

BRAINERD PLANNING COMMISSION

Wednesday, May 15, 2019
6:00 p.m.
City Hall Council Chambers

1. Call To Order
2. Approval/Amendment Of Agenda
3. Approval Of Minutes
 1. Regular Meeting Held on April 17, 2019

Documents:

[2019-4-17 DRAFT.PDF](#)

4. New Business

- 4.a. Rezoning Application, 50 Jenny Street - Submitted By Mr. Scott Magnuson, Superintendent Of Brainerd Public Utilities, 8027 Highland Scenic Rd., Baxter

- Rezone property from an R-1A (Single Family Residential) District to an I-1 (Light Industrial) District
- Purpose is to better serve the operation of the Brainerd Wastewater Treatment Plant

Documents:

[CITY OF BRAINERD REZONING APPLICATION.PDF](#)

- 4.b. Conditional Use Permit Application, 702 S. 5th St. - Submitted By Ms. Laine Larson, Superintendent ISD#181 On Behalf Of Brainerd Public Schools
To construct an addition to Brainerd High School including, but not limited to:

- Addition to the school building
- Remodel existing building
- Construction of new parking
- New pool
- Auxiliary gym
- Performing arts center

Documents:

[CUP APPLICATION.PDF](#)

- 4.c. Variance Application, 702 S. 5th St. - Submitted By Ms. Laine Larson, Superintendent ISD#181 On Behalf Of Brainerd Public Schools
The property is located in a B-4 (General Commercial) District
 - To construct a performing arts center as an addition to Brainerd High School

- A variance from the setback requirements from 30 feet to 15 feet is requested.

Documents:

[VARIANCE APPLICATION.PDF](#)

5. Public Forum

Time allocated for citizens to bring matters not on the agenda to the attention of the Planning Commission - time limits may be imposed

6. Old Business

6.a. Zoning Uses Matrix

Documents:

[B-ZONES ZONING MATRIX .PDF](#)

[R-ZONES ZONING MATRIX .PDF](#)

[OTHER-ZONES ZONING MATRIX .PDF](#)

6.b. Lighting Standards

6.b.i. Lighting Information

Documents:

[LIGHTING.PDF](#)

7. Commissioners' Questions/Comments

8. Community Development Director's Report

9. Adjourn

Any individual needing special accommodations, or that desires more information about the above items, please call 218-828-2309

PLANNING COMMISSION

Wednesday, April 17, 2019

#1 Call to Order

Planning Commission Chair Gorham called the meeting of the Brainerd Planning Commission to order at 6:00 p.m. in the City Hall Council Chambers.

Noted present were Commissioners Gorham, Marohn, and Duval; and Council Liaison Lambert. Commissioner Burslie was noted as absent. Community Development Director Chanski was also noted as present.

#2 Approval/Amendment of Agenda

MOTION AND SECONDED BY COMMISSIONERS LAMBERT AND MAROHN, DULY CARRIED, TO APPROVE THE AGENDA.

#3 Approval of Minutes

MOTION AND SECONDED BY COMMISSIONERS DUVAL AND LAMBERT, DULY CARRIED, TO APPROVE THE MINUTES OF THE REGULAR PLANNING COMMISSION MEETING HELD ON MARCH 20, 2019.

#4 New Business

4a. Variance Request – Mitch Tuomi, 701 7th St. NW on behalf of Property Owner David Muhonen to Construct a 16'x 40' Addition

- The property is a nonconforming residential use in a B-4 (General Commercial) District

Community Development Director Chanski stated the applicant is proposing to construct a 16' x 40' addition which would include a garage, bedroom and bathroom. The property is zoned B-4 (General Commercial) district and is a residential use and is considered a legal non-conforming use. The property was rezoned in 1978 from an R-3 (High Density Residential) district to a B-4 (General Commercial) district. The section of the code in question is 515-15-2 D. which reads *"Any nonconformity, including the lawful use or occupation of land or premises existing at the time of adoption of an additional control under this Ordinance, may be continued in the same size and manner, including through repair, replacement, restoration, maintenance, or improvement, but not including expansion, except as specifically provided in this Section."*

Community Development Director Chanski discussed the application with the city attorney and was told, *"Unless the residential use was discontinued for a year or more, it is still a legal nonconformity under MN Statute 462.357, Subds. 1E a & b. and the City Code. A request for variance of a nonconforming expansion prohibition could be heard by the City Council, who shall be the Board of Appeals, and Adjustments for this City after review by Planning and Zoning if the property owner demonstrates practical difficulties. Under the circumstances, a variance may be possible and suggested having the property owner submit a variance application in order to construct a garage on an existing nonconforming house."* City Attorney Langel also cited a 1972 Supreme Court case in Freeborn county in which stated an addition to an existing building is clearly an extension or expansion of the prior nonconforming use. He added that Brainerd Zoning

Ordinance states *“any nonconformity, including the lawful use or occupation of land may be continued in the same size and manner not including expansion.”* He said by adding a garage with a bedroom is not continuing the use in the size and manner; it is expanding the use just as adding a building to vacant land would be. He stated in order to proceed legally a variance is required.

Commissioner Marohn stated he disagrees with the interpretation presented by City Attorney Langel. He said the attorney is conflating uses and structures and does not feel this is a correct interpretation of state statute or the code. He indicated the League of Minnesota Cities information memo titled “Land Use Nonconformities” states, *“The statutory right of legal nonconformities to continue specifically provides that the right does not include expansion of the use. Because the state statute does not define expansion, some cities choose to define expansion in the city zoning ordinance. The definition could refer to any physical expansion of the nonconforming use, or even intensifying the use.”* He said this means that the state statutes are silent on the issue of what it means to expand a use, but local codes will often not be silent.

Commissioner Marohn cited the following Brainerd Zoning Codes and does not think the variance is required.

Section 515-15-3: Non-Conforming Uses:

1. When a lawful non-conforming use of any structure, building or parcel of land in any district has been changed to a conforming use, it shall not thereafter be changed to any nonconforming use.

2. A lawful, nonconforming use of a structure, building, or parcel of land may be changed to lessen the nonconformity of the use. Once a nonconforming structure or parcel of land has been changed, it shall not thereafter be so altered to increase the nonconformity.

Section 515-3-4: Appeal Procedures:

A. The Board of Zoning Appeals shall act upon all questions as they may arise in the administration of this Ordinance. (opinions of staff, legal counsel, research)

Commissioner Marohn feels the Planning Commission members have the capacity to decide if this is in violation of our code, that the structure meets the criteria of the ordinance and that no variance is required.

Commission discussion took place.

MOTION AND SECONDED BY COMMISSIONERS MAROHN AND LAMBERT TO FIND THAT A VARIANCE IS NOT REQUIRED FOR THIS REQUEST DUE TO THE FOLLOWING:

- 1.) LEAGUE OF MN CITIES LAND USE NONCONFORMITIES INFORMATIONAL MEMO, WHICH STATES *“CITIES HAVE THE AUTHORITY TO DEFINE WHETHER AN EXPANSION OF A BUILDING IS THE SAME AS AN EXPANSION OF THE USE”*
- 2.) SECTION 515-15-3 NONCONFORMING USES IN THE CITY ZONING CODE
- 3.) THE REQUEST DOES NOT VIOLATE ANY OF THE PROVISIONS OF SECTION 515-15-3

Members Marohn, Gorham and Lambert voted “aye”. Member Duval voted “nay”. The Chair declared the motion carried.

The Chair opened the public hearing at 6:30 p.m.

The Chair recognized Mr. Mitch Tuomi, 701 7th Street NW, who stated his application is to allow the construction of an addition which would include a bedroom, a bathroom, and a garage to accommodate his disabled brother to live with him. He stated the current shed that is located on the property would be removed to allow for the construction.

Community Development Director Chanski stated he did receive an email from Mr. Tim Haglin, Thelen Heating & Roofing who indicated he is not against the variance, however asked if this would be the best investment for the property long term. He said the resale value of the home with this addition is hampered because of the limited market share of home owners who want to live in a B-4 zone.

The Chair closed the public hearing at 6:36 p.m.

Commissioner Marohn said in Section 7 of the Zoning Code it states, *"Variances shall only be permitted when I.) When they are in harmony with the general purposes and intent of the ordinance and II.) When the variances are consistent with the Comprehensive Plan."* He indicated in Section 63-1 of the Zoning Code states, *"The purpose and intent of the B-4 General Business District is to allow more intensive commercial uses that require extensive highway access for customer contact."* He explained he has concerns when there is clearly an issue.

Commissioner Lambert indicated she does not feel that a variance is necessary based on the information that it is improving the property and not extending the use.

MOTION AND SECONDED BY COMMISSIONERS MAROHN AND DUVAL, DULY CARRIED, TO RECOMMEND DENIAL OF THE VARIANCE DUE TO THE USE OF A RESIDENTIAL BUILDING IS NOT IN HARMONY WITH THE PURPOSE AND INTENT OF SECTION 515-63-1 (B-4 GENERAL BUSINESS DISTRICT) WHICH STATES *"THE DISTRICT IS TO ALLOW MORE INTENSIVE COMMERCIAL USES THAT REQUIRE EXTENSIVE HIGHWAY ACCESS FOR CUSTOMER CONTACT."*

4b. Variance Request – William John Cory, 212 and 214 – 2nd Ave NE to Construct a 24' x 24' Garage

- The property is in an R-2 (Medium Density Residential) District

Community Development Director Chanski explained the details of Mr. Cory's recent application of constructing a 24'x20' garage. The applicant previously applied for a variance regarding only the property at 214 2nd Avenue NE. Mr. Cory has since acquired the property adjoining this property and will be combining the lots with Crow Wing County Land Services, which is in the process of being completed. The applicant now has the space to construct a garage of the size he desires. This variance would pertain to Section 515-17, which states *"Garages for single family dwellings greater than 500 square feet and less than 750 square feet are limited in size to 16' x 20'."*

The Chair opened the public hearing at 6:58 p.m.

Commissioner Duval confirmed with Mr. Cory the stormwater grading will be towards the alley.

The Chair recognized Mr. William Cory, 214 2nd Ave NE who stated he received the deed from the County and the consolidation is in process.

The Chair closed the public hearing at 7:00 p.m.

MOTION AND SECONDED BY COMMISSIONERS DUVAL AND LAMBERT, DULY CARRIED, TO RECOMMEND APPROVAL OF THE VARIANCE REQUEST BASED ON THE COUNTY FINALIZING THE CONSOLIDATION OF THE LOTS AND THE FINDINGS OF FACT PROVIDED BY STAFF. THE AGGREGATED SUM OF THE PRIMARY STRUCTURE IS ESTIMATED AT 1,100 SQUARE FEET MEETS THE SPIRIT OF THE ZONING ORDINANCE. THE PRACTICAL DIFFICULTY BEING UNIQUE TO THE PROPERTY THE DWELLING AREA CRITERIANCE DIVIDED INTO THESE TWO SEPARATE BUILDINGS ARE NOT CREATED BY THE LANDOWNER.

Commissioner Marohn indicated this seems like moving backward; the first variance was approved with the smaller garage. He said the vacant lot could have had a new home built on it, earning tax-based income for the City which is now going to just be land in order to build a larger garage.

Community Development Director Chanski indicated these lots are currently nonconforming and the consolidation will bring them back to conforming.

#5 Public Forum

The Chair opened public forum at 7:05 p.m.

No one came forward.

The Chair closed public forum at 7:06 p.m.

#6 Old Business

6a. Uses Within Zoning Districts

Community Development Director Chanski stated the Zoning Matrix was sent to the commission members and feels it is a great start to the discussion of the review of the zoning code.

Commissioner Marohn stated now is the time to bring this to the City Council for direction and feels the table should be inserted into the city code to eliminate the bulk of the zoning ordinances. He said to condense the table further, some of the similar uses may be able to be joined together; e.g., Auto Dealerships, Auto Sales, Auto Repairs or omit some of the uses.

Community Development Director Chanski asked if the Commission would like to address the Council at the same time of the Commission's desire to rewrite the code.

Commissioner Lambert indicated going to a form-based code could take years to accomplish. She suggested start with simplifying the code, inserting the table and bring the rewrite to Council at a later date.

Commissioner discussion took place and it was determined to proceed with the simplification of the code and incorporate the Zoning Matrix.

Commissioner Marohn indicated he would like to work on using Kingwood Street as a model to develop the start of a form-based code.

Community Development Director Chanski will bring the Zoning Matrix idea to Council at the May 6th meeting.

#7 Commissioner's Questions/Comments

Commissioner Marohn would like to see information regarding the topics in the Planning Commission agenda sooner than the Friday prior to the meeting. He said with the upcoming school projects, it would benefit him to have more time to prepare and research.

Commission discussion took place. Community Development Director Chanski will compile all questions, comments and communication regarding the Brainerd High School renovation plan into the packet for review in advance of the Planning Commission meeting.

Commissioner Marohn explained some of the items he would like to see in future Planning Commission packets, regarding the Findings of Fact and Staff Report: 1) Specific ordinance provisions that the decision needs to be based on 2) Findings of Fact need to be facts related to the findings of the topic at hand.

Commission discussion took place regarding the street lighting ordinance and suggested changes.

Commissioner Lambert indicated she is the Chair of the Rental Ordinance Review Committee and they have been working on revisions to the Conduct on Premises and the current Rental Housing code.

#8 Community Development Director's Report

Community Development Director Chanski updated the Commission on items from the last Planning Commission meeting:

- Rezoning Ordinance for Harrison School on Oak Street – First and Second Ordinance Readings held and approved by City Council
- Rezoning Ordinance on 28th Street SE – First and Second Ordinance Readings held and approved by City Council
- Conditional Use Permit for Harrison School on Oak Street – Approved by City Council with one additional condition of the applicant to provide an exit or turnaround on the vacated alley between 16th and 17th Street SE.

He stated the City has hired a summer intern for the Planning Department who will start on May 6, 2019.

#9 Adjourn

The Chair adjourned at 8:07 p.m.

Planning Commission Chair

DRAFT



City Planning Department

City Hall – 501 Laurel Street
Brainerd, MN 56401
218-828-2309/Fax 218-828-2316
www.ci.brainerd.mn.us

Receipt # _____
Check # _____
Date Paid: _____

CONDITIONAL USE/REZONING/VARIANCE APPLICATION

	RESIDENTIAL	COMMERCIAL
CONDITIONAL USE PERMIT	☐ (\$250.00)	☐ (\$400.00 + \$500.00 escrow deposit)
REZONING	☐ (\$300.00)	☐ (\$500.00)
VARIANCE	☐ (\$250.00)	☐ (\$400.00 + \$500.00 escrow deposit)

PROPERTY ADDRESS: 50 Jenny Street

LEGAL DESCRIPTION: Lot(s): _____ Block: _____ Addition: _____
(attach description if lengthy) ATTACHED

Property Owner Name: City of Brainerd

Street Address: 501 Laurel St City: Brainerd State: MN Zip Code: 56401

Phone Number: 828-2307 Fax: _____ E-mail: _____

Applicant Name: (If different than Property Owner) Scott Magnuson BPU

Street Address: 8027 Highland Scenic Rd City: Baxter State: MN Zip Code: 56425

Phone Number: 218-825-3213 Fax: _____ E-mail: smagnuson@bpu.org

Description of Request: request zoning change from R-1 to I-1 for water treatment plant and related facilities

Cassandra Torstenson
Property Owner Signature

4-17-19
Date

Cassandra Torstenson
(Please print name)

SM
Applicant Signature

4-15-2019
Date

SCOTT MAGNUSON
(Please print name)

(OVER)

City of Brainerd

Community Development Department

TO: Planning Commission

FROM: David Chanski, Community Development Director

DATE: May 10, 2019

RE: 50 Jenny St. Rezoning

Scott Magnuson, Brainerd Public Utilities Superintendent, 8027 Highland Scenic Road, Baxter, MN 56425, has submitted a request on behalf of Brainerd Public Utilities to rezone the property at 50 Jenny St. from an R-1A Single Family Residential District to an I-1 Light Industrial District.

The purpose of the rezoning request is to better serve the operation of the Brainerd Wastewater Treatment Plant. The property is owned by the City of Brainerd, and the application has been signed by the City Administrator.

Findings of Fact

1. Per Section 515-55-1 of the Code of Ordinances, the purpose and intent of a R-1A District is to “allow areas of low density, single family detached dwellings and to preserve the quiet single-family neighborhoods free from other uses except those which are both compatible with residents of such districts.”
 - a. While public buildings on public land is a conditional use in a R-1A District per Section 515-55-5.F, such zoning is not ideal for a wastewater treatment plant as it must conform to the residential standards set forth in ordinance, and a wastewater treatment plant does not meet the spirit or purpose of such zoning as stated above.
2. Per Section 515-70-1 of the Code of Ordinances, the purpose and intent of a I-1 district is to “provide for the establishment of warehousing and light industrial development, particularly in the form of industrial parks. The overall character of the I-1 District is intend to have low impact character.”
 - a. Public utility buildings are a permitted use in a I-1 District, and the commercial zoning standards integrated within such a much district much better serve the operations of a wastewater treatment plant, including lot area and setback requirements, building regulations, and allowable uses.

As of this writing, no parties have come forward to express their objections to this rezoning request.

Staff Opinion

As the Brainerd Wastewater Treatment Plant better fits the purpose and intent of a I-1 Light Industrial District than a R-1A Single Family Residential District, and as the standards set forth in I-1 Light Industrial Districts better serve the current and long-term operations of the Brainerd Wastewater Treatment Plant, staff recommends approval of this rezoning request.



General Information

Parcel Number: 09202010000Z009

General Information

Township/City: CITY OF BRAINERD
Taxpayer: CITY OF BRAINERD
CITY ADMINISTRATOR-CITY HALL
501 LAUREL ST
BRAINERD, MN 56401

Property Address:

Township: 45
Range: 31
Section: 36
Plat: WOODLAND PARK ADDITION TO BRAINERD

Lake Number: 0

Lake Name:

Acres: 0.00

School District: 181

Legal Description:

ALL OF BLOCK 10 THRU 16 INCLUSIVE

2018 Assessment for 2019 Tax Payable

Class Code 1:	Water/Wastewater Treatment Facilities
Class Code 2:	N/A
Class Code 3:	N/A
Homestead:	Non Homestead

Estimated Land Value:	\$108,800.00
Estimated Building Value:	\$1,385,700.00
Estimated Total Value:	\$1,494,500.00

2018 Tax Payable

Net Tax (Specials Not Included):	\$0.00
Total Special Assessments:	\$15.00
Current Year Balance Due:	\$0.00
Delinquent:	NO



General Information

Parcel Number: 060362300E00009

General Information

Township/City: CITY OF BRAINERD
Taxpayer: CITY OF BRAINERD
CITY ADMINISTRATOR-CITY HALL
501 LAUREL ST
BRAINERD, MN 56401

Property Address:

Township: 45
Range: 31
Section: 36
Plat:

Lake Number: 0
Lake Name:

Acres: 0.86

School District: 181

Legal Description:

N. 300 FT OF W. 125 FT OF SW1/4 OF NW1/4

2018 Assessment for 2019 Tax Payable

Class Code 1: Municipal - All Other
Class Code 2: N/A
Class Code 3: N/A
Homestead: Non Homestead

Estimated Land Value:	\$23,900.00
Estimated Building Value:	\$0.00
Estimated Total Value:	\$23,900.00

2018 Tax Payable

Net Tax (Specials Not Included):	\$0.00
Total Special Assessments:	\$0.00
Current Year Balance Due:	\$0.00
Delinquent:	NO



General Information

Parcel Number: 060351101000009

General Information

Township/City: CITY OF BRAINERD
Taxpayer: CITY OF BRAINERD
CITY ADMINISTRATOR-CITY HALL
501 LAUREL ST
BRAINERD, MN 56401

Property Address:

Township: 45
Range: 31
Section: 35
Plat:
Lake Number: 0
Lake Name:
Acres: 64.94
School District: 181

Legal Description:

GL 1 & THAT PT OF GL 2 LYING N OF THE E & W C /L OF SD SEC 35 & THE N 1/2 OF SENE SEC 35

2018 Assessment for 2019 Tax Payable

Class Code 1:	Water/Wastewater Treatment Facilities
Class Code 2:	N/A
Class Code 3:	N/A
Homestead:	Non Homestead

Estimated Land Value:	\$126,900.00
Estimated Building Value:	\$131,400.00
Estimated Total Value:	\$258,300.00

2018 Tax Payable

Net Tax (Specials Not Included):	\$0.00
Total Special Assessments:	\$15.00
Current Year Balance Due:	\$0.00
Delinquent:	NO

NOTICE OF HEARING

TO WHOM IT MAY CONCERN:

Notice is hereby given that Scott Magnuson, superintendent Brainerd Public Utilities, 8027 Highland Scenic Road, Baxter, MN 56425, has submitted a request on behalf of Brainerd Public Utilities for the property at 50 Jenny Street to rezone said property from an R-1A (Single Family Residential) District to an I-1 (Light Industrial) District. The purpose of this rezoning is to better serve the operation of the Brainerd Wastewater Treatment Plant.

The legal description of the property is as follows:

All of Block 10 Thru 16 Of The Woodland Park Addition To The City of Brainerd

P.I.N. 41360560

Township 45, Range 31, Section 16

A Public Hearing will be conducted by the Brainerd Planning Commission at 6:00 p.m. Wednesday, May 15, 2019 in the Brainerd City Hall Council Chambers, 501 Laurel Street to consider the request.

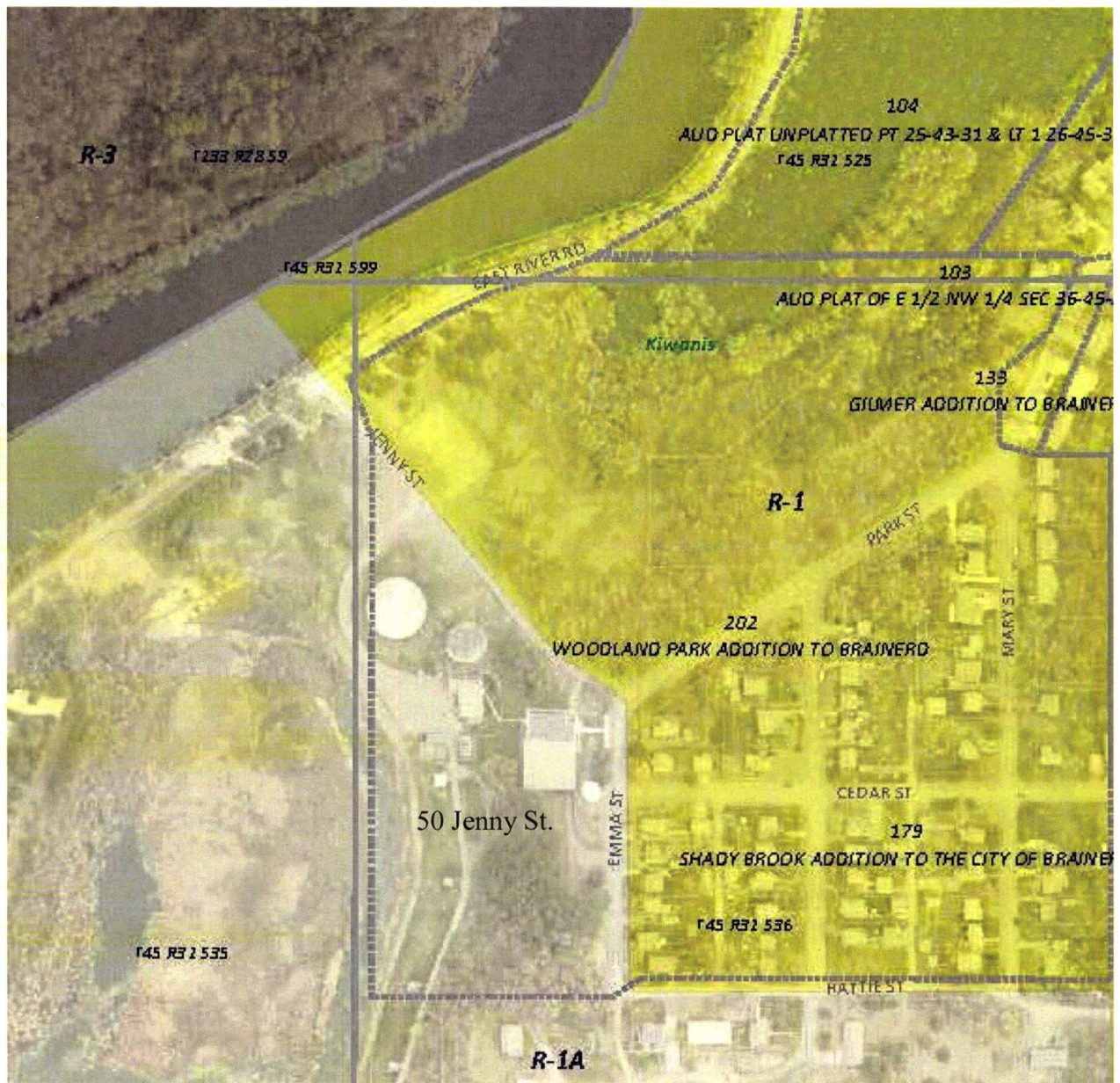
Any individual needing special accommodations or would like more information about this request please call (218) 828-2309.

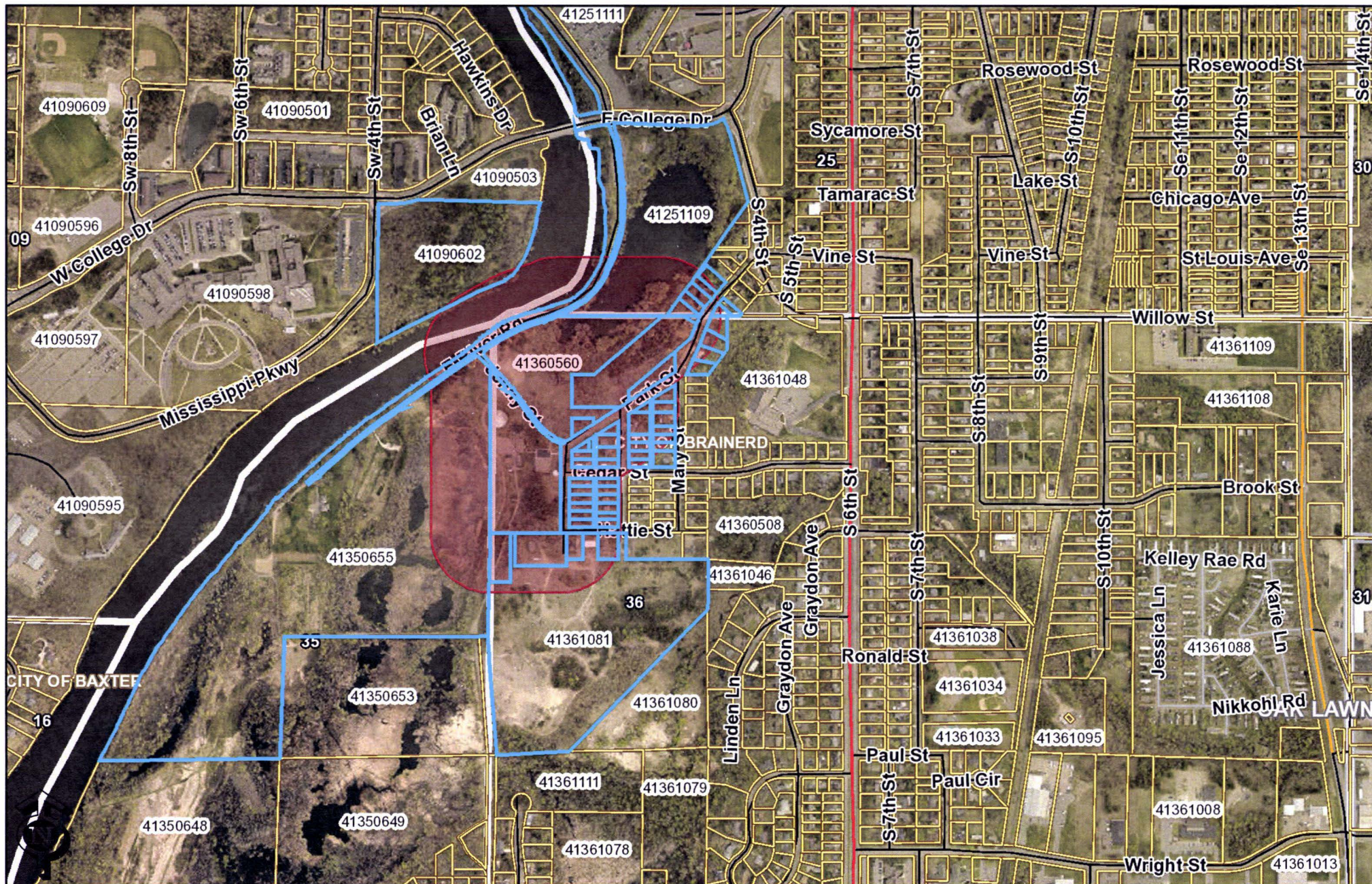
Dated this 3rd day of May 2019.



David C. Chanski, MPA
Community Development Director

See reverse side for map.





These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

50 Jenny Street

Date: 5/3/2019 Time: 1:28:37 PM



Parcel Number	Legacy Parcel Number	Tax Name	Tax Address	Tax Address 2	Tax Address 3	Tax Address Physical Address	Physical City	Physical Zip
41360591	92020050090009	ABBOTT, CAROLYN T	1509 PENNSYLVANIA AVE	BRAINERD, MN 56401		1509 PENNSYLVANIA AVE	BRAINERD	56401
41360592	092020050072009	ANDERSON, KEITH R & RACHAEL A	13082 WICKLUND RD	BRAINERD, MN 56401		1503 PENNSYLVANIA AVE	BRAINERD	56401
41360579	092020080042009	BECK, ALLYSON D	1518 PENNSYLVANIA AVE	BRAINERD, MN 56401		1518 PENNSYLVANIA AVE	BRAINERD	56401
41360562	92020090110009	BORCHERT, WILMA	1617 EMMA STR	BRAINERD MN 56401		1617 EMMA ST	BRAINERD	56401
41360594	92020050040009	BRIGHT, BARBARA L	1516 MARY ST	BRAINERD, MN 56401		1516 MARY ST	BRAINERD	56401
41090602	070093103A00009	CENTRAL LAKES COLLEGE	501 COLLEGE DR W	BRAINERD MN 56401			0 BRAINERD	56401
41360573	92020080120009	CLJ TRUST AGR DATED 5-9-12	LOWELL S JOHNSON & COLLEEN LEBLANC	4441 20TH ST	FORT RIPLEY, MN 56449	1521 EMMA ST	BRAINERD	56401
41250861	091400020022009	CZECH, NICKLOS A & GINA	1310 PARK ST	BRAINERD, MN 56401		1310 PARK ST	BRAINERD	56401
41360580	092020080032009	FITCH, GARY D & GAIL	1510 PENNSYLVANIA	BRAINERD MN 56401		1510 PENNSYLVANIA AVE	BRAINERD	56401
41360576	09202008009Y009	FITCH, GARY D & GAIL	1510 PENNSYLVANIA	BRAINERD MN 56401			0 BRAINERD	56401
41360596	92020050020009	GREENHOUSES PROPERTIES LLC	4903 OJIBWA RD	BRAINERD MN 56401		1508 MARY ST	BRAINERD	56401
41360561	92020090120009	HEDBERG, ISAAC M	1623 EMMA ST	BRAINERD MN 56401		1623 EMMA ST	BRAINERD	56401
41250860	091400020052009	HINES, JESSICA ANN &	RUSSELL LEE CLARK	1306 PARK ST	BRAINERD, MN 56401	1306 PARK ST	BRAINERD	56401
41300996	091330010012009	HIPPERT, KIMBERLY S	1319 PARK ST	BRAINERD, MN 56401		1319 PARK ST	BRAINERD	56401
41360593	092020050052009	HUNTER, IVY RAE	6078 DONALD ST		BAXTER MN 56425	1524 MARY ST	BRAINERD	56401
41360575	092020080092009	JACKSON, TRAVIS L	1519 EMMA ST	BRAINERD, MN 56401			0 BRAINERD	56401
41360574	92020080110009	JACKSON, TRAVIS L	1519 EMMA ST	BRAINERD, MN 56401		1519 EMMA ST	BRAINERD	56401
41360586	092020060042009	JOHNSON, KEITH M	1420 MARY ST	BRAINERD, MN 56401		1420 MARY ST	BRAINERD	56401
41250872	091400010042009	KRAEMER, ALLARD & MARCELLENE	1302 PARK ST	BRAINERD MN 56401		1301 PARK ST	BRAINERD	56401
41250859	091400020072009	KRAEMER, ALLARD & MARCELLENE	1302 PARK ST	BRAINERD MN 56401		1302 PARK ST	BRAINERD	56401
41361047	09103000007C009	KRAEMER, MARCELLENE J	1302 PARK ST	BRAINERD, MN 56401		1313 PARK ST	BRAINERD	56401
41360563	92020090100009	KUHN, DALE P & DEBRA L	10154 DEPOT ST	BRAINERD, MN 56401		1615 EMMA ST	BRAINERD	56401
41360590	92020050100009	KUKOWSKI, RAYMOND T & PATRIC	35082 SILVER SANDS RD	PEQUOT LAKES, MN 56472		1513 PENNSYLVANIA AVE	BRAINERD	56401
41360564	92020090090009	LAFOND, BRODY P	1609 EMMA ST	BRAINERD, MN 56401		1609 EMMA ST	BRAINERD	56401
41360597	092020050012009	LINDSEY, RYAN D & MICHELLE L	1504 MARY ST	BRAINERD, MN 56401		1504 MARY ST	BRAINERD	56401
41360567	92020090060009	MYERS, JOHN W & ROBIN K	1624 PENNSYLVANIA AVE	BRAINERD MN 56401		1624 PENNSYLVANIA AVE	BRAINERD	56401
41360588	92020050120009	OHMAN, CYNTHIA A	1523 PENNSYLVANIA AVE	BRAINERD, MN 56401		1523 PENNSYLVANIA AVE	BRAINERD	56401
41300995	09133001002B009	O'LEARY, KARI ESTHER	1325 PARK ST	BRAINERD, MN 56401		1325 PARK ST	BRAINERD	56401
41360569	09202009004Z889	PENNSYLVANIA AVENUE LLC	11171 TOWN HALL ST	BRAINERD, MN 56401		1616 PENNSYLVANIA AVE	BRAINERD	56401
41360566	92020090070009	RICK, JEREMI M & ANGIE L	1601 EMMA ST	BRAINERD, MN 56401		1601 EMMA ST	BRAINERD	56401
41361084	060362300B00009	ROBERTS REVOCABLE TRUST	C/O LESLIE L & MARY L ROBERTS	1702 PENNSYLVANIA AVE	BRAINERD, MN 56401	1702 PENNSYLVANIA AVE	BRAINERD	56401
41361083	060362300C00009	ROBERTS REVOCABLE TRUST	C/O LESLIE L & MARY L ROBERTS	1702 PENNSYLVANIA AVE	BRAINERD, MN 56401	1701 EMMA ST	BRAINERD	56401
41361081	060362300F00889	ROBERTS SAND & GRAVEL	1701 EMMA ST	BRAINERD MN 56401		1702 PENNSYLVANIA AVE	BRAINERD	56401
41360513	060362300D00009	ROBERTS, KEITH W & JAN D	1700 EMMA ST	BRAINERD MN 56401		1700 EMMA ST	BRAINERD	56401
41360565	92020090080009	RODRIQUEZ, ASHLEY M	1605 EMMA ST	BRAINERD, MN 56401-4319		1605 EMMA ST	BRAINERD	56401
41250873	091400010012009	RUBADO, KAREN E & JOSEPH J	1305 PARK ST	BRAINERD MN 56401		1305 PARK ST	BRAINERD	56401
41250862	09140002001Y009	SKOGEN, MARK A	1324 PARK ST	BRAINERD, MN 56401		1324 PARK ST	BRAINERD	56401
41300994	091330010032009	SWEDBERG, BERNICE A	1331 PARK ST	BRAINERD, MN 56401		1331 PARK ST	BRAINERD	56401
41360595	92020050030009	SWIFT, SHARON J	1512 MARY ST	BRAINERD, MN 56401		1512 MARY ST	BRAINERD	56401
41360584	092020060092009	TAX FORFEITED	CROW WING COUNTY LAND SERVICES	322 LAUREL ST STE 15	BRAINERD, MN 56401-3590		0 BRAINERD	56401
41360583	09202007001A009	TAX FORFEITED	CROW WING COUNTY LAND SERVICES	322 LAUREL ST STE 15	BRAINERD, MN 56401-3590		0 BRAINERD	56401
41360570	92020090030009	TAYLOR, KEVIN J & CROWLEY, ROSI	1610 PENNSYLVANIA AVE	BRAINERD MN 56401		1610 PENNSYLVANIA AVE	BRAINERD	56401
41250858	09140002009X009	VLECK, DANIEL	14191 CROOKED LAKE RD	DEERWOOD, MN 56444		1224 PARK ST	BRAINERD	56401
41360585	092020060062009	VOSS, PEGGY A	1424 MARY STR	BRAINERD MN 56401		1424 MARY ST	BRAINERD	56401
41360571	92020090020009	WEBER, JAMES H & DONNA	1604 PENNSYLVANIA	BRAINERD MN 56401		1604 PENNSYLVANIA AVE	BRAINERD	56401
41360589	92020050110009	WEIK, ASHLEY J	1519 PENNSYLVANIA AVE	BRAINERD, MN 56401		1519 PENNSYLVANIA AVE	BRAINERD	56401
41360572	92020090010009	WILL, DARIN	1602 PENNSYLVANIA AVE	BRAINERD MN 56401		1602 PENNSYLVANIA AVE	BRAINERD	56401
41360568	09202009005A889	WILT, RICHARD E & JOYCE I & DAVI	5389 PIONEER TRL	BRAINERD, MN 56401		1620 PENNSYLVANIA AVE	BRAINERD	56401
41360578	92020080060009	WINTERS, HEATHER M	1524 PENNSYLVANIA AVE	BRAINERD MN 56401		1524 PENNSYLVANIA AVE	BRAINERD	56401

CITY OF BRAINERD
501 LAUREL STREET
BRAINERD, MN 56401-
(218) 828-2309 FAX: (218) 828-2316



PRINTED WITHOUT ISSUING 5/3/2019

Permit #: 2019-00015

ADDRESS : 702 5TH ST S
PIN : 09166005000Z009
LEGAL DESC : RIVERSIDE ADDITION
: LOT BLOCK 5
PERMIT TYPE : CONDITIONAL USE PERMIT FEE - COMM
PROPERTY TYPE : INSTITUTIONAL/EDUCATIONAL
CONSTRUCTION TYPE : CONDITIONAL USE PERMIT

APPLICANT

IND SCHOOL DIST # 181, BRAINERD SENIOR HIGH
SCHOOL
804 OAK STREET
BRAINERD, MN 56401

CONDITIONAL USE PERMIT FEE - COMM	400.00
ESCROW DEPOSIT (\$500)	500.00
TOTAL	900.00
Payment(s)	
CHECK 160529	900.00

OWNER

IND SCHOOL DIST # 181, BRAINERD SENIOR HIGH
SCHOOL
804 OAK STREET
BRAINERD, MN 56401

AGREEMENT AND SWORN STATEMENT

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of laws and ordinances governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or the performance of construction.

Signature of Applicant

Date

This permit becomes null and void if construction authorized is not commenced within 180 days, or if construction is suspended for a period of 180 days at any time after work is commenced.

SEPARATE PERMITS REQUIRED FOR WORK OTHER THAN DESCRIBED ABOVE.

CITY OF BRAINERD
501 LAUREL STREET
BRAINERD, MN 56401-
(218) 828-2309 FAX: (218) 828-2316



* 2 0 1 9 - 0 0 0 1 5 *
ISSUED:

PRINTED WITHOUT ISSUING 5/3/2019

ADDRESS : 702 5TH ST S **PERMIT APPLICANT:**
PIN : 09166005000Z009 **IND SCHOOL DIST # 181, BRAINERD SEN**
LEGAL DESC : RIVERSIDE ADDITION **804 OAK STREET**
: BLOCK 5 **BRAINERD, MN 56401**
PERMIT TYPE : CONDITIONAL USE PERMIT FEE - CO
PROPERTY TYPE : INSTITUTIONAL/EDUCATIONAL
CONSTRUCTION TYPE : CONDITIONAL USE PERMIT

BUILDING INSPECTION RECORD
24 HOUR NOTICE REQUIRED FOR ALL INSPECTIONS.
CALL FOR INSPECTIONS WEEKDAYS: 9:00 am to 3:30 pm

INSPECTION TYPE	DATE	INSPECTOR	INSPECTION TYPE	DATE	INSPECTOR

INSPECTION COMMENTS: _____

IN ACCORDANCE WITH CITY ORDINANCE, NEW OR SUBSTANTIALLY REMODELED BUILDINGS SHALL NOT BE OCCUPIED UNTIL ALL WORK HAS BEEN APPROVED, AND A CERTIFICATE OF OCCUPANCY HAS BEEN ISSUED BY THE BUILDING DEPARTMENT.

THIS CARD MUST BE POSTED AND VISIBLE AT ALL TIMES UNTIL WORK IS COMPLETE.

City of Brainerd Community Development Department

TO: Planning Commission

FROM: David Chanski, Community Development Director

DATE: May 10, 2019

RE: Brainerd High School CUP

Laine Larson, superintendent of ISD #181, on behalf of Brainerd Public Schools – ISD #181, has submitted an application on behalf of the school district for a Conditional Use Permit for the properties legally described as:

Lots 1 thru 11 and 13 thru 24, Block 125, and Portions of Vacated Norwood, Fourth Street and oak Street, BRAINERD

Blocks 161, 163, 183, and 185, and Portions of Vacated Quince, saith Fourth Street, said Oak Street and Pine Street, said BRAINERD

Together with Blocks 4, 5, 6 and 7, and Portions of Vacated Ridge Street, said Pine Street, said Quince Street and Alleys in said Blocks 5, and 6, RIVERSIDE ADDITION

Together with Blocks 1, 2 and 3, and vacated Gilmer Road and Quinlen Road, HILL CREST ADDITION

Together with that part of Lot 16, AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25 & LOT 1-SECTION 26, T. 45 N. – R. 31 W.

Together with Lots 10, 11, 12, 14 and 15 said AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25 & LOT 1-SECTION 26, T. 45 N. – R 31 W.

The purpose of the Conditional Use Permit application is to construct an addition to the school building, including an addition to the school building, remodel of existing building, and construction of new parking, new pool, auxiliary gym, and performing arts center.

Findings of Fact

1. The operation of a school on the aforementioned properties is considered a conditional use per [Section 515-54-5.F](#) of the Code of Ordinances.
2. The proposed addition meets the following criteria as required by the aforementioned section of the Code:
 - a. The site accesses a major collector.

- i. The school is located on S. 5th St. with adjacent streets of Oak St., Pine St., and Quince St., to the east, E. College Dr. to the south, and E. River Rd. to the west.
- b. The site is landscaped in accordance with [Section 20](#) of the Zoning Code.
 - i. The landscape plan has been reviewed by staff and deemed adequate.
- c. Off-street parking is provided in accordance with [Section 22](#) of the Zoning Code
 - i. The schools' current parking includes reconstruction of the school's north parking lot following construction of the Performing Arts Center, as well as construction of a parking lot along S. 5th St. between Pine St. and Quince St. provide sufficient off-street parking.
- d. Off-street loading and service entrances are provided as regulated by [Section 23](#) of the Zoning Code.
 - i. The provided off-street loading entrances are sufficient.
- e. Emergency vehicle access is provided to and within the site.
 - i. There is sufficient access for emergency vehicles.
3. ISD #181 has come to an agreement with the City Engineer and the Minnesota Department of Transportation to reconstruct S. 5th St from Oak St. to Quince St. to slow traffic and increase pedestrian safety.
4. All school bus traffic will be diverted off S. 5th St. between Oak St. and Quince St.
5. ISD #181 has purchase agreements in place to acquire all the properties associated with this project that are not currently owned by the district.

As of this writing, no parties have come forward to express their objections to this Conditional Use Permit application.

Staff Opinion

As ISD #181 is seeking to improve and expand Brainerd High School to provide quality educational facilities for the children of Brainerd for years to come, and as ISD #181 has purchase agreements in place to purchase all properties associated with this project that the district does not currently own, and as the applicant has met all the requirements previously listed, staff recommends approval of this application.



City Planning Department

City Hall – 501 Laurel Street
Brainerd, MN 56401
218-828-2309/Fax 218-828-2316
www.ci.brainerd.mn.us

Receipt # 8019-00015
Check # 160529
Date Paid: 5/3/19

CONDITIONAL USE/REZONING/VARIANCE APPLICATION

RESIDENTIAL

COMMERCIAL

CONDITIONAL USE PERMIT
REZONING
VARIANCE

☐ (\$250.00)
☐ (\$300.00)
☐ (\$250.00)

☒ (\$400.00 + \$500.00 escrow deposit)
☐ (\$500.00)
☐ (\$400.00 + \$500.00 escrow deposit)

PROPERTY ADDRESS: 702 S. 5th St, Brainerd, MN 56401

LEGAL DESCRIPTION: Lot(s): NA Block: NA Addition: See attached Certificate of Survey for Legal Descriptions
(attach description if lengthy)

Property Owner Name: Brainerd Public Schools I.S.D. 181

Street Address: 804 Oak Street City: Brainerd State: MN Zip Code 56401

Phone Number: 218-454-6911 Fax: _____ E-mail: Laine.Larson@isd181.org

Applicant Name: (If different than Property Owner) _____

Street Address: _____ City: _____ State: _____ Zip Code: _____

Phone Number: _____ Fax: _____ E-mail: _____

Description of Request: For the Brainerd High School North Campus.

Request for "Conditional Use Permit" for the construction of high school additions, a performing arts center, a new pool, an auxiliary gym, and parking lots as indicated on the attached prints.

Laine D. Larson
Property Owner Signature
Laine D. Larson
(Please print name)

04/30/19
Date

Laine D. Larson
Applicant Signature
Laine D. Larson
(Please print name)

04/30/19
Date

LEGAL DESCRIPTION FOR PORTION OF SCHOOL PROPERTY

Lots 1-11 and 13-24, Block 125, and portions of vacated Norwood, Fourth Street and Oak Street, BRAINERD, according to the recorded plat thereof, on file in the Crow Wing County, Minnesota Recorder's Office.

Blocks 161, 163, 183 and 185, and portions of vacated Quince, said Fourth Street, said Oak Street and Pine Street, said BRAINERD, according to the recorded plat thereof, on file in said Crow Wing County, Minnesota Recorder's Office.

Together with Blocks 4, 5, 6 and 7, and portions of vacated Ridge Street, said Pine Street, said Quince Street and alleys in said Blocks 5 and 6, RIVERSIDE ADDITION according to the recorded plat thereof, on file in said Crow Wing County, Minnesota Recorder's Office.

Together with Blocks 1, 2 and 3, and vacated Gilmer Road and Quinlen Road, HILL CREST ADDITION, according to the recorded plat thereof, on file in said Crow Wing County, Minnesota Recorder's Office.

Together with that part of Lot 16, AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25 & LOT 1-SECTION 26, T.45N. – R. 31 W., according to recorded Auditor's plat thereof, on file in said Crow Wing County, Minnesota Recorder's Office, which lies northerly of College Road.

Together with Lots 10, 11, 12, 14 and 15 said AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25 & LOT 1-SECTION 26, T.45N. – R. 31 W., according to said recorded Auditor's plat thereof, on file in said Crow Wing County, Minnesota Recorder's Office

NOTICE OF HEARING

TO WHOM IT MAY CONCERN:

Notice is hereby given that Laine Larson, superintendent ISD #181, has submitted a request on behalf of Brainerd Public Schools – ISD #181 for a Conditional Use Permit to construct an addition to Brainerd High School, 702 S 5th St., Brainerd, MN 56401, including but not limited to an addition to the school building, remodel of existing building, and construction of new parking, new pool, auxiliary gym, and performing arts center. The properties included in this application are described as:

Lots 1 thru 11 and 13 thru 24, Block 125, and Portions of Vacated Norwood, Fourth Street and oak Street, BRAINERD

Blocks 161, 163, 183, and 185, and Portions of Vacated Quince, saith Fourth Street, said Oak Street and Pine Street, said BRAINERD

Together with Blocks 4, 5, 6 and 7, and Portions of Vacated Ridge Street, said Pine Street, said Quince Street and Alleys in said Blocks 5, and 6, RIVERSIDE ADDITION

Together with Blocks 1, 2 and 3, and vacated Gilmer Road and Quinlen Road, HILL CREST ADDITION

Together with that part of Lot 16, AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25 & LOT 1-SECTION 26, T. 45 N. – R. 31 W.

Together with Lots 10, 11, 12, 14 and 15 said AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25 & LOT 1-SECTION 26, T. 45 N. – R 31 W.

The properties are zoned R-1 (Single Family Residential) District and Zoning Ordinance Section 54-5 F (Single Family Residential) District Conditional Uses permits the operation of public and private schools provided that they meet the required provisions as listed under Section 54-5 F. A copy of the proposed site plan is on file for review at the Community Development Department.

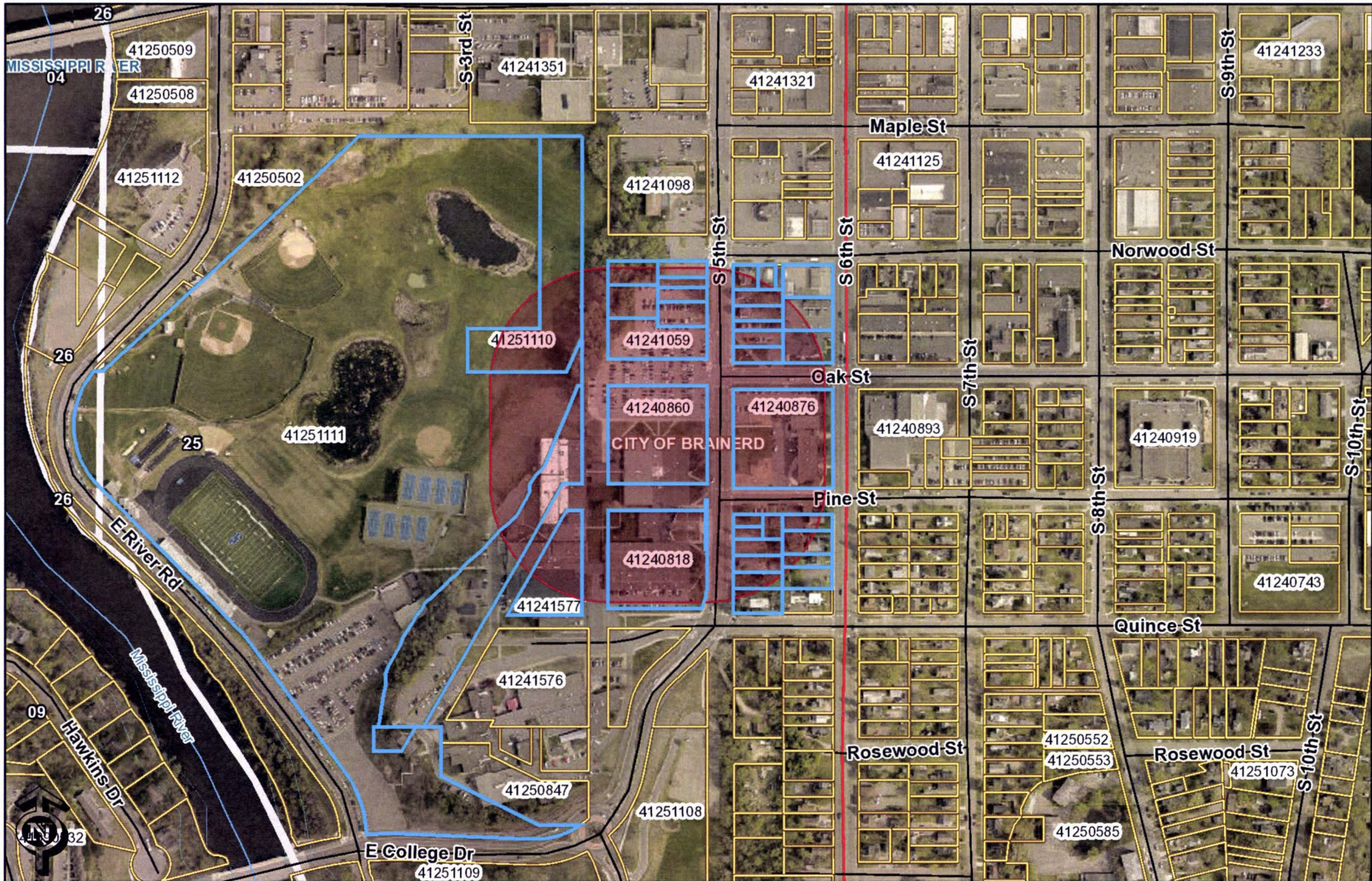
A Public Hearing will be conducted by the Brainerd Planning Commission at 6:00 p.m. Wednesday, May 15, 2019 in the Brainerd City Hall Council Chambers, 501 Laurel Street, to consider the Conditional Use Permit request.

Any individual needing special accommodations or would like more information about this request, please call (218) 828-2309.

Dated this 3rd day of May 2019



David C. Chanski, MPA
Community Development Director



These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

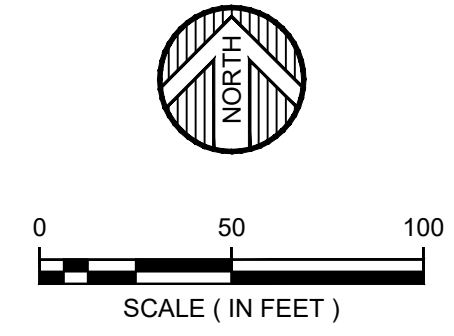
702 S. 5th St

Date: 5/3/2019 Time: 3:33:18 PM

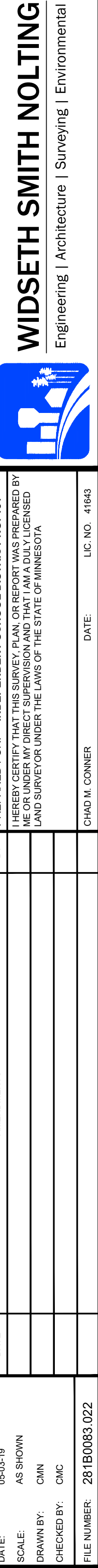


Parcel Number	Legacy Parcel Number	Municipality	Tax Name	Tax Address	Tax Address 2	Tax Address 3	Tax Address	Physical Address	Physical City	Physical Zip
41241044	09196127019200	CITY OF BRAINERD	BRAINERD SAVINGS & LOAN	524 S 6TH ST	BRAINERD MN 56401-3561			515 5TH ST S	BRAINERD	56401
41241052	09196127001200	CITY OF BRAINERD	BRAINERD SAVINGS AND LOAN	524 6TH ST S	BRAINERD MN 56401			524 6TH ST S	BRAINERD	56401
41241043	09196127021200	CITY OF BRAINERD	BRAINERD SAVINGS AND LOAN	524 6TH ST S	BRAINERD MN 56401			519 5TH ST S	BRAINERD	56401
41241042	09196127023200	CITY OF BRAINERD	BRAINERD SAVINGS AND LOAN	524 6TH ST S	BRAINERD MN 56401			523 5TH ST S	BRAINERD	56401
41241703	091961830002AC	CITY OF BRAINERD	CITY OF BRAINERD	CITY ADMINISTRATOR-CITY HALL	501 LAUREL ST	BRAINERD, MN 56401				
41240814	09196185008200	CITY OF BRAINERD	FELSKE PROPERTIES LLC	1021 INDUSTRIAL PARK RD	BRAINERD, MN 56401			710 6TH ST S	BRAINERD	56401
41240813	09196185011200	CITY OF BRAINERD	FELSKE PROPERTIES LLC	1021 INDUSTRIAL PARK RD	BRAINERD, MN 56401			704 6TH ST S	BRAINERD	56401
41251111	09104000009X00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41251110	09104000010200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241578	09166004000200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241577	09166005000200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241059	09196125001VOC	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			518 5TH ST S	BRAINERD	56401
41241058	09196125005200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			514 5TH ST S	BRAINERD	56401
41241057	09196125008200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241056	09196125009200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			506 5TH ST S	BRAINERD	56401
41241054	09196125013200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241053	09196125016200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41240876	09196161000200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			0 LINCOLN SCH	BRAINERD	56401
41240860	09196163000200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41240818	09196183000200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41240816	09196185004200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			716 6TH ST S	BRAINERD	56401
41240807	09196185020200	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			717 5TH ST S	BRAINERD	56401
41240815	09196185006200	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1 ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401			714 6TH ST S	BRAINERD	56401
41240812	09196185013Y00	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1 ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401			510 PINE ST	BRAINERD	56401
41240811	09196185013200	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1 ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41240810	09196185014200	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1 ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401			705 5TH ST S	BRAINERD	56401
41240809	09196185016200	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1 ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401			707 5TH ST S	BRAINERD	56401
41240808	09196185018200	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1 ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401			711 5TH ST S	BRAINERD	56401
41240806	09196185022200	CITY OF BRAINERD	KNOWLES, RODNEY L	723 5TH ST S	BRAINERD MN 56401			723 5TH ST S	BRAINERD	56401
41241048	09196127013W0	CITY OF BRAINERD	MALLIE, MATTHEW R	507 S 5TH ST	BRAINERD, MN 56401			510 NORWOOD ST	BRAINERD	56401
41241047	09196127013200	CITY OF BRAINERD	MALLIE, MATTHEW R	507 S 5TH ST	BRAINERD, MN 56401			502 NORWOOD ST	BRAINERD	56401
41241046	09196127016200	CITY OF BRAINERD	MALLIE, MATTHEW R	507 S 5TH ST	BRAINERD, MN 56401			507 5TH ST S	BRAINERD	56401
41241051	09196127005200	CITY OF BRAINERD	POSITIVE REALTY, & INVESTMENT	514 SO 6TH STREET	BETTER HOMES & GARDENS	BRAINERD MN 56401		514 6TH ST S	BRAINERD	56401
41241050	09196127009200	CITY OF BRAINERD	S & L CREATIVE INVESTMENTS LLC	502 S 6TH ST	BRAINERD, MN 56401			502 6TH ST S	BRAINERD	56401
41241055	09196125011200	CITY OF BRAINERD	SUITE PROPERTIES LLC	PO BOX 2511		BAXTER MN 56425		502 5TH ST S	BRAINERD	56401
41241045	09196127018200	CITY OF BRAINERD	WENDEL PROPERTIES LLC	17122 STATE HWY 371	BRAINERD, MN 56401			511 5TH ST S	BRAINERD	56401

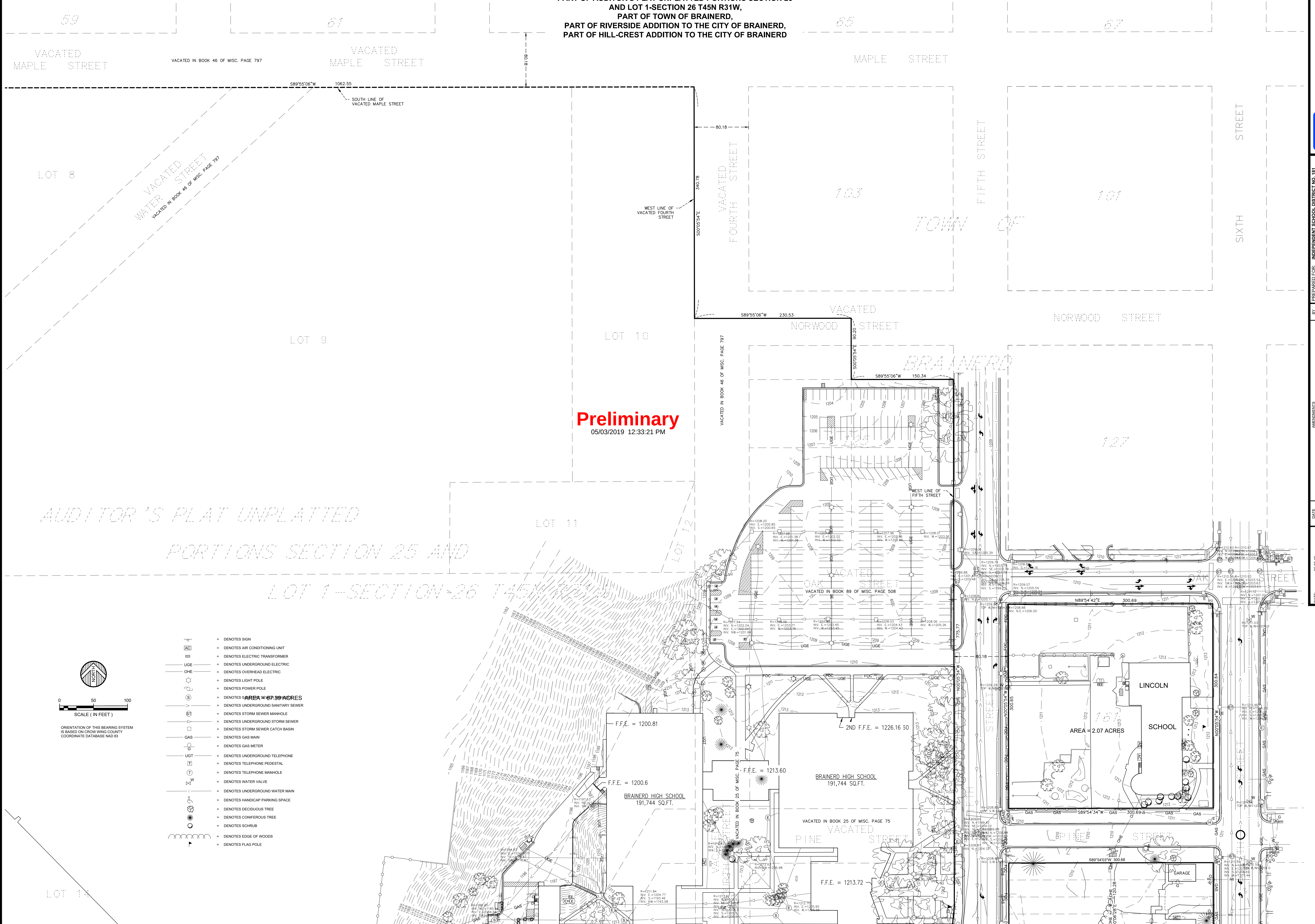
PART OF WEST END ADDITION TO THE CITY OF BRAINERD,
PART OF AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25
AND LOT 1-SECTION 26 T45N R31W,
PART OF TOWN OF BRAINERD,
PART OF RIVERSIDE ADDITION TO THE CITY OF BRAINERD,
PART OF HILL-CREST ADDITION TO THE CITY OF BRAINERD



ORIENTATION OF THIS BEARING SYSTEM
IS BASED ON CROW WING COUNTY
COORDINATE DATABASE NAD 83

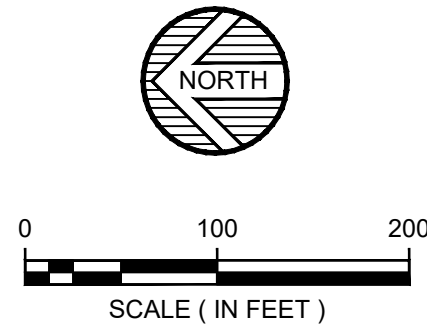
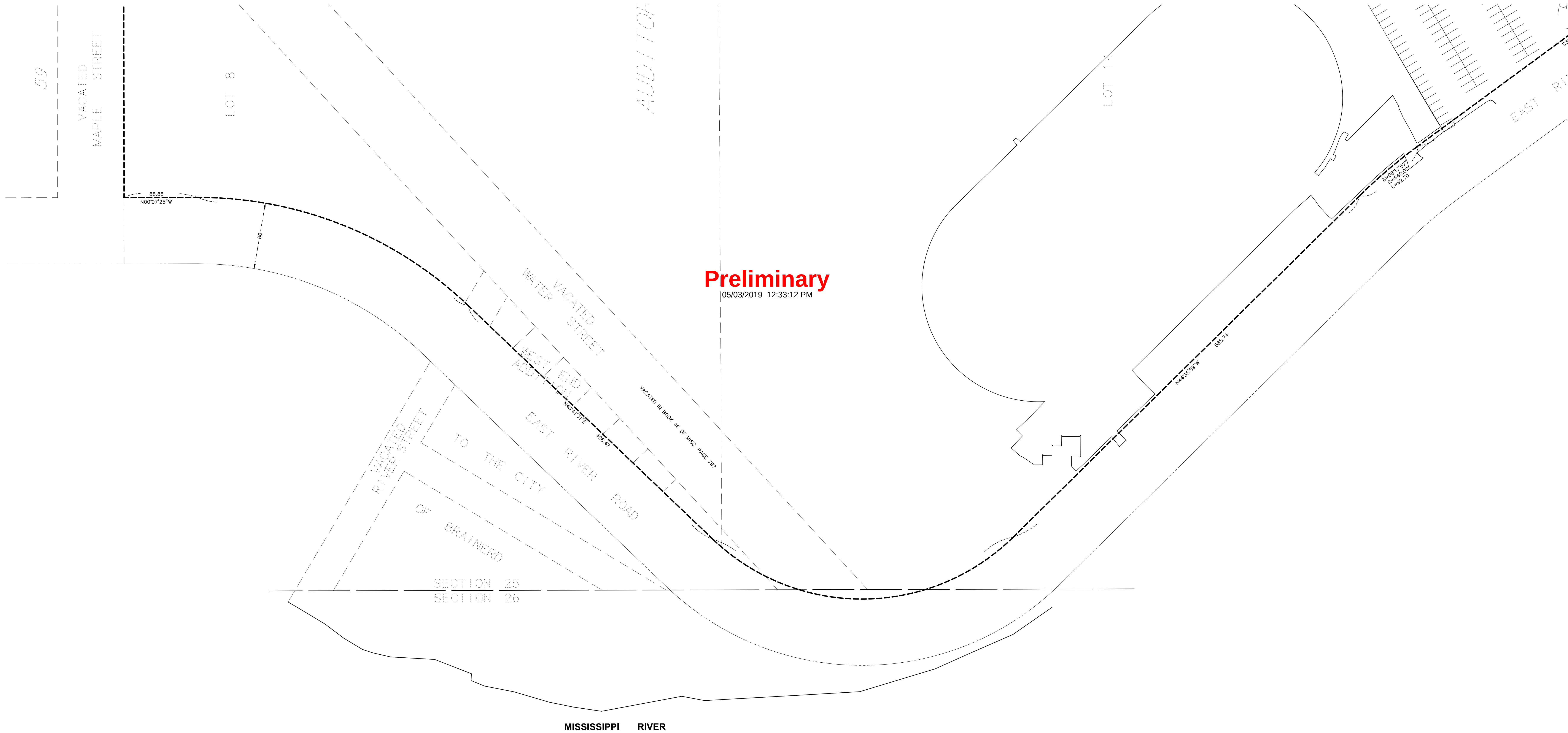


**PART OF WEST END ADDITION TO THE CITY OF BRAINERD,
PART OF AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25
AND LOT 1-SECTION 26 T45N R31W,
PART OF TOWN OF BRAINERD,
PART OF RIVERSIDE ADDITION TO THE CITY OF BRAINERD,
PART OF HILL-CREST ADDITION TO THE CITY OF BRAINERD**



CERTIFICATE OF SURVEY

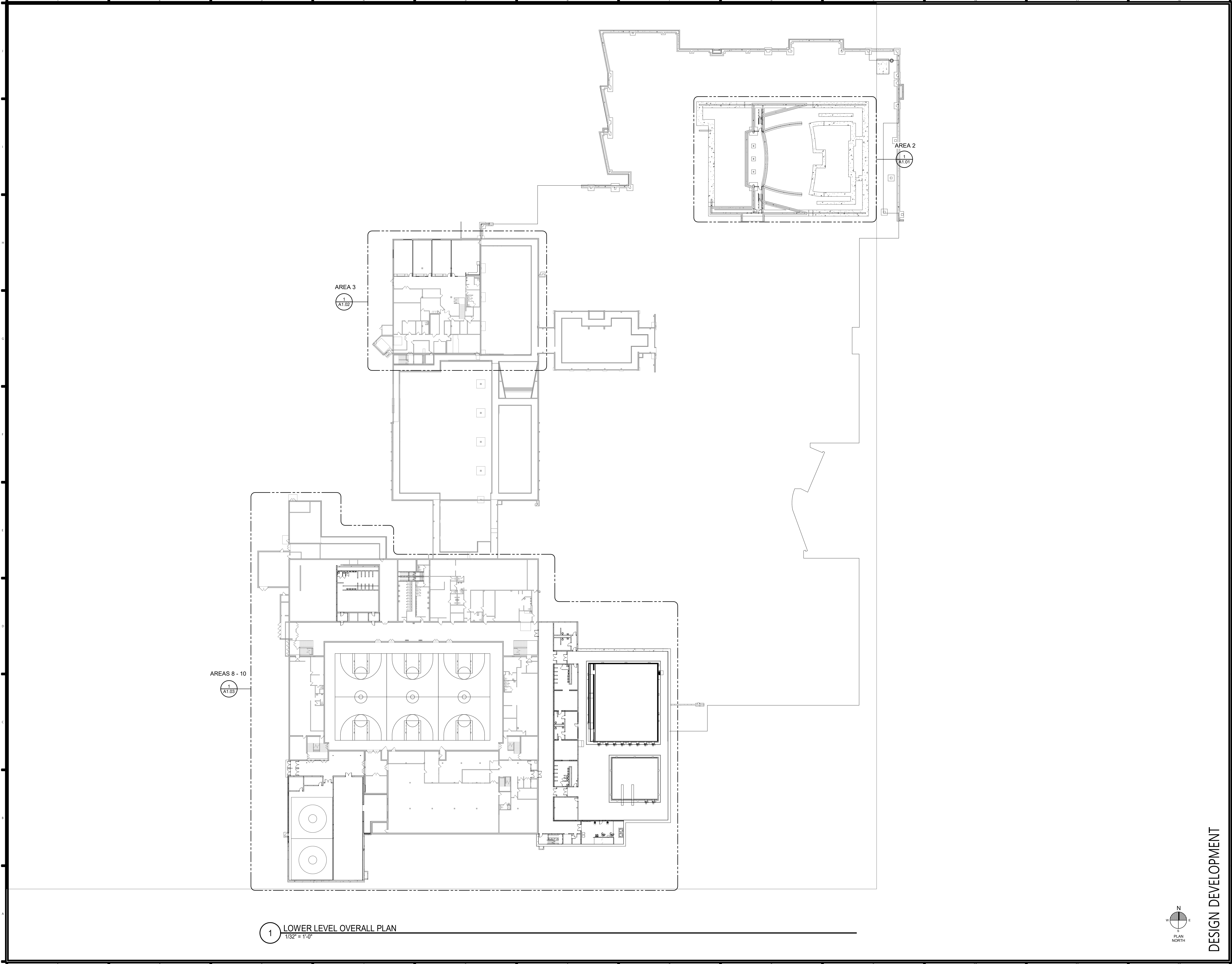
PART OF WEST END ADDITION TO THE CITY OF BRAINERD,
PART OF AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25
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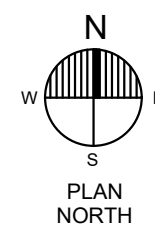
ORIENTATION OF THIS BEARING SYSTEM
IS BASED ON CROW WING COUNTY
COORDINATE DATABASE (NAD 83)

- DENOTES SIGN
- DENOTES AIR CONDITIONING UNIT
- DENOTES ELECTRIC TRANSFORMER
- DENOTES UNDERGROUND ELECTRIC
- DENOTES OVERHEAD ELECTRIC
- DENOTES LIGHT POLE
- DENOTES POWER POLE
- DENOTES SANITARY SEWER MANHOLE
- DENOTES UNDERGROUND SANITARY SEWER
- DENOTES STORM SEWER MANHOLE
- DENOTES UNDERGROUND STORM SEWER
- DENOTES STORM SEWER CATCH BASIN
- DENOTES GAS MAIN
- DENOTES GAS METER
- DENOTES UNDERGROUND TELEPHONE
- DENOTES TELEPHONE PEDESTAL
- DENOTES TELEPHONE MANHOLE
- DENOTES WATER VALVE
- DENOTES UNDERGROUND WATER MAIN
- DENOTES HANDICAP PARKING SPACE
- DENOTES DECIDUOUS TREE
- DENOTES CONIFEROUS TREE
- DENOTES SHRUB
- DENOTES EDGE OF WOODS
- DENOTES FLAG POLE

DATE: 1-24-19	DATE:	BY:	PREPARED FOR: INDEPENDENT SCHOOL DISTRICT NO. 181
SCALE: AS SHOWN	DATE:	BY:	BY: WIDSETH SMITH NOLTING
DRAWN BY: CMN	DATE:	BY:	ENGINEERING ARCHITECTURE SURVEYING ENVIRONMENTAL
CHECKED BY: CMN	DATE:	BY:	
FILE NUMBER: 281B0083.022	DATE:	BY:	



1 LOWER LEVEL OVERALL PLAN
1/32" = 1'-0"



DESIGN DEVELOPMENT



BRAINERD HIGH
SCHOOL
NORTH
CAMPUS
REMODEL

Project Location:
702 S 5TH ST.
BRAINERD, MN 56401

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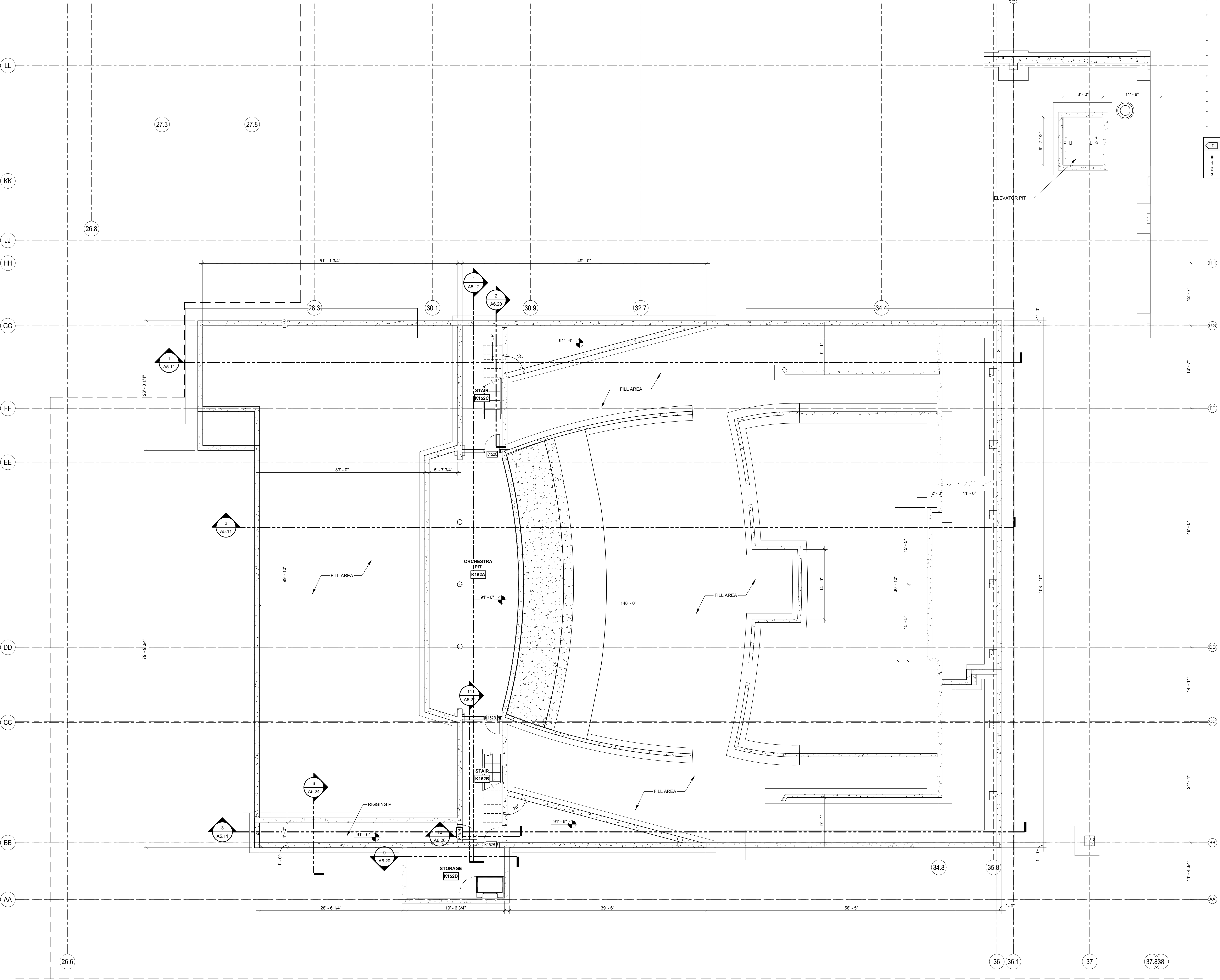
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or report was prepared by me or under my
direct supervision, and that I am a duly
Licensed Architect under the laws of the
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Signature: _____
Printed Name: Architect
Date: ##/##/## Reg. No.: Arch # _____

Project Information:
Project No.: 028180083.020
Drawn By: Author
Checked By: Checker
Date: 03/08/2019
File Name:

Sheet Title:
LOWER LEVEL OVERALL PLAN

Sheet Number:
A1.00



1 LOWER LEVEL PLAN AREA 2
1/8" = 1'-0"

GENERAL PLAN NOTES:

- ALL INTERIOR PARTITION WALLS ARE STEEL STUDS 16" O.C. WITH 5/8" GWB EACH SIDE (U.N.O.)
- DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION IMMEDIATELY
- ALL PIPING, CONDUITS, AND RELATED MECHANICAL AND ELECTRICAL ITEMS SHALL BE CONCEALED WITHIN DRYWALL FURRING AS REQUIRED IN FINISHED AREAS WHETHER SHOWN ON DRAWINGS OR NOT, U.N.O.
- PROVIDE METAL PLATE BACKING AND/OR TREATED WOOD BLOCKING IN WALLS WHERE WALL-MOUNTED EQUIPMENT IS SHOWN ON PLANS OR ELEVATIONS. VERIFY HEIGHT AND LENGTH WITH ACTUAL EQUIPMENT.
- ALL MECHANICAL EQUIPMENT PADS TO BE 4" HIGH U.N.O. LENGTH AND WIDTH OF PADS TO BE VERIFIED BY CONTRACTOR.
- ALL DIMENSIONS ARE CLEAR FROM THE CENTER OF WALL/PARTITION TO FACE OF FINISHED WALL/PARTITION. SEE PARTITION TYPES (SHEET A8.1) FOR ACTUAL THICKNESS OF PARTITIONS. MASONRY WALLS ARE DIMENSIONED TO THE NOMINAL FACE.
- ALL EXTERIOR DIMENSIONS ARE TO THE FACE OF SHEATHING OR GRID LINE, UNLESS OTHERWISE NOTED. SEE SHEET A8.1 FOR WALL TYPE LEGENDS.
- PATCH ALL HOLES IN SURFACES WHERE EQUIPMENT HAS BEEN REMOVED OR DEMOLITION HAS OCCURRED. PREPARED SURFACES AS REQUIRED FOR NEW FINISHES. PATCH TO MATCH ADJACENT SURFACE IF NOT SCHEDULED.
- ALL FLOOR OPENINGS AND DEPRESSIONS IN THE WORK SHALL BE FILLED OR CLOSED U.N.O. WITH MATERIALS TO MATCH ADJACENT SURFACES. FINISHES ARE FIRE RATED.
- SEE SHEET G1.4 FOR TYPICAL BARRIER-FREE TOILET ROOM TYPES AND ACCESSORIES REQUIREMENTS & LOCATIONS. SOAP DISPENSERS AND PAPER TOWEL DISPENSERS TO BE INSTALLED AT ALL SINKS UNLESS NOTED OTHERWISE.
- COORDINATE ALL FLOOR OPENING DIMENSIONS AND CLEARANCES FOR DUCTWORK W/ MECHANICAL CONTRACTOR. (TYPICAL)
- ALL MONITORS & SMARTBOARDS NOT IN CONTRACT.

