

**WisDOT Division of Transportation System
Development**
Northeast Region
944 Vanderperren Way
Green Bay, WI 54304

**Governor Tony Evers
Secretary Craig Thompson**
wisconsindot.gov
Telephone: (920)492-5643
FAX: (920)492-5640
Email: ner.dtsd@dot.wi.gov



January 15, 2020

Jim Doperalski
Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313

Subject: Request for Section 401 Water Quality Certification/Final Concurrence
Project I.D. 1590-23-00
USH 8
Dunbar - Pembine
Marinette County

Dear Mr. Doperalski,

The Wisconsin Department of Transportation (WisDOT), Northeast Region, is requesting final concurrence and water quality certification on the subject project above.

As the enclosed permit application and supporting documentation indicates, unavoidable wetland filling associated with construction of this project totals 0.18 acres. Bank site mitigation is proposed at the Peshtigo Brook Phase 2 site in Oconto County. Please see the Permit Application and attachments for a detailed project description and a detailed discussion regarding wetland impacts, including type, location, and amount.

A PS&E (plans, specifications, & estimate) submittal date of November 1, 2020 is scheduled for this project. Please contact me if you have any questions regarding this request or need any further information.

Sincerely,

A handwritten signature in black ink, appearing to read "Alex Dums".

Alex Dums, P.E.
WisDOT Project Engineer

Cc: Matthew Ternes, P.E., WisDOT Project Manager
Jen Gibson, WisDOT Environmental Coordinator

DNR/DOT PROJECT REVIEW

State of Wisconsin – Department of Natural Resources (DNR) and Department of Transportation (WisDOT)
DTNR0002 6/2018

DNR Internet: http://dnr.wi.gov/	WisDOT Internet: http://wisconsindot.gov/
JIM DOPERALSKI NE REGION 2984 SHAWANO AVENUE Green Bay, WI 54313-6727	Wisconsin Department of Transportation Division of Transportation Systems Development 944 Vanderperren Way Green Bay, WI 54304

Inform WisDOT Regional Environmental Coordinator, if more than 45 days is needed.

Design Project ID 1590-23-00	Project Highway USH 8	Review Submittal Date (m/d/yy) 1/15/20
Construction Project ID 1590-23-71	Estimated Project Cost (range) \$3,000,000.00 to \$4,000,000.00	Construction Year (yyyy) 2021
Project Name Dunbar-Pembin	Project Limits CTH O - USH 141	
County Marinette	Project on Tribal Land ☐ Yes ☒ No	
Contact Name Alex Dums	Contact (Area Code) Phone Number 920-492-5707	
Section/Township/Range T37N R19E Sections 32, 33, 34, 35; T36N R19E 1, 2, 3, 4; T36N R20E Section 3, 4, 5, 6	Estimated Area of Ground Disturbance (acres) 0.31 Acres	

Type of Review Requested ☐ Initial Review ☒ Final Concurrence ☐ Scope Change ☐ Other:	Document Type ☐ Environmental Assessment (EA) ☐ Environmental Report (ER) ☐ Programmatic Categorical Exclusion (PCE) ☒ Categorical Exclusion Checklist (CEC)
WisDOT Project Classification ☐ Bridge Rehabilitation, FDM 3-5-2 ☐ Bridge Replacement, FDM 3-5-2 ☐ Expansion, FDM 3-5-2 ☐ Pavement Replacement, FDM 3-5-2 ☐ Preventive Maintenance, FDM 3-1-5 ☐ SHRM (State Hwy Rehab/Maint), Maintenance Manual 13.08 ☐ Recondition, FDM 3-5-2 ☐ Reconstruction, FDM 3-5-2 ☒ Resurface, FDM 3-5-2 ☐ Safety (HSIP), PMM 4-1-10 ☐ Other:	Work Involved ☒ Beam Guard Replacement ☐ Borrow and/or Waste Site Required ☐ Channel Change/Stream Relocation ☐ Clearing and Grubbing ☒ Culvert Replacement or Extensions ☐ Dredging ☒ Grading ☐ Fill Outside Toe of Slope ☐ Intersection Improvement ☒ Right of Way Acquisition ☐ Shoulder Work ☐ Storm Sewer ☐ Other:

Storm Water Management (check all that apply)

- ☐ Trans 401 post construction requirements
- ☐ NPDES MS4/Urbanized Area
- ☐ TMDL Implementation Area
- ☒ Transportation Construction General Permit (TCGP)

Project Description and Reason for Project:

(include project location map with limits and necessary attachments; attach additional sheets if needed)

The purpose of this highway improvement project along USH 8 between Dunbar and Pembine is to improve pavement conditions and address deficiencies in the existing corridor. From the western limits of the project (County Highway O in Dunbar) to the eastern limits (USH 141 in Pembine) USH 8 is a two lane rural highway. A project location map is presented in Attachment A. This section of roadway is classified as a principal arterial and is part of the National Highway System (NHS). USH 8 serves as the main east-west travel route through Marinette County and provides access to many cabins.

Examples of deficiencies include deteriorating pavement, below standard superelevation rates, improper beam guard grading, and deteriorating culverts. The existing asphaltic concrete pavement roadway was initially constructed in 1937. There have been several improvements to this portion of USH 8 over the years. The most recent resurfacing level rehabilitation project was constructed in 2000. The existing pavement throughout the project corridor is showing signs of deterioration. The Pavement Condition Index (PCI) was 39 (0 is the worst possible condition and 100 is the best) in 2018. The PCI measures the type, extent and severity of pavement surface distresses and the smoothness and ride comfort of the road. The International Roughness Index (IRI) was 1.702 (0 is best possible condition and 12 is the worst) in 2018. The IRI defines the characteristics of a longitudinal profile of the traveled wheel track and is unaffected by vehicle mechanical quality. Below standard super elevation rates exist at four locations with 4.5%, 4.5%, 2.3%, and 2.3% superelevation rates where the current standard superelevation rates are 4.6%, 4.6%, 2.4%, and 2.4% respectively. The existing grading behind all eight beamguard locations is substandard as there is not a 2 foot width of 10% slope behind the beamguard. The existing condition of the beamguard itself is substandard as the height varies from 23 inches to 25 inches above the roadway and the current minimum standard is 27-3/4 inches with a desirable height of 32 inches. The flowline of three corrugated metal culvert pipes have deteriorated and rusted away.

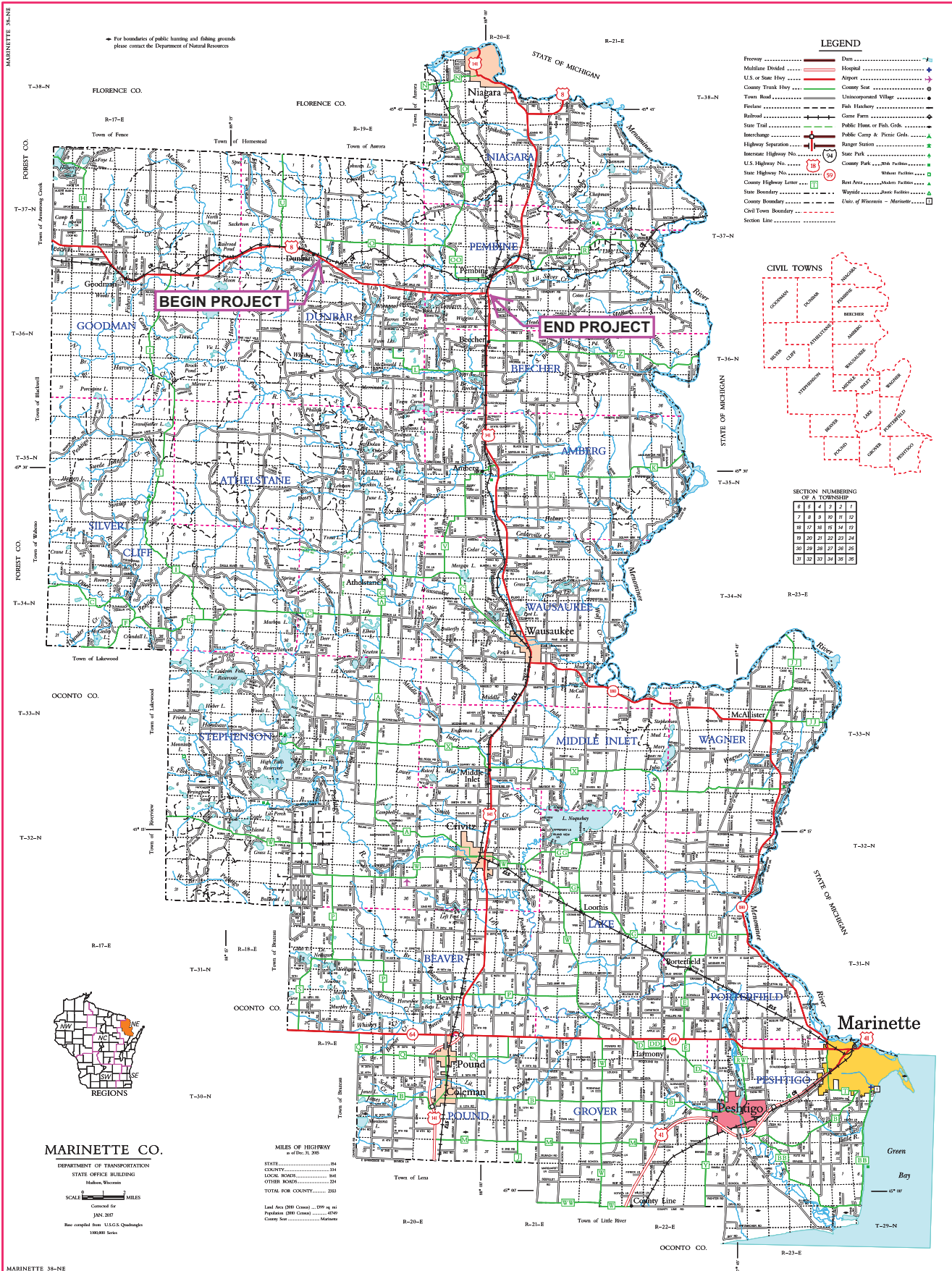
To address the deficiencies within the corridor, the project proposal includes milling and overlaying the highway, replacing beam guard and regrading around new beam guard to current standards, and replacing two culverts and lining one culvert. Existing geometrics of USH 8 between Dunbar and Pembine will not be affected. No detour will be required for the project as the project will be constructed under traffic with a rolling lane closure.

Attachment Index

- A: Project Location Map
- B: Wetland Determination Map
- C: Wetland Impact Plan Sheets
- D: Practicable Alternative Analysis
- E: Wetland Tracking Form
- F: Plan Sheets and Special Provisions
- G: WDNR Initial Concurrence
- H: USACE 404 Permit Correspondence

Attachment A

PROJECT LOCATION MAP



1590-23-00
USH 8
CTH O - USH 141
MARINETTE COUNTY

Attachment B

1590-23-00
USH 8
Marinette Co.
Map 1

Ar

525

8

RPF

RPE

UPL

AuA

RsB

Lundgren Lake Rd

0 25 50 100 150 200 Feet

N

1590-23-00
 USH 8
 Marinette Co.
 Map 1

Ar

525

UPL

RPE

RPF

UPL

RPE

RPF

UPL

RPE

RPF

UPL

RPE

RPF

AuA

RsB

Lundgren Lake Rd

0 25 50 100 150 200 Feet

N

1590-23-00
USH 8
Marinette Co.
Map 1

Ar

525

8

RPF

RPE

UPL

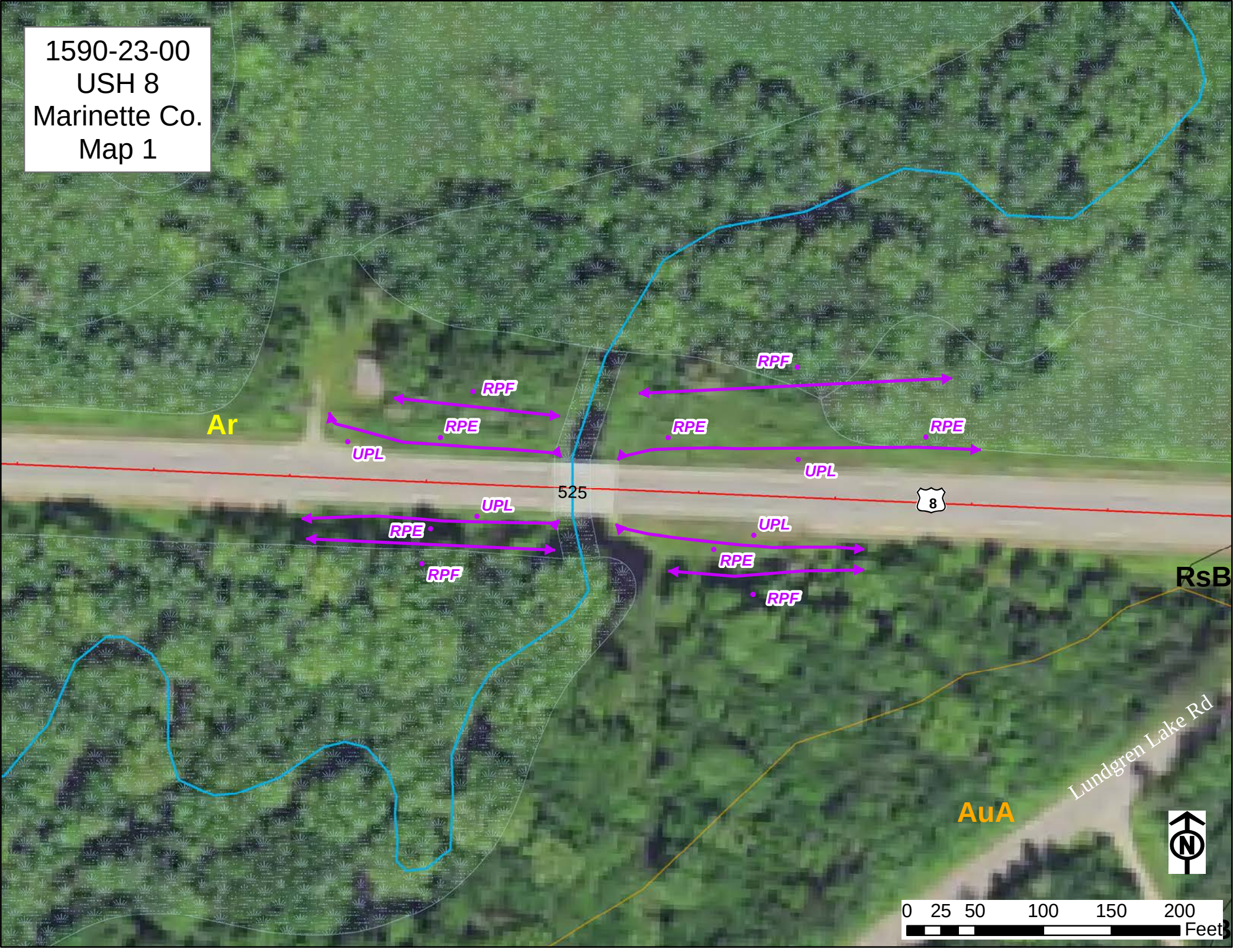
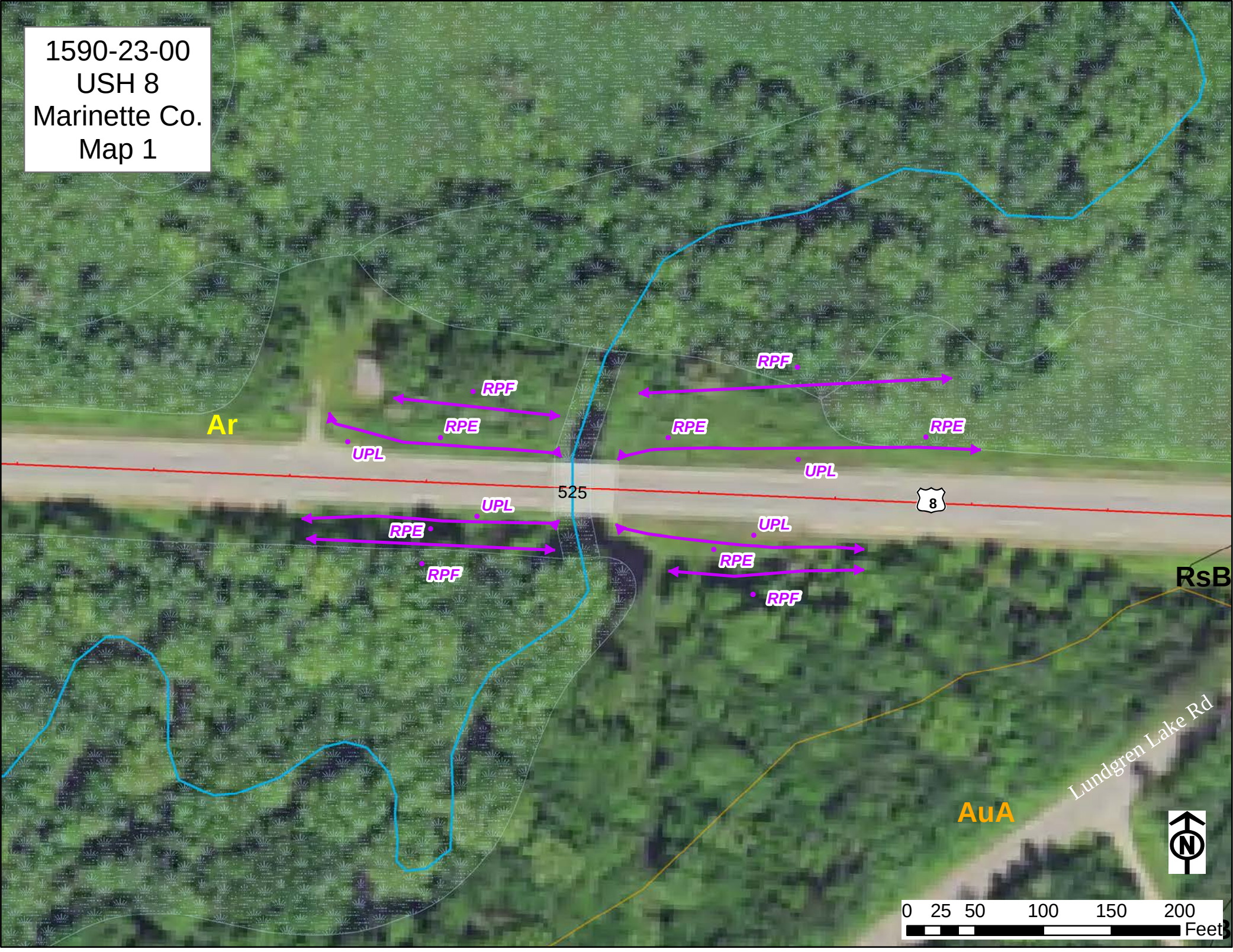
AuA

RsB

Lundgren Lake Rd

0 25 50 100 150 200 Feet

N



1590-23-00
USH 8
Marinette Co.
Map 2

Rc

WS

M

UPL

505

8

500

Ar

UPL

M

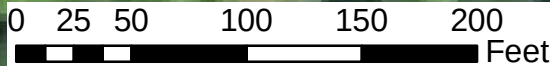
WS

South Branch Pemebonnet River

IxC

AuA

IxC



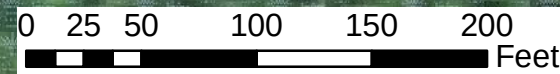
1590-23-00
USH 8
Marinette Co.
Map 3

EaD

South Branch Penthiemou River

Ar

Sd



1590-23-00
USH 8
Marinette Co.
Map 4



Young Lake Rd

PkB

PaD



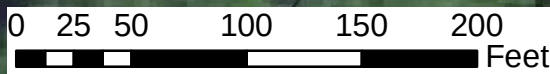
380

385

UPL

UPL

PkB



1590-23-00
USH 8
Marinette Co. B
Map 5



PaC

Popple Ln

Sd

8

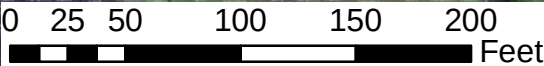
360

365

Sa

W

PkB



1590-23-00
USH 8
Marinette Co.
Map 6

Sd

GmB

SbC

265

270

MrC

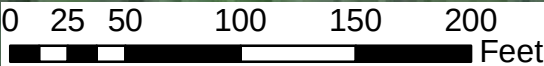
M

UPL

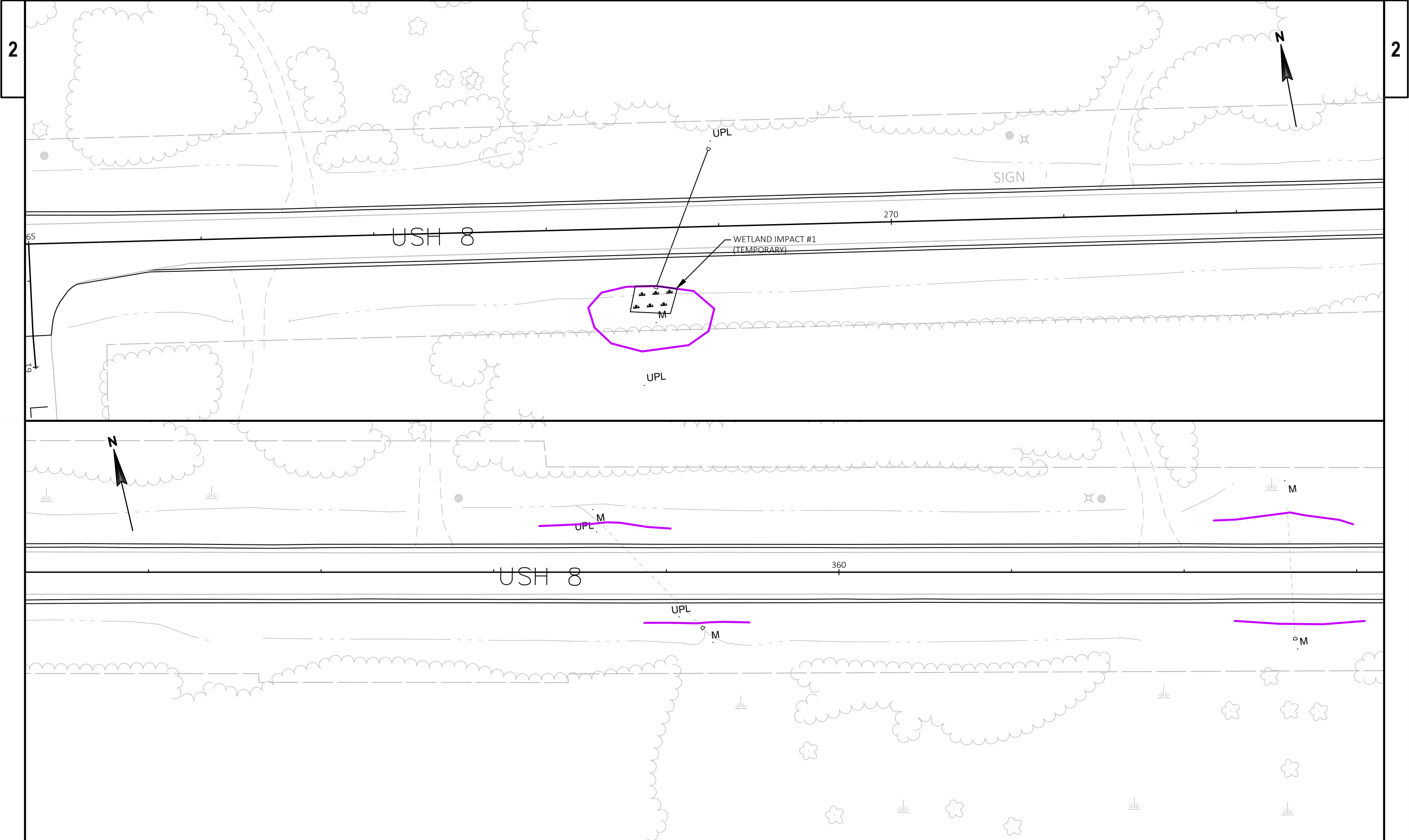
UPL

Lily Lake Rd

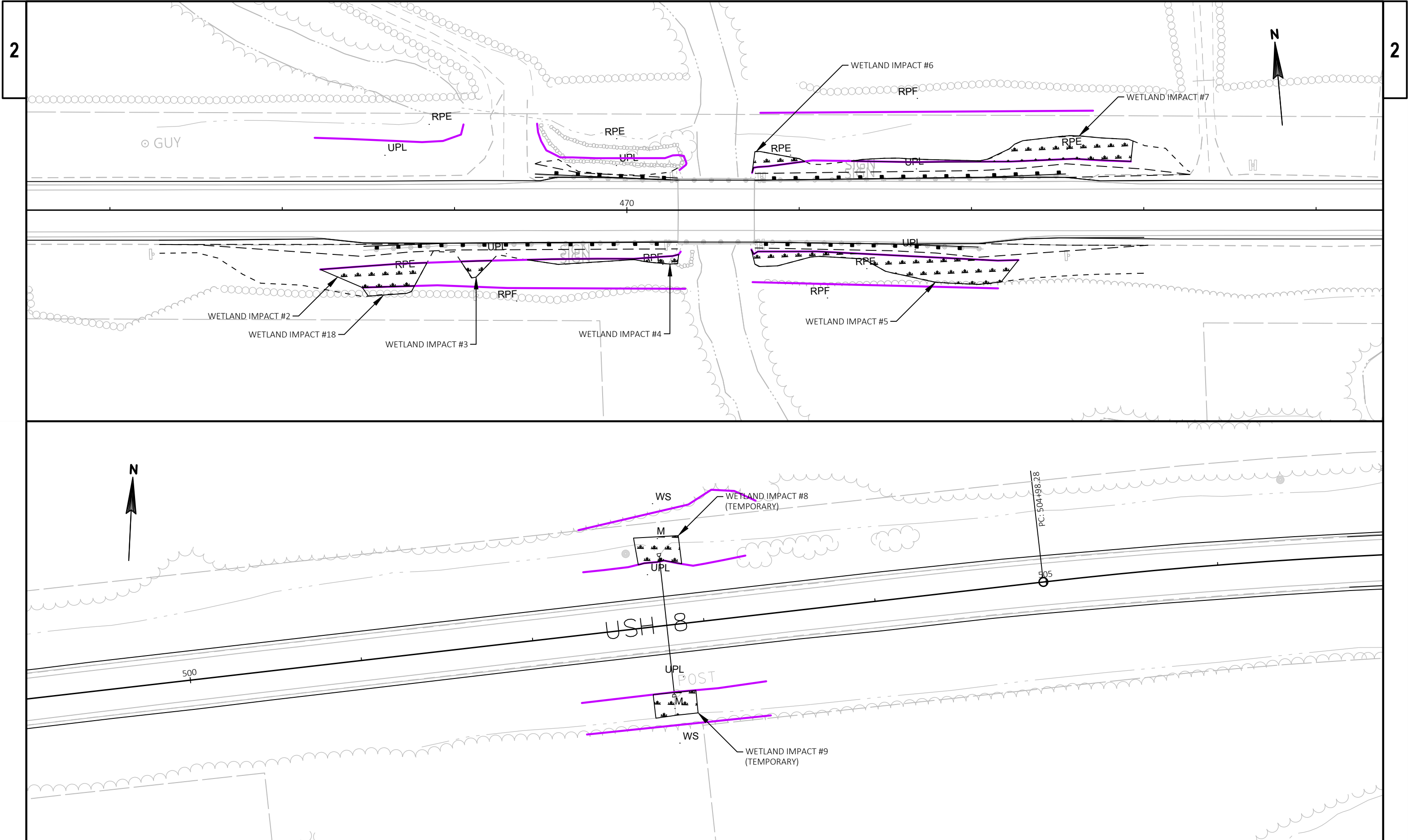
PaC



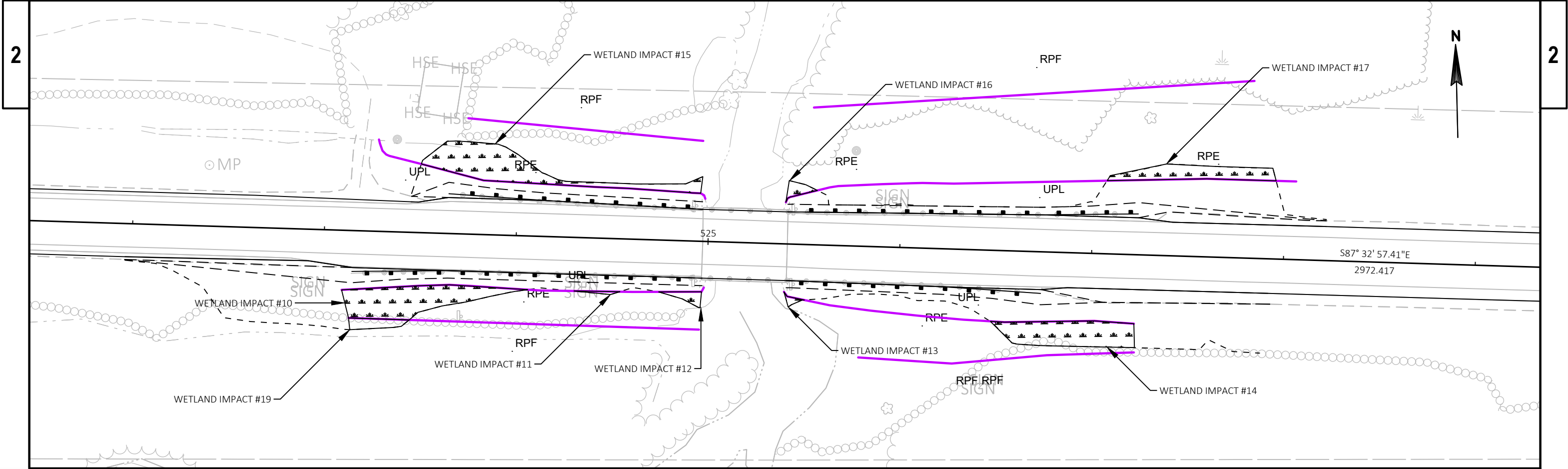
Attachment C



PROJECT NO: 1590-23-71	HWY: USH 8	COUNTY: MARINETTE	EROSION CONTROL PLAN	SHEET	E
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PROJECT NO: 1590-23-71	HWY: USH 8	COUNTY: MARINETTE	EROSION CONTROL PLAN	SHEET	E
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Attachment D

Project ID 1590-23-00
Dunbar - Pembine
CTH O – USH 141
Marinette County

Informational Requirements for Practicable Alternatives Analysis

I. Background/Description of Project

A. Describe the purpose and need for the project.

The purpose of this highway improvement project along USH 8 between Dunbar and Pembine is to improve pavement conditions and address deficiencies in the existing corridor. From the western limits of the project (County Highway O in Dunbar) to the eastern limits (USH 141 in Pembine) USH 8 is a two lane rural highway. This section of roadway is classified as a principal arterial and is part of the National Highway System (NHS). USH 8 serves as the main east-west travel route through Marinette County and provides access to many cabins.

Examples of deficiencies include deteriorating pavement, below standard superelevation rates, improper beam guard grading, and deteriorating culverts. The existing asphaltic concrete pavement roadway was initially constructed in 1937. There have been several improvements to this portion of USH 8 over the years. The most recent resurfacing level rehabilitation project was constructed in 2000. The existing pavement throughout the project corridor is showing signs of deterioration. The Pavement Condition Index (PCI) was 39 (0 is the worst possible condition and 100 is the best) in 2018. The PCI measures the type, extent and severity of pavement surface distresses and the smoothness and ride comfort of the road. The International Roughness Index (IRI) was 1.702 (0 is best possible condition and 12 is the worst) in 2018. The IRI defines the characteristics of a longitudinal profile of the traveled wheel track and is unaffected by vehicle mechanical quality. Below standard super elevation rates exist at four locations with 4.5%, 4.5%, 2.3%, and 2.3% superelevation rates where the current standard superelevation rates are 4.6%, 4.6%, 2.4%, and 2.4% respectively. The existing grading behind all eight beamguard locations is substandard as there is not a 2 foot width of 10% slope behind the beamguard. The existing condition of the beamguard itself is substandard as the height varies from 23 inches to 25 inches above the roadway and the current minimum standard is 27-3/4 inches with a desirable height of 32 inches. The flowline of three corrugated metal culvert pipes have deteriorated and rusted away.

To address the deficiencies within the corridor, the project proposal includes milling and overlaying the highway, replacing beam guard and regrading around new beam guard to current standards, and replacing two culverts and lining one culvert. Existing geometrics of USH 8 between Dunbar and Pembine will not be affected. No detour will be required for the project as the project will be constructed under traffic with a rolling lane closure.

B. Is your project an expansion of existing work or is it new construction? Explain.

The project is an expansion of existing work:

C. When did you start to develop a plan for your project?

Program level scoping was completed on May 22, 2019.

D. Explain why your project must be located in or adjacent to wetlands.

The proposed project involves improvements to existing roadways which are adjacent to wetlands. Grading for beamguard areas will be upgraded to improve the safety for the travelling public. These grading upgrades will push out the slopes in the beamguard areas and therefore fill wetlands located in ditches.

II. Alternatives

A. How could you redesign or reduce your project to avoid wetland, and still meet your basic project purpose?

The proposed beam guard grading improvements involves grading along the roadway and therefore will have unavoidable impacts to wetlands located in the roadside ditches.

B. Other sites

1. What geographical area(s) was searched for alternative sites?

The project involves an existing roadway; therefore no other alternative sites are available.

2. Were other sites considered?

No.

3. Have you sold any lands in recent years that are located within the vicinity of the project? If so, why were they unsuitable for the project?

No.

C. For each of the alternatives you identified, explain why you eliminated the alternative from consideration (include cost comparisons, logistical, technological, and any other reasons).

No other alternatives were identified.

D. What are the consequences of not building the project (include social and economic consequences):

Not building the project would fail to address the deteriorating road condition. Not building the project would also fail to address the deficient grading around the beam guard areas.

E. Summarize why your alternative was selected.

The selected alternative was the only alternative that would meet the needs of the project.

F. Explain what you plan to do to minimize adverse effects on wetlands during your project (e.g. erosion control, best management practices, setbacks, etc.).

Best management practices will be used during construction and an Erosion Control Implementation Plan (ECIP) will be submitted and followed by the construction contractor.

Attachment E



Wisconsin Department of Transportation

Division of Transportation System Development
Northeast Region

WETLAND IMPACT TRACKING FORM

****This form must be filled out for all projects.****

Return This Completed Form to:

Jennifer Gibson
Environmental Coordinator
WisDOT - Northeast Region
944 Vanderperren Way
Green Bay, WI 54304
Phone : (920) 492-4160

FAX: (920) 492-0144
Jennifer.Gibson@dot.wi.gov

**Please Complete All
Information Highlighted In
Yellow**

**WisDOT Regional
Environmental Coordinator
(REC) Will Complete Sections
Highlighted In Green**

Project Design I.D. #: 1590-23-00
Project Construction I.D. #: 1590-23-71
Hwy/ Project Title : USH 8: CTH O - USH 141
Dunbar - Pembine
County : Marinette
Construction Year : 2021
Let Date: 9/14/2021
Date this form is completed: 9/19/2018
Date this form is approved: 11/21/2019

This Form Prepared by:

Alex Dums 920-492-5707 alex.dums@outlook.com
NAME PHONE EMAIL

This Form Approved by:

Jennifer Gibson 920-492-4160 Jennifer.Gibson@dot.wi.gov
NAME PHONE EMAIL

Is a discharge of dredged or fill material into wetlands anticipated?

NO ☐ ➔ Form complete; no further information is required (RETURN FORM).

YES ☒ ➔ 1. Complete remainder of form:
- Complete yellow portions on both pages of the form and return to REC for finalization and approval.
- Include comment about sending for approval only after final impacts are determined.

2. Include final APPROVED form with DNR 401 and COE 404 permit applications.

Wetland Delineation/

Determination completed by:

Jennifer Gibson 920-492-4160 jennifer.gibson@dot.wi.gov
NAME PHONE EMAIL

WisDOT REC
QUALIFICATIONS

Describe methods used to avoid and minimize impacts to wetlands:

Best management practices, erosion control such as rock bags, ditch checks, erosion mat, and silt fence will be used in order to minimize erosion and the transport of sediment into wetland areas. Wetlands to be filled are within road ditches and will be mitigated from a bank site. Additionally, 2.5:1 slopes were used behind the guardrail to minimize impacts to wetlands.

Was professional discretion
used to determine debit
ratio?

No
Yes

☒
☐

➔ Describe discretionary
rationale below:

WETLAND IMPACT / REPLACEMENT SUMMARY

Type Impacted	Area Impacted	Type Mitigated	Area Mitigated
AB	-	AB	-
BOG	-	BOG	-
DM	-	DM	-
M	-	M	-
RPE	0.17	RPE	-
RPF	0.01	RPF	-
SM	-	SM	-
SS	-	SS	0.21
WS	-	WS	-
AB(D)	-	TOTAL	0.21
DM(D)	-		
M(D)	-		
RPE(D)	-		
RPF(D)	-		
SM(D)	-		
SS(D)	-		
WS(D)	-		
TOTAL	0.18		

**WETLAND IMPACT TRACKING FORM - PAGE 2**
DETAILED TABLE OF WETLAND IMPACTS**Directions to complete Page 2:**

1. One location may be made up of several different wetland types. List each type of wetland impacted from each location on the project corridor separately in the table below.
2. Contact the Environmental Coordinator for appropriate ratio and bank information.
3. Use Department of Transportation Wetland Classification System:
<http://roadwaystandards.dot.wi.gov/standards/fdm/24-05-010att.pdf#fd24-5a10.2>
4. Individual wetland areas should be reported to the **nearest 0.001-acre**. Impacts are summed by type and rounded to the **nearest 0.01-acre**.

						DOT REC will provide this information.		
Point #	Wetland ID	Impact Location (project station)	Lat/Long	Type Impacted	Area Impacted	Debit Ratio	Type Mitigated	Area Mitigated
2	Wetland 2	468+22 - 468+84	45.6227 N -88.0350 W	RPE	0.013	1.200	SS	0.016
3	Wetland 3	469+04 - 469+21	45.6227 N -88.0348 W	RPE	0.002	1.200	SS	0.002
4	Wetland 4	469+42 - 470+30	45.6227 N -88.0346 W	RPE	0.004	1.200	SS	0.005
5	Wetland 5	470+72 - 472+27	45.6227 N -88.0339 W	RPE	0.031	1.200	SS	0.037
6	Wetland 6	470+72 - 471+03	45.6229 N -88.0341 W	RPE	0.004	1.200	SS	0.005
7	Wetland 7	471+30 - 472+93	45.6229 N -88.0336 W	RPE	0.024	1.200	SS	0.029
10	Wetland 10	523+10 - 524+07	45.6227 N -88.0137 W	RPE	0.023	1.200	SS	0.028
11	Wetland 11	524+31 - 524+55	45.6227 N -88.0132 W	RPE	0.001	1.200	SS	0.001
12	Wetland 12	524+75 - 524+97	45.6227 N -88.0131 W	RPE	0.002	1.200	SS	0.002
13	Wetland 13	525+40 - 525+51	45.6227 N -88.0129 W	RPE	0.001	1.200	SS	0.001
14	Wetland 14	526+48 - 527+23	45.6226 N -88.0123 W	RPE	0.020	1.200	SS	0.024
15	Wetland 15	523+49 - 524+96	45.6229 N -88.0134 W	RPE	0.027	1.200	SS	0.032
16	Wetland 16	525+40 - 525+56	45.6229 N -88.0129 W	RPE	0.002	1.200	SS	0.002
17	Wetland 17	527+07 - 527+95	45.6229 N -88.0121 W	RPE	0.012	1.200	SS	0.014
18	Wetland 18	468+46 - 468+76	45.6227 N -88.0350 W	RPF	0.003	1.300	SS	0.004
19	Wetland 19	523+14 - 523+45	45.6227 N -88.0137 W	RPF	0.003	1.300	SS	0.004

Is there potential for onsite mitigation? If unknown, check with the REC.

YES

☐

Where is it located? (T/R, station, map)

NO

☒

List bank site to be used. (Determined by REC)

Peshtigo Brook Phase 2

Please attach another sheet if the space provided is not adequate for all impacts or to add any additional comments.

Attachment F

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1590-23-71		

PROJECT

1590-23-71

PLAN OF PROPOSED IMPROVEMENT

CTH 0 - USH 141

MARINETTE COUNTY

1590-23-71

R - 18 - E

R - 19 - E

R - 20 - E

T
37
N

T
36
N

LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 8.264 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MARINETTE COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

END PROJECT
STA 568+83

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections



A.A.D.T.	2021	=	2300
A.A.D.T.	2042	=	2800
D.H.V.		=	423
D.D.		=	61/39
T.		=	21.8%
DESIGN SPEED		=	55 MPH
ESALS		=	1,500,000

<u>PLAN</u>	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE
(To be noted as such)
SPECIAL DITCH

CULVERT (Profile View)

ELECTRIC
FIBER OPTIC
GAS
SANITARY SEWER
STORM SEWER
TELEPHONE
WATER
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE

E
FO
G
SAN
SS
T
W

BEGIN
PROJECT
STA 132+50
N: 348,259.51
E: 668,497.62

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	
Designer	ALEX DUMS
Project Manager	PAUL ZOELLNER
Regional Examiner	
Regional Supervisor	DAN SEGERSTROM

APPROVED FOR THE DEPARTMENT

DATE: _____ (Signature)

FILE NAME : N:\PDS\C3D\15902300\SHEETSPLAN\010101-TI.DWG

PLOT DATE : 5/20/2019 3:28 PM

PLOT BY : DUMS, ALEXANDER T

PLOT NAME :

PRE_1

■

GENERAL NOTES

THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE.
THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT THAT ARE NOT SHOWN.

EXISTING PERMANENT SIGNS ARE TO REMAIN IN PLACE UNLESS SPECIALLY CALLED FOR
REMOVAL ON MISCELLANEOUS QUANTITY TABLE.

EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS
OTHERWISE DIRECTED BY THE ENGINEER.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING, SEEDING AND MULCHING ANY PREVIOUSLY GRASSED
AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS.
REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.
DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD
BY THE ENGINEER.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

ALL DISTURBED AREAS, NOT OTHERWISE SURFACED, ARE TO BE TOPSOILED, FERTILIZED, SEEDED
AND COVERED WITH MULCH OR EROSION MAT, AS SHOWN ON THE PLANS.

THE EXACT LOCATIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND ALL UTILITIES IN THE VICINITY OF THE PROJECT
TO LOCATE THEIR FACILITIES AT LEAST THREE WORKING DAYS PRIOR TO BEGINNING WORK.

ALL OPENINGS OF HOLES BELOW SUBGRADE RESULTING FROM REMOVALS, ABANDONMENTS OR STORM SEWER
SHALL BE BACKFILLED WITH GRANULAR BACKFILL. GRANULAR BACKFILL SHALL BE INCLUDED IN THE
CONTRACT PRICE OF REMOVAL OR ABANDONMENT ITEM.

