

MARSHALL MN

CONSTRUCTION PLANS FOR

BROADMOOR VALLEY

AGGREGATE BASE, BITUMINOUS PAVEMENT, AND STORM SEWER IMPROVEMENTS

JUNE 2023

RESOURCE LIST

CITY OF MARSHALL
CITY HALL
344 W MAIN ST
MARSHALL, MN 56258
507-537-6760

CITY ADMINISTRATOR:
SHARON HANSON

DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
JASON ANDERSON
507-537-6051

WASTEWATER SUPERINTENDENT
SCOTT TRUEDSON

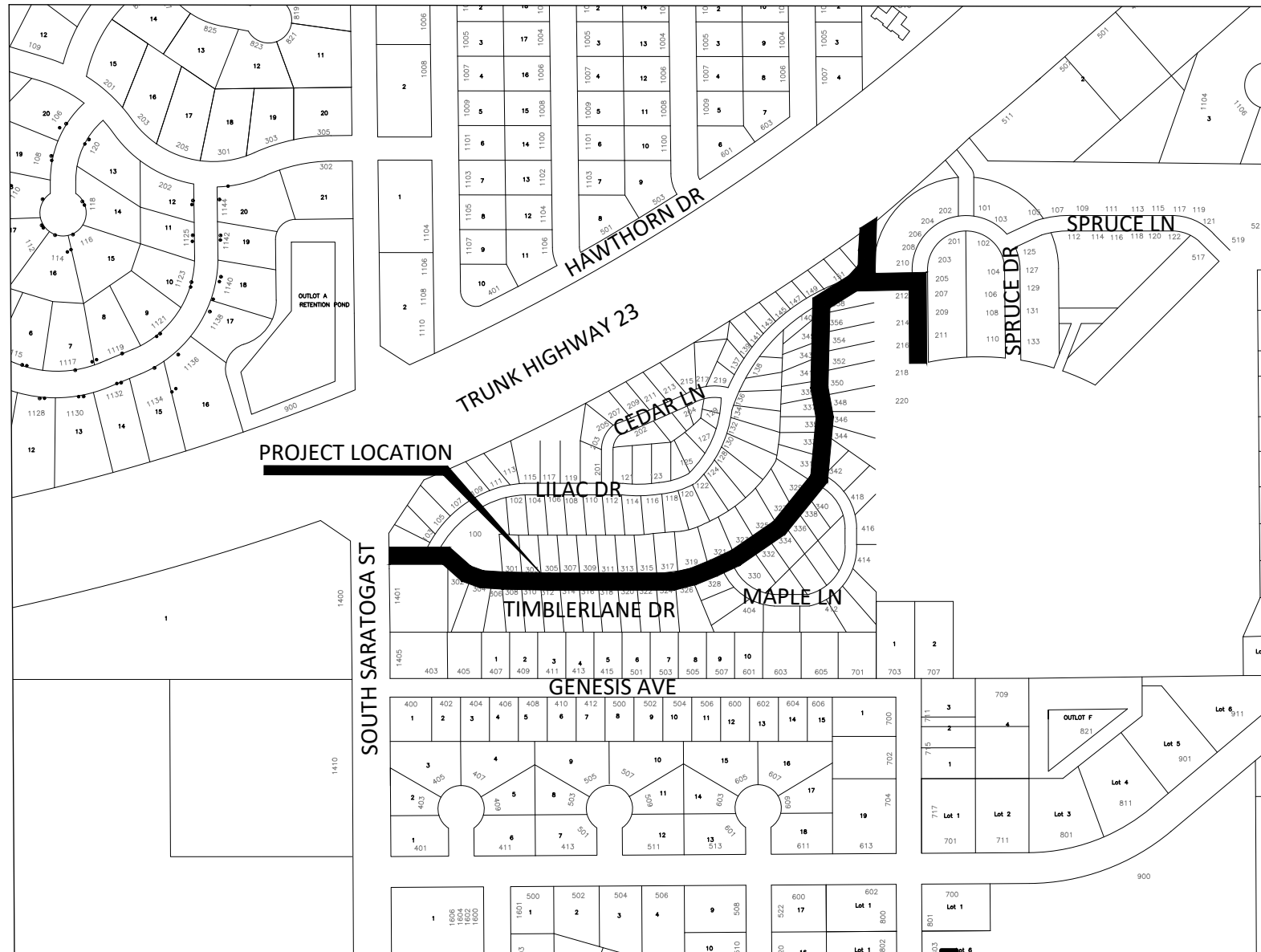
WATER OPERATIONS MANAGER
JEFF LARSON

ELECTRICAL OPERATIONS MANAGER
TONY MEAD

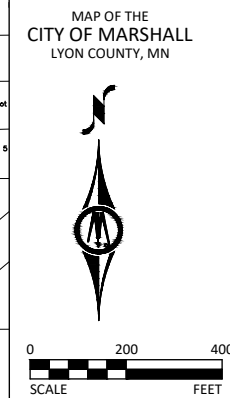
PUBLIC WAYS SUPERINTENDENT
DEAN COUDRON

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."



SHEET NUMBER	SHEET TITLE
GENERAL	
G0.01 - G0.02	TITLE SHEET, LEGEND
G1.01	STATEMENT OF ESTIMATED QUANTITIES
CIVIL	
C0.01 - C0.05	EXISTING CONDITIONS & REMOVALS
C1.01 - C1.02	TYPICAL SECTIONS, DETAILS
C2.01 - C2.02	STORMWATER POLLUTION PREVENTION PLAN
C5.01 - C5.03	STORM SEWER PLAN & PROFILE
C6.01 - C6.05	STREET PLAN & PROFILE
C8.01 - C8.05	CROSS SECTIONS
THIS PLAN SET CONTAINS <u>25</u> SHEETS.	



MAP LEGEND

█ PROJECT LIMITS

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.

JOSHUA G. STIER
LIC. NO. 54171 DATE 06/28/2023



2040 HIGHWAY 12 EAST
WILLMAR, MINNESOTA 56201
Phone: (320) 231-3956
Email: Willmar@bolton-menk.com
www.bolton-menk.com

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SCHIERHOLZ & ASSOCIATES
2023 BROADMOOR VALLEY IMPROVEMENTS
TITLE SHEET

RECORD DRAWING INFORMATION	
OBSERVER:	
CONTRACTOR:	
DATE:	

SHEET
G0.01

STATEMENT OF ESTIMATED QUANTITIES					A
ITEM NO.	MNDOT SPEC NO.	ITEM	NOTES	UNIT	TOTAL QUANTITY
BASE BID					
1	2021.501	MOBILIZATION		LUMP SUM	1
2	2104.502	REMOVE MANHOLE OR CATCH BASIN	1.11	EACH	4
3	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	1.11	LIN FT	178
4	2104.503	REMOVE SEWER PIPE (STORM)		LF	848
5	2104.504	REMOVE CONCRETE WALK		SQ YD	1298
6	2104.504	REMOVE BITUMINUS PAVEMENT	1.5	SQ YD	5778
7	2106.507	EXCAVATION - COMMON (P)		CU YD	1825
8	2108.504	GEOTEXTILE FABRIC TYPE 7		SQ YD	8329
9	2118.507	AGGREGATE SURFACING, CLASS 1 (P)		CU YD	360
10	2211.509	AGGREGATE BASE, CLASS 5 (P)		CU YD	1851
11	2360.509	TYPE SP 9.5 NON-WEARING COURSE MIX (3,C)		TON	1036
12	2503.503	12" RC PIPE SEWER CLASS V	1.3	LF	450
13	2503.503	36" RC PIPE SEWER CLASS III	1.8	LF	628
14	2501.502	36" RC PIPE APRON		EACH	1
15	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 4020-48"		LF	12
16	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 4020-72"	1.9	LF	21
17	2503.602	CONNECT TO EXISTING STORM SEWER OR DRAINAGE STRUCTURE		EACH	3
18	2506.502	ADJUST FRAME & RING CASTING		EACH	3
19	2563.601	TRAFFIC CONTROL		LUMP SUM	1
20	2564.503	SIGN		EACH	8
21	2573.502	STABILIZED CONSTRUCTION EXIT	1.2	LUMP SUM	1
22	2573.502	STORM DRAIN INLET PROTECTION		LUMP SUM	1
23	2574.508	FERTILIZER TYPE 3		POUND	165
24	2575.508	SEED MIXTURE 25-131		POUND	121
25	2575.508	HYDRAULIC BONDED FIBER MATRIX		POUND	2200
26	2575.605	SEEDING		ACRE	1
27	2582.503	6" SOLID LINE PAINT		LIN FT	4600

GENERAL NOTES:

1. SEQ NOTES
 - 1.1. (P) = PLANNED QUANTITY
 - 1.2. ALL DISTURBED AREAS SHALL BE PREPARED WITH TOPSOIL, SEEDED, FERTILIZED, AND STABILIZED AS SPECIFIED WITHIN THIS PROJECT MANUAL AND THE PLANS.
2. PROTECTION OF EXISTING IMPROVEMENTS
 - 2.1. THE CONTRACTOR SHALL TAKE CARE IN PROTECTING ALL EXISTING LANDSCAPING, TREES, SHRUBS AND OTHER FEATURES ADJACENT TO THE NEW CONSTRUCTION NOT DESIGNATED FOR REMOVAL OR SALVAGE. REMOVAL OF TREES, OR SHRUBS, OR OTHER LANDSCAPING FEATURES FOUND TO CONFLICT WITH THE CONSTRUCTION SHALL BE REMOVED ONLY WHERE AUTHORIZED BY THE ENGINEER.
3. OTHER PROJECT REQUIREMENTS
 - 3.1. ALL TRAFFIC CONTROL SHALL BE INSTALLED BEFORE COMMENCING WITH WORK ON THE PROJECT.
 - 3.2. EACH CONSTRUCTION ACTIVITY WITHIN EACH SEGMENT SHALL BE PURSUED DILIGENTLY AND CONTINUOUSLY FROM START TO FINISH. AFTER THE AGGREGATE BASE IS IN PLACE, ACCESS SHALL BE PROVIDED TO ALL CAMPSITES AND DRIVEWAYS.
 - 3.3. THE CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL BMP'S TO MINIMIZE THE RISK FOR EROSION AND LOSS OF AGGREGATE. ADDITIONAL WORK OR MATERIALS NECESSARY TO COMPLETE REPAIRS CAUSED BY FAILURE TO PROTECT SLOPES FROM EROSION SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE.
 - 3.4. RECLAIMED AGGREGATE BASE FROM PROJECT MAY BE USED, PROVIDED IT MEETS SPECIFICATIONS.
 - 3.5. MODIFICATIONS TO THE LIMITATIONS DESCRIBED ABOVE MAY BE REQUESTED BY THE CONTRACTOR. SUCH VARIATIONS WILL BE CONSIDERED BY THE ENGINEER AND THE OWNER AND IF APPROVED, WRITTEN AUTHORIZATION WILL BE PROVIDED BY THE ENGINEER.
4. PRIVATE UTILITIES
 - 4.1. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR ANY NECESSARY RELOCATIONS WHEN AND IF THEY OCCUR. DELAYS CAUSED BY UTILITY RELOCATION OR HOLDING OF POLES ARE OUTSIDE THE OWNER'S CONTROL. FAILURE OF THE CONTRACTOR TO AVOID DELAYS BY COMPLETING WORK ELSEWHERE WHILE CONFLICTING UTILITIES ARE REMOVED OR RELOCATED WILL NOT BE CONSIDERED AS ADEQUATE REASONING FOR EXTENDING COMPLETION DATES OR APPROVING PAYMENT FOR CONSTRUCTION DELAYS.

BASIS OF ESTIMATED QUANTITIES	
BITUMINOUS PAVEMENT	115 LBS / SY INCH THICKNESS
BITUMINOUS TACK	0.075 GAL / SQ YD
SEED MIXTURE 25-131	220 LB / ACRE
FERTILIZER TYPE 3	300 LB / ACRE
HYDRAULIC BONDED FIBER MATRIX	4000 LB / ACRE

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

SCHIERHOLZ & ASSOCIATES
 2023 BROADMOOR VALLEY IMPROVEMENTS
 STATEMENT OF ESTIMATED QUANTITIES

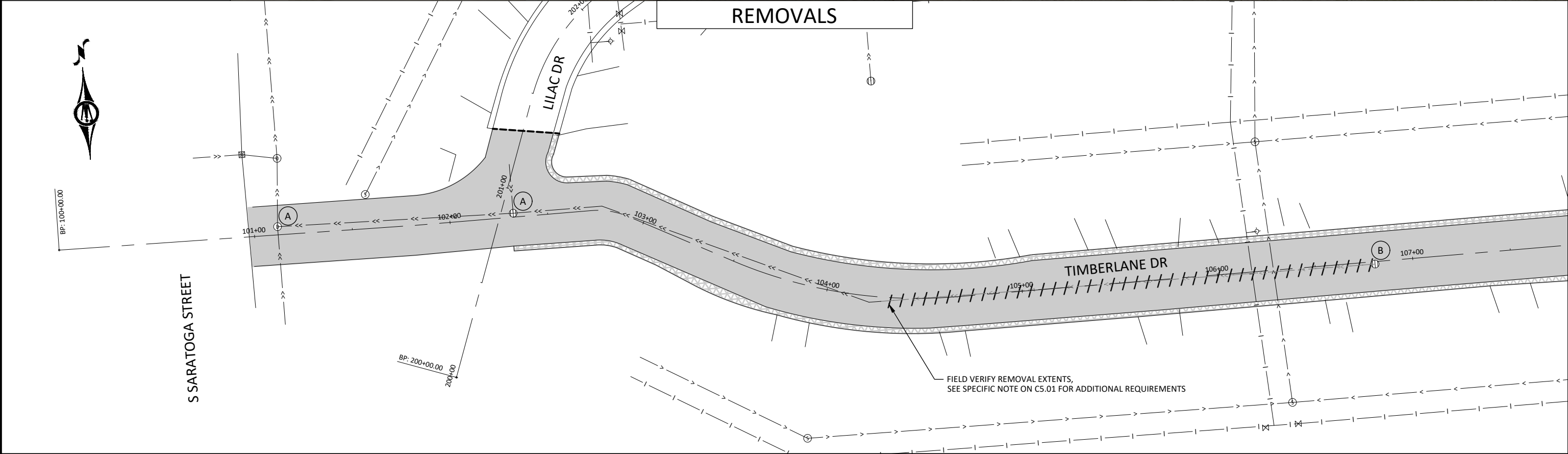
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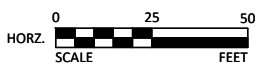


LEGEND

-  REMOVE BITUMINOUS PAVEMENT
-  REMOVE CONCRETE SIDEWALK
-  ADJUST FRAME & RING CASTING
-  REMOVE STORM STRUCTURE
-  REMOVE STORM PIPE
-  SAWING BITUMINOUS PAVEMENT (FULL DEPTH)



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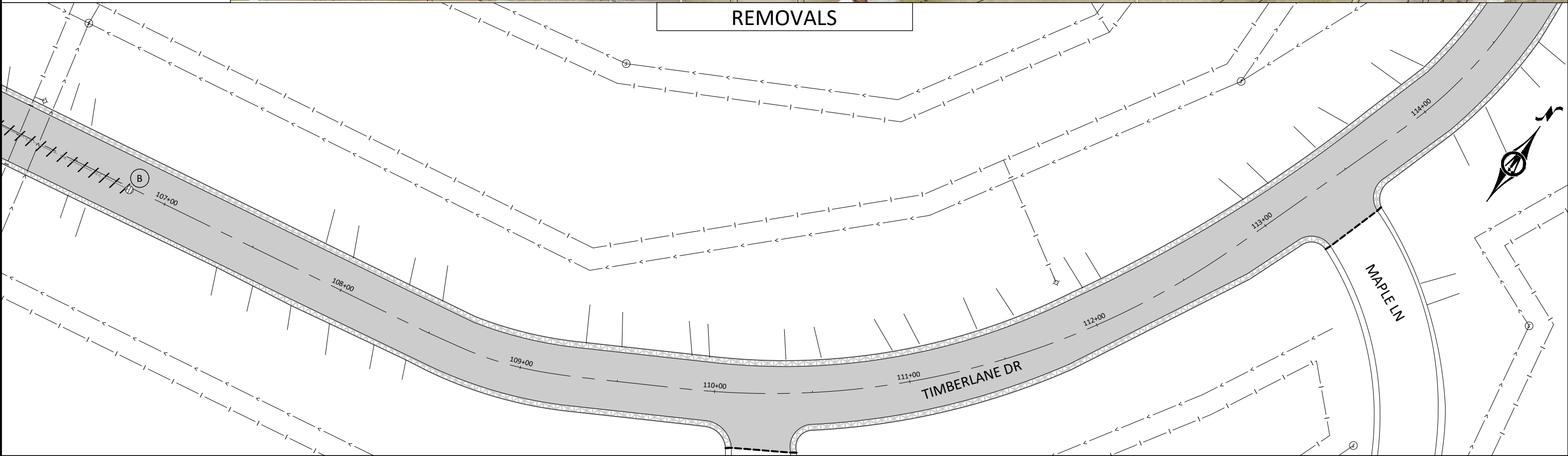
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 EXISTING CONDITIONS & REMOVALS

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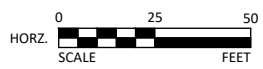


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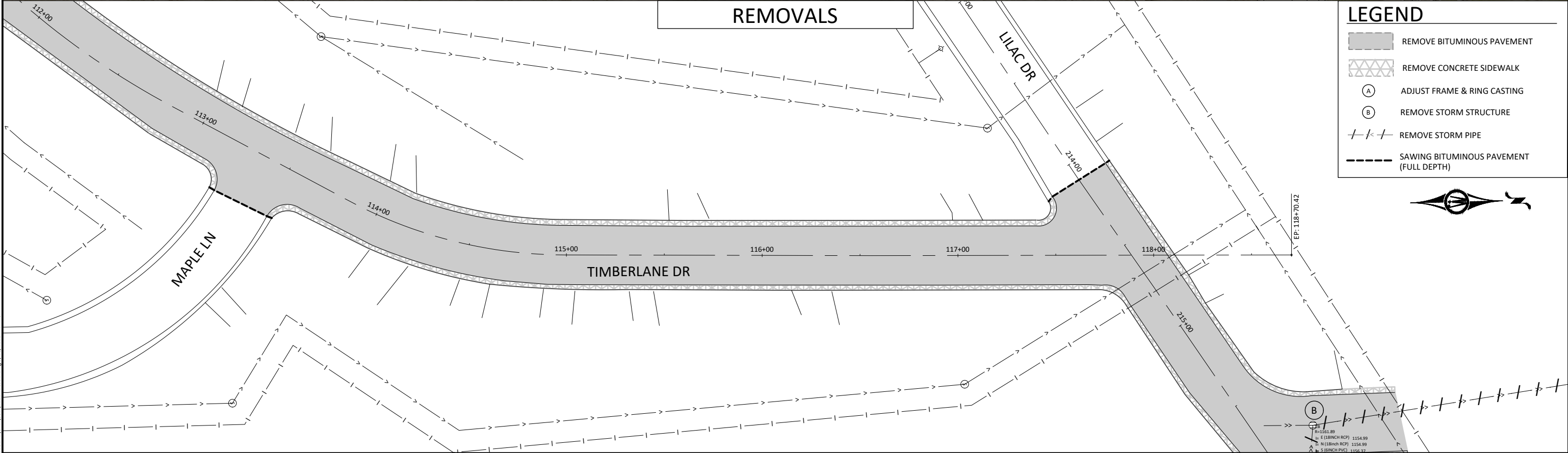
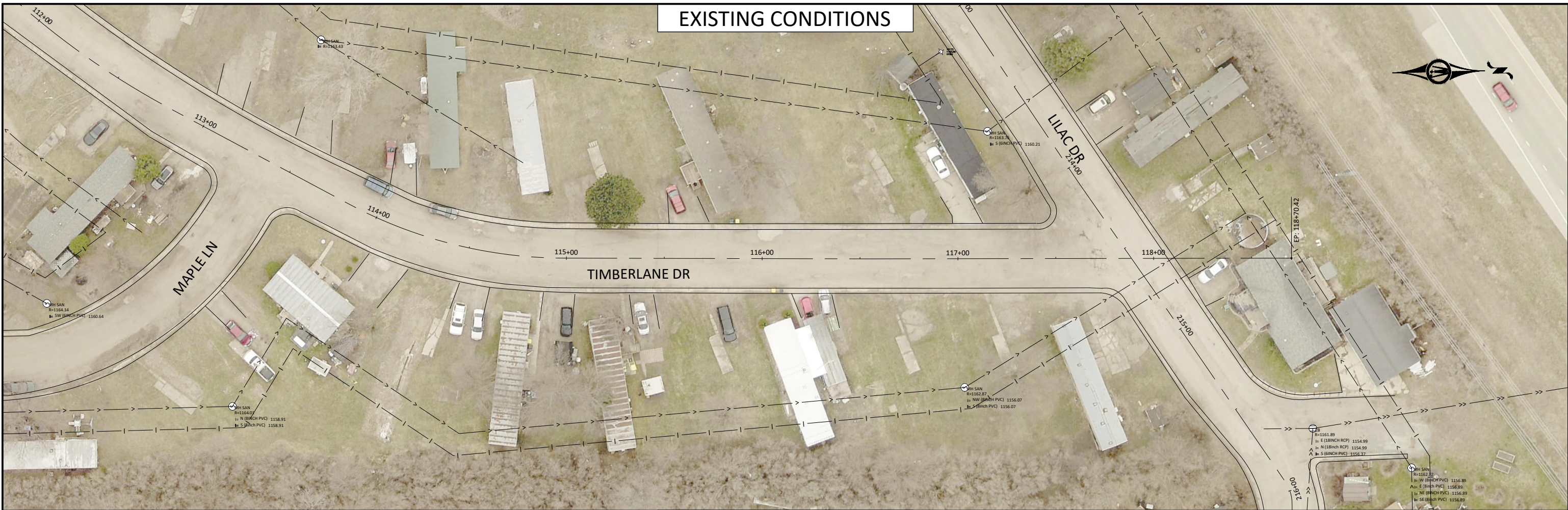


