

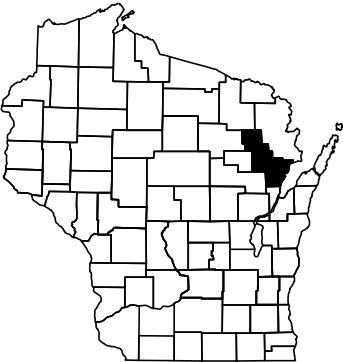
PROJECT ID: 9180-31-60
WITH: N/A

COUNTY: OCONTO

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 9180-31-60

A.A.D.T.	2020	=	4,200
A.A.D.T.	2040	=	5,000
D.H.V.		=	555
D.D.		=	60/40
T.		=	12.9 %
DESIGN SPEED		=	60 MPH
ESALS		=	1,300,000

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)	
<u>UTILITIES</u>	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

OCONTO FALLS - OCONTO

USH 141 - USH 41

STH 22

OCONTO COUNTY

STATE PROJECT NUMBER
9180-31-60

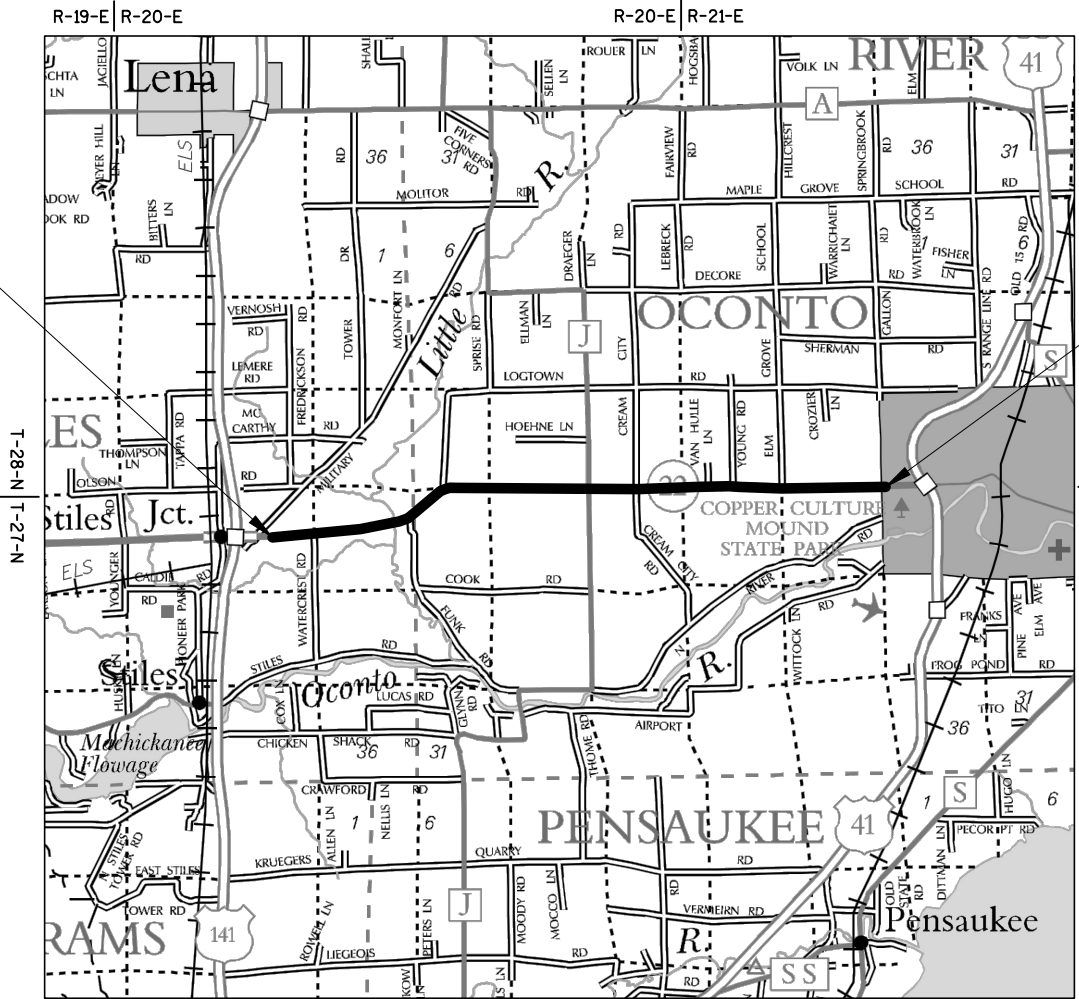
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9180-31-60		

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

Date: 06/28/2018

BEGIN PROJECT
STA 312+88.39
Y=178497.6694
X=566662.2355

END PROJECT
STA 668+22.82



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 6.730 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, OCONTO COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NATIONAL AMERICAN VERTICAL DATUM OF (2012) (NAVD88).

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WISDOT NE REGION
Designer	K. LORENZ
Project Manager	M. TERNES
Regional Examiner	
Regional Supervisor	D. 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.

PAVING LIMITS AT INTERSECTIONS ARE TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

UTILITIES

CENTURY LINK
KEVIN ZICKERT
224 INDUSTRIAL DRIVE
NORTH PRAIRIE, WI 53153
PHONE: 262-392-5200
EMAIL: KEVIN.ZICKERT@CENTURYLINK.COM

NET LEC, LLC
RICK VINCENT
450 SECURITY BLVD
P.O. BOX 19079
GREEN BAY, WI 54307-9079
PHONE: 920-617-7316
EMAIL: RICK.VINCENT@NSIGHT.COM

PACKERLAND BROADBAND
ANDREW HEIGL
105 KENT ST
P.O. BOX 190
IRON MOUNTAIN, MI 49801
PHONE: 906-221-7536
EMAIL: ANDY.HEIGL@PACKERLANDBROADBAND.COM

OCONTO ELECTRIC COOPERATIVE
JACK PARDY
7479 REA ROAD
OCONTO FALLS, WI 54154
PHONE: 920-846-2816
EMAIL: JPARDY@OCONTOELECTRIC.COM

ATC MANAGEMENT, INC.
ANTHONY MARCINIAK
W 234 N 2000 RIDGEVIEW PARKWAY CT
P.O. BOX 47
WAUKESHA, WI 53187-0047
PHONE: 262-506-6814
EMAIL: AMARCINIAK@ATCLLC.COM

WISCONSIN PUBLIC SERVICE CORPORATION -
ELECTRICITY/GAS/PETROLEUM
LORI BUTRY
700 N ADAMS ST
GREEN BAY, WI 54307-9001
PHONE: 920-433-1703
EMAIL: LABUTRY@INTEGRYSGROUP.COM

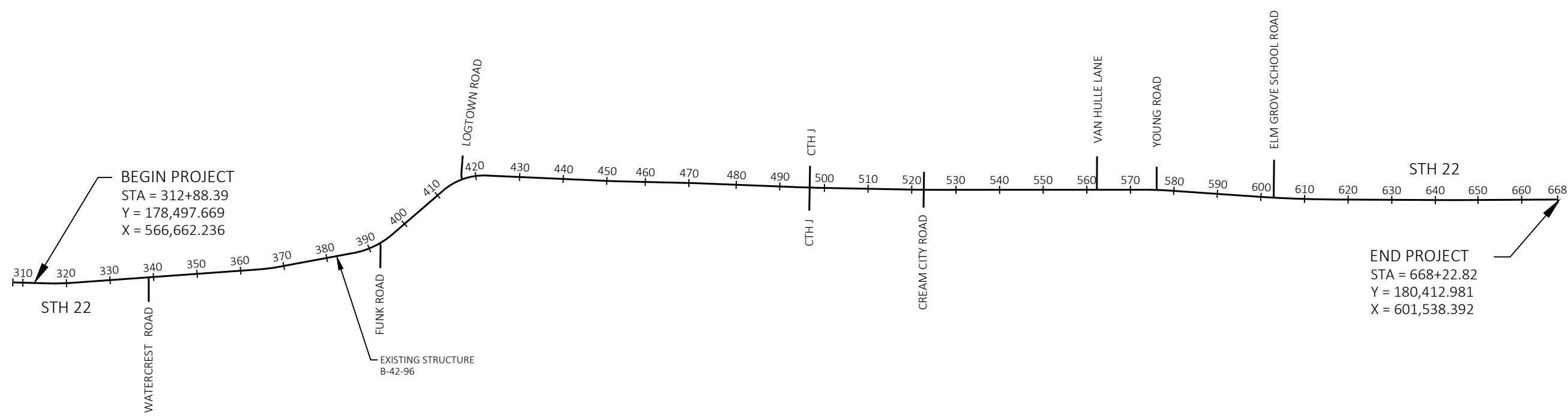
CITY OF OCONTO - SEWER/WATER
JEREMY WUSTERBARTH
1616 MAIN STREET
OCONTO, WI 54153
PHONE: 920-834-7725
EMAIL: JEREMY@CITYOFOCONTO.COM

DNR AREA LIASON
CONTACT: JIM DOPERALSKI
DEPARTMENT OF NATURAL RESOURCES
NORTHEAST REGION
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
PHONE: 920-412-0165
EMAIL: JAMES.DOPERALSKI@WISCONSIN.GOV

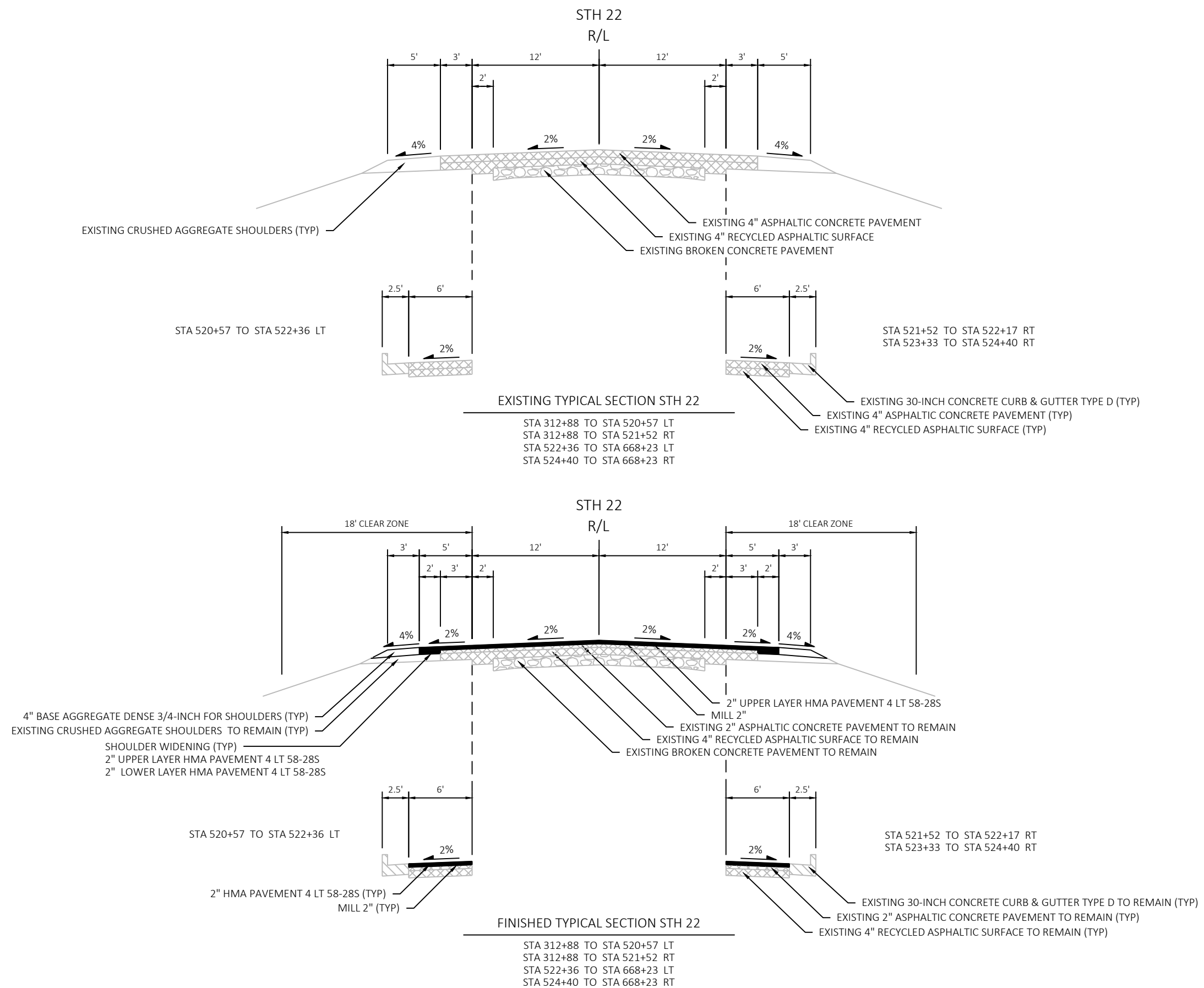
COUNTY SURVEYOR OR SURVEYS CONTACT PERSON
CONTACT: CORMAC MCINNIS
NORTHEAST REGIONAL SURVEY COORDINATOR
GREEN BAY, WI 54304
PHONE: 920-492-5638
EMAIL: CORMAC.MCINNIS@DOT.WI.GOV

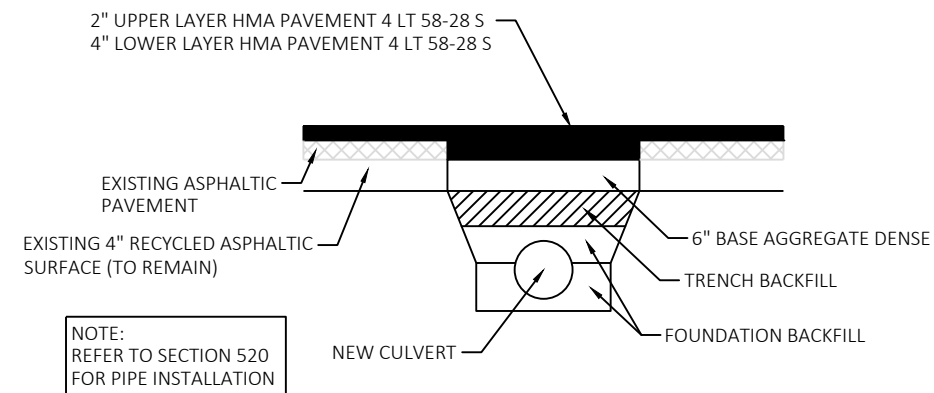
WISDOT CONTACT PERSON
CONTACT: MATTHEW TERNES, P.E.
NORTHEAST REGION PROJECT MANAGER
944 VANDERPERREN WAY
GREEN BAY, WI 54304
PHONE: 920-366-3028
EMAIL: MATTHEW.TERNES@DOT.WI.GOV



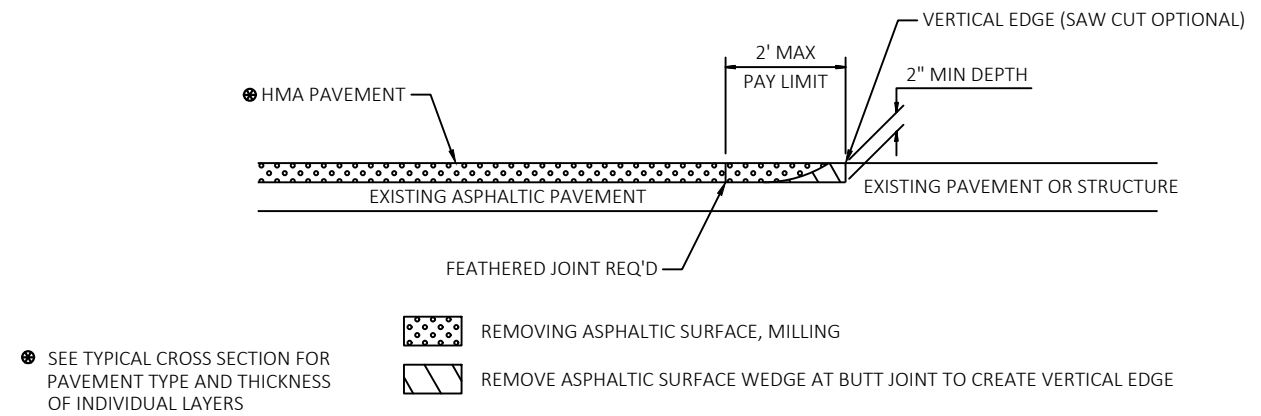


PROJECT NO: 9180-31-60	HWY: STH 22	COUNTY: OCONTO	PROJECT OVERVIEW	SHEET	E
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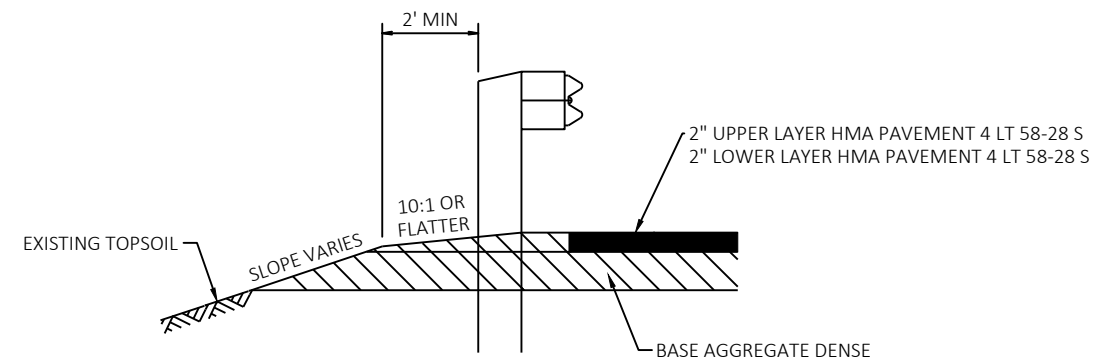




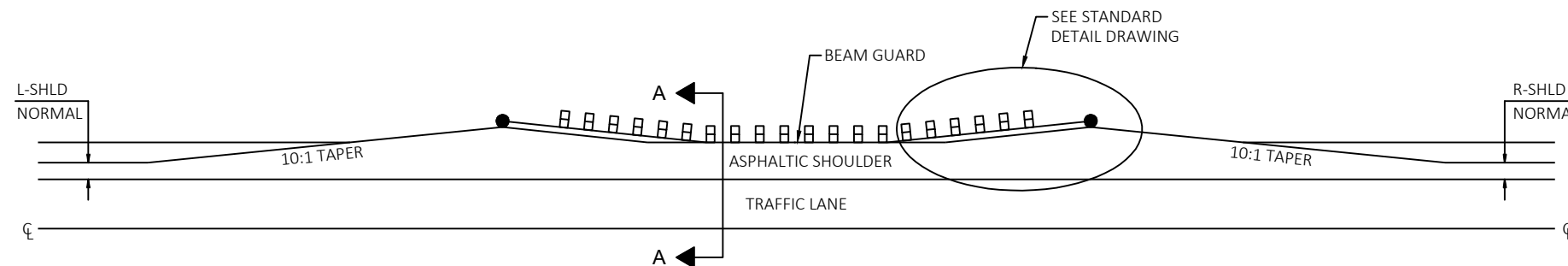
PAVEMENT AT CULVERT REPLACEMENTS



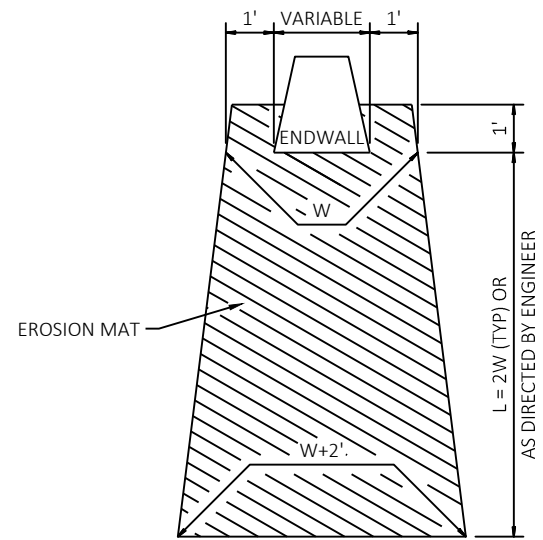
BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



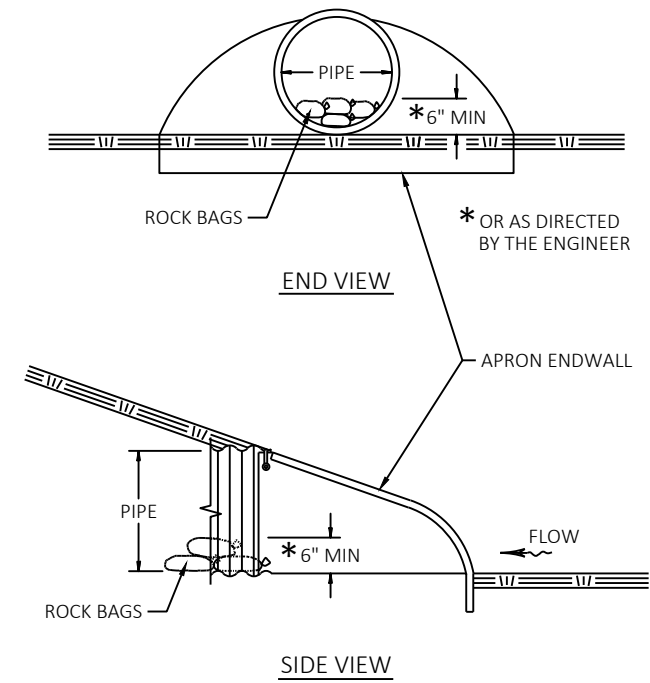
SECTION A-A



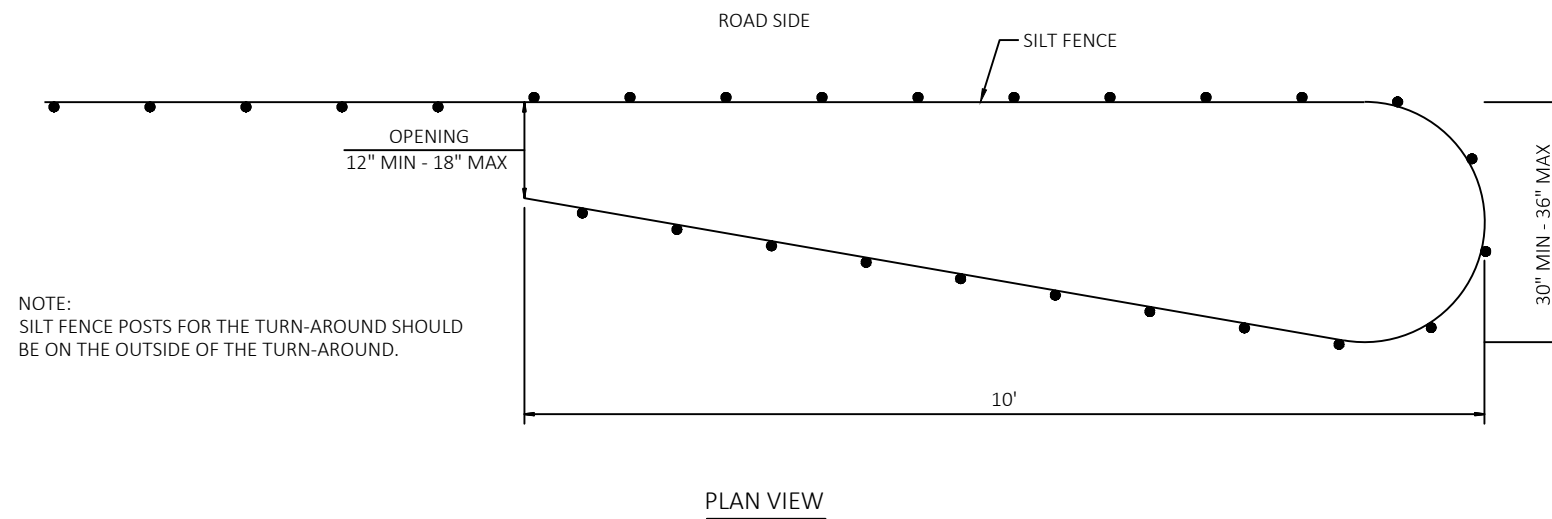
DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD



EROSION MAT TREATMENT AT CULVERTS



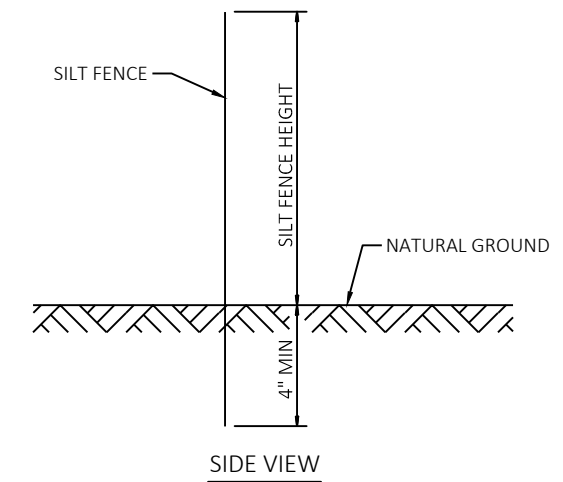
CULVERT PIPE CHECKS



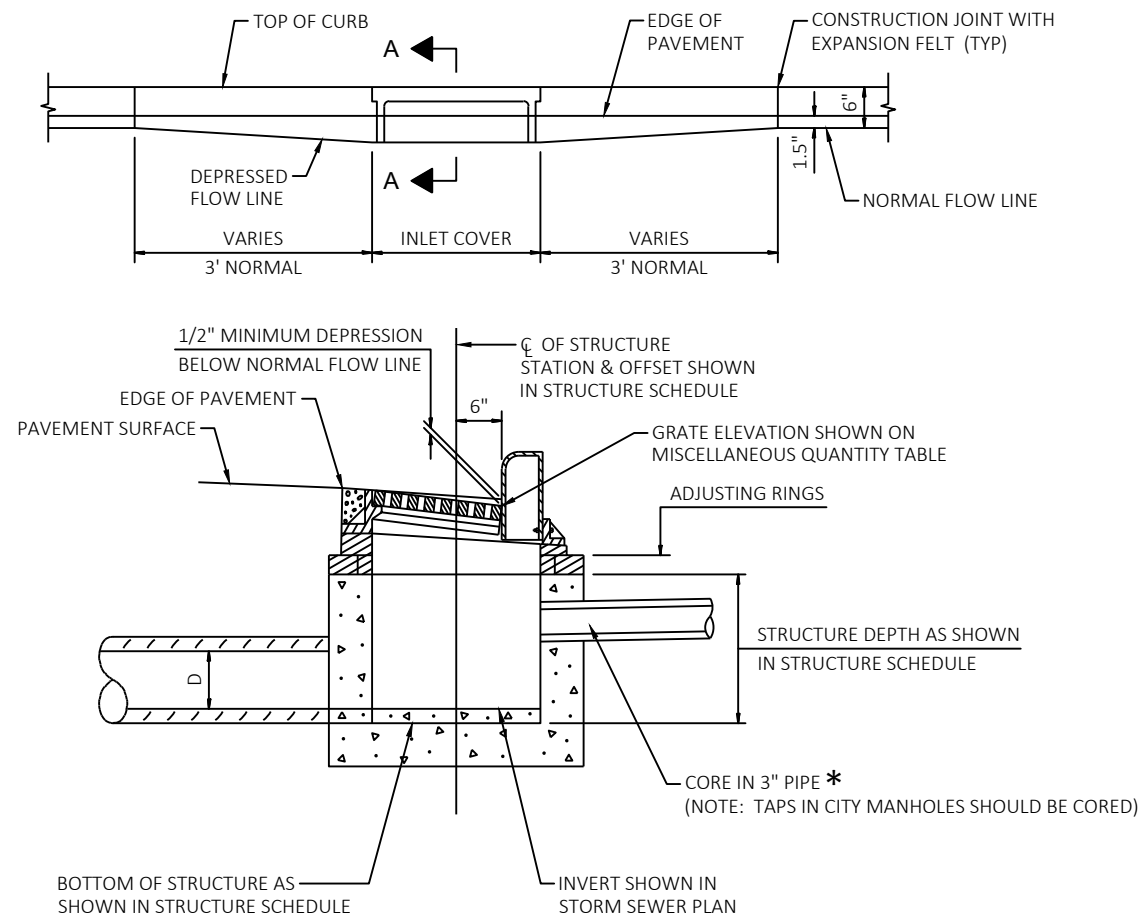
NOTE:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD
BE ON THE OUTSIDE OF THE TURN-AROUND.

PLAN VIEW

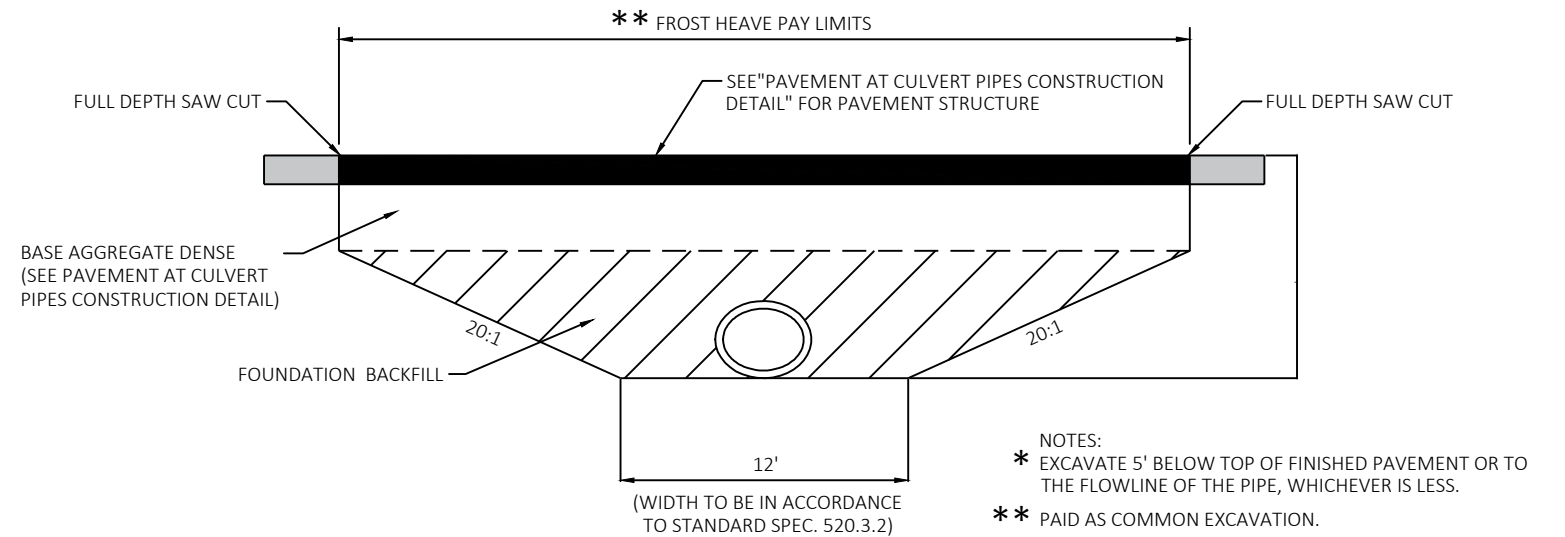
SILT FENCE TURN-AROUND DETAIL



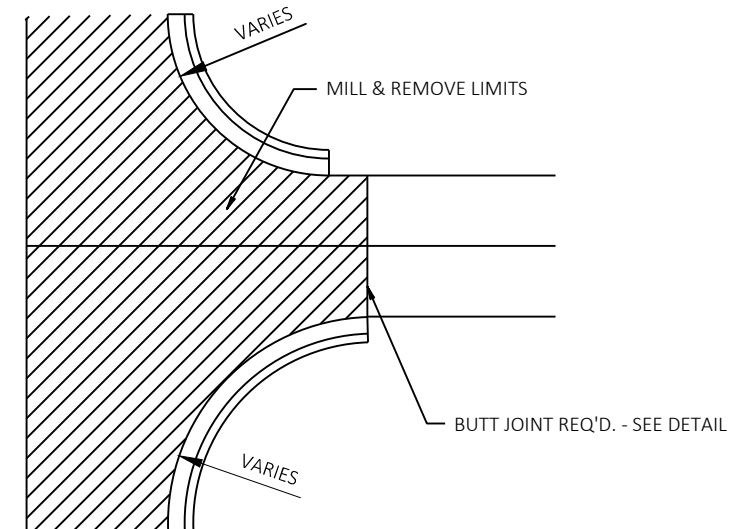
SIDE VIEW



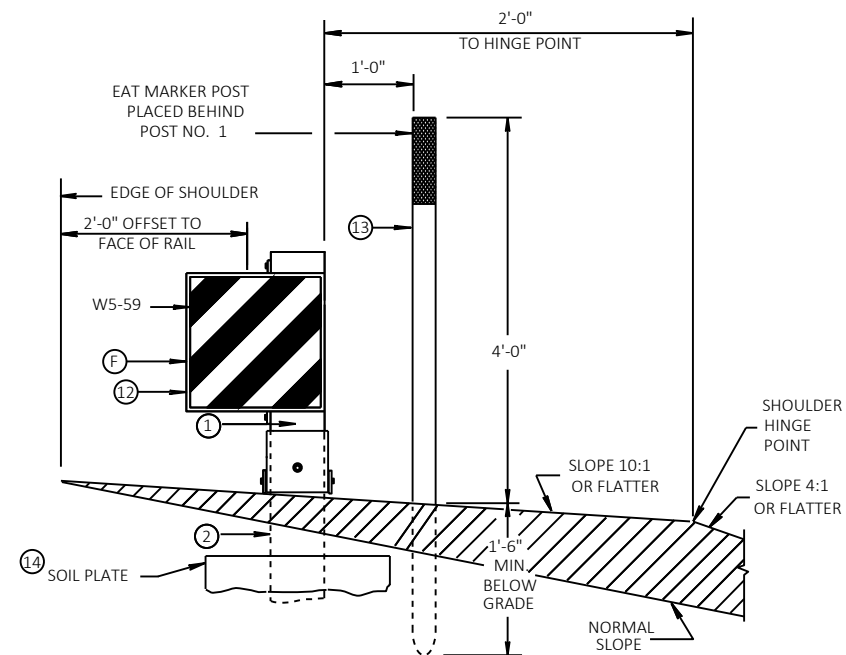
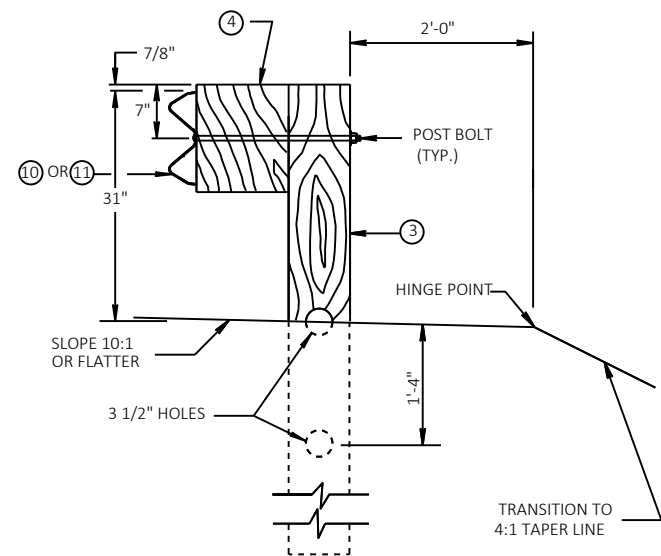
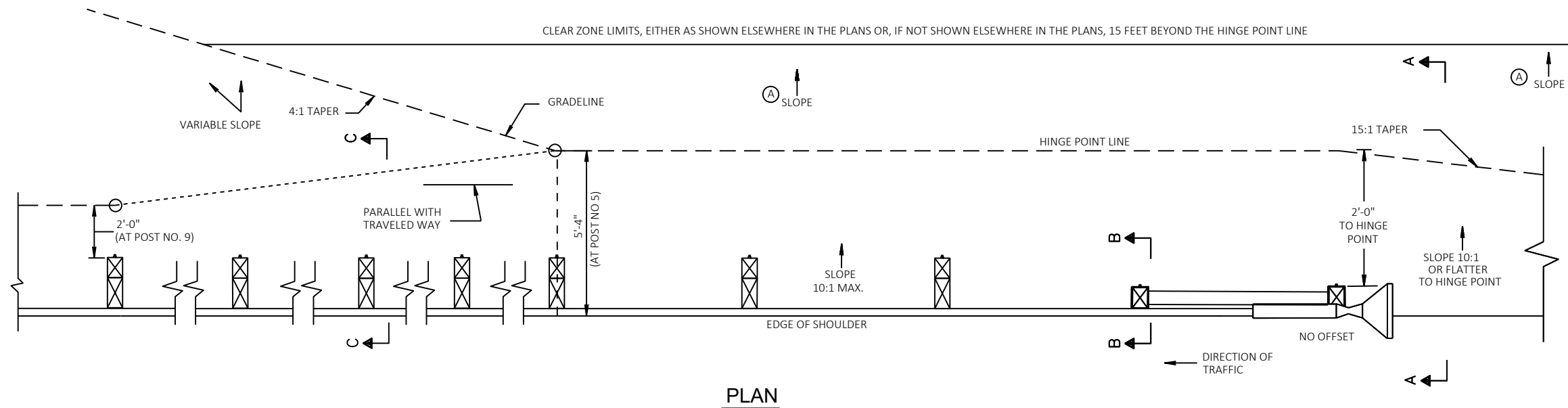
SECTION A-A
DETAIL OF CURB AND GUTTER AT INLETS
* STA 522+51, LT



LONGITUDINAL DETAIL FOR CULVERT PIPE FROST HEAVE REPAIR AREA
STA 621+71



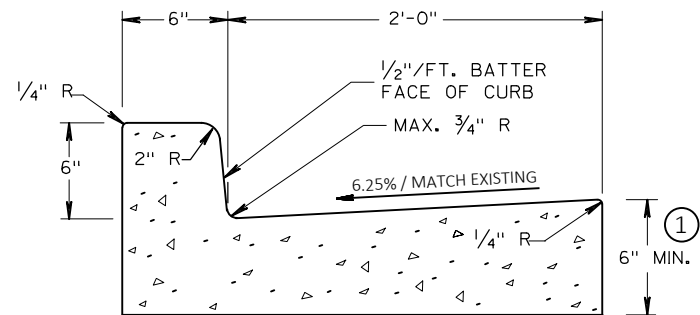
SIDEROAD PAVING DETAIL - CURB & GUTTER TO REMAIN



NOTE:
SEE SDD "MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)" FOR
OTHER DETAILS AND NOTES.

