

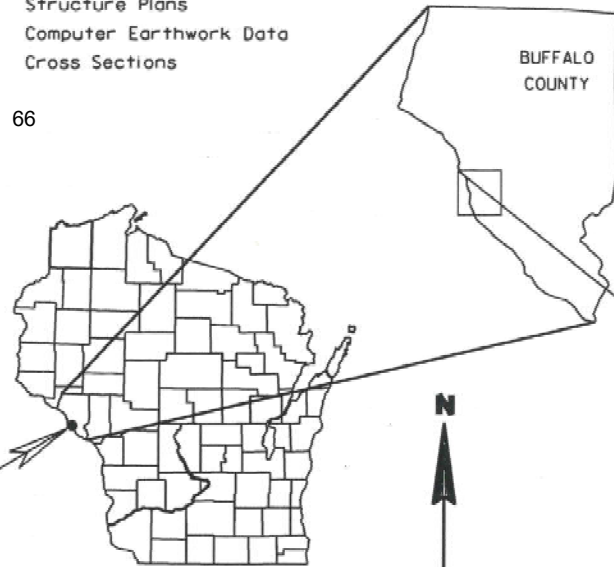
NOVEMBER 2021
ORDER OF SHEETS

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

TOTAL SHEETS = 66

34

PROJECT LOCATION



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

PRAIRIE MOON ROAD - CTH 0

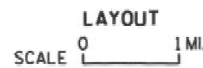
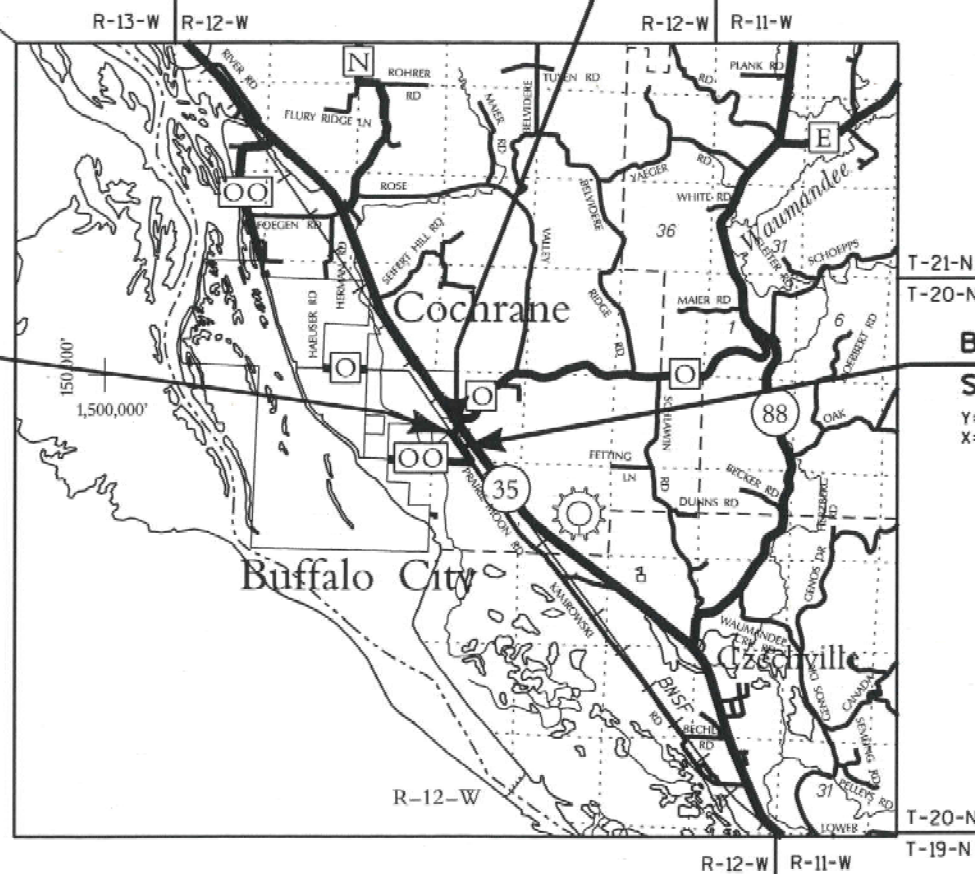
BR ROSE VALLEY CREEK BR B-06-0197

CTH 00

BUFFALO COUNTY

STATE PROJECT NUMBER
7356-00-70

STRUCTURE B-6-197



TOTAL NET LENGTH OF CENTERLINE = 0.024 MI.

DESIGN DESIGNATION

A.A.D.T. (2022)	=	700
A.A.D.T. (2042)	=	950
D.H.V.	=	70
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	35 MPH
ESALS	=	73,000

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	OVERHEAD
EXISTING CULVERT	ELECTRIC
PROPOSED CULVERT (Box or Pipe)	FIBER OPTIC
COMBUSTIBLE FLUIDS	GAS
HIGH VOLTAGE	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

ACCEPTED FOR

County of Buffalo

7/19/21
Date
Bl. Plattner
Highway Commissioner

ORIGINAL PLANS PREPARED BY

AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



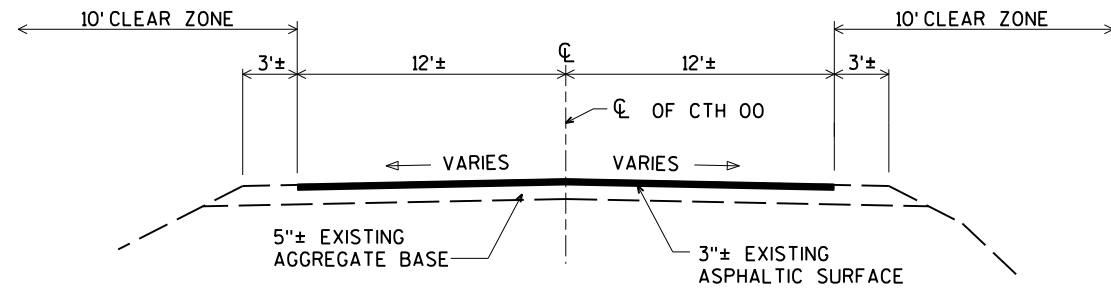
DATE 7/26/2021

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

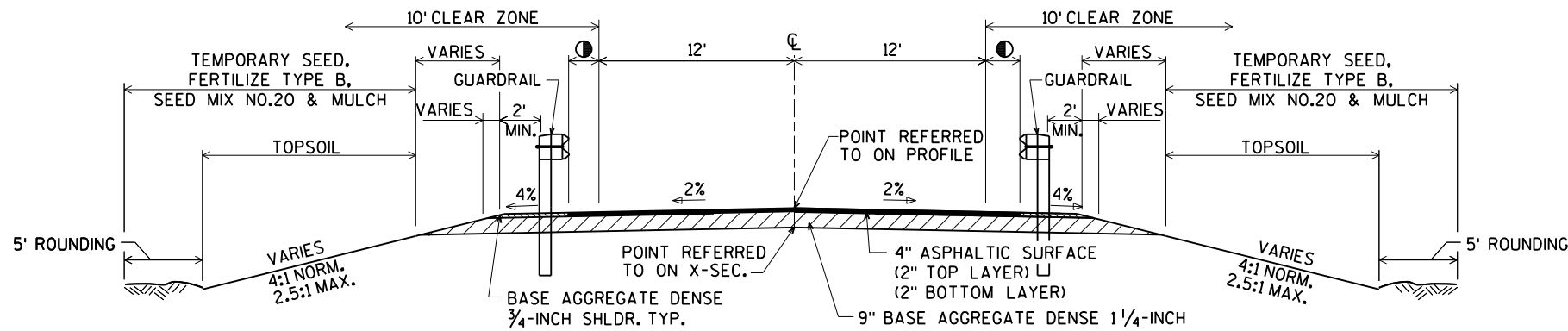
PREPARED BY	
Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
Project Manager	MATTHEW THORNSEN, PE
Regional Examiner	TOU YANG, PE
Regional Supervisor	TYLER RONGSTAD, PE

APPROVED FOR THE DEPARTMENT
DATE: 7/26/2021
Matthew Thorsen P.E.
Digitally signed by Matthew Thorsen P.E.
Date: 2021.07.26 10:00:47-0500
(Signature)

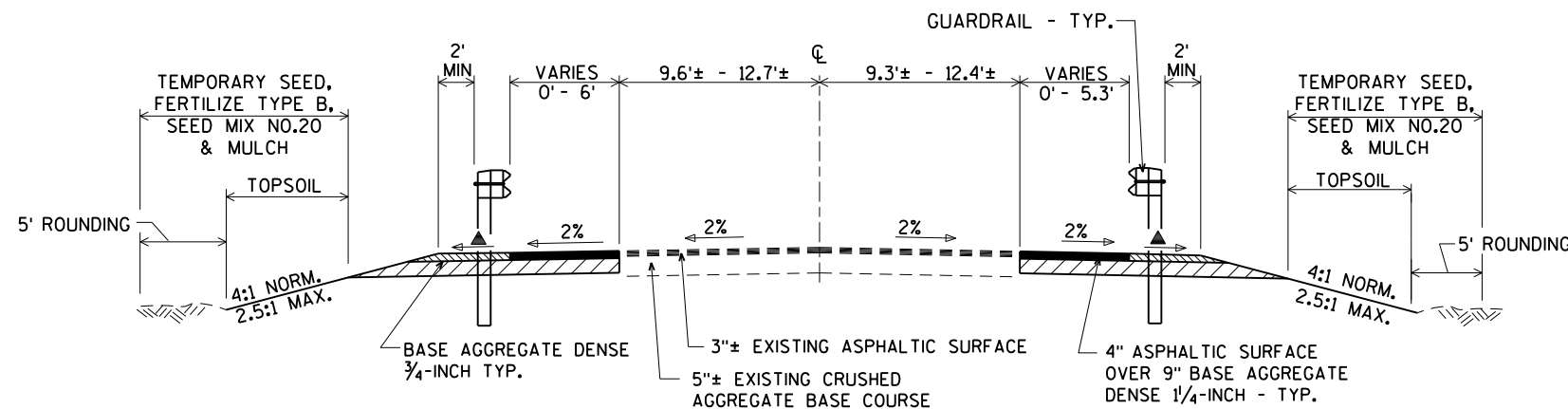
E



EXISTING TYPICAL SECTION
 STA. 9+36.88 - STA. 10+63.13



FINISHED TYPICAL SECTION ● VARIES, 2' MIN. - 2.4' MAX.
 STA. 9+36.88 - STA. 9+86.88
 STA. 10+13.13 - STA. 10+63.13



TYPICAL FINISHED SECTION - SHOULDER WIDENING
 ▲ 4%
 STA. 7+77.19 - STA. 9+36.88 LT; STA. 7+27.19 - STA. 9+36.88 RT
 STA. 10+63.13 - STA. 12+72.81 LT; STA. 10+63.13 - STA. 12+23.22 RT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

AMY LESIK
 1300 WEST CLAIREMONT AVENUE
 EAU CLAIRE, WI 54701
 715-836-6571
 715-495-1903
 amy.l.lesik@wisconsin.gov

DESIGNER

AYRES ASSOCIATES
 3433 OAKWOOD HILLS PARKWAY
 EAU CLAIRE, WI 54701
 ATTN: DANIEL N. SYDOW
 715-834-3161
 sydow@AyresAssociates.com

COUNTY CONTACT:

BUFFALO COUNTY, HIGHWAY COMMISSIONER
 S1672 STATE ROAD 37
 ALMA, WI 54610
 ATTN: BOB PLATTETER
 608-685-6226A
 bob.platteter@co.buffalo.wi.us

GENERAL NOTES

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

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEED, AND MULCHED AS DIRECTED BY THE ENGINEER.

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

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).

ASPHALT SURFACE SHALL USE 1/2" NOMINAL AGGREGATE SIZE.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.

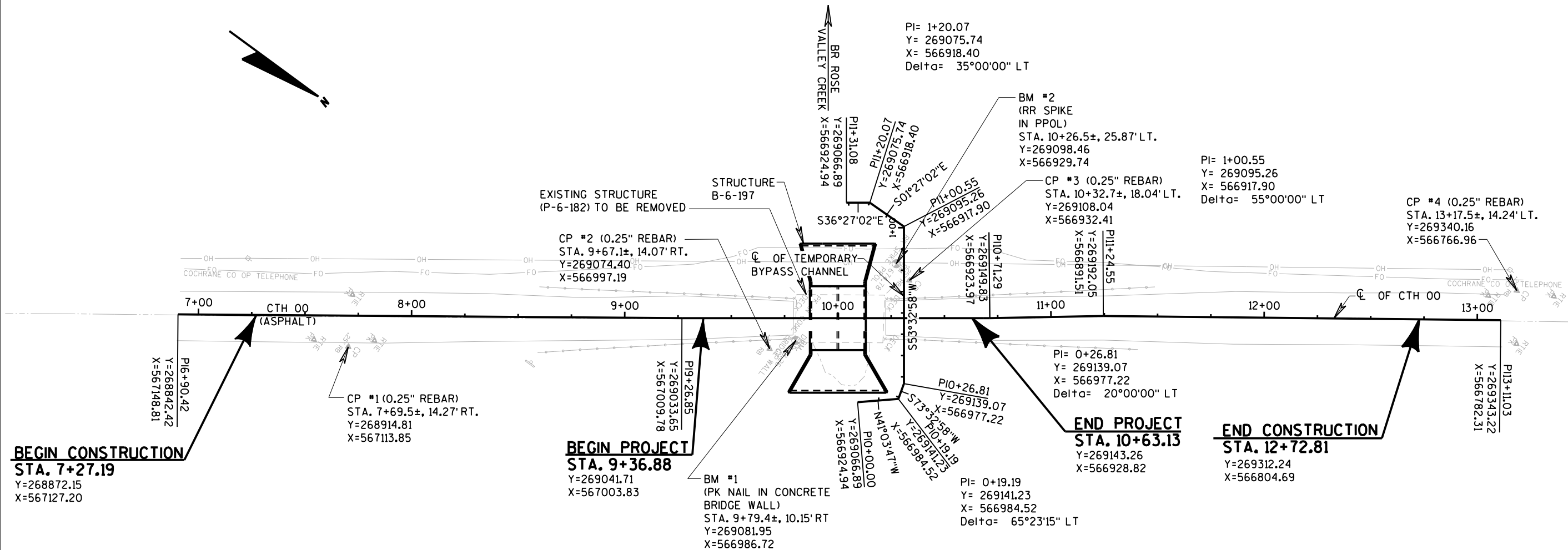
UTILITIES

XCEL ENERGY - ELECTRIC
 320 HELLER ROAD
 MENOMONIE, WI 54751
 ATTN: MEGAN BOLDIG
 715-232-7412
 715-308-6211 (CELL)
 megan.m.boldig@xcelenergy.com
 ATTN: CORRISSA SEELY
 715-737-4097
 corriッサ.e.seely@xcelenergy.com

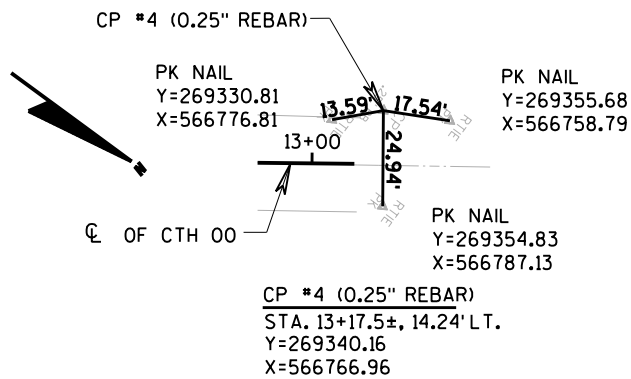
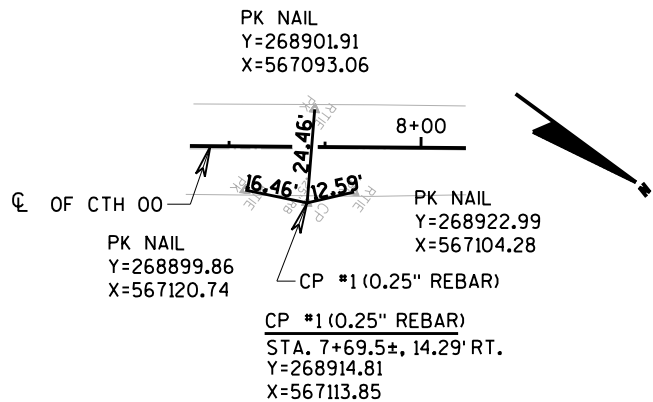
COCHRANE COOPERATIVE TELEPHONE COMPANY - COMMUNICATIONS
 103 W. 5TH STREET
 P.O. BOX 189
 COCHRANE, WI 54622
 ATTN: MATT BIESTERVELD
 608-248-2323
 mbiesterveld@cctcoop.com



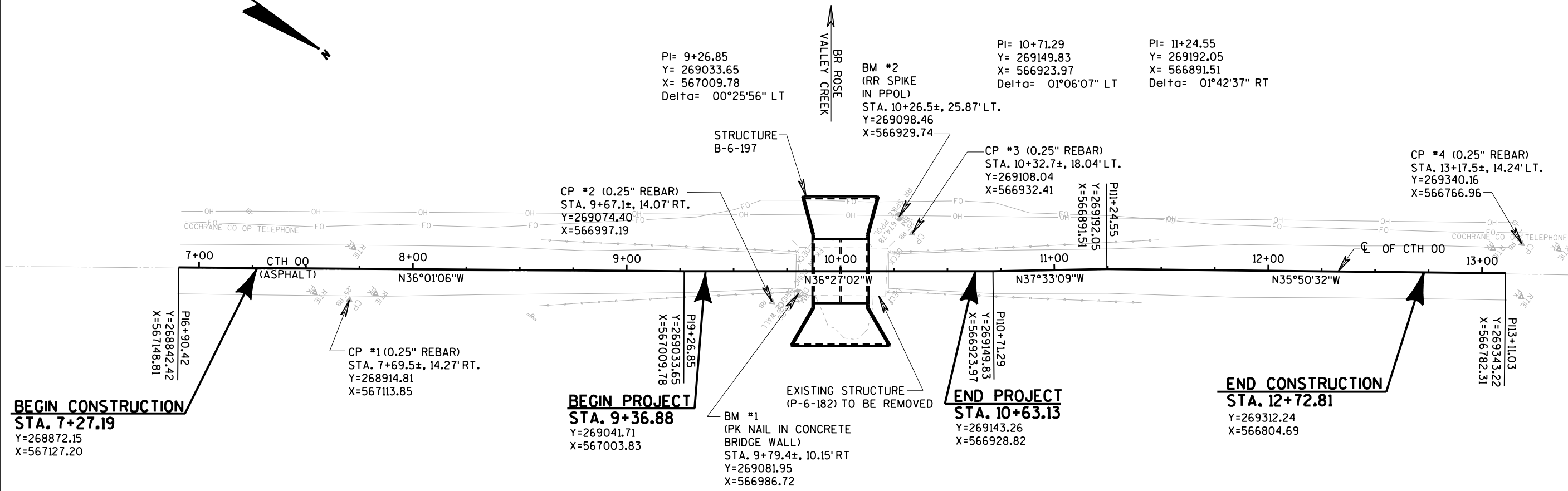
Dial 811 or (800) 242-8511
 www.DiggersHotline.com



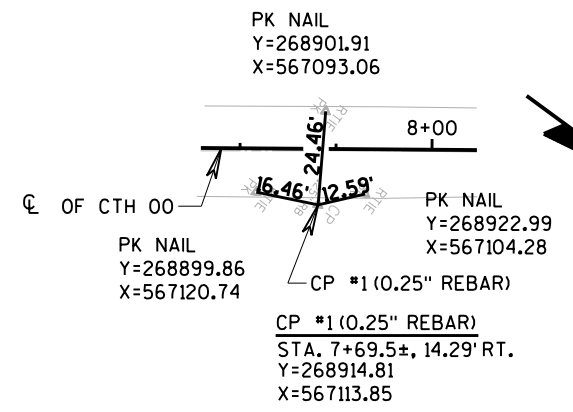
ALIGNMENT CONTROLS



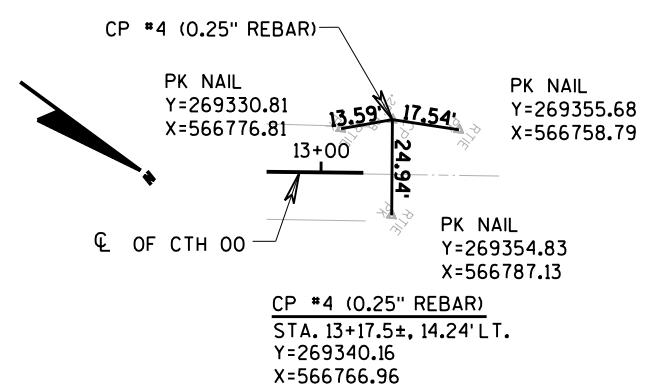
CONTROL POINT TIES

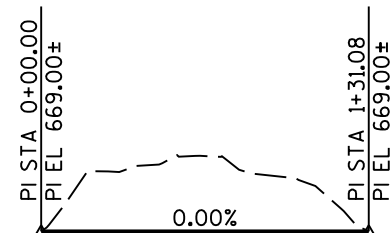
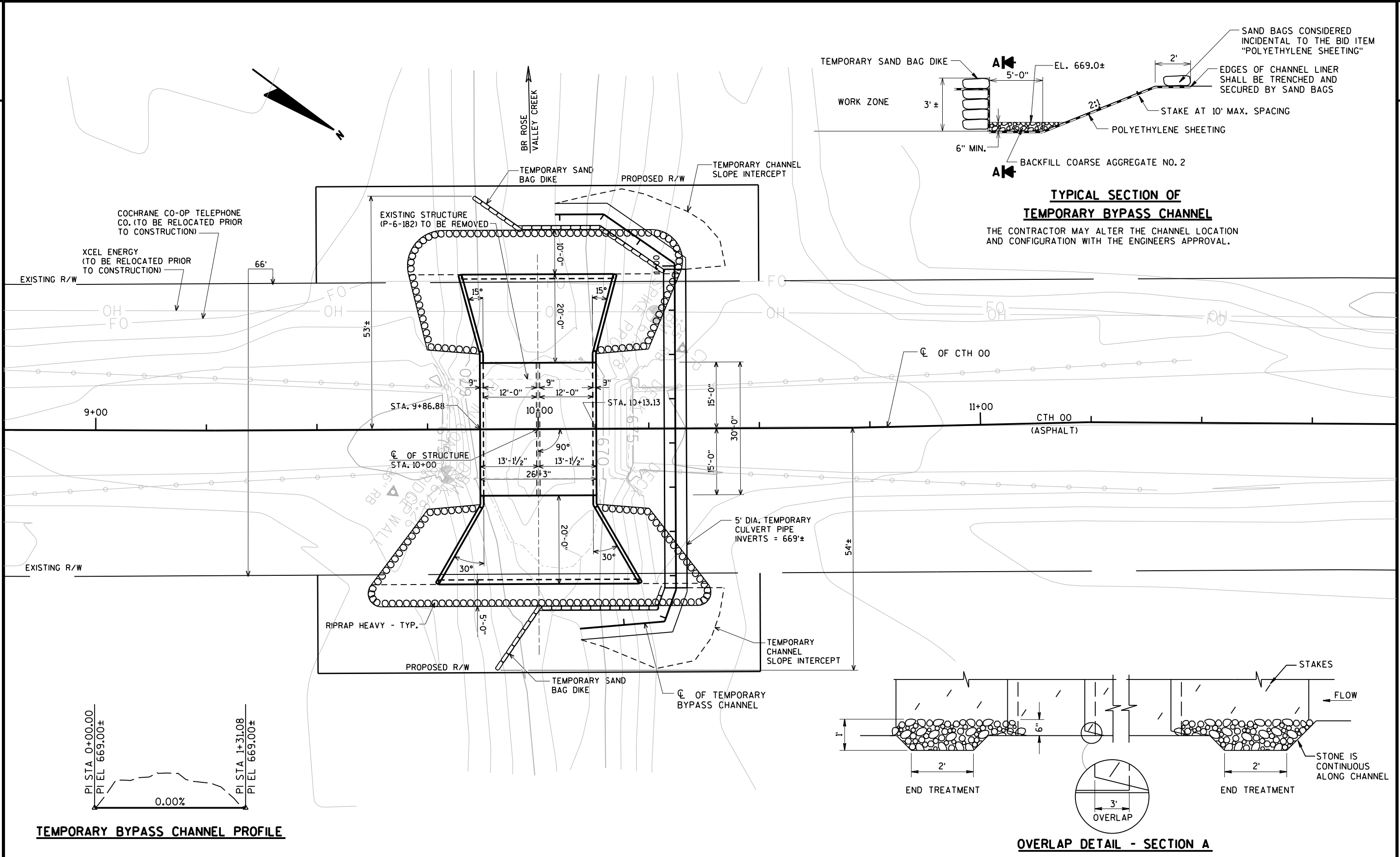


ALIGNMENT CONTROLS

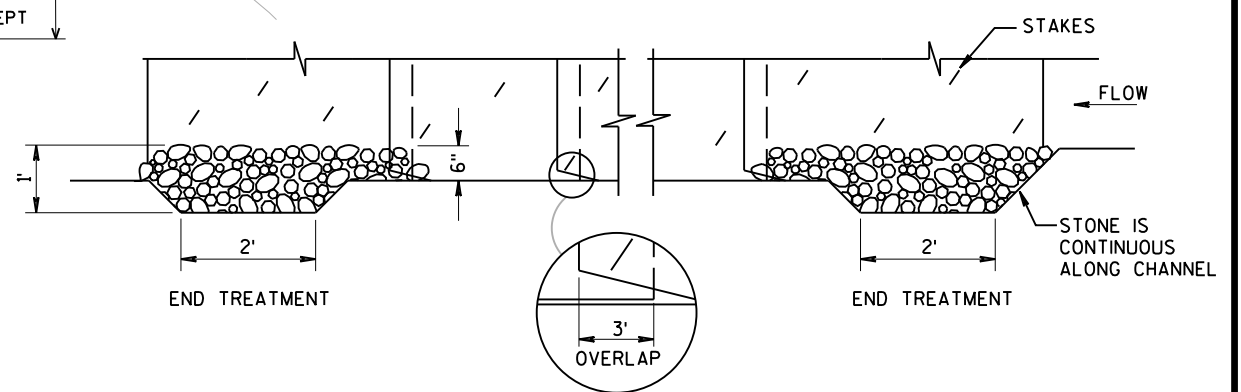


CONTROL POINT TIES

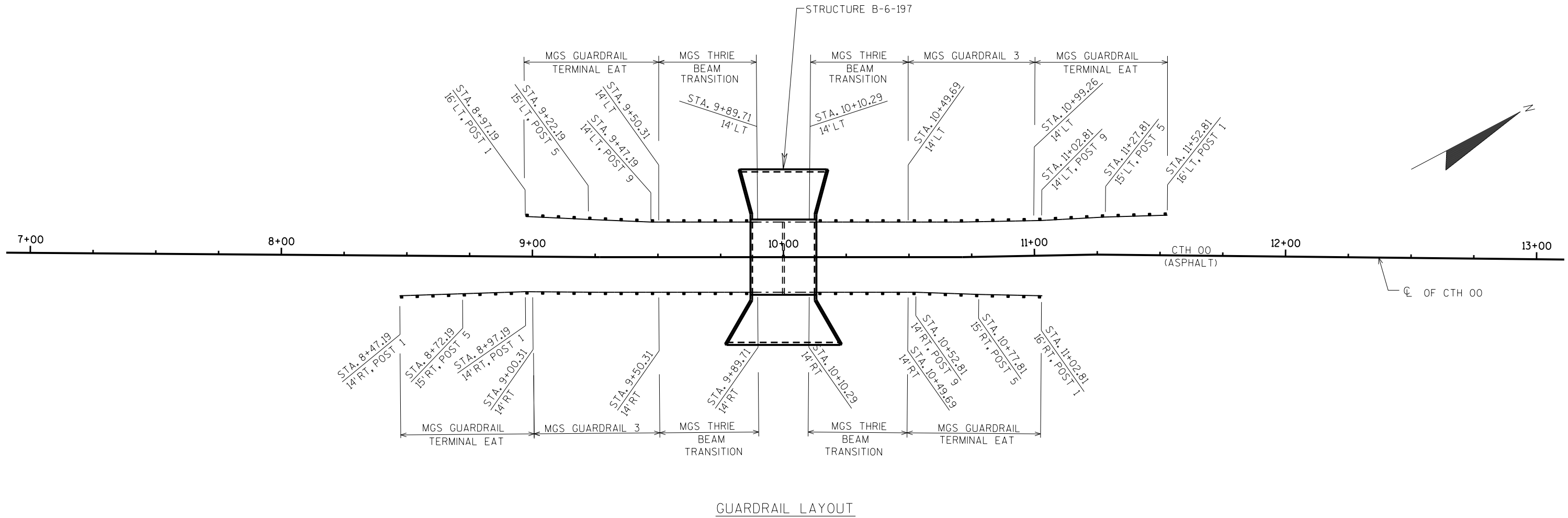


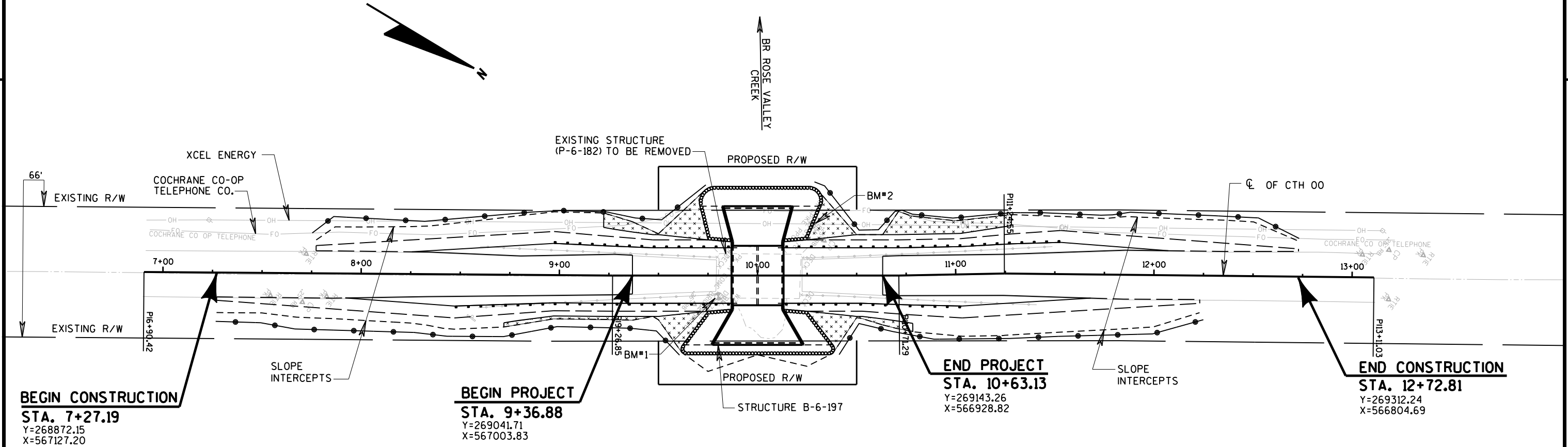


TEMPORARY BYPASS CHANNEL PROFILE



OVERLAP DETAIL - SECTION A





	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

HIGH WATER 2 EL. 670.85

- LEGEND**
- EROSION MAT CLASS II TYPE C
 - SILT FENCE
 - RIPRAP HEAVY

TOTAL PROJECT AREA = 0.93 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.47 ACRES

Estimate Of Quantities

7356-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	6.000	6.000
0004	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. P-06-0182	EACH	1.000	1.000
0006	204.0165	Removing Guardrail	LF	484.000	484.000
0008	205.0100	Excavation Common	CY	581.000	581.000
0010	206.2000	Excavation for Structures Culverts (structure) 01. B-06-0197	LS	1.000	1.000
0012	208.0100	Borrow	CY	37.000	37.000
0014	209.0300.S	Backfill Coarse Aggregate (size) 01. No. 2	CY	6.000	6.000
0016	210.2500	Backfill Structure Type B	TON	480.000	480.000
0018	213.0100	Finishing Roadway (project) 01. 7356-00-70	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	100.000	100.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	595.000	595.000
0024	311.0110	Breaker Run	TON	675.000	675.000
0026	455.0605	Tack Coat	GAL	36.000	36.000
0028	465.0105	Asphaltic Surface	TON	120.000	120.000
0030	502.3200	Protective Surface Treatment	SY	100.000	100.000
0032	504.0100	Concrete Masonry Culverts	CY	147.000	147.000
0034	505.0400	Bar Steel Reinforcement HS Structures	LB	8,620.000	8,620.000
0036	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	6,150.000	6,150.000
0038	513.7051	Railing Steel Type W	LF	47.700	47.700
0040	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0042	520.2060	Culvert Pipe Temporary 60-Inch	LF	72.000	72.000
0044	606.0300	Riprap Heavy	CY	165.000	165.000
0046	614.2300	MGS Guardrail 3	LF	100.000	100.000
0048	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0050	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0052	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7356-00-70	EACH	1.000	1.000
0054	619.1000	Mobilization	EACH	1.000	1.000
0056	624.0100	Water	MGAL	7.000	7.000
0058	625.0100	Topsoil	SY	450.000	450.000
0060	627.0200	Mulching	SY	580.000	580.000
0062	628.1504	Silt Fence	LF	1,140.000	1,140.000
0064	628.1520	Silt Fence Maintenance	LF	2,280.000	2,280.000
0066	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0068	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0070	628.2027	Erosion Mat Class II Type C	SY	245.000	245.000
0072	628.5505	Polyethylene Sheeting	SY	160.000	160.000
0074	629.0210	Fertilizer Type B	CWT	0.600	0.600
0076	630.0120	Seeding Mixture No. 20	LB	31.000	31.000
0078	630.0200	Seeding Temporary	LB	31.000	31.000
0080	630.0500	Seed Water	MGAL	26.000	26.000
0082	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	5.000	5.000
0084	637.2230	Signs Type II Reflective F	SF	21.000	21.000
0086	638.2602	Removing Signs Type II	EACH	5.000	5.000
0088	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0090	642.5001	Field Office Type B	EACH	1.000	1.000
0092	643.0420	Traffic Control Barricades Type III	DAY	1,440.000	1,440.000
0094	643.0705	Traffic Control Warning Lights Type A	DAY	2,240.000	2,240.000
0096	643.0900	Traffic Control Signs	DAY	1,120.000	1,120.000
0098	643.5000	Traffic Control	EACH	1.000	1.000

Estimate Of Quantities

7356-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	645.0105	Geotextile Type C	SY	345.000	345.000
0102	645.0120	Geotextile Type HR	SY	310.000	310.000
0104	650.4500	Construction Staking Subgrade	LF	520.000	520.000
0106	650.5000	Construction Staking Base	LF	520.000	520.000
0108	650.6500	Construction Staking Structure Layout (structure) 01. B-06-0197	LS	1.000	1.000
0110	650.9910	Construction Staking Supplemental Control (project) 01. 7356-00-70	LS	1.000	1.000
0112	650.9920	Construction Staking Slope Stakes	LF	520.000	520.000
0114	690.0150	Sawing Asphalt	LF	546.000	546.000
0116	715.0502	Incentive Strength Concrete Structures	DOL	882.000	882.000
0118	999.2000.S	Installing and Maintaining Bird Deterrent System (Station) 01. 10+00	EACH	1.000	1.000
0120	SPV.0060	Special 01. Temporary Sand Bag Dike	EACH	1.000	1.000
0122	SPV.0090	Special 01. Flashing Stainless Steel	LF	49.500	49.500

REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	REMARKS
0010	8+60	-	9+79	LT	120	
0010	8+60	-	9+79	RT	120	
0010	10+23	-	11+49	LT	126	
0010	10+23	-	11+41	RT	118	
TOTAL 0010					484	

GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0205 GRUBBING STA	REMARKS
0010	7+27.19	-	12+72.81	LT & RT	6	
TOTAL 0010					6	

CTH OO BRIDGE EARTHWORK SUMMARY

From/To Station	Location	Common Excavation (1) (Item 205.0100)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow (Item 208.0100)	Comment:
		Cut		Factor 1.30				
0+00.00 - 1+31.08	TEMP. BYPASS	124	0	0	124	124	0	
0+00.00 - 1+31.08	TEMP. BYPASS REMOVAL	0	124	161	-161	0	37	
7+27.81 - 9+86.88	MAINLINE	203	45	59	144	144	0	
10+13.13 - 12+7.81	MAINLINE	254	69	90	164	164	0	
TOTAL 0010		581					37	

- 1) Common Excavation is the Cut. Item number 205.0100.
- 2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill * Fill Factor
- 3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.
- 4) All quantities shown in CY.

BASE AGGREGATE DENSE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4- INCH TON	624.0100 WATER MGAL	REMARKS
0010	7+27	-	9+87	MAINLINE	50	290	3.4	
0010	10+13	-	12+73	MAINLINE	50	305	3.6	
TOTAL 0010					100	595	7.0	

ASPHALTIC PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON	REMARKS
0010	7+92	-	9+87	MAINLINE	18	60	
0010	10+13	-	12+07	MAINLINE	18	60	
TOTAL 0010					36	120	

TEMP BYPASS

CATEGORY	STATION	TO	STATION	LOCATION	209.0300.S BACKFILL COARSE AGGREGATE SIZE NO. 2 CY	520.2060 CULVERT PIPE TEMPORARY 60- INCH LF	628.5505 POLYETHYLENE SHEETING SY	SPV.0060.01 SPECIAL (01. TEMPORARY SAND BAG DIKE) EACH	REMARKS
0010	0+00	-	1+31.08	TEMP. BYPASS	6	72	160	1	
TOTAL 0010					6	72	160	1	

GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	REMARKS
0010	8+97.19	-	9+89.71	LT	-	40	1	
0010	8+47.19	-	9+89.71	RT	50	40	1	
0010	10+10.29	-	11+52.81	LT	-	40	1	
0010	10+10.29	-	11+02.81	RT	50	40	1	
TOTAL 0010					100	160	4	

MOBILIZATIONS EROSION CONTROL

CATEGORY	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
0010	PROJECT 7356-00-70	4	4	
TOTAL 0010		4	4	

EROSION CONTROL AND FINISHING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2027 EROSION MAT CLASS II TYPE C SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL	REMARKS
0010	7+77	-	9+87	LT	110	150	210	420	45	0.1	6	6	5	
0010	7+77	-	9+87	RT	60	100	240	480	40	0.1	5	5	4	
0010	10+13	-	12+73	LT	160	160	265	530	80	0.2	8	8	7	
0010	10+13	-	12+73	RT	120	170	195	390	30	0.1	6	6	5	
UNDISTRIBUTED					-	-	230	460	50	0.1	6	6	5	
TOTAL 0010					450	580	1,140	2,280	245	0.6	31	31	26	

PERMANENT SIGNING

CATEGORY	STATION	LOCATION	634.0614 POSTS WOOD 4X6-INCH X 14- FT EACH	637.2230 SIGNSTYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNSTYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	8+56	RT	1	9	1	1	W3-5: REDUCE SPEED AHEAD 25 MPH
0010	9+79	RT	--	--	1	1	W5-52R: BRIDGE HASH MARKS
0010	9+79	LT	--	--	1	1	W5-52L: BRIDGE HASH MARKS
0010	9+86	RT	1	3	--	--	W5-52R: BRIDGE HASH MARKS
0010	9+86	LT	1	3	--	--	W5-52L: BRIDGE HASH MARKS
0010	10+14	RT	1	3			W5-52L: BRIDGE HASH MARKS
0010	10+14	LT	1	3			W5-52R: BRIDGE HASH MARKS
0010	10+23	RT	--	--	1	1	W5-52L: BRIDGE HASH MARKS
0010	10+23	LT	--	--	1	1	W5-52R: BRIDGE HASH MARKS
TOTAL 0010			5	21	5	5	

TRAFFIC CONTROL

CATEGORY	LOCATION	DURATION DAY	NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH	REMARKS
0010	CTH OO	80	18	1,440	28	2,240	14	1,120
0010	7356-00-70			-		-		1
TOTAL 0010				1,440	2,240	1,120	1	

CONSTRUCTION STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6500.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-06-0197) LS	650.9910.01 CONSTRUCTION SUPPLEMENTAL CONTROL (PROJECT) (01. 7356-00-70) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	REMARKS
0010	7+27.19	-	12+72.81	MAINLINE	520	520	-	-	520	
0010				PROJECT ID: 7356-00-70	-	-	-	1	-	
TOTAL 0010					520	520	0	1	520	
0020				B-06-0197	-	-	1	-	-	
TOTAL 0020					0	0	1	0	0	
PROJECT TOTAL					520	520	1	1	520	

SAWING

CATEGORY	STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
0010	7+92	-	9+37	MAINLINE	277	
0010	10+63	-	12+06	MAINLINE	269	
TOTAL 0010					546	

CONVENTIONAL SYMBOLS

SECTION LINE	PARCEL NUMBER (25)	UTILITY NUMBER (40)
QUARTER LINE	PRIV POINT NUMBER (100)	T.E. POINT NUMBER (110)
SIXTEENTH LINE	SECTION CORNER	R/W MONUMENT
NEW REFERENCE LINE	NON-MONUMENTED R/W POINT	FOUND IRON PIN
NEW R/W LINE	NOTATION FOR COMBUSTIBLE FLUIDS	VALVE (GAS, WATER, ETC.)
EXISTING R/W LINE	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	OFF-PREMISE SIGN
PROPERTY LINE	ACCESS CONTROLLED BY ACQUISITION	NO ACCESS (BY STATUTORY AUTHORITY)
LOT, TIE, AND OTHER MINOR LINES	ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)	NO ACCESS (NEW HIGHWAY)
SLOPE INTERCEPT	NO ACCESS (BY STATUTORY AUTHORITY)	NATIONAL GEODETIC SURVEY MONUMENT
CORPORATE LIMITS	NO ACCESS (NEW HIGHWAY)	SIXTEENTH CORNER MONUMENT
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)	NO ACCESS (BY STATUTORY AUTHORITY)	PARALLEL OFFSETS
FEE ACQUISITION AREA (WATCHING VARIES BY OWNER)	NO ACCESS (BY STATUTORY AUTHORITY)	
TEMP. LIMITED EASEMENT AREA	NO ACCESS (BY STATUTORY AUTHORITY)	
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)	NO ACCESS (BY STATUTORY AUTHORITY)	
TRANSMISSION STRUCTURES	NO ACCESS (BY STATUTORY AUTHORITY)	
BUILDING	NO ACCESS (BY STATUTORY AUTHORITY)	
BUILDING (TO BE REMOVED)	NO ACCESS (BY STATUTORY AUTHORITY)	
BRIDGE	NO ACCESS (BY STATUTORY AUTHORITY)	

CURVE DATA ABBREVIATIONS

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ / DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CONVENTIONAL UTILITY SYMBOLS

WATER	—
GAS	—
TELEPHONE	—
OVERHEAD TRANSMISSION LINES	—
ELECTRIC	—
CABLE TELEVISION	—
FIBER OPTIC	—
SANITARY SEWER	—
STORM SEWER	—
ELECTRIC TOWER	—

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	OUTLOT	OL
ACROSS	AC	PAVE	PA
AHEAD	AH	POINT OF TANGENCY	PT
ALUMINUM	ALUM	PROPERTY LINE	PL
AND OTHERS	ET AL	RECORDED AS	RA
AREA	AREA	REFERENCE LINE	RL
BLOCK	BLK	RESTRICTIVE DEVELOPMENT EASEMENT	RDE
CERTIFIED SURVEY MAP	CSM	RIGHT	RT
CONCRETE	CONC	RIGHT OF WAY	ROW
COUNTY	CO	SECTION	SEC
COUNTY THROUGH HIGHWAY	CTH	SEWER VENT	SEPV
DISTANCE	DIST	SQUARE FEET	SF
CORNER	COR	STATE TRUNK HIGHWAY	STH
DOCUMENT NUMBER	DOC	STATION	STA
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED EASEMENT	TLE
GAS VALVE	GV	TRANSPORTATION PROJECT PLAT	TPP
GRID NORTH	GN	UNITED STATES HIGHWAY	USH
HIGHWAY EASEMENT	HE	VOLUME	V
IDENTIFICATION	ID		
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), BUFFALO COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSE ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 (1/2"x24" CAPPED IRON REBAR WEIGHING 1.50 LBS./LIN. FT.) AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

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

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINT OF REFERENCE:

EXISTING HIGHWAY RIGHT-OF-WAY FOR CTH "OO" SHOWN HEREIN IS PRESUMED TO BE 66 FEET IN WIDTH CENTERED ON THE EXISTING CENTERLINE OF THE TRAVELED WAY PER STATE STATUTE 82.31(2).