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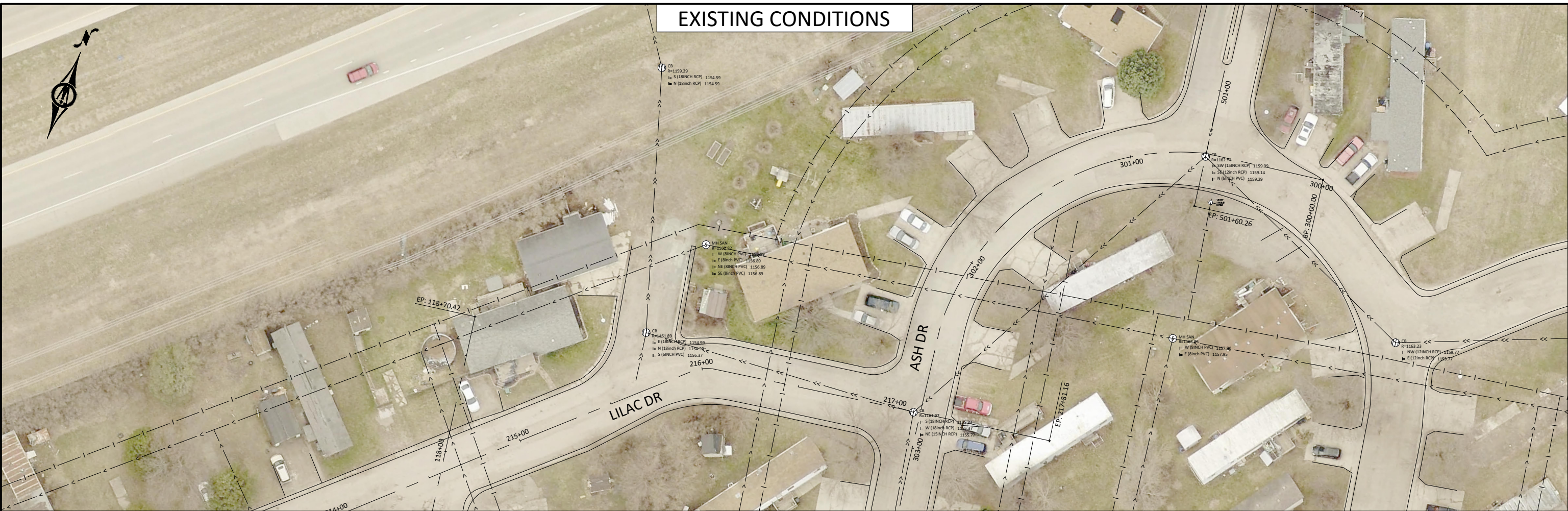


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

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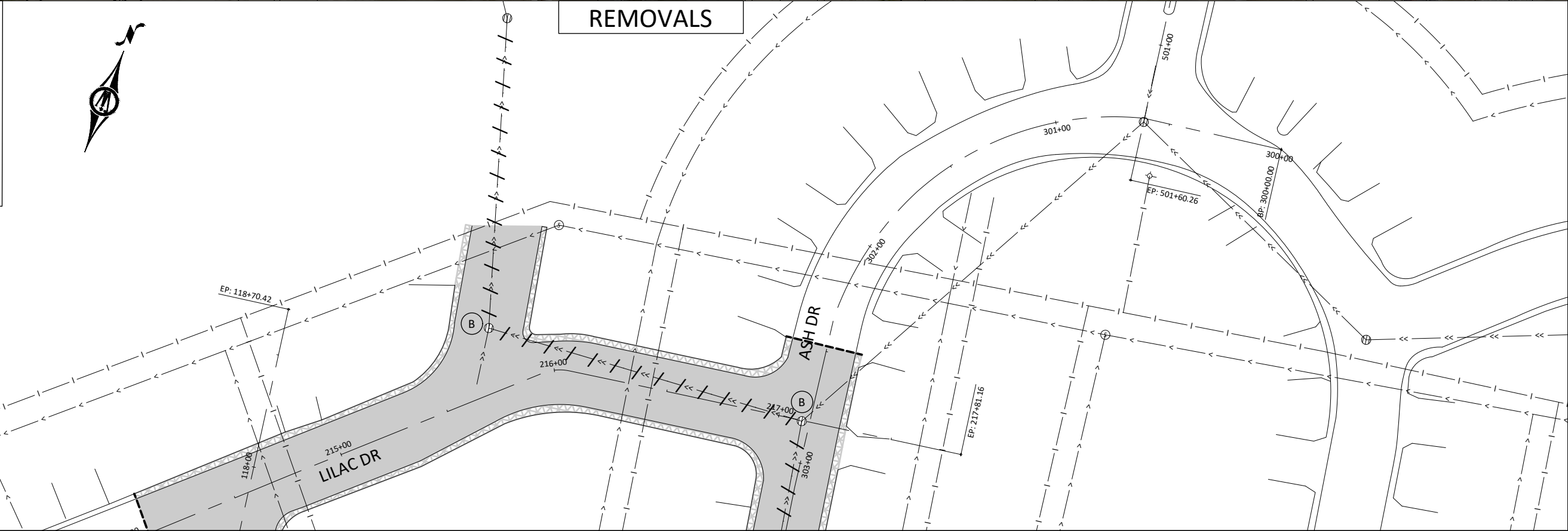
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 2023 BROADMOOR VALLEY IMPROVEMENTS
 EXISTING CONDITIONS & REMOVALS

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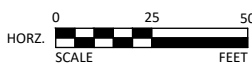


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-  REMOVE STORM STRUCTURE
-  REMOVE STORM PIPE
-  SAWING BITUMINOUS PAVEMENT (FULL DEPTH)



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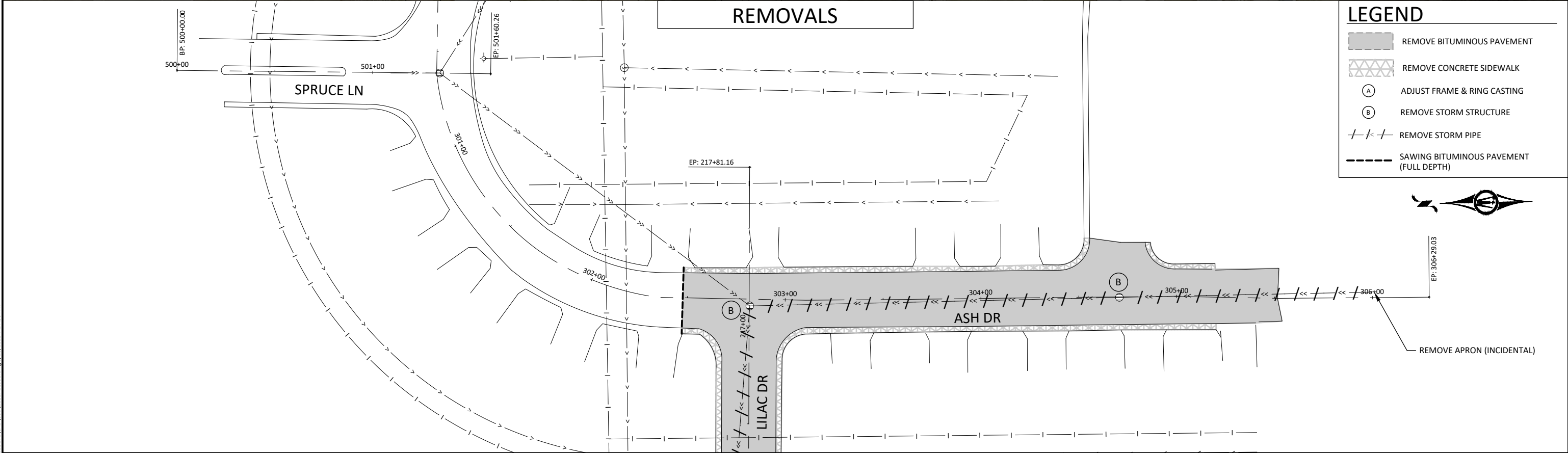
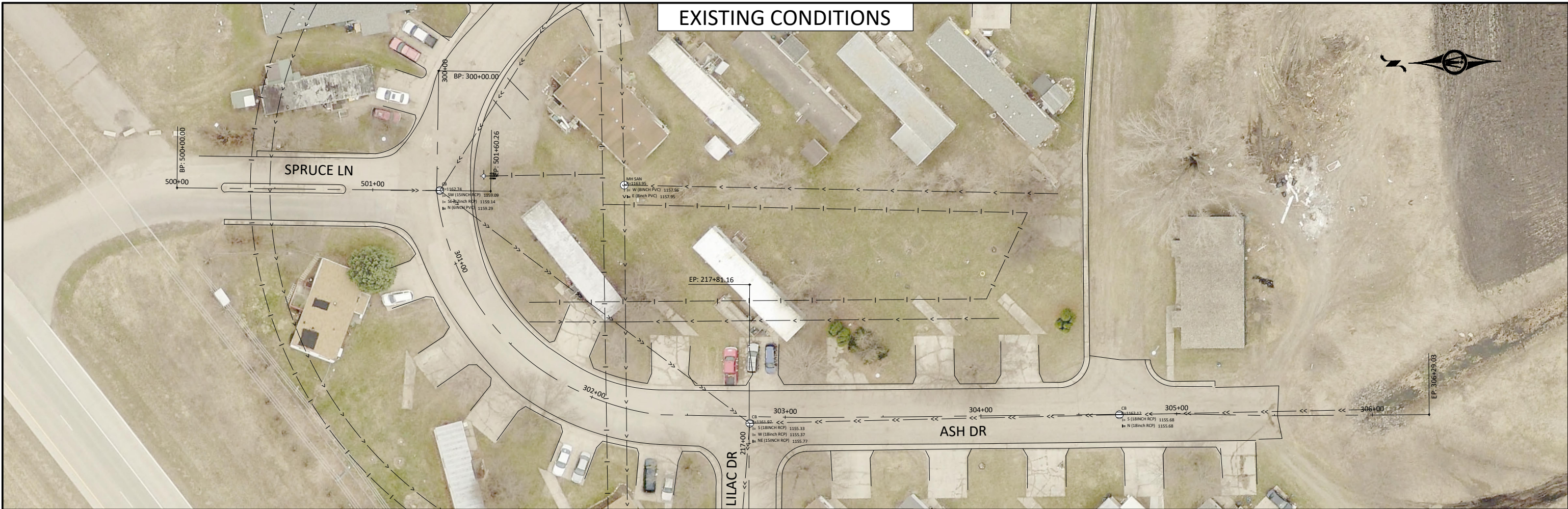


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

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 EXISTING CONDITIONS & REMOVALS

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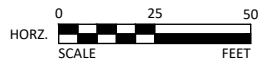
LEGEND

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-  REMOVE STORM PIPE
-  SAWING BITUMINOUS PAVEMENT (FULL DEPTH)



EP: 306+29.03
REMOVE APRON (INCIDENTAL)

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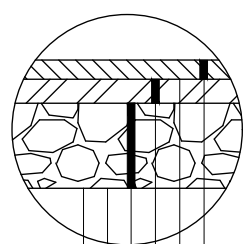
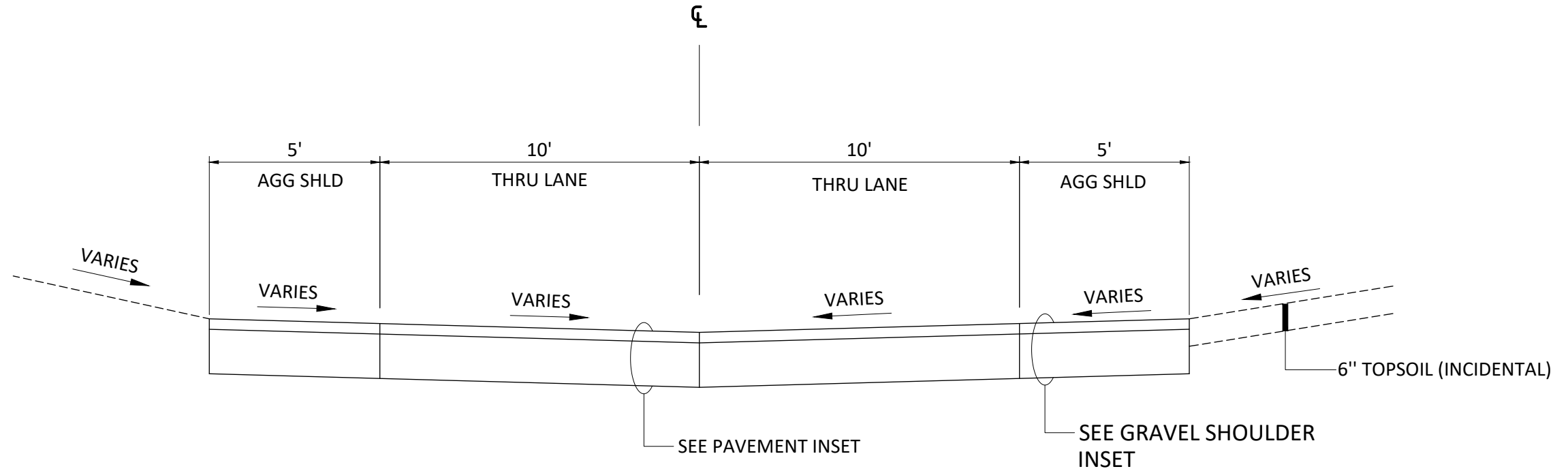
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EXISTING CONDITIONS & REMOVALS

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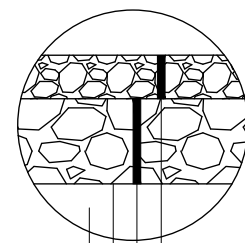
PROPOSED TYPICAL SECTION

STA 101+00 TO STA 117+89 (TIMBERLANE DRIVE)
 STA 214+09 TO STA 217+14 (LILAC DRIVE)
 STA 302+48 TO STA 305+53 (ASH DRIVE)



- 1.5" TYPE SP 9.5 WEARING COURSE MIXTURE (2,C) (SPWEA240C) (2360)
- BITUMINOUS TACK COAT (2357) (INCIDENTAL)
- 1.5" TYPE PS 9.5 WEARING COURSE MIXTURE (2,C) (SPWEA240C) (2360)
- 8" AGGREGATE BASE, CL 5 (2211) (CV)
- GEOTEXTILE FABRIC TYPE 7 (2105)
- SUBGRADE PREPARATION (2112) (INCIDENTAL)

BITUMINOUS STREET PAVEMENT
 NOT TO SCALE



- 3" AGGREGATE SURFACING, CL 1 (2118) (CV)
- 8" AGGREGATE BASE, CL 5 (2211) (CV)
- GEOTEXTILE FABRIC TYPE 7 (2105)
- SUBGRADE PREPARATION (2112) (INCIDENTAL)

GRAVEL SHOULDER
 NOT TO SCALE

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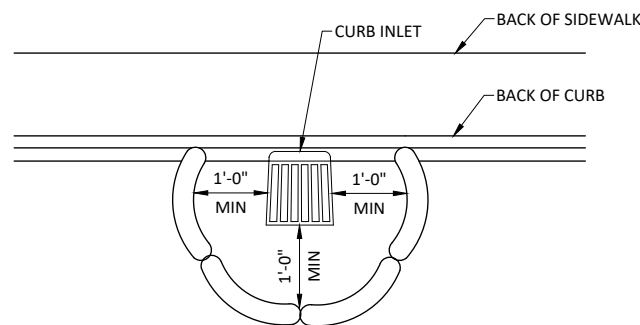
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SCHIERHOLZ & ASSOCIATES
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 MISCELLANEOUS DETAILS

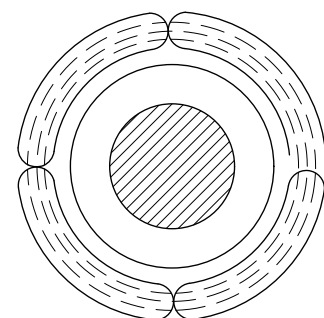
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NOTE:
THIS INLET PROTECTION IS USED DURING
ROUGH GRADING ONLY, USE BEFORE ROAD
IS OPEN TO TRAFFIC OR IS PAVED

PAYMENT SHALL INCLUDE ALL MATERIALS,
FILLING OF LOG, PLACEMENT,
MAINTENANCE & REMOVAL;
80% OF BID PRICE SHALL BE PAID UPON
PROPER PLACEMENT WITH THE FINAL 20%
PAID UPON REMOVAL

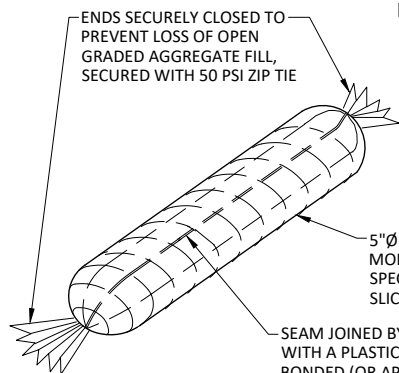


INLET PROTECTION
WITH ROCK LOG

FILL ROCK LOG WITH 45 LBS. OF OPEN
GRADED AGGREGATE CONSISTING OF
SOUND, DURABLE PARTICLES OF CRUSHED
QUARRY ROCK OR GRAVEL CONFORMING
TO THE FOLLOWING GRADATION.

GRADATION	
SIEVE SIZE	PERCENT PASSING
1 1/2"	100
1"	95-100
3/4"	65-95
3/8"	30-65
NO 4	10-35
NO 10	3-20
NO 40	0-8
NO 200	0-3

NOTE:
CRUSHED CONCRETE OR BITUMINOUS
SHALL NOT BE USED FOR OPEN
GRADED AGGREGATE.