MIDWEST GUARDRAIL SYSTEM EAT WITH NO OFFSET

STA 383+12 RT - STA 384+75 RT
STA 383+08 LT - STA 385+14 LT



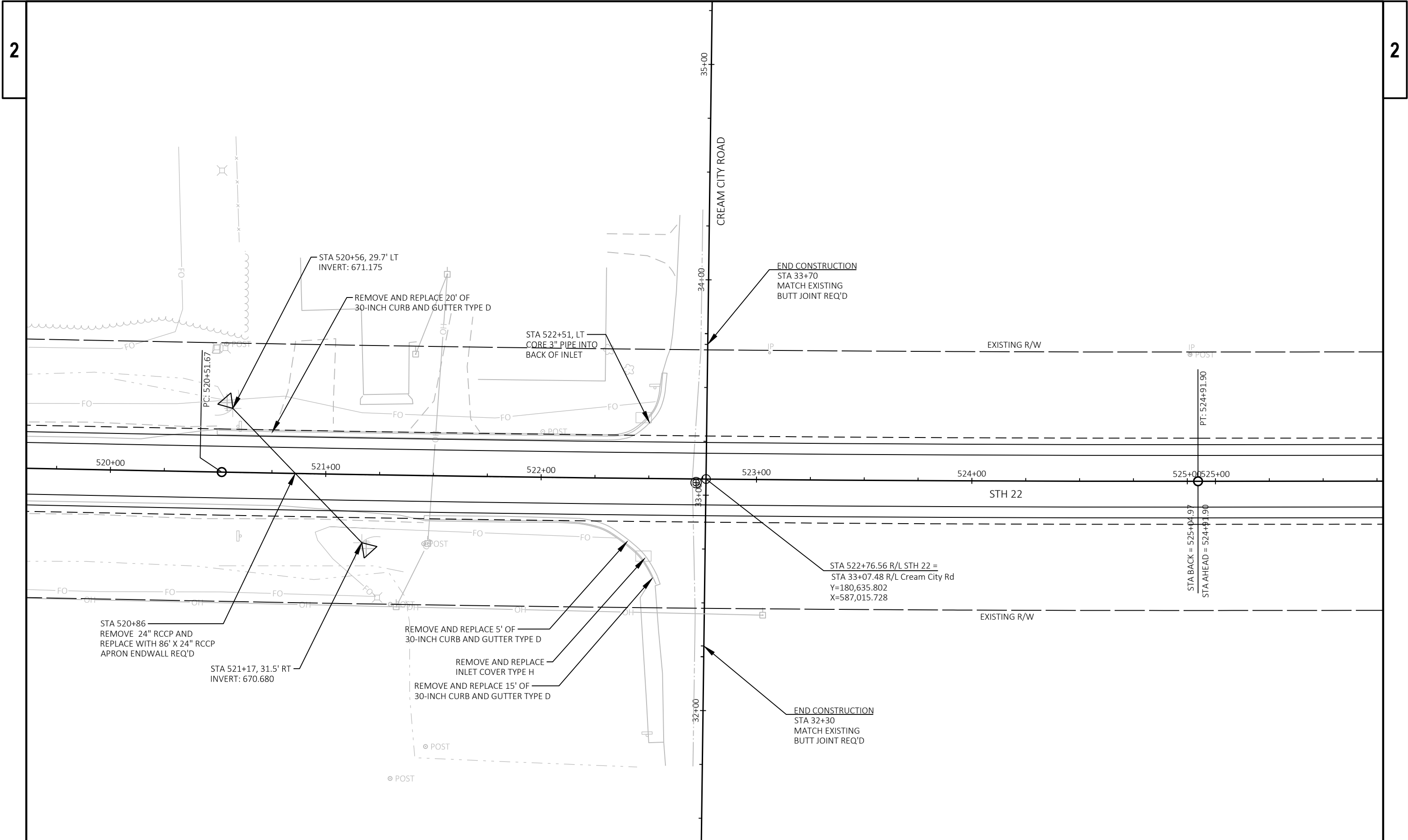
CONCRETE CURB AND GUTTER TYPE D MODIFIED

NOTES

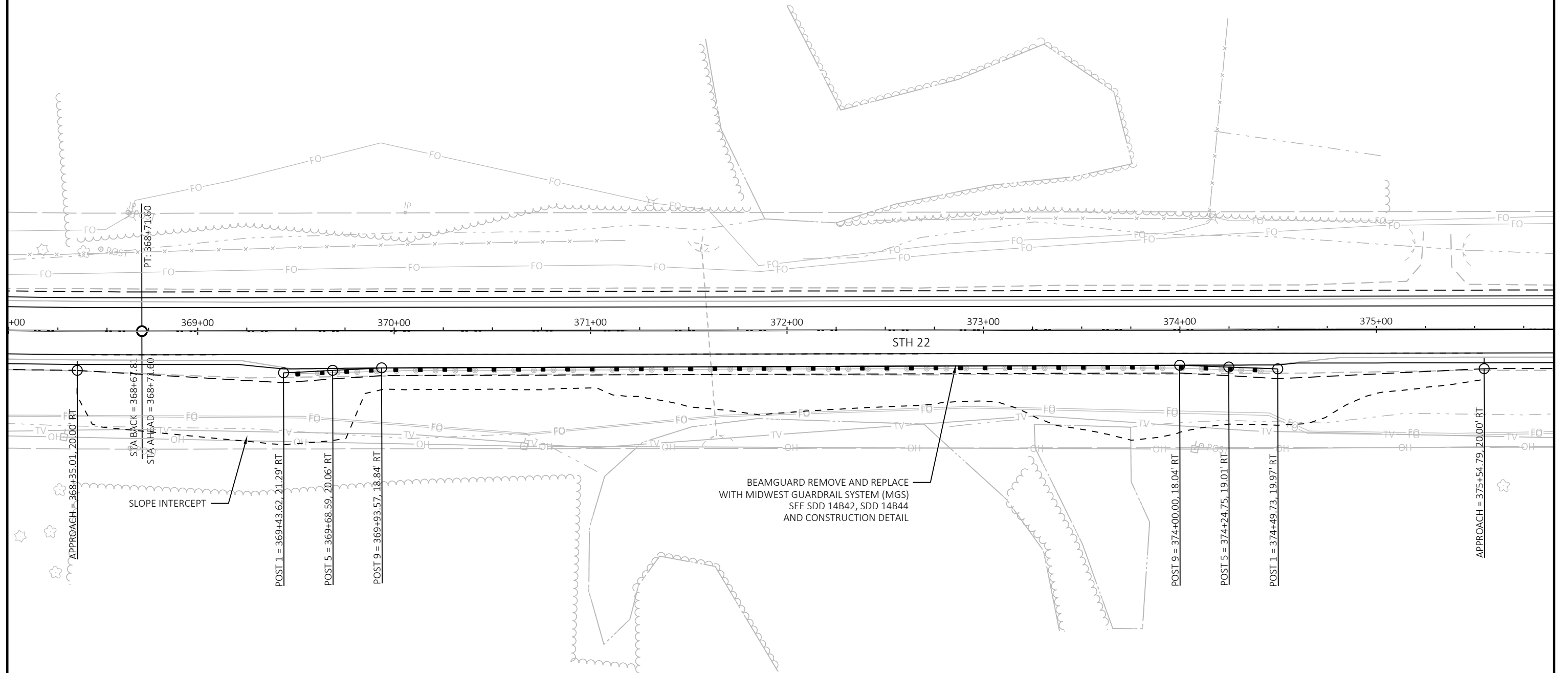
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
- INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRAVERSE GUTTER SLOPE.
- WHERE THE TRAVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB & GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT, THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB & GUTTER.
- UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURB.
- ① THE BOTTOM OF CURB AND GUTTER MAY BE BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

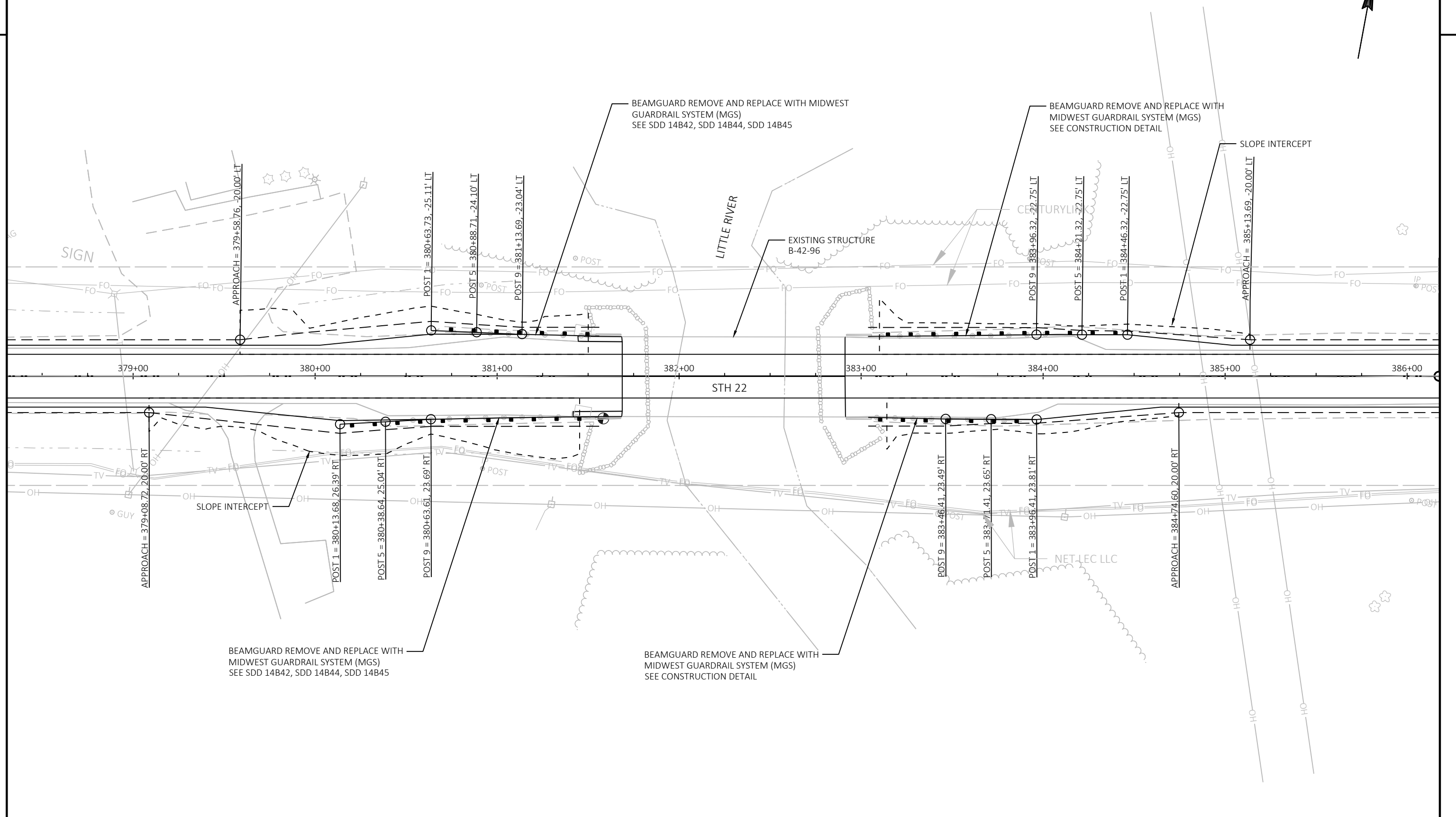
PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PROJECT NO: 9180-31-60	HWY: STH 22	COUNTY: OCONTO	INTERSECTION DETAIL (CREAM CITY RD)	SHEET	E
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PROJECT NO: 9180-31-60	HWY: STH 22	COUNTY: OCONTO	PLAN DETAILS	SHEET	E
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PROJECT NO: 9180-31-60

HWY: STH 22

COUNTY: OCONTO

PLAN DETAILS

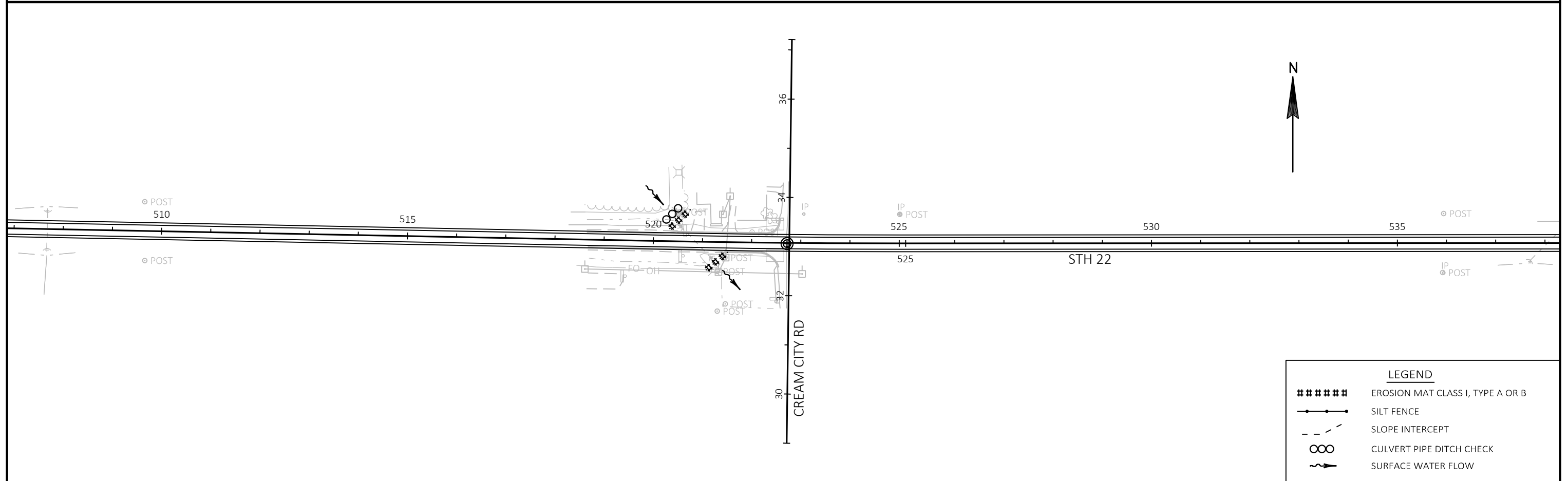
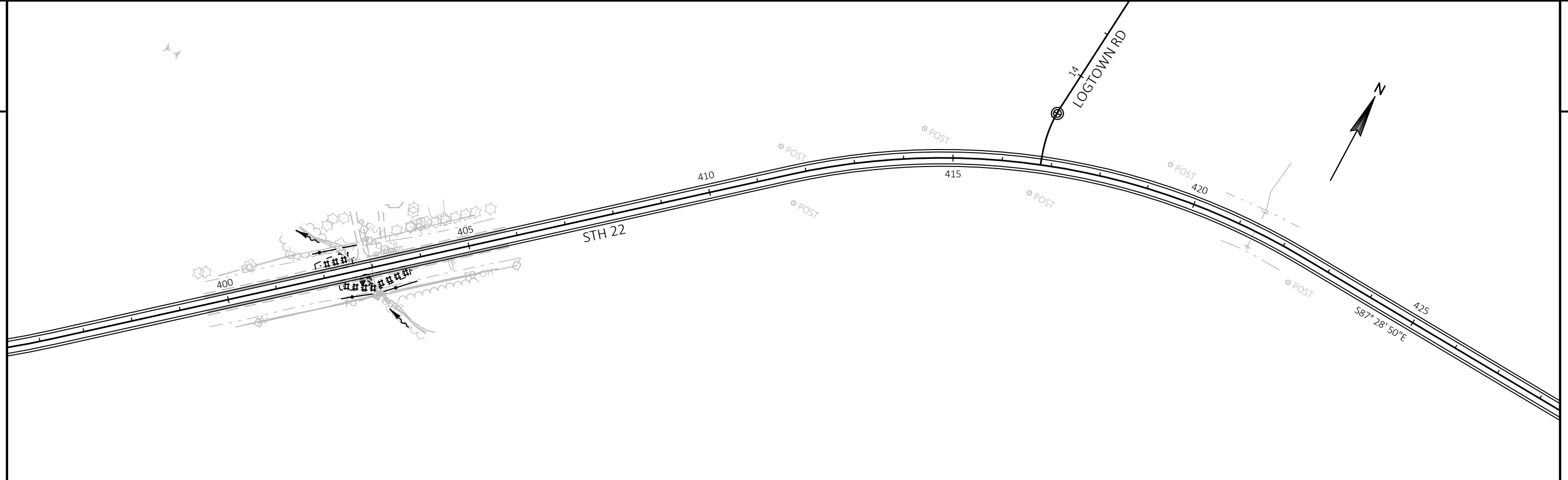
SHEET

E



2

2



PROJECT NO:	9180-31-60
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HWY: STH 22

COUNTY: OCONTO

EROSION CONTROL

SHEET

E

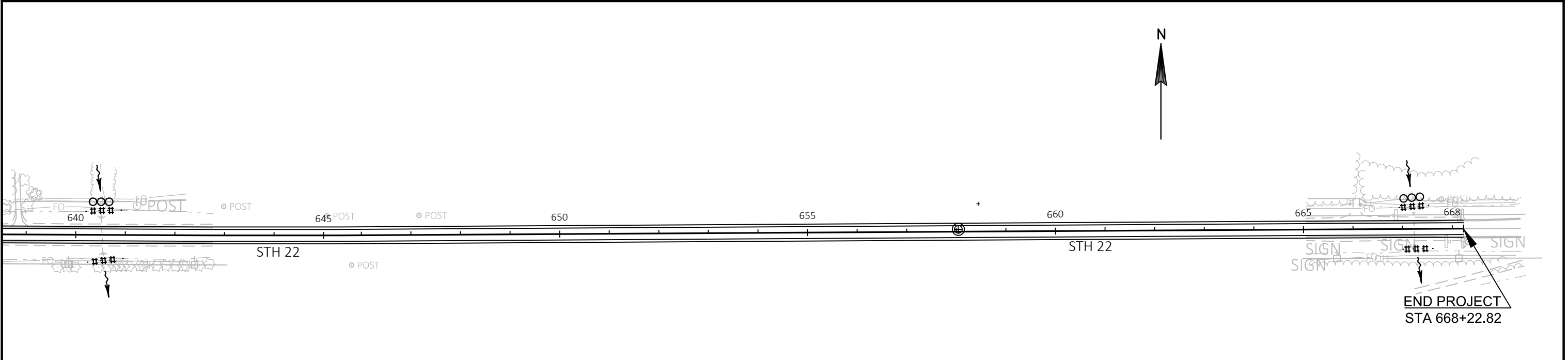
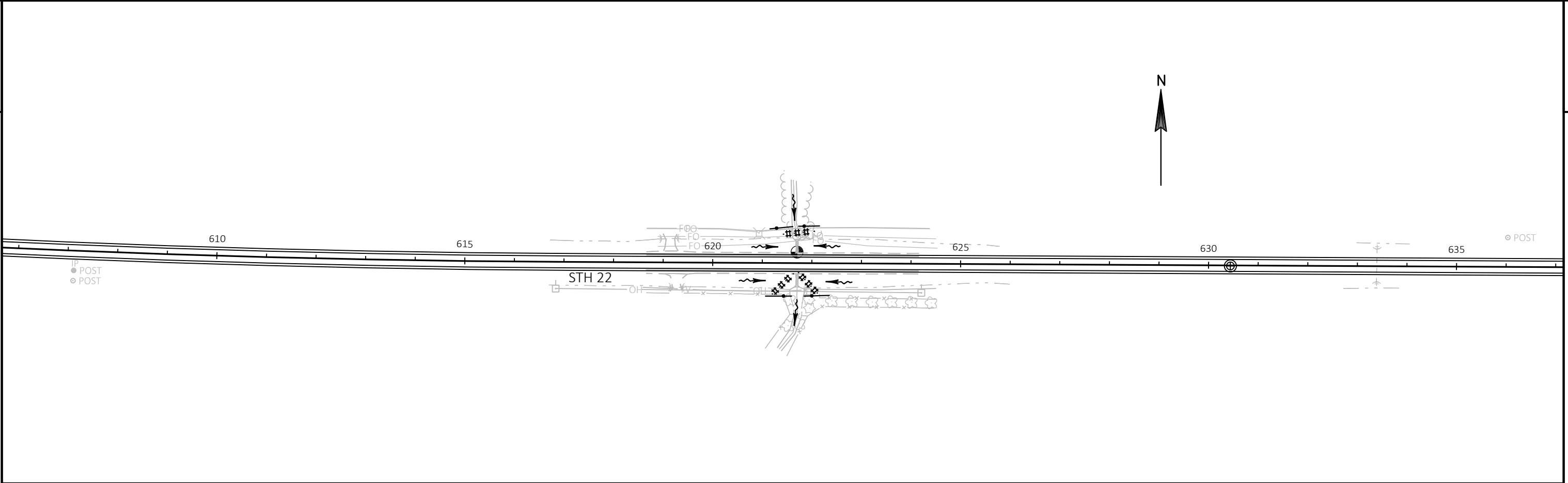
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LAYOUT NAME - 022002-ecB

PLOT DATE : 3/7/2018 2:50 PM PLOT BY : CAMPSHURE, MICHAEL R

PLOT BY : CAMPSHURE, MICHAEL R PLOT NAME : PLOT SCALE :

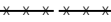
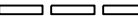
PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44



LEGEND	
#####	EROSION MAT CLASS I, TYPE A OR B
—●—●—	SILT FENCE
- - -	SLOPE INTERCEPT
∞ ∞	CULVERT PIPE DITCH CHECK
~>	SURFACE WATER FLOW

LEGEND

	CRASH CUSHION
	SIGN ON PERMANENT SUPPORT
	REMOVING PAVEMENT MARKING
	TYPE III BARRICADE WITH ATTACHED SIGN
	CONCRETE BARRIER TEMPORARY PRECAST
	FLAGS 16"X16" MIN (ORANGE)
	TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
	DIRECTION OF TRAFFIC

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

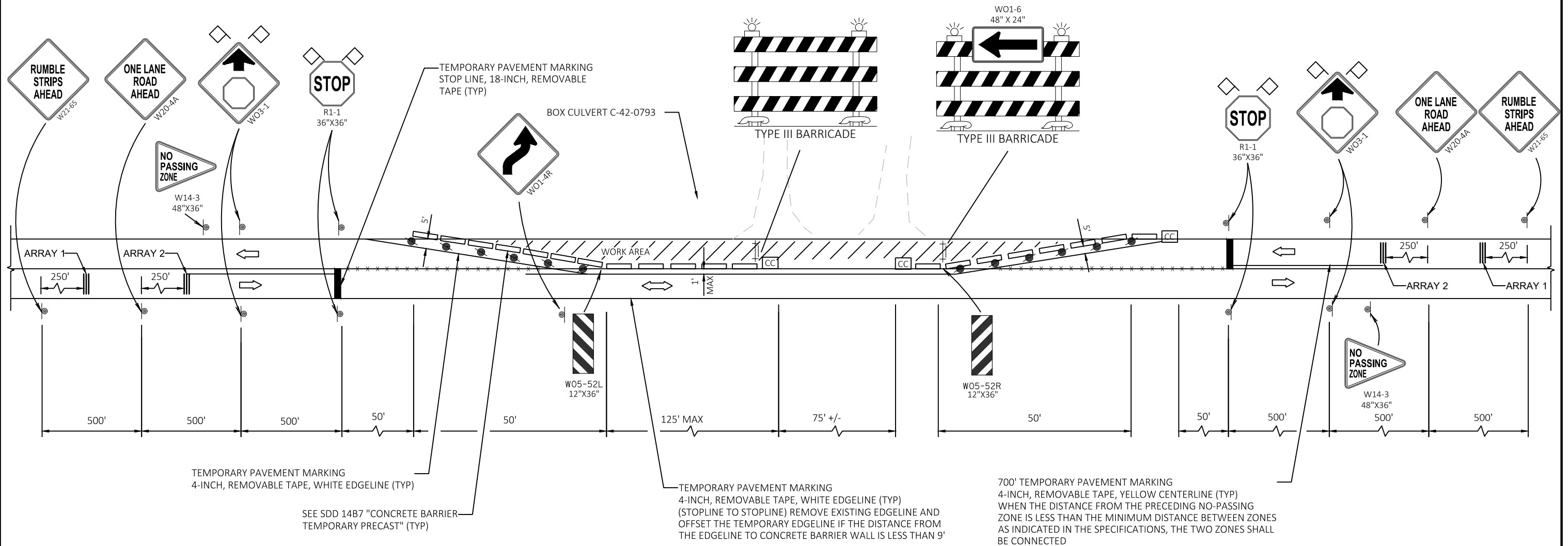
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE.

TEMPORARY PORTABLE RUMBLE STRIPS MUST BE MONITORED FREQUENTLY AND ADJUSTED AS NEEDED.



PROJECT NO: 9180-31-60

HWY: STH 22

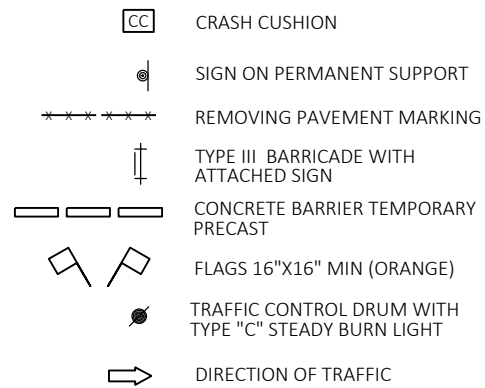
COUNTY: OCONTO

TRAFFIC CONTROL DETAIL FOR WESTBOUND

SHEET

E

LEGEND



GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

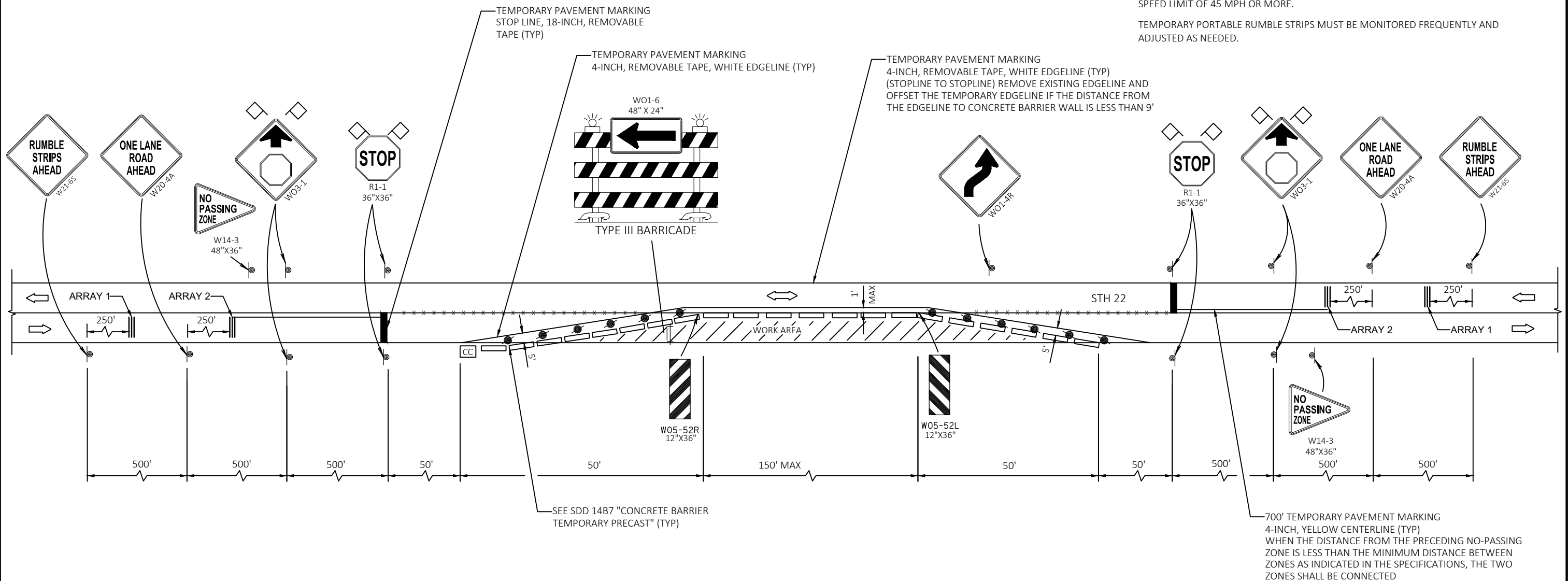
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE.

TEMPORARY PORTABLE RUMBLE STRIPS MUST BE MONITORED FREQUENTLY AND ADJUSTED AS NEEDED.



TRAFFIC CONTROL ONE LANE ROAD STOP CONDITION FOR EASTBOUND TRAFFIC

PROJECT NO: 9180-31-60

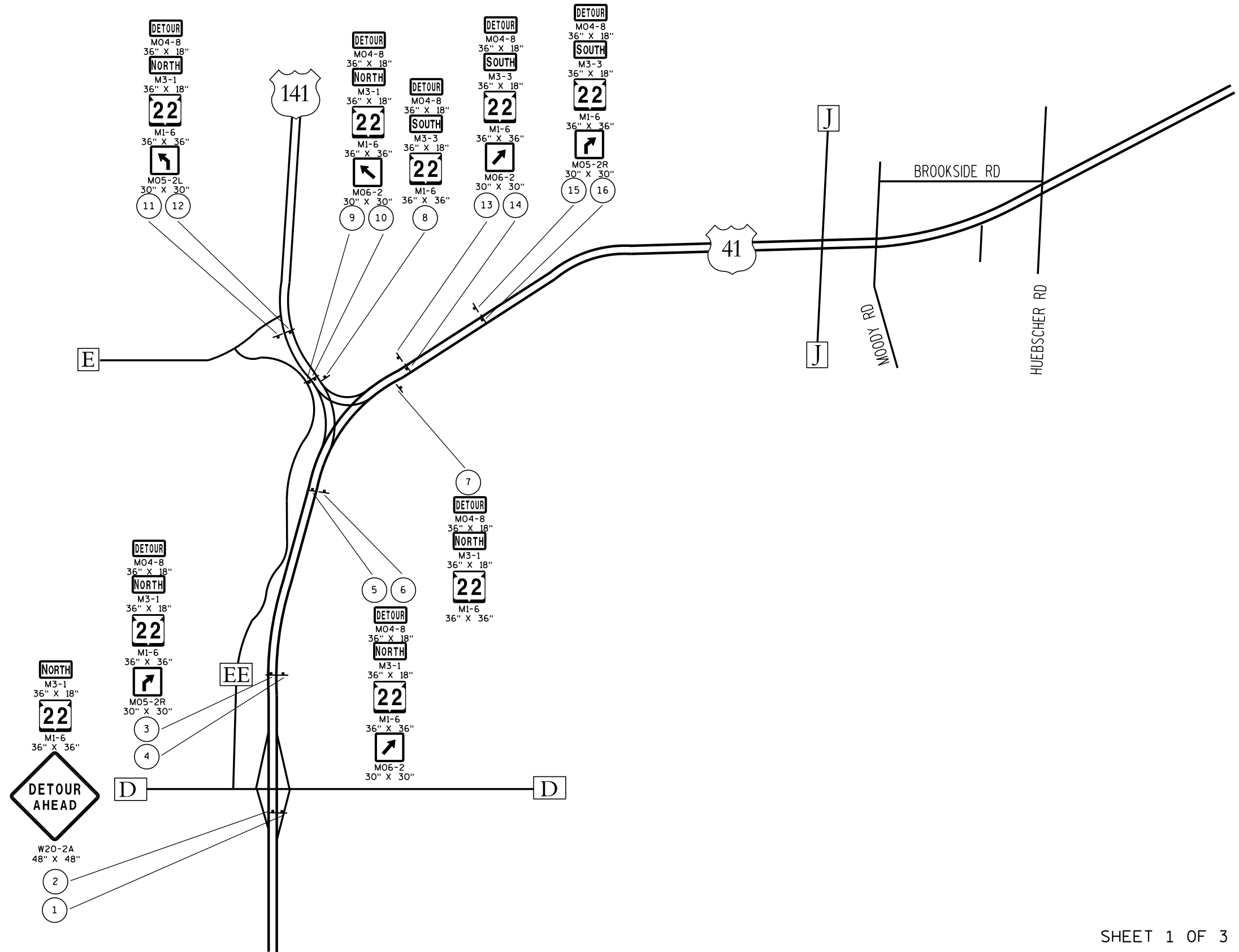
HWY: STH 22

COUNTY: OCONTO

TRAFFIC CONTROL DETAIL FOR EASTBOUND

SHEET

E



LEGEND

-  SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
-   PORTABLE CHANGEABLE MESSAGE SIGN
-  SIGN MOUNTED ON TYPE III BARRICADE
-  POST MOUNTED SIGN

SHEET 1 OF 3

PLAN SHEET PRODUCED
BY WISDOT-NE REGION

PROJECT NO: 9180-31-60

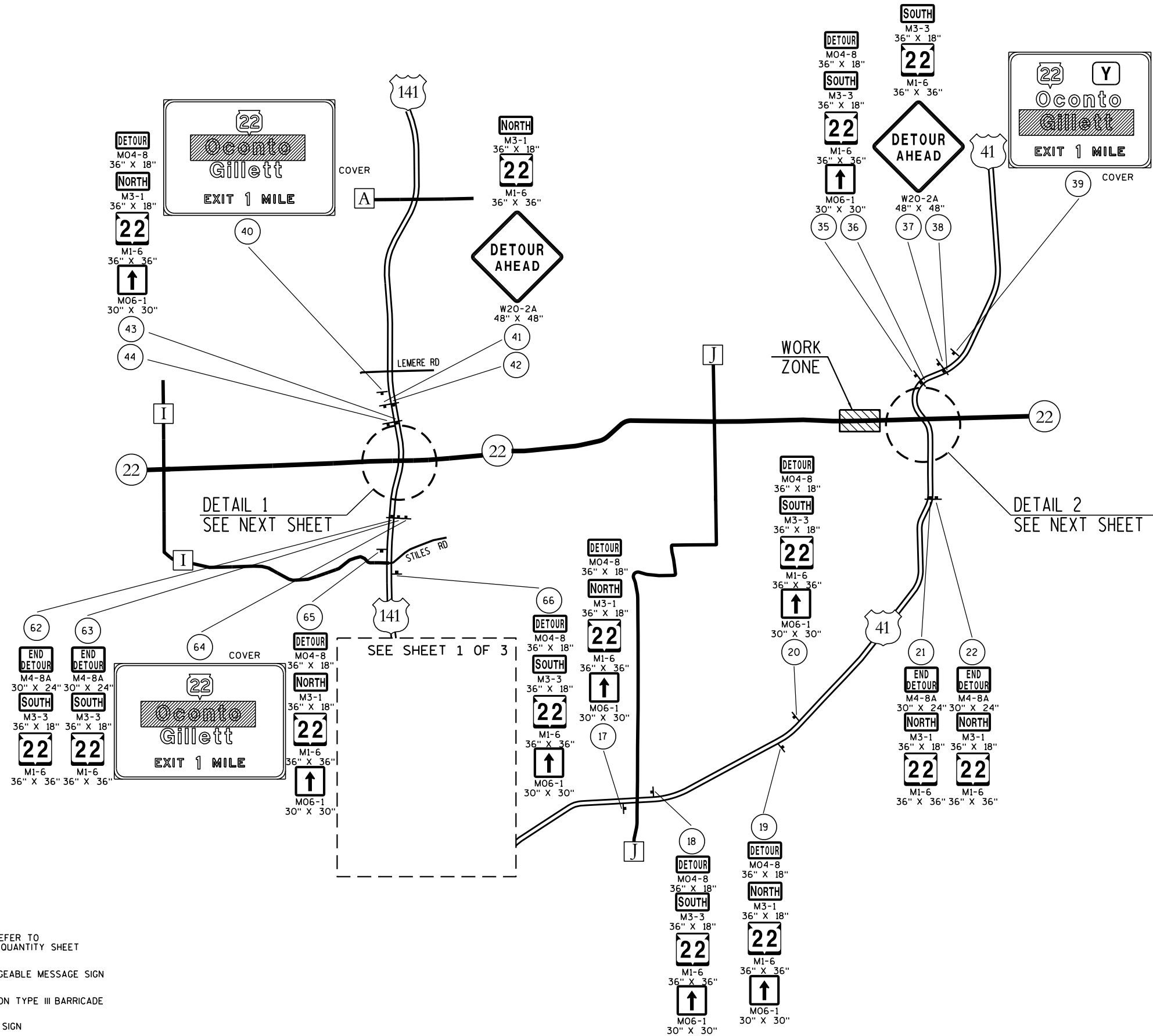
HWY: STH 22

COUNTY: OCONTO

DETOUR SIGNING DETAIL

SHEET

E



LEGEND

- (X) SIGN NUMBER. REFER TO MISCELLANEOUS QUANTITY SHEET
- ▲ PCMS (X) PORTABLE CHANGEABLE MESSAGE SIGN
- ⇄ SIGN MOUNTED ON TYPE III BARRICADE
- POST MOUNTED SIGN

SHEET 2 OF 3
PLAN SHEET PRODUCED
BY WISDOT-NE REGION

PROJECT NO: 9180-31-60

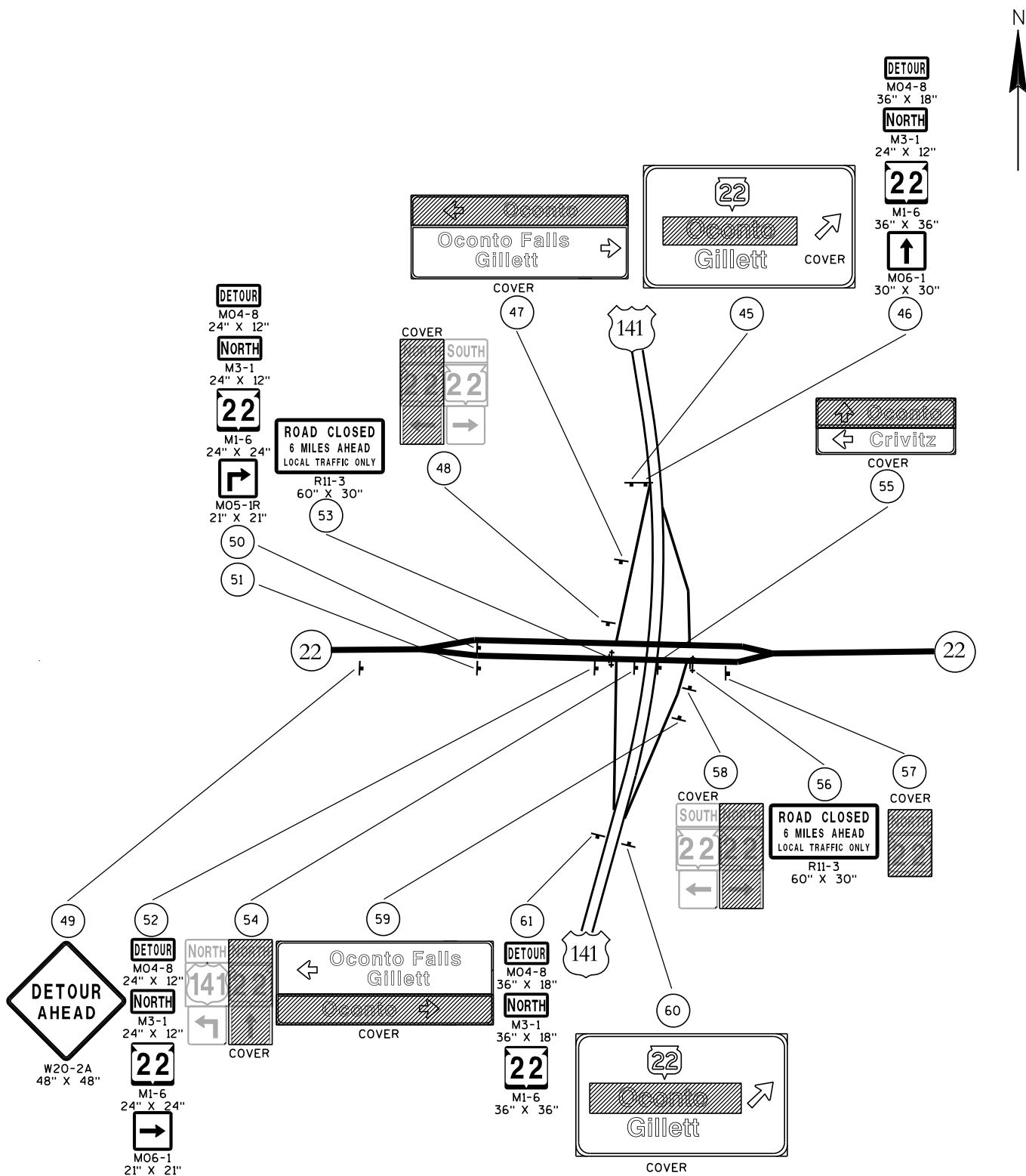
HWY: STH 22

COUNTY: OCONTO

DETOUR SIGNING DETAIL

SHEET

E



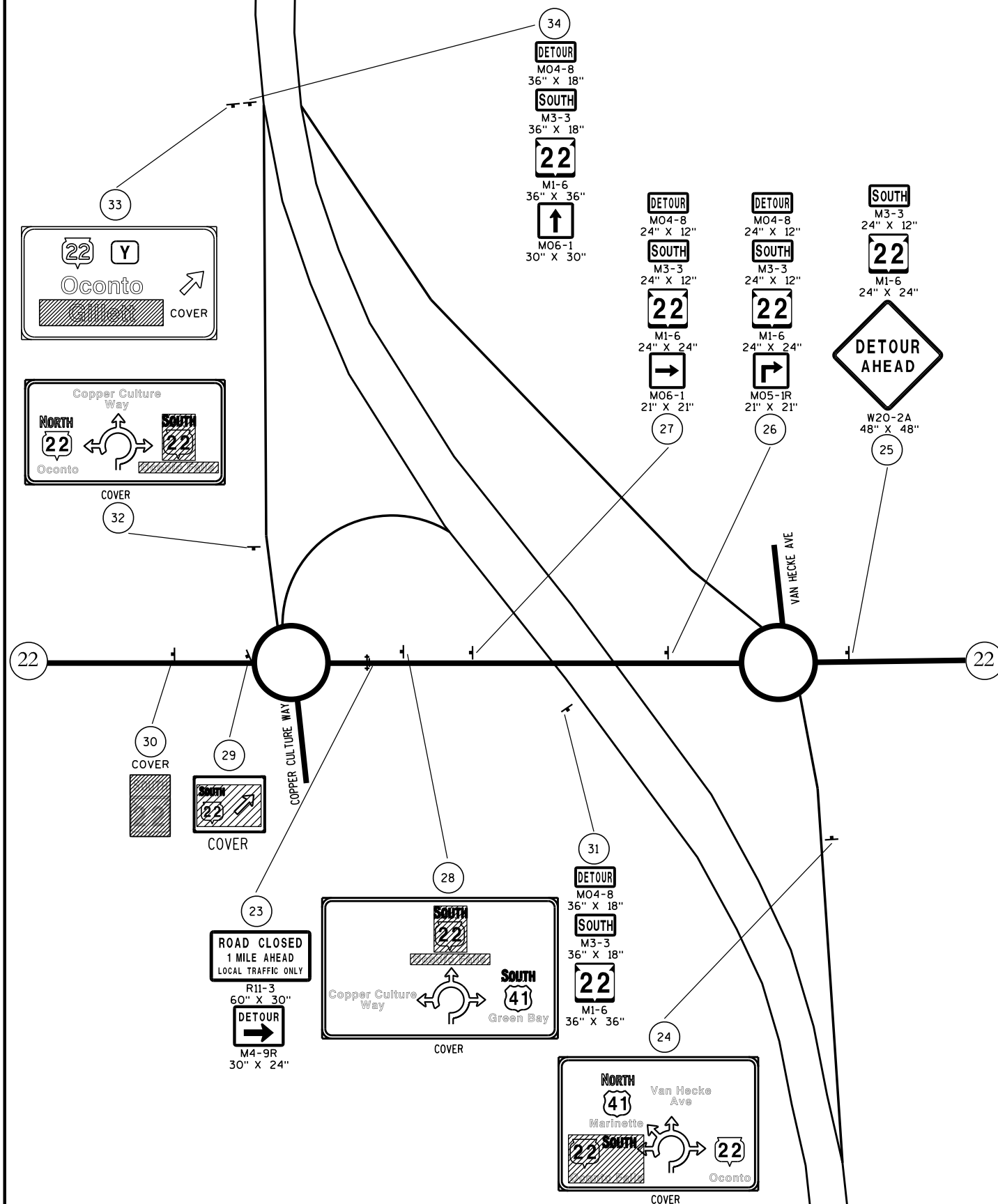
LEGEND

(X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET

⇐ SIGN MOUNTED ON TYPE III BARRICADE

— POST MOUNTED SIGN

DETAIL 1



DETAIL 2

PLAN SHEET PRODUCED
BY WISDOT-NE REGION

3

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	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
1	US 41/US 141, S. OF CTH D, PLACE 800' S. OF CTH D OVERPASS ON RIGHT SHOULDER	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	W 20-2A	48"X48"	1	30	30							
2	US 41/US 141, S. OF CTH D, PLACE 800' S. OF CTH D OVERPASS IN MEDIAN	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	W 20-2A	48"X48"	1	30	30							
3	US 41/US 141, N. OF CTH D, PLACE 2500' N. OF CTH D OVERPASS IN MEDIAN	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 5-2R	30"X30"	1	30	30							
4	US 41/US 141, N. OF CTH D, PLACE 2500' N. OF CTH D OVERPASS ON RIGHT SHOULDER	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 5-2R	30"X30"	1	30	30							
5	US 41/US 141, S. OF 41/141 SPLIT, PLACE 1000' S. OF 41/141 SPLIT IN MEDIAN	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-2	30"X30"	1	30	30							TILT RIGHT
6	US 41/US 141, S. OF 41/141 SPLIT, PLACE 1000' S. OF 41/141 SPLIT ON RIGHT SHOULDER	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-2	30"X30"	1	30	30							TILT RIGHT
7	US 41, N. OF 41/141 SPLIT, PLACE RIGHT OF EXISTING J4-1 SIGN	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
8	US 141, N. OF 41/141 SPLIT, PLACE 500' N. OF PENSAUKEE RIVER	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
9	US 141, N. OF 41/141 SPLIT, PLACE 600' N. OF PENSAUKEE RIVER ON RIGHT SHOULDER	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-2	30"X30"	1	30	30							TILT LEFT
10	US 141, N. OF 41/141 SPLIT, PLACE 600' N. OF PENSAUKEE RIVER IN MEDIAN	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-2	30"X30"	1	30	30							TILT LEFT
11	US 141, S. OF CTH E, PLACE 1600' N. OF PENSAUKEE RIVER ON RIGHT SHOULDER	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 5-2L	30"X30"	1	30	30							
12	US 141, S. OF CTH E, PLACE 1500' N. OF PENSAUKEE RIVER IN MEDIAN	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 5-2L	30"X30"	1	30	30							
13	US 41, S. OF GALUSKA RD, PLACE 2000' S. OF GALUSKA RD ON RIGHT SHOULDER	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-2	30"X30"	1	30	30							TILT RIGHT