#	DESCRIPTION
1	INFILL WALL TO MATCH EXISTING
2	PATCH FLOOR AS NEEDED TO MATCH EXISTING
3	RADIAL DIMENSION OF CIRCLE = 160'-0"

Project Location:
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BRANERD, MN 56401

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Printed Name: Architect
Date: ##/##/## Reg. No.: Arch # _____

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Project No.: 028180083.020
Drawn By: Author
Checked By: Checker
Date: 03/08/2019
File Name:

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LOWER LEVEL AREA 2

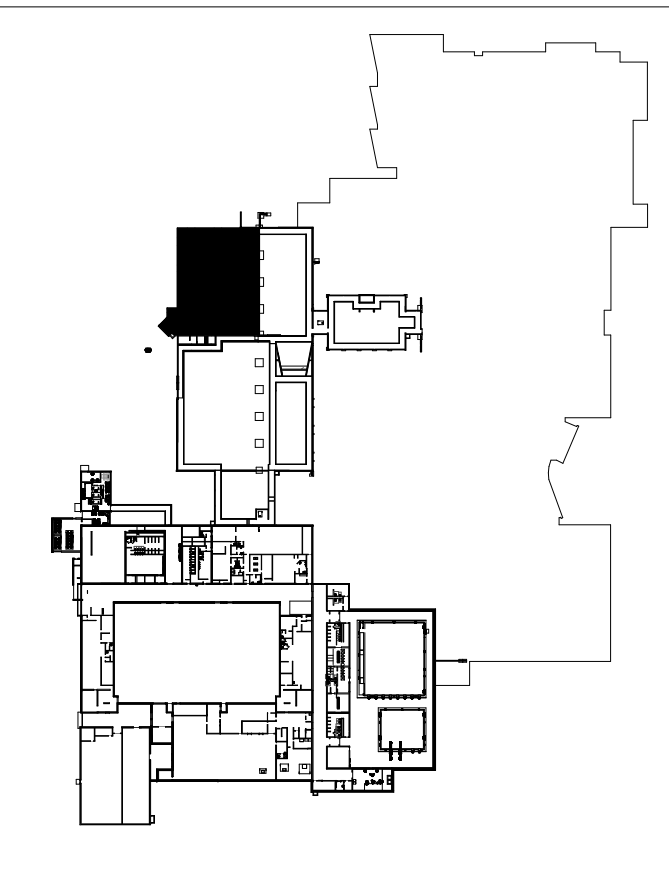
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DESIGN DEVELOPMENT

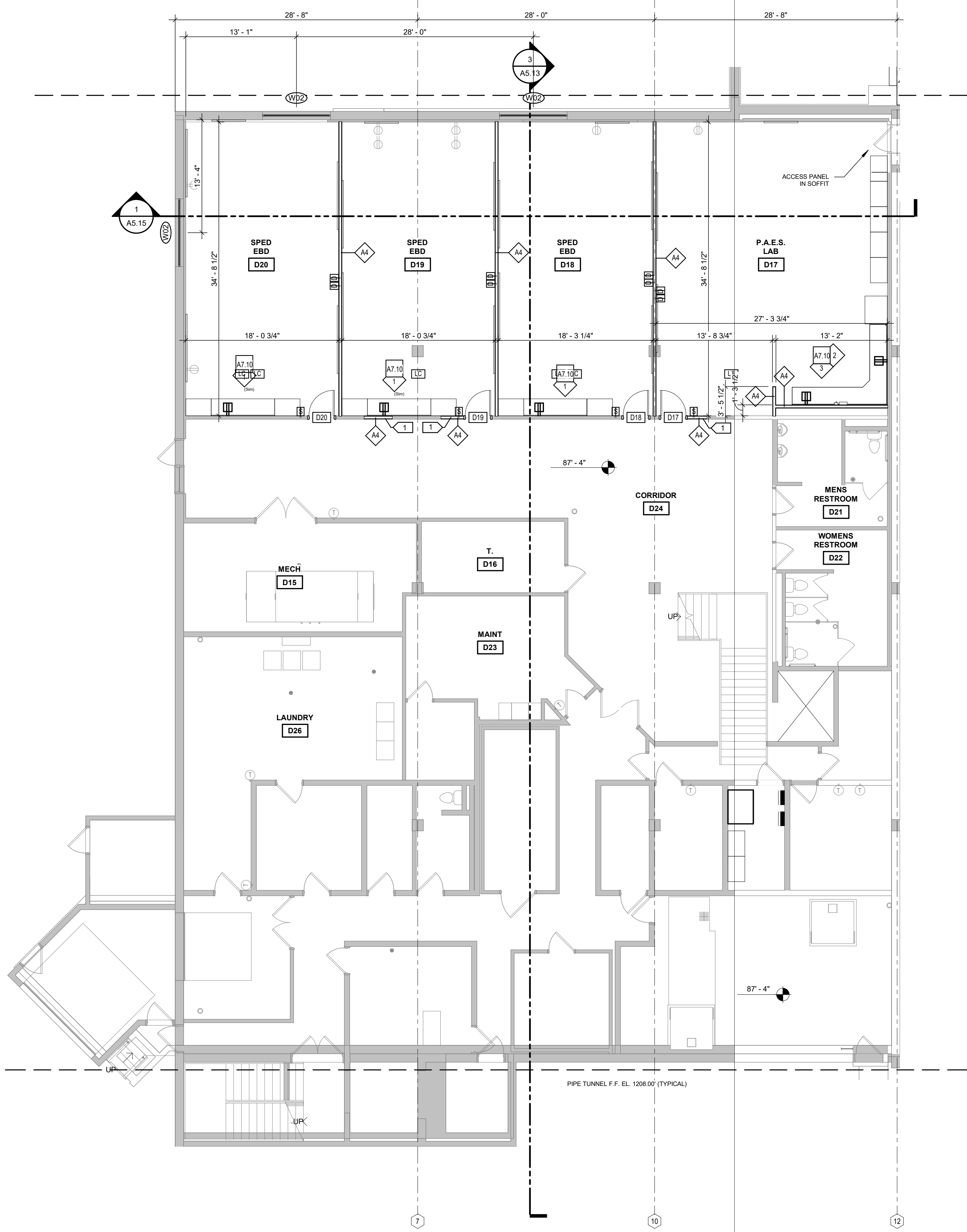
GENERAL PLAN NOTES:

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- ALL MONITORS & SMARTBOARDS NOT IN CONTRACT.

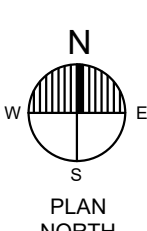
#	FLOOR PLAN KEYNOTES
#	DESCRIPTION
1	INFILL WALL TO MATCH EXISTING
2	PATCH FLOOR AS NEEDED TO MATCH EXISTING
3	RADIAL DIMENSION OF CIRCLE = 160'-0"



KEY PLAN - LOWER AREA 3



1 LOWER LEVEL PLAN AREA 3
1/8" = 1'-0"



DESIGN DEVELOPMENT



BRAINERD HIGH SCHOOL
NORTH CAMPUS
REMODEL

Project Location:
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BRANERD, MN 56401

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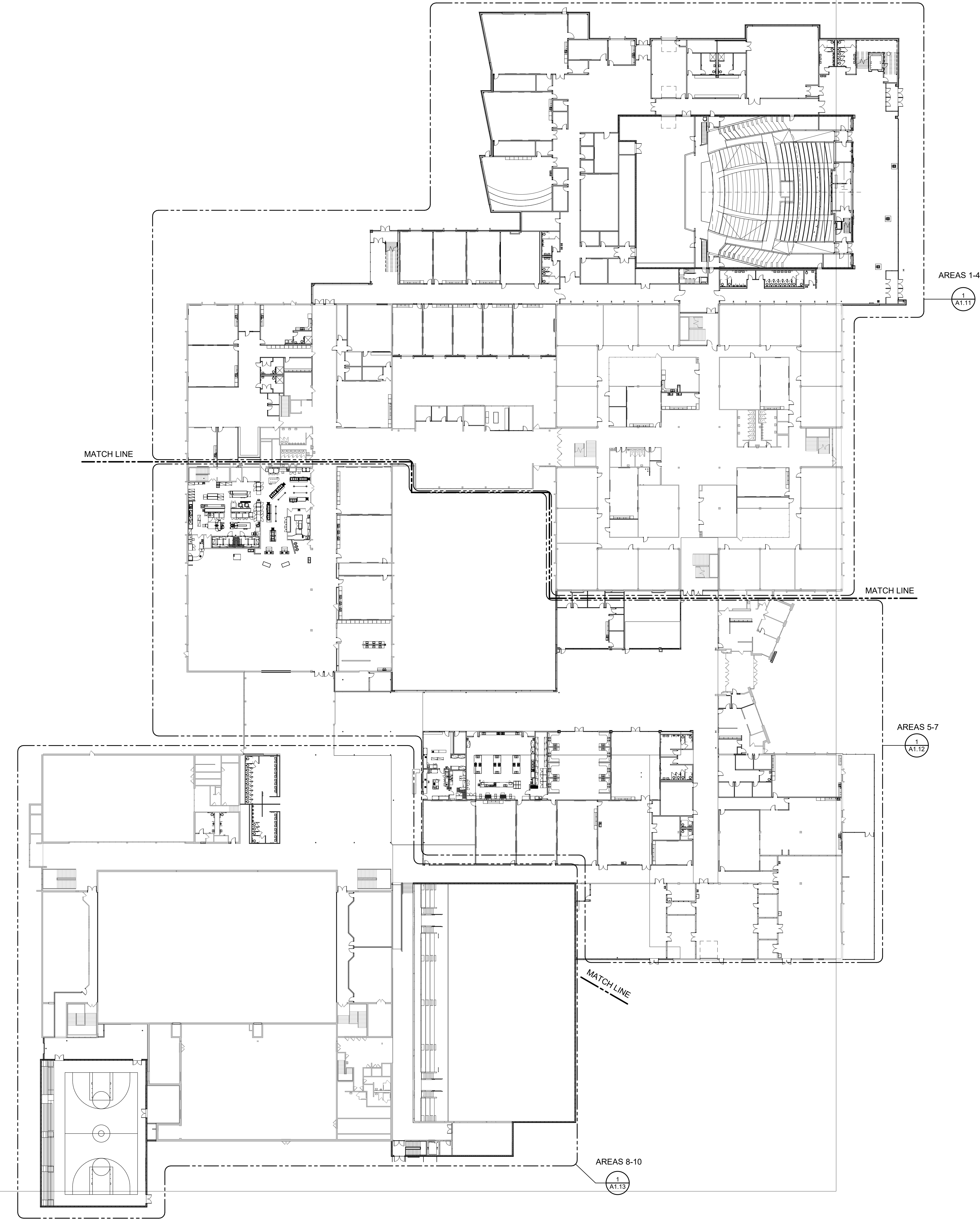
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Signature: _____
Printed Name: Architect
Date: ##/##/## Reg. No.: Arch #

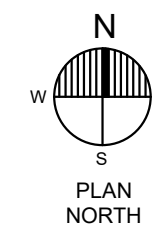
Project Information:
Project No.: 028180083.020
Drawn By: Author
Checked By: Checker
Date: 03/08/2019
File Name:

Sheet Title:
LOWER LEVEL AREA 3

Sheet Number:
A1.02



1 MAIN LEVEL OVERALL PLAN
1/32" = 1'-0"



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NORTH CAMPUS
REMODEL

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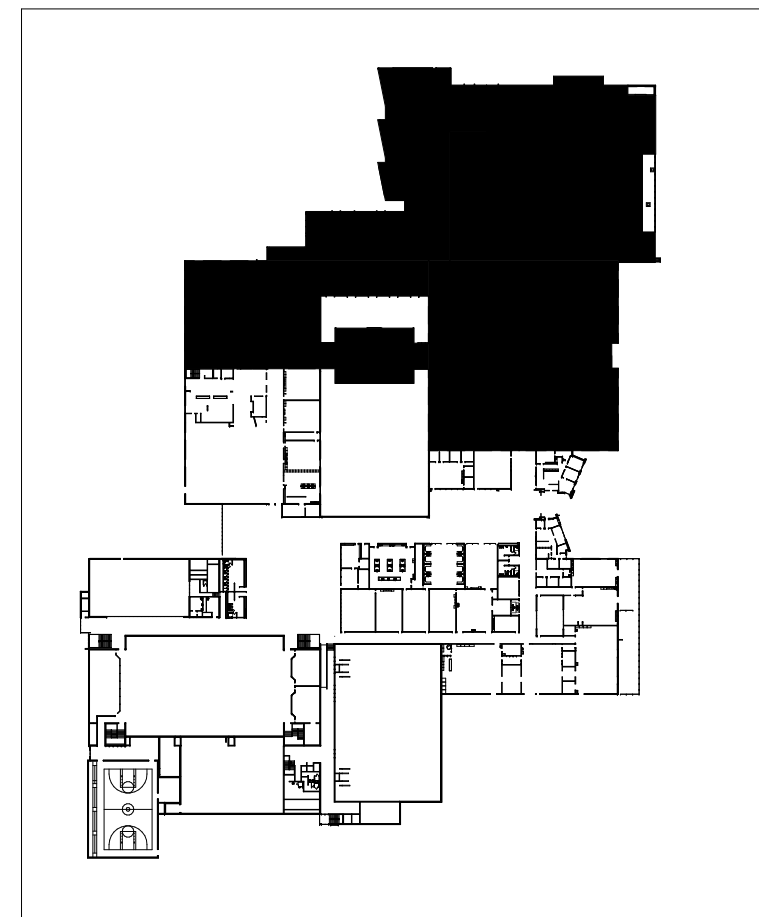
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Signature: _____
Printed Name: Architect
Date: ##/##/## Reg. No.: Arch #

Project Information:
Project No.: 028180083.020
Drawn By: Author
Checked By: Checker
Date: 03/08/2019
File Name:

Sheet Title:
MAIN LEVEL OVERALL PLAN

Sheet Number:
A1.10



KEY PLAN - AREAS 1-4

GENERAL PLAN NOTES:

- ALL INTERIOR PARTITION WALLS ARE STEEL STUDS 16" O.C. WITH 5/8" GWB EACH SIDE (U.N.O.).
- DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION IMMEDIATELY.
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- ALL MONITORS & SMARTBOARDS NOT IN CONTRACT.

AREA 1

AREA 2

AREA 3

AREA 4

1 MAIN LEVEL PLAN - AREAS 1-4
1/16" = 1'-0"



DESIGN DEVELOPMENT



BRAINERD HIGH SCHOOL
NORTH CAMPUS
REMODEL

Project Location:
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BRAINERD, MN 56401

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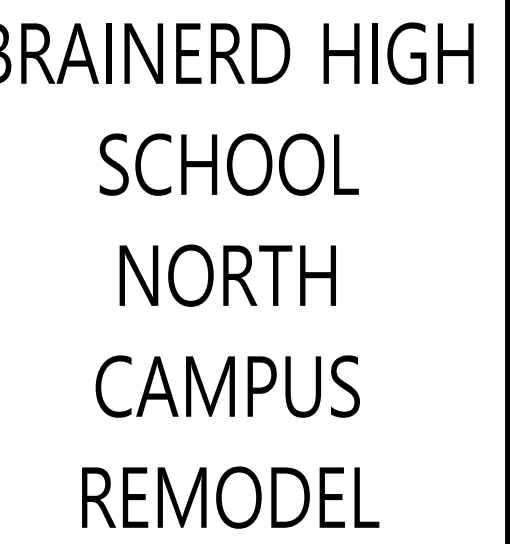
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Printed Name: Architect
Date: ##/##/## Reg. No.: Arch #

Project Information:
Project No.: 028180083.020
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Checked By: Checker
Date: 03/08/2019
File Name:

Sheet Title:
MAIN LEVEL AREAS 1-4

Sheet Number:
A1.11



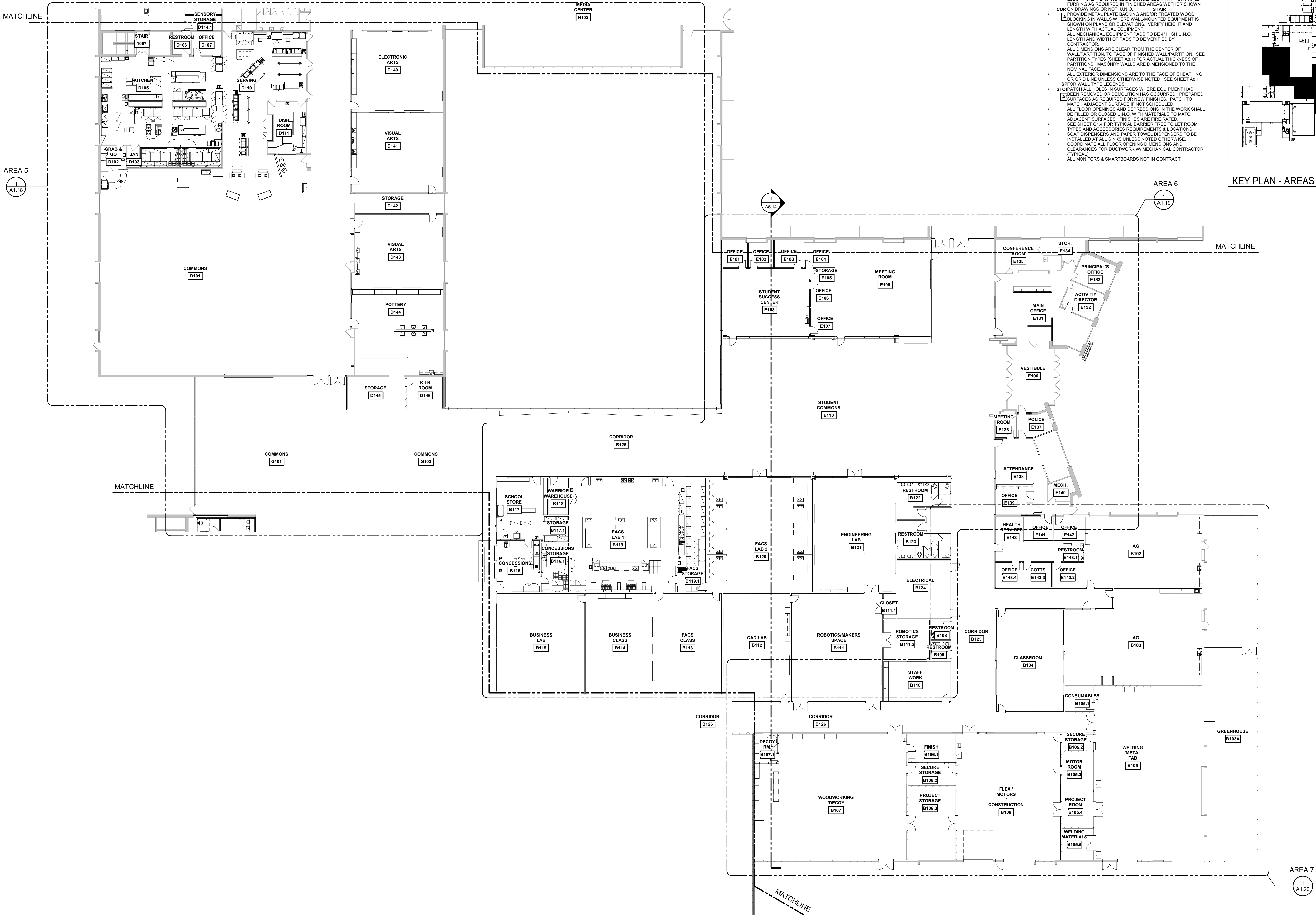
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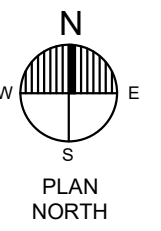
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Project No. : 0281B0083.020

Sheet Title:
MAIN LEVEL AREAS 5-7

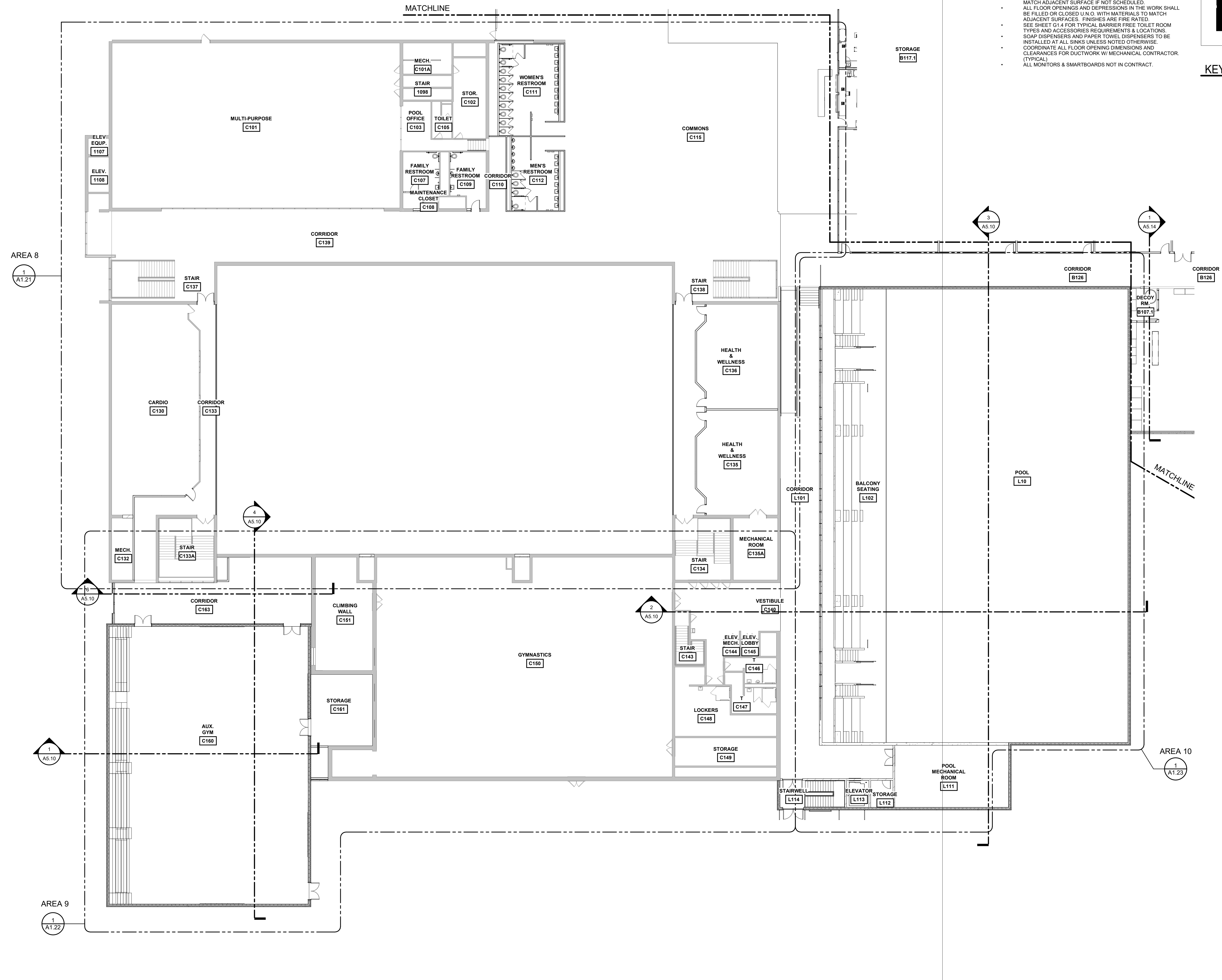
Sheet Number:
A1.12

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MAIN LEVEL PLAN - AREAS 5-7
1/16" = 1'-0"

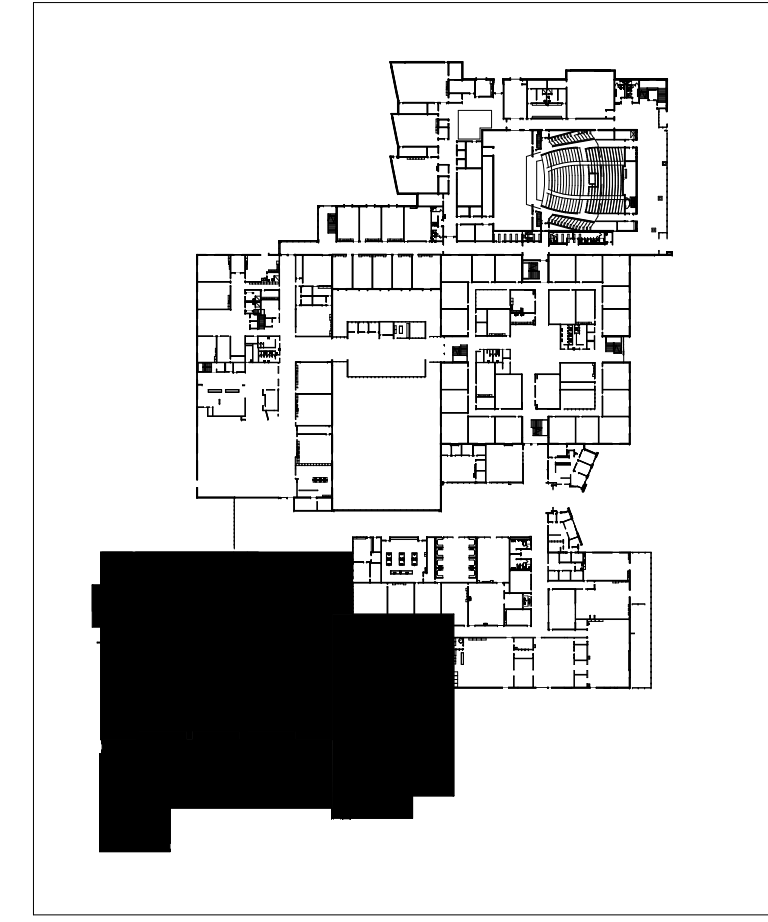


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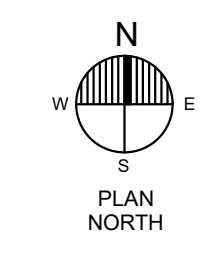
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- SEE SHEET G1.4 FOR TYPICAL BARRIER FREE TOILET ROOM TYPES AND ACCESSORIES REQUIREMENTS & LOCATIONS.
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- ALL MONITORS & SMARTBOARDS NOT IN CONTRACT.



KEY PLAN - AREAS 8-10

1 MAIN LEVEL PLAN - AREAS 8-10
1/16" = 1'-0"



DESIGN DEVELOPMENT



BRAINERD HIGH SCHOOL
NORTH CAMPUS
REMODEL

Project Location:
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BRAINERD, MN 56401

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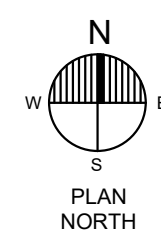
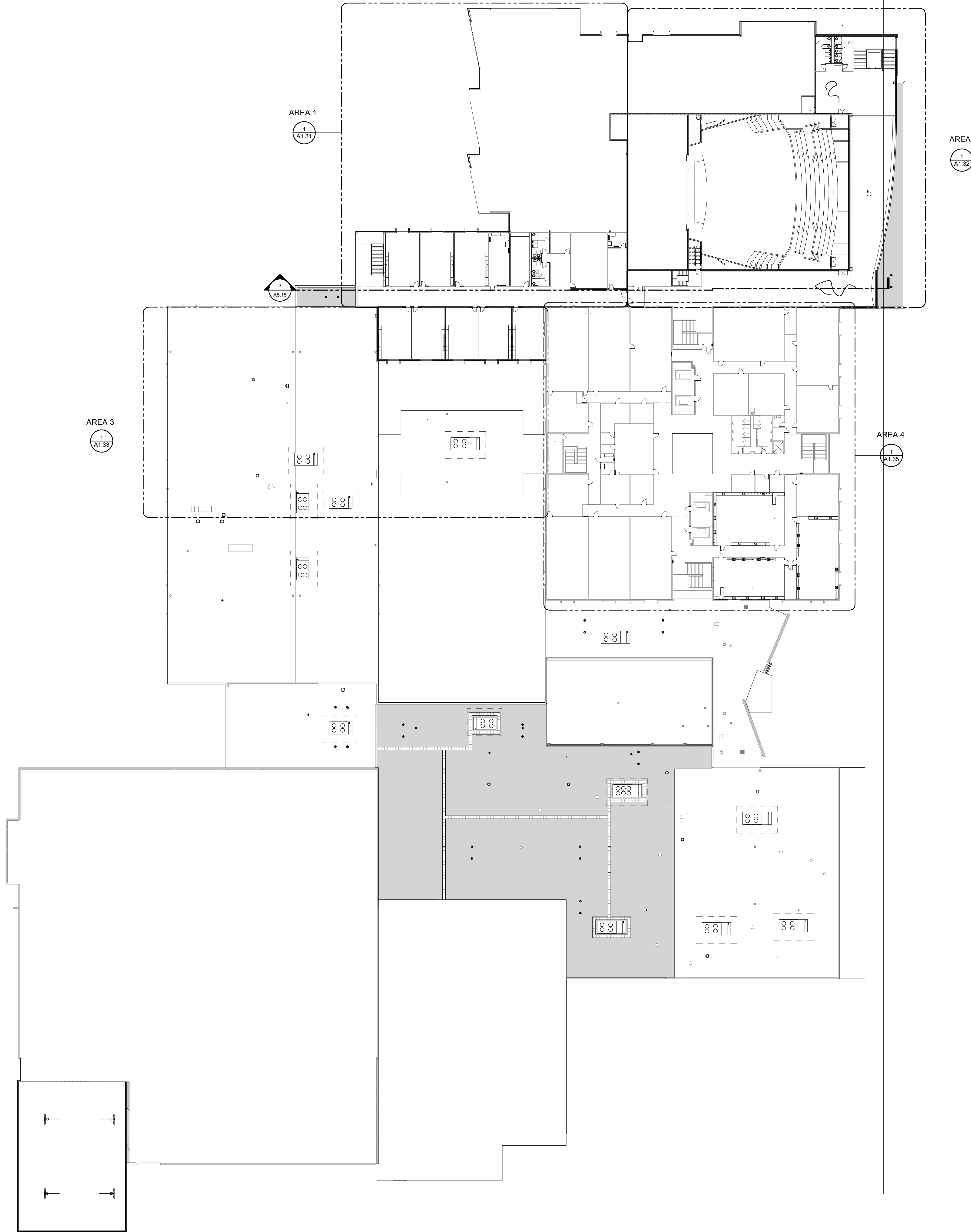
Signature: _____
Printed Name: Architect
Date: ##/##/## Reg. No.: Arch #

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Project No.: 028180083.020
Drawn By: Author
Checked By: Checker
Date: 03/08/2019
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Sheet Title:
MAIN LEVEL AREAS 8-10

Sheet Number:
A1.13

1 UPPER LEVEL OVERALL PLAN
1" = 30'-0"



DESIGN DEVELOPMENT



BRAINERD HIGH SCHOOL
NORTH CAMPUS
REMODEL

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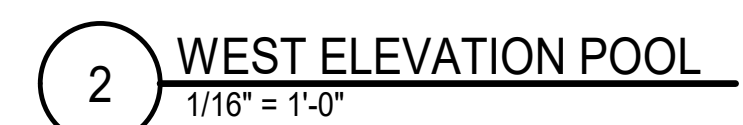
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Project Information:
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Checked By: Checker
Date: 03/08/2019
File Name:

Sheet Title:
UPPER LEVEL OVERALL PLAN

Sheet Number:
A1.30





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NORTH CAMPUS
REMODEL

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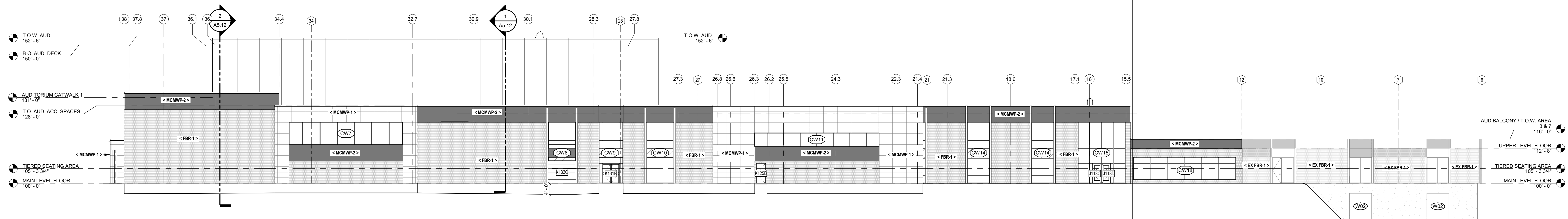
Signature: _____
Printed Name: Architect
Date: ##/##/## Reg. No.: Arch #

Project Information:
Project No.: 028180083.020
Drawn By: Author
Checked By: Checker
Date: 03/08/2019
File Name:

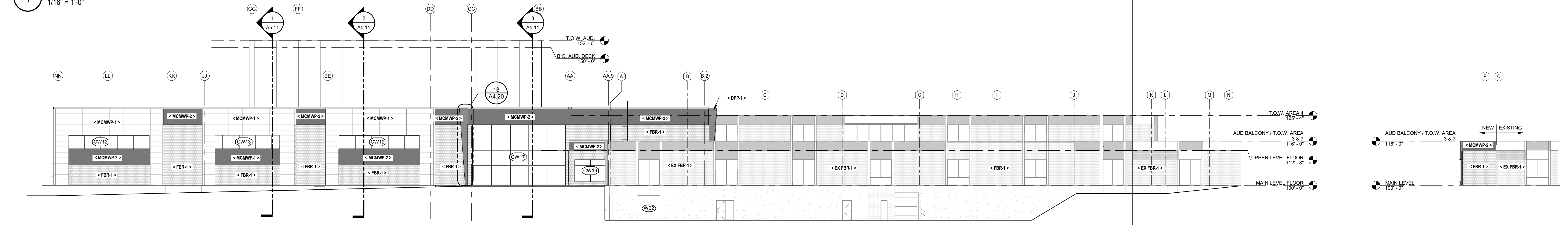
Sheet Title:
BUILDING ELEVATIONS &
ENLARGED ELEVATIONS

Sheet Number:
A4.20

DESIGN DEVELOPMENT

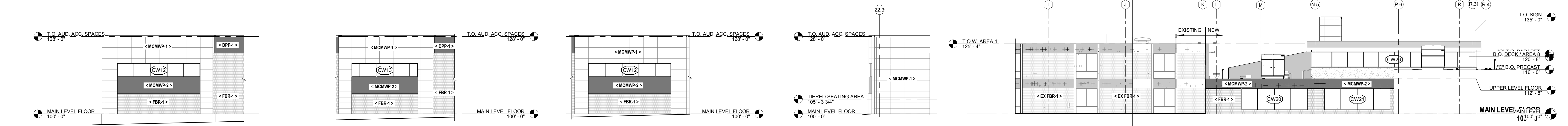


1 NORTH ELEVATION OVERALL
1/16" = 1'-0"



2 WEST ELEVATION OVERALL A
1/16" = 1'-0"

11 EAST ELEVATION COMMONS COURTYARD
1/16" = 1'-0"



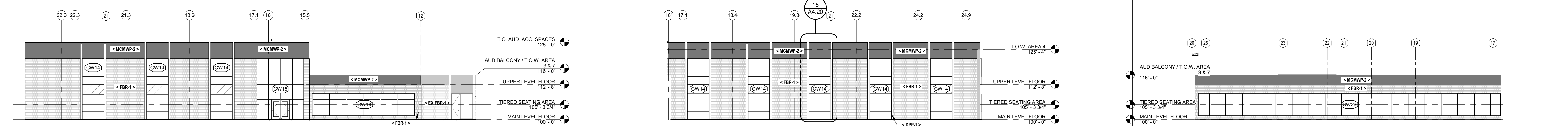
3 WEST ELEVATION AUD. BAND
1/16" = 1'-0"

4 WEST ELEVATION AUD. ORCH.
1/16" = 1'-0"

5 WEST ELEVATION AUD. CHOIR
1/16" = 1'-0"

6 SOUTH ELEVATION AUD. CHOIR
1/16" = 1'-0"

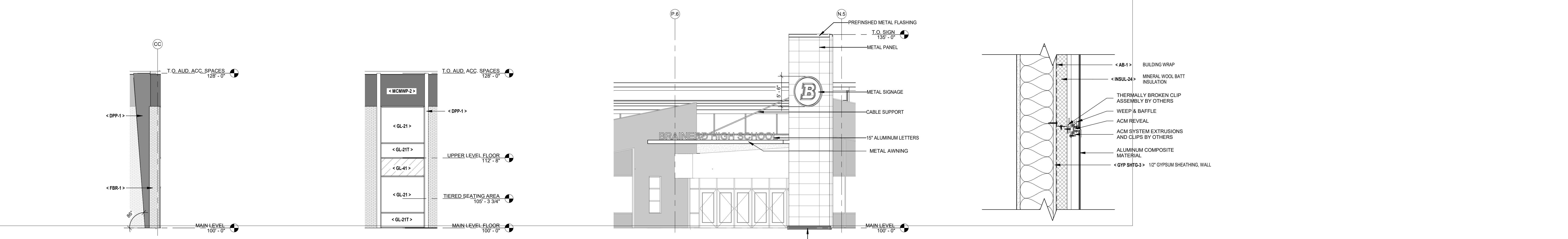
7 WEST ELEVATION COMMONS COURTYARD
1/16" = 1'-0"



8 NORTH ELEVATION AUDITORIUM MATH
1/16" = 1'-0"

9 SOUTH ELEVATION AREA 3 COURTYARD
1/16" = 1'-0"

10 NORTH ELEVATION COMMONS COURTYARD
1/16" = 1'-0"



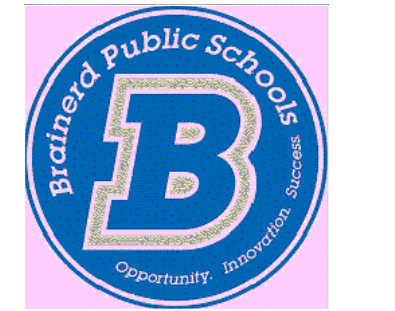
13 ENLARGED ELEVATION @ DEC. PRECAST PANEL
1/8" = 1'-0"

15 ENLARGED ELEVATION @ MATH
1/8" = 1'-0"

14 ENLARGED ELEVATION @ ENTRY
1/8" = 1'-0"

HORIZONTAL JOINT
1 1/2" = 1'-0"

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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BRAINERD, MN

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MARK	DATE	REVISION
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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 State of Minnesota.

Signature: _____
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYYReg. No.: 41966

Project Information:
Project No. : 028180083.020
Drawn By : JWR
Checked By : TTR
Date : MAY 2019
File Name:

Sheet Title:
CIVIL PLAN LEGEND

Sheet Number:
C1.00

SURVEY MONUMENTS

	BENCH MARK
	FOUND CIM
	FOUND CPNT.
	FOUND JLM
	FOUND LATH
	FOUND PIPE
	FOUND READING
	STAKED CIM
	STAKED CPNT.
	STAKED JLM
	STAKED PIPE

EXISTING TOPO SYMBOLS

	AC UNIT
	FENCE POST
	FLAG POLE
	GUARD POST
	GUY ANCHOR
	GUY POLE
	HANDICAP SYMBOL
	MAILBOX
	SHRUB
	SIGN DOUBLE POST
	SIGN SINGLE POST
	TREE CONIFER
	TREE DECIDUOUS
	TREE STUMP
	TV DISH
	WETLAND SYMBOL
	YARD LIGHT

EXISTING UTILITY MUNICIPAL SYMBOLS

	APRON
	LIFT STATION
	SANITARY CLEANOUT
	SANITARY MANHOLE
	STORM CATCH BASIN
	STORM INLET

EXISTING UTILITY MUNICIPAL SYMBOLS (cont.)

	STORM MANHOLE
	WATER CURB STOP
	WATER HANDHOLE
	WATER HYDRANT
	WATER MANHOLE
	WATER METER
	WATER VALVE
	WATER WELL
UTILITY	UTILITY SIZE & TYPE

EXISTING UTILITY PRIVATE SYMBOLS

	ELEC GROUND LIGHT
	ELEC HANDHOLE
	ELEC LIGHT POLE
	ELEC MANHOLE
	ELEC METER
	ELEC PEDESTAL
	ELEC POLE
	ELEC SIGNAL
	ELEC TRANSFORMER BOX
	GAS METER
	GAS VALVE
	LP TANK
	TELE HANDHOLE
	TELE MANHOLE
	TELE PEDESTAL
	TELE POLE
	TV HANDHOLE
	TV PEDESTAL

SOIL BORING SYMBOLS

	LASER-INDUCED FLUORESCENCE BORING
	LYSIMETER
	MONITOR WELL
	PERC TEST
	PIEZOMETER
	RECOVERY WELL
	SOIL BORING
	SOIL VAPOR POINT
	VAPOR SURVEY POINT

PROPOSED UTILITY MUNICIPAL SYMBOLS

	APRON PROPOSED
	SANITARY CLEANOUT PROPOSED
	SANITARY LIFT STATION PROPOSED
	SANITARY LIFT STATION VALVE MANHOLE PROPOSED
	SANITARY MANHOLE PROPOSED
	SANITARY PLUG PROPOSED
	STORM CATCH BASIN PROPOSED
	STORM MANHOLE PROPOSED
	WATER 11 1/4" BEND PROPOSED
	WATER 22 1/2" BEND PROPOSED
	WATER 45" BEND PROPOSED
	WATER 90" BEND PROPOSED
	WATER CAP PROPOSED
	WATER CROSS PROPOSED
	WATER CURB STOP PROPOSED
	WATER HYDRANT PROPOSED
	WATER REDUCER PROPOSED
	WATER SLEEVE PROPOSED
	WATER TEE PROPOSED
	WATER VALVE PROPOSED

PROPOSED UTILITY PRIVATE SYMBOLS

	ELEC LIGHT POLE PROPOSED
--	--------------------------

EROSION CONTROL SYMBOLS

	SURFACE DRAINAGE ARROW
	STORM DRAIN INLET PROTECTION

TRAFFIC CONTROL DEVICES & SYMBOLS

	TRAFFIC CONTROL SIGN (1 POST)
	TRAFFIC CONTROL SIGN (2 POST)
	TYPE III BARRICADE
	DRUM CHANNELIZER
	FLASHING ARROW OR MESSAGE BOARD

EXISTING TOPOGRAPHIC LINES

	CENTER LINE
	EDGE OF WOODS
	FENCE BARB WIRE
	FENCE CHAIN LINK
	FENCE WOOD
	FORCEMAIN
	OVERHEAD CABLE TV
	OVERHEAD ELECTRIC
	OVERHEAD TELE
	RAILROAD
	RETAINING WALL
	SANITARY SEWER
	SANITARY SEWER SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	UNDERGROUND CABLE TV
	UNDERGROUND ELECTRIC
	UNDERGROUND FIBER OPTIC
	UNDERGROUND GAS
	UNDERGROUND TELE
	WATERMAIN
	WATERMAIN SERVICE
	WETLAND EDGE

R/W, LOT & EASEMENTS LINES

	BUILDING SETBACK LINE
	LOT LINE PROPOSED
	EASEMENT LINE
	EASEMENT LINE PROPOSED
	LOT LINE
	MNDOT CONTROLLED ACCESS LINE
	RIGHT OF WAY EXISTING
	RIGHT OF WAY PROPOSED

PROPOSED CONSTRUCTION LINES

	FENCE CHAIN LINK PROPOSED
	FENCE WOOD PROPOSED
	FENCE BARB WIRE PROPOSED
	FORCEMAIN PROPOSED
	SANITARY SEWER PROPOSED
	SANITARY SERVICE PROPOSED
	STORM SEWER PROPOSED
	STORM SEWER DRAIN TILE PROPOSED
	WATERMAIN PROPOSED
	WATERMAIN SERVICE PROPOSED

EROSION CONTROL LINES

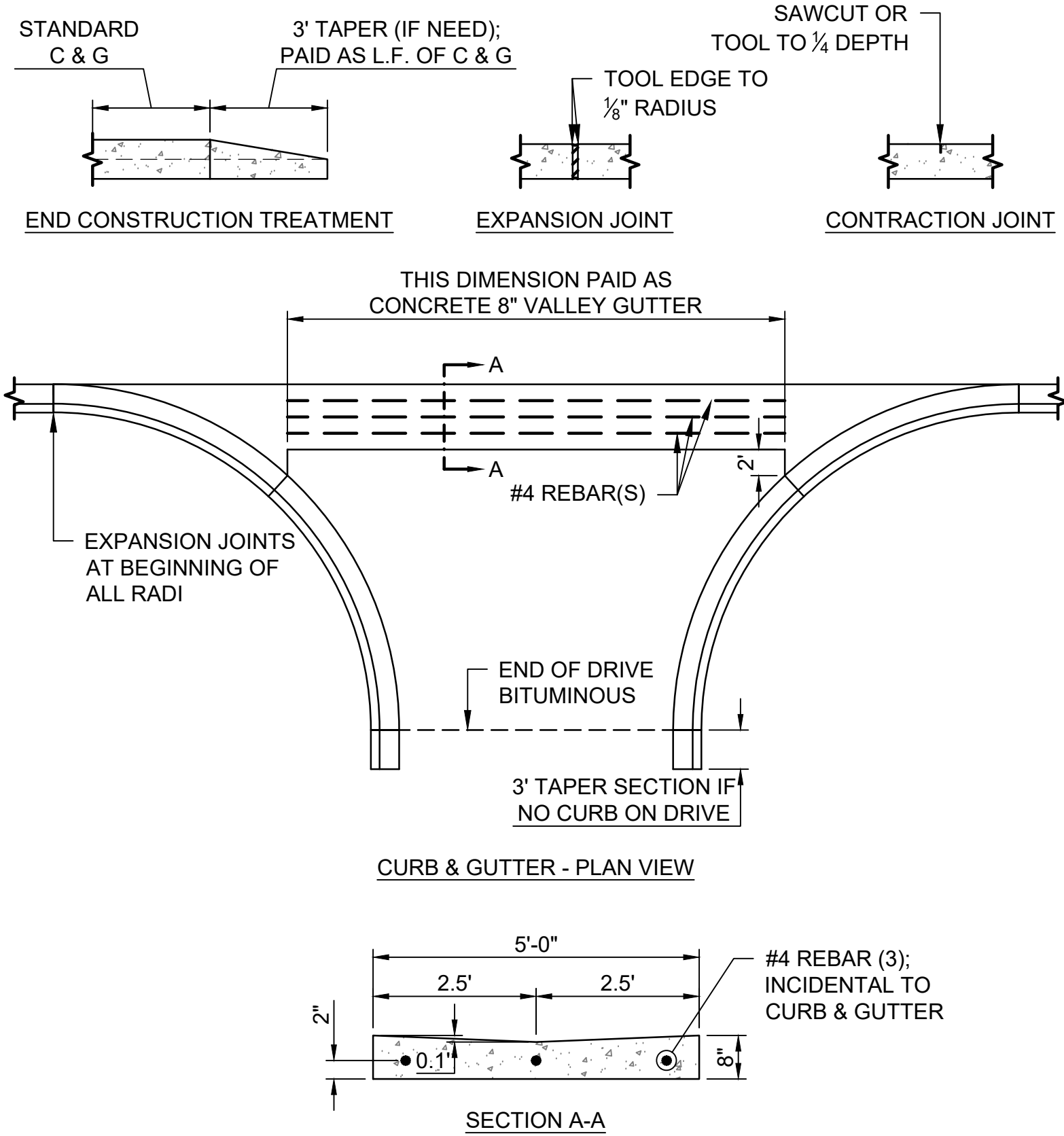
	BALE CHECK
	BIO ROLL
	SILT FENCE
	SILT FENCE TYPE HEAVY DUTY
	SILT FENCE TYPE MACHINE SLICED
	SILT FENCE TYPE PREASSEMBLED
	FLOTATION SILT CURTAIN

HATCH PATTERN AND SHADING LEGEND

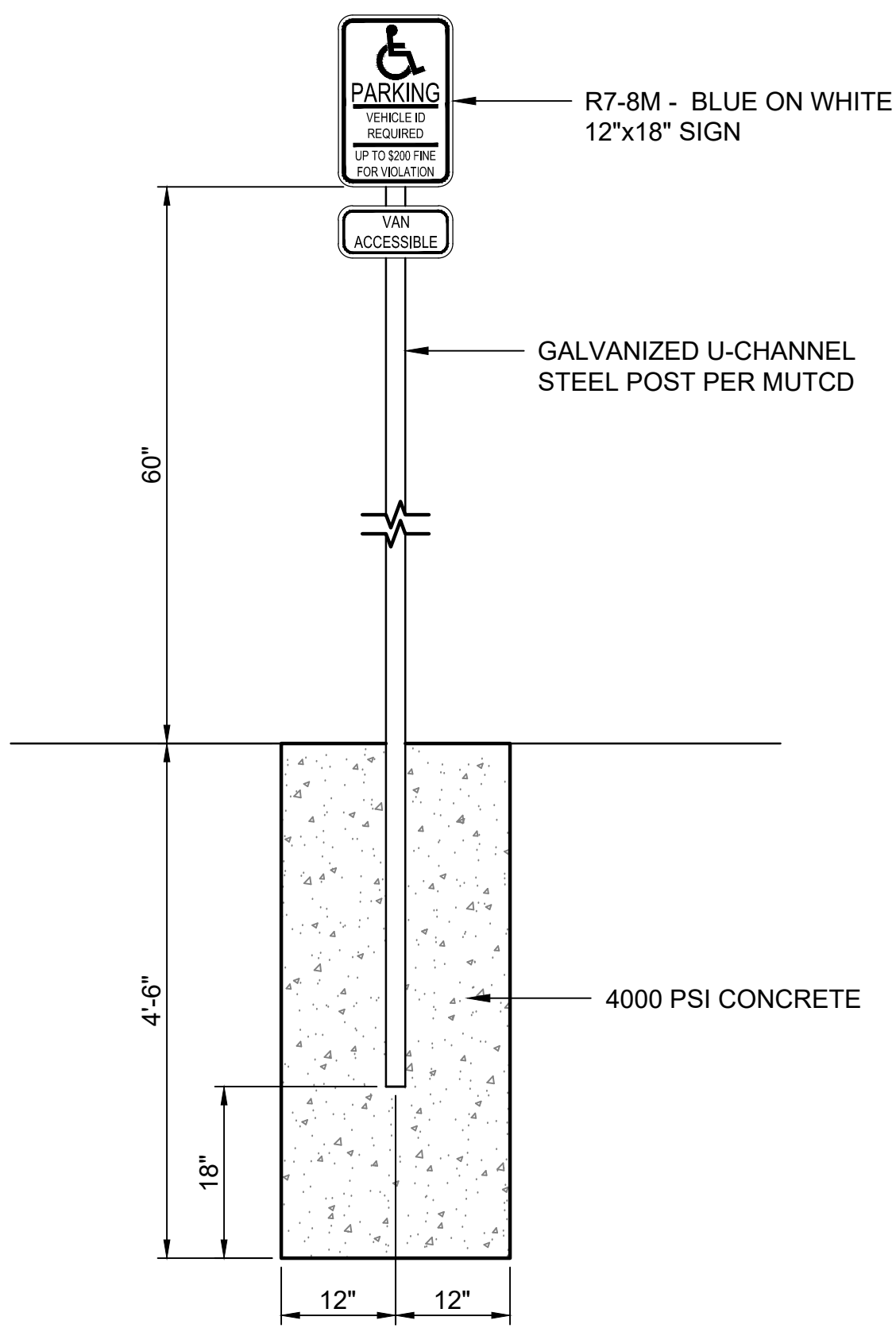
	RANDOM RIPRAP
	SOD
	SEED
	HYDRAULIC STABILIZER
	EROSION CONTROL BLANKET
	TEMP. ROCK CONSTRUCTION ENTRANCE
	BUILDING WALL HATCH
	BITUMINOUS SURFACE
	CONCRETE SURFACE
	GRAVEL SURFACE
	EASEMENT PATTERN

DOCUMENTATION SYMBOLS

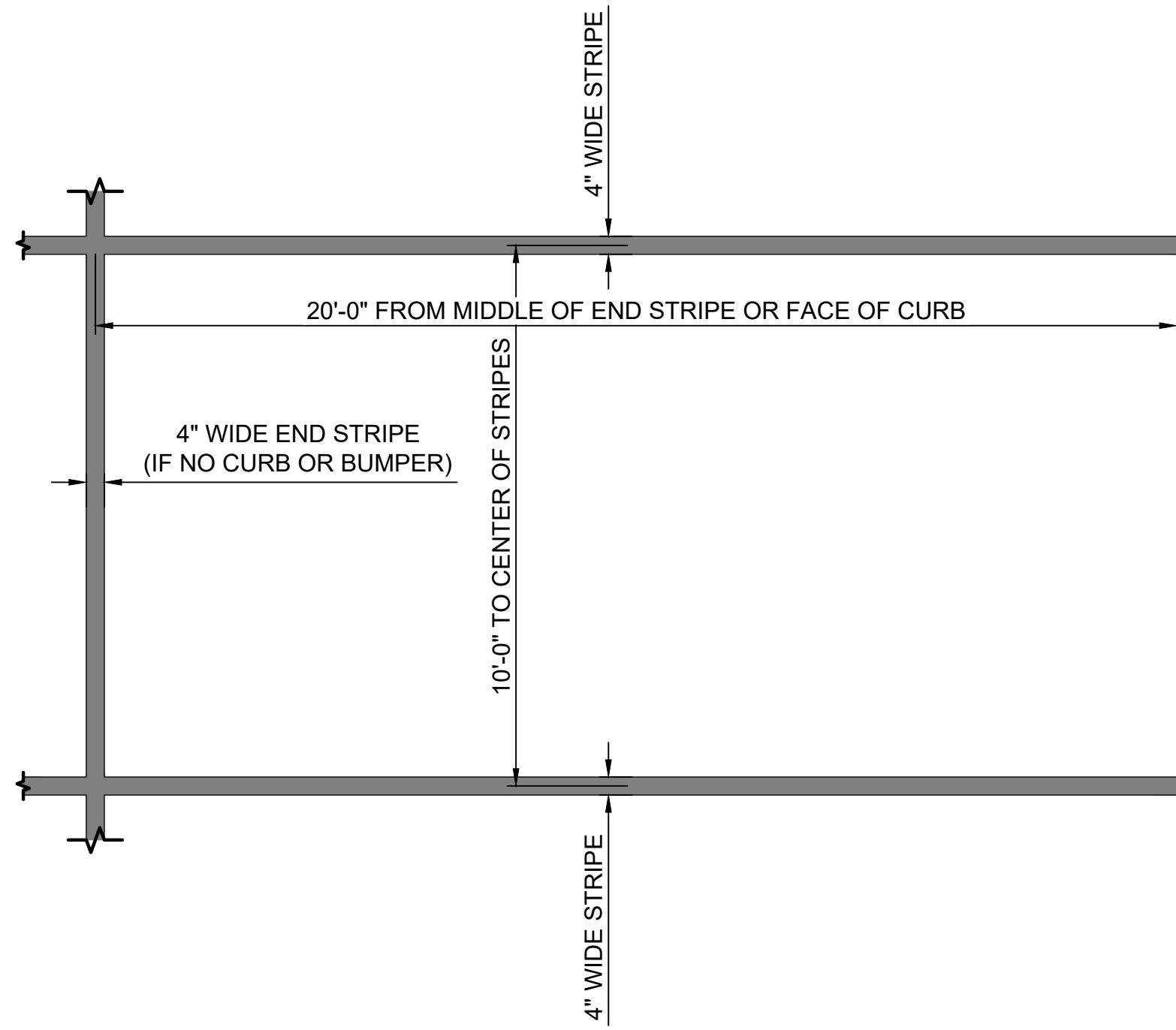
	SECTION ARROW - SECTION NUMBER TOP; PAGE OF SECTION BOTTOM
--	--



CURB & GUTTER WITH 5' VALLEY GUTTER DETAIL
SCALE: NONE



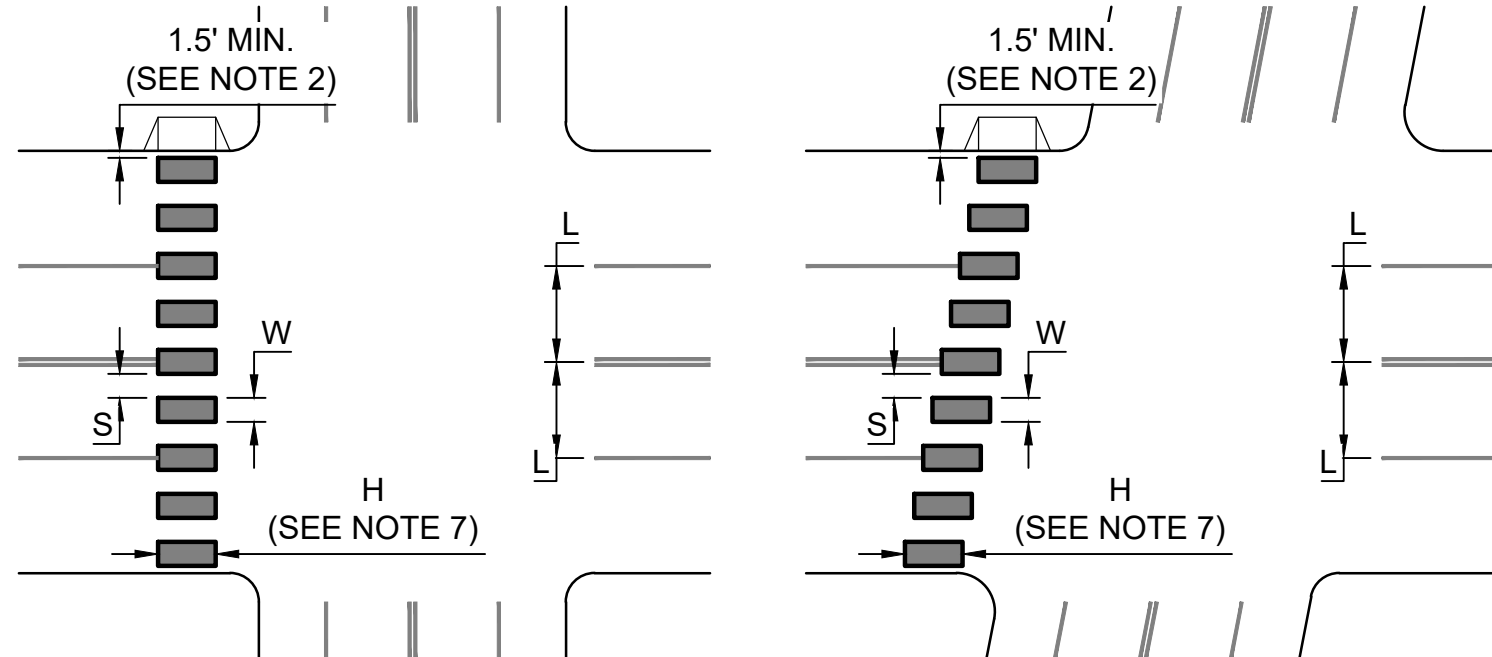
TYPICAL ACCESSIBLE PARKING ADVISORY SIGN WITH POST DETAIL
SCALE: NONE



NOTE:
ALL PAINT USED FOR STRIPING SHALL CONFORM TO STANDARD MNDOT REQUIREMENTS AS OUTLINED IN MNDOT SPECIFICATION No. 3591. COLOR SHALL BE BRIGHT WHITE.

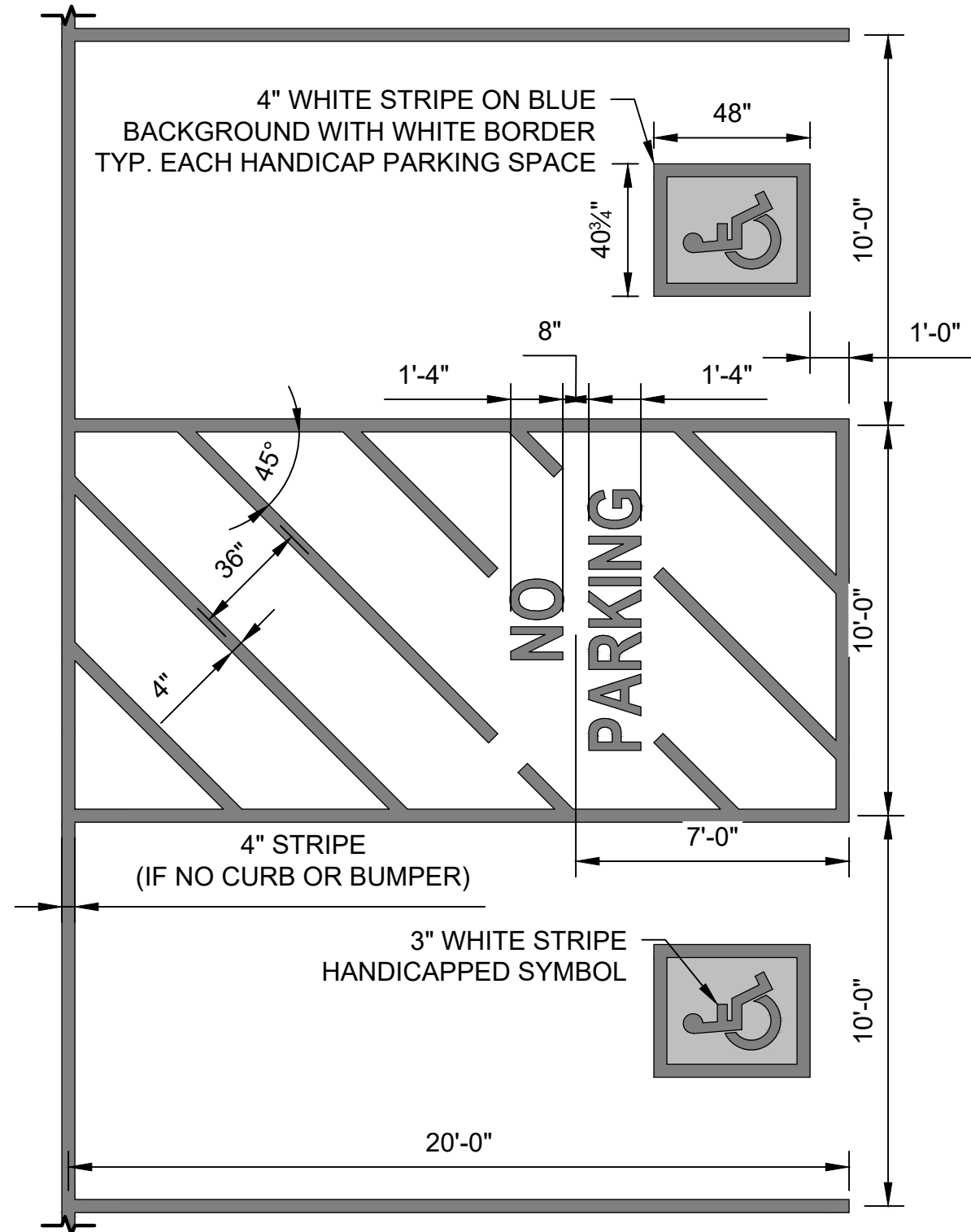
PARKING LOT STRIPING DETAIL
SCALE: NONE

CROSSWALK MARKING DIMENSIONS TABLE				
(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREA	(S) WIDTH OF SPACE	ALTERNATE (W) WIDTH OF PAINTED AREA	ALTERNATE (S) WIDTH OF SPACE
9'	2.0'	2.5'	--	--
10'	2.5'	2.5'	2.0'	3.0'
11'	2.5'	3.0'	2.0'	3.5'
12'	3.0'	3.0'	2.5'	3.5'
13'	3.0'	3.5'	--	--



- NOTES:
1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
 2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB FACE. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
 3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
 4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
 5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.
 6. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
 7. THE BLOCKS SHALL BE A MINIMUM OF 6' LONG AND AT LEAST AS LONG AS THE TRUNCATED DOMES, FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED USE PATH.
 8. THE ALTERNATE (W) AND (S) MAY BE USED WHEN BLOCKS LONGER THAN 6' (H) ARE USED.

PEDESTRIAN CROSSWALK MARKINGS DETAIL
SCALE: NONE



NOTE:
ALL PAINT USED FOR STRIPING SHALL CONFORM TO STANDARD MNDOT REQUIREMENTS AS OUTLINED IN MNDOT SPECIFICATION No. 3591. COLOR SHALL BE BRIGHT WHITE.