INLET PROTECTION
ROCK BAG
NOT TO SCALE

ENDS SECURELY CLOSED TO
PREVENT LOSS OF OPEN
GRADED AGGREGATE FILL,
SECURED WITH 50 PSI ZIP TIE

5"Ø GEOTEXTILE SOCK, TYPE WOVEN
MONOFILAMENT CONFORMING TO
SPEC. 3886 TABLE 3886-1. MACHINE
SLICE

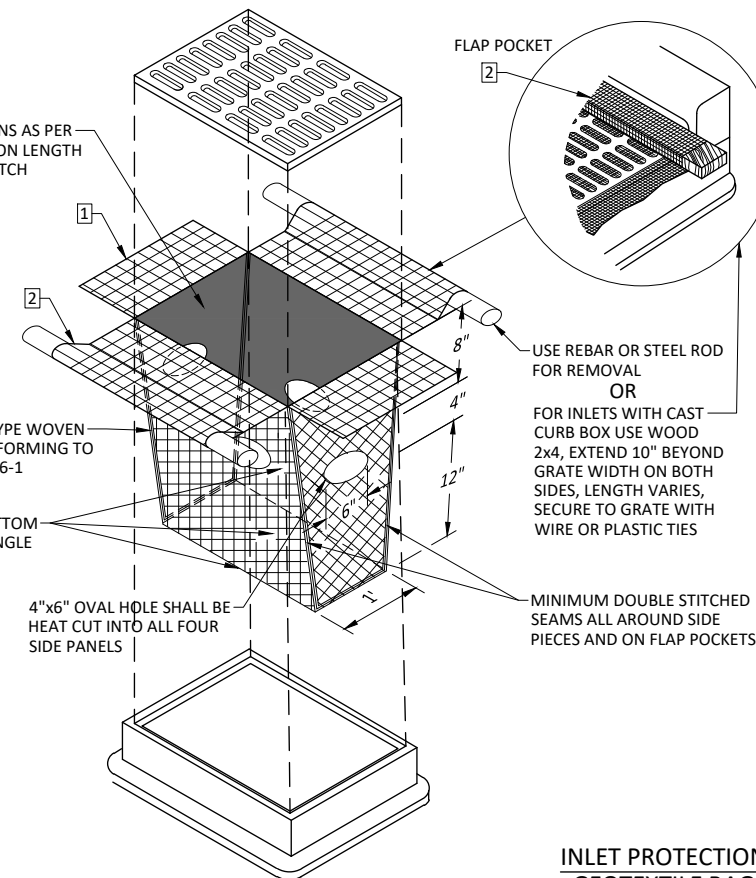
SEAM JOINED BY TWO ROWS OF STITCHING
WITH A PLASTIC MESH BACKING OR HEAT
BONDED (OR APPROVED EQUAL)

INLET SPECIFICATIONS AS PER
THE PLAN DIMENSION LENGTH
AND WIDTH TO MATCH

GEOTEXTILE FABRIC, TYPE WOVEN
MONOFILAMENT CONFORMING TO
SPEC. 3886, TABLE 3886-1
MACHINE SLICE

FRONT, BACK AND BOTTOM
TO BE MADE FROM SINGLE
PIECE OF FABRIC

4"x6" OVAL HOLE SHALL BE
HEAT CUT INTO ALL FOUR
SIDE PANELS



INLET PROTECTION
GEOTEXTILE BAG
NOT TO SCALE

NOTES:
1 INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE
DIRECTION OF THE ENGINEER. MANUFACTURED ALTERNATIVES APPROVED
AND LISTED ON THE DEPARTMENTS EROSION CONTROL PRODUCT
ACCEPTABILITY LIST MAY BE SUBSTITUTED. WHEN REMOVING OR
MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE
SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL IN THE INLET.
ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

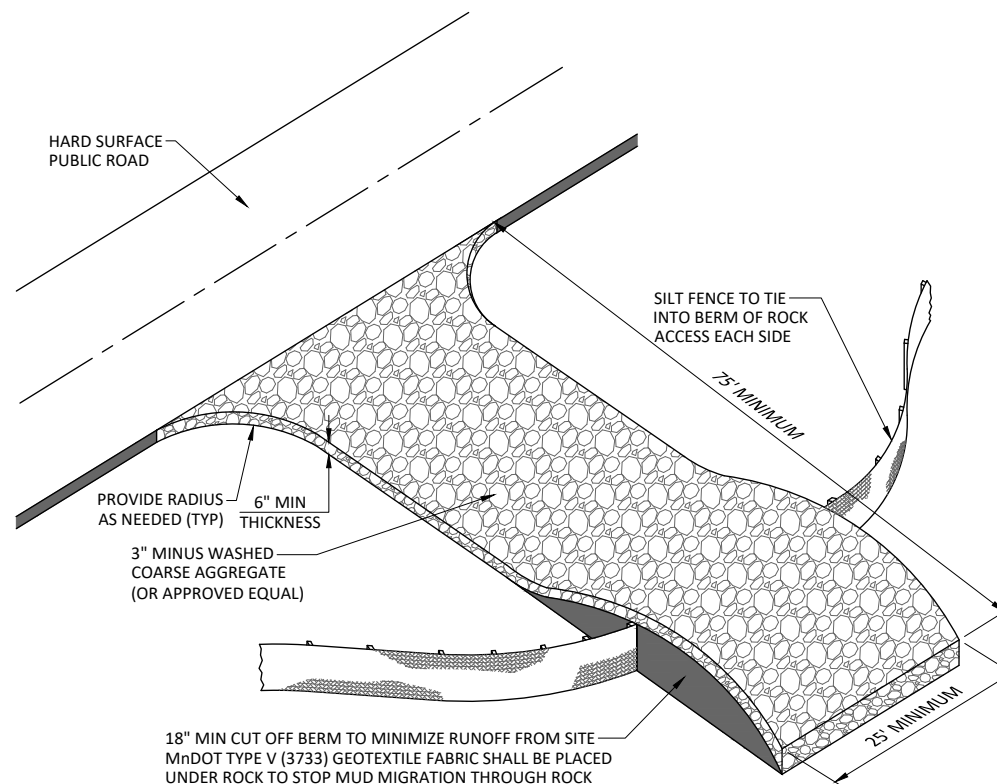
2 FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED, SHALL EXTEND A
MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR
REMOVAL.

FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2x4.

INSTALLATION NOTES:
DO NOT INSTALL PROTECTION IN INLETS SHALLOWER THAN 30", MEASURED
FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE
INLET AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES,
OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING
PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED
AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

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JOSHUA G. STIER
LIC. NO. 54171 DATE 06/28/2023

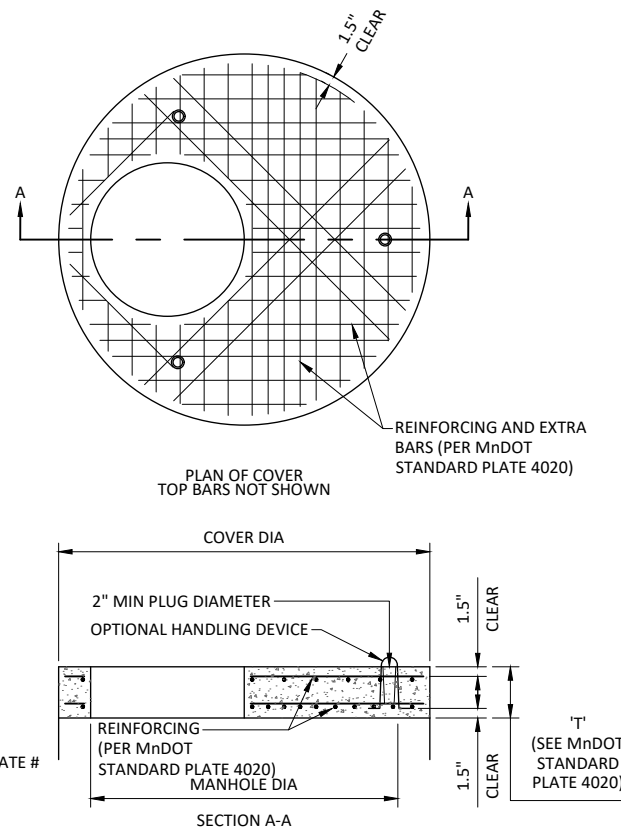
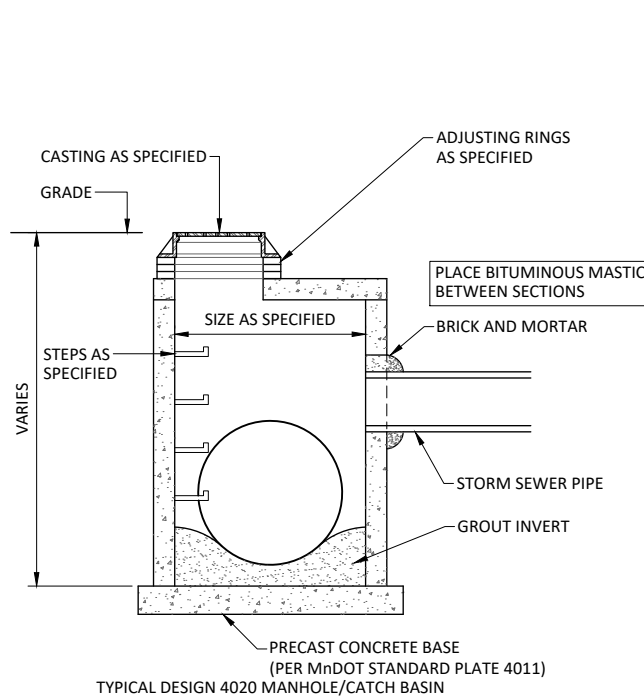


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Email: Willmar@bolton-menk.com
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CHECKED			
CLIENT PROJ. NO.	OW1-128171		

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2023 BROADMOOR VALLEY IMPROVEMENTS
MISCELLANEOUS DETAILS

SHEET
C1.02



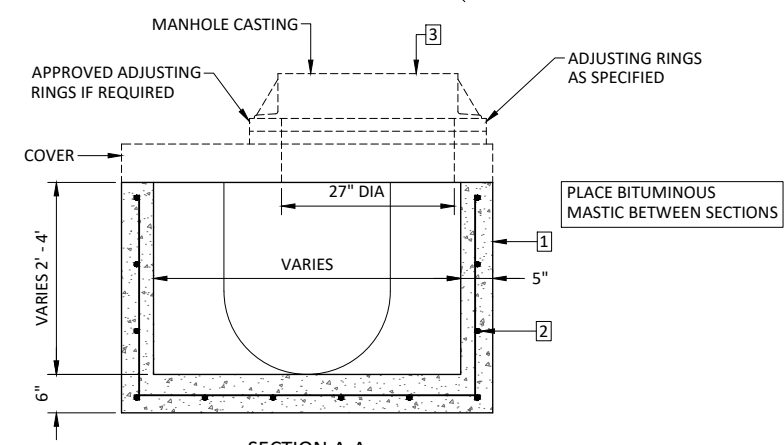
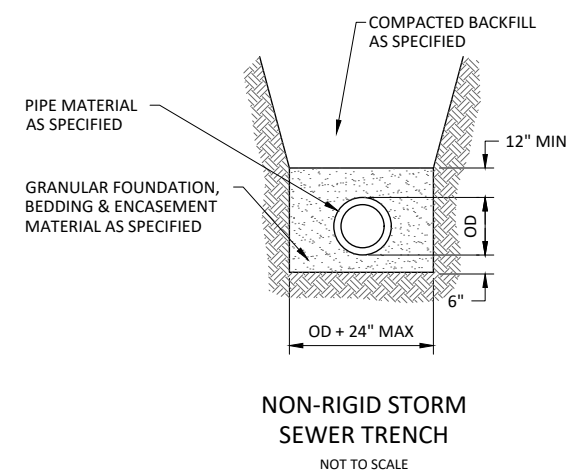
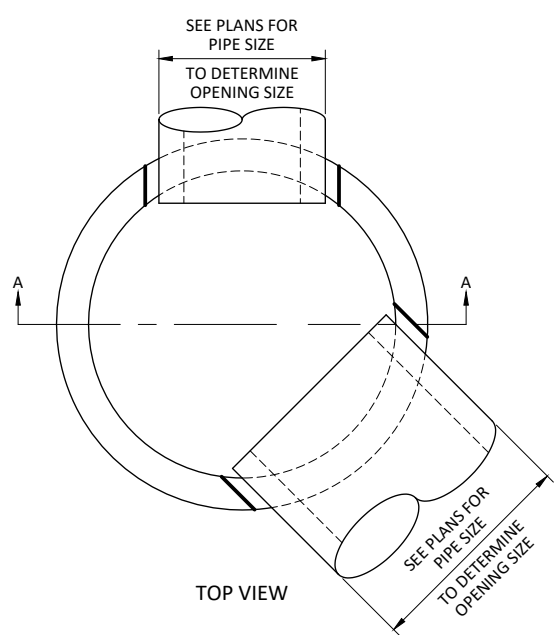
NOTES:

1. AASHTO HS 25 LOADING MAX FILL HEIGHT 15'
2. THE # 4020 SHALL BE PERMANENTLY MARKED ON THE TOP COVER
3. EQUIVALENT STEEL AREAS IN WIRE MESH MAY BE USED
4. REINFORCEMENT PER SPEC 3301, GRADE 60 A SINGLE HOOP OF 8ga STEEL WIRE

DESIGNATION:
DESIGN DIAMETER - STANDARD PLATE #
DESIGN 48-4020

XX
X.XX
NOT TO SCALE

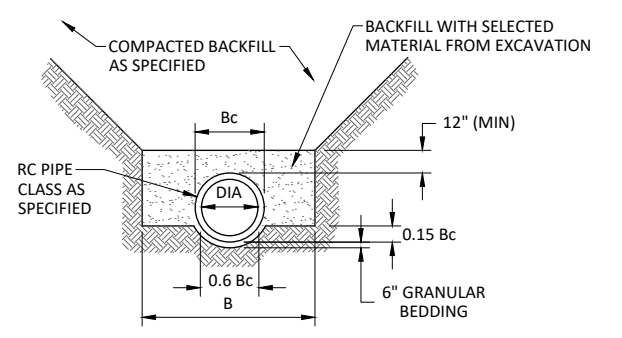
**STORM SEWER STRUCTURE
DESIGN 4020**



STANDARD OPENINGS	
PIPE DIA (INCHES)	OPENING SIZE (INCHES)
12	20
15	24
18	26
21	30
24	34

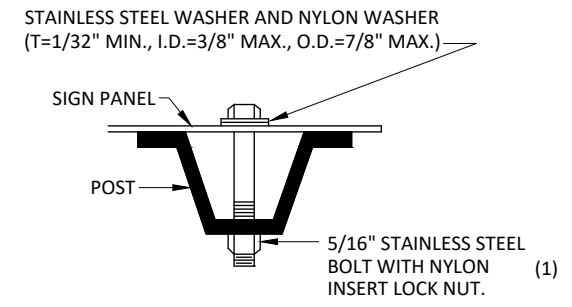
NOTES:

- 1 BRICK OR CONCRETE BLOCK MASONRY MAY BE USED, AS APPROVED BY THE ENGINEER
- FOR MATERIALS AND CONSTRUCTION METHODS, SEE STANDARD PLATE NO 4000
- CONE SECTION DETAILS OF 4000 DO NOT APPLY
- 2 REINFORCING: SINGLE LINE STEEL WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ IN PER FOOT
- 3 COVER AND CASTING AS SPECIFIED



PIPE DIA	B
36" OR LESS	Bc + 24"
42" TO 54"	1.5 X Bc
60" OR OVER	Bc + 36"

**RC PIPE
CLASS "B" BEDDING
NOT TO SCALE**



**U-POST MOUNTING
NOT TO SCALE**

**R8-3A
(24 X 24)**



**SIGN - NO PARKING
NOT TO SCALE**

XX
X.XX
NOT TO SCALE

**PRECAST SHALLOW DEPTH
MANHOLE/CATCH BASIN, DESIGN SD**

NOTE TO DESIGNER:
- INCLUDE TRACER WIRE DETAILS IF REQUIRED

NOTES:

1. SIGN SHALL BE MOUNTED ON A U-CHANNEL POST PER DETAIL.
2. SHALL BE PAID FOR BY THE EACH AND INCLUDE U-CHANNEL POST

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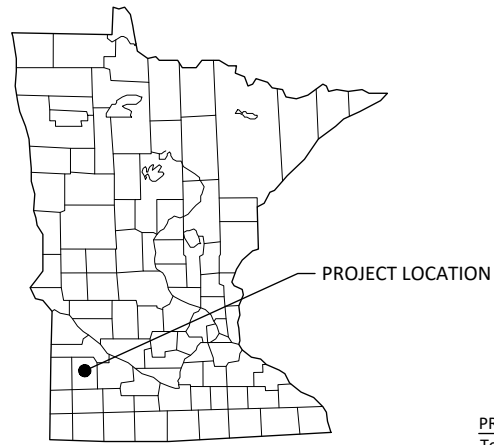
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2023 BROADMOOR VALLEY IMPROVEMENTS
MISCELLANEOUS DETAILS

SHEET
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STORMWATER POLLUTION PREVENTION PLAN (SWPPP) BROADMOOR VALLEY IMPROVEMENTS - 2023

CITY OF MARSHALL LYON COUNTY, MINNESOTA



LEGEND	
	1-MILE BOUNDARY
	PROJECT BOUNDARY
	OR
	NATIONAL WETLANDS INVENTORY
	CALCAREOUS FEN
	RECEIVING WATERS

PROJECT AREAS:

Total Project Size (disturbed area) =	1.9	ACRES
Existing area of impervious surface =	1.9	ACRES
Post construction area of impervious surface =	1.7	ACRES
Total new impervious surface area created =	0.0	ACRES

Planned Construction Start Date:	Aug 2023
Estimated Construction Completion Date:	June 2024

PERMANENT STORMWATER MANAGEMENT SYSTEM:
Type of storm water management used if more than 1 acre of new impervious surface is created:

<input type="checkbox"/>	Wet Sedimentation Basin
<input type="checkbox"/>	Infiltration/Filtration
<input type="checkbox"/>	Regional Pond
<input checked="" type="checkbox"/>	Permanent Stormwater Management Not Required

PROJECT LOCATION:

COUNTY	TOWNSHIP	RANGE	SECTION	LATITUDE	LONGITUDE
LYON	T111N	R41W	9	44.43786°	-95.78258°

BMP SUMMARY	QUANTITY	UNIT
SEE STATEMENT OF EST. QUANTITIES		

DESCRIPTION OF CONSTRUCTION ACTIVITIES AND STORMWATER MANAGEMENT:
Construction activities include: Full reconstruction of Timberlane Drive from S Saratoga Street to Lilac Drive, Lilac Drive from Timberlane Drive to Ash drive and Ash drive from the intersection of Lilac Drive to the south end of Ash drive in Marshall Minnesota. Items of work include removal of existing bituminous pavement and sidewalk, installation of new 36" storm sewer and connecting to an existing catch basin on Lilac Drive, site grading, temporary erosion and sediment control, and permanent stabilization.

Stormwater that is currently collected in the south-west end of Timberlane Drive is collected by two catch basins that are located on the west side of the project location. The water that is collected by the existing catch basins is routed through an existing RCP storm system that routes the water north on the east side of S Saratoga Street. Stormwater that is collected in the north end of the Timberlane Drive, Ash Drive and Lilac Drive runs within the existing roadway and will travel overland to a catch basin on Lilac Drive and Ash Drive. The stormwater then runs through existing RCP and is routed north to a catch basin in a ditch on the south side of Highway 23.

After construction is complete stormwater will continue to drain to the two catch basins that are located towards the south west side of the project. The conveyance system will be an inverted crown that will drain the water to the catch basins. The stormwater that is collected within north end of Timberlane Drive, Ash Drive and Lilac will drain to four new catch basins that will be located in the inverted crown of the new corridor. This storm sewer network will be connected to an existing catch basin that is located north of the project location and in the ditch on the south side of Highway 23

This project includes inlet protection on any catch basin that is being reconstructed or that can be affected by construction activities. There will also be silt fence installed in the ditch of the existing catch basin in the south ditch of Highway 23 and the location of the inlet on the south end of Ash Drive.

RESPONSIBLE PARTIES:
The Contractor and Owner will be joint applicants under the MPCA's General Stormwater Permit for Construction Activity as required by the National Pollutant Discharge Elimination System (NPDES) Phase II program.

The Contractor shall provide one or more trained Construction SWPPP Manager(s) knowledgeable and experienced in the application of erosion prevention and sediment control BMPs that will oversee the implementation of the SWPPP, and the installation, inspection and maintenance of the erosion prevention and sediment control BMPs.

A Construction SWPPP Manager must be available for an on-site inspection within 72 hours upon request by the MPCA.

	COMPANY	CONTACT PERSON	PHONE
OWNER:	Broadmoor Valley	Paul Schierholz	888-902-6825
SWPPP DESIGNER:	Bolton & Menk, Inc.	Josh Stier	218-491-9434
CONTRACTOR:			
CONSTRUCTION SWPPP MANAGER:			
PARTY RESPONSIBLE FOR LONG TERM O&M:	Broadmoor Valley	Paul Schierholz	888-902-6825

The SWPPP Designer, Construction SWPPP Manager, and BMP Installer must have appropriate training. Documentation showing training commensurate with the job duties and responsibilities is required to be included in the SWPPP prior to any work beginning on the site. Training documentation for the SWPPP Designer is included on the Narrative sheet. The Contractor shall attach training documentation to this SWPPP for the Construction SWPPP Manager and BMP Installer prior to the start of construction. This information shall be kept up to date until the project NOT is filed.

