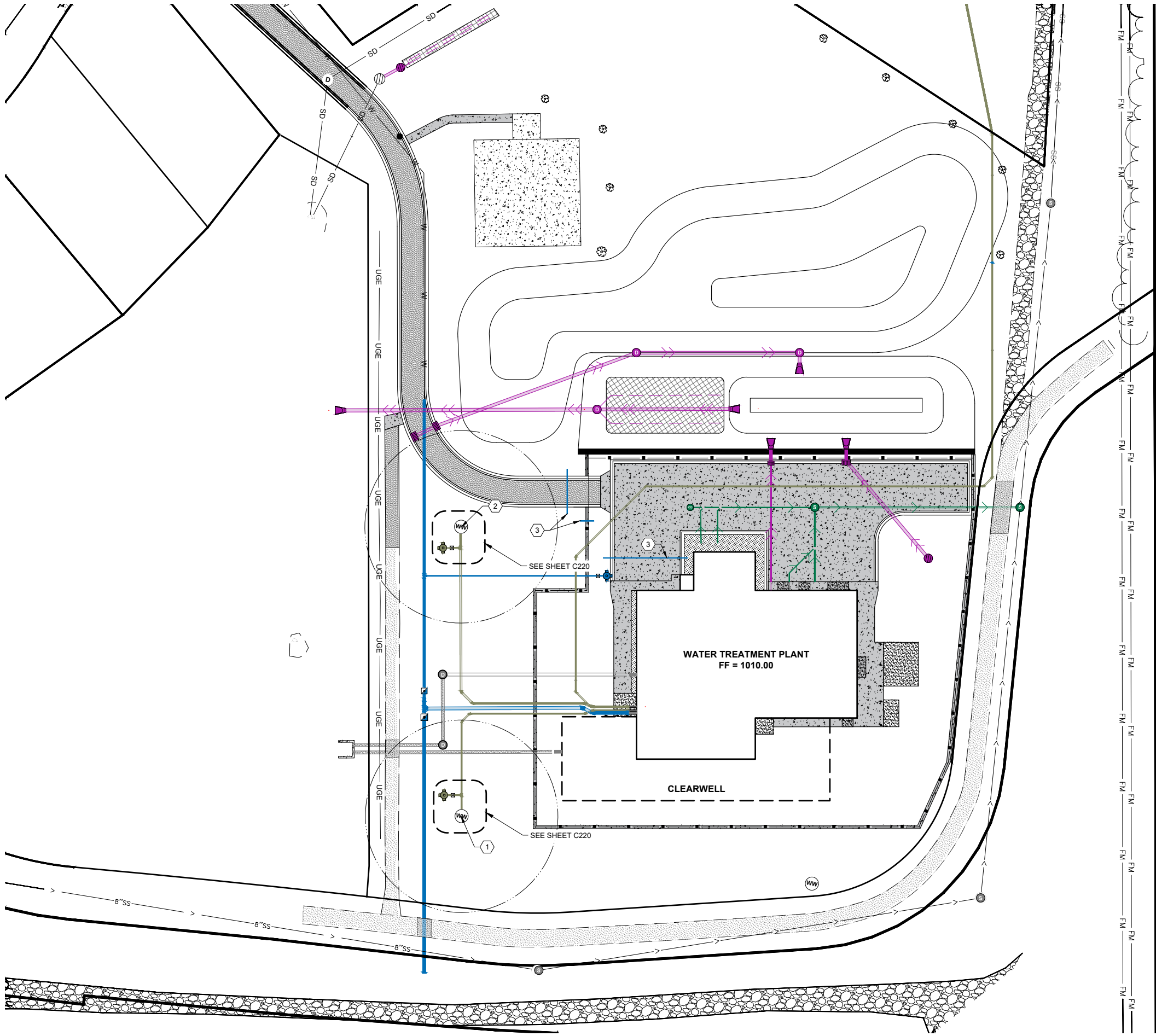


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Printed By: daniel.landrus Date: Friday, September 5, 2025



Certification of Individual Project Design Disciplines Are Included On Their Individual Drawings, Respectively

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

SIGNATURE: *[Signature]*

TYPED NAME: DANIEL LANDRUS
SEPTEMBER 3, 2025 LIC. NO. 54263



0 30
Scale in Feet

CONSTRUCTION NOTES

- WELL 8
- WELL 9
- 4" PVC IRRIGATION CARRIER PIPE

PROCESS PIPE LEGEND

- FINISHED WATER (FW)
- RAW WATER (RW)
- OVERFLOW

SITE PIPING - OVERALL LAYOUT

CLIENT:	CITY OF MINNETRISTA MINNETRISTA, MN	PREPARED BY: GP
PROJECT NO: P05355-2023-002	SHEET DESIGNATOR:	CHECKED BY: DL
DATE: JULY 2025	SHEET NO:	APPROVED BY: DL
ALT. PROJECT NO: 000-0000	SW	C203

STATUS: CONSTRUCTION

ADDENDUM 2

DATE

SYM

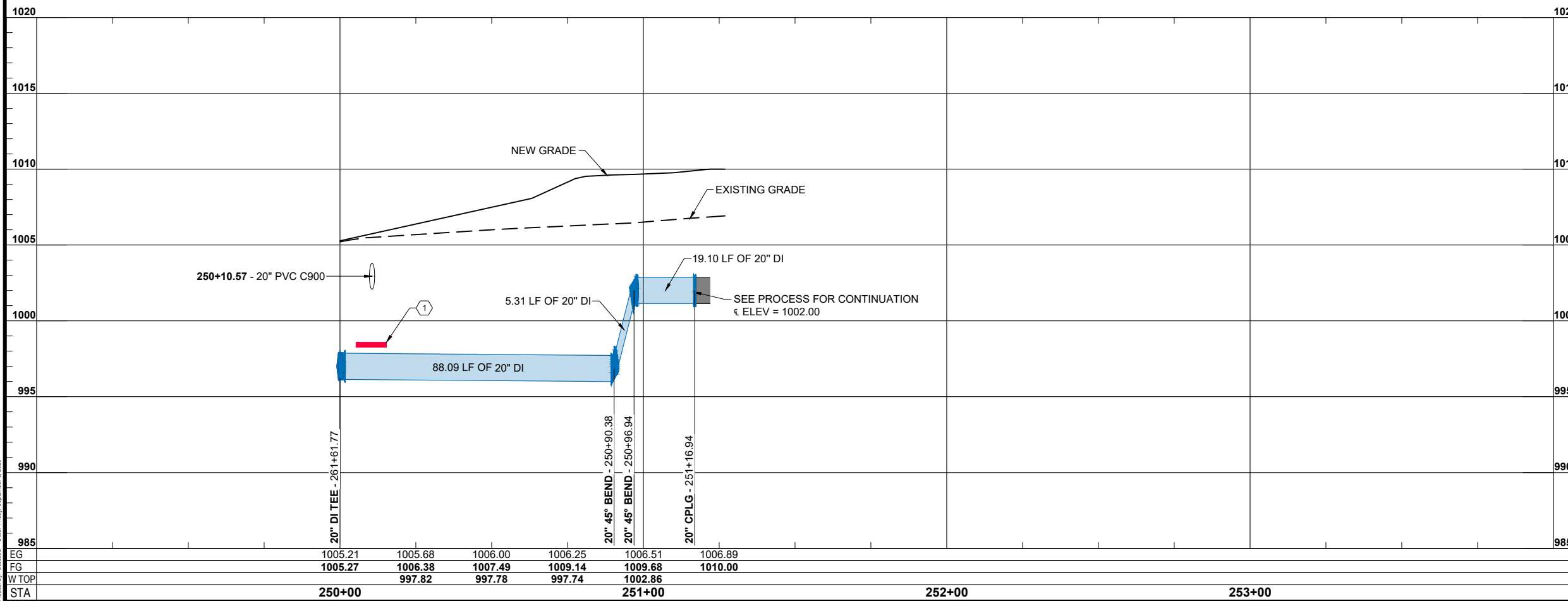
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APPR

MINNETRISTA WOODLAND COVE WTP PROJECT

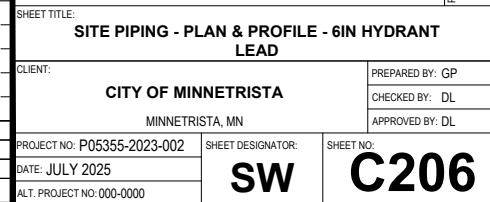
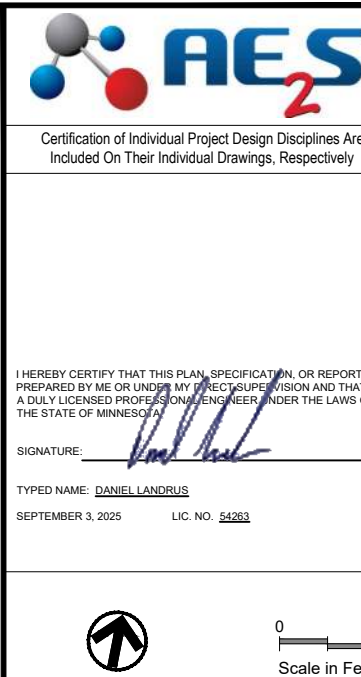
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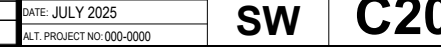
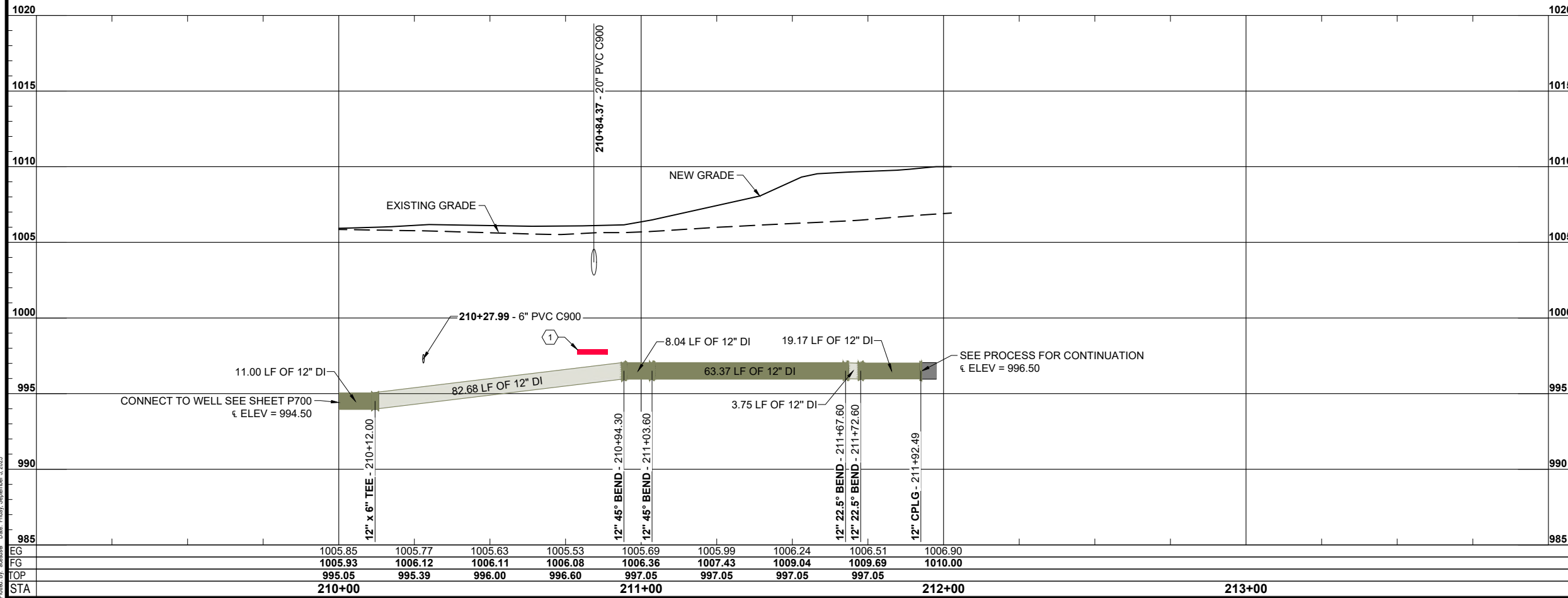
Advanced Engineering and Environmental Services, LLC www.ae2s.com



10

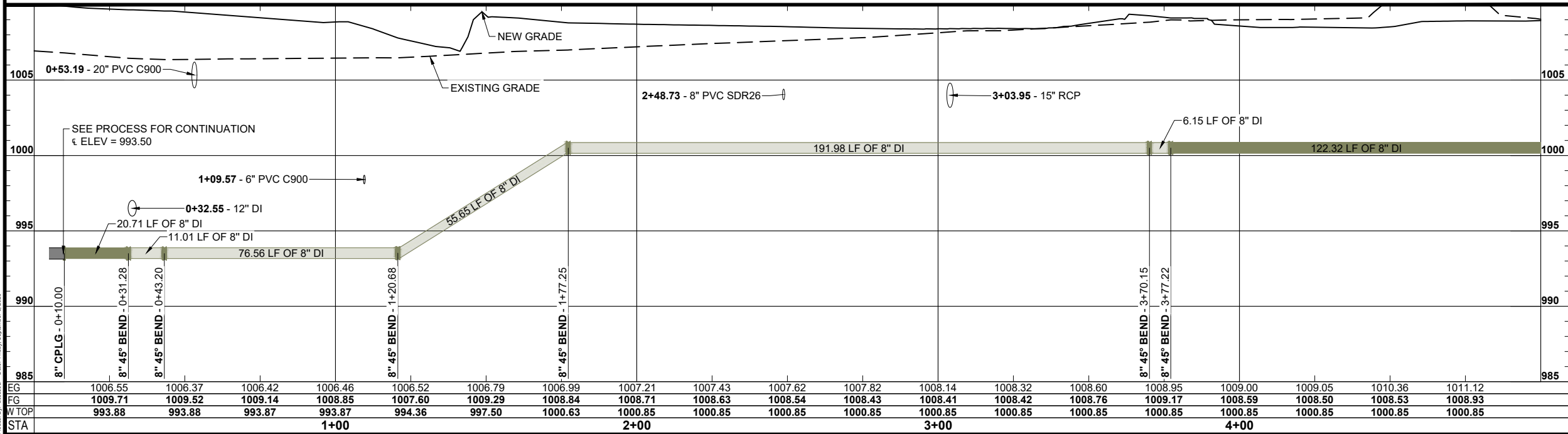
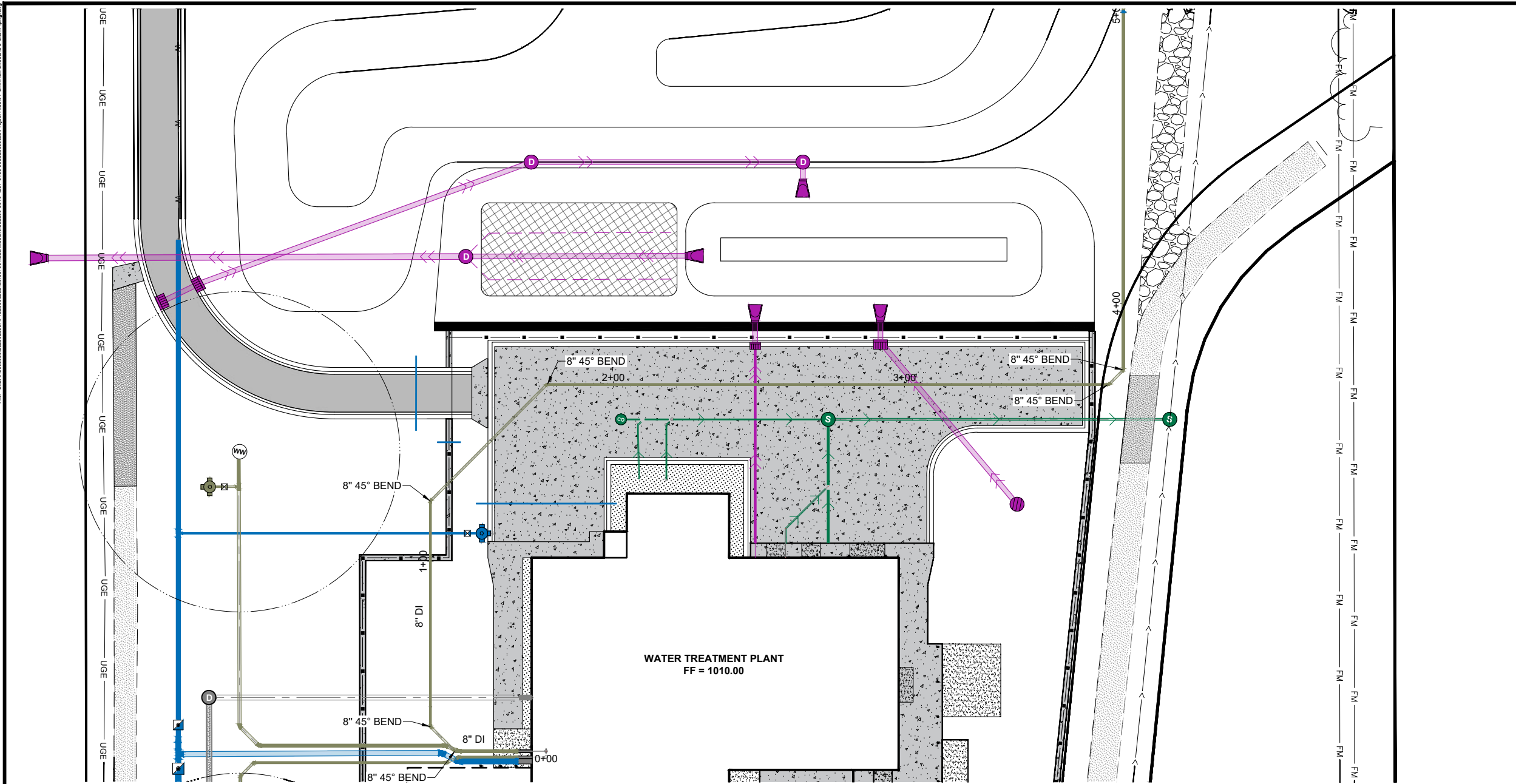
ISTA WOODLAND COVE WTP PROJECT
Advanced Engineering and Environmental Services, LLC www.ae2s.com





File: C:\Users\landr\OneDrive\Documents\Projects\Woodland Cove WTP\Drawings\Sheet C209.dwg

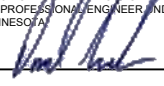
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SIGNATURE: 

TYPED NAME: DANIEL LANDRUS
SEPTEMBER 3, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

ADDENDUM 2

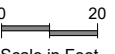
9/3/25

DATE

SYMBOL



NORTH



Scale in Feet

GENERAL NOTES

1. MINIMUM 10' SEPARATION FROM RAW WATER MAIN AND SEWER. DISTANCE MEASURED FROM EDGE OF PIPE TO EDGE OF PIPE.

PROJECT TITLE: MINNETRISTA WOODLAND COVE WTP PROJECT

Advanced Engineering and Environmental Services, LLC www.ae2s.com

SHEET TITLE: **SITE PIPING - PLAN & PROFILE - 8IN RAW WATER**

CLIENT: CITY OF MINNETRISTA
MINNETRISTA, MN

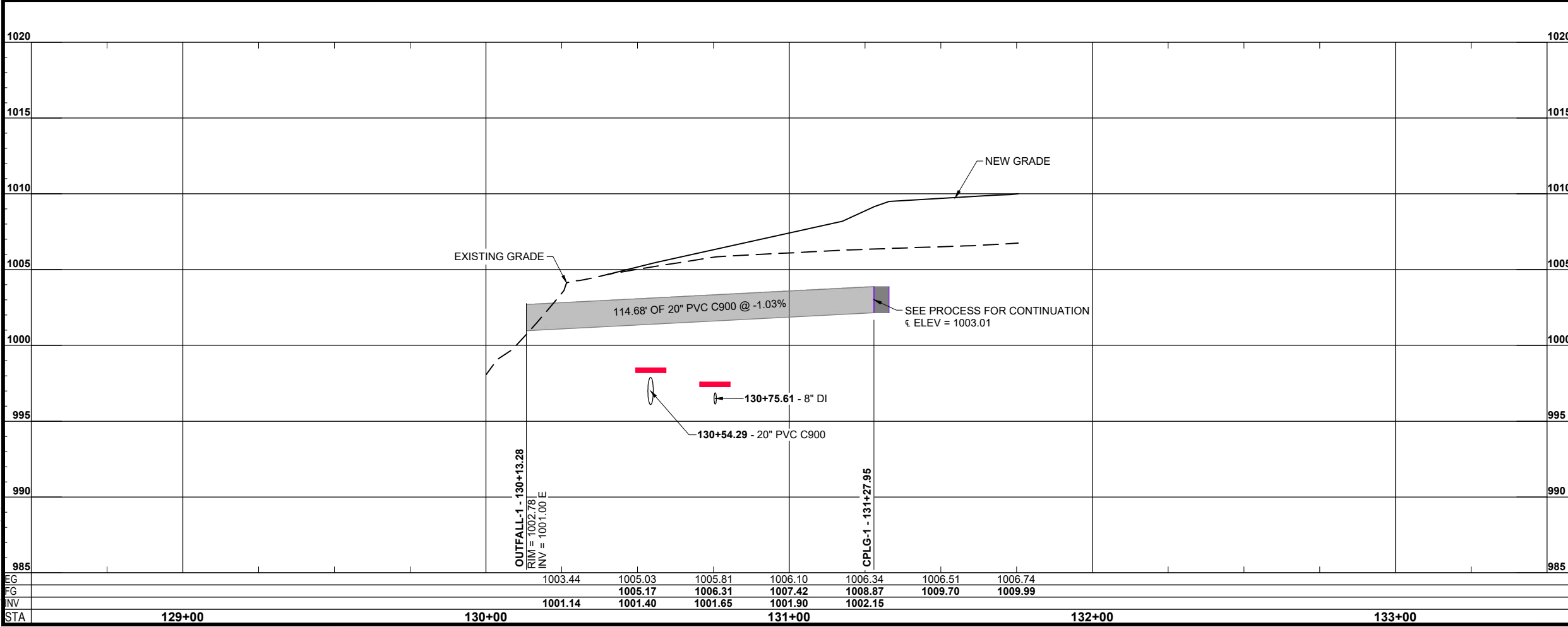
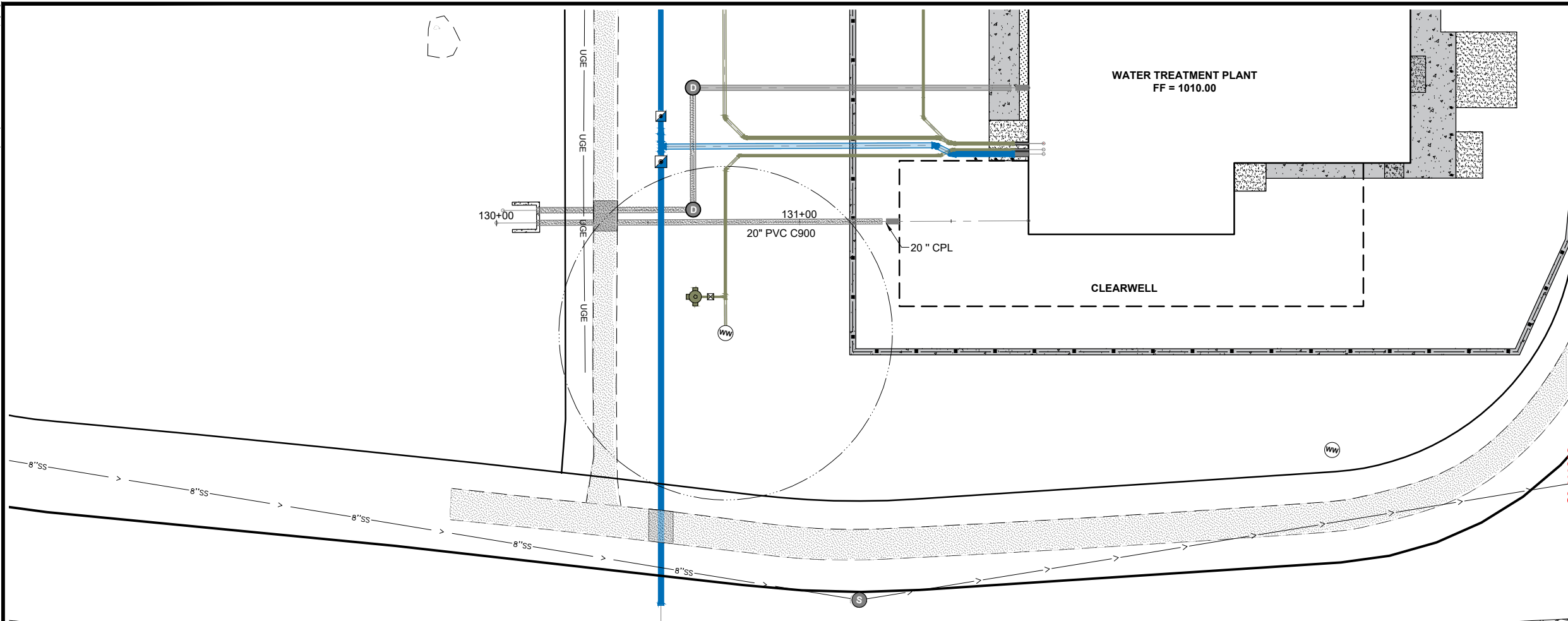
PROJECT NO: P05355-2023-002
DATE: JULY 2025
ALT. PROJECT NO: 000-0000

