

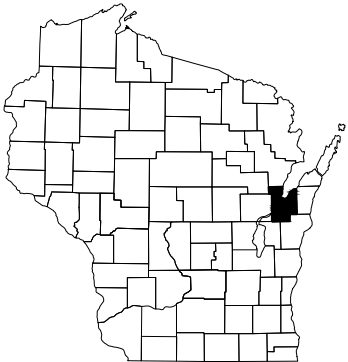
PROJECT ID:
WITH: 9190-20-71

COUNTY:
BROWN

ORDER OF SHEETS

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

TOTAL SHEETS =



DESIGN DESIGNATION 9190-20-00

A.A.D.T.	2021	=	8,300
A.A.D.T.	2041	=	11,000
D.H.V.		=	831
D.D.		=	60/40
T.		=	7.2%
DESIGN SPEED		=	45/35 M.P.H
ESALS		=	1,200,000

CONVENTIONAL SYMBOLS

PLAN

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	

PROFILE

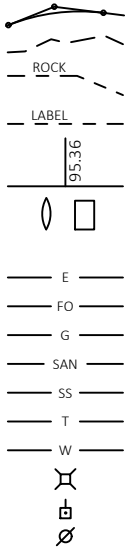
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

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



T-25-N

of Maple Grove

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

VILLAGE OF PULASKI

CTH B - EAST GREEN BAY STREET

STH 32
BROWN

STATE PROJECT NUMBER
9190-20-71

R-19-E

Town of Chase

32 Pulaski

160

32

CREST DR

B

GOLDENROD DR

32

QUARRY

HAWTHORNE DR

NORWAY DR

NORWAY

KUNESH RD N

BROOKSIDE DR

BROOKSIDE DR

BROWN HILLS

FOREST

HAZLEWOOD

BF

T-25-N

R-19-E

PITTSFIELD

POINT HILL DR

LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.86 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), BROWN COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (1991). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT

FEDERAL PROJECT

PROJECT

CONTRACT

9190-20-71

TRANS 220
PROJECT PLAN
FOR
DESIGN OF UTILITY FACILITY
ALTERATIONS OR RELOCATIONS

Date: 03/29/2019

END PROJECT
STA 300+42.7

BEGIN PROJECT
STA 254+92.10

N=61963.684
E=45651.84

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	KELSEY HOLMES
Project Manager	ANDREW FULCER
Regional Examiner	REGIONAL EXAMINER
Regional Supervisor	DANIEL SEGERSTROM

APPROVED FOR THE DEPARTMENT

DATE: (Signature)

E

GENERAL NOTES

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

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR SHALL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER.

CURB AND GUTTER RADII ARE SHOWN TO THE FRONT FACE OF CURB.

ALL DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREA BETWEEN THE SUBGRADE SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, AND COVERED WITH EROSION MAT.

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

UTILITIES

NSIGHT TELESERVICES
CONTACT NAME
ADDRESS
CITY, STATE, ZIP
PHONE:
EMAIL:

VILLAGE OF PULASKI
JOEL VAN LANNEN - DPW
ADDRESS
PULASKI, WI 54162
PHONE: 920-822-5192
EMAIL: pubdept@villageofpulaski.org

WE ENERGIES
CONTACT NAME
ADDRESS
CITY, STATE, ZIP
PHONE:
EMAIL:

WINDSTREAM KDL, INC.
AARON GRODI OR DENNIS RUESS ???
13935 BISHOPS DR
BROOKFIELD, WI 53005
PHONE:
EMAIL:

WISCONSIN PUBLIC SERVICE
CONTACT NAME
ADDRESS
CITY, STATE, ZIP
PHONE:
EMAIL:

DNR AREA LIASON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
JAMES DOPERALSKI
PHONE - (920) 412-0165
EMAIL - JAMES.DOPERALSKI@WISCONSIN.GOV



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

PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	GENERAL NOTES	SHEET	E
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PROJECT NO: 9190-20-71

HWY: STH 32

COUNTY: BROWN

PROJECT OVERVIEW

SHEET

E

FILE NAME : N:\PDS\C3D\91902000\SHETSPLAN\020201-PO.DWG
LAYOUT NAME - 020201

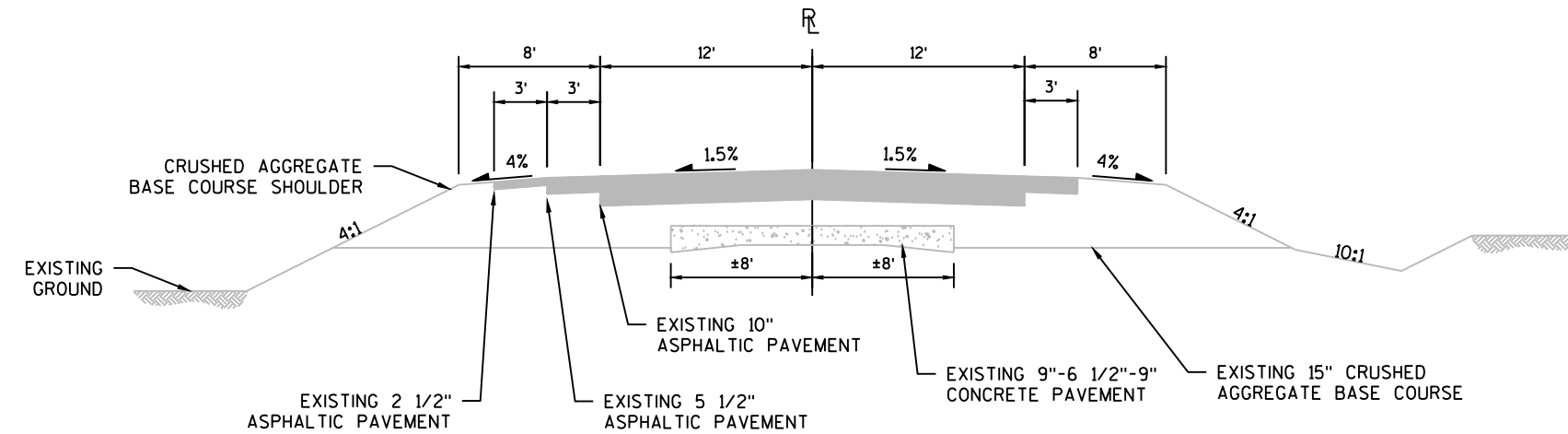
PLOT DATE : 2/5/2019 9:17 AM

PLOT BY : HOLMES, KELSEY J

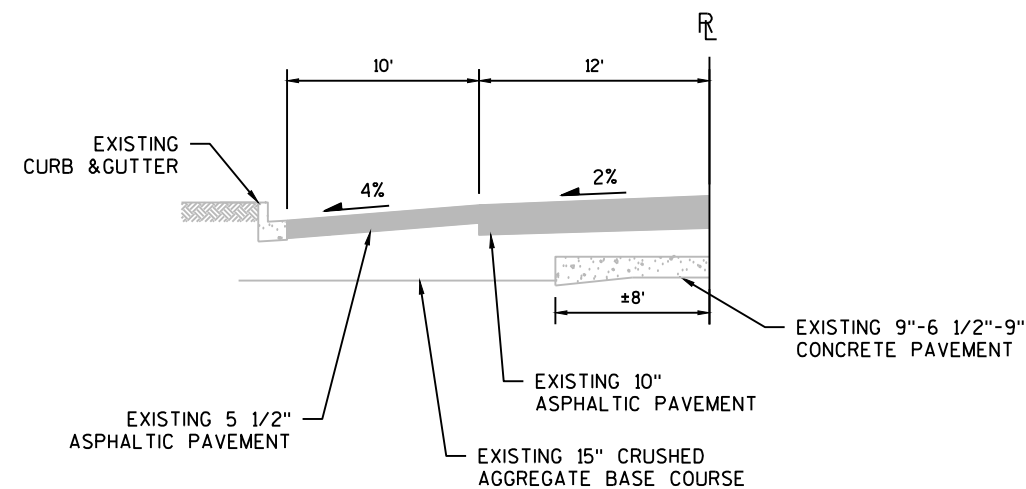
PLOT NAME :

PLOT SCALE : #####

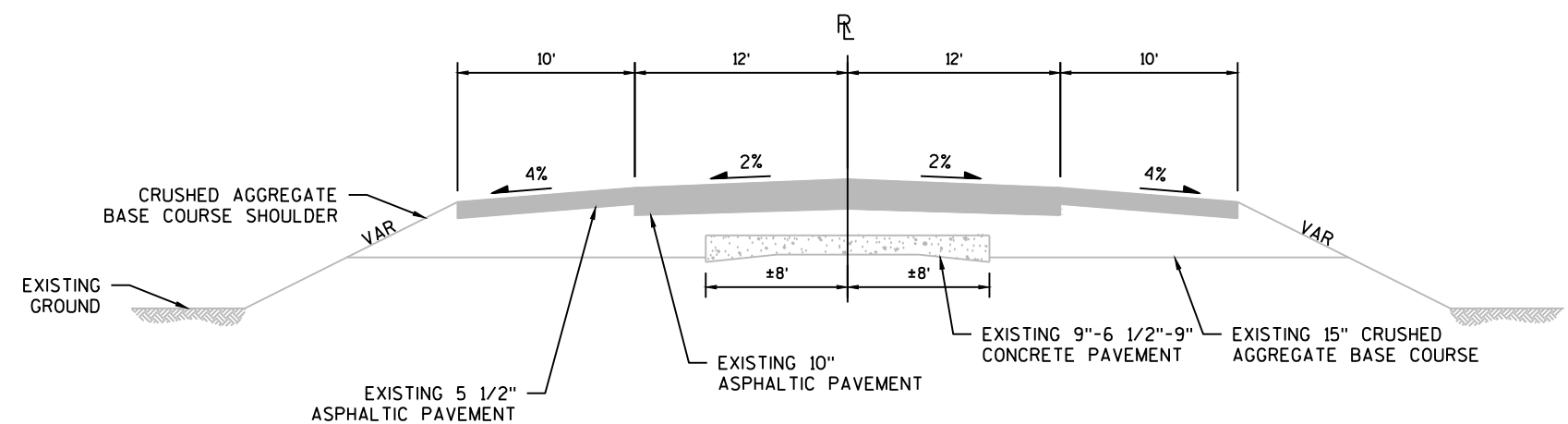
WISDOT/CADDs SHEET 42



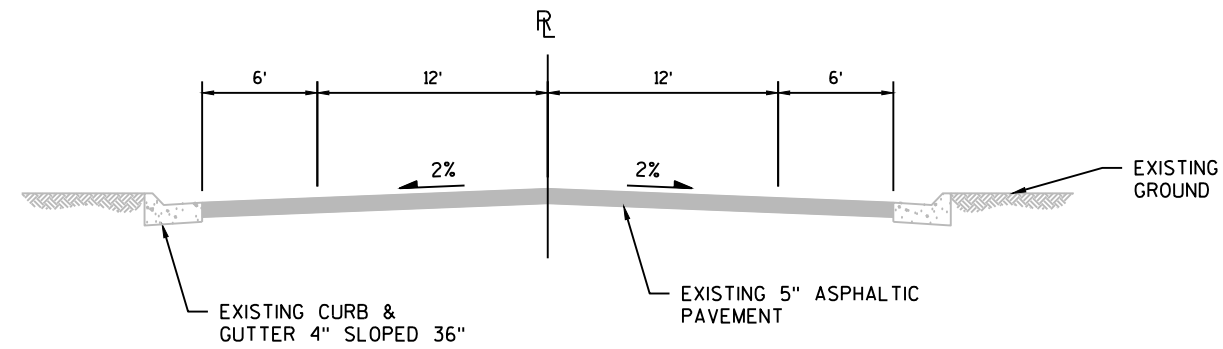
EXISTING TYPICAL SECTION STH 32
STA 254+92.1 TO STA 275+84.7



EXISTING TYPICAL SECTION STH 32
STA 249+22.78 TO STA 296+52.83 LT

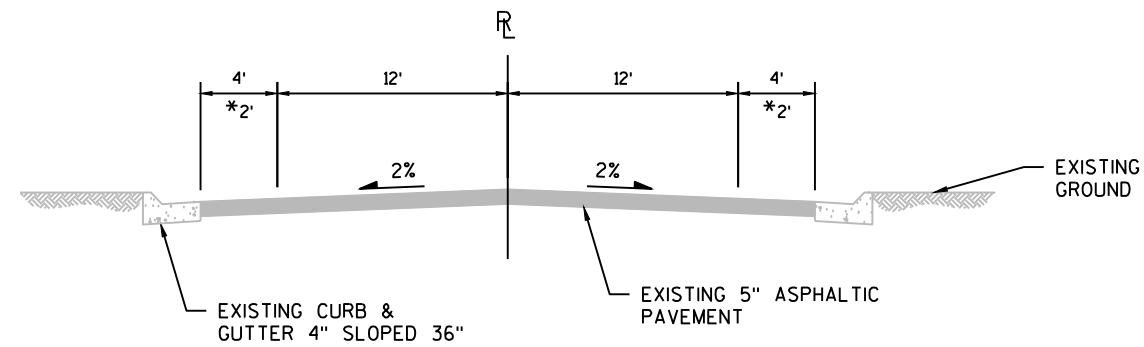


EXISTING TYPICAL SECTION STH 32
STA 275+84.7 TO STA 300+42.7



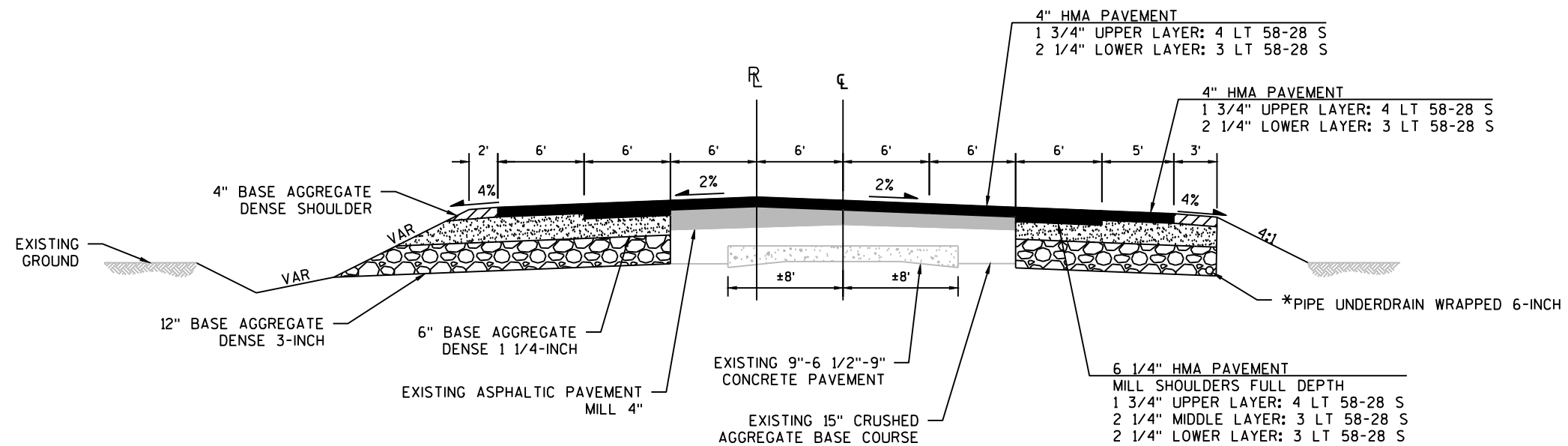
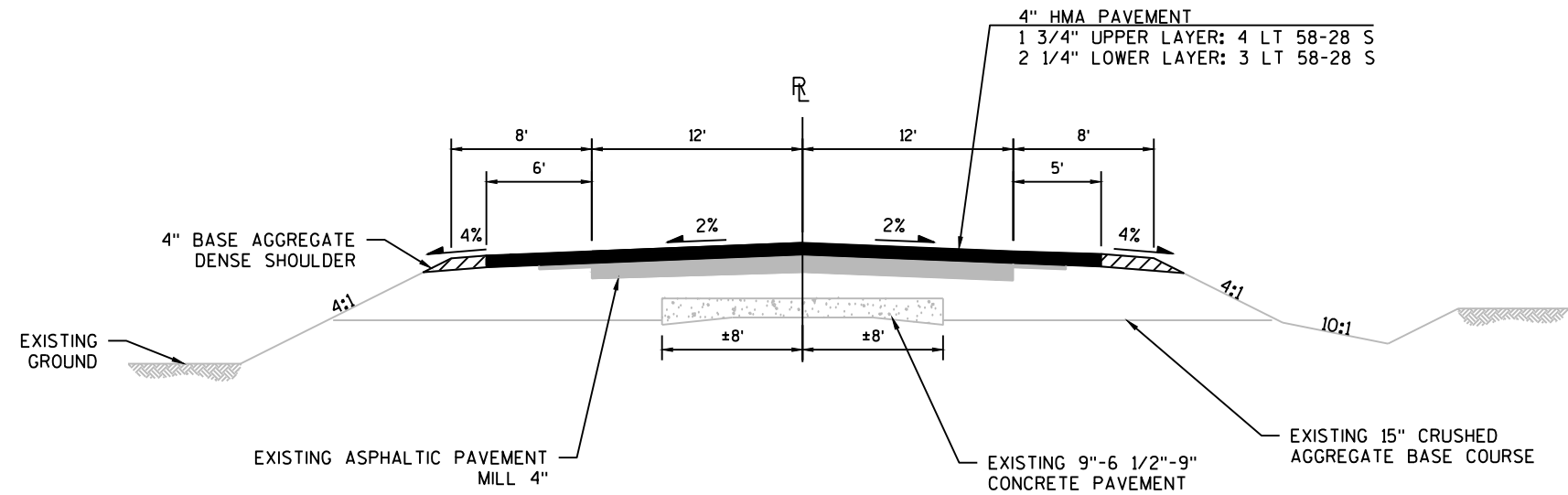
EXISTING TYPICAL SECTION SIDE ROADS

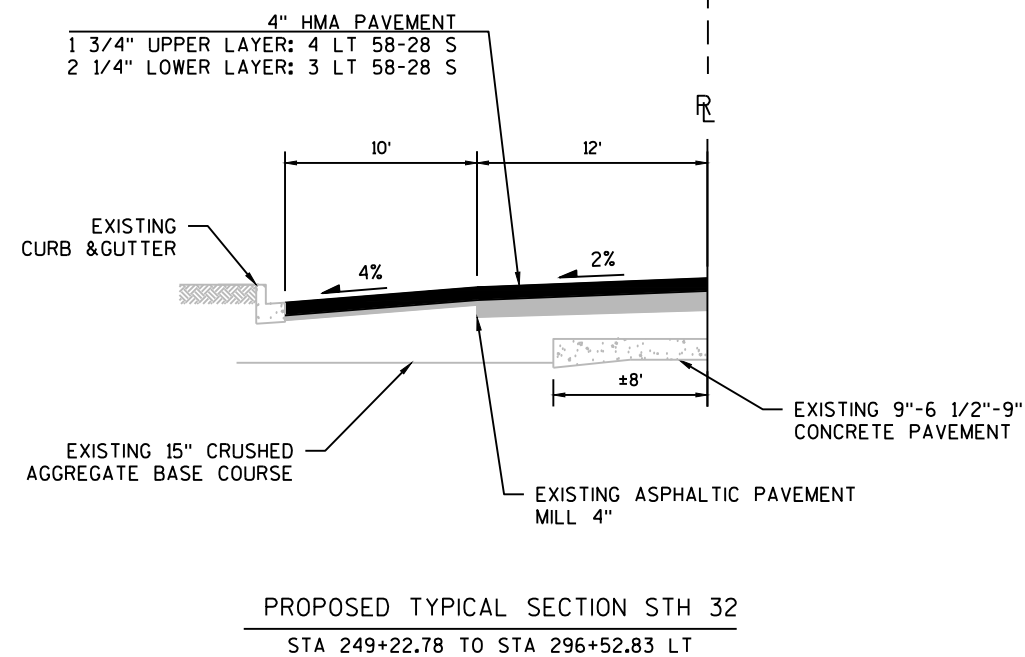
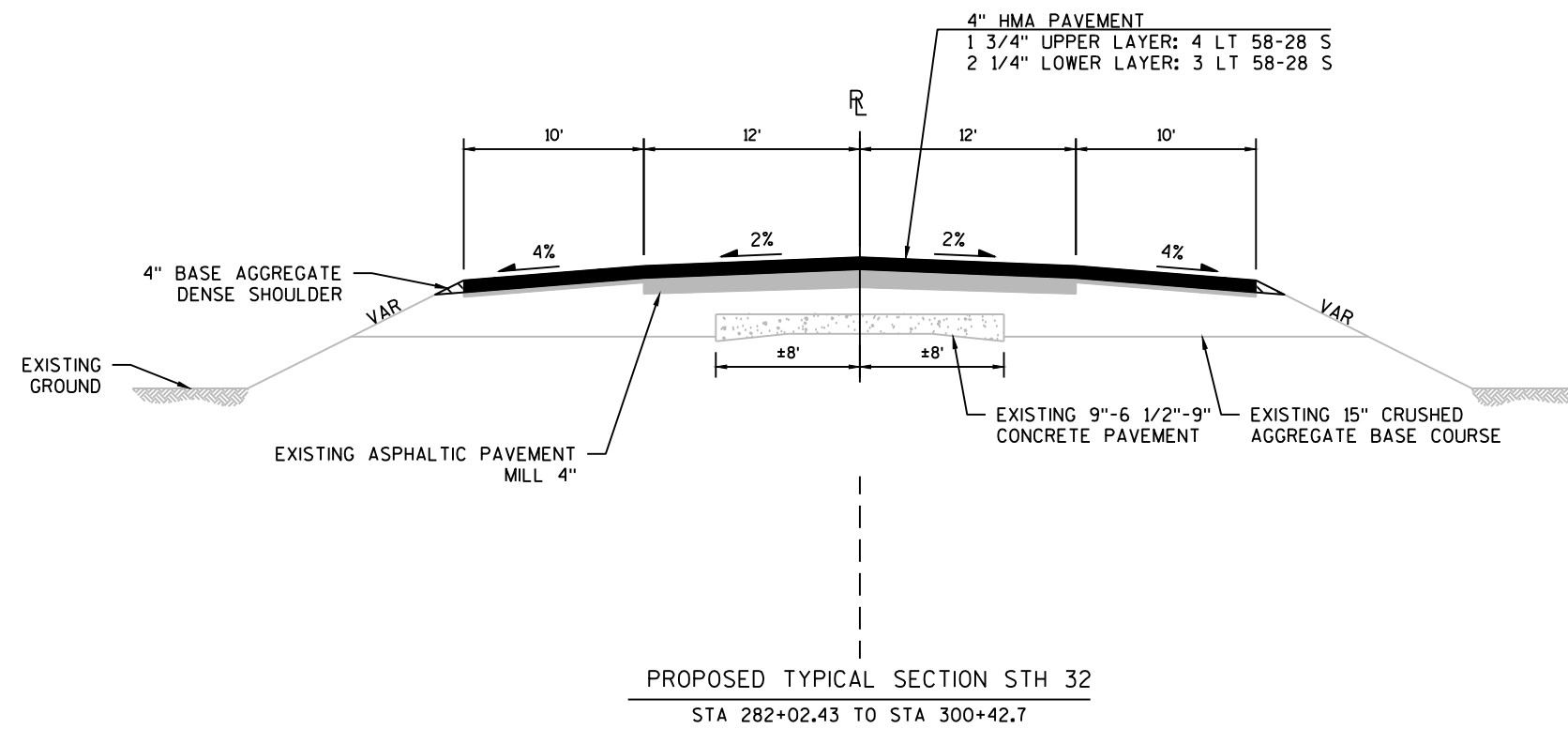
GLENBROOK DR LT
E CEDAR ST
KARCZ DR

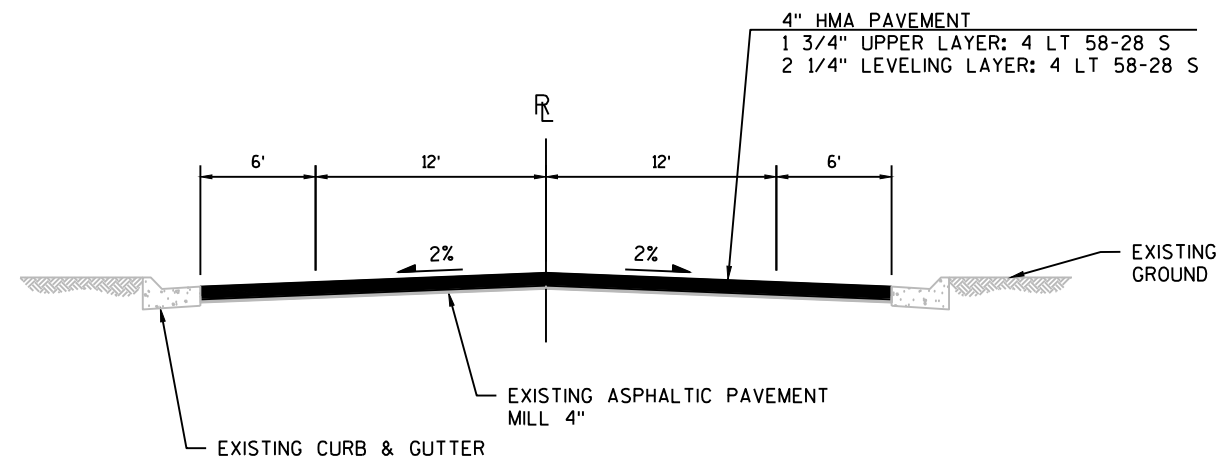


EXISTING TYPICAL SECTION SIDE ROADS

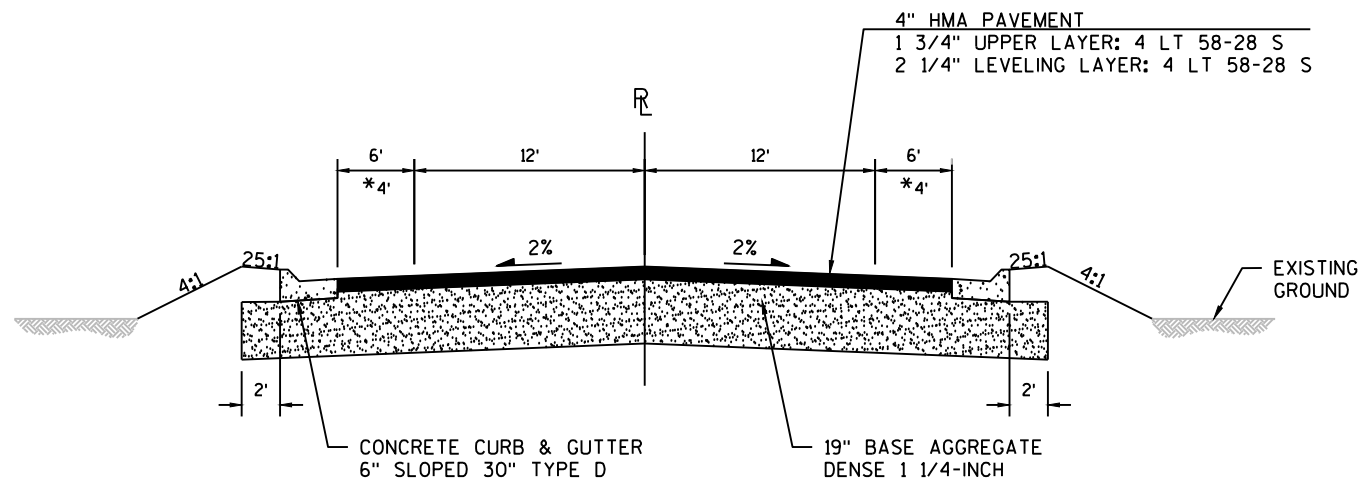
BLUE HERON DR
* GLENBROOK DR RT



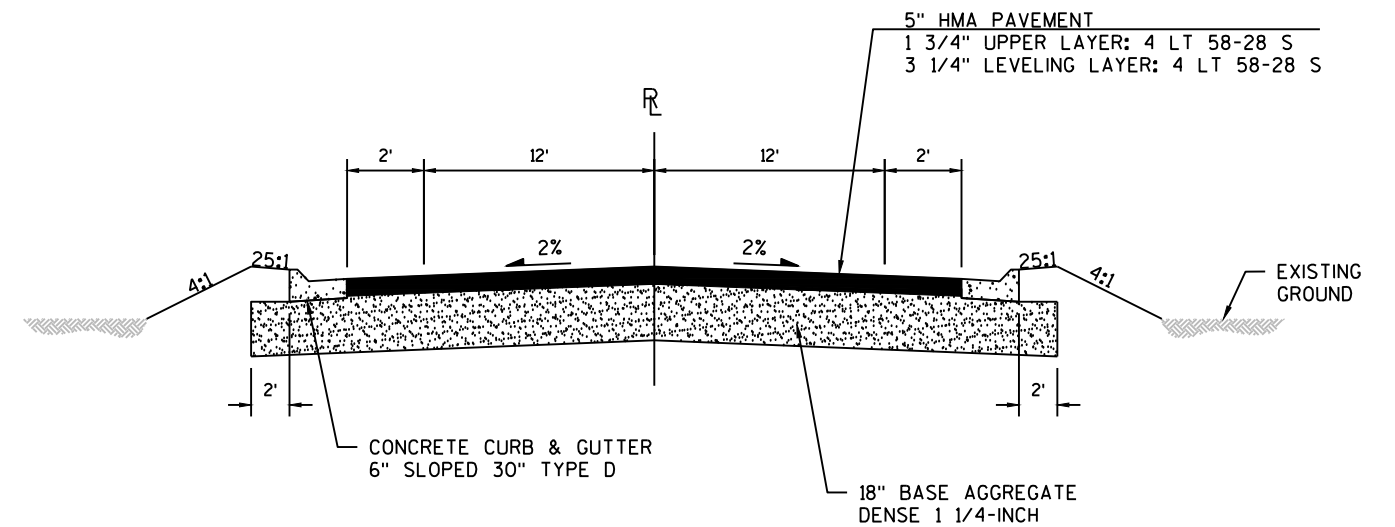




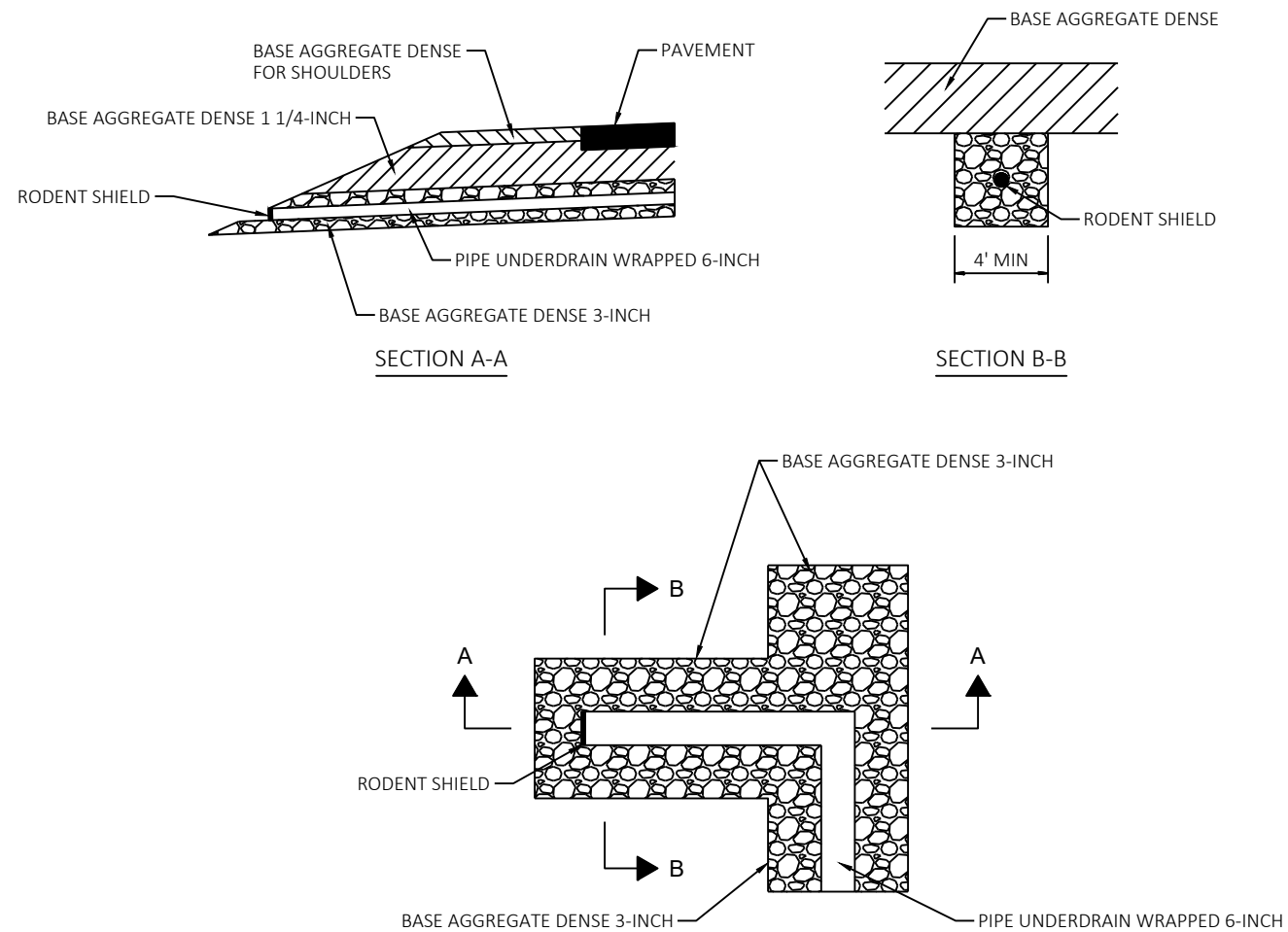
PROPOSED TYPICAL SECTION SIDE ROADS
E CEDAR ST
KARCZ DR



PROPOSED TYPICAL SECTION SIDE ROADS
* BLUE HERON DR
GLENBROOK DR LT



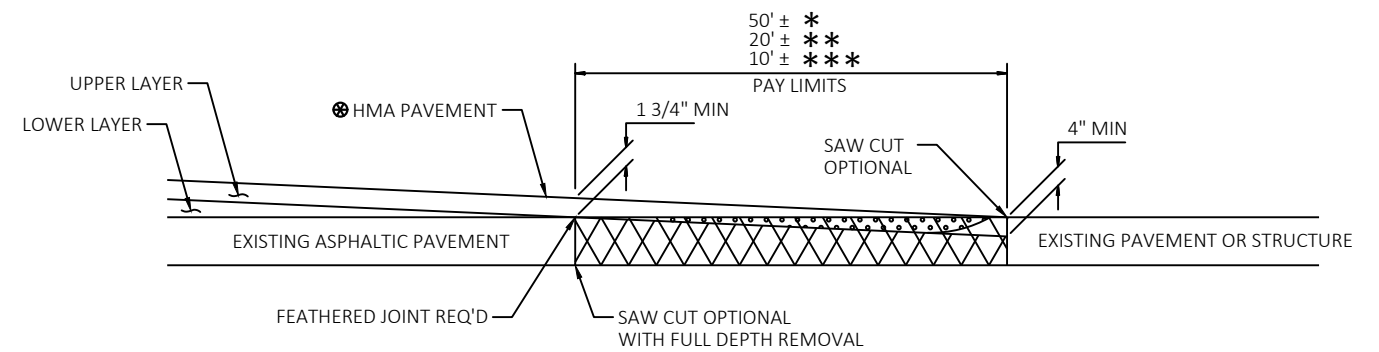
PROPOSED TYPICAL SECTION SIDE ROADS
GLENBROOK DR RT



DETAIL FOR FRENCH DRAINS WITH UNDERDRAIN

DRAINS ARE TO BE CONSTRUCTED PER PLAN OR AT LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

EXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS SHALL BE CONSIDERED INCIDENTAL TO THE ITEM BASE AGGREGATE DENSE 3-INCH.

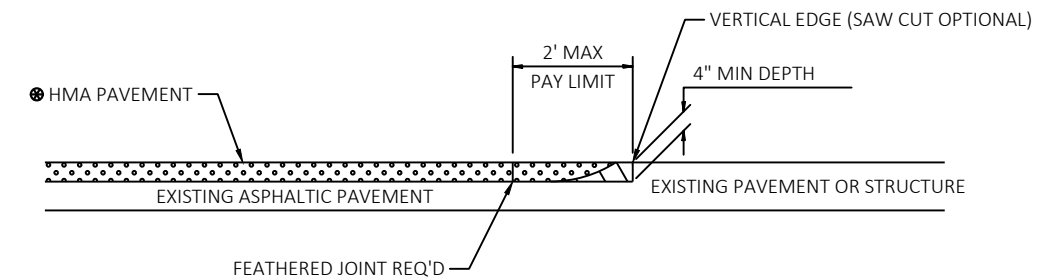


SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

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

BUTT JOINT DETAIL FOR NON MILLED ASPHALTIC PAVEMENTS (PROFILE CHANGE)

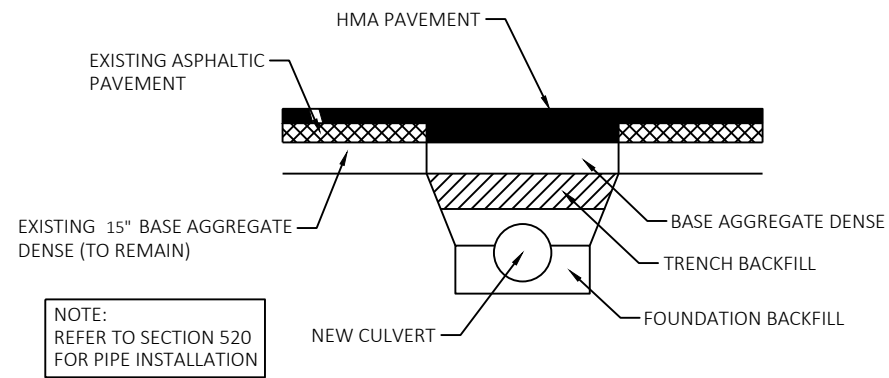
- * MAINLINE
- ** SIDEROADS
- *** PRIVATE ENTRANCES



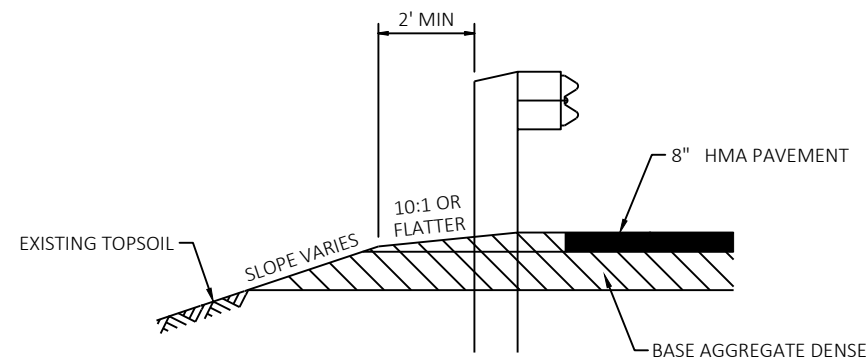
SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

- REMOVING ASPHALTIC SURFACE, MILLING
- REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE

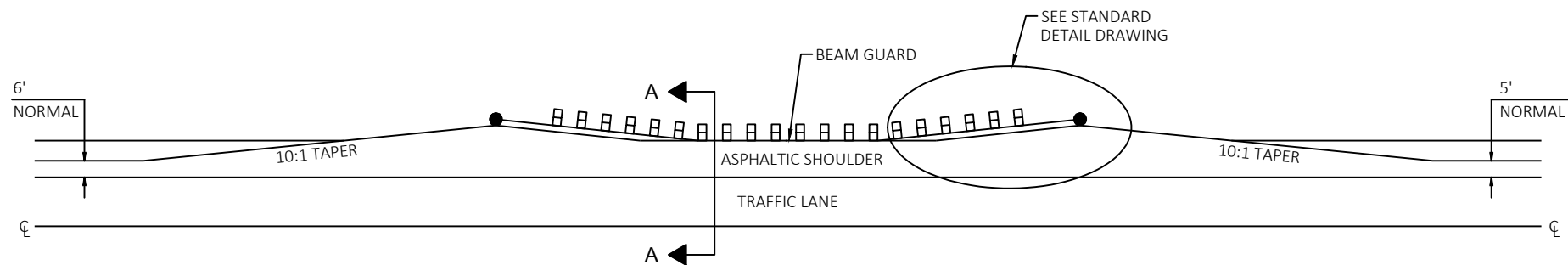
BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



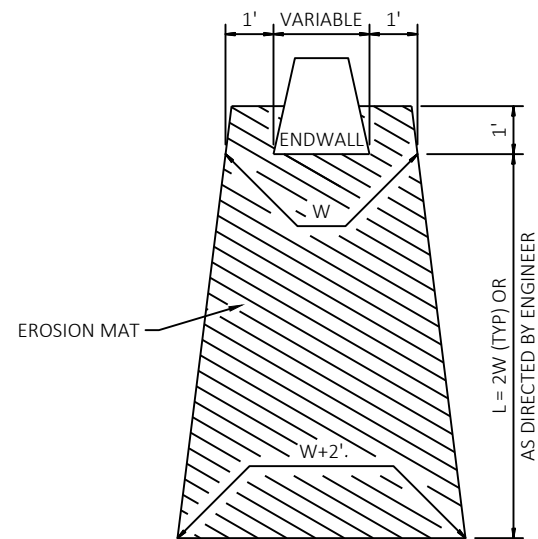
PAVEMENT AT CULVERT REPLACEMENTS



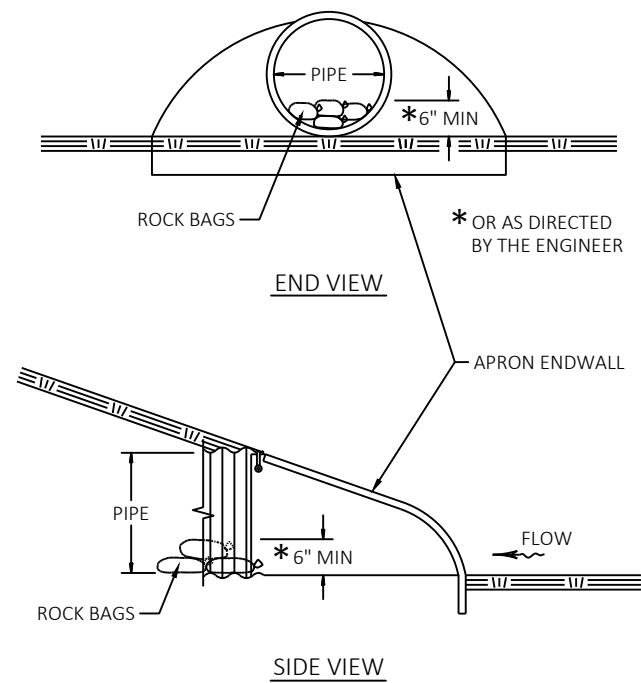
SECTION A-A



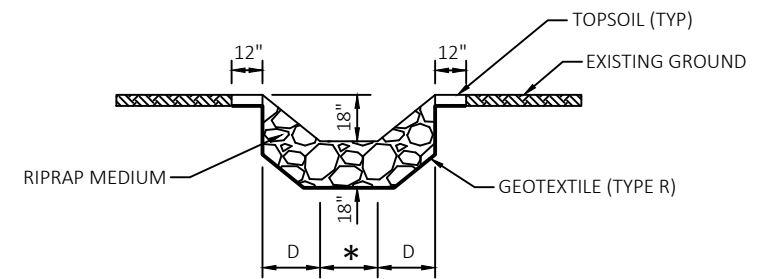
DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD



EROSION MAT TREATMENT AT CULVERTS

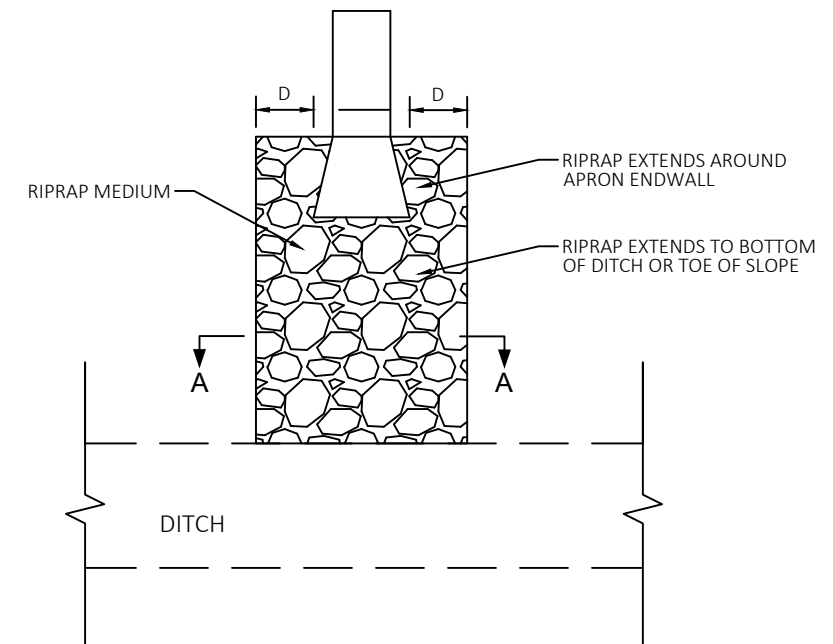


CULVERT PIPE CHECKS



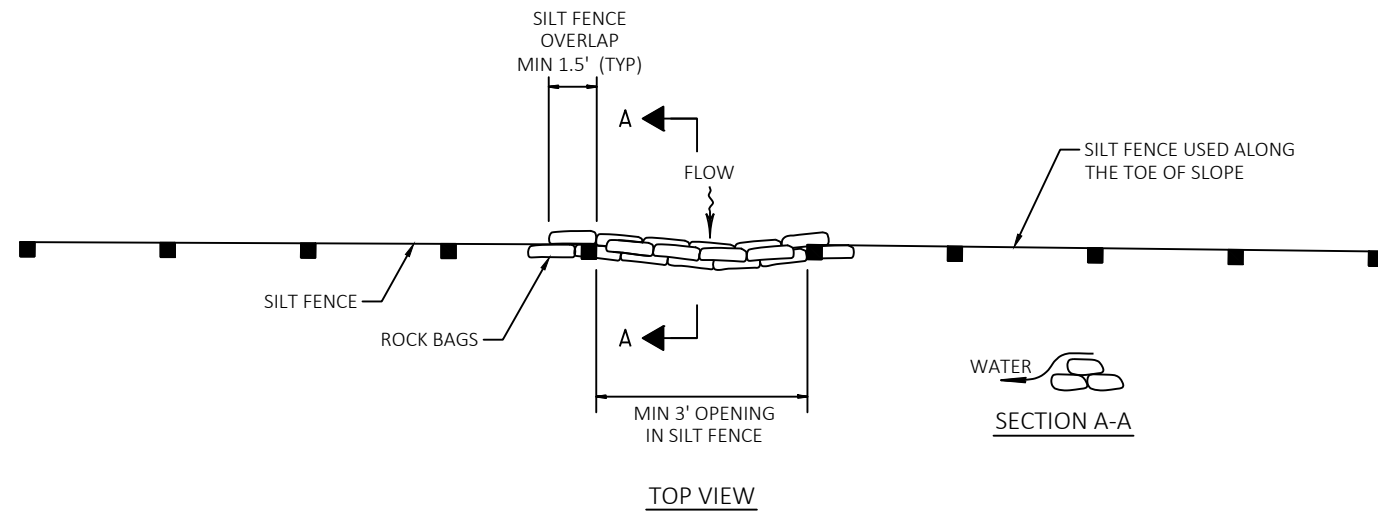
SECTION A-A

* APRON ENDWALL WIDTH
D = PIPE DIAMETER

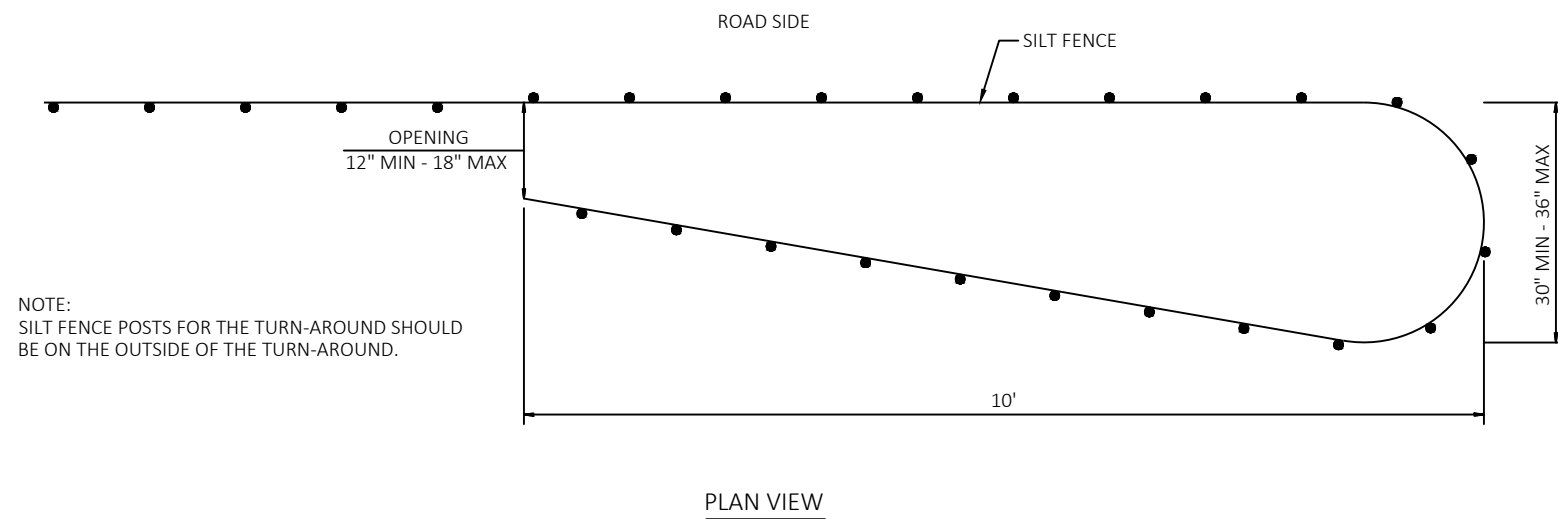


PLAN VIEW

RIPRAP TREATMENT AT STORM SEWER OUTFALLS

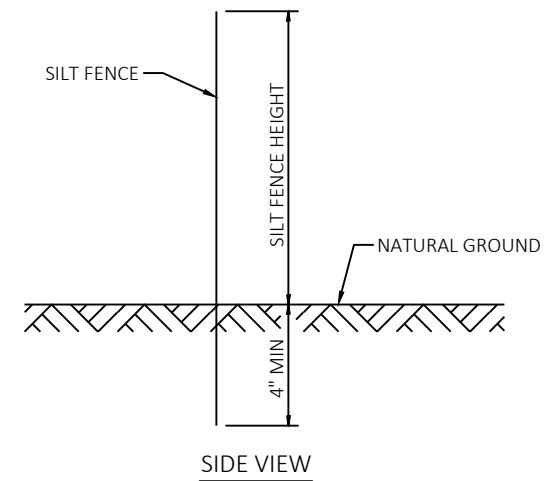


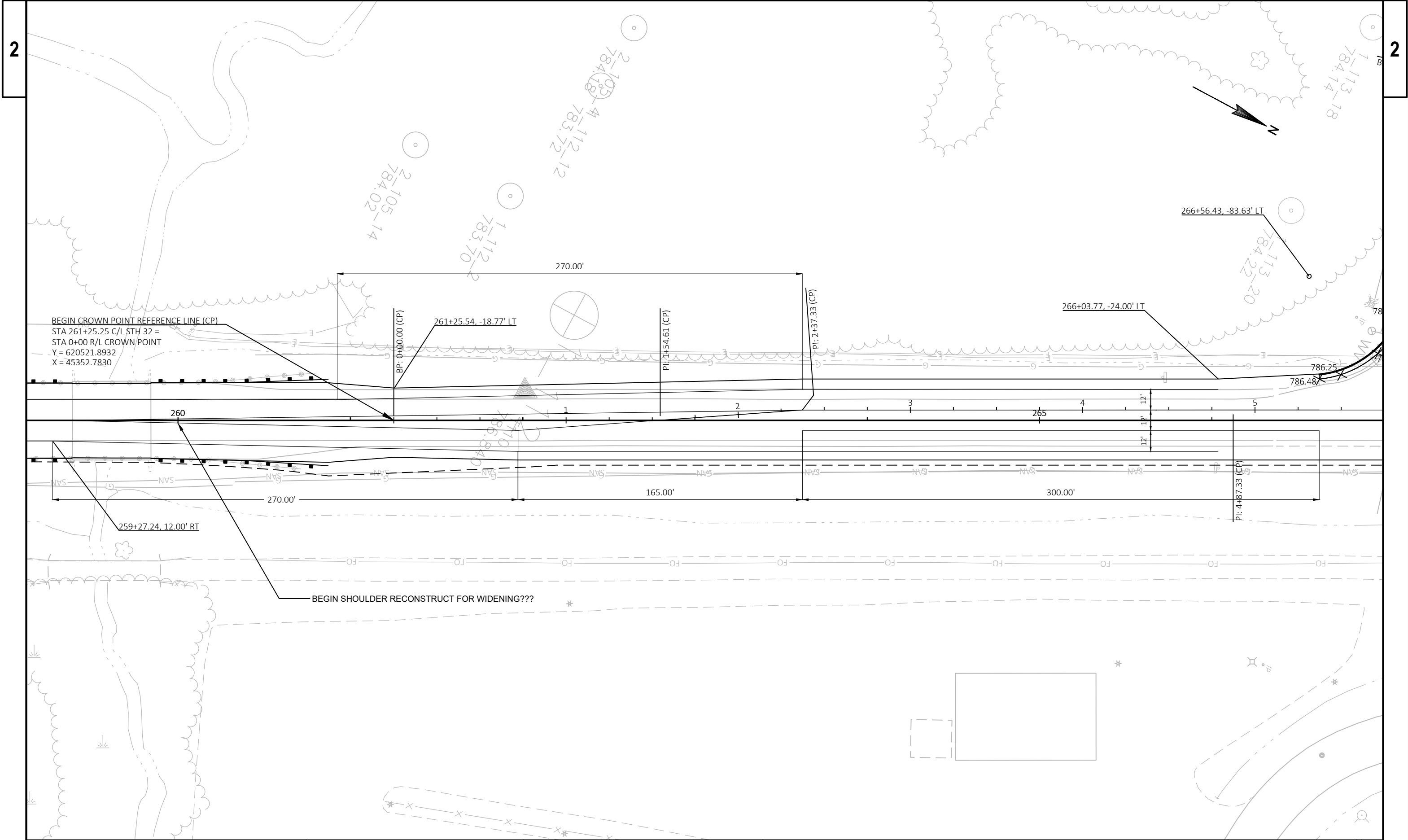
ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL



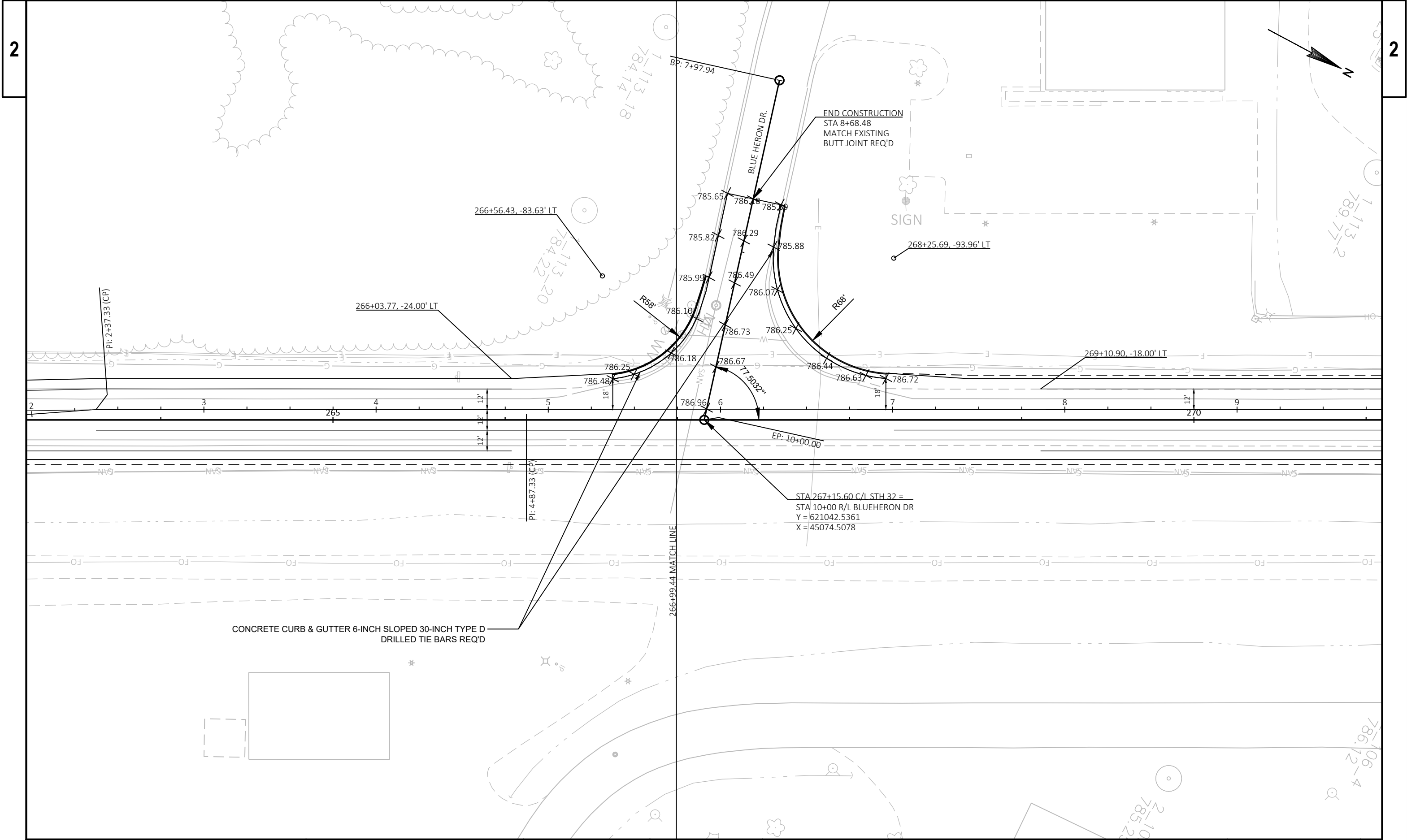
NOTE:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD
BE ON THE OUTSIDE OF THE TURN-AROUND.