UTILITIES

ATC MANAGEMENT, INC. - ELECTRICITY
W234 N2000 RIDGEVIEW PARKWAY COURT
P.O. BOX 47
WAUKESHA, WI 53187-0047
ATTN: TONY MARCINIAK
PHONE: 262-506-6814
E-MAIL: TMARCINIAK@ATCLLC.COM

CENTURYLINK - COMMUNICATION LINE
224 INDUSTRIAL DRIVE
NORTH PRAIRIE, WI 53153
ATTN: KEVIN ZICKERT
PHONE: 262-392-5200
E-MAIL: KEVIN.ZICKERT@CENTURYLINK.COM

PACKERLAND BROADBAND - COMMUNICATION LINE
105 KENT STREET
P.O. BOX 190
IRON MOUNTAIN, MI 49801
ATTN: WAYNE CRETTON
PHONE: 906-282-3768
E-MAIL: WAYNE.CRETTON@PACKERLANDBROADBAND.COM

WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY &
GAS/PETROLEUM
700 N ADAMS STREET
P.O. BOX 19001
GREEN BAY, WI 54307-9001
ATTN: LORI BUTRY
PHONE: 920-433-1703
E-MAIL: LABUTRY@INTEGRYSGROUP.COM

NE REGION SURVEY CONTACT PERSON

CORMAC MCINNIS
DEPARTMENT OF TRANSPORTATION
NORTHEAST REGION
944 VANDERPERREN WAY
GREEN BAY, WI 54304
TEL: 920-492-5638
E-MAIL: CORMAC.MCINNIS@DOT.WI.GOV

ESCANABA & LAKE SUPERIOR RAILROAD CONTACTS

RAILROAD FLAGGING AND FACILITY LOCATING CONTACT
MARY ELLEN CARMODY, AUDIT OFFICER, ADMINISTRATION SERVICE CENTER 2800
700 PERSHING STREET
PONTIAC, MI 48340
TEL: 248-452-4705
FAX: 248-452-4972
E-MAIL: MARYELLEN.CARMODY@CN.CA

MAIN RAILROAD CONTACT
JACKIE MACEWICZ, MANAGER PUBLIC WORKS
1625 DEPOT STREET
STEVENS POINT, WI 54481
TEL: 715-345-2503
FAX: 715-345-2534
E-MAIL: JACKIE.MACEWICZ@CN.CA

24 HOUR EMERGENCY RAILROAD
SIGNAL CONTACT: 1-800-616-3432

CALL BEFORE YOU DIG

ESCANABA & LAKE SUPERIOR IS NOT PART OF THE DIGGERS HOTLINE SYSTEM.
CALL ----- AT ----- WHEN DIGGING ON RAILROAD R/W

WWW.CN.CA/EN/DELIVERING-RESPONSIBLY/SAFETY/ERAISAFE/UTILITY-INSTALLATIONS

DNR AREA LIAISON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
2984 SHAWANO AVENUE
GREEN BAY, WI 54313-6727
ATTN: JAMES P. DOPERALSKI JR.
PHONE: 920-662-5119
FAX: 920-662-5159
E-MAIL: JAMES.DOPERALSKI@WISCONSIN.GOV

MARINETTE COUNTY
HIGHWAY COMMISSIONER

ERIC BURMEISTER
501 PINE STREET
PESHTIGO, WI 54157
PHONE: 715-582-3771

TOWN OF DUNBAR
CHAIRPERSON

HARRY C. SOKEL
N18956 CC CAMP ROAD
DUNBAR, WI 54119
PHONE: 715-324-5311
E-MAIL: TOWNOFDUNBAR1@GMAIL.COM

TOWN OF PEMBINE
CLERK/TREASURER

SUZANNE ALLEN
P.O. BOX 279
PEMBINE, WI 54156
PHONE: 715-324-6314



Dial 811 or (800)242-8511
www.DiggersHotline.com

EMERGENCY CONTACT NUMBERS FOR WISCONSIN POWER AND LIGHT COMPANY

ELECTRIC 24 HOUR EMERGENCY SERVICE: 1-800-862-6261
GAS 24 HOUR EMERGENCY SERVICE: 1-800-862-6263

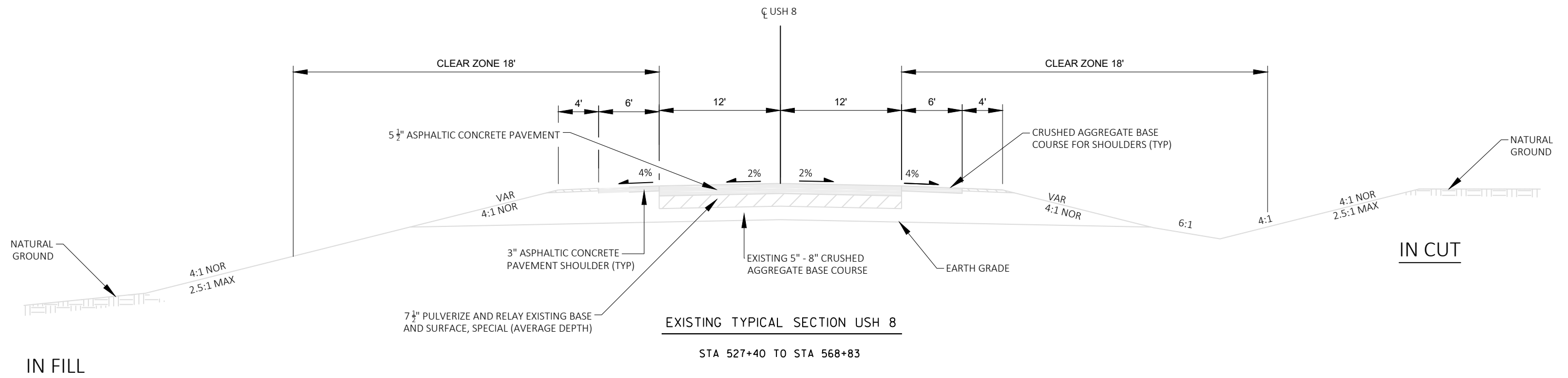
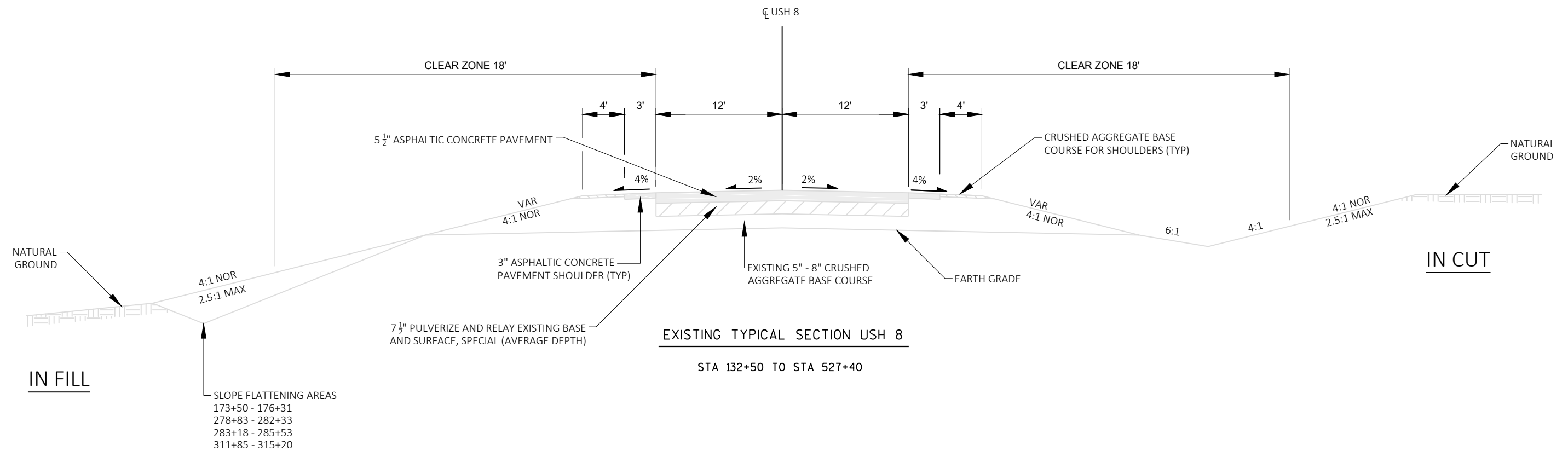
EMERGENCY CONTACT NUMBERS FOR WISCONSIN PUBLIC SERVICE

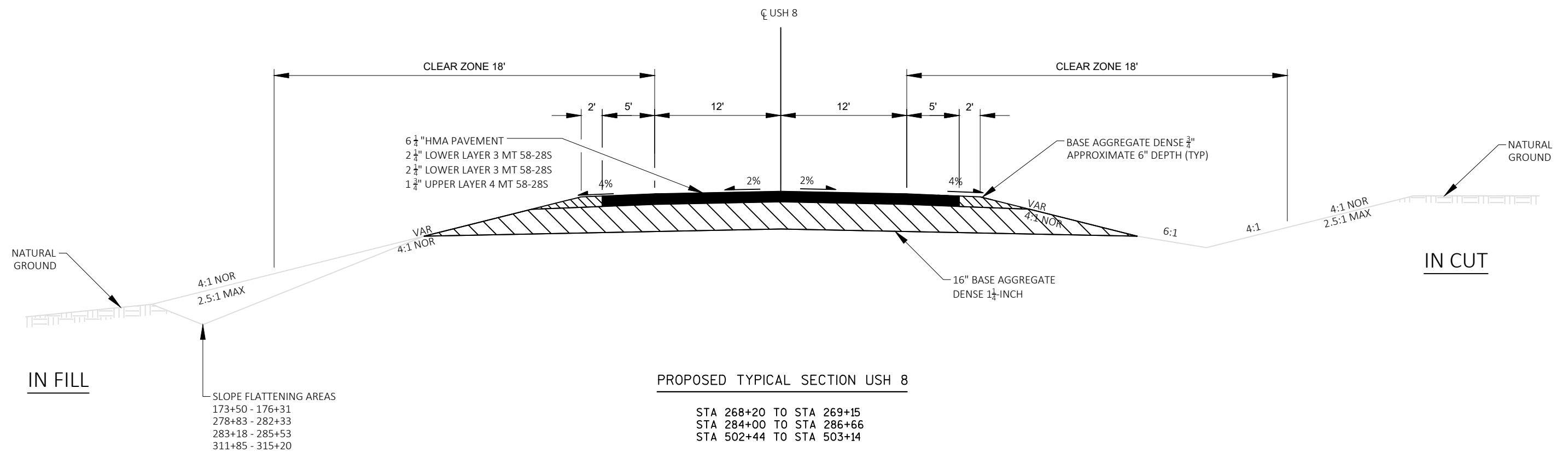
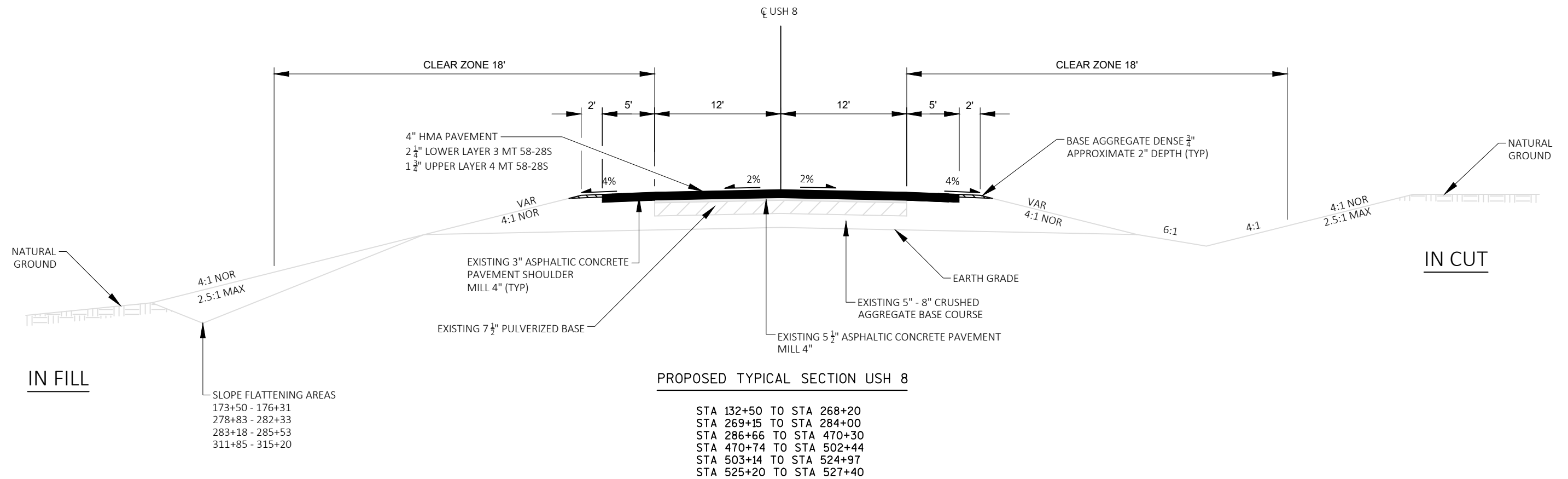
ELECTRIC 24 HOUR EMERGENCY SERVICE: 1-800-450-7240
GAS 24 HOUR EMERGENCY SERVICE: 1-800-450-7280

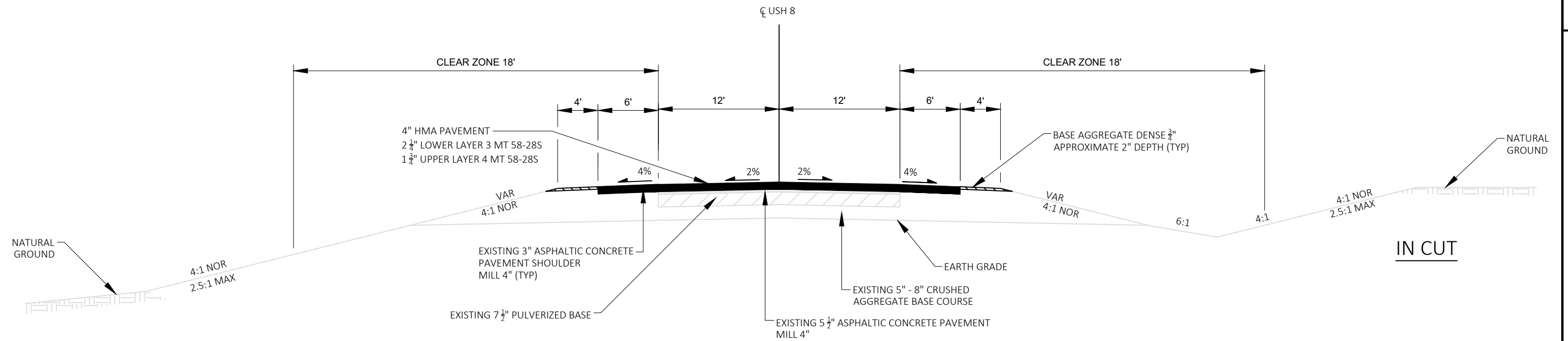
EMERGENCY CONTACT NUMBERS FOR WE ENERGIES

ELECTRIC 24 HOUR EMERGENCY SERVICE: 1-800-662-4797
GAS 24 HOUR EMERGENCY SERVICE: 1-800-261-5325







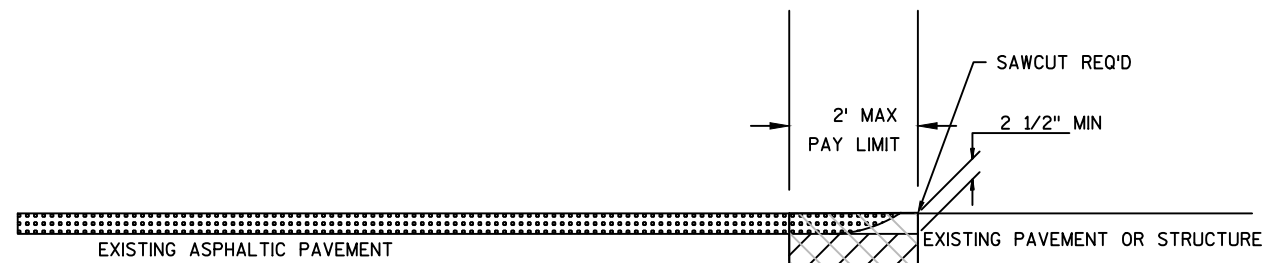


IN FILL

IN CUT

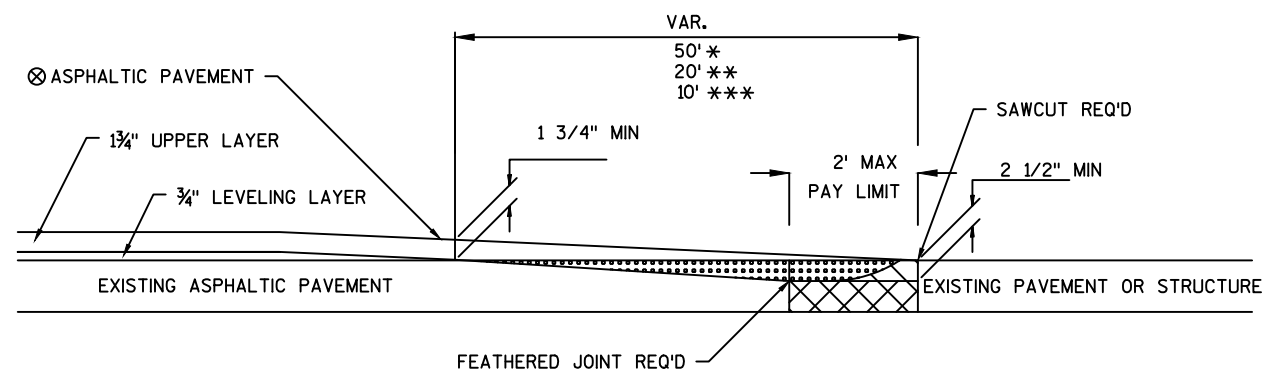
PROPOSED TYPICAL SECTION USH 8

STA 527+40 TO STA 565+86
STA 566+01 TO STA 568+83



- REMOVING ASPHALTIC SURFACE, MILLING
- REMOVING ASPHALTIC SURFACE, BUTT JOINTS (FULL DEPTH REMOVAL OPTION)
- ASPHALTIC WEDGING (FULL DEPTH REMOVAL OPTION)

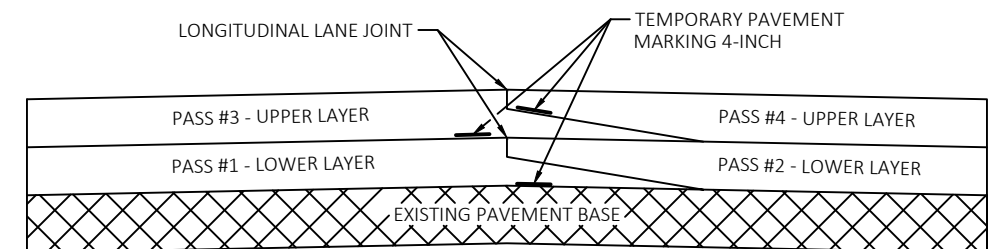
BUTT JOINT DETAIL FOR MILLED ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



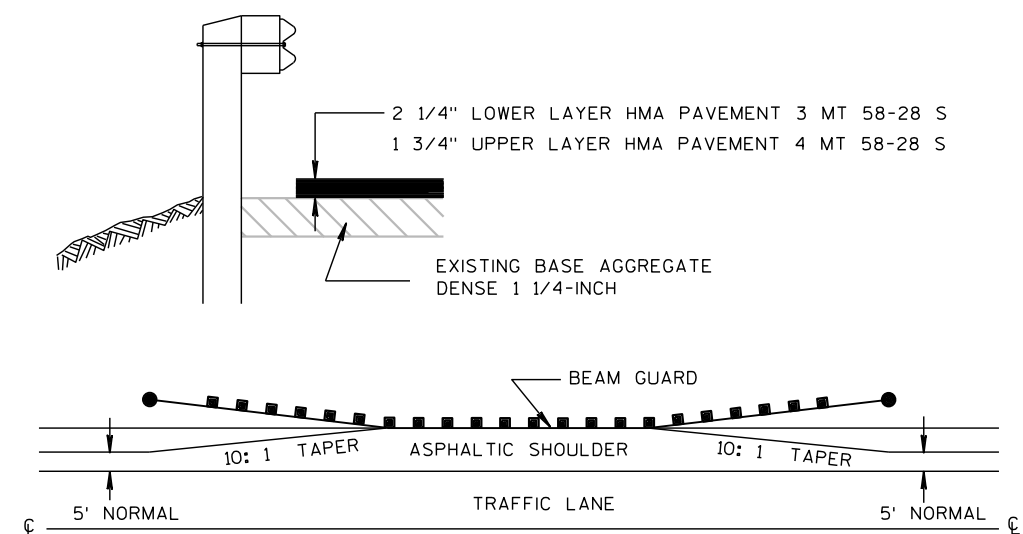
- REMOVING ASPHALTIC SURFACE, MILLING
 - REMOVING ASPHALTIC SURFACE, BUTT JOINTS (FULL DEPTH REMOVAL OPTION)
 - ASPHALTIC WEDGING (FULL DEPTH REMOVAL OPTION)
- ⊗ SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

BUTT JOINT DETAIL FOR MILLED ASPHALTIC PAVEMENTS (PROFILE CHANGE)

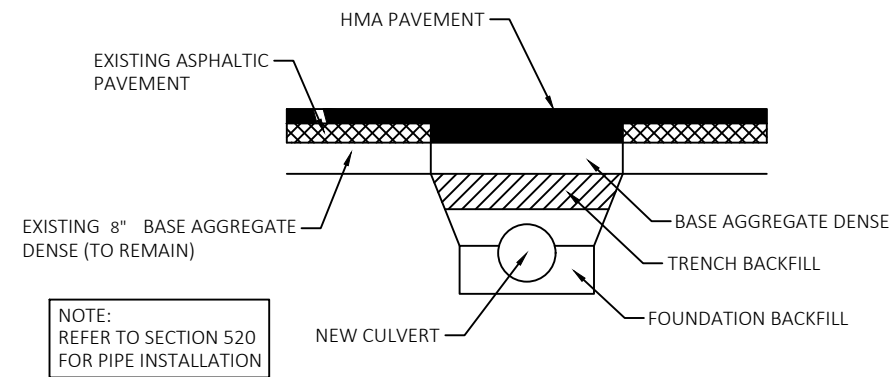
* MAINLINE
** SIDEROADS
*** PRIVATE ENTRANCES/DRIVEWAYS



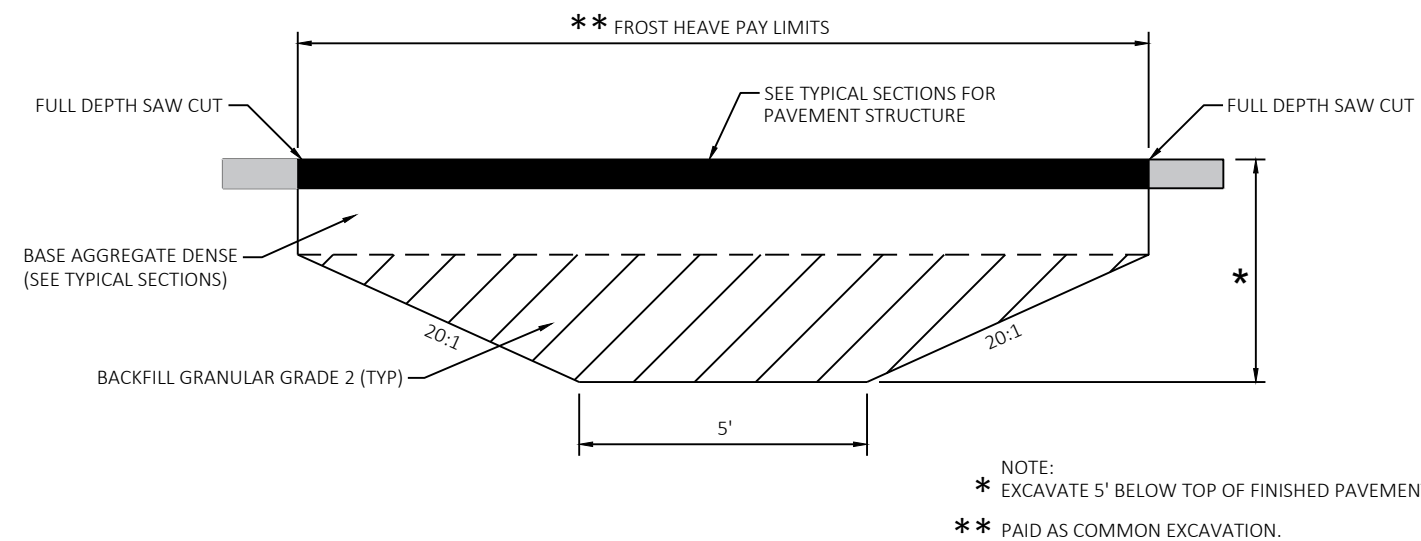
PAVEMENT MARKING DETAIL FOR TAPERED OVERLAPPING JOINTS IN HMA PAVEMENTS



DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD



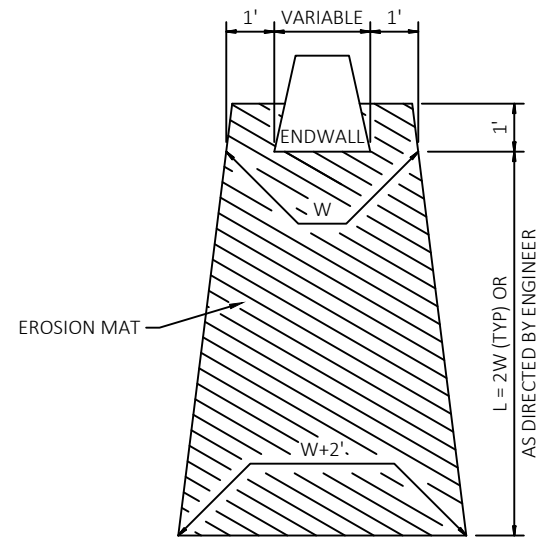
PAVEMENT AT CULVERT REPLACEMENTS



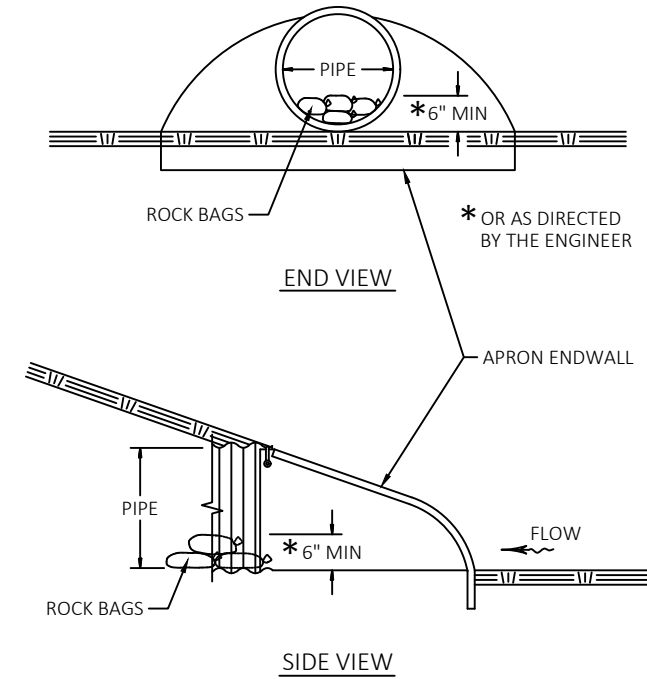
LONGITUDINAL DETAIL FOR FROST HEAVE REPAIR AREA WITHOUT PIPE

STA 284+00 - STA 286+66

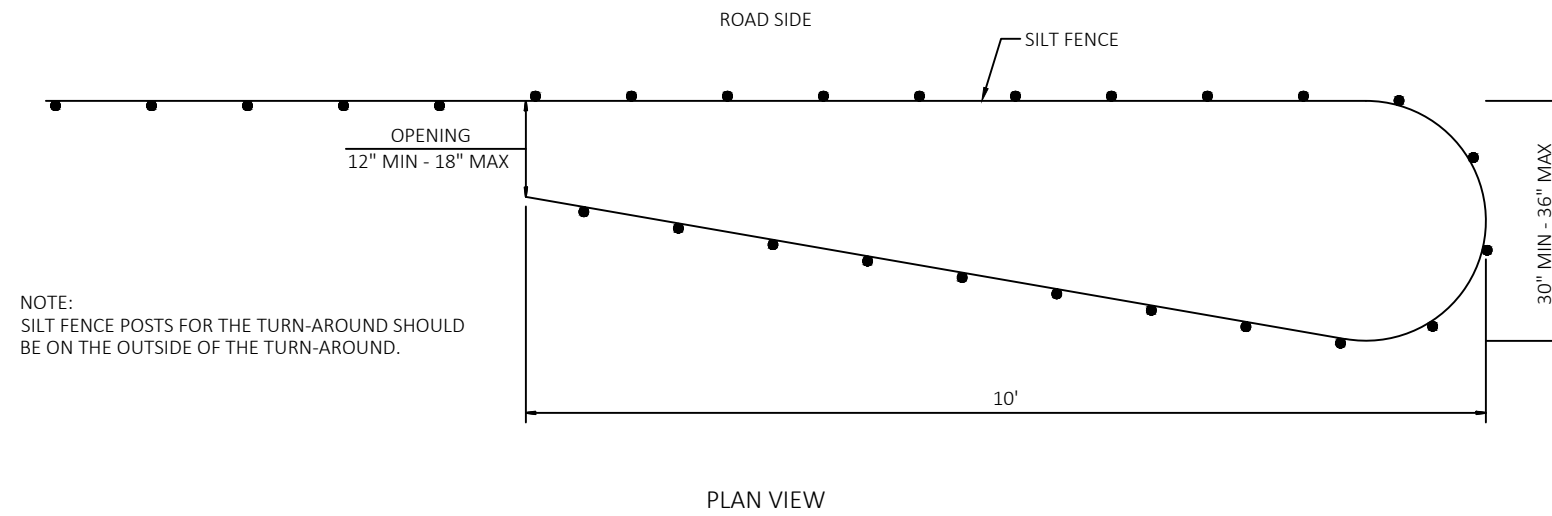




EROSION MAT TREATMENT AT CULVERTS

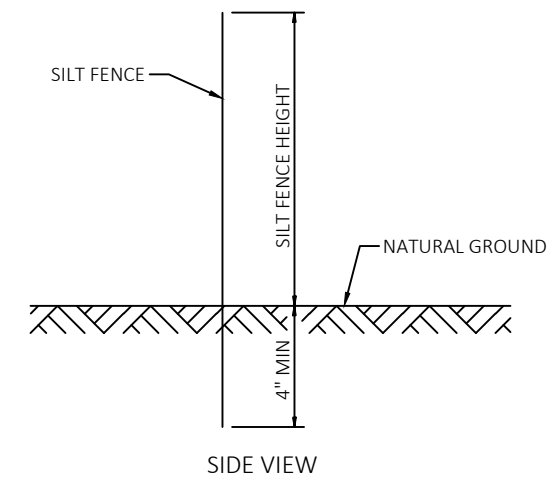


CULVERT PIPE CHECKS



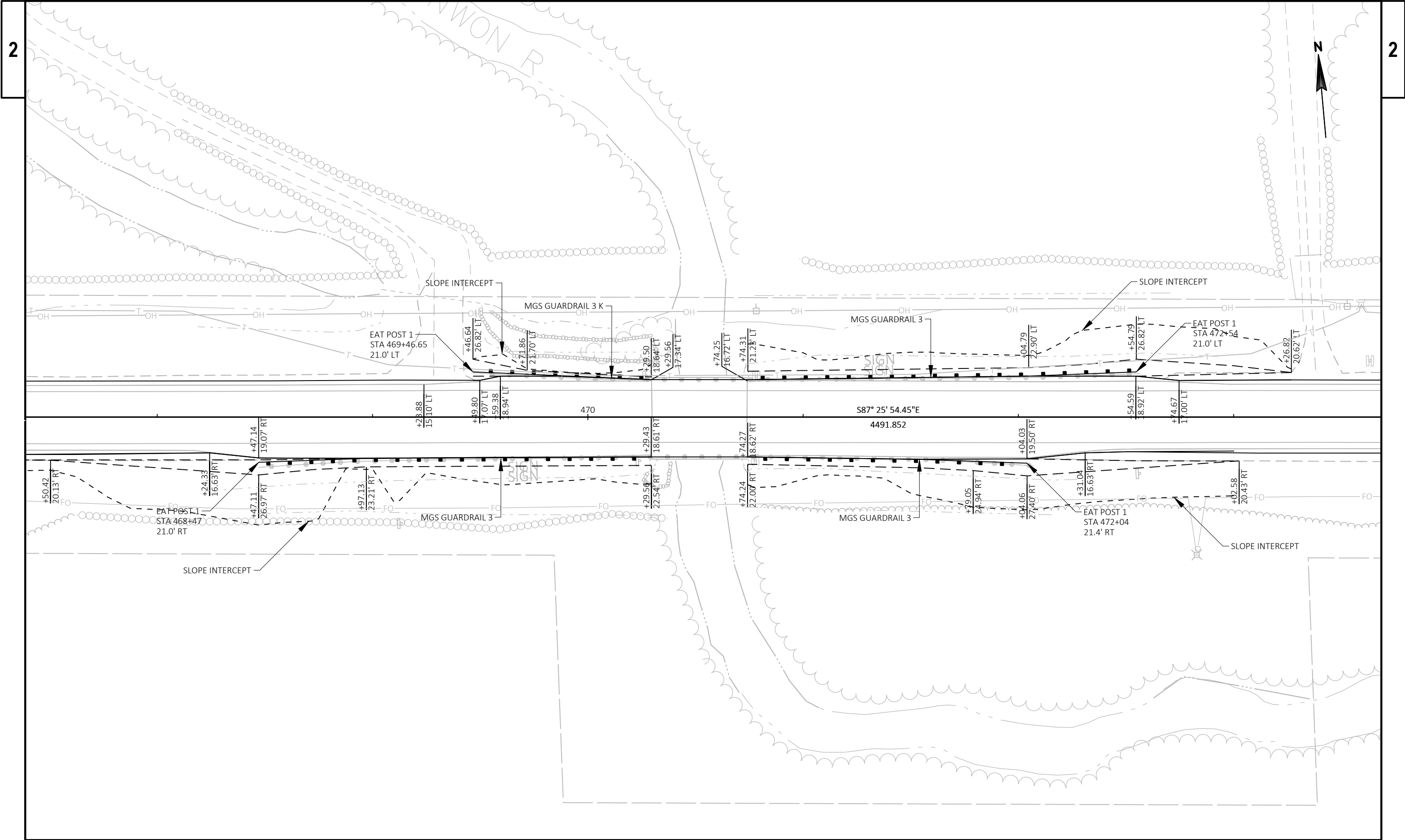
NOTE:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD
BE ON THE OUTSIDE OF THE TURN-AROUND.

PLAN VIEW

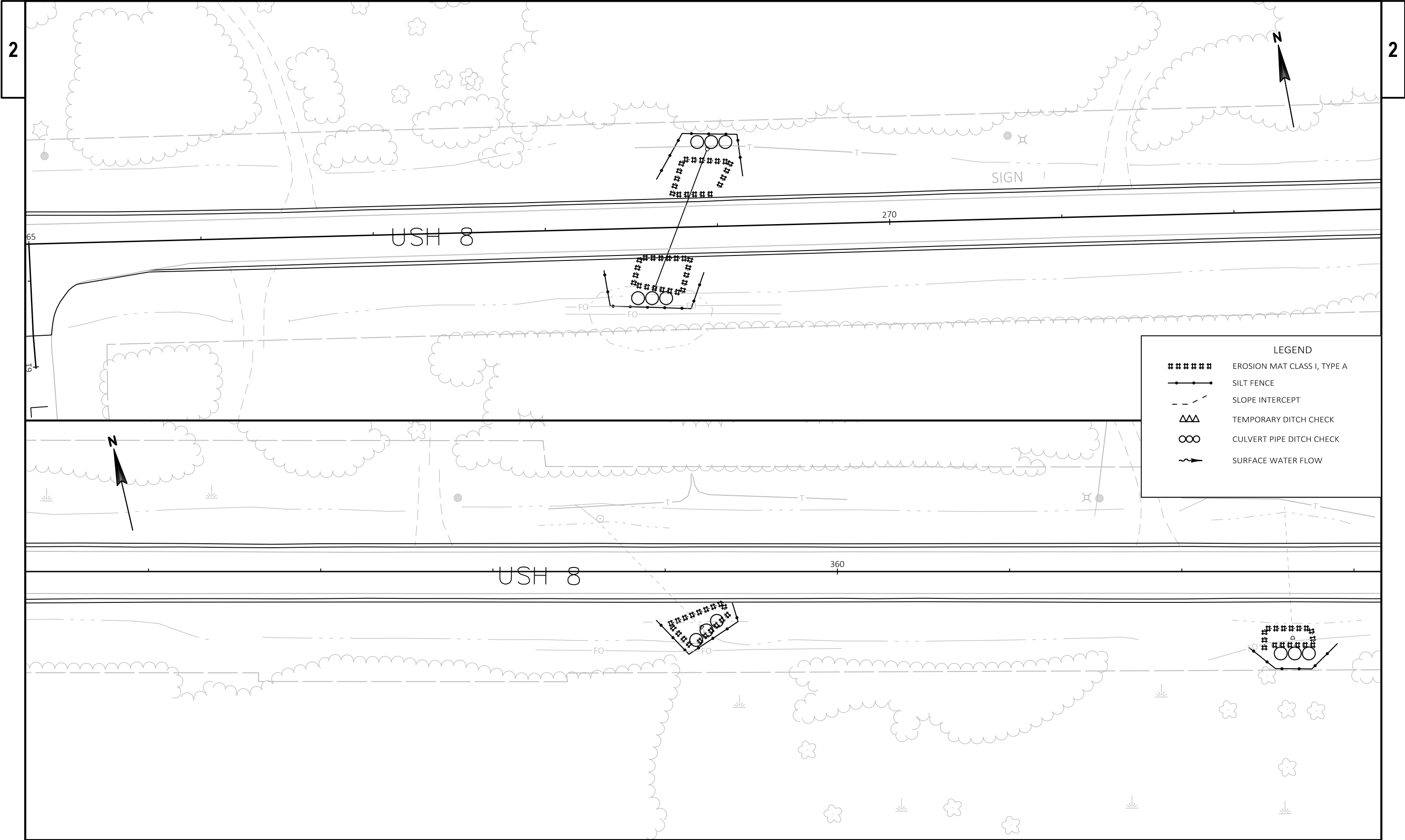


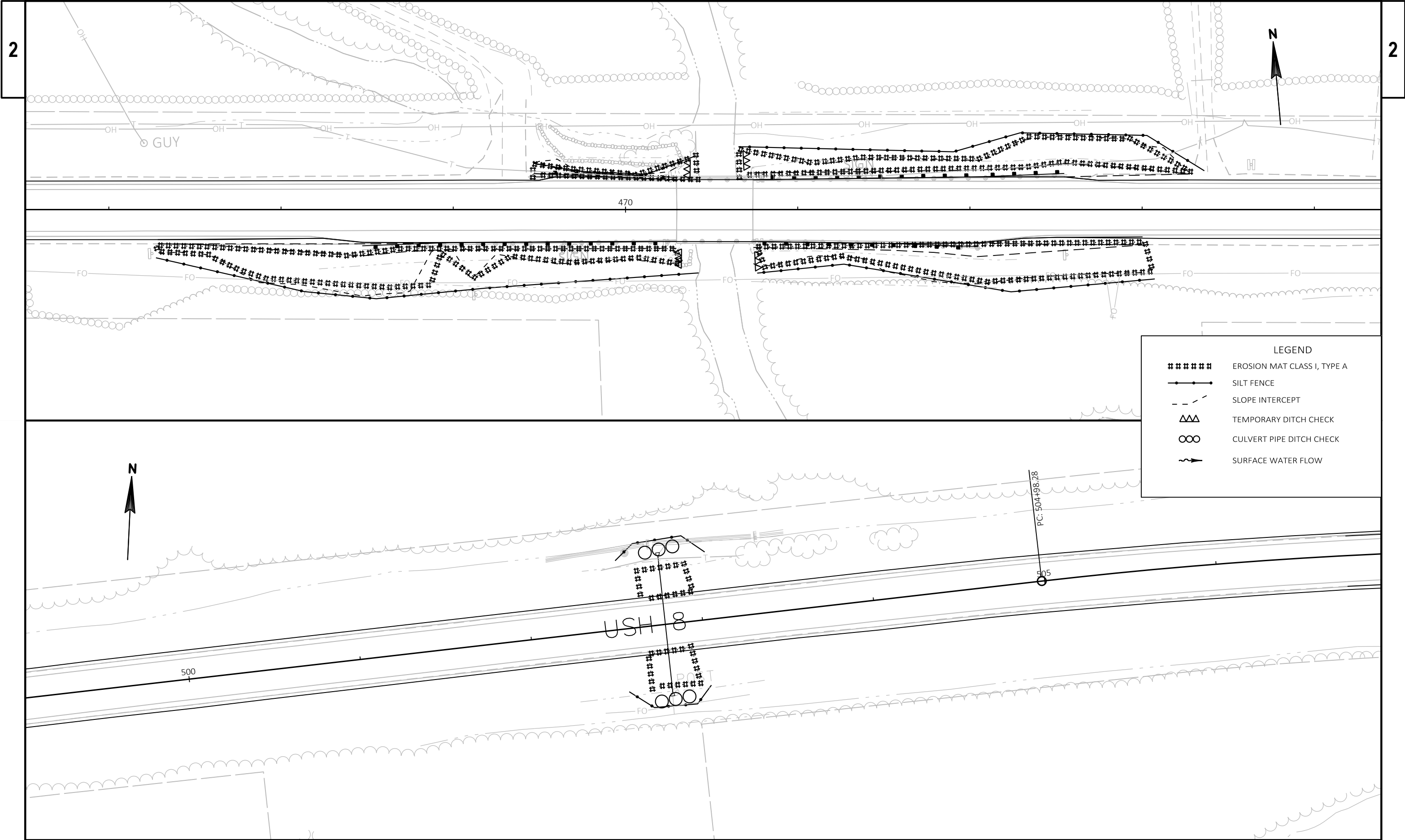
SIDE VIEW

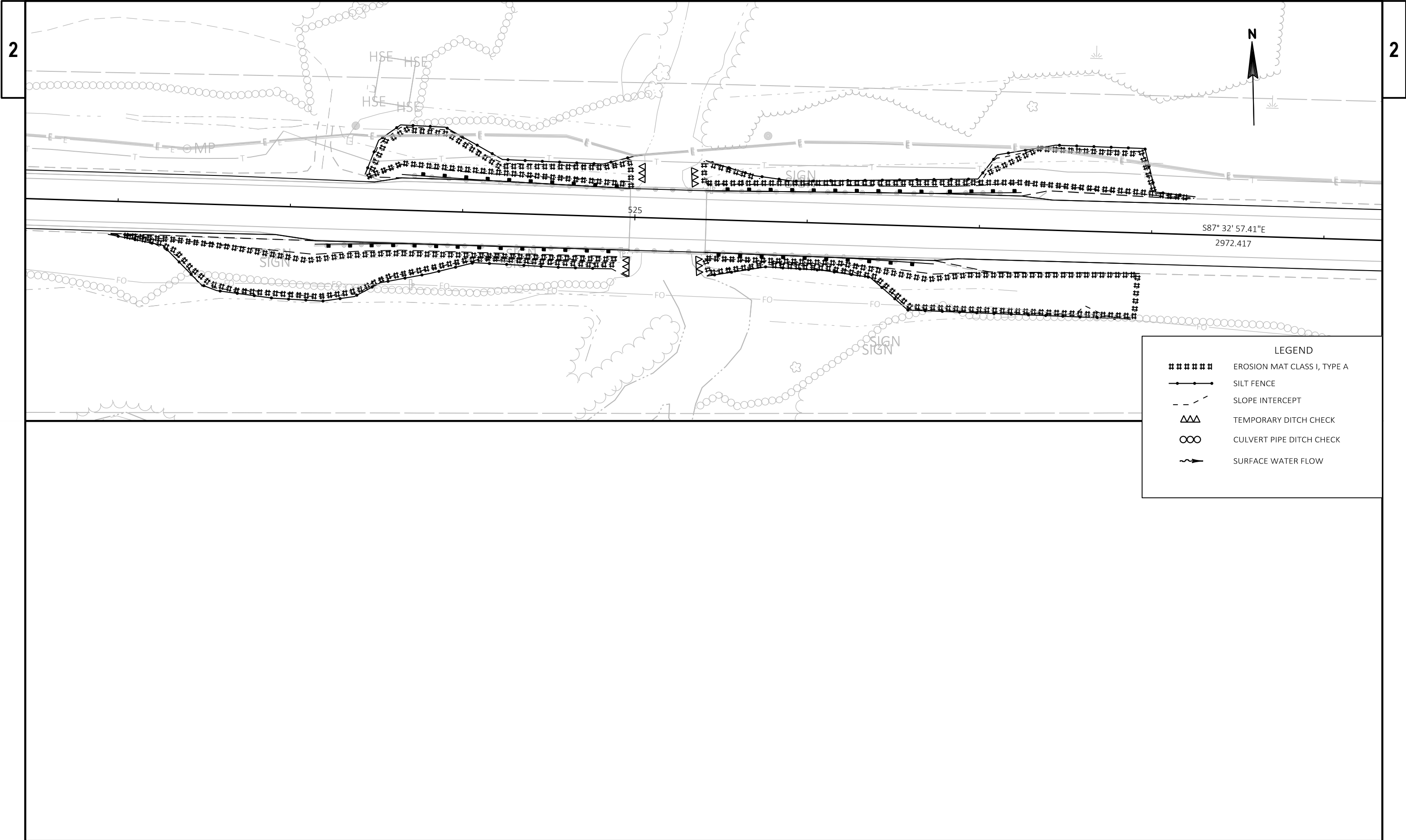
SILT FENCE TURN-AROUND DETAIL











REMOVALS

203.0100		
REMOVING SMALL PIPE		
PIPE CULVERTS		
STATION	LOCATION	EACH
CATEGORY 0010		
268+83	USH 8	1
502+78	USH 8	1
TOTAL		2

REMOVALS ASPHALTIC SURFACE BUTT JOINTS

204.0115			
BUTT JOINTS			
STATION	LOCATION	SY	REMARKS
CATEGORY 0010			
132+50	USH 8	7	WEST PROJECT LIMITS
165+50	USH 8	5	WHITE BIRCH ROAD
172+45	USH 8	4	WOODS ROAD
220+35	USH 8	6	BLUEBERRY POINT ROAD - WEST
223+07	USH 8	5	BLUEBERRY POINT ROAD - EAST
251+72	USH 8	5	3 MILE ROAD
265+00	USH 8	5	LILY LAKE ROAD
312+79	USH 8	5	1 MILE ROAD
385+15	USH 8	5	YOUNGS LAKE ROAD - NORTH
385+15	USH 8	4	YOUNGS LAKE ROAD - SOUTH
406+61	USH 8	8	LINDQUIST LAKE ROAD
421+80	USH 8	5	DIXON LANE
435+52	USH 8	9	LUNDGREN LAKE ROAD
531+34	USH 8	5	LINDQUIST LAKE ROAD
551+34	USH 8	4	PETITE LANE
554+34	USH 8	4	TONY'S LANE
565+86	USH 8	11	WEST RAILROAD APPROACH
566+01	USH 8	11	EAST RAILROAD APPROACH
558+56	USH 8	5	GEERTZ ROAD
564+98	USH 8	7	MARSH LANE
568+83	USH 8	11	EAST PROJECT LIMITS
TOTAL		131	

REMOVALS ASPHALTIC SURFACE MILLING

204.0120		
MILLING		
STATION TO STATION	LOCATION	REMARKS
CATEGORY 0010		
132+50 - 165+75	USH 8	WEST PROJECT LIMITS TO WHITE BIRCH ROAD
165+75 - 172+92	USH 8	WHITE BIRCH ROAD TO WOODS ROAD
172+92 - 223+65	USH 8	WOODS ROAD TO BLUEBERRY POINT ROAD - EAST
223+65 - 252+14	USH 8	BLUEBERRY POINT ROAD - EAST TO 3 MILE ROAD
252+14 - 265+68	USH 8	3 MILE ROAD TO LILY LAKE ROAD
265+68 - 312+17	USH 8	LILY LAKE ROAD TO 1 MILE ROAD
312+17 - 385+90	USH 8	1 MILE ROAD TO YOUNGS LAKE ROAD
385+90 - 407+00	USH 8	YOUNGS LAKE ROAD TO LINDQUIST LAKE ROAD
407+00 - 422+22	USH 8	LINDQUIST LAKE ROAD TO DIXON LANE
422+22 - 436+45	USH 8	DIXON LANE TO LUNDGREN LAKE ROAD
436+45 - 470+30	USH 8	LUNDGREN LAKE ROAD TO B-38-0071
470+74 - 524+97	USH 8	B-38-0071 TO B-38-0072
525+42 - 531+85	USH 8	B-38-0072 TO LINDQUIST LAKE ROAD
531+85 - 551+65	USH 8	LINDQUIST LAKE ROAD TO PETITE LANE
551+65 - 568+84	USH 8	PETITE LANE TO EAST PROJECT LIMITS
TOTAL		152,730

REMOVING GUARDRAIL

204.0165			
STATION TO STATION	LOCATION	LF	REMARKS
CATEGORY 0010			
468+47 - 470+29	USH 8	182	B-38-0071 - SW QUADRANT
469+47 - 470+29	USH 8	82	B-38-0071 - NW QUADRANT
470+74 - 472+04	USH 8	130	B-38-0071 - SE QUADRANT
470+74 - 472+54	USH 8	180	B-38-0071 - NE QUADRANT
523+15 - 524+98	USH 8	183	B-38-0072 - SW QUADRANT
523+64 - 524+98	USH 8	134	B-38-0072 - NW QUADRANT
525+41 - 526+74	USH 8	133	B-38-0072 - SE QUADRANT
525+41 - 527+24	USH 8	183	B-38-0072 - NE QUADRANT
TOTAL		1,025	

Division	From/To Station	Location	205.0100 Common Excavation (1)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Expanded EBS Backfill (11)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	208.0100 Borrow	Comment:
			Cut (2)	EBS Excavation (3)			Factor 1.15		Factor 1.25				
Division 1	Division 1												
Frost Heave Repair	284+00 - 286+66	USH 8	833	558	148	685	642	0	0	685			
Culvert Replacement	268+20 - 269+15	USH 8	212	251	38	174	289	0	0	174			
Guardrail Grading	468+47 - 470+30	USH 8	4	0	4	0	0	203	254	-254			
Culvert Replacement	502+44 - 503+14	USH 8	206	230	68	138	265	0	0	138			
Guardrail Grading	521+96 - 528+21	USH 8	7	0	7	0	0	236	295	-295			
Division 1 Subtotal	Division 1 Subtotal		1,262	1,039	265	997	1,195	439	549	448	448	0	
Grand Total	Grand Total		1,262	1,039	265	997	1,195	439	549	448	448	0	
Total Common Exc			2,301										

