

LAX

PROJECT ID:

5198-01-60

COUNTY:

RICHLAND

WITH: N/A

MAY 2018
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 Plan
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 8	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 88

Addenda Sheets
61A & 61B Added

NO ADDITIONAL CHANGES



DESIGN DESIGNATION

A.A.D.T.	2018	=	400
A.A.D.T.	2038	=	490
D.H.V.		=	105
D.D.		=	60/40
T.		=	9.3%
DESIGN SPEED		=	60 M.P.H.
ESALS		=	N/A

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	
HIGH VOLTAGE	
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	
OVERHEAD UTILITY	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

BEGIN PROJECT
STA. 100+00
N= 431895.21
E= 639193.43

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

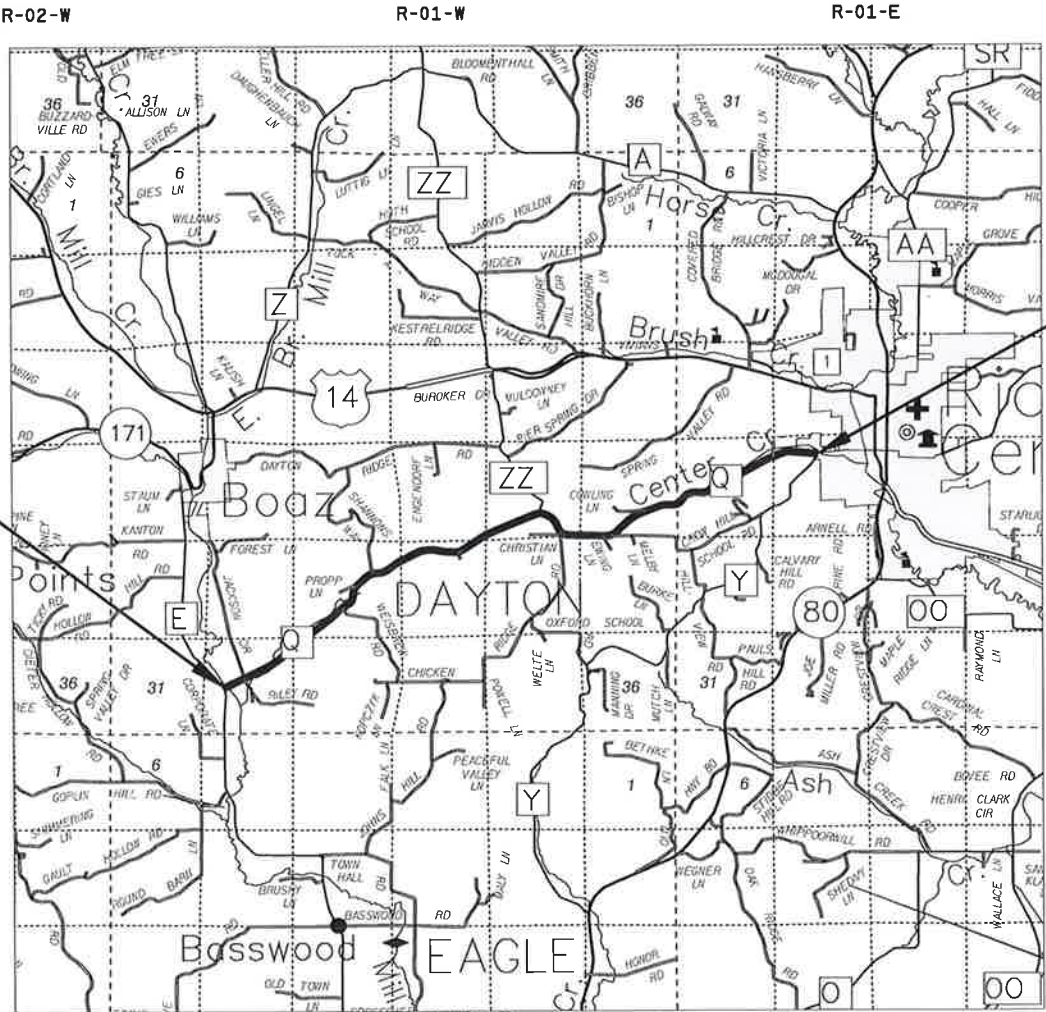
BOAZ - RICHLAND CENTER

(CTH E TO CTH Y)

CTH Q

RICHLAND COUNTY

STATE PROJECT NUMBER
5198-01-60



SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE = 7.144 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, RICHLAND 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.

STATE PROJECT

5198-01-60

FEDERAL PROJECT

PROJECT

WISC 2018234

CONTRACT

1

AS-BUILT PLAN

SUPERVISOR: Joseph Gregas
PROJECT MANAGER: Dan Kleinertz
PROJECT LEADER: Dan Tracy - Jewell Associates
CONTRACTOR: Mattison Contractors, Inc.
WORK STARTED: 7/16/18
WORK COMPLETED: 8/13/18

Subcontractor List
SJK Engineering
Safemark LLC
St. Joseph Construction

ACCEPTED FOR

COUNTY of RICHLAND

Commissioner

1-27-18 *William L. Landon*
(Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

WESTBROOK
Associated Engineers, Inc.

619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WISCONSIN 53588
PHONE (608) 588-7866
FAX (608) 588-7954



1-24-2018 *Aaron Palmer*
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor WESTBROOK

Designer WESTBROOK

Management Consultant KL ENGINEERING, INC.

APPROVED FOR THE DEPARTMENT

DATE: 1/30/18 *[Signature]*
Management Consultant Signature

GENERAL NOTES

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

EROSION CONTROL
PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL THE EROSION CONTROL PROTECTION IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.

THE QUANTITY OF THE ITEMS FOR EROSION PROTECTION INCLUDES AN UNDISTRIBUTED AMOUNT FOR PROTECTION, CONTROL, AND ABATEMENT OF WATER POLLUTION RESULTING FROM SOIL EROSION. THE DISTRIBUTION AND LOCATION OF THESE MATERIALS ARE TO BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY ARE TO BE FERTILIZED, SEEDED AND TEMPORARILY SEEDED AS DIRECTED BY THE ENGINEER. THESE ITEMS ARE INCIDENTAL TO "BARRIER SYSTEM GRADING SHAPING FINISHING".

DO NOT APPLY FERTILIZER WITHIN 20 FEET OF A WATER BODY OR WETLAND.

MISCELLANEOUS
WHEN THE QUANTITY OF BASE AGGREGATE DENSE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

ALL WASTE MATERIAL RESULTING FROM THE VARIOUS CONSTRUCTION OPERATIONS ADJACENT TO THE PAVEMENT UNDER TRAFFIC SHALL BE ENTIRELY REMOVED AND PROPERLY DISPOSED OF IMMEDIATELY OR AS DIRECTED BY THE ENGINEER.

THE EXACT LOCATION AND WIDTH OF DRIVEWAYS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

DRIVEWAYS SHALL BE REPLACED IN KIND AND AND IN ACCORDANCE WITH THE CONSTRUCTION DETAILS.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCES SHALL OCCUR OUTSIDE OF THE SLOPE INTERCEPTS IN WETLAND AREAS.

STORAGE OF EQUIPMENT AND/OR MATERIALS OUTSIDE OF THE SHOWN SLOPE INTERCEPTS, IN AREAS OF ADJACENT WETLANDS, IS PROHIBITED.

STATIONING, DISTANCES, AND OFFSETS FOR PROPOSED SIGNS SHOWN ON THE PLANS ARE APPROXIMATE AND THE LOCATIONS OF SIGNS ARE TO BE COORDINATED IN THE FIELD WITH THE ENGINEER.

ALL COORDINATES ON THIS PLAN ARE REFERENCED TO THE RICHLAND COUNTY COORDINATE SYSTEM. DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES. BEARINGS SHOWN ON THIS PLAN ARE GRID BEARINGS.

PURSUANT TO CHAPTER 59 OF THE WISCONSIN STATUTES, THE CONTRACTOR SHALL CAREFULLY MAKE A SEARCH FOR EVIDENCE OF A LANDMARK IN ALL AREAS WHERE SUCH A LANDMARK MAY EXIST.

CONSULTANT LIAISON

WESTBROOK ASSOCIATED ENGINEERS, INC.
619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WI 53588

ATTN: AARON PALMER, P.E.
PH: (608) 588-7866
apalmer@westbrookeng.com

RICHLAND COUNTY LIAISON

RICHLAND COUNTY HIGHWAY DEPARTMENT
120 BROWEN CIR
RICHLAND CENTER, WI 53581

ATTN: BILL CONDON, INTERIM HIGHWAY COMMISSIONER
PH: (608) 647-4707
bill.condon@co.richland.wi.us

WisDNR LIAISON

DNR SOUTH CENTRAL REGION HEADQUARTERS
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711

ATTN: ANDY BARTA
PH: (608) 275-3308
andrew.barta@wisconsin.gov

ORDER OF SECTION 2 SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- PROJECT OVERVIEW
- CONSTRUCTION DETAILS
- GUARDRAIL DETAILS (INCLUDES EROSION CONTROL PLANS)
- PERMANENT SIGNING

UTILITIES

FRONTIER COMMUNICATIONS
ATTN: JERRY MOORE
20 S WILSON AVE
RICE LAKE, WI 54868
(608) 742-9507
jerald.r.moore@frt.com

WISCONSIN POWER AND LIGHT
ATTN: MICHAEL BROLIN
4902 N. BILTMORE LANE,
MADISON, WI 53713
(608) 458-4871
MichaelBrolin@alliantenergy.com

DAIRYLAND POWER COOPERATIVE
(TRANSMISSION LINE)
P.O. BOX 817
LA CROSSE, WI 54602

RICHLAND ELECTRIC COOPERATIVE
ATTN: LARRY HALLETT
P.O. BOX 439
RICHLAND CENTER, WI 53581
(608) 647-3173
lhallett@rec.coop

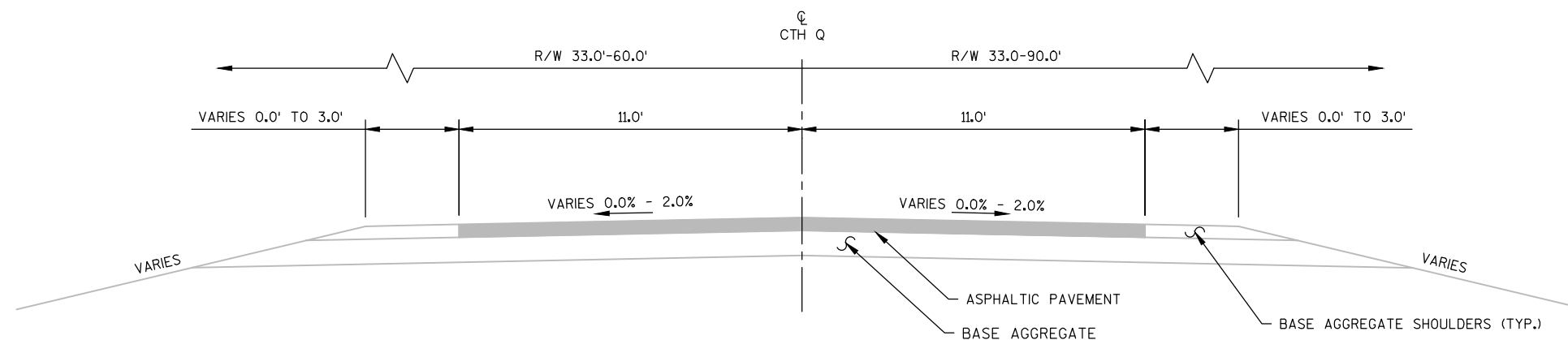


Dial 811 or (800)242-8511

www.DiggersHotline.com

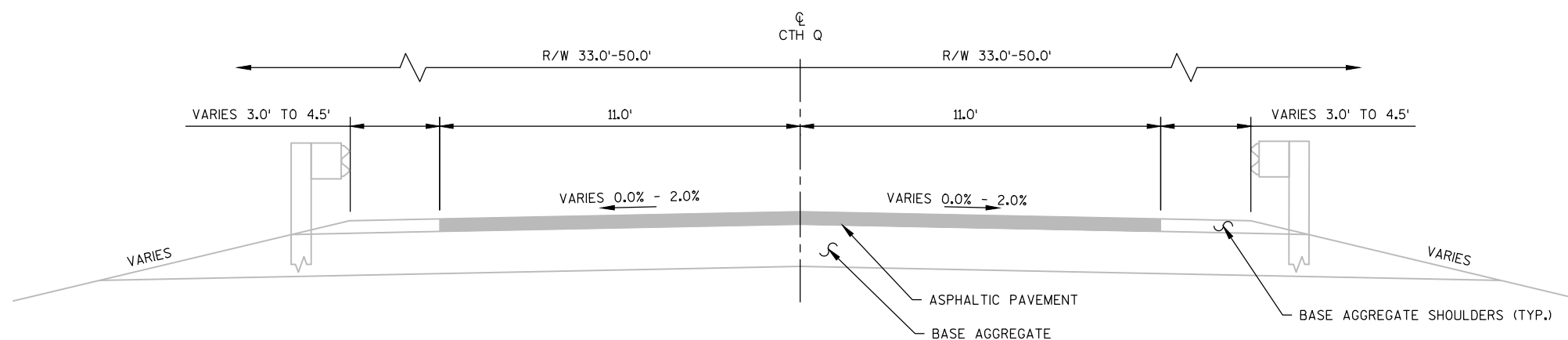
STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	L.S.	LUMP SUM
AGG.	AGGREGATE	LT.	LEFT
AH.	AHEAD	M.H.	MANHOLE
ET. AL.	AND OTHERS	MAX.	MAXIMUM
BK.	BACK	MIN.	MINIMUM
B	BARN	N.	NORTH
B.M.	BENCH MARK	NOR.	NORMAL
BIT.	BITUMINOUS	PAV'T.	PAVEMENT
BOT.	BOTTOM	P.C.	POINT OF CURVE
C.A.B.C.	CRUSHED AGGREGATE BASE COURSE	P.I.	POINT OF INTERSECTION
C.B.	CATCH BASIN	P.C.C.	PORTLAND CEMENT CONCRETE
C.E.	COMMERCIAL ENTRANCE	P.E.	PRIVATE ENTRANCE
C OR CL	CENTERLINE	PL OR PL	PROPERTY LINE
CH.	CHISELED	P.P.	POWER POLE
CH. CH.	CHANNEL CHANGE	PROJ.	PROJECT
CL.	CLASS	P.T.	POINT OF TANGENCY
C & G	CURB & GUTTER	P.U.	PIPE UNDERDRAIN
C.M.C.P.	CORRUGATED METAL CULVERT PIPE	P.U.U.	PIPE UNDERDRAIN UNPERFORATED
CONC.	CONCRETE	R.	RADIUS
CONST.	CONSTRUCTION	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
COR.	CORNER	R.C.P.S.S.	REINFORCED CONCRETE PIPE, STORM SEWER
C.P.	CULVERT PIPE	REQ'D.	REQUIRED
CR.	CRUSHED	RL OR RL	REFERENCE LINE
C.T.H.	COUNTY TRUNK HIGHWAY	R.R.	RAILROAD
CWT.	HUNDREDWEIGHT	RT.	RIGHT
C.Y.	CUBIC YARD	R.H.F.	RIGHT HAND FORWARD
D	DEGREE OF CURVE	R/W	RIGHT-OF-WAY
D	DIRECTIONAL DISTRIBUTION	RD.	ROAD
D.H.	DOUBLE HEADED	S.	SOUTH
D.H.V.	DESIGN HOURLY VOLUME	SAN.	SANITARY
DISC.	DISCHARGE	S.E.	SUPERELEVATION
E.	EAST	SHR.	SHRINKAGE
E.B.S.	EXCAVATION BELOW SUBGRADE	S.R.	SIDE ROAD
EL. OR ELEV.	ELEVATION	S.S.	STORM SEWER
E.M.	EROSION MAT	STD.	STANDARD
EXC.	EXCAVATION	S.T.H.	STATE TRUNK HIGHWAY
F.F.	FACE TO FACE	STA.	STATION
F.E.	FIELD ENTRANCE	SURF.	SURFACE
F.L.	FLOW LINE	S.W.	SIDEWALK
FT.	FOOT (FEET)	S.Y.	SQUARE YARD
G.	GARAGE	T	TRUCK PERCENTAGE
GAL.	GALLON	T	TANGENT LENGTH OF CURVE
G.F.	GEOTEXTILE FABRIC	TAN. LINE	TANGENT LINE
H	HOUSE	TAV.	TAVERN
HOR.	HORIZONTAL	T.P.	TELEPHONE POLE
H.P.	HIGH POINT	T.L.E.	TEMPORARY LIMITED EASEMENT
IN.	INCHES	TL OR TL	TRANSIT LINE
INL.	INLET	T.S.F.	TEMPORARY SILT FENCE
OR I	INTERSECTION ANGLE	UNCL.	UNCLASSIFIED EXCAVATION
I.P.	IRON PIPE	V	DESIGN SPEED
I.R.	IRON ROD	VAR.	VARIABLE
L.	LENGTH OF CURVE	V.C.	VERTICAL CURVE
L.F.	LINEAR FEET	VERT.	VERTICAL
L.H.E.	LIMITED HIGHWAY EASEMENT	W.	WEST
L.H.F.	LEFT HAND FORWARD		



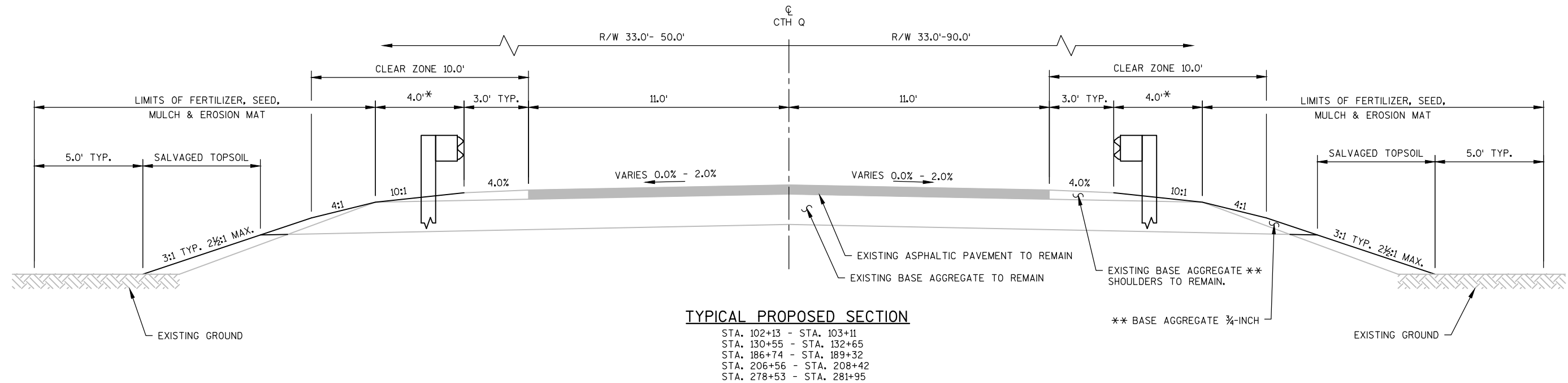
TYPICAL EXISTING SECTION

STA. 100+00 - STA. 187+13
STA. 188+61 - STA. 206+73
STA. 208+29 - STA. 477+41



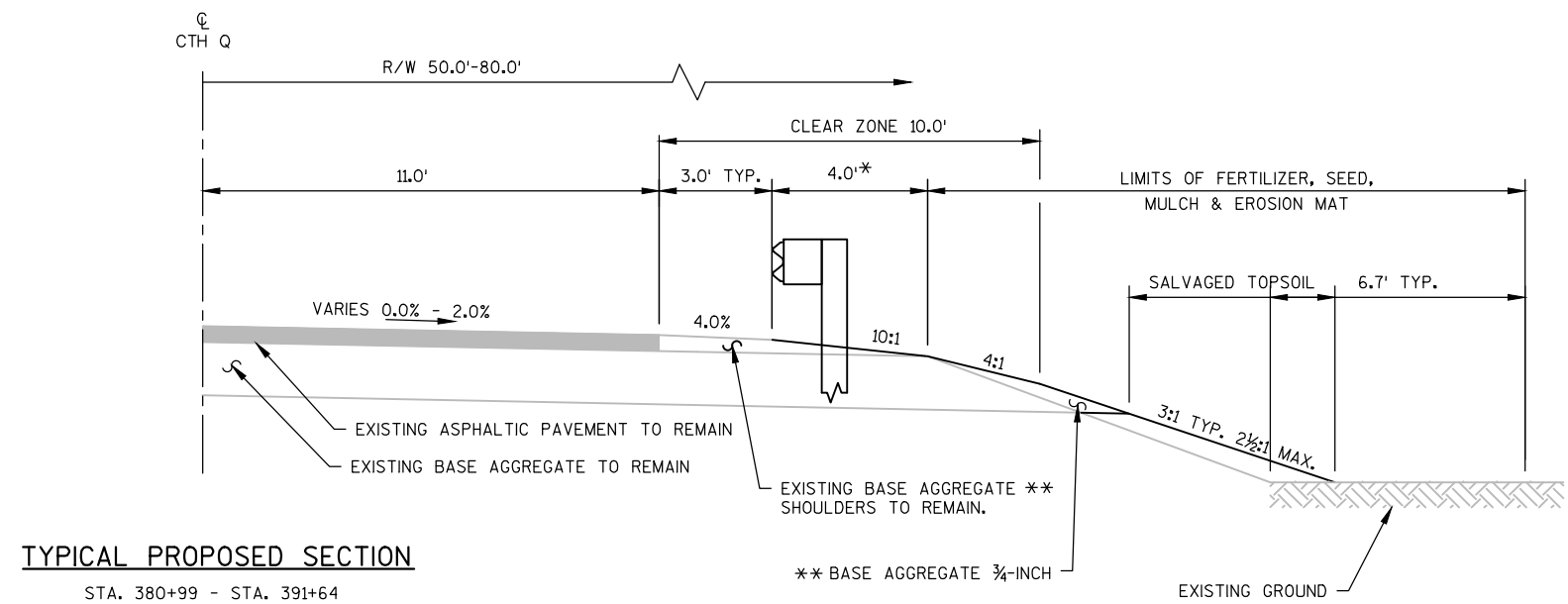
TYPICAL EXISTING SECTION

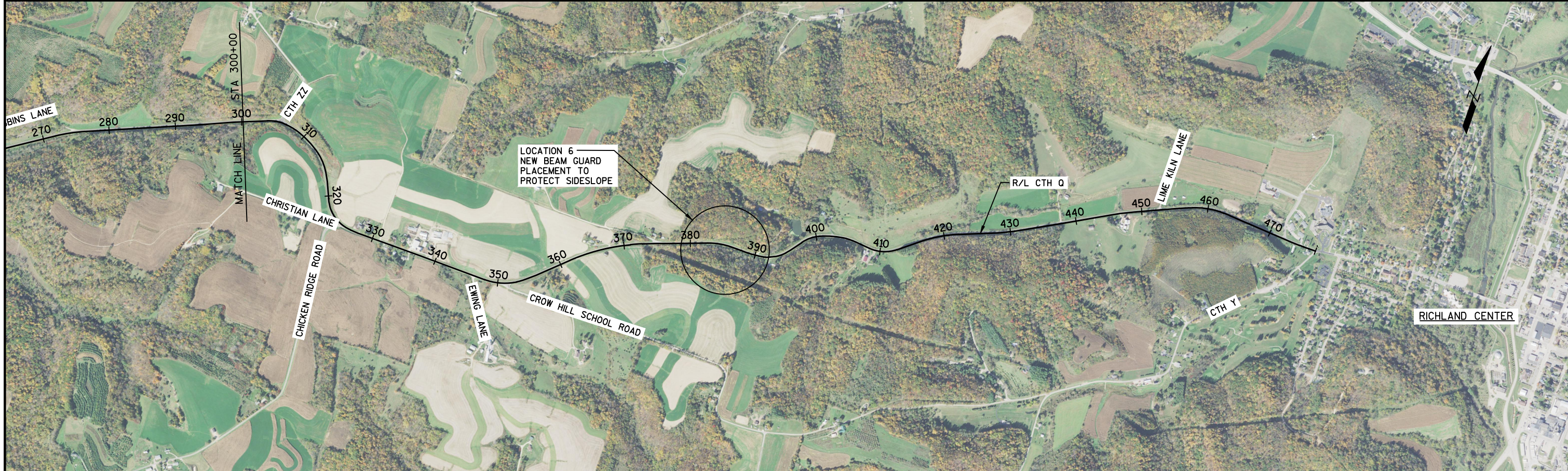
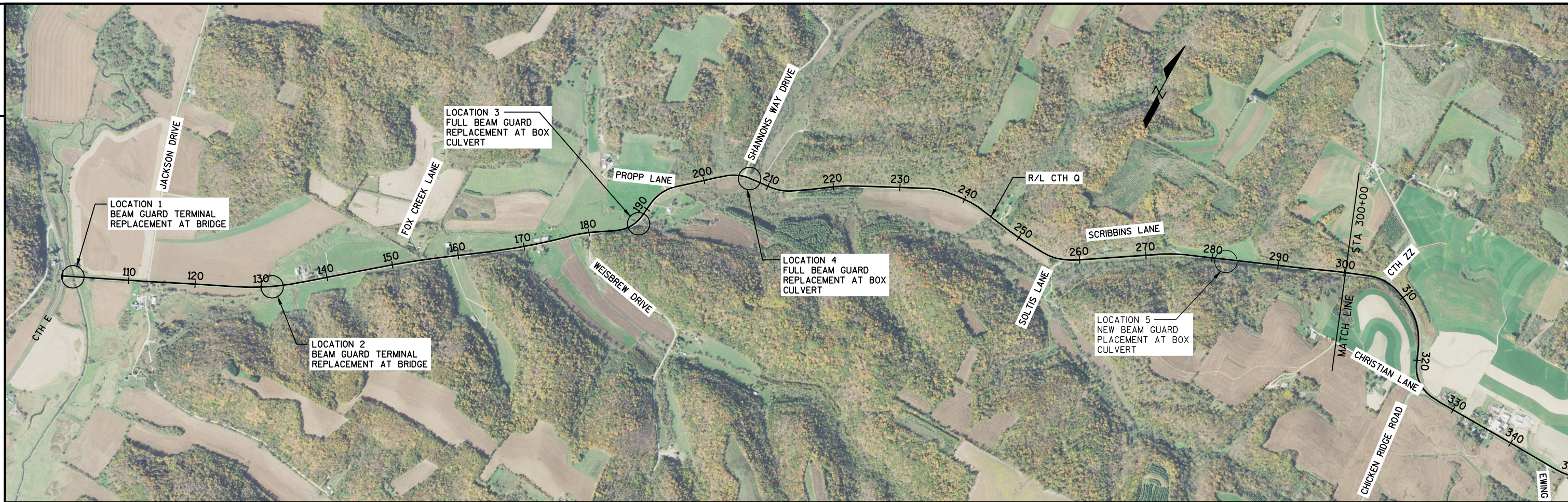
STA. 187+13 - STA. 188+61
STA. 206+73 - STA. 208+29



* SHOULDER TO TAPER TO MATCH EXISTING BEYOND GUARDRAIL LIMITS.

** ADD BASE AGGREGATE TO SHOULDERS WERE NEEDED OR AS DIRECTED BY THE ENGINEER.





PROJECT NO: 5198-01-60

HWY: CTH Q

COUNTY: RICHLAND

PROJECT OVERVIEW

SHEET

5

E

FILE NAME : G:\00-PROJECT FILES\2016\16104 BOAZ - RICHLAND CENTER ID 5198-01-30\01-CAD\SHEETSP\LAN\020301_PO.DWG
LAYOUT NAME - ****

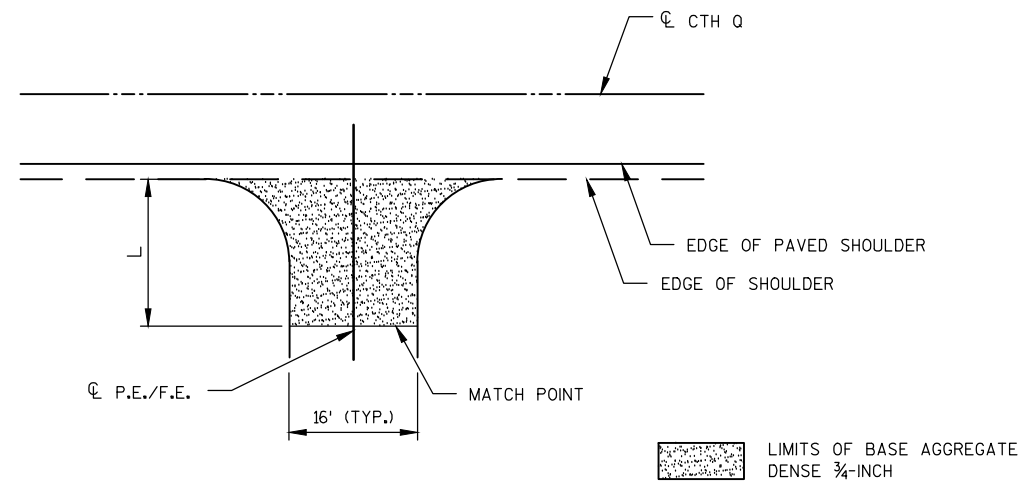
PLOT DATE : 11/15/2017 2:46 PM

PLOT BY : LUKE C. SANDER

PLOT NAME :

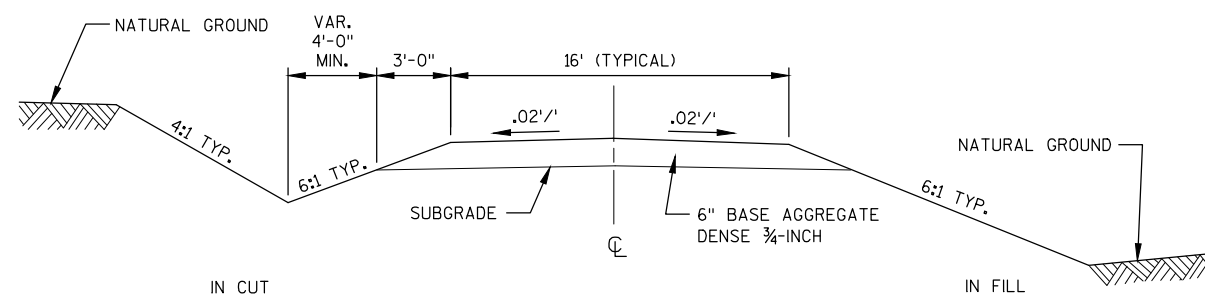
PLOT SCALE : 1:1500

WISDOT/CADDS SHEET 42

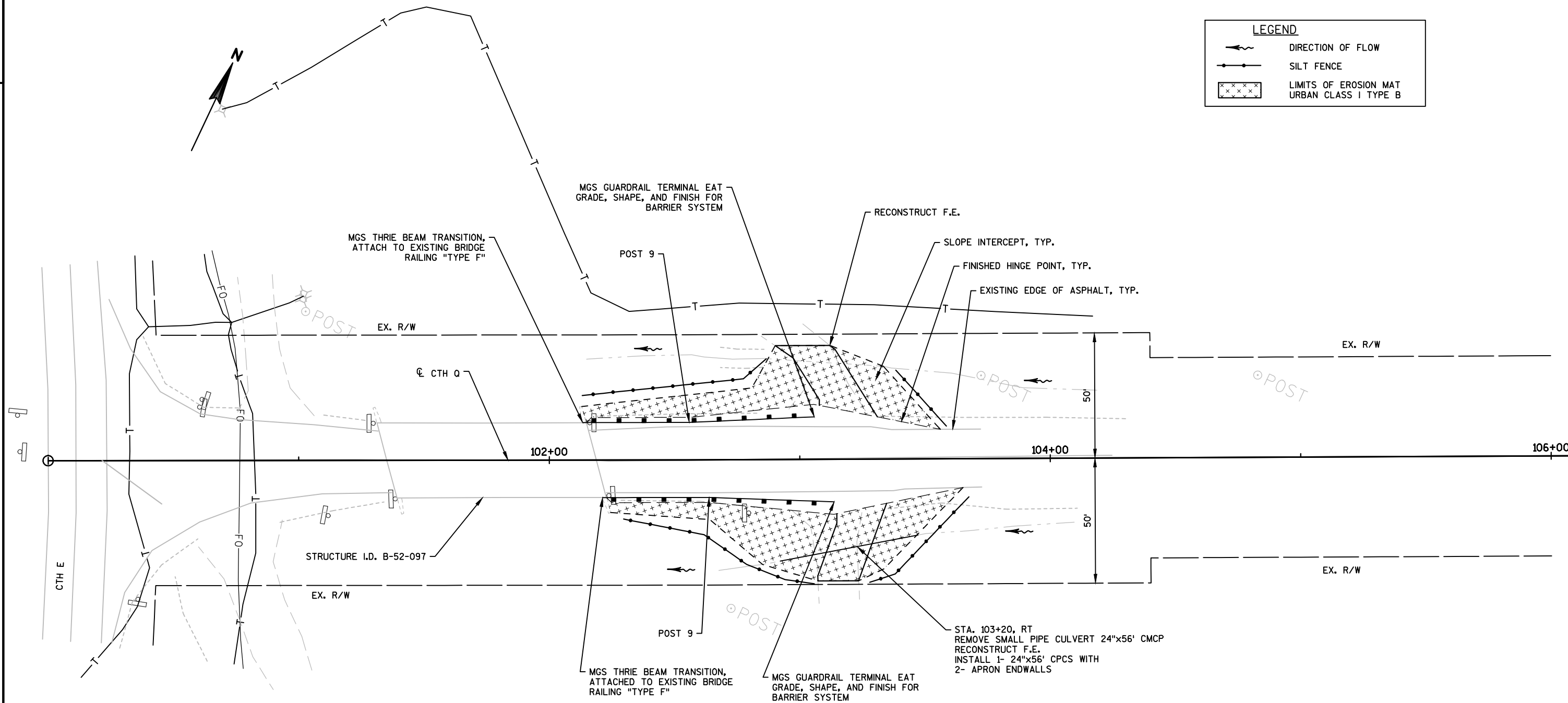


**P.E./F.E. (EXISTING B.A.D.)
DRIVEWAY DETAIL**

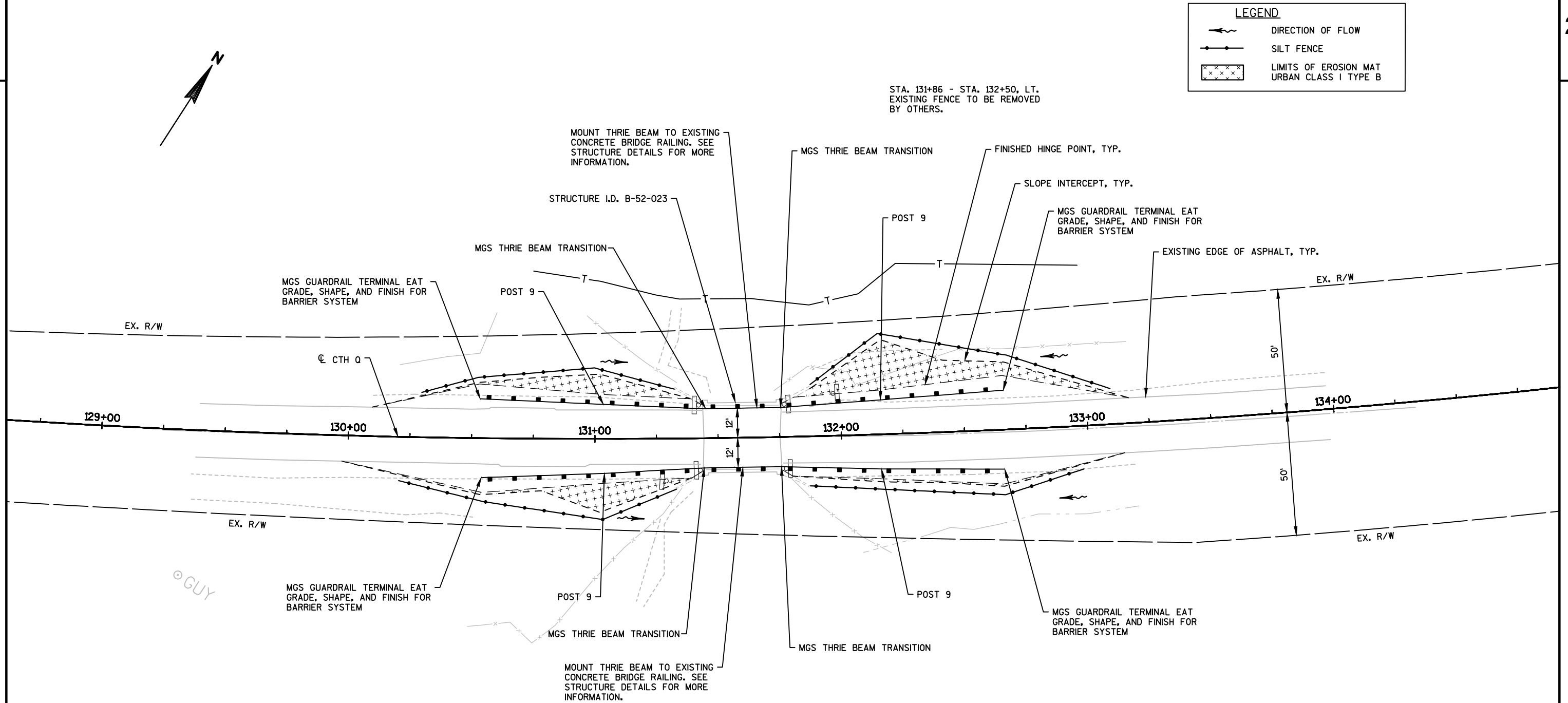
L= THE DISTANCE FROM THE EDGE OF PAVED SHOULDER
TO THE MATCH POINT SHOWN IN THE CROSS SECTIONS.



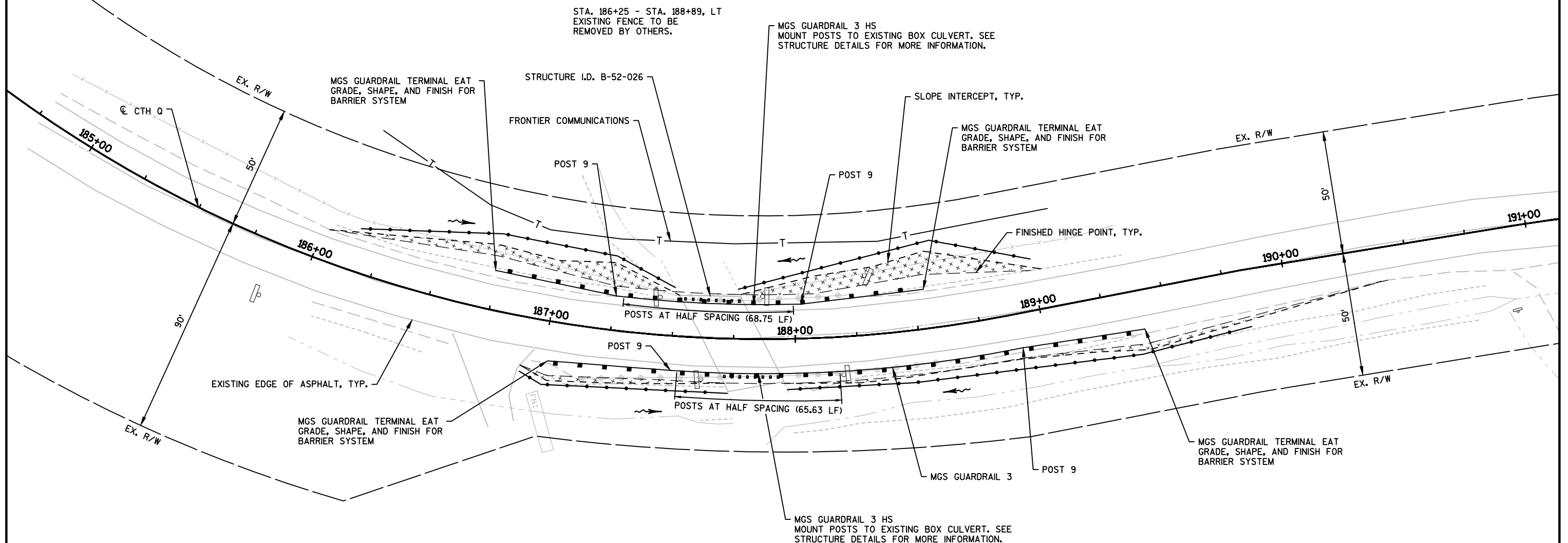
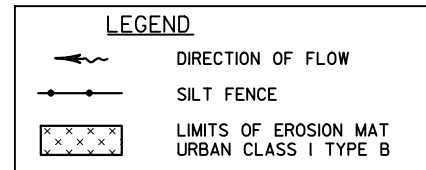
**TYPICAL CROSS SECTION
FOR P.E./F.E.**



STA.	DESCRIPTION	OFFSET
102+13.38 LT	THRIE BEAM TRANSITION	-15.00
102+55.95 LT	POST 9	-15.00
103+05.91 LT	MGS EAT	-17.00
102+21.26 RT	THRIE BEAM TRANSITION	15.00
102+63.73 RT	POST 9	15.00
103+13.69 RT	MGS EAT	17.00

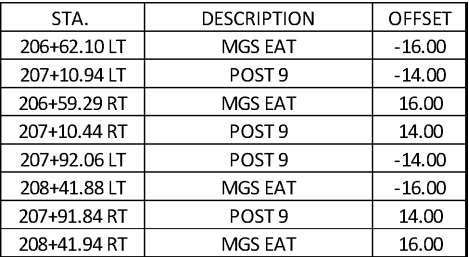


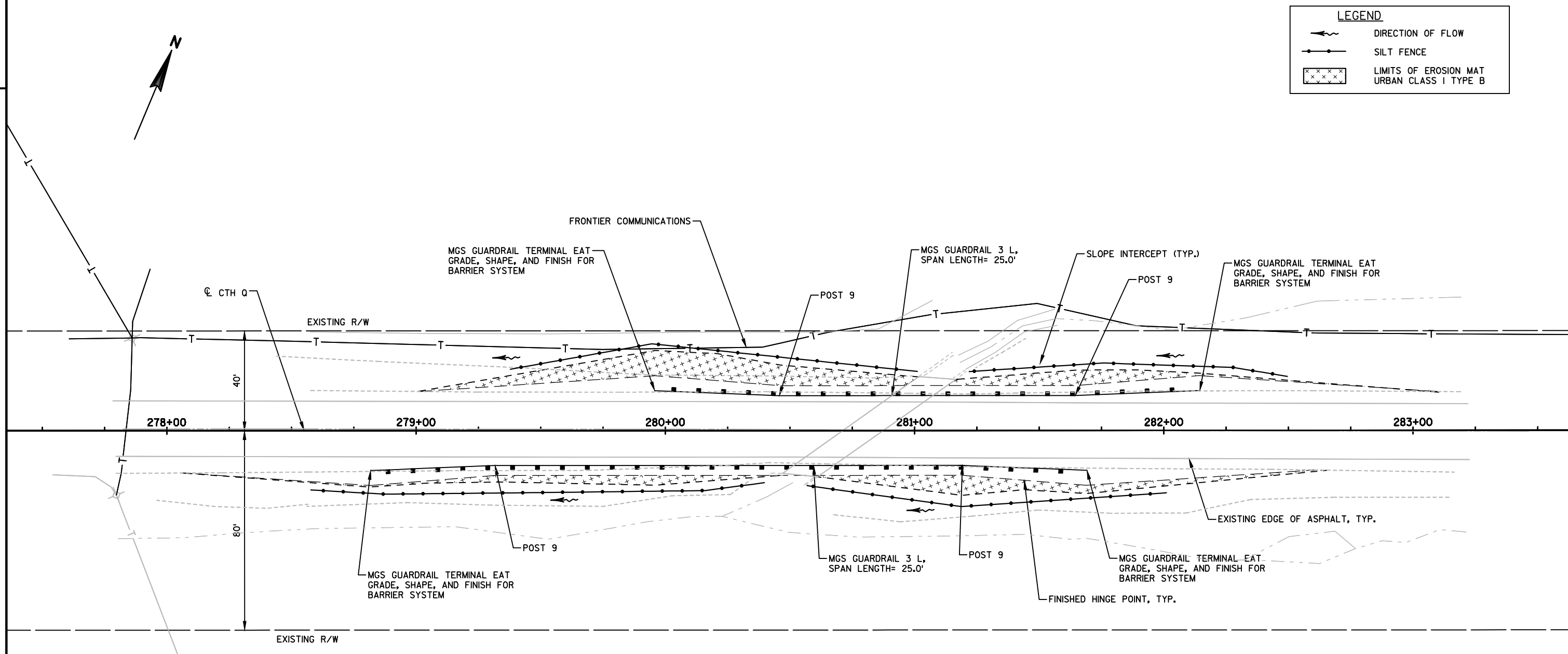
STA.	DESCRIPTION	OFFSET
130+53.31 LT	MGS EAT	-16.00
131+03.48 LT	POST 9	-14.00
131+44.20 LT	THRIE BEAM TRANSITION	-12.00
130+54.11 RT	MGS EAT	16.00
131+03.86 RT	POST 9	14.00
131+44.30 RT	THRIE BEAM TRANSITION	12.00
131+75.55 LT	THRIE BEAM TRANSITION	-12.00
132+16.27 LT	POST 9	-14.00
132+66.43 LT	MGS EAT	-16.00
131+75.45 RT	THRIE BEAM TRANSITION	12.00
132+15.88 RT	POST 9	14.00
132+65.64 RT	MGS EAT	16.00