ACCESSIBLE STALL STRIPING DETAIL
SCALE: NONE

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 SOUTH 5th STREET
BRAINERD, MN

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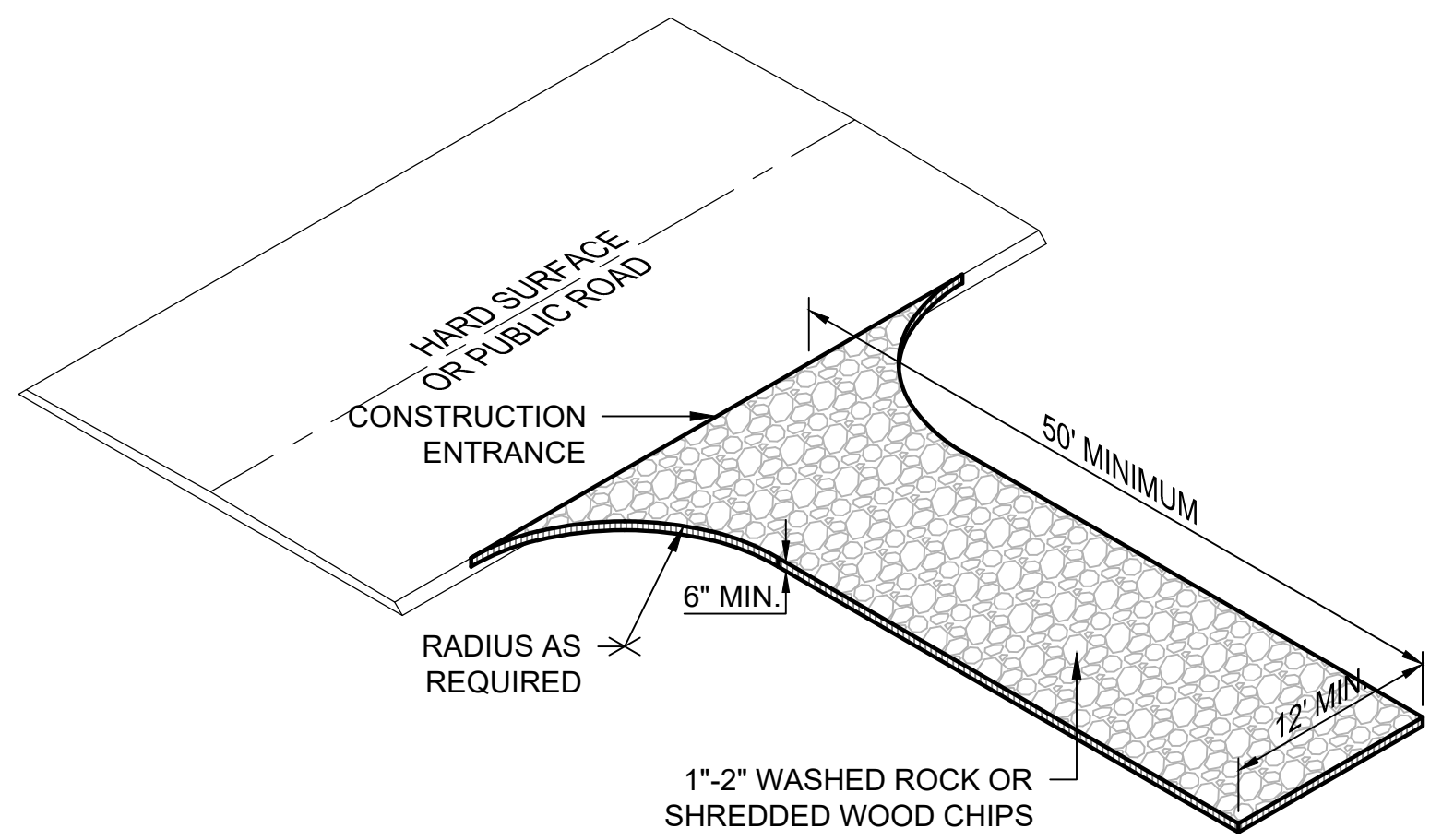
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the State of Minnesota.

Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

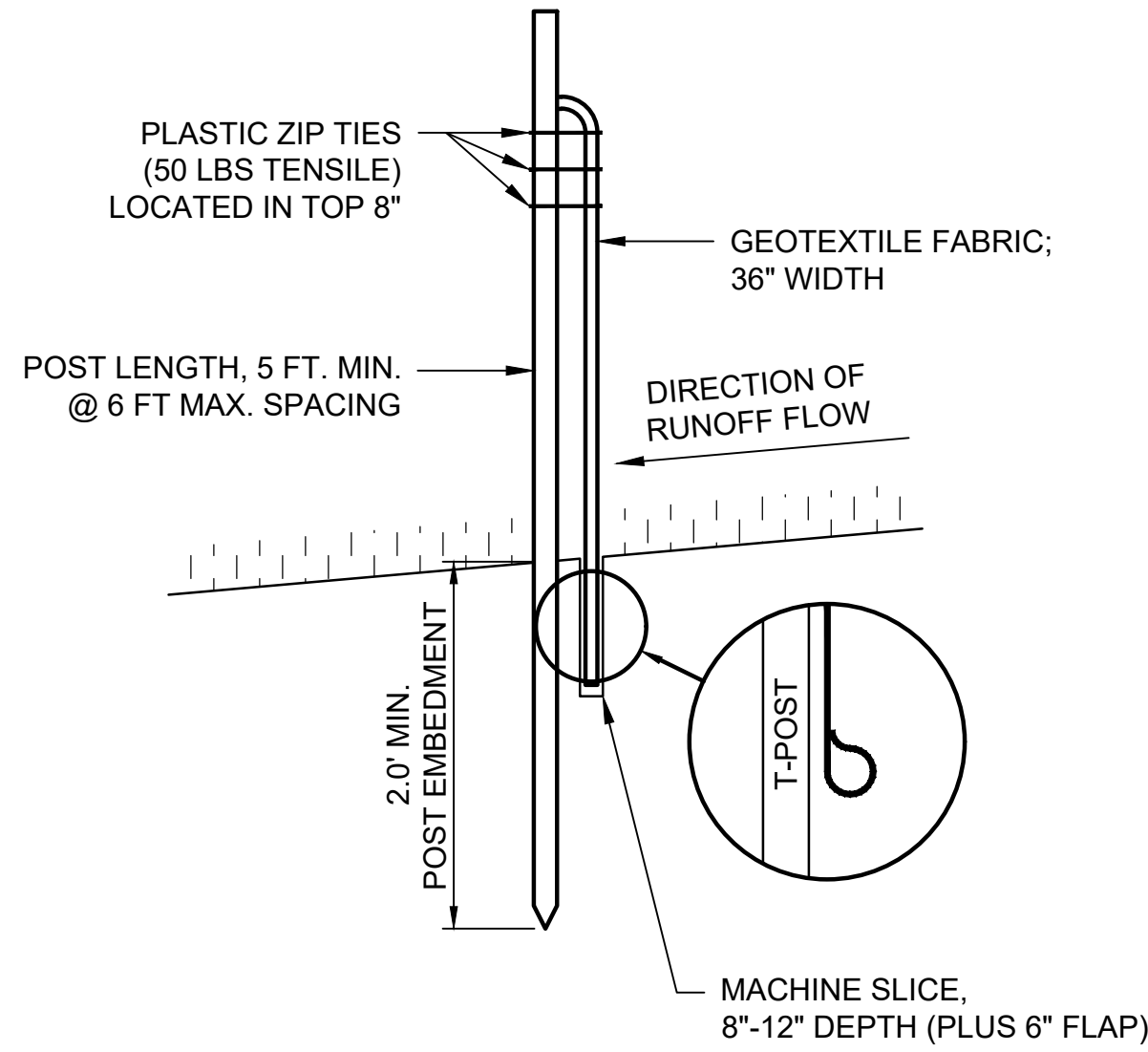
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Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
CIVIL DETAILS

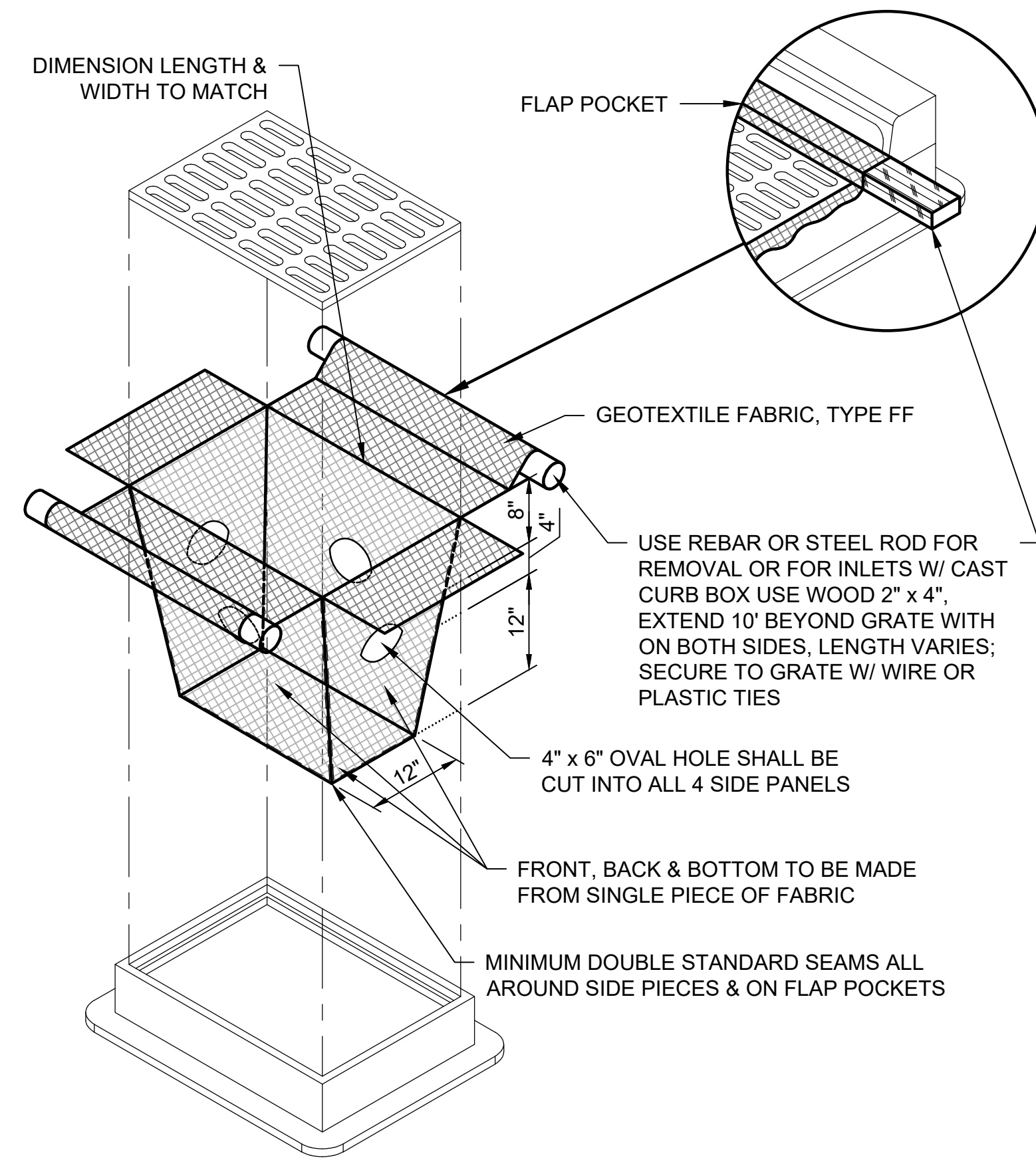
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C2.01



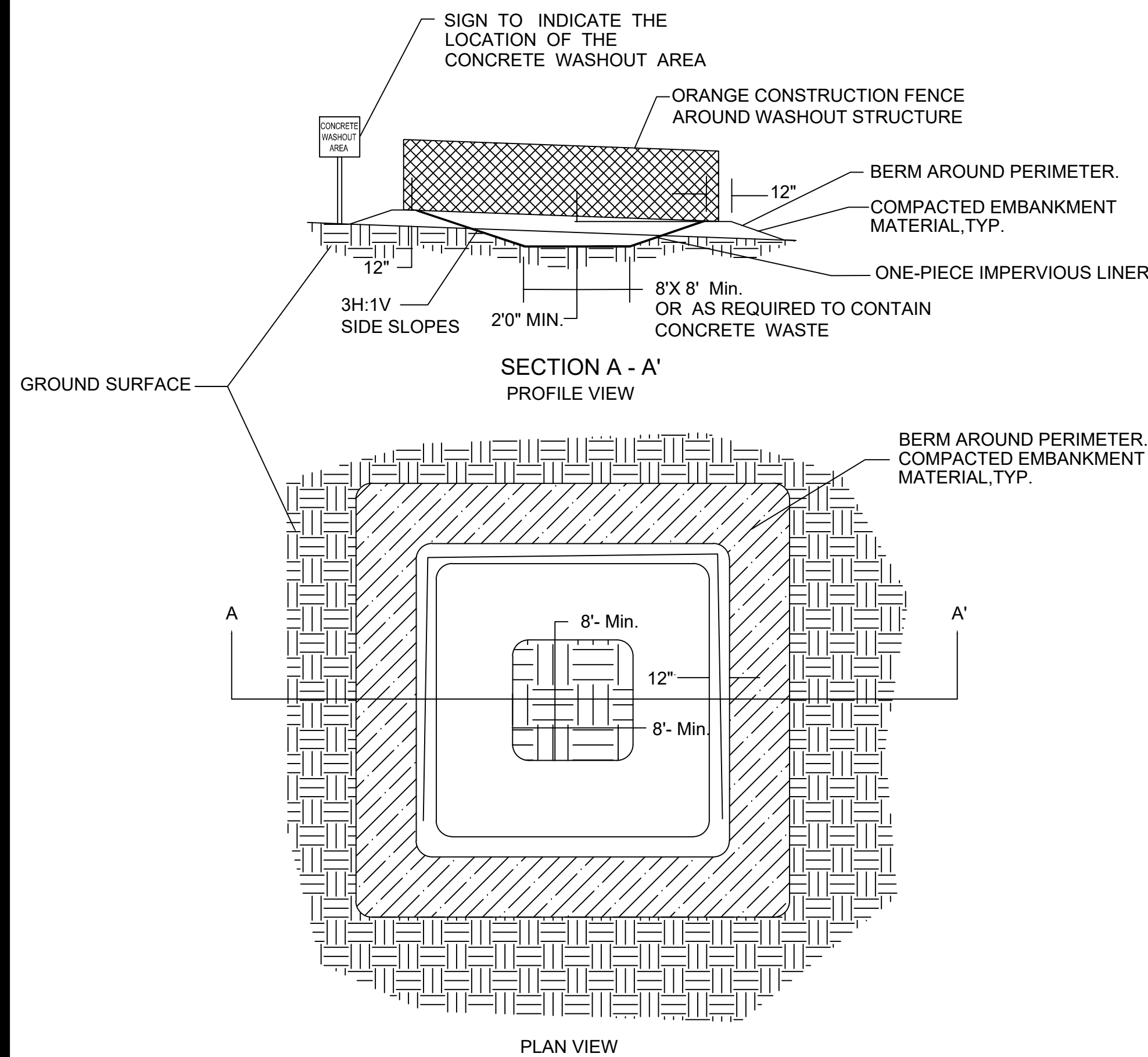
TEMPORARY ROCK CONSTRUCTION ENTRANCE
SCALE: NONE



SILT FENCE DETAIL - MACHINE SLICED
SCALE: NONE



INLET PROTECTION DETAIL - FABRIC
SCALE: NONE



- NOTES:
1. CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
 2. VEHICLE TRACKING CONTROL IS REQUIRED AT CONCRETE WASHOUT ENTRANCE IF ACCESS TO CONCRETE WASHOUT AREA IS OFF PAVEMENT
 3. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND/OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE.
 4. WASTE MATERIAL FROM CONCRETE WASHOUT OPERATIONS MUST BE REMOVED AND LEGALLY DISPOSED OF WHEN IT HAS ACCUMULATED TWO-THIRDS OF THE WET STORAGE CAPACITY OF THE STRUCTURE.
 5. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF AT AN APPROVED SITE.
 6. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER ACCEPTED BY THE ENGINEER.

CONCRETE WASHOUT AREA
NO SCALE

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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BRAINERD, MN

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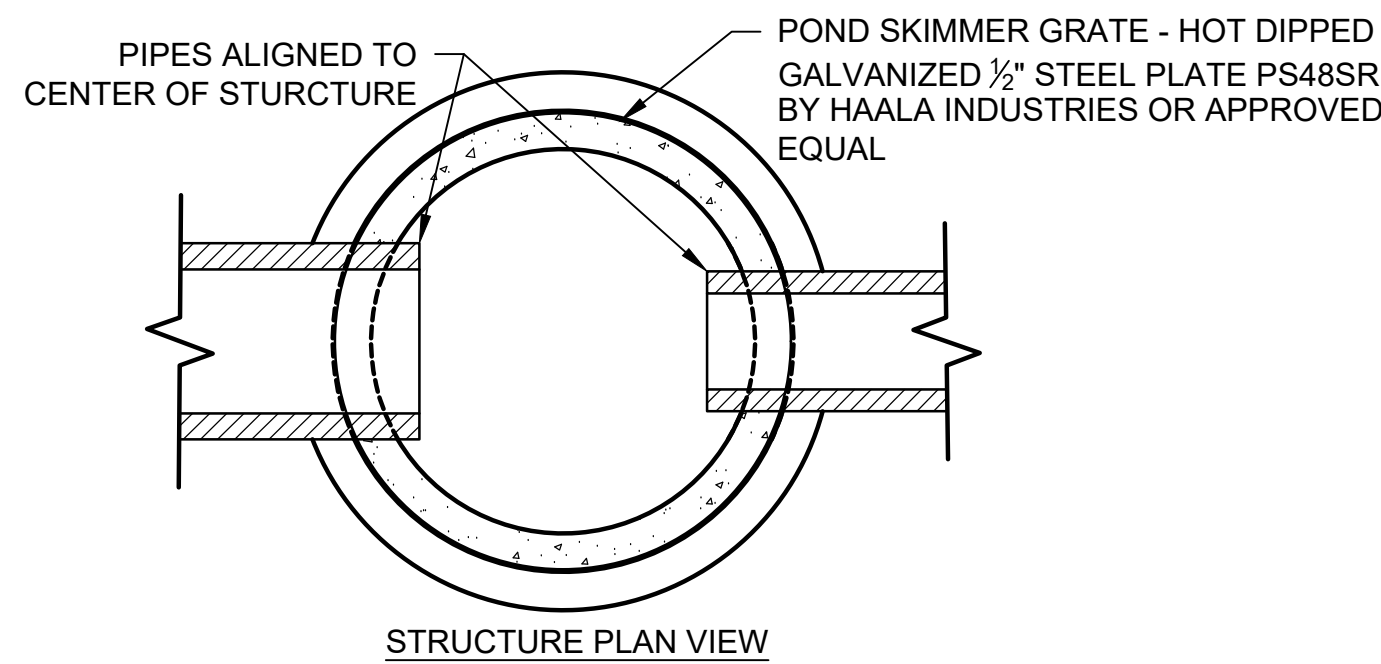
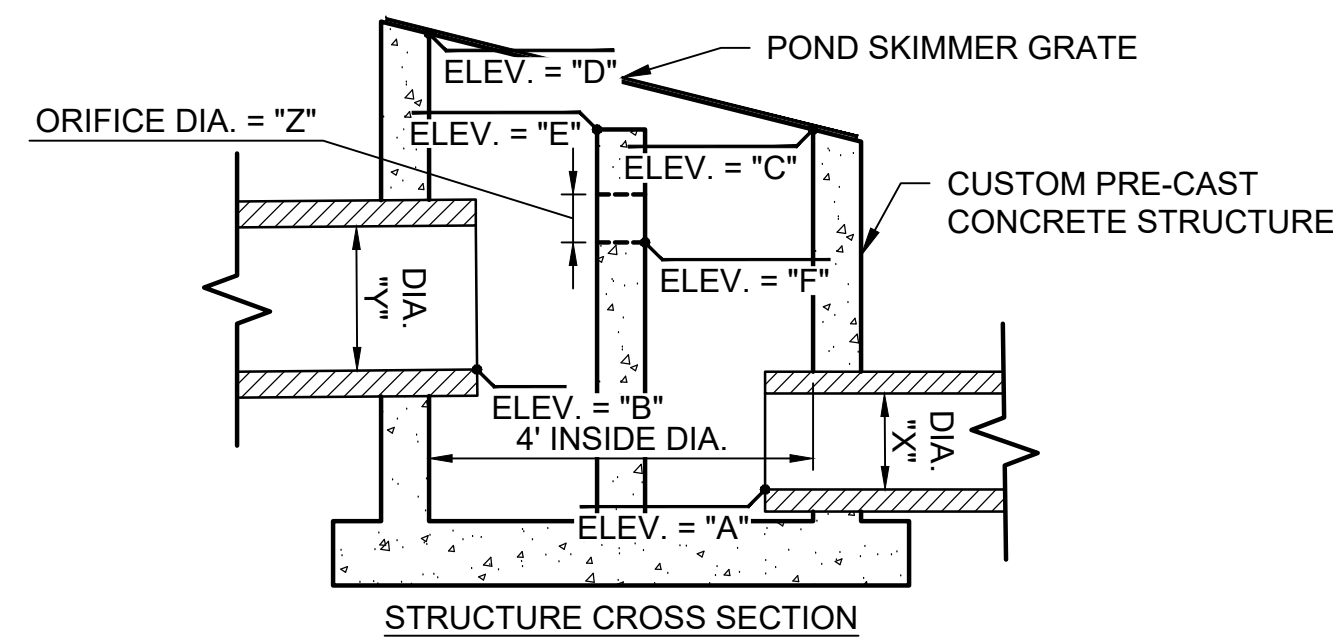
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the State of Minnesota.

Signature: _____
Printed Name: **TIMOTHY T. RAMERTH**
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

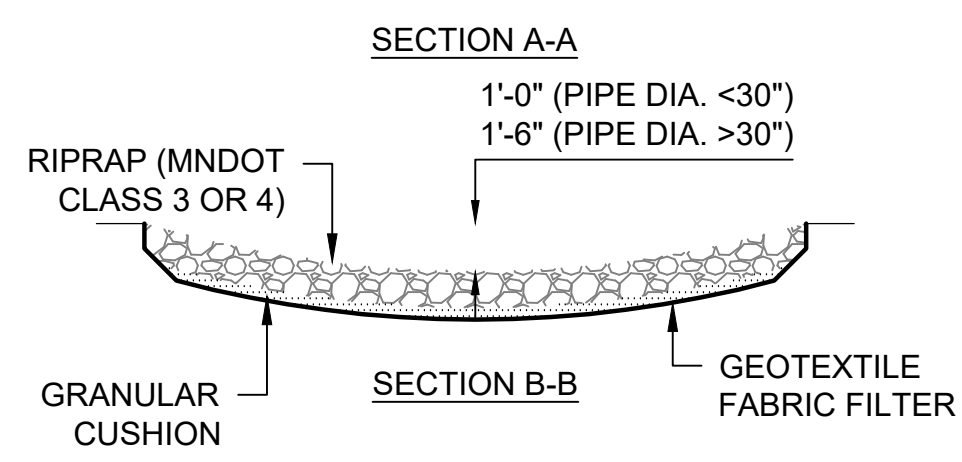
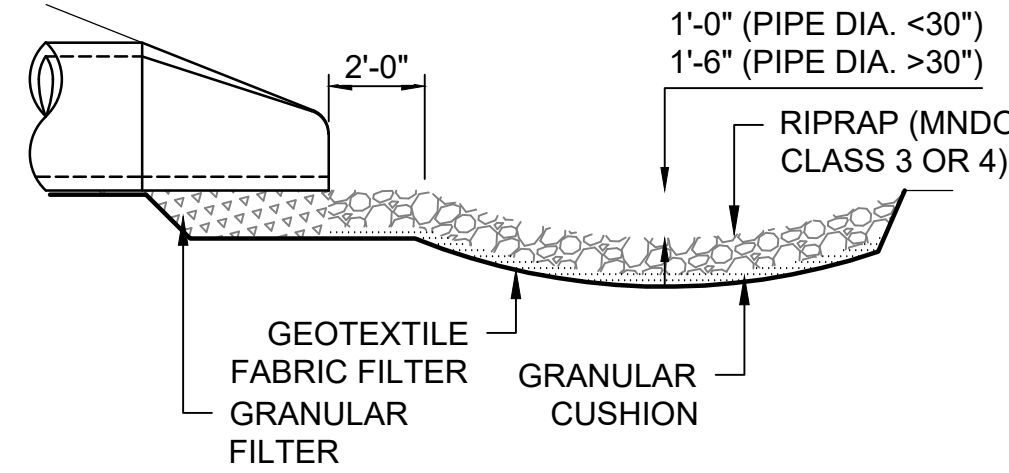
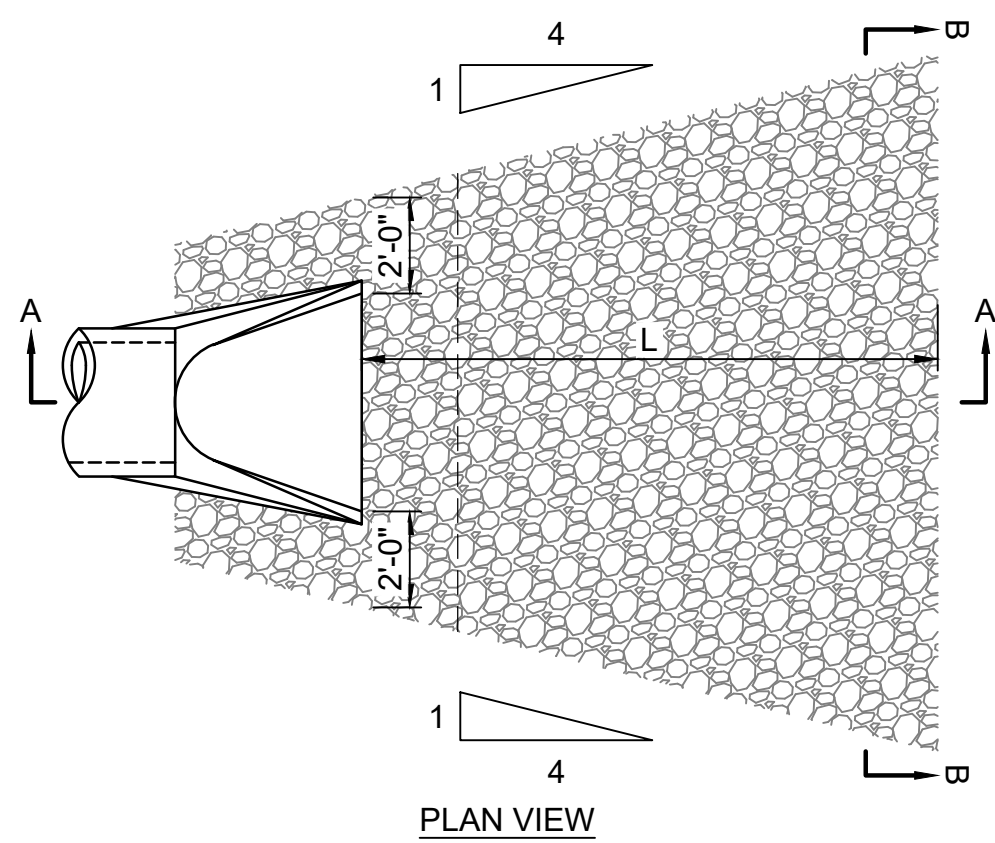
Sheet Title:
CIVIL DETAILS

Sheet Number:
C2.02



ITEM	SIZE OR ELEVATION	DESCRIPTION
A	1205.00	INLET PIPE INVERT ELEVATION
B	1208.00	OUTLET PIPE INVERT ELEVATION
C	1211.00	OVERFLOW STRUCTURE ELEVATION LOWER
D	NA	OVERFLOW STRUCTURE ELEVATION UPPER
E	NA	WEIR TOP ELEVATION
F	NA	ORIFICE BOTTOM ELEVATION
X	12"	INLET PIPE DIAMETER
Y	12"	OUTLET PIPE DIAMETER
Z	8"	ORIFICE DIAMETER

POND OUTLET CONTROL STRUCTURE W/ WEIR DETAIL
SCALE: NONE

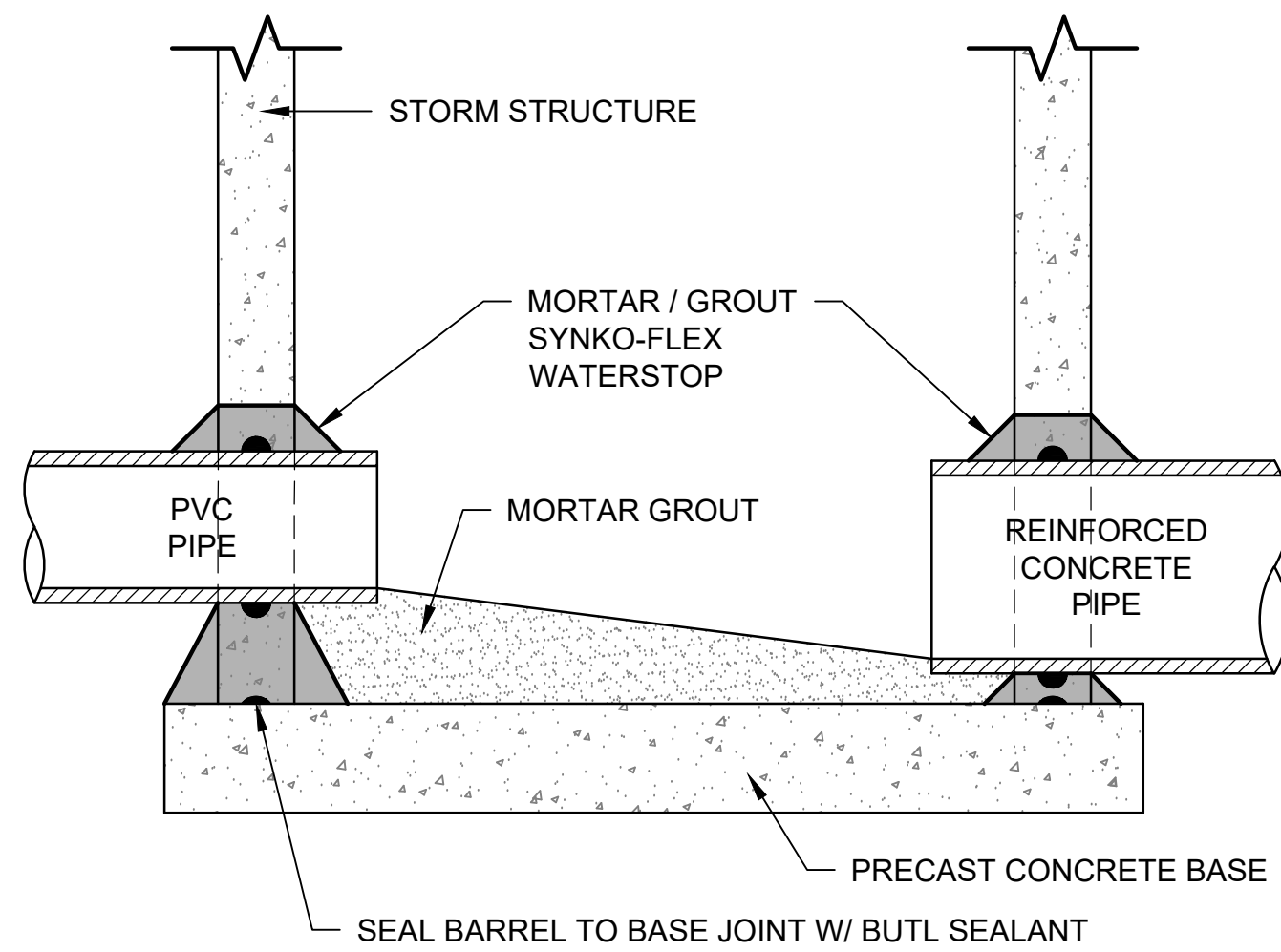


RIPRAP AT RCP OUTLETS DETAIL
SCALE: NONE

RIPRAP LENGTHS	
DIA. OF PIPE (IN.)	LENGTH OF RIPRAP (FT.)
12	8
15	8
18	10
21	10
24	12
27	12
30	14
36	16
42	18
48	20

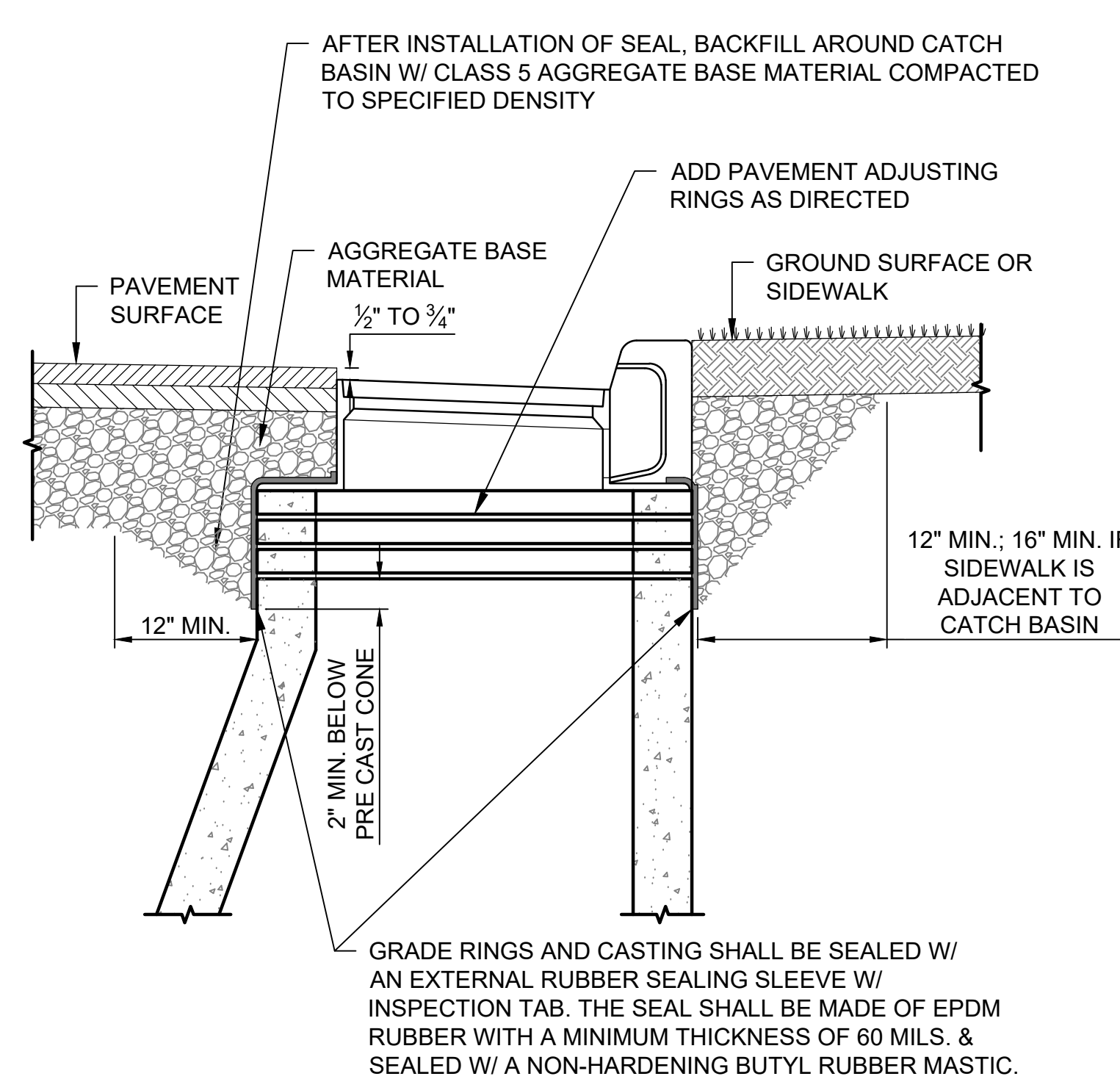
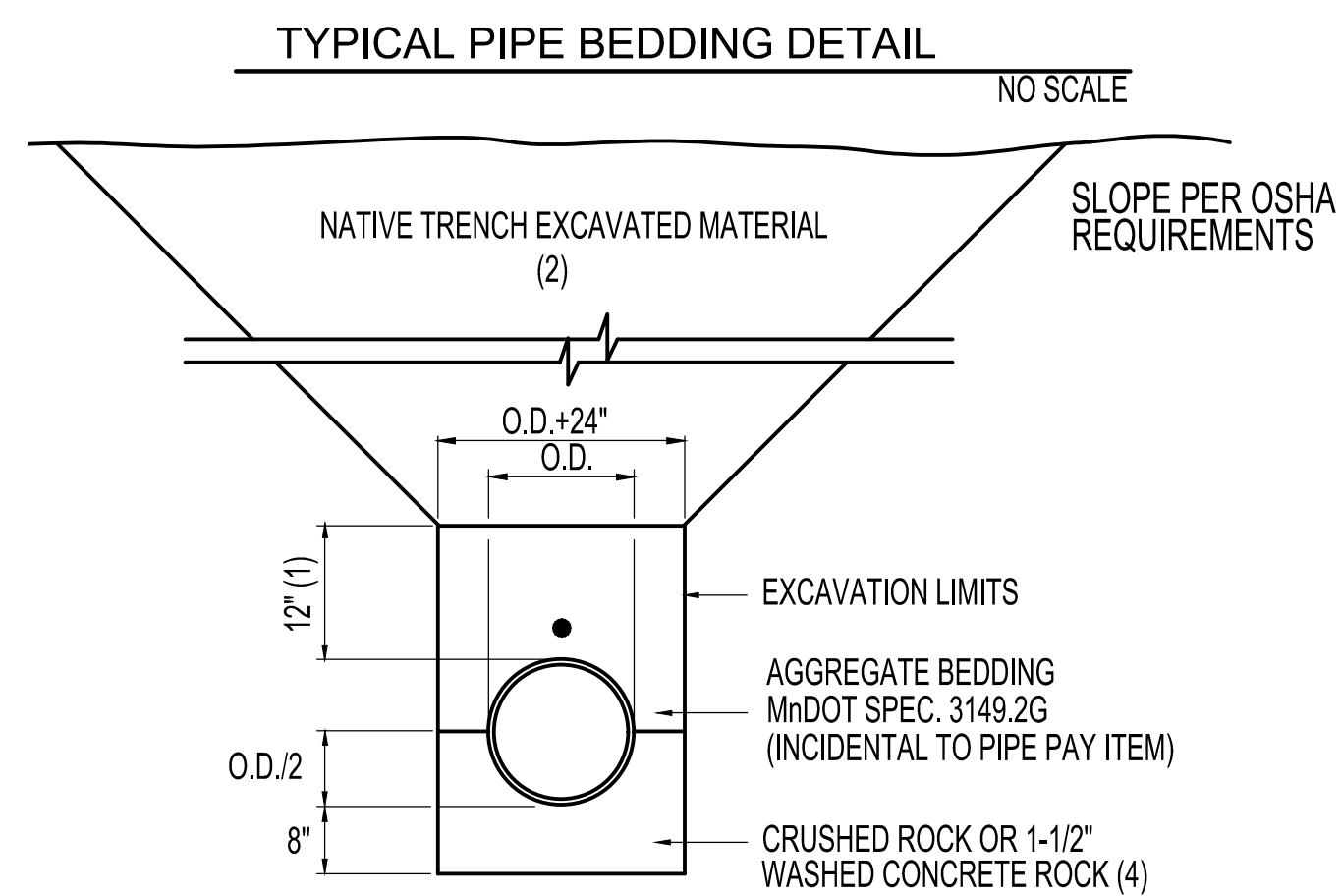
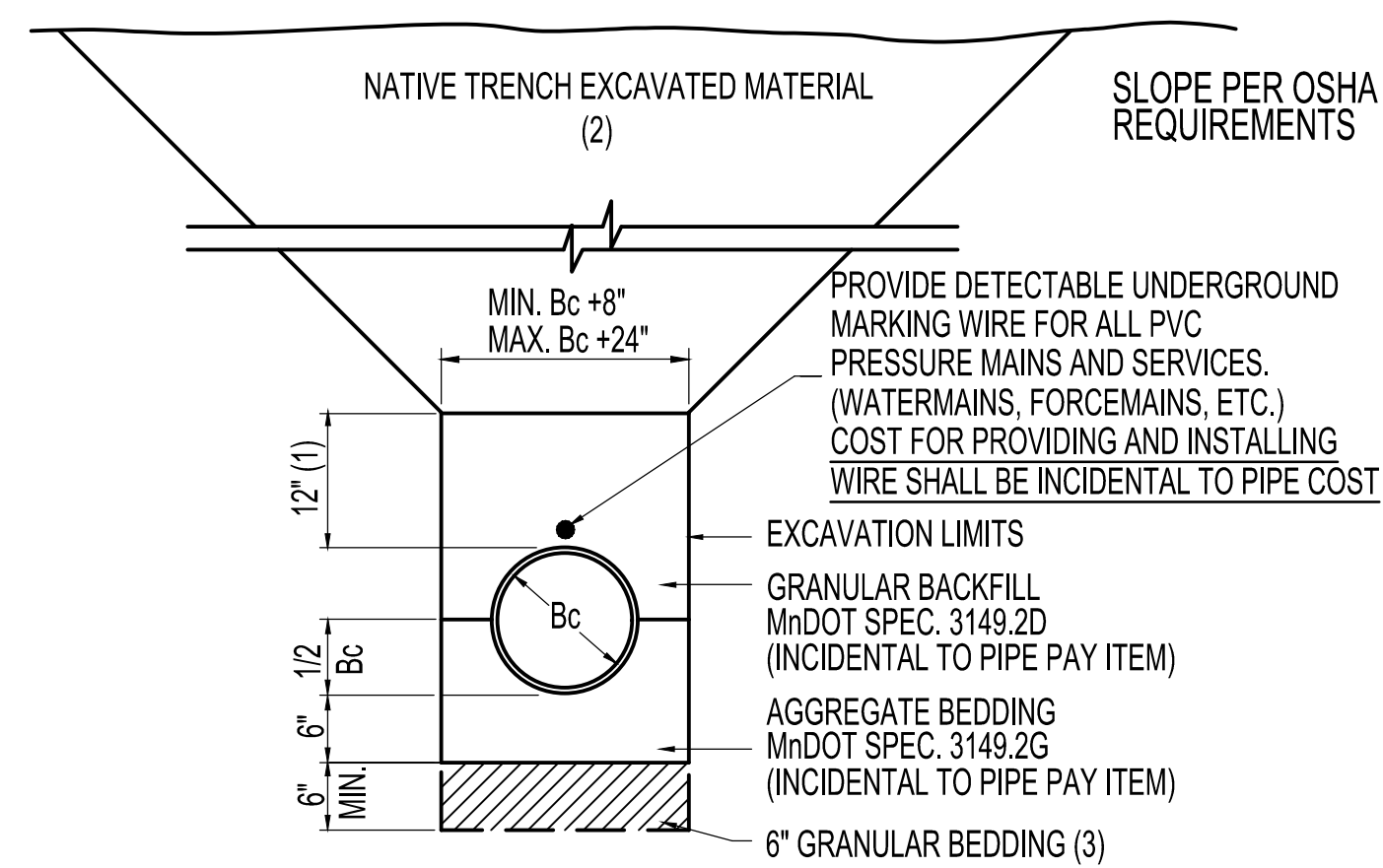
RIPRAP LENGTHS	
SPAN OF PIPE ARCH (IN.)	LENGTH OF RIPRAP (FT.)
22	10
28	12
36	14
43	16
51	18
58	20

- NOTES:
1. GEOTEXTILE FILTER, MNDOT SPEC. 3733, SHALL COVER THE BOTTOM & SIDES OF THE AREA EXCAVATED FOR THE RIPRAP, GRANULAR FILTER MATERIALS.
 2. GRANULAR FILTER, MNDOT SPEC. 3601, MAY BE USED AS A CUSHION LAYER, GRANULAR FILTER OR RIPRAP, MNDOT SPEC. 3601, TO EXTEND UNDER ENTIRE OPEN PORTION OF PIPE APRON. DEPTH OF MATERIAL UNDER APRON SHALL MATCH RIPRAP DEPTH.

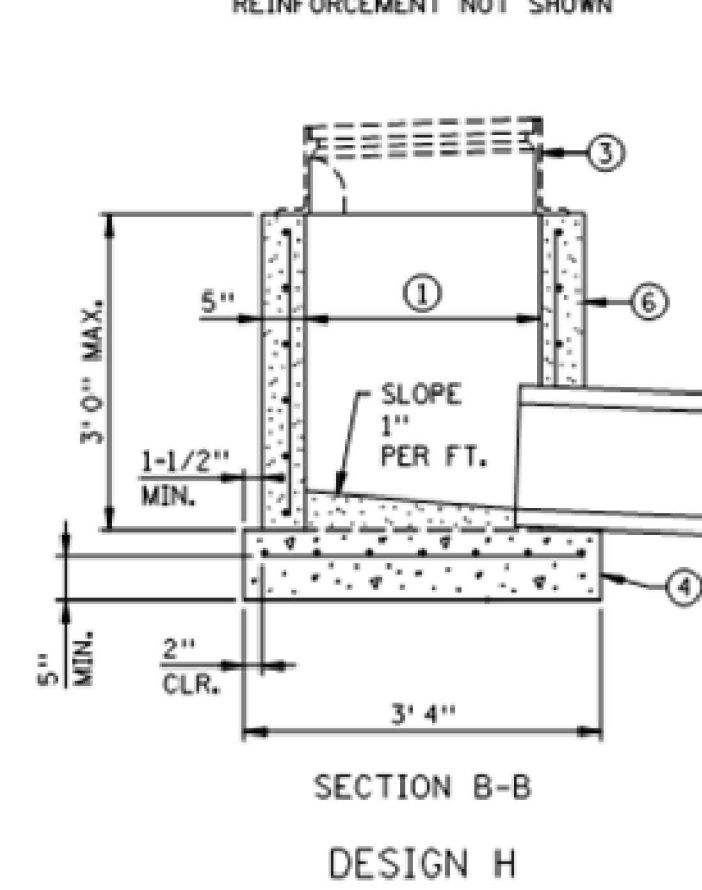
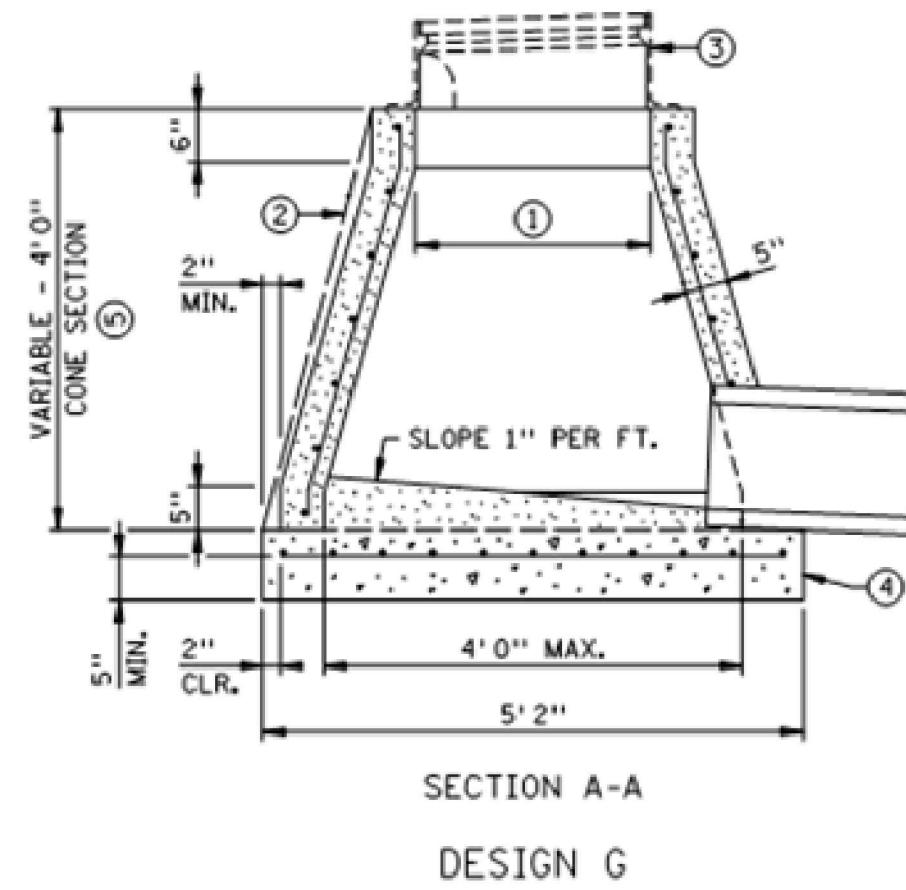
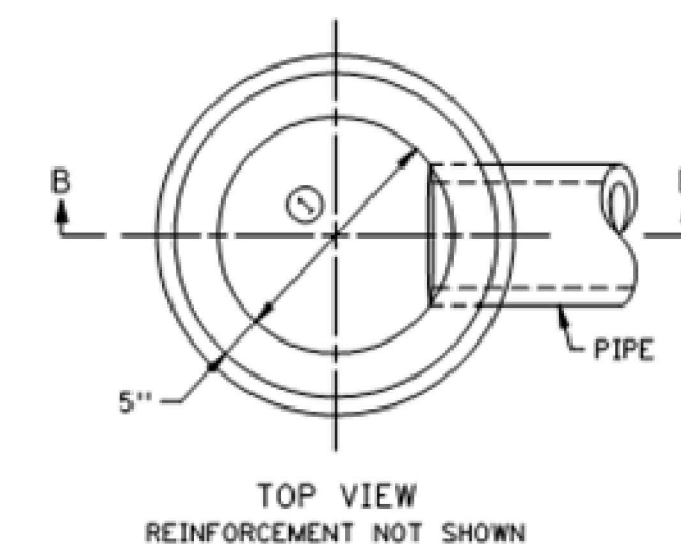
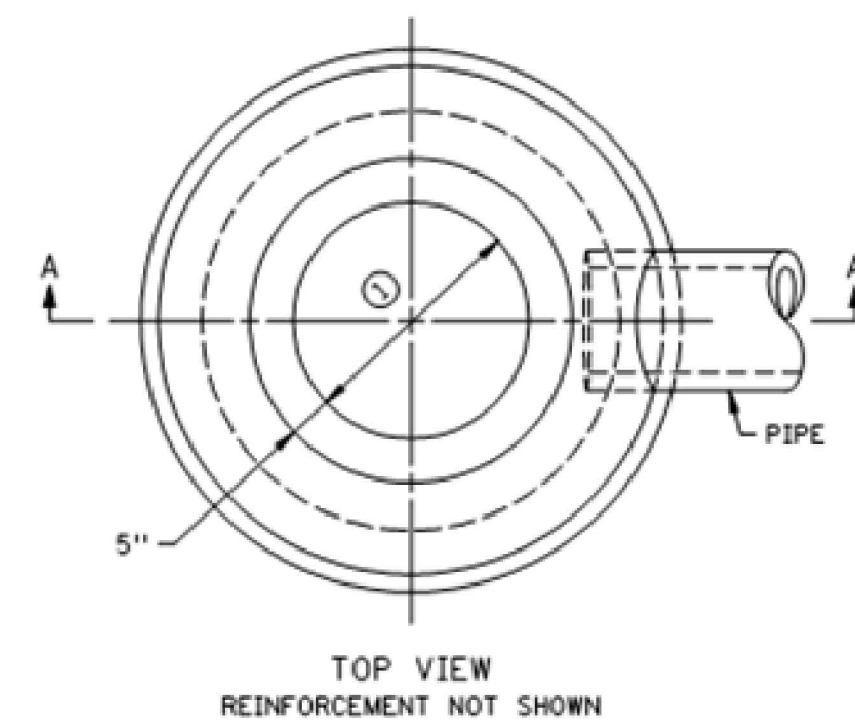


PIPE SEALING DETAIL
SCALE: NONE

- NOTES:
- (1) IF THIS DIMENSION DECREASES THE BEDDING CONDITIONS WILL CHANGE. A HIGHER LEVEL BEDDING CONDITION SHALL BE SOLELY AT THE CONTRACTOR'S EXPENSE.
 - (2) GRANULAR MATERIAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM.
 - (3) FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHOULD BE OVER EXCAVATED A MINIMUM OF 6" & REFILLED WITH GRANULAR MATERIAL. THIS ITEM WILL BE ELIGIBLE FOR EXTRA PAYMENT, IF REQUIRED.
 - (4) THIS PROCEDURE IS NOT INTENDED TO REPLACE DEWATERING SYSTEMS IN WET CONDITIONS.



ADJUSTING RING & SEAL DETAIL - STORM SEWER CATCH BASIN AT CURB
SCALE: NONE



- NOTES:
1. REINFORCING: SINGLE LINE STEEL WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ. IN. PER FOOT OF HEIGHT.
 2. 2" 3" NOM. OPENING. WHEN GRATE FRAME CASTING NO. 802A OR NO. 805 IS USED, SEE STANDARD PLATES CASTING LIST.
 3. A STRAIGHT TAPERED WALL IS ACCEPTABLE.
 4. REFER TO PLAN FOR CASTINGS REQUIRED. USE ADJUSTING RINGS WHERE NECESSARY. SEE STANDARD PLATES INDEX. CASTING AND PRECAST CONC. ADJUSTING RINGS, SHALL BE SET ON FULL MORTAR BEDS.
 5. 8 IN. POURED CONCRETE BASE. BASE REINFORCEMENT: 0.12 SQ. IN. PER FT. IN EACH DIRECTION. AN APPROVED ALTERNATE PRECAST CONCRETE BASE MAY BE USED.
 6. HEIGHT OF STRUCTURE MAY BE INCREASED UP TO 1 FT. BY THE USE OF A PRECAST SECTION OR CONCRETE BLOCK CONSTRUCTION ABOVE THE CONE SECTION. SEE STANDARD PLATE 4002 FOR BLOCK CONSTRUCTION.
 7. AS AN ALTERNATE, BRICK OR CONCRETE BLOCK MASONRY MAY BE USED. FOR MATERIALS & CONSTRUCTION METHODS, SEE STANDARD PLATE 4002. CONE SECTION DETAILS OF 4002 DO NOT APPLY.

DESIGN G
DESIGN H

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 SOUTH 5th STREET
BRAINERD, MN

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MARK	DATE	REVISION
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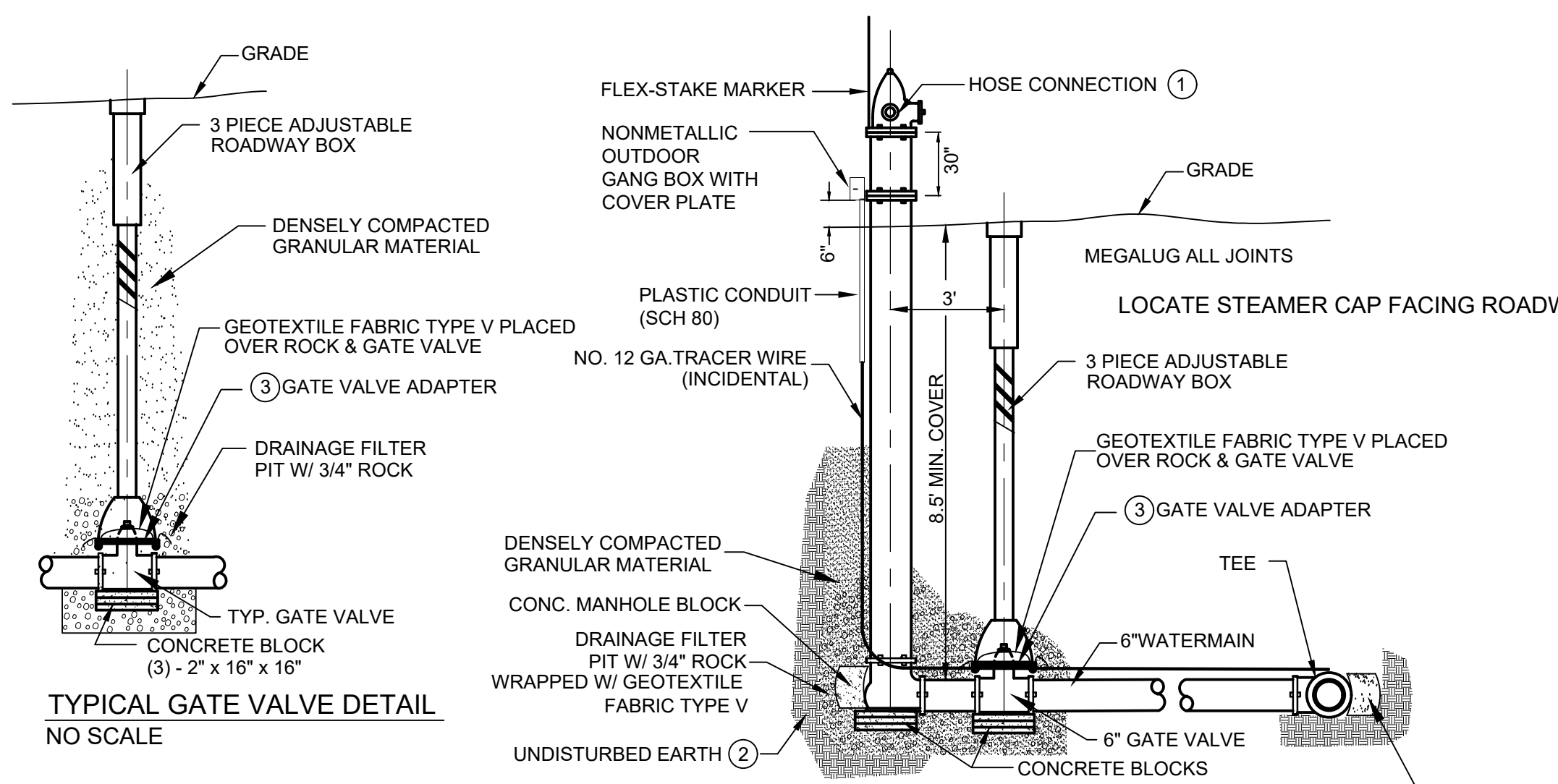
Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
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Date: MAY 2019
File Name:

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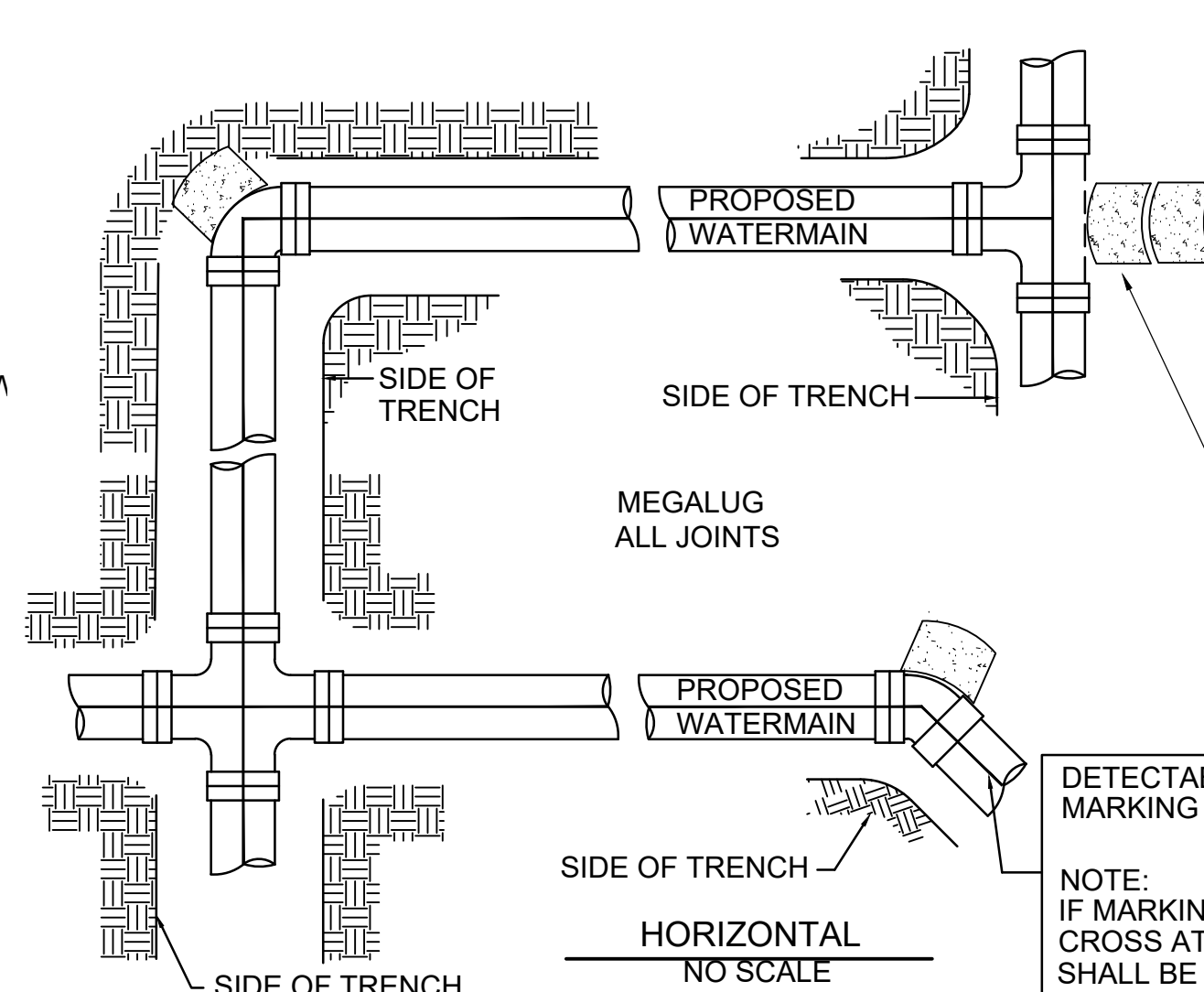
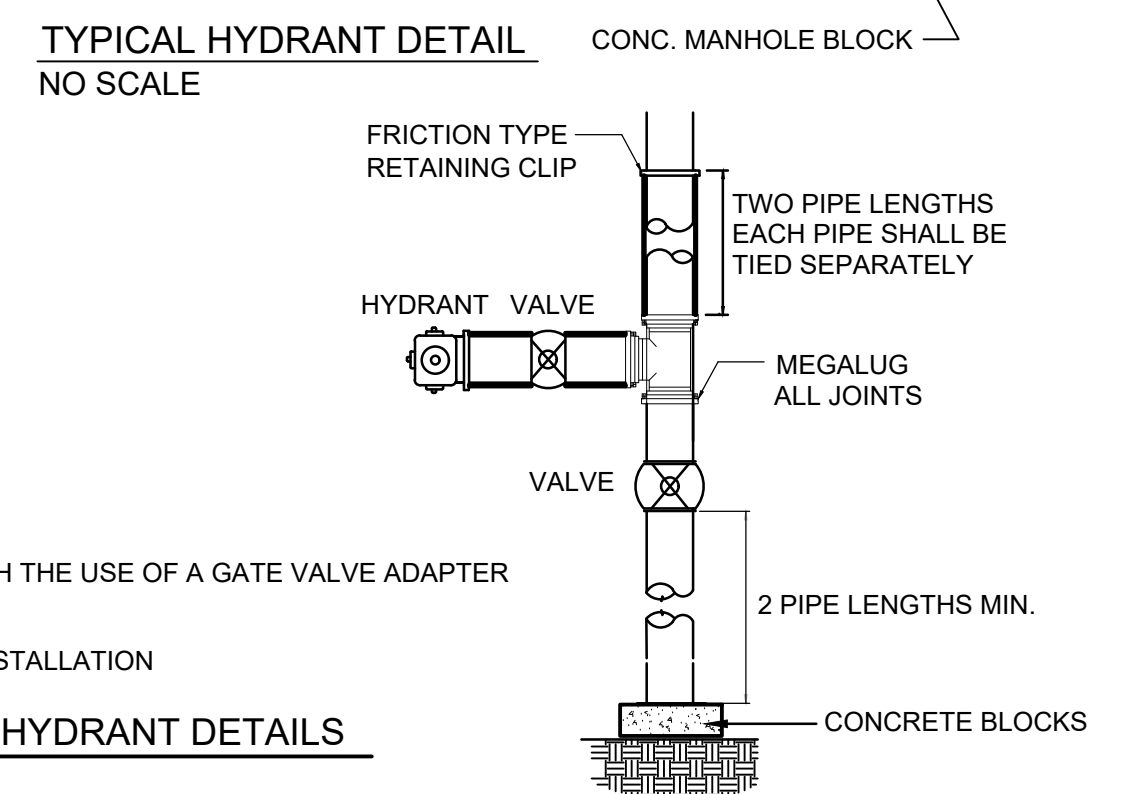
NOTES:

① VERIFY DIAMETER OF HOSE CONNECTIONS, PUMPER CONNECTION, OPERATING NUT SIZE AND SHAPE, AND CONNECTION THREADING WITH OWNER/FURNISH KEEPER CHAINS.