SHEET DESIGNATOR: **SW**

SHEET NO: **C209**

PREPARED BY: GP
CHECKED BY: DL
APPROVED BY: DL

File: C:\Users\DLandrus\Documents\2023\002\AES\0556-2023\002\Minnetrista Woodland Cove WTP Project\Project Files\01 - Civil\Plan Sheets\01 - Site Plan.dwg
Plotted By: Dan Landrus Date: Monday, September 22, 2025



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SIGNATURE:

TYPED NAME: DANIEL LANDRUS
SEPTEMBER 22, 2025 LIC. NO. 54263

STATUS: CONSTRUCTION
ADDENDUM NO. 3
9/2/25
DATE

SYMBOLS
SCALE IN FEET
0 20

GENERAL NOTES

1. OVERFLOW PIPING SHALL BE AIR TESTED ACCORDING TO SANITARY SEWER TESTING REQUIREMENTS.

PROJECT TITLE: MINNETRISTA WOODLAND COVE WTP PROJECT
Advanced Engineering and Environmental Services, LLC www.ae2s.com

SHEET TITLE: SITE PIPING - PLAN & PROFILE - 20IN CLEARWELL OVERFLOW

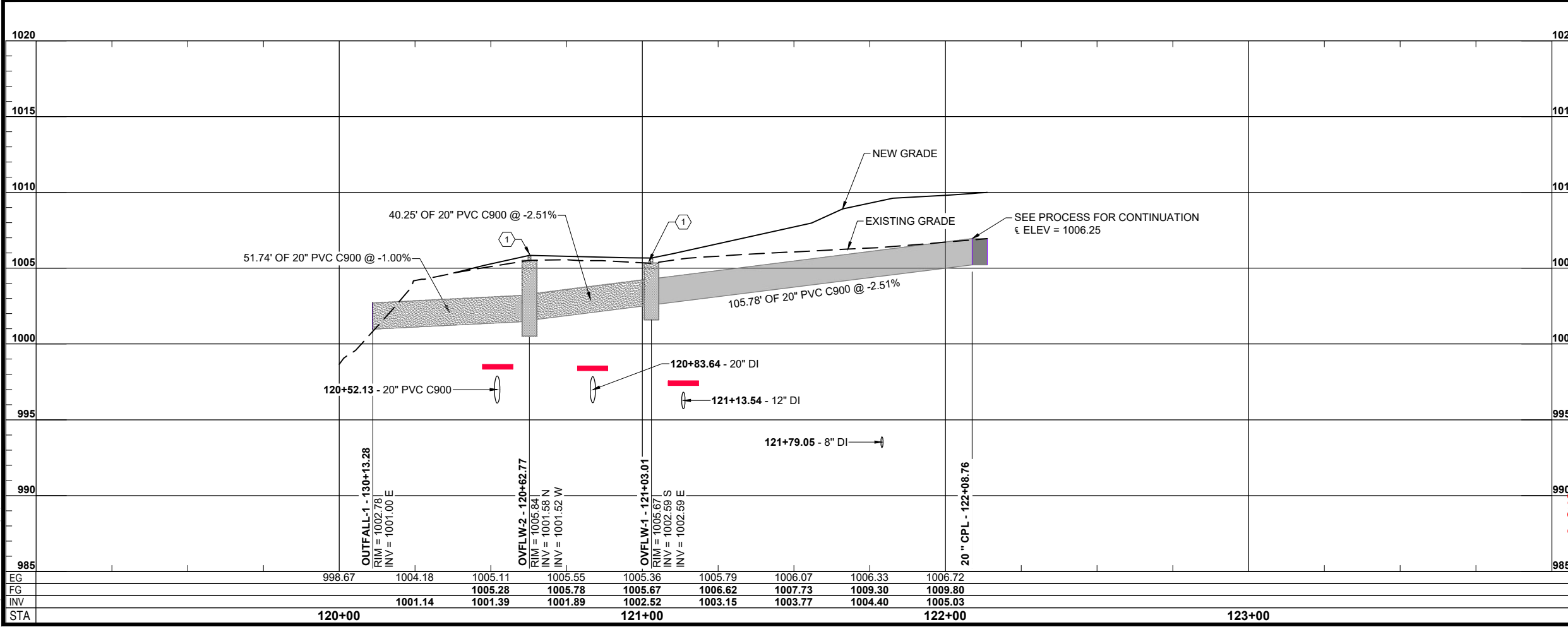
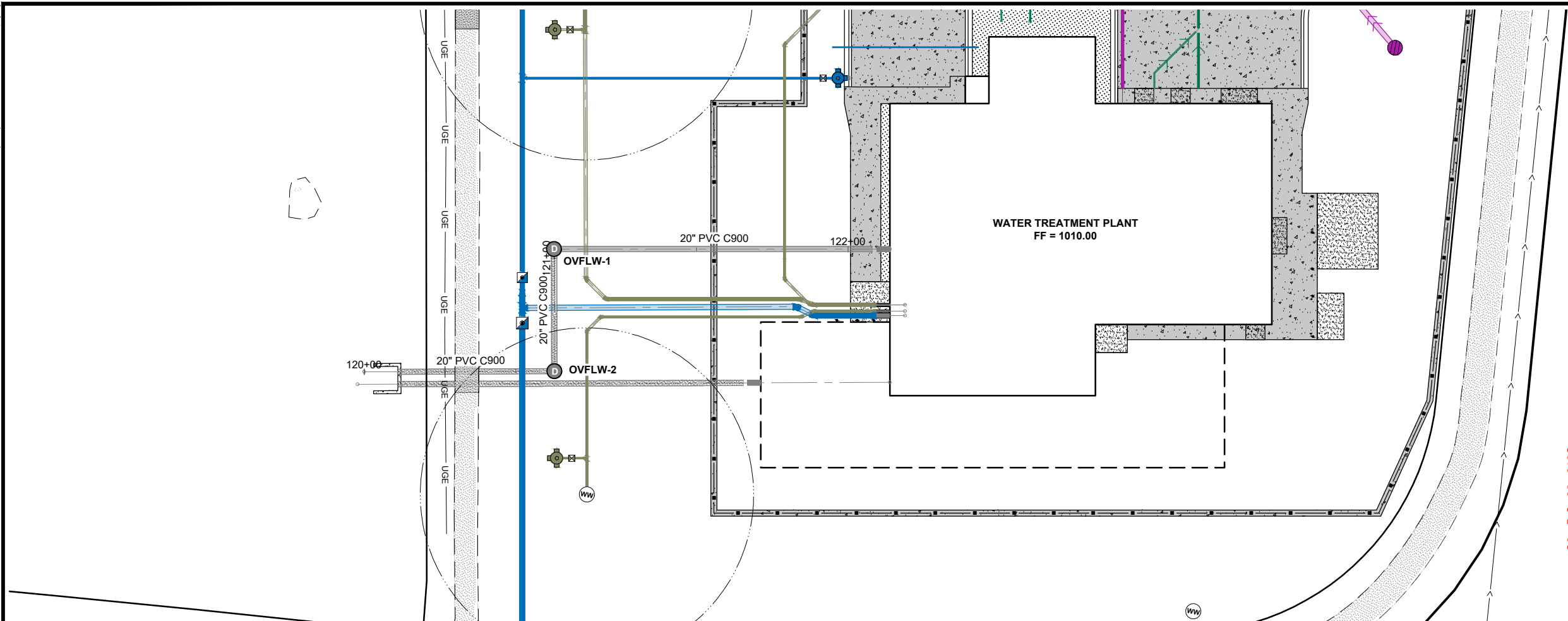
CLIENT: CITY OF MINNETRISTA
MINNETRISTA, MN

PROJECT NO. P05355-2023-002
DATE: JULY 2025
ALT. PROJECT NO. 000-0000

SHEET DESIGNATOR: SW
SHEET NO.: C211

PREPARED BY: GP
CHECKED BY: DL
APPROVED BY: DL

File: C:\Users\DLandrus\Documents\2023\002\AES\0556-2023-002 Minnetrista Woodland Cove WTP Project\Project Files\01 Civil\Plan Sheets\01 Site Plan.dwg
Plotted By: Dan Landrus Date: Monday, September 22, 2025



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SIGNATURE:

TYPED NAME: DANIEL LANDRUS

SEPTEMBER 22, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

ADDENDUM: 03

DATE: 9/22/25

SYMBOL:

GENERAL NOTES

1. OVERFLOW PIPING SHALL BE AIR TESTED ACCORDING TO SANITARY SEWER TESTING REQUIREMENTS.

CONSTRUCTION NOTES

1. CONSTRUCT MANHOLE PER DETAIL SAN-01 ON SHEET C701. NO TEXT INCLUDED ON COVER.

MINNETRISTA WOODLAND COVE WTP PROJECT

Advanced Engineering and Environmental Services, LLC www.ae2s.com

SHEET TITLE: **SITE PIPING - PLAN & PROFILE - 20IN BACKWASH OVERFLOW**

CLIENT: **CITY OF MINNETRISTA**
MINNETRISTA, MN

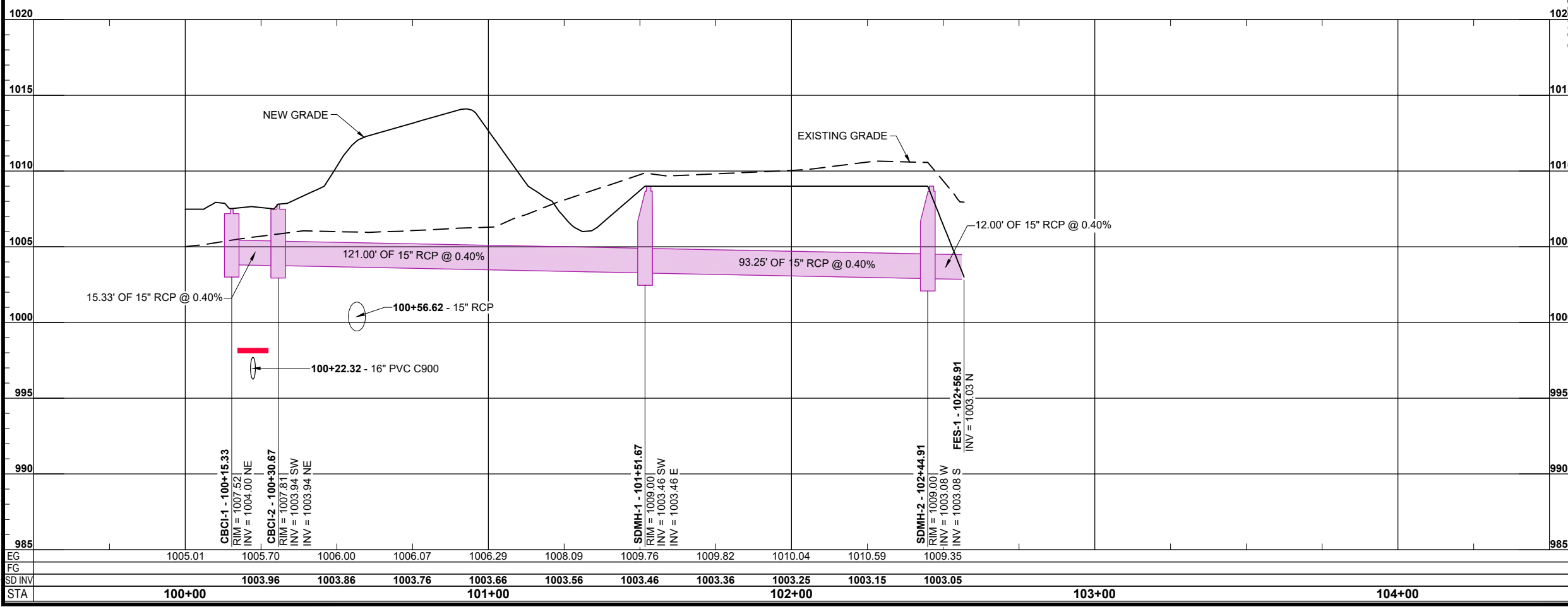
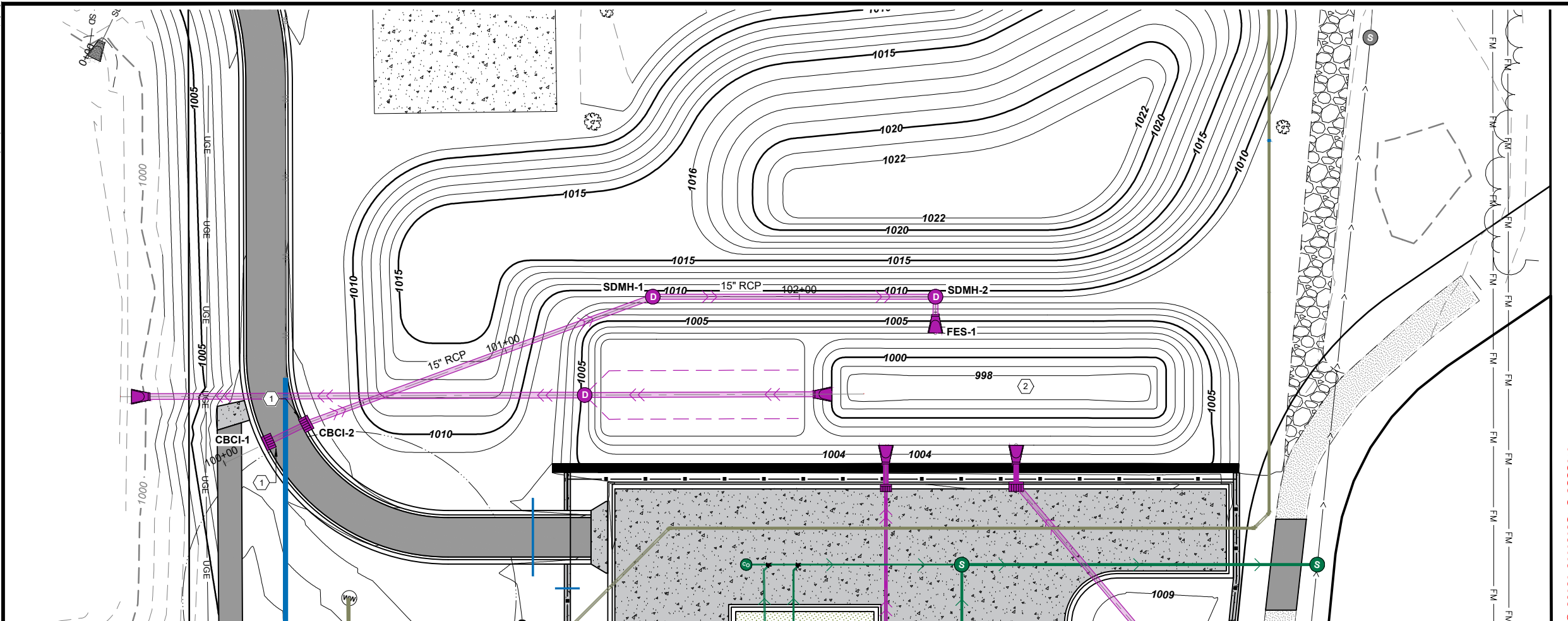
PREPARED BY: GP
CHECKED BY: DL
APPROVED BY: DL

PROJECT NO: P05355-2023-002
DATE: JULY 2025
ALT. PROJECT NO: 000-0000

SHEET DESIGNATOR: **SW**

SHEET NO: **C212**

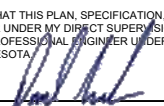
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Plotted By: Dan Landrus Date: Monday, September 22, 2025





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SIGNATURE: 

TYPED NAME: DANIEL LANDRUS

SEPTEMBER 22, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

ADDENDUM 3

DATE: 9/22/25

SYMBOL: 



NORTH

0 20

Scale in Feet

- GENERAL NOTES**
1. INSTALL ARTICULATED CONCRETE BLOCK MAT AT ALL STORM OUTLETS. SEE DETAIL 1/C708.
 2. TRANSITION FROM PERFORATED PVC DRAIN TILE TO SOLID WALL PVC SCH 40 WHEN DRAIN TILE IS INSTALLED OUTSIDE OF FILTRATION BENCH.
- CONSTRUCTION NOTES**
1. INSTALL 50 LF OF 4" DRAIN TILE ON EACH SIDE OF CATCH BASIN. SEE MNDOT STANDARD PLAN 5-297.430.
 2. STORM BASIN:
BOTTOM: 998.0
NWL / TOP OF SAND: 1002.0
DOLI WATER QUALITY VOLUME: 1002.9
100 YR HWL: 1004.2
TOP: 1008.0

SHEET TITLE: **SITE PIPING - PLAN & PROFILE - STORM SEWER**

CLIENT: **CITY OF MINNETRISTA**
MINNETRISTA, MN

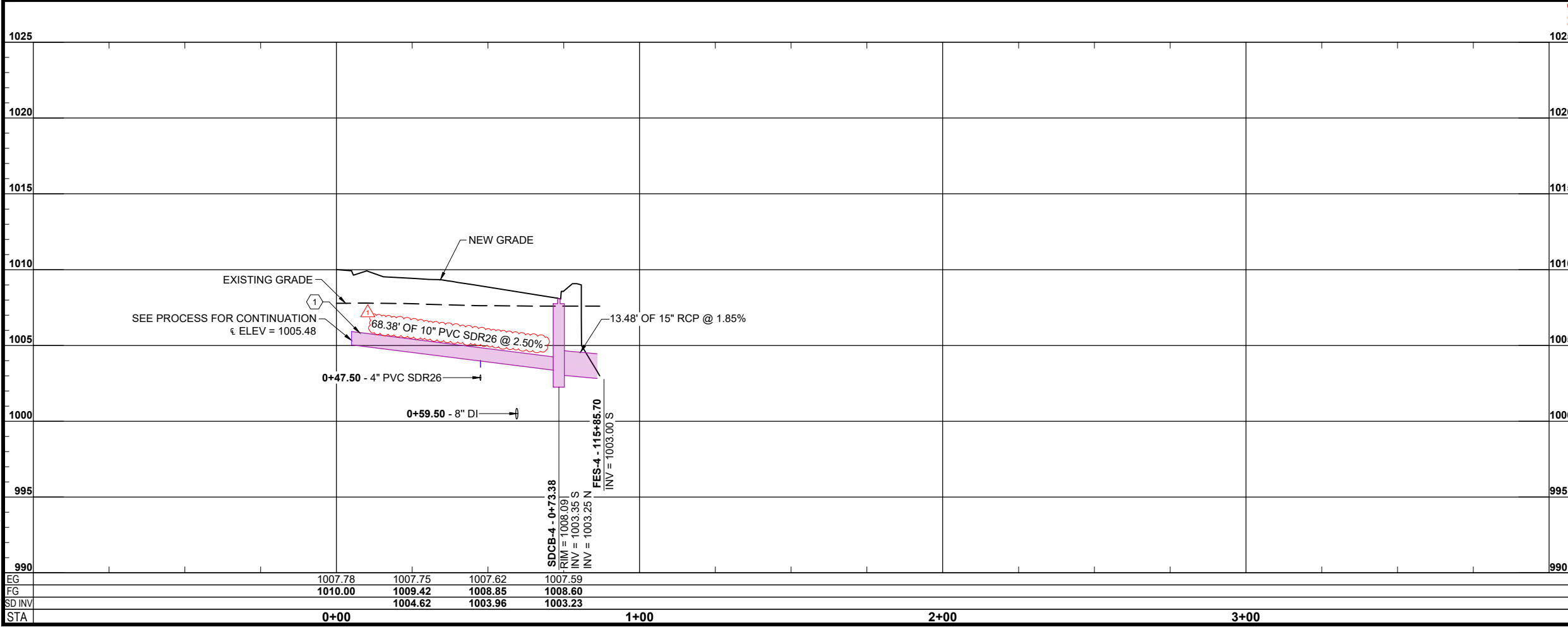
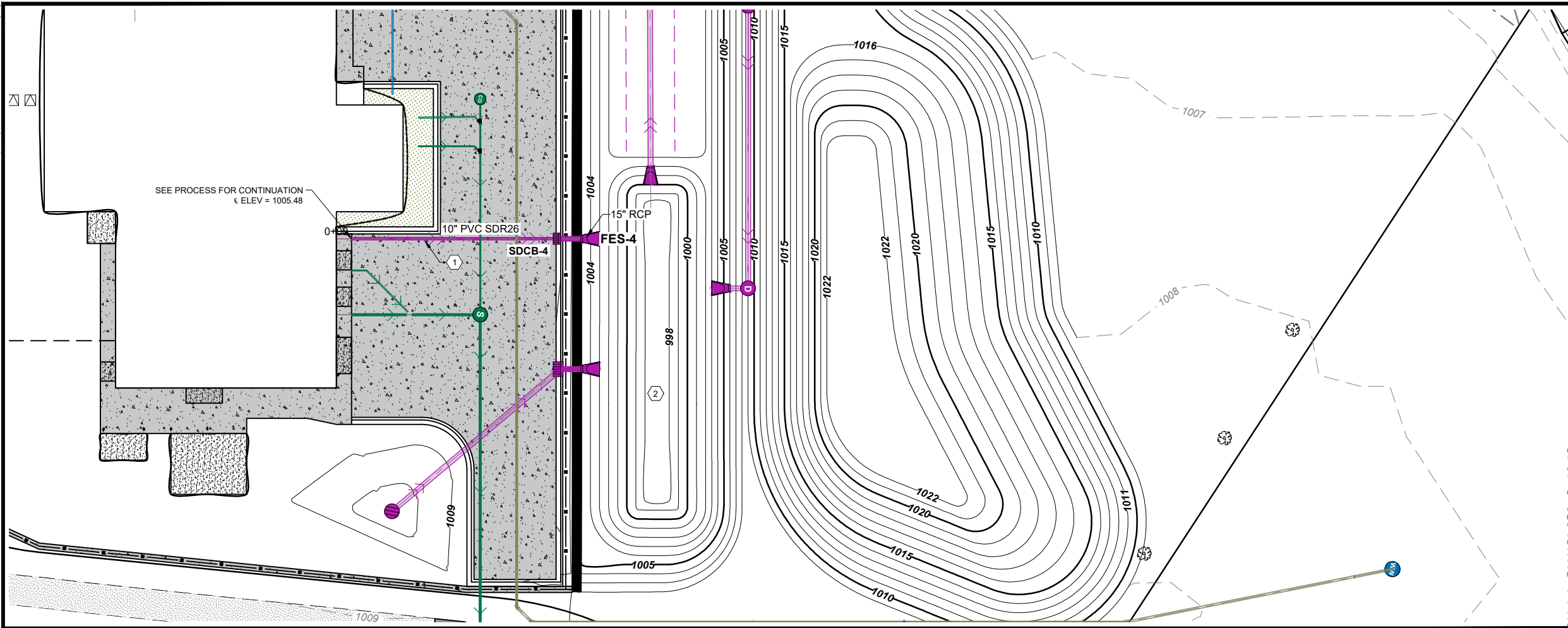
PROJECT NO: P05355-2023-002
DATE: JULY 2025
ALT. PROJECT NO: 000-0000