SILT FENCE TURN-AROUND DETAIL

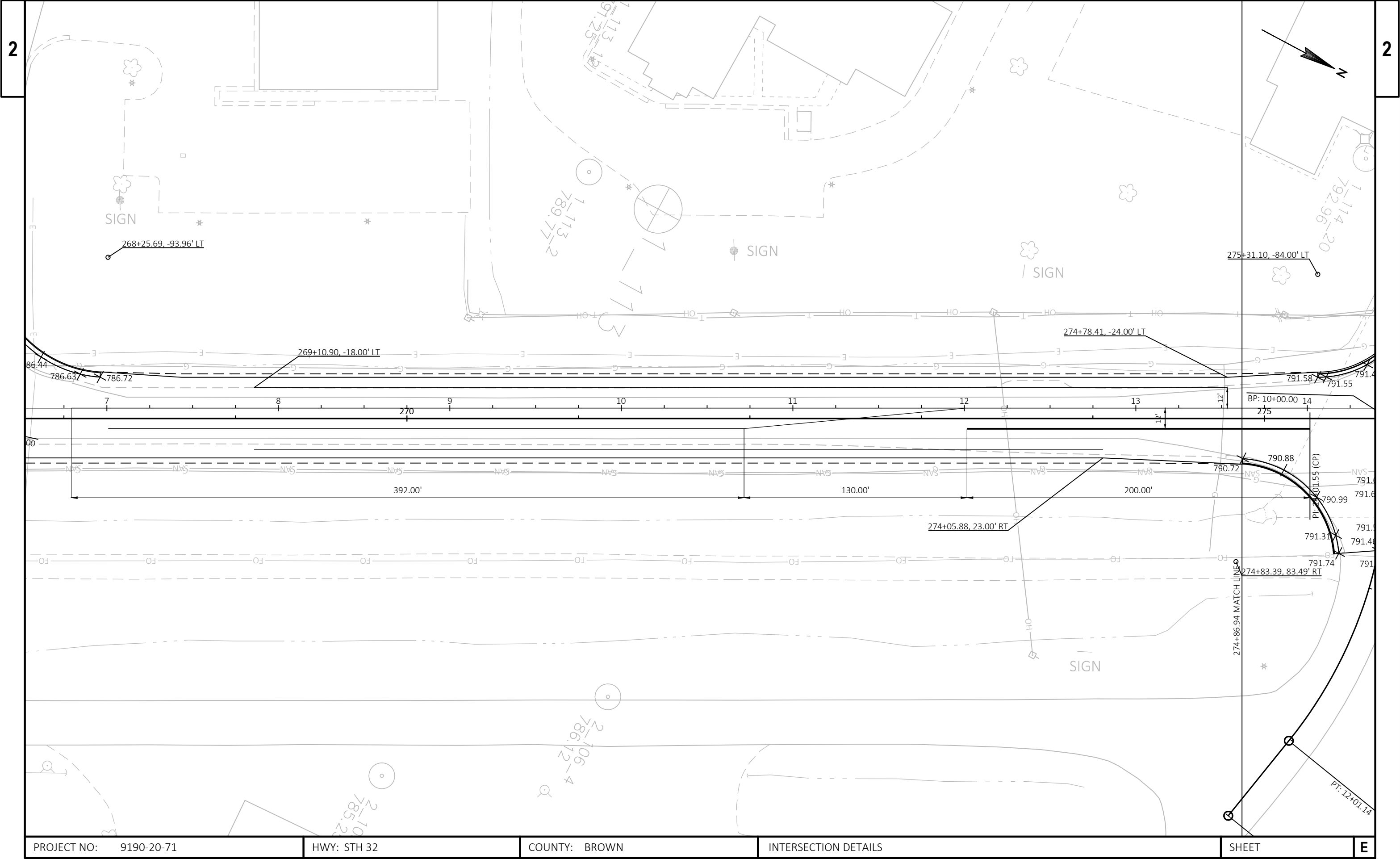




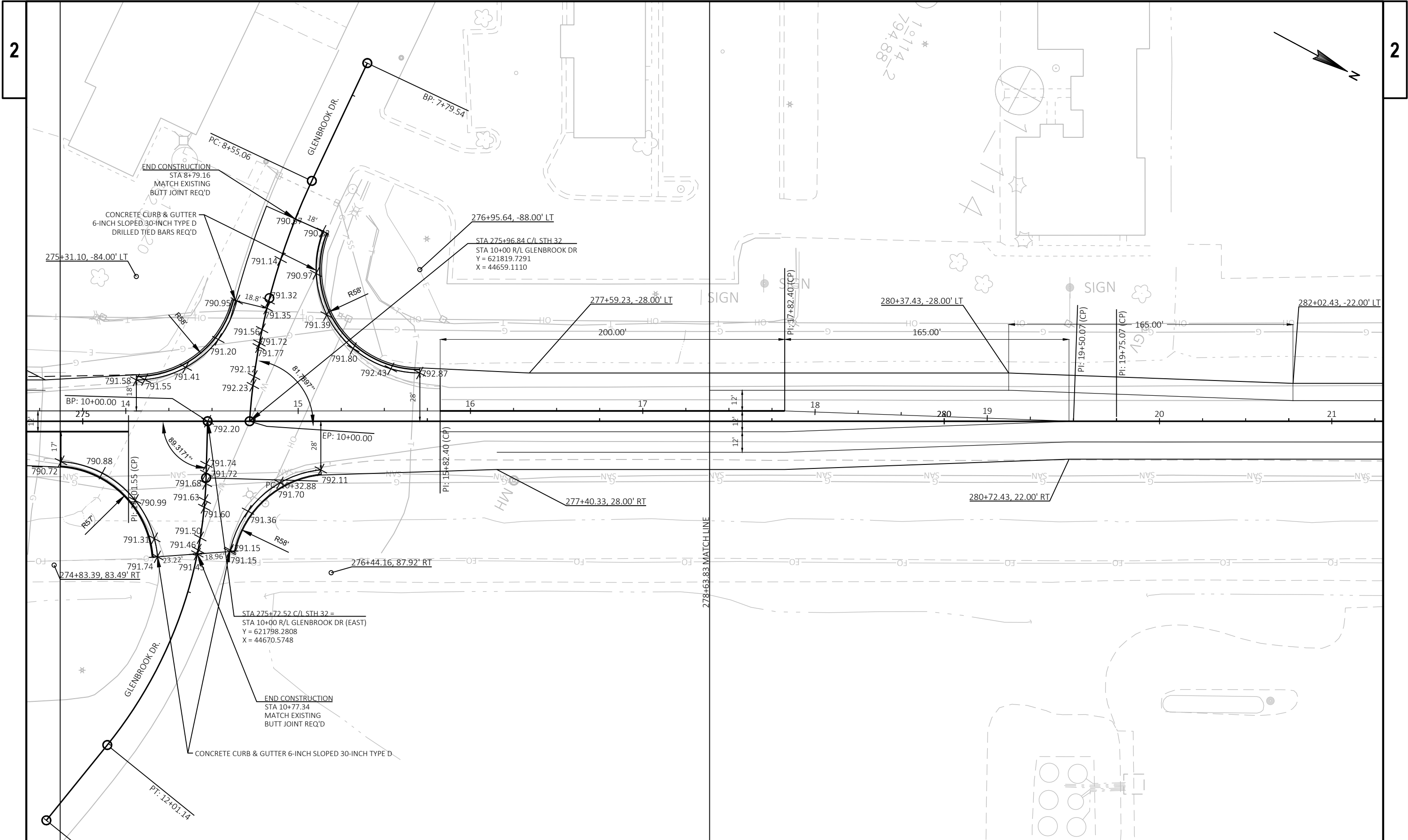
PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	INTERSECTION DETAILS	SHEET	E
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PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	INTERSECTION DETAILS (BLUE HERON DR)	SHEET	E
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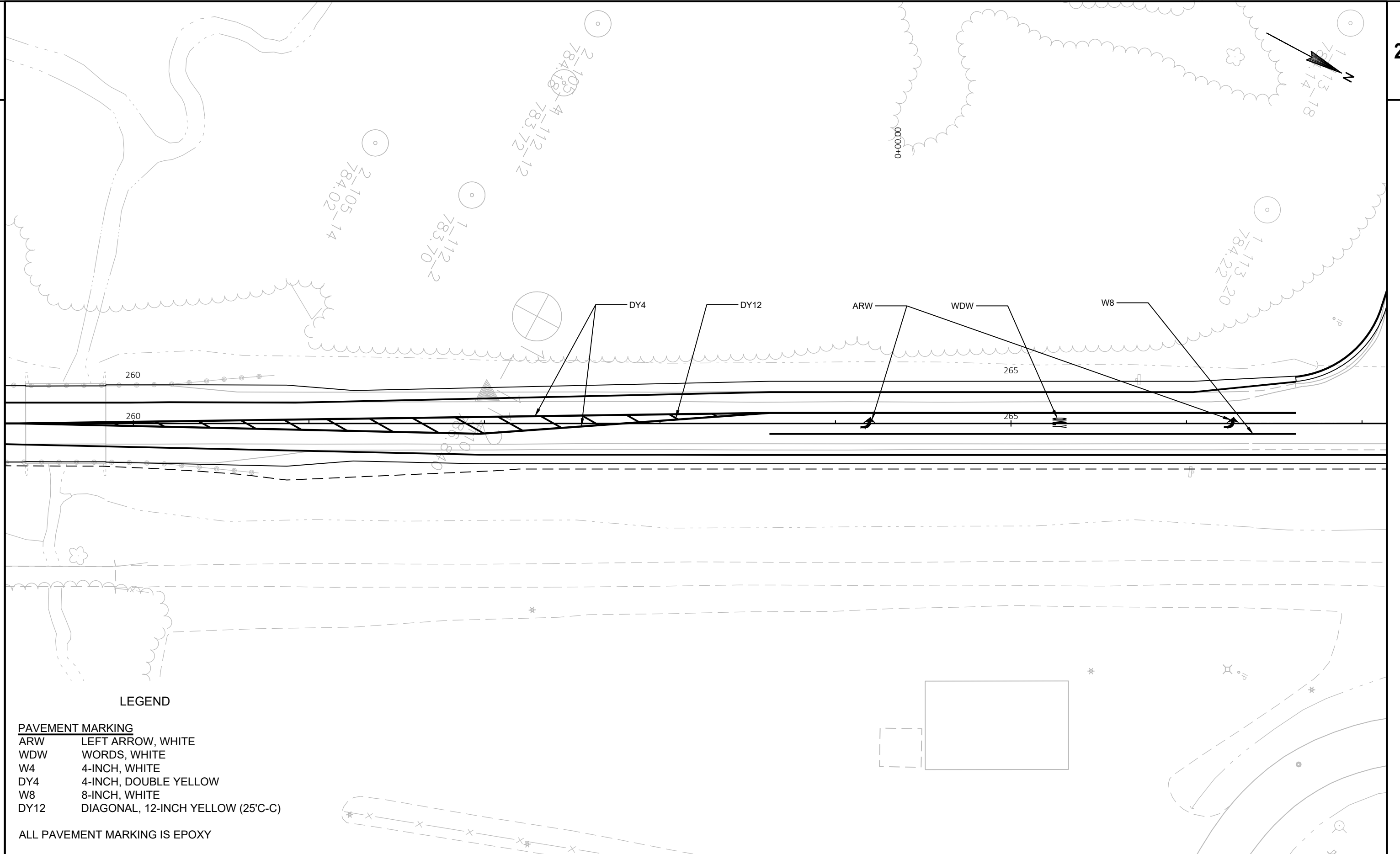


PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	INTERSECTION DETAILS	SHEET	E
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2

2



LEGEND

PAVEMENT MARKING

ARW	LEFT ARROW, WHITE
WDW	WORDS, WHITE
W4	4-INCH, WHITE
DY4	4-INCH, DOUBLE YELLOW
W8	8-INCH, WHITE
DY12	DIAGONAL, 12-INCH YELLOW (25°C-C)

ALL PAVEMENT MARKING IS EPOXY

PROJECT NO: 9190-20-71

HWY: STH 32

COUNTY: BROWN

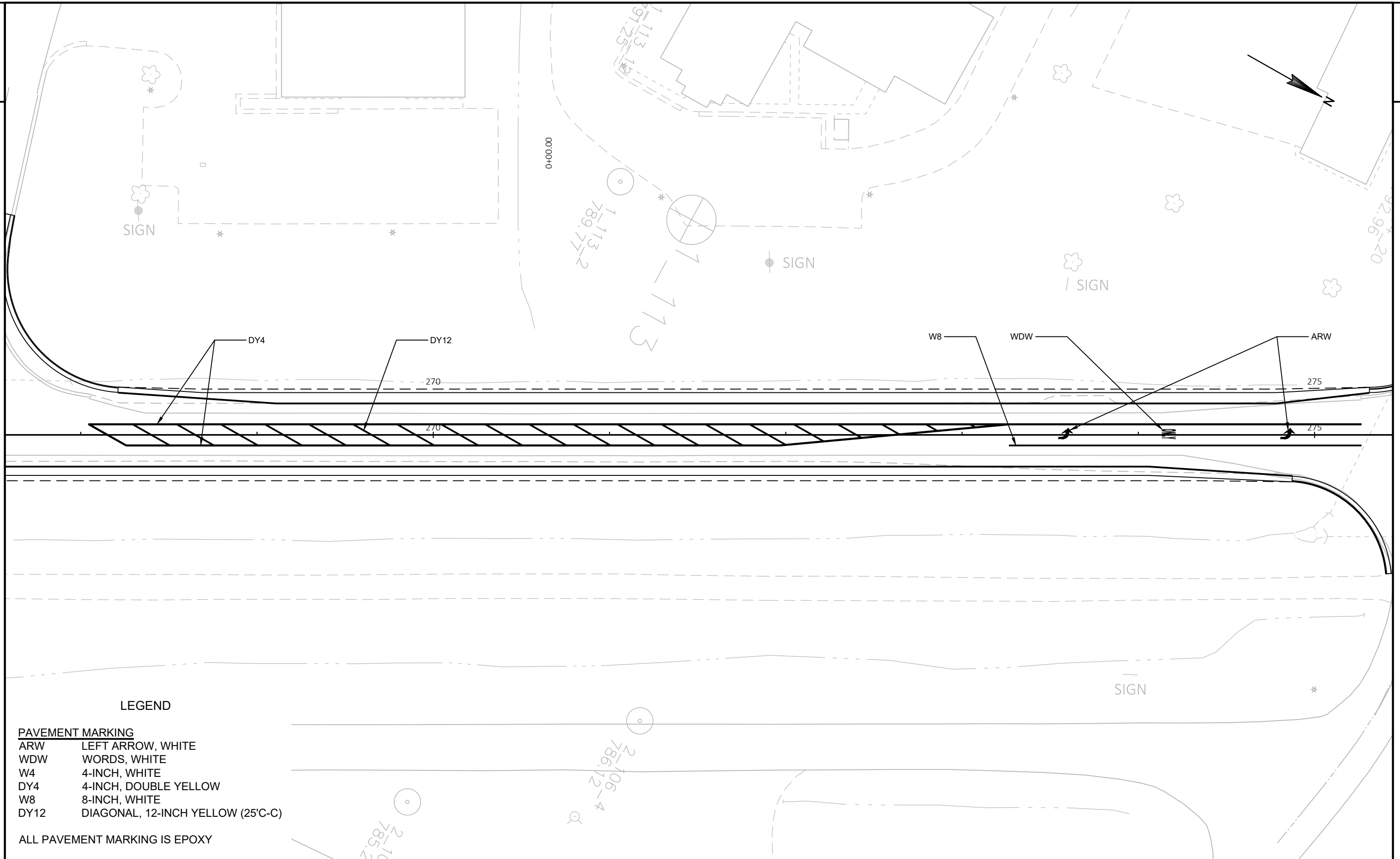
PAVEMENT MARKING

SHEET

E

2

2



LEGEND

PAVEMENT MARKING

- | | |
|------|-----------------------------------|
| ARW | LEFT ARROW, WHITE |
| WDW | WORDS, WHITE |
| W4 | 4-INCH, WHITE |
| DY4 | 4-INCH, DOUBLE YELLOW |
| W8 | 8-INCH, WHITE |
| DY12 | DIAGONAL, 12-INCH YELLOW (25°C-C) |

ALL PAVEMENT MARKING IS EPOXY

PROJECT NO: 9190-20-71

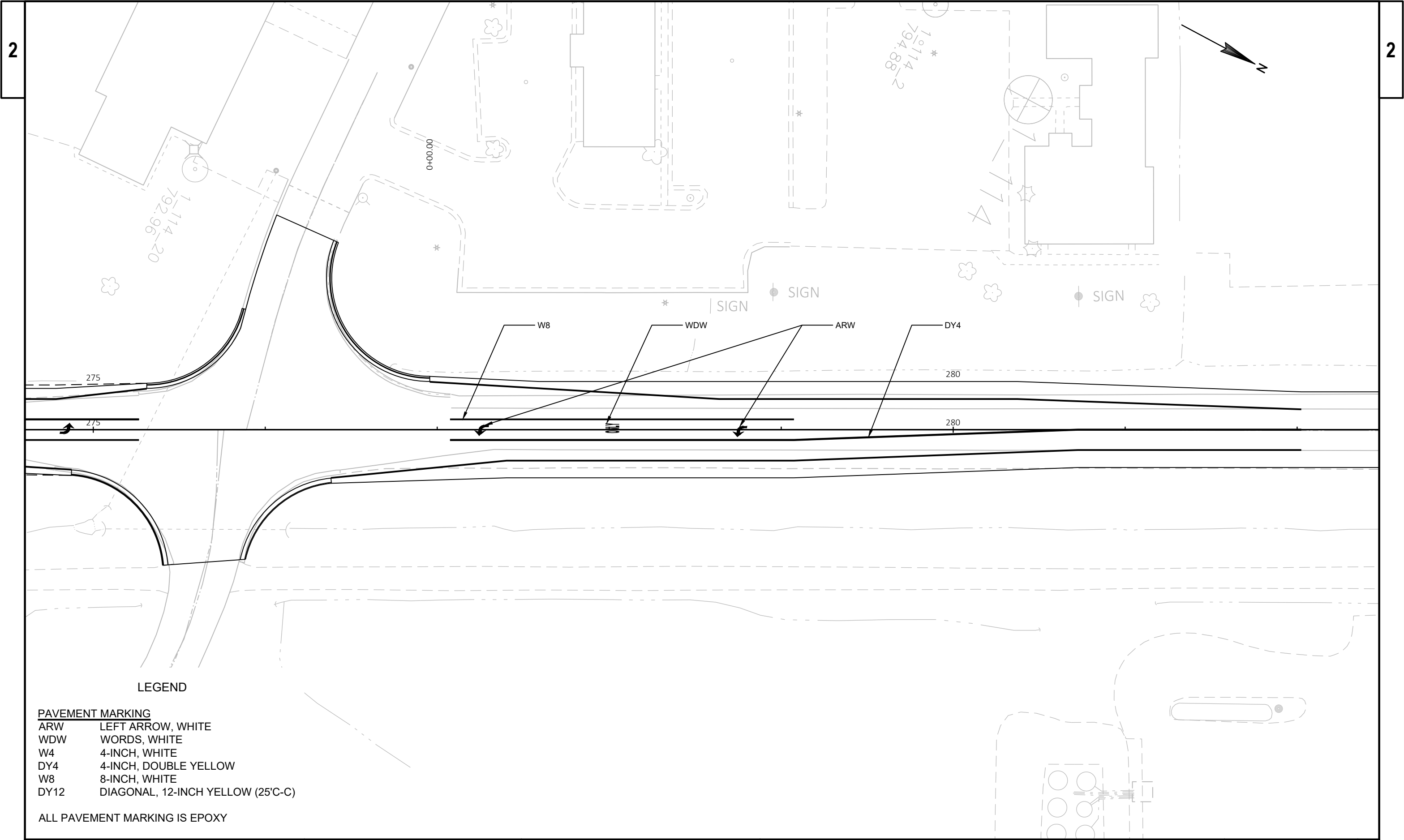
HWY: STH 32

COUNTY: BROWN

PAVEMENT MARKING

SHEET

E

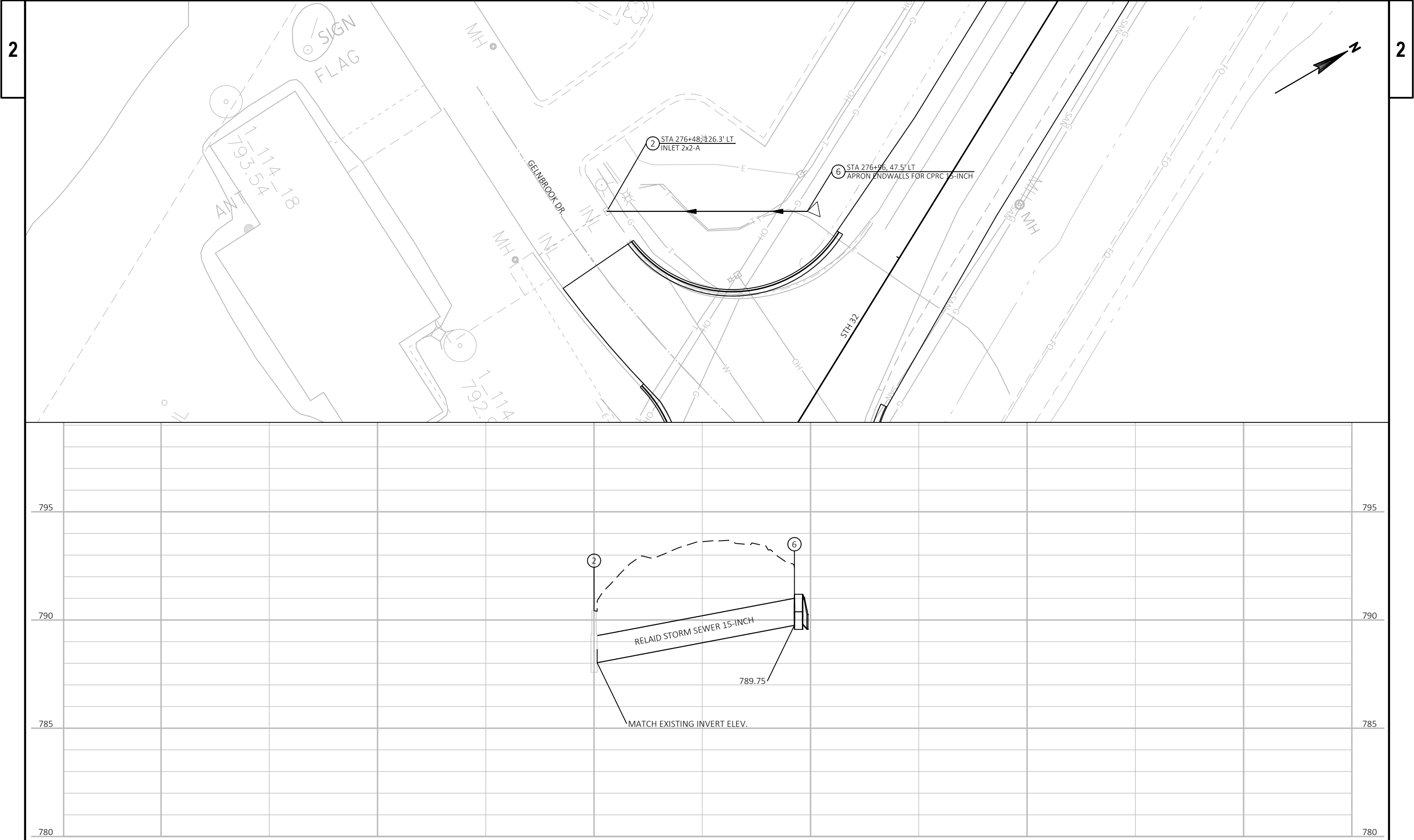


LEGEND

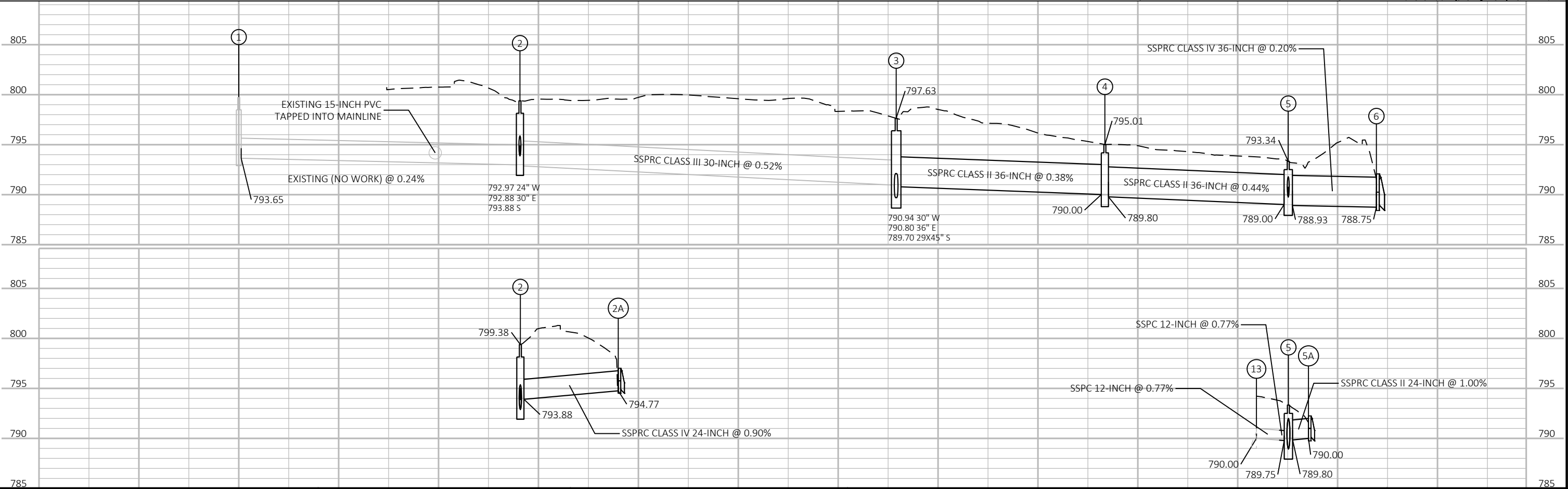
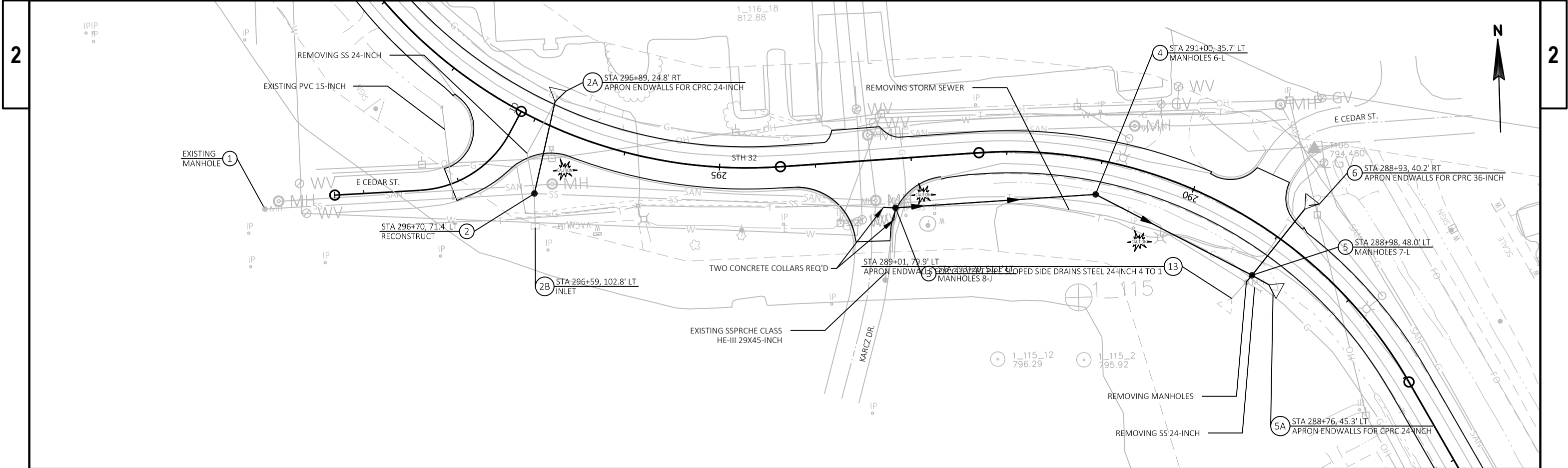
PAVEMENT MARKING	
ARW	LEFT ARROW, WHITE
WDW	WORDS, WHITE
W4	4-INCH, WHITE
DY4	4-INCH, DOUBLE YELLOW
W8	8-INCH, WHITE
DY12	DIAGONAL, 12-INCH YELLOW (25'C-C)

ALL PAVEMENT MARKING IS EPOXY

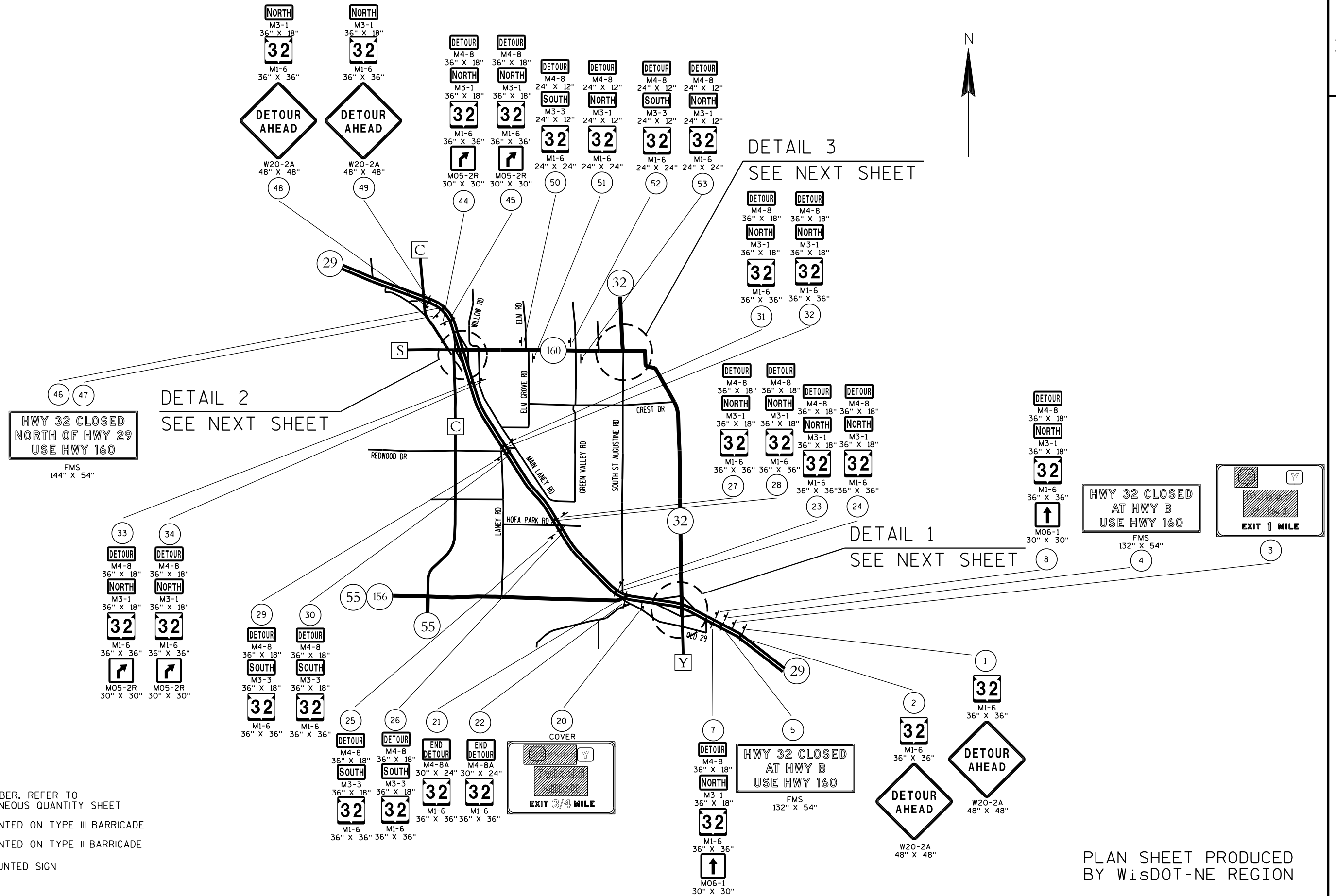
PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	PAVEMENT MARKING	SHEET	E
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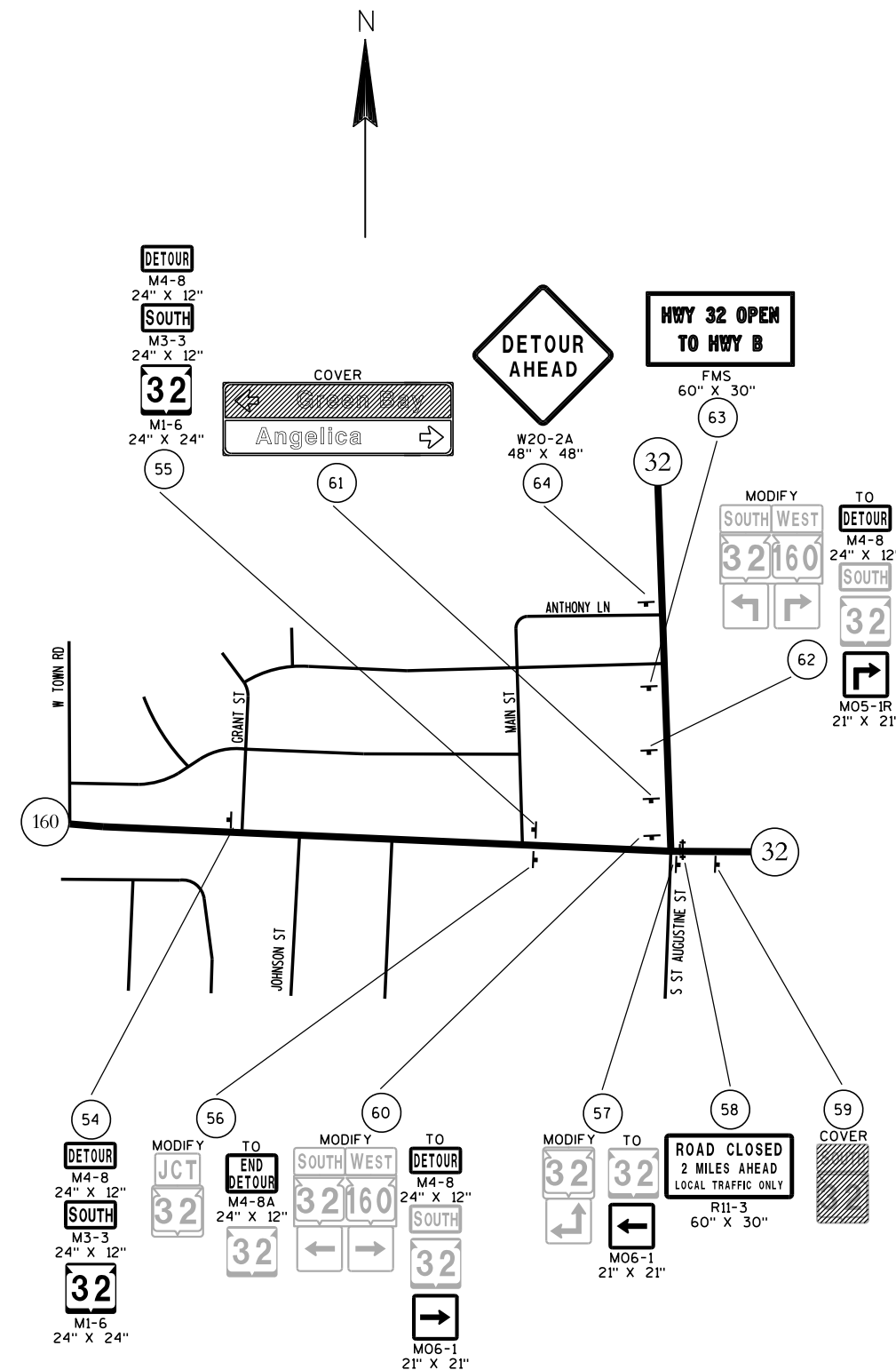


PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	STORM SEWER	SHEET	E
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PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	STORM SEWER	SHEET	E
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PLAN SHEET PRODUCED
BY WisDOT-NE REGION

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 30 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 SIGNS FIXED MESSAGE SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
1	STH 29/32, E. OF STH 32 INTERCHANGE, PLACE ON RIGHT 1 1/4 MILE PRIOR TO STH 32 EXIT	M 1-6	36"X36"	1	30	30								32
	"	W 20-2A	48"X48"	1	30	30								
2	STH 29/32, E. OF STH 32 INTERCHANGE, PLACE IN MEDIAN 1 1/4 MILE PRIOR TO STH 32 EXIT	M 1-6	36"X36"	1	30	30								32
	"	W 20-2A	48"X48"	1	30	30								
3	STH 29/32, E. OF STH 32 INTERCHANGE, COVER EXISTING TYPE I SIGN AS SHOWN										1	1		COVER "32-PULASKI-GILLETT"
4	STH 29/32, E. OF STH 32 INTERCHANGE, PLACE ON RIGHT 3/4 MILE PRIOR TO STH 32 EXIT	FMS	132"X54"	1	30	30			49.5					
5	STH 29/32, E. OF STH 32 INTERCHANGE, PLACE IN MEDIAN 3/4 MILE PRIOR TO STH 32 EXIT	FMS	132"X54"	1	30	30			49.5					
6	VACANT													
7	STH 29/32, E. OF STH 32 INTERCHANGE, PLACE IN MEDIAN 1/4 MILE PRIOR TO STH 32 EXIT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
	"	MO 6-1	30"X30"	1	30	30								AHEAD
8	STH 29/32, E. OF STH 32 INTERCHANGE, PLACE ON RIGHT 1/4 MILE PRIOR TO STH 32 EXIT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
	"	MO 6-1	30"X30"	1	30	30								AHEAD
9	STH 29/32, AT STH 32 INTERCHANGE EXIT, COVER EXISTING TYPE I SIGN AS SHOWN										1	1		COVER "32-PULASKI-GILLETT"
10	STH 29/32, AT STH 32 INTERCHANGE EXIT, PLACE ON RIGHT AT EXIT DIVERGE TAPER POINT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
	"	MO 6-1	30"X30"	1	30	30								AHEAD
11	STH 29/32, AT STH 32 INTERCHANGE EXIT, PLACE IN MEDIAN AT EXIT DIVERGE TAPER POINT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
	"	MO 6-1	30"X30"	1	30	30								AHEAD
12	STH 29 OFF-RAMP TO STH 32, COVER EXITING TYPE II SIGN AS SHOWN										1		1	COVER "PULASKI-GILLETT"
13	STH 29 OFF-RAMP TO STH 32, COVER EXITING TYPE II SIGN AS SHOWN										1		1	COVER "NORTH-32-RT"
14	STH 32, N. OF STH 29 INTERCHANGE, COVER EXISTING TYPE II SIGN AS SHOWN										1		1	COVER "NORTH 32"
15	CTH Y, S. OF STH 29/32 INTERCHANGE, COVER EXISTING TYPE II SIGN AS SHOWN										1		1	COVER "NORTH-32-AHEAD"
16	CTH Y, S. OF STH 29/32 INTERCHANGE, COVER EXISTING TYPE II SIGN AS SHOWN										1		1	COVER "PULASKI-SHAWANO"
17	STH 29 OFF-RAMP TO STH 32, COVER EXITING TYPE II SIGN AS SHOWN										1		1	COVER "NORTH-32-LT"
18	STH 29 OFF-RAMP TO STH 32, COVER EXITING TYPE II SIGN AS SHOWN										1		1	COVER "PULASKI-GILLETT"
19	STH 29, AT STH 32 INTERCHANGE EXIT, COVER EXISTING TYPE I SIGN AS SHOWN										1	1		COVER "32 NORTH-PULASKI-GILLETT"
20	STH 29, W. OF STH 32 INTERCHANGE, COVER EXISTING TYPE I SIGN AS SHOWN										1	1		COVER "32 NORTH-PULASKI-GILLETT"
21	STH 29, W. OF STH 32 INTERCHANGE, PLACE IN MEDIAN 1 MILE PRIOR TO STH 32 EXIT	M 4-8A	30"X24"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
22	STH 29, W. OF STH 32 INTERCHANGE, PLACE ON RIGHT 1 MILE PRIOR TO STH 32 EXIT	M 4-8A	30"X24"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
23	STH 29, W. OF ST. AUGUSTINE RD, PLACE 100' W. OF ST. AUGUSTINE RD INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32

PAGE SUBTOTALS

29

870

0

0

99

0

4

7

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

PROJECT NUMBER: 9190-20-71

HWY: STH 32

COUNTY: BROWN

MISCELLANEOUS QUANTITIES

SHEET

E

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 30 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 SIGNS FIXED MESSAGE SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
24	STH 29, W. OF ST. AUGUSTINE RD, PLACE 100' W. OF ST. AUGUSTINE RD INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
25	STH 29, E. OF HOFA PARK RD, PLACE 100' E. OF HOFA PARK RD INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-3	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
26	STH 29, E. OF HOFA PARK RD, PLACE 100' E. OF HOFA PARK RD INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-3	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
27	STH 29, W. OF HOFA PARK RD, PLACE 100' W. OF HOFA PARK RD INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
28	STH 29, W. OF HOFA PARK RD, PLACE 100' W. OF HOFA PARK RD INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
29	STH 29, E. OF REDWOOD DR, PLACE 100' E. OF REDWOOD DR INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-3	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
30	STH 29, E. OF REDWOOD DR, PLACE 100' E. OF REDWOOD DR INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-3	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
31	STH 29, W. OF REDWOOD DR, PLACE 100' W. OF REDWOOD DR INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
32	STH 29, W. OF REDWOOD DR, PLACE 100' W. OF REDWOOD DR INTERSECTION	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
33	STH 29, E. OF STH 160 INTERCHANGE, PLACE IN MEDIAN 1/2 MILE E. OF STH 160 EXIT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36'	1	30	30								32
	"	MO 5-2R	30"X30"	1	30	30								
34	STH 29, E. OF STH 160 INTERCHANGE, PLACE ON RIGHT 1/2 MILE E. OF STH 160 EXIT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36'	1	30	30								32
	"	MO 5-2R	30"X30"	1	30	30								
35	STH 29, AT STH 160 EXIT RAMP, PLACE IN MEDIAN AT STH 160 EXIT RAMP TAPER POINT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36'	1	30	30								32
	"	MO 6-2	30"X30"	1	30	30								TILT RIGHT
36	STH 29, AT STH 160 EXIT RAMP, PLACE ON RIGHT AT STH 160 EXIT RAMP TAPER POINT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36'	1	30	30								32
	"	MO 6-2	30"X30"	1	30	30								TILT RIGHT

PAGE SUBTOTALS

43

1,290

0

0

0

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0

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

PROJECT NUMBER: 9190-20-71

HWY: STH 32

COUNTY: BROWN

MISCELLANEOUS QUANTITIES

SHEET

E

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 30 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 SIGNS FIXED MESSAGE SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
37	STH 29 OFF-RAMP TO STH 160, PLACE TO RIGHT OF EXISTING D1-3	M 4-8	24"X12"	1	30	30								
	"	M 3-1	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
	"	MO 5-1R	21"X21"	1	30	30								
38	STH 29 OFF-RAMP TO STH 160, PLACE TO RIGHT OF EXISTING D1-3	M 4-8	24"X12"	1	30	30								
	"	M 3-1	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
	"	MO 6-1	21"X21"	1	30	30								RIGHT
39	STH 160, E. OF STH 29, PLACE RIGHT OF EXISTING W6-2 SIGN	M 4-8	24"X12"	1	30	30								
	"	M 3-1	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
40	STH 160, AT STH 29, PLACE RIGHT OF EXISTING J2-2 SIGN	M 4-8	24"X12"	1	30	30								
	"	M 3-3	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
	"	MO 5-1L	21"X21"	1	30	30								
40A	STH 160, AT STH 29, PLACE ON BACK OF MEDIAN R4-7 SIGN	M 4-8	24"X12"	1	30	30								
	"	M 3-3	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
	"	MO 6-1	21"X21"	1	30	30								LEFT
41	STH 160 ON-RAMP TO STH 29, PLACE 100' S. OF RAMP INTERSECTION	M 4-8	24"X12"	1	30	30								
	"	M 3-3	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
42	STH 29, AT STH 160 EXIT RAMP, PLACE ON RIGHT AT STH 160 EXIT RAMP TAPER POINT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36'	1	30	30								32
	"	MO 6-2	30"X30"	1	30	30								TILT RIGHT
43	STH 29, AT STH 160 EXIT RAMP, PLACE IN MEDIAN AT STH 160 EXIT RAMP TAPER POINT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36'	1	30	30								32
	"	MO 6-2	30"X30"	1	30	30								TILT RIGHT
44	STH 29, W. OF STH 160, PLACE ON RIGHT 1/2 MILE W. OF STH 160 EXIT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36'	1	30	30								32
	"	MO 5-2R	30"X30"	1	30	30								
45	STH 29, W. OF STH 160, PLACE IN MEDIAN 1/2 MILE W. OF STH 160 EXIT	M 4-8	36"X18"	1	30	30								
	"	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36'	1	30	30								32
	"	MO 5-2R	30"X30"	1	30	30								
46	STH 29, W. OF STH 160, PLACE IN MEDIAN 3/4 MILE W. OF STH 160 EXIT	FMS	144"X54"	1					54					
47	STH 29, W. OF STH 160, PLACE ON RIGHT 3/4 MILE W. OF STH 160 EXIT	FMS	144"X54"	1					54					
48	STH 29, W. OF STH 160, PLACE ON RIGHT 1 MILE W. OF STH 160 EXIT	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
	"	W 20-2A	48"X48"	1	30	30								
PAGE SUBTOTALS				43		1,230	0	0	108	0		0	0	

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 30 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 SIGNS FIXED MESSAGE SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
49	STH 29, W. OF STH 160, PLACE IN MEDIAN 1 MILE W. OF STH 160 EXIT	M 3-1	36"X18"	1	30	30								
	"	M 1-6	36"X36"	1	30	30								32
	"	W 20-2A	48"X48"	1	30	30								
50	STH 160, W. OF ELM RD, PLACE 150' W. OF ELM RD	M 4-8	24"X12"	1	30	30								
	"	M 3-3	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
51	STH 160, E. OF ELM GROVE RD, PLACE 150' E. OF ELM GROVE RD	M 4-8	24"X12"	1	30	30								
	"	M 3-1	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
52	STH 160, W. OF GREEN VALLEY RD, PLACE 150' W. OF GREEN VALLEY RD	M 4-8	24"X12"	1	30	30								
	"	M 3-3	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
53	STH 160, E. OF GREEN VALLEY RD, PLACE 150' E. OF GREEN VALLEY RD	M 4-8	24"X12"	1	30	30								
	"	M 3-1	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
54	STH 160, W. OF GRANT ST, PLACE 150' W. OF GRANT ST	M 4-8	24"X12"	1	30	30								
	"	M 3-3	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								32
55	STH 160, W. OF STH 32, MOUNT ON LIGHT POLE	M 4-8	24"X12"	1	30	30								
	"	M 3-3	24"X12"	1	30	30								
	"	M 1-6	24"X24"	1	30	30								
56	STH 160, W. OF STH 32, MODIFY EXISTING J1-1 SIGN AS SHOWN	M 4-8A	24"X12"	1	30	30								
57	STH 160, AT STH 32 INTERSECTION, MODIFY EXISTING J13-1 SIGN AS SHOWN	MO 6-1	21"X21"	1	30	30								LEFT
58	STH 32, E. OF ST. AUGUSTINE ST, PLACE IN PARKING LANE WITHIN ROADWAY	R 11-3	60"X30"	1	30	30	30	60						2 MILES AHEAD
59	STH 32, E. OF ST. AUGUSTINE ST, COVER EXISTING J4-1 SIGN AS SHOWN										1		1	COVER ENTIRE SIGN
60	STH 32, AT STH 160 INTERSECTION, MODIFY EXISTING J3-2 SIGN A SHOWN	M 4-8	24"X12"	1	30	30								
	"	MO 6-1	21"X21"	1	30	30								RIGHT
61	STH 32, N. OF STH 160, COVER EXISTING SIGN AS SHOWN										1		1	COVER "LT-GREEN BAY"
62	STH 32, N. OF STH 160, MODIFY EXISTING J2-2 AS SHOWN	M 4-8	24"X12"	1	30	30								
	"	MO 5-1R	21"X21"	1	30	30								
63	STH 32, N. OF ANTHONY LN, PLACE 50' N. OF ANTHONY LN INTERSECTION	FMS	60"X30"	1					12.5					PLACE IN BUMP OUT TERRACE
64	STH 32, N. OF ANTHONY LN, PLACE 1000' N. OF STH 160 INTERSECTION	W 20-2A	48"X48"	1	30	30								

PAGE SUBTOTALS	30	870	30	60	12.5	0		0	2
ALTERNATE ROUTE TOTALS	100	3,000	60	120	0	0		0	1
PROJECT TOTALS	245	7,260	90	180	220	0		4	10

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACCESS POINT	AP	SECTION CORNER	●
ACCESS RIGHTS	AR	(MATERIAL AS NOTED)	
ACRES	AC	SET R/W MONUMENT W/CAP	○
CHORD BEARING	CH BRG	11-1/2" OUTSIDE DIA. X 18"	
CHORD DISTANCE	CH DIS	IRON PIPE 1.13 LBS./FT.)	
DEED	(D)	FOUND TYPE 2 MON.	●
DOCUMENT	DOC	FOUND 3/4" REBAR	●
EAST BOUND	EB	SET P.K. NAIL	△
GAS VALVE	GV	PROPOSED R/W	PRW000
INLET	IL	BOUNDARY POINT	=====
LENGTH OF CURVE	L	CORPORATE LIMITS	=====
MANHOLE	MH	EXISTING R/W	=====
MONUMENT	MON	SECTION LINE	=====
NORTH BOUND	NB	QUARTER LINE	=====
PAGE	PG	SIXTEENTH LINE	=====
PERMANENT	PERM	PROPOSED OR NEW R/W LINE	=====
PERMANENT LIMITED EASEMENT	P.L.E.	PROPOSED EASEMENT LINE	-----
PRIVATE DRIVEWAY	PD	CSM, SUBDIVISION, OR	-----
PROPERTY LINE	PL	PLAT OF SURVEY LINE	-----
RADIUS	RAD	PARCEL NUMBER	00
REFERENCE LINE	R/L		000
REMAINING	REM		0-0
RIGHT OF WAY	R/W		PL
SECTION	SEC		
SECTION LINE	S		
FOUND IRON PIPE	IP		
STATION	STA		
TEMPORARY LIMITED EASEMENT	T.L.E.		
TIE POINT	TIE		
VOLUME	VOL		
ADJOINING LANDS			
WITH SAME OWNER			
PARALLEL TO LINE	00°		
BUILDING TO BE RAZED			
FEE ACQUISITION			
BEGIN POINT	BP		
END POINT	EP		

CONVENTIONAL UTILITY SYMBOLS

WATER	W
GAS	G
TELEPHONE	T
OVERHEAD	OH
TRANSMISSION LINES	TH
ELECTRIC	E
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	SS
NON-COMPENSABLE	NON-COMPENSABLE
COMPENSABLE	COMPENSABLE
POWER POLE	□
TELEPHONE POLE	○
TELEPHONE PEDESTAL	×
ELECTRIC TOWER	⊠

NOTES:

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

RIGHT OF WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 1" X 24" IRON PIPE) AND WILL BE PLACED PRIOR TO COMPLETION OF PROJECT.