3

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	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
14	US 41, S. OF GALUSKA RD, PLACE 2000' S. OF GALUSKA RD IN MEDIAN	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-2	30"X30"	1	30	30							TILT RIGHT
15	US 41, S. OF FALK RD, PLACE 800' S. OF FALK RD ON RIGHT SHOULDER	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 5-2R	30"X30"	1	30	30							
16	US 41, S. OF FALK RD, PLACE 800' S. OF FALK RD IN MEDIAN	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 5-2R	30"X30"	1	30	30							
17	US 41, S. OF CTH J, PLACE 600' S. OF CTH J INTERSECTION	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
18	US 41, N. OF CTH J, PLACE 600' N. OF CTH J INTERSECTION	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
19	US 41, S. OF CTH SS, PLACE 600' S. OF CTH SS INTERSECTION	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
20	US 41, N. OF CTH SS, PLACE 600' N. OF CTH SS INTERSECTION	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
21	US 41, S. OF STH 22, PLACE ACROSS FROM SIGN #22 IN MEDIAN	M 4-8A	30"X24"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
22	US 41, S. OF STH 22, PLACE NEXT TO EXISTING TYPE I ADV SIGN	M 4-8A	30"X24"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
23		R 11-3	60"X30"	1	30	30	30	60					1 MILE AHEAD
		M 4-9R	30"X24"	1	30	30							
24	US 41 OFF-RAMP TO STH 22, COVER EXISTING D1-62 SIGN AS SHOWN									1		1	COVER "STH 22 SOUTH-MARINETTE"
25	STH 22, E. OF US 41 NB OFF-RAMP RAB, PLACE 150' E. OF RAB INTERSECTION	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	W 20-2A	48"X48"	1	30	30							
26	STH 22, BETWEEN US 41 RAMP RAB, PLACE 1000' E. OF US 41 SB RAB INTERSECTION	MO 4-8	24"X12"	1	30	30							
	"	M 3-3	24"X12"	1	30	30							
	"	M 1-6	24"X24"	1	30	30							22
	"	MO 5-1R	21"X21"	1	30	30							
27	STH 22, BETWEEN US 41 RAMP RAB, PLACE 500' E. OF US 41 SB RAB INTERSECTION	MO 4-8	24"X12"	1	30	30							
	"	M 3-3	24"X12"	1	30	30							
	"	M 1-6	24"X24"	1	30	30							22
	"	MO 6-1	21"X21"	1	30	30							RIGHT
28	STH 22, BETWEEN US 41 RAMP RAB, COVER EXISTING D1-62 SIGN AS SHOWN									1		1	COVER "STH 22 SOUTH-OCNTO FALLS"

PAGE SUBTOTALS

47

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TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 30 DAYS	643.0900 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	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
29	STH 22, AT US 41 SB RAMP RAB, COVER EXISTING SPLITTER ISLAND SIGN									1		1	COVER ENTIRE SIGN
30	STH 22, W. OF US 41 SB RAMP RAB, COVER EXISTING J4-1 SIGN									1		1	COVER ENTIRE SIGN
31	US 41, ON-RAMP FROM STH 22, PLACE RIGHT OF EXISTING J4-1 SIGN	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
32	US 41 OFF-RAMP TO STH 22, COVER EXISTING D1-62 SIGN AS SHOWN									1		1	
33	US 41, AT STH 22 OFF-RAMP, COVER EXISTING TYPE I SIGN AS SHOWN									1	1		
34	US 41, AT STH 22 OFF-RAMP, PLACE LEFT OF EXISTING TYPE I SIGN AT EXIT	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
35	US 41, N. OF STH 22, PLACE 2000' N. OF STH 22 OFF-RAMP ON RIGHT SHOULDER	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
36	US 41, N. OF STH 22, PLACE 2000' N. OF STH 22 OFF-RAMP IN MEDIAN	MO 4-8	36"X18"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
37	US 41, N. OF STH 22, PLACE 3500' N. OF STH 22 OFF-RAMP ON RIGHT SHOULDER	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	W 20-2A	48"X48"	1	30	30							
38	US 41, N. OF STH 22, PLACE 3500' N. OF STH 22 OFF-RAMP IN MEDIAN	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	W 20-2A	48"X48"	1	30	30							
39	US 41, N. OF STH 22, COVER EXISTING TYPE I SIGN AS SHOWN									1	1		COVER "GILLETT"
40	US 141, N. OF STH 22, COVER EXISTING TYPE I SIGN AS SHOWN									1	1		COVER "OCONTO"
41	US 141, N. OF STH 22, PLACE 3500' N. OF STH 22 OFF-RAMP ON RIGHT SHOULDER	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	W 20-2A	48"X48"	1	30	30							
42	US 141, N. OF STH 22. PLACE 3500' N. OF STH 22 OFF-RAMP IN MEDIAN	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	W 20-2A	48"X48"	1	30	30							
43	US 141, N. OF STH 22, PLACE 2000' N. OF STH 22 OFF-RAMP ON RIGHT SHOULDER	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
44	US 141, N. OF STH 22, PLACE 2000' N. OF STH 22 OFF-RAMP IN MEDIAN	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
45	US 141, AT STH 22 OFF-RAMP, COVER EXISTING TYPE I SIGN AS SHOWN									1	1	3	COVER "OCONTO"

PAGE SUBTOTALS

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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	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
46	US 141, AT STH 22 OFF-RAMP, PLACE LEFT OF EXISTING TYPE I SIGN	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
47	US 141, ON STH 22 OFF-RAMP, COVER EXISTING D1-3 SIGN AS SHOWN									1	1		COVER "OCONTO"
48	US 141, ON STH 22 OFF-RAMP, COVER EXISTING J3-2 SIGN AS SHOWN									1		1	COVER "NORTH 22 LT"
49	STH 22, W. OF US 141, PLACE 1000' W. OF DUAME RD	W 20-2A	48"X48"	1	30	30							
50	STH 22, W. OF US 141, PLACE 500' W. OF DUAME RD IN MEDIAN	MO 4-8	24"X12"	1	30	30							
	"	M 3-1	24"X12"	1	30	30							
	"	M 1-6	24"X24"	1	30	30							22
	"	MO 5-1R	21"X21"	1	30	30							
51	STH 22, W. OF US 141, PLACE 500' W. OF DUAME RD ON RIGHT SHOULDER	MO 4-8	24"X12"	1	30	30							
	"	M 3-1	24"X12"	1	30	30							
	"	M 1-6	24"X24"	1	30	30							22
	"	MO 5-1R	21"X21"	1	30	30							
52	STH 22, W. OF US 141, PLACE 200' E. OF DUAME RD ON RIGHT SHOULDER	MO 4-8	24"X12"	1	30	30							
	"	M 3-1	24"X12"	1	30	30							
	"	M 1-6	24"X24"	1	30	30							22
	"	MO 6-1	21"X21"	1	30	30							RIGHT
53	STH 22, AT US 141 SB RAMP, PLACE IN MEDIAN JUST W. OF RAMP INTERSECTION	R 11-3	60"X30"	1	30	30	30	60					6 MILES AHEAD
54	STH 22, BETWEEN US 141 RAMPS, COVER EXISTING J2-2 SIGN AS SHOWN									1		1	COVER "NORTH 22 AHEAD"
55	STH 22, BETWEEN US 141 RAMPS, COVER EXISTING D1-2 SIGN AS SHOWN									1		1	COVER "OCONTO"
56	STH 22, AT US 141 NB RAMP, PLACE IN MEDIAN JUST E. OF RAMP INTERSECTION	R 11-3	60"X30"	1	30	30	30	60					6 MILES AHEAD
57	STH 22, W. OF US 141, COVER EXISTING J4-1 SIGN AS SHOWN												COVER ENTIRE SIGN
58	US 141 OFF-RAMP TO STH 22, COVER EXISTING J3-2 SIGN AS SHOWN									1		1	COVER "NORTH 22 RIGHT"
59	US 141 OFF-RAMP TO STH 22, COVER EXISTING D1-3 SIGN AS SHOWN			1	30	30				1		1	COVER "OCONTO"
60	US 141, AT STH 22 OFF-RAMP, COVER EXISTING TYPE I SIGN AS SHOWN									1	1		COVER "OCONTO"
61	US 141, S. OF STH 22, PLACE RIGHT OF EXISTING J4-1 SIGN	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
62	US 141, S. OF STH 22, PLACE ACROSS FROM SIGN #63	M 4-8A	30"X24"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
63	US 141, S. OF STH 22, PLACE LEFT OF EXISTING TYPE I ADVANCED SIGN	M 4-8A	30"X24"	1	30	30							
	"	M 3-3	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
64	US 141, S. OF STH 22, COVER EXISTING TYPE I SIGN AS SHOWN									1	1		COVER "OCONTO"
65	US 141, N. OF CTH I, PLACE 750' N. OF CTH I INTERSECTION	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD
66	US 141, S. OF CTH I, PLACE 750' S. OF CTH I INTERSECTION	MO 4-8	36"X18"	1	30	30							
	"	M 3-1	36"X18"	1	30	30							
	"	M 1-6	36"X36"	1	30	30							22
	"	MO 6-1	30"X30"	1	30	30							AHEAD

PAGE SUBTOTALS

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PROJECT TOTALS

167

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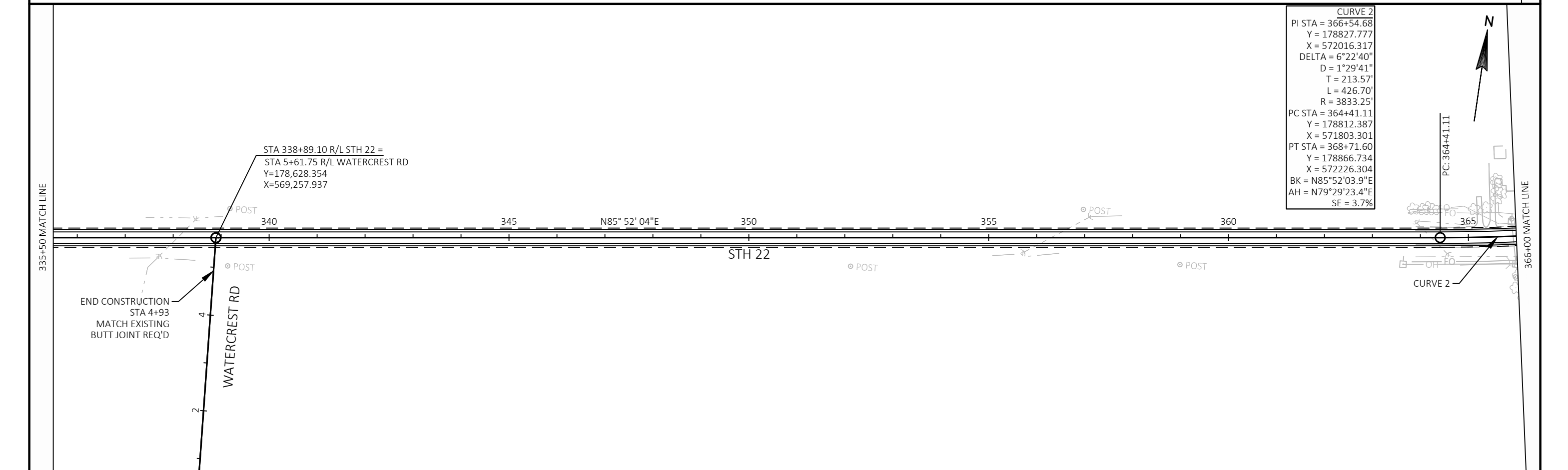
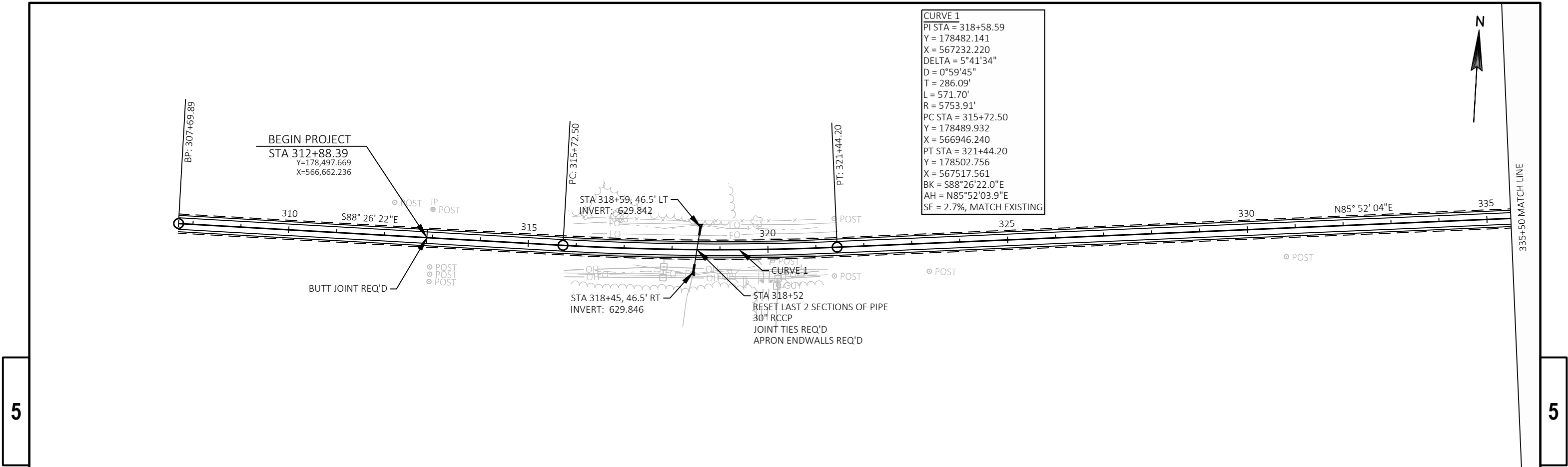
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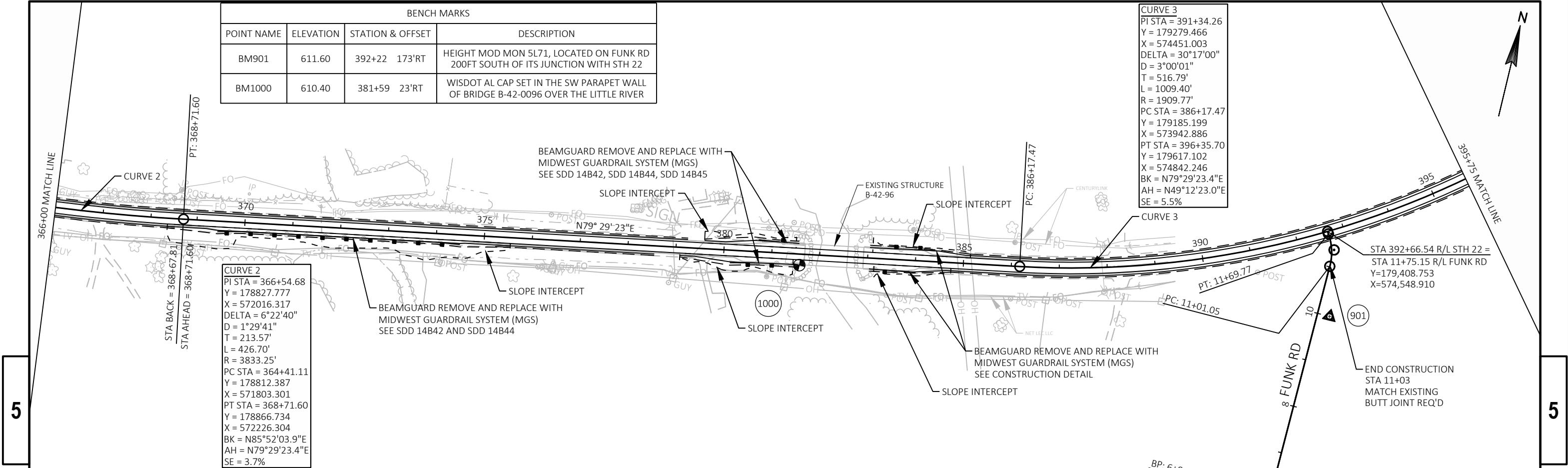
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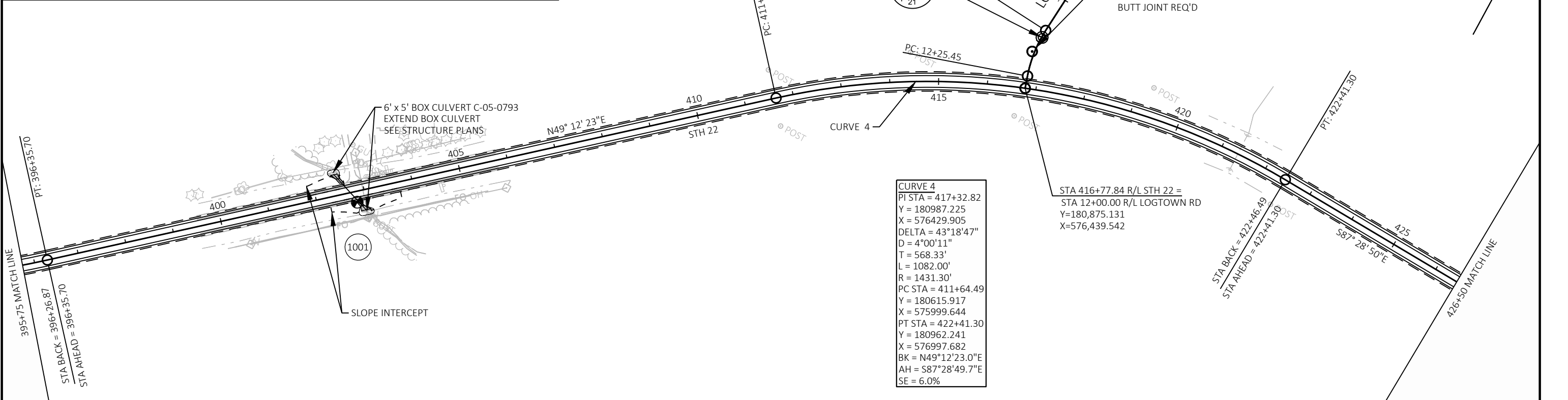
PLAN SHEET PRODUCED
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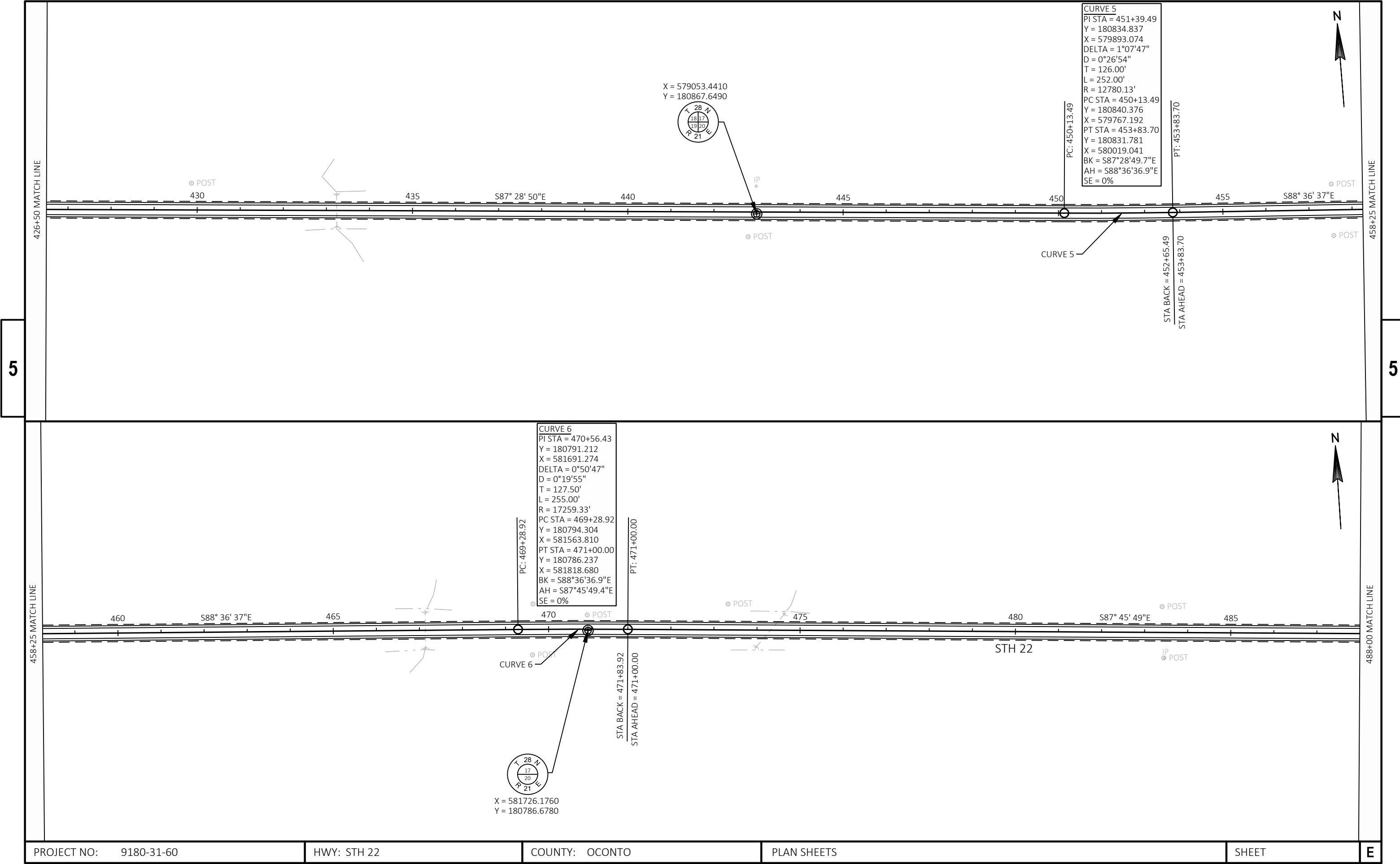
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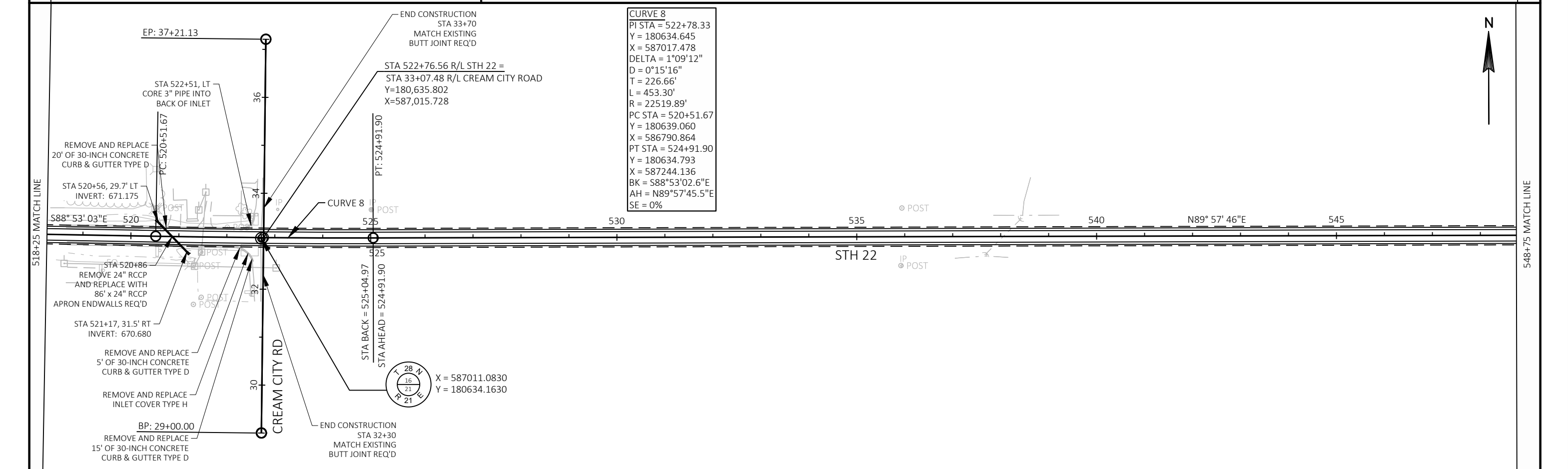
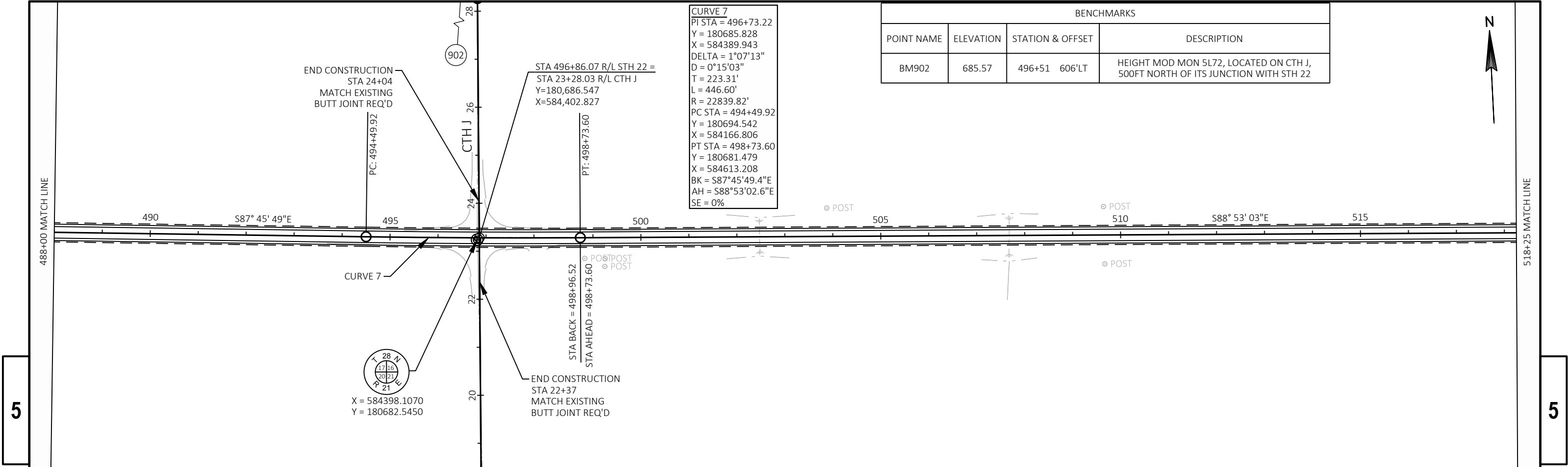


BENCH MARKS			
POINT NAME	ELEVATION	STATION & OFFSET	DESCRIPTION
BM1001	613.99	402+81 22'RT	CHISELED SQUARE ON TOP OF SW WING WALL OF BOX CULVERT C-793-37, LOCATED ON STH 22, 1000FT NE OF ITS JUNCTION WITH FUNK RD



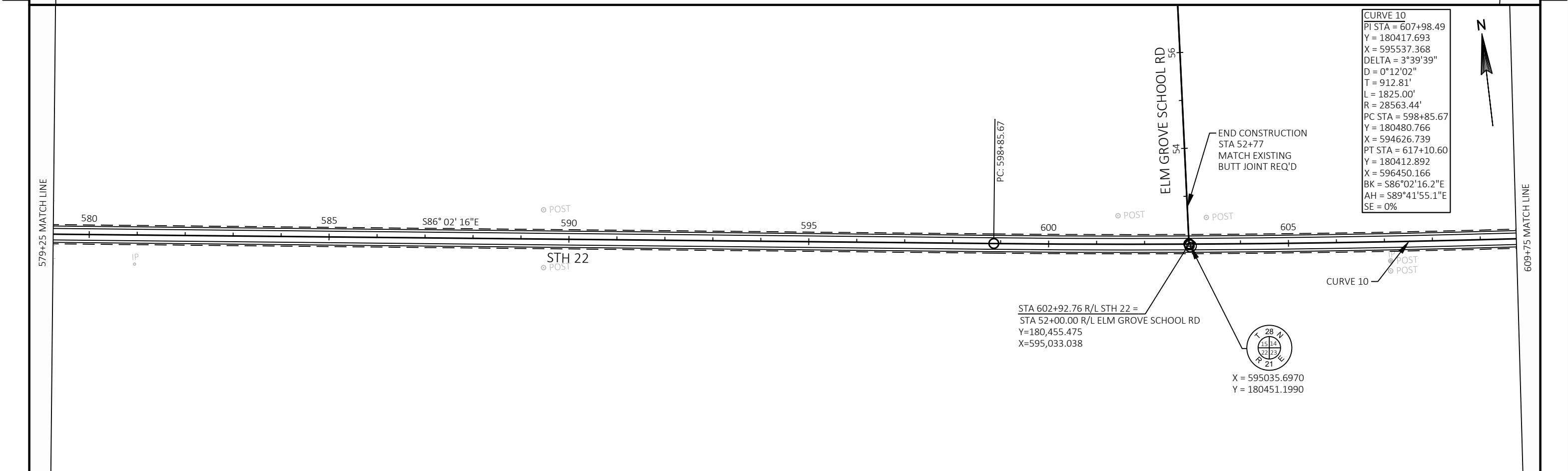
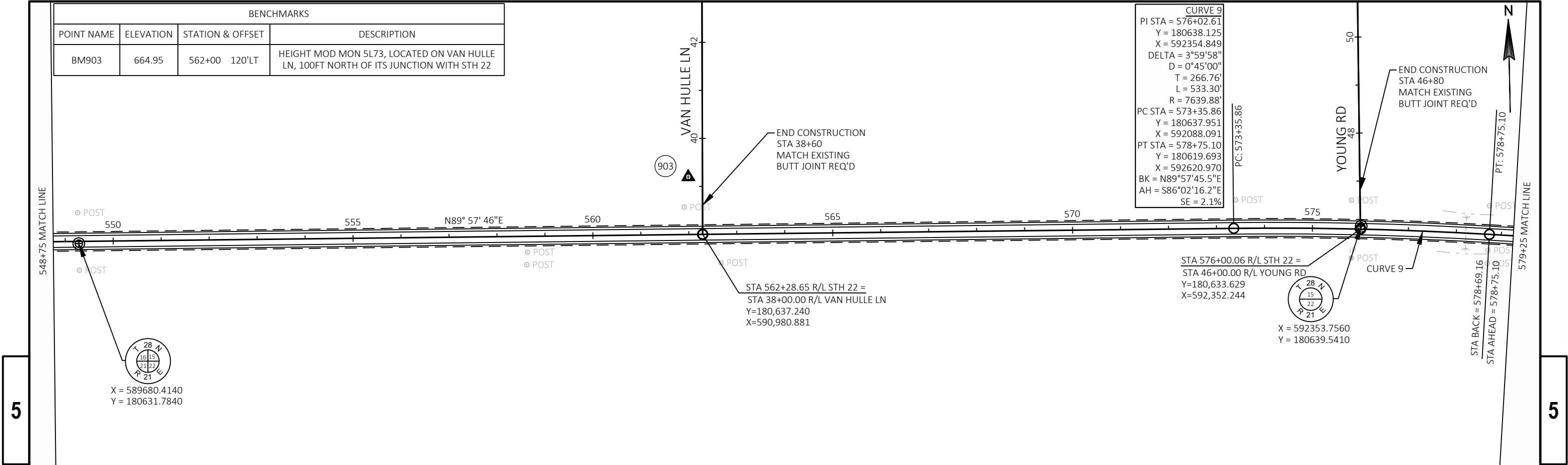
PROJECT NO:	9180-31-60	HWY: STH 22	COUNTY: OCONTO	PLAN SHEETS	SHEET	E
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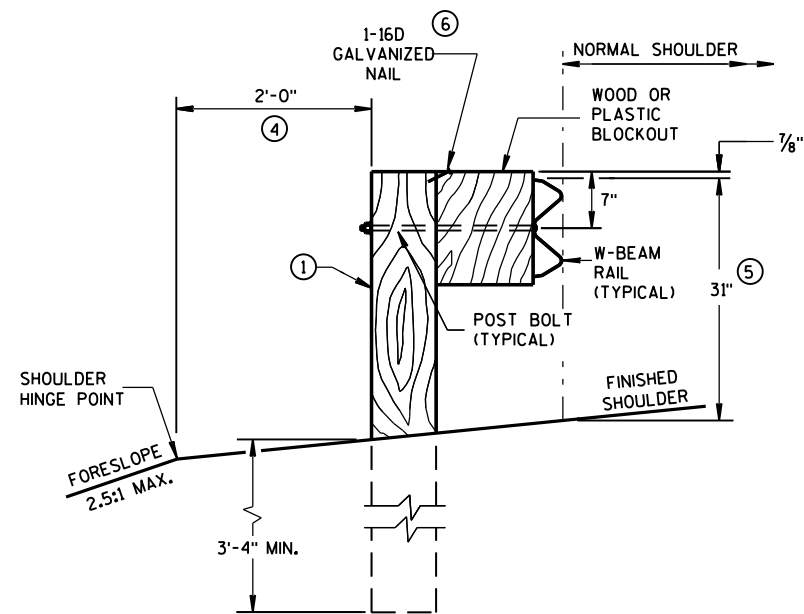
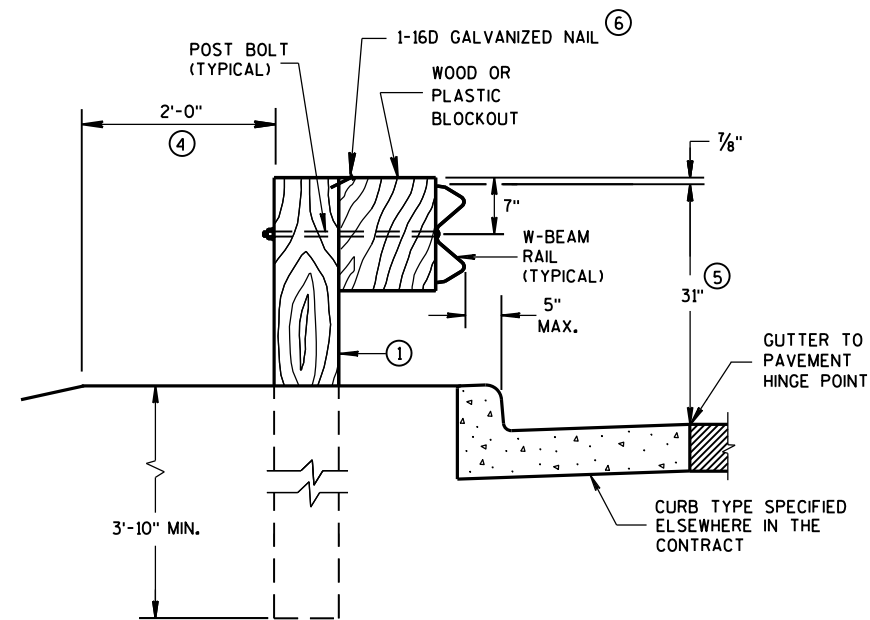
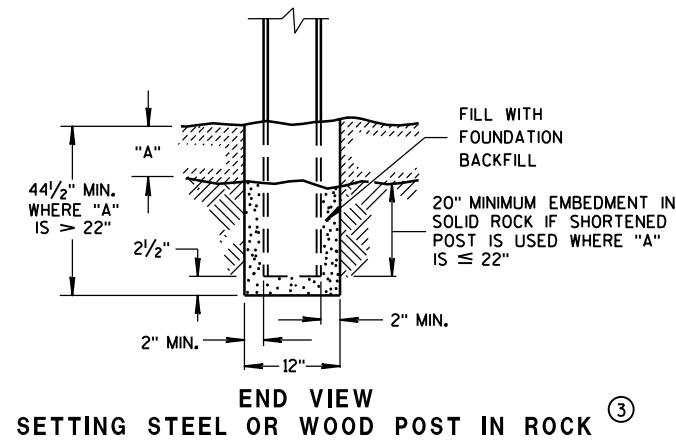
PROJECT NO: 9180-31-60	HWY: STH 22	COUNTY: OCONTO	PLAN SHEETS	SHEET	E
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BENCHMARKS			
POINT NAME	ELEVATION	STATION & OFFSET	DESCRIPTION
BM903	664.95	562+00 120'LT	HEIGHT MOD MON 5L73, LOCATED ON VAN HULLE LN, 100FT NORTH OF ITS JUNCTION WITH STH 22



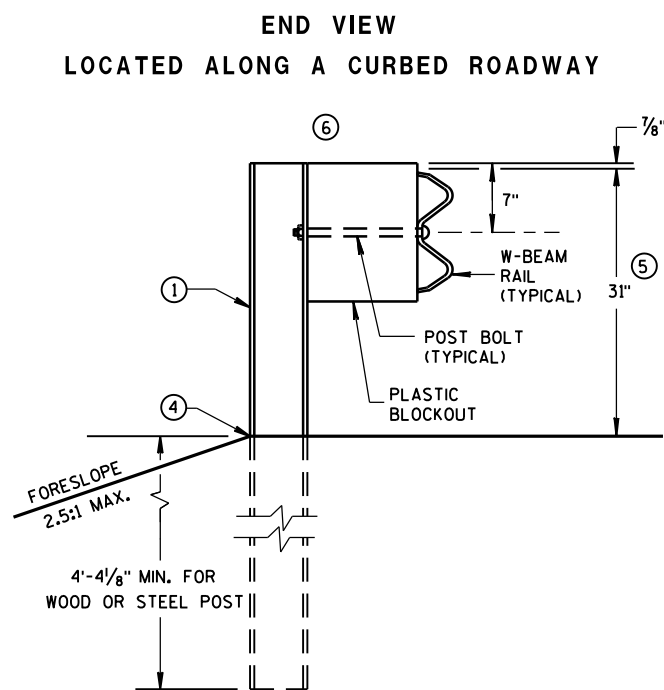
11

- ① WOOD OR STEEL POSTS (W6X9 OR W6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".
- ⑥ WHEN USING STEEL POST 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.

