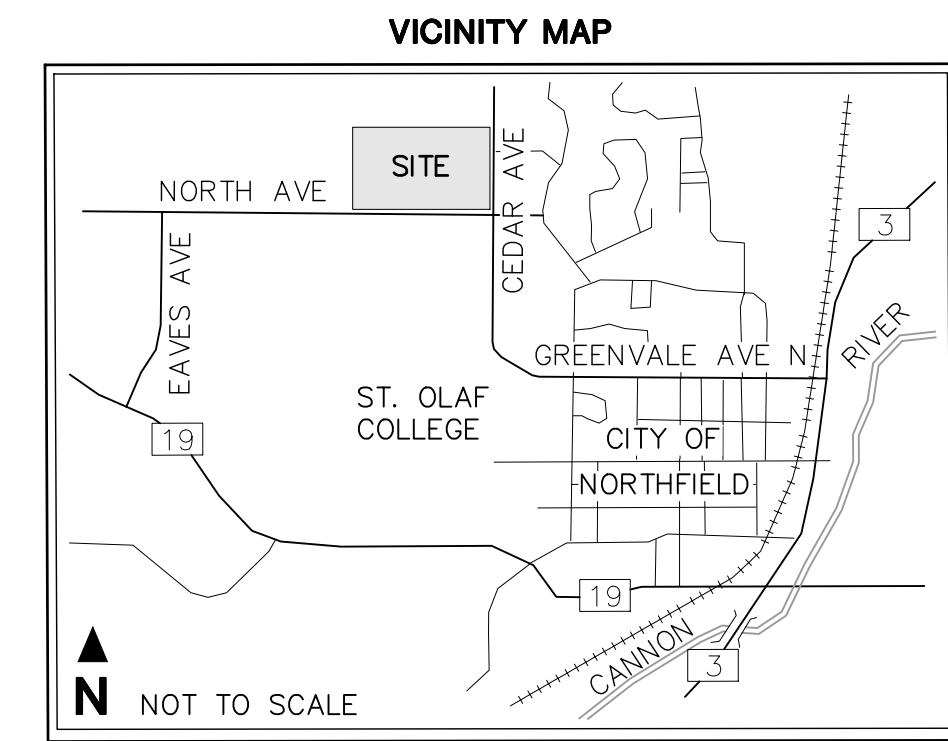
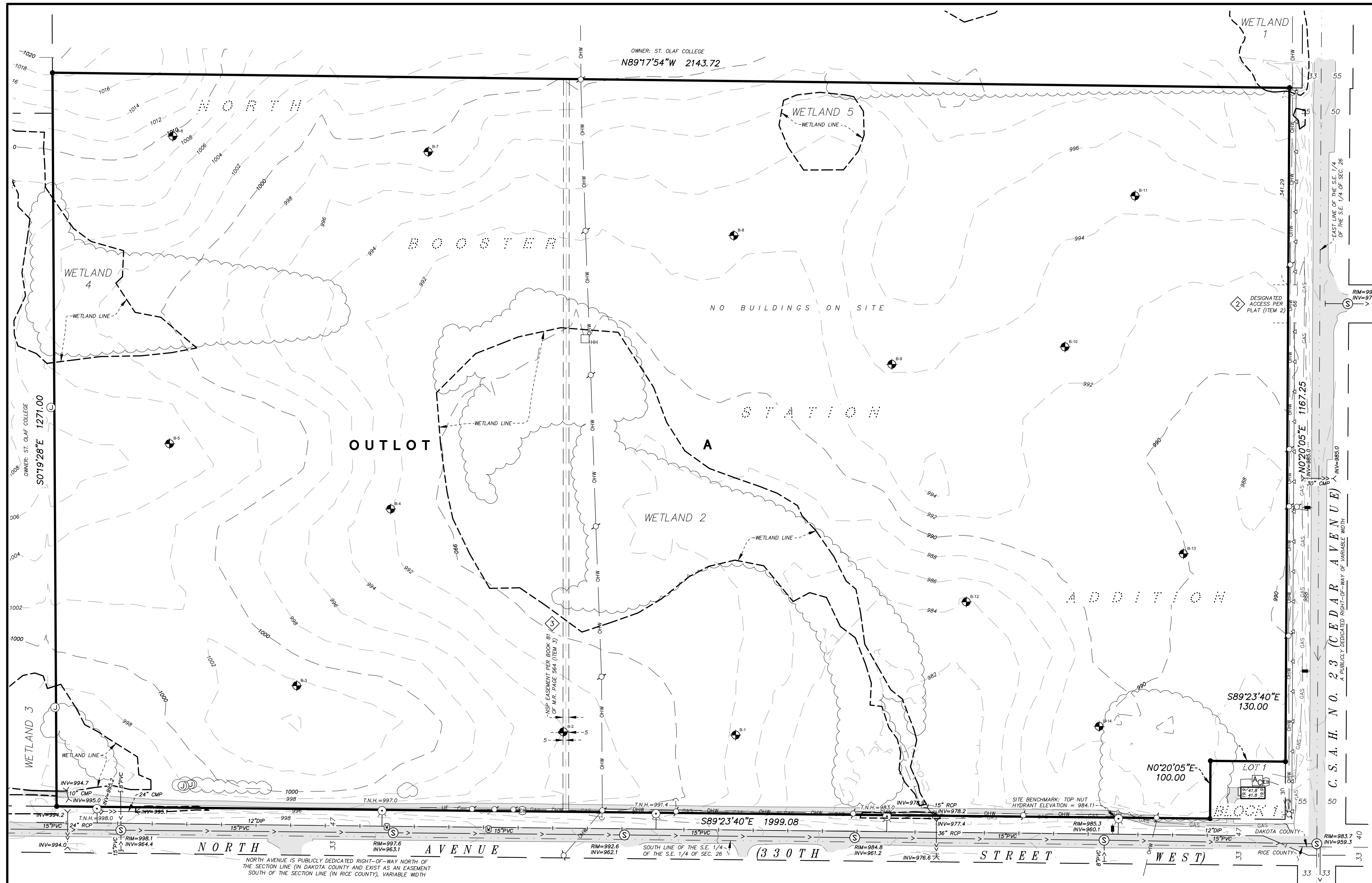
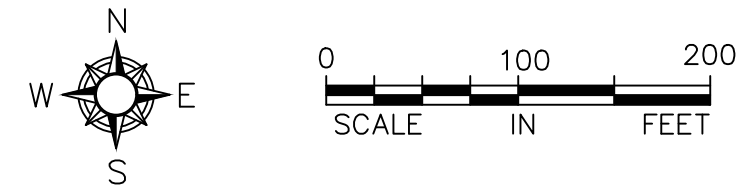


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LEGEND

- ⊙ COMMUNICATION PEDESTAL
- > CULVERT
- ⊞ ELECTRIC BOX
- ⊙ HYDRANT
- ⊞ HANDHOLE
- ⊙ POWER POLE
- ⊞ POWER POLE ANCHOR
- ⊙ SANITARY MANHOLE
- ⊞ SIGN
- ⊙ STORM MANHOLE
- ⊞ WATER VALVE
- FOUND IRON 1/2" OPEN PIPE
- GAS — GAS MAIN
- OHW — OVERHEAD WIRES
- SANITARY SEWER
- STORM SEWER
- UNDERGROUND ELECTRIC
- WATER MAIN
- ACCESS RESTRICTION
- TREE LINE
- WETLAND LINE FROM OTHERS
- BITUMINOUS SURFACE
- CMP — CORRUGATED METAL PIPE
- DIP — DUCTILE IRON PIPE
- PVC — POLYVINYL CHLORIDE PIPE
- SOIL BORING LOCATION



ALTA/NSPS LAND TITLE SURVEY

LEGAL DESCRIPTION:
Outlot A, NORTH BOOSTER STATION ADDITION, Dakota County, Minnesota.
Abstract Property

CERTIFICATION:
To North & Cedar 62, LLP, a Minnesota limited liability partnership, and DCA Title:
This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS and includes items 1, 2, 3, 4, 6(a), 7(a), 8, 9, 10, 11 and 12 of Table A thereof. The field work was completed on January 28, 2022.
Date of Map or Plat: February 16, 2022

Anderson Engineering of Minnesota, LLC
by: *David Anderson*
David Anderson
Minnesota License No. 43501

- SURVEY NOTES:**
- The horizontal datum and bearings are based on the Dakota County Coordinate System NAD83(2011).
 - The vertical datum is NAVD 88. The site benchmark is the top nut hydrant located 160 feet west of the southeast property corner (depicted hereon). Elevation = 984.11 feet.
 - The area of the property described hereon is 2,698,140 square feet or 61.9408 acres.
 - The legal description and easement information were provided by Dakota County Abstract Company DBA DCA Title, File No. 21-080192-RC, issued by its agent, Old Republic National Title Insurance Company and dated October 22, 2021.
 - According to Federal Emergency Management Agency (FEMA), the property described hereon lies in flood zone X (area outside 0.2% annual chance floodplain) per Flood Insurance Rate Map Number 27037C0481E, dated December 2, 2011.
 - The location and extent of underground utilities, if shown, are based upon existing drawings provided by the utility companies, above ground evidence and Gopher State One Call markings per ticket number 220180619. However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, in some jurisdictions, 811 or other similar utility locate requests from surveyors may be ignored or result in an incomplete response. The size and location of utilities shown should be considered approximate. Additional underground utilities may be present. Verification of the existence and location of all utilities should be obtained from the utility owners prior to any planning or design. In accordance with State Statute, the location of utilities shall be confirmed prior to any demolition or construction.
 - There were no parking spaces observed at the time of the field work.
 - According to the City of Northfield, the subject property is zoned N2-B (Neighborhood General 2) and has mixed setbacks depending on the proposed development. It is recommended that the property owner obtain a zoning letter from the City to verify all conditions that affect the property through the city zoning ordinance. This survey does not purport to describe all conditions contained in said ordinance.
Setbacks to be determined under official PUD Amendment review.
 - At the time of this survey, portions of the subject property were covered in significant amounts of snowfall, snow piles and ice. Some improvements may not be depicted.

- SURVEY RELATED ITEMS FROM SCHEDULE B:**
- ② ITEM 2: Access Restriction to County Road 23 as shown on the recorded plat. (depicted hereon).
 - ③ ITEM 3: Electrical Easement recorded in Book 81 of Miscellaneous Records on page 564. Said easement is depicted on the herein described plat and is depicted hereon).
 - ITEM 4: Memorandum of Agreement as Document No. 1520718. (Not located on property).
 - ITEM 5: Electrical easement recorded as Document 1576648, corrective recorded as Document No. 1702145. (Said easement describes a strip lying 20 feet west of the westerly right-of-way line of Co. Rd. 23, and is dated 2/8/1999. By the date of this document, it is possible that the location of the mentioned right-of-way line was 33 feet from the section line in contrast to the 55 feet as platted in 2001 as ST. OLAF COLLEGE NORTH AVENUE DEVELOPMENT. Not depicted).
 - ITEM 7: Right-of-Way Plat for the City of Northfield recorded as Document No. 1800470. (Document describes a temporary easement that expired May 1, 2002).
 - ITEM 8: Developers Agreement, dated August 9, 2001, filed October 8, 2001 as Document No. 1818396. (not survey related).
 - ITEM 9: Ground Lease recorded as Document No. 1834253, amended by Document Nos. 3239283 and 3260659. (not survey related).
 - ITEM 10: Resolution recorded as Document No. 2472799. (not survey related).
 - ITEM 11: Annexation Order recorded as Document No. 2547813. (not survey related).
 - ITEM 12: Ordinance recorded as Document No. 2678911. (road name change, depicted hereon).

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NORTHFIELD, MN, 55057
NORTH AND CEDAR, LLP

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

DESIGNED:	DRAWN:	CHECKED BY:
NH	DO	NH

DRAWING TITLE
EXISTING CONDITIONS SURVEY

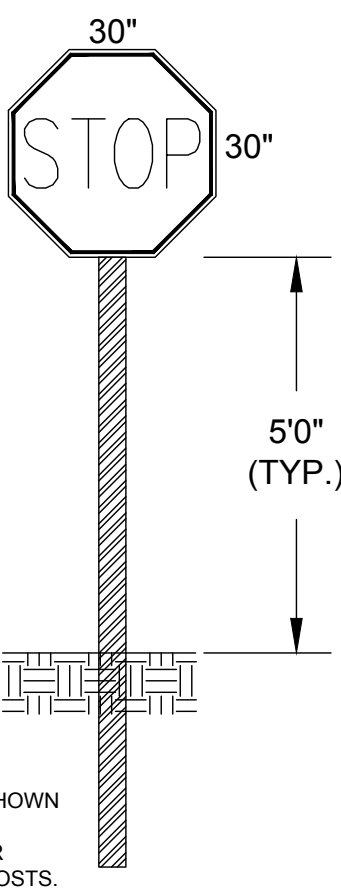
DRAWING NO.
C2
PAGE: 2 OF 26
PLOTTED: 1/5/2024
COMM. NO. 16826

SIGNS:
 INSTALL PER MN MUTCD REGULATIONS.
 COMMON SIGN SIZES:
 STOP - R1-1, 30" X 30"
 NO PARKING ANY TIME - R7-2A, 12" X 18"
 DO NOT ENTER - R5-1, 30" X 30"
 RIGHT TURN ONLY - R3-5(R), 30" X 36"
 ONE WAY - R6-2, 24" X 30"

ALL SIGNS SHALL BE LYLE SIGNS OR APPROVED EQUAL.
 ALL SIGNS WILL HAVE "3M" HIGH INTENSITY REFLECTIVE SHEETING OR APPROVED EQUAL.
 ALL SIGNS SHALL BE ON ALUMINUM PLATE.
 ALL SIGNS UP TO 18" SHALL BE .080 MIN. THICKNESS.
 ALL SIGNS OVER 30" SHALL BE 0.100 MIN. THICKNESS.
 ALL SIGNS TO BE SIZED ACCORDING TO MN MUTCD MANUAL.
 AND PUNCHED WITH 3/8" HOLES MEETING MINDOT SPECS.

POSTS:
 THE SIGN SUPPORTS WILL BE A U CHANNEL POST, PAINTED GREEN.
 THE POSTS SHALL BE 2 & 3 LBS. PER FT. AND 6.7 AND 8" IN LENGTH.
 ALL SIGNS UP TO 18" SHALL BE MOUNTED ON 2 U-CHANNEL POSTS, EACH 2 LBS., ONE 7' LONG AND ONE 6' LONG. THE LONGER POST TO BE DRIVEN IN THE GROUND FIRST.
 ALL SIGNS UP TO 30" SHALL USE A 8" - 3 LBS. POST AND A 7' - 2 LB. POST. WITH THE 3 LB. POST DRIVEN INTO THE GROUND FIRST.
 ALL SIGNS OVER 30" SHALL USE 2 SETS OF POSTS. (THE HEAVIER POST PLACED IN THE GROUND FIRST)
 ALL U-CHANNEL POSTS WILL BE POUNDED 3" INTO THE GROUND.

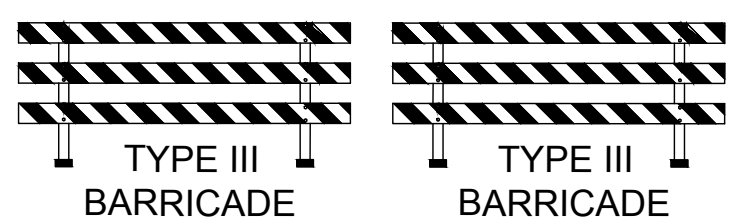
PLACEMENT AND MOUNTING HEIGHTS:
 ALL SIGNS AND COLLARS WILL BE PLACED BY THE CONTRACTOR. INSTALLATION OF STREET SIGN COLLARS SHALL TAKE PLACE PRIOR TO PLACEMENT OF TURF.
 IN THE CASE A SIGN COLLAR IS TO BE PLACED IN CONCRETE, THE COLLAR SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF THE CONCRETE. SIGN LOCATIONS SHOWN ON THE DRAWINGS ARE ONLY APPROXIMATE. THE FINAL LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. CONTRACTOR IS RESPONSIBLE FOR HAVING ALL UNDERGROUND UTILITIES LOCATED PRIOR TO INSTALLING ALL SIGNPOSTS. PROVIDE ENGINEER 48-HOUR NOTICE PRIOR TO SIGN INSTALLATIONS TO ALLOW FOR ADEQUATE STAKING TIME. ALL TUBE POST SHALL BE PLACED IN A 10" DIAMETER BY 3' DEEP CONCRETE FOOTING FLARED AT THE BOTTOM.



1. USE LYLE SIGN, "NO PARKING FIRE LANE, LR7-22 OR APPROVED EQUAL. SIGN MUST BE A MINIMUM OF 12" X 18", ALUMINUM PLATE, .080 MIN. THICKNESS, HIGH INTENSITY SHEETING, INSTALLED AT A HEIGHT 5' ABOVE GROUND, WITH RED LETTERING ON WHITE BACKGROUND (STANDARD).
2. THE SIGN SUPPORTS WILL BE A U POST, PAINTED GREEN. THE MATERIALS AND INSTALLATION REQUIREMENTS ARE PER DETAIL STRT-17 UNDER THE "POSTS" SECTION.
3. THE SUPPORTING POSTS SHALL BE SET BACK A MINIMUM OF 12" BUT NOT MORE THAN 36" FROM THE CURB ON BOTH SIDES OF THE FIRE LANE/PRIVATE DRIVE.
4. ALL SIGNS SHALL FACE THE DIRECTION OF TRAVEL AND BE INSTALLED ACCORDING TO THE LOCATIONS IDENTIFIED BY THE CITY ON THE APPROVED SITE PLAN FOR THE DEVELOPMENT.
5. A FIRE LANE SHALL BE REQUIRED IN FRONT OF FIRE DEPARTMENT CONNECTIONS EXTENDING 5 FEET ON EACH SIDE AND ALONG ALL AREAS DESIGNATED BY THE BUILDING OFFICIAL.

GENERAL NOTES

1. SEE SHEET C23 FOR STREET, SIDEWALK, AND R.O.W. DIMENSIONS.



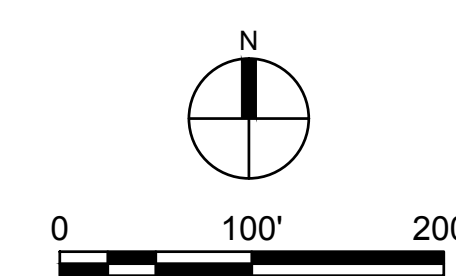
2. TYPICAL TYPE III CONSTRUCTION BARRICADE

KEY NOTES

1. TAPERED CURB AT TEE INTERSECTIONS
2. PEDESTRIAN CROSSWALK
3. STOP SIGN MOUNTED ON POST WITH STREET SIGNS.
4. INSTALL TYPE III BARRICADE SIGNS. SIGN LETTERING TO READ "ROAD WILL BE EXTENDED IN THE FUTURE".
5. INSTALL WETLAND BUFFER SIGNAGE EVERY 200 LF. WETLAND BUFFER SIGNAGE SHALL ADHERE TO CITY OF NORTHFIELD ORDINANCE.
6. 10 FOOT WIDE TRAIL EASEMENT

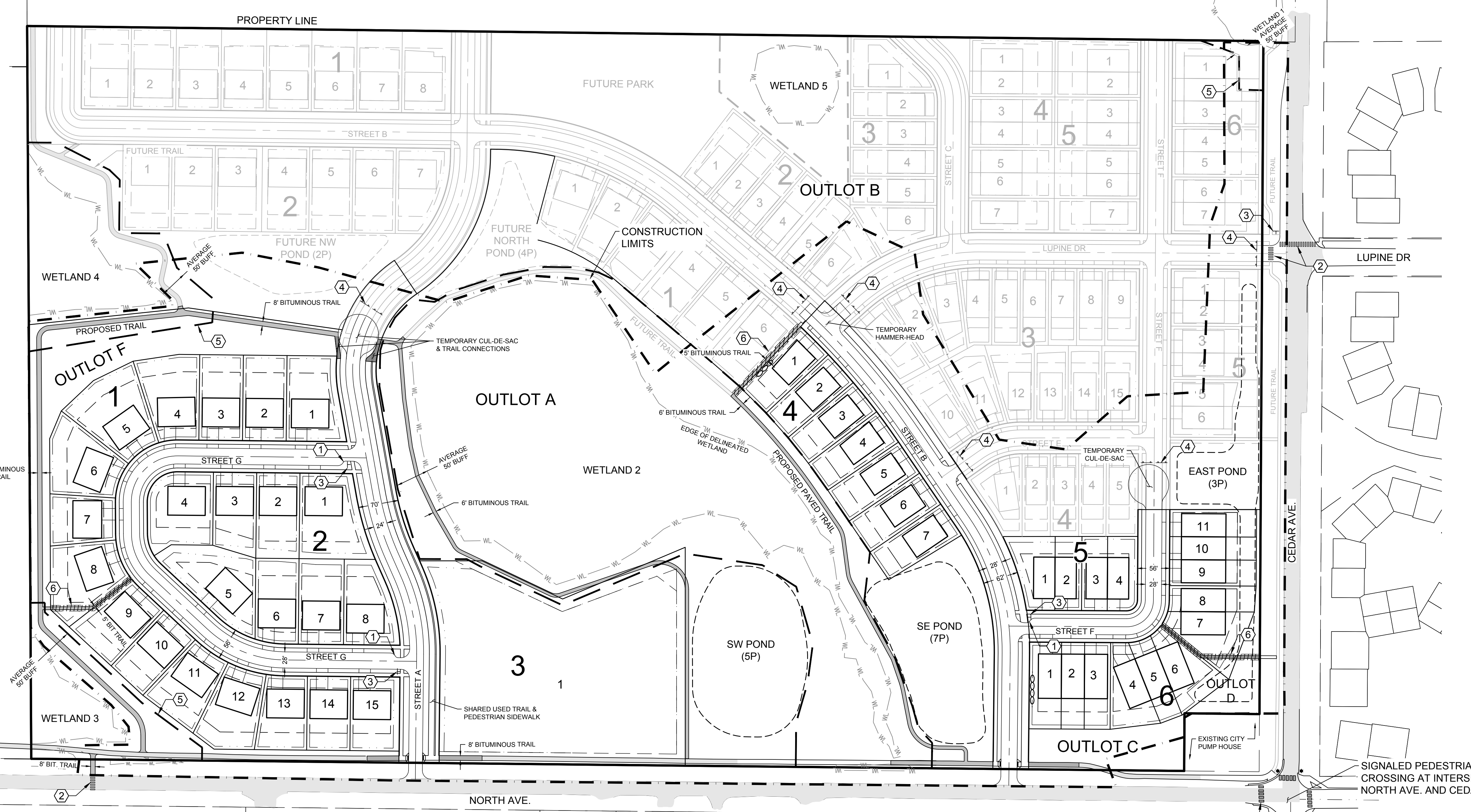
LEGEND

- — — — — PROPERTY LIMITS
- - - - - CONSTRUCTION LIMITS
- - - - - ADJACENT PROPERTY
- WL - WL - EXISTING WETLAND
- - - - - WETLAND BUFFER
- - - - - PROPOSED POND
- - - - - FUTURE POND
- - - - - ROAD CENTERLINE
- - - - - PROPOSED STOP SIGN
- ||||| PROPOSED PEDESTRIAN CROSSING
- ▬▬▬▬▬ PROPOSED TRAIL



1. SIGN & POST SPECIFICATIONS

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CEDAR MEADOWS DEVELOPMENT 1ST ADDITION
 NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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

PRINT NAME: BRIAN J. FIELD, PE

SIGNATURE: **NOT FOR CONSTRUCTION**
 DATE: 06/23/2023 LICENSE NO. 57224

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

DESIGNED:	DRAWN:	CHECKED BY:
BJF	JPD	BJF

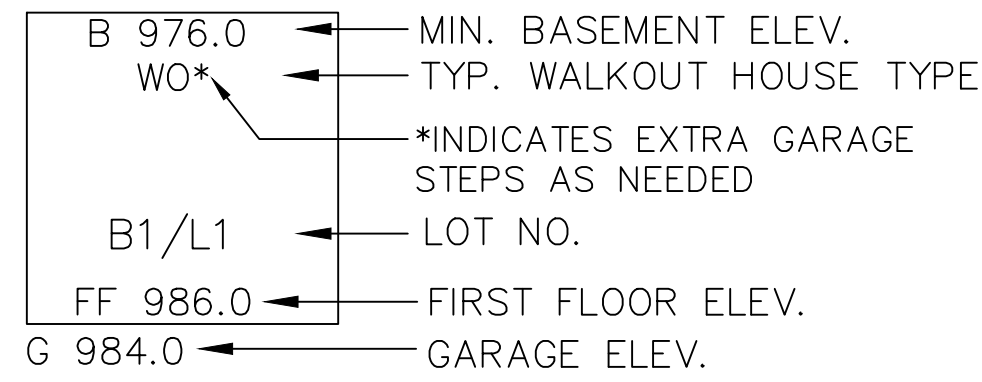
DRAWING TITLE
OVERALL SITE & SIGNAGE PLAN

DRAWING NO.
C3

PAGE: 3 OF 26
 PLOTTED: 1/5/2024 COMM. NO. 16826

RECOMMENDED HOUSE TYPES

- FB** STANDARD LOT - FINISHED GRADE ELEVATION IS THE SAME AT THE FRONT AND REAR OF HOUSE. LOT CAN ACCOMMODATE RAMBLER, SPLIT ENTRY OR TWO STORY HOME. LOWEST BASEMENT FLOOR ELEVATION MAY BE EITHER 8' OR 3.5' BELOW FINISHED GROUND LEVEL.
- WO** WALKOUT LOT - FINISHED GRADE ELEVATION FOR REAR BASEMENT WALKOUT IS 8.0' LOWER THAN FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE. BASEMENT FLOOR ELEVATION IS 0.5' ABOVE REAR FINISHED GROUND ELEVATION SHOWN.
- LO** LOOKOUT - FINISHED GRADE AT THE REAR OF HOUSE IS 5.0' BELOW GROUND AT THE FRONT OF THE HOUSE TO ACCOMMODATE FULL WINDOWS. LOT CAN ACCOMMODATE RAMBLER LOOKOUT, OR SPLIT ENTRY WALKOUT. WINDOW OPENINGS ARE 0.5' ABOVE THE GROUND AT THE REAR OF THE HOUSE.



TYPICAL HOUSE PAD
NOT TO SCALE

CONTRACTOR NOTES

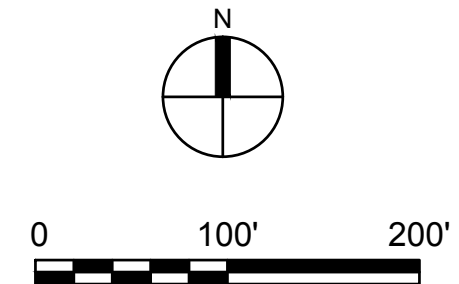
- THE TOTAL DISTURBED AREA IS EQUAL TO 40.5 ACRES. AN MPCA PERMIT IS REQUIRED.
- PROPOSED SPOT ELEVATIONS ARE TO TOP OF FINISHED SURFACE UNLESS PRECEDED BY LETTER DESIGNATION.
- TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES. LOCATIONS OF UTILITIES SHOWN BASED ON SURVEY AND AS-BUILT INFORMATION AND MAY NOT REPRESENT ACTUAL CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR UTILIZING UTILITY LOCATES PRIOR TO STARTING ANY WORK.

SPOT ELEVATION KEY

- ± EXISTING GRADE
- HP HIGH POINT ELEVATION
- LP LOW POINT ELEVATION
- R. RIM ELEVATION
- I. INVERT ELEVATION
- TOB TOP OF BERM ELEVATION
- EOF EMERGENCY OVERFLOW ELEVATION

LEGEND

- PROPERTY LIMITS
- - - CONSTRUCTION LIMITS
- - - EXISTING MINOR CONTOUR
- - - EXISTING MAJOR CONTOUR
- - - PROPOSED MINOR CONTOUR
- - - PROPOSED MAJOR CONTOUR
- - - PROPOSED BUILDING SETBACK
- - - PROPOSED DRAINAGE & UTILITY EASEMENT
- ⇒ DRAINAGE ARROW
- PROPOSED CONCRETE C&G
- - - WETLAND LINE
- ▨ WETLAND BUFFER AREA
- ▨ PROPOSED TRAILS



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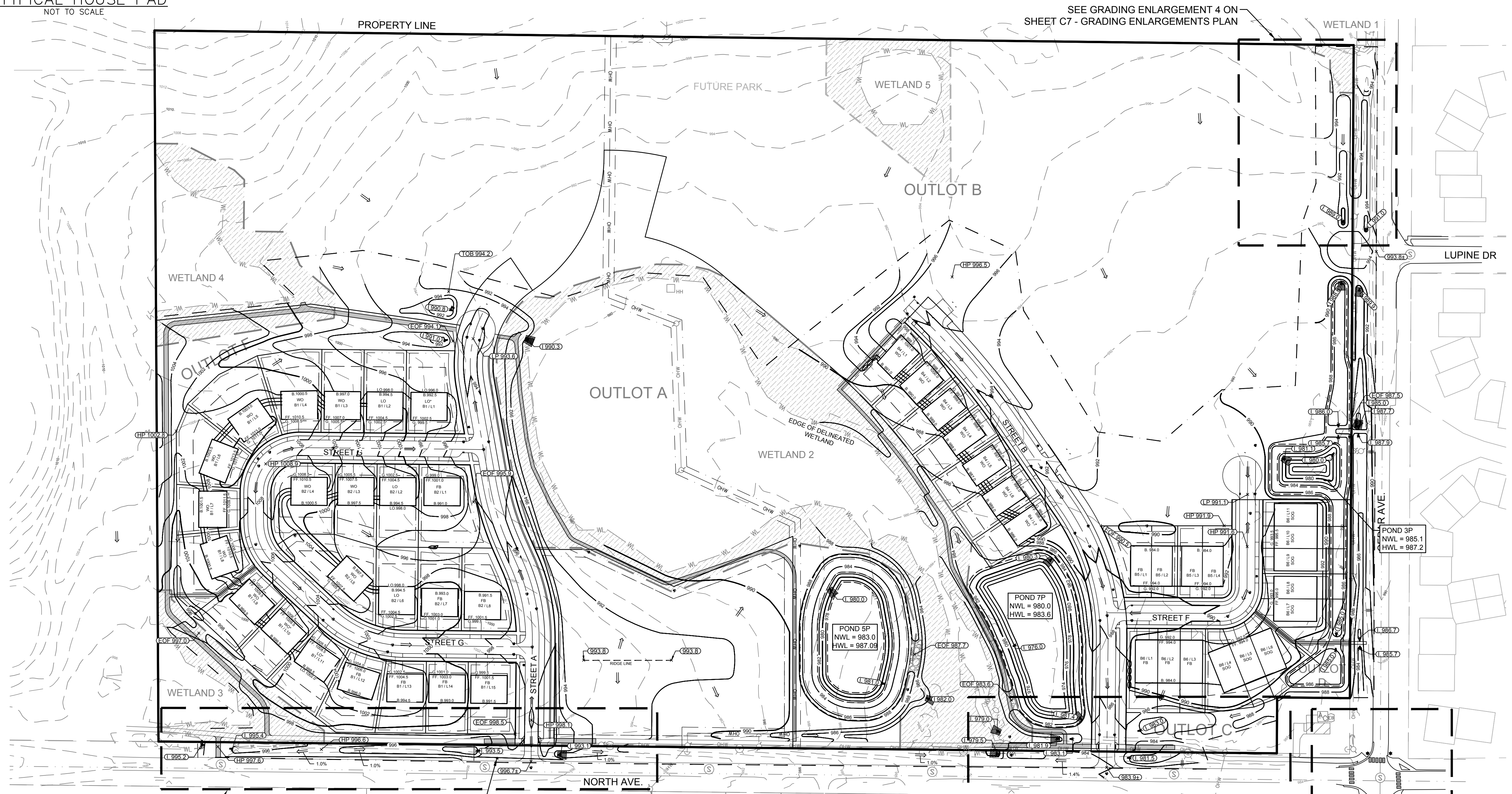
NO.	DATE	DESCRIPTION OF REVISIONS

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BJF	JPD	BJF

OVERALL GRADING PLAN

DRAWING NO. **C4**
PAGE: 4 OF 26
PLOTTED: 1/5/2024 COMM. NO. 16826



SEE GRADING ENLARGEMENT 4 ON SHEET C7 - GRADING ENLARGEMENTS PLAN

SEE GRADING ENLARGEMENT 1 ON SHEET C7 - GRADING ENLARGEMENTS PLAN

RELOCATED HYDRANT

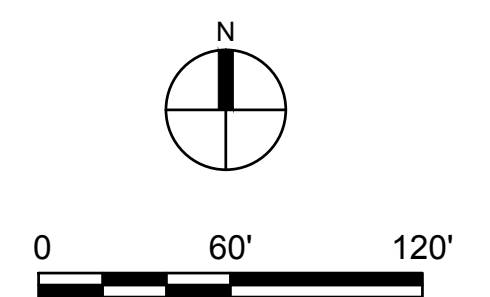
SEE GRADING ENLARGEMENT 2 ON SHEET C7 - GRADING ENLARGEMENTS PLAN

SEE GRADING ENLARGEMENT 3 ON SHEET C7 - GRADING ENLARGEMENTS PLAN

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KEY NOTES
 ① POND 5P:
 BOTTOM ELEVATION = 977.0
 EMERGENCY OVERTFLOW = 987.7
 TOP OF BERM ELEVATION = 988.7
 OVERTFLOW WIDTH = 40'



LEGEND

---	PROPERTY LIMITS
---	CONSTRUCTION LIMITS
- - - -	EXISTING MINOR CONTOUR
- - - -	EXISTING MAJOR CONTOUR
---	PROPOSED MINOR CONTOUR
---	PROPOSED MAJOR CONTOUR
- - - -	PROPOSED BUILDING SETBACK
- - - -	PROPOSED DRAINAGE & UTILITY EASEMENT
→	DRAINAGE ARROW
---	PROPOSED CONCRETE C&G
WL	WETLAND LINE
---	WETLAND BUFFER LINE
---	WETLAND BUFFER AREA
---	PROPOSED TRAILS
■	STORM & SANITARY SEWER STRUCTURES
▲	FLARED END SECTION
▲	FLARED END SECTION WITH RIP-RAP
■	EMERGENCY OVERTFLOW RIPRAP

SPOT ELEVATION KEY

±	EXISTING GRADE
HP	HIGH POINT ELEVATION
LP	LOW POINT ELEVATION
R.	RIM ELEVATION
I.	INVERT ELEVATION
TOB	TOP OF BERM ELEVATION
EOF	EMERGENCY OVERTFLOW ELEVATION

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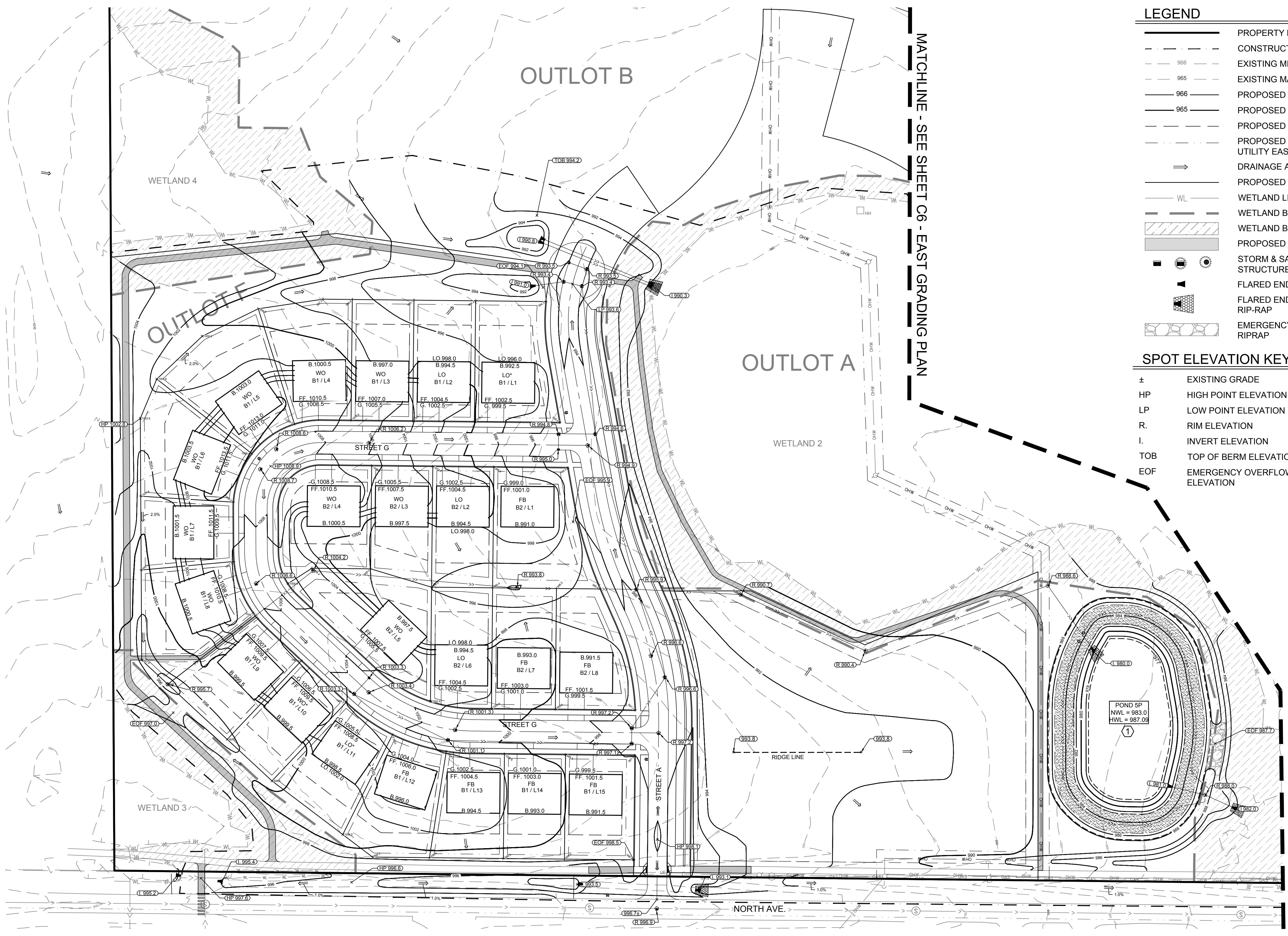
NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

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DRAWING TITLE
WEST GRADING PLAN

DRAWING NO.
C5
 PAGE: 5 OF 26
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REVISION LOG

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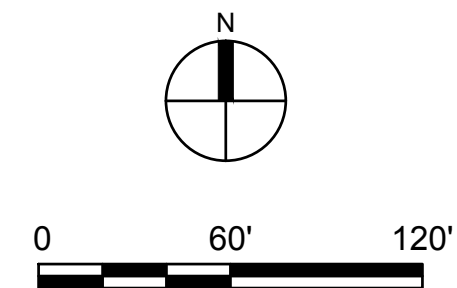
EAST GRADING PLAN

DRAWING NO.