Notes:
(1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
(2) Salvaged/Unsuable Pavement Material is included in Cut.
(3) EBS Excavation to be backfilled with Select Borrow material.
(4) Salvaged/Unusable Pavement Material
(5) Available Material = Cut - Salvaged/Unusuable Pavement Material
(11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.15. Item number 208.1100
(13) Expanded Fill Factor = 1.25
Depending on selections: **Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced Marsh - Reduced EBS) * Fill Factor**
 Or Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced EBS) * Fill Factor
 Or Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced Marsh) * Fill Factor
 Or Expanded Fill = (Unexpanded Fill - Expanded Rock) * Fill Factor
(14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE DENSE

				305.0110	305.0120	305.0500	
				BASE AGGREGATE	BASE AGGREGATE	SHAPING	
				DENSE 3/4-INCH	DENSE 1 1/4-INCH	SHOULDERS	
STATION	TO STATION	LOCATION		TON	TON	STA	REMARKS
CATEGORY 0010							
132+50	- 165+75	USH 8		493	--	67	WEST PROJECT LIMITS TO WHITE BIRCH ROAD
165+75	- 172+92	USH 8		106	--	14	WHITE BIRCH ROAD TO WOODS ROAD
172+92	- 223+65	USH 8		752	--	101	WOODS ROAD TO BLUEBERRY POINT ROAD - EAST
223+65	- 252+14	USH 8		422	--	57	BLUEBERRY POINT ROAD - EAST TO 3 MILE ROAD
252+14	- 265+68	USH 8		201	--	27	3 MILE ROAD TO LILY LAKE ROAD
265+68	- 312+17	USH 8		689	--	93	LILY LAKE ROAD TO 1 MILE ROAD
268+20	- 269+15	USH 8		--	464	--	CULVERT REPLACEMENT
284+00	- 286+66	USH 8		--	1,300	--	FROST HEAVE REPAIR
312+17	- 385+90	USH 8		1,092	--	147	1 MILE ROAD TO YOUNGS LAKE ROAD
385+90	- 407+00	USH 8		313	--	42	YOUNGS LAKE ROAD TO LINDQUIST LAKE ROAD
407+00	- 422+22	USH 8		225	--	30	LINDQUIST LAKE ROAD TO DIXON LANE
422+22	- 467+28	USH 8		668	--	90	DIXON LANE TO B-38-0071
467+28	- 470+30	USH 8		86	--	6	NW AND SW QUADRANTS FOR MGS GRADING AT B-38-0071
470+74	- 473+27	USH 8		96	--	5	NE AND SE QUADRANTS FOR MGS GRADING AT B-38-0071
473+27	- 521+96	USH 8		721	--	97	B-38-0071 TO B-38-0072
502+44	- 503+14	USH 8		--	342	--	CULVERT REPLACEMENT
521+96	- 524+97	USH 8		93	--	6	NW AND SW QUADRANTS FOR MGS GRADING AT B-38-0072
525+42	- 528+22	USH 8		147	--	6	NE AND SE QUADRANTS FOR MGS GRADING AT B-38-0072
528+22	- 531+85	USH 8		108	--	7	B-38-0072 TO LINDQUIST LAKE ROAD
531+85	- 551+65	USH 8		587	--	40	LINDQUIST LAKE ROAD TO PETITE LANE
551+65	- 568+84	USH 8		509	--	34	PETITE LANE TO EAST PROJECT LIMITS
TOTAL				7,306	2,107	871	

CULVERT PIPE ITEMS

				520.9700.S	522.0430	522.1024	522.1030	633.5200				
				CULVERT PIPE	CULVERT PIPE	APRON ENDWALLS FOR	APRON ENDWALLS FOR	MARKERS				
				LINERS	REINFORCED CONCRETE	CULVERT PIPE REINFORCED	CULVERT PIPE REINFORCED	CULVERT				
				24-INCH	CLASS IV 30-INCH	CONCRETE 24-INCH	CONCRETE 30-INCH	END	INLET	DISCHARGE	SLOPE	
STATION	O/S	STATION	O/S	LF	LF	EACH	EACH	LF	ELEV	ELEV	FT/FT	REMARKS
CATEGORY 0010												
268+63 33.8' RT -		268+95 44.2' LT		--	84	--	2	2	1145.31	1142.23	0.0365	INLET = S. SIDE, DISCHARGE = N. SIDE
359+21 33.7' RT -		N/A N/A		--	--	1	--	1	--	--	--	--
362+64 37.7' RT -		N/A N/A		--	--	1	--	1	--	--	--	--
383+62 97.3' RT		383+62 76.1' LT		128	--	--	--	2	1043.39	1031.79	0.0906	INLET = S. SIDE, DISCHARGE = N. SIDE
502+78 40.3' RT -		502+79 40.4' LT		--	91	--	2	2	959.65	959.27	0.0042	INLET = N. SIDE, DISCHARGE = S. SIDE
TOTAL				128	175	2	4	8				

ASPHALTIC MATERIALS

		455.0605	460.4110.S	460.6223	460.6224	465.0110	465.0425	465.0475		
			REHEATING HMA	HMA PAVEMENT	HMA PAVEMENT	ASPHALTIC	ASPHALTIC SHOULDER	ASPHALTIC CENTERLINE		
		TACK	PAVEMENT	LOWER LAYER	UPPER LAYER	SURFACE	RUMBLE STRIPS	RUMBLE STRIPS		
		COAT	LONGITUDINAL JOINT	3 MT 58-28S	4 MT 58-28S	PATCHING	2 LANE RURAL	2 LANE RURAL		
STATION TO	STATION	LOCATION	GAL	LF	TON	TON	TON	LF	LF	REMARKS
CATEGORY 0010										
132+50	- 165+75	USH 8	1,516	6,650	1,689	1,216	--	6,650	3,325	WEST PROJECT LIMITS TO WHITE BIRCH ROAD
165+75	- 172+92	USH 8	346	1,434	386	278	--	1,434	717	WHITE BIRCH ROAD TO WOODS ROAD
172+92	- 223+65	USH 8	2,332	10,146	2,600	1,871	--	10,146	5,073	WOODS ROAD TO BLUEBERRY POINT ROAD - EAST
223+65	- 252+14	USH 8	1,318	5,698	1,469	1,057	--	5,698	2,849	BLUEBERRY POINT ROAD - EAST TO 3 MILE ROAD
252+14	- 265+68	USH 8	754	2,708	840	605	--	2,708	1,354	3 MILE ROAD TO LILY LAKE ROAD
265+68	- 312+17	USH 8	2,133	9,298	2,377	1,711	--	9,298	4,649	LILY LAKE ROAD TO 1 MILE ROAD
312+17	- 385+90	USH 8	3,388	14,746	3,776	2,717	--	14,746	7,373	1 MILE ROAD TO YOUNGS LAKE ROAD
385+90	- 407+00	USH 8	981	4,220	1,093	787	--	4,220	2,110	YOUNGS LAKE ROAD TO LINDQUIST LAKE ROAD
407+00	- 422+22	USH 8	711	3,044	792	570	--	3,044	1,522	LINDQUIST LAKE ROAD TO DIXON LANE
422+22	- 436+45	USH 8	690	2,846	769	553	--	2,846	1,423	DIXON LANE TO LUNDGREN LAKE ROAD
436+45	470+30	USH 8	1,538	6,770	1,714	1,233	--	6,770	3,385	LUNDGREN LAKE ROAD TO B-38-0071
470+74	- 524+97	USH 8	2,460	10,846	2,741	1,973	--	10,846	5,423	B-38-0071 TO B-38-0072
525+42	- 531+85	USH 8	334	1,286	372	268	--	1,286	643	B-38-0072 TO LINDQUIST LAKE ROAD
531+85	- 551+65	USH 8	953	3,960	1,062	765	--	3,960	1,980	LINDQUIST LAKE ROAD TO PETITE LANE
551+65	- 568+84	USH 8	871	3,438	971	699	--	3,438	1,719	PETITE LANE TO EAST PROJECT LIMITS
UNDISTRIBUTED			--	--	--	--	200	--	--	AS NEEDED; LOCATIONS TO BE DETERMINED IN FIELD
TOTAL			20,324	87,090	22,652	16,301	200	87,090	43,545	

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

				211.0400	
STATION TO		STATION	LOCATION	STA	REMARKS
CATEGORY 0010					
132+50	-	268+20	USH 8	136	WEST PROJECT LIMITS TO WHITE BIRCH ROAD
269+15	-	284+00	USH 8	15	WHITE BIRCH ROAD TO WOODS ROAD
286+66	-	470+30	USH 8	184	WOODS ROAD TO BLUEBERRY POINT ROAD - EAST
470+74	-	502+44	USH 8	32	BLUEBERRY POINT ROAD - EAST TO 3 MILE ROAD
503+14	-	524+97	USH 8	22	3 MILE ROAD TO LILY LAKE ROAD
525+20	-	527+40	USH 8	2	LILY LAKE ROAD TO 1 MILE ROAD
TOTAL				391	

GUARDRAIL						
		614.0010	614.2300	614.2330	614.2500	614.2610
		BARRIER SYSTEM			MGS THRIE	MGS GUARDRAIL
		GRADING	MGS	MGS	BEAM	TERMINAL
		SHAPING FINISHING	GUARDRAIL 3	GUARDRAIL 3 K	TRANSITION	EAT
STATION	TO STATION	EACH	LF	LF	LF	EACH
CATEGORY 0010						
468+47	- 470+30	1	91	--	39	1
469+47	- 470+30	1	--	12	27	1
470+74	- 472+04	1	38	--	39	1
470+74	- 472+54	1	88	--	39	1
523+15	- 524+97	1	90	--	39	1
523+64	- 524+97	1	41	--	39	1
525+41	- 526+74	1	41	--	39	1
525+41	- 527+24	1	91	--	39	1
TOTAL		8	480	12	300	8

BARRIER SYSTEM GRADING, SHAPING, AND FINISHING

		* EXCAVATION		* SALV.	FERTILIZER		*CONSTRUCTION STAKING
		COMMON	* BORROW	TOPSOIL	TYPE B	* SEEDING	* MULCHING
STATION	TO STATION	CY	CY	SY	CWT	LB	SY
CATEGORY 0010							
468+47	- 470+30	4	254	1,018	0.6	18	1018
521+96	- 528+21	7	295	558	0.4	10	558
TOTAL		11	549	1,576	1.0	28	1576

* ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY.

WATER		
		624.0100
STATION TO STATION	MGAL	LOCATION
CATEGORY 0010		
COMPACTION AND DUST CONTROL		
268+20 - 269+15	7	CULVERT REPLACEMENT
284+00 - 286+66	18	FROST HEAVE REPAIR
502+44 - 503+14	5	CULVERT REPLACEMENT
TOTAL		30

SAWING

		690.0150
		SAWING
		ASPHALT
STATION	LOCATION	LF
CATEGORY 0010		
284+00	USH 8	30
286+66	USH 8	30
268+20	USH 8	30
269+15	USH 8	30
502+44	USH 8	30
503+14	USH 8	30
TOTAL		180

EROSION CONTROL

			625.0500	628.1504	628.1520	628.1905	628.1910	628.2002	628.7504	628.7555	628.7570
			SALVAGED	SILT	SILT	MOBILIZATIONS	MOBILIZATIONS	EROSION MAT	TEMPORARY	CULVERT	
			TOPSOIL	FENCE	FENCE	EROSION	EROSION	CLASS I	DITCH	PIPE	ROCK
					MAINTENANCE	CONTROL	CONTROL	TYPE A	CHECKS	CHECKS	BAGS
STATION	TO	STATION	LOCATION	SY	LF	LF	EACH	EACH	SY	EACH	EACH
268+33	-	268+91	CULVERT REPLACEMENT - S. SIDE	58	90	90	--	--	58	--	5
268+65	-	269+15	CULVERT REPLACEMENT - N. SIDE	58	90	90	--	--	58	--	5
358+94	-	359+39	ENDWALL REPLACEMENT	44	70	70	--	--	44	--	3
362+39	-	362+90	ENDWALL REPLACEMENT	44	70	70	--	--	44	--	3
467+28	-	470+30	SW QUAD B-38-0071	--	320	320	--	--	390	1	--
469+47	-	470+30	NW QUAD B-38-0071	--	100	100	--	--	30	1	--
470+74	-	473+03	SE QUAD B-38-0071	--	235	235	--	--	309	1	--
470+74	-	473+27	NE QUAD B-38-0071	--	280	280	--	--	290	1	--
502+53	-	503+00	CULVERT REPLACEMENT - S. SIDE	56	60	60	--	--	56	--	5
502+53	-	503+00	CULVERT REPLACEMENT - N. SIDE	56	60	60	--	--	56	--	5
521+96	-	524+97	SW QUAD B-38-0072	--	310	310	--	--	143	1	--
523+45	-	524+97	NW QUAD B-38-0072	--	180	180	--	--	91	1	--
525+41	-	527+94	SE QUAD B-38-0072	--	255	255	--	--	159	1	--
525+41	-	528+22	NE QUAD B-38-0072	--	313	313	--	--	165	1	--
UNDISRIBUTED			PROJECT	--	--	--	4	2	--	2	4
TOTAL				317	2,433	2,433	4	2	1,894	10	30
											50

LANDSCAPING

				629.0210	630.0140
				FERTILIZER	SEEDING
				TYPE B	MIXTURE NO. 40
STATION	TO	STATION	LOCATION	CWT	LB
268+33	-	268+91	CULVERT REPLACEMENT - S. SIDE	0.04	1.1
268+65	-	269+15	CULVERT REPLACEMENT - N. SIDE	0.04	1.1
358+94	-	359+39	ENDWALL REPLACEMENT	0.03	0.8
362+39	-	362+90	ENDWALL REPLACEMENT	0.03	0.8
502+53	-	503+00	CULVERT REPLACEMENT - S. SIDE	0.04	1.0
502+53	-	503+00	CULVERT REPLACEMENT - N. SIDE	0.04	1.0
TOTAL				0.20	6

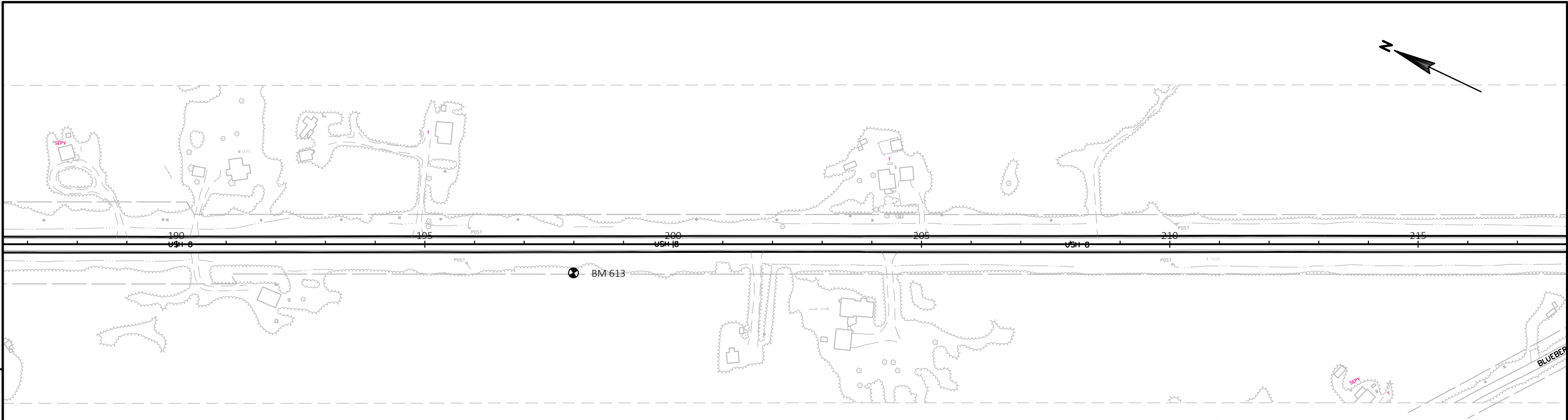
TRAFFIC CONTROL										
LOCATION/STAGE	643.0300	643.0715			643.0900			643.1050	643.0310.S	REMARKS
	TRAFFIC	TRAFFIC CONTROL	APPROX.		TRAFFIC	APPROX.		TRAFFIC	TEMP PORTABLE	
	CONTROL	WARNING LIGHTS	SERVICE		CONTROL	SERVICE		CONTROL	RUMBLE	
	DRUMS	TYPE C	PERIODS	NO.	SIGNS	PERIODS		PCMS	STRIPS	
	DAY	DAY	DAYS		DAY	DAYS	NO.	DAY	LS	
CATEGORY 0010										
ADVANCE WARNING										
PROJECT LIMITS, EB	--	--	65	5	325	7	1	7	1	INSTALL PCMS PRIOR TO START OF CONSTRUCTION
PROJECT LIMITS, WB	--	--	65	5	325	7	1	7	1	INSTALL PCMS PRIOR TO START OF CONSTRUCTION
SIDE ROADS	--	--								
WHITE BIRCH ROAD	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
WOODS ROAD	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
BLUEBERRY POINT ROAD	--	--	65	2	130	--	--	--	--	ADVANCE WARNING
3 MILE ROAD	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
LILY LAKE ROAD	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
1 MILE ROAD	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
WOODLAND LANE	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
MINNIE LAKE DRIVE	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
YOUNGS LAKE ROAD	--	--	65	2	130	--	--	--	--	ADVANCE WARNING
LINDQUIST LAKE ROAD	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
DIXON LANE	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
LUNDGREN LAKE ROAD (WEST)	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
LUNDGREN LAKE ROAD (EAST)	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
PETITE LANE	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
MARSH LANE	--	--	65	1	65	--	--	--	--	ADVANCE WARNING
USH 141	--	--	65	2	130	--	--	--	--	ADVANCE WARNING
UNDISRIBUTED QUANTITY	500	125	--	--	--	--	--	--	--	
	500	125			1,885			14	2	

PAVEMENT MARKING

			646.1040	646.4520	646.5320	648.0100	649.0120
			MARKING LINE GROOVED	MARKING LINE	RAILROAD	LOCATING	TEMPORARY MARKING LINE
			WET REF EPOXY 4-INCH	SAME DAY EPOXY 4-INCH	CROSSINGS	NO-PASSING	EPOXY 4-INCH
			WHITE	YELLOW	EPOXY	ZONES	YELLOW
STATION TO STATION	LOCATION		LF	LF	EACH	MI	LF
CATEGORY 0010							
132+50 - 165+75	WEST PROJECT LIMITS TO WHITE BIRCH ROAD		6,653	3,445	--	0.63	6,890
165+75 - 172+92	WHITE BIRCH ROAD TO WOODS ROAD		1,267	1,267	--	0.14	2,534
172+92 - 223+65	WOODS ROAD TO BLUEBERRY POINT ROAD - EAST		10,296	3,742	--	0.96	7,484
223+65 - 252+14	BLUEBERRY POINT ROAD - EAST TO 3 MILE ROAD		5,702	4,653	--	0.54	9,306
252+14 - 265+68	3 MILE ROAD TO LILY LAKE ROAD		2,798	2,204	--	0.26	4,408
265+68 - 312+17	LILY LAKE ROAD TO 1 MILE ROAD		9,187	5,359	--	0.88	10,718
312+17 - 385+90	1 MILE ROAD TO YOUNGS LAKE ROAD		14,784	10,626	--	1.40	21,252
385+90 - 407+00	YOUNGS LAKE ROAD TO LINDQUIST LAKE ROAD		4,330	4,330	--	0.40	8,660
407+00 - 422+22	LINDQUIST LAKE ROAD TO DIXON LANE		2,957	1,848	--	0.29	3,696
422+22 - 436+45	DIXON LANE TO LUNDGREN LAKE ROAD		2,851	1,861	--	0.27	3,722
436+45 - 470+30	LUNDGREN LAKE ROAD TO B-38-0071		6,758	3,062	--	0.64	6,124
470+30 - 524+97	B-38-0071 TO B-38-0072		10,930	5,431	--	1.04	10,862
525+42 - 531+85	B-38-0072 TO LINDQUIST LAKE ROAD		1,320	165	--	0.12	330
531+85 - 551+65	LINDQUIST LAKE ROAD TO PETITE LANE		4,013	924	--	0.38	1,848
551+65 - 568+84	PETITE LANE TO EAST PROJECT LIMITS		3,696	3,181	2	0.33	6,362
TOTAL			87,542	52,098	2	8.26	104,196

CONSTRUCTION STAKING

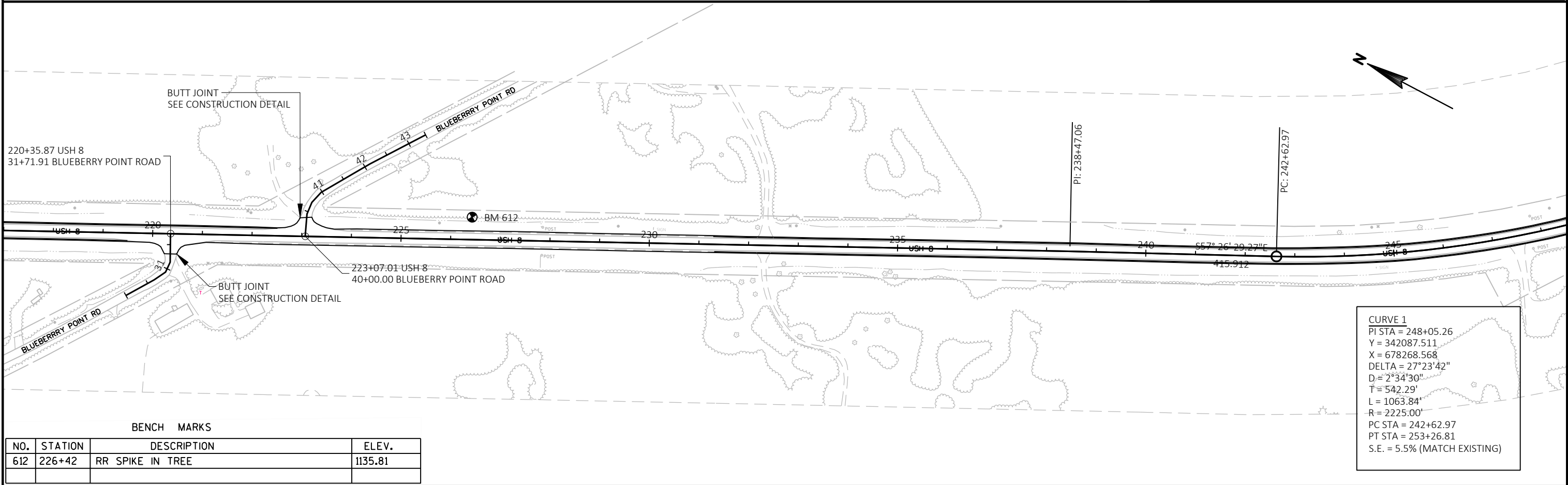
		650.4500	650.5000	650.6000	650.8000	650.9910	
		CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	
		STAKING	STAKING	STAKING	STAKING RESURFACING	STAKING SUPPLEMENTAL	
		SUBGRADE	BASE	PIPE CULVERTS	REFERENCE	CONTROL (PROJECT)	
STATION TO STATION	LOCATION	LF	LF	EACH	LF	LS	REMARKS
CATEGORY 0010							
132+50 - 568+83	USH 8	--	--	--	43,633	--	PROJECT LENGTH
268+63 - 268+95	USH 8	--	--	2	--	--	CULVERT REPLACEMENTS
284+00 - 286+66	USH 8	266	266	--	--	--	FROST HEAVE REPAIR
UNDISTRIBUTED	USH 8	--	--	--	--	1	PROJECT
TOTAL		266	266	2	43,633	1	



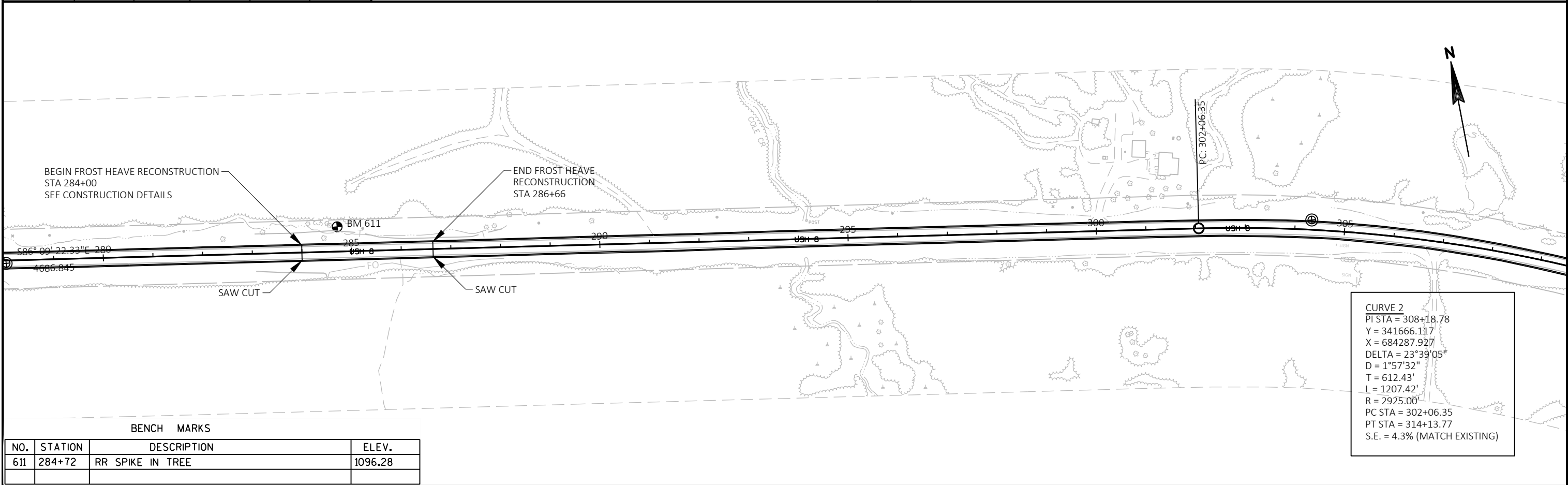
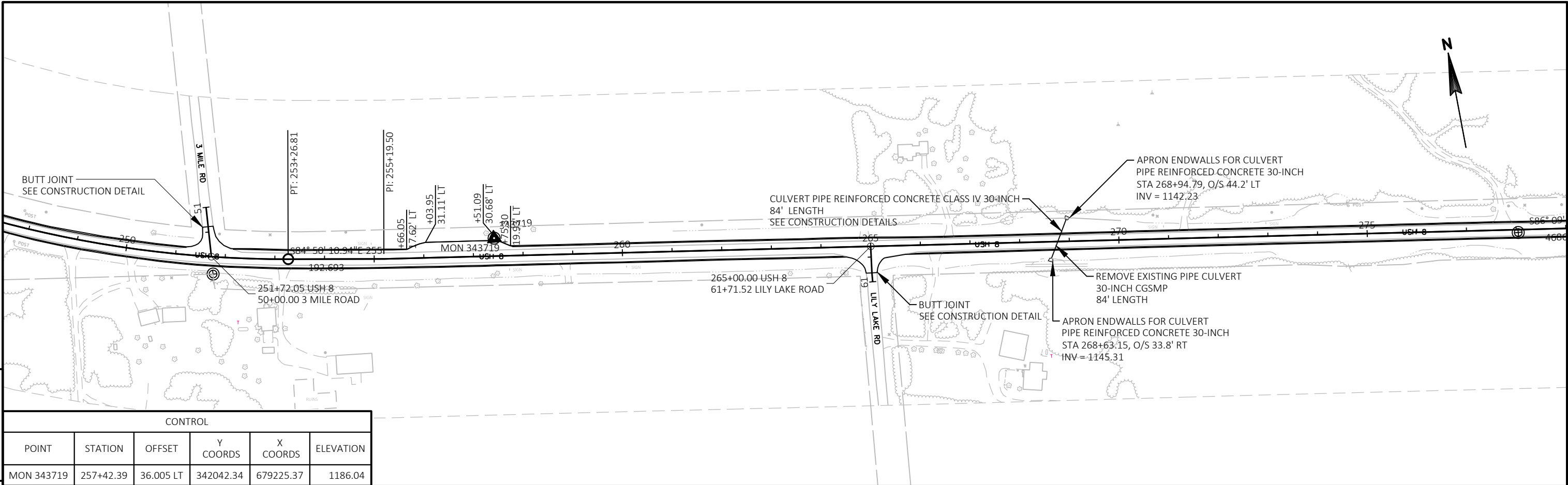
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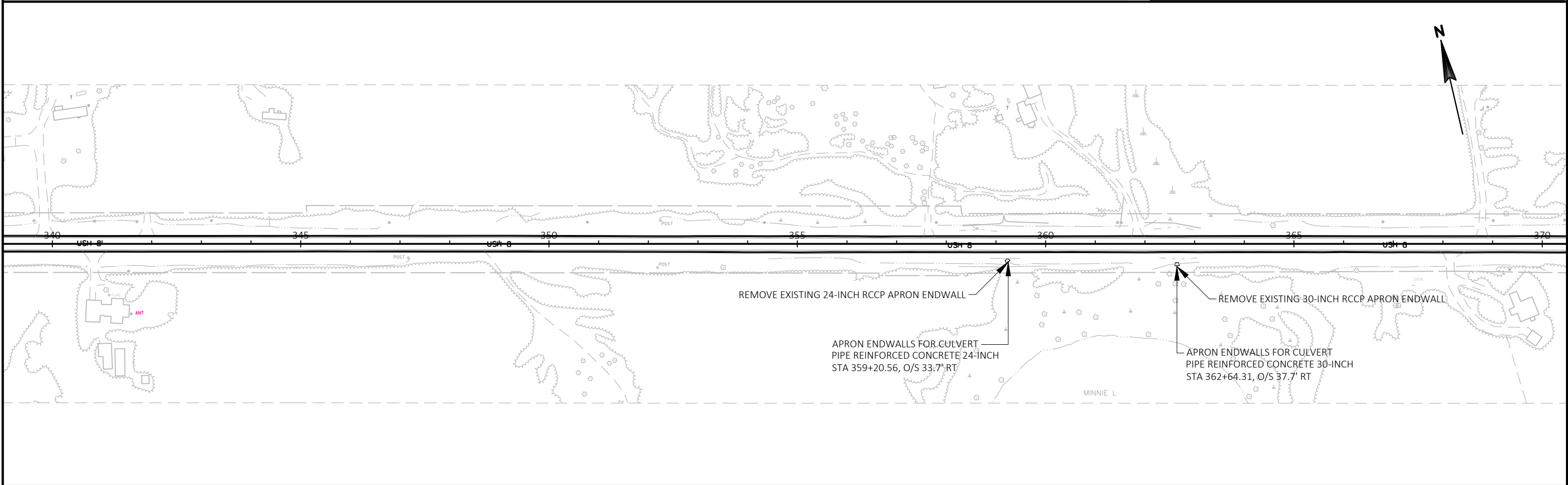
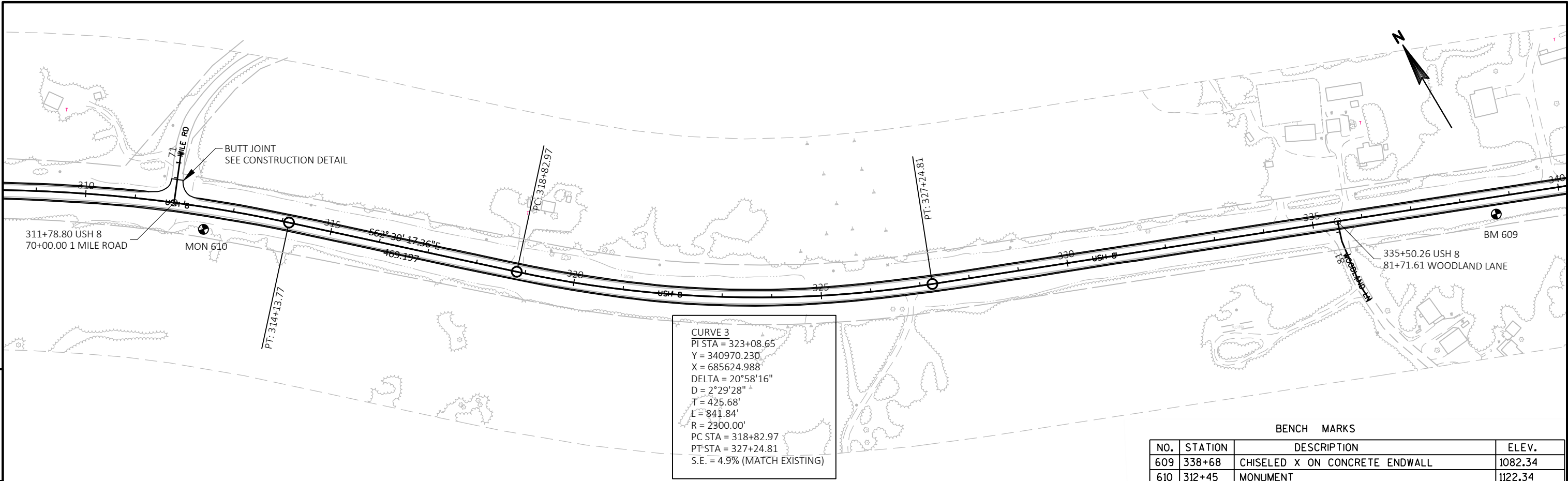
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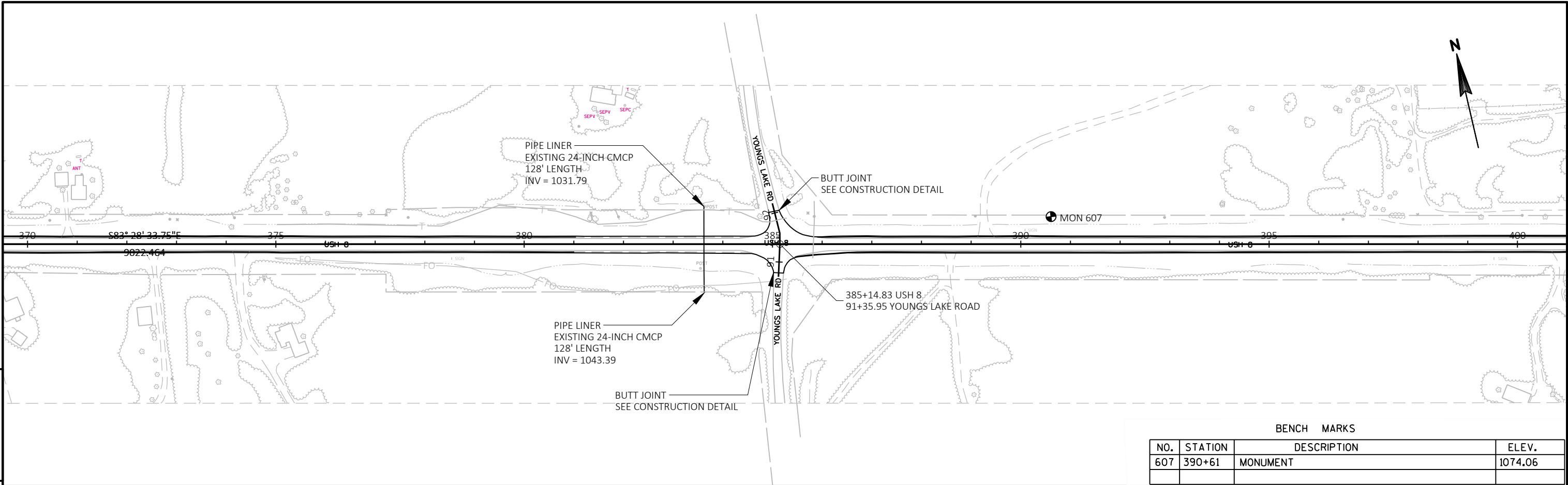
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
613	198+00	RR SPIKE IN TREE	1107.59



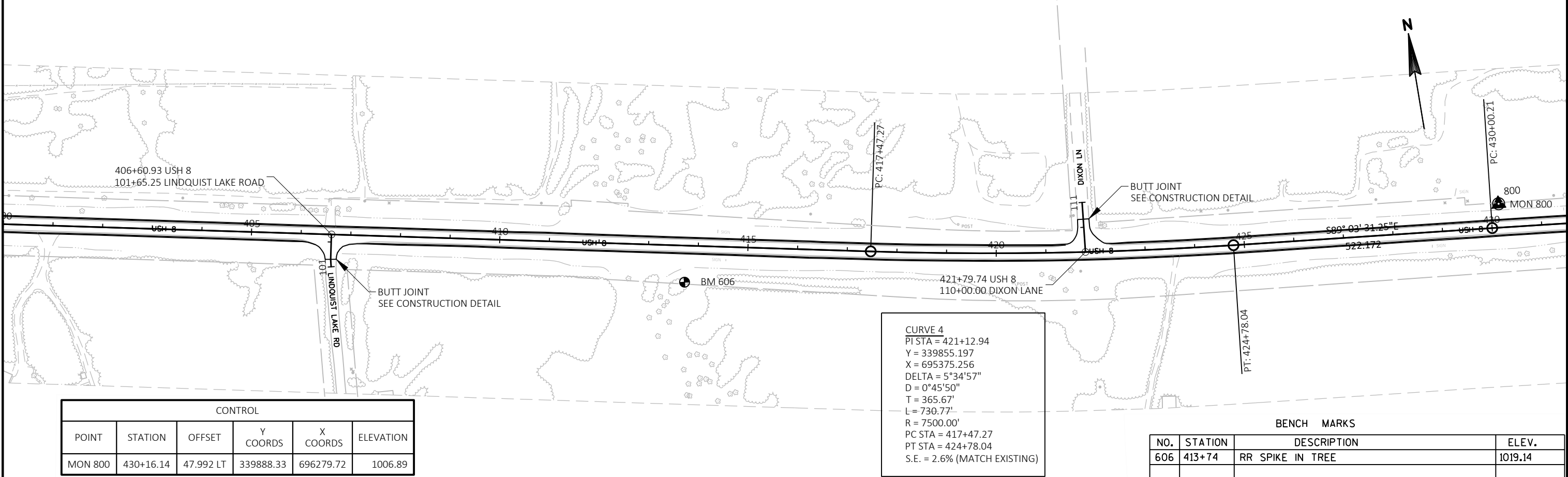
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
612	226+42	RR SPIKE IN TREE	1135.81





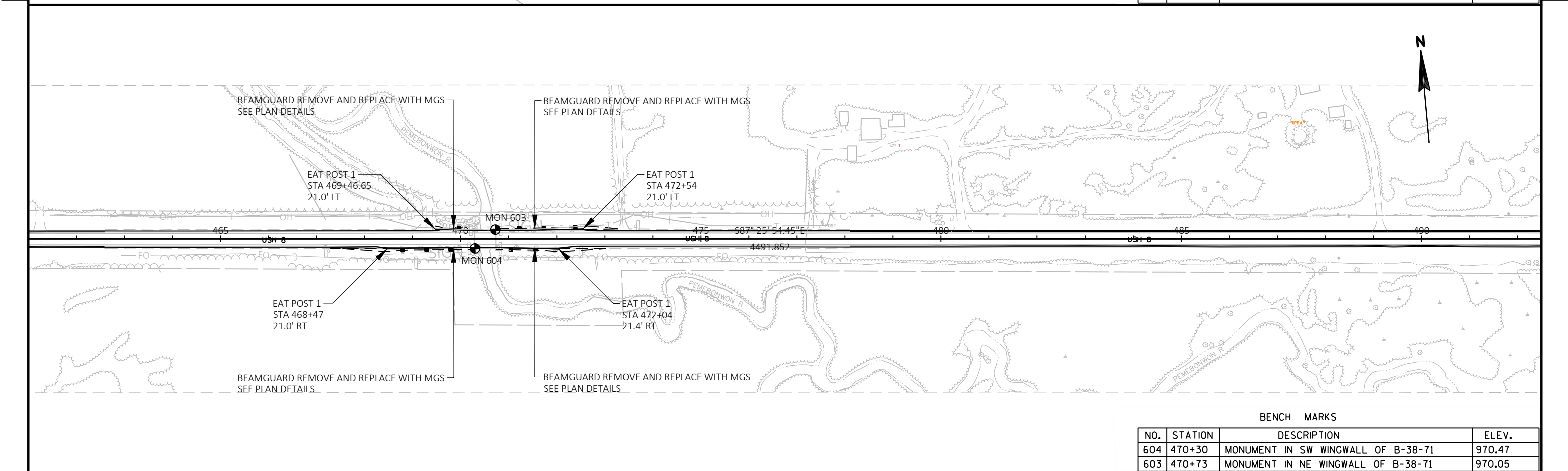
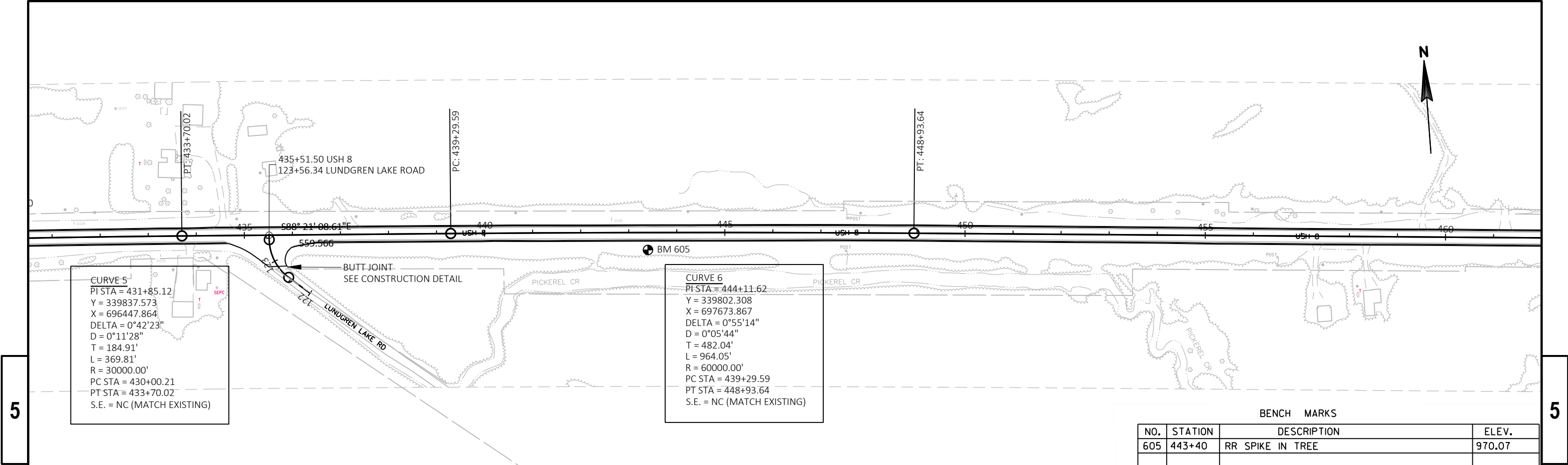


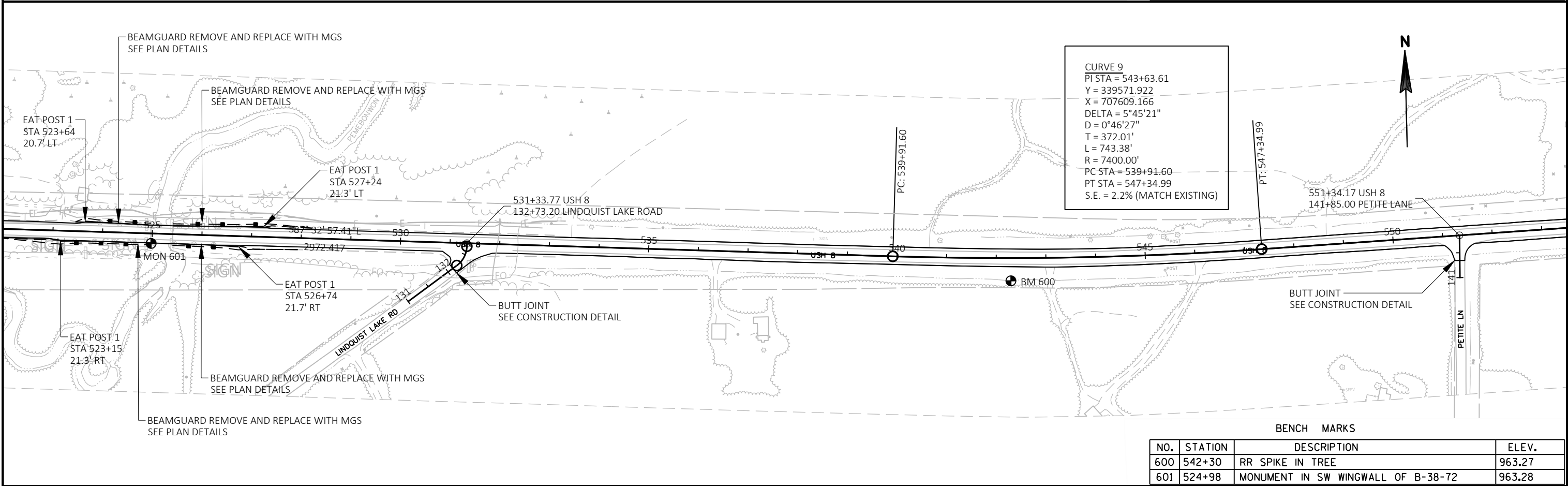
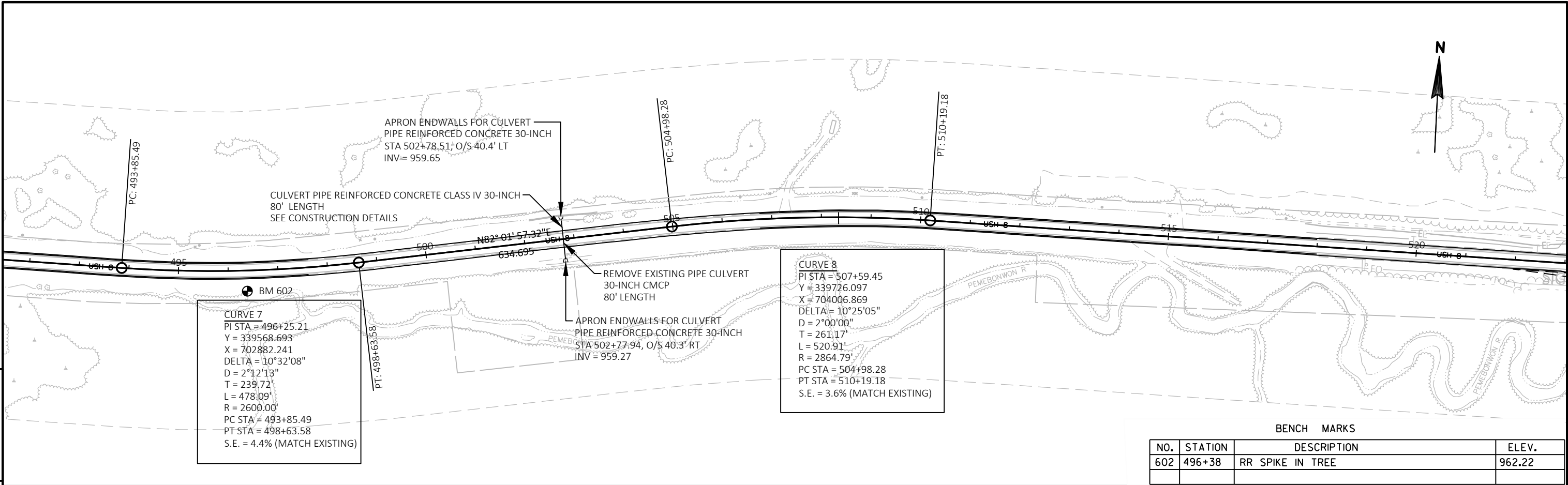
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
607	390+61	MONUMENT	1074.06