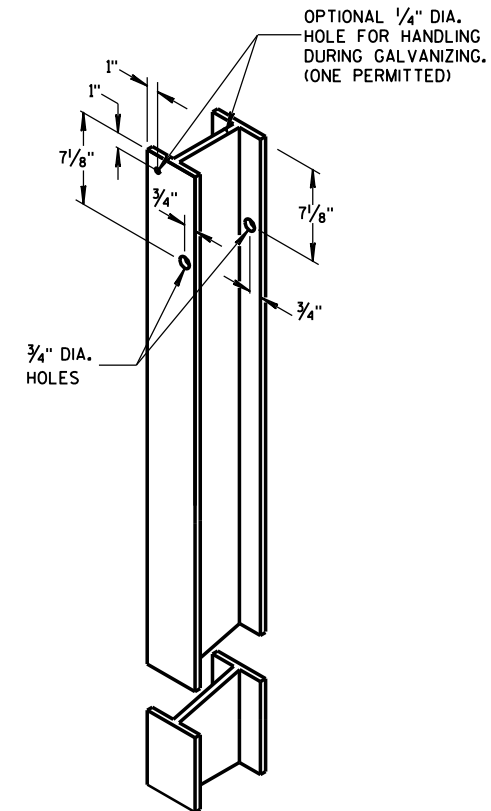


END VIEW

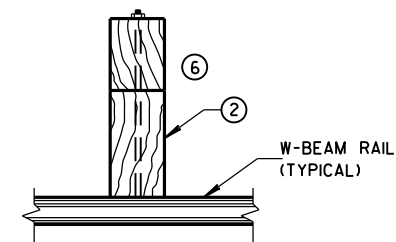
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



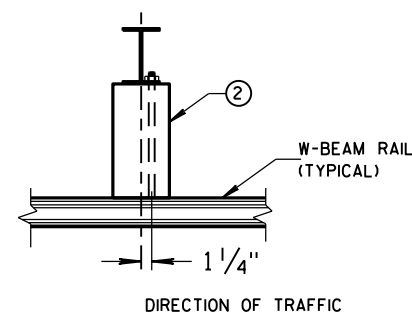
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



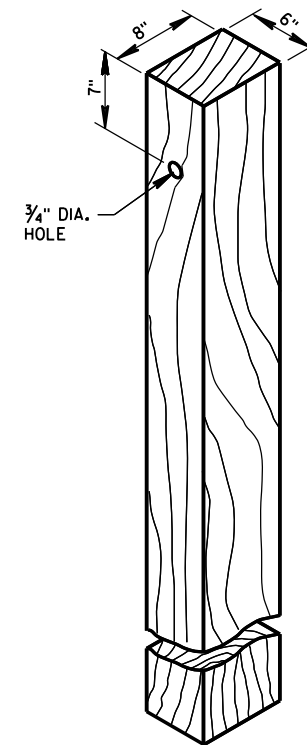
**STEEL POST &
HOLE PUNCHING DETAIL
(w6X9)^①**



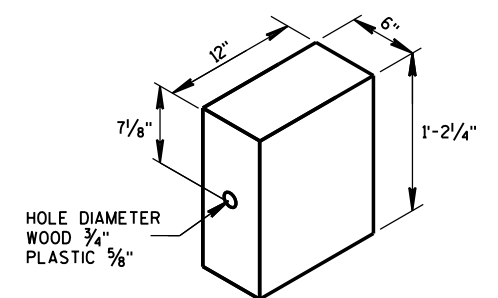
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



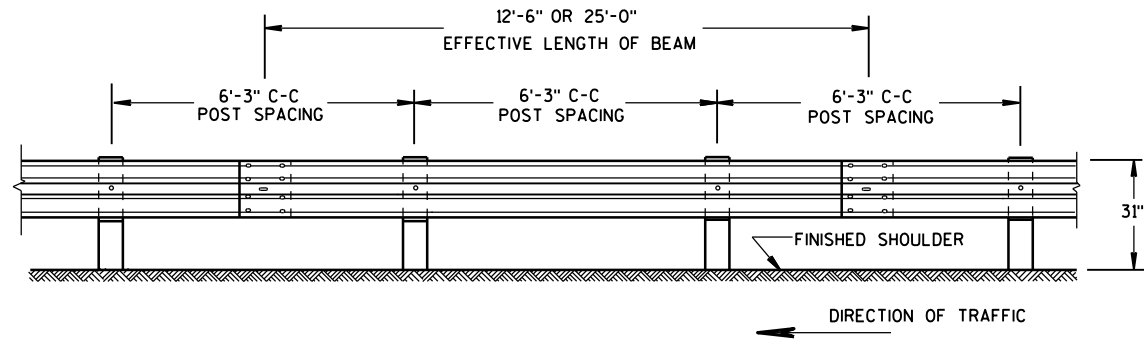
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



WOOD POST
(6" X 8") NOMINAL ^①

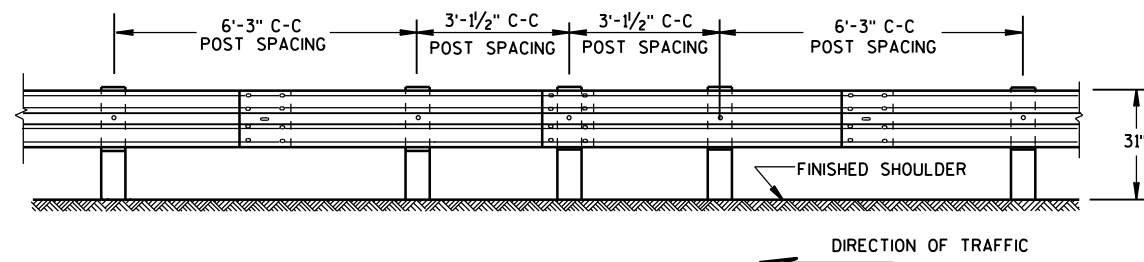


**WOOD OR
PLASTIC BLOCKOUT** ⁽²⁾



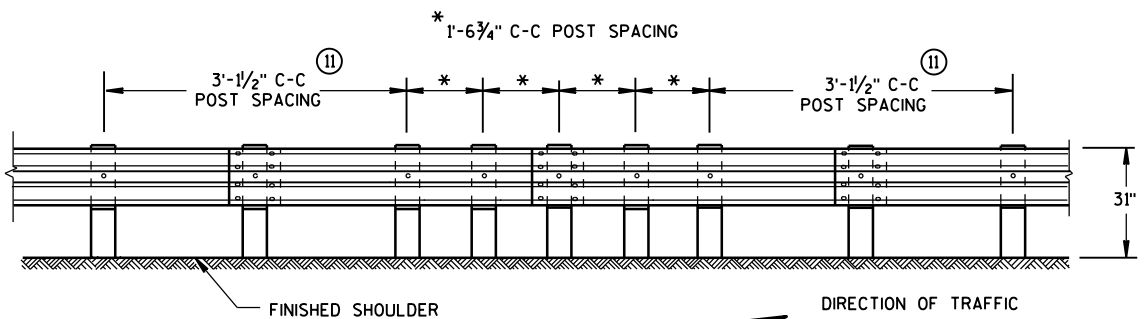
FRONT VIEW

POST SPACING STANDARD INSTALLATION



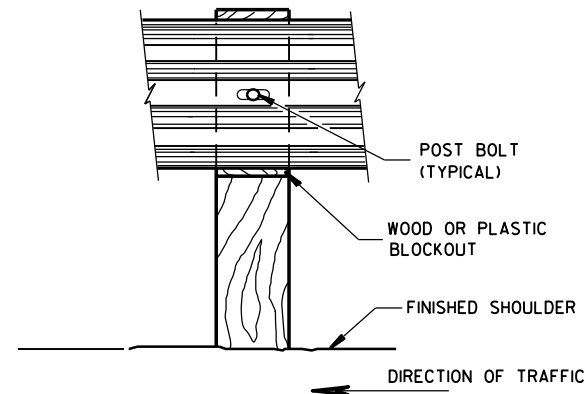
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

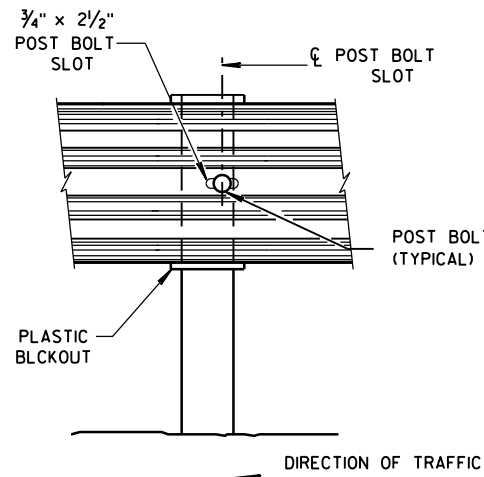


FRONT VIEW

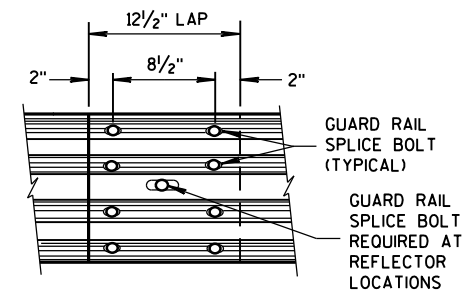
QUARTER POST SPACING (QS)



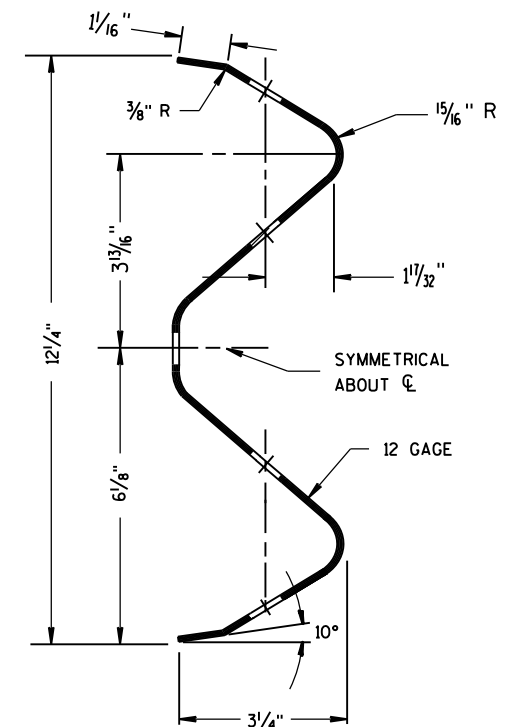
FRONT VIEW AT WOOD POST



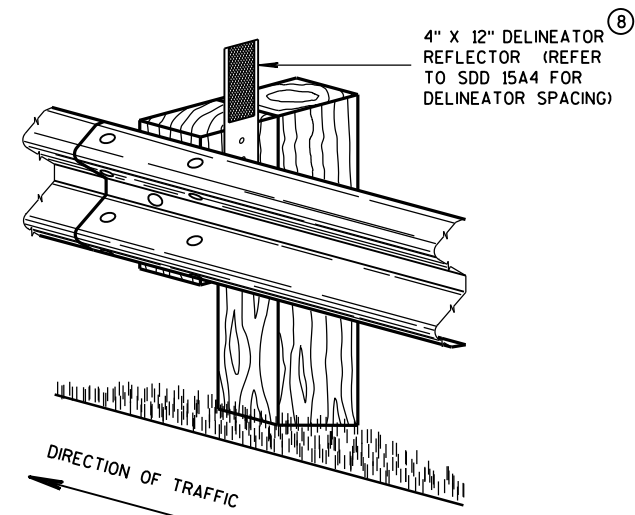
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



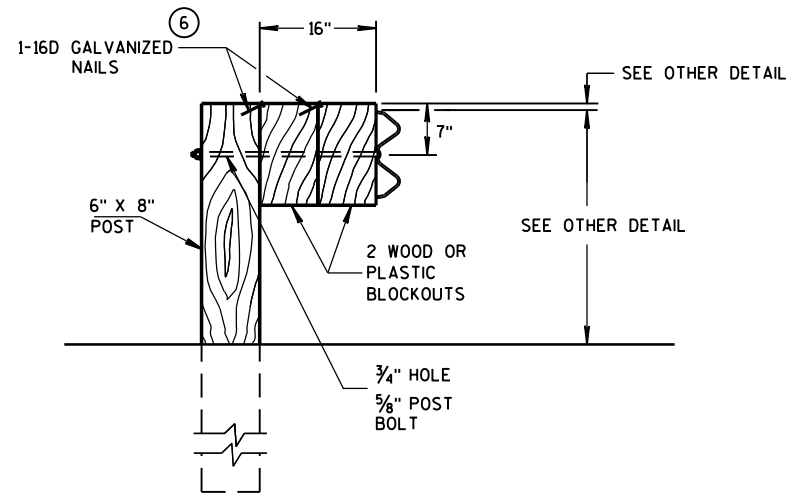
SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

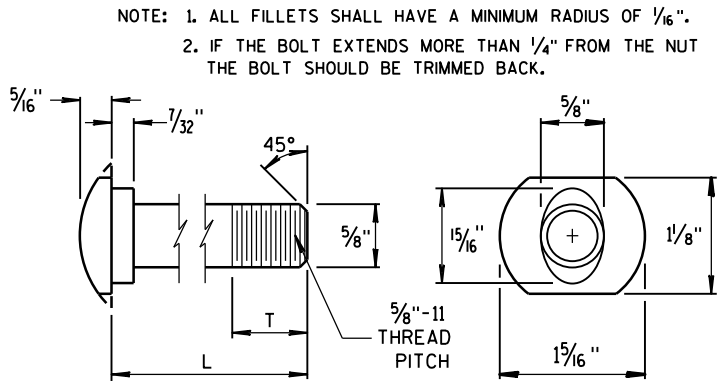
GENERAL NOTES

- 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.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

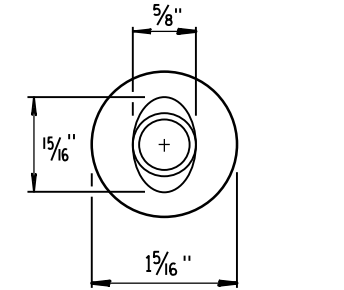


DETAIL FOR 16" BLOCKOUT DEPTH

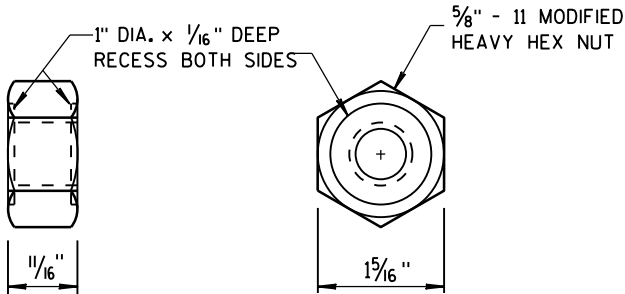
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



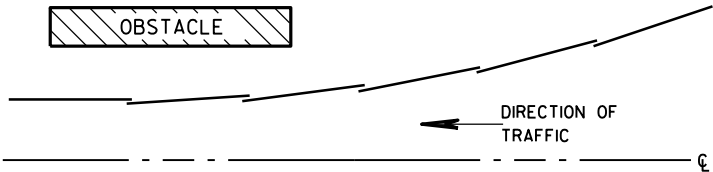
POST BOLT TABLE



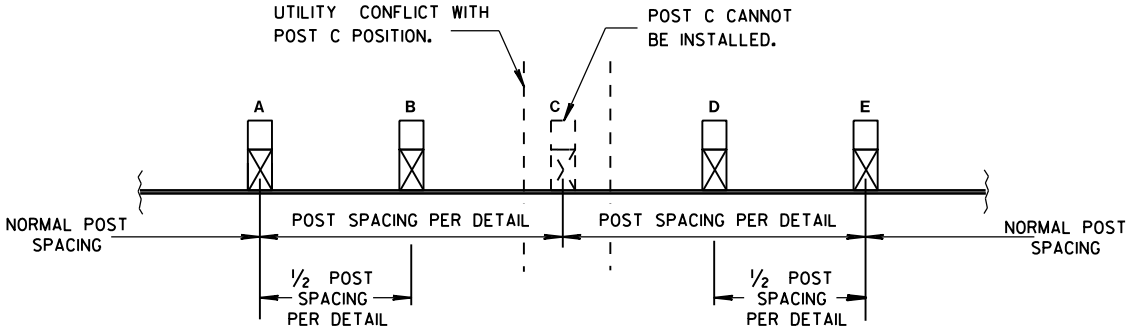
ALTERNATE BOLT HEAD



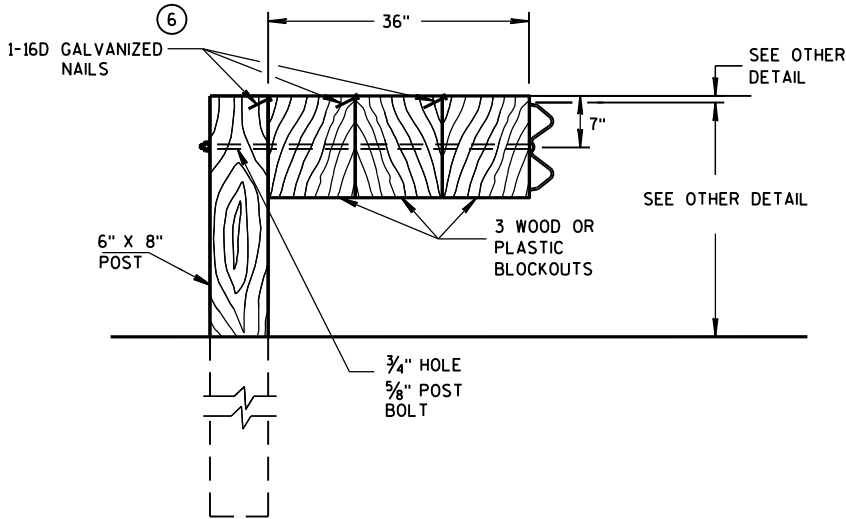
POST BOLT, SPLICE BOLT AND RECESS NUT



PLAN VIEW
BEAM LAPPING DETAIL



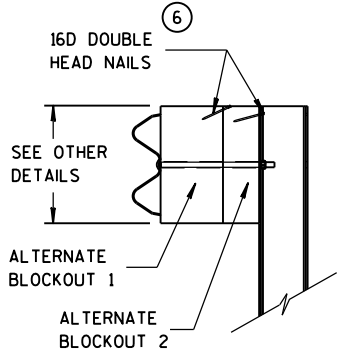
POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



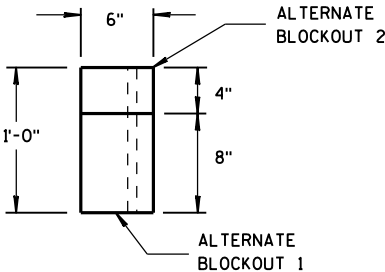
DETAIL FOR 36" BLOCKOUT DEPTH

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.



SIDE VIEW

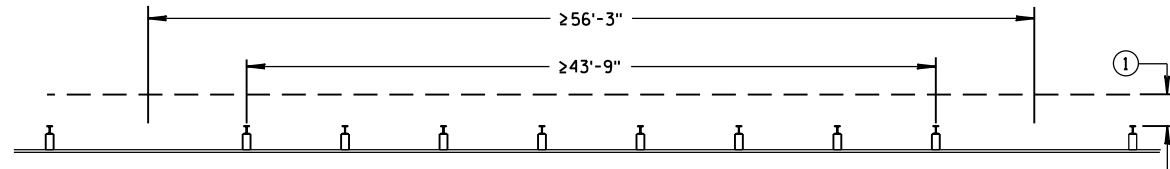


TOP VIEW

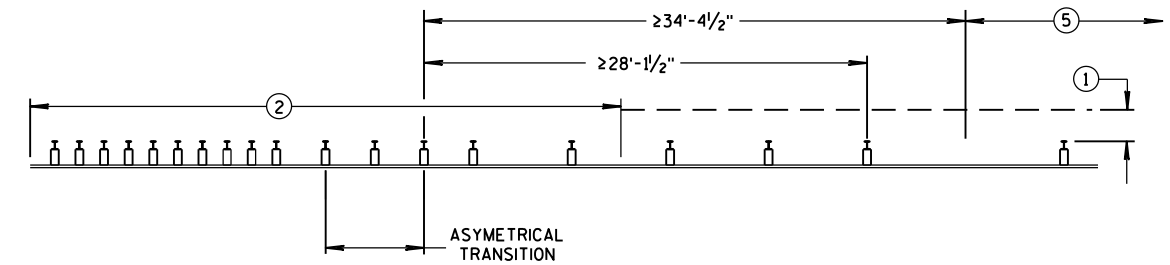
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

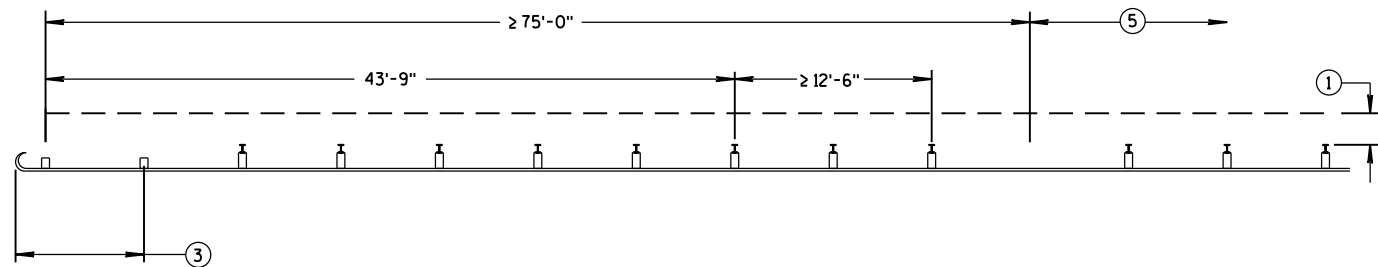
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MISSING POST IN NORMAL BEAM GUARD RUN

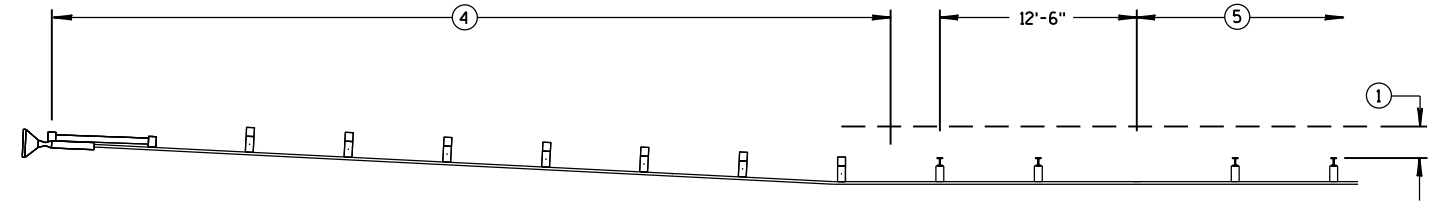


MISSING POST NEAR APPROACH THRIE BEAM TRANSITION

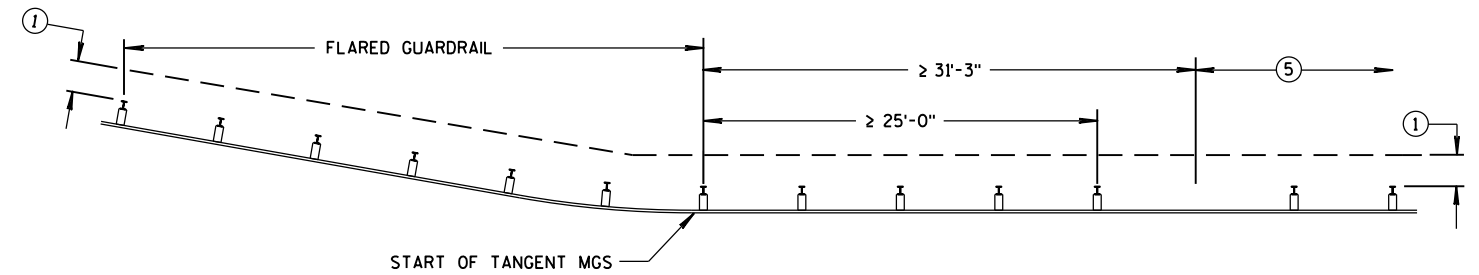


MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL

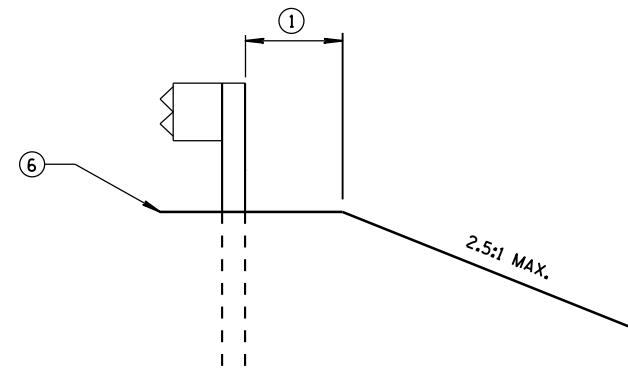
- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER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



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

6

- S.D.D. 14 B 44-3a**

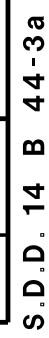
S.D.D. 14 B 44-3a

S.D.D. 14 B 44-3a

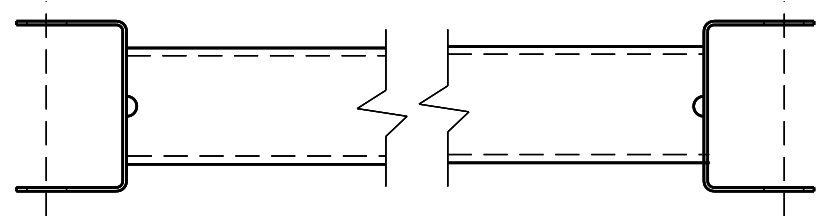
S.D.D. 14 B 44-3a

S.D.D. 14 B 44-3a

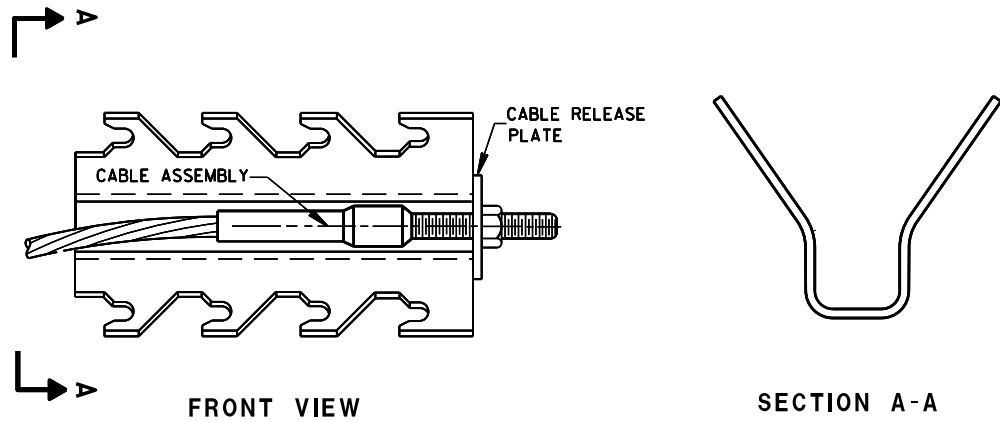
S.D.D. 14 B 44-3a



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

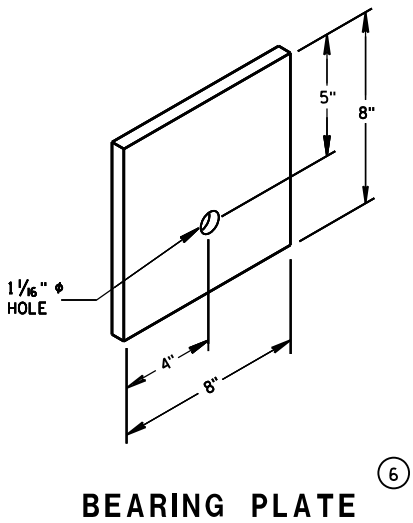


GENERIC GROUND STRUT (9) (H)

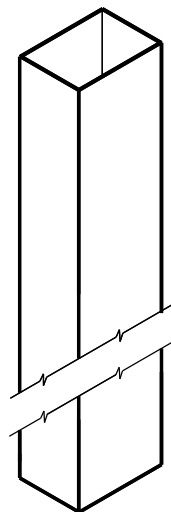


GENERIC ANCHOR CABLE BOX (8) (H)

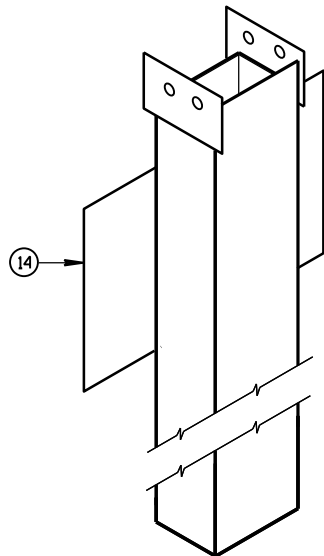
BILL OF MATERIALS	
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
(1)	UPPER POST NO.1 6" X 6" TUBE
(2)	LOWER POST NO.1
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND 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



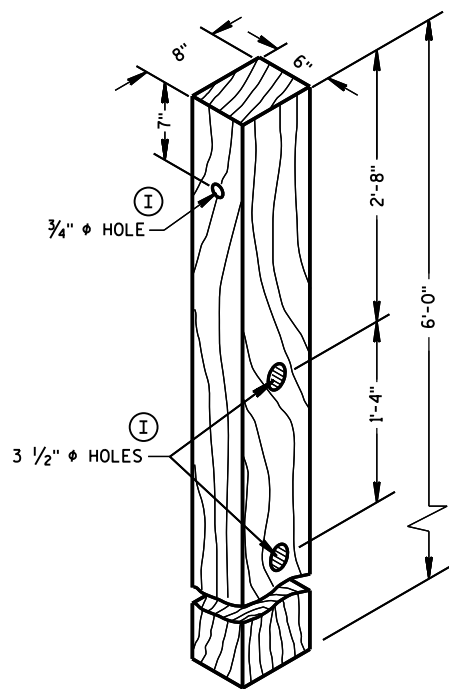
BEARING PLATE (6)



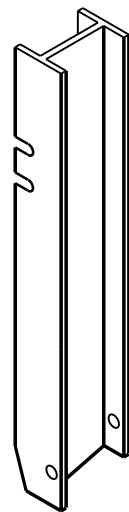
UPPER POST NO. 1⁽¹⁾



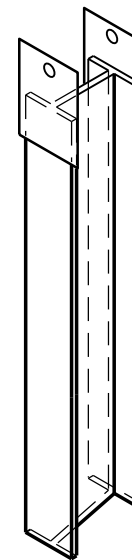
LOWER POST NO. 1⁽²⁾



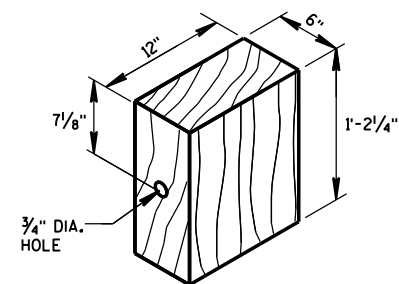
POSTS NUMBER 3-9
WOOD CRT POST⁽³⁾



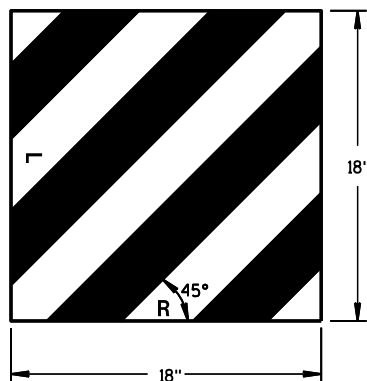
UPPER POST NO. 2⁽¹⁵⁾



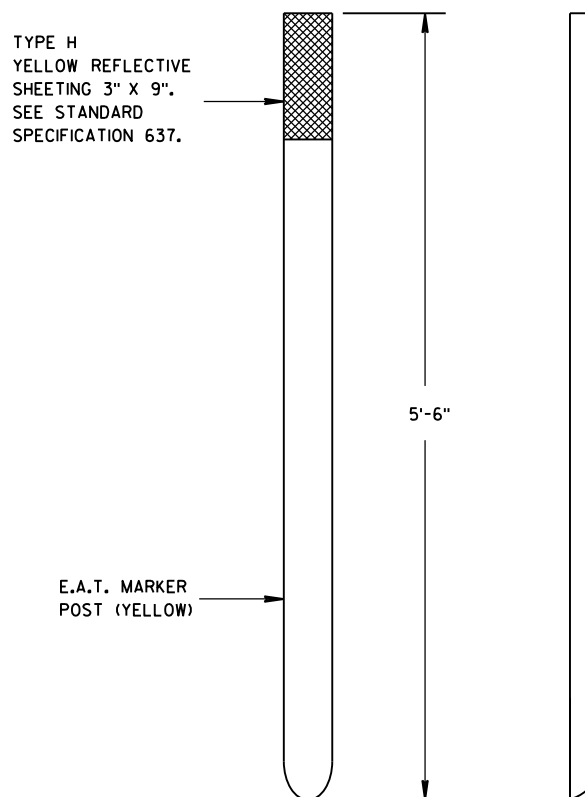
LOWER POST NO. 2⁽¹⁶⁾



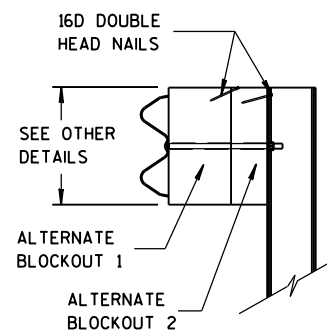
WOOD BLOCKOUT⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



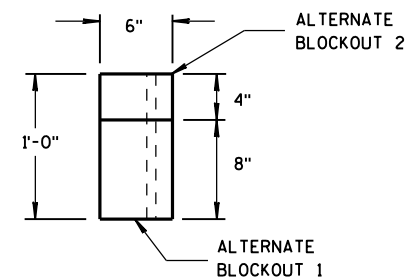
REFLECTIVE SHEETING DETAIL^(H)



FRONT VIEW
SIDE VIEW
E.A.T. MARKER POST⁽¹³⁾



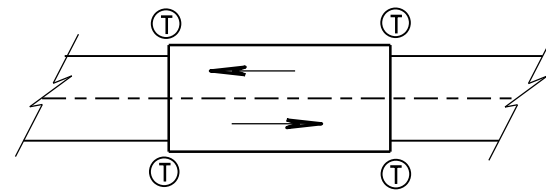
SIDE VIEW



TOP VIEW

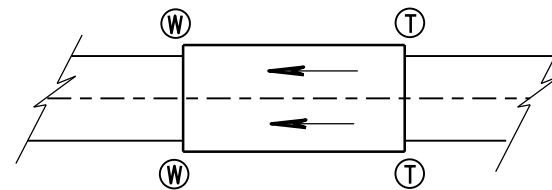
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

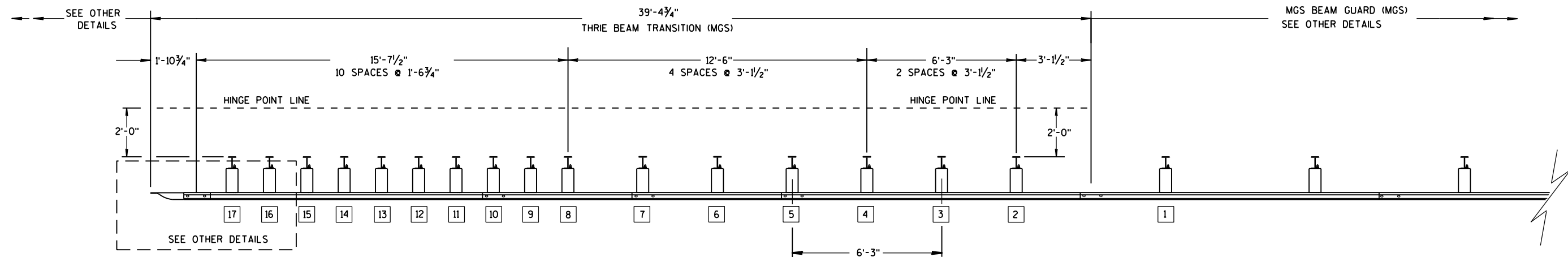
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

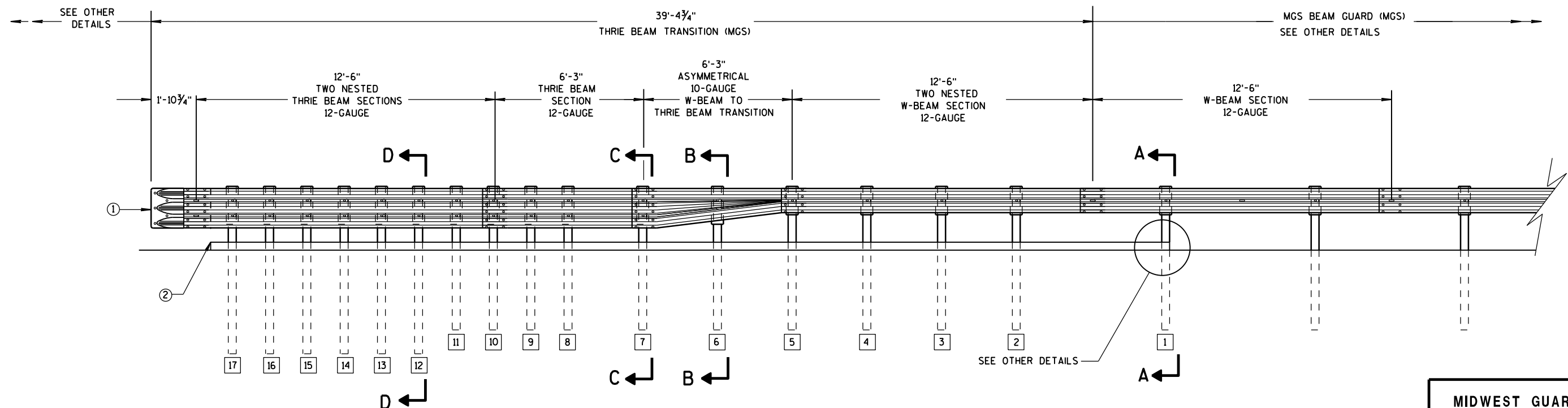
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

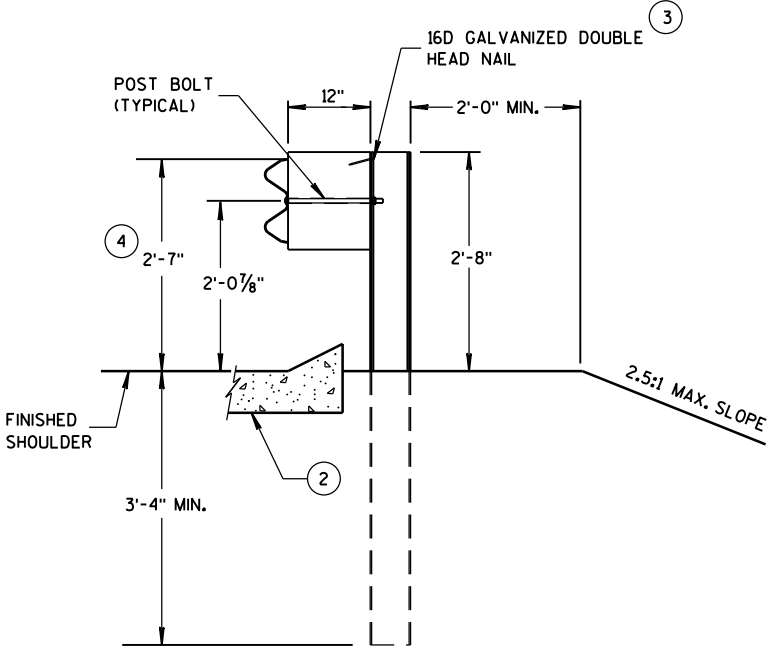
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

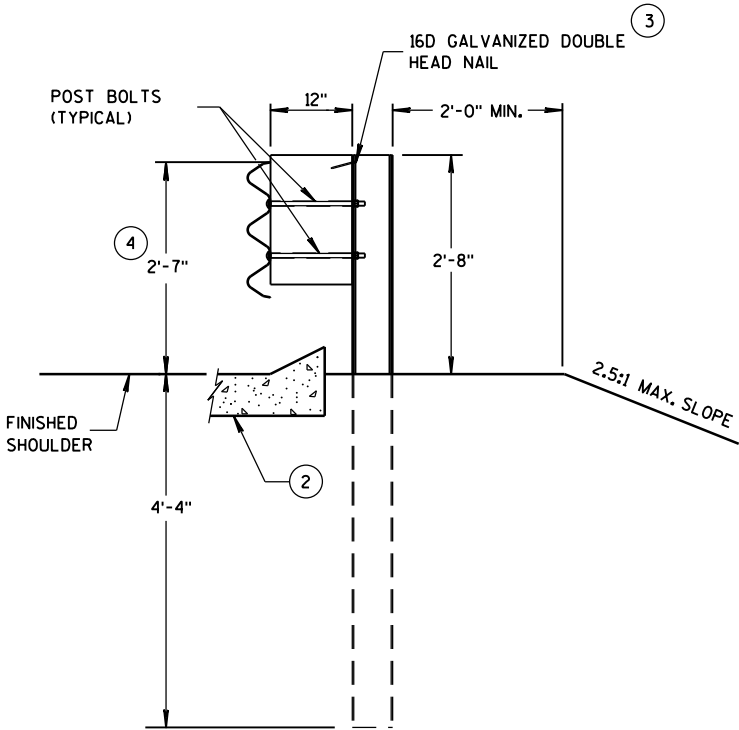
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

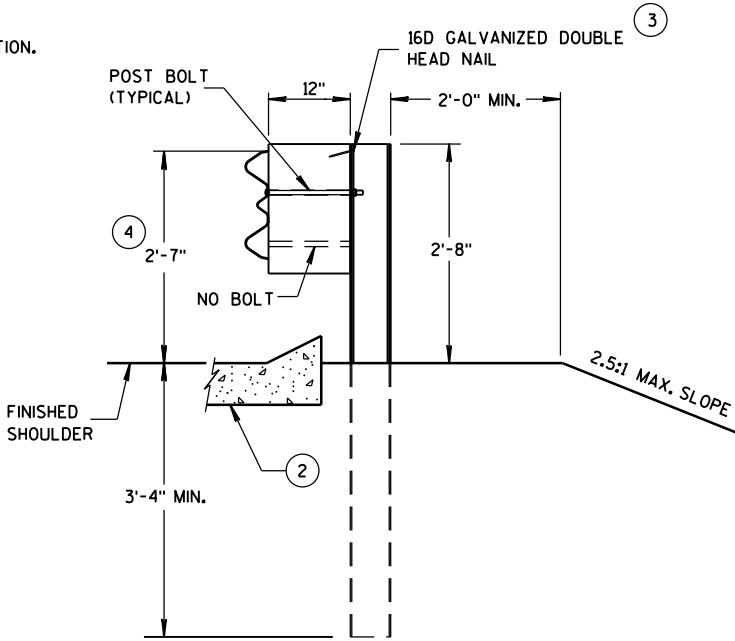
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



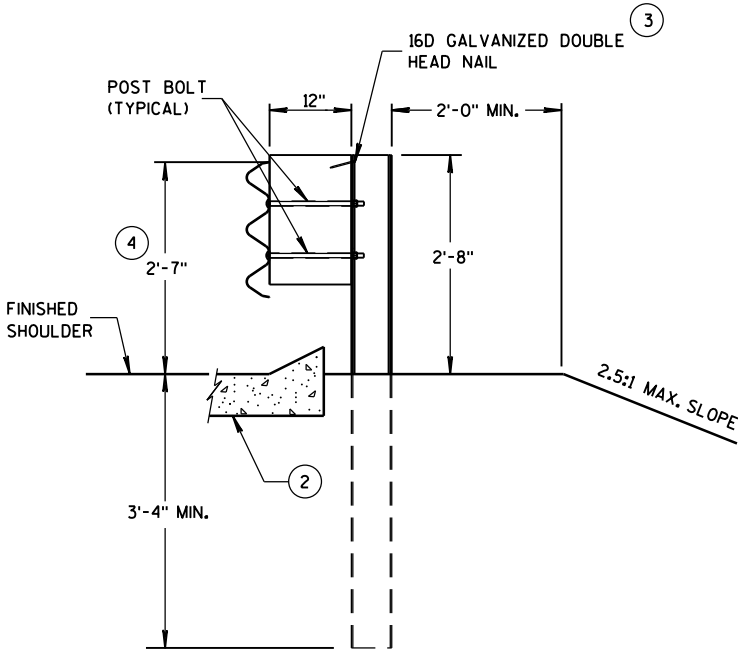
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