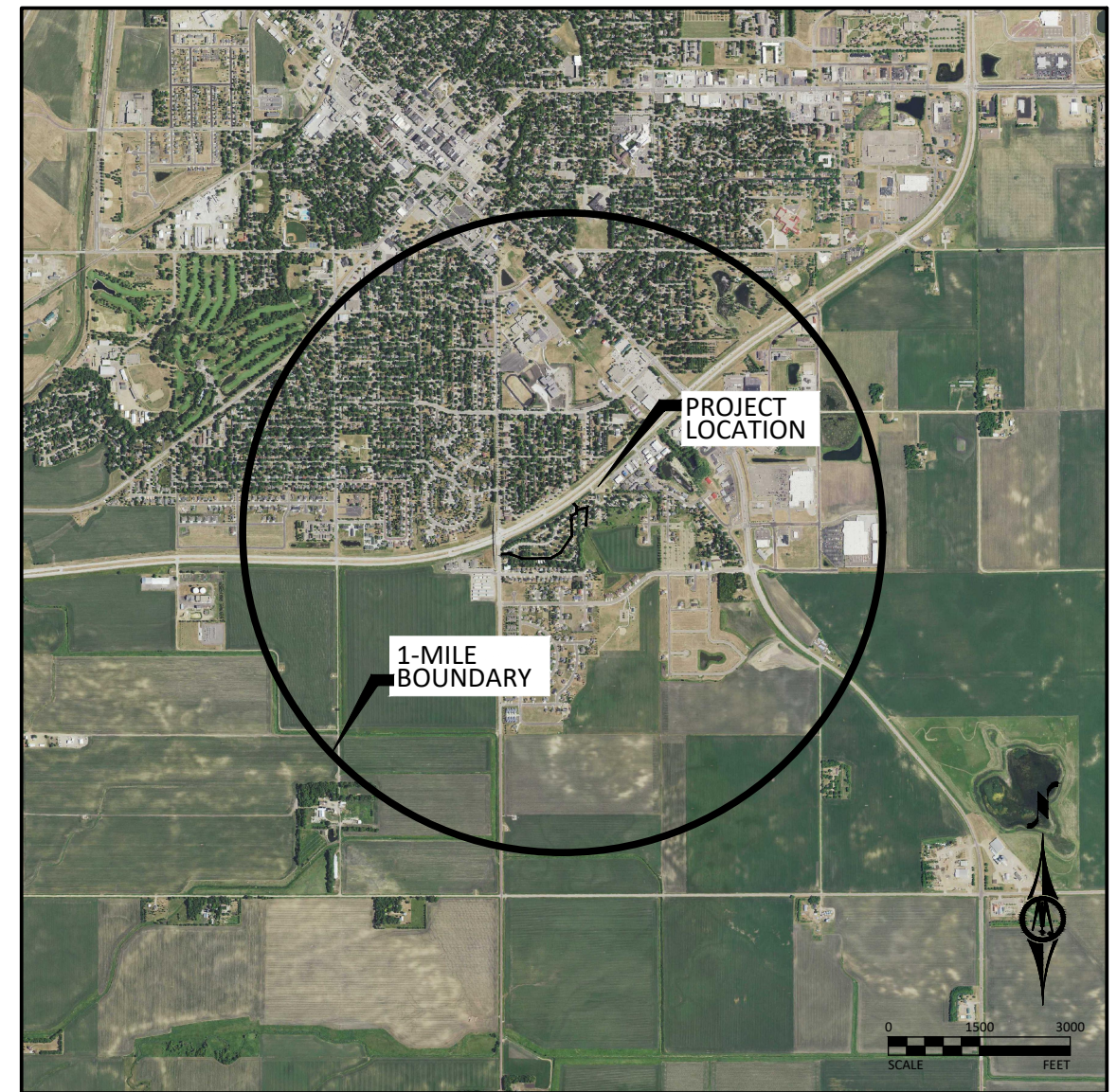
ADDITIONAL COMPENSATION
Payment for all work associated with Erosion and Sediment Control shall be as described in the Project Manual. Unless otherwise authorized by the Owner no additional payment shall be made for any work required to administer and maintain the site erosion and sediment control in compliance with the Minnesota Pollution Control Agency (MPCA) - General Stormwater Permit for Construction Activity (MN R100001) including but not limited to inspection, maintenance, and removal of BMPs or addition of BMPs to accommodate Contractor phasing.

DOCUMENT RETENTION
Permittees must make the SWPPP, including all inspection reports, maintenance records, training records and other information required by this permit, available to federal, state, and local officials within three (3) days upon request for the duration of the permit and for three (3) years following the NOT.

GENERAL STORMWATER DISCHARGE REQUIREMENTS
All requirements listed in Section 5.1 of the Permit for the design of the permanent stormwater management system and discharge have been included in the preparation of this SWPPP. These include but are not limited to:

- The expected amount, frequency, intensity, and duration of precipitation.
- The nature of stormwater runoff and run-on at the site
- Peak flow rates and stormwater volumes to minimize erosion at outlets and downstream channel and stream bank erosion.
- The range of soil particle sizes expected to be present on the site.

Permanent stormwater treatment systems for this project have been designed in accordance with the guidance in the MN Stormwater Manual in place at the time of bidding. Copies of the design information and calculations are part of this SWPPP and will be provided in digital format upon written request to the Engineer.



RECEIVING WATERS:
Receiving waters, including surface water, wetlands, Public Waters, and stormwater ponds, within 1-mile of the project boundary are identified on the USGS 7.5 min quad map above. Receiving waters that are impaired, the impairment, and WLA are listed as follows. All specific BMPs relative to construction activities listed in the permit for special, prohibited, restricted, or impaired have been incorporated into this plan. All specific BMPs listed in approved TMDLs and those BMPs listed for construction related waste load allocations have also been incorporated.

NAME OF WATER BODY	TYPE (ditch, pond, wetland, lake, etc.)	Special, Prohibited, Restricted Water ¹	Flows to Impaired Water Within 1-Mile ²	USEPA Approved Construction Related TMDL ³
REDWOOD RIVER	RIVER	NO	YES	YES

¹ Special, prohibited, and restricted waters are listed in Section 23 of the MN Construction Stormwater General Permit (MNR100001).
² Identified as impaired under section 303 (d) of the federal Clean Water Act for phosphorus, turbidity, TSS, dissolved oxygen, and/or aquatic biota.
³ Construction Related TMDLs include those related to: phosphorus, turbidity, TSS, dissolved oxygen, and/or aquatic biota.

IMPLEMENTATION SCHEDULE AND PHASING: The Contractor is required to provide an updated schedule and site management plan meeting the minimum requirements of Section 1717 of the Minnesota Standard Specifications for Construction.

- Submit SWPPP Updates to Engineer. Submittal shall include any requested changes to the SWPPP, including but not limited to: Trained Personnel, Locations for Stockpiles, Concrete Washout, Sanitation Facilities, Types and Locations of Erosion & Sediment Control. Failure to submit updates shall be considered acceptance of the SWPPP as designed with no changes.
- Install perimeter sediment control, inlet protection, and construction exit.
- Remove existing street surface.
- Complete roadway, site, and utility installation.
- Install additional inlet protection as needed.
- Reestablish turf.
- Repeat steps 2-6 as needed throughout the project.
- Add additional temporary BMPs as necessary during construction based on inspection reports.
- Ensure final stabilization measures are complete.
- Provide digital copy of all Field SWPPP Documentation including Inspection Reports and SWPPP Revisions to the Owner.
- Submit Notice of Termination (NOT) to MPCA. NOTE: The NOT must be submitted to MPCA before Final Stabilization is considered complete.

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2023 BROADMOOR VALLEY IMPROVEMENTS
STORMWATER POLLUTION PREVENTION PLAN

SHEET

C2.01

Information contained in this SWPPP narrative sheet summarizes requirements of the GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM PROGRAM - Permit No: MN RI00001 (Permit) as they apply to this project. All provisions of the Permit including those not specifically cited herein shall apply to this project. The Contractor is responsible to be familiar with and comply with all conditions of the permit. The full text of the Permit is available at: <https://www.pca.state.mn.us/sites/default/files/wq-strm2-80a.pdf>

SWPPP AMENDMENTS AND SUBMITTALS

Contractor must prepare and submit to the Engineer a SWPPP amendment as necessary to include additional Best Management Practices (BMPs) to correct problems identified or address the following situations.

1. Contact information and training documentation for Construction SWPPP Manager and BMP Installer,
2. There is a change in construction method of phasing, operation, maintenance, weather or seasonal conditions not anticipated during the design of the SWPPP including but not limited to:
 - a. Types and/or Locations of BMPs
 - b. Material Storage and Spill Response
 - c. Fueling Plans
 - d. Locations for Stockpiles, Concrete Washout, and Sanitation Facilities and
 - e. Project Phasing
3. It is determined that the SWPPP is not achieving objectives of minimizing pollutants in stormwater discharges associated with construction activity, or
4. The SWPPP is not consistent with the terms and conditions of the permit.

The Contractor may implement SWPPP amendments immediately and is not required to wait for Engineer review of the submittal. The responsibility for completeness of SWPPP amendments and compliance with the Permit lies with the Contractor. Review, comment, or lack of comment by the Engineer on a SWPPP amendment shall not absolve the responsibilities of the Contractor in any way.

If a change order is issued for a design change the SWPPP amendment will be prepared by the Engineer and included in the change order.

In addition to SWPPP amendments, the Contractor shall submit to the Engineer Weekly Erosion and Sediment Control Schedule meeting the requirements of MnDOT 1717.

The Contractor shall keep copies of all SWPPP amendments, Weekly Erosion and Sediment Control Schedules, inspection logs, and maintenance logs with the field copy of the SWPPP. A PDF copy of these documents will be provided along with a copy of the final Field Copy of the SWPPP to the Engineer along with the signed Notice of Termination when final stabilization is complete.

EROSION PREVENTION PRACTICES

Stormwater conveyance channels shall be routed around unstabilized areas. Erosion controls and velocity dissipation devices shall be used at outlets within and along the length of any constructed conveyance channel.

The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200' of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Temporary or permanent ditches or swales used as sediment containment during construction do not need to be stabilized during temporary period of use and shall be stabilized within 24 hours after no longer used as sediment containment.

Mulch, hydromulch, tackifier, or similar practice shall not be used in any portion of the wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than 2 percent.

Energy dissipation shall be installed at all temporary or permanent pipe outlets within 24 hours of connection to a surface water or permanent stormwater treatment system.

The Contractor shall phase construction and use construction methods to the extent practical to minimize exposed soils. The project phasing shall be documented in the Weekly Erosion and Sediment Control Schedule.

SEDIMENT CONTROL PRACTICES

Down gradient BMPs including perimeter BMPs must be in place before up gradient land- disturbing activities begin and shall remain in place until final stabilization.

All BMPs that have been adjusted or removed to accommodate short-term activities shall be re-installed or replaced the earlier of the end of the work day or before the next precipitation event even if the activity is not complete.

Inlet BMPs may be removed for specific safety concerns. The BMPs shall be replaced as soon as the safety concern is resolved. The removal shall be documented in the SWPPP as a SWPPP amendment.

Temporary stockpiles must have sediment control BMPs. The Contractor shall prepare and submit to the Engineer a SWPPP amendment showing the location of temporary stockpiles and the BMPs for each stockpile. The SWPPP amendment must meet the minimum requirements of Section 9 of the Permit.

Soil compaction shall be minimized and topsoil shall be preserved, unless infeasible or if construction activities dictate soil compaction or topsoil stripping.

The use of polymers, flocculants, or other sedimentation treatment chemicals are not proposed as part of this SWPPP as designed by the Engineer. If methods or phasing of construction require the use of any of these chemicals, the Contractor shall prepare and submit to the Engineer a SWPPP amendment that meets the minimum requirements of Section 9 of the Permit.

TEMPORARY SEDIMENTATION BASINS

A temporary sedimentation basin has not been included in this SWPPP as designed by the Engineer. If a basin is later determined to be desirable or necessary the Contractor shall prepare and submit to the Engineer a SWPPP amendment. Temporary sedimentation basins shall meet or exceed the minimum requirements of Section 14 of the Permit and shall include a basin draining plan meeting or exceeding the minimum requirements of Section 10 of the Permit. Where the site discharges to Special and/or Impaired Waters the SWPPP amendment shall also meet or exceed the minimum requirements of Section 23 of the permit.

DEWATERING

A dewatering plan has not been included in this SWPPP as designed by the Engineer. If dewatering is required for this project, the Contractor shall prepare and submit to the Engineer a SWPPP amendment. All dewatering shall meet or exceed the minimum requirements of Section 10 of the Permit.

POLLUTION PREVENTION

Products and materials that have the potential to leach pollutants that are stored on the site must be stored in a manner designed to minimize contact with stormwater. Materials that are not a source of potential contamination to stormwater or that are designed for exposure to stormwater are not required to be covered.

Hazardous materials including but not limited to pesticides, fertilizer, petroleum products, curing compounds and toxic waste must be properly stored and protected from stormwater exposure as recommended by the manufacturer in an access restricted area.

Solid waste must be stored, collected and disposed of in compliance with Minnesota Administrative Rules Chapter 7035.

Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. CH 7041.

Exterior vehicle or equipment washing on the project site shall be limited to a defined area of the site. No engine degreasing is allowed on site. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

The Contractor shall prepare and submit a SWPPP amendment detailing the location and BMPs proposed for storage of materials, solid waste, portable toilets, and exterior vehicle or equipment washing on the site. The SWPPP amendment shall include a spill prevention and response plan that is appropriate for the materials proposed to be on the site. The SWPPP amendment shall meet or exceed the minimum requirements of Section 12 of the Permit.

INSPECTION & MAINTENANCE

A trained person shall routinely inspect the entire construction site at the time interval indicated on this sheet of the SWPPP during active construction and within 24-hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24-hours after a rainfall event, the next inspection must be conducted at the time interval indicated in the Receiving Waters Table found on the SITE PLAN AND INFORMATION SHEET of the SWPPP.

All inspections and maintenance conducted during construction must be recorded on the day it is completed and must be retained with the SWPPP. Inspection report forms are available in the Project Specifications. Inspection report forms other than those provided shall be approved by the engineer.

The Contractor may request a change in inspection schedule for the following conditions:

- a. Inspections of areas with permanent cover to be reduced to once per month,
- b. Inspections of areas that have permanent cover and have had no construction activity for 12 months to be suspended until construction resumes,
- c. Inspections of areas where construction is suspended due to frozen ground conditions, inspections to be suspended until the earlier of within 24 hours of runoff occurring, or upon resuming construction.

No change in inspection schedule shall occur until authorized by the Engineer.

Inspections must include:

1. All erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness.
2. Surface waters, including drainage ditches and conveyance systems for evidence of erosion and sediment deposition.
3. Construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles.
4. Infiltration areas to ensure that no sediment from ongoing construction activity is reaching the infiltration area and that equipment is not being driven across the infiltration area.

All non-functioning BMPs and those BMPs where sediment reaches one-half (1/2) of the depth of the BMP, or in the case of sediment basins one-half (1/2) of the storage volume, must be repaired, replaced, or supplemented by the end of the next business day after discovery, or as soon as field conditions allow.

Permittees must repair, replace or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow.

Any sediment that escapes the site must be removed and the area stabilized within 7 calendar days of discovery unless precluded by legal, regulatory, or physical access in which case the work shall be completed within 7 calendar days of authorization. Paved surfaces such as streets shall have any escaped or tracked sediment removed by the end of the day that it is discovered. Sediment release, other than paved surfaces that can be cleaned up with street sweeping shall be reported immediately upon discovery to the Engineer.

PUBLIC WATER RESTRICTIONS:

For public waters that have been promulgated "work in water restrictions" during fish spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must complete stabilization within 24-hours during the time period. MN DNR permits are not valid for work in waters that are designated as infested waters unless accompanied by an Infested Waters Permit or written notification has been obtained from MN DNR stating that such permit is not required. There is no exception for pre-existing permits. If a MN DNR Permit has been issued for the project and the water is later designated as infested, the Contractor shall halt all work covered by the MN DNR Permit until an Infested Waters Permit is obtained or that written notification is obtained stating that such permit is not required.

FINAL STABILIZATION

Final Stabilization is not complete until all the following requirements have been met:

1. Substantial Completion has been reached and no ground disturbing activities are anticipated.
2. Permanent cover has been installed with an established minimum uniform perennial vegetation density of 70 percent of its expected final growth. Vegetation is not required in areas where no vegetation is proposed by this project such as impervious surfaces or the base of a sand filter.

3. Accumulated sediment has been removed from all permanent stormwater treatment systems as necessary to ensure the system is operating as designed.
4. All sediment has been removed from conveyance systems
5. All temporary synthetic erosion prevention and sediment control BMPs have been removed. BMPs designated on the SWPPP to remain to decompose on-site may remain.
6. For residential construction only, permit coverage terminates on individual lots if the structures are finished and temporary erosion prevention and downgradient perimeter control is complete, the residence sells to the homeowner, and the permittee distributes the MPCA's "Homeowner Fact Sheet" to the homeowner.
7. For agricultural land only (e.g., pipelines across cropland), the disturbed land must be returned to its preconstruction agricultural use prior to submitting the NOT.

SITE STABILIZATION COMPLETION:

Stabilization of exposed soils shall begin immediately and shall be completed after the construction activity has temporarily or permanently ceased no later than:	7 calendar days
--	-----------------

SITE INSPECTION INTERVAL:

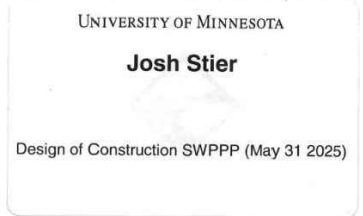
A trained person shall routinely inspect the entire construction site during active construction at an interval of no more than:	7 calendar days
--	-----------------

SPECIAL ENVIRONMENTAL CONSIDERATIONS AND PERMITS:

1)	Was an environmental review required for this project or any part of a common plan of development or sale that includes all or any portion of this project?	NO
2)	Does any portion of the site have the potential to affect threatened or endangered species or their critical habitat?	NO
3)	Does any portion of this site discharge to a Calcareous fen.	NO
4)	Will any portion of the site potentially affect properties listed on the National Register of Historic Places or a known or discovered archeological site?	NO
5)	Have any Karst features have been identified in the project vicinity?	NO
6)	Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO
7)	Has the MN DNR promulgated "work in water restrictions" for any Public Water this site discharges to during fish spawning?	NO

TYPE OF PERMIT	PERMITTING AGENCY	PERMIT STATUS AND CONDITIONS
Construction Stormwater NPDES	MPCA	Contractor to Apply

SWPPP DESIGNER TRAINING DOCUMENTATION:



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JOSHUA G. STIER
 LIC. NO. 54171 DATE 06/28/2023



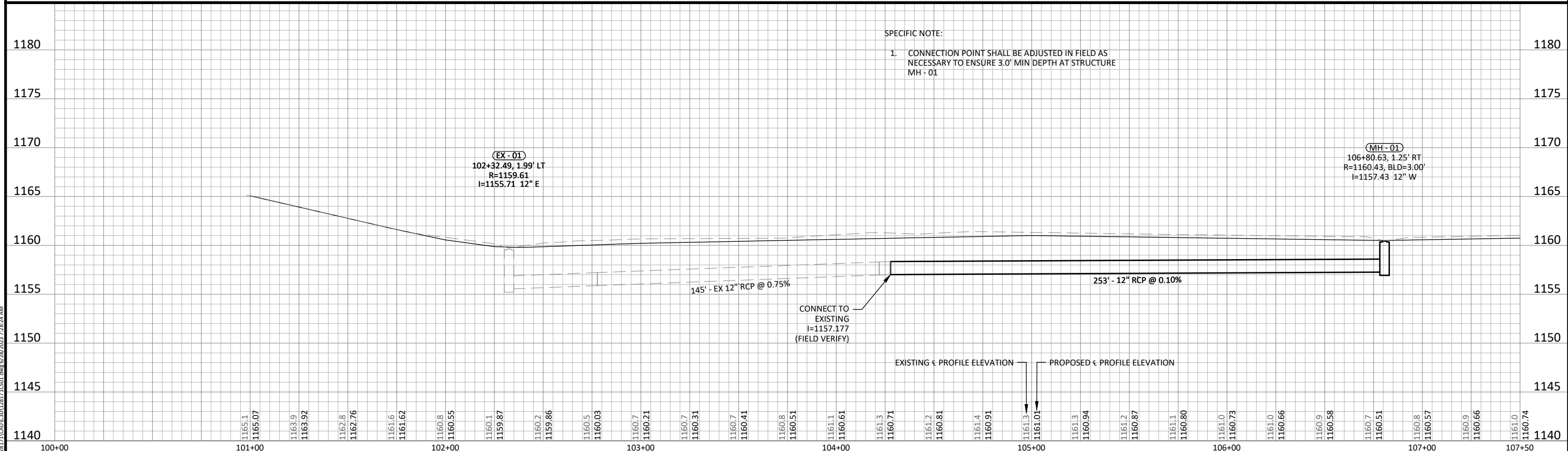
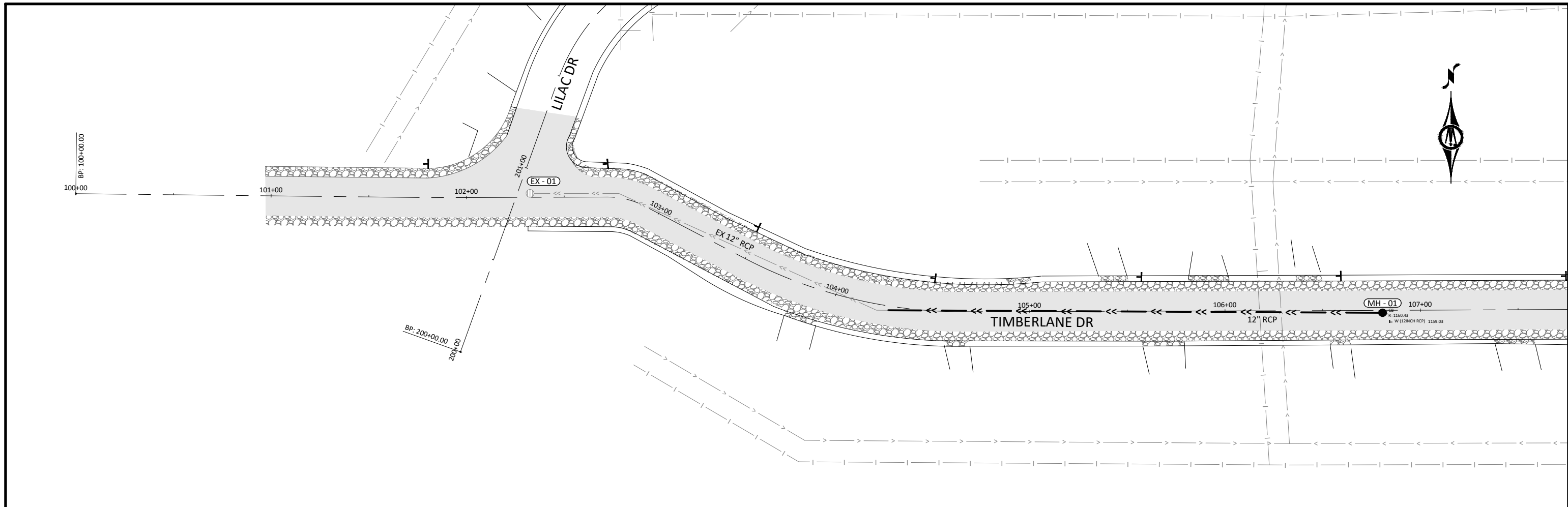
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C2.02