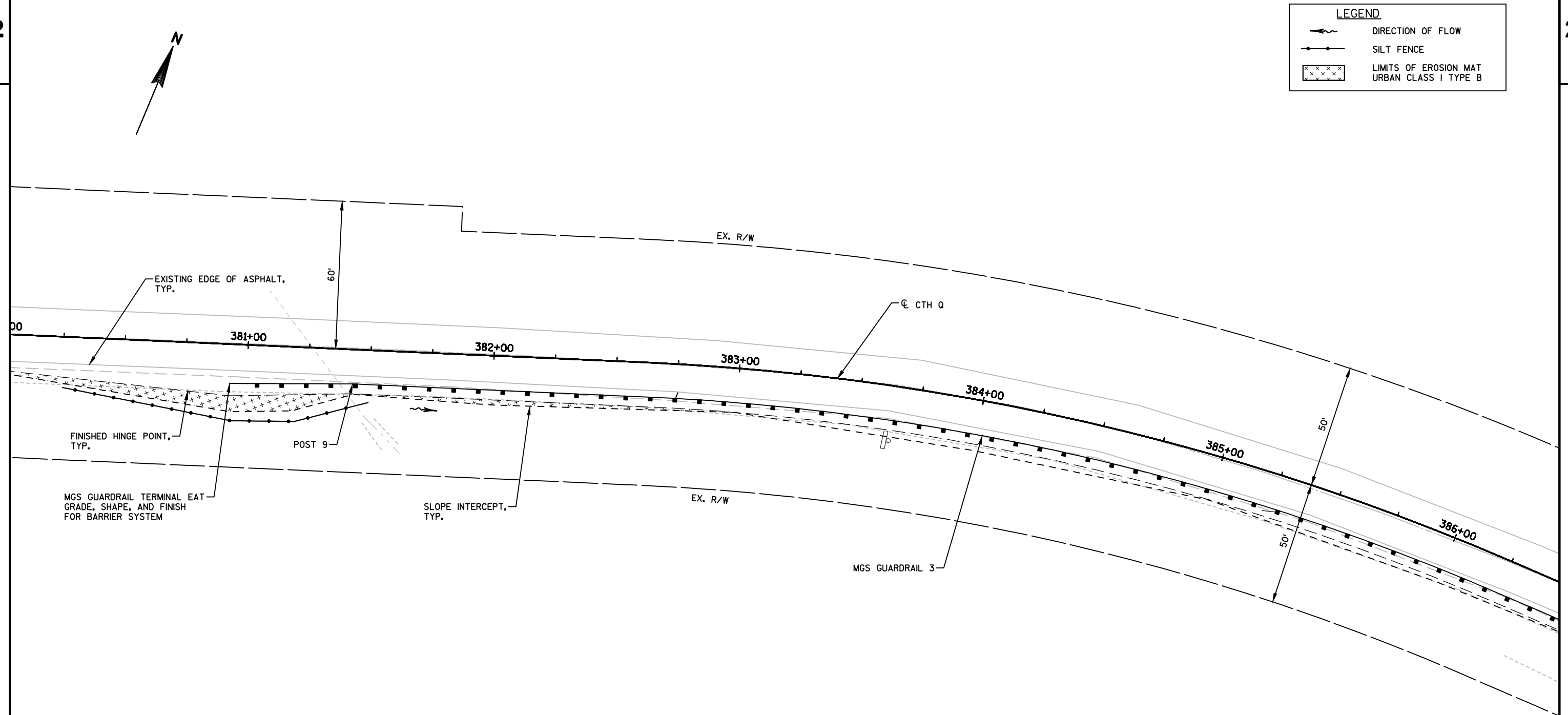
STA.	DESCRIPTION	OFFSET
186+74.13 LT	MGS EAT	-16.00
187+25.60 LT	POST 9	-14.00
187+01.74 RT	MGS EAT	16.00
187+50.33 RT	POST 9	14.00
188+02.68 LT	POST 9	-14.00
188+54.16 LT	MGS EAT	-16.00
188+90.39 RT	POST 9	14.00
189+40.35 RT	MGS EAT	16.00

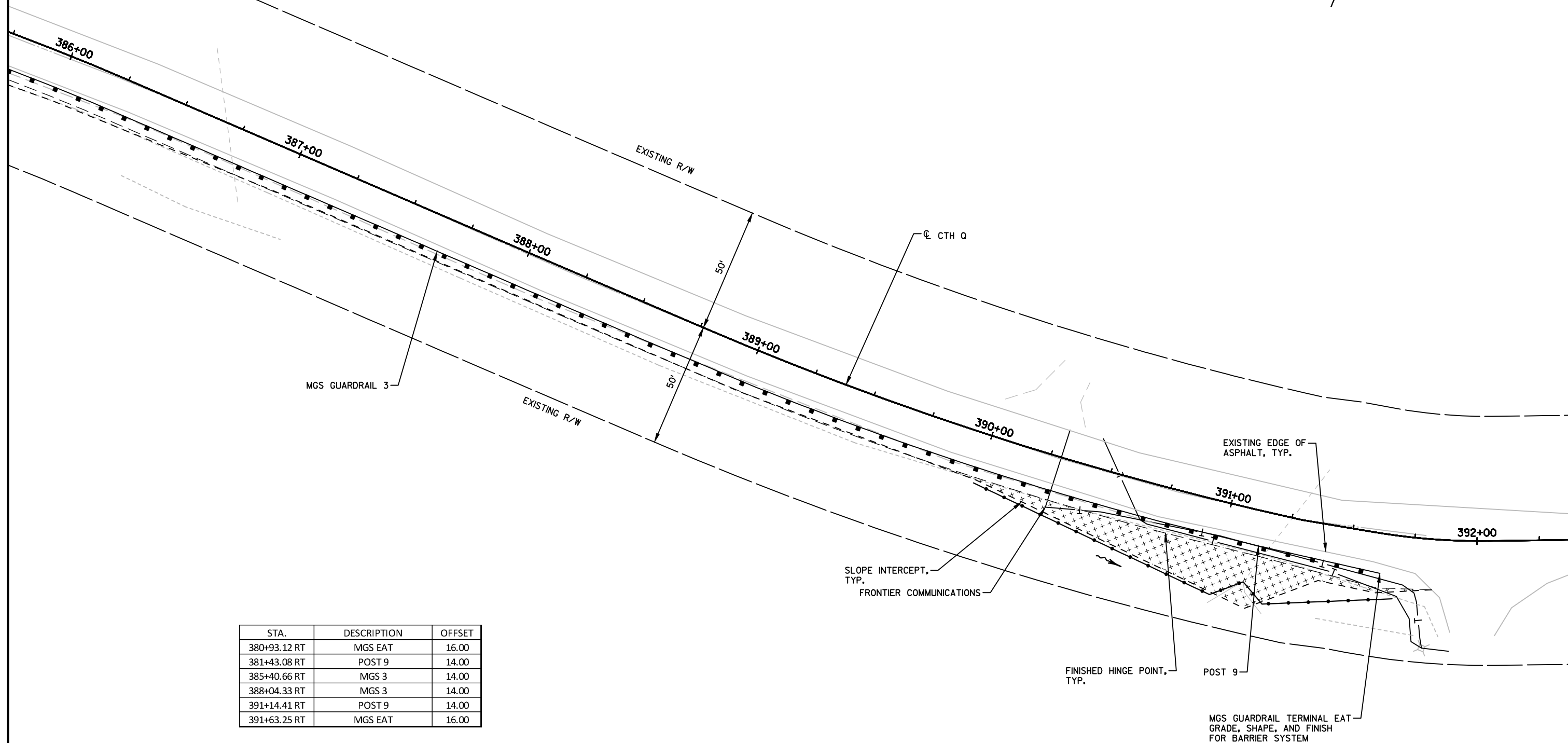
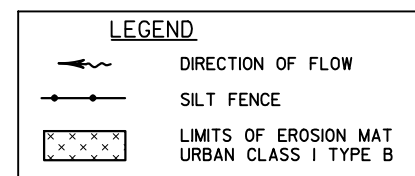
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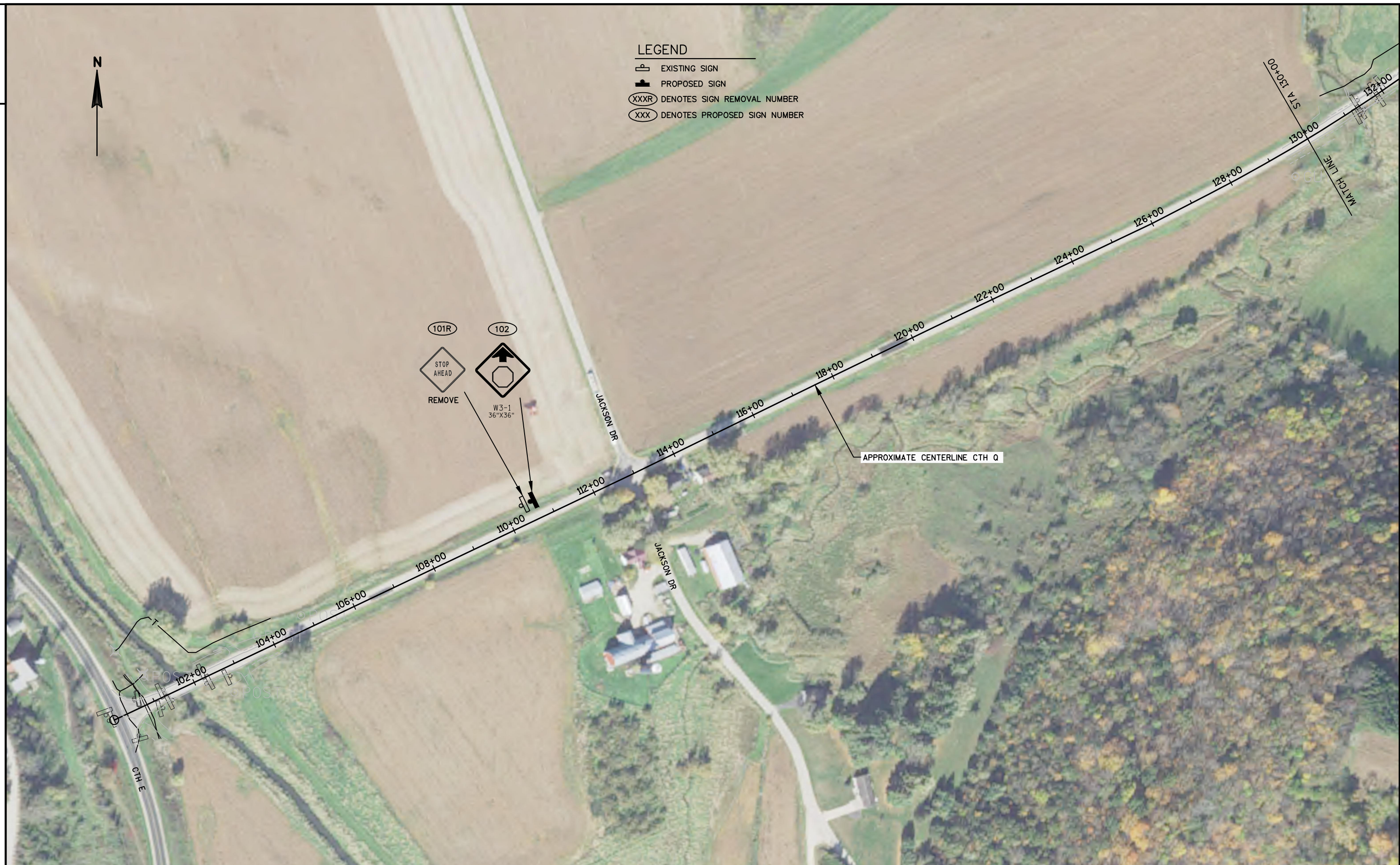


STA.	DESCRIPTION	OFFSET
278+81.74 RT	MGS EAT	16.00
279+31.70 RT	POST 9	14.00
279+95.76 LT	MGS EAT	-16.00
280+45.72 LT	POST 9	-14.00
281+19.20 RT	POST 9	14.00
281+69.16 RT	MGS EAT	16.00
281+64.47 LT	POST 9	-14.00
282+14.43 LT	MGS EAT	-16.00



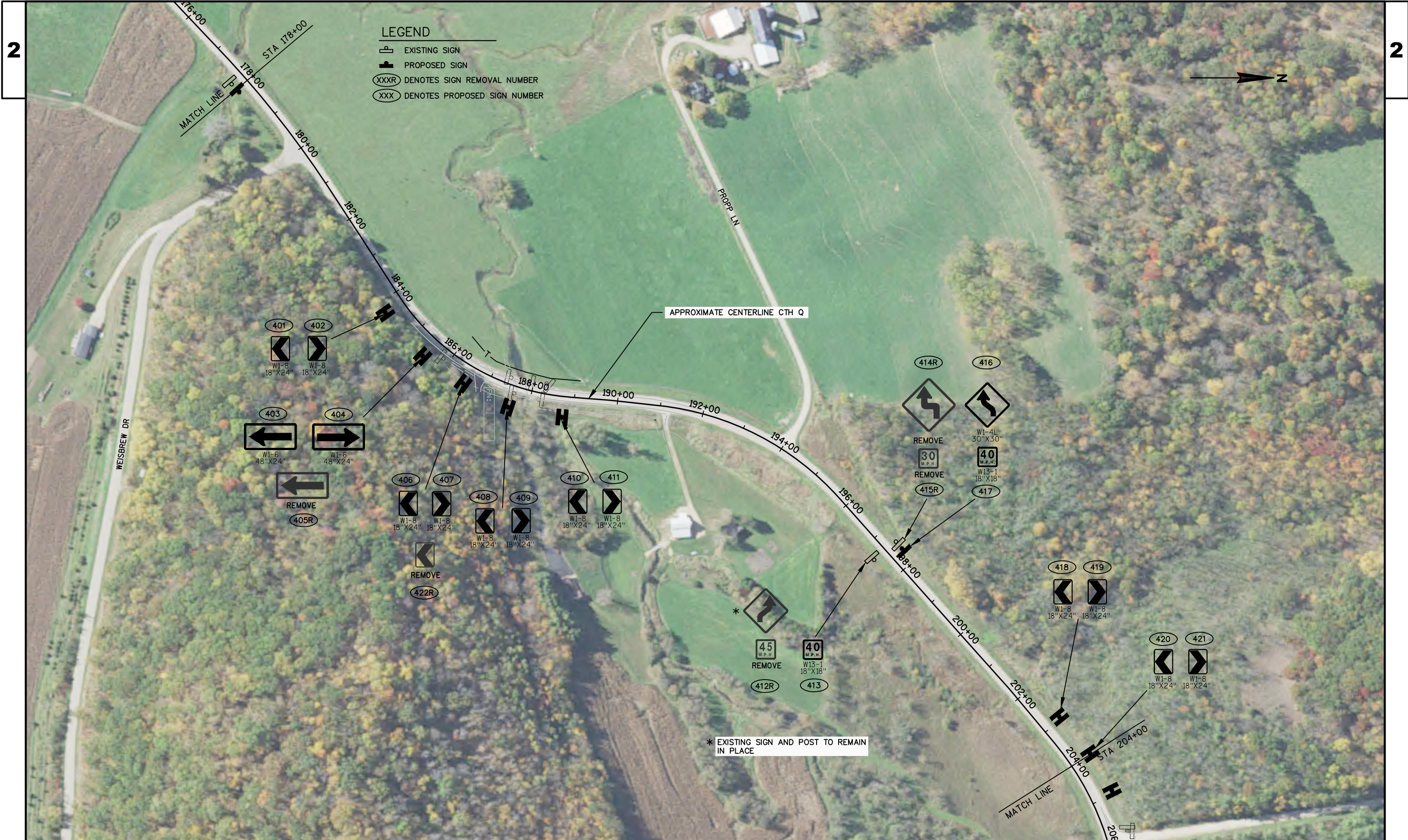


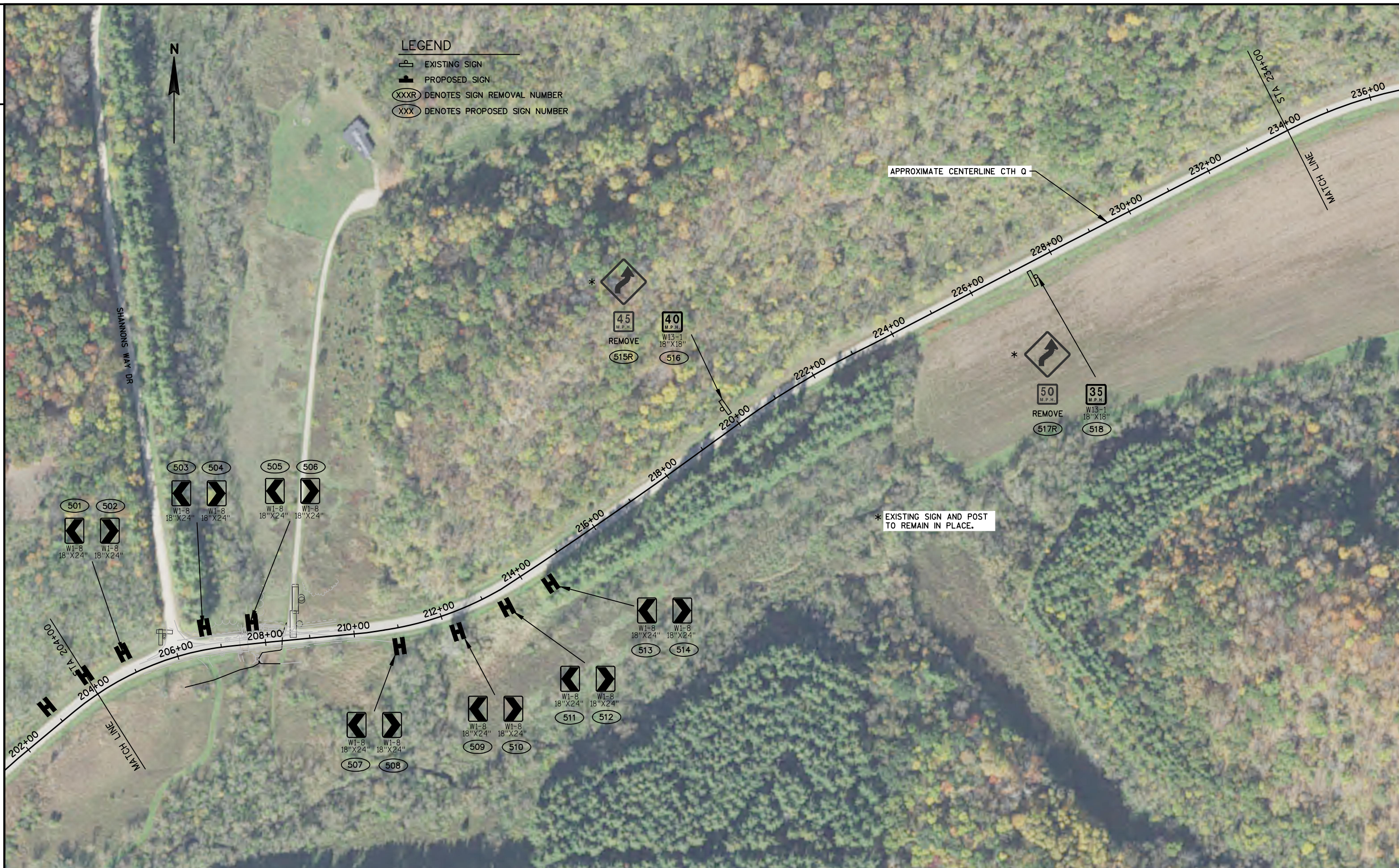
STA.	DESCRIPTION	OFFSET
380+93.12 RT	MGS EAT	16.00
381+43.08 RT	POST 9	14.00
385+40.66 RT	MGS 3	14.00
388+04.33 RT	MGS 3	14.00
391+14.41 RT	POST 9	14.00
391+63.25 RT	MGS EAT	16.00















LEGEND

- EXISTING SIGN
PROPOSED SIGN
(XXXX) DENOTES SIGN REMOVAL NUMBER
(XXX) DENOTES PROPOSED SIGN NUMBER

* EXISTING SIGN AND POST
TO REMAIN IN PLACE.



PROJECT NO: 5198-01-60

HWY: CTH Q

COUNTY: RICHLAND

PERMANENT SIGNING

SHEET

22

E

FILE NAME : G:\00-PROJECT FILES\2016\16104 BOAZ - RICHLAND CENTER ID 5198-01-30\01-CAD\SHEETSP\AN\023209_PS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/28/2017 1:23 PM

PLOT BY : LUKE C. SANDER

PLOT NAME :

PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 42

2

2



PROJECT NO: 5198-01-60	HWY: CTH Q	COUNTY: RICHLAND	PERMANENT SIGNING	SHEET 23	E
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FILE NAME : G:\00-PROJECT FILES\2016\16104 BOAZ - RICHLAND CENTER ID 5198-01-30\01-CAD\SHEETS\PLAN\023210-PS.DWG PLOT DATE : 11/28/2017 9:28 AM PLOT BY : LUKE C. SANDER PLOT NAME : PLOT SCALE : 1 IN:200 FT
LAYOUT NAME - **** WISDOT/CADDs SHEET 42

- LEGEND
- EXISTING SIGN
 - PROPOSED SIGN
 - XXXR DENOTES SIGN REMOVAL NUMBER
 - XXX DENOTES PROPOSED SIGN NUMBER



- LEGEND
- EXISTING SIGN
 - PROPOSED SIGN
 - XXXX DENOTES SIGN REMOVAL NUMBER
 - XXX DENOTES PROPOSED SIGN NUMBER

* EXISTING SIGN AND POST TO REMAIN IN PLACE.





Estimate Of Quantities

5198-01-60

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0004	204.0165	Removing Guardrail	LF	529.000	529.000
0006	211.0500	Prepare Foundation for Base Aggregate	STA	41.000	41.000
0008	213.0100	Finishing Roadway (project) 01. 5198-01-60	EACH	1.000	1.000
0010	305.0110	Base Aggregate Dense 3/4-Inch	TON	390.000	390.000
0012	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	2.000	2.000
0014	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	56.000	56.000
0016	614.0010	Barrier System Grading Shaping Finishing	EACH	11.000	11.000
0018	614.2300	MGS Guardrail 3	LF	1,028.000	1,028.000
0020	614.2310	MGS Guardrail 3 HS	LF	135.000	135.000
0022	614.2340	MGS Guardrail 3 L	LF	425.000	425.000
0024	614.2500	MGS Thrie Beam Transition	LF	120.000	120.000
0026	614.2610	MGS Guardrail Terminal EAT	EACH	20.000	20.000
0028	614.8010	Anchor Post Assembly Top Mount	EACH	16.000	16.000
0030	619.1000	Mobilization	EACH	1.000	1.000
0032	624.0100	Water	MGAL	3.000	3.000
0034	628.1504	Silt Fence	LF	3,000.000	3,000.000
0036	628.1520	Silt Fence Maintenance	LF	3,000.000	3,000.000
0038	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0040	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0042	628.2008	Erosion Mat Urban Class I Type B	SY	1,950.000	1,950.000
0044	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	67.000	67.000
0046	637.2230	Signs Type II Reflective F	SF	443.500	443.500
0048	638.2102	Moving Signs Type II	EACH	4.000	4.000
0050	638.2602	Removing Signs Type II	EACH	20.000	20.000
0052	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0054	642.5001	Field Office Type B	EACH	1.000	1.000
0056	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0058	643.0900	Traffic Control Signs	DAY	520.000	520.000
0060	643.5000	Traffic Control	EACH	1.000	1.000
0062	650.9910	Construction Staking Supplemental Control (project) 01. 5198-01-60	LS	1.000	1.000
0064	SPV.0060	Special 01. MGS Thrie Beam Concrete Bridge Rail Mounted	EACH	2.000	2.000

CULVERT REPLACEMENT

LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS	521.0124 CULVERT PIPE CORRUGATED STEEL 24-INCH	521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH
	(EACH)	(LF)	(EACH)
STA. 103+20, RT	1	56	2
TOTAL	1	56	2

MINIMUM THICKNESS = 0.064"

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 (LF)
187+43 - 188+24	MAINLINE, LT	79
187+14 - 188+62	MAINLINE, RT	153
206+76 - 208+16	MAINLINE, LT	142
206+73 - 208+28	MAINLINE, RT	155
TOTAL		529

PREPARE FOUNDATION FOR BASE
AGGREGATE

STATION - STATION	LOCATION	211.0500 (STA)
102+15 - 103+56	MAINLINE, LT	2
102+22 - 103+65	MAINLINE, RT	2
130+09 - 133+17	MAINLINE, LT	3
129+97 - 133+14	MAINLINE, RT	3
186+02 - 189+04	MAINLINE, LT	3
186+91 - 190+39	MAINLINE, RT	3
206+42 - 208+48	MAINLINE, LT	2
206+07 - 209+41	MAINLINE, RT	3
278+06 - 282+61	MAINLINE, RT	4
279+01 - 283+10	MAINLINE, LT	4
379+80 - 391+83	MAINLINE, RT	12
TOTAL		41

BASE AGGREGATE DENSE 3/4-INCH

LOCATION	305.0110 3/4-INCH (TON)
BEAM GUARD REPLACEMENTS	315
DRIVEWAYS	40
UNDISTRIBUTED	35
TOTAL	390

BEAM GUARD AND TERMINALS

STATION - STATION	LOCATION	614.2300 MGS GUARDRAIL 3 (LF)	614.2310 MGS GUARDRAIL 3 HS	614.2340 MGS GUARDRAIL 3 L (LF)	614.2500 MGS THRIE BEAM TRANSITION (LF)	614.2610 MGS GUARDRAIL EAT TERMINAL (EACH)	614.8010 ANCHOR POST ASSEMBLIES TOP MOUNTED (EACH)	SPV.0060.01 MGS THRIE BEAM CONCRETE BRIDGE RAIL MOUNTED (EACH)
102+13.38 - 103+05.91	LT	---	---	---	40	1	---	---
102+21.26 - 103+13.69	RT	---	---	---	40	1	---	---
130+53.31 - 132+66.43	LT	---	---	---	76	2	---	1
130+54.11 - 132+65.64	RT	---	---	---	76	2	---	1
186+73.31 - 188+59.77	LT	---	69	---	---	2	8	---
186+99.83 - 189+38.37	RT	72	66	---	---	2	8	---
206+62.10 - 208+41.88	LT	---	---	69	---	2	---	---
206+59.29 - 208+41.94	RT	---	---	69	---	2	---	---
278+81.74 - 281+69.16	RT	---	---	181	---	2	---	---
279+95.76 - 282+14.43	LT	---	---	106	---	2	---	---
380+93.12 - 391+63.25	RT	956	---	---	---	2	---	---
TOTALS		1028	135	425	120	20	16	2

WATER

PROJECT	624.0100 WATER (MGAL)
5198-01-60	3
TOTAL	3

TRAFFIC CONTROL

LOCATION	643.0310.S TEMMPORARY PORTABLE RUMBLE STRIPS (LS)	643.0900 TRAFFIC CONTROL SIGNS (DAY)
PROJECT	1	520
TOTAL	1	520

MOVING SIGNS TYPE II

EXISTING LOCATION	PROPOSED LOCATION	638.2102 MOVING SIGNS TYPE II (EACH)
STA. 131+42, 13' LT	STA. 131+42, 15' LT	1
STA. 131+43, 13' RT	STA. 131+43, 15' RT	1
STA. 131+77, 13' LT	STA. 131+77, 15' LT	1
STA. 133+77, 13' RT	STA. 133+77, 15' RT	1
TOTAL		4

CONSTRUCTION STAKING

LOCATION	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONROL (5198-01-60) (LS)
PROJECT	1
TOTAL	1

BARRIER SYSTEM GRADING SHAPING FINISHING

		FOR INFORMATIONAL PURPOSES ONLY									628.2008
STATION - STATION	LOCATION	614.0010 (EACH)	EXCAVATION	BORROW	SALVAGED	MULCHING	FERTILIZER	SEEDING	SEEDING	CONSTRUCTION	EROSION MAT URBAN CLASS I TYPE B (SY)
			COMMON (CY)	(CY)	TOPSOIL (SY)	(SY)	TYPE B (CWT)	MIXTURE NO. 30 (LB)	TEMPORARY (LB)	STAKING SLOPE STAKES (LF)	
102+13 - 103+06	MAINLINE, LT	1	---	2	130	0	0.1	3	5	143	210
102+21 - 103+14	MAINLINE, RT	1	---	2	170	0	0.1	4	6	141	240
130+53 - 132+66	MAINLINE, LT	1	---	51	130	0	0.1	3	5	307	165
130+54 - 132+66	MAINLINE, RT	1	---	3	35	0	0.1	1	2	318	70
186+73 - 188+60	MAINLINE, LT	1	---	27	120	0	0.1	3	4	301	150
186+99 - 189+39	MAINLINE, RT	1	---	1	25	0	0.1	1	2	348	50
206+62 - 208+42	MAINLINE, LT	1	---	4	45	0	0.1	2	2	209	85
206+59 - 208+42	MAINLINE, RT	1	---	8	55	0	0.1	2	3	334	100
278+81 - 281+70	MAINLINE, RT	1	---	18	95	0	0.1	3	4	455	130
279+95 - 282+15	MAINLINE, LT	1	---	60	185	0	0.1	4	6	408	210
380+93 - 391+64	MAINLINE, RT	1	---	144	230	0	0.2	5	8	1203	275
	UNDISTRIBUTED	---	10	---	---	---	---	---	---	---	265
TOTALS		11	10	320	1220	0	1.2	31	47	4167	1950

EROSION CONTROL ITEMS

STATION - STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)
102+13 - 103+06	MAINLINE, LT	107	107	---	---
102+21 - 103+14	MAINLINE, RT	135	135	---	---
130+53 - 132+66	MAINLINE, LT	236	236	---	---
130+54 - 132+66	MAINLINE, RT	230	230	---	---
186+73 - 188+60	MAINLINE, LT	254	254	---	---
186+99 - 189+39	MAINLINE, RT	276	276	---	---
206+62 - 208+42	MAINLINE, LT	190	190	---	---
206+59 - 208+42	MAINLINE, RT	263	263	---	---
278+81 - 281+70	MAINLINE, RT	326	326	---	---
279+95 - 282+15	MAINLINE, LT	293	293	---	---
380+25 - 381+50	MAINLINE, RT	127	127	---	---
390+00 - 391+75	MAINLINE, RT	183	183	---	---
UNDISTRIBUTED		380	380	2	2
TOTALS		3000	3000	2	2

PERMANENT SIGNING

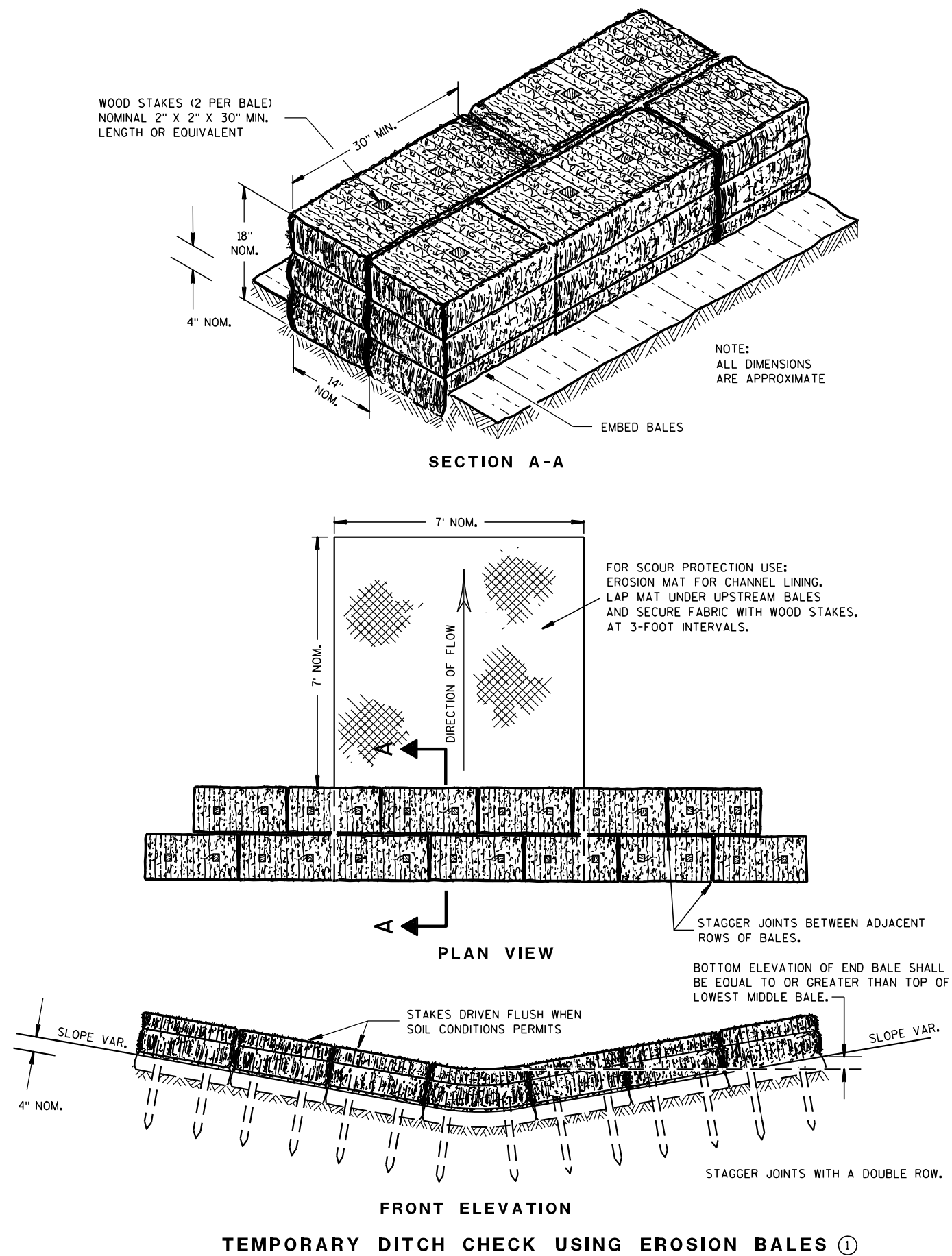
SIGN NO.	STATION	SIGN CODE	SIGN SIZE IN X IN	637.2230 SIGNS TYPE II REFLECTIVE F (SF)	634.0614 POST WOOD 4X6 INCH 14 FT (EACH)	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)	MESSAGE
101R	110+25	W3-1	36 X 36	---	---	1	1	STOP AHEAD
102	110+25	W3-1	36 X 36	9	1	---	---	STOP AHEAD
301R	178+00	W1-4L	30 X 30	---	---	1	1	ROAD CURVES AHEAD (LEFT)
302R	178+00	W13-1	18 X 18	---	---	1	1	30 MPH
303	178+00	W1-4L	30 X 30	6.25	1	---	---	ROAD CURVES AHEAD (LEFT)
304	178+00	W13-1	18 X 18	2.25	---	---	---	40 MPH
401	184+25	W1-8	18 X 24	3	1	---	---	CHEVRON
402	184+25	W1-8	18 X 24	3	---	---	---	CHEVRON
403	185+50	W1-6	48 X 24	8	1	---	---	ONE-DIRECTION LARGE ARROW
404	185+50	W1-6	48 X 24	8	---	---	---	ONE-DIRECTION LARGE ARROW
405R	185+50	W1-6	48 X 24	---	---	1	1	ONE-DIRECTION LARGE ARROW
406	186+50	W1-8	18 X 24	3	1	---	---	CHEVRON
407	186+50	W1-8	18 X 24	3	---	---	---	CHEVRON
408	187+50	W1-8	18 X 24	3	1	---	---	CHEVRON
409	187+50	W1-8	18 X 24	3	---	---	---	CHEVRON
410	188+75	W1-8	18 X 24	3	1	---	---	CHEVRON
411	188+75	W1-8	18 X 24	3	---	---	---	CHEVRON
412R	197+50	W13-1	18 X 18	---	---	1	---	45 MPH
413	197+50	W13-1	18 X 18	2.25	---	---	---	40 MPH
414R	197+50	W1-4L	30 X 30	---	---	1	1	ROAD CURVES AHEAD (LEFT)
415R	197+50	W13-1	18 X 18	---	---	1	---	30 MPH
416	197+50	W1-4L	30 X 30	6.25	1	---	---	ROAD CURVES AHEAD (LEFT)
417	197+50	W13-1	18 X 18	2.25	---	---	---	40 MPH
418	203+00	W1-8	18 X 24	3	1	---	---	CHEVRON
419	203+00	W1-8	18 X 24	3	---	---	---	CHEVRON
420	204+00	W1-8	18 X 24	3	1	---	---	CHEVRON
421	204+00	W1-8	18 X 24	3	---	---	---	CHEVRON
422R	186+50	W1-8	18 X 24	---	---	1	1	CHEVRON
501	205+00	W1-8	18 X 24	3	1	---	---	CHEVRON
502	205+00	W1-8	18 X 24	3	---	---	---	CHEVRON
503	206+50	W1-8	18 X 24	3	1	---	---	CHEVRON
504	206+50	W1-8	18 X 24	3	---	---	---	CHEVRON
505	207+75	W1-8	18 X 24	3	1	---	---	CHEVRON
506	207+75	W1-8	18 X 24	3	---	---	---	CHEVRON
507	211+00	W1-8	18 X 24	3	1	---	---	CHEVRON
508	211+00	W1-8	18 X 24	3	---	---	---	CHEVRON
509	212+25	W1-8	18 X 24	3	1	---	---	CHEVRON
510	212+25	W1-8	18 X 24	3	---	---	---	CHEVRON
511	213+25	W1-8	18 X 24	3	1	---	---	CHEVRON
512	213+25	W1-8	18 X 24	3	---	---	---	CHEVRON
513	214+50	W1-8	18 X 24	3	1	---	---	CHEVRON
514	214+50	W1-8	18 X 24	3	---	---	---	CHEVRON
515R	220+00	W13-1	18 X 18	---	---	1	---	45 MPH
516	220+00	W13-1	18 X 18	2.25	---	---	---	40 MPH
517R	227+25	W13-1	18 X 18	---	---	1	---	50 MPH
518	227+25	W13-1	18 X 18	2.25	---	---	---	35 MPH
701R	262+50	W13-1	18 X 18	---	---	1	---	50 MPH
702	262+50	W13-1	18 X 18	2.25	---	---	---	40 MPH
801	298+00	W2-2	30 X 30	6.25	1	---	---	SIDE ROAD (RIGHT ANGLE) SYMBOL
802R	300+50	W13-1	18 X 18	---	---	1	---	40 MPH
803	300+50	W13-1	18 X 18	2.25	---	---	---	45 MPH
804	304+00	W1-8	18 X 24	3	1	---	---	CHEVRON
805	304+00	W1-8	18 X 24	3	---	---	---	CHEVRON
806	305+00	W1-8	18 X 24	3	1	---	---	CHEVRON
807	305+00	W1-8	18 X 24	3	---	---	---	CHEVRON
808	307+00	W1-8	18 X 24	3	1	---	---	CHEVRON
809	307+00	W1-8	18 X 24	3	---	---	---	CHEVRON
810	308+00	W1-8	18 X 24	3	1	---	---	CHEVRON
811	308+00	W1-8	18 X 24	3	---	---	---	CHEVRON
812	309+00	W1-8	18 X 24	3	1	---	---	CHEVRON
813	309+00	W1-8	18 X 24	3	---	---	---	CHEVRON
814	310+00	W1-8	18 X 24	3	1	---	---	CHEVRON
815	310+00	W1-8	18 X 24	3	---	---	---	CHEVRON
816	311+00	W1-8	18 X 24	3	1	---	---	CHEVRON
817	311+00	W1-8	18 X 24	3	---	---	---	CHEVRON
818	312+00	W1-8	18 X 24	3	1	---	---	CHEVRON
819	312+00	W1-8	18 X 24	3	---	---	---	CHEVRON
820	313+00	W1-8	18 X 24	3	1	---	---	CHEVRON
821	313+00	W1-8	18 X 24	3	---	---	---	CHEVRON
822	314+00	W2-2	30 X 30	6.25	1	---	---	SIDE ROAD (RIGHT ANGLE) SYMBOL
823	315+00	W1-8	18 X 24	3	1	---	---	CHEVRON
824	315+00	W1-8	18 X 24	3	---	---	---	CHEVRON
825	316+00	W1-8	18 X 24	3	1	---	---	CHEVRON
826	316+00	W1-8	18 X 24	3	---	---	---	CHEVRON
827	320+25	W1-8	18 X 24	3	1	---	---	CHEVRON
828	320+25	W1-8	18 X 24	3	---	---	---	CHEVRON
829	321+25	W1-8	18 X 24	3	1	---	---	CHEVRON
830	321+25	W1-8	18 X 24	3	---	---	---	CHEVRON
831	322+50	W1-8	18 X 24	3	1	---	---	CHEVRON
832	322+50	W1-8	18 X 24	3	---	---	---	CHEVRON

PERMANENT SIGNING CONTINUED

SIGN NO.	STATION	SIGN CODE	SIGN SIZE IN X IN	637.2230 SIGNS TYPE II REFLECTIVE F (SF)	634.0614 POST WOOD 4X6 INCH 14 FT (EACH)	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)	MESSAGE
833	324+00	W1-8	18 X 24	3	1	---	---	CHEVRON
834	324+00	W1-8	18 X 24	3	---	---	---	CHEVRON
835	325+75	W1-8	18 X 24	3	1	---	---	CHEVRON
836	325+75	W1-8	18 X 24	3	---	---	---	CHEVRON
901	327+00	W1-8	18 X 24	3	1	---	---	CHEVRON
902	327+00	W1-8	18 X 24	3	---	---	---	CHEVRON
903	327+75	W1-8	18 X 24	3	1	---	---	CHEVRON
904	327+75	W1-8	18 X 24	3	---	---	---	CHEVRON
905R	331+00	W13-1	18 X 18	---	---	1	---	40 MPH
906	331+00	W13-1	18 X 18	2.25	---	---	---	45 MPH
907R	344+50	W1-2L	30 X 30	---	---	1	1	ROAD CURVES AHEAD (LEFT)
908R	344+50	W13-1	18 X 18	---	---	1	---	40 MPH
909	344+50	W1-2L	30 X 30	6.25	1	---	---	ROAD CURVES AHEAD (LEFT)
910	344+50	W13-1	18 X 18	2.25	---	---	---	45 MPH
911	347+50	W1-8	18 X 24	3	1	---	---	CHEVRON
912	347+50	W1-8	18 X 24	3	---	---	---	CHEVRON
913	348+75	W1-8	18 X 24	3	1	---	---	CHEVRON
914	348+75	W1-8	18 X 24	3	---	---	---	CHEVRON
915	350+00	W1-8	18 X 24	3	1	---	---	CHEVRON
916	350+00	W1-8	18 X 24	3	---	---	---	CHEVRON
917	352+00	W1-8	18 X 24	3	1	---	---	CHEVRON
918	352+00	W1-8	18 X 24	3	---	---	---	CHEVRON
919	353+25	W1-8	18 X 24	3	1	---	---	CHEVRON
920	353+25	W1-8	18 X 24	3	---	---	---	CHEVRON
1001	354+25	W1-8	18 X 24	3	1	---	---	CHEVRON
1002	354+25	W1-8	18 X 24	3	---	---	---	CHEVRON
1003	355+50	W1-8	18 X 24	3	1	---	---	CHEVRON
1004	355+50	W1-8	18 X 24	3	---	---	---	CHEVRON
1005	359+00	W1-2R	30 X 30	6.25	1	---	---	ROAD CURVES AHEAD (RIGHT)
1006	359+00	W13-1	18 X 18	2.25	---	---	---	50 MPH
1007R	381+00	W1-2L	30 X 30	---	---	1	1	ROAD CURVES AHEAD (LEFT)
1008R	381+00	W13-1	18 X 18	---	---	1	---	40 MPH
1009R	381+00	W13-1	18 X 18	---	---	1	---	35 MPH
1010	381+00	W13-1	18 X 18	2.25	---	---	---	50 MPH
1011	384+00	W1-8	18 X 24	3	1	---	---	CHEVRON
1012	384+00	W1-8	18 X 24	3	---	---	---	CHEVRON
1013	385+75	W1-8	18 X 24	3	1	---	---	CHEVRON
1014	385+75	W1-8	18 X 24	3	---	---	---	CHEVRON
1101	387+25	W1-8	18 X 24	3	1	---	---	CHEVRON
1102	387+25	W1-8	18 X 24	3	---	---	---	CHEVRON
1103	388+75	W1-8	18 X 24	3	1	---	---	CHEVRON
1104	388+75	W1-8	18 X 24	3	---	---	---	CHEVRON
1105	390+00	W1-8	18 X 24	3	1	---	---	CHEVRON
1106	390+00	W1-8	18 X 24	3	---	---	---	CHEVRON
1107	391+25	W1-8	18 X 24	3	1	---	---	CHEVRON
1108	391+25	W1-8	18 X 24	3	---	---	---	CHEVRON
1109	392+50	W1-8	18 X 24	3	1	---	---	CHEVRON
1110	392+50	W1-8	18 X 24	3	---	---	---	CHEVRON
1111	393+75	W1-8	18 X 24	3	1	---	---	CHEVRON
1112	393+75	W1-8	18 X 24	3	---	---	---	CHEVRON
1113	394+75	W1-8	18 X 24	3	1	---	---	CHEVRON
1114	394+75	W1-8	18 X 24	3	---	---	---	CHEVRON
1115	397+75	W1-8	18 X 24	3	1	---	---	CHEVRON
1116	397+75	W1-8	18 X 24	3	---	---	---	CHEVRON
1117	399+00	W1-8	18 X 24	3	1	---	---	CHEVRON
1118	399+00	W1-8	18 X 24	3	---	---	---	CHEVRON
1119	400+25	W1-8	18 X 24	3	1	---	---	CHEVRON
1120	400+25	W1-8	18 X 24	3	---	---	---	CHEVRON
1121	401+50	W1-8	18 X 24	3	1	---	---	CHEVRON
1122	401+50	W1-8	18 X 24	3	---	---	---	CHEVRON
1123	402+50	W1-8	18 X 24	3	1	---	---	CHEVRON
1124	402+50	W1-8	18 X 24	3	---	---	---	CHEVRON
1125	403+75	W1-8	18 X 24	3	1	---	---	CHEVRON
1126	403+75	W1-8	18 X 24	3	---	---	---	CHEVRON
1127	405+00	W1-8	18 X 24	3	1	---	---	CHEVRON
1128	405+00	W1-8	18 X 24	3	---	---	---	CHEVRON
1129	406+25	W1-8	18 X 24	3	1	---	---	CHEVRON
1130	406+25	W1-8	18 X 24	3	---	---	---	CHEVRON
1131	409+50	W1-8	18 X 24	3	1	---	---	CHEVRON
1132	409+50	W1-8	18 X 24	3	---	---	---	CHEVRON
1133	410+50	W1-8	18 X 24	3	1	---	---	CHEVRON
1134	410+50	W1-8	18 X 24	3	---	---	---	CHEVRON
1135	411+75	W1-8	18 X 24	3	1	---	---	CHEVRON
1136	411+75	W1-8	18 X 24	3	---	---	---	CHEVRON
1137	413+00	W1-8	18 X 24	3	1	---	---	CHEVRON
1138	413+00	W1-8	18 X 24	3	---	---	---	CHEVRON
1201R	431+00	W13-1	18 X 18	---	---	1	---	35 MPH
1202	431+00	W13-1	18 X 18	2.25	---	---	---	40 MPH
1203R	436+75	W13-1	18 X 18	---	---	1	---	35 MPH
TOTAL PROJECT 5198-01-60				443.5	67	20	8	