R/W POINT TABLE

POINT NAME	NORTHING	EASTING	POINT NAME	NORTHING	EASTING
100	268830.859	567116.626	107	269353.502	566815.379
101	269032.289	566968.985	108	269281.916	566887.849
102	269019.589	566951.791	109	269152.157	566962.957
103	269100.026	566892.378	110	269165.380	566980.859
104	269112.945	566909.868	111	269084.943	567040.272
105	269173.445	566865.523	112	269071.502	567022.074
106	269314.854	566761.876	113	268869.670	567170.009

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTEREST REQUIRED	R/W (ACRES)		
			FEE	EXISTING	TOTAL
1	KYLE B. BUSHMAN AND LEE M. BUSHMAN	FEE	0.101	0.909	1.01
50	COCHRANE COOPERATIVE TELEPHONE COMPANY	RELEASE OF RIGHTS			

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

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
R/L-100	S53°58'54"W	32.83'
100-101	N36°14'24"W	249.74'
101-102	S53°32'58"W	21.38'
102-103	N36°27'02"W	100.00'
103-104	N53°32'58"E	21.74'
104-105	N36°14'24"W	75.01'
105-106	N36°14'24"W	175.33'
106-R/L	N54°09'28"E	33.18'

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
R/L-107	N54°09'28"E	32.83'
107-108	S36°14'24"E	89.76'
108-109	S36°14'24"E	160.88'
109-110	N53°32'58"E	22.26'
110-111	S36°27'02"E	100.00'
111-112	S53°32'58"W	22.62'
112-113	S36°14'24"E	250.24'
113-R/L	S53°58'54"W	33.17'

R/W STATION & OFFSET TABLE

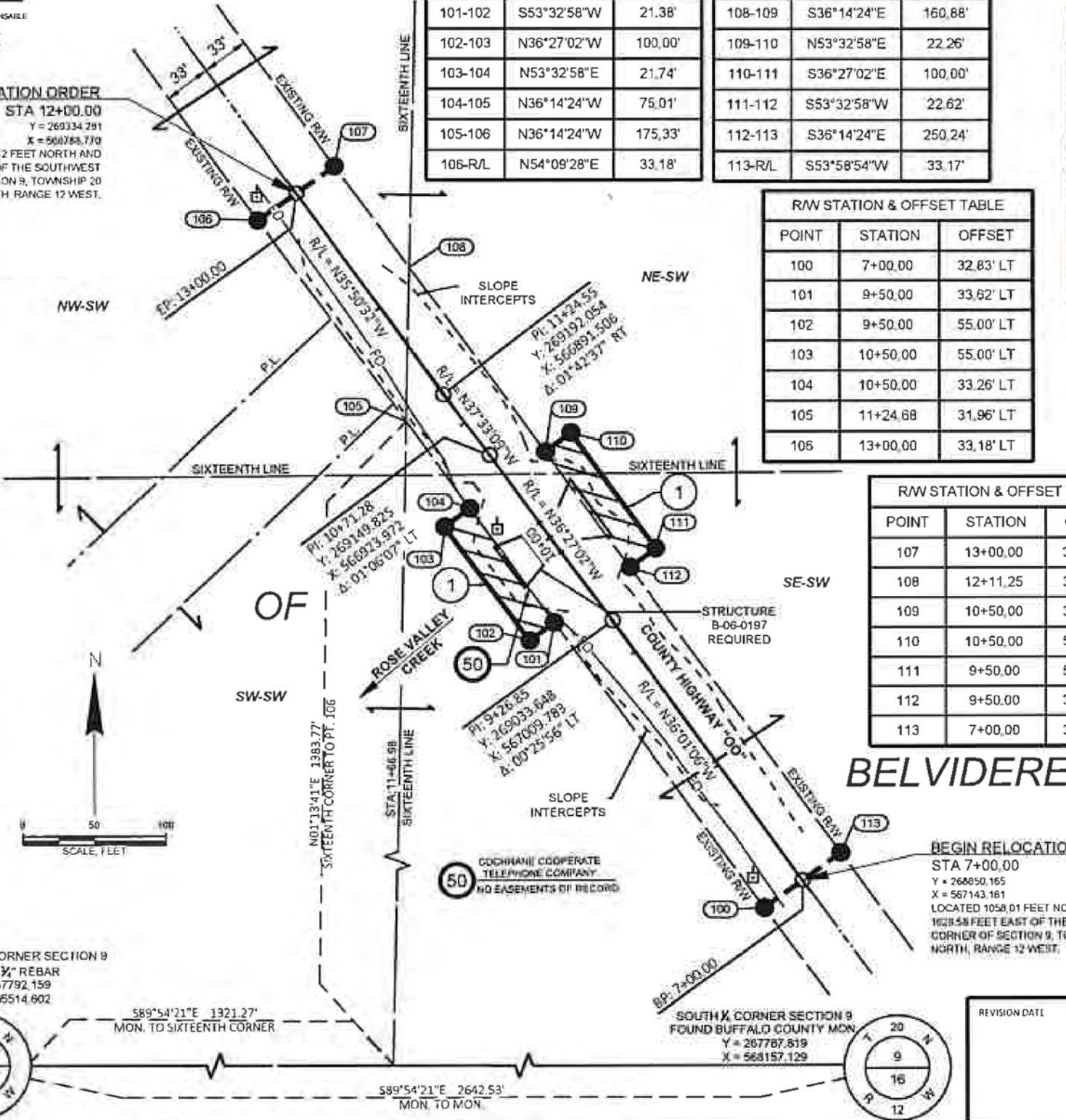
POINT	STATION	OFFSET
100	7+00.00	32.83' LT
101	9+50.00	33.62' LT
102	9+50.00	55.00' LT
103	10+50.00	55.00' LT
104	10+50.00	33.26' LT
105	11+24.68	31.96' LT
106	13+00.00	33.18' LT

R/W STATION & OFFSET TABLE

POINT	STATION	OFFSET
107	13+00.00	32.83' RT
108	12+11.25	33.44' RT
109	10+50.00	32.74' RT
110	10+50.00	55.00' RT
111	9+50.00	55.00' RT
112	9+50.00	32.38' RT
113	7+00.00	33.17' RT

END RELOCATION ORDER
 STA 12+00.00
 Y = 269334.291
 X = 566783.779
 LOCATED 1542.12 FEET NORTH AND 1274.17 FEET EAST OF THE SOUTHWEST CORNER OF SECTION 9, TOWNSHIP 20 NORTH, RANGE 12 WEST.

TOWN



TOTAL NET LENGTH OF CENTERLINE = 0.095 MI.

APPROVED FOR
 BUFFALO COUNTY HIGHWAY DEPARTMENT
Alana T. Platt
 DATE HIGHWAY COMMISSIONER

PLAT PREPARED BY
AVRES

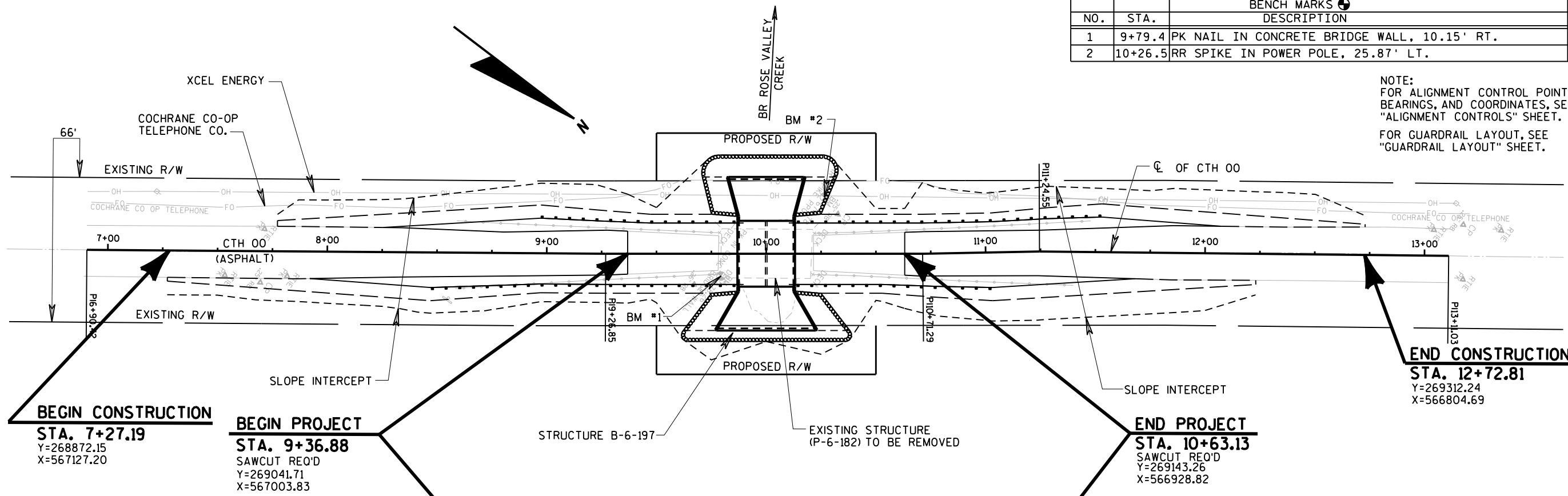
THE SURVEY IS PREPARED AT THE REQUEST OF THE BUFFALO COUNTY HIGHWAY DEPARTMENT.
 THE FIELD SURVEY WAS PERFORMED IN SEPTEMBER 2019.
 THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.



Christopher R. Badtke
 CHRISTOPHER R. BADTKE, P.L.S., DATE 02/18/2021
 S-3150

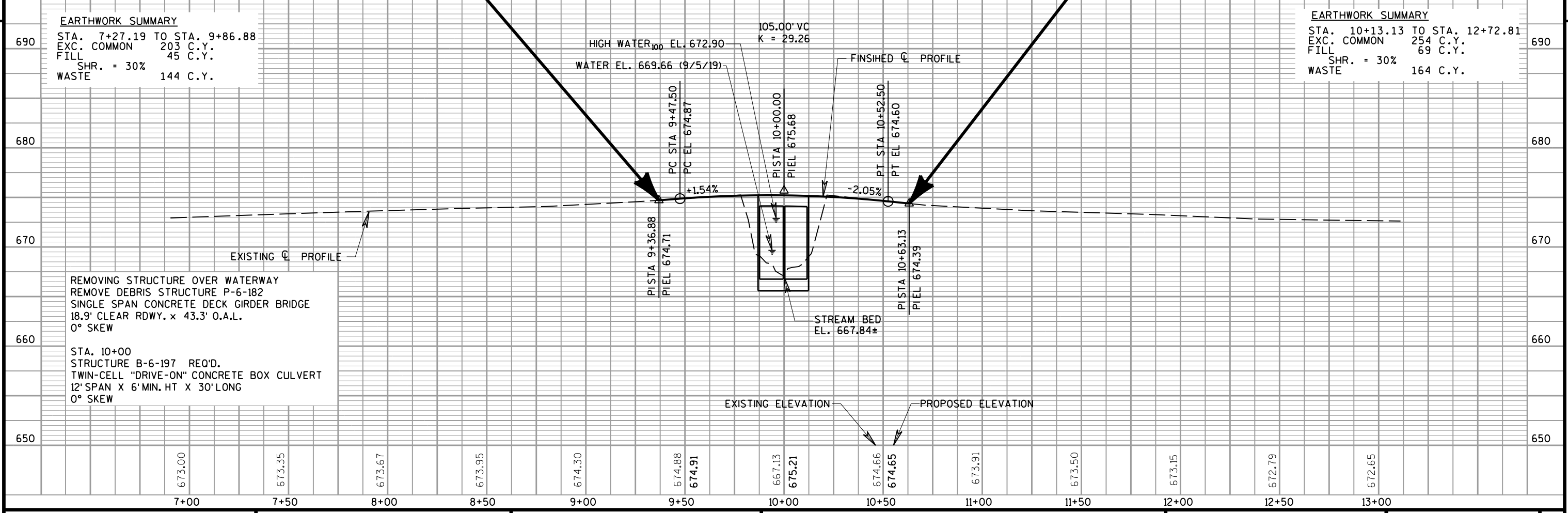
BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	9+79.4	PK NAIL IN CONCRETE BRIDGE WALL, 10.15' RT.	678.26
2	10+26.5	RR SPIKE IN POWER POLE, 25.87' LT.	674.78

NOTE:
FOR ALIGNMENT CONTROL POINTS,
BEARINGS, AND COORDINATES, SEE
"ALIGNMENT CONTROLS" SHEET.
FOR GUARDRAIL LAYOUT, SEE
"GUARDRAIL LAYOUT" SHEET.



EARTHWORK SUMMARY
 STA. 7+27.19 TO STA. 9+86.88
 EXC. COMMON 203 C.Y.
 FILL 45 C.Y.
 SHR. = 30%
 WASTE 144 C.Y.

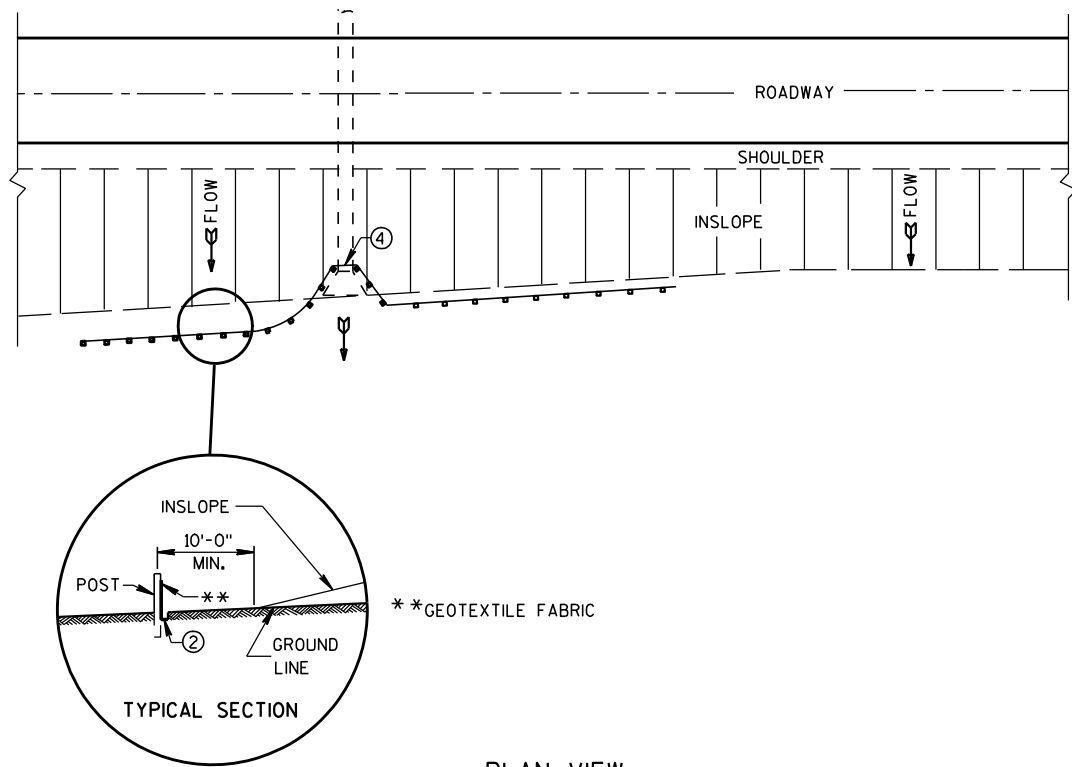
EARTHWORK SUMMARY
 STA. 10+13.13 TO STA. 12+72.81
 EXC. COMMON 254 C.Y.
 FILL 69 C.Y.
 SHR. = 30%
 WASTE 164 C.Y.



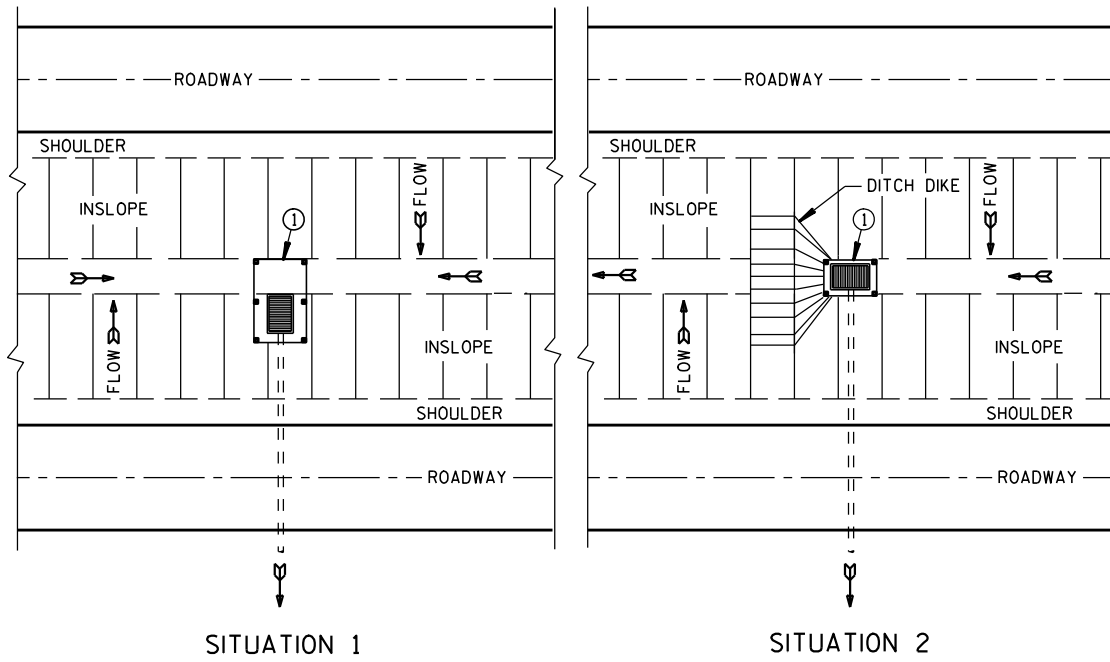
REMOVING STRUCTURE OVER WATERWAY
 REMOVE DEBRIS STRUCTURE P-6-182
 SINGLE SPAN CONCRETE DECK GIRDER BRIDGE
 18.9' CLEAR RDWY. x 43.3' O.A.L.
 0° SKEW
 STA. 10+00
 STRUCTURE B-6-197 REQ'D.
 TWIN-CELL "DRIVE-ON" CONCRETE BOX CULVERT
 12' SPAN X 6' MIN. HT X 30' LONG
 0° SKEW

Standard Detail Drawing List

08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

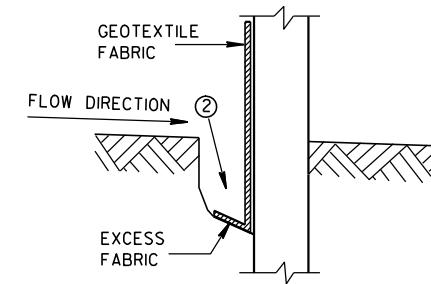


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

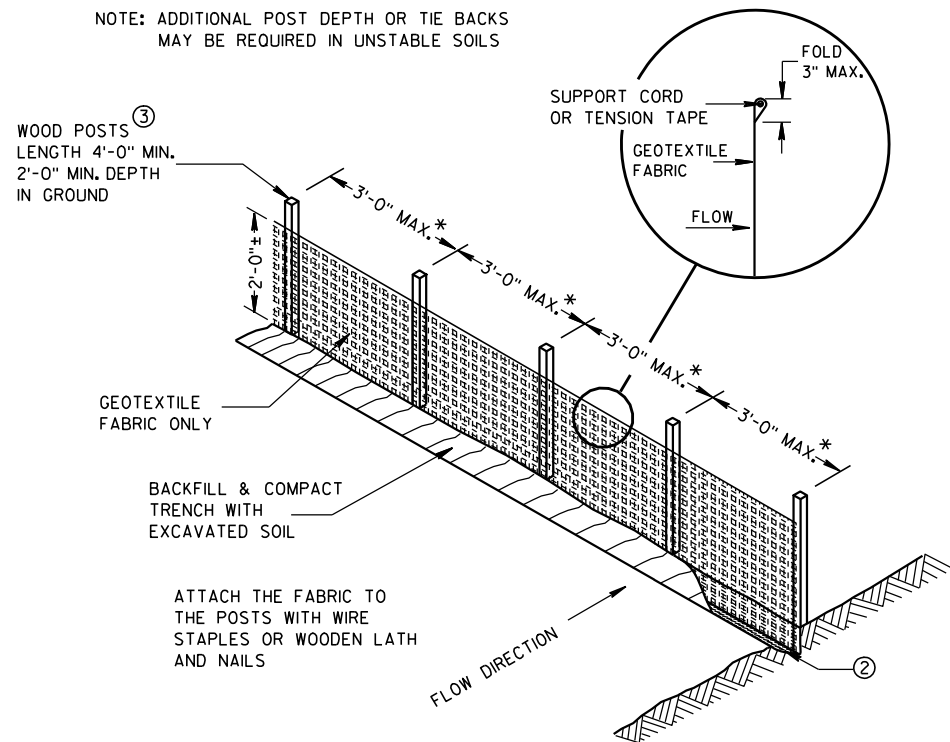
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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 1 1/8" X 1 1/8" 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.



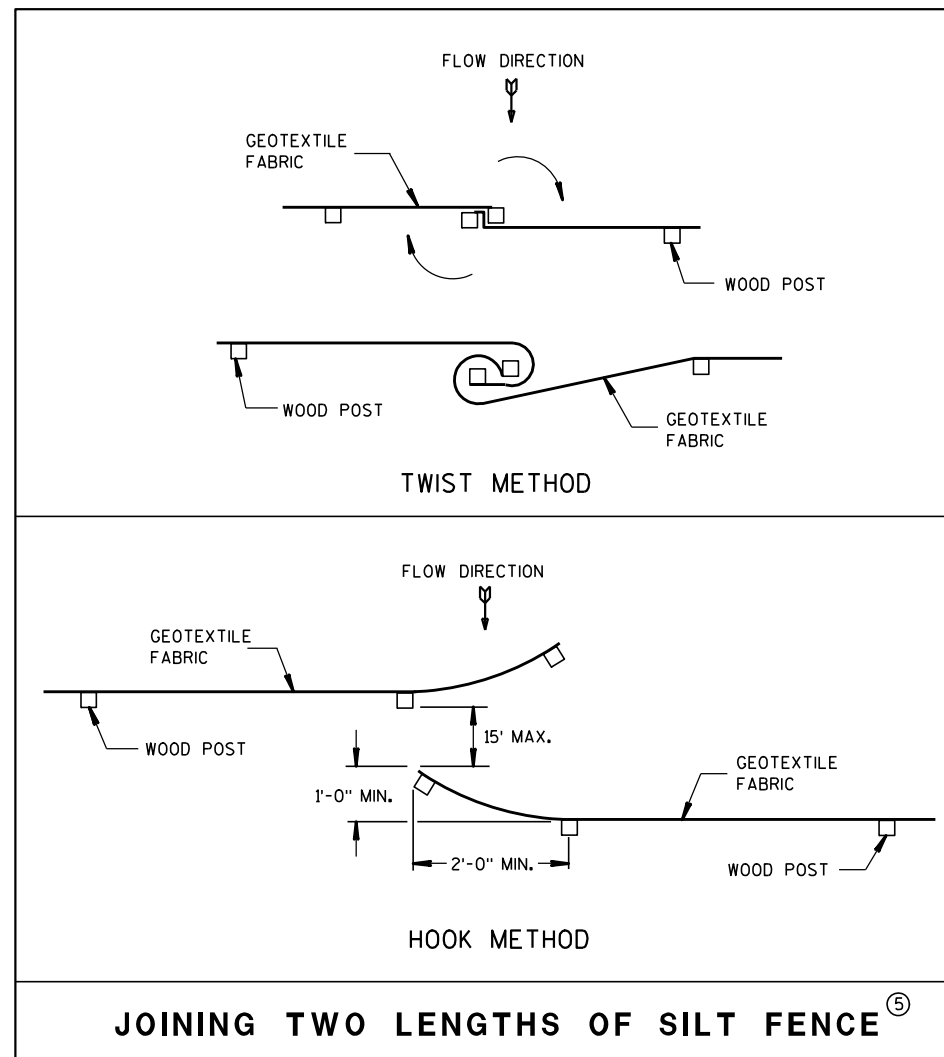
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

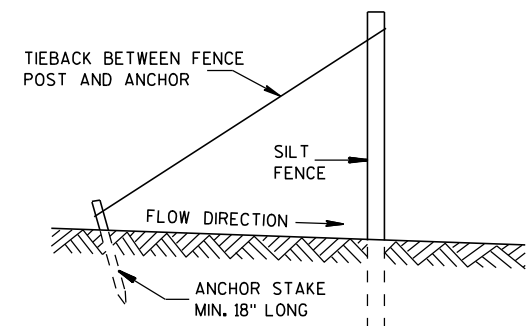


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤

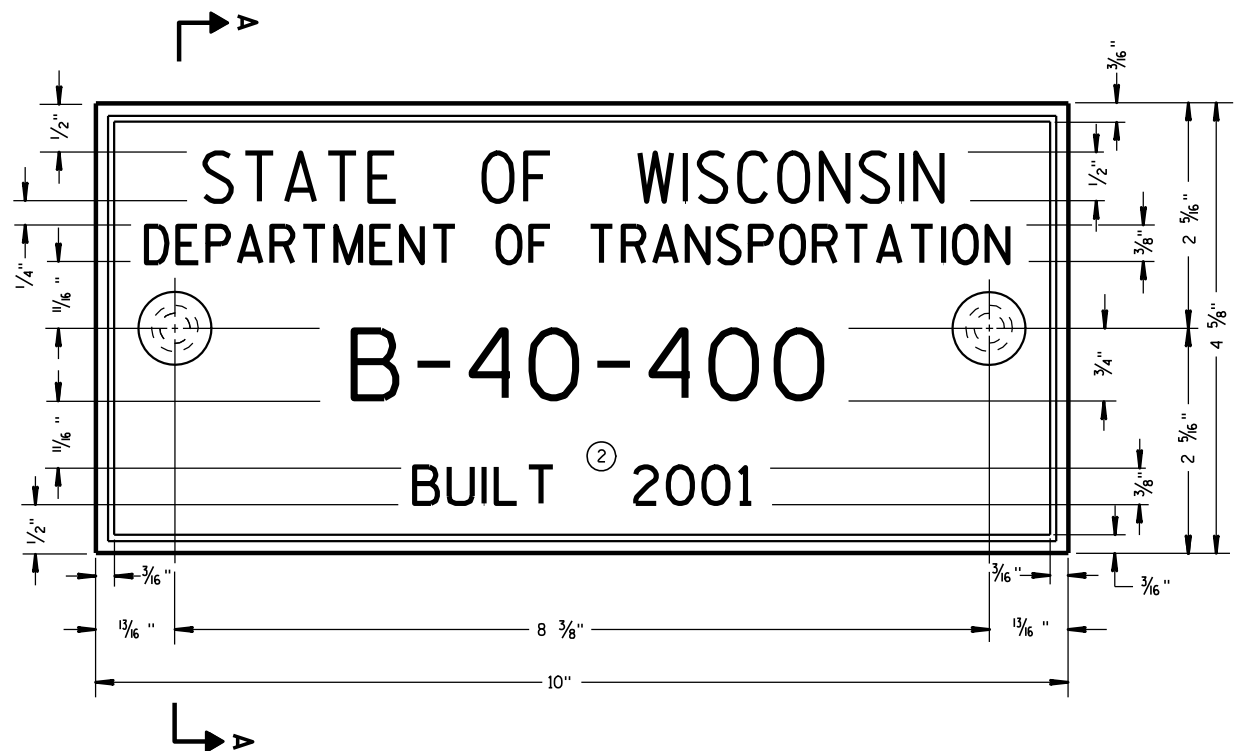


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



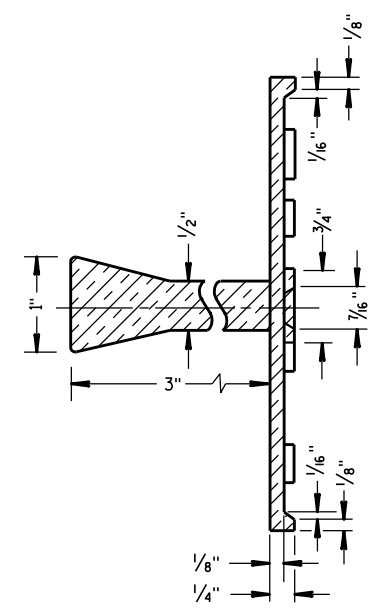
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

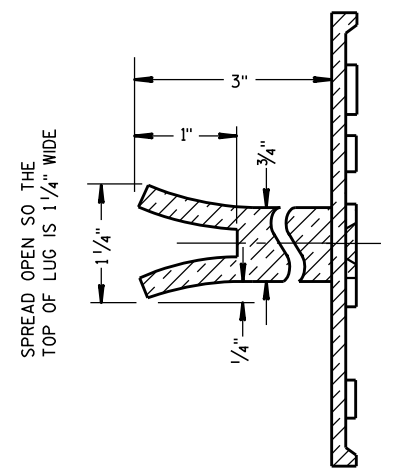
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG

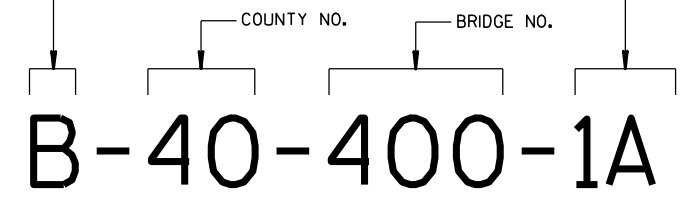
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

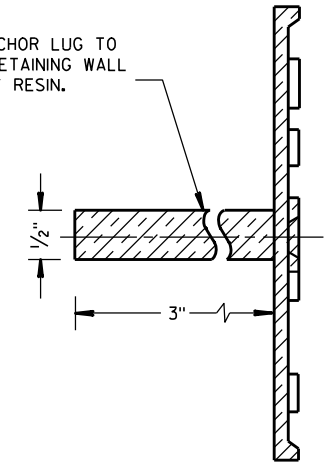
B = BRIDGE
C = CULVERT
R = RETAINING WALL

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



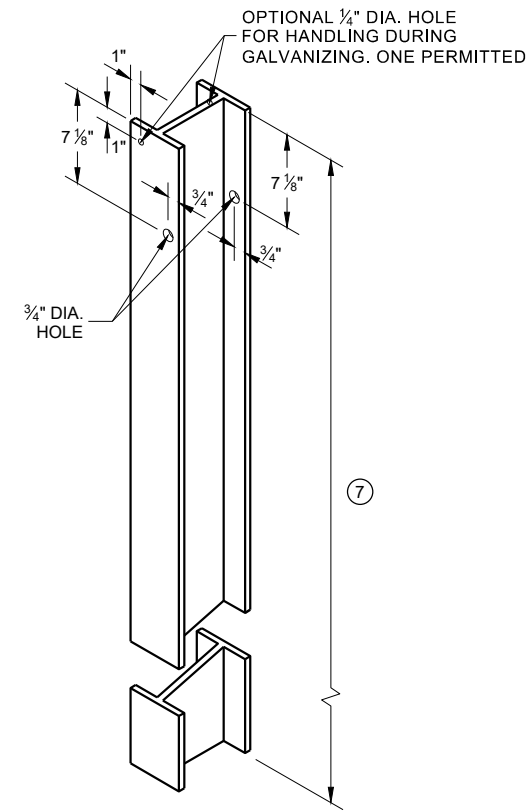
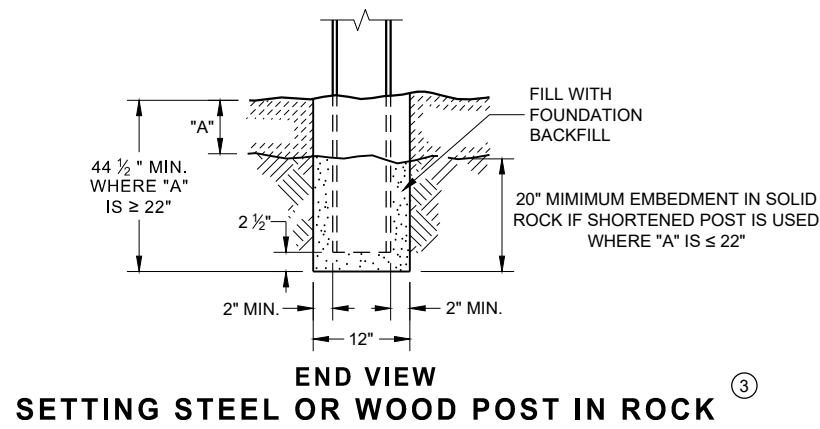
ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

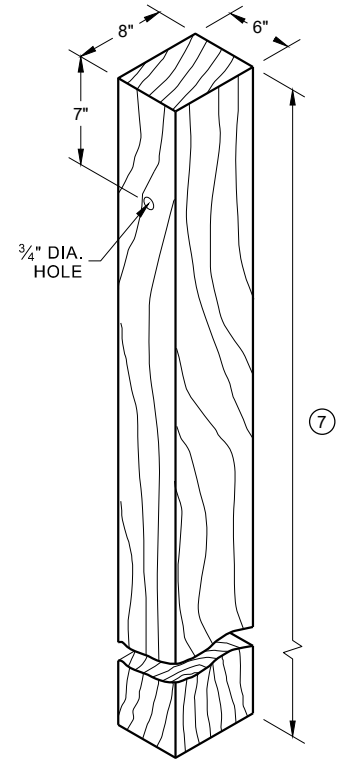
S.D.D. 12 A 3-10

NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	

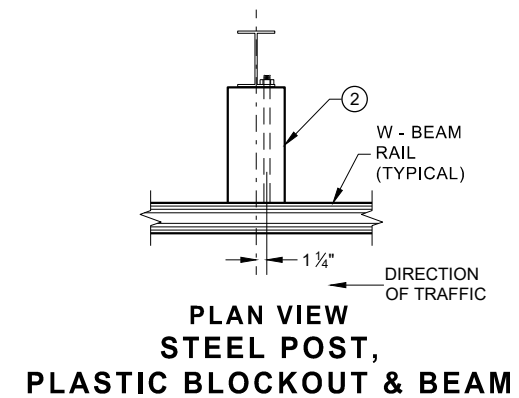
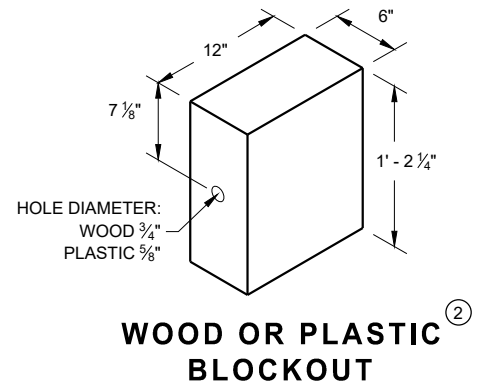
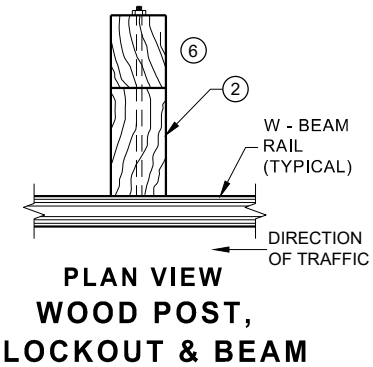
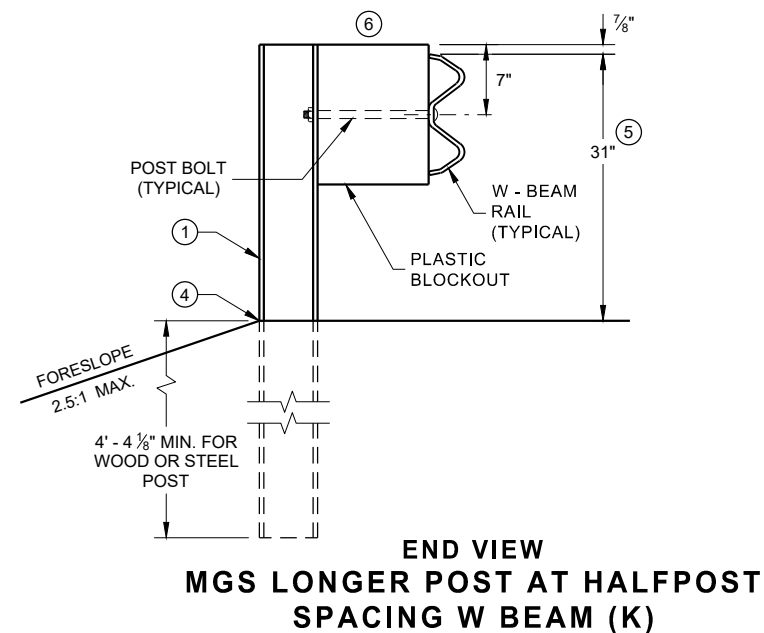
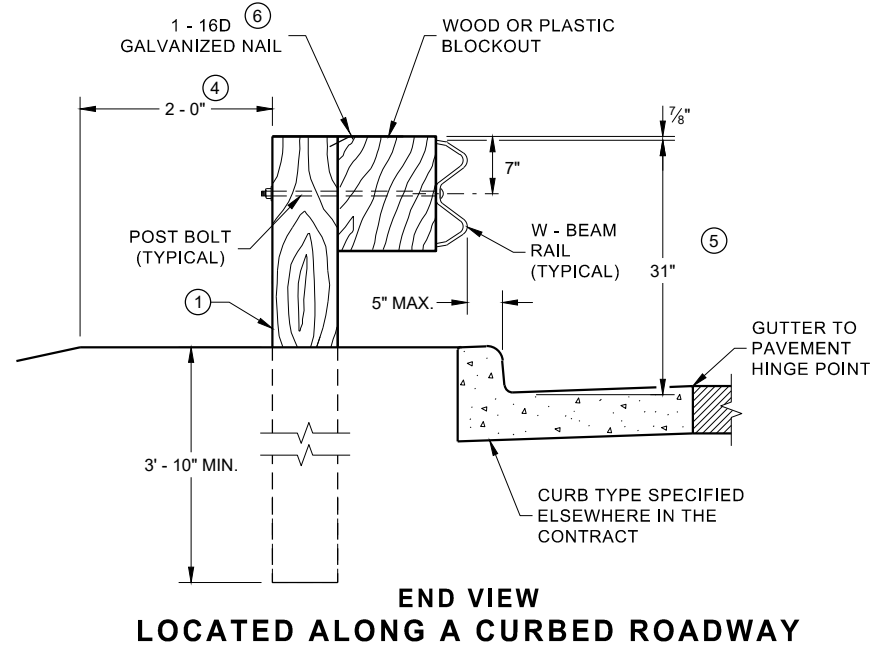
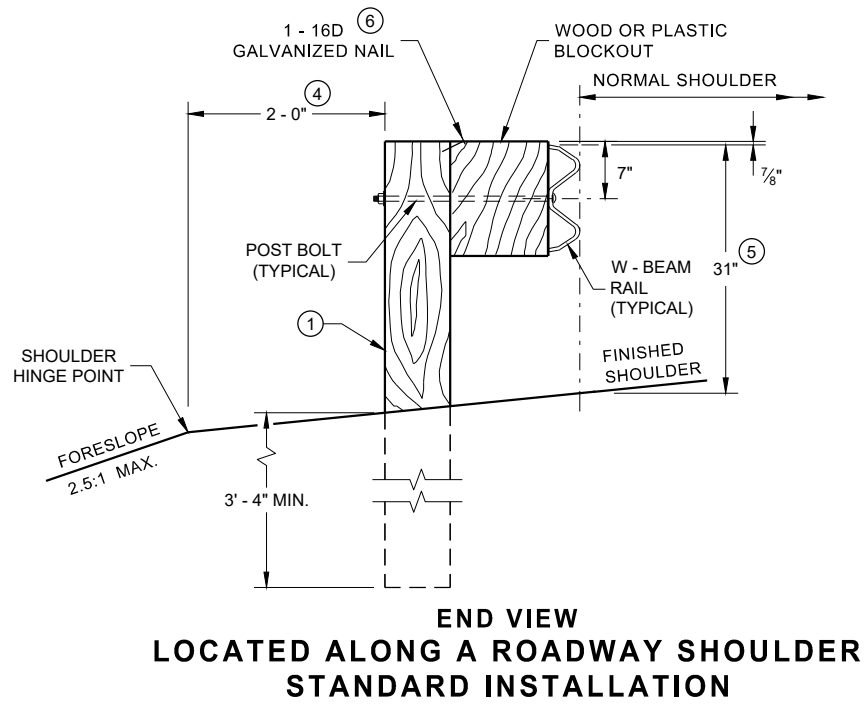
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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 ±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.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) ①

