MAD

FEB 2016

ORDER OF SHEETS

TOTAL SHEETS = 72

PROJECT ID: 1066-06-70

COUNTY: JEFFERSON

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1066-06-70		

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

AZTALAN - JOHNSON CREEK

(CTH N B-28-46)

IH 94

JEFFERSON COUNTY

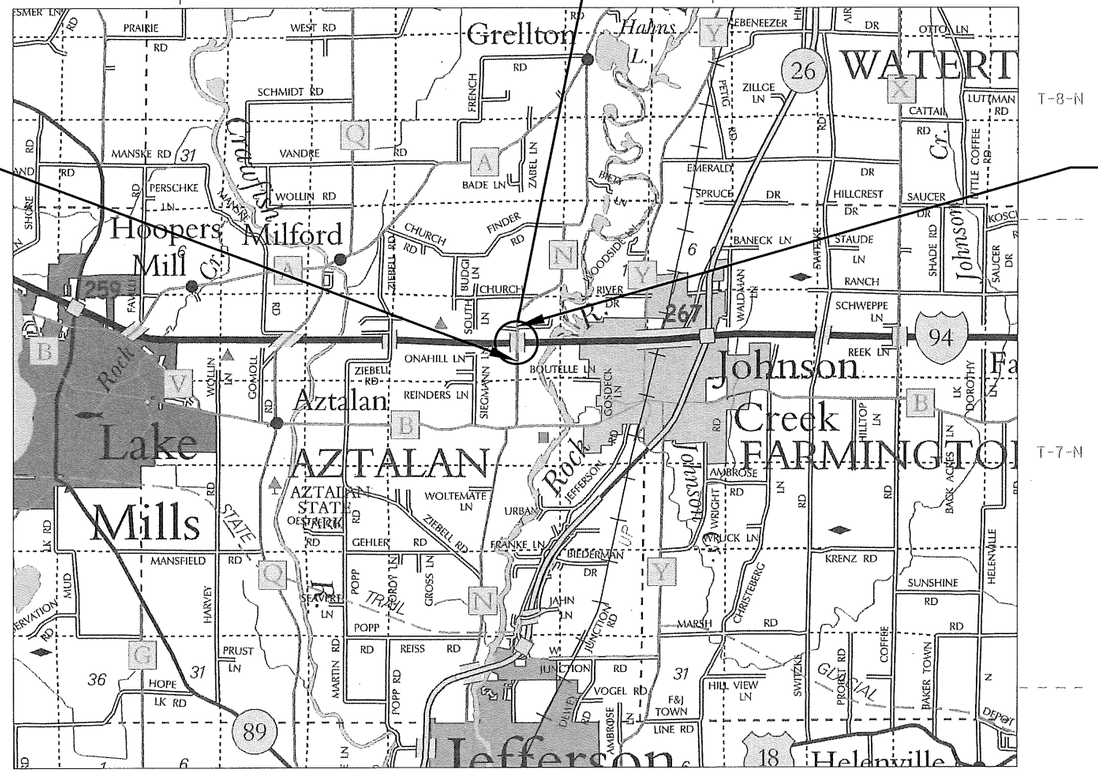
STATE PROJECT NUMBER
1066-06-70

N

STRUCTURE
B-28-46

BEGIN PROJECT
STA. 44+85
Y= 587,645.53
X= 855,786.74

END PROJECT
STA. 54+12.5
Y= 588,572.09
X= 855,810.17



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.176 MI.

DESIGN DESIGNATION

			C.T.H. N	IH-94
A.A.D.T.	2009	=	670	33,200
A.A.D.T.	2036	=	1300	43,600
D.H.V.	2036	=	133	
D.D.		=	60/40	
T.		=	12.1%	
DESIGN SPEED		=	50 MPH	70 MPH
ESALS		=	190,000	

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	PAT KREBS
Designer	JOHN JENKINS
Project Manager	VICKI ROMENESKO
Regional Examiner	-
Regional Supervisor	TODD MATHESON

APPROVED FOR THE DEPARTMENT
DATE: 7/22/15 Todd Matheson (Signature)

E

STANDARD ABBREVIATIONS

AC.	ACRE	MAX.	MAXIMUM
AGG.	AGGREGATE	MGAL	1000 GALLONS
AH	AHEAD	MIN.	MINIMUM
<	ANGLE	N.C.	NORMAL CROWN OR NO CHANGE
AE, AEW	APRON ENDWALL	N	NORTH
ASPH.	ASPHALTIC	NO.	NUMBER
A.D.T.	AVERAGE DAILY TRAFFIC	PAV'T	PAVEMENT
B.F.	BACK FACE	P.L.E.	PERMANENT LIMITED EASEMENT
BK.	BACK	P.C.	POINT OF CURVATURE
BEG.	BEGIN	P.I.	POINT OF INTERSECTION
B.M.	BENCH MARK	P.T.	POINT OF TANGENCY
C/L	CENTER LINE	V.P.C.	VERTICAL POINT OF CURVATURE
D	CENTRAL ANGLE OR DELTA	V.P.I.	VERTICAL POINT OF INTERSECTION
C.M.C.P.	CORRUGATED METAL CULVERT PIPE	V.P.T.	VERTICAL POINT OF TANGENCY
C.M.P.	CORRUGATED METAL PIPE	PCC	PORTLAND CEMENT CONCRETE
CO.	COUNTY	P.E.	PRIVATE ENTRANCE
CTH	COUNTY TRUNK HIGHWAY	P.L.	PROPERTY LINE
CR.	CREEK	R	RADIUS OR RANGE
C.A.B.C.	CRUSHED AGGREGATE BASE COURSE	R/L	REFERENCE LINE
C.Y.	CUBIC YARD	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
C.P.	CULVERT PIPE	RT	RIGHT
C. & G.	CURB AND GUTTER	REQ'D	REQUIRED
D	DEGREE OF CURVE	R.H.F.	RIGHT HAND FORWARD
D.H.V.	DESIGN HOUR VOLUME	R/W	RIGHT OF WAY
DIA.	DIAMETER	R.	RIVER
DISCH.	DISCHARGE	RD.	ROAD
EA	EACH	SHLD.	SHOULDER(S)
E	EAST	SHR.	SHRINKAGE
ELEC.	ELECTRIC(AL), ELEC. CABLE	S	SOUTH
EL., ELEV.	ELEVATION	S.F.	SQUARE FOOT (FEET)
EXC.	EXCAVATION	SDD	STANDARD DETAIL DRAWING(S)
F.F.	FACE TO FACE	STH	STATE TRUNK HIGHWAY
FERT.	FERTILIZER	STA.	STATION
F.E.	FIELD ENTRANCE	S.E.	SUPERELEVATION
F/L, F.L.	FLOW LINE	S/L	SURVEY LINE
CWT.	HUNDRED WEIGHT	T	TANGENT
INL	INLET	TEL.	TELEPHONE
INTER.	INTERSECTION	TEMP.	TEMPORARY
JT.	JOINT	T.L.E.	TEMPORARY LIMITED EASEMENT
LT	LEFT	T.O.C.	TOP OF CURB
L.H.F.	LEFT HAND FORWARD	T.	(TRUCKS) PERCENT OF
L.	LENGTH OF CURVE	TYP.	TYPICAL
L.F.	LINEAR FOOT(FEET)	UNCL.	UNCLASSIFIED
LC.	LONG CHORD	U.G.	UNDERGROUND (CABLE)
LS	LUMP SUM	V.C.	VERTICAL CURVE
M.P.	MARKER POST	W	WEST

DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED AS APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND MULCHED.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION.

4-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED IN TWO LAYERS.

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. THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING LANE.

DNR CONTACT

LAURA BUB
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
3911 FISH HATCHERY ROAD
MADISON, WI 53711
(608) 275-3485
Laura.Bub@wisconsin.gov

UTILITY CONTACTS

WE ENERGIES - ELECTRICITY
FRANCISCO J CHAVEZ - FIELD CONTACT
500 S. 116TH ST.
WEST ALLIS, WI 53214
(414) 944-5540 (office)
(414) 322-1671 (mobile)
Francisco.Chavez@we-energies.com

TDS TELECOM - COMMUNICATION LINE
MIKE JOHNSON - FIELD CONTACT
16924 WEST VICTOR ROAD
NEW BERLIN, WI 53151
(262) 754-3052 (office)
(262) 939-6355 (mobile)
Michael.Johnson@tdstelecom.com

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

WISDOT PROJECT MANAGER
VICKI ROMENESKO
2101 WRIGHT ST.
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(608) 246-5333
vicki.romenesko@dot.wi.gov

WISDOT PROJECT LEADER
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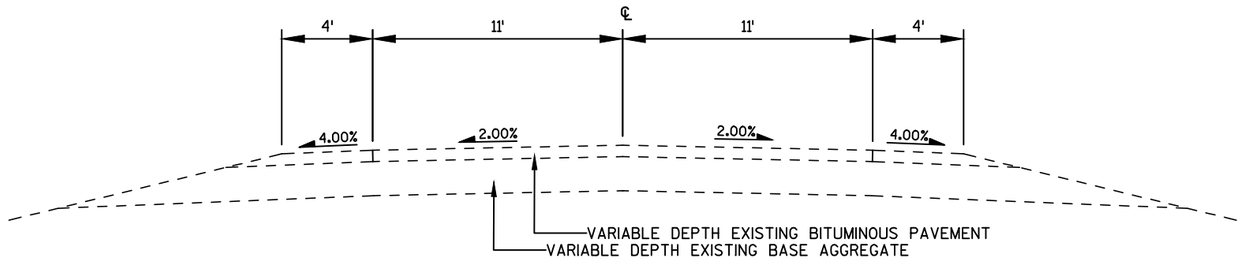
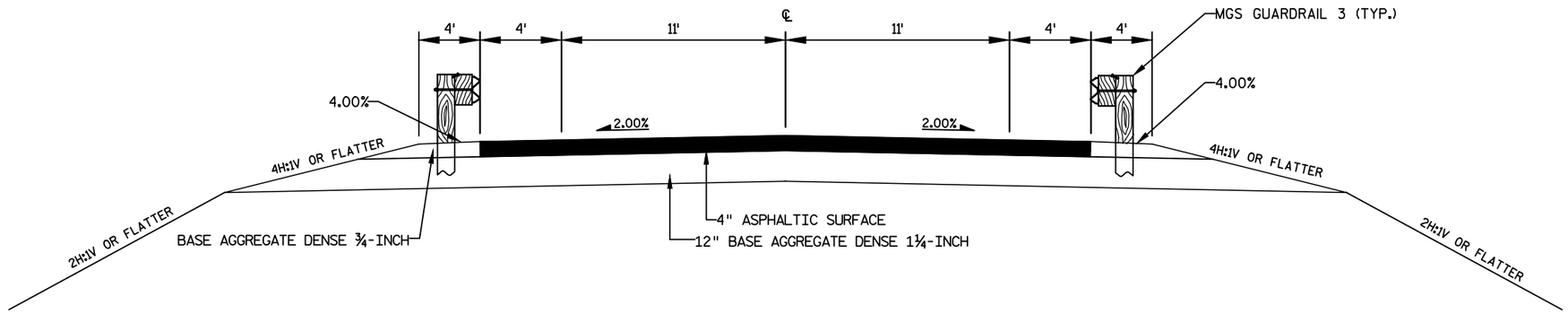
(608) 246-3866
john.jenkins@dot.wi.gov



EXISTING TYPICAL SECTION

CTH N
STA 44+85 TO STA 54+12.5

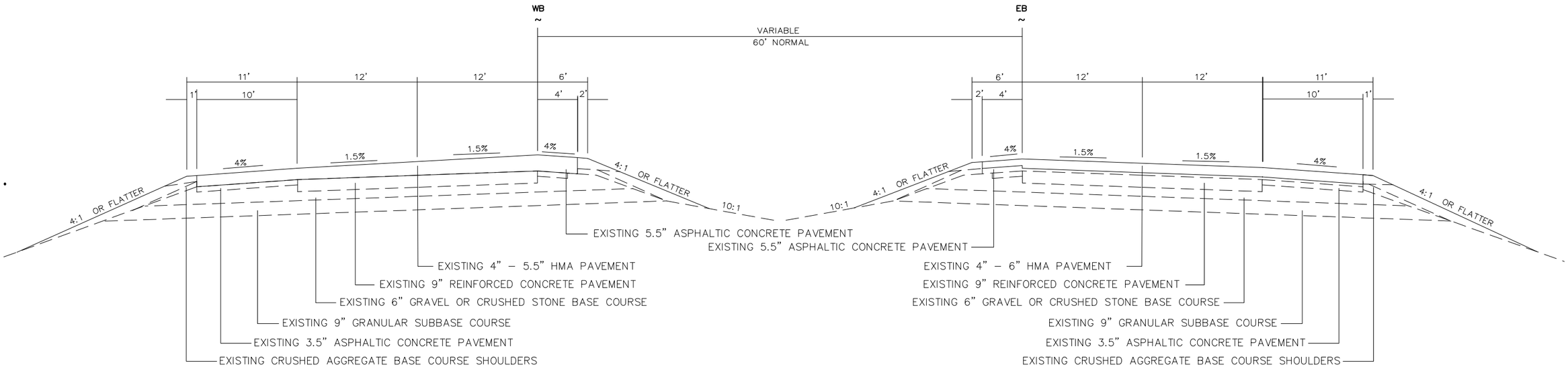


PROPOSED TYPICAL SECTION

CTH N
STA 44+85.63 TO STA 48+63.80
STA 50+76.58 TO STA 54+12.5

PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	PLAN: TYPICAL SECTIONS	SHEET 3	E

2



TYPICAL EXISTING SECTION IH 94

1348+00 EB – 1556+12 EB
1345+50 WB – 1500+58 WB

PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	PLAN: TYPICAL SECTIONS	SHEET 4	E

FILE NAME : N:\PDS\C3D\10660601\SHEETSPLAN\020301 TYPICAL SECTIONS\020301-TS.DWG
**** - ****
PLOT DATE : 5/8/2015 2:57 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:5 FT
WISDOT/CADDS SHEET 42

2

GENERAL TRAFFIC CONTROL NOTES:

DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON CONTRACTOR METHODS OR SEQUENCE OF OPERATION.

ALL "W" AND "WO" SIGNS SHALL BE 48"X48" UNLESS OTHERWISE NOTED, OR AS PROVIDED FOR IN SDD'S, AND SHALL HAVE REFLECTIVE FLUORESCENT DIAMOND GRADE SHEETING.

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF TRAFFIC CONTROL, INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS SPECIFIED IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

"WO" SIGNS ARE THE SAME AS "W" SIGNS, EXCEPT THE BACKGROUND SHALL BE ORANGE.

WARNING LIGHTS SHALL NOT BE WORKING ON "COVERED" OR "DOWNED" SIGNS OR BARRICADES.

DURING HOURS OF DARKNESS, ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH TYPE "A" LIGHTS.

ALL R11-2, R11-3, AND R11-4 SIGNS SHALL BE ATTACHED ONLY TO THE TOP RAIL OF THE TYPE III BARRICADE. THE SIGNS SHALL NOT COVER THE MIDDLE RAIL.

TYPE "H" REFLECTIVE SHEETING SHALL BE USED ON ALL BARRICADES AND ON R11-2, R11-3, AND R11-4 SIGNS.

ALL TYPE III BARRICADES SHALL HAVE AN EQUIVALENT WIDTH OF 8 FEET.

DETAILS OF TRAFFIC CONTROL DEVICES AND THEIR LOCATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE WISCONSIN MANUAL OF TRAFFIC CONTROL DEVICES, THE PLANS, SPECIFICATIONS AND CONTRACT.

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES.

ADVANCED TRAFFIC CONTROL DETAIL

PLACE SIGNS DURING IH 94 LANE RESTRICTIONS
FOR EB LANES: PLACE WEST OF STH 89 EXIT RAMP
FOR WB LANES: PLACE EAST OF STH 26 EXIT RAMP

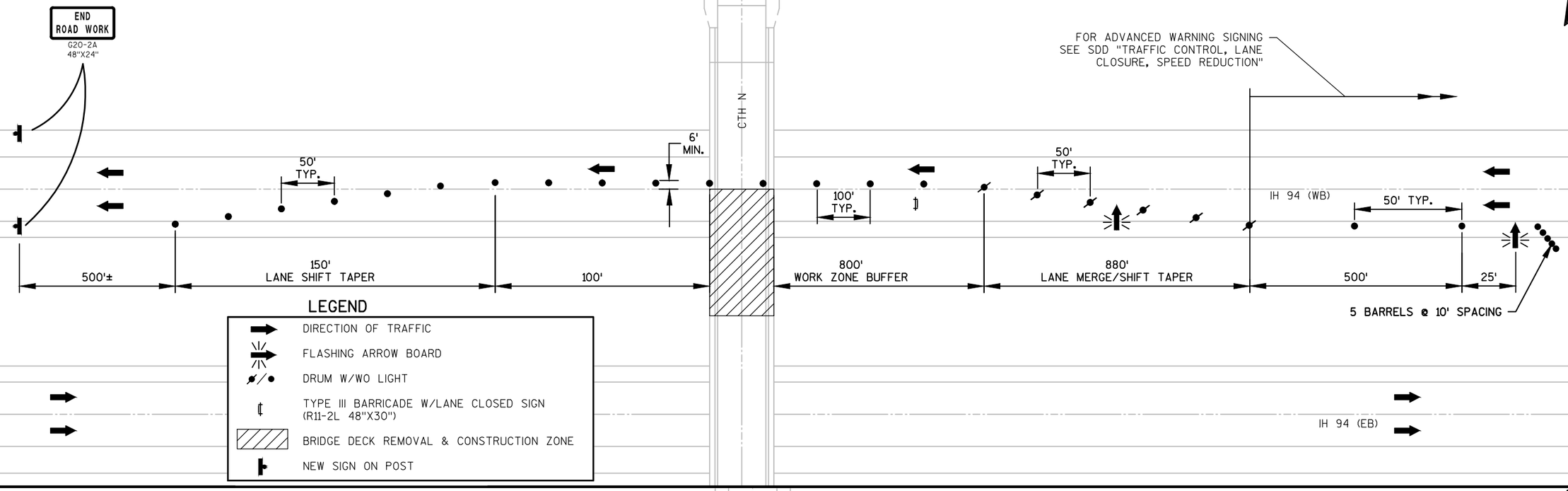
R12-70-B
114"X42"

JV-F
36"X81"

PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	TRAFFIC CONTROL NOTES	SHEET 5	E

PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	TRAFFIC CONTROL DETAILS	SHEET 6	E

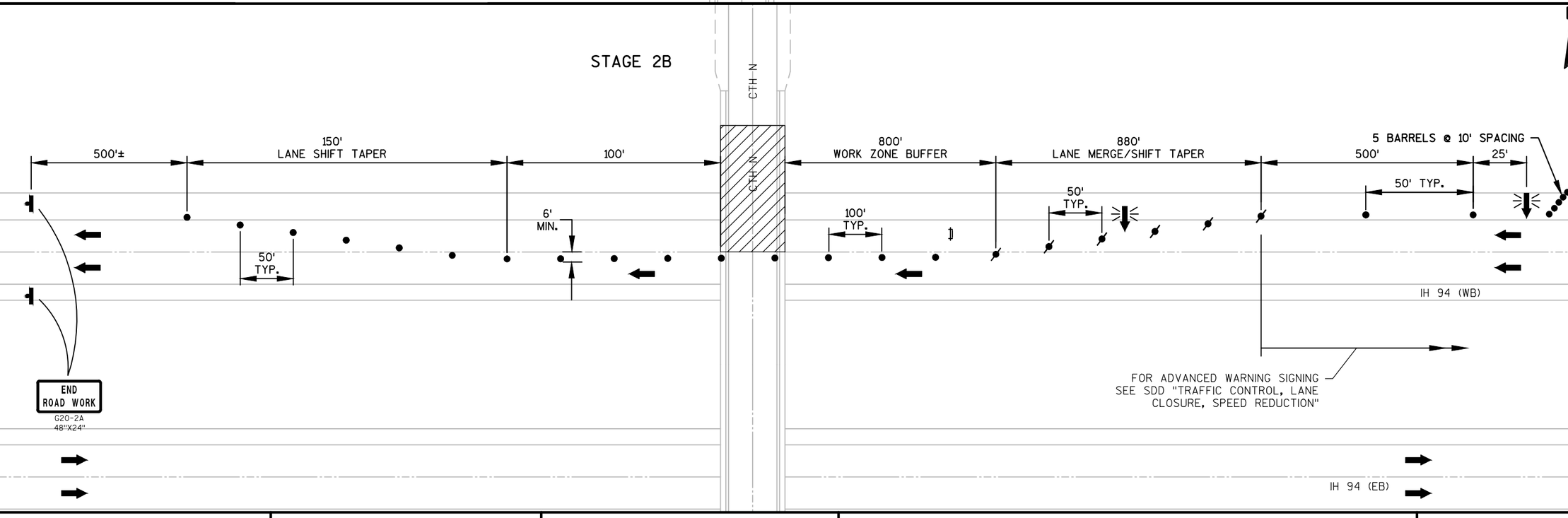
STAGE 2A



LEGEND

- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- DRUM W/WO LIGHT
- TYPE III BARRICADE W/LANE CLOSED SIGN (R11-2L 48"X30")
- BRIDGE DECK REMOVAL & CONSTRUCTION ZONE
- NEW SIGN ON POST

STAGE 2B



PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	TRAFFIC CONTROL DETAILS	SHEET 7	E

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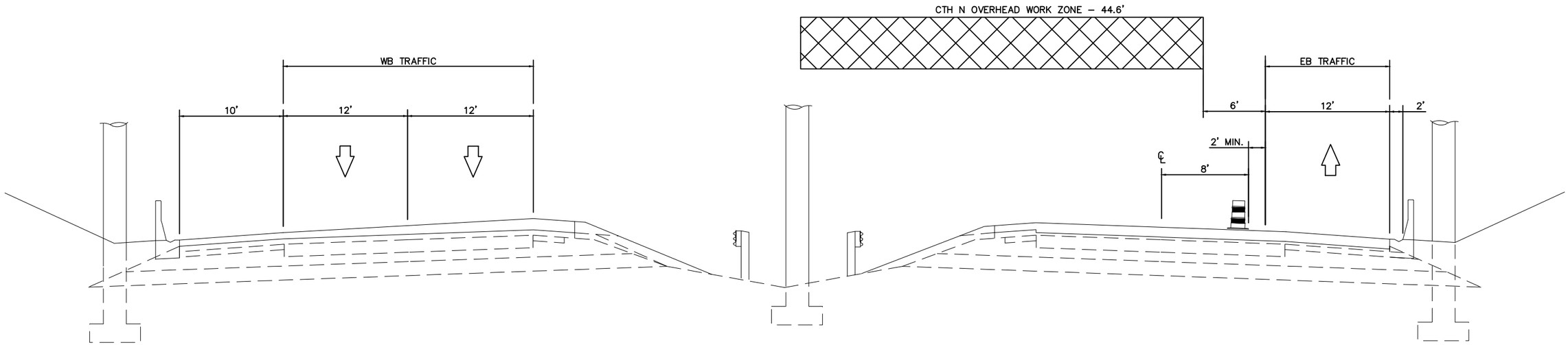
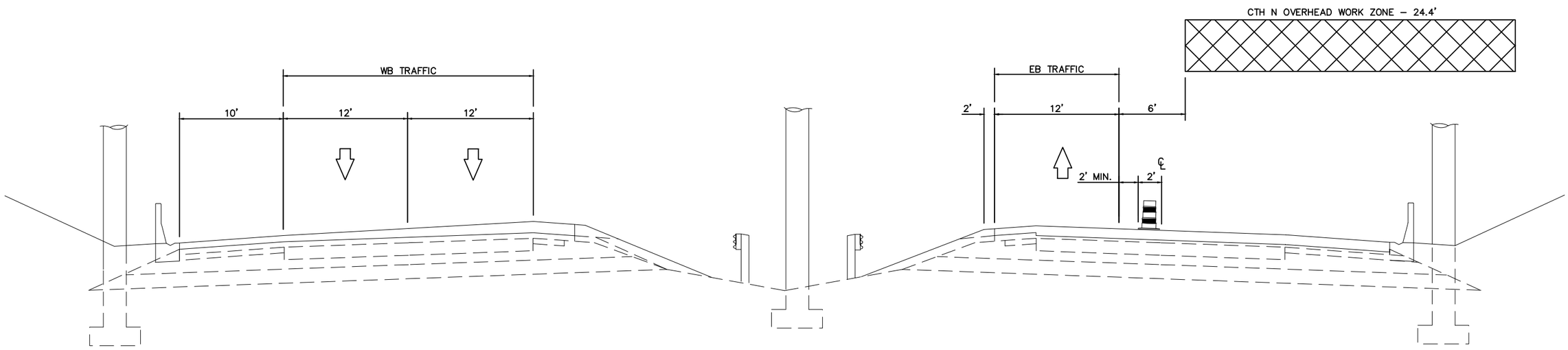
LAYOUT NAME - ****
PLOT DATE : 5/8/2015 2:57 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44



STAGE 1B – EB IH 94

EB IH 94
LOOKING EAST



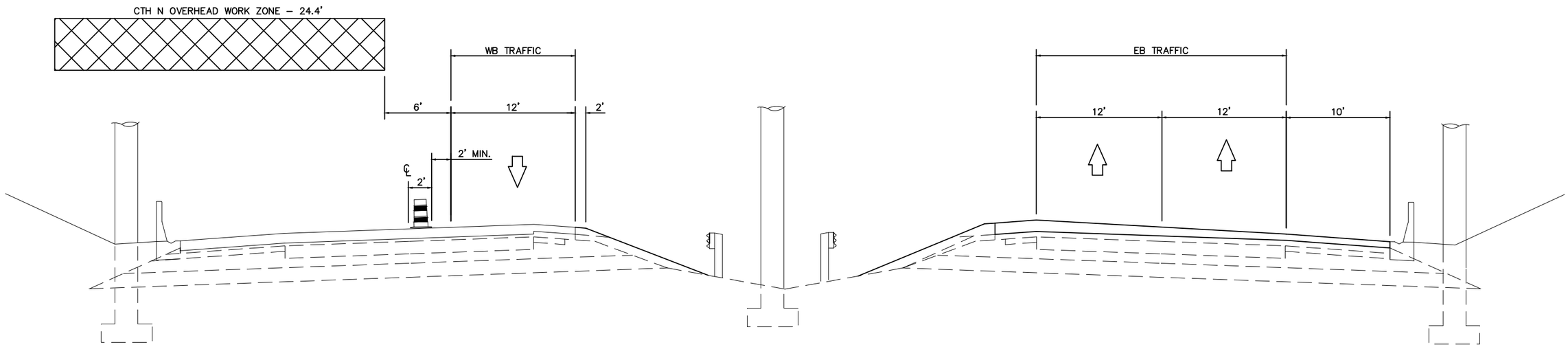
STAGE 1A – EB IH 94

EB IH 94
LOOKING EAST

NOTES:
1) STAGES 1 AND 2 OCCUR FOR DECK REMOVAL, FORM WORK, AND FALSEWORK REMOVAL.