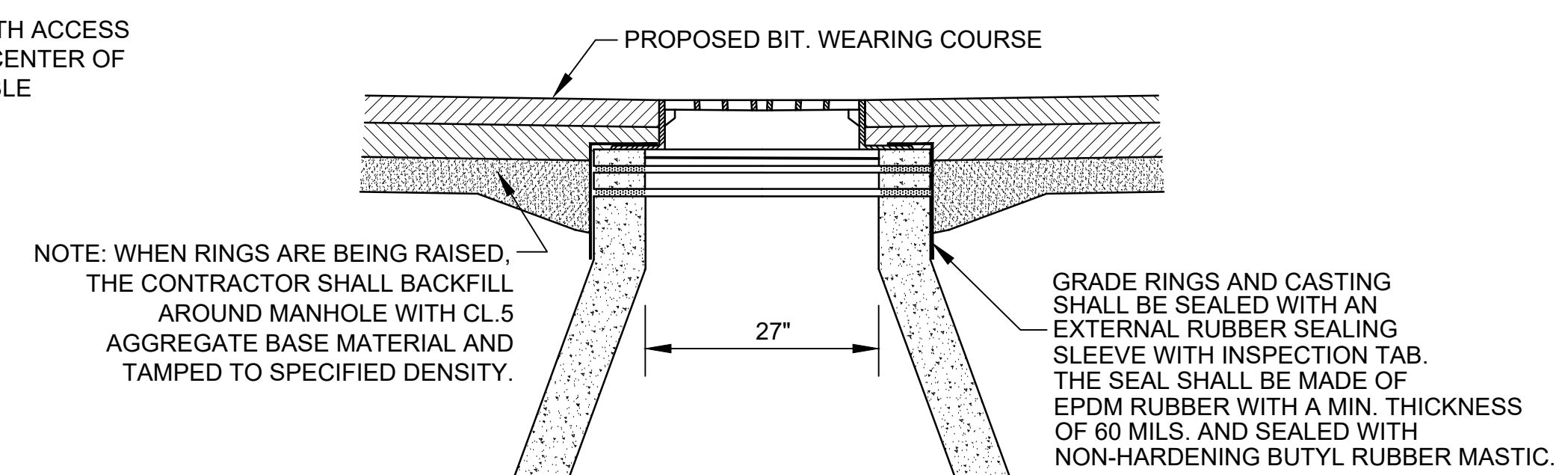
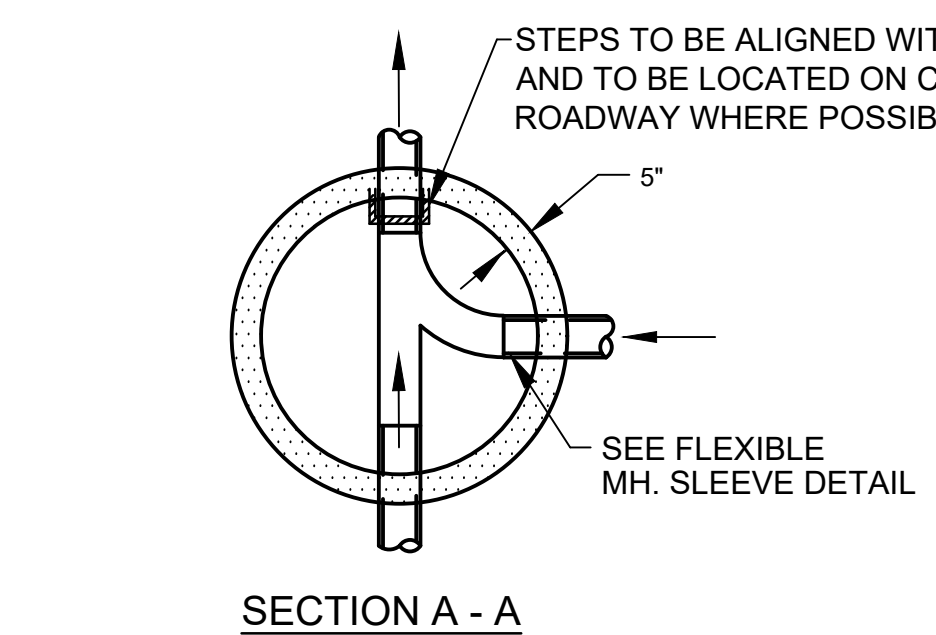
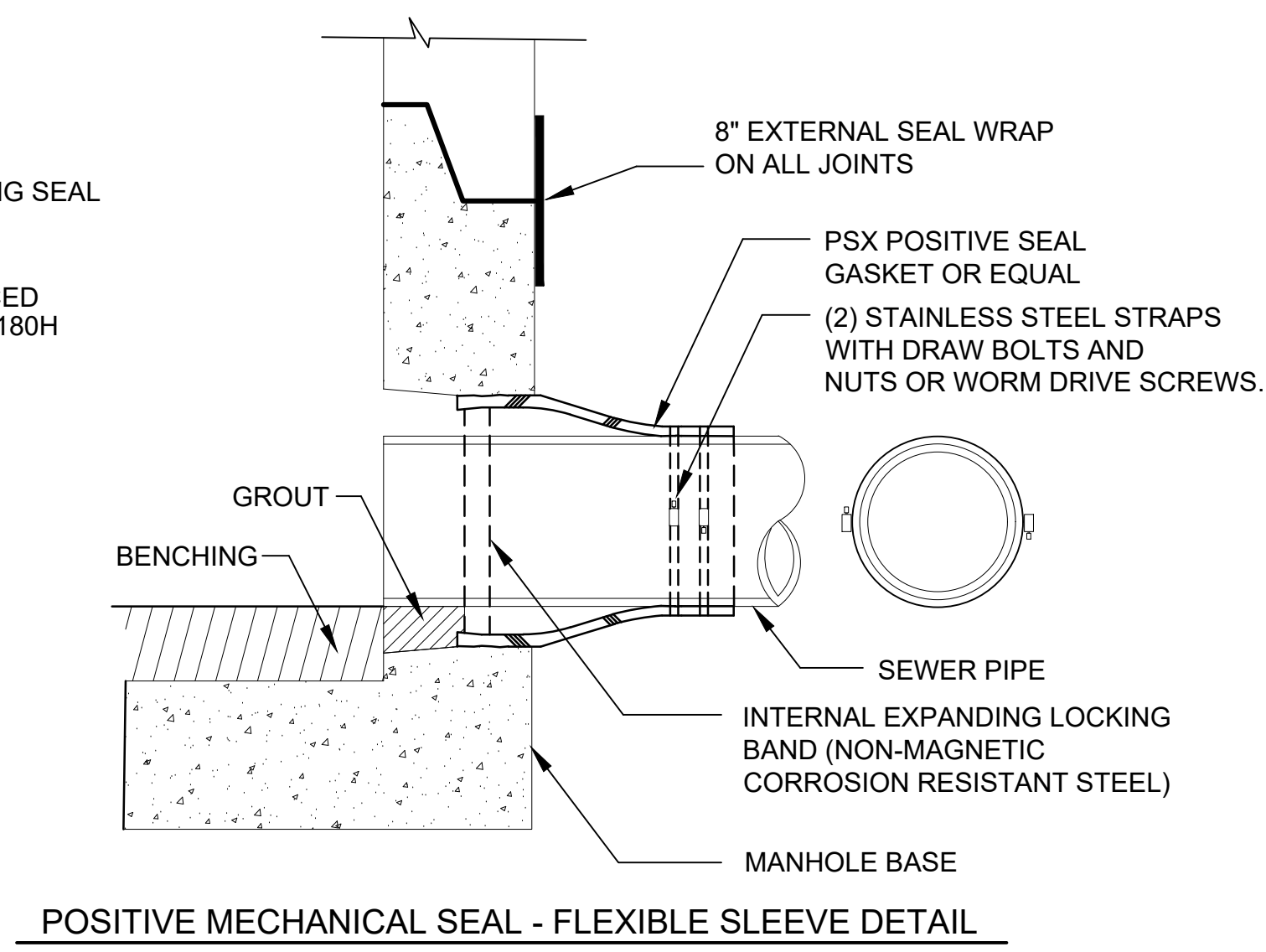
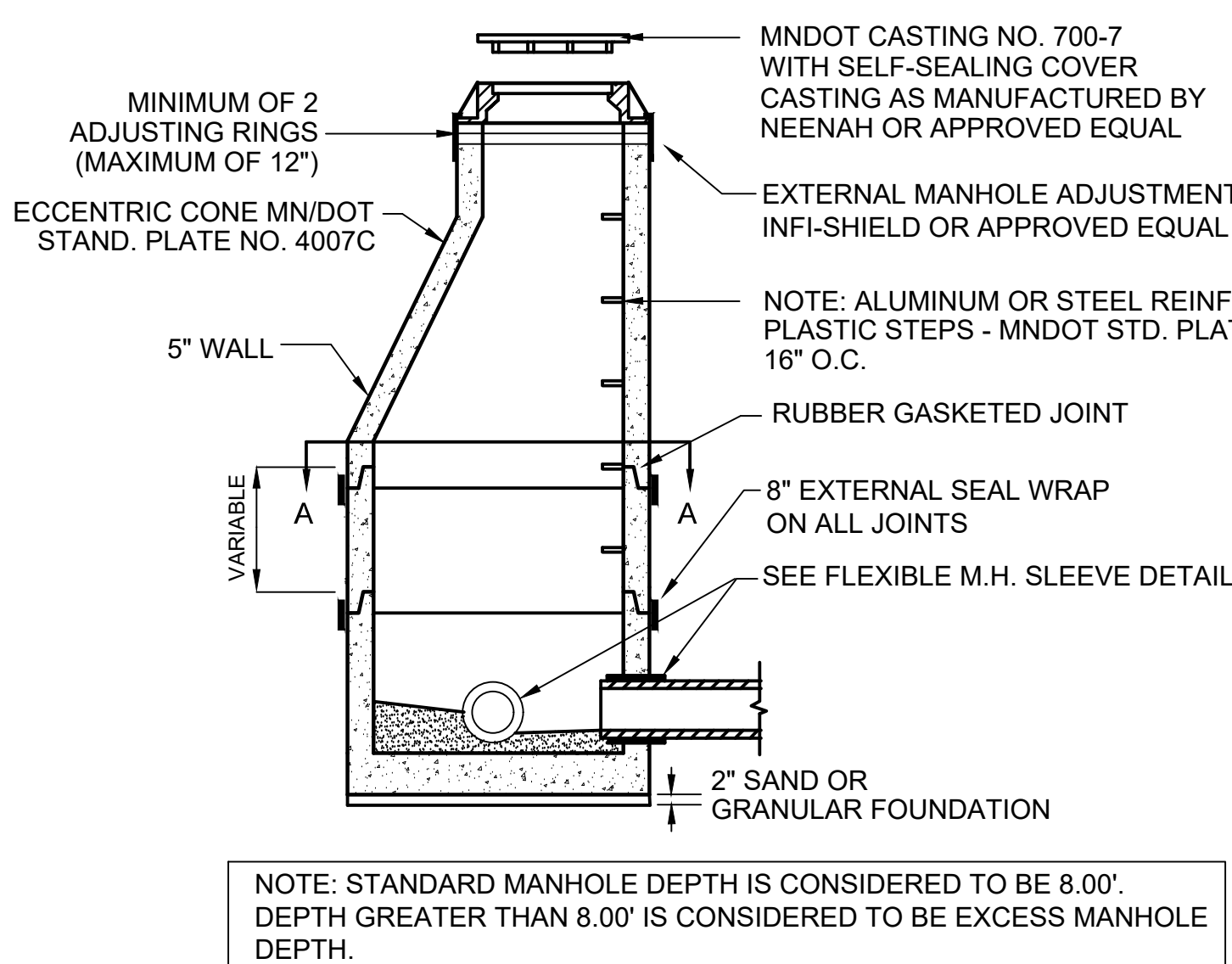
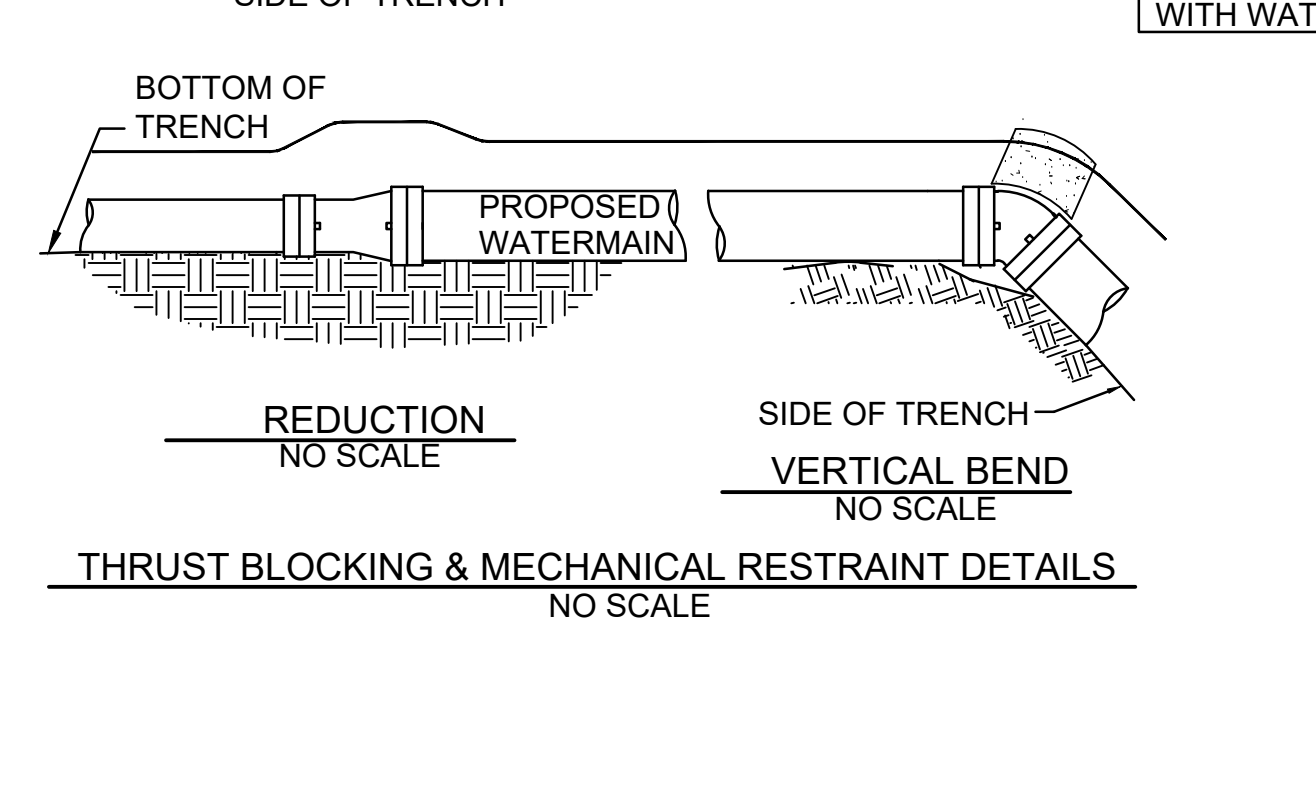
② IN IMPERVIOUS SOIL, SUCH AS CLAY, EXCAVATE A DRAINAGE PIT 2' IN DIAMETER, 3' IN DEPTH BELOW HYD BASE & FILL WITH FILTER AGGREGATE. COMPACT UNDER & AROUND HYD. BASE UP TO 6\"/>

③ ALL VALVE BOXES SHALL BE INSTALLED UPON THE GATE VALVE WITH THE USE OF A GATE VALVE ADAPTER AS MANUFACTURED BY ADAPTER INC. OR APPROVED EQUAL. THE GATE VALVE ADAPTER SHALL BE INCIDENTAL TO VALVE AND BOX INSTALLATION

TYPICAL HYDRANT & DEAD END HYDRANT DETAILS
NO SCALE

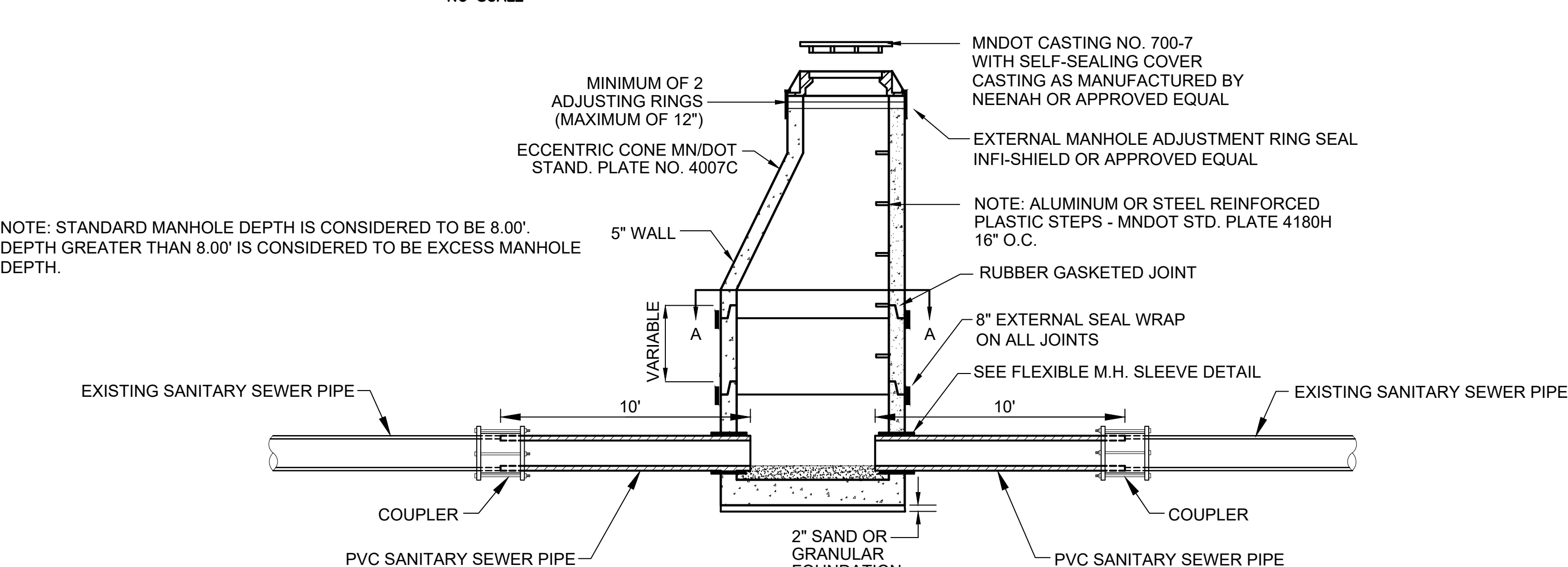


NOTE: IF MARKING WIRES CROSS AT ANY POINT, THEY SHALL BE CONNECTED TOGETHER WITH WATERPROOF CONNECTOR.



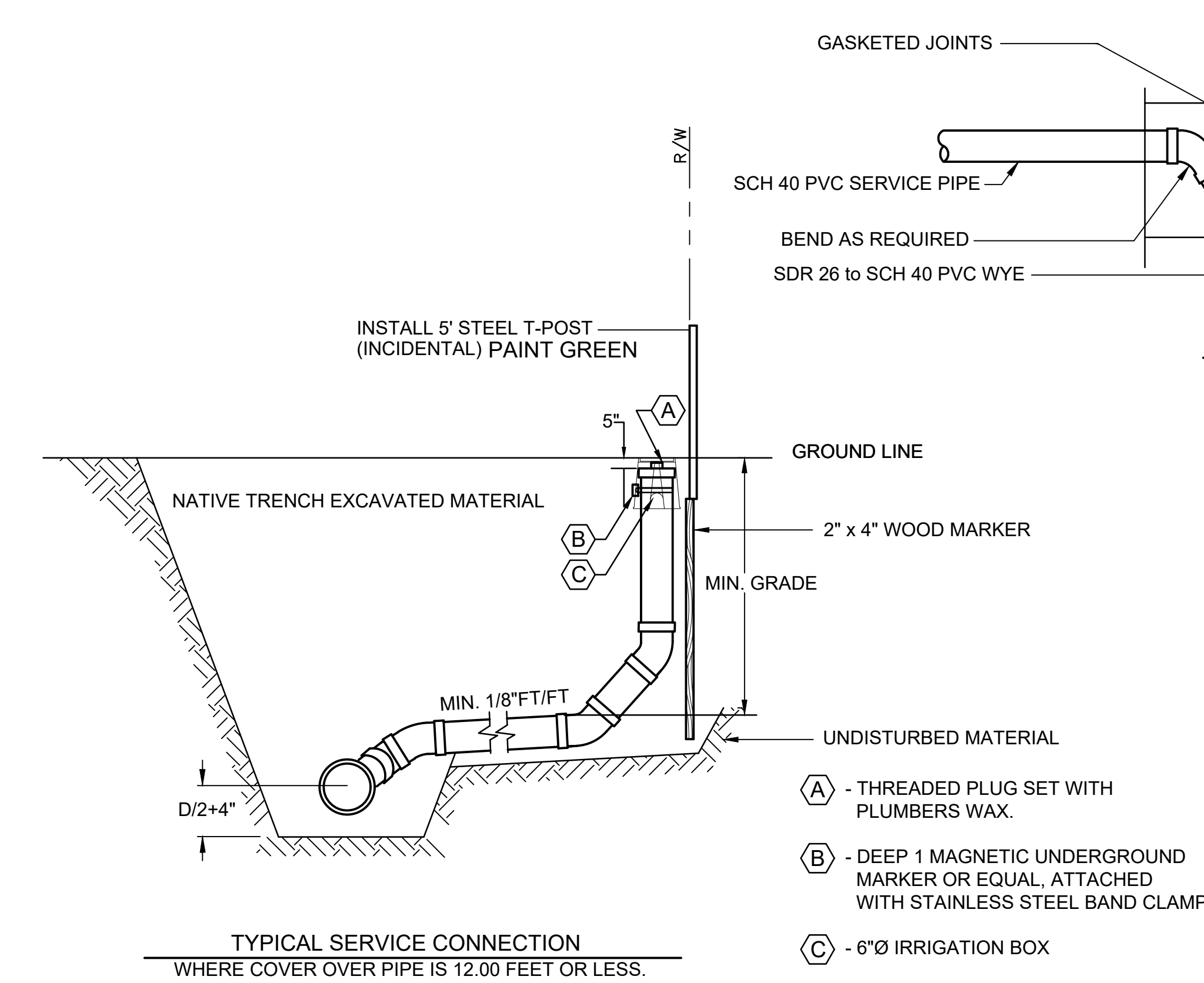
STANDARD PRECAST MANHOLE DETAIL
NO SCALE

SEALANT DETAIL
SANITARY SEWER MANHOLES - ROADWAYS

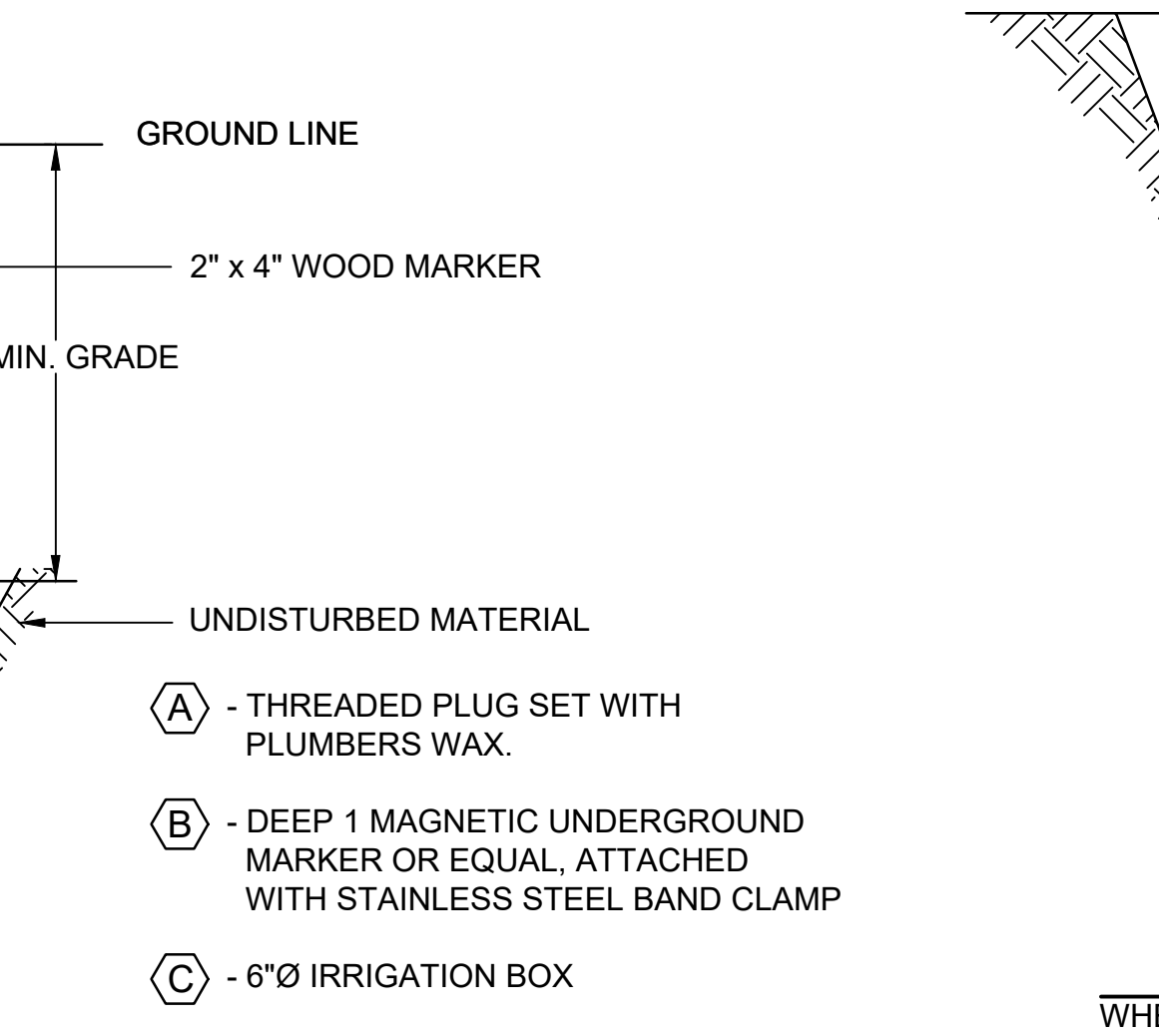
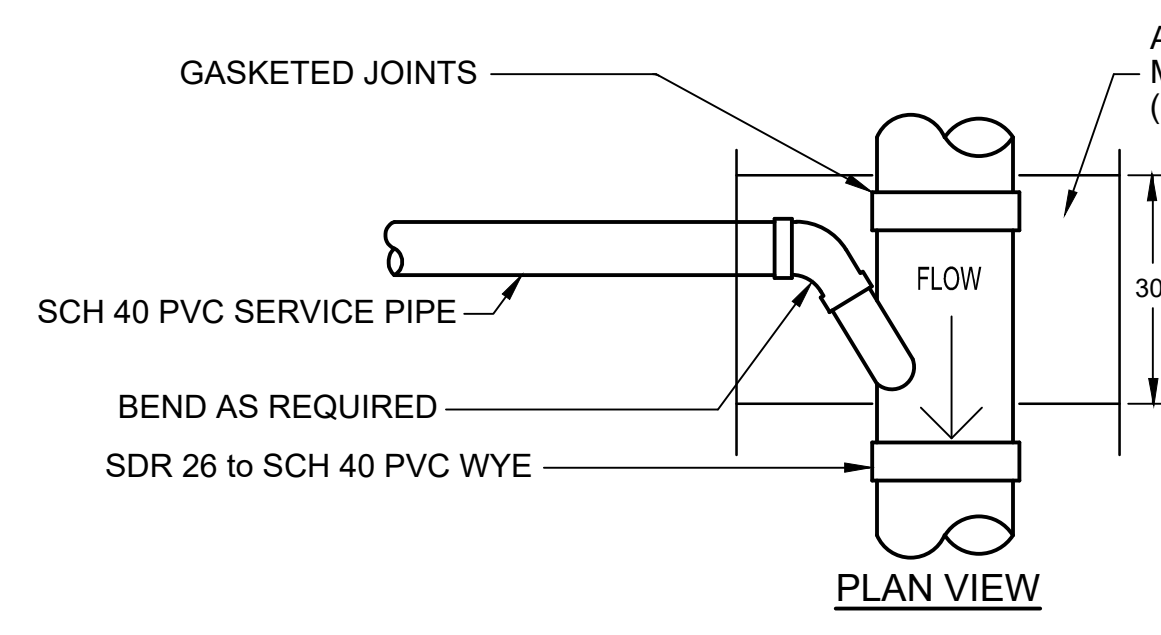


STANDARD PRECAST MANHOLE DETAIL - CONNECT TO EXISTING PIPES
NO SCALE

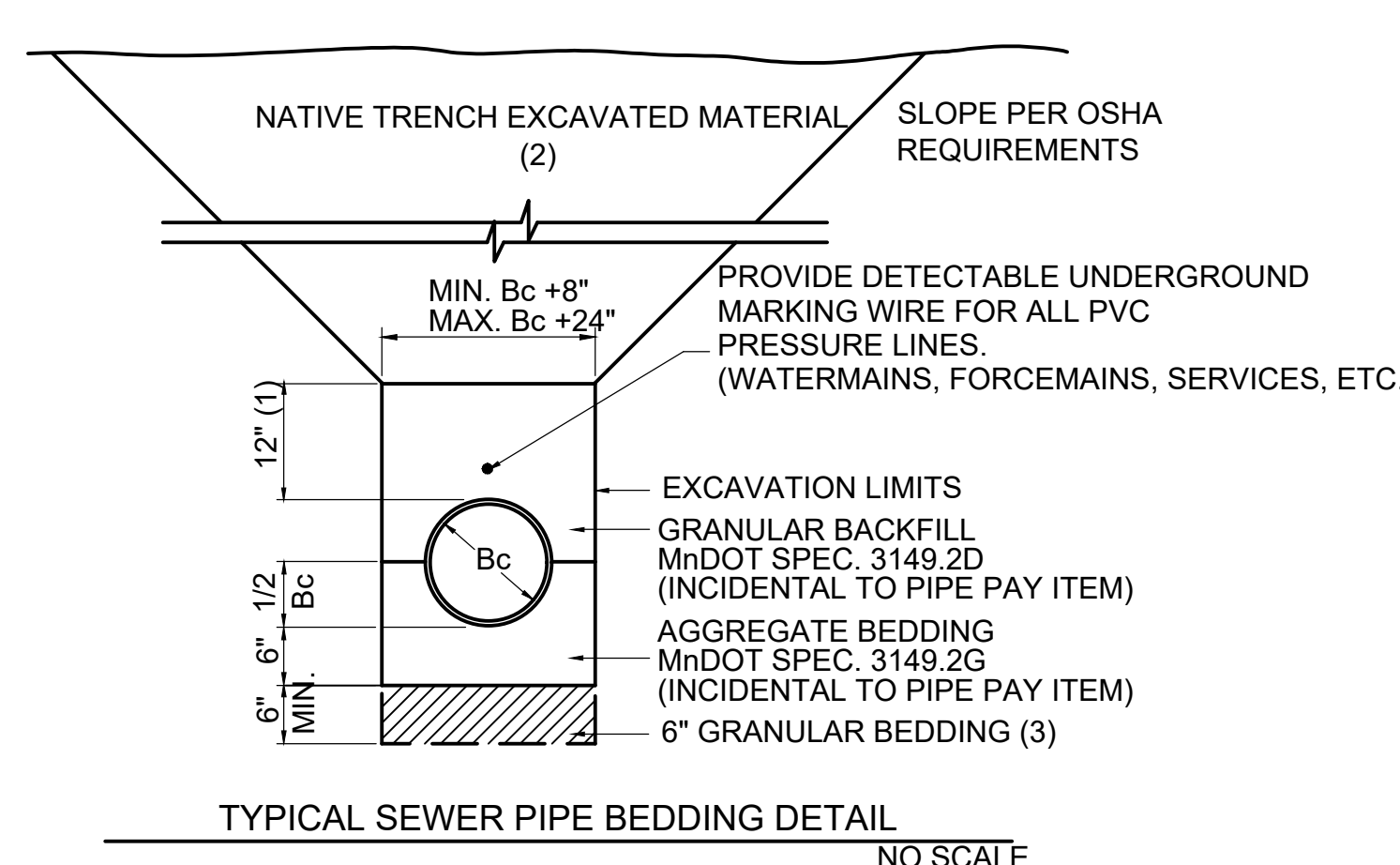
NOTE: THE STANDARD PRECAST MANHOLE - SPECIAL PAY ITEM SHALL INCLUDE ALL MATERIALS AND FITTINGS AS SHOWN IN THE DETAIL, EXCEPT FOR HDPE SANITARY SEWER PIPE.



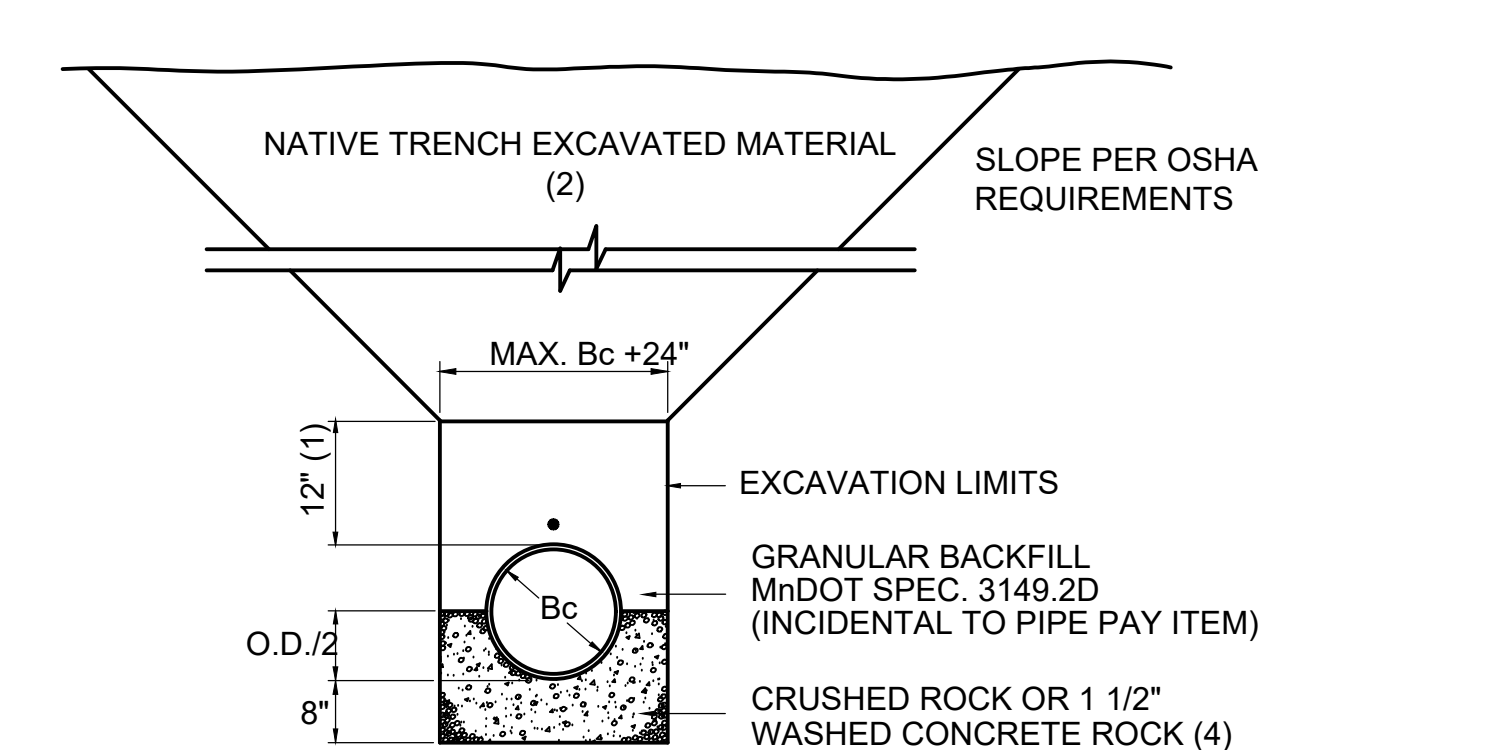
TYPICAL SERVICE CONNECTION
WHERE COVER OVER PIPE IS 12.00 FEET OR LESS.



TYPICAL SERVICE CONNECTION
WHERE COVER OVER PIPE IS GREATER THAN 12.00 FEET



TYPICAL SEWER PIPE BEDDING DETAIL
NO SCALE



SPECIAL PIPE BEDDING DETAIL FOR
TRENCH STABILIZATION WHERE REQUIRED
NO SCALE

NOTES:

- IF THIS DIMENSION DECREASES THE BEDDING CONDITIONS WILL CHANGE. A HIGHER LEVEL BEDDING CONDITION SHALL BE SOLELY AT THE CONTRACTOR'S EXPENSE.
- IN AREAS WHERE EXISTING MATERIAL IS NOT SUITABLE AS BACKFILL, THE ENGINEER MAY DIRECT THE PLACEMENT OF GRANULAR BACKFILL. GRANULAR BACKFILL WILL BE PAID AND MEASURED AS GRANULAR BACKFILL (LV). DISPOSAL OF EXCESS EXCAVATED MATERIAL SHALL BE CONSIDERED INCIDENTAL TO GRANULAR BACKFILL (LV).
- FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHOULD BE OVER EXCAVATED A MINIMUM OF 6\"/>

Project Name:



BRainerd HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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BRainerd, MN

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Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
CIVIL DETAILS

Sheet Number:

C2.04

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE:

Project Location:

Brainerd High School is an existing school facility located North West of the intersection of South 5th St and Quince St in Brainerd, Minnesota. A site location map has been provided detailing the location of the proposed improvements

Existing Site Description:

The site consists of a school, bituminous parking surface, concrete walks, sports fields and surfacing, and grass. The school property is accessed by South 5th St and Quince St. The site currently drains in all directions into City storm sewer system and a stormwater basin located near the sports fields.

Proposed Site Description:

The proposed improvements consist of multiple additions to the main building, new sidewalks, additional parking for students and staff and a stormwater basin. The property is approximately 67.4 acres in size and maintains approximately 25.5 acres of that in impervious surface coverage. There will be residential houses removed along with the Lincoln Education Center. Under the proposed conditions, the site will maintain approximately 26 acres of impervious surface coverage. The total area of impervious surface will increase; therefore, stormwater treatment is required from an NPDES standpoint. The City of Brainerd has stormwater regulations that require stormwater treatment for the proposed improvements. The existing infiltration basin will be modified to accommodate the proposed conditions along with the addition of a new stormwater basin on the east side of the site for accommodating the necessary stormwater treatment required by the City of Brainerd. The infiltration basin has been maximized to the extent possible and will retain a runoff volume equivalent to 3.81" of runoff from the contributing drainage area or 1" of runoff from 0.5 acres of impervious surfaces. The runoff estimates are based on Atlas 14 rainfall data. A stormwater management plan has been developed and is available upon request and shall be considered part of this SWPPP. The total land disturbance will be approximately 17.0 acres.

The more than 10 acres of disturbed area will not be draining to one point on the site, therefore, temporary sediment control basins are not needed.

The proposed site consists of Graycalm Loamy Sand, Lougee-Barber-Guida Complex, and Zimmerman-Urban Land Complex. The existing and proposed drainage areas will be altered by the proposed development and onsite stormwater infiltration will be utilized to offset the increased impervious surface, based on City stormwater regulations. Only small modifications will be incorporated to the interior drainage area boundaries to maximize the amount of runoff that will be directed to the infiltration basin constructed..

Runoff is will be pretreated prior to entering the infiltration basin, as it will be directed to a grass buffer around the infiltration basin or it will be directed across a vegetated filter strip prior to entering the infiltration basin.

Receiving Waters:

Water Body ID	Water Body Name	Type	Special Water	Impaired Water
N/A	Little Buffalo Creek River		N	Y

Dates of Construction:

The project will be started Spring 2019, with construction being completed in Fall 2020.

Contact Information:

Owner:

ISD 181
[Contact] TBD
[Address]
[City, State Zip]
[Email]
[Phone]

Contractor:

[Company] TBD
[Contact]
[Address]
[City, State Zip]
[Email]
[Phone]

Estimated Erosion Prevention and Sediment Control Quantities

Item	Estimated Quantity
Stabilized Construction Entrances	6 EA
Seeding	2 AC

Dewatering:

It is anticipated that dewatering will be required during portions of the utility installation. The discharge for dewatering can be directed to the stormwater ponds, but measures shall be taken so that erosion does not occur at the discharge of the dewater pipe. The water shall be conveyed to the pond in a non-erosive manner and shall have minimal potential for erosion.

Total disturbed area within project areas are as follows:

Project Disturbed Area =	17 AC
Existing Impervious =	25.5 AC
Proposed Impervious Area =	26.0 AC
Temporary Seeding =	17 AC

Unique Storm Water Management Features

There are no special or impaired waters within one mile of the project site will receive stormwater runoff.

TMDL Implementation Plans Containing Storm Water Requirements

No TMDL Implementation Plans currently exist for the receiving waters on this project.

Long Term Maintenance

The Contractor must identify an Erosion Control Supervisor (ECS) who is knowledgeable and experienced in the application of erosion and sediment control Best Management Practices (BMP's). The ECS must work with the Contractor to oversee and implement the SWPPP, and the installation, inspection, and maintenance of erosion and sediment control BMP's before, during and after construction. The Contractor/ECS is required to comply with the training requirements in 2018 Permit Reference 21 of the NPDES Permit. The permittee(s) shall ensure that employees are properly trained in the following areas with certification proof provided at the pre-construction conference.

Erosion Control Supervisor Requirements

The Contractor must identify an Erosion Control Supervisor (ECS) who is knowledgeable and experienced in the application of erosion and sediment control Best Management Practices (BMP's). The ECS must work with the Contractor to oversee and implement the SWPPP, and the installation, inspection, and maintenance of erosion and sediment control BMP's before, during and after construction. The Contractor/ECS is required to comply with the training requirements in Part III.A of the NPDES Permit. The permittee(s) shall ensure that employees are properly trained in the following areas with certification proof provided at the pre-construction conference.

SWPPP Preparation:

Name: Timothy T. Ramerth

Dates of instruction and training specifics are on file at Widseth Smith Nolting & Associates, Inc. and are available upon request.

Site Manager:

Name: _____
Dates of Training: _____
Instructors Name providing Training: _____
Content of Training (incl. hours): _____

BMP Installer:

Name: _____
Dates of Training: _____
Instructors Name providing Training: _____
Content of Training (incl. hours): _____

The Contractor/ECS shall develop a chain of responsibility with all operators on the site to ensure that the SWPPP will be implemented and stay in effect until the project site has undergone Final Stabilization in accordance with Part IV.G of the NPDES Permit and a Notice of Termination (NOT) has been submitted to the MPCA in accordance with Part I.C of the NPDES Permit. The Contractor/ECS must routinely inspect the entire construction site at least

once every seven days during active construction and within 24 hours after a rainfall event greater than 0.5 inch in 24 hours. The Contractor shall take action to eliminate any deficiencies found during these inspections and contact the MPCA if contaminated stormwater has reached any surface water. The Contractor must provide 2 rain gauges to be installed on the construction site. Inspections, maintenance and documentation must be in accordance with the NPDES Permit Part IV.E. See Part II.D of the NPDES Permit for record retention requirements. Copies of the inspection records are to be submitted to the Engineer.

The Contractor/ECS must amend the SWPPP as necessary to include additional requirements, such as additional or modified BMP's, designed to correct problems or address situations in accordance with Part III.A.5 of the NPDES Permit.

Individual Site Plans will be required by the E.C. Supervisor as deemed necessary. Refer to MnDot 1717.

A daily inspection log will be required by the E.C. Supervisor of all sediment, erosion and materials on site (ie: chemicals, etc.). This log shall be presented daily to the observer on site and kept current.

The E.C. Supervisor shall provide an inlet staging schedule and protection plan for the entire project. This plan and schedule shall be presented to the engineer at the pre-construction conference. Minimum requirements of the plan and schedule shall include:

- date of proposed inlet protection device installation
- protection device utilized
- estimated duration of device in operation
- schedule of subsequent devices that will be utilized for inlet protection

The Contractor shall have a petroleum release plan and shall have all necessary materials on hand to implement the plan. All employees shall be trained in implementation of the plan. The MPCA shall be informed of any petroleum spills.

STORM WATER POLLUTION PREVENTION PLAN NOTES:

Construction Practices to Minimize Storm Water Contamination

- Stockpiles should be constructed away from slopes and natural drainage ways.
- Collected solid waste, sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of properly and must comply with MPCA disposal requirements.
- No construction materials can be buried on site.
- Licensed sanitary waste management handler must dispose of sanitary waste.
- Fertilizers must be stored in covered locations.
- Restricted access to chemical storage areas must be provided to prevent vandalism.
- All chemicals must be stored in locked containers when not in use.
- Oil, gasoline, paint and any hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks or other discharge
- Storage and disposal of hazardous waste must be in compliance with MPCA regulations.
- Vehicles must be monitored for leaks and preventative maintenance scheduled.
- Spill kits must be available during equipment fueling and maintenance operations.
- External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site.
- Asphalt substances must be applied according to manufactures recommendations.
- Spray guns must be cleaned on removable surfaces such as tarpaulins.
- Contractor/Erosion Control Supervisor must make a spill response plan before the application of any chemical that may be harmful to the environment.
- All spills must be reported immediately. Spill cleanup materials must be available on site. Material shall include but not limited to brooms, mops, rags, gloves, absorbent material, sand plastic and metal containers. Spills that reach storm water conveyance systems connected to a Water of the State must be immediately reported to the MPCA State Duty Officer.
- Contractor must control weeds on the entire project site.
- Form release oil must be applied over a pallet covered with absorbent material to collect excess fluid. The absorbent material shall be replaced when saturated.
- Dust control must be provided as conditions warrant.
- If this project is not stabilized before winter conditions stop construction activities, it shall be the contractor's responsibility to ensure sediment does not reach a water of the state. A written plan of this activity shall be presented to the engineer 1 month before expected project shut down for the season occurs. This plan shall include but not be limited to:
 - o date of proposed bmp employment
 - o duration of bmp's employed
 - o schedule of subsequent bmp's employed

Temporary and Permanent Erosion Control Practices

BMP's proposed for temporary and permanent erosion control are shown on the erosion control plan sheets and are further identified as follows:

Temporary Erosion Control Methods

All disturbed soil areas shall be temporarily mulched with Type 1 mulch within 14 days if the area is not being actively worked. Temporary seed mix 22-111 at a rate of 31 lbs/ac of Pure Live Seed will be used only in cases where disturbed soil areas are anticipated to remain unworked in excess of 14 days prior to placement of Type 1 mulch at 2 tons per acre.

Permanent Erosion Control Methods

Permanent erosion control will be achieved by using Seed Mixture 25-131 at a rate of 220 lbs/ac of Pure Live Seed, Type 1 Commerical Grade Fertilizer with a composition of 10-10-10 at a rate of 300 lbs/ac, and Hydraulic Soil Stabilizer, Type 5 at a rate of 2100 lbs/ac on all disturbed construction areas.

Temporary Sediment Control Methods

Silt fence or windrowed topsoil will be used as the primary control. Biorolls will be used as secondary control along each side of roadway at all low points and areas of high velocity drainage to prevent sediment from draining off roadway.

Rock construction entrances shall be placed at all locations construction vehicles will be exiting the project area.

Unique Environmental Concerns

There are wetlands that are adjacent to the project. Special care shall be taken to minimize impacts to the surrounding wetlands.

Timing of BMP Installation

Erosion and sediment control BMP's must be installed as necessary to minimize erosion from disturbed surfaces and capture sediment onsite. All BMP's must conform to 2018 Permit Reference 8 and 9 of the NPDES Permit.

Erosion Prevention Practices

The Contractor/ECS is responsible for the Erosion Prevention Practices contained in Part IV.B of the NPDES Permit. The Contractor/ECS must plan for and implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading and other construction practices that minimize erosion. The location of areas not to be disturbed must be delineated (marked) on the development site before work begins.

All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

The normal wetted perimeter of any temporary or permanent drainage ditch or swale that drains water from any portion of the construction site, or diverts water around the construction site, must be stabilized within 200 lineal feet from the property edge, or from the discharge into any surface water. Stabilization must be complete within 24 hours after connecting to surface water.

Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours after connection to a surface water.

Sediment Control Practices

The Contractor/ECS is responsible for the Sediment Control Practices contained in Part IV.C of the NPDES Permit. Sediment Control Practices must be installed on all down gradient perimeters before any upgradient land disturbing activities begin. There shall be no unbroken slope length greater than 75 feet for slopes with a grade of 3:1 or steeper. These practices must remain in place until Final Stabilization has been established in accordance with Part IV.G of the NPDES Permit.

The timing of installation of Sediment Control Practices may be adjusted to accommodate short-term activities such as clearing or grubbing, or passage of vehicles. Short-term activities must be completed as quickly as possible and the practices must be installed immediately after the activity is completed. However, the Sediment Control Practices must be installed before the next precipitation event even if the activity is not complete.

All storm drain inlets must be protected by appropriate BMP's during construction until all sources with potential for discharging to the inlet have been stabilized. Inlet protection may be removed if a specific safety concern has been identified and the procedure in Part IV.C.4 of the NPDES Permit is followed.

Temporary soil stockpiles must have super duty silt fence or other effective sediment controls, and cannot be placed in surface waters, including stormwater conveyances such as curb and gutter systems, or conduit and ditches unless there is a bypass for stormwater.

Vehicle tracking of sediment from the construction site must be minimized by BMP's such as stone or wood chip pads, concrete or steel wash racks, or equivalent systems. Street sweeping with collection must be used if such BMP's are not adequate to prevent sediment from being tracked onto the street (see Part IV.E.4.d of the NPDES Permit).

Dewatering related to the construction activity must comply with Part IV.D of the NPDES Permit. Dewatering discharge that may have turbid or sediment laden discharge must be discharged to a temporary or permanent sedimentation basin on the project site whenever possible and BMP's must be implemented to prevent water containing sediment or other pollutants from being discharged to a Water of the State.

Contractor may construct temporary sedimentation basins in accordance with Part III.B of the NPDES Permit.

Pollution Prevention:

Each contractor on site is individually responsible for maintaining a clean and safe work site. The person responsible shall dispose of all solid waste properly and in compliance with the MPCA disposal requirements. Solid waste includes but is not limited to: collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris. The person responsible shall be responsible for all hazardous materials during construction. Oil, gasoline, grease, paint and other hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks and unwanted discharges. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in accordance with the MPCA regulations. External washing of trucks and other construction equipment is prohibited on this project site.

Concrete washout site: all liquid and solid wastes generated by concrete washout operations must be contained in a leak proof containment facility or impermeable liner. A compacted clay liner that does not allow washout liquids to enter the ground water is considered an impermeable liner. Another option to provide an impermeable basin in sandy soils is to construct a basin 18 inches deep with a minimum size of 12 feet by 14 feet. The basin should then be lined with a 10-mil poly liner that is secured on the perimeter. The liquid and solid wastes must not contact the ground, and there must not be runoff from the concrete washout operations or areas. Liquid and solid wastes must be disposed of properly and in compliance with the MPCA regulations. A sign must be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.

The following telephone numbers are provided for assistance to the contractors and are not necessarily comprehensive; it is the responsibility of the individual contractor to make sure of proper notification.

Poison Control (800) 222-1222

24 Hour Spill Emergency (800) 422-0798

Payment

Cost for permanent and temporary erosion and sediment control measures shown on the plans will be included in lump sum bid prices. The costs to maintain and remove these devices shall be incidental to the bid. The cost for temporary seeding, soil stabilization, or any additional temporary erosion and sediment control devices shall be paid according to MN/DOT Spec. 2573.4 or 2575.5 as applicable. All costs for documentation required by the Permit shall be incidental to other items unless a specific bid item is established.

Contacts

Agency	Permit	Name	Phone Number
MPCA	NPDES	Jeremy Sanoski	(218) 316-3888
City of Brainerd	City	Paul Sandy	(218) 828-2307
SWPPP Design	WSN	Tim Ramerth	(218) 316-3653 EC Supervisor

Amendments to the SWPPP:

Date:

1.

2.

3.

4.

5.



Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 SOUTH 5th STREET
BRAINERD, MN

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MARK	DATE	REVISION
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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 State of Minnesota.

Signature: _____
Printed Name: **TIMOTHY T. RAMERTH**
Date: MM/DD/YYYY Reg. No.: 41966

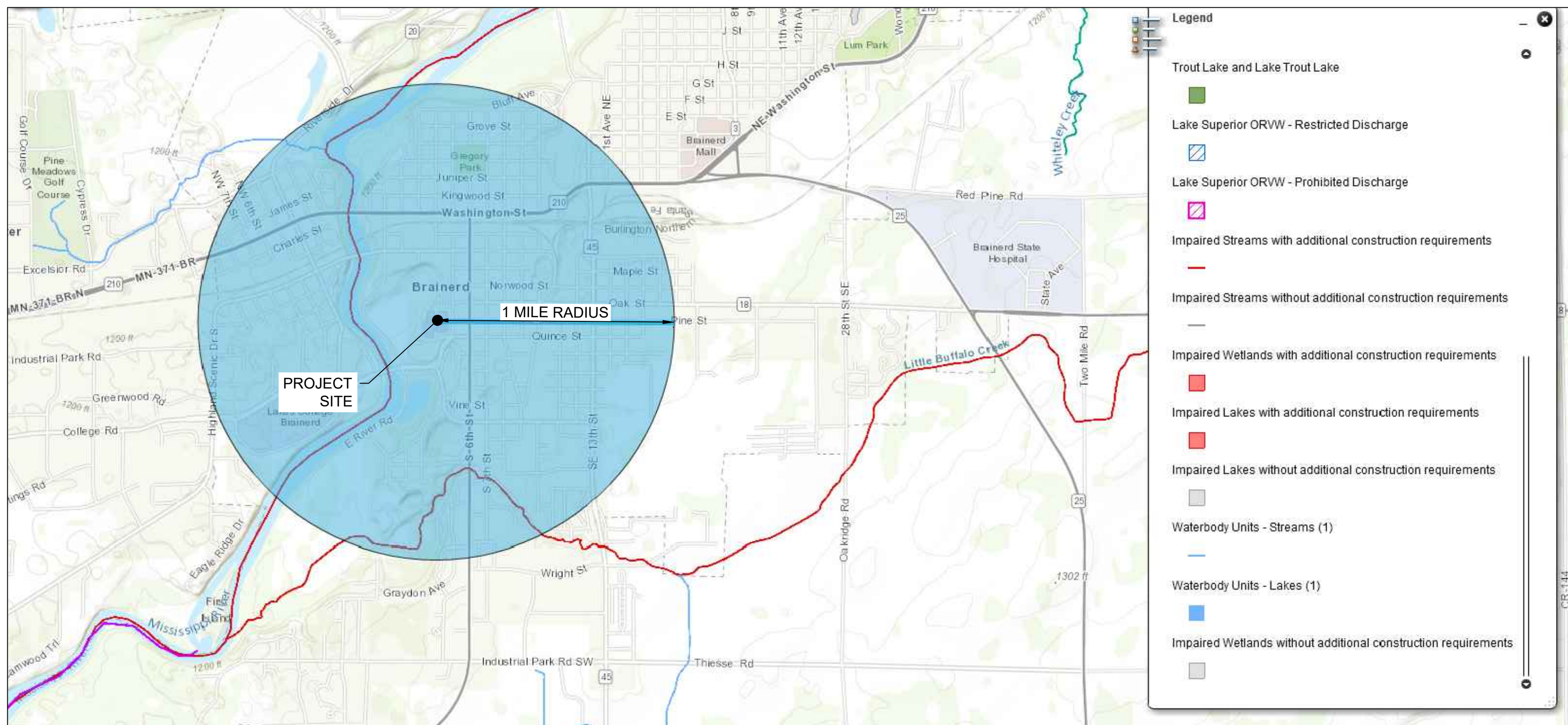
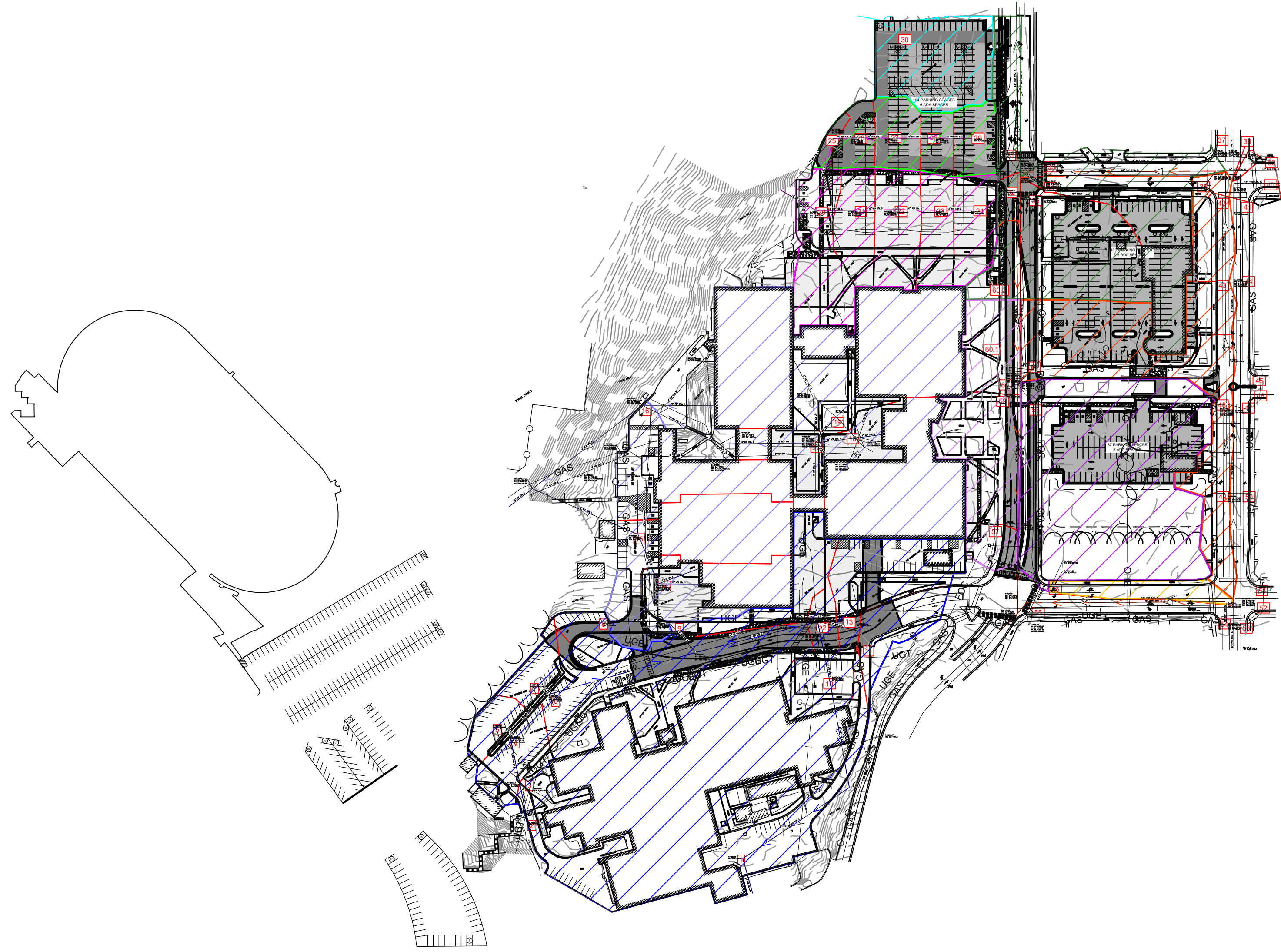
Project Information:

Project No. : 028180083.020
Drawn By : JWR
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Sheet Title:
SWPPP NARRATIVE

Sheet Number:

C3.01



Soil Map—Crow Wing County, Minnesota

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
D49D	Graycalm loamy sand, 12 to 25 percent slopes	11.5	28.7%
D53B	Lougee-Barber-Guida complex, 0 to 6 percent slopes	5.2	12.9%
D69B	Zimmerman-Urban land complex, 0 to 6 percent slopes	23.5	58.5%
Totals for Area of Interest		40.1	100.0%

USDA Natural Resources Conservation Service

Web Soil Survey National Cooperative Soil Survey

4/2/2019
Page 3 of 3

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Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
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Sheet Title:
SWPPP MAPS

Sheet Number:
C3.02

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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BRAINERD, MN

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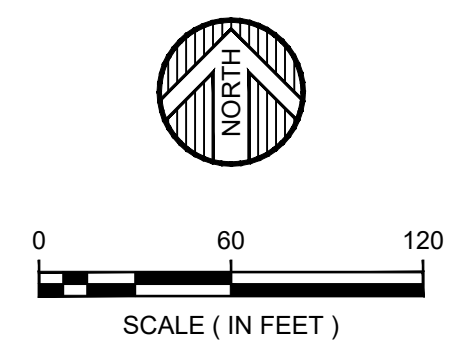
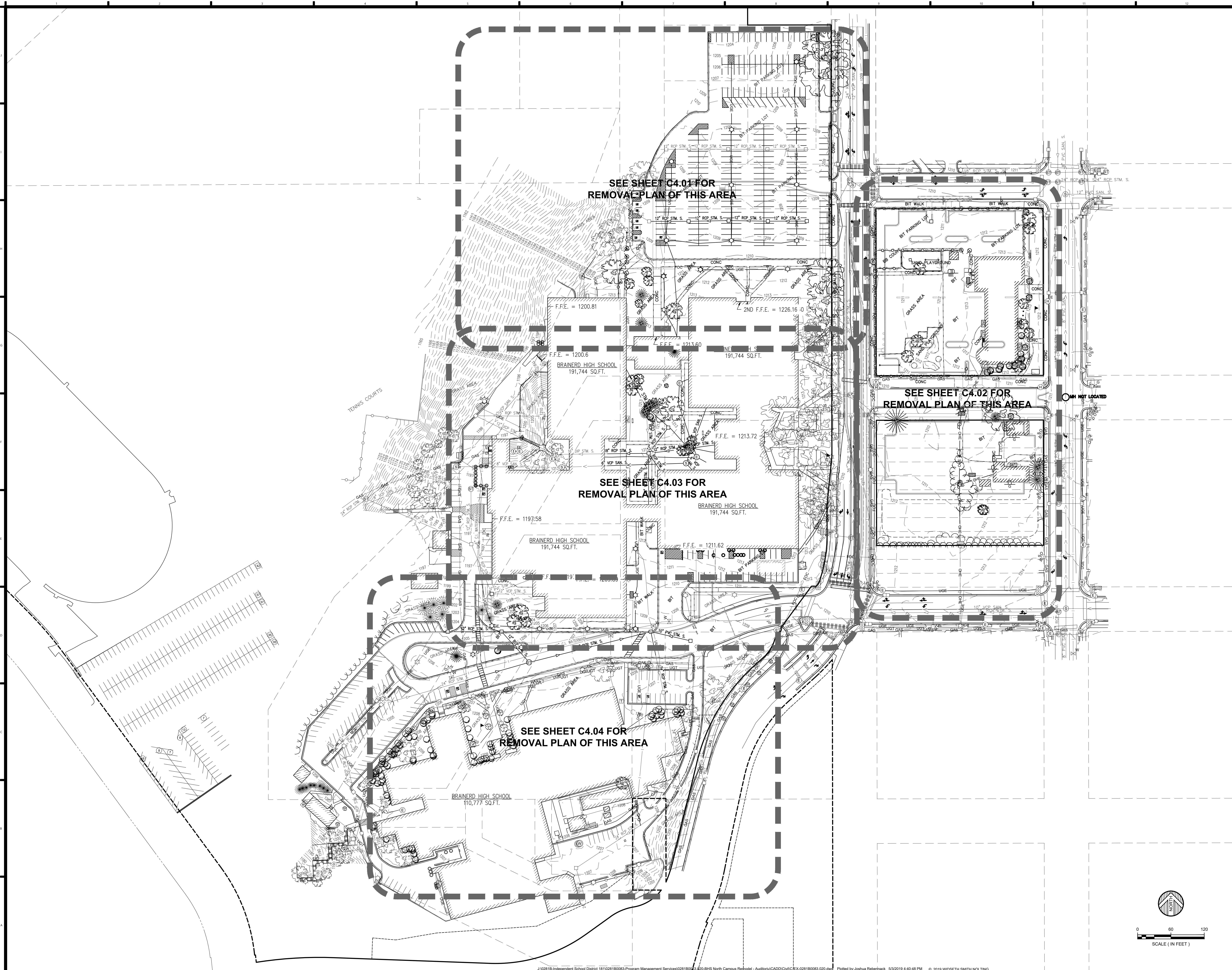
Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
EXISTING CONDITIONS &
REMOVALS - OVERALL MAP

Sheet Number:

C4.00



- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY OWNER AND ENGINEER OF ANY DIFFERENCES BETWEEN THE FIELD AND PLAN.
- CONTRACTOR SHALL CALL GOPHER STATE ONE CALL PRIOR TO BEGINNING REMOVALS.
- UNLESS OTHERWISE NOTED, ALL MATERIALS, CONSTRUCTION TECHNIQUES AND TESTING SHALL CONFORM TO THE 2013 ED. OF THE "STANDARD SPECIFICATIONS FOR TRENCH EXCAVATION AND BACKFILL/SURFACE RESTORATION, WATERMAIN AND SERVICE LINE INSTALLATION AND SANITARY SEWER AND STORM SEWER INSTALLATION" AS PUBLISHED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA AND THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION AS PUBLISHED BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION 2018 ED. THE CONTRACTOR SHALL REQUIRE ALL PROCEDURES AS OUTLINED BY THE LOCAL AGENCY.
- THE CONTRACTOR SHALL RECEIVE THE NECESSARY PERMISSION/PERMITS FOR ALL WORK LOCATED OUTSIDE OF THE MUNICIPAL RIGHT-OF-WAY AND PROPERTY LIMITS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING INVERT LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION.

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REMOVAL AREA TABLE - C4.01									
	BUILDING (EACH)	CONCRETE (FT²)	CURB & GUTTER (L.F.)	BITUMINOUS MILL (FT²)	BITUMINOUS (FT²)	GRAVEL (FT²)	FENCE (L.F.)	TREES (EACH)	CLEAR & GRUB (FT²)
	BRainerd HIGH SCHOOL								
		9,613	7,341	44,596	71,708		387	14	
	5TH STREET								
		197	428	9,348	9,097				
TOTAL	0	9,810	7,769	53,944	80,805	0	387	14	0



Project Location:
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BRAINERD, MN

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Signature: _____
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project No. : 0281B0083.020
Drawn By : JWR
Checked By : TTR
Date : MAY 2019
File Name:

Sheet Title:
EXISTING CONDITIONS &
REMOVALS - NORTH PARKING
LOT

C4.01

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

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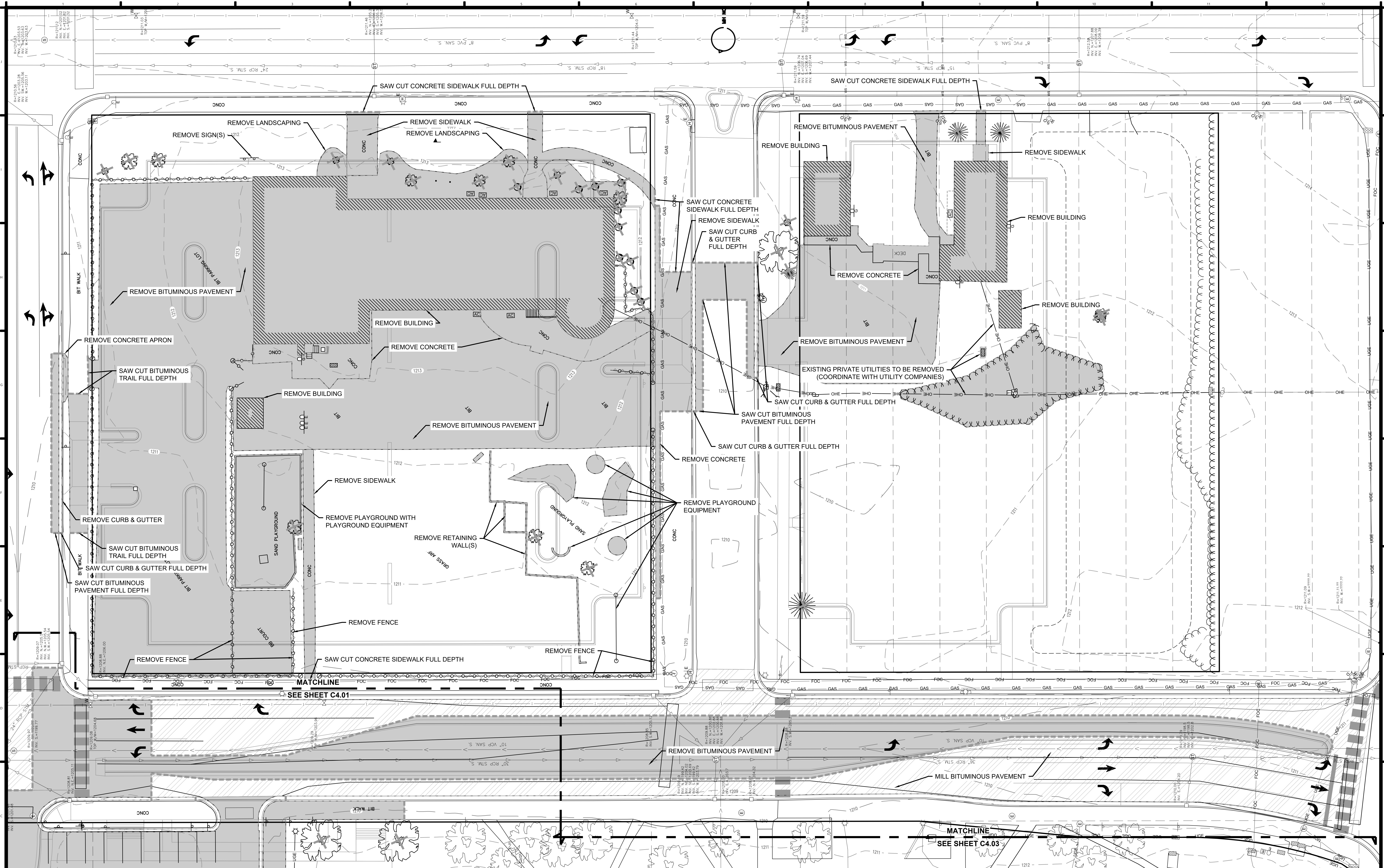
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File Name:

Sheet Title:
EXISTING CONDITIONS &
REMOVALS - EAST PARKING LOTS

Sheet Number:

C4.02



GENERAL DEMOLITION PLAN NOTES

- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY OWNER AND ENGINEER OF ANY DIFFERENCES BETWEEN THE FIELD AND PLAN.
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- THE CONTRACTOR SHALL VERIFY ALL EXISTING INVERT LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION.

GENERAL CONSTRUCTION NOTES

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REMOVAL AREA TABLE - C4.02

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LINCOLN ELEMETRY SCHOOL								
2	3,554	7,341	34,885	71,072	0	1,115	23	2,499
PREVIOUSLY PRIVATE PROPERTY								
3	498	0	0	0	0	0	8	2,906
OAK STREET								
0	68	75	0	300	0	0	0	0
PINE STREET								
0	1,800	114	0	1,090	0	0	0	0
5TH STREET								
0	0	0	15,464	8,693	0	0	0	0
TOTAL	5,920	7,530	50,349	81,155	0	1,115	31	5,405

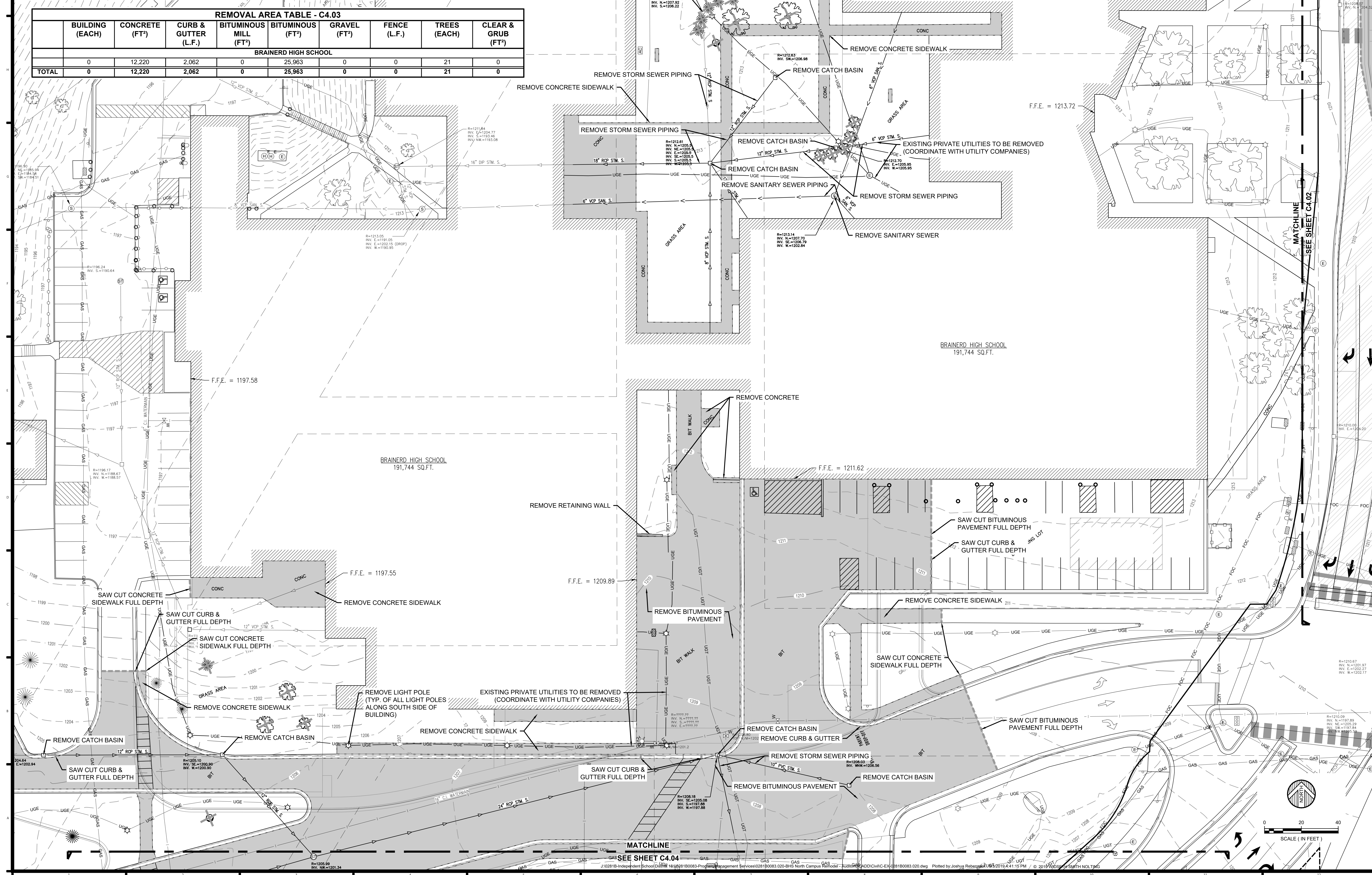


0 20 40
SCALE (IN FEET)

- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY OWNER AND ENGINEER OF ANY DIFFERENCES BETWEEN THE FIELD AND PLAN.
- CONTRACTOR SHALL CALL GOPHER STATE ONE CALL PRIOR TO BEGINNING REMOVALS.
- UNLESS OTHERWISE NOTED, ALL MATERIALS, CONSTRUCTION TECHNIQUES AND TESTING SHALL CONFORM TO THE 2013 ED. OF THE "STANDARD SPECIFICATIONS FOR TRENCH EXCAVATION AND BACKFILL/SURFACE RESTORATION, WATERMAIN AND SERVICE LINE INSTALLATION AND SANITARY SEWER AND STORM SEWER INSTALLATION" AS PUBLISHED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA AND THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION AS PUBLISHED BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION 2018 ED. THE CONTRACTOR SHALL REQUIRE ALL PROCEDURES AS OUTLINED BY THE LOCAL AGENCY.
- THE CONTRACTOR SHALL RECEIVE THE NECESSARY PERMISSION/PERMITS FOR ALL WORK LOCATED OUTSIDE OF THE MUNICIPAL RIGHT-OF-WAY AND PROPERTY LIMITS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING INVERT LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION.

- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY OWNER AND ENGINEER OF ANY DIFFERENCES BETWEEN THE FIELD AND PLAN.
- CONTRACTOR SHALL CALL Gopher State One Call PRIOR TO BEGINNING REMOVALS.
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- THE CONTRACTOR SHALL RECEIVE THE NECESSARY PERMISSION/PERMITS FOR ALL WORK LOCATED OUTSIDE OF THE MUNICIPAL RIGHT-OF-WAY AND PROPERTY LIMITS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION.

REMOVAL AREA TABLE - C4.03									
	BUILDING (EACH)	CONCRETE (FT²)	CURB & GUTTER (L.F.)	BITUMINOUS MILL (FT²)	BITUMINOUS (FT²)	GRAVEL (FT²)	FENCE (L.F.)	TREES (EACH)	CLEAR & GRUB (FT²)
	BRainerd High School								
	0	12,220	2,062	0	25,963	0	0	21	0
TOTAL	0	12,220	2,062	0	25,963	0	0	21	0



Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRainerd, MN

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MARK	DATE	REVISION
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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 State of Minnesota

Signature: _____
 Printed Name: TIMOTHY T. RAMERTH
 Date: MM/DD/YYYY Reg. No.: 41966

Project Information:

Project No. : 0281B0083.020

Drawn By : JWR

Checked By : TTR

Date : MAY 2019

File Name:

Sheet Title:

Sheet Title.

