a power washer to make the job easier. Again, a light detergent or PVC friendly chemical will likely be required to remove the graffiti. Test a small area that is concealed from view to test the product prior to commencing on the whole surface**. For best results, graffiti should be removed as quickly as possible from the surface of the wall.**

The walls can also be washed with a pressure washer at any time to remove dirt and debris if required. Care should be taken not to direct the power washer nozzle at the perforated surface to avoid damaging the acoustic mineral wool.

6.2 Anchor Rod and Steel Post Inspection

Anchor rods and steel posts shall be visually inspected for corrosion on a two year cycle. Any corrosion areas shall be cleaned with a steel wire brush and coated with two coats of zinc rich paint per ASTM or CSA standards. Areas of excessive corrosion shall be brought to the attention of a structural engineer for review of anchor rod/post condition. Anchor rods shall have the nuts checked for tightness and ensure they continue to meet the required torque specification on the AIL IFC drawings. Anchor rods should also be inspected to ensure that no anchor rod nuts have been removed or are missing.

6.3 Panel Inspection

Panels shall be visually inspected for defects that may affect structural performance every two years. Damaged panels shall be removed and replaced.

7. Structure Checklist

1a) Construction safety precautions taken and personal protective equipment (PPE) worn as prescribed?
Yes □ No □

1b) Pre-construction meeting with the AIL representative and site personnel to review installation procedures, AIL IFC drawings and Installation Guide to confirm a full understanding of requirements?
Yes □ No □

2) Latest approved AIL IFC Drawings?
Yes □ No □

3) All required material available at site?
Yes □ No □

4) Material stored properly to prevent on-site damage?
Yes □ No □

5) Any damaged material identified and a copy of rejected material documentation given to suppliers?
Yes □ No □

8a) Layout completed?
Yes □ No □

8b) Site drainage in place to re-route all runoff away from foundations and work site?
Yes □ No □

9) Anchor rods assembled (if required)?
Yes □ No □

10) Anchor rod templates completed (if required)?
Yes □ No □

11) Foundations drilled/excavated per AIL IFC drawings?
Yes □ No □

12) Anchor rods installed per AIL IFC drawings?
Yes □ No □

13) Posts installed per AIL IFC drawings?
Yes □ No □

14) Concrete cured to required 70% design strength?
Yes □ No □

15a) Grout installed under base plate and cured (if required)?
Yes □ No □

15b) Has the flange cover been put on prior to installing any panels (if required)?
Yes □ No □

16) Is the steel C channel been placed in the bottom panel of each bay?
Yes □ No □

17) Are the panels installed facing the proper direction (Silent Protector – perforations towards the noise source)?
Yes □ No □

18) Are the panels placed in the pattern as required by the AIL IFC drawings?
Yes □ No □

19) Has the panel retention device been installed and secured at the top of each bay?
Yes □ No □

20) Has the final grading been done to ensure there is no grade difference between both sides of the wall?
Yes □ No □

8. Disclaimer of Liability

This Installation Guide is only a general guide to the installation of a Ground Mounted AIL Sound Wall supplied by Atlantic Industry Limited ("AIL") and so in all cases AIL's issued for construction drawings shall govern and must be obtained prior to commencing installation, and then strictly followed. There are no warranties of any kind, whether statutory, oral, written, express or implied, including any implied warranty of merchantability or fitness for a particular purpose contained in or arising out of this Installation Guide. Other than replacement of those materials and products supplied by AIL to the user of this Installation Guide that are demonstrated to be defective, no user or other reader of this Installation Guide, including the Owner, Contractor, Engineer or anyone else, shall have any cause of action or claim against AIL, including those arising out of or based on theories of contract, warranty, tort (including negligence and breaches of a duty to warn), strict liability or otherwise, and whether arising out of defective design, equipment, material, workmanship or services. In no event shall AIL be liable or responsible to anyone for the cost of the removal and reinstallation of any defective materials or products supplied by AIL, including no liability or responsibility for damages to adjacent or other structures. Without limiting the generality of the foregoing, in no event shall AIL be liable to anyone for any special, incidental, indirect, or consequential damages under any circumstances, including but not limited to failure of the structure, loss of production, loss of use, failure to meet required load capacity of the completed structure, loss of opportunity, increased operating or maintenance costs, loss of anticipated profits, delay, financing or interest costs, or any other special, incidental, indirect or consequential damage, whether similar or dissimilar, of any nature arising from any cause whatsoever.

In consideration of their receipt and use of this Installation Guide, and in recognition that the Ground Mounted AIL Sound Wall can fail due to improper installation, improper backfill material and failure to comply with best construction practices, each user of this Installation Guide by using it hereby agrees to and does waive and release AIL from and against any and all claims, losses, costs, expenses, damages, injury and liability whatsoever, whether arising out of contract, tort, statutory duties or otherwise, arising directly or indirectly from or in relation to the Installation Guide, and all users of this Installation Guide agrees to and shall indemnify, defend and hold AIL and its officers, directors, servants, agents and employees, and each of them, harmless from and against any and all claims, losses, costs, expenses, damages, injury and liability whatsoever, whether arising out of contract, tort, statutory duties or otherwise, which AIL and its officers, directors, servants, agents and employees may have or incur and arising directly or indirectly from or related to the installation by those users of this Installation Guide of a Ground Mounted AIL Sound Wall.