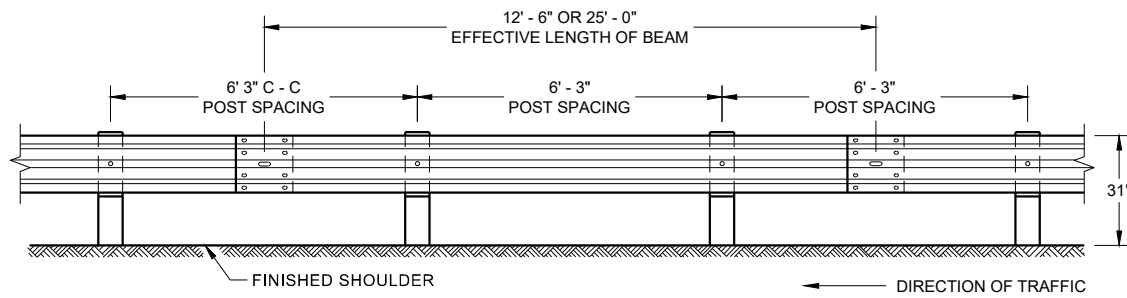


WOOD POST (6" X 8") NOMINAL ①

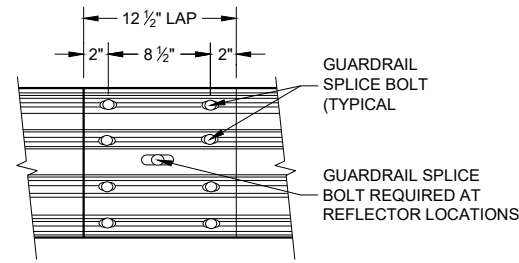


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



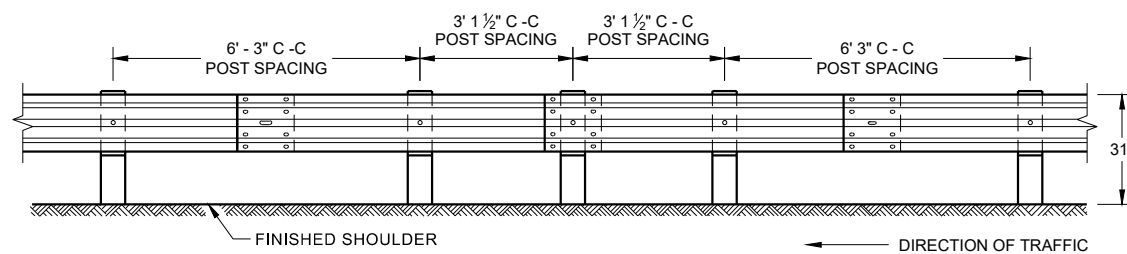
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



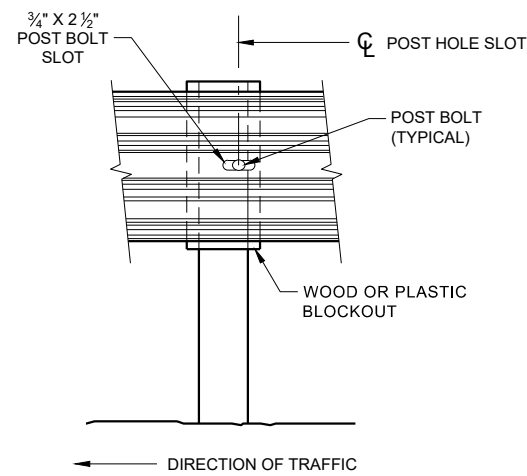
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

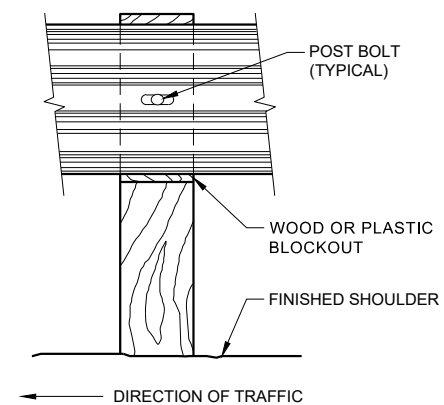
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER 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 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



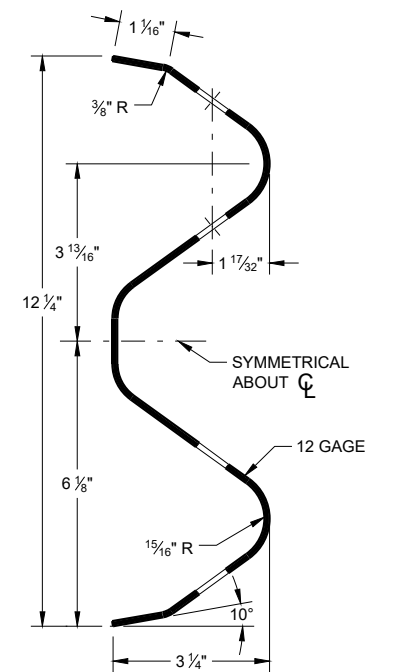
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



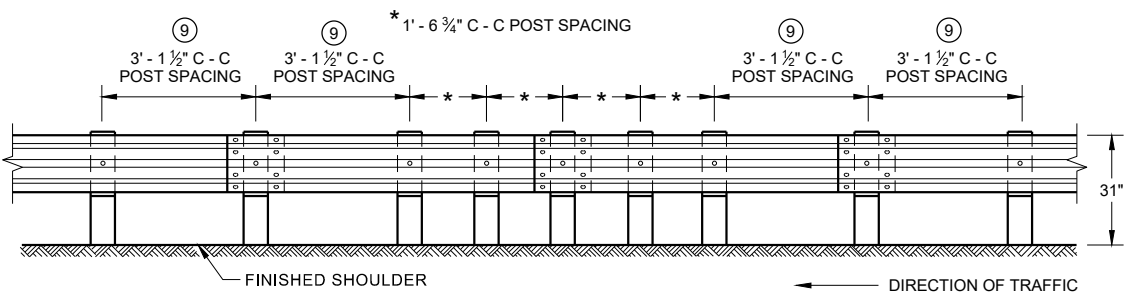
FRONT VIEW AT STEEL POST



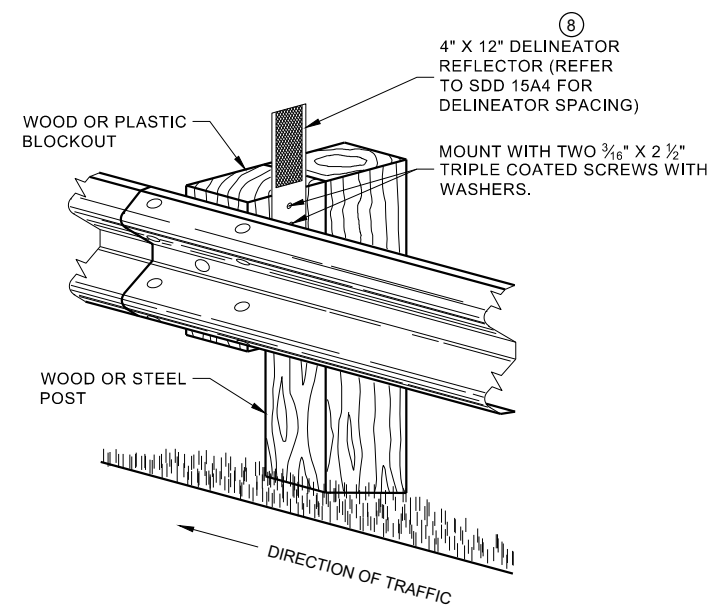
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

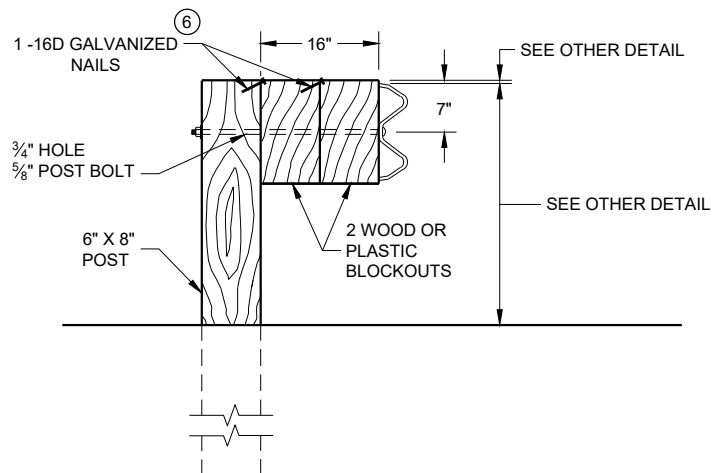
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

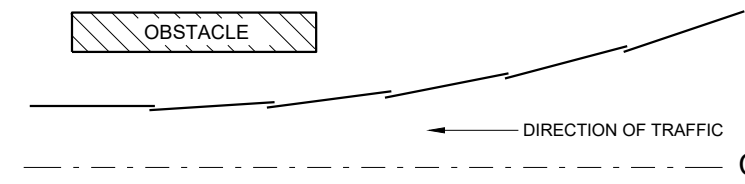
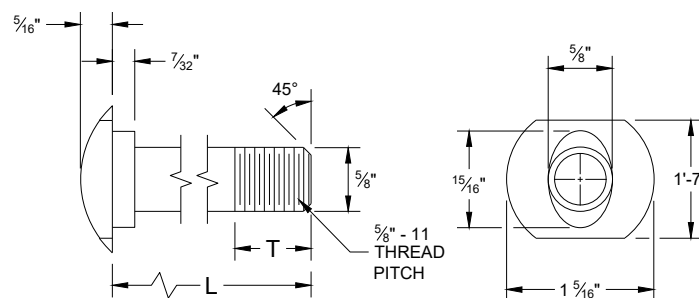


DETAIL FOR 16" BLOCKOUT DEPTH

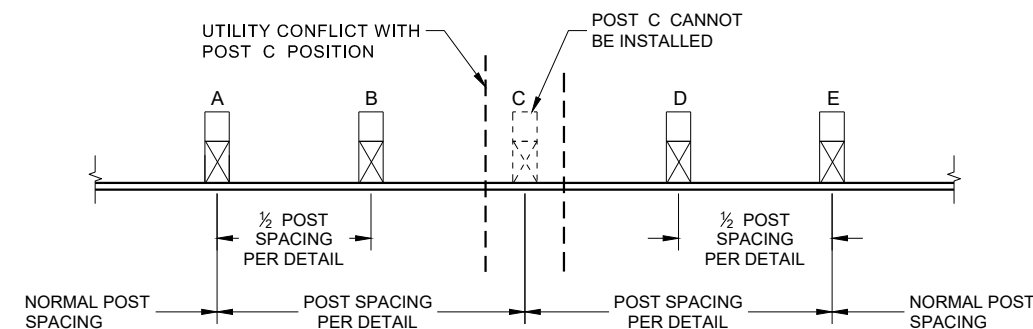
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

NOTE:

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



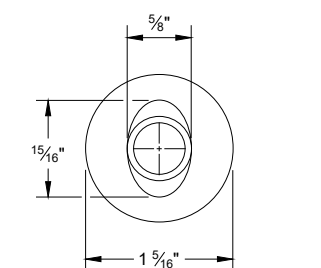
**PLAN VIEW
BEAM LAPPING DETAIL**



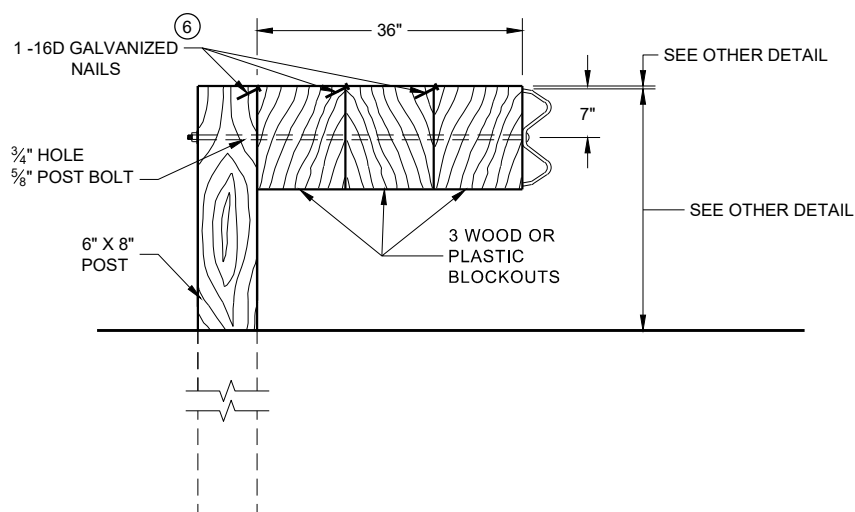
**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

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"

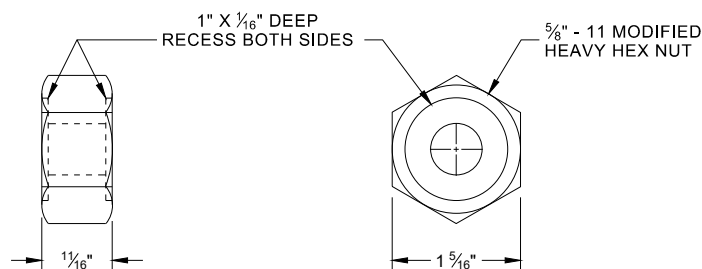


ALTERNATE BOLT HEAD

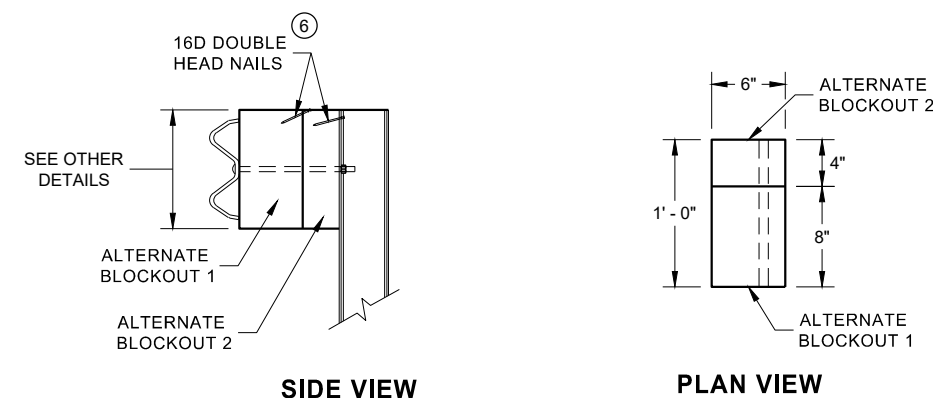


DETAIL FOR 36" BLOCKOUT DEPTH

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



**POST BOLT, SPLICE BOLT
AND RECESS NUT**

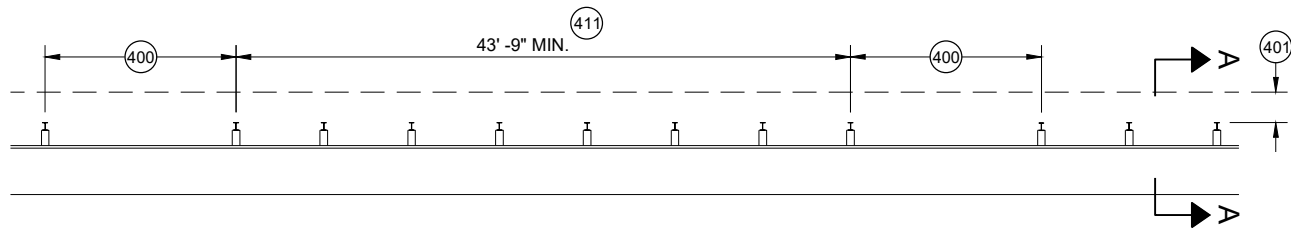


**ALTERNATE WOOD
BLOCKOUT DETAIL**

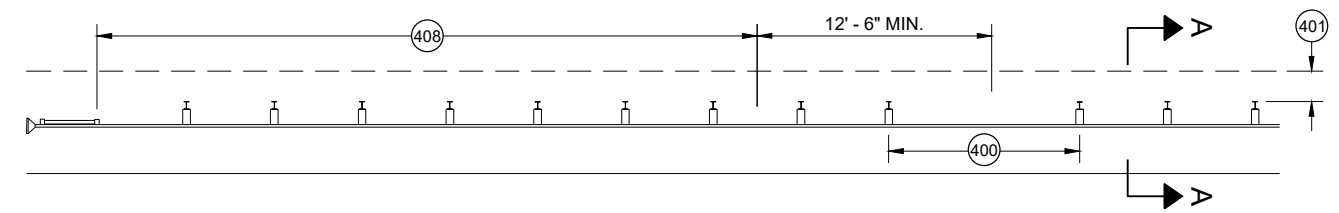
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

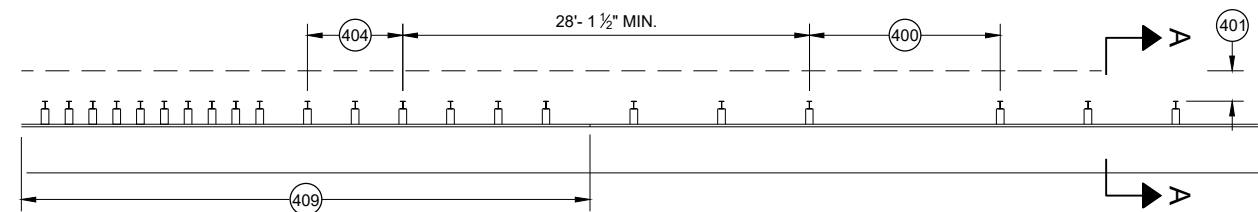
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



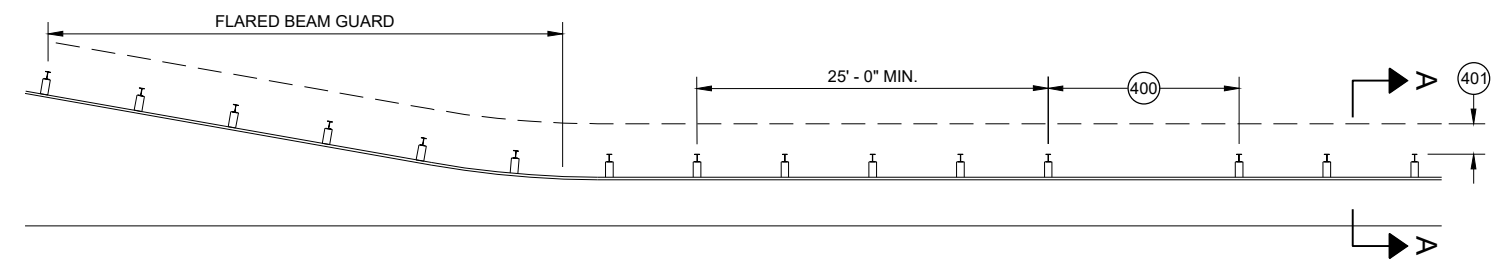
MISSING POST IN MGS GUARDRAIL



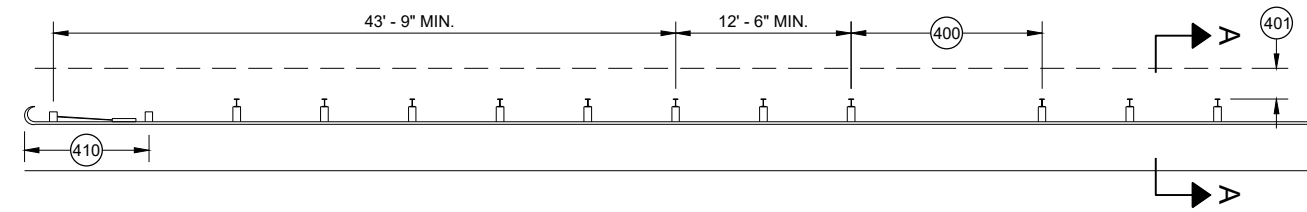
MISSING POST IN MGS GUARDRAIL NEAR EAT



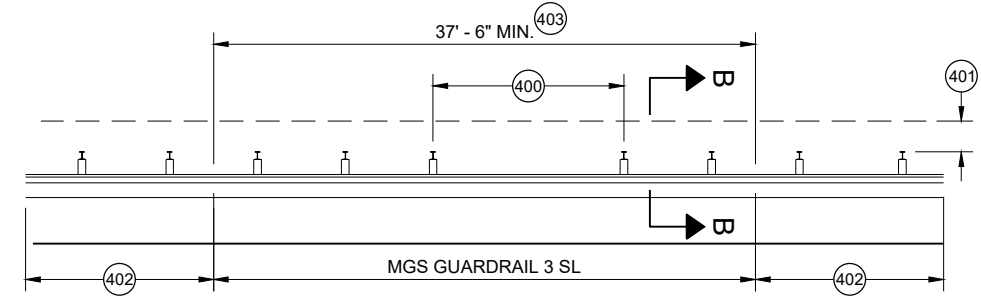
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

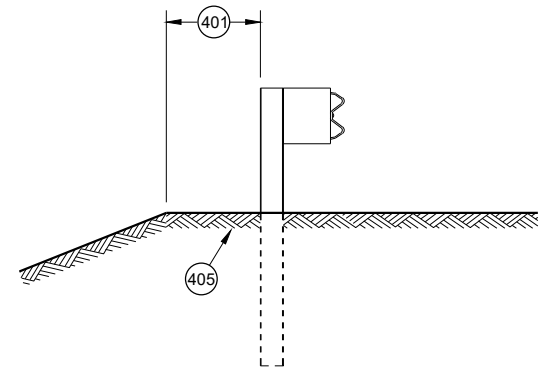


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

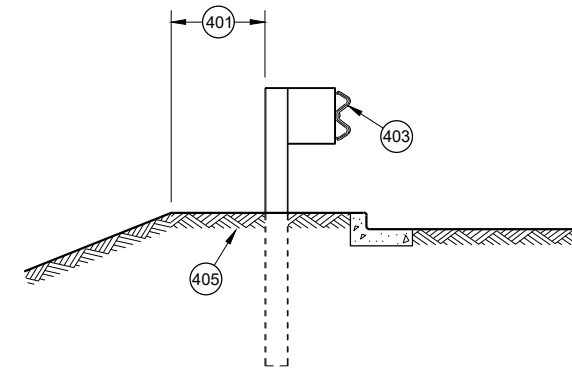


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 400 MAX SPAN 12' - 6"
- 401 2' MIN.
- 402 MGS GUARDRAIL 3
- 403 NESTING BEAM GUARD
- 404 ASYMMETRIC TRANSITION
- 405 SOIL WELL DRAINED AND COMPACTED
- 406 SEE OTHER DRAWINGS IN THIS SDD
- 407 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- 408 SEE SDD 14B44
- 409 SEE SDD 14B45
- 410 SEE SDD 14B47
- 411 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	

GENERAL NOTES

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

SEE SDD 14B42 FOR MORE INFORMATION.

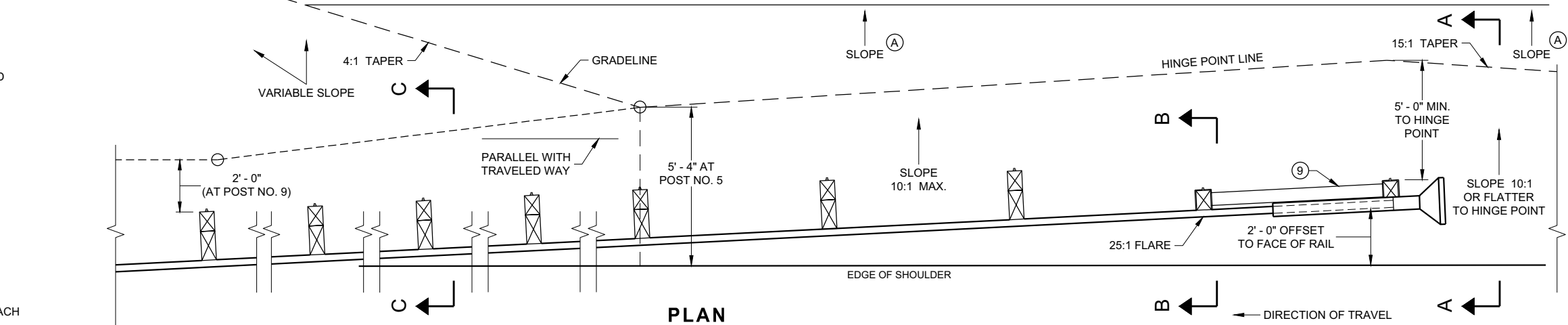
* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

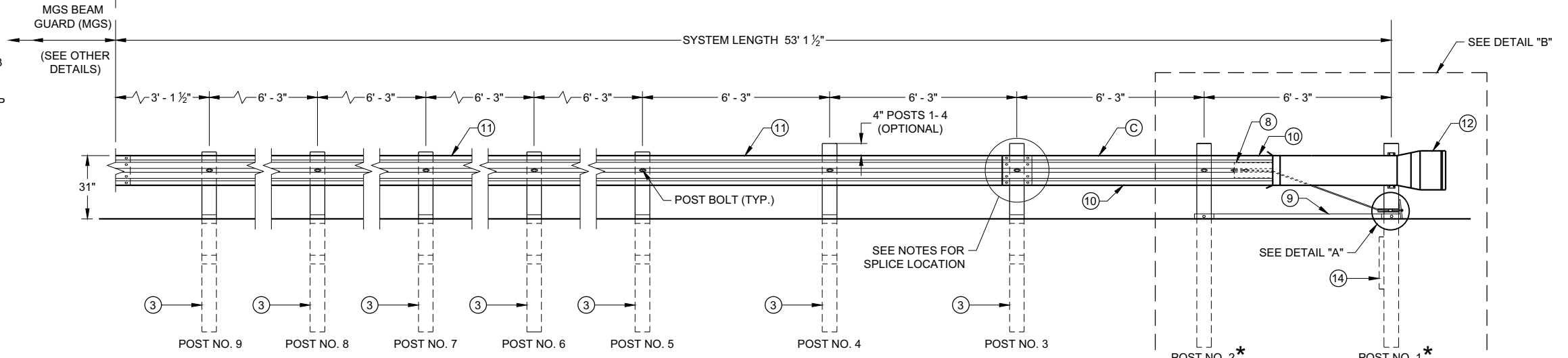
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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

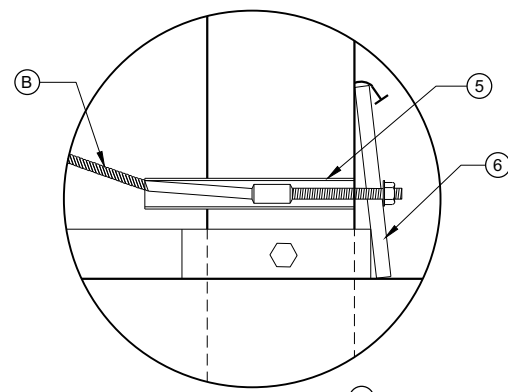
CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE



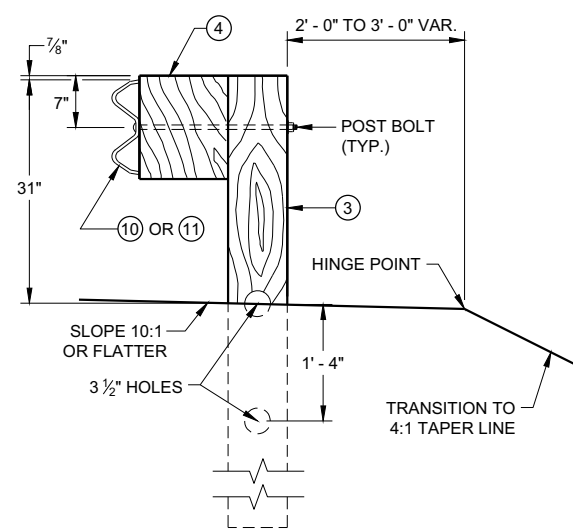
PLAN



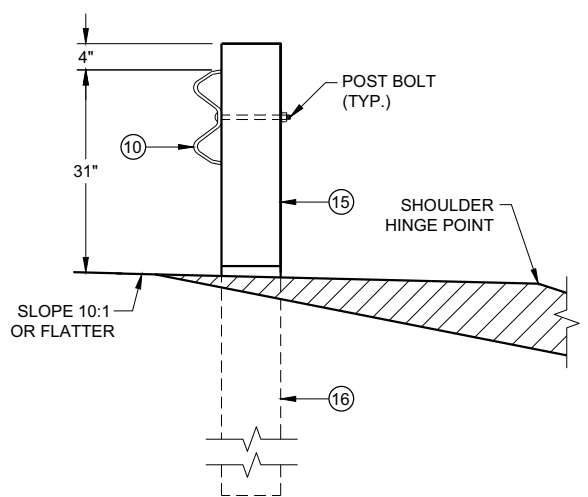
ELEVATION



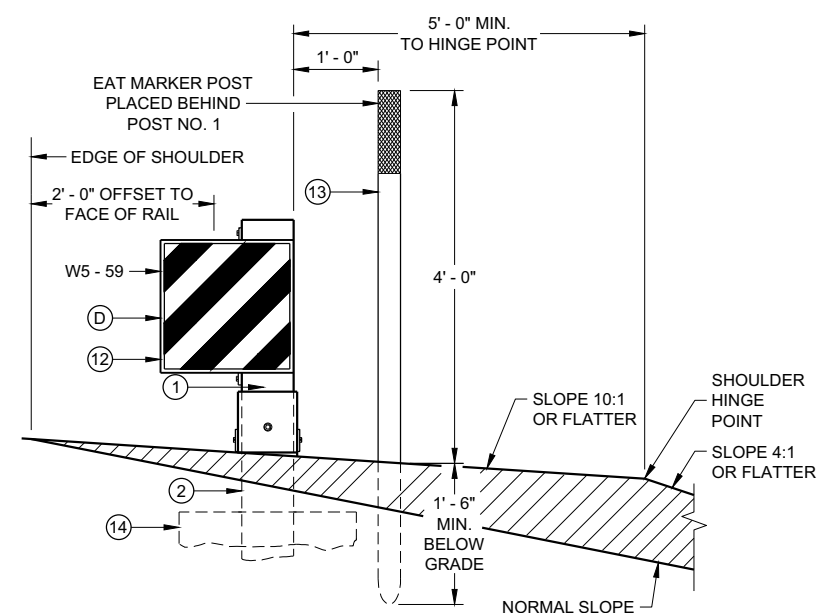
DETAIL "A"



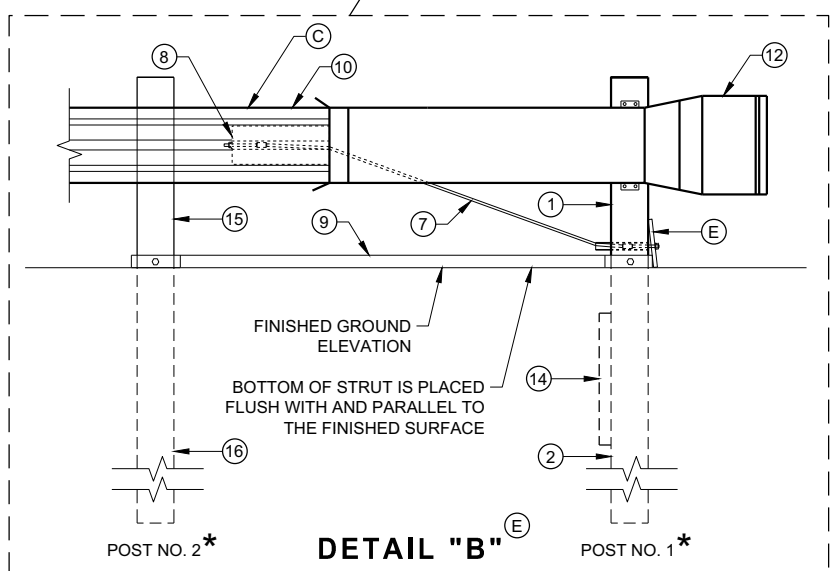
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

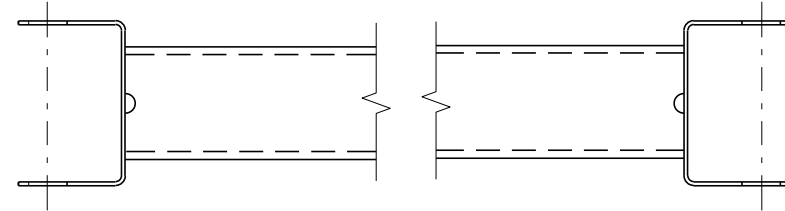
6

SDD 14B44 - 04a

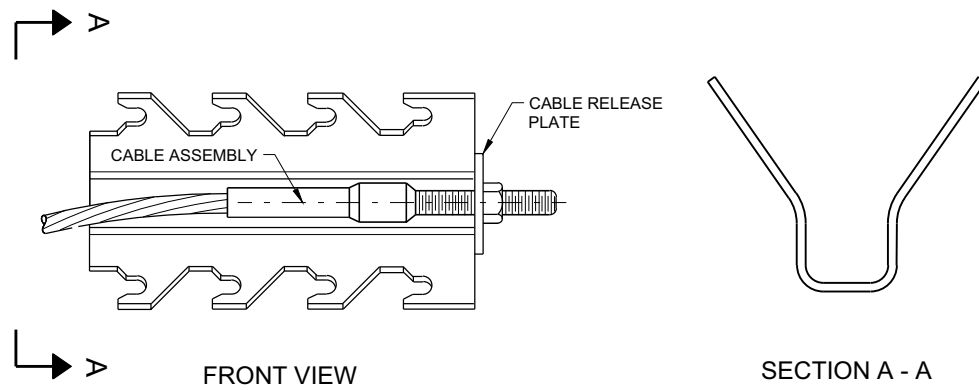
SDD 14B44 - 04a

BILL OF MATERIALS

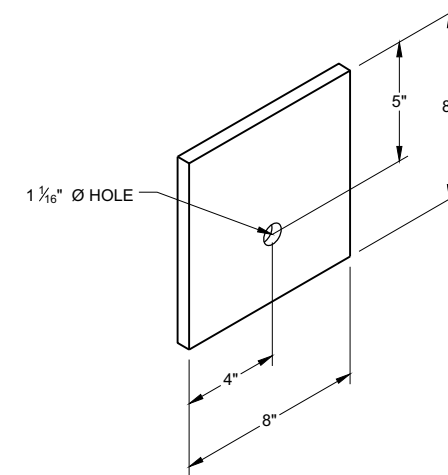
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

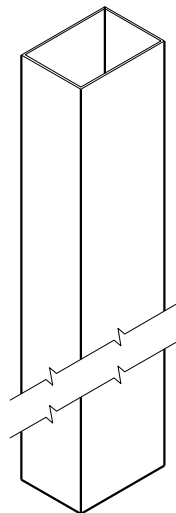
6

SDD 14B44 - 04b

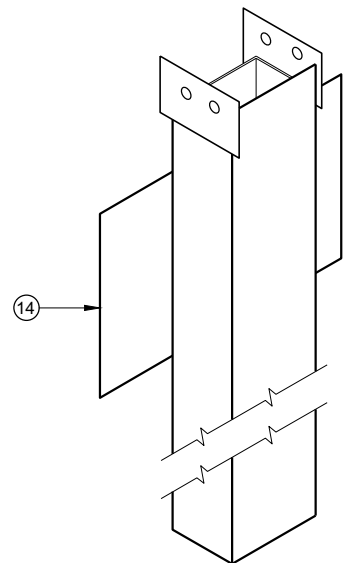
SDD 14B44 - 04b

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

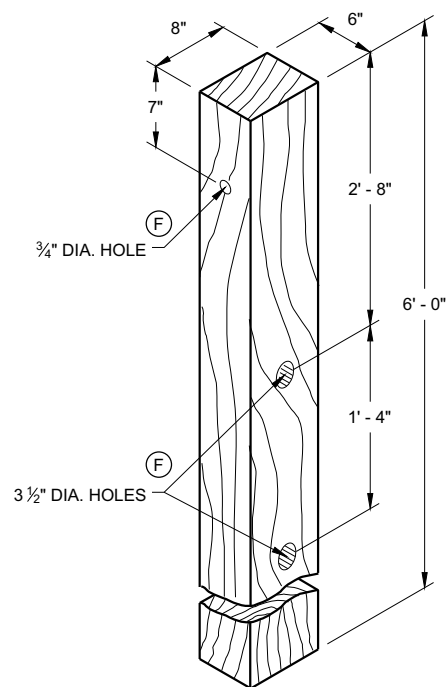
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



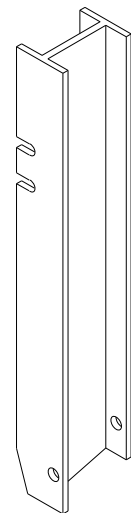
UPPER POST NO. 1 ⁽¹⁾ (E)



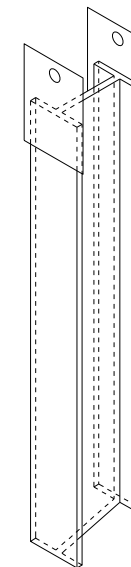
LOWER POST NO. 1 ⁽²⁾ (E)



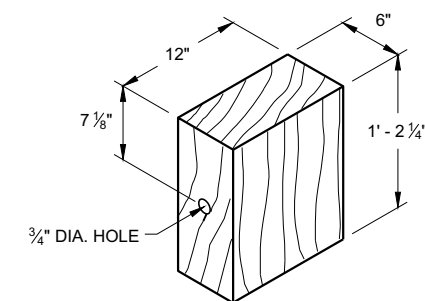
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

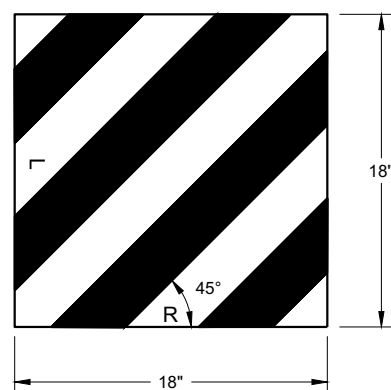


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

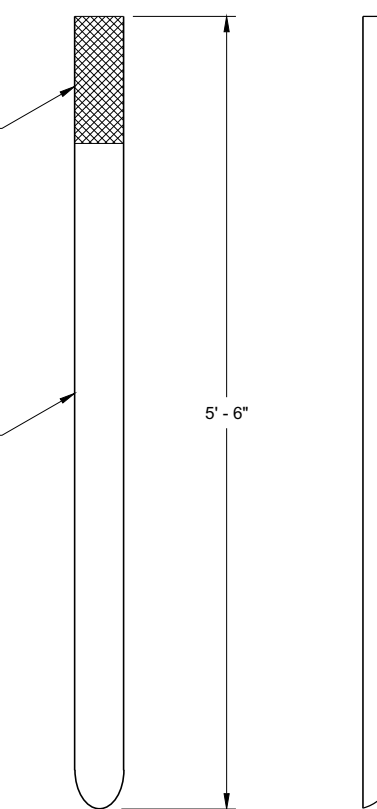
6



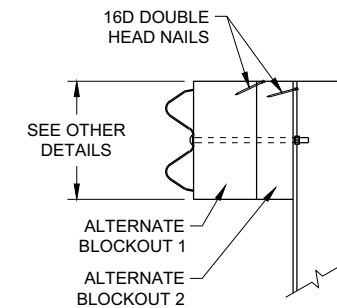
REFLECTIVE SHEETING DETAIL ^(E)

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.