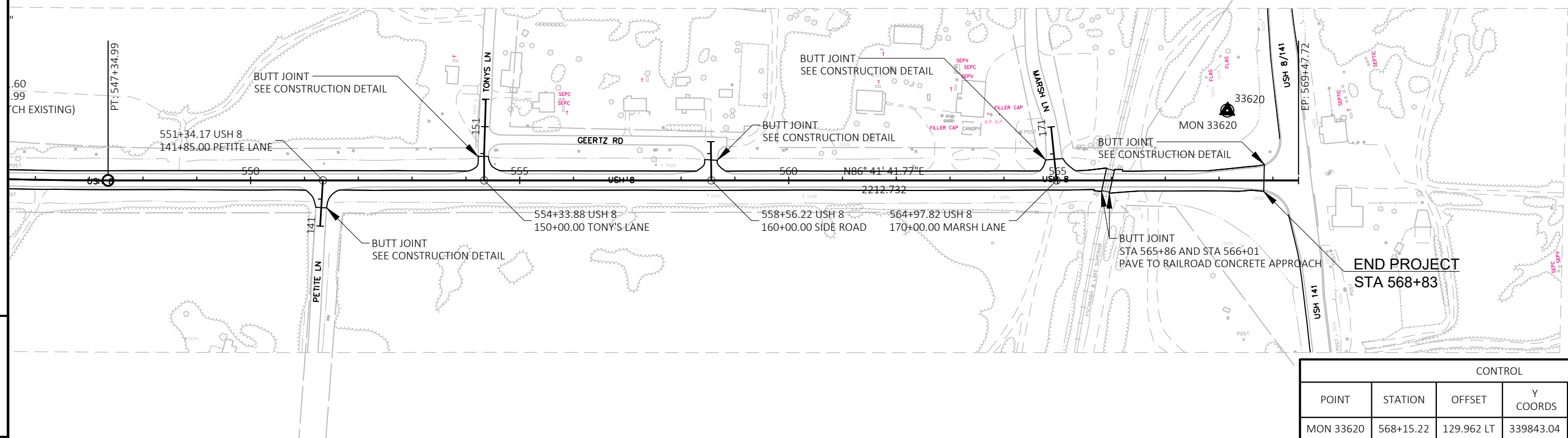
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
606	413+74	RR SPIKE IN TREE	1019.14

CONTROL					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
MON 800	430+16.14	47.992 LT	339888.33	696279.72	1006.89





PROJECT NO:	1590-23-71	HWY:	USH 8	COUNTY:	MARINETTE	PLAN	SHEET	E
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CONTROL					
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION
MON 33620	568+15.22	129.962 LT	339843.04	710049.84	975.95

3

WISDOT/CADDS SHEET 44

Frost Heave Repair

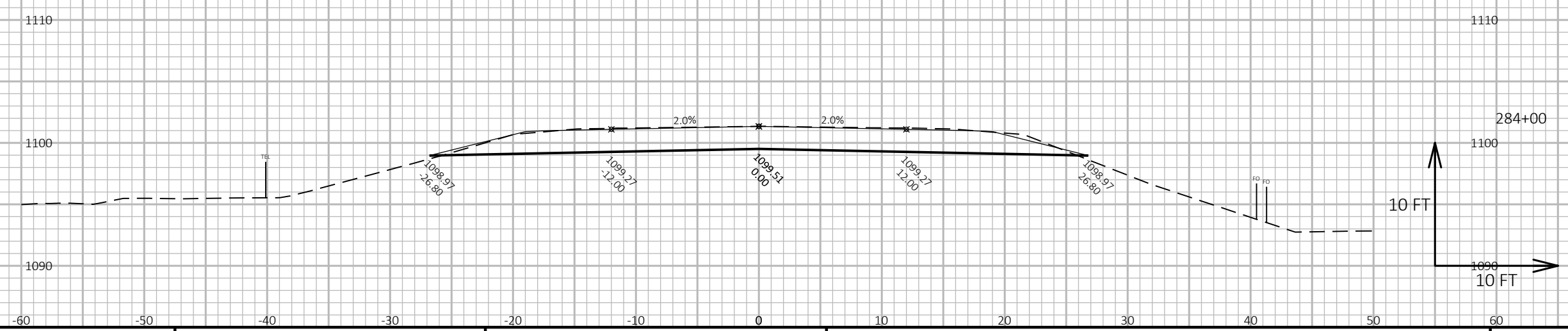
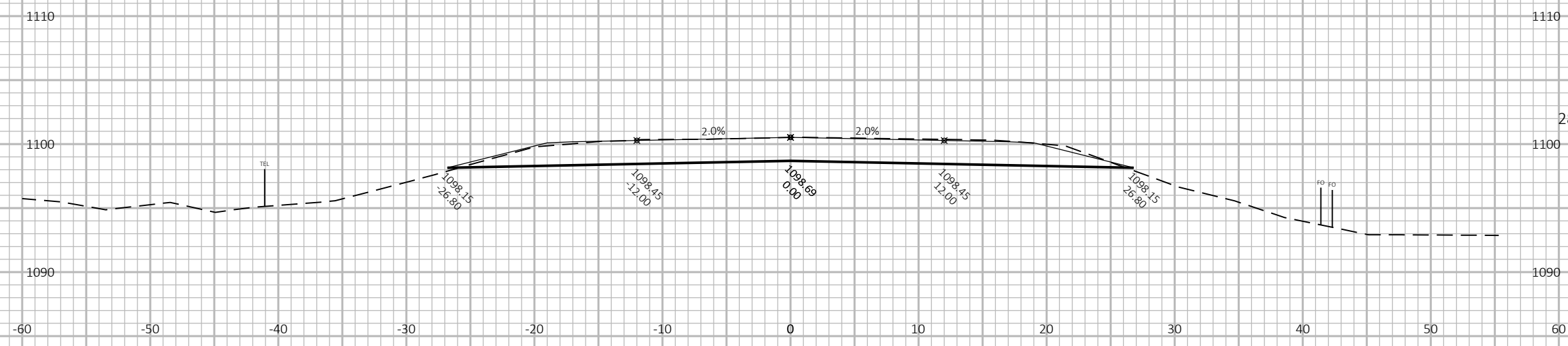
STATION	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			
	Salvaged/Unusable				Salvaged/Unusable				Expanded		Expanded	Mass Ordinate
	Cut	Pavement Material	Fill	EBS	Cut	Pavement Material	Fill	EBS	Cut 1.00	Fill 1.25	EBS Backfill 1.15	
284+00	85.11	15.00	0.00	0.00	0	0	0	0	0	0	0	0
284+25	83.94	15.00	0.00	0.00	78	14	0	0	78	0	0	64
284+50	82.35	15.00	0.00	0.00	77	14	0	0	155	0	0	127
284+75	85.36	15.00	0.00	24.57	78	14	0	11	233	0	13	191
285+00	84.66	15.00	0.00	69.24	79	14	0	43	312	0	63	256
285+25	84.56	15.00	0.00	110.76	78	14	0	83	390	0	159	321
285+50	83.92	15.00	0.00	152.65	78	14	0	122	468	0	299	385
285+67.75	85.06	15.00	0.00	161.05	56	10	0	103	523	0	418	430
285+72.75	85.19	15.00	0.00	148.32	16	3	0	29	539	0	451	443
285+75	85.10	15.00	0.00	142.30	7	1	0	12	546	0	465	449
286+00	87.12	15.00	0.00	74.60	80	14	0	100	626	0	580	515
286+25	83.58	15.00	0.00	21.02	79	14	0	44	705	0	631	580
286+50	83.68	15.00	0.00	0.00	77	14	0	10	783	0	642	644
286+66.5	82.25	15.00	0.00	0.00	51	9	0	0	833	0	642	685

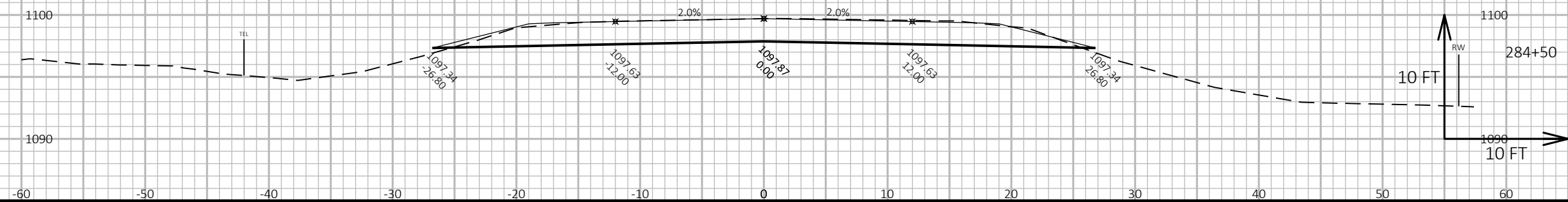
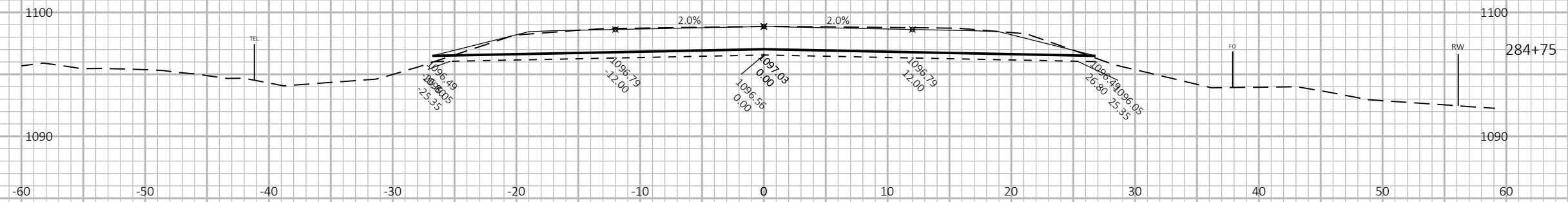
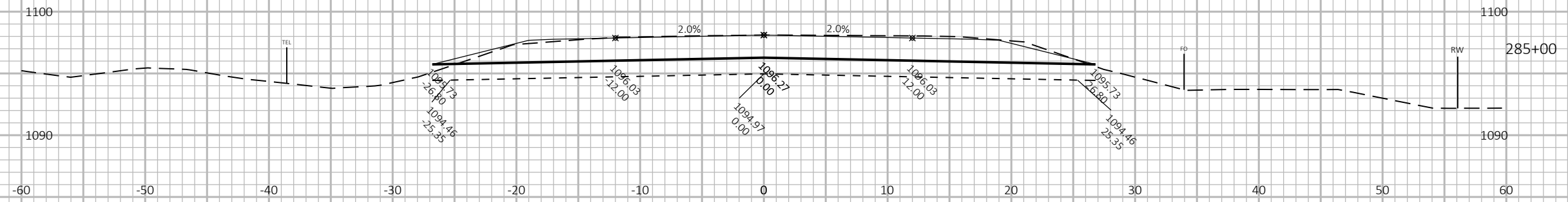
Culvert Replacement 268+77

STATION	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			
	Salvaged/Unusable				Salvaged/Unusable				Expanded		Expanded	Mass Ordinate
	Cut	Pavement Material	Fill	EBS	Cut	Pavement Material	Fill	EBS	Cut 1.00	Fill 1.25	EBS Backfill 1.15	
268+20	83.47	15.00	0.00	13.99	0	0	0	0	0	0	0	0
268+25	83.42	15.00	0.00	34.66	15	3	0	5	15	0	5	13
268+50	80.92	15.00	0.00	138.17	76	14	0	80	92	0	97	75
268+63.95	85.07	15.00	0.00	195.98	43	8	0	86	134	0	196	110
268+64.05	0.00	0.00	0.00	0.00	0	0	0	0	135	0	197	110
268+75	0.00	0.00	0.00	0.00	0	0	0	0	135	0	197	110
268+89.95	0.00	0.00	0.00	0.00	0	0	0	0	135	0	197	110
268+90.05	84.01	15.00	0.00	167.98	0	0	0	0	135	0	197	110
269+00	83.73	15.00	0.00	104.74	31	6	0	50	166	0	255	136
269+15	83.07	15.00	0.00	0.00	46	8	0	29	212	0	288	174

Culvert Replacement 502+78

STATION	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			
	Salvaged/Unusable				Salvaged/Unusable				Expanded		Expanded	Mass Ordinate
	Cut	Pavement Material	Fill	EBS	Cut	Pavement Material	Fill	EBS	Cut 1.00	Fill 1.25	EBS Backfill 1.15	
502+44	89.50	30.00	0.00	11.48	0	0	0	0	0	0	0	0
502+50	89.77	30.00	0.00	43.72	20	7	0	6	20	0	7	13
502+73.01	93.18	30.00	0.00	220.74	78	26	0	113	98	0	137	66
502+75	0.00	0.00	0.00	0.00	3	1	0	8	101	0	146	68
502+78.16	0.00	0.00	0.00	0.00	0	0	0	0	101	0	146	68
502+82.97	0.00	0.00	0.00	0.00	0	0	0	0	101	0	146	68
502+83.01	93.25	30.00	0.00	169.35	0	0	0	0	101	0	146	68
503+00	90.75	30.00	0.00	82.02	58	19	0	79	159	0	237	107
503+14	90.02	30.00	0.00	10.06	47	16	0	24	206	0	265	138





PROJECT NO: 1590-23-71

HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: FROST HEAVE REPAIR

SHEET

PRE_34

E

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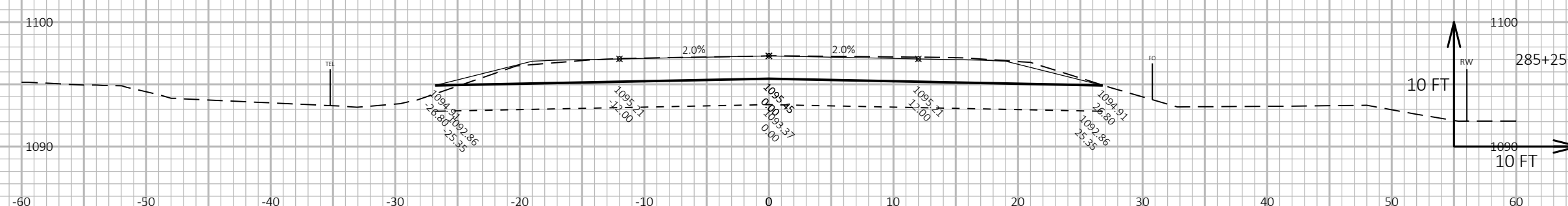
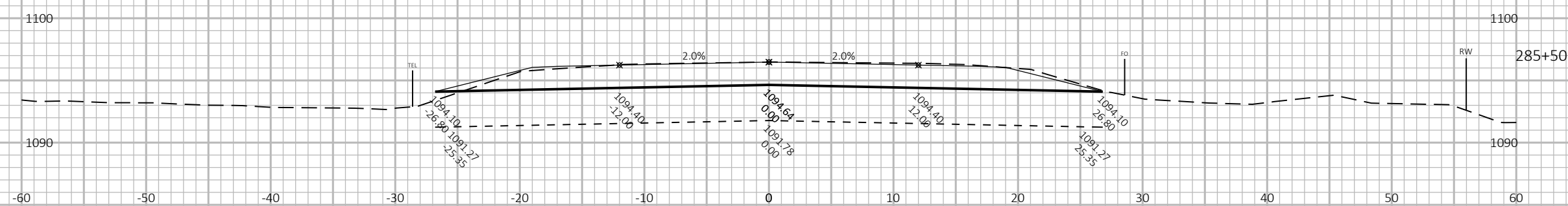
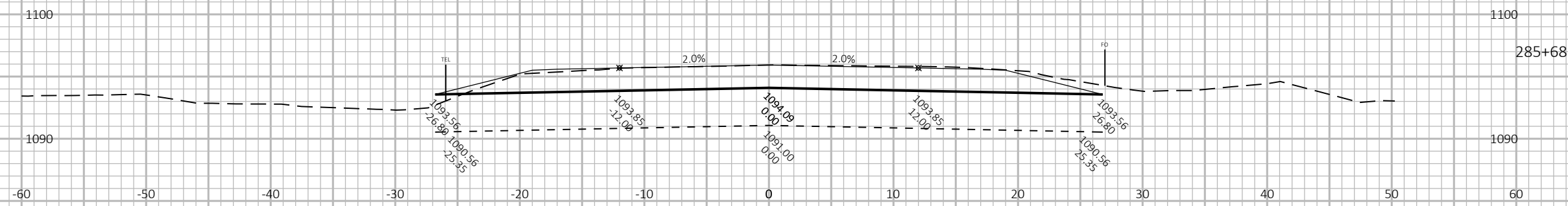
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PLOT BY : DUMS, ALEXANDER T

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDs SHEET 49



PROJECT NO: 1590-23-71

HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: FROST HEAVE REPAIR

SHEET

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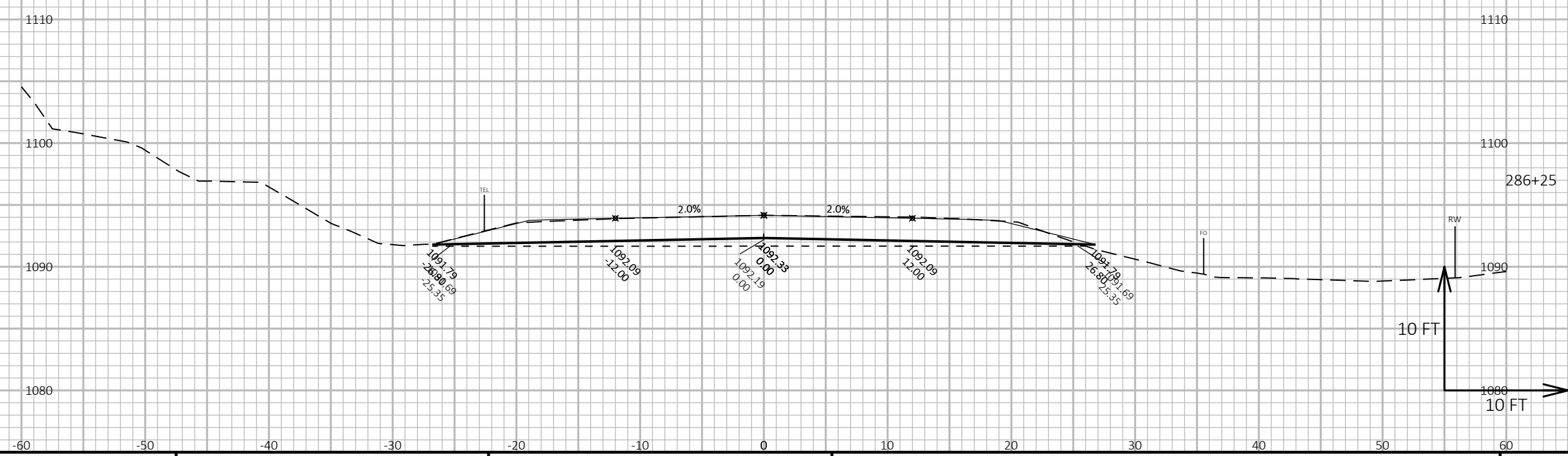
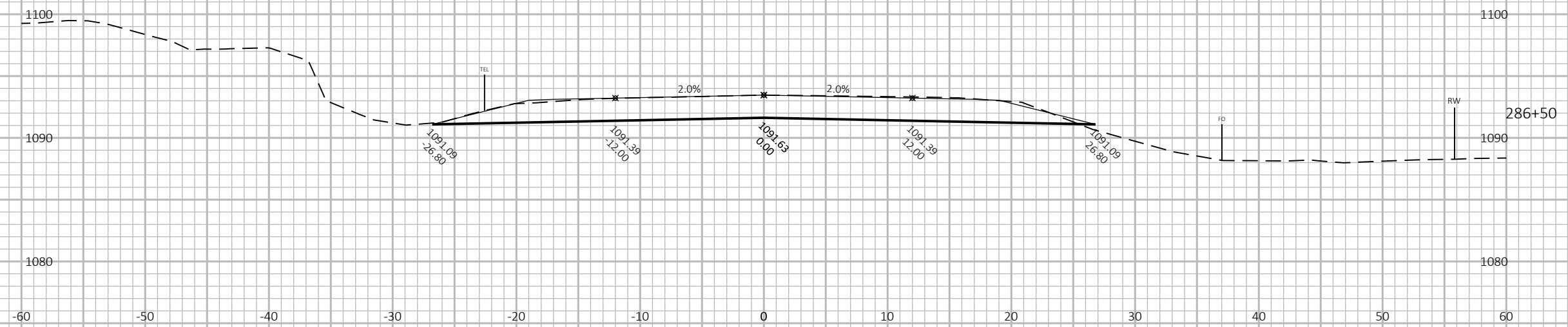
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PRE_35

E

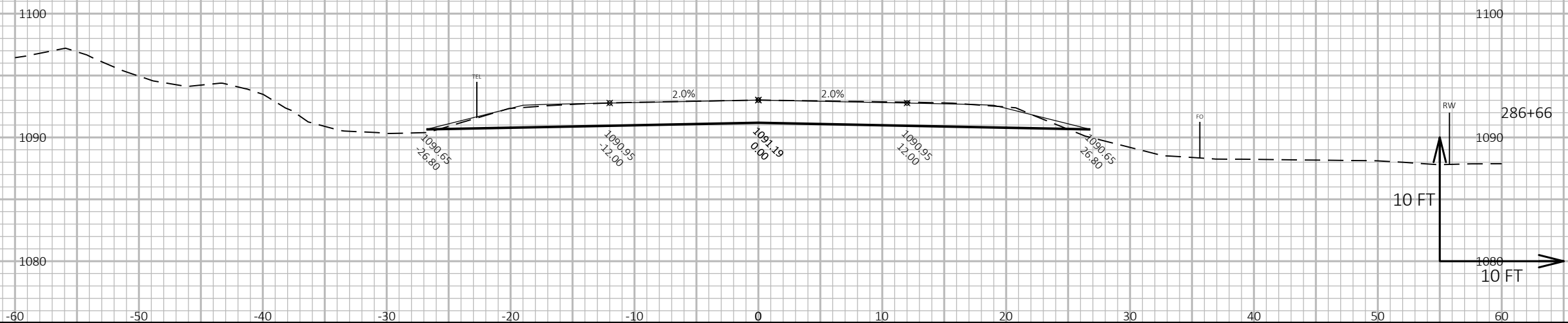
WISDOT/CADDs SHEET 49



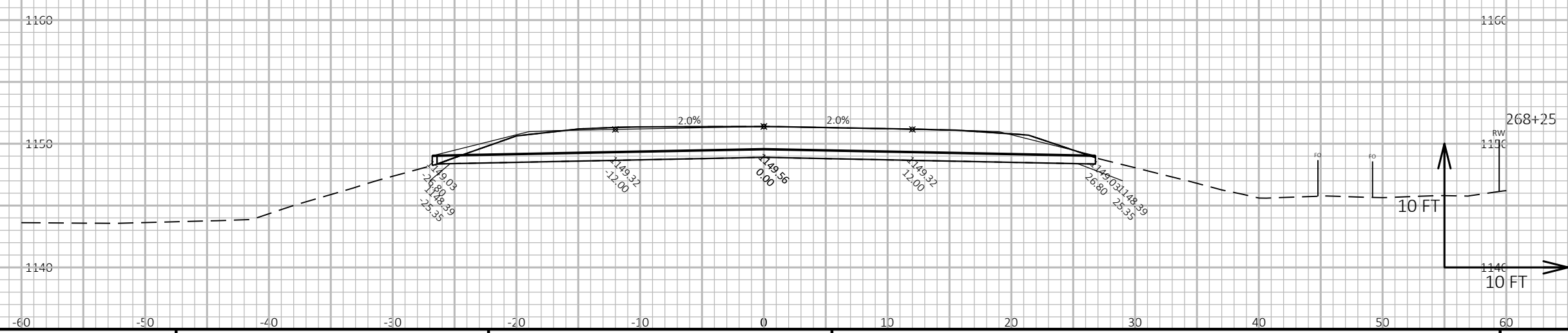
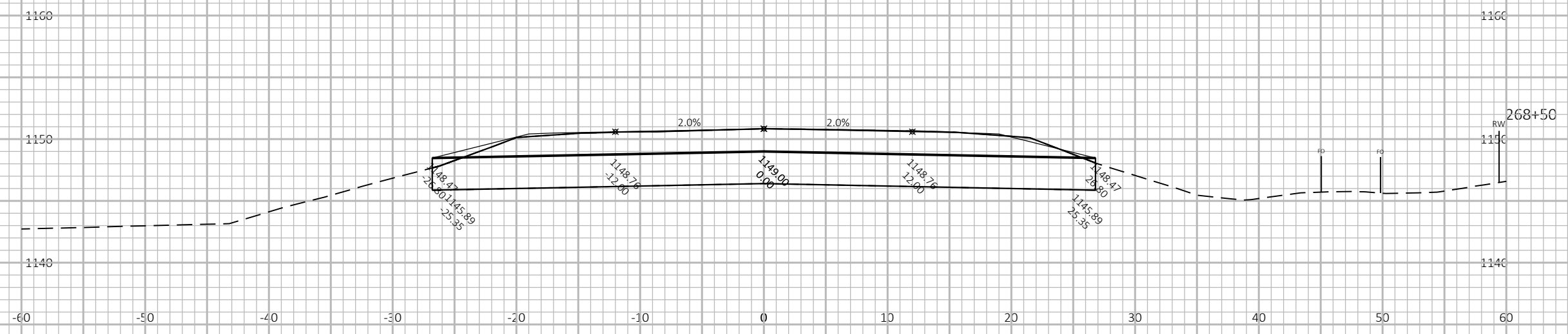
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9



9



PROJECT NO: 1590-23-71

HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: CULVERT REPLACEMENT

SHEET

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LAYOUT NAME - 090401-xs

PLOT DATE : 11/21/2019 7:42 AM

PLOT BY : DUMS, ALEXANDER T

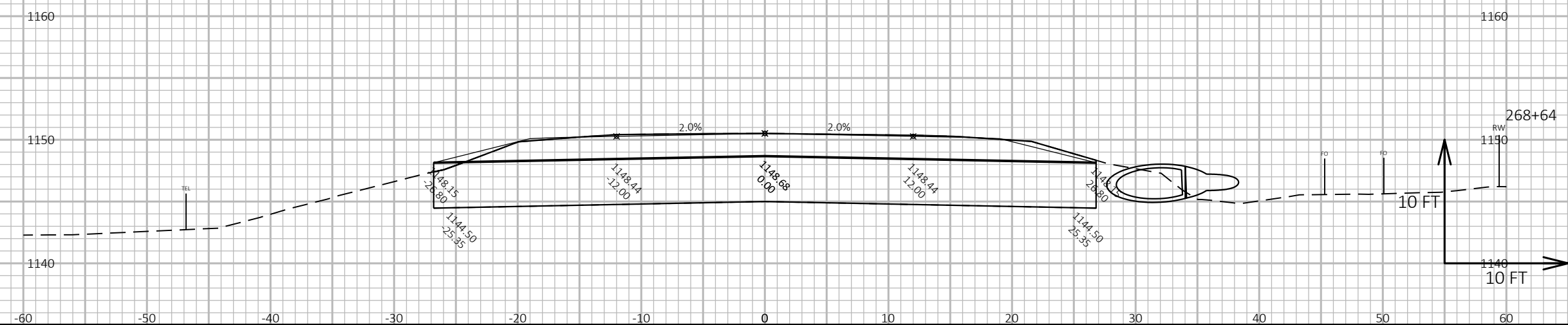
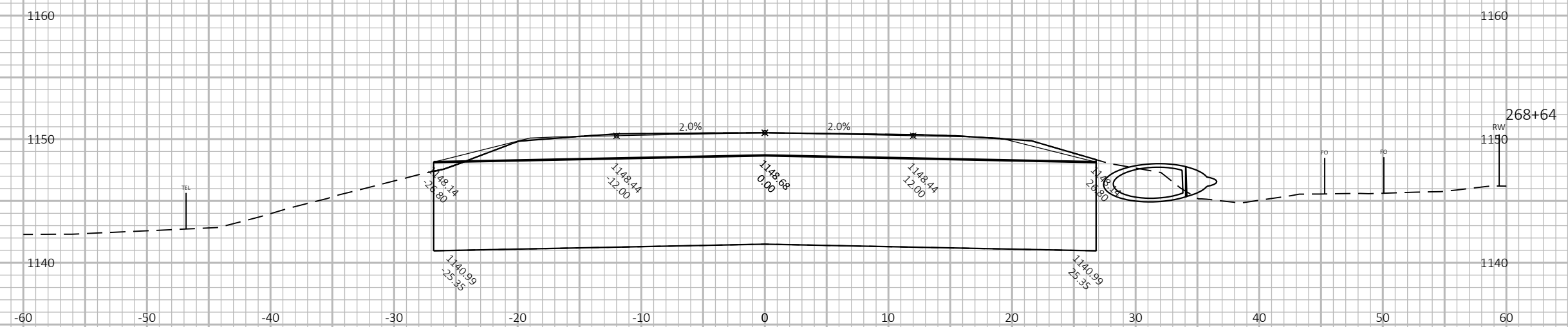
PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

PRE_39

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WISDOT/CADDs SHEET 49



PROJECT NO:	1590-23-71
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HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: CULVERT REPLACEMENT

SHEET

PRE_40

FILE NAME : N:\PDS\C3D\15902300\SHEETSPLAN\090401_XS.DWG
LAYOUT NAME - 090402-xs

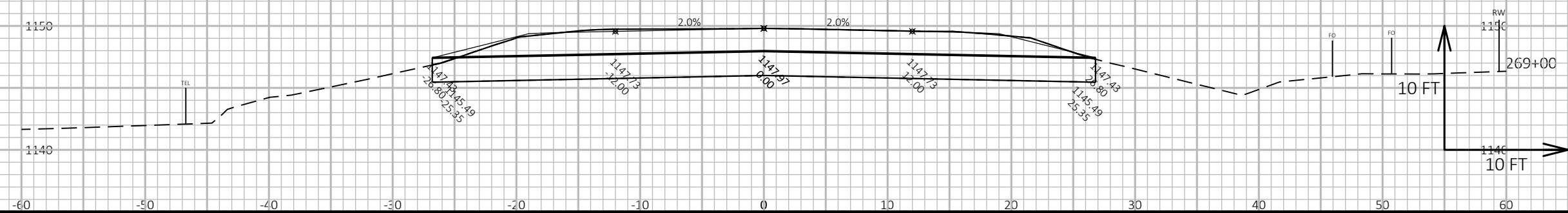
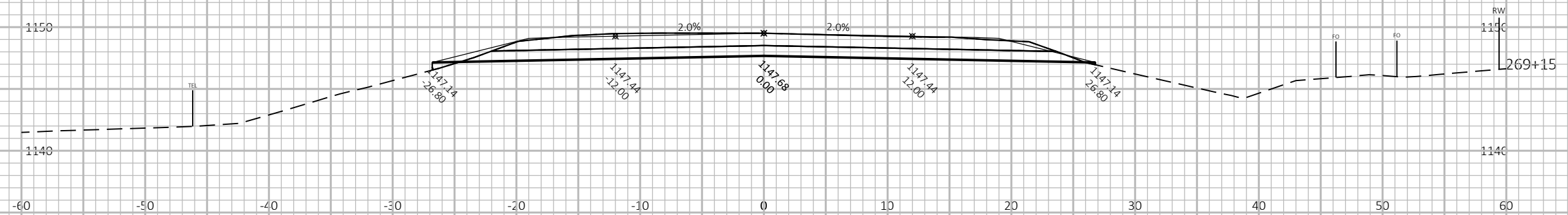
PLOT DATE : 11/21/2019 7:42 AM

PLOT BY : DUMS, ALEXANDER T

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDs SHEET 49



PROJECT NO: 1590-23-71

HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: CULVERT REPLACEMENT

SHEET

FILE NAME : N:\PDS\C3D\15902300\SHEETSPLAN\090401_XS.DWG
LAYOUT NAME - 090404-xs

PLOT DATE : 11/21/2019 7:42 AM

PLOT BY : DUMS, ALEXANDER T

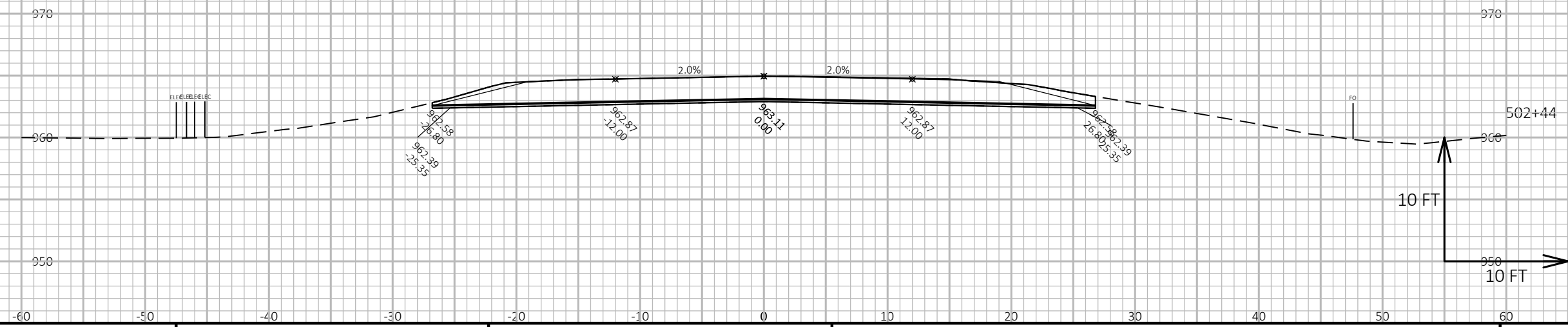
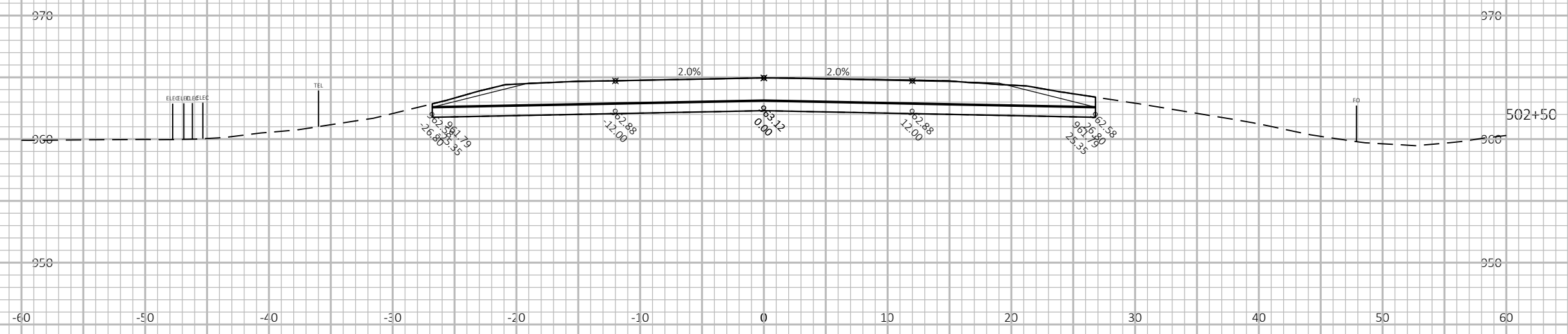
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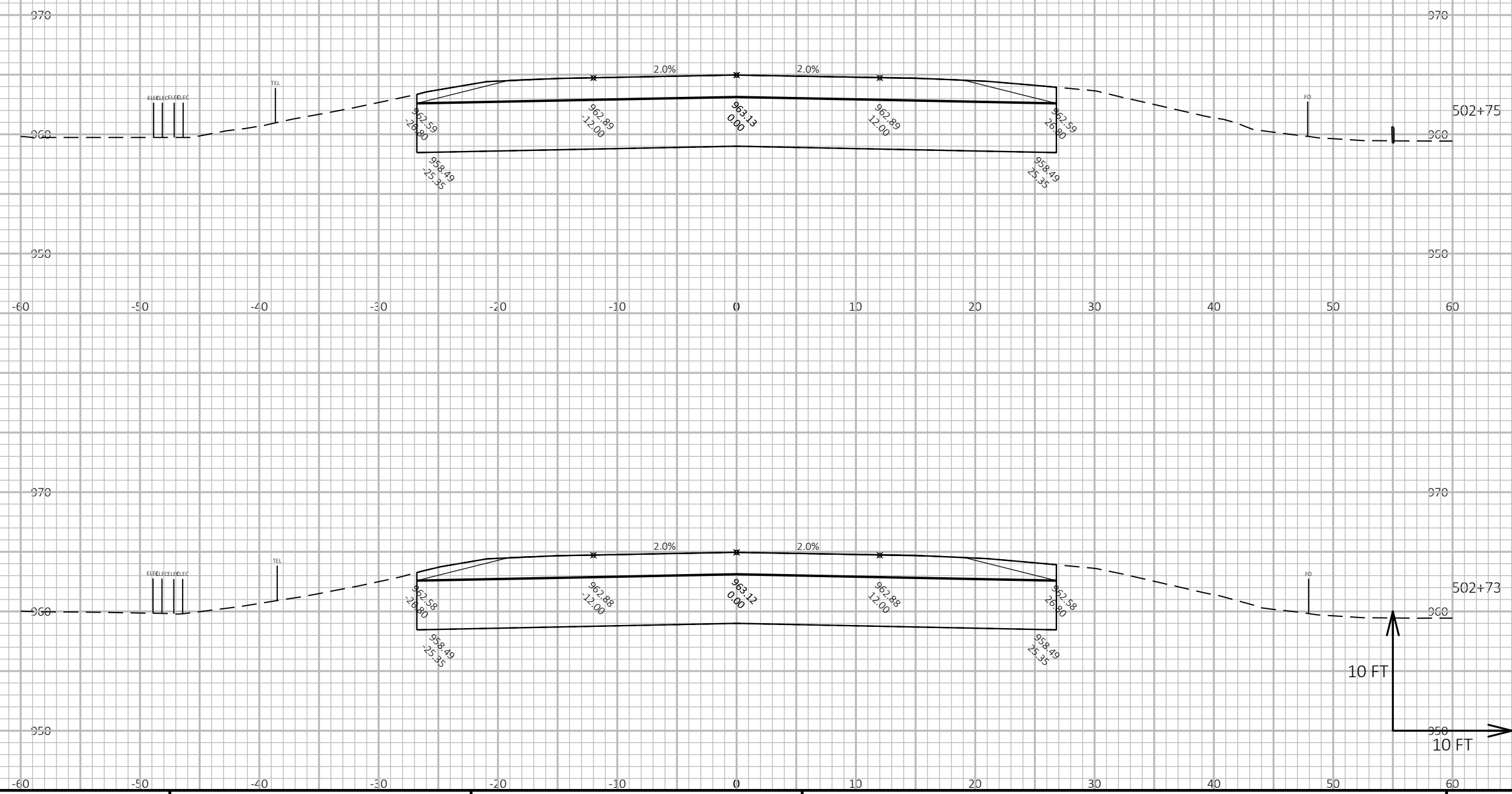
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

PRE_42

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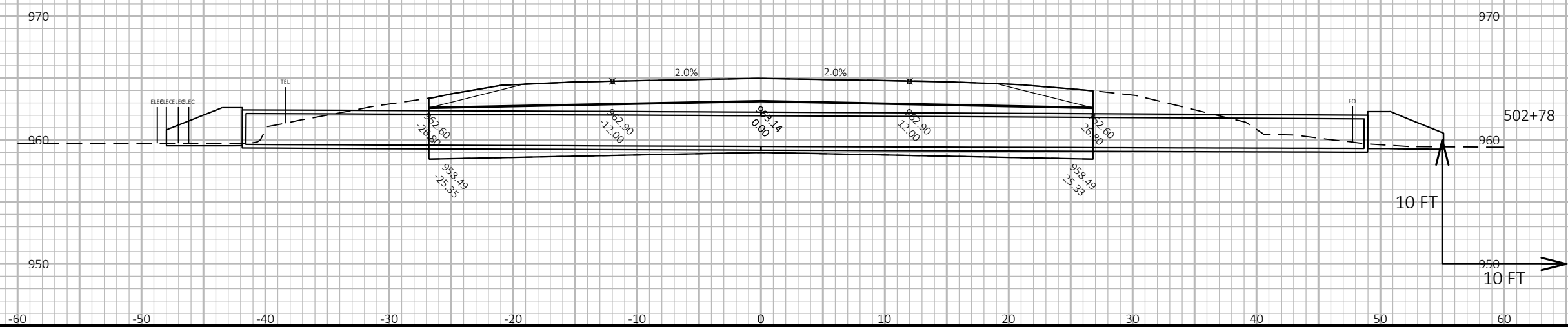
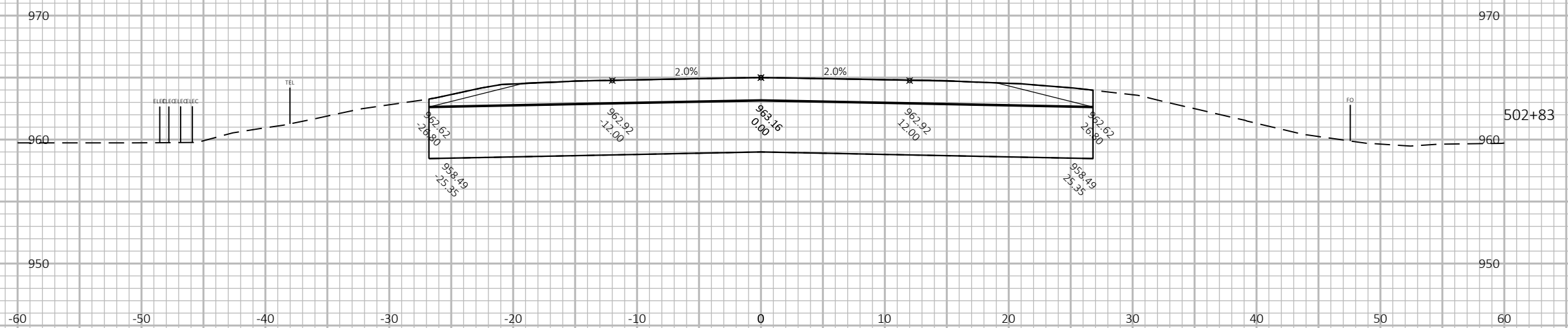
WISDOT/CADDs SHEET 49





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PROJECT NO:	1590-23-71
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HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: CULVERT REPLACEMENT

SHEET

1

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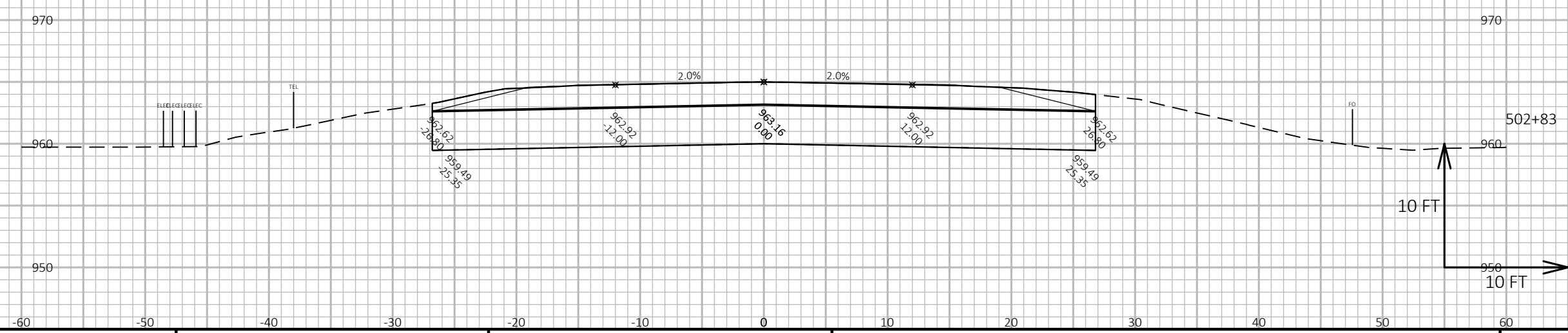
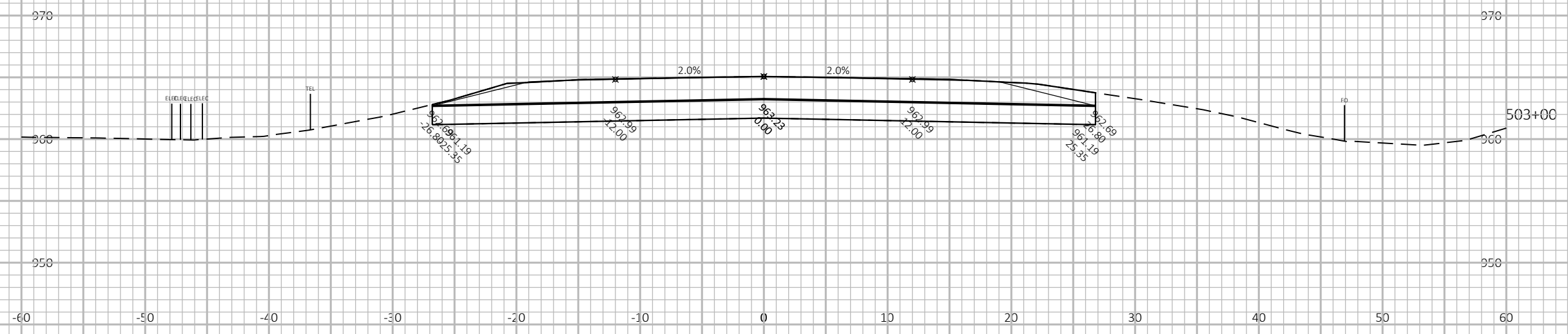
PLOT DATE : 11/21/2019 7:43 AM