C6

PAGE: 6 OF 26

PLOTTED:	COMM. NO.
1/5/2024	16826



LEGEND

	PROPERTY LIMITS
	CONSTRUCTION LIMITS
	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED BUILDING SETBACK
	PROPOSED DRAINAGE & UTILITY EASEMENT
	DRAINAGE ARROW
	PROPOSED CONCRETE C&G
	WETLAND LINE
	WETLAND BUFFER LINE
	WETLAND BUFFER AREA
	PROPOSED TRAILS
	STORM & SANITARY SEWER STRUCTURES
	FLARED END SECTION
	FLARED END SECTION WITH RIP-RAP
	EMERGENCY OVERTFLOW RIPRAP

SPOT ELEVATION KEY

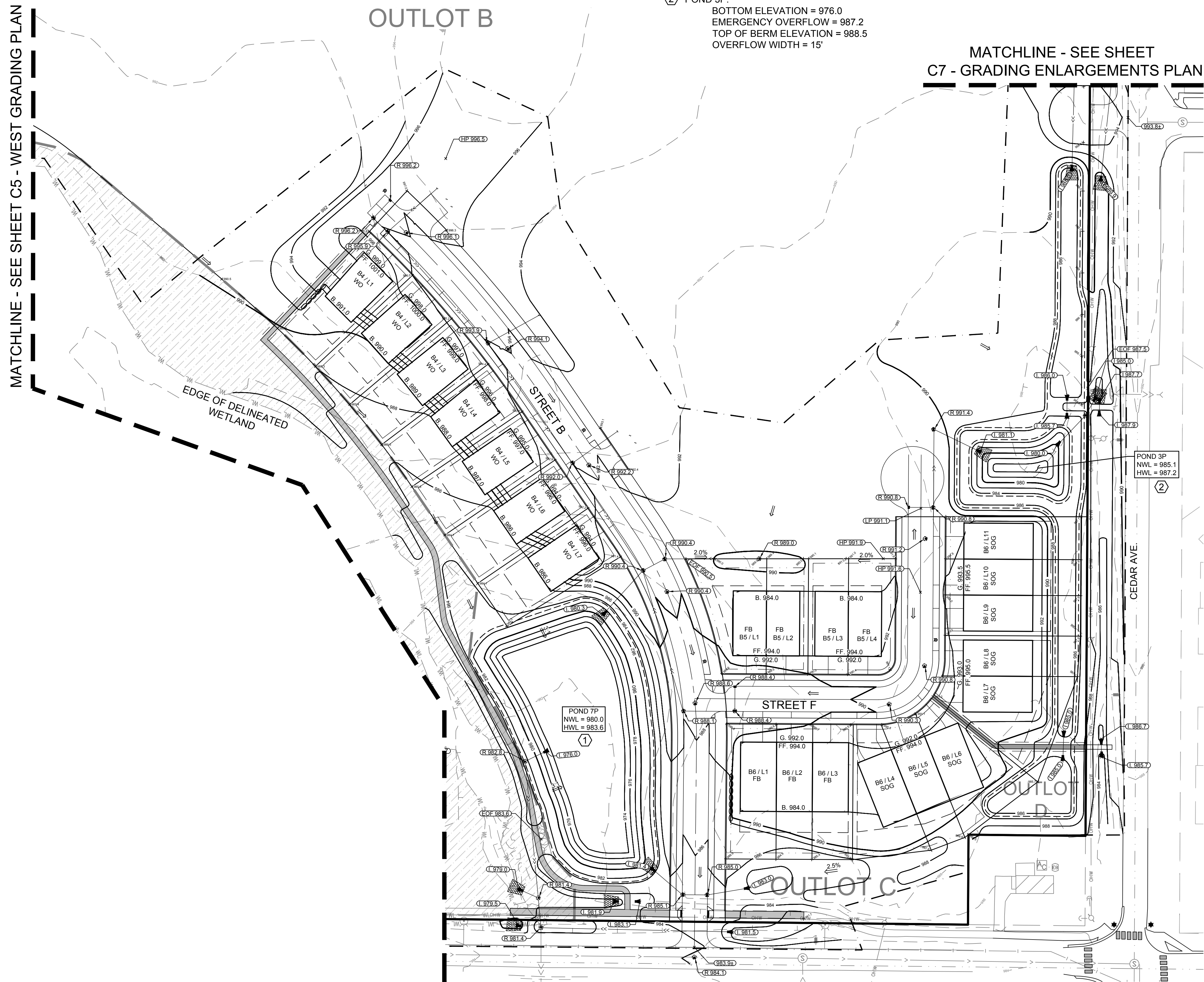
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HP	HIGH POINT ELEVATION
LP	LOW POINT ELEVATION
R.	RIM ELEVATION
I.	INVERT ELEVATION
TOB	TOP OF BERM ELEVATION
EOF	EMERGENCY OVERTFLOW ELEVATION

KEY NOTES

- POND 7P:
BOTTOM ELEVATION = 974.0
EMERGENCY OVERTFLOW = 983.0
TOP OF BERM ELEVATION = 984.6
OVERTFLOW WIDTH = 25'
- POND 3P:
BOTTOM ELEVATION = 976.0
EMERGENCY OVERTFLOW = 987.2
TOP OF BERM ELEVATION = 988.5
OVERTFLOW WIDTH = 15'

MATCHLINE - SEE SHEET C5 - WEST GRADING PLAN

MATCHLINE - SEE SHEET C7 - GRADING ENLARGEMENTS PLAN





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NORTHFIELD, MN, 55057

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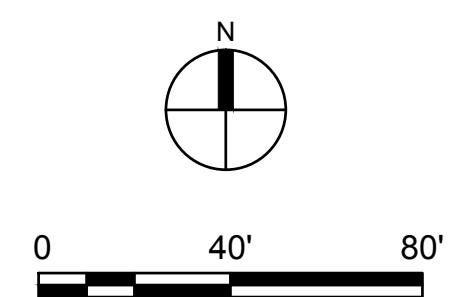
GRADING ENLARGEMENTS PLAN

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C7

PAGE: 7 OF 26

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1/5/2024	16826

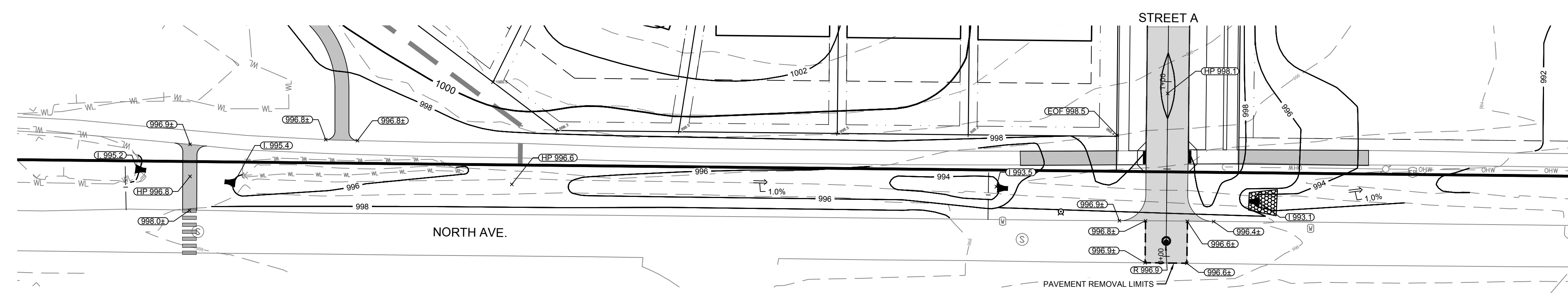


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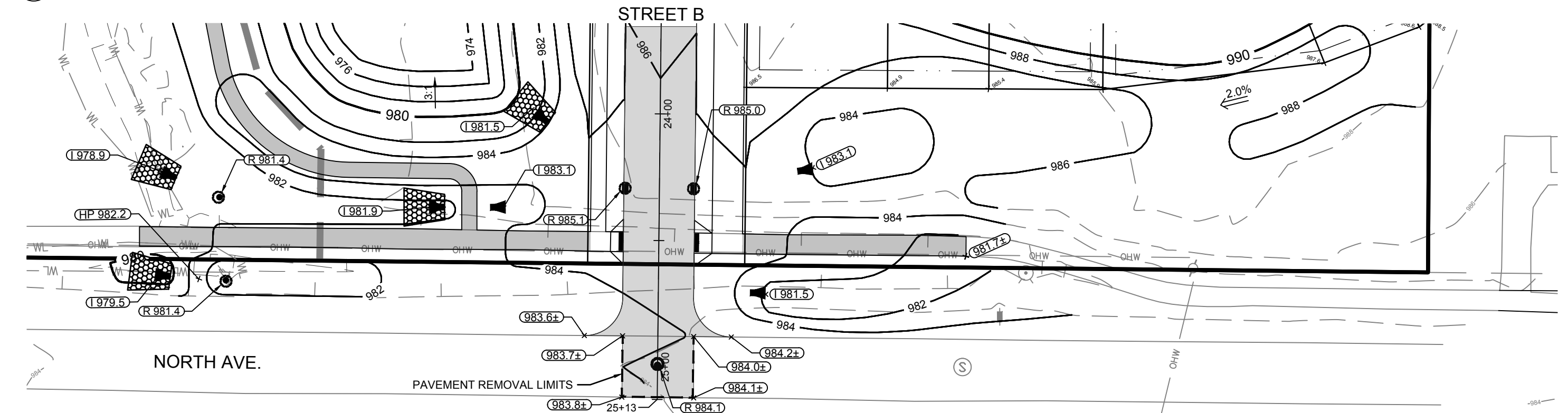
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	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	DRAINAGE ARROW
	PROPOSED CONCRETE C&G
	WETLAND LINE
	WETLAND BUFFER LINE

SPOT ELEVATION KEY

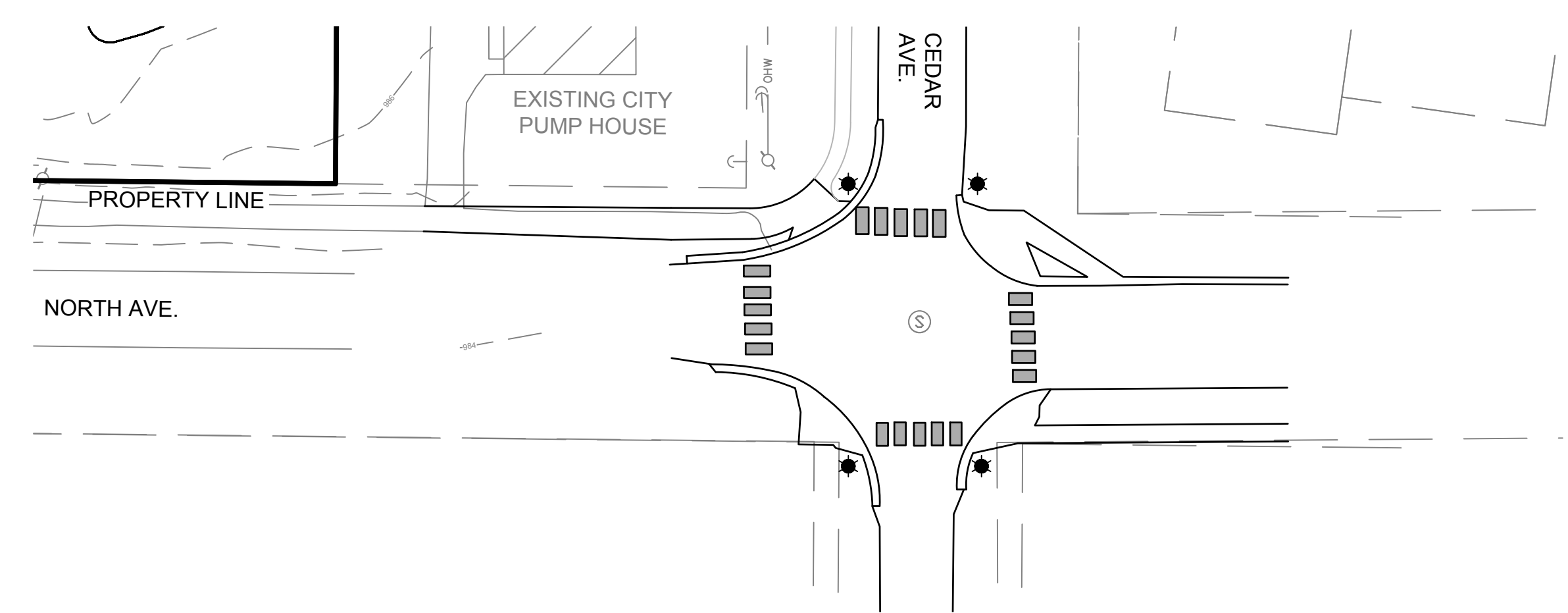
±	EXISTING GRADE
HP	HIGH POINT ELEVATION
LP	LOW POINT ELEVATION
R.	RIM ELEVATION
I.	INVERT ELEVATION
TOB	TOP OF BERM ELEVATION
EOF	EMERGENCY OVERTFLOW ELEVATION



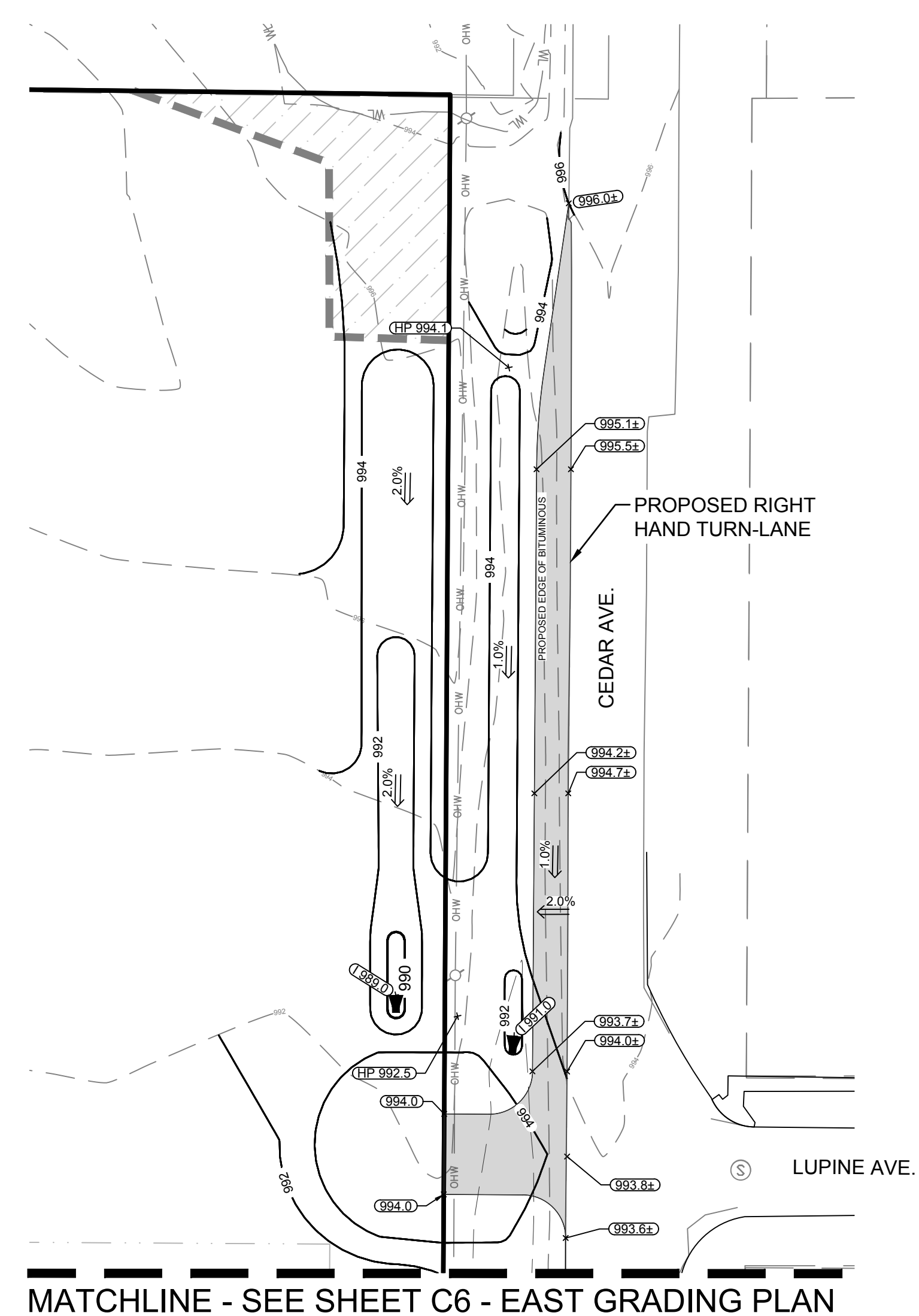
1 GRADING ENLARGEMENT 1 - SW DITCH ALONG NORTH AVENUE
 SCALE: 1" = 40'



2 GRADING ENLARGEMENT 2 - SE DITCH ALONG NORTH AVENUE
 SCALE: 1" = 40'



2 GRADING ENLARGEMENT 3 - NORTH AVE. & CEDAR AVE. INTERSECTION
 SCALE: 1" = 40'



4 GRADING ENLARGEMENT 4 - RIGHT TURN-LANE ALONG NORTH AVENUE
 SCALE: 1" = 40'

MATCHLINE - SEE SHEET C6 - EAST GRADING PLAN

Feb 15, 2024 - 11:03am
 J.Dobias
 Xref Filename: Y:\16826_s_base\16826_titleblock_22X34\16826_u_base
 Y:\16800\16826 - TERRACE COMPANIES - 62 ACRE DEVELOPMENT - NORTHFIELD MN_00 Construction Documents_07 CiviL_01 CAD files_01 Sheets\16826_C_GRAD.dwg

BMP	ORIGINAL ESTIMATE	MODIFICATION	DATE
ENERGY DISSIPATER	9 EA		
TEMP. DIVERSION DIKES			
CHECK DAMS	23 EA		
TEMP SEEDING	405,800 SF		
PERMANENT SEEDING	807,925 SF		
PERMANENT SODDING			
MULCHES (SPECIFY TYPES)			
CAT 3 EROSION CONTROL BLANKET	168,300 SF		
SOIL TACKIFIERS			
SILT FENCING	16,200 LF		
EROSION CONTROL MATS			
STORM DRAIN INLET PROTECTION	34 EA		
TEMPORARY OR PERMANENT SEDIMENTATION BASINS	2 EA		
CONSTRUCTION ENTRANCE	2 EA. (MIN. 1)		
DEWATERING (TREATMENT LOCATION, SCHEMATIC, & SAMPLING PLAN REQUIRED)	N/A		
CONCRETE TRUCK WASHOUT	1 EA		

TEMPORARY SEDIMENT BASINS

POND 5P:
 DRAINAGE AREA = 14.67 ACRES
 2 YR RUNOFF = 86,945 CF
 1800 x 14.67 Ac = 26,406 CF
 REQUIRED = 86,945 CF

POND 7P:
 DRAINAGE AREA = 15.50 ACRES
 2 YR RUNOFF = 87,120 CF
 1800 x 15.50 Ac = 27,900 CF
 REQUIRED = 87,120 CF

GENERAL NOTES

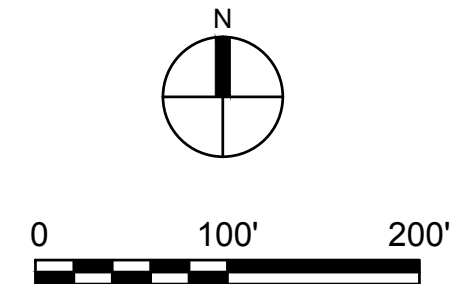
- TEMPORARY PERIMETER CONTROLS TO BE INSTALLED IN FRONT OF FES DURING UTILITY CONSTRUCTION.
- ALL POND SIDE SLOPES TO HAVE EROSION CONTROL BLANKETS.

KEY NOTES

- INSTALL & MAINTAIN SILT FENCE PERIMETER SEDIMENT PROTECTION IN TURF AREAS. USE BIO-ROLLS AS NEED IN PAVED AREA FOR PHASING PURPOSES. (TYP.)
- INSTALL AND MAINTAIN INLET SEDIMENT PROTECTION (TYP.).
- INSTALL TEMP ROCK ENTRANCE OR HARD SURFACE ASPHALT/CONCRETE AT CONSTRUCTION INGRESS & EGRESS LOCATION(S) PRIOR TO EXCAVATION & TO BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS.
- AREA WITH SLOPES 4:1 OR STEEPER, WITHIN DRAINAGE SWALES AND POND SIDE SLOPES TO HAVE EROSION CONTROL BLANKET & SEED INSTALLED. EROSION CONTROL BLANKET TO BE "NATURAL NET ONLY" CATEGORY 3N PER MNDOT SPEC 3885. (TYP.)
- INSTALL RIP-RAP AT EMERGENCY OVERFLOW SPILLWAY.
- INSTALL REDUNDANT SILT FENCE ALONG WETLAND BOUNDARIES WHERE 50' VEGETATIVE BUFFER CANNOT BE MAINTAINED.
- INSTALL CHECK DAM EVERY 100 LF WITHIN SWALE BOTTOM. (TYP.)
- STABILIZE DISTURBED AREAS WHERE NO CONSTRUCTION HAS OCCURRED FOR 14 DAYS WITH SOD, HYDRO-MULCH, OR STRAW-MULCH. (TYP.)

LEGEND

- PROPERTY LIMITS
- CONSTRUCTION LIMITS
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EXISTING SPOT ELEVATION
- DRAINAGE ARROW
- SILT FENCE
- INLET PROTECTION
- CONSTRUCTION ROCK ENTRANCE
- EROSION CONTROL BLANKET
- TEMPORARY SEEDING - ALL DISTURBED AREA
- RIPRAP
- CHECK DAM



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 Anderson Engineering of Minnesota, LLC

CEDAR MEADOWS DEVELOPMENT 1ST ADDITION
 NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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

PRINT NAME: BRIAN J. FIELD, PE

SIGNATURE: **NOT FOR CONSTRUCTION**
 DATE: 06/23/2023 LICENSE NO. 57224

REVISION LOG		
NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

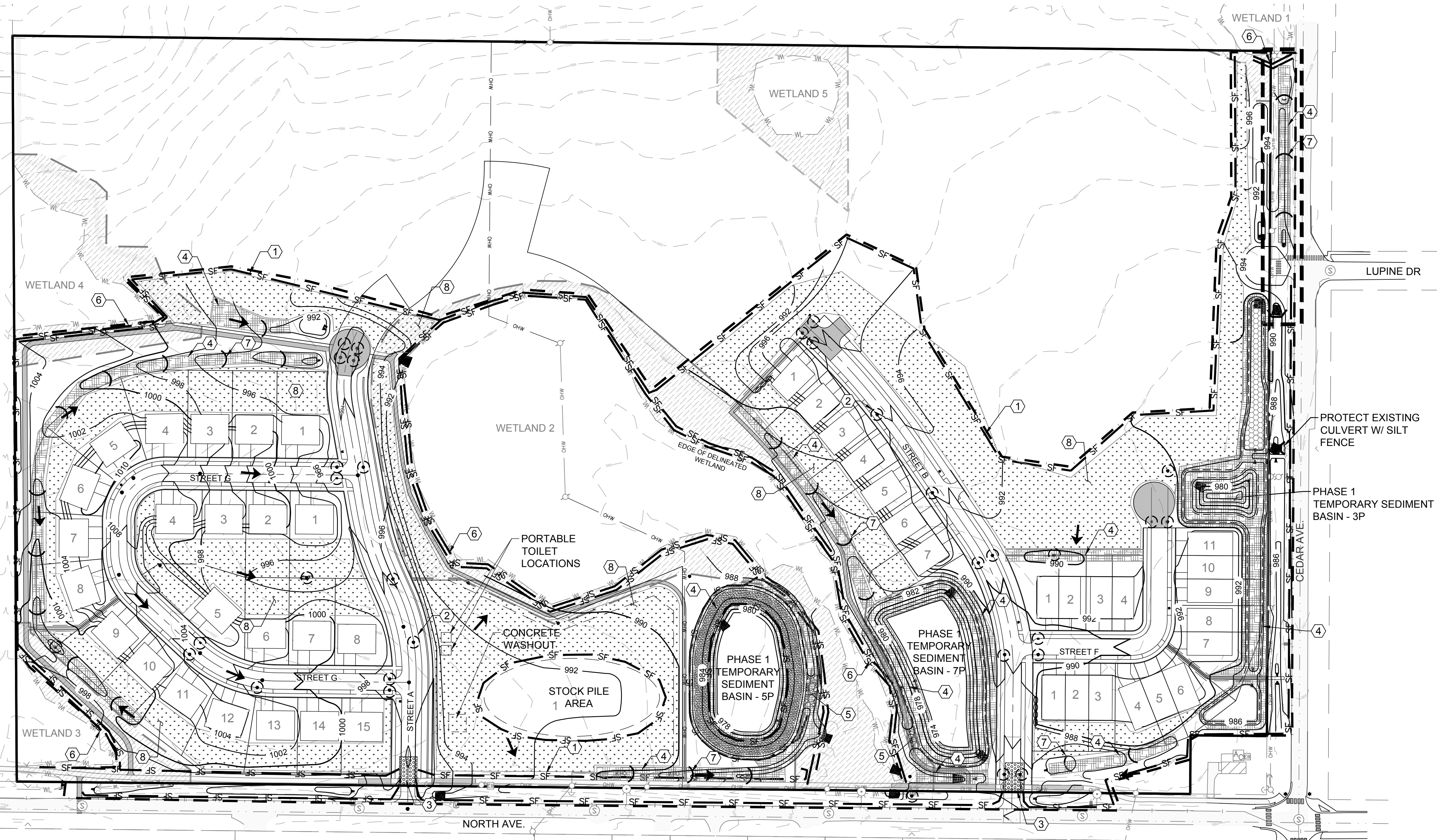
DESIGNED:	DRAWN:	CHECKED BY:
BJF	DKV	BJF

DRAWING TITLE
OVERALL EROSION CONTROL PLAN

DRAWING NO.
C8

PLOTTED: 1/5/2024	COMM. NO. 16826
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Feb 15, 2024 - 11:15am
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 Y:\16800\16826 - TERRACE COMPANIES - 62 ACRE DEVELOPMENT - NORTHFIELD MN_00 Construction Documents_07 Civil_01 CAD files_01 Sheets\16826_C_EROS.dwg
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STORM WATER POLLUTION PREVENTION PLAN NARRATIVE - PAGE 1 OF 2

PROJECT DESCRIPTION/LOCATION

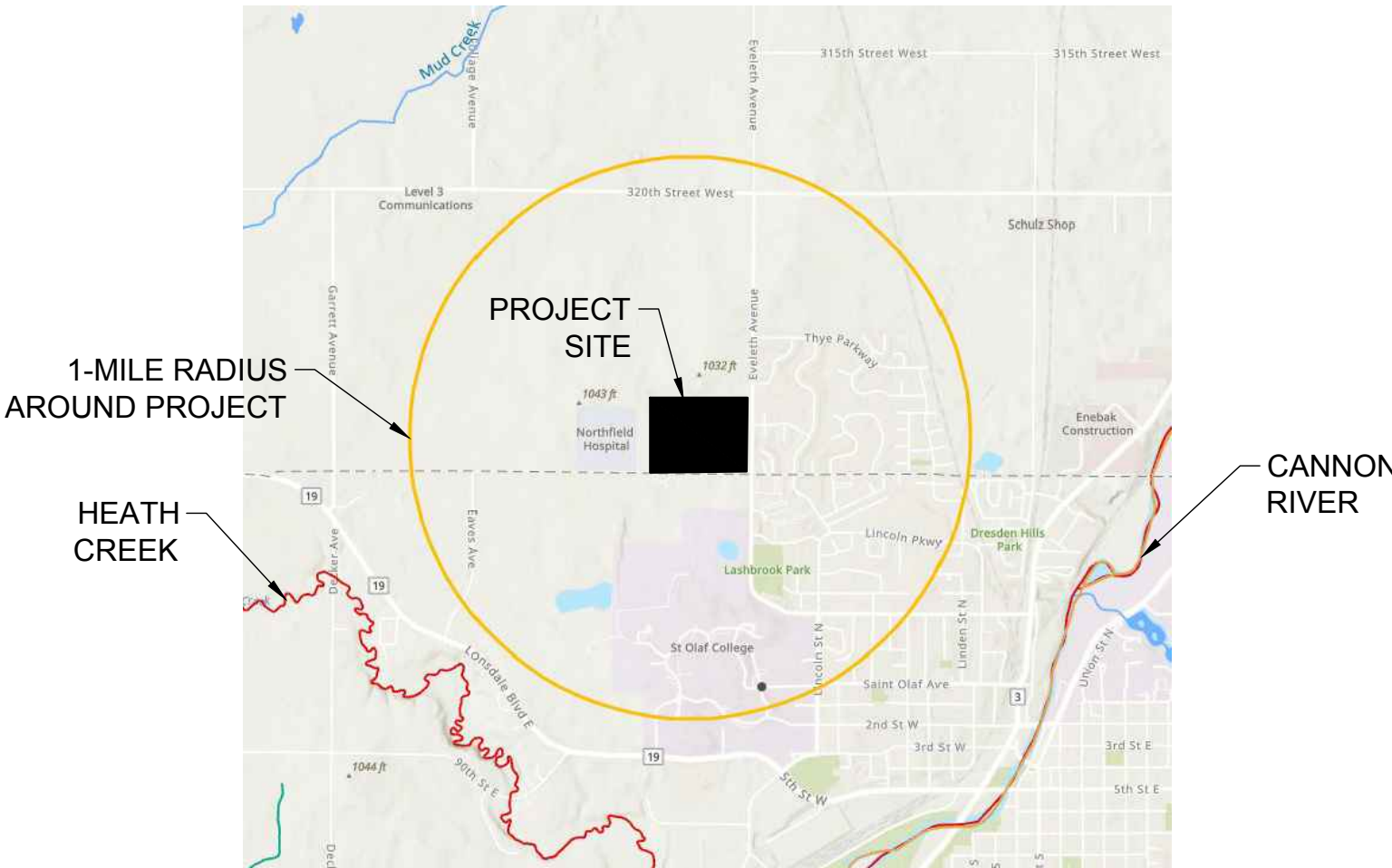
CEDAR MEADOWS IS LOCATED IN THE CITY OF NORTHFIELD IN DAKOTA COUNTY, BOUNDED ON NORTH AVE AND CEDAR AVE. THE PROPERTY EXTENDS 2289.7 FT FROM EAST TO WEST AND 1307.4 FT FROM SOUTH TO NORTH, LOCATED IN SPRING CREEK WATERSHED. THE PROPOSED SITE ENCOMPASSES 61.94 ACRES.

THE PLANNED SCOPE OF THE PROJECT INCLUDES:

- THE INSTALLATION OF EROSION CONTROL MEASURES AS REQUIRED FOR THE MASS GRADING OF THE SITE FOR THE CONSTRUCTION OF SOUTH AND CEDAR DEVELOPMENT
- GRADING AS REQUIRED FOR THE INSTALLATION OF THE STRUCTURES, ROADS, AND PONDS
- THE CONSTRUCTION OF STORM WATER PONDS.
- INSTALLATION OF SANITARY SEWER, WATERMAIN, AND STORM SEWER.
- PLACEMENT OF CONCRETE AS REQUIRED TO ESTABLISH CURB, GUTTER, AND SIDEWALKS THROUGHOUT THE SITE.
- CONSTRUCTION OF SINGLE FAMILY HOMES, TWIN HOMES, TRIPLEX HOMES, AND SENIOR LIVING

RECEIVING WATERS

THESE WATERS ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE. DUE TO THE PROXIMITY OF THE RECEIVING WATERS, THE BMPS DESCRIBED IN APPENDIX A OF THE NPDES PERMIT MAY APPLY TO ALL AREAS OF THE SITE.

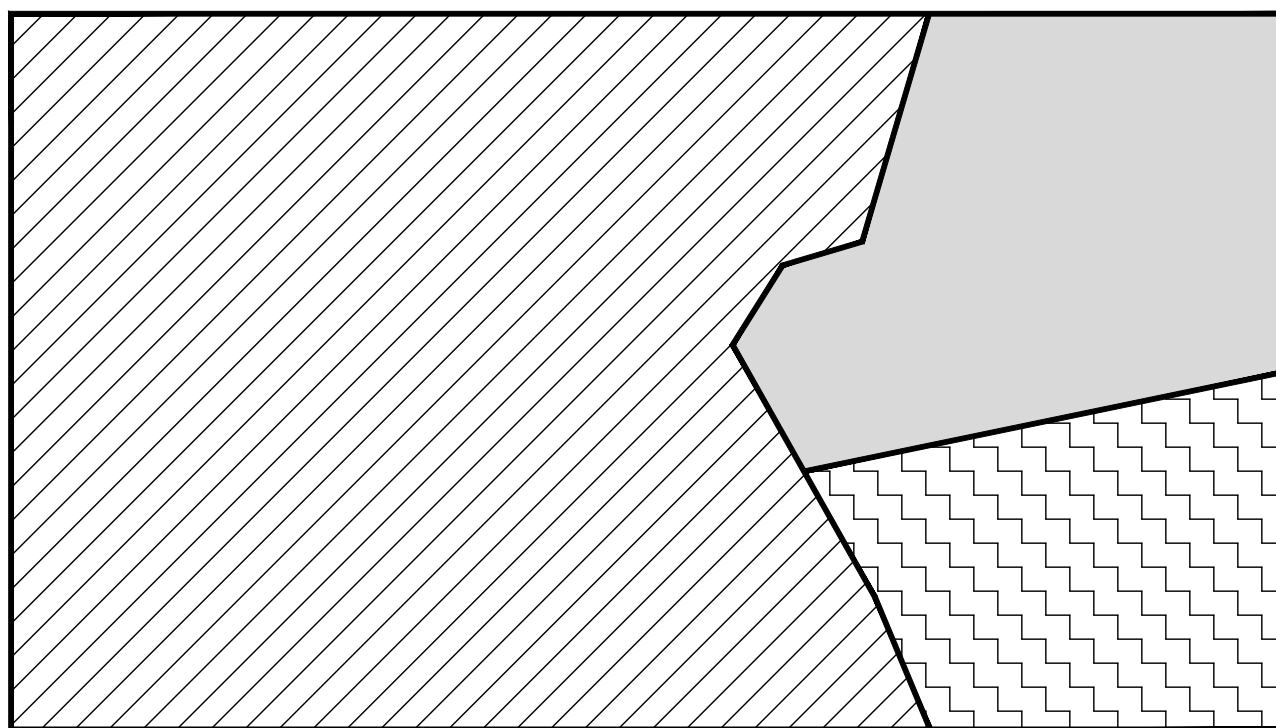


WATERS WITHIN 1 MILE RADIUS

NAME OF WATER BODY	TYPE (LAKE, RIVER, WETLAND, DITCH, ETC)	APPENDIX A SPECIAL WATER (YES OR NO)	IMPAIRED WATER WITHIN 1 MILE OF PROJECT SITE (YES OR NO)	APPROVED TMDL	RECEIVING WATERS (YES OR NO)
NONE					

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT RANGE FROM SANDY LEAN CLAY TO SAND, WITH TRACES OF SILT. PER SOIL BORINGS TAKEN BY KILO ENGINEERING DATED 05/16/2022. KILO ENGINEERING REPORT IS TO BE KEPT ON SITE AS PART OF THE SWPPP AND IS TO BE MADE AVAILABLE UPON REQUEST.