AREAS SHOWN IN THE TOTAL ACRES COLUMN OF THE SCHEDULE OF LANDS & INTEREST TABLE MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

COORDINATES AS SHOWN ARE NOT INTENDED TO BE USED FOR RETRACEMENT PURPOSES AND MUST BE VERIFIED WITH THE COUNTY SURVEY DEPARTMENT.

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, BROWN COUNTY, NAD 83 (2007) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

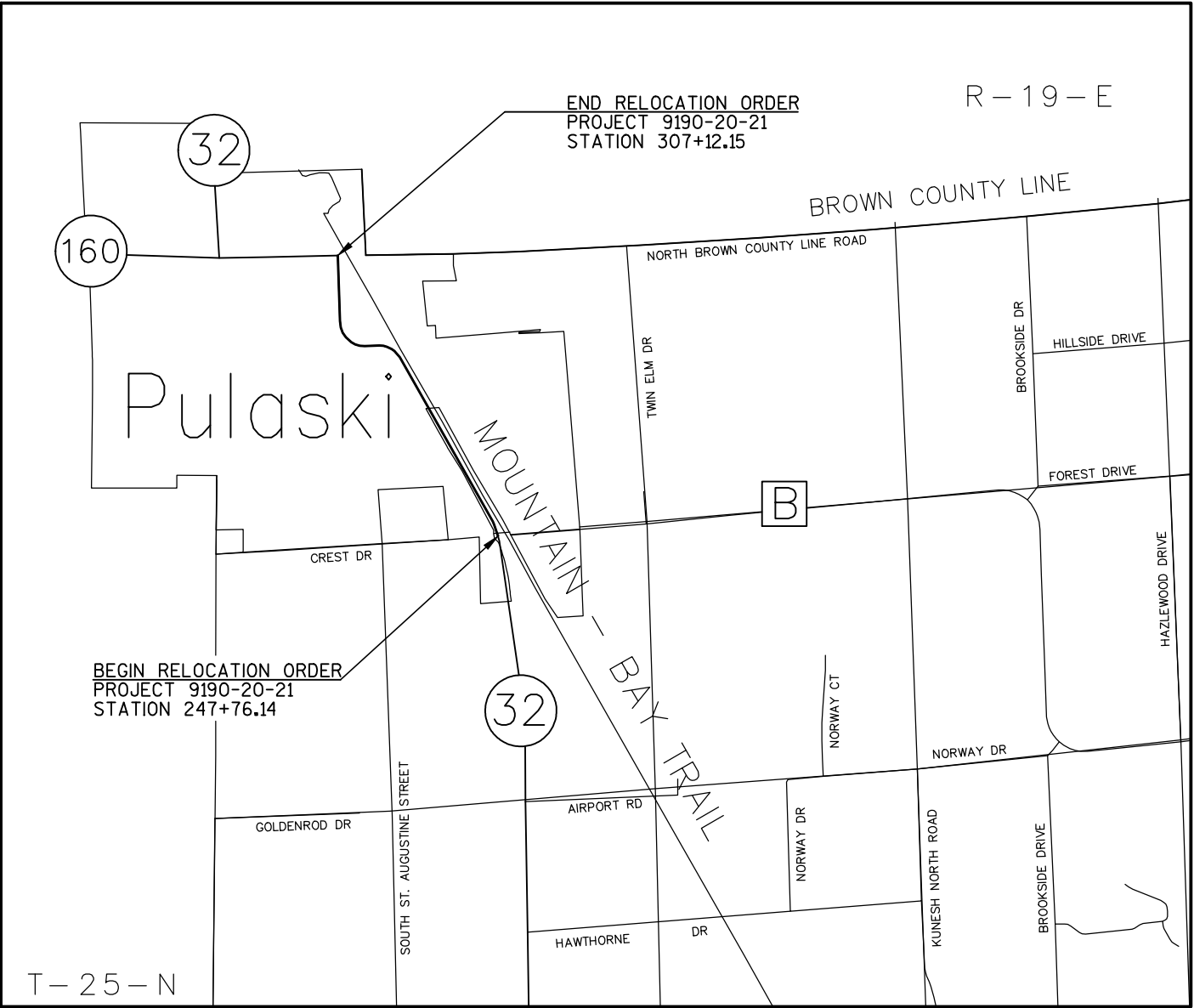
EXISTING RIGHT OF WAY WAS ACQUIRED FROM PROJECT(S): T-0261 (4), CSMs AND PLAT OF SURVEYS

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S)/DOC.#:

RIGHT OF WAY REFERENCE LINE MAY NOT BE THE SAME AS THE CONSTRUCTION REFERENCE LINE.

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO DEPARTMENT OF TRANSPORTATION.

FEE SIMPLE TO ALL THOSE EXISTING LANDS OF THE GRANTOR CURRENTLY USED FOR HIGHWAY PURPOSES, DESIGNATED AS EXISTING RIGHT OF WAY, WHETHER ACQUIRED BY SEPARATE CONVEYANCE OR OTHERWISE, BOUND BY THE TRAVERSE OF THE COURSE TABLE OF NEW RIGHT OF WAY AS SHOWN ON THE SAID TRANSPORTATION PROJECT PLAT.



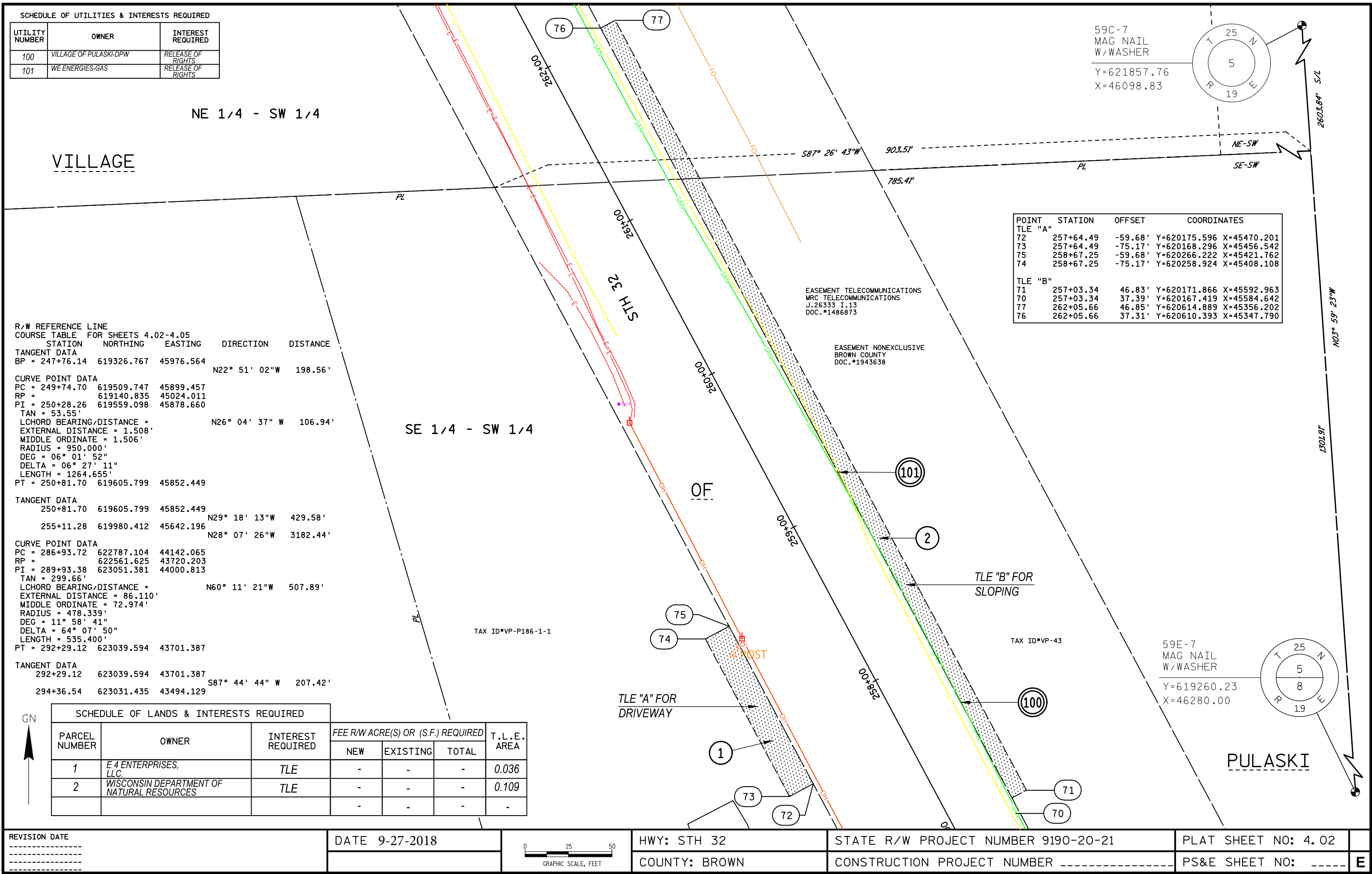
TOTAL NET LENGTH OF CENTERLINE = 1.00 MI.

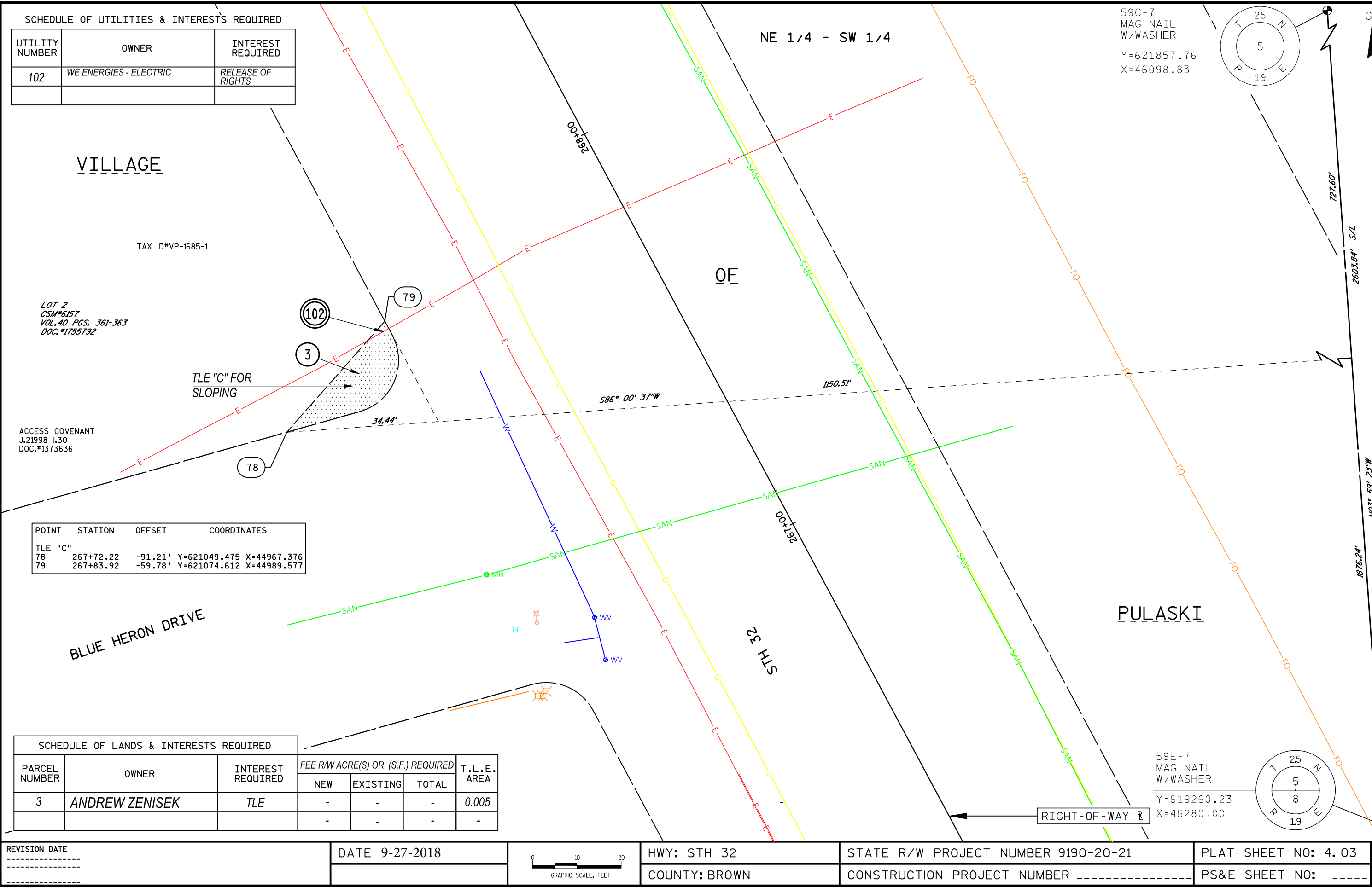
R/W PROJECT NUMBER 9190-20-21	SHEET 4.01	TOTAL 5
FEDERAL PROJECT NUMBER -----		
PLAT OF RIGHT OF WAY REQUIRED FOR VILLAGE OF PULASKI CTH B - EAST GREEN BAY ST. STH 32 BROWN COUNTY		



Gregory T. Belanger

REVISION DATE	STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED:	DATE: 9-27-2018 <i>Curt Van Erem</i> CURT VAN EREM





SCHEDULE OF UTILITIES & INTERESTS REQUIRED		
UTILITY NUMBER	OWNER	INTEREST REQUIRED
102	WE ENERGIES - ELECTRIC	RELEASE OF RIGHTS

59C-7
MAG NAIL
W/WASHER
Y=621857.76
X=46098.83

25
N
5
19
E
P

GN

VILLAGE

TAX ID*VP-1685-1

LOT 2
CSM*6157
VOL.40 PGS. 361-363
DOC.#1755792

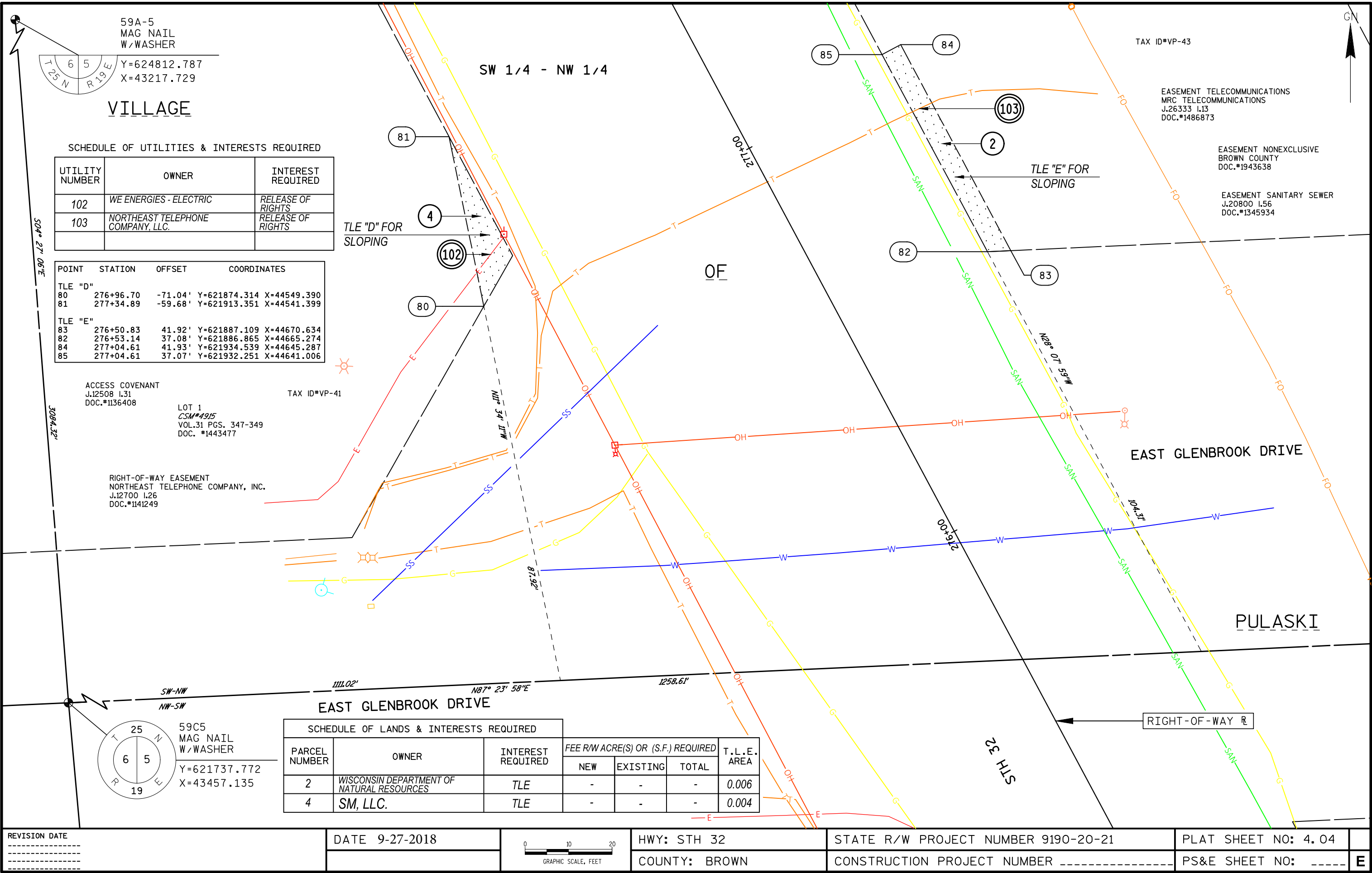
ACCESS COVENANT
J.21998 I.30
DOC.#1373636

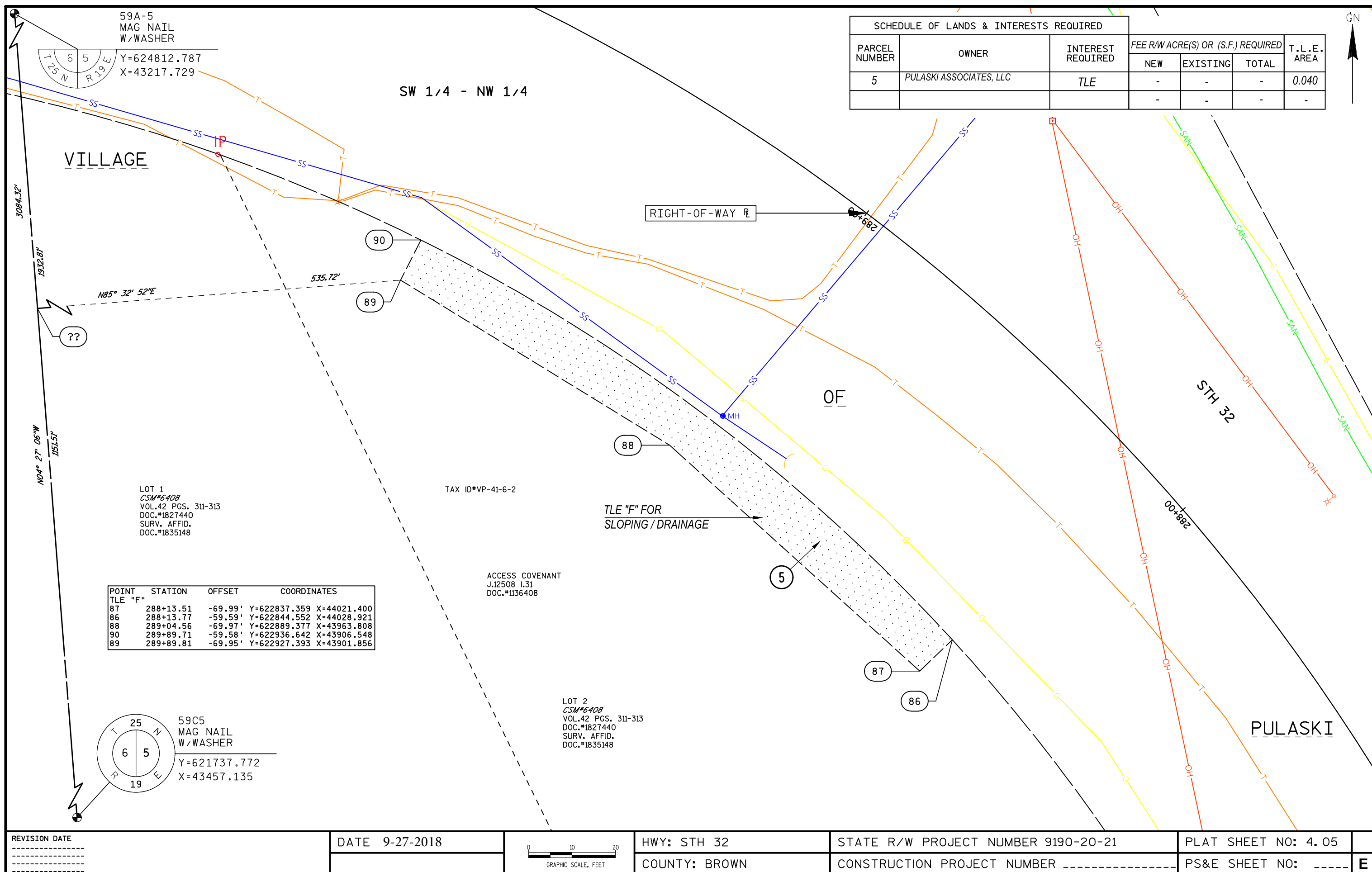
POINT	STATION	OFFSET	COORDINATES
TLE "C"			
78	267+72.22	-91.21'	Y=621049.475 X=44967.376
79	267+83.92	-59.78'	Y=621074.612 X=44989.577

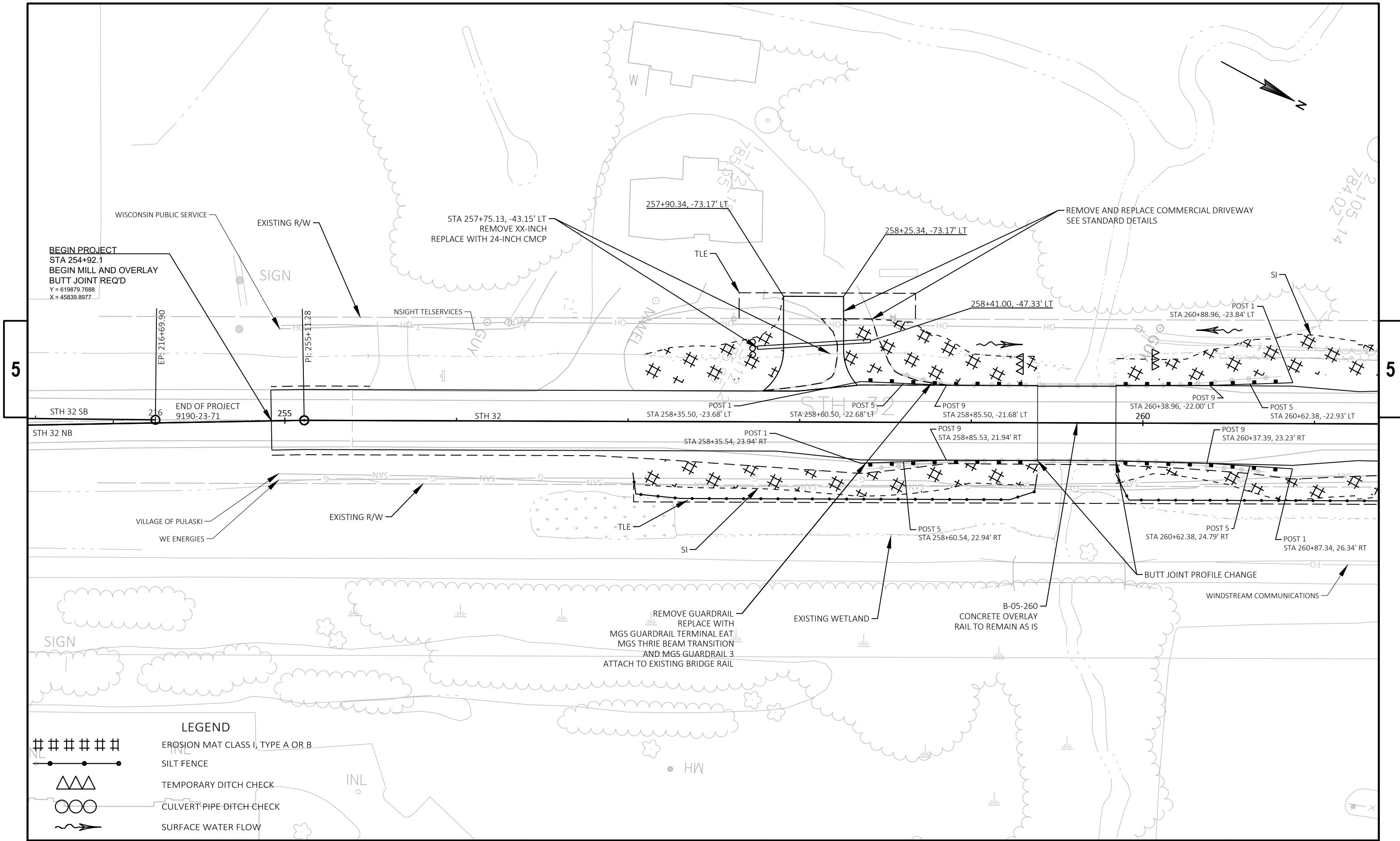
SCHEDULE OF LANDS & INTERESTS REQUIRED						
PARCEL NUMBER	OWNER	INTEREST REQUIRED	FEE R/W ACRE(S) OR (S.F.) REQUIRED			T.L.E. AREA
			NEW	EXISTING	TOTAL	
3	ANDREW ZENISEK	TLE	-	-	-	0.005
			-	-	-	-

59E-7
MAG NAIL
W/WASHER
Y=619260.23
X=46280.00

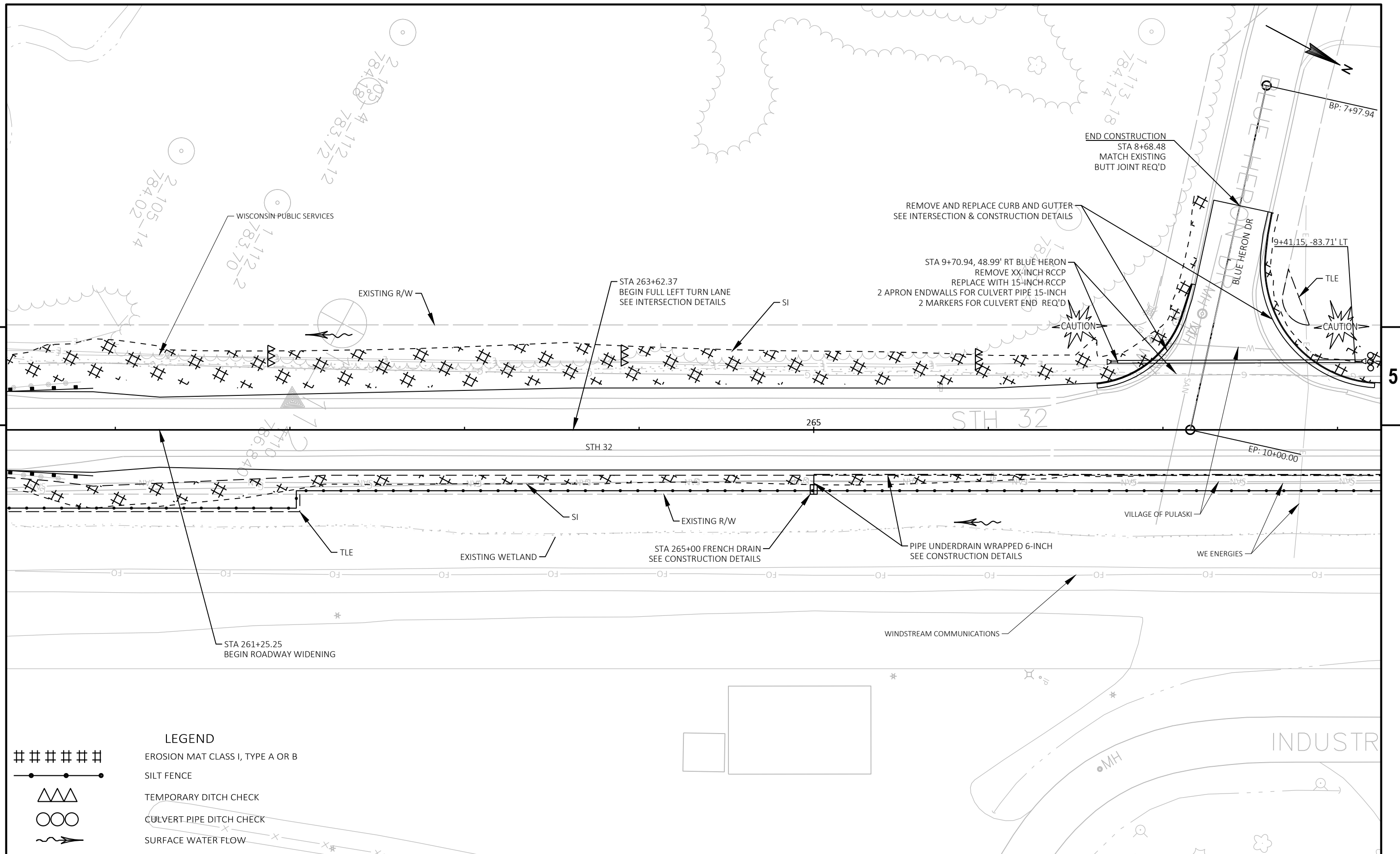
25
N
5
8
19
E
P







PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	PLAN SHEETS	SHEET	E
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PROJECT NO:	9190-20-71
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HWY: STH 32

COUNTY: BROWN

PLAN SHEETS

SHEET

■

FILE NAME : N:\PDS\C3D\91902000\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 050202

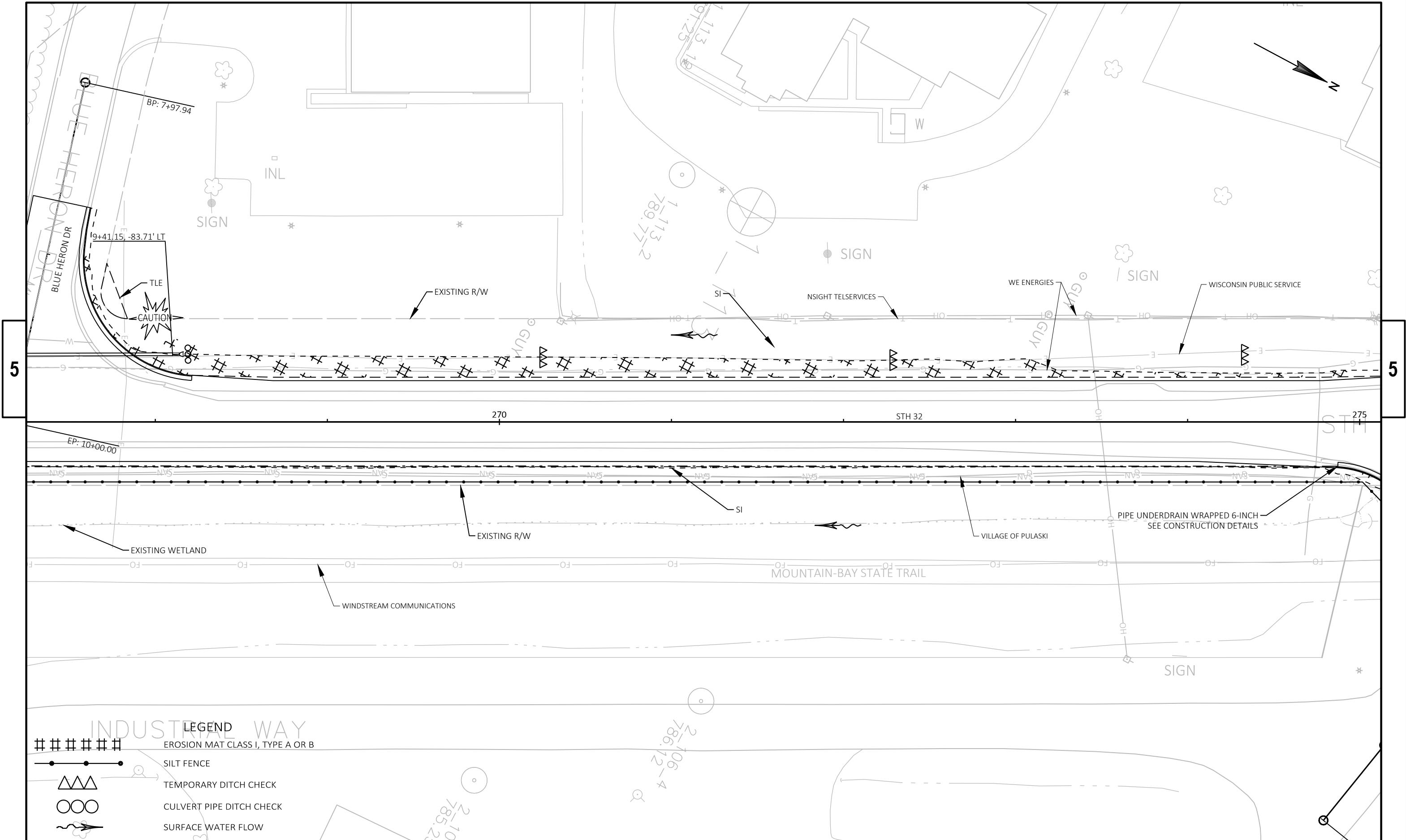
PLOT DATE : 3/11/2019 1:37 PM

PLOT BY : HOLMES, KELSEY J

PLOT NAME :

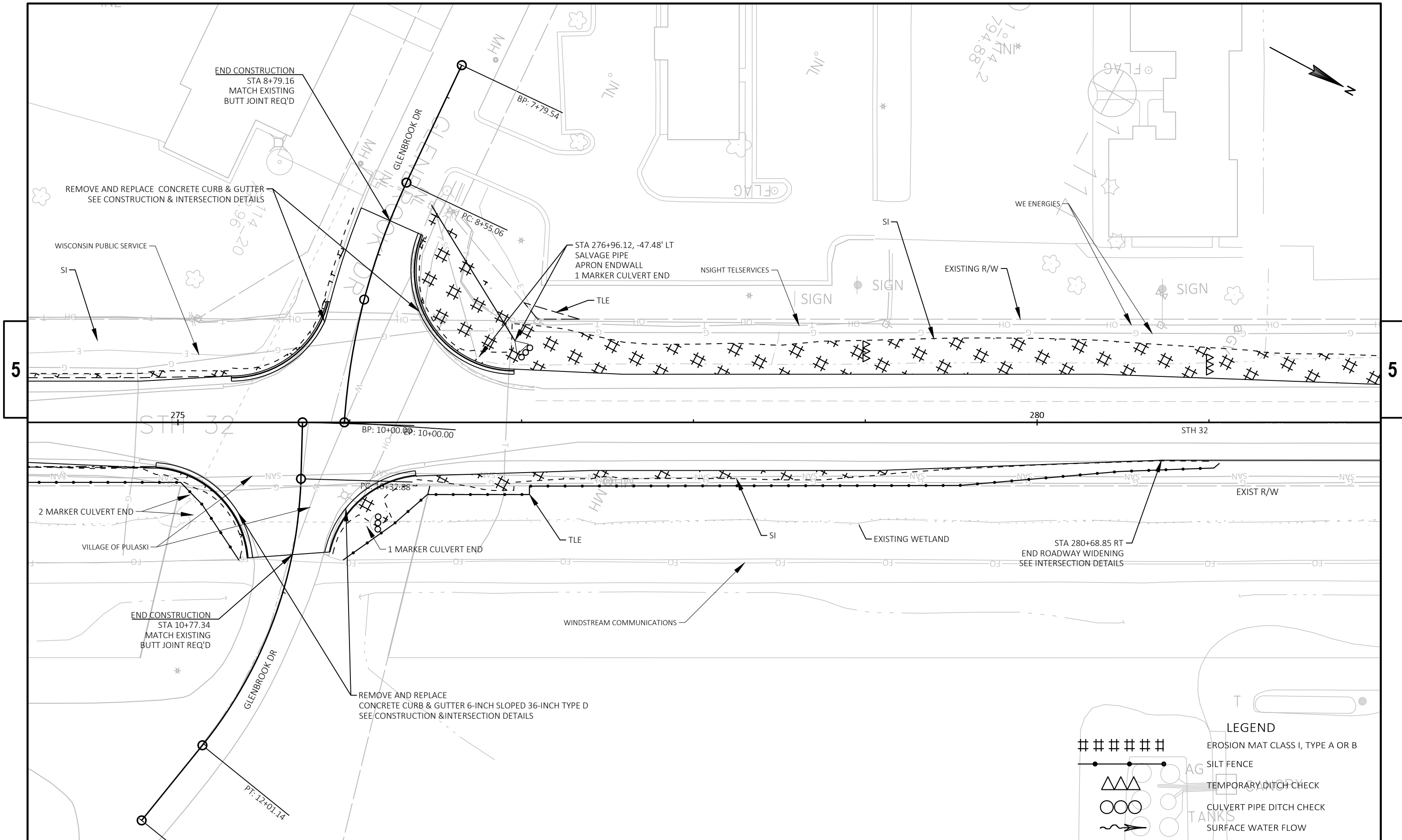
PLOT SCALE : #####

WISDOT/CADDS SHEET 44

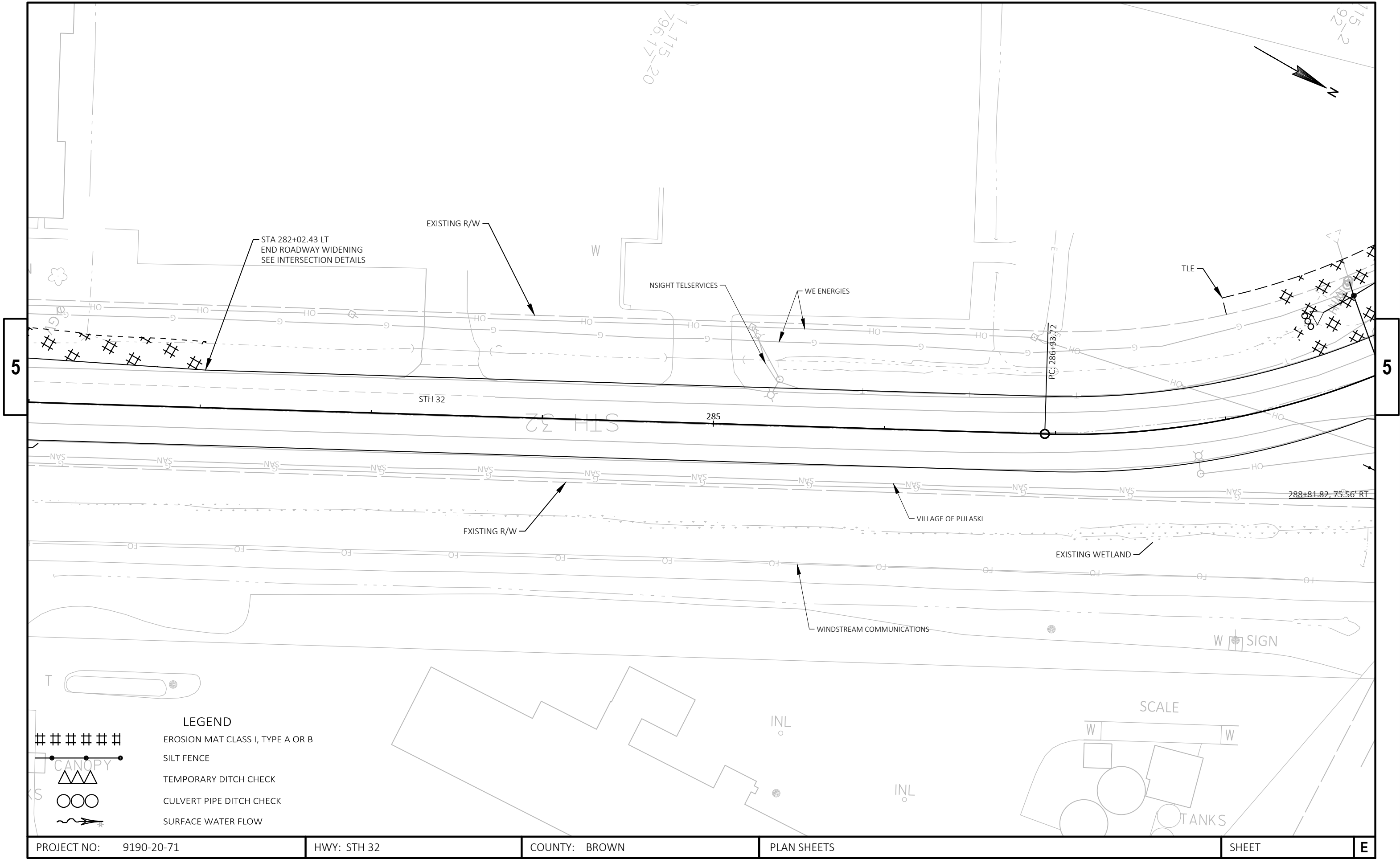


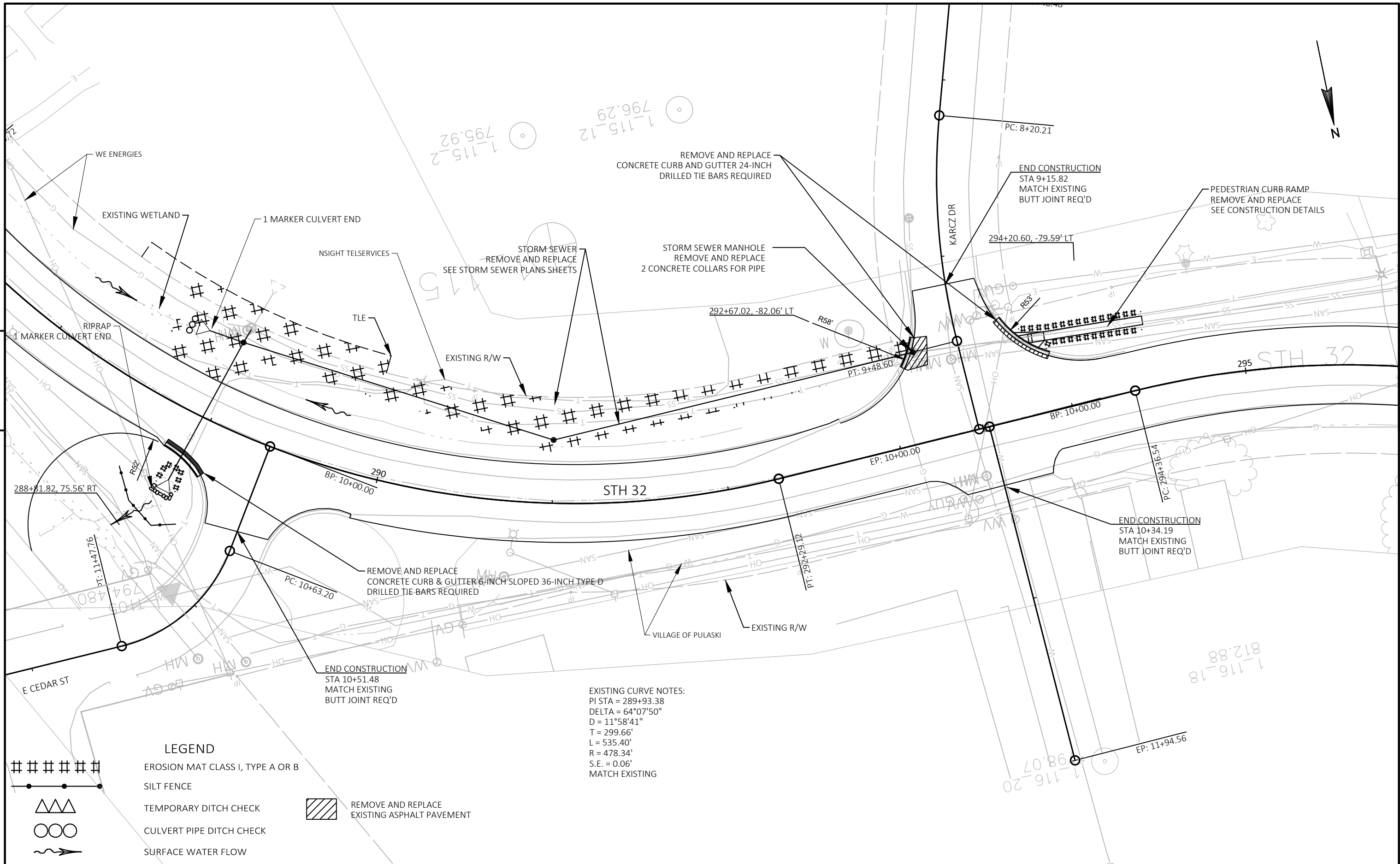
- INDUSTRIAL WAY
- LEGEND
- ##### EROSION MAT CLASS I, TYPE A OR B
 - SILT FENCE
 - △△△ TEMPORARY DITCH CHECK
 - CULVERT PIPE DITCH CHECK
 - ~> SURFACE WATER FLOW

PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	PLAN SHEETS	SHEET	E
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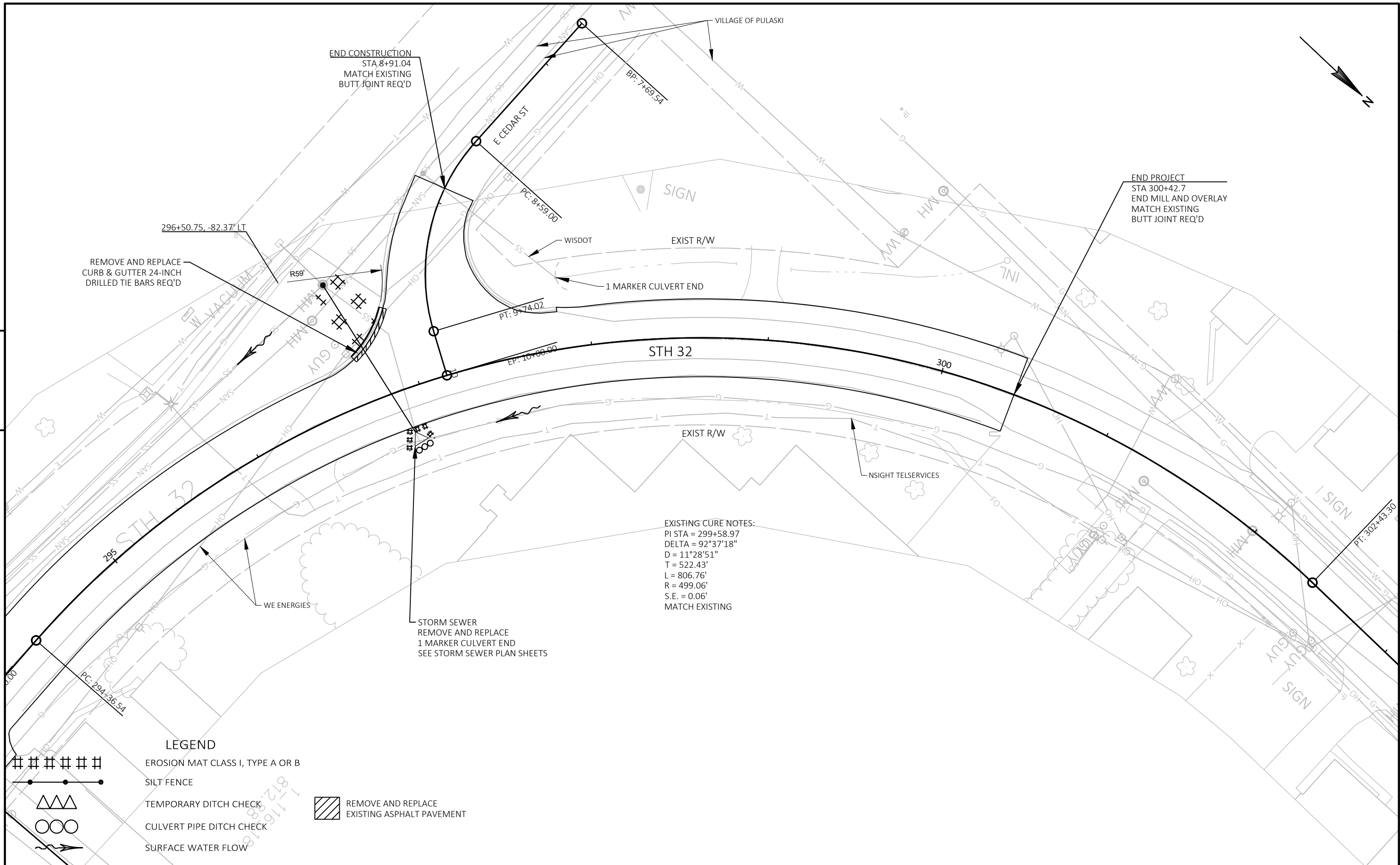


PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	PLAN SHEETS	SHEET	E
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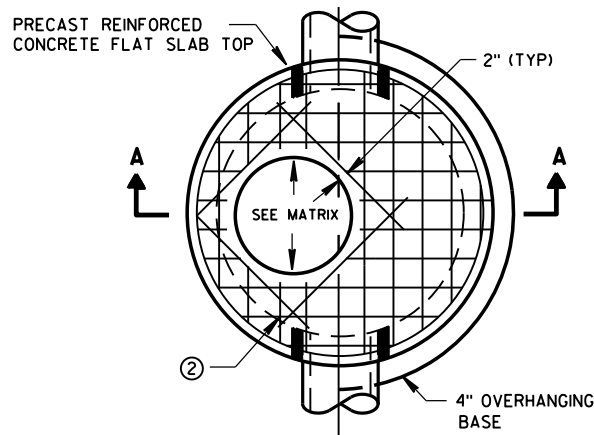




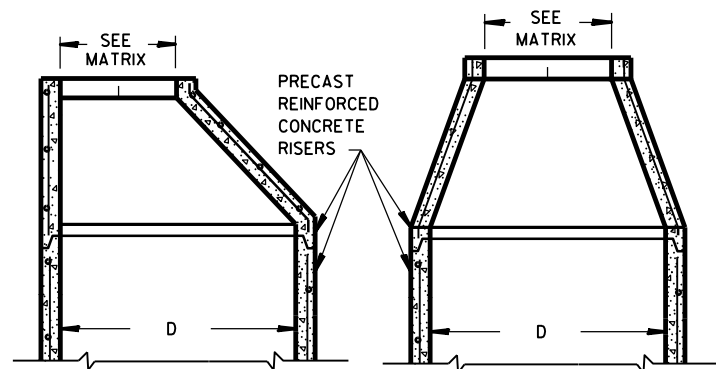
PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	PLAN SHEETS	SHEET	E
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PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	PLAN SHEETS	SHEET	E
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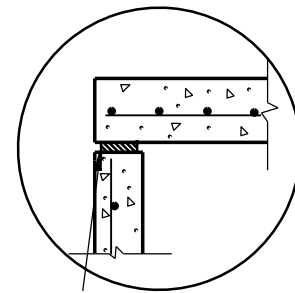


PLAN VIEW CIRCULAR OPENING

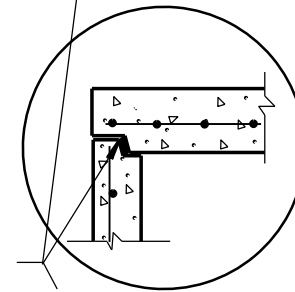


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

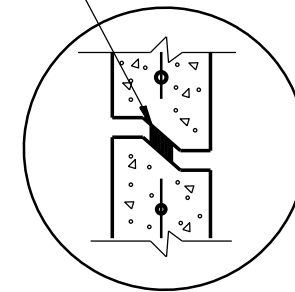
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT



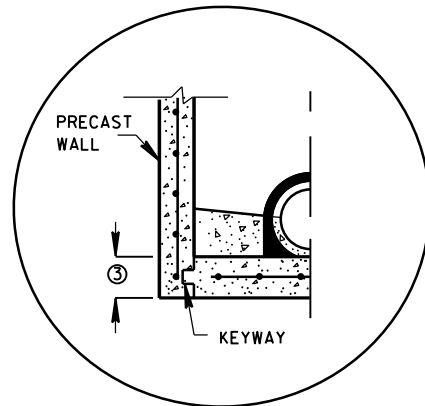
TOP WITH TONGUE AND GROOVE JOINT



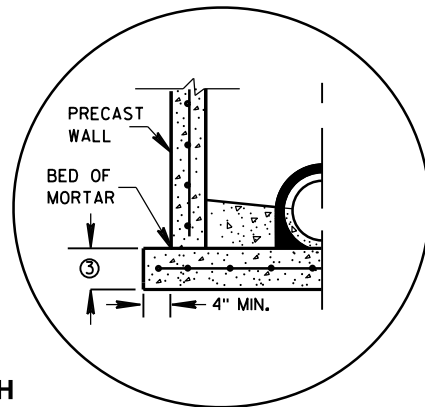
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