SHEET DESIGNATOR: **SW**

SHEET NO: **C215**

PREPARED BY: GP
CHECKED BY: DL
APPROVED BY: DL

File: C:\Users\DanielD\OneDrive\AES\2023\002 Minnetrista Woodland Cove WTP Project\Plan Sheet\CU-Storm_Piping.dwg
Plotted By: Dan Landrus Date: Monday, September 22, 2025



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SIGNATURE:

TYPED NAME: DANIEL LANDRUS
SEPTEMBER 22, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

ADDITIONAL: 3

DATE: 9/22/25

SYMBOL:

NORTH

0 20
Scale in Feet

GENERAL NOTES

1. INSTALL ARTICULATED CONCRETE BLOCK MAT AT ALL STORM OUTLETS. SEE DETAIL 1/C708.

CONSTRUCTION NOTES

1. INSTALL INSULATION LENGTH OF PIPE - SEE DETAIL

2. STORM BASIN:
BOTTOM: 998.0
NWL / TOP OF SAND: 1002.0
DOLI WATER QUALITY VOLUME: 1002.9
100 YR HWL: 1004.2
TOP: 1008.0

SHEET TITLE:
SITE PIPING - PLAN & PROFILE - STORM SEWER

CLIENT:
CITY OF MINNETRISTA
MINNETRISTA, MN

PROJECT NO. P05355-2023-002
DATE: JULY 2025
ALT. PROJECT NO. 000-0000

SHEET DESIGNATOR:
SW

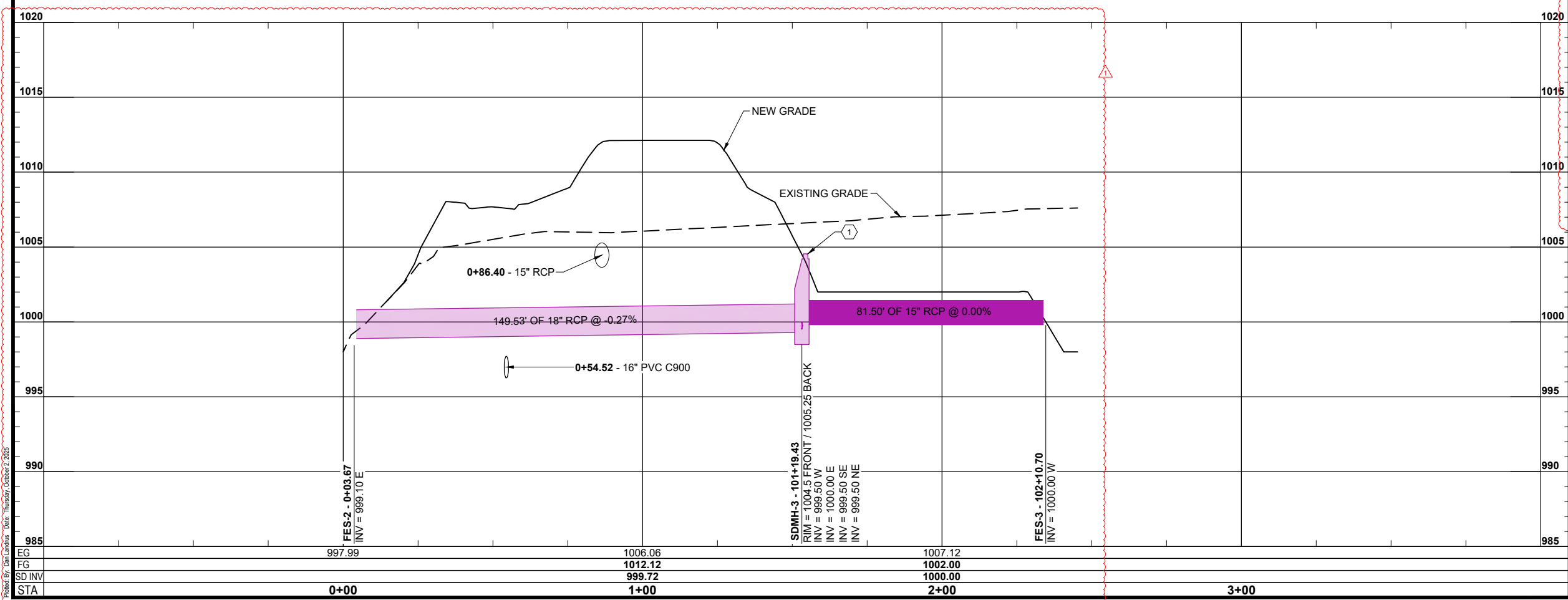
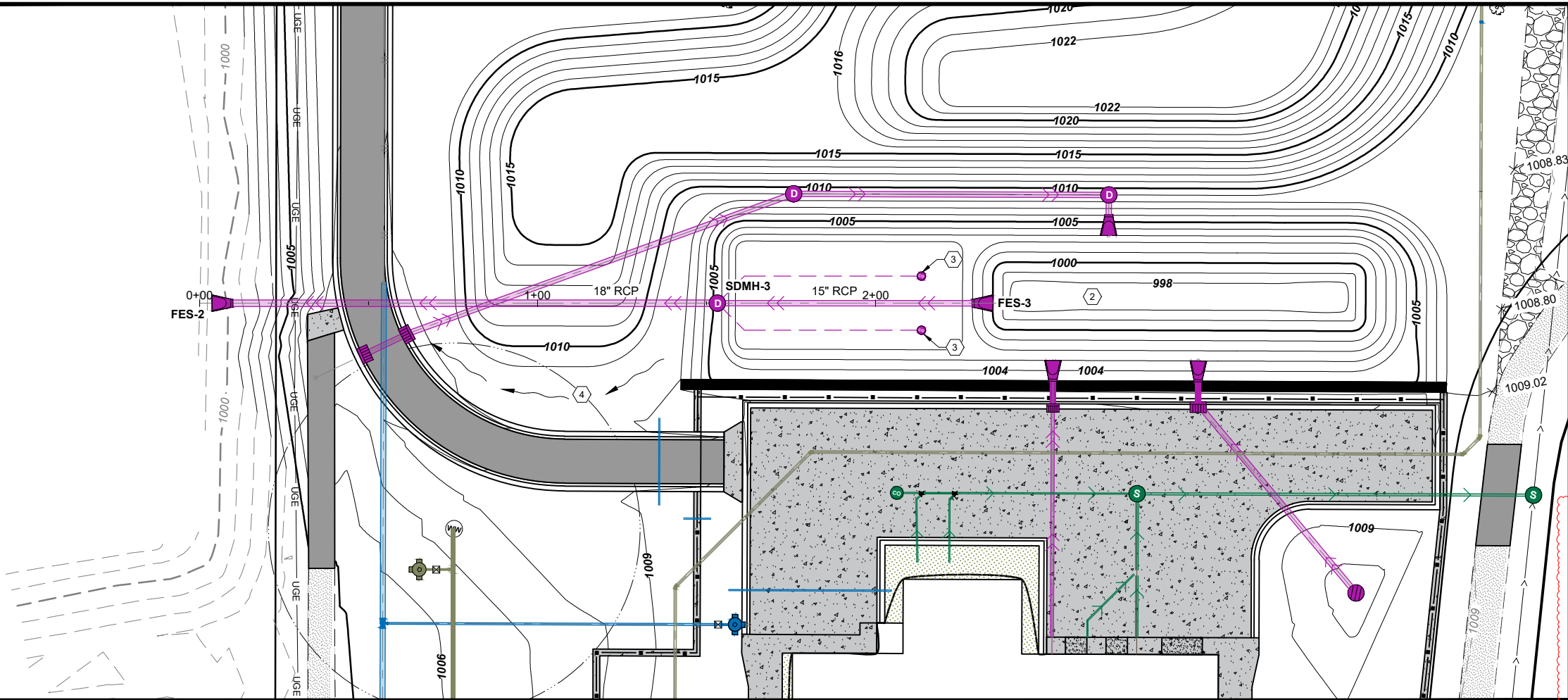
SHEET NO.:
C217

PREPARED BY: GP
CHECKED BY: DL
APPROVED BY: DL

PROJECT TITLE:
MINNETRISTA WOODLAND COVE WTP PROJECT

Advanced Engineering and Environmental Services, LLC www.ae2s.com

File: C:\Users\DanielD\OneDrive\AES\2023\05\05-2023-002 Minnetrista Woodland Cove WTP Project\Project Files\Plan Sheet\CU Storm Piping.dwg
Plotted By: Dan Landrus Date: Thursday, October 2, 2025



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SIGNATURE:

TYPED NAME: DANIEL LANDRUS

OCTOBER 2, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

DATE: 10/02/25

SYMBOL:

DATE: 10/02/25

SYMBOL:

GENERAL NOTES

- INSTALL ARTICULATED CONCRETE BLOCK MAT AT ALL STORM OUTLETS. SEE DETAIL 1/C708.
- TRANSITION FROM PERFORATED PVC DRAIN TILE TO SOLID WALL PVC SCH 40 WHEN DRAIN TILE IS INSTALLED OUTSIDE OF FILTRATION BENCH.

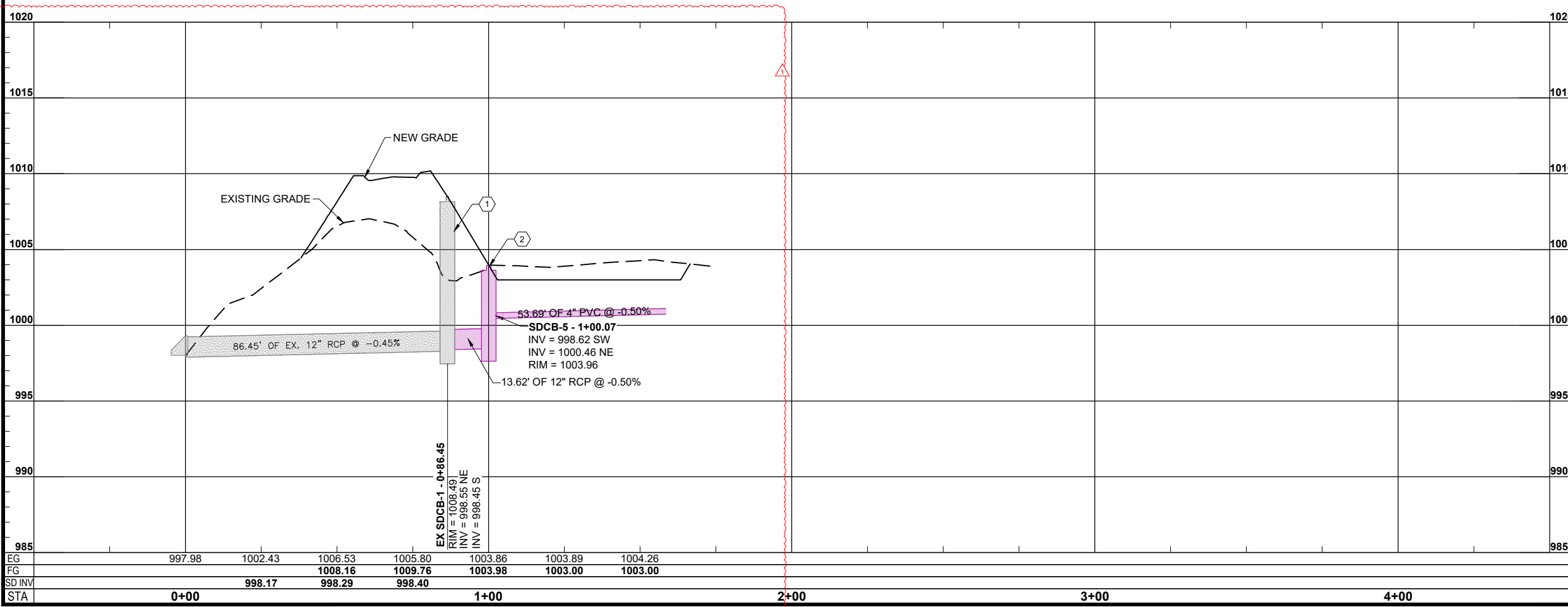
CONSTRUCTION NOTES

- OUTLET CONTROL STRUCTURE: SEE DETAIL 1/C703.
GRATE TOP - INSTALL SALVAGED GRATE
RIM (FRONT/LOW) = 1004.5
RIM (BACK/HIGH) = 1005.25
6" THICK X 48" WIDE WEIR = 1003.0
- STORM BASIN:
BOTTOM: 998.0
NWL / TOP OF SAND: 1002.0
DOLI WATER QUALITY VOLUME: 1002.9
100 YR HWL: 1004.2
TOP: 1008.0
- INSTALL FILTRATION MEDIA AND 4" DRAIN TILE PER DETAIL 3/C706
INSTALL END OF LINE CLEAN OUT PER DETAIL SAN-10 ON C708.
DRAIN TILE INVERT AT CLEAN OUT = 999.75'
- EMERGENCY OVERFLOW: 1008.0'
CONTRACTOR TO GRADE EOF AREA TO ELEVATION 1008.0 FROM TOP OF POND TO CATCH BASIN.

SHEET TITLE:
SITE PIPING - PLAN & PROFILE - STORM SEWER

CLIENT: CITY OF MINNETRISTA MINNETRISTA, MN	PREPARED BY: GP CHECKED BY: DL APPROVED BY: DL
PROJECT NO: P05355-2023-002 DATE: JULY 2025 ALT. PROJECT NO: 000-0000	SHEET DESIGNATOR: SW SHEET NO: C218

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Plotted By: Dan Landrus Date: Thursday, October 2, 2025



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SIGNATURE:

TYPED NAME: DANIEL LANDRUS

OCTOBER 2, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

10/02/25 WATERSHED DISTRICT PERMIT

DATE

SYMBOL

NORTH

0 20
Scale in Feet

CONSTRUCTION NOTES

- 1 ADJUST STRUCTURE TO NEW GRADE. INSTALL CASTING PER DETAIL STO-01 ON SHEET C702
- 2 INSTALL BEEHIVE GRATE
- 3 FILTRATION DITCH:
INSTALL FILTRATION MEDIA AND 4" DRAIN TILE PER DETAIL 3/C706
INSTALL END OF LINE CLEAN OUT PER DETAIL SAN-10 ON C708.
DRAIN TILE INVERT AT CLEAN OUT = 1000.75'
- 4 EMERGENCY OVERFLOW: EXISTING DRAINAGE PATH

PROJECT TITLE:
MINNETRISTA WOODLAND COVE WTP PROJECT

SHEET TITLE:
SITE PIPING - PLAN & PROFILE - STORM SEWER

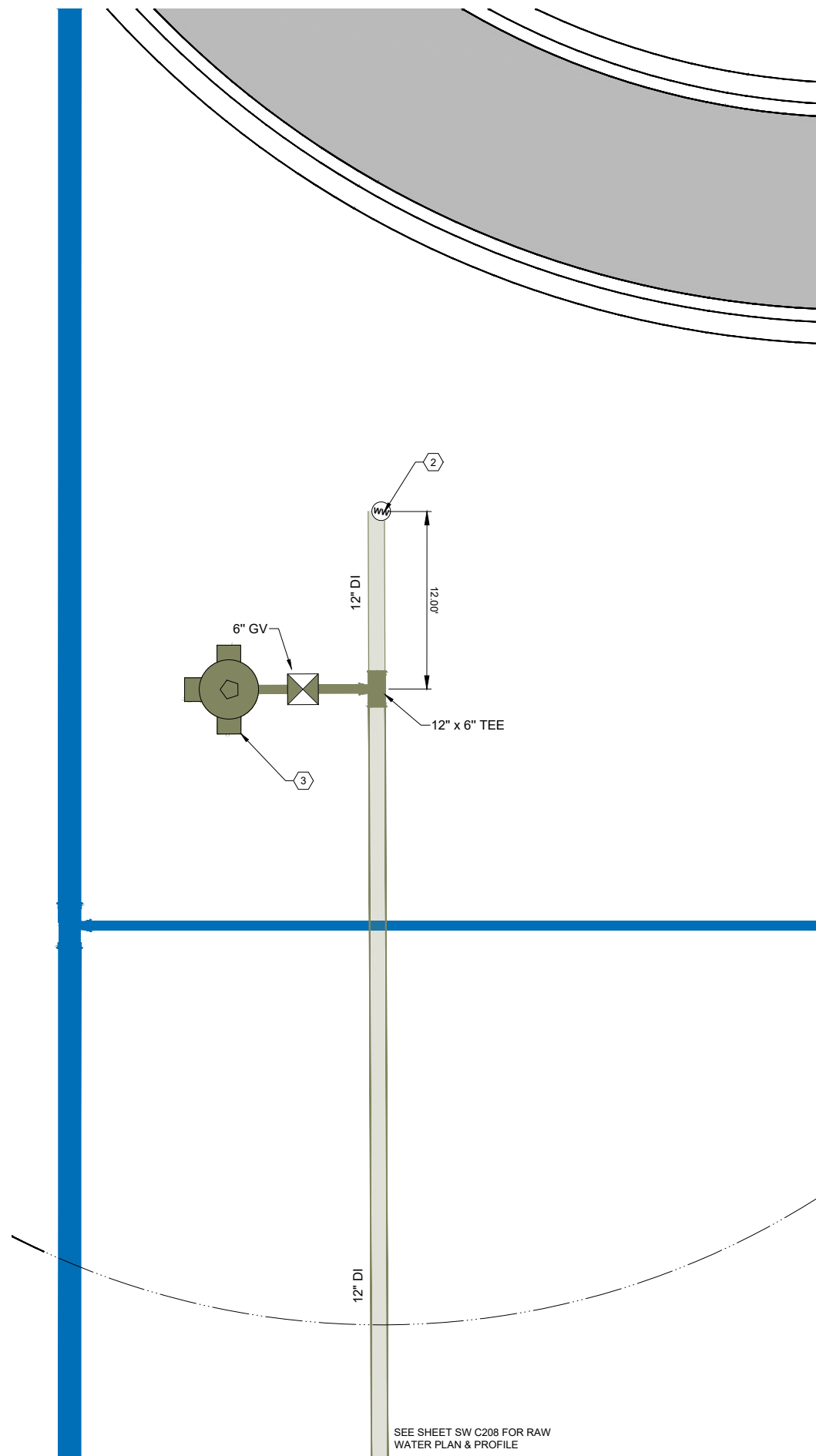
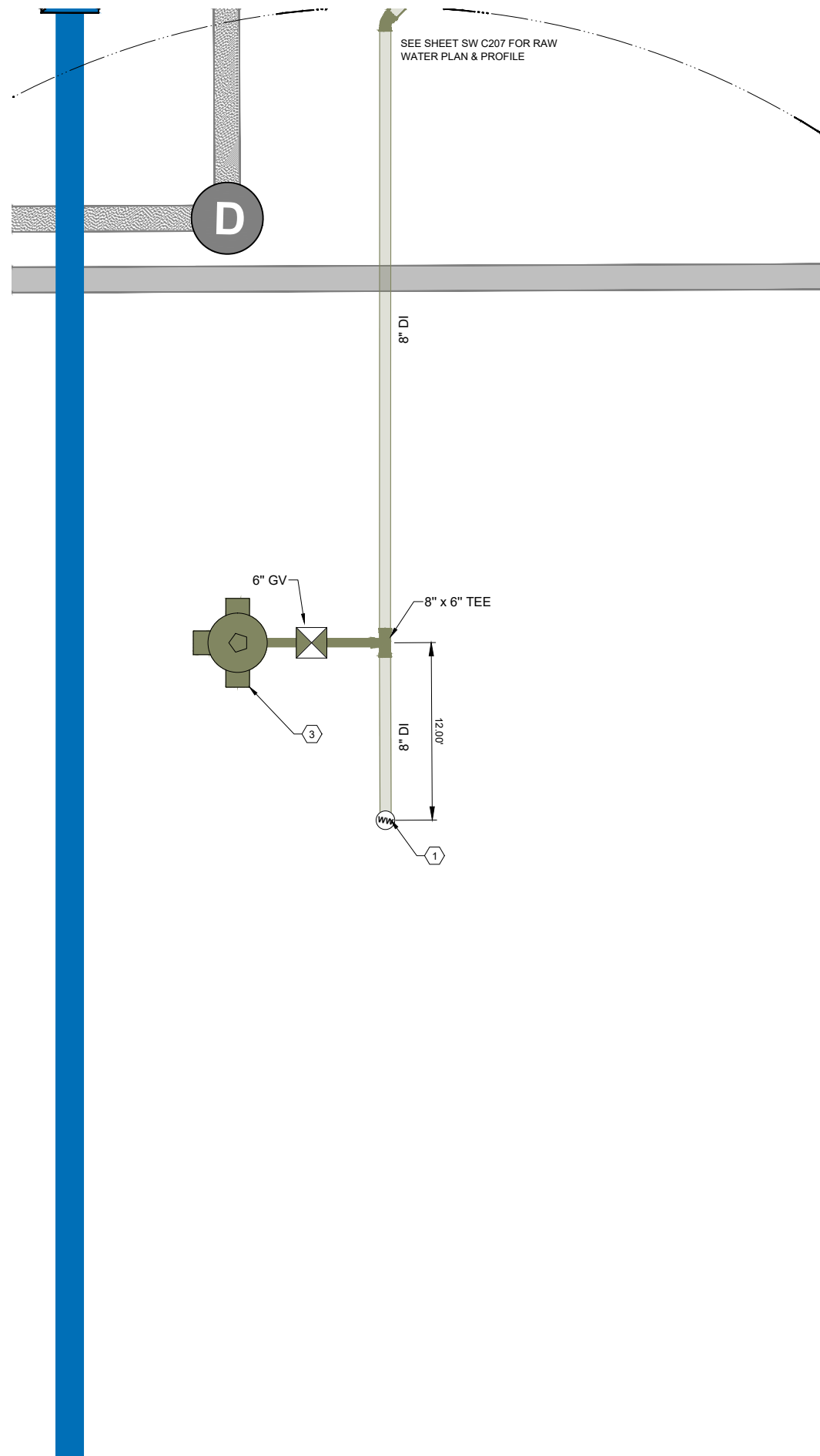
CLIENT:
CITY OF MINNETRISTA
MINNETRISTA, MN

PREPARED BY: GP
CHECKED BY: DL
APPROVED BY: DL

PROJECT NO. P05355-2023-002
DATE: JULY 2025
ALT. PROJECT NO. 000-0000

SHEET DESIGNATOR:
SW

SHEET NO.:
C219



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SIGNATURE: David Lee

TYPED NAME: DANIEL LANDRUS

SEPTEMBER 3, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

ADDENDUM NO. 2

DATE 9-3-25

Δ	CVM
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0 5
Scale in Feet

CONSTRUCTION NOTES

- 1 CONNECT TO WELL 8 - SEE PROCESS DETAIL
2 CONNECT TO WELL 9 - SEE PROCESS DETAIL
2 FLUSHING HYDRANT - SEE DETAIL WAT-01

PROCESS PIPE LEGEND

- FINISHED WATER (FW)
 RAW WATER (RW)
 OVERFLOW

SITE PIPING - CONNECTION DETAILS

CLIENT:	PREPARED BY: CD
---------	-----------------

CITY OF MINNETRISTA	PREPARED BY: S
	CHECKED BY: DI

MINNETONKA, MN	CHECKED BY: DE
	APPROVED BY: DI

MINNETRISTA, MN		APPROVED BY: DL
PROJECT NO. D05255 0000 000	SHEET DESIGNATOR	SHEET NO.