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Atlantic Industries Limited

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AIL INTERNATIONAL

AIL MINING .com

Special Use Permit Criteria Worksheet

A special use permit cannot be approved unless the Planning Commission and City Council find that the following criteria have been met. Please provide a response on how/why your project meets the below stated criteria. Use additional sheets if necessary and consult with the Planning Director at the time of your Pre-Application Meeting as some items may not be applicable for your project.

1) That the establishment, maintenance, or operations of the special use will not be detrimental to or endanger the public health, safety, morals, comfort or general welfare.

The sound fence will be installed on the private property of the facilty it will be located on. It will be a pre-engineered fence with low maintenance colored materials.

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

The fence should not have an affect on the property values of the neighboring property as the installation of the fence is intended to reduce the noise affecting the neighboring townhouse community.

3) That the establishment of the special use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.

The sound fence should not impede on developments and imrovements of adjacent properties

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

Not Applicable

5) That the special use shall in all other respects conform to the applicable regulations of the district in which it is located.

This project should conform to the applicable regulations

Agenda Section:	**VI**
Item:	**3**
Report Date:	**7/13/21**
Commission Meeting Date:	**7/20/21**

REQUEST FOR COMMISISON CONSIDERATION

ITEM DESCRIPTION:	**Comprehensive Plan Amendment:** Request from US Bank National Association and North Shore Development Partners to provide an avenue for the maximum residential density in the Mixed Use Regional land use designation to reach 60 units per acre.
DEPARTMENT HEAD'S APPROVAL:	
CITY MANAGER'S APPROVAL:	
No comments to supplement this report ___	**Comments attached ___**

15.99 Deadline: 8/30/21

Recommendations:
- After studying the request, **staff is recommending approval of the change as drafted.**

Legislative History:
- Application received on 7/1/21
- Planning Commission review scheduled for 7/20/21

Financial Impact:
- Potentially significant if the proposed change is the catalyst for residential redevelopment in the City's Mixed Use Regional Land Use district.

Summary: The City of New Brighton has received an application from US Bank National Association and North Shore Development Partners requesting that the City amend its comprehensive plan. If approved, the change would add clarity to the existing plan language, and would provide an avenue for residential projects within the Mixed Use Regional land use classification to reach up to 60 units per acre under certain conditions when approved through a Planned Residential Development or Planned Unit Development

Attachments:
1) *Staff Report*
2) *Draft Council Resolution*
3) *Applicant's supporting documentation*

Ben Gozola, AICP
Assistant Director of Community Assets and Development

STAFF Memorandum

Comprehensive Plan Amendment Request

To: **Planning Commission**

From: Ben Gozola, *Assistant Director DCAD*

Meeting Date: **7-20-21**

INTRODUCTION/BACKGROUND

The City of New Brighton has received an application from US Bank National Association and North Shore Development Partners requesting that the City amend its comprehensive plan. If approved, the change would add clarity to the existing plan language, and would provide an avenue for residential projects within the Mixed Use Regional land use classification to reach up to 60 units per acre under certain conditions when approved through a Planned Residential Development or Planned Unit Development.

CURRENT PLAN LANGUAGE

Existing language regarding the "Mixed Use-Regional" land use classification (page 3-27) reads as follows:

Mixed Use – Regional Node

The City intends the Mixed Use – Regional Node designation to be for areas serving community and regional needs with convenient and immediate access to regional highways and Interstates. These areas are targeted to have regional-serving commercial retail or service businesses, offices, and high-density housing. The mix of uses will tend to lean commercial with, in most cases, at least 50 percent of development being commercial in nature. Commercial, office, and residential development may be combined vertically in the same building or horizontally on the same or adjacent sites. When uses are mixed within a building; retail, service, and civic uses should be focused on the ground floor while housing and offices should be focused on the upper floors.

Residential uses will primarily consist of higher-density stacked multi-family housing, with the possibility of higher-density row homes or townhouses utilized as a transition into surrounding neighborhoods. Development is expected to be around 35% residential with density of residential development at 12 - 50 units per acre. The mix of uses will be more automobile-oriented than other Mixed Use nodes, but pedestrian facilities are still important to ensure safe movement through the site. Parking should be optimized, with shared parking where possible/feasible, and parking facilities on the interior of the site. The intensity of mixed use - community development will vary depending on its location within the City and surrounding uses, but generally will be more intense in nature. Because frequent and reliable transit service greatly benefits Mixed Use – Regional Nodes, transit service maintenance and expansion to these areas should be supported.