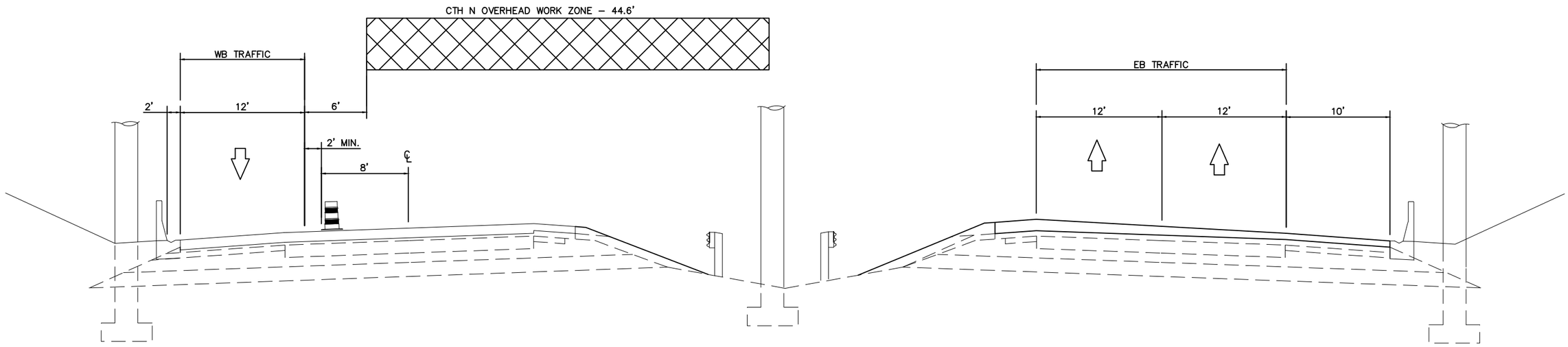
2) A MINIMUM OF ONE LANE OF TRAFFIC MUST BE MAINTAINED IN EACH DIRECTION AT ALL TIMES.

PROJECT NO:1066–06–70	HWY:IH 94	COUNTY:JEFFERSON	TRAFFIC CONTROL DETAILS	SHEET 8	E



STAGE 2B – WB IH 94

WB IH 94
LOOKING EAST



STAGE 2A – WB IH 94

WB IH 94
LOOKING EAST

NOTES:
1) STAGES 1 AND 2 OCCUR FOR DECK REMOVAL, FORM WORK, AND FALSEWORK REMOVAL.

2) A MINIMUM OF ONE LANE OF TRAFFIC MUST BE MAINTAINED IN EACH DIRECTION AT ALL TIMES.

PROJECT NO:1066–06–70	HWY:IH 94	COUNTY:JEFFERSON	TRAFFIC CONTROL DETAILS	SHEET 9	E

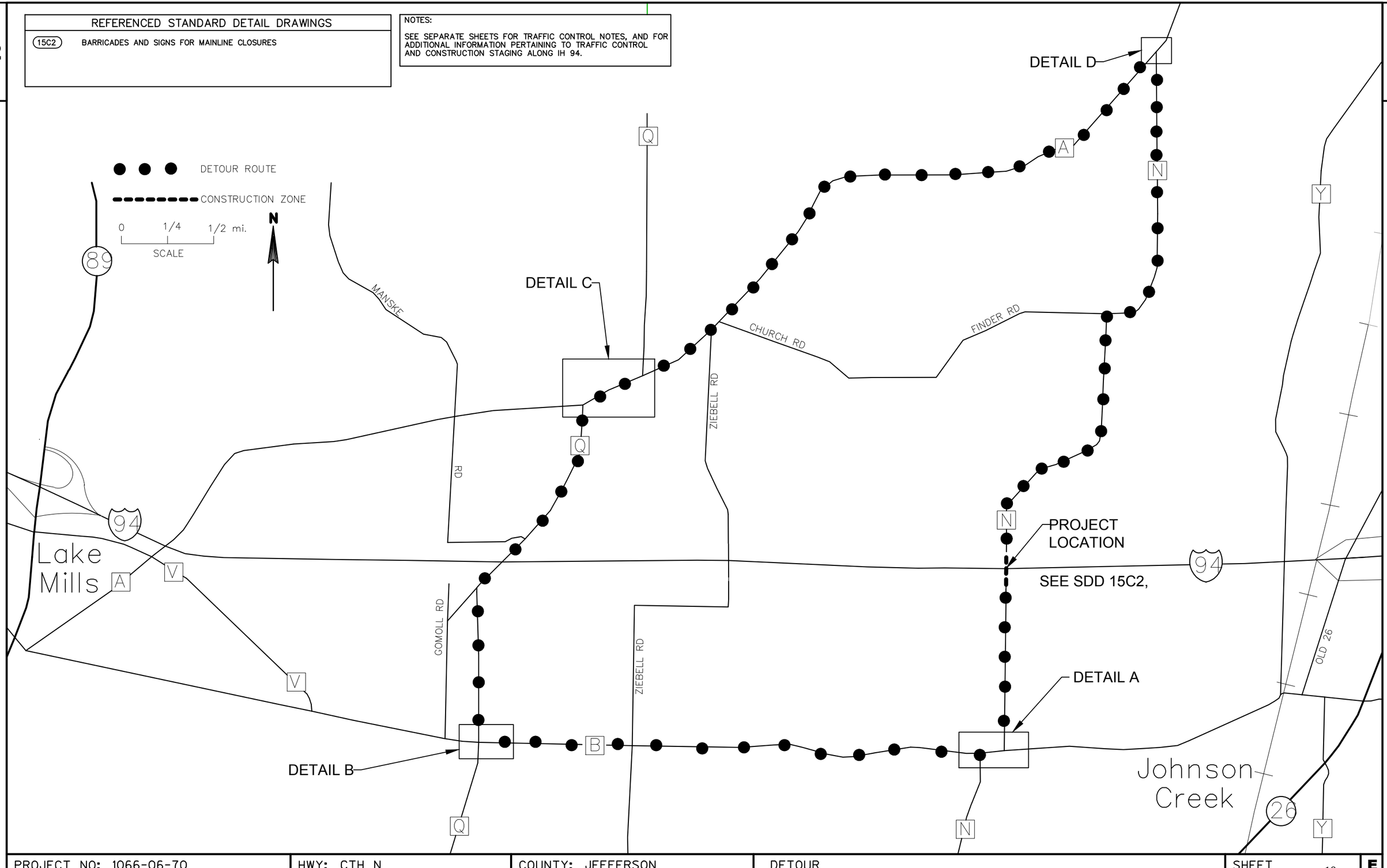
2

REFERENCED STANDARD DETAIL DRAWINGS

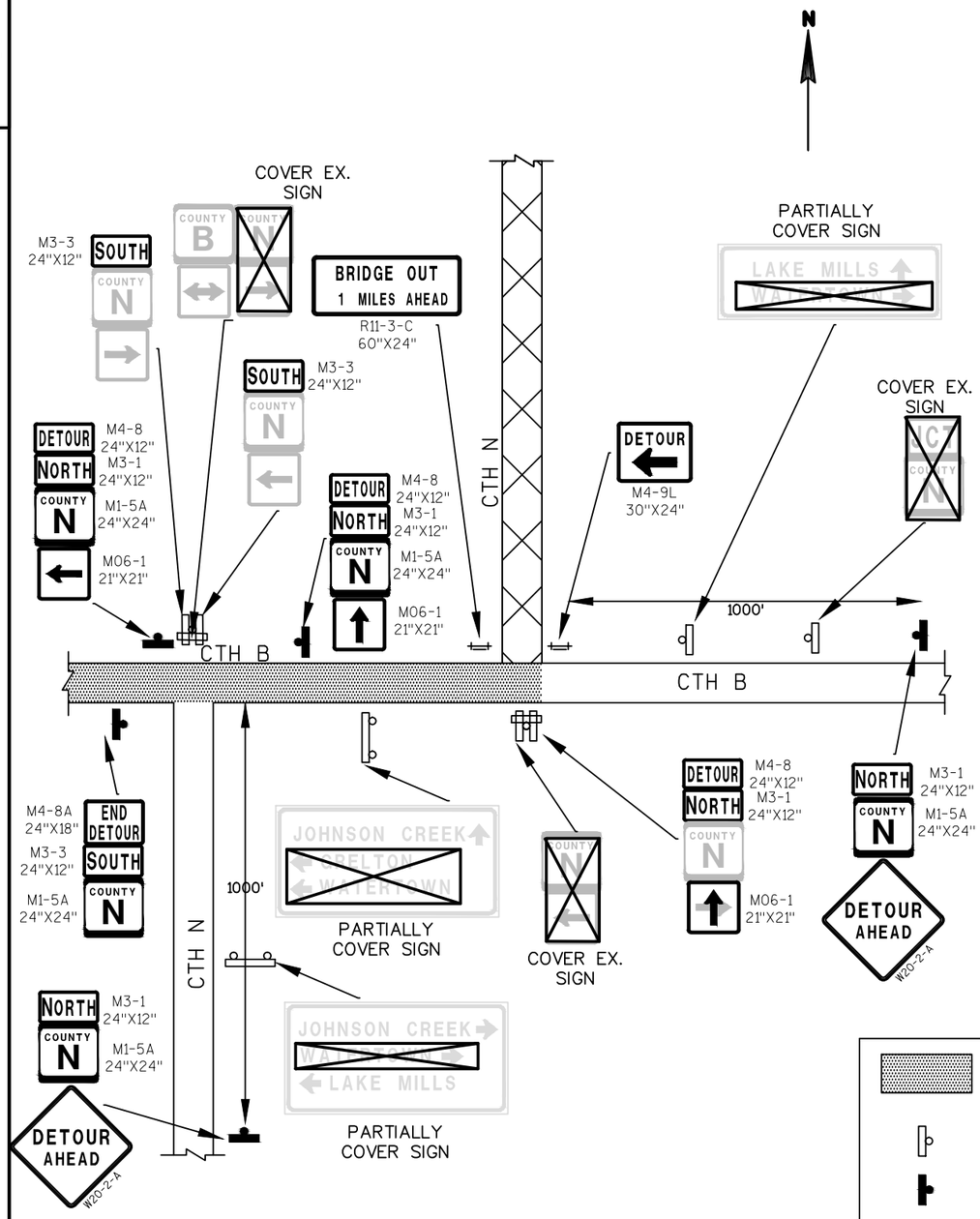
(15C2) BARRICADES AND SIGNS FOR MAINLINE CLOSURES

NOTES:

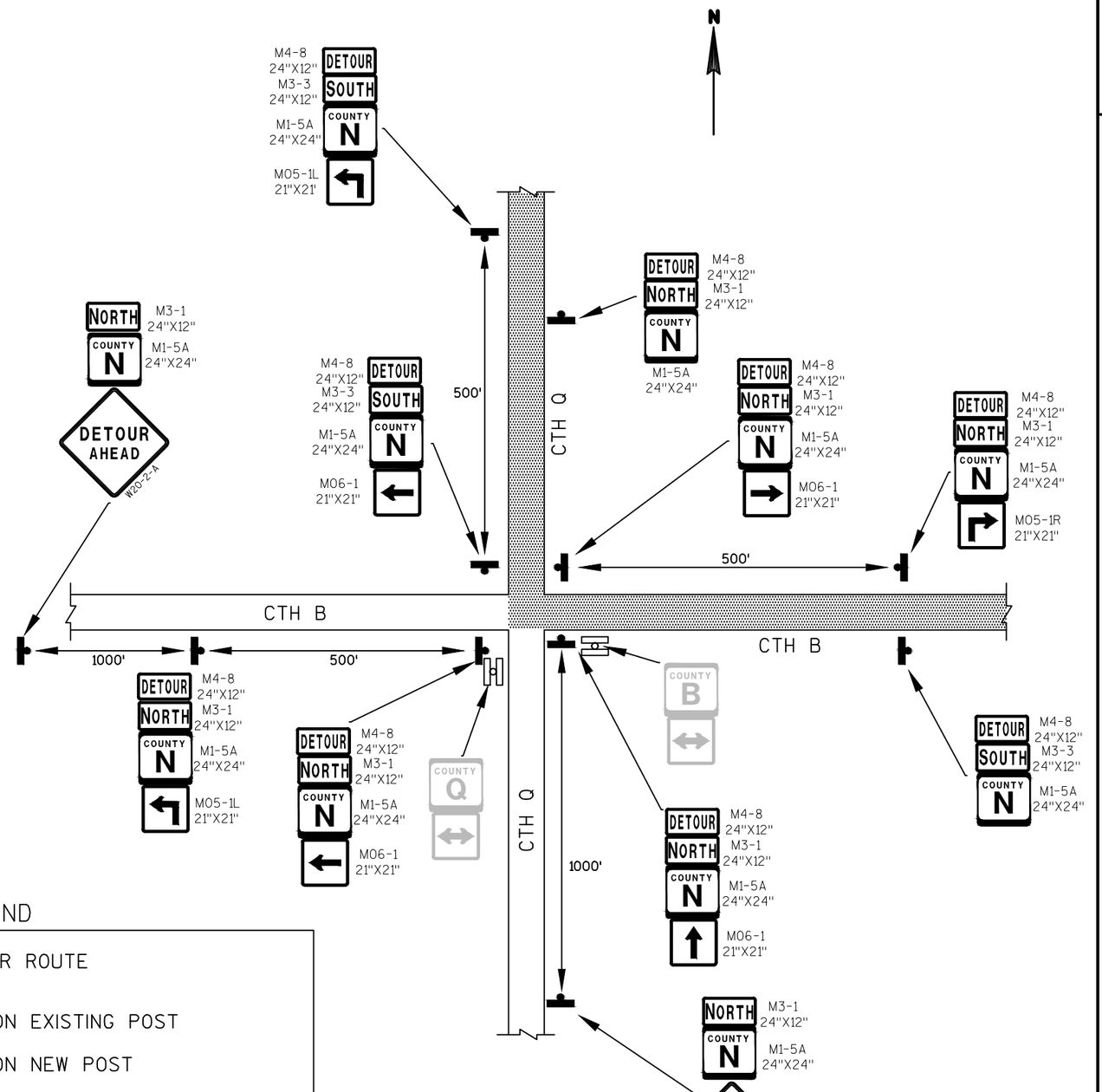
SEE SEPARATE SHEETS FOR TRAFFIC CONTROL NOTES, AND FOR ADDITIONAL INFORMATION PERTAINING TO TRAFFIC CONTROL AND CONSTRUCTION STAGING ALONG IH 94.



PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	DETOUR	SHEET 10	E



DETAIL A
CTH N AND CTH B



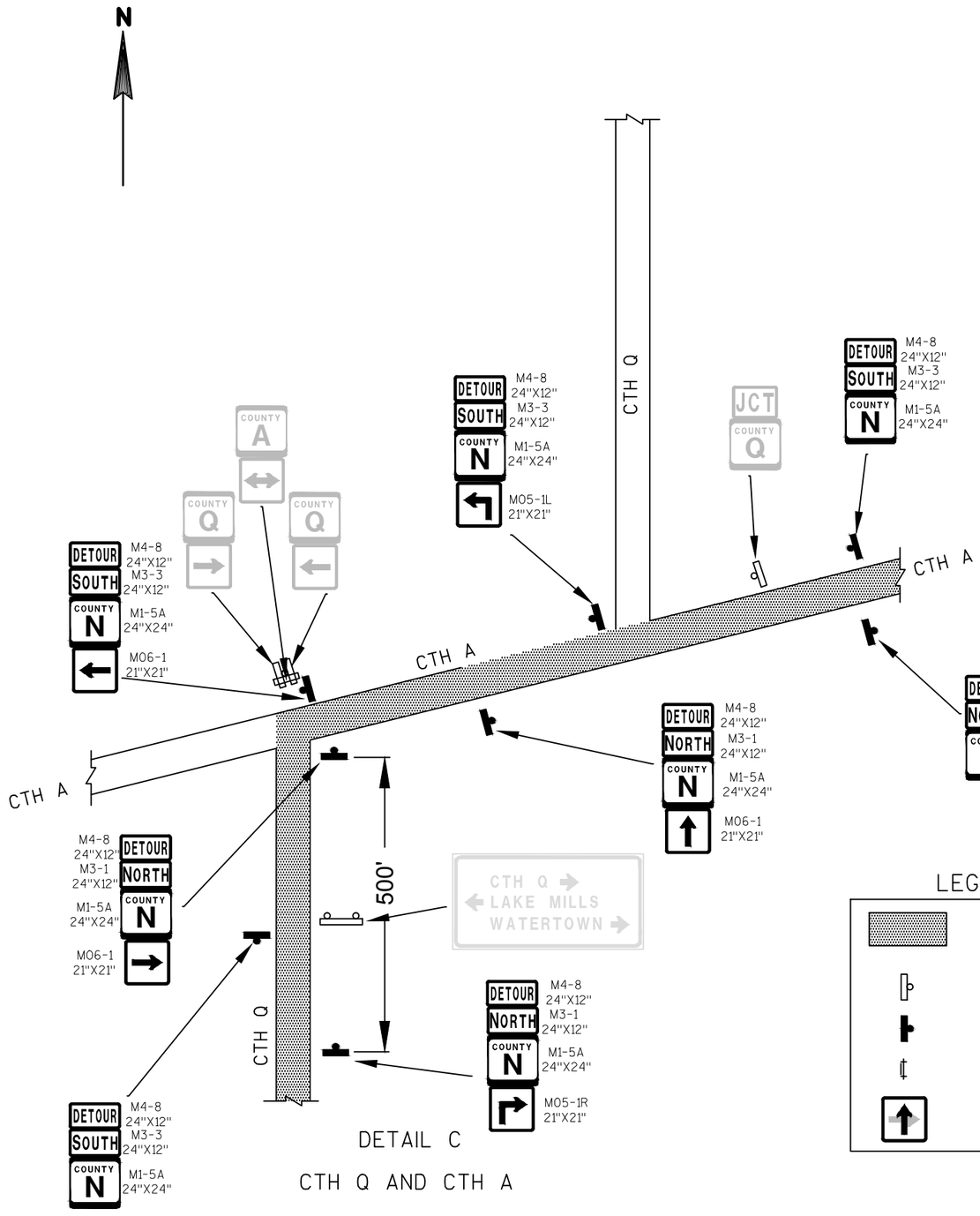
DETAIL B
CTH Q AND CTH B

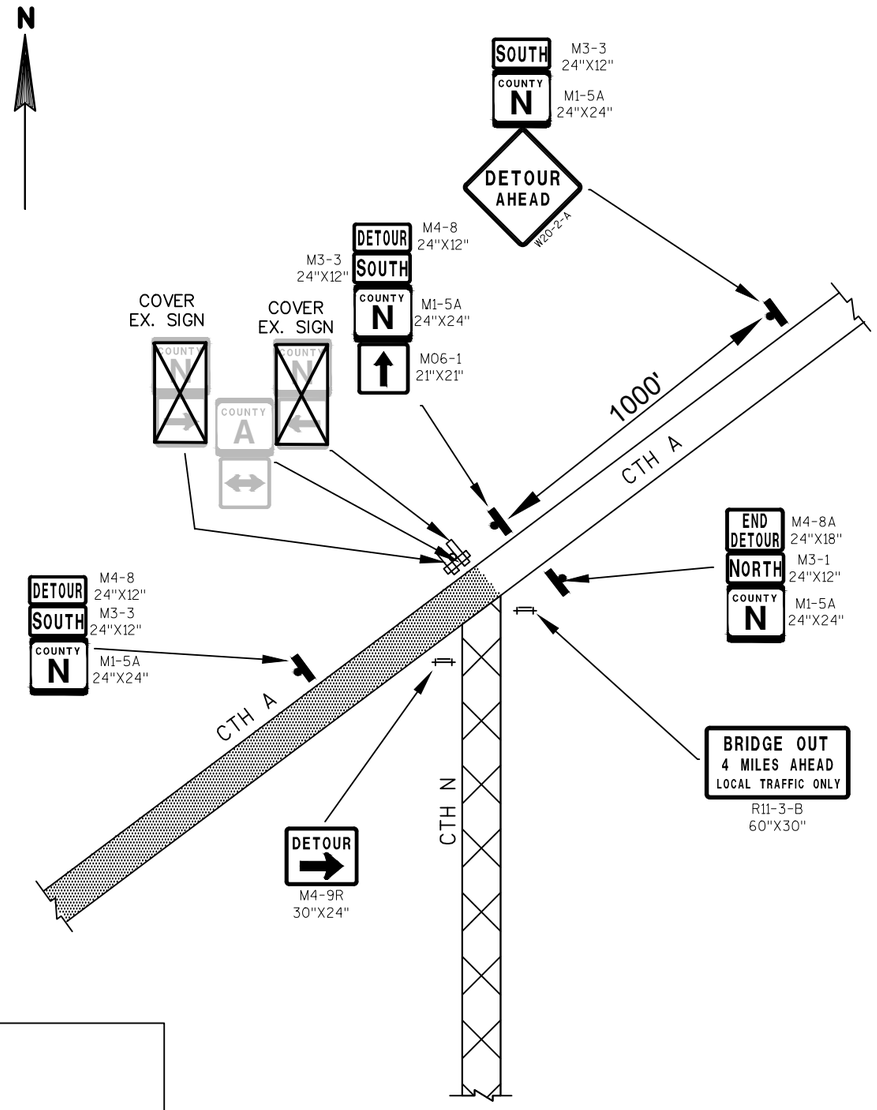
LEGEND

- DETOUR ROUTE
- SIGN ON EXISTING POST
- SIGN ON NEW POST
- TYPE III BARRICADE W/SIGN
- COVER EXISTING SIGN W/NEW SIGN

PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	DETOUR SIGNING	SHEET 11	E

FILE NAME : N:\PDS\C3D\10660601\SHEETSPLAN\027001 DETOURS\027001_DET.DWG
LAYOUT NAME - ****
PLOT DATE : 7/16/2015 9:35 AM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 0.033822
WISDOT/CADDS SHEET 42