PROJECT NO. F03333-Z023-002	SHEET DESIGNATOR.	SHEET NO.
DATE: JULY 2005	CM	C220

DATE: JULY 2025

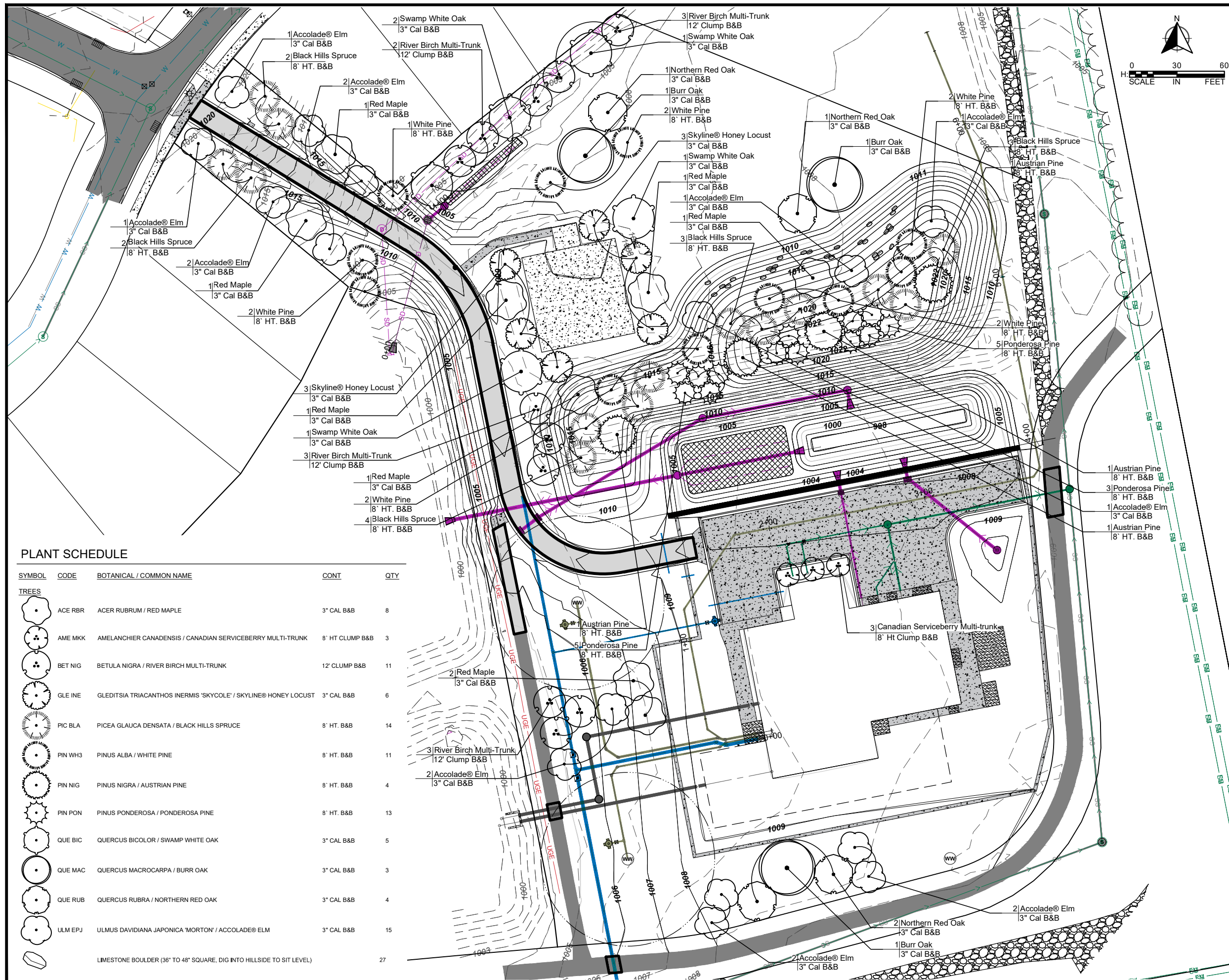
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SW

C220

MINNETRISTA WOODLAND COVE WTP PROJECT

Advanced Engineering and Environmental Services, LLC www.ae2s.com



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DIRECT SUPERVISION AND THAT I AM A DULY
LICENSED LANDSCAPE ARCHITECT UNDER THE
LAWS OF THE STATE OF MINNESOTA.

Robert A. Slipka III
Robert Slipka, PLA

DATE: 09-03-2025 LIC. NO: 44337



STATUS: CONSTRUCTION	DATE: 03/05/2025	APPROVAL: [Signature]
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STRUCTURE

COM

STATUS	Δ
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MINNETRISTA WOODLAND COVE WTP PROJECT

SHEET TITLE:

LANDSCAPE PLAN

CLIENT: CITY OF MINNETRISTA MINNETRISTA, MINNESOTA	PREPARED BY: HW
	CHECKED BY: RS
	APPROVED BY: RS

PROJECT NO: 05355-2023-002	SHEET DESIGNATOR: SW	SHEET NO:
DATE: JULY 2025		L101
ALT. PROJECT NO: 00000-0000		

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LEGEND

CONSTRUCTION LIMITS

EXISTING CONTOUR

EXISTING DECIDUOUS TREE

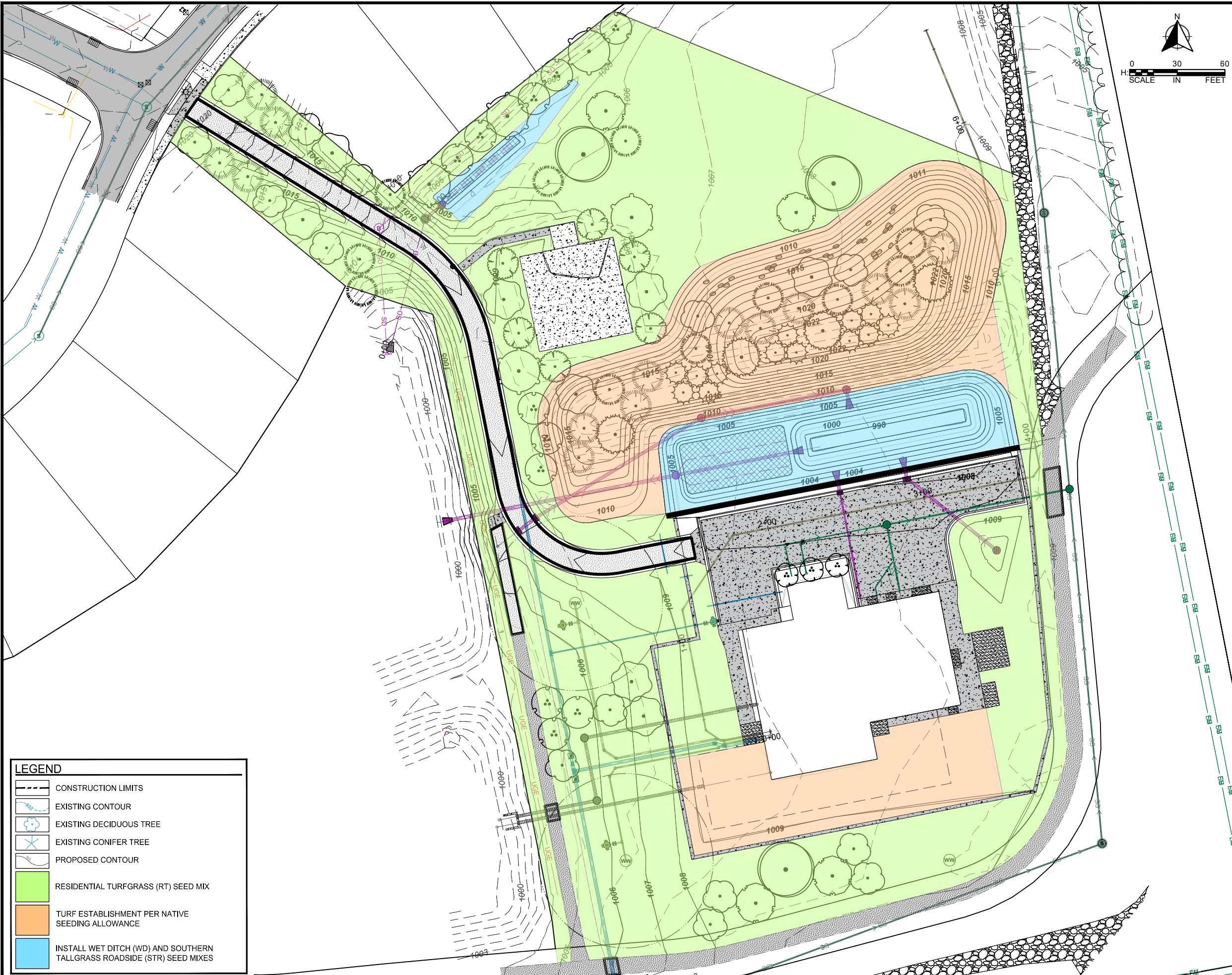
EXISTING CONIFER TREE

PROPOSED CONTOUR

RESIDENTIAL TURFGRASS (RT) SEED MIX

TURF ESTABLISHMENT PER NATIVE SEEDING ALLOWANCE

INSTALL WET DITCH (WD) AND SOUTHERN TALLGRASS ROADSIDE (STR) SEED MIXES



0 30 60

H. SCALE IN FEET

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Robert A. Slipka III

Robert Slipka, PLA

DATE: 09-03-2025 LIC. NO: 44337



STATUS: CONSTRUCTION	ADDENDUM 2	DLL	APPR
9-3-25			
SYN	DATE		
MINNETRISTA WOODLAND COVE WTP PROJECT			
PROJECT TITLE:			

SHEET TITLE: LANDSCAPE PLAN

CLIENT: CITY OF MINNETRISTA
MINNETRISTA, MINNESOTA

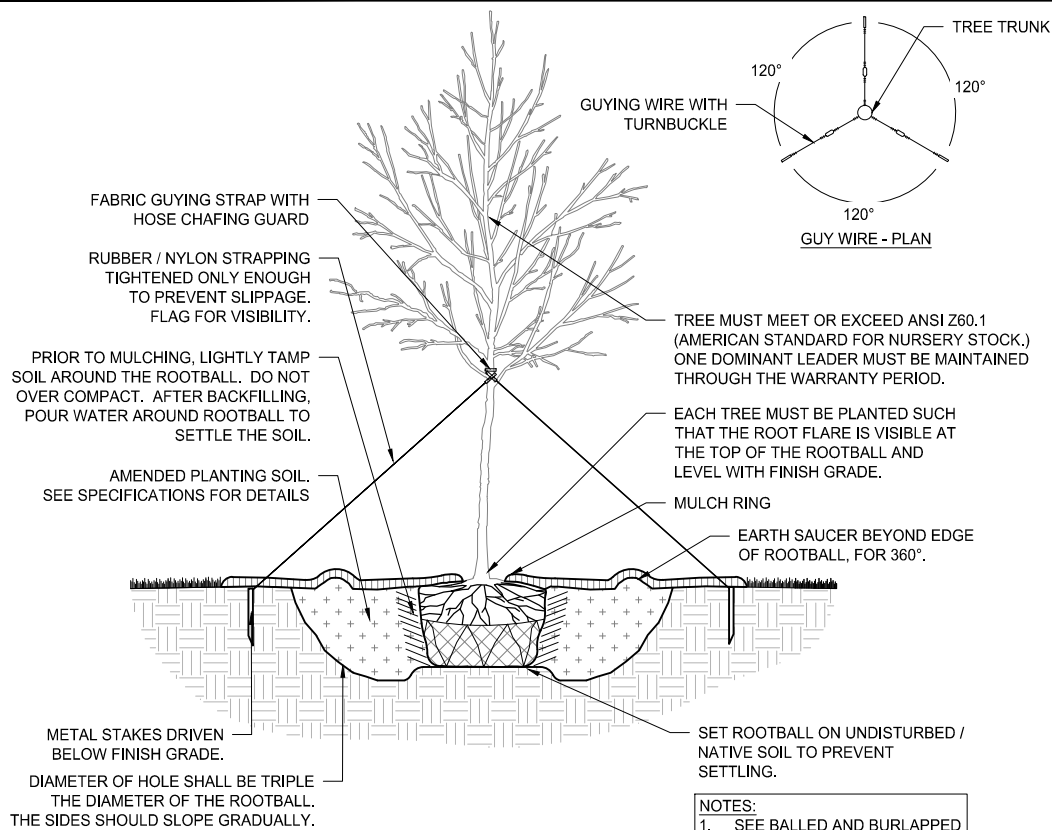
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DATE: JULY 2025
ALT. PROJECT NO: 00000-0000

SHEET DESIGNATOR: SW

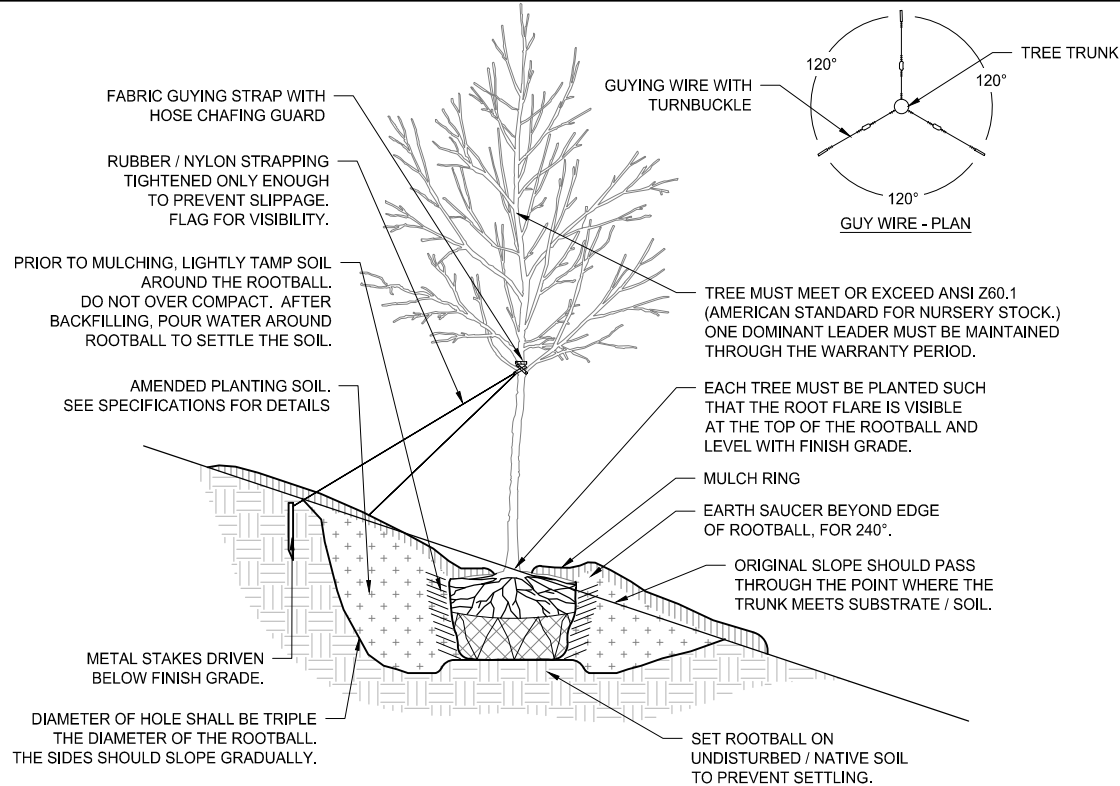
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PREPARED BY: HW
CHECKED BY: RS
APPROVED BY: RS

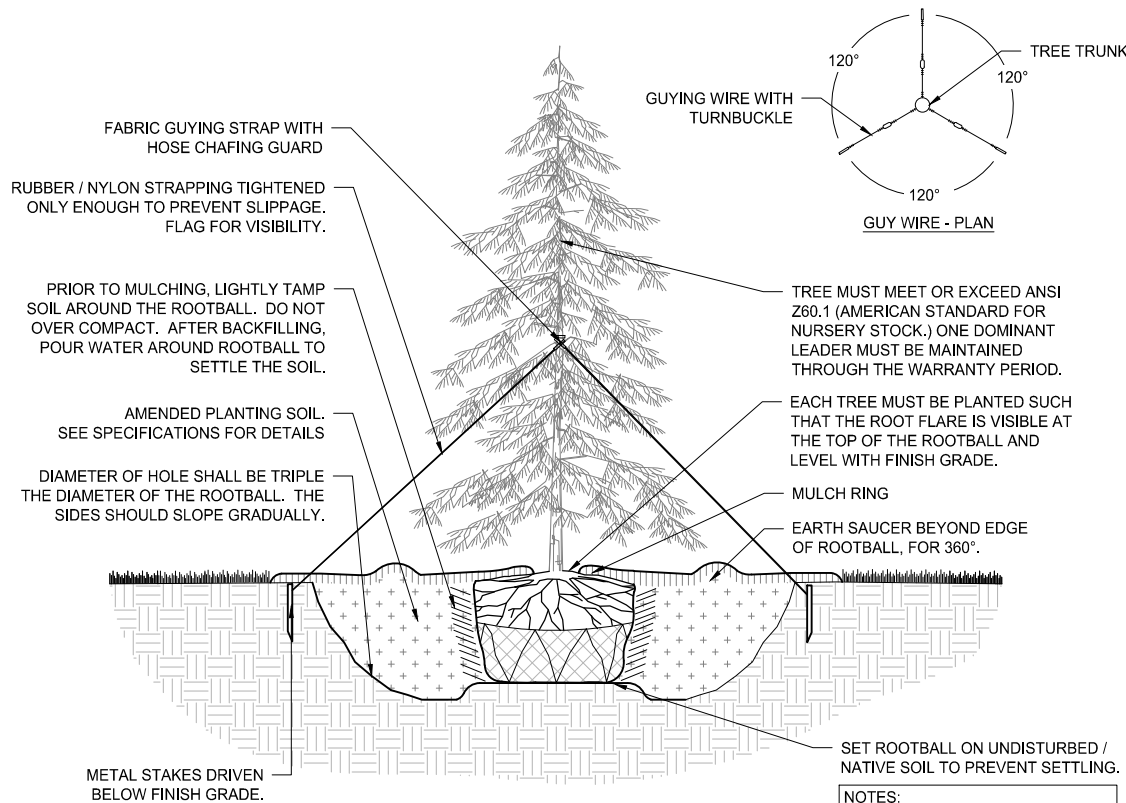
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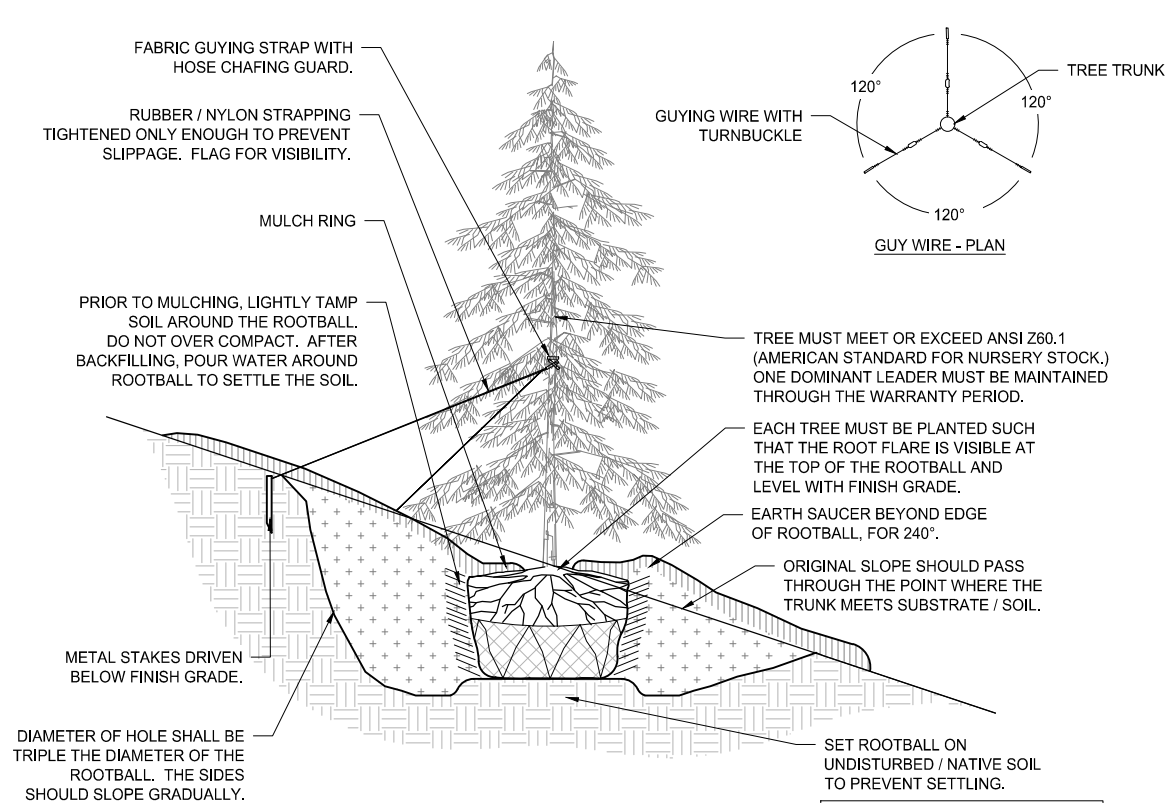
1 DECIDUOUS TREE PLANTING
L-03



2 DECIDUOUS TREE PLANTING ON SLOPE
L-03



3 CONIFEROUS TREE PLANTING
L-03



4 CONIFEROUS TREE PLANTING ON SLOPE
L-03



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

Robert A. Slipka III
Robert Slipka, PLA

DATE: 09-03-2025 LIC. NO: 44337



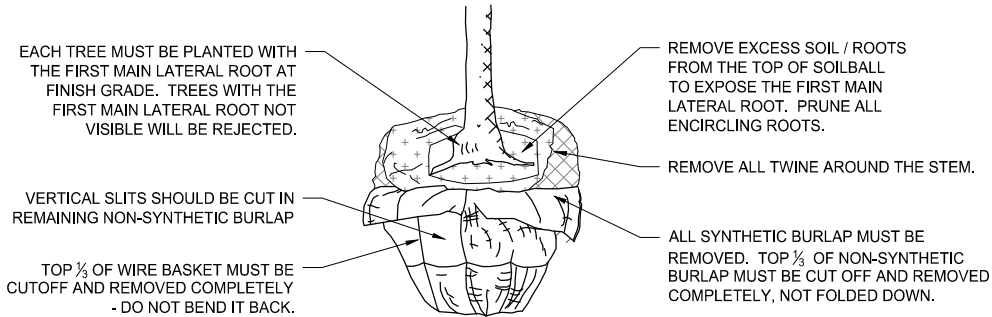
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9-3-25	ADDDWNO 2			