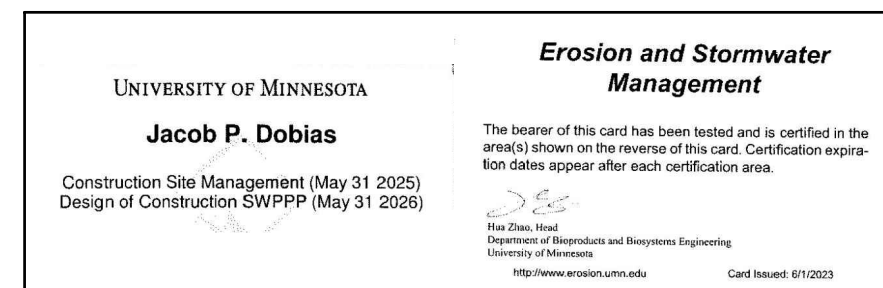
PROJECT PERSONNEL AND TRAINING

THIS SWPPP WAS PREPARED BY PERSONNEL THAT ARE VERIFIED IN THE DESIGN OF CONSTRUCTION SWPPP. COPIES OF THE CERTIFICATIONS ARE ON FILE WITH THE ENGINEER. PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. THE EROSION CONTROL SUPERVISOR WILL WORK WITH THE PROJECT ENGINEER / SWPPP DESIGNER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. PROVIDE PROOF OF CERTIFICATION AT THE RECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL

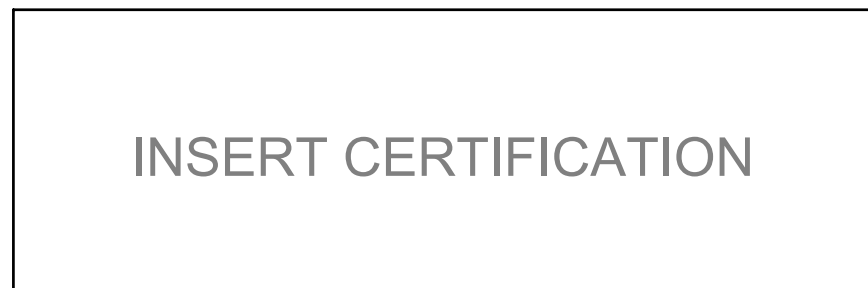
PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

PROVIDE AT LEAST ONE CERTIFIED INSTALLER FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT INSTALLS THE PRODUCTS LISTED IN SPECIFICATION SECTION 2573.3.A.2 CERTIFIED INSTALLERS. PROVIDE PROOF OF CERTIFICATION AT THE RECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

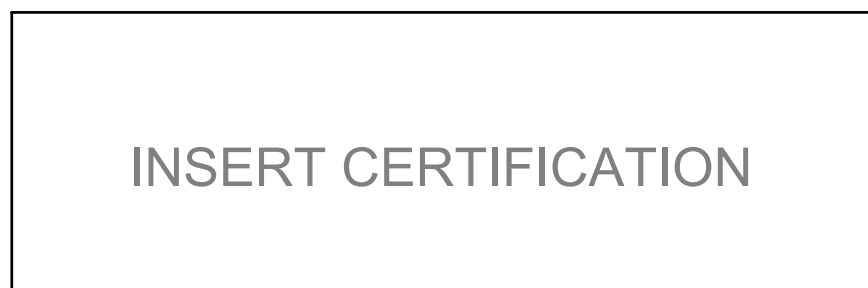
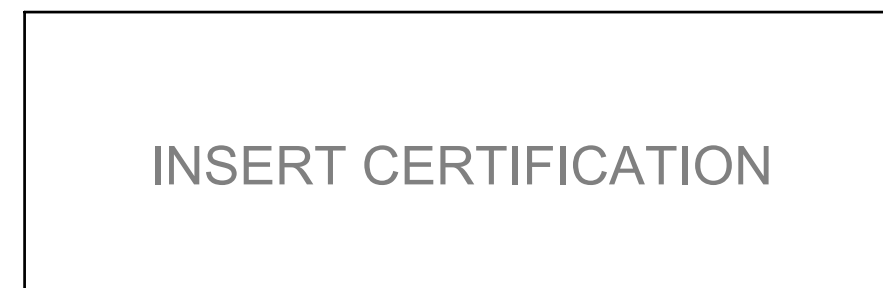
DESIGN OF CONSTRUCTION SWPPP



CONSTRUCTION SITE MANAGEMENT



CONSTRUCTION INSTALLER



CHAIN OF RESPONSIBILITY

THE OWNER AND CONTRACTOR ARE CO-PERMITTEES FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA THE CONTRACTOR WILL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

PROJECT CONTACTS

THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED.

CONTACT INFORMATION		
ORGANIZATION	CONTACT NAME	PHONE
TERRACE COMPANIES (OWNER)	TIM BROWN	612-802-6948
ANDERSON ENGINEERING (SWPPP DESIGN)	JACOB DOBIAS*	763-412-4000
(CONTRACTOR)		

*CERTIFIED FOR DESIGN OF CONSTRUCTION SWPPP BY UNIVERSITY OF MINNESOTA, EXPIRES 5/31/26

MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFICATION:
651-649-5451 OR 800-422-0798

SITE INSPECTION AND MAINTENANCE

CONTRACTOR SHALL PROVIDE NAME, CONTACT INFO, AND TRAINING DOCUMENTATION FOR THE PERSON RESPONSIBLE FOR SWPPP IMPLEMENTATION AND INSPECTION/MAINTENANCE OF BMPS.

INSPECT THE ENTIRE CONSTRUCTION SITE A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES WITHIN A 24 HOUR TIME FRAME. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE N.O.T. HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION.

RAINFALL AMOUNTS MUST BE OBTAINED BY A PROPERLY MAINTAINED RAIN GAUGE INSTALLED ONSITE, OR BY A WEATHER STATION THAT IS WITHIN ONE MILE OR BY A WEATHER REPORTING SYSTEM. A RAIN GAUGE IS PREFERRED FOR THIS PROJECT.

RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER.

FOR PROJECTS THAT DISCHARGE TO PROHIBITED WATERS, CONDUCT ROUTINE SITE INSPECTIONS AT A MINIMUM OF ONCE EVERY 72 HOURS (3 DAYS).

INCLUDE THE FOLLOWING IN THE RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY:

- DATE AND TIME OF INSPECTIONS
- NAME OF PERSONS CONDUCTING INSPECTIONS
- FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS
- CORRECTIVE ACTION TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES
- DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS
- DOCUMENTS AND CHANGES MADE TO THE SWPPP
- MAKE NOTE OF ANY OBSERVATIONS OF DISCHARGE THAT MAY BE OCCURRING DURING THE INSPECTION. THIS SHOULD BE DESCRIBED IN DETAIL AND PHOTOGRAPHED.

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY IN THE TIME PROVIDED BELOW:

- REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
- REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
- DRAIN AND REMOVE SEDIMENT FROM TEMPORARY AND PERMANENT SEDIMENT BASINS ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME.
- REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATER INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. RESTABILIZED ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATION. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR WORKING IN SURFACE WATERS.

- REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN 24 HOURS OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING
- MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

AREA SUMMARY

ACREAGE SUMMARY	
AREA	ACRES
PROPERTY	61.94
DISTURBED	40.5
IMP. PRE-CONSTRUCTION	0.60
IMP. POST-CONSTRUCTION	14.71
NEW IMP.	14.11
PERVIOUS AT COMPLETION	47.23

SPECIAL SITE NOTES

IF SITE REQUIRES PERMANENT STORMWATER MANAGEMENT HYDROLOGIC AND WATER QUALITY MODELING DATA IS AVAILABLE UPON REQUEST.

THE SWPPP COORDINATOR MUST BE AVAILABLE FOR AN ONSITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY THE MPCA AND SHALL BE RESPONSIBLE FOR THE FOLLOWING:

- SUBMIT THE NPDES PERMIT APPLICATION AND COMPLY WITH ALL REQUIREMENTS
- IMPLEMENT THE SWPPP.
- OVERSEE INSTALLATION AND MAINTENANCE PRACTICES AND REPAIRS IDENTIFIED IN THE SWPPP.
- IMPLEMENT AND OVERSEE EMPLOYEE TRAINING AND RECORD IN OR WITH THE SWPPP.
- CONDUCT OR PROVIDE FOR INSPECTION AND MONITORING ACTIVITIES AND MAINTAIN LOGS AS PERMIT REQUIRES.
- IDENTIFY OTHER POTENTIAL POLLUTANT SOURCES NOT LISTED IN THE SWPPP AND ADD THEM.
- IDENTIFY ANY DEFICIENCIES IN THE SWPPP AND CORRECT THEM.
- ENSURE THAT CHANGES TO CONSTRUCTION PLANS ARE ADDRESSED IN THE SWPPP.
- FILE THE NOTICE OF TERMINATION UPON PROJECT COMPLETION.

AFTER THE NOTICE OF TERMINATION HAS BEEN FILED, THE OWNER SHALL BE RESPONSIBLE FOR ASSIGNING RESPONSIBILITY FOR PERMANENT MAINTENANCE MEASURES.

PERMITS

THE FOLLOWING PERMITS APPLY TO THIS PROJECT:

AGENCY	TYPE OF PERMIT	PERMIT # AND DATES
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	NPDES CONSTRUCTION PERMIT	
CITY OF NORTHFIELD	GRADING PERMIT	
CITY OF NORTHFIELD	BUILDING PERMIT	

NOTE: IF THE 50' BUFFERS ARE MAINTAINED FROM THE WETLANDS, ADDITIONAL PERMITS WILL NOT BE REQUIRED.

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET. PLAN VIEW OF THE EROSION CONTROL MEASURES CAN BE FOUND ON SHEET C8 - OVERALL EROSION CONTROL PLAN OF THE PLANS.

BUFFER REQUIREMENTS

A FIFTY FOOT AVERAGE WETLAND BUFFER SETBACK WILL BE MAINTAINED. REDUNDANT PERIMETER CONTROL TO BE INSTALLED WHERE POTENTIAL STORMWATER ENTERS/ EXITS THE SITE THAT IS ADJACENT TO THE WETLAND / PROPOSED FILTRATION BASIN. BELOW IS A SUMMARY OF SITE CONSTRAINTS LIMITING THE 50' BUFFER SETBACK:

WETLAND 1: THE PROXIMITY TO CEDAR AVE AND THE REQUIRED RHT LANE LIMITS THE BUFFER AREA TO THE EAST. THE FUTURE ROAD CONNECTION LIMITS THE BUFFER AREA TO THE WEST.

WETLAND 2: THE 50' WETLAND BUFFER IS LIMITED BY THE PROPOSED PONDS P5, P7, AND FUTURE P4 LOCATIONS.

WETLAND 3: THE 50' WETLAND BUFFER IS LIMITED BY THE PROXIMITY TO NORTH AVE AND CONSTRUCTION OF THE GREENWAY TRAIL.

WETLAND 4: THE 50' WETLAND BUFFER IS LIMITED BY THE BY THE CONSTRUCTION OF THE GREENWAY TRAIL AND THE FUTURE ROAD CONNECTION LOCATED IN THE NW CORNER OF THE PROPERTY.

WETLAND 5: THE 50' BUFFER IS LIMITED BY THE PARK DEDICATION TO THE CITY.

SWPPP AMENDMENTS

A QUALIFIED INDIVIDUAL MUST COMPLETE ALL SWPPP CHANGES. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP MUST INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.

PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OF ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION OPERATION, MAINTENANCE, WEATHER, OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER.

PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER INSPECTIONS OR INVESTIGATIONS BY THE SITE OWNER OR OPERATOR, USEPA OR MPCA OFFICIALS INDICATE THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER OR THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCE OR THE SWPPP IS NOT CONSISTENT WITH THE OBJECTIVES OF A USEPA APPROVED TMDL.

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	14 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
STOCKPILES	14 DAYS	1
PERMANENT COVER METHODS FOR EXPOSED SOILS	14 DAYS	6



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CEDAR MEADOWS DEVELOPMENT 1ST ADDITION

NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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CONSTRUCTION DOCUMENTS

DESIGNED:	DRAWN:	CHECKED BY:
BJF	JPD	BJF

DRAWING TITLE

STORMWATER POLLUTION PREVENTION PLAN 1

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PAGE: 9 OF 26

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1/5/2024	16826

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE - PAGE 2 OR 2

STABILIZATION TIME FRAMES

ALL AREAS DISTURBED BY CONSTRUCTION WILL RECEIVE SEED OR SOD ACCORDING TO THE PLANS AND SPECIFICATIONS AND WITHIN THE SPECIFIED VEGETATIVE TIME SCHEDULE. FINAL STABILIZATION WILL OCCUR WHEN THE SITE HAS A UNIFORM VEGETATIVE COVER WITH A DENSITY OF 70% OVER THE ENTIRE DISTURBED AREA COMPARED TO EXISTING CONDITIONS. ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPS MUST BE REMOVED AS PART OF THE SITE FINAL STABILIZATION. ALL SEDIMENT MUST BE CLEANED OUT OF CONVEYANCES AND TEMPORARY SEDIMENTATION BASINS IF APPLICABLE. STABILIZATION TIME FRAMES CAN BE SEEN ON THE FOLLOWING TABLE AND THE FOLLOWING SHEET OF THE SWPPP NARRATIVE.

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	14 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
STOCKPILES	14 DAYS	1
PERMANENT COVER METHODS FOR EXPOSED SOILS	14 DAYS	6

- INITIATE INLET STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE NOT APPROPRIATE AND THEREFORE EXEMPT FROM THE STABILIZATION REQUIREMENT.
- APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.
- STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER, ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, AND BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.
- TOPSOIL BERMS MUST BE STABILIZED IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS. USE RAPID STABILIZATION METHOD 2, 3, OR 4 AS DIRECTED BY THE ENGINEER. THE SEED MIX USED IN THE RAPID STABILIZATION MAY BE SUBSTITUTED AS FOLLOWS:
 - SINGLE YEAR CONSTRUCTION BETWEEN MAY 1 - AUGUST 1, SEED WITH SEED MIXTURE 21.111
 - SINGLE YEAR CONSTRUCTION BETWEEN AUGUST 1 AND OCTOBER 31, SEED WITH SEED MIXTURE 21-112
 - MULTI YEAR CONSTRUCTION 22-111
- KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES AND BLANKETS.
- AREAS THAT HAVE SLOPES LESS THAN 3:1 TO RECEIVE HYDROMULCH APPLICATION. AREAS WITHIN LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE & AREAS WITH SLOPES GRATER THAN 3:1, TO RECEIVE A COVER OF EROSION CONTROL BLANKET.
- TEMPORARY OR PERMANENT DITCHES OR SWALES THAT ARE BEING USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM.
- SEED SHALL BE APPLIED AT A RATE AS SPECIFIED PER MNDOT SEEDING MANUAL. WITH 2 TONS SHREDDED AND PUNCHED IN PLACE STRAW PER ACRE. HYDROSEEDING PER MNDOT SPEC SECTION 3884 & MULCHING IS AN ACCEPTABLE ALTERNATE FOR COVER.

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

- CONTRACTOR SHALL AMEND THE SWPPP AND DOCUMENT ANY AND ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS WITHIN 7 DAYS UPON IMPLEMENTATION. STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.
- PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW ALL MINIMUM OF 7 DAYS FOR THE ENGINEER TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
- IT IS THE DESIGNER'S INTENT THAT THE CONTRACTOR BUILD PONDS AND INSTALL EROSION CONTROL BMPS BEFORE PUTTING THEM INTO ACTIVE SERVICE TO THE MAXIMUM EXTENT PRACTICABLE.
- BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.
- DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURBED AREAS OUTSIDE OF THE CONSTRUCTION LIMITS OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.
- ROUT STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.
- DIRECT DISCHARGES FROM BMPS TO VEGETATED AREA WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
- THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE PLACED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND TO CAPTURE SEDIMENT ON SITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES COMMENCE.
- ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UP GRADIENT OF ANY BUFFER ZONES BEFORE AND UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. MAINTAIN SEDIMENT CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
- LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100 FOOT INTERVALS.
- PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES. PLACE BMP A MINIMUM 5 FEET FROM THE TOE OF SLOPE WHERE FEASIBLE. DO NOT PLACE STOCKPILES IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES.
- FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. INSTALL THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.
- DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.
- PLACE CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. PROVIDE CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACK OUT. MAINTAIN CONSTRUCTION EXITS WHEN EVIDENCE OF TRACKING IS DISCOVERED. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE. CONSTRUCTION EXITS ARE INCIDENTAL.
- DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS OR TEMPORARY SEDIMENT TRAPS TO THE DESIGN CAPACITY AFTER ALL UP GRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.
- PROVIDE SCOUR PROTECTION AT ANY OUTFALL OF DEWATERING ACTIVITIES.
- PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.

POLLUTION PREVENTION

- PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.
- STORE ALL BUILDING MATERIALS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS, PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS UNDER COVER WITH SECONDARY CONTAINMENT.
- PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY.
- STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
- POSITION ALL PORTABLE TOILETS SO THAT THEY ARE SECURE AND CANNOT BE TIPPED OR KNOCKED OVER. PROPERLY DISPOSE OF ALL SANITARY WASTE.
- FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FORM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES. PROVIDE A SPILL KIT AT EACH LOCATION THAT VEHICLES AND EQUIPMENT ARE FUELED OR MAINTAINED AT.
- LIMIT VEHICLE AND EQUIPMENT WASHING TO A DEFINED AREA OF THE SITE. CONTAIN RUNOFF FROM THE WASHING AREA TO A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL. PROPERLY DISPOSE OF ALL WASTE GENERATED BY VEHICLE AND EQUIPMENT WASHING. ENGINE DEGREASING IS NOT ALLOWED ON THE SITE.
- PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.
- CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER.
- USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTING, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
- USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING SITE, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT SAW CUT SLURRY AND PLACING WASTE FROM LEAVING SITE AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS INCLUDING DITCHES AND CULVERTS.

RECORD RETENTION

THE SWPPP, ALL CHANGES TO IT AND INSPECTION AND MAINTENANCE RECORDS MUST BE KEPT ON-SITE DURING CONSTRUCTION. THE OWNER MUST RETAIN A COPY OF THE SWPPP ALONG WITH THE FOLLOWING RECORDS FOR THREE (3) YEARS AFTER SUBMITTAL OF THE NOTICE OF TERMINATION (NOT).

- ANY OTHER PERMITS REQUIRED FOR THE PROJECT.
- RECORDS OF ALL INSPECTION AND MAINTENANCE CONDUCTED DURING CONSTRUCTION
- ALL PERMANENT OPERATIONS AND MAINTENANCE AGREEMENT THAT HAVE BEEN IMPLEMENTED INCLUDING ALL RIGHT OF WAY, CONTRACTS, COVENANTS AND OTHER BINDING REQUIREMENTS REGARDING PERPETUAL MAINTENANCE; AND
- ALL REQUIRED CALCULATIONS FOR DESIGN OF THE TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS.

SWPPP SCHEDULE OF INSTALLATION & MAINTENANCE

ITEM	INSTALLATION	INSPECTION & MAINTENANCE	REMOVAL
SILT FENCE	PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS.	INSPECT & MAINT. AFTER EACH RUN-OFF EVENT. REMOVE SEDIMENTS AS REQUIRED.	AFTER TRIBUTARY DRAINAGE AREA IS RESTORED.
ROCK CONST. ENTRANCE	PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS.	INSPECT REGULARLY. MAINTAIN AS NEEDED.	PRIOR TO PAVING.
OUTLET SKIMMER STRUCTURE	AFTER POND GRADING IS COMPLETED.	INSPECT REGULARLY. MAINTAIN AS NEEDED.	PERMANENT.
RIP-RAP & FILTER	UPON COMPLETION OF POND GRADING, CONC. SWALE CONST. AND OUTLET INSTALLATION.	INSPECT & MAINTAIN AT LEAST ANNUALLY AND AFTER HEAVY RAINFALL EVENT.	PERMANENT.
DETENTION POND	DURING EARTHWORK OPERATIONS.	AFTER HEAVY RAINFALL EVENTS. REMOVE SEDIMENTS AS NEEDED.	PERMANENT.
SEED & MULCH	AFTER POND GRADING IS COMPLETED.	INSPECT & MAINTAIN AFTER HEAVY RAINS. REPLACE WASH-OUT AREAS IMMEDIATELY.	NO REMOVAL NECESSARY.
INLET PROTECTION	UPON INLET CONSTRUCTING	WHEN 1/3 CAPACITY OF BMP IS REACHED	AFTER TRIBUTARY AREAS ARE FULLY RESTORED

SITE ASSESSMENTS FOR GROUNDWATER OR SOIL CONTAMINATION

LAND HAS NOT BEEN DEVELOPED. THEREFORE, THERE IS NO PROBABLE CAUSE OF SOIL CONTAMINATION ON SITE.

SITE CONSTRAINTS

THE EXISTING CLAYEY SOILS MAY COLLECT WATER DURING TIMES OF INCLEMENT WEATHER OR SNOW MELT. WATER SHOULD BE REMOVED FROM WITHIN EXCAVATION DURING CONSTRUCTION. THE ON-SITE SOILS ARE CONSIDERED POTENTIALLY CORROSIVE. BURIED METALLIC UTILITIES SHOULD BE COATED OR PROTECTED.

LONG TERM MAINTENANCE & OPERATION OF PERMANENT STORMWATER MANAGEMENT

TERRACE COMPANIES IS RESPONSIBLE FOR THE LONG TERM OPERATION & MAINTENANCE OF THE PONDS LOCATED WITHIN THE PROPERTY. TERRACE COMPANIES PLANS TO ENTER INTO A MAINTENANCE AGREEMENT WITH THE CITY OF NORTHFIELD THAT IDENTIFIES THAT TERRACE COMPANIES IS RESPONSIBLE FOR ONGOING MAINTENANCE, AND HOW RESPONSIBILITY WILL BE TRANSFERRED TO OTHER AGENTS.

MINIMIZE SOIL COMPACTION & PRESERVE TOPSOIL

THE FOLLOWING ACTIONS CAN BE MADE TO MINIMIZE / PREVENT SOIL COMPACTION DURING CONSTRUCTION ACTIVITIES:

- REDUCE CONTACT AREA PRESSURE TO PROTECT TOPSOIL BY INCREASING THE CONTACT AREA OF THE WHEEL, USE WIDE TIRES OR FLOTATION TIRES, USE TIRE INFLATION PRESSURE CONTROL SYSTEM, USE CRAWLER TRACKS ON SENSITIVE SITES.
- REDUCE WHEEL LOAD
- REDUCE WHEEL SLIP
- REDUCE THE NUMBER ON PASSES

SOIL RIPPING / SUBSOILING NOTES

- SOIL RIPPING CAN BE CONDUCTED PRIOR TO OR AFTER TOPSOIL PLACEMENT
- SOIL SHOULD BE RIPPED TO A TARGET DEPTH OF 20 INCHES WITH AN EFFECTIVE DEPTH OF 15-18 INCHES
- SPACING OF THE SHANKS SHOULD BE 30 INCHES
- CALL FOR LOCATES PRIOR TO DEEP SOUL RIPPING.
- SOIL RIPPING IS TO BE USED WHERE TOP SOIL HAS BECOME OVER COMPACTED AND WITHIN INFILTRATION/FILTRATION AREAS.

DESIGN OF TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL BMPS

- THE EXPECTED FREQUENCY OF RAINFALL IS A 1-YEAR EVENT WITH AN INTENSITY OF 2.5 IN/HR FOR A 24 HOUR DURATION.
- EXPECTED FLOW FROM IMPERVIOUS SURFACE IS APPROXIMATELY 3.0 CFS AT IT'S PEAK WITH A VOLUME OF 0.15 ACRE FEET.
- RUNOFF WILL BE CAPTURED VIA STORM SEWER AND ROUTED TO THE PROPOSED FILTRATION BASIN.
- PEAK DISCHARGE RATES WITHIN SWALES AND AT FLARED END SECTIONS ARE TO BE BELOW 5.0 FEET PER SECOND TO PREVENT SCOURING.
- SOIL PARTICLE SIZES EXPECTED TO BE PRESENT ON SITE ARE CLAY SILT OR SMALLER.

PERMANENT STORMWATER MANAGEMENT

NURP RETENTION PONDS:

FIVE NURP STORMWATER RETENTION PONDS ARE LOCATED THROUGHOUT THE SITE TO CAPTURE AND TREAT STORMWATER RUNOFF. POND P2 IS LOCATED TO THE NORTHWEST OF THE CENTRAL WETLAND 2 AND WILL SERVE THE MAJORITY OF THE DESIGNATED SINGLE FAMILY RESIDENTIAL LOTS AND OUTLETS NEAR THE NORTH POINT OF WETLAND 2. POND P3 IS LOCATED ON THE EAST SIDE OF THE SITE ALONG CEDAR AVE AND WILL DISCHARGE VIA AN OUTLET CONTROL STRUCTURE TO THE CITY DITCH. FROM THERE, THE DITCH DISCHARGES THROUGH AN EXISTING 24" RCP TO THE EAST UNDER CEDAR AVE. POND P4 IS LOCATED DIRECTLY NORTH OF WETLAND 2 AND WILL SERVE APPROXIMATELY 1,350 FEET OF ROAD B AND PORTIONS OF THE RESIDENTIAL UNITS. THIS POND WILL DISCHARGE SOUTH TO EXISTING WETLAND 2 THROUGH AN OUTLET CONTROL STRUCTURE. POND P5 IS LOCATED ON THE SOUTH SIDE OF THE SITE, WEST OF WETLAND 2. POND P5 HAS BEEN SIZED TO HANDLE THE IMPERVIOUS SURFACE GENERATED BY THE WEST PROPOSED ITEMS. A 20FT WIDE FILTRATION BENCH AND UNDERDRAIN WILL BE INCLUDED WITHIN THE POND TO HANDLE THE VOLUME CONTROL. POND P7 IS ALSO LOCATED ON THE SOUTH SIDE OF THE SITE, BUT EAST OF WETLAND 2. THIS POND WILL SERVE THE MAJORITY OF THE EAST PROPOSED STRUCTURES. BOTH POND P5 & P7 WILL OUTLET INTO WETLAND 2. FROM THERE STORMWATER WILL BE CARRIED OFFSITE VIA AN EXISTING 36" RCP THAT RUNS UNDER NORTH AVE.

VOLUME REDUCTION INFEASIBILITY:

INFILTRATION PRACTICES WERE FIRST CONSIDERED FOR THIS PROJECT. PER SOIL BORING TAKEN, THE SITE SOILS TYPICALLY FOUND ARE CLASSIFIED AS HYDRAULIC SOIL TYPE D CONSISTING OF ORGANIC CLAY (OC) TO POORLY GRADED GRAVEL (GP). BELOW THE EXISTING FILL OR ALLUVIAL SOILS, THE BORINGS ENCOUNTERED LIMESTONE BEDROCK AT DEPTH FROM 4 TO 7 FEET AT AN ELEVATION OF APPROXIMATELY 924.0. BEDROCK IS WITHIN 3 FEET OF THE BOTTOM OF THE INFILTRATION BASIN, AND THEREFORE INFILTRATION PRACTICES HAVE BEEN DEEMED INFEASIBLE.

STORMWATER SYSTEM DESIGN:

ALL STORM SEWER HAS BEEN DESIGNED USING 10-YR RETURN FREQUENCY STORM INTENSITIS USED FOR DESIGN HAVE BEEN PULLED FROM THE IDF TABLES DEVELOPED BY MNDOT FOR THE DAKOTA COUNTY REGION. ALL PROPOSED STORMWATER PONDS HAVE BEEN DESIGNED TO CONTAIN THE 100-YR EVENT WITH A BROAD CRESTED RIP-RAP SPILLWAY PROVIDING AN EMERGENCY OVERFLOW FOR LARGER EVENTS. RATE CONTROL WAS ANALYZED FOR THE 2, 10, 100, AND 10-DAY SNOW MELT EVENTS. EXISTING RATES AND PROPOSED RATES WERE COMPARED FOR THE ENTIRE PROPERTY. THERE ARE FIVE DISCHARGE POINTS WHERE STORMWATER LEAVES THE SITE IN EXISTING CONDITIONS. THESE DISCHARGE POINTS HAVE BEEN ANALYZED IN EXISTING AND PROPOSED CONDITIONS. THE PROPOSED STORMWATER POND P5 WITH FILTRATION BENCH HAS BEEN SIZED TO ALLOW A DRAWDOWN TIME OF LESS THAN 48 HOURS ACCORDING TO THE WATERSHED DISTRICT DESIGN CRITERIA. BY USING A DESIGN INFILTRATION RATE OF 1.63 IN/HR, THE FILTRATION BENCH SURFACE AREA, AND VOLUME BELOW THE LOWEST OUTLET THE DRAWDOWN TIME HAS BEEN CALCULATED AS FOLLOWS.
 $DRAWDOWN\ TIME\ (HR) = \sqrt[3]{VVA(\frac{1}{2})} = 88079 / (1.63 \times 16295(\frac{1}{2})) = 39.8\ HR$
 PLEASE SEE THE STORMWATER REPORT FOR DESIGN CALCULATION, RESULTS, & ADDITIONAL INFORMATION.

TOTAL SUSPENDED SOLIDS (TSS) REMOVAL:

THE PROPOSED STORMWATER PONDS HAS BEEN SIZED AND DESIGNED PER THE DAKOTA COUNTY & CANNON RIVER WATERSHED DISTRICT TO ENSURE NO NET INCREASE IN TOTAL PHOSPHORUS (TP) OR TOTAL SUSPENDED SOLIDS (TSS) FROM PRE-DEVELOPMENT LAND COVER TO POST-DEVELOPMENT LAND COVER. PER THE MIDS REPORT FOUND IN THE APPENDIX OF THE STORMWATER MANAGEMENT PLAN FOUND IN THE CONSTRUCTION DOCS, THE STORMWATER SYSTEMS REMOVE 94% OF THE TOTAL ANNUAL TSS DIRECTED FROM THE WATERSHED AND 62% OF THE TOTAL PHOSPHORUS.

ENVIRONMENTAL IMPACTS

WETLANDS: WETLANDS WILL NOT BE IMPACTED WITH THIS PROJECT. ALL WETLANDS ON SITE WILL HAVE A 50FT BUFFER WITH DOUBLE SILT FENCE AROUND THE SETBACK. SEE BUFFER REQUIREMENTS FOR LIMITING CONSTRAINTS.

ENDANGERED SPECIES: ENDANGERED SPECIES WILL NOT BE IMPACTED WITH THIS PROJECT.

ARCHAEOLOGICAL REVIEW: THE SITE IS NOT ANTICIPATED TO BE AN ARCHAEOLOGICAL SITE.

NOTICE OF TERMINATION NOTES

- PRIOR TO SUBMITTING A NOTICE OF TERMINATION TO THE MPCA, THE PERMANENT STORMWATER TREATMENT SYSTEM HAS BEEN CONSTRUCTED, INSPECTED, AND IS OPERATING AS DESIGNED.
- SUBMIT NOTICE OF TERMINATION TO THE MPCA ONCE PERMIT TERMINATION CONDITION ARE MET.
- TRANSFER OF THE SWPPP AND SUBDIVISION COVERAGE REGISTRATION WILL NEED TO BE COMPLETED WITH THE RESIDENTIAL UNIT CONSTRUCTION.

ESTIMATED BMPS QUANTITIES

SEE SHEET C8 - OVERALL EROSION CONTROL PLAN FOR BMP QUANTITIES ESTIMATE.



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CEDAR MEADOWS DEVELOPMENT 1ST ADDITION

NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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

PRINT NAME: BRIAN J. FIELD, PE

SIGNATURE: **NOT FOR CONSTRUCTION**

DATE: 06/23/2023 LICENSE NO. 57224

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

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STORMWATER POLLUTION PREVENTION PLAN 2

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SERVICE UTILITY NOTES

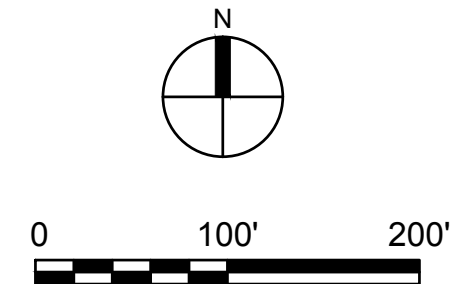
- ALL CONSTRUCTION SHALL COMPLY WITH RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER UNLESS DIRECTED OTHERWISE (SEE GEOTECHNICAL REPORT ON SEPTEMBER 14, 2021 BY KILO ENGINEERING).
- ALL CONSTRUCTION SHALL COMPLY WITH CITY OF NORTHFIELD ENGINEERING STANDARDS AND THE 2018 EDITION OF MNDOT SPECIFICATIONS, UNLESS DIRECTED OTHERWISE.
- ALL CONSTRUCTION SHALL COMPLY WITH APPLICABLE MUNICIPAL, WATERSHED DISTRICT, COUNTY, MPCA, DEPT. OF HEALTH, AND MNDOT PERMITS. VERIFY RECEIPT OF ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
- EXISTING TOPOGRAPHIC AND UTILITY INFORMATION PROVIDED BY THE OWNER ON A SURVEY PREPARED BY ANDERSON ENGINEERING. BE ADVISED THAT THE LOCATION AND TYPE OF EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE INFORMATION IS NOT WARRANTED TO BE ACCURATE OR COMPLETE. THE CONTRACTOR, IN COOPERATION WITH THE APPROPRIATE UTILITY COMPANY OR MUNICIPALITY, IS RESPONSIBLE FOR VERIFYING THE LOCATION, SIZE, AND DEPTH OF ALL UNDERGROUND UTILITIES.
- WATER LINES ARE REQUIRED TO BE INSTALLED AT 8 FEET MINIMUM DEPTH OF COVER AND PROVIDE MINIMUM 10' HORIZONTAL AND 18" VERTICAL SEPARATION OF ALL WATERMAIN CROSSINGS FROM STORM OR SANITARY SEWER. WATERMAIN TO BE INSULATED PER C.E.A.M. SPECIFICATIONS, WHERE COVER DEPTHS CANNOT BE ACHIEVED. CONTRACTOR SHALL CONTACT THE ENGINEER IF THERE ARE AREAS WHERE MINIMUM COVER DEPTH CANNOT BE MET.
- WATER MAIN MATERIALS SHALL BE DIP. CONTRACTOR SHALL VERIFY EXISTING SERVICE SIZE AND MATERIALS PRIOR TO CONSTRUCTION. ALL INSTALLED PIPE WILL REQUIRE TESTING PER CITY AND STATE REQUIREMENTS. THIS WILL INCLUDE, AT A MINIMUM, CONDUCTIVITY AND PRESSURE TESTING, AS WELL AS TESTING FOR BACTERIA AND PROPER DISINFECTION. FOLLOW C.E.A.M. STANDARD SPECIFICATIONS UNLESS NOTED OTHERWISE. INSTALL TRACER WIRE, JOINT RESTRAINTS AND THRUST BLOCKING ON ALL WATERMAIN PIPE AND FITTING, PER CITY OF NORTHFIELD STANDARDS.
- SANITARY SEWER PIPE MATERIALS SHALL BE PVC SDR 26 UNLESS OTHERWISE NOTED. PIPE SHALL BE INSULATED PER CITY AND C.E.A.M. STANDARDS WHERE 7.5 FOOT COVER DEPTHS ARE NOT ACHIEVED. THIS APPLIES TO ALL PROPOSED NEW PIPE FOR THIS PROJECT. ALL SANITARY SEWER PIPE WILL REQUIRE TESTING PER CITY AND C.E.A.M. STANDARDS. THIS WILL INCLUDE, AT A MINIMUM, LEAKAGE AND ALIGNMENT TESTING.
- ALL JOINTS AND CONNECTIONS IN THE STORM SEWER SYSTEM SHALL BE WATER TIGHT. APPROVED RESILIENT RUBBER JOINTS MUST BE USED TO MAKE WATER TIGHT CONNECTIONS TO MANHOLES AND CATCH BASINS.