EXISTING CONDITIONS 8

EXISTING CONDITIONS &
REMOVALS - HIGH SCHOOL

100

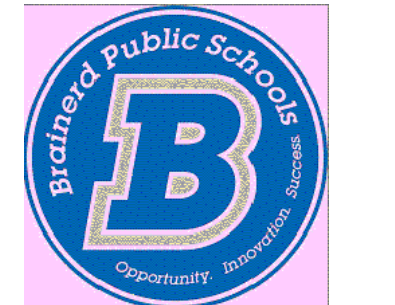
Sheet Number:

C4.02

(403)

1.05

Project Name:



BRainerd HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRainerd, MN

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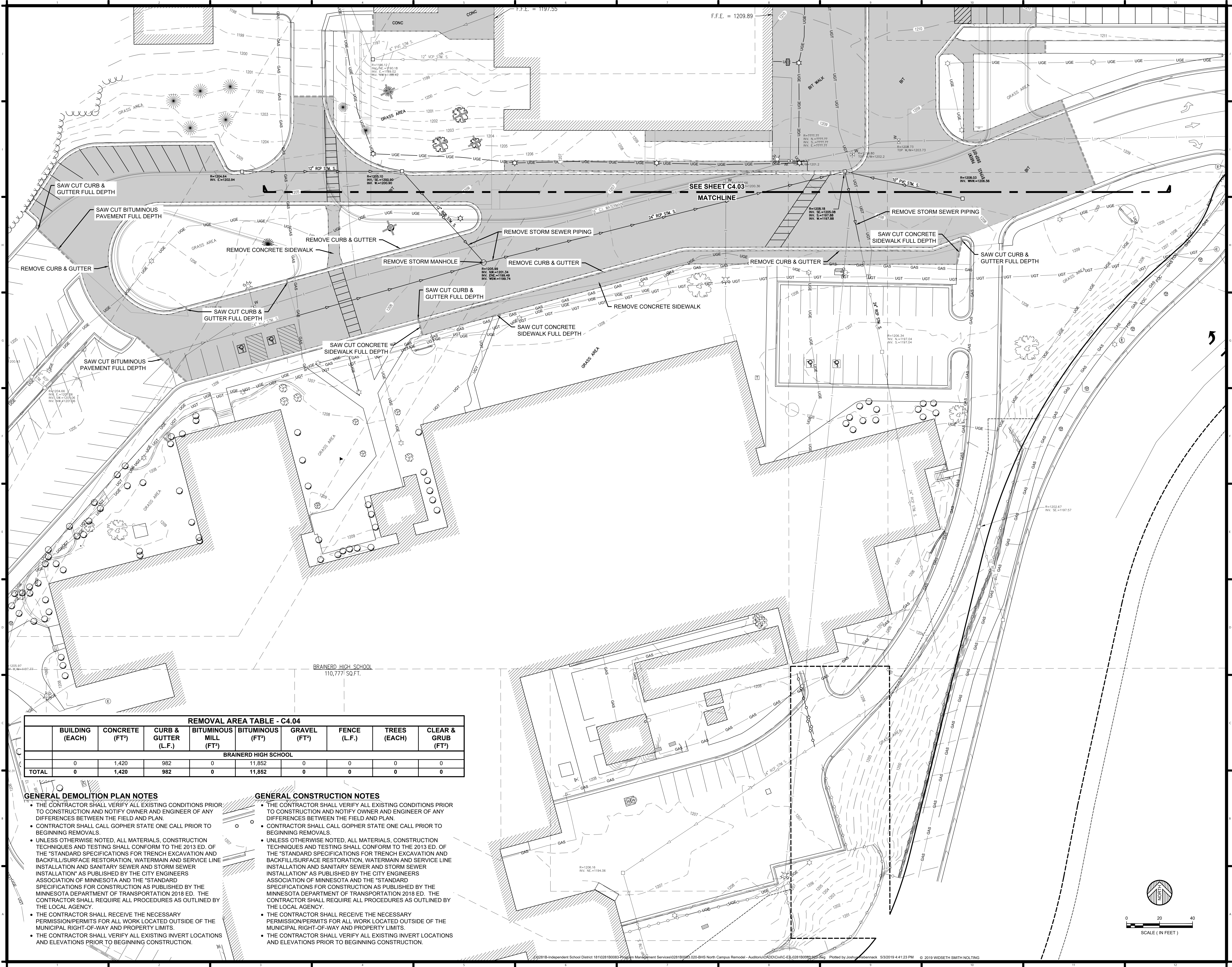
Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
EXISTING CONDITIONS & REMOVALS - SOUTH PARKING LOT

Sheet Number:

C4.04



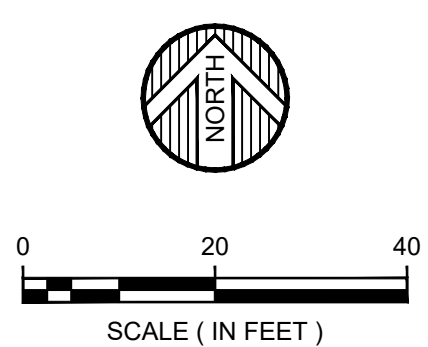
REMOVAL AREA TABLE - C4.04								
BUILDING (EACH)	CONCRETE (FT²)	CURB & GUTTER (L.F.)	BITUMINOUS MILL (FT²)	BITUMINOUS (FT²)	GRAVEL (FT²)	FENCE (L.F.)	TREES (EACH)	CLEAR & GRUB (FT²)
BRainerd HIGH SCHOOL								
0	1,420	982	0	11,852	0	0	0	0
TOTAL	0	1,420	982	0	11,852	0	0	0

GENERAL DEMOLITION PLAN NOTES

- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY OWNER AND ENGINEER OF ANY DIFFERENCES BETWEEN THE FIELD AND PLAN.
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GENERAL SITE PLAN NOTES:

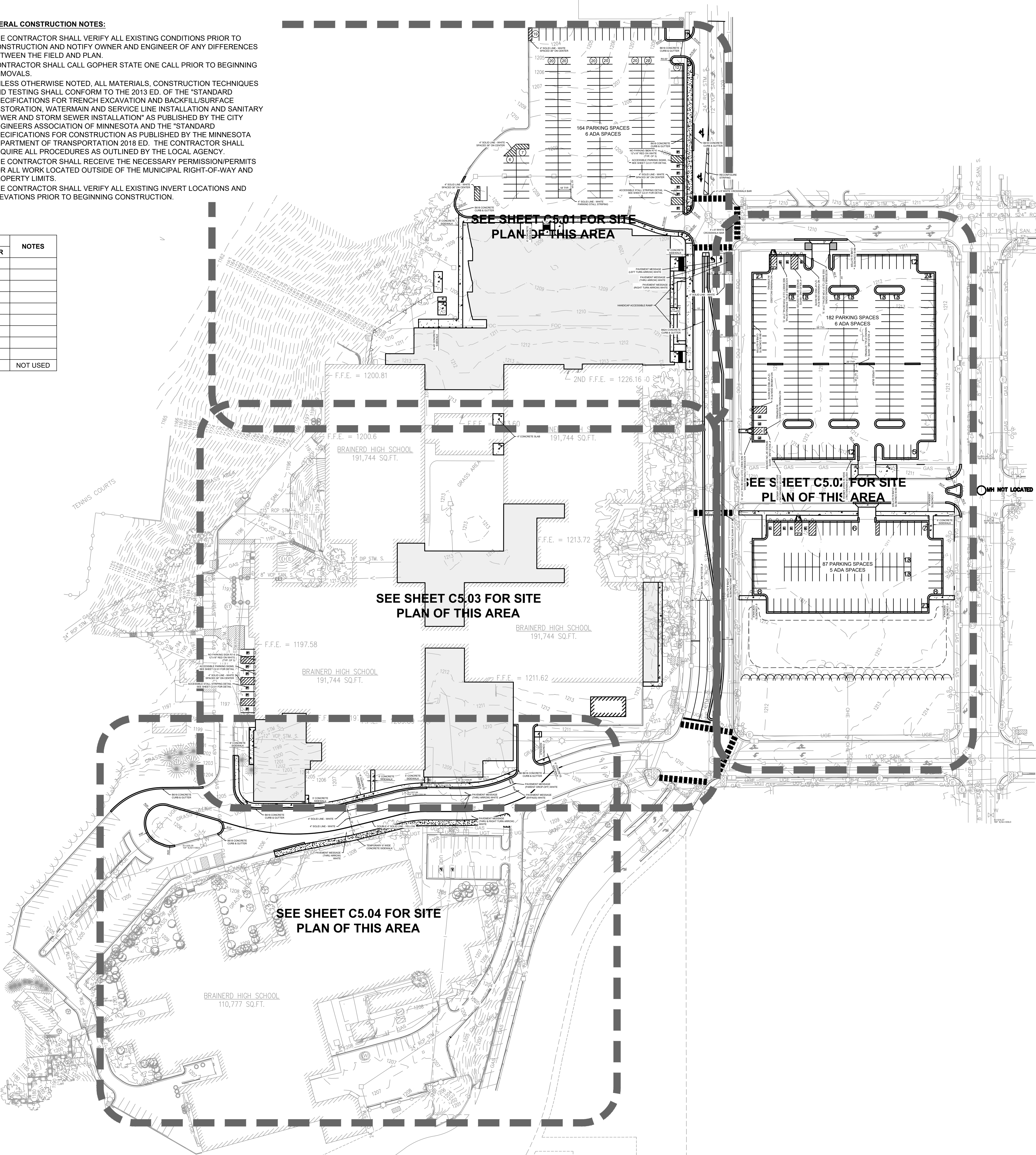
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LOCATION	STALLS				BHS BREAKDOWN			NOTES
	LOT	STANDARD	BUS	ADA	STUDENT	STAFF	VISTOR	
BHS NORTH LOT	164	-	6	1	-	164	-	
LOWER LOT	-	-	60	-	-	-	-	
SOUTH CAMPUS 1	78	-	2	-	-	78	-	
SOUTH CAMPUS 2	221	-	7	-	221	-	-	
SOUTH CAMPUS 3	10	-	-	-	-	10	-	
WEST LOT	31	-	2	-	-	31	-	
EAST LOT NORTH	182	-	6	-	182	-	21	
EAST LOT SOUTH	87	-	5	-	87	-	-	
TOTAL	773	-	28	1	469	283	21	
PIT	80	-	-	-	-	-	-	NOT USED

- THIS PROPERTY IS ZONED: R-1 - SINGLE FAMILY RESIDENTIAL
B-4 - GENERAL COMMERCIAL



Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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MARK	DATE	REVISION
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Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No. 41966

Project Information:
Project No. : 028180083.020
Drawn By : JWR
Checked By : TTR
Date : MAY 2019
File Name:

Sheet Title:
SITE PLAN - OVERALL MAP

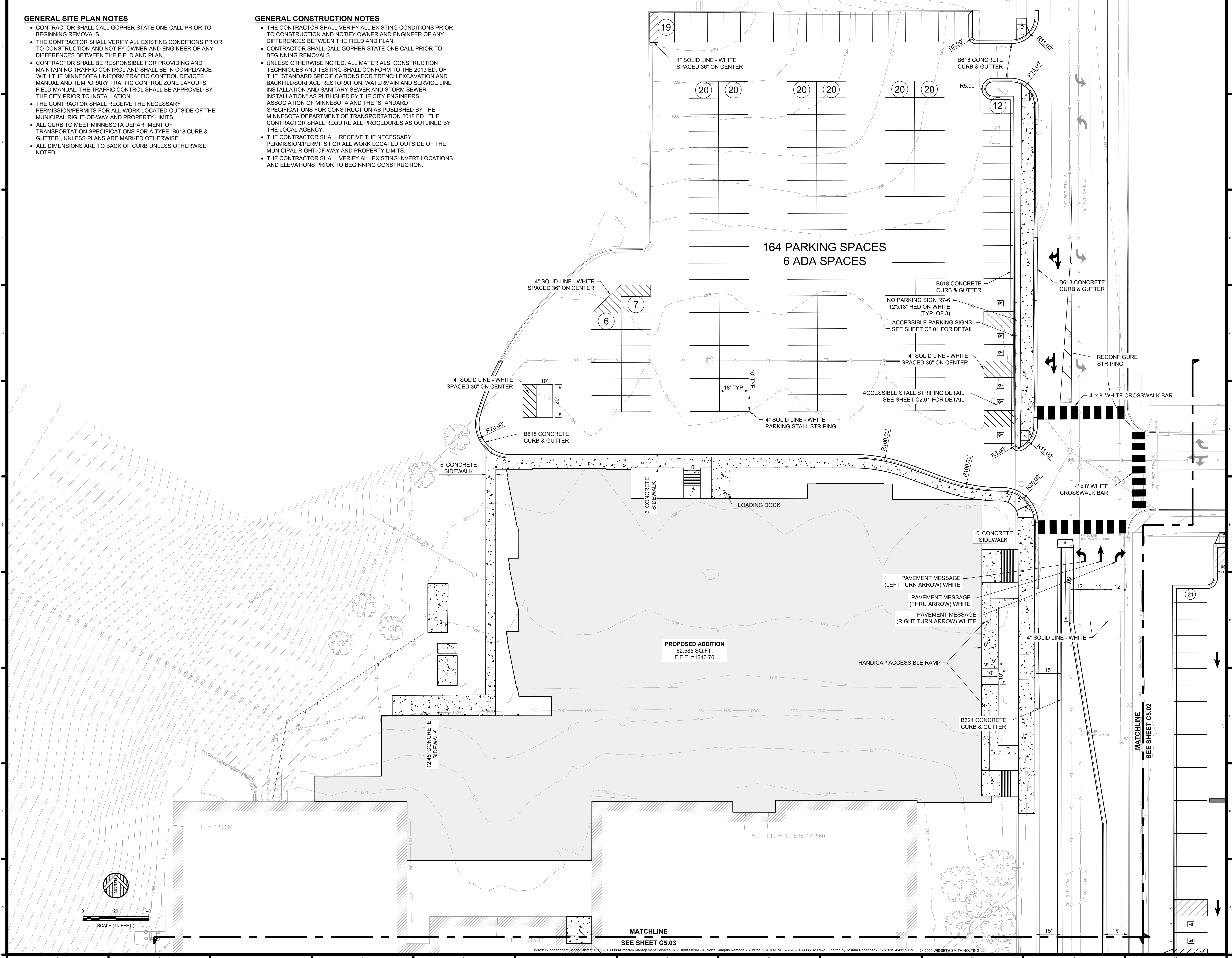
Sheet Number:
C5.00

GENERAL SITE PLAN NOTES

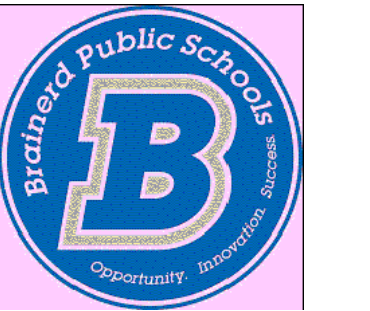
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- THE CONTRACTOR SHALL VERIFY ALL EXISTING INVERT LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION.



Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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MARK	DATE	REVISION
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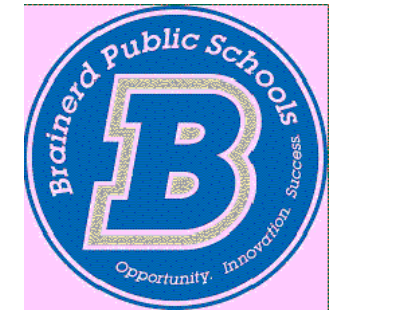
Signature:
Printed Name: **TIMOTHY T. RAMERTH**
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
SITE PLAN - NORTH PARKING LOT

Sheet Number:
C5.01

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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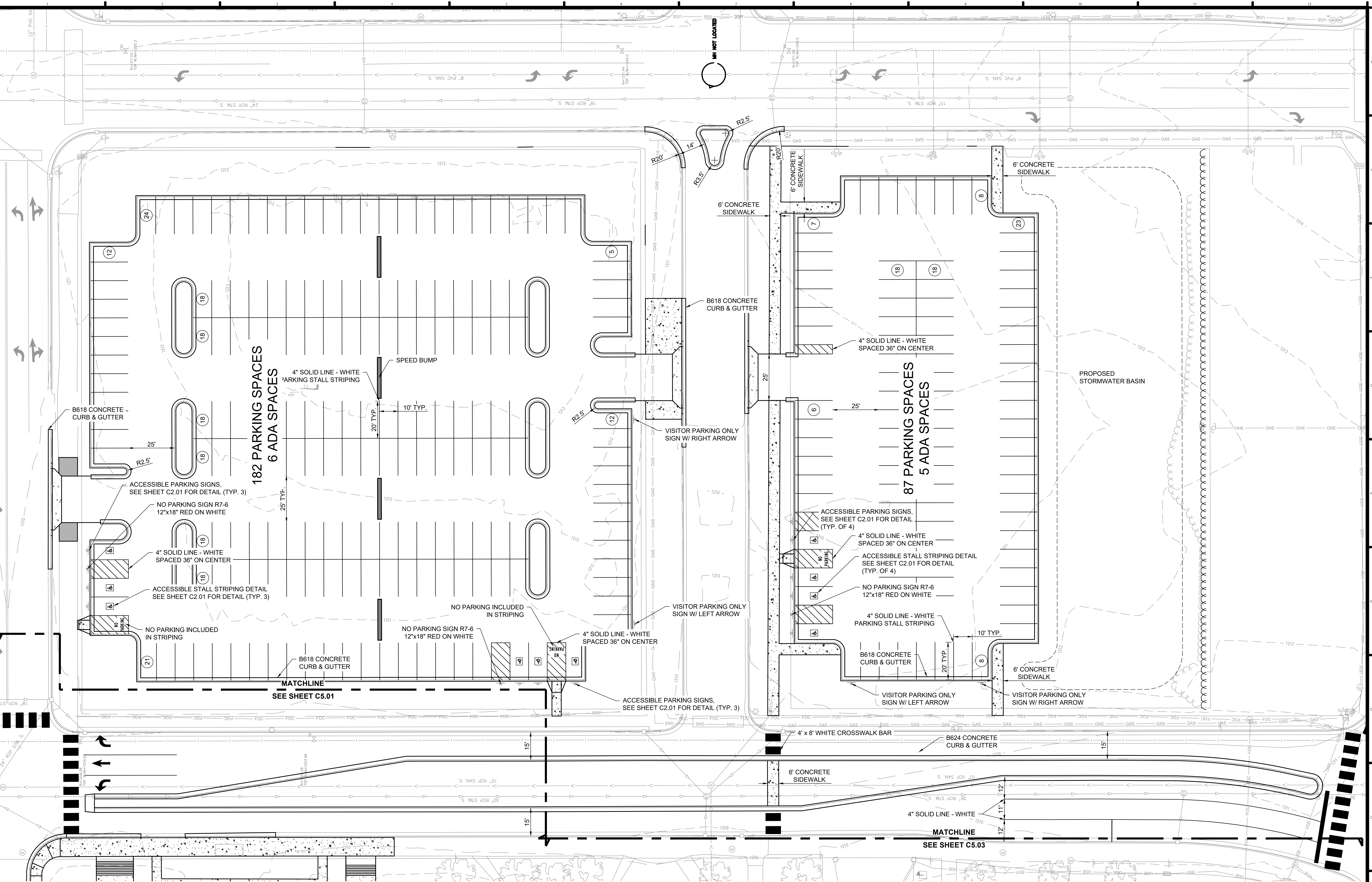
Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
SITE PLAN - EAST PARKING LOTS

Sheet Number:

C5.02



GENERAL SITE PLAN NOTES

- CONTRACTOR SHALL CALL GOPHER STATE ONE CALL PRIOR TO BEGINNING REMOVALS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY OWNER AND ENGINEER OF ANY DIFFERENCES BETWEEN THE FIELD AND PLAN.
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GENERAL CONSTRUCTION NOTES

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GENERAL SITE PLAN NOTES

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SEE SHEET C5.01

MATCHLINE

F.F.E. = 1213.60

4" CONCRETE SLAB

BRainerd HIGH SCHOOL
191,744 SQ.FT.

PROPOSED ADDITION
17,542 SQ.FT.
F.F.E. = 1213.70

F.F.E. = 1213.72

MATCHLINE
SEE SHEET C5.02

NO PARKING SIGN R7-6
12"x18" RED ON WHITE
(TYP. OF 3)

ACCESSIBLE PARKING SIGNS,
SEE SHEET C2.01 FOR DETAIL

4" SOLID LINE - WHITE
SPACED 36" ON CENTER

BLE STALL STRIPING DETAIL
SEE SHEET C2.01 FOR DETAIL

BRainerd HIGH SCHOOL
191,744 SQ.FT.

F.F.E. = 1211.62

PROPOSED ADDITION
18,648 SQ.FT.
F.F.E. = 1213.70

F.F.E. = 1209.89

PROPOSED ADDITION
9,521 SQ.FT.
F.F.E. = 1213.70

6' CONCRETE
SIDEWALK

5' CONCRETE
SIDEWALK

6' CONCRETE
SIDEWALK

5' CONCRETE
SIDEWALK

MATCHLINE
SEE SHEET C5.04

PAVEMENT MESSAGE
(THRU ARROW) WHITE

PAVEMENT MESSAGE
(PARENT DROP-OFF) WHITE

PAVEMENT MESSAGE
(BYPASS) WHITE

B618 CONCRETE
CURB & GUTTER

6' CONCRETE
SIDEWALK

6' CONCRETE
SIDEWALK

PROPOSED ADDITION
3,037 SQ.FT.
F.F.E. = 1213.70

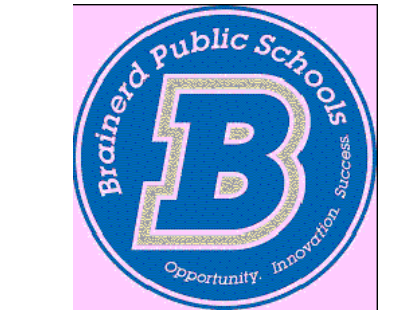
24" WIDE STOP BAR WHITE

4' x 8' WHITE CROSSWALK BAR



SCALE (IN FEET)

Project Name:



BRainerd HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRainerd, MN

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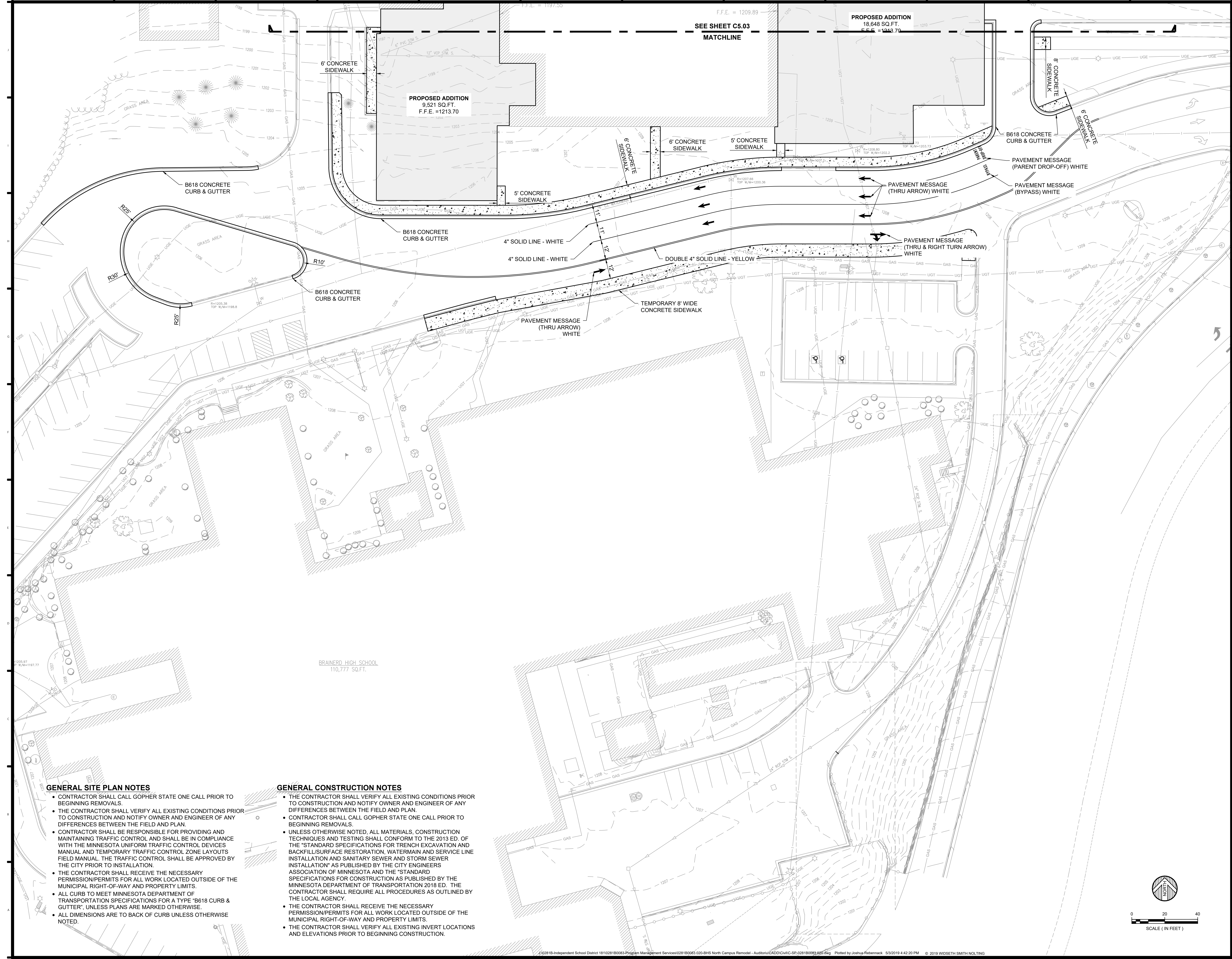
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Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
SITE PLAN - HIGH SCHOOL

Sheet Number:
C5.03



GENERAL SITE PLAN NOTES

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- THE CONTRACTOR SHALL VERIFY ALL EXISTING INVERT LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION.

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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MARK	DATE	REVISION

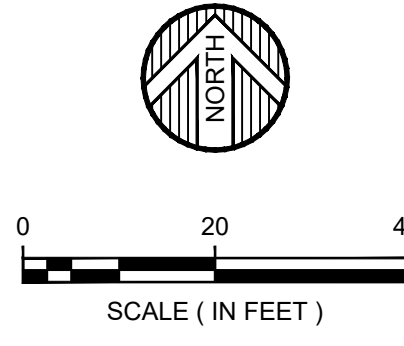
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the State of Minnesota.

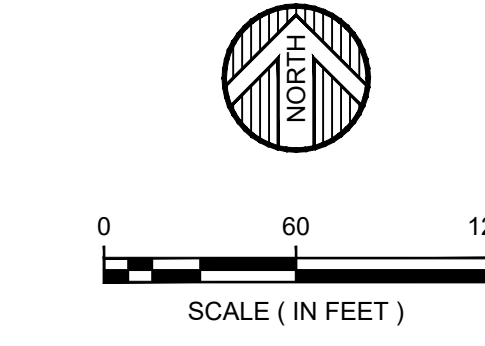
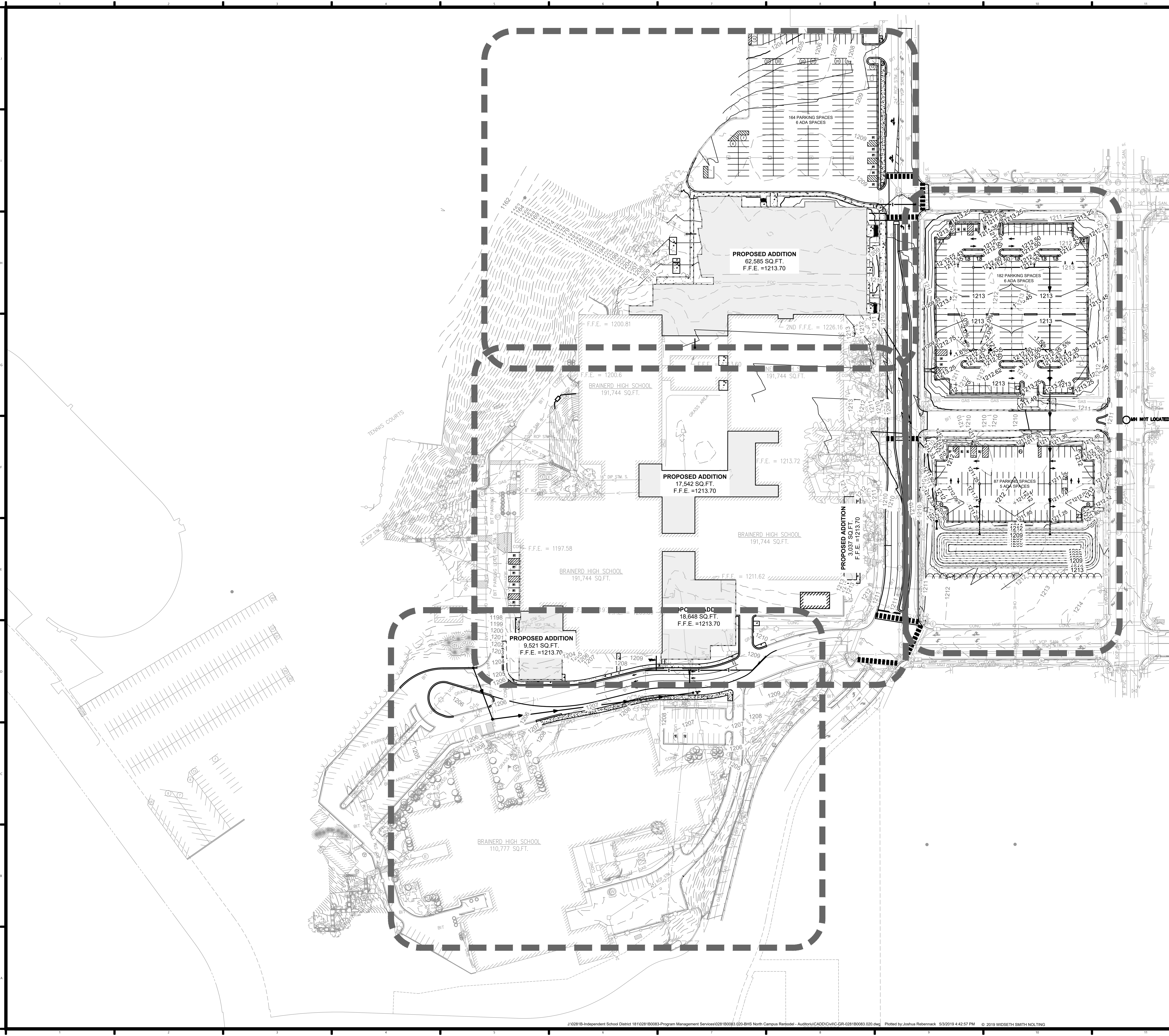
Signature:
Printed Name: **TIMOTHY T. RAMERTH**
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
SITE PLAN - SOUTH PARKING LOT

Sheet Number:
C5.04





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WIDSETH SMITH NOLTING

Project Name:


BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:

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BRAINERD, MN

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Signature: _____
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No. 41966

Project Information:
Project No. : 028180083.020
Drawn By : JWR
Checked By : TTR
Date : MAY 2019
File Name: _____

Sheet Title:
GRADING PLAN - OVERALL MAP

Sheet Number:
C6.00

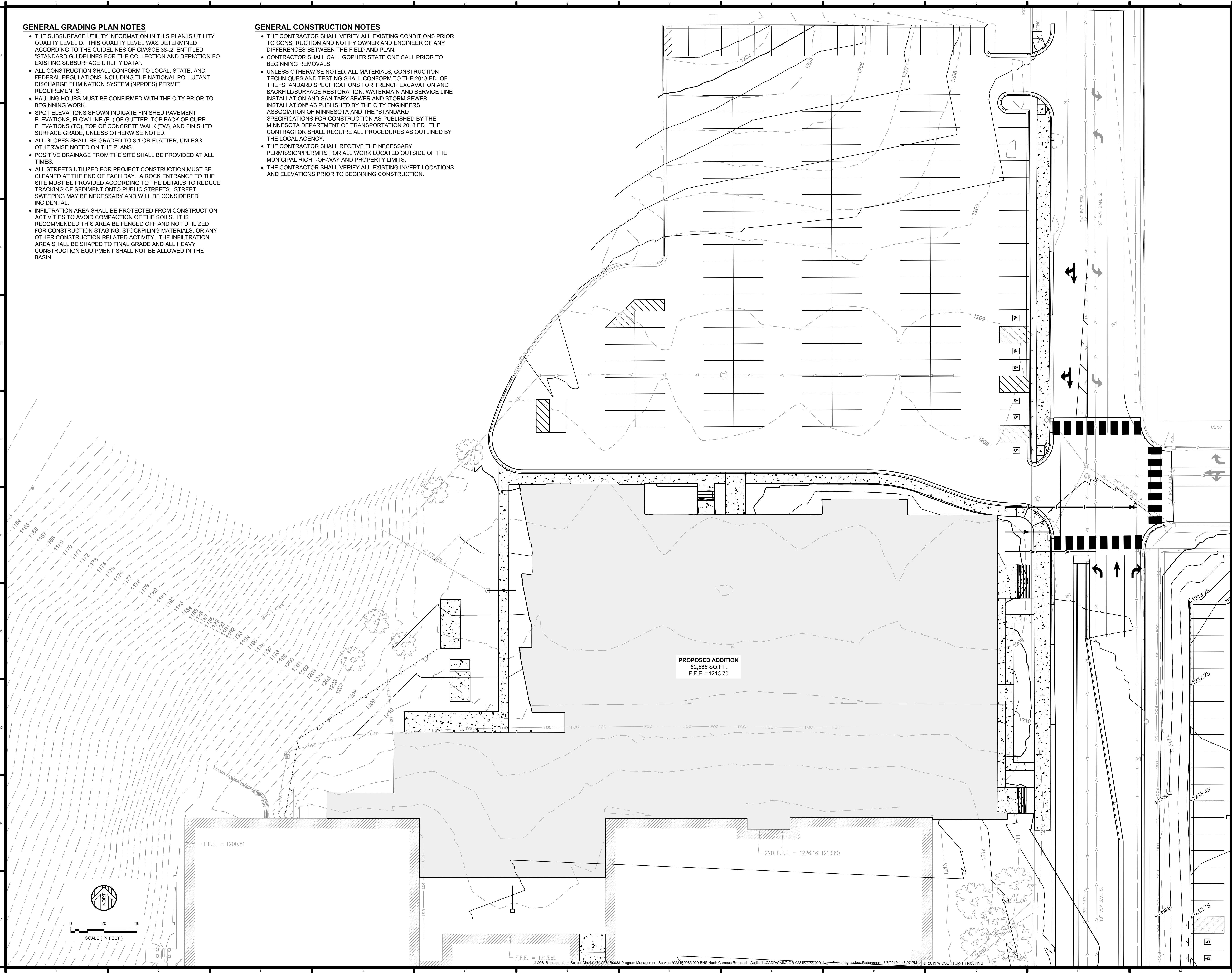
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GENERAL GRADING PLAN NOTES

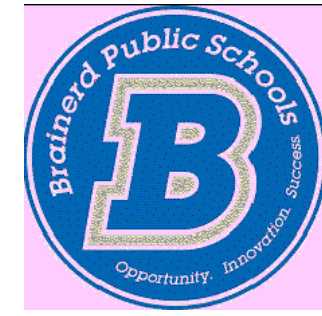
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GENERAL CONSTRUCTION NOTES

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Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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BRAINERD, MN

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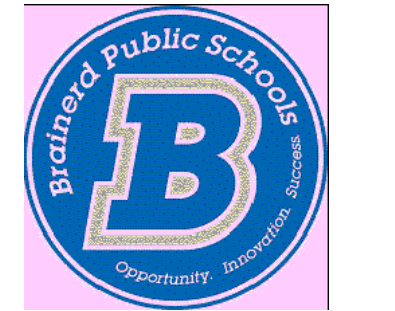
Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
GRADING PLAN - NORTH PARKING LOT

Sheet Number:
C6.01

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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BRAINERD, MN

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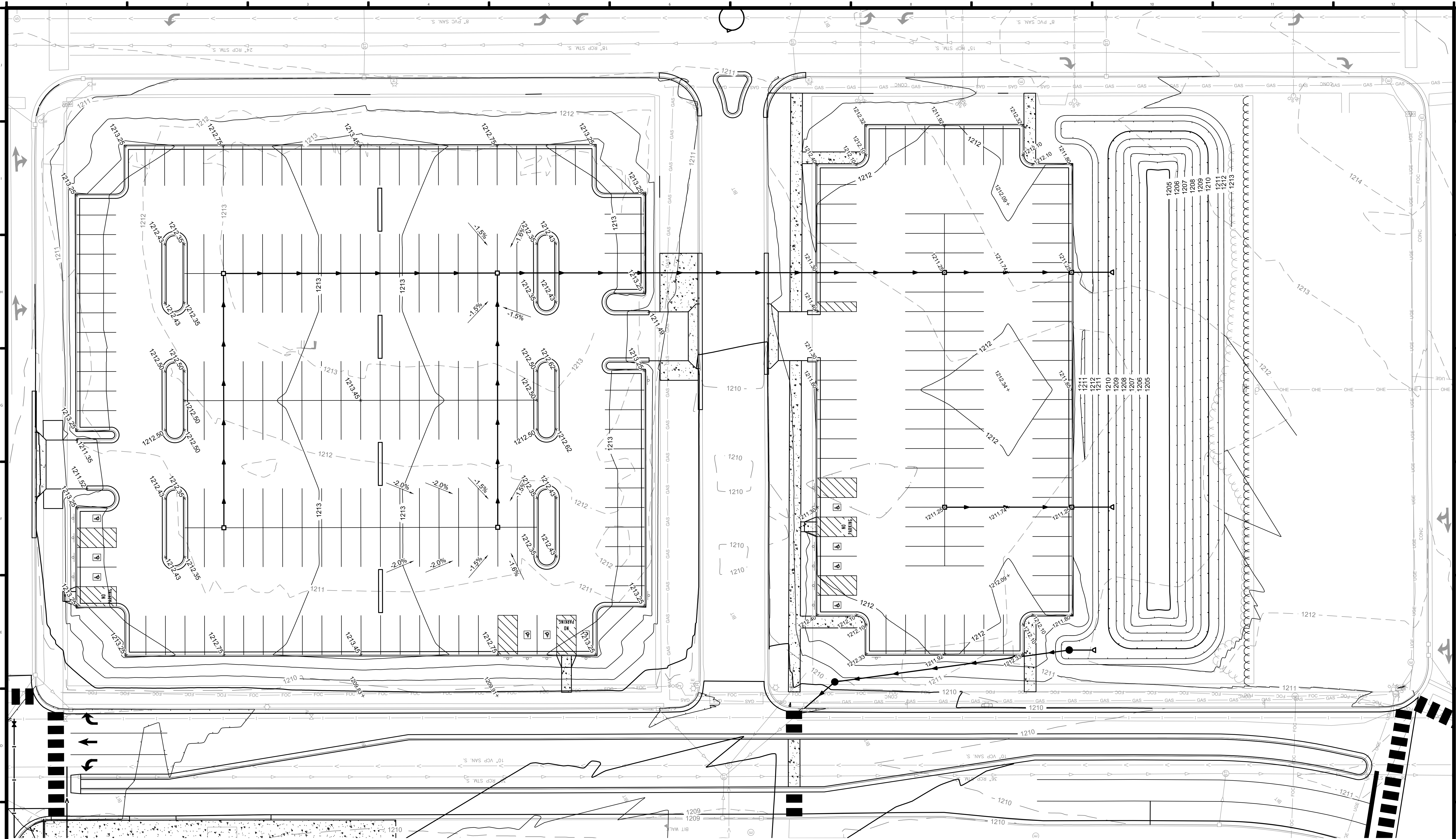
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Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
GRADING PLAN - EAST PARKING LOTS

Sheet Number:

C6.02



GENERAL GRADING PLAN NOTES

- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C1ASCE 38-2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
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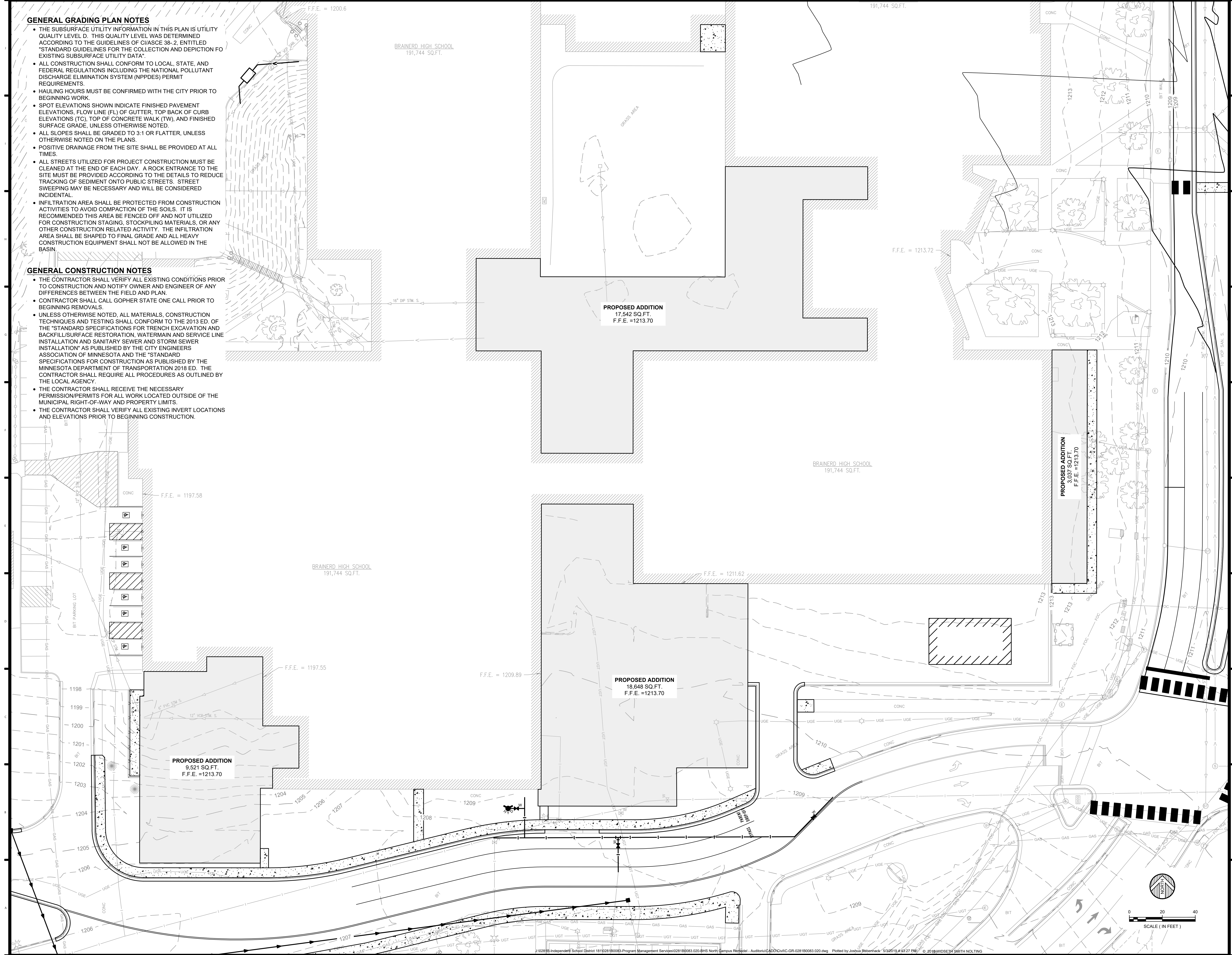
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GENERAL GRADING PLAN NOTES

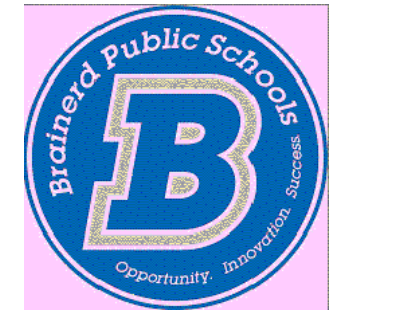
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Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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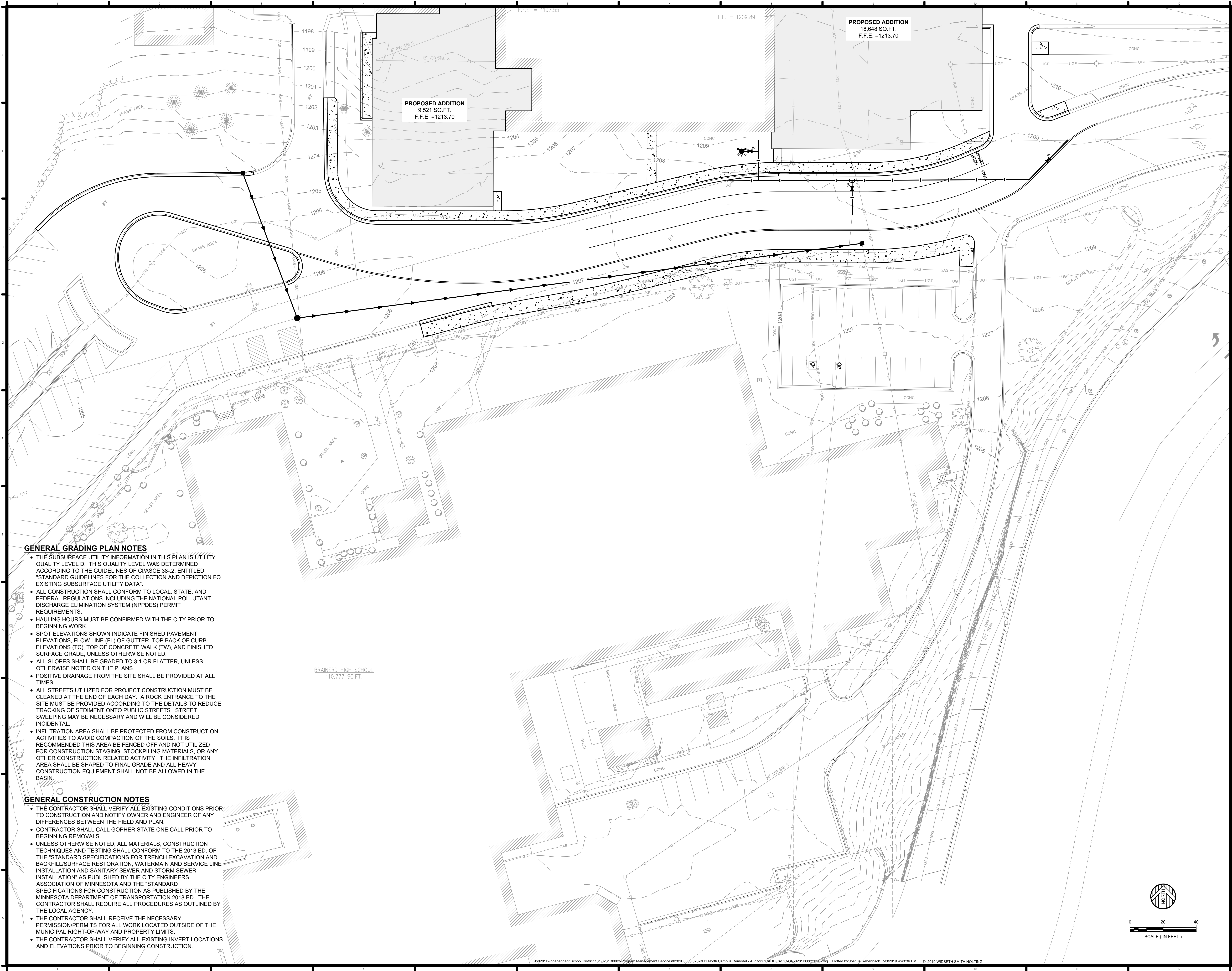
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Signature:
Printed Name: TIMOTHY T. RATHERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
GRADING PLAN - HIGH SCHOOL

Sheet Number:
C6.03



GENERAL GRADING PLAN NOTES

- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
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GENERAL CONSTRUCTION NOTES

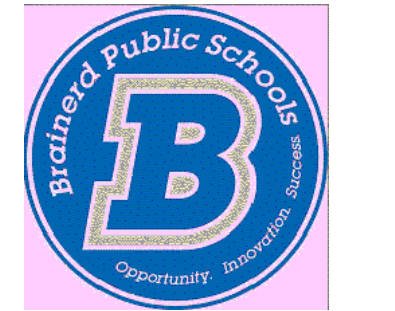
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BRAINERD HIGH SCHOOL
110,777 SQ.FT.

PROPOSED ADDITION
18,848 SQ.FT.
F.F.E. = 1213.70

PROPOSED ADDITION
9,521 SQ.FT.
F.F.E. = 1213.70

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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Signature:
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Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
GRADING PLAN - SOUTH PARKING LOT

Sheet Number:

C6.04

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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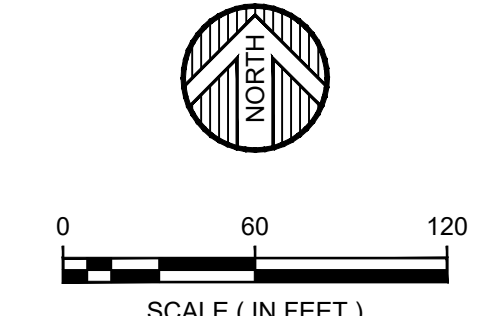
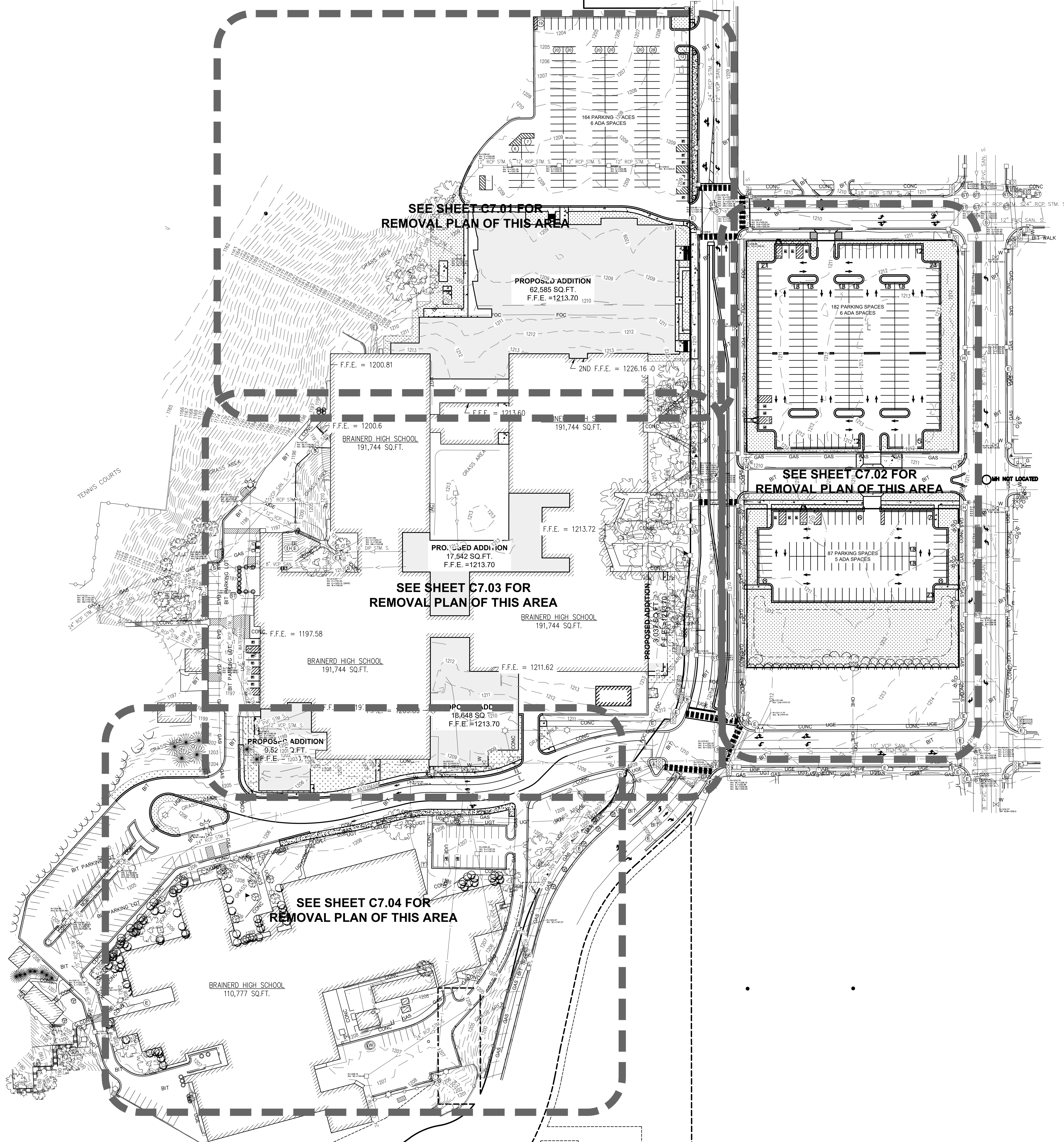
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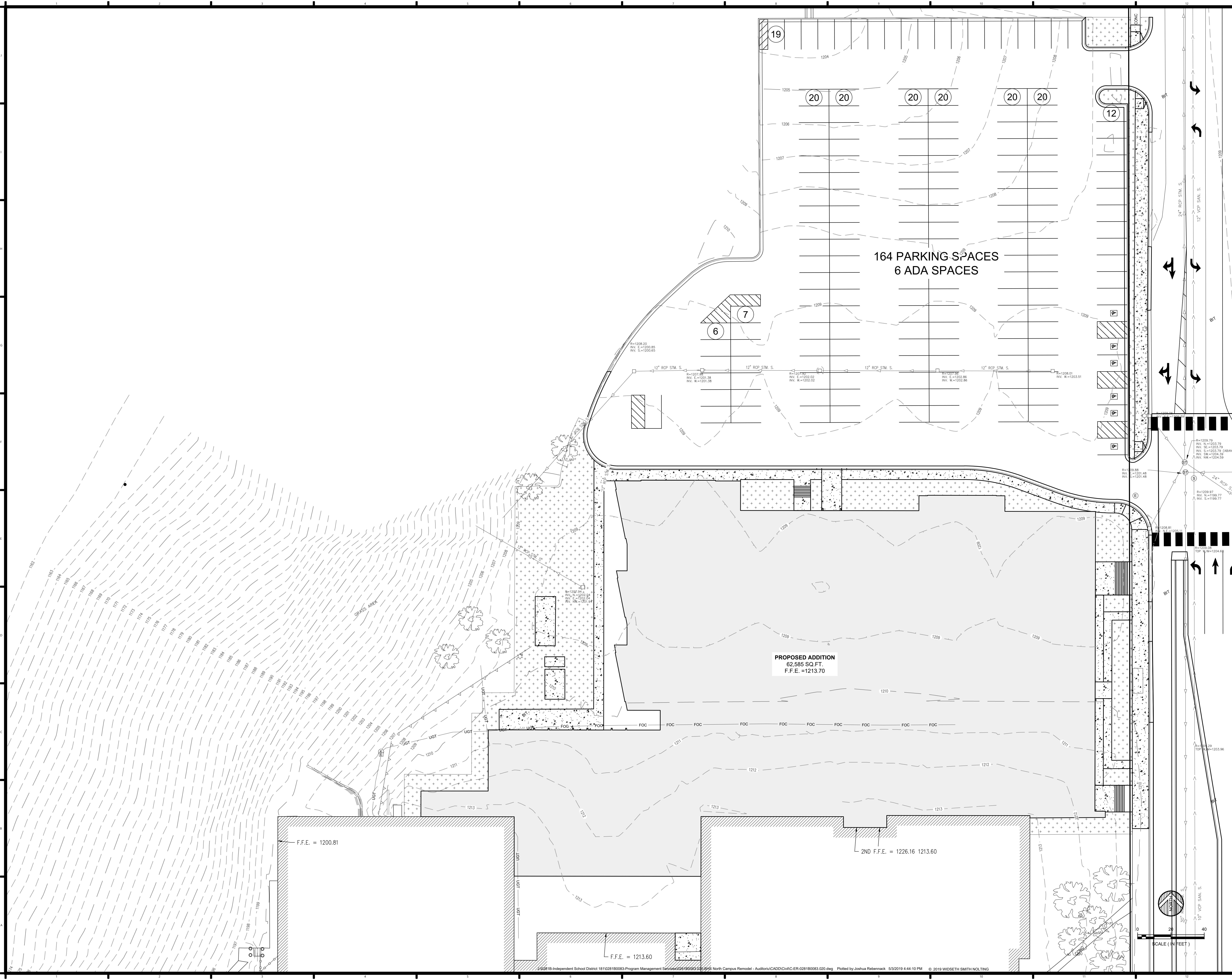
Signature:
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
EROSION CONTROL PLAN -
OVERALL MAP

Sheet Number:
C7.00





MARK	DATE	REVISION

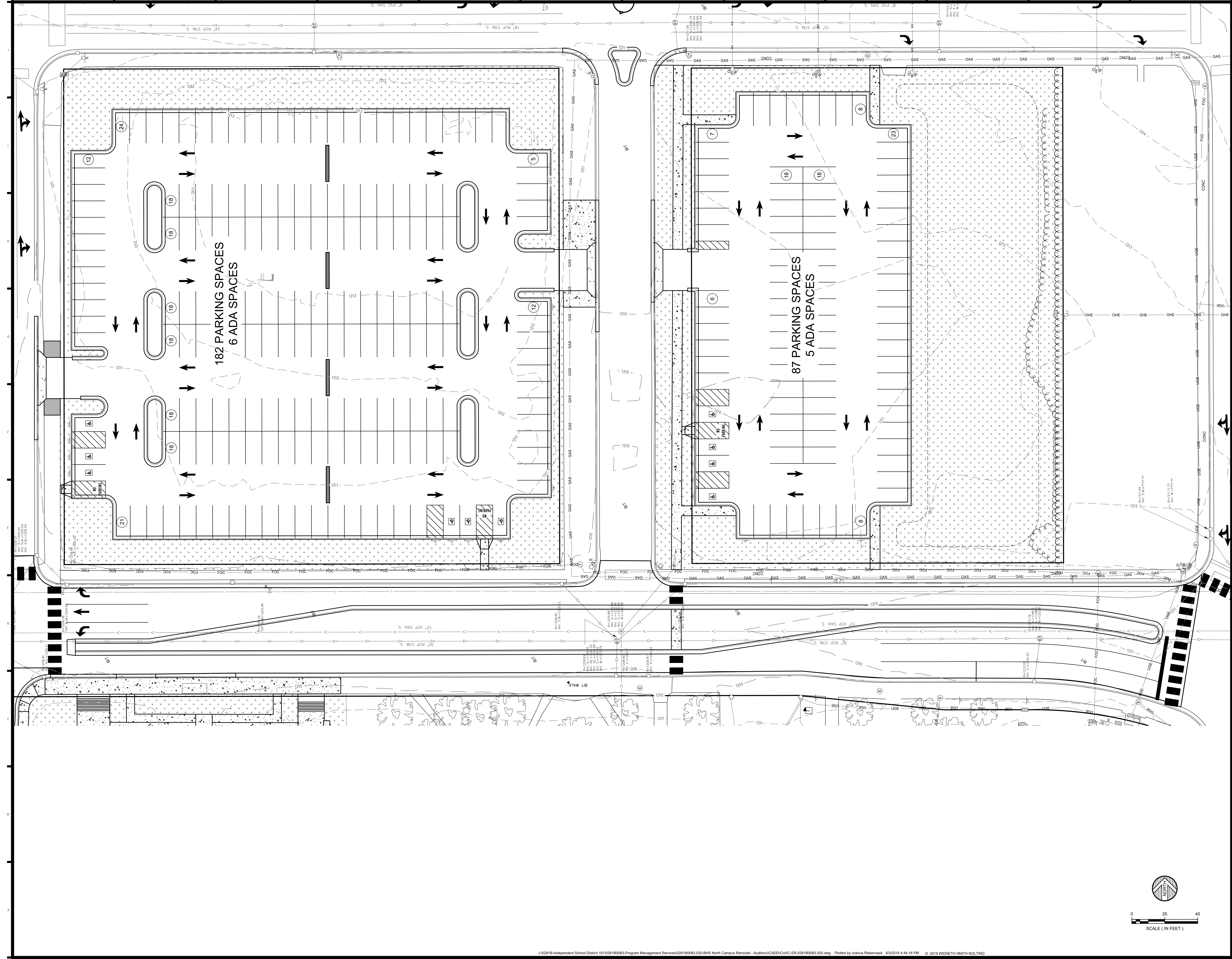
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Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
**EROSION CONTROL PLAN -
NORTH PARKING LOT**

Sheet Number:
C7.01



MARK	DATE	REVISION

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Project Information:
Project No. : 028180083.020
Drawn By : JWR
Checked By : TTR
Date : MAY 2019
File Name:

Sheet Title:
EROSION CONTROL PLAN - EAST PARKING LOTS

Sheet Number:
C7.02



Project Location:
702 S 5TH ST
BRAINERD, MN

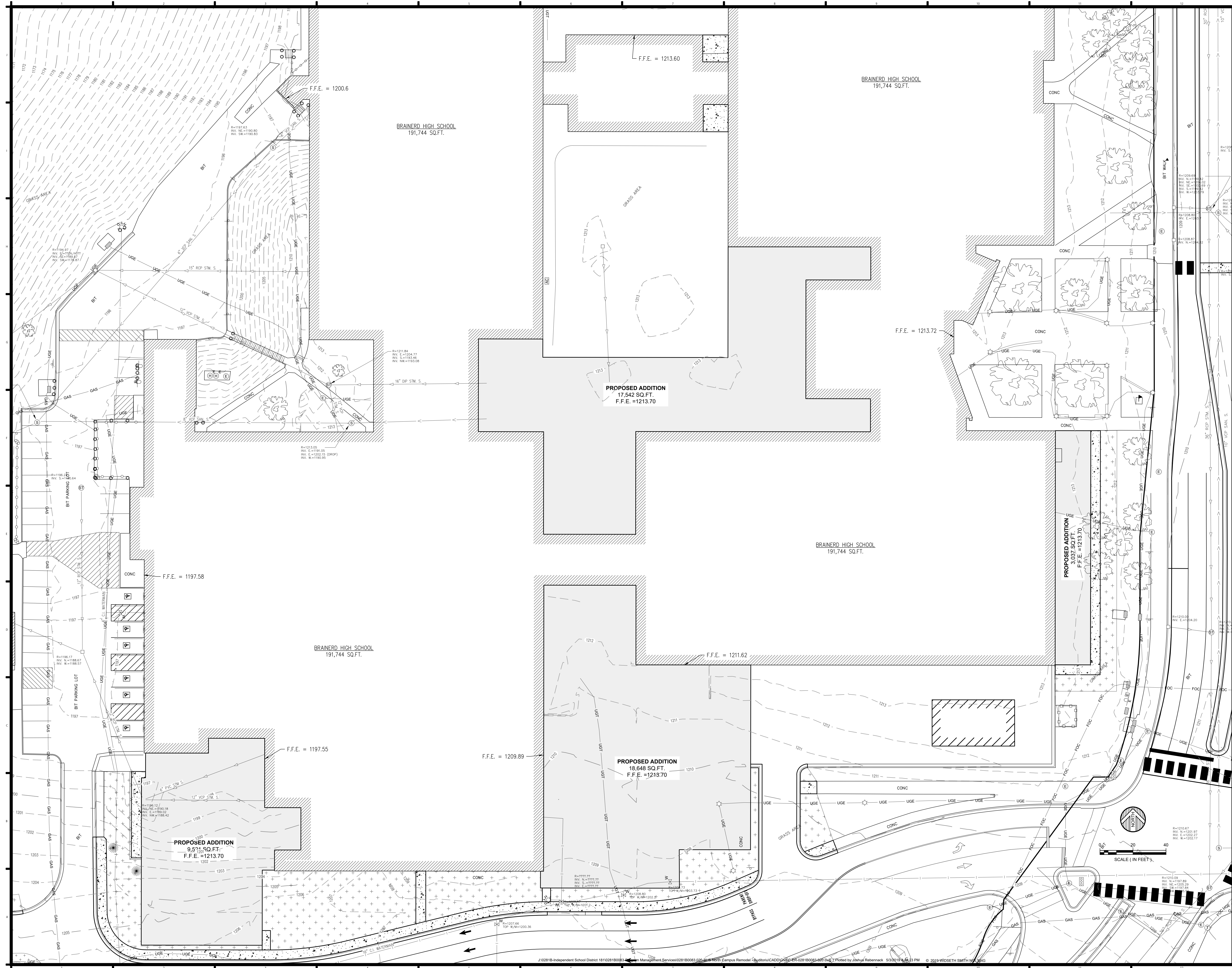
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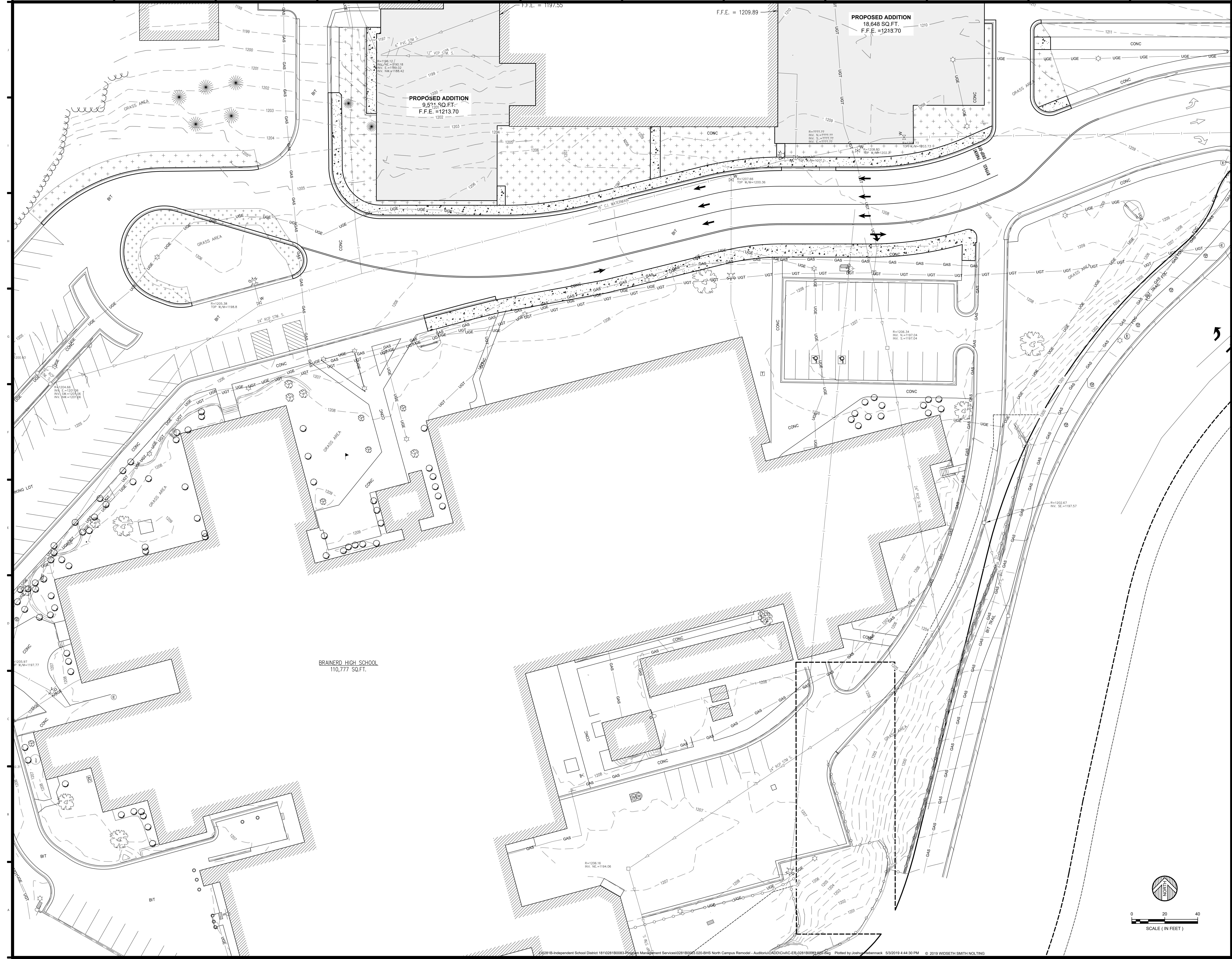
MARK	DATE	REVISION
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Signature: _____
 Printed Name: TIMOTHY T. RAMERTH
 Date: MM/DD/YYYY Reg. No.: 41966

Sheet Title:
EROSION CONTROL PLAN - HIGH
SCHOOL

C7.03





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PHILADELPHIA | PENNSYLVANIA
FARGO | NORTH DAKOTA
SIOUX FALLS | SOUTH DAKOTA
www.ics-consult.com



Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

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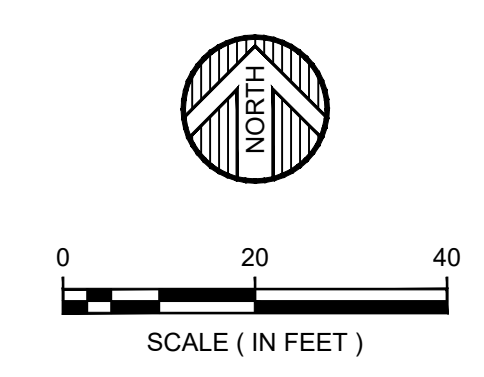
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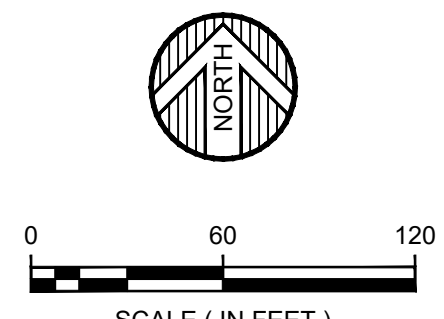
Sheet Title:
EROSION CONTROL PLAN -
SOUTH PARKING LOT

Sheet Number:
C7.04



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- PROVIDE WATERMAIN THRUST RESTRAINTS PER CITY STANDARD REQUIREMENTS.
- RIM ELEVATIONS REFLECT A SUMP OF 0.05 FEET.
- STORM SEWER OF DIFFERING DIAMETERS SHALL MATCH 0.8 DIAMETER GRADE LINE ELEVATIONS AT CATCH BASIN OR MANHOLE JUNCTIONS.
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Project Location:
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BRAINERD, MN

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Signature: _____
 Printed Name: TIMOTHY T. RAMERTH
 Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No. : 0281B0083.020
Drawn By : JWR
Checked By : TTR
Date : MAY 2019
File Name:

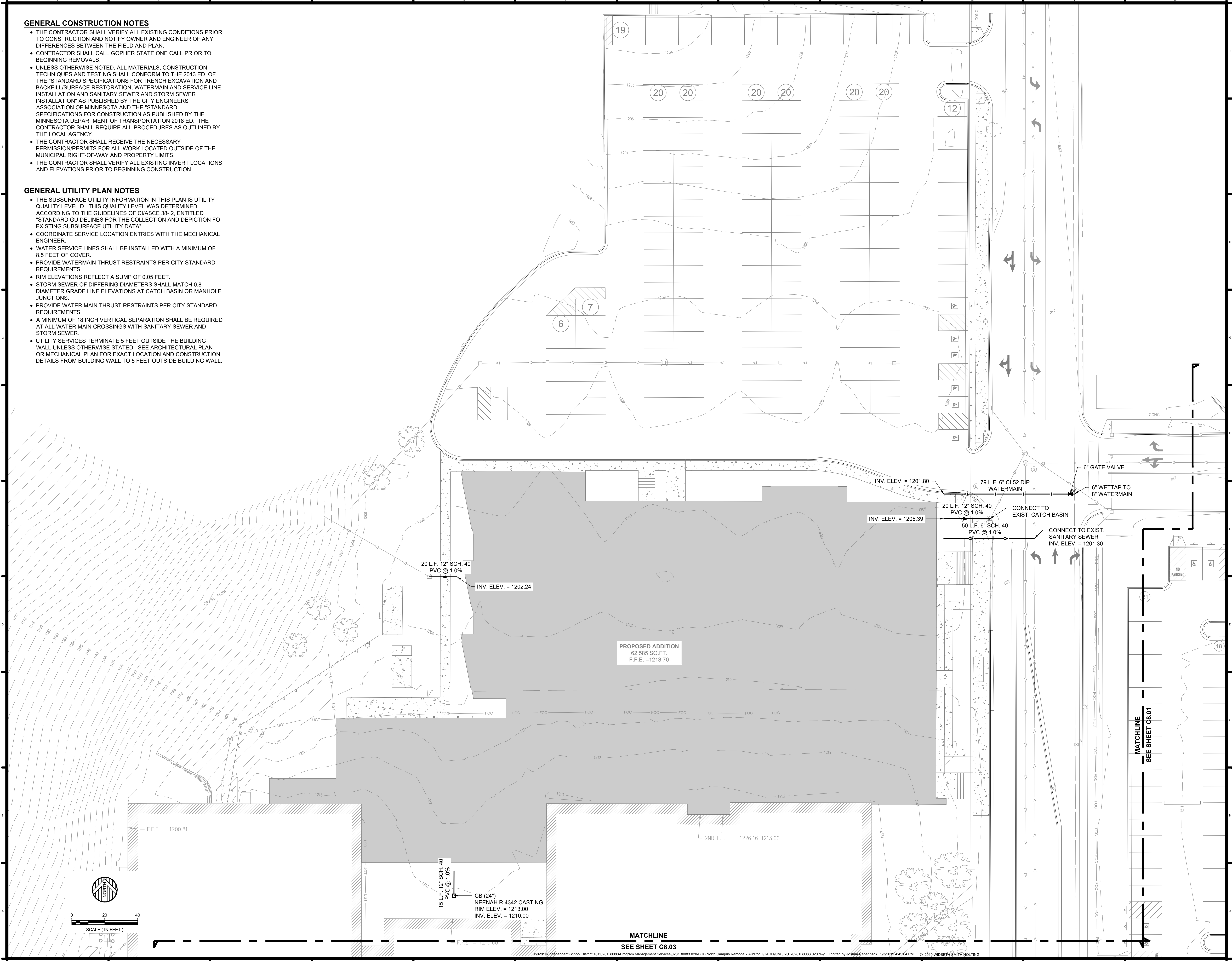
Sheet Title:
UTILITY PLAN - OVERALL MAP

Sheet Number:

C8.00

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BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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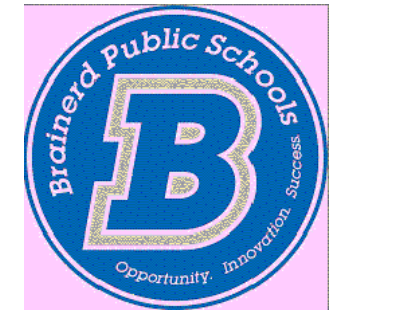
Project Information:
Project No. : 0281B0083.020
Drawn By : JWR
Checked By : TTR
Date : MAY 2019
File Name:

Sheet Title:
UTILITY PLAN - NORTH PARKING
LOT

Sheet Number:

C8.01

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

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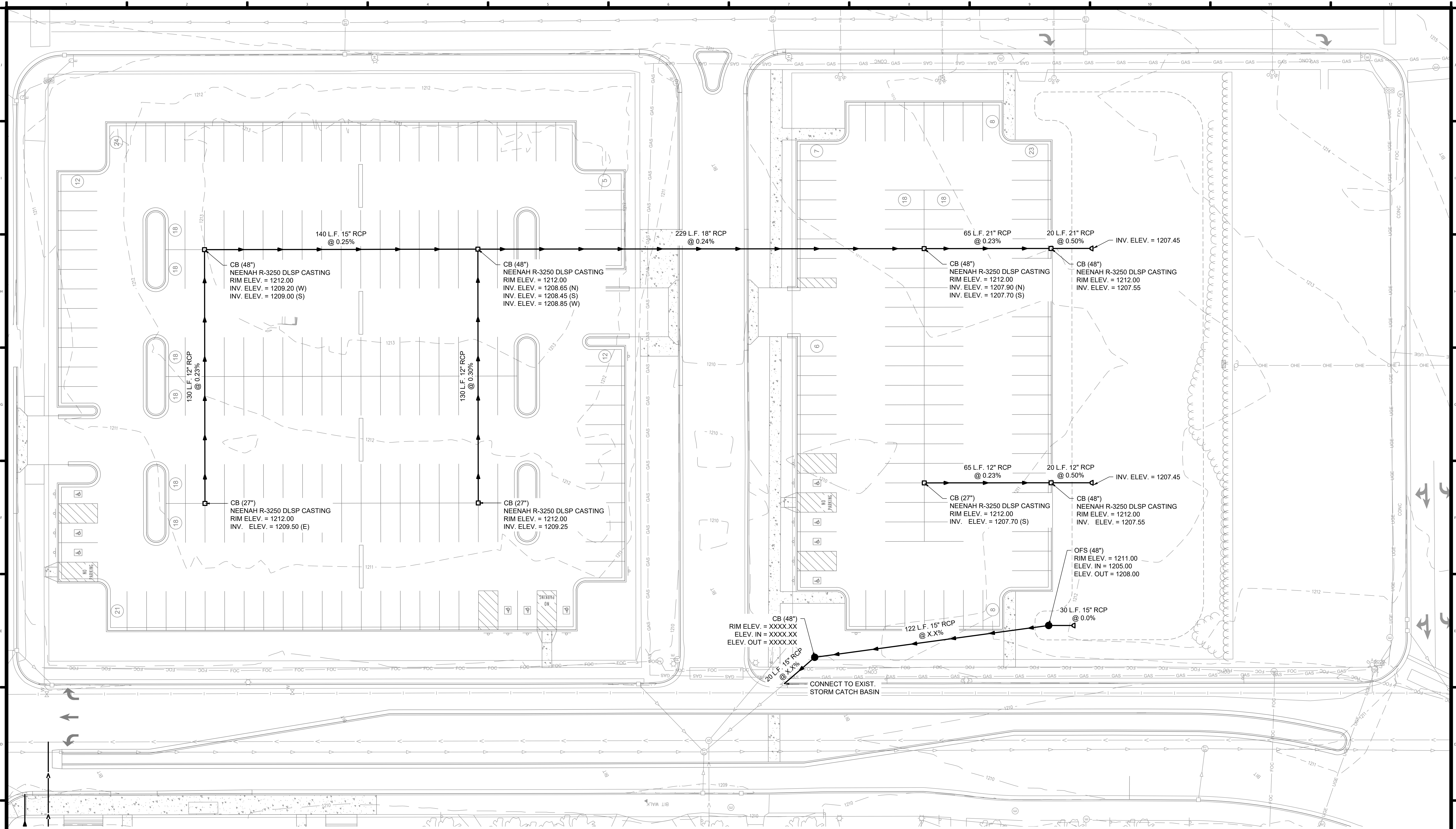
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Project Information:
 Project No. : 028180083.020
 Drawn By : JWR
 Checked By : TTR
 Date : MAY 2019
 File Name:

Sheet Title:
 UTILITY PLAN - EAST PARKING LOTS

Sheet Number:
C8.02



GENERAL UTILITY PLAN NOTES

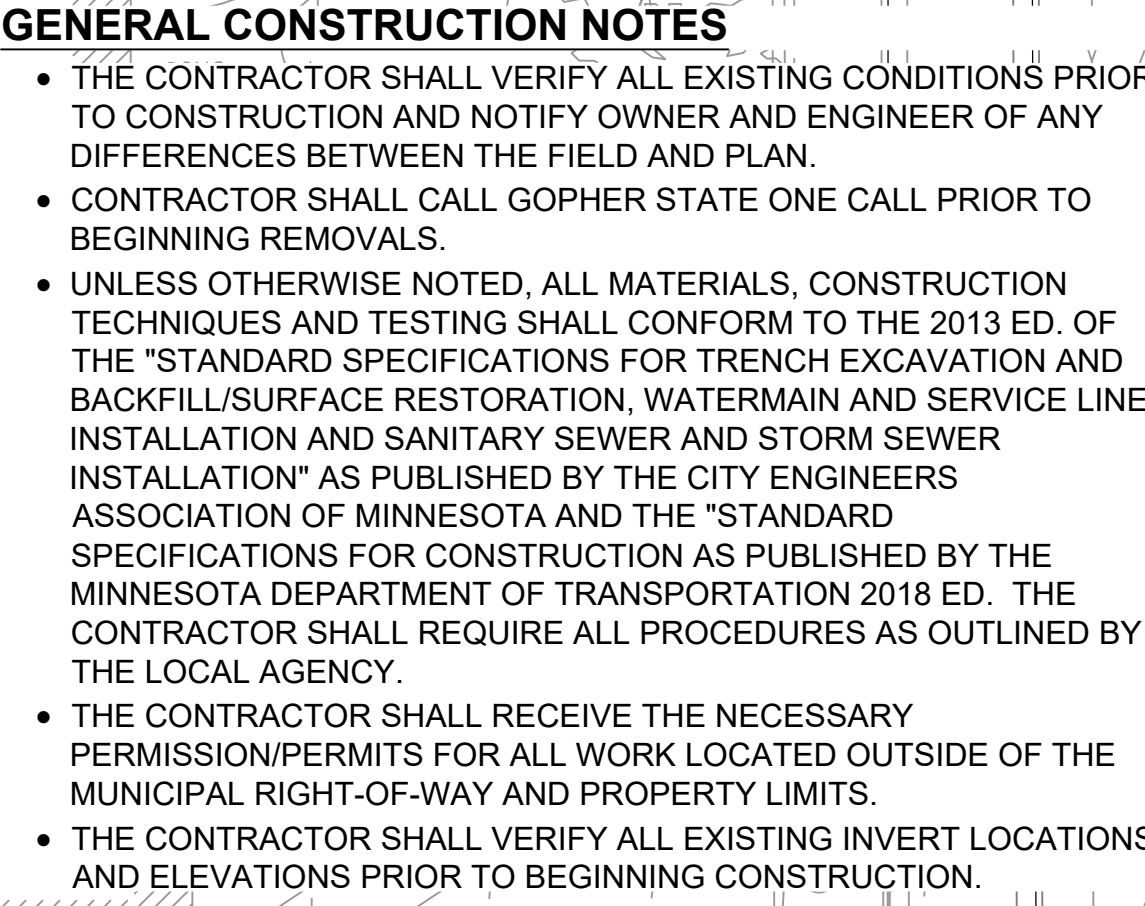
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0 20 40
 SCALE (IN FEET)



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Printed Name: TIMOTHY T. RAMERT

Date: MM/DD/YYYY Reg. No.: 41966

Project No. : 0281B0083.020

Drawn By : JWR

Checked By : TTR

Date : MAY 2019

File Name:

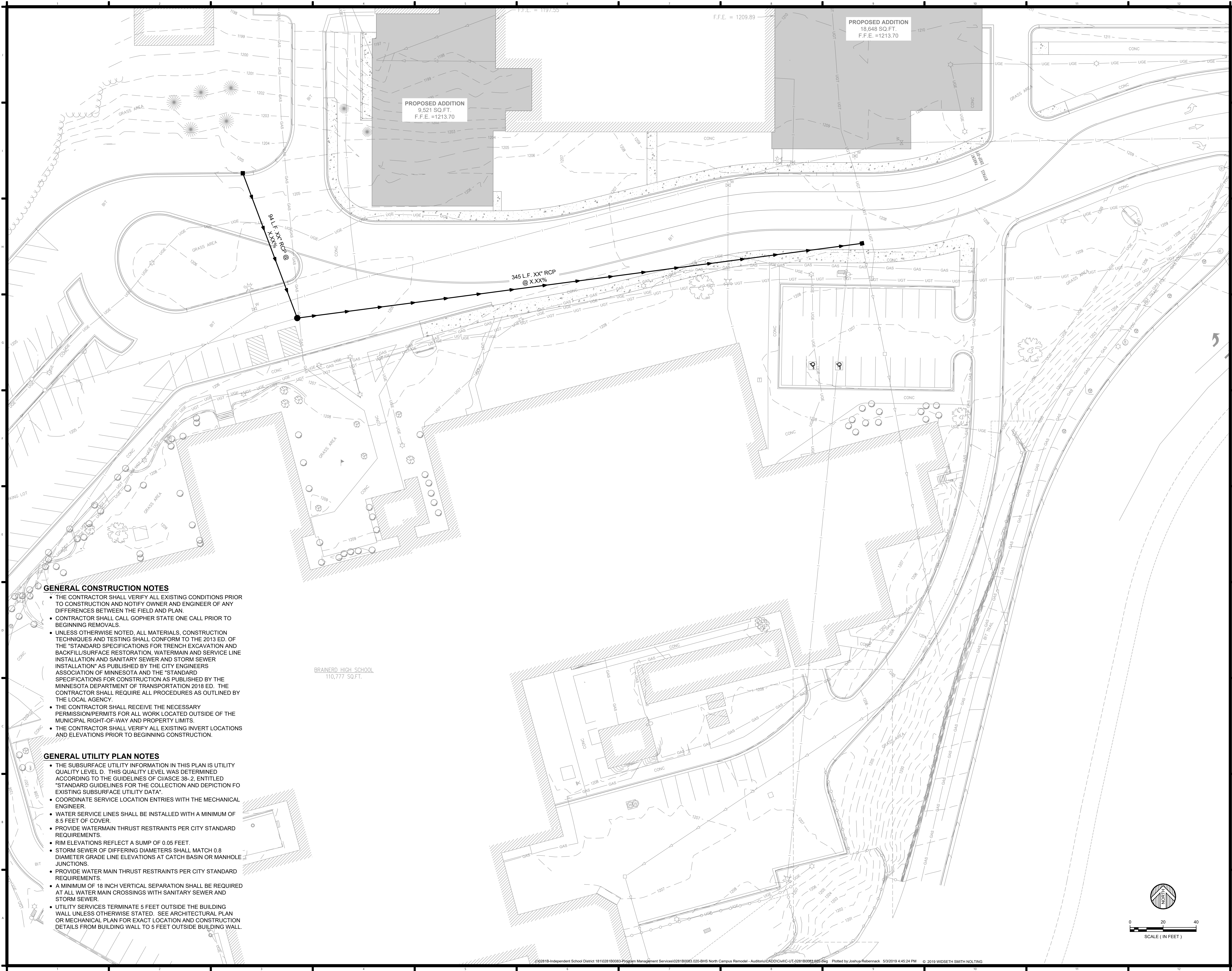
Sheet Title:

UTILITY PLAN - HIGH SCHOOL

Sheet Number:

C8.03





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Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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BRAINERD, MN

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MARK	DATE	REVISION
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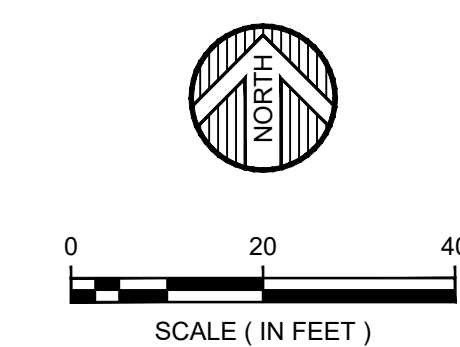
Signature:
Printed Name: **TIMOTHY T. RAMERTH**
Date: MM/DD/YYYY Reg. No.: 41956

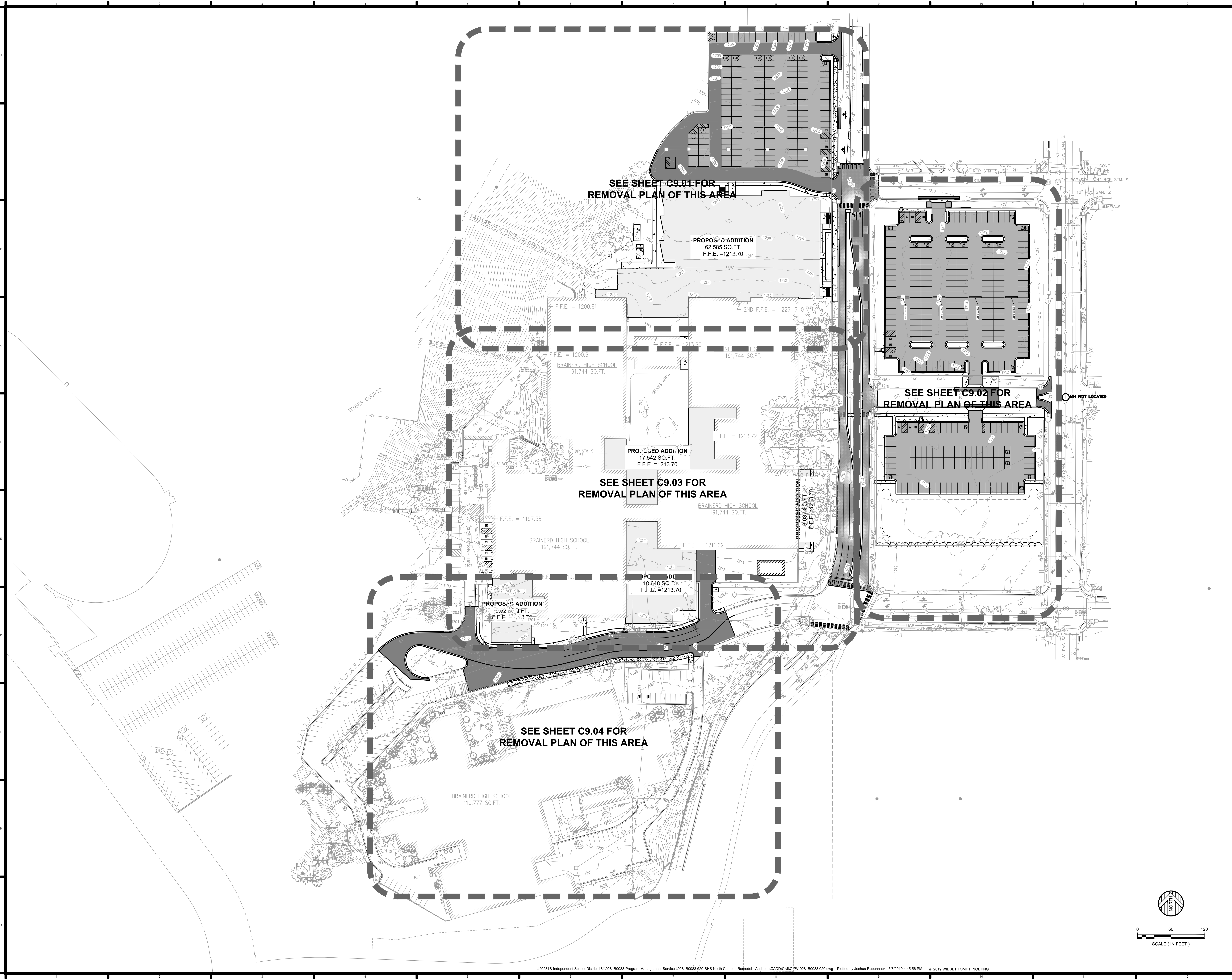
Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
UTILITY PLAN - SOUTH PARKING LOT

Sheet Number:

C8.04





SEE SHEET C9.01 FOR
REMOVAL PLAN OF THIS AREA

PROPOSED ADDITION
62,585 SQ. FT.
F.F.E. = 1213.70

SEE SHEET C9.02 FOR
REMOVAL PLAN OF THIS AREA

SEE SHEET C9.03 FOR
REMOVAL PLAN OF THIS AREA

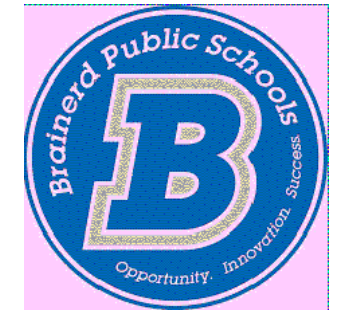
PROPOSED ADDITION
17,542 SQ. FT.
F.F.E. = 1213.70

PROPOSED ADDITION
3,037 SQ. FT.
F.F.E. = 1213.70

PROPOSED ADDITION
9,522 SQ. FT.
F.F.E. = 1213.70

SEE SHEET C9.04 FOR
REMOVAL PLAN OF THIS AREA

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

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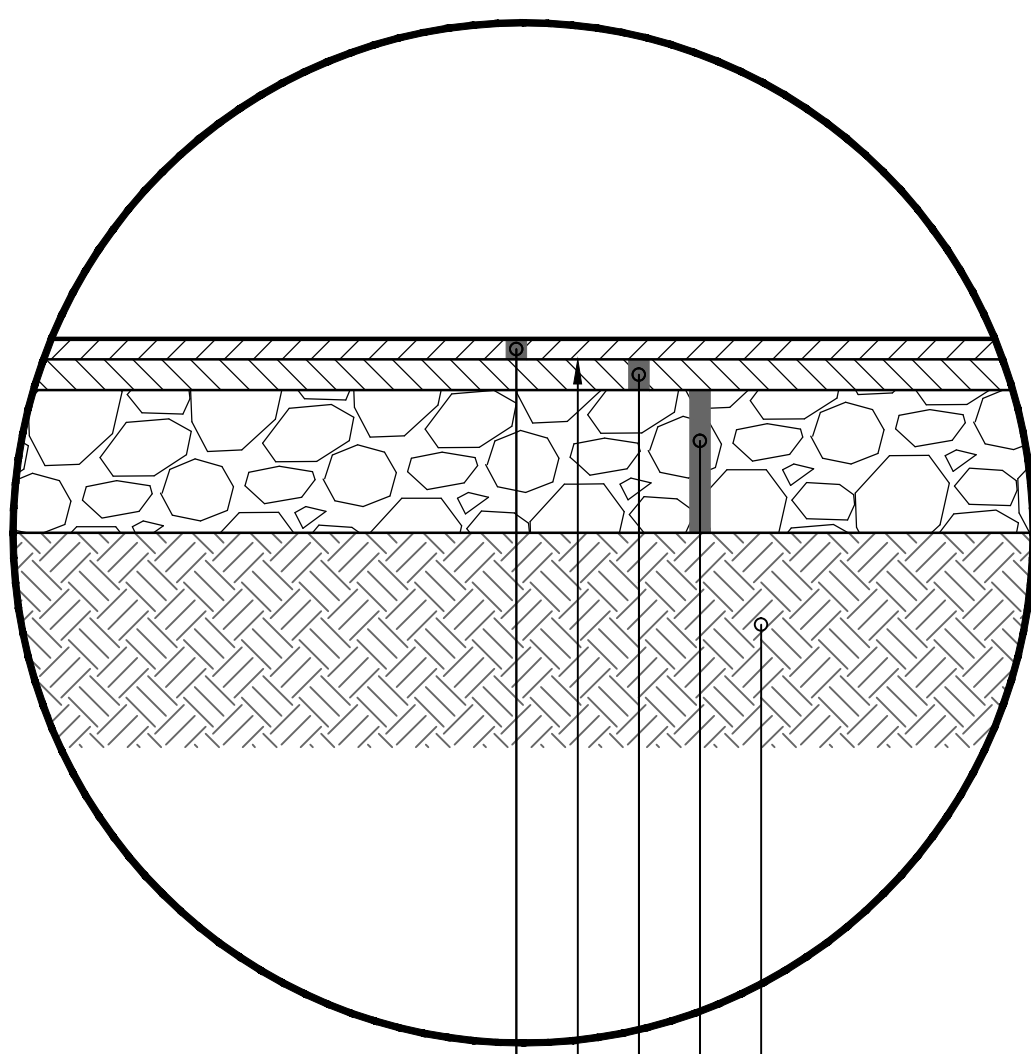
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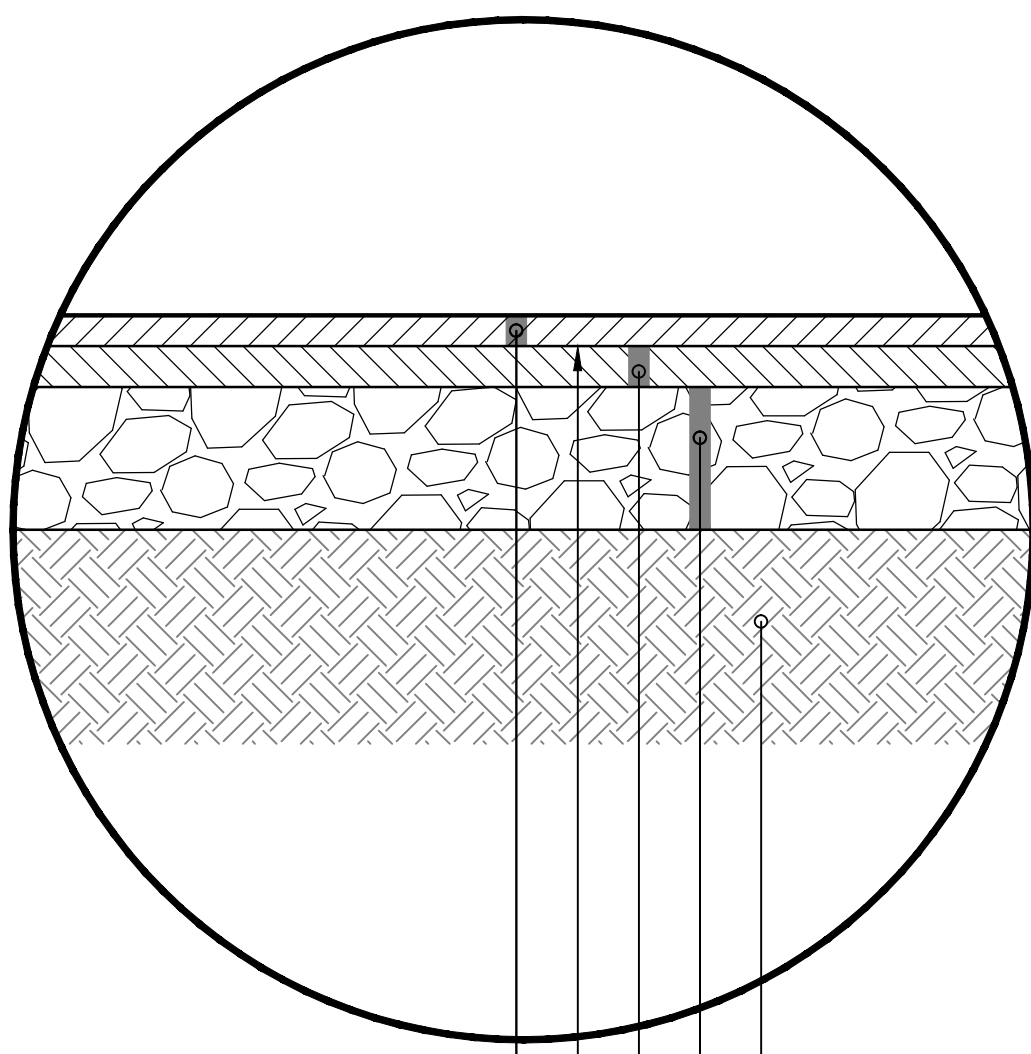
Sheet Title:
PAVING PLAN - OVERALL MAP

Sheet Number:
C9.00



1 1/2" BITUMINOUS WEARING
COURSE SPWEA 340C
BITUMINOUS MATERIAL FOR TACK COAT
1 1/2" BITUMINOUS NON-WEARING COURSE SPWEA 340C
6" AGGREGATE CLASS 5
SCARIFY & COMPACT SUBGRADE

LIGHT DUTY BITUMINOUS PAVING SECTION
SCALE: NONE



2" BITUMINOUS WEARING
COURSE SPWEA 340C
BITUMINOUS MATERIAL FOR TACK COAT
2" BITUMINOUS NON-WEARING COURSE SPWEA 340C
8" AGGREGATE CLASS 5
SCARIFY & COMPACT SUBGRADE

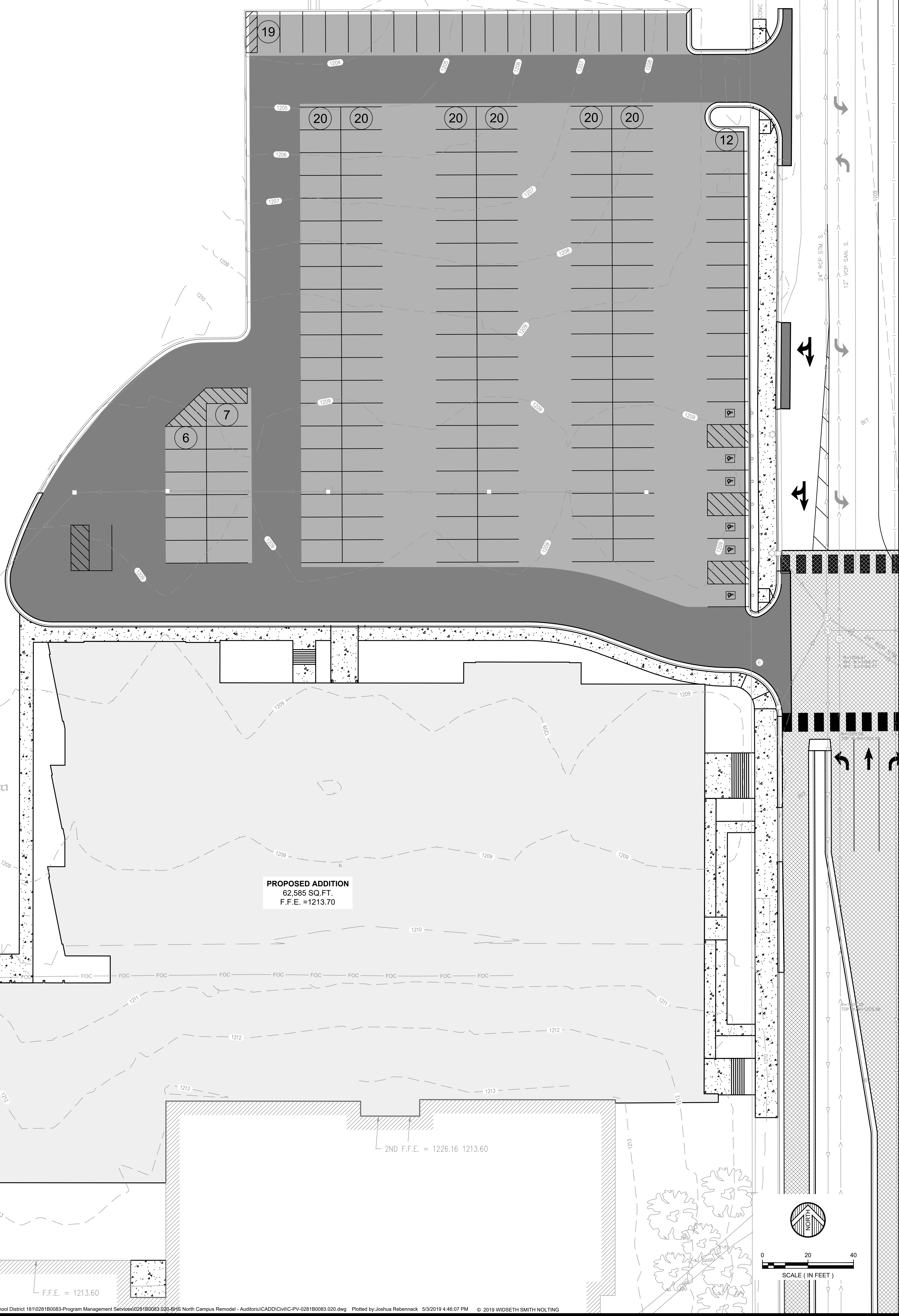
HEAVY DUTY BITUMINOUS PAVING SECTION
SCALE: NONE

PAVING NOTES

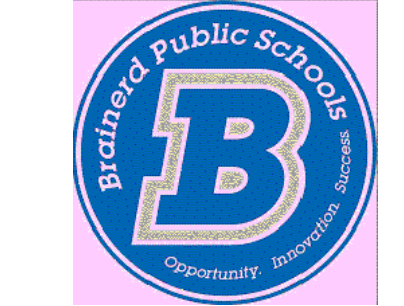
- REFER TO PROJECT ARCHITECTURAL DRAWINGS FOR DETAIL DIMENSIONS OF BUILDING, CANOPIES, RECEIVING AND REFUSE/RECYCLING PLATFORMS AND/OR ENCLOSURES AND CONCRETE WORK SURROUNDING BUILDING.
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- BITUMINOUS PAVEMENT SECTIONS SHALL MATCH EXISTING PAVEMENT SECTIONS FOR KNOLLWOOD DRIVE REPLACEMENT AND THE CURRENT SITE IMPROVEMENTS. THE BEST INFORMATION KNOWN AT THE TIME OF CONSTRUCTION OF THE PREVIOUS PROJECTS HAS BEEN PROVIDED IN THE PAVEMENT SECTION DETAILS SHOWN.
- ALL CURB AND GUTTER SHALL BE B618 UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL INSTALL ALL UTILITIES AND CONDUITS PRIOR TO PAVING AND INSTALLATION OF CURB AND GUTTER.

LEGEND

- DENOTES LIGHT DUTY BITUMINOUS PAVEMENT
- DENOTES HEAVY DUTY BITUMINOUS PAVEMENT
- DENOTES 1-1/2" BITUMINOUS OVERLAY PAVEMENT



Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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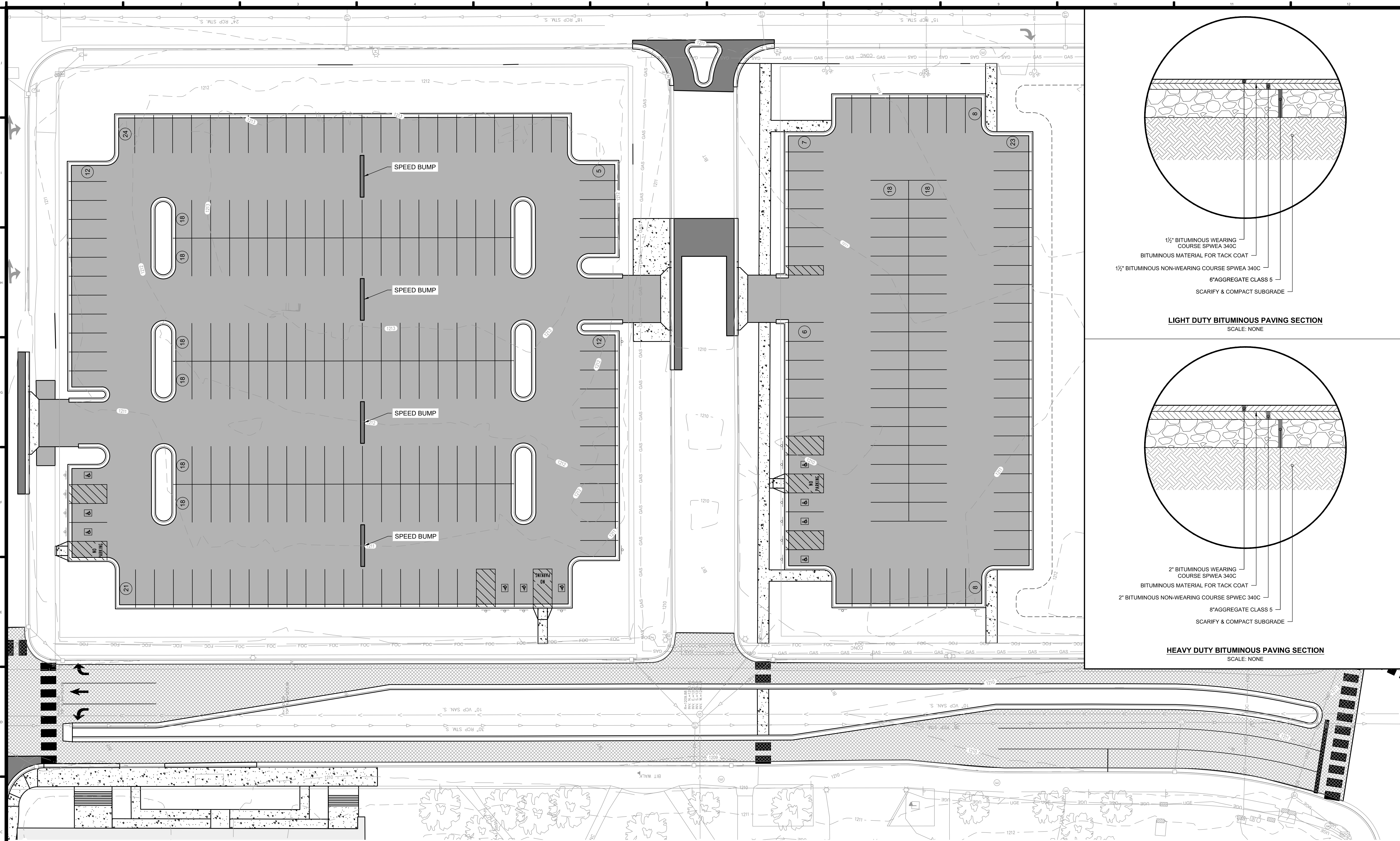
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Project Information:
Project No.: 028180083.020
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Date: MAY 2019
File Name:

Sheet Title:
PAVING PLAN - NORTH PARKING LOT

Sheet Number:
C9.01

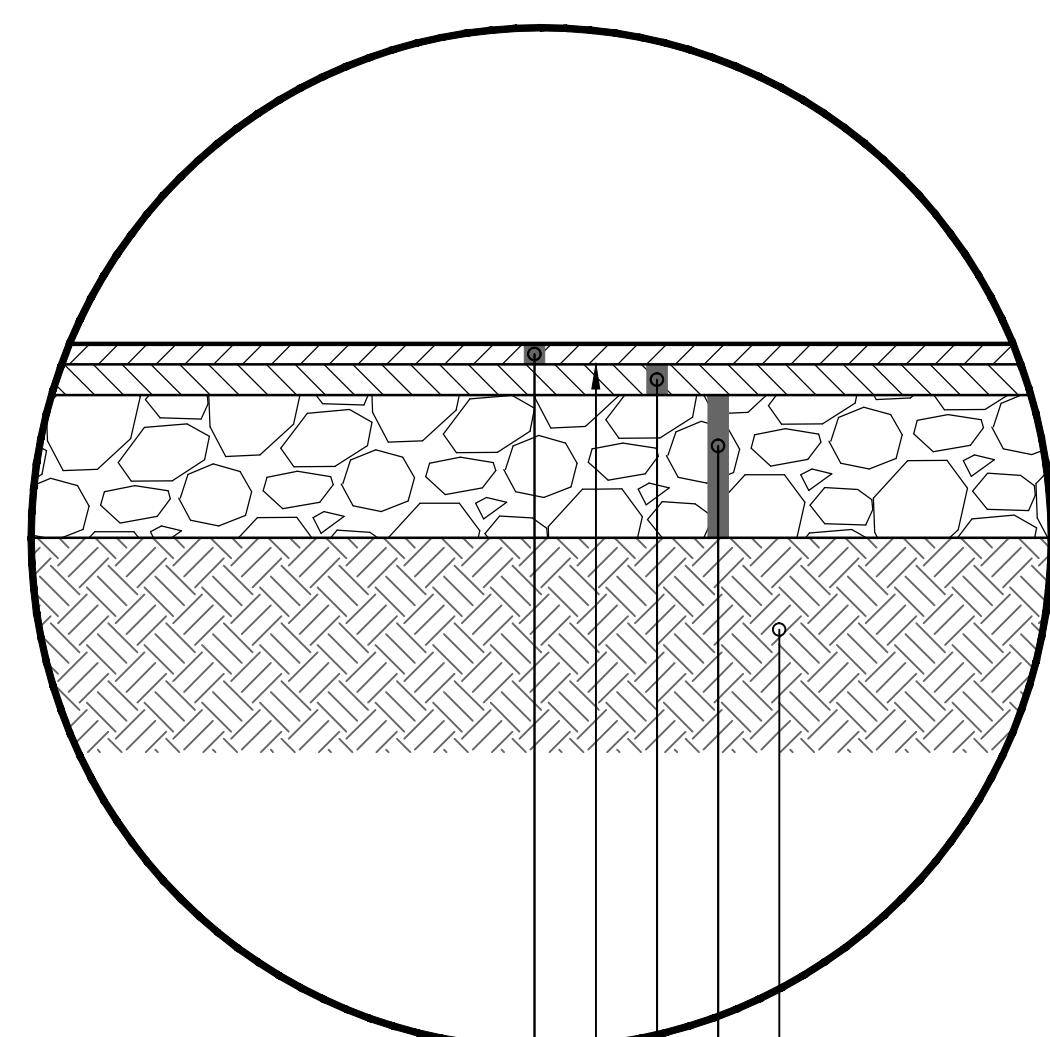


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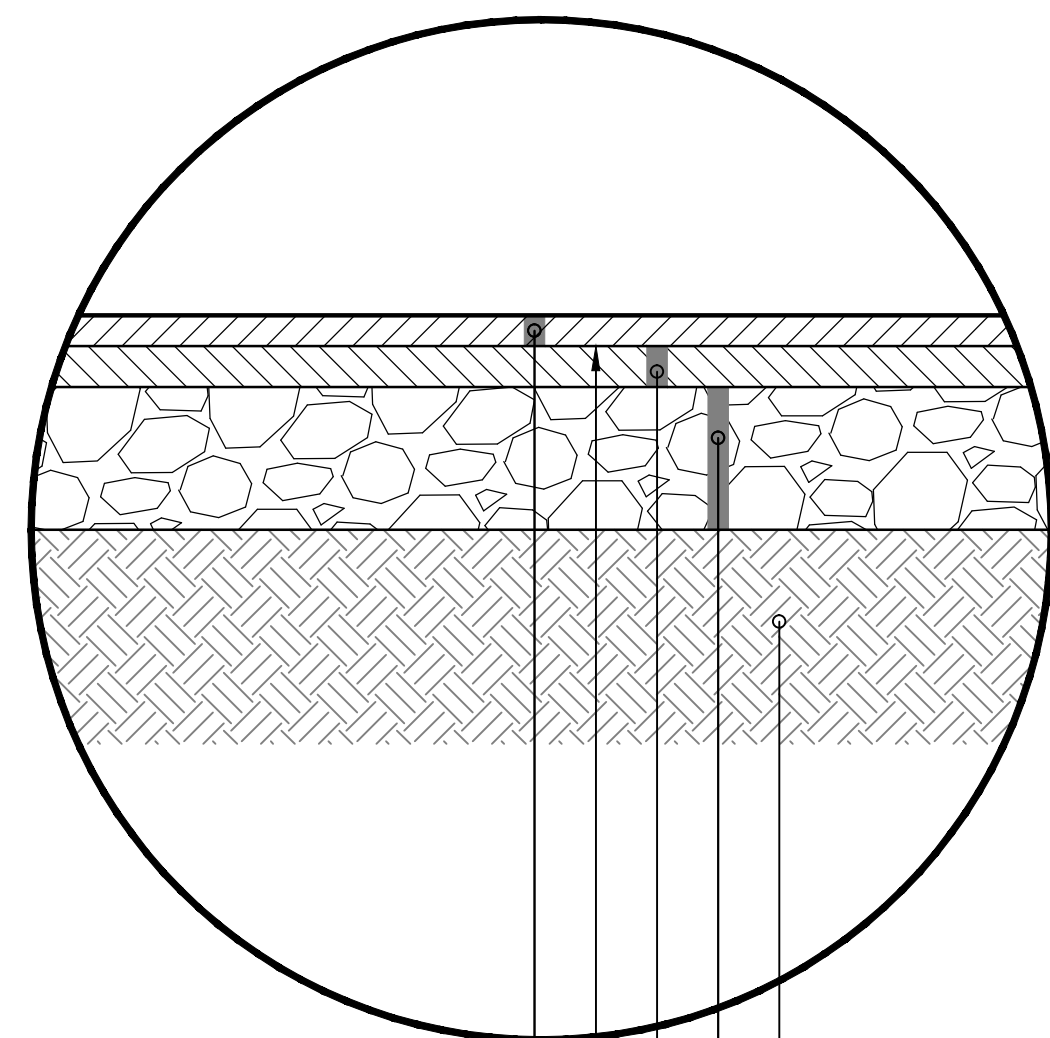
LEGEND

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- DENOTES HEAVY DUTY BITUMINOUS PAVEMENT
- DENOTES 1-1/2" BITUMINOUS OVERLAY PAVEMENT



1 1/2" BITUMINOUS WEARING
COURSE SPWEA 340C
BITUMINOUS MATERIAL FOR TACK COAT
1 1/2" BITUMINOUS NON-WEARING COURSE SPWEA 340C
8" AGGREGATE CLASS 5
SCARIFY & COMPACT SUBGRADE

LIGHT DUTY BITUMINOUS PAVING SECTION
SCALE: NONE



2" BITUMINOUS WEARING
COURSE SPWEA 340C
BITUMINOUS MATERIAL FOR TACK COAT
2" BITUMINOUS NON-WEARING COURSE SPWEC 340C
8" AGGREGATE CLASS 5
SCARIFY & COMPACT SUBGRADE

HEAVY DUTY BITUMINOUS PAVING SECTION
SCALE: NONE



0 20 40
SCALE (IN FEET)

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
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BRAINERD, MN

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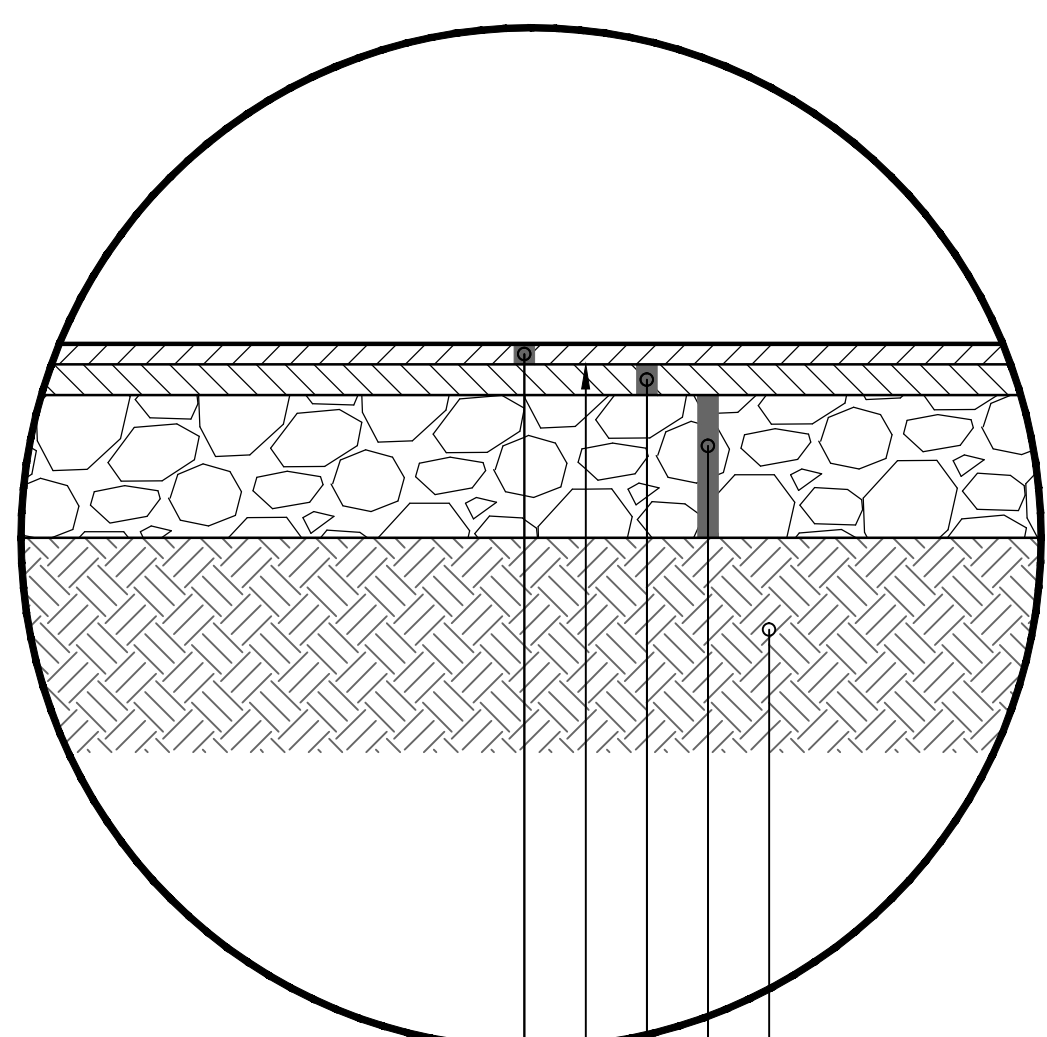
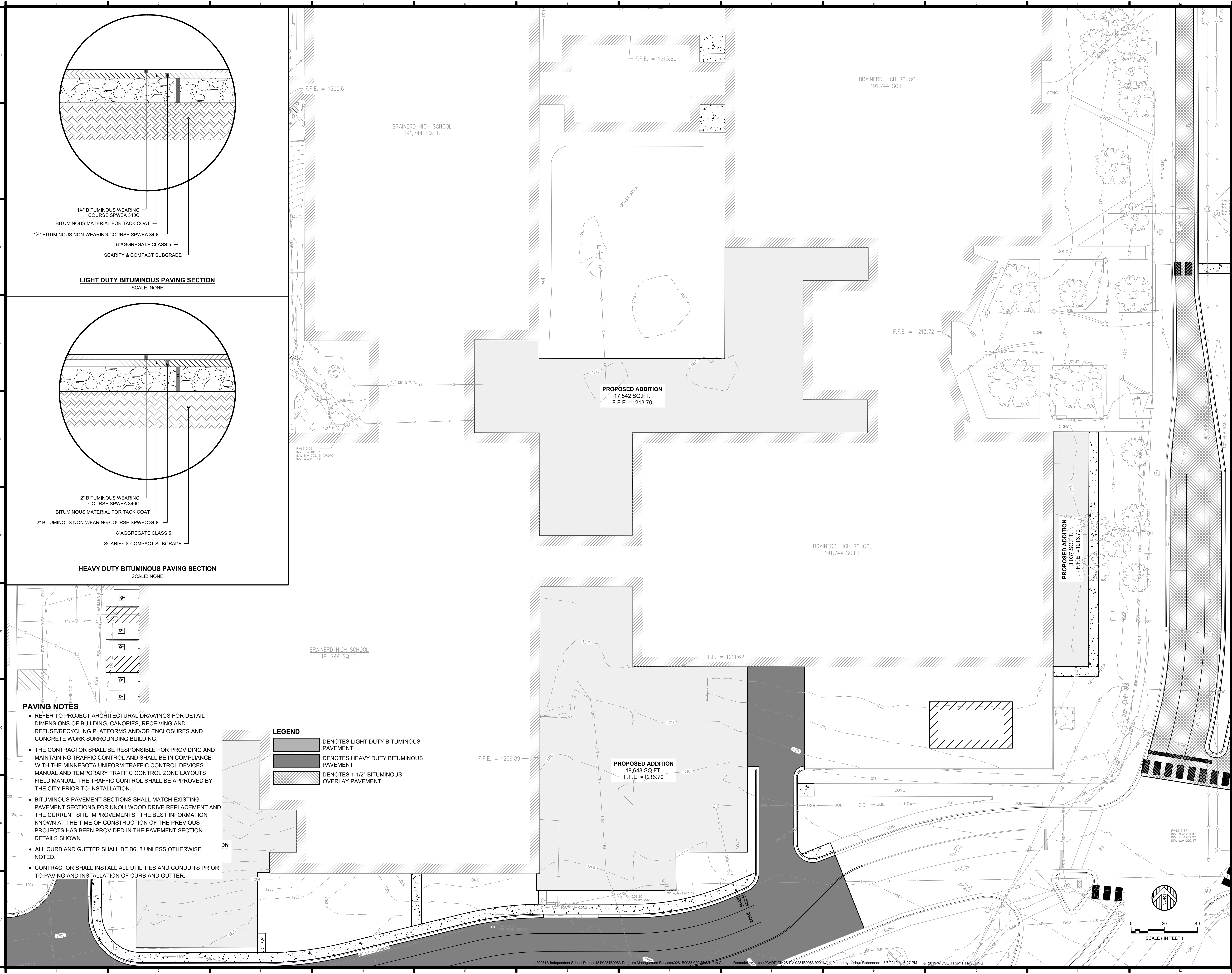
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Date: MAY 2019
File Name:

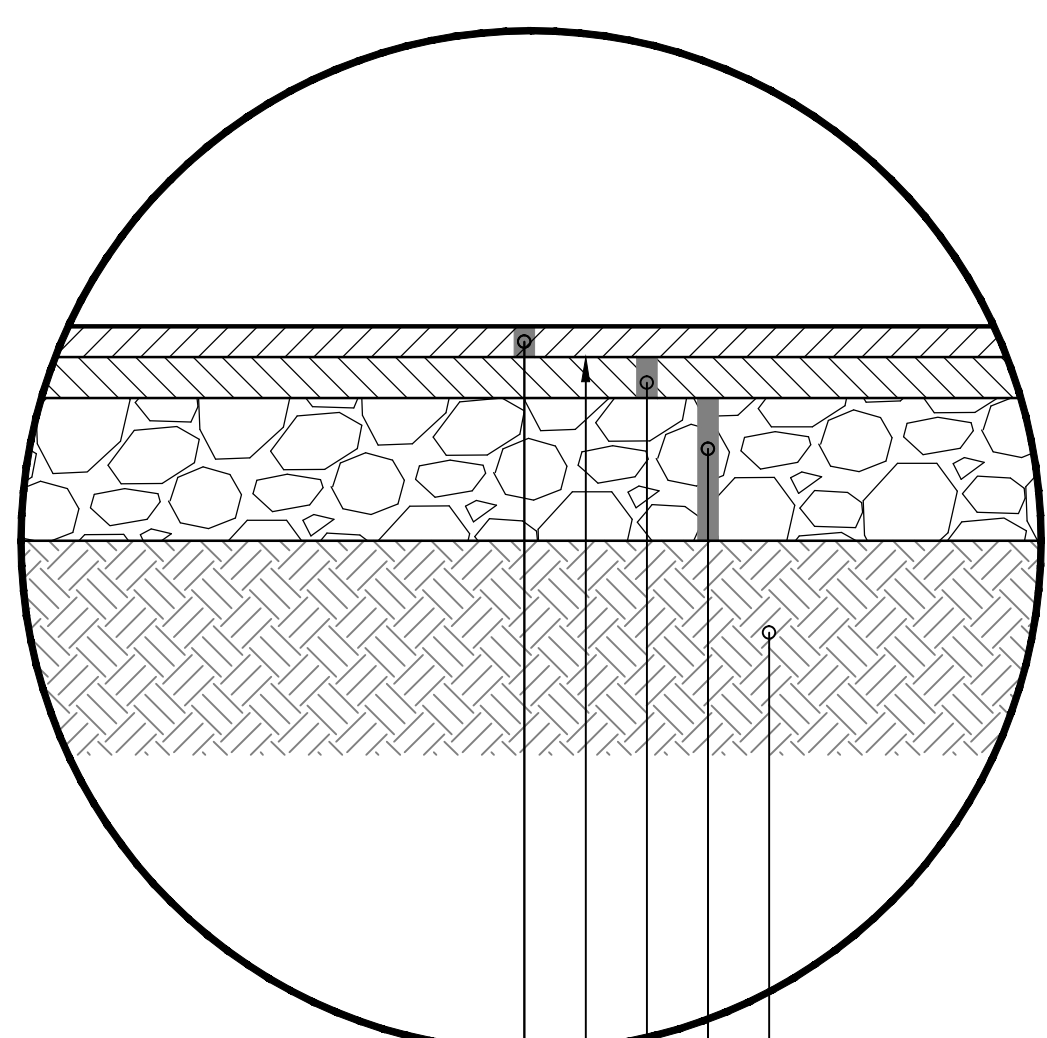
Sheet Title:
PAVING PLAN - EAST PARKING LOTS

Sheet Number:

C9.02



LIGHT DUTY BITUMINOUS PAVING SECTION
SCALE: NONE



HEAVY DUTY BITUMINOUS PAVING SECTION
SCALE: NONE

PAVING NOTES

- REFER TO PROJECT ARCHITECTURAL DRAWINGS FOR DETAIL DIMENSIONS OF BUILDING, CANOPIES, RECEIVING AND REFUSE/RECYCLING PLATFORMS AND/OR ENCLOSURES AND CONCRETE WORK SURROUNDING BUILDING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TRAFFIC CONTROL AND SHALL BE IN COMPLIANCE WITH THE MINNESOTA UNIFORM TRAFFIC CONTROL DEVICES MANUAL AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL. THE TRAFFIC CONTROL SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION.
- BITUMINOUS PAVEMENT SECTIONS SHALL MATCH EXISTING PAVEMENT SECTIONS FOR KNOLLWOOD DRIVE REPLACEMENT AND THE CURRENT SITE IMPROVEMENTS. THE BEST INFORMATION KNOWN AT THE TIME OF CONSTRUCTION OF THE PREVIOUS PROJECTS HAS BEEN PROVIDED IN THE PAVEMENT SECTION DETAILS SHOWN.
- ALL CURB AND GUTTER SHALL BE B618 UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL INSTALL ALL UTILITIES AND CONDUITS PRIOR TO PAVING AND INSTALLATION OF CURB AND GUTTER.

LEGEND

- DENOTES LIGHT DUTY BITUMINOUS PAVEMENT
- DENOTES HEAVY DUTY BITUMINOUS PAVEMENT
- DENOTES 1-1/2" BITUMINOUS OVERLAY PAVEMENT

BLAINE | SOUTH MINNESOTA
PHILADELPHIA | PENNSYLVANIA
FARGO | NORTH DAKOTA
SIOUX FALLS | SOUTH DAKOTA
www.ics-consult.com

Project Name:

BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:

702 S 5TH ST
BRAINERD, MN

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MARK	DATE	REVISION
------	------	----------

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 State of Minnesota.

Signature: _____
Printed Name: **TIMOTHY T. RAMERTH**
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:

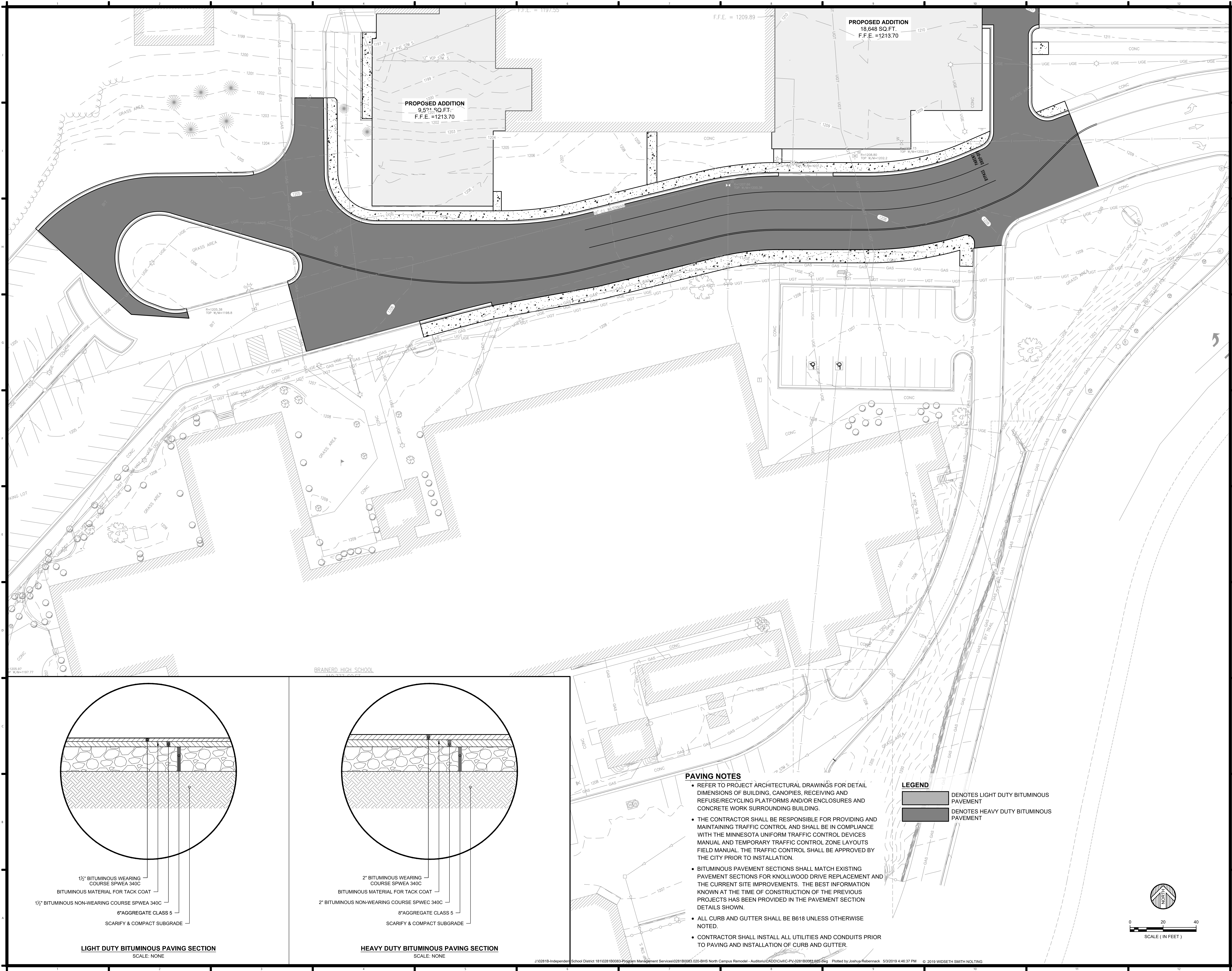
Project No. : 028180083.020
Drawn By : JWR
Checked By : TTR
Date : MAY 2019
File Name: _____

Sheet Title:

PAVING PLAN - HIGH SCHOOL

Sheet Number:

C9.03



Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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MARK	DATE	REVISION
------	------	----------

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 State of Minnesota.

Signature:
Printed Name: **TIMOTHY T. RAMERTH**
Date: MM/DD/YYYY Reg. No.: 41966

Project Information:
Project No.: 028180083.020
Drawn By: JWR
Checked By: TTR
Date: MAY 2019
File Name:

Sheet Title:
PAVING PLAN - SOUTH PARKING LOT

Sheet Number:

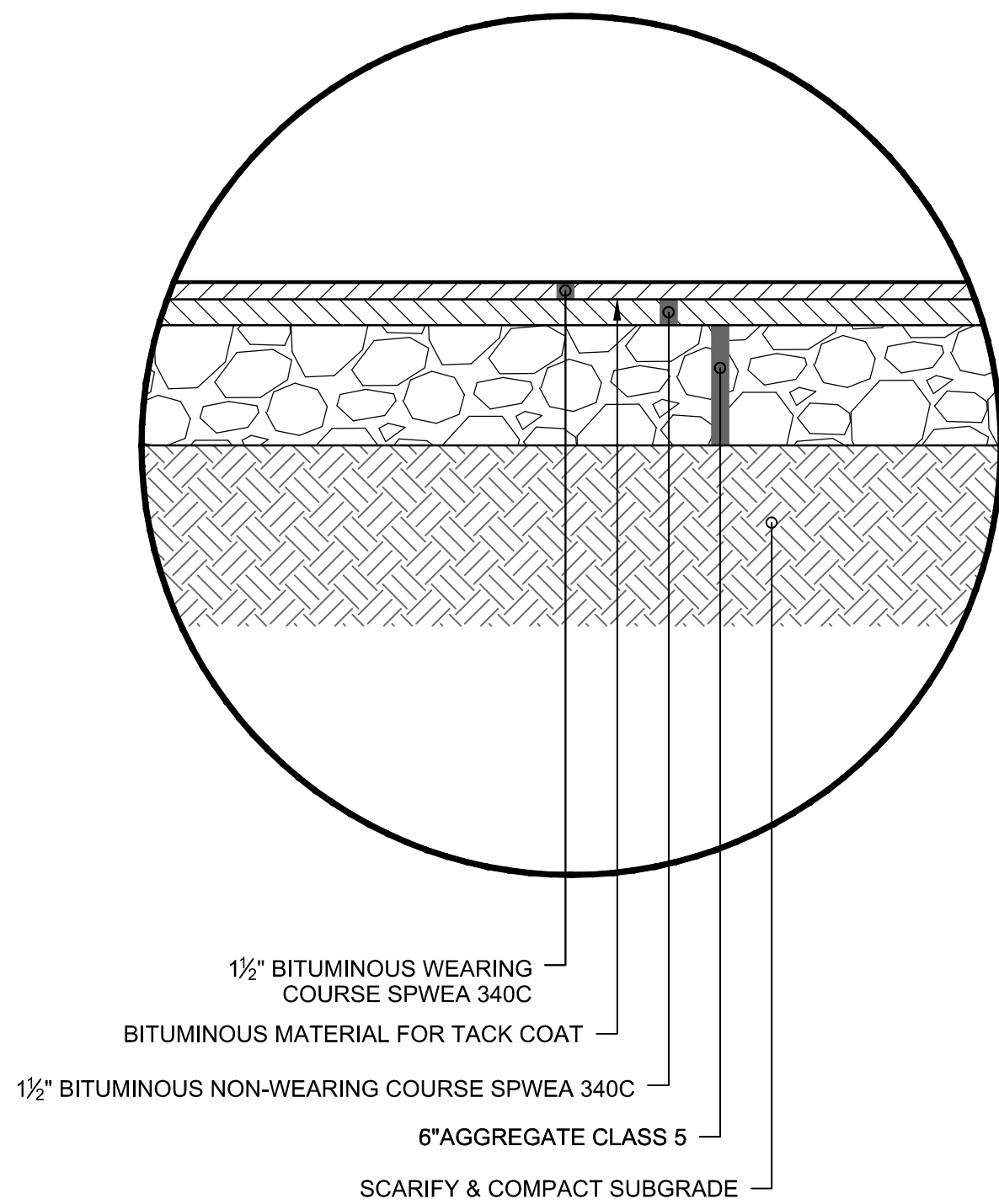
C9.04

PAVING NOTES

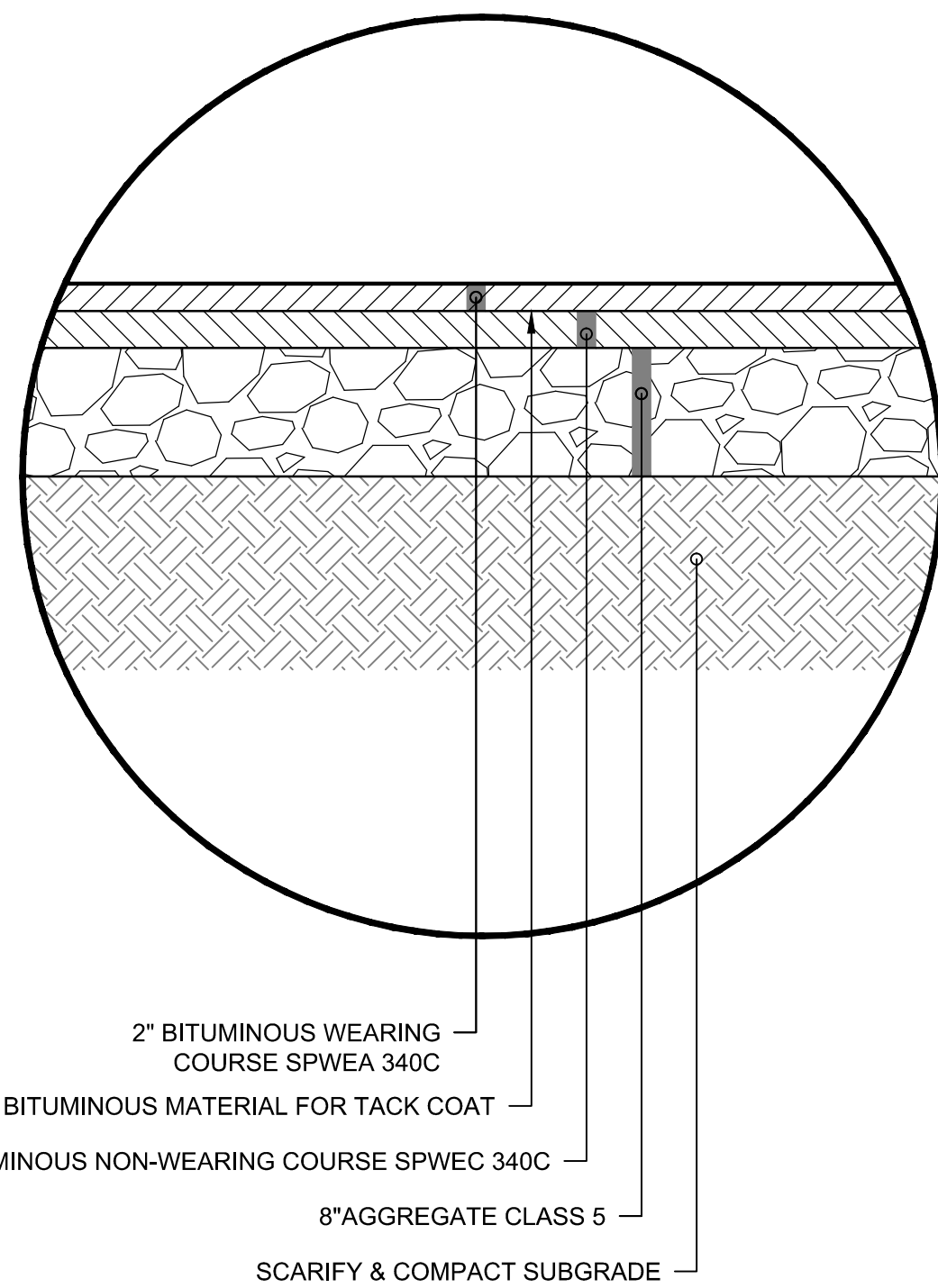
- REFER TO PROJECT ARCHITECTURAL DRAWINGS FOR DETAIL DIMENSIONS OF BUILDING, CANOPIES, RECEIVING AND REFUSE/RECYCLING PLATFORMS AND/OR ENCLOSURES AND CONCRETE WORK SURROUNDING BUILDING.
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- BITUMINOUS PAVEMENT SECTIONS SHALL MATCH EXISTING PAVEMENT SECTIONS FOR KNOLLWOOD DRIVE REPLACEMENT AND THE CURRENT SITE IMPROVEMENTS. THE BEST INFORMATION KNOWN AT THE TIME OF CONSTRUCTION OF THE PREVIOUS PROJECTS HAS BEEN PROVIDED IN THE PAVEMENT SECTION DETAILS SHOWN.
- ALL CURB AND GUTTER SHALL BE B618 UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL INSTALL ALL UTILITIES AND CONDUITS PRIOR TO PAVING AND INSTALLATION OF CURB AND GUTTER.