SPECIFIC NOTE:
 1. CONNECTION POINT SHALL BE ADJUSTED IN FIELD AS NECESSARY TO ENSURE 3.0' MIN DEPTH AT STRUCTURE MH - 01

(EX - 01)
 102+32.49, 1.99' LT
 R=1159.61
 I=1155.71 12" E

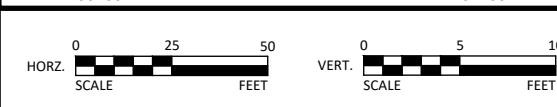
(MH - 01)
 106+80.63, 1.25' RT
 R=1160.43, BLD=3.00'
 I=1157.43 12" W

145' - EX 12" RCP @ 0.75%

253' - 12" RCP @ 0.10%

CONNECT TO EXISTING I=1157.177 (FIELD VERIFY)

EXISTING € PROFILE ELEVATION PROPOSED € PROFILE ELEVATION



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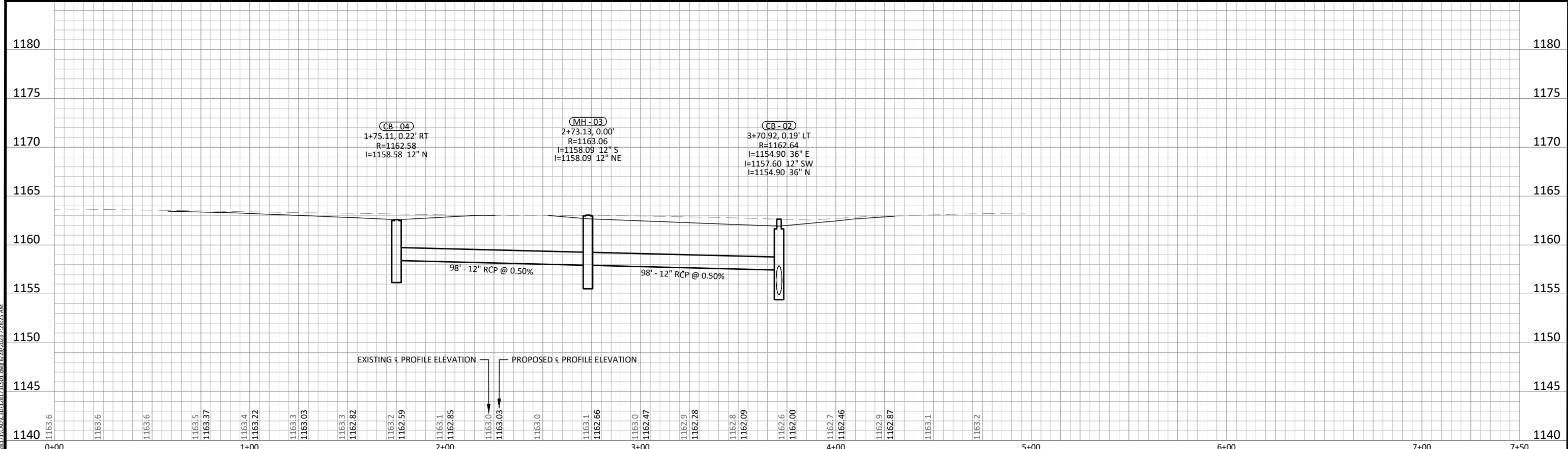
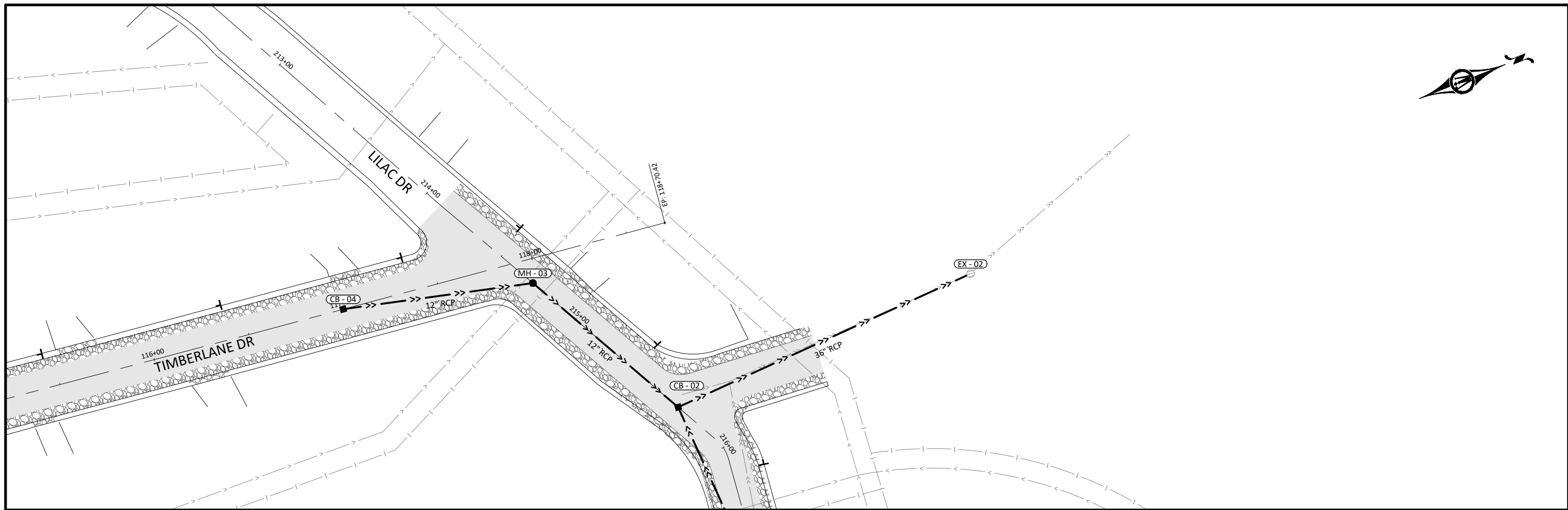
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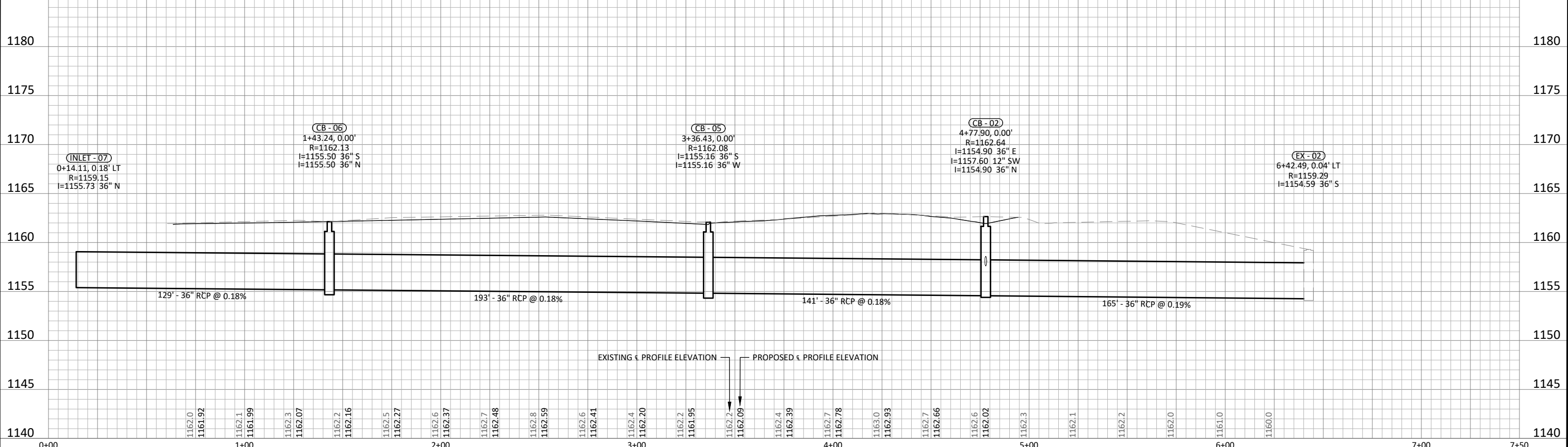
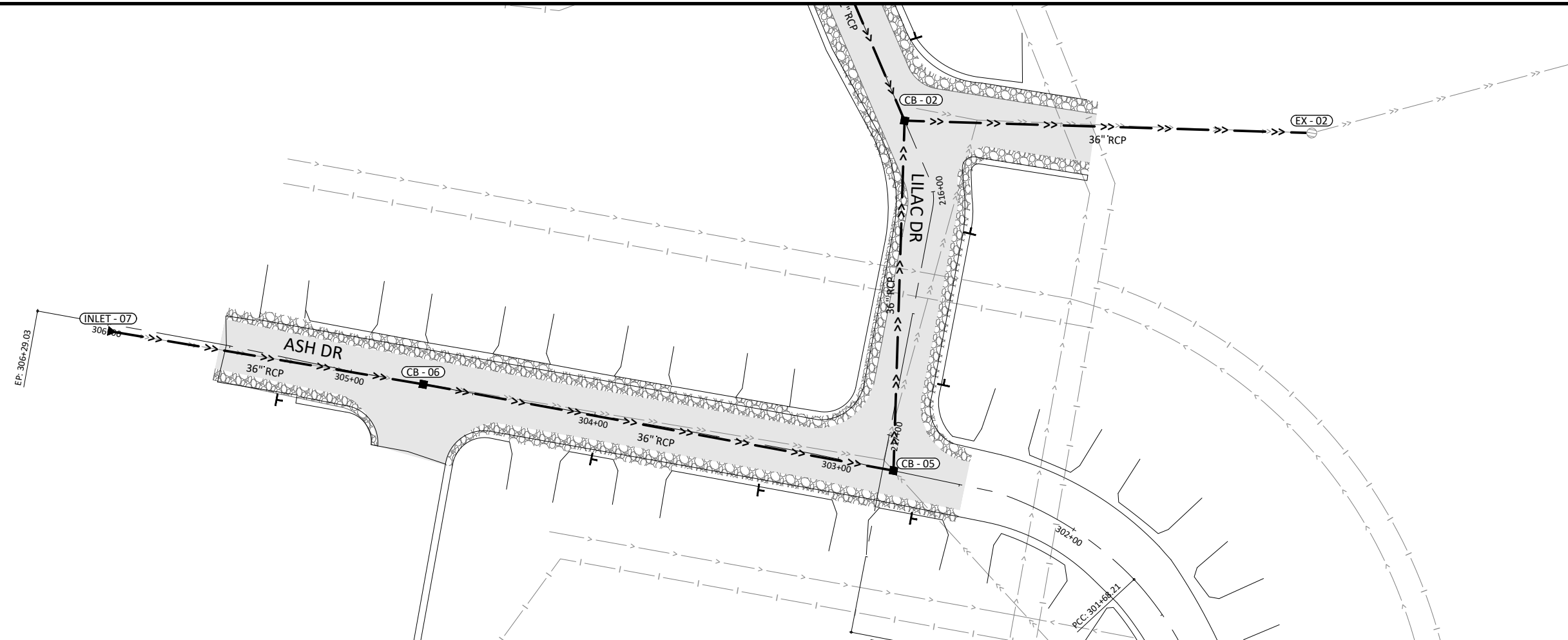


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(INLET - 07) 0+14.11, 0.18' LT
 R=1159.15
 I=1155.73 36" N

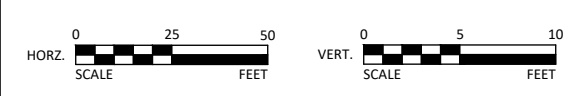
(CB - 06) 1+43.24, 0.00'
 R=1162.13
 I=1155.50 36" S
 I=1155.50 36" N

(CB - 05) 3+36.43, 0.00'
 R=1162.08
 I=1155.16 36" S
 I=1155.16 36" W

(CB - 02) 4+77.90, 0.00'
 R=1162.64
 I=1154.90 36" E
 I=1157.60 12" SW
 I=1154.90 36" N

(EX - 02) 6+42.49, 0.04' LT
 R=1159.29
 I=1154.59 36" S

0+00	1162.0	1161.92	1162.1	1161.99	1162.3	1162.07	1162.2	1162.16	1162.5	1162.27	1162.6	1162.37	1162.7	1162.48	1162.8	1162.59	1162.6	1162.41	1162.4	1162.20	1162.2	1161.95	1162.2	1162.09	1162.4	1162.39	1162.7	1162.78	1163.0	1162.93	1162.7	1162.66	1162.6	1162.02	1162.3	1162.1	1162.2	1162.0	1161.0	1160.0
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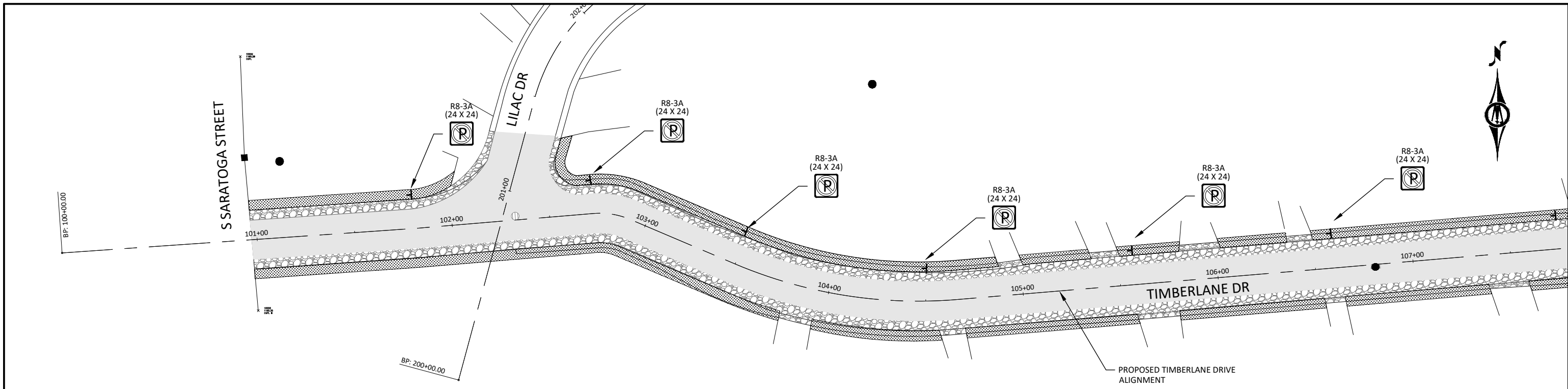
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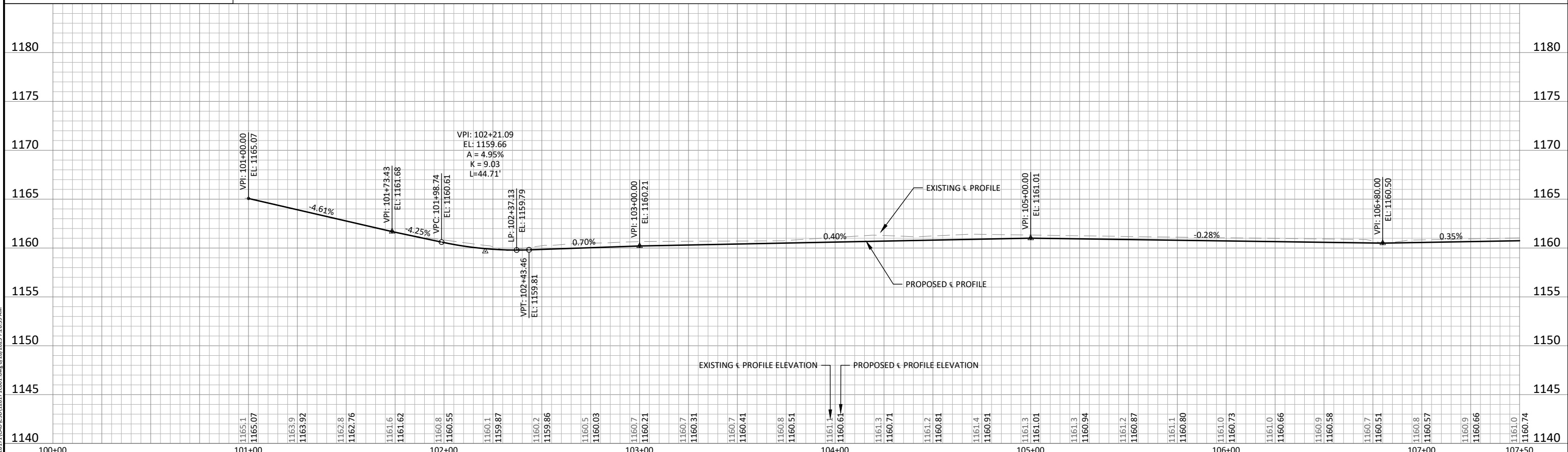
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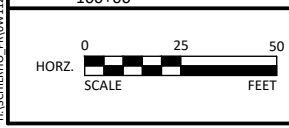


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-  BITUMINOUS PAVEMENT
-  ADJUST FRAME & RING CASTING

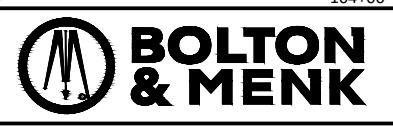


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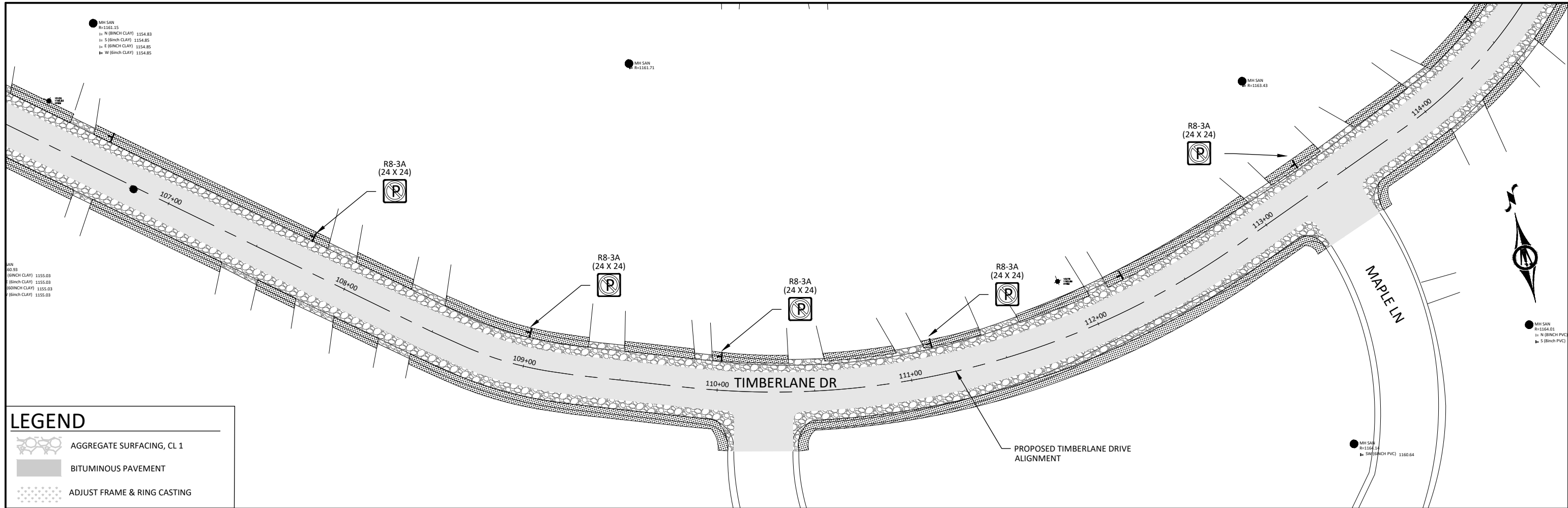