KEY NOTES

- CONNECT TO EXISTING SANITARY MANHOLE VIA 8" PVC WITH OUTSIDE DROP MANHOLE. CONSTRUCT NEW SANITARY MANHOLE ON EXISTING 15" PVC.
- MAINTAIN 10' MINIMUM HORIZONTAL SEPARATION BETWEEN SANITARY AND WATERMAIN.
- INSTALL 6" LEAD, HYDRANT, 8"x6" TEE, & 6" GATE VALVE
- INSTALL 6" LEAD, HYDRANT, 12"x6" TEE, & 6" GATE VALVE
- RESTORE CITY PAVEMENT IN-KIND WITHIN NORTH AVENUE.

LEGEND

- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM INLETS
- PROPOSED FES



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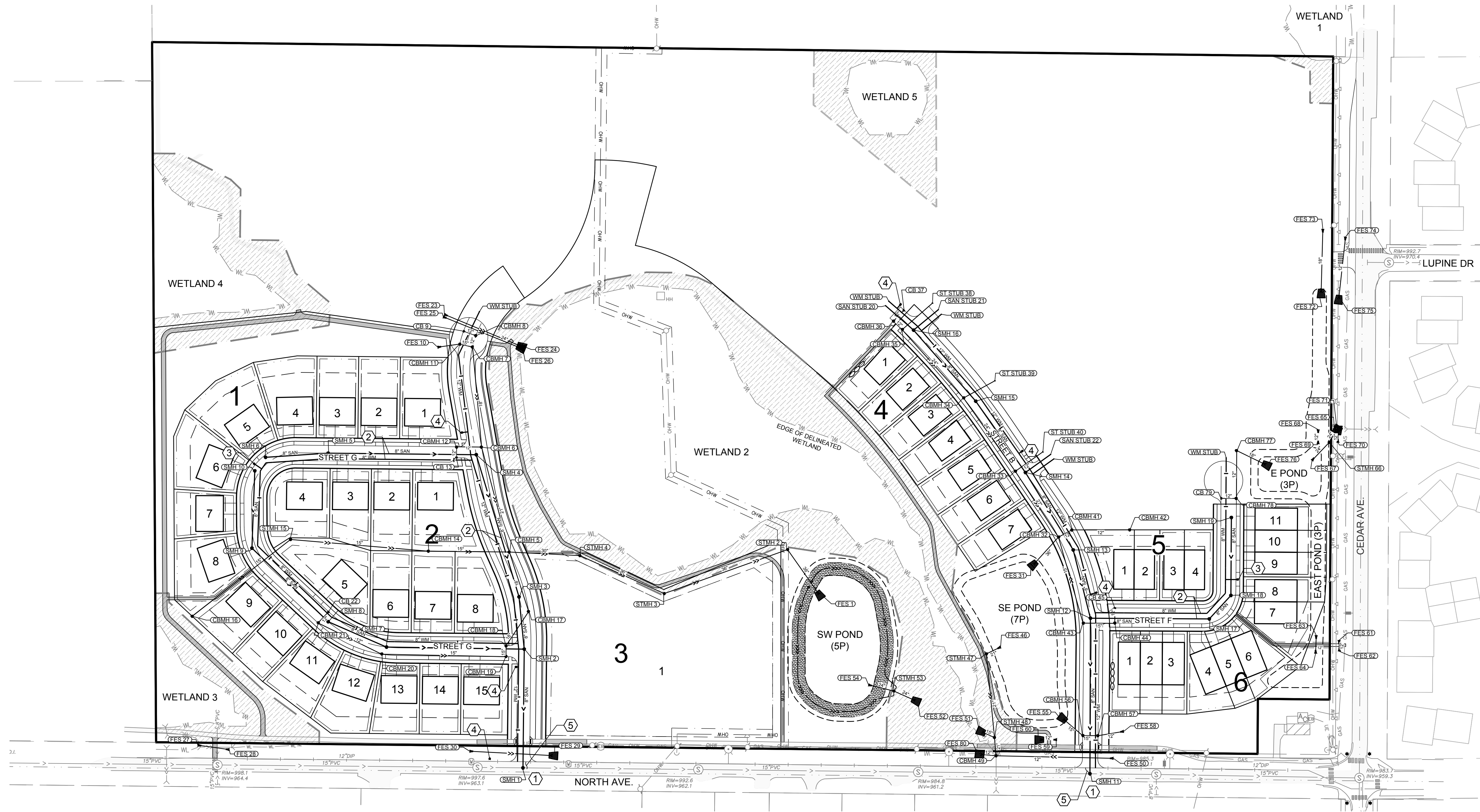
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OVERALL UTILITY PLAN

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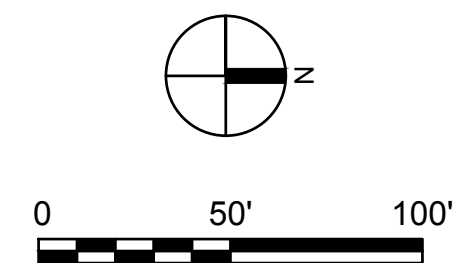
STREET A - SANITARY & WATERMAIN PLAN & PROFILE

DRAWING NO.

C12

PAGE: 12 OF 26

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LEGEND

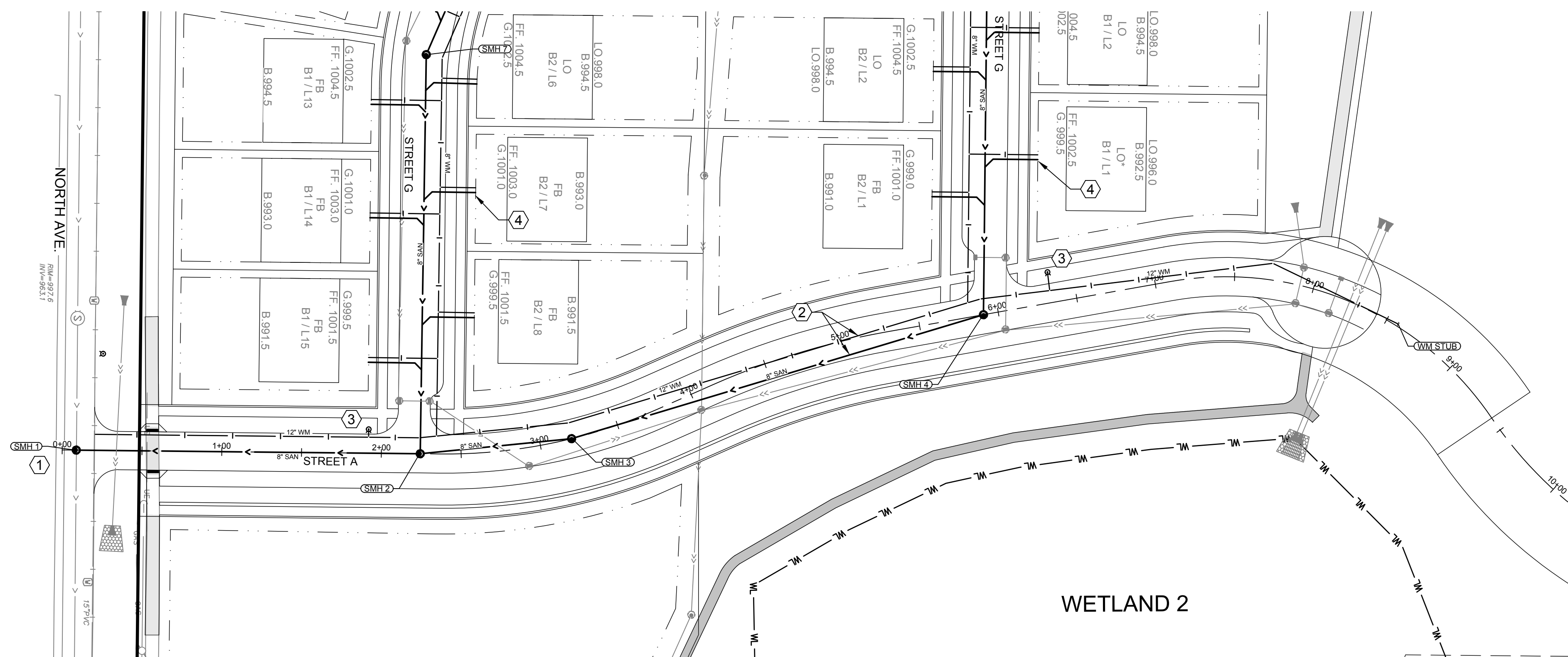
	PROPOSED DRAINAGE & UTILITY EASEMENT
	PROPOSED WATERMAIN
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	PROPOSED HYDRANT
	PROPOSED SANITARY MANHOLE
	PROPOSED STORM STRUCTURES
	FLARED END SECTION

KEY NOTES

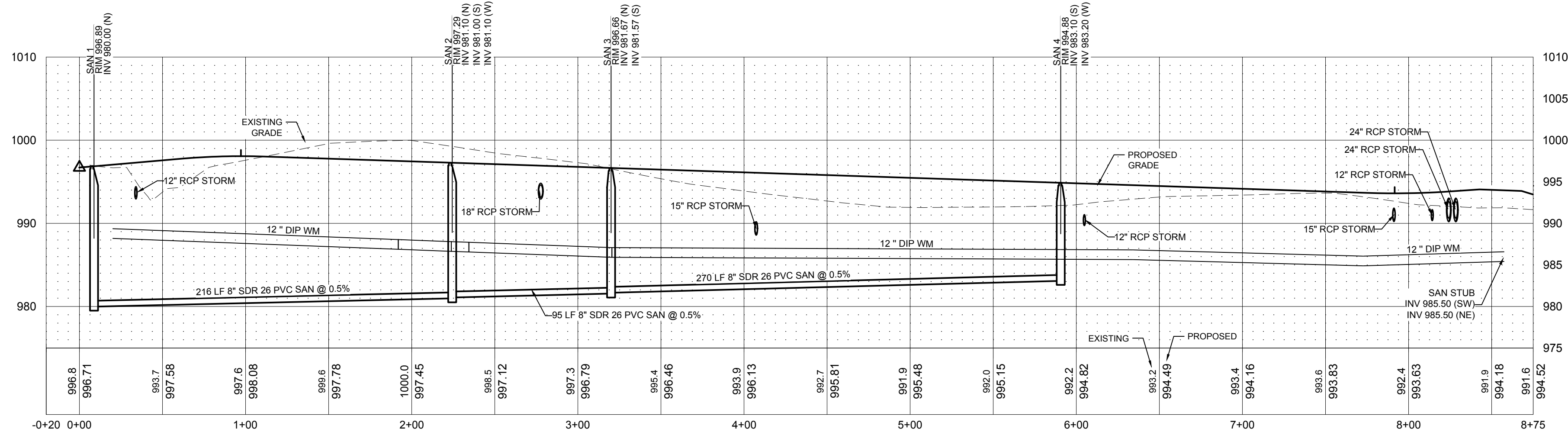
- CONNECT TO EXISTING SANITARY MANHOLE VIA 8" PVC WITH OUTSIDE DROP MANHOLE. CONSTRUCT NEW SANITARY MANHOLE ON EXISTING 15" PVC.
- MAINTAIN 10' MINIMUM HORIZONTAL SEPARATION BETWEEN SANITARY AND WATERMAIN. (TYP.)
- INSTALL 6" LEAD, HYDRANT, 12"x6" TEE, & 6" GATE VALVE.
- SEE SHEET C15 FOR SANITARY AND WATER SERVICE INFORMATION.

SANITARY STRUCTURE SCHEDULE

STRUCTURE NUMBER	SIZE	CASTING (NEENAH OR APPROVED EQUAL)
SMH 1	48" ROUND	R-1642-D, SOLID, "SANITARY"
SMH 2	48" ROUND	R-1642-D, SOLID, "SANITARY"
SMH 3	48" ROUND	R-1642-D, SOLID, "SANITARY"
SMH 4	48" ROUND	R-1642-D, SOLID, "SANITARY"



1 PROFILE VIEW - STREET A - SANITARY SEWER & WATERMAIN
SCALE: 1" = 50'



2 PROFILE VIEW - STREET A - SANITARY SEWER & WATERMAIN
SCALE: HORIZONTAL 1" = 50' VERTICAL 1" = 10'

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NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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PRINT NAME: BRIAN J. FIELD, PE

SIGNATURE: **NOT FOR CONSTRUCTION**

DATE: 06/23/2023 LICENSE NO. 57224

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

DESIGNED:	DRAWN:	CHECKED BY:
BJF	JPD	BJF

DRAWING TITLE

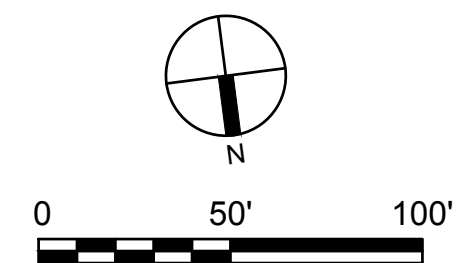
STREET G - SANITARY & WATERMAIN PLAN & PROFILE

DRAWING NO.

C15

PAGE: 15 OF 26

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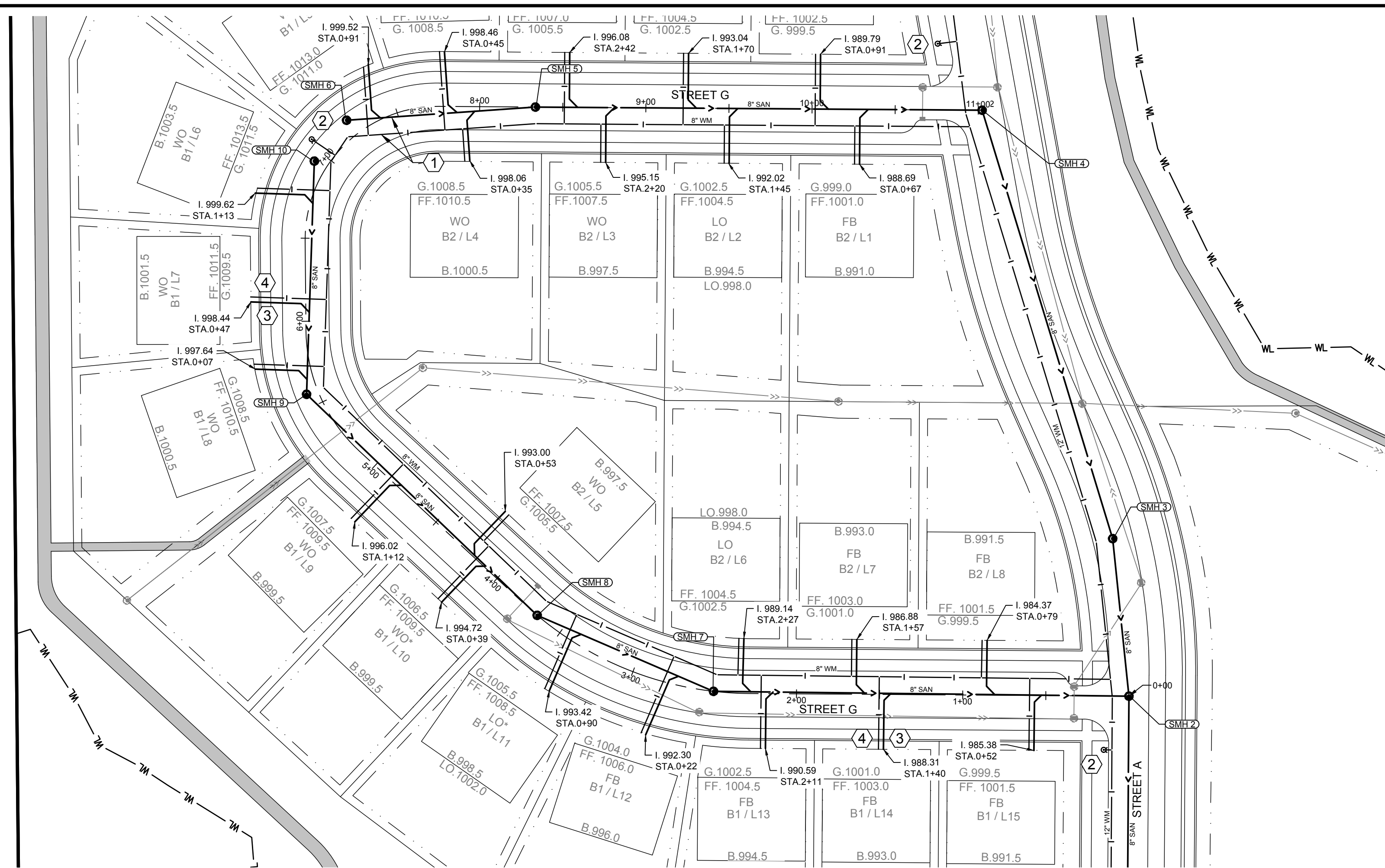
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- PROPOSED DRAINAGE & UTILITY EASEMENT
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM STRUCTURES
- FLARED END SECTION

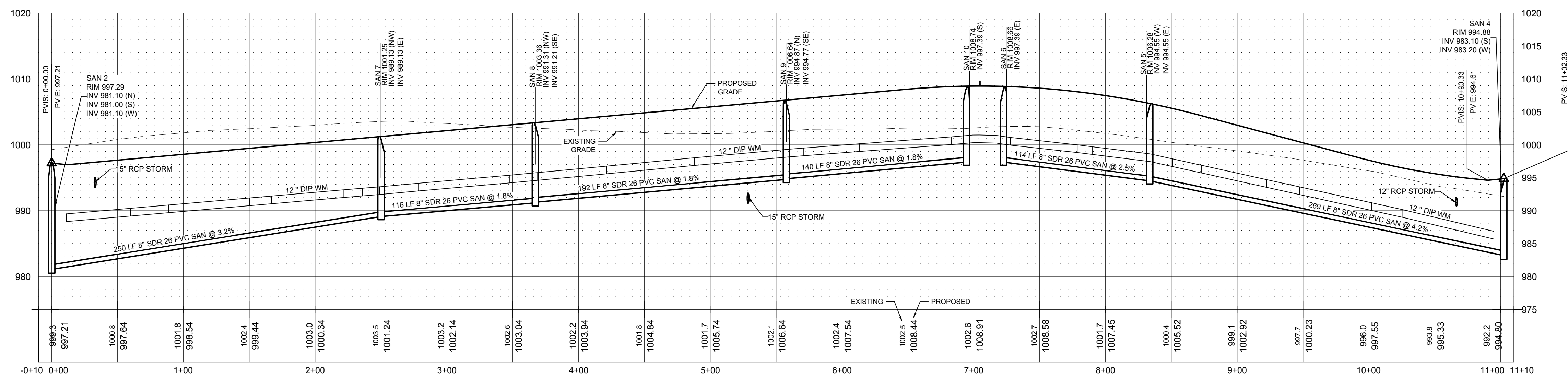
KEY NOTES

- ① MAINTAIN 10' MINIMUM HORIZONTAL SEPARATION BETWEEN SANITARY AND WATERMAIN. (TYP.)
- ② INSTALL 6" LEAD, HYDRANT, 12"x6" TEE, & 6" GATE VALVE
- ③ INSTALL 4" SDR 26 PVC SANITARY SEWER SERVICE @ 2.0% MIN SLOPE TO R.O.W. (TYP.)
- ④ INSTALL 1" TYPE L COPPER WATER SERVICE TO R.O.W. (TYP.)

SANITARY STRUCTURE SCHEDULE		
STRUCTURE NUMBER	SIZE	CASTING (NEENAH OR APPROVED EQUAL)
SMH 5	48" ROUND	R-1642-D, SOLID, "SANITARY"
SMH 6	48" ROUND	R-1642-D, SOLID, "SANITARY"
SMH 7	48" ROUND	R-1642-D, SOLID, "SANITARY"
SMH 8	48" ROUND	R-1642-D, SOLID, "SANITARY"
SMH 9	48" ROUND	R-1642-D, SOLID, "SANITARY"
SMH 10	48" ROUND	R-1642-D, SOLID, "SANITARY"



① PROFILE VIEW - STREET G - SANITARY SEWER & WATERMAIN
 SCALE: 1" = 50'



② PROFILE VIEW - STREET G - SANITARY SEWER & WATERMAIN
 SCALE: HORIZONTAL 1" = 50' VERTICAL 1" = 10'

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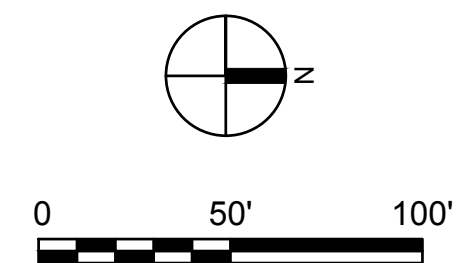
STREET A - STORM SEWER AND STREET PLAN & PROFILE

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PAGE: 16 OF 26

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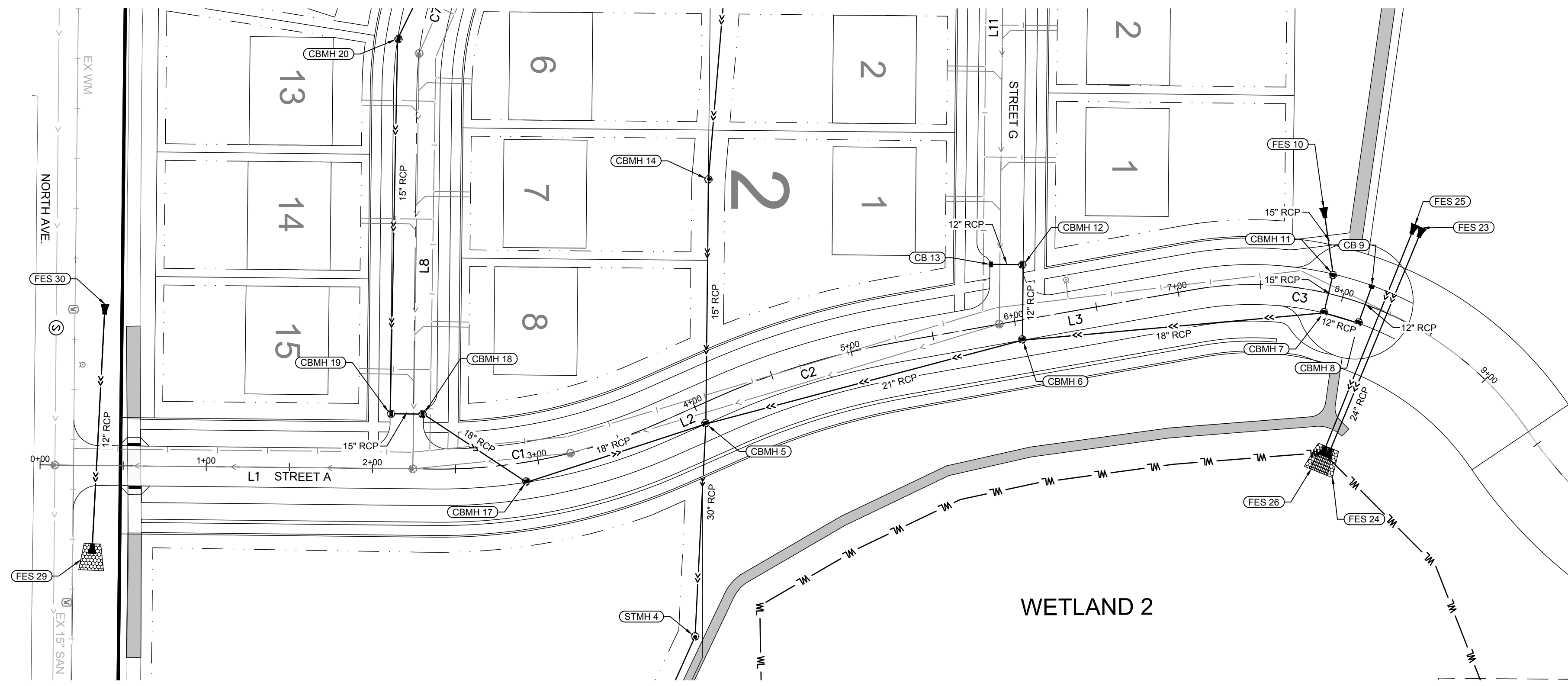
LEGEND

- PROPOSED DRAINAGE & UTILITY EASEMENT
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM STRUCTURES
- FLARED END SECTION

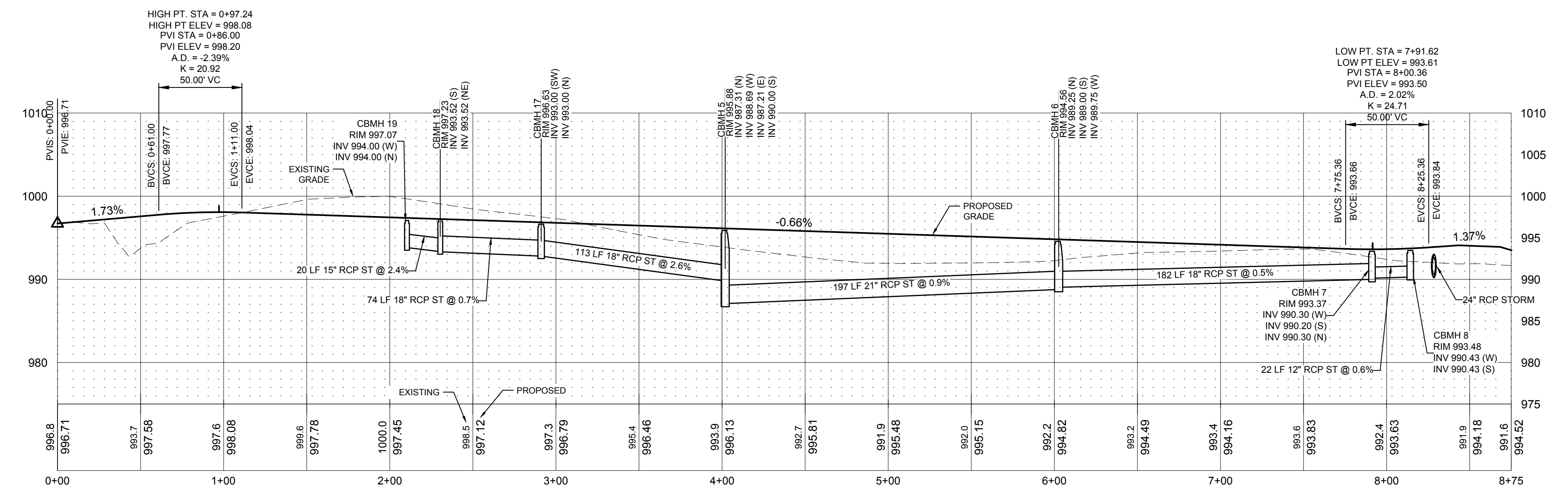
LINE TABLE		
LINE #	LENGTH (FT)	DIRECTION
L1	217.095	S00° 36' 20.00"W
L2	38.334	S23° 50' 18.66"E
L3	180.997	S10° 03' 20.90"E

CURVE TABLE			
CURVE #	LENGTH (FT)	RADIUS	DELTA
C1	139.508	327.000	024.444
C2	113.301	471.000	013.783
C3	130.453	201.000	037.186

STORM STRUCTURE SCHEDULE		
STRUCTURE NUMBER	SIZE	CASTING (NEENAH OR APPROVED EQUAL)
STMH 4	48" ROUND	R-1642-D, SOLID. "STORM"
CBMH 5	60" ROUND	R-3067-V
CBMH 6	48" ROUND	R-3067-V
CBMH 7	48" ROUND	R-3501-R
CBMH 8	48" ROUND	R-3501-R
CB 9	2' X 3' RECT	R-3501-R
FES 10	15" FLARED	N/A
CBMH 11	48" ROUND	R-3501-R
CBMH 17	48" ROUND	R-3067-V
FES 23	24" FLARED	N/A
FES 24	24" FLARED	N/A
FES 25	24" FLARED	N/A
FES 26	24" FLARED	N/A
FES 29	12" FLARED	N/A
FES 30	12" FLARED	N/A



1 PLAN VIEW - STREET A & STORM SEWER
SCALE: 1" = 50'



2 PROFILE VIEW - STREET A & STORM SEWER
SCALE: HORIZONTAL 1" = 50' VERTICAL 1" = 10'

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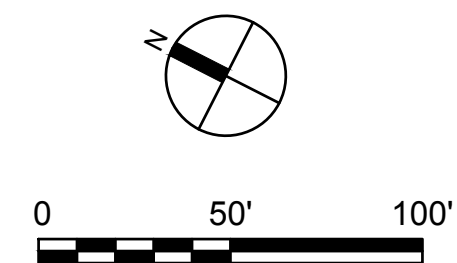
STREET B - STORM SEWER AND WATERMAIN PLAN & PROFILE

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PAGE: 17 OF 26

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1/5/2024	16826



LEGEND

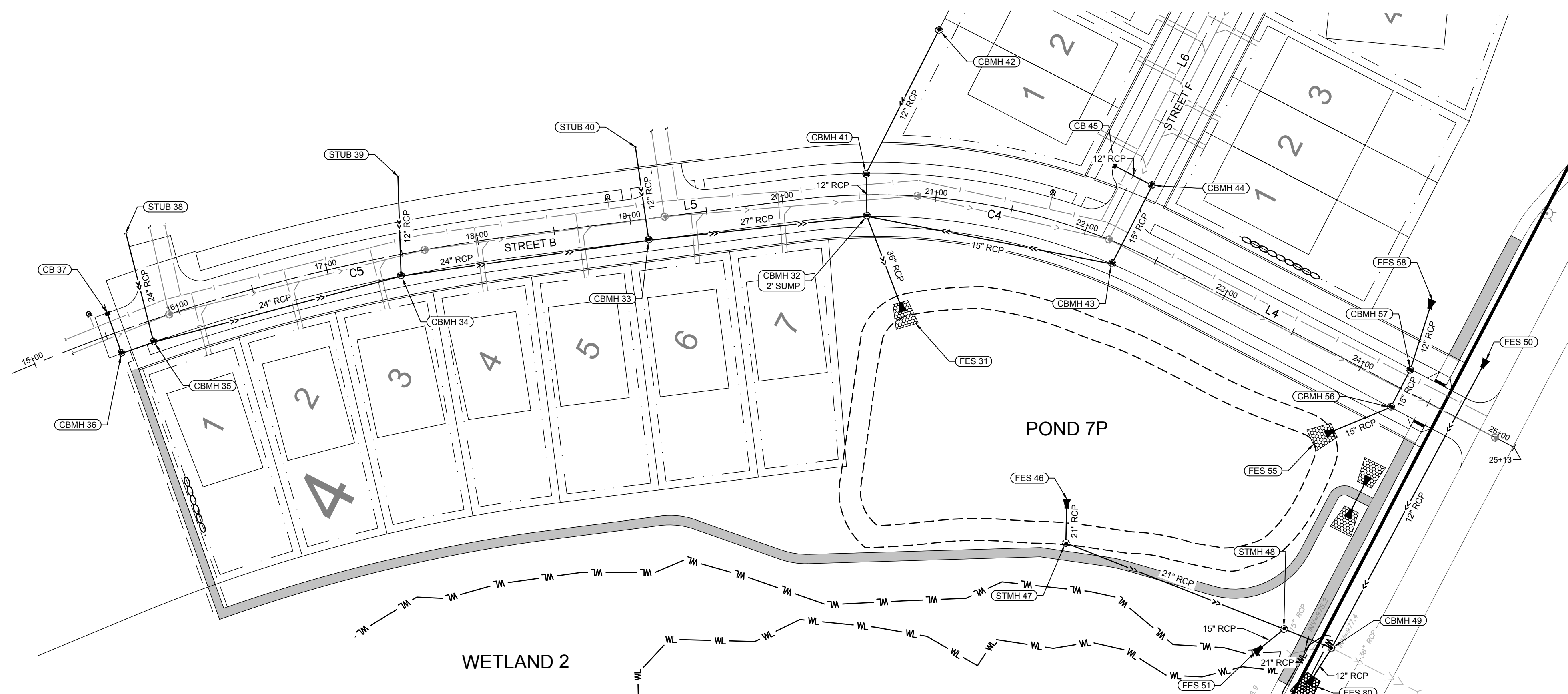
- PROPOSED DRAINAGE & UTILITY EASEMENT
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM STRUCTURES
- FLARED END SECTION

LINE TABLE		
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L4	229.836	S00° 36' 20.00"W
L5	179.662	S34° 14' 59.07"E

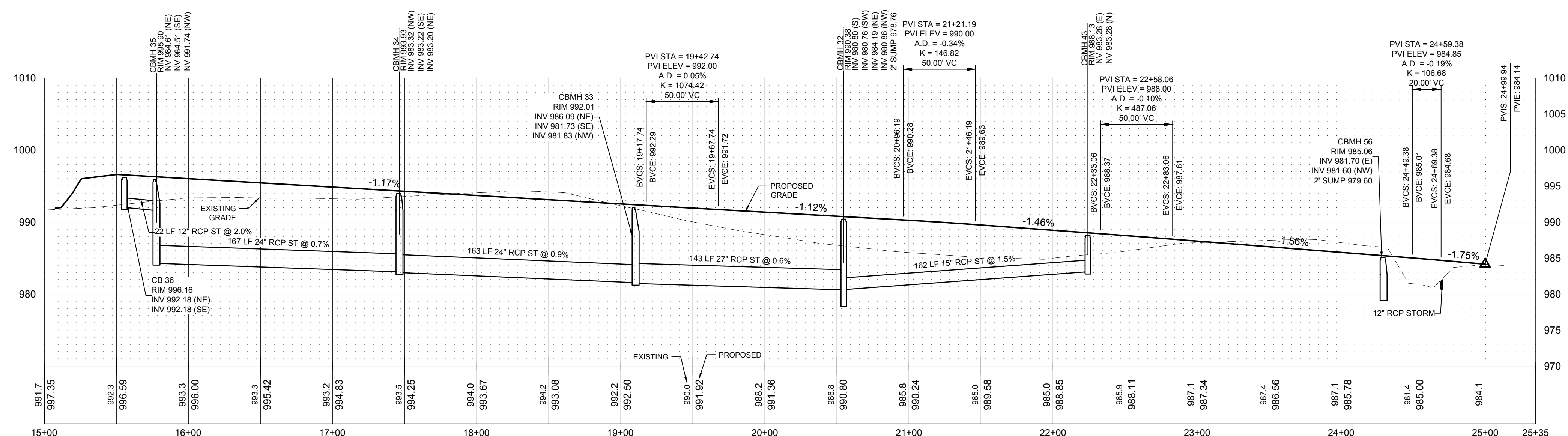
CURVE TABLE			
CURVE #	LENGTH (FT)	RADIUS	DELTA
C4	248.811	409.000	034.855
C5	282.433	1247.000	012.977