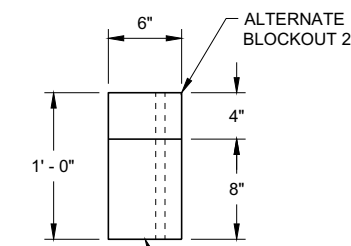
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

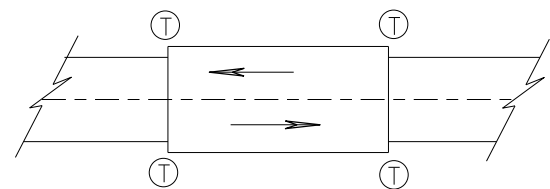
SDD 14B44 - 04c

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

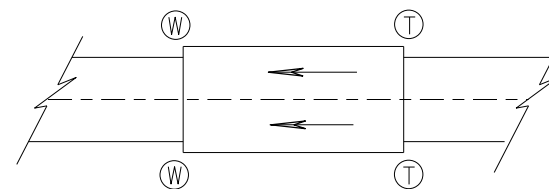
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

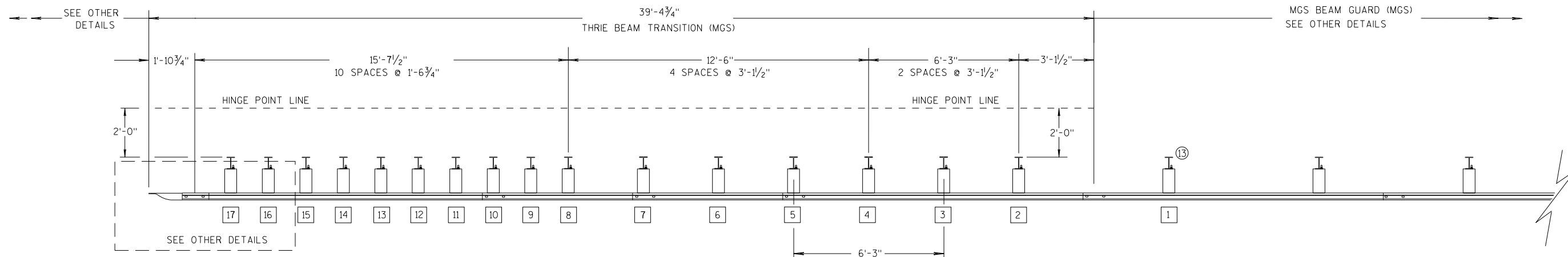
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

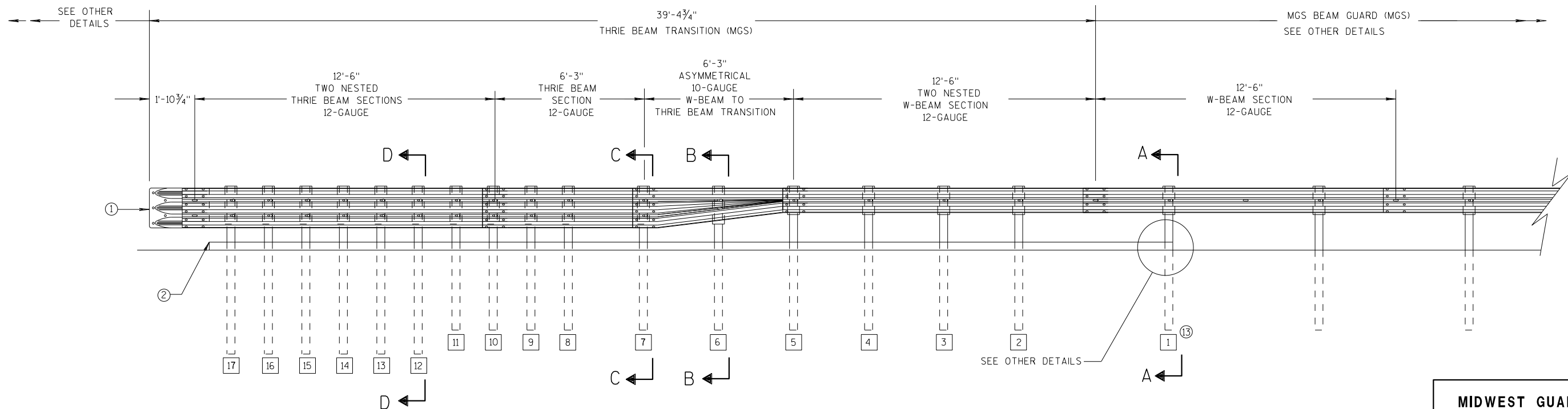
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

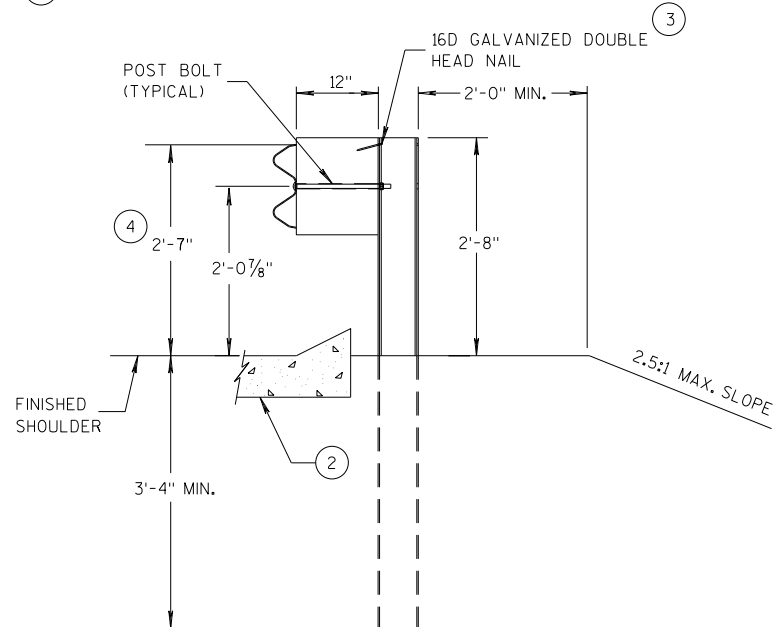
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

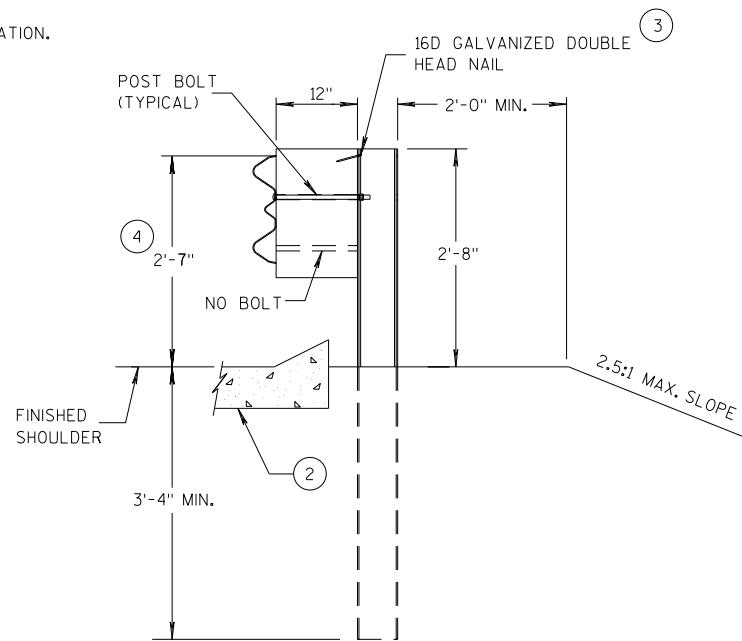
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

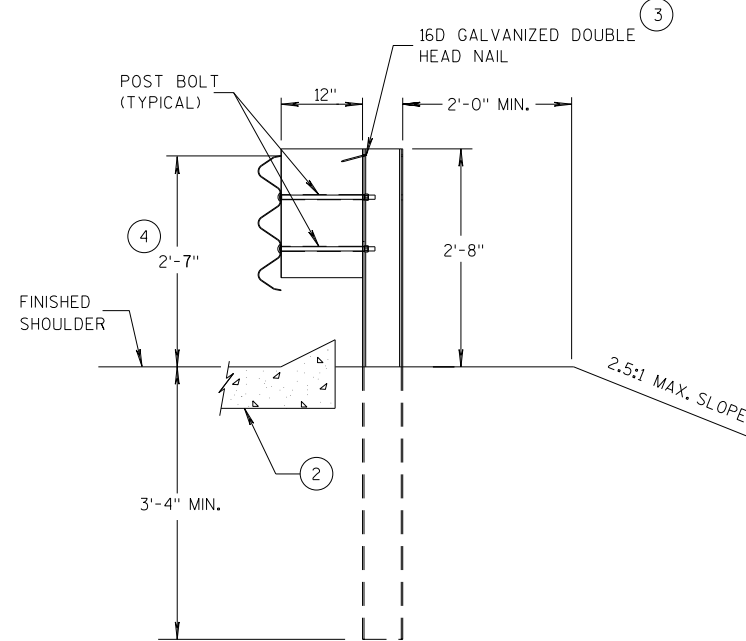
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

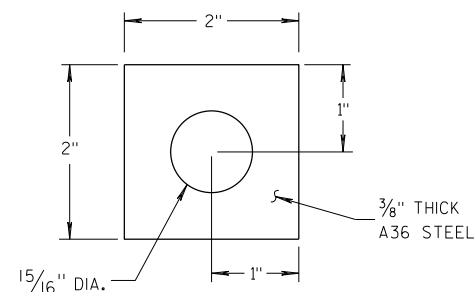
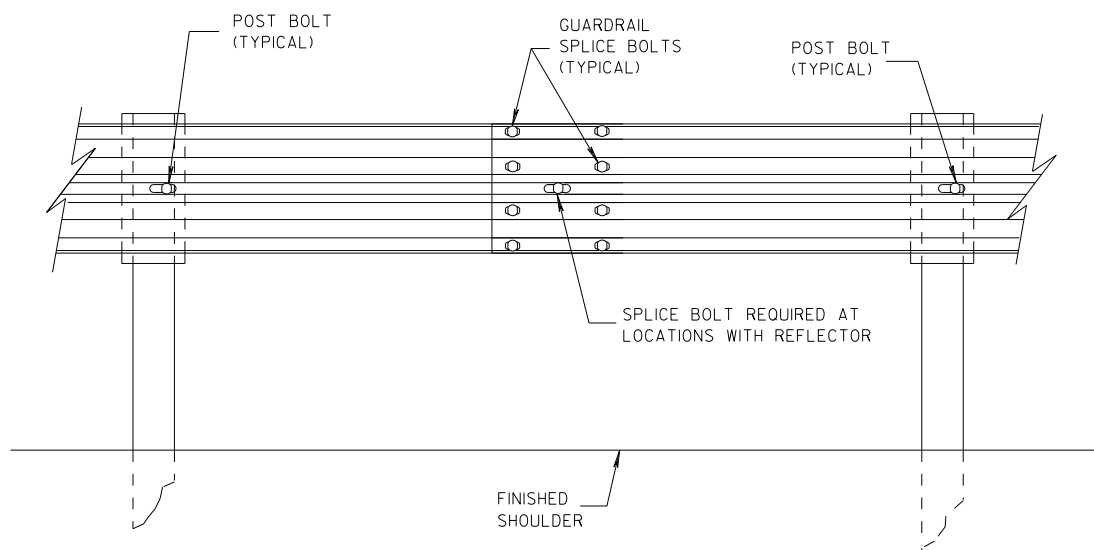
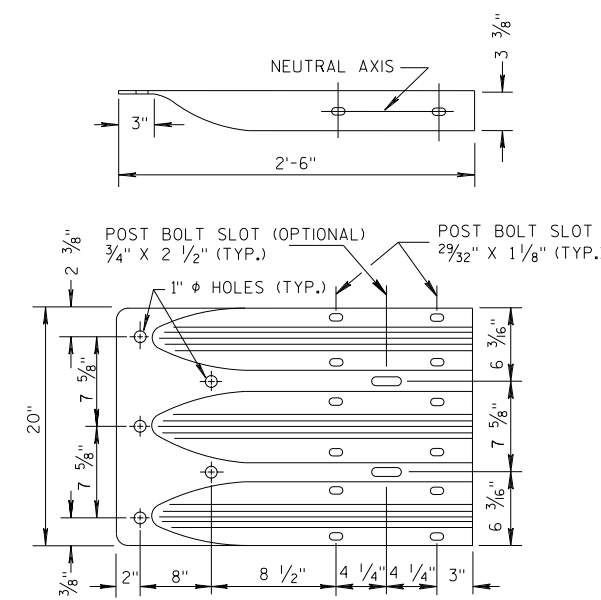


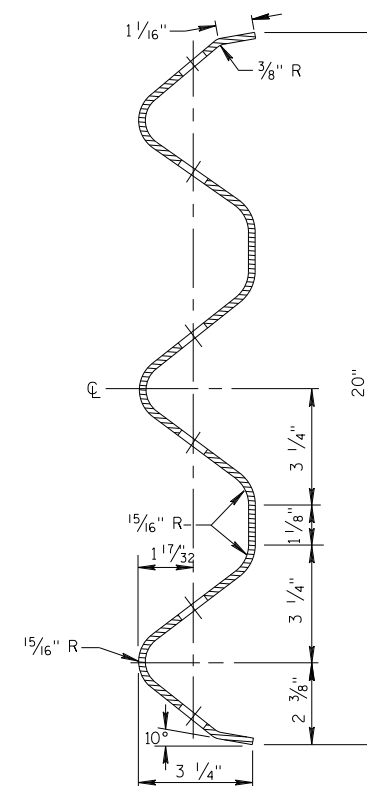
PLATE WASHER DETAIL



SPLICE DETAIL



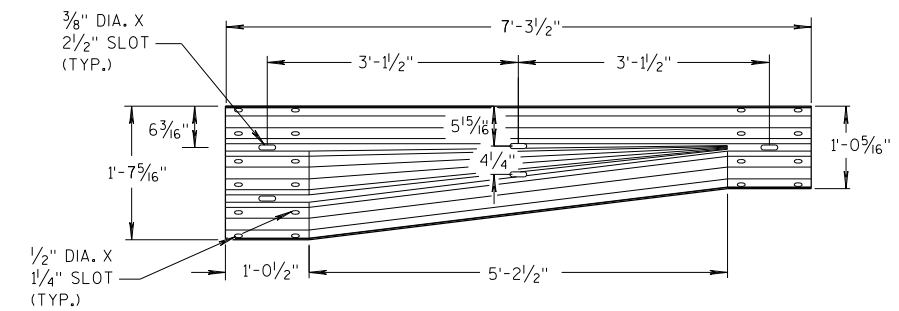
**THRIE BEAM
TERMINAL CONNECTOR**



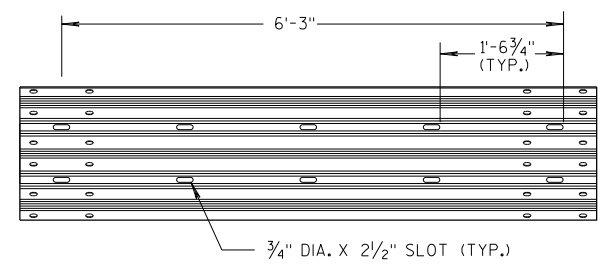
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

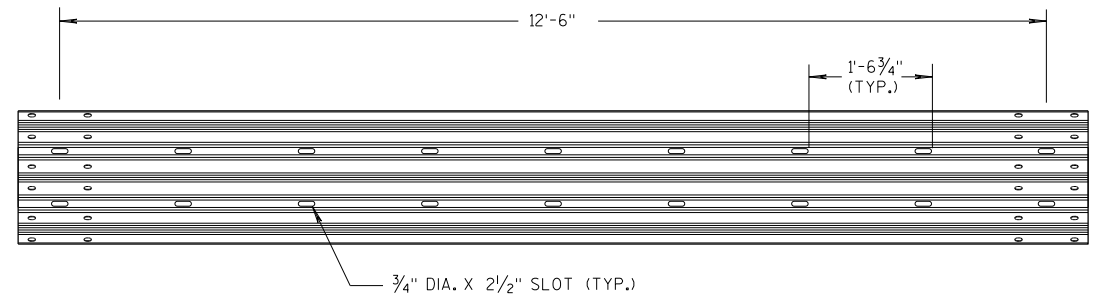
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



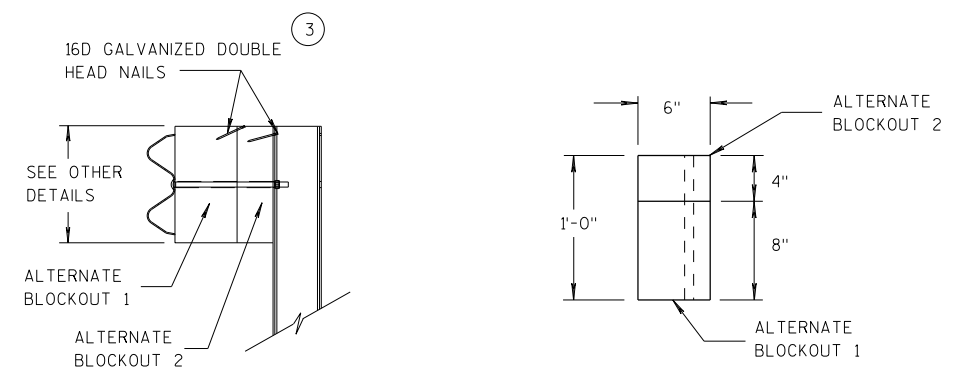
W-BEAM TO THRIE BEAM TRANSITION SECTION



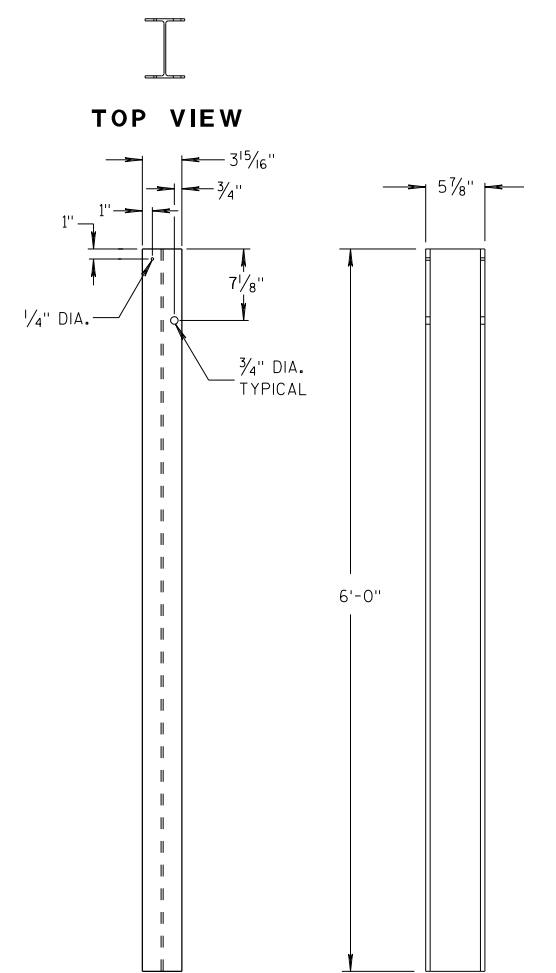
6'-3\"/>



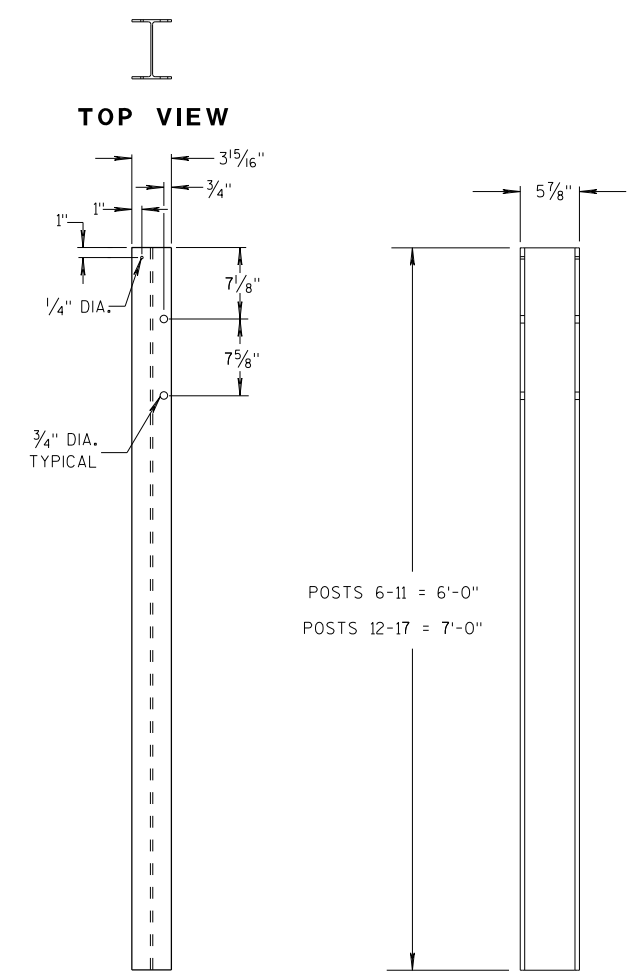
12'-6\"/>



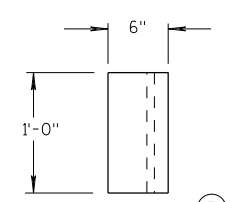
ALTERNATE WOOD BLOCKOUT DETAIL



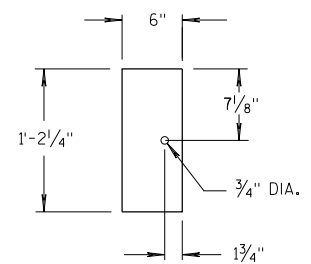
STEEL POSTS 1-5



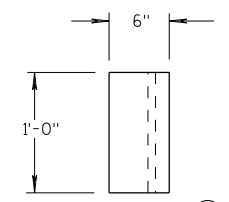
STEEL POSTS 6-17



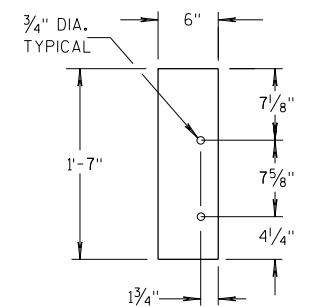
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 6-17**

GENERAL NOTES

- STEEL POSTS ARE W6X9 OR W6X8.5.
- BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.
- (3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- (5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

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

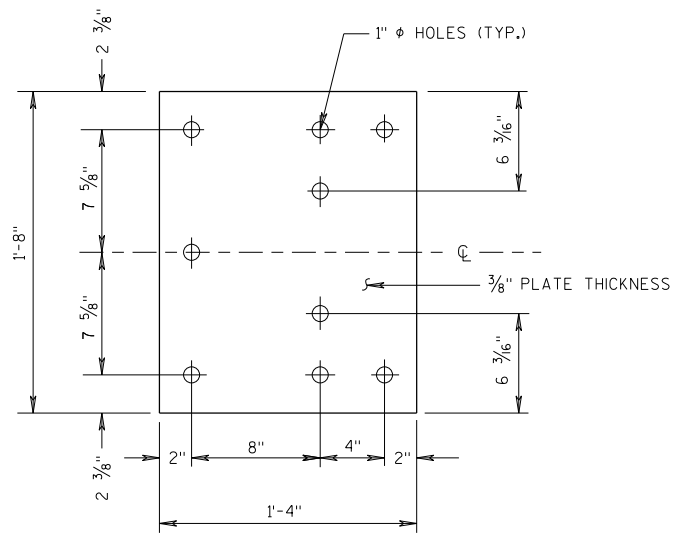
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

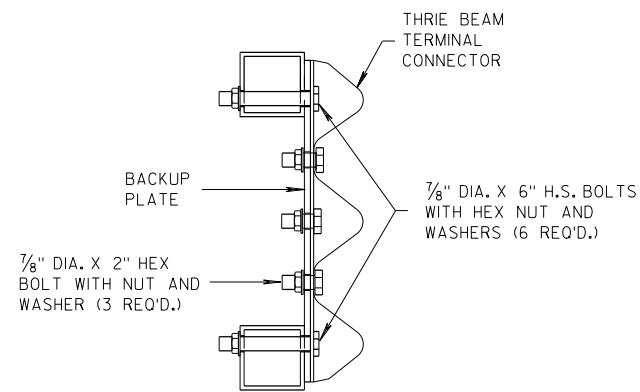
6

S.D.D. 14 B 45-5c

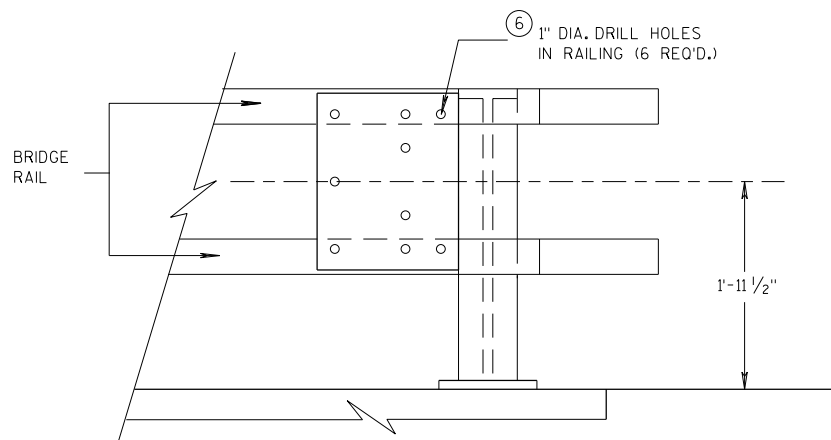
S.D.D. 14 B 45-5c



BACK-UP PLATE DETAIL



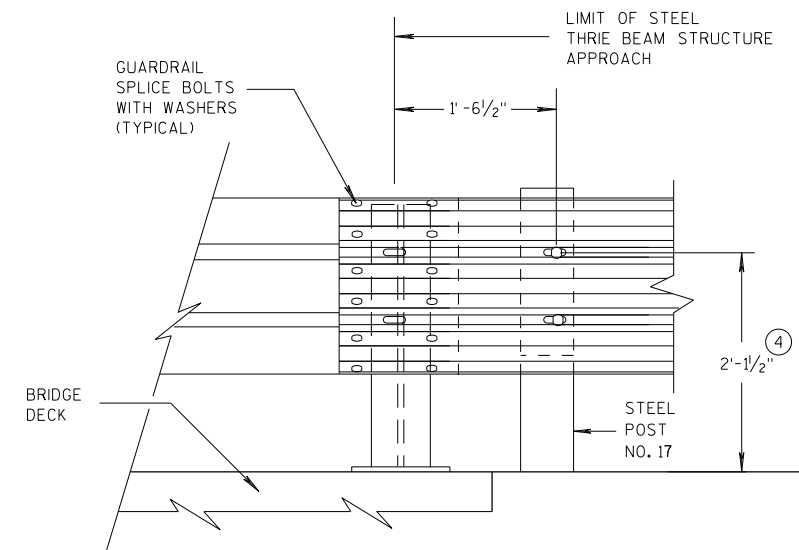
SECTION J-J



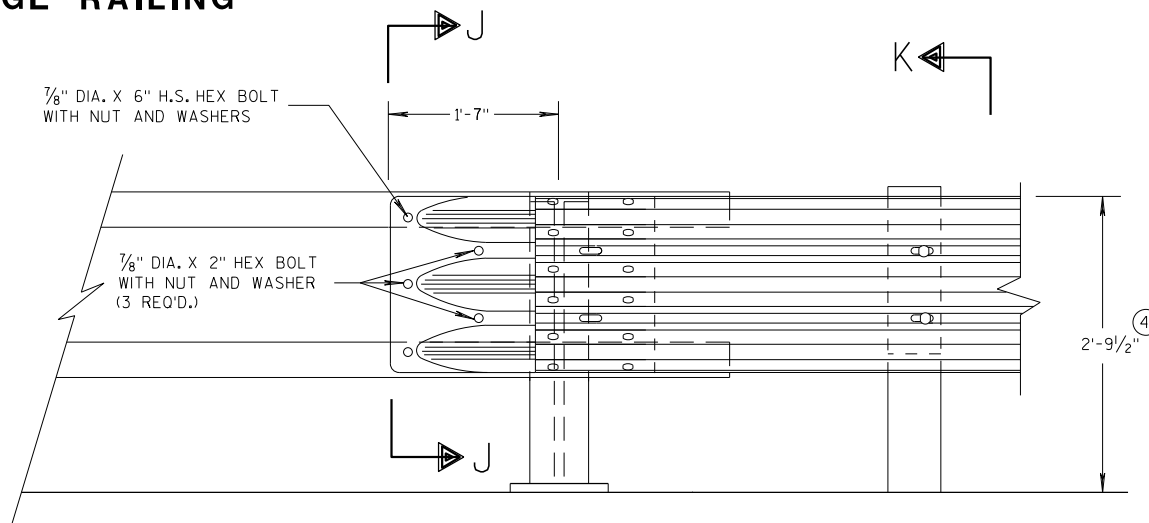
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

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.

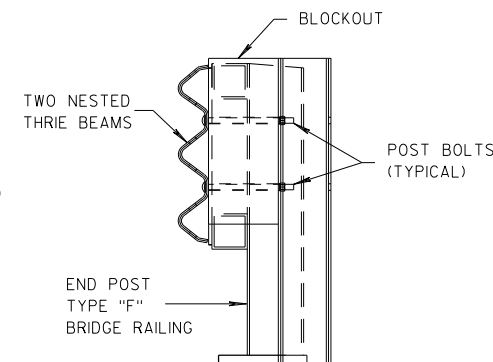


FRONT VIEW THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

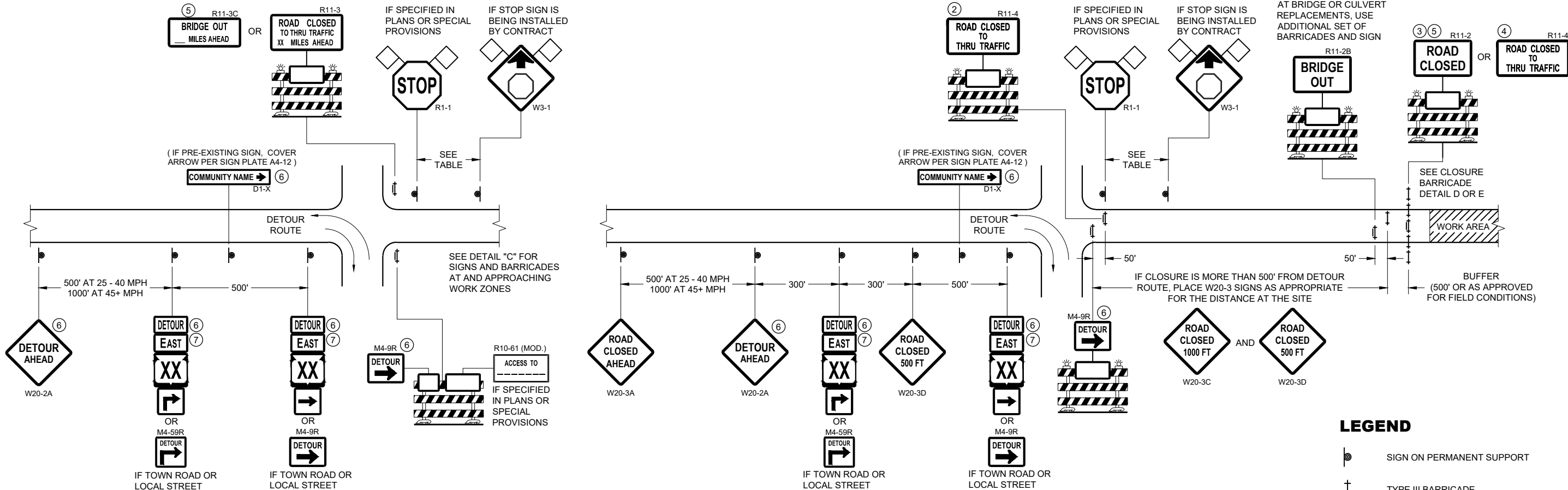
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

6

S.D.D. 14 B 45-59

S.D.D. 14 B 45-59



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

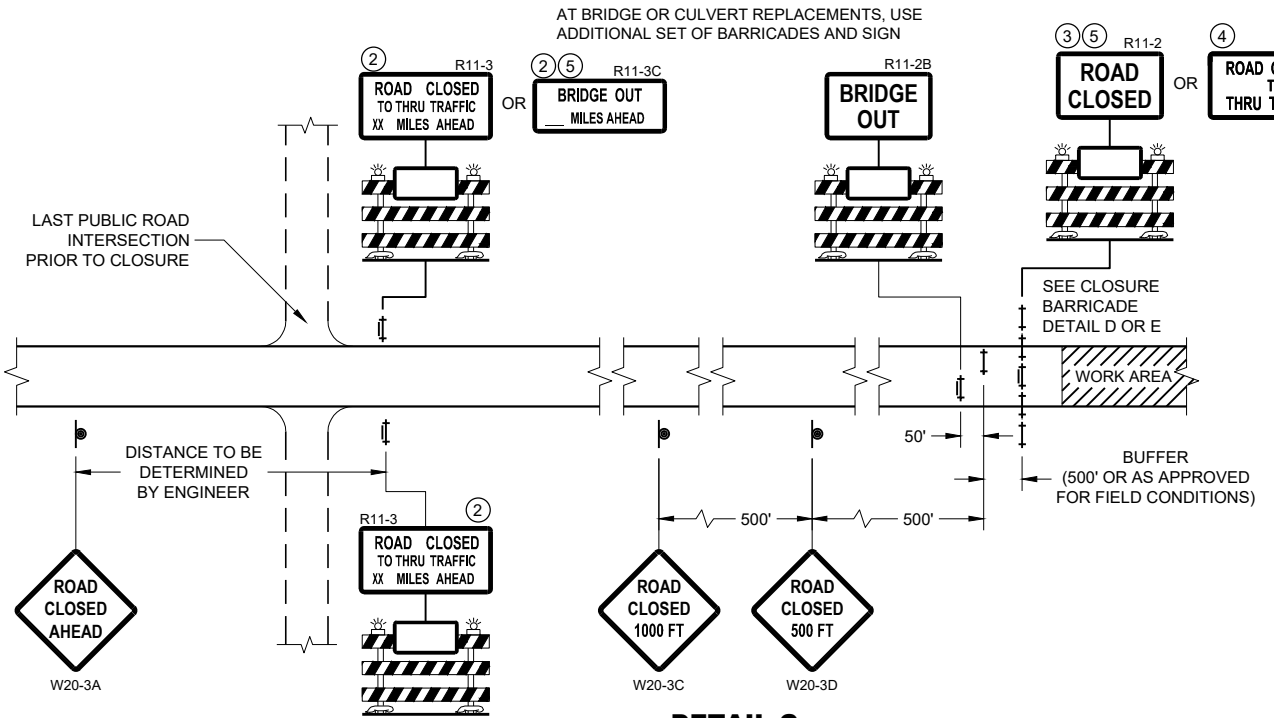
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



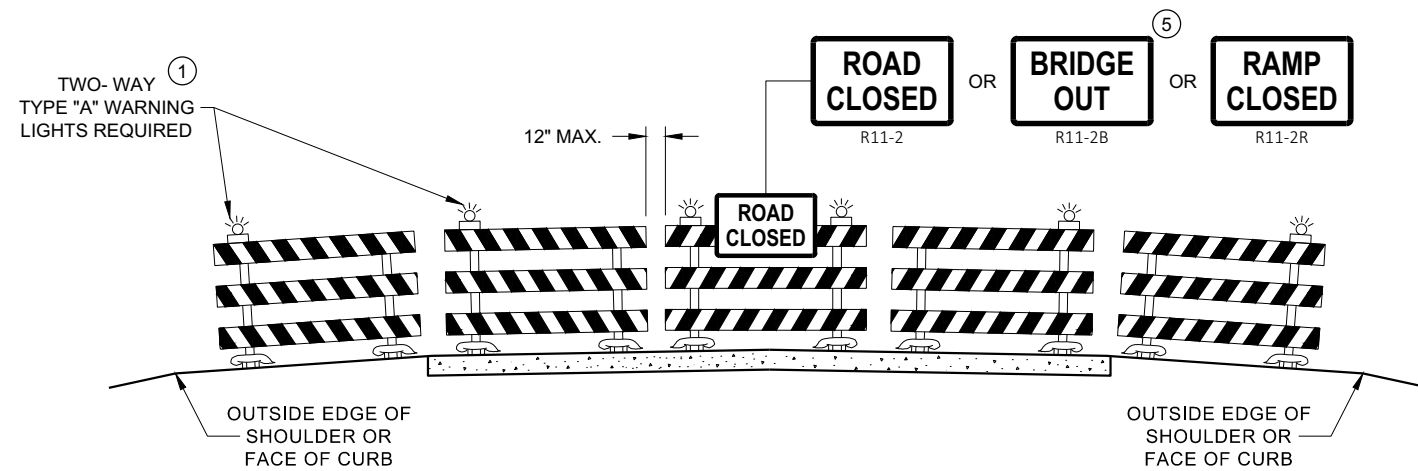
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

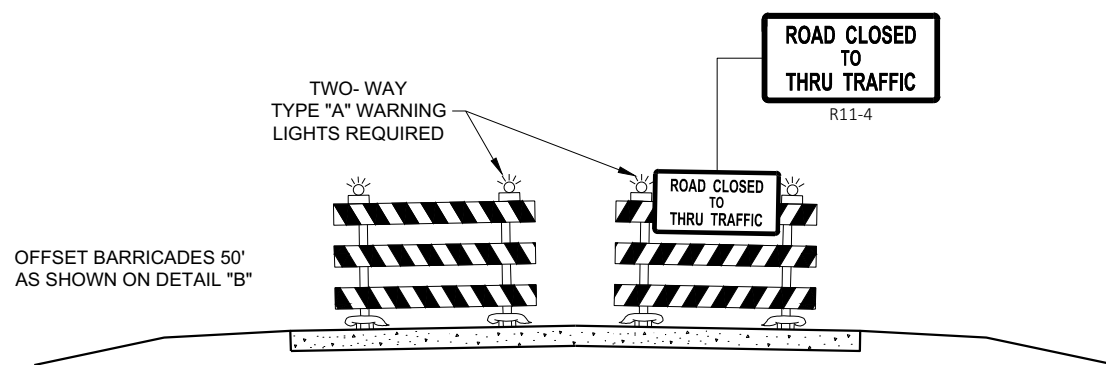
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

GENERAL NOTES

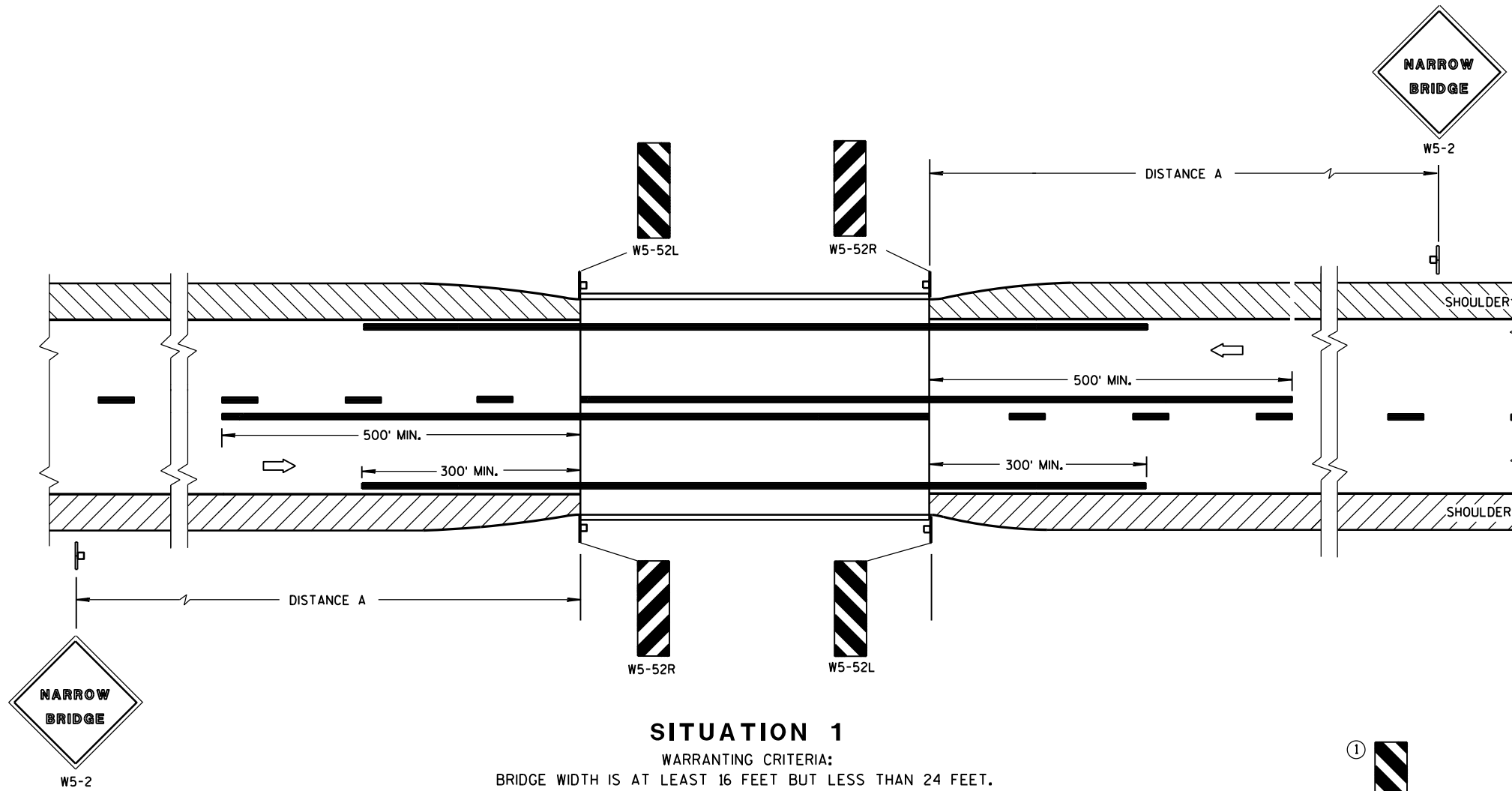
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

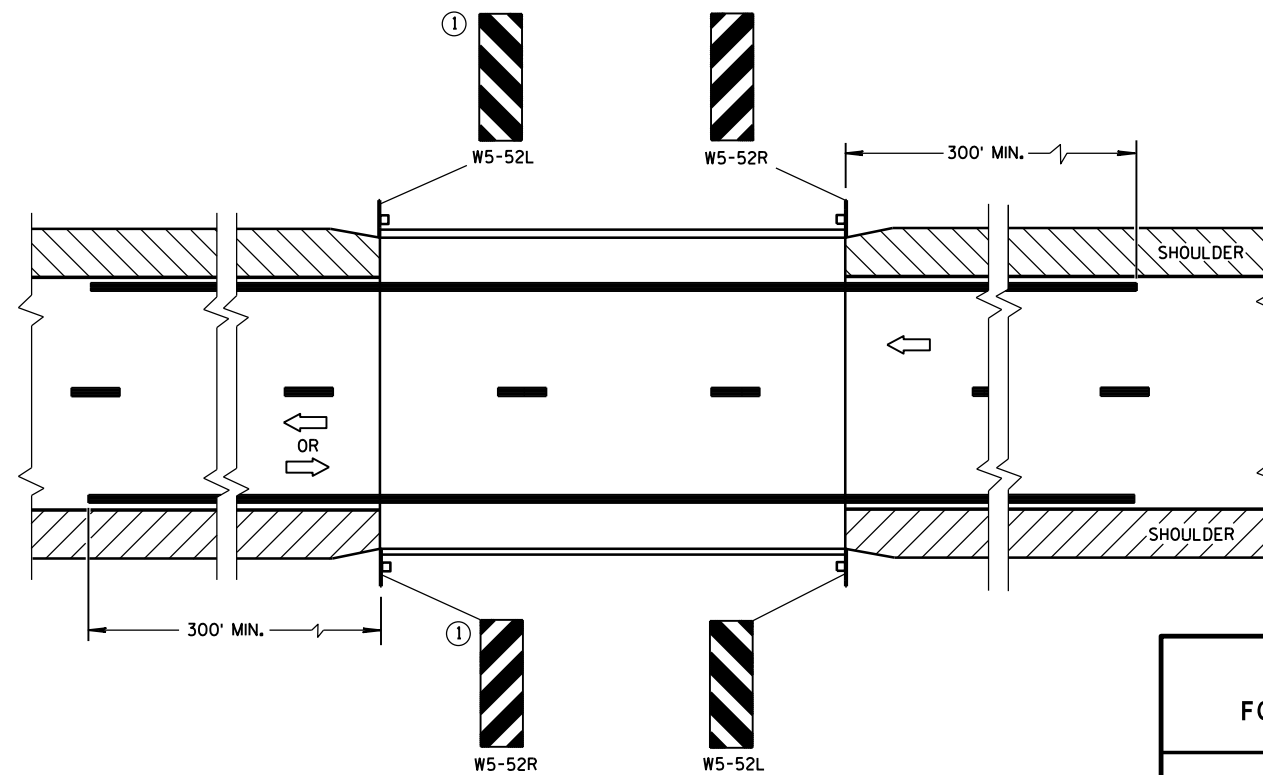
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



SITUATION 2

WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

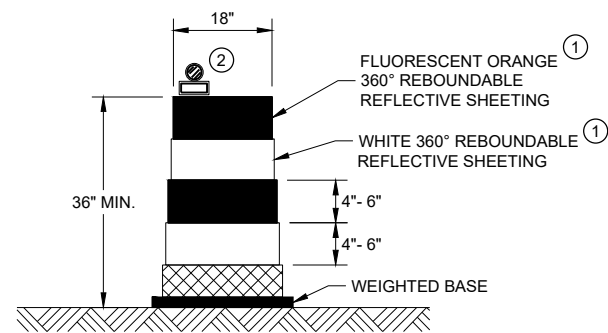
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

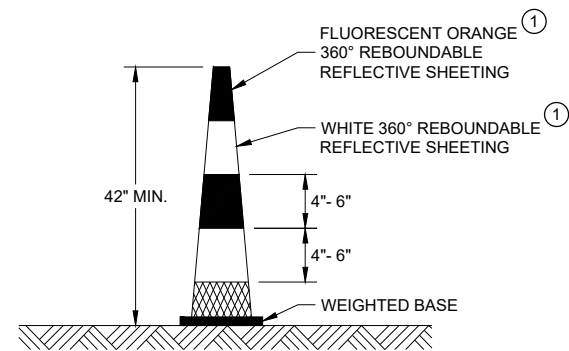
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

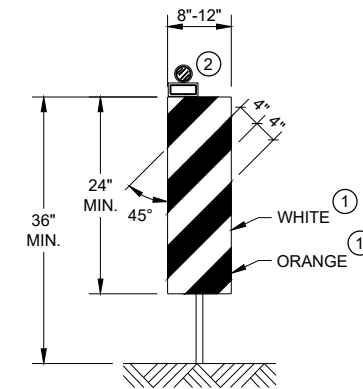


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

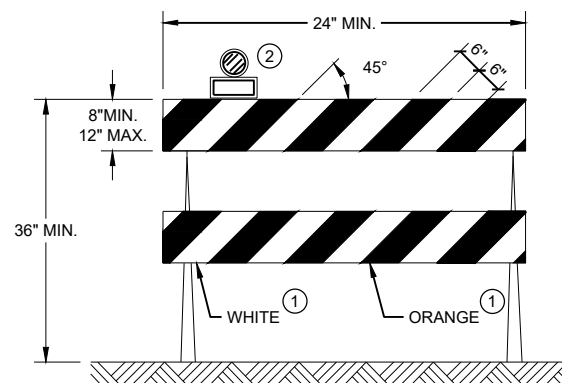


VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.