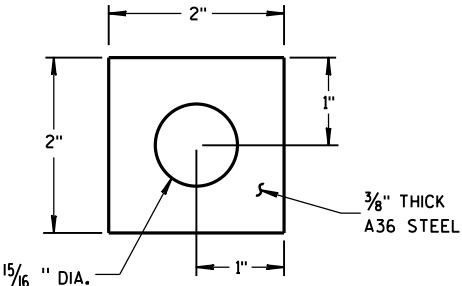
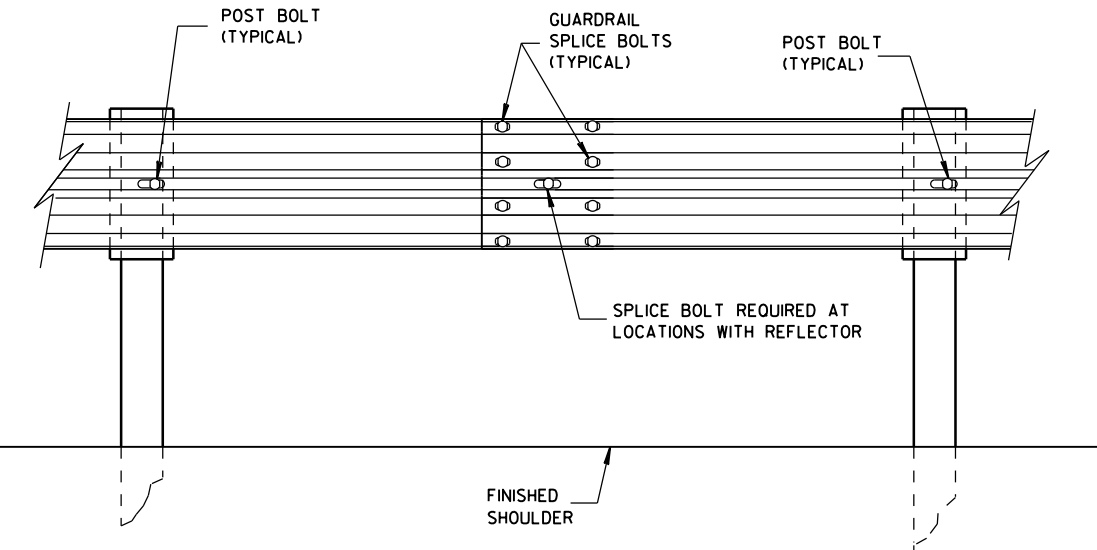
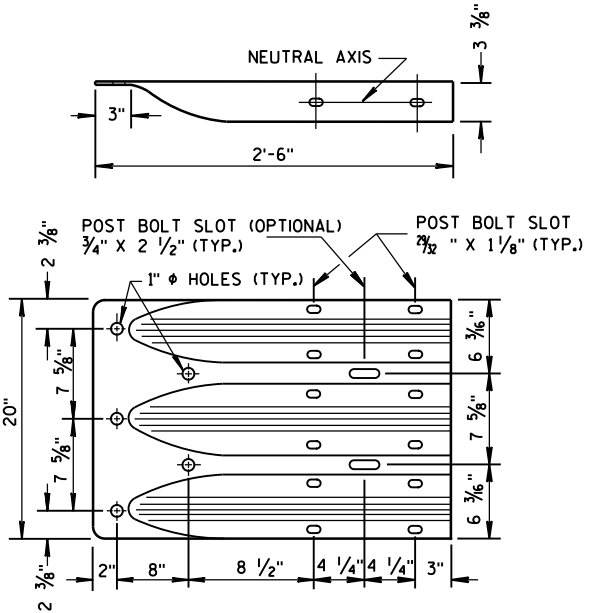


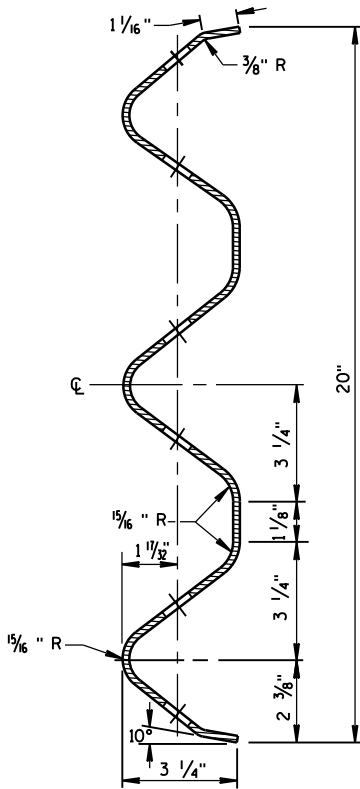
PLATE WASHER DETAIL



SPlice DETAIL



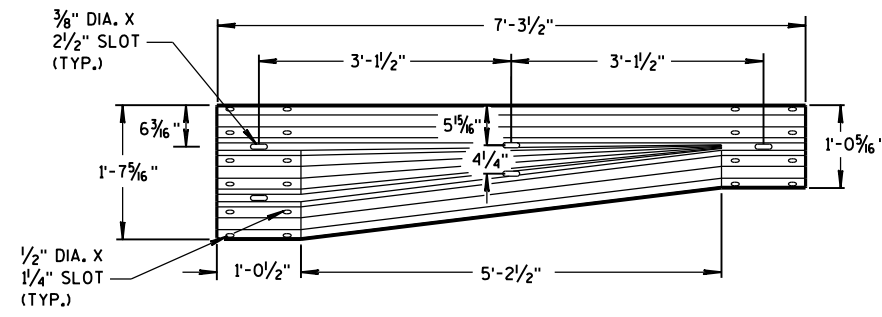
THRIE BEAM
TERMINAL CONNECTOR



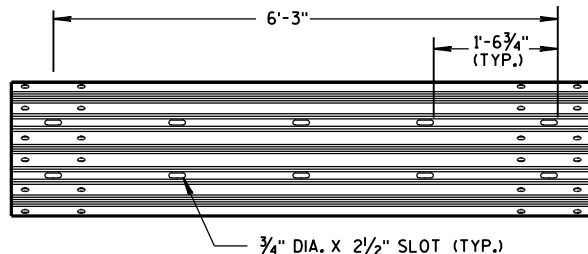
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

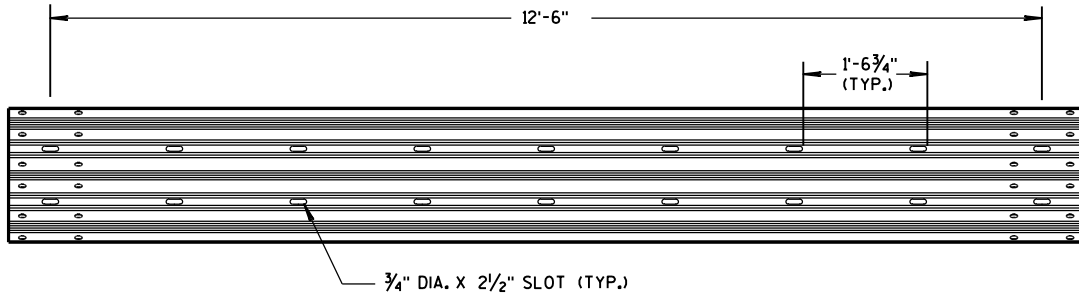
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



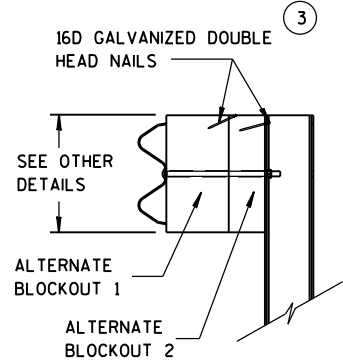
W-BEAM TO THRIE BEAM TRANSITION SECTION



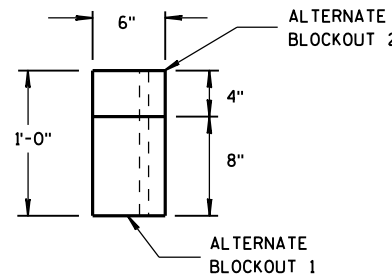
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

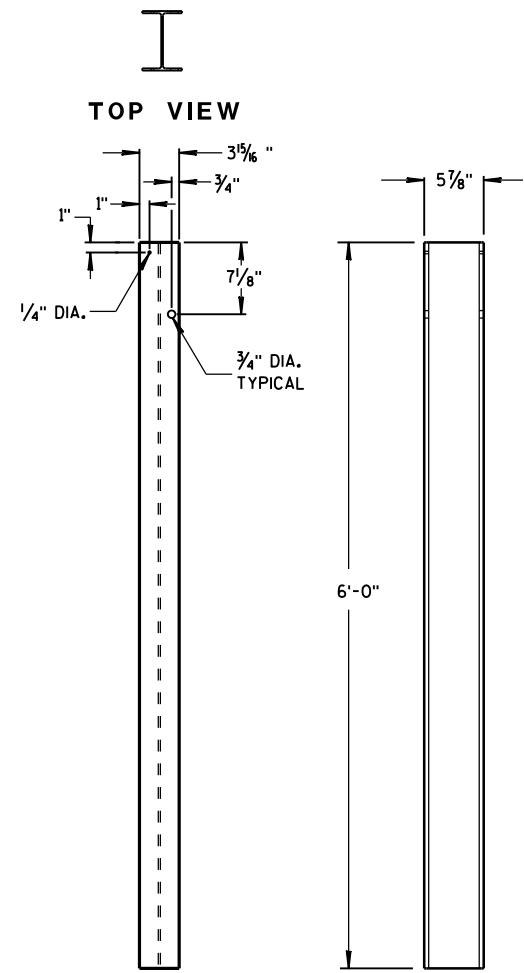


SIDE VIEW



TOP VIEW

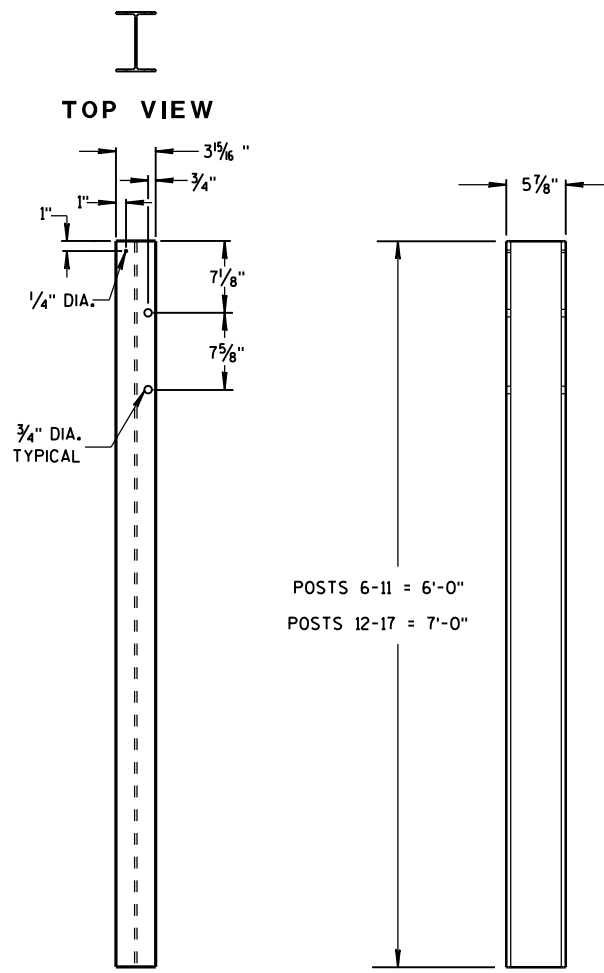
ALTERNATE WOOD BLOCKOUT DETAIL



FRONT VIEW

SIDE VIEW

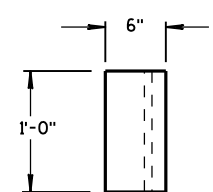
STEEL POSTS 1-5



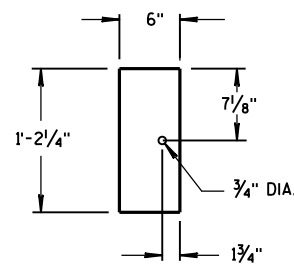
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17

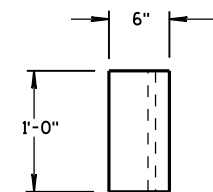


TOP VIEW

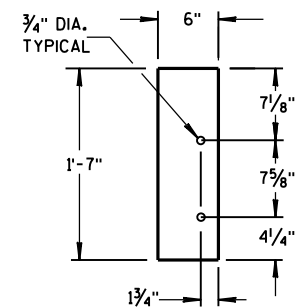


FRONT VIEW

BLOCKOUT POSTS 1-5



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

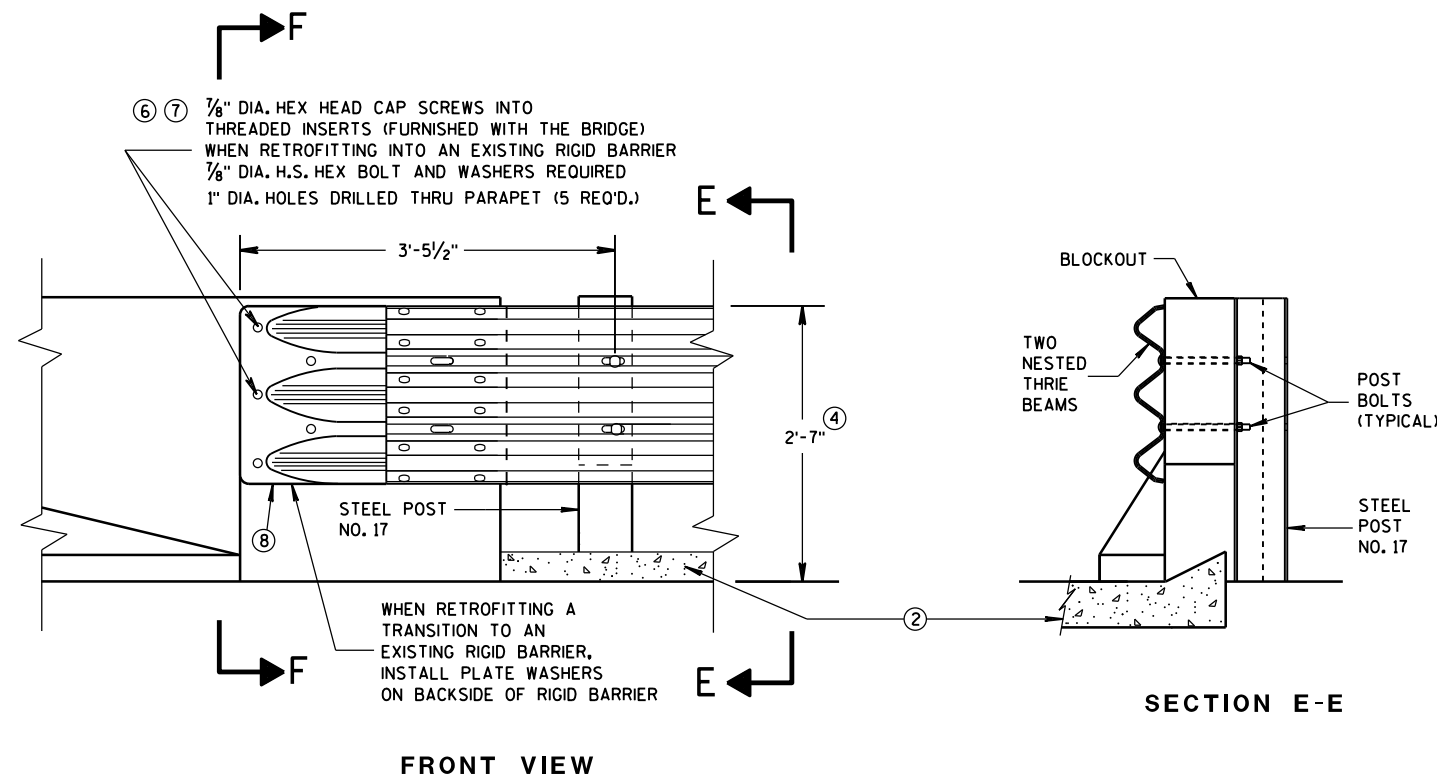
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

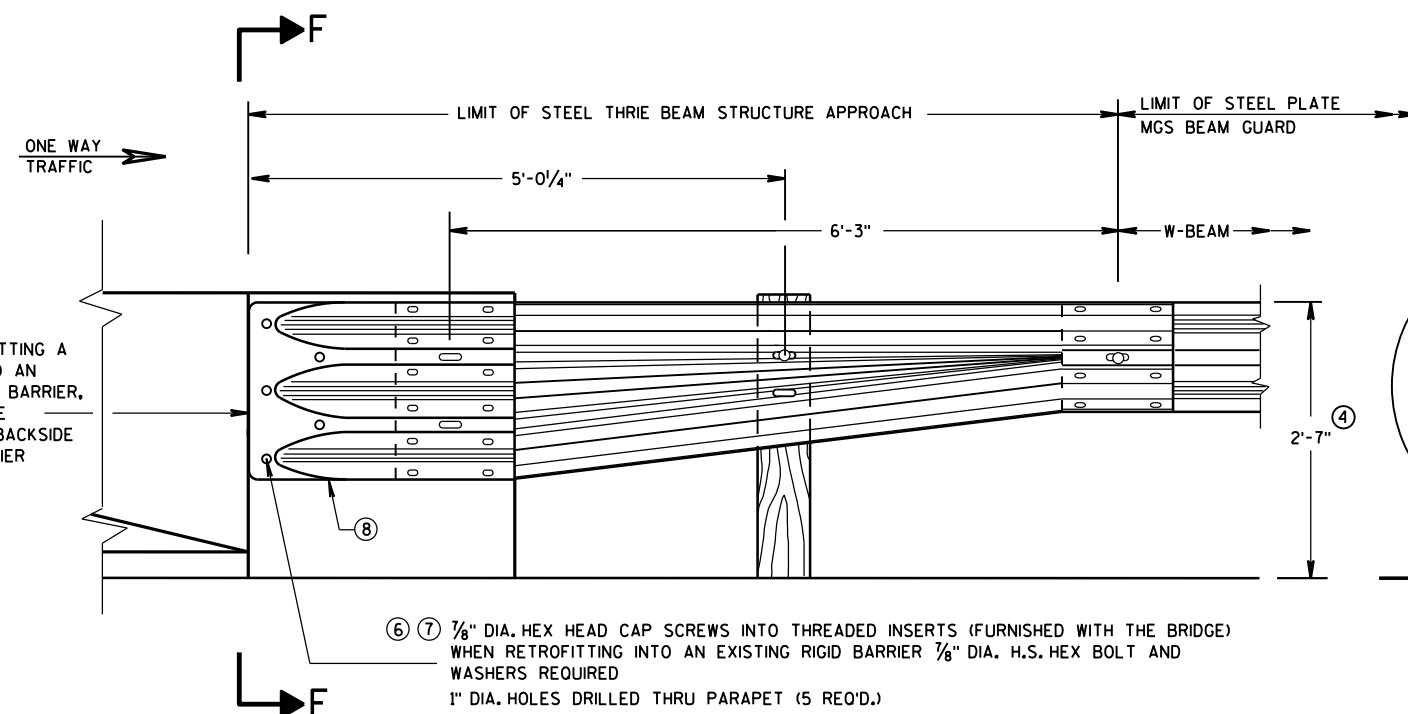
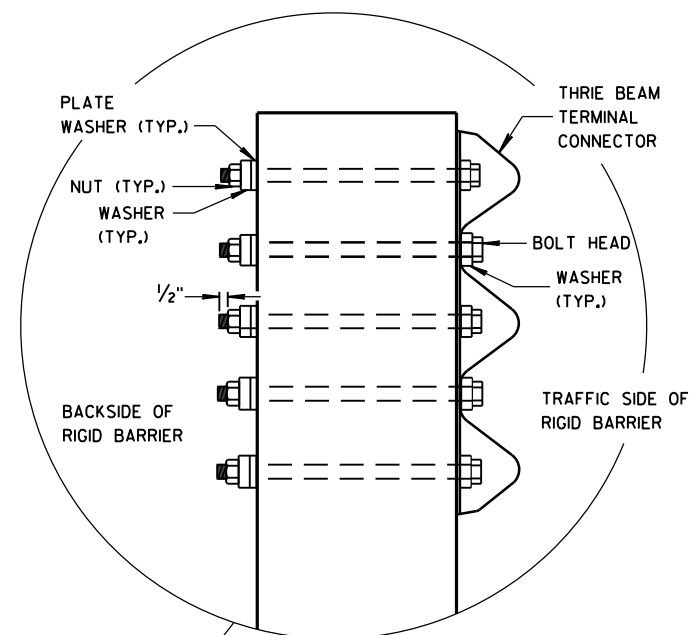
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



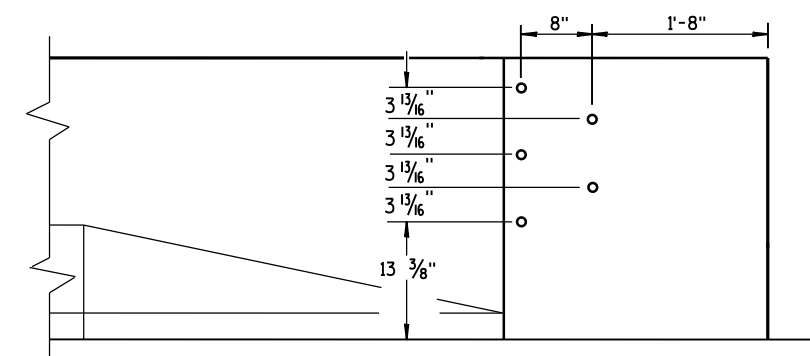
GENERAL NOTES

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 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 1/2".



SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

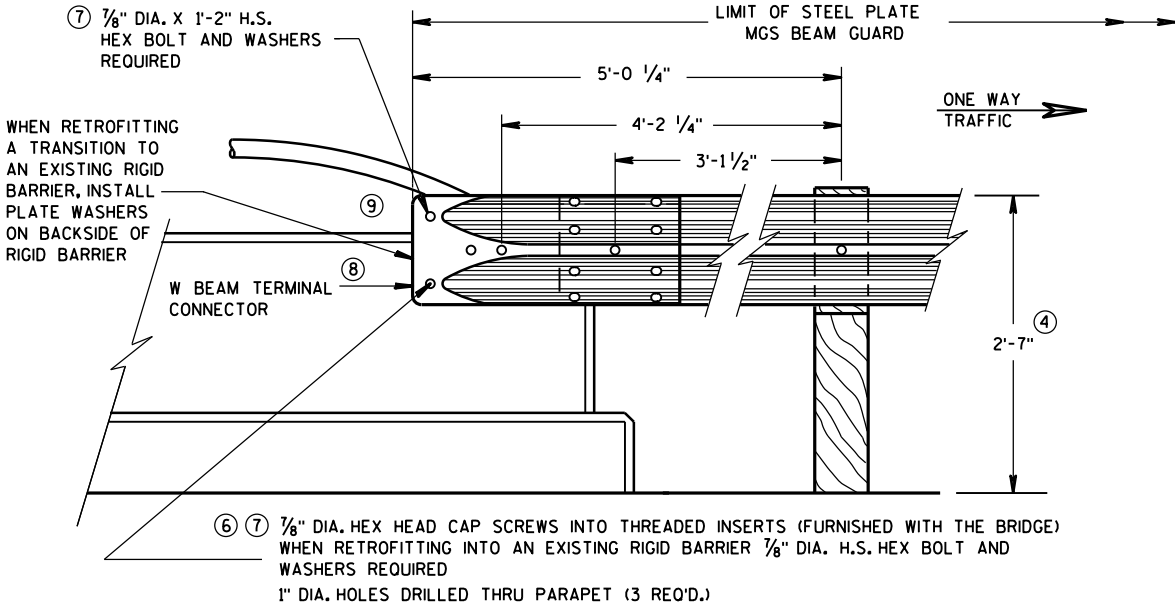
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/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

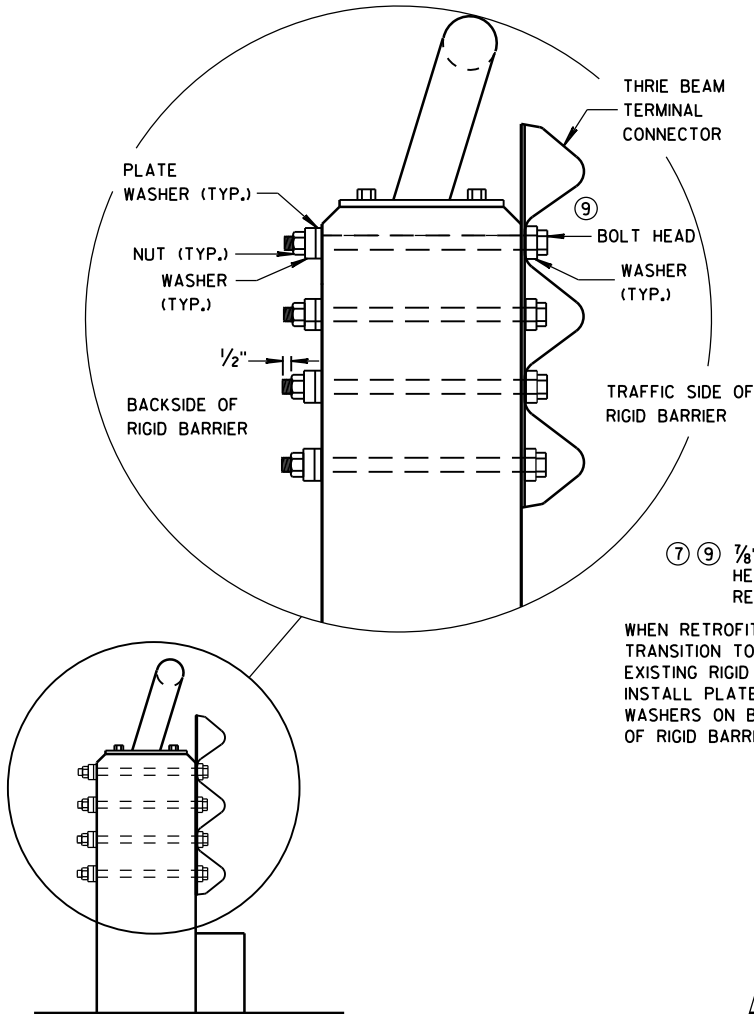
GENERAL NOTES

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

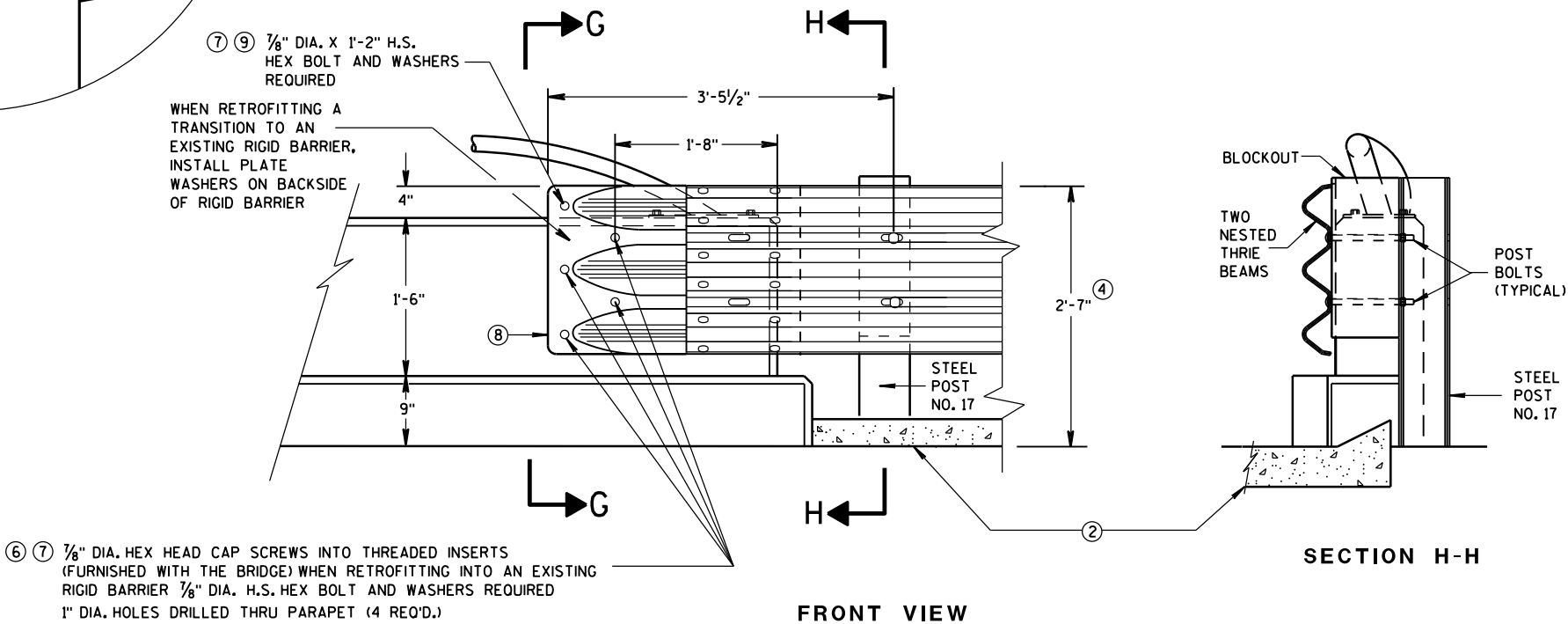
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
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- 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.



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

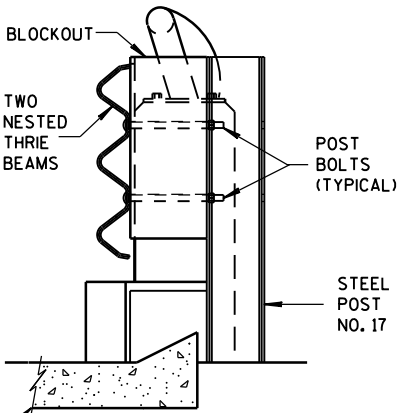


SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

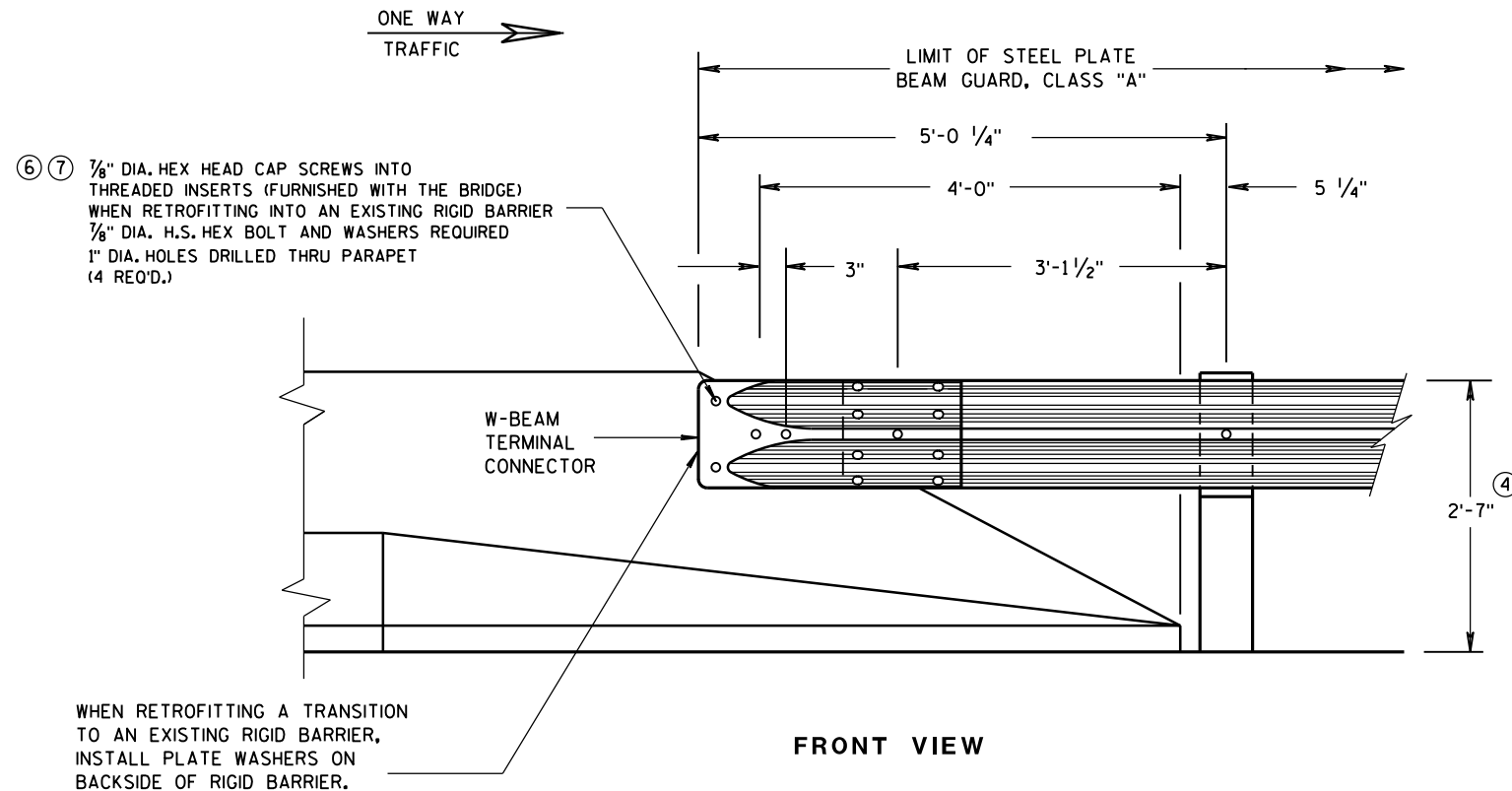


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

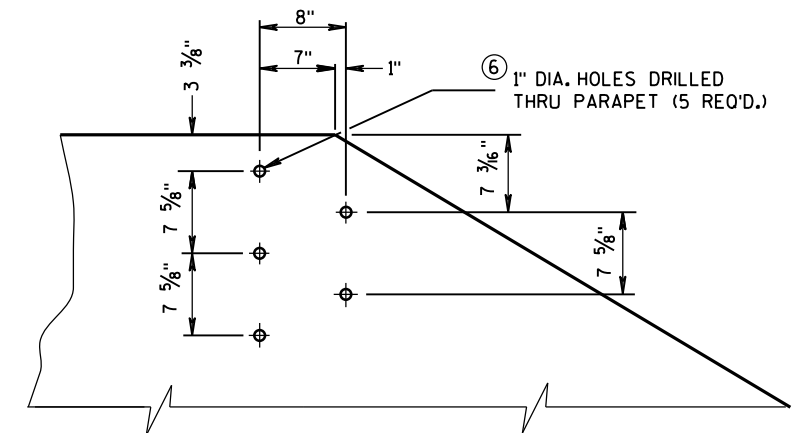
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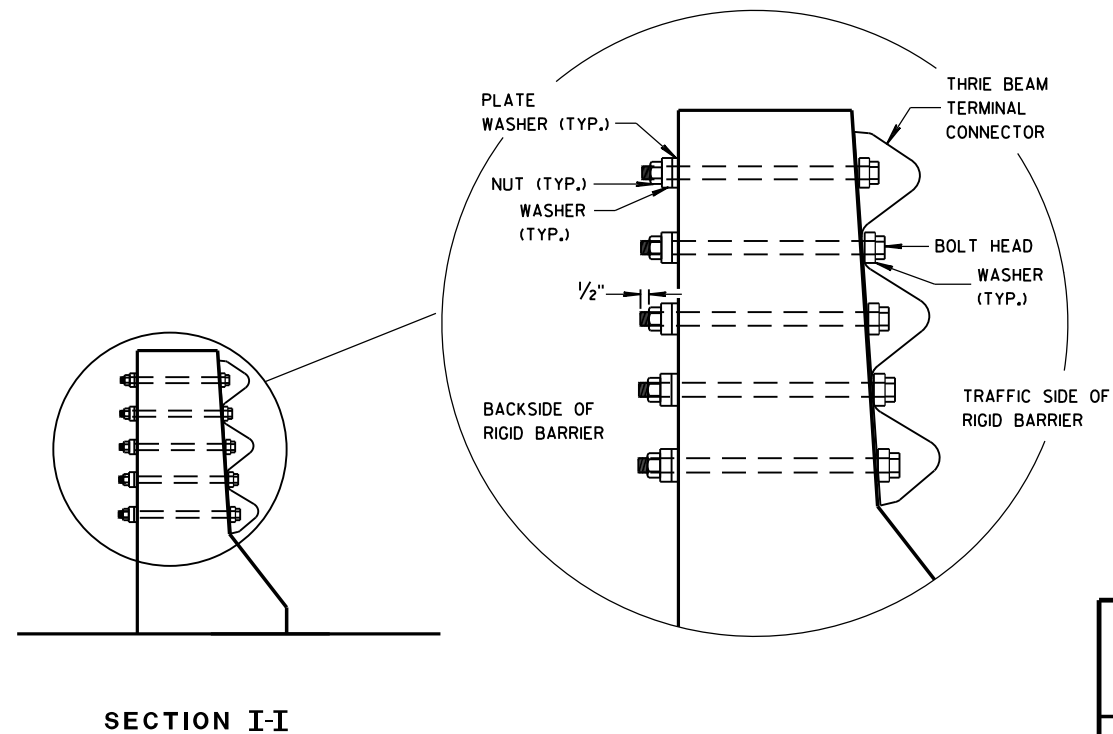
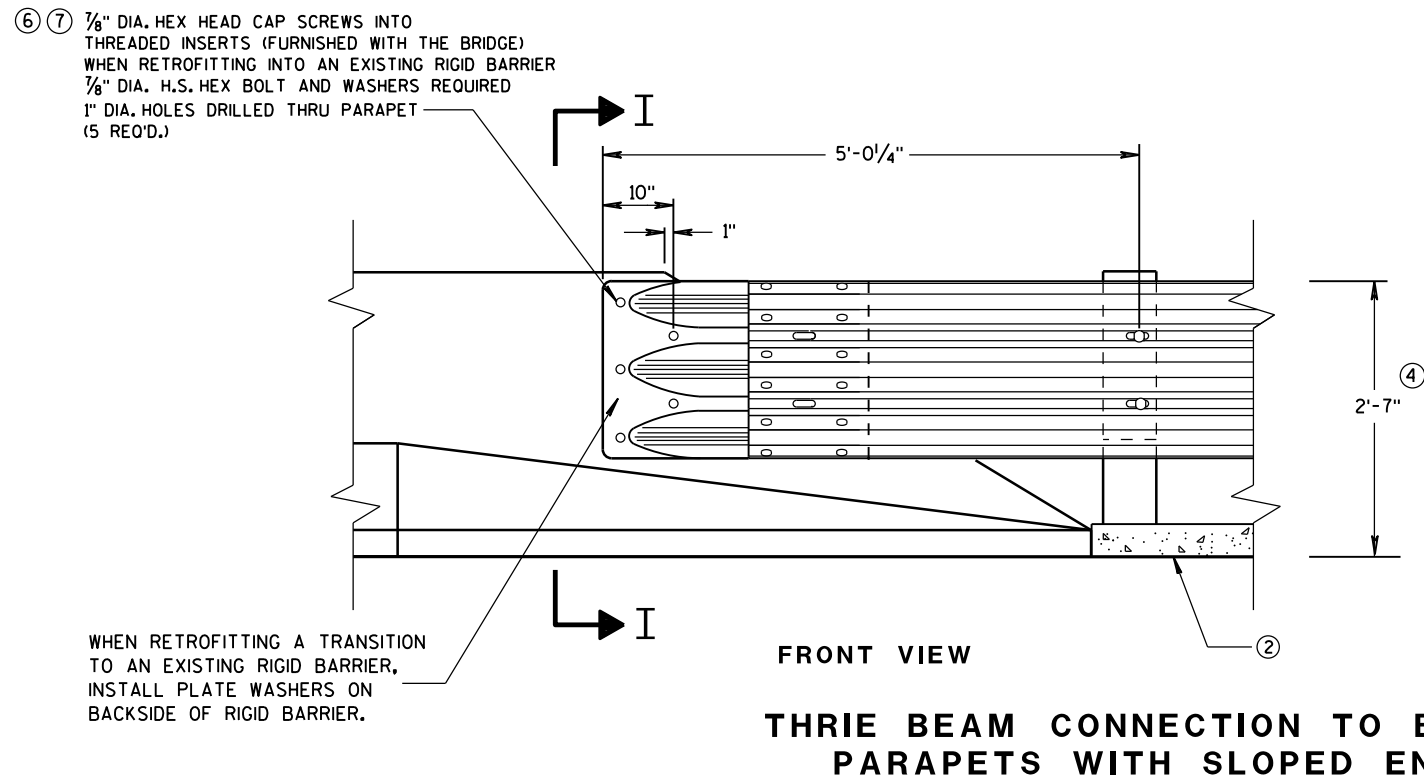


GENERAL NOTES

- 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.
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DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION

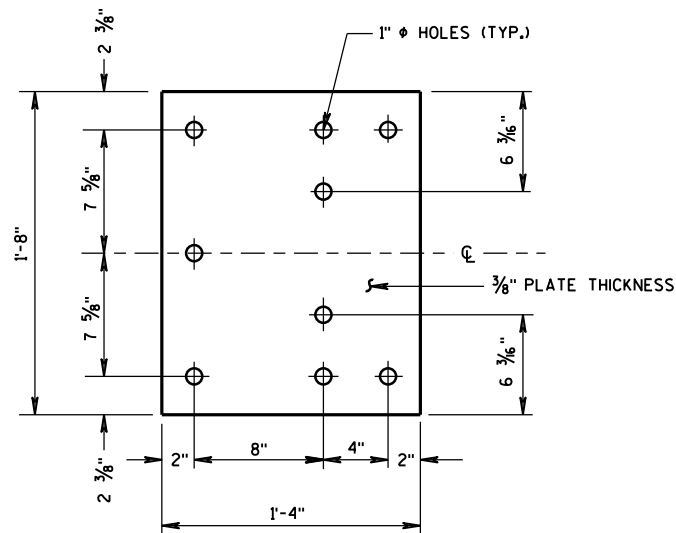


MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

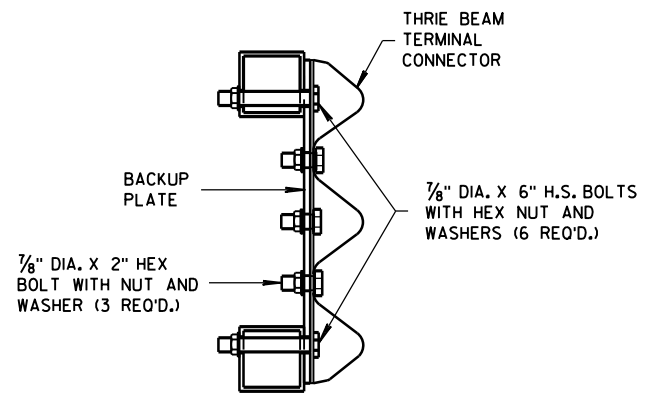
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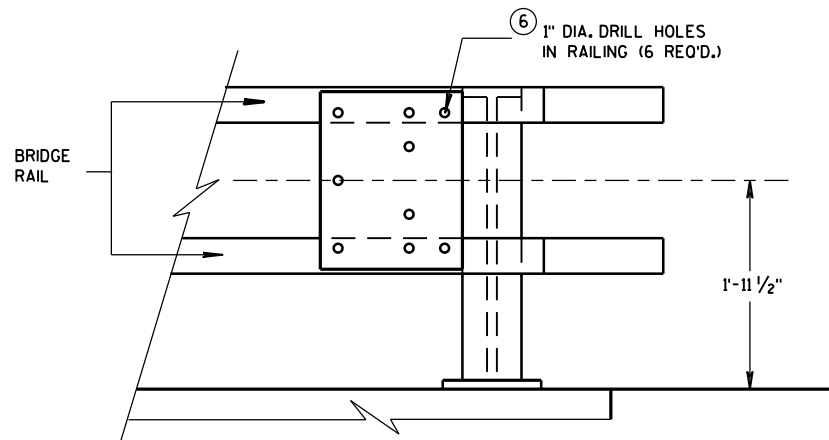
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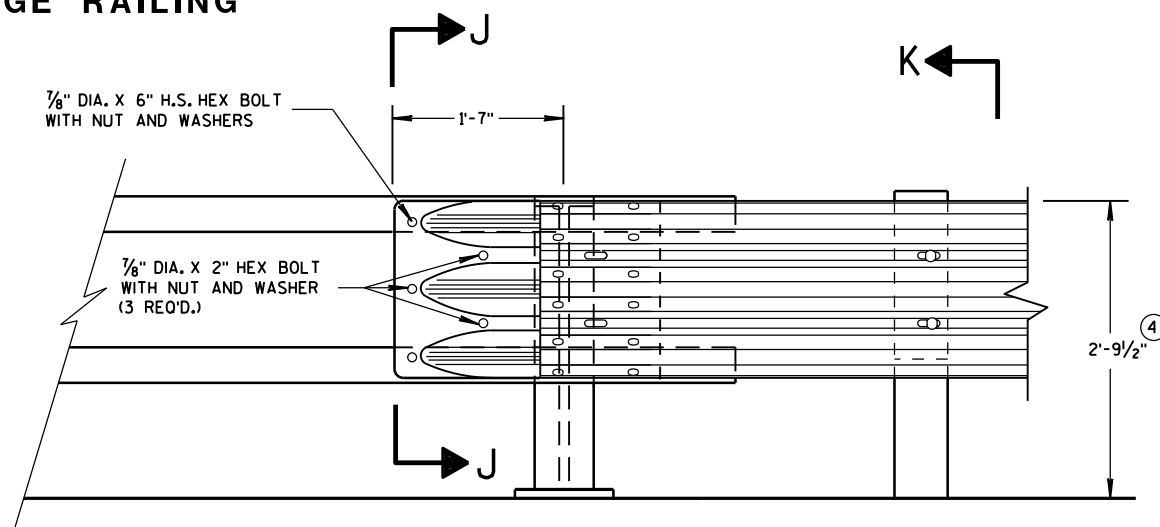
BACK-UP PLATE DETAIL



SECTION J-J

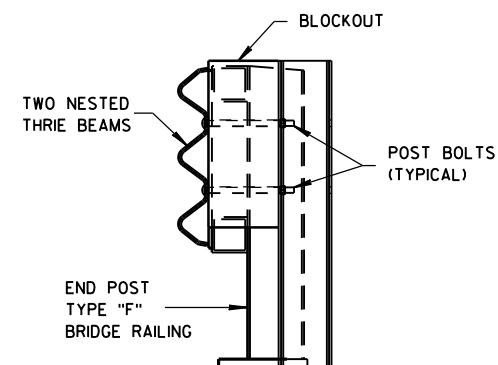


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

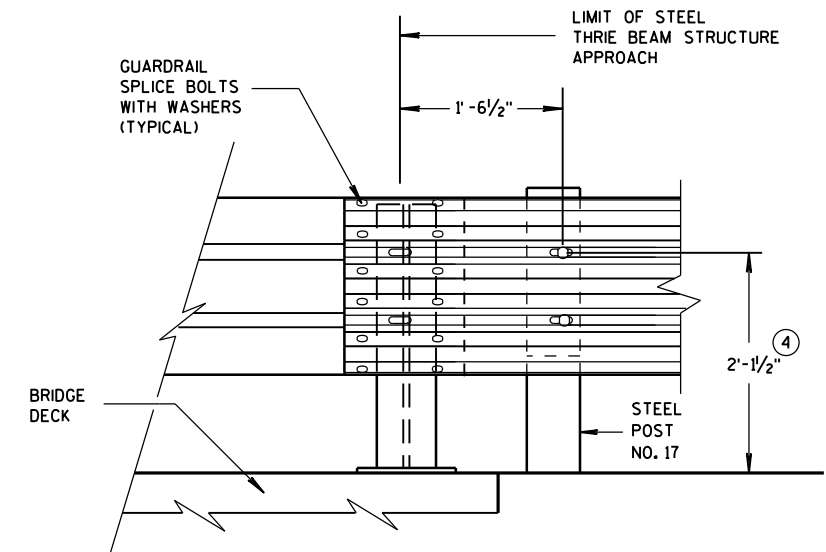
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

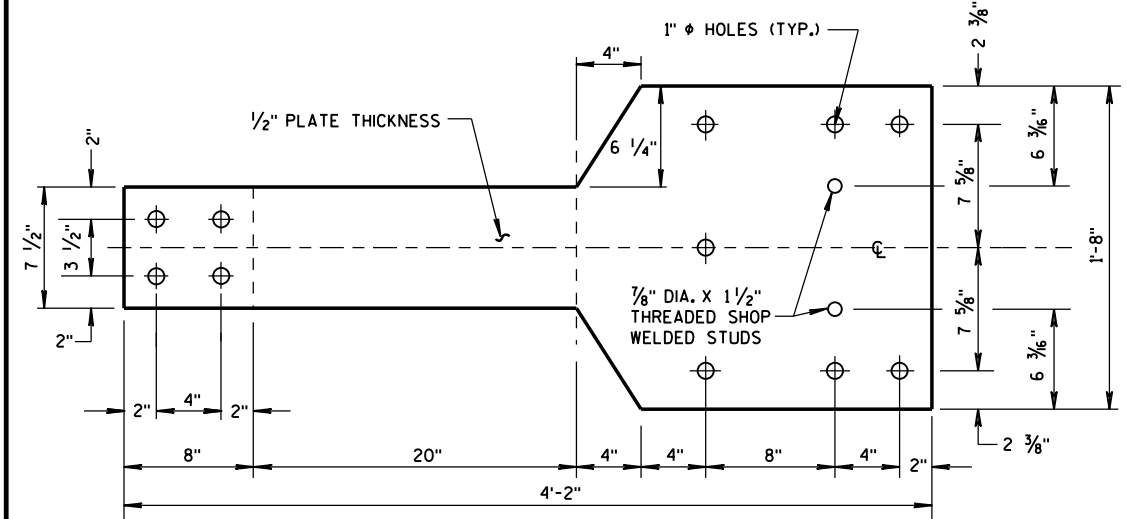
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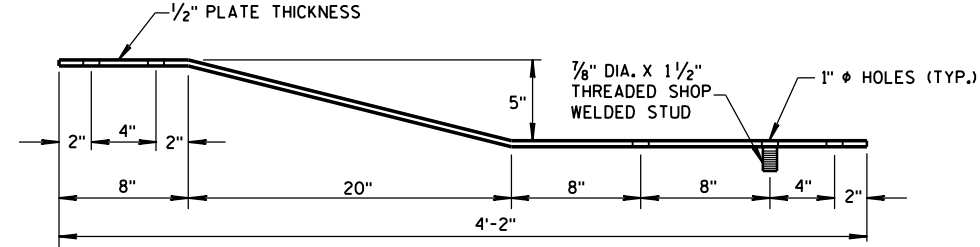
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

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

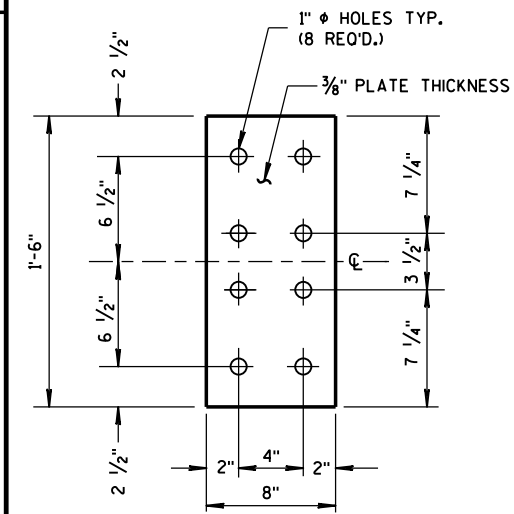


FRONT VIEW



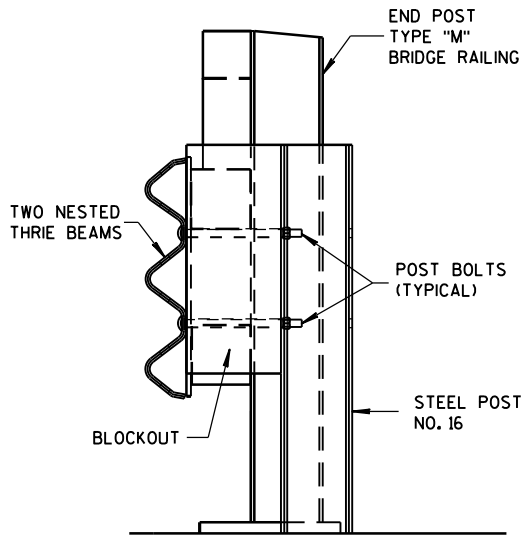
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

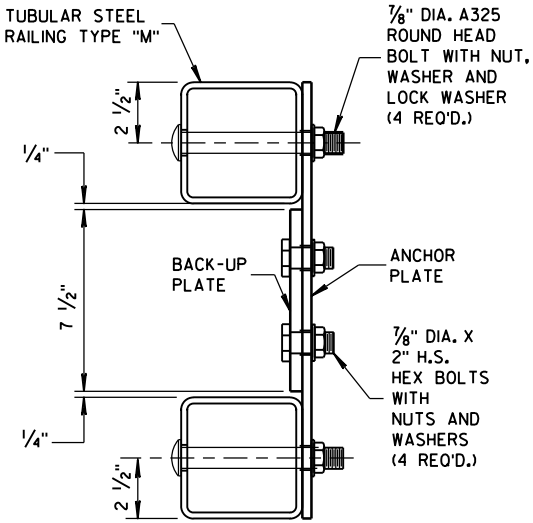


FRONT VIEW

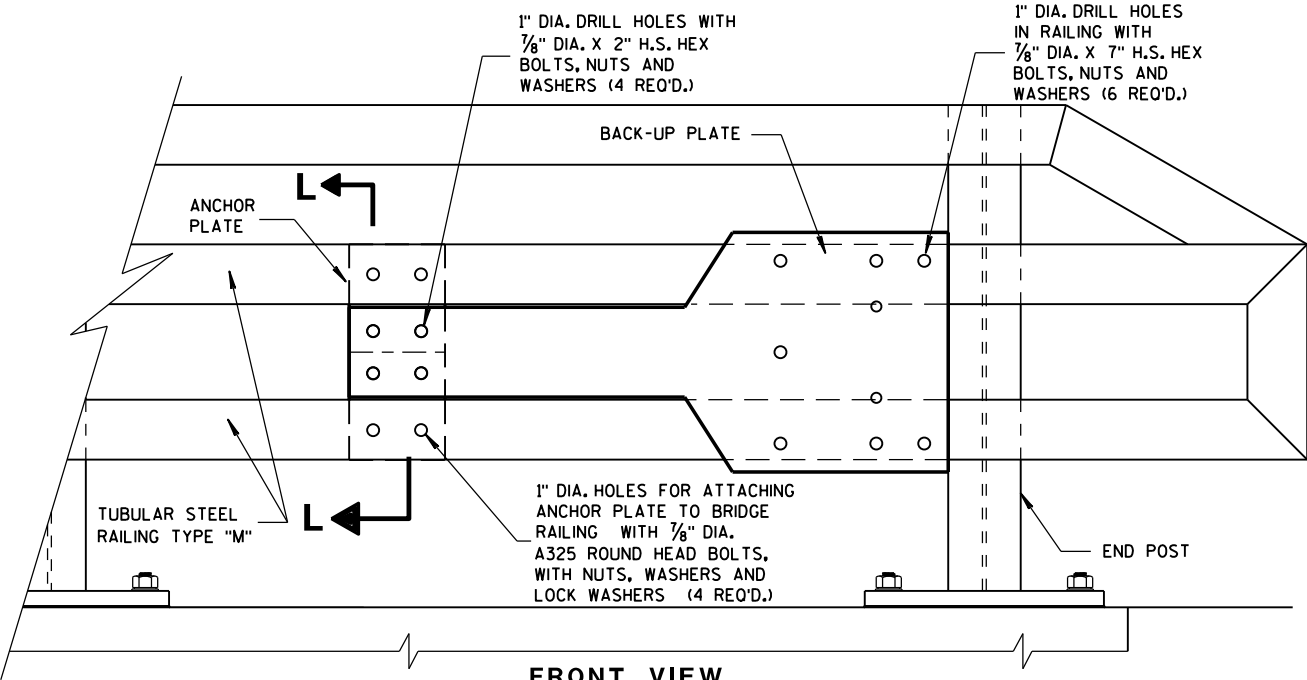
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

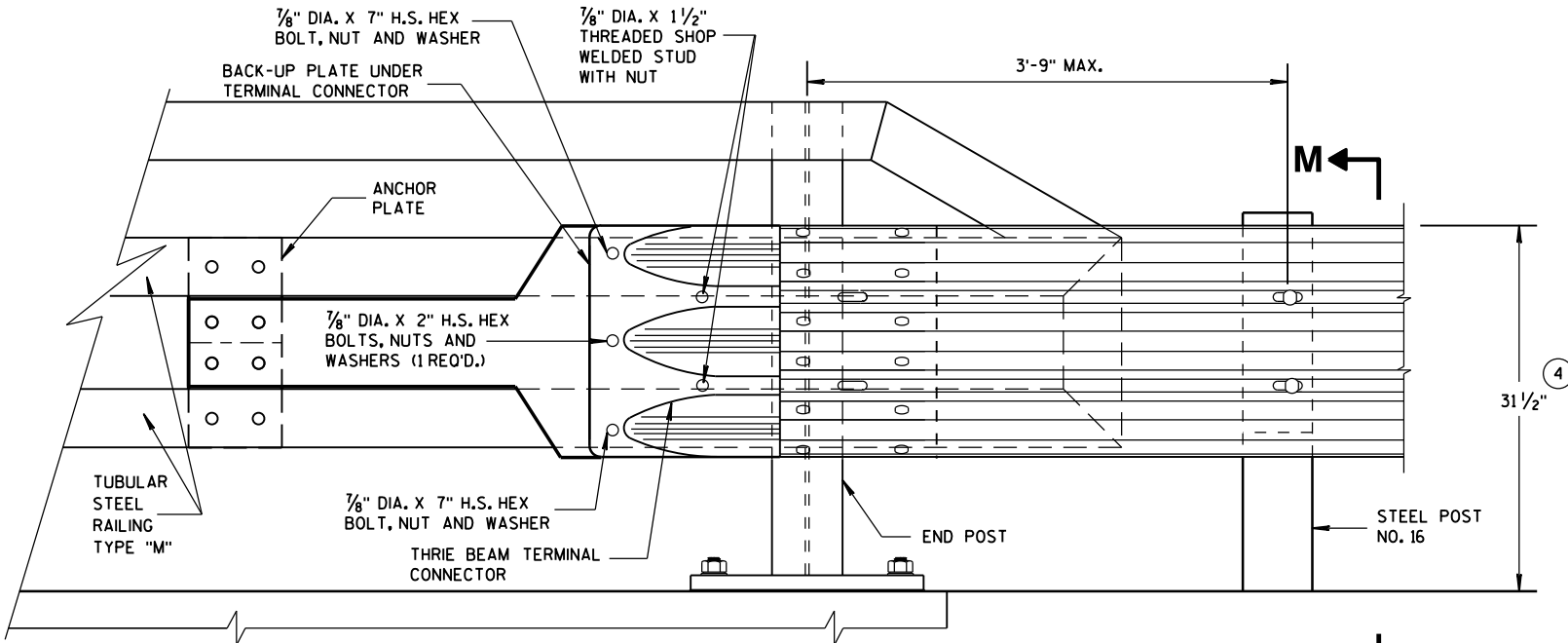


SECTION L-L

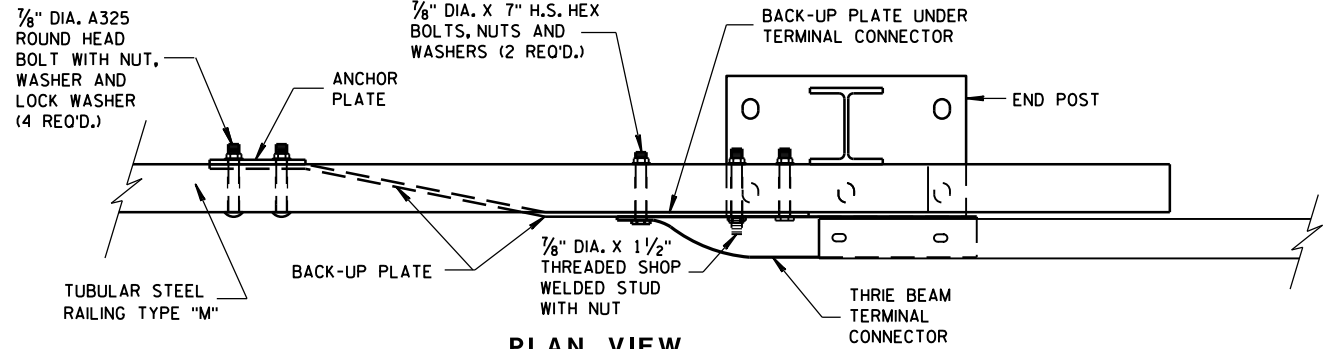


FRONT VIEW

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



FRONT VIEW



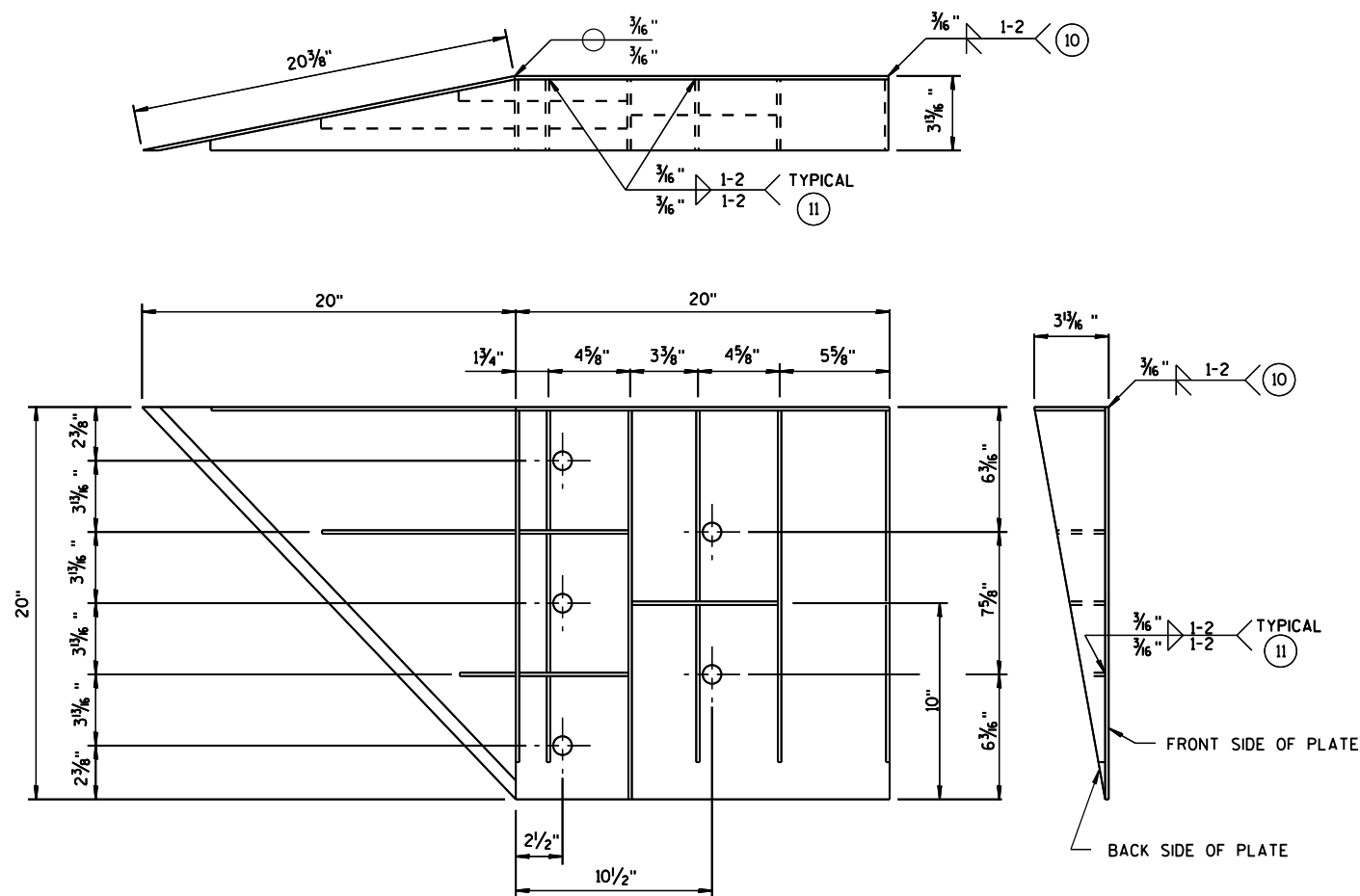
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

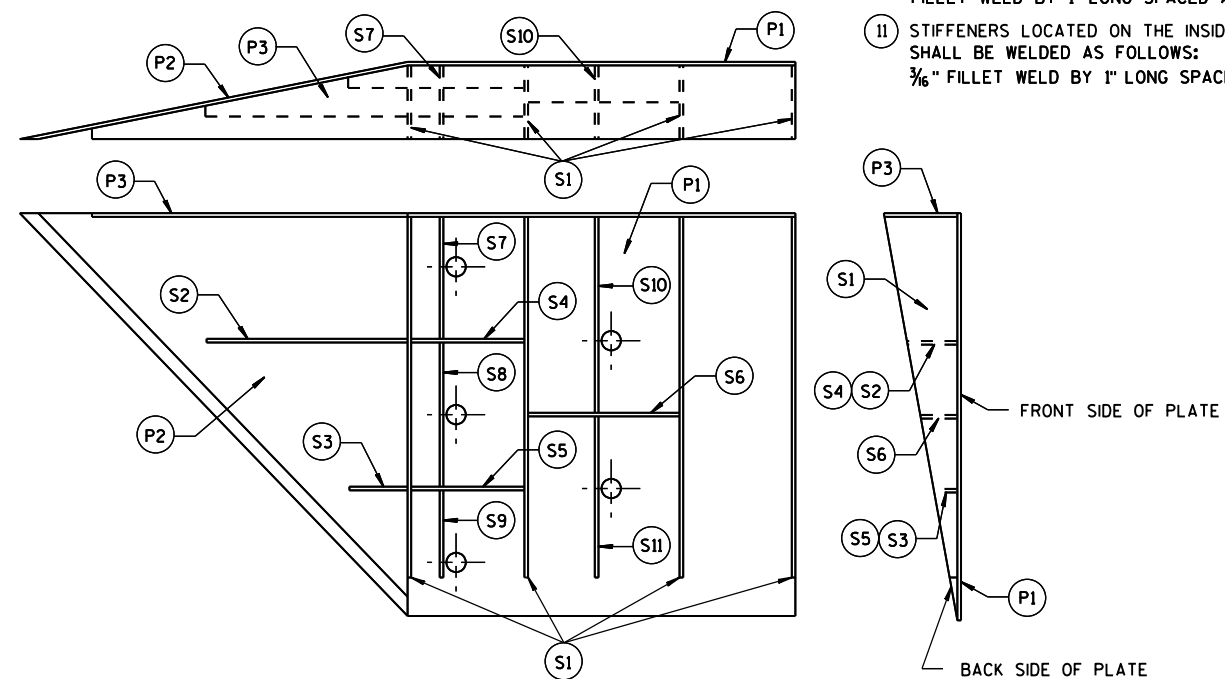


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE $\frac{3}{16}$ " THICK.

ALL STIFFENERS ARE $\frac{1}{4}$ " THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- ⑩ STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND $\frac{3}{16}$ " FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 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".

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

SINGLE SLOPE CONNECTION PLATE

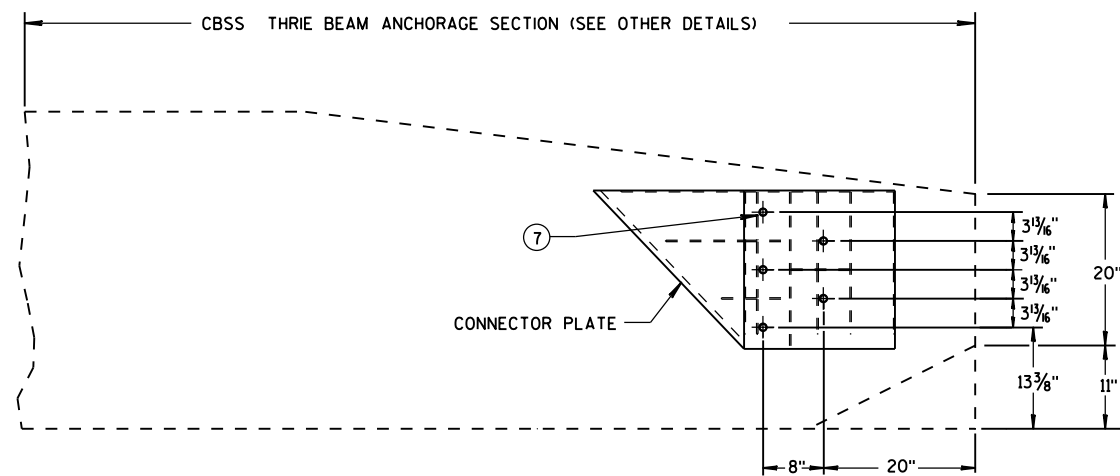
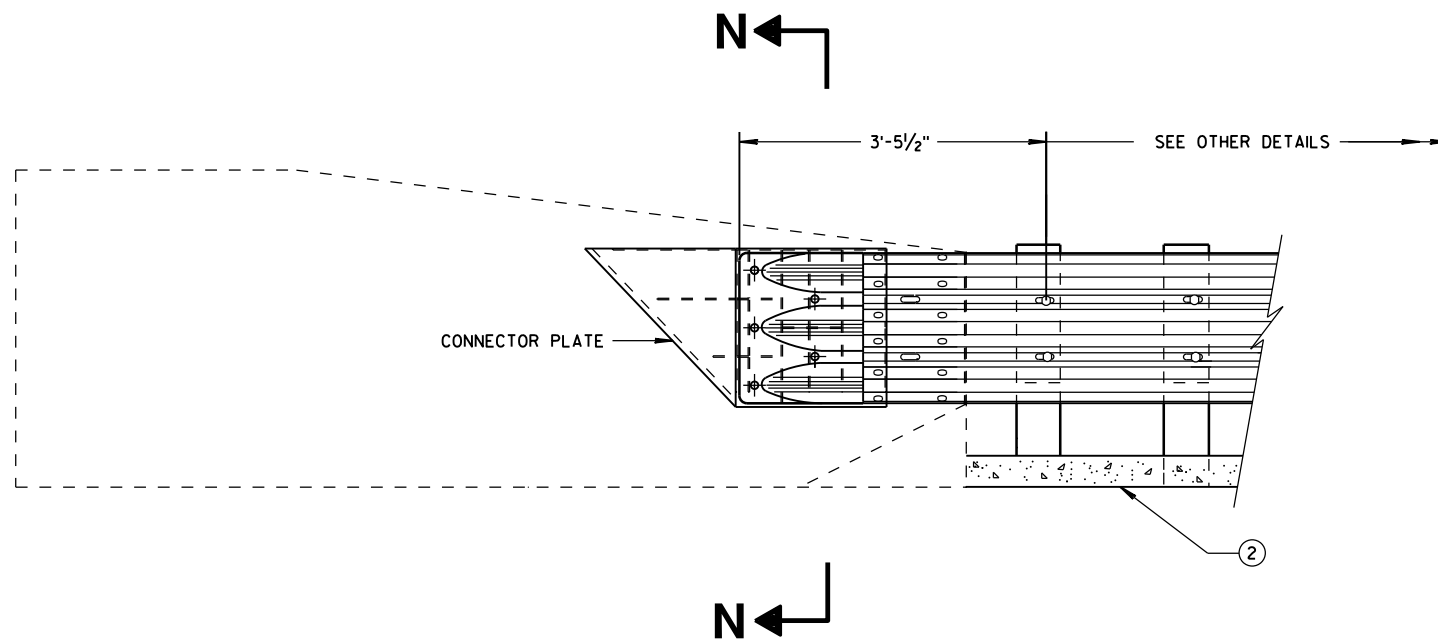
MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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APPROVED
June, 2015
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



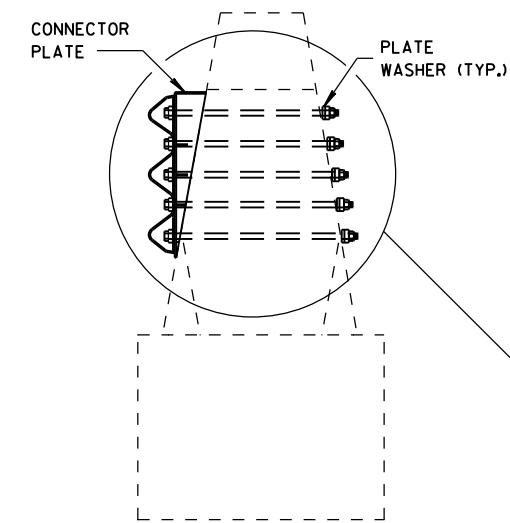
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

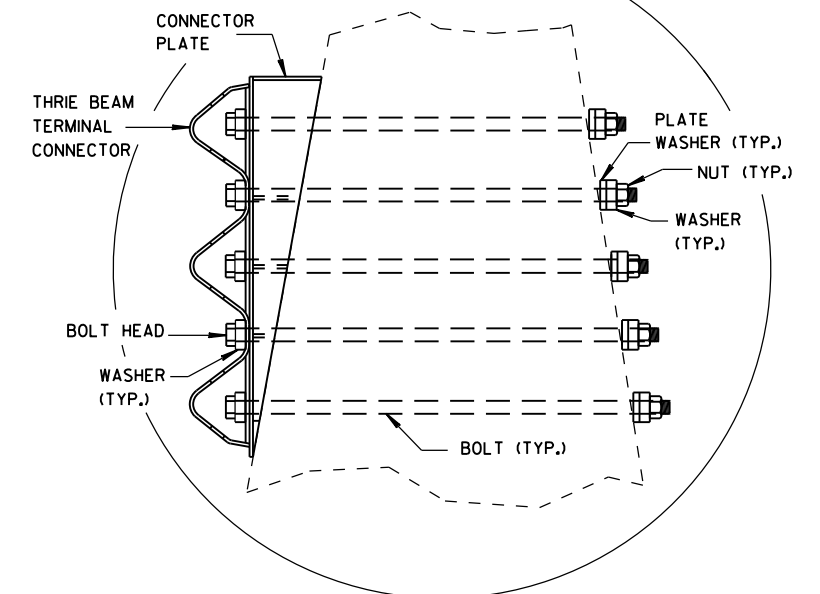
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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)

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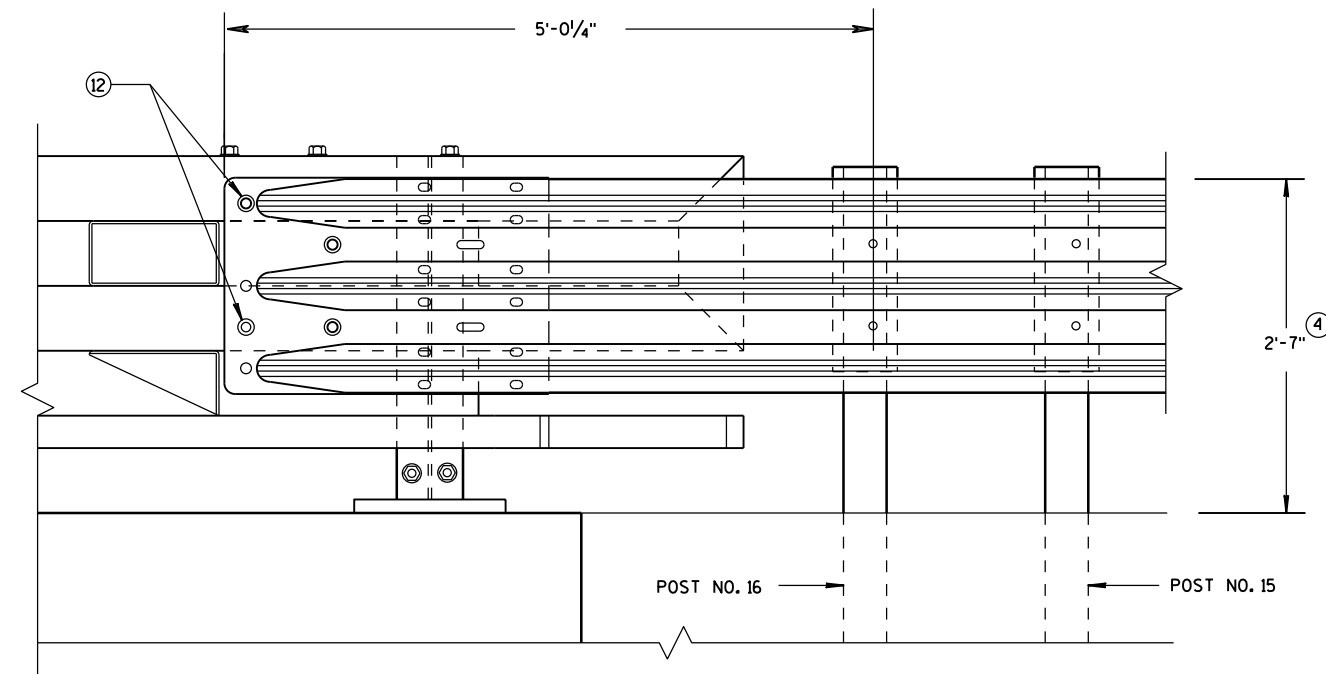
/s/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

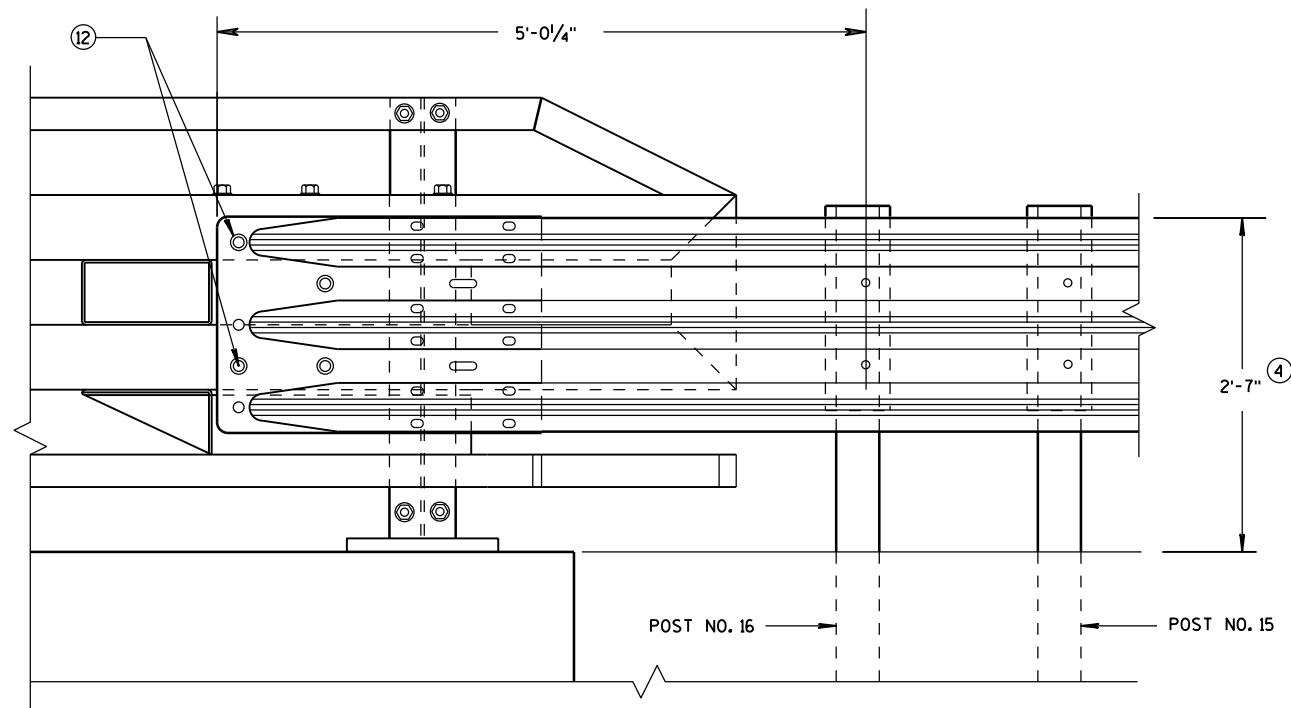
④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

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.