PLOT BY : DUMS, ALEXANDER T

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

PRE_45



PROJECT NO: 1590-23-71

HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: CULVERT REPLACEMENT

SHEET

PRE_46

E

FILE NAME : N:\PDS\C3D\15902300\SHEETSP\090401_XS.DWG
LAYOUT NAME - 090504-xs

PLOT DATE : 11/21/2019 7:43 AM

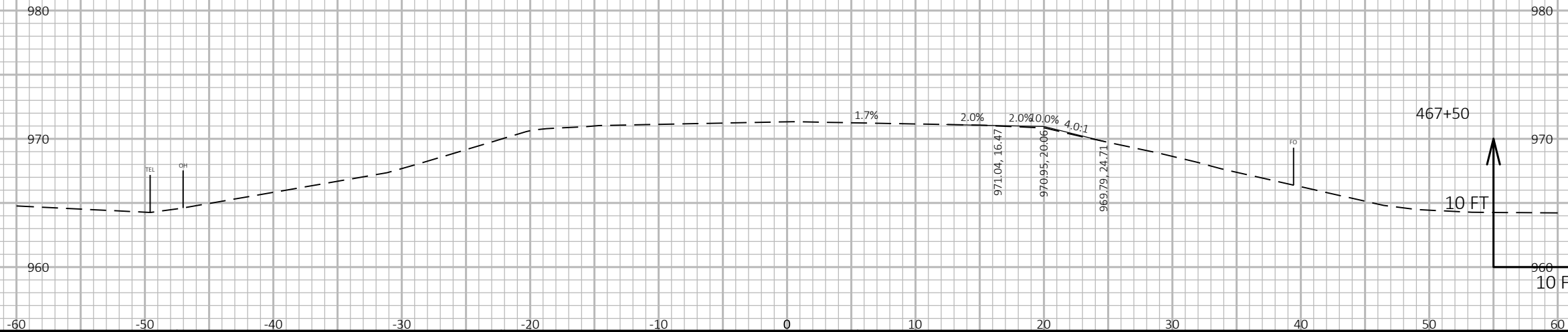
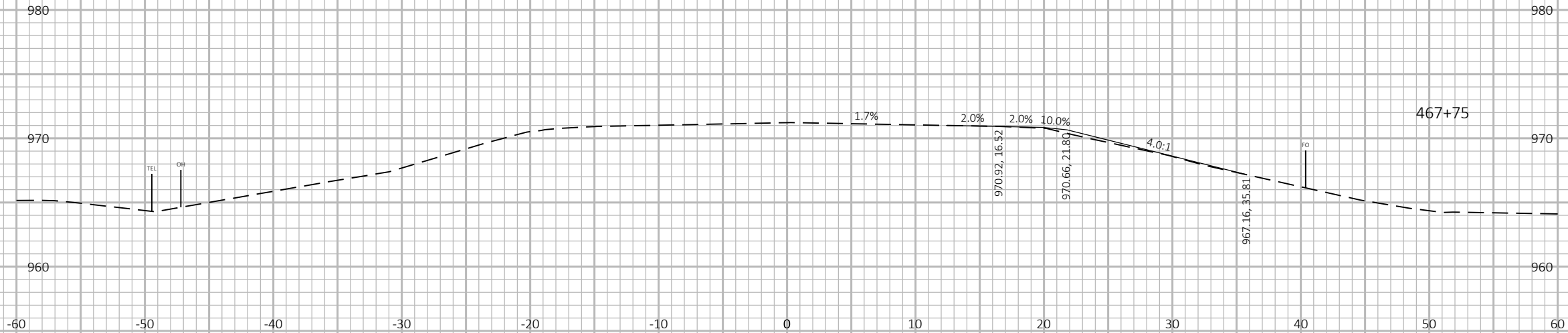
PLOT BY : DUMS, ALEXANDER T

PLOT NAME :

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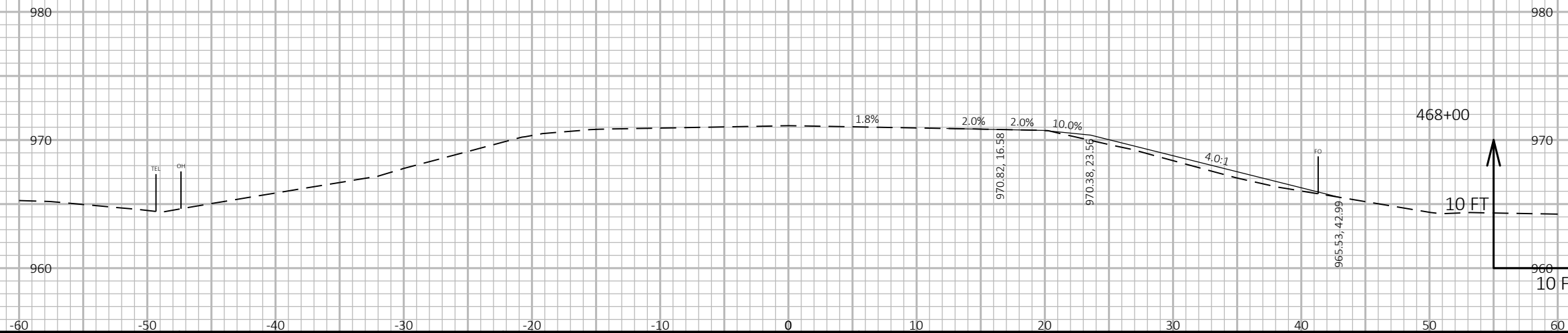
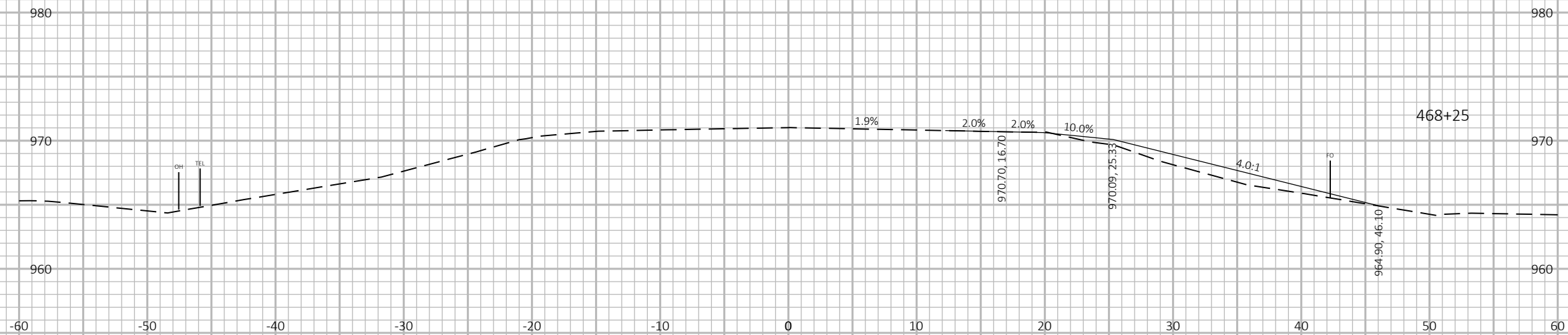
WISDOT/CADDs SHEET 49

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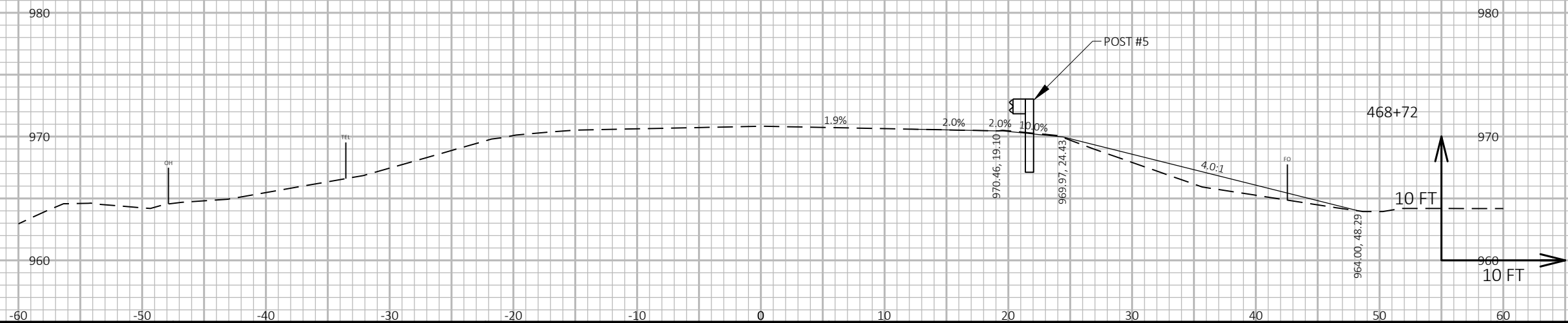
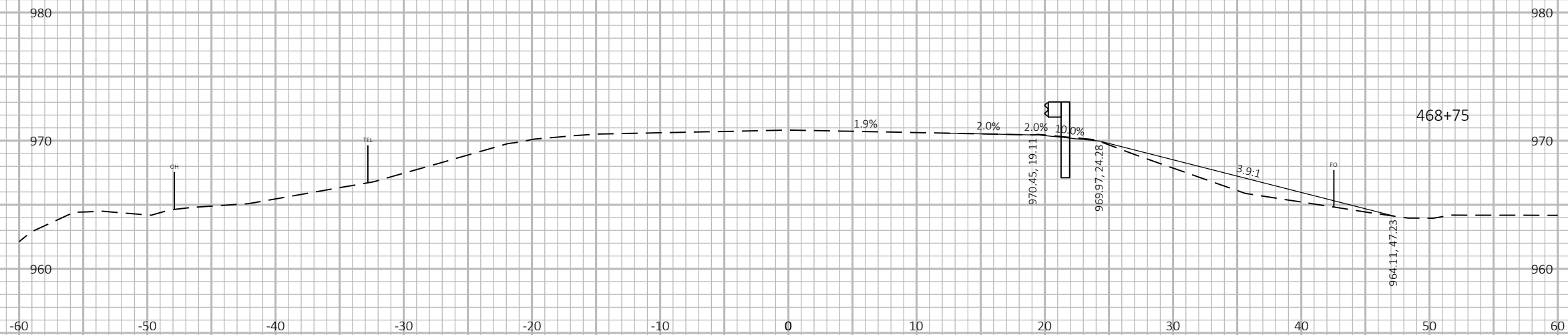


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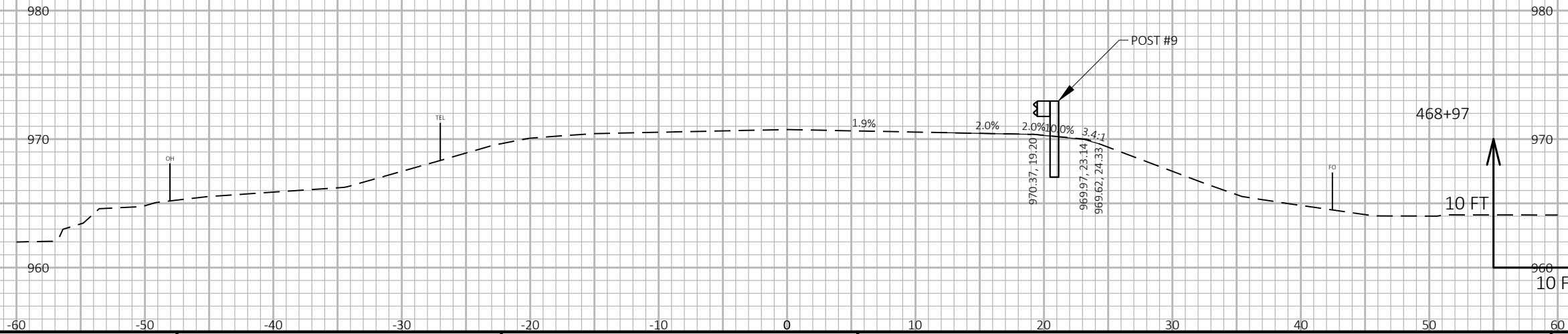
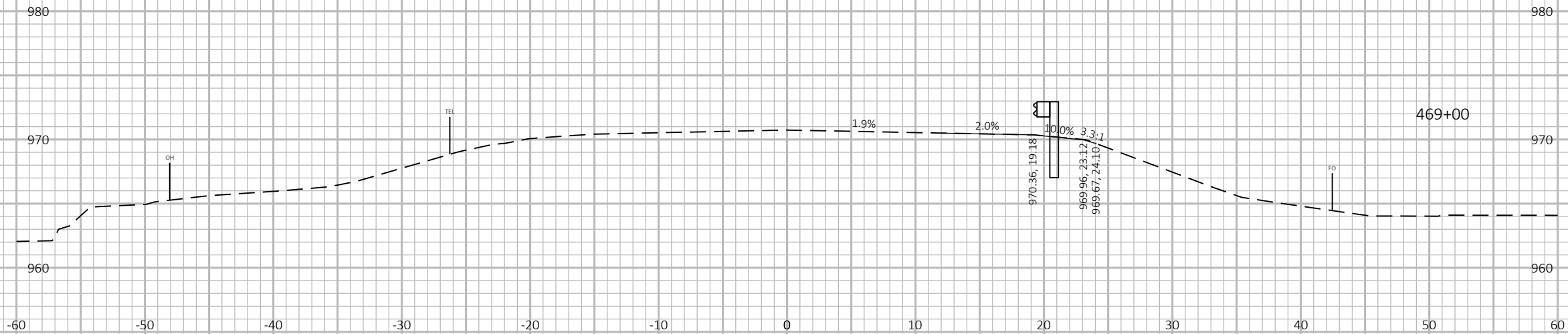
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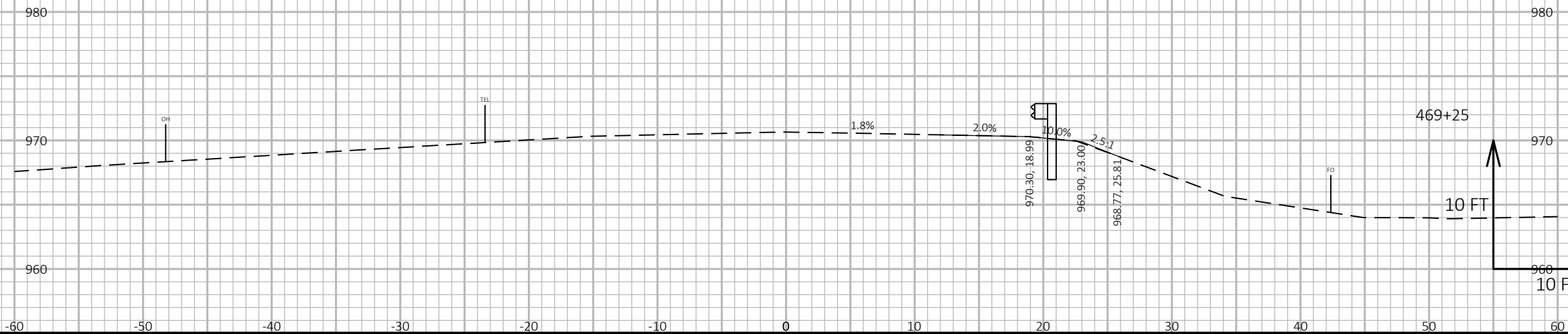
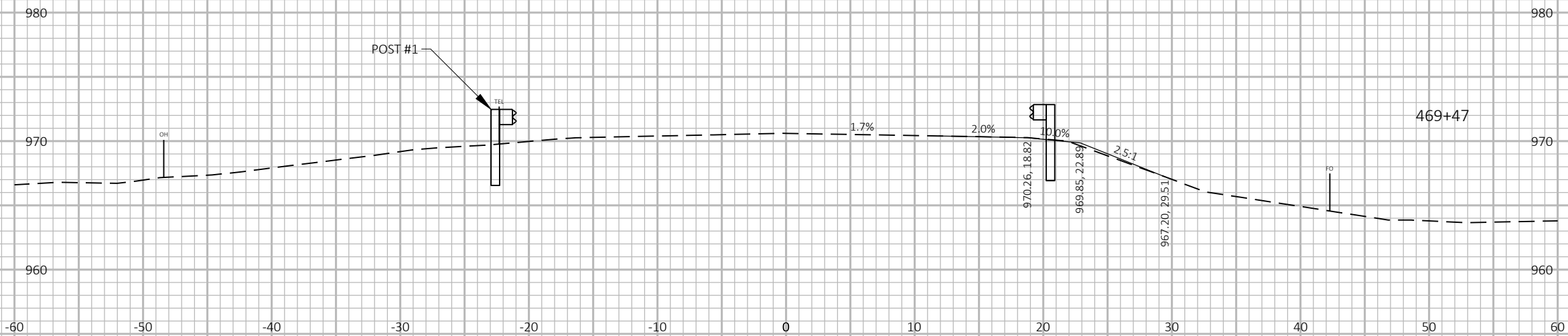


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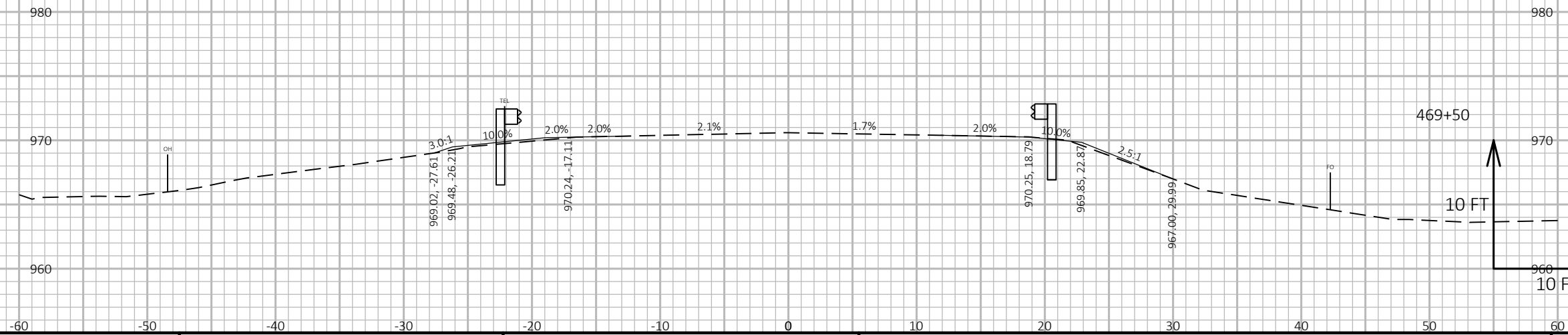
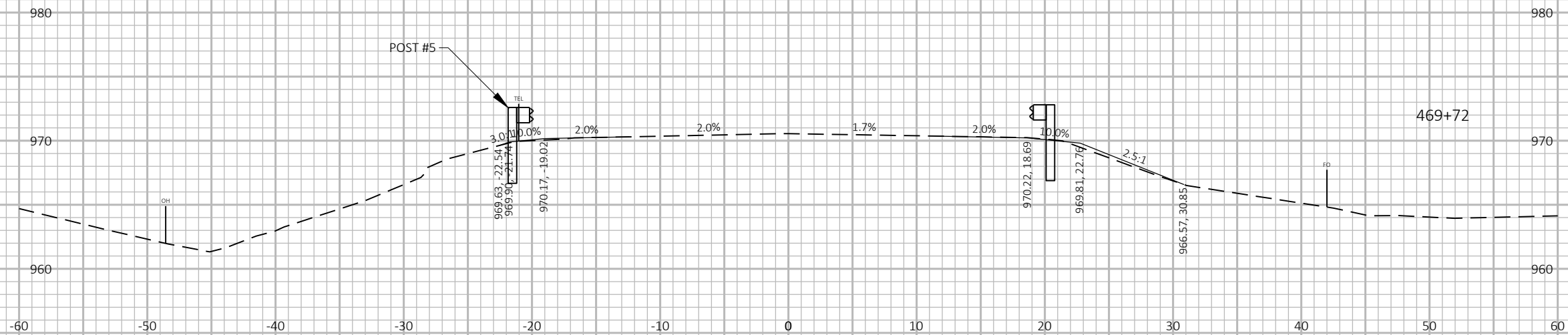
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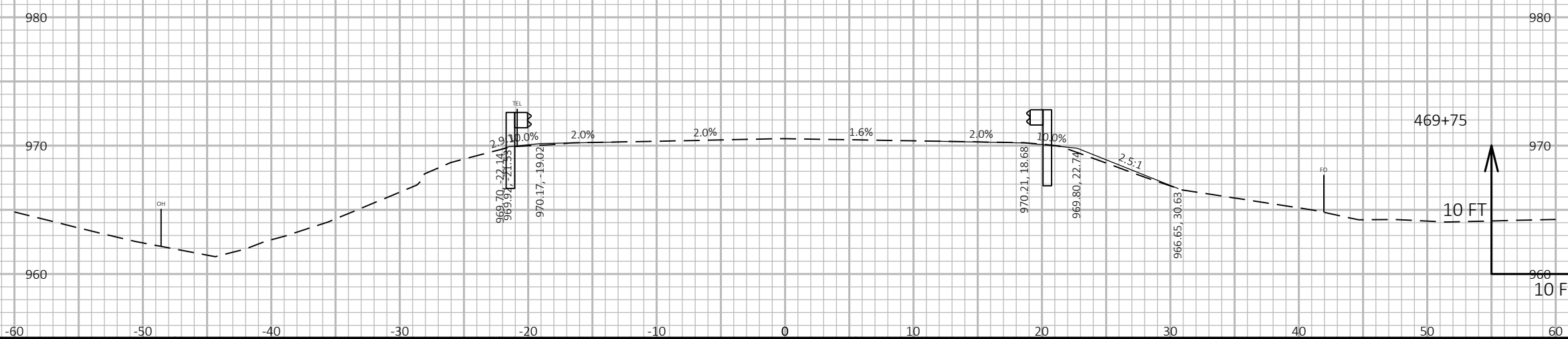
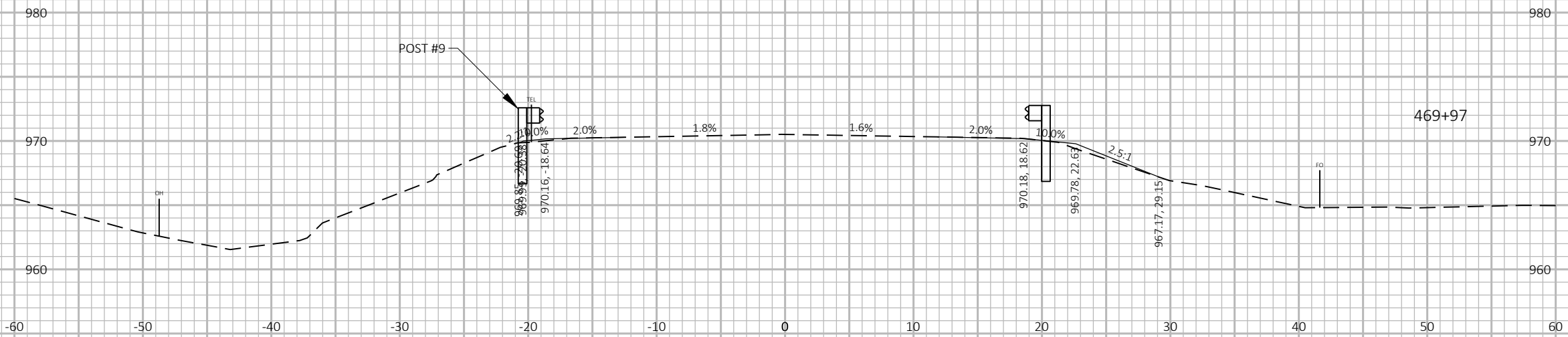
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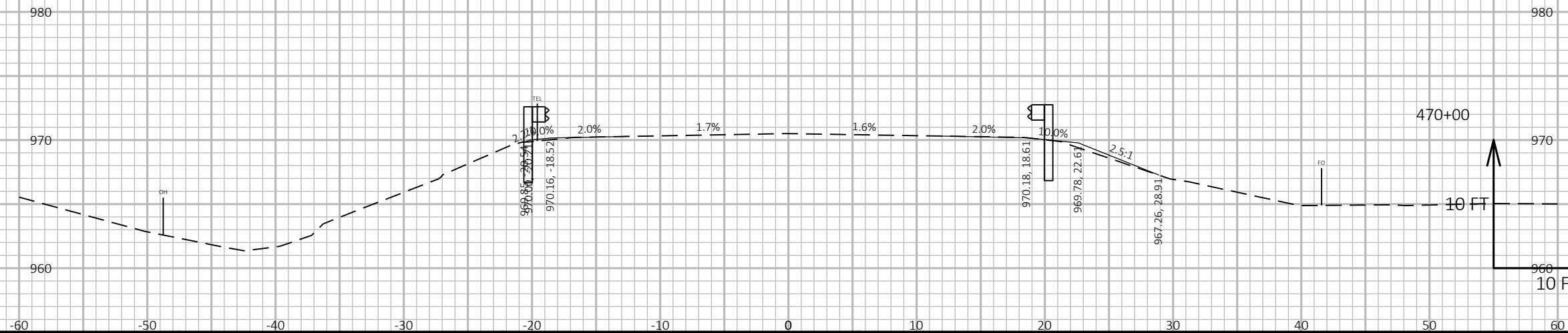
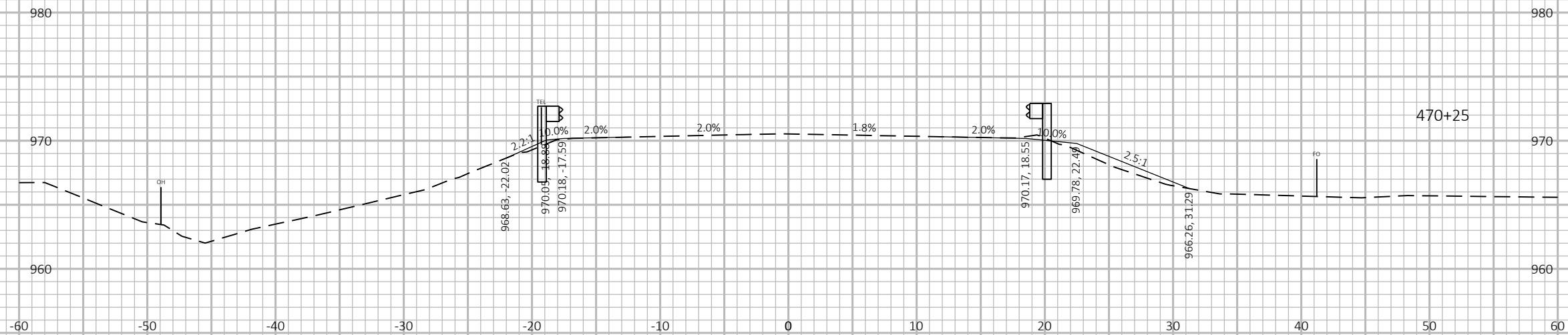
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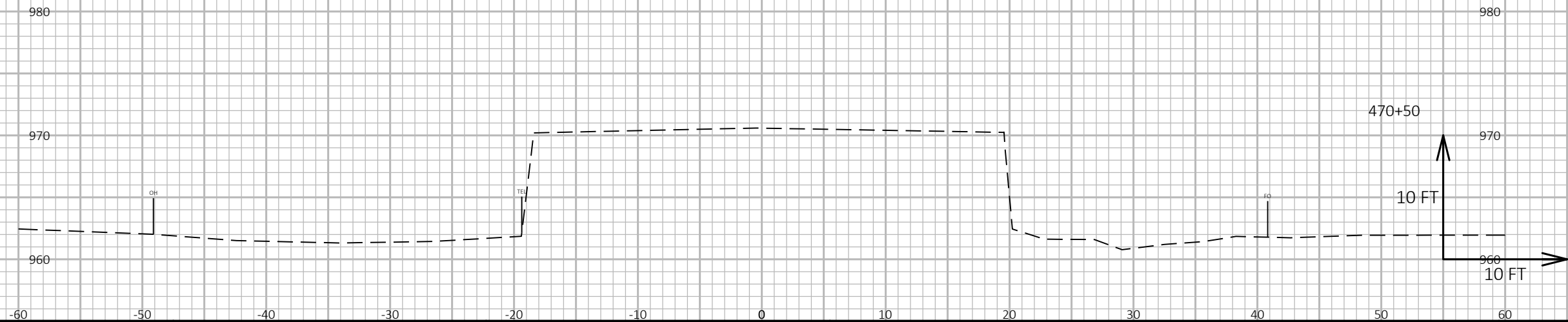
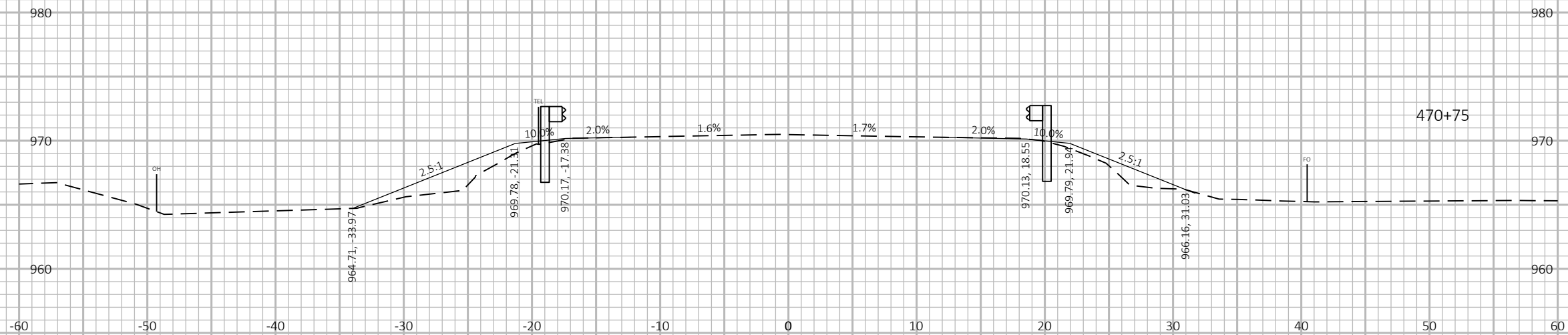
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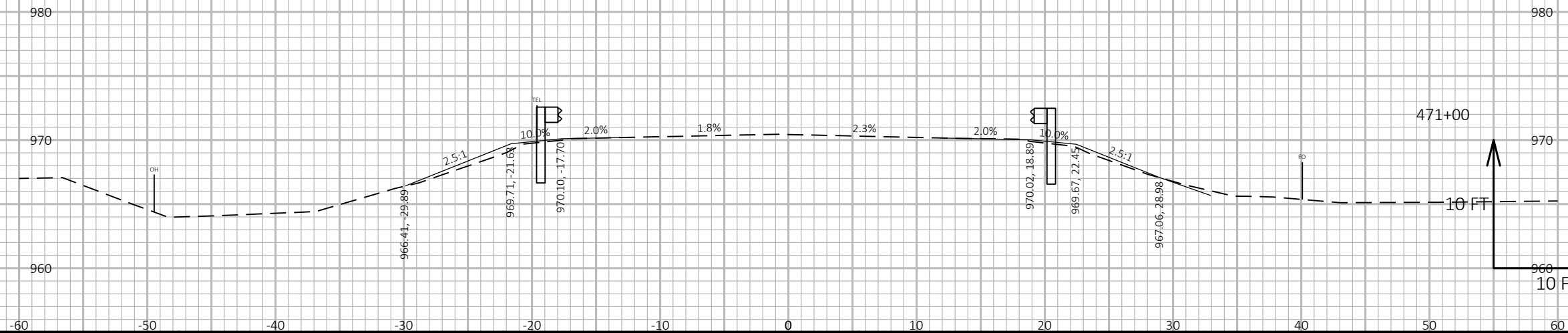
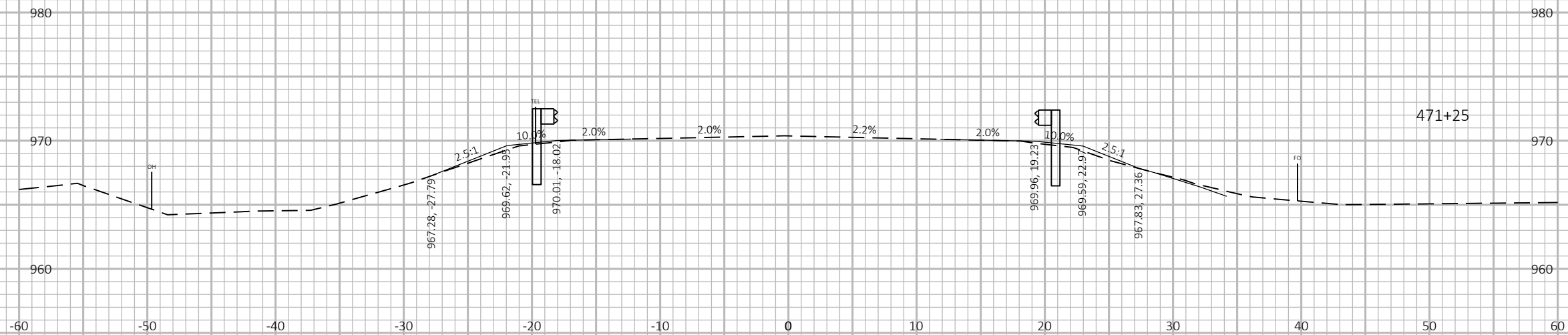
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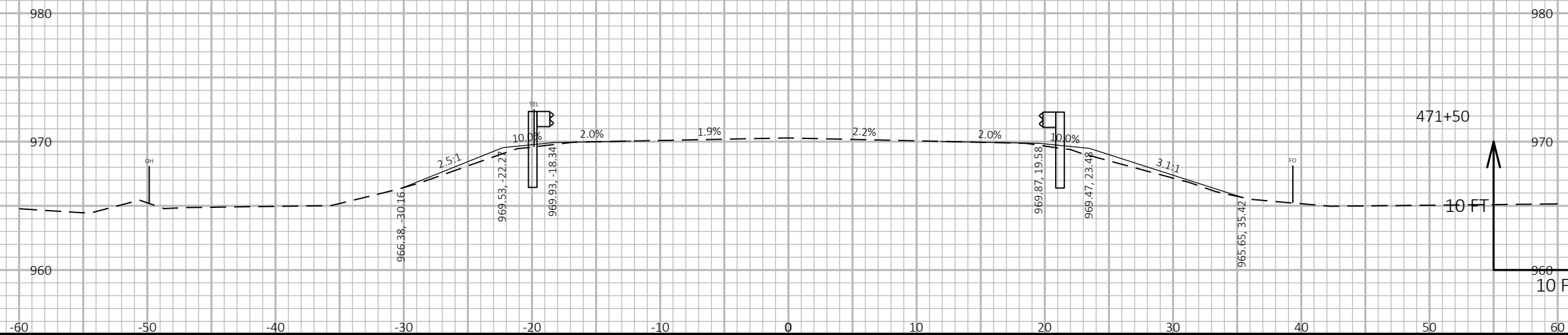
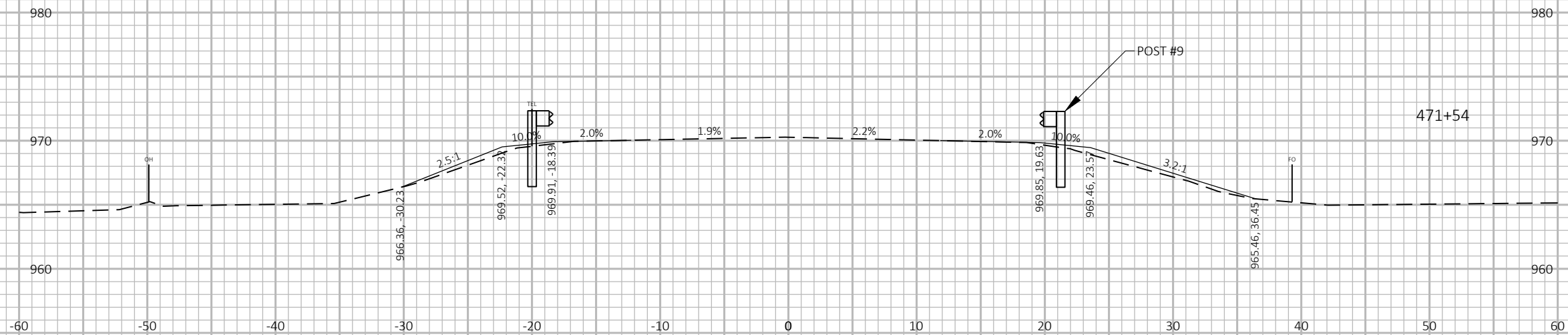
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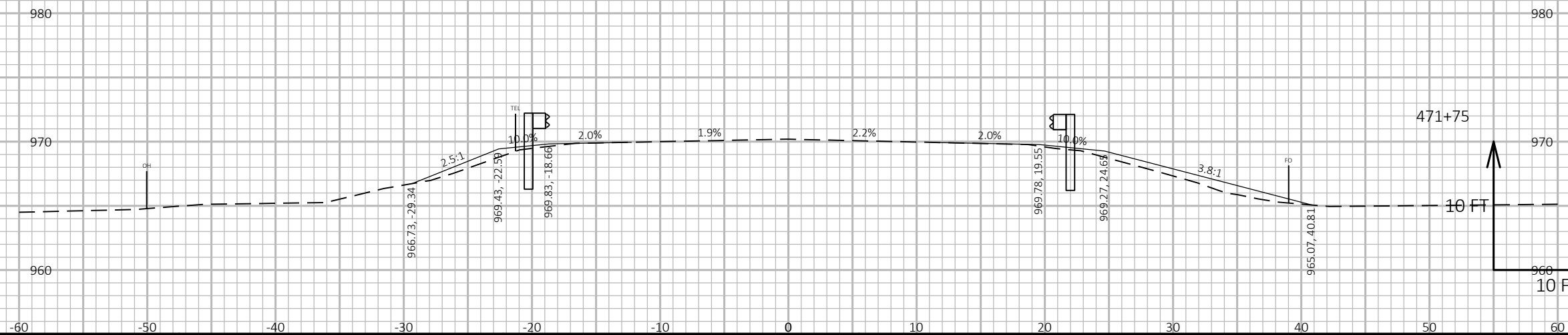
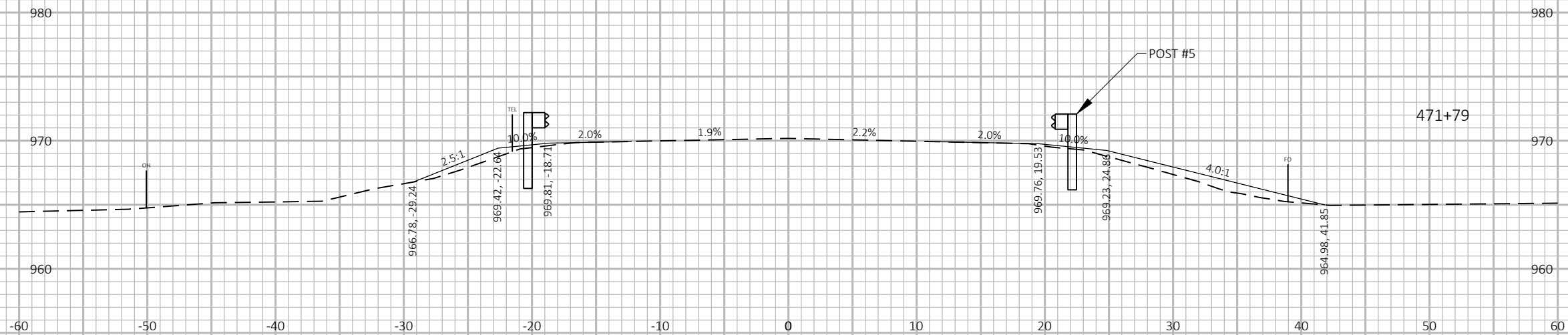
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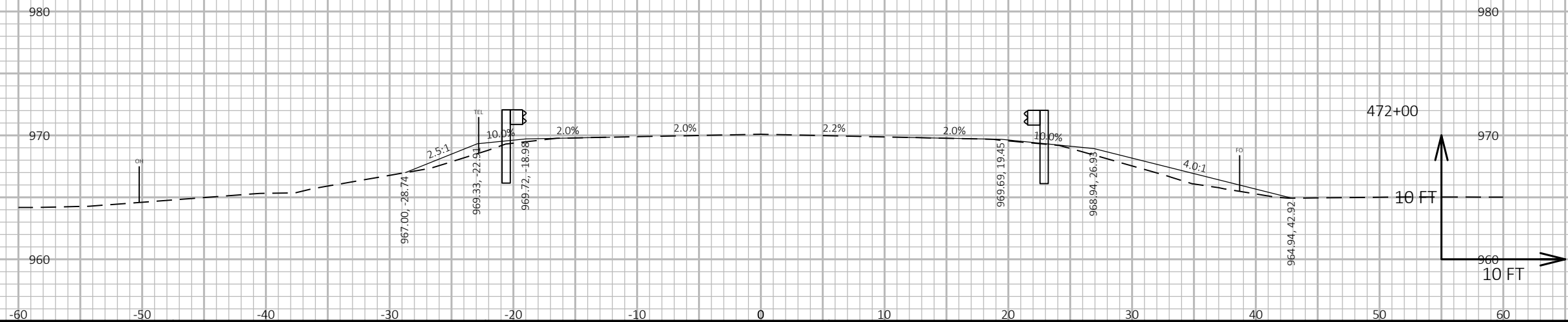
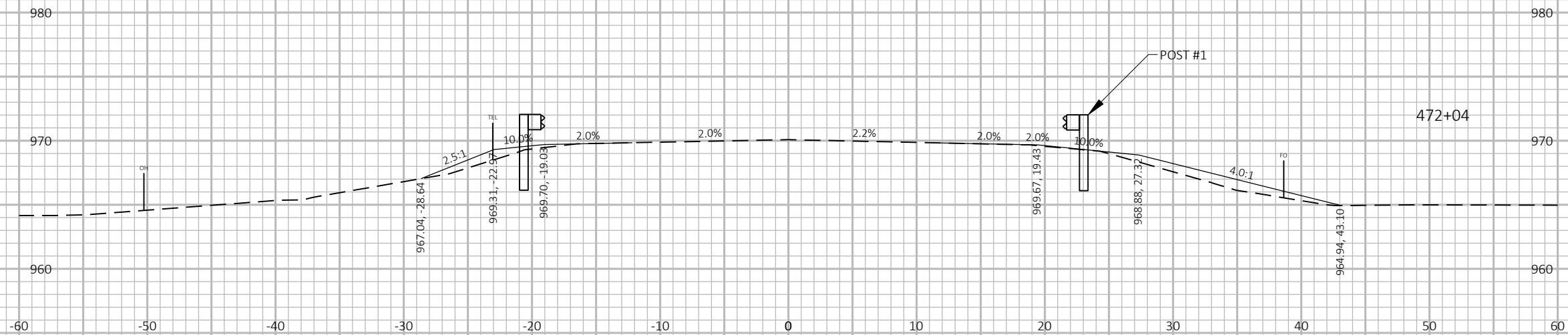
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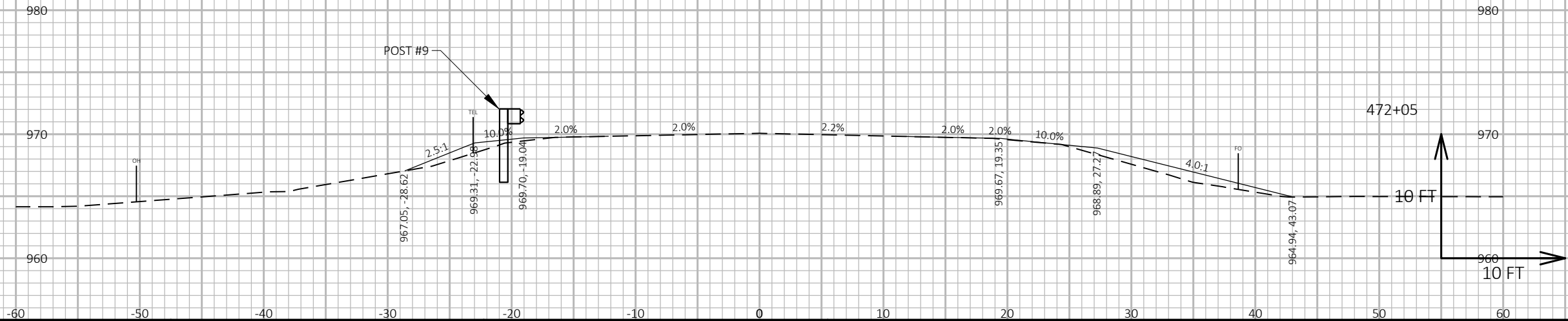
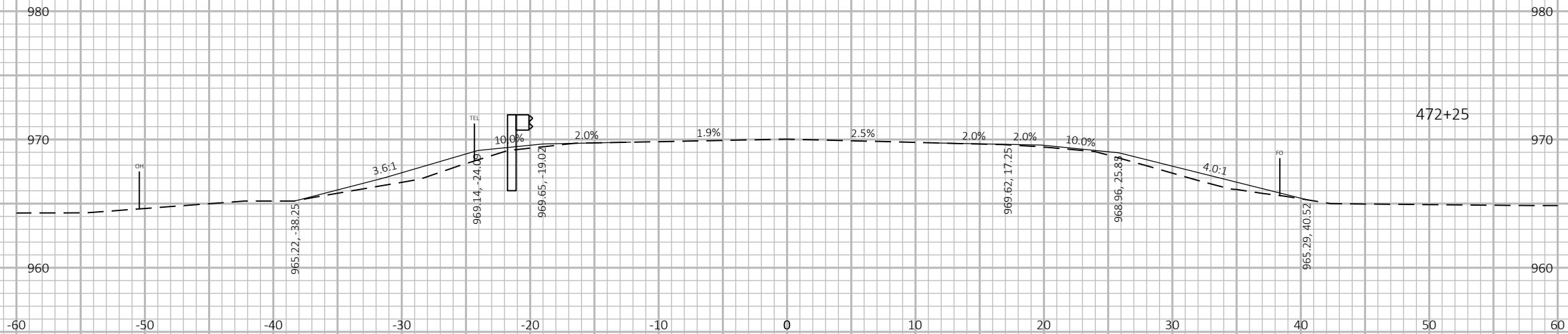
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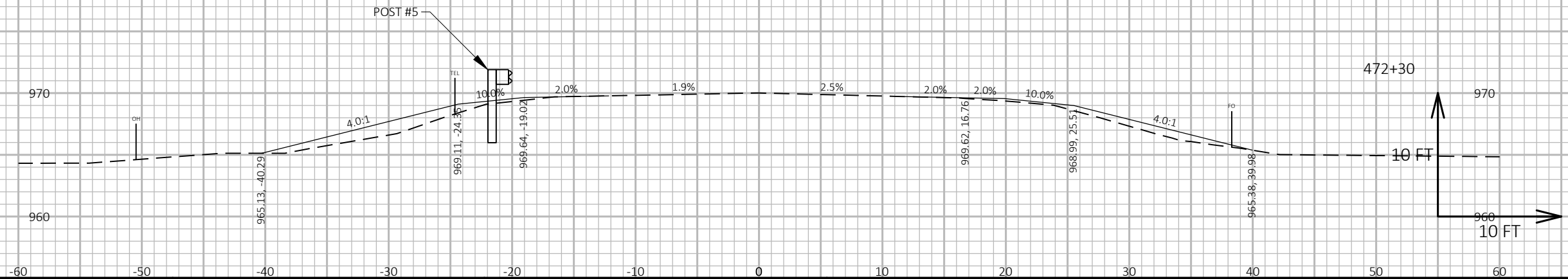
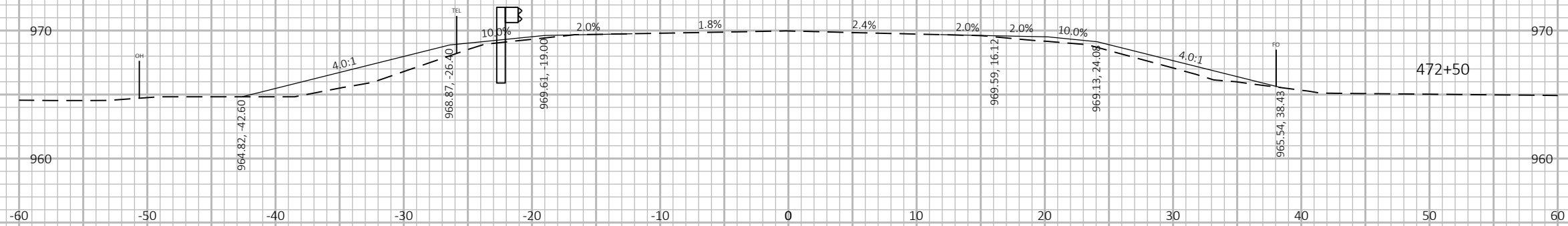
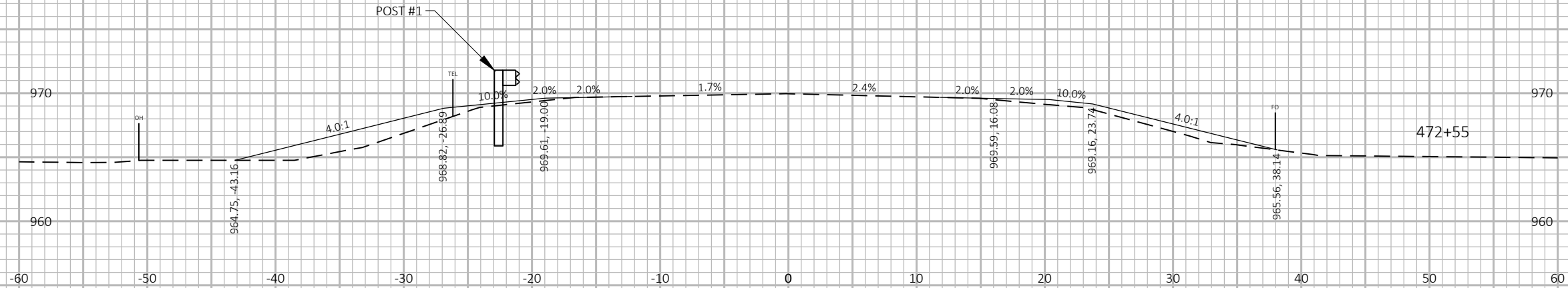