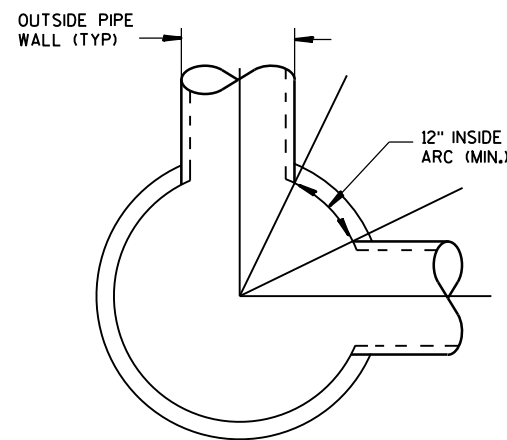


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept., 2016

DATE

FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

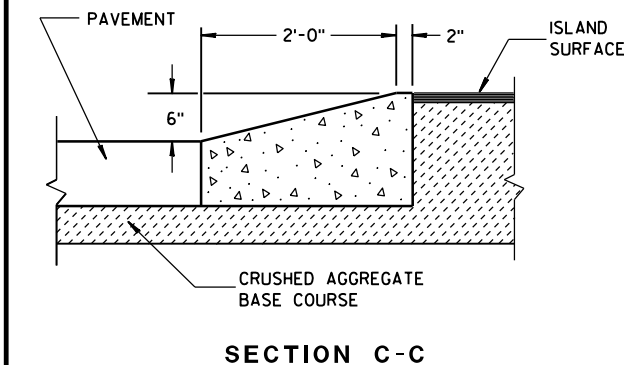
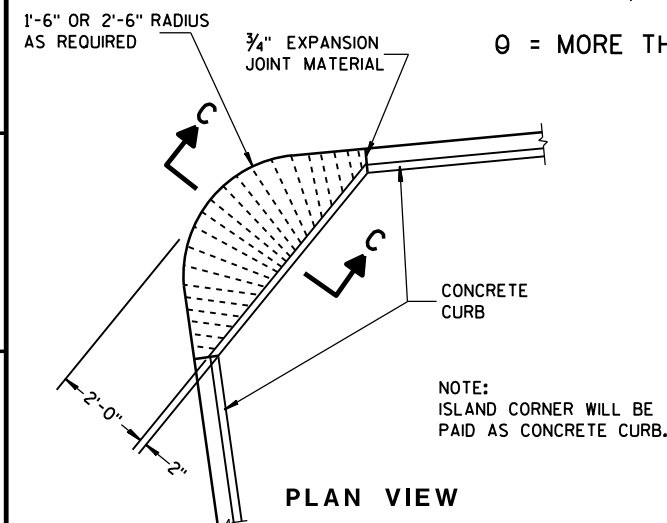
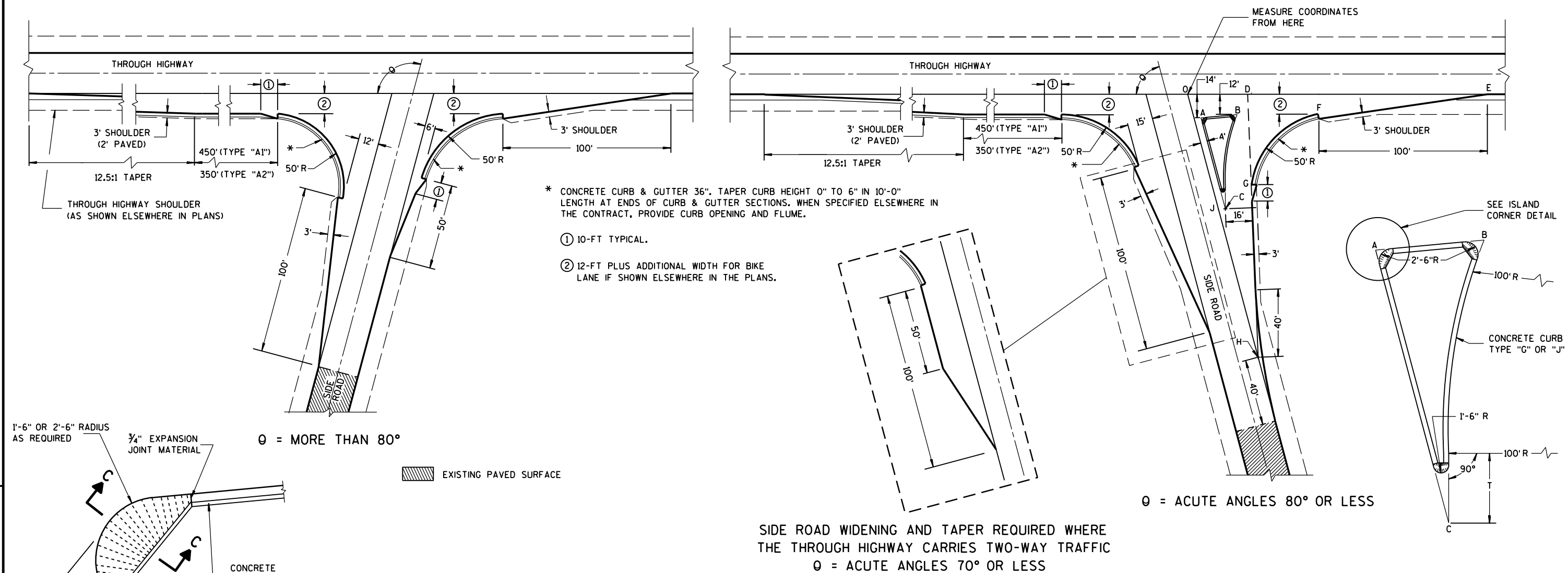
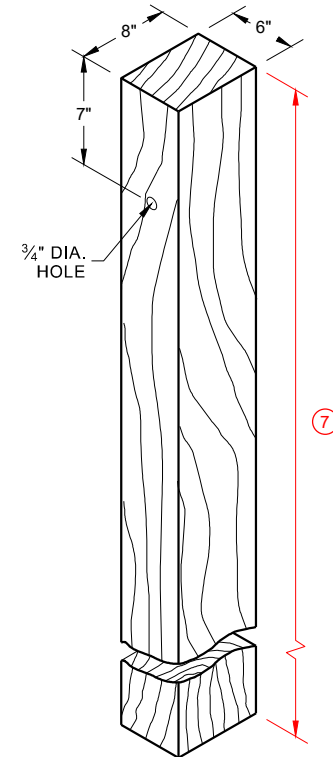
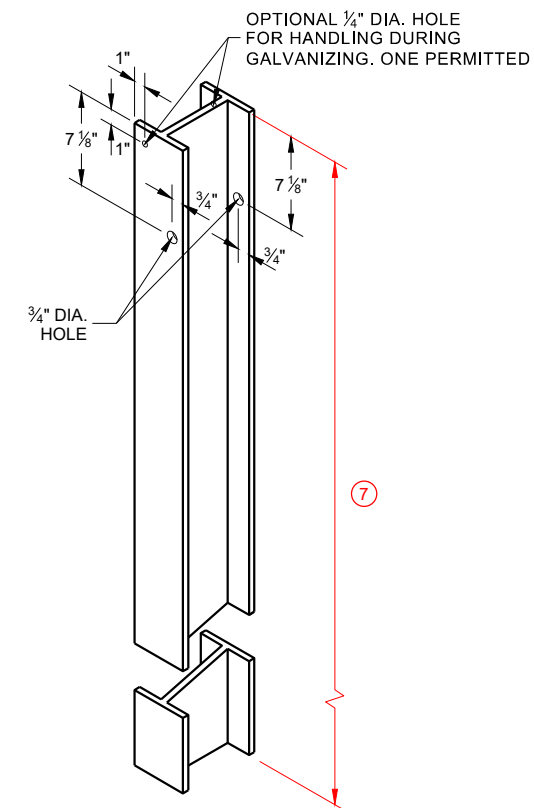


TABLE OF DIMENSIONS FOR VARIABLE SIDE ROAD INTERSECTION ANGLES (INTERPOLATE VALUES FOR ANGLES NOT SHOWN)													
ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT "O")								LENGTH IN FEET				
	A	B	C	D	E	F	G	H	AB	AC	T	OJ	OH
60	12.7	44.9	46.4	41.9	205.0	104.6	64.0	85.0	32.3	67.4	4.9	85.9	169.9
	-14.0	-12.0	-72.4	0.0	0.0	-12.0	-75.5	-147.1					
65	10.9	39.0	37.8	39.4	196.1	95.7	54.1	70.5	28.2	63.6	8.5	80.9	166.9
	-14.0	-12.0	-71.6	0.0	0.0	-12.0	-71.5	-151.3					
70	9.4	33.9	29.8	37.4	188.3	87.8	45.6	56.1	24.6	59.7	11.5	76.1	164.1
	-14.0	-12.0	-70.1	0.0	0.0	-12.0	-67.5	-154.2					
75	7.9	29.3	22.3	35.7	181.2	80.7	38.2	41.8	21.5	55.8	13.8	71.4	161.4
	-14.0	-12.0	-67.9	0.0	0.0	-12.0	-63.4	-155.9					
80	6.5	25.4	15.6	34.4	174.8	74.4	31.8	27.6	18.9	52.0	15.6	66.9	158.9
	-14.0	-12.0	-65.2	0.0	0.0	-12.0	-59.3	-156.5					

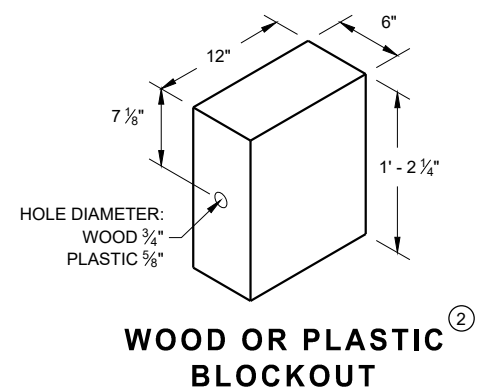
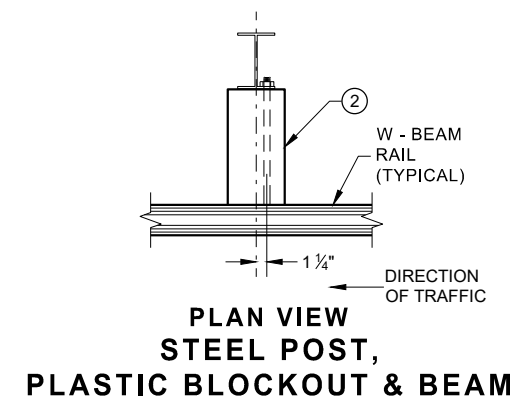
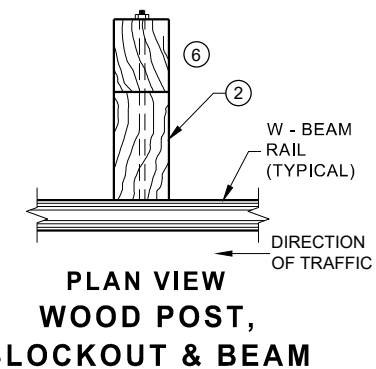
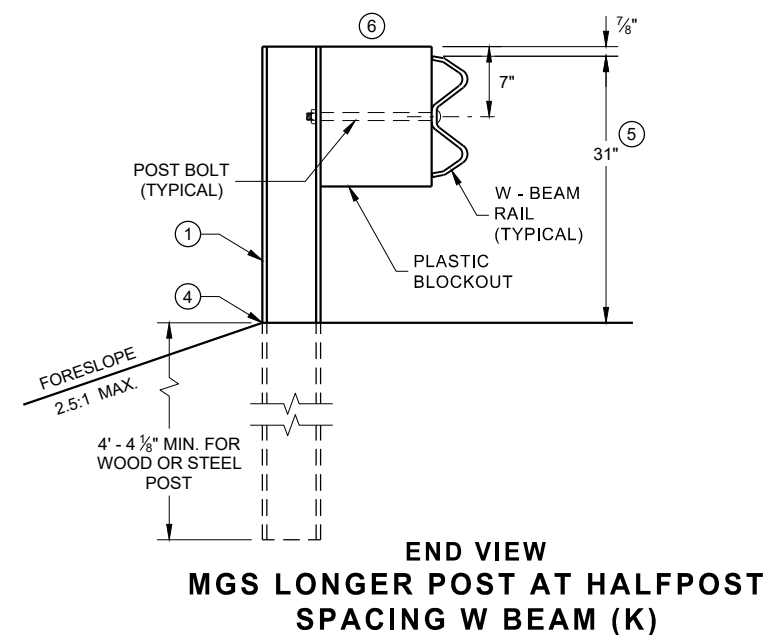
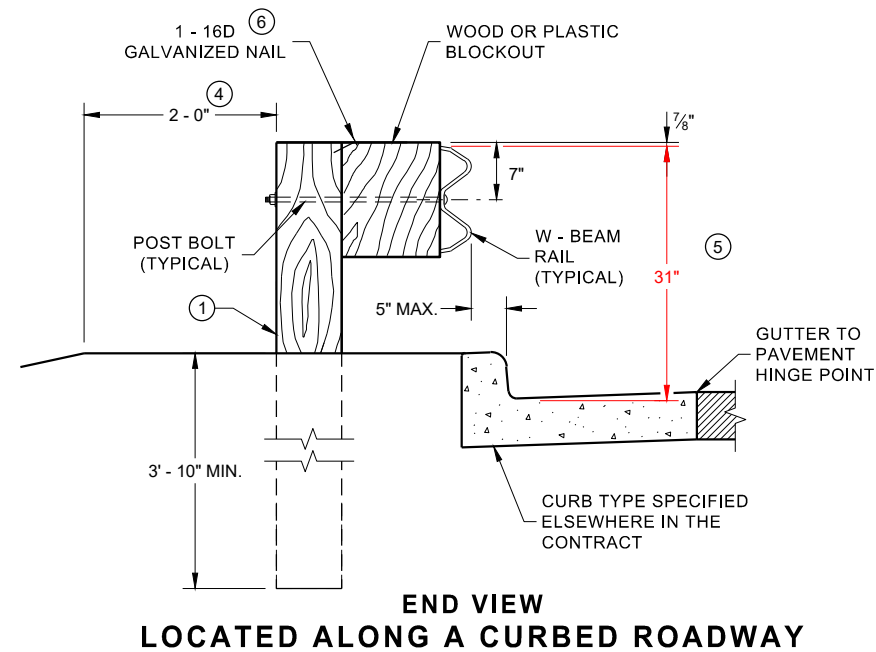
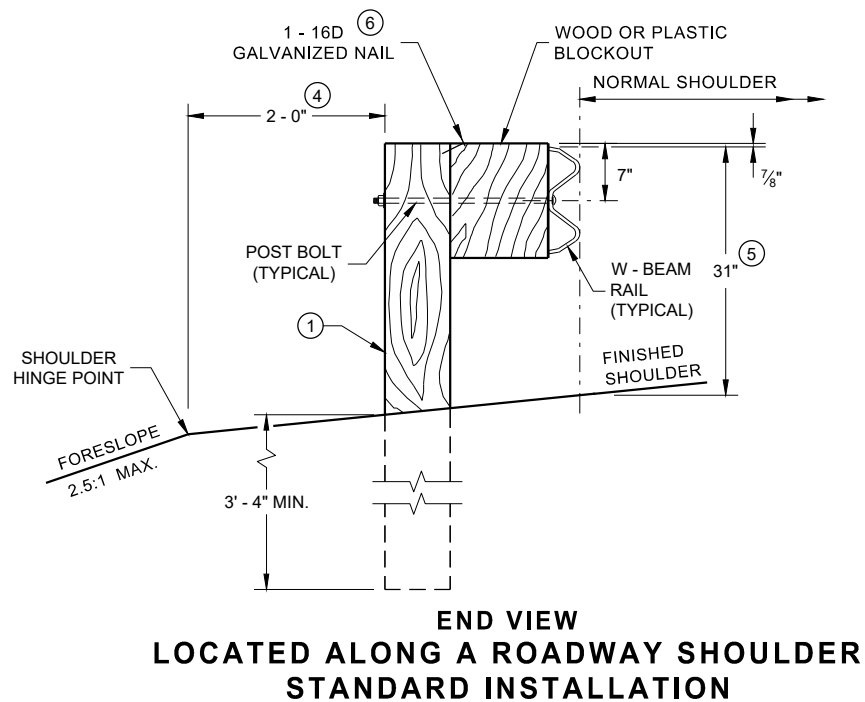
AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/18/12 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



-
- Diagram illustrating the end view of a steel or wood post set in rock. The post is 12" wide and 2" thick. The rock is 44 1/2" MIN. high, where "A" is $\geq 22"$. The post is embedded 20" MINIMUM in solid rock if shortened post is used, where "A" is $\leq 22"$. The post is surrounded by foundation backfill. Dimensions include 2 1/2" for the post width, 2" MIN. for the rock thickness, and 12" for the post width.
- END VIEW**
- SETTING STEEL OR WOOD POST IN ROCK**



WOOD POST (6" X 8") NOMINAL ^①

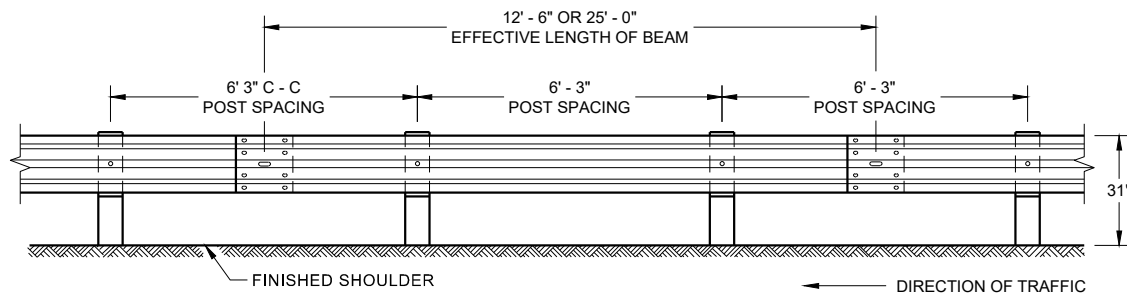


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

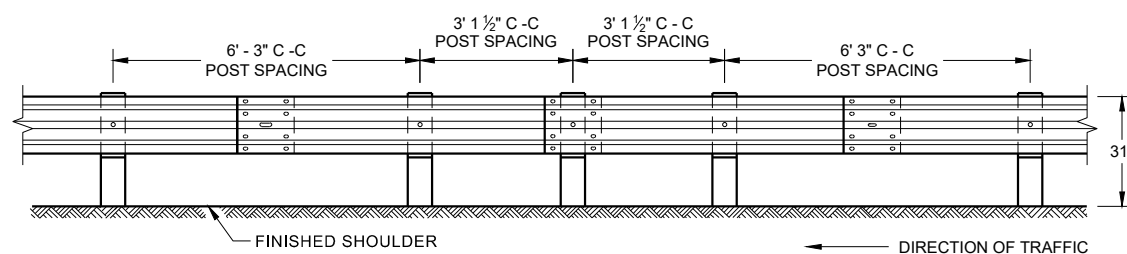
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B42 - 06a

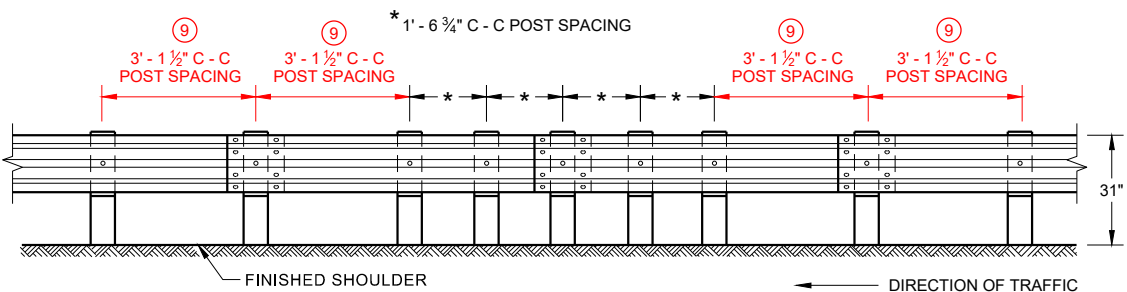
SDD14B42 - 06a



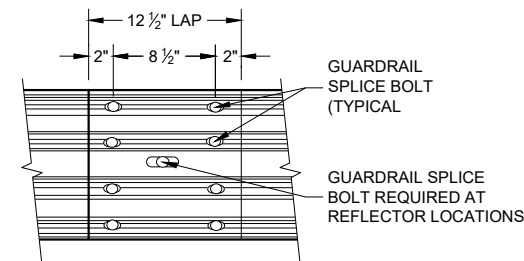
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



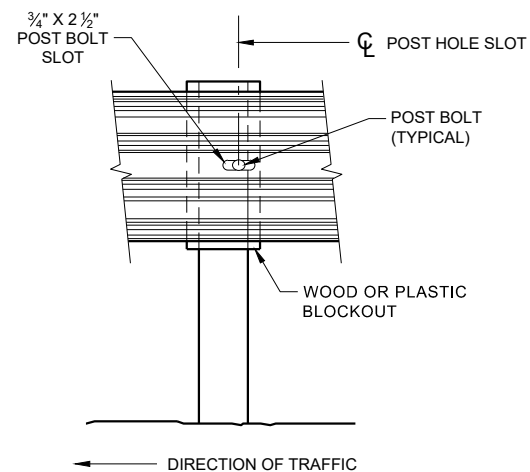
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



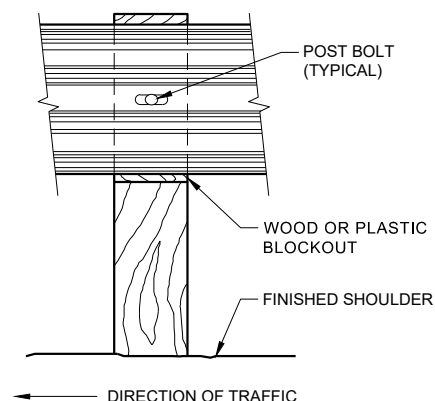
**FRONT VIEW
QUARTER POST SPACING (QS)**



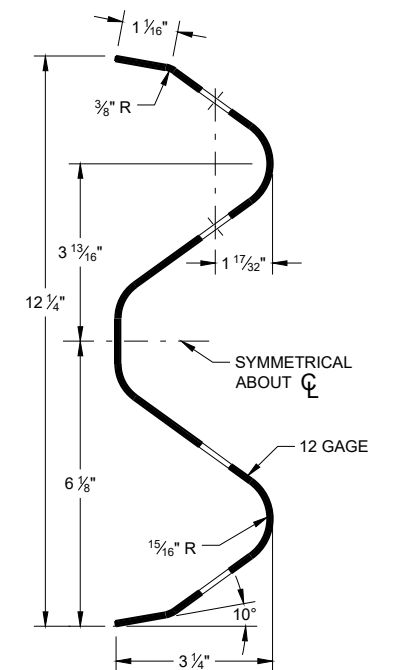
**FRONT VIEW
MID-SPAN BEAM SPLICE**



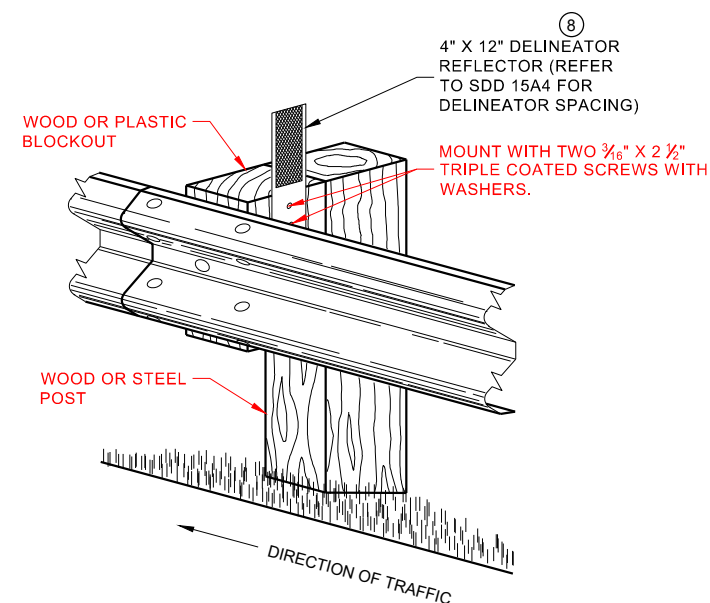
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



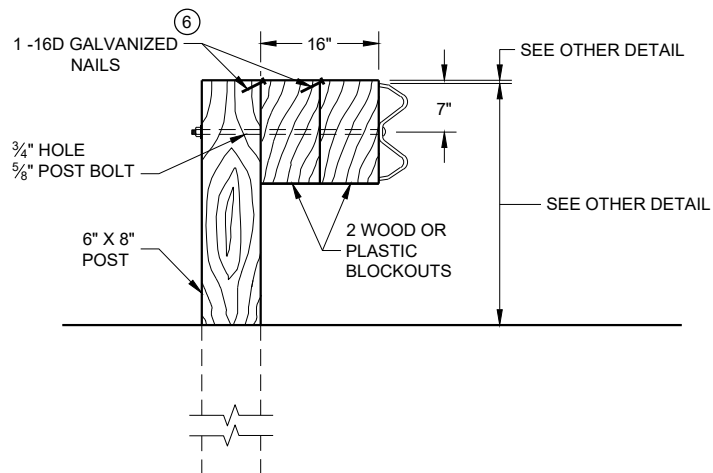
SECTION THRU W-BEAM RAIL



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

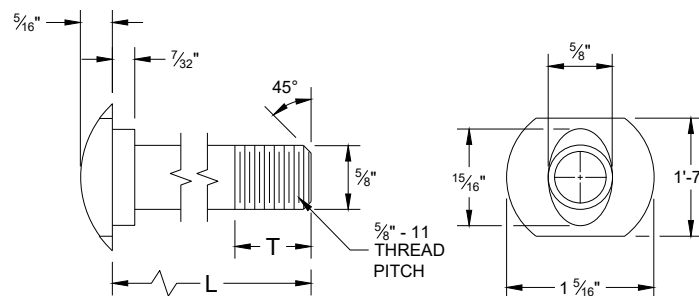
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



DETAIL FOR 16" BLOCKOUT DEPTH

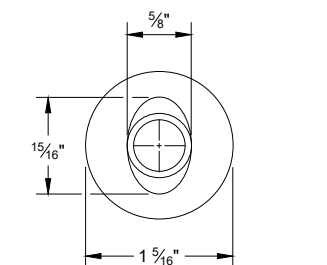
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

- NOTE:
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

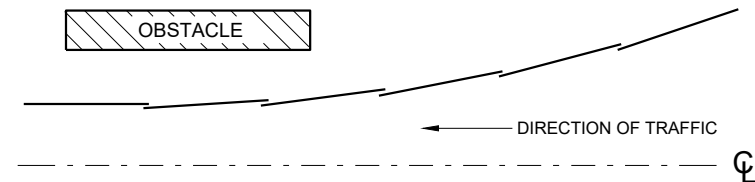


POST BOLT TABLE

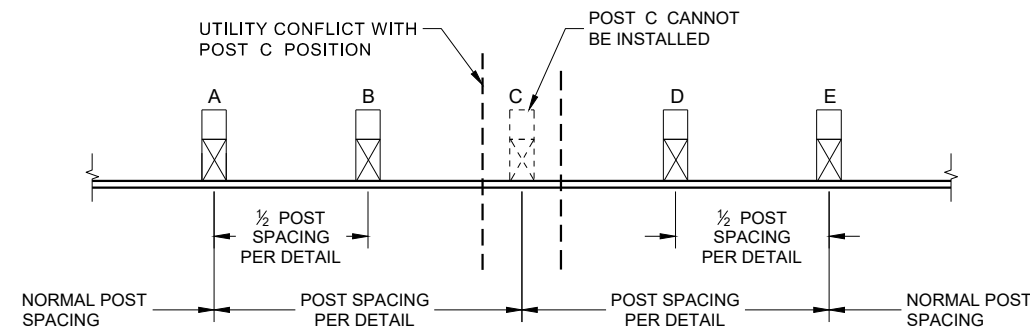
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



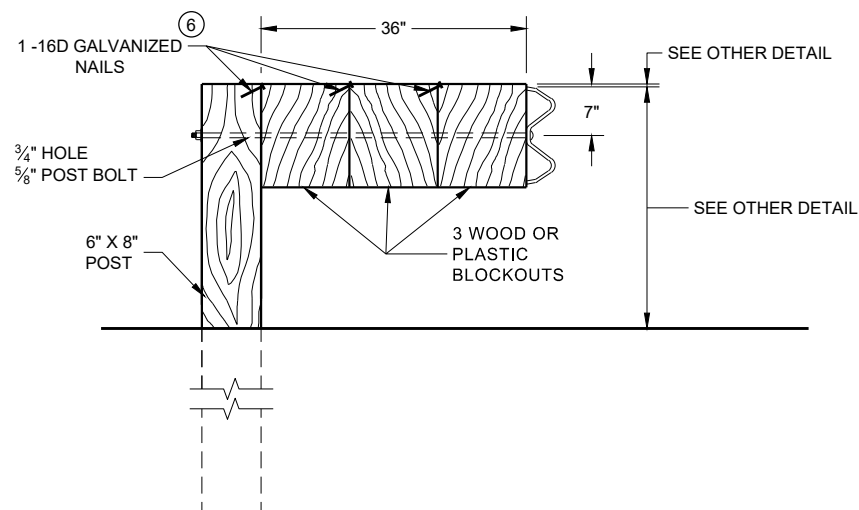
ALTERNATE BOLT HEAD



PLAN VIEW
BEAM LAPPING DETAIL

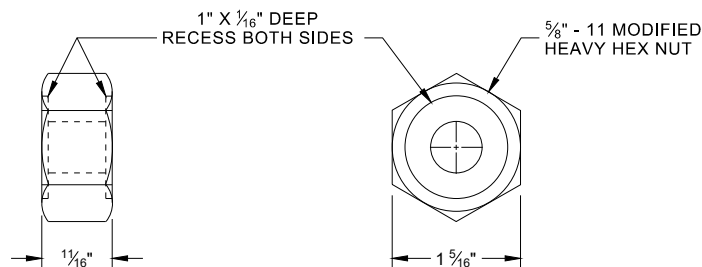


POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



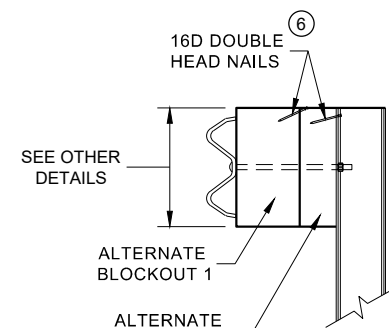
DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

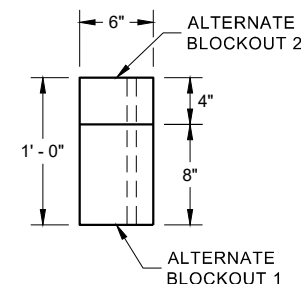


POST BOLT, SPLICE BOLT
AND RECESS NUT

- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



SIDE VIEW

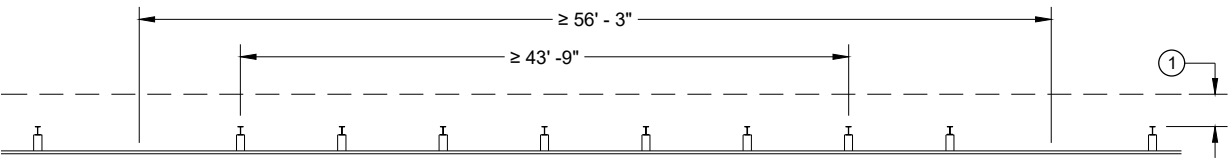


PLAN VIEW

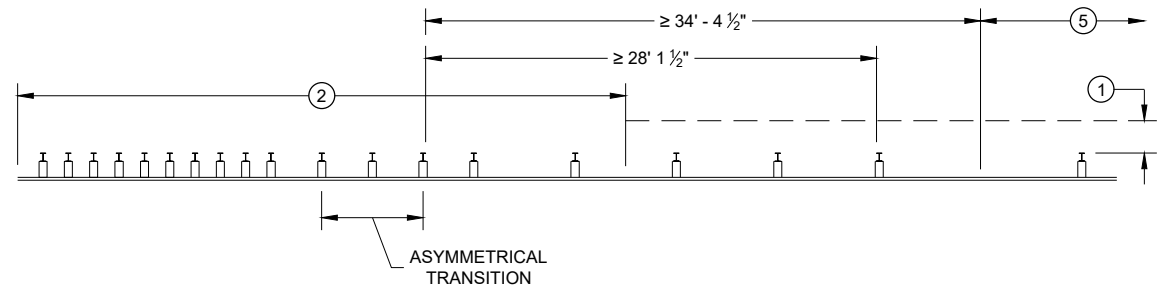
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

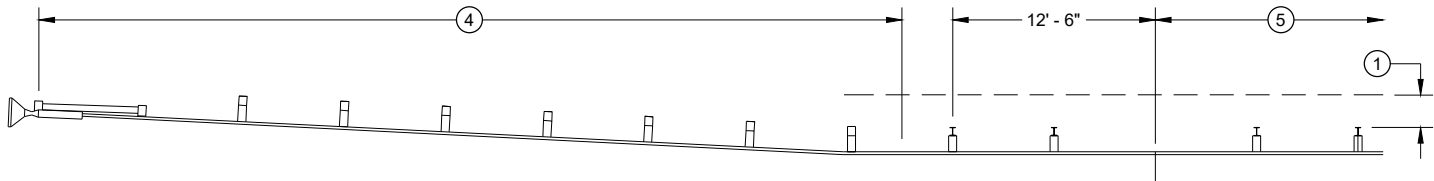
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



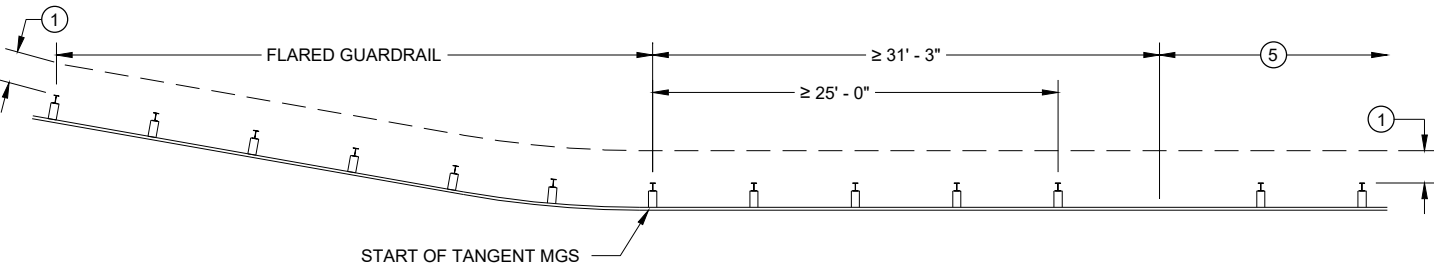
MISSING POST IN NORMAL BEAM GUARD RUN



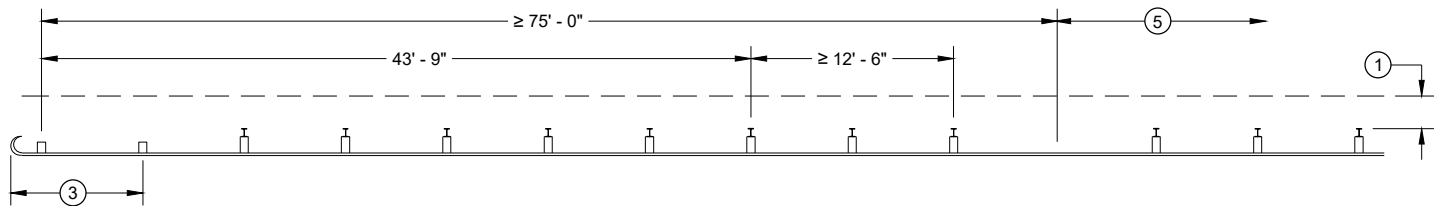
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



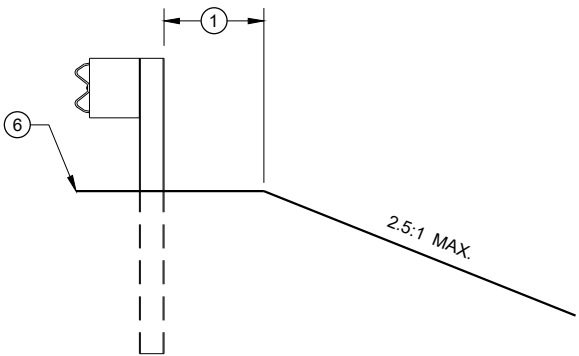
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- (1) MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- (2) SEE SDD 14B45 FOR MORE DETAILS.
- (3) SEE SDD 14B47 FOR MORE DETAILS.
- (4) SEE SDD 14B44 FOR MORE DETAILS.
- (5) SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- (6) SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



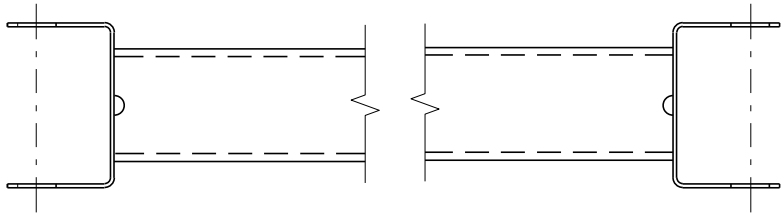
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.
- (F) DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



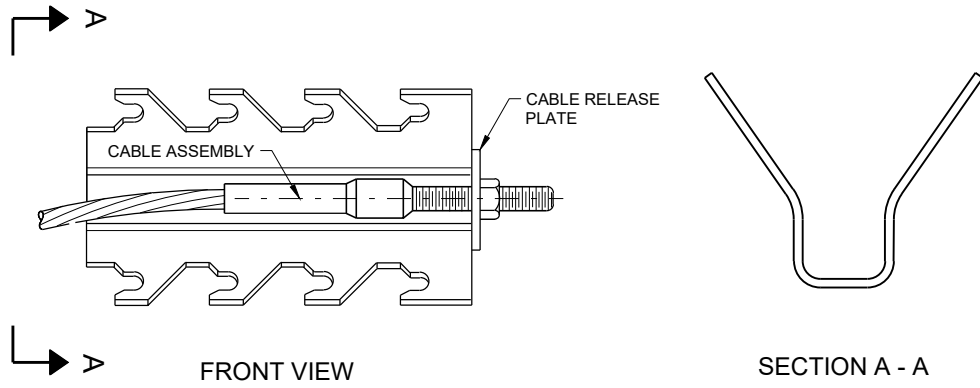
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD14B44 - 04a

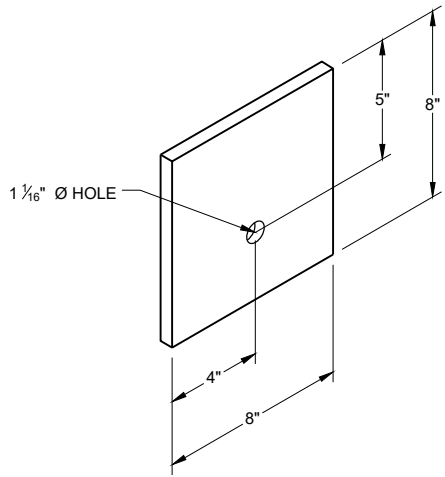


GENERIC GROUND STRUT 9 E

BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
1	UPPER POST NO. 1 6" X 6" TUBE
2	LOWER POST NO. 1
3	WOOD CRT
4	WOOD BLOCKOUT
5	PIPE SLEEVE
6	BEARING PLATE
7	BCT CABLE ASSEMBLY
8	ANCHOR CABLE BOX
9	GROUND STRUT
10	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
11	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
12	IMPACT HEAD
13	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
14	SOIL PLATE
15	UPPER POST NO. 2
16	LOWER POST NO. 2



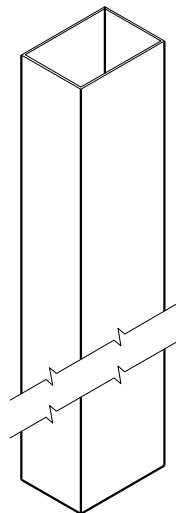
GENERIC ANCHOR CABLE BOX 9 E



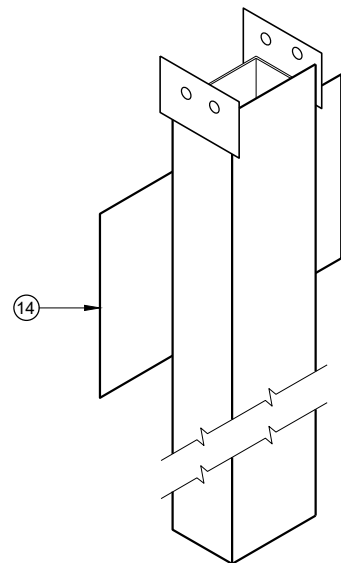
BEARING PLATE 6 E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

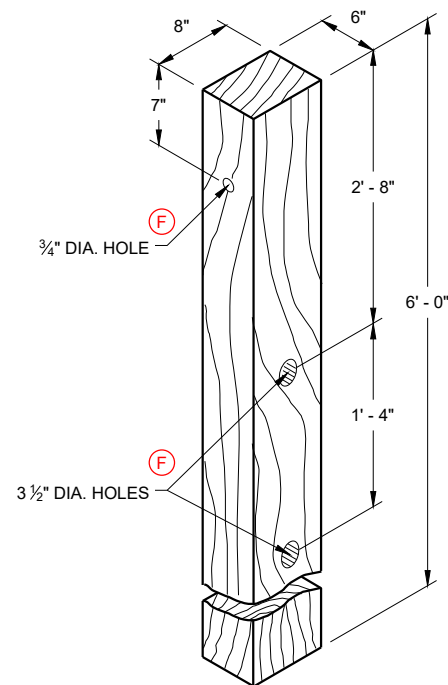
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



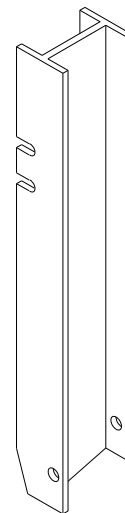
UPPER POST NO. 1 ^① (E)



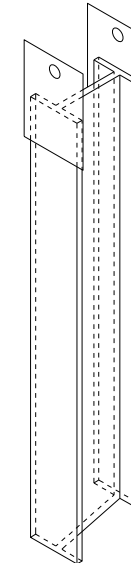
LOWER POST NO. 1 ^② (E)



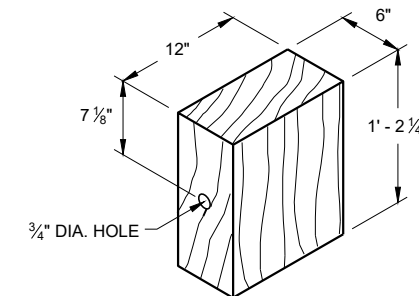
WOOD CRT POST ^③ (E)
POSTS NUMBER 3-9



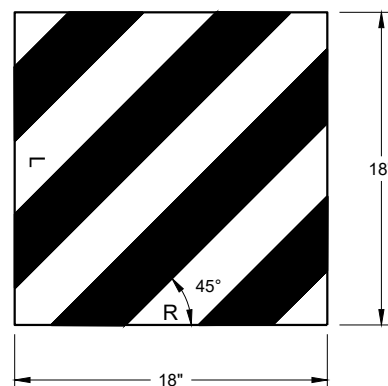
UPPER POST NO. 2 ^⑮ (E)



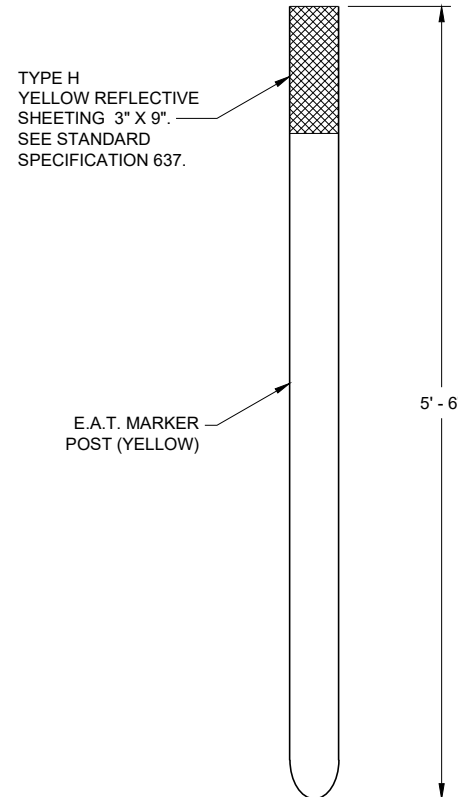
LOWER POST NO. 2 ^⑯ (E)



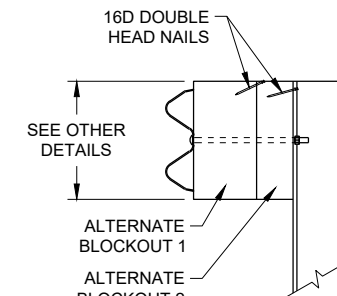
WOOD BLOCKOUT ^④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



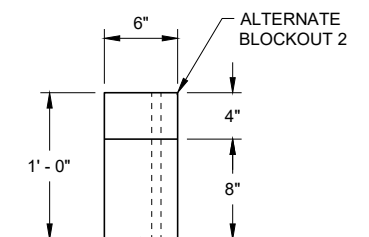
REFLECTIVE SHEETING DETAIL ^(E)



E.A.T. MARKER POST ^⑬



SIDE VIEW



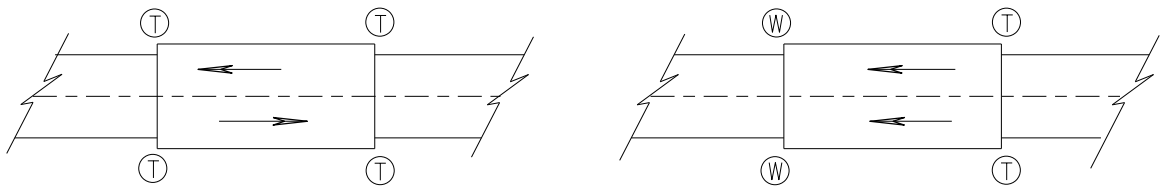
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



SDD 14b45-a Midwest Guardrail System (MGS) Thrie Beam Transition - Layout



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

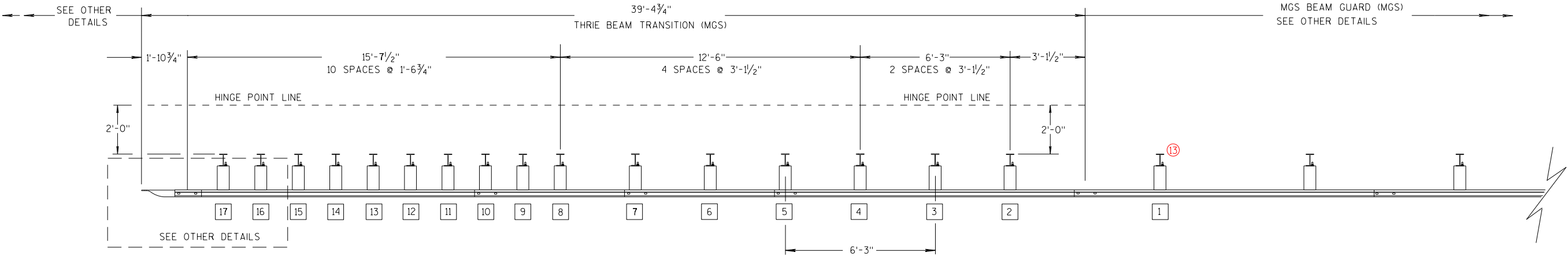
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

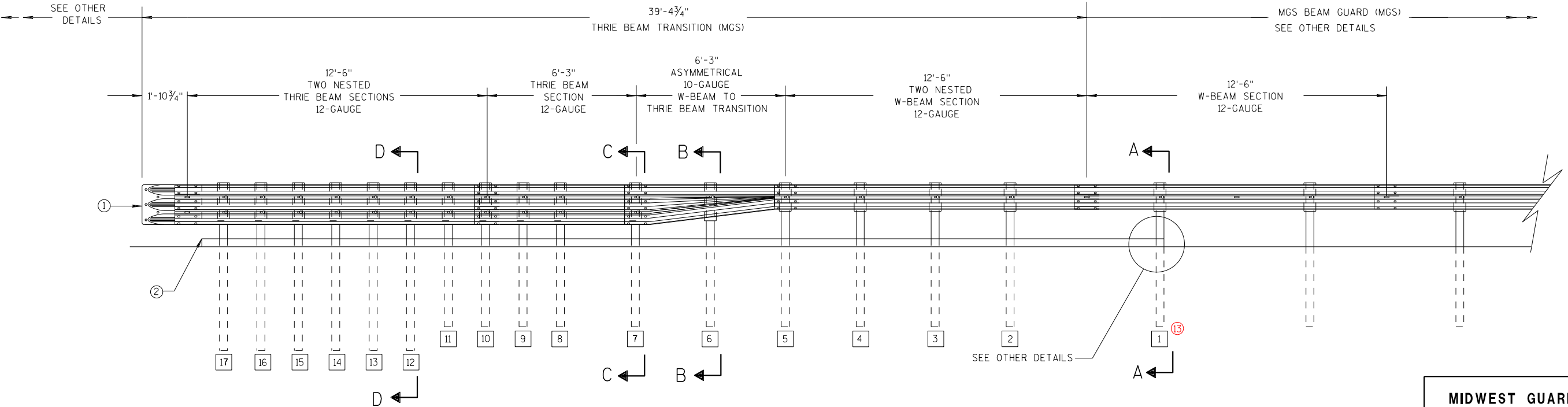
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

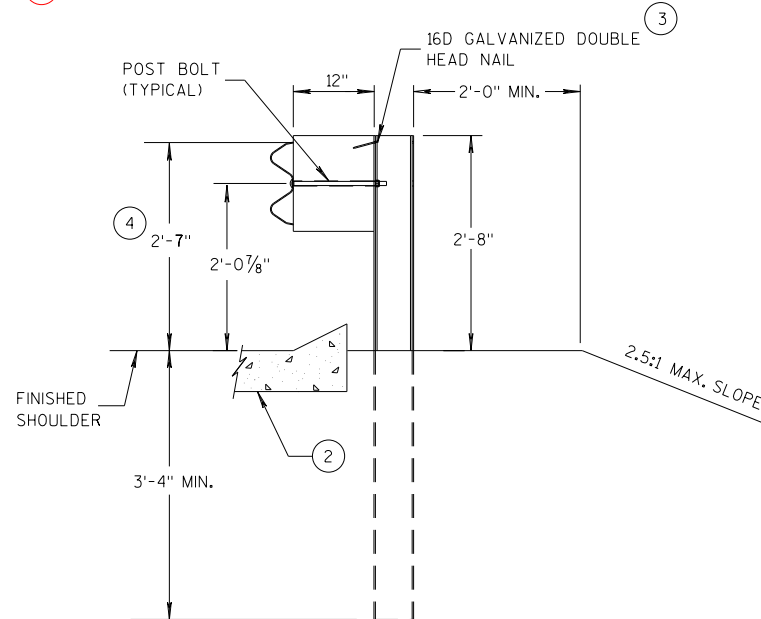
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



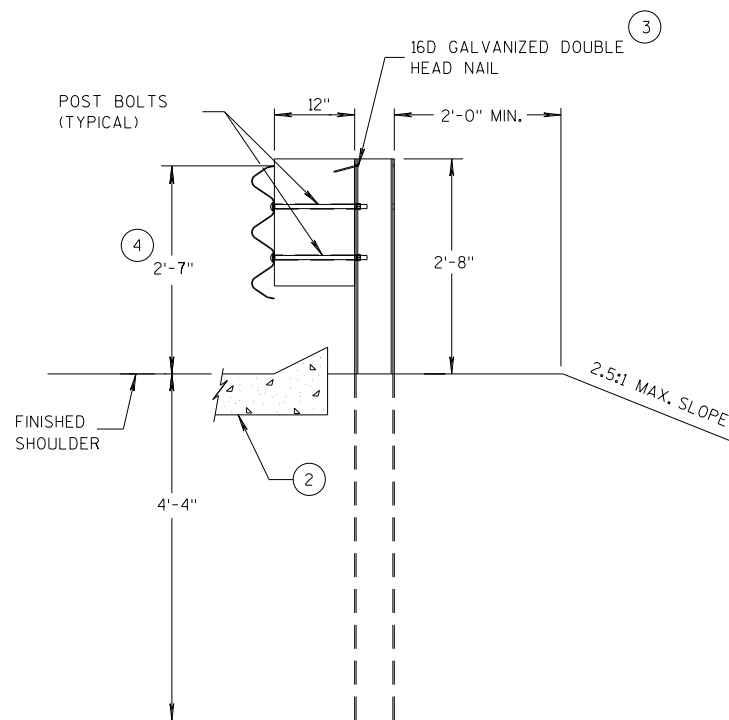
SDD 14b45-b MGS Thrie Beam Transition - Post Details, Thrie Beam Terminal Connector Details, Splice Detail, Cross Section

GENERAL NOTES

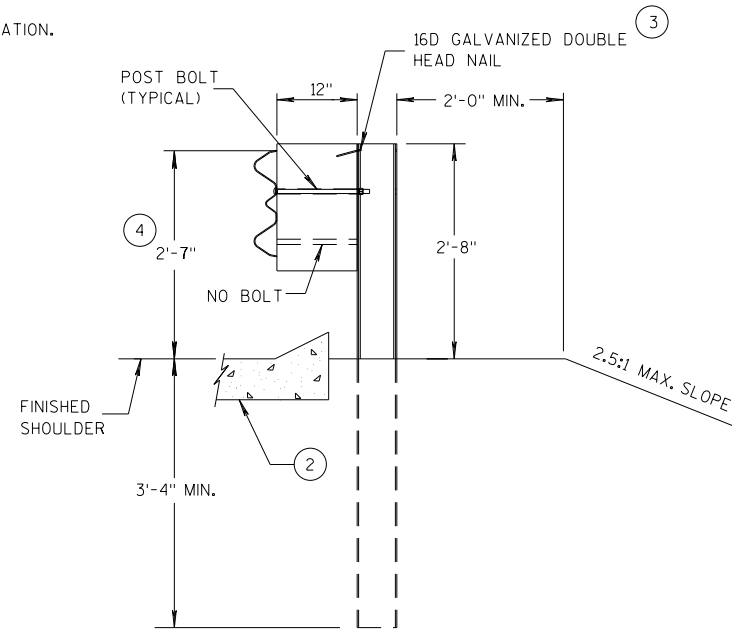
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



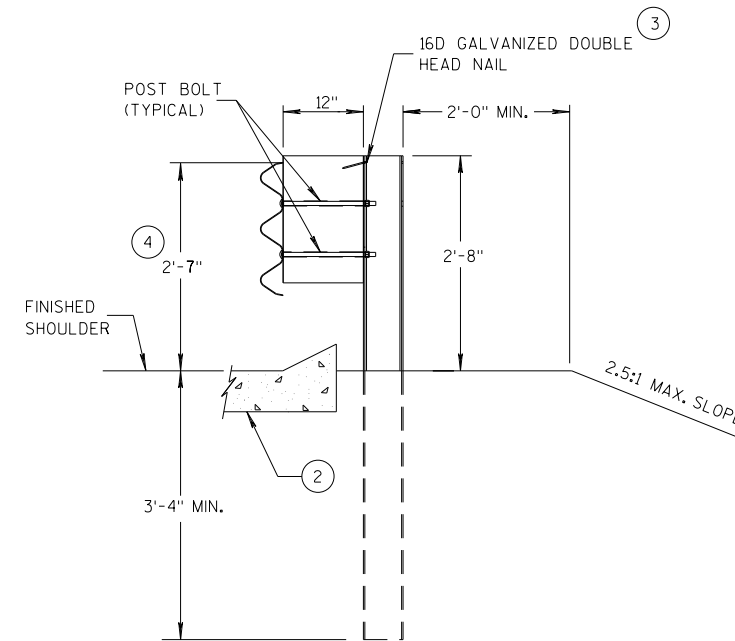
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