Standard Detail Drawing List

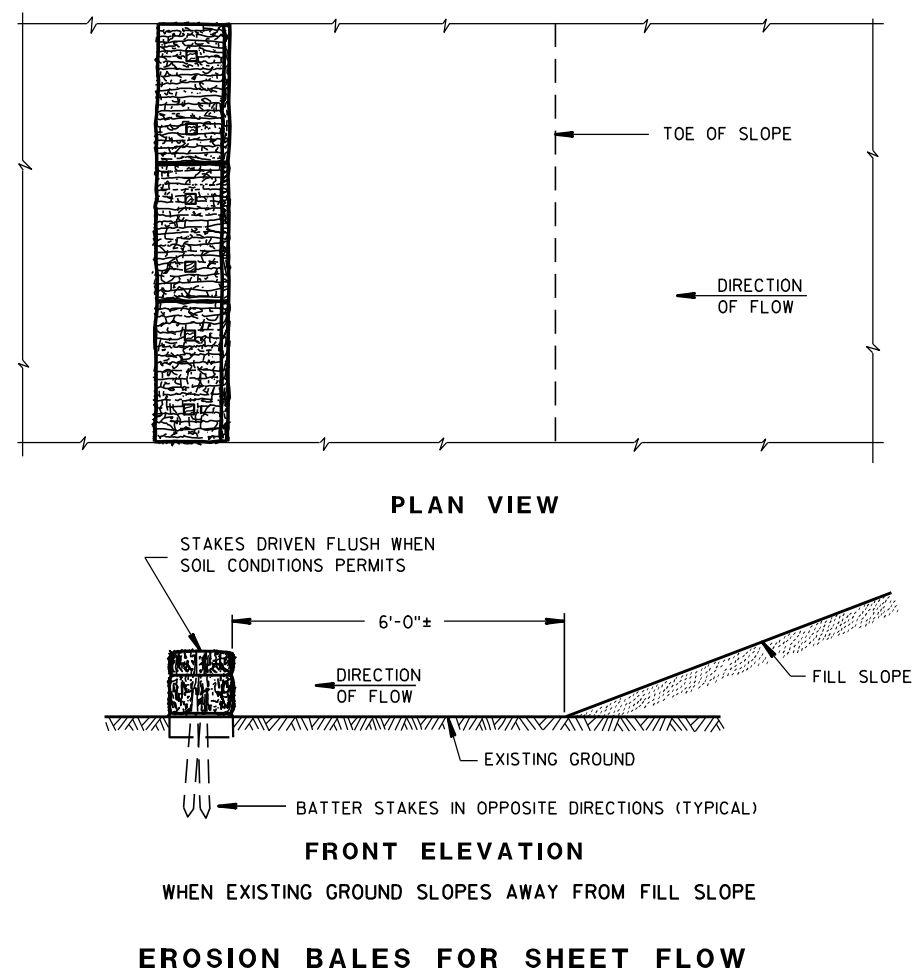
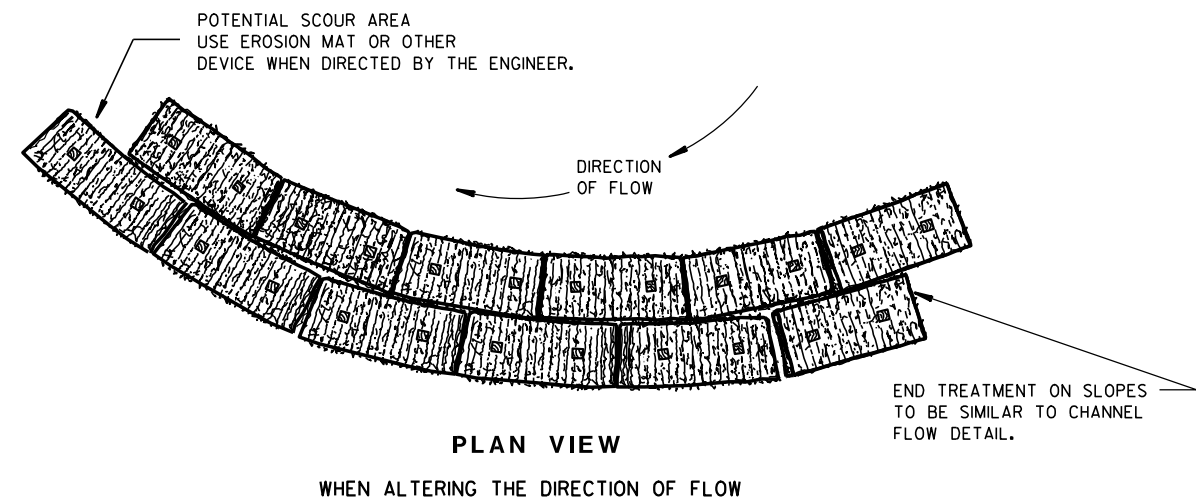
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-03A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B51-01A	ANCHOR POST ASSEMBLY TOP-MOUNTED
14B51-01B	ANCHOR POST ASSEMBLY TOP-MOUNTED
14B51-01C	ANCHOR POST ASSEMBLY TOP-MOUNTED
15C04-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



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.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

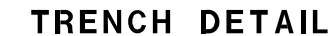
/S/ Beth Connors
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



SILT FENCE

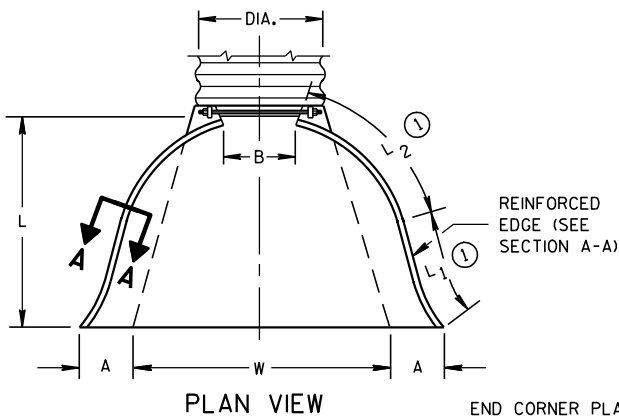
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Connolly
DATE CHIEF ROADWAY DEVELOP 32 INEER

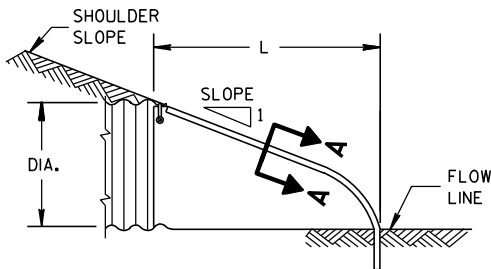
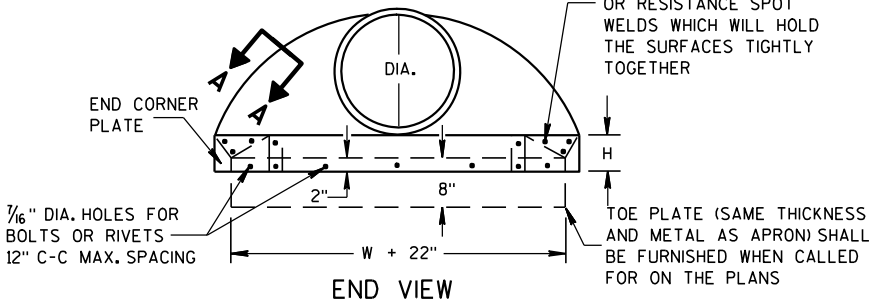
FHWA

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)						APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①			W (±2")
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



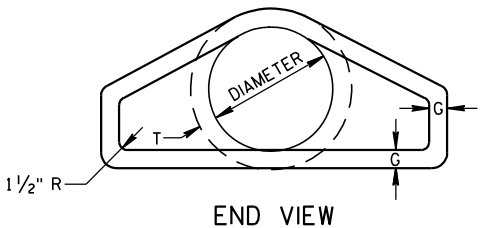
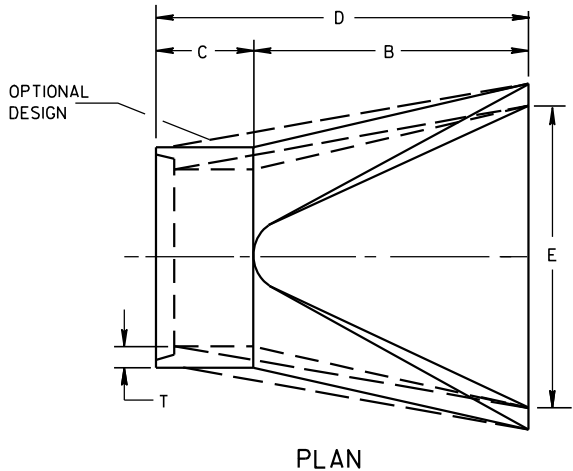
END CORNER PLATES MAY
BE FASTENED TO APRON
PROPER BY BOLTS, RIVETS,
OR RESISTANCE SPOT
WELDS WHICH WILL HOLD
THE SURFACES TIGHTLY
TOGETHER



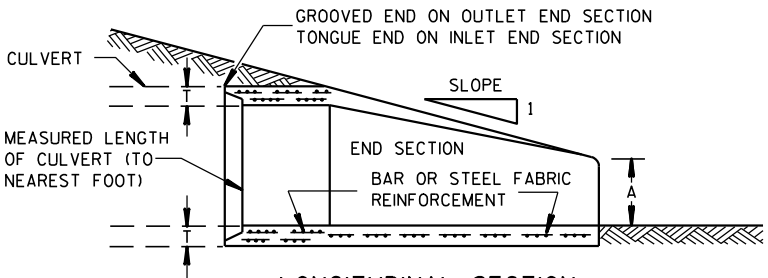
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	33 ¹ / ₄ -35	98 ¹ / ₄ -100	90	5 ¹ / ₂	2 ¹ / ₂ to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	24-30	72-78	21-27	99	102	5 ¹ / ₂	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

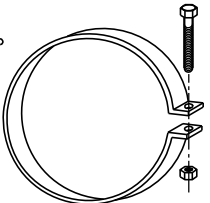
*MINIMUM
**MAXIMUM



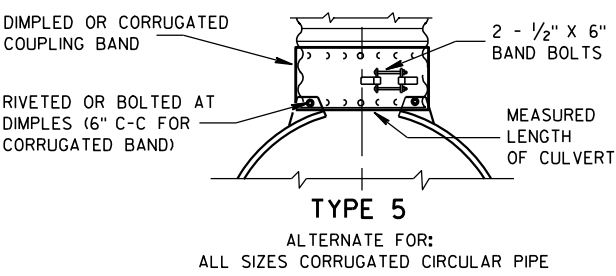
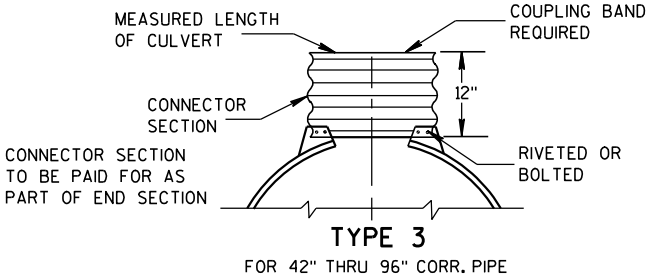
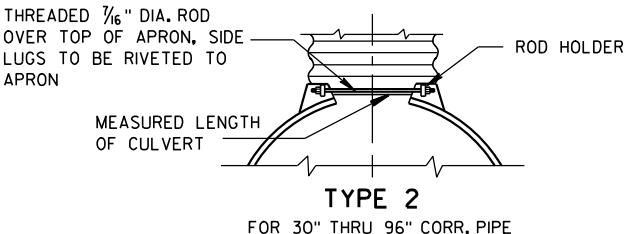
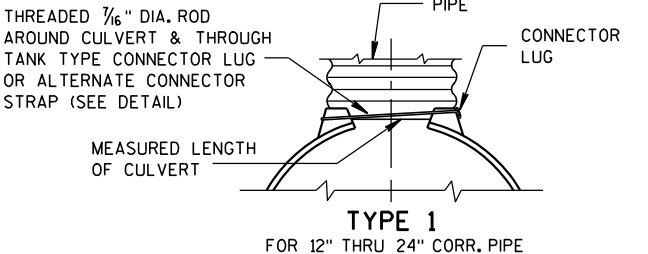
LONGITUDINAL SECTION
CONCRETE ENDWALLS



1" WIDE, 12 GA. (0.109"
THICK) GALVANIZED STRAP
WITH STANDARD 6" X 1/2"
BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



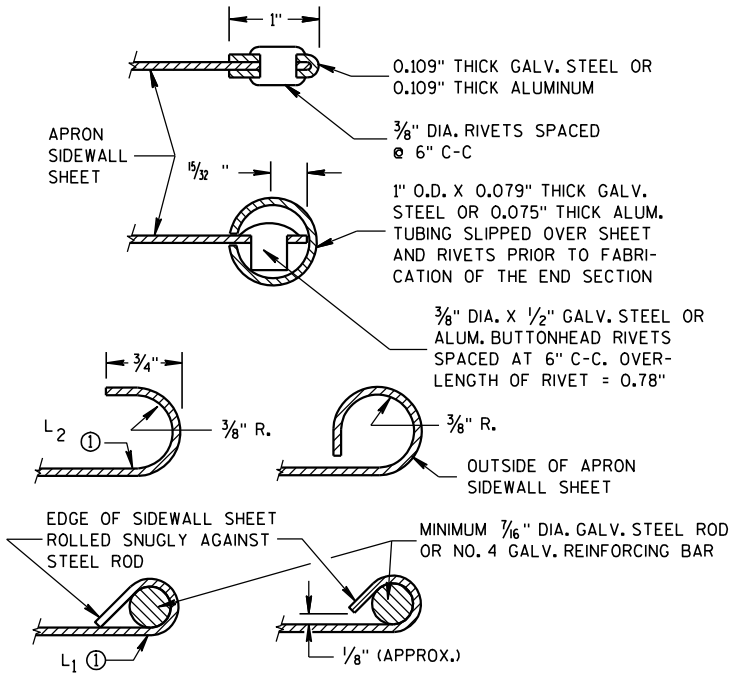
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE
ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5
AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL
CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO
CIRCUMFERENTIAL CORRUGATIONS AT EACH END
USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL
OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR
ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE
OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL
THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH
OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE
PERIMETER.

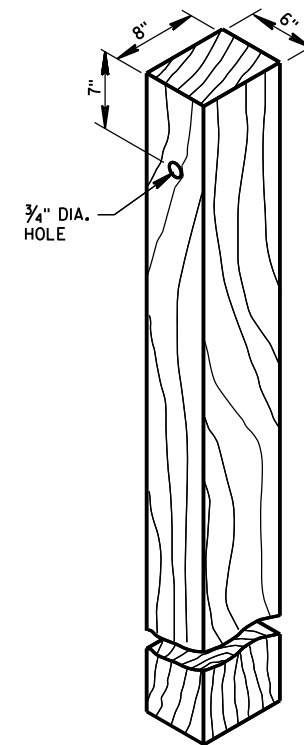
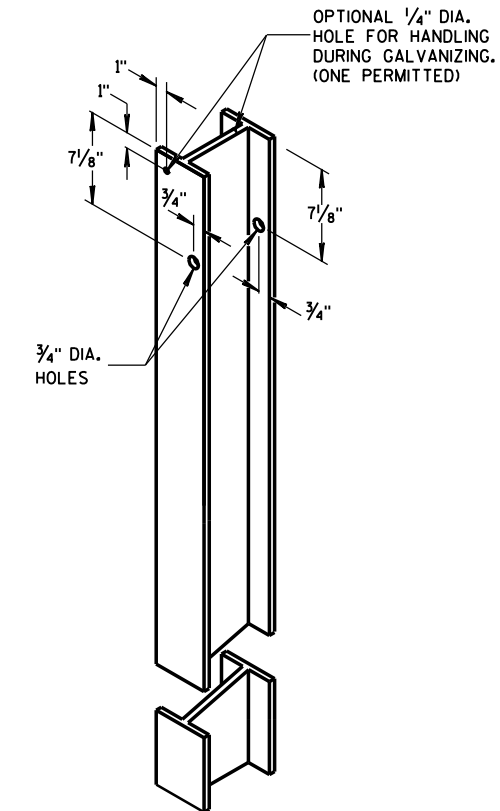
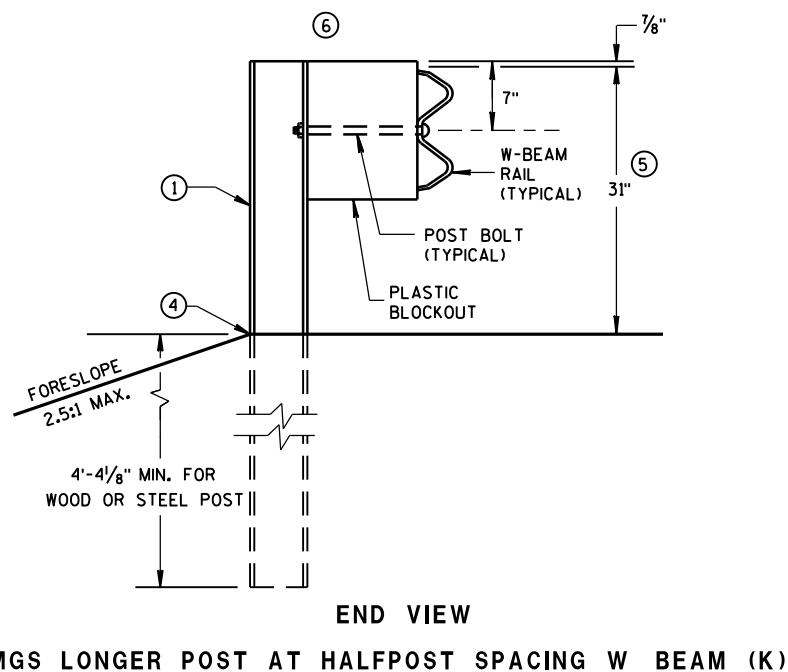
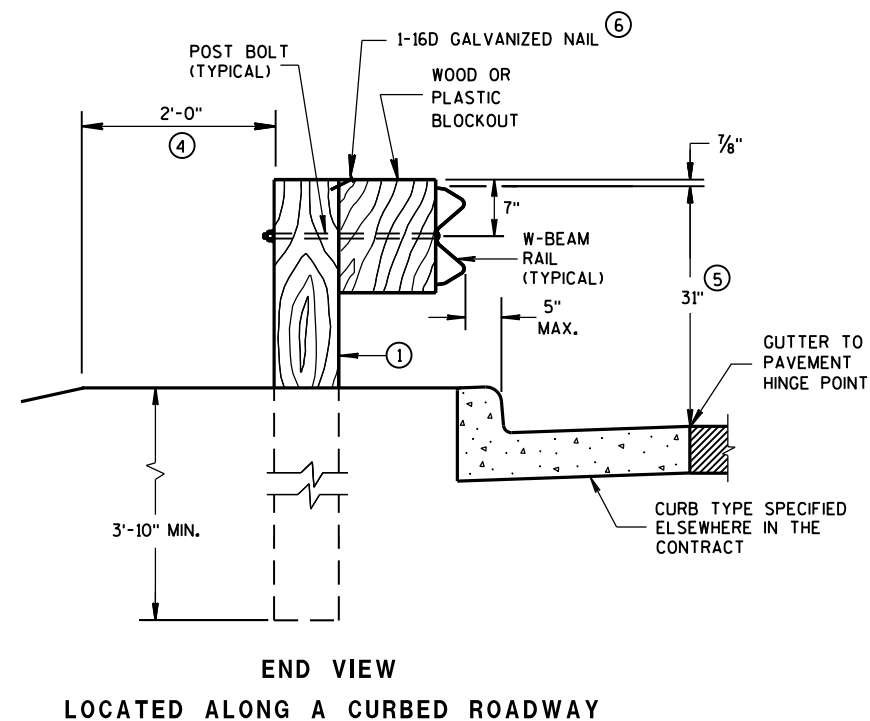
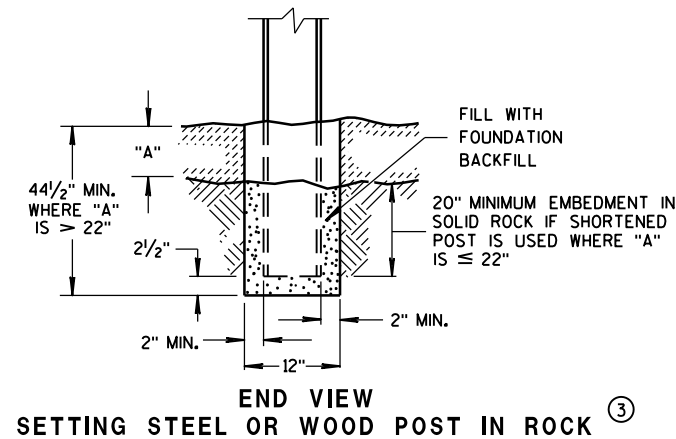
LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS
FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS.
FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED
EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH
GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE
ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM
NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED
INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

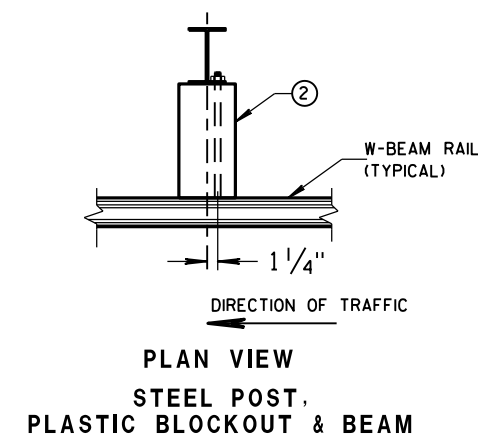
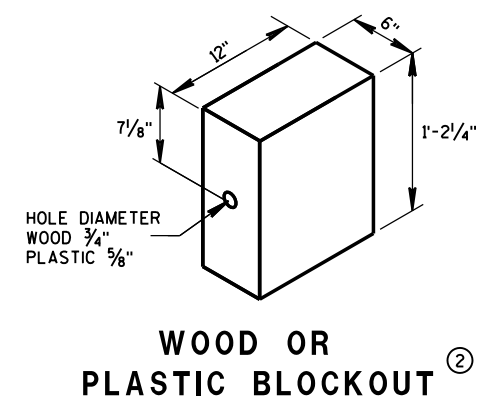
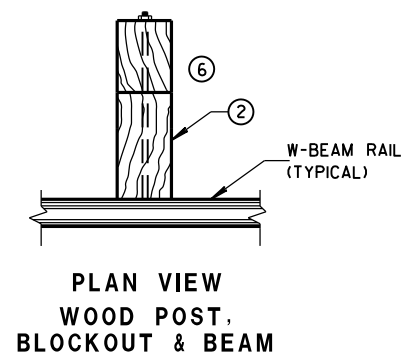
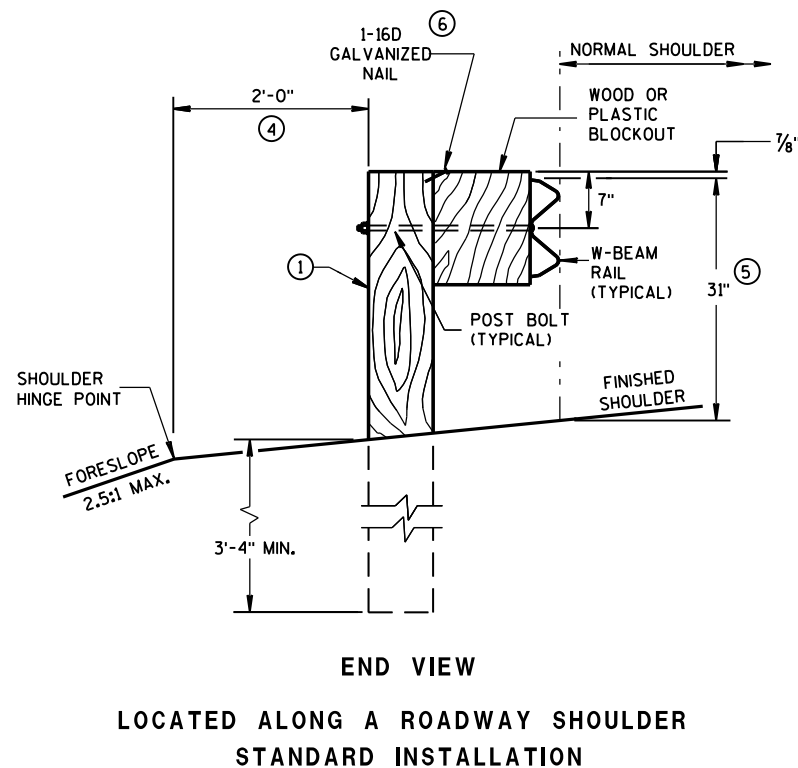
APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/30/94 DATE	/S/ Rory L. Rhin... CHIEF ROADWAY DEVELOP 33 NEER
FHWA	

- 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 2 1/2 INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE 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 $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" 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.



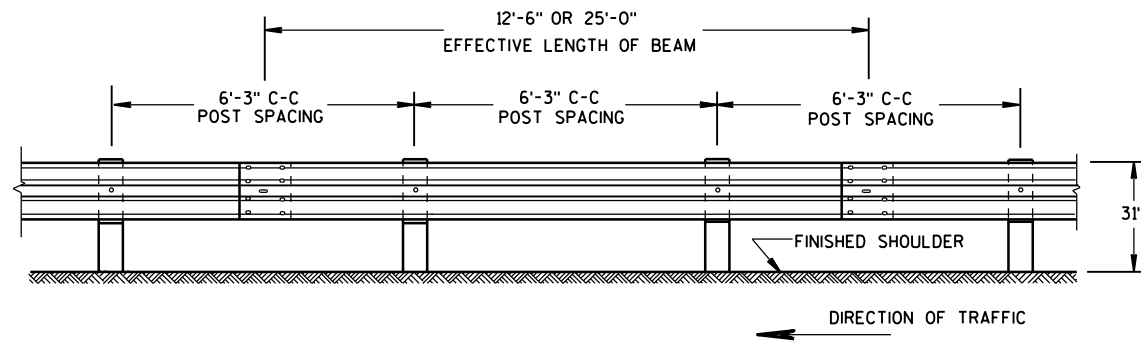
**STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①**

**WOOD POST
(6" X 8") NOMINAL ①**



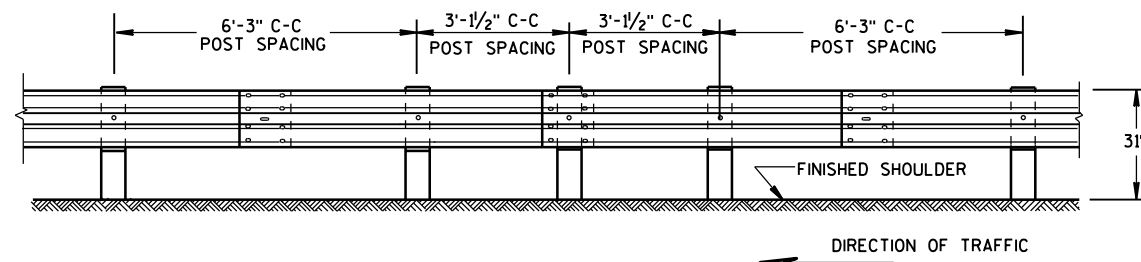
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



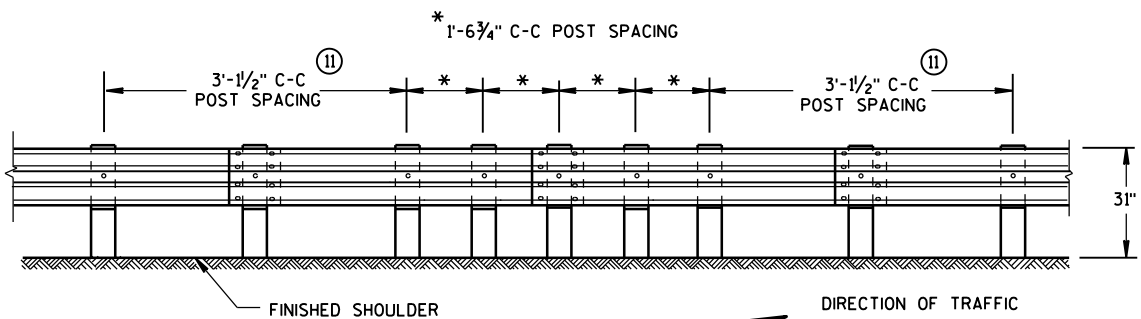
FRONT VIEW

POST SPACING STANDARD INSTALLATION



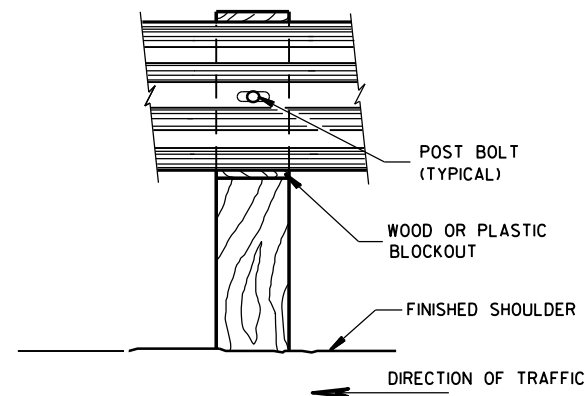
FRONT VIEW

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

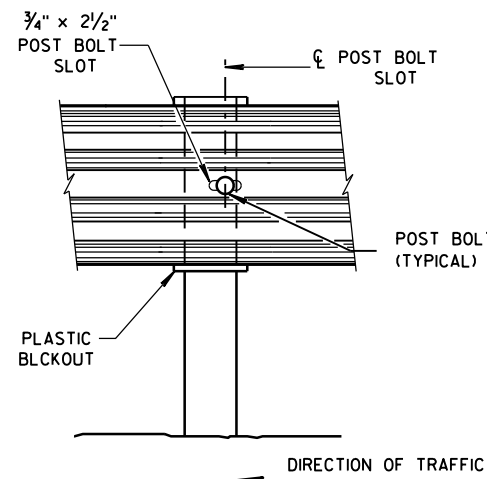


FRONT VIEW

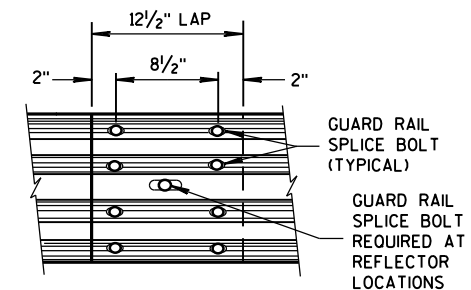
QUARTER POST SPACING (QS)



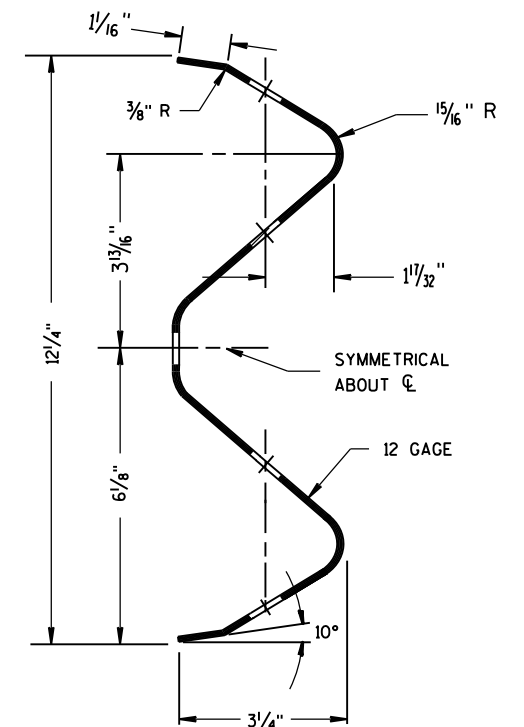
FRONT VIEW AT WOOD POST



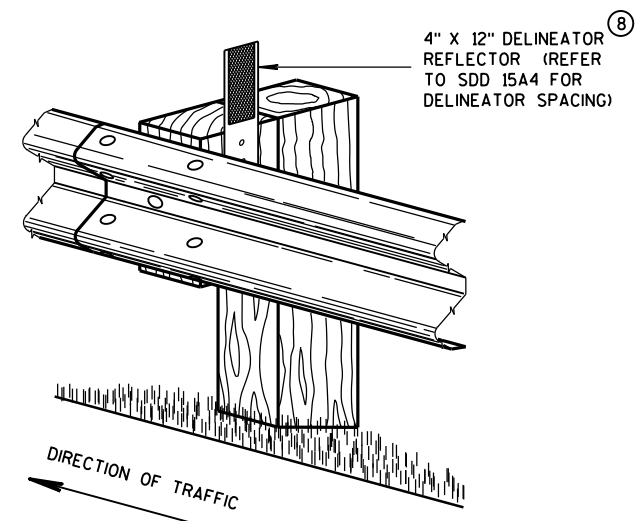
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



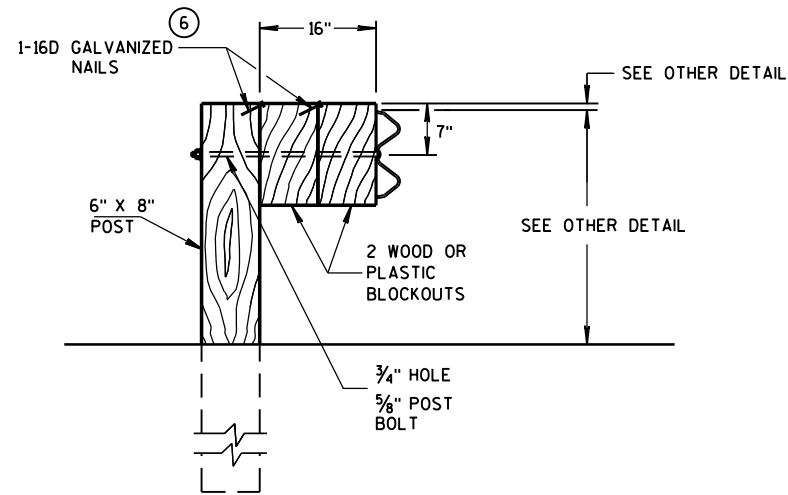
SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

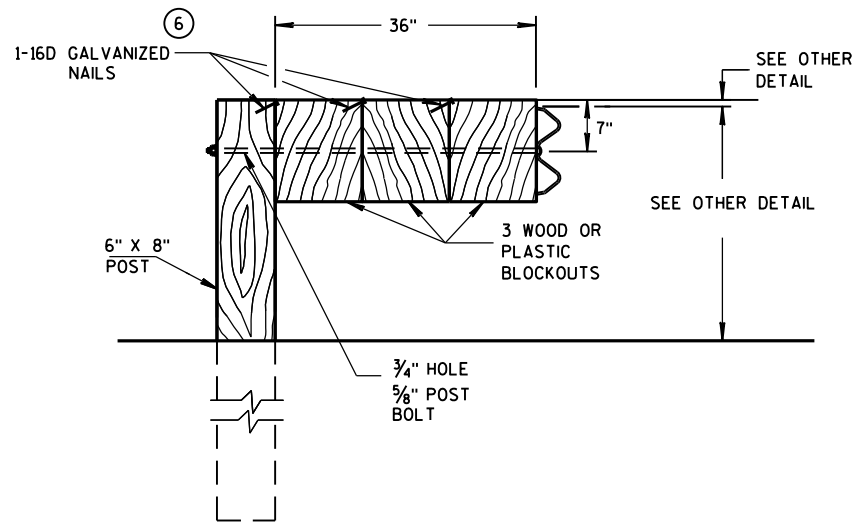
GENERAL NOTES

- 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

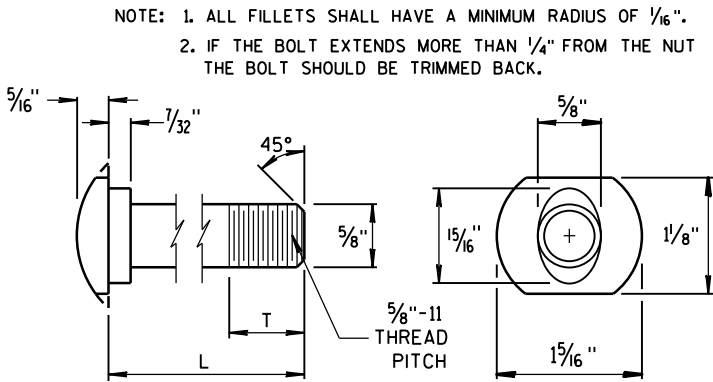
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

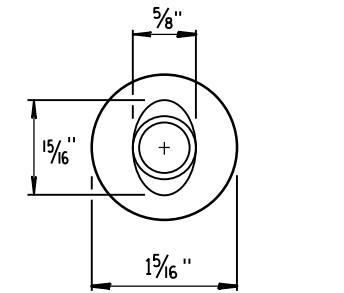
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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.

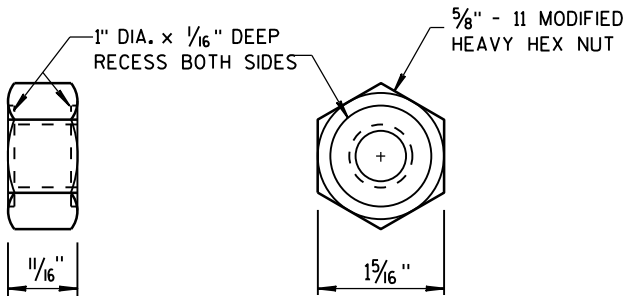


POST BOLT TABLE

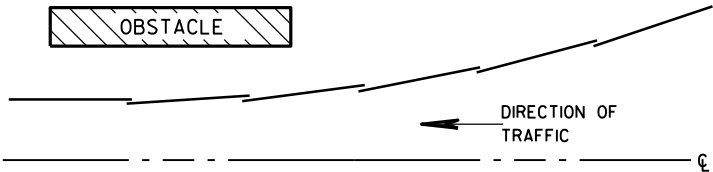
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



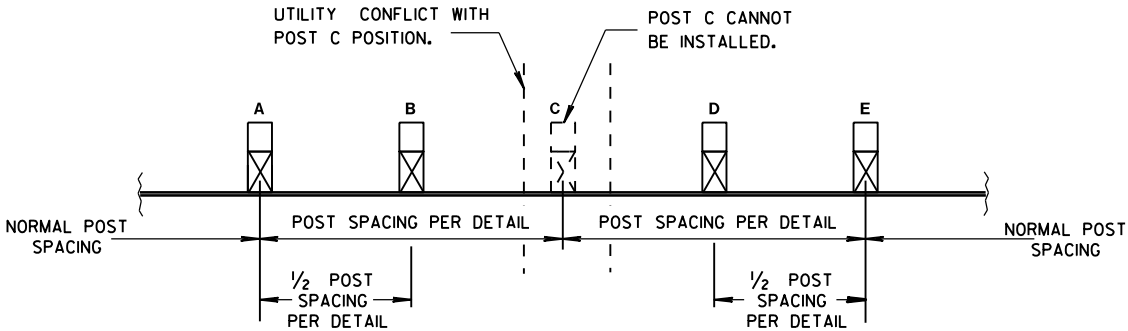
ALTERNATE BOLT HEAD



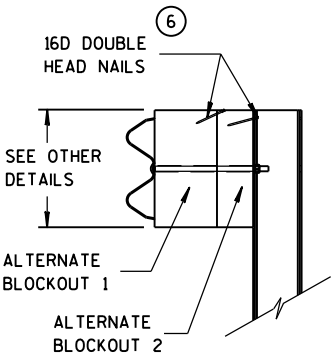
POST BOLT, SPLICE BOLT AND RECESS NUT



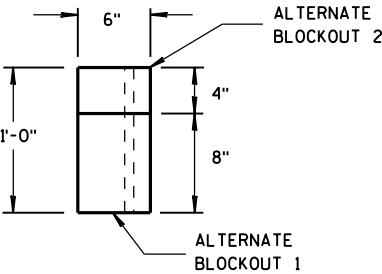
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

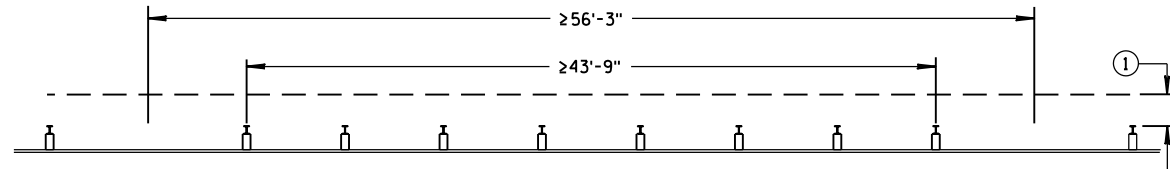


TOP VIEW

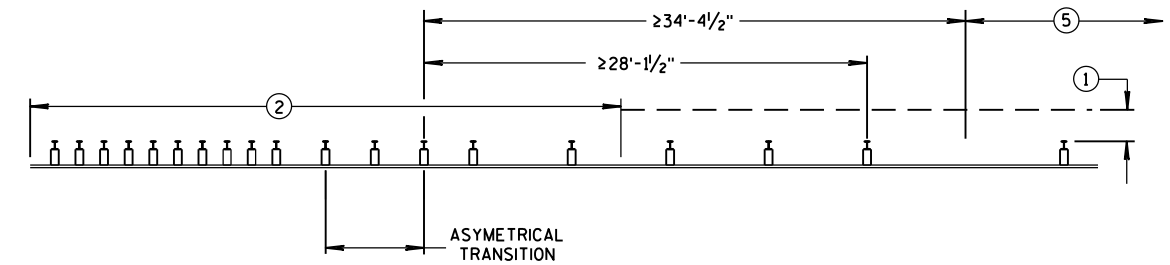
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

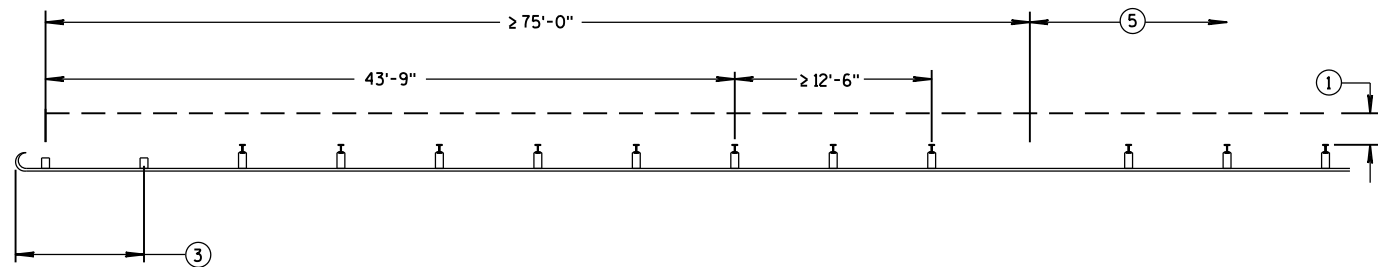
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MISSING POST IN NORMAL BEAM GUARD RUN

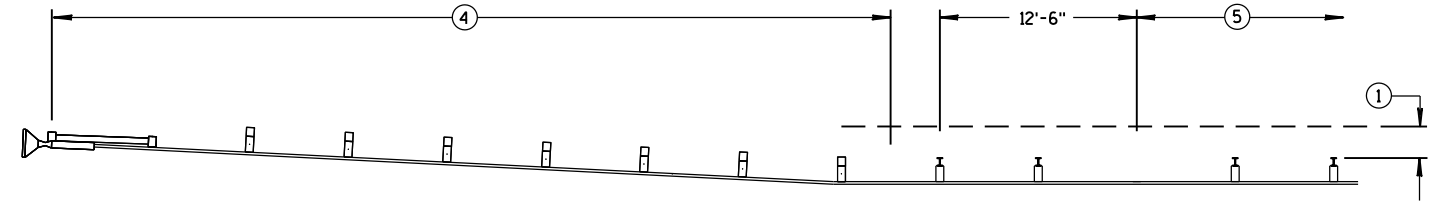


MISSING POST NEAR APPROACH THRIE BEAM TRANSITION

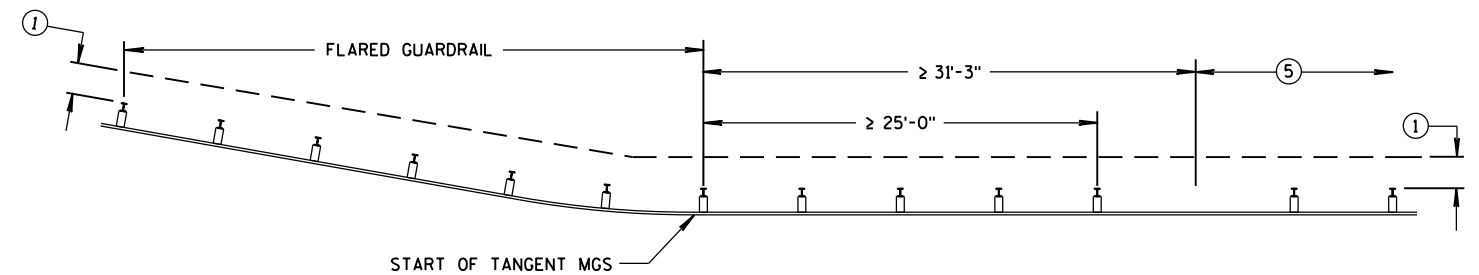


MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL

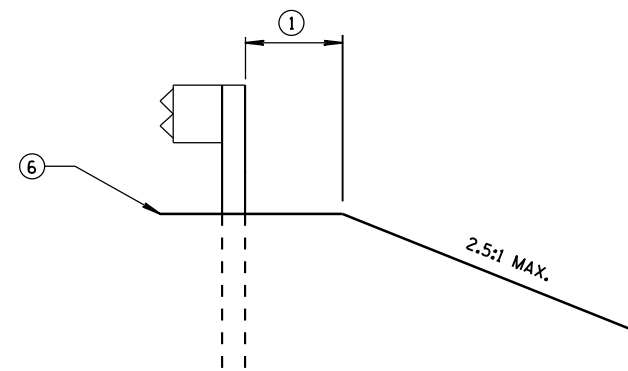
- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER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



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

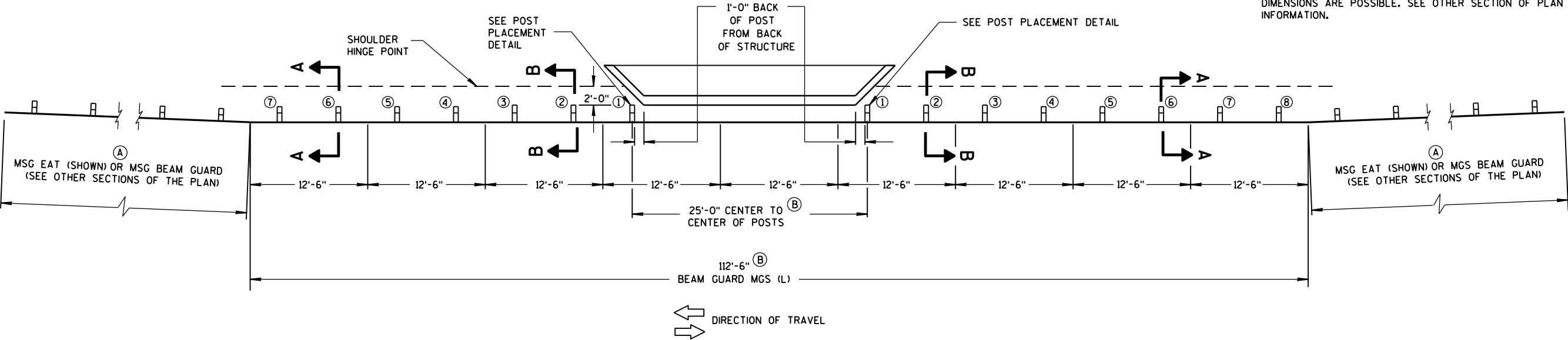
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS	37	ENT
FHWA	UNIT SUPERVISOR		