LEGEND

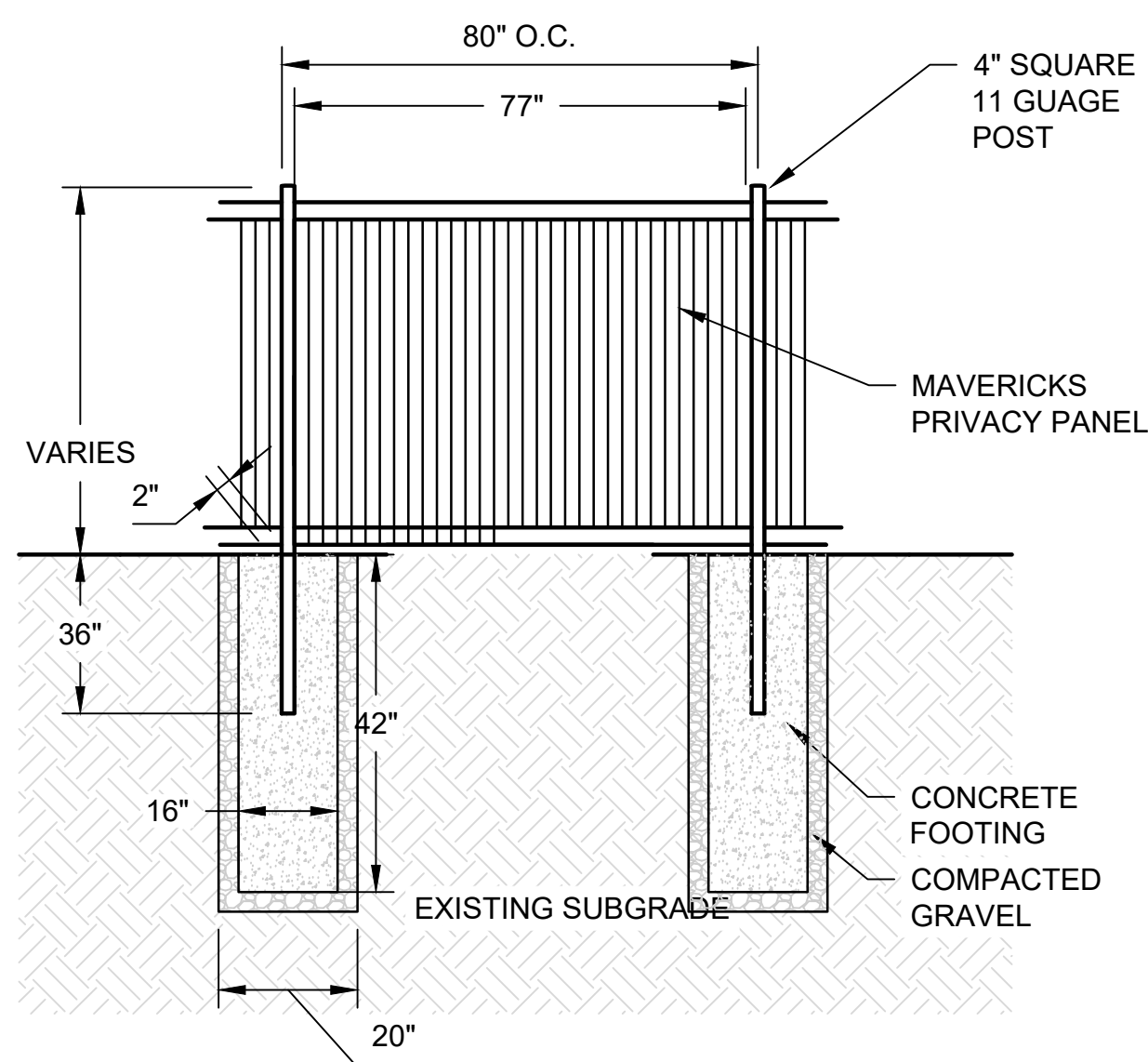
- DENOTES LIGHT DUTY BITUMINOUS PAVEMENT
- DENOTES HEAVY DUTY BITUMINOUS PAVEMENT



LIGHT DUTY BITUMINOUS PAVING SECTION
SCALE: NONE



HEAVY DUTY BITUMINOUS PAVING SECTION
SCALE: NONE



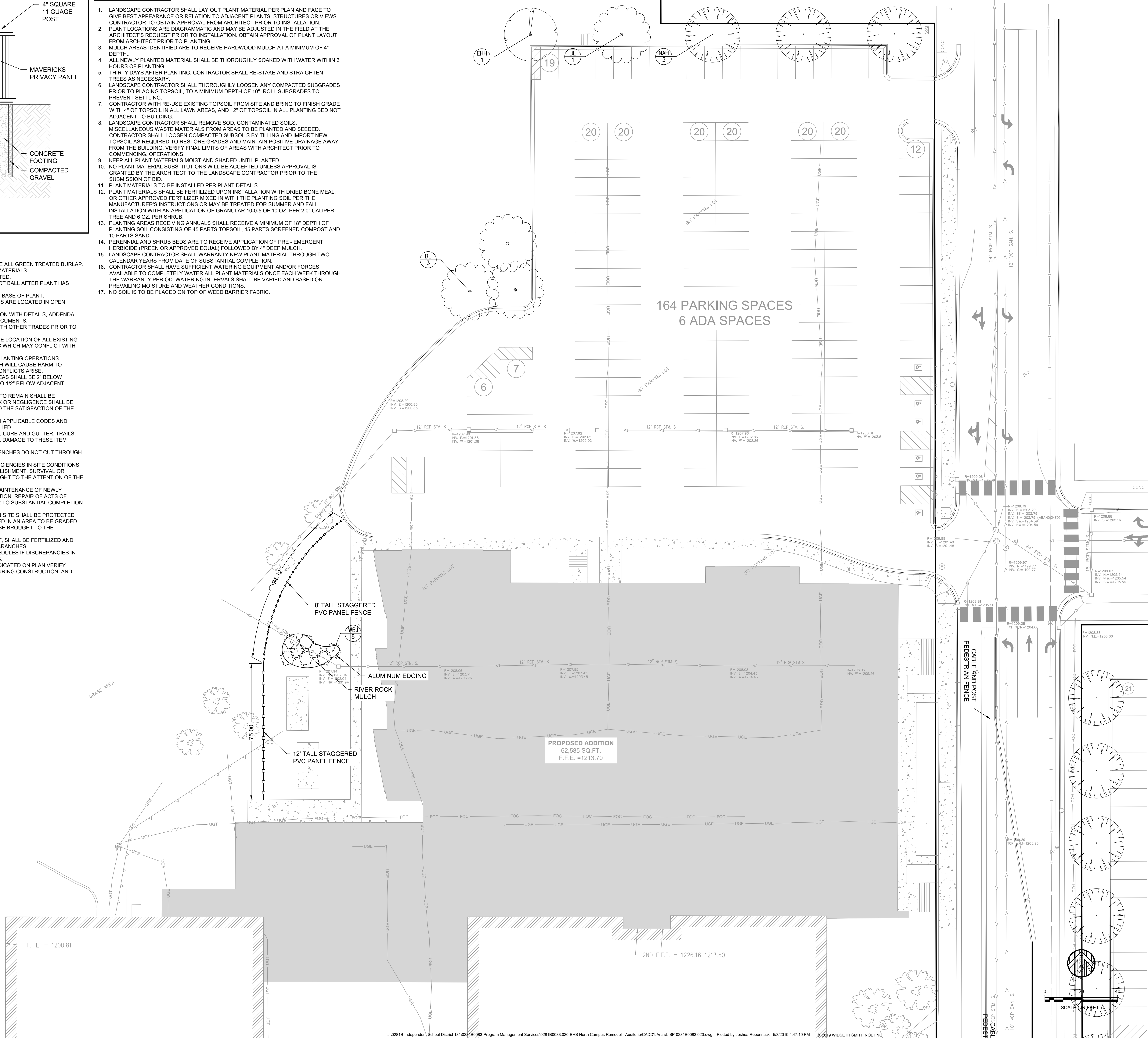
FENCE DETAIL
SCALE: NONE

GENERAL NOTES

1. REMOVE ALL BURLAP FROM THE TOP OF ROOT BALL. REMOVE ALL GREEN TREATED BURLAP. REMOVE ALL PLANT IDENTIFICATION TAGS FROM ALL PLANT MATERIALS.
2. KEEP ALL PLANT MATERIALS MOIST AND SHADED UNTIL PLANTED.
3. FOR CONTAINER PLANTS: MAKE 4 TO 5 VERTICAL CUTS IN ROOT BALL AFTER PLANT HAS BEEN REMOVED. MAKE CUTS 1/2" DEEP. PLANT IMMEDIATELY.
4. SPREAD MULCH SO THAT IT IS NOT IN CONTACT WITH WOODY BASE OF PLANT.
5. MULCH AT BASE OF TREES 5'-0" DIAMETER RING WHEN TREES ARE LOCATED IN OPEN GRASS AREAS.
6. THESE NOTES ARE FOR GENERAL REFERENCE IN CONJUNCTION WITH DETAILS, ADDENDA AND CHANGE ORDERS ASSOCIATED WITH THE CONTRACT DOCUMENTS.
7. LANDSCAPE CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
8. LANDSCAPE CONTRACTOR SHALL BECOME FAMILIAR WITH THE LOCATION OF ALL EXISTING AND FUTURE UNDERGROUND SERVICES AND IMPROVEMENTS WHICH MAY CONFLICT WITH WORK TO BE DONE.
9. FINE GRADING AND EDGING SHALL BE APPROVED PRIOR TO PLANTING OPERATIONS.
10. PLANT MATERIAL SHALL NOT BE INSTALLED IN AN AREA WHICH WILL CAUSE HARM TO ADJACENT STRUCTURES. NOTIFY THE ARCHITECT SHOULD CONFLICTS ARISE.
11. UNLESS OTHERWISE NOTED, FINISH GRADE OF PLANTING AREAS SHALL BE 2" BELOW ADJACENT PAVING. TAPER 3" DEPTH MULCH TOP DRESSING TO 1/2" BELOW ADJACENT PAVING (1 1/2" DEPTH) WITHIN 2" OF PAVING.
12. ALL EXISTING TREES, SHRUBS, VINES AND GROUND COVERS TO REMAIN SHALL BE PROTECTED. ANY DAMAGE CAUSED BY CONTRACTOR'S WORK OR NEGLIGENCE SHALL BE REPLACED OR REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
13. LANDSCAPE CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND MATERIALS SUPPLIED.
14. LANDSCAPE CONTRACTOR SHALL PROTECT EXISTING ROADS, CURB AND GUTTER, TRAILS, TREES, LAWNS AND SITE ELEMENTS DURING CONSTRUCTION. DAMAGE TO THESE ITEMS SHALL BE REPAIRED AT NO COST TO OWNER.
15. UNDERGROUND SERVICES SHALL BE INSTALLED SO THAT TRENCHES DO NOT CUT THROUGH ROOT SYSTEMS OF EXISTING TREES TO REMAIN.
16. LANDSCAPE CONTRACTOR SHALL REVIEW THE SITE FOR DEFICIENCIES IN SITE CONDITIONS WHICH MIGHT NEGATIVELY AFFECT PLANT MATERIALS ESTABLISHMENT, SURVIVAL OR WARRANTY. UNDESIRABLE SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BEGINNING OF WORK.
17. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ONGOING MAINTENANCE OF NEWLY INSTALLED MATERIALS UNTIL TIME OF SUBSTANTIAL COMPLETION. REPAIR OF ACTS OF VANDALISM OR DAMAGE WHICH MAY HAVE OCCURRED PRIOR TO SUBSTANTIAL COMPLETION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
18. EXISTING TREES OR SIGNIFICANT SHRUB MASSING FOUND ON SITE SHALL BE PROTECTED AND SAVED UNLESS NOTED TO BE REMOVED OR ARE LOCATED IN AN AREA TO BE GRADED. QUESTIONS REGARDING EXISTING PLANT MATERIALS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO REMOVAL.
19. EXISTING TREES TO REMAIN, UPON DIRECTION OF ARCHITECT, SHALL BE FERTILIZED AND PRUNED TO REMOVE DEAD WOOD, DAMAGED AND RUBBING BRANCHES.
20. SYMBOLS ON PLAN DRAWING TAKE PRECEDENCE OVER SCHEDULES IF DISCREPANCIES IN QUANTITIES EXIST. DETAILS TAKE PRECEDENCE OVER NOTES.
21. IT IS CONTRACTOR'S RESPONSIBILITY TO SALVAGE TREES INDICATED ON PLAN, VERIFY EXACT PLANT TYPE, KEEP MOIST AND IN GOOD CONDITION DURING CONSTRUCTION, AND REPLANT ACCORDING TO PLANTING PLAN.

PLANTING NOTES

1. LANDSCAPE CONTRACTOR SHALL LAY OUT PLANT MATERIAL PER PLAN AND FACE TO GIVE BEST APPEARANCE OR RELATION TO ADJACENT PLANTS, STRUCTURES OR VIEWS. CONTRACTOR TO OBTAIN APPROVAL FROM ARCHITECT PRIOR TO INSTALLATION.
2. PLANT LOCATIONS ARE DIAGRAMMATIC AND MAY BE ADJUSTED IN THE FIELD AT THE ARCHITECT'S REQUEST PRIOR TO INSTALLATION. OBTAIN APPROVAL OF PLANT LAYOUT FROM ARCHITECT PRIOR TO PLANTING.
3. MULCH AREAS IDENTIFIED ARE TO RECEIVE HARDWOOD MULCH AT A MINIMUM OF 4" DEPTH.
4. ALL NEWLY PLANTED MATERIAL SHALL BE THOROUGHLY SOAKED WITH WATER WITHIN 3 HOURS OF PLANTING.
5. THIRTY DAYS AFTER PLANTING, CONTRACTOR SHALL RE-STAKE AND STRAIGHTEN TREES AS NECESSARY.
6. LANDSCAPE CONTRACTOR SHALL THOROUGHLY LOOSEN ANY COMPACTED SUBGRADES PRIOR TO PLACING TOPSOIL TO A MINIMUM DEPTH OF 10". ROLL SUBGRADES TO PREVENT SETTLING.
7. CONTRACTOR WITH RE-USE EXISTING TOPSOIL FROM SITE AND BRING TO FINISH GRADE WITH 4" OF TOPSOIL IN ALL LAWN AREAS, AND 12" OF TOPSOIL IN ALL PLANTING BED NOT ADJACENT TO BUILDING.
8. LANDSCAPE CONTRACTOR SHALL REMOVE SOD, CONTAMINATED SOILS, MISCELLANEOUS WASTE MATERIALS FROM AREAS TO BE PLANTED AND SEEDED. CONTRACTOR SHALL LOOSEN COMPACTED SUBSOILS BY TILLING AND IMPORT NEW TOPSOIL AS REQUIRED TO RESTORE GRADES AND MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING. VERIFY FINAL LIMITS OF AREAS WITH ARCHITECT PRIOR TO COMMENCING OPERATIONS.
9. KEEP ALL PLANT MATERIALS MOIST AND SHADED UNTIL PLANTED.
10. NO PLANT MATERIAL SUBSTITUTIONS WILL BE ACCEPTED UNLESS APPROVAL IS GRANTED BY THE ARCHITECT TO THE LANDSCAPE CONTRACTOR PRIOR TO THE SUBMISSION OF BID.
11. PLANT MATERIALS TO BE INSTALLED PER PLANT DETAILS.
12. PLANT MATERIALS SHALL BE FERTILIZED UPON INSTALLATION WITH DRIED BONE MEAL, OR OTHER APPROVED FERTILIZER MIXED IN WITH THE PLANTING SOIL PER THE MANUFACTURER'S INSTRUCTIONS OR MAY BE TREATED FOR SUMMER AND FALL INSTALLATION WITH AN APPLICATION OF GRANULAR 10-0-5 OF 10 OZ. PER 2.0" CALIPER TREE AND 6 OZ. PER SHRUB.
13. PLANTING AREAS RECEIVING ANNUALS SHALL RECEIVE A MINIMUM OF 12" DEPTH OF PLANTING SOIL CONSISTING OF 45 PARTS TOPSOIL, 45 PARTS SCREENED COMPOST AND 10 PARTS SAND.
14. PERENNIAL AND SHRUB BEDS ARE TO RECEIVE APPLICATION OF PRE-EMERGENT HERBICIDE (PREEN OR APPROVED EQUAL) FOLLOWED BY 4" DEEP MULCH.
15. LANDSCAPE CONTRACTOR SHALL WARRANTY NEW PLANT MATERIAL THROUGH TWO CALENDAR YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
16. CONTRACTOR SHALL HAVE SUFFICIENT WATERING EQUIPMENT AND/OR FORCES AVAILABLE TO COMPLETELY WATER ALL PLANT MATERIALS ONCE EACH WEEK THROUGH THE WARRANTY PERIOD. WATERING INTERVALS SHALL BE VARIED AND BASED ON PREVAILING MOISTURE AND WEATHER CONDITIONS.
17. NO SOIL IS TO BE PLACED ON TOP OF WEED BARRIER FABRIC.



Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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MARK	DATE	REVISION
------	------	----------

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 State of Minnesota.

Signature: _____
Printed Name: **TIMOTHY T. RAMERTH**
Date: **MM/DD/YYYY** Reg. No.: **41966**

Project Information:
Project No.: **028180083.020**
Drawn By: **RSH**
Checked By: **TTR**
Date: **MAY 2019**
File Name: _____

Sheet Title:
LANDSCAPE PLAN - NORTH PARKING LOT

Sheet Number:

L1.01



Project Location:
702 S 5TH ST
BRAINERD, MN

MARK	DATE	REVISION
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MARK	DATE	REVISION
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Signature: _____

Printed Name: TIMOTHY T. BAMERT

Date: MM/DD/YYYY Req. No.: 41966

Project No. : 0281B0083.020

Drawn By : RSH

Checked By : TTR

Date : MAY 2019

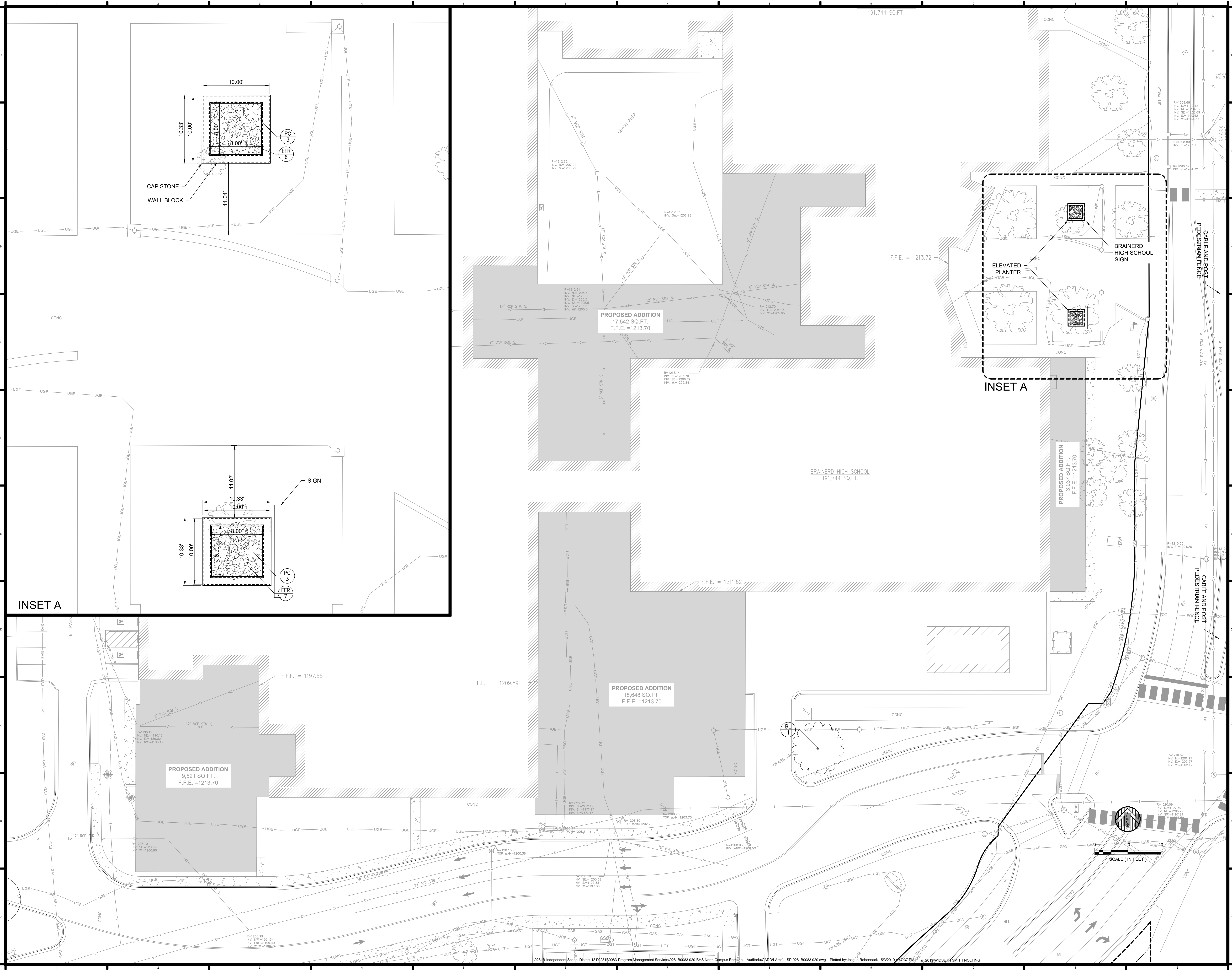
File Name:

Sheet Title:

LANDSCAPE PLAN - EAST PARKING
LOTS

Sheet Number:

1102



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FARGO | NORTH DAKOTA
SIOUX FALLS | SOUTH DAKOTA

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WIDSETH SMITH NOLTING

Project Name:



BRAINERD HIGH SCHOOL NORTH CAMPUS REMODEL

Project Location:
702 S 5TH ST
BRAINERD, MN

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MARK	DATE	REVISION

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Signature: _____
Printed Name: TIMOTHY T. RAMERTH
Date: MM/DD/YYYY Reg. No: 41966

Project Information:
Project No. : 028180083.020
Drawn By : RSH
Checked By : TTR
Date : MAY 2019
File Name:

Sheet Title:
LANDSCAPE PLAN - HIGH SCHOOL

Sheet Number:
L1.03

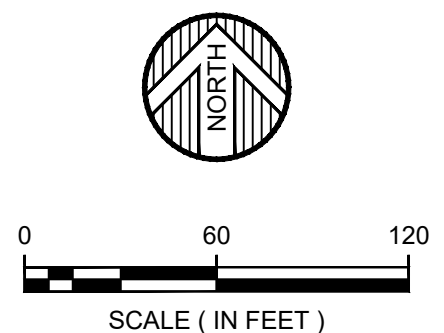
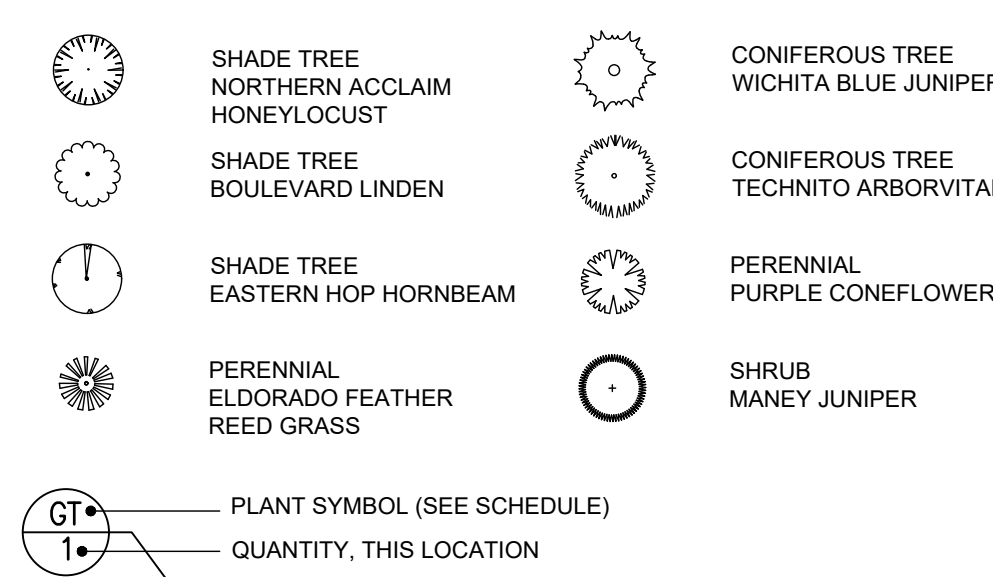


SEE SHEET L1.02 FOR
REMOVAL PLAN OF THIS AREA

**SEE SHEET L1.03 FOR
REMOVAL PLAN OF THIS AREA**

PLANT SCHEDULE						
ITEM	SYM	COMMON NAME	BOTANICAL NAME	QTY	MAX SIZE	ROOT
Deciduous Tree						
	NAH	Northern Acclaim Honeylocust	Gleditsia triacanthos var. 'nervis 'Harve'	15	H: 35-45' W: 30-35'	Ball
	BL	Boulevard Linden	Tilia americana 'Boulevard'	17	H: 60' W: 30'	Ball
	EHH	Eastern Hop Hornbeam	Ostrya virginiana	7	H: 30-50' W: 25'	Ball
Coniferous Tree						
	WBJ	Wichita Blue Juniper	Juniperus scopulorum 'Wichita Blue'	7	H: 18' W: 8'	Cont.
	TA	Technito Arborvitae	Thuja occidentalis 'BallJohn'	40	H: 8-10' W: 4-5'	Cont.
Shrub						
	MJ	Maney Juniper	Juniperus chinensis 'Maney'	49	H: 4-5' W: 5-6'	Cont.
Perennial						
	PC	Purple Coneflower	Echinacea purpurea	6	H: 24-30" W: 18-24"	Cont.
	EFR	Eldorado Feather Reed Grass	Calamagrostis acutiflora 'Eldorado'	13	H: 4-5' W: 2'	Cont.

SYMBOLS LEGEND



CITY OF BRAINERD
501 LAUREL STREET
BRAINERD, MN 56401-
(218) 828-2309 FAX: (218) 828-2316



PRINTED WITHOUT ISSUING 5/3/2019

Permit #: 2019-00016

ADDRESS : 702 5TH ST S
PIN : 09166005000Z009
LEGAL DESC : RIVERSIDE ADDITION
: LOT BLOCK 5
PERMIT TYPE : VARIANCE FEE - COMMERCIAL
PROPERTY TYPE : COMMERICAL
CONSTRUCTION TYPE : VARIANCE

APPLICANT

IND SCHOOL DIST # 181, BRAINERD SENIOR HIGH
SCHOOL
804 OAK STREET
BRAINERD, MN 56401

VARIANCE - COMMERCIAL	400.00
ESCROW DEPOSIT (\$500)	500.00
TOTAL	900.00
Payment(s)	
CHECK 160529	900.00

OWNER

IND SCHOOL DIST # 181, BRAINERD SENIOR HIGH
SCHOOL
804 OAK STREET
BRAINERD, MN 56401

AGREEMENT AND SWORN STATEMENT

I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of laws and ordinances governing this type of work will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or the performance of construction.

Signature of Applicant

Date

This permit becomes null and void if construction authorized is not commenced within 180 days, or if construction is suspended for a period of 180 days at any time after work is commenced.

SEPARATE PERMITS REQUIRED FOR WORK OTHER THAN DESCRIBED ABOVE.

CITY OF BRAINERD
501 LAUREL STREET
BRAINERD, MN 56401-
(218) 828-2309 FAX: (218) 828-2316



* 2 0 1 9 - 0 0 0 1 6 *

ISSUED:

PRINTED WITHOUT ISSUING 5/3/2019

ADDRESS : 702 5TH ST S
PIN : 09166005000Z009
LEGAL DESC : RIVERSIDE ADDITION
: BLOCK 5
PERMIT TYPE : VARIANCE FEE - COMMERCIAL
PROPERTY TYPE : COMMERICAL
CONSTRUCTION TYPE : VARIANCE

PERMIT APPLICANT:
IND SCHOOL DIST # 181, BRAINERD SEN
804 OAK STREET
BRAINERD, MN 56401

BUILDING INSPECTION RECORD
24 HOUR NOTICE REQUIRED FOR ALL INSPECTIONS.
CALL FOR INSPECTIONS WEEKDAYS: 9:00 am to 3:30 pm

INSPECTION TYPE	DATE	INSPECTOR

INSPECTION TYPE	DATE	INSPECTOR

INSPECTION COMMENTS: _____

IN ACCORDANCE WITH CITY ORDINANCE, NEW OR SUBSTANTIALLY REMODELED BUILDINGS SHALL NOT BE OCCUPIED UNTIL ALL WORK HAS BEEN APPROVED, AND A CERTIFICATE OF OCCUPANCY HAS BEEN ISSUED BY THE BUILDING DEPARTMENT.

THIS CARD MUST BE POSTED AND VISIBLE AT ALL TIMES UNTIL WORK IS COMPLETE.

City of Brainerd Community Development Department

TO: Planning Commission

FROM: David Chanski, Community Development Director

DATE: May 10, 2019

RE: Brainerd High School/Performing Arts Center Setback Variance

Laine Larson, superintendent ISD #181, has submitted a plan to construct a performing arts center as an addition to the Brainerd High School located at 702 S. 5th St., Brainerd, MN 56401. The property is in a B-4 (General Commercial) District.

The property is legally described as:

*ALL OF BLOCK 16, TOWN OF BRAINERD & FIRST ADDITION TO BRAINERD
P.I.N. 41240860
Section 24 Township 45 Range 31*

The applicant is requesting a variance from Section 515-63-7 Lot Area and Setbacks Requirements. Section 515-53-7 states front yard setbacks shall be 30 feet. The applicant is requesting a variance for a 15-foot front yard setback.

Note: The initial notice of hearing incorrectly listed this location in a R-1 Single Family Residential District. The correct zoning is B-4 General Commercial as listed above.

Findings of Fact

1. Section 515-7-2, Subdivision 3A – Variances shall only be permitted:
 - a. When they are in harmony with the general purposes and intent of the ordinance
 - i. Theatres and cultural arts centers are permitted uses within a B-4 District
 - b. When the variances are consistent with the Comprehensive Plan
 - i. The proposed Performing Arts Center was approved by through a ballot referendum.
 - ii. The current Comprehensive Plan and updated Comprehensive Plan in development support increased educational, cultural, and arts related development and programming.
 - iii. The Brainerd City Council is in support of this project.
2. Section 515-7-2, Subdivision 3B & Subdivision 4 – Variances may be granted when the applicant for the variances establishes that there are practical difficulties in complying with the Zoning Ordinance.
 - a. The property owner proposes to use the property in a reasonable manner not permitted by the Zoning Ordinance.

- i. The proposed Performing Arts Center is a permitted use with a 30-foot front yard setback. The adjoining Brainerd High School building has only a 20-foot setback per R-1 District requirements. The requested 15-foot setback would place the front facade of structure only 5 feet in front of the current high school's front façade.
- b. The plight of the landowner is due to circumstances unique to the property not created by the landowner.
 - i. A bluff with a significant decline is located on the west side of the property that prohibits the structure from being moved further back.
- c. The variance, if granted, will not alter the essential character of the locality.
 - i. The proposed Performing Arts Center will be connected to the Brainerd High School. The property is currently used as a parking lot (part of which will remain). The Lincoln Education Center will be located across the street to the east with the Brainerd Public Library located immediately to the north.

Staff Opinion

As staff believes the request variance meets the requirements as outlined in Section 515-7 of the Code of Ordinances, and as the construction of the Performing Arts Center was approved through ballot referendum, and as the Brainerd City Council is in support of this project, approval of this variance is recommended.

**City Planning Department**

City Hall – 501 Laurel Street

Brainerd, MN 56401

218-828-2309/Fax 218-828-2316

www.ci.brainerd.mn.us

Receipt # 2019-00016Check # 160529Date Paid: 5/2/19**CONDITIONAL USE/REZONING/VARIANCE APPLICATION****RESIDENTIAL****COMMERCIAL****CONDITIONAL USE PERMIT**☐ (\$250.00)☐ (\$400.00 + \$500.00 escrow deposit)**REZONING**☐ (\$300.00)☐ (\$500.00)**VARIANCE**☐ (\$250.00)☒ (\$400.00 + \$500.00 escrow deposit)**PROPERTY ADDRESS:** 702 S. 5th St, Brainerd, MN 56401**LEGAL DESCRIPTION:** Lot(s): NA Block: NA Addition: See attached Certificate of Survey for Legal Descriptions
(attach description if lengthy)**Property Owner Name:** Brainerd Public Schools I.S.D. 181**Street Address:** 804 Oak Street **City:** Brainerd **State:** MN **Zip Code** 56401**Phone Number:** 218-454-6911 **Fax:** _____ **E-mail:** Laine.Larson@isd181.org**Applicant Name:** (If different than Property Owner) _____**Street Address:** _____ **City:** _____ **State:** _____ **Zip Code:** _____**Phone Number:** _____ **Fax:** _____ **E-mail:** _____**Description of Request:** For the Brainerd High School North Campus.Request for "Variance" to the setback requirement of 25' per zoning code R-2. The performing arts center will infringe upon the setback distance by 10' due to existing topographical conditions. The performing arts center will maintain a 15' setback as designed. Please see attached prints for clarification.Laine D. Larson
Property Owner SignatureLaine D. Larson

(Please print name)

Laine D. Larson
Applicant SignatureLaine D. Larson

(Please print name)

4/30/19
Date4/30/19
Date

(OVER)

NOTICE OF HEARING

TO WHOM IT MAY CONCERN:

Notice is hereby given that Laine Larson, superintendent ISD #181, has submitted a request on behalf of Brainerd Public Schools – ISD #181 for a Conditional Use Permit to construct an addition to Brainerd High School, 702 S 5th St., Brainerd, MN 56401, including but not limited to an addition to the school building, remodel of existing building, and construction of new parking, new pool, auxiliary gym, and performing arts center. The properties included in this application are described as:

Lots 1 thru 11 and 13 thru 24, Block 125, and Portions of Vacated Norwood, Fourth Street and oak Street, BRAINERD

Blocks 161, 163, 183, and 185, and Portions of Vacated Quince, saith Fourth Street, said Oak Street and Pine Street, said BRAINERD

Together with Blocks 4, 5, 6 and 7, and Portions of Vacated Ridge Street, said Pine Street, said Quince Street and Alleys in said Blocks 5, and 6, RIVERSIDE ADDITION

Together with Blocks 1, 2 and 3, and vacated Gilmer Road and Quinlen Road, HILL CREST ADDITION

Together with that part of Lot 16, AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25 & LOT 1-SECTION 26, T. 45 N. – R. 31 W.

Together with Lots 10, 11, 12, 14 and 15 said AUDITOR'S PLAT UNPLATTED PORTIONS SECTION 25 & LOT 1-SECTION 26, T. 45 N. – R 31 W.

The properties are zoned R-1 (Single Family Residential) District and Zoning Ordinance Section 54-5 F (Single Family Residential) District Conditional Uses permits the operation of public and private schools provided that they meet the required provisions as listed under Section 54-5 F. A copy of the proposed site plan is on file for review at the Community Development Department.

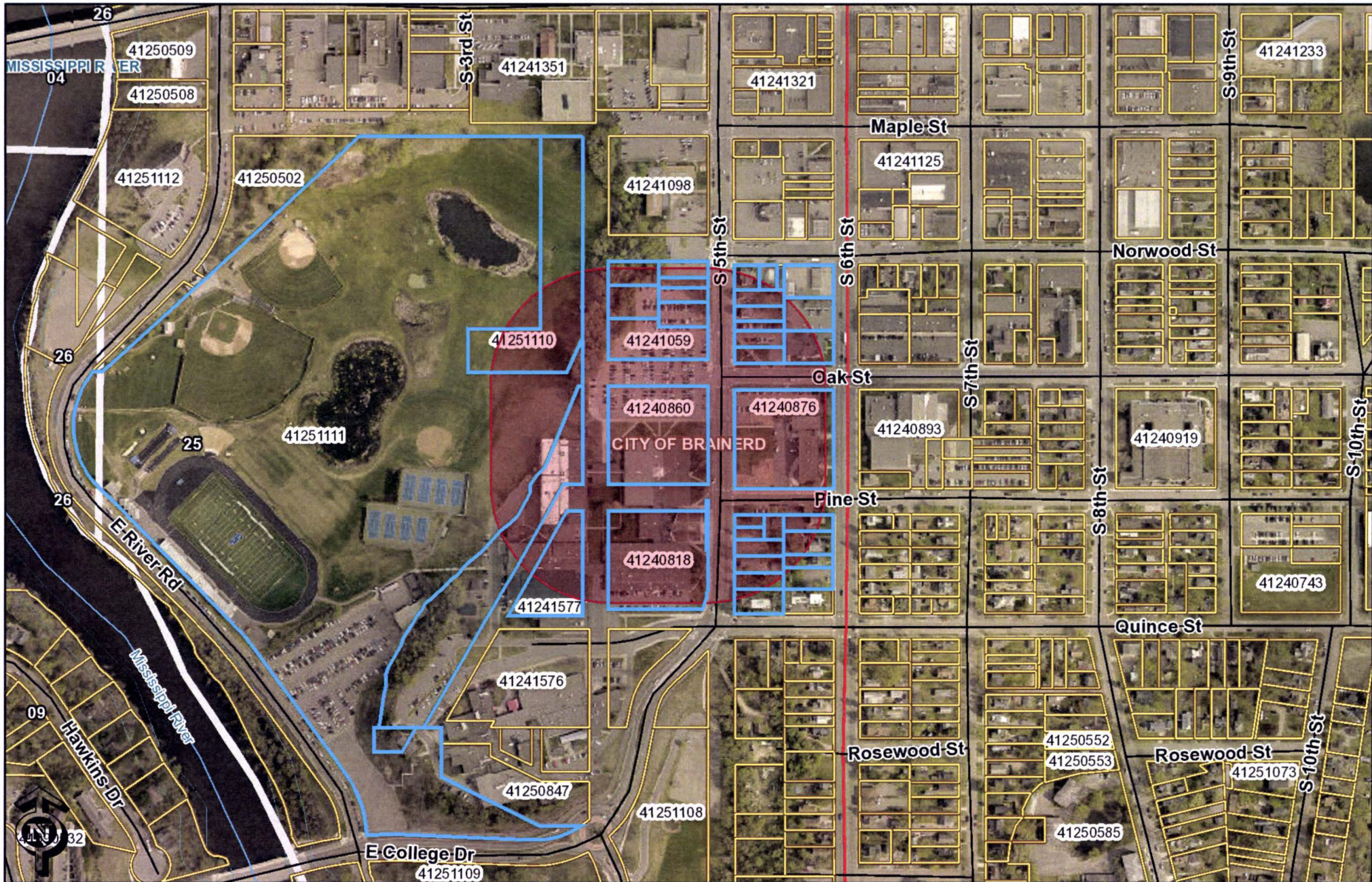
A Public Hearing will be conducted by the Brainerd Planning Commission at 6:00 p.m. Wednesday, May 15, 2019 in the Brainerd City Hall Council Chambers, 501 Laurel Street, to consider the Conditional Use Permit request.

Any individual needing special accommodations or would like more information about this request, please call (218) 828-2309.

Dated this 3rd day of May 2019



David C. Chanski, MPA
Community Development Director



These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

702 S. 5th St

Date: 5/3/2019 Time: 3:33:18 PM



Parcel Number	Legacy Parcel Number	Municipality	Tax Name	Tax Address	Tax Address 2	Tax Address 3	Tax Address	Physical Address	Physical City	Physical Zip
41241044	09196127019200	CITY OF BRAINERD	BRAINERD SAVINGS & LOAN	524 S 6TH ST	BRAINERD MN 56401-3561			515 5TH ST S	BRAINERD	56401
41241052	09196127001200	CITY OF BRAINERD	BRAINERD SAVINGS AND LOAN	524 6TH ST S	BRAINERD MN 56401			524 6TH ST S	BRAINERD	56401
41241043	09196127021200	CITY OF BRAINERD	BRAINERD SAVINGS AND LOAN	524 6TH ST S	BRAINERD MN 56401			519 5TH ST S	BRAINERD	56401
41241042	09196127023200	CITY OF BRAINERD	BRAINERD SAVINGS AND LOAN	524 6TH ST S	BRAINERD MN 56401			523 5TH ST S	BRAINERD	56401
41241703	091961830000ZAC	CITY OF BRAINERD	CITY OF BRAINERD	CITY ADMINISTRATOR-CITY HALL	501 LAUREL ST	BRAINERD, MN 56401				
41240814	09196185008200	CITY OF BRAINERD	FELSKE PROPERTIES LLC	1021 INDUSTRIAL PARK RD	BRAINERD, MN 56401			710 6TH ST S	BRAINERD	56401
41240813	09196185011200	CITY OF BRAINERD	FELSKE PROPERTIES LLC	1021 INDUSTRIAL PARK RD	BRAINERD, MN 56401			704 6TH ST S	BRAINERD	56401
41251111	09104000009X00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41251110	09104000010Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241578	09166004000Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241577	09166005000Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241059	09196125001VOC	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			518 5TH ST S	BRAINERD	56401
41241058	09196125005Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			514 5TH ST S	BRAINERD	56401
41241057	09196125008Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241056	09196125009Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			506 5TH ST S	BRAINERD	56401
41241054	09196125013Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41241053	09196125016Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41240876	09196161000Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			0 LINCOLN SCH	BRAINERD	56401
41240860	09196163000Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41240818	09196183000Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401				0 BRAINERD	56401
41240816	09196185004Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			716 6TH ST S	BRAINERD	56401
41240807	09196185020Z00	CITY OF BRAINERD	IND SCHOOL DIST, # 181	804 OAK ST	BRAINERD, MN 56401			717 5TH ST S	BRAINERD	56401
41240815	09196185006Z00	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1	ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401		714 6TH ST S	BRAINERD	56401
41240812	09196185013Y00	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1	ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401		510 PINE ST	BRAINERD	56401
41240811	09196185013Z00	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1	ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401			0 BRAINERD	56401
41240810	09196185014Z00	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1	ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401		705 5TH ST S	BRAINERD	56401
41240809	09196185016Z00	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1	ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401		707 5TH ST S	BRAINERD	56401
41240808	09196185018Z00	CITY OF BRAINERD	INDEPENDENT SCHOOL DISTRICT #1	ADMINISTRATIVE OFFICES	804 OAK ST	BRAINERD, MN 56401		711 5TH ST S	BRAINERD	56401
41240806	09196185022Z00	CITY OF BRAINERD	KNOWLES, RODNEY L	723 5TH ST S	BRAINERD MN 56401			723 5TH ST S	BRAINERD	56401
41241048	09196127013W0	CITY OF BRAINERD	MALLIE, MATTHEW R	507 S 5TH ST	BRAINERD, MN 56401			510 NORWOOD ST	BRAINERD	56401
41241047	09196127013Z00	CITY OF BRAINERD	MALLIE, MATTHEW R	507 S 5TH ST	BRAINERD, MN 56401			502 NORWOOD ST	BRAINERD	56401
41241046	09196127016Z00	CITY OF BRAINERD	MALLIE, MATTHEW R	507 S 5TH ST	BRAINERD, MN 56401			507 5TH ST S	BRAINERD	56401
41241051	09196127005Z00	CITY OF BRAINERD	POSITIVE REALTY, & INVESTMENT	514 SO 6TH STREET	BETTER HOMES & GARDENS	BRAINERD MN 56401		514 6TH ST S	BRAINERD	56401
41241050	09196127009Z00	CITY OF BRAINERD	S & L CREATIVE INVESTMENTS LLC	502 S 6TH ST	BRAINERD, MN 56401			502 6TH ST S	BRAINERD	56401
41241055	09196125011Z00	CITY OF BRAINERD	SUITE PROPERTIES LLC	PO BOX 2511		BAXTER MN 56425		502 5TH ST S	BRAINERD	56401
41241045	09196127018Z00	CITY OF BRAINERD	WENDEL PROPERTIES LLC	17122 STATE HWY 371	BRAINERD, MN 56401			511 5TH ST S	BRAINERD	56401

B - Zoning Ordinance Use Matrix

A “C” appearing in the table for any use means that the use will be permitted in the zoning district by a “Conditional Use Permit”. By “I” appearing in the table for any use means that the use will be permitted an “Interim Use Permit”. A “P” means that the use is permitted in the zoning district subject to the general provisions of the Zoning Ordinance, and “NP” means the use is not permitted in the zoning district. For uses not included on this list, application shall be made to the Board of Adjustment for interpretation.

B-1: Residential-Office District

B-2: Neighborhood Business District

B-3: Central Business District

B-4: General Business District

B-5: Commercial Amusement District

B-6: Washington Street Commercial District

USE	B-1	B-2	B-3	B-4	B-5	B-6
Accessory Building	P ¹	NP	NP	NP	NP	NP
Adult Uses	NP	NP	NP	P	NP	P
Agricultural Building	NP	NP	NP	NP	NP	NP
Agricultural Sales	NP	NP	NP	NP	NP	NP
Agricultural Uses	NP	NP	NP	NP	NP	NP
Amusement Park	NP	NP	NP	NP	C	NP
Animal Hospital or clinic and kennels	NP	NP	NP	C	NP	C
Antenna ²	P	P	P	P	NP	P
Armories	NP	NP	NP	C	NP	NP
Art Centers, museums	NP	NP	P	P	NP	NP
Automobile Dealership	NP	NP	NP	C	NP	C
Automobile & Truck Repair-including auto body shops	NP	NP	NP	C	NP	NP
Auto Racing Tracks	NP	NP	NP	NP	C	NP
Bed & Breakfasts	C	NP	NP	NP	NP	NP
Boarding Schools	NP	NP	NP	C	NP	NP
Brew Pub, Off-Sale	NP	C	C	C	C	C
Brew Pub, On-Sale	NP	C	C	C	C	C
Brewery Taproom, Off-Sale	NP	C	C	C	C	C
Brewery Taproom, On-Sale	NP	C	C	C	C	C
Business Conducted entirely within a building	NP	NP	P	NP	NP	NP
Business, vocational, colleges and universities located above first floor	NP	NP	P	NP	NP	NP
Business or trade school entirely within a building	NP	NP	NP	P	NP	NP
Campground	NP	NP	NP	NP	C	NP

¹ These are garages, private garages and sheds

² All antennas are accessory uses and require a permit

B - Zoning Ordinance Use Matrix

USE	B-1	B-2	B-3	B-4	B-5	B-6
Car Wash	NP	NP	NP	NP	NP	C
Car Wash as Accessory Use to Motor Vehicle Sales	NP	NP	NP	NP	NP	P
Cemeteries	NP	NP	NP	NP	NP	NP
Colleges and universities	NP	NP	NP	C	NP	NP
Commercial animal kennels	NP	NP	NP	NP	NP	NP
Commercial Car Wash	NP	NP	NP	C	NP	NP
Commercial Accessory Buildings	NP	NP	NP	P ³	NP	NP
Commercial recreational businesses	NP	NP	NP	NP	C ⁴	NP
Commercial Day Care Facility	NP	C	C	C	NP	C
Crematoriums	NP	NP	NP	P	NP	P
DHS (Dept of Human Services) licensed Drug & Alcohol Treatment Facilities	NP	NP	NP	C	NP	NP
Drive In Movie Theater	NP	NP	NP	NP	C	NP
Drive Up Service Facilities	NP	NP	NP	P ³	P ³	P ³
Equipment rental - indoor	NP	NP	NP	P	NP	NP
Essential Services	P	P	P	P	P	P
Farms, farmsteads and farming	NP	NP	NP	NP	I	NP
Fences ³	P	P	P	P	P	P
Financial Institutions	NP	NP	P	P	NP	P
Funeral Homes, Mortuaries	C	C	NP	P	NP	P
Golf Courses	NP	NP	NP	NP	C	NP
Government and public buildings, utilities and/or structure	P	P	P	P	NP	NP
Health Clubs	NP	NP	P	NP	P	NP
Home Businesses	P ³	NP	NP	NP	NP	NP
Hospitality Business	NP	NP	P	P	P	NP
Hospitals	NP	NP	NP	C	NP	NP
In home day care ³	P	NP	NP	NP	NP	NP

³ Are accessory uses

⁴ Commercial riding stables, rodeo facilities, zoos and biological facilities

B - Zoning Ordinance Use Matrix

USE	B-1	B-2	B-3	B-4	B-5	B-6
Light Manufacturing	NP	NP	NP	C	NP	NP
Liquor Sales, Off-Sale	NP	NP	P	P	NP	P
Liquor Sales, On-Sale	NP	C	P	P	P	P
Loading and unloading areas ³	NP	NP	P	P	NP	P
Microdistilleries & Cocktail Rooms	NP	C	P	P	P	P
Mining & Extraction	NP	NP	NP	NP	I	NP
Motor Fuel Sales	NP	C	NP	C	NP	C
Multifamily Dwelling	NP	P	NP	NP	NP	NP
Noncommercial Greenhouses ³	P	P	NP	NP	NP	NP
Non-Enclosed Areas for dining and/or serving alcohol when accessory to a restaurant or bar	NP	C	C	C	C	C
Nursing Home	NP	NP	NP	NP	NP	NP
Office Business-Clinic & General	P	P	P	P	NP	NP
Offices	NP	NP	NP	NP	NP	P
Off-Street Parking ³	P	P	P	P	P	NP
Off-Street Loading ³	P	P	NP	NP	NP	NP
On-site service businesses ⁵	NP	P	P	P	NP	P
Outdoor dining	NP	C	C	C	C	C
Outdoor Entertainment Venues	NP	NP	NP	NP	C	NP
Outdoor Storage	NP	NP	NP	C ³	NP	NP
Outside Services, sales, and equipment rental ⁶	NP	NP	NP	P ³	NP	P ³
Parking Lots	C ⁷	NP	NP	NP	NP	NP
Parking Structures	NP	NP	C ⁸	NP	NP	NP
Pawn Shops	NP	NP	NP	P	NP	P

³ Are accessory uses

⁵ Limited to tailoring/alterations, dry cleaners, self-service laundry and copy centers

⁶ Is an accessory to the principal use and limited in up to 15ft of the gross floor area of the principal building or 15% of the tenant bay if it is a multiple tenant building. Must be located on private property and shall not intrude on the public sidewalk or boulevard.

⁷ The parking lot shall be adjacent to or across an alley from an allowed B-6 district use. Parking lot shall be no wider than the boundary line of the primary parcel on which the associated B-6 use is located. Overnight parking will be limited to vehicles owned and operated by the business associated with the B-6 site. Alley improvements desired by the adjacent property owner shall be approved by the City of Brainerd and improved at the requesting party's expense.

⁸ First Floor contains a Business Use

B - Zoning Ordinance Use Matrix

USE	B-1	B-2	B-3	B-4	B-5	B-6
Personal, professional and recreational vehicle repair-major	NP	NP	NP	NP	NP	C
Personal, professional and recreational vehicle repair - minor	NP	NP	NP	NP	NP	P
Personal Services ⁹	NP	P	P	P	NP	P
Personal Wireless Service Antennas ¹⁴	P	P	P	P	NP	P
Place of Worship	C	C	C	P	NP	NP
Planned Unit Development	C	C ¹⁰	C ¹²	C ¹⁰	NP	C ¹⁰
Private Clubs	NP	C	C	NP	NP	NP
Public buildings	NP	NP	NP	NP	NP	NP
Public Parks & Playgrounds	NP	NP	NP	NP	P	NP
Public & Private Schools	NP	NP	NP	NP	NP	NP
Radio and television studios	NP	NP	NP	C	NP	C
Recreational business-indoor	NP	NP	P	P	P	P
Rental Offices	NP	NP	NP	NP	NP	NP
Repair Services	NP	P	P	P	NP	P
Residential and non-residential uses	NP	NP	C	NP	NP	NP
Restaurants-sit down, take out or delivery	NP	NP	P	P	NP	P
Restaurants and on-sale liquor establishments	NP	NP	NP	NP	P	NP
Restaurants without drive up window	NP	C	NP	NP	NP	NP
Retail businesses ¹⁵	NP	NP	P	P	NP	P
Retail establishments ¹³	NP	P	NP	NP	NP	NP
Seasonal non-agricultural merchandise sales	NP	NP	NP	P ¹⁴	NP	NP

³ Are accessory uses

⁹ Such as barber shops, beauty salons, nail salons, tanning salons, therapeutic massage & tattooing

¹⁰ Includes shopping centers

¹² Without first floor residential

¹³ Such as groceries, hardware, pharmacy, clothing furniture, liquor stores (off-sale only) florists, books, cards and gifts.

¹⁴ Requires a permit

¹⁵ Contained in a principal building

B - Zoning Ordinance Use Matrix

USE	B-1	B-2	B-3	B-4	B-5	B-6
Self Service Laundromat with dry cleaning pick up & drop off service	NP	NP	P	NP	NP	NP
Service business off site	NP	NP	NP	NP	NP	NP
Signs	P ³	P ³	P ³	P ³	P ³	P ³
Single family dwelling	P	P	NP	NP	NP	NP
Small engine and boat repair	NP	NP	NP	C	NP	C
Specialty Food Shops	NP	C	NP	NP	NP	NP
Sports Stadium	NP	NP	NP	NP	C	NP
State Licensed Treatment Facility	NP	NP	NP	C	NP	NP
Studios ¹⁶	C	P	P	P	NP	P
Swimming Pool & water parks	NP	NP	NP	NP	P	NP
Taxi or bus dispatch sites	NP	NP	NP	P	NP	NP
Temporary/seasonal outdoor events and sales ¹⁴	NP	P	P	P	NP	P
Testing labs for water and soil, rocks/minerals and air quality	NP	NP	NP	P	NP	NP
Theaters	NP	NP	NP	NP	P	NP
Theaters - except drive ins	NP	NP	P	P	NP	NP
Two family dwellings	NP	P	NP	NP	NP	NP
Wind Energy Conversion Systems ¹¹	C	C	C	C	C	NP

³ Are accessory uses

¹¹ Wind Energy Conversion Systems may be allowed as an accessory, conditional use, provided the property upon which the system is to be located is zoned R-A, B-1, B-2, B-3, B-4, B-5, I-1 or I-2 (Section 34 of the Zoning Ordinance)

¹⁴ Requires a permit

¹⁶ These are art, decorating, dance, music and photography studios

B - Zoning Ordinance Use Matrix

R - Zoning Ordinance Use Matrix

A “C” appearing in the table for any use means that the use will be permitted in the zoning district by a “Conditional Use Permit”. By “I” appearing in the table for any use means that the use will be permitted an “Interim Use Permit”. A “P” means that the use is permitted in the zoning district subject to the general provisions of the Zoning Ordinance, and “NP” means the use is not permitted in the zoning district. For uses not included on this list, application shall be made to the Board of Adjustment for interpretation.

R-A: Rural Agricultural District

R-E: Single Family Estate Residential District

R-1: Single Family Residential

R-3: High Density Residential

R-R: Rural Residential District

R-1A: Single Family Residential

R-2: Medium Density Residential

R-MH: Manufactured Housing District

USE	R-A	R-R	R-E	R-1	R-1A	R-2	R-3	R-MH
Accessory Building ^{1&3}	P	P	P	P	P	P	P	P
Adult Uses	NP	NP	NP	NP	NP	NP	NP	NP
Agricultural Building	P	P	NP	NP	NP	NP	NP	NP
Agricultural Uses	P	P	NP	NP	NP	NP	NP	NP
Antenna ²	P	P	P	P	P	P	P	NP
Auto Repair	NP	NP	NP	NP	NP	NP	NP	NP
Auto Sales	NP	NP	NP	NP	NP	NP	NP	NP
Bed & Breakfasts	NP	C	C	C	C	C	C	NP
Boarding or renting of rooms to not more than two individuals per dwelling	P ³	P ³	P ³	NP	NP	NP	NP	NP
Boarding Houses	NP	NP	NP	NP	NP	C	C	NP
Cemeteries	C	C	C	NP	C	NP	NP	NP
Commercial animal kennels	I	NP	NP	NP	NP	NP	NP	NP
Commercial riding stables	C	NP	NP	NP	NP	NP	NP	NP
Commercial Day Care Facility	NP	NP	NP	NP	NP	NP	P	NP

¹ These are garages, private garages and tool sheds

² All antennas are accessory uses and need a permit

³ Are accessory uses

R - Zoning Ordinance Use Matrix

USE	R-A	R-R	R-E	R-1	R-1A	R-2	R-3	R-MH
Community Laundry Facilities	NP	NP	NP	NP	NP	NP	NP	P ³
Essential Services	P	P	P	P	P	P	P	NP
Fences	P ³	P ³	P ³	P ³	P ³	P ³	P ³	NP
Forest and Game management areas	P	P	P	NP	NP	NP	NP	NP
Funeral Homes	NP	NP	NP	NP	NP	NP	NP	NP
Governmental and public regulated utility buildings	C	C	C	C	C	C	C	NP
Home Businesses ³	P	P	P	P	P	P	P	P
Home Extended Businesses	I	I	I	I	I	NP	I	NP
Hospitals	NP	NP	NP	C	C	C	NP	NP
In home day care serving 14 or fewer persons in a single family dwelling ³	P	P	P	P	P	P	P	NP
Mining & Extraction	I	NP	NP	NP	NP	NP	NP	NP
Multiple Family Dwellings	NP	NP	NP	NP	NP	P ⁴	P	NP
Nursing Home ⁵	NP	NP	NP	NP	NP	C	C	NP
Nurseries, greenhouses for growing only	P	NP	NP	NP	NP	NP	NP	NP
Noncommercial Greenhouses ³	NP	P	P	P	P	P	P	P
Non-profit and not-for profit offices in Brainerd Independent School District, not used for classroom education	NP	NP	NP	C	C	C	NP	NP
Open off-street parking space	NP	P ³	P ³	P ³	P ³	NP	NP	P ^{3&6}
Off-street parking for private residential use	NP	NP	NP	NP	NP	P	P ³	NP

³ Are accessory uses

⁴ One multiple family per building per lot or parcel containing 4 or less units

⁵ Includes nursing homes, senior homes and senior centers

R - Zoning Ordinance Use Matrix

USE	R-A	R-R	R-E	R-1	R-1A	R-2	R-3	R-MH
Off-premise surface parking lots and parking ramps	NP	NP	NP	C	NP	NP	NP	NP
Place of Worship	C	C	C	C	C	C	C	NP
Planned Unit Development	NP	C	C	C	C	C ⁷	C ⁷	NP
Private recreational facilities	P ³	P ³	P ³	P ³	P ³	P ³	P ³	NP
Public Buildings on Public Land	NP	NP	NP	NP	C	NP	NP	NP
Public & Private Schools	NP	C	C	C	C	C	C	NP
Public recreation areas and related accessory buildings and structures	P	P	P	P	P	P	P	P
Public or semi-public recreation buildings and neighborhood or community centers ⁸	NP	NP	NP	NP	NP	NP	C	NP
Regional pipelines power transmission lines and relay towers	NP	NP	C	NP	NP	NP	NP	NP
Rental Offices	NP	NP	NP	NP	NP	P ³	P ³	NP
Residential care facilities serving 6 or fewer persons	P ³	P	P	P	P	P	P	NP
Short Term Rentals	NP	NP	NP	I	I	I	I	NP
Single family detached dwelling	P ⁹	P ⁹	P ⁹	P ⁹	P ⁹	P ⁹	P	P ¹¹
Single family dwellings-(Greater than 500 sf. Less than 750 sf.)	NP	NP	NP	NP	NP	C	NP	NP
Solar ³	P	P	P	P	P	P	P	NP

³ Are accessory uses

⁶ R-MH regulates parking spaces and car ports

⁷ This includes Residential Townhome Planned Developments

⁸ This also includes public and private educational institutions limited to elementary, junior high and senior high school; religious institutions such as churches, chapels, temples and synagogues.

⁹ Residential facilities serving 6 or fewer persons in single family detached dwelling

¹¹ Only manufactured homes

R - Zoning Ordinance Use Matrix

USE	R-A	R-R	R-E	R-1	R-1A	R-2	R-3	R-MH
State Licensed residential serving 7 to 16 persons	NP	NP	NP	NP	NP	C	C	NP
Storage of recreational vehicles and equipment ³	P	P	P	P	P	P	P	P
Studios	NP	NP	NP	NP	NP	NP	NP	NP
Swimming Pool	NP	NP	NP	NP	NP	NP	NP	p ^{3&10}
Temporary buildings associated with a public or private principal school building and used for classrooms	NP	NP	NP	I	I	NP	I	NP
Temporary roadside sales of agricultural products produces on site ³	P	P	NP	NP	NP	NP	NP	NP
Two-family attached dwellings	NP	NP	NP	NP	NP	NP	P	NP
Two-family dwellings - Greater than 500 sf. and less than 750 s.f.	NP	NP	NP	NP	NP	C	NP	NP
Wind Energy Conversion Systems ¹²	C	C	C	C	C	C	C	NP

³ Are accessory uses

¹⁰ Common swimming pool, sport courts and similar recreational facilities for the use of residents of the park and their occasional guests

¹² Wind Energy Conversion Systems may be allowed as an accessory, conditional use, provided the property upon which the system is to be located is zoned R-A, B-1, B-2, B-3, B-4, B-5, I-1 or I-2 (Section 34 of the Zoning Ordinance)

Other (zones) Zoning Ordinance Use Matrix

A “C” appearing in the table for any use means that the use will be permitted in the zoning district by a “Conditional Use Permit”. By “I” appearing in the table for any use means that the use will be permitted an “Interim Use Permit”. A “P” means that the use is permitted in the zoning district subject to the general provisions of the Zoning Ordinance, and “NP” means the use is not permitted in the zoning district. For uses not included on this list, application shall be made to the Board of Adjustment for interpretation.

I-1: Light Industry District

I-2: General Industry District

MU: Mixed Use District

FW: Floodway District

FF: Flood Fringe District

USE	I-1	I-2	MU	FW	FF
Accessory Buildings and structures	NP	P ³	NP	NP	NP
Adult Uses	NP	P	NP	NP	NP
Agricultural Building	NP	NP	NP	NP	NP
Agricultural Uses	NP	NP	NP	P	P
Animal Hospital or clinic and kennels or shelters	C	NP	C	NP	NP
All accessory uses allowed in B-4, B-5 and I-1	NP	NP	P	NP	NP
All commercial uses permitted in B-1, B-2, B-3, B-4 and B-6	P	P	P	NP	NP
All uses allowed permitted uses and conditional uses in B-4, B-5, and I-1	NP	NP	P	NP	NP
Antenna ²	P	P	P	NP	NP
Automobile body shop	P	P	P	NP	NP
Auto wrecking or salvage yard, junk yard, used auto parts and similar uses	NP	C	NP	NP	NP
Beverage Bottling	P	P	P	NP	NP
Billboard signs	I	NP	NP	NP	NP
Brew Pub, Off-Sale	P	NP	NP	NP	NP
Brew Pub, On-Sale	P	NP	NP	NP	NP
Brewery Taproom, Off-Sale	P	NP	NP	NP	NP
Brewery Taproom, On-Sale	P	NP	NP	NP	NP
Brewery tasting rooms and product sales provided these do not occupy more than 10% of the site	NP	P ³	NP	NP	NP

² Are accessory uses and require a permit

³ Are accessory uses

Other (zones) Zoning Ordinance Use Matrix

USE	I-1	I-2	MU	FW	FF
Bulk Liquid Storage	C	NP	NP	NP	NP
Coal, tar, concrete or asphalt processing or distillation and acid manufacturing	NP	C	NP	NP	NP
Commercial printing and publishing establishments	P	P	P	NP	NP
Commercial sales incidental to the manufacture, processing or wholesaling of products manufactured on, processed on or wholesaled from the premises	P	P	P	NP	NP
Commercial stockyards and slaughtering of animals	NP	C	NP	NP	NP
Construction equipment sales and repair	P	P	P	NP	NP
Contractor Offices	P	P	P	NP	NP
Cosmetics/toiletries	P	P	P	NP	NP
Crude Oil, gasoline, liquid fertilizer or other liquid storage	NP	C	NP	NP	NP
Decommissioning the significant removal of machinery	I	I	I	NP	NP
Drugs and pharmaceuticals	P	P	P	NP	NP
Electronics assembly and testing	P	P	P	NP	NP
Electronics/Plumbing/Heating/Air Conditioning products and parts	P	P	P	NP	NP
Essential Services	P	P	P	NP	NP
Extraction of sand, gravel, and other materials	NP	NP	NP	C	C
Fences	P ³	P ³	P ³	P ³	P ³
Fitness and recreation centers	P	P	P	NP	NP
Food/beverage processing	P	P	P	NP	NP

³ Are accessory uses

Other (zones) Zoning Ordinance Use Matrix

USE	I-1	I-2	MU	FW	FF
Government and public utility buildings and structures	P	P	P	NP	NP
Guard/Reserve facilities	P	P	P	NP	NP
Industrial and commercial uses such as parking areas, loading areas and airport landing strips	NP	NP	NP	P	P
Kilns, forges or other heat processes fired by means other than electricity	NP	C	C	NP	NP
Laundry, dry cleaning or dyeing plants	P	P	P	NP	NP
Machine Shops	P	P	P	NP	NP
Major auto and truck repair	NP	P	C	NP	NP
Manufacturing compounding assembly, packaging and treatment or storage ¹⁶	NP	P	C	NP	NP
Marinas, boat rentals, docks, piers, wharves, and water control structures	NP	NP	NP	C	C
Metal Sales	P	P	P	NP	NP
Microdistilleries & Cocktail Rooms	P	P	P	NP	NP
Mini self storage facilities	C	NP	NP	NP	NP
Non-Enclosed Areas for dining and/or serving alcohol when accessory to a restaurant or bar	C	NP	NP	NP	NP
Nonresidential structures; Commercial; manufacturing and industrial structures	NP	NP	NP	NP	C
Office Business-Clinic & General	P	P	P	NP	NP
Off-Street Loading ³	P	P	P	NP	NP
Off-Street Parking ³	P	P	P	NP	NP

³ Are accessory uses

¹⁶ Of brewing; cement; stone cutting; glass wet or dry mill working; metal polishing and plating; vinegar works; rubber products; plastics; meat packing; flour; feed and grain milling; vegetable canning and processing; lime; gypsum and plaster of paris and similar uses

Other (zones) Zoning Ordinance Use Matrix

USE	I-1	I-2	MU	FW	FF
Other uses similar in nature	NP	NP	NP	C	C
Outdoor dining accessory to restaurant	C	NP	NP	NP	NP
Outdoor Sales Lot	C	NP	C	NP	NP
Outside Services, sales, and rental	NP	C	C	NP	NP
Outdoor Storage	I & P ³	NP	C	NP	NP
Paper products	P	P	P	NP	NP
Personal Wireless Service Antennas ²	P	P	P	NP	NP
Placement and operation of outdoor wood burning furnaces	C	C	C	NP	NP
Placement of fill	NP	NP	NP	C	C
Planned Unit Development	C	NP	NP	NP	NP
Private and public recreational uses	NP	NP	NP	P	P
Radio and television studios	P	P	P	NP	NP
Railroads, streets, bridges, utility transmissions line and pipelines	NP	NP	NP	C	C
Recycling Center	P	C	C	NP	NP
Refuse/garbage collection, recycling and incineration or reduction of waste materials	NP	C	NP	C	C
Research Laboratories	P	P	P	NP	NP
Residences for Security Personnel	P ³	NP	NP	NP	NP
Residential uses such as lawns, gardens, parking areas and play areas	NP	NP	NP	P	P
Retail sales operated by non-profit organizations	P	P	P	NP	NP
Sales and distribution of propane	P	P	P	NP	NP
Sale of parts and sale and repair of tires	P	P	P	NP	NP

² Are accessory uses and require a permit

³ Are accessory uses

Other (zones) Zoning Ordinance Use Matrix

USE	I-1	I-2	MU	FW	FF
Service facilities such as electrical and heating equipment shall be installed at or above the regulatory flood protection elevation ³	NP	NP	NP	NP	P ³
Signs	P ³	P ³	P ³	P ³	P ³
Storage, utilization or manufacture of materials which could decompose by detonation	NP	C	NP	NP	NP
Storage Yards for equipment, machinery or materials	NP	NP	NP	C	C
Structures accessory to park and recreational uses	NP	NP	NP	C	C
Structures shall be firmly anchored to prevent floatation ³	NP	NP	NP	NP	P
Structures shall have low flood damage potential ³	NP	NP	NP	NP	P
Structures shall not be designated for human habitation ³	NP	NP	NP	NP	P
Structural works for flood control such as levees, dikes and flood walls	NP	NP	NP	C	C
Telecommunications towers ¹⁴	P	P	P	NP	NP
Temporary mobile towers ¹⁴	P	P	P	NP	NP
Tire Vulcanizing	NP	P	C	NP	NP
Trade/Specialty Schools	C	NP	NP	NP	NP
Truck and semi tractor/trailer sales and repair	P	P	P	NP	NP
Trucking Terminals	NP	C	NP	NP	NP
Warehousing and distribution facilities	NP	P	NP	NP	NP

³ Are accessory uses

¹⁴ Requires a permit

Other (zones) Zoning Ordinance Use Matrix

USE	I-1	I-2	MU	FW	FF
Warehousing and wholesaling	P	P	P	NP	NP
Wholesale businesses	NP	P	NP	NP	NP
Wind Energy Conversion Systems ¹¹	C	C	C	NP	NP
Woodworking	P	P	P	NP	NP

¹¹ Wind Energy Conservation Systems may be allowed as an accessory, conditional use provided the property upon which the system is to be located is zoned R-A, B-1, B-2, B-3, B-4, B-5, I-1 or I-2 (Section 34 of the Zoning Ordinance)

Why is Blue Light at Night Bad?

on December 22, 2016

New technical capabilities often come with unanticipated challenges. White LED lighting often has much higher levels of potentially harmful blue light. In 2010, IDA published its paper, “[Visibility, Environmental, and Astronomical Issues Associated with Blue-Rich White Outdoor Lighting](#),” detailing the hazards of blue-rich white light sources. In the years since scientific evidence has solidified around its conclusions.

The Harvard Health Publications article, “[Blue light has a dark side](#),” describes artificial lighting that emits the blue color spectrum light throws off the body’s circadian rhythm off balance. While not all colors have the same negative effects, research is showing that it *may* contribute to the cause of cancer, heart disease, obesity, and diabetes.

The blue wavelengths emitted by artificial lighting at night, blue lights are actually beneficial during the daytime. Research shows the blue wavelengths put off by the sun during the daytime increases attention, reaction times and mood. All of these benefits during the day are disruptive at night.

Concerns about blue light reach far beyond our health. Outdoor lighting with strong blue content is likely to worsen skyglow because it has a significantly larger geographic reach than lighting consisting of less blue. According to the 2016 “[World Atlas of Artificial Night Sky Brightness](#)” street lighting and outdoor lighting retrofits using 4000K lamps could result in a 2.5 increase in lighting pollution.

Blue-rich white light sources are also known to increase glare and compromise human vision, especially in the aging eye. These lights create potential road safety problems for motorists and pedestrians alike. In natural settings, blue light at night has been shown to adversely affect wildlife behavior and reproduction. This particularly true in cities, which are often stopover points for migratory species.

The promise of cheaper outdoor lighting based on electricity and maintenance savings from LED conversion should be weighed against other factors, such as the blue light content of white LEDs. Blue-rich sources are the most efficient LEDs in terms of the conversion of electricity to light, and therefore have the lowest electricity cost to produce a given amount of light compared to “warmer,” less efficient white LED lamps. Every effort should be made to diminish or eliminate blue light exposure after dark.

IDA Recommends

Already many white LED options are available on the outdoor lighting market and that number will only rise in the future. IDA has developed a set of recommendations for those choosing lighting systems. These suggestions will aid in the selection of lighting that is energy and cost efficient, yet ensures safety and security, protects wildlife, and promotes the goal of dark night skies. These include:

- **Always choose fully shielded fixtures** that emit no light upward
- **Use “warm-white” or filtered LEDs** (CCT < 3,000 K; S/P ratio < 1.2) to minimize blue emission
- **Look for products with adaptive controls** like dimmers, timers, and motion sensors
- **Consider dimming or turning off the lights during overnight hours**
- **Avoid the temptation to over-light** because of the higher luminous efficiency of LEDs.
- **Only light the exact space and in the amount required for particular tasks**

Help us protect our night skies for current and future generations! [DONATE NOW!](#)

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Illuminating
ENGINEERING SOCIETY



JOINT IDA - IES

**MODEL
LIGHTING
ORDINANCE
(MLO)**

with USER'S GUIDE

June 15, 2011

The User Notes

The User Notes are intended to clarify the sections of the MLO for the various audiences who will use it: lighting designers, city officials, engineers, citizen groups, and others. Every effort has been made to keep the language technically accurate and clear, but since different disciplines may use the same term in different ways, or have different interpretations, some guidance may be helpful. While these Notes can not be a full tutorial on modern lighting design, it is hoped that the Notes will help facilitate the dialogue necessary to adopt the MLO.

Background

The problems of light pollution first became an issue in the 1970s when astronomers identified the degradation of the night sky due to the increase in lighting associated with development and growth. As more impacts to the environment by lighting have been identified, an international “dark sky” movement is advocating for the precautionary approach to outdoor lighting design.

Many communities have passed anti-light-pollution laws and ordinances. However, there is little or no agreement among these laws, and they vary considerably in language, technical quality, and stringency. This is confusing for designers, engineers, and code officials. The lack of a common basis prevents the development of standards, educational programs, and other means of achieving the goal of effective lighting control.

This MLO will allow communities to drastically reduce light pollution and glare and lower excessive light levels. The recommended practices of the IES can be met using readily available, reasonably priced lighting equipment. However, many conventional lighting practices will no longer be permitted, or will require special permits.

This Model Lighting Ordinance (MLO) is the result of extensive efforts by the International Dark Sky Association (IDA) and the Illuminating

Engineering Society of North America (IES). Among its features is the use of lighting zones (LZ0-4) which allow each governing body to vary the stringency of lighting restrictions according to the sensitivity of the area as well as accommodating community intent. In this way, communities can fine-tune the impact of the MLO without having to customize the MLO. The MLO also incorporates the Backlight-Uplight-Glare (BUG) rating system for luminaires, which provides more effective control of unwanted light.

Joint IDA-IESNA Model Outdoor Lighting Ordinance (MLO)

June 15, 2011

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General Notes in Adopting this Model Ordinance

Adoption of this ordinance should follow the established development, review, and approval processes of the adopting authority. If no such processes are in place, this ordinance may be adopted as a new independent section of the Municipal Code.

The MLO is probably best adopted as an “overlay zoning” ordinance. This means that it overlays, but is different from, land-use zoning. It can be added to or integrated into existing ordinances or codes and cross-referenced to other applicable codes and ordinances such as the electrical code, the sign code, planning ordinances, etc.

The MLO may best be managed by assigning it to planning officials and using existing administrative structures.

Because of the diverse community and lighting needs across large areas, this MLO is not intended for adoption as a state, provincial or national ordinance. Regional coordination is encouraged. Light pollution knows no boundaries, and the effects of polluting light persist as far as 200 kilometers (about 120 miles) from the source. One large city could adopt the MLO and dramatically affect a region, but adoption in suburbs and small towns must be part of a regional effort to achieve significant improvements in the overall quality of the night sky.