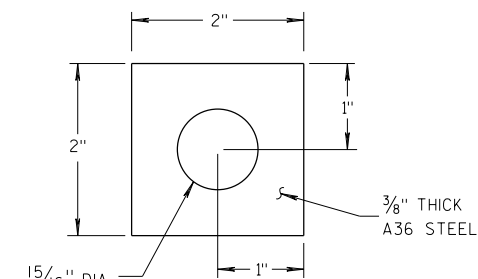
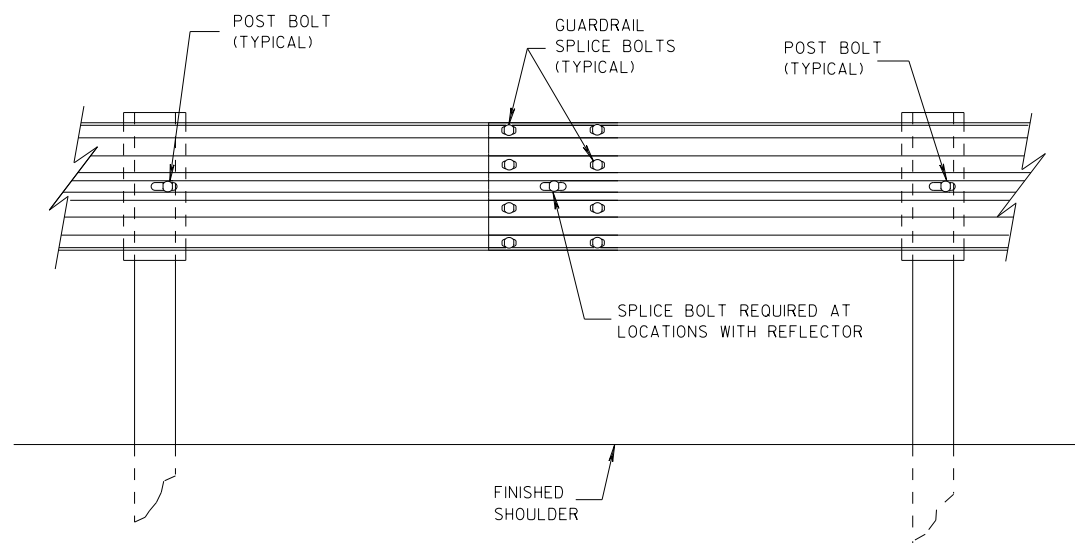
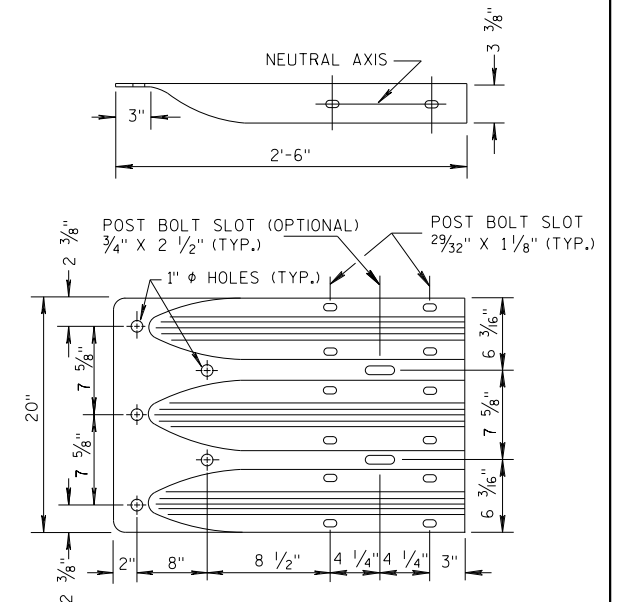


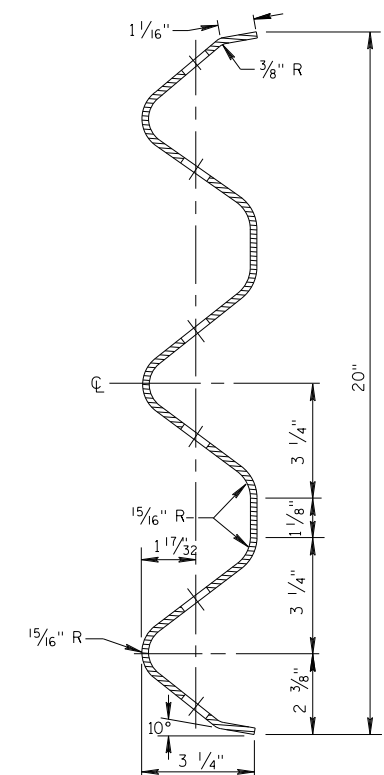
PLATE WASHER DETAIL



SPICE DETAIL



THRIE BEAM
TERMINAL CONNECTOR



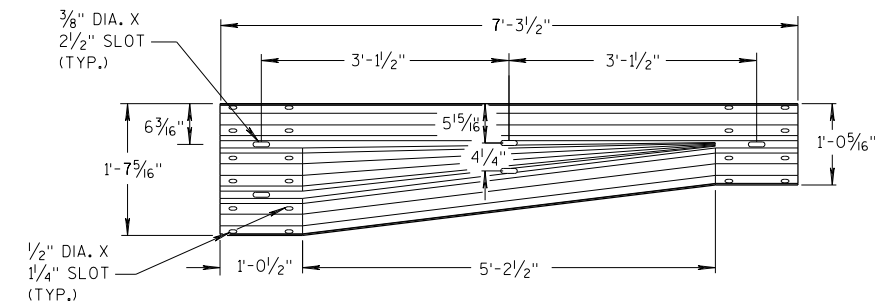
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

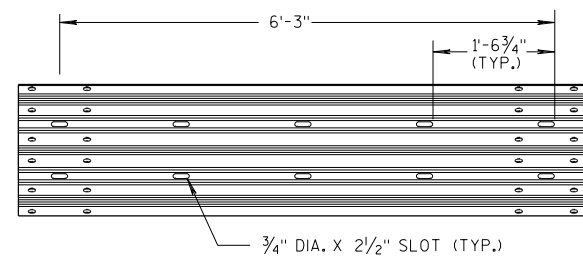
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



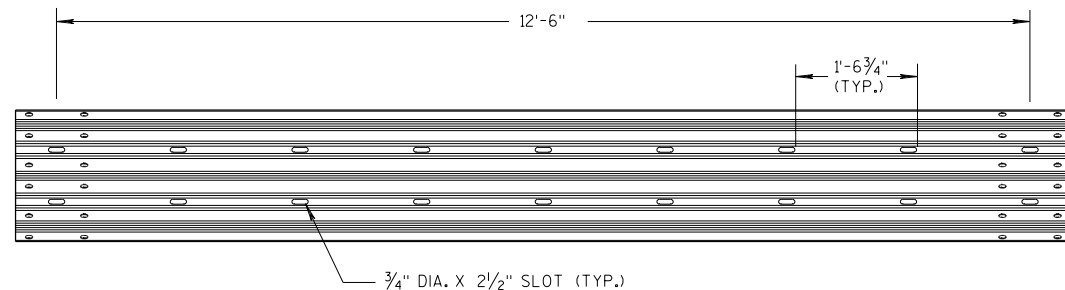
SDD 14b45-c MGS Thrie Beam Transition - Thrie Beam Details, Post Details, Block Details



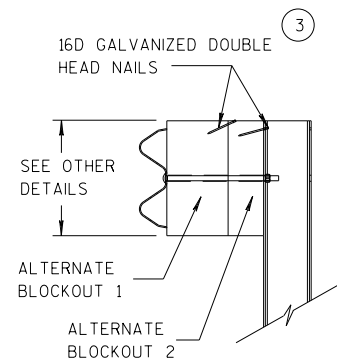
W-BEAM TO THRIE BEAM TRANSITION SECTION



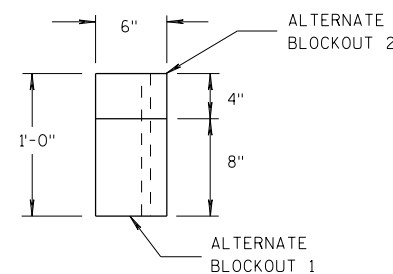
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

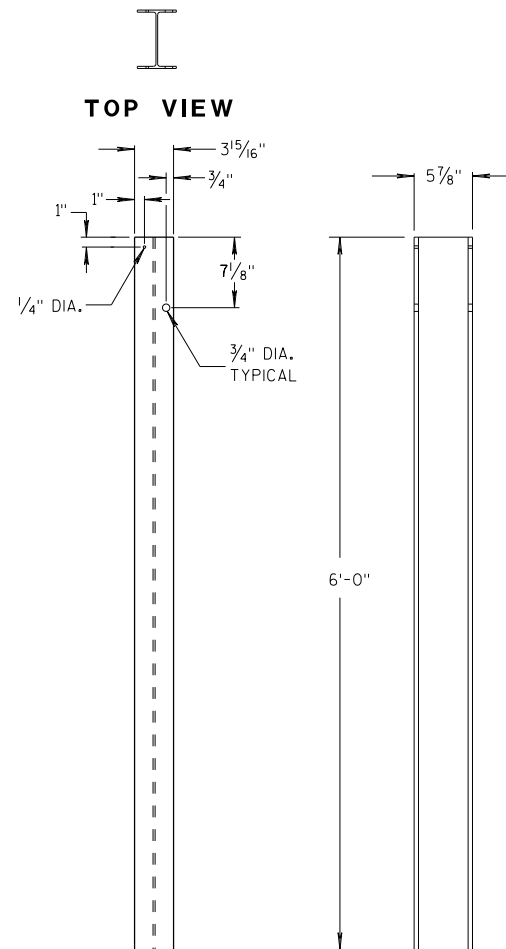


SIDE VIEW



TOP VIEW

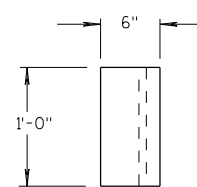
ALTERNATE WOOD BLOCKOUT DETAIL



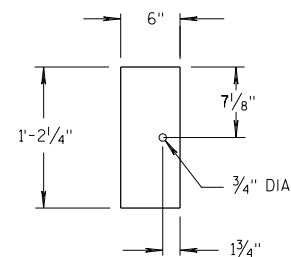
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

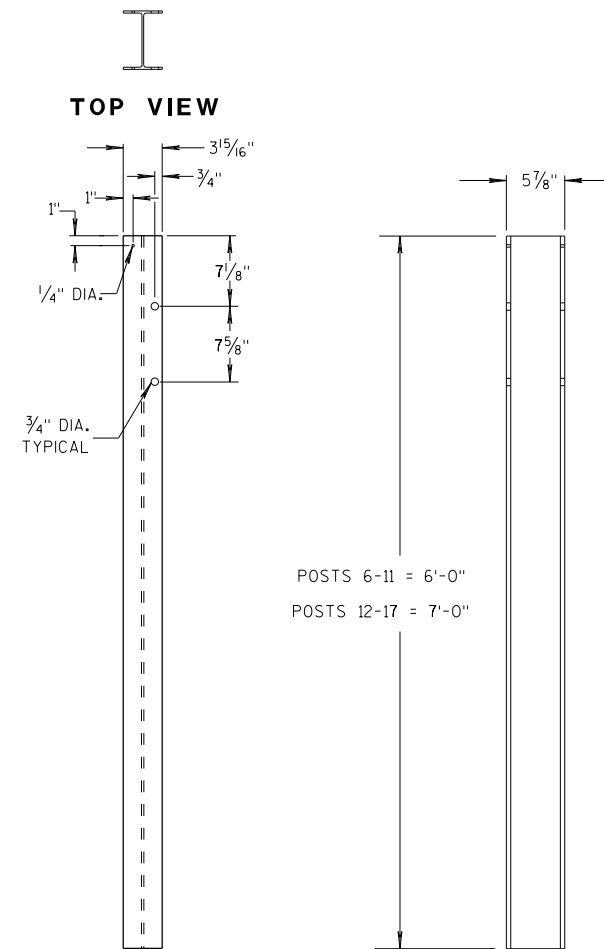


TOP VIEW



FRONT VIEW

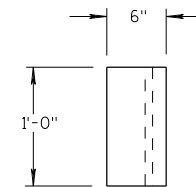
BLOCKOUT POSTS 1-5



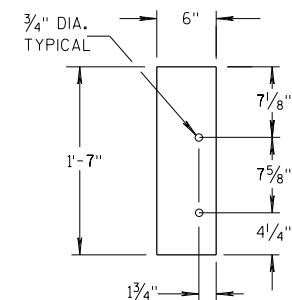
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

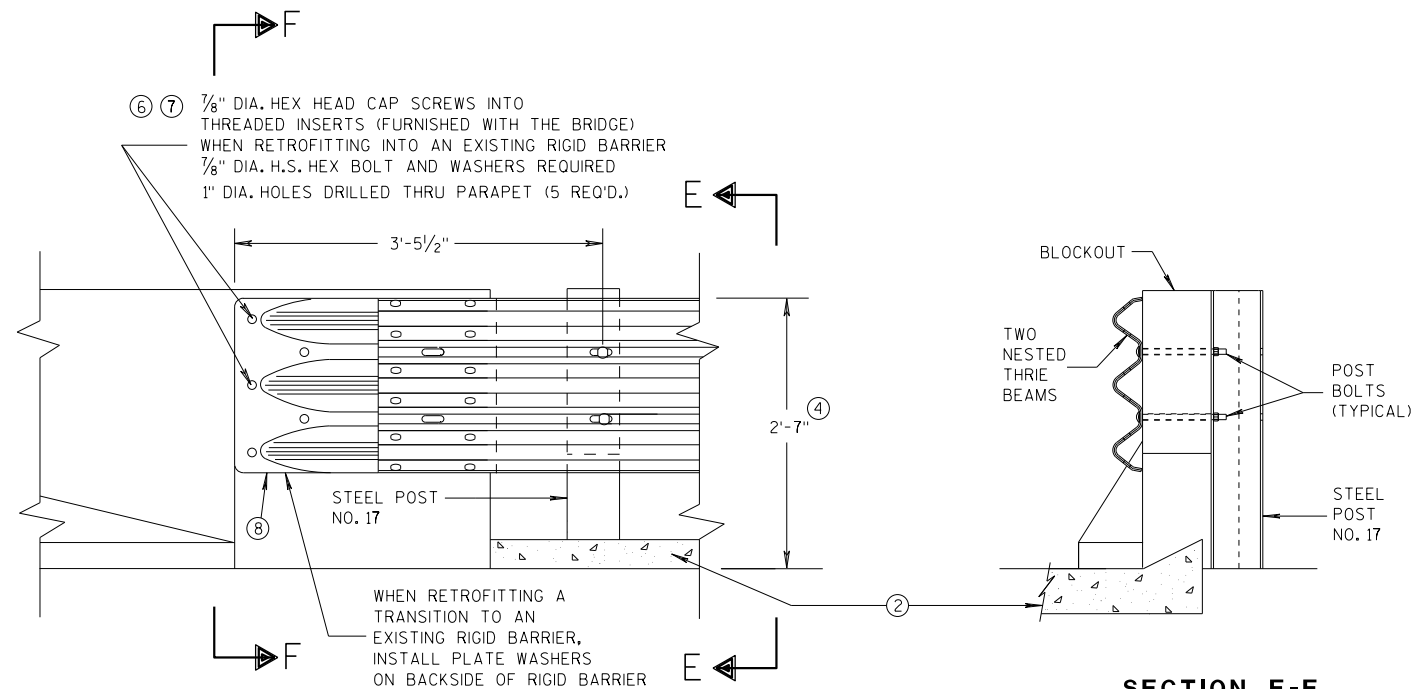
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SDD 14b45-d MGS Thrie Beam Transition - W and Thrie Beam Connection to Bridge Parapet with Square Ends



FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

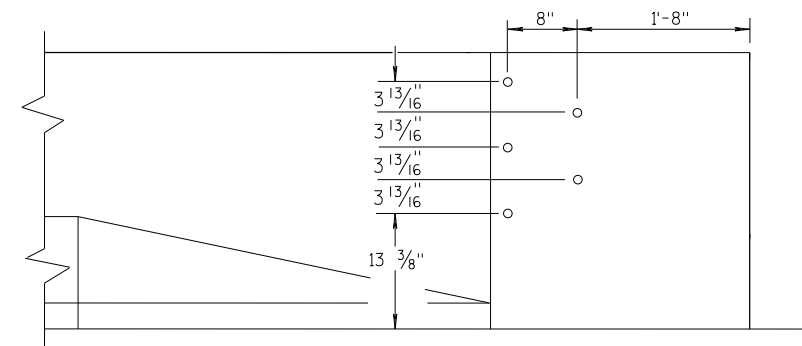
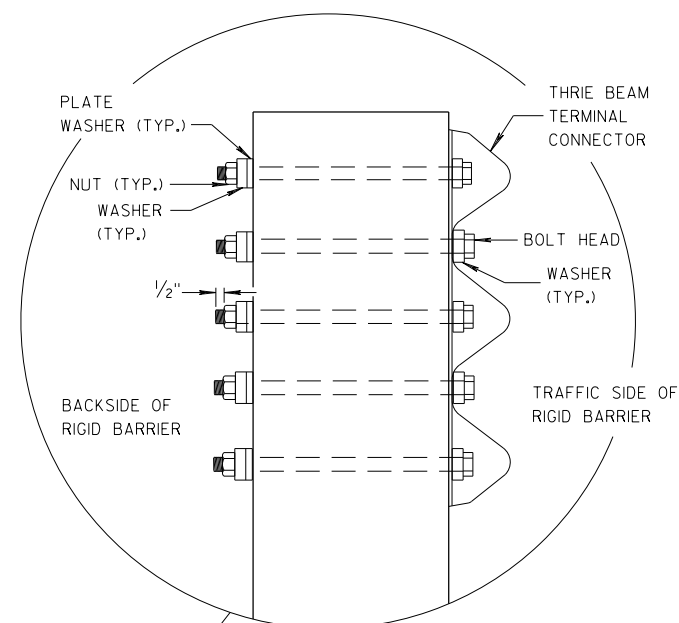
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

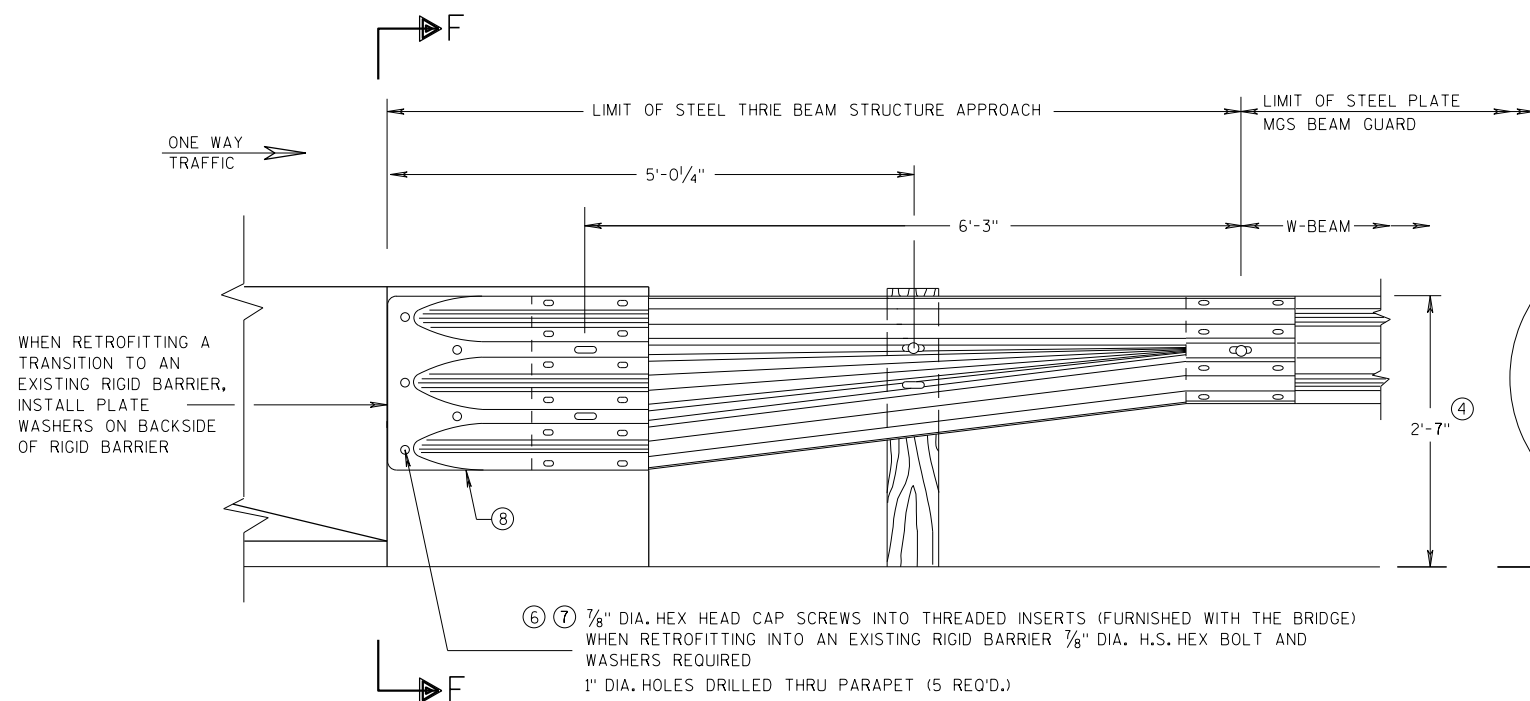
⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X $3 \frac{1}{2}"$.



DRILL HOLE LOCATION



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

SECTION F-F

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

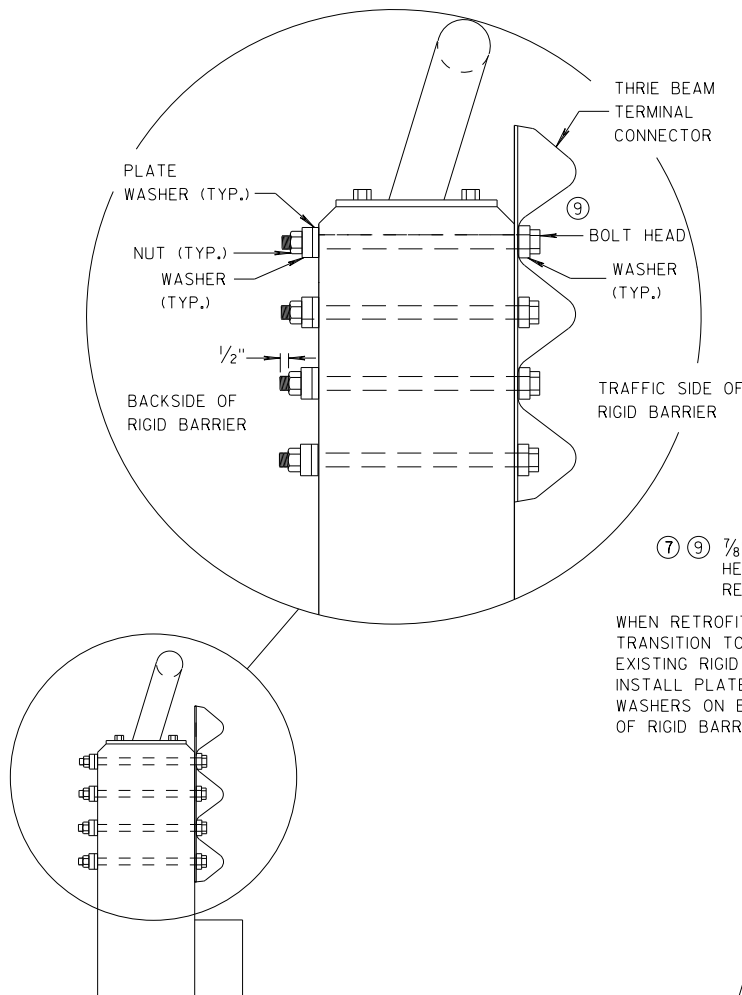


SDD 14b45-e MGS Thrie Beam Transition - W and Thrie Beam Connection to Vertical Faced Parapets

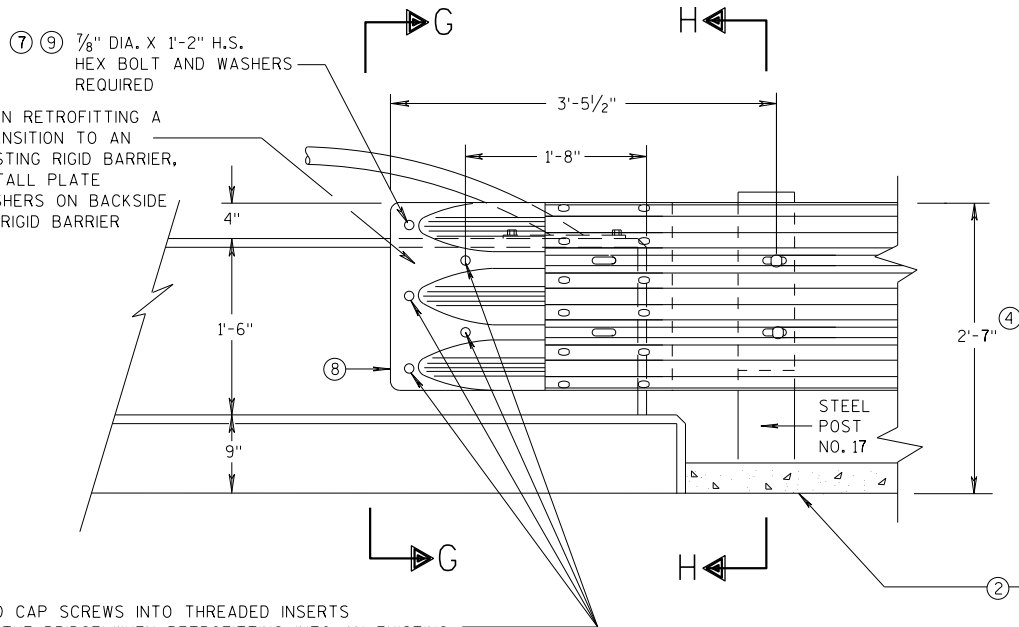
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}"$ THICK AND ONE PLATE WASHER, REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}"$.
- ⑨ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



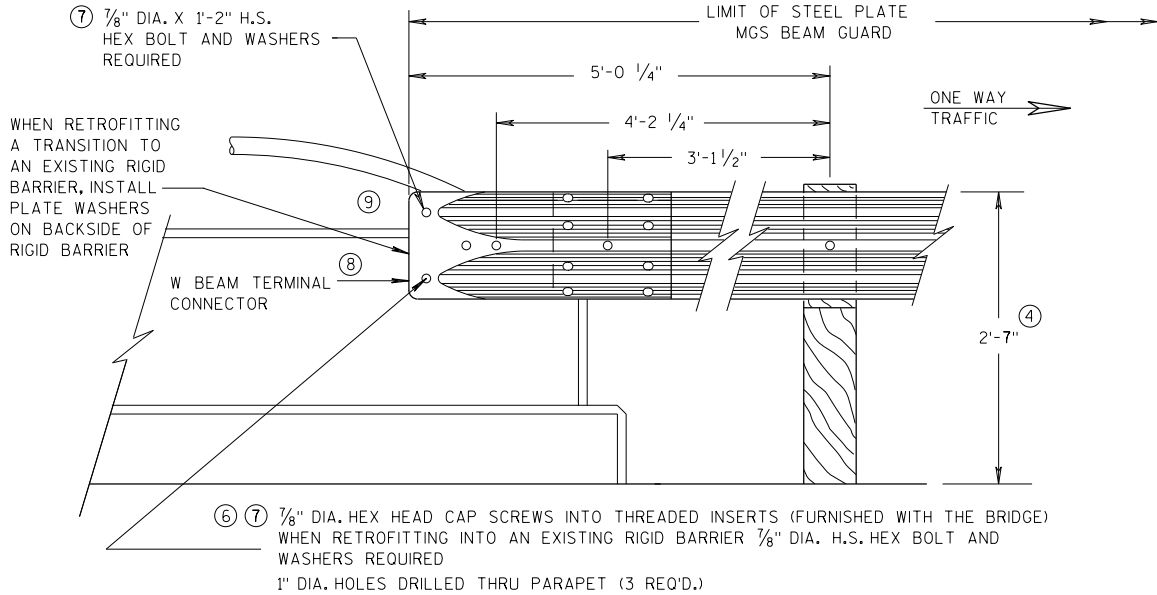
SECTION G-G



SECTION H-H

- ⑥ ⑦ $\frac{7}{8}"$ DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER $\frac{7}{8}"$ DIA. H.S. HEX BOLT AND WASHERS REQUIRED 1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



W BEAM CONNECTION TO VERTICAL FACE PARAPET (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

SECTION G-G

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018
DATE
FHWA

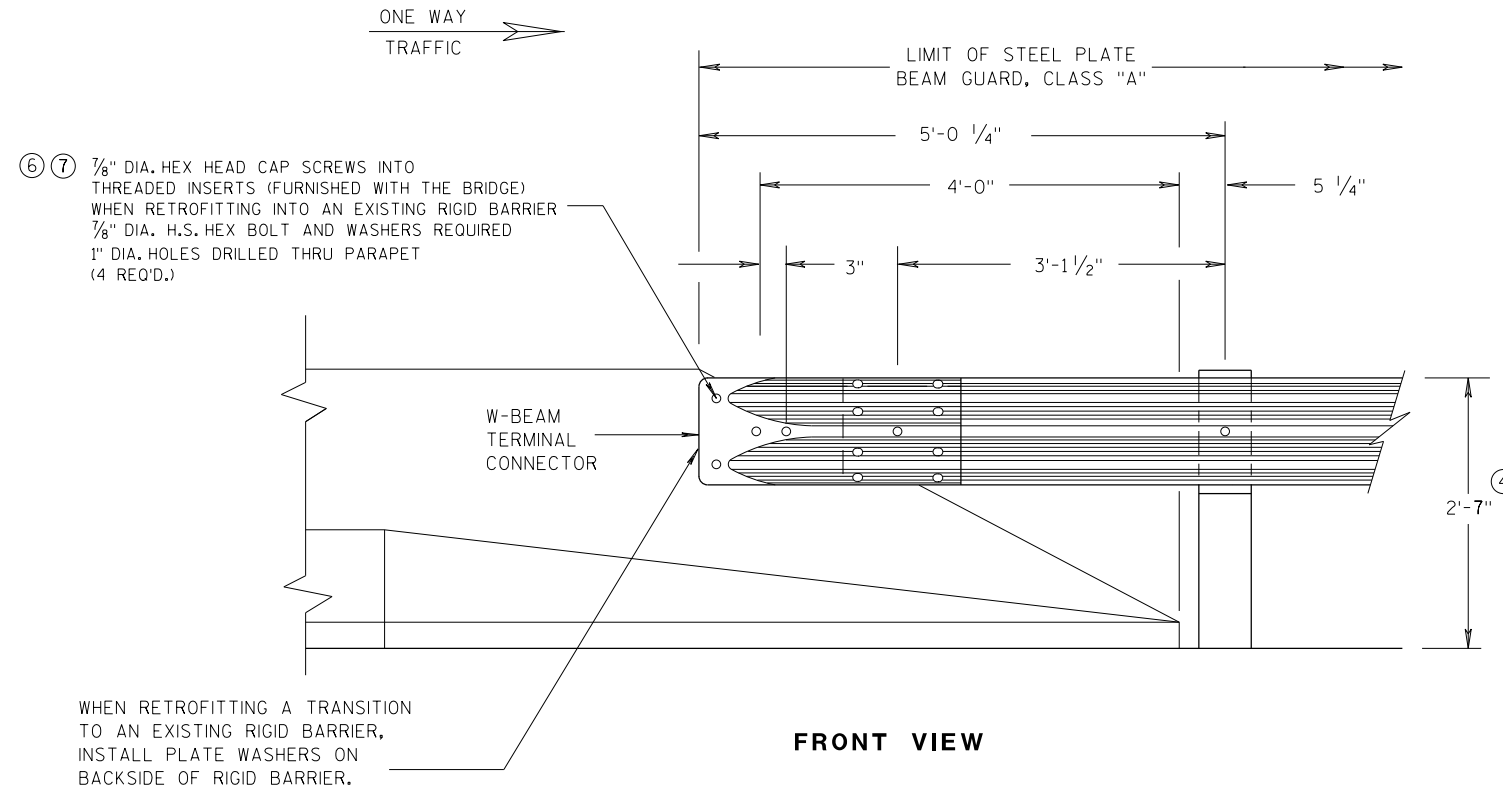
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR



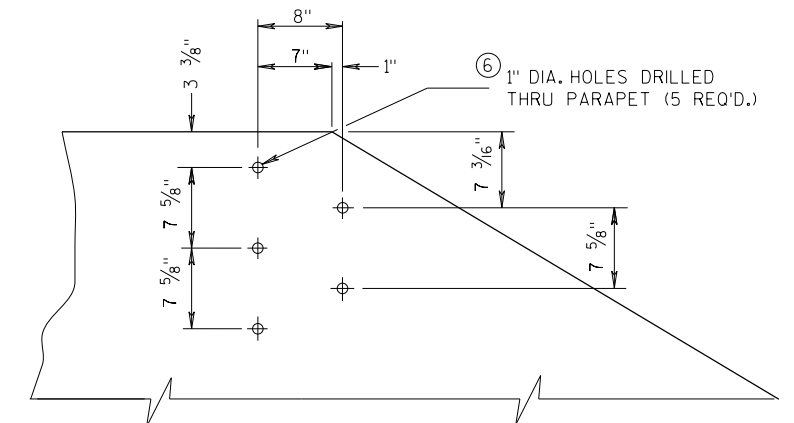
SDD 14b45-f MGS Thrie Beam Transition - W and Thrie Beam Connection to Bridge Parapets with Sloped Ends

GENERAL NOTES

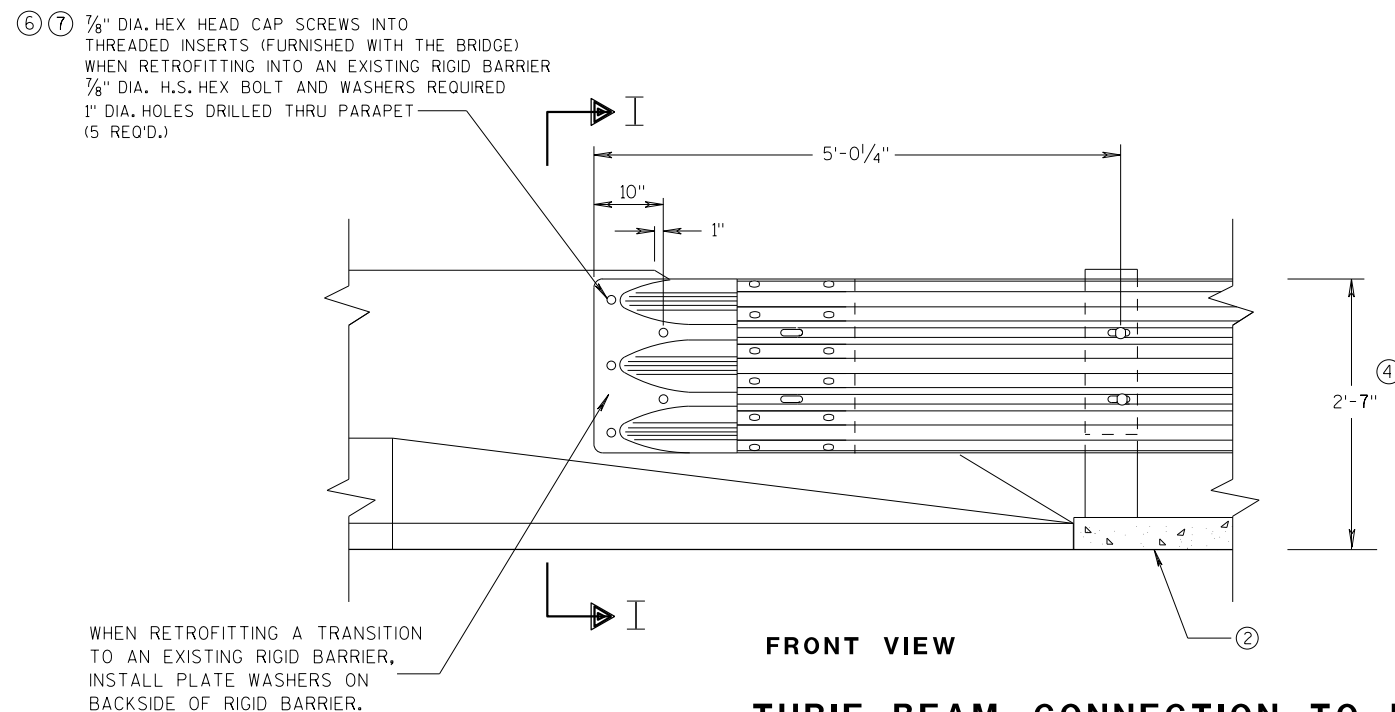
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



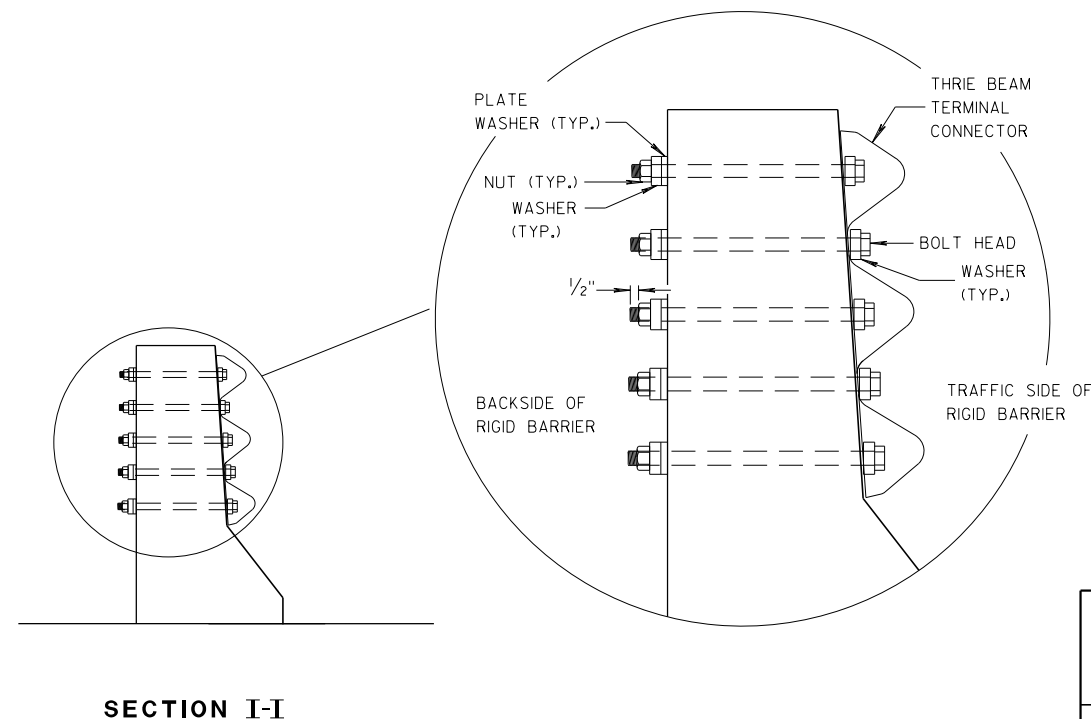
W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

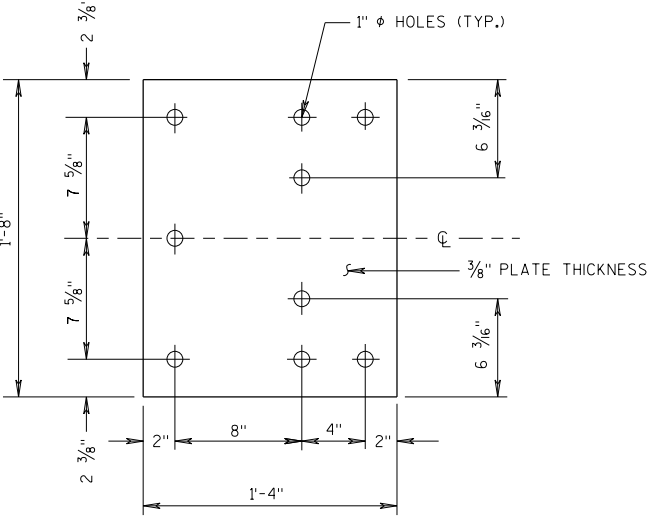
APPROVED
07/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

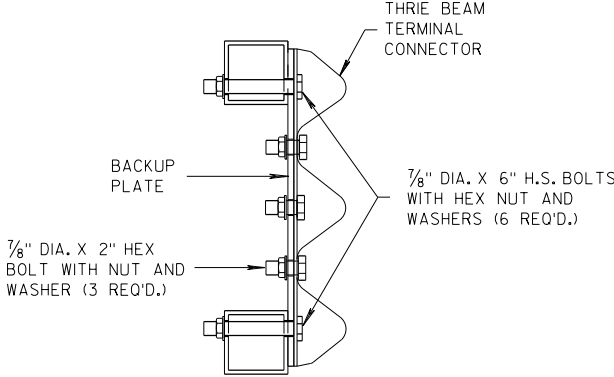
FHWA



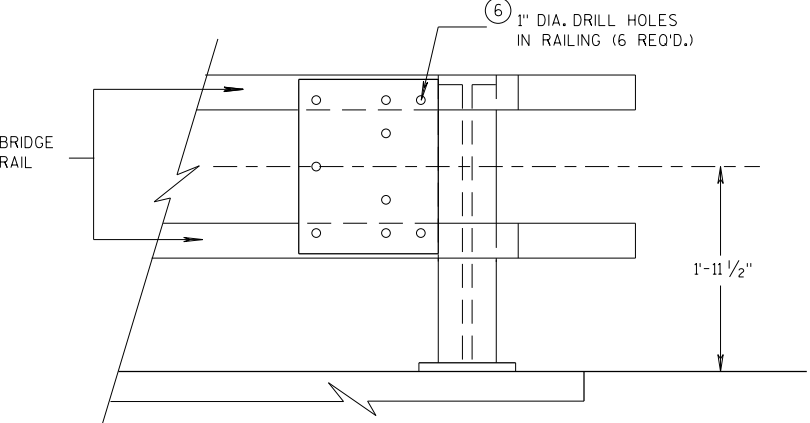
SDD 14b45-g MGS Thrie Beam Transition - Connection to W and F Bridge Parapet



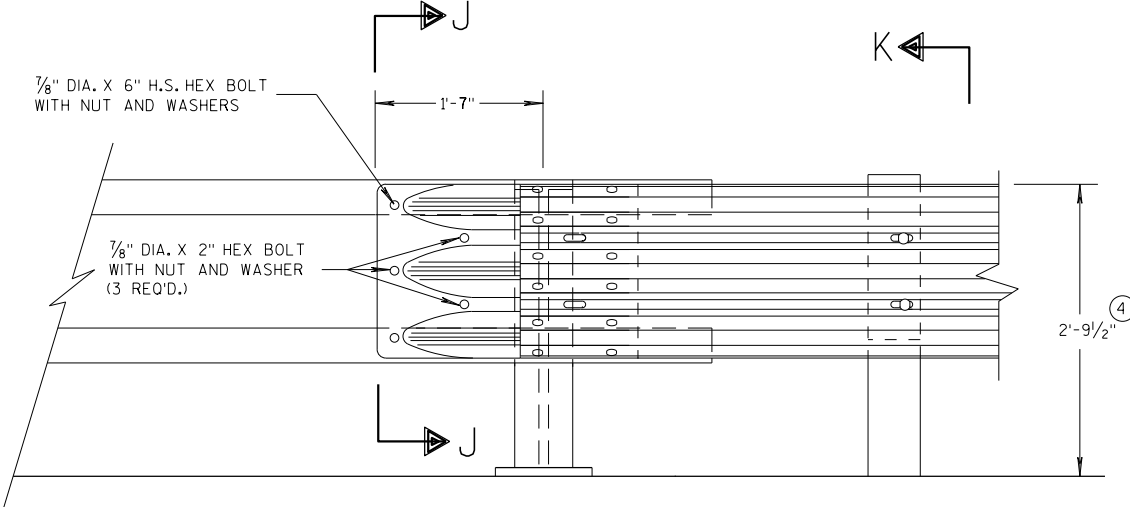
BACK-UP PLATE DETAIL



SECTION J-J



BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

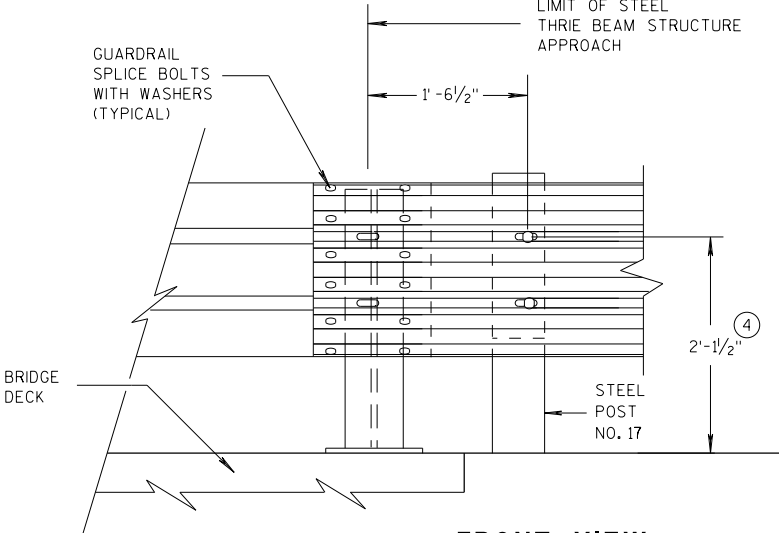


FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

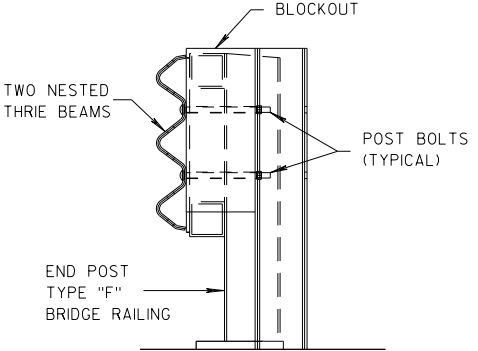
GENERAL NOTES

- (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- (6) DRILLING HOLES THROUGH THE PAPERPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



SECTION K-K

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

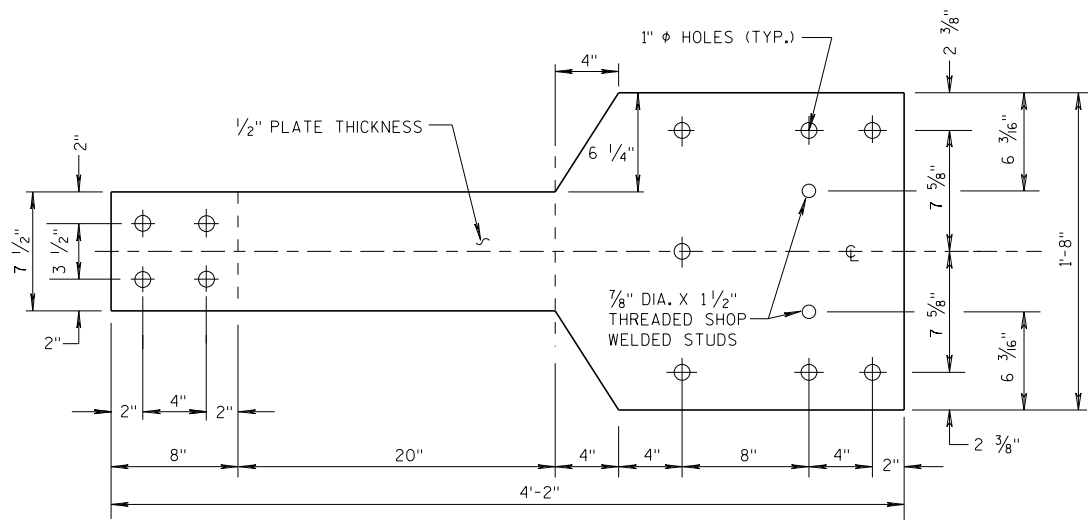
APPROVED
07/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



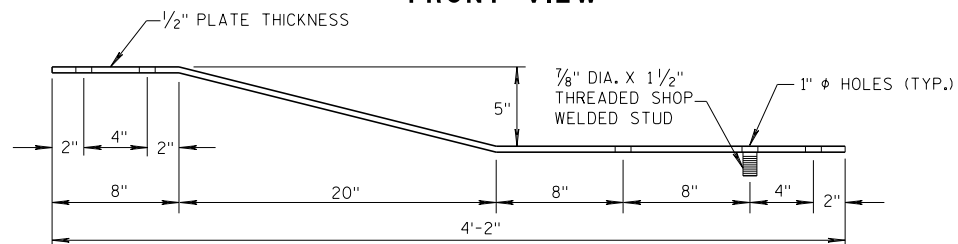
SDD 14b45-h MGS Thrie Beam Transition - Connection to M Bridge Parapet

GENERAL NOTES

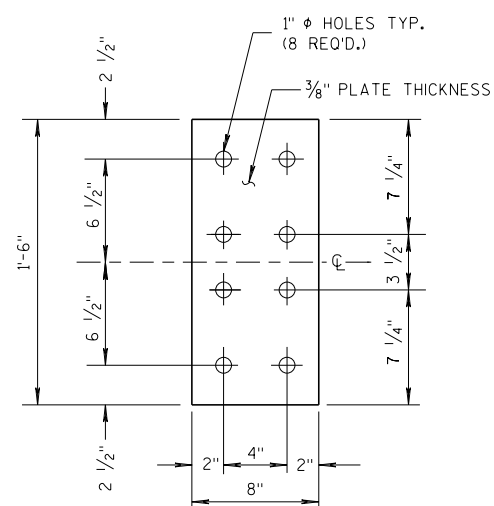
- (4) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

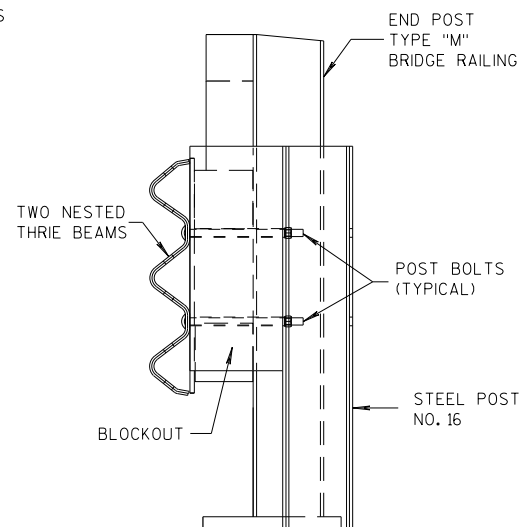


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

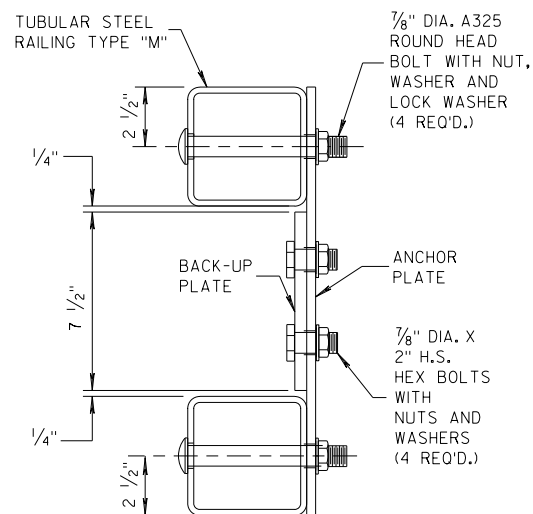


FRONT VIEW

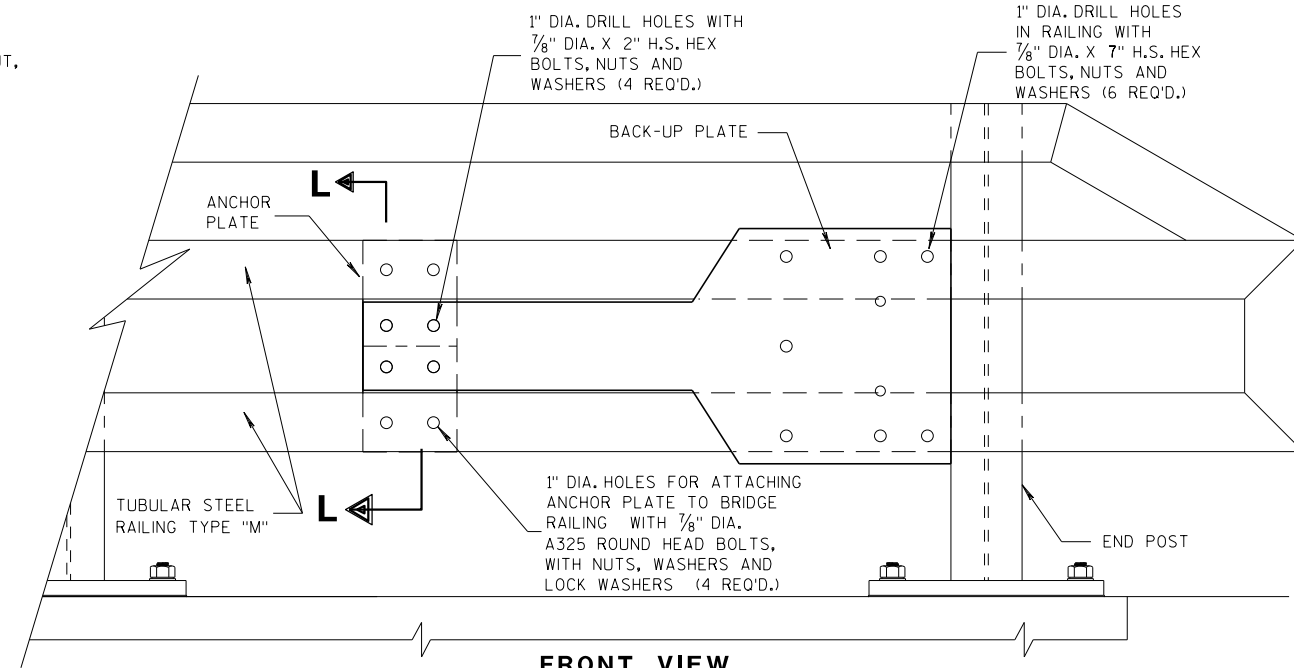
ANCHOR
PLATE DETAIL,
TYPE "M"



SECTION M-M

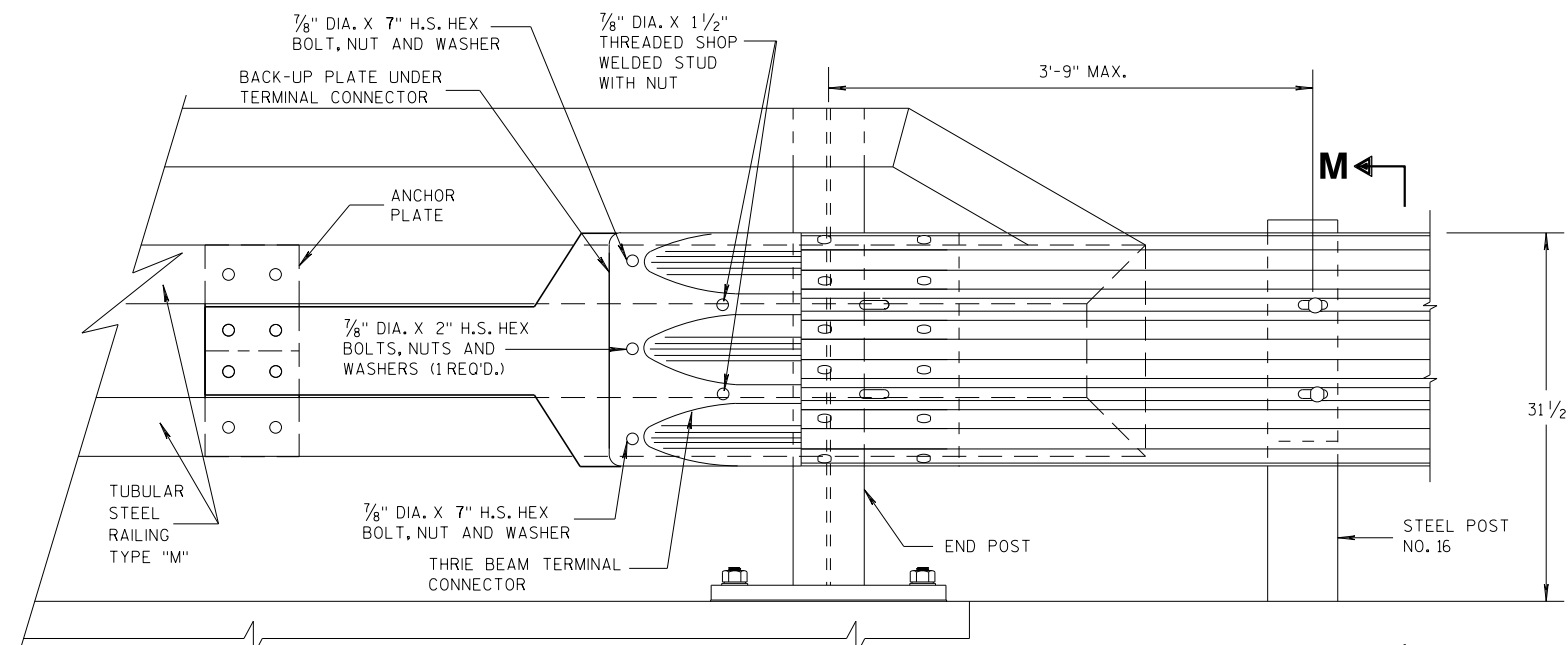


SECTION L-L

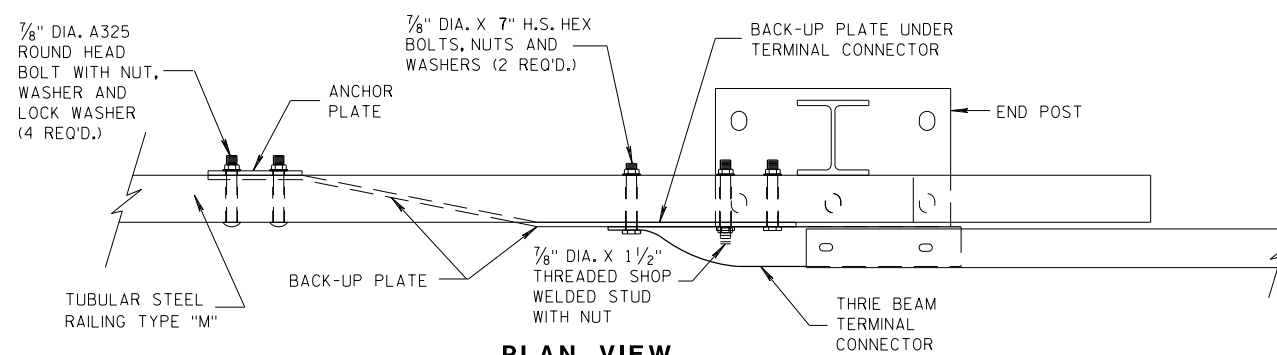


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

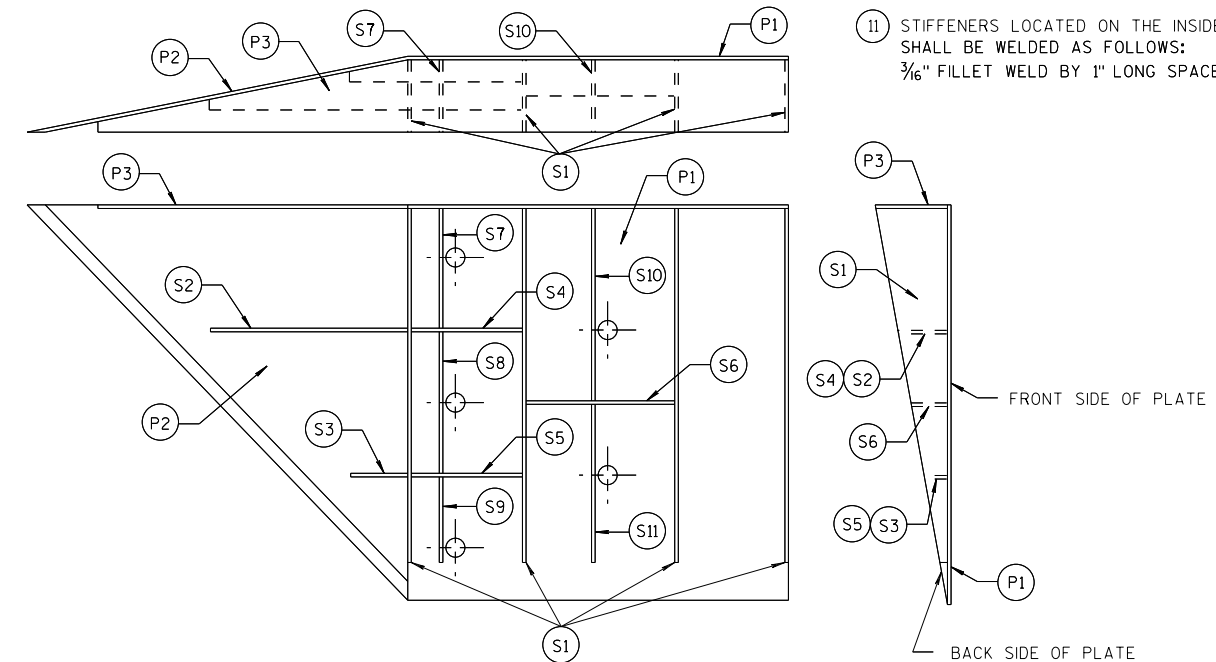
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
 $\frac{3}{16}$ " FILLET WELD BY 1" LONG SPACED AT 2".