LEGEND

- DETOUR ROUTE
- SIGN ON EXISTING POST
- SIGN ON NEW POST
- TYPE III BARRICADE W/SIGN
- COVER EXISTING SIGN W/NEW SIGN

PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	DETOUR SIGNING	SHEET 12	E

DATE 10DEC15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1066-06-70 QUANTITY
0010	203.0200	Removing Old Structure (station) 01. 49+69	LS	1.000	1.000
0020	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. (B-28-46)	LS	1.000	1.000
0030	203.0225.S	Debris Containment (structure) 01. (B-28-46)	LS	1.000	1.000
0040	204.0165	Removing Guardrail	LF	1,375.000	1,375.000
0050	205.0100	Excavation Common	CY	1,219.000	1,219.000
0060	206.1000	Excavation for Structures Bridges (structure) 01. (B-28-46)	LS	1.000	1.000
0070	210.0100	Backfill Structure	CY	280.000	280.000
0080	213.0100	Finishing Roadway (project) 01. 1066-06-70	EACH	1.000	1.000
0090	305.0110	Base Aggregate Dense 3/4-Inch	TON	151.000	151.000
0100	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,170.000	2,170.000
0110	312.0115	Select Crushed Material	CY	52.000	52.000
0120	465.0105	Asphaltic Surface	TON	534.000	534.000
0130	502.0100	Concrete Masonry Bridges	CY	322.000	322.000
0140	502.3200	Protective Surface Treatment	SY	7.000	7.000
0150	502.3210	Pigmented Surface Sealer	SY	197.000	197.000
0160	502.5005	Masonry Anchors Type L No. 5 Bars	EACH	64.000	64.000
0170	502.6105	Masonry Anchors Type S 5/8-Inch	EACH	136.000	136.000
0180	505.0400	Bar Steel Reinforcement HS Structures	LB	1,800.000	1,800.000
0190	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	69,840.000	69,840.000
0200	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	8.000	8.000
0210	506.4000	Steel Diaphragms (structure) 01. (B-28-46)	EACH	26.000	26.000
0220	506.7050.S	Removing Bearings (structure) 01. (B-28-46)	EACH	8.000	8.000
0230	509.1500	Concrete Surface Repair	SF	175.000	175.000
0240	509.5100.S	Polymer Overlay	SY	717.000	717.000
0250	513.4056	Railing Tubular Type H (structure) 01. (B-28-46)	LF	473.000	473.000
0260	514.0445	Floor Drains Type GC	EACH	4.000	4.000
0270	514.2625	Downspout 6-Inch	LF	104.000	104.000
0280	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0290	604.0400	Slope Paving Concrete	SY	93.000	93.000
0300	606.0200	Riprap Medium	CY	20.000	20.000
0310	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0320	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0330	614.2300	MGS Guardrail 3	LF	1,009.000	1,009.000
0340	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0350	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0360	619.1000	Mobilization	EACH	1.000	1.000
0370	624.0100	Water	MGAL	47.000	47.000
0380	625.0500	Salvaged Topsoil	SY	2,480.000	2,480.000
0390	628.1104	Erosion Bales	EACH	188.000	188.000
0400	628.1504	Silt Fence	LF	2,167.000	2,167.000
0410	628.1520	Silt Fence Maintenance	LF	2,167.000	2,167.000
0420	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0430	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0440	628.2004	Erosion Mat Class I Type B	SY	6,785.000	6,785.000
0450	628.7570	Rock Bags	EACH	46.000	46.000

3

DATE 10DEC15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1066-06-70 QUANTITY
0460	629.0210	Fertilizer Type B	CWT	1.590	1.590
0470	630.0120	Seeding Mixture No. 20	LB	67.100	67.100
0480	630.0200	Seeding Temporary	LB	67.100	67.100
0490	634.0416	Posts Wood 4x4-Inch X 16-FT	EACH	6.000	6.000
0500	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0510	638.2602	Removing Signs Type II	EACH	6.000	6.000
0520	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0530	642.5001	Field Office Type B	EACH	1.000	1.000
0540	643.0100	Traffic Control (project) 01. 1066-06-70	EACH	1.000	1.000
0550	643.0300	Traffic Control Drums	DAY	1,152.000	1,152.000
0560	643.0420	Traffic Control Barricades Type III	DAY	1,770.000	1,770.000
0570	643.0705	Traffic Control Warning Lights Type A	DAY	1,600.000	1,600.000
0580	643.0715	Traffic Control Warning Lights Type C	DAY	432.000	432.000
0590	643.0800	Traffic Control Arrow Boards	DAY	48.000	48.000
0600	643.0900	Traffic Control Signs	DAY	456.000	456.000
0610	643.0920	Traffic Control Covering Signs Type II	EACH	13.000	13.000
0620	643.2000	Traffic Control Detour (project) 01. 1066-06-70	EACH	1.000	1.000
0630	643.3000	Traffic Control Detour Signs	DAY	10,961.000	10,961.000
0640	645.0120	Geotextile Fabric Type HR	SY	48.000	48.000
0650	646.0106	Pavement Marking Epoxy 4-Inch	LF	3,710.000	3,710.000
0660	650.4500	Construction Staking Subgrade	LF	711.000	711.000
0670	650.5000	Construction Staking Base	LF	711.000	711.000
0680	650.9910	Construction Staking Supplemental Control (project) 01. 1066-06-70	LS	1.000	1.000
0690	650.9920	Construction Staking Slope Stakes	LF	711.000	711.000
0700	690.0150	Sawing Asphalt	LF	60.000	60.000
0710	715.0502	Incentive Strength Concrete Structures	DOL	1,932.000	1,932.000
0720	SPV.0060	Special 01. PRECAST CONCRETE BEARING BLOCK	EACH	8.000	8.000

3

From/To Station	Location	205.0100 Common Excavation (1) Cut (2) CY	205.0100 Common Excavation (1) EBS Excavation CY	Salvaged/Unusable Pavement Material (4) CY	Available Material (5) CY	Reduced EBS in Fill (6) Factor 0.80 CY	312.0115 Expanded EBS Backfill (7) Factor 1.30 CY	Unexpanded Fill CY	Expanded Fill (8) Factor 1.20 CY	Mass Ordinate +/- (9) CY	Waste CY
44+85 to 48+63	LT & RT	599	0	168	431	0	0	350	420	11	11
50+76 to 54+12	LT & RT	620	0	150	470	0	0	118	142	328	328
5% EBS	UNDISTRIBUTED	0	40	0	0	32	52	0	0	0	0
	Total	1,219	40	318	901	32	52	468	562	339	339
	Total Common Exc.	**1,219**									

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Crushed Material.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
7) Expanded EBS Backfill - This is to be filled with Select Crushed Material. EBS Backfill Factor = 1.3. Item number 312.0155
8) Expanded Fill. Factor = 1.20
9) The Mass Ordinate + or - Qty calculated for the division. Plus quantity indicates an excess of material within the division. Minus indicates a shortage of material within the division.
10) EBS calculated as 5% of pavement surface area to a depth of 1 FT.

SAWING ASPHALT

STATION	LOCATION	SAWING ASPHALT 690.0150 LF
44+85	LT & RT	30
54+13	LT & RT	30
	TOTAL 0010	60

ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	ASPHALTIC SURFACE 465.0105 TON
44+85	-	48+63	LT & RT	283
50+77	-	54+13	LT & RT	251
			TOTAL 0010	534

BASE AGGREGATE

STATION	TO	STATION	LOCATION	BASE AGGREGATE DENSE 3/4-INCH 305.0110 TON	BASE AGGREGATE DENSE 1 1/4-INCH 305.0120 TON
44+85	-	48+63	LT & RT	80	1150
50+74	-	54+11	LT & RT	71	1020
			TOTAL 0010	151	2170

WATER
*FOR BASE AGGREGATE COMPACTION

STATION	TO	STATION	LOCATION	WATER 624.0100 MGAL
44+85	-	48+63	LT & RT	24.6
50+74	-	54+11	LT & RT	21.8
			TOTAL 0010	47.0

FILE NAME : N:\PDS\...\030200_mq.pptx PLOT DATE : June 14, 1911 PLOT BY : A.R.H. PLOT NAME : PLOT SCALE : 1:1

3

REMOVING GUARDRAIL

STATION	TO	STATION	LOCATION	REMOVING GUARDRAIL 204.0165 LF
44+85	-	48+54	LT	369
44+98	-	48+54	RT	356
50+86	-	54+11	LT	325
50+86	-	54+11	RT	325
			TOTAL 0010	1375

BEAM GUARD

STATION	TO	STATION	LOCATION	MGS GUARDRAIL 3 614.2300 LF	MGS THRIE BEAM TRANSITION 614.2500 LF	MGS GUARDRAIL TERMINAL EAT 614.2610 EACH
44+85	-	45+38	LT	--	--	1
44+98	-	45+51	RT	--	--	1
53+58	-	54+11	LT & RT	--	--	2
48+14	-	48+54	LT	--	40	--
48+14	-	48+54	RT	--	40	--
50+85	-	51+24	LT	--	40	--
50+85	-	51+24	RT	--	40	--
45+38	-	48+14	LT	277	--	--
45+51	-	48+14	RT	264	--	--
51+24	-	53+58	LT	234	--	--
51+24	-	53+58	RT	234	--	--
			TOTAL 0010	1009	160	4

LANDSCAPING

STATION	TO	STATION	LOCATION	SALVAGED TOPSOIL 625.0500 SY	FERTILIZER TYPE B 629.0210 CWT	SEEDING MIXTURE NO. 20 630.0120 LB	SEEDING TEMPORARY 630.0200 LB
44+85	-	48+63	LT	858	0.55	23.2	23.2
44+85	-	48+63	RT	651	0.42	17.6	17.6
50+74	-	54+11	LT	466	0.30	12.6	12.6
50+74	-	54+11	RT	505	0.32	13.7	13.7
			TOTAL 0010	2480	1.59	67.1	67.1

EROSION CONTROL

STATION	TO	STATION	LOCATION	SILT FENCE 628.1504 LF	SILT FENCE MAINTENANCE 628.1520 LF	EROSION MAT CLASS I TYPE B 628.2004 SY	EROSION BALES 628.1104 EACH	ROCK BAGS 628.7570 EACH
44+76	-	49+00	LT	476	476	1722	--	--
44+81	-	48+98	RT	455	455	1493	156	--
50+39	-	54+19	LT	434	434	1195	--	--
50+39	-	54+16	RT	442	442	1244	--	--
			UNDISTRIBUTED	360	360	1131	32	--
		47+20	67' LT	--	--	--	--	9
		48+95	65' RT	--	--	--	--	9
		50+39	59' LT	--	--	--	--	9
		50+40	61' RT	--	--	--	--	9
			UNDISTRIBUTED	--	--	--	--	10
			TOTAL 0010	2167	2167	6785	188	46

3

SIGNS

STATION	LOCATION	POSTS WOOD 4X4-INCH X 16-FT 634.0416 EACH	SIGNS TYPE II REFLECTIVE F 637.2230 SF	REMOVING SIGNS TYPE II 638.2602 EACH	REMOVING SMALL SIGN SUPPORTS 638.3000 EACH	REMARKS
46+58	18.5' RT	1	--	1	1	R12-1 (WEIGHT LIMIT 40 TONS)
48+51	LT & RT	2	6	2	2	W5-52R, W5-52L
50+88	LT & RT	2	6	2	2	W5-52R, W5-52L
52+90	18.5' LT	1	--	1	1	R12-1 (WEIGHT LIMIT 40 TONS)
	TOTAL 0010	6	12	6	6	

PAVEMENT MARKING EPOXY 4-INCH

STATION	TO	STATION	LOCATION	PAVEMENT MARKING EPOXY 4-INCH 646.0106 LF
44+85	-	54+13	LT (WHITE)	928
44+85	-	54+13	RT (WHITE)	928
44+85	-	54+13	CL (YELLOW)	1855
			TOTAL 0010	3710

3

CONSTRUCTION STAKING

STATION	TO	STATION	CONSTRUCTION STAKING SUBGRADE 650.4500 LF	CONSTRUCTION STAKING BASE 650.5000 LF	CONSTRUCTION STAKING SLOPE STAKES 650.9920 LF
44+85	-	48+63	378.0	378.0	378.0
50+80	-	54+13	332.5	332.5	332.5
	TOTAL 0010		711	711	711

TRAFFIC CONTROL DETOUR SIGNS

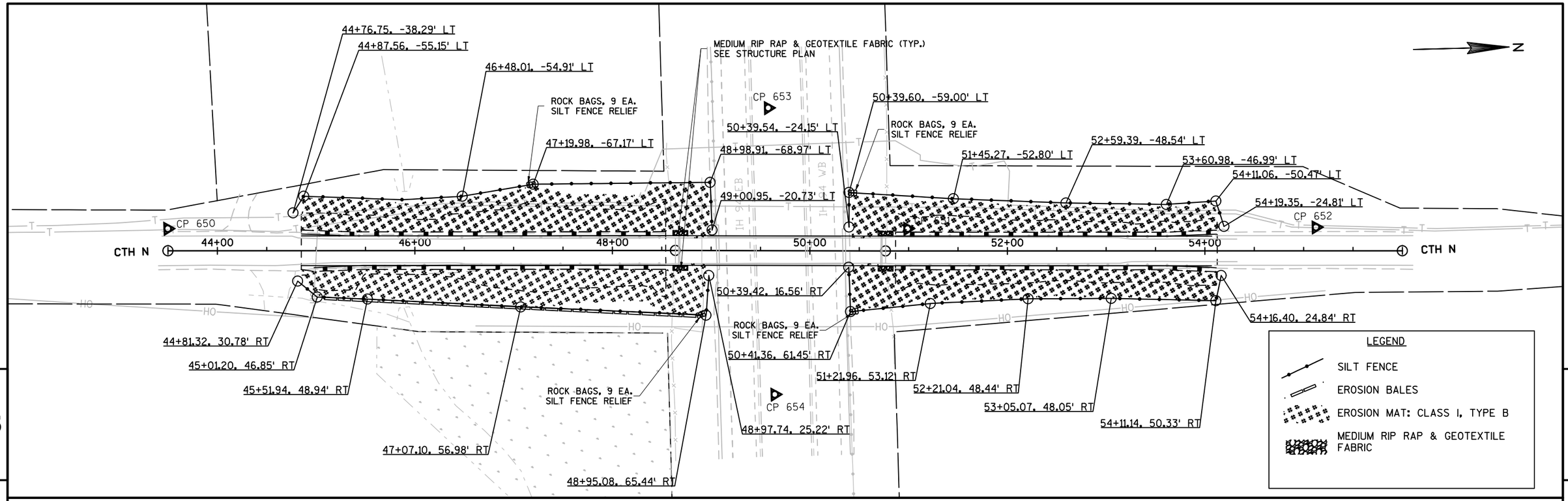
LOCATION	ESTIMATED DURATION* DAY	ESTIMATED NUMBER OF SIGNS* EACH	TRAFFIC CONTROL DETOUR SIGNS 643.3000 DAY	COVERING SIGNS TYPE II 643.0920 EACH	COVERING CYCLES EACH	REMARKS
Detour - Detail A	97*	26*	2522	9	1	
Detour - Detail B	97*	40*	3880	--	--	
Detour - Detail C	97*	29*	2813	--	--	
Detour - Detail D	97*	18*	1746	4	1	
		TOTAL 0010	10961	13		

*FOR INFORMATION ONLY. ACTUAL NUMBER OF DEVICES TO BE DETERMINED IN THE FIELD BY THE ENGINEER

TRAFFIC CONTROL

LOCATION	ASSUMED STAGE DURATION* DAY	TRAFFIC CONTROL DRUMS 643.0300 EACH	TRAFFIC CONTROL DRUMS 643.0300 DAY	TRAFFIC CONTROL BARRICADES TYPE III 643.0420 EACH	TRAFFIC CONTROL BARRICADES TYPE III 643.0420 DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A 643.0705 EACH	TRAFFIC CONTROL WARNING LIGHTS TYPE A 643.0705 DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE C 643.0715 EACH	TRAFFIC CONTROL WARNING LIGHTS TYPE C 643.0715 DAY	TRAFFIC CONTROL ARROW BOARDS 643.0800 EACH	TRAFFIC CONTROL ARROW BOARDS 643.0800 DAY	TRAFFIC CONTROL SIGNS 643.0900 EACH	TRAFFIC CONTROL SIGNS 643.0900 DAY
Stage 1A	6*	48*	288	1*	6	2*	12	18*	108	2*	12	19*	114
Stage 1B	6*	48*	288	1*	6	2*	12	18*	108	2*	12	19*	114
Stage 2A	6*	48*	288	1*	6	2*	12	18*	108	2*	12	19*	114
Stage 2B	6*	48*	288	1*	6	2*	12	18*	108	2*	12	19*	114
Detour	97*	--	--	18*	1746	16*	1552	--	--	--	--	--	--
TOTAL 0010			1152		1770		1600		432		48		456

*FOR INFORMATION ONLY. ACTUAL NUMBER OF DEVICES TO BE DETERMINED IN THE FIELD BY THE ENGINEER



PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	EROSION CONTROL: CTH N	SHEET 18	E

FILE NAME : N:\PDS\C3D\10660601\SHEETSPLAN\022001 EROSION CONTROL\022001_EC.DWG
LAYOUT NAME - 0220(1)-EC
PLOT DATE : 7/17/2015 2:47 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

GARY S ROSSMAN
PARCEL NO.
002-0714-1131-000
N6662 CTH N
JOHNSON CREEK, WI 53038

APPROX. PROPERTY LINE

STATION 49+69
REMOVE EX. CONCRETE DECK STRUCTURE B-28-46
PRESTRESSED CONCRETE GIRDERS TO REMAIN
211' OVERALL LENGTH
30' OVERALL WIDTH

REMOVE EXISTING BEAM GUARD
AND REPLACE FROM STA. 44+85
TO STA. 48+54 LT

MARLENE S CISSA
PARCEL NO.
002-0714-1131-001
N6661 CTH N
JOHNSON CREEK, WI 53038

CP 653

TDS

APPROX. EX. RIGHT-OF-WAY

REMOVE EXISTING BEAM GUARD
AND REPLACE FROM STA. 50+86
TO STA. 54+11 LT

BARBARA M ALBERS TRUST
PARCEL NO.
020-0714-1124-000
N5588 ALBERS LANE
JOHNSON CREEK, WI 53038

MIDWEST GUARDRAIL SYSTEM (MGS) EAT

BEGIN PROJECT
STA. 44+85.63
Y= 587,645.53
X= 855,786.74

MIDWEST GUARDRAIL SYSTEM (MGS) EAT

END PROJECT
STA. 54+12.5
Y= 588572.09
X= 855810.17

CP 650

CP 651

CP 652

CTH N

44 46 48 50 52 54

CTH N

MATCH EX. STA. 44+85
SAWCUT REQ'D

MATCH EX. STA. 54+11
SAWCUT REQ'D

APPROX. EX. RIGHT-OF-WAY

REMOVE EXISTING BEAM GUARD
AND REPLACE FROM STA. 44+98
TO STA. 48+54 RT

REMOVE EXISTING BEAM GUARD
AND REPLACE FROM STA. 50+86
TO STA. 54+11 RT

TIMOTHY E DETTMANN
AMY J DETTMANN
PARCEL NO.
020-0714-1113-001
N7295 CTH N
JOHNSON CREEK, WI 53038

WE ENERGIES

CP 654

GARY S ROSSMAN
PARCEL NO.
002-0714-1142-000
N6662 CTH N
JOHNSON CREEK, WI 53038

JANE AHRENS, BRUNK
TRUST
MARY ANN REANDEAU
PARCEL NO.
002-0714-1142-002
212 WOODLAND CIRCLE
LAKE MILLS, WI 53551

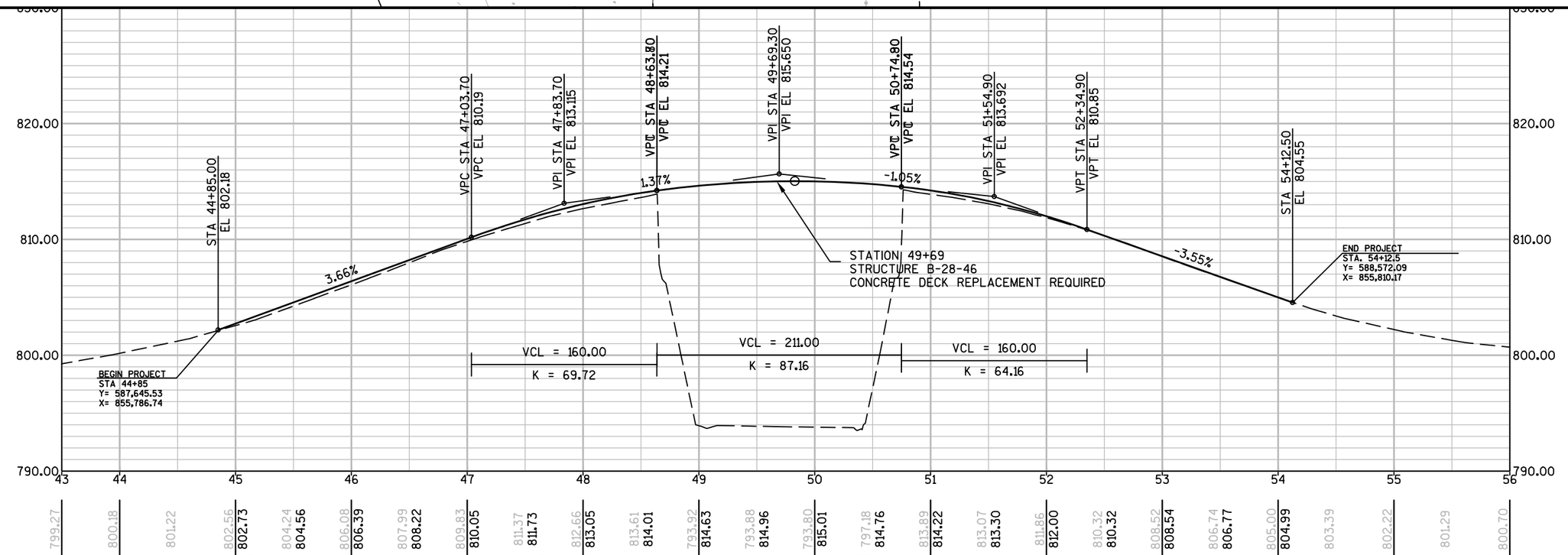
SLOPE INTERCEPTS

APPROX. PROPERTY LINE

MAINTAIN EX. FENCES AT BRIDGE (TYP.)
ANY REQ'D ADJUSTMENTS ARE
INCIDENTAL TO REMOVING OLD STRUCTURE

CONTROL POINTS

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
CP 650	43+50.10	22.3 LT	587,510.31	855,761.08	---
CP 651	50+95.98	22.4 LT	588,259.20	855,779.90	812.45
CP 652	55+12.37	23.7 LT	588,672.67	855,788.83	---
CP 653	49+57.47	144.5 LT	588,121.14	855,654.24	---
CP 654	49+65.06	145.4 RT	588,120.66	855,944.15	---



PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	PLAN AND PROFILE: CTH N	SHEET 19 E

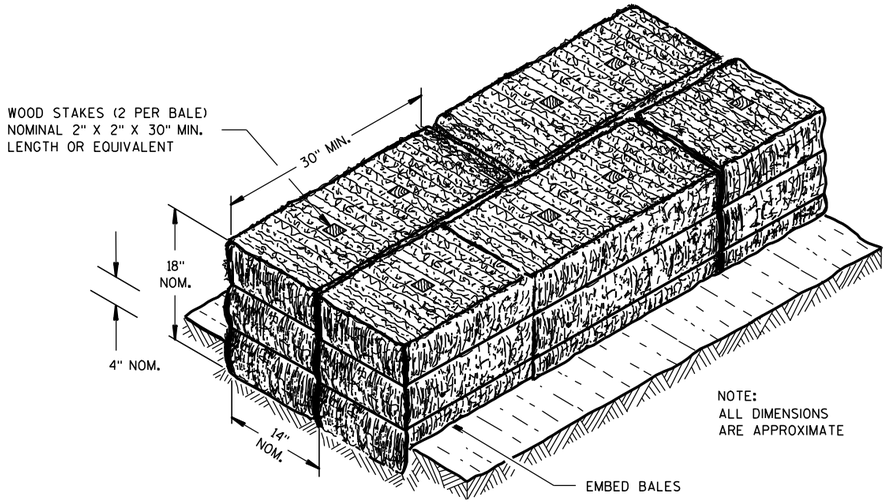
FILE NAME : N:\PDS\C3D\10660601\SHEETSPLAN\050101 PLAN AND PROFILE\050101_PP.DWG
LAYOUT NAME - 050101 - (1)