STORM STRUCTURE SCHEDULE

STRUCTURE NUMBER	SIZE	CASTING (NEENAH OR APPROVED EQUAL)
FES 31	36" FLARED	N/A
CBMH 32	60" ROUND	R-3067-V
CBMH 33	60" ROUND	R-3067-V
CBMH 34	48" ROUND	R-3067-V
CBMH 35	48" ROUND	R-3067-V
CBMH 36	60" ROUND	R-3067-V
CB 37	2' X 3' RECT	R-3067-V
CBMH 41	48" ROUND	R-3067-V
CBMH 42	48" ROUND	R-4342, DITCH GRATE
CBMH 43	48" ROUND	R-3067-V
FES 46	21" FLARED	N/A
STMH 47	48" ROUND	R-1642-D, SOLID, "STORM"
STMH 48	48" ROUND	R-1642-D, SOLID, "STORM"
CBMH 49	48" ROUND	R-4342, DITCH GRATE
FES 50	12" FLARED	N/A
FES 51	21" FLARED	N/A
FES 55	15" FLARED	N/A
CBMH 56	48" ROUND	R-3067-V
CBMH 57	48" ROUND	R-3067-V
FES 58	12" FLARED	N/A
FES 59	12" FLARED	N/A
FES 60	12" FLARED	N/A
FES 80	12" FLARED	N/A



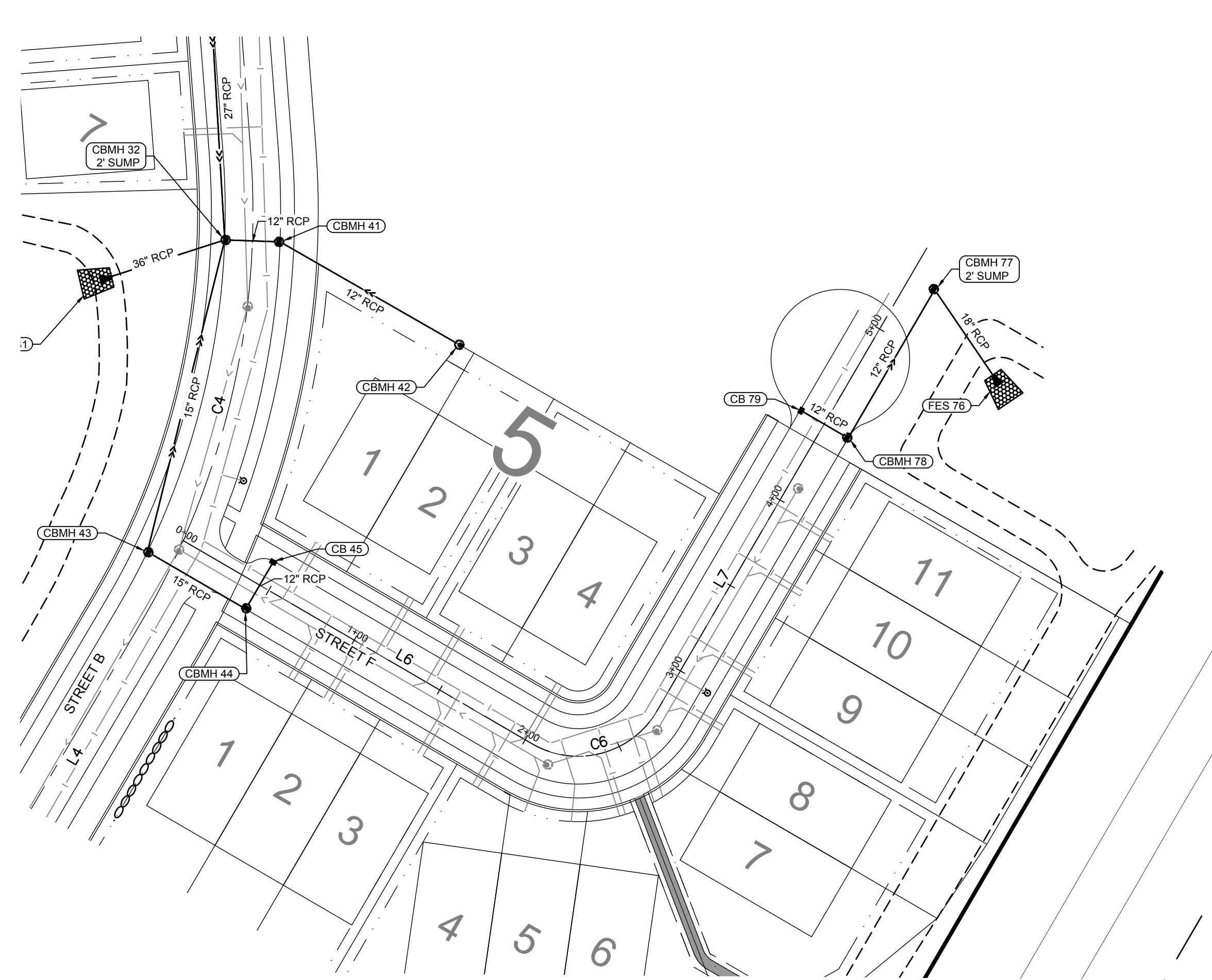
1 PLAN VIEW - STREET B & STORM SEWER
SCALE: 1" = 50'



2 PROFILE VIEW - STREET B & STORM SEWER
SCALE: HORIZONTAL 1" = 50' VERTICAL 1" = 10'

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1 PLAN VIEW - STREET F & STORM SEWER
 SCALE: 1" = 50'

LEGEND

- PROPOSED DRAINAGE & UTILITY EASEMENT
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM STRUCTURES
- ▲ FLARED END SECTION

LINE TABLE

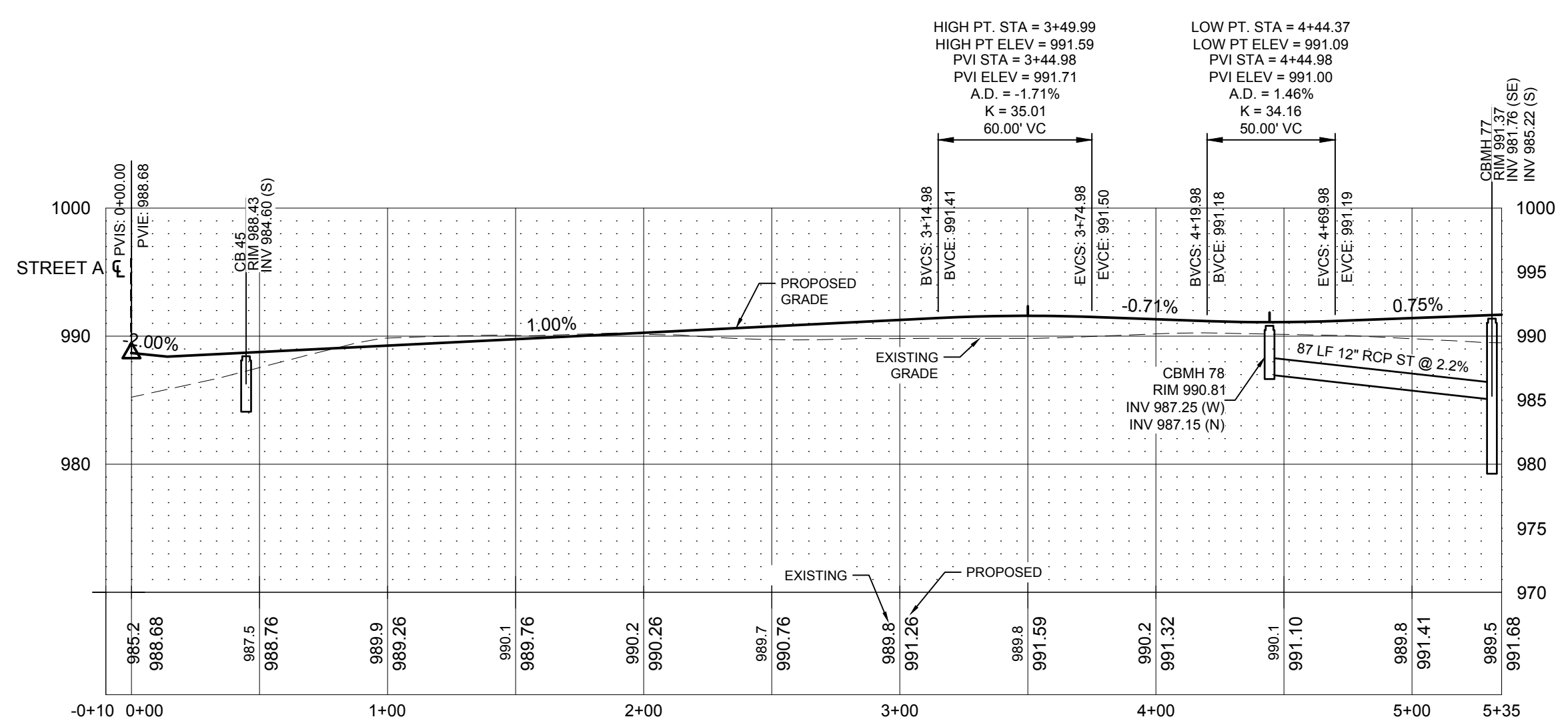
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L6	204.229	S89° 39' 54.99"E
L7	226.455	N00° 20' 05.15"E

CURVE TABLE

CURVE #	LENGTH (FT)	RADIUS	DELTA
C6	72.257	46.000	090.000

STORM STRUCTURE SCHEDULE

STRUCTURE NUMBER	SIZE	CASTING (NEENAH OR APPROVED EQUAL)
CBMH 44	48" ROUND	R-3067-V
CB 45	2' X 3' RECT	R-3067-V
FES 66	18" FLARED	N/A
CBMH 77	48" ROUND	R-1642-D, SOLID, "STORM"
CBMH 78	48" ROUND	R-3067-V
CB 79	2' X 3' RECT	R-3067-V



2 PROFILE VIEW - STREET F & STORM SEWER
 SCALE: HORIZONTAL 1" = 50' VERTICAL 1" = 10'

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 NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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STREET F - STORM SEWER AND WATERMAIN PLAN & PROFILE

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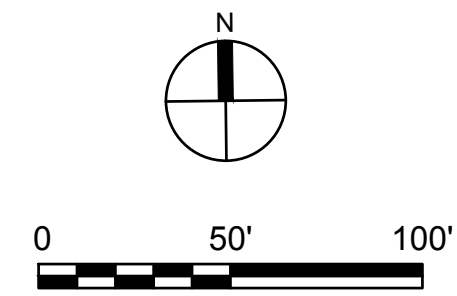
STREET G - STORM SEWER AND WATERMAIN PLAN & PROFILE

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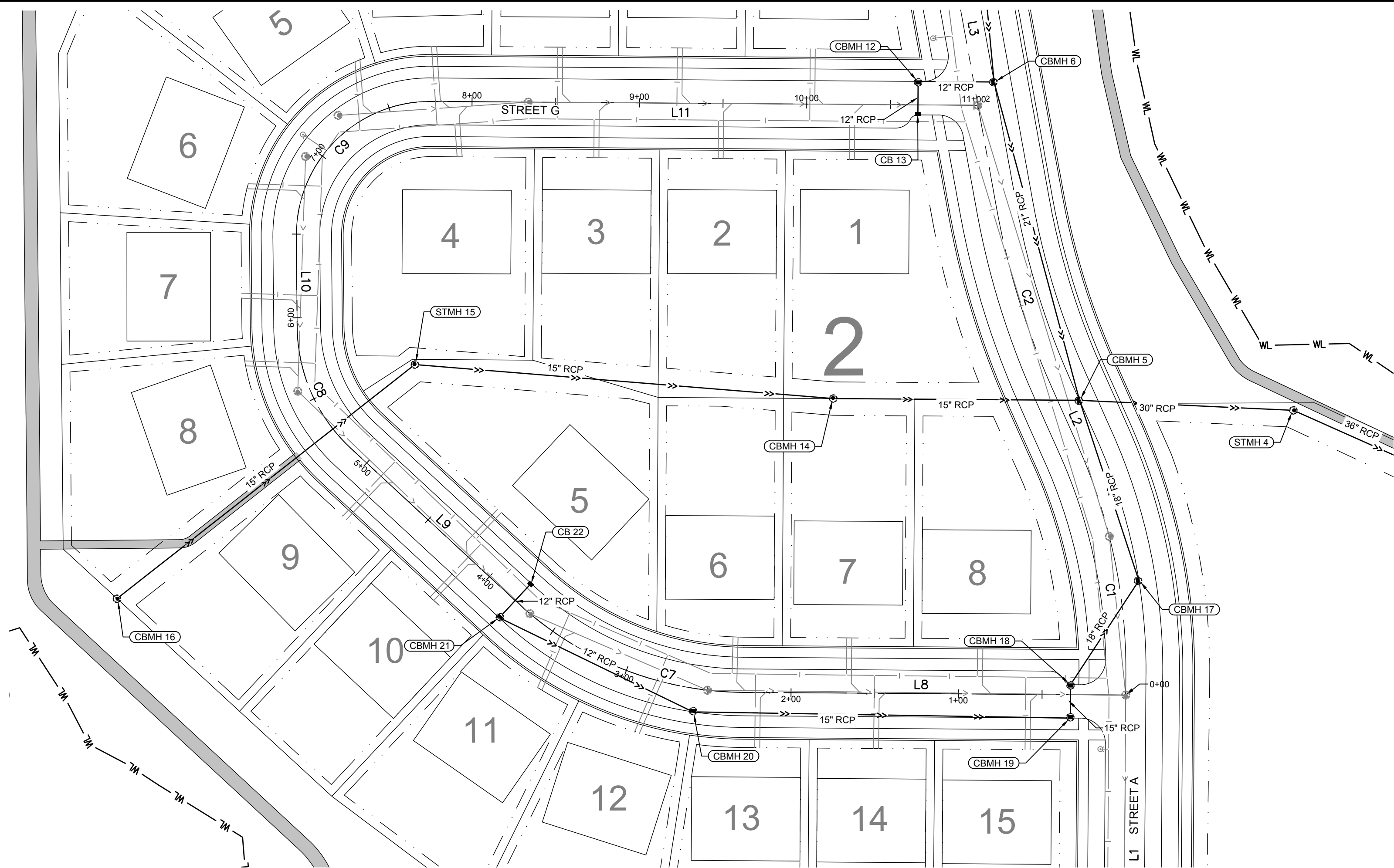
LEGEND

- PROPOSED DRAINAGE & UTILITY EASEMENT
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- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM STRUCTURES
- FLARED END SECTION

LINE #	LENGTH (FT)	DIRECTION
L8	228.605	S89° 23' 40.00"E
L9	136.299	S46° 58' 33.40"E
L10	54.216	S00° 19' 28.00"E
L11	326.757	N89° 23' 40.00"W

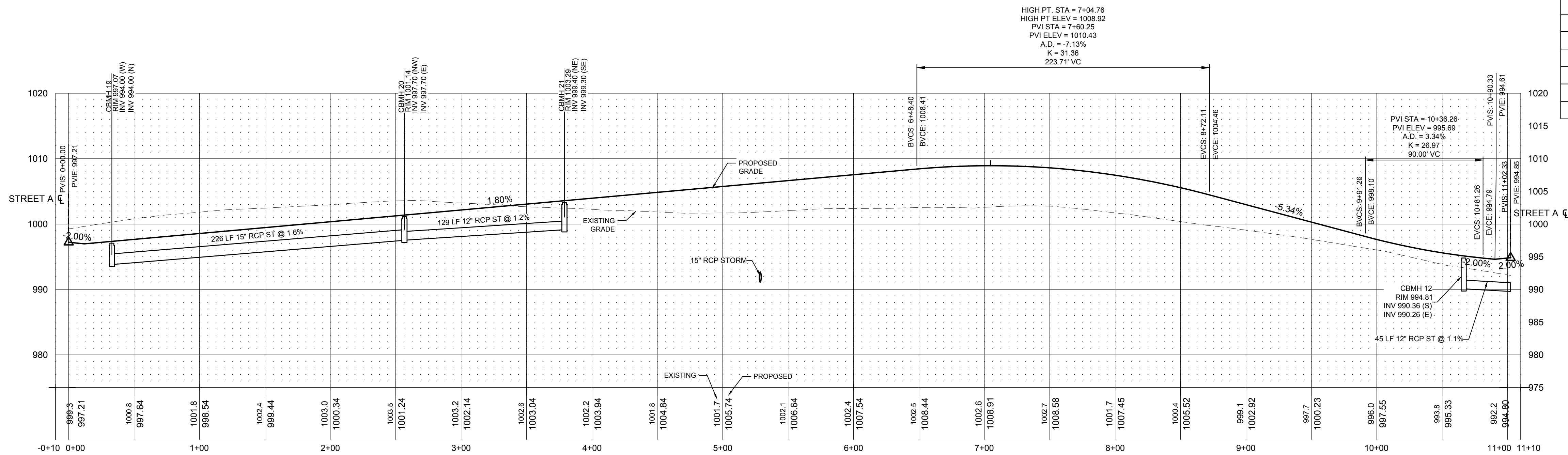
CURVE #	LENGTH (FT)	RADIUS	DELTA
C7	148.068	200.000	042.419
C8	81.422	100.000	046.651
C9	126.962	80.000	090.930

STRUCTURE NUMBER	SIZE	CASTING (NEENAH OR APPROVED EQUAL)
CBMH 12	48" ROUND	R-3067-V
CB 13	2' X 3' RECT	R-3067-V
CBMH 14	48" ROUND	R-4342, DITCH GRATE
STMH 15	48" ROUND	R-1642-D, SOLID, "STORM"
CBMH 16	48" ROUND	R-4342, DITCH GRATE
CBMH 18	48" ROUND	R-3067-V
CBMH 19	48" ROUND	R-3067-V
CBMH 20	48" ROUND	R-3067-V
CBMH 21	48" ROUND	R-3067-V
CB 22	2' X 3' RECT	R-3067-V



1 PLAN VIEW - STREET G & STORM SEWER
SCALE: 1" = 50'

HIGH PT. STA = 7+04.76
HIGH PT. ELEV = 1008.92
PVI STA = 7+60.25
PVI ELEV = 1010.43
A.D. = -7.13%
K = 31.36
223.71' VC



2 PROFILE VIEW - STREET G & STORM SEWER
SCALE: HORIZONTAL 1" = 50' VERTICAL 1" = 10'

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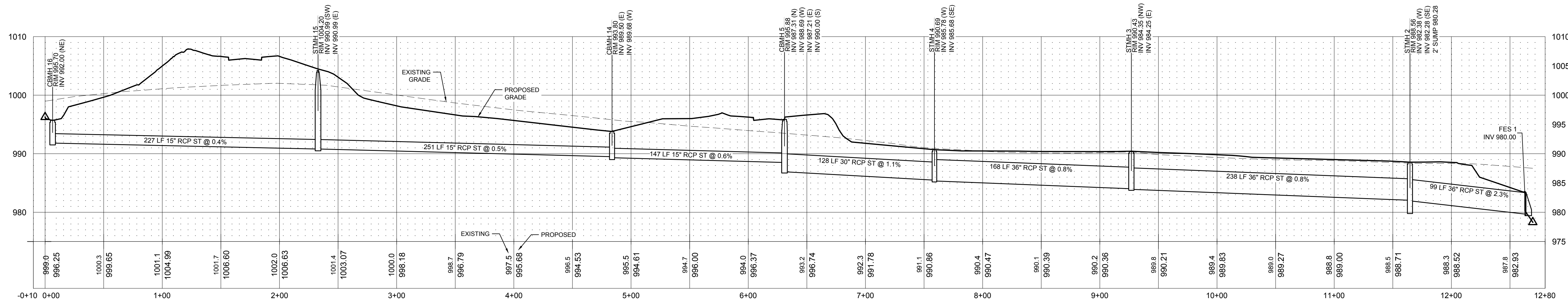
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STORM PROFILES

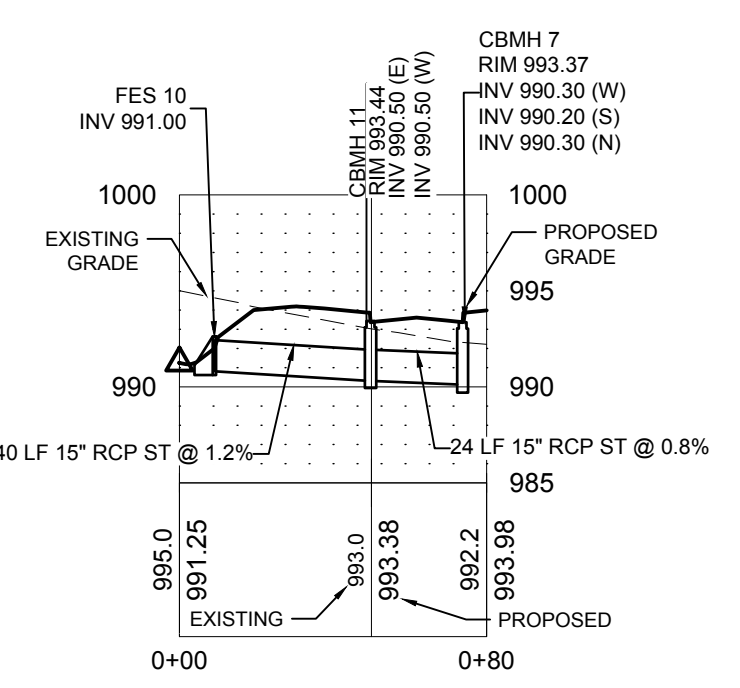
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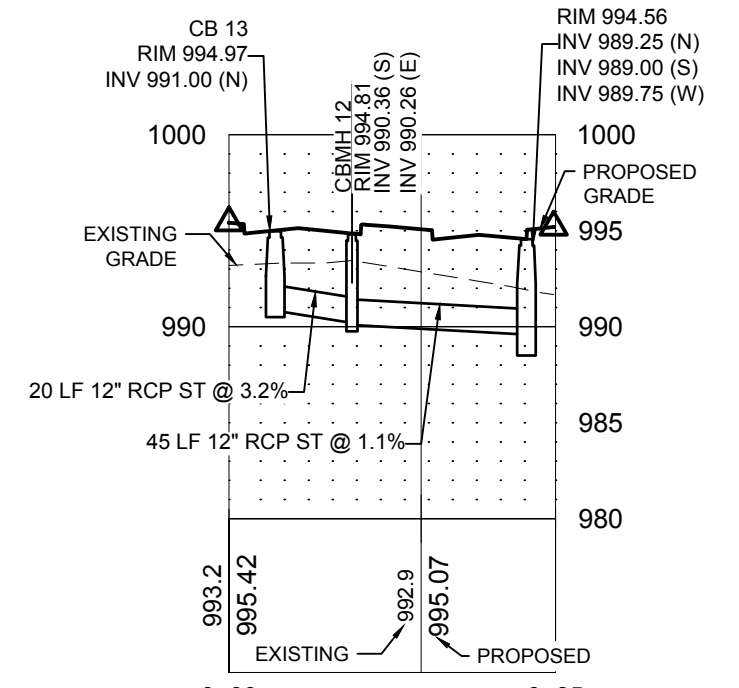
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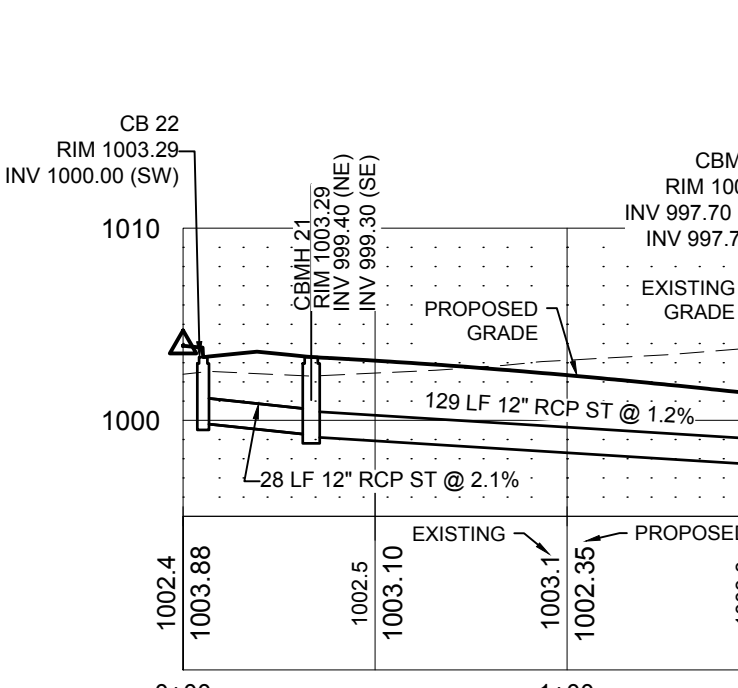
1 PROFILE VIEW - FES-1 TO CBMH-16
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



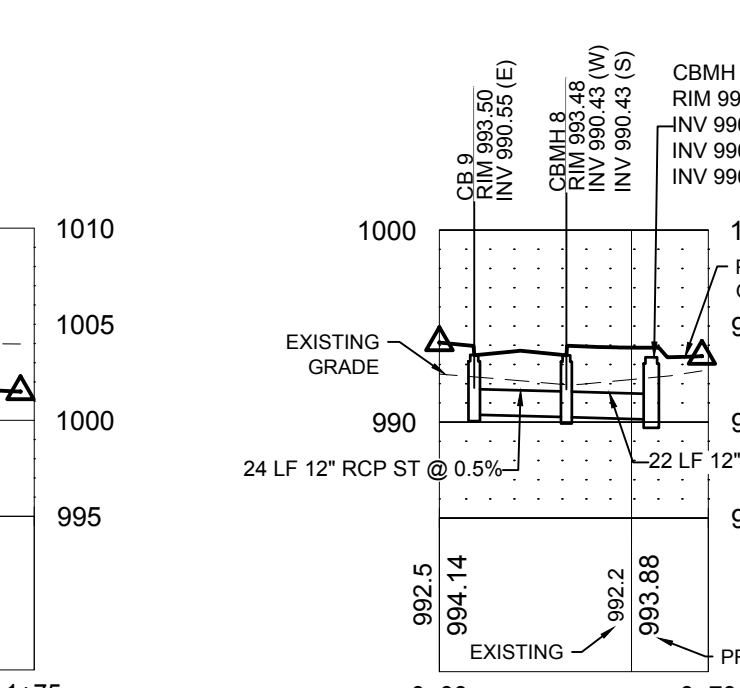
2 PROFILE VIEW - FES-10 TO CBMH-7
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



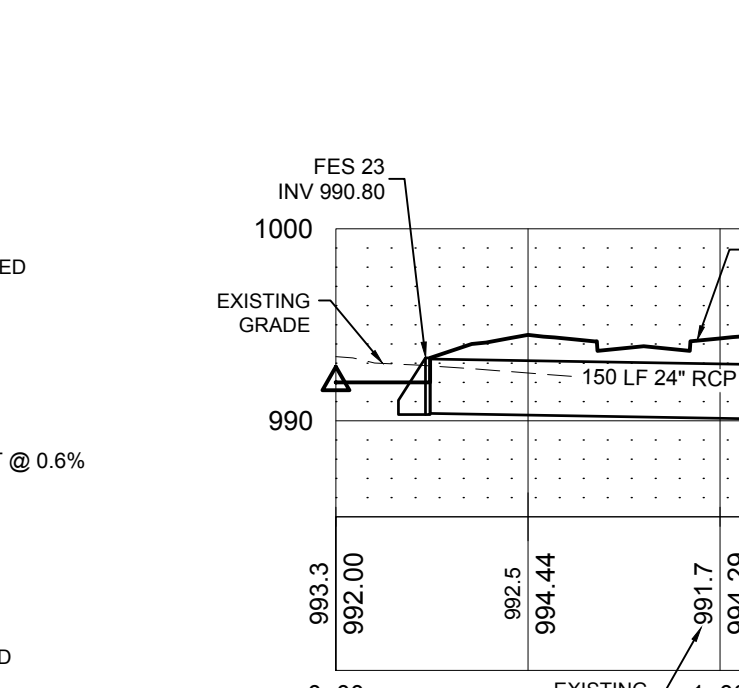
3 PROFILE VIEW - CB-13 TO CBMH-6
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



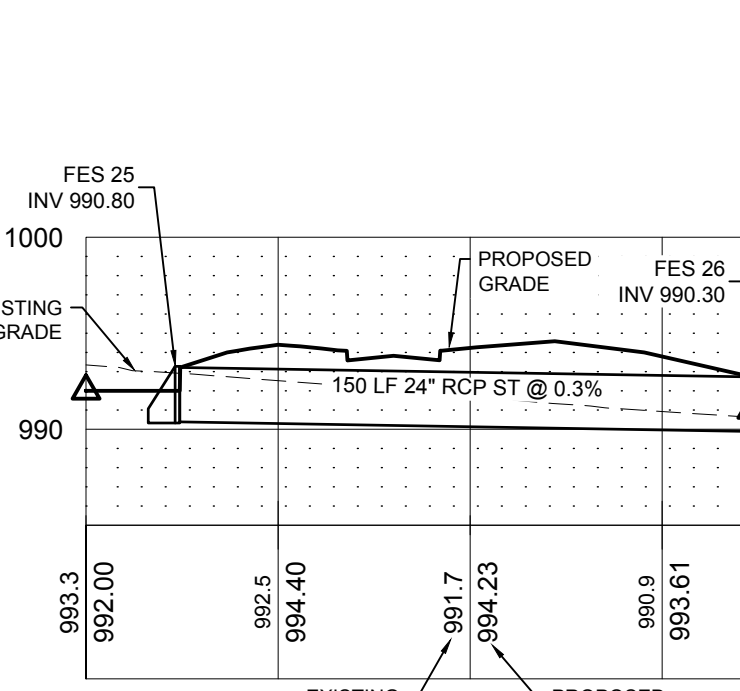
4 PROFILE VIEW - CB-22 TO CBMH-20
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



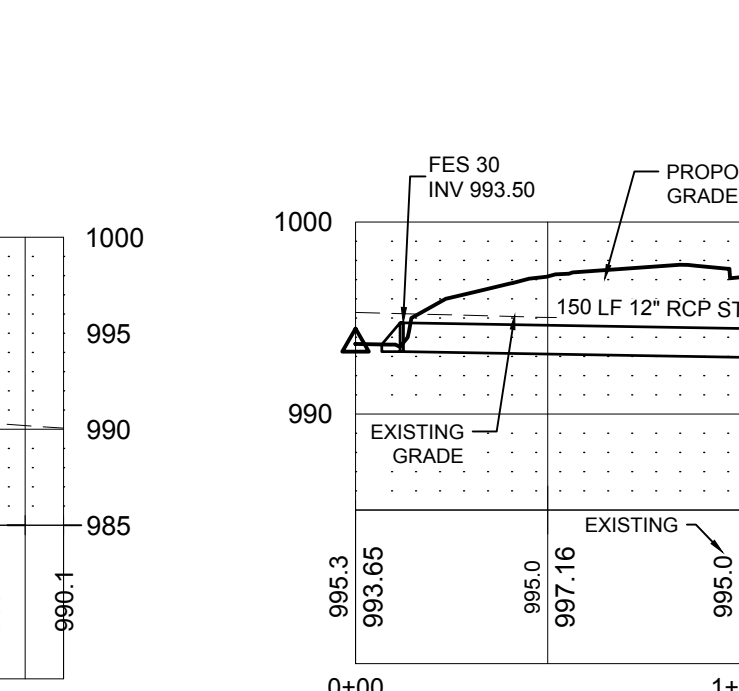
5 PROFILE VIEW - CB-9 TO CBMH-7
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



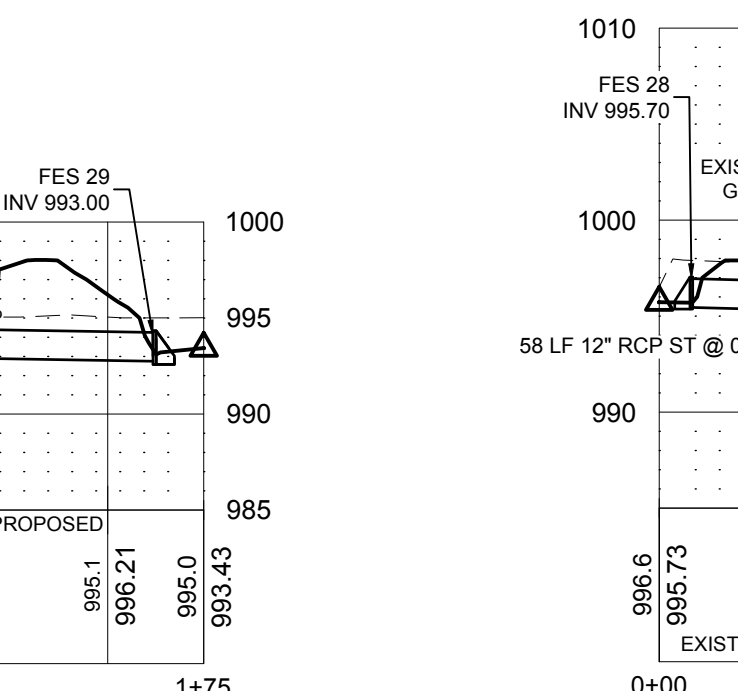
6 PROFILE VIEW - FES-23 TO FES-24
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



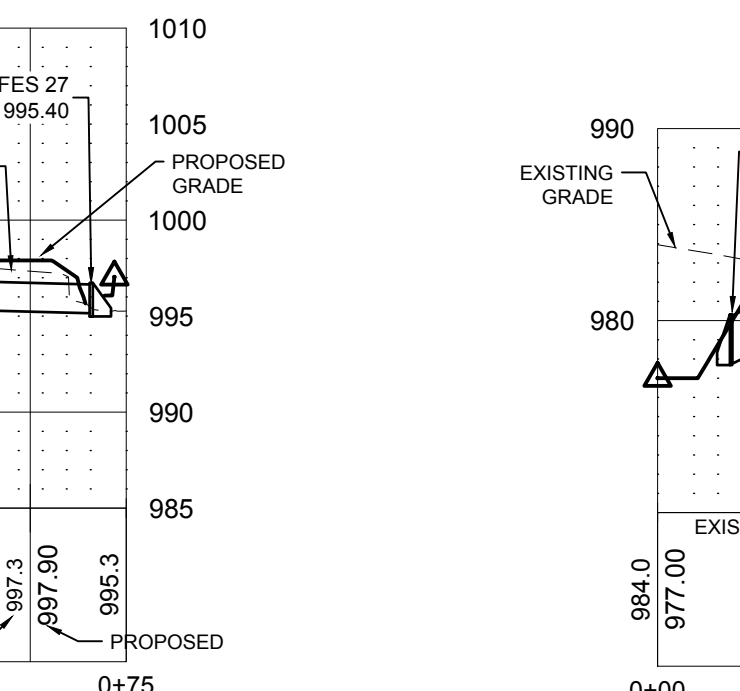
7 PROFILE VIEW - FES-25 TO FES-26
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



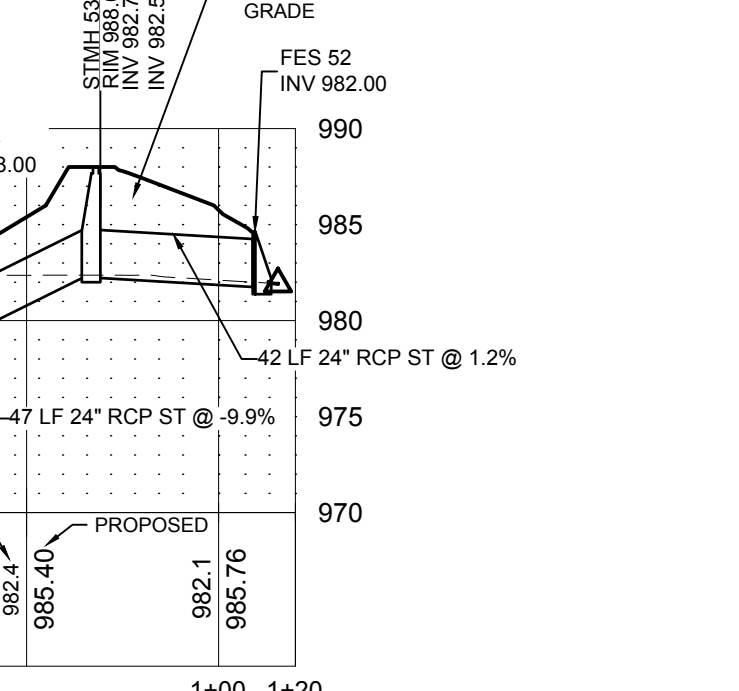
8 PROFILE VIEW - FES-30 TO FES-29
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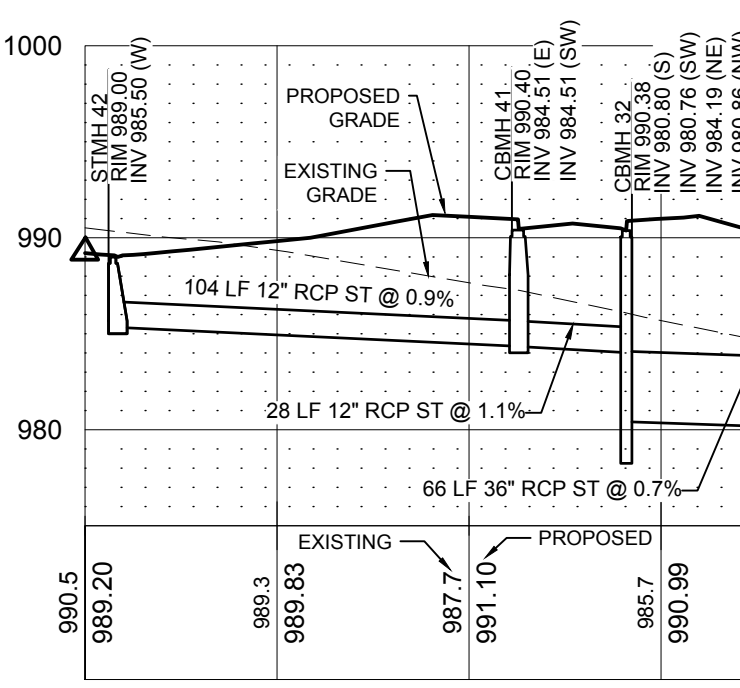
9 PROFILE VIEW - FES-28 TO FES-27
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