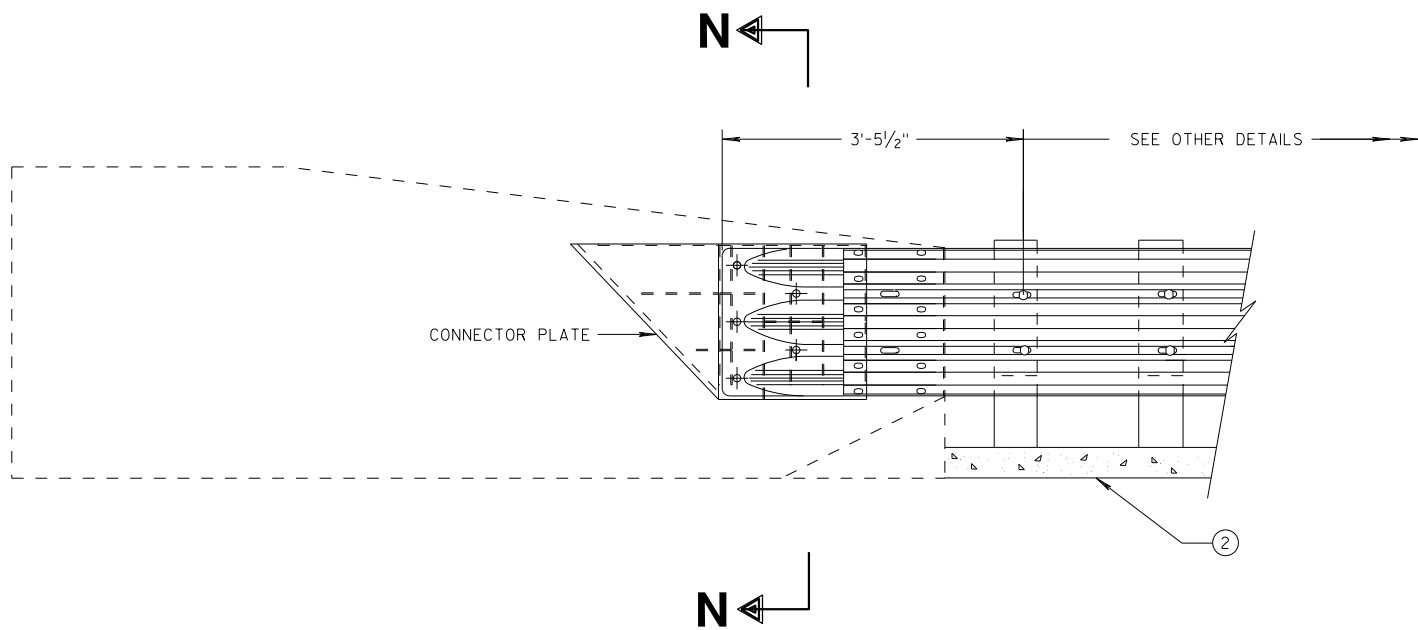
(VIEWED FROM BACK SIDE OF PLATE)

(VIEWED FROM BACK SIDE OF PLATE)

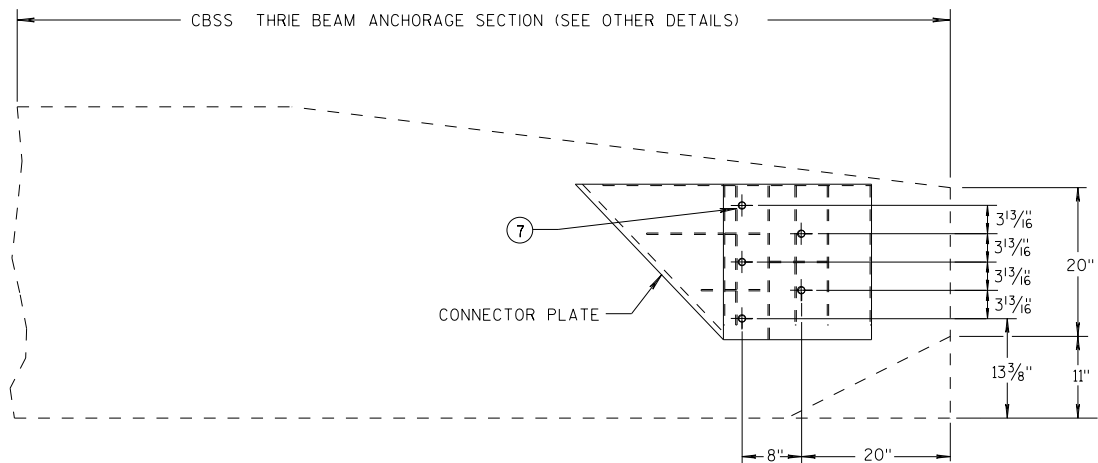
CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 35 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 1/16" x 35 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 3 6/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

APPROVED	
7/2018	/S/ Rodney Taylor
DATE	ROADWAY STANDARDS DEVELOPMENT
	UNIT SUPERVISOR
FHWA	



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

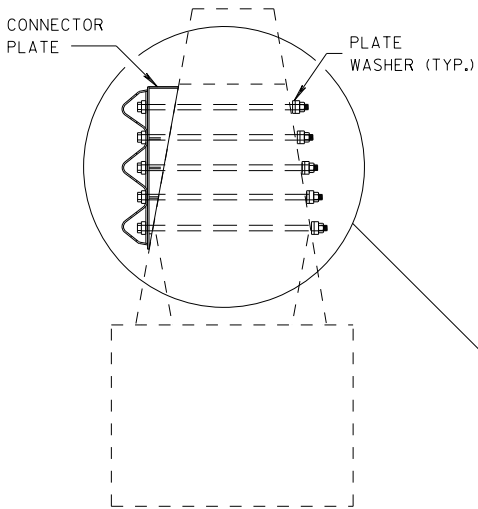


SINGLE SLOPE CONNECTION PLATE PLACEMENT

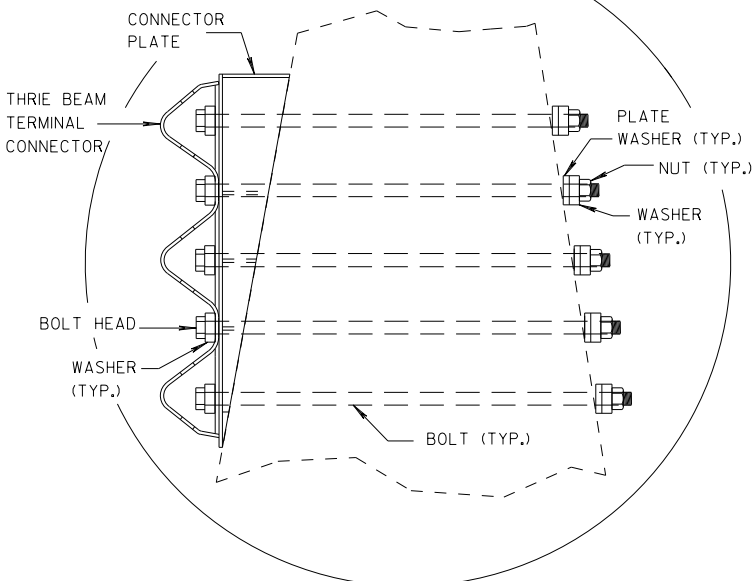
GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



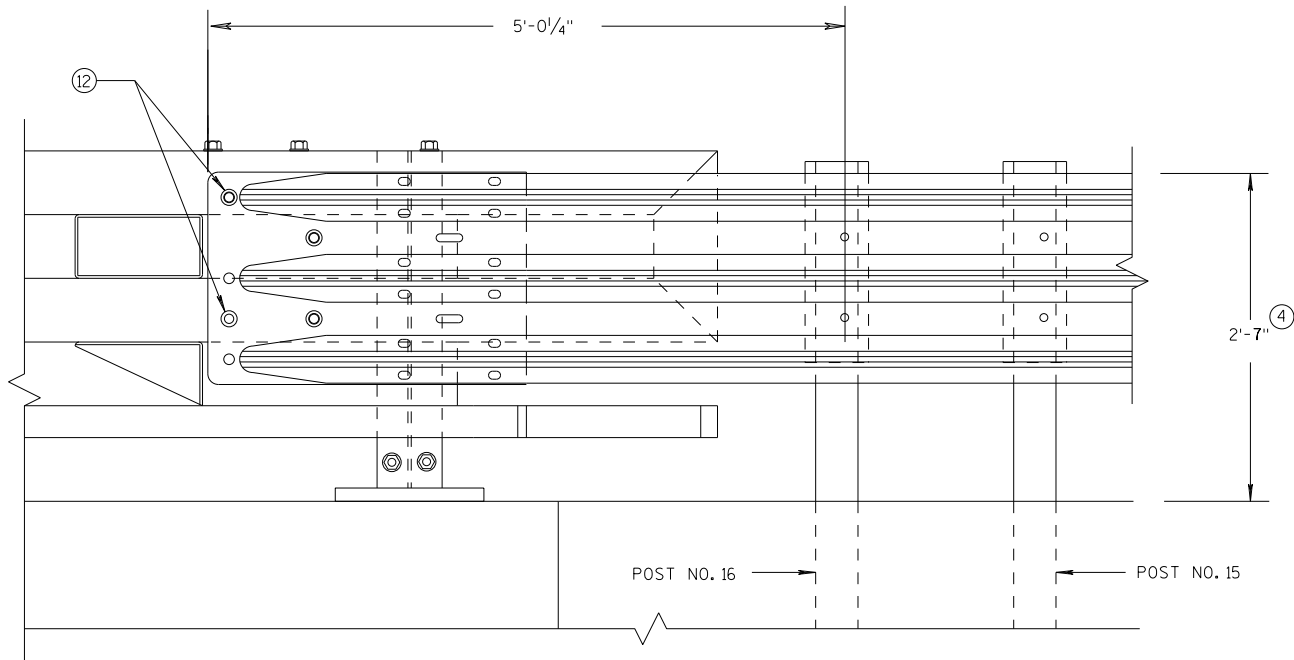
SECTION N-N



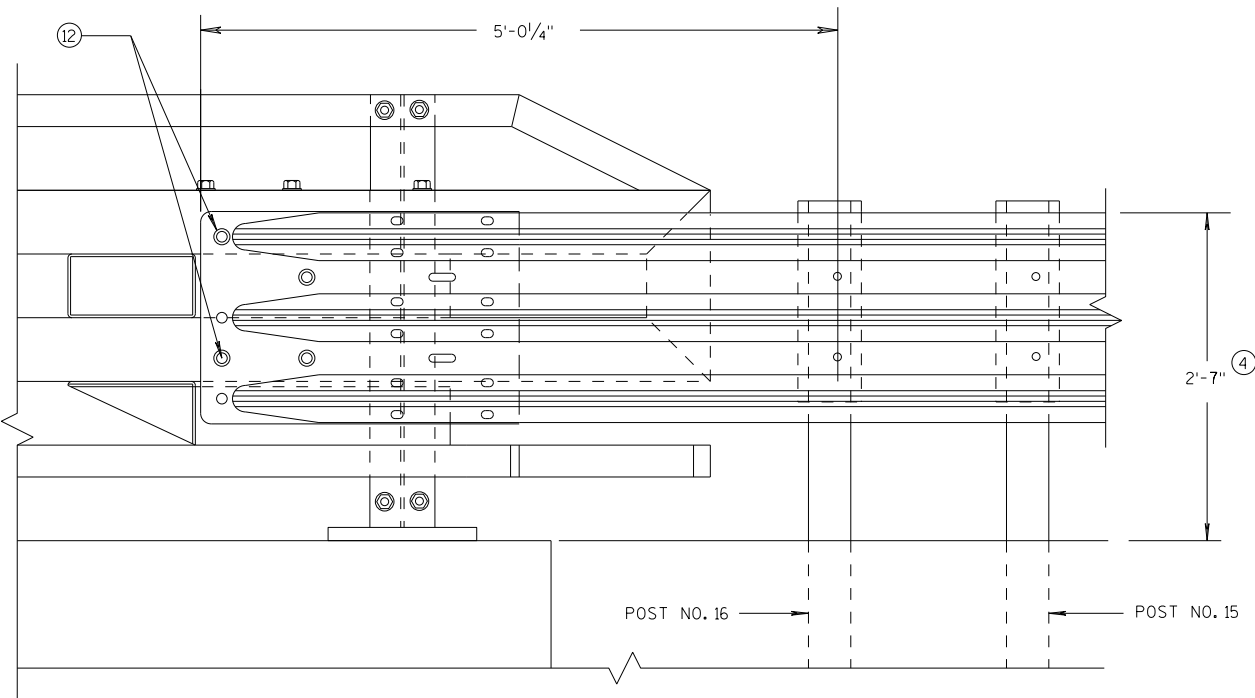
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

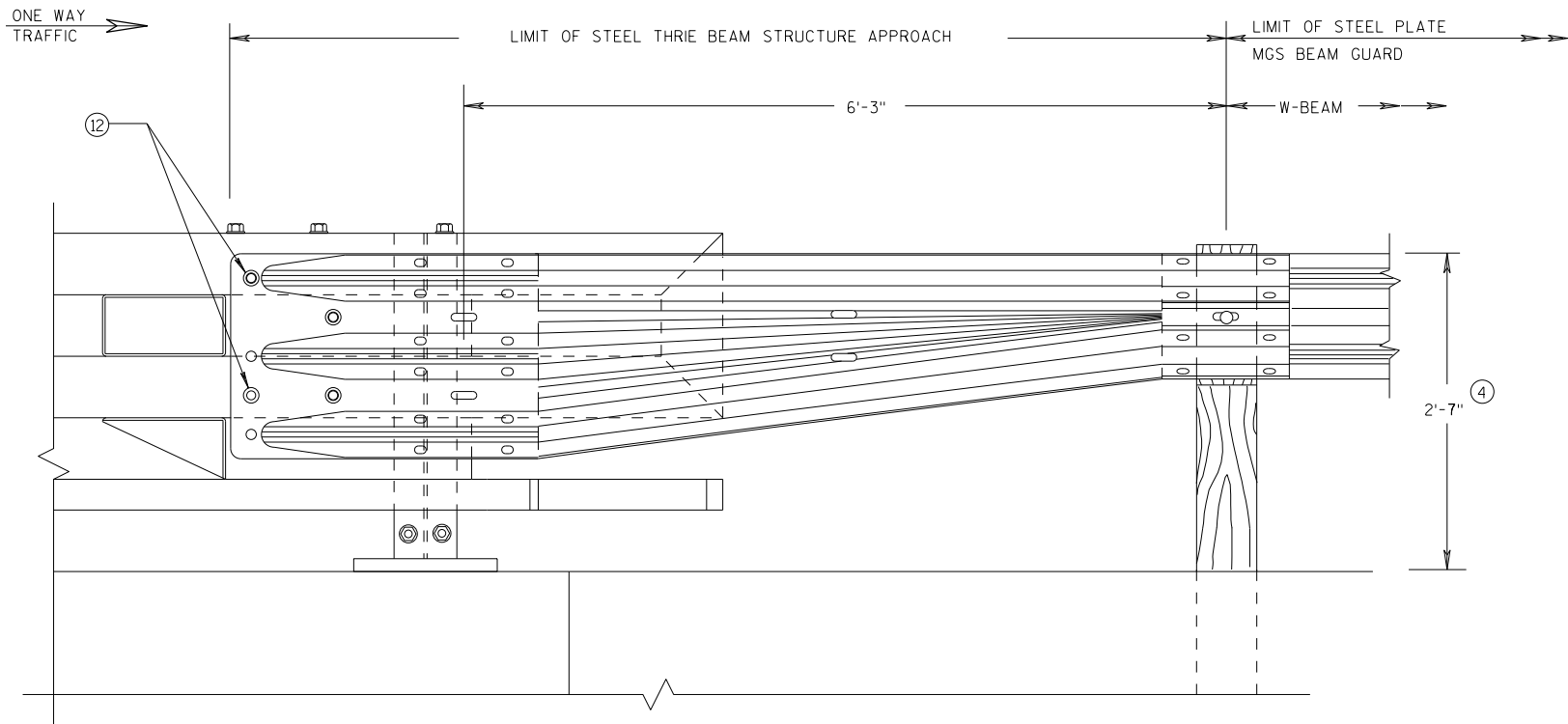


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.

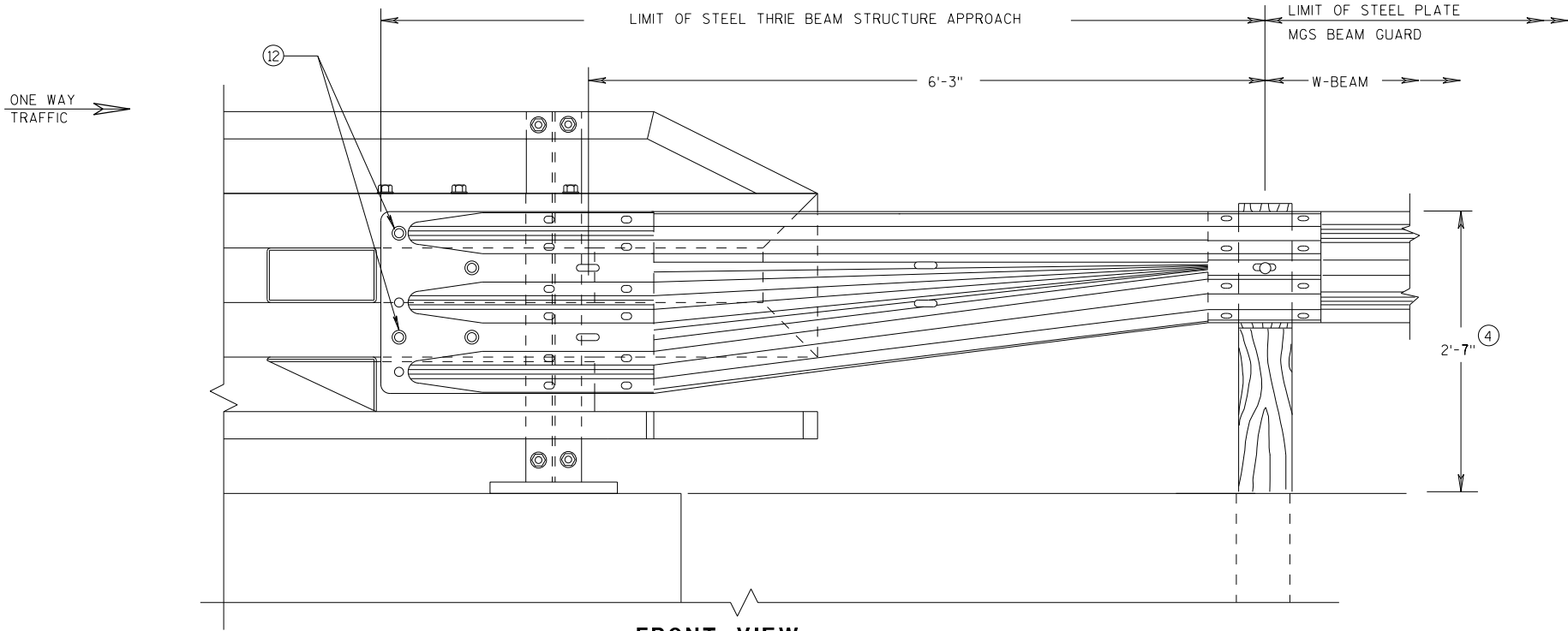
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.

FRONT VIEW
W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY3"
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



FRONT VIEW
W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

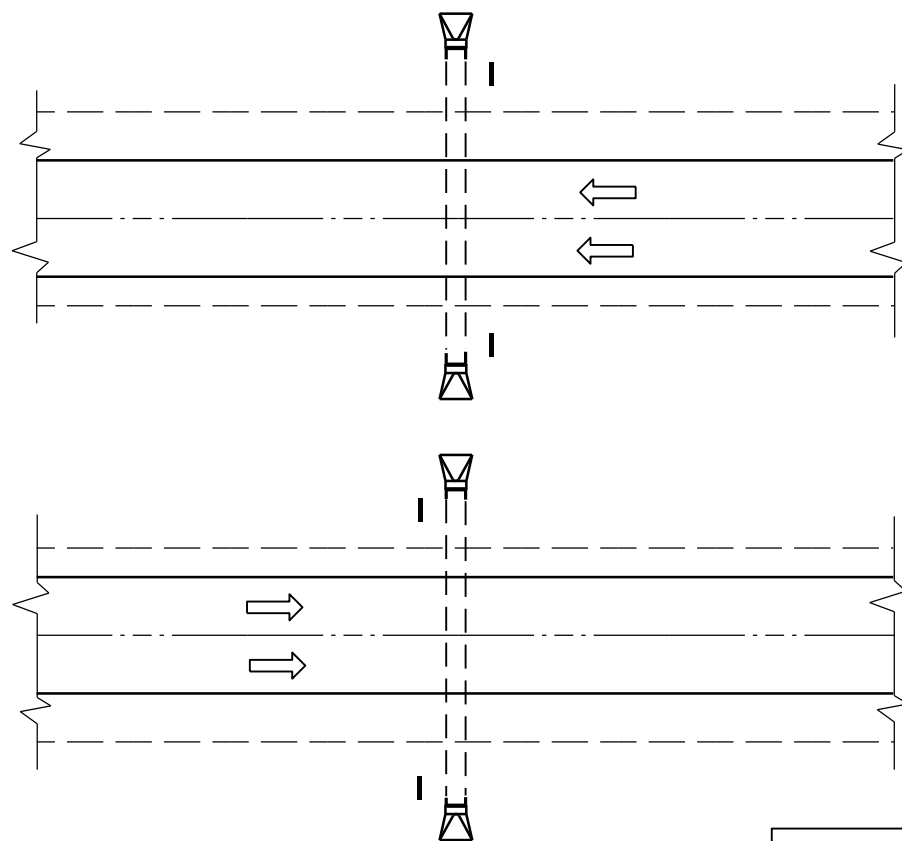
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

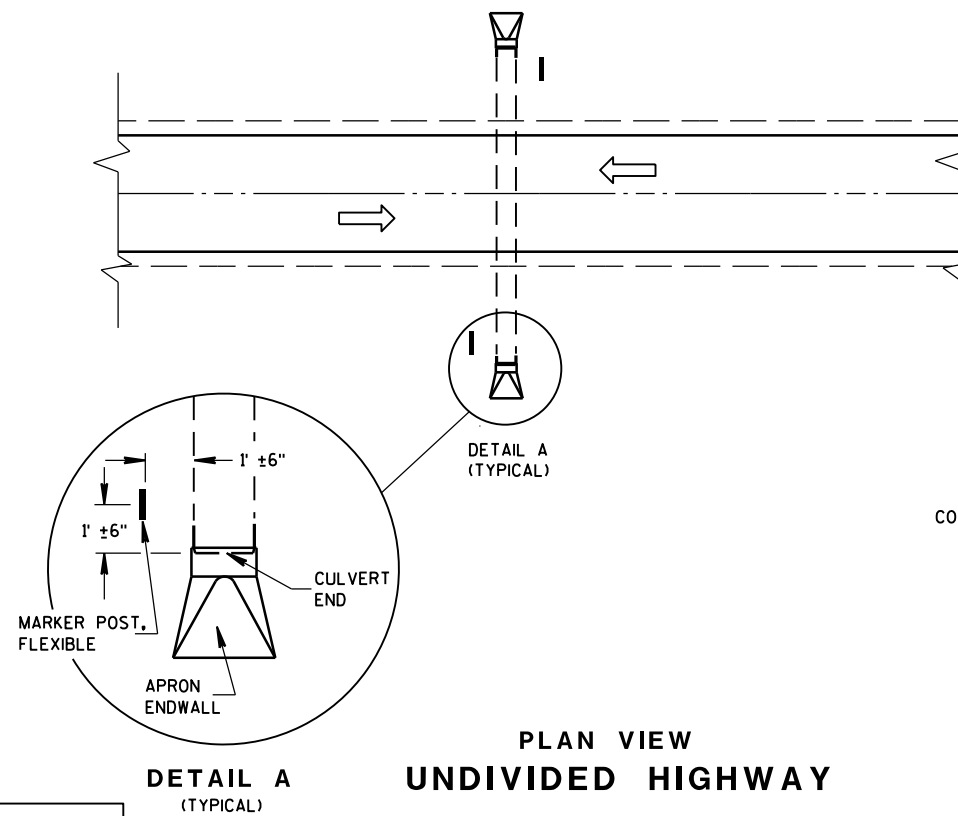
APPROVED
7/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



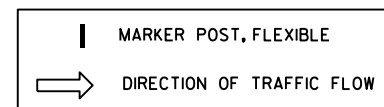
SDD 15a3-a Flexible Marker Post for Culvert End



PLAN VIEW
DIVIDED HIGHWAY



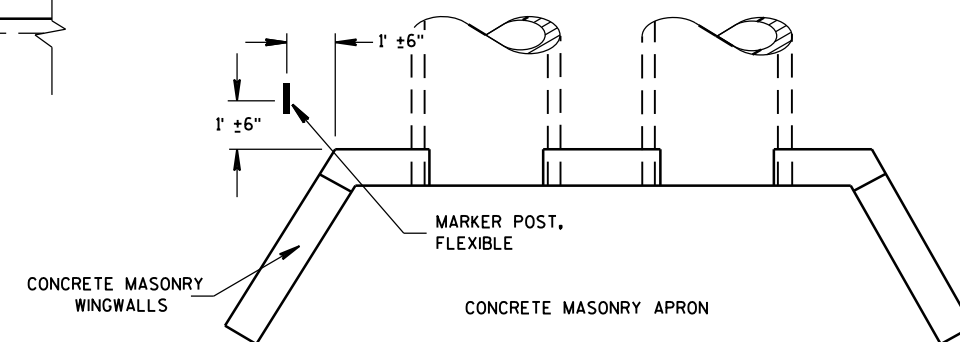
PLAN VIEW
UNDIVIDED HIGHWAY



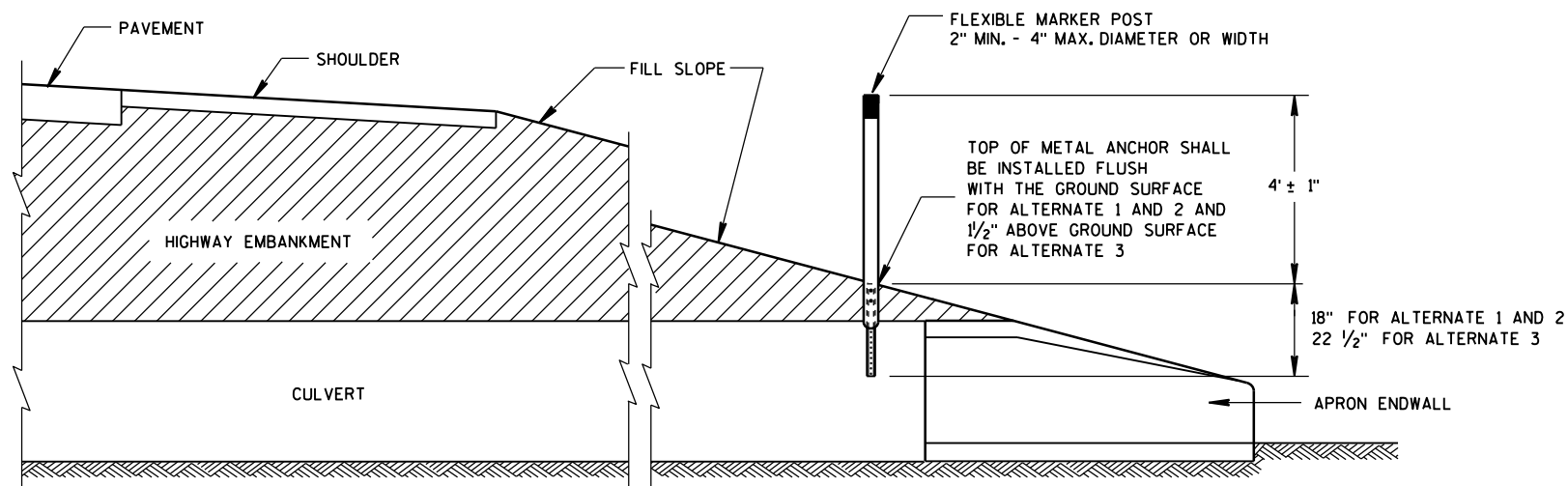
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



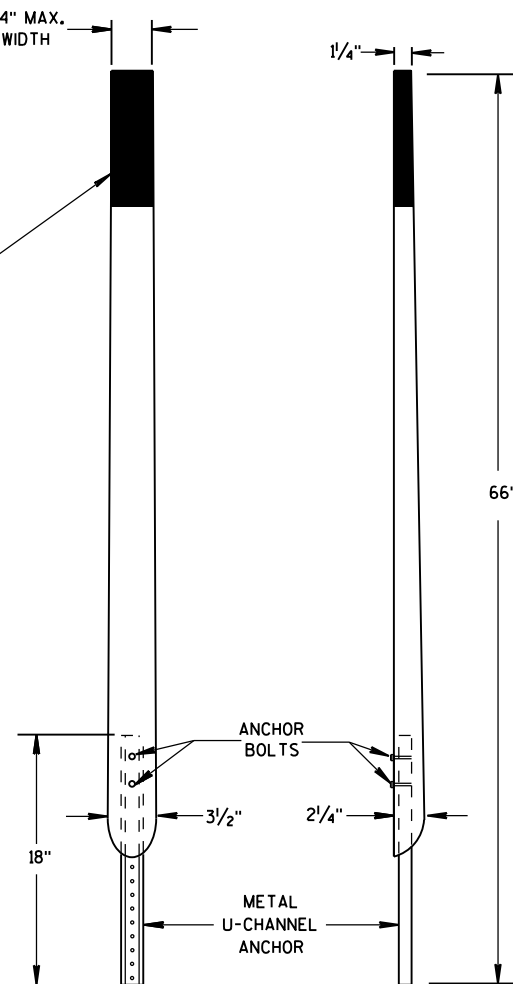
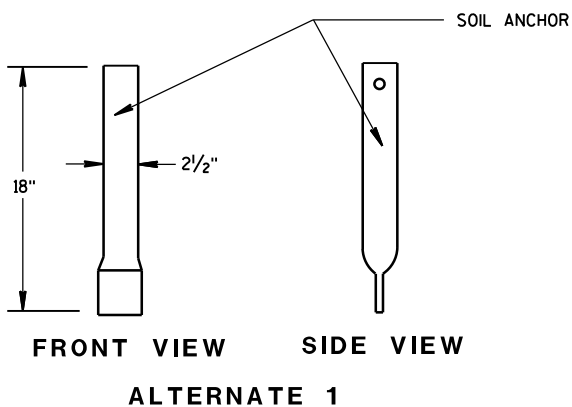
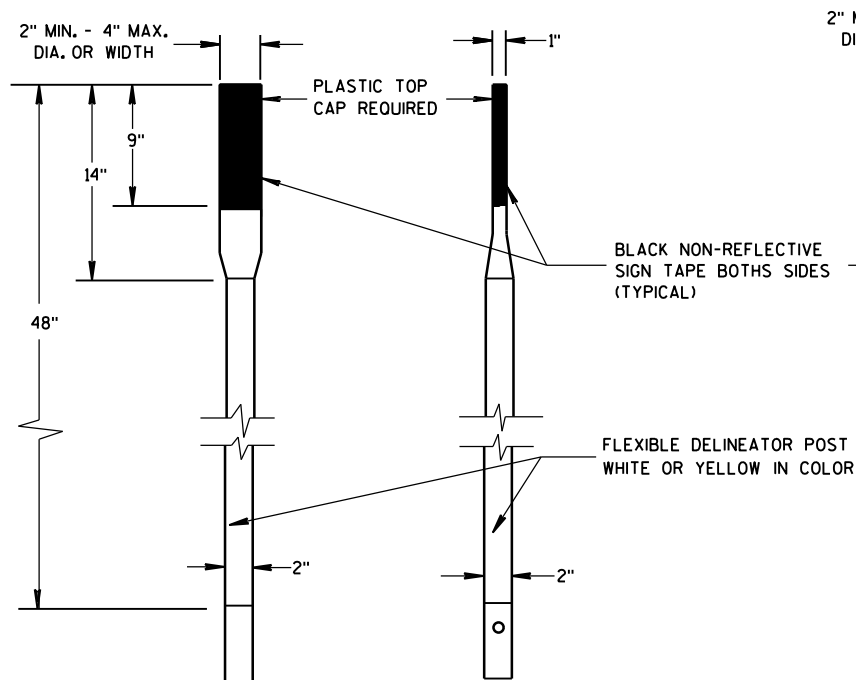
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

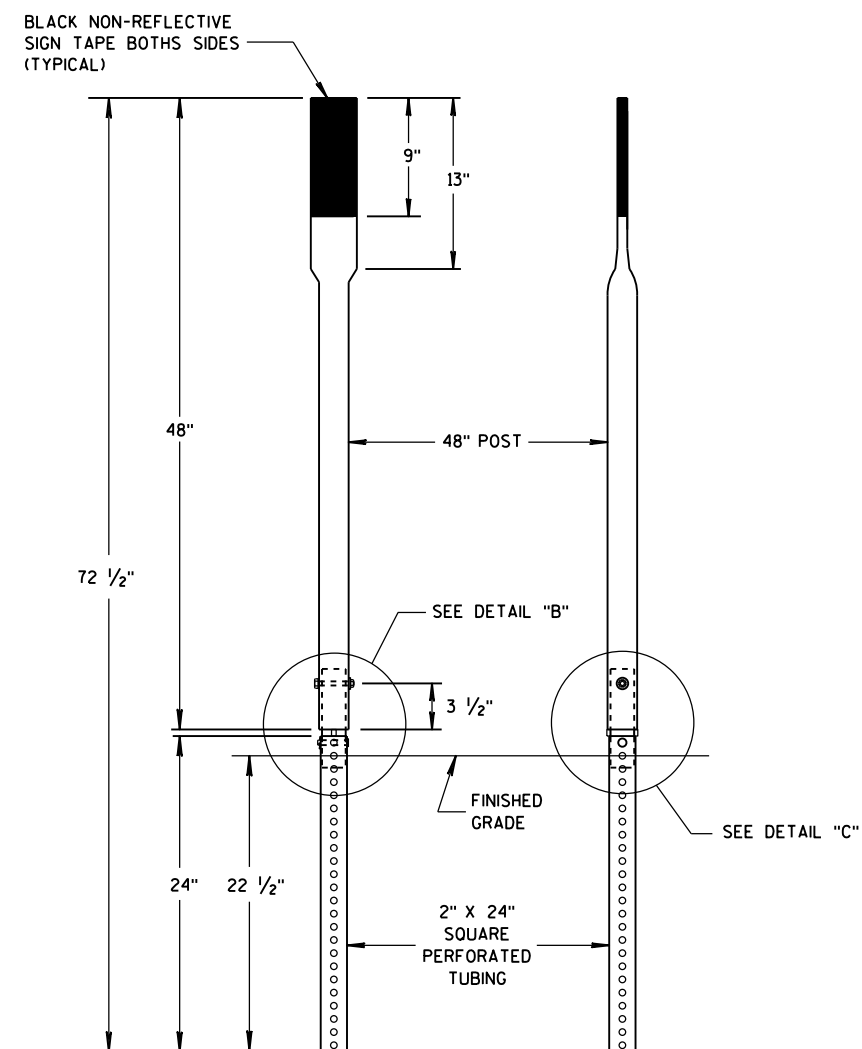


SDD 15a3-b Flexible Marker Post for Culvert End

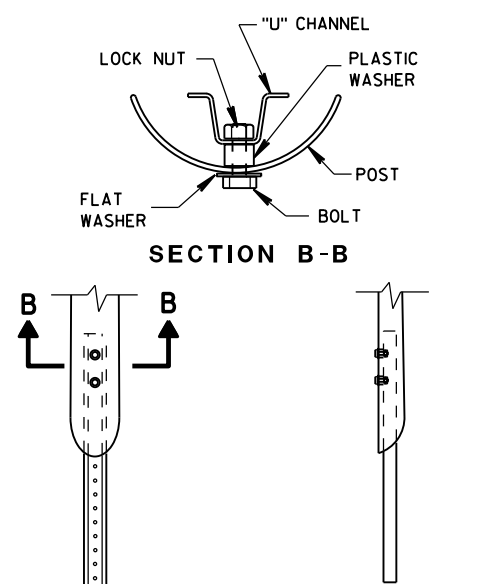
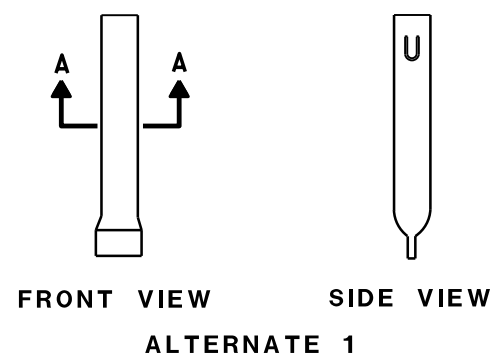
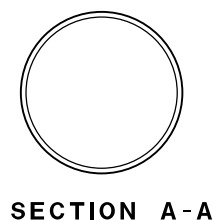
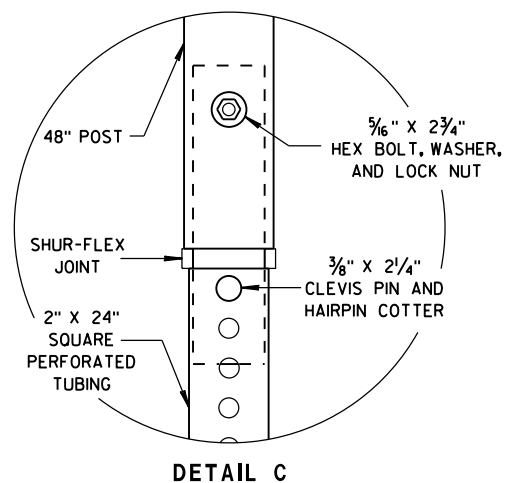
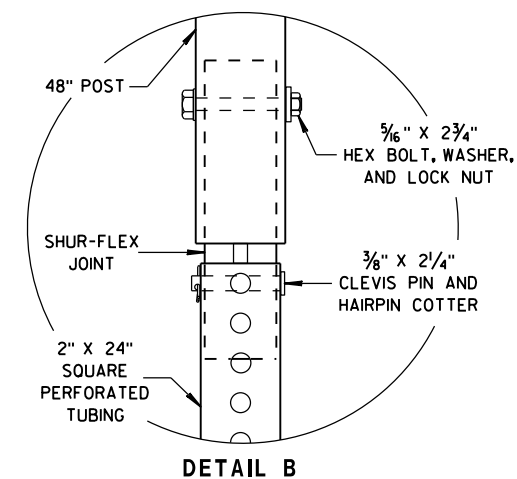
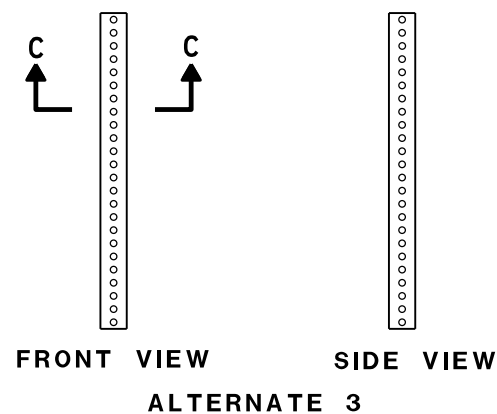
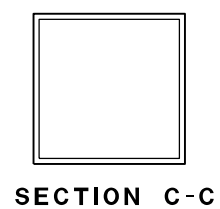


FRONT VIEW SIDE VIEW
ALTERNATE 2

FLEXIBLE MARKER POSTS



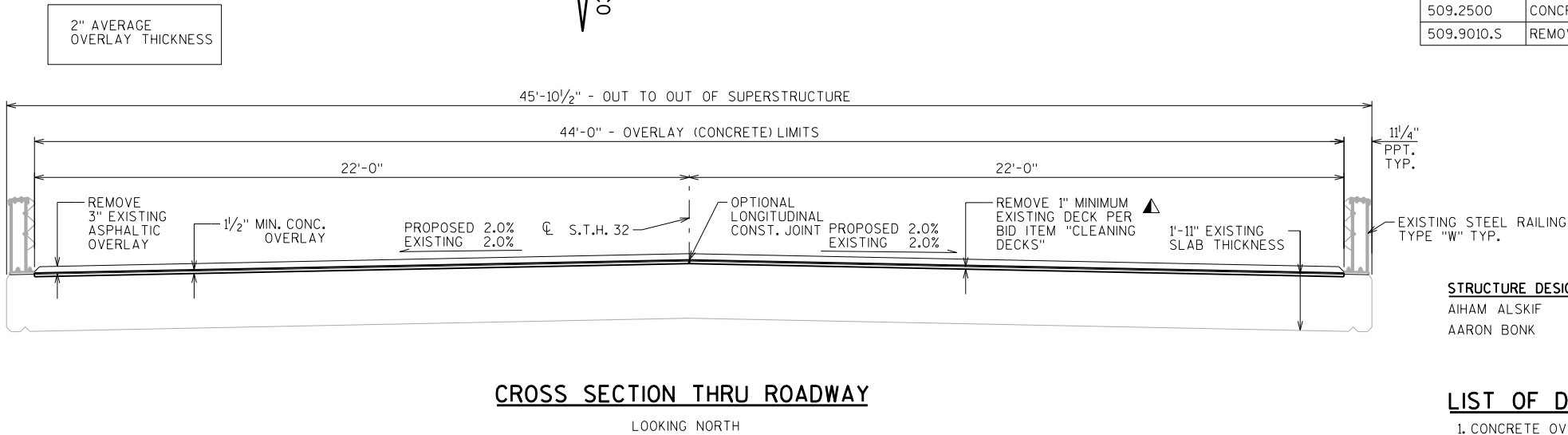
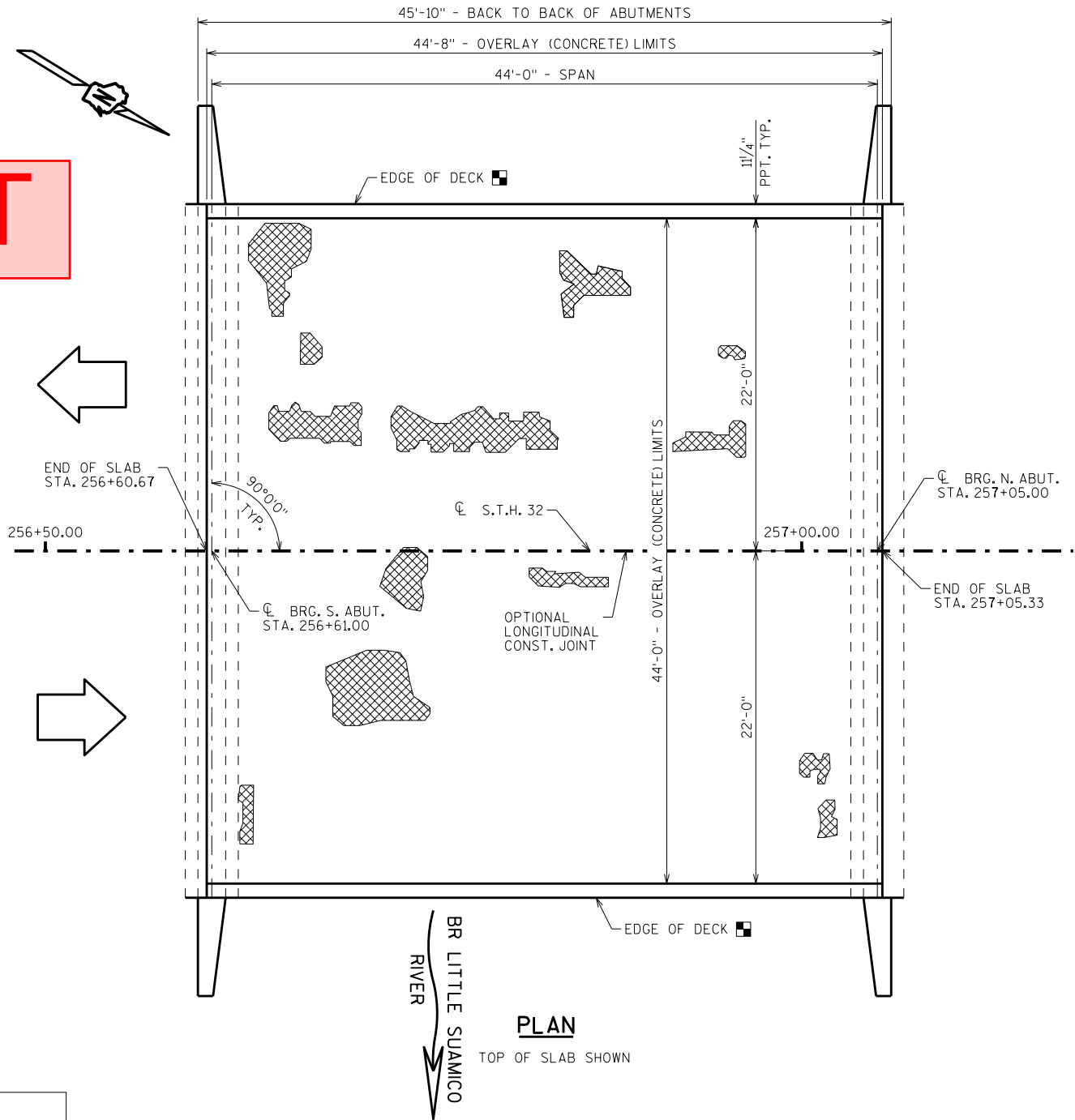
FRONT VIEW SIDE VIEW
ALTERNATE 3



FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

DRAFT



DECK PREPARATION

SURVEY TYPE: IR
SURVEY COMPLETED DATE: 09/07/2016

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS-20
INVENTORY RATING: HS-21
OPERATING RATING: HS-35
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 209(KIPS)

MATERIAL PROPERTIES:
CONCRETE MASONRY:
SUPERSTRUCTURE & OVERLAY DECK f'c = 4,000 P.S.I.

TRAFFIC VOLUME

S.T.H. 32
ADT = 7800 (2041)
R.D.S. = 45 M.P.H.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP SURFACE OF THE CONCRETE OVERLAY.

SEAL OVERLAY CONSTRUCTION JOINTS ACCORDING TO SECTION 502.3.13.1 OF THE STANDARD SPECIFICATIONS. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1 1/2" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1 1/2", CONTACT THE STRUCTURES DESIGN SECTION.

THE ENTIRE EXISTING ASPHALTIC OVERLAY SHALL BE REMOVED FROM THE BRIDGE DECK UNDER BID ITEM "REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-5-260" AND A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

THE AVERAGE OVERLAY THICKNESS IS BASED ON THE MINIMUM OVERLAY THICKNESS PLUS 1/2-INCH TO ACCOUNT FOR VARIATIONS IN THE DECK SURFACE.