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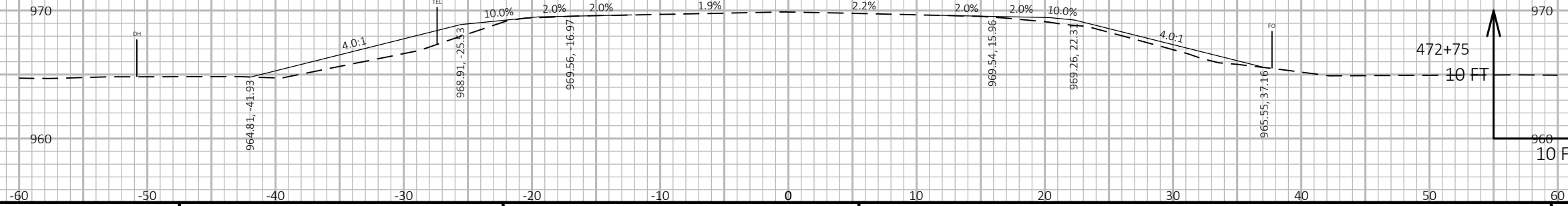
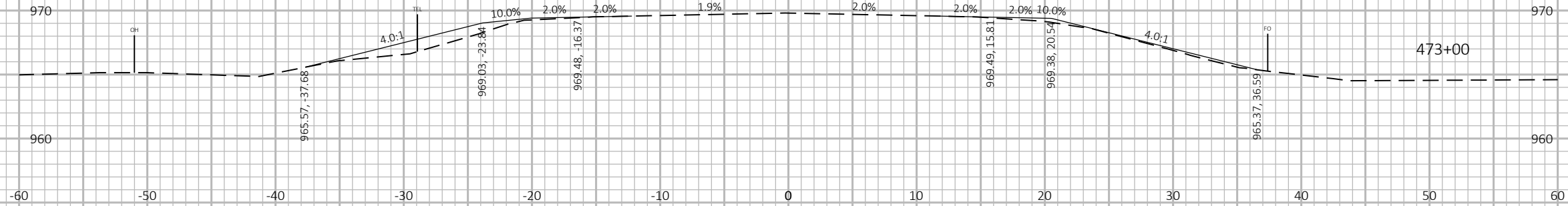
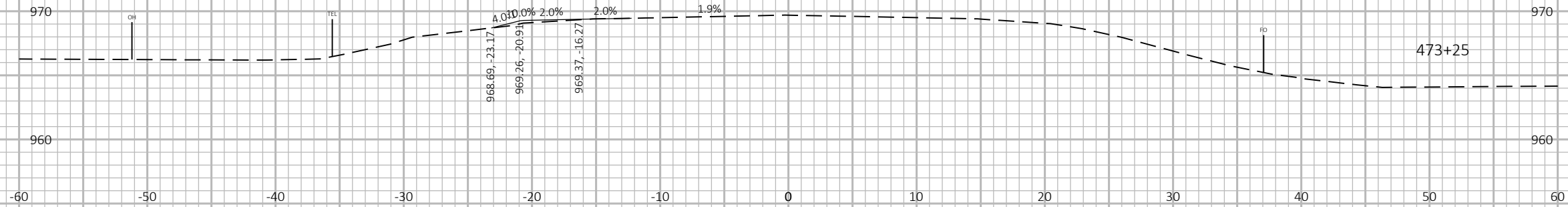
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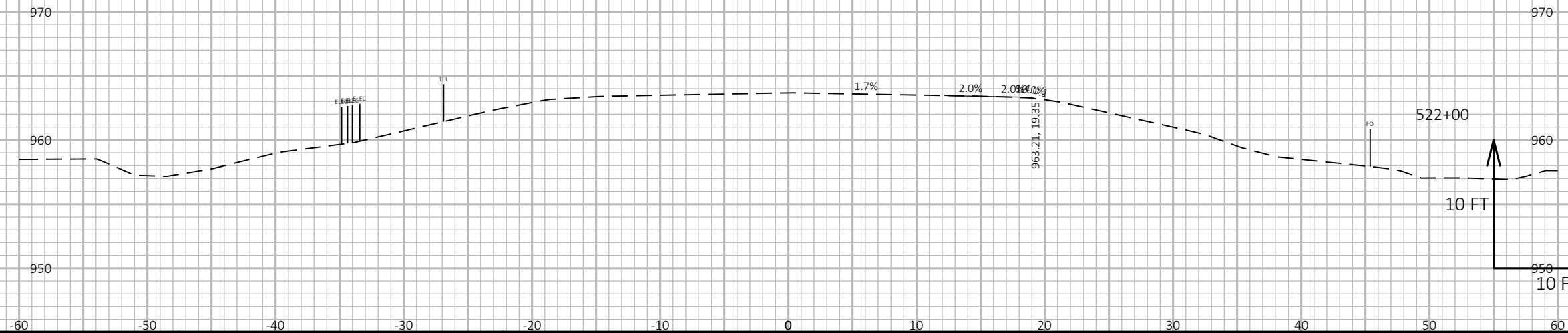
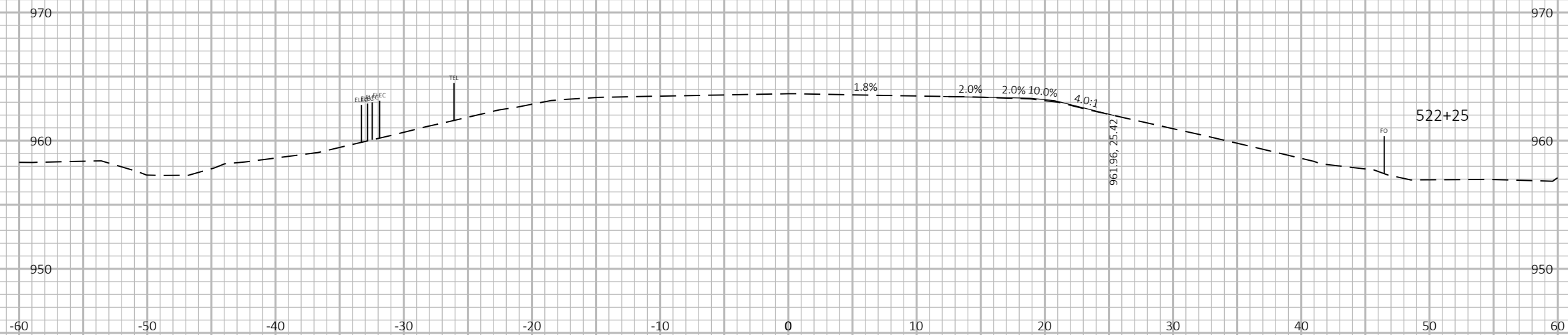


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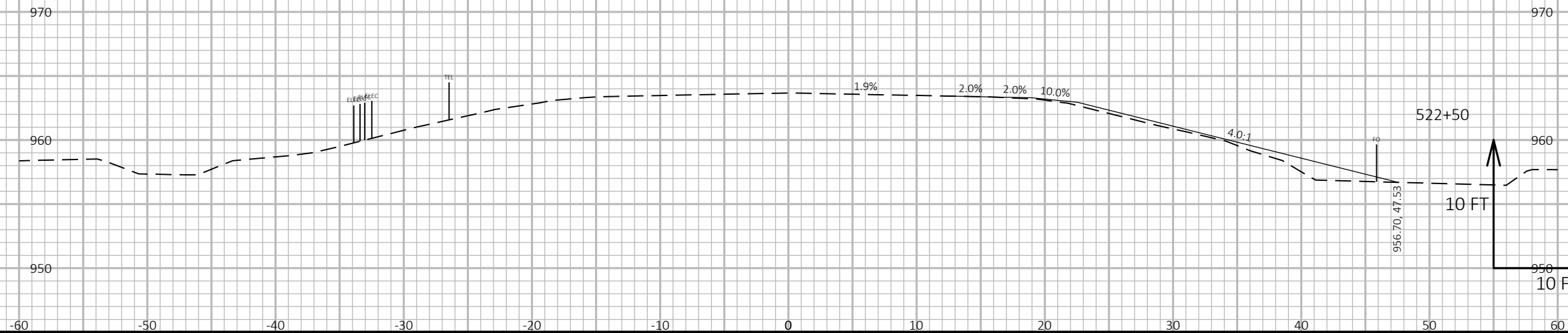
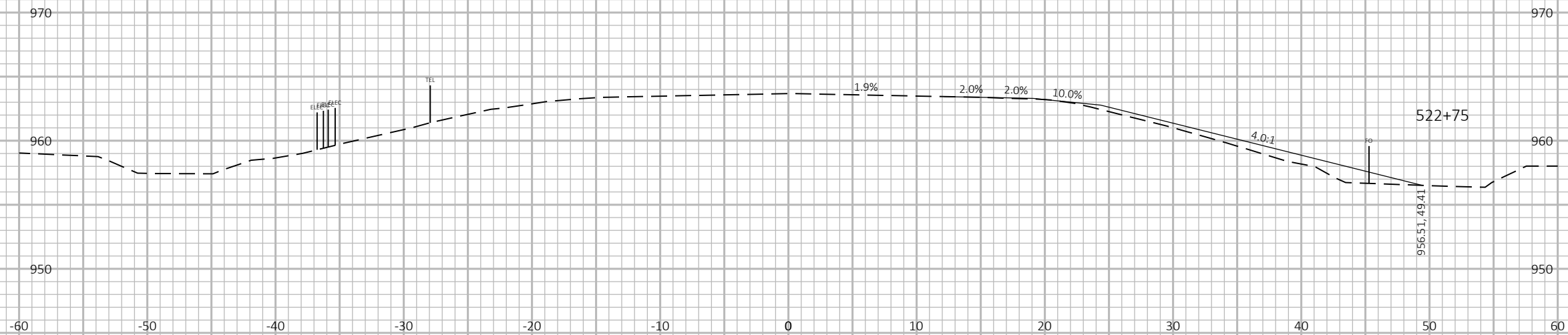
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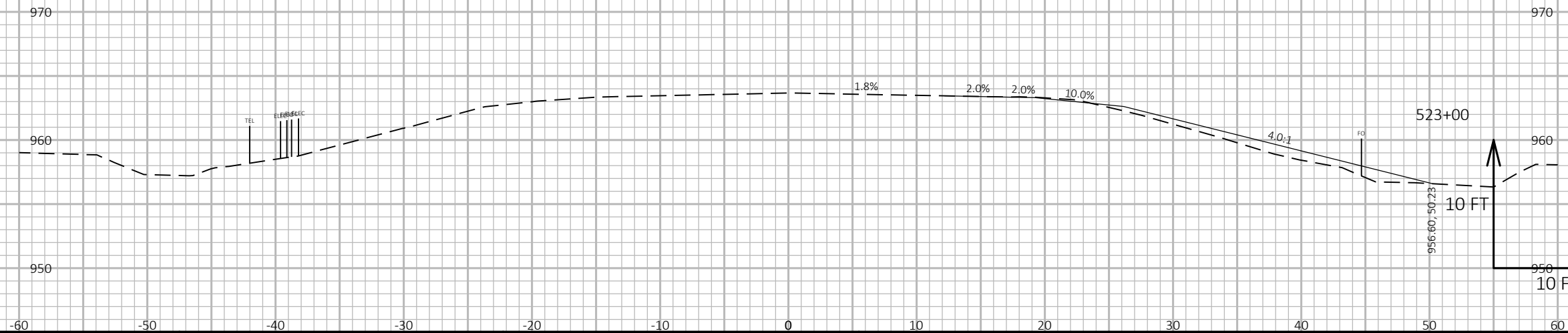
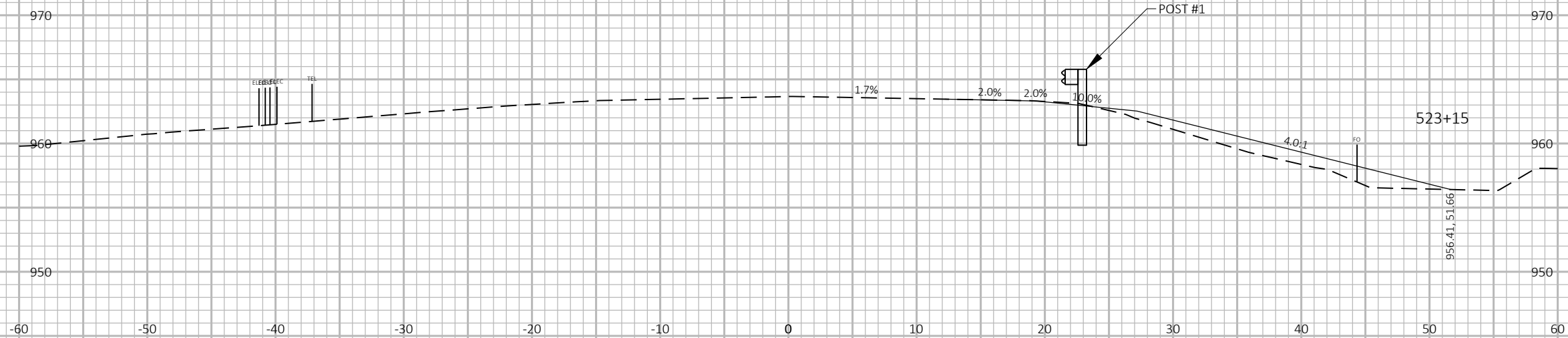


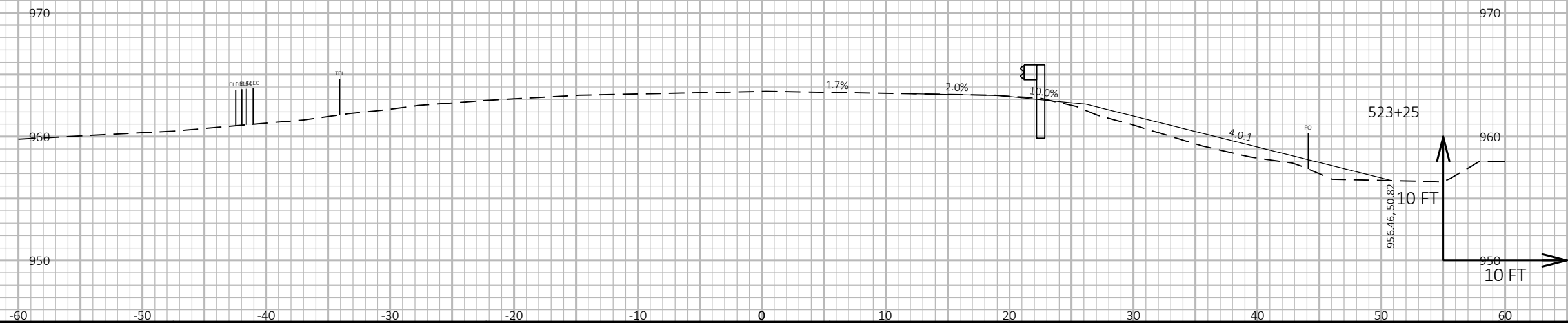
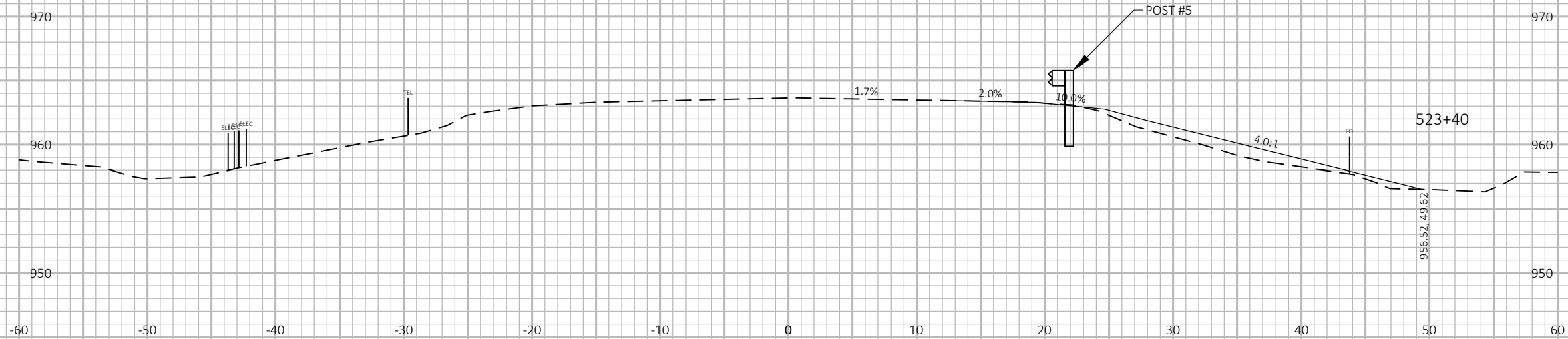
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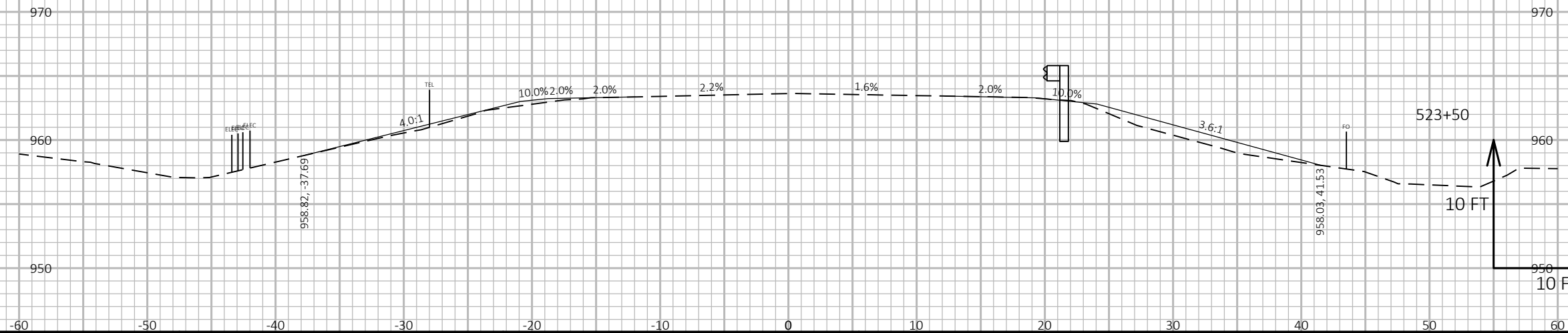
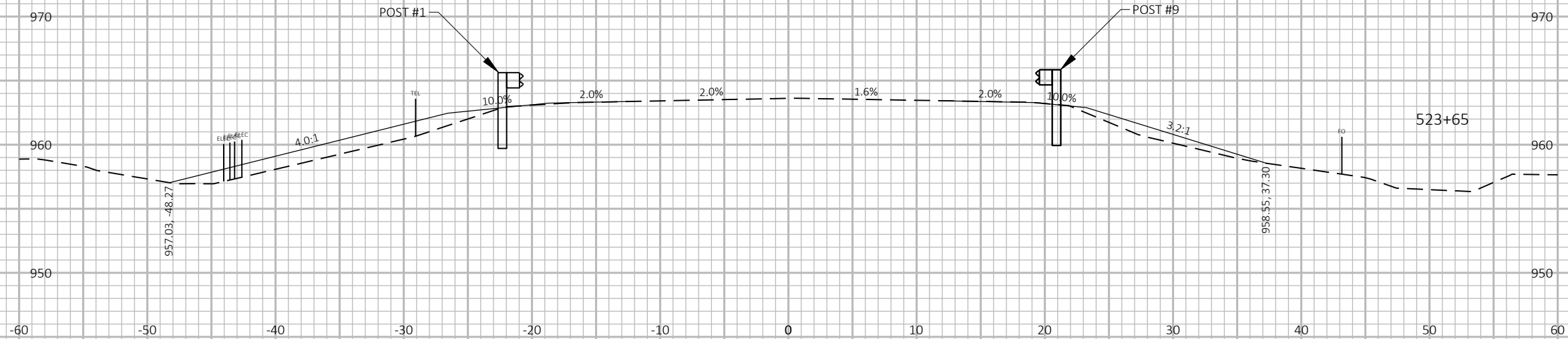
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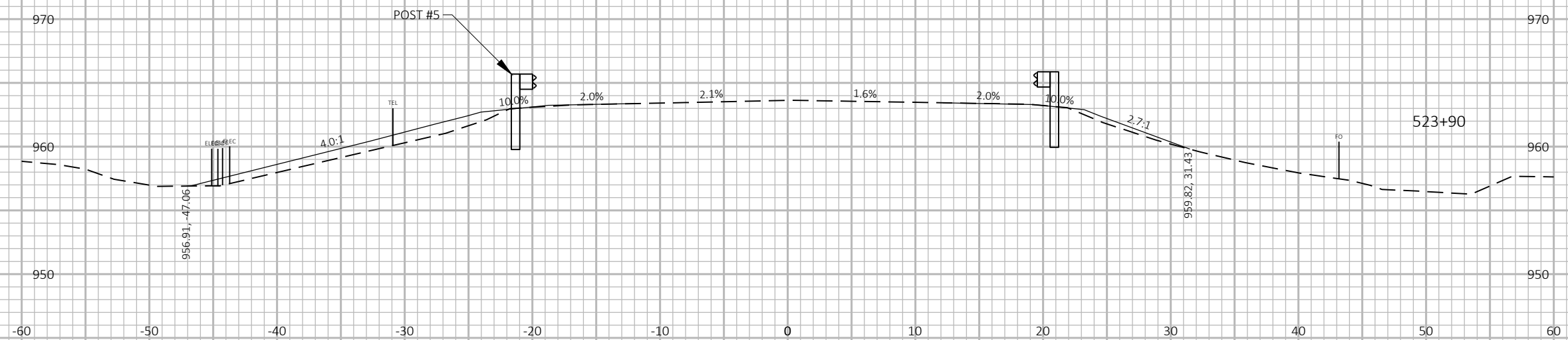


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PROJECT NO:	1590-23-71
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HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: B-38-72 GUARDRAIL CROSS SECTIONS

SHEET

9

FILE NAME : N:\PDS\C3D\15902300\DESIGN\CORRIDORS\GUARDRAIL CORRIDOR.DWG
LAYOUT NAME - 090206-xs

PLOT DATE : 8/17/2018 9:05 AM

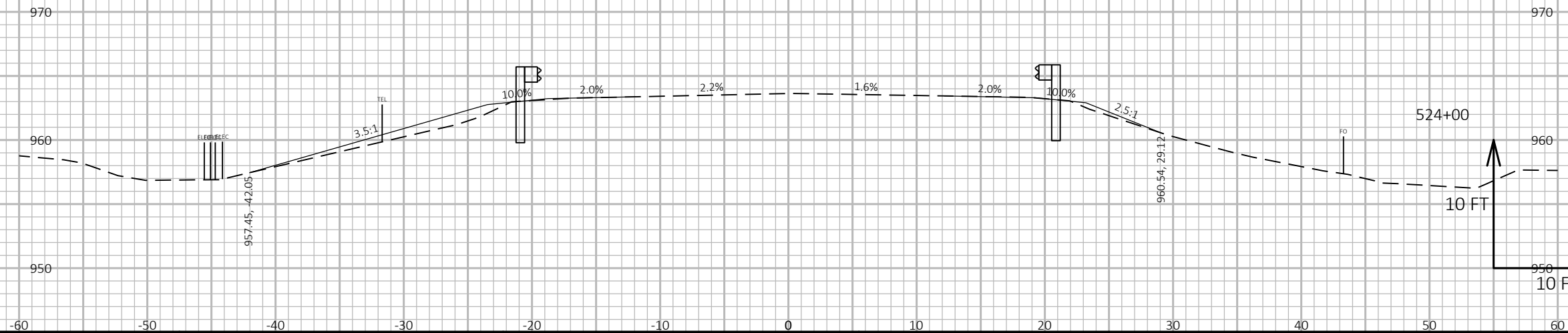
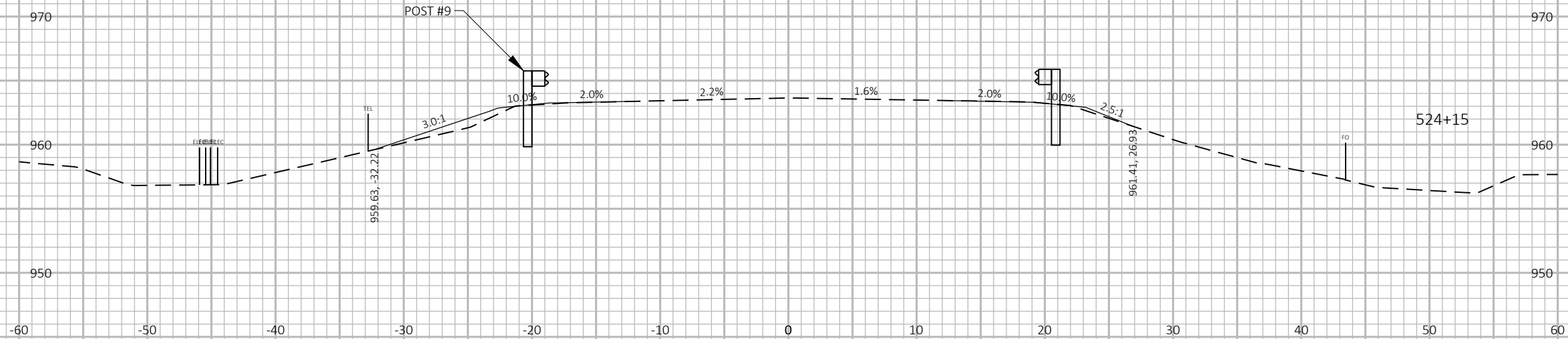
PLOT BY : DUMS, ALEXANDER T

PLOT NAME :

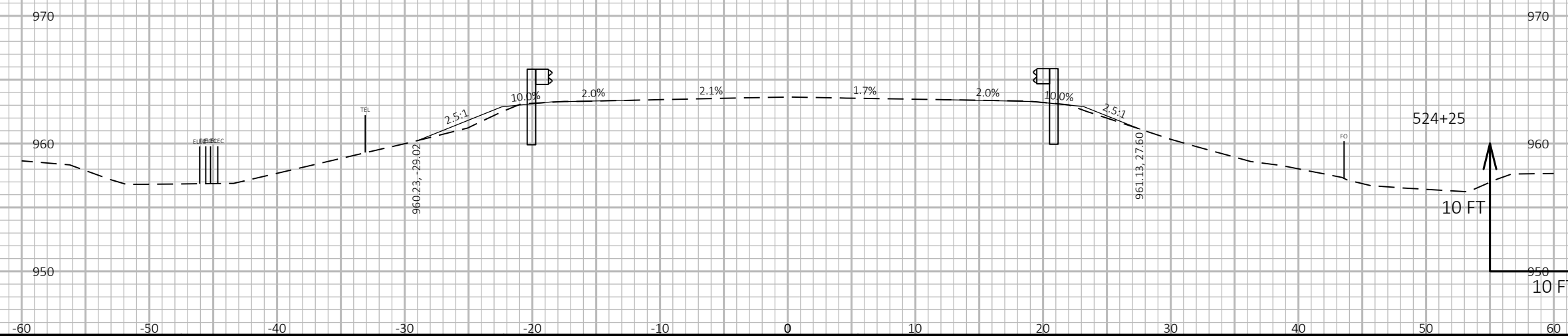
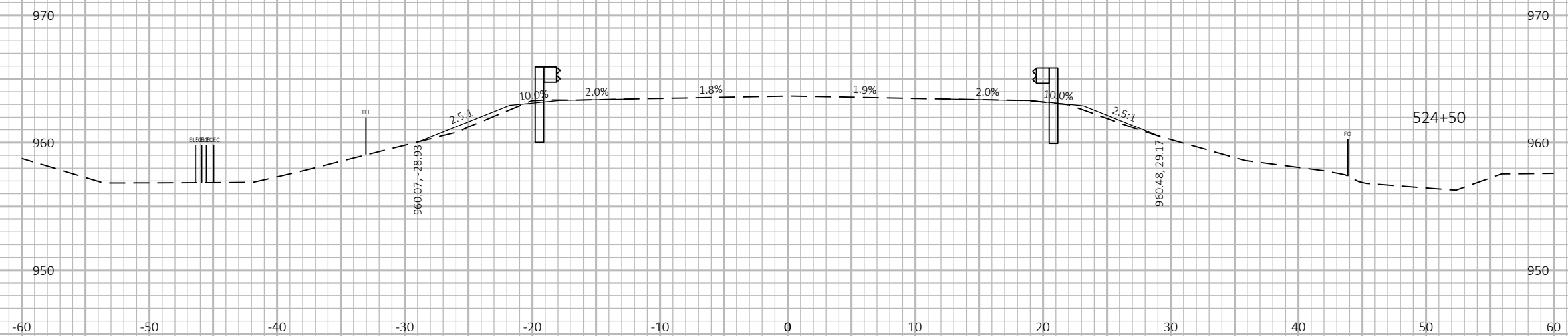
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

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WISDOT/CADDS SHEET 49

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PROJECT NO:	1590-23-71
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HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: B-38-72 GUARDRAIL CROSS SECTIONS

SHEET

1

FILE NAME : N:\PDS\C3D\15902300\DESIGN\CORRIDORS\GUARDRAIL CORRIDOR.DWG
LAYOUT NAME - 090208-xs

PLOT DATE : 8/17/2018 9:05 AM

PLOT BY : DUMS, ALEXANDER T

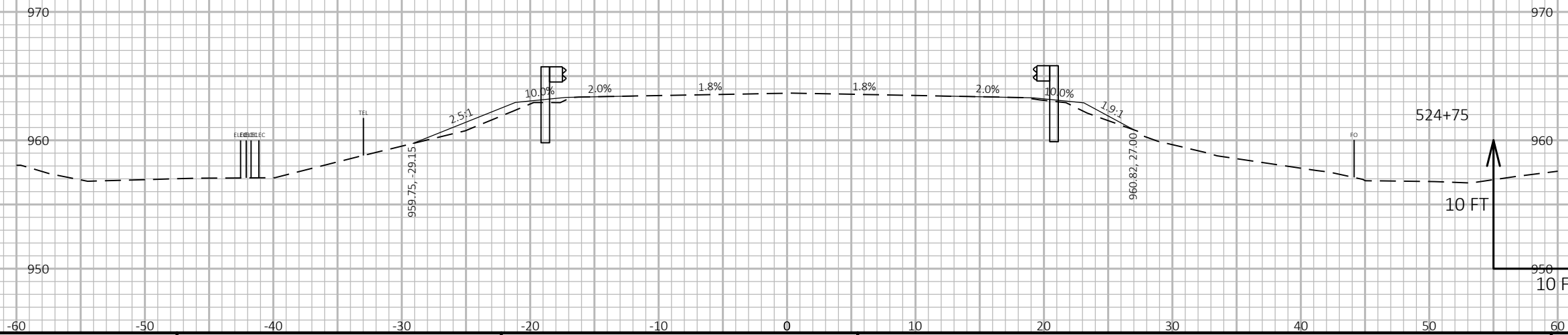
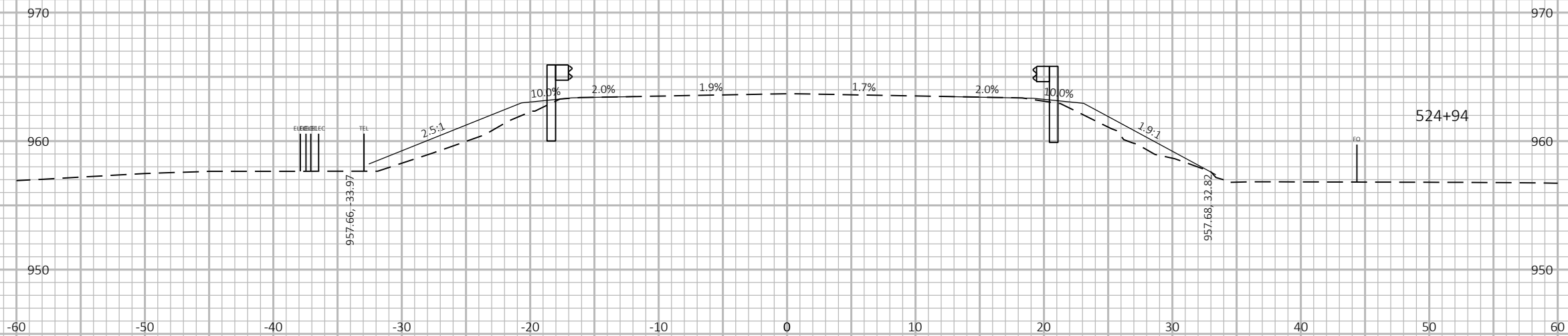
PLOT NAME :

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PRE_72 

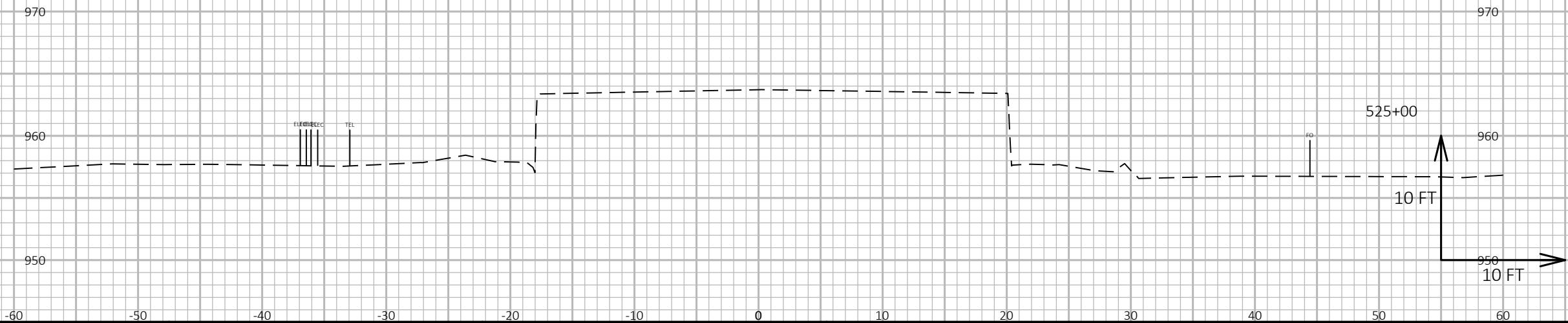
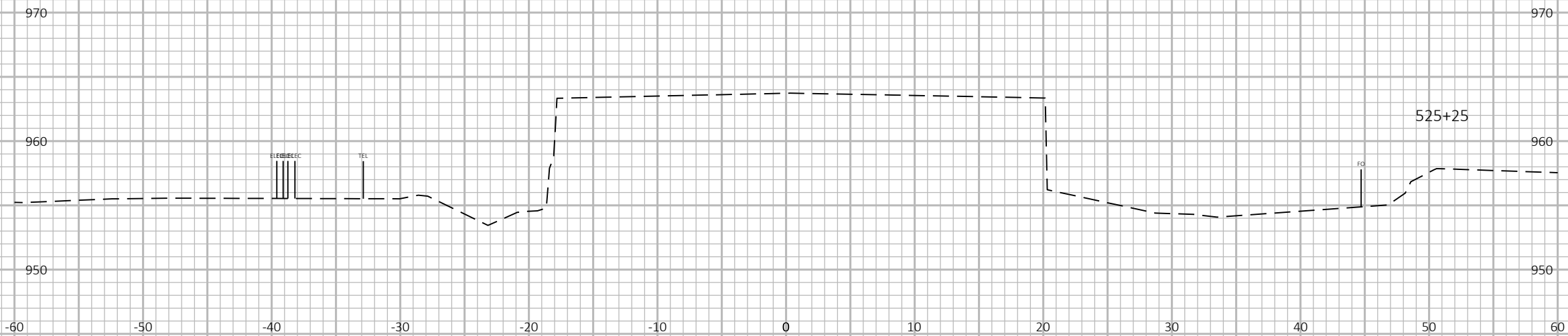
WISDOT/CADDS SHEET 49

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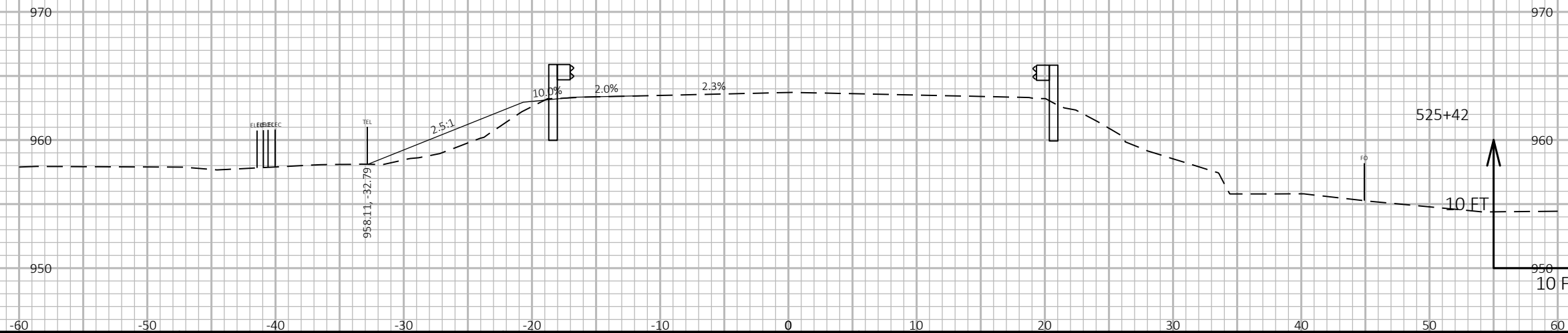
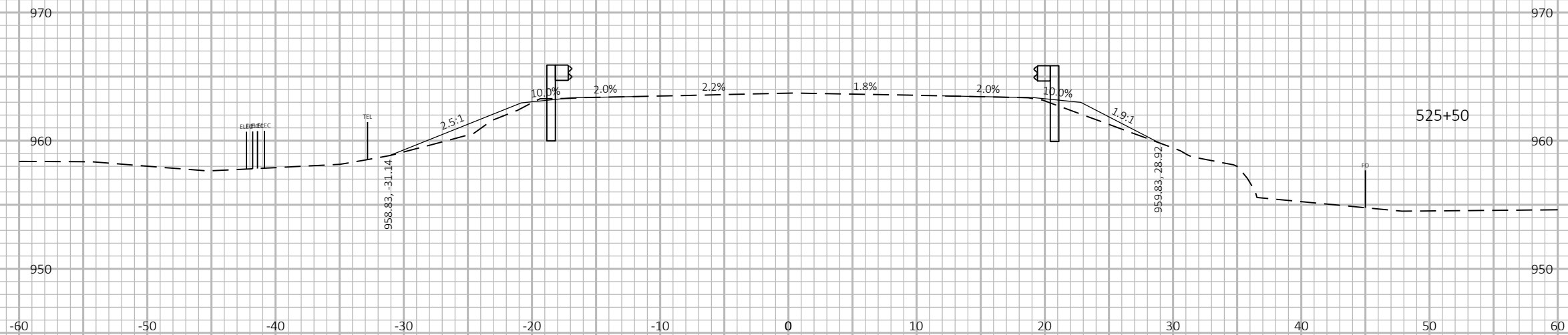
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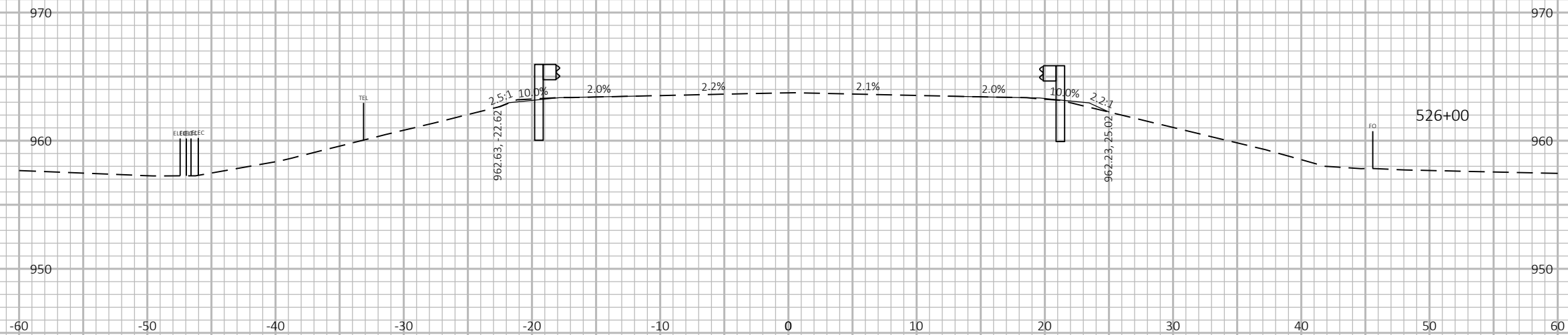
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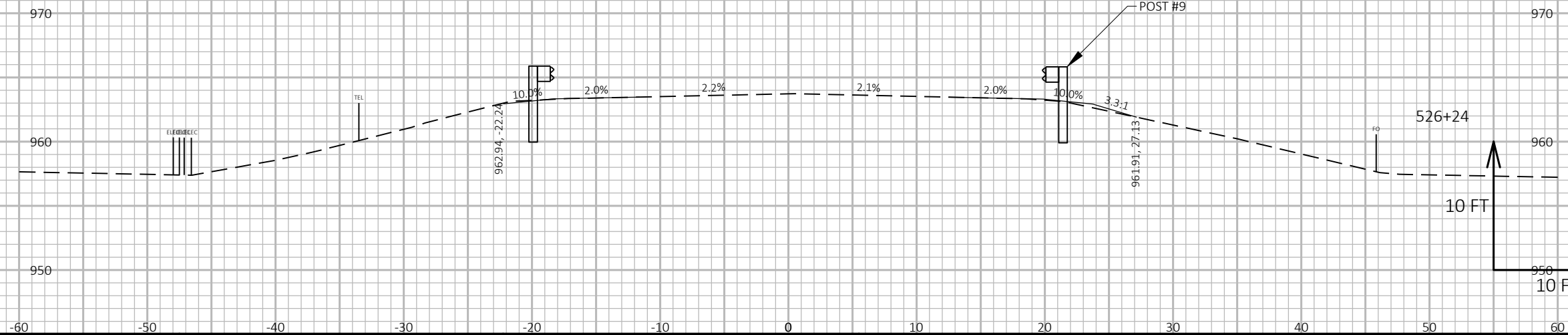
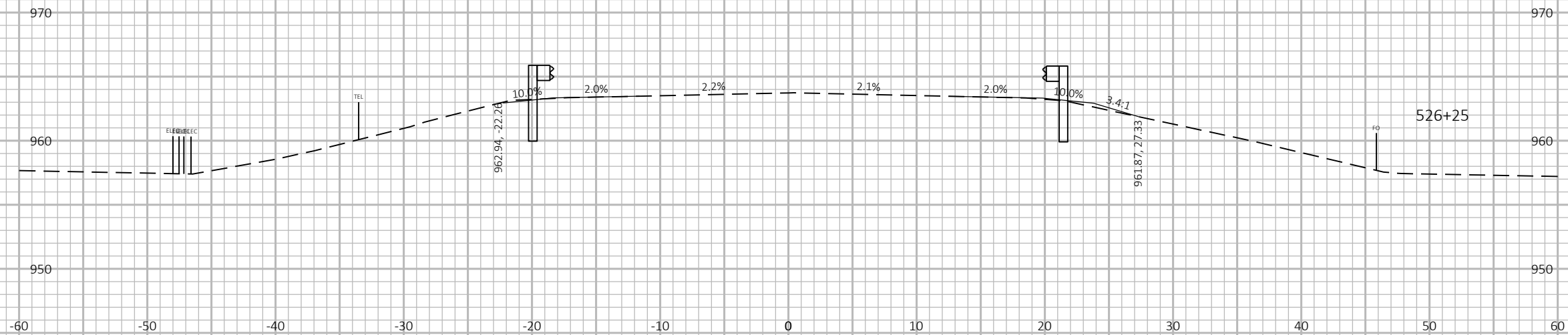
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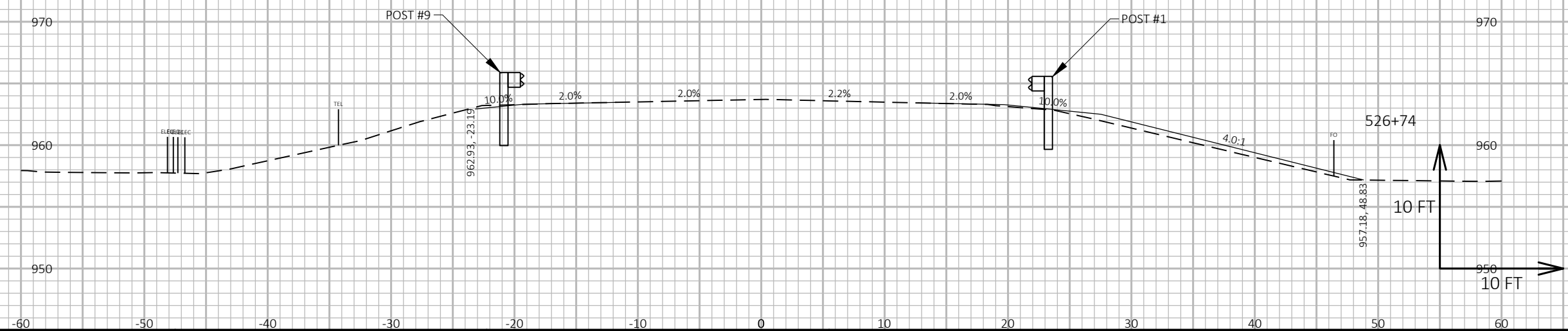
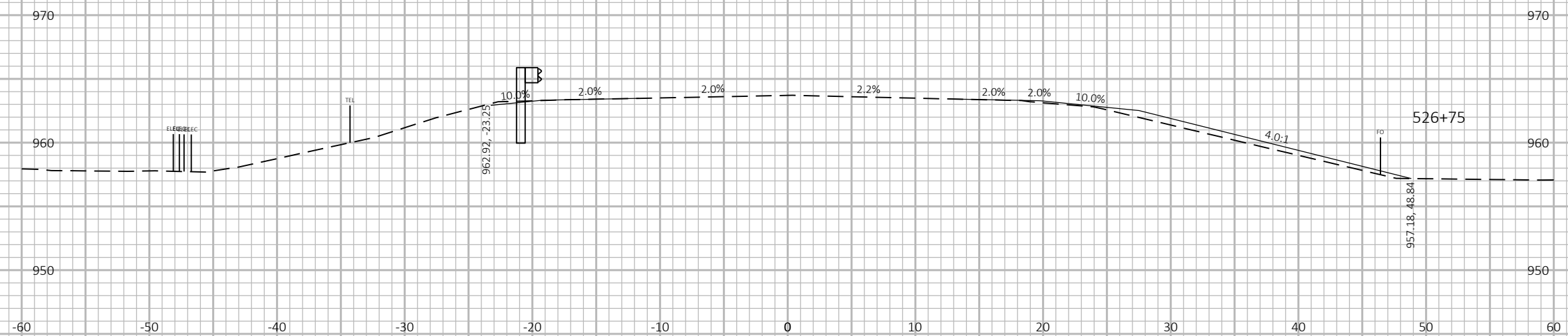