PLOT DATE : 12/2/2015 2:56 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:100 FT

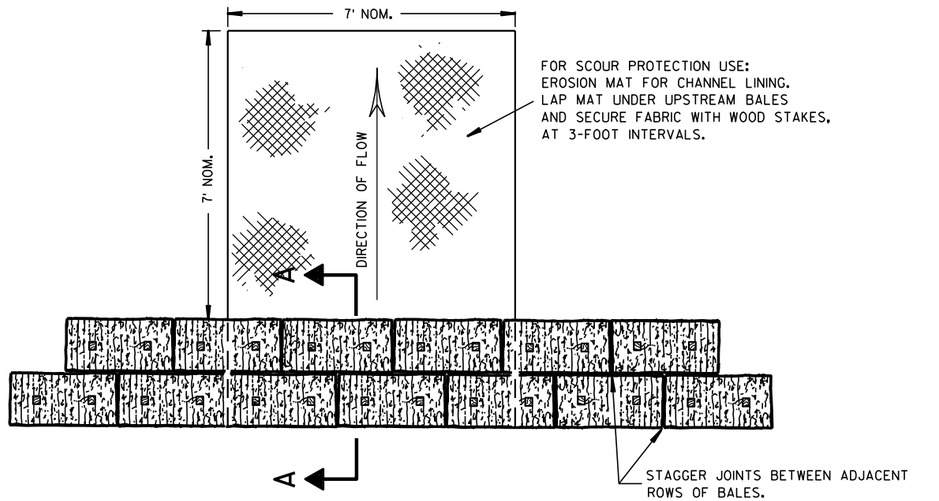
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

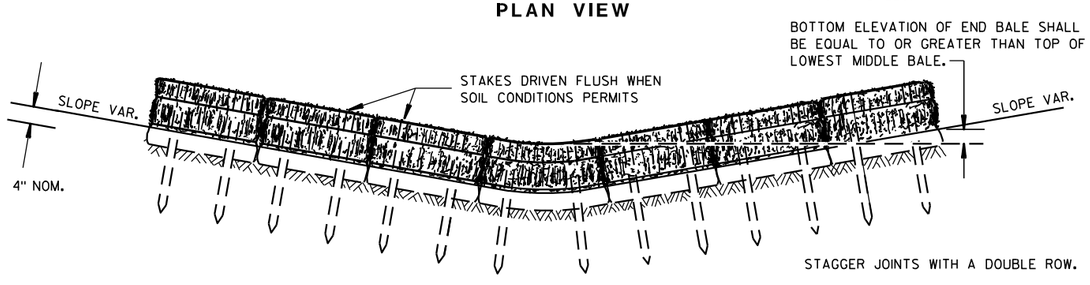
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15D12-05B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION



SECTION A-A



PLAN VIEW



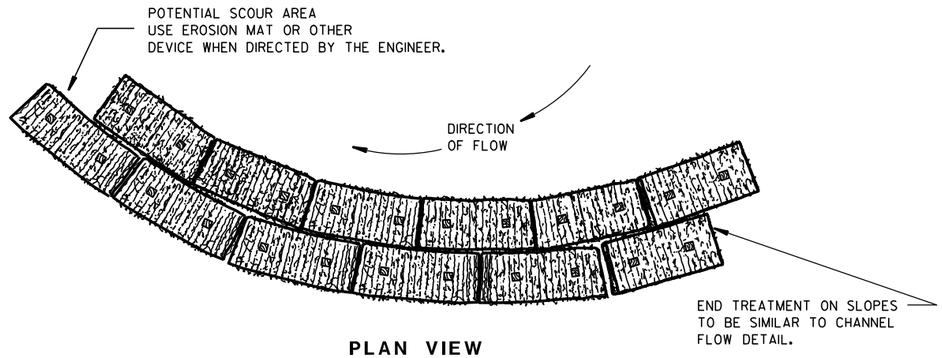
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

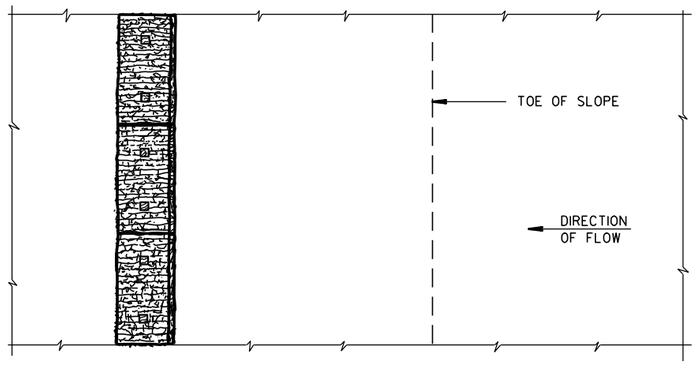
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

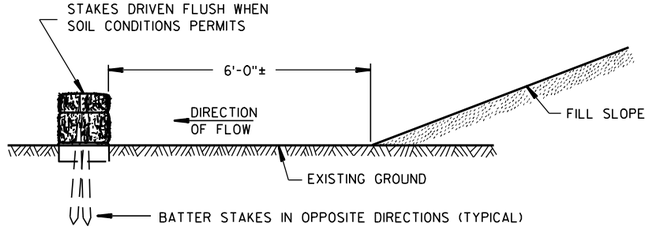


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

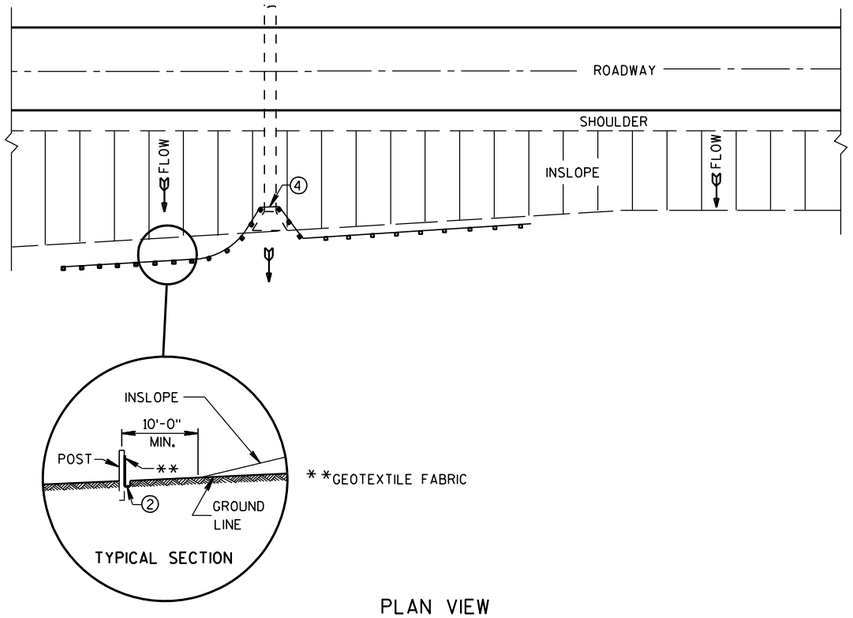
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

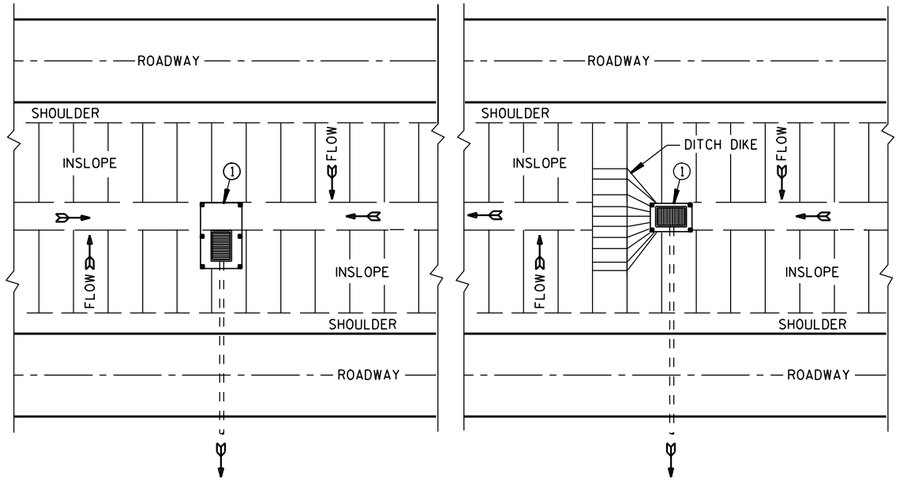
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



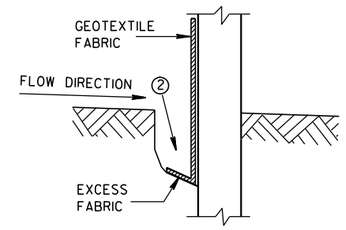
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

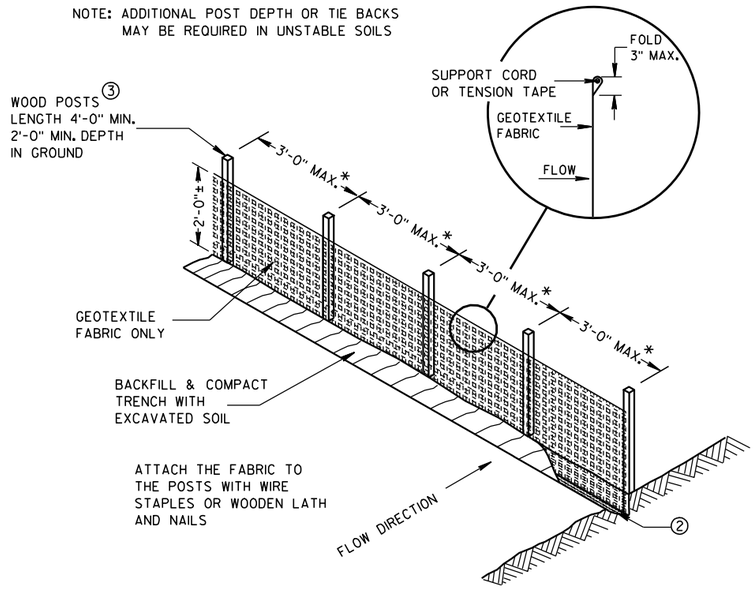
GENERAL NOTES

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

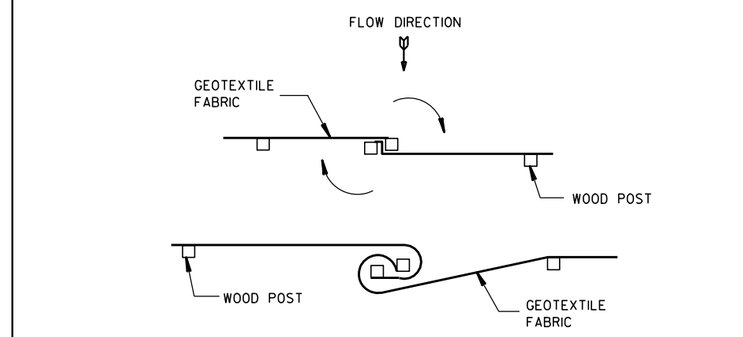
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" 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.



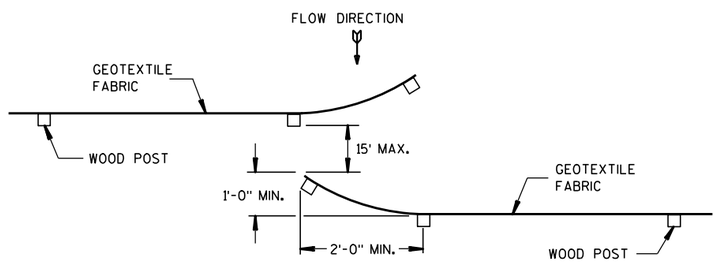
TRENCH DETAIL



SILT FENCE

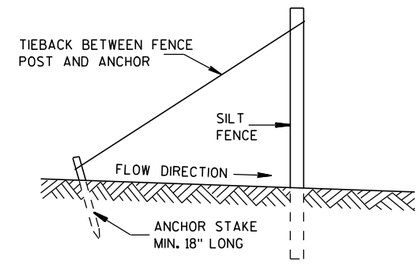


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

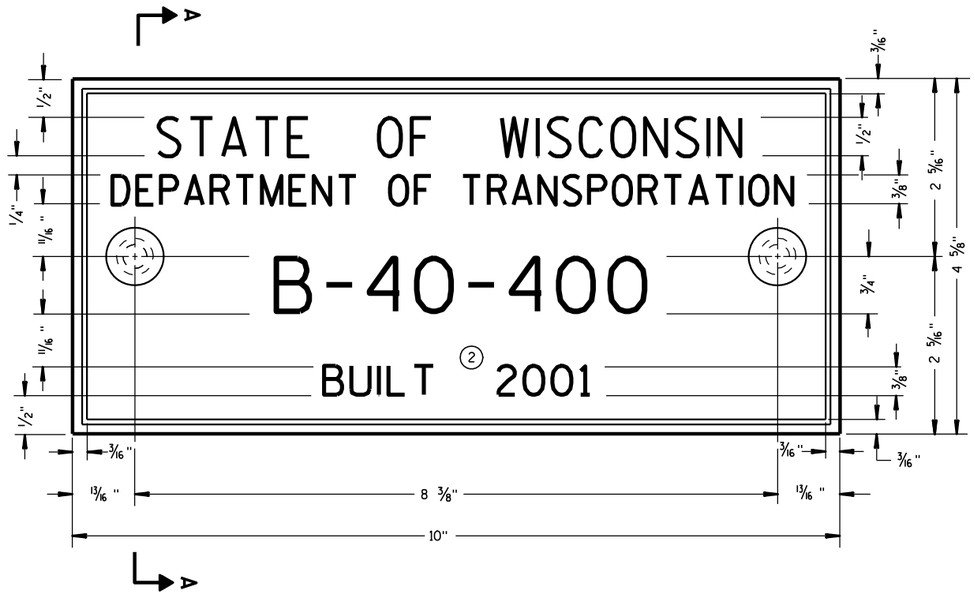
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 9-6

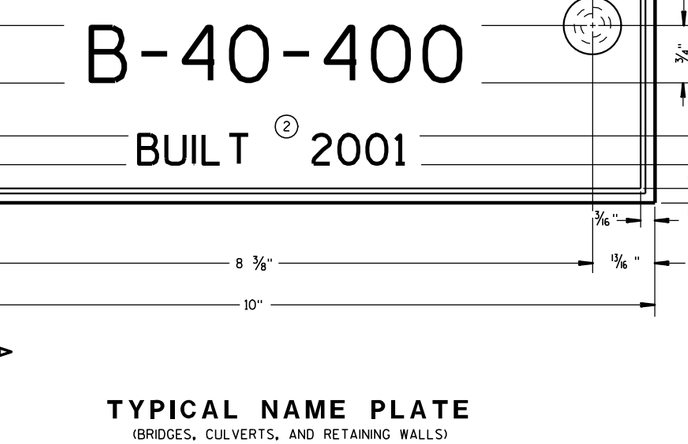
6

S.D.D. 8 E 9-6



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

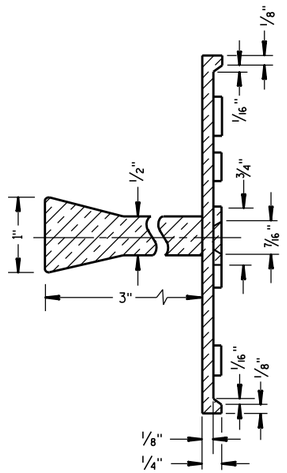
GENERAL NOTES

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.

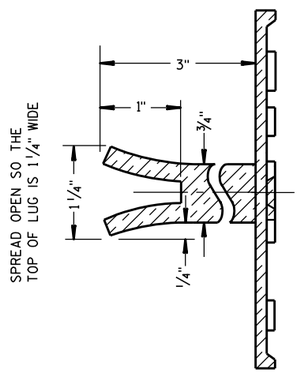
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

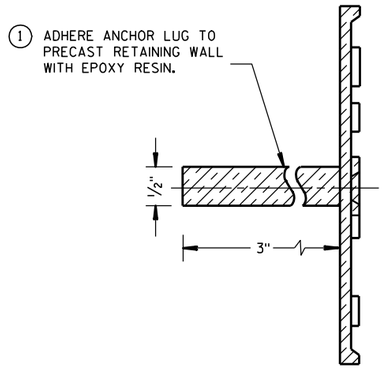
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

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

6

S.D.D. 12 A 3-10

GENERAL NOTES

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

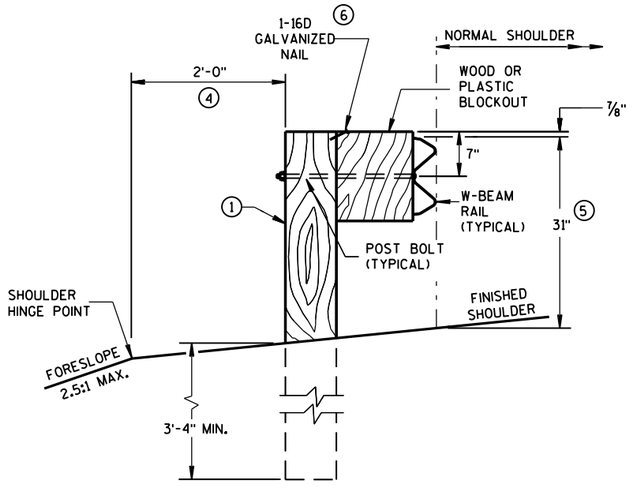
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

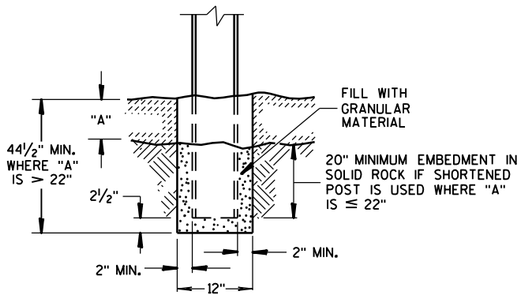
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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



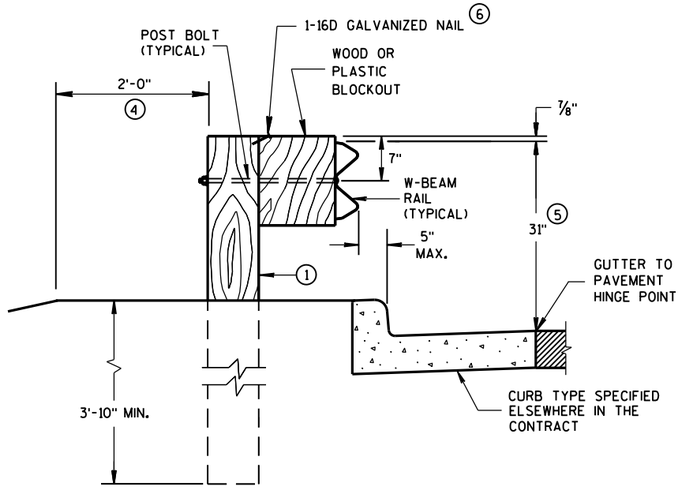
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



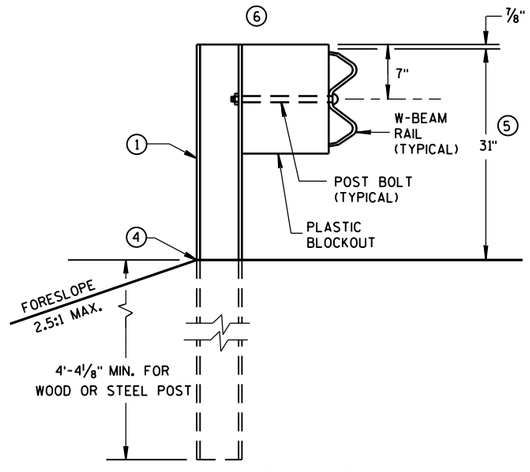
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



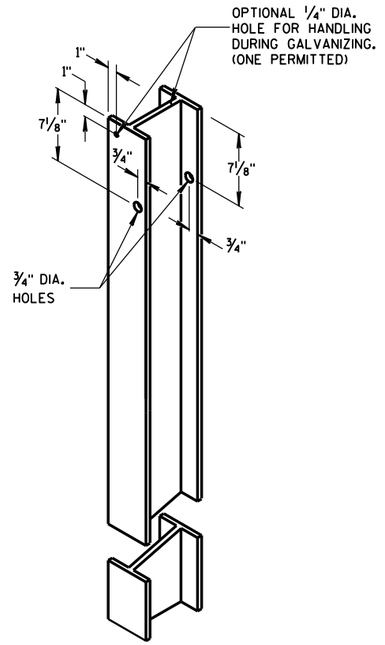
END VIEW

LOCATED ALONG A CURBED ROADWAY

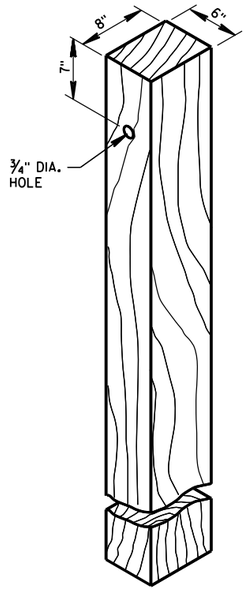


END VIEW

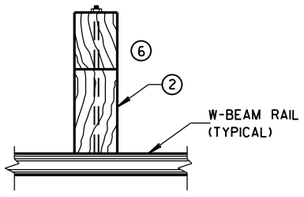
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



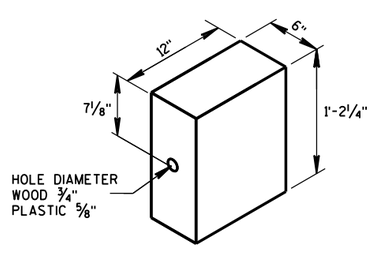
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



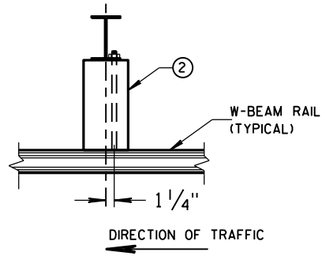
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

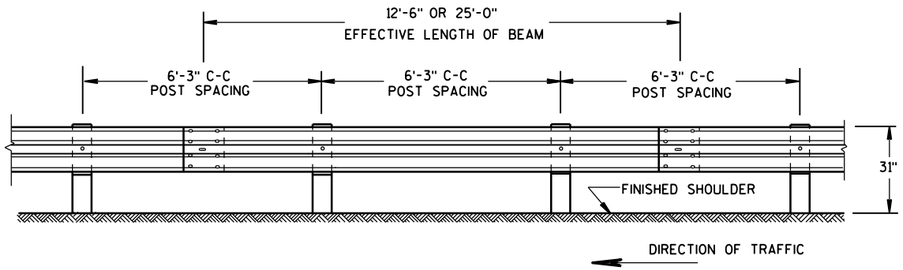


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

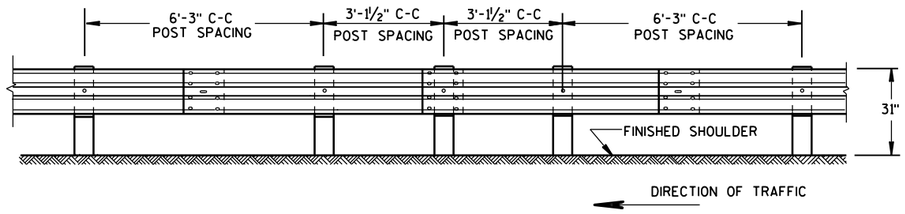
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 42-3a