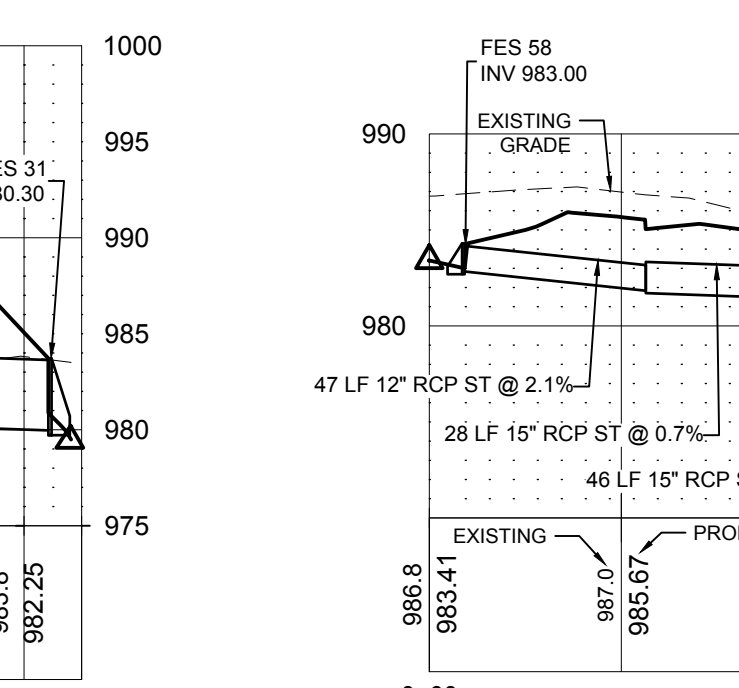
10 PROFILE VIEW - FES-54 TO FES-52
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



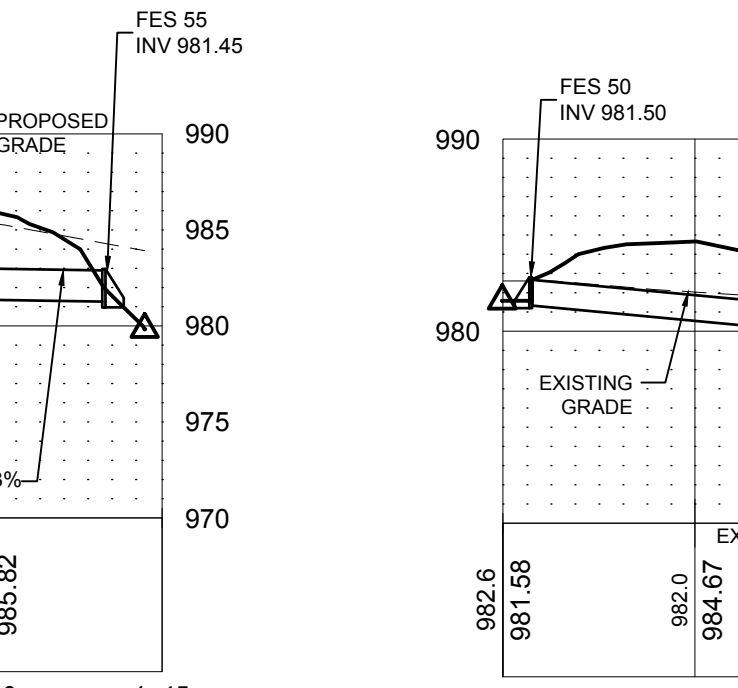
11 PROFILE VIEW - CB-37 TO CBMH-35
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



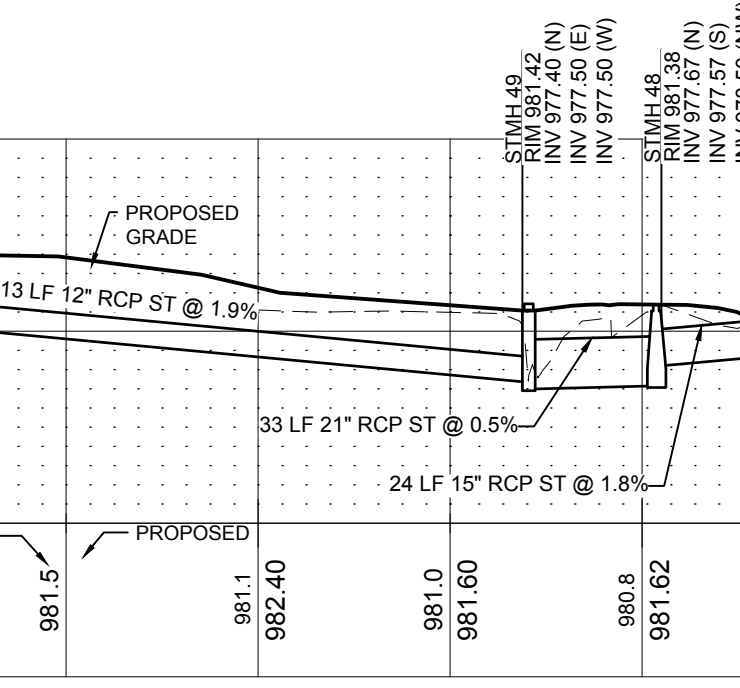
12 PROFILE VIEW - STMH-42 TO FES-31
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



13 PROFILE VIEW - FES-58 TO FES-55
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



14 PROFILE VIEW - FES-50 TO FES-51
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



15 PROFILE VIEW - FES-59 TO FES-60
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'

STORM STRUCTURE SCHEDULE		
STRUCTURE NUMBER	SIZE	CASTING (NEENAH OR APPROVED EQUAL)
FES 1	36" FLARED	N/A
STMH 2	84" ROUND	R-1642-D, SOLID, "STORM"
STMH 3	60" ROUND	R-1642-D, SOLID, "STORM"
FES 27	12" FLARED	N/A
FES 28	12" FLARED	N/A
FES 52	24" FLARED	N/A
STMH 53	48" ROUND	R-1642-D, SOLID, "STORM"
FES 54	24" FLARED	N/A

Y:\16800\16826 - TERRACE COMPANIES - 62 ACRE DEVELOPMENT - NORTHFIELD MN_00 Construction Documents\07 Civil\01 CAD files\16826_C_01 PROFILES - STRM.dwg
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Anderson Engineering of Minnesota, LLC

CEDAR MEADOWS DEVELOPMENT 1ST ADDITION

NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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

PRINT NAME: BRIAN J. FIELD, PE

SIGNATURE: **NOT FOR CONSTRUCTION**

DATE: 06/23/2023 LICENSE NO. 57224

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

DESIGNED: BJF	DRAWN: JPD	CHECKED BY: BJF
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DRAWING TITLE

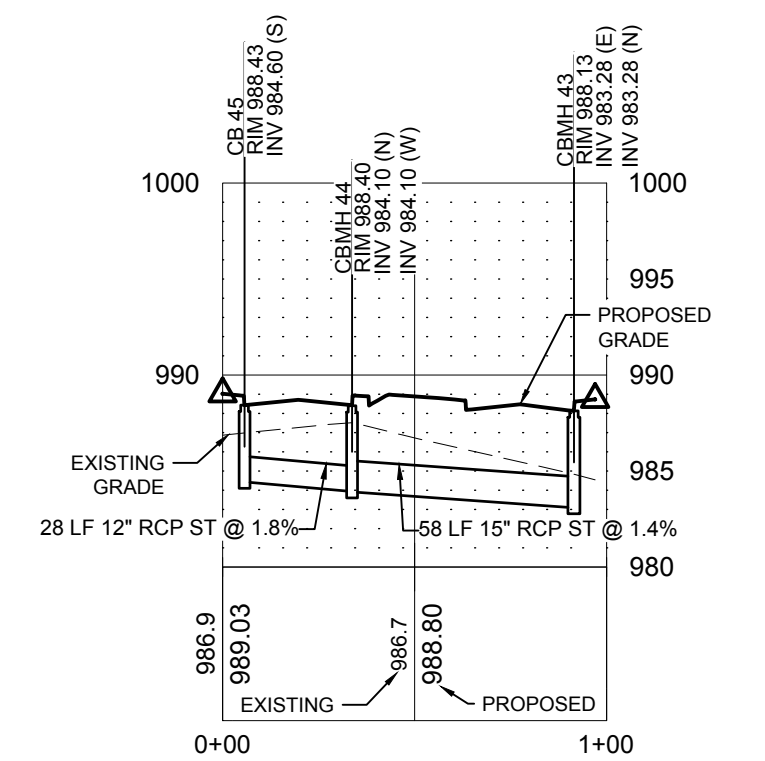
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DRAWING NO.

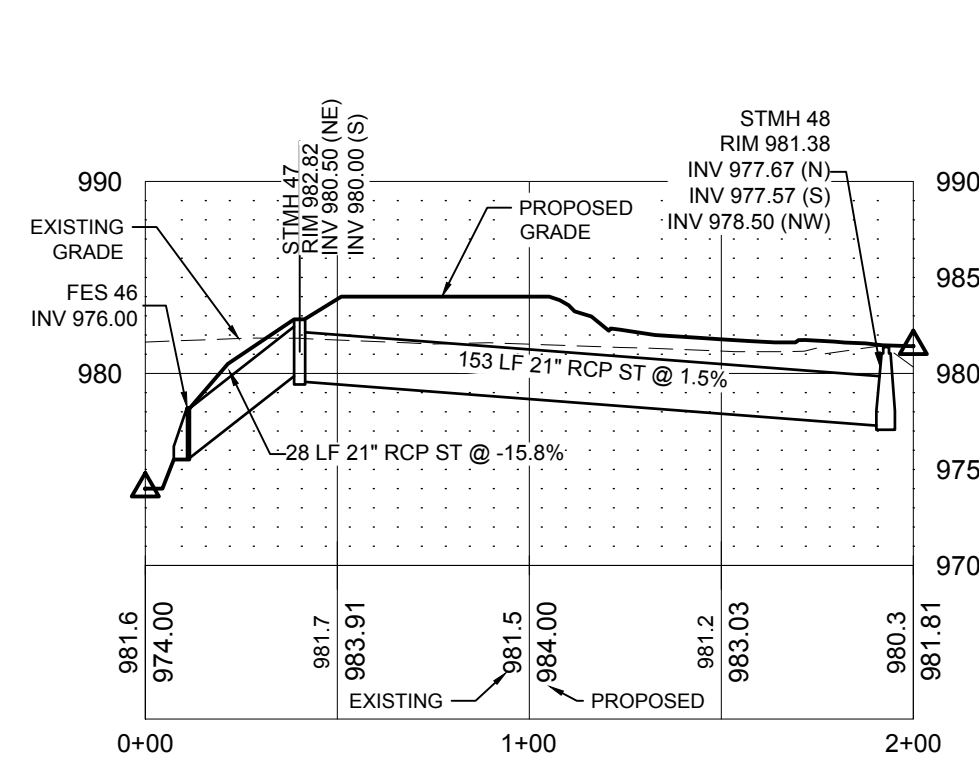
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PAGE: 21 OF 26

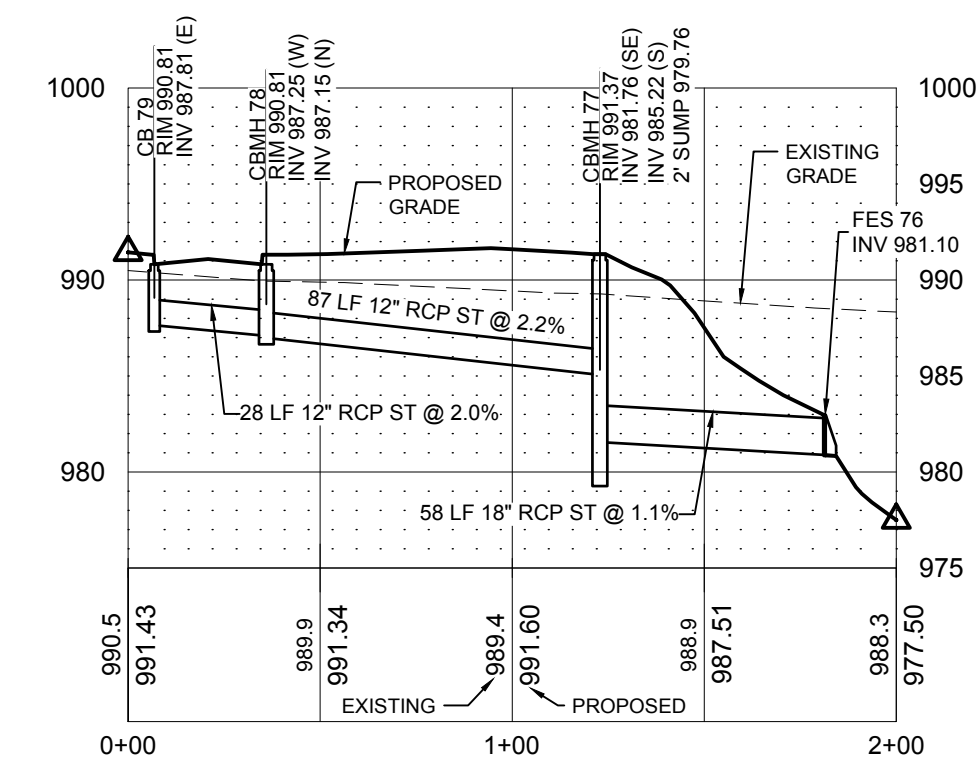
PLOTTED: 1/5/2024	COMM. NO. 16826
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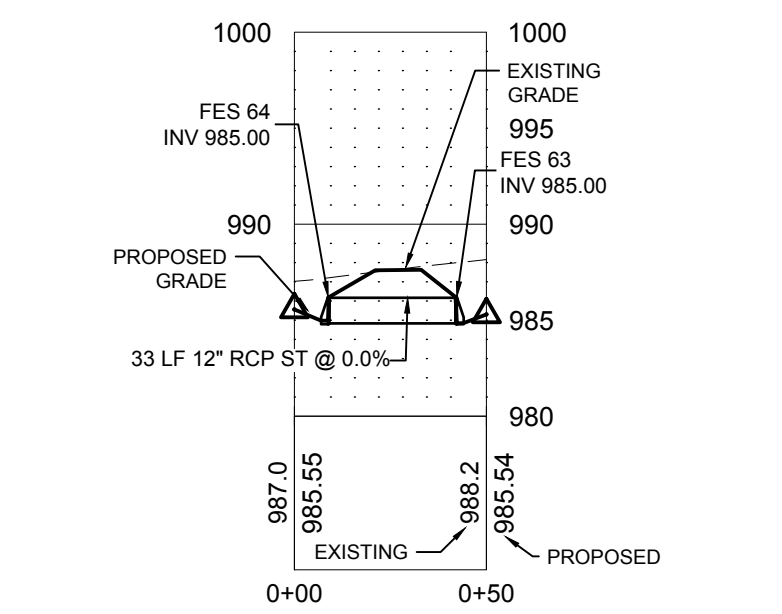
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SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



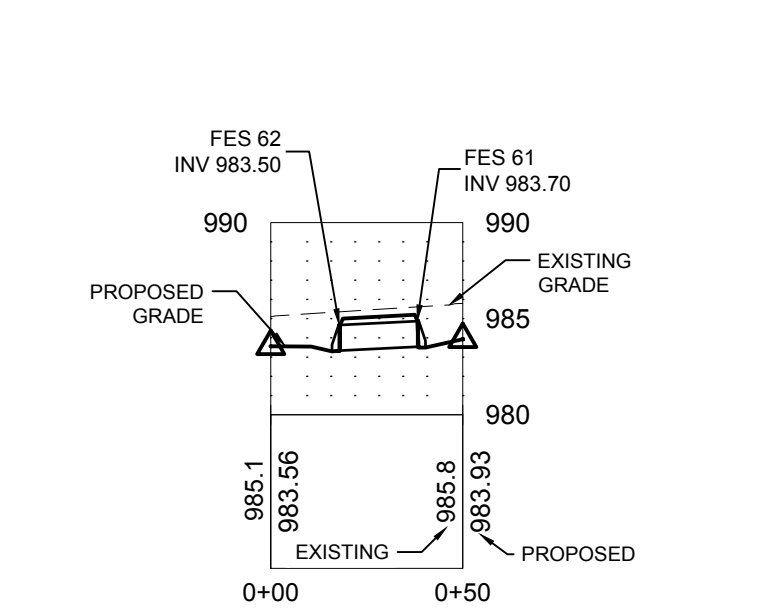
2 PROFILE VIEW - FES-46 TO STMH-48
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



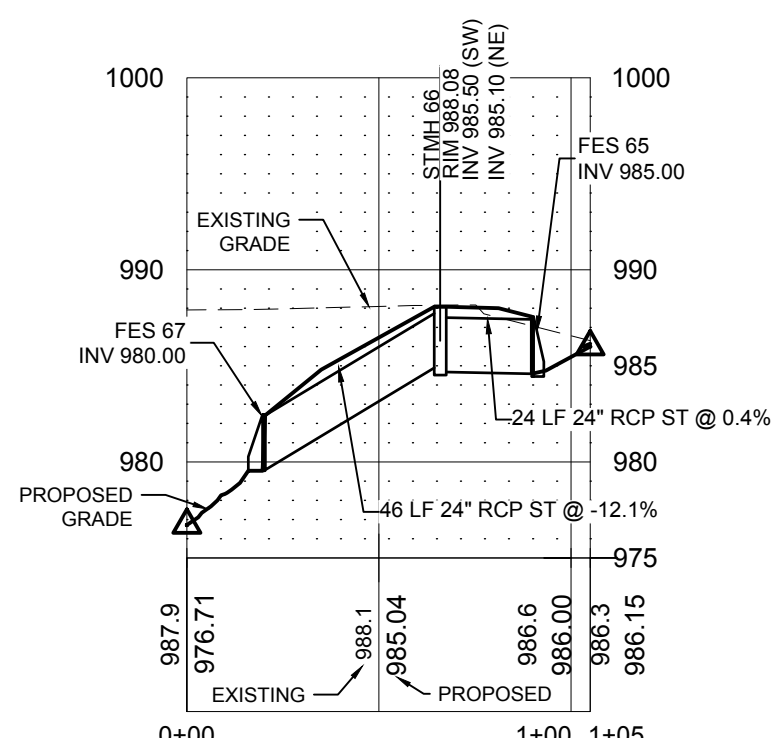
3 PROFILE VIEW - CB-79 TO FES-76
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



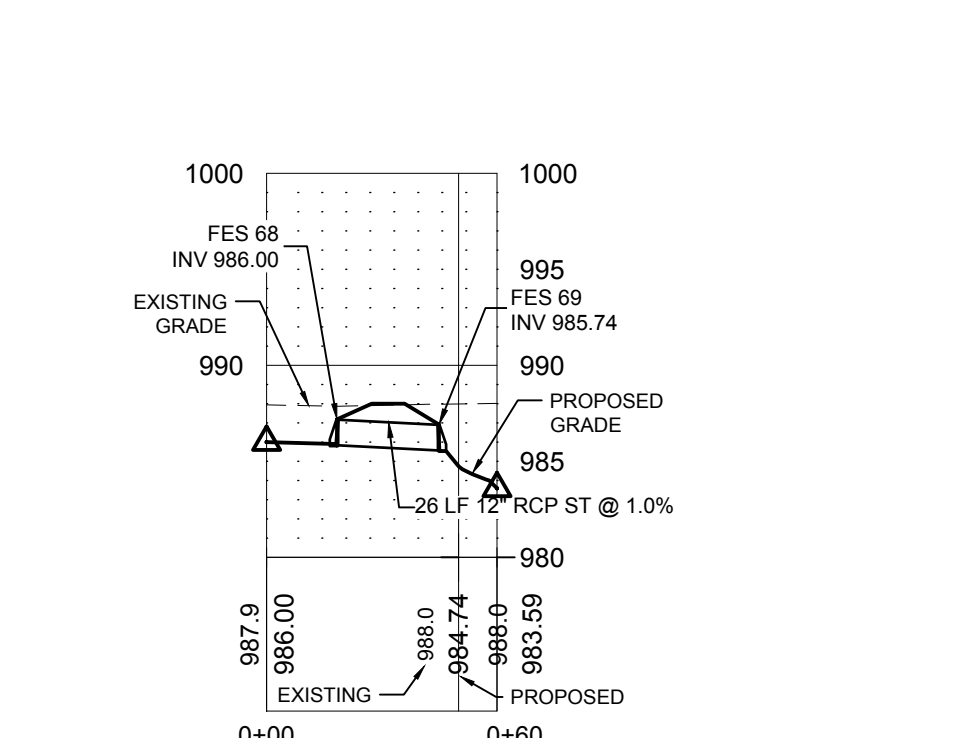
4 PROFILE VIEW - FES-64 TO FES-63
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



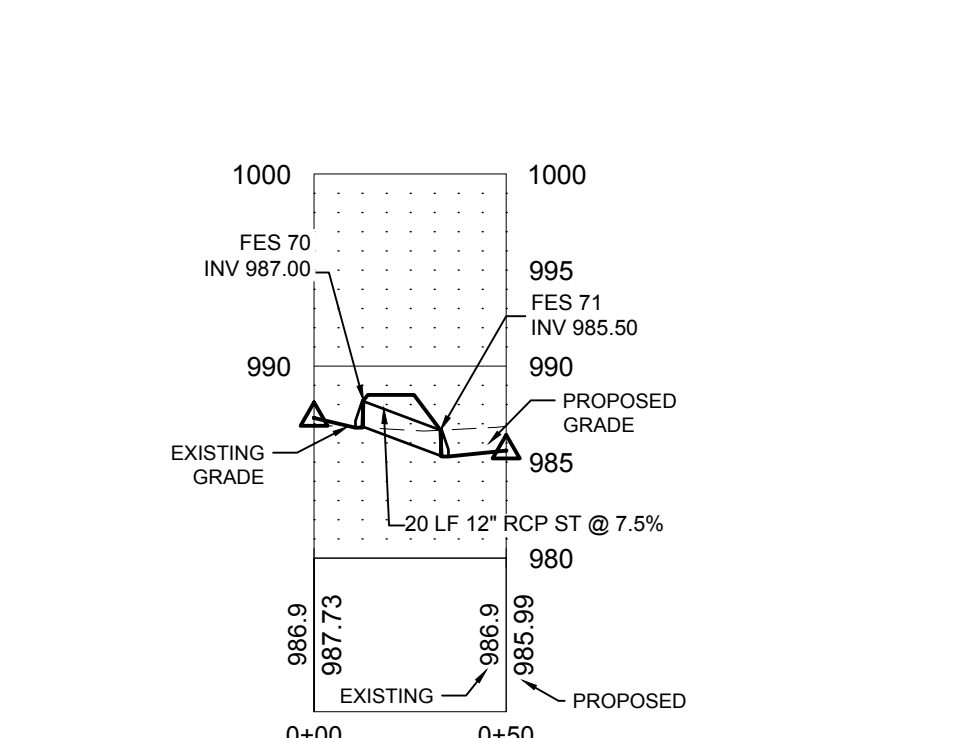
5 PROFILE VIEW - FES-62 TO FES-61
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



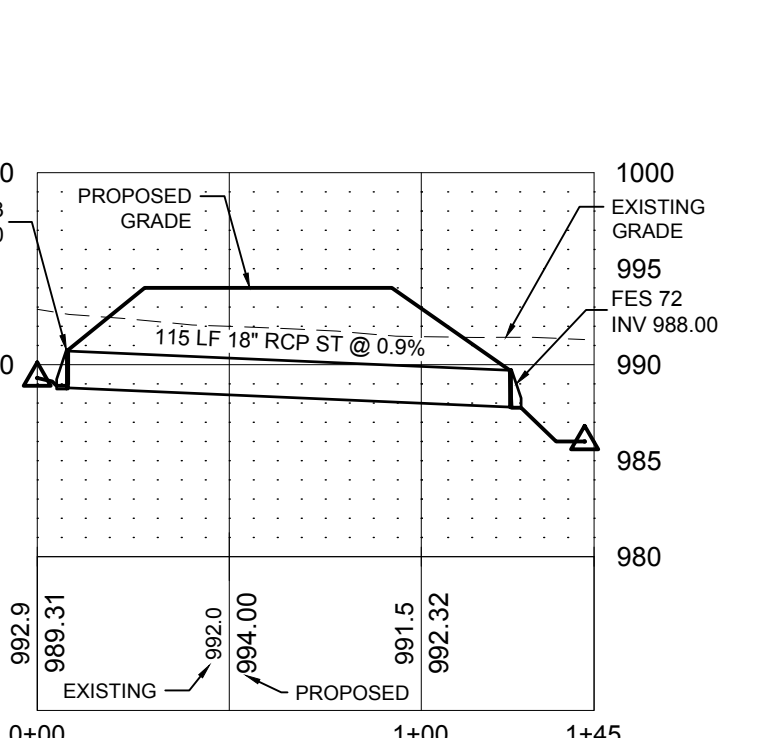
6 PROFILE VIEW - FES-67 TO FES-65
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



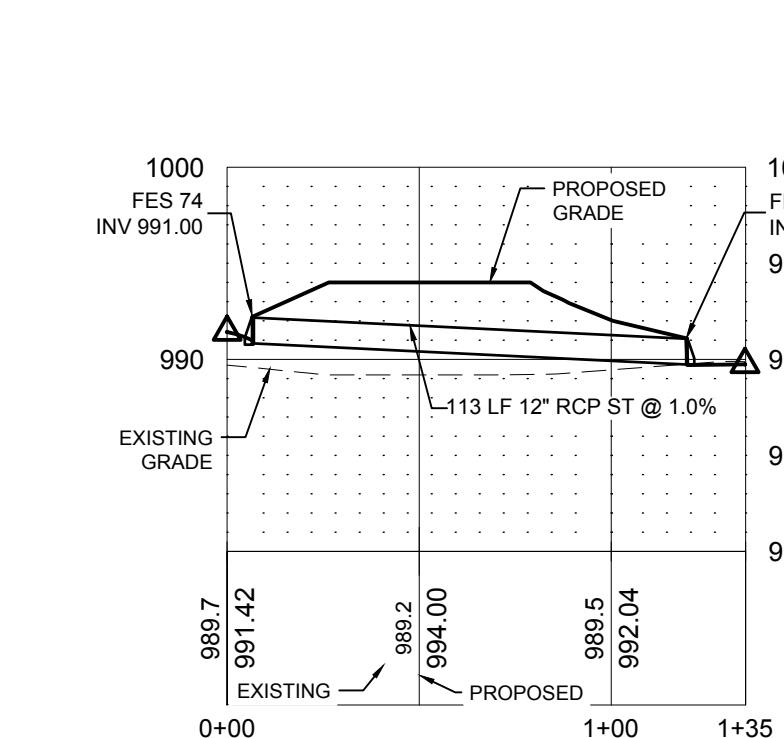
7 PROFILE VIEW - FES-68 TO FES-69
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



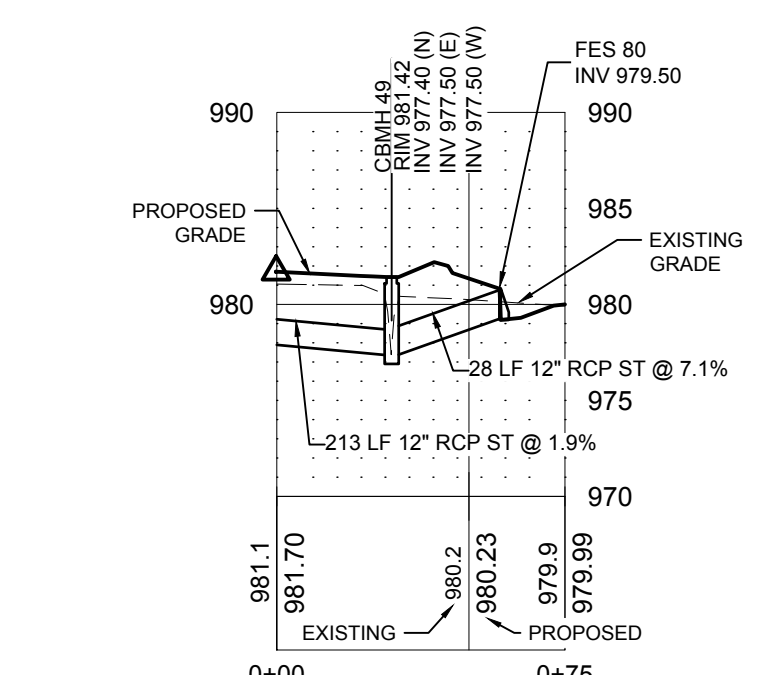
8 PROFILE VIEW - FES-70 TO FES-71
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



9 PROFILE VIEW - FES-73 TO FES-72
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



10 PROFILE VIEW - FES-74 TO FES-75
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'



11 PROFILE VIEW - FES-80 TO FES-49
SCALE: HORIZONTAL 1"=50' VERTICAL 1"=10'

STORM STRUCTURE SCHEDULE		
STRUCTURE NUMBER	SIZE	CASTING (NEENAH OR APPROVED EQUAL)
FES 61	12" FLARED	N/A
FES 62	12" FLARED	N/A
FES 63	12" FLARED	N/A
FES 64	12" FLARED	N/A
FES 65	24" FLARED	N/A
STMH 66	48" ROUND	R-1642-D, SOLID, "STORM"
FES 67	24" FLARED	N/A
FES 68	12" FLARED	N/A
FES 69	12" FLARED	N/A
FES 70	12" FLARED	N/A
FES 71	12" FLARED	N/A
FES 72	18" FLARED	N/A
FES 73	18" FLARED	N/A
FES 74	12" FLARED	N/A
FES 75	12" FLARED	N/A
FES 76	18" FLARED	N/A

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Xref Filename: \\s_base\16826_c_base\16826_titleblock_22x34\16826_u_base
Feb 15, 2024 - 11:24am JDbibas



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Anderson Engineering of Minnesota, LLC

CEDAR MEADOWS DEVELOPMENT 1ST ADDITION

NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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PRINT NAME: BRIAN J. FIELD, PE

SIGNATURE: **NOT FOR CONSTRUCTION**

DATE: 06/23/2023 LICENSE NO. 57224

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

DESIGNED:	DRAWN:	CHECKED BY:
BJF	JPD	BJF

DRAWING TITLE

CIVIL DETAILS (2)

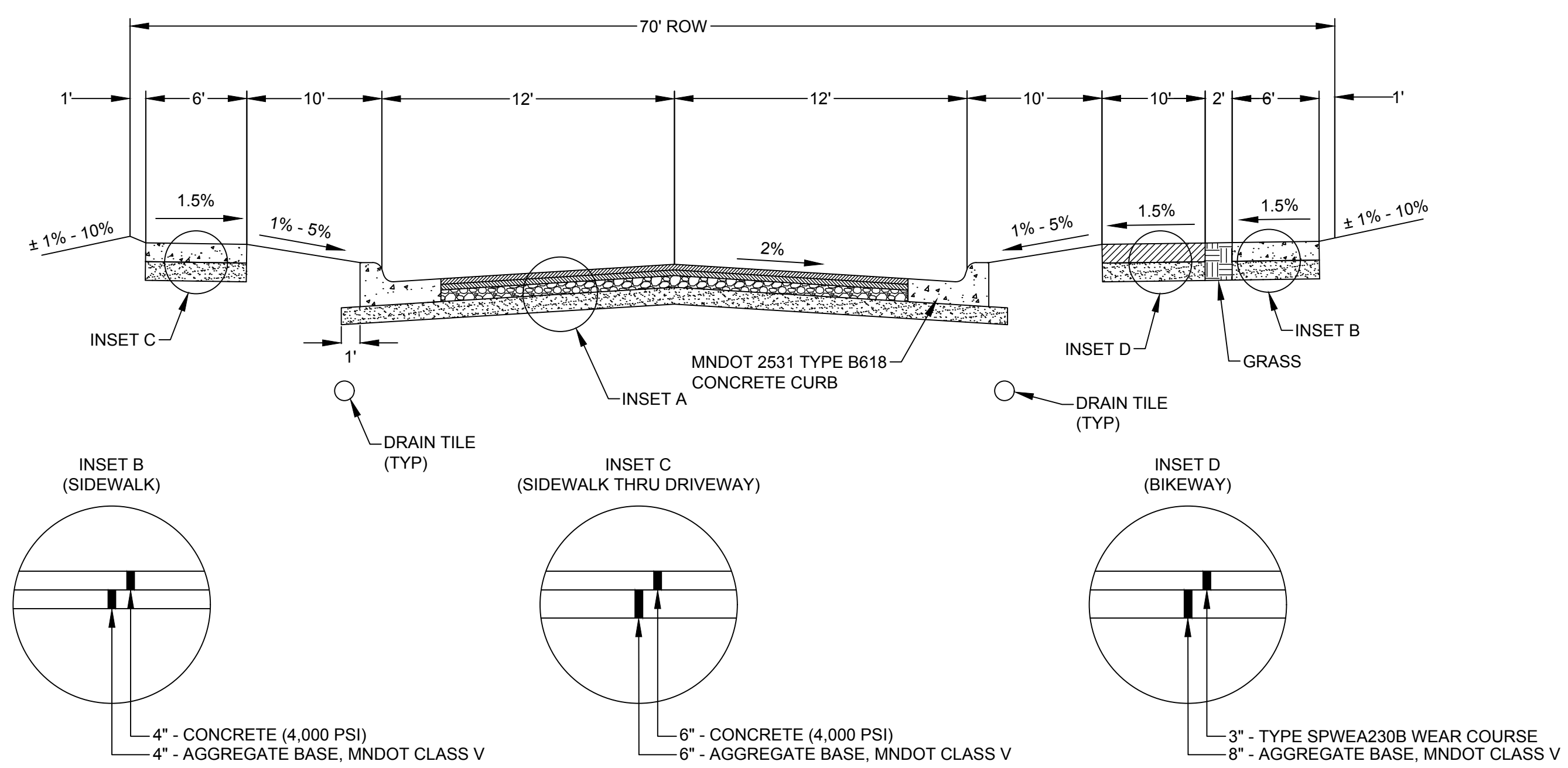
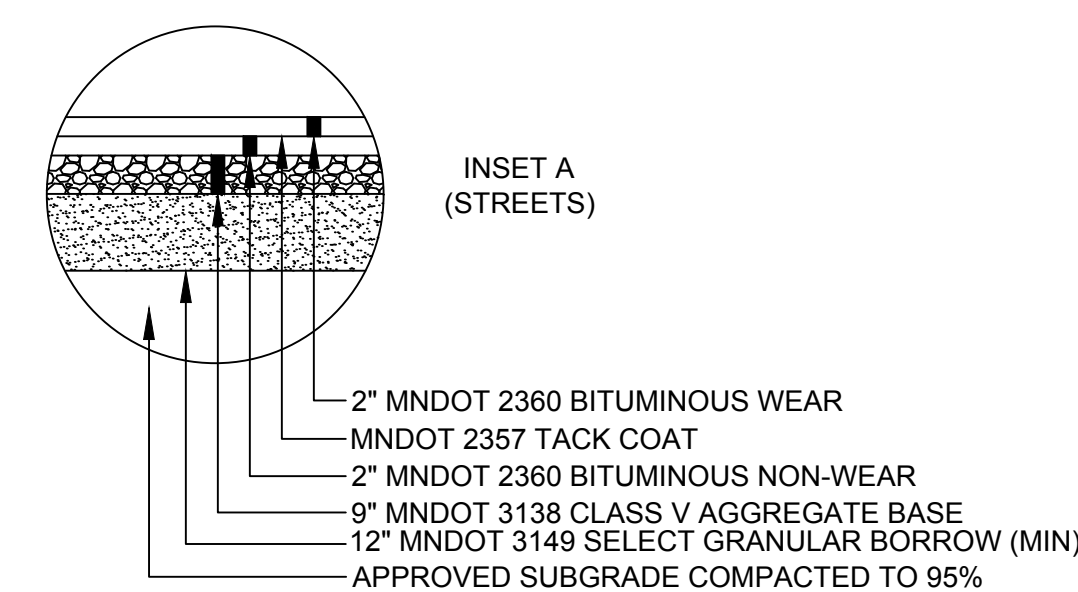
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C23