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PROJECT NO:	1590-23-71
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HWY: USH 8

COUNTY: MARINETTE

CROSS SECTIONS: B-38-72 GUARDRAIL CROSS SECTIONS

SHEET

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FILE NAME : N:\PDS\C3D\15902300\DESIGN\CORRIDORS\GUARDRAIL CORRIDOR.DWG
LAYOUT NAME - 090215-xs

PLOT DATE : 8/17/2018 9:06 AM

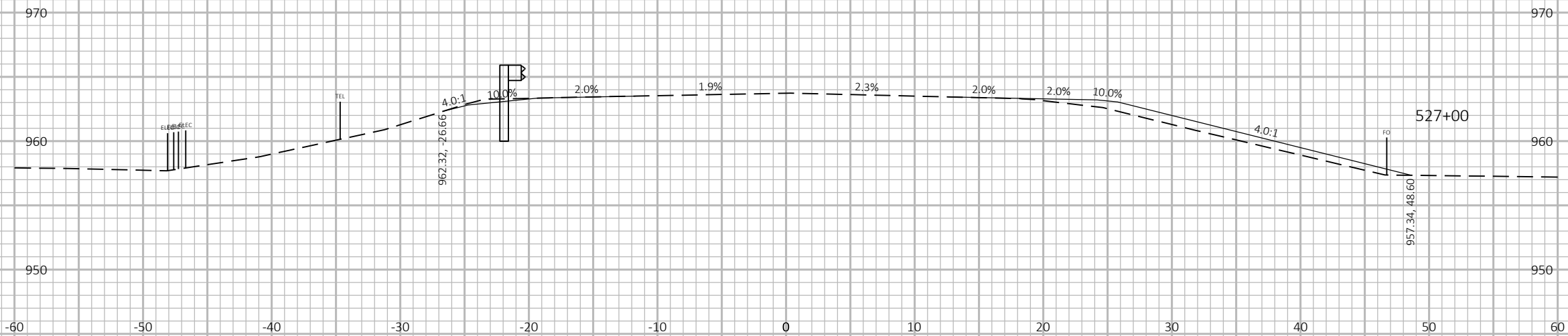
PLOT BY : DUMS, ALEXANDER T

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

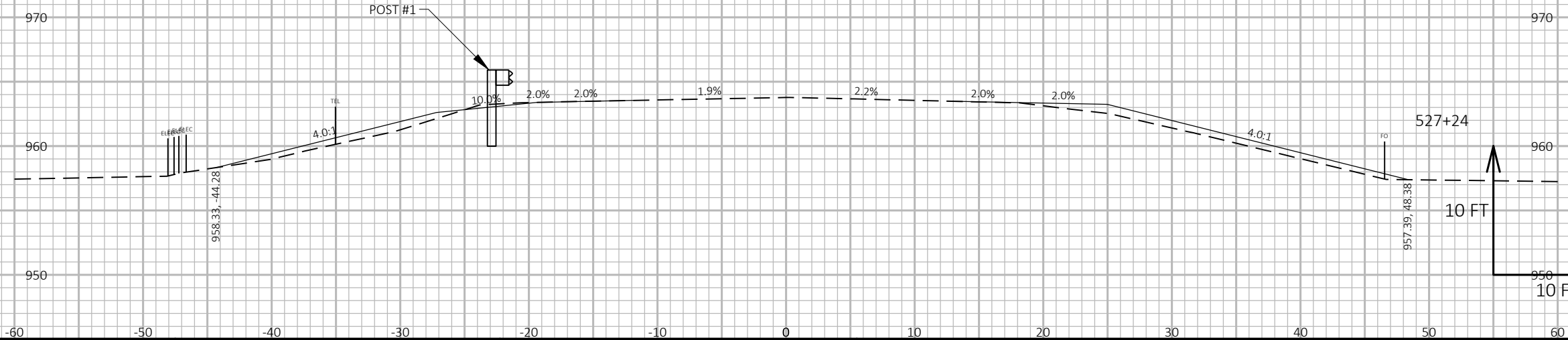
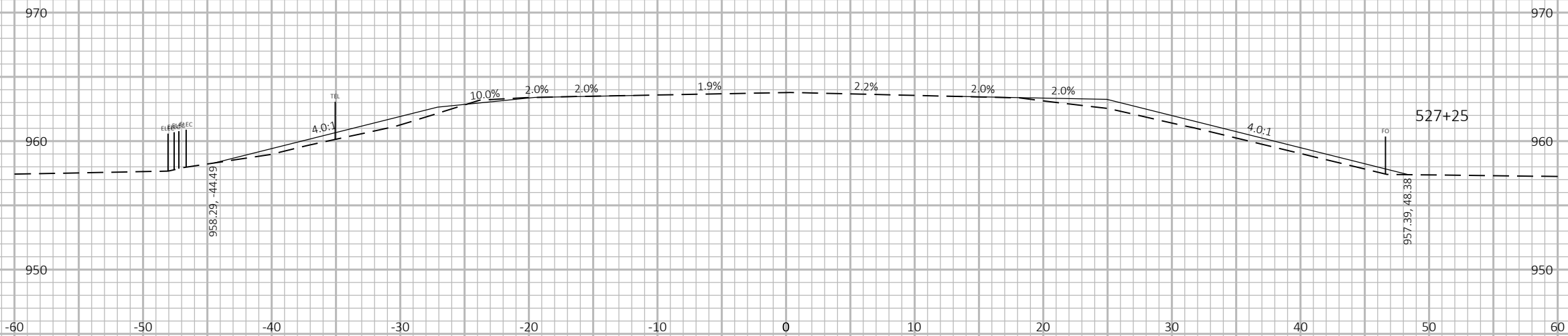
PRE_79 
WISDOT/CADDS SHEET 49

9



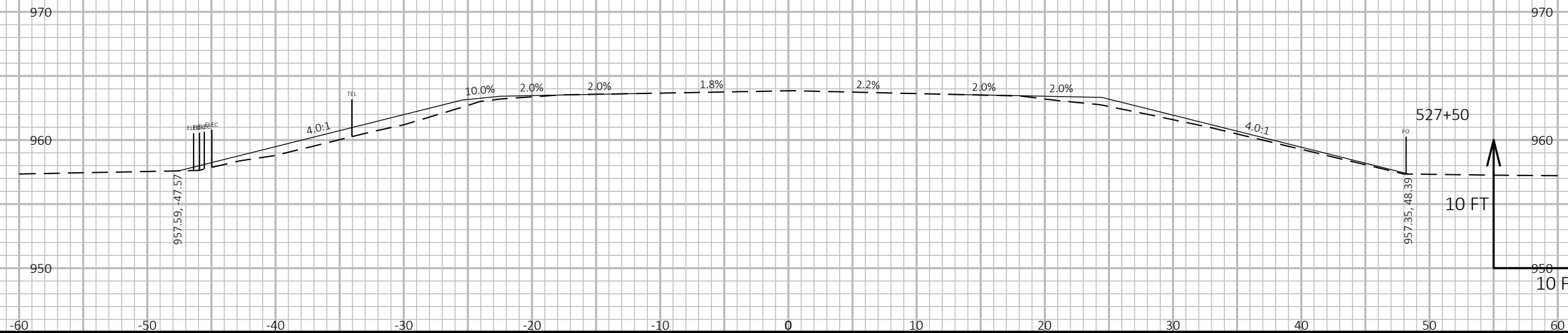
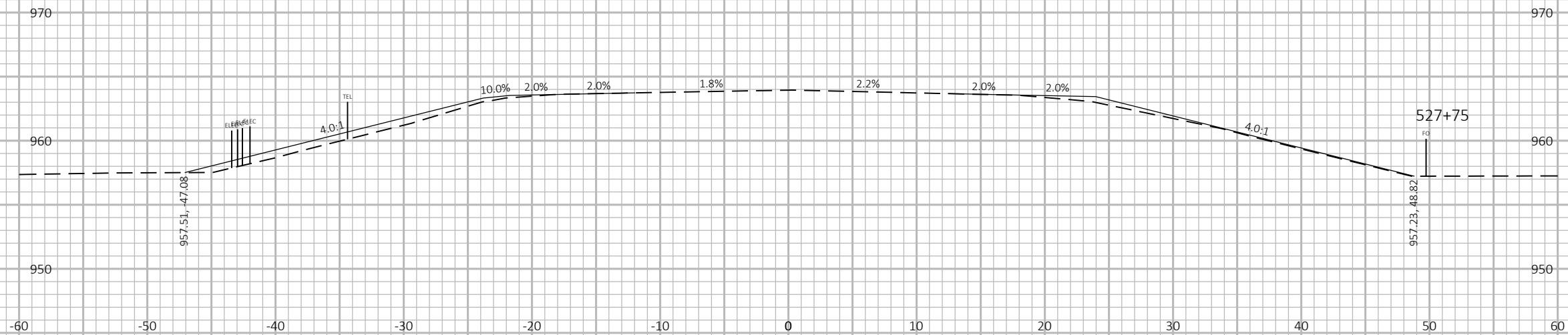
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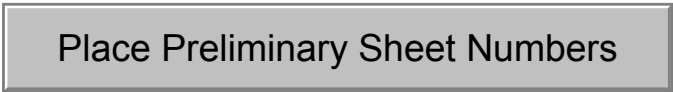
EPlans Preliminary Sheet Numbering Tool

Notes

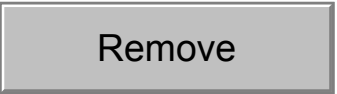
- Acrobat 5 or higher is required to Insert Preliminary Sheet Numbers.
- The Bureau of Highway Construction Plan Examiner places sheet numbers in the final plan.
- This sheet is for placing preliminary sheet numbers with a “PRE_” prefix.
- If a plan contains multiple projects, number each plan individually.
- Leave this sheet in the plan.

TO ADD PRELIMINARY SHEET NUMBERS

- 1. Insert this sheet at the end of the plan**
 - a. With the plan open in Acrobat, select Document > Insert Pages.
 - b. In the Select File to Insert dialog box, select this file (Preliminary_Sheet_Numbers.pdf)
 - c. In the Insert dialog box, choose After for Location and Last page for Page.
 - d. Click OK.
- 2. Click the Place Preliminary Sheet Numbers button**
 - a. Go to the last sheet of the plan.
 - b. Click the Place Preliminary Sheet Numbers button once.
(The preliminary sheet number appears in the bottom right corner of the sheets.
The number should match the page number in the Acrobat Status bar).
- 3. Re-Save the PDF**
 - a. Select File > Save As and save the PDF.



TO REMOVE PRELIMINARY SHEET NUMBERS



Special Provisions

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STSP'S Revised November 19, 2018

SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1590-23-71, Dunbar – Pembine, CTH O – USH 141, USH 8, Marinette County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2019 Edition, as published by the department, and these special provisions.

If all or a portion of the plans and special provisions are developed in the SI metric system and the schedule of prices is developed in the US standard measure system, the department will pay for the work as bid in the US standard system.

100-005 (20181119)

2. Scope of Work.

The work under this contract shall consist of milling, HMA pavement, base aggregate dense, culvert replacement, MGS guardrail, erosion control, pavement marking, centerline rumble strips and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

3. Prosecution and Progress.

Begin work within ten calendar days after the engineer issues a written notice to do so.

Provide the start date to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Upon approval, the engineer will issue the notice to proceed within ten calendar days before the approved start date.

To revise the start date, submit a written request to the engineer at least two weeks before the intended start date. The engineer will approve or deny that request based on the conditions cited in the request and its effect on the department's scheduled resources.

Northern Long-eared Bat (*Myotis septentrionalis*)

Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees. Roosts may not have been observed on this project, but conditions to support the species exist. The species and all active roosts are protected by the Federal Endangered Species Act. If an individual bat or active roost is encountered during construction operations, stop work and notify the engineer and the WisDOT Regional Environmental Coordinator (REC).

If additional construction activities beyond what was originally specified are required to complete the work, approval from the engineer, following coordination with WisDOT REC, is required prior to initiating these activities.

4. Traffic

Maintain two-way counter directional traffic along USH 8 at all times. One lane may be closed with flagging operations during daylight working hours.

All traffic operations for milling, paving, frost heave reconstruction, culvert replacement, and shouldering will be done utilizing one lane, two-way traffic control using flagging operations. HMA pavement shall be placed at each culvert replacement location before opening section up to 2-way traffic at the end of the working day. Base aggregate surface will not be allowed.

Temporary asphalt must be placed when there are drop offs 2-inches or greater, within 18 feet of the travel way each night or when there are no operations present. Potential drop offs include between

driving lanes, between driving lanes and shoulders, and between driving lanes and adjacent intersecting roadways or driveways.

Maintain access to businesses/residences and emergency services at all times. If interference becomes unavoidable during construction operations, contact owners to seek alternatives to access. Notify businesses and private residents at least 48 hours prior to restricting access for construction.

Portable Changeable Message Signs

Portable Changeable Message Signs shall be operating 7 days prior to start of construction.

After coordinating with Department construction field staff, notify the Northeast Region Traffic Section at 920-366-8033 (secondary contact number is 920-360-3107) 3 business days prior to deploying or changing a message on a PCMS to obtain approval of the proposed message. The Northeast Region Traffic Unit will review the proposed message and either approve the message or make necessary changes.

Wisconsin Lane Closure System Advanced Notification

Provide the following minimum advance notification to the engineer for incorporation into the Wisconsin Lane Closure System (LCS).

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

Closure type with height, weight, or width restrictions (available width, all lanes in one direction $\leq 16'$)	MINIMUM NOTIFICATION
Lane and shoulder closures	14 calendar days
Full roadway closures	14 calendar days
System and service ramp closures	14 calendar days
Full system and service ramp closures	14 calendar days
Detours	14 calendar days
Closure type without height, weight, or width restrictions (available width, all lanes in one direction $> 16'$)	MINIMUM NOTIFICATION
Lane and shoulder closures	3 business days
System and service ramp closures	3 business days
Modifying all closure types	3 business days

Discuss LCS completion dates and provide changes in the schedule to the engineer at weekly project meetings in order to manage closures nearing their completion date.

108-057 (20150630)

5. Traffic Control

Perform this work conforming to standard spec 643, and as the plans show, or as the engineer approves, except as follows.

Submit to engineer for approval a detailed traffic control plan for any changes to the proposed traffic control detail as the plans show. Submit this plan ten (10) days before the preconstruction conference.

Provide 24 hours-a-day availability of equipment and forces to expeditiously restore lights, signs, or other traffic control devices that are damaged or disturbed. The cost to maintain and restore the above items shall be considered incidental to the item as bid and no additional payment will be made therefore.

Supply the name and telephone number of a local contact person for traffic control repair before starting work.

Have available at all times sufficient experienced personnel to promptly install, remove and reinstall the required traffic control devices to route traffic during the construction operations.

The turning of traffic control devices when not in use to obscure the message will not be allowed under this contract.

Obtain prior approval from the engineer for the location of egress and ingress for construction vehicles to prosecute the work.

Cover existing signs which conflict with traffic control as the engineer directs.

Conduct operations in such a manner that causes the least interference and inconvenience to the free flow of vehicles on the roadways. This includes the following:

Do not park or store any vehicle, piece of equipment, or construction materials on the right of way, unless otherwise specified in the traffic control article or without approval of the engineer.

All construction vehicles and equipment entering or leaving live traffic lanes shall yield to through traffic.

Equip all vehicles and equipment entering or leaving the live traffic lanes with a hazard identification beam (flashing yellow signal) capable of being visible on a sunny day when viewed without the sun directly on or behind the device from a distance of 1000 feet. Activate the beam when merging into or exiting a live traffic lane.

Do not disturb, remove or obliterate any traffic control signs, advisory signs, shoulder delineators or beam guard in place along the traveled roadways without the approval of the engineer. Immediately repair or replace any damage done to the above during the construction operations at contractor expense.

The traffic requirements are subject to change at the direction of the engineer in the event of an emergency.

ner-643-065 (20171213)

6. **Holiday Work Restrictions.**

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying USH 8 traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday periods:

- From noon Friday, May 28, 2021 to 6:00 AM Tuesday, June 1, 2021 for Memorial Day
- From noon Friday, July 2, 2021 to 6:00 AM Tuesday, July 6, 2021 for Independence Day
- From noon Friday, September 3, 2021 to 6:00 AM Tuesday, September 7, 2021 for Labor Day

stp-107-005 (20181119)

7. **Railroad Insurance and Coordination - Select from drop-down.**

A Description

Enter A1 or A2 and press F3

A.1 Railroad Insurance Requirements

In addition to standard spec 107.26, provide railroad protective liability insurance coverage as specified in standard spec 107.17.3. Enter B1, B2 or B3 and press F3

A.2 Train Operation

Enter one of the following: F (Freight only), P (Passenger & Freight present) or M (for Multiple Crossings) then press F3

A.3 Names and Addresses of Railroad Representatives for Consultation and Coordination

Enter one of the following: BNSF; DME; ELS; ETE; PGR; SSAM; SOO; TR; UP; WSOR; WCL; WGN then press F3

A.4 Work by Railroad

The railroad will perform the work described in this section, except for work described in other special provisions, and will be accomplished without cost to the contractor. Enter a description of the work or write "None"

A.5 Temporary Grade Crossing

Enter C1 or C2 and press F3

A.6 Rail Security Awareness and Contractor Orientation

Enter CNSAFETY or Others then press F3

stp-107-026 (20170615)

8. Information to Bidders, U.S. Army Corps of Engineers Section 404 Permit.

The department has obtained a U.S. Army Corps of Engineers Section 404 permit. Comply with the requirements of the permit in addition to requirements of the special provisions. A copy of the permit is available from the regional office by contacting Matthew Ternes at 920-366-3028.

stp-107-054 (20080901)

9. Environmental Protection, Dewatering.

Add the following to standard spec 107.18:

If dewatering is required, treat the water to remove suspended sediments by filtration, settlement or other appropriate best management practice before discharge. The means and methods proposed to be used during construction shall be submitted for approval as part of the Erosion Control Implementation Plan for dewatering at each location it is required. The submittal shall also include the details of how the intake will be managed to not cause an increase in the background level turbidity before treatment and any additional erosion controls necessary to prevent sediments from reaching the project limits or wetlands and waterways. Guidance on dewatering can be found on the Wisconsin Department of Natural Resources website located in the Storm Water Construction Technical Standards, Dewatering Code #1061, "Dewatering". This document can be found at the WisDNR website:

http://dnr.wi.gov/topic/stormwater/standards/const_standards.html

The cost of all work and materials associated with water treatment and/or dewatering is incidental to the bid items the work is associated.

ner-107-040 (20180212)

10. Utilities.

This contract comes under the provision of Administrative Rule Trans 220.

stp-107-065 (20080501)

11. Coordination with Businesses

The contractor will arrange and conduct a meeting between the contractor, the department, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. Hold the first meeting 14 days prior to the start of work under this

contract and monthly thereafter. The contractor shall notify all parties in writing a minimum of 10 days before the first meeting being held.

ner-105-005 (20180212)

12. Freight Width Restriction

USH 8 is a designated WisDOT Freight Network Route. Maintain a width restriction no less than 16 feet at all times in each direction. Movement of OSOW freight is scheduled to occur during this construction project that will require a minimum of 16 feet of horizontal clearance.

Enter in the correct minimum width restriction in Wisconsin Lane Closure System.

ner-900-030 (20171213)

13. Select Borrow

Conform to standard spec 208 and as follows.

Material

Furnish and use material that consists of granular material meeting the following requirements: Not more than 25% of that portion passing the No. 4 sieve shall pass the No. 200 sieve.

If the engineer approves, the contractor may substitute Breaker Run conforming to standard spec 311 for select borrow.

ner-208-010 (20171213)

14. Preparing the Foundation

Add the following to standard spec 211.3.1:

The contractor shall plan construction activities such that the earth subgrade is covered by the roadway base in a timely manner upon completion of preparation of the subgrade or as the engineer directs. The contractor is responsible for the removal of any excess water from the subgrade as a result of rainfall events or natural drainage.

ner-211-005 (20171213)

15. Pavement Marking and Centerline Rumble Strip/Type 2 Rumble Strip.

Before installing Centerline Rumble Strips place centerline Temporary Marking Line (Epoxy) 4-Inch. Before installing Type 2 Rumble Strips place edgelines Temporary Marking Line (Epoxy) 4-Inch. Except where removed with the rumble application, do not remove the centerline/edgeline Temporary Marking Line (Epoxy) 4-Inch. After the Centerline Rumble Strips or Type 2 Rumble Strips have been installed, place permanent centerline/edgeline Marking Line (Epoxy) 4-Inch.

ner-646-001 (20180205)

16. Base Aggregate Dense 1 1/4-Inch for Lower Base Layers.

Replace standard spec 305.2.2.1(2) with the following:

(2) Unless the plans or special provisions specify otherwise, do the following:

1. Use 1 1/4-inch base throughout the full base depth.
2. Use 3/4-inch base in the top 3 inches of the unpaved portion of shoulders. Use 3/4-inch base or 1 1/4-inch base elsewhere in shoulders.

stp-305-020 (20080902)

17. **HMA Percent Within Limits (PWL) Test Strip Volumetrics, Item 460.0105.S;
HMA Percent Within Limits (PWL) Test Strip Density Item 460.0110.S.**

A Description

This special provision describes the Hot Mix Asphalt (HMA) density and volumetric testing tolerances required for an HMA test strip. An HMA test strip is required for contracts constructed under HMA Percent Within Limits (PWL) QMP. A density test strip is required for each pavement layer placed over a specific, uniform underlying material, unless specified otherwise in the plans. Each contract is restricted to a single mix design per mix type per layer (e.g., upper layer and lower layer may have different mix type specified or may have the same mix type with different mix designs). Each mix design requires a separate test strip. Density and volumetrics testing will be conducted on the same test strip whenever possible.

Perform work according to standard spec 460 and as follows.

B Materials

Use materials conforming to HMA Pavement Percent Within Limits (PWL) QMP special provision.

C Construction

C.1 Test Strip

Submit the test strip start time and date to the department in writing at least 5 calendar days in advance of construction of the test strip. If the contractor fails to begin paving within 2 hours of the submitted start time, the test strip is delayed and the department will assess the contractor \$2,000 for each instance according to Section E of this document. Alterations to the start time and date must be submitted to the department in writing a minimum of 24 hours prior to the start time. The contractor will not be liable for changes in start time related to adverse weather days as defined by standard spec 101.3 or equipment breakdown verified by the department.

On the first day of production for a test strip, produce approximately 750 tons of HMA. (Note: adjust tonnage to accommodate natural break points in the project.) Locate test strips in a section of the roadway to allow a representative rolling pattern (i.e. not a ramp or shoulder, etc.).

C.1.1 Sampling and Testing Intervals

C.1.1.1 Volumetrics

Laboratory testing will be conducted from a split sample yielding three components, with portions designated for QC (quality control), QV (quality verification), and retained.

During production for the test strip, obtain sufficient HMA mixture for three-part split samples from trucks prior to departure from the plant. Collect three split samples during the production of test strip material. Perform sampling from the truck box and three-part splitting of HMA according to CMM 8-36. These three samples will be randomly selected by the engineer from each *third* of the test strip tonnage (T), excluding the first 50 tons:

<u>Sample Number</u>	<u>Production Interval (tons)</u>
<u>1</u>	50 to $\frac{T}{3}$

2

$\frac{T}{3}$ to $\frac{2T}{3}$

3

$\frac{2T}{3}$ to T

C.1.1.2 Density

Required field tests include contractor QC and department QV nuclear density gauge tests and pavement coring at ten individual locations (five in each half of the test strip length) in accordance with Appendix A: *Test Methods and Sampling for HMA PWL QMP Projects*. Both QV and QC teams shall have two nuclear density gauges present for correlation at the time the test strip is constructed. QC and QV teams may wish to scan with additional gauges at the locations detailed in Appendix A, as only gauges used during the test strip correlation phase will be allowed.

C.1.2 Field Tests

C.1.2.1 Density

A gauge comparison according to CMM 8-15.7 shall be completed prior to the day of test strip construction. Daily standardization of gauges on reference blocks and a project reference site shall be performed according to CMM 8-15.8. A standard count shall be performed for each gauge on the material placed for the test strip, prior to any additional data collection. Nuclear gauge readings and pavement cores shall be used to determine nuclear gauge correlation in accordance with Appendix A. The two to three readings for the five locations across the mat for each of two zones shall be provided to the engineer. The engineer will analyze the readings of each gauge relative to the densities of the cores taken at each location. The engineer will determine the average difference between the nuclear gauge density readings and the measured core densities to be used as a constant offset value. This offset will be used to adjust raw density readings of the specific gauge and shall appear on the density data sheet along with gauge and project identification. An offset is specific to the mix and layer, therefore a separate value shall be determined for each layer of each mix placed over a differing underlying material for the contract. This constitutes correlation of that individual gauge for the given layer. Two gauges per team are not required to be onsite daily after completion of the test strip. Any data collected without a correlated gauge will not be accepted.

The contractor is responsible for coring the pavement from the footprint of the density tests and filling core holes according to Appendix A. Coring and filling of pavement core holes must be approved by the engineer. The QV team is responsible for the labeling and safe transport of the cores from the field to the QC laboratory. Testing of cores shall be conducted by the contractor and witnessed by department personnel. The contractor is responsible for drying the cores following testing. The department will take possession of cores following laboratory testing and will be responsible for any verification testing at the discretion of the engineer.

The target maximum density to be used in determining core density is the average of the three volumetric/mix Gmm values from the test strip multiplied by 62.24 lb/ft³. In the event mix and density portions of the test strip procedure are separated, or if an additional density test strip is required, the mix portion must be conducted prior to density determination. The target maximum density to determine core densities shall then be the Gmm four-test running average (or three-test average from a PWL volumetric-only test strip) from the end of the previous day's production multiplied by 62.24 lb/ft³. If no PWL production volumetric test is to be taken in a density-only test strip, a non-random three-part split mix sample will be taken and tested for Gmm by the department representative. The department Gmm test results from this non-random test will be entered in the HMA PWL Test Strip Spreadsheet and must conform to the Acceptance Limits presented in C.2.1.

Exclusions such as shoulders and appurtenances shall be tested and reported according to CMM 8-15. However, all acceptance testing of shoulders and appurtenances will be conducted by the department, and average lot (daily) densities must conform to standard spec Table 460-3. No density incentive or disincentive will be applied to shoulders or appurtenances. However, unacceptable shoulder material will be handled according to standard spec 460.3.3.1 and CMM 8-15.11.

C.1.3 Laboratory Tests

C.1.3.1 Volumetrics

Obtain random samples according to C.1.1.1 and Appendix A. Perform tests the same day as taking the sample.

Theoretical maximum specific gravities of each mixture sample will be obtained according to AASHTO T 209. Bulk specific gravities of both gyratory compacted samples and field cores shall be determined according to AASHTO T 166. The bulk specific gravity values determined from field cores shall be used to calculate a correction factor (i.e., offset) for each QC and QV nuclear density gauge. The correction factor will be used throughout the remainder of the layer.

C.2 Acceptance

C.2.1 Volumetrics

Produce mix conforming to the following limits based on individual QC and QV test results (tolerances based on most recent JMF):

ITEM	ACCEPTANCE LIMITS
Percent passing given sieve:	
37.5-mm	+/- 8.0
25.0-mm	+/- 8.0
19.0-mm	+/- 7.5
12.5-mm	+/- 7.5
9.5-mm	+/- 7.5
2.36-mm	+/- 7.0
75-µm	+/- 3.0
Asphaltic content in percent ^[1]	- 0.5
Air Voids	-1.5 & +2.0
VMA in percent ^[2]	- 1.0
Maximum specific gravity	+/- 0.024

^[1] Asphalt content more than -0.5% below the JMF will be referee tested by the department's AASHTO accredited laboratory and HTCP certified personnel using automated extraction according to WisDOT Modified ASTM D8159.

^[2] VMA limits based on minimum requirement for mix design nominal maximum aggregate size in [table 460-1](#).

QV samples will be tested for Gmm, Gmb, and AC. Air voids and VMA will then be calculated using these test results.

Calculation of air voids shall use either the QC, QV, or retained split sample test results, as identified by conducting the paired t-test with the WisDOT PWL Test Strip Spreadsheet.

If QC and QV test results do not correlate as determined by the split sample comparison, the retained split sample will be tested by the department's AASHTO accredited laboratory and HTCP certified personnel as a referee test. Additional investigation shall be conducted to identify the source of the difference between QC and QV data. Referee data will be used to determine material conformance and pay.

C.2.2 Density

Compact all layers of test strip HMA mixture to the applicable density shown in the following table:

TABLE 460-3 MINIMUM REQUIRED DENSITY^[1]

LAYER	MIXTURE TYPE	
	LT & MT	HT
LOWER	93.0 ^[2]	93.0 ^[3]
UPPER	93.0	93.0

^[1] If any individual core density test result falls more than 3.0 percent below the minimum required target maximum density, the engineer will investigate the acceptability of that material per CMM 8-15.11.

^[2] Minimum reduced by 2.0 percent for a lower layer constructed directly on crushed aggregate or recycled base courses.

^[3] Minimum reduced by 1.0 percent for lower layer constructed directly on crushed aggregate or recycled base courses.

Nuclear density gauges are acceptable for use on the project only if correlation is completed for that gauge during the time of the test strip and the department issues documentation of acceptance stating the correlation offset value specific to the gauge and mix design. The offset is not to be entered into any nuclear density gauge as it will be applied by the department-furnished Field Density Worksheet.

C.2.3 Test Strip Approval and Material Conformance

All applicable laboratory and field testing associated with a test strip shall be completed prior to any additional mainline placement of the mix. All test reports shall be submitted to the department upon completion, and approved before paving resumes. The department will notify the contractor within 24 hours from start of test strip regarding approval to proceed with paving, unless an alternate time frame is agreed upon in writing with the department. The 24-hour approval time includes only working days as defined in standard spec 101.3.

The department will evaluate material conformance and make pay adjustments based on the PWL value of air voids and density for the test strip. The QC core densities and QC and QV mix results will be used to determine the PWL values as calculated in accordance with Appendix A.

The PWL values for air voids and density shall be calculated after determining core densities. An approved test strip is defined as the individual PWL values for air voids and density both being equal to or

greater than 75, mixture volumetric properties conforming to the limits specified in C.2.1, and an acceptable gauge-to-core correlation. Further clarification on PWL test strip approval and appropriate post-test strip actions are shown in the following table:

PWL Test Strip Approval and Material Conformance Criteria

PWL Value for Air Voids and Density	Test Strip Approval	Material Conformance	Post-Test Strip Action
Both PWL $\geq$ 75	Approved ¹	Material paid for according to Section E.	Proceed with Production
$50 \leq$ Either PWL $<$ 75	Not Approved	Material paid for according to Section E.	Consult BTS to determine need for additional test strip.
Either PWL $<$ 50	Not Approved	Unacceptable material removed and replaced or paid for at 50% of the contract unit price according to Section E.	Construct additional Volumetrics or Density test strip as necessary.

¹ In addition to these PWL criteria, mixture volumetric properties must conform to the limits specified in C.2.1, split sample comparison must have a passing result and an acceptable gauge-to-core correlation must be completed.

A maximum of two test strips will be allowed to remain in place per pavement layer per contract. If material is removed, a new test strip shall replace the previous one at no additional cost to the department. If the contractor changes the mix design for a given mix type during a contract, no additional compensation will be paid by the department for the required additional test strip and the department will assess the contractor \$2,000 for the additional test strip according to Section E of this special provision. For simultaneously conducted density and volumetric test strip components, the following must be achieved:

- i. Passing/Resolution of Split Sample Comparison
- ii. Volumetrics/mix PWL value $\geq$ 75
- iii. Density PWL value $\geq$ 75
- iv. Acceptable correlation

If not conducted simultaneously, the mix portion of a test strip must accomplish (i) & (ii), while density must accomplish (iii) & (iv). If any applicable criteria are not achieved for a given test strip, the engineer, with authorization from the department's Bureau of Technical Services, will direct an additional test strip (or alternate plan approved by the department) be conducted to prove the criteria can be met prior to additional paving of that mix. For a density-only test strip, determination of mix conformance will be according to main production, i.e., HMA Pavement Percent Within Limits (PWL) QMP special provision.

D Measurement

The department will measure HMA Percent Within Limits (PWL) Test Strip as each unit of work, acceptably completed as passing the required air void, VMA, asphalt content, gradation, and density

correlation for a Test Strip. Material quantities shall be determined according to standard spec 450.4 and detailed here within.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH
460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH

These items are intended to compensate the contractor for the construction of the test strip for contracts paved under the HMA Pavement Percent Within Limits QMP article.

Payment for HMA Percent Within Limits (PWL) Test Strip Volumetrics is full compensation for volumetric sampling, splitting, and testing; for proper labeling, handling, and retention of split samples.

Payment for HMA Percent Within Limits (PWL) Test Strip Density is full compensation for collecting and measuring of pavement cores, acceptably filling core holes, providing of nuclear gauges and operator(s), and all other work associated with completion of a core-to-gauge correlation, as directed by the engineer.

Acceptable HMA mixture placed on the project as part of a volumetric or density test strip will be compensated by the appropriate HMA Pavement bid item with any applicable pay adjustments. If a test strip is delayed as defined in C.1 of this document, the department will assess the contractor \$2,000 for each instance, under the HMA Delayed Test Strip administrative item. If an additional test strip is required because the initial test strip is not approved by the department or the mix design is changed by the contractor, the department will assess the contractor \$2,000 for each additional test strip (i.e. \$2,000 for each individual volumetrics or density test strip) under the HMA Additional Test Strip administrative item.

Pay adjustment will be calculated using 65 dollars per ton of HMA pavement. The department will pay for measured quantities of mix based on \$65/ton multiplied by the following pay adjustment:

PAY ADJUSTMENT FOR HMA PAVEMENT AIR VOIDS & DENSITY

<i>PERCENT WITHIN LIMITS (PWL)</i>	<i>PAYMENT FACTOR, PF (percent of \$65/ton)</i>
≥ 90 to 100	PF = ((PWL – 90) * 0.4) + 100
≥ 50 to < 90	(PWL * 0.5) + 55
<50	50% ^[1]

where, PF is calculated per air voids and density, denoted PF_{air voids} & PF_{density}

^[1] Material resulting in PWL value less than 50 shall be removed and replaced, unless the engineer allows for such material to remain in place. In the event the material remains in place, it will be paid at 50% of the contract unit price of HMA pavement.

For air voids, PWL values will be calculated using lower and upper specification limits of 2.0 and 4.3 percent, respectively. Lower specification limits for density will be according to Table 460-3 as modified

herein. Pay adjustment will be determined for an acceptably completed test strip and will be computed as shown in the following equation:

$$\text{Pay Adjustment} = (\text{PF}-100)/100 \times (\text{WP}) \times (\text{tonnage}) \times (\$65/\text{ton})^*$$

*Note: If Pay Factor <50, the contract unit price will be used in lieu of \$65/ton

The following weighted percentage (WP) values will be used for the corresponding parameter:

<u>Parameter</u>	<u>WP</u>
Air Voids	0.5
Density	0.5

Individual Pay Factors for each air voids (PF_{air voids}) and density (PF_{density}) will be determined. PF_{air voids} will be multiplied by the total tonnage produced (i.e., from truck tickets), and PF_{density} will be multiplied by the calculated tonnage used to pave the mainline only (i.e., traffic lane excluding shoulder) as determined in accordance with Appendix A.

The department will pay incentive for air voids under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
460.2005	Incentive Density PWL HMA Pavement	DOL
460.2010	Incentive Air Voids HMA Pavement	DOL

The department will administer disincentives under the Disincentive Density HMA Pavement and the Disincentive Air Voids HMA Pavement administrative items.

stp-460-040 (20181119)

18. Reheating HMA Pavement Longitudinal Joints, Item 460.4110.S.

A Description

This special provision describes reheating the abutting edge of the previously compacted layer in the adjacent lane while paving mainline asphalt pavements.

B (Vacant)

C Construction

C.1 Equipment

Provide a self-contained heating unit that heats by convection only. Do not use forced air to enhance the flame. Provide a fireproof barrier between the flame and the heater's fuel source. The heater must produce a uniform distribution of heat within the heat box. Provide automatic controls to regulate the heater output and shutoff the heater when the paver stops or the heater control system loses power.

Mount the heater on the paver inside the paver's automatic leveling device.

C.2 Reheating Joints

Evenly reheat at least an 8 inch (200 mm) wide strip of the previously compacted layer in the adjacent lane as follows:

- Reheat the joint to within 60 degrees F (15 degrees C) of the mix temperature at the paver auger. Measure joint temperature immediately behind the heater.

The engineer may allow the required joint reheat temperatures to be cooler than specified to adjust for weather, wind, and other field conditions. Coordinate the heater output and paver speed to achieve the required joint reheat temperature without visible smoke emission.

D Measurement

The department will measure Reheating HMA Pavement Longitudinal Joints by the linear foot acceptably completed as measured along each joint for each layer of asphalt placed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF

Payment is full compensation for all the work required under this bid item.

stp-460-015 (20140630)

19. HMA Pavement Percent Within Limits (PWL) QMP.

A Description

This special provision describes percent within limits (PWL) pay determination, providing and maintaining a contractor Quality Control (QC) Program, department Quality Verification (QV) Program, required sampling and testing, dispute resolution, corrective action, pavement density, and payment for HMA pavements. Pay is determined by statistical analysis performed on contractor and department test results conducted according to the Quality Management Program (QMP) as specified in standard spec 460, except as modified below.

B Materials

Conform to the requirements of standard specs 450, 455, and 460 except where superseded by this special provision. The department will allow only one mix design for each HMA mixture type per layer required for the contract, unless approved by the engineer. The use of more than one mix design for each HMA pavement layer will require the contractor to construct a new test strip in accordance with HMA Pavement Percent Within Limits (PWL) QMP Test Strip Volumetrics and HMA Pavement Percent Within Limits (PWL) QMP Test Strip Density articles at no additional cost to the department.

Replace standard spec 460.2.8.2.1.3.1 Contracts with 5000 Tons of Mixture or Greater with the following:

460.2.8.2.1.3.1 Contracts under Percent within Limits

(1) Furnish and maintain a laboratory at the plant site fully equipped for performing contractor QC testing. Have the laboratory on-site and operational before beginning mixture production.

(2) Obtain random samples and perform tests according to this special provision and further defined in Appendix A: *Test Methods & Sampling for HMA PWL QMP Projects*. Obtain HMA mixture samples from trucks at the plant. For the subplot in which a QV sample is collected, discard the QC sample and test a split of the QV sample.

(3) Perform sampling from the truck box and three-part splitting of HMA samples according to CMM 8-36. Sample size must be adequate to run the appropriate required tests in addition to one set of duplicate tests that may be required for dispute resolution (i.e., retained). This requires sample sizes which yield three splits for all random sampling per subplot. All QC samples shall provide the following: QC, QV, and Retained. The contractor shall take possession and test the QC portions. The department will observe the splitting and take possession of the samples intended for QV testing (i.e., QV portion from each sample)

and the Retained portions. Additional sampling details are found in Appendix A. Label samples according to CMM 8-36. Additional handling instructions for retained samples are found in CMM 8-36.

(4) Use the test methods identified below to perform the following tests at a frequency greater than or equal to that indicated:

- Blended aggregate gradations in accordance with AASHTO T 30
- Asphalt content (AC) in percent determined by ignition oven method according to AASHTO T 308 as modified in CMM 8-36.6.3.6, chemical extraction according to AASHTO T 164 Method A or B, or automated extraction according to ASTM D8159 as modified in CMM 8-36.6.3.1.
- Bulk specific gravity (Gmb) of the compacted mixture according to AASHTO T 166.
- Maximum specific gravity (Gmm) according to AASHTO T 209.
- Air voids (Va) by calculation according to AASHTO T 269.
- Voids in Mineral Aggregate (VMA) by calculation according to AASHTO R35.

(5) Lot size shall consist of 3750 tons with sublots of 750 tons. Test each design mixture at a frequency of 1 test per 750 tons of mixture type produced and placed as part of the contract. Add a random sample for any fraction of 750 tons at the end of production for a specific mixture design. Partial lots with less than three subplot tests will be included into the previous lot for data analysis and pay adjustment. Volumetric lots will include all tonnage of mixture type under specified bid item unless otherwise specified in the plan.

(6) Conduct field tensile strength ratio tests according to AASHTO T283, without freeze-thaw conditioning cycles, on each qualifying mixture in accordance with CMM 8-36.6.14. Test each full 50,000 ton production increment, or fraction of an increment, after the first 5,000 tons of production. Perform required increment testing in the first week of production of that increment. If field tensile strength ratio values are below the spec limit, notify the engineer. The engineer and contractor will jointly determine a corrective action.

Delete standard spec 460.2.8.2.1.5 and 460.2.8.2.1.6.

Replace standard spec 460.2.8.2.1.7 Corrective Action with the following:

460.2.8.2.1.7 Corrective Action

(1) Material must conform to the following action and acceptance limits based on individual QC and QV test results (tolerances relative to the JMF used on the PWL Test Strip):

ITEM	ACTION LIMITS	ACCEPTANCE LIMITS
Percent passing given sieve:		
37.5-mm	+/- 8.0	
25.0-mm	+/- 8.0	
19.0-mm	+/- 7.5	
12.5-mm	+/- 7.5	
9.5-mm	+/- 7.5	
2.36-mm	+/- 7.0	
75-µm	+/- 3.0	
AC in percent ^[1]	-0.3	-0.5
Va		- 1.5 & +2.0
VMA in percent ^[2]	- 0.5	-1.0

^[1] The department will not adjust pay based on QC AC in percent test results; however corrective action will be applied to nonconforming material according to 460.2.8.2.1.7(3) as modified herein.

^[2] VMA limits based on minimum requirement for mix design nominal maximum aggregate size in table 460-1.

(2) QV samples will be tested for Gmm, Gmb, and AC. Air voids and VMA will then be calculated using these test results.

(3) Notify the engineer if any individual test result falls outside the action limits, investigate the cause and take corrective action to return to within action limits. If two consecutive test results fall outside the action limits, stop production. Production may not resume until approved by the engineer. Additional QV samples may be collected upon resuming production, at the discretion of the engineer.

(4) For any additional tests outside the random number testing conducted for volumetrics, the data collected will not be entered into PWL calculations. Additional QV tests must meet acceptance limits or be subject to production stop and/or remove and replace.

(5) Remove and replace unacceptable material at no additional expense to the department. Unacceptable material is defined as any individual QC or QV tests results outside the acceptance limits or a PWL value < 50. The engineer may allow such material to remain in place with a price reduction. The department will pay for such HMA Pavement allowed to remain in place at 50 percent of the contract unit price.

Replace standard spec 460.2.8.3.1.2 Personnel Requirements with the following:

460.2.8.3.1.2 Personnel Requirements

(1) The department will provide at least one HTCP-certified Transportation Materials Sampling (TMS) Technician, to observe QV sampling of HMA mixtures.

(2) Under departmental observation, a contractor TMS technician shall collect and split samples.

(3) A department HTCP-certified Hot Mix Asphalt, Technician I, Production Tester (HMA-IPT) technician will ensure that all sampling is performed correctly and conduct testing, analyze test results, and report resulting data.

(4) The department will make an organizational chart available to the contractor before mixture production begins. The organizational chart will include names, telephone numbers, and current certifications of all QV testing personnel. The department will update the chart with appropriate changes, as they become effective.

Replace standard spec 460.2.8.3.1.4 Department Verification Testing Requirements with the following:

460.2.8.3.1.4 Department Verification Testing Requirements

(1) HTCP-certified department personnel will obtain QV random samples by directly supervising HTCP-certified contractor personnel sampling from trucks at the plant. Sample size must be adequate to run the appropriate required tests in addition to one set of duplicate tests that may be required for dispute resolution (i.e., retained). This requires sample sizes which yield three splits for all random sampling per subplot. All QV samples shall furnish the following: QC, QV, and Retained. The department will observe the splitting and take possession of the samples intended for QV testing (i.e., QV portion from each sample) and the Retained portions. The department will take possession of retained samples accumulated to date each day QV samples are collected. The department will retain samples until surpassing the analysis window of up to 5 lots, as defined in 460.2.8.3.1.7(2) of this special provision. Additional sampling details are found in Appendix A.

(2) The department will verify product quality using the test methods specified here in 460.2.8.3.1.4(3). The department will identify test methods before construction starts and use only those methods during production of that material unless the engineer and contractor mutually agree otherwise.

(3) The department will perform all testing conforming to the following standards:

- Bulk specific gravity (Gmb) of the compacted mixture according to AASHTO T 166.
- Maximum specific gravity (Gmm) according to AASHTO T 209.
- Air voids (Va) by calculation according to AASHTO T 269.
- Voids in Mineral Aggregate (VMA) by calculation according to AASHTO R 35.
- Asphalt Content (AC) in percent determined by ignition oven method according to AASHTO T 308 as modified in CMM 8-36.6.3.6, chemical extraction according to AASHTO T 164 Method A or B, or automated extraction according to ASTM D8159 as modified in CMM 8-36.6.3.1.

(4) The department will randomly test each design mixture at the minimum frequency of one test for each lot.

Delete standard spec 460.2.8.3.1.6.

Replace standard spec 460.2.8.3.1.7 Dispute Resolution with the following:

460.2.8.3.1.7 Data Analysis for Volumetrics

(1) Analysis of test data for pay determination will be contingent upon QC and QV test results. Statistical analysis will be conducted on Gmm and Gmb test results for calculation of Va. If either Gmm or Gmb analysis results in non-comparable data as described in 460.2.8.3.1.7(2), subsequent testing will be performed for both parameters as detailed in the following paragraph.