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL DEPTH DECK REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

TOTAL ESTIMATED QUANTITIES

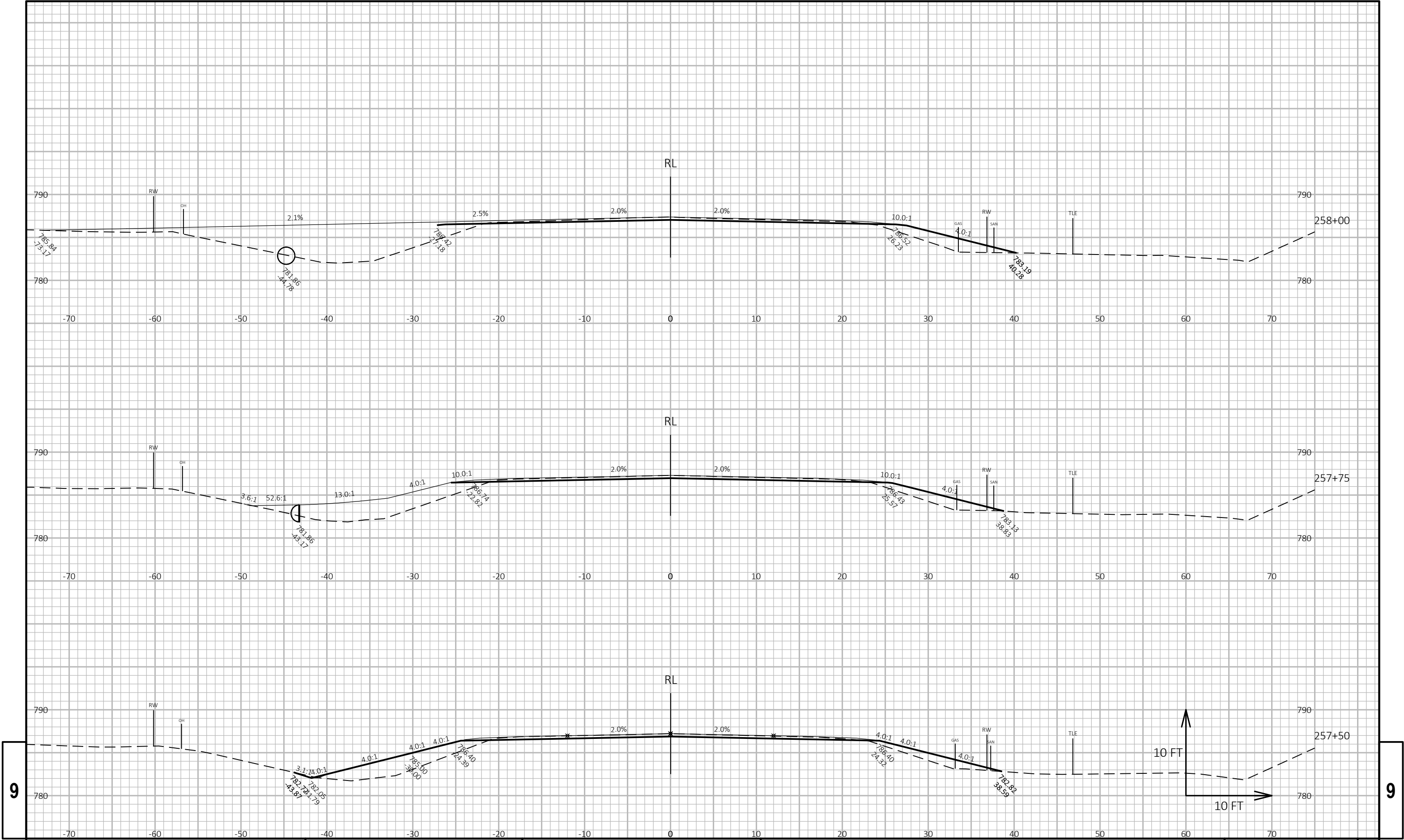
BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
502.3200	PROTECTIVE SURFACE TREATMENT	SY	219
509.0301	PREPARATION DECKS TYPE 1	SY	11
509.0302	PREPARATION DECKS TYPE 2	SY	5
509.0500	CLEANING DECKS	SY	219
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	13
509.9010.S	REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-5-260	SY	219

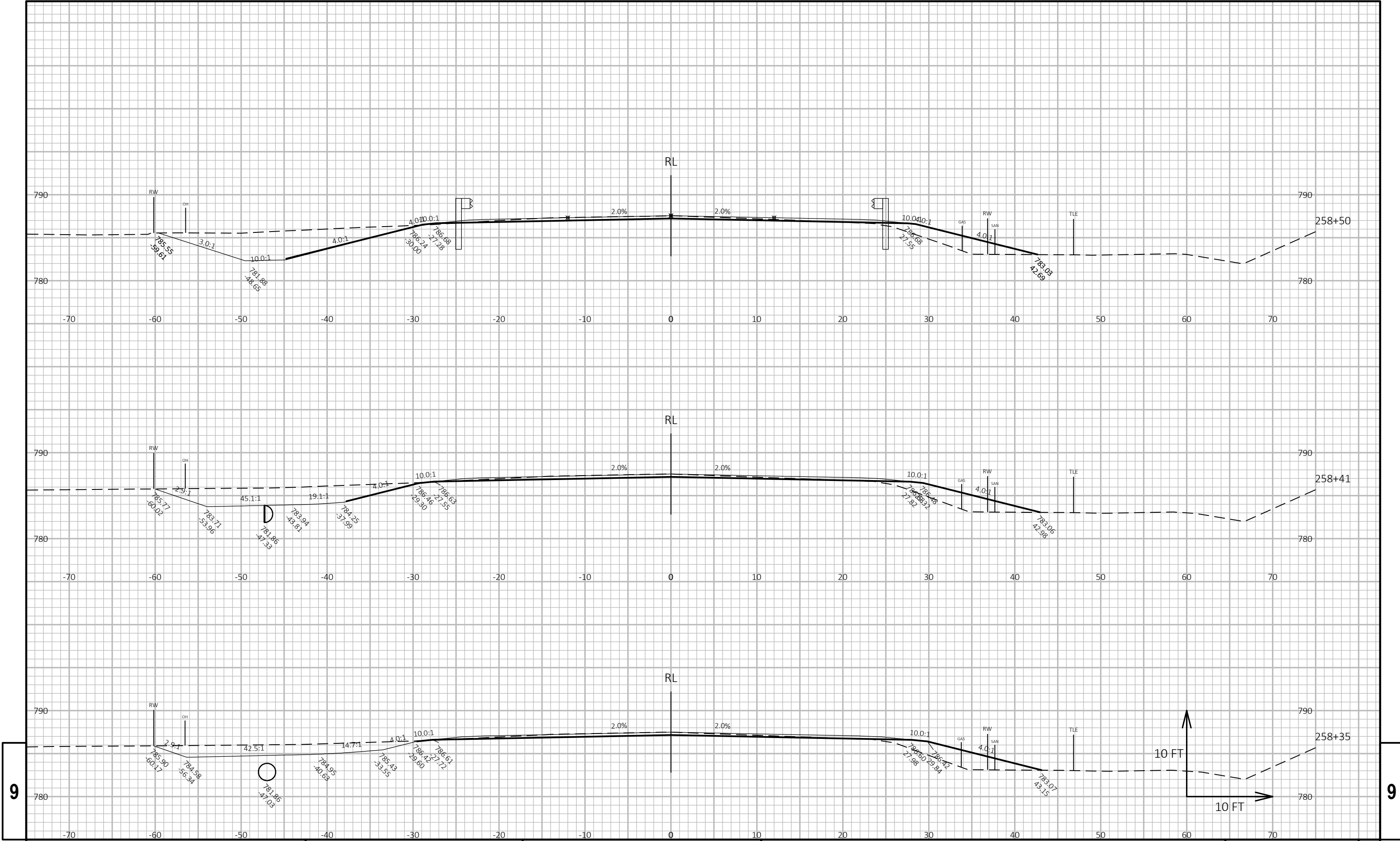
NO.	DATE	REVISION	BY
 BUREAU OF STRUCTURES			
ACCEPTED CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-5-260			
STH 32 OVER BR LITTLE SUAMICO RIVER			
COUNTY	BROWN	VILLAGE	PULASKI
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	AA	DESIGNED CK'D. JJS	DRAWN BY AA PLANS CK'D.
CONCRETE OVERLAY			SHEET 1 OF 1

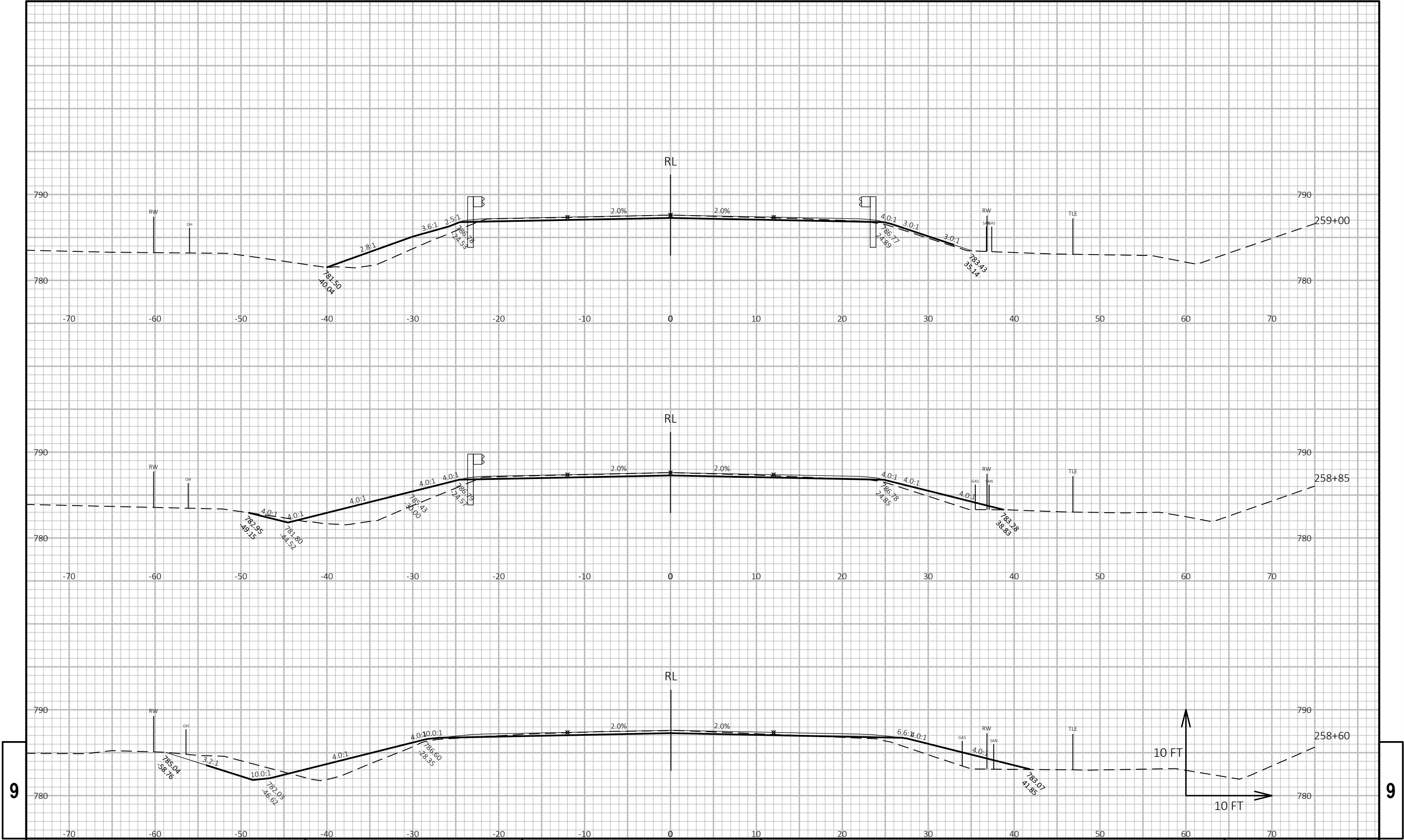
STRUCTURE DESIGN CONTACTS:
AIHAM ALSKIF (608) 261-6113
AARON BONK (608) 261-0261

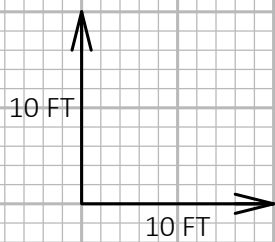
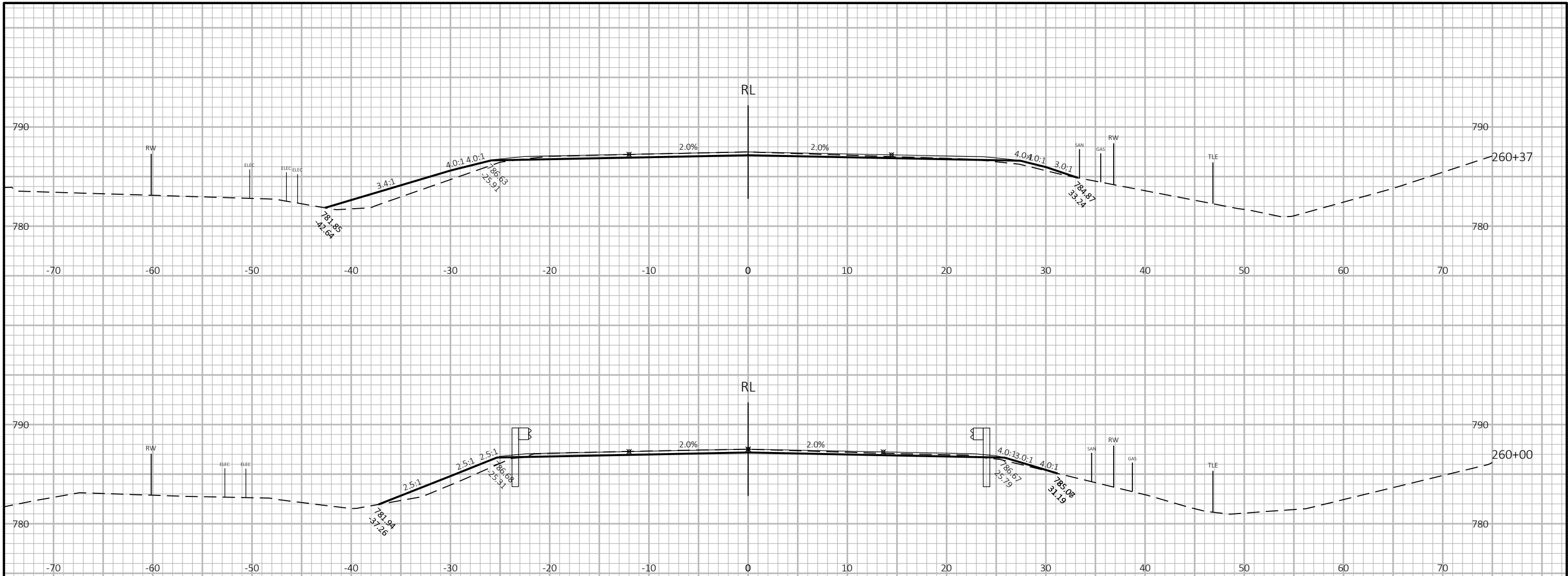
LIST OF DRAWINGS

1. CONCRETE OVERLAY





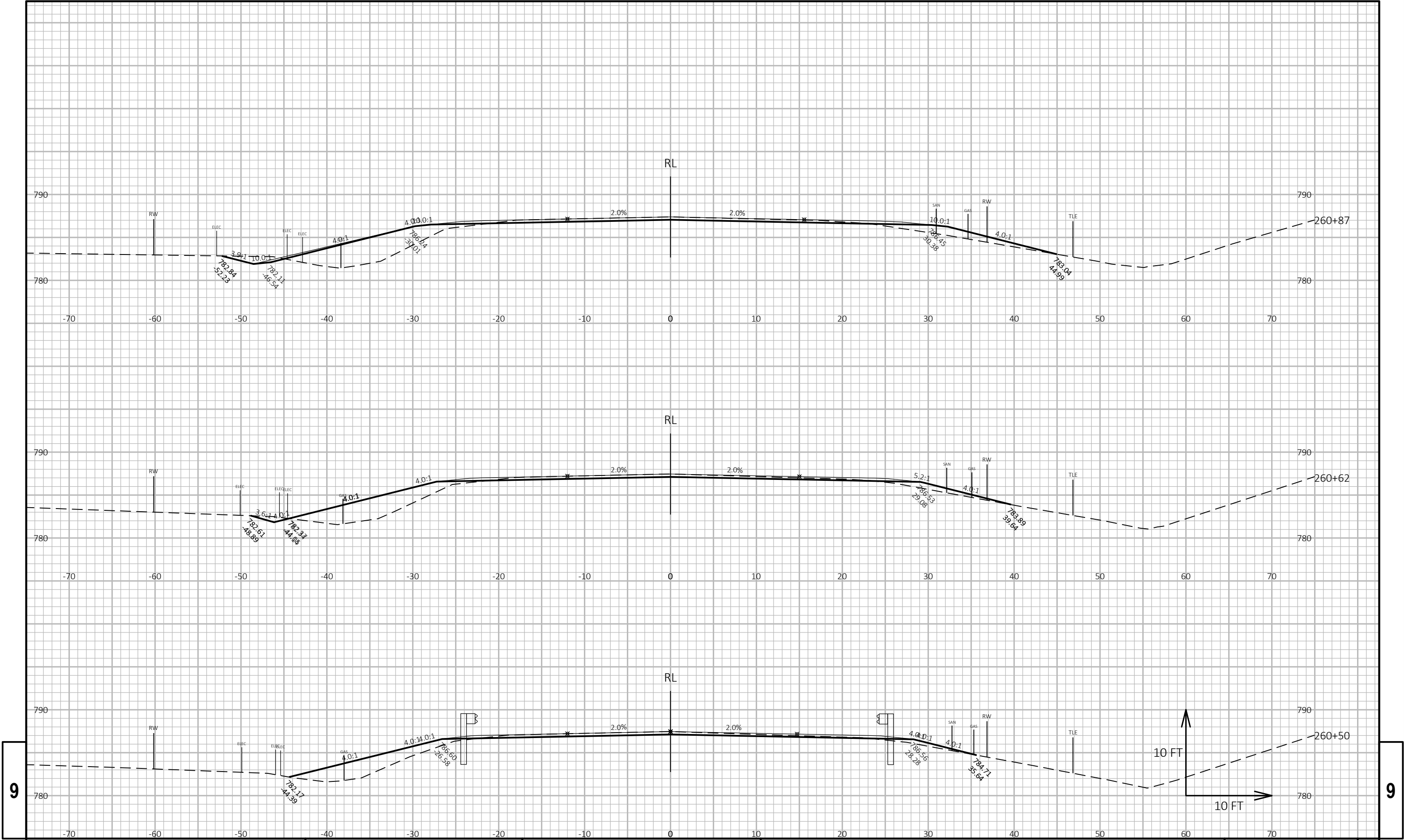




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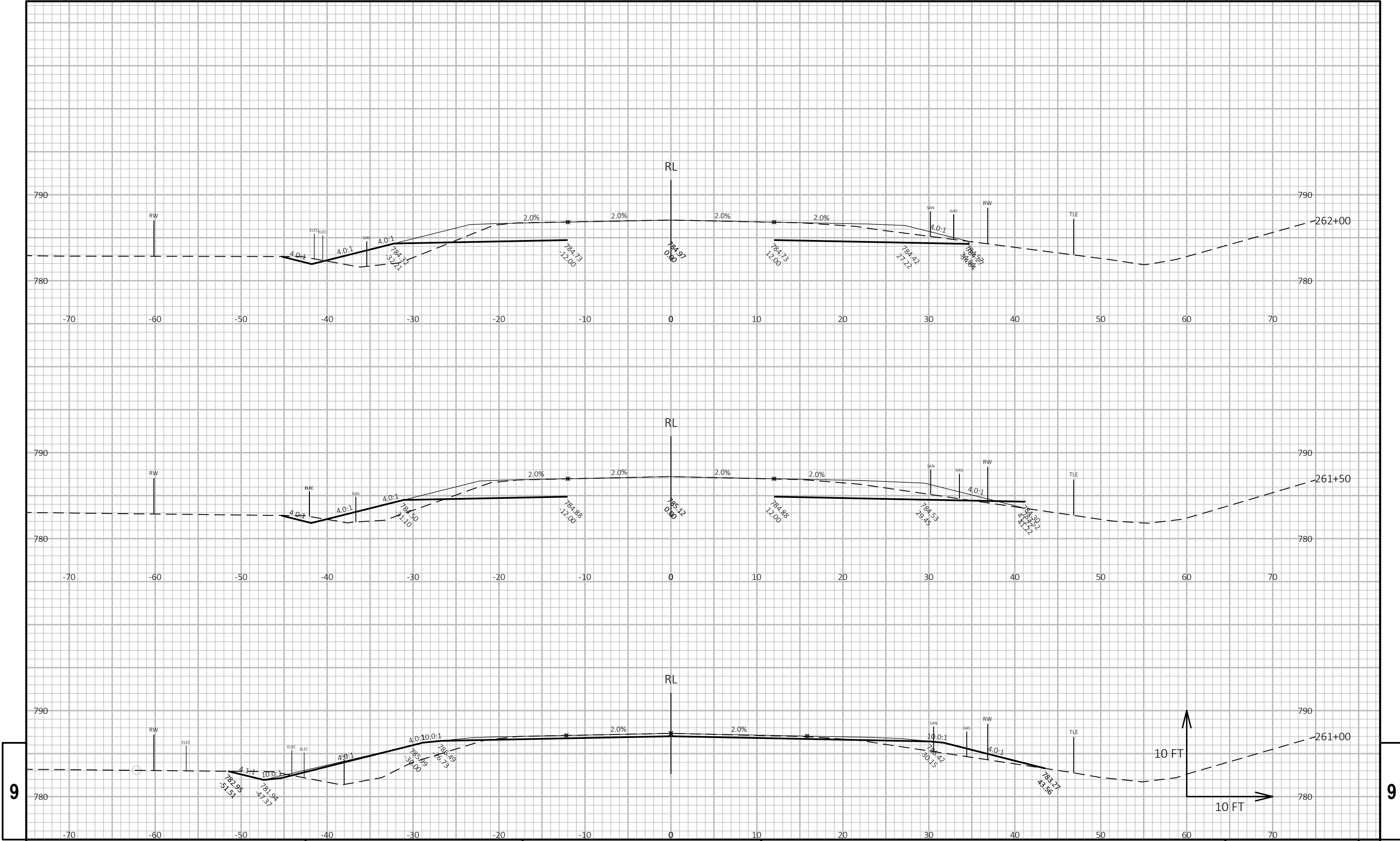
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PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	CROSS SECTIONS: STH 32	SHEET	E
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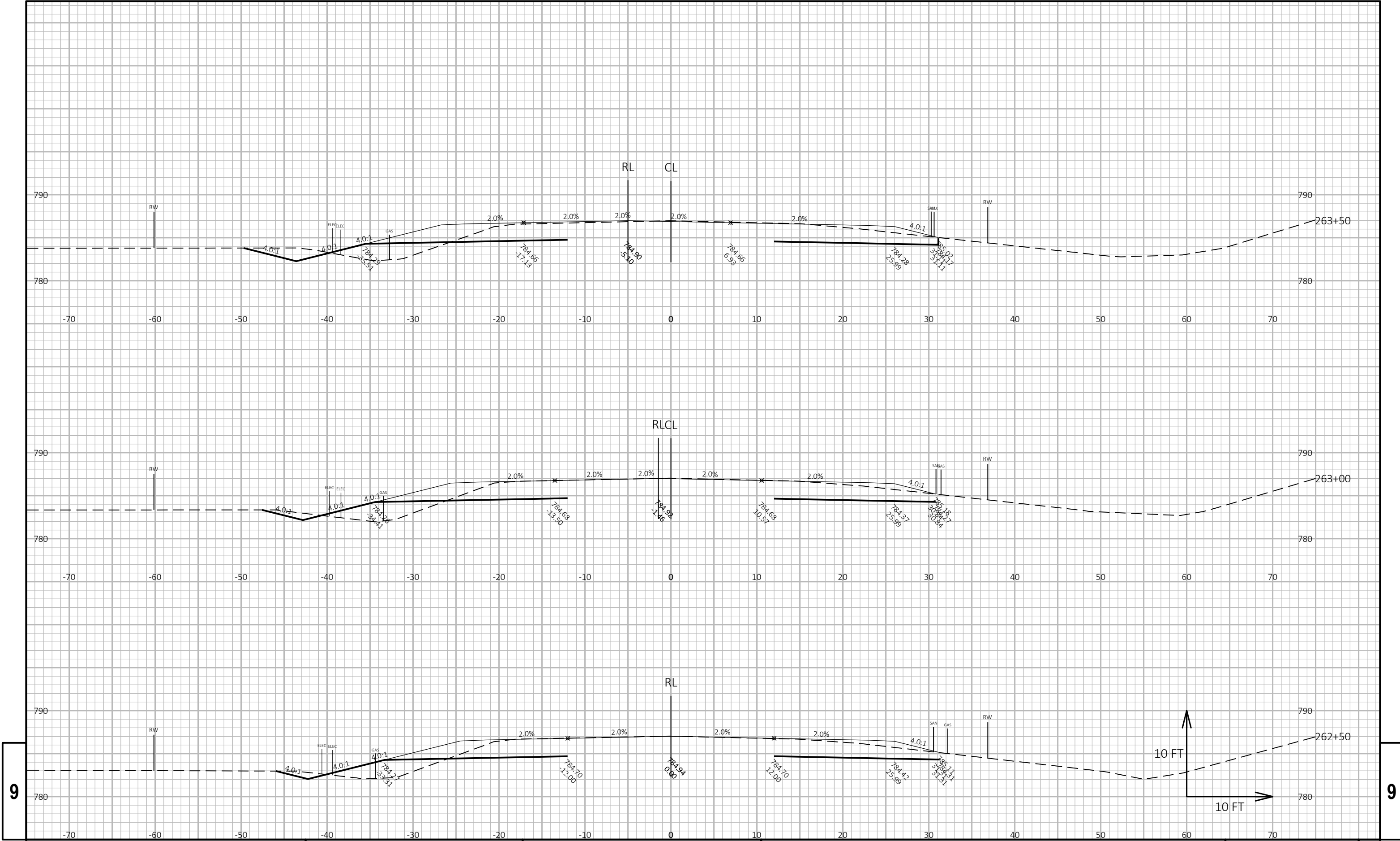
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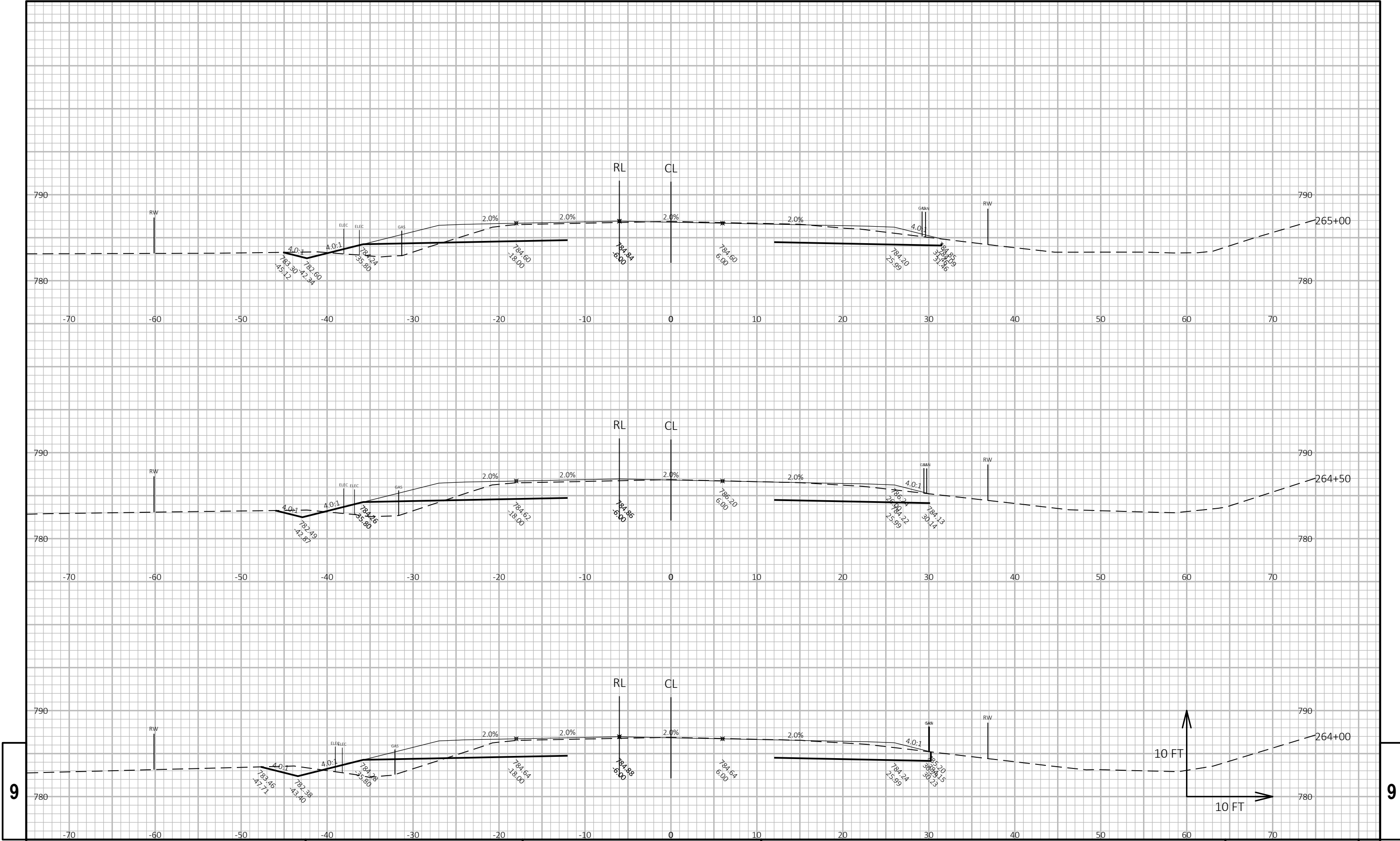
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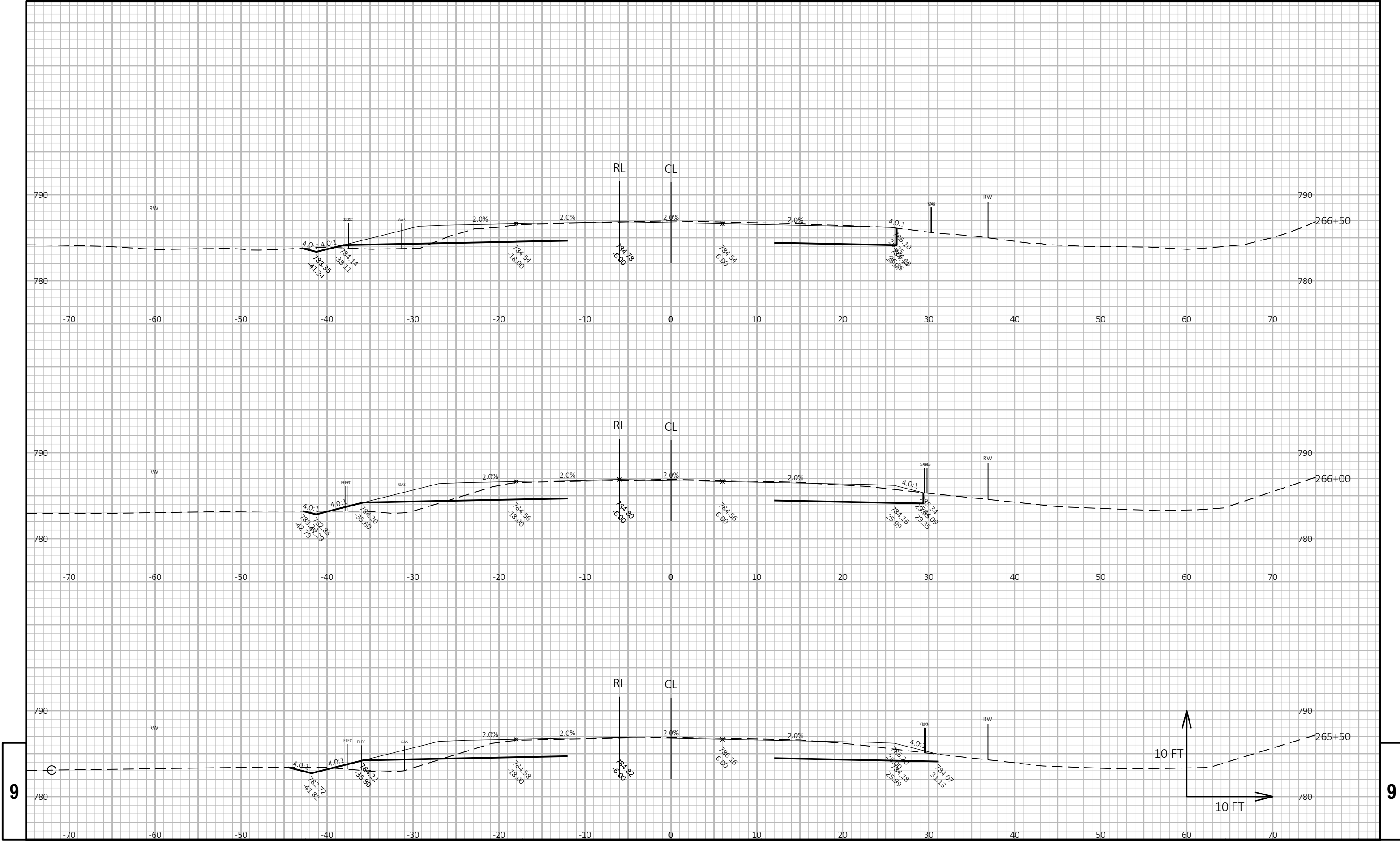
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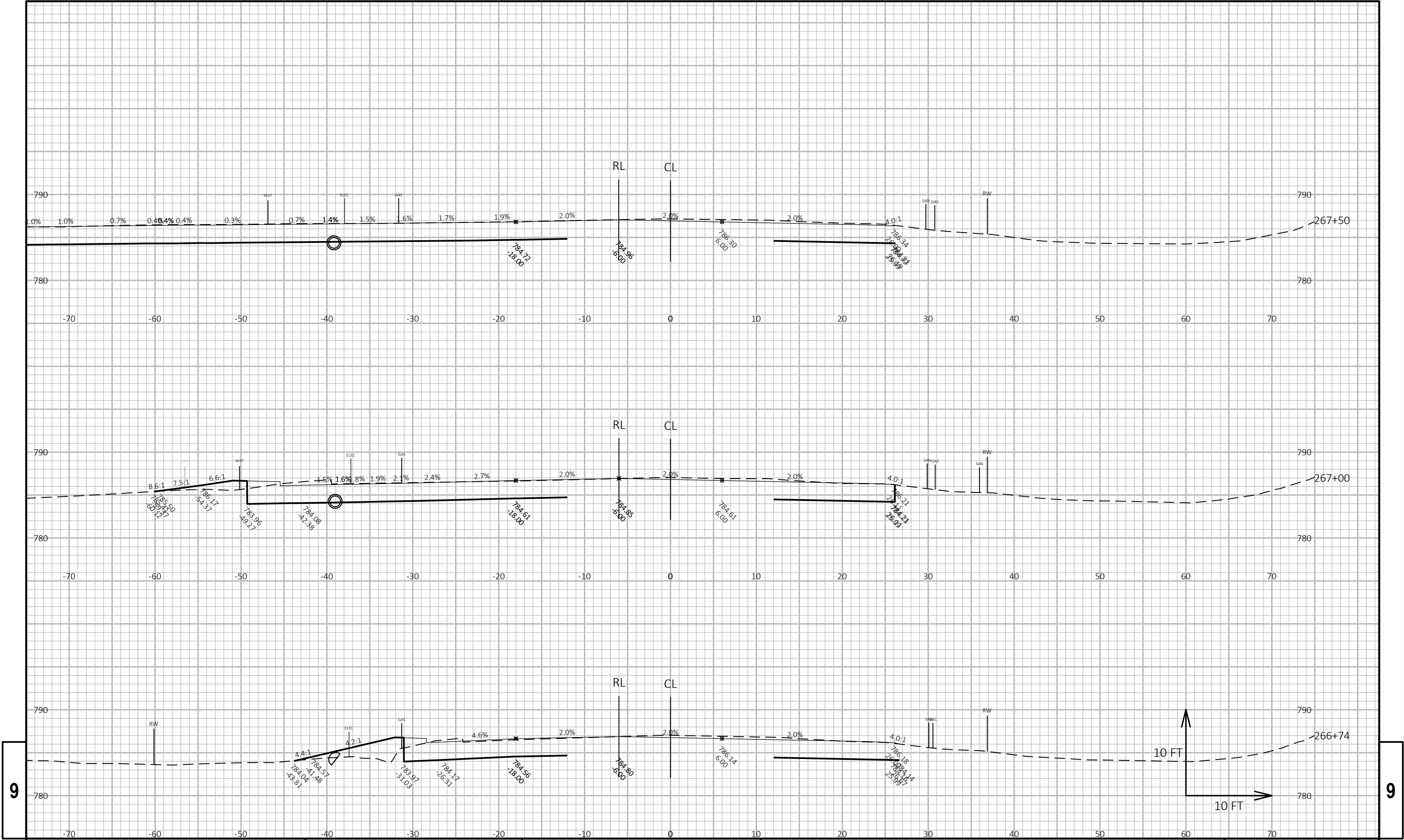




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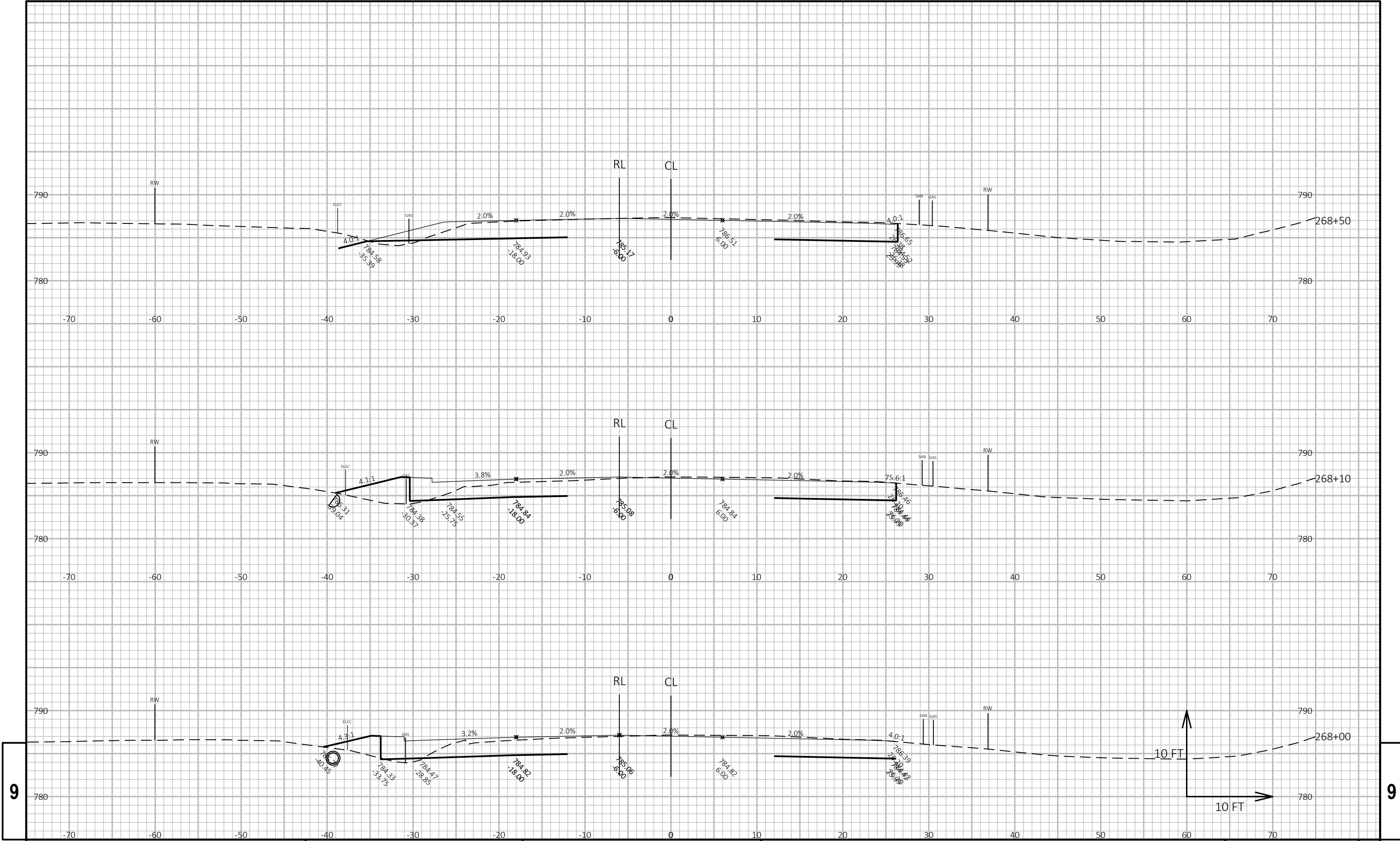


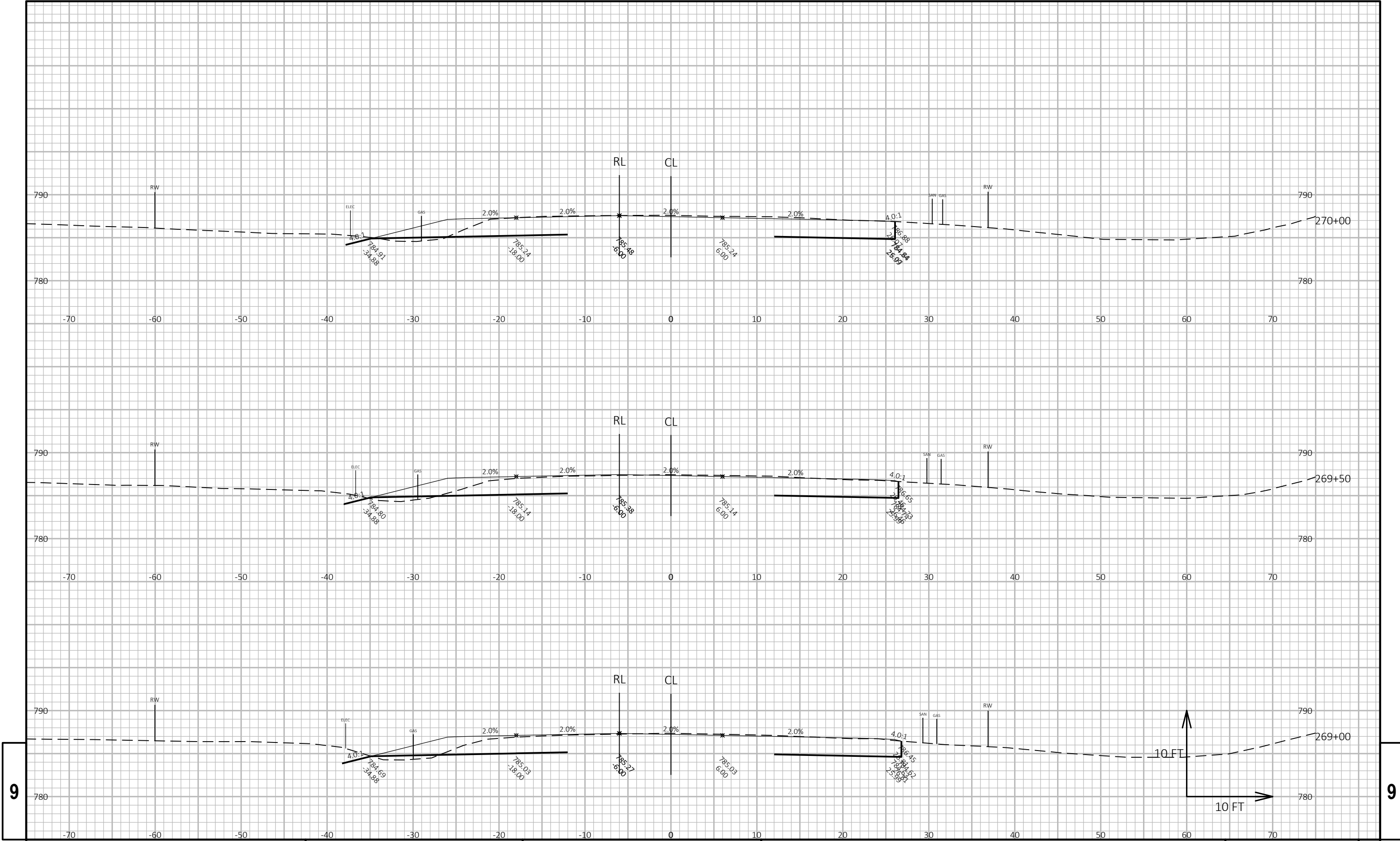


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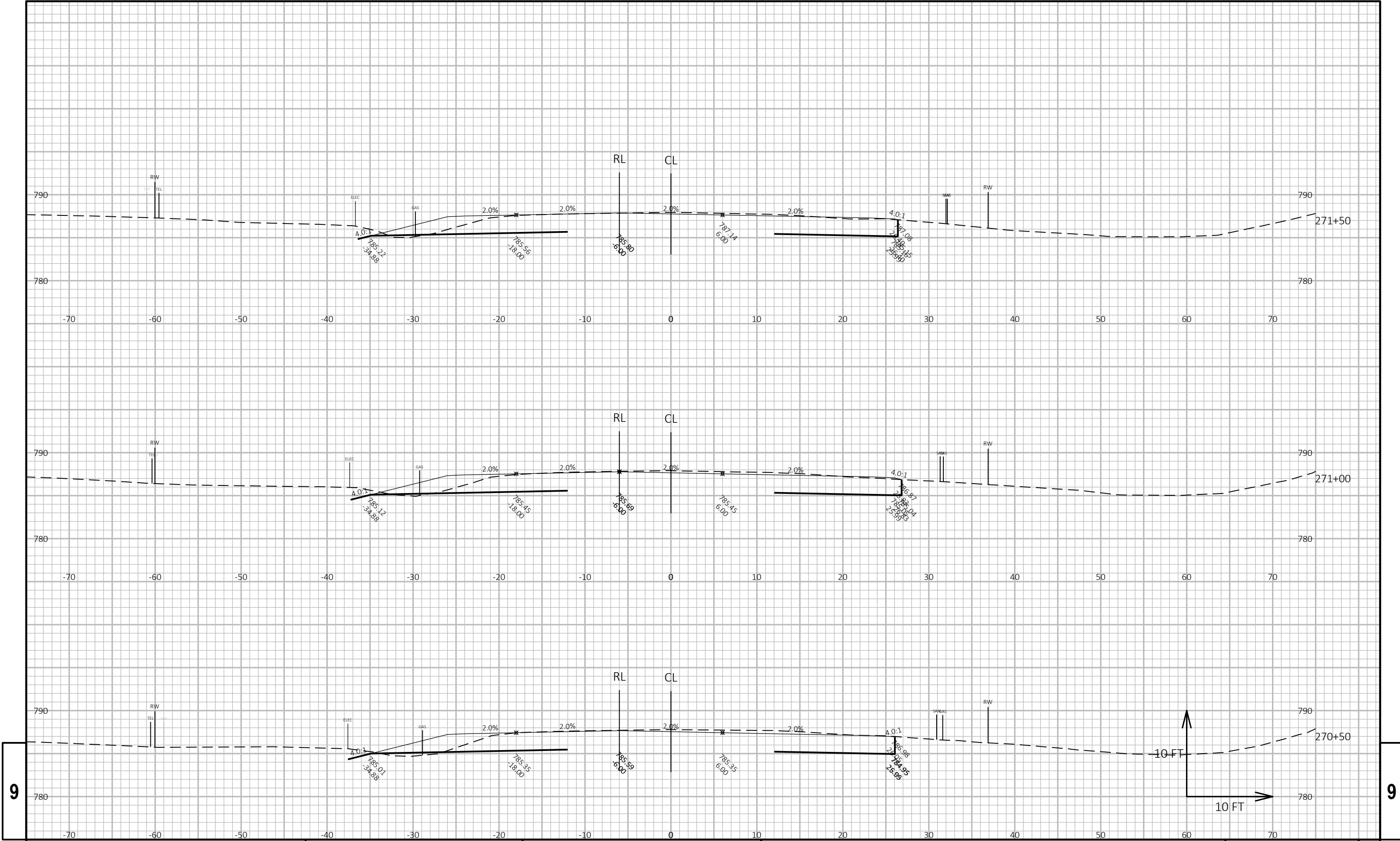
PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	CROSS SECTIONS: STH 32	SHEET	E
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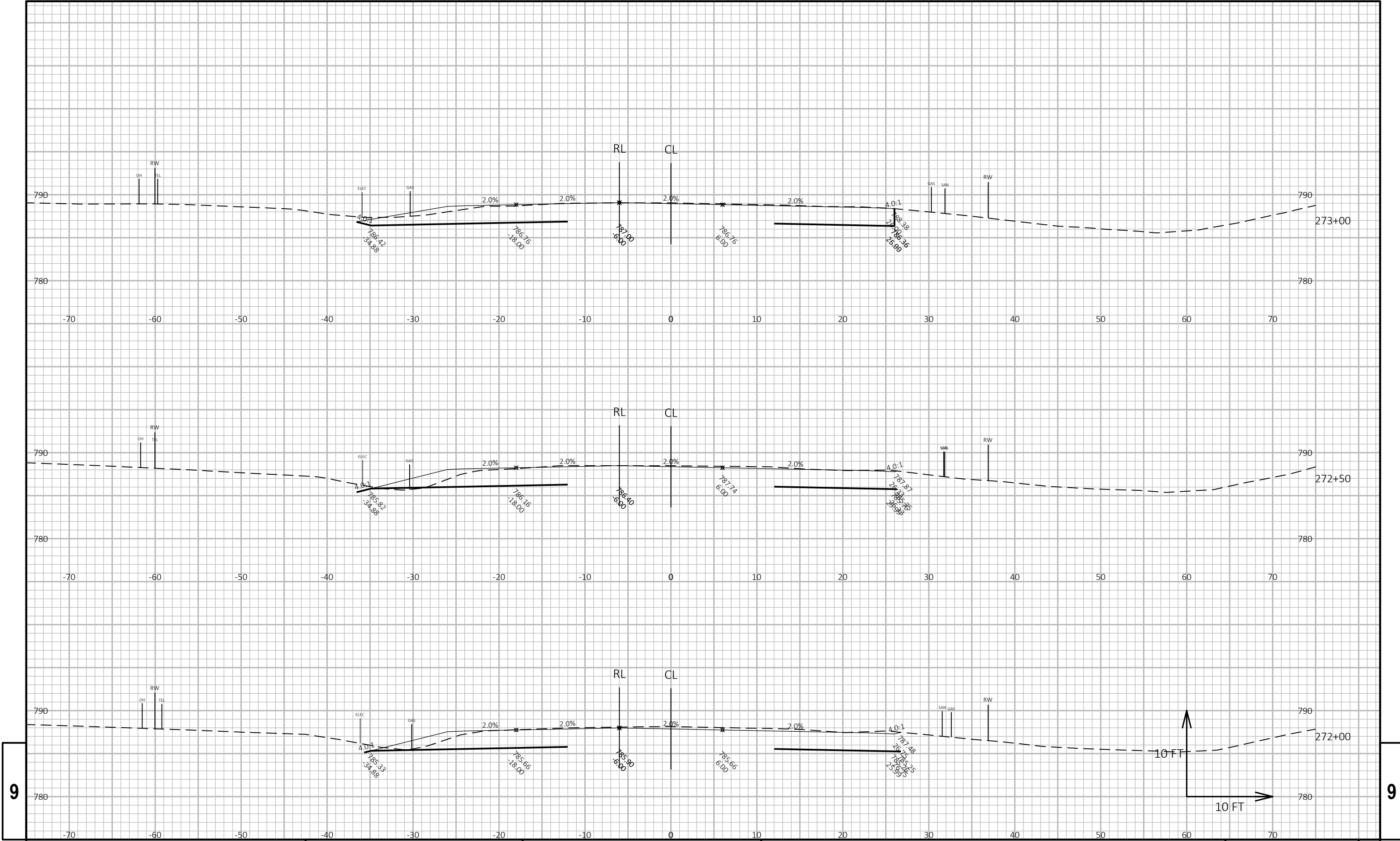
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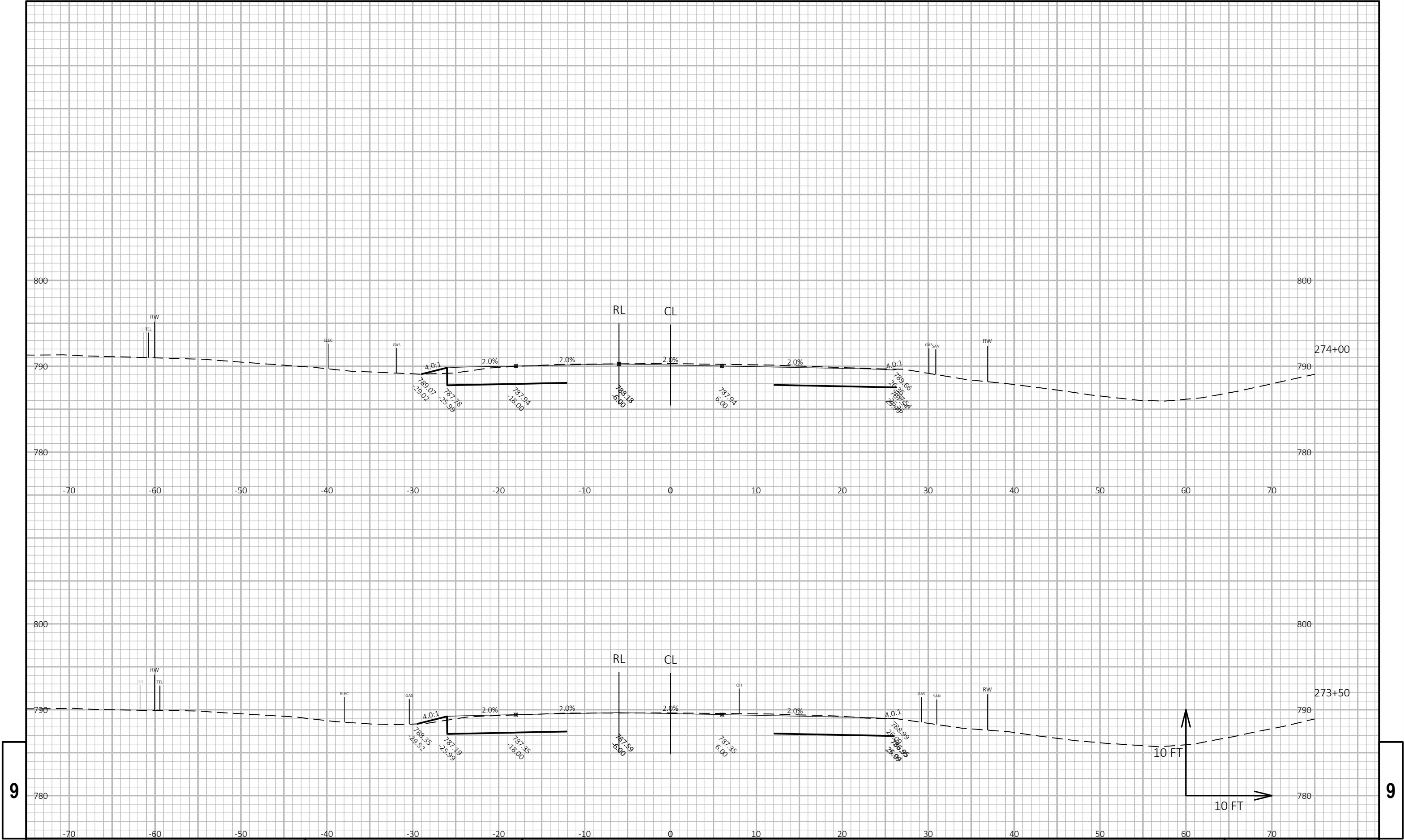
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9