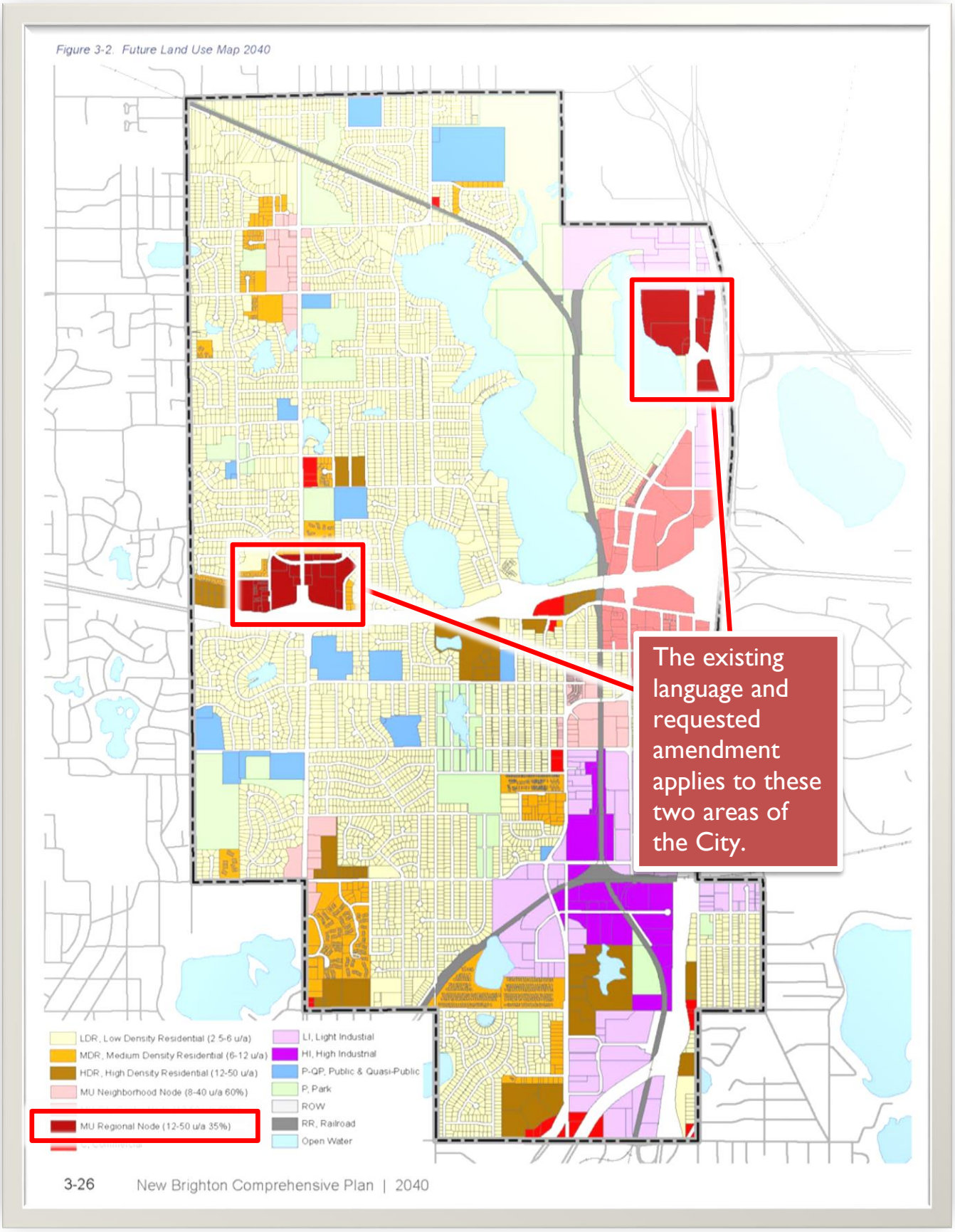


Figure 3-2. Future Land Use Map 2040
The existing language and requested amendment applies to these two areas of the City.
LDR, Low Density Residential (2 5-6 u/a)
MDR, Medium Density Residential (6-12 u/a)
HDR, High Density Residential (12-50 u/a)
MU Neighborhood Node (8-40 u/a 60%)
MU Regional Node (12-50 u/a 35%)
LI, Light Industrial
HI, High Industrial
P-QP, Public & Quasi-Public
P, Park
ROW
RR, Railroad
Open Water
3-26
New Brighton Comprehensive Plan | 2040

PROPOSED UPDATE

After working with the applicant to understand and respond to their request, staff has produced an update that is intended to do two things:

1) Clarify what is meant by "35% residential." The existing language does not provide much guidance on whether "35% residential" refers to individual projects or overall land area, and whether such projects can stand alone. The proposed revisions would address this issue.

   and

2) The amendment would provide an avenue for anticipated projects to realize additional density through vertical development if the increase could be supported through a planned development process.