Adopting agencies should also consider that the MLO, like all other modern codes, is designed to evolve over time. Lighting technology will change, and MLO changes will be needed every few years. On-going renewal cycles are strongly recommended as any part of an adopting ordinance.

MLO Development and Task Force Members

This Model Lighting Ordinance has been developed as a joint undertaking by the Illuminating Engineering Society and the International Dark-Sky Association.

The Joint Task Force responsible for developing the MLO include

IDA
Co-Chair: Jim Benya
Co-Chair: Nancy Clanton
Leslie Lipstein
Leo Smith
Michael Mutmanský

IES
Naomi Miller
Cheryl English
Denis Lavoie
Eric Gibson

John Walter representing the electric utility industry also contributed as a member of the Joint Task Force.

I. PREAMBLE - User's Guide

In general, the preamble is part of the ordinance but is typically not part of the code. It establishes the reasons why the municipality is undertaking these regulations.

Local governments may add other purposes to the Preamble including established local government environmental or energy goals that support the model lighting ordinance. The environmental impacts of outdoor lighting fall into two categories: carbon footprint (energy used in the life of a lighting product) and obtrusive light.

CARBON FOOTPRINT	OBTRUSIVE LIGHT
Cost & Impact of Mining the Materials Used	Impact on Humans
Energy Used in Production	Impact on the Environment
Energy Used during Product Life	
Disposal/Recycling Costs	

II. LIGHTING ZONES - User's Guide

Lighting zones reflect the base (or ambient) light levels desired by a community. The use of lighting zones (LZ) was originally developed by the International Commission on Illumination (CIE) and appeared first in the US in IES Recommended Practice for Exterior Environmental Lighting, RP-33-99.

It is recommended that lower lighting zone(s) be given preference when establishing zoning criteria. Selection of lighting zone or zones should be based not on existing conditions but rather on the type of lighting environments the jurisdiction seeks to achieve. For instance, new development on previously rural or undeveloped land may be zoned as LZ-1. Using lighting zones allows a great deal of flexibility and customization without the burden of excessive regulation. For example, a jurisdiction may choose to establish vertical lighting zones with the lighting zone at street level at a higher zone than the residential housing on upper levels.

I. PREAMBLE - Ordinance Text

The purpose of this Ordinance is to provide regulations for outdoor lighting that will:

- Permit the use of outdoor lighting that does not exceed the minimum levels specified in IES recommended practices for night-time safety, utility, security, productivity, enjoyment, and commerce.
- Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive light.
- Curtail light pollution, reduce skyglow and improve the nighttime environment for astronomy.
- Help protect the natural environment from the adverse effects of night lighting from gas or electric sources.
- Conserve energy and resources to the greatest extent possible.

II. LIGHTING ZONES - Ordinance Text

The Lighting Zone shall determine the limitations for lighting as specified in this ordinance. The Lighting Zones shall be as follows:

LZ0: No ambient lighting

Areas where the natural environment will be seriously and adversely affected by lighting. Impacts include disturbing the biological cycles of flora and fauna and/or detracting from human enjoyment and appreciation of the natural environment. Human activity is subordinate in importance to nature. The vision of human residents and users is adapted to the darkness, and they expect to see little or no lighting. When not needed, lighting should be extinguished.

II. LIGHTING ZONES (cont.) - User's Guide

However, if an adjacent use could be adversely impacted by allowable lighting, the adopting authority may require that a particular site meet the requirements for a lower lighting zone. For example, the authority could specify Lighting Zone 1 or 2 requirements if a commercial development were adjacent to a residence, hospital or open space, or to any land assigned to a lower zone.

Lighting zones are best implemented as an overlay to the established zoning especially in communities where a variety of zone districts exists within a defined area or along an arterial street. Where zone districts are cohesive, it may be possible to assign lighting zones to established land use zoning. It is recommended that the lighting zone includes churches, schools, parks, and other uses embedded within residential communities.

Zone	Recommended Uses or Areas	Zoning Considerations
LZ-0	Lighting Zone 0 should be applied to areas in which permanent lighting is not expected and when used, is limited in the amount of lighting and the period of operation. LZ-0 typically includes undeveloped areas of open space, wilderness parks and preserves, areas near astronomical observatories, or any other area where the protection of a dark environment is critical. Special review should be required for any permanent lighting in this zone. Some rural communities may choose to adopt LZ-0 for residential areas.	Recommended default zone for wilderness areas, parks and preserves, and undeveloped rural areas. Includes protected wildlife areas and corridors.
LZ-1	Lighting Zone 1 pertains to areas that desire low ambient lighting levels. These typically include single and two family residential communities, rural town centers, business parks, and other commercial or industrial/storage areas typically with limited nighttime activity. May also include the developed areas in parks and other natural settings.	Recommended default zone for rural and low density residential areas. Includes residential single or two family; agricultural zone districts; rural residential zone districts; business parks; open space include preserves in developed areas.

II. LIGHTING ZONES (cont.) - Ordinance Text

LZ1: Low ambient lighting

Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety and convenience but it is not necessarily uniform or continuous. After curfew, most lighting should be extinguished or reduced as activity levels decline.

LZ2: Moderate ambient lighting

Areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting may typically be used for safety and convenience but it is not necessarily uniform or continuous. After curfew, lighting may be extinguished or reduced as activity levels decline.

LZ3: Moderately high ambient lighting

Areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security and/or convenience and it is often uniform and/or continuous. After curfew, lighting may be extinguished or reduced in most areas as activity levels decline.

LZ4: High ambient lighting

Areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security and/or convenience and it is mostly uniform and/or continuous. After curfew, lighting may be extinguished or reduced in some areas as activity levels decline.

II. LIGHTING ZONES (cont.) - User's Guide

Zone	Recommended Uses or Areas	Zoning Considerations
LZ-2	Lighting Zone 2 pertains to areas with moderate ambient lighting levels. These typically include multifamily residential uses, institutional residential uses, schools, churches, hospitals, hotels/motels, commercial and/or businesses areas with evening activities embedded in predominately residential areas, neighborhood serving recreational and playing fields and/or mixed use development with a predominance of residential uses. Can be used to accommodate a district of outdoor sales or industry in an area otherwise zoned LZ-1.	Recommended default zone for light commercial business districts and high density or mixed use residential districts. Includes neighborhood business districts; churches, schools and neighborhood recreation facilities; and light industrial zoning with modest nighttime uses or lighting requirements.
LZ-3	Lighting Zone 3 pertains to areas with moderately high lighting levels. These typically include commercial corridors, high intensity suburban commercial areas, town centers, mixed use areas, industrial uses and shipping and rail yards with high night time activity, high use recreational and playing fields, regional shopping malls, car dealerships, gas stations, and other nighttime active exterior retail areas.	Recommended default zone for large cities' business district. Includes business zone districts; commercial mixed use; and heavy industrial and/or manufacturing zone districts.
LZ-4	Lighting zone 4 pertains to areas of very high ambient lighting levels. LZ-4 should only be used for special cases and is not appropriate for most cities. LZ-4 may be used for extremely unusual installations such as high density entertainment districts, and heavy industrial uses.	Not a default zone. Includes high intensity business or industrial zone districts.

III. GENERAL REQUIREMENTS - User's Guide

This Section sets out the requirements that apply to all lighting, both residential and non-residential.

Each adopting jurisdiction should incorporate their existing standards as to when compliance with new regulations is required, when repair or remodeling triggers compliance and if the new ordinance will be retroactive to existing development. The Applicability section of this model ordinance should serve as a guide if the adopting jurisdiction does not have standards or policies in place. Likewise, the adopting jurisdiction should use their existing policies and definitions of what constitutes public monuments, and temporary and/or emergency lighting. Community attitudes and precedents should be taken into account in deciding to regulate seasonal holiday lighting.

EXEMPTIONS - User's Guide

This is standard language intended to prevent conflict of laws and to give the community the ability to set specific lighting requirements in special plans and under use permits. It can be amended to conform to similar language in other ordinances. For example, while public monuments, statuary, and flags should be lighted, the lighting also should be limited to avoid excess.

Lighting for streets, roads, and highways is usually regulated by a street lighting ordinance, and is not covered by this model ordinance. However, since street lighting can affect nearby areas, some recognition of its effect is appropriate. (See Section XI)

SIGN LIGHTING - User's Guide

A sign lighting ordinance is strongly recommended if not already in place. It should carefully limit lighting to prevent over-lighted signs from being used to circumvent lighting ordinances.

III. GENERAL REQUIREMENTS - Ordinance Text

A. *Conformance with All Applicable Codes*

All outdoor lighting shall be installed in conformance with the provisions of this Ordinance, applicable Electrical and Energy Codes, and applicable sections of the Building Code.

B. *Applicability*

Except as described below, all outdoor lighting installed after the date of effect of this Ordinance shall comply with these requirements. This includes, but is not limited to, new lighting, replacement lighting, or any other lighting whether attached to structures, poles, the earth, or any other location, including lighting installed by any third party.

Exemptions from III.(B.) The following are not regulated by this Ordinance

- a. Lighting within public right-of-way or easement for the principal purpose of illuminating streets or roads. No exemption shall apply to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside the public right of way or easement, unless regulated with a streetlighting ordinance.

Note to adopting agency: if using the street lighting ordinance (Section XI), this exemption should read as follows:

Lighting within the public right-of-way or easement for the principal purpose of illuminating roads and highways. No exemption shall apply to any street lighting and to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside of the public right of way or easement.

- b. Lighting for public monuments and statuary.
- c. Lighting solely for signs (lighting for signs is regulated by the Sign Ordinance).
- d. Repairs to existing luminaires not exceeding 25% of total installed luminaires.

III. GENERAL REQUIREMENTS (cont.) - Ordinance Text

- e. Temporary lighting for theatrical, television, performance areas and construction sites;
- f. Underwater lighting in swimming pools and other water features
- g. Temporary lighting and seasonal lighting provided that individual lamps are less than 10 watts and 70 lumens.
- h. Lighting that is only used under emergency conditions.
- i. In lighting zones 2, 3 and 4, low voltage landscape lighting controlled by an automatic device that is set to turn the lights off at one hour after the site is closed to the public or at a time established by the authority.

Exceptions to III. (B.) All lighting shall follow provisions in this ordinance; however, any special requirements for lighting listed in a) and b) below shall take precedence.

- a. Lighting specified or identified in a specific use permit.
- b. Lighting required by federal, state, territorial, commonwealth or provincial laws or regulations.

C. *Lighting Control Requirements*

1. Automatic Switching Requirements

Controls shall be provided that automatically extinguish all outdoor lighting when sufficient daylight is available using a control device or system such as a photoelectric switch, astronomic time switch or equivalent functions from a programmable lighting controller, building automation system or lighting energy management system, all with battery or similar backup power or device.

LIGHTING CONTROLS - User's Guide

This section requires all outdoor lighting to have lighting controls that prohibit operation when sufficient daylight is available, and to include the capability, either through circuiting, dimming or alternating sources, to be able to reduce lighting without necessarily turning all lighting off.

CURFEW REQUIREMENTS - User's Guide

The intent is to reduce or eliminate lighting after a given time. Benefits include reduced environmental impact, longer hours of improved astronomy, energy savings, and improved sleeping conditions for residents. Additionally, some police departments have indicated that post-curfew light reductions make drive-by patrolling easier because it allows them to see further into and through a site.

The authority should determine the time of curfew and the amount of lighting reduction based on the character, norms and values of the community.

Typically, curfews go into effect one hour after the close of business. Restaurants, bars and major entertainment facilities such as sports stadiums, may require the curfew go into effect two hours after the close of business. The authority may elect to have no curfew for facilities with shift workers and 24 hour operations, or to extend the curfew time to meet specific needs. The MLO can be modified to address those concerns.

Areas without street lights or with very low ambient light levels should consider turning off all non-emergency lighting at curfew while commercial areas or urban areas may prefer a reduction in lighting levels. A reduction of at least 30% is recommended for most uses.

III. GENERAL REQUIREMENTS (cont.) - Ordinance Text

Exceptions to III.(C.) 1. Automatic lighting controls are not required for the following:

- a. Lighting under canopies.
- b. Lighting for tunnels, parking garages, garage entrances, and similar conditions.

2. Automatic Lighting Reduction Requirements

The Authority shall establish curfew time(s) after which total outdoor lighting lumens shall be reduced by at least 30% or extinguished.

Exceptions to III.(C.) 2. Lighting reductions are not required for any of the following:

- a. With the exception of landscape lighting, lighting for residential properties including multiple residential properties not having common areas.
- b. When the outdoor lighting consists of only one luminaire.
- c. Code required lighting for steps, stairs, walkways, and building entrances.
- d. When in the opinion of the Authority, lighting levels must be maintained.
- e. Motion activated lighting.
- f. Lighting governed by special use permit in which times of operation are specifically identified.
- g. Businesses that operate on a 24 hour basis.

IV. NON-RESIDENTIAL LIGHTING - User's Guide

This section addresses non-residential lighting and multiple-family residences having common spaces, such as lobbies, interior corridors or parking. Its intent is to:

- Limit the amount of light that can be used
- Minimize glare by controlling the amount of light that tends to create glare
- Minimize sky glow by controlling the amount of uplight
- Minimize the amount of off-site impacts or light trespass

This MLO provides two methods for determining compliance. The *prescriptive method* contains precise and easily verifiable requirements for luminaire light output and fixture design that limit glare, uplight, light trespass and the amount of light that can be used. The *performance method* allows greater flexibility and creativity in meeting the intent of the ordinance. Note that both the prescriptive and the performance method limit the *amount* of light that can be used, but do not control *how* the lighting is to be used.

Most outdoor lighting projects that do not involve a lighting professional will use the prescriptive method, because it is simple and does not require engineering expertise.

For the prescriptive method, the initial luminaire lumen allowances defined in Table A (Parking Space Method) or B (Hardscape Area Method) will provide basic lighting (parking lot and lighting at doors and/or sensitive security areas) that is consistent with the selected lighting zone. The prescriptive method is intended to provide a safe lighting environment while reducing sky glow and other adverse offsite impacts. The Per Parking Space Method is applicable in small rural towns and is a simple method for small retail “mom and pop” operations without drive lane access and where the parking lot is immediately adjacent to the road. A jurisdiction may

IV. NON-RESIDENTIAL LIGHTING - Ordinance Text

For all non-residential properties, and for multiple residential properties of seven domiciles or more and having common outdoor areas, all outdoor lighting shall comply either with Part A or Part B of this section.

PRESCRIPTIVE METHOD - User's Guide

also allow a prescriptive method for classes of sites, such as car dealerships, gas stations, or other common use areas.

Note that the values are for initial luminaire lumens, not footcandles on the target (parking lot, sidewalk, etc). Variables such as the efficiency of the luminaire, dispersion, and lamp wear can affect the actual amount of light so the lumens per square foot allowance is not equal to footcandles on the site. By specifying initial luminaire lumen values, it is easier for officials to verify that the requirement is being met. Initial luminaire lumens are available from photometric data. Each initial luminaire lumens calculation should be supplied on the submittal form.

Solid state luminaires, such as LEDs, do not have initial lamp lumens, only initial luminaire lumens (absolute photometry). Other luminaires tested with relative photometry will have initial luminaire lumens which can be calculated by multiplying initial lamp lumens by the luminaire efficiency. In this example, three types of luminaires are used to light a parking area and building entry in a light commercial area. Two of these three luminaires use metal halide lamps: 70 watt wall mounted area lights and 150 watt pole mounted area lights. For these, the Initial Luminaire Lumens is equal to the initial lamp lumens multiplied by the luminaire efficiency. These values are entered into the compliance chart. The lumen value for the building mounted LED luminaires is equal to the lumens exiting the luminaire. Therefore, the value already represents the Initial Luminaire Lumens and no luminaire efficiency is needed. The total Luminaire Lumens for the site is equal to 247,840.

The allowable lumens are based on the lighting zone and the total hardscape area. Referencing Table B, the allowed lumens are 2.5/SF for LZ2. Multiplying this by the total hardscape square footage gives a value of 250,000 lumens allowed. Because this value is greater than the value calculated for the site, the project complies. Listed below is an example on a typical compliance worksheet for the Prescriptive Method.

IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text***A. Prescriptive Method***

An outdoor lighting installation complies with this section if it meets the requirements of subsections 1 and 2, below.

1. Total Site Lumen Limit

The total installed initial luminaire lumens of all outdoor lighting shall not exceed the total site lumen limit. The total site lumen limit shall be determined using either the Parking Space Method (Table A) or the Hardscape Area Method (Table B). Only one method shall be used per permit application, and for sites with existing lighting, existing lighting shall be included in the calculation of total installed lumens.

The total installed initial luminaire lumens is calculated as the sum of the initial luminaire lumens for all luminaires.

IV. NON-RESIDENTIAL LIGHTING (cont.) - User's Guide

In this example, three types of luminaires are used to light a parking area and building entry in a light commercial area. Two of these three luminaires use metal halide lamps: 70 watt wall mounted area lights and 150 watt pole mounted area lights. For these, the Initial Luminaire Lumens is equal to the initial lamp lumens multiplied by the luminaire efficiency. These values are entered into the compliance chart. The lumen value for the building mounted LED luminaires is equal to the lumens exiting the luminaire. Therefore, the value already represents the Initial Luminaire Lumens and no luminaire efficiency is needed. The total Luminaire Lumens for the site is equal to 247,840. The allowable lumens are based on the lighting zone and the total hardscape area. Referencing Table B, the allowed lumens are 2.5/SF for LZ2. Multiplying this by the total hardscape square footage gives a value of 250,000 lumens allowed. Because this value is greater than the value calculated for the site, the project complies.

PRESCRIPTIVE METHOD EXAMPLE - COMPLIANCE CHART			
<i>Lamp Descriptions</i>	<i>QTY</i>	<i>Initial Luminaire Lumens</i>	<i>Total</i>
70 W Metal Halide	8	3,920	31,360
150 W Metal Halide	20	9,600	192,000
18 W LED	24	1,020	24,480
TOTAL INITIAL LUMINAIRE LUMENS			247,840
SITE ALLOWED TOTAL INITIAL LUMENS*			250,000
PROJECT IS COMPLIANT?			YES

* Listed below is the method of determining the allowed total initial lumen for non-residential outdoor lighting using the hardscape areamethod. (Table B).

SITE ALLOWED TOTAL INITIAL LUMENS	
<i>Site Description</i>	Light Commercial
<i>Lighting Zone</i>	LZ-2
<i>Hardscape Area (SF)</i>	100,000
<i>Allowed Lumens per SF of Hardscape (Table B)</i>	2.5
<i>Site Allowed Total Initial Lumens (lumens per SF X hardscape area)</i>	250,000

IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text

PRESCRIPTIVE METHOD (cont.) - User's Guide**LIMITS TO OFFSITE IMPACTS**

The prescriptive method of the MLO restricts uplighting, including upward light emitted by decorative luminaires. A jurisdiction may choose to preserve some types of lighting, including lighting of monuments or historic structures. In this case, the adopting jurisdiction should exempt or otherwise regulate these types of lighting carefully so that it does not inadvertently allow glaring or offensive lighting systems.

Offsite effects of light pollution include glare, light trespass, sky glow, and impacts on the nocturnal environment. All of these are functions of the fixture or luminaire design and installation. This document replaces the previous luminaire classification terminology of full cut-off, semi cut-off, and cut-off because those classifications were not as effective in controlling offsite impacts as with the new IESNA luminaire classification system as described in TM-15-07.

A traditional method of defining light trespass is to identify a maximum light level at or near the property line. However, this method does not address offensive light that is not directed toward the ground, or the intensity of glaring light shining into adjacent windows. The requirements defined in Table C limit the amount of light in all quadrants that is directed toward or above the property line. The Backlight/Uplight/Glare (BUG) rating will help limit both light trespass and glare. (A detailed explanation of the BUG system is provided in the section on Table C.)

The limits for light distribution established in Table C (for the BUG rating system) prevent or severely limit all direct upward light. A small amount of uplight reflected by snow, light-colored pavement or a luminaire's supporting arms is inevitable and is not limited by the prescriptive method of this ordinance.

IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text**PRESCRIPTIVE METHOD****2. Limits to Off Site Impacts**

All luminaires shall be rated and installed according to Table C.

3. Light Shielding for Parking Lot Illumination

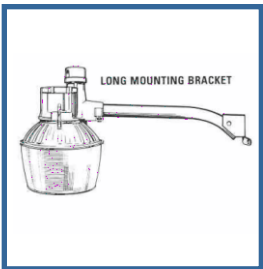
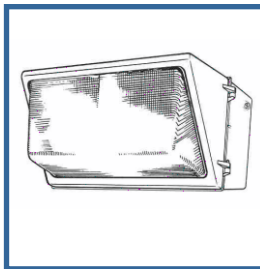
All parking lot lighting shall have no light emitted above 90 degrees.

Exception:

a) Ornamental parking lighting shall be permitted by special permit only, and shall meet the requirements of Table C-1 for Backlight, Table C-2 for Uplight, and Table C-3 for Glare, without the need for external field-added modifications.

PRESCRIPTIVE METHOD (cont.) - User's Guide**LIMITS TO OFFSITE IMPACTS**

A seemingly non-compliant fixture, such as a post-top translucent acorn luminaire, may in certain cases meet the BUG ratings, as long as it has proper interior baffling within the acorn globe. However, the BUG ratings in Table C will limit the use of the following types of luminaires in all lighting zones:

**Barn Lights****Non-Shielded
Wall Packs****Floodlights or
lights not aimed
downward****IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text**

PERFORMANCE METHOD - User's Guide

The performance method is best for projects with complex lighting requirements or when the applicant wants or needs more flexibility in lighting design. The performance method is also used when any lighting designer plans to aim or direct any light fixture upward (above 90 degrees). An engineer or lighting professional generally will be required to design within the performance method. An adopting jurisdiction may also wish to hire an engineer or lighting professional to review and approve projects using this method and/or incorporate review of the performance method into special review procedures.

The Performance Method is also best for projects where higher lighting levels are required compared to typical area lighting. An example might be a car sales lot where more light might be required on the new cars than would be needed for a standard parking lot. Another example is a gas station canopy requiring more light than a building entrance canopy.

The first step in the Performance Method regulates overlighting by establishing the Total Initial Site Lumens (Table D) that are allowed.

Allowances include the summation of the following (Table D):

- 1) Initial lumen allowance per site
- 2) Per area (SF) of hardscape

Table E allows additional lumens for unique site conditions.

Examples of allowances include:

- 1) Per building entrance/exit
- 2) Per length (linear feet) of Outdoor Sales Frontage Perimeter
- 3) Per area (SF) of Vehicle Service Station Canopy
- 4) Plus more ...

The Site Total Initial Site Lumens allowed are a combination of allowances from Table D and Table E.

IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text

B. Performance Method

1. Total Site Lumen Limit

The total installed initial luminaire lumens of all lighting systems on the site shall not exceed the allowed total initial site lumens. The allowed total initial site lumens shall be determined using Tables D and E. For sites with existing lighting, existing lighting shall be included in the calculation of total installed lumens.

The total installed initial luminaire lumens of all is calculated as the sum of the initial luminaire lumens for all luminaires.

IV. NON-RESIDENTIAL LIGHTING (cont.) - User's Guide**LIMITS TO OFFSITE IMPACTS (cont.)**

The second step in the Performance Method is to determine if the proposed luminaires are producing off site impacts such as glare, sky glow and light trespass. One may either use Option A which are the Maximum Allowable BUG Ratings in Table C, or Option B through computer lighting calculations show compliance with Maximum Vertical Illuminance at any point in the plane of the property line in Table F. Option B will be required for all non-residential luminaires that

- A) do not have BUG ratings, or
- B) exceed the BUG ratings,
- C) are not fully shielded, or
- D) have adjustable mountings.

For the performance method, Option B (2) requires photometric calculations for the site perimeter, to a height of no less than 33 feet (10 meters) above the tallest luminaire. Vertical illuminances at eye height (5 feet above grade) will give values that can be used to verify compliance by comparing actual site conditions to the photometric plan submitted during review.

Note that the MLO specifies 'total initial luminaire lumens' as a measurement in addition to footcandles/lux. The footcandle (lux) is equal to one lumen per square meter. Lux is the metric unit and is equal to one lumen per square meter.

IV. NON-RESIDENTIAL LIGHTING (cont.) - Ordinance Text**PERFORMANCE METHOD****2. Limits to Off Site Impacts**

All luminaires shall be rated and installed using either Option A or Option B. Only one option may be used per permit application.

Option A: All luminaires shall be rated and installed according to Table C.

Option B: The entire outdoor lighting design shall be analyzed using industry standard lighting software including inter-reflections in the following manner:

- 1) Input data shall describe the lighting system including luminaire locations, mounting heights, aiming directions, and employing photometric data tested in accordance with IES guidelines. Buildings or other physical objects on the site within three object heights of the property line must be included in the calculations.
- 2) Analysis shall utilize an enclosure comprised of calculation planes with zero reflectance values around the perimeter of the site. The top of the enclosure shall be no less than 33 feet (10 meters) above the tallest luminaire. Calculations shall include total lumens upon the inside surfaces of the box top and vertical sides and maximum vertical illuminance (footcandles and/or lux) on the sides of the enclosure.

The design complies if:

- a) The total lumens on the inside surfaces of the virtual enclosure are less than 15% of the total site lumen limit; and
- b) The maximum vertical illuminance on any vertical surface is less than the allowed maximum illuminance per Table F.

DESIGN COMPLIANCE - User's Guide

The application form will require information about the number of luminaires, the number of lamps in each luminaire, the initial luminaire lumens for each luminaire and the initial lumen output for each lamp (based on the wattage and type of lamp selected) as well as plans showing the site area measurements. This will allow the reviewer to verify that the lumen output of all the luminaires does not exceed the allowance.

Field verification can be achieved by asking the applicant and/or owner to verify that the luminaire type, lamp type and wattages specified have been used. Also ask the applicant for photometric data for each luminaire, since the initial luminaire lumens and B-U-G ratings are stated on the photometric report.

However, if a jurisdiction requires additional on-site verification, it may also request a point-by-point photometric plan. While this will not be a true measure of compliance with the criteria of this Ordinance, comparing the actual measured levels on site to the photometric plan can be an indication whether or not the installed lighting varies from the approved design.

V. RESIDENTIAL LIGHTING - User's Guide

This section applies to single family home, duplexes, row houses, and low rise multi-family buildings of 6 dwelling units or less.

RESIDENTIAL LIGHTING EXCEPTIONS

The exceptions allow for typical lighting that might exceed the specified limits.

Landscape Lighting - While not common in residential areas, it can cause light pollution and light trespass if it is not controlled.

Lighting controlled by Vacancy (Motion) Sensor - Reduces light pollution and light trespass and should be encouraged.

RESIDENTIAL LIGHTING EXAMPLE

In this example on the following page, five different luminaires are used on a residential property. Each luminaire must comply to meet the requirements. The site plan following shows luminaire types followed by a tabulation of each luminaire, whether or not it is fully shielded, lamp type, and initial luminaire lumens. If the luminaire lumens are not known, multiply the initial lamp lumens by the luminaire efficiency. If the efficiency is not known, multiply the initial lamp lumens by 0.7 as a reasonable assumption. The maximum allowable lumen values come from Table G, based on the shielding classification and location on the site. In this case, each luminaire complies with the requirements of Table G.

Comparison of efficacy by power
(120 Volt Incandescent lamps)

Output (Lumens)	Power (Watt)		
	Incan	CFL	LED
500	40	8 - 10	9
850	60	13 - 18	12 - 15
1,200	75	18 - 22	15
1,700	100	23 - 28	18

V. RESIDENTIAL LIGHTING - Ordinance Text

A. General Requirements

For residential properties including multiple residential properties not having common areas, all outdoor luminaires shall be fully shielded and shall not exceed the allowed lumen output in Table G, row 2.

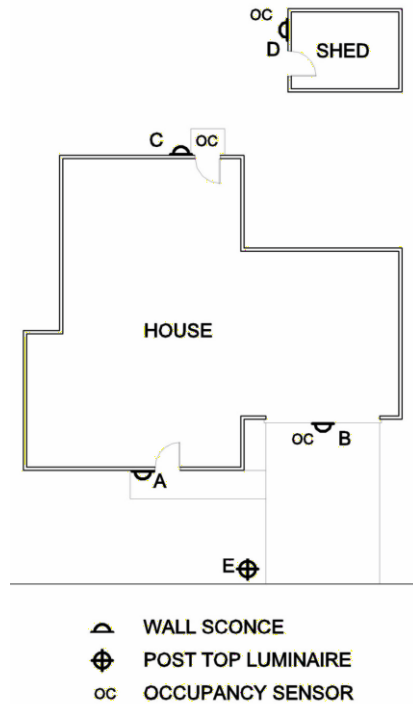
Exceptions

1. One partly shielded or unshielded luminaire at the main entry, not exceeding the allowed lumen output in Table G row 1.
2. Any other partly shielded or unshielded luminaires not exceeding the allowed lumen output in Table G row 3.
3. Low voltage landscape lighting aimed away from adjacent properties and not exceeding the allowed lumen output in Table G row 4.
4. Shielded directional flood lighting aimed so that direct glare is not visible from adjacent properties and not exceeding the allowed lumen output in Table G row 5.
5. Open flame gas lamps.
6. Lighting installed with a vacancy sensor, where the sensor extinguishes the lights no more than 15 minutes after the area is vacated.
7. Lighting exempt per Section III (B.).

B. Requirements for Residential Landscape Lighting

1. Shall comply with Table G.
2. Shall not be aimed onto adjacent properties.

V. RESIDENTIAL LIGHTING - User's Guide



Property Type: Residential Lighting Zone 1								
Luminaire Type	Location	Luminaire Description	Fully Shielded	Lamp Type	Initial Luminaire Lumens*	Maximum Allowed Initial Luminaire Lumens (Table G)	Controls	Compliant
A	Front Entry	Decorative wall sconce	No	9W CFL	420	420	None	Yes
B	Garage Door	Fully shielded wall pack	Yes	23W CFL	1050	1260	Occupancy Sensor	Yes
C	Back Entry	Decorative wall sconce	No	7W CFL	280	315	Occupancy Sensor	Yes
D	Shed Entry	Fully shielded wall pack	Yes	40W INC	343	1260	Occupancy Sensor	Yes
E	Driveway	Fully shielded post top	Yes	13W CFL	1260	1260	None	Yes

*Initial Luminaire Lumens are calculated by multiplying the total initial lamp lumens by the luminaire efficiency.
If the luminaire efficiency is not known, assume an efficiency of 70% and multiply the lamp lumen value by 0.7.

VI. LIGHTING BY SPECIAL PERMIT ONLY - User's Guide

This section addresses types of lighting that are intrusive or complex in their impacts and need a higher level of scrutiny and/or site sensitivity.

It should be noted that safety could be compromised if lighting conforming to this ordinance is located adjacent to excessively bright and/or glaring lighting.

It is important that the authority set clear and reasonable guidelines for applying for a special lighting use permit, and establish rules and procedures for granting or refusing them. They may differ from existing special use policies, in which case one or the other may be changed to achieve the overall goal of effective lighting without glare, sky glow, or light trespass.

SPORTS FIELD LIGHTING

For athletic and sports fields, the appropriate level of lighting will depend on the Class of Play and Facilities. Class of Play is divided into 4 categories, depending on the number of fixed spectator seats. (Competition play intended for nighttime TV broadcast may require higher lighting levels).

CLASS I: Competition play at facilities with 5,000 or more fixed spectator seats. (Professional, Colleges & Universities, some Semi-Professional & Large Sports Clubs)

CLASS II: Games at facilities with over 1,500 fixed spectator seats. (Smaller Universities and Colleges, some Semi-pro, large amateur leagues and high schools with large spectator facilities)

CLASS III: Games at facilities with over 500 fixed spectator seats. (Sports Clubs and amateur leagues, some high schools and large training professional training facilities with spectator sections)

CLASS IV: Competition or recreational play at facilities with 500 fixed spectator seats or less. Class IV Class of Play applies to games at which family and close friends of the players and staff are usually the majority of spectators. (Smaller amateur leagues, park and recreation department facilities, most Little Leagues smaller high schools, elementary and middle schools, and social events)

VI. LIGHTING BY SPECIAL PERMIT ONLY - Ordinance Text

A. High Intensity and Special Purpose Lighting

The following lighting systems are prohibited from being installed or used except by special use permit:

1. Temporary lighting in which any single luminaire exceeds 20,000 initial luminaire lumens or the total lighting load exceeds 160,000 lumens.
2. Aerial Lasers.
3. Searchlights.
4. Other very intense lighting defined as having a light source exceeding 200,000 initial luminaire lumens or an intensity in any direction of more than 2,000,000 candelas.

B. Complex and Non-Conforming Uses

Upon special permit issued by the Authority, lighting not complying with the technical requirements of this ordinance but consistent with its intent may be installed for complex sites or uses or special uses including, but not limited to, the following applications:

1. Sports facilities, including but not limited to unconditioned rinks, open courts, fields, and stadiums.
2. Construction lighting.
3. Lighting for industrial sites having special requirements, such as petrochemical manufacturing or storage, shipping piers, etc.
4. Parking structures.
5. Urban parks
6. Ornamental and architectural lighting of bridges, public monuments, statuary and public buildings.
7. Theme and amusement parks.
8. Correctional facilities.

To obtain such a permit, applicants shall demonstrate that the proposed lighting installation:

- a. Has sustained every reasonable effort to mitigate the effects of light on the environment and surrounding properties, supported by a signed statement describing the mitigation measures. Such statement shall be accompanied by the calculations required for the Performance Method.

SPORTS FIELD LIGHTING

When Class of Play is above Class IV, a dual control should be installed to limit illumination to Class IV levels during practices where spectators are fewer than 500.

(See IES Recommended Practice for Sports and Recreational Area Lighting RP-6)

VII. EXISTING LIGHTING - User's Guide

Adoption of this section on existing lighting is strongly encouraged.

If the adopting jurisdiction has criteria in place that require a property to come into compliance with the current zoning ordinance, it is recommended that the criteria also be applied to bringing existing lighting into compliance. If there are no established criteria, this section of the MLO is recommended.

Amortization allows existing lighting to gradually and gracefully come into compliance. Substantial changes or additions to existing properties are considered the same as new construction, and must comply.

Most outdoor lighting can be fully depreciated once it is fully amortized, usually no longer than 10 years, if not sooner, from the date of initial installation. Some jurisdictions may prefer to require phase-out in a substantially shorter period. The Authority may also wish to require compliance much sooner for “easy fixes” such as re-aiming or lowering lumen output of lamps. Where lighting is judged to be a safety hazard, immediate compliance can be required.

VI. LIGHTING BY SPECIAL PERMIT ONLY (cont.) - Ordinance Text

- b. Employs lighting controls to reduce lighting at a Project Specific Curfew (“Curfew”) time to be established in the Permit.
- c. Complies with the Performance Method after Curfew.

The Authority shall review each such application. A permit may be granted if, upon review, the Authority believes that the proposed lighting will not create unwarranted glare, sky glow, or light trespass.

VII. EXISTING LIGHTING - Ordinance Text

Lighting installed prior to the effective date of this ordinance shall comply with the following.

A. Amortization

On or before [amortization date], all outdoor lighting shall comply with this Code.

B. New Uses or Structures, or Change of Use

Whenever there is a new use of a property (zoning or variance change) or the use on the property is changed, all outdoor lighting on the property shall be brought into compliance with this Ordinance before the new or changed use commences.

C. Additions or Alterations***1. Major Additions.***

If a major addition occurs on a property, lighting for the entire property shall comply with the requirements of this Code. For purposes of this section, the following are considered to be major additions:

VII. EXISTING LIGHTING (cont.) - Ordinance Text

Additions of 25 percent or more in terms of additional dwelling units, gross floor area, seating capacity, or parking spaces, either with a single addition or with cumulative additions after the effective date of this Ordinance.

Single or cumulative additions, modification or replacement of 25 percent or more of installed outdoor lighting luminaires existing as of the effective date of this Ordinance.

2. Minor Modifications, Additions, or New Lighting Fixtures for Non-residential and Multiple Dwellings

For non-residential and multiple dwellings, all additions, modifications, or replacement of more than 25 percent of outdoor lighting fixtures existing as of the effective date of this Ordinance shall require the submission of a complete inventory and site plan detailing all existing and any proposed new outdoor lighting.

Any new lighting shall meet the requirements of this Ordinance.

3. Resumption of Use after Abandonment

If a property with non-conforming lighting is abandoned for a period of six months or more, then all outdoor lighting shall be brought into compliance with this Ordinance before any further use of the property occurs.

VIII. ENFORCEMENT & PENALTIES - Ordinance Text

(Reserved)

VIII. ENFORCEMENT AND PENALTIES - User's Guide

Enforcement and penalties will vary by jurisdiction. There are, however, certain practices that will promote compliance with lighting regulations. Education is a key tool in promoting compliance. Proactive enforcement procedures can include providing a copy of the lighting regulations to every contractor at the time they visit to obtain a building permit. Another effective tool is a requirement that the builder or developer acknowledge in writing that the he or she is familiar with the lighting requirements and will submit a lighting plan for approval.

VIII. ENFORCEMENT AND PENALTIES (cont.) - User's Guide

Submission of the Lighting Plan should be required as a precondition to any approvals. The Lighting Plan should include the location and BUG rating for each luminaire, specify whether compliance is by the performance or prescriptive method, and a worksheet to show that the luminaires and their BUG ratings are compliant.

IX. TABLES - User's Guide

The tables are to be reviewed periodically by a joint committee of the IES and IDA, and adjusted as standards and technology permit. If more research on the impacts of outdoor lighting shows the effects of light pollution to be a significant concern, then the values in the tables may be modified. Such changes will have no significant impact to the balance of the language of the Ordinance or Code.

VIII. ENFORCEMENT & PENALTIES - Ordinance Text**IX. TABLES - Ordinance Text****Table A - Allowed Total Initial Luminaire Lumens per Site for Non-residential Outdoor Lighting, Per Parking Space Method**

May only be applied to properties up to 10 parking spaces (including handicapped accessible spaces).

LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
350 lms/space	490 lms/space	630 lms/space	840 lms/space	1,050 lms/space

Table B - Allowed Total Initial Lumens per Site for Non-residential Outdoor Lighting, Hardscape Area Method

May be used for any project. When lighting intersections of site drives and public streets or road, a total of 600 square feet for each intersection may be added to the actual site hardscape area to provide for intersection lighting.

LZ-0	LZ-1	LZ-2	LZ-3	LZ-4
Base Allowance				
0.5 lumens per SF of Hardscape	1.25 lumens per SF of Hardscape	2.5 lumens per SF of Hardscape	5.0 lumens per SF of Hardscape	7.5 lumens per SF of Hardscape

IX. TABLES - Ordinance Text

Table B - *Lumen Allowances, in Addition to Base Allowance*

	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Additional allowances for sales and service facilities. No more than two additional allowances per site, Use it or Lose it.					
Outdoor Sales Lots. This allowance is lumens per square foot of uncovered sales lots used exclusively for the display of vehicles or other merchandise for sale, and may not include driveways, parking or other non sales areas. To use this allowance, luminaires must be within 2 mounting heights of sales lot area.	0	4 lumens per square foot	8 lumens per square foot	16 lumens per square foot	16 lumens per square foot
Outdoor Sales Frontage. This allowance is for lineal feet of sales frontage immediately adjacent to the principal viewing location(s) and unobstructed for its viewing length. A corner sales lot may include two adjacent sides provided that a different principal viewing location exists for each side. In order to use this allowance, luminaires must be located between the principal viewing location and the frontage outdoor sales area	0	0	1,000 per LF	1,500 per LF	2,000 per LF
Drive Up Windows. In order to use this allowance, luminaires must be within 20 feet horizontal distance of the center of the window.	0	2,000 lumens per drive-up window	4,000 lumens per drive-up window	8,000 lumens per drive-up window	8,000 lumens per drive-up window
Vehicle Service Station. This allowance is lumens per installed fuel pump.	0	4,000 lumens per pump (based on 5 fc horiz)	8,000 lumens per pump (based on 10 fc horiz)	16,000 lumens per pump (based on 20 fc horiz)	24,000 lumens per pump (based on 20 fc horiz)

IX. TABLES - TABLE C BUG RATING - User's Guide

Work on the BUG system started in 2005 when the IES upgraded the roadway cutoff classification system. The original system, which included the ratings full cutoff, cutoff, semi-cutoff and non cutoff, had been designed as a rating system focused on brightness and glare control. However, with increasing demand for control of uplight and light trespass in addition to glare, IES realized that a more comprehensive system was needed. IES developed TM-15 *Luminaire Classification System for Outdoor Luminaires*.

As this is a relatively new rating system, and many people may not be familiar with it, more explanation of how the rating system works is provided here. For example, some people are familiar with terms such as "full cutoff" and they may expect the MLO to include those terms. It will be very important that all groups recognize that older terms and concepts are inadequate for the complex tasks of controlling light pollution. It is recommended that the new rating system adopted in TM-15, as followed herein by the MLO, be used intact and exclusively.

BUG requires downlight only with low glare (better than full cut off) in lighting zones 0, 1 and 2, but allows a minor amount of uplight in lighting zones 3 and 4. In lighting zones 3 and 4, the amount of allowed uplight is enough to permit the use of very well shielded luminaires that have a decorative drop lens or chimney so that dark sky friendly lighting can be installed in places that traditional-appearing luminaires are required. BUG typically cannot be used for residential luminaires unless they have been photometrically tested. For non-photometrically tested residential luminaires, shielding description is used instead.

The lumen limits established for each lighting zone apply to all types of lighting within that zone. This includes, but is not limited to, specialty lighting, façade lighting, security lighting and the front row lighting for auto dealerships. BUG rating limits are defined for each luminaire and

IX. TABLES (cont.) - Ordinance Text**Table C - Maximum Allowable Backlight, Uplight and Glare (BUG) Ratings**

May be used for any project. A luminaire may be used if it is rated for the lighting zone of the site or lower in number for all ratings B, U and G. Luminaires equipped with adjustable mounting devices permitting alteration of luminaire aiming in the field shall not be permitted.

TABLE C-1	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
Allowed Backlight Rating*					
Greater than 2 mounting heights from property line	B1	B3	B4	B5	B5
1 to less than 2 mounting heights from property line and ideally oriented**	B1	B2	B3	B4	B4
0.5 to 1 mounting heights from property line and ideally oriented**	B0	B1	B2	B3	B3
Less than 0.5 mounting height to property line and properly oriented**	B0	B0	B0	B1	B2

*For property lines that abut public walkways, bikeways, plazas, and parking lots, the property line may be considered to be 5 feet beyond the actual property line for purpose of determining compliance with this section. For property lines that abut public roadways and public transit corridors, the property line may be considered to be the center-line of the public roadway or public transit corridor for the purpose of determining compliance with this section. NOTE: This adjustment is relative to Table C-1 and C-3 only and shall not be used to increase the lighting area of the site.

** To be considered 'ideally oriented', the luminaire must be mounted with the backlight portion of the light output oriented perpendicular and towards the property line of concern.

IX. TABLES - TABLE C BUG RATING (cont.) - User's Guide

are based on the internal and external design of the luminaire, its aiming, and the initial luminaire lumens of the specified luminaires. The BUG rating limits also take into consideration the distance the luminaire is installed from the property line in multiples of the mounting height (See Table C).

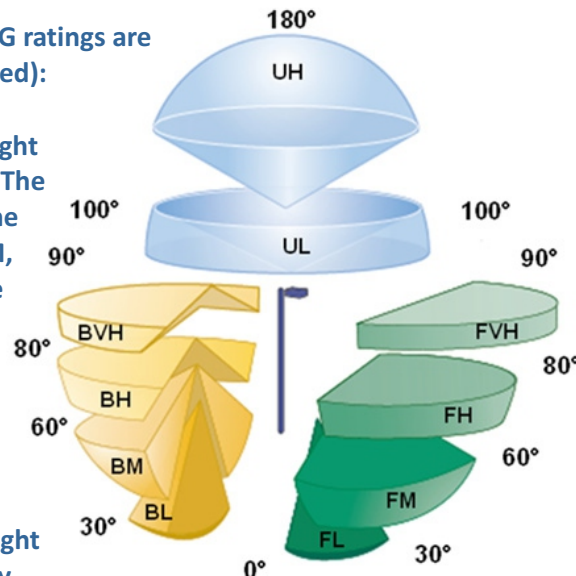
The three components of BUG ratings are based on IES TM-15-07 (revised):

Backlight, which creates light trespass onto adjacent sites. The B rating takes into account the amount of light in the BL, BM, BH and BVH zones, which are in the direction of the luminaire OPPOSITE from the area intended to be lighted.

Uplight, which causes artificial sky glow. Lower uplight (zone UL) causes the most sky glow and negatively affects professional and academic astronomy. Upper uplight (UH) not reflected off a surface is mostly energy waste. The U rating defines the amount of light into the upper hemisphere with greater concern for the light at or near the horizontal angles (UL).

Glare, which can be annoying or visually disabling. The G rating takes into account the amount of frontlight in the FH and FVH zones as well as BH and BVH zones.

BUG ratings apply to the Lighting Zone of the property under consideration.



IX. TABLES (cont.) - Ordinance Text

IX. TABLES - TABLE C BUG RATING (cont.) - User's Guide

(Key: UH=Uplight High, UL=Uplight Low, BVH=Backlight Very High, BH=Backlight High, BM=Backlight Medium, BL=Backlight Low, FVH=Forward Light Very High, FH=Forward Light High, FM=Forward Light Medium, FL=Forward Light Low.)

In general, a higher BUG rating means more light is allowed in solid angles, and the rating increases with the lighting zone. However, a higher B (backlight) rating simply indicates that the luminaire directs a significant portion of light behind the pole, so B ratings are designated based on the location of the luminaire with respect to the property line. A high B rating luminaire maximizes the spread of light, and is effective and efficient when used far from the property line. When luminaires are located near the property line, a lower B rating will prevent unwanted light from interfering with neighboring properties.

At the 90-180 degree ranges:

- Zone 0 allows no light above 90 degrees.
- Zone 1 allows only 10 lumens in the UH and UL zones, 20 lumens total in the complete upper hemisphere. (This is roughly equivalent to a 5 W incandescent lamp).
- Zone 2 allows only 50 lumens in the UH and UL zones, 100 lumens total (less than a 25W incandescent lamp).
- Zone 3 allows only 500 lumens in the UH and UL zones, 1000 lumens total (about the output of a 75W incandescent bulb).
- Zone 4 allows only 1,000 lumens in the UH and UL zones, 2000 lumens total (about the output of a 100W incandescent bulb).

IX. TABLES (cont.) - Ordinance Text

Table C - 2 Maximum Allowable Uplight (BUG) Ratings - Continued

TABLE C-2	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
Allowed Uplight Rating	U0	U1	U2	U3	U4
Allowed % light emission above 90° for street or Area lighting	0%	0%	0%	0%	0%

Table C - 3 Maximum Allowable Glare (BUG) Ratings - Continued

TABLE C-3	Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
Allowed Glare Rating	G0	G1	G2	G3	G4
Any luminaire not ideally oriented*** with 1 to less than 2 mounting heights to any property line of concern	G0	G0	G1	G1	G2
Any luminaire not ideally oriented*** with 0.5 to 1 mounting heights to any property line of concern	G0	G0	G0	G1	G1
Any luminaire not ideally oriented*** with less than 0.5 mounting heights to any property line of concern	G0	G0	G0	G0	G1

*** Any luminaire that cannot be mounted with its backlight perpendicular to any property line within 2X the mounting heights of the luminaire location shall meet the reduced Allowed Glare Rating in Table C-3.

TABLE D EXAMPLE - PERFORMANCE METHOD - User's Guide

The first step in the Performance Method is to establish the Site Total Initial Site Lumens which regulates overlighting. The performance method allows layers of light depending on the complexity of the site.

Table D establishes the basic total initial site lumens allowed. These lumen allowances are added together for a total initial site lumen allowance. Allowances include:

- 1) Initial lumen allowance per site
- 2) Per area (SF) of hardscape

IX. TABLES (cont.) - Ordinance Text

Table D Performance Method Allowed Total Initial Site Lumens

May be used on any project.

Lighting Zone	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Allowed Lumens Per SF	0.5	1.25	2.5	5.0	7.5
Allowed Base Lumens Per Site	0	3,500	7,000	14,000	21,000

Table E Performance Method Additional Initial Luminaire Lumen Allowances. All of the following are “use it or lose it” allowances.

All area and distance measurements in plan view unless otherwise noted.

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Additional Lumens Allowances for All Buildings except service stations and outdoor sales facilities. A MAXIMUM OF THREE (3) ALLOWANCES ARE PERMITTED. THESE ALLOWANCES ARE “USE IT OR LOSE IT”.					
Building Entrances or Exits. This allowance is per door. In order to use this allowance, luminaires must be within 20 feet of the door.	400	1,000	2,000	4,000	6,000
Building Facades. This allowance is lumens per unit area of building façade that are illuminated. To use this allowance, luminaires must be aimed at the façade and capable of illuminating it without obstruction.	0	0	8/SF	16/SF	24/SF

TABLE E PERFORMANCE METHOD - User's Guide

The allowable light levels for these uses defined in Table E may be used to set a prescriptive lighting allowance for these uses in each lighting zone. It should be noted that the lighting allowance defined in Table E is only applicable for the area defined for that use and cannot be transferred to another area of the site. For some uses, such as outdoor sales, the jurisdiction is encouraged to define a percentage of the total hardscape area that is eligible for the additional lighting allowance. For example, a set percentage of a car dealership's lot may be considered a display area and receive the additional lighting allowance where the remainder of the lot would be considered storage, visitor parking, etc. and cannot exceed the base light levels defined in Table A.

TABLE E EXAMPLE - PERFORMANCE METHOD - User's Guide**IX. TABLES (cont.) - Ordinance Text****Table E - Performance Method Additional Initial Lumen Allowances (cont.)**

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Sales or Non-sales Canopies. This allowance is lumens per unit area for the total area within the drip line of the canopy. In order to qualify for this allowance, luminaires must be located under the canopy.	0	3/SF	6/SF	12/SF	18/SF
Guard Stations. This allowance is lumens per unit area of guardhouse plus 2000 sf per vehicle lane. In order to use this allowance, luminaires must be within 2 mounting heights of a vehicle lane or the guardhouse.	0	6/SF	12/SF	24/SF	36/SF
Outdoor Dining. This allowance is lumens per unit area for the total illuminated hardscape of outdoor dining. In order to use this allowance, luminaires must be within 2 mounting heights of the hardscape area of outdoor dining.	0	1/SF	5/SF	10/SF	15/SF
Drive Up Windows. This allowance is lumens per window. In order to use this allowance, luminaires must be within 20 feet of the center of the window.	0	2,000 lumens per drive-up window	4,000 lumens per drive-up window	8,000 lumens per drive-up window	8,000 lumens per drive-up window
Additional Lumens Allowances for Service Stations only. Service stations may not use any other additional allowances.					
Vehicle Service Station Hardscape. This allowance is lumens per unit area for the total illuminated hardscape area less area of buildings, area under canopies, area off property, or areas obstructed by signs or structures. In order to use this allowance, luminaires must be illuminating the hardscape area and must not be within a building below a canopy, beyond property lines, or obstructed by a sign or other structure.	0	4/SF	8/SF	16/SF	24/SF

IX. TABLES (cont.) - Ordinance Text

Table E - Performance Method Additional Initial Lumen Allowances (cont.)

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Vehicle Service Station Canopies. This allowance is lumens per unit area for the total area within the drip line of the canopy. In order to use this allowance, luminaires must be located under the canopy.	0	8/SF	16/SF	32/SF	32/SF
Additional Lumens Allowances for Outdoor Sales facilities only. Outdoor Sales facilities may not use any other additional allowances. NOTICE: lighting permitted by these allowances shall employ controls extinguishing this lighting after a curfew time to be determined by the Authority.					
Outdoor Sales Lots. This allowance is lumens per square foot of uncovered sales lots used exclusively for the display of vehicles or other merchandise for sale, and may not include driveways, parking or other non sales areas and shall not exceed 25% of the total hardscape area. To use this allowance, Luminaires must be within 2 mounting heights of the sales lot area.	0	4/SF	8/SF	12/SF	18/SF
Outdoor Sales Frontage. This allowance is for lineal feet of sales frontage immediately adjacent to the principal viewing location(s) and unobstructed for its viewing length. A corner sales lot may include two adjacent sides provided that a different principal viewing location exists for each side. In order to use this allowance, luminaires must be located between the principal viewing location and the frontage outdoor sales area.	0	0	1,000/LF	1,500/LF	2,000/LF

IX. TABLES (cont.) - Ordinance Text

Table F Maximum Vertical Illuminance at any point in the plane of the property line

Lighting Zone 0	Lighting Zone 1	Lighting Zone 2	Lighting Zone 3	Lighting Zone 4
0.05 FC or 0.5 LUX	0.1 FC or 1.0 LUX	0.3 FC or 3.0 LUX	0.8 FC or 8.0 LUX	1.5 FC or 15.0 LUX

IX. TABLES (cont.) - Ordinance Text

Table G - Residential Lighting Limits

Lighting Application	LZ 0	LZ 1	LZ 2	LZ 3	LZ 4
Row 1 Maximum Allowed Luminaire Lumens* for Unshielded Luminaires at one entry only	Not allowed	420 lumens	630 lumens	630 lumens	630 lumens
Row 2 Maximum Allowed Luminaire Lumens* for each Fully Shielded Luminaire	630 lumens	1,260 lumens	1,260 lumens	1,260 lumens	1,260 lumens
Row 3 Maximum Allowed Luminaire Lumens* for each Unshielded Luminaire excluding main entry	Not allowed	315 lumens	315 lumens	315 lumens	315 lumens
Row 4 Maximum Allowed Luminaire Lumens* for each Landscape Lighting	Not allowed	Not allowed	1,050 lumens	2,100 lumens	2,100 lumens
Row 5 Maximum Allowed Luminaire Lumens* for each Shielded Directional Flood Lighting	Not allowed	Not allowed	1,260 lumens	2,100 lumens	2,100 lumens
Row 6 Maximum Allowed Luminaire Lumens* for each Low Voltage Landscape Lighting	Not allowed	Not allowed	525 lumens	525 lumens	525 lumens

* Luminaire lumens equals Initial Lamp Lumens for a lamp, multiplied by the number of lamps in the luminaire

TABLE G RESIDENTIAL LIGHTING - User's Guide

Residential Light Levels

Most residential lighting has traditionally used incandescent lamps which are identified by their wattage. However, since new technologies provide more light for fewer watts, it is no longer possible to regulate residential lighting solely by providing a maximum wattage. Table G, therefore, lists maximum initial luminaire lumens only.

X. DEFINITIONS - User's Guide

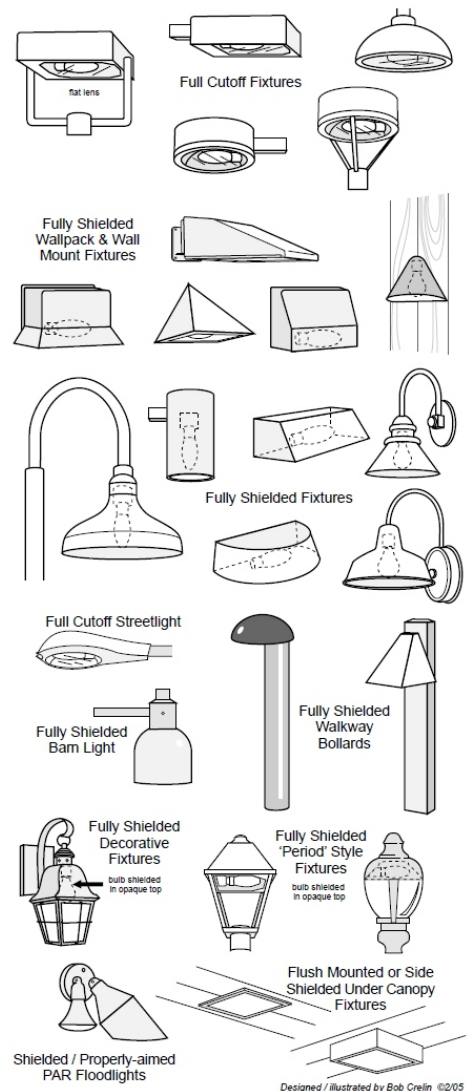
Definitions are typically generally added to any code when new code sections are added. The definitions are legally required and play a significant role in the interpretation of the ordinance and code.

Most city attorneys will not accept references to outside sources regardless of credibility, such as the IES Handbook. Thus as a general rule, a definition for an unfamiliar term (e.g. lumens) must be added by the adopting ordinance.

When adopting or integrating the MLO definitions, be sure to retire conflicting technical terminology. In particular, the latest IES Luminaire Classification System as defined in IES TM-15-07 is likely to need attention.

X. DEFINITIONS - Ordinance Text

<i>Absolute Photometry</i>	Photometric measurements (usually of a solid-state luminaire) that directly measures the footprint of the luminaire. Reference Standard IES LM-79
<i>Architectural Lighting</i>	Lighting designed to reveal architectural beauty, shape and/or form and for which lighting for any other purpose is incidental.
<i>Authority</i>	The adopting municipality, agency or other governing body.
<i>Astronomic Time Switch</i>	An automatic lighting control device that switches outdoor lighting relative to time of solar day with time of year correction.
<i>Backlight</i>	For an exterior luminaire, lumens emitted in the quarter sphere below horizontal and in the opposite direction of the intended orientation of the luminaire. For luminaires with symmetric distribution, backlight will be the same as front light.
<i>BUG</i>	A luminaire classification system that classifies backlight (B), uplight (U) and glare (G).
<i>Canopy</i>	A covered, unconditioned structure with at least one side open for pedestrian and/or vehicular access. (An unconditioned structure is one that may be open to the elements and has no heat or air conditioning.)
<i>Common Outdoor Areas</i>	One or more of the following: a parking lot; a parking structure or covered vehicular entrance; a common entrance or public space shared by all occupants of the domiciles.
<i>Curfew</i>	A time defined by the authority when outdoor lighting is reduced or extinguished.

Examples of Fully Shielded Luminaires**X. DEFINITIONS - Ordinance Text**

<i>Emergency conditions</i>	Generally, lighting that is only energized during an emergency; lighting fed from a backup power source; or lighting for illuminating the path of egress solely during a fire or other emergency situation; or, lighting for security purposes used solely during an alarm.
<i>Footcandle</i>	The unit of measure expressing the quantity of light received on a surface. One footcandle is the illuminance produced by a candle on a surface one foot square from a distance of one foot.
<i>Forward Light</i>	For an exterior luminaire, lumens emitted in the quarter sphere below horizontal and in the direction of the intended orientation of the luminaire.
<i>Fully Shielded Luminaire</i>	A luminaire constructed and installed in such a manner that all light emitted by the luminaire, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal plane through the luminaire's lowest light-emitting part.
<i>Glare</i>	Lighting entering the eye directly from luminaires or indirectly from reflective surfaces that causes visual discomfort or reduced visibility.
<i>Hardscape</i>	Permanent hardscape improvements to the site including parking lots, drives, entrances, curbs, ramps, stairs, steps, medians, walkways and non-vegetated landscaping that is 10 feet or less in width. Materials may include concrete, asphalt, stone, gravel, etc.
<i>Hardscape Area</i>	The area measured in square feet of all hardscape. It is used to calculate the Total Site Lumen Limit in both the Prescriptive Method and Performance Methods. Refer to Hardscape definition.

X. DEFINITIONS - Ordinance Text

<i>Hardscape Perimeter</i>	The perimeter measured in linear feet is used to calculate the Total Site Lumen Limit in the Performance Method. Refer to Hardscape definition.
<i>IDA</i>	International Dark-Sky Association.
<i>IESNA</i>	Illuminating Engineering Society of North America.
<i>Impervious Material</i>	Sealed to severely restrict water entry and movement
<i>Industry Standard Lighting Software</i>	Lighting software that calculates point-by-point illuminance that includes reflected light using either ray-tracing or radiosity methods.
<i>Lamp</i>	A generic term for a source of optical radiation (i.e. "light"), often called a "bulb" or "tube". Examples include incandescent, fluorescent, high-intensity discharge (HID) lamps, and low pressure sodium (LPS) lamps, as well as light-emitting diode (LED) modules and arrays.
<i>Landscape Lighting</i>	Lighting of trees, shrubs, or other plant material as well as ponds and other landscape features.
<i>LED</i>	Light Emitting Diode.
<i>Light Pollution</i>	Any adverse effect of artificial light including, but not limited to, glare, light trespass, sky-glow, energy waste, compromised safety and security, and impacts on the nocturnal environment.

X. DEFINITIONS - Ordinance Text

<i>Light Trespass</i>	Light that falls beyond the property it is intended to illuminate.
<i>Lighting</i>	“Electric” or “man-made” or “artificial” lighting. See “lighting equipment”.
<i>Lighting Equipment</i>	Equipment specifically intended to provide gas or electric illumination, including but not limited to, lamp(s), luminaire(s), ballast(s), poles, posts, lens(s), and related structures, electrical wiring, and other necessary or auxiliary components.
<i>Lighting Zone</i>	An overlay zoning system establishing legal limits for lighting for particular parcels, areas, or districts in a community.
<i>Lighting Equipment</i>	Equipment specifically intended to provide gas or electric illumination, including but not limited to, lamp(s), luminaire(s), ballast(s), poles, posts, lens(s), and related structures, electrical wiring, and other necessary or auxiliary components.
<i>Low Voltage Landscape Lighting</i>	Landscape lighting powered at less than 15 volts and limited to luminaires having a rated initial luminaire lumen output of 525 lumens or less.
<i>Lumen</i>	The unit of measure used to quantify the amount of light produced by a lamp or emitted from a luminaire (as distinct from “watt,” a measure of power consumption).
<i>Luminaire</i>	The complete lighting unit (fixture), consisting of a lamp, or lamps and ballast(s) (when applicable), together with the parts designed to distribute the light (reflector, lens, diffuser), to position and protect the lamps, and to connect the lamps to the power supply.

Mounting Height: The horizontal spacing of poles is often measured in units of “mounting height”. Example: “The luminaires can be spaced up to 4 mounting heights apart.”

X. DEFINITIONS - Ordinance Text

<i>Luminaire Lumens</i>	For luminaires with relative photometry per IES, it is calculated as the sum of the initial lamp lumens for all lamps within an individual luminaire, multiplied by the luminaire efficiency. If the efficiency is not known for a residential luminaire, assume 70%. For luminaires with absolute photometry per IES LM-79, it is the total luminaire lumens. The lumen rating of a luminaire assumes the lamp or luminaire is new and has not depreciated in light output.
<i>Lux</i>	The SI unit of illuminance. One lux is one lumen per square meter. 1 Lux is a unit of incident illuminance approximately equal to 1/10 footcandle.
<i>Mounting height</i>	The height of the photometric center of a luminaire above grade level.
<i>New lighting</i>	Lighting for areas not previously illuminated; newly installed lighting of any type except for replacement lighting or lighting repairs.
<i>Object</i>	A permanent structure located on a site. Objects may include statues or artwork, garages or canopies, outbuildings, etc.
<i>Object Height</i>	The highest point of an entity, but shall not include antennas or similar structures.
<i>Ornamental lighting</i>	Lighting that does not impact the function and safety of an area but is purely decorative, or used to illuminate architecture and/or landscaping, and installed for aesthetic effect.

X. DEFINITIONS - Ordinance Text

<i>Ornamental Street Lighting</i>	A luminaire intended for illuminating streets that serves a decorative function in addition to providing optics that effectively deliver street lighting. It has a historical period appearance or decorative appearance, and has the following design characteristics: · designed to mount on a pole using an arm, pendant, or vertical tenon; · opaque or translucent top and/or sides; · an optical aperture that is either open or enclosed with a flat, sag or drop lens; · mounted in a fixed position; and · with its photometric output measured using Type C photometry per IESNA LM-75-01.
<i>Outdoor Lighting</i>	Lighting equipment installed within the property line and outside the building envelopes, whether attached to poles, building structures, the earth, or any other location; and any associated lighting control equipment.
<i>Partly shielded luminaire</i>	A luminaire with opaque top and translucent or perforated sides, designed to emit most light downward.
<i>Pedestrian Hardscape</i>	Stone, brick, concrete, asphalt or other similar finished surfaces intended primarily for walking, such as sidewalks and pathways.
<i>Photoelectric Switch</i>	A control device employing a photocell or photodiode to detect daylight and automatically switch lights off when sufficient daylight is available.
<i>Property line</i>	The edges of the legally-defined extent of privately owned property.

X. DEFINITIONS - Ordinance Text

<i>Relative photometry</i>	Photometric measurements made of the lamp plus luminaire, and adjusted to allow for light loss due to reflection or absorption within the luminaire. Reference standard: IES LM-63.
<i>Repair(s)</i>	The reconstruction or renewal of any part of an existing luminaire for the purpose of its on-going operation, other than relamping or replacement of components including capacitor, ballast or photocell. Note that retrofitting a luminaire with new lamp and/or ballast technology is not considered a repair and for the purposes of this ordinance the luminaire shall be treated as if new. "Repair" does not include normal relamping or replacement of components including capacitor, ballast or photocell.
<i>Replacement Lighting</i>	Lighting installed specifically to replace existing lighting that is sufficiently broken to be beyond repair.
<i>Sales area</i>	Uncovered area used for sales of retail goods and materials, including but not limited to automobiles, boats, tractors and other farm equipment, building supplies, and gardening and nursery products.
<i>Seasonal lighting</i>	Temporary lighting installed and operated in connection with holidays or traditions.
<i>Shielded Directional Luminaire</i>	A luminaire that includes an adjustable mounting device allowing aiming in any direction and contains a shield, louver, or baffle to reduce direct view of the lamp.
<i>Sign</i>	Advertising, directional or other outdoor promotional display of art, words and/or pictures.

X. DEFINITIONS - Ordinance Text

<i>Sky Glow</i>	The brightening of the nighttime sky that results from scattering and reflection of artificial light by moisture and dust particles in the atmosphere. Skyglow is caused by light directed or reflected upwards or sideways and reduces one's ability to view the night sky.
<i>Temporary lighting</i>	Lighting installed and operated for periods not to exceed 60 days, completely removed and not operated again for at least 30 days.
<i>Third Party</i>	A party contracted to provide lighting, such as a utility company.
<i>Time Switch</i>	An automatic lighting control device that switches lights according to time of day.
<i>Translucent</i>	Allowing light to pass through, diffusing it so that objects beyond cannot be seen clearly (not transparent or clear).
<i>Unshielded Luminaire</i>	A luminaire capable of emitting light in any direction including downwards.
<i>Uplight</i>	For an exterior luminaire, flux radiated in the hemisphere at or above the horizontal plane.
<i>Vertical Illuminance</i>	Illuminance measured or calculated in a plane perpendicular to the site boundary or property line.

XI. OPTIONAL STREETLIGHT ORDINANCE - User's Guide

This section was added since the first public review. It is designed to work closely with the proposed revision to ANSI/IES RP-8 Standard Practice for Roadway and Street Lighting.

Street and roadway lighting is one of the world's largest causes of artificial skyglow. Many adopting agencies will recognize that the MLO will make privately owned lighting more efficient and environmentally responsible than their street lighting systems. But because the process of designing street lighting often requires more precise lighting calculations, applying the MLO directly to street lighting is not advised. Using existing standards of street lighting is recommended, particularly IES RP-8 and AASHTO standards.

Until a new recommended practice for street lighting can be developed, this section can serve to prevent most of the uplight of street lighting systems without setting specific requirements for the amount of light, uniformity of light, or other performance factors. Adopting agencies should include these basic improvements to street lighting along with regulations to private lighting.

Lighting streets with "period" ornamental luminaires that evoke the look of a time when the light source was a gas flame can cause glare if high-lumen lamps are used. Such ornamental street lights should not exceed a BUG rating of G1. If additional illuminance and/or uniformity is desired, the ornamental fixtures should be supplemented by higher mounted fully shielded luminaires, as illustrated in RP-33-99.

Few street lighting warranting processes exist. The adopting agency needs to gauge whether a complex warranting systems is required, or if a simple one using posted speeds, presence of pedestrians, or other practical considerations is sufficient.

Examples of a current street lighting warranting system are included in the Transportation Association of Canada's Guide for the Design of Roadway Lighting 2006.

XI. OPTIONAL STREETLIGHT ORDINANCE - Ordinance Text

Note to the adopting authority: the intent of this section is that it only applies to streets and not to roadways or highways.

A. Preamble

The purpose of this Ordinance is to control the light pollution of street lighting, including all collectors, local streets, alleys, sidewalks and bike-ways, as defined by ANSI/IES RP-8 Standard Practice for Roadway and Street Lighting and in a manner consistent with the Model Lighting Ordinance.

B. Definitions

Roadway or Highway lighting is defined as lighting provided for freeways, expressways, limited access roadways, and roads on which pedestrians, cyclists, and parked vehicles are generally not present. The primary purpose of roadway or highway lighting is to help the motorist remain on the roadway and help with the detection of obstacles within and beyond the range of the vehicle's headlights.

Street lighting is defined as lighting provided for major, collector, and local roads where pedestrians and cyclists are generally present. The primary purpose of street lighting is to help the motorist identify obstacles, provide adequate visibility of pedestrians and cyclists, and assist in visual search tasks, both on and adjacent to the roadway.

Ornamental Street Lighting is defined as a luminaire intended for illuminating streets that serves a decorative function in addition to providing optics that effectively deliver street lighting. It has a historical period appearance or decorative appearance, and has the following design characteristics:

- designed to mount on a pole using an arm, pendant, or vertical tenon;
- opaque or translucent top and/or sides;
- an optical aperture that is either open or enclosed with a flat, sag or drop lens;
- mounted in a fixed position; and
- with its photometric output measured using Type C photometry per IESNA LM-75-01.

XI. OPTIONAL STREETLIGHT ORDINANCE - Ordinance Text***C. Scope***

All street lighting not governed by regulations of federal, state or other superceding jurisdiction.

EXCEPTION: lighting systems mounted less than 10.5 feet above street level and having less than 1000 initial lumens each.

D. Master Lighting Plan

The Authority shall develop a Master Lighting Plan based on the American Association of State Highway and Transportation Officials (AASHTO) Roadway Lighting Design Guide GL-6, October 2005, Chapter 2. Such plan shall include, but not be limited to, the Adoption of Lighting Zones and:

1. Goals of street lighting in the jurisdiction by Lighting Zone
2. Assessment of the safety and security issues in the jurisdiction by Lighting Zone
3. Environmentally judicious use of resources by Lighting Zone
4. Energy use and efficiency by Lighting Zone
5. Curfews to reduce or extinguish lighting when no longer needed by Lighting Zone

E. Warranting

The Authority shall establish a warranting process to determine whether lighting is required. Such warranting process shall not assume the need for any lighting nor for continuous lighting unless conditions warrant the need. Lighting shall only be installed where warranted.

XI. OPTIONAL STREETLIGHT ORDINANCE - Ordinance Text***F. Light Shielding and Distribution***

All street lighting shall have no light emitted above 90 degrees.

Exception: Ornamental street lighting for specific districts or projects shall be permitted by special permit only, and shall meet the requirements of Table H below without the need for external field-added modifications.

**Table H - Uplight Control Requirements
for Ornamental Street Lights -
by Special Permit Only**

Lighting Zone	Maximum Uplight Rating
LZ-0	U-0
LZ-1	U-1
LZ-2	U-2
LZ-3	U-3
LZ-4	U-4



Figure 1. Street scene of outdoor lighting trespass onto residential property. Note that compliance with the city ordinance standard for light trespass has not been evaluated.



Figure 2. Street scene of outdoor lighting contrasting visual area affected by height of light fixture. Note that luminaries of Thrifty White Drug are turned off at time of photograph.



Figure 3. Street scene of outdoor lighting in relation to structure height.



Figure 4. Street scene of sign having blue light source contrasted with adjacent white light source projected through blue pigment. Note that sign on left is predominantly red by area with a blue border. Also note reflection of blue light off of adjacent structure indicating light trespass.



Figure 5. Street scene displaying a variety of sign illumination colors and sizes. Note that sign with blue light source toward right is predominantly red by area with a blue border but is the most bright to the eye in this street scene..



Figure 6. Variety of sign illumination colors and sizes. Note that sign with blue light source toward distant center is predominantly red by area with a blue border but is the most bright to the eye in this street scene.