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

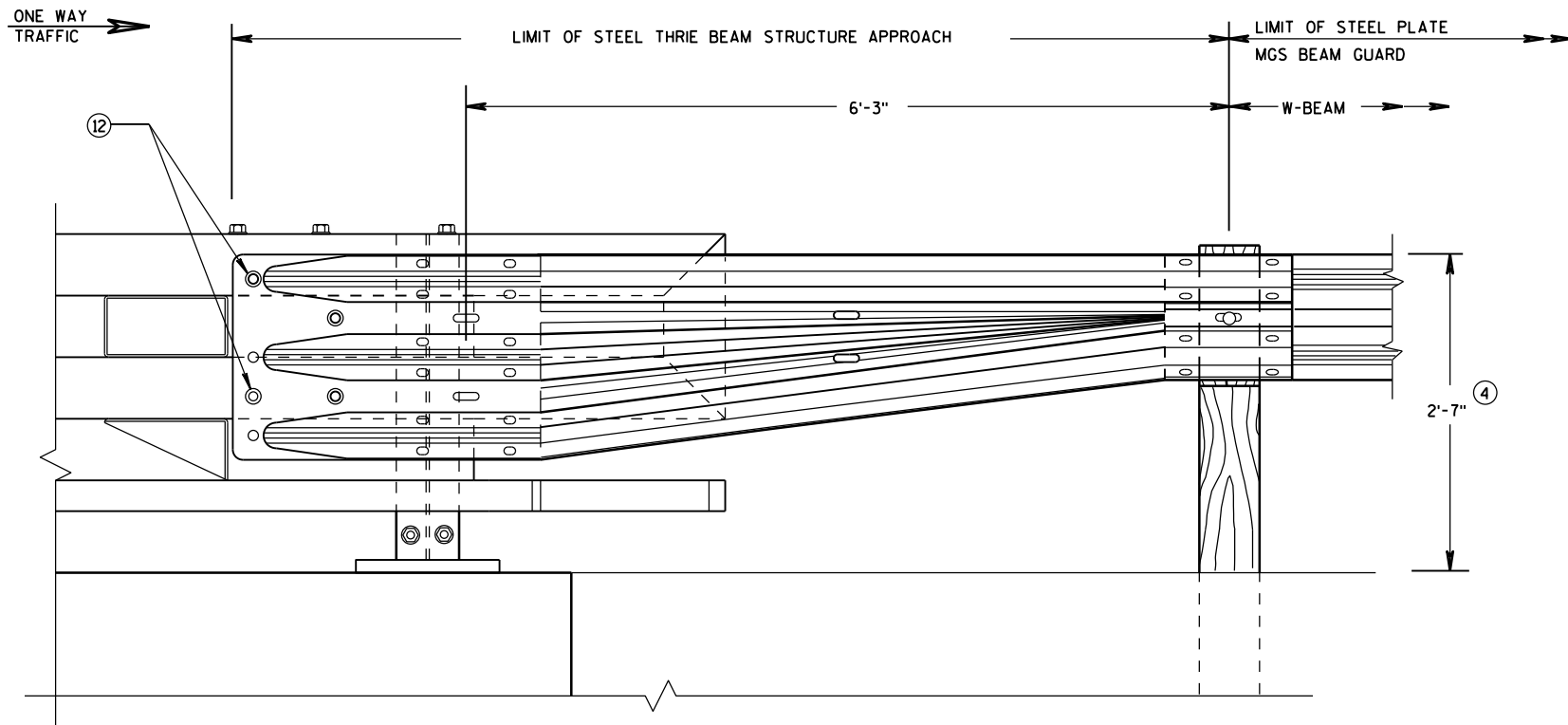
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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ROADWAY STANDARDS DEVELOPMENT
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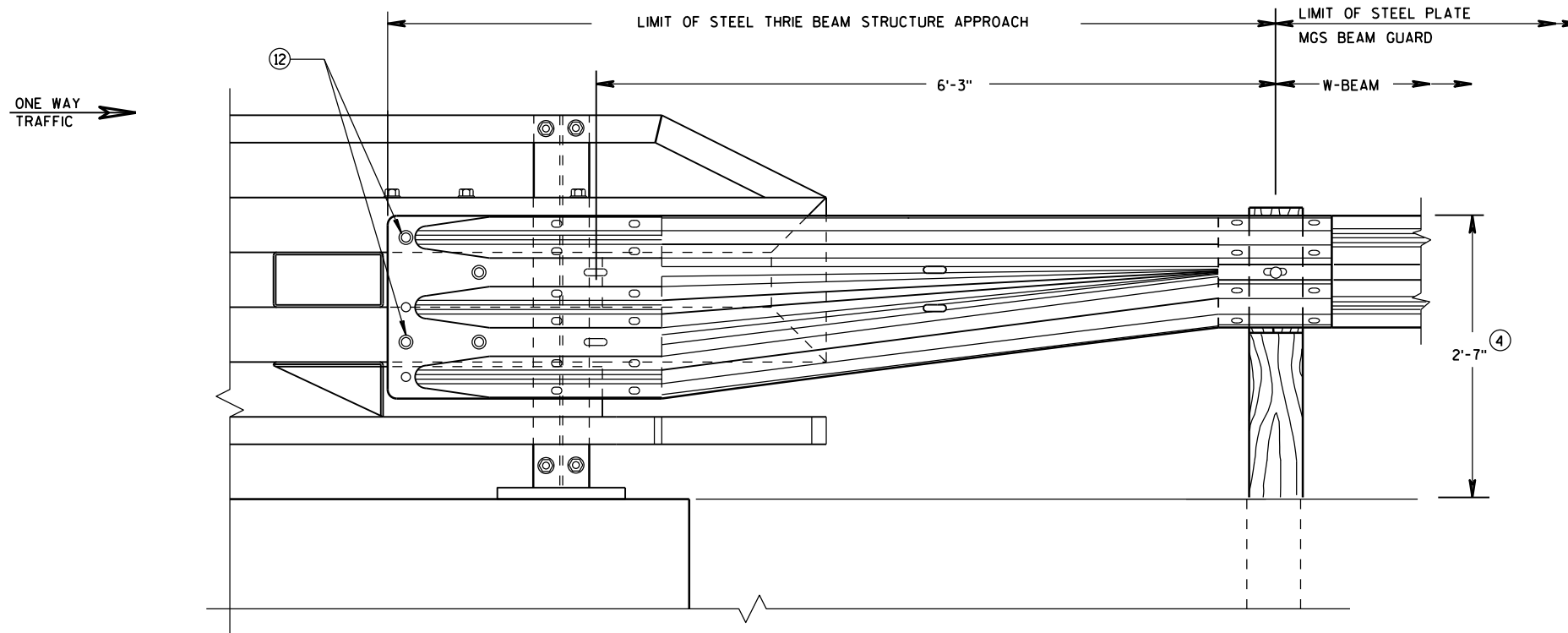


FRONT VIEW

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

GENERAL NOTES

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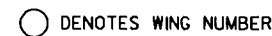
FRONT VIEW

**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
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FHWA	



OUTLET EL. 606.93

4'-0"±

2'-0"

5'-0"

2'-0"

1'-0"

1'-5"±

5'-0"±

1'-6"±

1'-0"

2" BEVEL

HORIZ. CONST. JOINT

VERT. CONST. JOINT

EL. 607.00±

REMOVE EXISTING END OF BOX, U-CHANNEL, APRON AND WINGWALLS AS SHOWN - TYP. BOTH ENDS

TOP SLAB

BOTTOM SLAB

GEOTEXTILE TYPE C (UNDER BOX & APRONS) - TYP.

BACKFILL STRUCTURE

CUTOFF WALL

OPT. CONST. JOINT

OUTLET

EXISTING STRUCTURE C-42-793 TO BE EXTENDED

INLET EL. 607.69

4'-0"±

2'-0"

3'-0"

2'-0"

1'-0"

1'-1"

1'-5"±

5'-0"±

1'-0"

2" BEVEL

HORIZ. CONST. JOINT

VERT. CONST. JOINT

EL. 607.57±

TOP SLAB

BOTTOM SLAB

GEOTEXTILE TYPE C (UNDER BOX & APRONS) - TYP.

BACKFILL STRUCTURE

CUTOFF WALL

OPT. CONST. JOINT

INLET

NO. DATE

- FOR GENERAL NOTES,
DESIGN DATA, & QUANTITIES,
SEE SHEET 2

PRELIMINARY PLAN	

DATE:

\$PRNAME\$
U:\42-1078.00 - Oconto Co. STH 22 Culverts\Structure\421078 C-42-793 gp.dgn

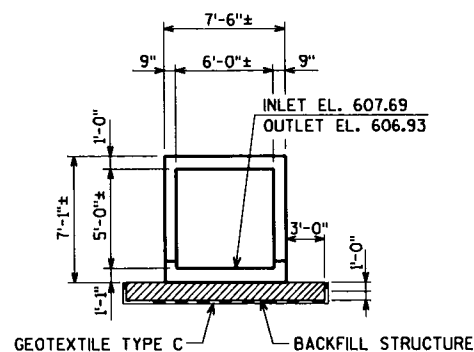
8

STATE PROJECT NUMBER

9180-31-30

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" SHALL BE THE EXISTING GROUND LINE.
THE ALTERNATE CUTOFF WALL MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUTOFF WALLS. PAYMENT SHALL BE BASED ON THE CONCRETE CUTOFF WALLS.
THE CONCRETE IN THE CUTOFF WALL MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.
ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE ELEVATION OF THE TOP OF THE BOX WITHIN THE LENGTH OF THE BOX. THE PAY LIMITS OF THE STRUCTURAL BACKFILL ARE 3'-0" BEYOND THE HORIZONTAL PLAN LIMITS AT THE BOTTOM OF THE BOX AND APRON AND UP AT A 1:1.5 BACKFILL SLOPE FROM BOTTOM OF SLAB TO TOP OF BOX OR PROPOSED SUBGRADE ELEVATION, WHICHEVER IS LOWER, PLUS 6" BELOW BOX.
THE EXISTING STRUCTURE C-42-793, IS A SINGLE-CELL 6'-0" x 5'-0" CONCRETE BOX CULVERT WITH A BARREL LENGTH OF 54'-6"±.
REMOVING OLD STRUCTURE STATION 402+71.53, INCLUDES REMOVING PORTIONS OF THE EXISTING ENDS OF THE EXISTING BARREL ALONG WITH THE U-CHANNEL, OUTLET AND INLET WINGS AND APRONS.
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS. THE CONTRACTOR SHALL ADJUST THE DIMENSIONS OF THE BOX CELL OPENINGS TO MATCH THE EXISTING CULVERT.
ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1" DEEP SAW CUT UNLESS SHOWN OR NOTED OTHERWISE.
FILLET THE FORMS WITH 3/4 INCH TRIANGULAR MOLDING CHAMFER STRIPS AT ALL EXPOSED, SHARP CORNERS AND AT THE EDGES OF THE CONCRETE, UNLESS SPECIFIED OTHERWISE.
THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW THE ORIGINAL CONSTRUCTION YEAR (1960).



TYPICAL SECTION THRU BOX CULVERT EXTENSIONS

NOTE: MATCH EXISTING CULVERT OPENING

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	AMOUNT
203.0500.S	REMOVING OLD STRUCTURE OVER WATERWAY STATION 402+71.53	1 LS
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-42-793	1 LS
210.0100	BACKFILL STRUCTURE	CY
502.5005	MASONRY ANCHORS TYPE L NO.5 BARS	EACH
504.0100	CONCRETE MASONRY CULVERTS	CY
505.0410	BAR STEEL REINFORCEMENT HS CULVERTS	LB
509.1500	CONCRETE SURFACE REPAIR	SF
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY
606.0300	RIPRAP HEAVY	CY
645.0105	GEOTEXTILE TYPE C	SY
645.0120	GEOTEXTILE TYPE HR	SY
NON-BID ITEMS		
FILLER		3/4 SIZE

⊗UNDISTRIBUTED, AS DIRECTED BY THE ENGINEER IN THE FIELD.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR:
OPERATING RATING FACTOR :
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = KIPS

EARTH LOAD: 2.0 FEET

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY $f'_c = 3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) $f_y = 60,000$ p.s.i.

HYDRAULIC DATA:

100 YEAR FLOOD

DRAINAGE AREA = 1.8 sq. mi.
WATERWAY AREA = sq. ft.
 $V =$ f.p.s.
 $Q_{100} = 160$ c.f.s.
 $Q_2 = 40$ c.f.s.
HIGH WATER₁₀₀ EL. =
HIGH WATER₂
RDWY. OVERFLOW = N/A
SCOUR CRITICAL CODE = N/A

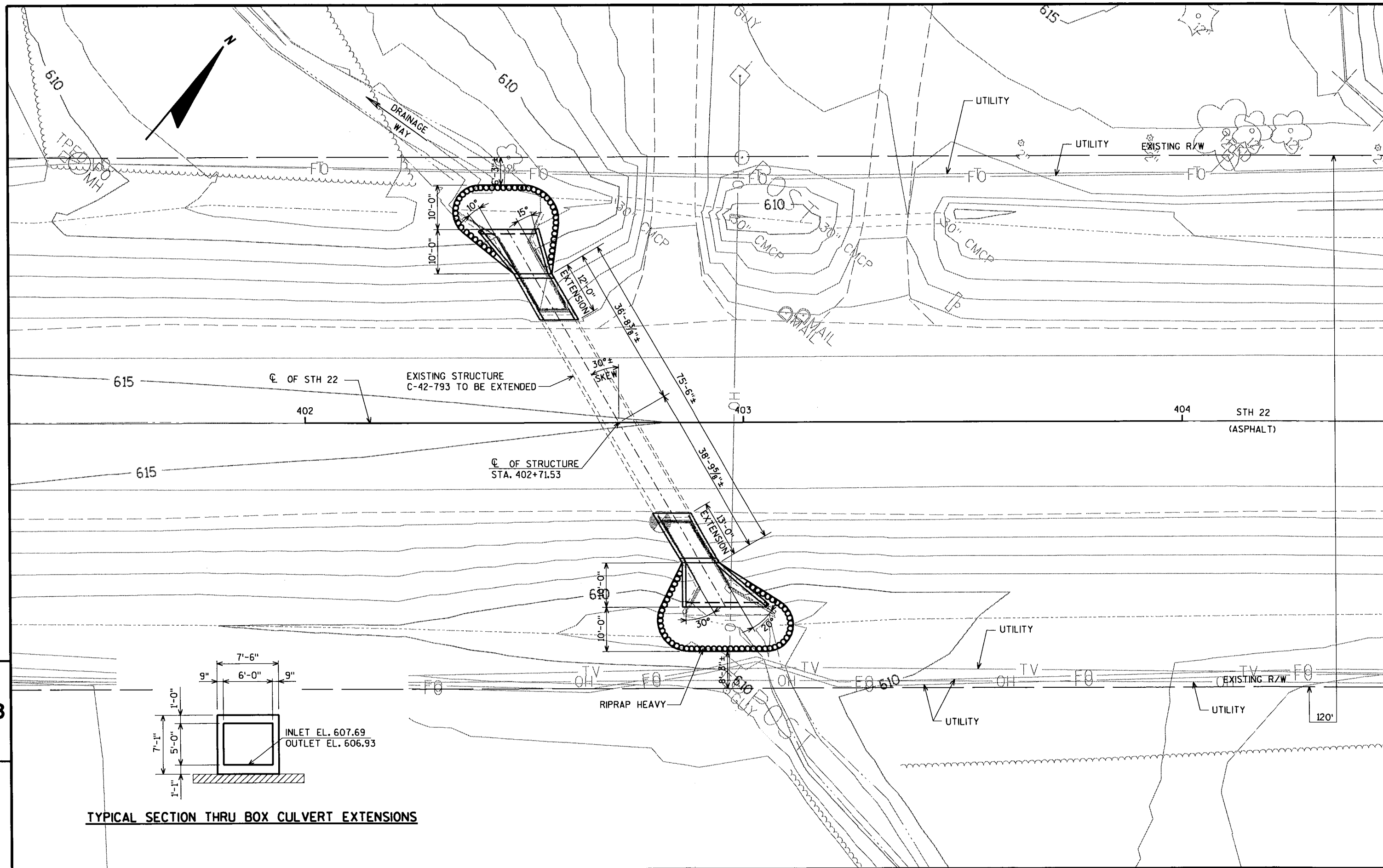
TRAFFIC DATA:

A.A.D.T. = (2019)
A.A.D.T. = (2039)
R.D.S. = M.P.H.

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-42-793			
DRAWN BY CLS		PLANS CK'D.	
DESIGN DATA, QUANTITIES AND NOTES			SHEET 2 OF 2

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



PROJECT NO: 9180-31-30

HWY: STH 22

COUNTY: OCONTO

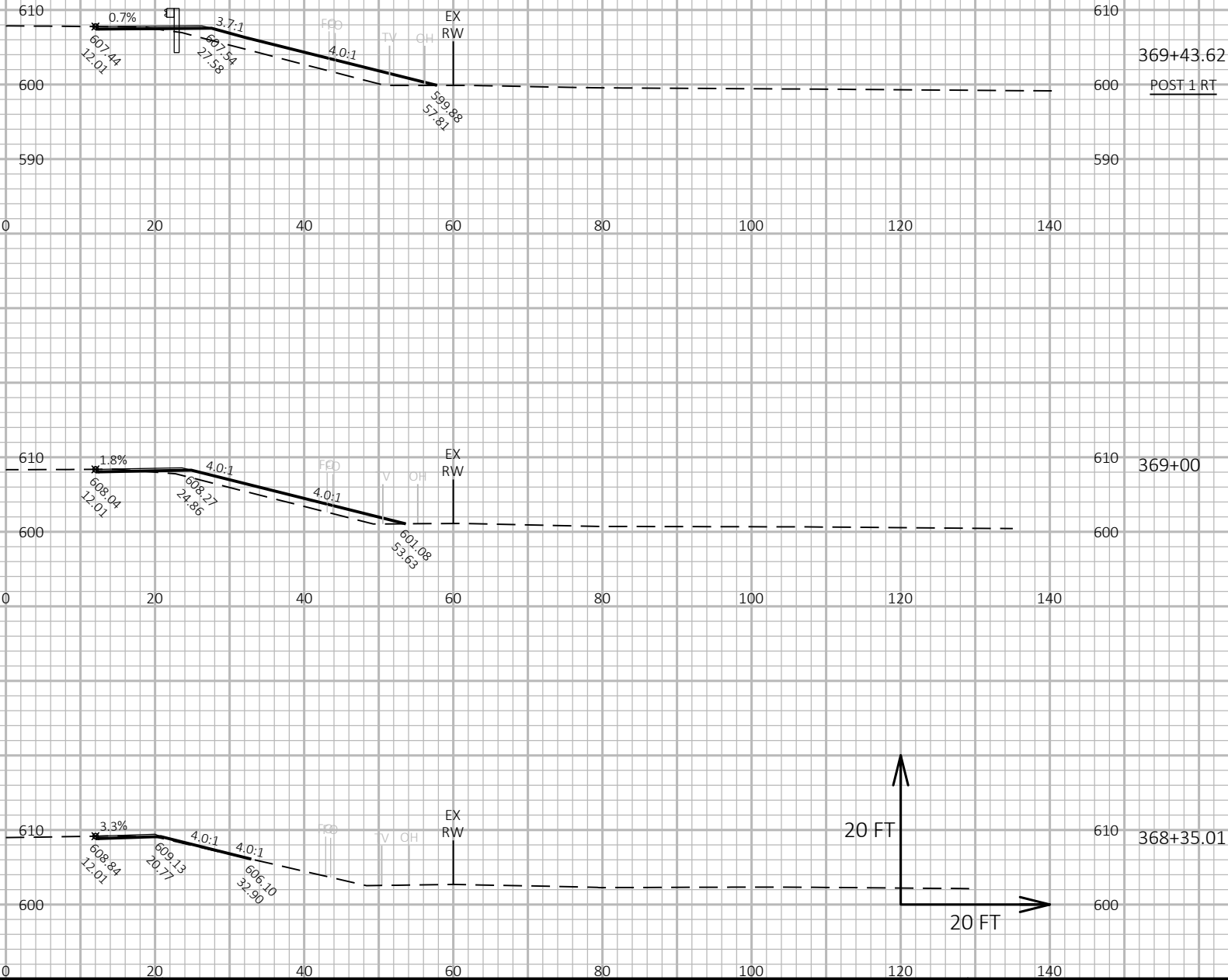
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SCALE, FEET 0 10 20

SHEET

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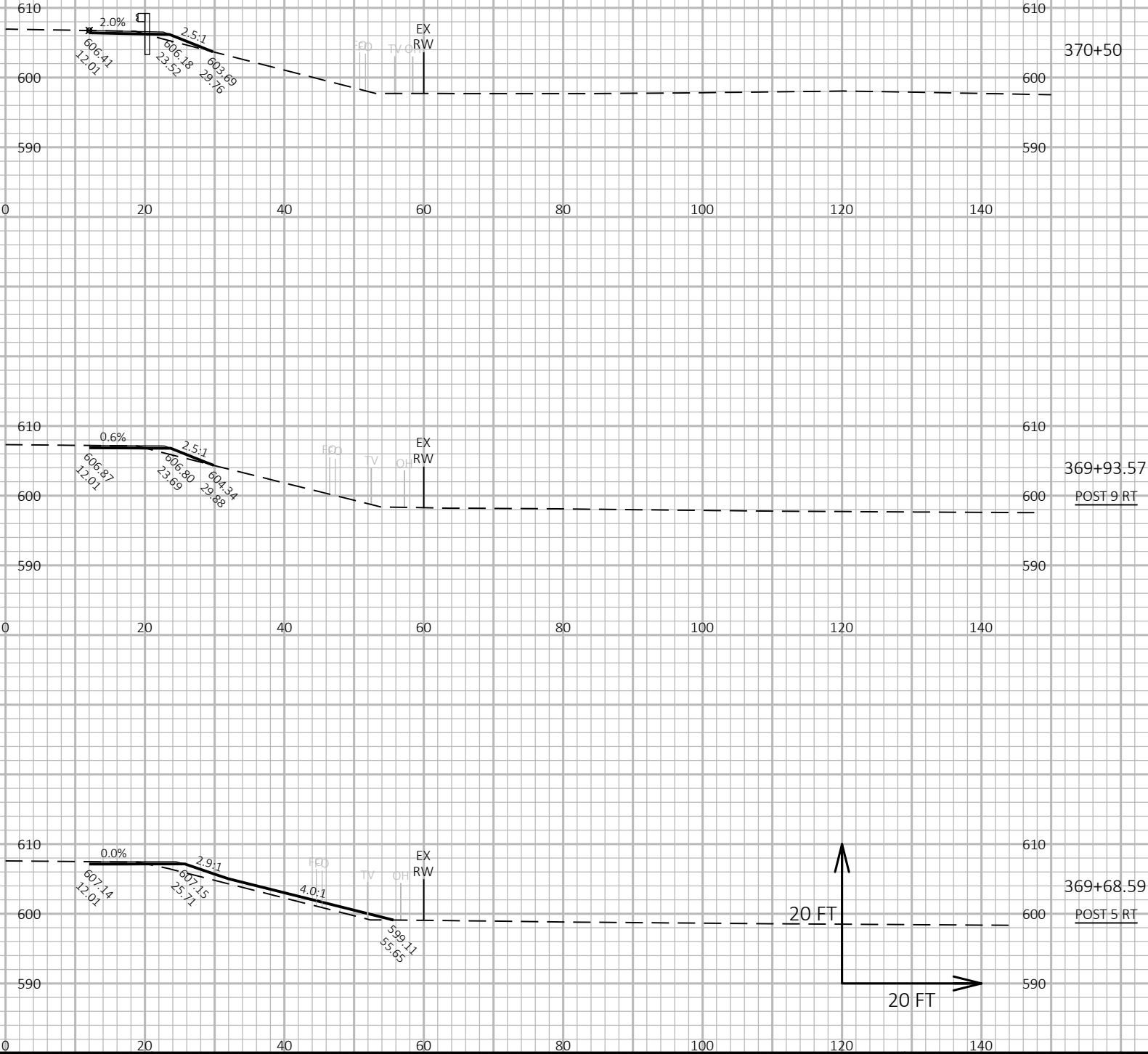
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PROJECT NO:	9180-31-60	HWY:	STH 22	COUNTY:	OCONTO	CROSS SECTIONS:	CROSS SECTIONS	SHEET	E
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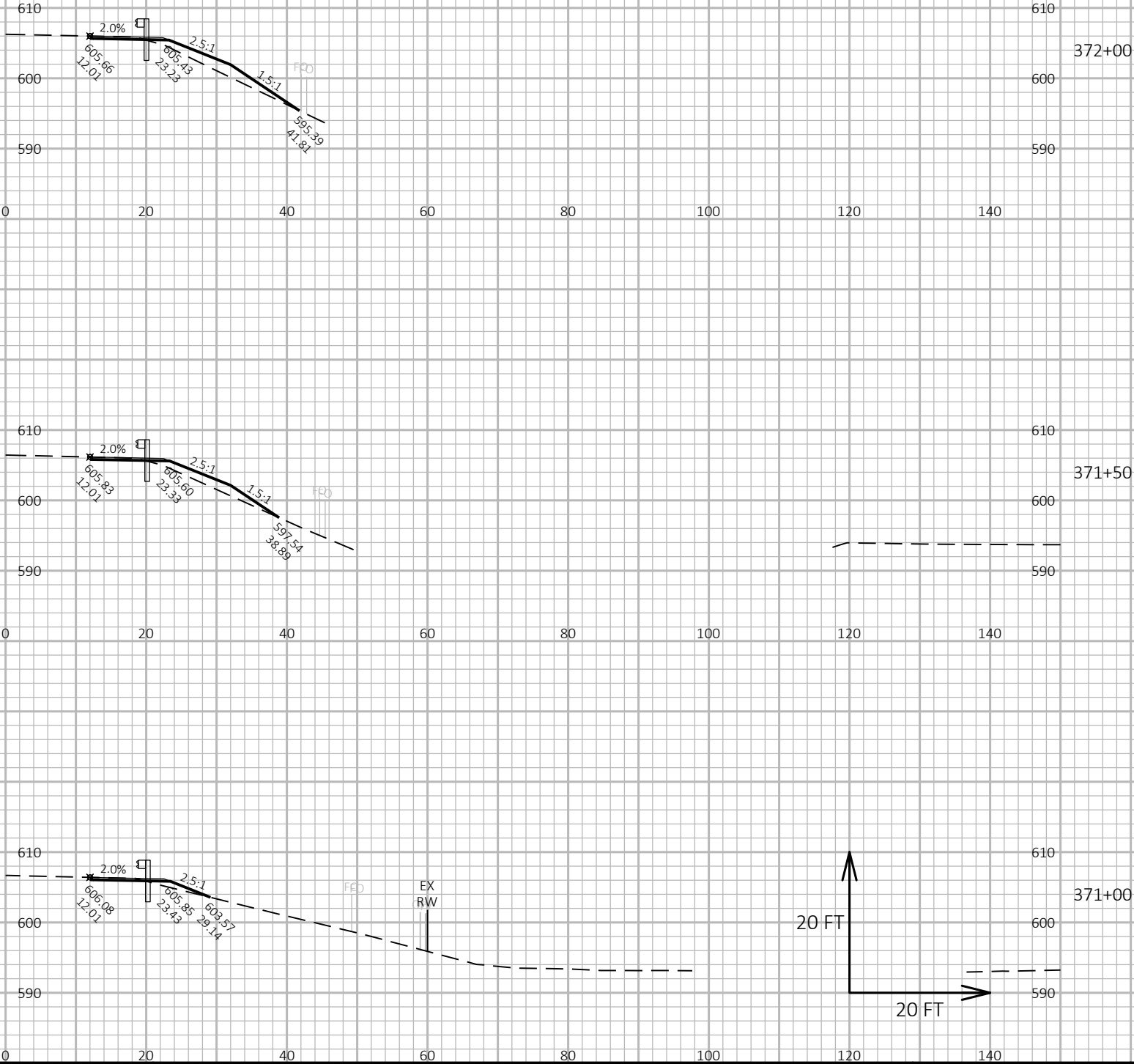
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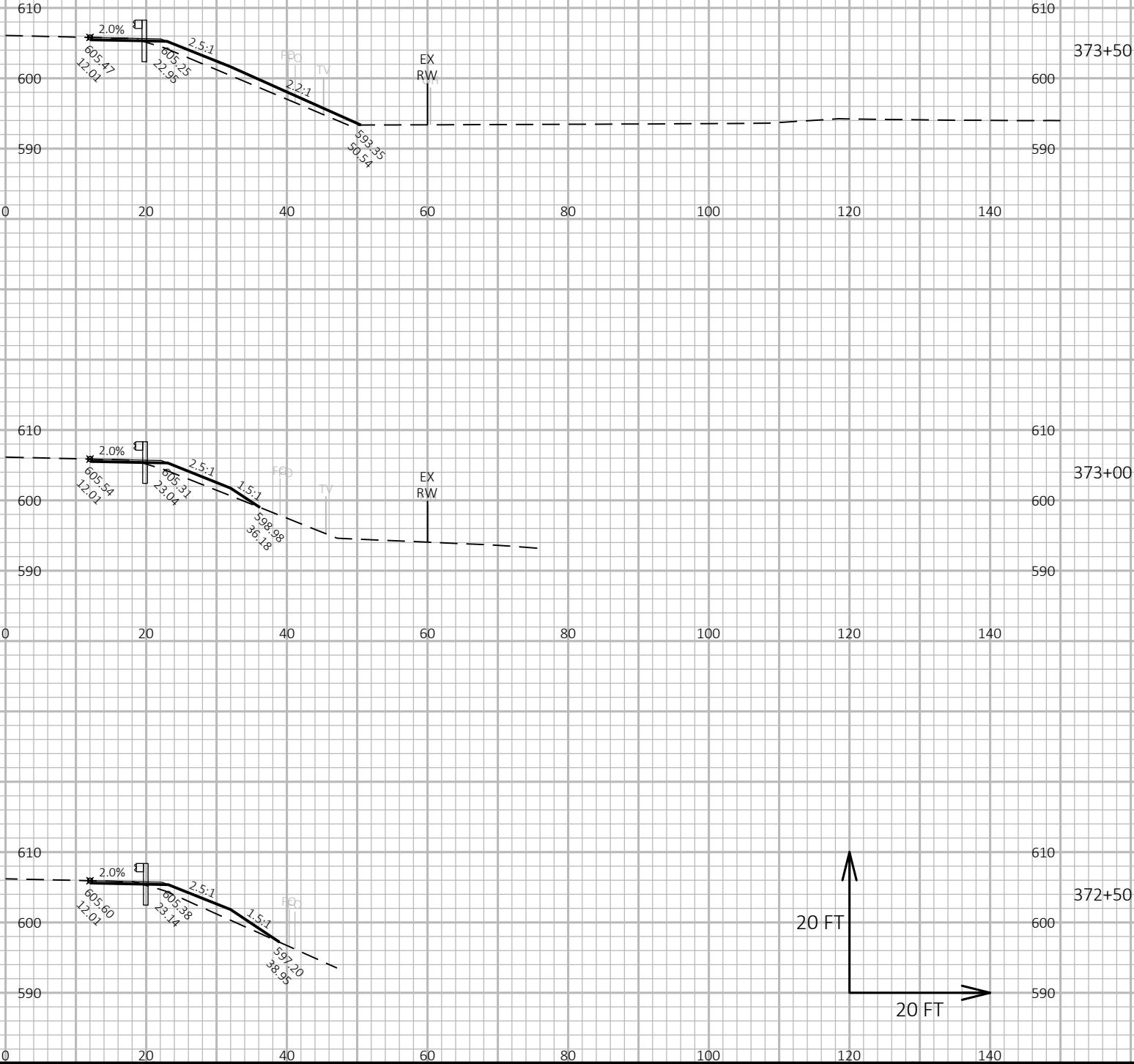
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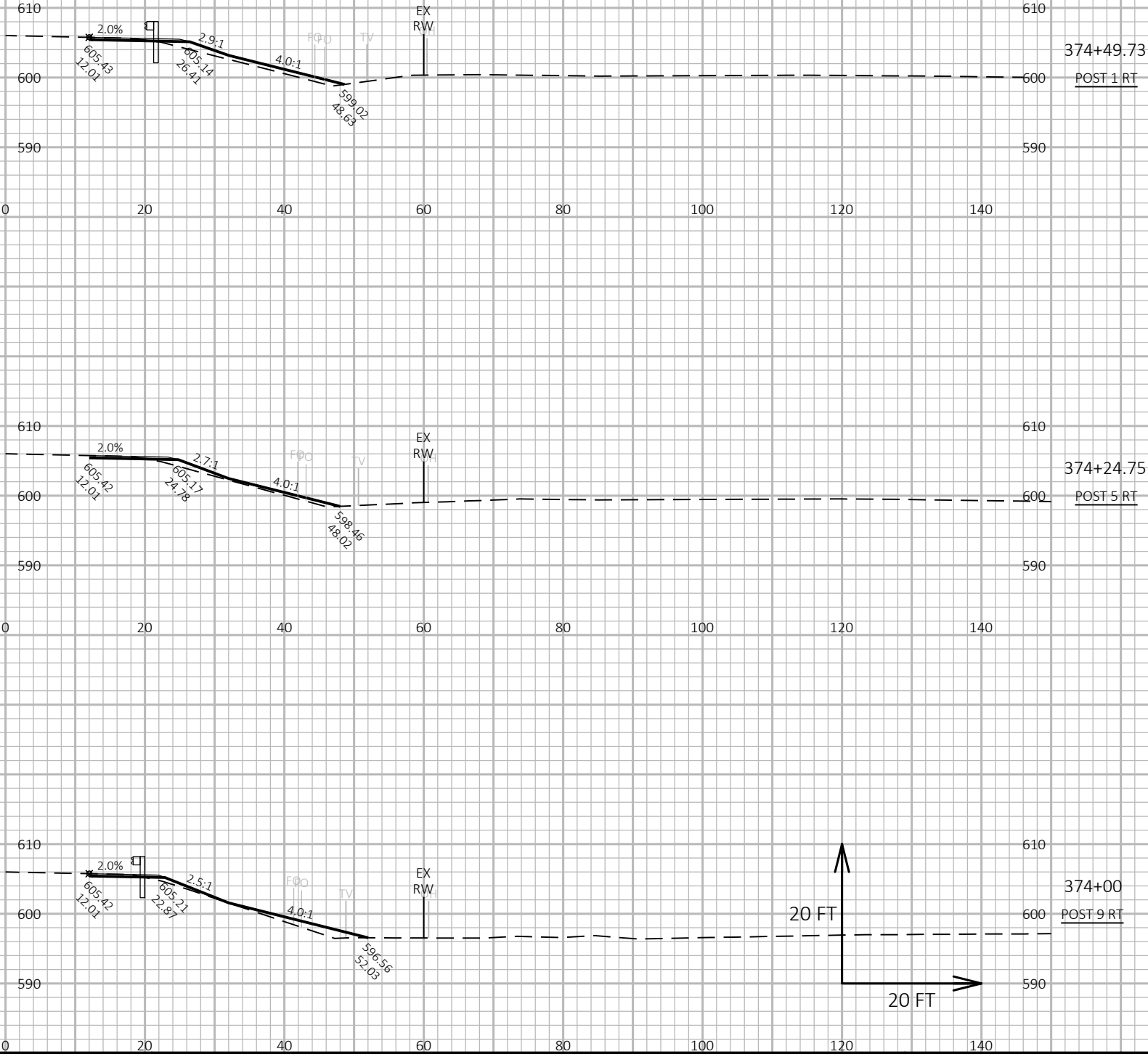
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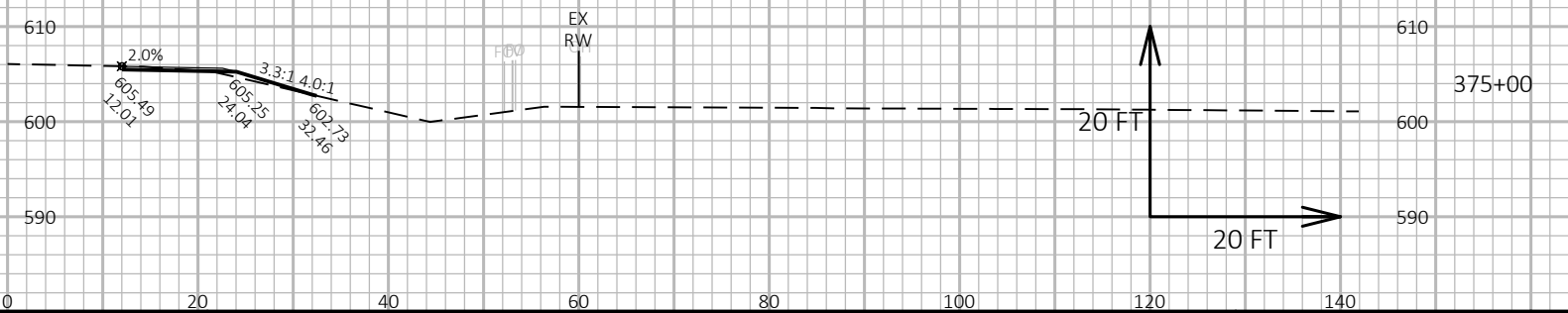
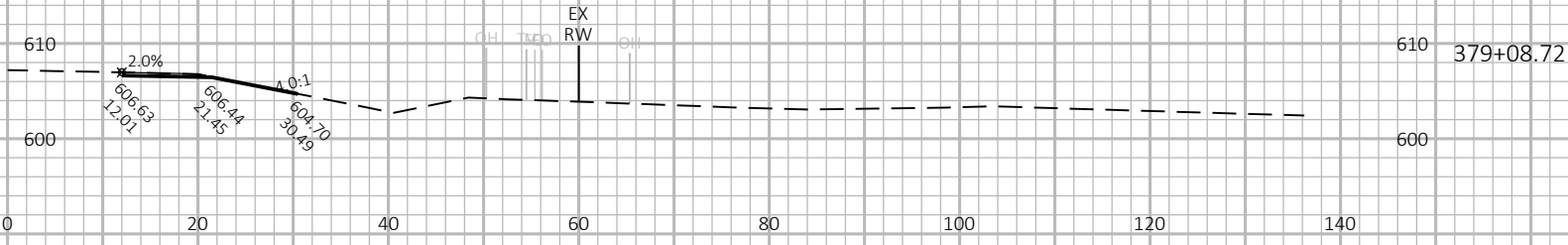
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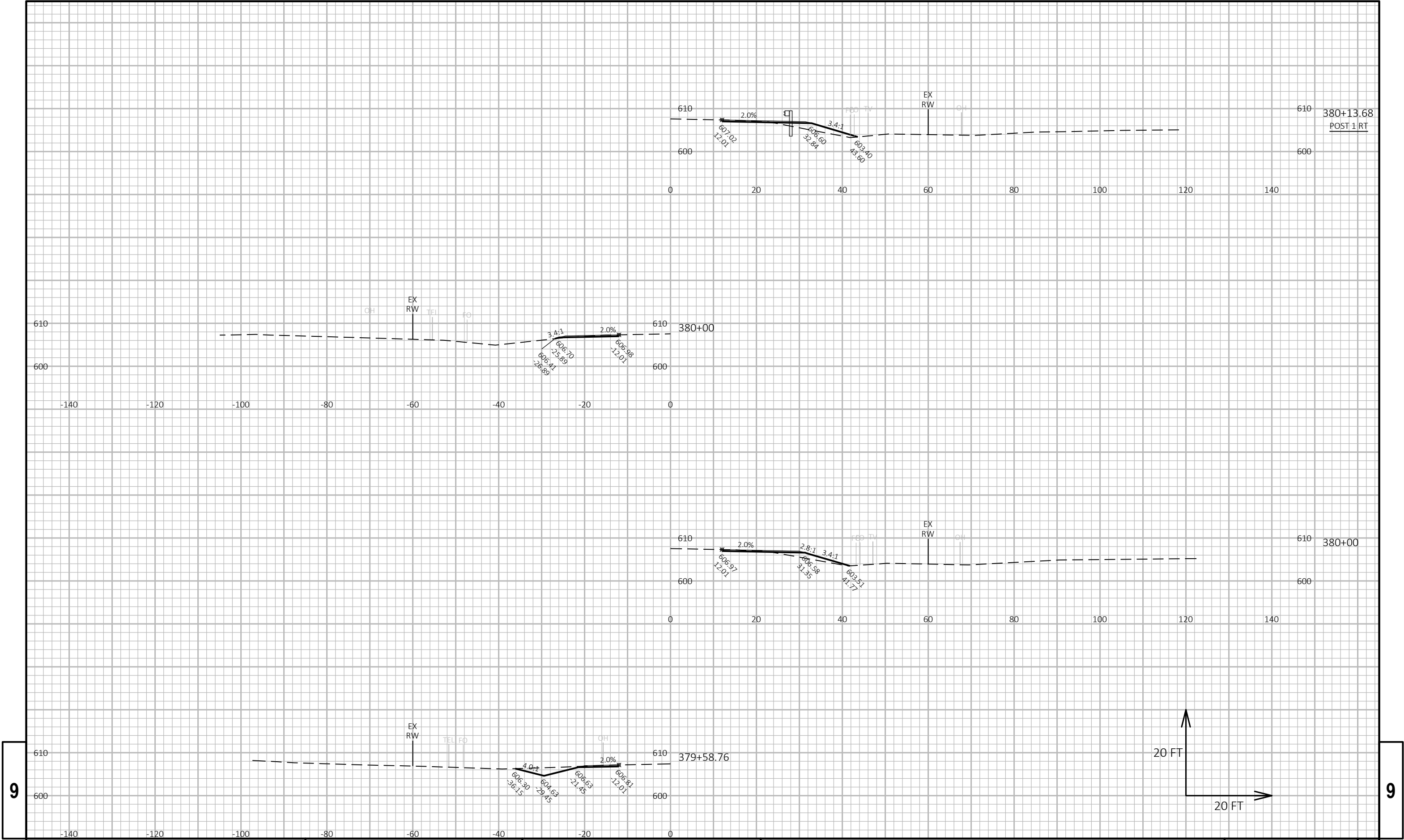
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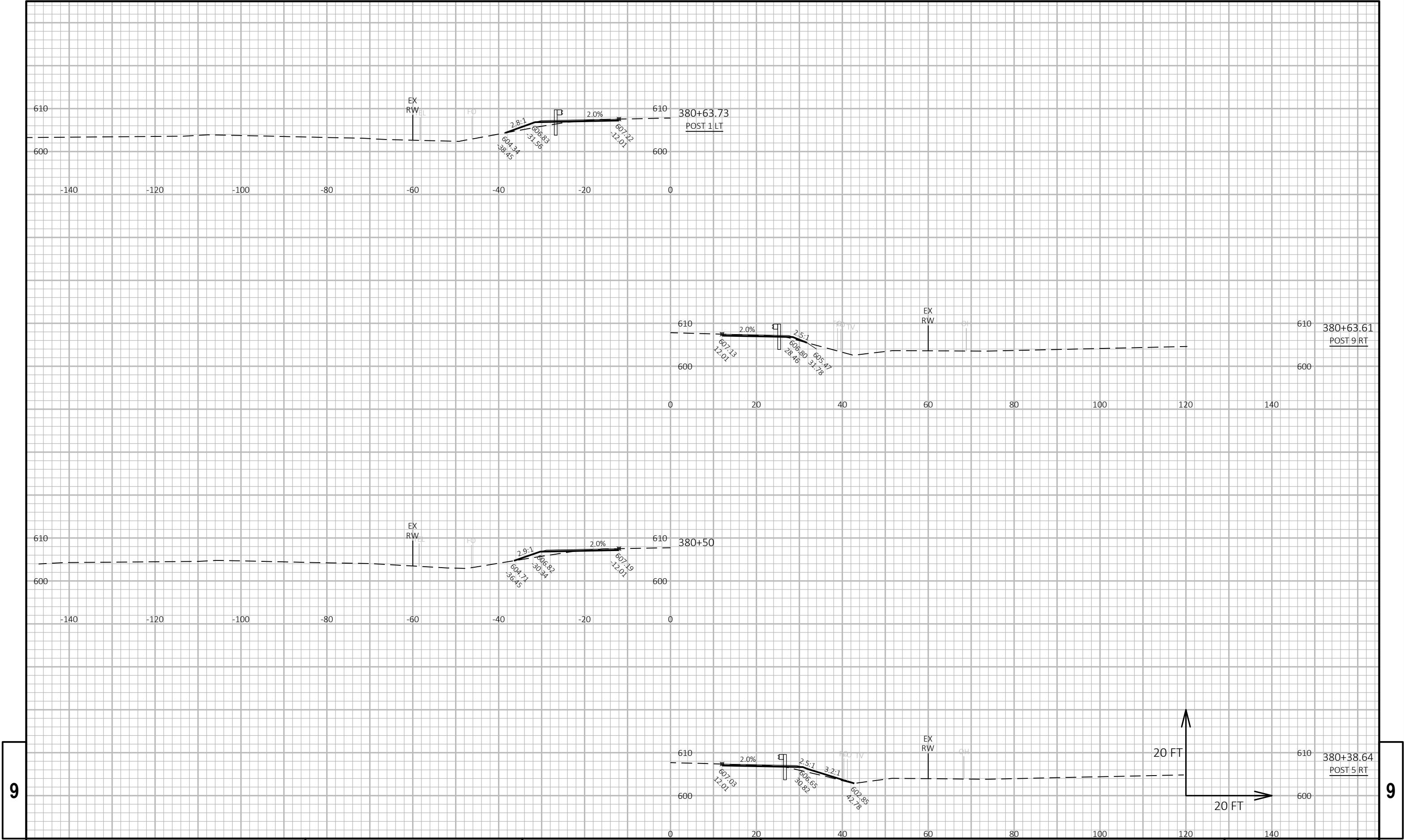
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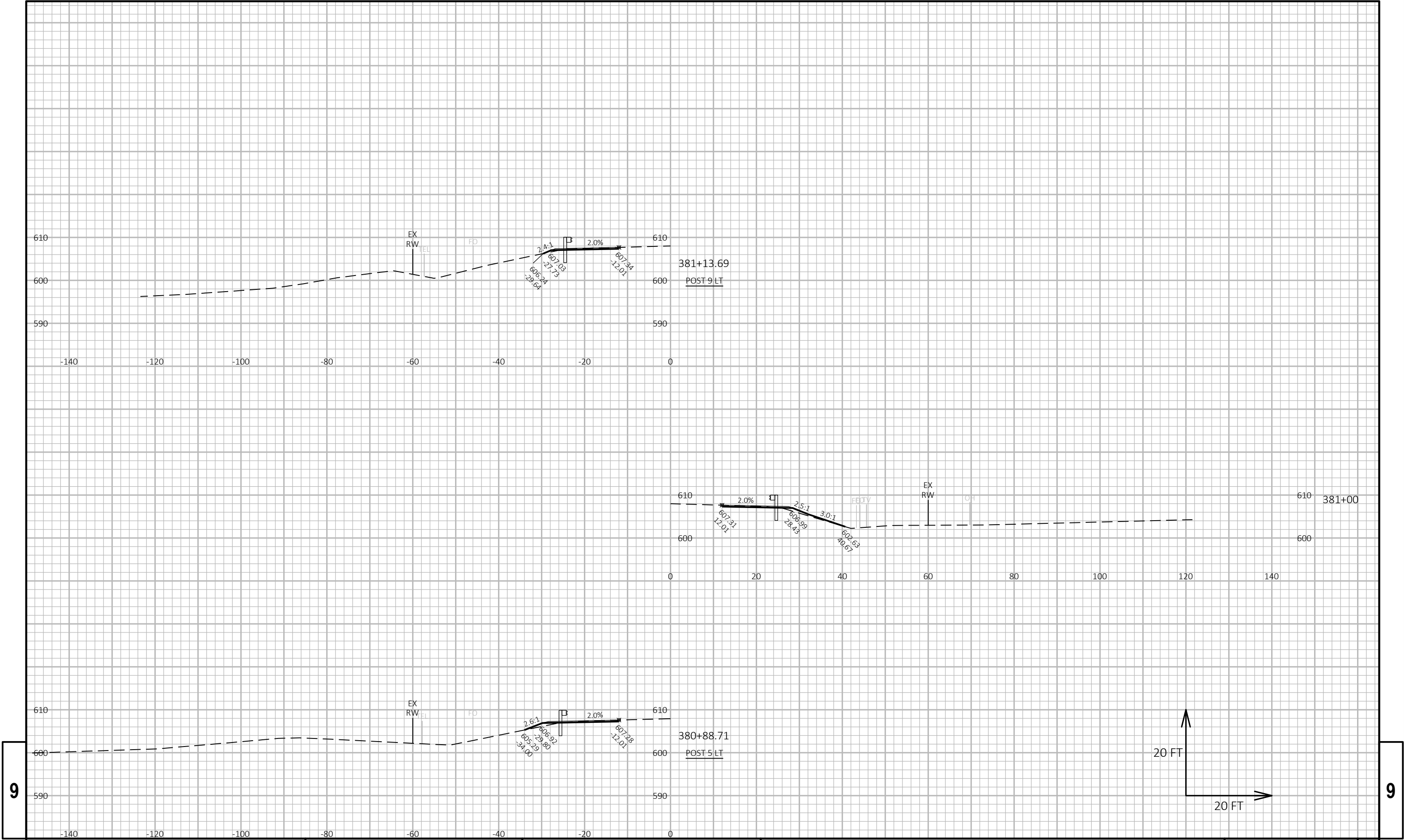
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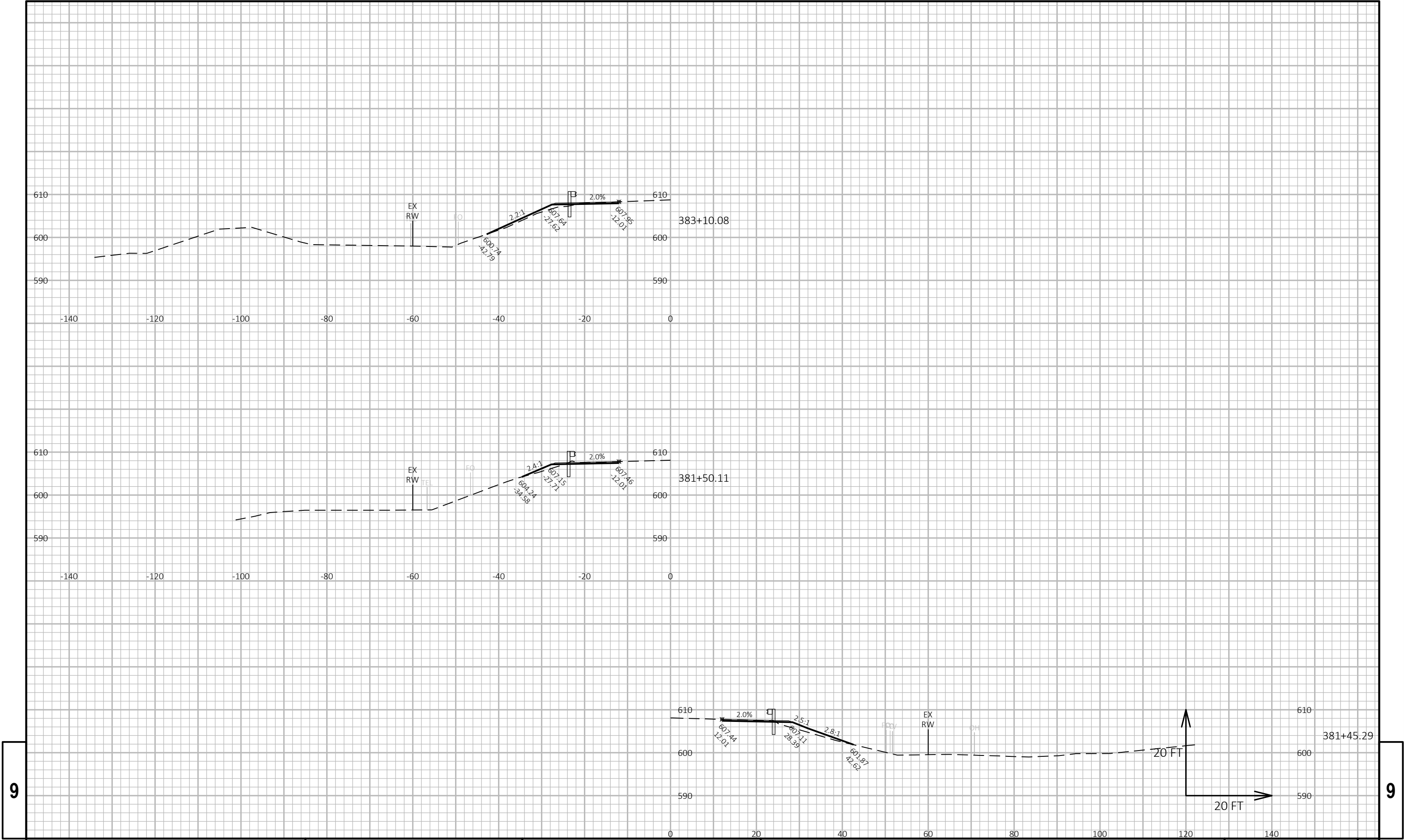