GENERAL NOTES

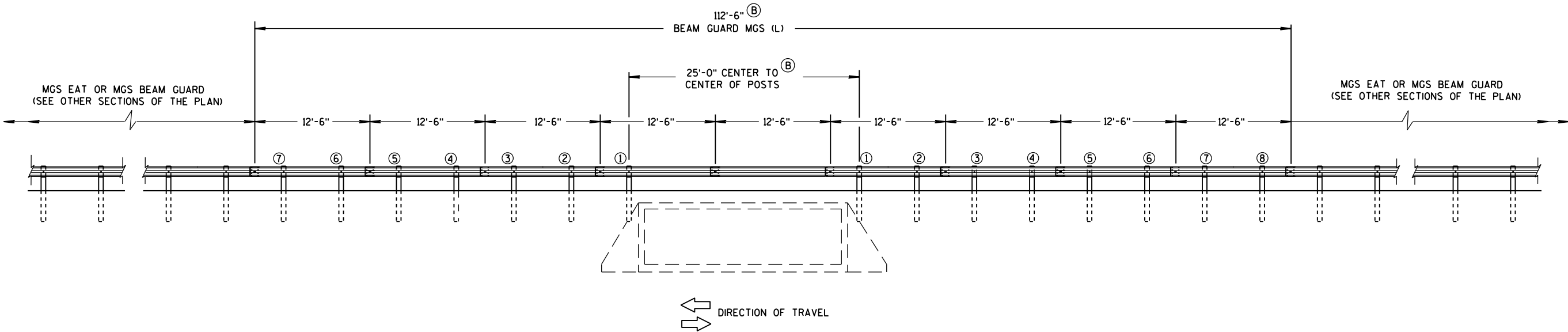
POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

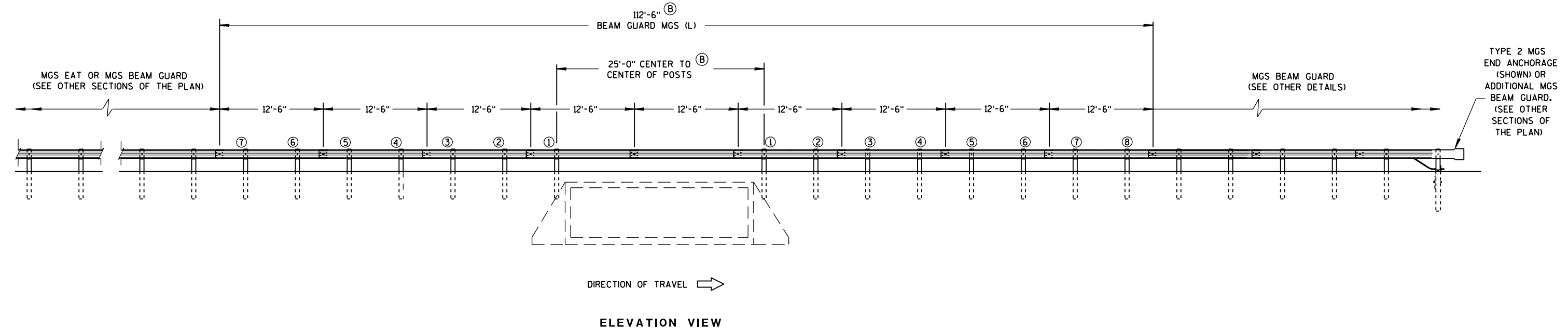
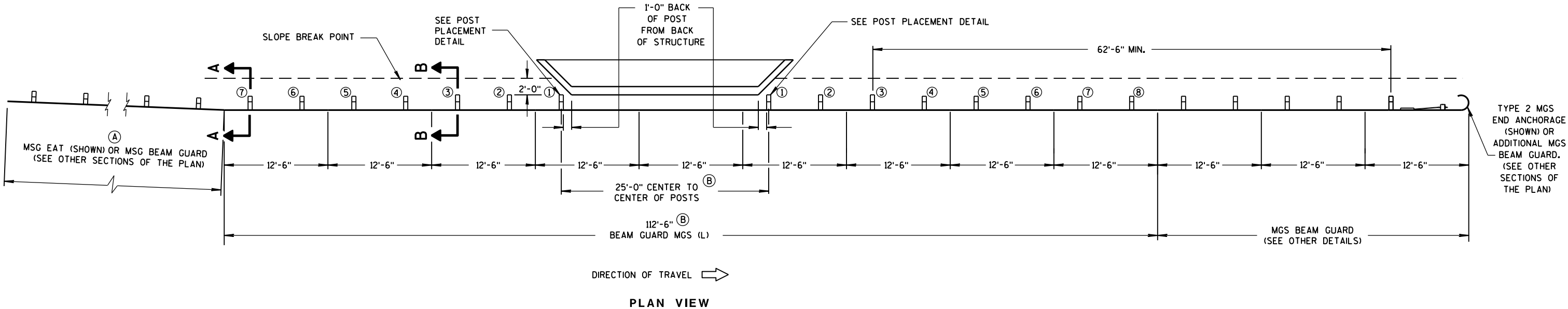
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

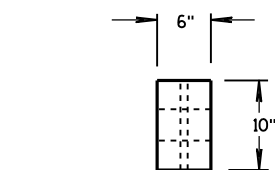
- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



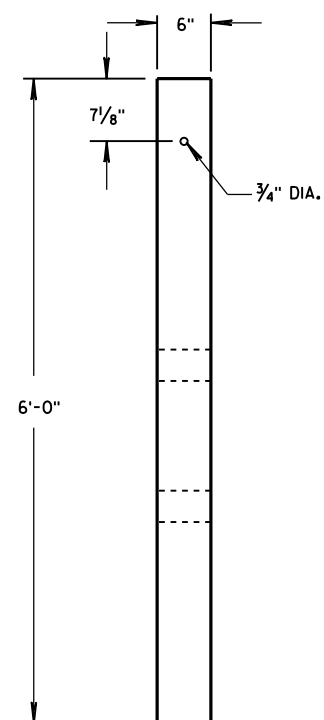
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

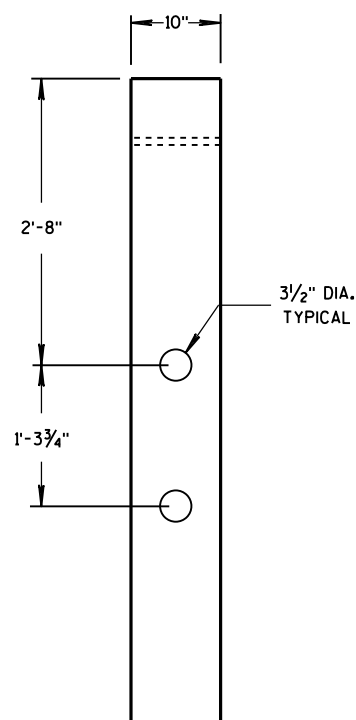


PLAN VIEW

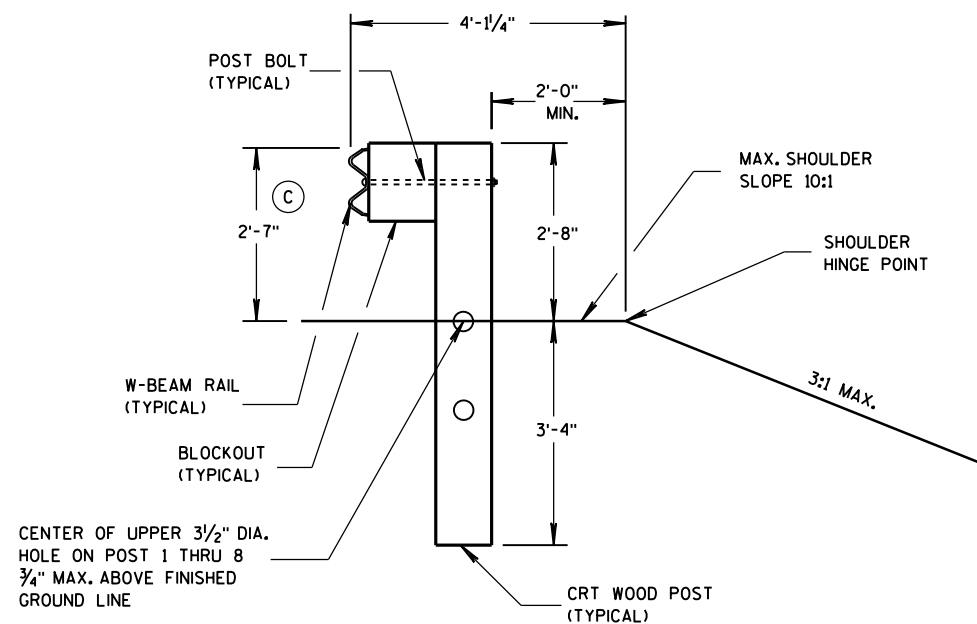


FRONT VIEW

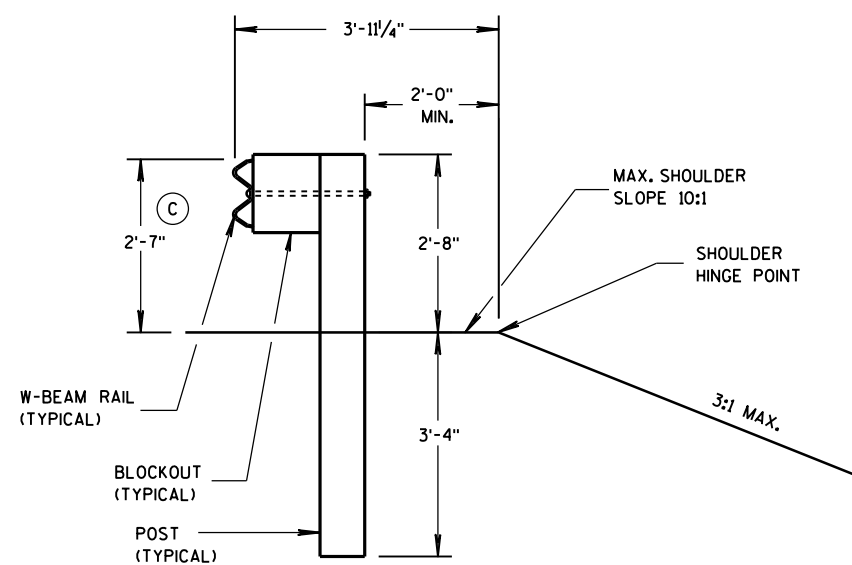
CRT WOOD POST



SIDE VIEW

SECTION B-B
POSTS NO. 1-3

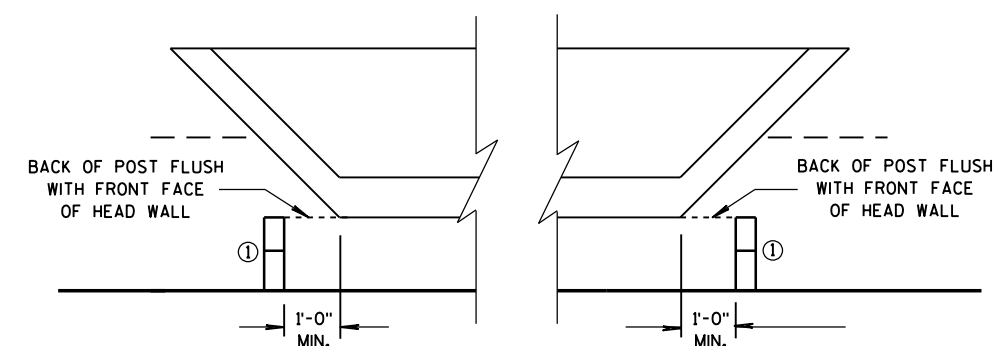
SEE OTHER DETAILS

SECTION A-A
POSTS NO. 4-8

SEE OTHER DETAILS

GENERAL NOTES

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



POST PLACEMENT DETAIL

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/10/2013

DATE

FHWA

/S/ Jerry H. Zogg

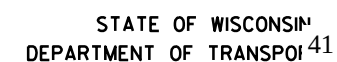
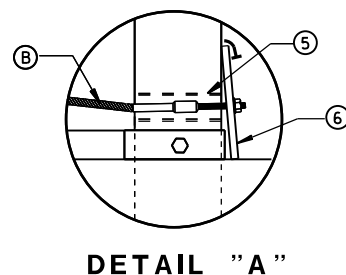
ROADWAY STANDARDS (40)

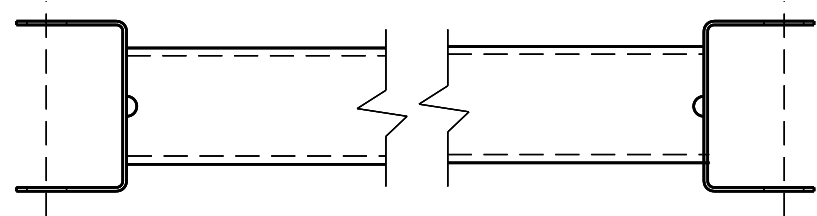
ENGINEER

ENT

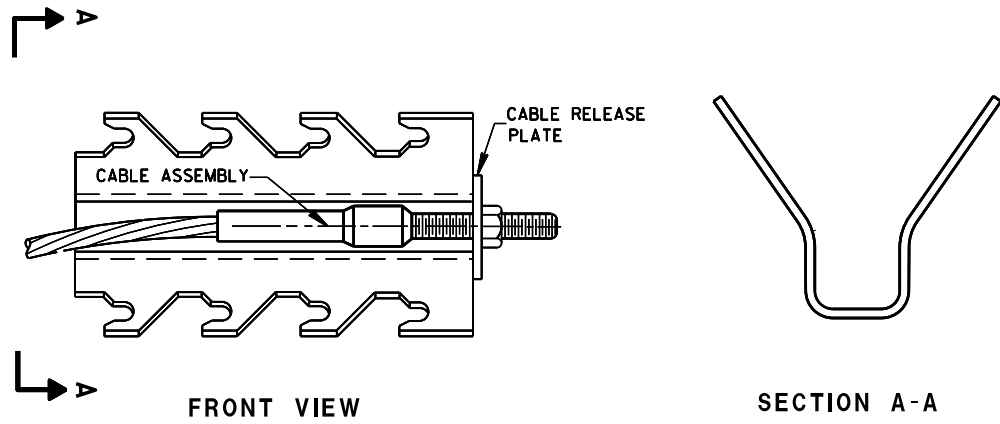
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS.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



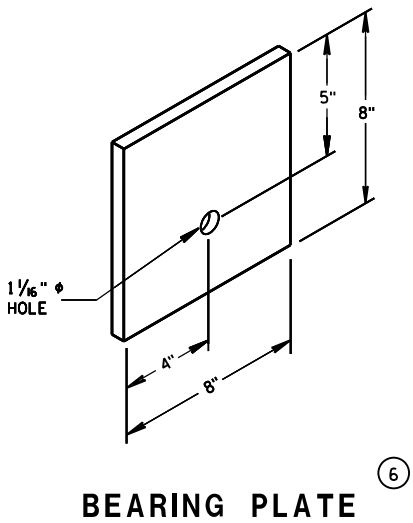


GENERIC GROUND STRUT (9) (H)

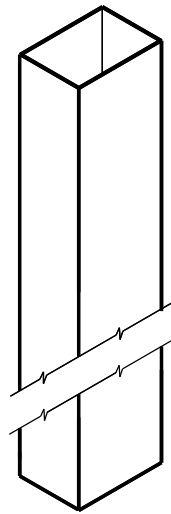


GENERIC ANCHOR CABLE BOX (8) (H)

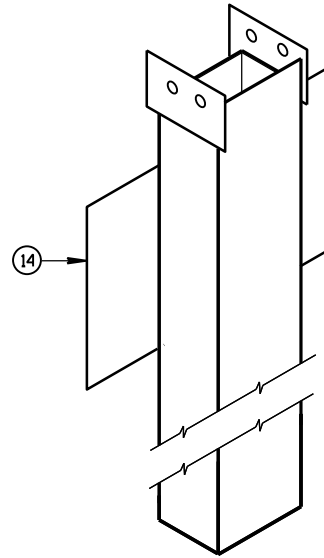
BILL OF MATERIALS	
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
(1)	UPPER POST NO.1 6" X 6" TUBE
(2)	LOWER POST NO.1
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND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



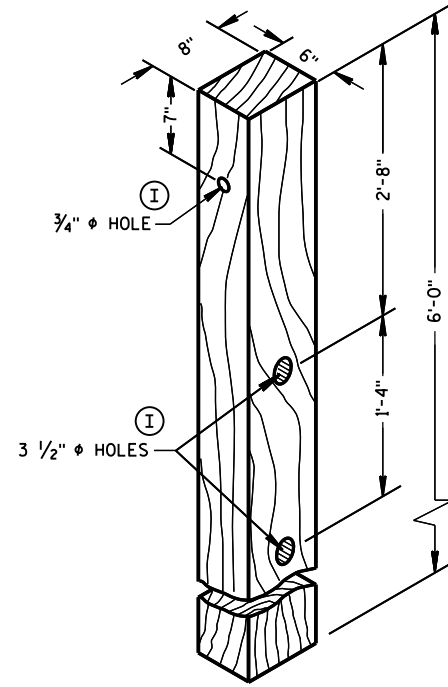
BEARING PLATE (6)



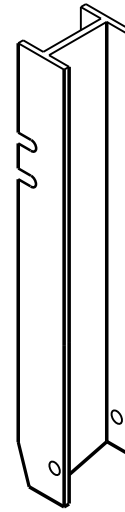
UPPER POST NO. 1⁽¹⁾



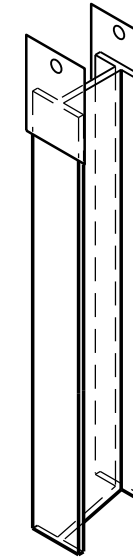
LOWER POST NO. 1⁽²⁾



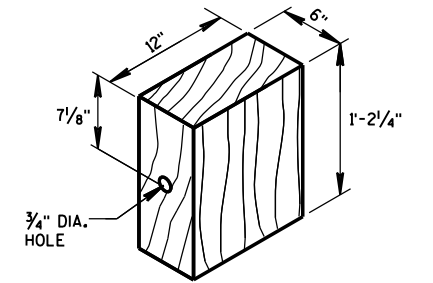
POSTS NUMBER 3-9
WOOD CRT POST⁽³⁾



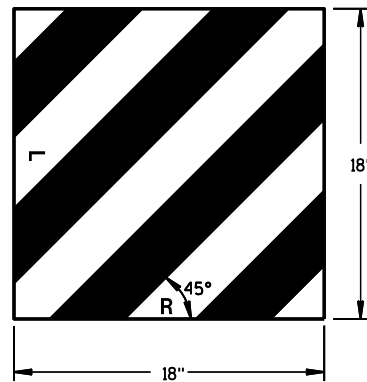
UPPER POST NO. 2⁽¹⁵⁾



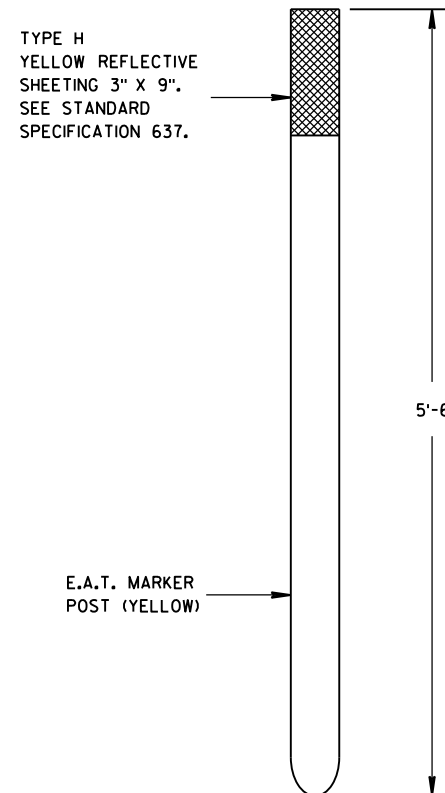
LOWER POST NO. 2⁽¹⁶⁾



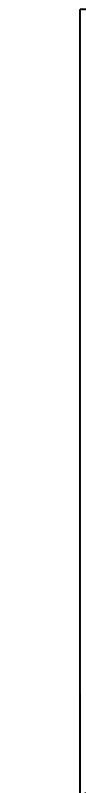
WOOD BLOCKOUT⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



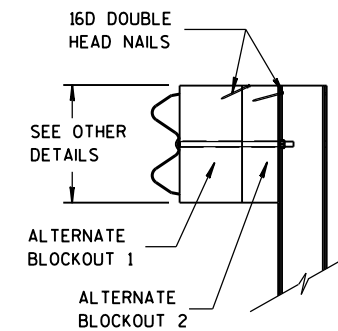
W5-59
REFLECTIVE SHEETING DETAIL^(H)



FRONT VIEW
E.A.T. MARKER POST⁽¹³⁾

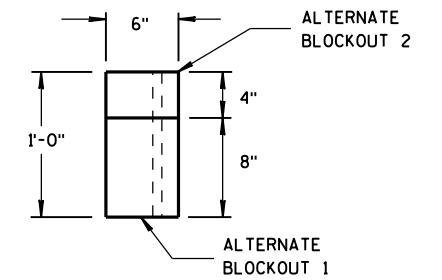


SIDE VIEW



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



TOP VIEW

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017

DATE

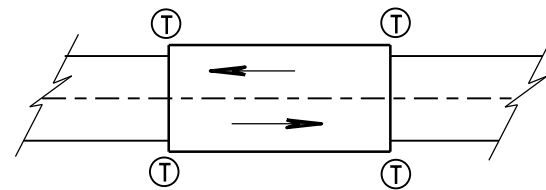
FHWA

/S/ Rodney Taylor

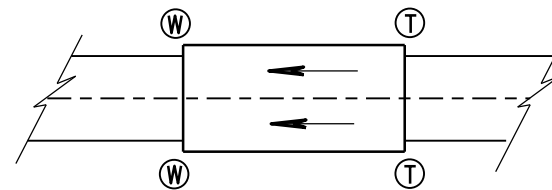
ROADWAY STANDARDS 43

UNIT SUPERVISOR

IENT



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) 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.

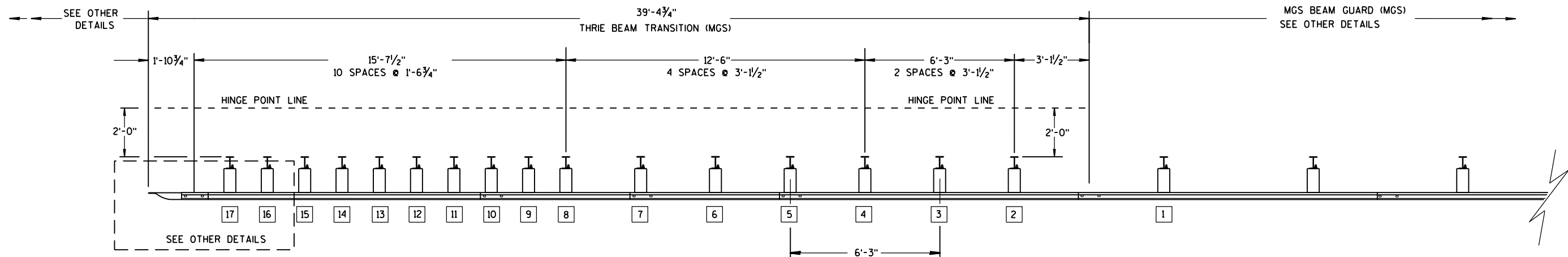
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

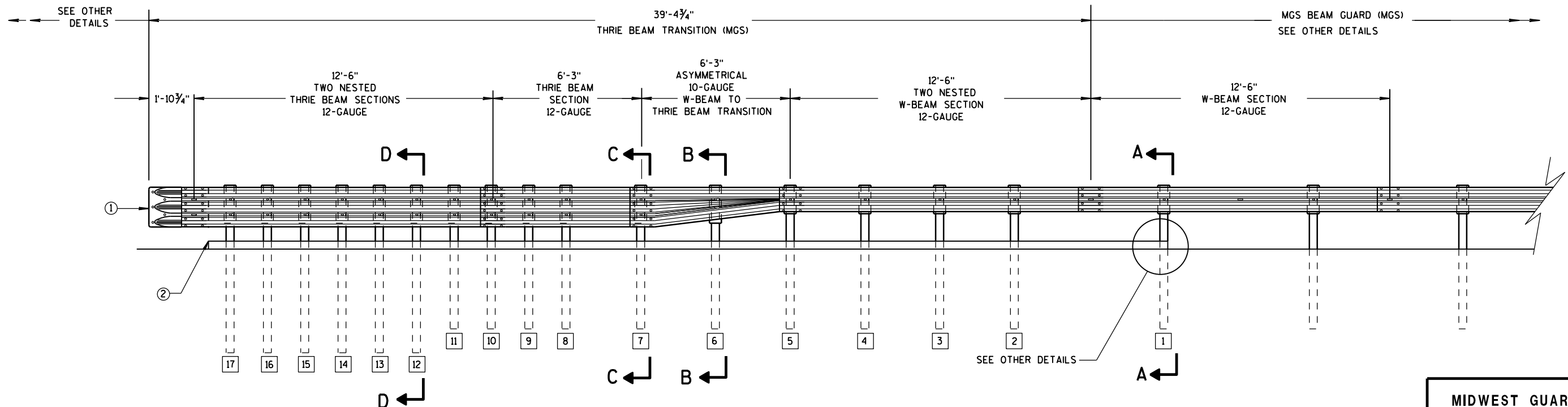
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

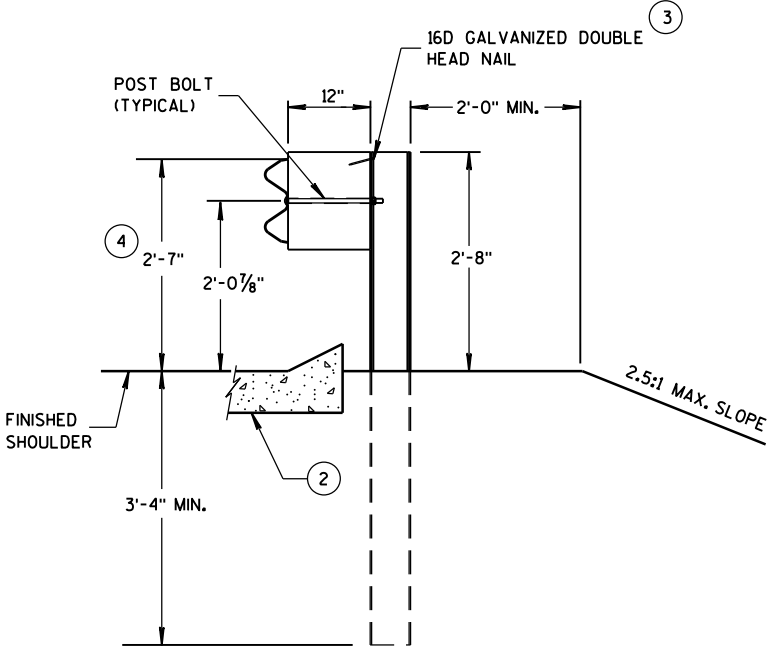
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

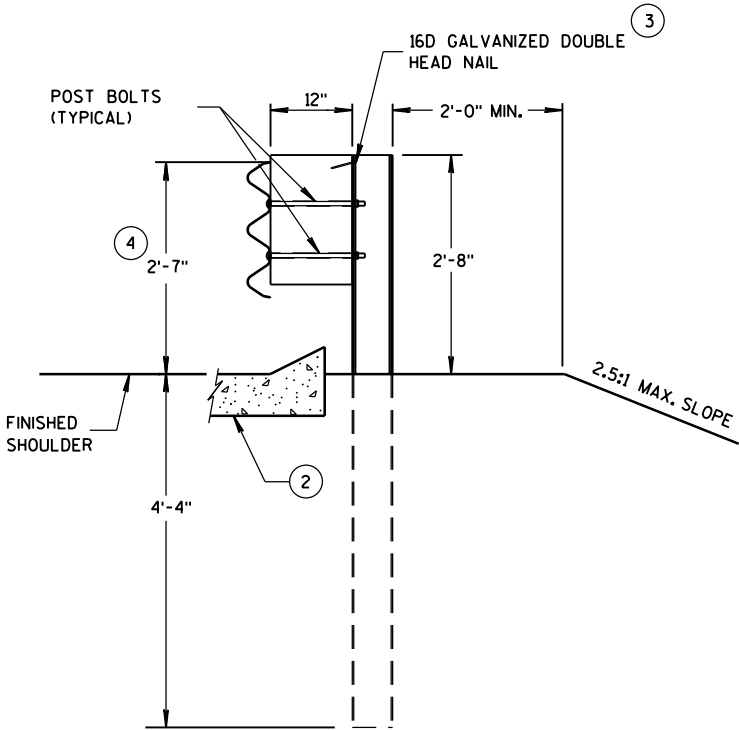
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

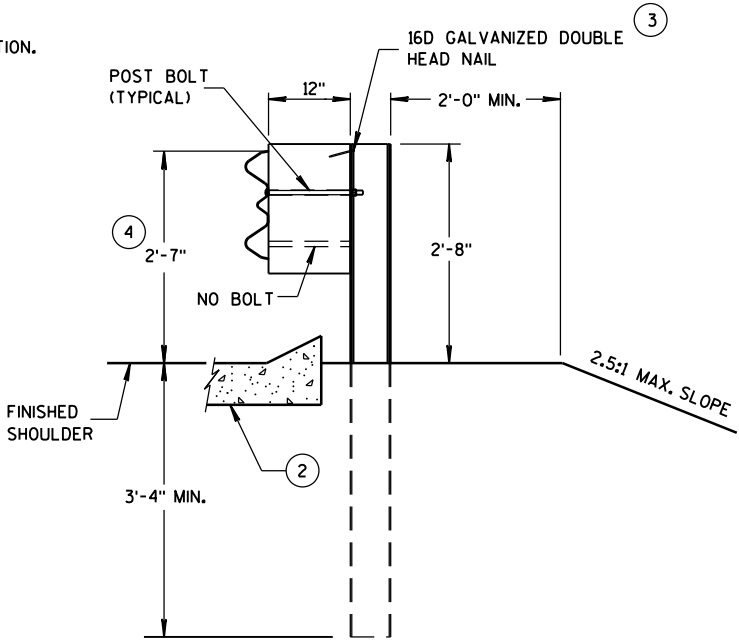
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



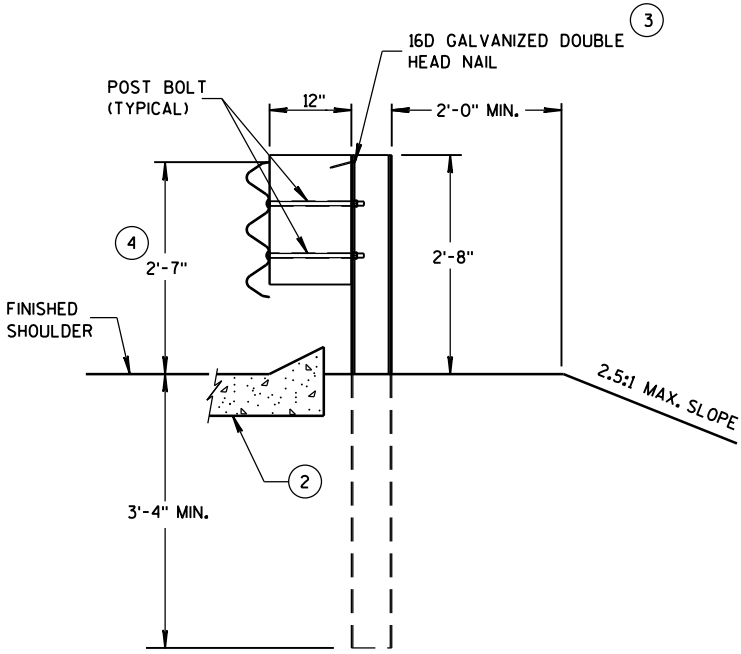
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

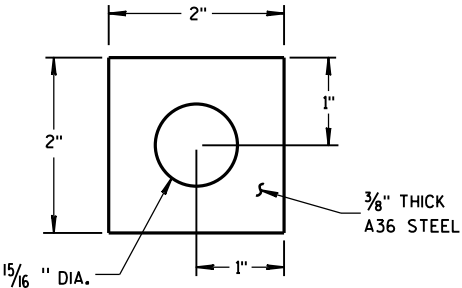
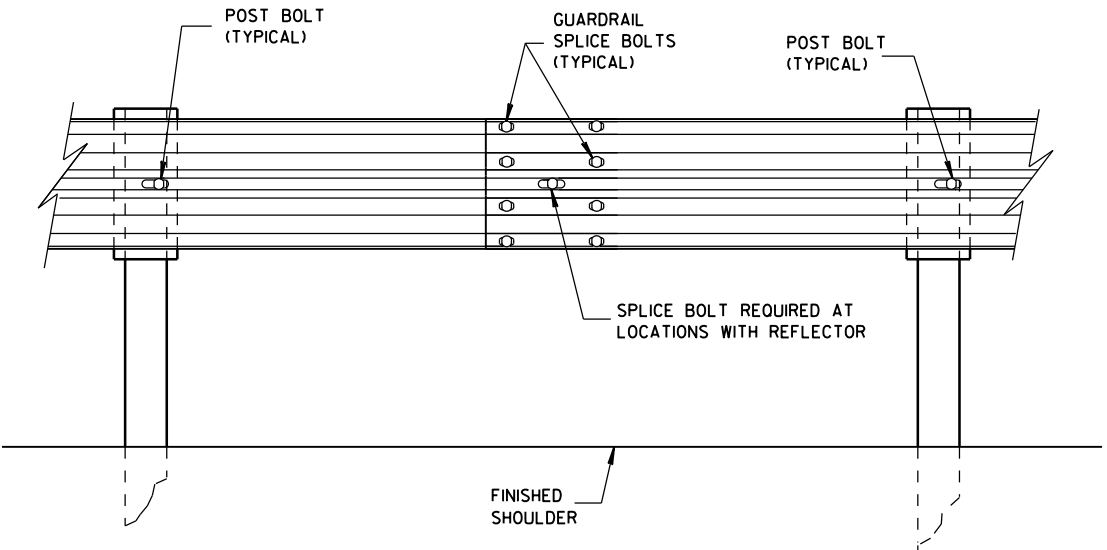
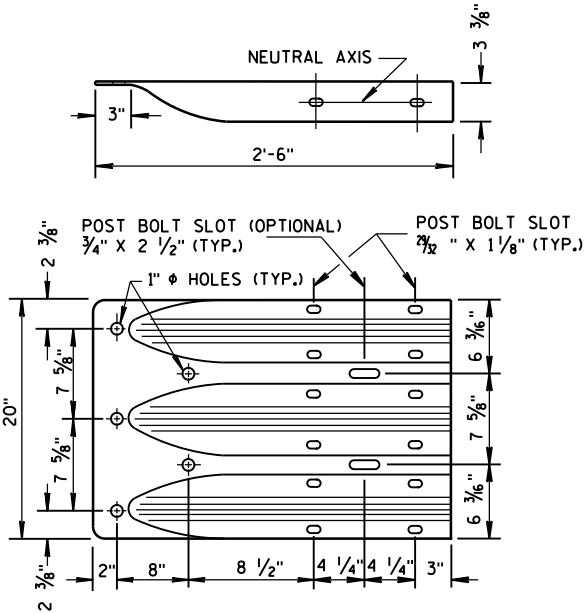


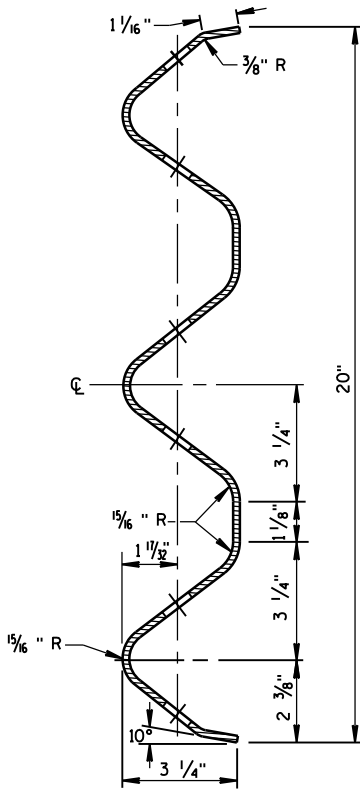
PLATE WASHER DETAIL



SPLICE DETAIL



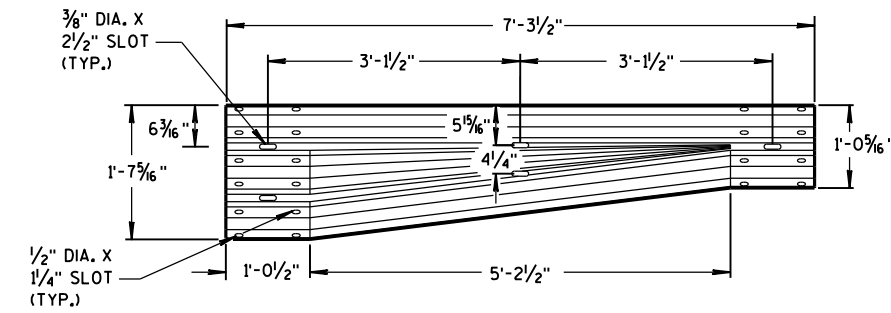
THRIE BEAM
TERMINAL CONNECTOR



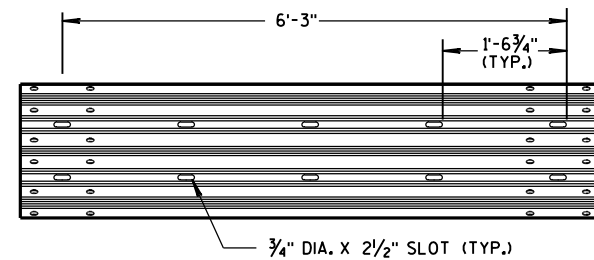
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

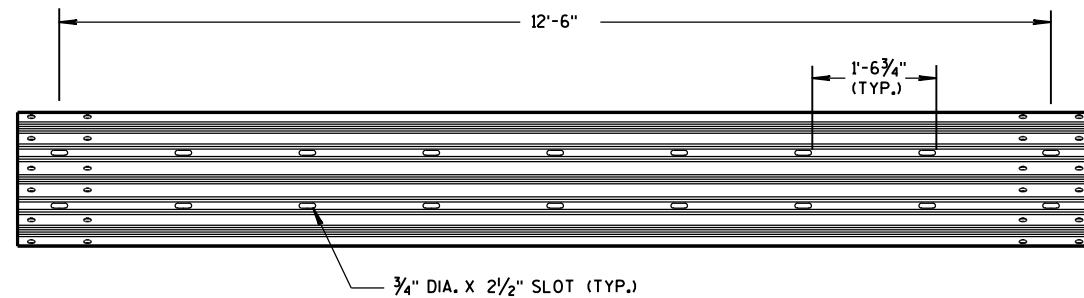
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



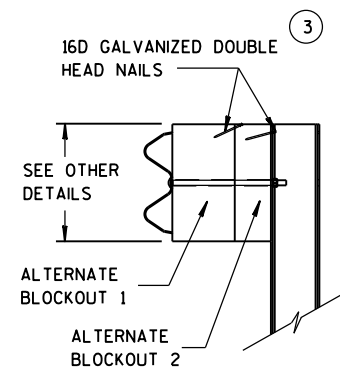
W-BEAM TO THRIE BEAM TRANSITION SECTION



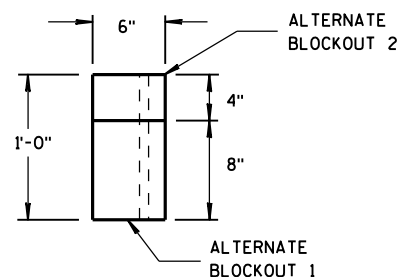
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

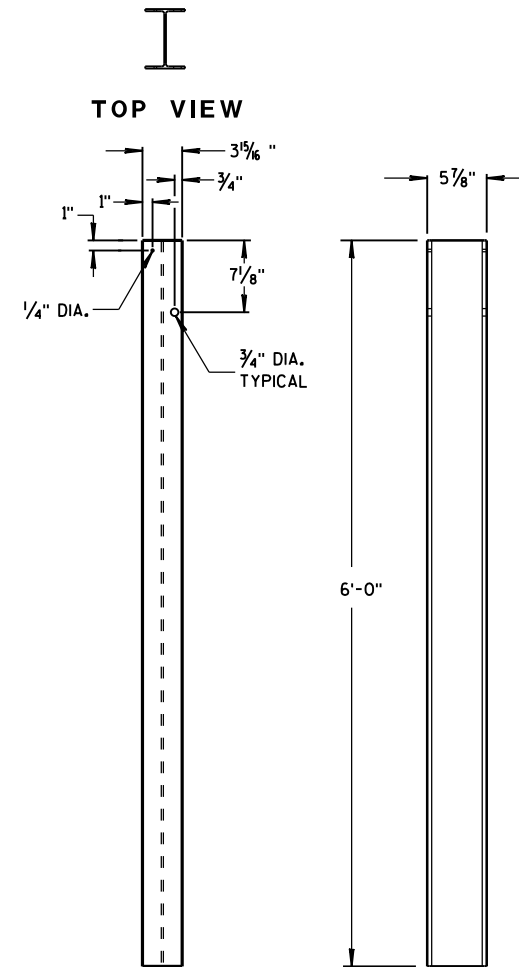


SIDE VIEW



TOP VIEW

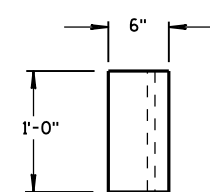
ALTERNATE WOOD BLOCKOUT DETAIL



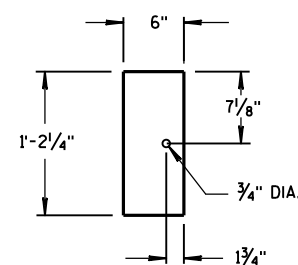
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

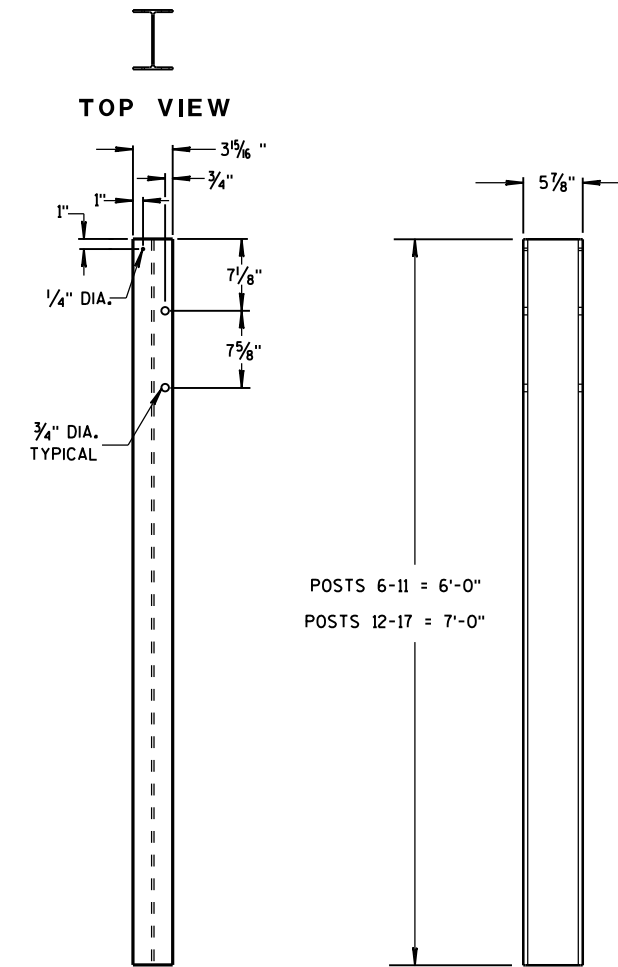


TOP VIEW



FRONT VIEW

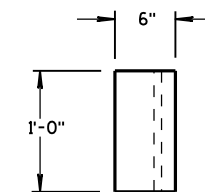
BLOCKOUT
POSTS 1-5



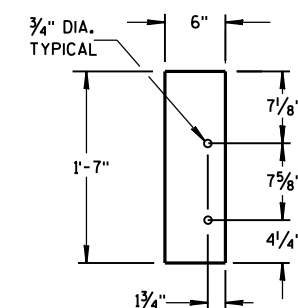
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT
POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

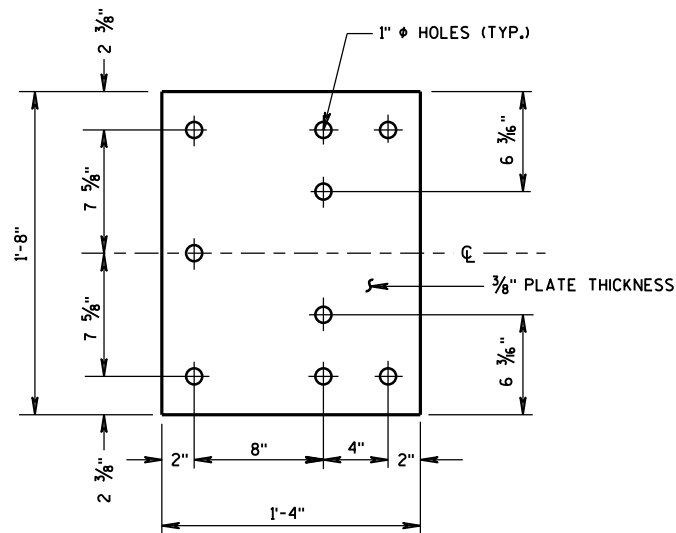
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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.