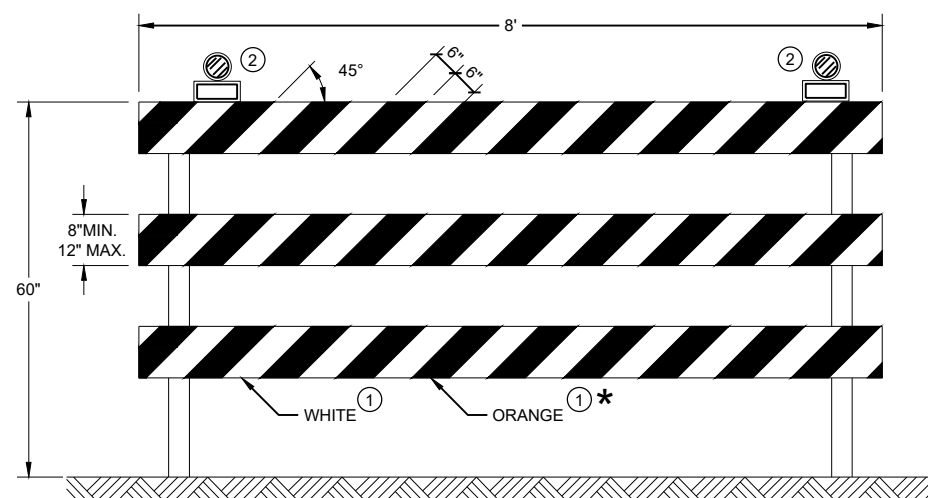
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.

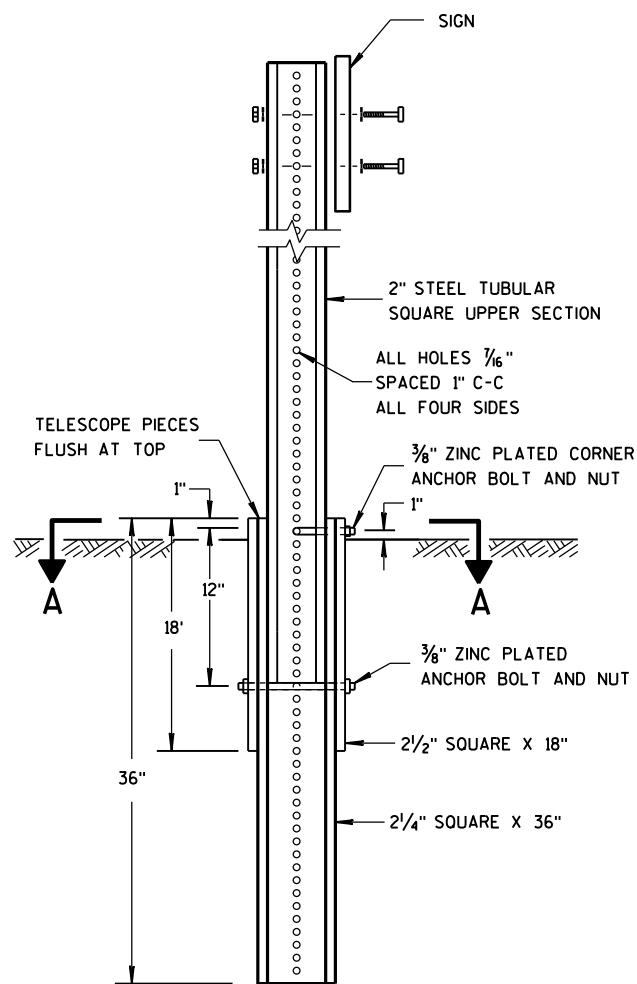


TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



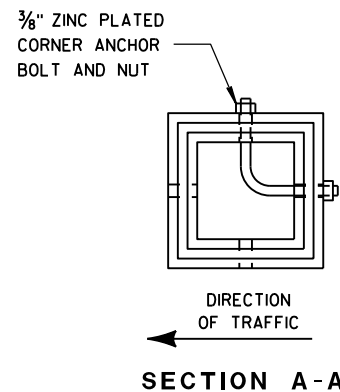
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

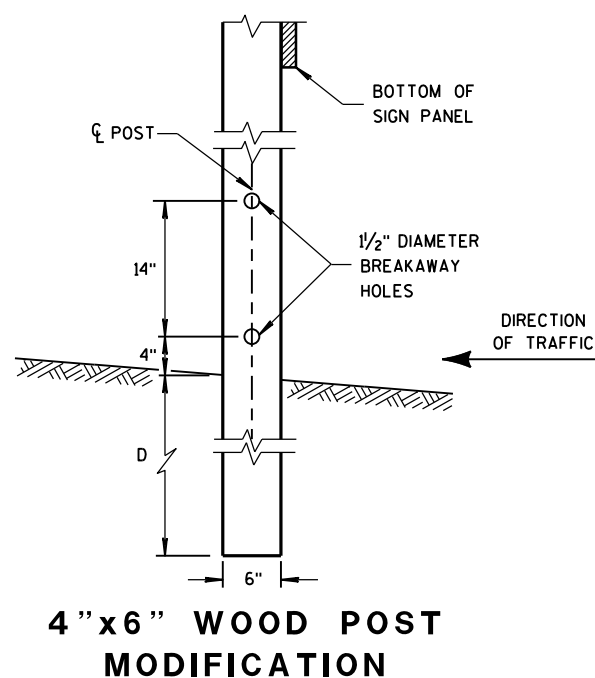
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

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

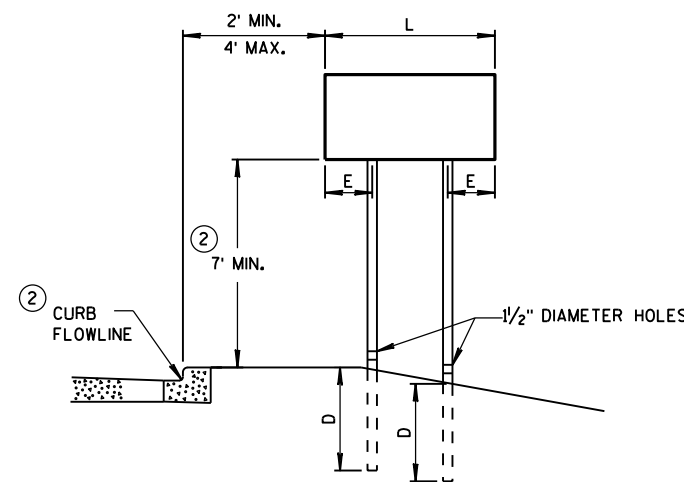
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



SECTION A-A



4" X 6" WOOD POST MODIFICATION

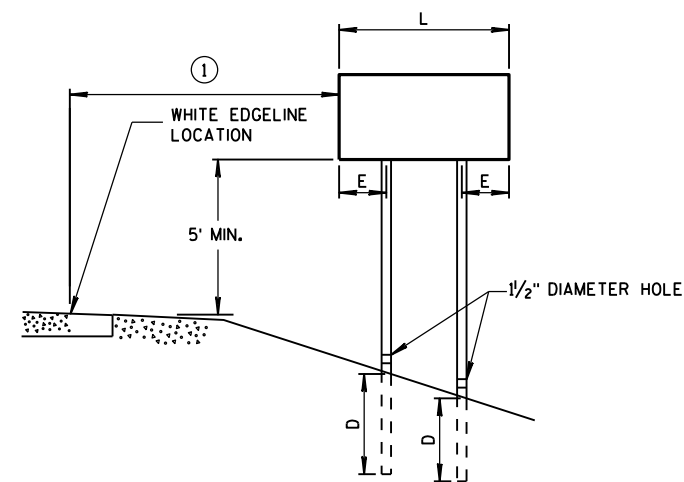


URBAN AREA

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'



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

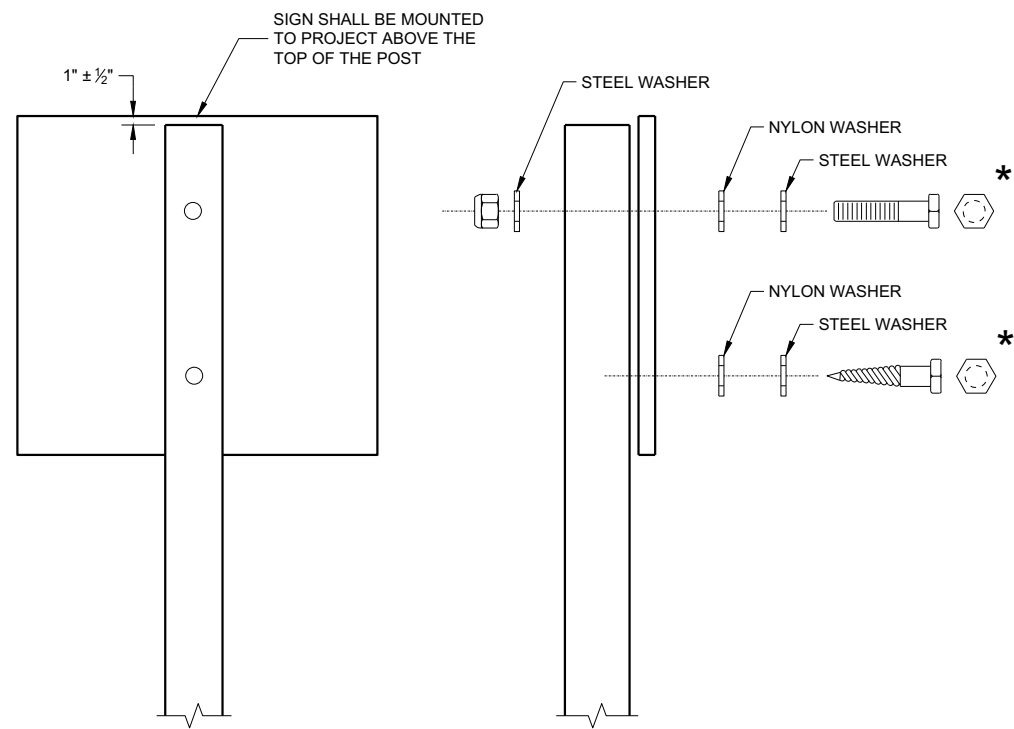
SEE NOTE ③

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.

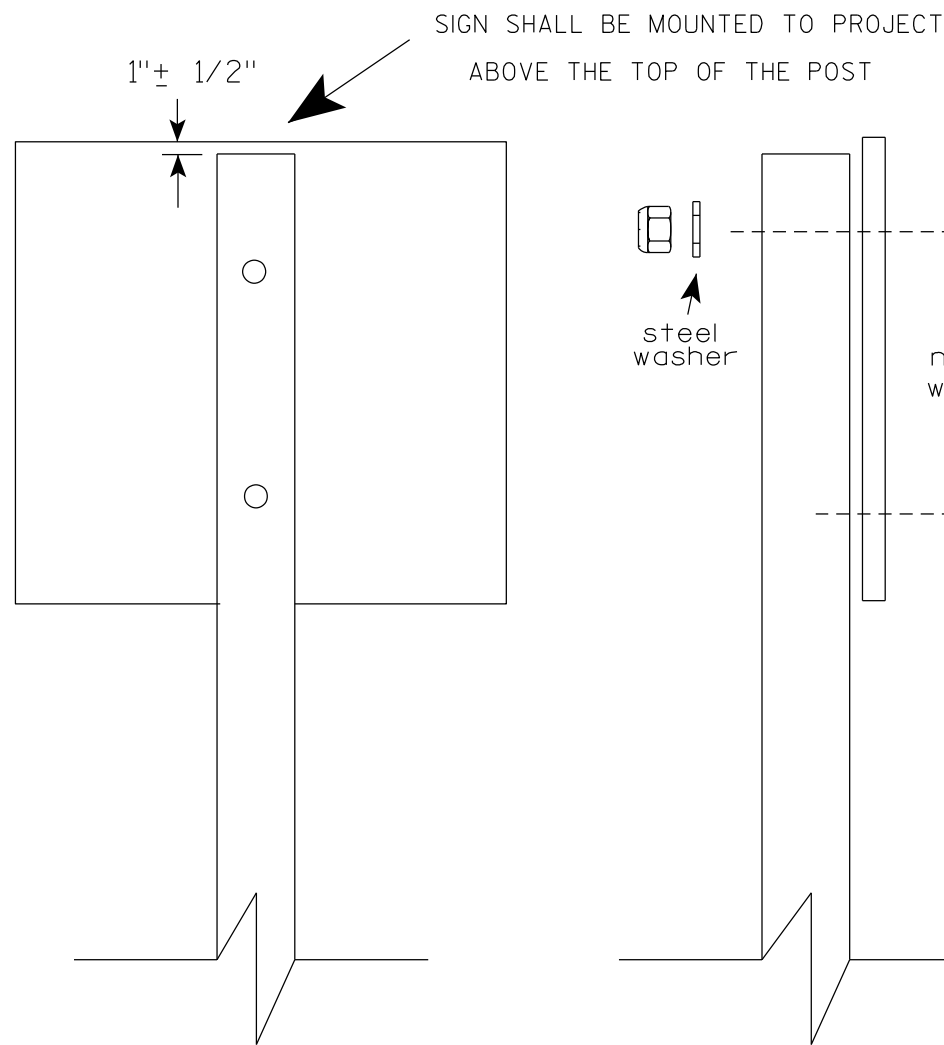
WOOD POST (4" x 6")
 LAG SCREWS - 3/8" x 3"
 MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
 MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
 RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
 BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
 GRIP RANGE 0.042 - 0.375 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 0.080 NYLON

* 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 ENGINEER
<small>FHWA</small>	



SIGN SHALL BE MOUNTED TO PROJECT
ABOVE THE TOP OF THE POST

1"± 1/2"

steel washer

nylon washer

steel washer

*

*

Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- 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.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- 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

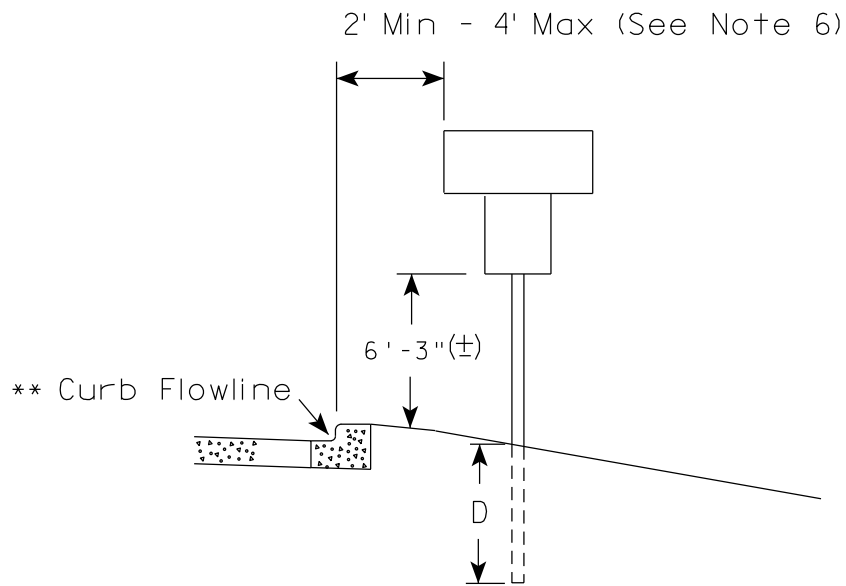
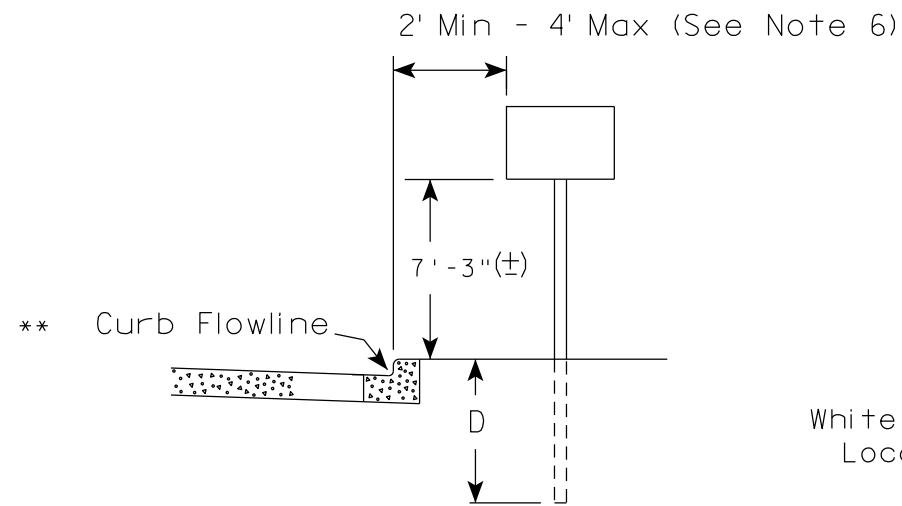
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

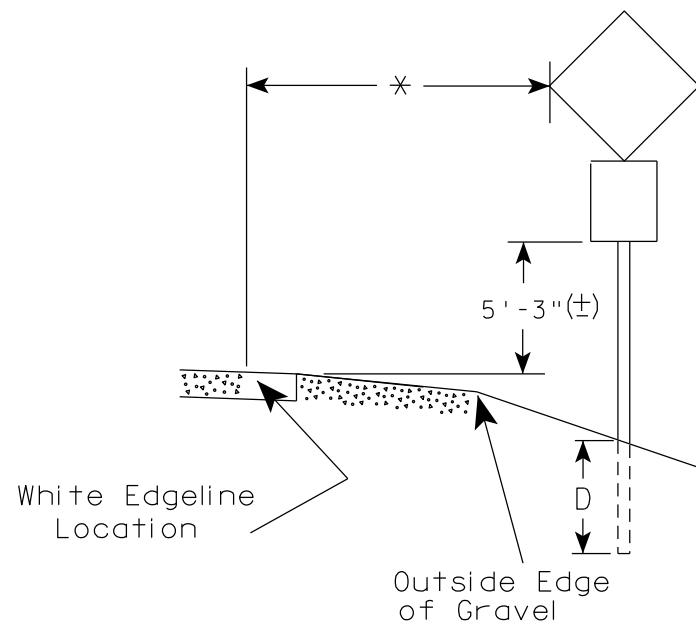
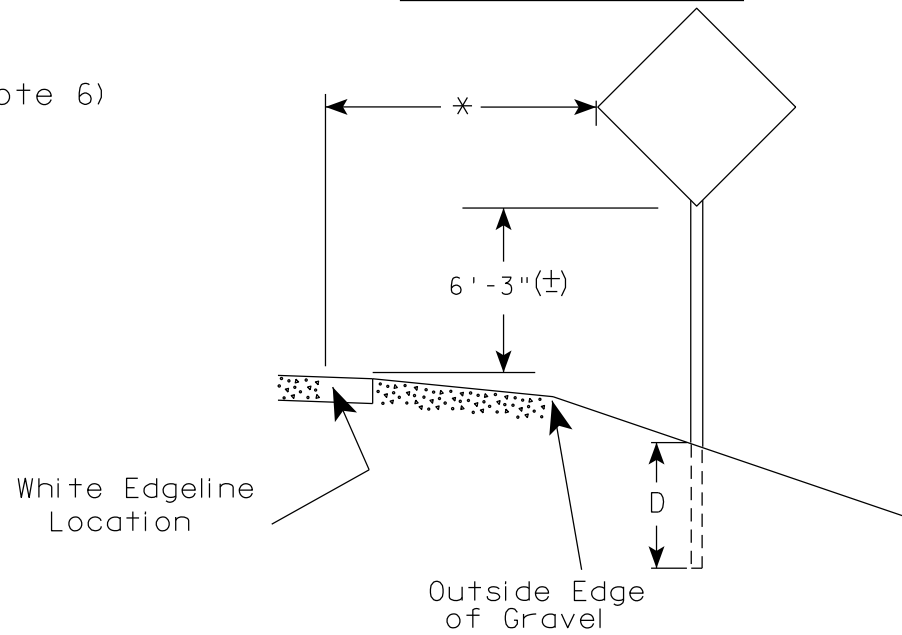
7

7

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

* * 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. Offset of signs is measured from the flow line.

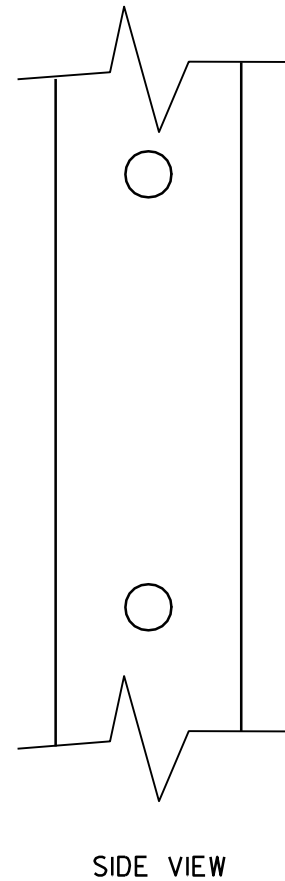
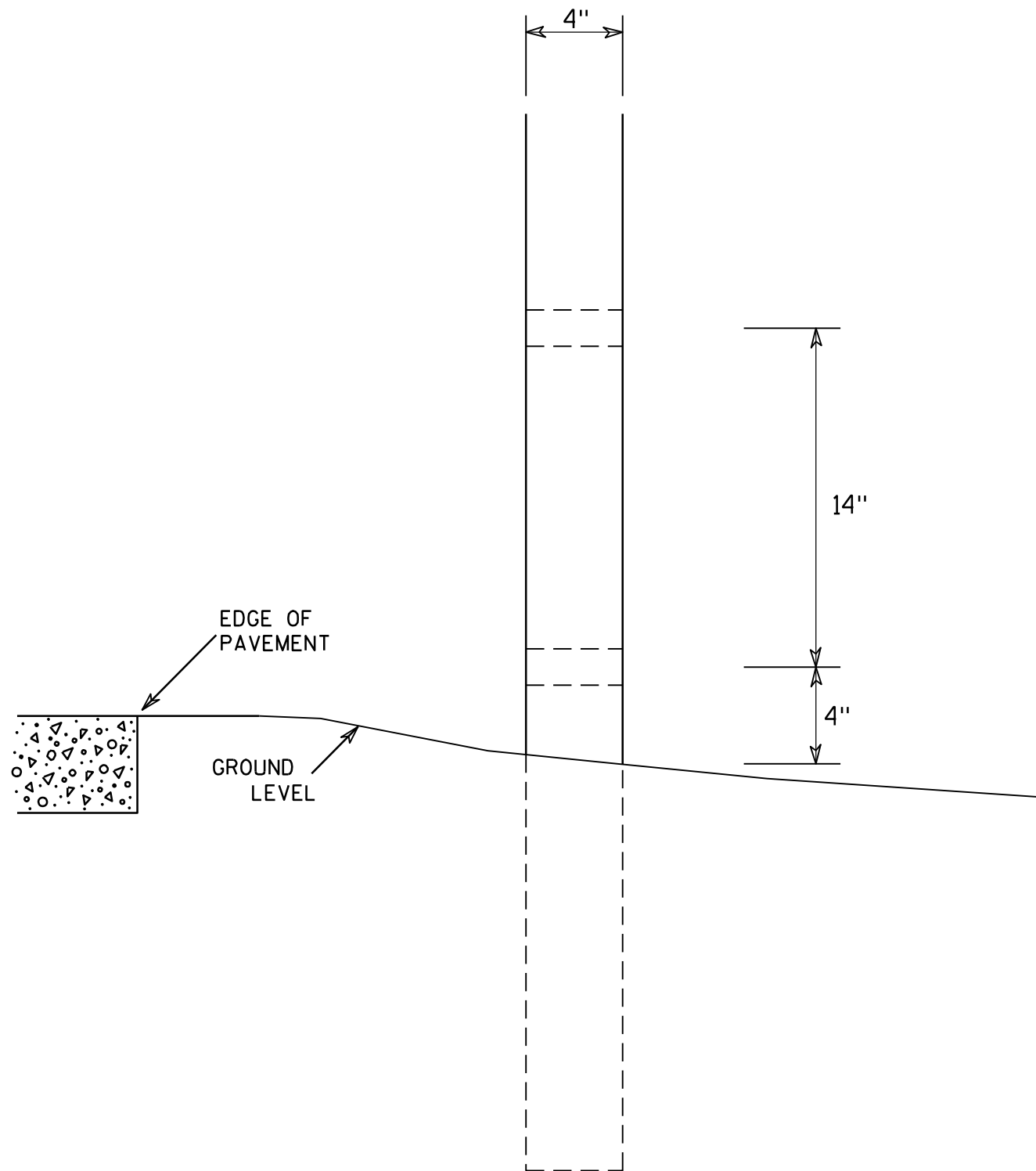
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22



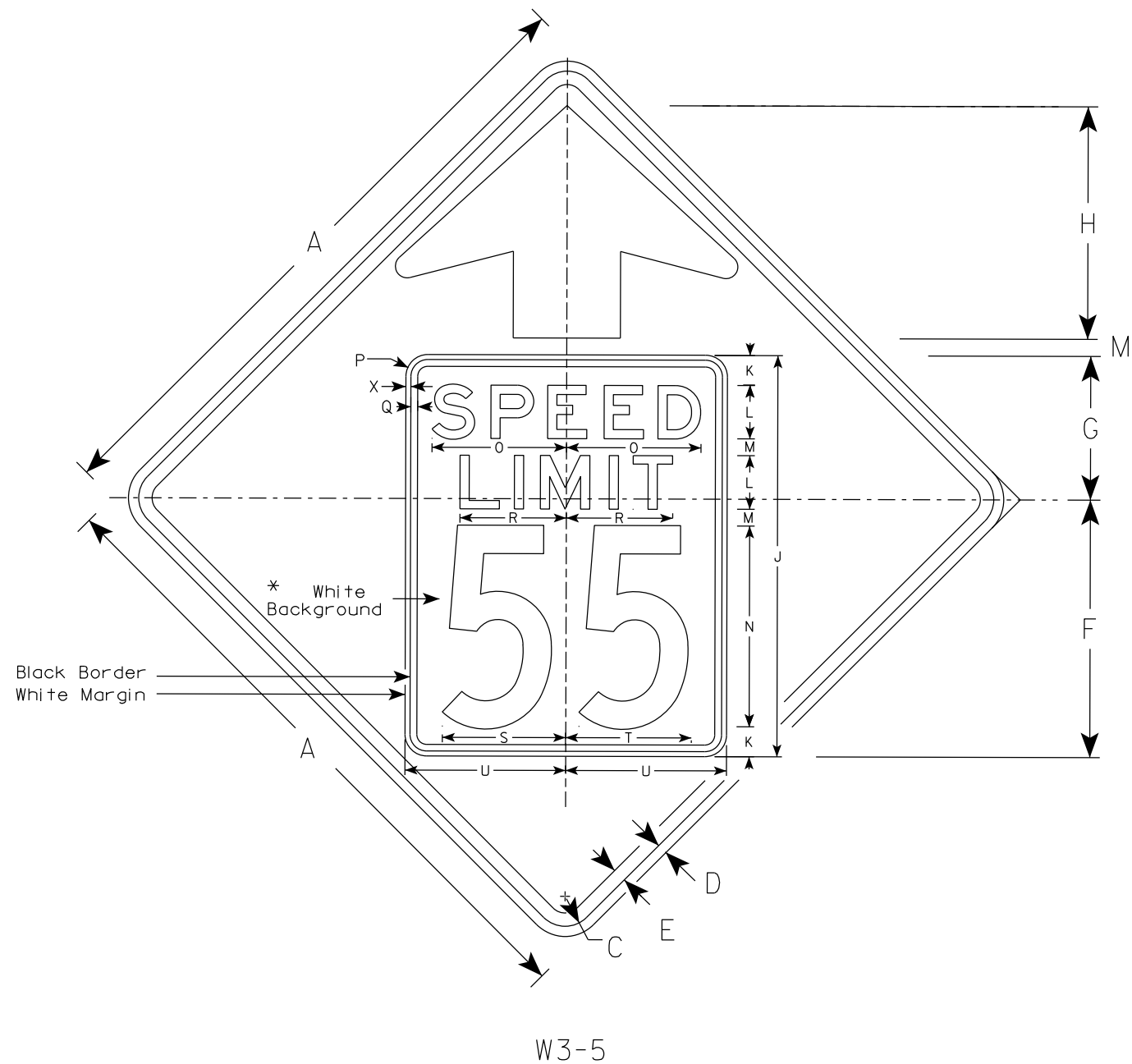
GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

7

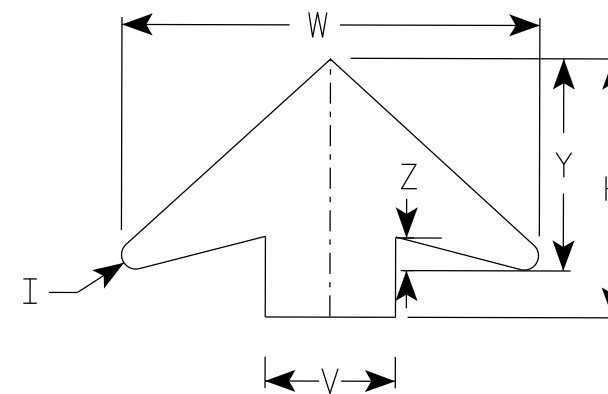
4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE 3/27/97	PLATE NO. A4-11.2



NOTES

1. Sign is Type II - See Note 2 for Sheeting Type
2. Color: *
Background - Yellow* (Type F Reflective)
Message - Black
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background with black message (Type SH Reflective)



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																											
2S	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2M	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
3	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 7/27/2020 PLATE NO. W3-5.6

PROJECT NO: 7356-00-70

HWY: CTH 00

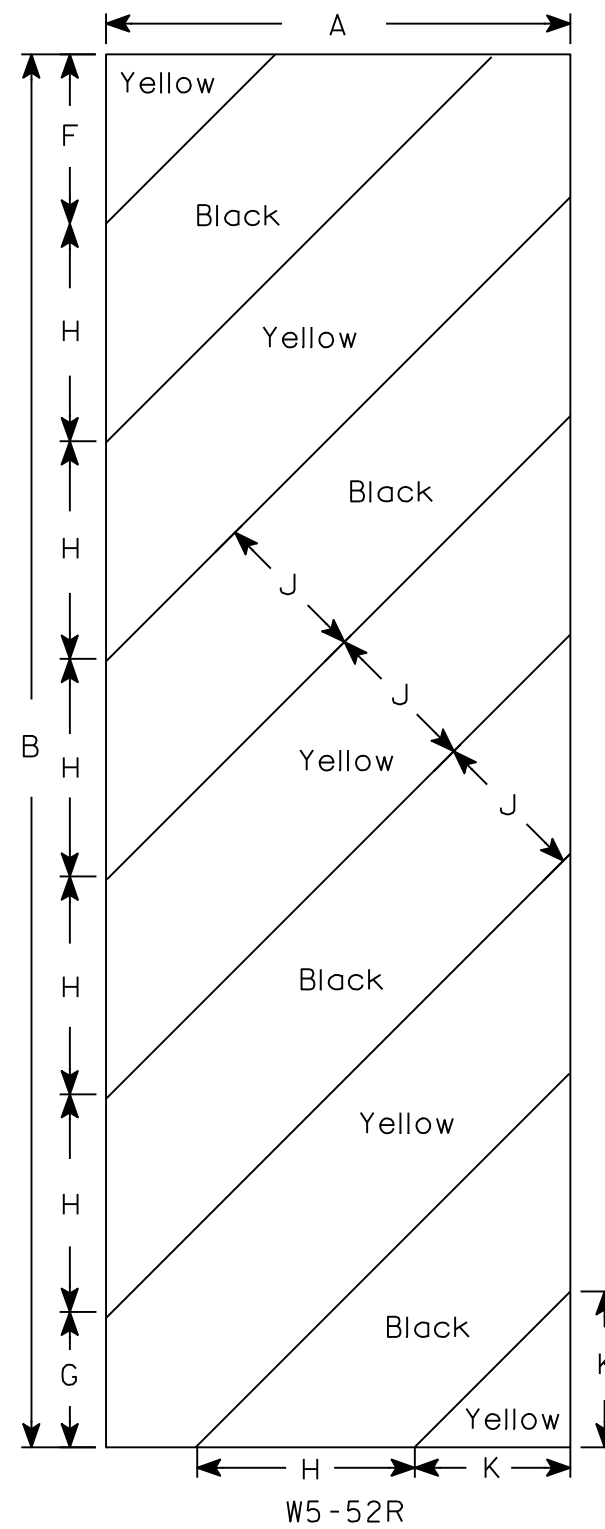
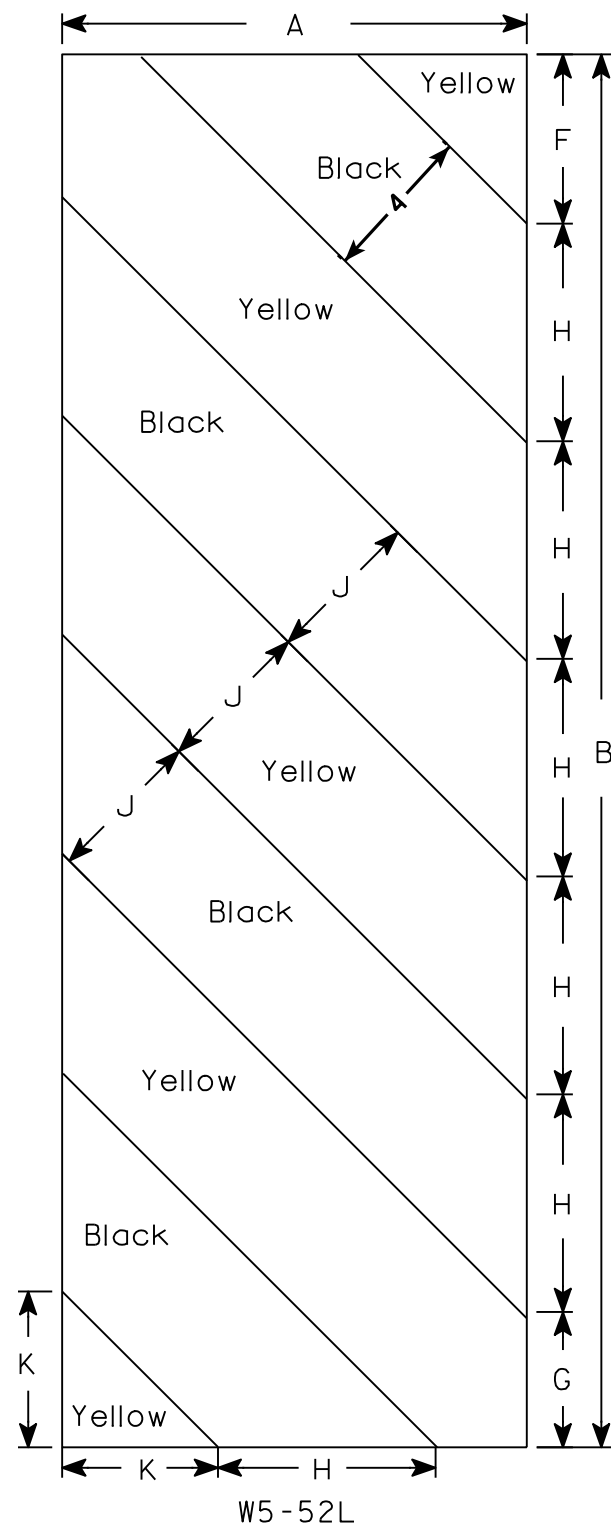
COUNTY: BUFFALO

SHEET NO:

E

7

7



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. Alternate colors of stripes as shown.