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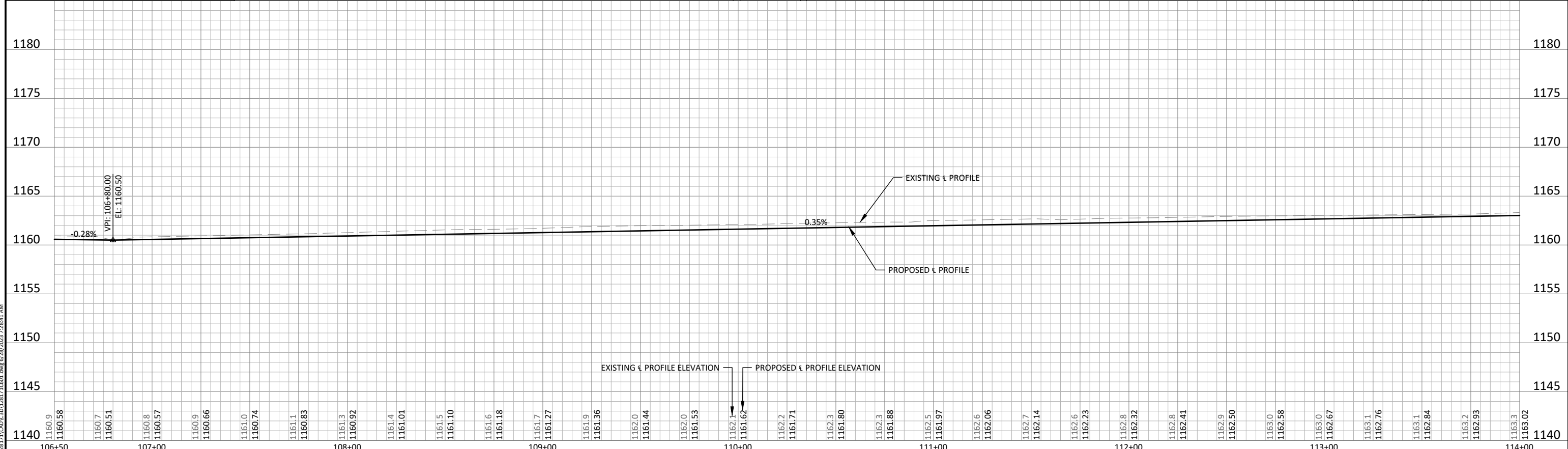
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LEGEND

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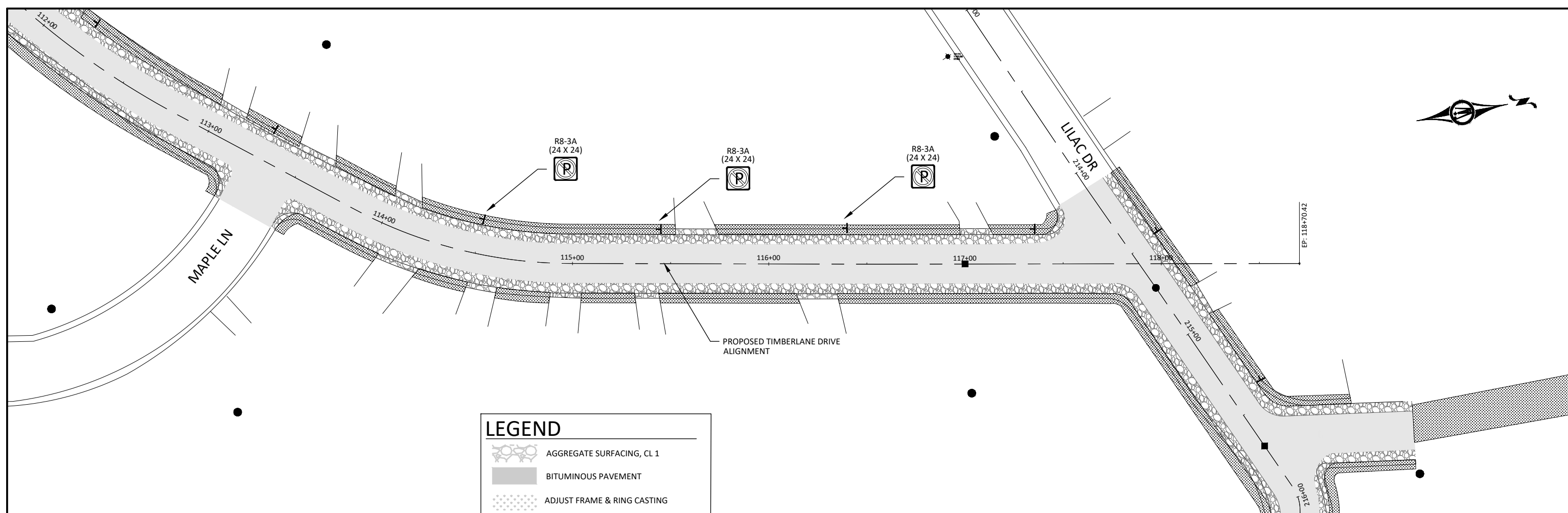


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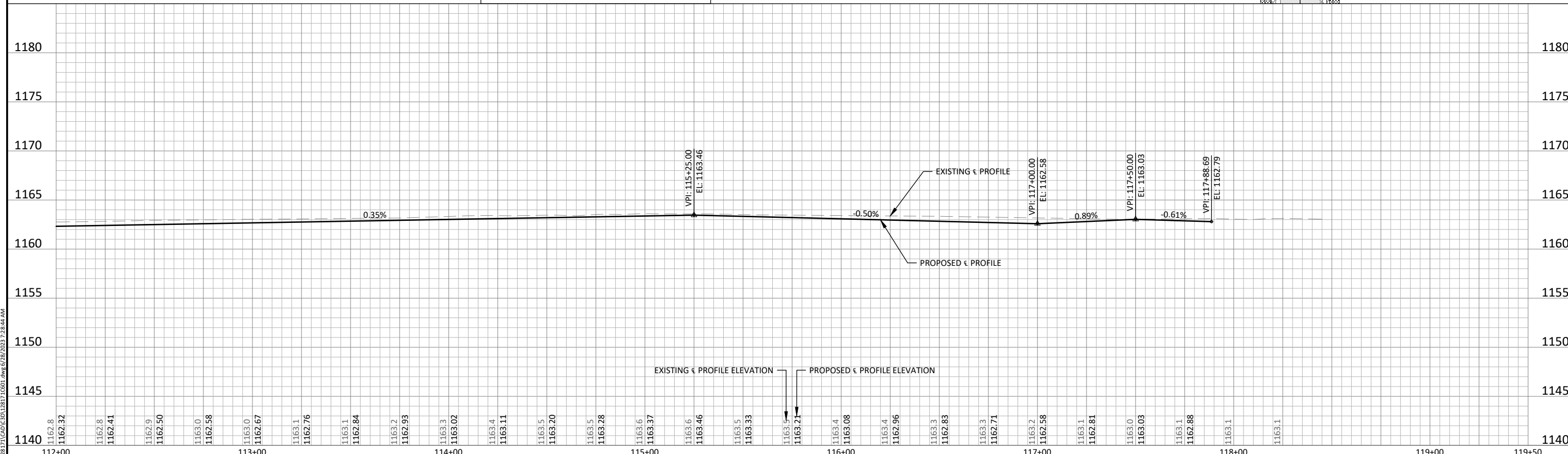
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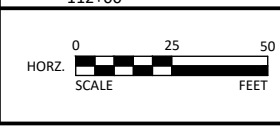


LEGEND

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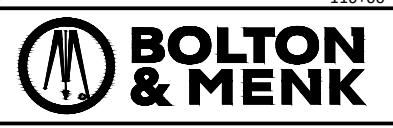


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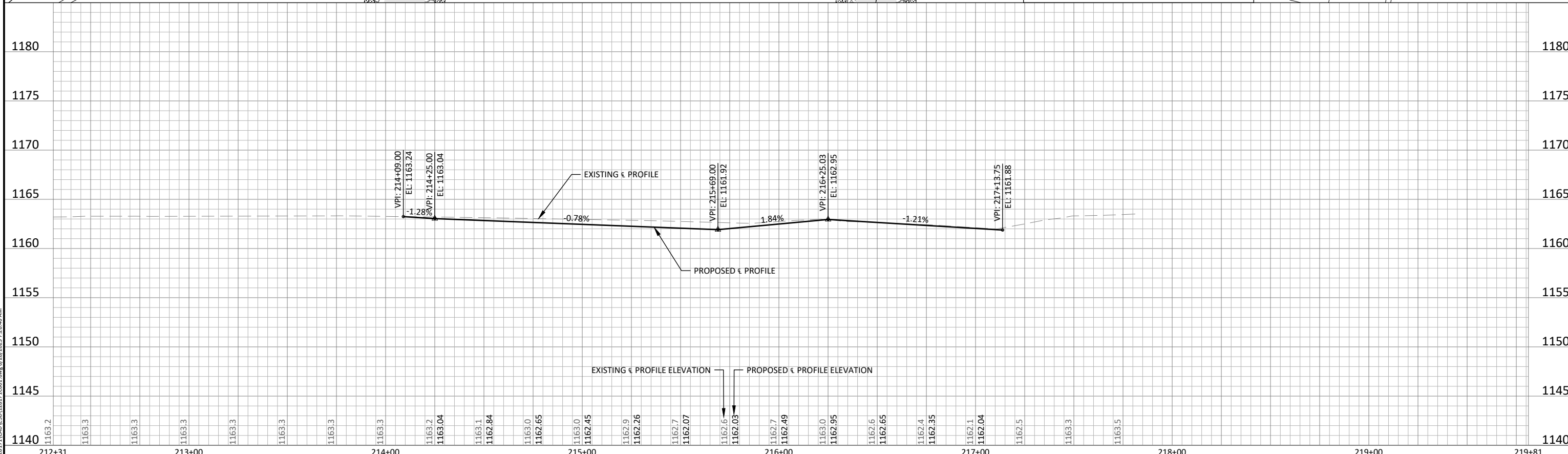
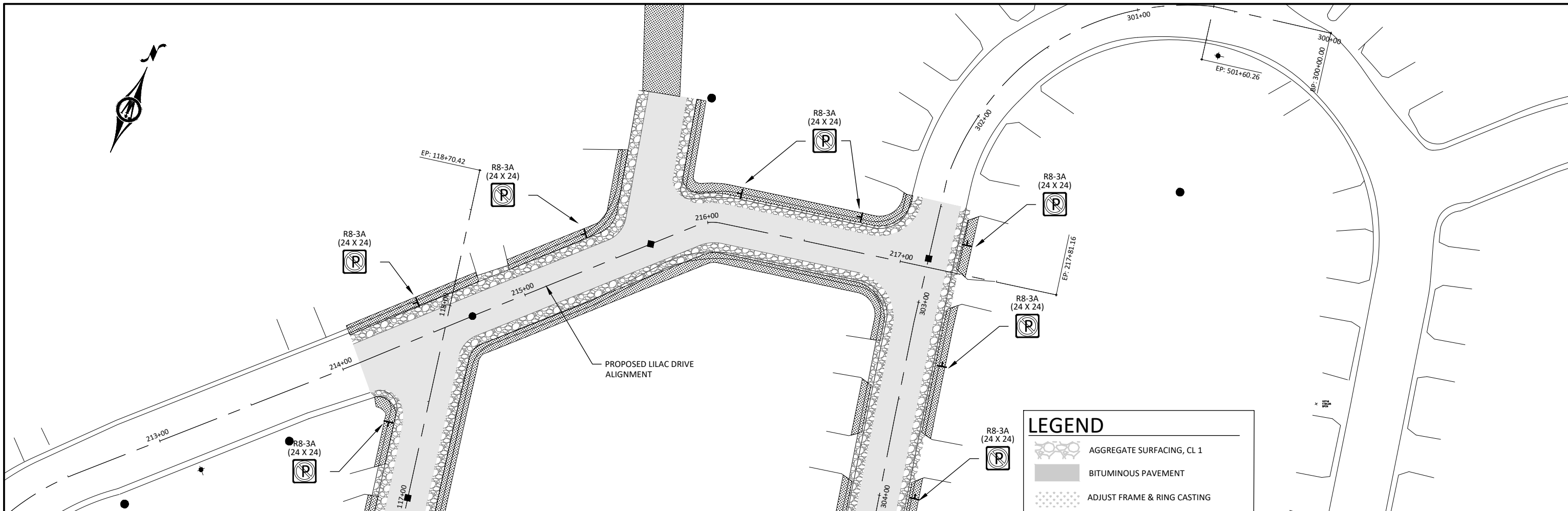


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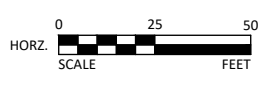
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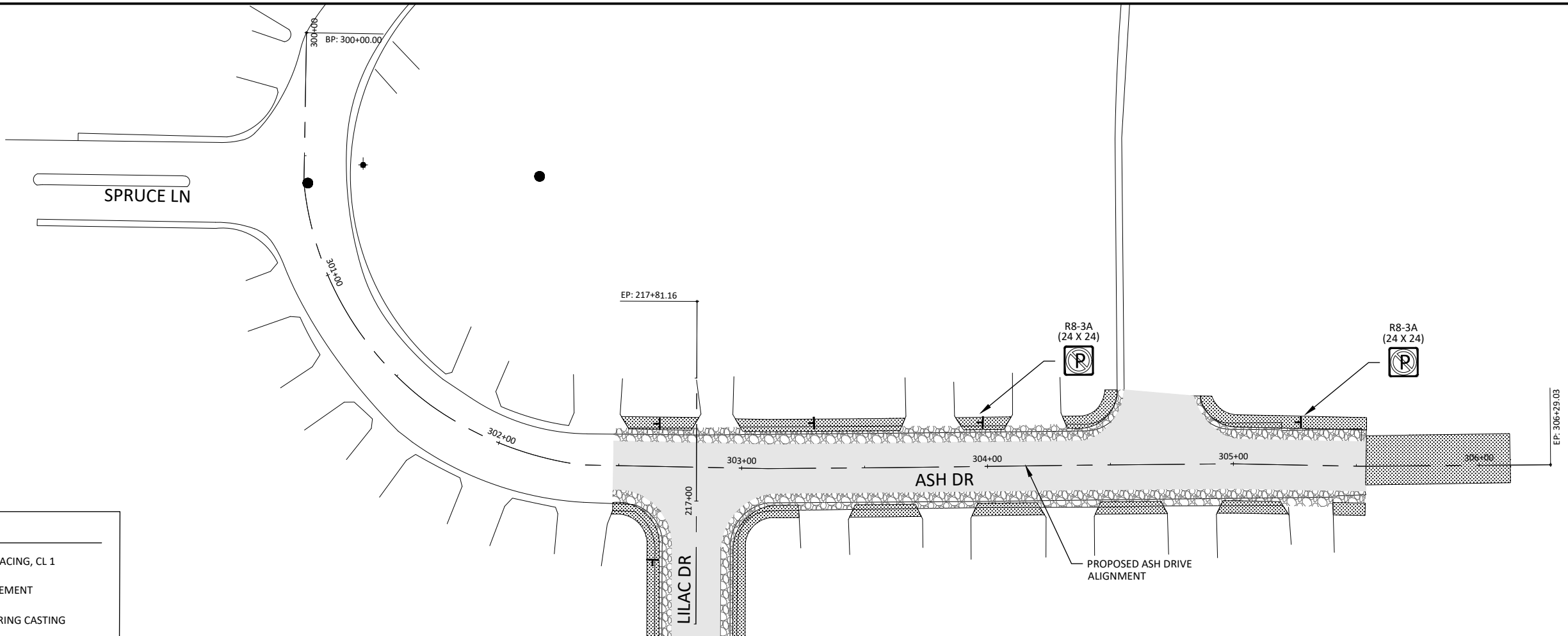


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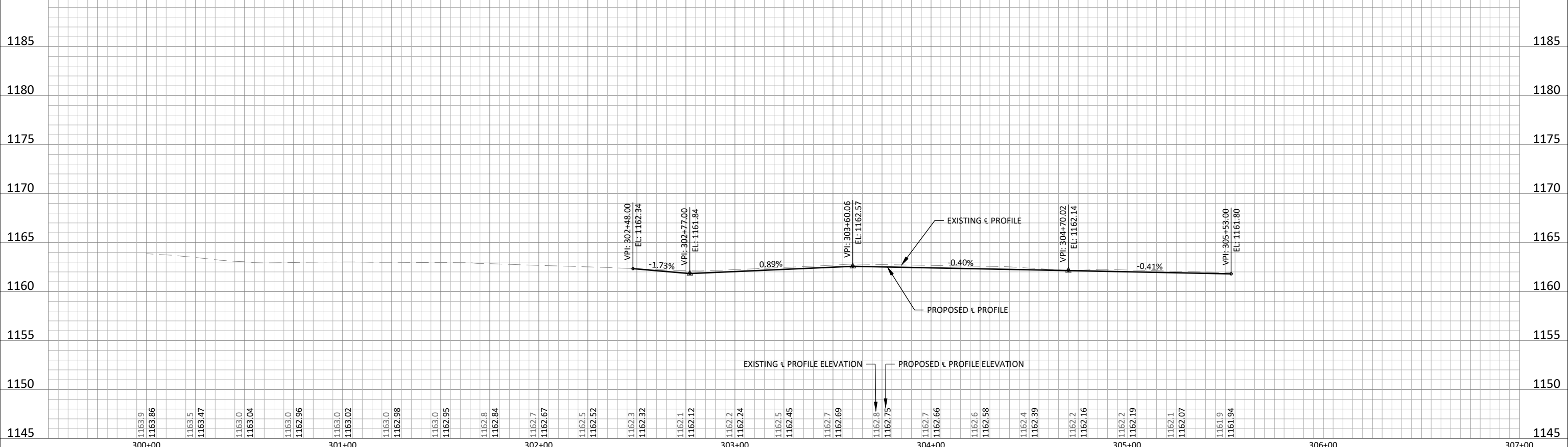
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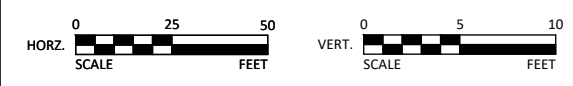