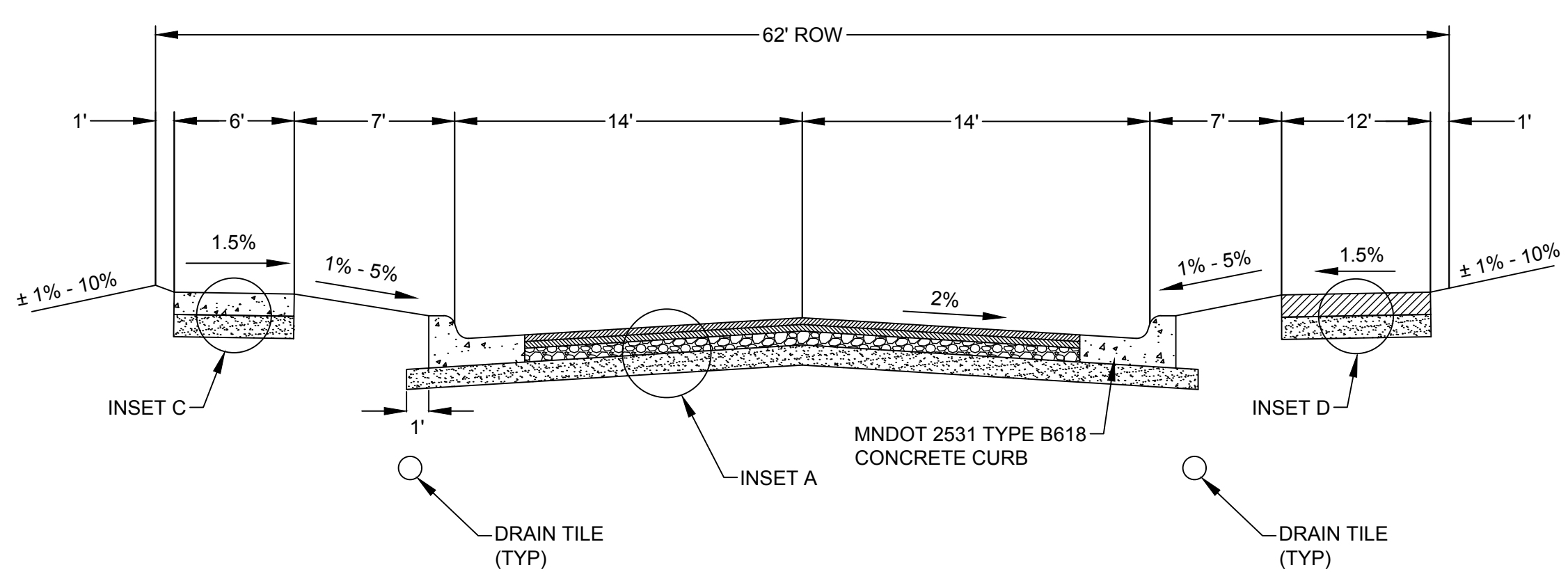
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PLOTTED:	COMM. NO.
1/5/2024	16826

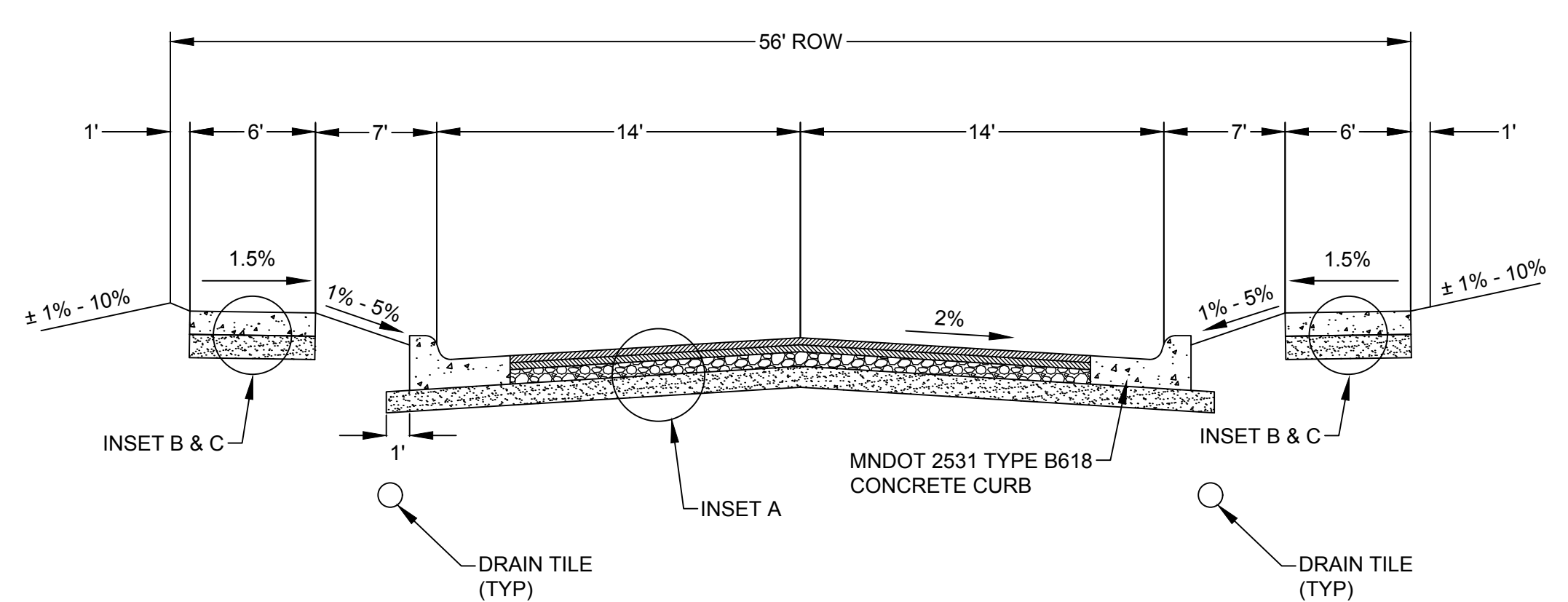
- NOTES:
- SIDEWALK MAY BE ELIMINATED ON ONE OR BOTH SIDES OF THE STREET IN SOME AREAS.
 - SUBGRADE MUST BE APPROVED BY THE CITY ENGINEER.
 - SEE PROJECT PLANS AND SPECIFICATIONS FOR STREET WIDTH AND STREET SECTION.
 - TYPICAL SECTION TO BE CONFIRMED WITH SITE SPECIFIC GEOTECHNICAL REPORT.
 - VERIFY PAVEMENT SECTION DESIGN & SUBGRADE REQUIREMENTS WITH GEOTECHNICAL REPORT & RECOMMENDATIONS PRIOR TO CONSTRUCTION.



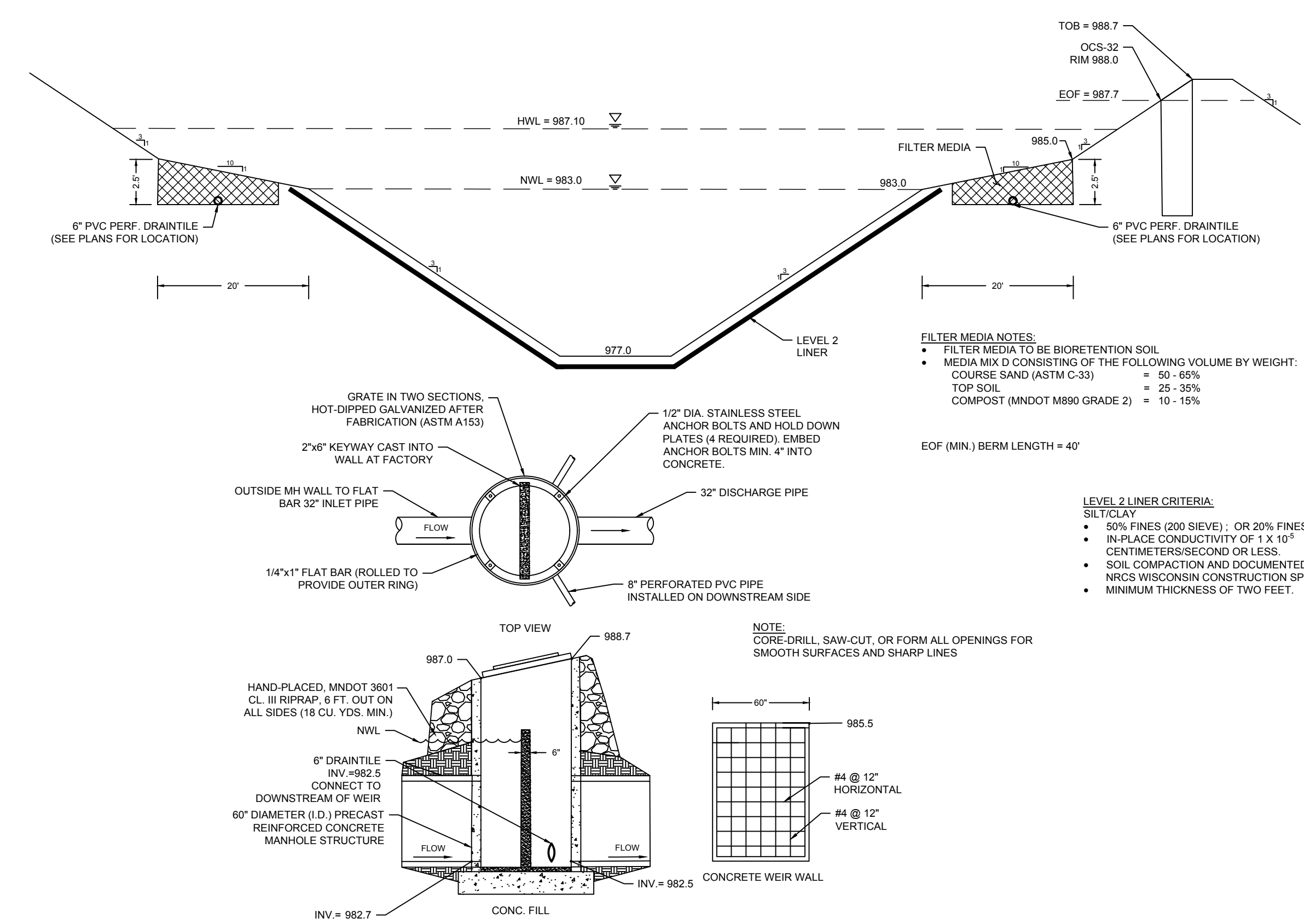
1 STREET SECTION: STREET A (70 FT R.O.W.)



2 STREET SECTION: STREET B AND LUPINE DRIVE (62 FT R.O.W.)

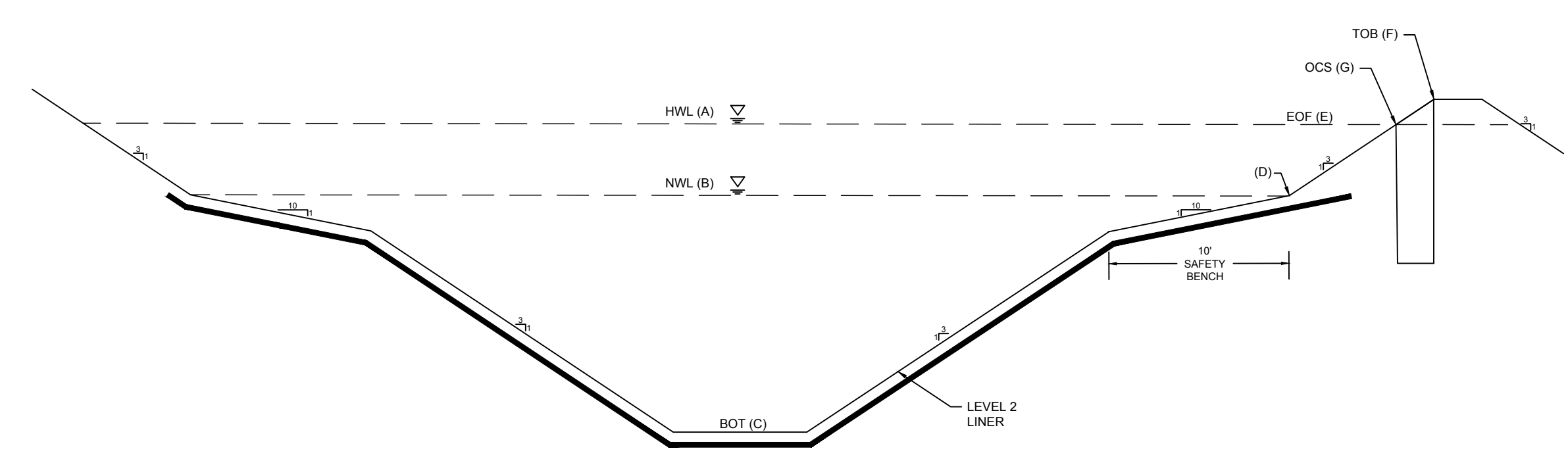


3 STREET SECTION: STREET G & F (56 FT R.O.W.)



4 FILTRATION BASIN 5P - OUTLET CONTROL DETAIL

STORMWATER POND TABLE								
POND	HWL (A)	NWL (B)	BOTTOM ELEVATION (C)	TOP OF BENCH ELEVATION (D)	EOF BERM LENGTH*	EOF SPILLWAY ELEVATION (E)	TOP OF BERM ELEVATION (F)	OCS RIM (G)
3P	987.2	985.1	976.0	986.1	15'	987.1	988.1	988.1
7P	983.6	980.0	974.0	981.0	25'	983.6	984.6	983.8



5 TYPICAL STORMWATER POND

Feb 15, 2024 - 11:24am
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Y:\16826_titleblock_22X341_ERO-2_Silt Fence Installation_1_ERO-3_Inlet Protection Rock Bag_ERO-4 Erosion Control Blanket Installation_ERO-1 Stabilized Construction Entrance_SAN-1_Standard MH_1_STM2 Catch Basin Manhole_1_WAT-1 Concrete Thrust Blocking_1_WAT-2 Hydrant & Valve Installation_1_WAT-3 Gate Valve & Box Installation_1_WAT-5 Watermain Offset
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Anderson Engineering of Minnesota, LLC

CEDAR MEADOWS DEVELOPMENT 1ST ADDITION

NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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PRINT NAME: BRIAN J. FIELD, PE

SIGNATURE: **NOT FOR CONSTRUCTION**

DATE: 06/23/2023 LICENSE NO. 57224

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

DESIGNED: BJF	DRAWN: JPD	CHECKED BY: BJF
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DRAWING TITLE

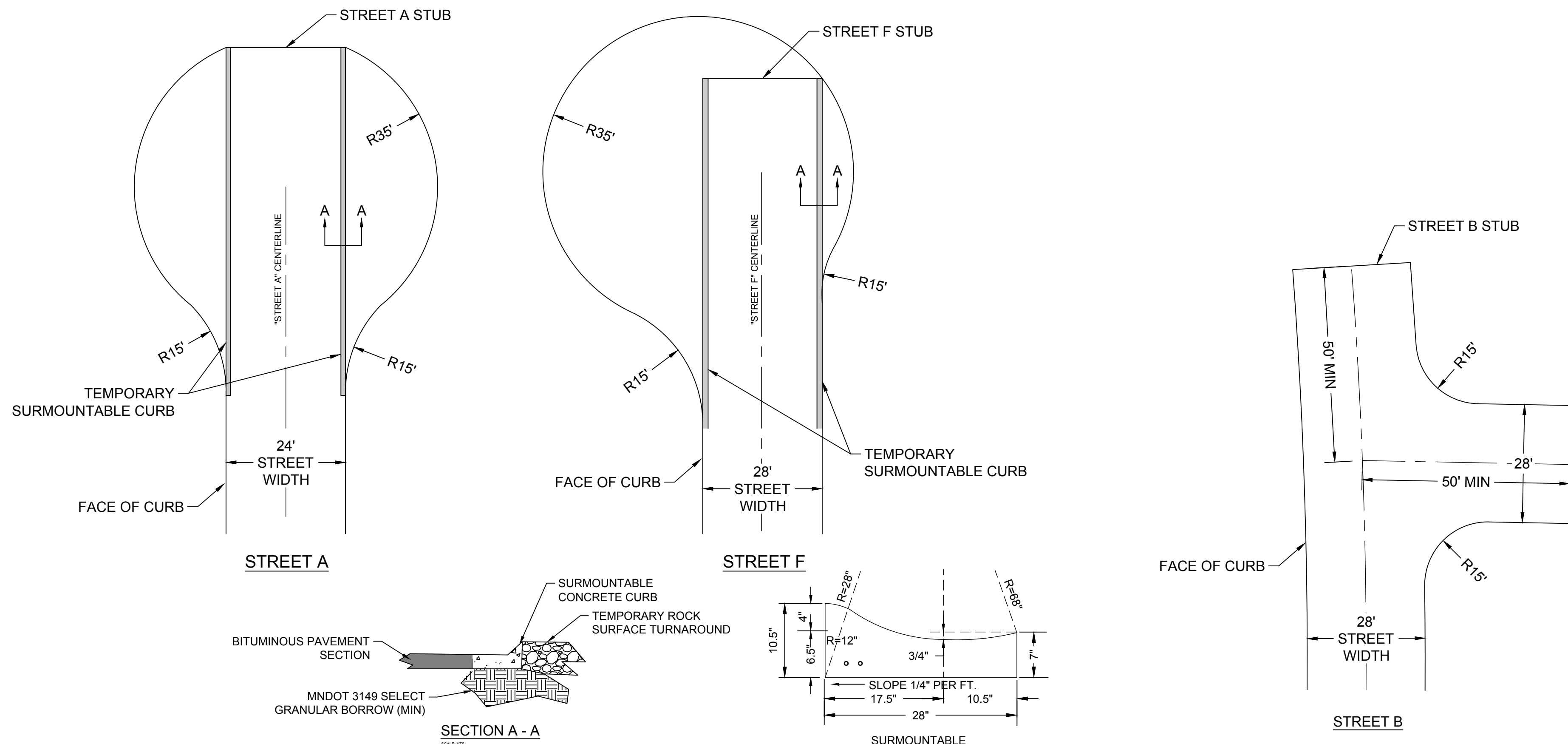
CIVIL DETAILS (3)

DRAWING NO.

C24

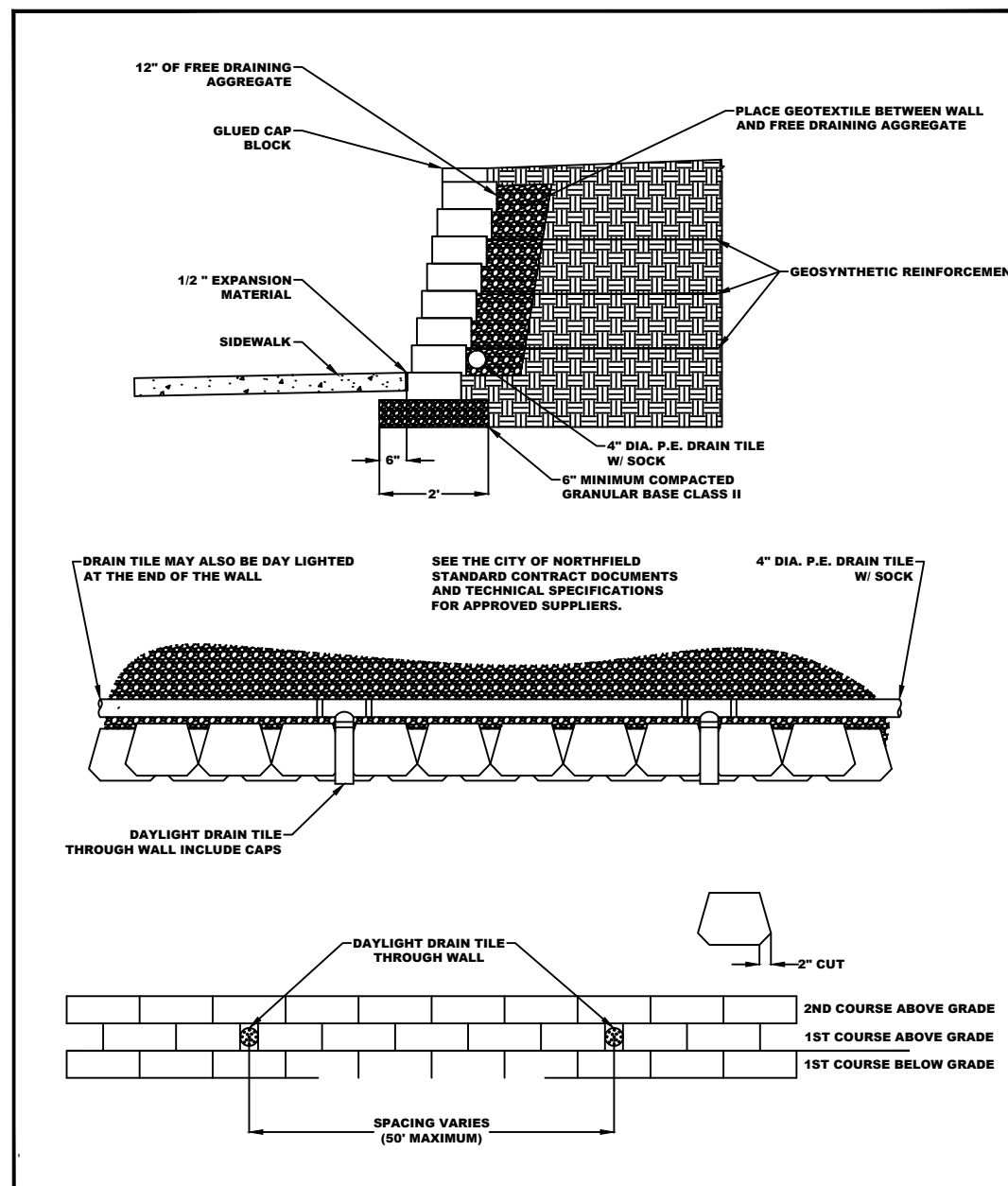
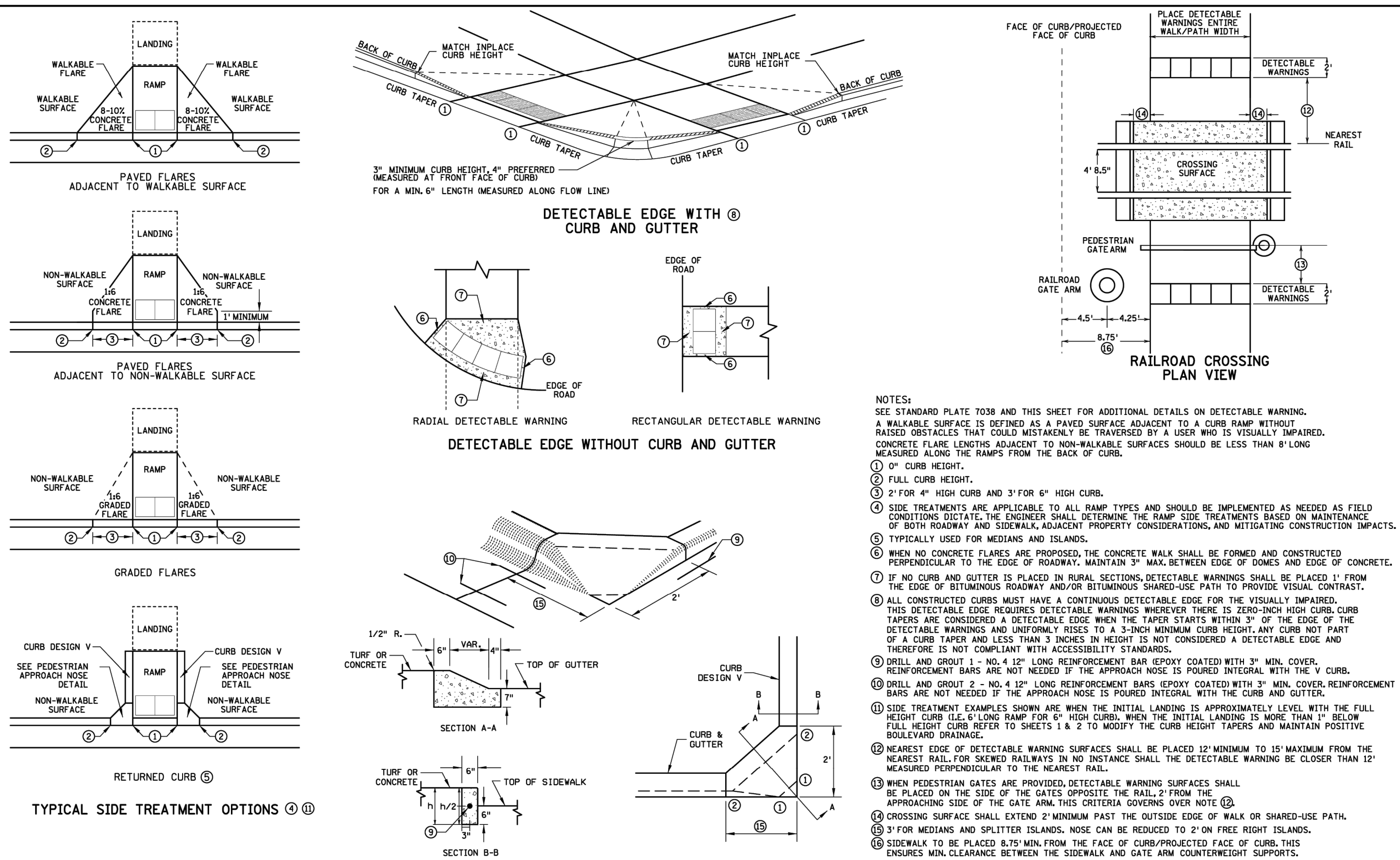
PAGE: 24 OF 26

PLOTTED: 1/5/2024	COMM. NO. 16826
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1 TEMPORARY CUL-DE-SAC DETAIL

2 TEMPORARY HAMMER HEAD DETAIL (STREET B)



DRAWN BY: B.D.H. NOT TO SCALE UPDATED: 2022

PLATE NO: GEN-1

Northfield ENGINEERING DIVISION

RETAINING WALL DETAIL

REVISION:
APPROVED: JANUARY 23, 2017

PEDESTRIAN APPROACH NOSE DETAIL (FOR RETURNED CURB SIDE TREATMENT)
--

REVISION:

APPROVED: 1-23-2017

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS
STANDARD PLAN 5-297.250
4 OF 6

Y:\1680016826 - TERRACE COMPANIES - 62 ACRE DEVELOPMENT - NORTHFIELD MN_00 Construction Documents_07 Civil_01 CAD files_01 Sheets\16826_C_01 DETAILS.dwg
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PRINT NAME: CURT H. CLAEYS, PLA

SIGNATURE: **NOT FOR CONSTRUCTION**

DATE: 06/23/2023 LICENSE NO. 45613

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

DESIGNED: CHC	DRAWN: JAF	CHECKED BY: CHC
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DRAWING TITLE

TREE PRESERVATION PLAN

DRAWING NO.

L1

PAGE: 16 OF 26

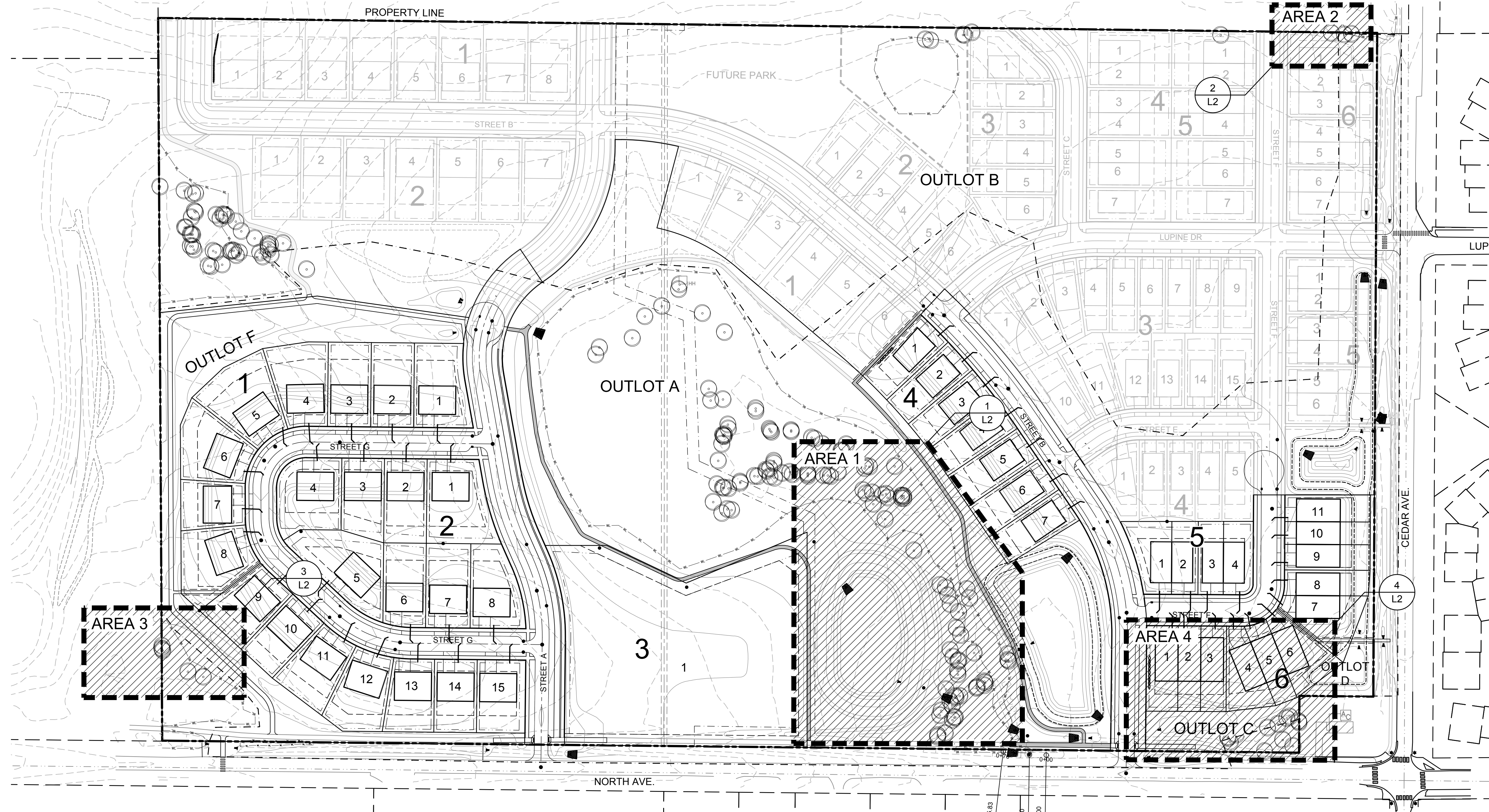
PLOTTED: 1/5/2024	COMM. NO. 16826
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LEGEND

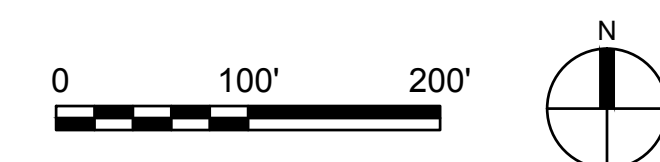
- PROPERTY LIMITS
- CONSTRUCTION LIMITS
- TREE PROTECTION
- PROTECTED TREES TO REMAIN
- ✕ PROTECTED TREES TO REMOVE

NOTES

- INSTALL TREE PROTECTION AROUND EXISTING TREES TO REMAIN (TYP.). WHERE CLUSTERS OF TREES ARE TO BE PROTECTED, CONTRACTOR SHALL INSTALL PROTECTION FENCING AROUND THE OUTERMOST DRIPLINE OF THE CLUSTER. SEE 2/L4.