7

7

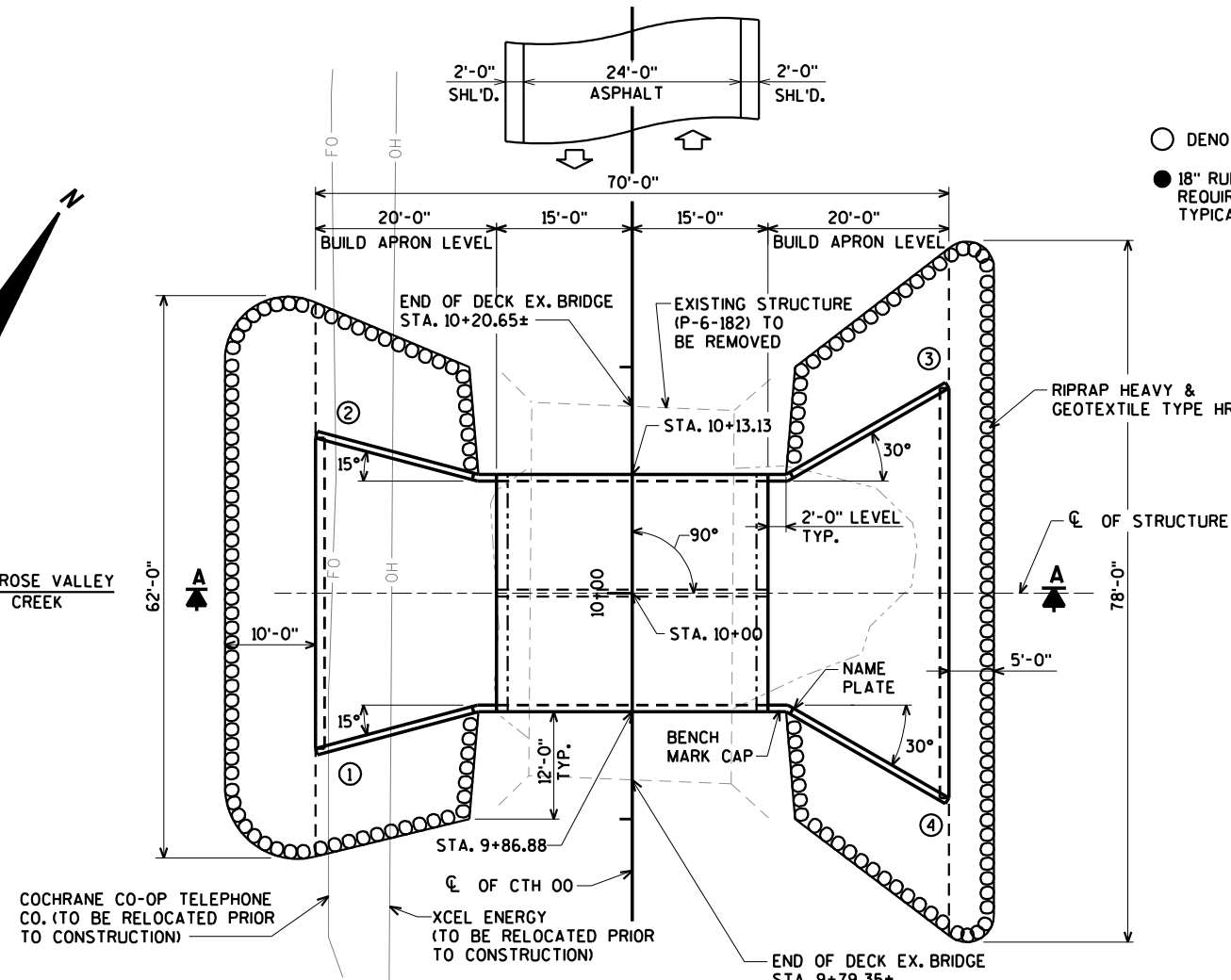
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

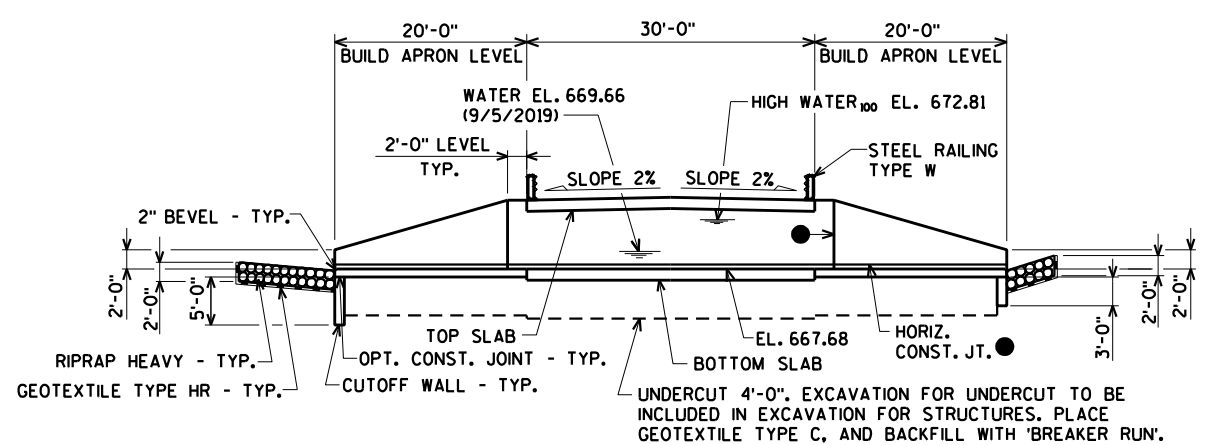
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

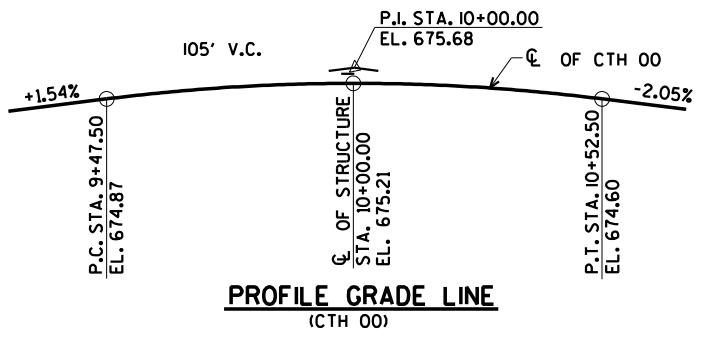
DATE 5/29/12 PLATE NO. W5-52.9



PLAN
TWIN-CELL "DRIVE-ON" CONCRETE BOX CULVERT



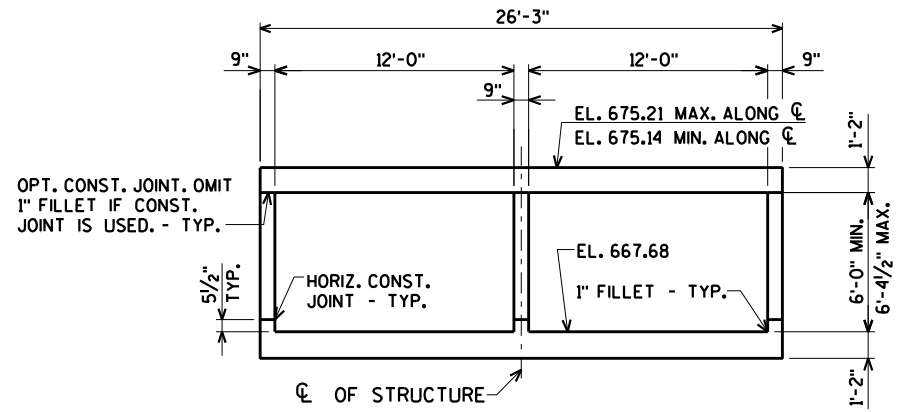
SECTION A



PROFILE GRADE LINE
(PTH 00)

○ DENOTES WING NUMBER.

● 18" RUBBERIZED MEMBRANE WATERPROOFING REQUIRED UP THE OUTSIDE OF THE WALLS. TYPICAL AT ALL JOINTS.



TYPICAL SECTION THRU CULVERT

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.07
OPERATING RATING FACTOR: 1.39
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20" S.F.

EARTHLOAD: DESIGNED FOR 0.0 FT. OF FILL

MATERIAL PROPERTIES:

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

HYDRAULIC DATA:

100 YEAR FREQUENCY
 $Q_{100} = 1,250$ c.f.s. { CULVERT = 668 c.f.s. OVERFLOW = 582 c.f.s.
VEL. = 6.4 f.p.s.
HW₁₀₀ = EL. 672.81
2 YEAR FREQUENCY
 $Q_2 = 180$ c.f.s.
VEL. = 2.3 f.p.s.
HW₂ = EL. 670.88

WATERWAY AREA = 89 sq. ft.
DRAINAGE AREA = 4.9 sq. mi.
SCOUR CRITICAL CODE = 8
DATUM = NAVD88 (2012)

FREQUENCY OF OVERTOPPING

FREQUENCY = 6 YEARS
 $Q_6 = 440$ c.f.s.
HW₆ = EL. 670.81

TRAFFIC DATA:

A.A.D.T. = 700 (2022)
A.A.D.T. = 950 (2042)
R.D.S. = 35 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. APRON DETAILS
4. WING DETAILS
5. BOX DETAILS
6. BAR STEEL LAYOUT
7. BILL OF BARS AND DETAILS
8. STEEL RAILING TYPE 'W'
9. SUBSURFACE EXPLORATION



08/06/2021

BRIDGE OFFICE CONTACT:
AARON BONK
(608)-261-0261

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>[Signature]</i>	SDR	08/09/21 DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-6-197			
CTH 00 OVER BR ROSE VALLEY CREEK			
COUNTY	BUFFALO	TOWN/CITY/VILLAGE	BELVIDERE
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JLB	DESIGN CK'D.	AEB
DRAWN BY	ZSS/CLP	PLANS CK'D.	DNS
GENERAL PLAN			SHEET 1 OF 9

8/6/2021
PENTABLE:BRocu_shd_util.tbl

CHECKED BY:
DATE:
BACK CHECKED BY:
DATE:
CORRECTED BY:

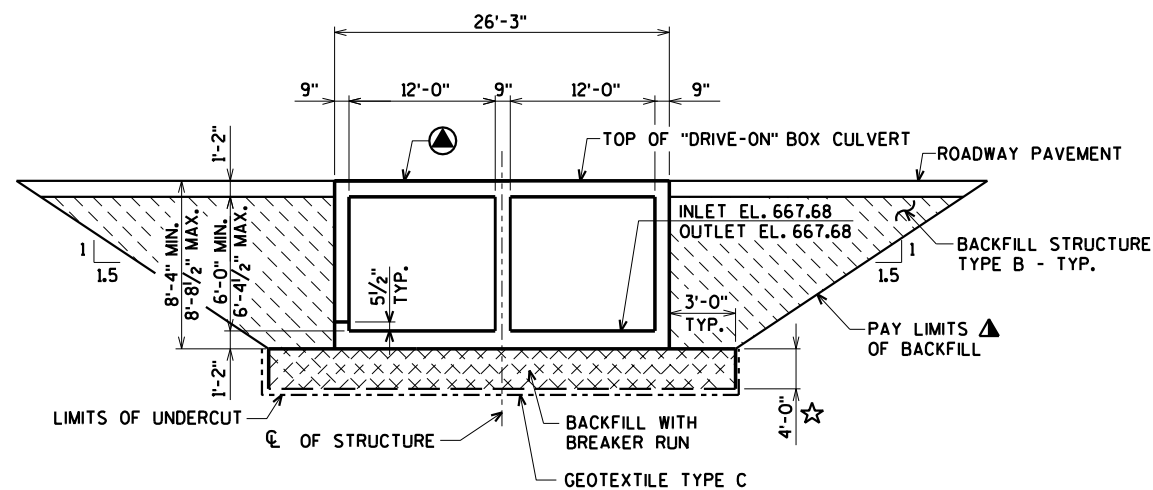
8

8

GENERAL NOTES

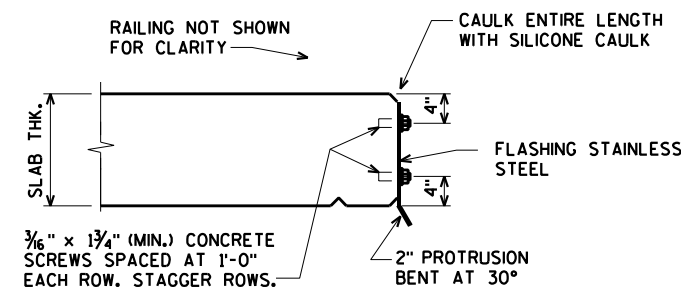
DRAWINGS SHALL NOT BE SCALED.
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
 THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
 JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.
 THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS B-6-197" SHALL BE THE EXISTING GROUNDLINE.
 THE EXISTING STRUCTURE, P-6-182 TO BE REMOVED, IS A 43.3-FOOT LONG SINGLE SPAN CONCRETE DECK GIRDER BRIDGE ON CONCRETE ABUTMENTS WITH A 18.9 FT. CLEAR ROADWAY WIDTH.
 THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE B" REQUIRED ON THE BOX CULVERT SIDES AND BEHIND APRON WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.
 PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.
 THE ALTERNATE CUTOFF WALL MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUTOFF WALLS. PAYMENT SHALL BE BASED ON THE CONCRETE CUTOFF WALLS.
 THE CONCRETE IN THE CUTOFF WALL MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.
 WITHIN THE LENGTH OF THE BOX ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE ELEVATION AND SECTION EXISTING PRIOR TO EXCAVATION WITHIN THE LENGTH OF THE CULVERT.

TOTAL ESTIMATED QUANTITIES		
BID ITEM NUMBER	BID ITEMS	AMOUNT
203.0250	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS P-6-182	1 EACH
206.2000	EXCAVATION FOR STRUCTURES CULVERTS B-6-197	1 LS
210.2500	BACKFILL STRUCTURE TYPE B	480 TON
311.0110	BREAKER RUN	675 TON
502.3200	PROTECTIVE SURFACE TREATMENT	100 SY
504.0100	CONCRETE MASONRY CULVERTS	147 CY
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	8,620 LB
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	6,150 LB
513.7051	RAILING STEEL TYPE W	47.7 LF
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	18 SY
606.0300	RIPRAP HEAVY	165 CY
645.0105	GEOTEXTILE TYPE C	345 SY
645.0120	GEOTEXTILE TYPE HR	310 SY
SPV.0090.01	FLASHING STAINLESS STEEL	49.5 LF
NON-BID ITEMS		
	FILLER	¾ SIZE



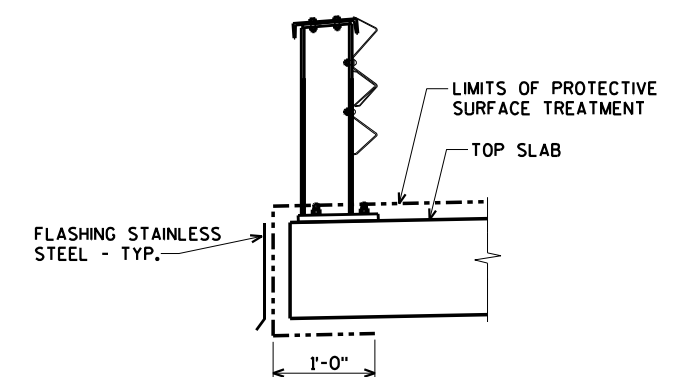
TYPICAL SECTION THRU BOX CULVERT AND BACKFILL DETAIL

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ☆ UNDERCUT 4'-0". EXCAVATION FOR UNDERCUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE GEOTEXTILE TYPE C, AND BACKFILL WITH 'BREAKER RUN'.
- FLASHING STAINLESS STEEL



FLASHING DETAIL FOR NEW BRIDGES WITH OPEN RAILING

THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL FLASHING, SILICONE CAULK, 3/16" CONCRETE SCREWS AND CLEANING THE EDGE OF THE DECK PRIOR TO ATTACHMENT OF THE FLASHING.
 FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT APPLICATION.
 CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.
 EXTEND FLASHING TO BACK FACE OF ABUTMENT.
 TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW TOP OF SLAB SURFACE.
 THE FLASHING IS TO BE A CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.



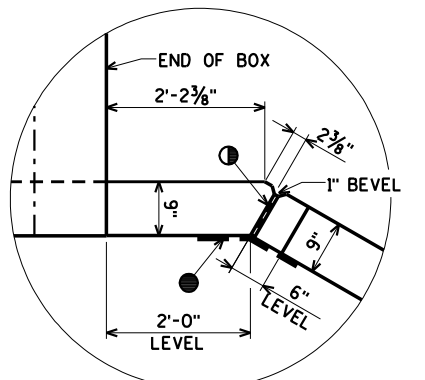
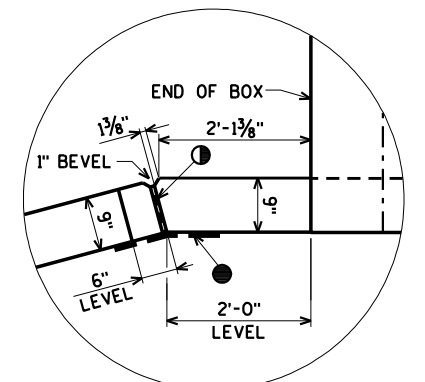
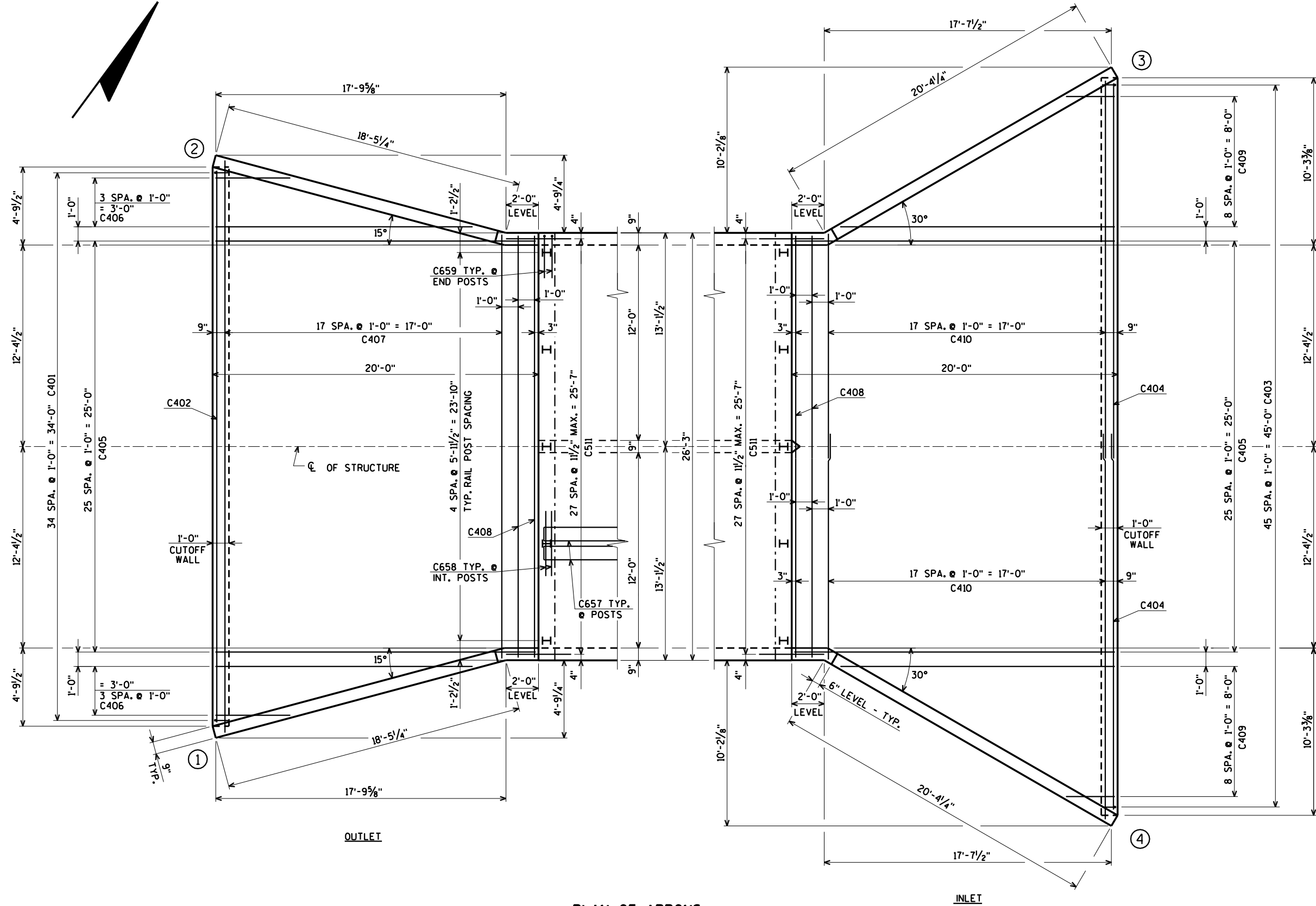
PROTECTIVE SURFACE TREATMENT DETAIL

8/6/2021 PENTABLE:BRReou_shd_util.tbl

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-197			
DRAWN BY ZSS		PLANS CK'D. JLB	
QUANTITIES AND NOTES			SHEET 2 OF 9

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

5/12/2021
PENTABLE:BRedu_shd_util.tbl



CORNER DETAILS

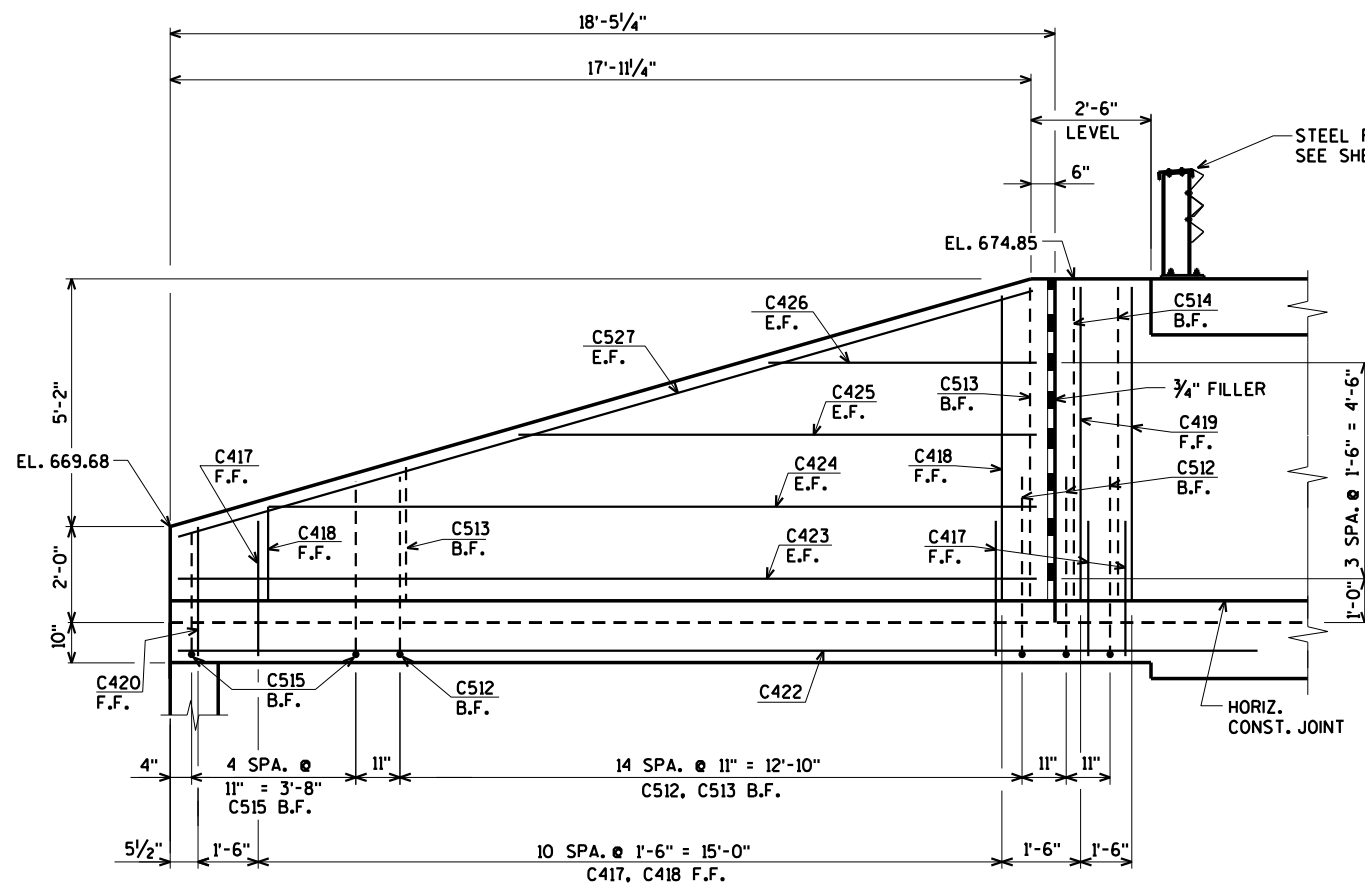
- 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING.
- 3/4" FILLER TO EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING.

NOTE:
DO NOT RUN ANY BAR STEEL REINF. THRU JOINT FILLER.

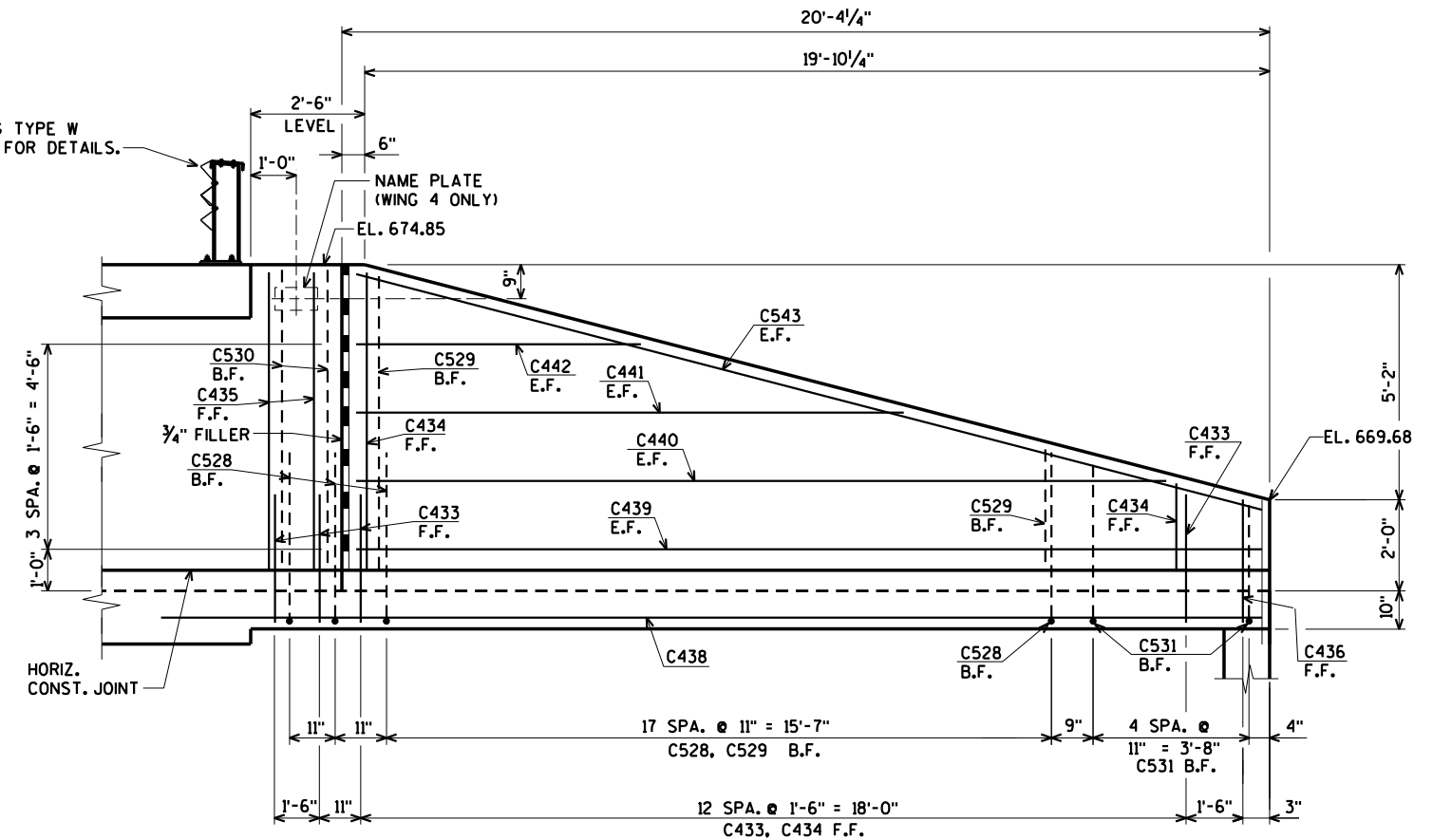
PLAN OF APRONS AND TOP SLAB RAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-197			
DRAWN BY CLP		PLANS CK'D. JLB	
APRON DETAILS			SHEET 3 OF 9

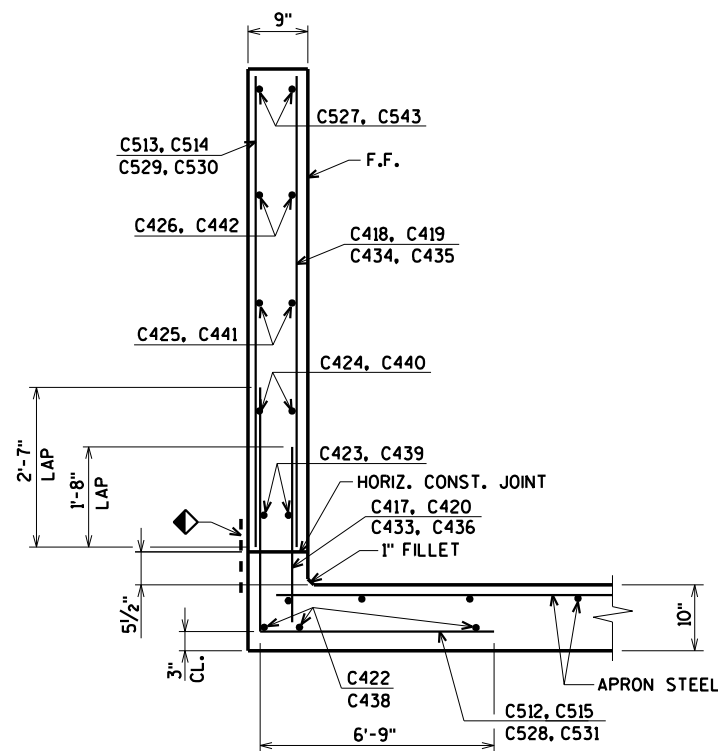
ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



ELEVATION - WING 1
(WING 2 SIMILAR)



ELEVATION - WING 4
(WING 3 SIMILAR)



TYP. SECTION THRU WINGWALLS

◆ 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING ALONG HORIZ. CONST. JT. IN WING

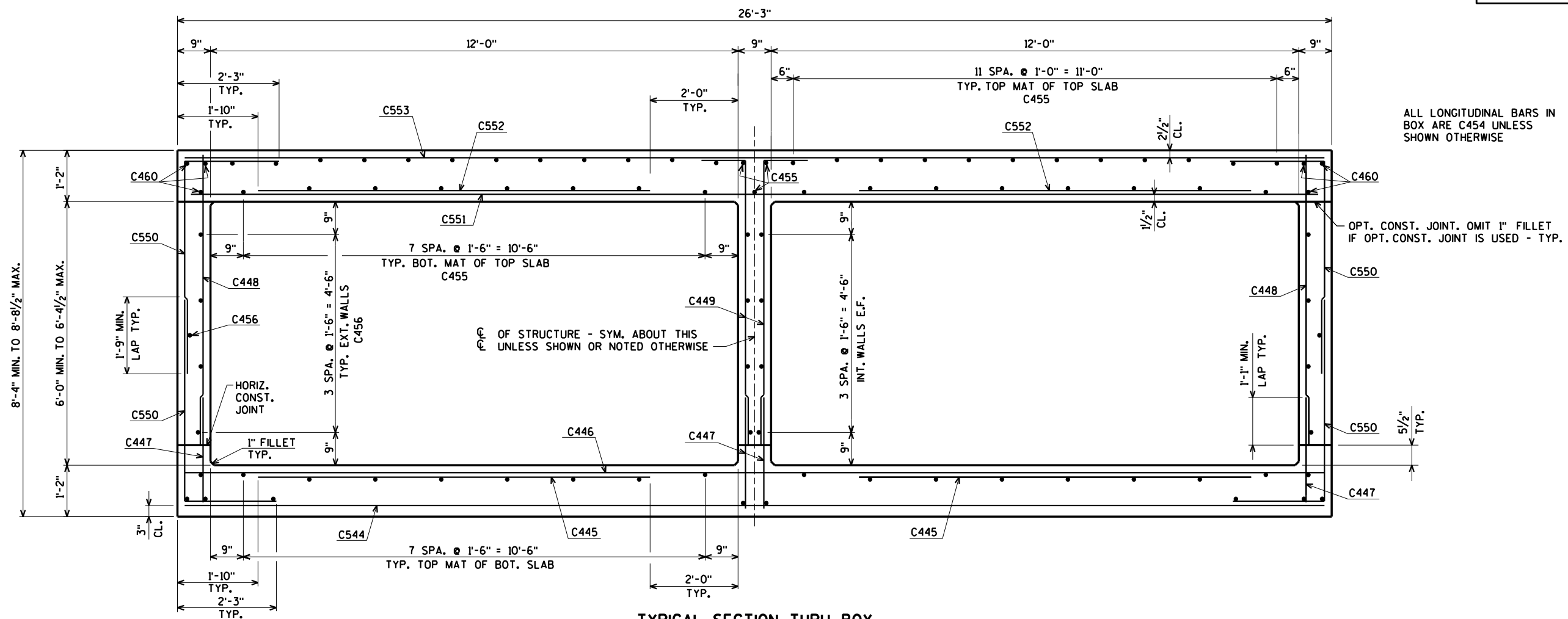
5/18/2021
PENTABLE:BRRedu_shd_utl1.tbi

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-197			
DRAWN BY CLP		PLANS CK'D. JLB	
WING DETAILS			SHEET 4 OF 9

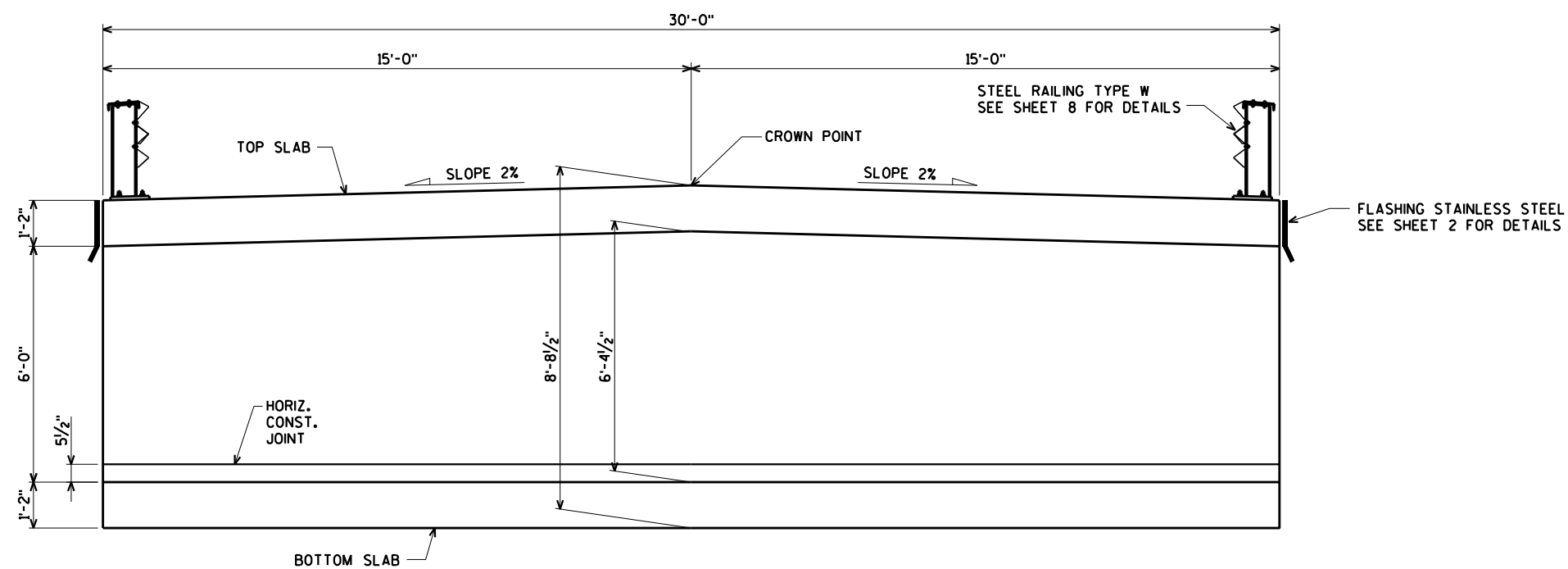
ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Equi Claire, WI 54701
www.AyresAssociates.com



ALL LONGITUDINAL BARS IN BOX ARE C454 UNLESS SHOWN OTHERWISE

OPT. CONST. JOINT. OMIT 1" FILLET IF OPT. CONST. JOINT IS USED - TYP.

TYPICAL SECTION THRU BOX



ELEVATION OF BOX

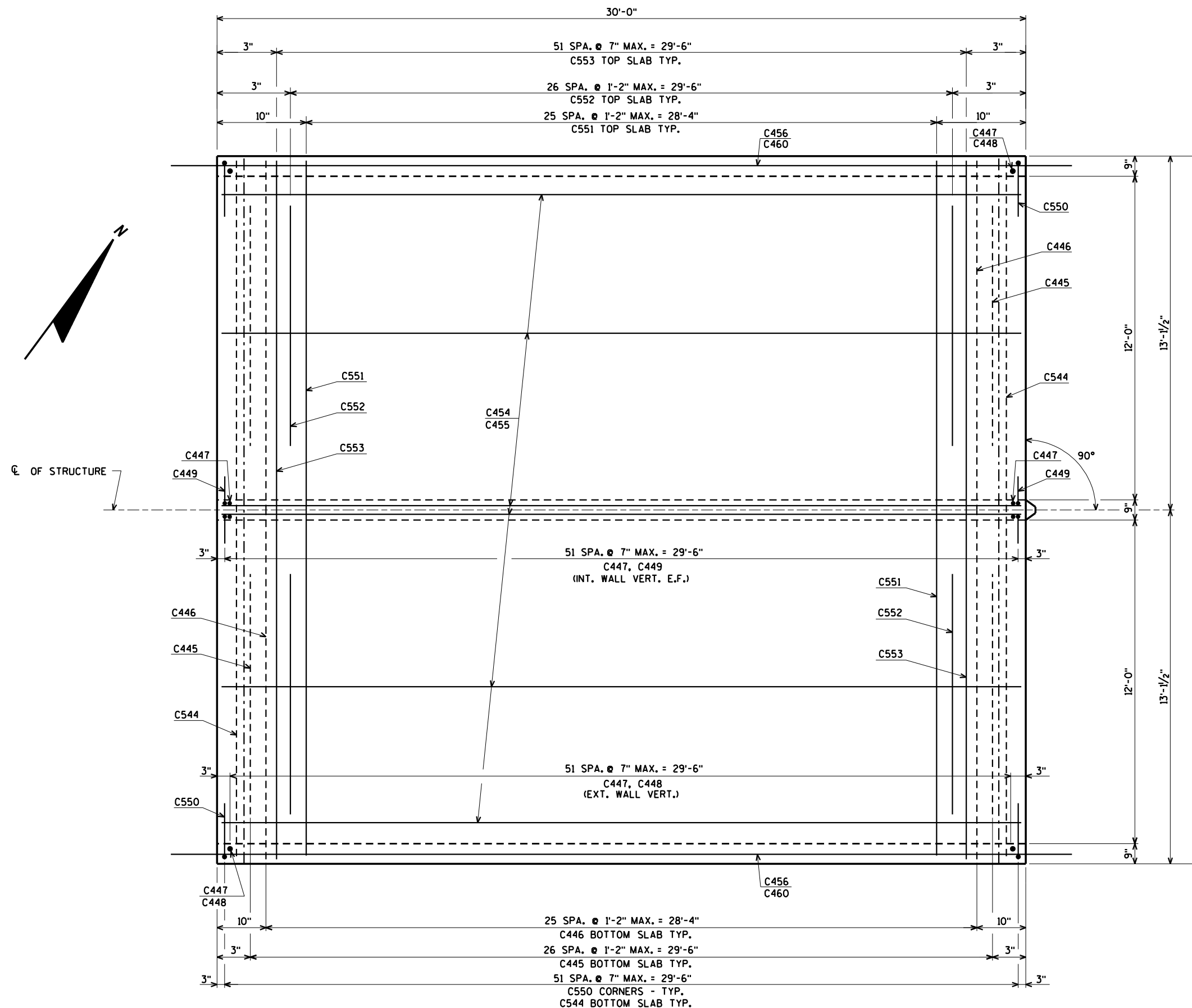
5/26/2021
PENTABLE:BRedu_shd_utl1.tbi

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-197			
DRAWN BY CLP		PLANS CK'D. JLB	
BOX DETAILS			SHEET 5 OF 9

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



BAR STEEL LAYOUT

5/26/2021 PENTABLE:BRedu_shd_utl1.tbl

8

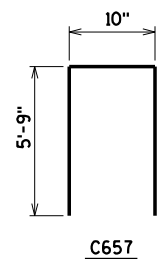
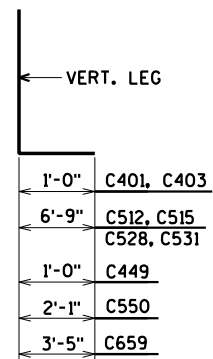
8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-197			
DRAWN BY	CLP	PLANS CK'D.	JLB
BAR STEEL LAYOUT			SHEET 6 OF 9

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

BILL OF BARS

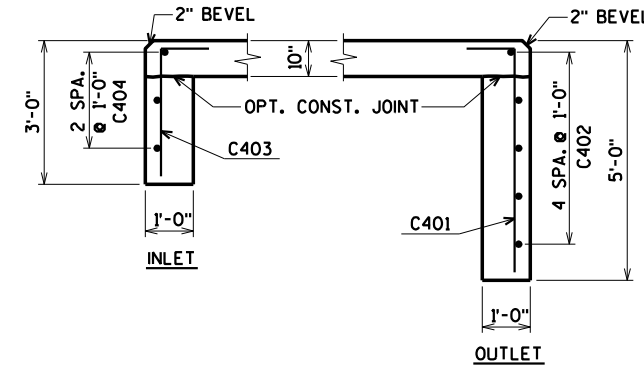
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	6,150* COATED	8,620* UNCOATED	LOCATION
C401		35	5'-7"	X					CUTOFF WALL OUTLET VERT.
C402		5	34'-0"						CUTOFF WALL OUTLET HORIZ.
C403		46	3'-7"	X					CUTOFF WALL INLET VERT.
C404		6	23'-0"						CUTOFF WALL INLET HORIZ.
C405		52	19'-8"						APRON INLET & OUTLET
C406		8	10'-2"						APRON OUTLET WINGS 1 & 2
C407		18	30'-7"						APRON OUTLET
C408		4	25'-11"						APRON INLET & OUTLET
C409		18	9'-11"						APRON INLET WINGS 3 & 4
C410		36	18'-6"						APRON INLET
C511		56	4'-0"						APRON INLET & OUTLET CONNECTION
C512	X	34	10'-3"	X					WINGS 1 & 2 VERT. B.F.
C513	X	30	4'-6"						WINGS 1 & 2 VERT. B.F.
C514	X	4	6'-4"						WINGS 1 & 2 VERT. B.F.
C515	X	10	9'-8"	X					WINGS 1 & 2 VERT. B.F.
C417	X	26	2'-7"						WINGS 1 & 2 VERT. F.F.
C418	X	22	4'-1"						WINGS 1 & 2 VERT. F.F.
C419	X	4	6'-4"						WINGS 1 & 2 VERT. F.F.
C420	X	2	2'-10"						WINGS 1 & 2 VERT. F.F.
C422		6	23'-11"						WINGS 1 & 2 HORIZ. APRON
C423	X	4	18'-0"						WINGS 1 & 2 HORIZ. E.F.
C424	X	4	15'-11"						WINGS 1 & 2 HORIZ. E.F.
C425	X	4	10'-9"						WINGS 1 & 2 HORIZ. E.F.
C426	X	4	5'-6"						WINGS 1 & 2 HORIZ. E.F.
C527	X	4	18'-9"						WINGS 1 & 2 DIAG. E.F.
C528	X	40	10'-3"	X					WINGS 3 & 4 VERT. B.F.
C529	X	36	4'-6"						WINGS 3 & 4 VERT. B.F.
C530	X	4	6'-4"						WINGS 3 & 4 VERT. B.F.
C531	X	10	9'-8"	X					WINGS 3 & 4 VERT. B.F.
C433	X	30	2'-7"						WINGS 3 & 4 VERT. F.F.
C434	X	26	4'-0"						WINGS 3 & 4 VERT. F.F.
C435	X	4	6'-4"						WINGS 3 & 4 VERT. F.F.
C436	X	2	2'-10"						WINGS 3 & 4 VERT. F.F.
C438		6	25'-10"						WINGS 3 & 4 HORIZ. APRON
C439	X	4	19'-11"						WINGS 3 & 4 HORIZ. E.F.
C440	X	4	17'-8"						WINGS 3 & 4 HORIZ. E.F.
C441	X	4	11'-10"						WINGS 3 & 4 HORIZ. E.F.
C442	X	4	6'-1"						WINGS 3 & 4 HORIZ. E.F.
C543	X	4	20'-7"						WINGS 3 & 4 DIAG. E.F.
C544		52	25'-11"						BOX BOT. SLAB TRANS.
C445		54	8'-11"						BOX BOT. SLAB TRANS.
C446		26	25'-11"						BOX BOT. SLAB TRANS.
C447		208	2'-11"						BOX WALLS VERT. INT. & EXT.
C448		104	6'-9"						BOX WALLS VERT. EXT.
C449		104	7'-8"	X					BOX WALLS VERT. INT.
C550		208	7'-0"	X					BOX CORNERS
C551	X	26	25'-11"						BOX TOP SLAB TRANS.
C552	X	54	8'-11"						BOX TOP SLAB TRANS.
C553	X	52	25'-11"						BOX TOP SLAB TRANS.
C454		34	29'-8"						BOX LONG. INT. WALLS & BOT. SLAB
C455	X	43	29'-8"						BOX LONG. TOP SLAB
C456		10	33'-8"						BOX LONG. EXT. WALLS
C657	X	20	12'-0"	X					SLAB @ RAIL POSTS
C658	X	12	4'-0"						SLAB @ INT. RAIL POSTS
C659	X	8	4'-0"	X					SLAB @ END RAIL POSTS
C460	X	6	33'-8"						TOP SLAB @ WINGS



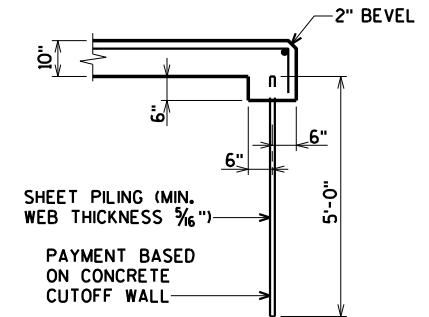
BAR SERIES TABLE

BAR NO.	NO. REQ'D.	LENGTH
C406	2 SERIES OF 4	4'-7" TO 15'-9"
C407	1 SERIES OF 18	26'-0" TO 35'-2"
C409	2 SERIES OF 9	3'-0" TO 16'-10"
C410	2 SERIES OF 18	13'-7" TO 23'-5"
C513	2 SERIES OF 15	2'-8" TO 6'-4"
C515	2 SERIES OF 5	9'-1" TO 10'-3"
C418	2 SERIES OF 11	1'-10" TO 6'-4"
C529	2 SERIES OF 18	2'-8" TO 6'-4"
C531	2 SERIES OF 5	9'-2" TO 10'-2"
C434	2 SERIES OF 13	1'-8" TO 6'-4"

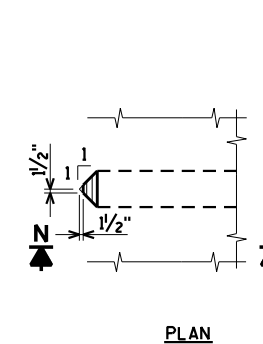
BUNDLE AND TAG EACH SERIES SEPARATELY.