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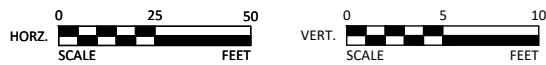
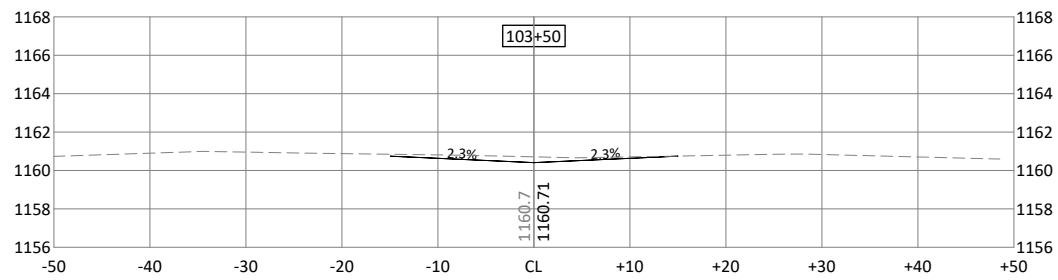
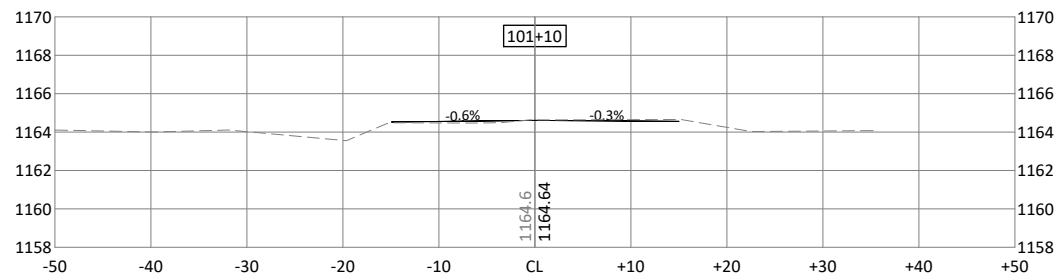
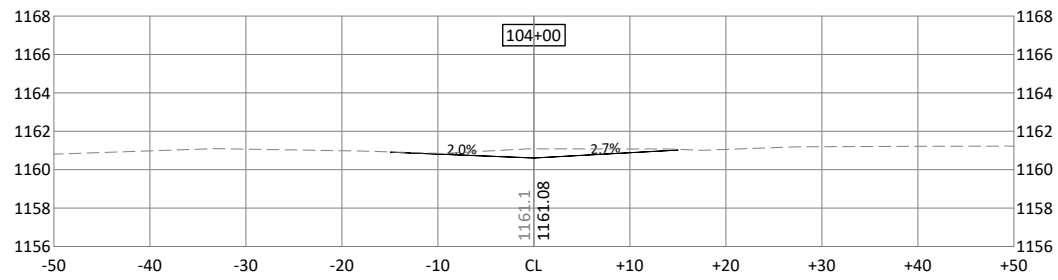
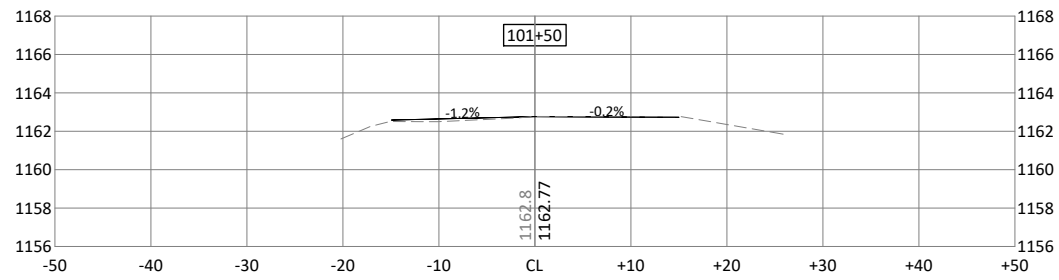
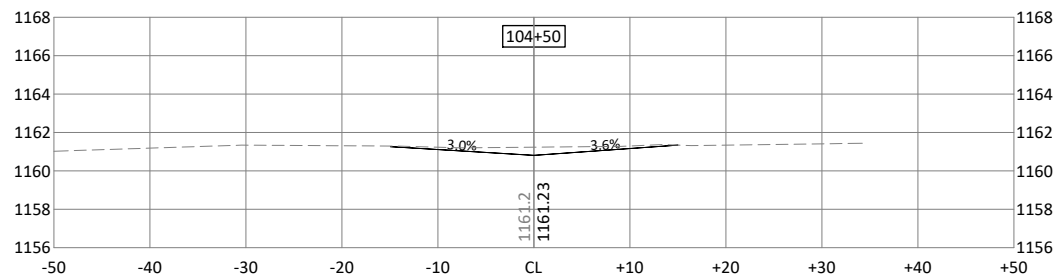
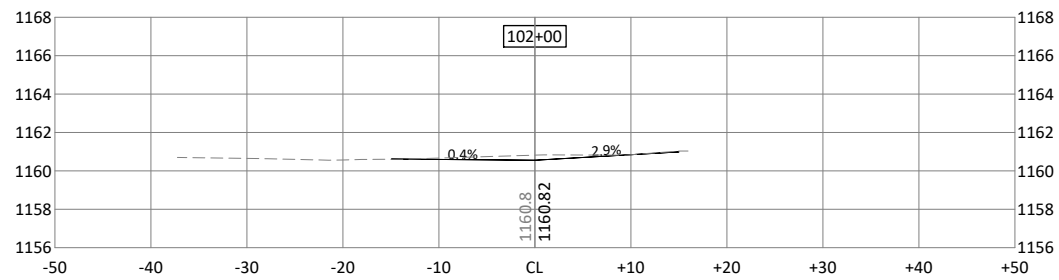
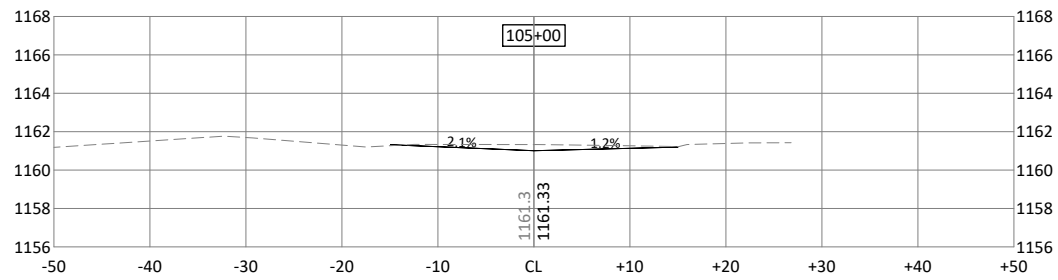
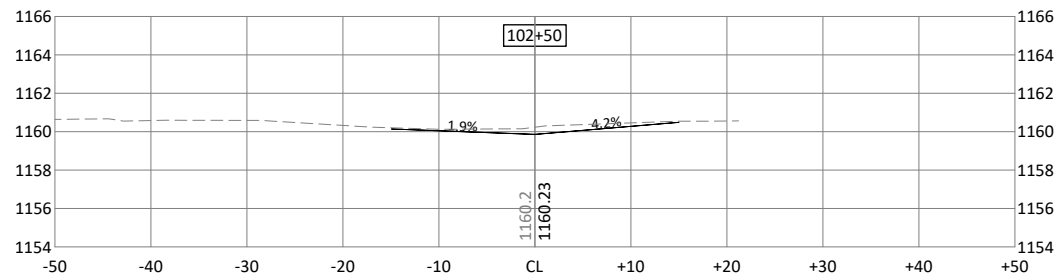
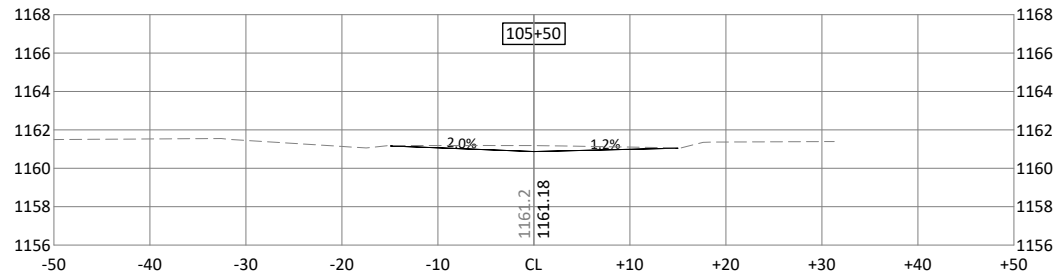
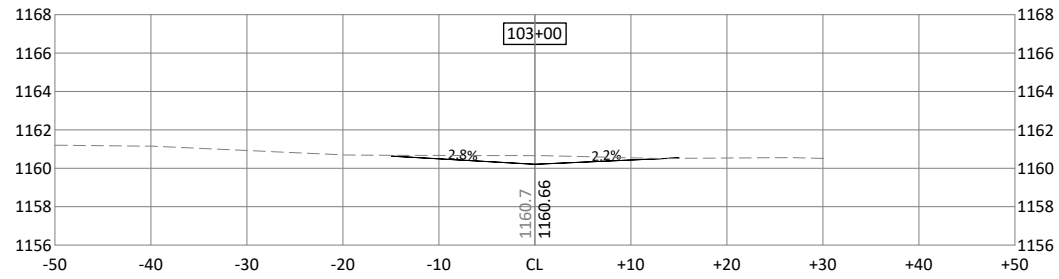
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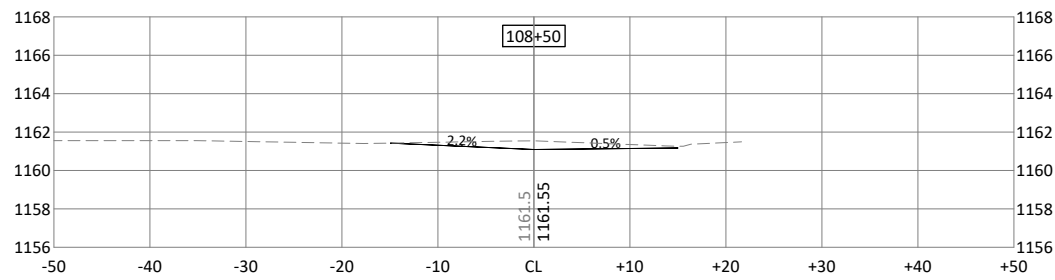
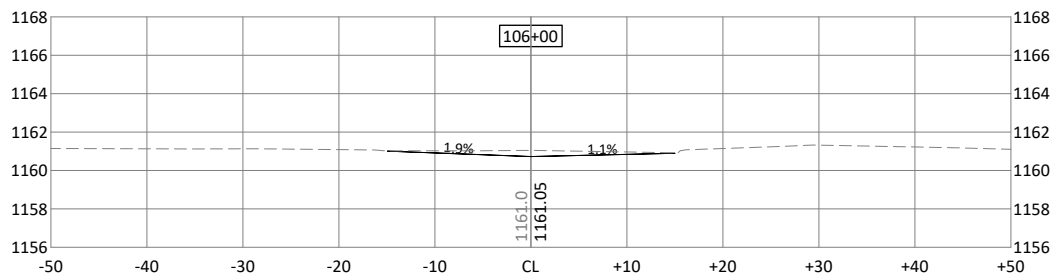
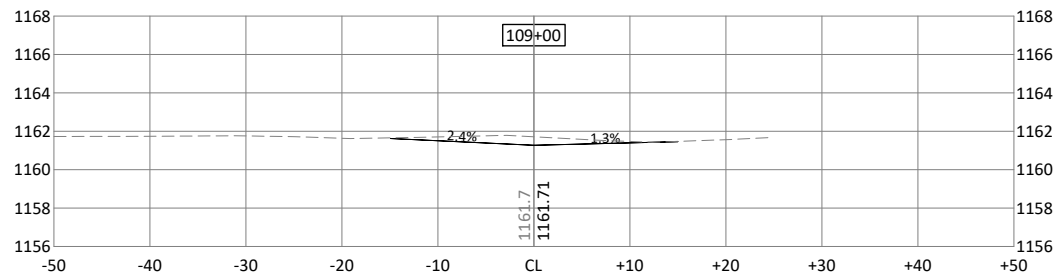
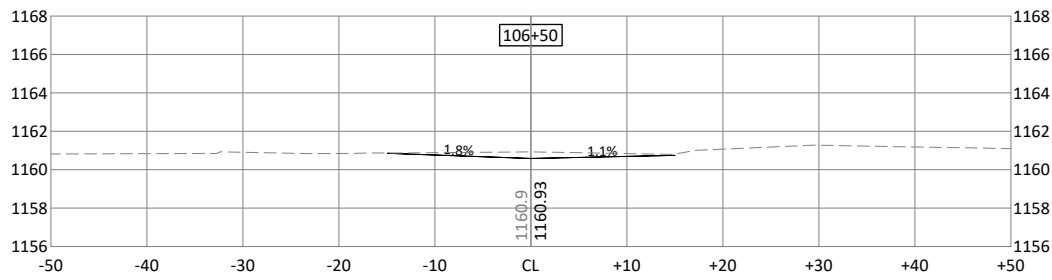
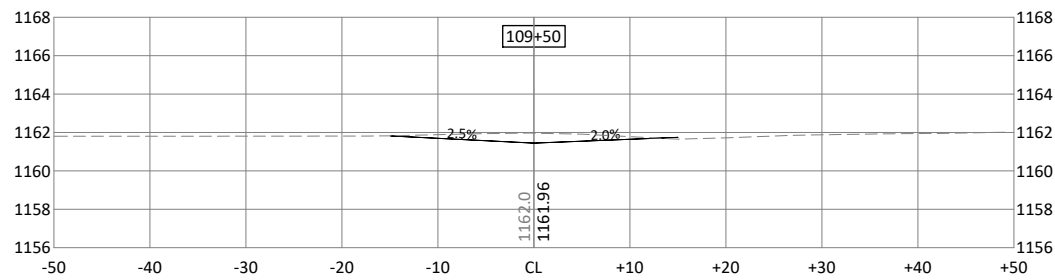
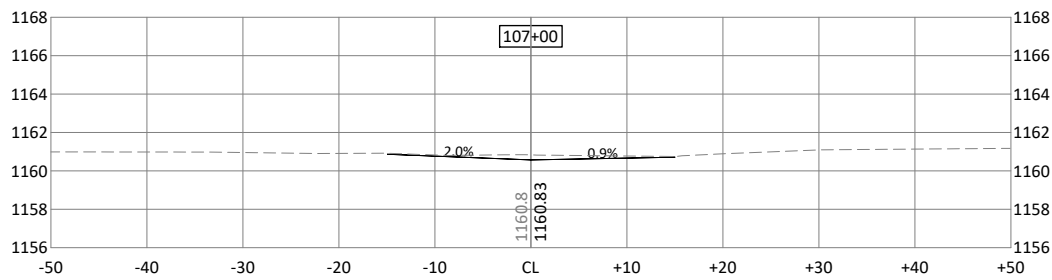
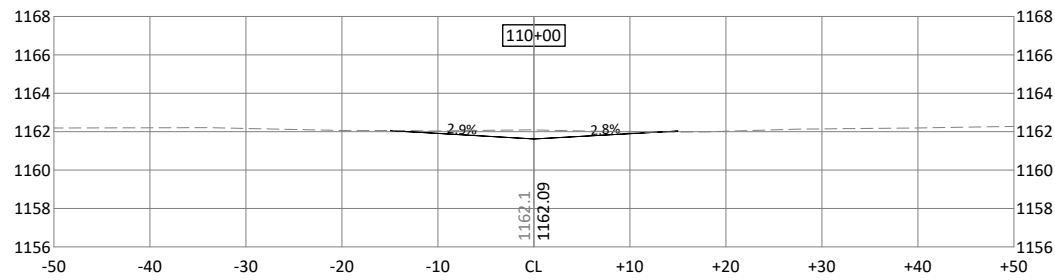
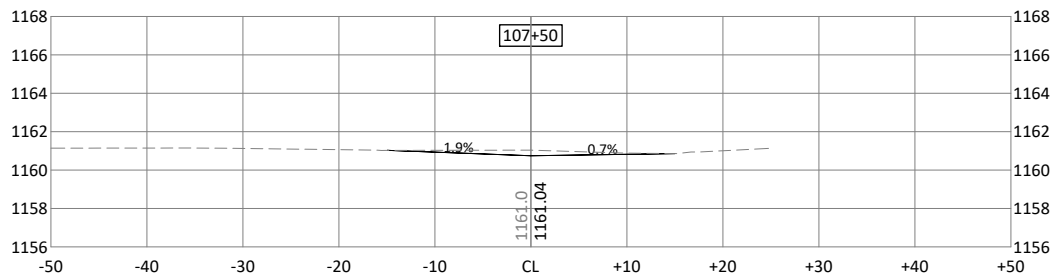
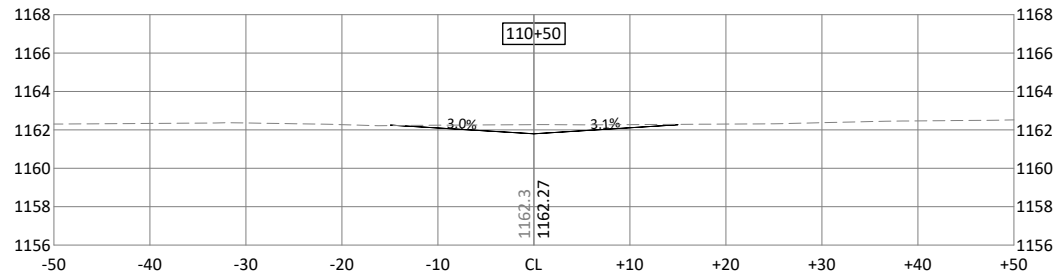
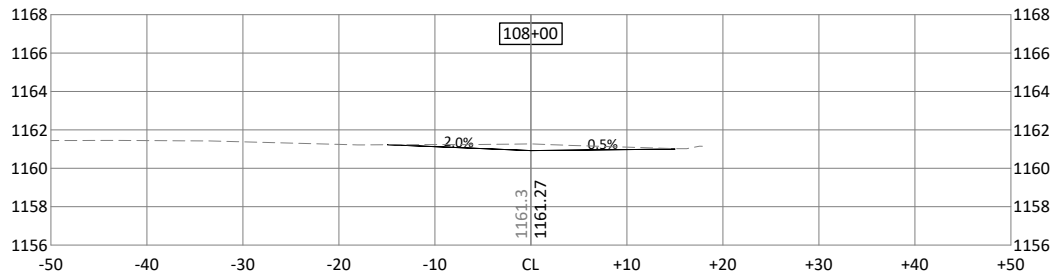
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CROSS SECTIONS