MINNETRISTA WOODLAND COVE WTP PROJECT

PROJECT TITLE:

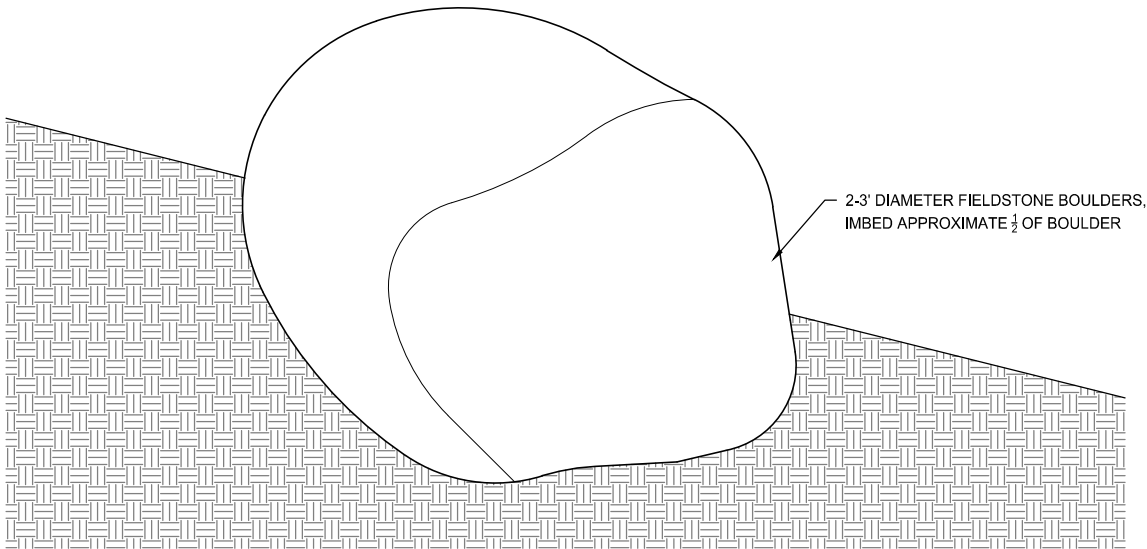
LANDSCAPE DETAILS			
CLIENT:	CITY OF MINNETRISTA MINNETRISTA, MINNESOTA	PREPARED BY: HW	CHECKED BY: RS
PROJECT NO: 05355-2023-002	SHEET DESIGNATOR: SW	SHEET NO: L103	APPROVED BY: RS
DATE: JULY 2025	ALT. PROJECT NO: 00000-0000		

C:\ACC\CCDocs\WSB\031517-2000\Project Files\05_Discipline\Landscape\03_Sheets\031517-2000-LP-PLNT-PLAN.dwg 9/5/2025 3:55:17 PM



- NOTES:
1. ROOTS OF ALL BALLED AND BURLAPPED STOCK SHALL FILL THE SOIL BALL, BE FREE OF KINKS, CIRCLING AND GIRDLING, AND THE UPPERMOST ROOTS SHALL NOT BE MORE THAN FOUR INCHES BELOW THE TOP OF THE SOIL BALL. TRANSPORT ROOTS SHALL BE SYMMETRICAL AROUND THE TRUNK / STEM OF THE PLANTS. SOIL BALLS MUST BE CENTERED OR NO MORE THAN 10% OFF CENTER.
 2. WHEN MOVING PLANTS, LIFT FROM BENEATH THE ROOT BALL. DO NOT LIFT BY THE TRUNK AND DO NOT BREAK OR LOOSEN THE ROOT BALL.
 3. BACKFILL PLANTING PIT WITH ORIGINAL SOIL HALFWAY TO THE TOP OF THE ROOT BALL. BREAK UP CLODS OF SOIL. DO NOT USE PEAT AS PART OF BACKFILL IN CLAY SOILS. REMOVE ALL ROCKS AND DEBRIS FROM BACKFILL AND THEN WATER PLANT AND BACKFILLED AREA TO SETTLE PLANTS AND FILL VOIDS.
 4. REMOVE ALL WIRE BASKETS FROM THE TOP 1/2 OF THE ROOT BALL AND CONTINUE BACKFILLING REMAINING PLANTING PIT WITH ORIGINAL SOIL.
 5. WATER THOROUGHLY A SECOND TIME TO SETTLE PLANTS AND FILL VOIDS WITHIN TWO HOURS OF PLANTING. PLACE SPECIFIED MULCH WITHIN 48 HOURS OF THE SECOND WATERING. PROVIDE SUPPORT IF NECESSARY.
 6. STAKING OF TREES SHALL BE THE CONTRACTOR'S OPTION. THE CONTRACT IS RESPONSIBLE TO INSURING THAT ALL PLANTINGS ARE INSTALLED PLUMB AND REMAIN PLUMB THROUGHOUT THE WARRANTY PERIOD OF 1 YEAR AFTER SUBSTANTIAL COMPLETION, WHICHEVER IS GREATER.
 7. IF STAKING IS INSTALLED, ALL COMPONENTS SHALL BE REMOVED BY THE CONTRACTOR AT THE END OF THE WARRANTY PERIOD.

1 TREE PLANTING - BALLED & BURLAPPED STOCK



2 BOULDER ON SLOPE



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Robert A. Slipka III

Robert Slipka, PLA

DATE: 09-03-2025 LIC. NO: 44337

STATUS	CONSTRUCTION	DLL	APPR
9-3-25	ADDENDUM 2		
DATE	SYM		



MINNETRISTA WOODLAND COVE WTP PROJECT

PROJECT TITLE:

SHEET TITLE:

LANDSCAPE DETAILS

CLIENT:

CITY OF MINNETRISTA
MINNETRISTA, MINNESOTA

PREPARED BY: HW

CHECKED BY: RS

APPROVED BY: RS

PROJECT NO: 05355-2023-002

DATE: JULY 2025

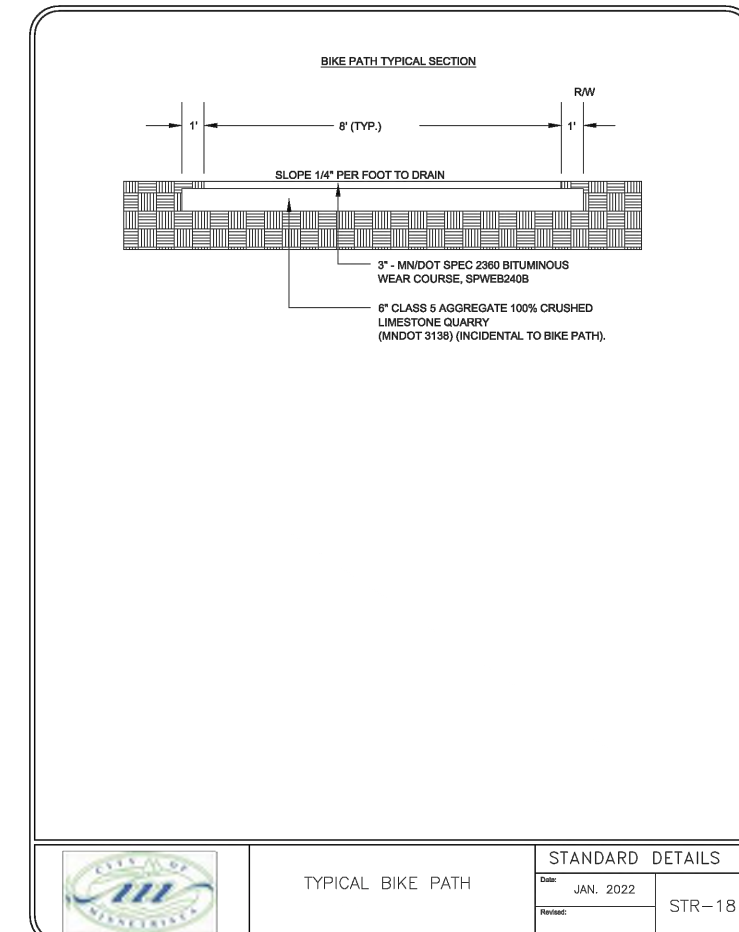
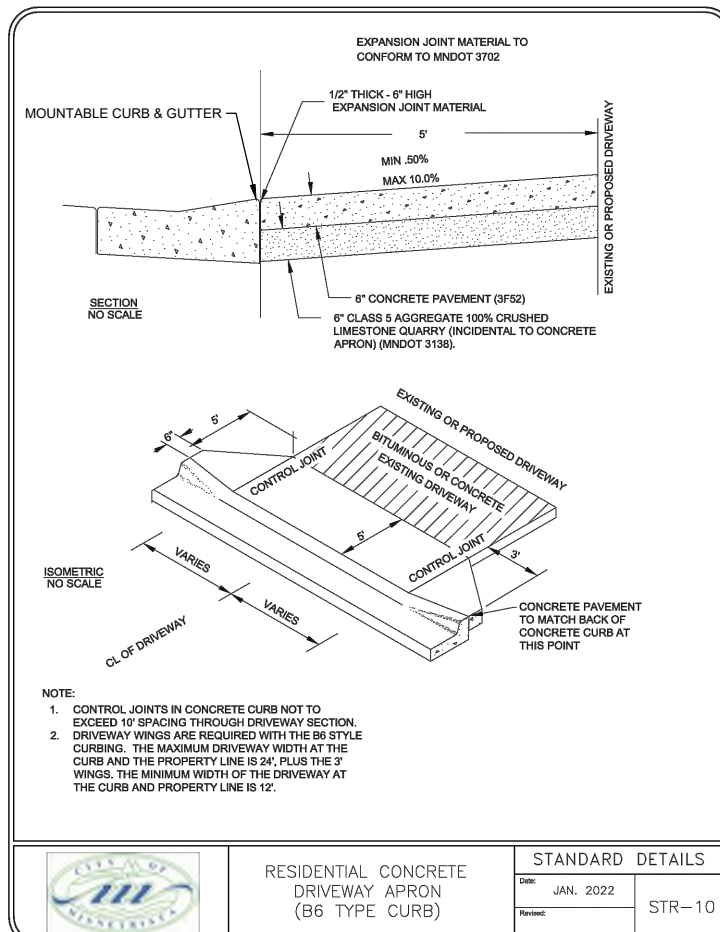
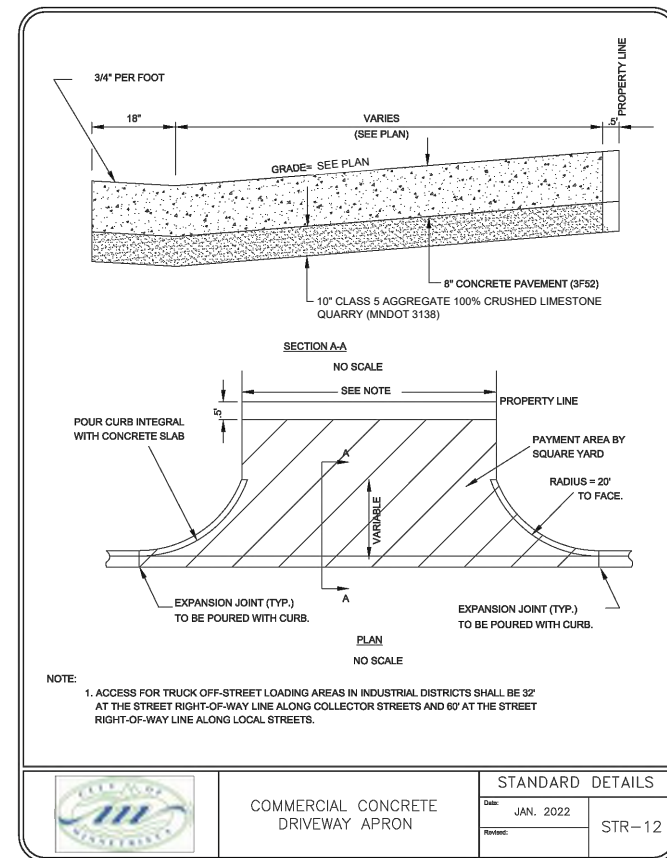
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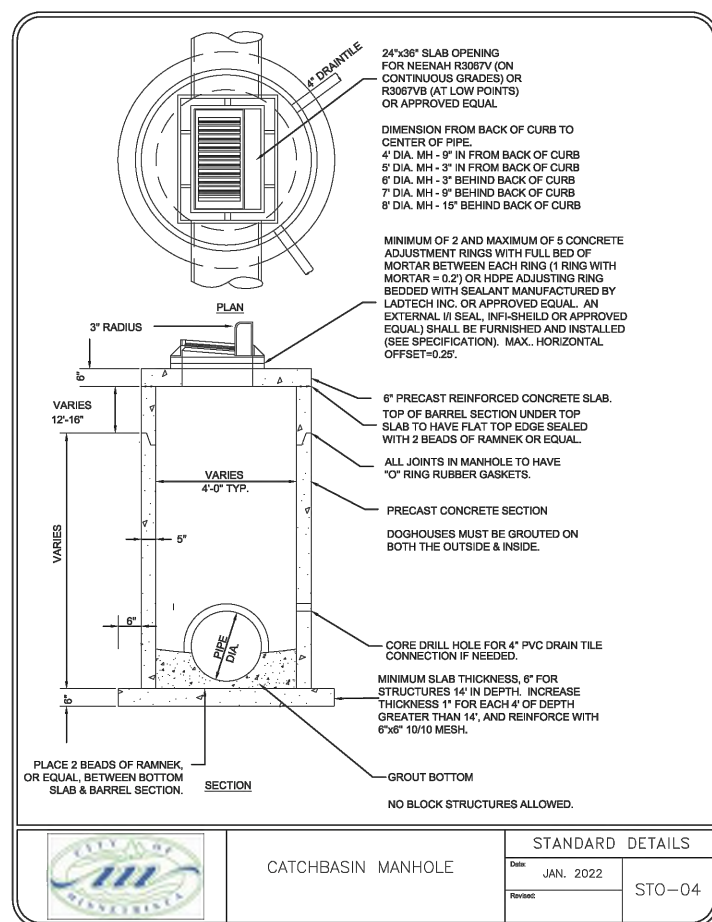
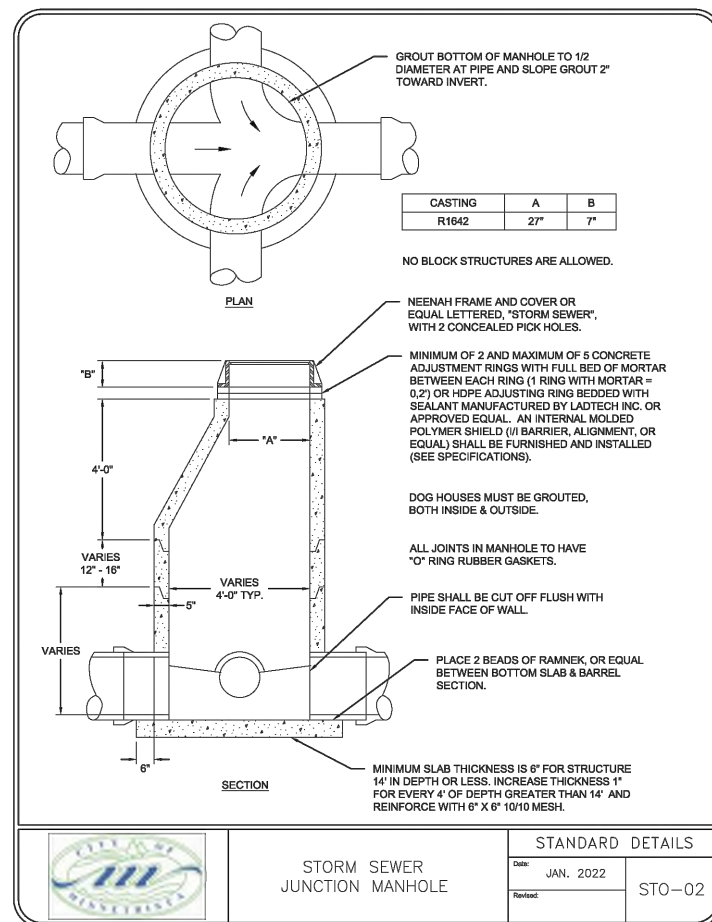
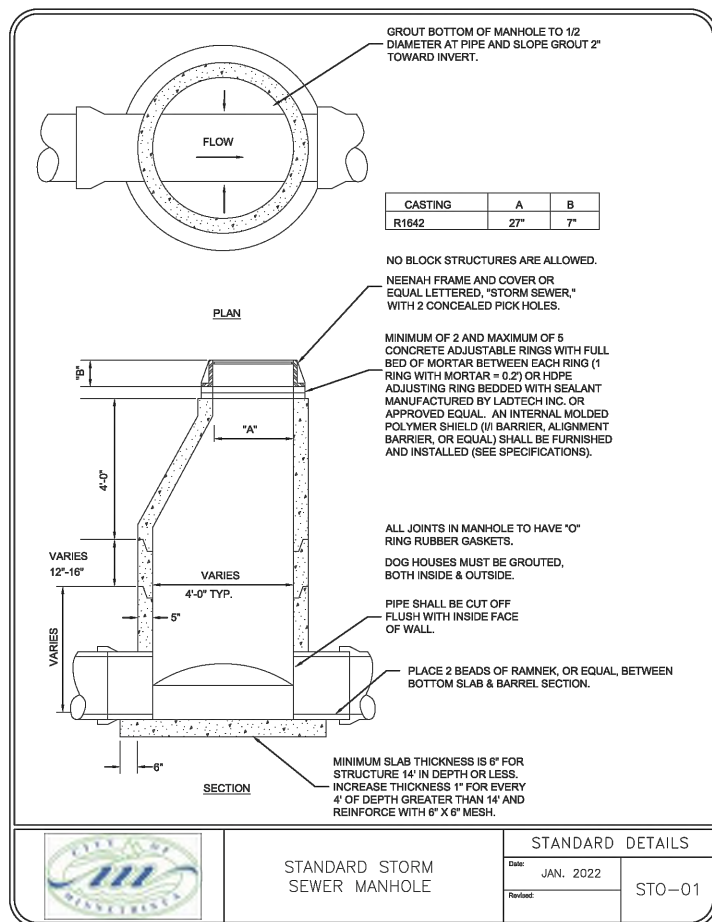
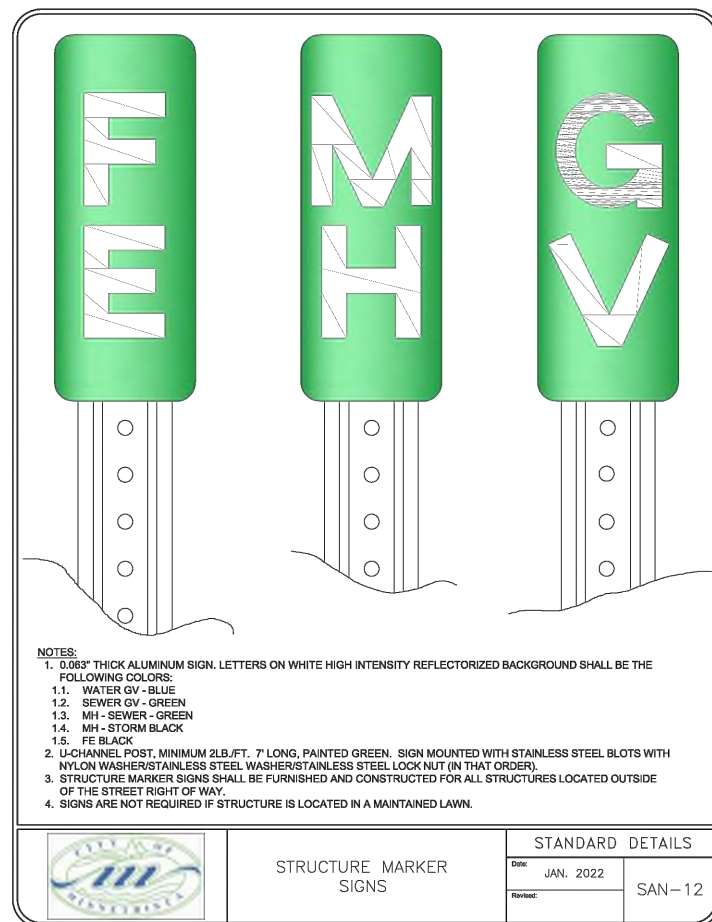
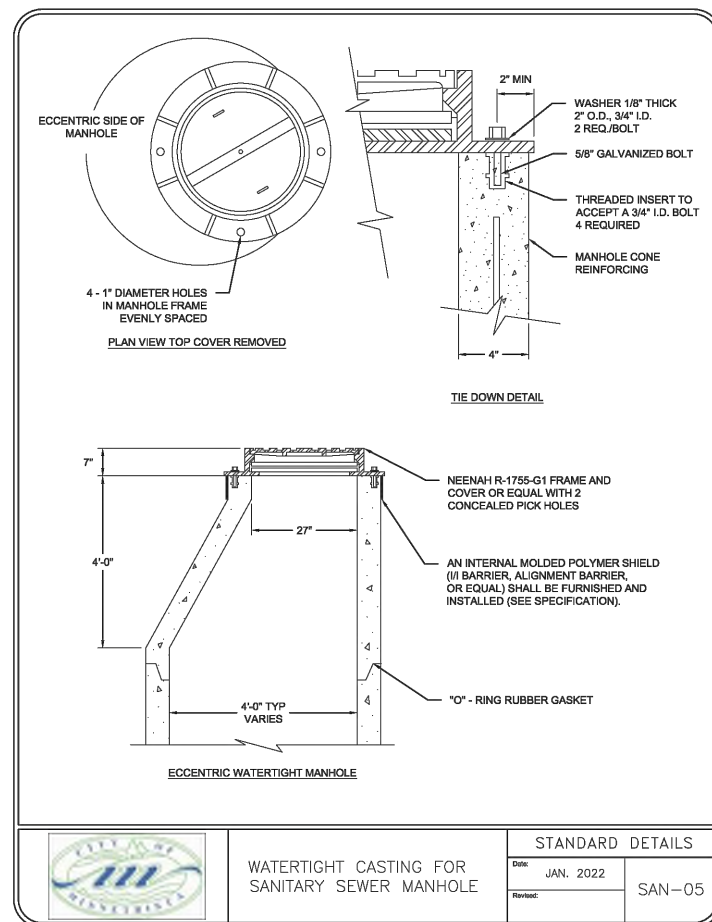
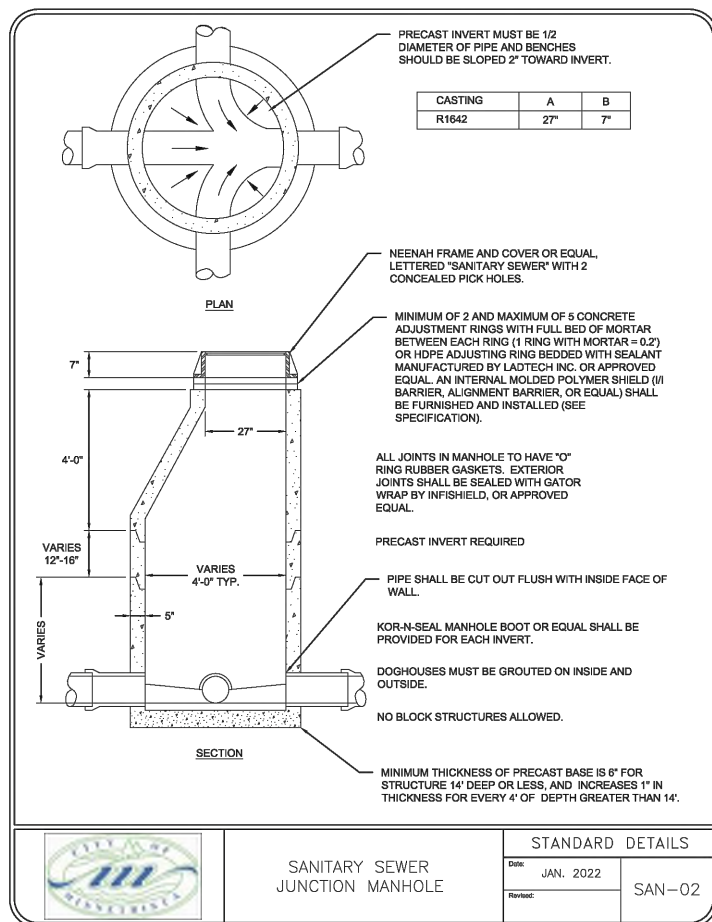
SHEET DESIGNATOR:

SW

SHEET NO:

L104





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Printed By: Dan Landrus Date: Thursday, October 2, 2025

SEE CITY PLATE NO. STO-12 FOR RIPRAP PLACEMENT.