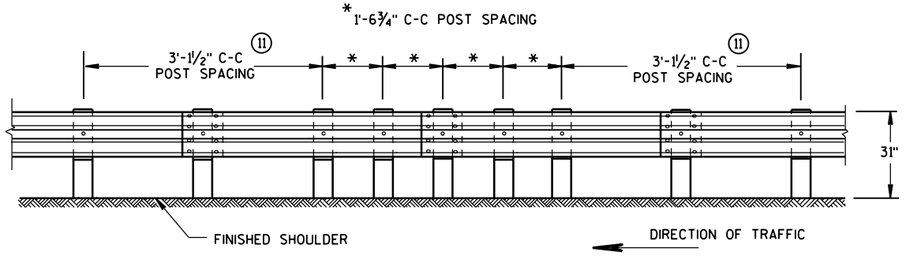
FRONT VIEW

POST SPACING STANDARD INSTALLATION



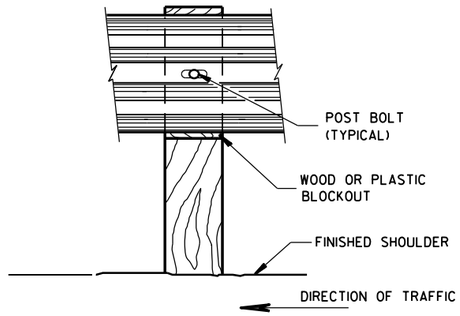
FRONT VIEW

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

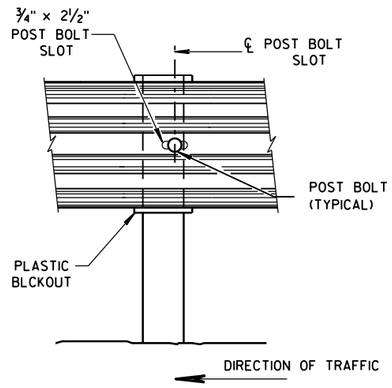


FRONT VIEW

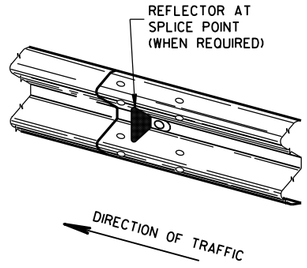
QUARTER POST SPACING (QS)

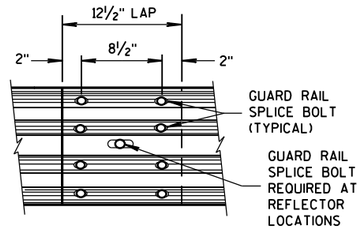


FRONT VIEW AT WOOD POST

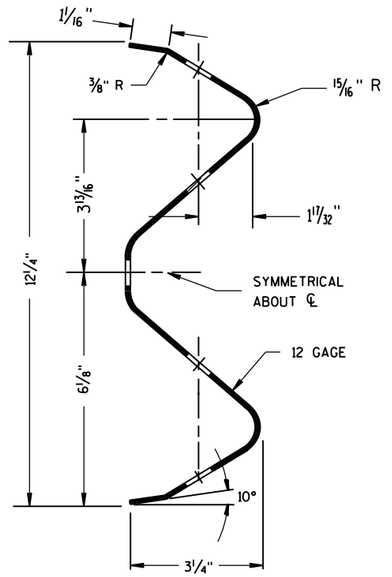


FRONT VIEW AT STEEL POST

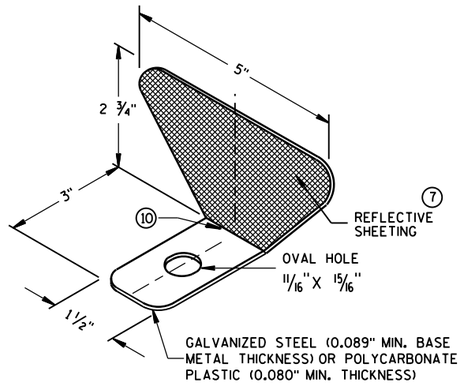




FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

GENERAL NOTES

⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

⑩ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ⑧

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ⑨ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ⑩	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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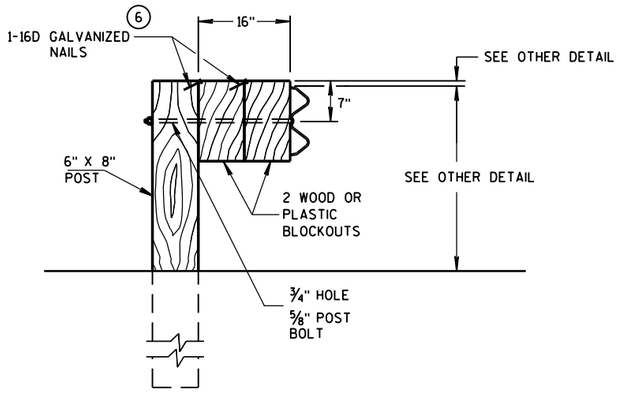
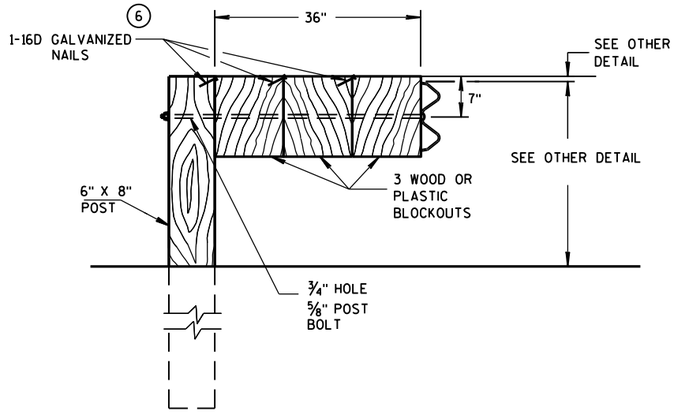
S.D.D. 14 B 42-3b



DETAIL FOR 16" BLOCKOUT DEPTH

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

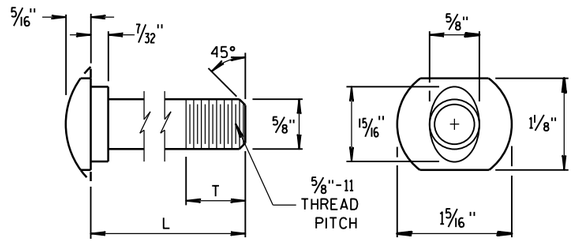


DETAIL FOR 36" BLOCKOUT DEPTH

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

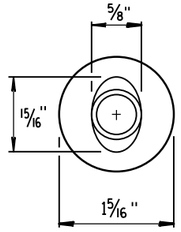
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

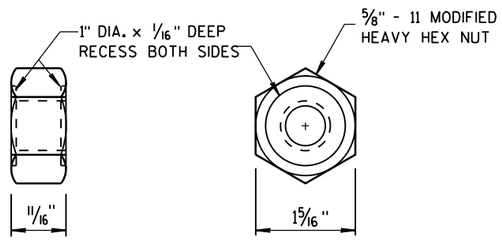


POST BOLT TABLE

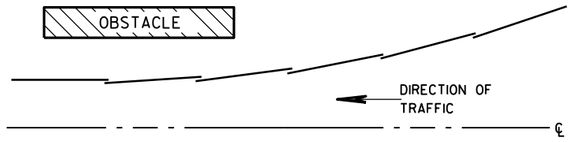
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

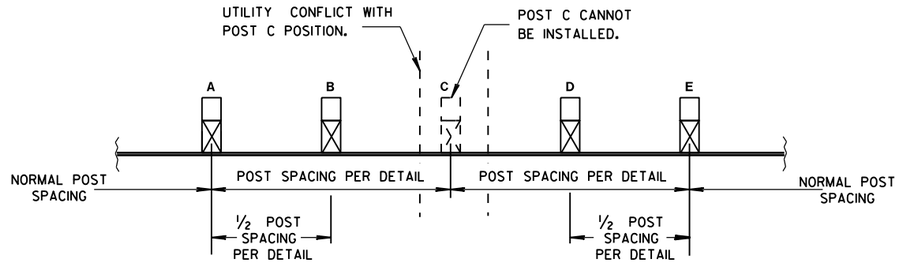


POST BOLT AND RECESS NUT

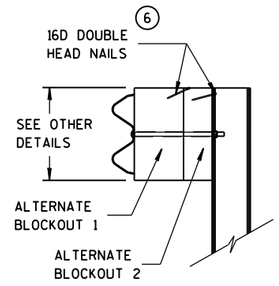


PLAN VIEW

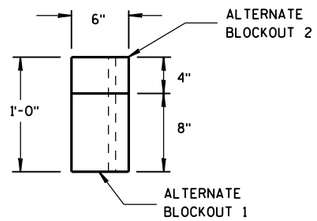
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 14 B 42-3c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

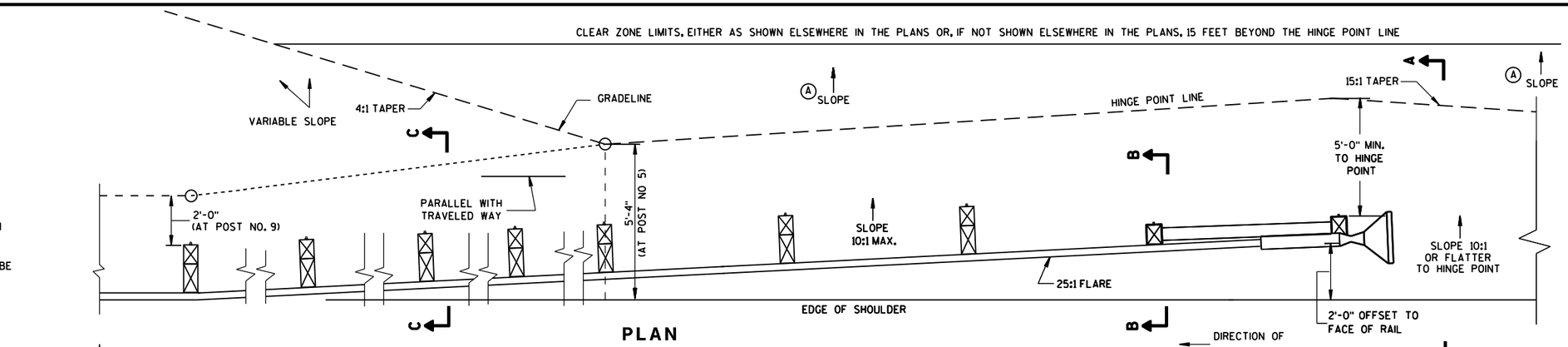
SEE SDD 14B42 FOR MORE INFORMATION.

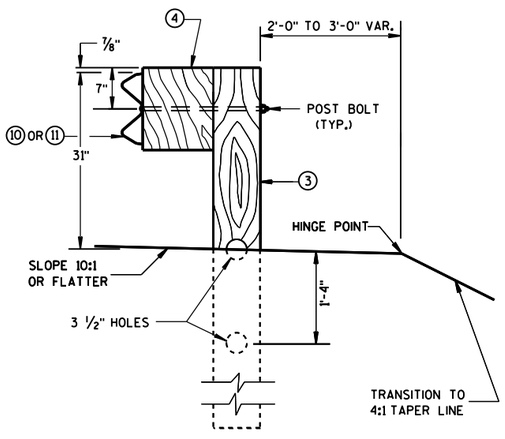
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

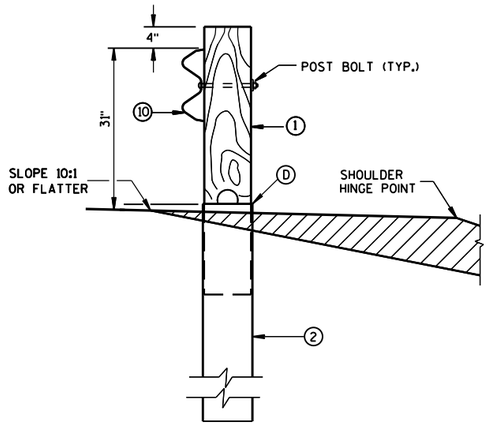
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" 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.

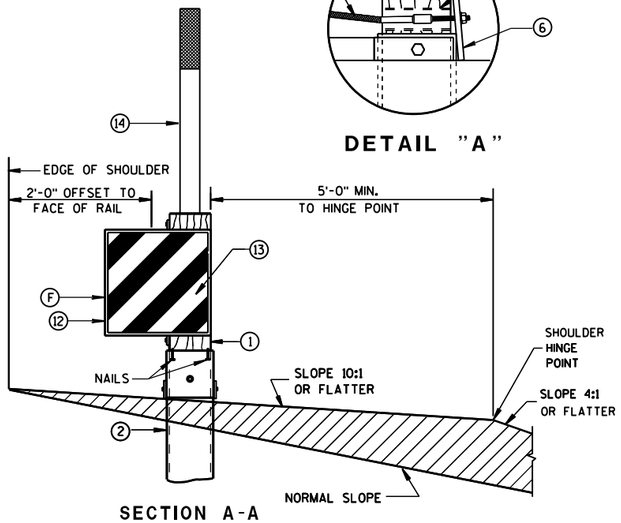




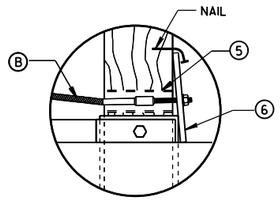
SECTION C-C
TYPICAL AT POST NOS. 3-9



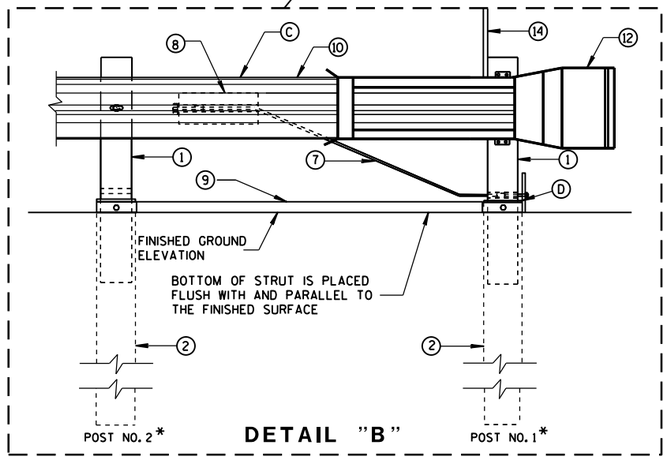
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



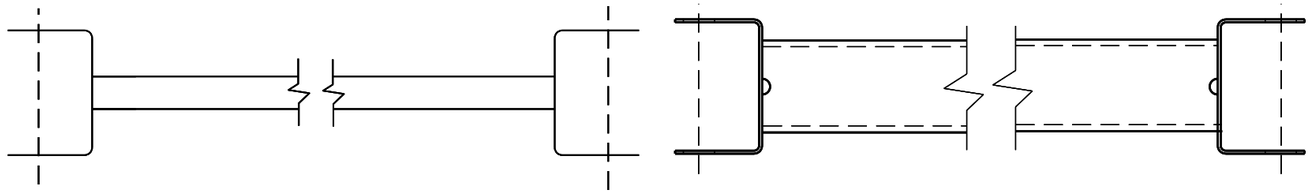
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

S.D.D. 14 B 44-2a

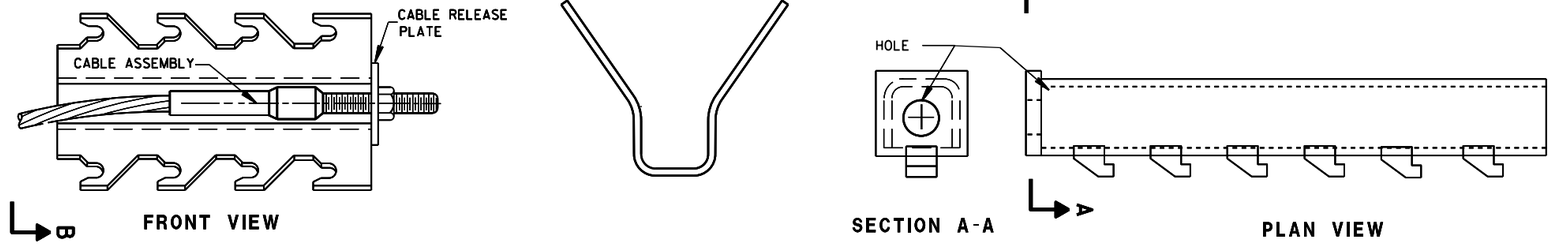
S.D.D. 14 B 44-2a



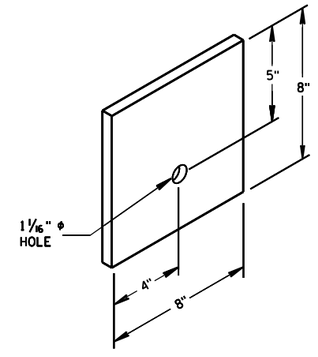
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(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)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)

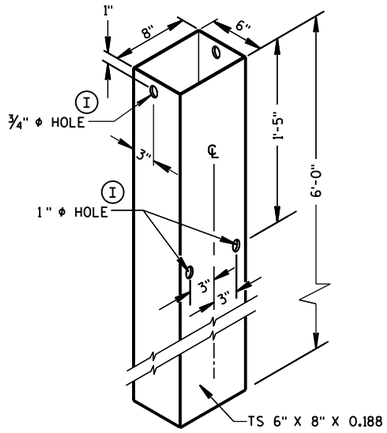


BEARING PLATE (6)

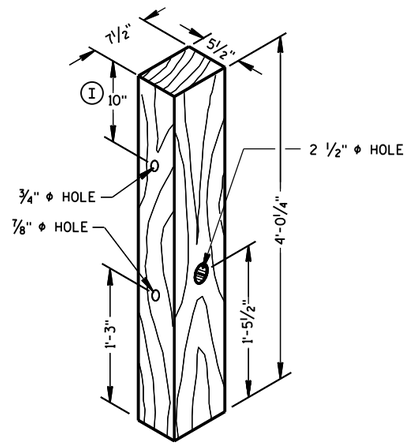
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 44-2b

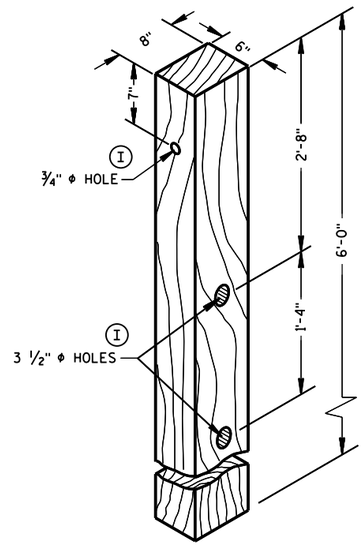


FOUNDATION TUBE (2)



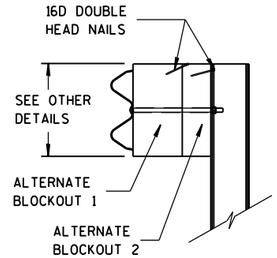
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

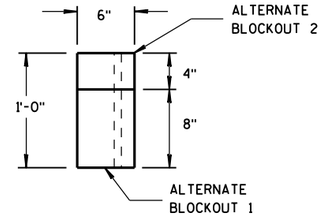


POSTS NUMBER 3-9

WOOD CRT POST (3)

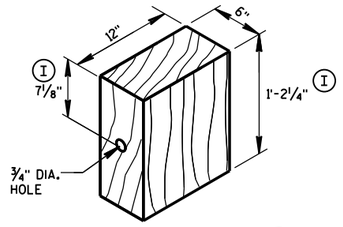


SIDE VIEW



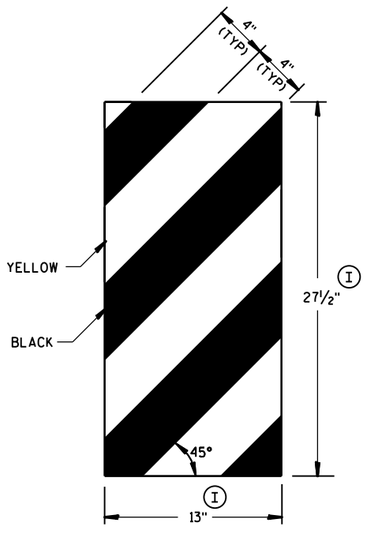
TOP VIEW

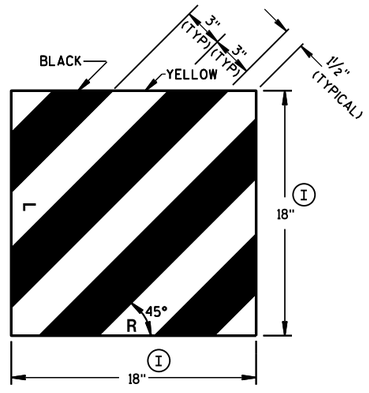
ALTERNATE WOOD BLOCKOUT DETAIL



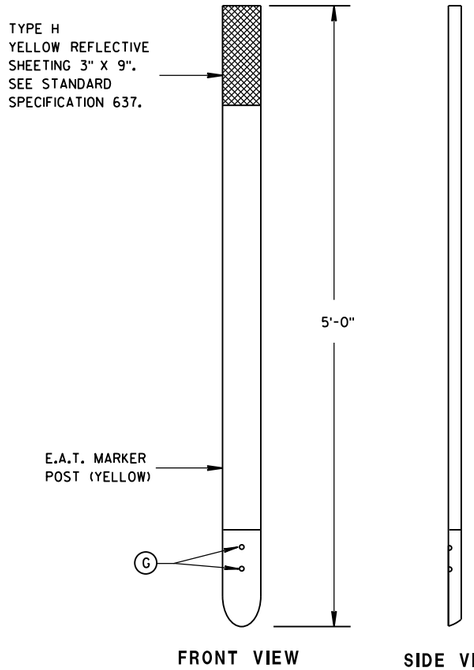
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





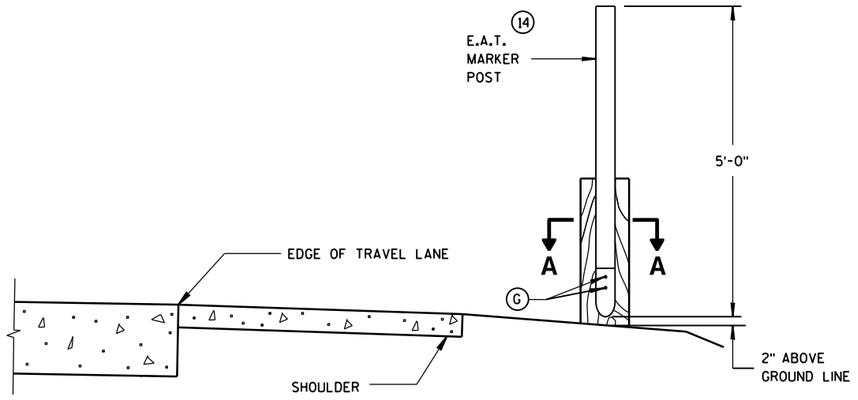
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

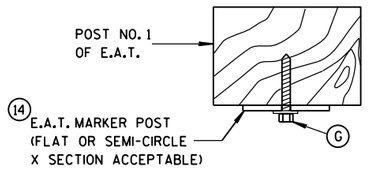
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

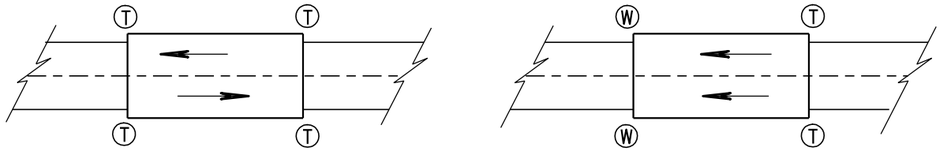
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-2c



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

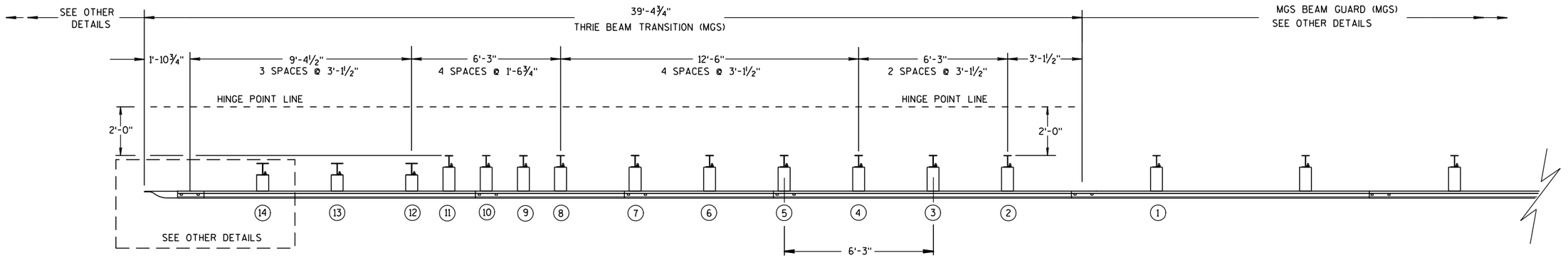
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