SHEET

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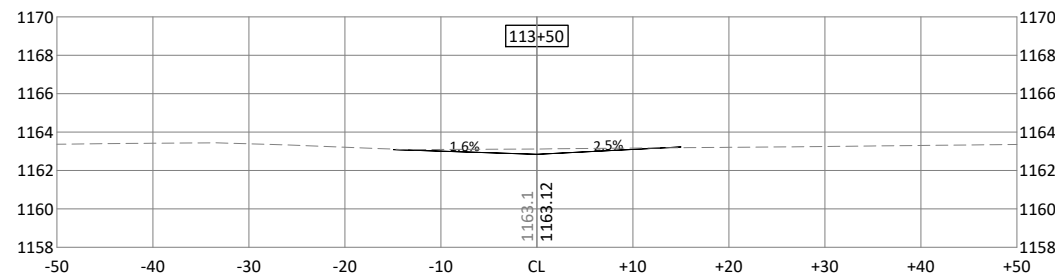
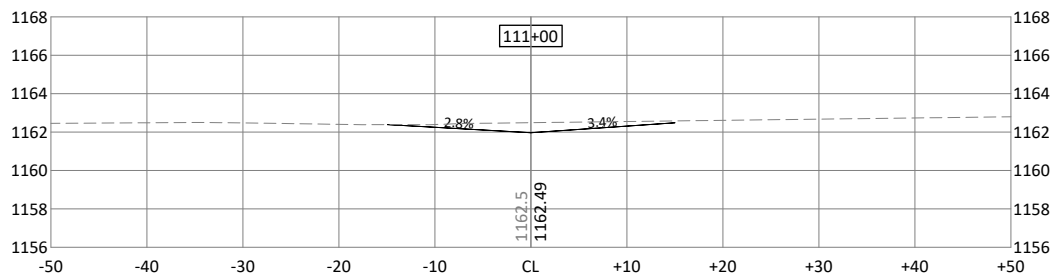
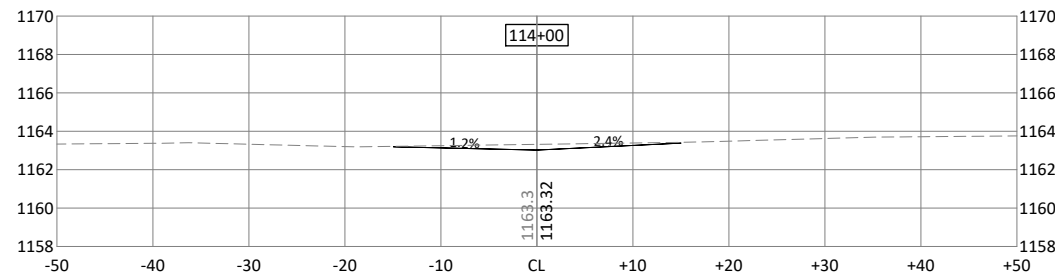
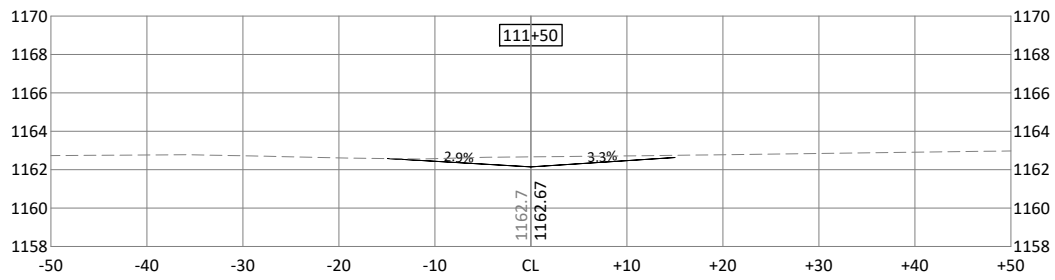
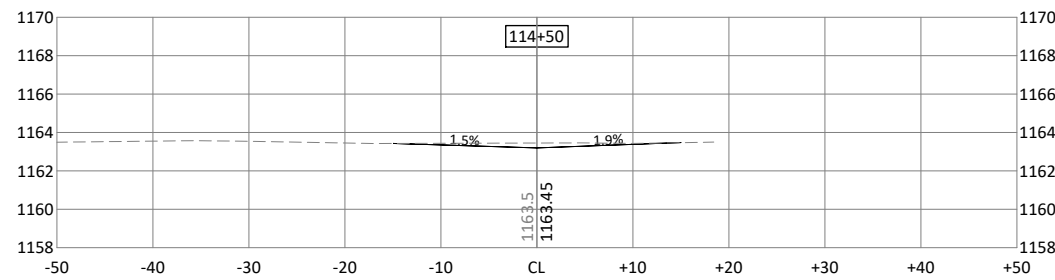
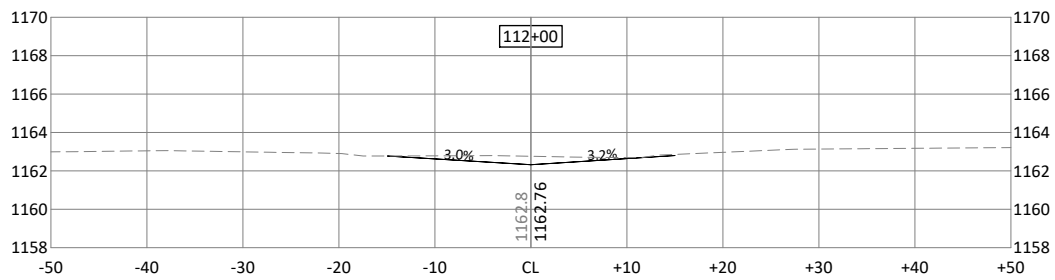
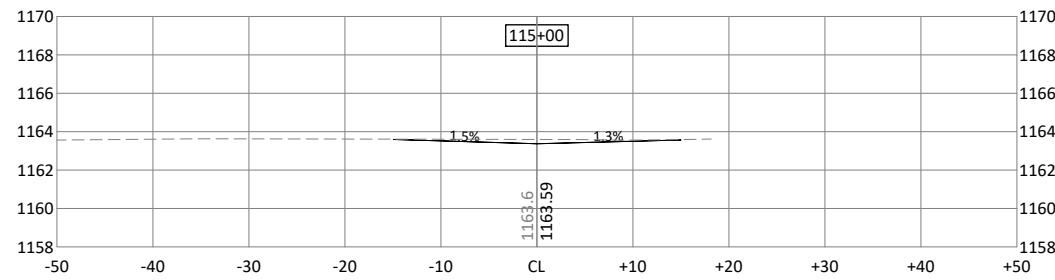
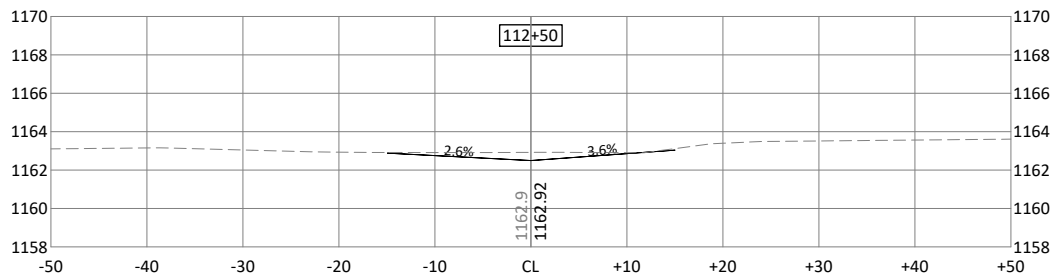
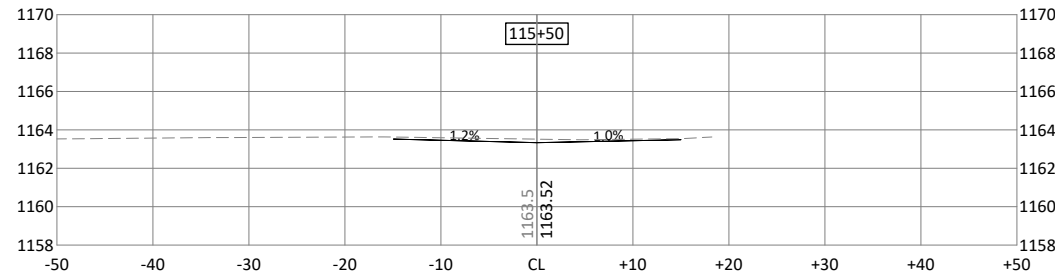
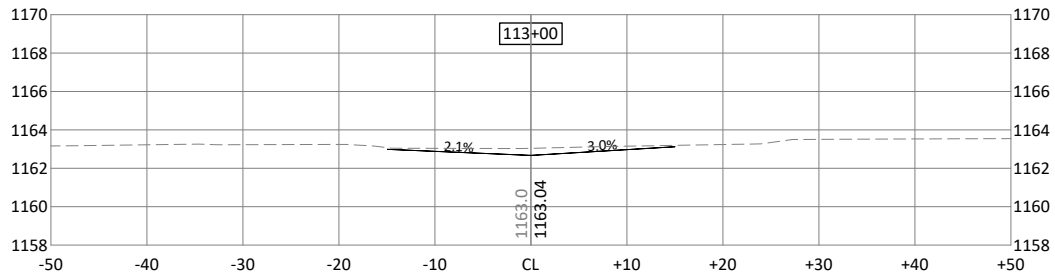
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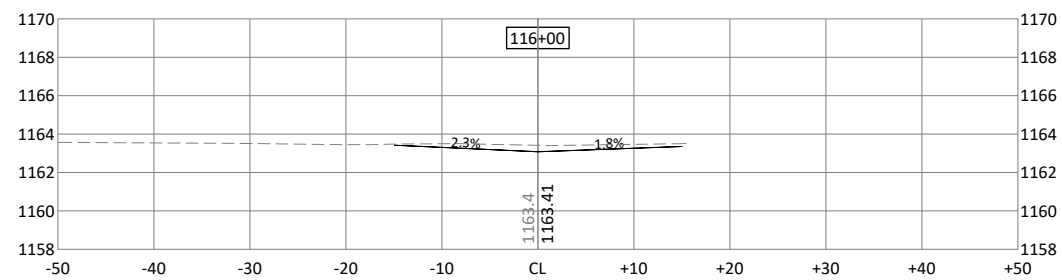
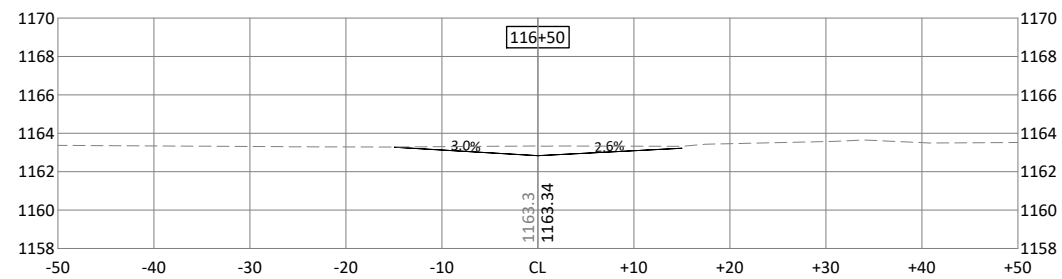
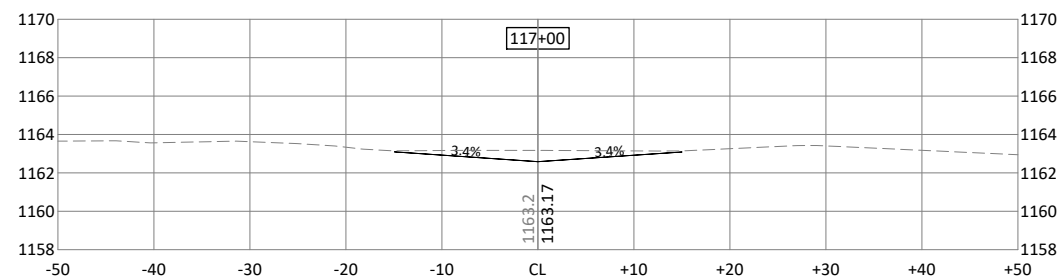
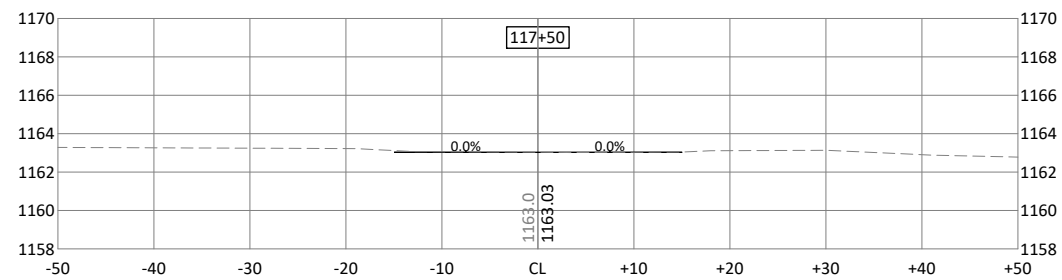
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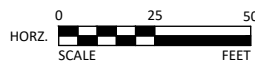
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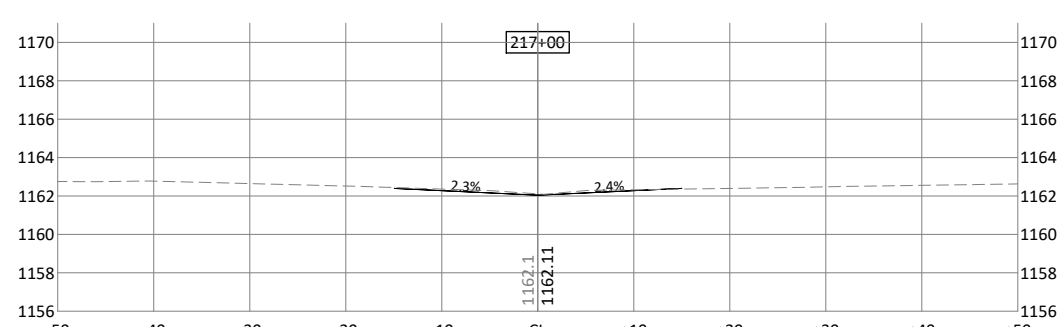
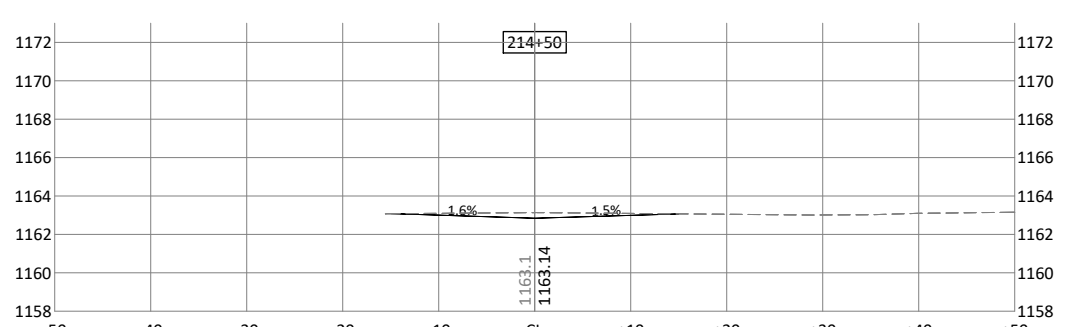
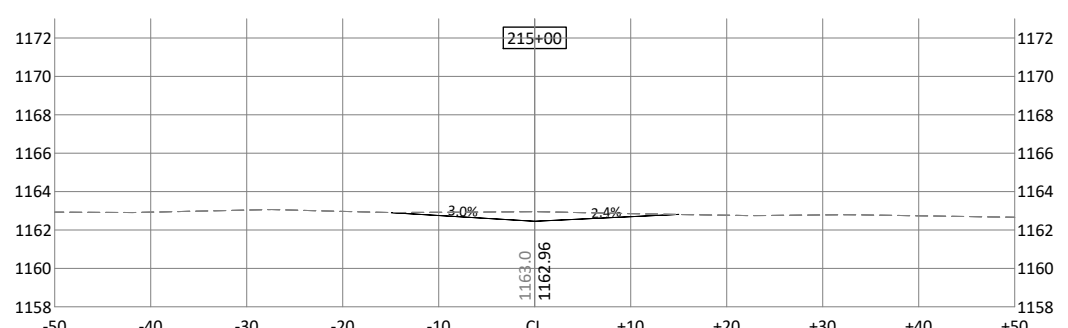
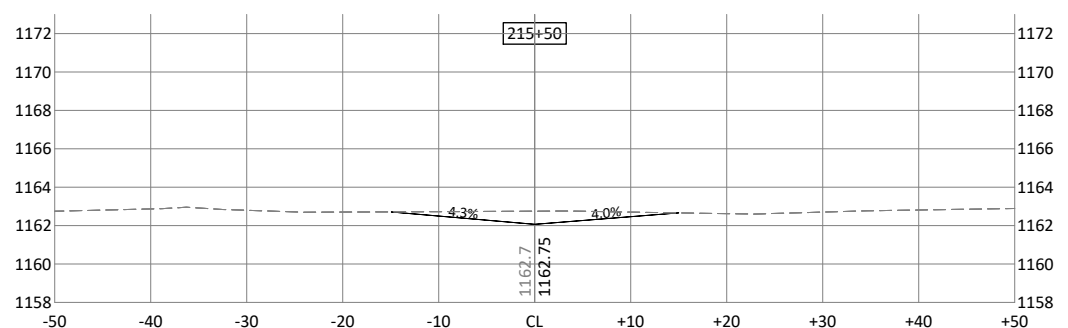
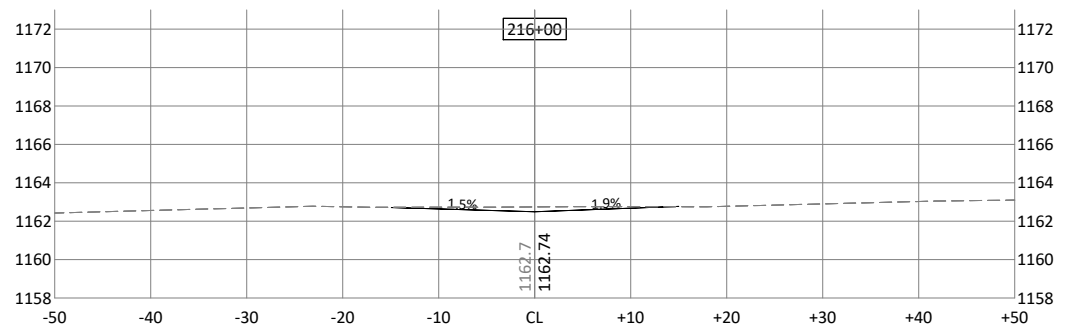
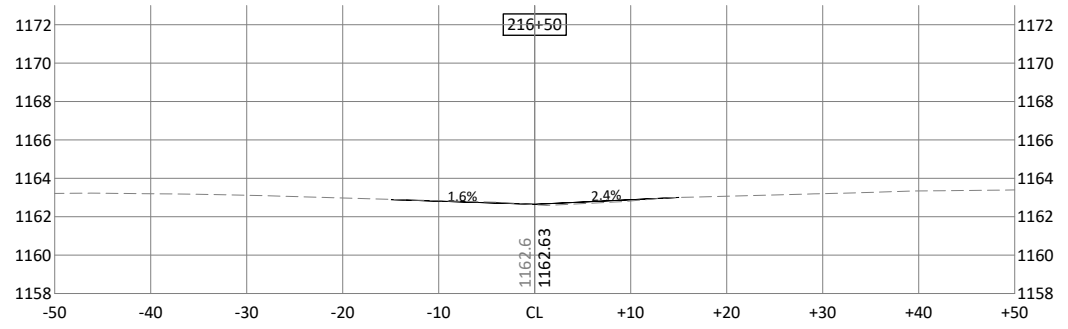
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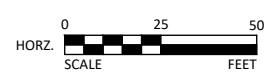
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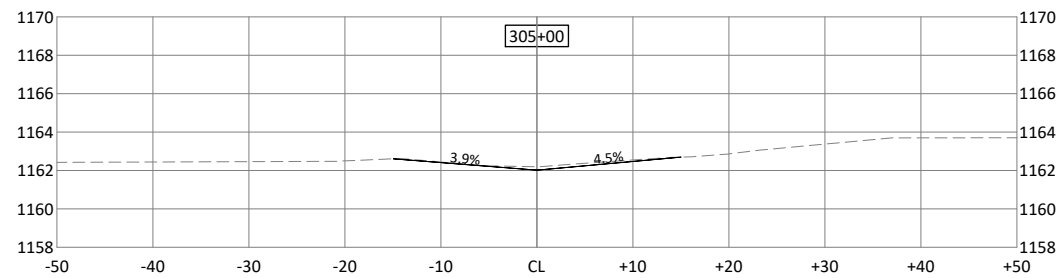
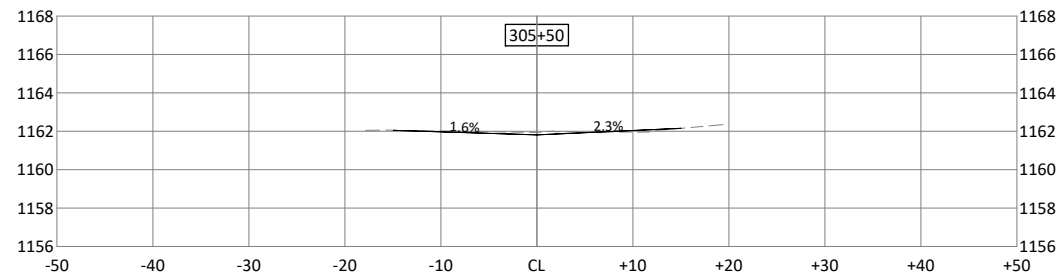
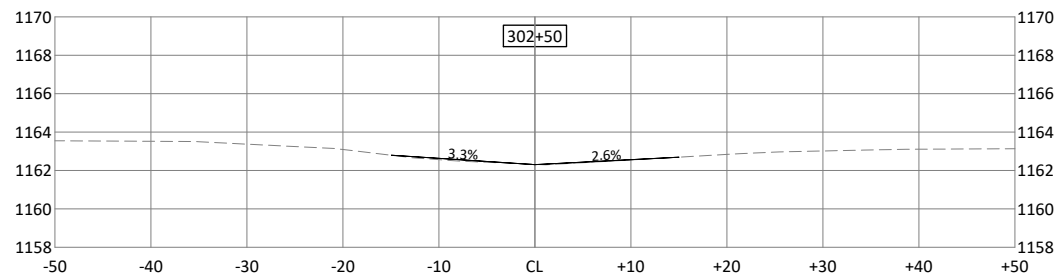
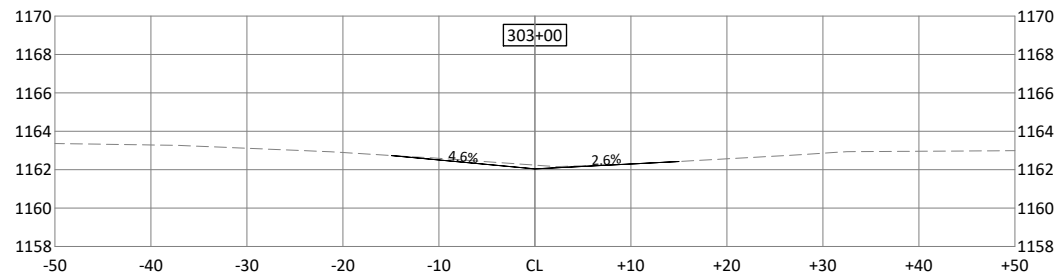
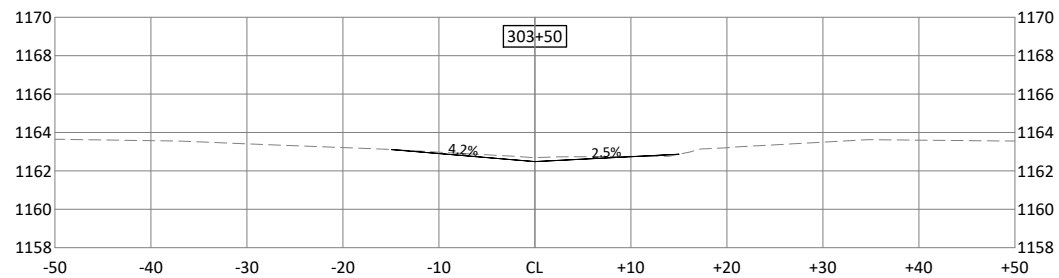
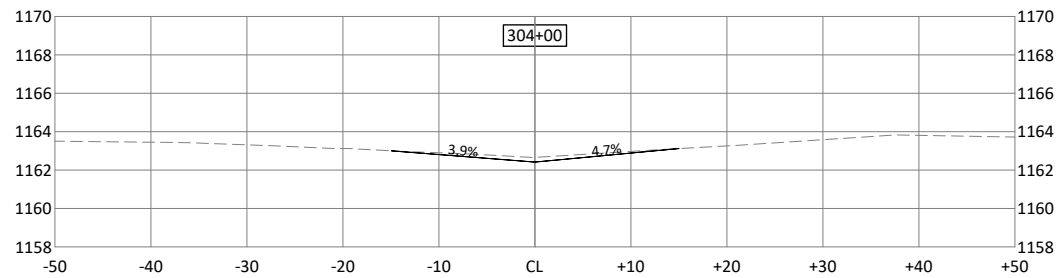
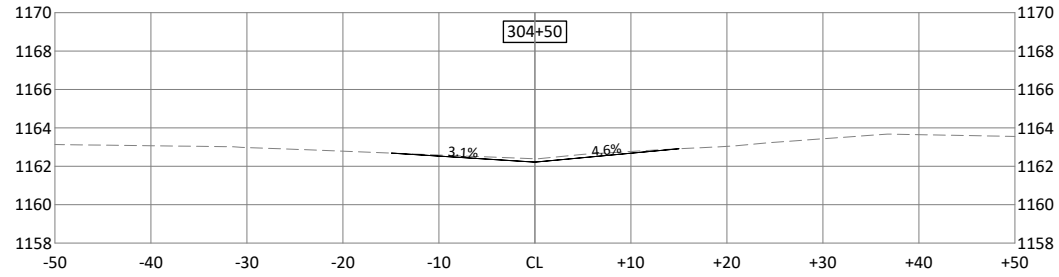


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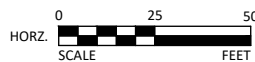
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