ANCHOR CLIP

24" MAX

6"

H

ANCHOR BOTH SIDES.

TIE LAST 3 PIPE JOINTS. USE 2 TIE BOLT FASTENERS PER JOINT. INSTALL AT 60° FROM TOP OR BOTTOM OF PIPE.

PROVIDE 3 ANCHOR CLIPS TO FASTEN TRASH GUARD TO FLARED END SECTION. HOT DIP GALVANIZE AFTER FABRICATION.

TRASH GUARD SIZING

PIPE SIZE	BAR	IN	BOLTS
12" - 18"	3/4" O.D.	4"	5/8"
21" - 42"	1" O.D.	6"	3/4"
48" - 72"	1-1/4" O.D.	12"	1"

TRASH GUARDS ARE ONLY REQUIRED ON INLETS.

FLARED END SECTION AND TRASH GUARD

STANDARD DETAILS

Date: JAN. 2022

Revised:

STO-08

MATERIAL IN THESE AREAS ARE CONSIDERED INCIDENTAL.

12"

6"

D

D+12" MIN.

"D" DENOTES OUTSIDE DIAMETER OF PIPE

PIPE FOUNDATION & BEDDING IN GOOD SOILS

MATERIAL IN THESE AREAS ARE CONSIDERED INCIDENTAL.

12"

6"

D

D+12" MIN.

"D" DENOTES OUTSIDE DIAMETER OF PIPE

PIPE FOUNDATION & BEDDING IN POOR SOILS

BEDDING METHODS FOR PVC AND DUCTILE IRON PIPE

STANDARD DETAILS

Date: JAN. 2022

Revised:

BED-01

MATERIAL IN THESE AREAS SHALL BE CONSIDERED INCIDENTAL.

12"

6"

D

D+12" MIN.

"D" DENOTES OUTSIDE DIAMETER OF PIPE

IMPROVED FOUNDATION AS REQUIRED BY SOILS ENGINEER (INCIDENTAL)

COMPACTED BACKFILL

GRANULAR BEDDING MNDOT SPEC. 3149B1 MOD.

COARSE FILTER AGGREGATE MNDOT SPEC. 3149H MOD.

GRANULAR FOUNDATION

IMPROVED FOUNDATION FOR RCP AND DIP

STANDARD DETAILS

Date: JAN. 2022

Revised:

BED-03

MATERIAL IN THIS AREA IS CONSIDERED INCIDENTAL.

6"

0.50'

D

D+12" MIN.

"D" DENOTES OUTSIDE DIAMETER OF PIPE

PIPE FOUNDATION & BEDDING IN GOOD SOILS

MATERIAL IN THIS AREA IS CONSIDERED INCIDENTAL.

6"

0.50'

D

D+12" MIN.

"D" DENOTES OUTSIDE DIAMETER OF PIPE

PIPE FOUNDATION & BEDDING IN POOR SOILS

BEDDING METHODS FOR RCP

STANDARD DETAILS

Date: JAN. 2022

Revised:

BED-02

NOTES

1. GROUT SHALL BE PLACED TO FILL VOIDS WHEN USING RCP PIPE.
2. FILL INVERT TO DESIGN GRADE WITH CONCRETE.
3. INSTALL SALVAGED GRATE ON NEW OUTLET CONTROL STRUCTURE.

DRAIN TILE

WEIR

18" DIA RCP OUTLET PIPE

15" DIA RCP LOW FLOW PIPE

PLAN

18" DIA RCP OUTLET PIPE

15" DIA RCP LOW FLOW PIPE

PRECAST BASE SLAB

UNDISTURBED SOIL

6" CLASS 5 AGGREGATE BASE (MIN.)

INV = 999.5

INV = 1000.0

48"

6"

1005.25

1004.5

1003.0

SECTION A-A

1
C703 **OUTLET CONTROL STRUCTURE**
SCALE: NONE

Certification of Individual Project Design Disciplines Are Included On Their Individual Drawings, Respectively

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

SIGNATURE:

TYPED NAME: DANIEL LANDRUS

OCTOBER 2, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

WATERSHED DISTRICT PERMIT

DATE

SYM

PROJECT TITLE: **MINNETRISTA WOODLAND COVE WTP PROJECT**

Advanced Engineering and Environmental Services, LLC www.ae2s.com

SHEET TITLE: **CIVIL STANDARD DETAILS**

CLIENT: **CITY OF MINNETRISTA**
MINNETRISTA, MN

PREPARED BY: CSD/GP

CHECKED BY: DL

APPROVED BY: DL

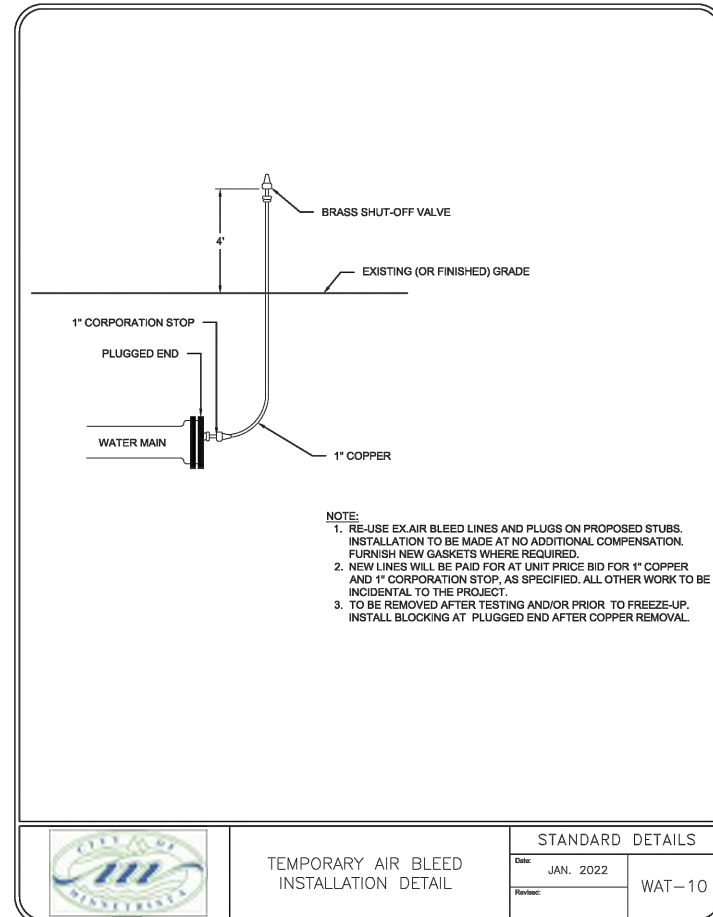
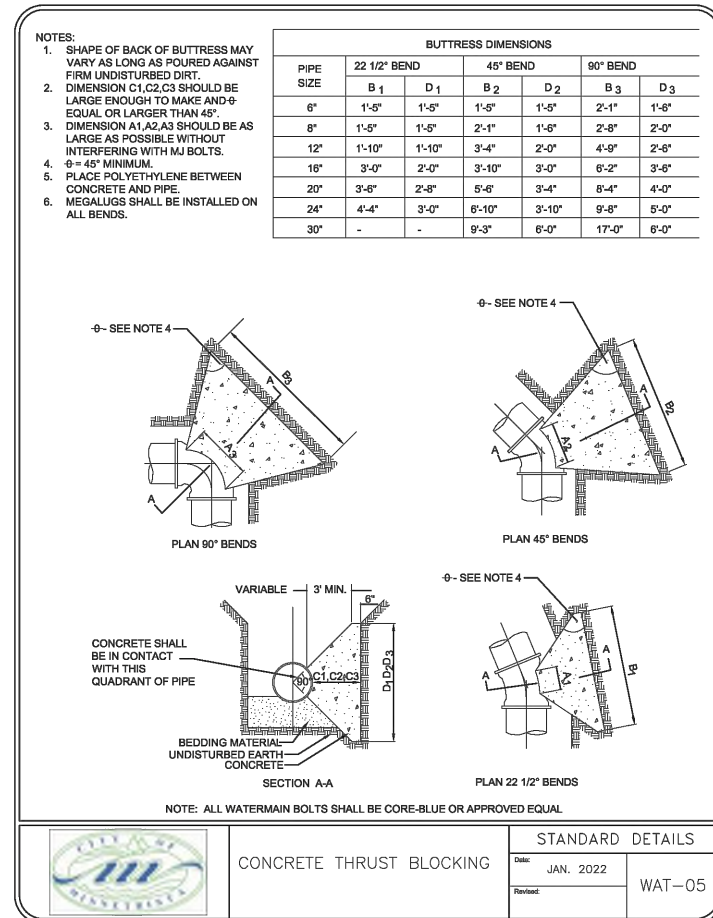
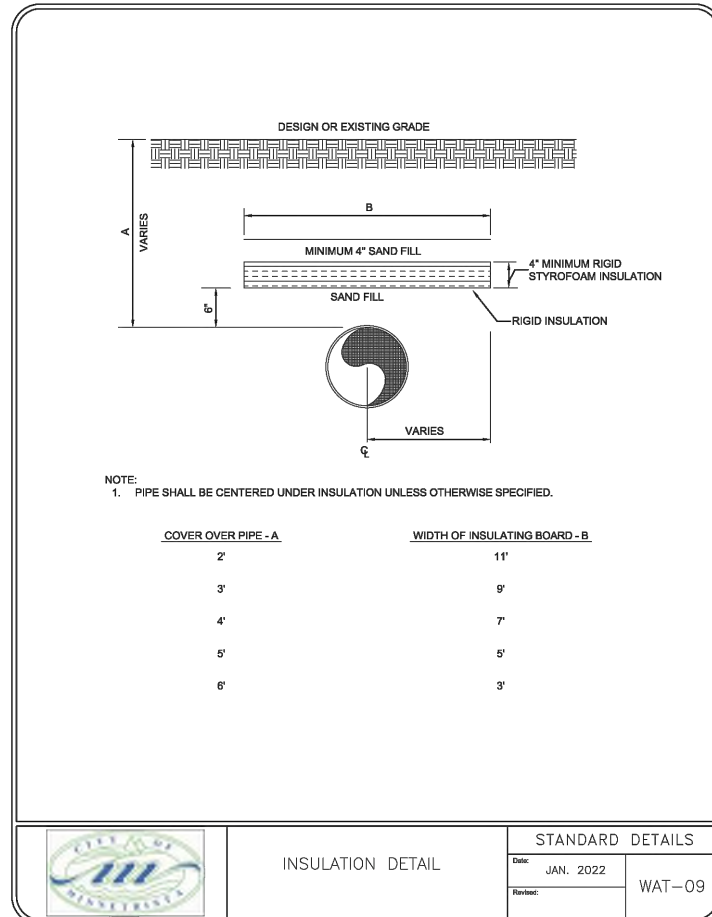
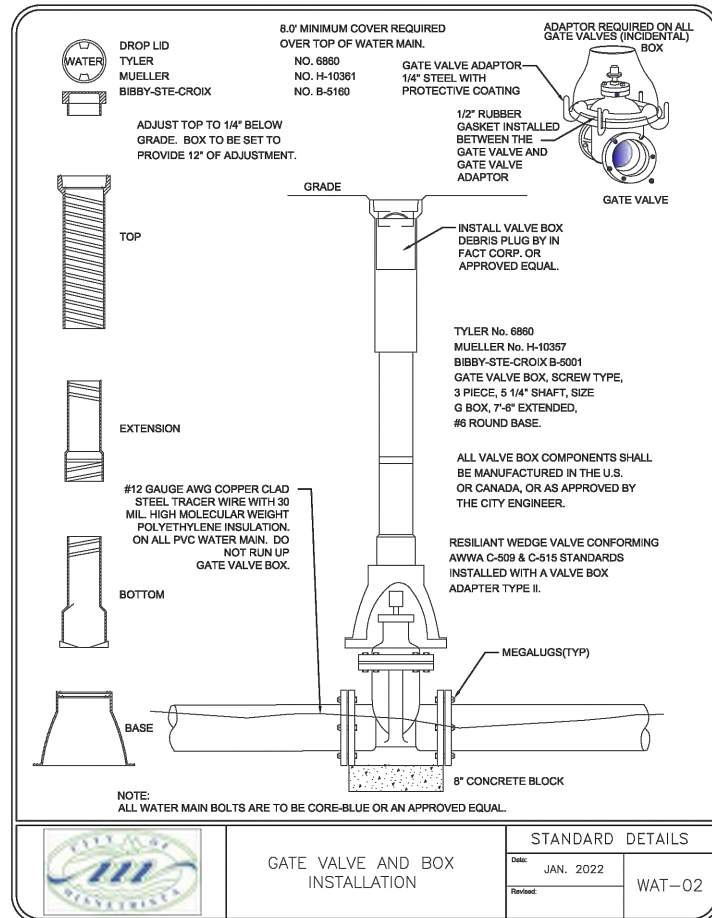
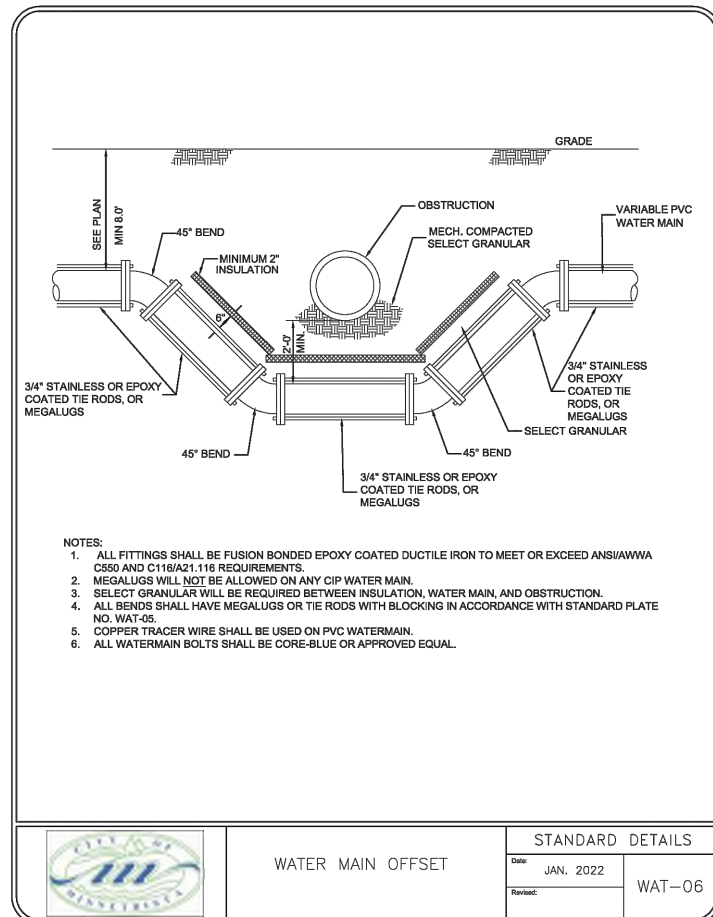
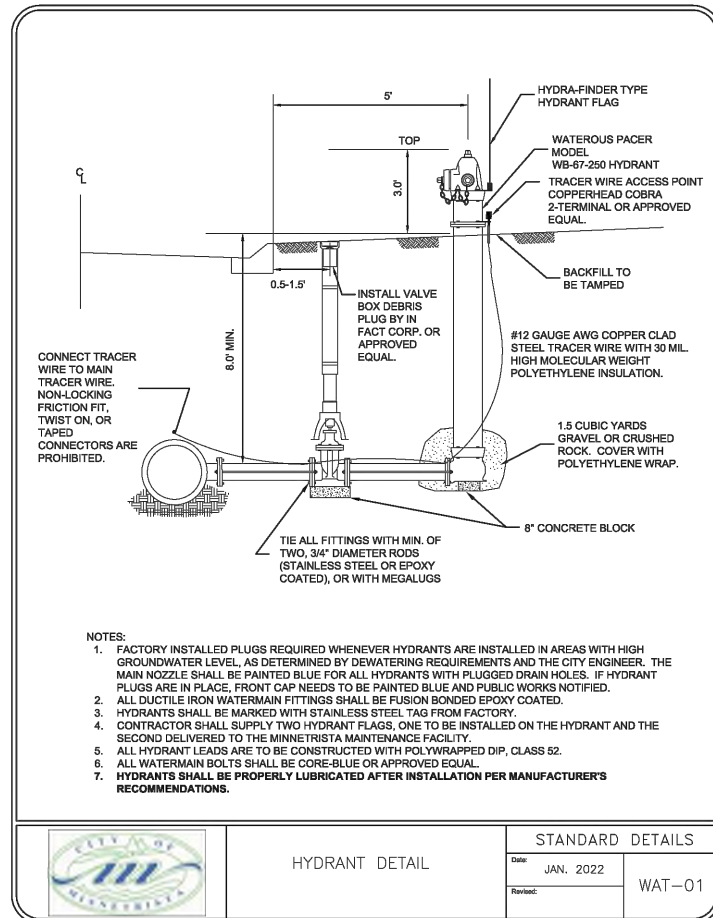
PROJECT NO. P05355-2023-002

DATE: JULY 2025

ALT. PROJECT NO. 000-0000

SHEET DESIGNATOR: **SD**

SHEET NO.: **C703**



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THE STATE OF MINNESOTA

SIGNATURE: [Signature]

TYPED NAME: DANIEL LANDRUS

SEPTEMBER 3, 2025

LIC. NO. 54263

STATUS: **CONSTRUCTION**

ADDENDUM NO. 2

9-3-25

OSTA WOODLAND COVE WTP PROJECT
Advanced Engineering and Environmental Services, LLC www.ae2s.com

PROJECT TITLE:

SHEET TITLE:

CIVIL STANDARD DETAILS

CLIENT:

CITY OF MINNETRISTA
MINNETRISTA, MN

PREPARED BY: CSD/GP

CHECKED BY: DL

APPROVED BY: DL

PROJECT NO: P05355-2023-002

SHEET DESIGNATOR:

SHEET NO

DATE: JULY 2025

ALT. PROJECT NO: 000-0000

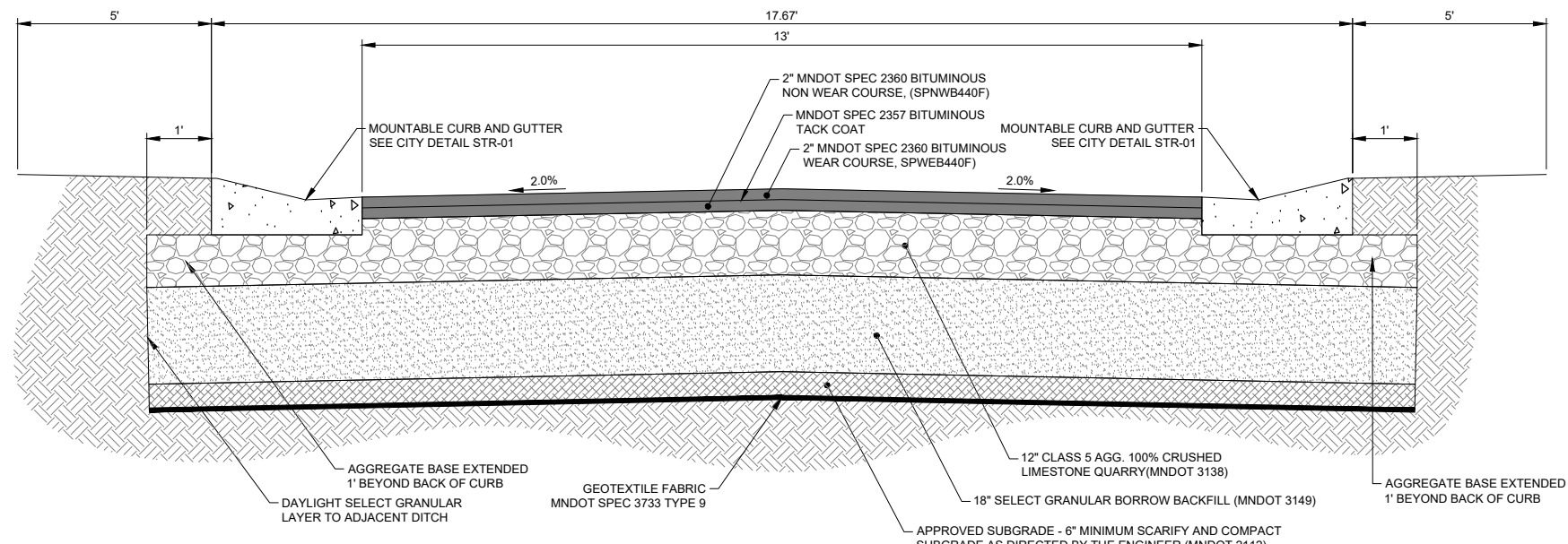
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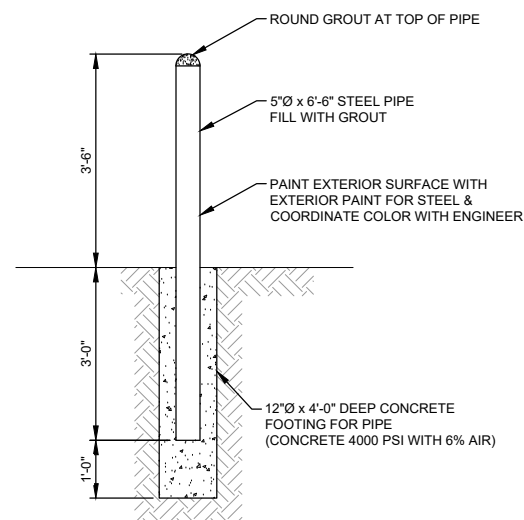
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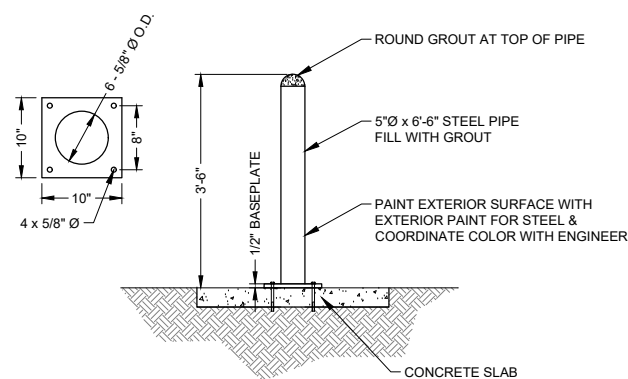
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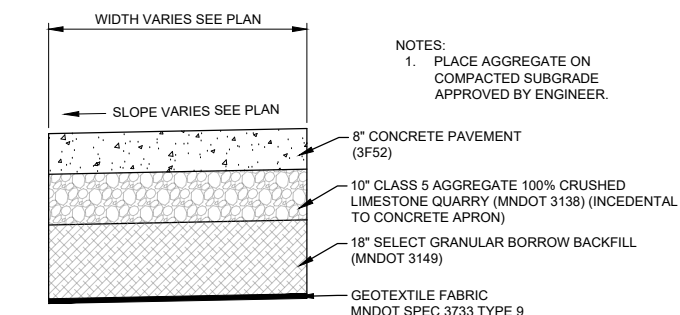
1 BITUMINOUS ROADWAY SECTION
C705 NO SCALE