To achieve these outcomes, the proposed changes to the comp plan text are as follows:

Mixed Use – Regional Node

The City intends the Mixed Use – Regional Node designation to be for areas serving community and regional needs with convenient and immediate access to regional highways and Interstates. These areas are targeted to have regional-serving commercial retail or service businesses, offices, and high-density housing. The mix of uses will tend to lean commercial with, in most cases, at least 50 percent of development being commercial in nature. Commercial, office, and residential development may be combined vertically in the same building or horizontally on the same or adjacent sites. When uses are mixed within a building; retail, service, and civic uses should be focused on the ground floor while housing and offices should be focused on the upper floors.

Residential uses ***can stand-alone, and*** *will primarily consist of higher-density stacked multi-family housing with the possibility of higher-density row homes or townhouses utilized as a transition into surrounding neighborhoods.* ***Residential*** ***d****evelopment is expected to be* ***realized over at least*** ~~***around***~~ *35%* ***of the district's land area*** ~~***residential with***~~ ***at densities generally ranging from*** ~~***density of residential development at***~~ *12 - 50 units per acre.* ***Densities of up to 60 units per acres may be allowed through expanded vertical development via the Planned Residential or Planned Unit Development process.*** *The mix of uses will be more automobile-oriented than other Mixed Use nodes, but pedestrian facilities are still important to ensure safe movement through the site. Parking should be optimized, with shared parking where possible/feasible, and parking facilities on the interior of the site. The intensity of mixed use - community development will vary depending on its location within the City and surrounding uses, but generally will be more intense in nature. Because frequent and reliable transit service greatly benefits Mixed Use – Regional Nodes, transit service maintenance and expansion to these areas should be supported.*

ANALYSIS

The proposed update is supported by staff as the minor changes appear to be a win-win for all parties involved.

1) **Clarifying what is meant by "35% residential" is in everyone's interest, and the requested text update eliminates ambiguity that exists with the current language.** As proposed, it would now be clear that "at least" 35% of the overall land area in the MU-R classification is expected to have a residential component (either stand alone or above commercial). This clarification provides the City with needed flexibility to respond to the ever-changing development market, and avoids a situation in which a great residential project could be rejected because "35%" is read as a cap rather than a target.

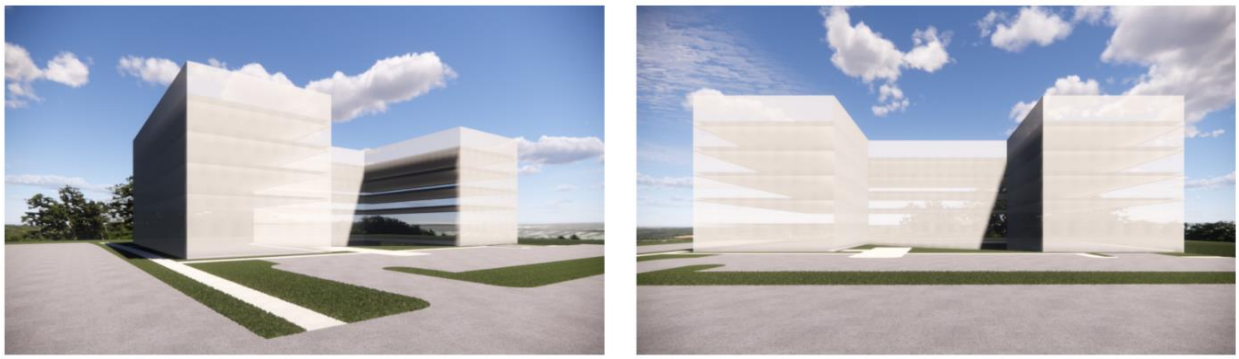
2) **The proposed amendment does NOT amend the target density range for residential projects in this district.** The allowed density range would remain at 12 to 50 units per acre if the amendment is approved. What would change is that a residential project within the allowed range *could* potentially build upward an additional story to realize additional density provided the resulting project did not exceed 60 units per acre. Importantly, the increase would only be allowed in the context of a planned development which would allow the public, staff, the Planning Commission, and City Council an opportunity to study whether the proposed increase in height was appropriate given the context of the site, and whether the increase in density could be handled by all other site characteristics (resulting traffic, parking, etc).

3) **The proposed amendment acknowledges realities of today's marketplace.** It is no secret that the cost of materials and labor have seen dramatic increases over the past year, so projects moving forward will likely need additional avenues for flexibility in order to achieve win-win outcomes. As indicated in the applicant's narrative (attached), approving this amendment to allow slightly higher densities only when deemed appropriate may be the difference between a high-quality, high-amenity residential building with affordable units being built as opposed to an average-quality, low amenity building with few or no affordable options. The first building in this example (with the density bonus) would be a catalyst that could propel and support further development in the area, would contribute towards the City's affordability goals via high-quality units, and would set the bar for market rate rents in New Brighton thereby forcing all current "market rate" rents down to compete with this new market segment (i.e. no one is going to pay market rate for an older/low amenity building when they can pay the same to live in a new high-amenity building). The second building held to current density caps, while possible according to the applicant, will result in a lesser quality development.