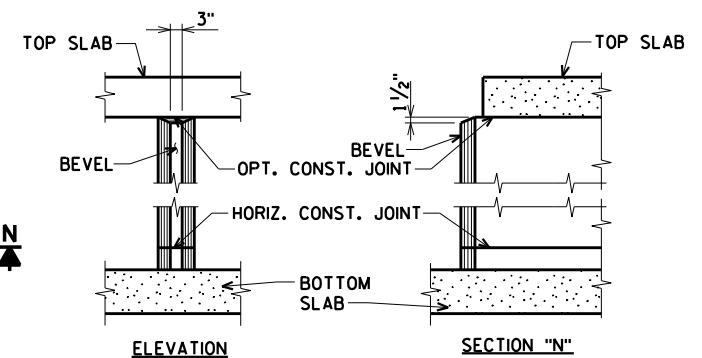
SECTION THRU CUTOFF WALL



SECTION THRU ALTERNATE CUTOFF WALL



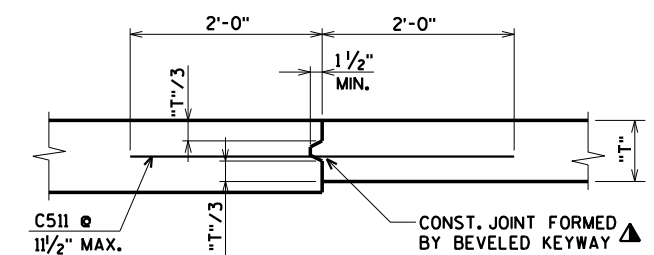
PLAN



ELEVATION

SECTION "N"

INLET NOSE DETAIL



APRON CONNECTION DETAIL

▲ IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAWCUTS WITHIN 12 HOURS AFTER POURING #5 BARS 4'-0" LONG AT 11/2" MAX. CENTERS REQUIRED.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

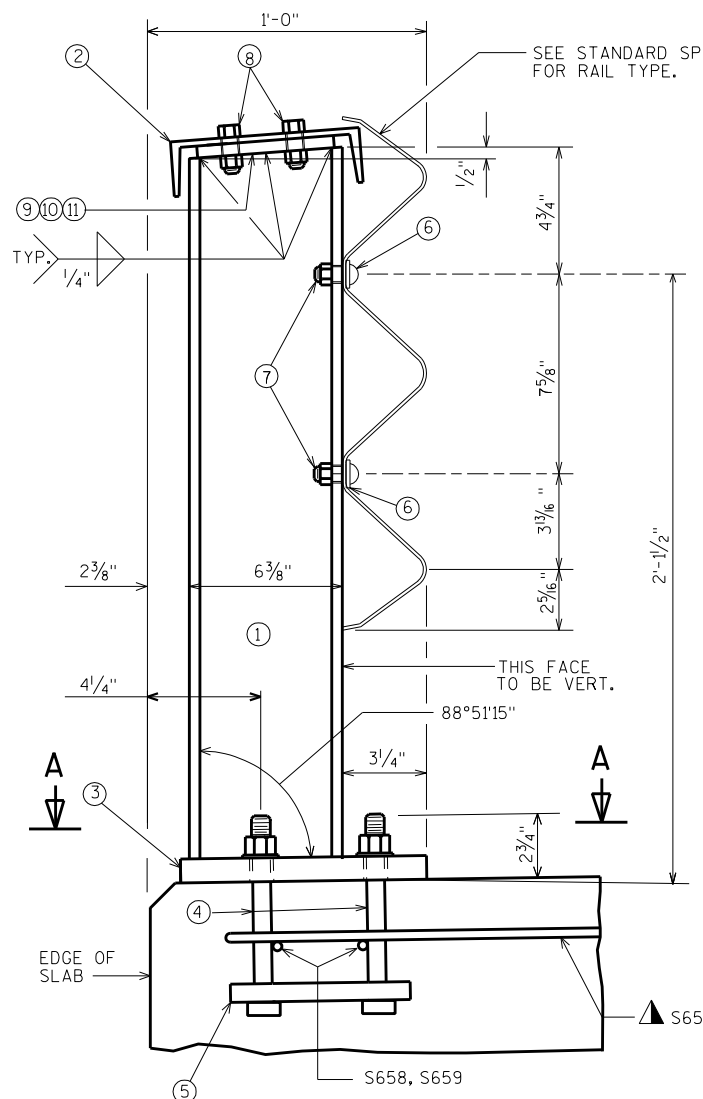
⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

NOTE:
C516, C421, C532, C437 INTENTIONALLY OMITTED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-197			
DRAWN BY		CLP	PLANS CK'D. JLB
BILL OF BARS AND DETAILS			SHEET 7 OF 9

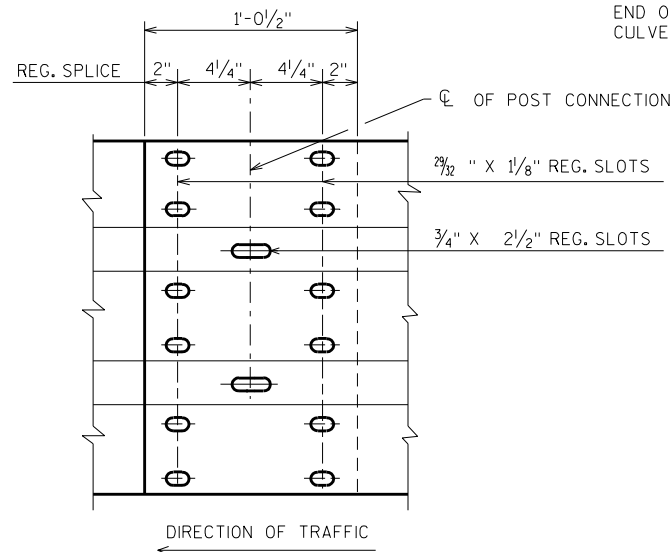
ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

\$PRNAME\$ I:\42-42-1189.00 - Buffalo Co, CTH 00, Rose Valley Creek Structure\CADD\Final\421189 w rail.DGN



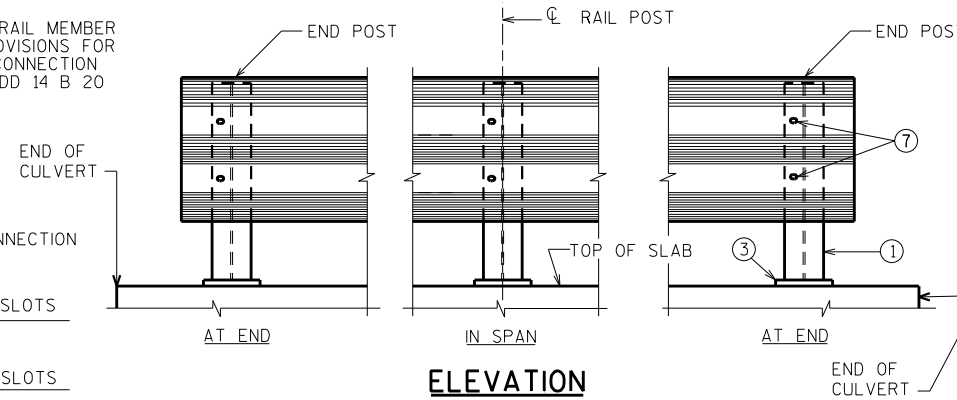
SECTION THRU RAILING

AT END POSTS, RAIL MEMBER SHALL HAVE PROVISIONS FOR A THRIE BEAM CONNECTION AS SHOWN ON SDD 14 B 20 STANDARDS.

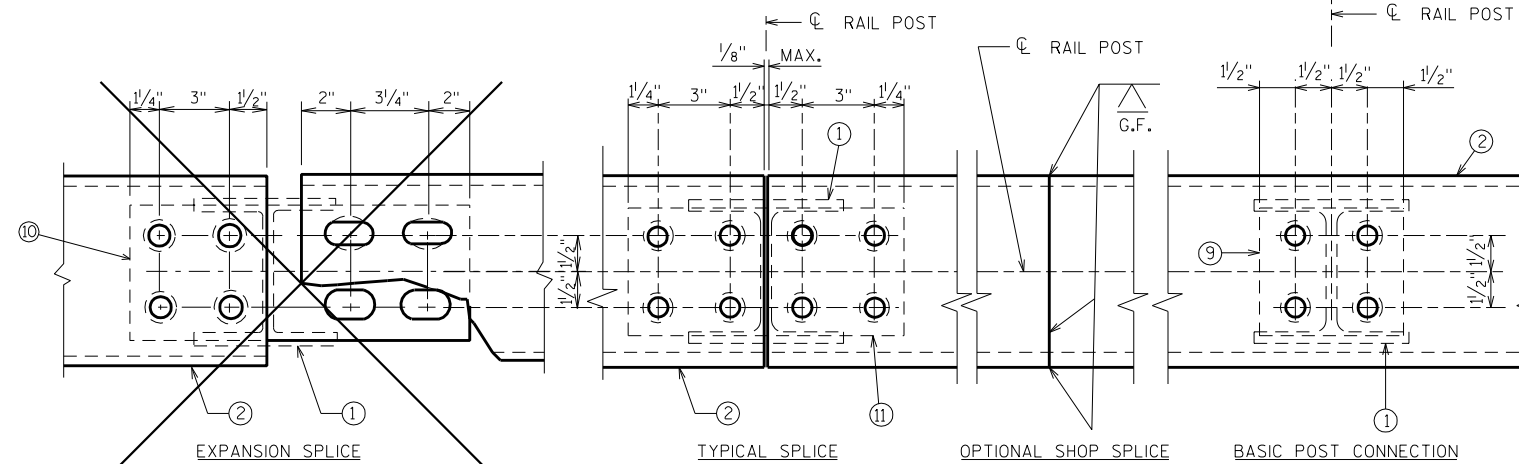


RAIL MEMBER SPLICE

5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.

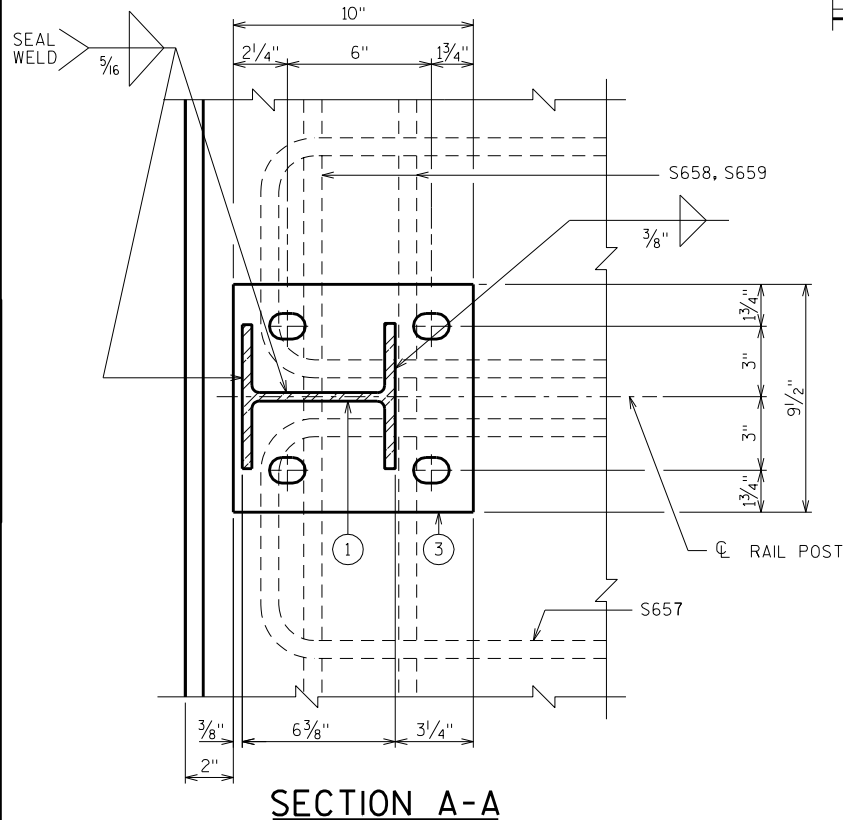


ELEVATION

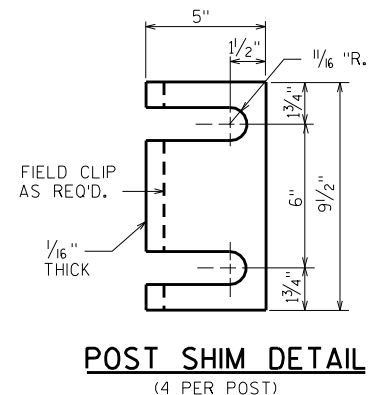


CHANNEL MEMBER DETAILS

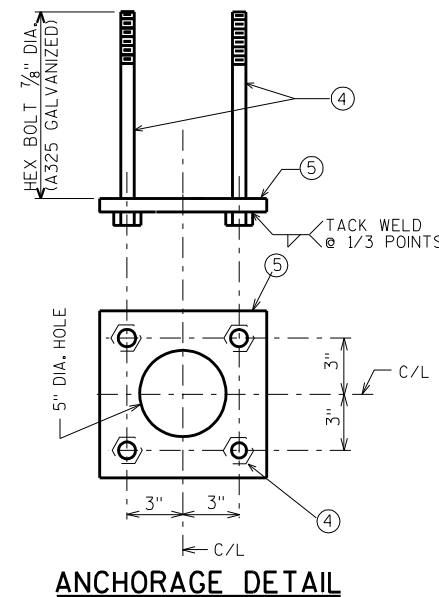
SHIM PLATES 6" X 1/16" X 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.



SECTION A-A



POST SHIM DETAIL
(4 PER POST)



ANCHORAGE DETAIL

LEGEND

- ① W6x25 WITH 2 - 3/4" x 2 1/2" VERT. SLOTS IN FLG. (SLOT ON OTHER SIDE OF WEB IS OPTIONAL) FOR NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.
- ② C8x11.5 WITH 13/16" DIA. HOLES FOR NO. 8.
- ③ BASE PLATE 1" X 9 1/2" X 10" WITH 1/16" X 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 4. WELD TO NO. 1 AS SHOWN.
- ④ A325 - 7/8" DIA. HEX BOLTS (GALVANIZED) WITH A325 NUT AND WASHER. 4" LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 15". USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 3. CHAMFER TOP OF BOLTS BEFORE THREADING.
- ⑤ 1/4" X 8" X 8" FLAT BAR WITH 15/16" DIA. HOLES FOR ANCHOR BOLTS NO. 4.
- ⑥ 1 3/4" X 3" MOUNTING BOLT WASHER (GALVANIZED).
- ⑦ 5/8" DIA. BUTTON HEAD POST MOUNTING BOLT WITH ROUND WASHER AND NUT.
- ⑧ 5/8" DIA. X 2" HEX BOLTS WITH NUT AND TWO WASHERS EACH.
- ⑨ PLATE 1/2" X 5 3/4" X 6" AT BASIC POST CONNECTION. 1/4" DIA. HOLES IN PLATE. 13/16" DIA. HOLES IN CHANNEL.
- ⑩ ~~PLATE 1/2" X 5 3/4" X 1 2 1/2". 1/4" DIA. HOLES IN PLATE. 1/16" DIA. HOLES IN CHANNEL. EXPANSION SLOTS ON JOINT SIDE OF POST. 1/4" X 2 1/4" IN PLATE. 1/2" X 2 1/4" IN CHANNEL. (AT EXPANSION SPLICE.)~~
- ⑪ PLATE 1/2" X 5 3/4" X 1 1/2". 1/4" DIA. HOLES IN PLATE. 1/16" DIA. HOLES IN CHANNEL. (AT TYPICAL SPLICE.)

NOTES

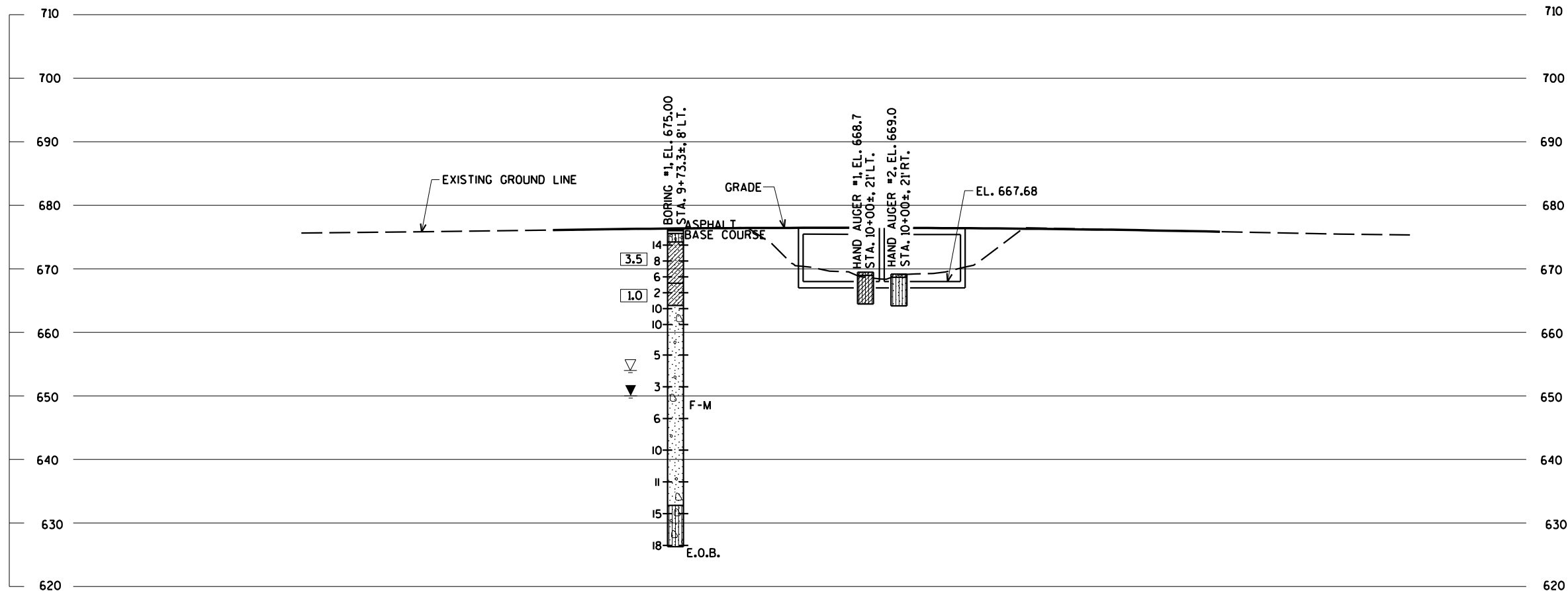
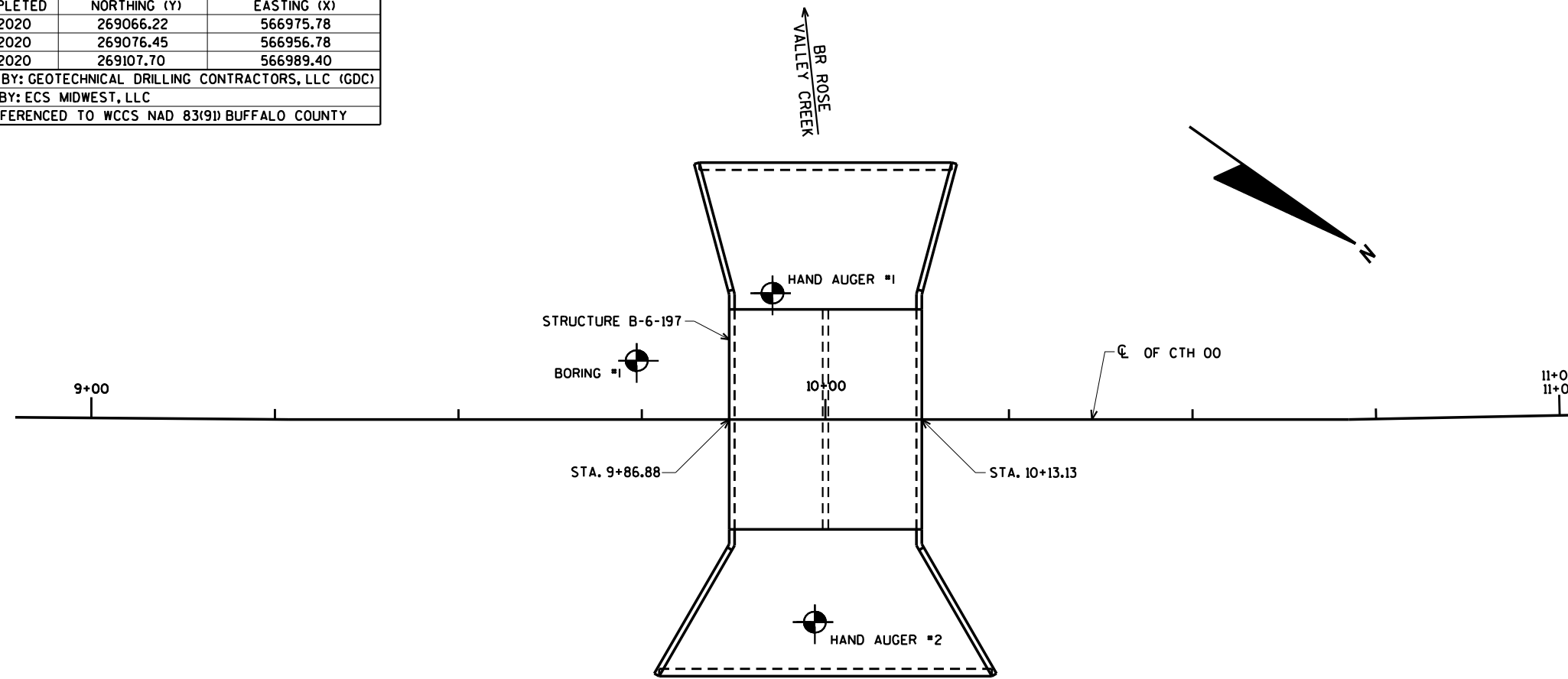
- BID ITEM SHALL BE "RAILING STEEL TYPE W" WHICH INCLUDES ALL ITEMS SHOWN.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
- ALL MATERIAL EXCEPT ANCHORAGE DETAIL NO. 5 SHALL BE GALVANIZED AFTER FABRICATION.
- PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY SSPC SPECS.
- ALL MATERIAL USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.
- FILL BOLT SLOT OPENINGS IN POST SHIMS & PLATE NO. 3 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
- CHANNEL MEMBER SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF EIGHT.
- AT EXPANSION SLOTS IN RAIL AND CHANNEL MEMBERS, TIGHTEN BOLTS, BACK OFF ONE HALF TURN AND BURR THREADS. RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.
- STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- SEE STANDARD SPECIFICATIONS FOR RAIL TYPE.
- ▲ PLACE BELOW AND TIE TO TOP MAT OF STEEL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-197			
DRAWN BY		CLP	PLANS CK'D. JLB
STEEL RAILING TYPE 'W'			SHEET 8 OF 9



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	MARCH 18, 2020	269066.22	566975.78
HA-1	MARCH 18, 2020	269076.45	566956.78
HA-2	MARCH 18, 2020	269107.70	566989.40

BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC (GDC)
 REPORT COMPLETED BY: ECS MIDWEST, LLC
 ALL COORDINATES REFERENCED TO WCCS NAD 83(9) BUFFALO COUNTY



STATE PROJECT NUMBER
7356-00-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING

BORING #/EL. STA./OFFSET

ST

0.25

17

F-C

COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'
REC=80%, ROD=72%

(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▽ END OF DRILLING

▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

5/11/2021
PENTABLE:BRedu_shd_util.tbl

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-197			
DRAWN BY ZSS		PLANS CKD. JLB	
SUBSURFACE EXPLORATION			SHEET 9 OF 9

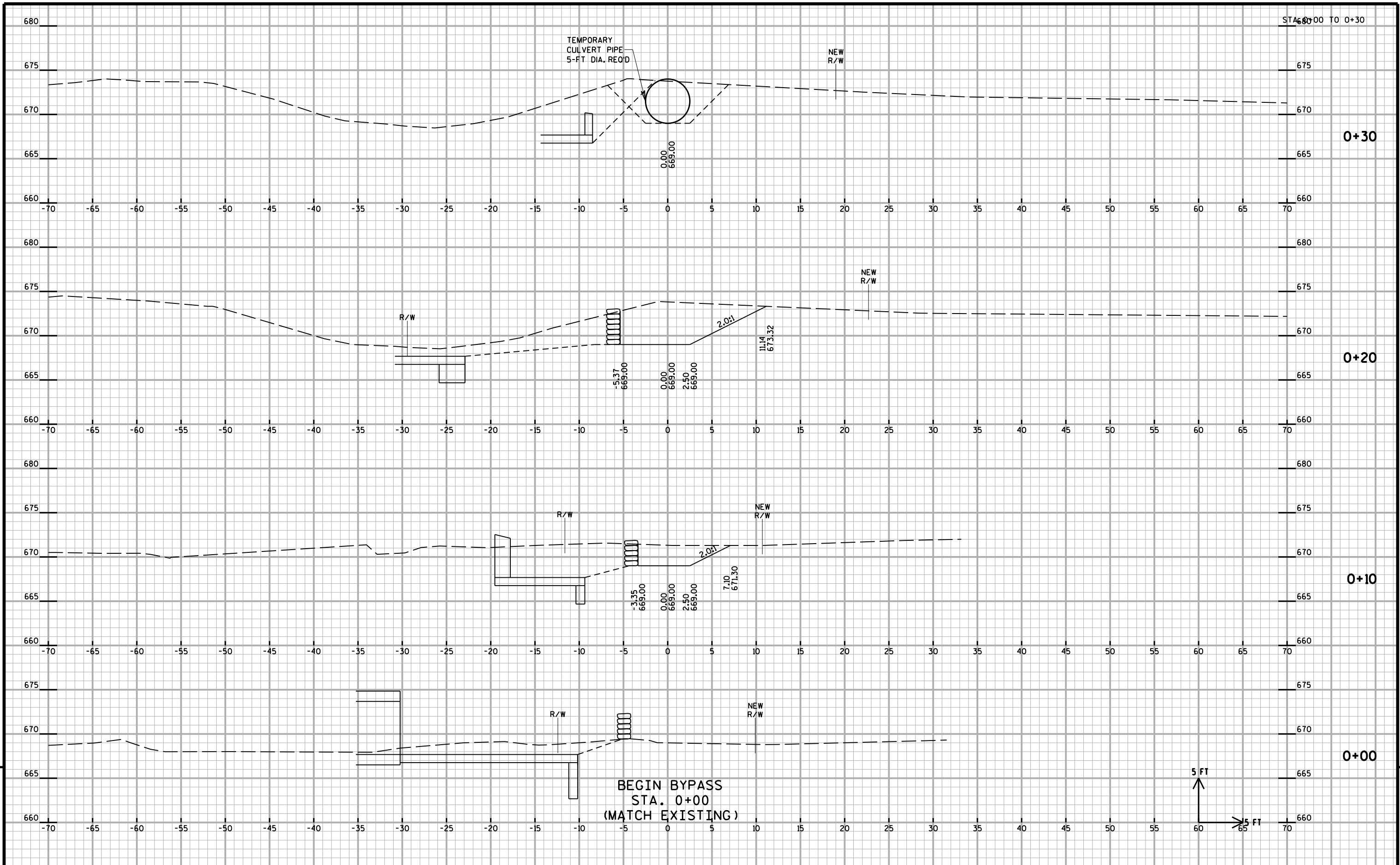
TEMPORARY BYPASS COMPUTER EARTHWORK

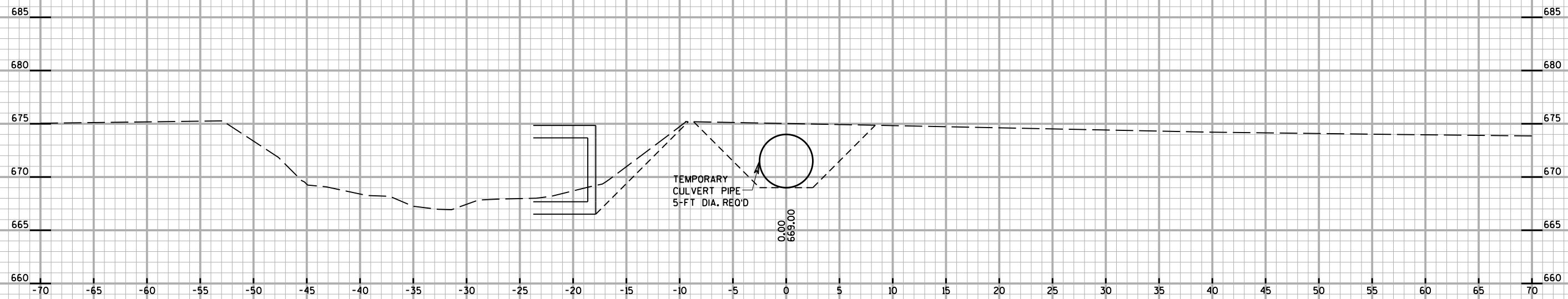
Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut	Expanded Fill	
		Note 1	Note 2	Note 1	Note 2	Note 3		
0+00	--	0.0	0.0					
0+10	10	21.5	0.0	9	0	9	0	9
0+20	10	66.0	0.0	40	0	50	0	50
0+27	7	66.0	0.0	5	0	55	0	55
TEMP. CULVERT	--	--	--	--	--	--	--	--
0+99	--	50.9	0.0	--	--	--	--	--
1+00	1	50.9	0.0	22	0	77	0	77
1+10	10	36.3	0.0	40	0	118	0	118
1+20	10	16.0	0.0	3	0	120	0	120
1+30	10	0.6	0.0	3	0	124	0	124
1+31	1	0.0	0.0	0	0	124	0	124
				124	0			

Note 1 - Cut Cut includes existing asphalt pavement.
 Note 2 - Fill Volume needed to be filled.
 Note 3 - Mass Ordinate (Cut) - (Fill * 1.30)

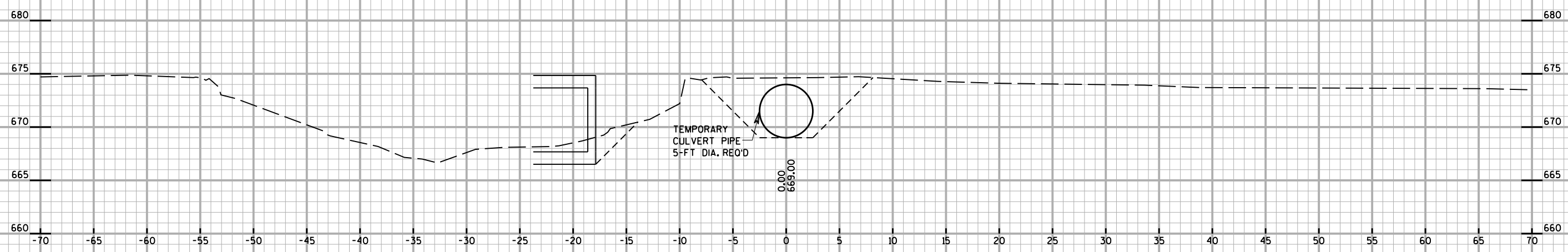
CTH OO COMPUTER EARTHWORK

Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut	Expanded Fill	
		Note 1	Note 2	Note 1	Note 2	Note 3		
7+27	--	5.5	0.0					
7+50	23	5.3	0.0	5	0	5	0	5
7+75	25	4.7	0.3	5	0	9	0	9
7+77	2	7.7	0.3	0	0	10	0	9
8+00	23	8.4	2.2	7	1	16	2	15
8+25	25	10.5	2.2	9	2	25	4	21
8+47	22	11.2	5.1	9	3	34	8	26
8+50	3	11.3	5.6	1	1	35	9	26
8+72	22	10.3	10.0	9	6	44	17	27
8+75	3	10.1	10.6	1	1	45	19	27
8+97	22	9.5	13.9	8	10	53	32	22
9+00	3	9.4	14.0	1	1	54	34	21
9+22	22	8.9	14.8	8	12	62	49	13
9+25	3	8.8	13.9	1	1	63	51	12
9+37	12	10.9	4.8	4	4	67	56	11
9+37	--	32.4	4.8	--	--	--	--	--
9+47	10	32.8	0.1	12	1	79	58	22
9+50	3	33.3	0.1	3	0	83	58	25
9+75	25	116.1	0.9	69	0	152	58	94
9+87	12	116.1	0.9	51	0	203	59	144
BRIDGE	--	--	--	--	--	--	--	--
10+13	--	124.0	0.1	--	--	--	--	--
10+25	12	124.0	0.1	54	0	258	59	199
10+50	25	42.0	0.2	77	0	334	59	276
10+53	3	41.6	0.5	4	0	339	59	280
10+63	10	37.1	5.4	15	1	354	60	293
10+63	--	16.0	5.4	--	--	--	--	--
10+75	12	19.0	9.6	8	3	362	65	297
10+78	3	17.8	10.3	2	1	363	66	297
11+00	22	18.2	13.3	15	10	378	79	300
11+03	3	18.7	13.7	2	1	380	81	300
11+25	22	20.8	12.6	16	11	396	95	302
11+28	3	20.9	12.1	2	1	399	96	302
11+50	22	22.7	8.5	18	8	416	107	309
11+53	3	22.8	8.1	2	1	419	108	311
11+75	22	12.7	6.2	15	6	433	116	317
12+00	25	8.0	11.0	10	8	443	126	317
12+23	23	9.3	7.9	7	8	450	137	314
12+25	2	3.4	7.9	0	1	451	138	313
12+50	25	3.2	5.5	3	6	454	146	308
12+73	23	3.4	0.0	3	2	457	149	308
				457	114			

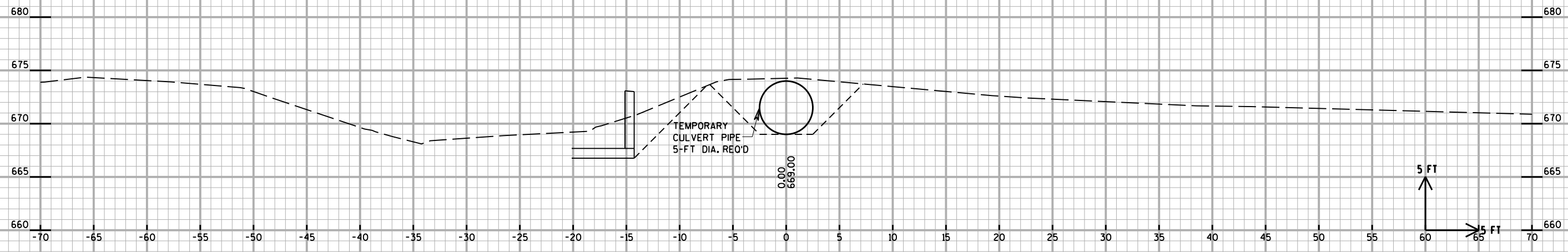




0+60

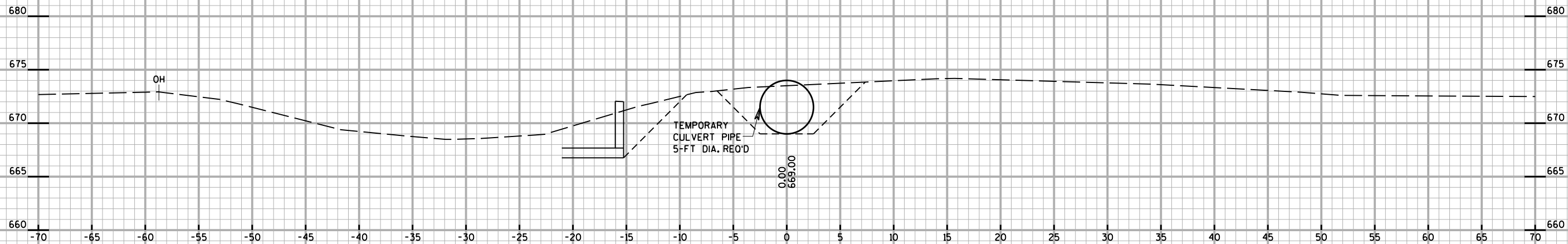


0+50

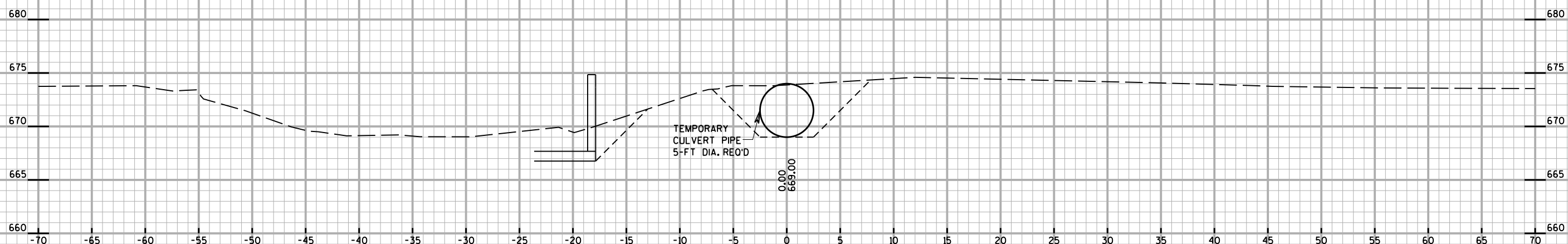


0+40

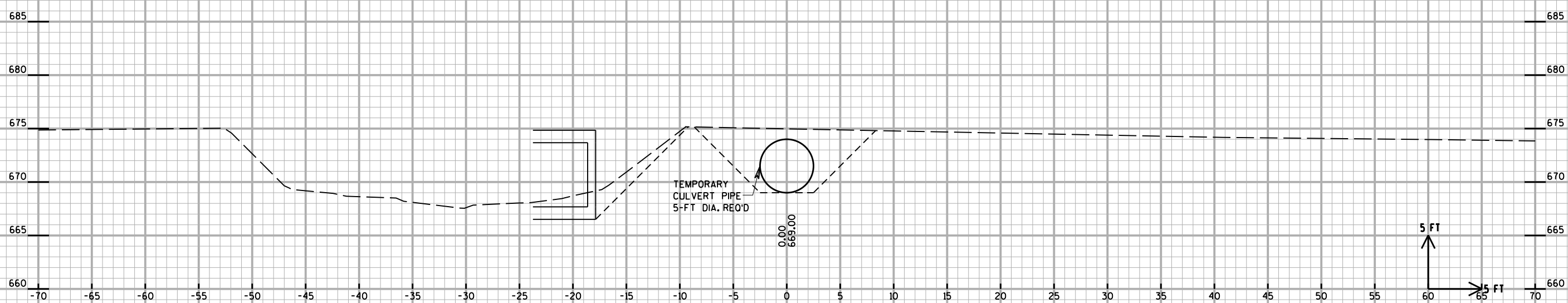
9	PROJECT NO: 7356-00-70	HWY: CTH 00	COUNTY: BUFFALO	CROSS SECTIONS - TEMPORARY BYPASS CHANNEL	SHEET	E
----------	------------------------	-------------	-----------------	---	-------	----------