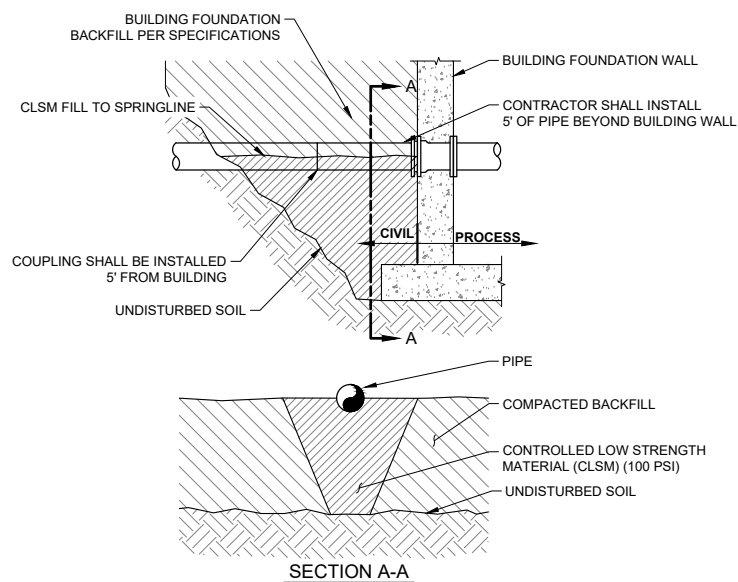
2 BOLLARD DETAIL
C705 NO SCALE



4 SURFACE MOUNTED BOLLARD
C705 NO SCALE



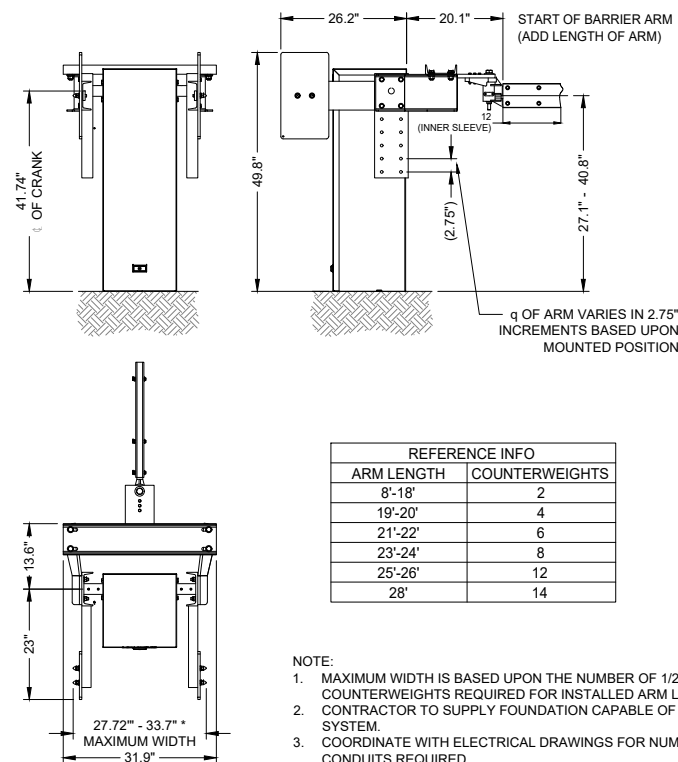
3 C705 CONCRETE DRIVEWAY PAVEMENT SECTION NO SCALE



NOTE:

1. SEE STRUCTURAL SPECIFICATIONS FOR ADDITIONAL CLSM REQUIREMENTS.
2. DEPTH OF CLSM TO EXTEND FROM BOTTOM OF FOOTING EXCAVATION TO BOTTOM OF PIPE BEDDING.

5 TYPICAL PROCESS PIPE CONNECTION AT BUILDING WALL
C705 NO SCALE



NOTE:

1. MAXIMUM WIDTH IS BASED UPON THE NUMBER OF 1/2" THICK COUNTERWEIGHTS REQUIRED FOR INSTALLED ARM LENGTH.
2. CONTRACTOR TO SUPPLY FOUNDATION CAPABLE OF SUPPORTING GATE SYSTEM.
3. COORDINATE WITH ELECTRICAL DRAWINGS FOR NUMBER AND SIZE OF CONDUITS REQUIRED.
4. DETAIL IS BASED ON STRONGARMDOT MANUFACTURED BY HYSECURITY.

6 GATE AND ARM DETAIL
C705 NO SCALE



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SIGNATURE:

TYPED NAME: DANIEL LANDRUS

SEPTEMBER 3, 2025 LIC. NO. 54263

STATUS: **CONSTRUCTION**

ADDENDUM NO. 2

93-25

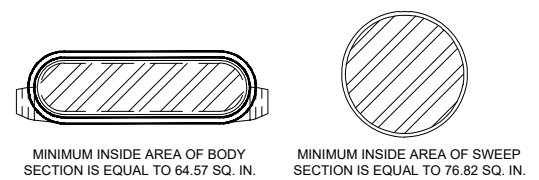
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MINNETRISTA WOODLAND COVE WTP PROJECT
Advanced Engineering and Environmental Services, LLC www.ae2s.com

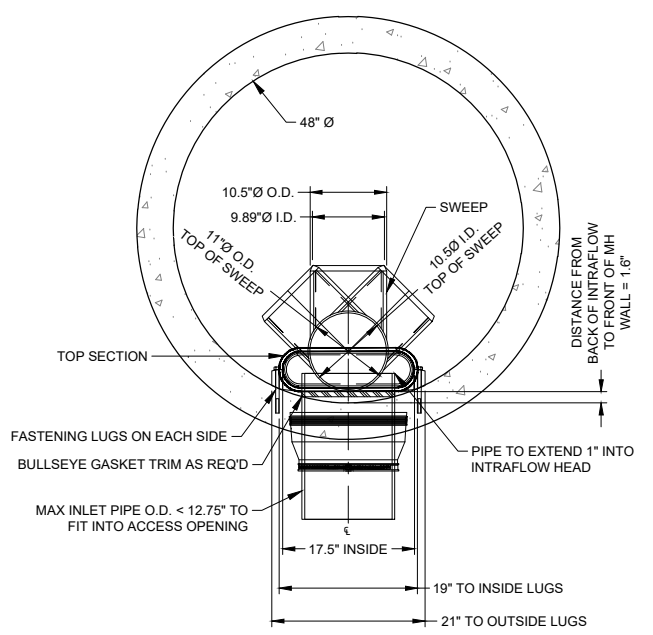
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TOP SECTION
DETAIL

SWEEP SECTION
DETAIL

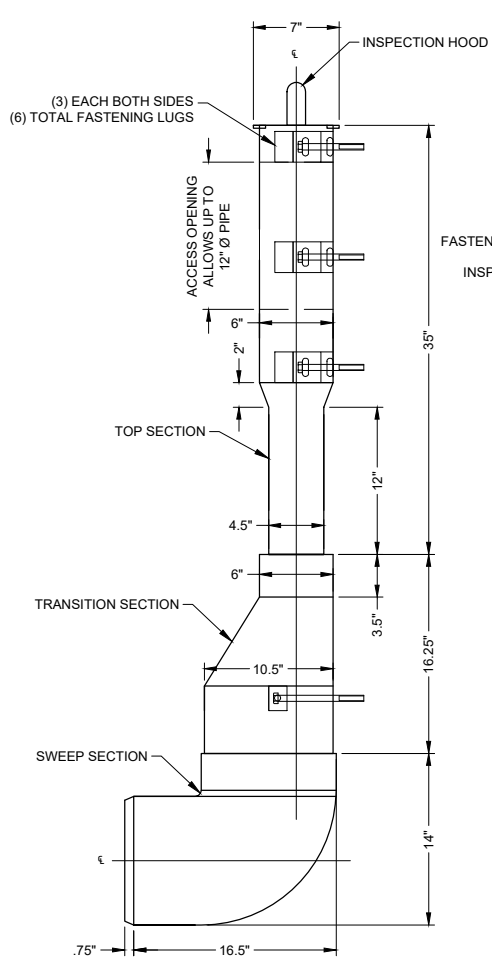


TOP VIEW

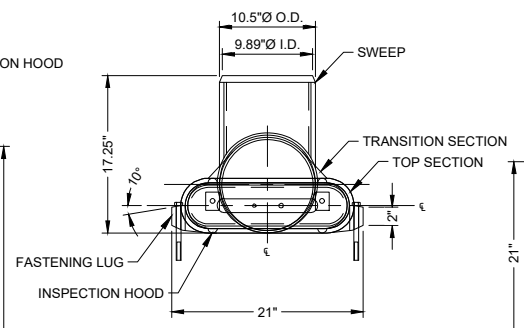


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C706 INSIDE DROP MANHOLE DETAIL
NO SCALE

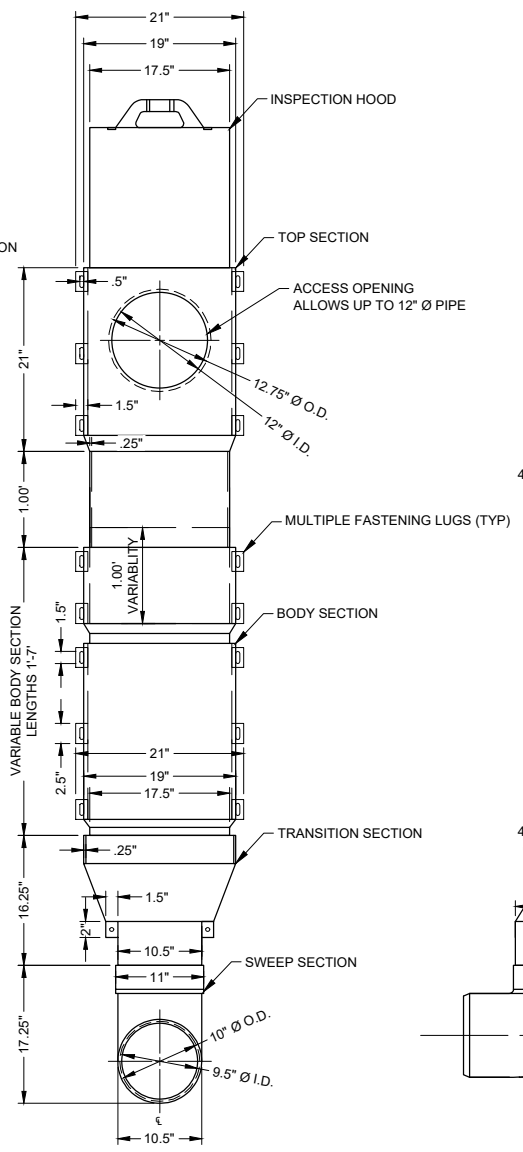
SIDE VIEW



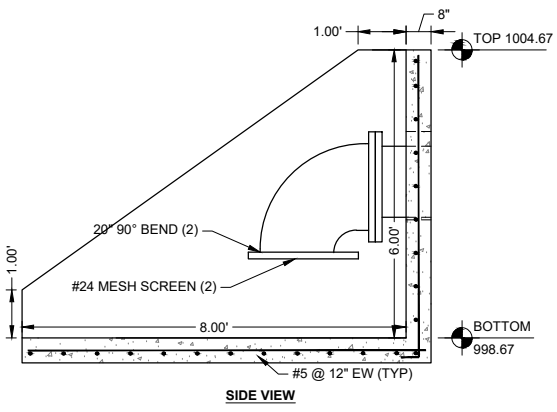
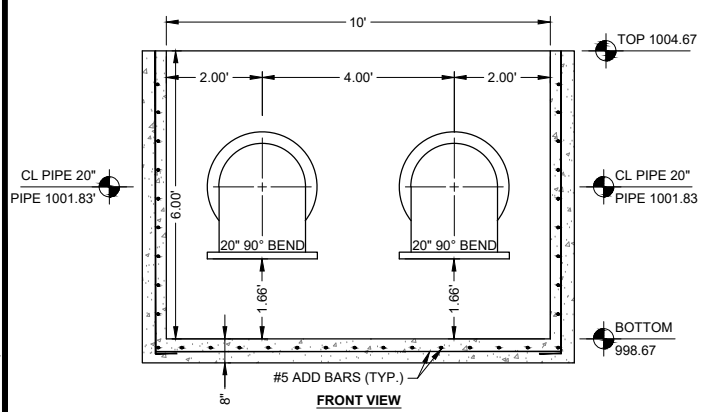
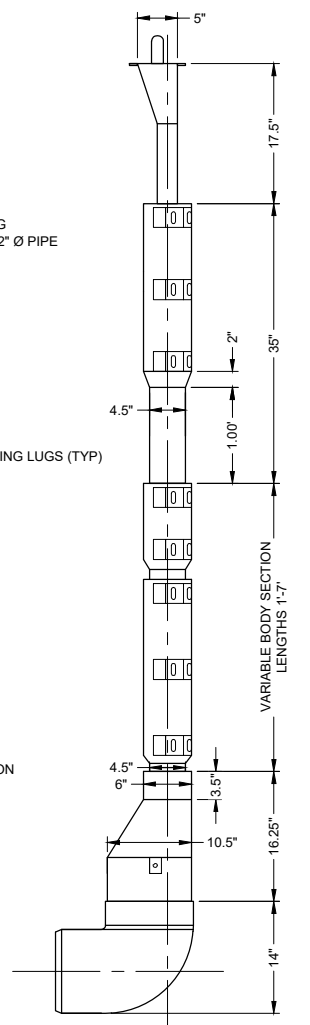
TOP VIEW



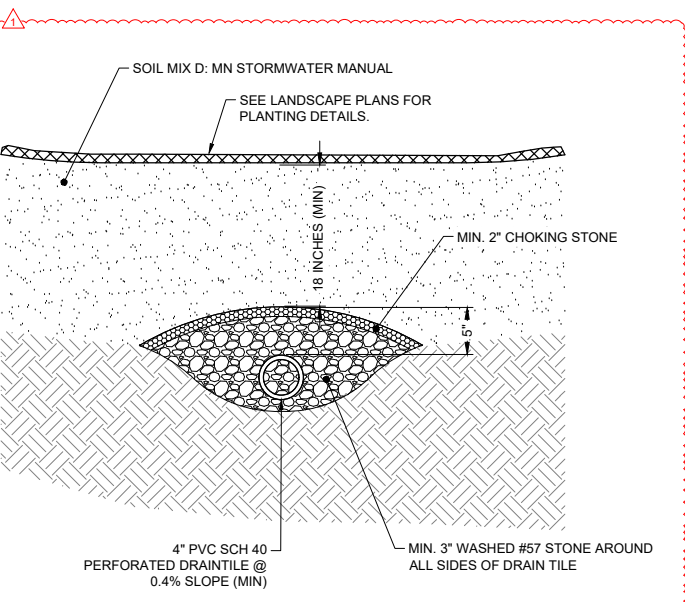
FRONT VIEW



SIDE VIEW



2
C706 OUTFALL STRUCTURE DETAIL
NO SCALE



3
C706 FILTRATION BASIN MEDIA AND DRAINTILE
NO SCALE



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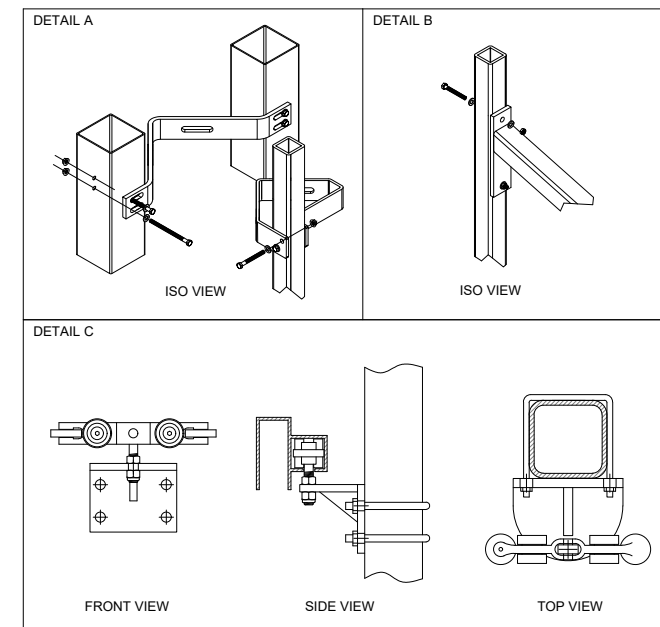
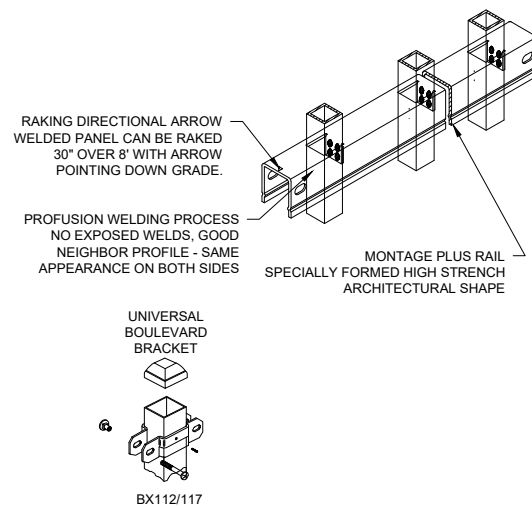
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TYPED NAME: DANIEL LANDRUS
OCTOBER 2, 2025 LIC. NO. 54263

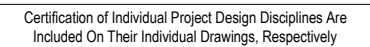
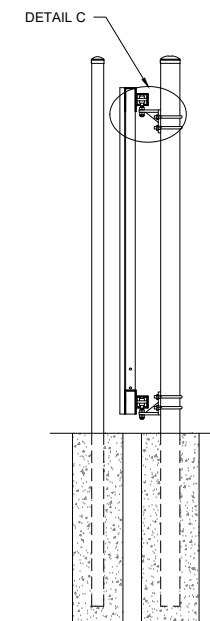
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10-02-25 WATERSHED DISTRICT PERMIT
SYMBOL DATE

MINNETRISTA WOODLAND COVE WTP PROJECT
Advanced Engineering and Environmental Services, LLC www.ae2s.com

SHEET TITLE: CIVIL STANDARD DETAILS			
CLIENT: CITY OF MINNETRISTA MINNETRISTA, MN		PREPARED BY: CSD/GP CHECKED BY: DL APPROVED BY: DL	
PROJECT NO: P05355-2023-002	SHEET DESIGNATOR:	SHEET NO:	
DATE: JULY 2025		SD C706	
ALT. PROJECT NO: 000-0000			



1. CONTRACTOR TO INSTALL CONCRETE MAINTENANCE STRIP UNDER CENTER OF FENCE. CONCRETE MAINTENANCE STRIP TO BE 24 INCHES WIDE AND 4 INCHES THICK PLACED ON 6 INCHES OF CLASS 5 AGGREGATE BASE.



SIGNATURE: [Signature]

SEPTEMBER 3, 2025 LIC. NO. 54263

STATUS: CONSTRUCTION	DATE: 11/11/2024	TIME: 10:00 AM
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ADDENDUM NO. 2

93-3-25

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MINNETRISTA WOODLAND COVE WTP PROJECT
Advanced Engineering and Environmental Services, LLC www.ae2s.com

CIVIL STANDARD DETAILS

MINNETRISTA, MN

APPROVED BY: DL

SHEET NO:

25

ALT PROJECT NO: 000-0000

25

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SD

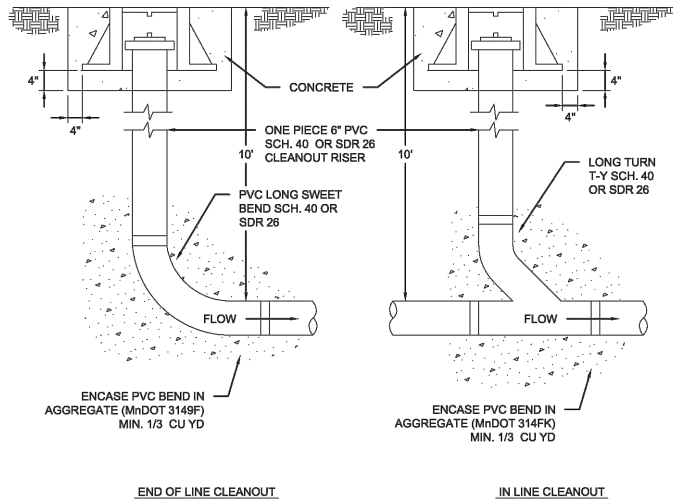
C707

1 ORNAMENTAL FENCE DETAIL
C707 NO SCALE

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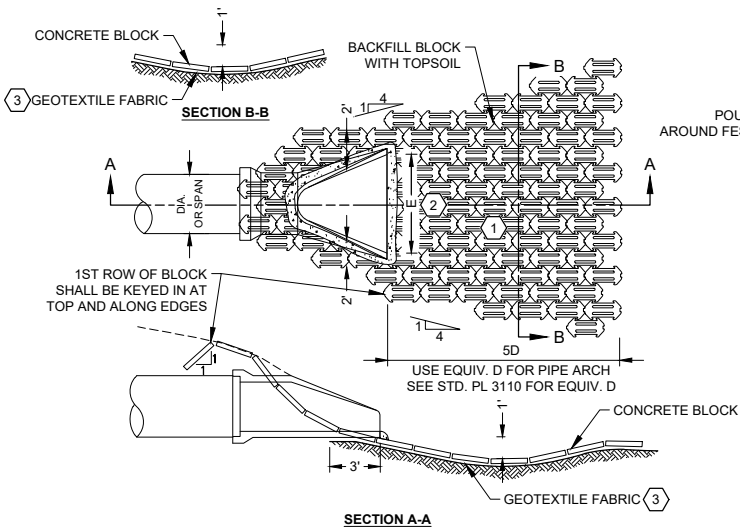
1. 6 HUB WITH THREADED PVC PLUG.
2. ENCLOSE LONG SWEEP BEND OR COMBINATION WYE IN CONCRETE AS SHOWN.
3. FORD A1 CASTING OR EQUAL ENCASED IN CONCRETE AS SHOWN WITH #4 REBAR EACH SQUARE EMBEDDED INTO CONCRETE (INCIDENTAL).
4. CLEANOUTS ARE REQUIRED EVERY 100' ON SANITARY SEWER SERVICES.
5. CLEANOUTS SHALL BE LOCATED OUTSIDE OF THE ROADWAY.