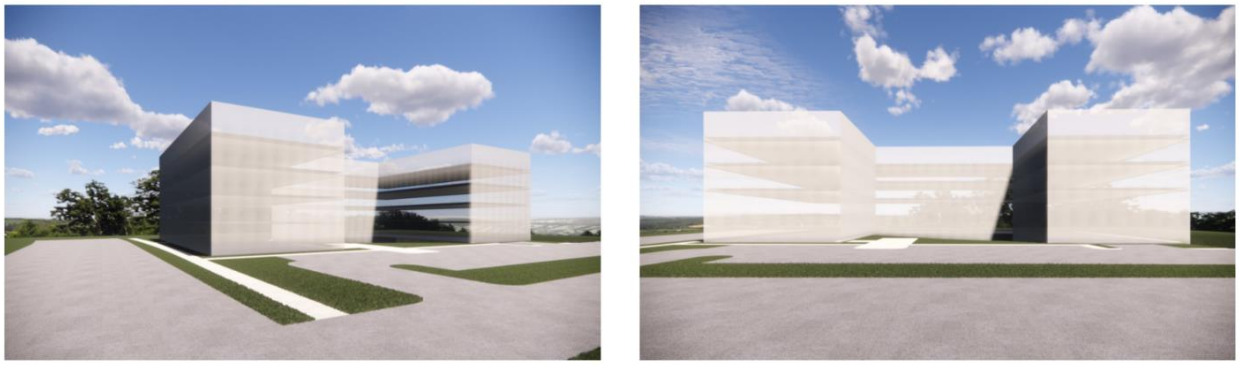
4) The City retains discretion as to when the additional density would be allowed. Planned developments (PUDs and PRDs) are not by-right development types. The City Council ultimately has discretion to approve or deny a proposal based on whether the project fits within the context of the site being redeveloped. If additional density is proposed but cannot be supported, Council will have ample avenues to issue a denial. In the context of the anticipated application driving this amendment request (redevelopment of the US Bank site), the applicants plan to show both parking and traffic will not be issues with an increase in density, and the visual impact of adding one more story on the site would be negligible (see next page)

Visibility Comparison

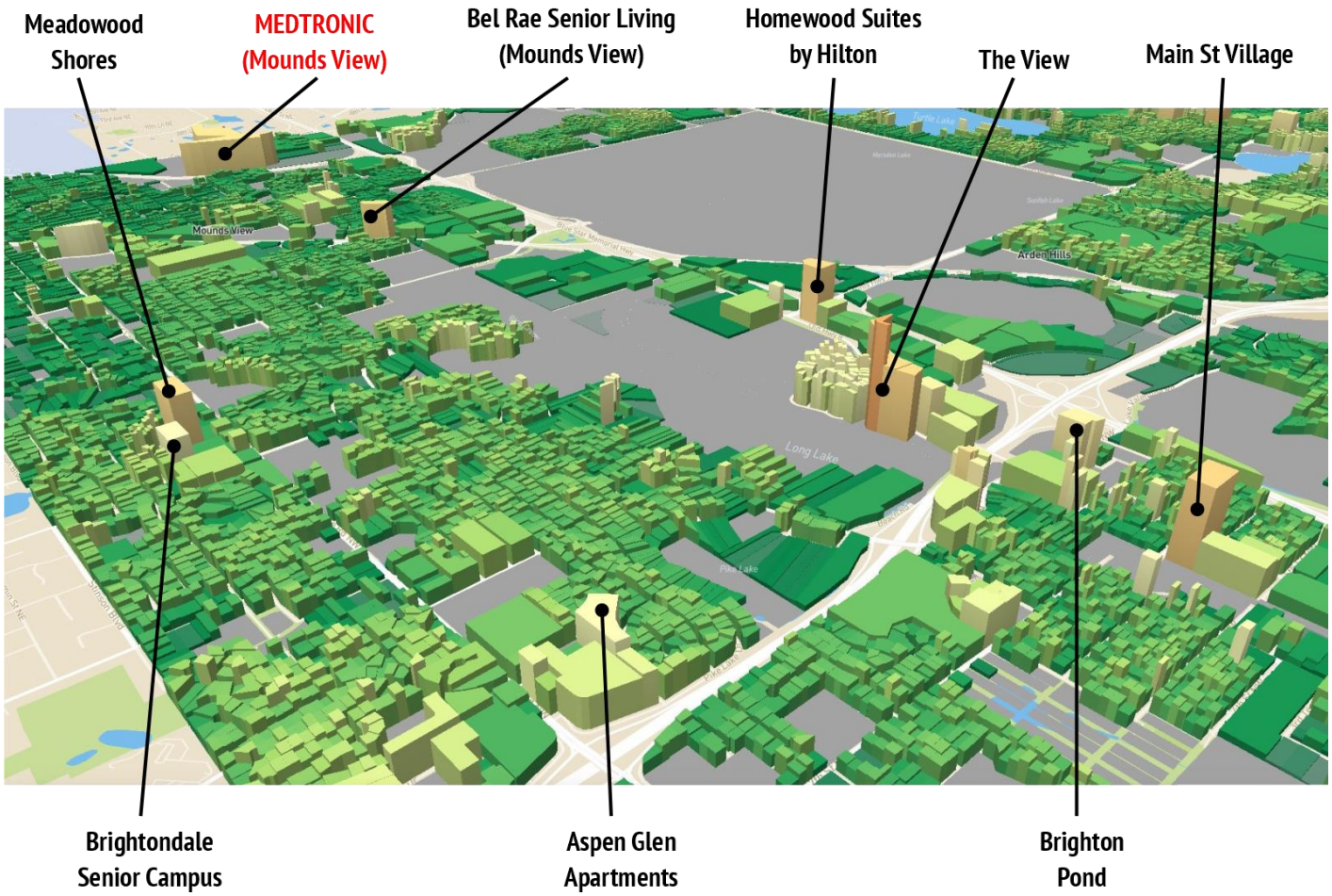
6-story model – density bonus (>60 u.p.a.)