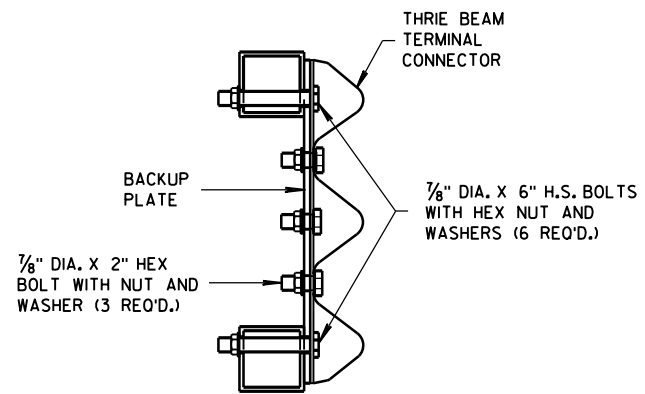
⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

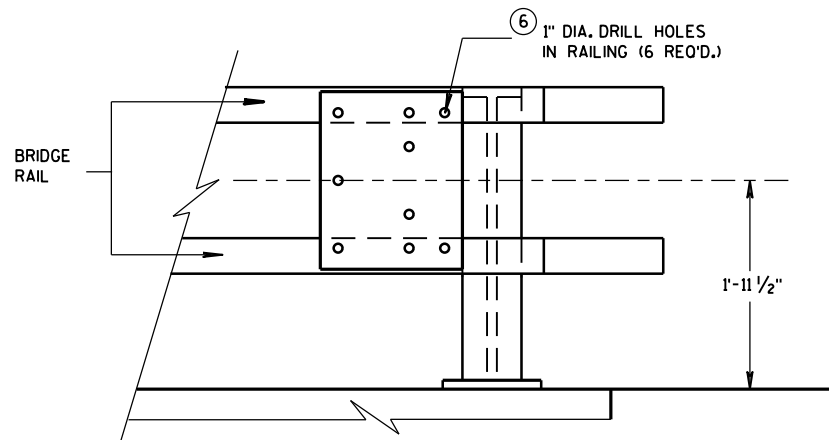
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



BACK-UP PLATE DETAIL



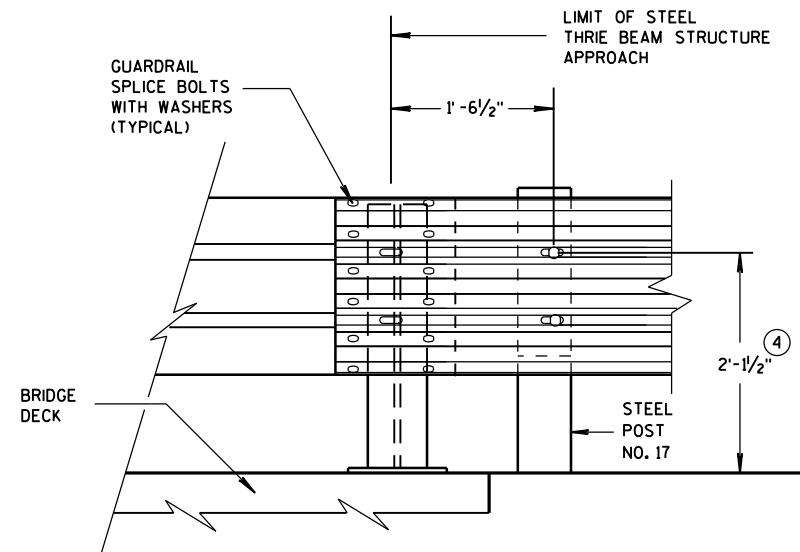
SECTION J-J



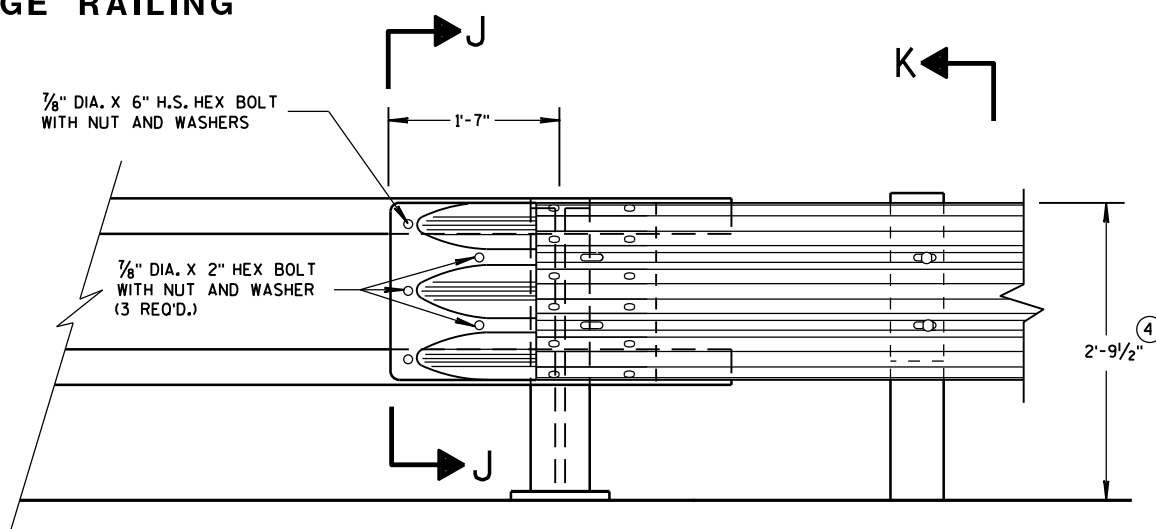
BACK-UP PLATE MOUNTING
ONTO BRIDGE RAILING

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.

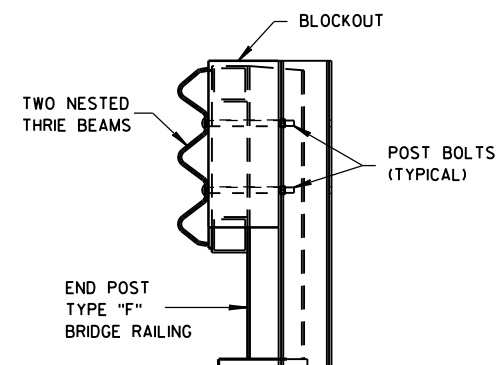


FRONT VIEW
THRIE BEAM CONNECTION TO
STEEL RAILING TYPE "W"



FRONT VIEW

THRIE BEAM CONNECTION TO
TUBULAR RAILING TYPE "F"

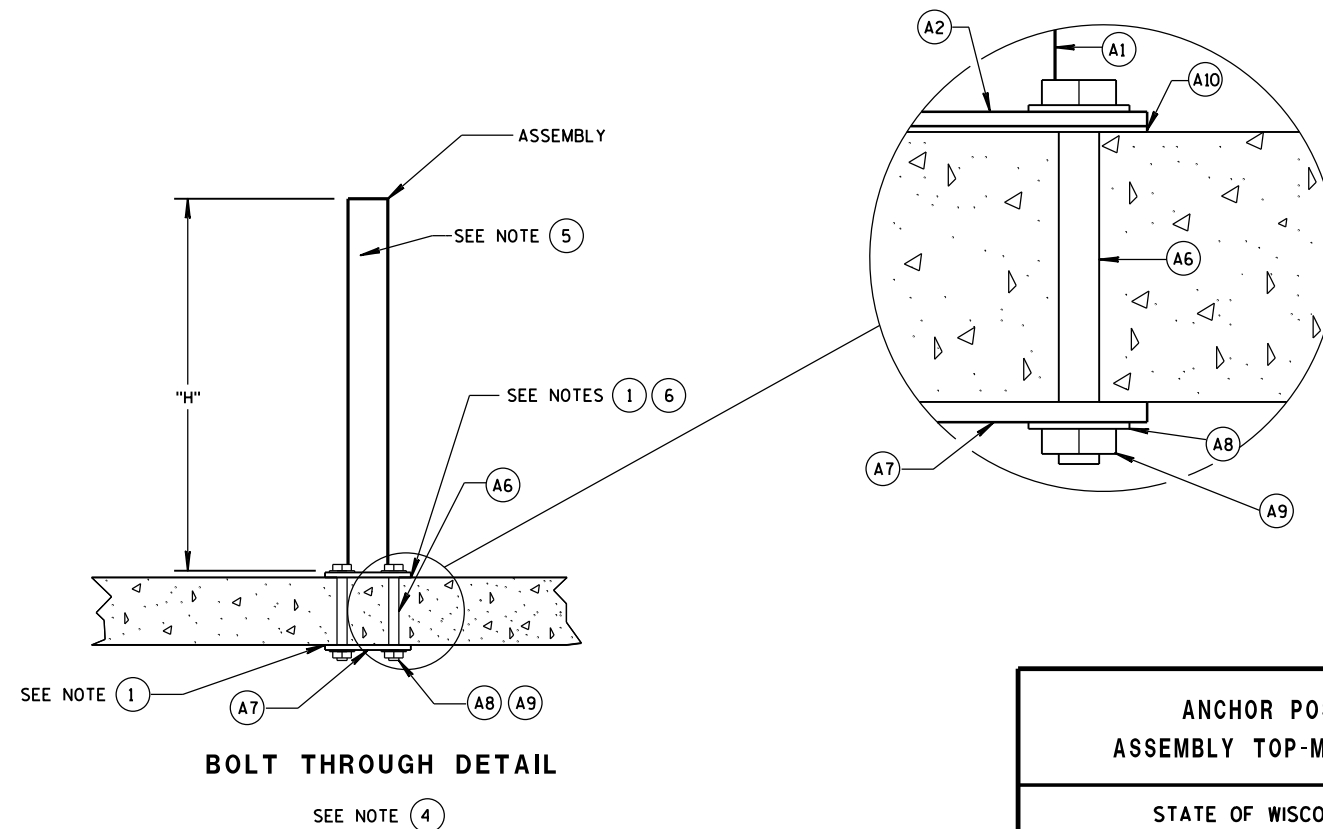
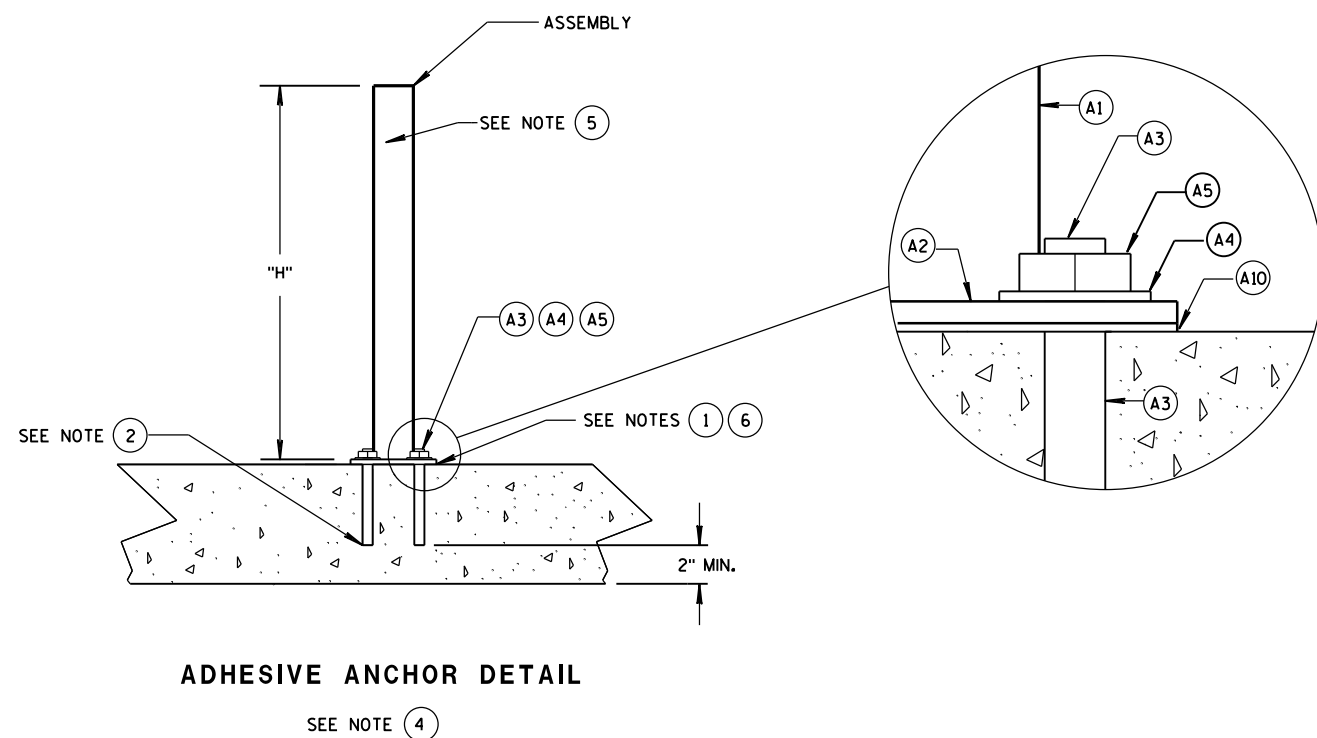
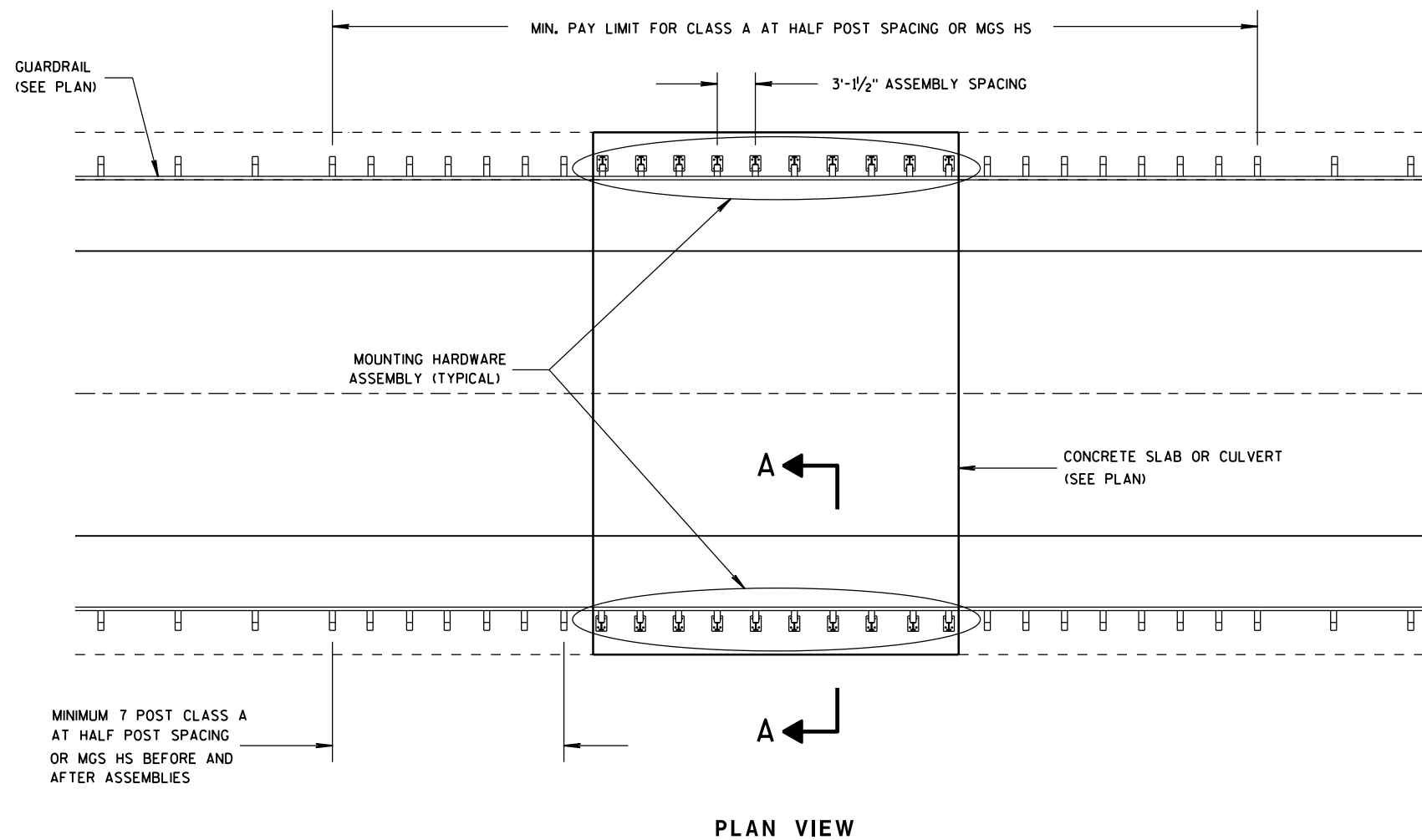


SECTION K-K

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 47 NT
FHWA ENGINEER



GENERAL NOTES

HOLES DRILLED INTO CONCRETE SLAB OR CULVERT ARE 1 1/8-INCH DIAMETER.

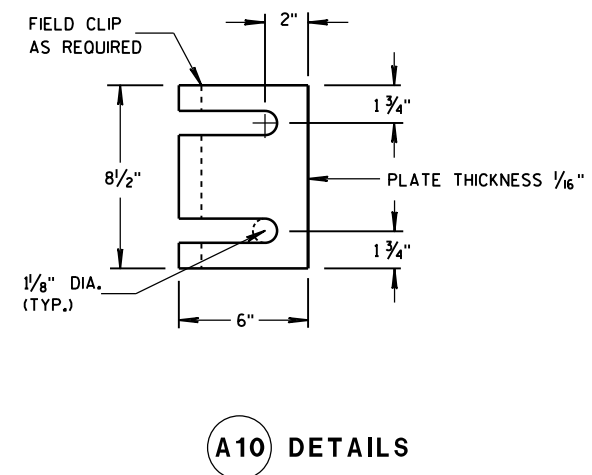
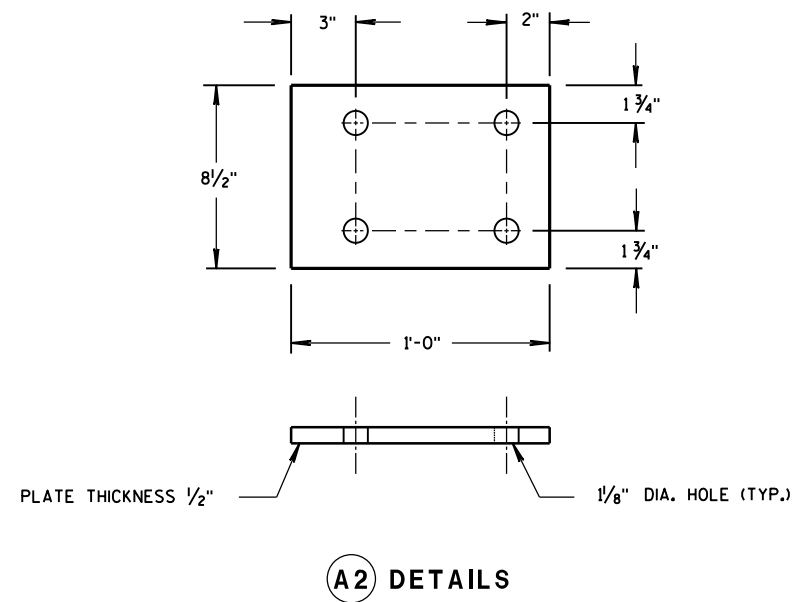
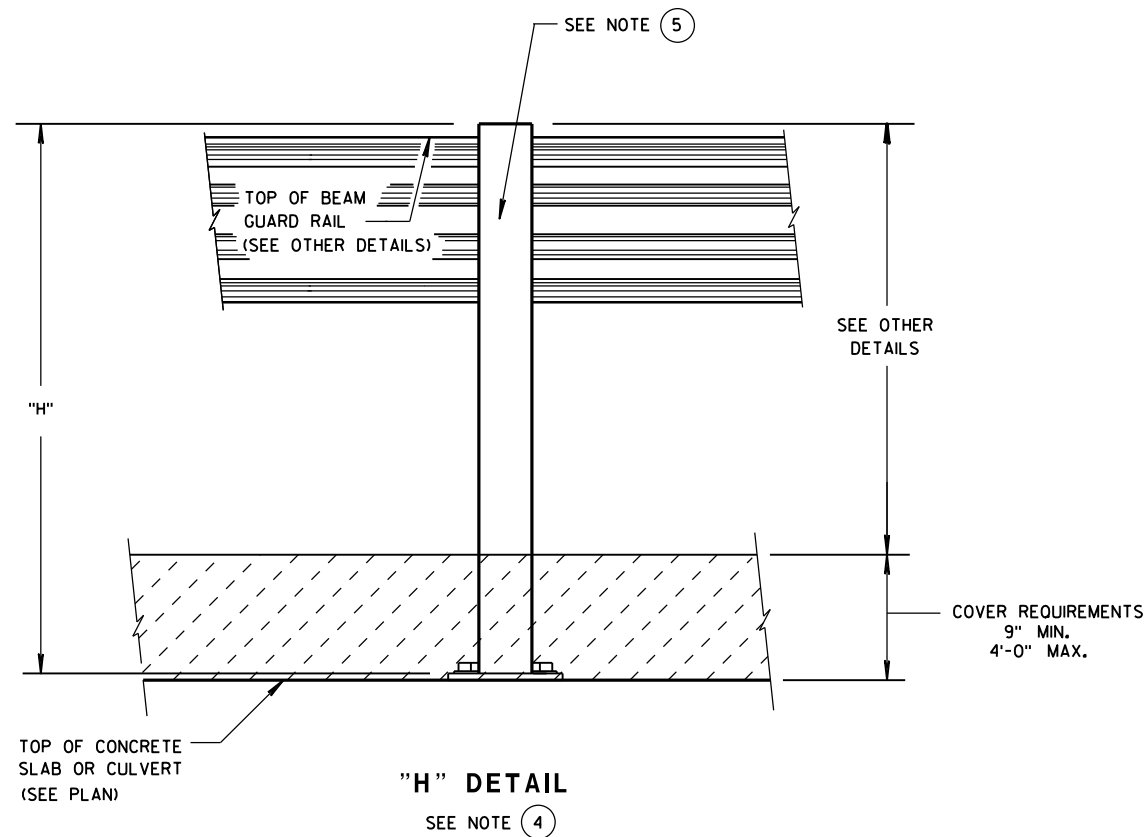
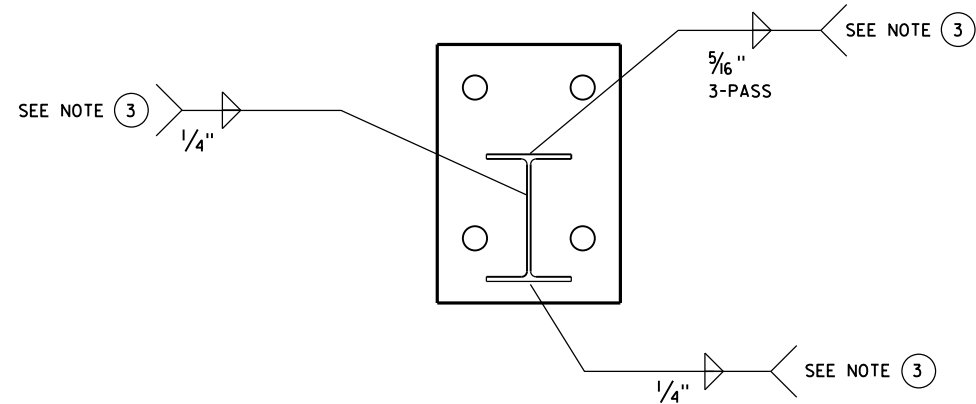
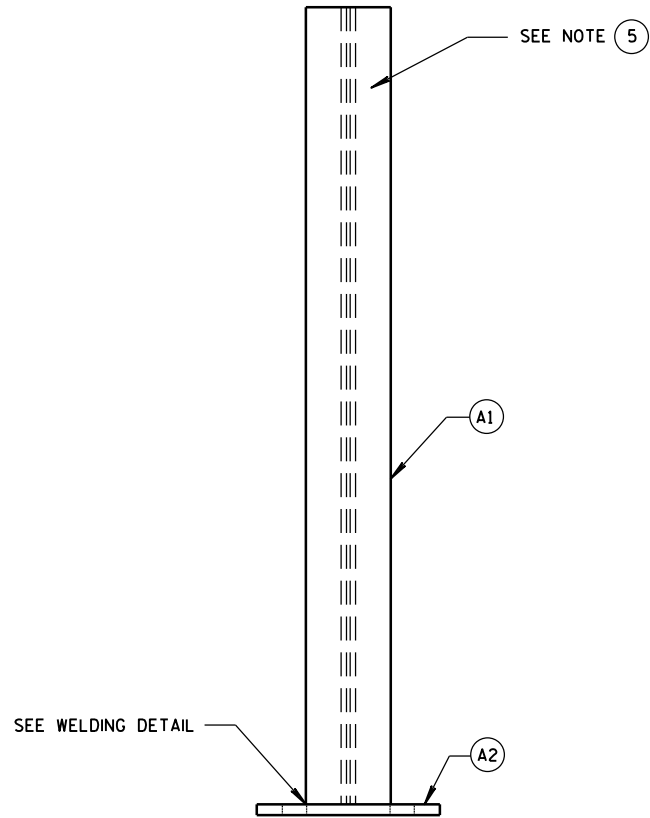
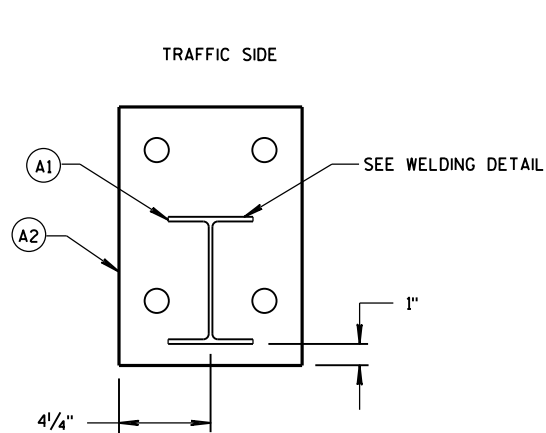
POST BASE PLATE (AND BOTTOM PLATES IF USED) SHALL BE FLAT WITH ALL SURFACES SMOOTH, AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS. CUT BOTTOM OF POST SO THAT POST WILL BE VERTICAL WHEN POST ASSEMBLY IS PLACED ON TOP OF CONCRETE. HEX BOLTS AND THREADED RODS ARE TO BE PLACED PERPENDICULAR TO THE BASE PLATE.

"H" DIMENSION WILL VARY. SEE PLAN FOR "H" DIMENSION. CONTRACTOR HAS OPTION OF INSTALLING POSTS THAT ARE TALLER THAN "H" DIMENSION AND CUT POSTS TO PROPER "H" DIMENSION IN THE FIELD. IF ELECTING TO FIELD CUT POSTS, DRILL HOLES AT APPROPRIATE LOCATIONS AND APPLY GALVANIZATION.

GALVANIZE STEEL COMPONENTS AFTER FABRICATION PER SECTION 614 OF THE WISCONSIN DEPT. OF TRANSPORTATION STANDARD SPECIFICATIONS.

INSTALL 1 NUT AND 1 WASHER WHERE APPLICABLE. PROVIDE SUFFICIENT LENGTH OF BOLT OR THREADED ROD TO ALLOW FOR 1/4-INCH TO 1/2-INCH OF THREAD TO BEYOND THE NUT.

- 1 PLACE NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER ON THE BOTTOM (A2) AND IN DRILL HOLES FOR BOLT THROUGH OPTION.
- 2 BOND STRENGTH OF ADHESIVE IS 1,305 PSI OR GREATER WITH A MINIMUM EMBEDMENT DEPTH OF 8-INCHES. IF MINIMUM EMBEDMENT CANNOT BE ACHIEVED BOLT THROUGH STRUCTURE.
- 3 USE GAS-METAL ARC WELDING (GMAW) PROCESS WITH ER70S-3 WELDING WIRE AND ARGON-OXYGEN OR CO2 COVER GAS.
- 4 OTHER COMPONENT OF BARRIER SYSTEM NOT SHOWN. SEE OTHER STANDARD DETAIL DRAWINGS. SEE SDD 14 B 15 OR SDD 14 B 42 FOR MORE DETAILS.
- 5 HOLES TO MOUNT BEAM GUARD AND BLOCK NOT SHOWN ON DRAWINGS. SEE OTHER STANDARD DETAIL DRAWINGS. SEE SDD 14 B 15 OR SDD 14 B 42 FOR MORE DETAILS.
- 6 ADD AND ADJUST SHIM PLATES AS NECESSARY TO INSTALL POST PLUMB. SEE (A10) FOR DETAIL.



MATERIALS LIST

ITEM	DESCRIPTION	MATERIAL SPECIFICATIONS	NOTES
(A1)	W6x9 or W6x8.5	ASTM A992, 50 KSI MIN. ASTM A709 GRADE 50 OR ASTM A36	SEE SDD 14B15 OR 14B42 LENGTH WILL VARY
(A2)	STEEL BASE PLATE	ASTM A992 50 KSI MIN., ASTM A529 GRADE 50, ASTM A572 GRADE 50, OR ASTM A36	
(A3)	1" DIA. THREADED ROD	SAE J429 GRADE 2, ASTM A307 GRADE C, OR ASTM F1554 GRADE 36	LENGTH WILL VARY
(A4)	1" DIA. FLAT WASHER	ASTM F844	
(A5)	1" HEX NUT	ASTM A563A	
(A6)	1" DIA. HEX BOLT	ASTM A307	LENGTH WILL VARY
(A7)	PLATE WASHER	ASTM A992 50 KSI MIN., ASTM A529 GRADE 50, ASTM A572 GRADE 50, OR ASTM A36	
(A8)	1" DIA. FLAT WASHER	ASTM F844	
(A9)	1" DIA. HEX NUT	ASTM A563A	
(A10)	SHIM PLATE	SEE (A2)	4 MAX PER POST

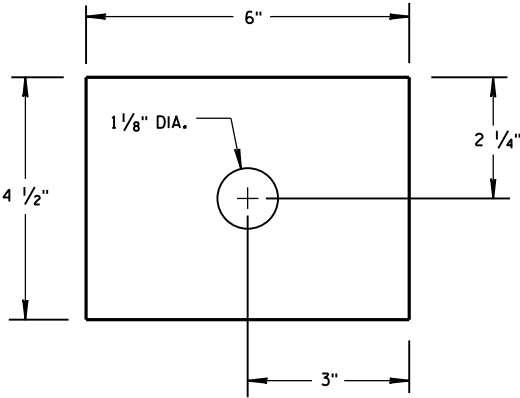
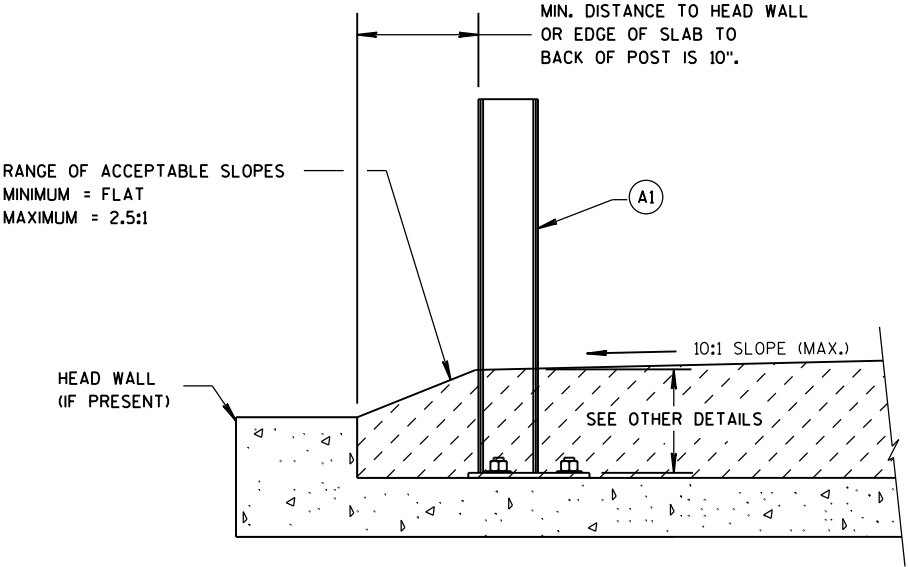
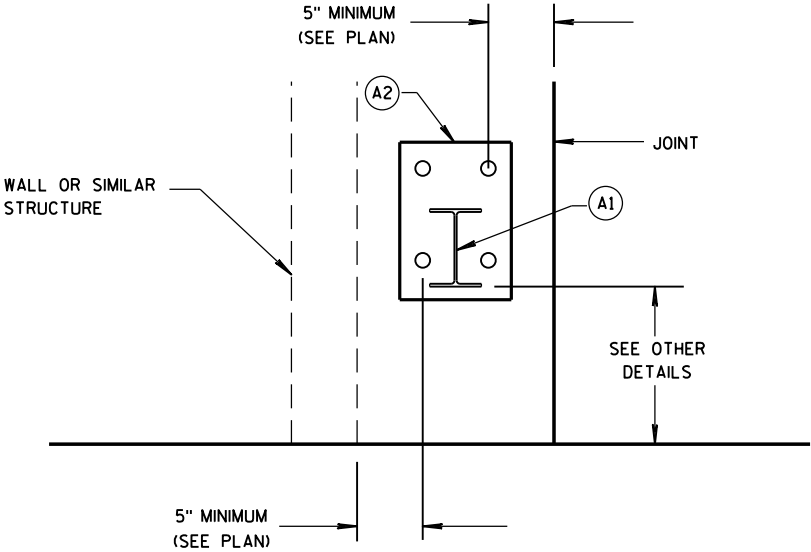


PLATE WASHER - (A7)



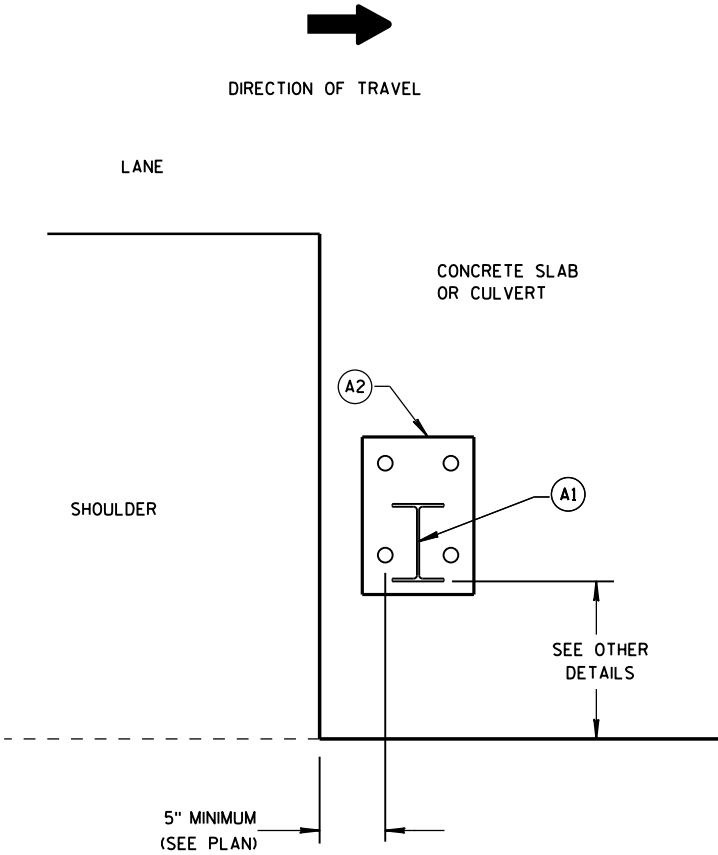
SECTION A-A

SEE NOTE (4)



OBSTRUCTION AND JOINT PLACEMENT

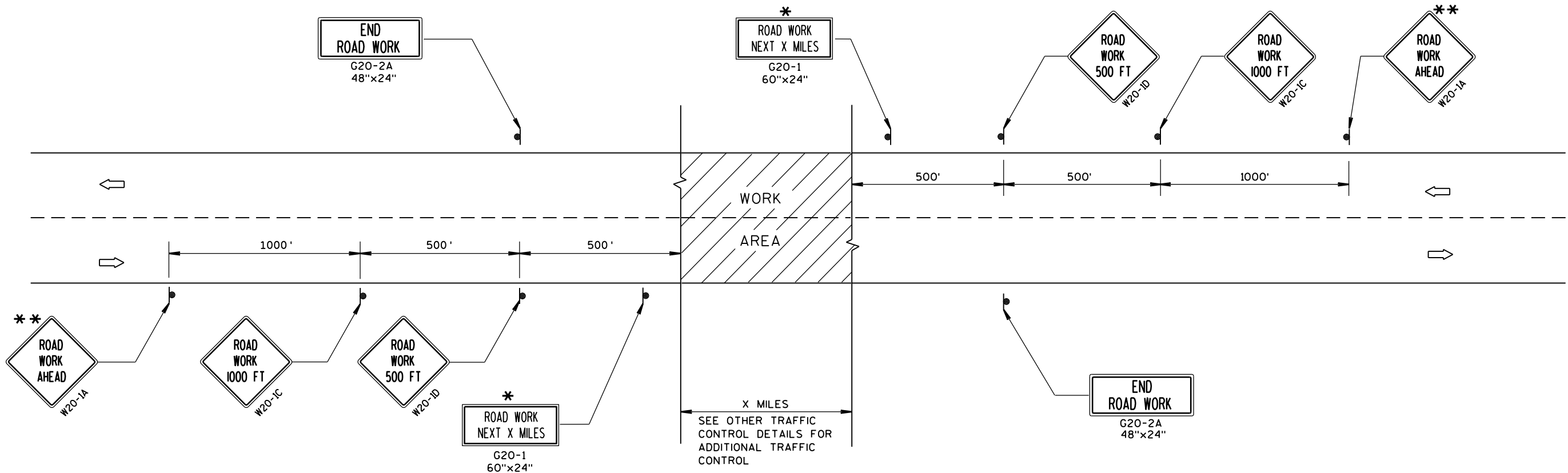
SEE NOTE (4)



EDGE PLACEMENT

SEE NOTE (4)

ANCHOR POST ASSEMBLY TOP-MOUNTED	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS 50 ENGINEER ENT
FHWA	



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

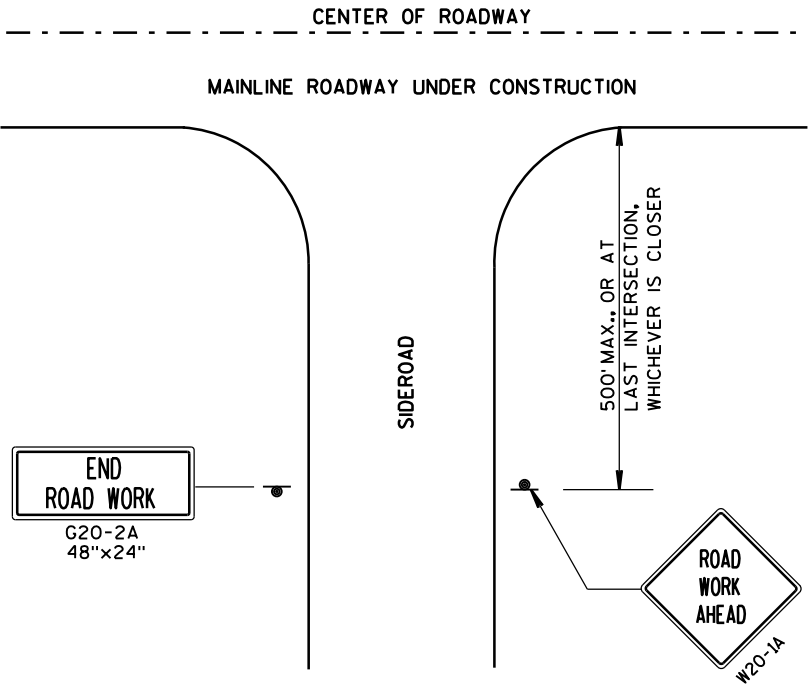
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

- SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENG 51
FHWA

LEGEND

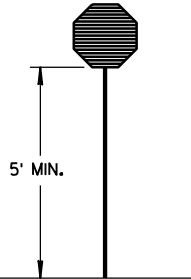
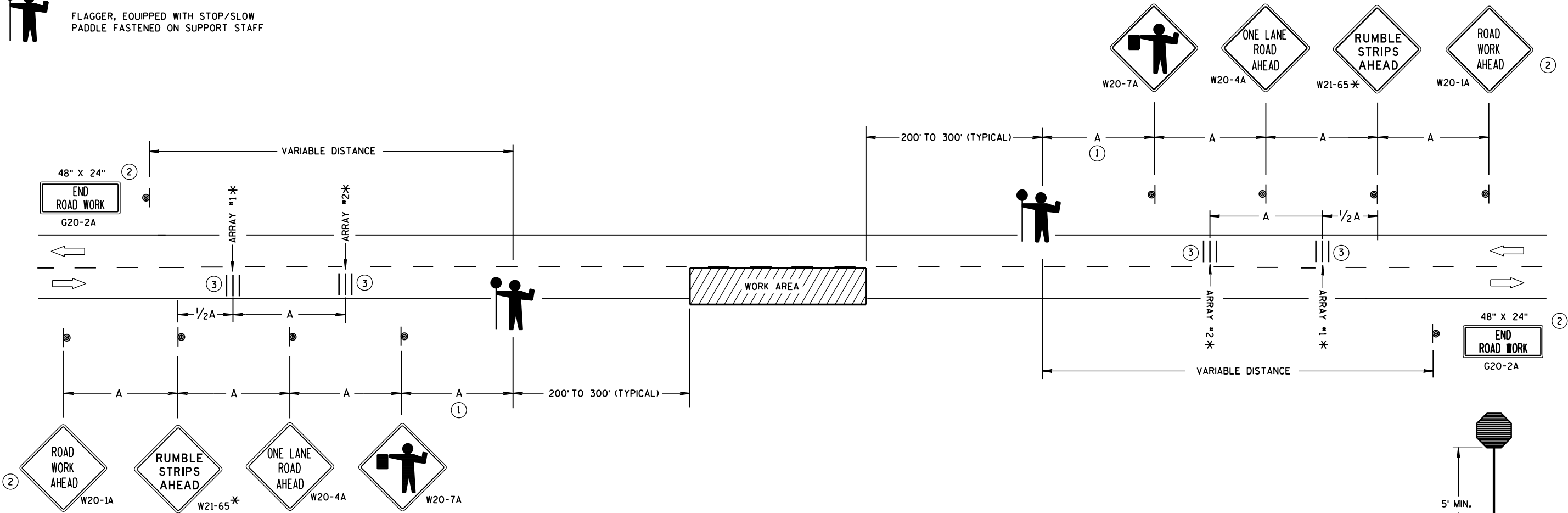
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING A.



STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE LOCATION OF ALL FLAGGERS) SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

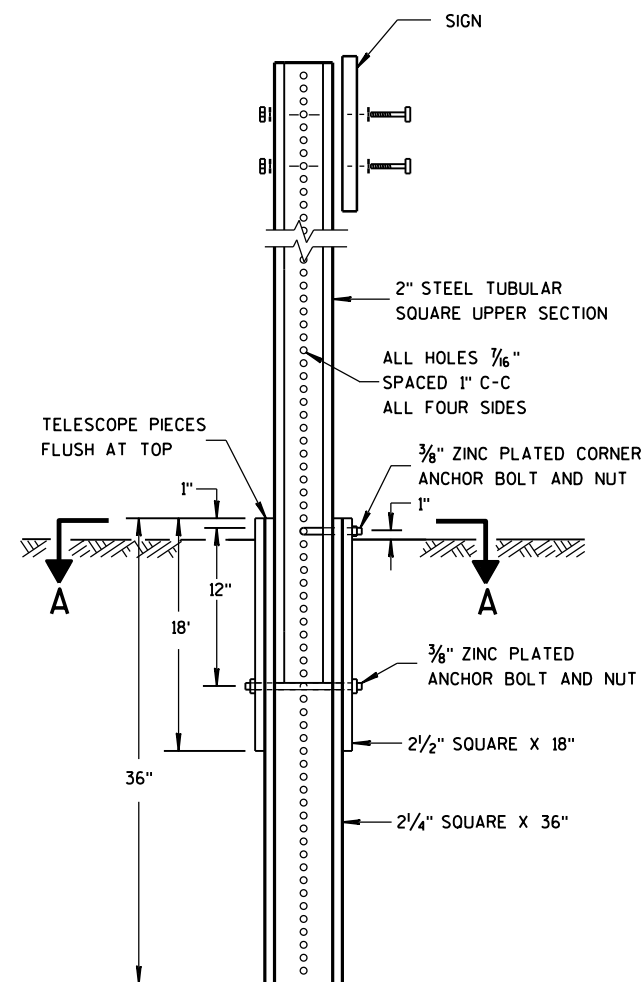
* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- ① FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ③ EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENG 52
FHWA



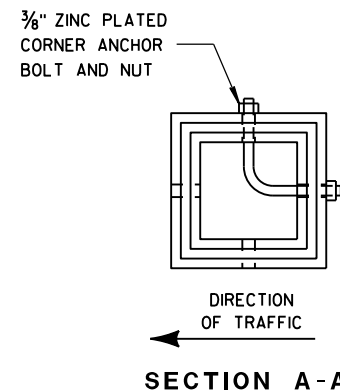
DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

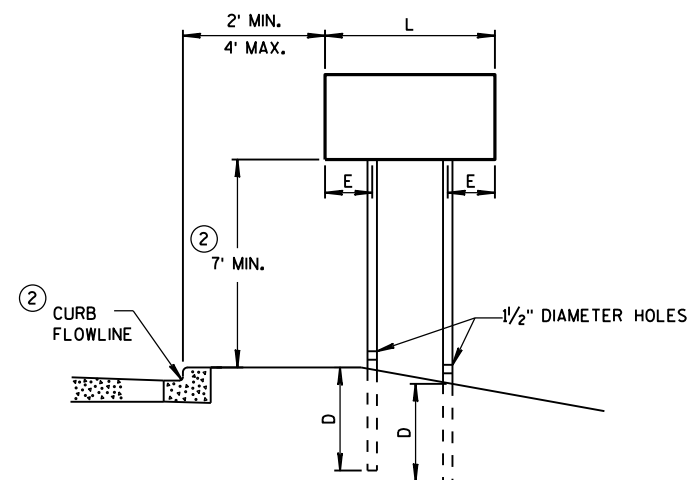
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



SECTION A-A

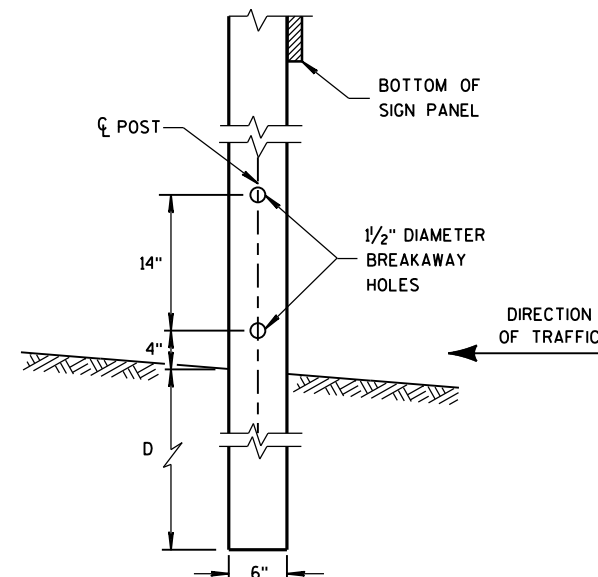


URBAN AREA

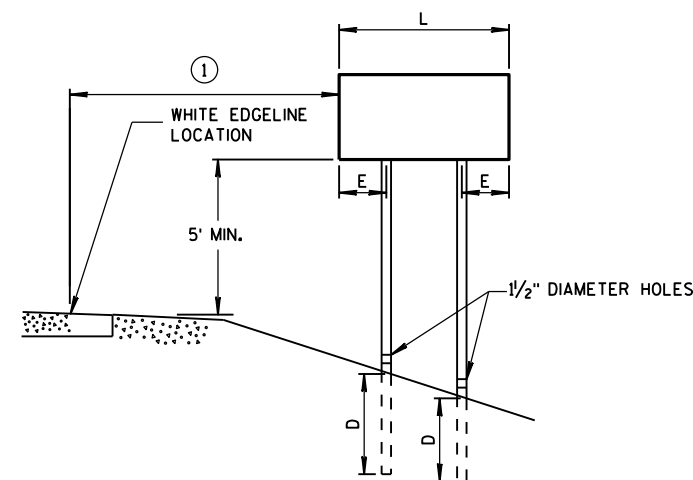
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" X 6" WOOD POST
MODIFICATION



RURAL AREA

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

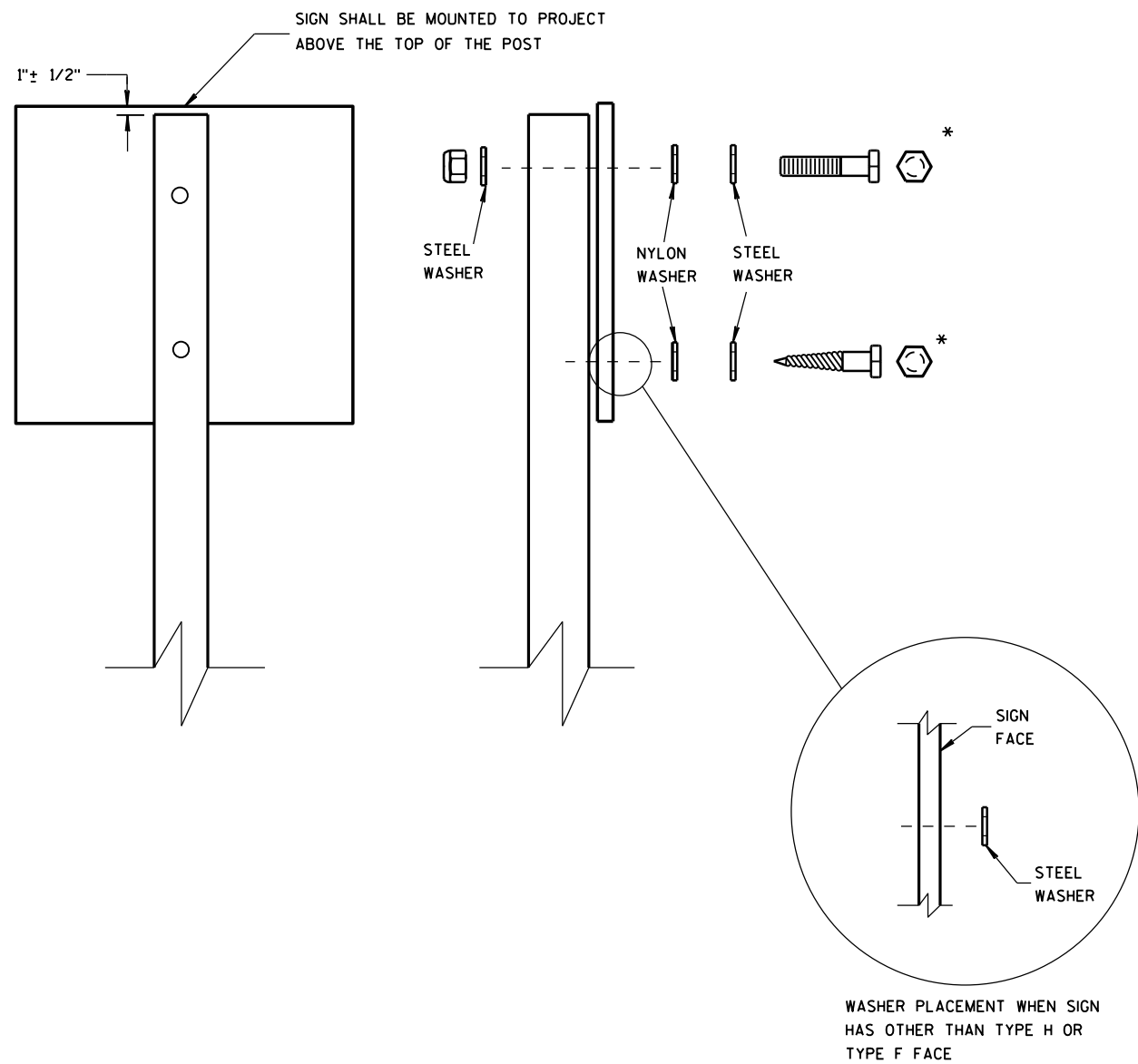
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

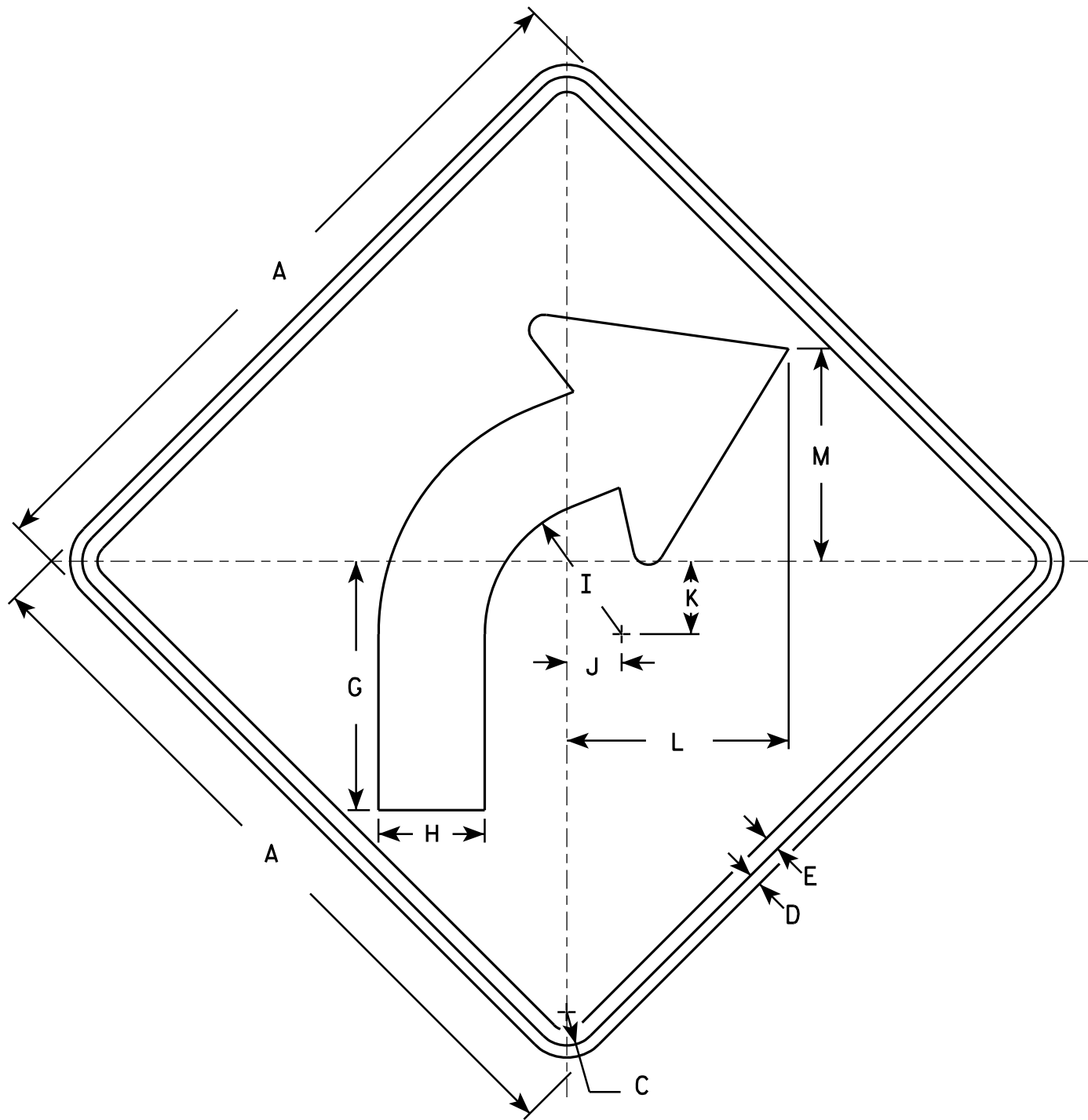
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

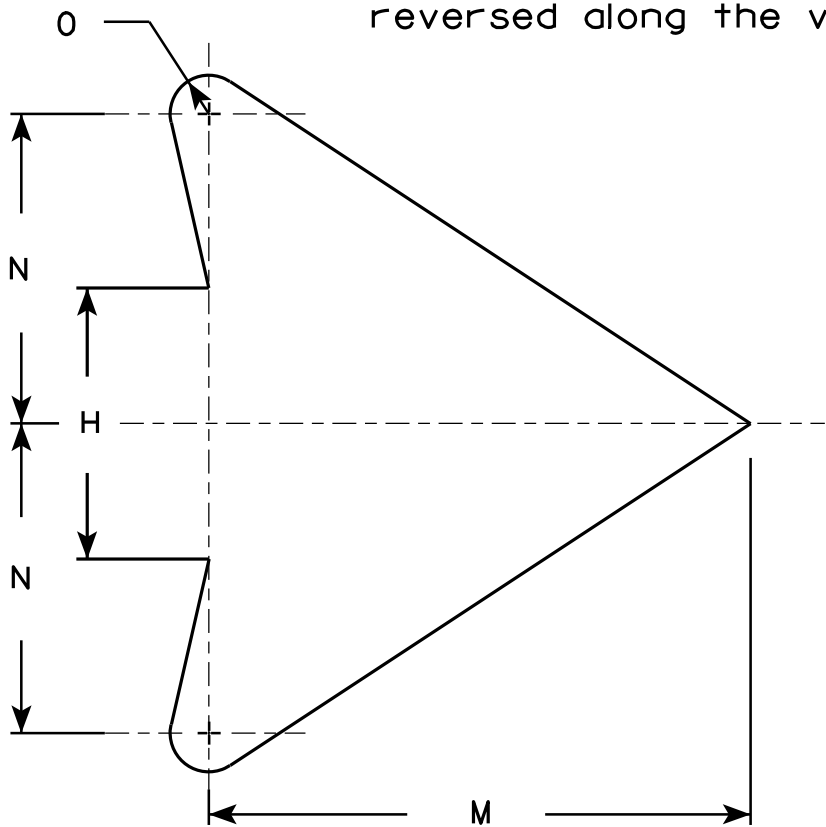
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENC 54
FHWA	

NOTES

1. Sign is Type II - Type F Reflective - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base
material is plywood but borders shall be rounded
as shown. When base material is metal, the
corners and borders shall be rounded.
4. W1-2L is the same as W1-2R except the arrow is
reversed along the vertical centerline.



W1-2R



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 5/15/12

PLATE NO. W1-2.10

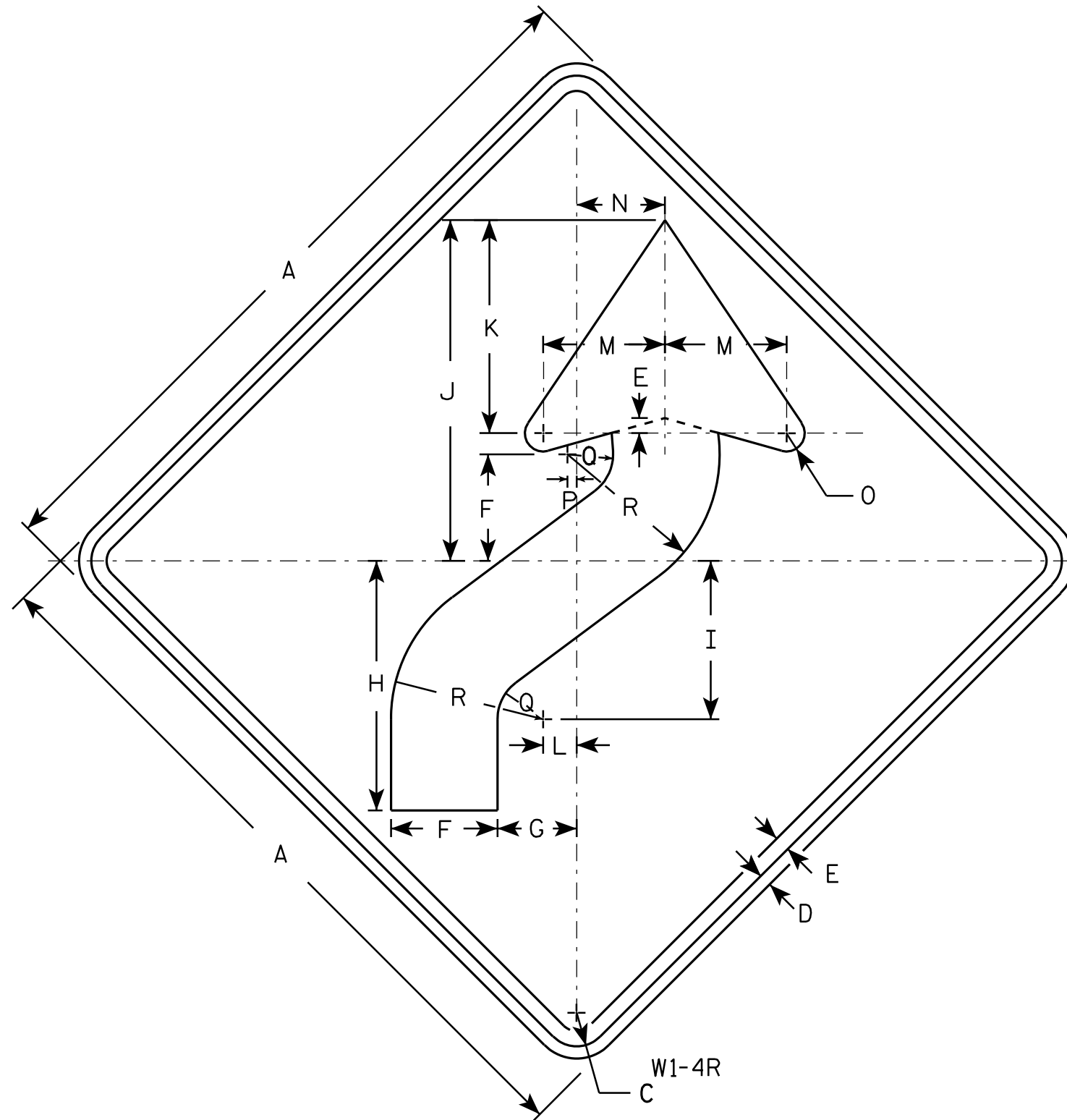
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 55

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-4L is the same as W1-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	3 1/2	2 5/8	8 1/4	5 1/4	11 1/4	7	1 1/8	4	3	5/8	1/4	1 1/2	5									4.0
2S	30		1 3/8	1/2	5/8	4 3/8	3 1/4	10 1/4	6 1/2	14	8 3/4	1 3/8	5	3 5/8	3/4	3/8	1 7/8	6 1/4									6.25
2M	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
3	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
4	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN

W1 - 4

WISCONSIN DEPT OF TRANSPORTATION

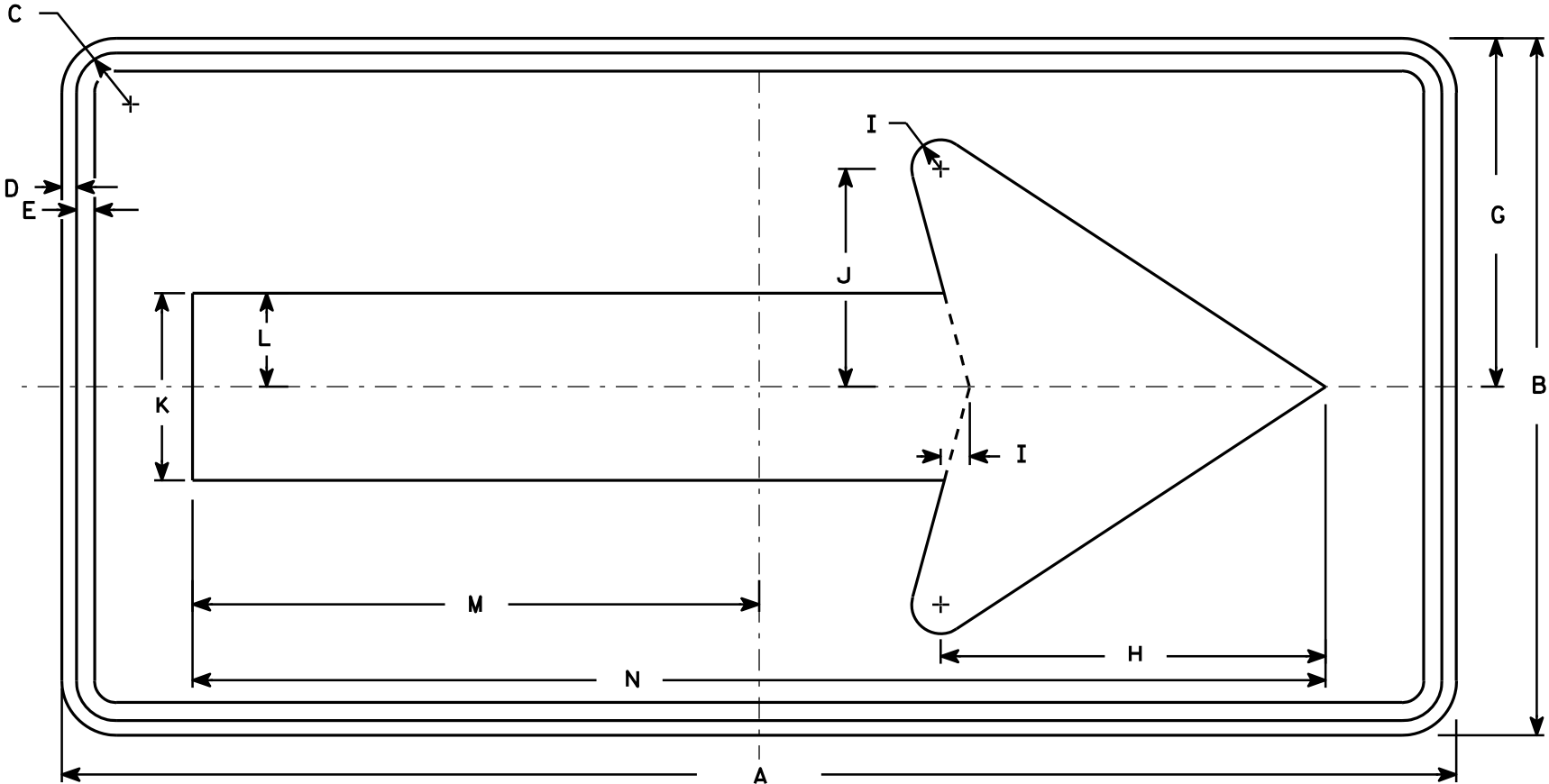
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/17/12 PLATE NO. W1-4.11

PROJECT NO: HWY: COUNTY: SHEET NO: 56 E

NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



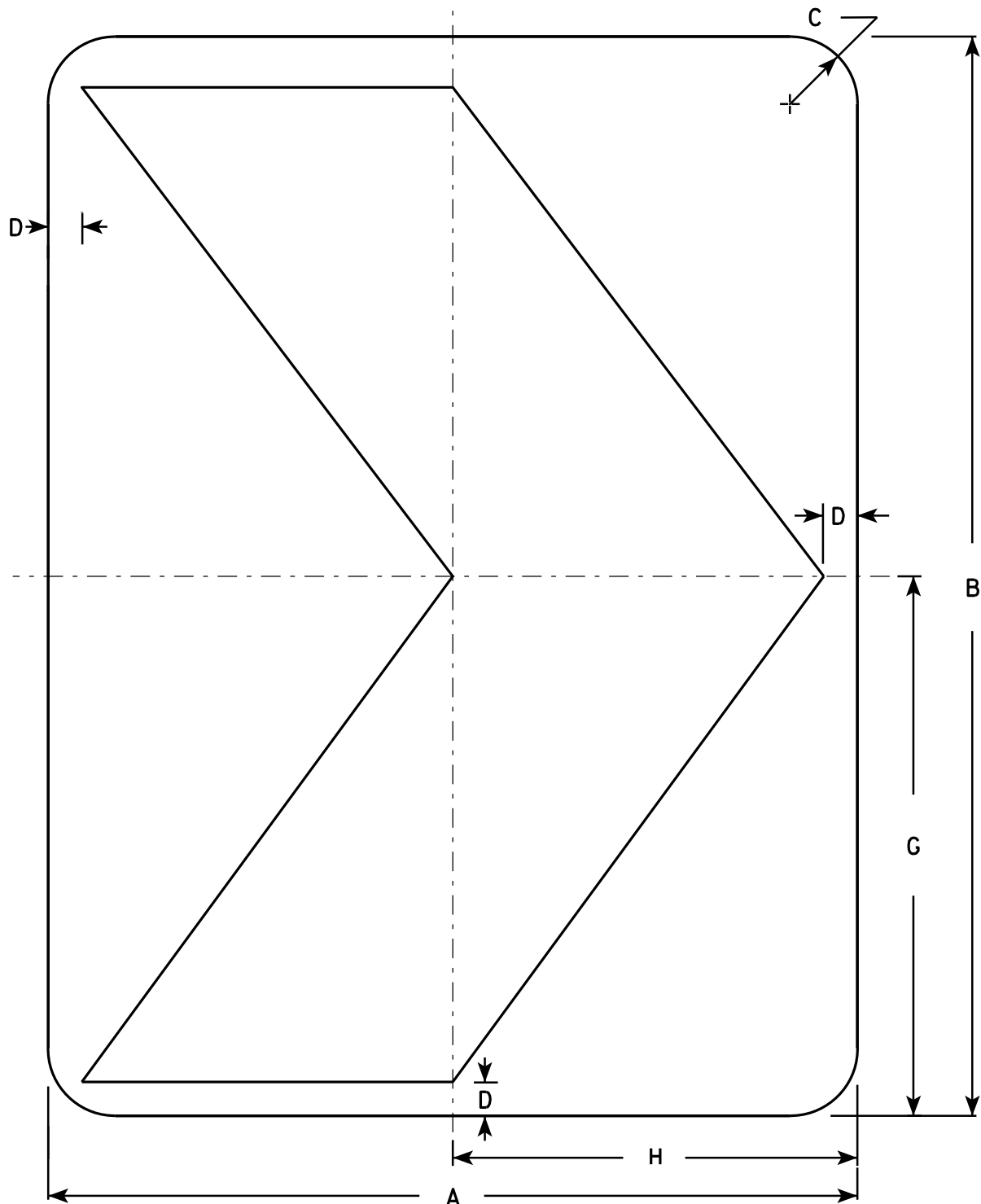
W1-6

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W1-6.8



W1-8

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/2	1/2			9	6																			1.5
2S	18	24	1 1/2	3/4			12	9																			3.0
2M	18	24	1 1/2	3/4			12	9																			3.0
3	24	30	1 1/2	1			15	12																			5.0
4	30	36	1 7/8	1 1/4			18	15																			7.5
5	36	48	2 1/4	1 1/2			24	18																			12.0

STANDARD SIGN

W1-8

WISCONSIN DEPT OF TRANSPORTATION

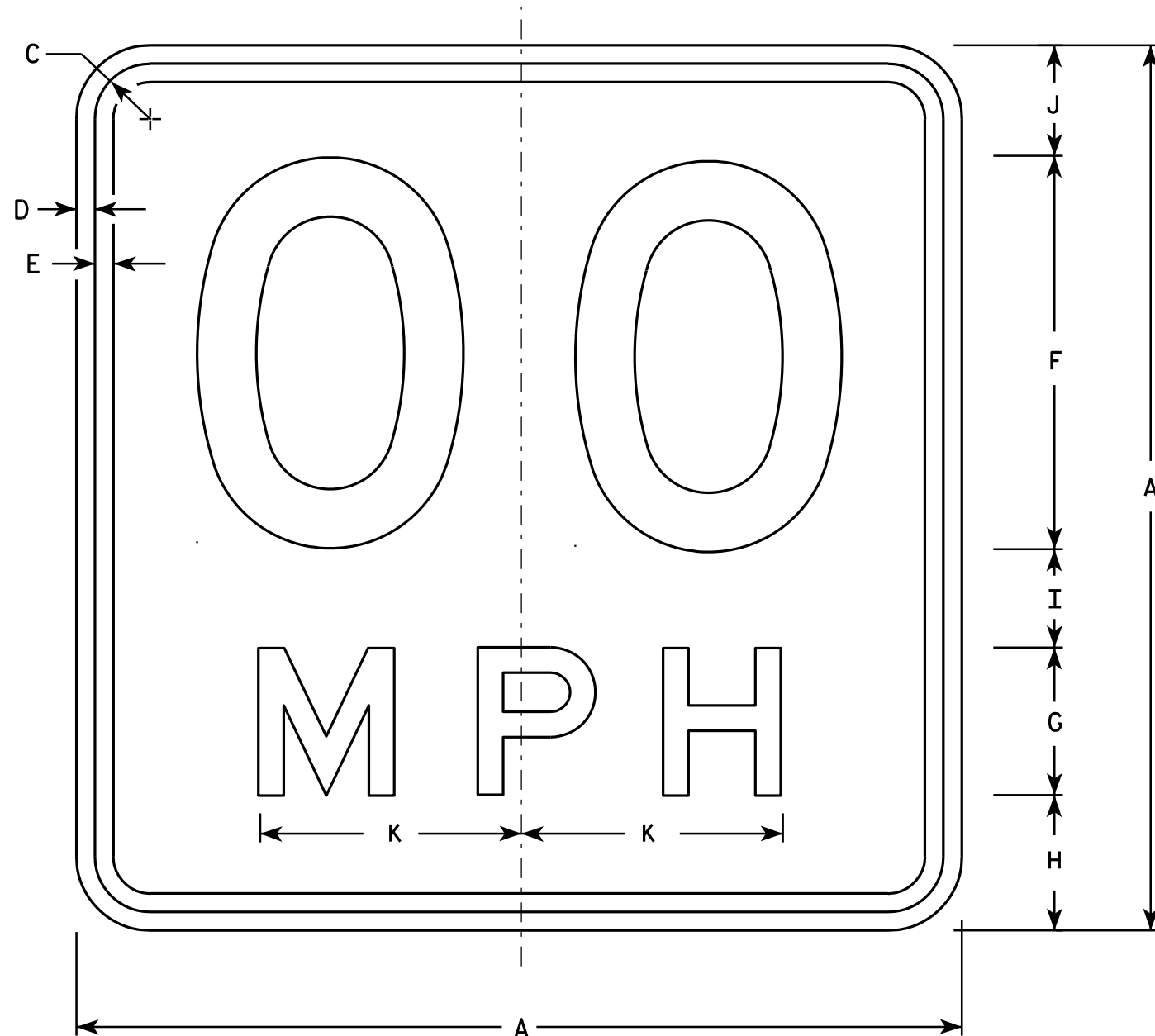
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-8.6

PROJECT NO:

SHEET NO: 58

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area Sq. Ft.
1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 61

E

NOTES:

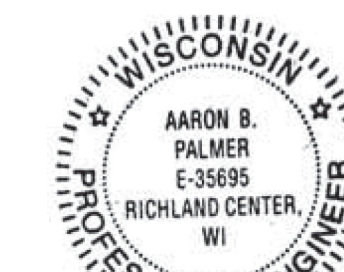
SEE STANDARD DETAIL DRAWING 14B45 FOR MORE INFORMATION.

THREE BEAM RAIL C-CHANNEL MOUNTING BOLTS ARE $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. C-CHANNEL MOUNTING BOLTS REQUIRE $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX BOLTS.

BOLTS, NUTS, AND WASHERS SHALL CONFORM TO ASTM A307, A449, AND GALVANIZED PER STANDARD SPECIFICATION 614.

EXPOSED TIMBER SURFACES DUE TO FIELD CUTS SHALL BE TREATED WITH WOOD PRESERVATIVES PER STANDARD SPECIFICATION 504.2.3.

OVER TIGHTEN 21" HEAD BOLT TO COMPENSATE FOR FUTURE POST SHRINKAGE.



1-29-2018

LIST OF DRAWINGS

1. GENERAL PLAN

NO.	DATE	REVISION	BY

WESTBROOK
Associated Engineers, Inc.

619 EAST HOXE STREET
P.O. BOX 429
SPRING GREEN, WI 53588
PHONE (608) 588-7866
FAX (608) 588-7954

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED *William C. Dreher* **05/02/18**
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-52-23

CTH 'Q' OVER FOX HOLLOW CREEK

COUNTY RICHLAND TOWN/CITY/VILLAGE DAYTON

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPEC.

DESIGNED BY CDS DESIGN CDD ABP DRAWN BY LCS PLANS CDD ABP

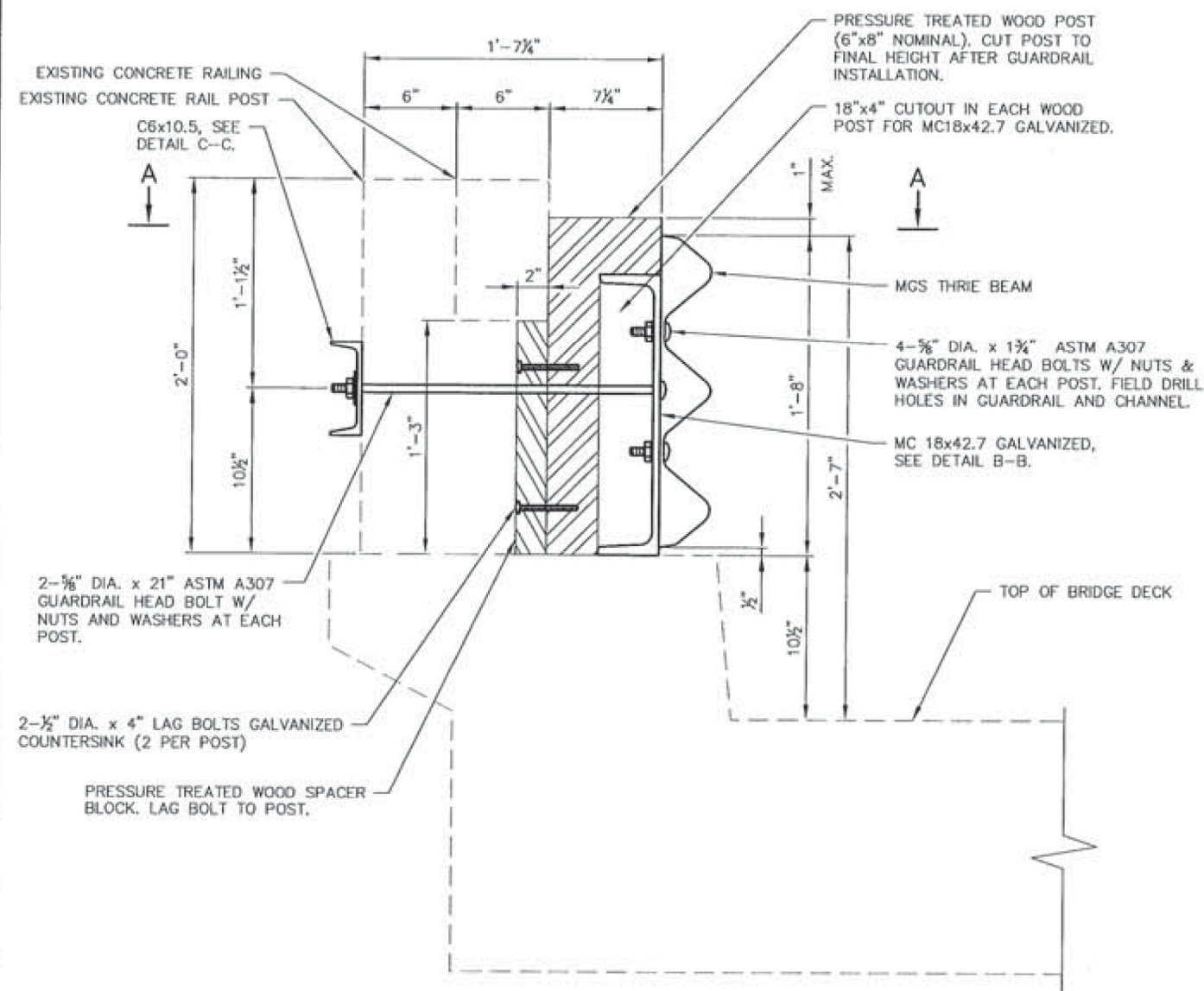
GENERAL PLAN

SHEET 1 OF 1

61A

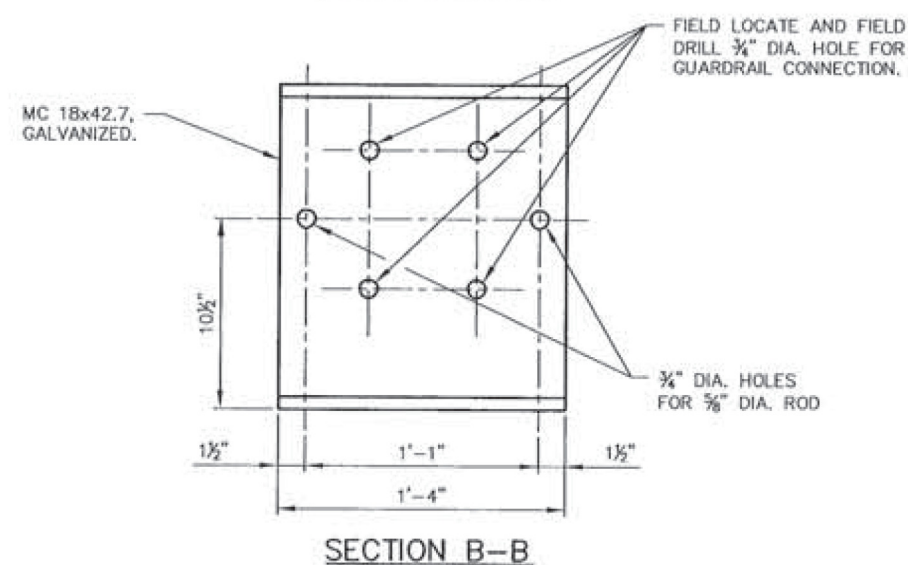
BRIDGE OFFICE CONTACT
WILLIAM DREHER, P.E.
(608) 266-8489

CONSULTANT CONTACT
AARON PALMER, P.E.
(608) 588-7866

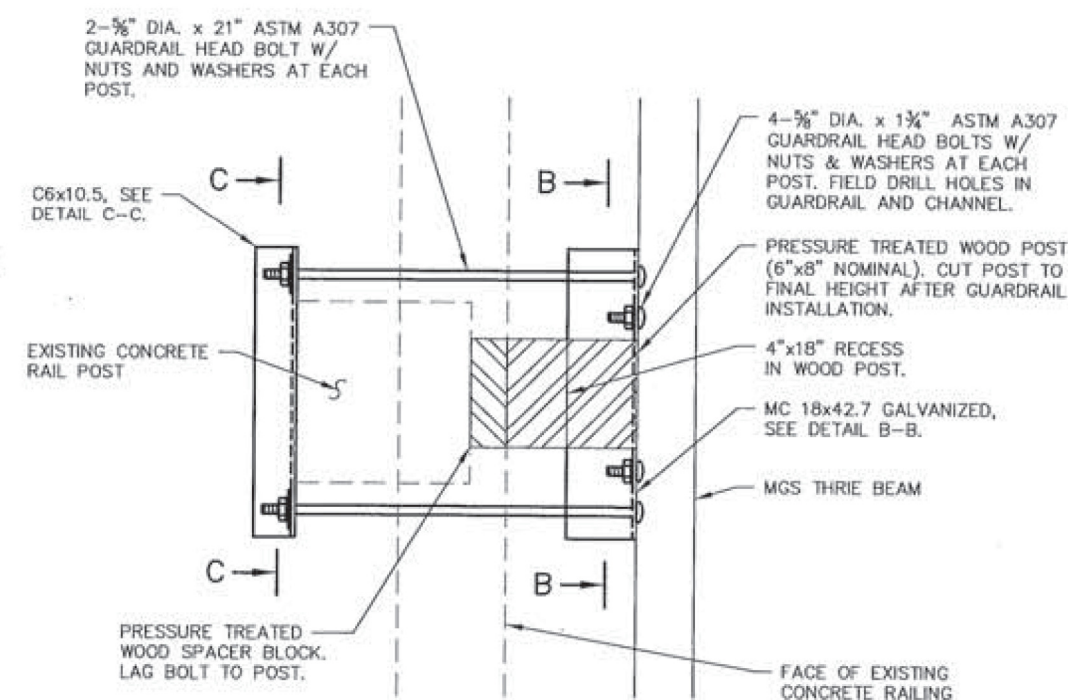


SECTION THRU RAILING

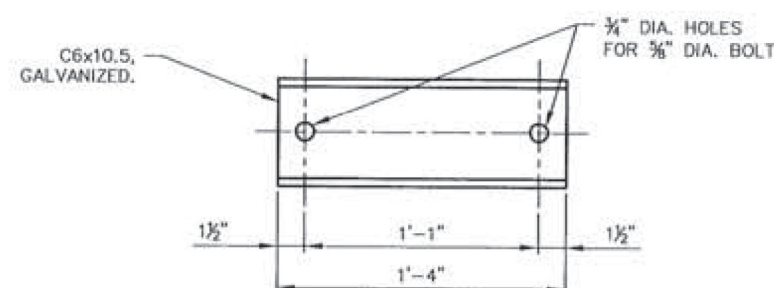
STA. 131+44 - STA. 131+75, LT & RT
(LOCATION 2, B-52-023)



SECTION B-B



SECTION A-A

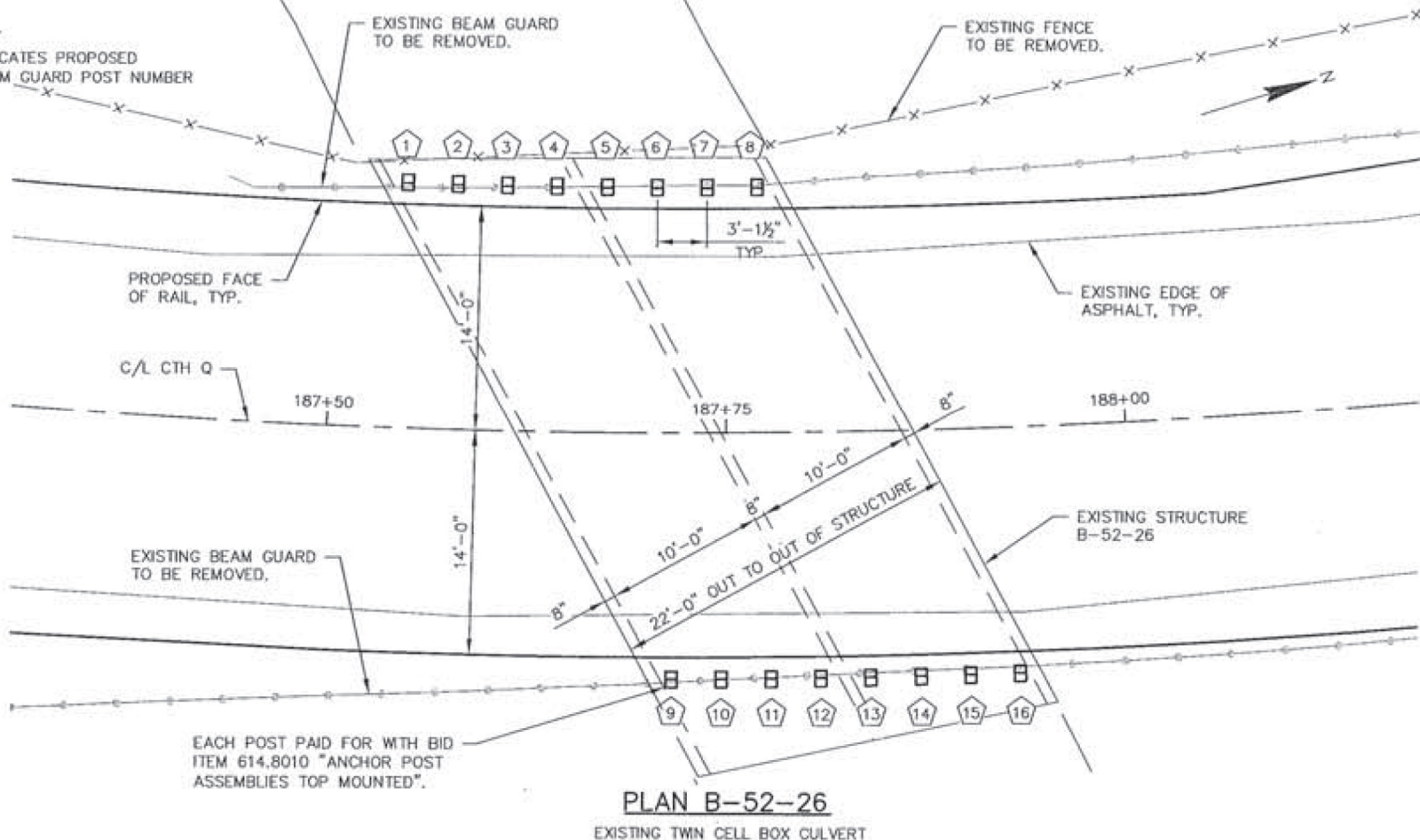


SECTION C-C

Addendum No. 01
ID 5198-01-60
Added Sheet 61A
May 3, 2018

NOTES

- INDICATES PROPOSED BEAM GUARD POST NUMBER



PLAN B-52-26

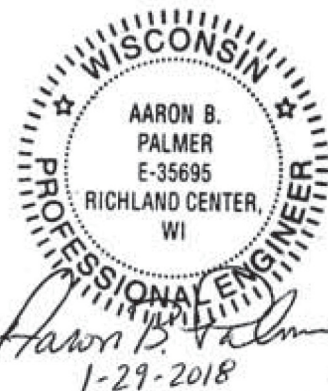
EXISTING TWIN CELL BOX CULVERT

EACH POST PAID FOR WITH BID ITEM 614.8010 "ANCHOR POST ASSEMBLIES TOP MOUNTED".

* WELDING IS TO BE COMPLETED USING THE GAS-METAL ARC WELDING (GMAW) PROCESS WITH ER70S-3 WELDING WIRE AND ARGON-OXYGEN OR CO₂ COVER GAS.

POST ANCHOR PLATE LAYOUT

POST NO.	STATION	OFFSET
1	187+54.46	14.85' LT
2	187+57.68	14.85' LT
3	187+60.90	14.85' LT
4	187+64.13	14.85' LT
5	187+67.35	14.85' LT
6	187+70.57	14.85' LT
7	187+73.79	14.85' LT
8	187+77.02	14.85' LT
9	187+71.65	14.85' RT
10	187+74.69	14.85' RT
11	187+77.72	14.85' RT
12	187+80.75	14.85' RT
13	187+83.79	14.85' RT
14	187+86.82	14.85' RT
15	187+89.86	14.85' RT
16	187+92.89	14.85' RT



Addendum No. 01
 ID 5198-01-60
 Added Sheet 61B
 May 3, 2018

NOTES:

DETAILS SHOWN FOR POSTS, PLATES, ANCHORAGE SYSTEM AND INSTALLATION, BLOCKS, AND GUARD RAIL ARE NOT PART OF THE STRUCTURE CONTRACT, BUT ARE BID PER THE ROADWAY DESIGN PLANS.

POST BASE PLATES AND BOTTOM PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

CUT BOTTOM OF POST SO THAT POST WILL BE VERTICAL WHEN POST ASSEMBLY IS PLACED ON TOP OF THE CULVERT. ALONG THE ROADWAY THE POST WILL BE NORMAL TO GRADE LINE. HEX BOLTS AND THREADED RODS ARE TO BE PLACED PERPENDICULAR TO THE BASE PLATE.

POSTS, BASE PLATES, BOTTOM PLATES, AND SHIMS SHALL BE GALVANIZED AFTER FABRICATION.

PRIOR TO GALVANIZING, ALL STEEL POSTS AND PLATES SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY SSPC SPECS.

ALL MATERIAL USED IN POSTS AND PLATES SHALL BE MADE FROM MATERIAL CONFORMING TO ASTM DESIGNATION A709 GRADE 50 OR 50S.

HEX BOLTS, TREADED RODS, HEX NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 GRADE 36, AND SHALL BE GALVANIZED. RODS ARE TO BE FULLY THREADED AND BOLTS TO BE THREADED 3". CHAMFER TOP OF BOLTS AND RODS BEFORE THREADING.

STEEL SHIMS MAY BE USED BETWEEN PLATES AND SLAB WHERE REQUIRED FOR ALIGNMENT.

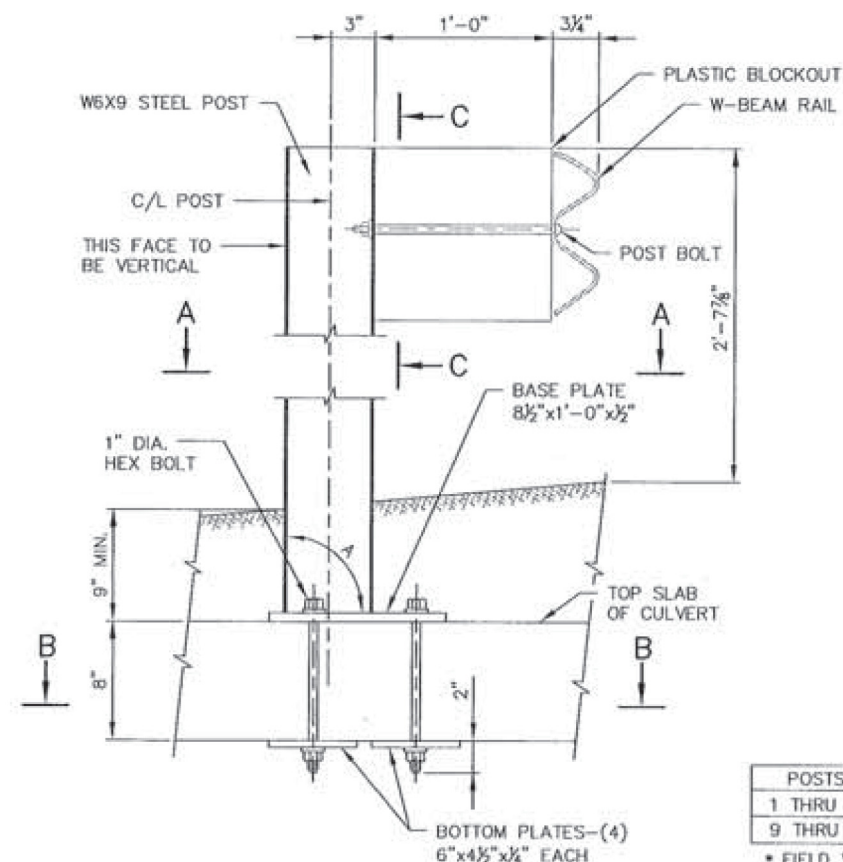
POST ANCHOR BOLTS SHALL BE PLACED A MINIMUM OF 4" HORIZONTALLY FROM BOX CULVERT WALLS.

FOR MORE INFORMATION ON LAYOUT SEE WisDOT SDD 14B51 "ANCHOR POST ASSEMBLY TOP MOUNT".

LIST OF DRAWINGS

1. GENERAL PLAN

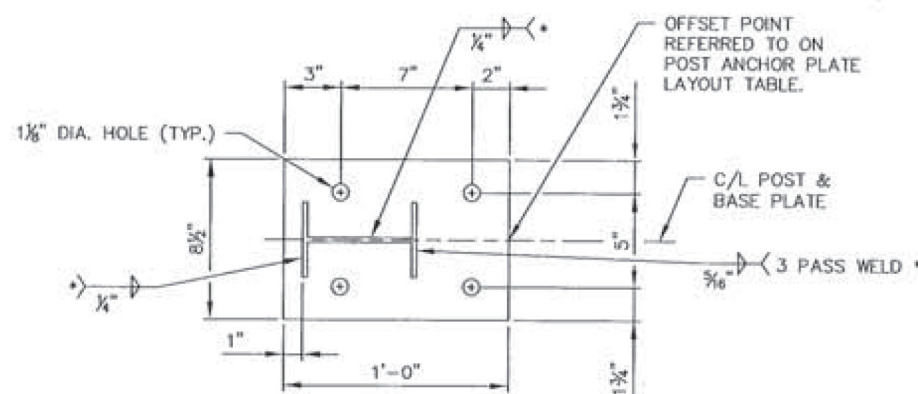
BRIDGE OFFICE CONTACT
 WILLIAM DREHER, P.E.
 (608) 266-8489
 CONSULTANT CONTACT
 AARON PALMER, P.E.,
 (608) 588-7866



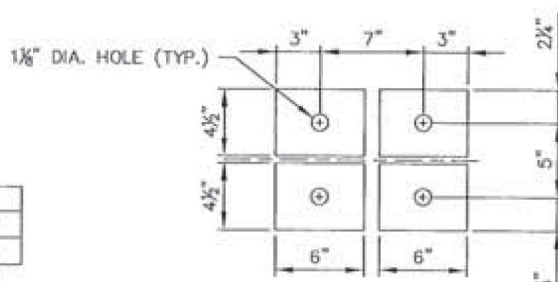
ELEVATION

POSTS	"A"
1 THRU 8	89' *
9 THRU 10	91' *

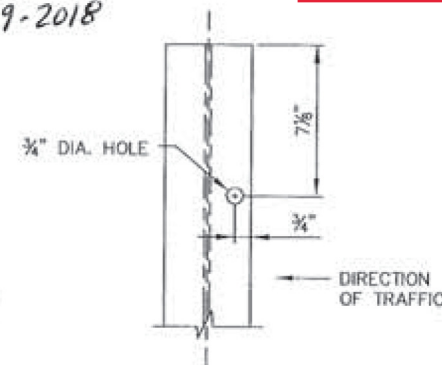
* FIELD VERIFY ANGLES.