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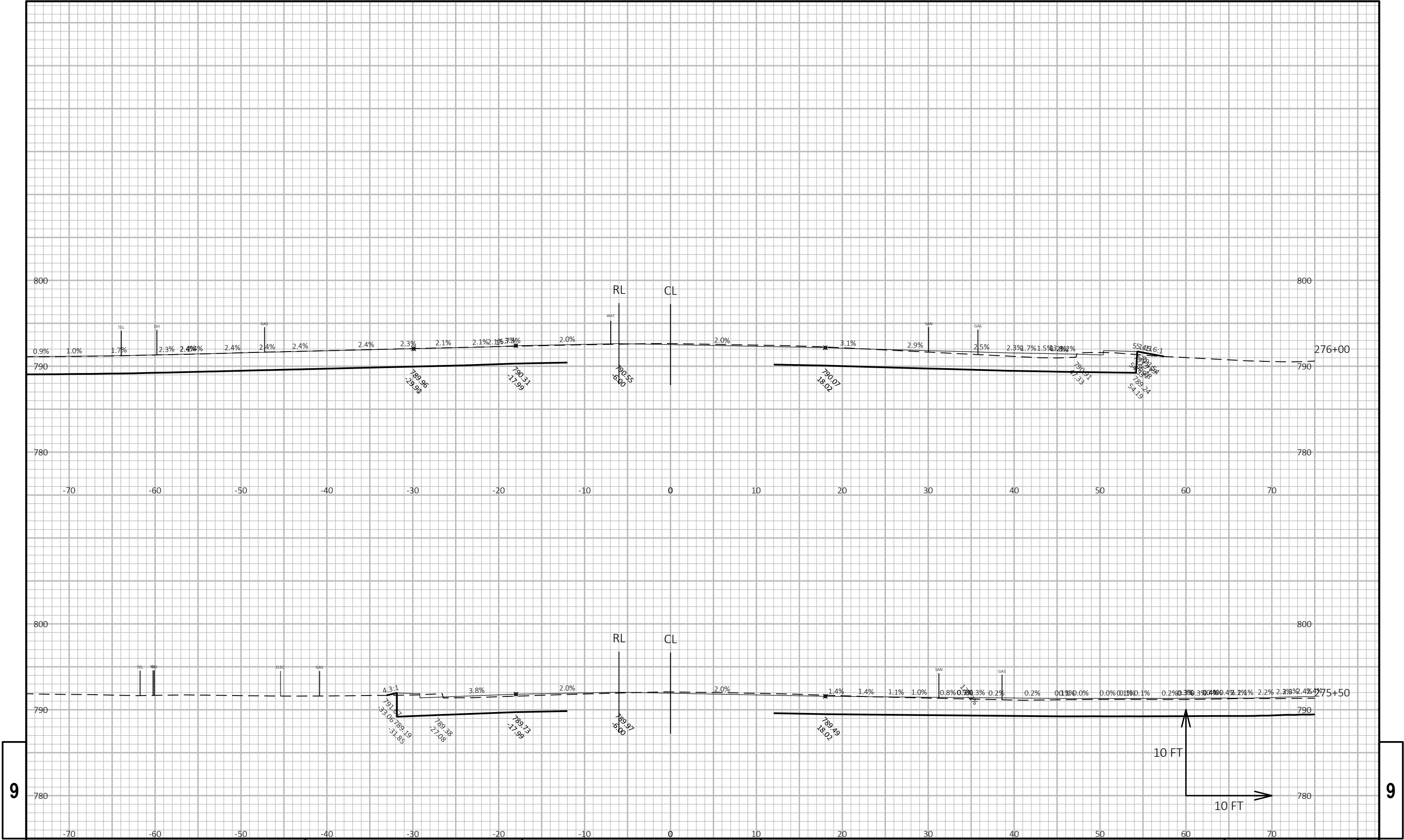




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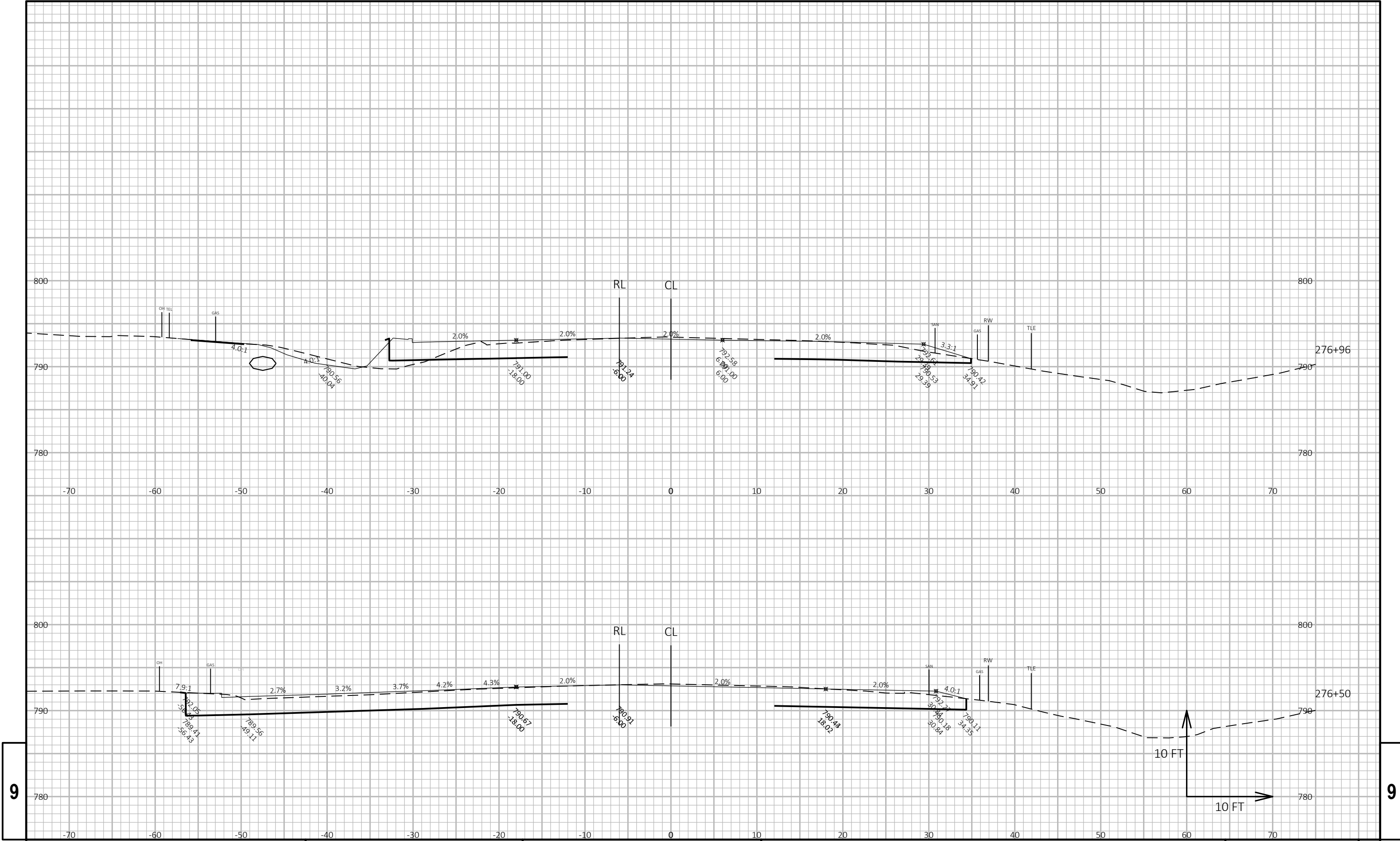
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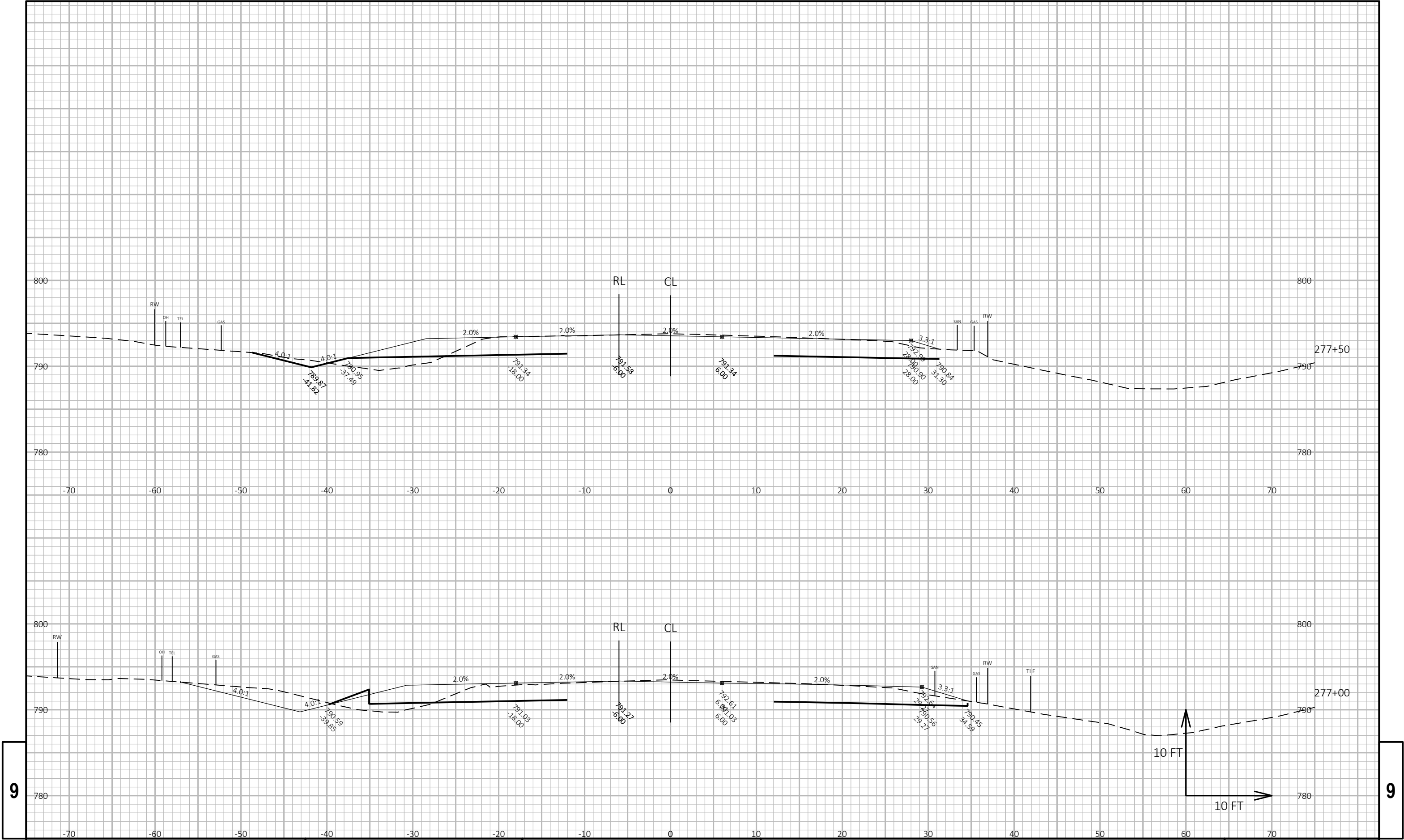
PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	CROSS SECTIONS: STH 32	SHEET	E
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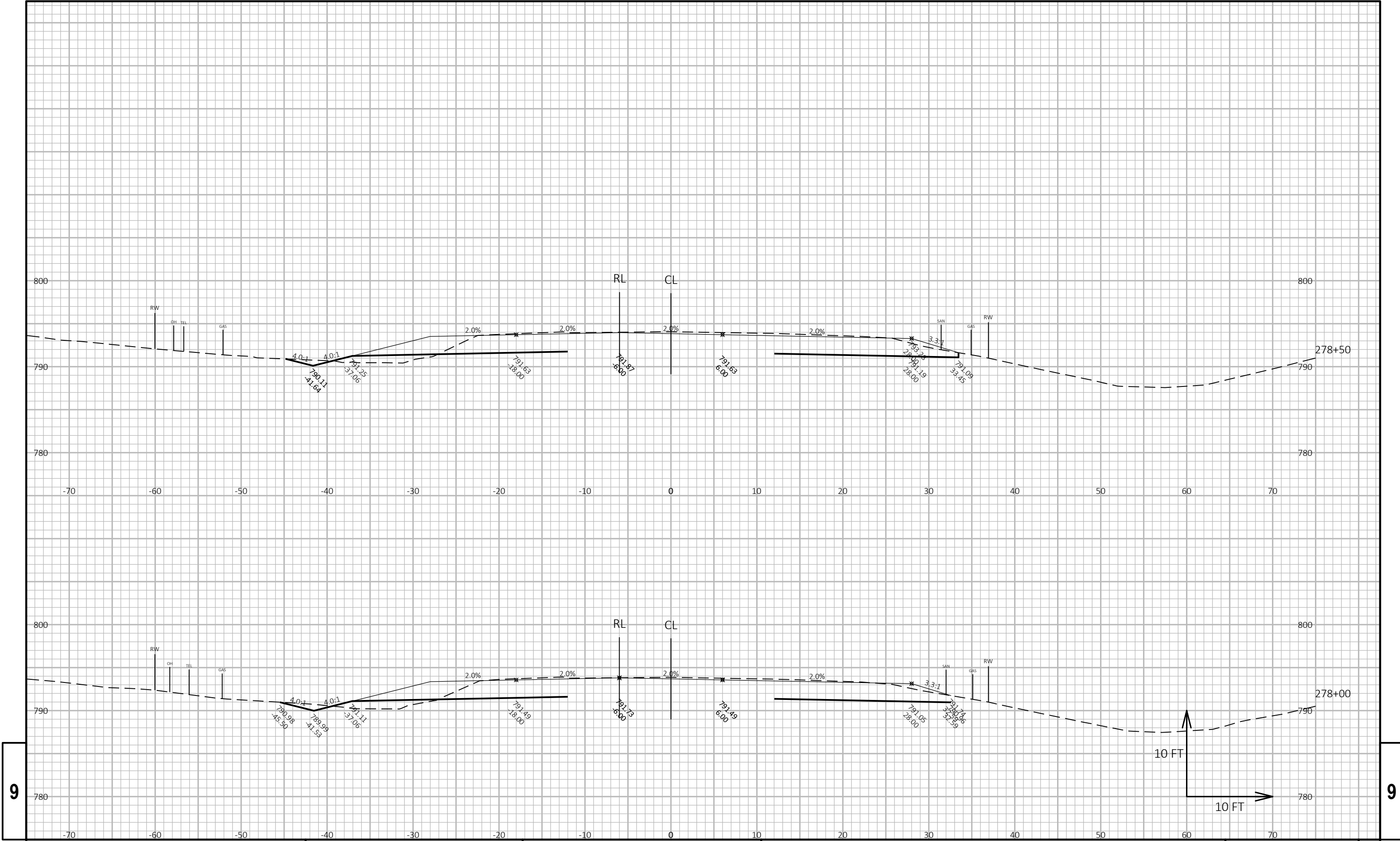


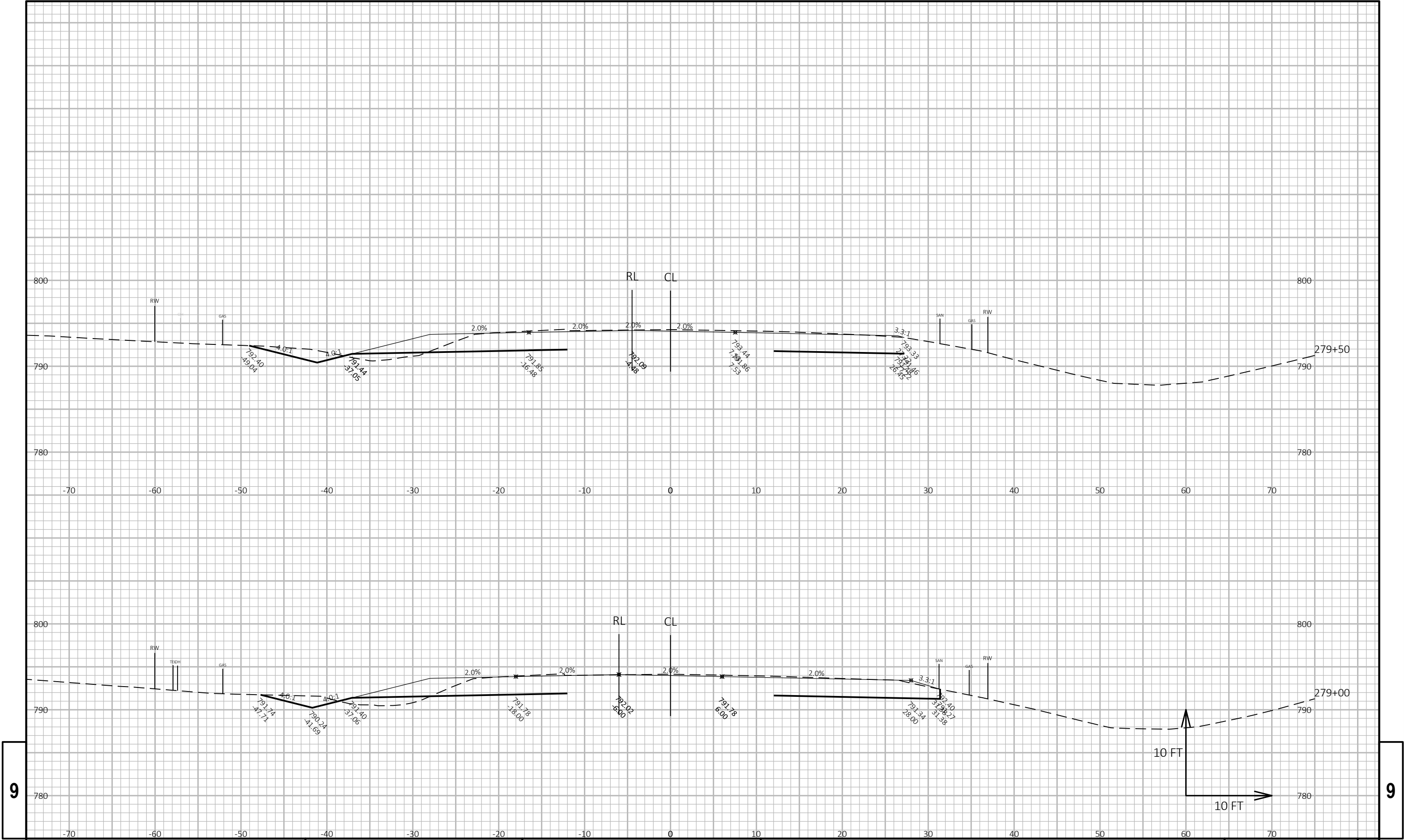
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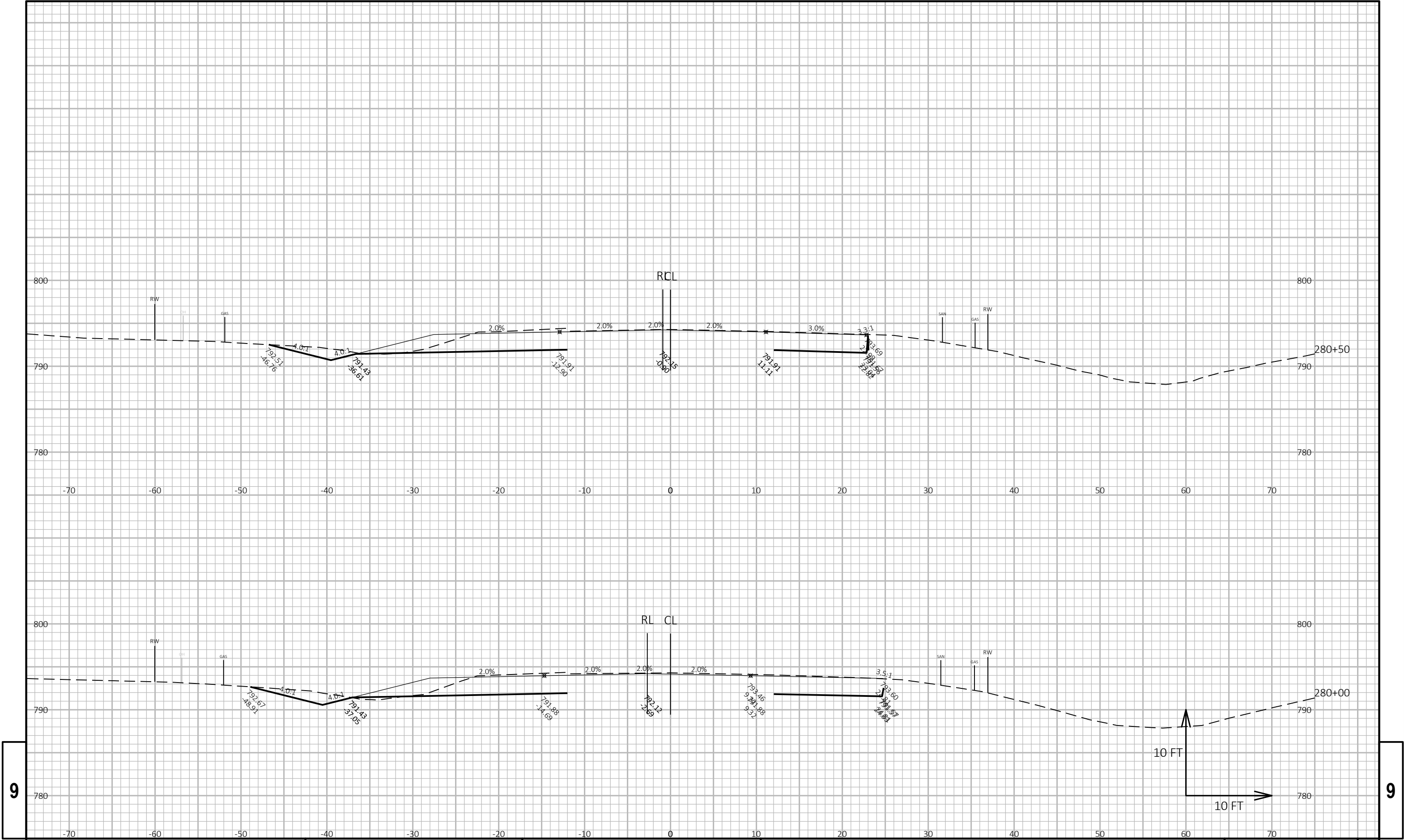






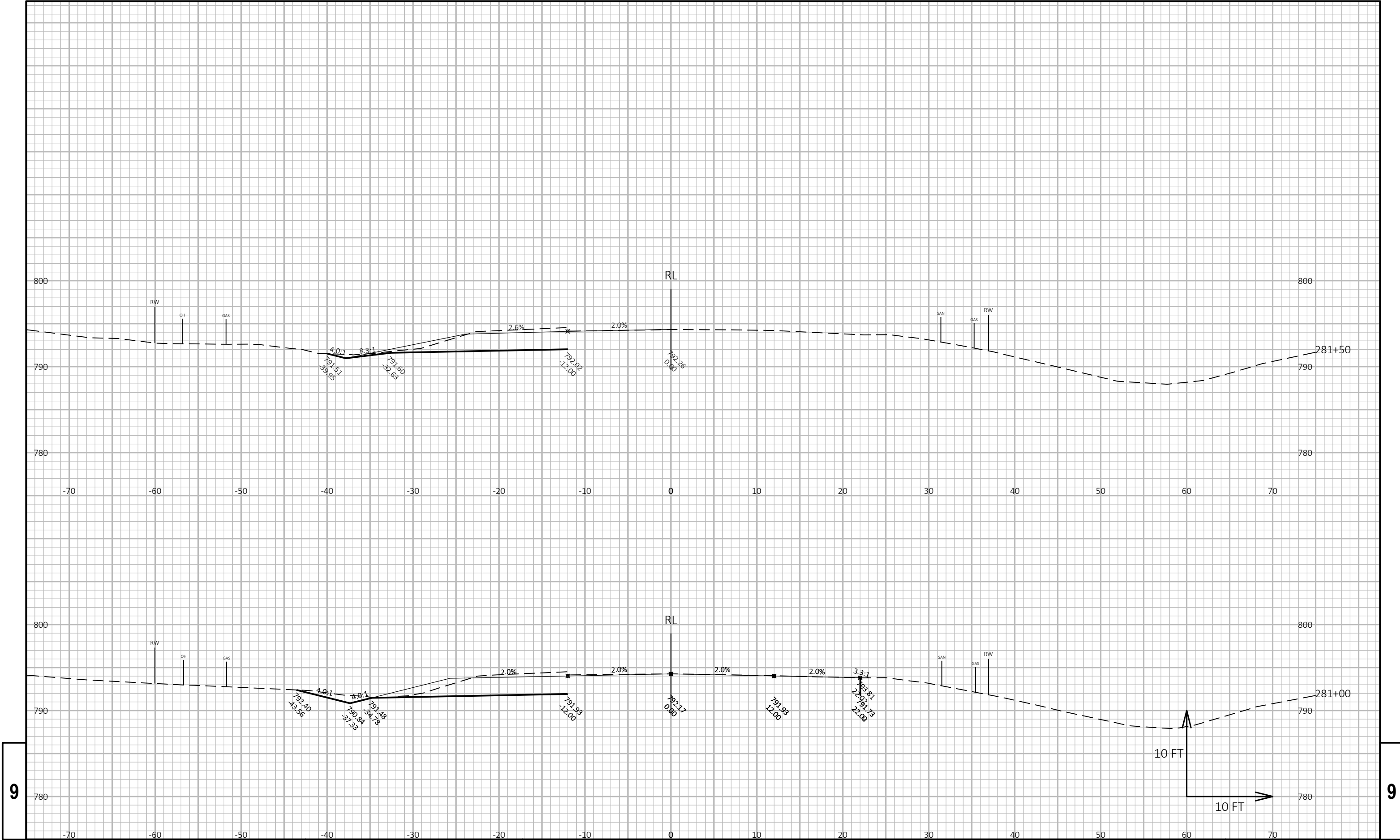
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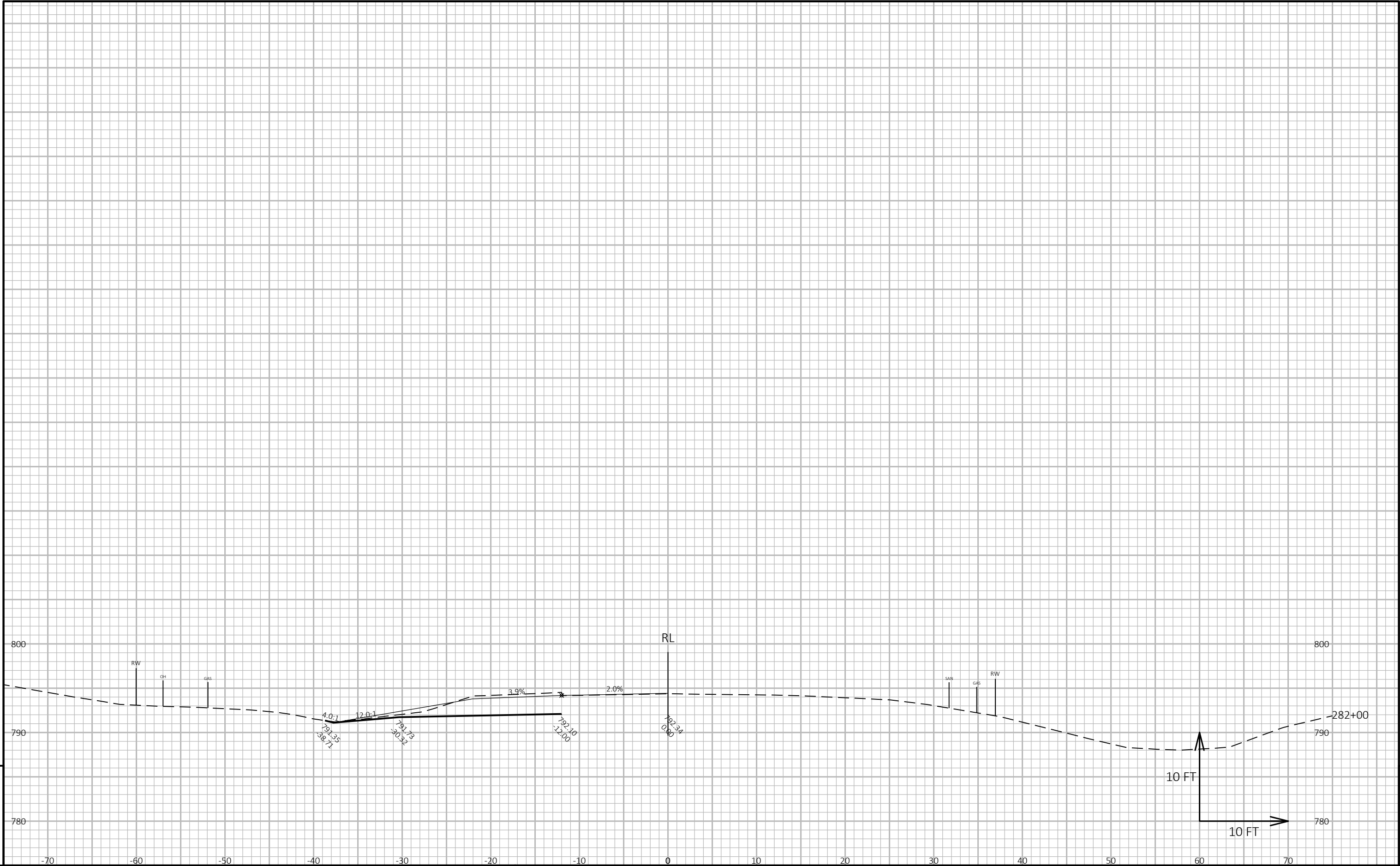


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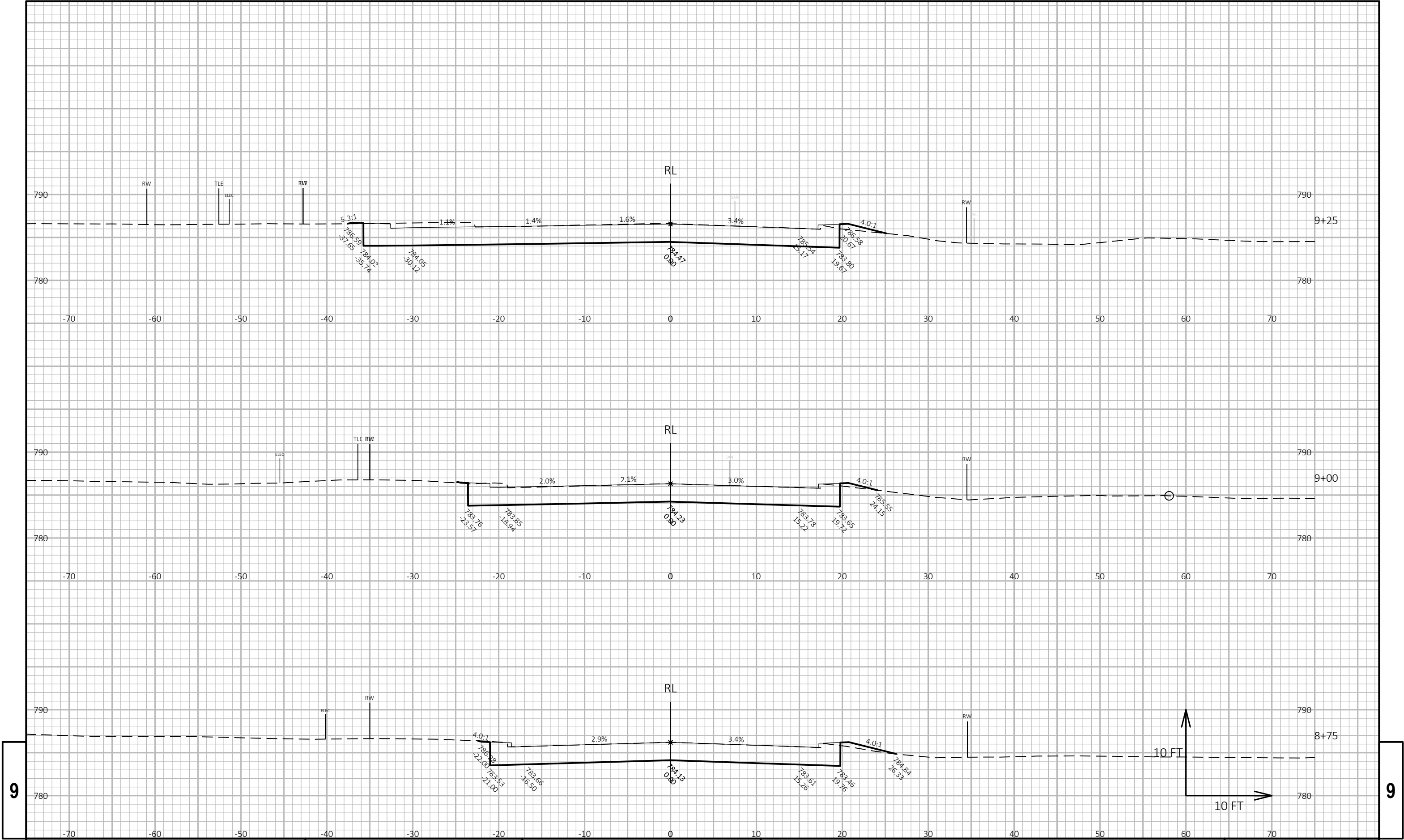


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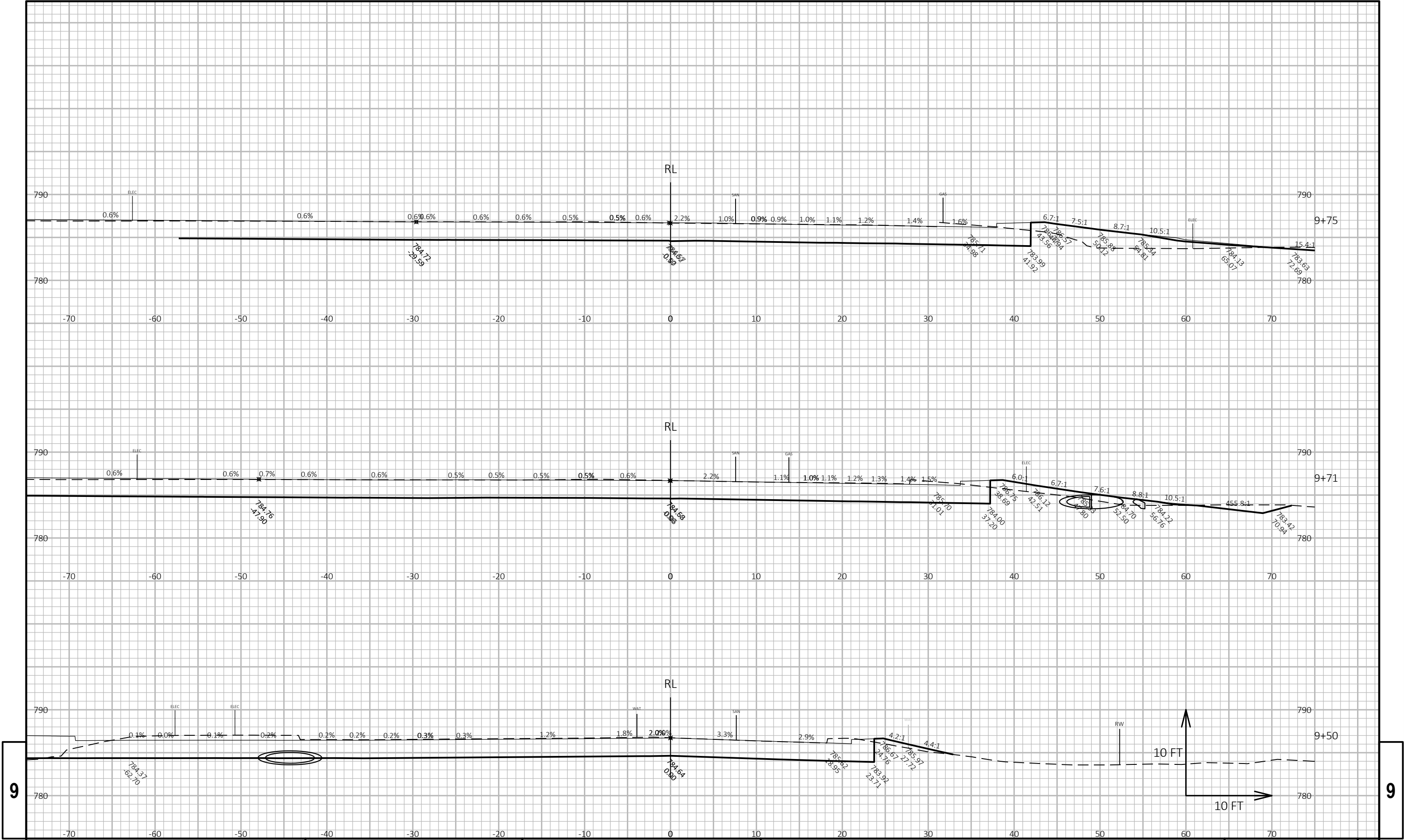
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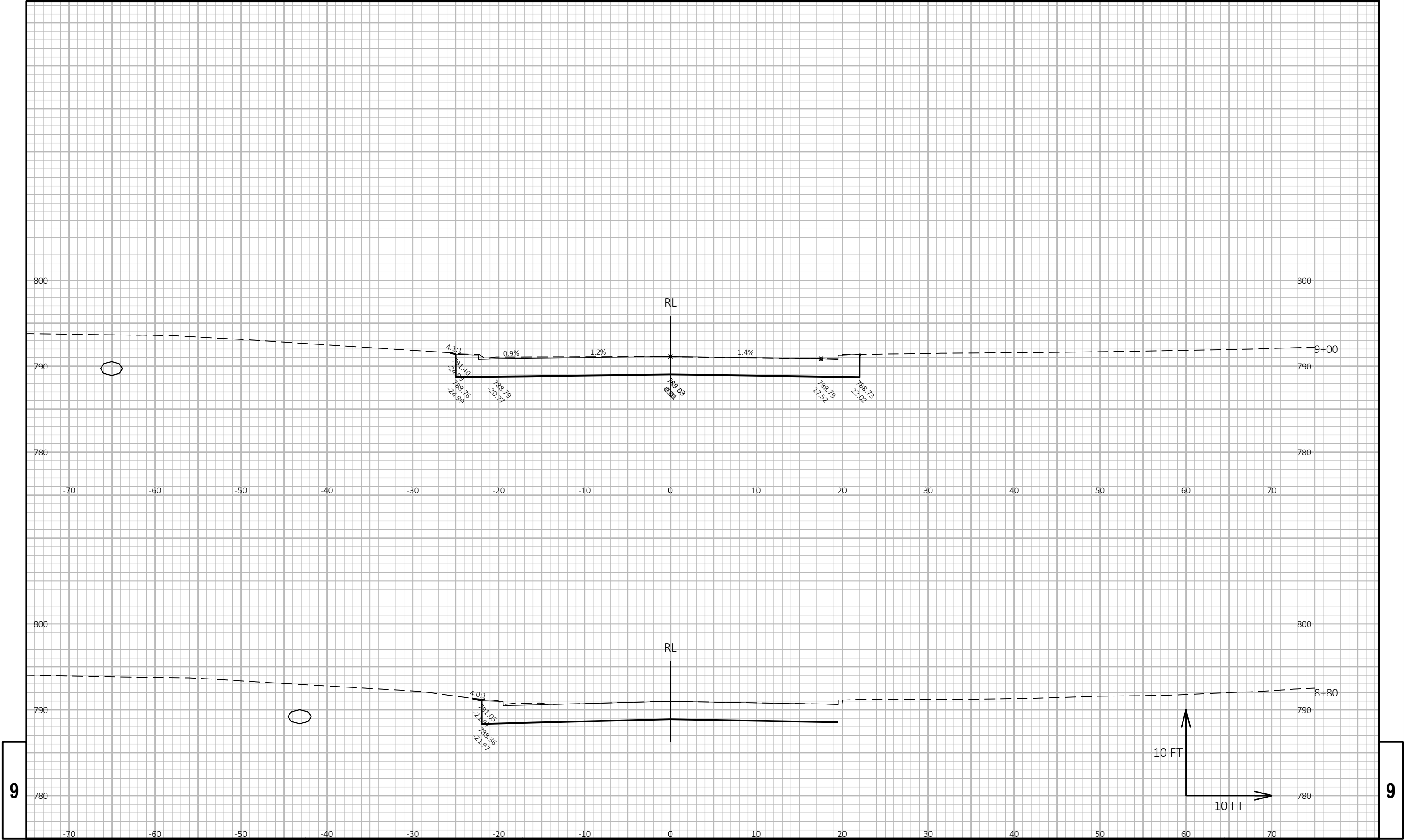


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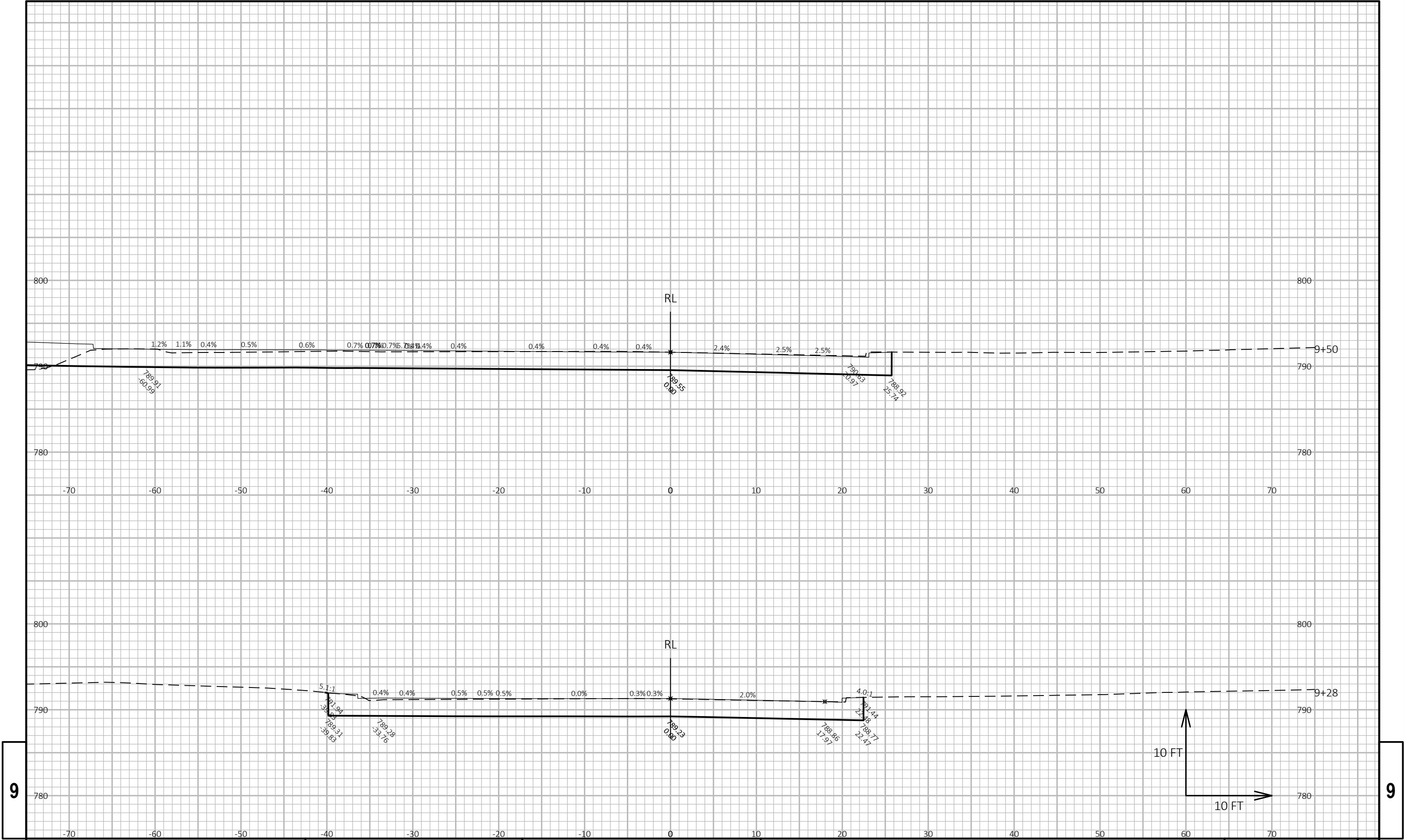
PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	CROSS SECTIONS: BLUE HERON DR	SHEET	E
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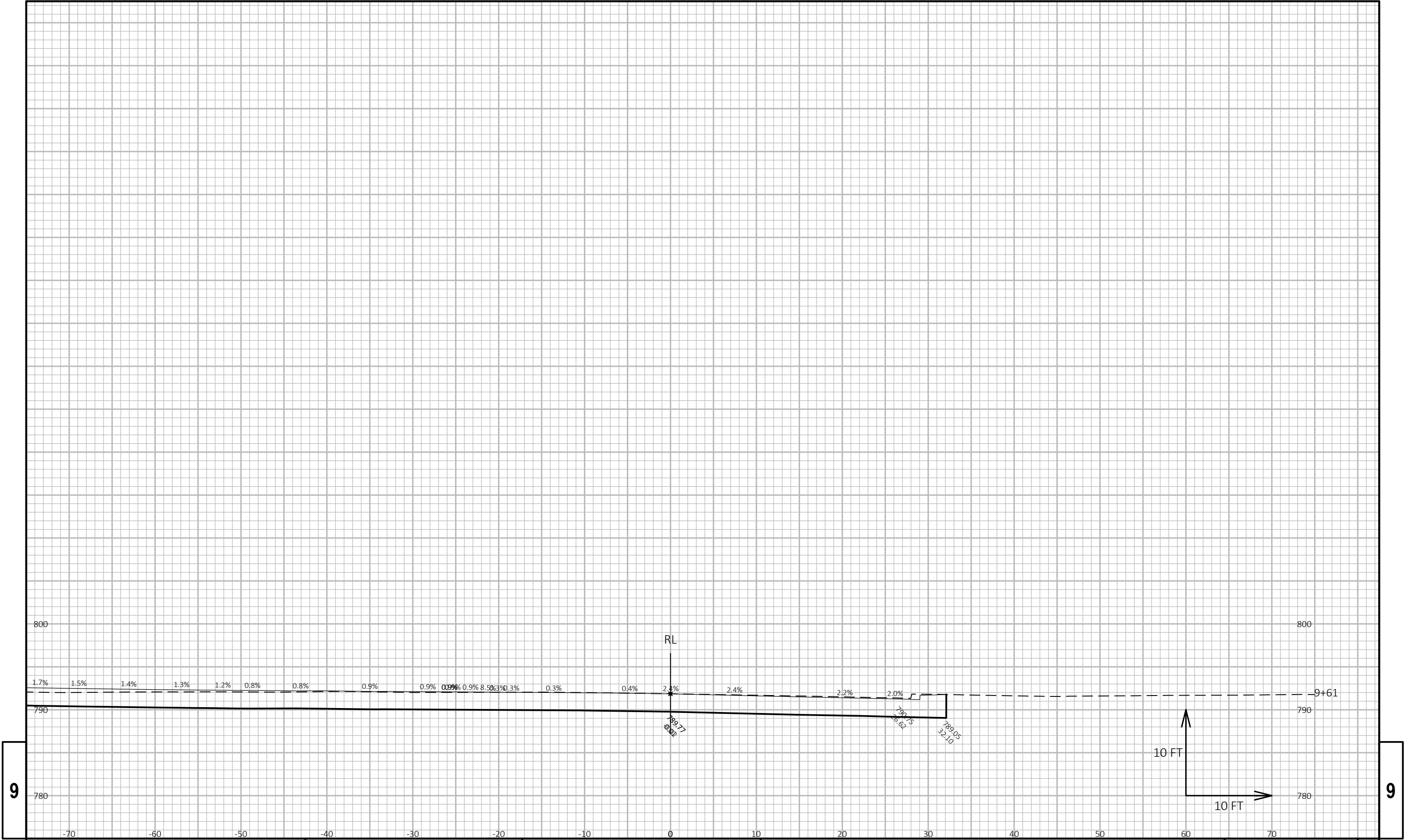
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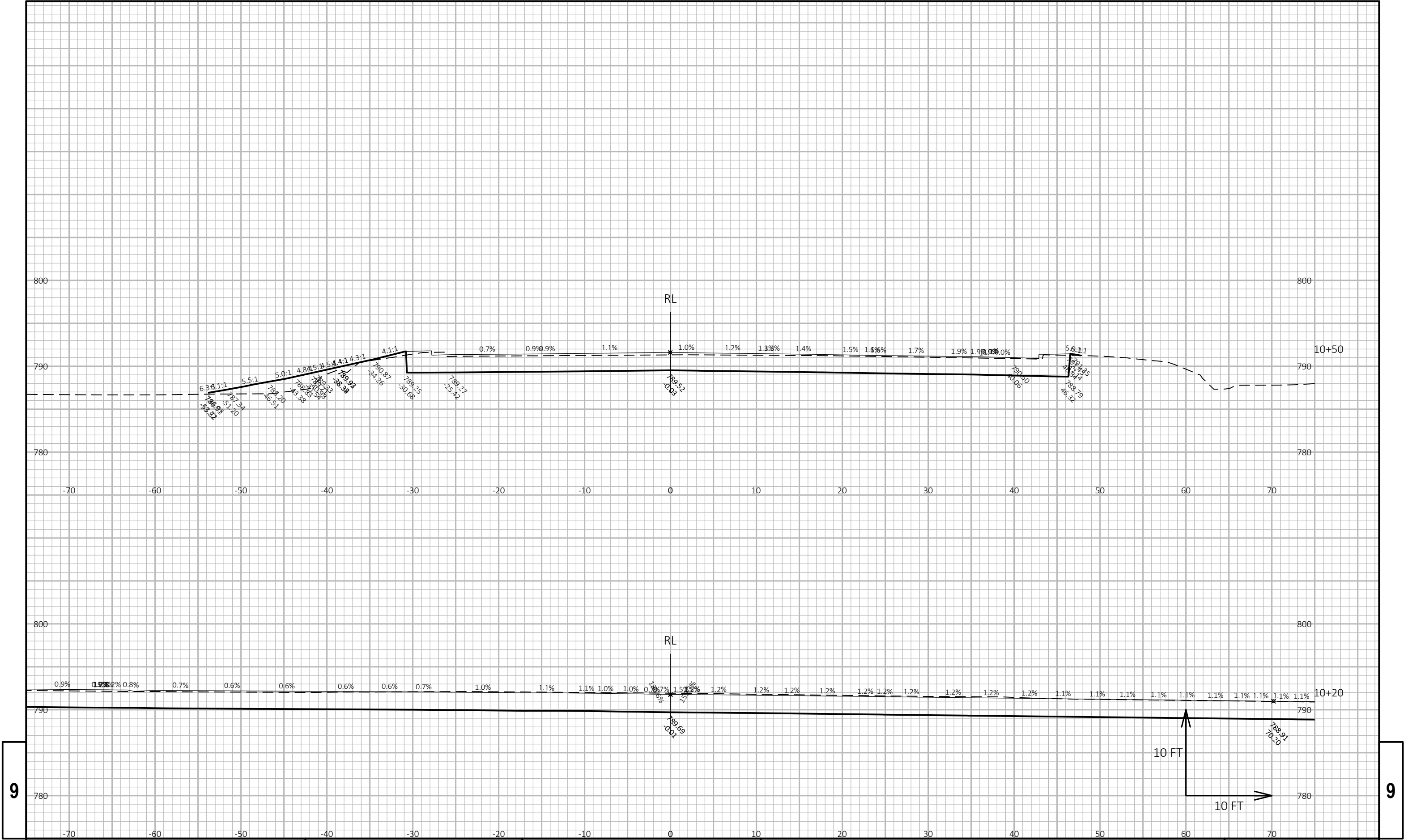
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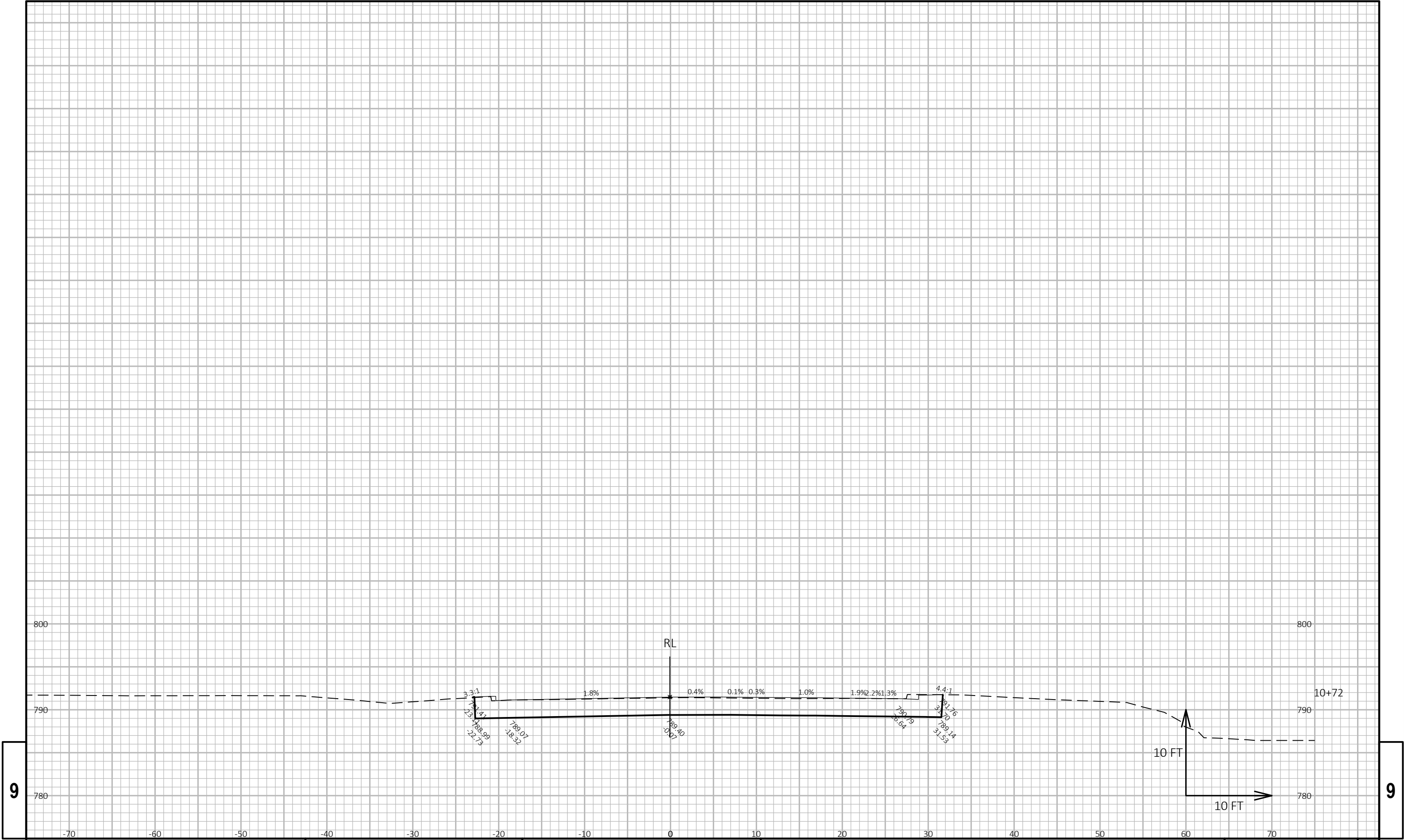
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PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	CROSS SECTIONS: GLENBROOK DR	SHEET	E
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PROJECT NO: 9190-20-71	HWY: STH 32	COUNTY: BROWN	CROSS SECTIONS: GLENBROOK DR	SHEET	E
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EPlans Preliminary Sheet Numbering Tool

This sheet: ftp://ftp.dot.state.wi.us/transp/roads/eplans/prelim_sheet_numbers.pdf

Notes

- Acrobat 5 or higher is required to use this tool.
- The Bureau of Highway Construction 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 (prelim_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