5-Story model – no density bonus (>50 u.p.a.)



5) **The potential rewards are worth opening the door for consideration of these requests.** On a per-acre bases, multi-family buildings like the ones the City anticipates being built in the Mixed Use Regional district are some of the greatest revenue generators per acre for jurisdictions. Recent work performed for Ramsey County by Urban3 (a consulting group that focuses on financially sustainable communities) highlights how important density is not only for addressing housing needs, but also for generating revenues that support local government. On the following page is a 3-D representation of area land values per acre given the uses on each site. Notably, you'll see the value generated per acre for Medtronic in Mounds View is matched or *exceeded* by many of the multi-family buildings in New Brighton. Every City would jump at the opportunity to attract an employer like Medtronic to town to support its tax base, but those opportunities are very rare. Luckily, similar values can be achieved on a per acre basis through multi-family development in areas like the Mixed Use Regional district. The proposed amendment will be an additional differentiator for New Brighton, and will hopefully attract more investment to our Mixed Use Regional sites in the coming years.



Population:	5528
Population Density:	2475/sq mi
Taxable Value Per Acre:	$654,500
Peak Value Per Acre:	$7.9 m

Taxable Value:
$ 2,392,408,700

Taxable Value per Acre ($)

- 0
- < 250,000
- 250,001 - 500,000
- 500,001 - 1,000,000
- 1,000,001 - 1,500,000
- 1,500,001 - 2,000,000
- 2,000,001 - 3,000,000
- 3,000,001 - 4,000,000
- 4,000,001 - 7,000,000
- 7,000,001 - 10,000,000
- 10,000,001 - 15,000,000
- 15,000,001 - 25,000,000
- > 25,000,001

Data from Urban3 as represented in the recently completed Ramsey County Economic Competitiveness and Inclusion Plan (2021)

RECOMMENDATION

After studying the request, **staff is recommending approval of the change**. We believe the requested change is carefully tailored to only open the door for density increases that make sense in MU-R areas of the City, and the benefits of this change far outweigh the minimal risks that may exist. Importantly, the change only allows developers to *request* consideration of additional density, and does not carry with it any guarantee of approval. Individual developments will be scrutinized on a case-by-case basis, and approvals will only occur when supported by the specific facts of a given site.

ATTACHMENTS:

1. *Draft Council resolution*

RESOLUTION _____
CITY COUNCIL
CITY OF NEW BRIGHTON

RESOLUTION APPROVING AN AMENDMENT TO THE 2040 COMPREHENSIVE PLAN TO PROVIDE ADDITIONAL DENSITY FLEXIBILITY FOR RESIDENTIAL DEVELOPMENT IN THE MIXED USE REGIONAL LAND USE CLASSIFICATION

WHEREAS, the City of New Brighton is a municipal corporation, organized and existing under the laws of the State of Minnesota; and,

WHEREAS, the City Council of the City of the New Brighton has adopted a comprehensive plan and corresponding zoning regulations to promote orderly development and utilization of land within the city; and,

WHEREAS, the City received an application to amend the current Comprehensive Plan to create an avenue for residential developments to achieve up to 60 units per acre through a planned development process in the Mixed Use Regional Land Use Classification; and

WHEREAS, the Planning Commission held a public hearing on the requested amendment at their meeting on July 20, 2021; and

WHEREAS, the Planning Commission recommended the City Council approve the text amendment to the Comprehensive Plan to clarify language and to authorize additional vertical development in the Mixed Use Regional district in order to allow residential density to exceed 50 units per acre as part of a planned development; and

WHEREAS, the Comprehensive Plan Amendment is subject to review and approval by the Metropolitan Council;

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of New Brighton hereby approves the following text amendment to the Mixed Use – Regional Node language on page 3-27 of the City's 2040 Comprehensive Plan:

> ***Mixed Use – Regional Node***
>
> *The City intends the Mixed Use – Regional Node designation to be for areas serving community and regional needs with convenient and immediate access to regional highways and Interstates. These areas are targeted to have regional-serving commercial retail or service businesses, offices, and high-density housing. The mix of uses will tend to lean commercial with, in most cases, at least 50 percent of development being commercial in nature. Commercial, office, and residential development may be combined vertically in the*

same building or horizontally on the same or adjacent sites. When uses are mixed within a building; retail, service, and civic uses should be focused on the ground floor while housing and offices should be focused on the upper floors.