0+90



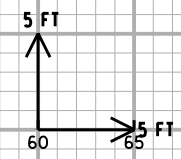
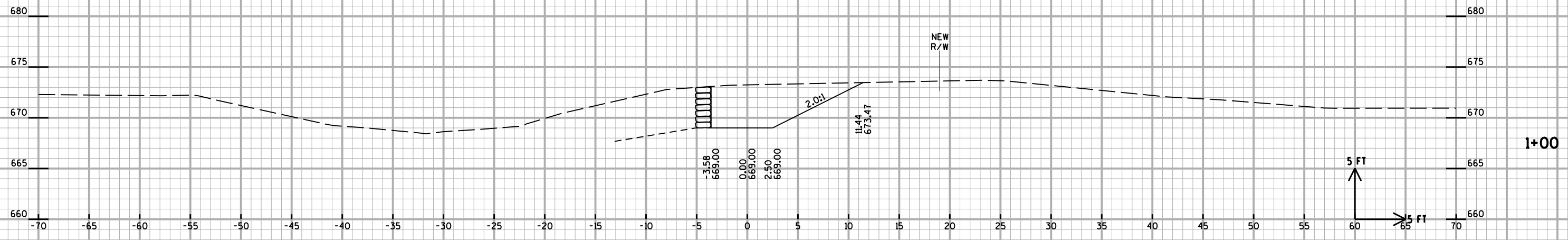
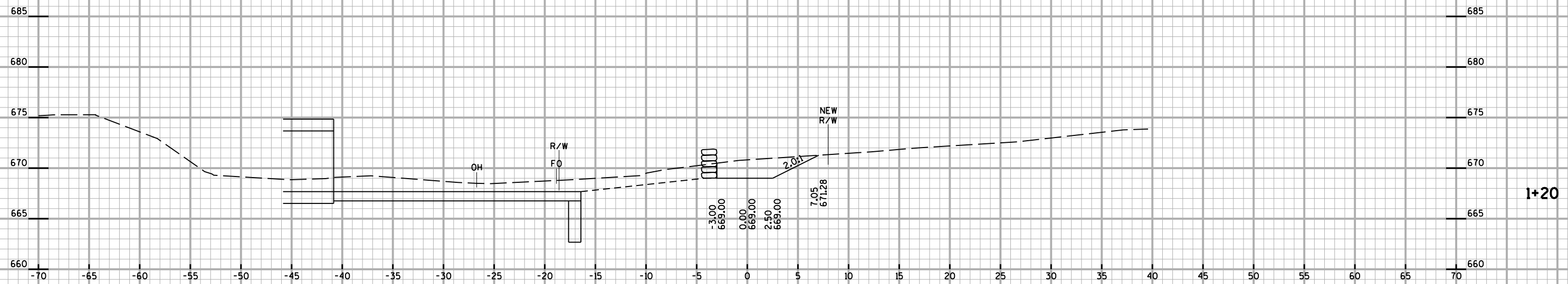
0+80



0+70

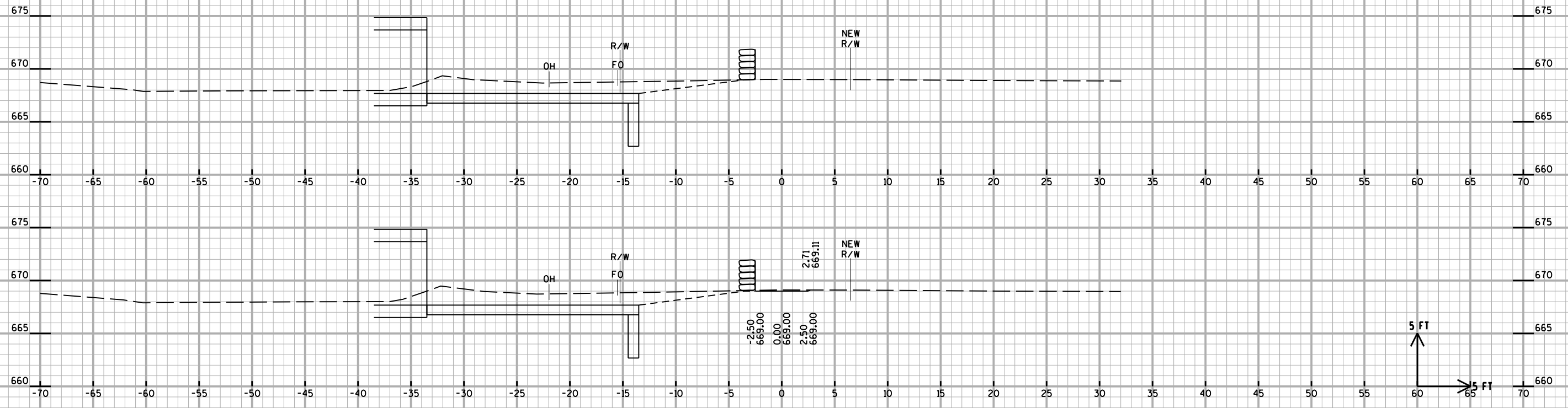
9

9



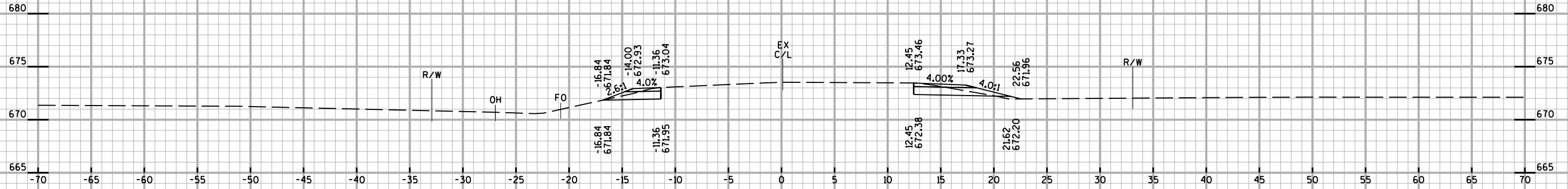
9	PROJECT NO: 7356-00-70	HWY: CTH 00	COUNTY: BUFFALO	CROSS SECTIONS - TEMPORARY BYPASS CHANNEL	SHEET	E	9
---	------------------------	-------------	-----------------	---	-------	---	---

END BYPASS
STA. 1+31.08
(MATCH EXISTING)

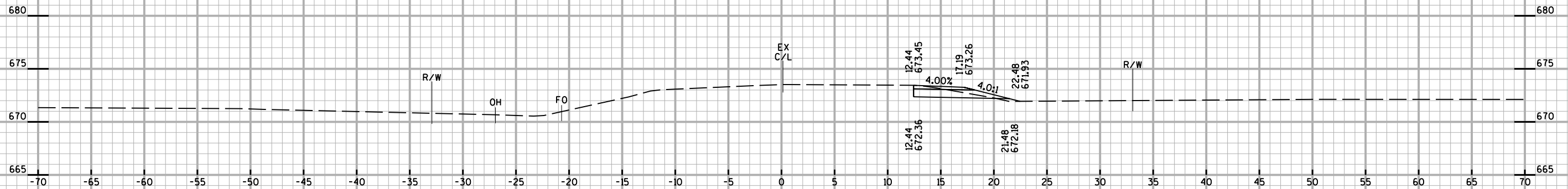


9

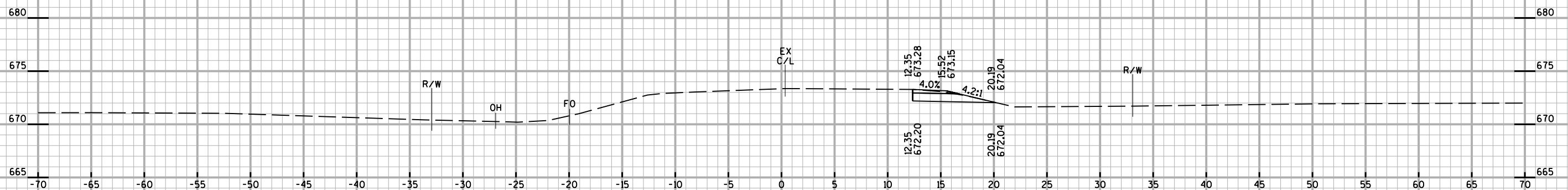
9



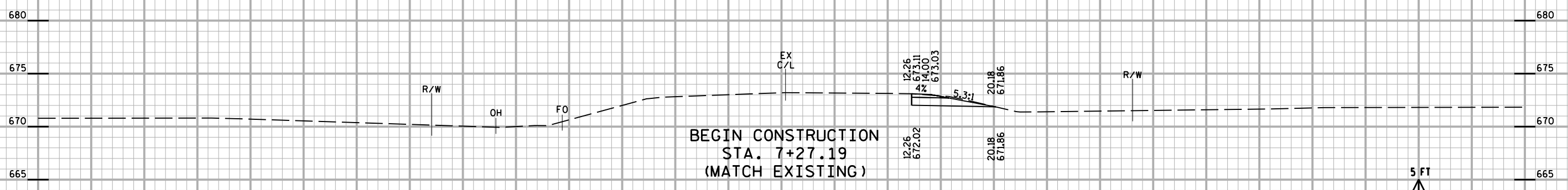
7+77.19



7+75

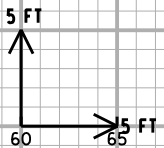


7+50



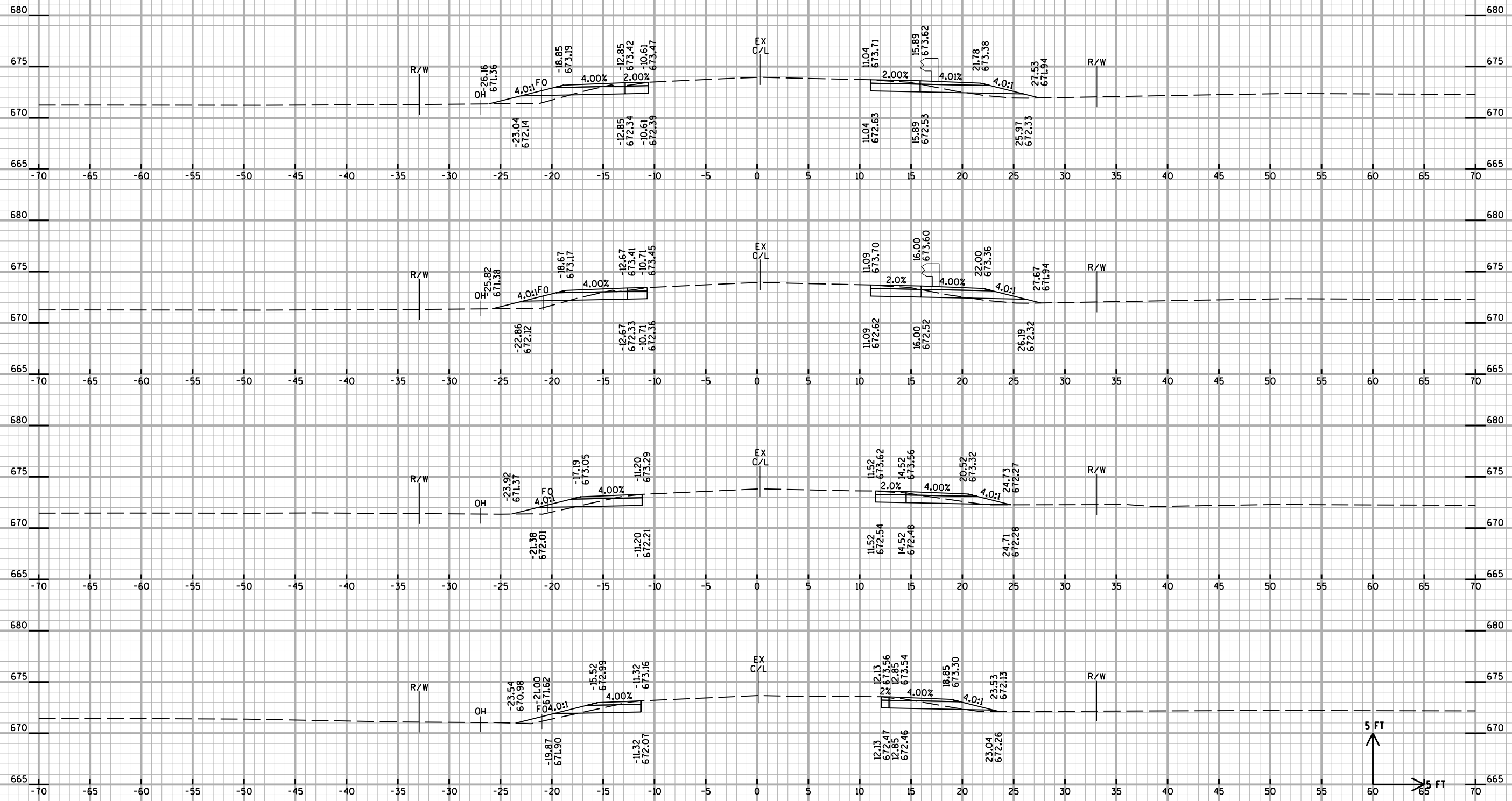
7+27.19

BEGIN CONSTRUCTION
STA. 7+27.19
(MATCH EXISTING)



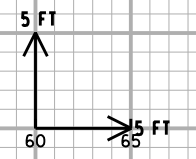
9

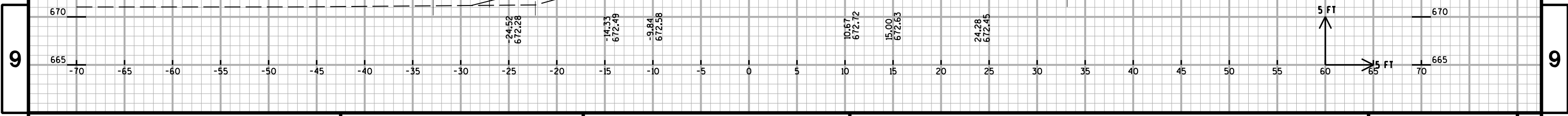
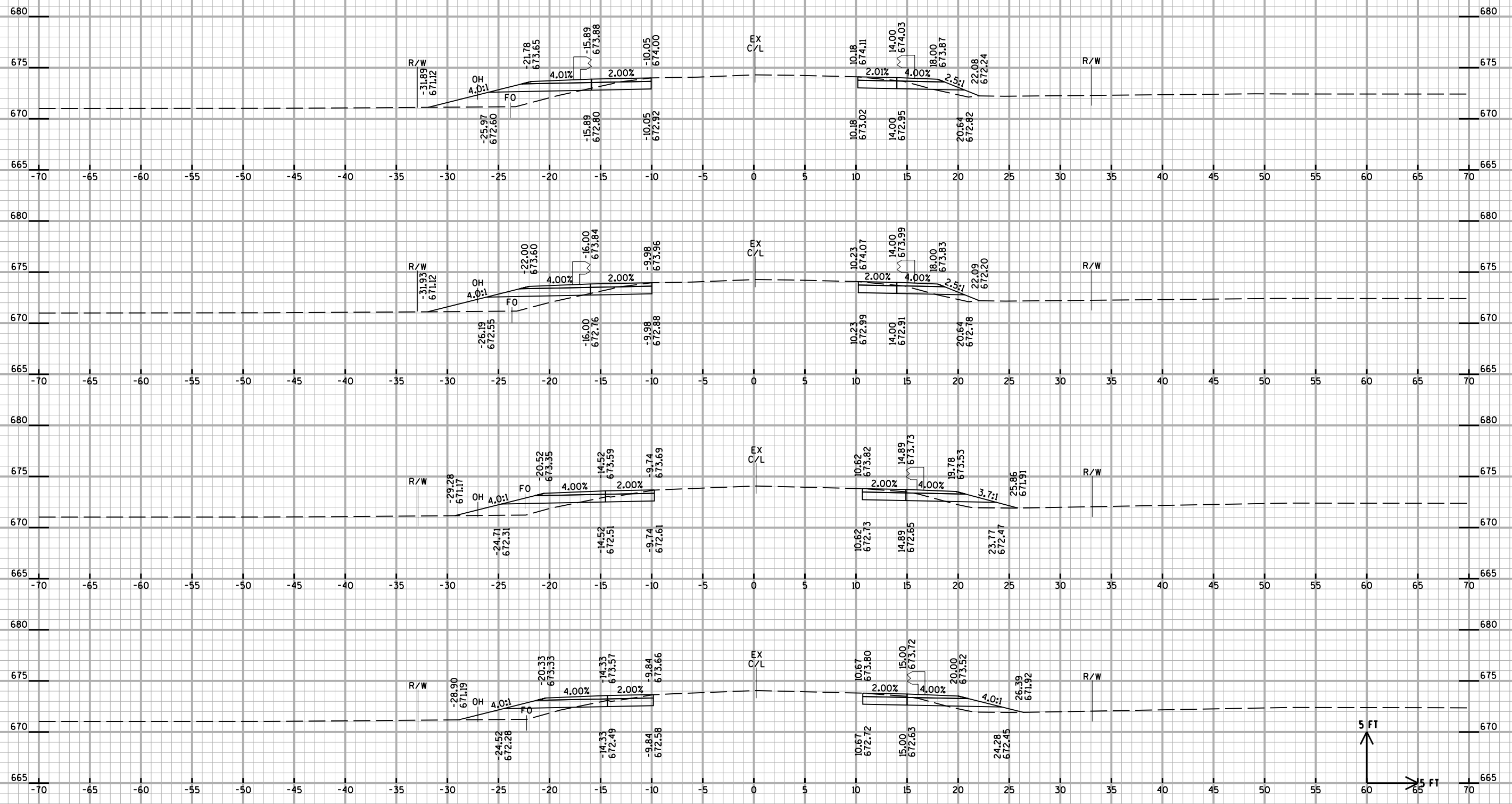
9

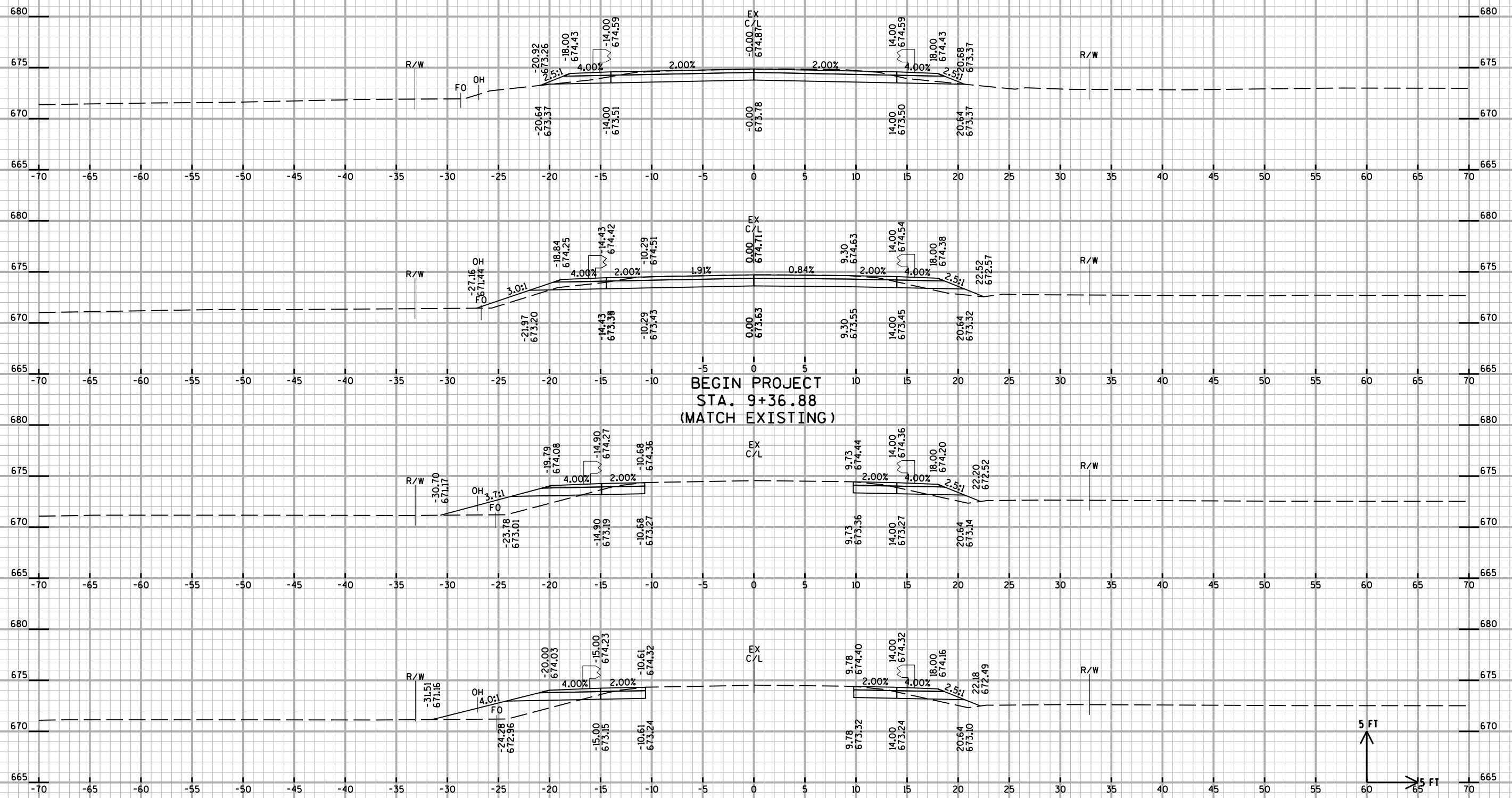


9

9

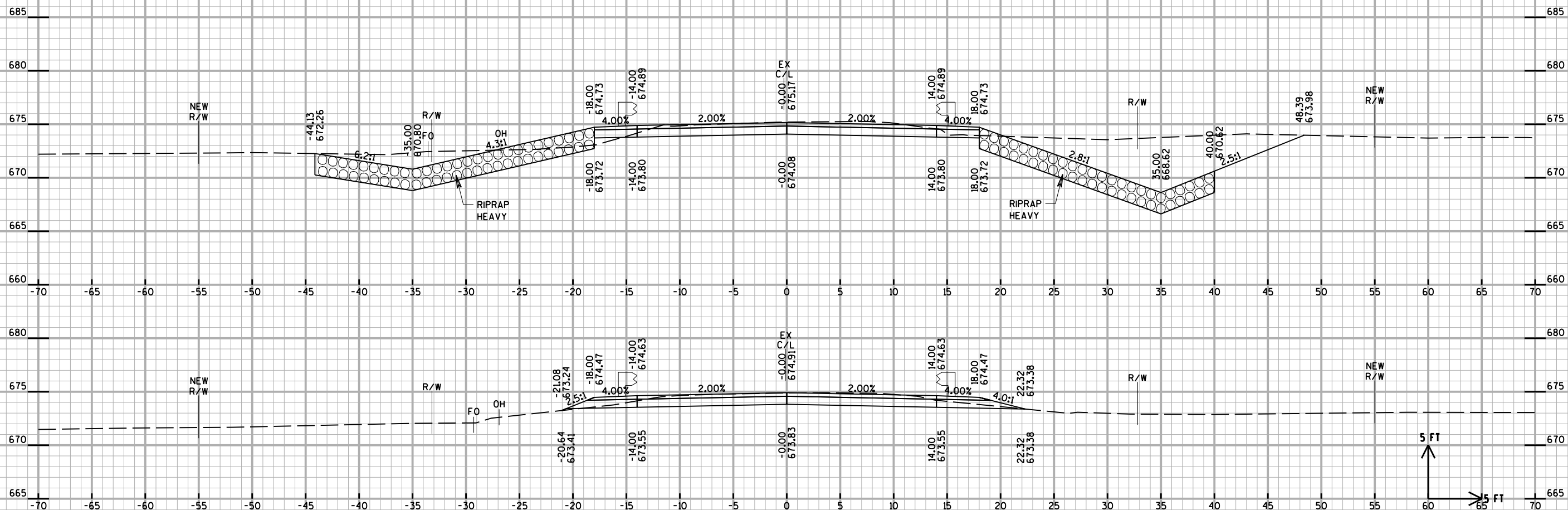




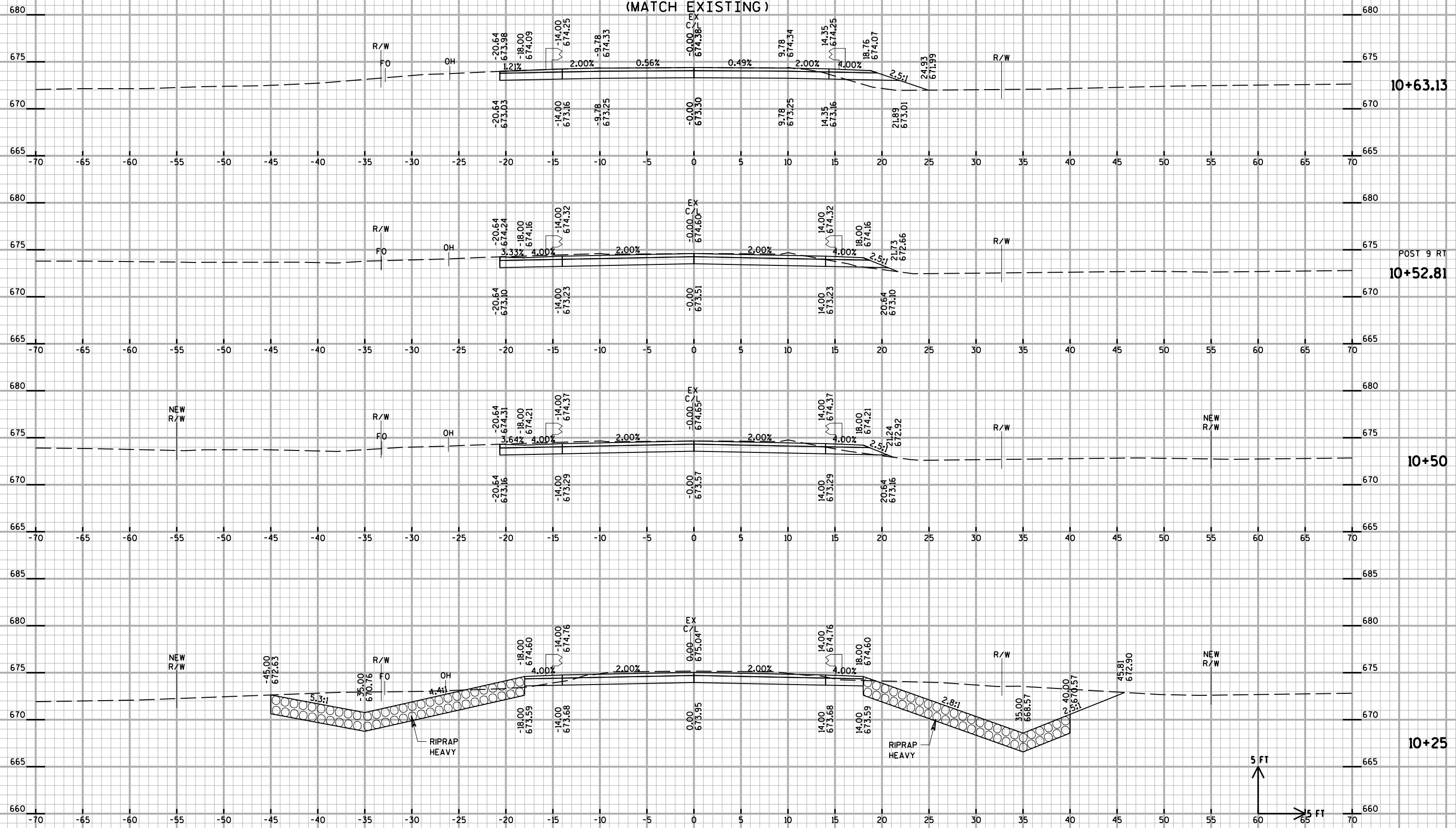


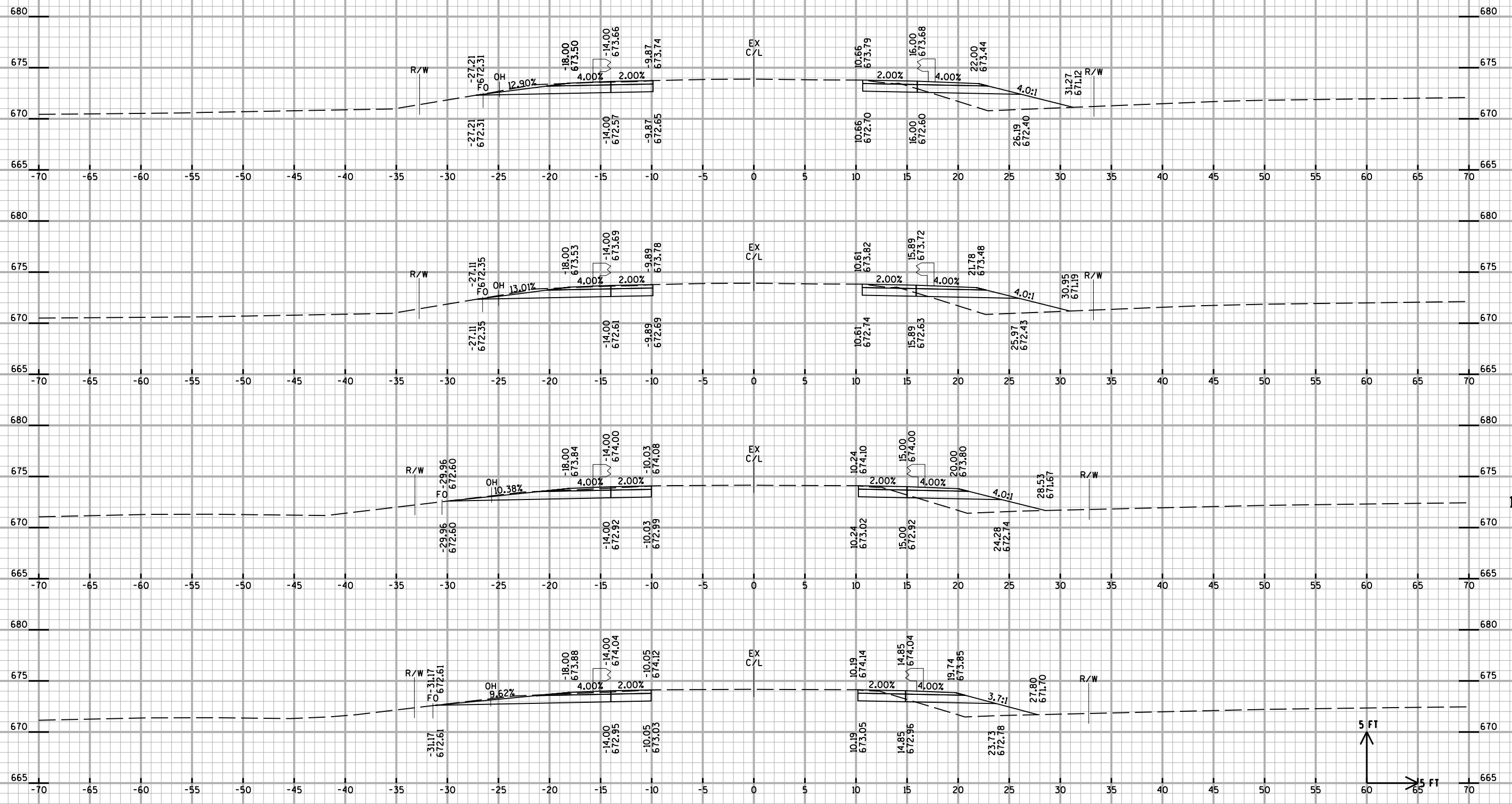
BEGIN PROJECT
 STA. 9+36.88
 (MATCH EXISTING)

STRUCTURE B-6-197



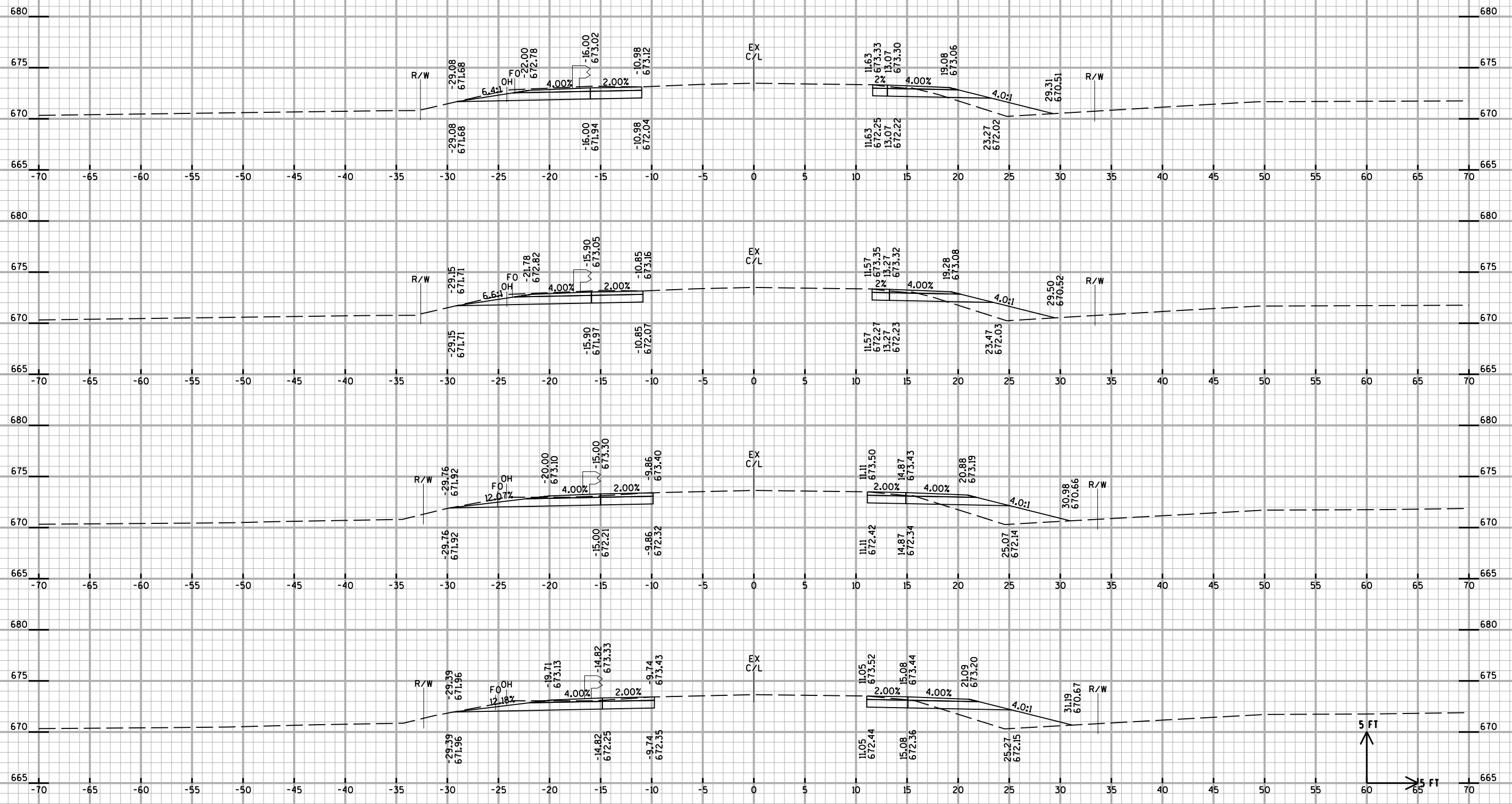
END PROJECT
STA. 10+63.13
(MATCH EXISTING)





9

9



POST 1 LT
11+52.81

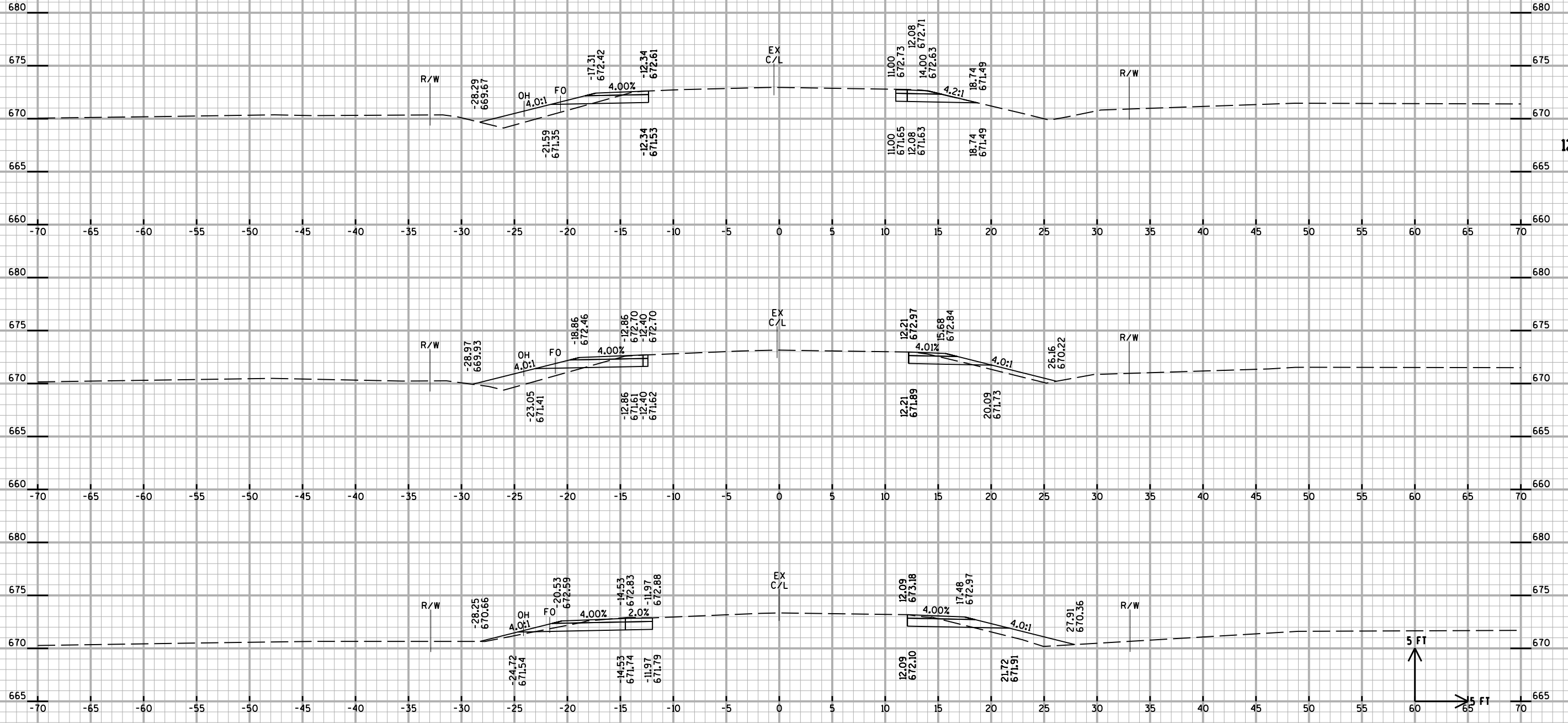
11+50

POST 5 LT
11+27.81

11+25

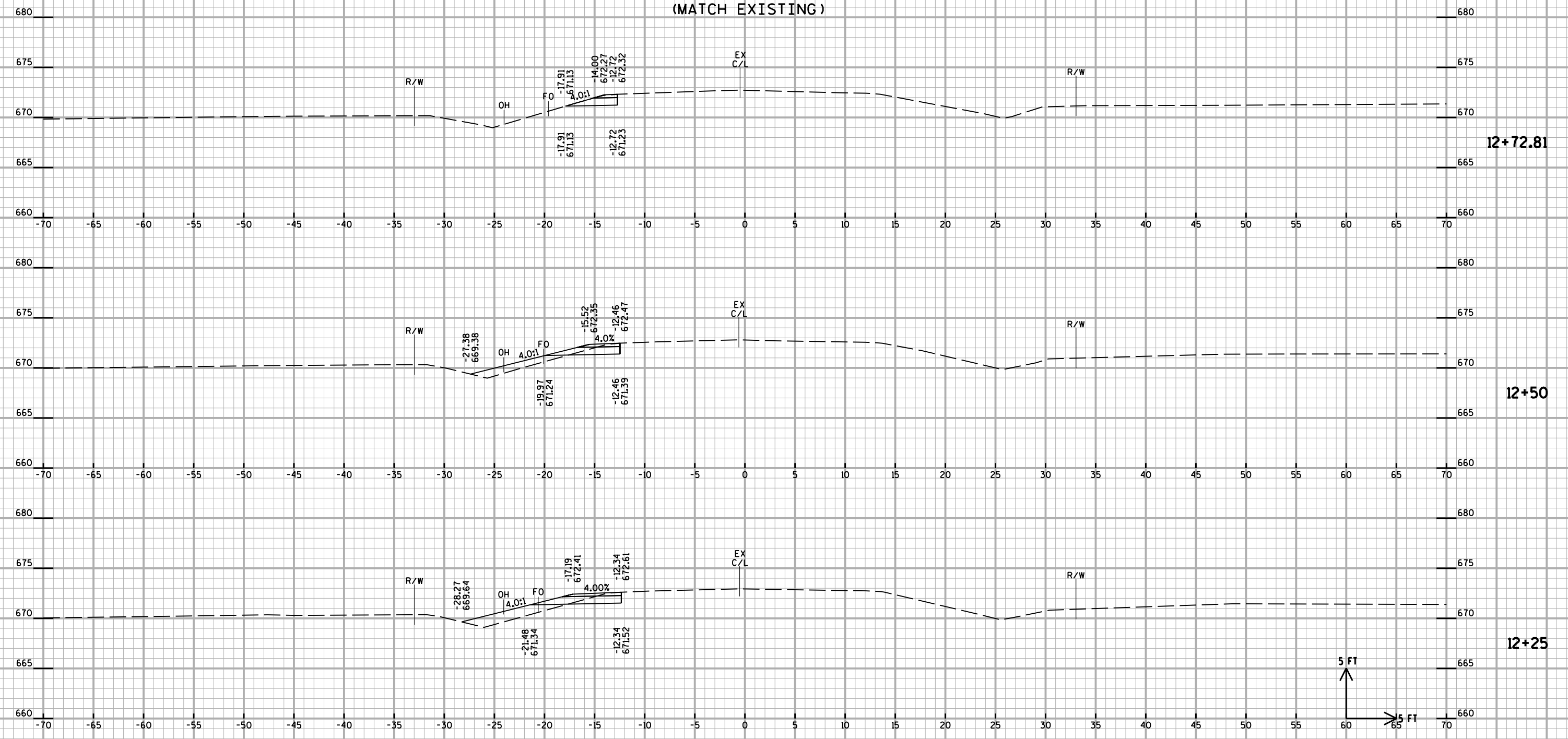
9

9



9

END CONSTRUCTION
STA. 12+72.81
(MATCH EXISTING)



9

9

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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