PVC SERVICE LINE CLEANOUTS

STANDARD DETAILS

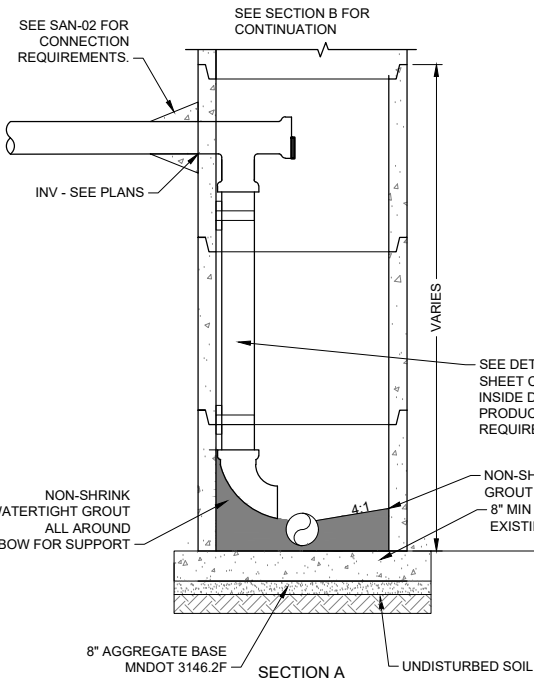
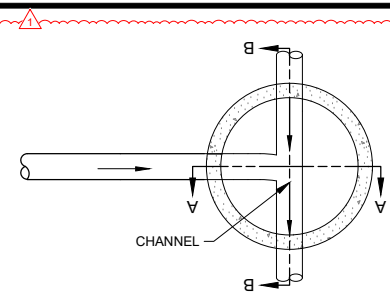
Date: JAN. 2022
Revised: SAN-10



CONSTRUCTION NOTES

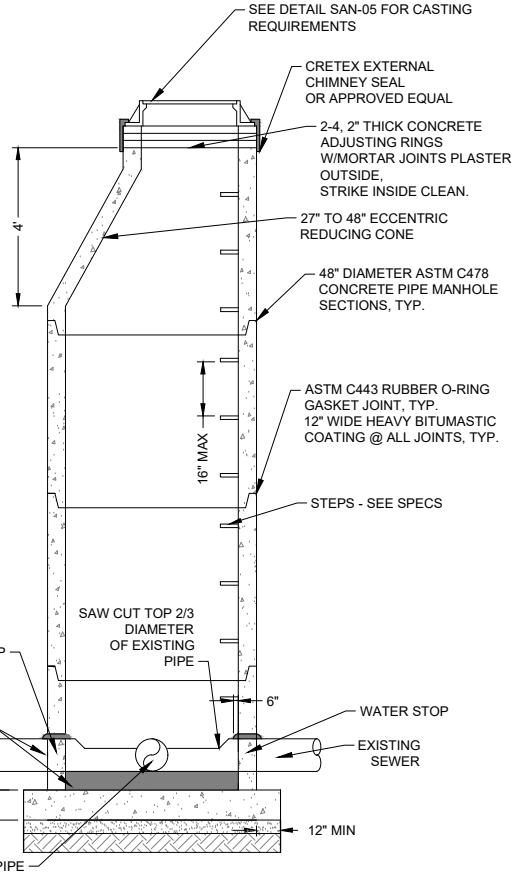
1. ARTICULATED CONCRETE BLOCK SHALL BE A HANDPLACED INTERLOCKING CONCRETE BLOCK SYSTEM, CABLE CONNECTED CONCRETE MAT, OR APPROVED EQUAL.
2. DIMENSION E IS GIVEN ON MINNESOTA STD. PL. 3100 & 3100
3. GEOTEXTILE FABRIC PER Mn/DOT SPEC. 3733. FABRIC SHALL BE OVERSIZED A MINIMUM OF 12" AND COVER THE ENTIRE AREA UNDER THE BLOCK MAT AND EXTEND UNDER THE CULVERT APRON 3'.
4. IF A CABLE CONCRETE SYSTEM IS USED, MULTIPLE MATS MUST BE TIED TOGETHER PER MANUFACTURERS SPEC. AND ALL CABLES PROTRUDING BEYOND THE FINISHED EDGES SHALL BE CUT FLUSH TO THE BLOCK.

1 ARTICULATED CONCRETE BLOCK AT RCP OUTLET
C708 NO SCALE

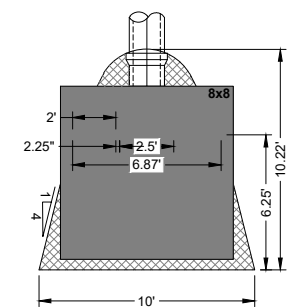
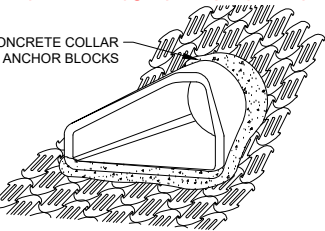


NOTES

1. INVERT OF NEW SANITARY AT FITTING TO BE MIN 2 INCHES HIGHER THAN TOP OF CUT PIPE
2. GROUT IN NEW FLOW CHANNEL AFTER TOP 2/3 OF THE EXISTING PIPE IS REMOVED
3. INSTALL EXTERNAL SEALING SYSTEM MANUFACTURED BY INFI-SHIELD. DISTRIBUTED BY ESS BROS. & SONS INC.
4. COAT THE EXTERIOR OF MANHOLE WITH XYPEX FCM 80, OR APPROVED EQUAL, AT THE JOINT BETWEEN BASE SLAB AND BOTTOM MANHOLE SECTION, EXTEND MIN 2 INCHES ON EACH SIDE OF JOINT, AND ON GROUT PLACED AROUND EXISTING PIPE.

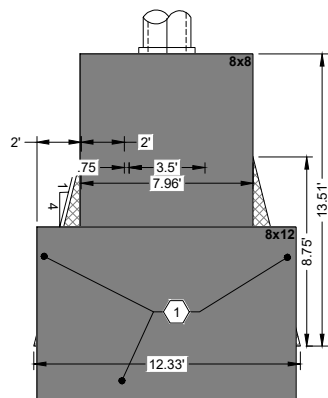


2 INTERIOR DROP DOGHOUSE MANHOLE
C708 NO SCALE



STANDARD PLATE AREA = 67.4 SF = 7.49 SY
MAT AREA (1) 8' x 8' = 64.0 SF = 7.11 SY

12" & 15" RCP
CC-35 MAT TYPE

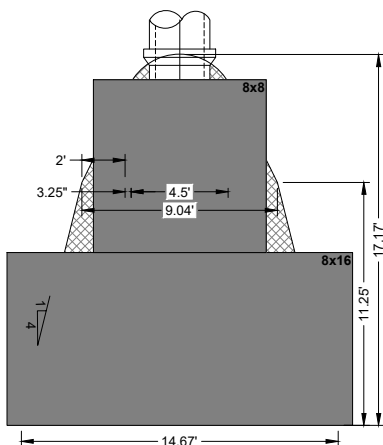


STANDARD PLATE AREA = 106.9 SF = 11.88 SY
MAT AREA (1) 8' x 8' + (1) 8' x 12' = 160 SF = 17.78 SY

8' x 4' WASTE IF ONLY 1 FES ON JOB, IF 2 FES ARE NEEDED THE WASTE CAN BE USED FOR 8' x 8'

1. CUT 4' EXCESS OFF 16' SHEET. SPLIT IN TWO PIECES = (2) 2' x 8' AND PLACE ON BOTH SIDES OF MAT.

18" & 21" RCP
CC-35 MAT TYPE



STANDARD PLATE AREA = 156.2 SF = 17.36 SY
MAT AREA (1) 8' x 8' + (1) 8' x 16' = 192 SF = 21.33 SY

24" & 27" RCP
CC-35 MAT TYPE



Certification of Individual Project Design Disciplines Are Included On Their Individual Drawings, Respectively

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

SIGNATURE:

TYPED NAME: DANIEL LANDRUS
SEPTEMBER 22, 2025 LIC. NO. 54263

STATUS: CONSTRUCTION
ADDENDUM 3
DATE: 9/22/25
SYM:

MINNETRISTA WOODLAND COVE WTP PROJECT

Advanced Engineering and Environmental Services, LLC www.ae2s.com

SHEET TITLE:

CIVIL STANDARD DETAILS

CLIENT:

CITY OF MINNETRISTA
MINNETRISTA, MN

PROJECT NO. P05355-2023-002

DATE: JULY 2025

ALT. PROJECT NO. 000-0000

SHEET DESIGNATOR:

SD

SHEET NO.

C708

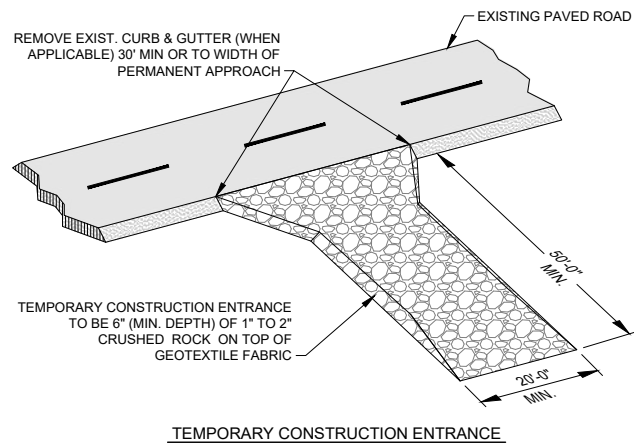
PREPARED BY: CSD/GP

CHECKED BY: DL

APPROVED BY: DL

NOTES

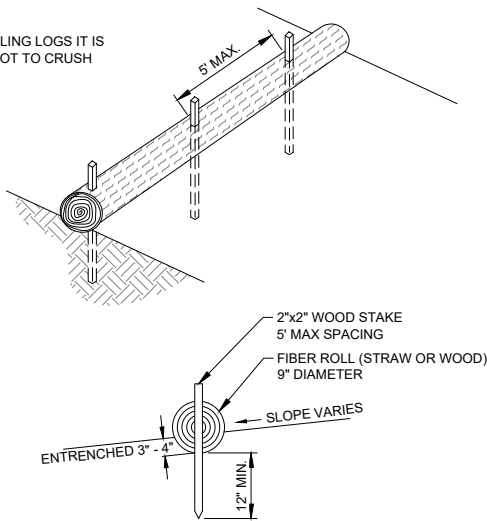
1. THE LOCATION OF CONSTRUCTION ENTRANCES SHALL BE AS SHOWN ON THE PLANS AND SHALL COINCIDE WITH THE PERMANENT ACCESS. IF THIS IS NOT PRACTICAL, THE CONTRACTOR SHALL COORDINATE THE LOCATIONS WITH THE ENGINEER.
2. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REMOVE THE TEMPORARY CONSTRUCTION ENTRANCE UNLESS NOTED OTHERWISE, AND THE SITE SHALL BE RESTORED TO ITS PREVIOUS CONDITION.
3. ENTRANCES SHALL BE MAINTAINED IN A MANNER TO MINIMIZE THE TRACKING OF SEDIMENT ONTO PAVED SURFACES.



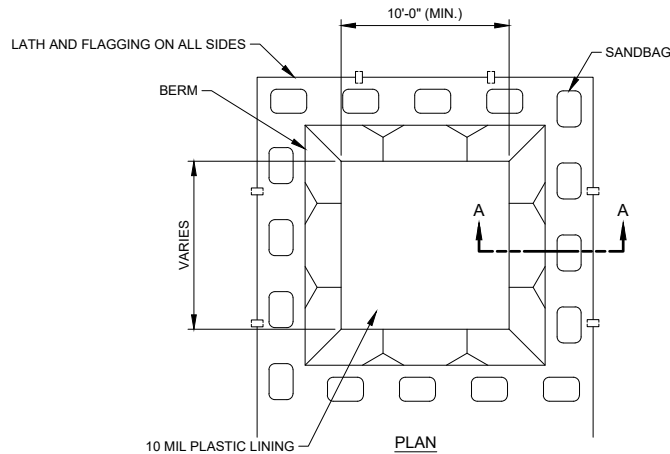
1 TEMPORARY CONSTRUCTION ENTRANCE
C709 NO SCALE

NOTE

1. WHEN INSTALLING LOGS IT IS IMPORTANT NOT TO CRUSH FIBER ROLL.

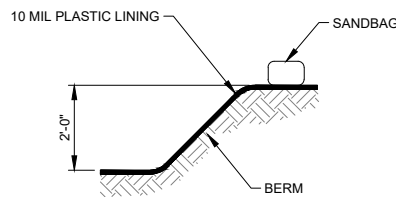


5 FIBER ROLL
C709 NO SCALE



NOTES:

1. TYPE "BELOW GRADE"
2. DETAIL MODIFIED FROM CALIFORNIA STORMWATER BMP HANDBOOK

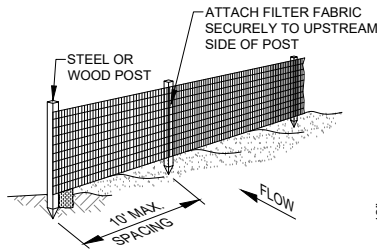


SECTION A-A

2 CONCRETE WASHOUT AREA
C709 NO SCALE

NOTES

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

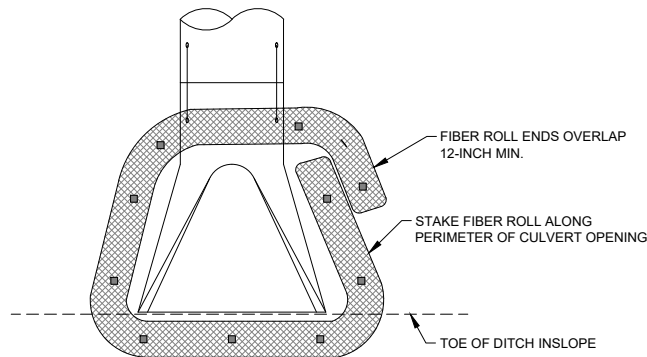


INSTALLATION WITHOUT TRENCH

3 SILT FENCE
C709 NO SCALE

NOTE

1. FOR CULVERT DIAMETERS LESS THAN 42-INCH USE "FIBER ROLLS 12-INCH". FOR CULVERT DIAMETERS 42-INCH OR GREATER USE "FIBER ROLLS 20-INCH".

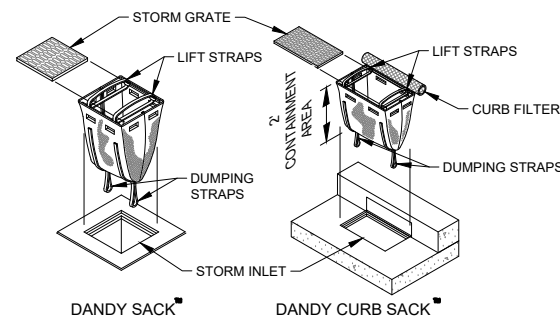


PLAN VIEW

6 CULVERT INLET FIBER ROLL PROTECTION
C709 NO SCALE

NOTES:

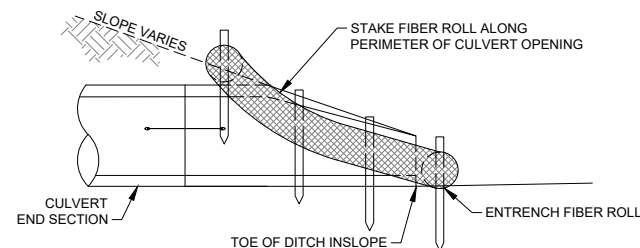
1. ALL FILTER BAGS SHALL BE DANDY CURB SACKS, DANDY SACKS OR APPROVED EQUAL.
2. INSTALL AS PER MANUFACTURERS SPECIFICATIONS:
 - A. REMOVE THE GRATE FROM THE CATCH BASIN.
 - B. STAND THE GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO THE DANDY CURB SACK OR DANDY SACK UNIT SO THAT THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. THE GRATE SHOULD BE CRADLED BETWEEN THE UPPER AND LOWER STRAPS.
 - C. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET, THEN LOWER BACK EDGE WITH CYLINDRICAL TUBE (DANDY CURB SACK ONLY) INTO PLACE, BEING CAREFUL THAT THE GRATE REMAINS IN PLACE AND BEING CAREFUL NOT TO DAMAGE THE UNIT. THE CYLINDRICAL TUBE SHOULD PARTIALLY BLOCK THE CURB HOOD OPENING WHEN INSTALLED PROPERLY (DANDY CURB SACK ONLY).



DANDY SACK

DANDY CURB SACK

4 STANDARD INLET PROTECTION
C709 NO SCALE



PROFILE VIEW



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SIGNATURE:

TYPED NAME: DANIEL LANDRUS

SEPTEMBER 3, 2025

LIC. NO. 54263

STATUS: CONSTRUCTION

ADDENDUM 2

DATE

SYM

MINNETRISTA WOODLAND COVE WTP PROJECT
Advanced Engineering and Environmental Services, LLC www.ae2s.com

PROJECT TITLE:

SHEET TITLE:

CIVIL STANDARD DETAILS

CLIENT:

CITY OF MINNETRISTA
MINNETRISTA, MN

PREPARED BY: CSD/GP

CHECKED BY: DL

APPROVED BY: DL

PROJECT NO: P05355-2023-002

DATE: JULY 2025

ALT. PROJECT NO: 000-0000

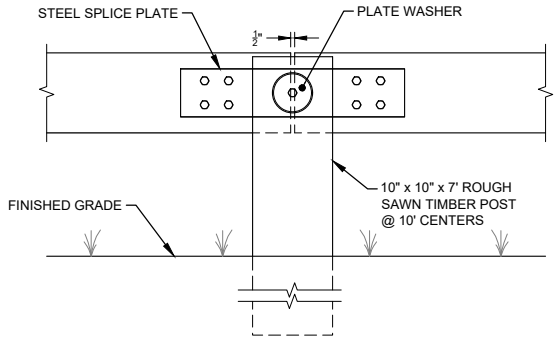
SHEET DESIGNATOR:

SD

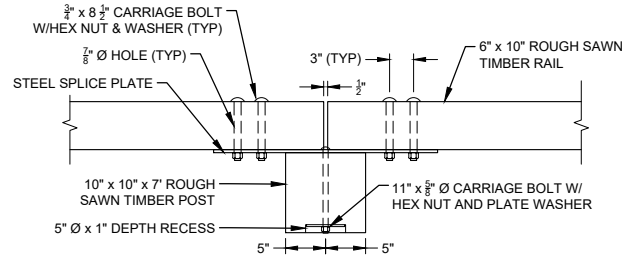
SHEET NO:

C709

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Printed By: des208 Date: Friday, September 5, 2025

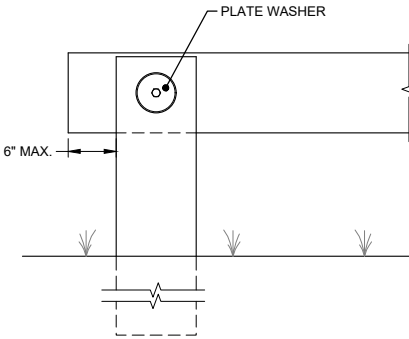


ELEVATION

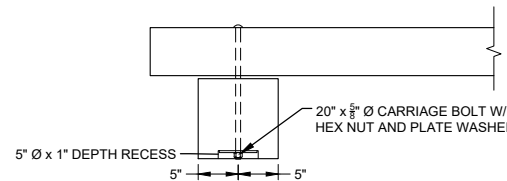


PLAN

POST CONNECTION

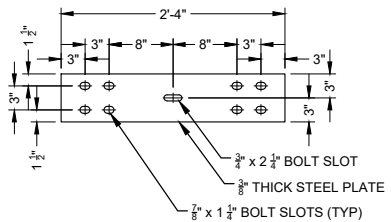


ELEVATION



PLAN

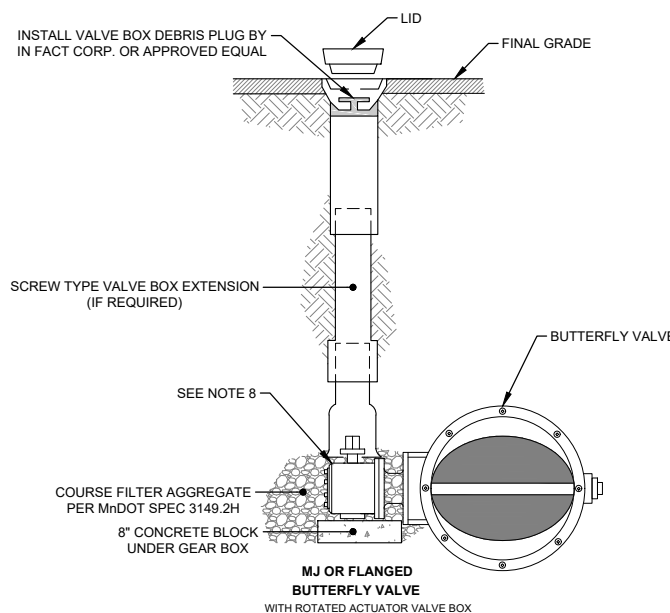
TERMINAL POST CONNECTION



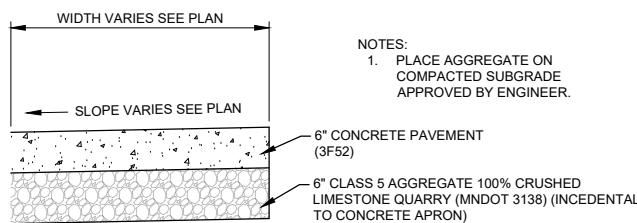
STEEL SPLICE PLATE

- NOTES
1. ALL LUMBER TO BE PRESSURE TREATED FOR GROUND CONTACT.
 2. TIMBER RAILS SHALL BE KILN DRIED.
 3. HARDWARE SHALL BE GALVANIZED AND MEET THE REQUIREMENTS OF MNDOT 3392.
 4. STEEL SPLICE PLATES SHALL MEET THE REQUIREMENTS OF MNDOT 3306.

1 GUARDRAIL
C710 NO SCALE



- NOTES
1. MAIN AND FIRE HYDRANT VALVE AND VALVE BOXES SHALL NOT BE IN THE CURB PAN, CURB OR SIDEWALK.
 2. VALVE BOXES SHALL BE SLIP TYPE.
 3. DEBRIS CAPS SHALL BE INSTALLED AS CLOSE UNDER THE CAST IRON COVER WITHOUT INTERFERING WITH COVER OPERATIONS.
 4. DEBRIS CAPS WITH FLEXIBLE SKIRTS SHALL BE TRIMMED TO PROVIDE SMOOTH CONTACT WITH THE INTERIOR OF THE VALVE BOX.
 5. INSTALL NUT EXTENDER TO 7" DEPTH ON ALL VALVES WITH OVERDEPTH.
 6. TYLER NO. 6860 MUELLER NO. H-10357 BIBBY-STE-CROIX B-5001 GATE VALVE BOX, SCREW TYPE, 3 PIECE, 5 1/4" SHAFT, SIZE G BOX, 7'-6" EXTENDED, #6 ROUND BASE.
 7. ALL VALVE BOX COMPONENTS SHALL BE MANUFACTURED IN THE U.S. OR CANADA, OR AS APPROVED BY THE ENGINEER.
 8. RESILIENT WEDGE VALVE CONFORMING AWWA C-509 & C-515 STANDARDS INSTALLED WITH A VALVE BOX ADAPTER TYPE II.



- NOTES:
1. PLACE AGGREGATE ON COMPACTED SUBGRADE APPROVED BY ENGINEER.

3 BUTTERFLY VALVE
C710 NO SCALE

2 CONCRETE SIDEWALK SECTION
C710 NO SCALE



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SIGNATURE:

TYPED NAME: DANIEL LANDRUS

SEPTEMBER 3, 2025 LIC. NO. 54263

STATUS: CONSTRUCTION
ADDENDUM 2
9-3-25
SYN DATE

MINNETRISTA WOODLAND COVE WTP PROJECT

Advanced Engineering and Environmental Services, LLC www.ae2s.com

SHEET TITLE: CIVIL STANDARD DETAILS			
CLIENT: CITY OF MINNETRISTA MINNETRISTA, MN		PREPARED BY: CSD/GP CHECKED BY: DL APPROVED BY: DL	
PROJECT NO: P05355-2023-002	SHEET DESIGNATOR:	SHEET NO:	
DATE: JULY 2025	SD	C710	
ALT. PROJECT NO: 000-0000			