Residential uses ***can stand-alone, and*** *will primarily consist of higher-density stacked multi-family housing with the possibility of higher-density row homes or townhouses utilized as a transition into surrounding neighborhoods.* ***Residential d****evelopment is expected to be* ***realized over at least*** ~~***around***~~ *35%* ***of the district's land area*** ~~***residential with***~~ ***at densities generally ranging from*** ~~***density of residential development at***~~ *12 - 50 units per acre.* ***Densities of up to 60 units per acres may be allowed through expanded vertical development via the Planned Residential or Planned Unit Development process.*** *The mix of uses will be more automobile-oriented than other Mixed Use nodes, but pedestrian facilities are still important to ensure safe movement through the site. Parking should be optimized, with shared parking where possible/feasible, and parking facilities on the interior of the site. The intensity of mixed use - community development will vary depending on its location within the City and surrounding uses, but generally will be more intense in nature. Because frequent and reliable transit service greatly benefits Mixed Use – Regional Nodes, transit service maintenance and expansion to these areas should be supported.*

BE IT FURTHER RESOLVED, that the Department of Community Assets & Development is directed to submit this amendment to the Metropolitan Council for review and approval.

ADOPTED this 27th day of July, 2021 by the New Brighton City Council with a vote of __ ayes and __ nays.

_____
Kari Niedfeldt-Thomas, Mayor

_____
Devin Massopust, City Manager

ATTEST:

_____
Terri Spangrud, City Clerk

2040 Comprehensive Plan Amendment Request Narrative

RE: "Mixed Use Regional Node" Density Ratio

Current Density Max: 50 units per acre

Requested Density Max: 60 units per acre

Request by: North Shore Development Partners LLC, purchaser of US Bank site located within the Mixed-Use Regional Node located north of 694, east of Silver Lake Road

Application Date: 6/30/2021

The intersection of I-694 and Silver Lake Road in the robust City of New Brighton proves to be a strong location for various land uses. However, an underutilized land use in this location identified as the Mixed-Use Regional Node is market rate multifamily rental units with numerous amenities. Several reasons support a new construction multifamily project, but the clear leader is the lack of such product type in the City of New Brighton. This location is one of the best, if not the best, within New Brighton to deliver such product to serve the community.

On a macro level, according to Marquette Advisors 1st Quarter 2021 Trends Report, the vacancy rate of apartments in the Twin Cities area is at 4.5%. Markets with vacancy rates below 5% are said to be tight, which indicates the need for an influx of housing supply in that market. Additionally, in the North Central Suburban Submarket Area, which includes New Brighton, vacancy rates have remained at 3.0% or lower for more than eight years. This statistic shows a positive market response to new apartment construction within the submarket. There is continued demand for apartments, strong employment growth, a corporate presence, and a strong economy: all of which are indicators that additional apartment supply is needed. Renters in the Twin Cities market and the North Central Suburban Submarket have shown positive responses to highly amenitized, modern apartments that are in a close proximity to major job centers, recreational amenities, and highways and/or major transit. Development in the Mixed-Use Regional Node provides easy access to desired amenities within a 20-minute drive radius. Millennials and Gen Z are the key demand drivers in the metro area, with empty nesters being the secondary market. Millennials and Gen Z renters have shown a preference for studio, alcove, and efficient 1BR layouts which are necessary to be incorporated into the design for any proposed development. The 2021 1st Quarter Trends Report shows the vacancy rate for these

layouts in the City of New Brighton remain the lowest of all layout options suggesting a demand for additional supply within the submarkets.