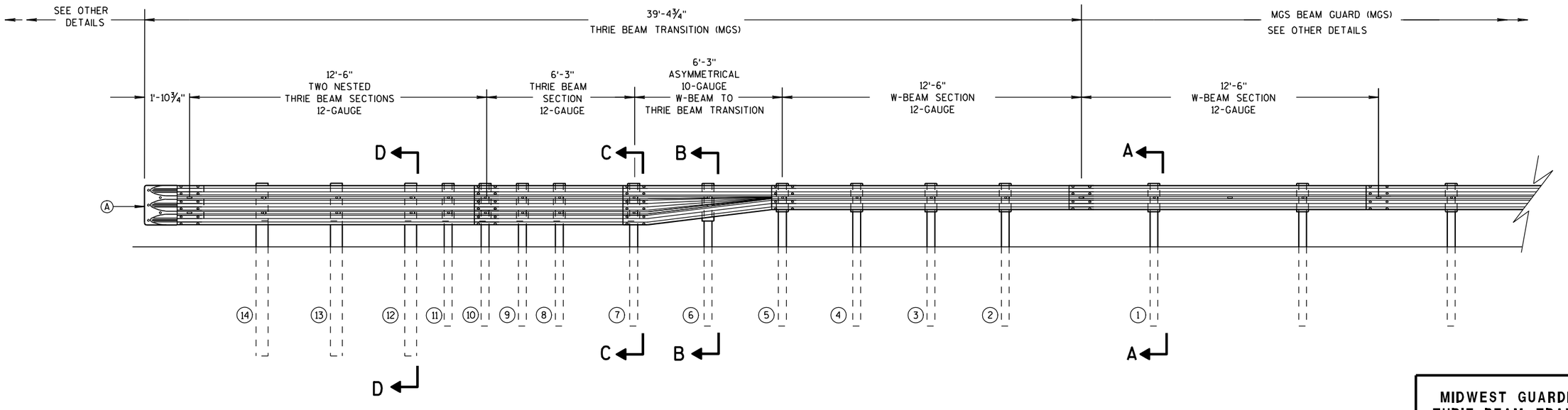
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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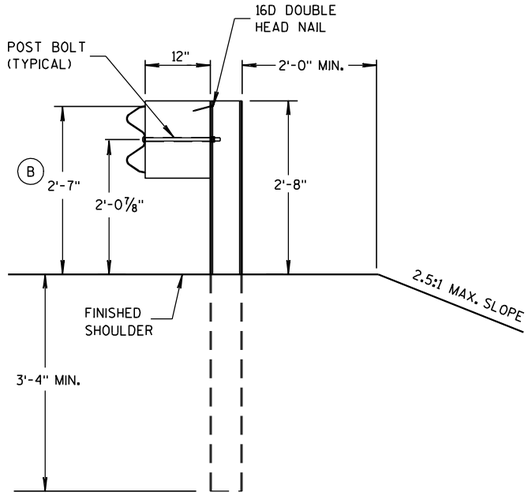
S.D.D. 14 B 45-3a

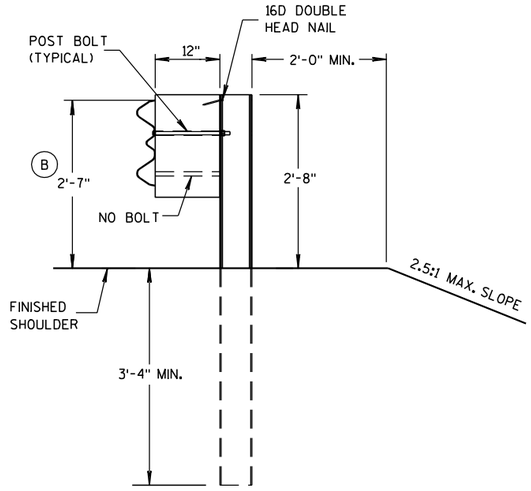
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



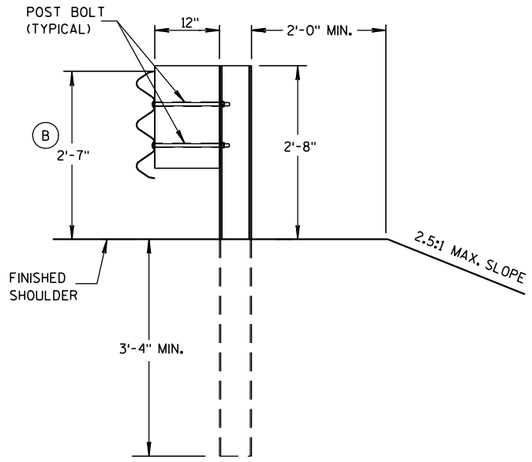
SECTION A-A

POSTS 1-5



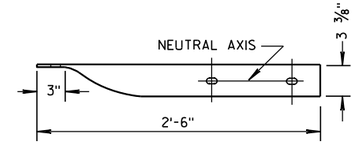
SECTION B-B

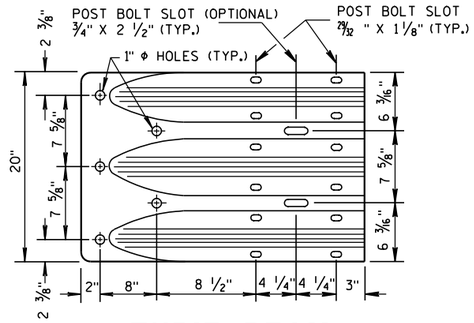
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

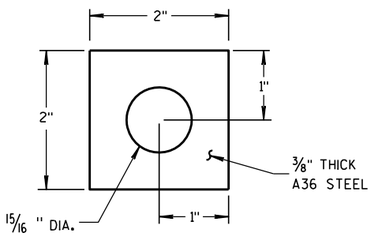
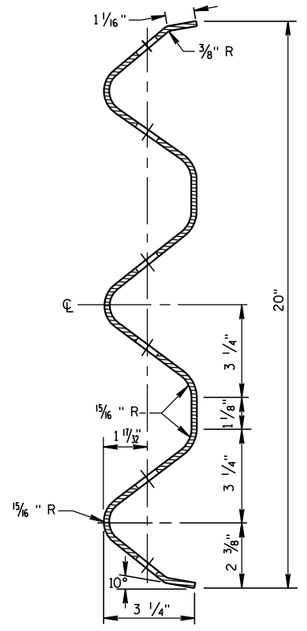
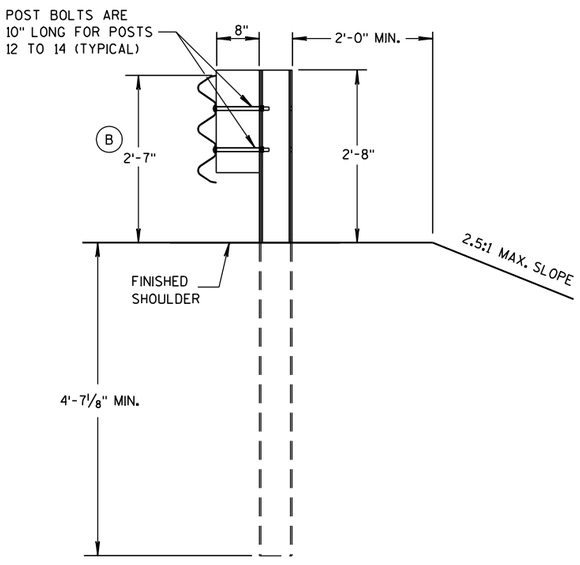


PLATE WASHER DETAIL

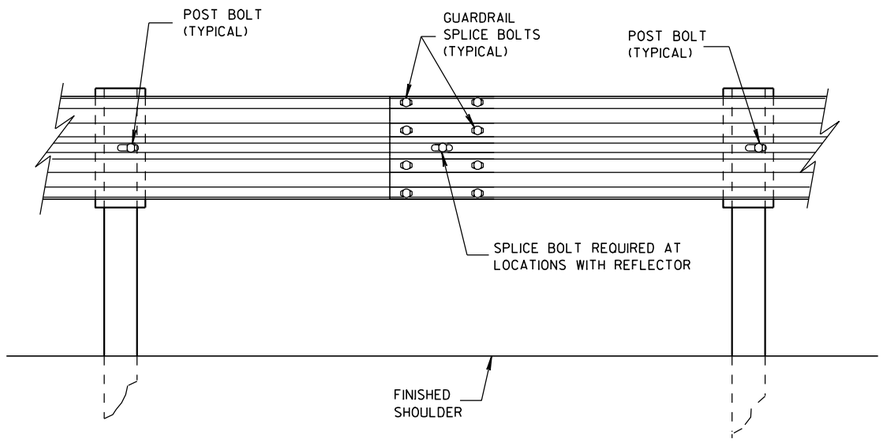


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

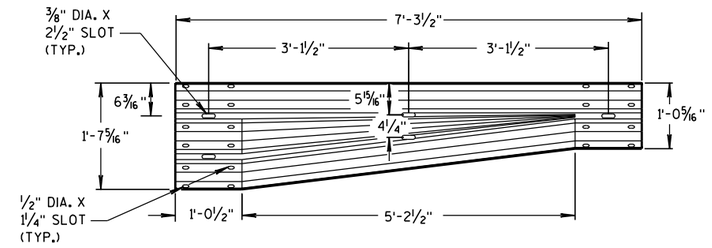
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

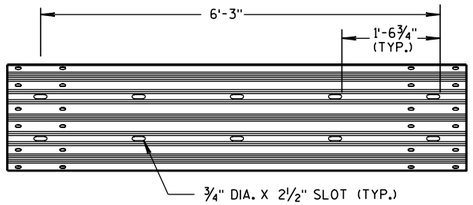
S.D.D. 14 B 45-3b

6

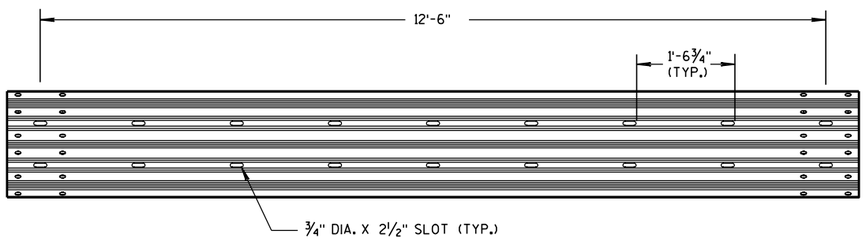
S.D.D. 14 B 45-3b



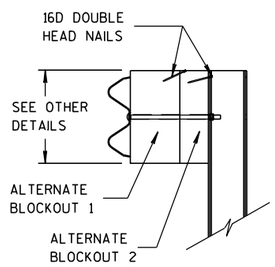
W-BEAM TO THRIE BEAM TRANSITION SECTION



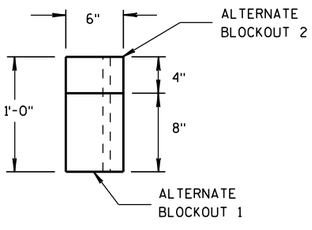
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

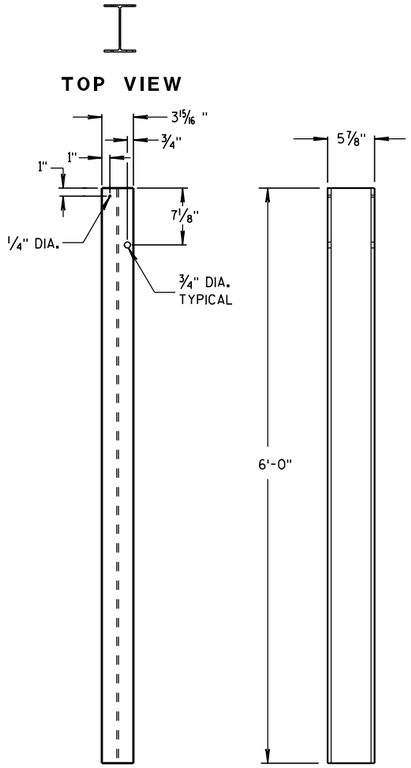


SIDE VIEW

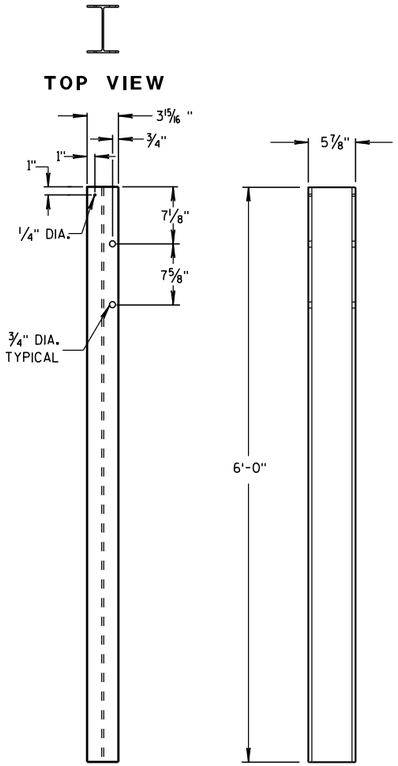


TOP VIEW

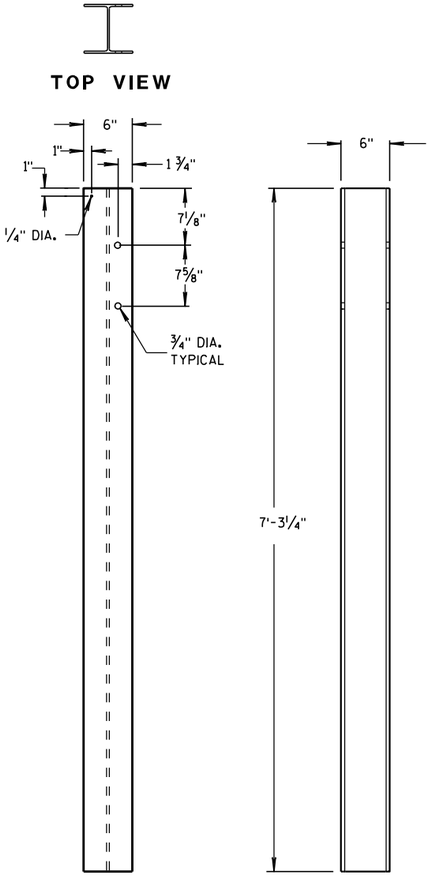
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

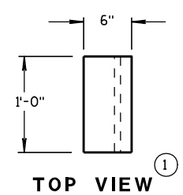


STEEL POSTS 6-11

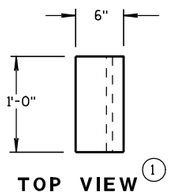


STEEL POSTS 12-14

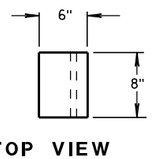
① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



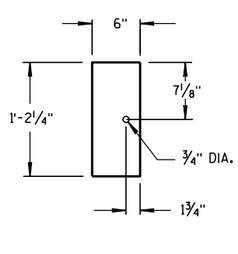
TOP VIEW ①



TOP VIEW ①

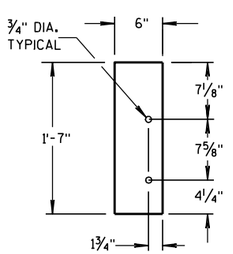


TOP VIEW



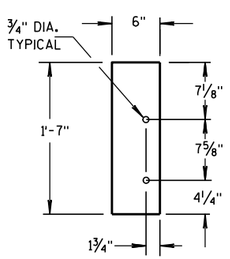
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

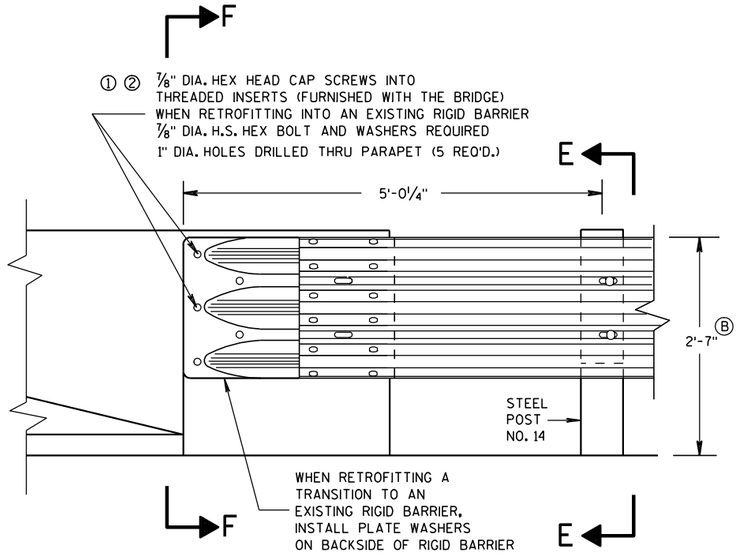
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

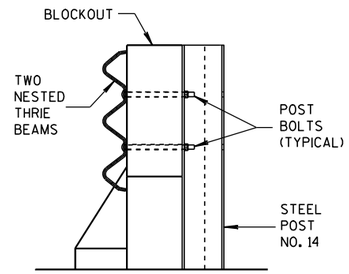
S.D.D. 14 B 45-3c

6

S.D.D. 14 B 45-3c



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

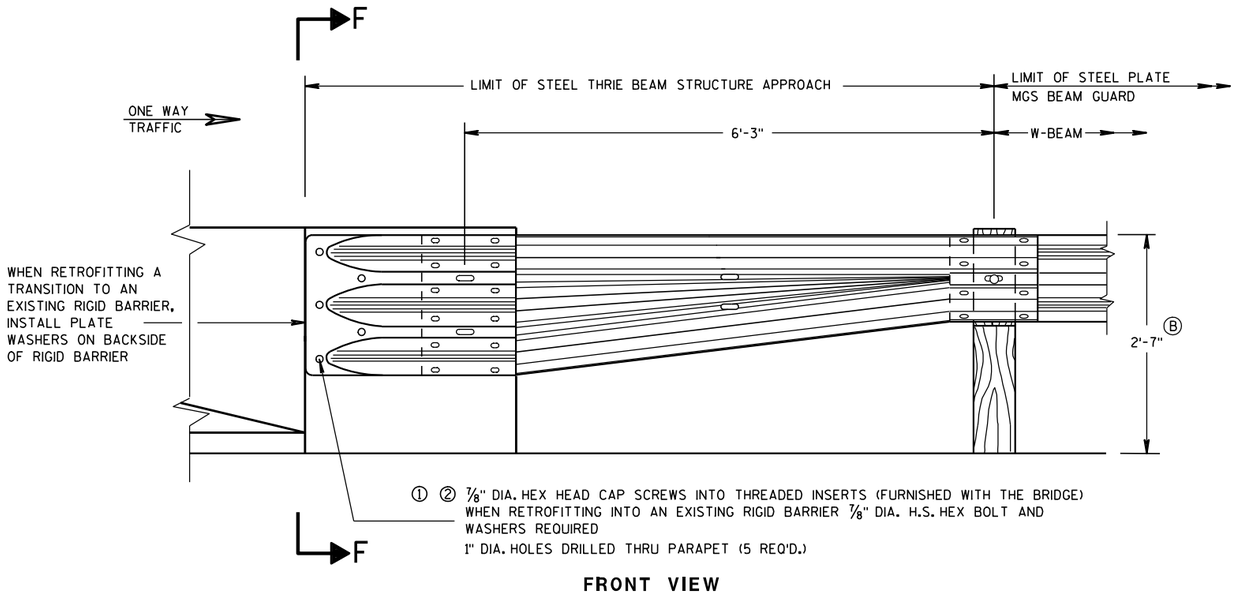
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

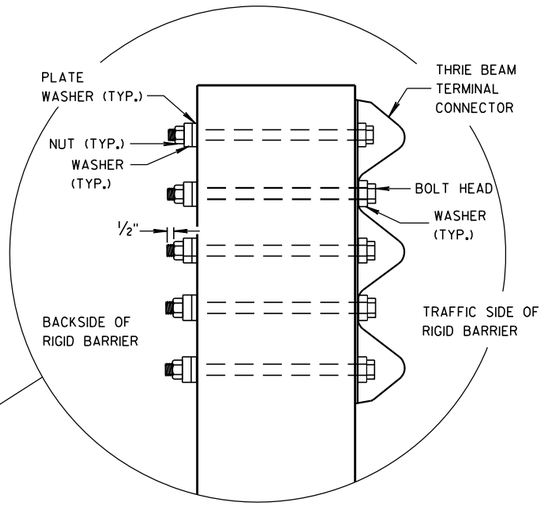
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

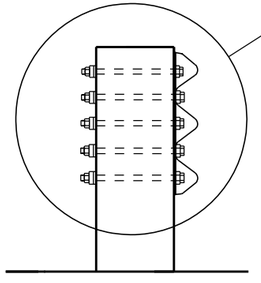
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW





SECTION F-F

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 14 B 45-3d

6

S.D.D. 14 B 45-3d

GENERAL NOTES

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

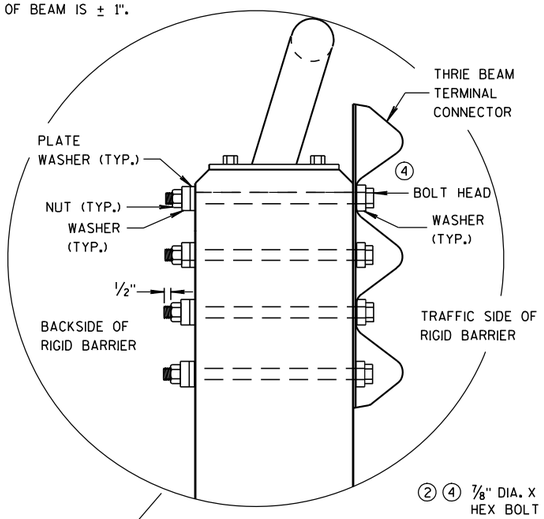
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

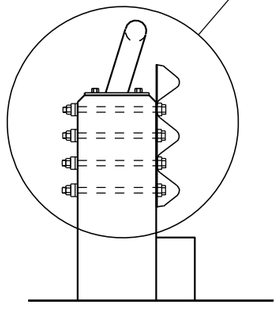
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2". BLOCK IS INCIDENTAL TO THE CONTRACT.