1 TREE PRESERVATION PLAN
SCALE: 1" = 100' (22" x 34" PAPER SIZE)



Feb 15, 2024 - 11:25am
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 JDobias



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PRINT NAME: CURT H. CLAEYS, PLA

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REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

CONSTRUCTION DOCUMENTS

DESIGNED: CHC	DRAWN: JAF	CHECKED BY: CHC
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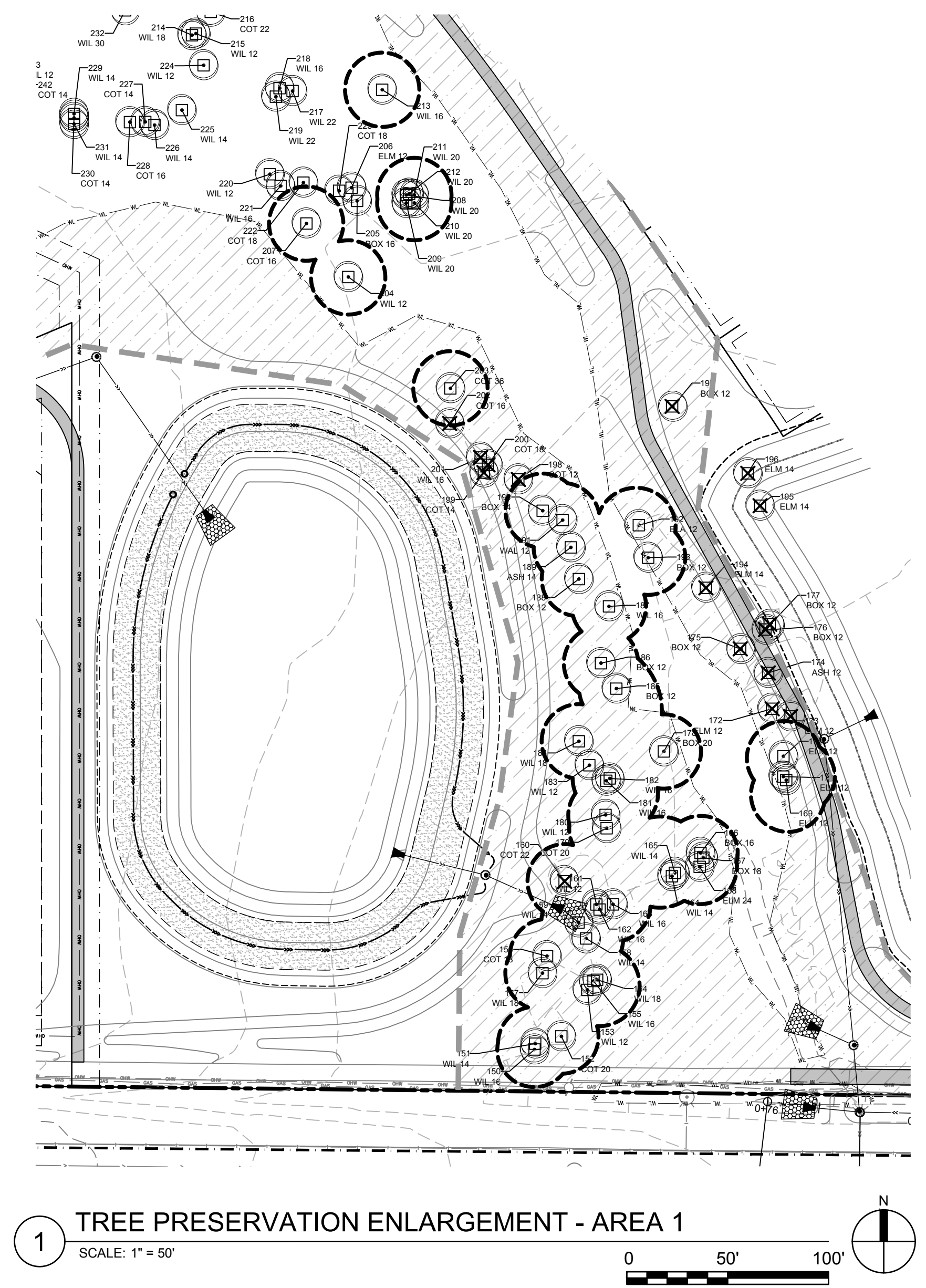
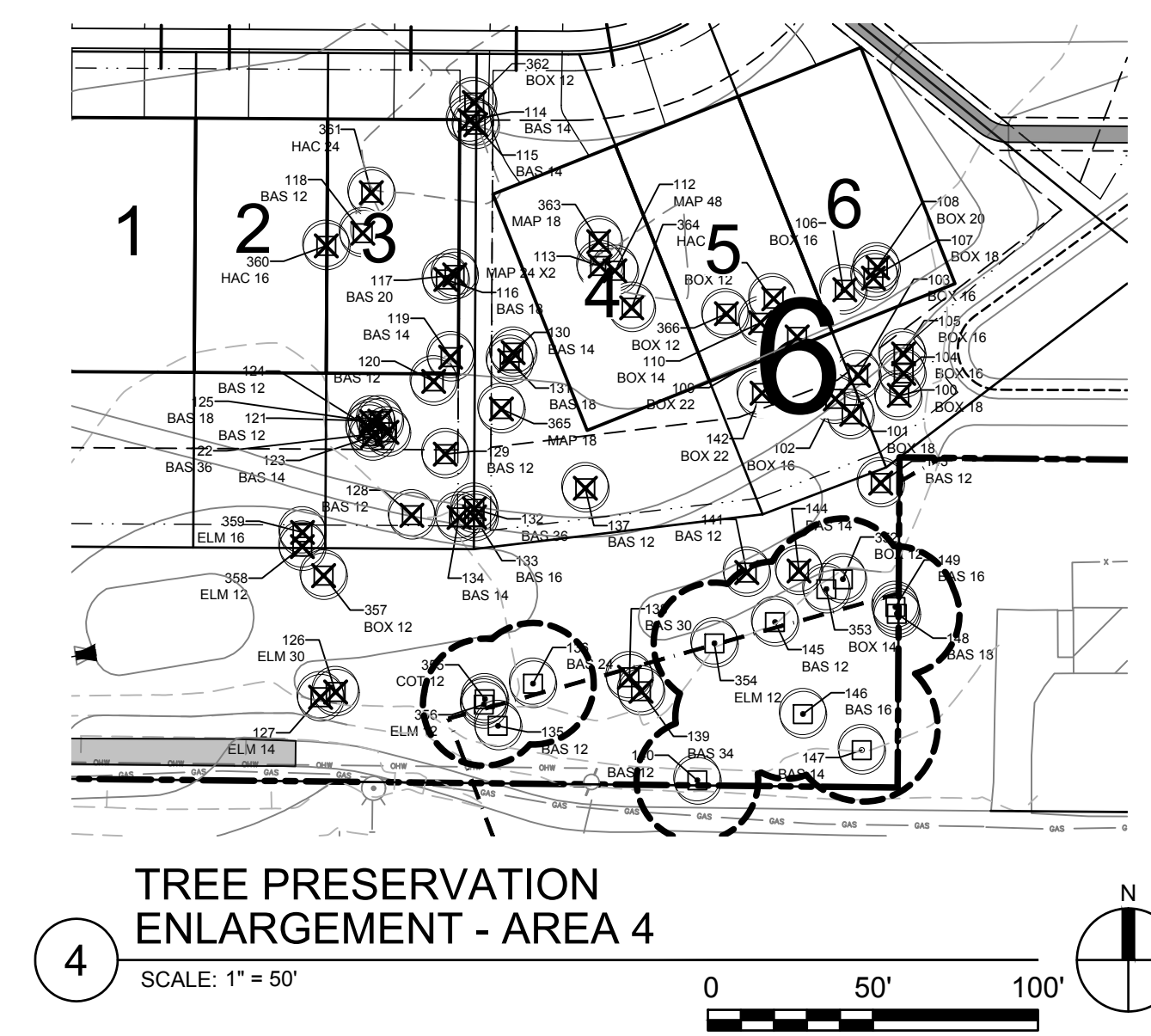
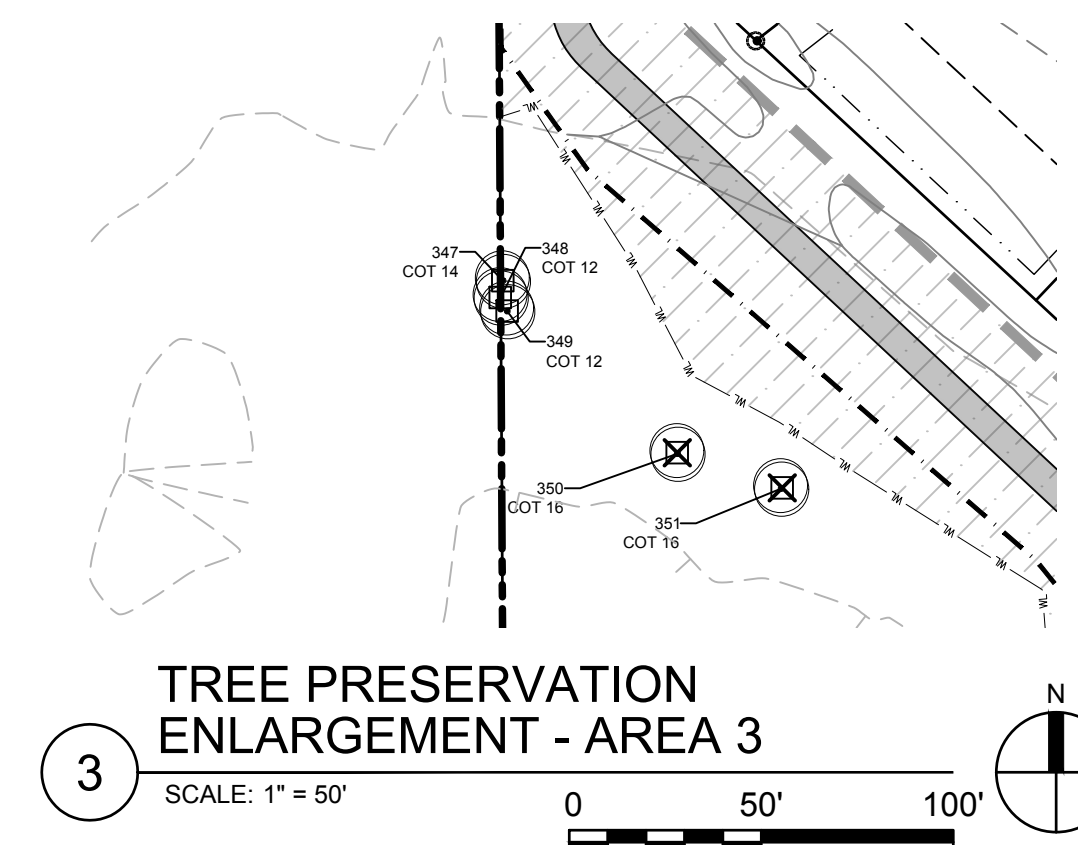
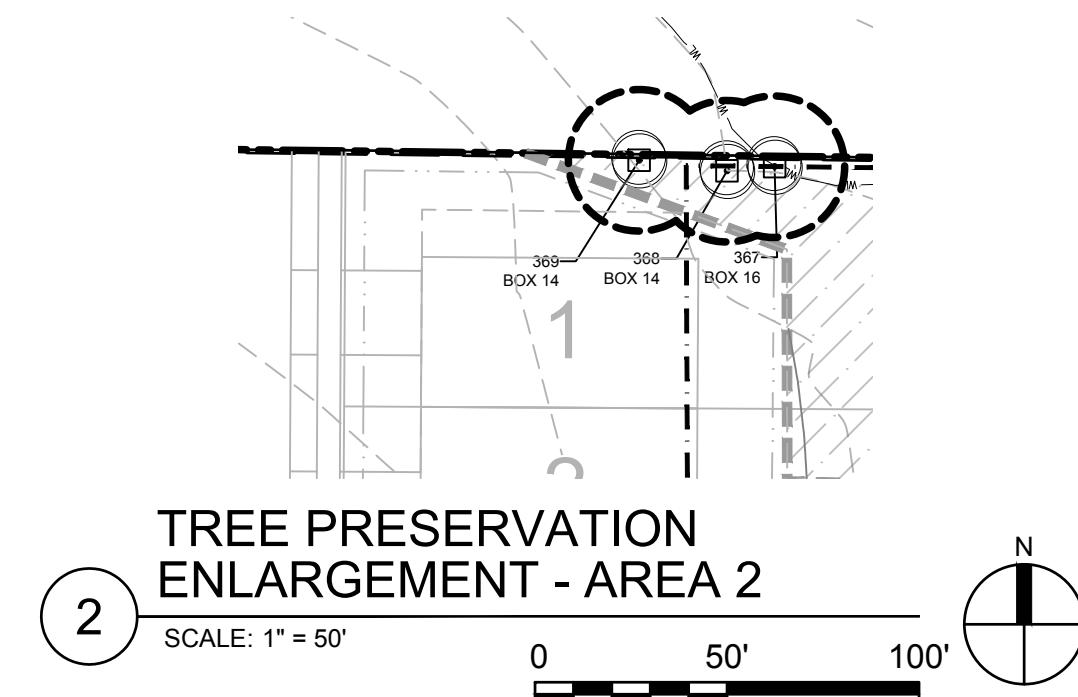
TREE PRESERVATION ENLARGEMENT PLANS

DRAWING NO.

L2

PAGE: 17 OF 26

PLOTTED: 1/5/2024	COMM. NO. 16826
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Feb 15, 2024 - 11:26am
JDobias

PLANTING SCHEDULE - PHASE 1

DECIDUOUS	CODE	QTY	COMMON / BOTANICAL NAME	CONT	CAL	REMARKS
	Ar	21	RED MAPLE ACER RUBRUM	B&B	2" CAL.	SINGLE, STRAIGHT LEADER; NO V CROTCHES
	Ct	29	HACKBERRY CELTIS OCCIDENTALIS	B&B	2" CAL.	SINGLE, STRAIGHT LEADER; NO V CROTCHES
	Gp	19	PRINCETON SENTRY® MAIDENHAIR TREE GINKGO BILOBA 'PNI 2720'	B&B	2" CAL.	SINGLE, STRAIGHT LEADER; NO V CROTCHES
	Qb	23	SWAMP WHITE OAK QUERCUS BICOLOR	B&B	2" CAL.	SINGLE, STRAIGHT LEADER; NO V CROTCHES
	Qr	28	RED OAK QUERCUS RUBRA	B&B	2" CAL.	SINGLE, STRAIGHT LEADER; NO V CROTCHES
	Ua	23	ACCOLADE™ ELM ULMUS X 'MORTON'	B&B	2" CAL.	SINGLE, STRAIGHT LEADER; NO V CROTCHES
EVERGREEN TREES	CODE	QTY	COMMON / BOTANICAL NAME	CONT	CAL	REMARKS
	Pg	3	WHITE SPRUCE PICEA LAUCA	B&B	4" HT.	FULL FORM TO GRADE - 12" MAX. LEADER LENGTH; SHEARED AND CLIPPED TREES WILL NOT BE ACCEPTED
	Pn	8	AUSTRIAN PINE PINUS NIGRA	B&B	4" HT.	FULL FORM TO GRADE - 12" MAX. LEADER LENGTH; SHEARED AND CLIPPED TREES WILL NOT BE ACCEPTED
	Pp	5	PONDEROSA PINE PINUS PONDEROSA	B&B	4" HT.	FULL FORM TO GRADE - 12" MAX. LEADER LENGTH; SHEARED AND CLIPPED TREES WILL NOT BE ACCEPTED
		163	TOTAL TREES PROVIDED			

CITY CODE: REQUIRED PLANTING

NORTH & CEDAR DEVELOPMENT
ZONE: NEIGHBORHOOD GENERAL 2 DISTRICT (N2)

- REQUIRED PLANTING:
- A PLANTED VEGETATED BUFFER WIDTH OF 50' ESTABLISHED AROUND ALL WETLANDS, STORMWATER PONDS, AND INFILTRATION / FILTRATION FACILITIES.
 - NO MORE THAN 33% OF TREES MAY BE OF A SINGLE SPECIES
 - AT LEAST (1) STREET TREE FOR EACH 40' LF OF RIGHT-OF-WAY (3,238 LF).
 - THIS REQUIREMENT MAY BE MODIFIED DEPENDING ON THE CHOSEN TREE SPECIES AND ITS TYPICAL SPREAD AT MATURITY.

STREET TREES REQUIRED: 81
REPLACEMENT TREES REQUIRED: 189 CREDIT FOR EXISTING TREES TO REMAIN: 217
TOTAL REQUIRED ADDITIONAL TREES REPLACED: -28 CREDIT TOWARDS REQUIREMENT (3.5.4 (3) (a))
TOTAL TREES REQUIRED: 53
TOTAL TREES PROVIDED: 163

- CREDITS:
- EXISTING HEALTHY, WELL-FORMED CANOPY AND UNDERSTORY TREES AS WELL AS HEALTHY SHRUBS SHALL BE CREDITED TOWARD THE REQUIREMENTS
 - REPLACEMENT TREES SHALL NOT BE USED TO MEET ANY LANDSCAPE REQUIREMENTS.

LEGEND

- PROPERTY LIMITS
- CONSTRUCTION LIMITS
- NEW TURF SEED MIX
MNDOT 25-131
- NEW RIPARIAN SEED MIX
MNDOT 34-261
- NEW MESIC PRAIRIE SEED MIX
MNDOT 35-241
- EXISTING TREES

NOTES

- ALL PLANTINGS WITHIN PROPERTY LIMITS SHALL RECEIVE IRRIGATION (SEE L4 FOR IRRIGATION NOTES)
- REFER TO PLAN SHEET L4 FOR SODDING, SEEDING, FERTILIZER AND TOPSOIL NOTES
- ALL LANDSCAPING DISTURBED BEYOND THE NEW PLANTINGS SHALL BE REPLACED IN KIND.
- INSTALL TREE PROTECTION AROUND EXISTING TREES TO REMAIN (TYP.) WHERE CLUSTERS OF TREES ARE TO BE PROTECTED. CONTRACTOR SHALL INSTALL PROTECTION FENCING AROUND THE OUTERMOST DRIPLINE OF THE CLUSTER. SEE 1/L4.

ANDERSON
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Anderson Engineering of Minnesota, LLC

CEDAR MEADOWS DEVELOPMENT 1ST ADDITION
NORTHFIELD, MN, 55057

NORTH AND CEDAR, LLP

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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: CURT H. CLAEYS, PLA

SIGNATURE: **NOT FOR CONSTRUCTION**
DATE: 06/23/2023 LICENSE NO. 45613

REVISION LOG

NO.	DATE	DESCRIPTION OF REVISIONS

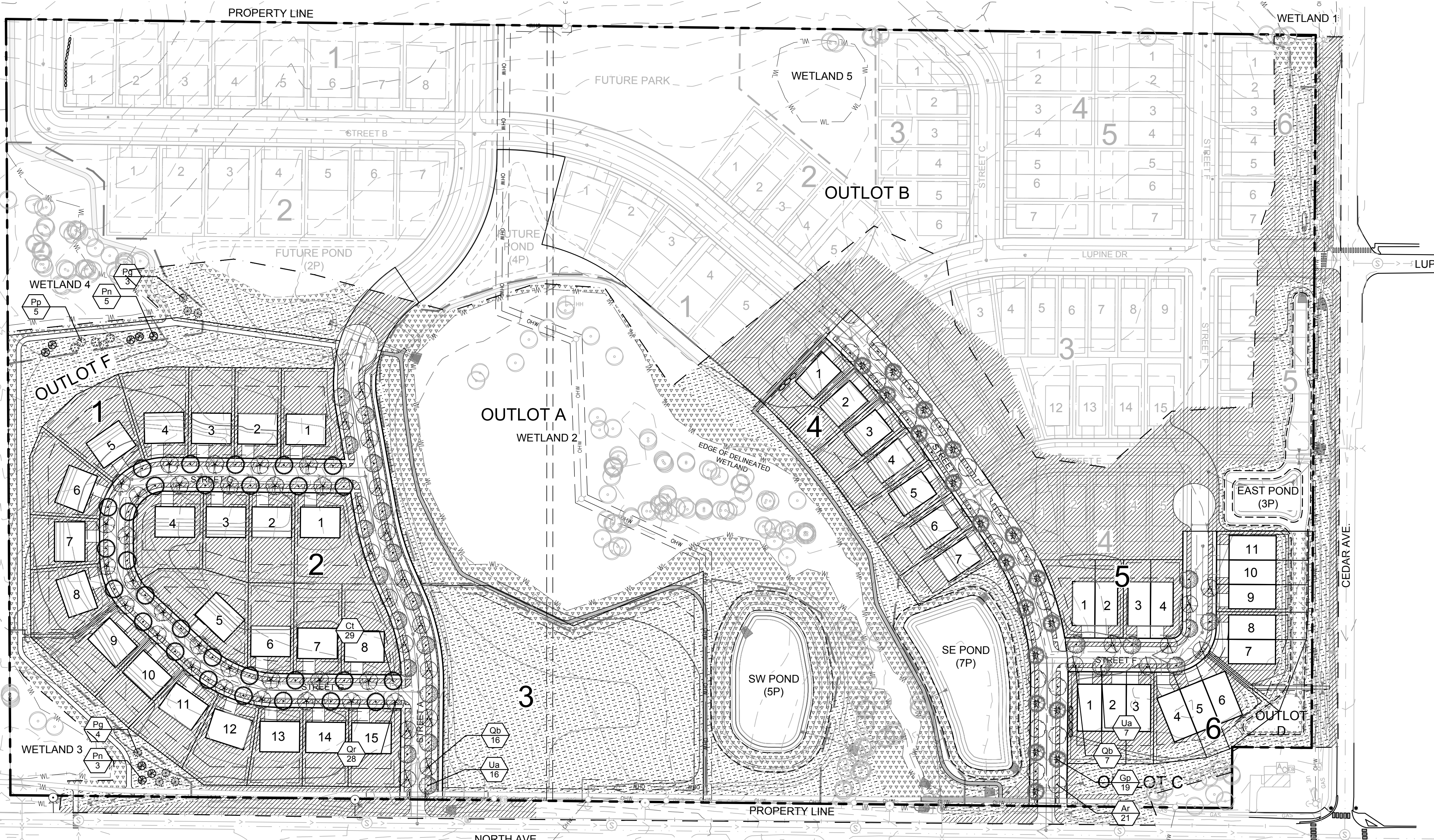
CONSTRUCTION DOCUMENTS

DESIGNED: CHC	DRAWN: AM	CHECKED BY: CHC
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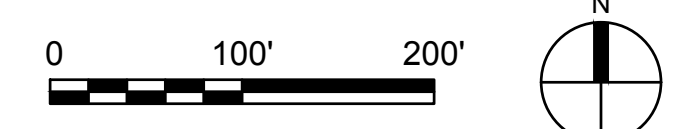
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PLANTING PLAN

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L3

PAGE: 25 OF 26
PLOTTED: 1/5/2024 COMM. NO. 16826



1 PLANTING PLAN
SCALE: 1" = 100' (22" x 34" PAPER SIZE)



Feb 15, 2024 - 11:27am J:\Dobias Y:\16800\16826 - TERRACE COMPANIES - 62 ACRE DEVELOPMENT - NORTHFIELD MN_00 Construction Documents_08 LA_01 CAD files_01 SHEETS\16826_L_PLANTING.dwg Xref Filename: '16826_s_base\16826_titleblock_22x34\16826_u_base'

GENERAL LANDSCAPE NOTES

- LANDSCAPE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID TO BECOME COMPLETELY FAMILIAR WITH SITE CONDITIONS.
- NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN IMMEDIATE AREA.
- IT IS THE RESPONSIBILITY OF THE OWNER & CONTRACTOR TO IDENTIFY ALL UNDERGROUND CABLES, CONDUITS, WIRES, ETC., ON THE PROPERTY.
- THE CONTRACTOR IS RESPONSIBLE FOR COMPLETE MAINTENANCE OF THE PLANT MATERIAL (WATERING, SPRAYING, FERTILIZING, MOWING, ETC.) UNTIL THE WORK HAS BEEN ACCEPTED, BY THE OWNER.
- IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER OF PLANTS SHOWN IN THE PLANT SCHEDULE, THE NUMBER OF PLANTS SHOWN ON THE PLAN WILL TAKE PRECEDENCE.
- ALL CONTAINER MATERIAL TO BE GROWN IN CONTAINER A MINIMUM OF 6 MONTHS.
- ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMEN.
- REPAIR ALL DAMAGE TO PROPERTY FROM PLANTING OPERATIONS AT NO COST TO THE OWNER.
- GUARANTEE NEW PLANT MATERIAL THROUGH ONE CALENDAR YEAR. DECIDUOUS TREES WILL BE GUARANTEED FOR TWO CALENDAR YEARS FROM TIME OF PROVISIONAL ACCEPTANCE.
- ALL PROPOSED PLANTS SHALL BE LOCATED CAREFULLY AS SHOWN ON THE PLANS AND SHALL BE APPROVED BY OWNERS REPRESENTATIVE BEFORE THEY ARE INSTALLED.
- CONTRACTOR CAN SUBSTITUTE MACHINE MOVED MATERIAL USING APPROPRIATE SIZE TREE SPADE FOR B & B WITH OWNERS REPRESENTATIVE APPROVAL.
- LANDSCAPE CONTRACTOR SHALL ENSURE THAT NEW TREES MOVED ONTO THE SITE ARE DUG FROM SIMILAR SITES WITH SIMILAR SOILS TO THE SOILS OF THIS PROJECT (HEAVY TO HEAVY, LIGHT TO LIGHT, HEAVY TO LIGHT SOILS).
- LANDSCAPE CONTRACTOR IS REQUIRED TO PROVIDE OWNER WITH MAINTENANCE INFORMATION DURING GUARANTEE PERIOD RELATING TO WATERING, FEEDING, PRUNING, PEST CONTROL, AND RELATED ITEMS. THIS WILL BE PREPARED AND DELIVERED TO OWNER AFTER PROVISIONAL INSPECTION APPROVAL HAS BEEN GIVEN BY OWNERS REPRESENTATIVE.
- BREATHABLE SYNTHETIC FABRIC TREE WRAP: WHITE IN COLOR, IN 3 INCH WIDE ROLLS. MATERIAL SHALL BE SPECIFICALLY MANUFACTURED FOR TREE WRAPPING. TREE WRAP SHALL BE SECURED TO THE TRUNK USING BIO-DEGRADABLE TAPE SUITABLE FOR NURSERY USE AND WHICH IS EXPECTED TO DEGRADE IN SUNLIGHT IN LESS THAN 2 YEARS AFTER INSTALLATION. WRAP ALL TREES, EXCEPT HACKBERRY TREE SHALL BE PROTECTED PRIOR TO 12/1.
- LANDSCAPE FABRIC (FILTER MAT) TO HAVE A COMBINED WEIGHT OF 4.5-5.5 OZ. PER S.Y. FABRIC SHOULD BE U.V. STABILIZED AND HAVE A FIVE YEAR MINIMUM WEATHERABILITY FACTOR IN FULL SUNLIGHT. FABRIC TO BE PHILLIPS DUON R OR EQUIVALENT. SAMPLE REQUIRED FOR APPROVAL.
- LANDSCAPE BED MULCH SHALL BE SHREDDED HARDWOOD MULCH. MULCH SHALL BE INSTALLED AT A DEPTH OF 3" WITH NO WEED BARRIER LANDSCAPE FABRIC.
- ALL TREES PLANTED INDEPENDENTLY OF SPECIFIED BEDS SHALL RECEIVE 3" DEEP SHREDDED HARDWOOD MULCH WITHOUT FABRIC.
- ALL PLANTINGS SHALL RECEIVE FERTILIZER AND APPLIED AT THE RATE INDICATED BY THE MANUFACTURER. FERTILIZER SHALL BE GENERAL PURPOSE 10-10-10.
- IF THE CONTRACTOR FEELS AN ERROR HAS BEEN MADE REGARDING SPACING OR HARDINESS OF A SPECIES OF PLANT MATERIAL INDICATED ON THE PLAN, NOTIFY THE LANDSCAPE ARCHITECT PRIOR TO THE INSTALLATION OF PLANT MATERIAL.
- ALL NEWLY INSTALLED PLANT MATERIAL SHALL BE PLANTED IN WELL-DRAINED AREAS. CONTRACTOR SHALL AVOID INSTALLING ANY PLANT MATERIAL IN DRAINAGE SWALES OR WET & POORLY DRAINED AREAS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ALL TREE STAKES, GUYS, STRAPS AND TRUNK PROTECTION MEASURES FOLLOWING THE COMPLETION OF THE WARRANTY PERIOD OR AS DIRECTED BY THE OWNER.
- THE PRACTICE OF STAKING SHOULD NOT ALLOW NAILS, SCREWS, WIRES, ETC. TO PENETRATE THE OUTER SURFACE OF THE TREES.
- THE CONTRACTOR SHALL MEET WITH THE OWNER ON SITE WHEN THEY FEEL THE PROJECT IS COMPLETE ACCORDING TO THE CONTRACT DOCUMENTS. IF ALL WORK IS SATISFACTORY AND COMPLETE ACCORDING TO THE CONDITIONS OF THE CONTRACT DOCUMENTS, THEN THE OWNER MUST DECLARE THE PROJECT COMPLETE. THIS DECLARATION WILL CONSTITUTE AS THE BEGINNING OF THE WARRANTY PERIOD FOR ALL PLANT MATERIAL. THE OWNER SHALL PROVIDE A LETTER WITH SIGNATURE STATING THE DATE OF ACCEPTANCE.

SODDING, SEEDING & TOPSOIL NOTES

- PLANTING SOIL REQUIRED: MIXTURE TO INCLUDE 45% TOPSOIL, 45% PEAT OR MANURE AND 10% SAND. ALL TREE, SHRUB AND PERENNIAL PLANTINGS SHALL RECEIVE 8" DEPTH OF PLANTING SOIL MIXTURE. ALL SODDED AREAS TO RECEIVE 4" DEPTH OF PLANTING SOIL MIXTURE. ALL SEEDED AREAS TO RECEIVE 2" DEPTH OF PLANTING SOIL MIXTURE.
- ALL AREAS SPECIFIED AS NEW TURF SEED MIX "MNDOT 25-131" TO BE SEEDED PER MNDOT RECOMMENDED APPLICATION RATES AND METHODS. "MNDOT 25-131" OR APPROVED EQUAL IS A BASIS OF DESIGN. CONTRACTOR IS RESPONSIBLE FOR ALL EROSION CONTROL NEEDS TO ESTABLISH VIGOROUS GROWTH PER MNDOT 2014 SEEDING MANUAL STANDARDS.
- ALL AREAS SPECIFIED AS NEW RIPARIAN SEED MIX "MNDOT 34-261" TO BE SEEDED PER MNDOT RECOMMENDED APPLICATION RATES AND METHODS. "MNDOT 34-261" OR APPROVED EQUAL IS A BASIS OF DESIGN. CONTRACTOR IS RESPONSIBLE FOR ALL EROSION CONTROL NEEDS TO ESTABLISH VIGOROUS GROWTH PER MNDOT 2014 SEEDING MANUAL STANDARDS.
- ALL AREAS SPECIFIED AS NEW MESIC PRAIRIE SEED MIX "MNDOT 35-241" TO BE SEEDED PER MNDOT RECOMMENDED APPLICATION RATES AND METHODS. "MNDOT 25-241" OR APPROVED EQUAL IS A BASIS OF DESIGN. CONTRACTOR IS RESPONSIBLE FOR ALL EROSION CONTROL NEEDS TO ESTABLISH VIGOROUS GROWTH PER MNDOT 2014 SEEDING MANUAL STANDARDS.



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DESIGNED:	DRAWN:	CHECKED BY:
CHC	AM	CHC

DRAWING TITLE

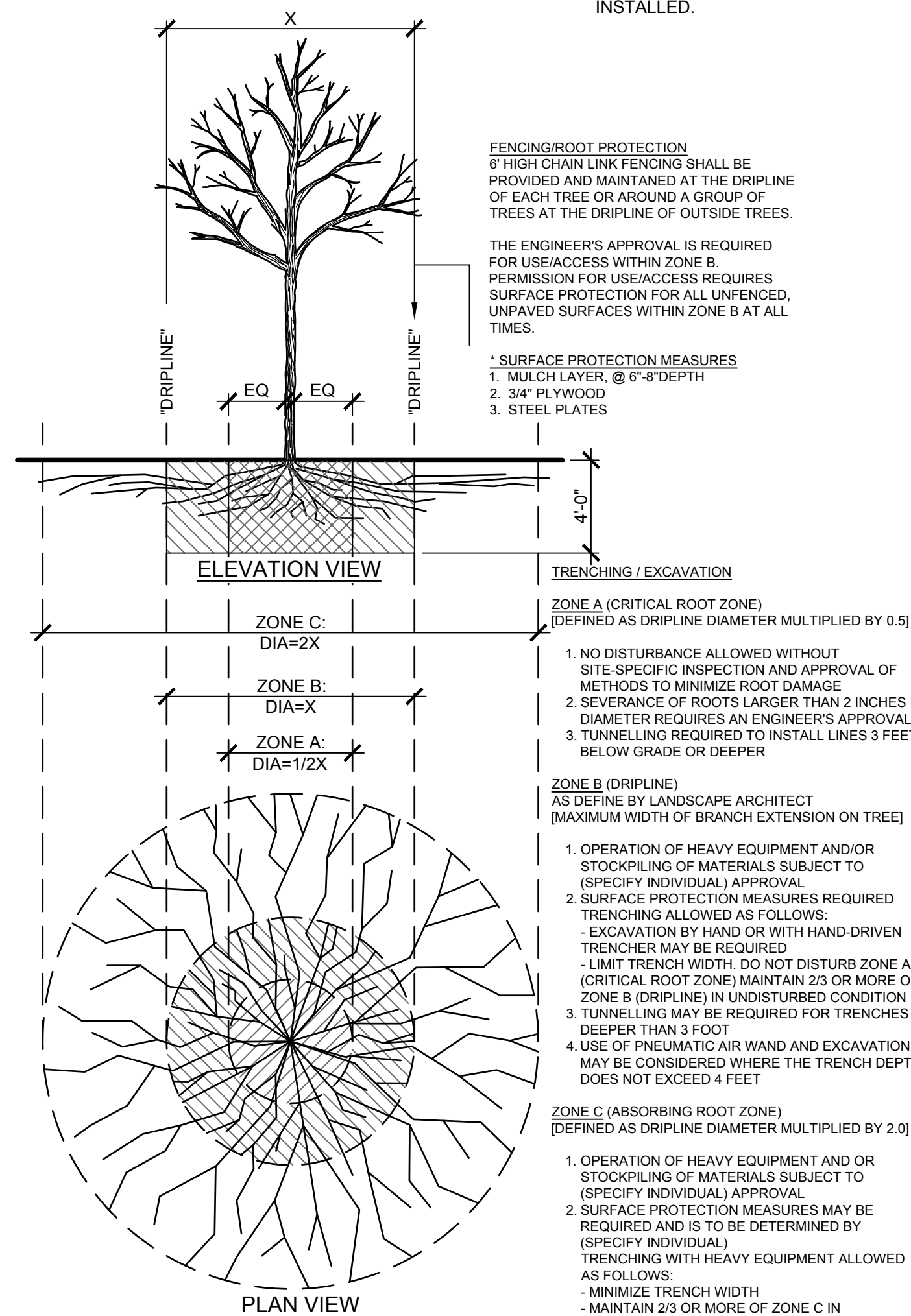
PLANTING NOTES & DETAILS

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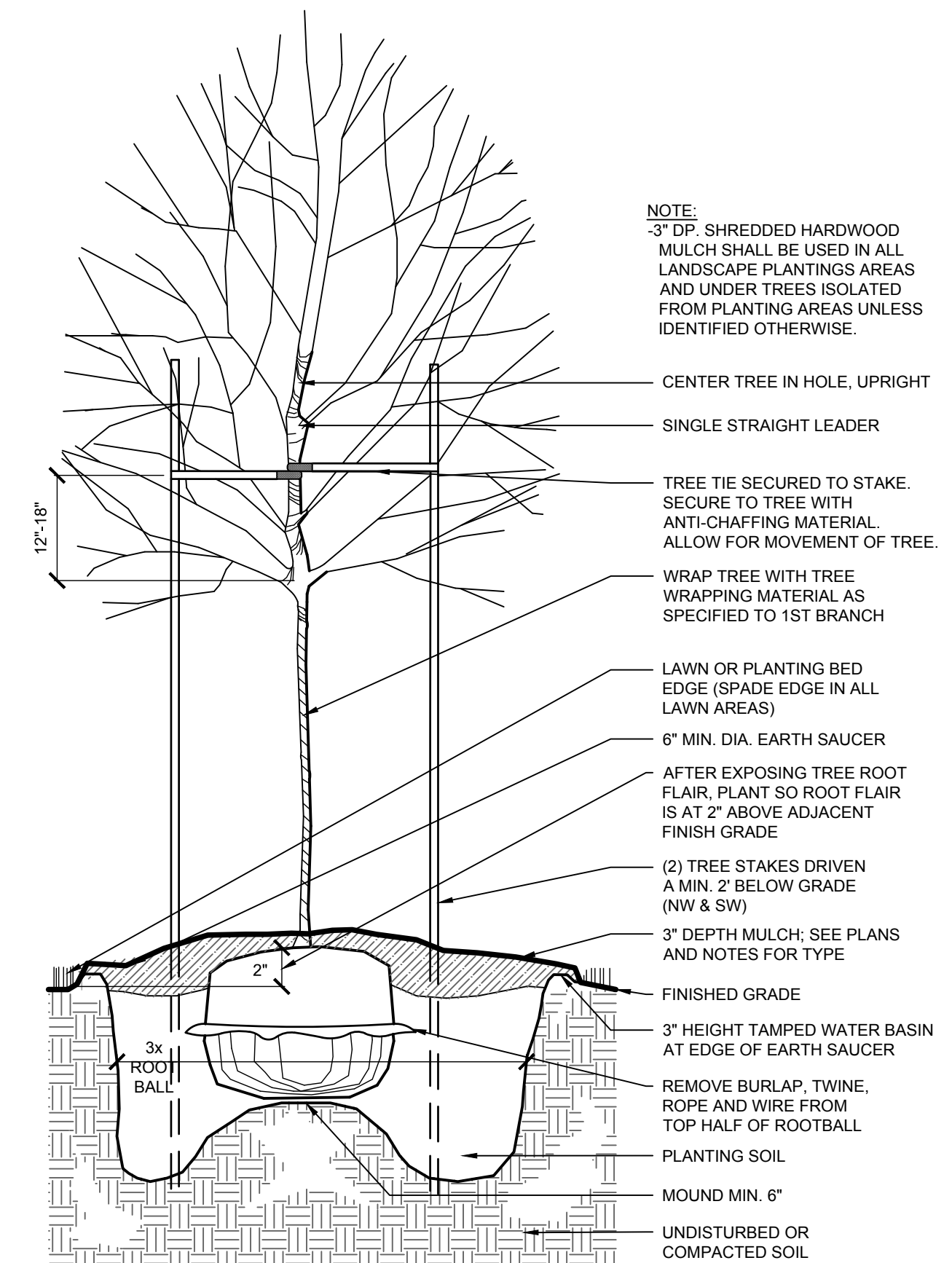
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PAGE: 26 OF 26

PLOTTED:	COMM. NO.
1/5/2024	16826



1 TREE PROTECTION DETAIL
SCALE: N.T.S.



2 DECIDUOUS TREE PLANTING (TYP.)
SCALE: N.T.S.

Feb 15, 2024 - 11:27am J:\Dobias\16826_s_base\16826_c_base\16826_titleblock_22x34\16826_u_base\Y:\1680016826 - TERRACE COMPANIES - 62 ACRE DEVELOPMENT - NORTHFIELD MN_00 Construction Documents\08_LA\01 CAD files\01 SHEETS\16826_L_PLANTING.dwg Xref Filename: Y:\16826_s_base\16826_c_base\16826_titleblock_22x34\16826_u_base