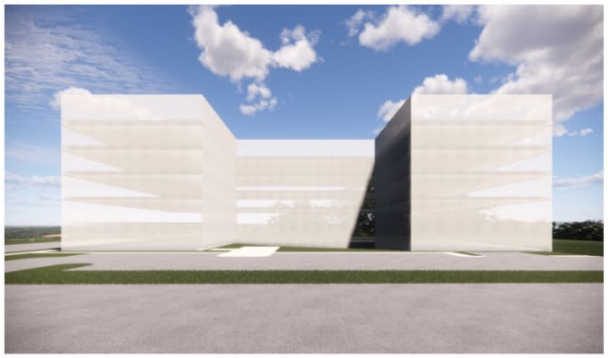
An apartment development in the Mixed-Use Regional Node would greatly benefit the surrounding commercial area as well as the overall health of New Brighton. Its proximity to highways, and job centers such as Medtronic, Land O' Lakes, and the Unity/Mercy Medical Center makes it the appropriate location for development. A potential development would attract approximately 200 or more market rate renters to the New Brighton area which will support the success of the surrounding commercial area and the overall economy of New Brighton through the diversification of housing stock. However, due to the Comprehensive Plan's current density limitations of 50 unit per acre (u.p.a.) in the Mixed-Use Regional Node, constructing and operating an apartment building within the current density limitation presents challenges any developer may face. Although it can be done, but for the reasons stated above, the Mixed-Use Regional Node can support slightly more density which has more benefits than drawbacks. Given today's volatile construction pricing market, slightly more density helps achieve better purchasing power, which results in a better end product in which higher quality design, and materials can be achieved in lieu of the cheapest options on the market. From a management perspective, it is more efficient to operate a building of this size compared to a smaller size because it allows for one building manager to be responsible for operations full time rather than part time.

Additionally, to visualize the density amendment, it can be sliced many ways and not necessarily be a heigh limitation – i.e., someone can build a taller building with only a few units per floor but to demonstrate a more specific applicable study, the density allows a potential building that fits on this site to be one story higher which has a visually insignificant impact. See next page which shows the material minimal change in visibility with 6 stories compared to 5.

In conclusion, the Mixed-Use Regional Node is an appropriate location for a minor density adjustment due to the future benefits and limited drawbacks it will have on the City of New Brighton.

Visibility Comparison

6-story model (60 u.p.a.)



5-Story model (50 u.p.a.)

KRAUS-ANDERSON®

Kraus-Anderson Development Company
501 South Eighth Street, Minneapolis, MN 55404

July 7, 2021

Metropolitan Council
City of New Brighton
390 Robert St. North
St. Paul, MN 55101-1805

Dear Metropolitan Council & City of New Brighton:

Kraus-Anderson, as owner of Brighton Village Shopping Center, strongly supports the Comprehensive Plan Amendment for the Mixed-Use Regional Node zone regarding a density amendment with respect to the current U.S. Bank site. A market rate, multi-family apartment development would be extremely beneficial for this intersection, the City, and the entire community for several reasons. This diversifies the City's housing stock by bringing new construction, highly amenitized market rate units to the community of New Brighton. Silver Lake Rd/Palmer Drive is an appropriate place to bring density to the City which, not only supports our tenants & retailers in this area, but the community as a whole.

Kraus-Anderson is thrilled about the possibility of welcoming a market rate apartment development with 200+ renters as our future neighbors. We implore the City to approve this amendment which not only supports many of the city's goals but promotes them.

Sincerely,

Matt S. Alexander
Senior Vice President
Kraus-Anderson Development Company

Medium-Density Residential

Medium-density residential areas are intended to accommodate densities in the range of 6 to 12 units per acre including housing types such as attached and detached townhomes, row houses, two-family dwellings, manufactured housing, and small-scale apartments. These are primarily infill areas where medium-density housing already exists and more can be anticipated. The intent will be to make these areas integral parts of the neighborhood rather than edges or buffers to it.

High-Density Residential

High-density residential areas are intended to be located in higher activity areas where residents can partake in a life-style which is rich in convenience and accessibility and less auto-dependent. These areas are intended to be located where convenient shopping and accessible transit is nearby, and/or other amenities are available. They are also intended to be integral parts of neighborhoods rather than freestanding or isolated elements.

This housing type, consisting of apartments and condominiums, is intended to exceed a density of 12-units per acre at a minimum, and is expected to include levels exceeding 30-units per acre with a maximum of 50 units per acre.

Mixed Use – Regional Node

The City intends the Mixed Use – Regional Node designation to be for areas serving community and regional needs with convenient and immediate access to regional highways and Interstates. These areas are targeted to have regional-serving commercial retail or service businesses, offices, and high-density housing. The mix of uses will tend to lean commercial with, in most cases, at least 50 percent of development being commercial in nature. Commercial, office, and residential development may be combined vertically in the same building or horizontally on the same or adjacent sites. When uses are mixed within a building; retail, service, and civic uses should be focused on the ground floor while housing and offices should be focused on the upper floors.

Residential uses will primarily consist of higher-density stacked multi-family housing, with the possibility of higher-density row homes or townhouses utilized as a transition into surrounding neighborhoods. Development is expected to be around 35% residential with density of residential development at 12 - 50 units per acre. The mix of uses will be more automobile-oriented than other Mixed Use nodes, but pedestrian facilities are still important to ensure safe movement through the site. Parking should be optimized, with shared parking where possible/feasible, and parking facilities on the interior of the site. The intensity of mixed use - community development will vary depending on its location within the City and surrounding uses, but generally will be more intense in nature. Because frequent and reliable transit service greatly benefits Mixed Use – Regional Nodes, transit service maintenance and expansion to these areas should be supported.