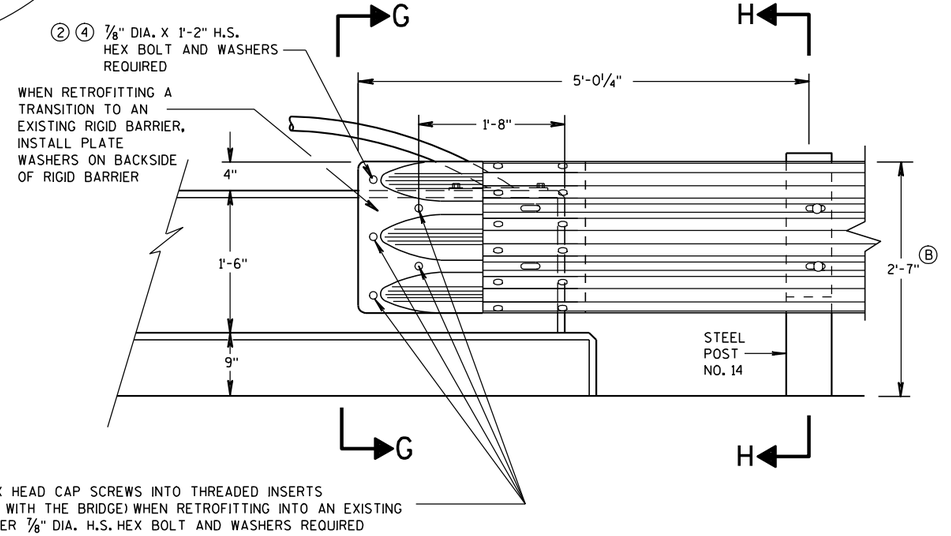
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

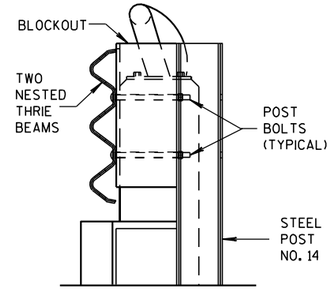




SECTION G-G

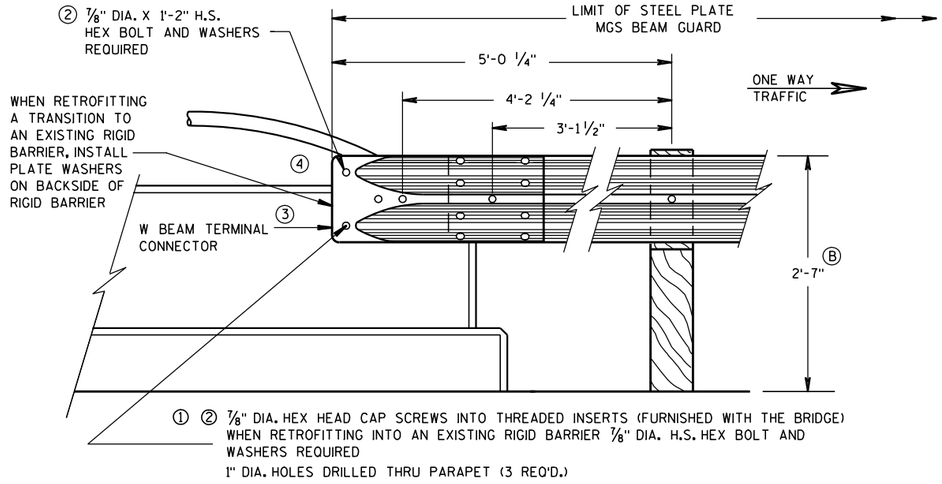


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

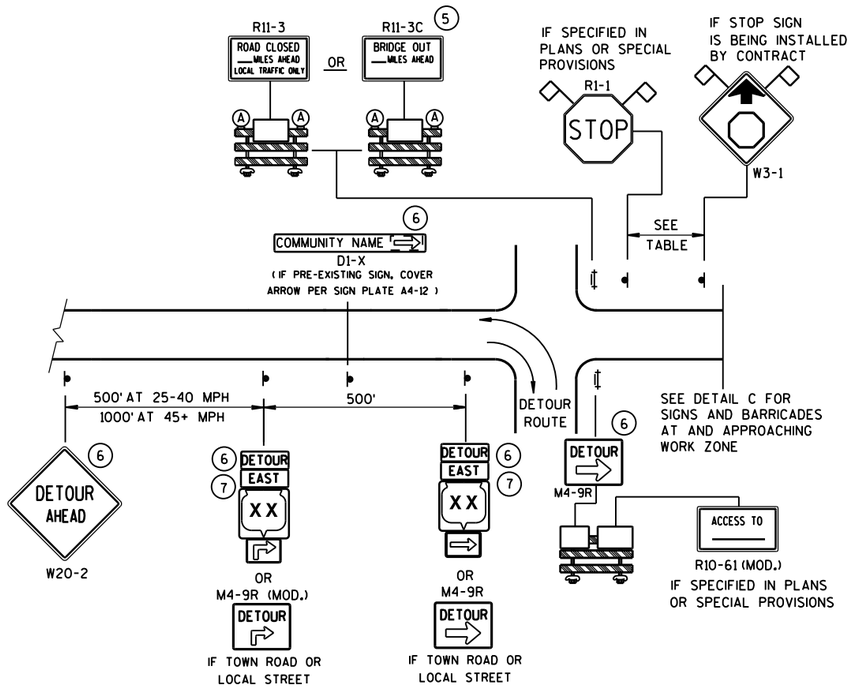
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

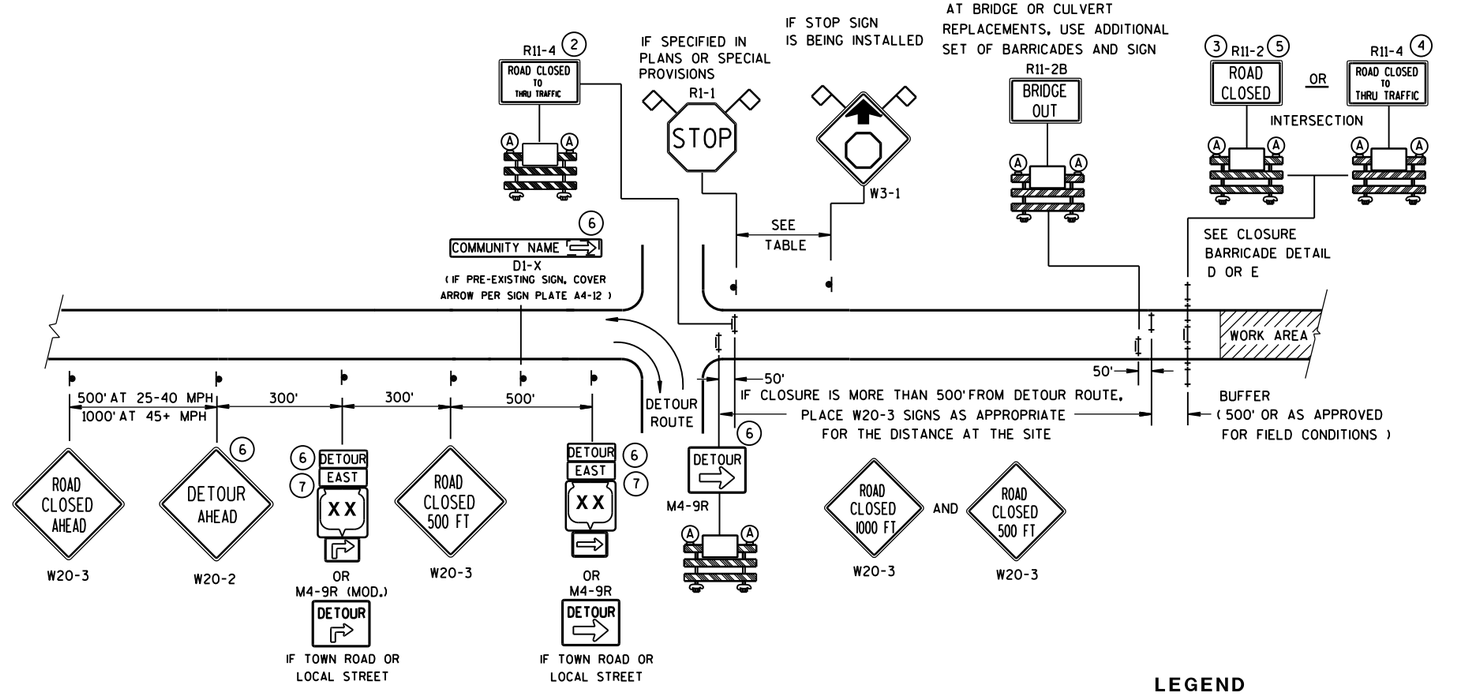
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA



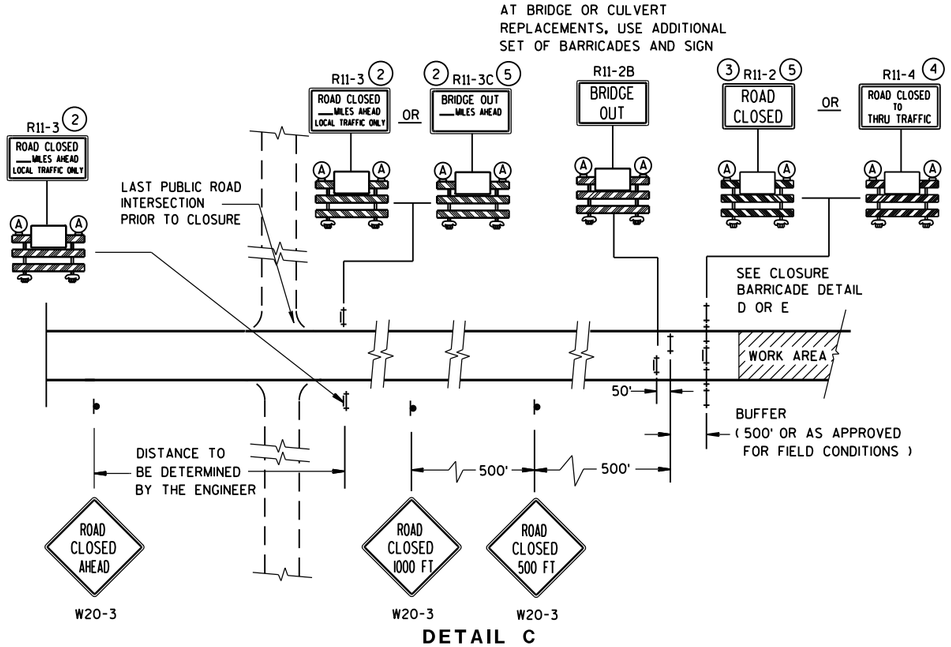
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

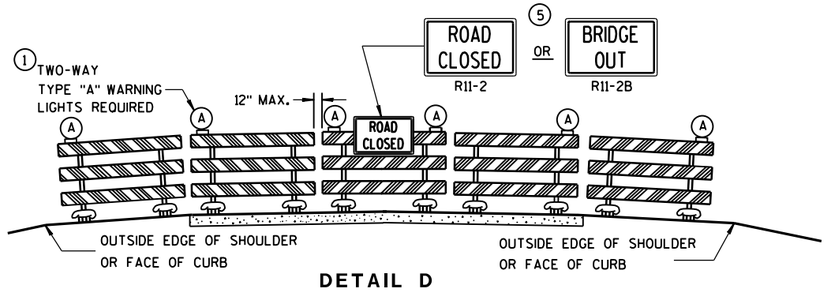
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE — /S/ Travis Feltes STATE TRAFFIC ENGINEER — DESIGN

FHWA

6

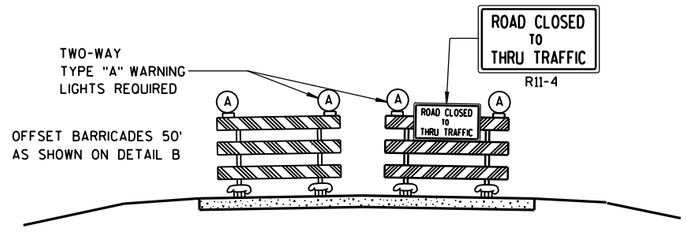
S.D.D. 15 C 2-5a



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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" 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.)
- M05-1 AND M06-1 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 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 LANE 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 MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 2-5b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

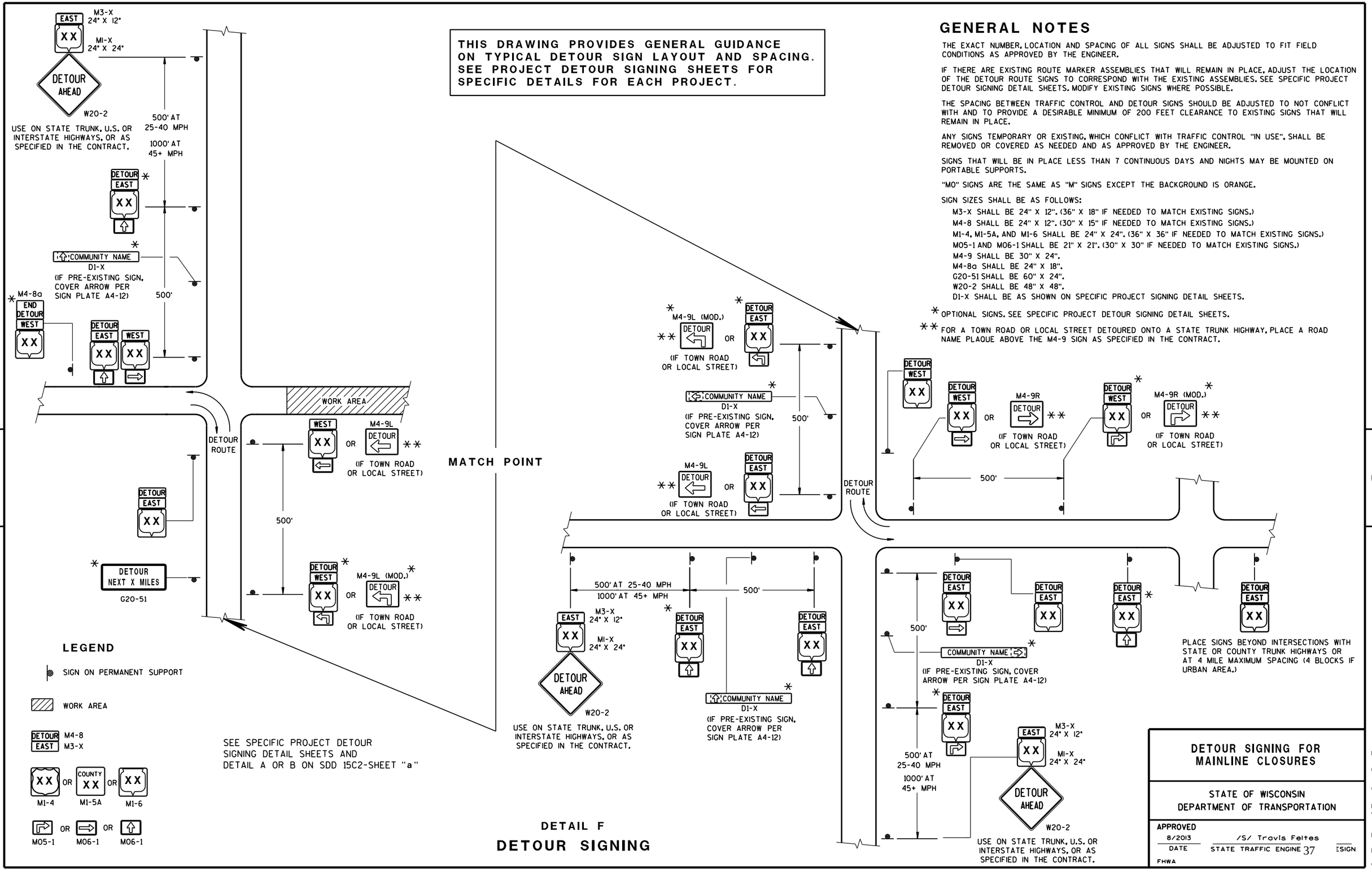
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" 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.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETAIL F

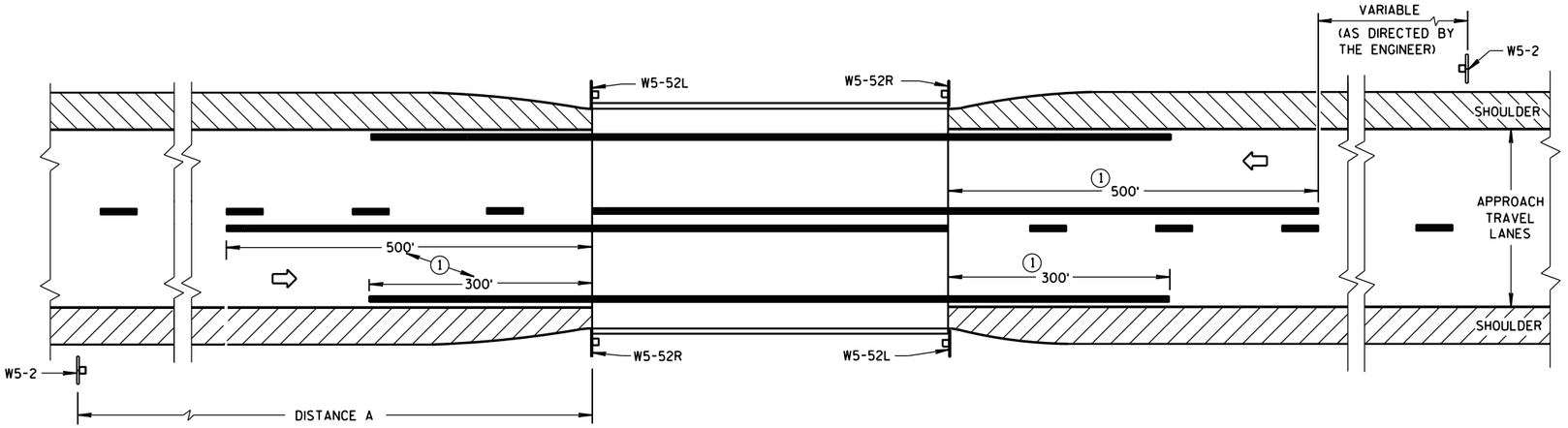
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

S.D.D. 15 C 2-5c



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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

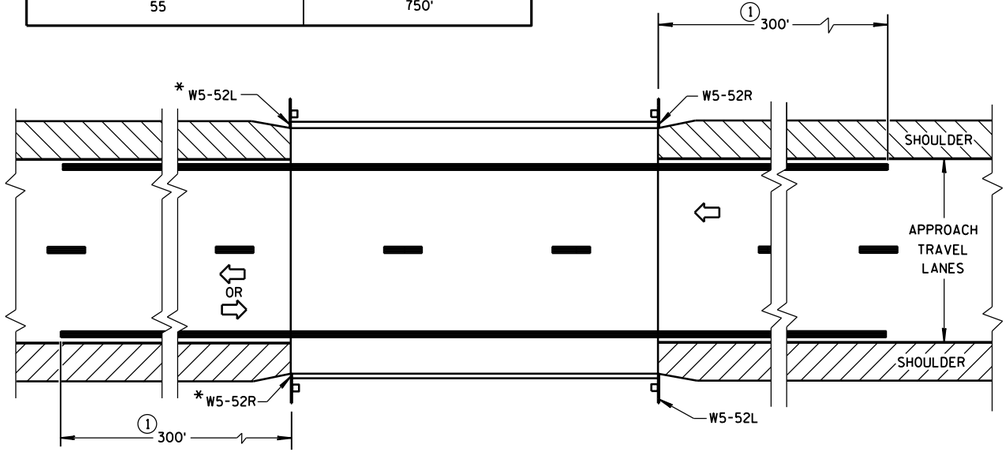
DISTANCE TABLE

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

SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET



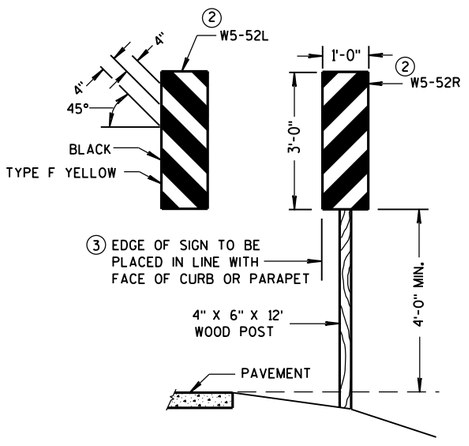
*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

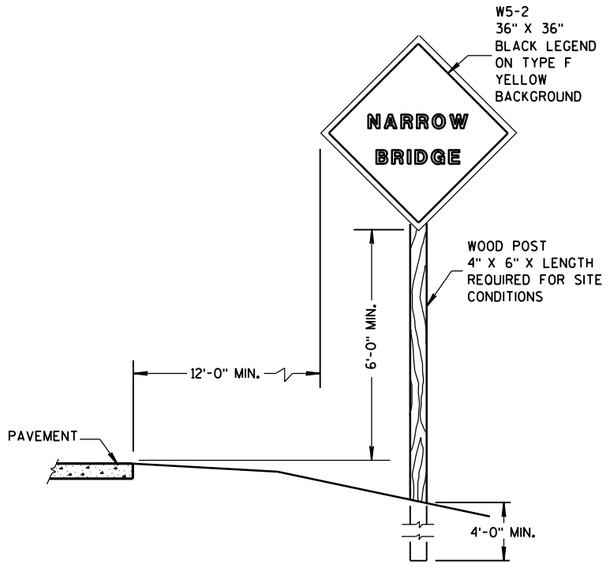
WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND

2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

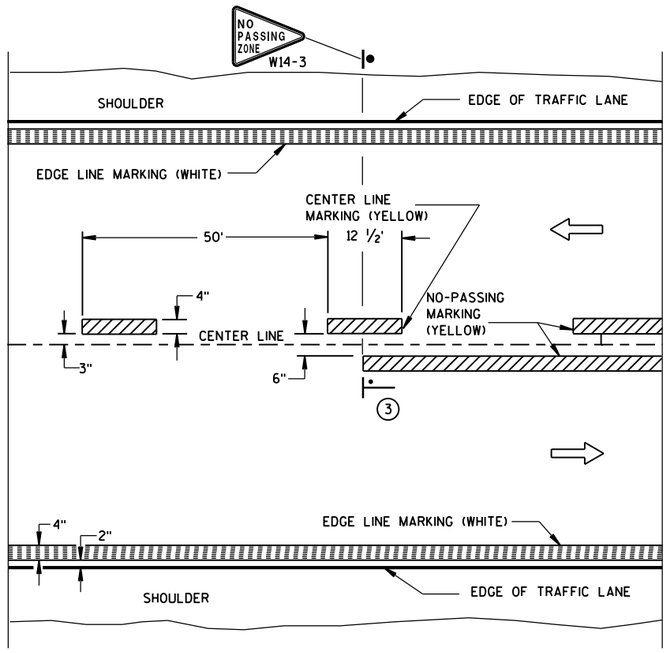
3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

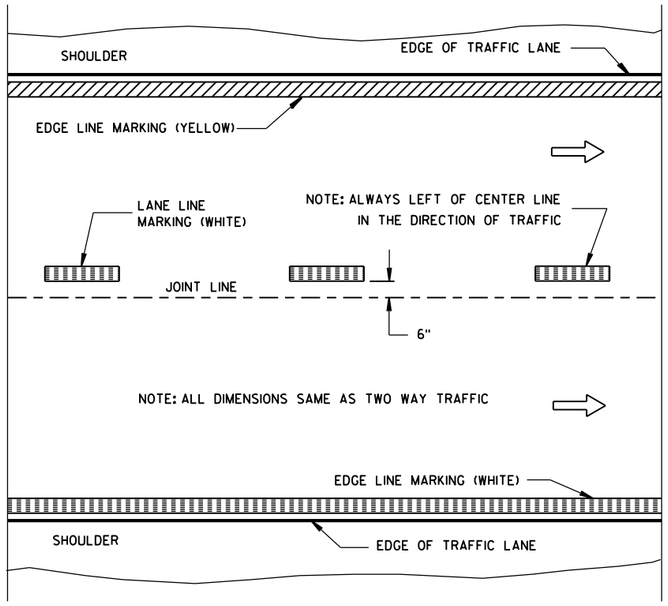
FHWA

6

S.D.D. 15 C 6-7

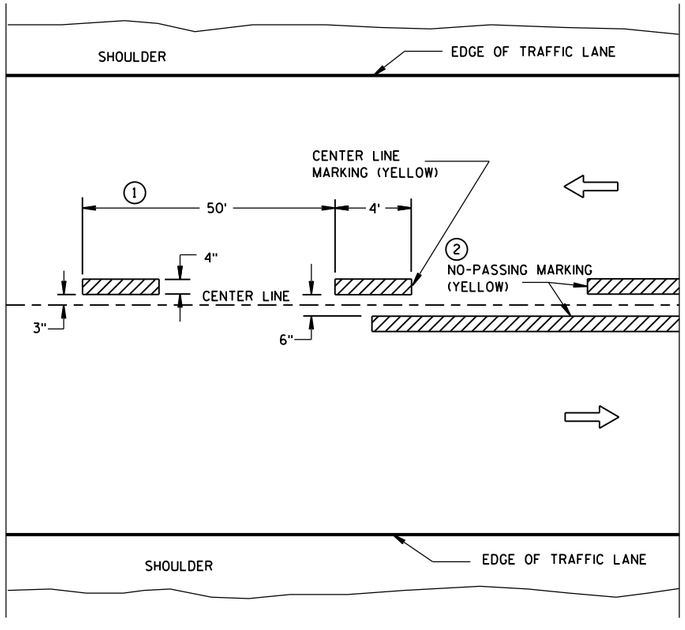


TWO WAY TRAFFIC

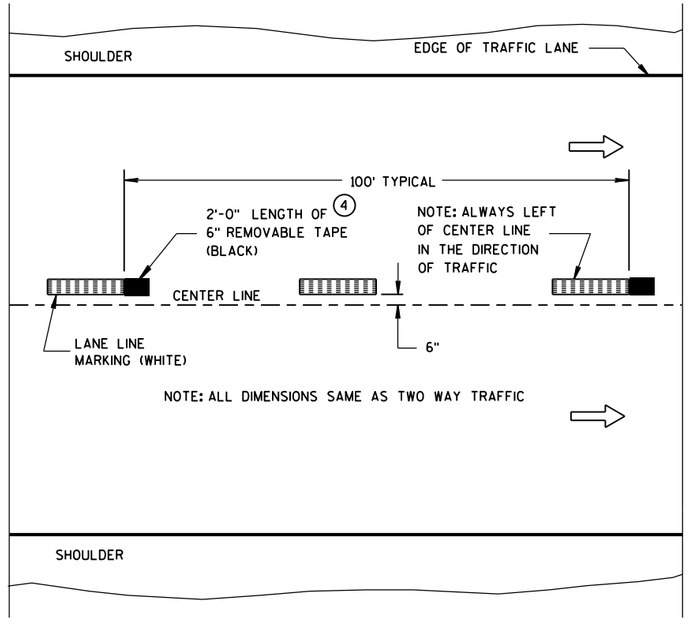


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

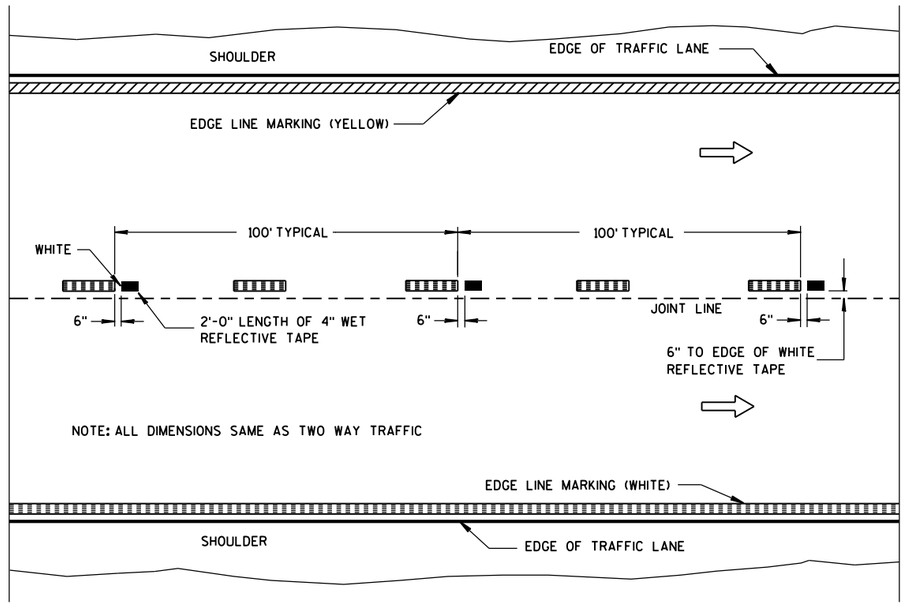
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