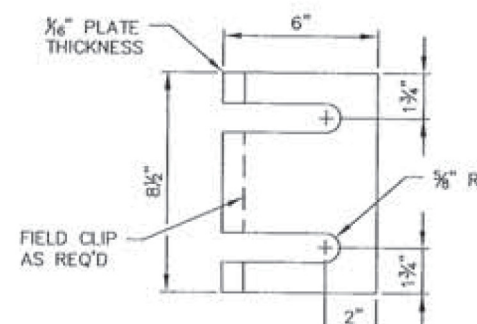
SECTION A-A
 POST & BASE PLATE



SECTION B-B
 (4)-BOTTOM PLATES

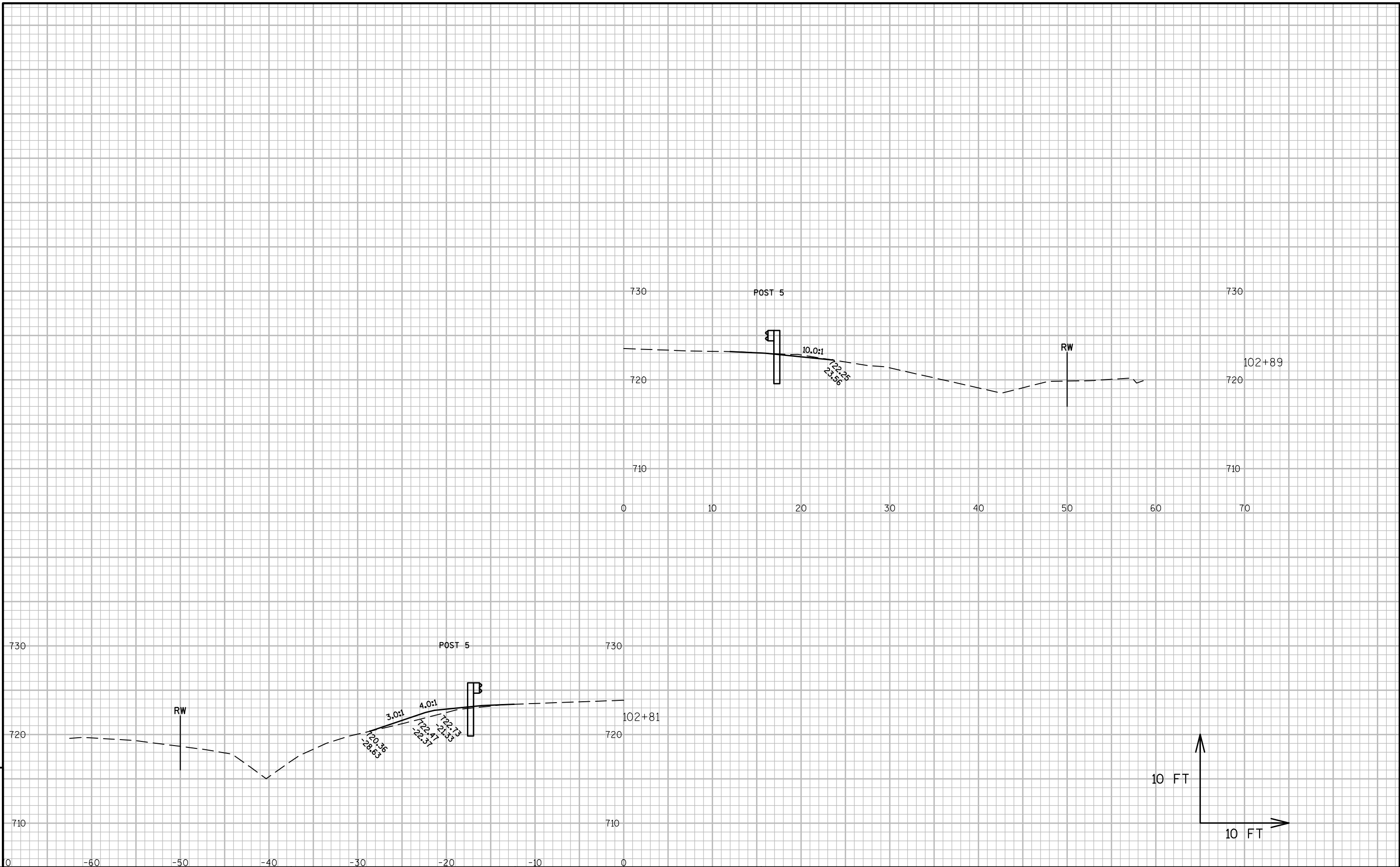


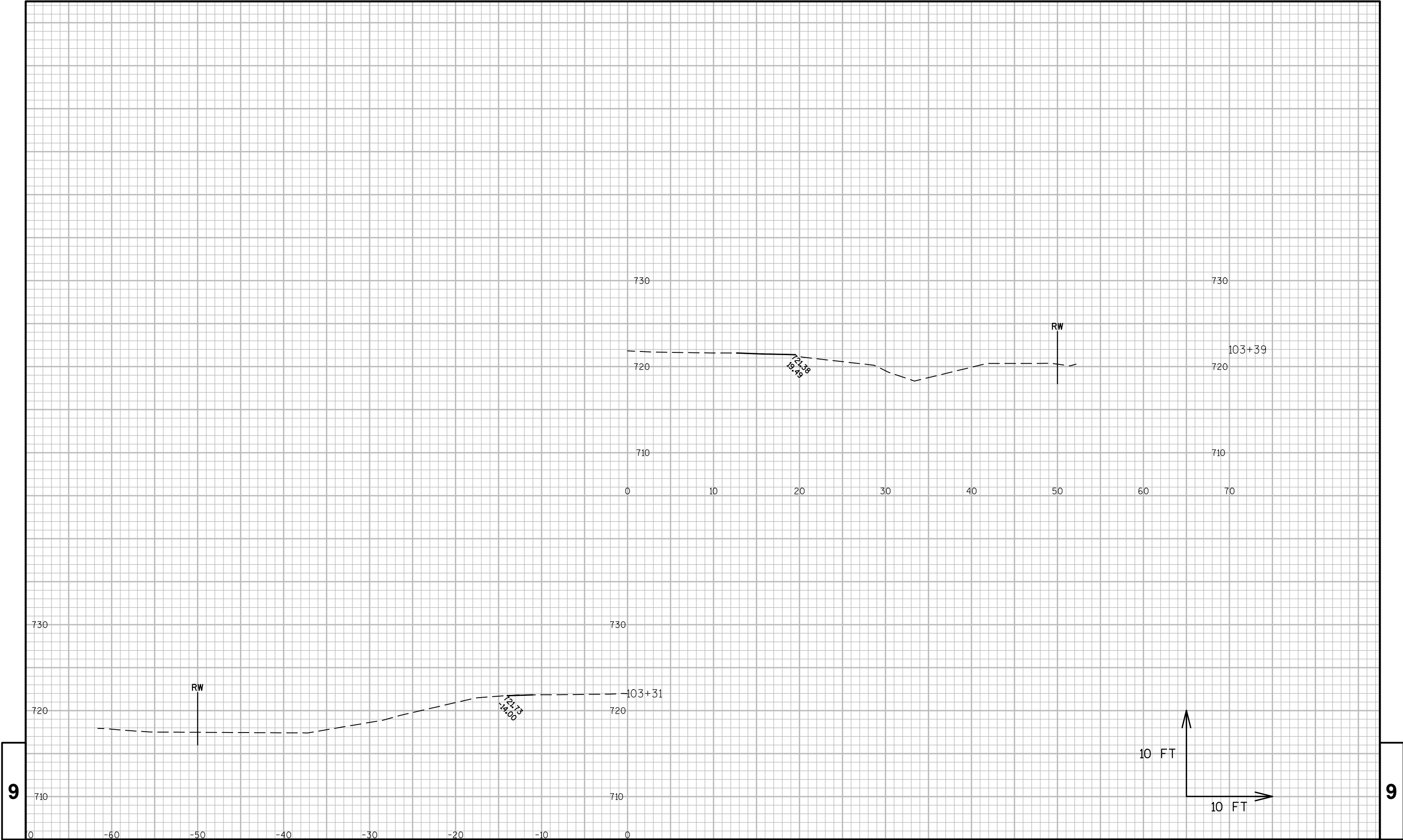
SECTION C-C
 HOLE IN POST FLANGE ON
 APPROACHING TRAFFIC SIDE



STEEL SHIM DETAIL
 4 PER POST

NO.	DATE	REVISION	BY
619 EAST HOXIE STREET P.O. BOX 429 SPRING GREEN, WI 53588 PHONE (608) 588-7866 FAX (608) 588-7864			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED			05/02/18
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-52-26			
CTH 'Q' OVER FOX HOLLOW CREEK			
COUNTY	RICHLAND		
TOWN/CDP/VILLAGE	DAYTON		
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPEC.		
DESIGNED BY	JAP	DESIGN	ACK
DRAWN BY	LCS	PLANS	OK'D
ABP			
GUARDRAIL POST ANCHORAGE SYSTEM			SHEET 1 OF 1 61B





9

9

PROJECT NO:5198-01-60

HWY:CTH Q

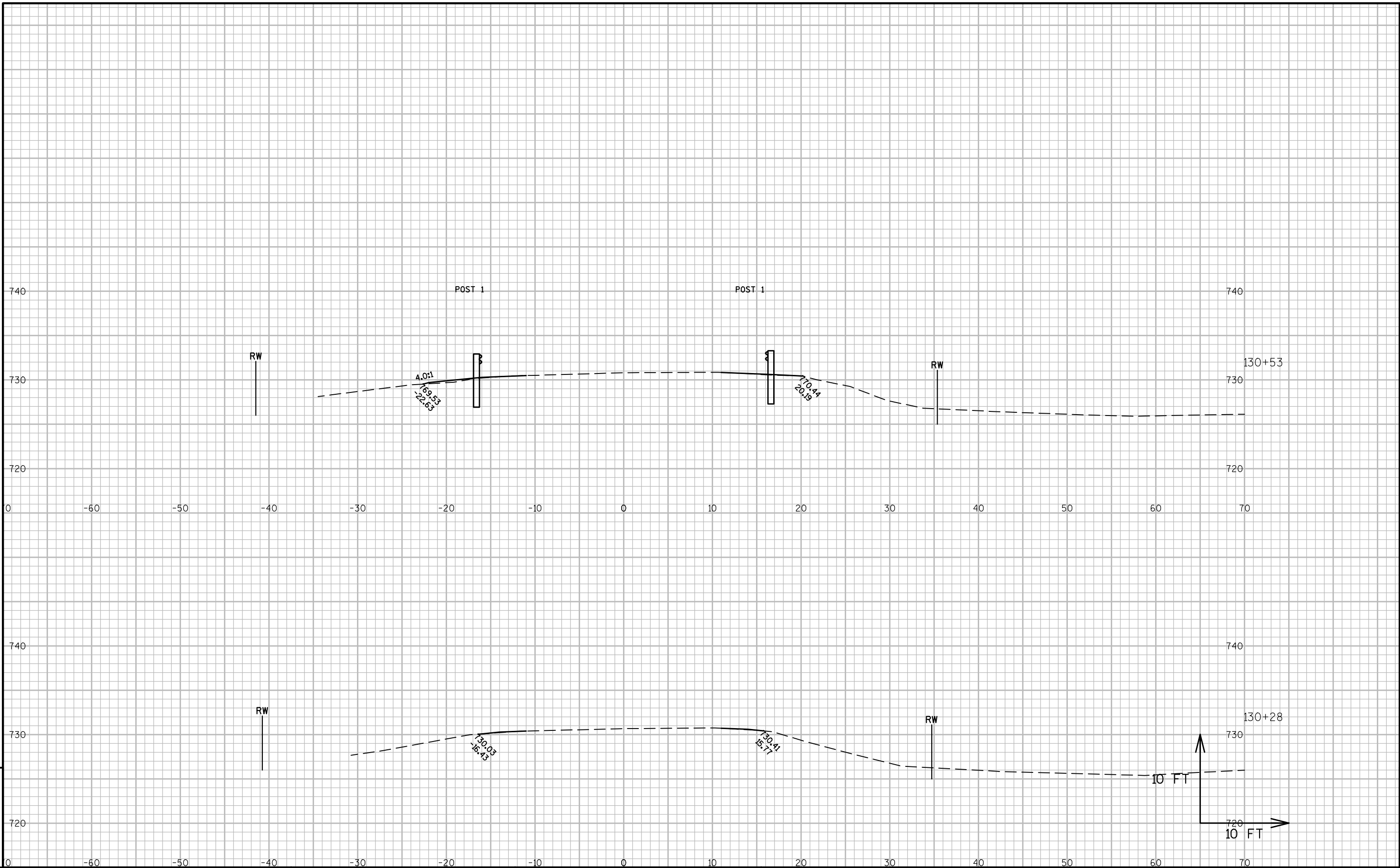
COUNTY:RICHLAND

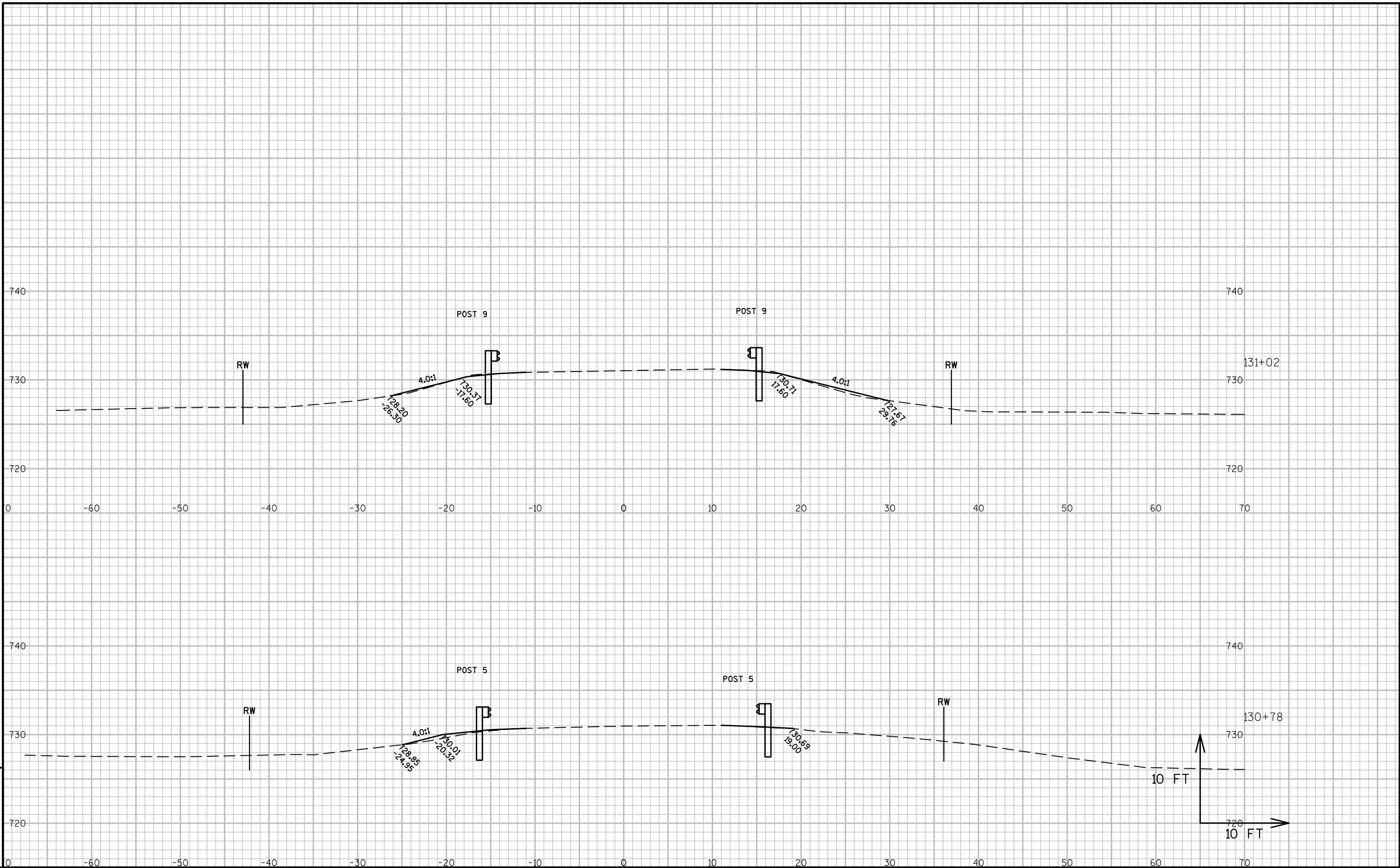
CROSS SECTIONS: LOCATION 1

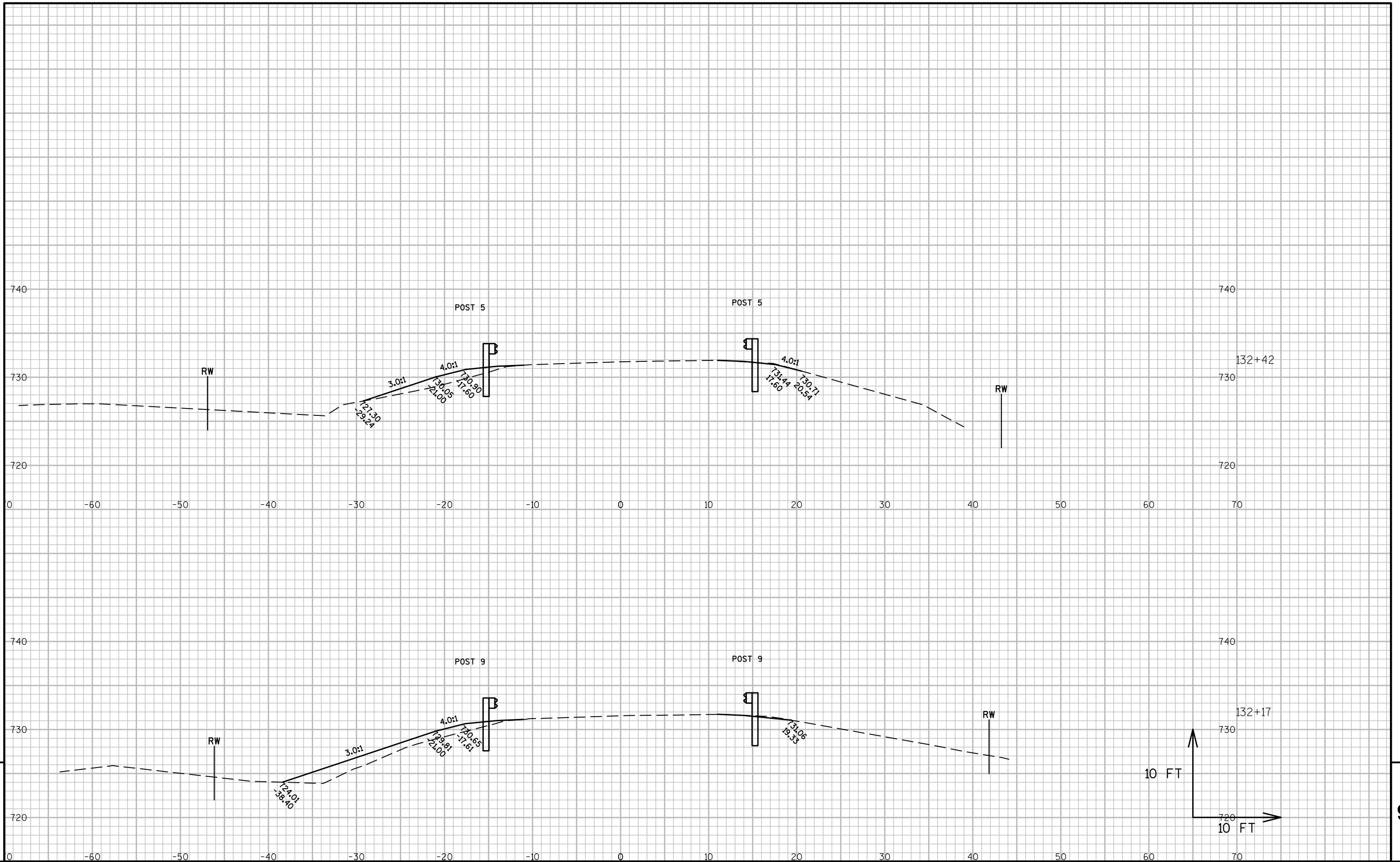
SHEET

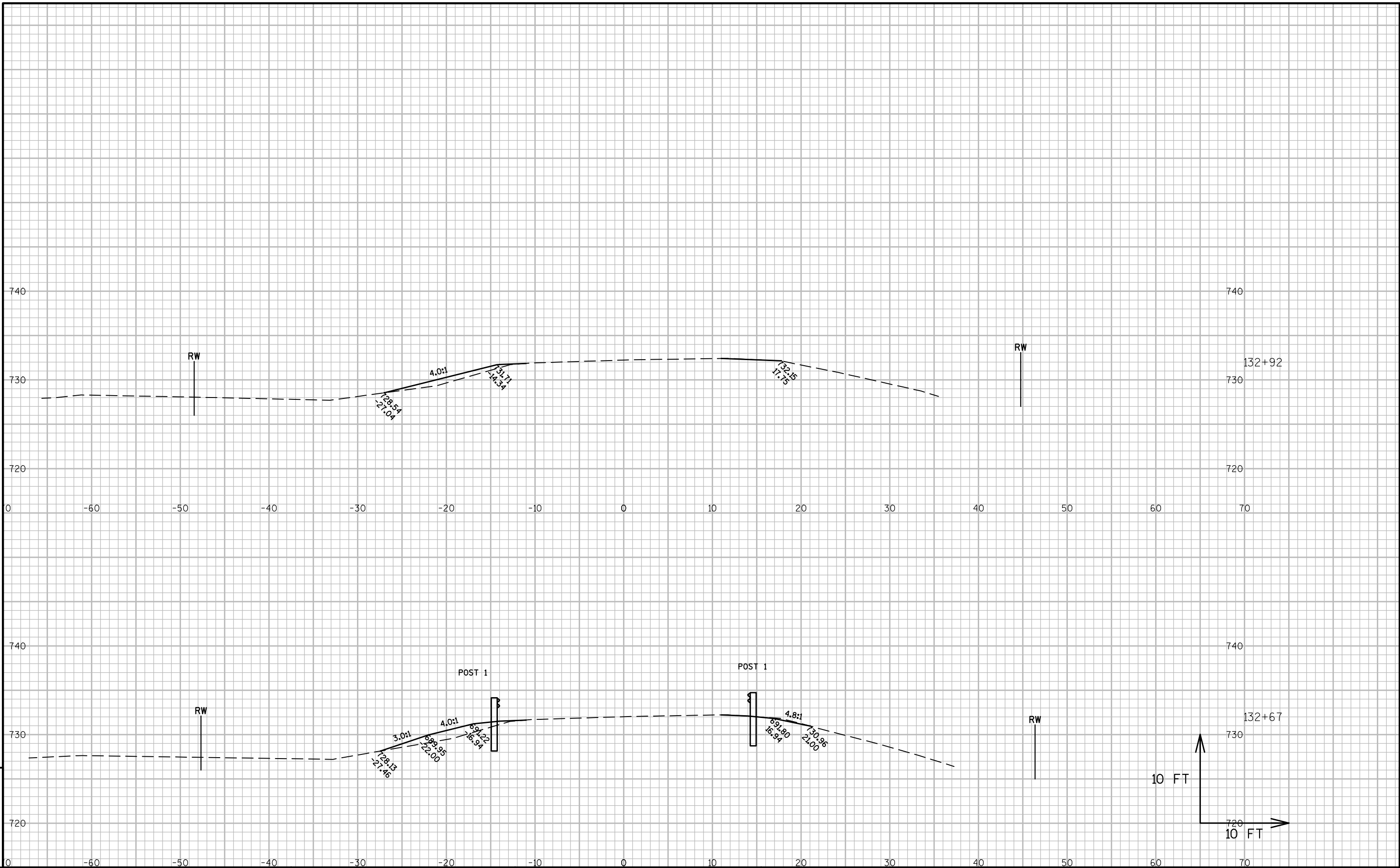
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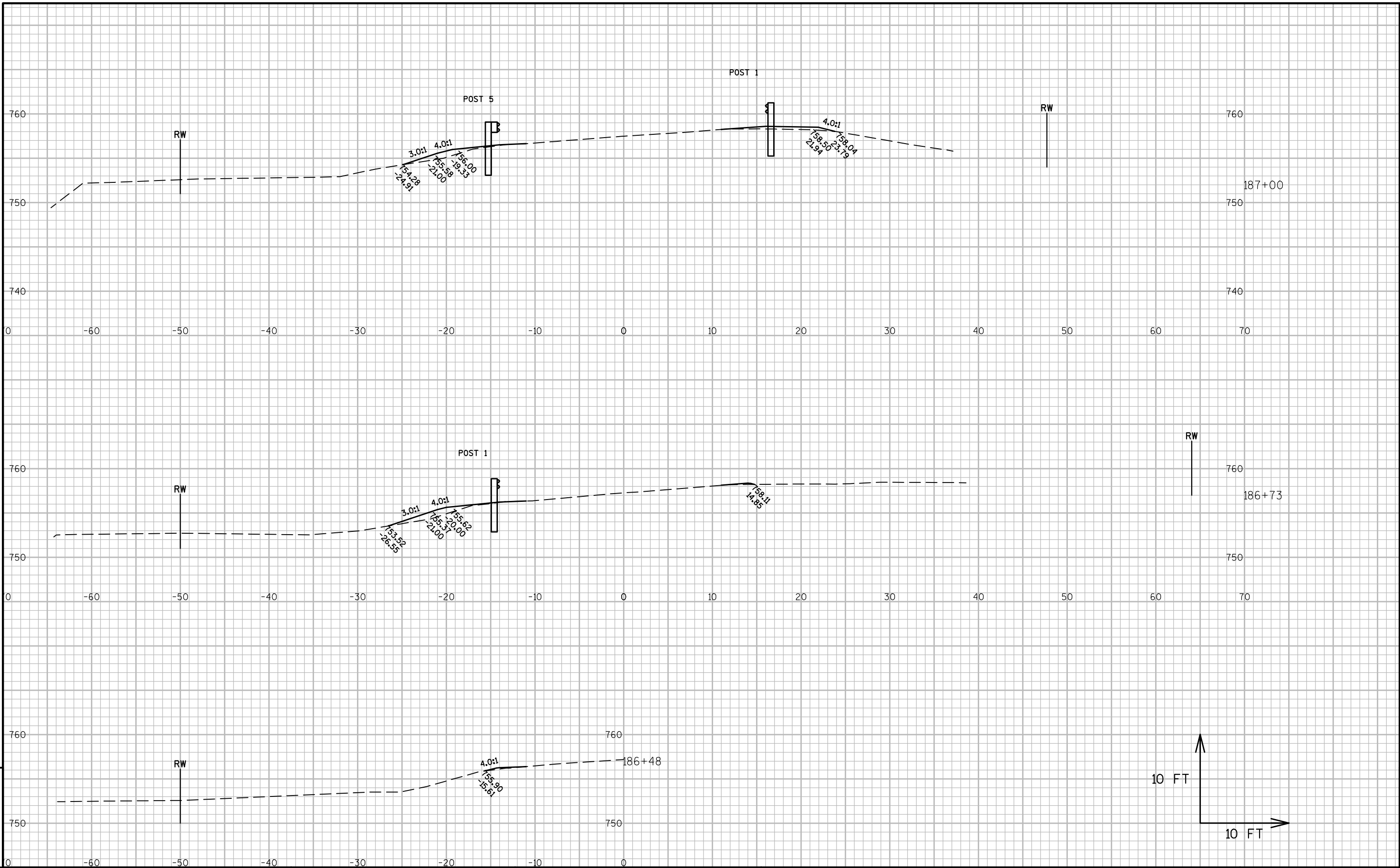
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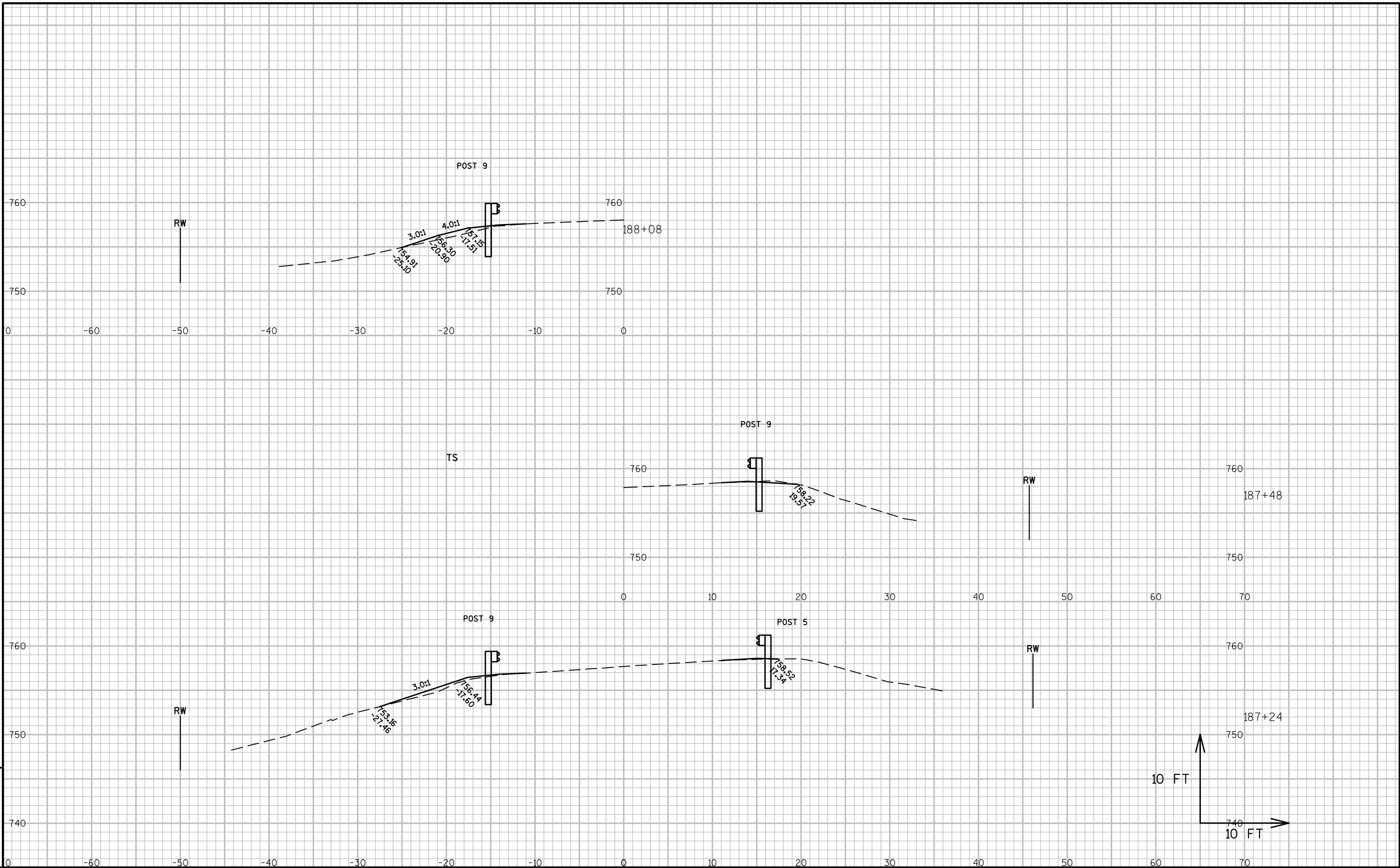


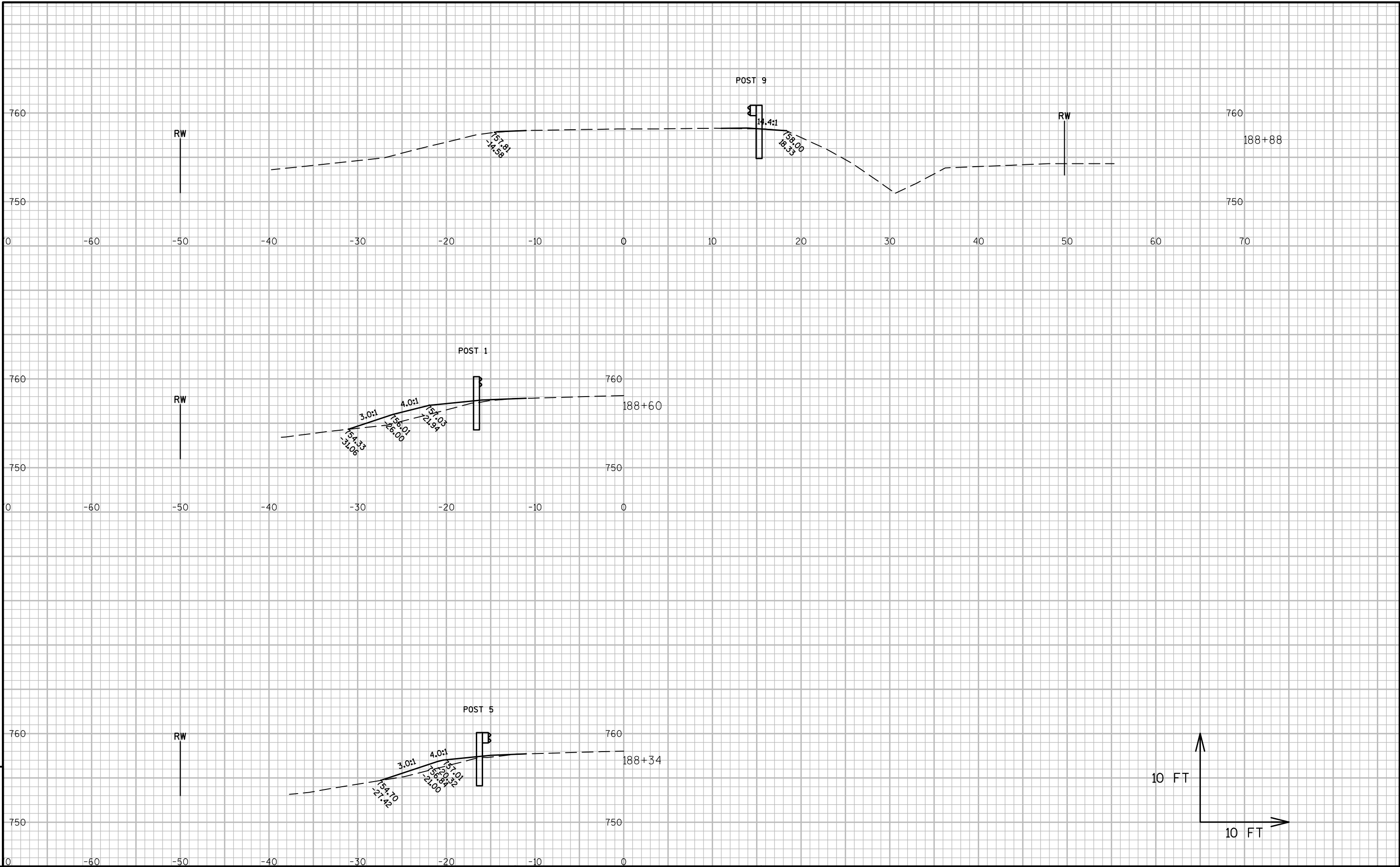




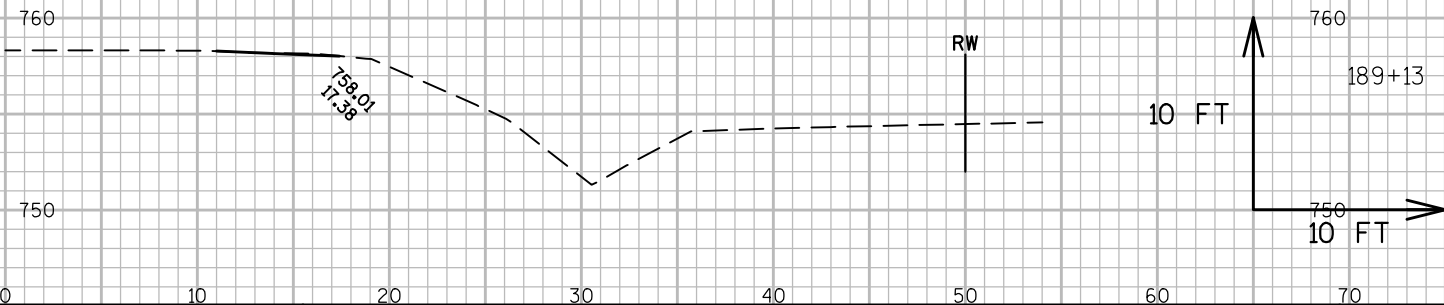
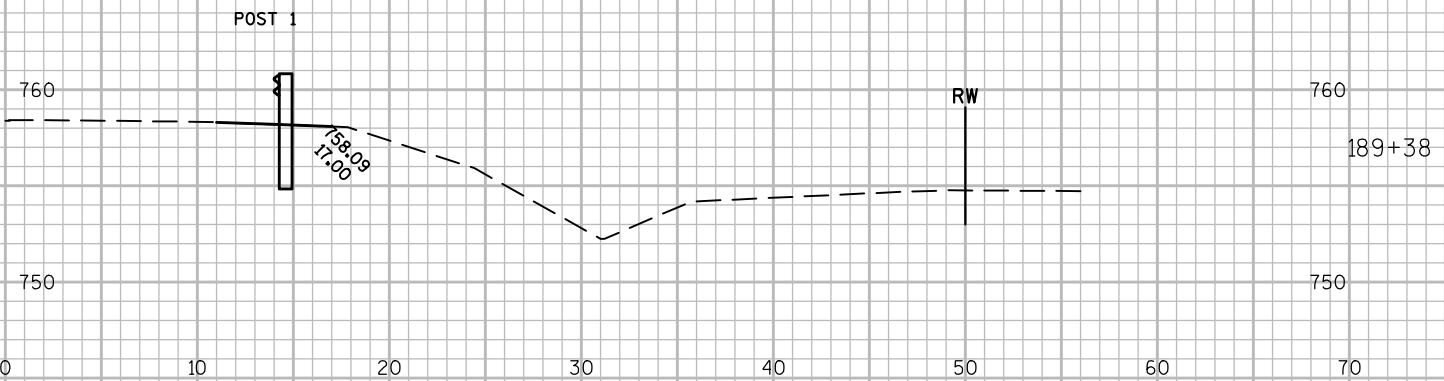
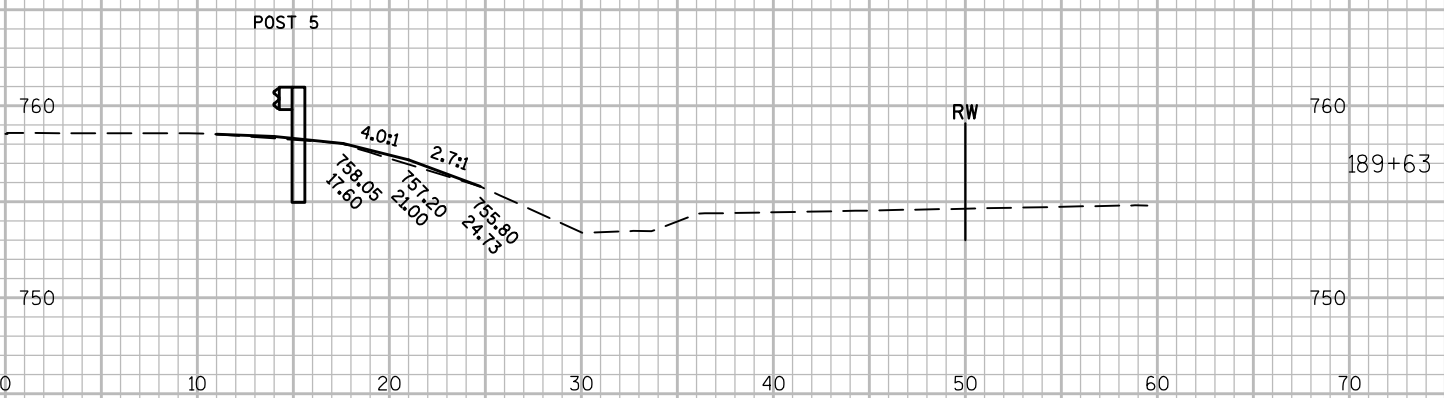