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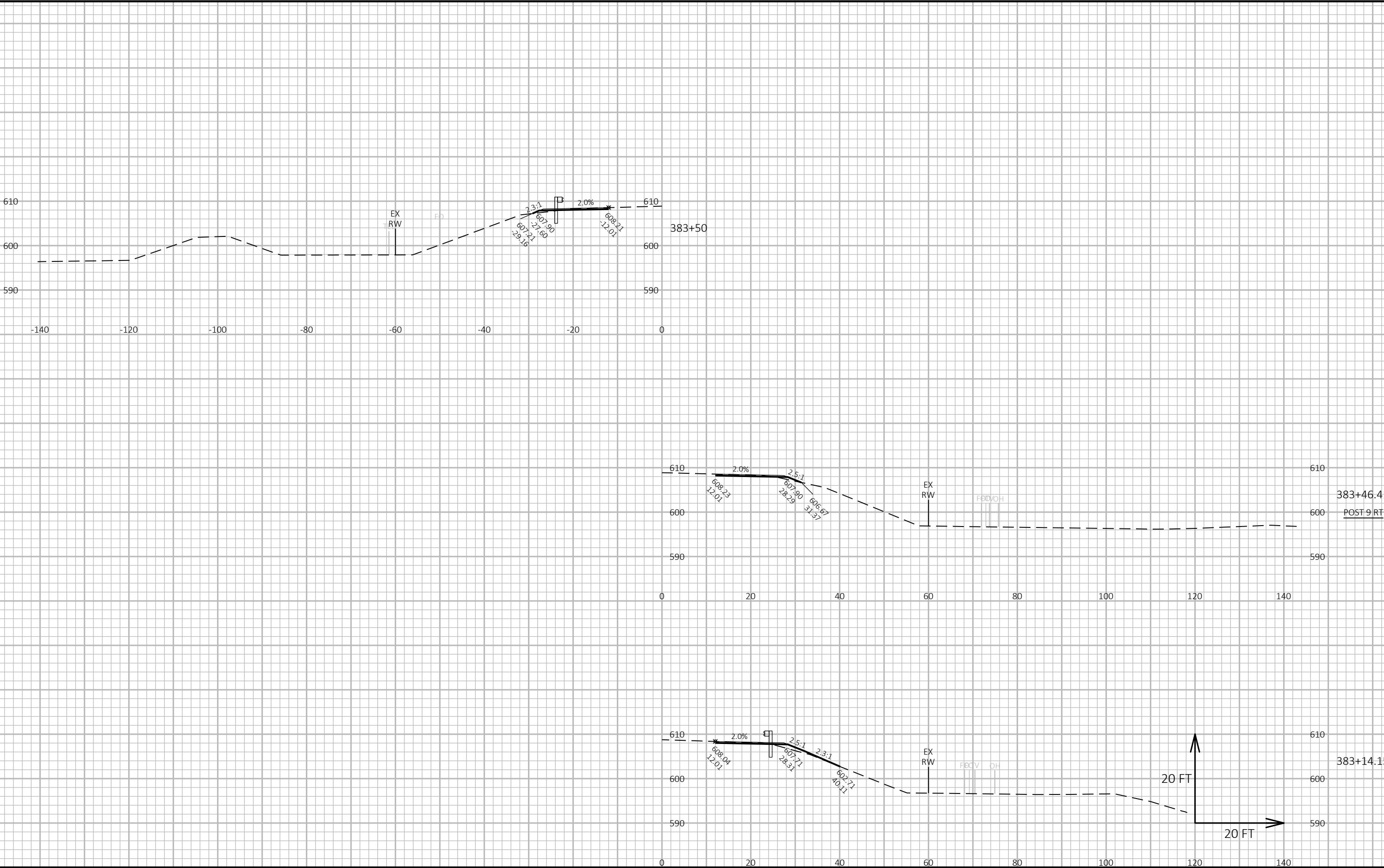




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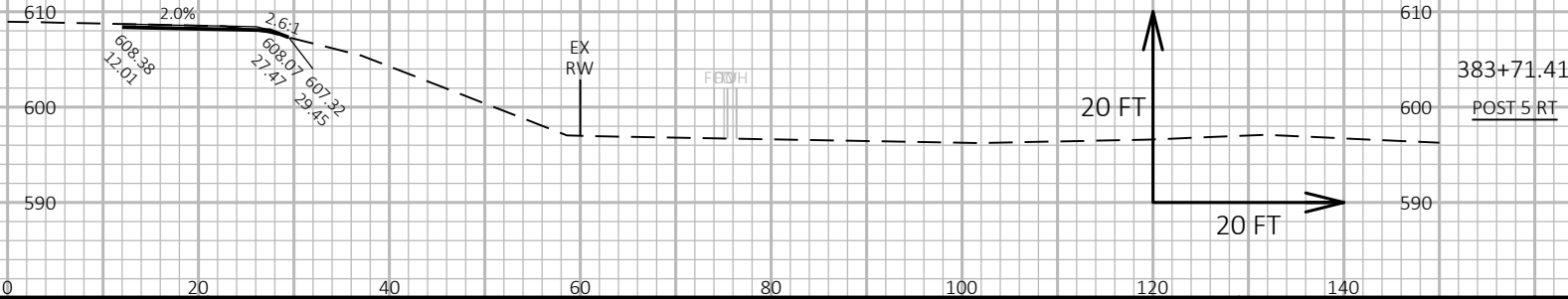
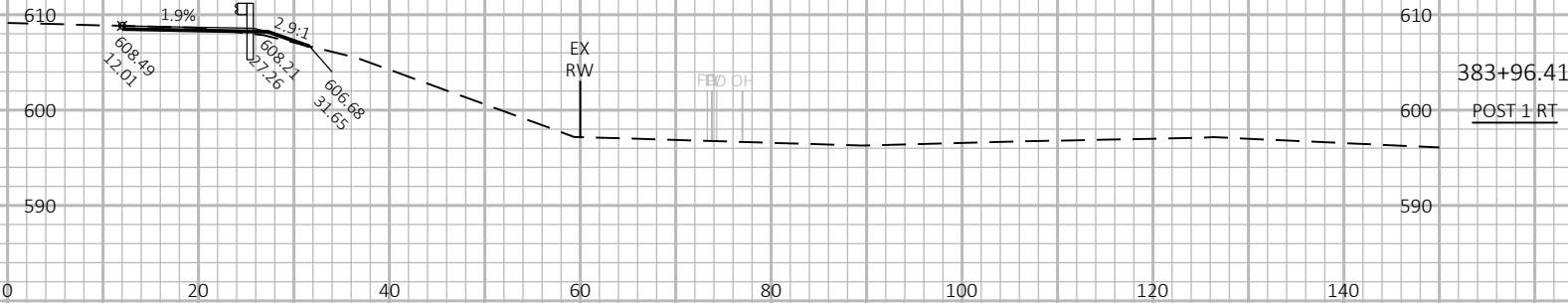
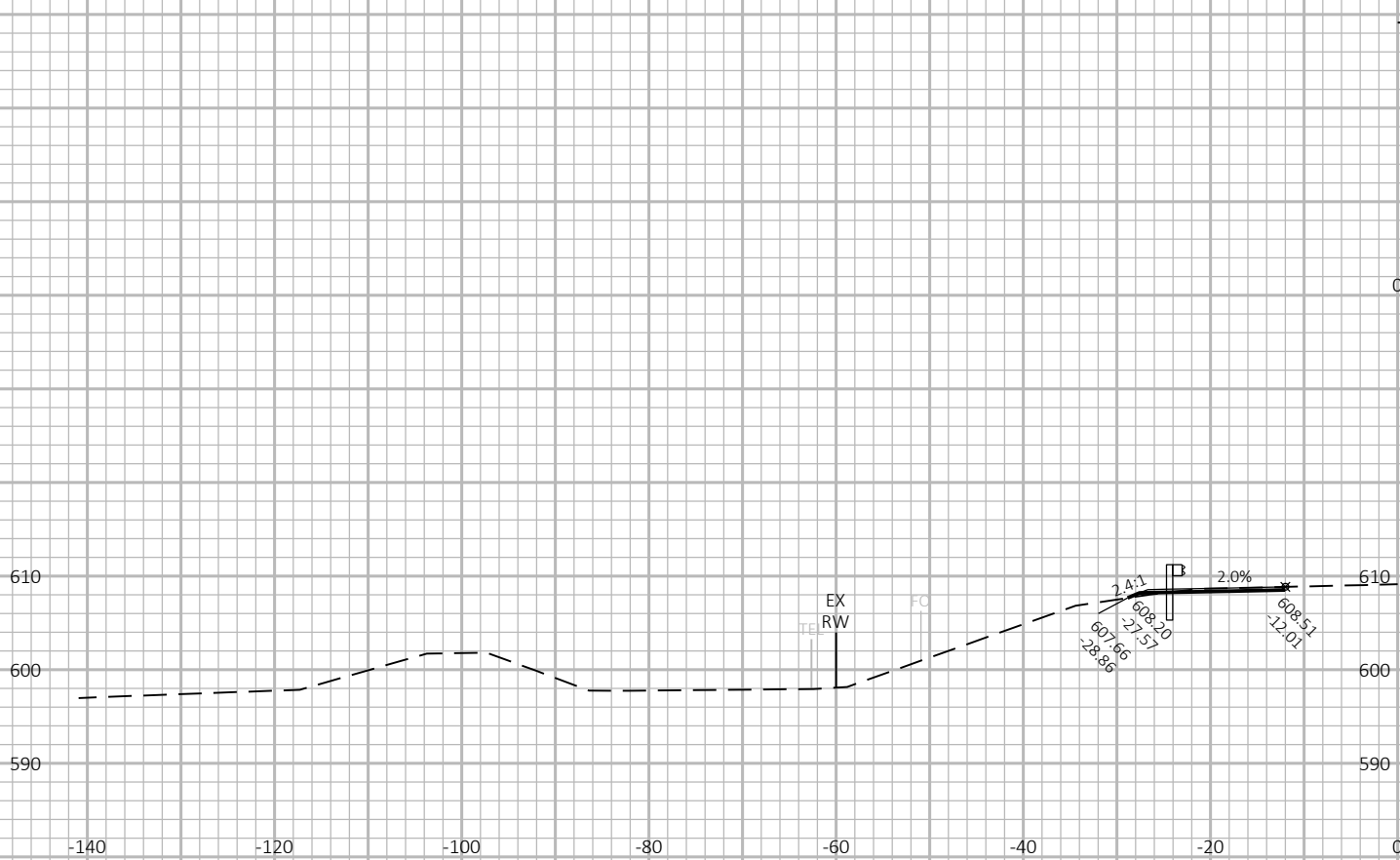
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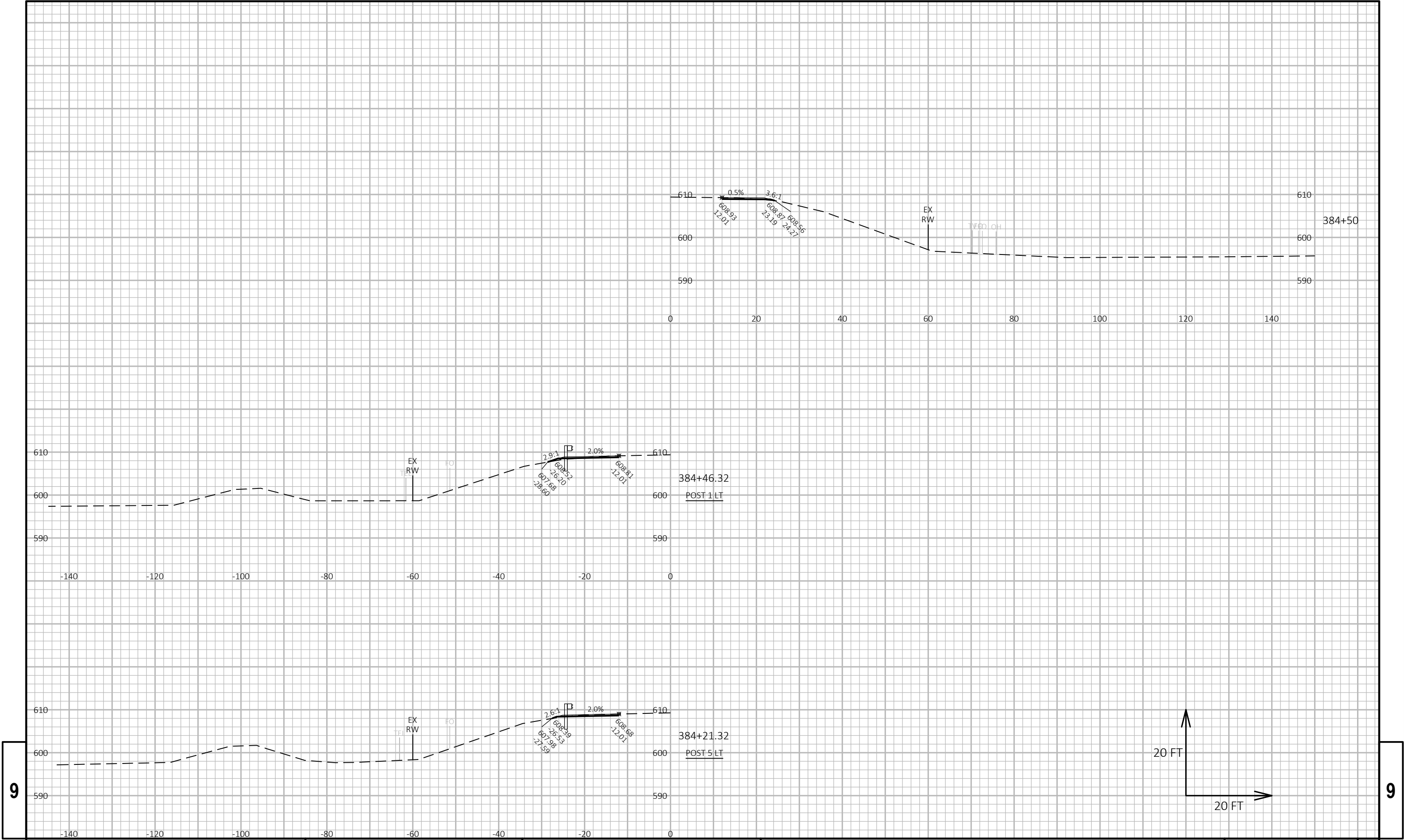
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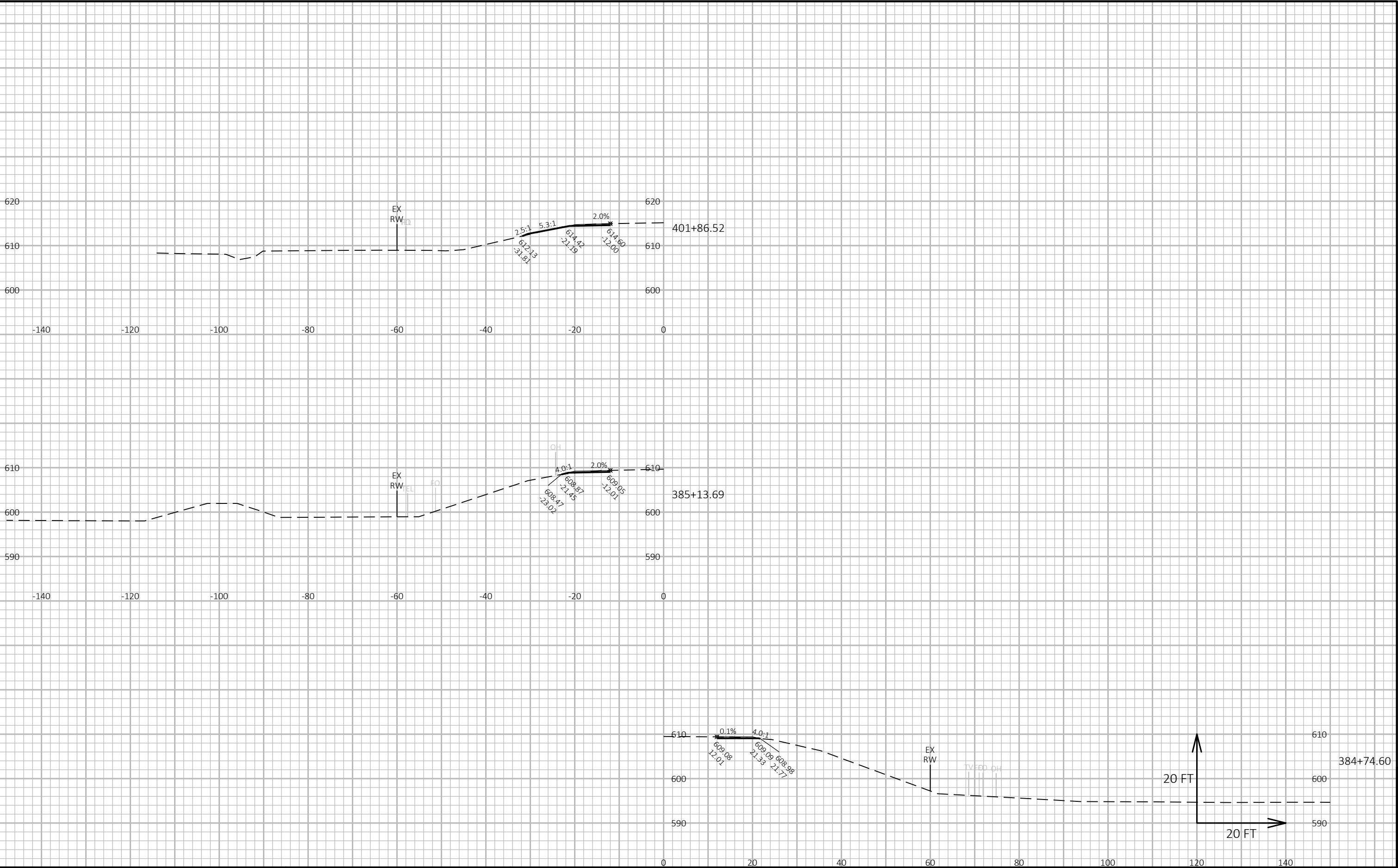


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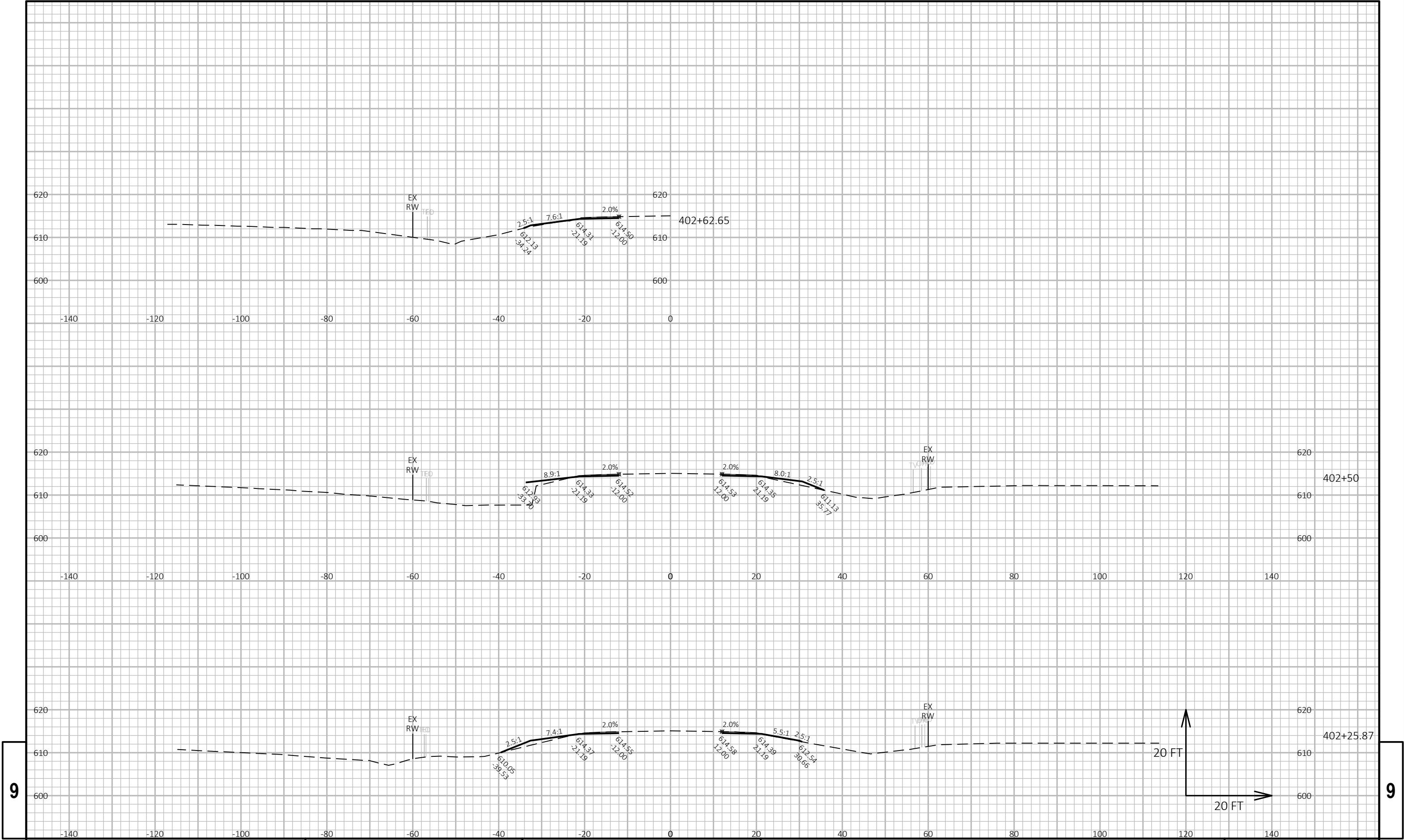


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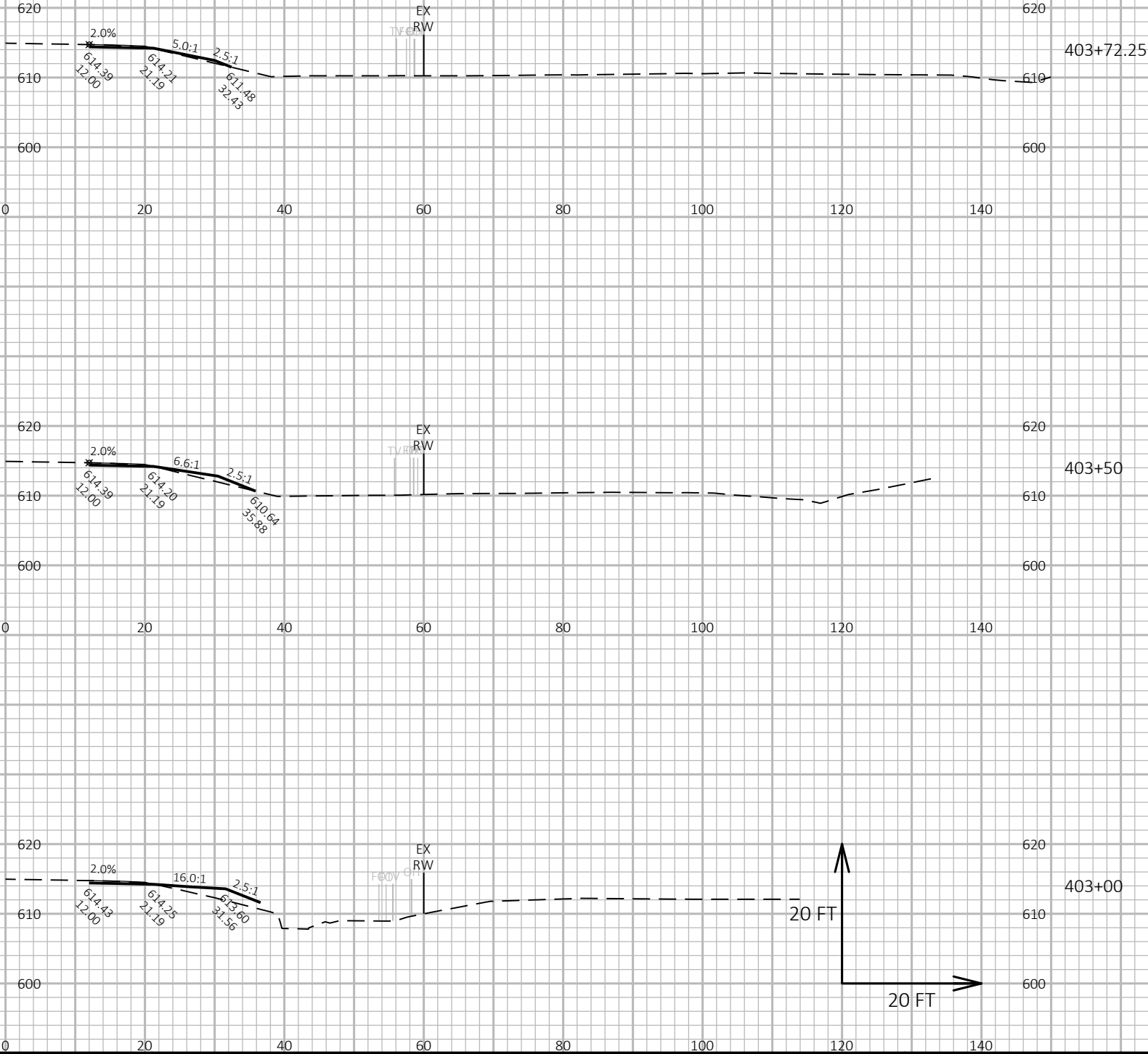


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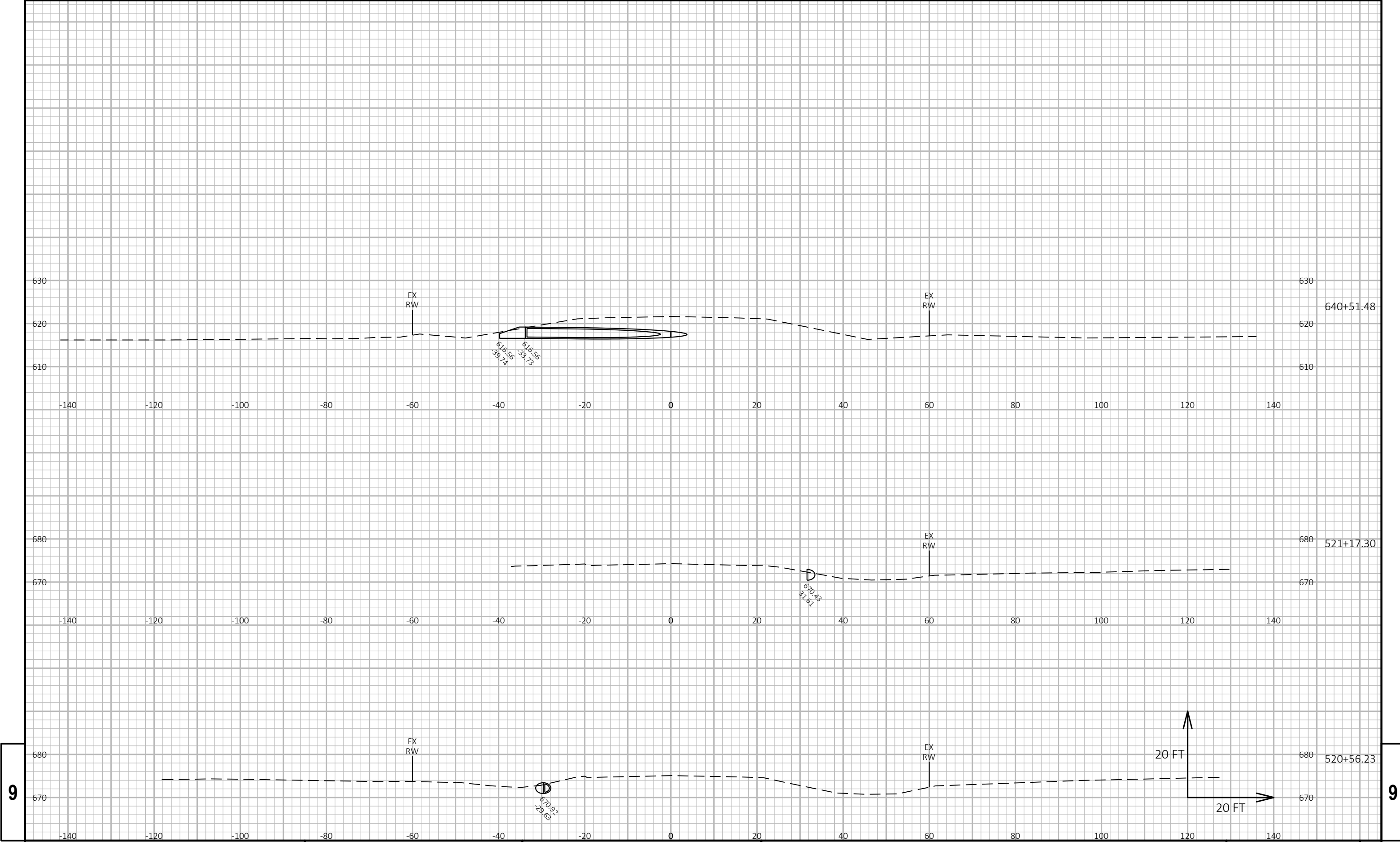
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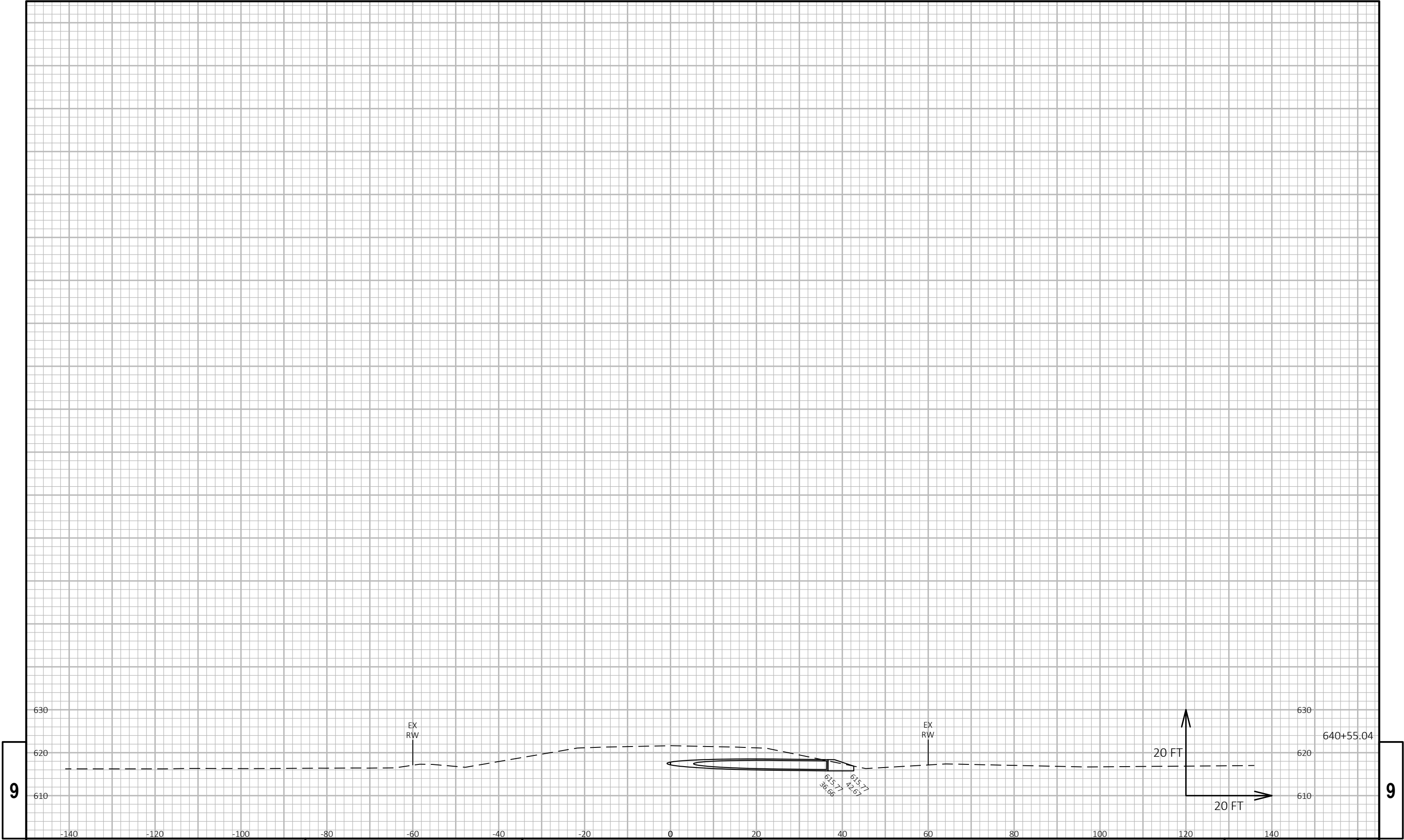
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EPlans Preliminary Sheet Numbering Tool

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