(2) The engineer, upon completion of the first 3 lots, will compare the variances (F-test) and the means (t-test) of the QV test results with the QC test results. Additional comparisons incorporating the first 3 lots of data will be performed following completion of the 4th and 5th lots (i.e., lots 1-3, 1-4, and 1-5). A rolling window of 5 lots will be used to conduct F & t comparison for the remainder of the contract (i.e., lots 2-6, then lots 3-7, etc.), reporting comparison results for each individual lot. Analysis will use a set alpha value of 0.025. If the F- and t-tests report comparable data, the QC and QV data sets are determined to be statistically similar and QC data will be used to calculate the Va used in PWL and pay adjustment calculations. If the F- and t-tests result in non-comparable data, proceed to the *dispute resolution* steps found below. Note: if both QC and QV Va PWL result in a pay adjustment of 102% or greater, dispute resolution testing will not be conducted. Dispute resolution via further investigation is as follows:

[1] The Retained portion of the split from the most recent lot in the analysis window (specifically the subplot identifying that variances or means do not compare) will be referee tested by the bureau's AASHTO accredited laboratory and certified personnel. If the non-comparison occurs following Lot 3, 4, or 5, all previous lots are subject to referee testing. Referee test results will replace the QV data of the subplot(s).

[2] Statistical analysis will be conducted with referee test results replacing QV results.

- i. If the F- and t-tests indicate variances and means compare, no further testing is required for the lot and QC data will be used for PWL and pay factor/adjustment calculations.
- ii. If the F- and t-tests indicate non-comparable variances or means, the Retained portion of the random QC sample will be tested by the department's regional lab for the remaining 4 sublots of the lot which the F- and t- tests indicate non-comparable datasets. The department's regional lab and the referee test results will be used for PWL and pay factor/adjustment calculations. Upon the second instance of non-comparable variance or means and for every instance thereafter, the department will assess a pay reduction for the additional testing of the remaining 4 sublots at \$2,000/lot under the HMA Regional Lab Testing administrative item.

[3] The contractor may choose to dispute the regional test results on a lot basis. In this event, the retained portion of each subplot will be referee tested by the department's AASHTO accredited laboratory and certified personnel. The referee Gmm and Gmb test results will supersede the regional lab results for the disputed lot.

- i. If referee testing results in an increased calculated pay factor, the department will pay for the cost of the additional referee testing.
- ii. If referee testing of a disputed lot results in an equal or lower calculated pay factor, the department will assess a pay reduction for the additional referee testing at \$2,000/lot under the Referee Testing administrative item.

(3) The department will notify the contractor of the referee test results within 3 working days after receipt of the samples by the department's AASHTO accredited laboratory. The intent is to provide referee test results within 7 calendar days from completion of the lot.

(4) The department will determine mixture conformance and acceptability by analyzing referee test results, reviewing mixture data, and inspecting the completed pavement according to the standard spec, this special provision, and accompanying Appendix A.

(5) Unacceptable material (i.e., resulting in a PWL value less than 50 or individual QC or QV test results not meeting the Acceptance Requirements of 460.2.8.2.1.7 as modified herein) will be referee tested by the bureau's AASHTO accredited laboratory and certified personnel. Such material may be subject to remove and replace, at the discretion of the engineer. If the engineer allows the material to remain in place, it will be paid at 50% of the HMA Pavement contract unit price. Replacement or pay adjustment will be conducted on a subplot basis. If an entire PWL subplot is removed and replaced, the test results of the newly placed material will replace the original data for the subplot. Any remove and replace shall be performed at no additional cost to the department. Testing of replaced material must include a minimum of one QV result. [Note: If the removed and replaced material does not result in replacement of original QV data, an additional QV test will be conducted and under such circumstances will be entered into the HMA PWL Production spreadsheet for data analysis and pay determination.] The quantity of material paid at 50% the contract unit price will be deducted from PWL pay adjustments, along with accompanying data of this material.

Delete standard spec 460.2.8.3.1.8 Corrective Action.

C Construction

Replace standard spec 460.3.3.2 Pavement Density Determination with the following:

460.3.3.2 Pavement Density Determination

(1) The engineer will determine the target maximum density using department procedures described in CMM 8-15. The engineer will determine density as soon as practicable after compaction and before placement of subsequent layers or before opening to traffic.

(2) Do not re-roll compacted mixtures with deficient density test results. Do not operate continuously below the specified minimum density. Stop production, identify the source of the problem, and make corrections to produce work meeting the specification requirements.

(3) A lot is defined as 7500 lane feet with sublots of 1500 lane feet (excluding shoulder, even if paved integrally) and placed within a single layer for each location and target maximum density category indicated in table 460-3. The contractor is required to complete three tests randomly per subplot and the department will randomly conduct one QV test per subplot. A partial quantity less than 750 lane feet will be included with the previous subplot. Partial lots with less than three sublots will be included in the previous lot for data analysis/acceptance and pay, by the engineer. If density lots/sublots are determined prior to construction of the test strip, any random locations within the test strip shall be omitted. Exclusions such as shoulders and appurtenances shall be tested and recorded in accordance with CMM 8-15. However, all acceptance testing of shoulders and appurtenances will be conducted by the department, and average

lot (daily) densities must conform to standard spec Table 460-3. No density incentive or disincentive will be applied to shoulders or appurtenances. Offsets will not be applied to nuclear density gauge readings for shoulders or appurtenances. Unacceptable shoulder material will be handled according to standard spec 460.3.3.1 and CMM 8-15.11.

(4) The three QC locations per subplot represent the outside, middle, and inside of the paving lane. The QC density testing procedures are detailed in Appendix A.

(5) QV nuclear testing will consist of one randomly selected location per subplot. The QV density testing procedures will be the same as the QC procedure at each testing location and are also detailed in Appendix A.

(6) An HTCP-certified nuclear density technician (NUCDENSITYTEC-I) shall identify random locations and perform the testing for both the contractor and department. The responsible certified technician shall ensure that sample location and testing is performed correctly, analyze test results, and provide density results to the contractor weekly, or at the completion of each lot.

(7) For any additional tests outside the random number testing conducted for density, the data collected will not be entered into PWL calculations. However, additional QV testing must meet the tolerances for material conformance as specified in the standard specification and this special provision. If additional density data identifies unacceptable material, proceed as specified in CMM 8-15.11.

Replace standard spec 460.3.3.3 Waiving Density Testing with Acceptance of Density Data with the following:

460.3.3.3 Analysis of Density Data

(1) Analysis of test data for pay determination will be contingent upon test results from both the contractor (QC) and the department (QV).

(2) As random density locations are paved, the data will be recorded in the HMA PWL Production Spreadsheet for analysis in chronological order. The engineer, upon completion of the analysis lot, will compare the variances (F-test) and the means (t-test) of the QV test results with the QC test results. Analysis will use a set alpha value of 0.025.

- i. If the F- and t-tests indicate variances and means compare, the QC and QV data sets are determined to be statistically similar and QC data will be used for PWL and pay adjustment calculations.
- ii. If the F- and t-tests indicate variances or means do not compare, the QV data will be used for subsequent calculations.

(3) The department will determine mixture density conformance and acceptability by analyzing test results, reviewing mixture data, and inspecting the completed pavement according to standard spec, this special provision, and accompanying Appendix A.

(4) Density resulting in a PWL value less than 50 or not meeting the requirements of 460.3.3.1 (any individual density test result falling more than 3.0 percent below the minimum required target maximum density as specified in standard spec Table 460-3) is unacceptable and may be subject to remove and replace at no additional cost to the department, at the discretion of the engineer.

- i. Replacement may be conducted on a subplot basis. If an entire PWL subplot is removed and replaced, the test results of the newly placed material will replace the original data for the subplot.
- ii. Testing of replaced material must include a minimum of one QV result. [Note: If the removed and replaced material does not result in replacement of original QV data, an additional QV test must be conducted and under such circumstances will be entered into the data analysis and pay determination.]
- iii. If the engineer allows such material to remain in place, it will be paid for at 50% of the HMA Pavement contract unit price. The extent of unacceptable material will be addressed as

specified in CMM 8-15.11. The quantity of material paid at 50% the contract unit price will be deducted from PWL pay adjustments, along with accompanying data of this material.

D Measurement

The department will measure the HMA Pavement bid items acceptably completed by the ton as specified in standard spec 450.4 and as follows in standard spec 460.5 as modified in this special provision.

E Payment

Replace standard spec 460.5.2 HMA Pavement with the following:

460.5.2 HMA Pavement

460.5.2.1 General

(1) Payment for HMA Pavement Type LT, MT, and HT mixes is full compensation for providing HMA mixture designs; for preparing foundation; for furnishing, preparing, hauling, mixing, placing, and compacting mixture; for HMA PWL QMP testing and aggregate source testing; for warm mix asphalt additives or processes; for stabilizer, hydrated lime and liquid antistripping agent, if required; and for all materials including asphaltic materials.

(2) If provided for in the plan quantities, the department will pay for a leveling layer, placed to correct irregularities in an existing paved surface before overlaying, under the pertinent paving bid item. Absent a plan quantity, the department will pay for a leveling layer as extra work.

460.5.2.2 Calculation of Pay Adjustment for HMA Pavement using PWL

(1) Pay adjustments will be calculated using 65 dollars per ton of HMA pavement. The HMA PWL Production Spreadsheet, including data, will be made available to the contractor by the department as soon as practicable upon completion of each lot. The department will pay for measured quantities of mix based on this price multiplied by the following pay adjustment calculated in accordance with the HMA PWL Production Spreadsheet:

PAY FACTOR FOR HMA PAVEMENT AIR VOIDS & DENSITY

<i>PERCENT WITHIN LIMITS</i>	<i>PAYMENT FACTOR, PF</i>
<i>(PWL)</i>	<i>(percent of \$65/ton)</i>
≥ 90 to 100	$PF = ((PWL - 90) * 0.4) + 100$
≥ 50 to < 90	$(PWL * 0.5) + 55$
<50	50% ^[1]

where PF is calculated per air voids and density, denoted PF_{air voids} & PF_{density}

^[1] Any material resulting in PWL value less than 50 shall be removed and replaced unless the engineer allows such material to remain in place. In the event the material remains in place, it will be paid at 50% of the contract unit price of HMA pavement.

For air voids, PWL values will be calculated using lower and upper specification limits of 2.0 and 4.3 percent, respectively. Lower specification limits for density shall be in accordance with standard spec Table 460-3. Pay adjustment will be determined on a lot basis and will be computed as shown in the following equation.

$$\text{Pay Adjustment} = (\text{PF} - 100) / 100 \times (\text{WP}) \times (\text{tonnage}) \times (\$65/\text{ton})^*$$

*Note: If Pay Factor <50, the contract unit price will be used in lieu of \$65/ton

The following weighted percentage (WP) values will be used for the corresponding parameter:

<u>Parameter</u>	<u>WP</u>
Air Voids	0.5
Density	0.5

Individual Pay Factors for each air voids ($\text{PF}_{\text{air voids}}$) and density ($\text{PF}_{\text{density}}$) will be determined. $\text{PF}_{\text{air voids}}$ will be multiplied by the total tonnage placed (i.e., from truck tickets), and $\text{PF}_{\text{density}}$ will be multiplied by the calculated tonnage used to pave the mainline only (i.e., travel lane excluding shoulder) as determined in accordance with Appendix A.

The department will pay incentive for air voids and density under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
460.2005	Incentive Density PWL HMA Pavement	DOL
460.2010	Incentive Air Voids HMA Pavement	DOL

The department will administer disincentives under the Disincentive Density HMA Pavement and the Disincentive Air Voids HMA Pavement administrative items.

The department will administer a disincentive under the Disincentive HMA Binder Content administrative item for each individual QV test result indicating asphalt binder content below the Action Limit in 460.2.8.2.1.7 presented herein. The department will adjust pay per subplot of mix at 65 dollars per ton of HMA pavement multiplied by the following pay adjustment calculated according to the HMA PWL Production Spreadsheet:

<u>AC Binder</u> <u>Relative to JMF</u>	<u>Pay Adjustment /</u> <u>Sublot</u>
-0.4% to -0.5%	75%
More than -0.5%	50% ^[1]

^[1] Any material resulting in an asphalt binder content more than 0.5% below the JMF AC content shall be removed and replaced unless the engineer allows such material to remain in place. In the event the material remains in place, it will be paid at 50% of the contract unit price of HMA pavement. Such material will be referee tested by the department's AASHTO accredited laboratory and HTCP certified personnel using automated extraction according to ASTM D8159 as modified in CMM 8-36.6.3.1.

Note: PWL value determination is further detailed in the *Calculations* worksheet of the HMA PWL Production spreadsheet.

stp-460-050 (20181119)

20. Culvert Pipe Liners, 24-Inch, Item 520.9700.S; Cleaning Culvert Pipes for Liner Verification, Item 520.9750.S.

A Description

This special provision describes providing, verifying, and pressure grouting culvert pipe liners for circular culverts.

B Materials

B.1 General

Provide flow calculations at the preconstruction conference. Use contractor-proposed liner properties, the Manning's coefficients listed on the department's approved products list, and base calculations on existing culvert sizes and liner sizes the plans show. Ensure that pipes when lined have a capacity within $\pm 5\%$ of the original full flow capacity of the pipe.

B.2 Flexible Pipe Liner

Use liners with a Manning's coefficient value published on the department's approved products list. Upon delivery provide manufacturer certificates of compliance certifying that the liners conform to the following:

Pipe Type	ASTM Designation	ASTM D3350 Resin
High Density Polyethylene (HDPE)		
Profile Wall Pipe	F894	345463C
Solid Wall Pipe	F714	345463C
Polyvinylchloride (PVC)	F949	---

B.3 Grout

B.3.1 Cement

Furnish cement meeting the requirements of standard specification 501.2.1 for Type I or II Portland Cement.

B.3.2 Fly Ash

Furnish Class C or F Fly Ash meeting the requirements of standard specification 501.2.6.

B.3.3 Sand

Furnish natural sand meeting the fine aggregate requirements of standard specification 501.2.5.3. In addition to the size requirements of standard specification 501.2.5.3.4 the percent passing of the number 200 sieve shall be 0-5 percent passing by weight.

B.3.4 Water

Furnish water meeting the requirements of standard specification 501.2.4.

B.3.5 Mix Design

Use the basic proportions of dry materials per cubic yard of grout as follows:

Cement 100 pounds
Fly Ash 400 pounds
Fine Aggregate 2600 pounds

Air entraining and chemical admixtures to control fluidity of the grout are allowable. Ten days before placement, furnish to the engineer a design mix detailing all components and their proportions in the mix.

B.8.6 Fluidity

Measure the fluidity of the grout per ASTM C939. Prior to filling the flow cone with flowable mortar, pass the mixture through a 1/4-inch screen. Use an efflux time of 10 seconds to 16 seconds. Measure in the presence of the engineer prior to placement and at least once every 4 working hours until work is complete.

B.8.7 Cellular Grout

Alternatively, the contractor may use, or if the manufacturer recommends, an engineer-approved commercial cellular concrete grout conforming to the following:

Cement	ASTM C150	Type I or II
Density	ASTM C495 (no oven drying)	50 pcf min
Compressive Strength	ASTM C495	300 psi @ 28 day min 100 psi in 24 hours
Shrinkage	ASTM	1% by volume
Flow	ASTM C939	35 sec max

C Construction

C.1 General

As soon as possible after contract execution, survey existing culvert pipes to determine which culverts need cleaning in order to verify the required liner diameter and length. Notify the engineer before cleaning to confirm payment under the Cleaning Culvert Pipes for Liner Verification bid item.

Coordinate with the engineer to field verify culvert diameter and length, shape, material, and condition before ordering the liners.

Obtain easements if necessary for installing long sections of pipe.

C.2 Excavating and Cleaning

Before inserting the liner, clean and dry the pipe. Excavate and pump as required to remove debris and other materials that would interfere with the placement or support of the inserted liner. Dispose of and replace unserviceable endwalls as the engineer directs.

C.3 Placing Liners

Unload liners using slings and boom-type trucks or equivalents. Do not use chains or wire rope to handle liners and do not dump liners from the trucks when unloading.

Install liners such that the alignment and invert lie true to the lines, grades, and elevations in the plan. In absence of plan details, install liners horizontally to provide even annular space between the host pipe and sides of the liner. Install liners vertically with the invert as close to the host pipe invert as possible.

Obtain additional easements, if necessary, for installing long sections of liner.

Connect joints and install the liner per the manufacturer's recommendations and this part.

C.4 Pressure Grouting

Furnish a written plan for grouting the annular space between the host pipe and culvert pipe liner to the engineer for acceptance. Furnish the grouting plan prior to or at the project preconstruction conference so that it can be reviewed and discussed. At a minimum, the grouting plan shall consist of the following:

- Intended grout mix(es)
- Testing methods and frequency
- Pumping equipment and pressure regulation
- Intended grout staging
- Grout monitoring
- Bracing/floatation control

Include a description of staging in the grouting plan. Based on the length and slope of the host culvert, multiple stages may be required to minimize external loads on the culvert pipe liner. Develop the staging plan with the manufacturer based on the recommended maximum loading for the culvert pipe liner and the condition of the host culvert. Unless approved by the manufacturer, in no case shall a single lift of grout exceed 1/3rd the pipe external diameter at any point in the pour.

After the liner is in place, fill the area between the original culvert and the liner completely with grout per the accepted grouting plan. Block, grout in lifts, or otherwise secure liners to prevent floatation or deformation of the liner while grouting. Grout ports can be fabricated to allow placement of anti-floatation bracing or spacers.

Use a grout plant that is capable of accurately measuring, proportioning, mixing, and discharging by volume and at discharge pressures the liner manufacturer recommends. Do not exceed manufacturer-specified maximum pressures. Place grout in lifts to prevent exceeding maximum allowable pressures and to prevent flotation.

Use grout and witness ports to vent grouting and monitoring grouting progress. Plug ports as necessary as grout reaches them.

Do not remove any bracing inside of the liner until the grouting process is complete.

C.5 Assembly, Floatation, and Deflection Mitigation

Damage or misalignment due to assembly, floatation or deformation during grouting, or otherwise resulting from workmanship will be mitigated at the contractor's expense.

C.6 Site Restoration

Replace pipe sections damaged or collapsed during installation or grouting operations. Restore the grade to its original or improved cross section. Dispose of waste material.

D Measurement

The department will measure the Culvert Pipe Liners bid items by the linear foot measured in place for each culvert location acceptably completed.

The department will measure Cleaning Culvert Pipes for Liner Verification as each culvert, acceptably cleaned. The department will only measure culverts the engineer approves for payment.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
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520.9700.S	Culvert Pipe Liners Enter Size	LF
520.9750.S	Cleaning Culvert Pipes for Liner Verification	EACH

Payment for the Culvert Pipe Liners bid items is full compensation for providing pipe liners; obtaining easements; for excavation and pumping; for cleaning the existing pipe before liner installation; for pressure grouting; for replacing contractor-damaged pipe and endwalls; and for restoring the grade and disposing of waste materials.

The department will pay the contractor \$150 per cubic yard for grout required in excess of 110 percent of the theoretical quantity required to fill the space between the inside diameter of the existing pipe and the outside diameter of the liner.

Payment for Cleaning Culvert Pipes for Liner Verification is full compensation for cleaning required to verify liner length and diameter; for excavation and pumping; and for disposing of waste material.

The department will pay separately for replacing unserviceable endwalls not rendered unserviceable by contractor operations under the appropriate contract endwall bid item, or absent the appropriate item as extra work.

stp-520-015 (20180628)

21. Temporary Portable Rumble Strips, Item 643.0310.S.

A Description

This special provision describes providing, relocating, maintaining, and removing temporary portable rumble strips.

B Materials

Furnish RoadQuake2 or Roadquake2F temporary portable rumble strips, by Plastic Safety Systems. Do not use alternate products or methods without preapproval by the Bureau of Traffic Operations.

C Construction

C.1 Placement

Provide rumble strips where the plans show or the engineer directs as follows:

1. Before placing rumble strips, clean the roadway of sand and other materials that may cause slippage.
2. Place one end of the rumble strips 6 inches from the roadway centerline. Extend the strips perpendicular to the direction of travel. Ensure strips lay flat on the roadway surface.
3. Only one series of rumble strips, placed before the first work zone, is required per direction of travel for multiple work zones spaced 1 mile or less apart. Work zones spaced greater than 1 mile apart require a separate series of rumble strips.

C.2 Maintenance

Maintain rumble strips as follows:

1. If rumble strips slide, become out of alignment, or are no longer in the wheel path of approaching vehicles during the work period, thoroughly clean both sides of the rumble strips and reset on a clean roadway.
2. Repair or replace damaged rumble strips immediately.

D Measurement

The department will measure temporary portable rumble strips as a single lump sum unit of work acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
643.0310.S	Temporary Portable Rumble Strips	LS

Payment is full compensation for providing, relocating, maintaining or replacing, and removing temporary portable rumble strips.

stp-643-020 (20161130)

22. Marking Replace Line Contrast Wet Reflective Epoxy 4-inch, Item 646.1546.S;

A Description

This special provision describes applying contrast wet reflective epoxy marking over existing grooved pavement marking conforming to standard spec 646, as the plans show, and as follows.

B Materials

Furnish contrast wet reflective epoxy pavement marking materials conforming to standard spec 646.2.

C Construction

Remove loose marking. Clean and prepare the surface of the existing marking and the groove to accept the new contrast wet reflective epoxy marking.

Apply contrast wet reflective epoxy marking conforming to standard spec 646.3 and as follows:

- For 4-inch: apply two 1 1/2-inch wide black epoxy lines with a 4-inch separation between the two black lines for the first pass, followed by a 4-inch wide white epoxy line second pass, for a total width of 7 inches.

Repair or replace new marking that was improperly applied or that fails during the proving period as specified in standard spec 646.3.1.5.

D Measurement

The department will measure the Marking Replace Line Contrast Wet Reflective Epoxy bid items by the linear foot of line, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
646.1546.S	Marking Replace Line Contrast Wet Reflective Epoxy 4-Inch	LF

Payment is full compensation for providing the marking, including remarking as required under standard spec 646.3.1.2(2).

stp-646-020 (20180628)

23. Locating No-Passing Zones, Item 648.0100.

For this project, the spotting sight distance in areas with a 55 mph posted speed limit is Select from drop-down.

stp-648-005 (20060512)

24. Appendix A

Test Methods & Sampling for HMA PWL QMP Projects.

The following procedures are included with the HMA Pavement Percent Within Limits (PWL) Quality Management Program (QMP) special provision:

- WisDOT Procedure for Nuclear Gauge/Core Correlation – Test Strip

- WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production
- Sampling for WisDOT HMA PWL QMP
- Calculation of PWL Mainline Tonnage Example
-

WisDOT Procedure for Nuclear Gauge/Core Correlation – Test Strip

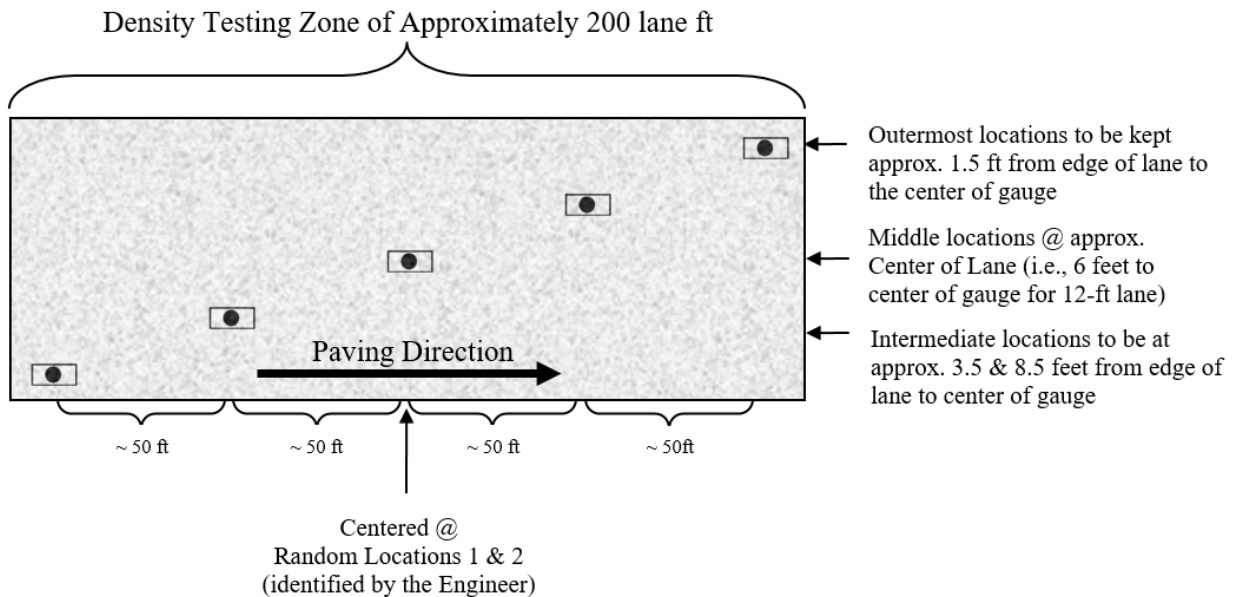


Figure 1: Nuclear/Core Correlation Location Layout

The engineer will identify two zones in which gauge/core correlation is to be performed. These two zones will be randomly selected within each *half* of the test strip length. (Note: Density zones shall not overlap and must have a minimum of 100 feet between the two zones; therefore, random numbers may be shifted (evenly) in order to meet these criteria.) Each zone shall consist of five locations across the mat as identified in Figure 1. The following shall be determined at each of the five locations within both zones:

- two one-minute nuclear density gauge readings for QC team*
- two one-minute nuclear density gauge readings for QV team*
- pavement core sample

*If the two readings exceed 1.0 pcf of one another, a third reading is conducted in the same orientation as the first reading. In this event, all three readings are averaged, the individual test reading of the three which falls farthest from the average value is discarded, and the average of the remaining two values is used to represent the location for the gauge.

The zones are supposed to be undisclosed to the contractor/roller operators. The engineer will not lay out density/core test sites until rolling is completed and the cold/finish roller is beyond the entirety of the zone. Sites are staggered across the 12-foot travel lane, and do not include shoulders. The outermost locations should be 1.5-feet from the center of the gauge to the edge of lane. [NOTE: This staggered layout is only applicable to the test strip. All mainline density locations after test strip should have a longitudinal- as well as transverse-random number to determine location as detailed in the *WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production* section of this document.]

Individual locations are represented by the  symbol as seen in Figure 1 above. The symbol is two-part, comprised of the nuclear test locations and the location for coring the pavement, as distinguished here:



The nuclear site is the same for QC and QV readings for the test strip, i.e., the QC and QV teams are to take nuclear density gauge readings in the same footprint. Each of the QC and QV teams are to take a minimum of two one-minute readings per nuclear site, with the gauge rotated 180 degrees between readings, as seen here:



Figure 2: Nuclear gauge orientation for (a) 1st one-minute reading and (b) 2nd one-minute reading

Photos should be taken of each of the 10 core/gauge locations of the test strip. This should include gauge readings (pcf) and a labelled core within the gauge footprint. If a third reading is needed, all three readings should be recorded and documented. Only raw readings in pcf should be written on the pavement during the test strip, with a corresponding gauge ID/SN (generalized as QC-1 through QV-2 in the following Figure) in the following format:



Figure 3: Layout of raw gauge readings as recorded on pavement

Each core will then be taken from the center of the gauge footprint, and will be used to correlate each gauge with laboratory-measured bulk specific gravities of the pavement cores. One core in good condition must be obtained from each of the 10 locations. If a core is damaged at the time of extracting from the pavement, a replacement core should be taken immediately adjacent to the damaged core, i.e., from the same footprint. If a core is damaged during transport, it should be recorded as damaged and excluded from the correlation. Coring after traffic is on the pavement should be avoided. The contractor is responsible for coring of the pavement. Coring and filling of core holes must be approved by the engineer. The QV team is responsible for the labeling and safe transport of the cores from the field to the QC laboratory. Core density testing will be conducted by the contractor and witnessed by department personnel. The contractor is responsible for drying the cores following testing. The department will take possession of cores following initial testing and is responsible for any verification testing.

Each core 150 mm (6 inches) in diameter will be taken at locations as identified in Figure 1. Each random core will be full thickness of the layer being placed. The contractor is responsible for thoroughly drying cores obtained from the mat in accordance with ASTM D 7227 prior to using specimens for in-place density determination in accordance with AASHTO T 166.

Cores must be taken before the pavement is open to traffic. Cores are cut under Department/project staff observation. Relabel each core immediately after extruding, or ensure that labels applied to pavement prior to cutting remain legible. The layer interface should also be marked immediately following extrusion. Cores should be cut at this interface, using a wet saw, to allow for density measurement of only the most recently placed layer. Cores should be protected from excessive temperatures such as direct sunlight. Also, there should be department custody (both in transport and storage) for the cores until they are tested, whether that be immediately after the test strip or subsequent day if agreed upon between Department and Contractor. Use of concrete cylinder molds works well to transport cores. Cores should be placed upside down (flat surface to bottom of cylinder mold) in the molds, one core per mold, cylinder molds stored upright, and ideally transported in a cooler. Avoid any stacking of pavement cores.

Fill all core holes with non-shrink rapid-hardening grout, mortar or concrete, or with HMA. When using grout, mortar or concrete, remove all water from the core holes prior to filling. Mix the mortar or concrete in a separate container prior to placement in the hole. If HMA is used, fill all core holes with hot-mix matching the same day's production mix type at same day compaction temperature +/- 20 F. The core holes shall be dry and coated with tack before filling, filled with a top layer no thicker than 2.25 inches, lower layers not to exceed 4 inches, and compacted with a Marshall hammer or similar tamping device using approximately 50 blows per layer. The finished surface shall be flush with the pavement surface. Any deviation in the surface of the filled core holes greater than 1/4 inch at the time of final inspection will require removal of the fill material to the depth of the layer thickness and replacement.

WisDOT Test Method for HMA PWL QMP Density Measurements for Main Production

For nuclear density testing of the pavement beyond the test strip, QC tests will be completed at three locations per subplot, with a subplot defined as 1500 lane feet. The three locations will represent the outside, middle, and inside of the paving lane (i.e., the lane width will be divided into thirds as shown by the dashed longitudinal lines in Figure 3 and random numbers will be used to identify the specific transverse location within each third in accordance with CMM 8-15). Longitudinal locations within each subplot shall be determined with 3 independent random numbers. The PWL Density measurements do not include the shoulder and other appurtenances. Such areas are tested by the department and are not eligible for density incentive or disincentive. Each location will be measured with two one-minute gauge readings oriented 180 degrees from one another, in the same footprint as detailed in Figure 2 above. Each location requires a minimum of two readings per gauge. The density gauge orientation for the first test will be with the source rod towards the direction of paving. QV nuclear testing will consist of one randomly selected location per subplot. The QV is also comprised of two one-minute readings oriented 180 degrees from one another. For both QC and QV test locations, if the two readings exceed 1.0 pcf of one another, a third reading is conducted in the same orientation as the first reading. In this event, all three readings are averaged, the individual test reading of the three which falls farthest from the average value is discarded, and the average of the remaining two values is used to represent the location for the gauge. The subplot density testing layout is depicted in Figure 4, with QC test locations shown as solid lines and QV as dashed.

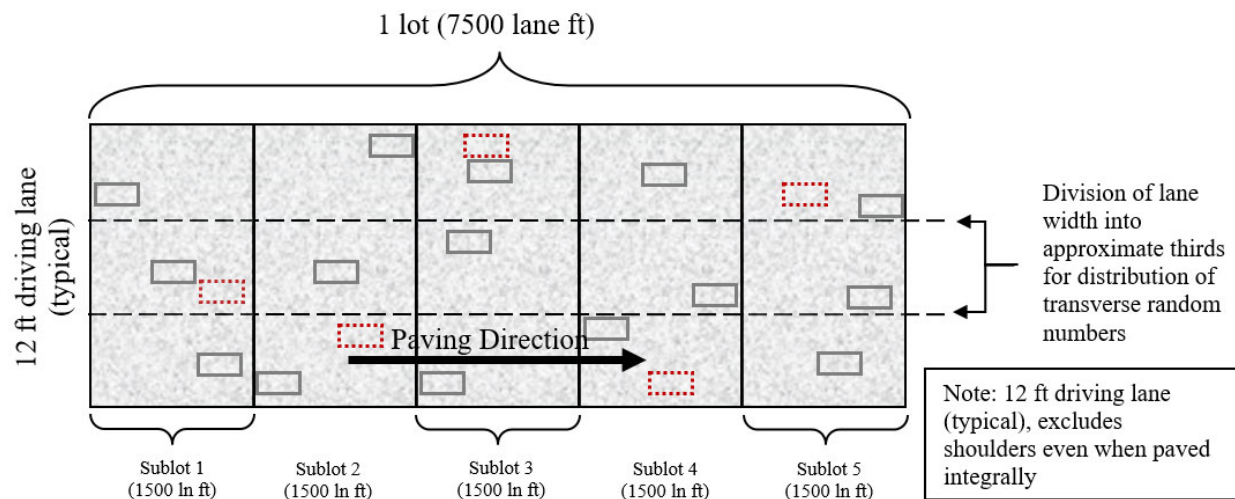


Figure 4: Locations of main lane HMA density testing (QC=solid lines, QV=dashed)

QC and QV nuclear density gauge readings will be statistically analyzed in accordance with Section 460.3.3.3 of the HMA PWL QMP SPV. (Note: For density data, if F- and t-tests compare, QC data will be used for the subsequent calculations of PWL value and pay determination. However, if an F- or t-test does not compare, the QV data will be used in subsequent calculations.)

Sampling for WisDOT HMA PWL QMP Production

Sampling of HMA mix for QC, QV and Retained samples shall conform to CMM 8-36 except as modified here.

Delete CMM 8-36.4 Sampling Hot Mix Asphalt and replace with the following to update subplot tonnages:

Sampling Hot Mix Asphalt

At the beginning of the contract, the contractor determines the anticipated tonnage to be produced. The frequency of sampling is 1 per 750 tons (subplot) for QC and Retained Samples and 1 per 3750 tons (lot or 5 sublots) for QV as defined by the HMA PWL QMP SPV. A test sample is obtained randomly from each subplot. Each random sample shall be collected at the plant according to CMM 8-36.4.1 and 8-36.4.2. The contractor must submit the random numbers for all mix sampling to the department before production begins.

Example 1

Expected production for a contract is 12,400 tons. The number of required samples is determined based on this expected production (per HMA PWL QMP SPV) and is determined by the random sample calculation.

Sample 1 – from 50 to 750 tons
Sample 2 – from 751 to 1500 tons
Sample 3 – from 1501 to 2250 tons
Sample 4 – from 2251 to 3000 tons
Sample X –
Sample 16 – from 11,251 to 12,000 tons
Sample 17 – from 12,001 to 12,400 tons

The approximate location of each sample within the prescribed sublots is determined by selecting random numbers using ASTM Method D-3665 or by using a calculator or computerized spreadsheet that has a random number generator. The random numbers selected are used in determining when a sample is to be taken and will be multiplied by the subplot tonnage. This number will then be added to the final tonnage of the previous subplot to yield the approximate cumulative tonnage of when each sample is to be taken.

To allow for plant start-up variability, the procedure calls for the first random sample to be taken at 50 tons or greater per production day (not intended to be taken in the first two truckloads). Random samples calculated for 0-50 ton should be taken in the next truck (51-75 ton).

This procedure is to be used for any number of samples per contract.

If the production is less than the final randomly generated sample tonnage, then the random sample is to be collected from the remaining portion of that subplot of production. If the randomly generated sample is calculated to be within the first 0-50 tons of the subsequent day of production, it should be taken in the next truck. Add a random sample for any fraction of 750 tons at the end of the contract. Lot size will consist of 3750 tons with sublots of 750 tons. Partial lots with less than three subplot tests will be included into the previous lot, by the engineer.

It's intended that the plant operator not be advised ahead of time when samples are to be taken. If the plant operator is involved in recording a Pb (%AC) to match up with the mix sample tonnage, then notification need not be earlier than 60 minutes before the mix sample being taken.

If belt samples are used during troubleshooting, the blended aggregate will be obtained when the mixture production tonnage reaches approximately the sample tonnage. For plants with storage silos, this could be up to 60 minutes in advance of the mixture sample that's taken when the required tonnage is shipped from the plant.

QC, QV and retained samples shall be collected for all test strip and production mixture testing using a three-part splitting procedure according to CMM 8-36.5.2.

Calculation of PWL Mainline Tonnage Example

A mill and overlay project is being constructed with a 12-foot travel lane and an integrally paved 3-foot shoulder. The layer thickness is 2 inches for the full width of paving. Calculate the tonnage in each subplot eligible for density incentive or disincentive.

Solution:

$$\frac{1500 \text{ ft} \times 12 \text{ ft}}{9 \text{ sf/sy}} \times \frac{2 \text{ in} \times 112 \text{ lb/sy/in}}{2000 \text{ lb/ton}} = 224 \text{ tons}$$

stp-460-055 (20181119)

Attachment G



October 19, 2017

DOT: Brown

Alex Dums, P.E.
Wisconsin Department of Transportation
944 Vanderperren Way
Green Bay, WI 54310-6727

Subject: DNR Initial Project Review
Project I.D. 1590-23-00
USH 8 Resurface
CTH O to USH 141
Towns of Dunbar and Pembine
Marinette County

Dear Mr. Dums:

The Wisconsin Department of Natural Resources (DNR) has received the information you provided for the proposed above-referenced project on September 25, 2017. According to your proposal, the purpose of this project is to resurfacing USH 8. Proposed improvements include milling existing pavement and overlaying HMA, minor intersection improvements, surface repair on a bridge, culvert pipe replacement and lining, centerline rumblestrips, permanent signing, pavement marking, and beam guard replacement.

Preliminary information has been reviewed by DNR staff for the project under the DNR/DOT (Wisconsin Department of Transportation) Cooperative Agreement. Initial comments on the project as proposed are included below, and assume that additional information will be provided that addresses all resource concerns identified. In addition to the project specific resource concerns highlighted below, it is DNR's expectation that the full range of DOT roadway standards will be applied throughout the design process.

A. Project-Specific Resource Concerns

Section 4(f) Requirement:

Public lands (Town of Dunbar, Marinette County and State of Wisconsin) are present in the vicinity of this project. If there is potential for impacts to these lands, please begin coordination with us as soon as possible. *First and foremost, every effort should be taken to avoid impacts to these lands.*

There is a U.S. Dept. of Transportation "Section 4(f)" process for federally funded transportation projects that impact various types of public parks, wildlife refuges, and recreation areas. This requirement is coordinated by state and federal transportation departments. Please ensure the 4f process as described in DOT FDM Chapter 21-25-1 is followed.

Depending on funding sources of these public lands may have additional encumbrances if impacts are anticipated from this project.

Wetlands

There is potential for wetland impacts to occur as a result of this project. Wetland impacts must be avoided and/or minimized to the greatest extent practicable. Unavoidable wetland losses must be compensated for in accordance with the DNR/DOT Cooperative Agreement and the DOT Wetland Mitigation Banking Technical Guideline. Per the Cooperative Agreement, mitigation banking is the preferred compensation option, however DOT and DNR agree that other practicable and ecologically valuable project specific opportunities may be pursued on a case-by-case basis. DNR requests information regarding the amount and type of unavoidable wetland impacts.

The DNR and DOT conducted a joint wetland determination for this project during the summer of 2017. Jennifer Gibson, DOT Regional Environmental Coordinator, should have additional information regarding the joint wetland determination.

Fisheries/Stream Work

There are multiple waterways that cross this project both under bridges and through culverts. The project description does not indicate a bridge replacement however additional information regarding the location of the culvert replacements is needed before DNR can determine what conditions will be needed in addition to proper erosion control or if an instream date restriction is warranted.

Aquatic Connectivity and Culvert Work

It is possible that some of the culverts may require construction to be properly be set and sized in such a manner to avoid or minimize impacts to stream morphology, aquatic organism passage, and water quality. This requires that water flow characteristics and streambed sediment in the culvert should closely match the characteristics of the streambed sediment in the natural channel. The invert elevations of the existing and proposed structure(s), the water surface elevations, and the natural streambed elevations upstream and downstream should be specified in the plans. The natural streambed elevations should extend well beyond the zone of influence of the culvert. The invert elevation of the new culvert(s) should be set an adequate distance below the natural streambed elevation, to allow for a natural and continuous streambed condition to occur.

Endangered Resources

Based upon a review of the Natural Heritage Inventory (NHI) and other DNR records dated October 17, 2017, the following Endangered Resources have been known to occur in the project area or its vicinity:

- Missouri Rock-cress (*Boechera missouriensis*), State Special Concern
- Hairy Beardtongue (*Penstemon hirsutus*), State Special Concern
- Blanding's Turtle (*Emydoidea blandingii*), State Special Concern
- Wood Turtle (*Glyptemys insculpta*), State Threatened

The following measures will be needed:

- Keep ground disturbance to a minimum. Roadsides are suitable habitat for the Hairy Beardtongue so it is important to minimize disturbance area.
- Minimize tree removal. Although the records for the Kirtlands Warbler (*Setophaga kirtlandii*), which is listed as State Endangered, was not found within the buffer zone of the project it has been recorded in the surrounding area. Minimizing tree removal will minimize any effects.
- Follow the Amphibian and Reptile Exclusion Fencing Protocols found at:
<http://dnr.wi.gov/topic/erreview/documents/amphibianreptilefencingprotocol.pdf>

The Wisconsin Natural Heritage Inventory (NHI Portal) database contains all current Northern Long-eared Bat roost sites and hibernacula in Wisconsin. The NHI Portal contains verified survey results from WI DNR, FWS, and private organizations. The NHI Portal was consulted for this project, and per U.S. Fish and Wildlife Service's 4(d) rule, it was determined that this project is more than 150 feet from a known maternity roost tree AND is more than 1/4 mile from a known hibernacula. In addition, this project is not located within a Rusty Patched Bumble Bee High Potential Zone. Therefore, this project can proceed without federal restrictions.

Invasive Species

My site review was too late to adequately identify specific areas where invasive species may be present. However, during previous reviews of USH 8 in this area there have been multiple invasive species identified. For example Tansy (*Tanacetum vulgare*), which is listed under NR 40 as restricted, was found near the western edge of the project boundary.

Adequate precautions should be taken to prevent transporting or introducing invasive species via construction equipment, as provided under chapter NR 40 Wis. Adm. Code. Further information on species classified as Restricted or Prohibited under NR 40 can be found at: <http://dnr.wi.gov/topic/Invasives/classification.html>.

Floodplains

A determination must be made as to whether or not the project lies within a mapped/zoned floodplain. Floodplain impacts should be assessed and/or quantified and appropriate coordination must be carried out in accordance with the DOT/DNR Cooperative Agreement. Coordination must also occur with the Marinette County Zoning Program.

Burning

If burning of brush will occur as part of this project, the contractor should be informed that it is illegal to burn materials other than clean wood. It is also illegal to start or maintain fires using oily substances, or other materials prohibited under chapter NR 429, Wis. Adm. Code. All necessary burning permits must be obtained prior to construction, as required under local and state fire protection regulations, in order to comply with NR 429 (Malodorous Emissions & Open Burning) http://docs.legis.wisconsin.gov/code/admin_code/nr/400/429.pdf.

Burning permits are available through the local DNR ranger or fire warden, however other local burning permits may be required.

B. Project Specific Construction Site Considerations

The following issues should be addressed in the Special Provisions, and the contractor will be required to outline their construction methods in the Erosion Control Implementation Plan (ECIP). An adequate ECIP for the project must be developed by the contractor and submitted to this office for review at least 14 days prior to the preconstruction conference. Erosion control and stormwater measures must adhere to the DNR/DOT Cooperative Agreement, Trans 401, and applicable federal laws.

Erosion Control and Storm Water Management

- Erosion control devices should be specified on the construction plans. All disturbed bank areas should be adequately protected and restored as soon as feasible.
- If erosion mat is used along stream banks, DNR recommends that biodegradable non-netted mat be used (e.g. Class I Type A Urban, Class I Type B Urban, or Class II Type C). Long-term netted mats may cause animals to become entrapped while moving in and out of the stream. Avoid the use of fine mesh matting that is tied or bonded at the mesh intersection such that the openings in the mesh are fixed in size.
- If dewatering is required for any reason, the water must be pumped into a properly selected and sized dewatering basin before the clean/filtered water is allowed to enter any waterway or wetland. The basin must remove suspended solids and contaminants to the maximum extent practicable. A properly designed

and constructed dewatering basin must take into consideration maximum pumping volume (gpm or cfs) and the sedimentation rate for soils to be encountered. Do not house any dewatering technique in a wetland.

- The contractor should restrict the removal of vegetative cover and exposure of bare ground to the minimum amounts necessary to complete construction. Restoration of disturbed soils should take place as soon as conditions permit. If sufficient vegetative cover will not be achieved because of late season construction, the site must be properly winterized.
- All temporary stock piles must be in an upland location and protected with erosion control measures (e.g. silt fence, rock filter-bag berm, etc.). Do not stockpile materials in wetlands, waterways, or floodplains.

Temporary Stream Channel or Culvert

If a temporary channel is needed for culvert construction, the channel should be lined with plastic or other non-erodible material and weighted down with clean stone. A temporary channel or culvert must be capable of carrying all stream flows during the construction period and must maintain a suitable depth and velocity to allow the passage of migrating fish and aquatic species. Fish that become stranded in dewatered areas or temporary channels should be captured and returned to the active channel immediately.

These requirements should be addressed in the special provisions and require the contractor to outline these construction methods in the ECIP.

Asbestos

A Notification of Demolition and/or Renovation and Application for Permit Exemption, DNR form 4500-113 (chapters NR 406, 410, and 447 Wis. Adm. Code) may be required. Please refer to DOT FDM 21-35-45 and the DNR's notification requirements web page: <http://dnr.wi.gov/topic/Demo/Asbestos.html> for further guidance on asbestos inspections and notifications. Contact Mark Davis, Air Management Specialist 608-266-3658, with questions on the form. The notification must be submitted 10 working days in advance of demolition projects.

Other Issues/Unique Features

This project may require a permit from the U.S. Army Corps of Engineers (ACOE). For further details you will need to contact Ryan Huber of the ACOE located in the Green Bay office, at (920) 448-2824. All local, state, and federal permits and/or approvals must be obtained prior to commencing construction activities.

The above comments represent the DNR's initial concerns for the proposed project and do not constitute final concurrence. Final concurrence will be granted after further review of refined project plans, and additional consultation if necessary. If any of the concerns or information provided in this letter requires further clarification, please contact this office at (920) 412-0165, or email at james.doperalski@wisconsin.gov.

Sincerely,



James P. Doperalski Jr.
Environmental Analysis & Review Specialist

cc: Jennifer Gibson - DOT
File

Attachment H

Dums, Alex T - DOT

From: Gibson, Jennifer J - DOT
Sent: Thursday, January 02, 2020 10:30 AM
To: usace_requests_wi@usace.army.mil
Cc: Dums, Alex T - DOT
Subject: Wetland Impact Tracking Form Submittal for No PCN Project - WisDOT ID 1590-23-00/71, Marinette County

Categories: Environmental

WisDOT ID: 1590-23-00/71
USH 8
Dunbar – Pembine
CTH O – USH 141
Marinette County

Good morning,

I am submitting the wetland impact tracking form (WITF) for the above project for inclusion in RIBITS. This project is covered under the TRGP. No preconstruction notification was necessary.

Please let me know if there are any questions on the WITF.

Thank you,

Jen Gibson

Environmental Analysis and Review Specialist
Wisconsin Department of Transportation
Northeast Region
Phone: (920) 492-4160
wisconsindot.gov

If this is related to a records request, please email: dotdtsdnerecords@dot.wi.gov