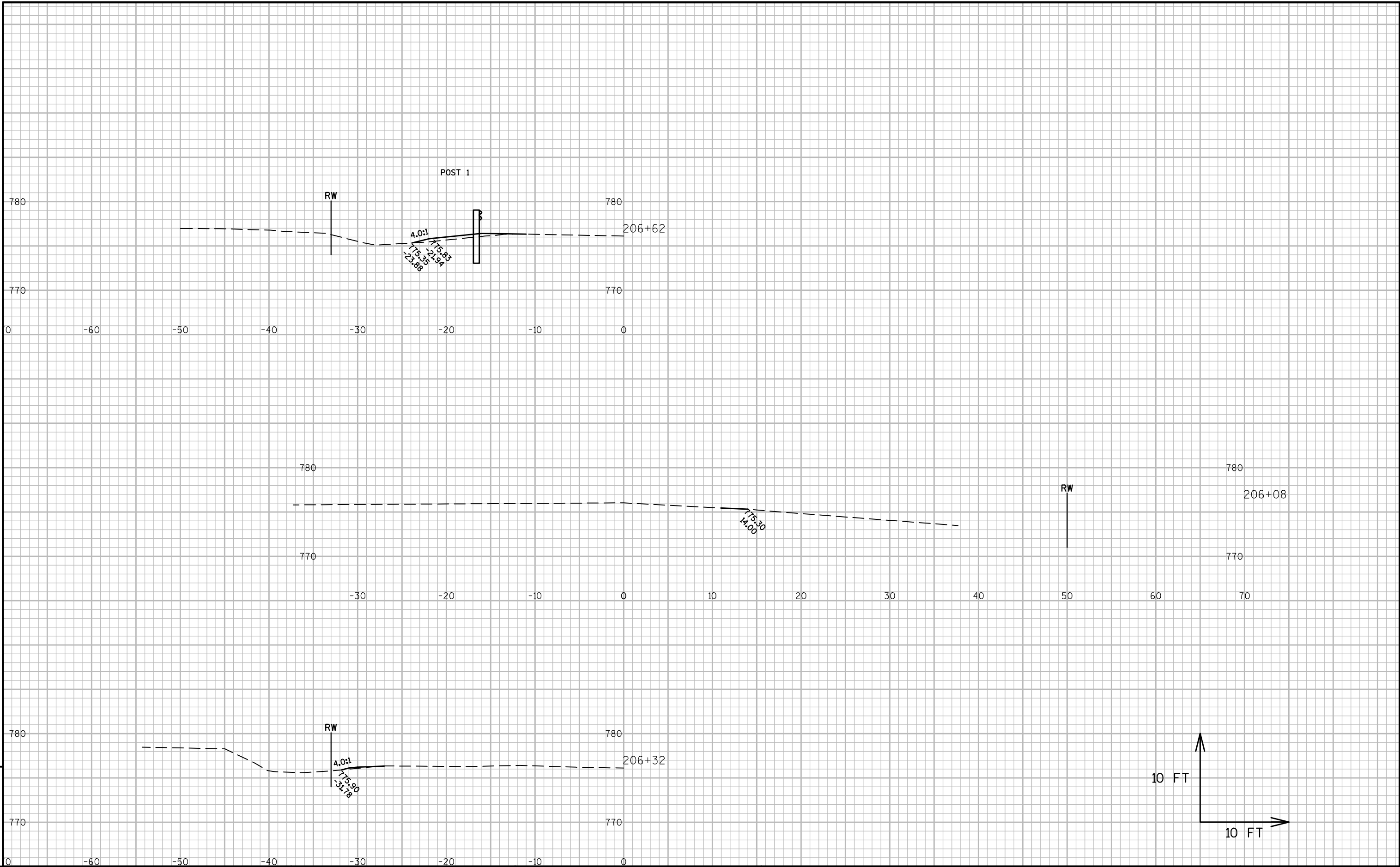


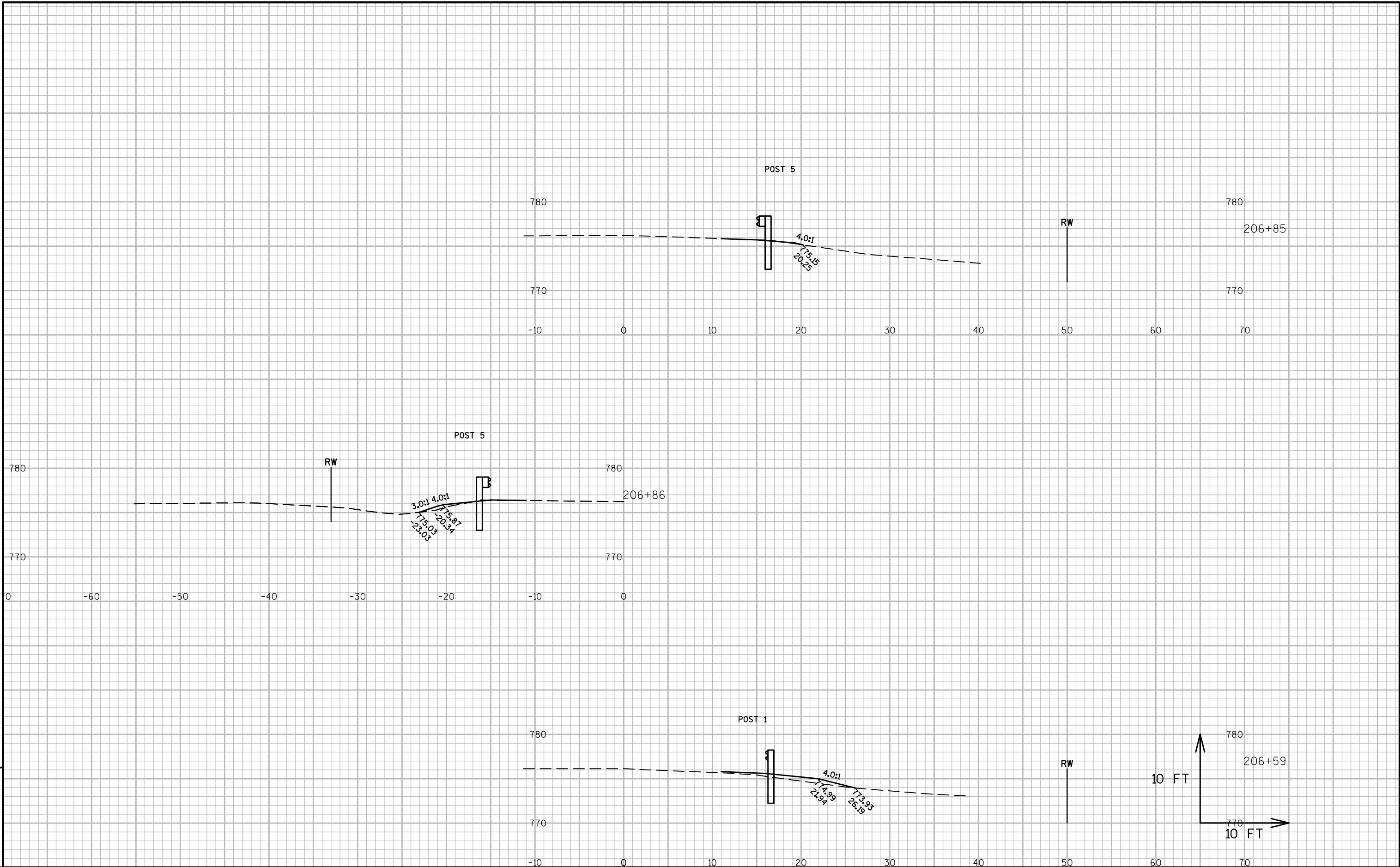


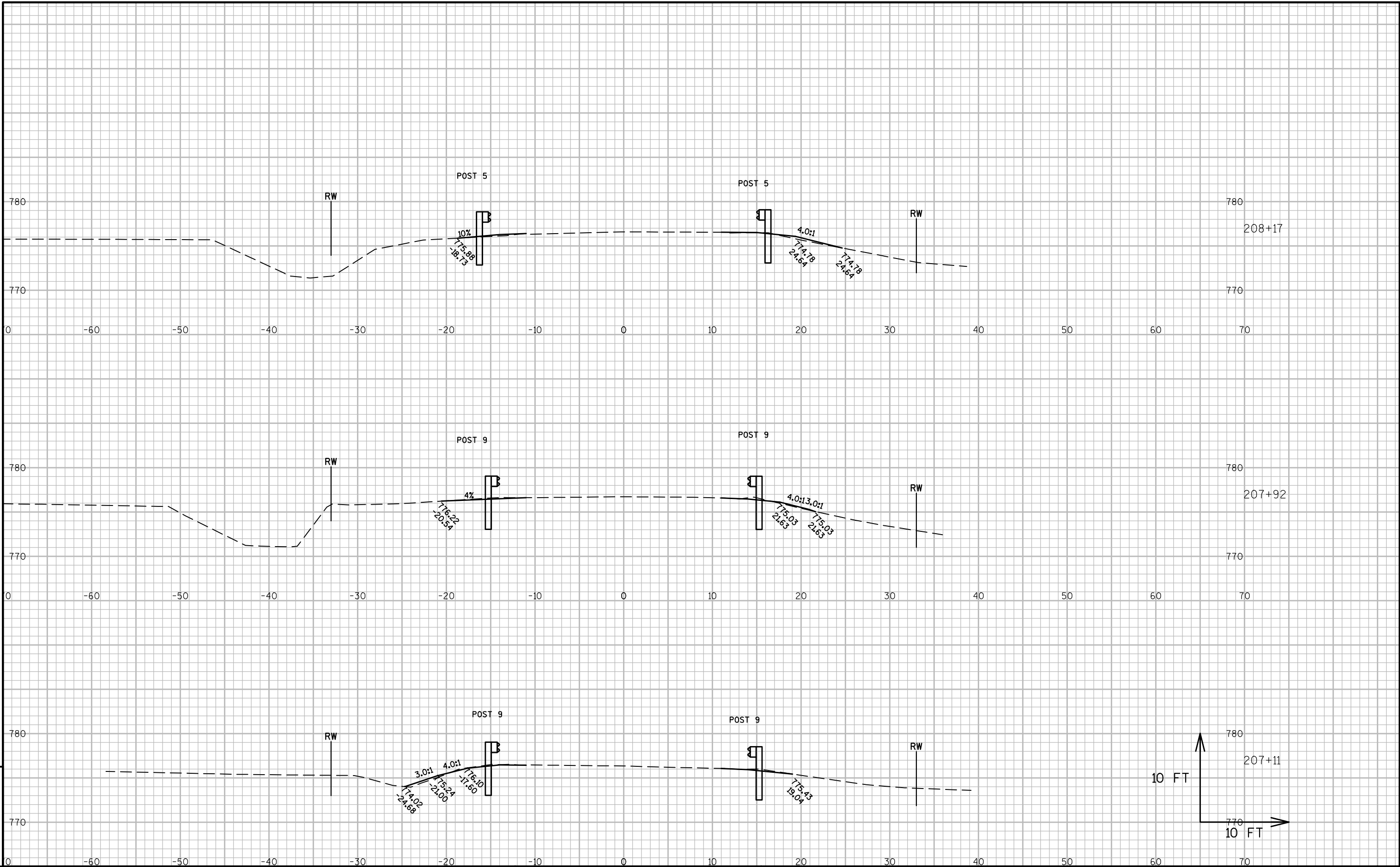
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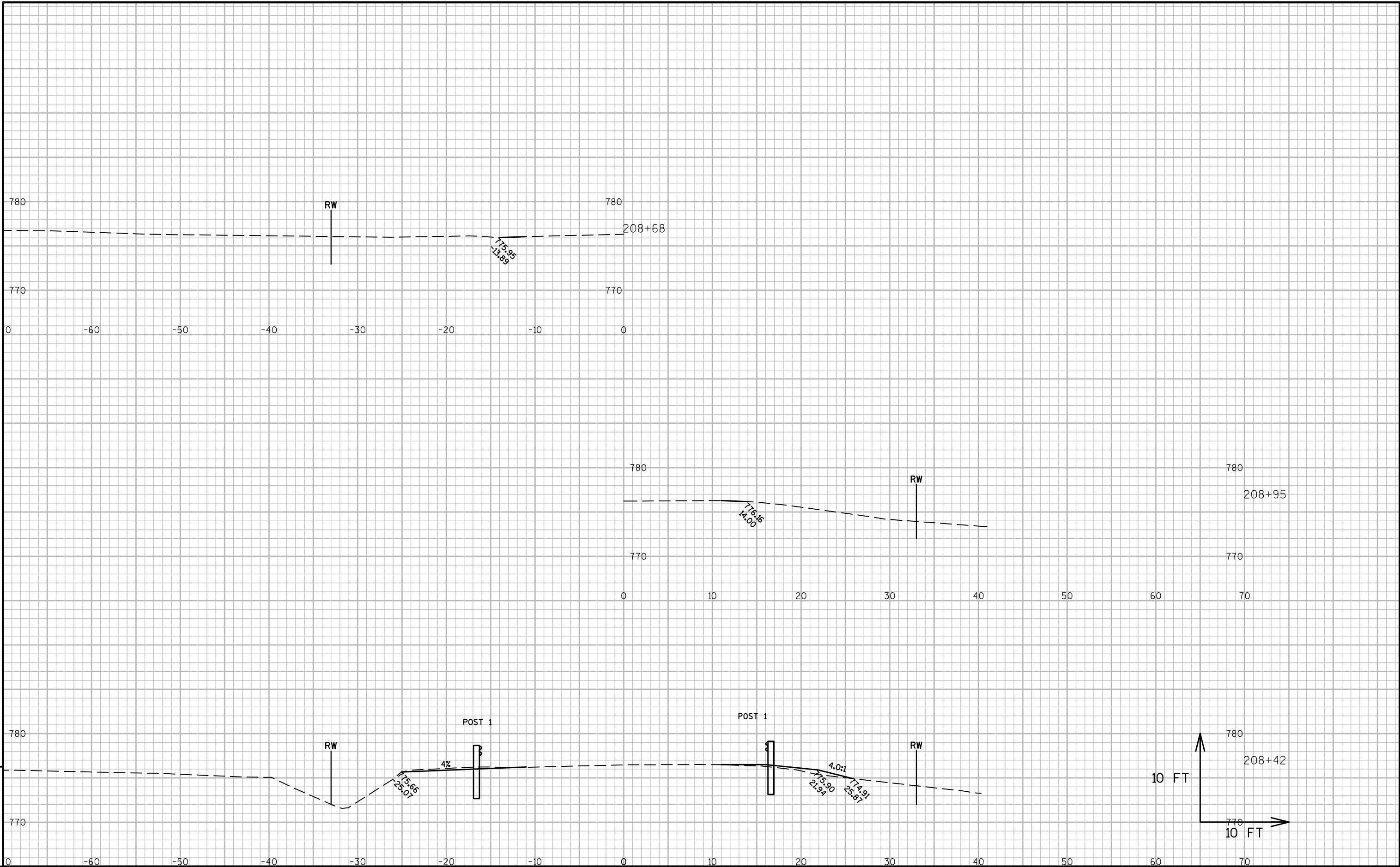


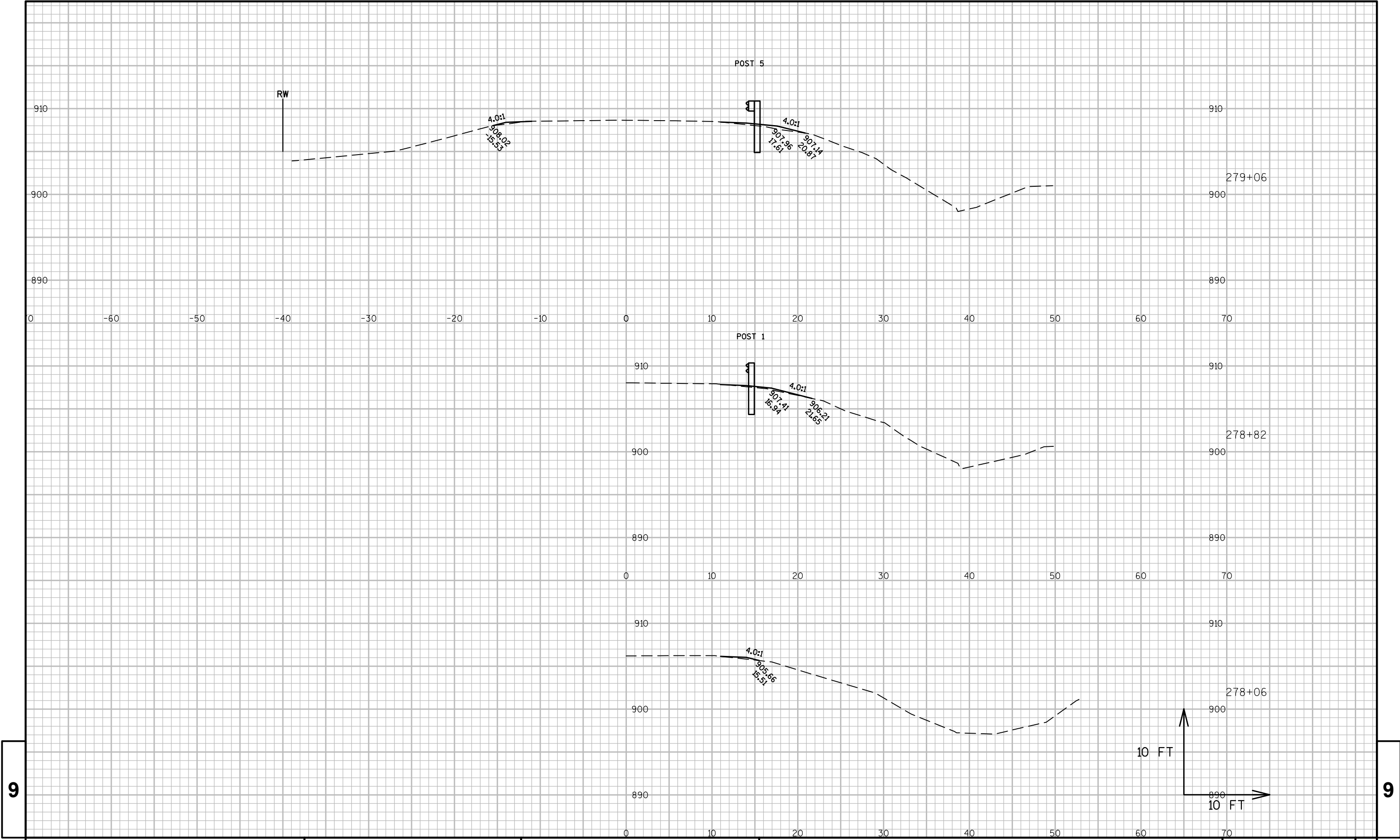
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PROJECT NO:5198-01-60

HWY:CTH Q

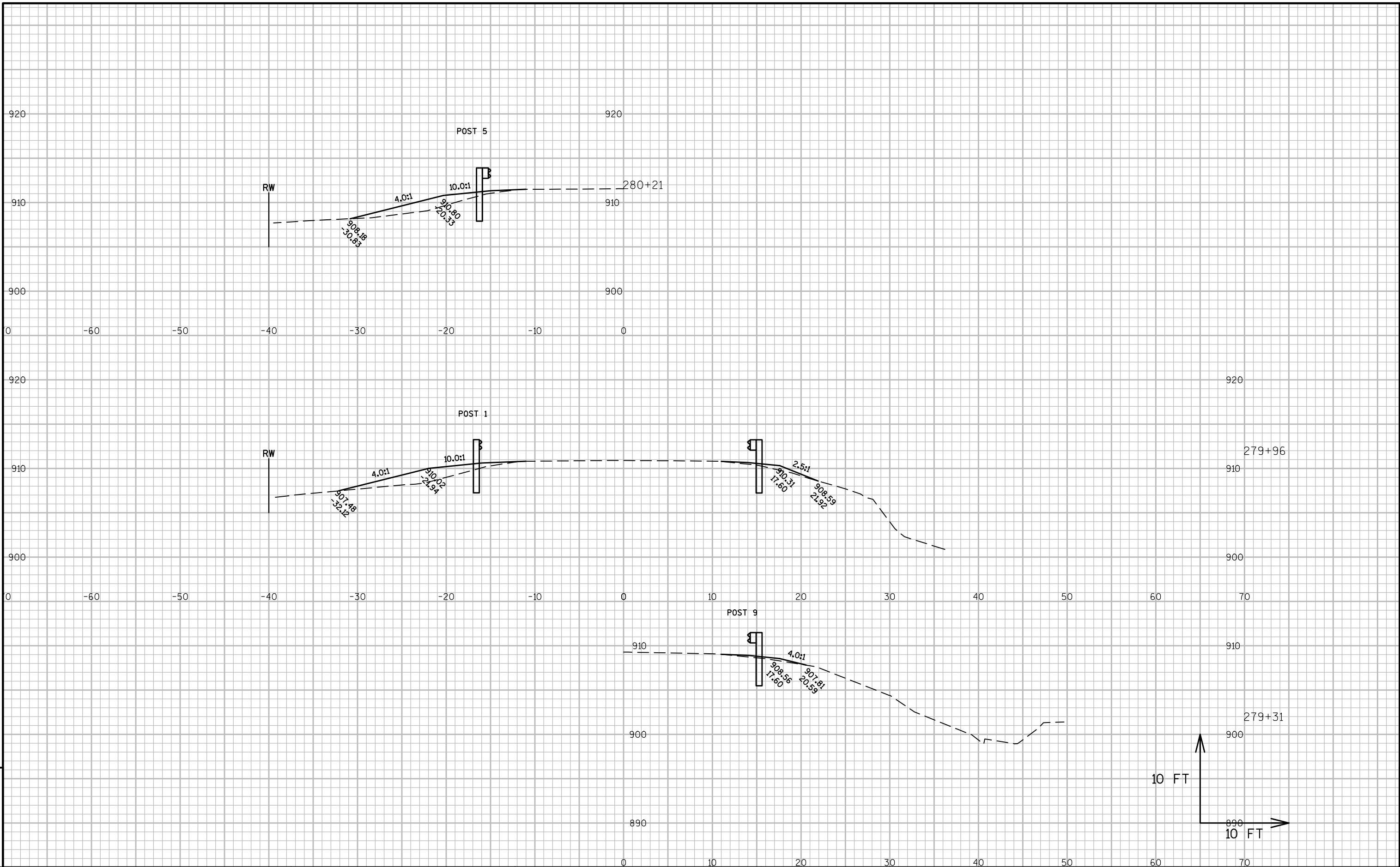
COUNTY:RICHLAND

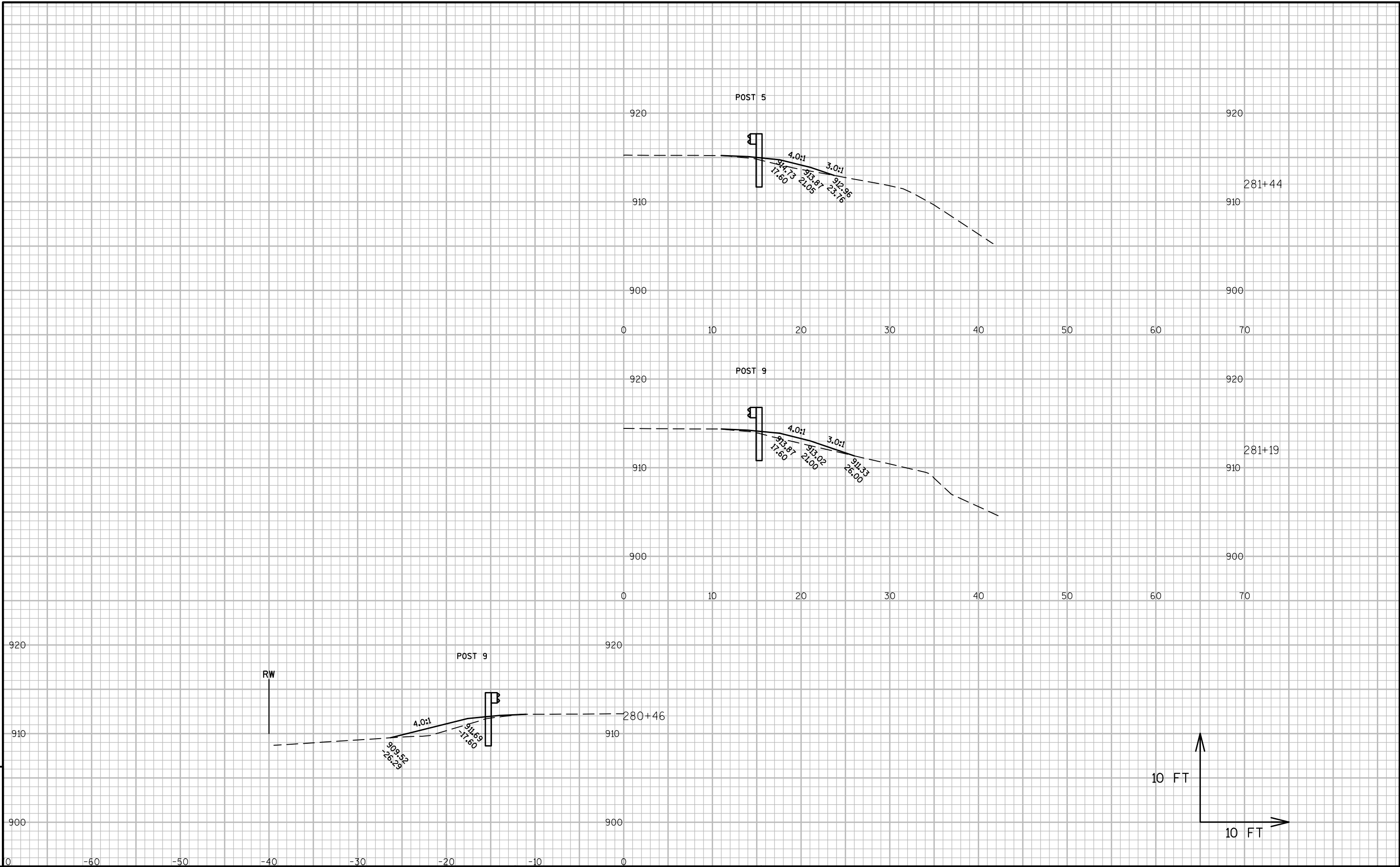
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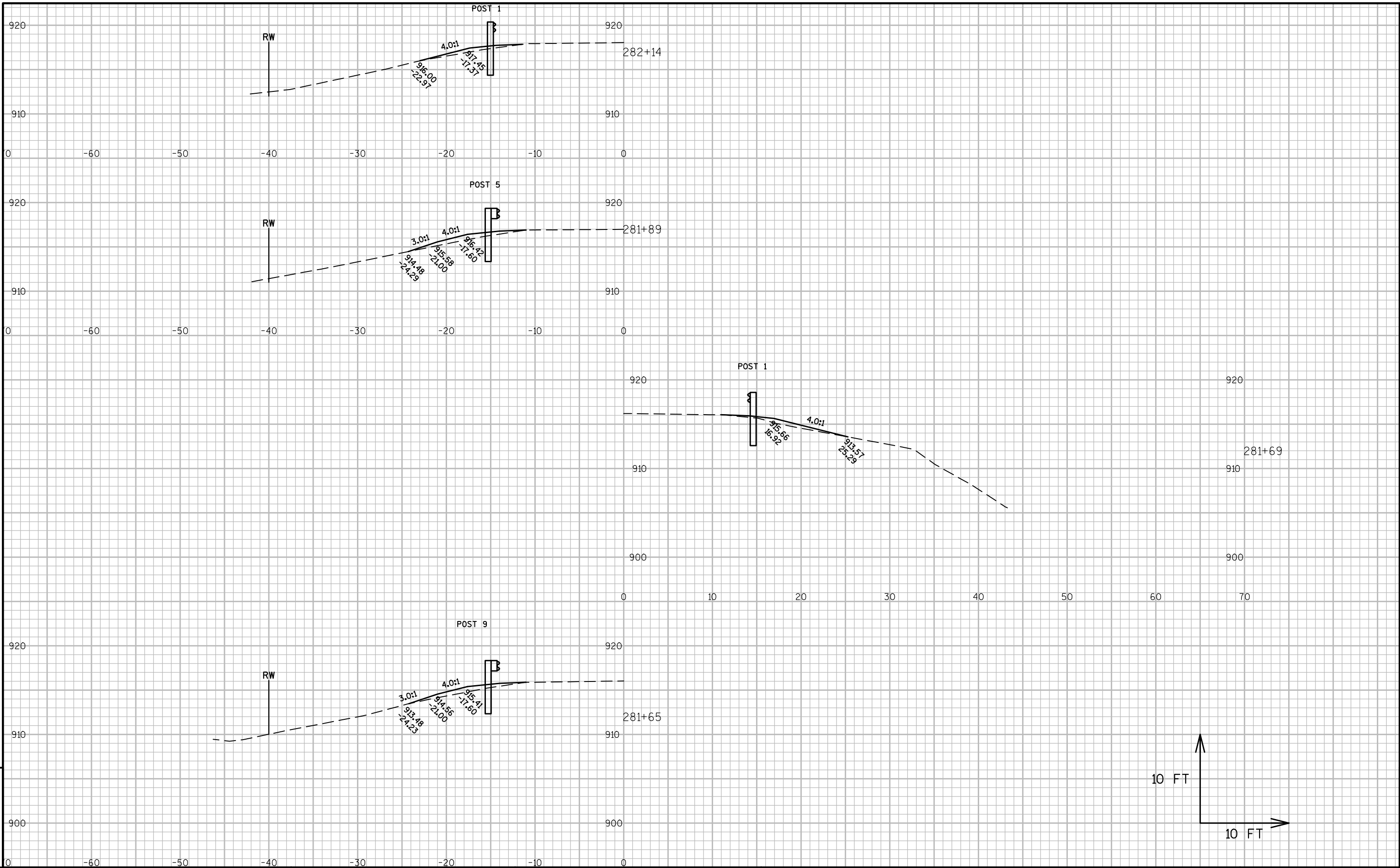
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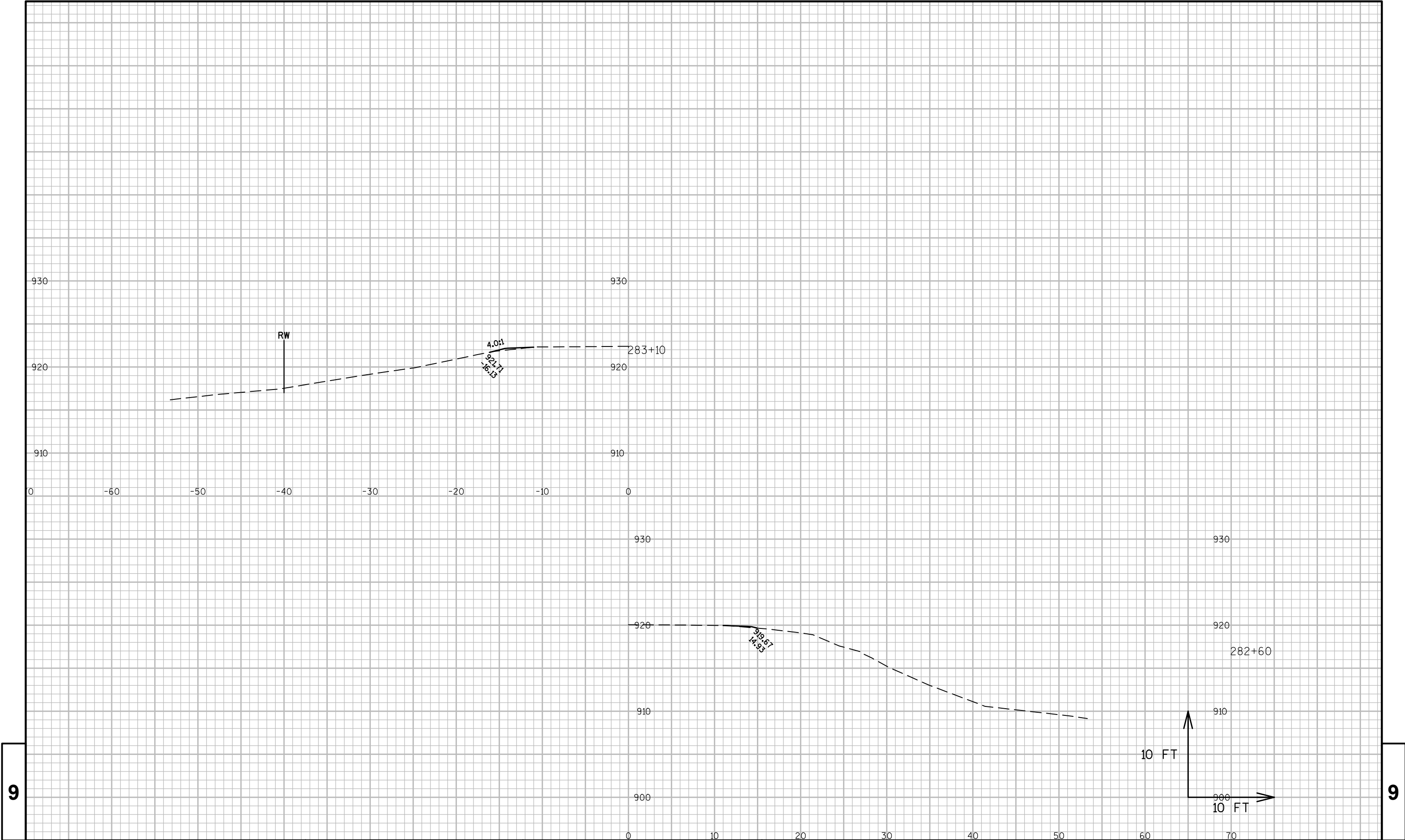
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E









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PROJECT NO:5198-01-60

HWY:CTH Q

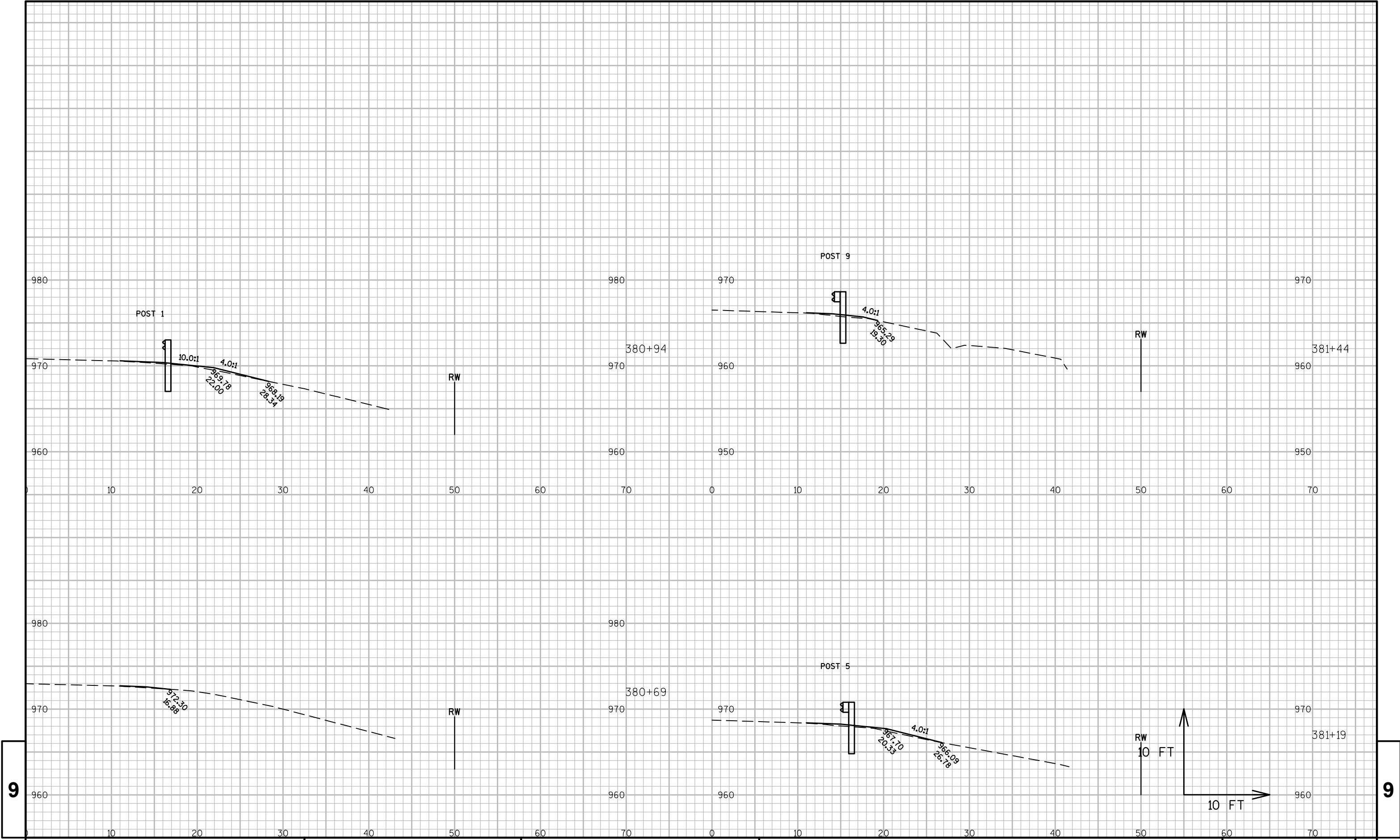
COUNTY:RICHLAND

CROSS SECTIONS: LOCATION 5

SHEET

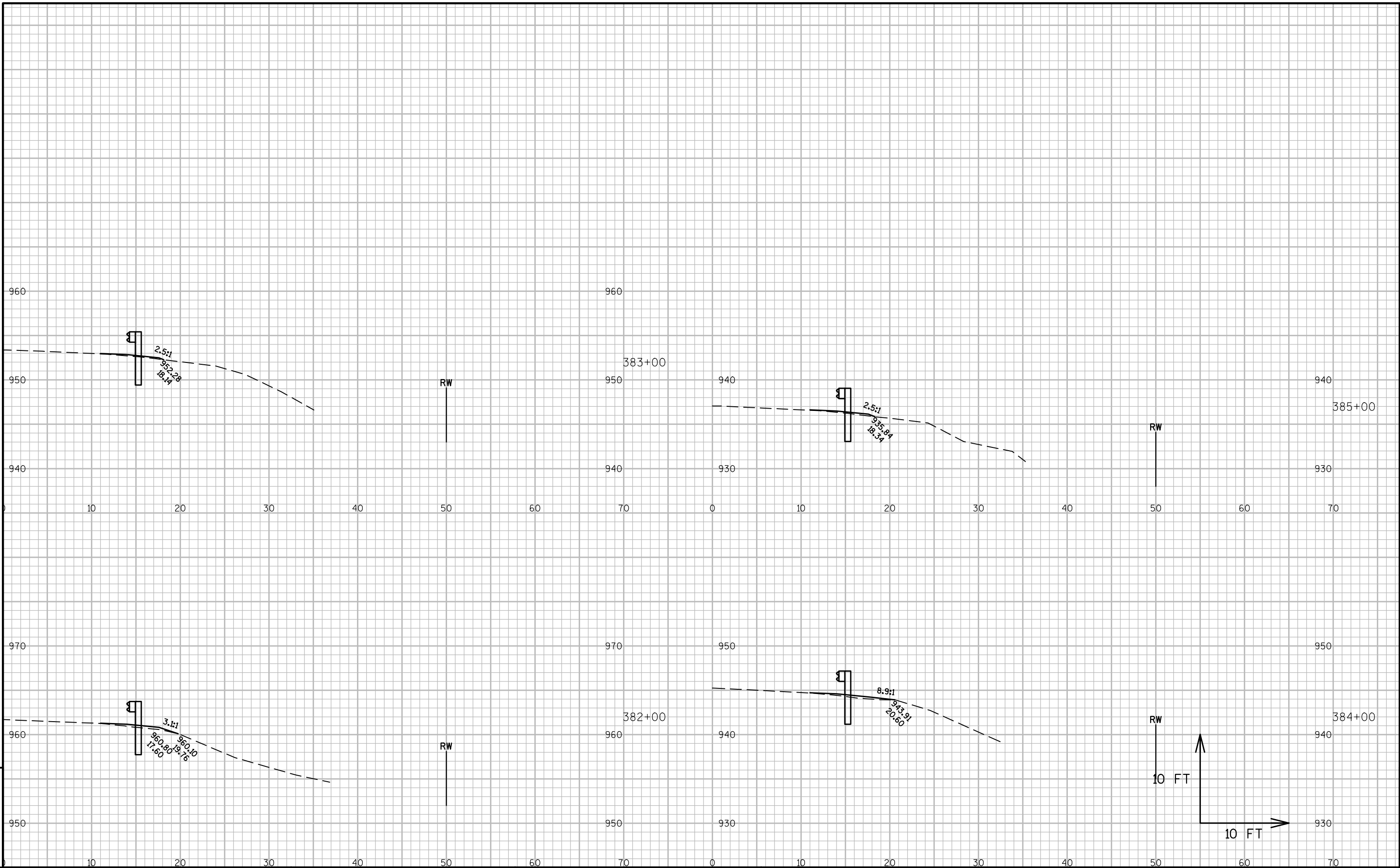
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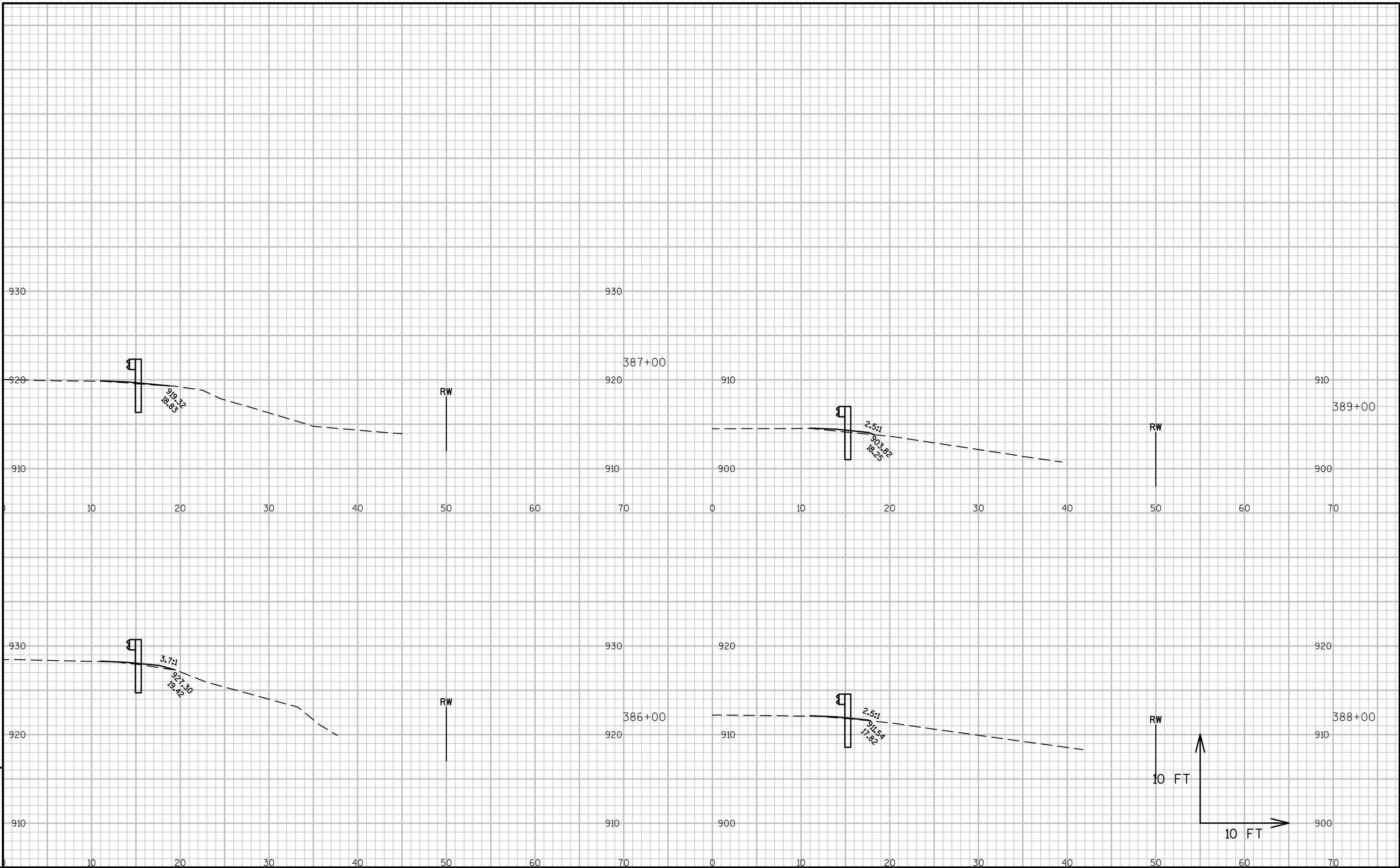
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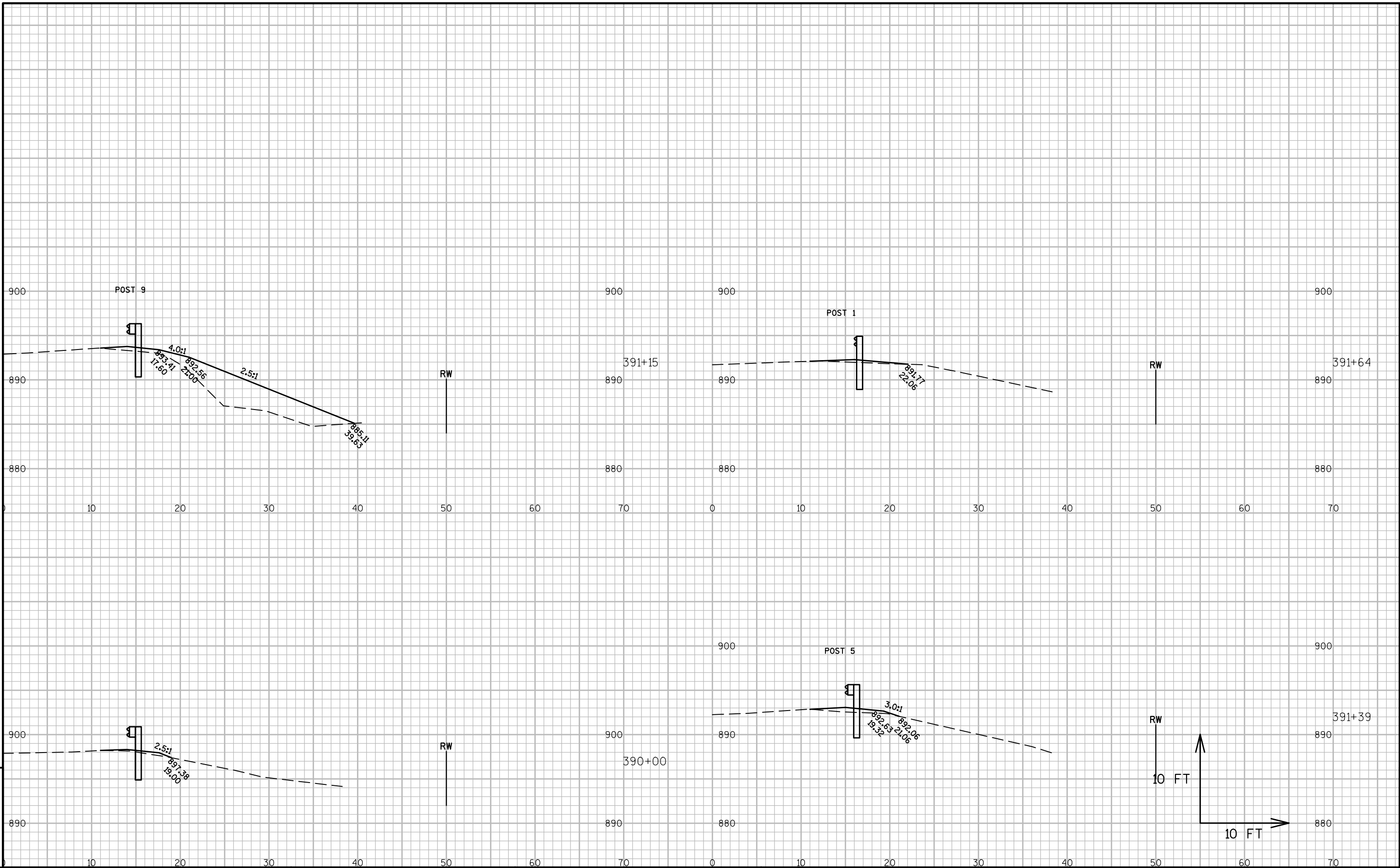
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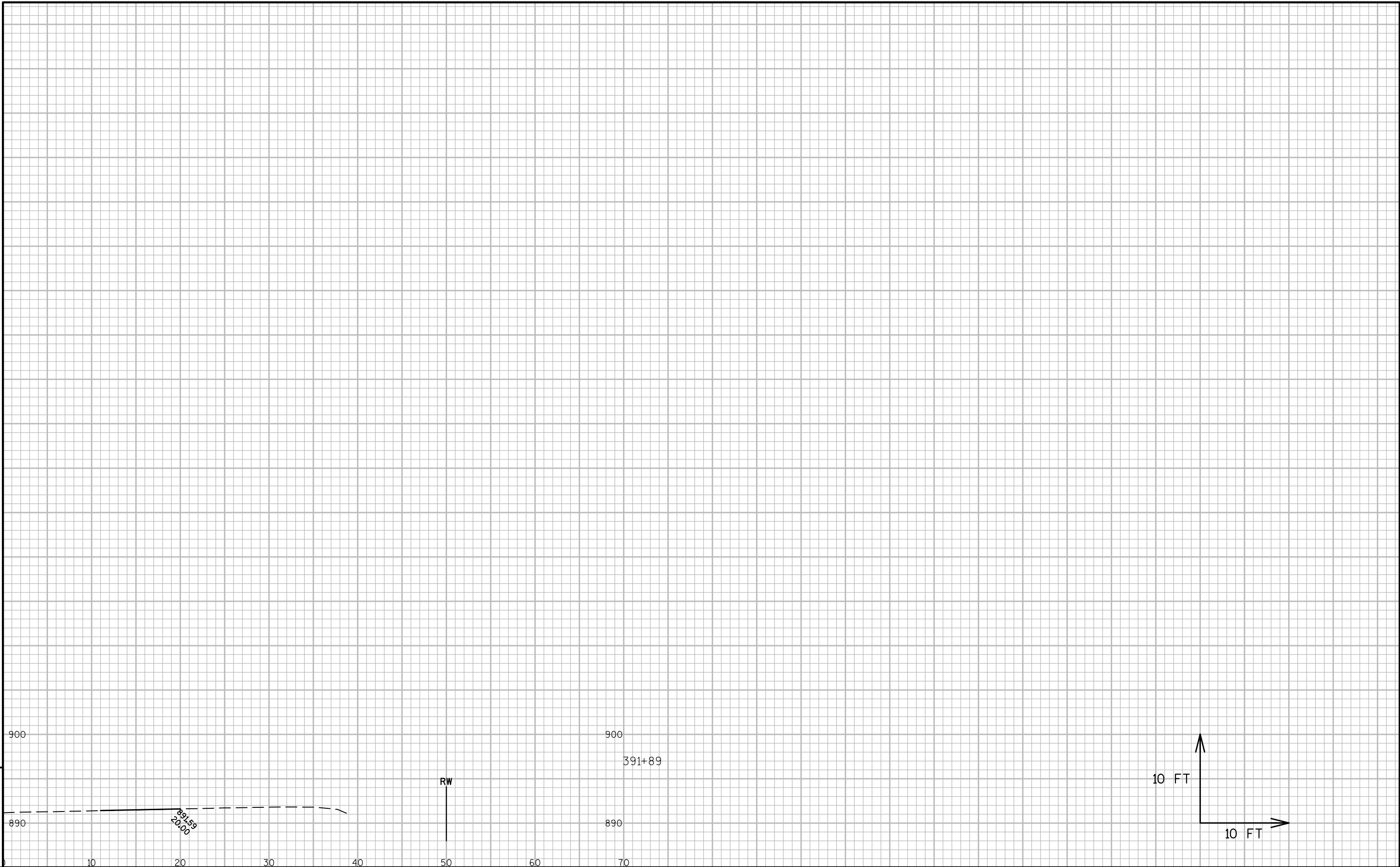


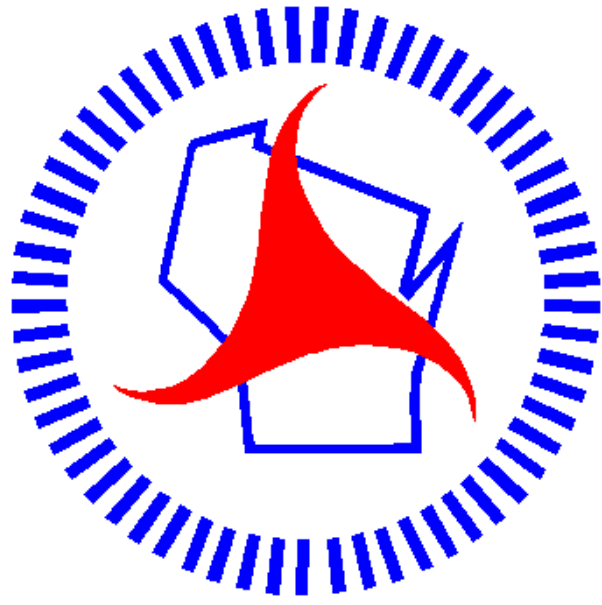


9

9







Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>