6

S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

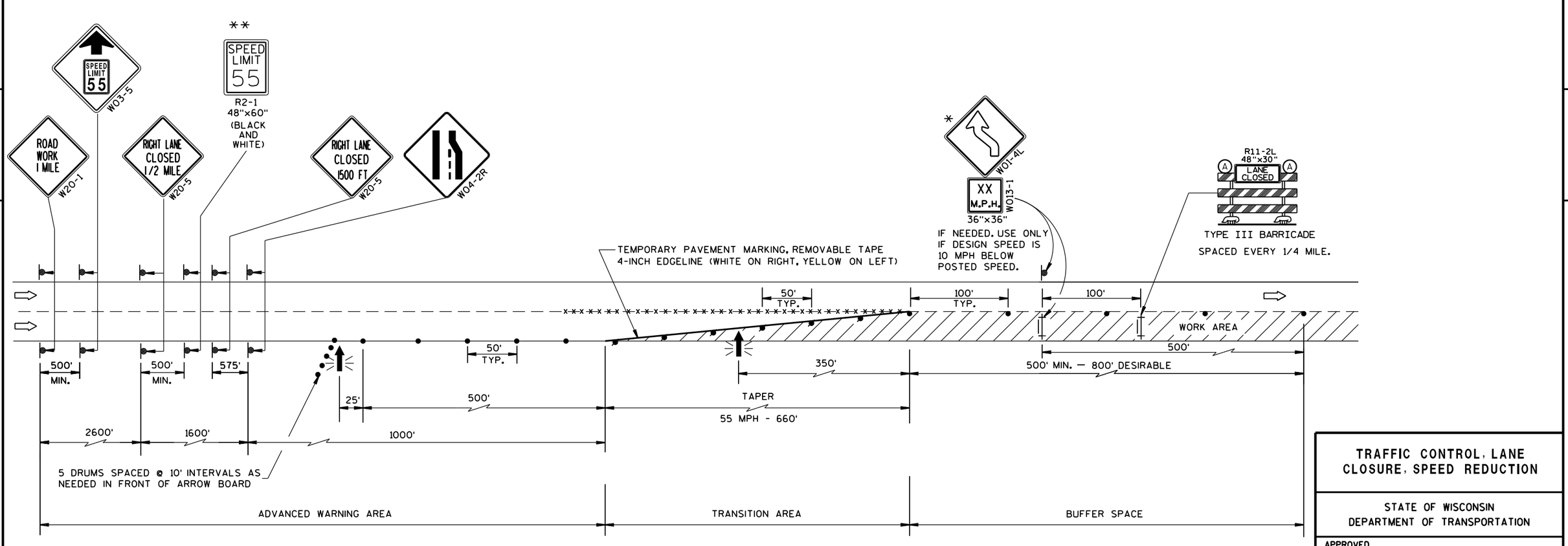
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A 65 MPH RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Feb. 2015	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINEER	DESIGN

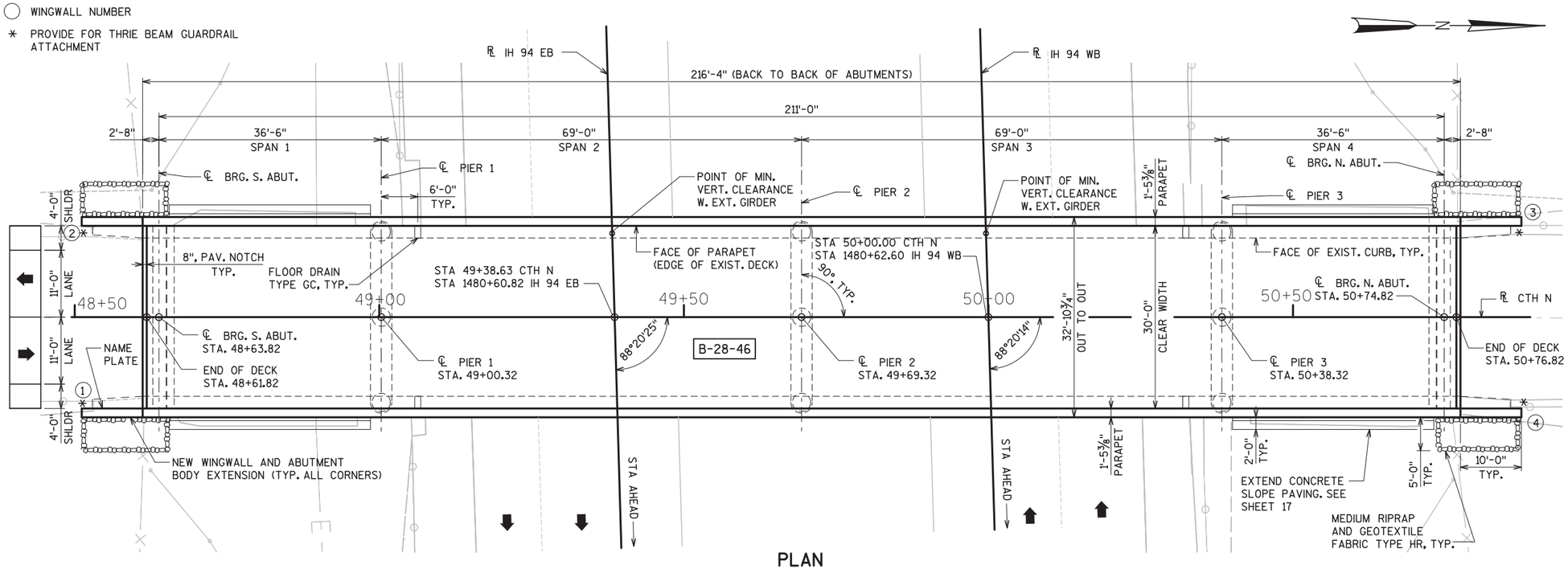
FHWA

6

S.D.D. 15 D 12-5b

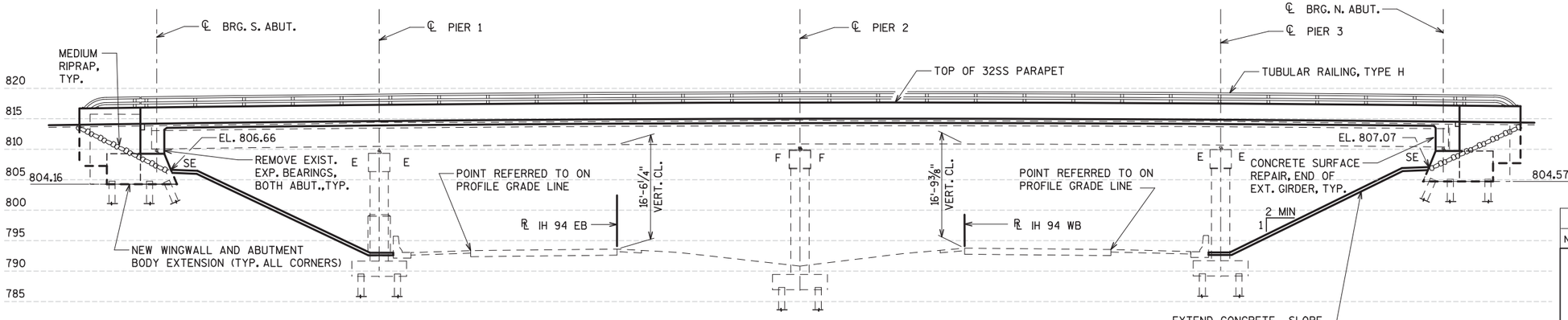
WINGWALL NUMBER

* PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT



PLAN

(4 SPAN 36" PRESTRESSED CONCRETE GIRDER BRIDGE)



ELEVATION

(LOOKING WEST)

WISCONSIN
BABU D. THENGANAKUNNEL
E-35905
MILWAUKEE, WI
PROFESSIONAL ENGINEER
12/3/2015

BENCHMARK

POINT ID: CP651
DESCRIPTION: REBAR WITH CAP
STA 50+95.98 CTH N, 22.4' LT.
EL. = 812.450

STRUCTURE DESIGN CONTACTS

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER
(608) 266-8489

CONSULTANT CONTACT:
YAKOV NENAYDYKH
(414) 292-4599

STATE PROJECT NUMBER

1066-06-70

LIST OF DRAWINGS

DESIGN DATA

LIVE LOAD

DESIGN LOAD: H15 (TAKEN FROM HSI 8/29/2013)
INVENTORY RATING: HS12
OPERATIONAL RATING: HS20
WISCONSIN STANDARD PERMIT VEHICLE LOAD (WIS-SPV): ..... 160 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY
SUPERSTRUCTURE ..... f'c = 4,000 psi
OTHER ..... f'c = 3,500 psi

HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 ... fy = 60,000 psi

TRAFFIC DATA

CTH N

A.D.T. = 670 (2009)
A.D.T. =1300 (2036)
R.D.S. = 50 MPH

IH 94

A.D.T. = 33,200 (2012)
A.D.T. = 43,600 (2036)
R.D.S. = 70 MPH

NO.	DATE	REVISION	BY

BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
Phone: (414) 771-3390 Fax: (414) 771-4490

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 12/04/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-28-46

CTH N OVER IH 94

COUNTY	JEFFERSON	TOWN	AZTALAN
DESIGN SPEC.	REHABILITATION		N/A

DESIGNED BY	BDT	DESIGN CK'D.	JRS	DRAWN BY	TAL	PLANS CK'D.	YN

GENERAL PLAN AND ELEVATION

SHEET 1 OF 17
41

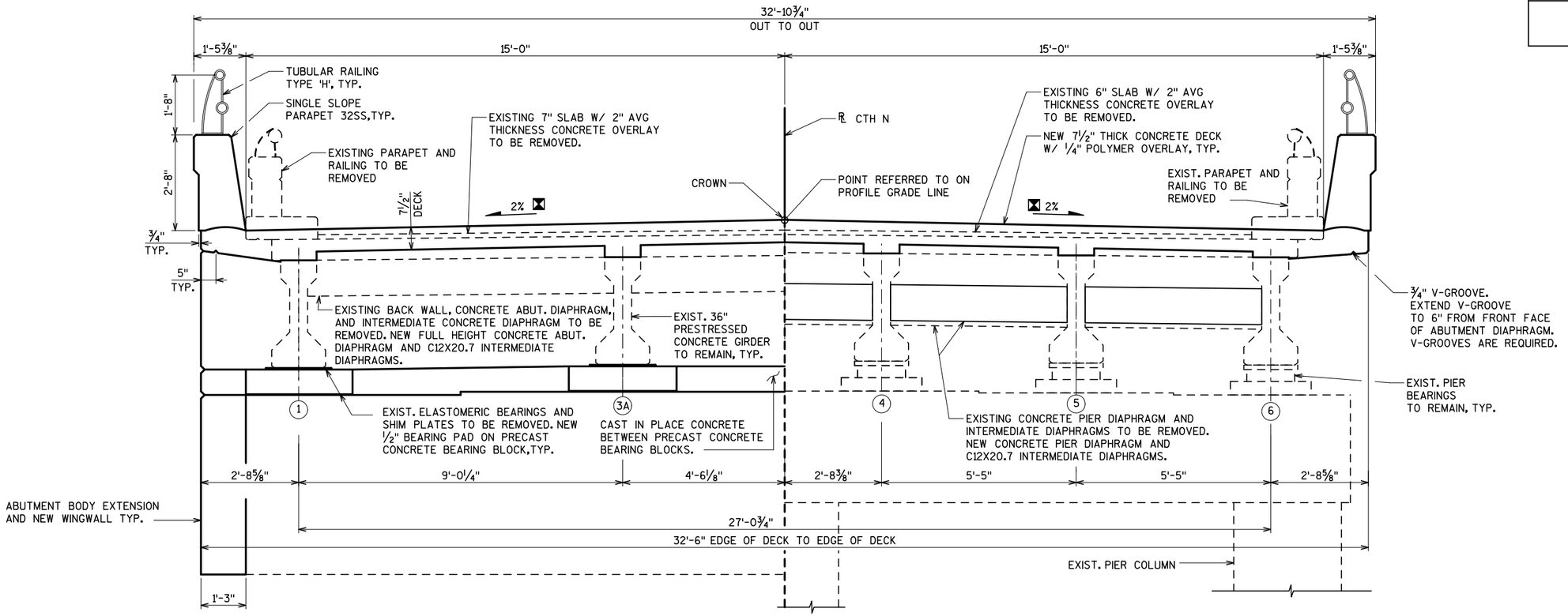
ID: 1066-06-01

DECEMBER 2015

8

8

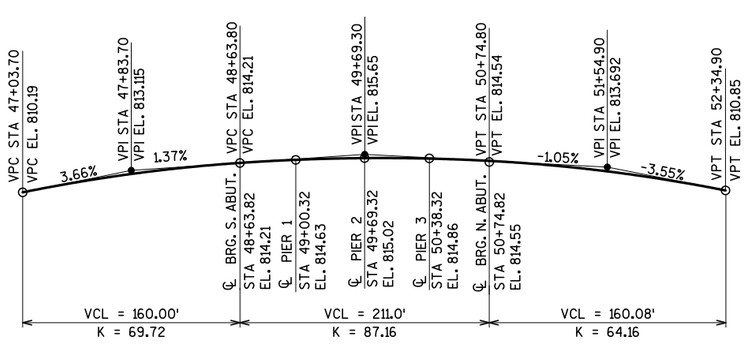
STATE PROJECT NUMBER
1066-06-70



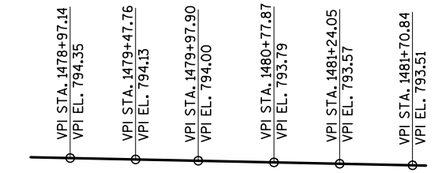
AT ABUTMENT
(SPANS 1 & 4)

TYPICAL SECTION
(LOOKING NORTH)

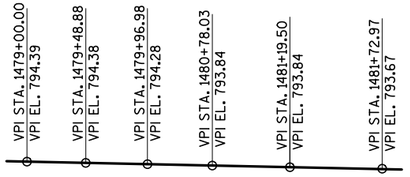
AT PIER
(SPANS 2 & 3)



PROFILE GRADE LINE - CTH N



PROFILE GRADE LINE - IH 94 WB
(BASED ON FIELD SURVEY)



PROFILE GRADE LINE - IH 94 EB
(BASED ON FIELD SURVEY)

LEGEND

EXISTING CROSS SLOPE IS 1%.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

TYPICAL SECTION

SHEET 2 OF 17
42

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STATE PROJECT NUMBER
1066-06-70

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT	SOUTH ABUT.	NORTH ABUT.	PIER 1	PIER 2	PIER 3	SUPER	TOTAL
203.0200	REMOVING OLD STRUCTURE STATION 49+69	LS	-	-	-	-	-	-	1
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL STRUCTURE B-28-46	LS	-	-	-	-	-	-	1
203.0225.S	DEBRIS CONTAINMENT B-28-46	LS	-	-	-	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-28-46	LS	-	-	-	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	140	140	-	-	-	-	280
502.0100	CONCRETE MASONRY BRIDGES	CY	20	20	-	-	-	282	322
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	-	-	7	7
502.3210	PIGMENTED SURFACE SEALER	SY	9	9	-	-	-	179	197
502.5005	MASONRY ANCHORS TYPE L NO. 5 BAR	EACH	32	32	-	-	-	-	64
502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	EACH	68	68	-	-	-	-	136
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	900	900	-	-	-	-	1800
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1140	1140	-	-	-	67560	69840
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	4	4	-	-	-	-	8
506.4000	STEEL DIAPHRAGMS B-28-46	EACH	-	-	-	-	-	26	26
506.7050.S	REMOVING BEARINGS B-28-46	EACH	4	4	-	-	-	-	8
509.1500	CONCRETE SURFACE REPAIR	SF	15	15	15	15	15	100	175
509.5100.S	POLYMER OVERLAY	SY	-	-	-	-	-	717	717
513.4056	RAILING TUBULAR TYPE H B-28-46	LF	20	20	-	-	-	433	473
514.0445	FLOOR DRAINS TYPE GC	EACH	-	-	-	-	-	4	4
514.2625	DOWNSPOUT 6-INCH	LF	-	-	52	-	52	-	104
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-	-	-	-	20
604.0400	SLOPE PAVING CONCRETE	SY	30	63	-	-	-	-	93
606.0200	RIPRAP MEDIUM	CY	10	10	-	-	-	-	20
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	80	80	-	-	-	-	160
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	2	-	-	-	-	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	24	24	-	-	-	-	48
SPV.0060.01	PRECAST CONCRETE BEARING BLOCK	EACH	4	4	-	-	-	-	8
	NON-BID ITEMS								
	FILLER	SIZE							1/2", 3/4", 1 1/2"
	NAME PLATE	EACH							1

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT OF EXCAVATION FOR STRUCTURES.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

ALL ELAVATIONS ARE BASED ON FIELD SURVEY.

ALL CONCRETE REMOVAL LIMITS SHALL BE DEFINED BY A 1" DEEP SAWCUT. EXERCISE CARE NOT TO CUT PRESTRESSING STRANDS OR REINFORCING BARS.

VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. THE NEW NAME PLATE SHALL SHOW THE ORIGINAL CONSTRUCTION YEAR. ORIGINAL CONSTRUCTION YEAR IS 1964

STRICTLY CONFORM TO THE APPROVED DEBRIS CONTAINMENT PLAN.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE SIDES OF PAVING NOTCH.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF PARAPETS ON THE DECK AND WINGS.

THE EXISTING STRUCTURE B-28-46 IS A FOUR SPAN PRESTRESSED CONCRETE GIRDER STRUCTURE WITH AN OVERALL WIDTH OF 30'-0" AND AN OVERALL LENGTH OF 216.33 FEET. THE EXISTING DECK, CONCRETE OVERLAY, PARAPETS, ABUTMENT BACK WALLS, EXAPANSION DEVICE, FLOOR DRAINS, WING WALLS, CONCRETE DIAPHRAGMS, AND PART OF CONCRETE SLOPE PAVING SHALL BE REMOVED IN THIS CONTRACT UNDER BID ITEM "REMOVING OLD STRUCTURE STATION 49+69". EXISTING GIRDERS AND SUBSTRUCTURE UNITS SHALL REMAIN IN PLACE.

PERFORM CONCRETE SURFACE REPAIR AS DIRECTED BY THE FIELD ENGINEER. QUANTITY SHOWN IS APPROXIMATE AND UNDISTRIBUTED.

PLANS OF THE EXISTING BRIDGE ARE ON FILE AND ARE AVAILABLE FOR INSPECTION AT THE WISCONSIN DEPARTMENT OF TRANSPORTATION, SOUTHWEST REGION.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

AT THE BACKFACE OF ABUTMENT ALL VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON SHEET 10.

NON-LAMINATED ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

RESHAPING THE EXISTING GROUNDLINE BELOW THE SLOPE PAVING IS INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-28-46".

MONITOR SAW CUTTING OF EXISTING BRIDGE DECK AND BLADE DEPTH SO THAT EXISTING UNDERLYING GIRDERS ARE NOT DAMAGED. EXERCISE CARE NOT TO DAMAGE THE TOP FLANGES WITH JACKHAMMER OR OTHER TOOLS. DO NOT DAMAGE EXISTING GIRDER STIRRUPS WITHIN THE DECK.

THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.0100, IS BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

EXERCISE CARE NOT TO DAMAGE EXISTING TIMBER PILE WITHIN THE WING WALL.

SEE SPECIAL PROVISIONS FOR REQUIRED CONCRETE CURE TIME PRIOR TO PLACING POLYMER OVERLAY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

GENERAL NOTES AND QUANTITIES

SHEET 3 OF 17

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STATE PROJECT NUMBER
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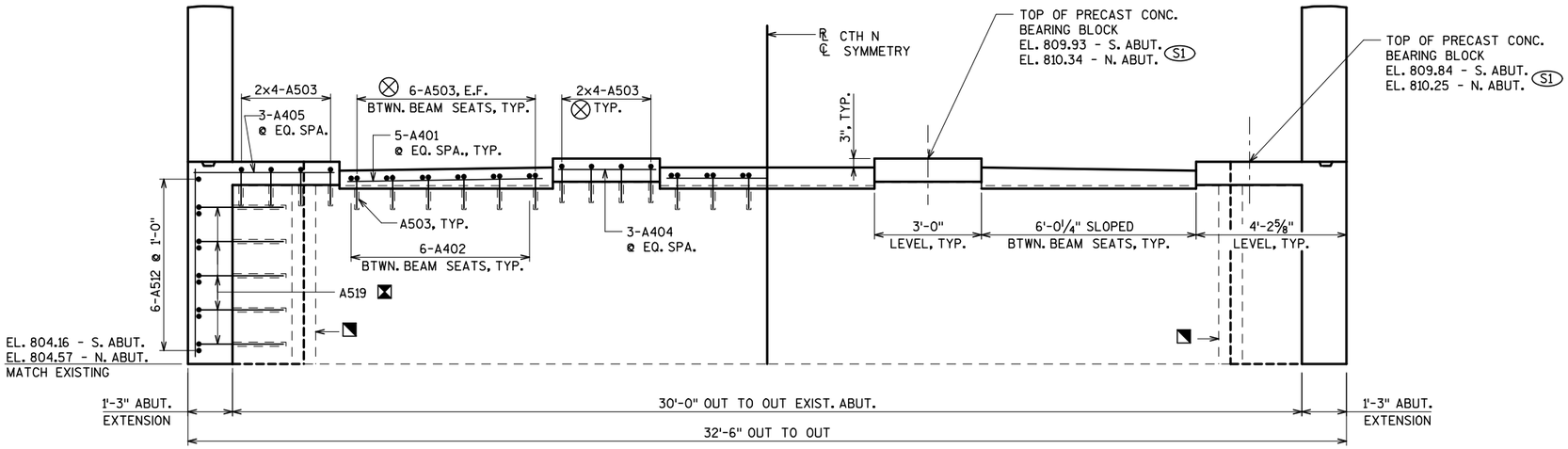
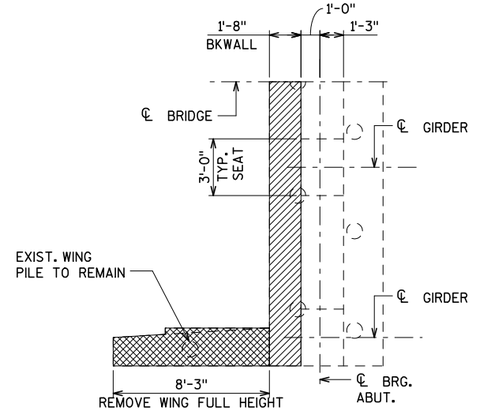


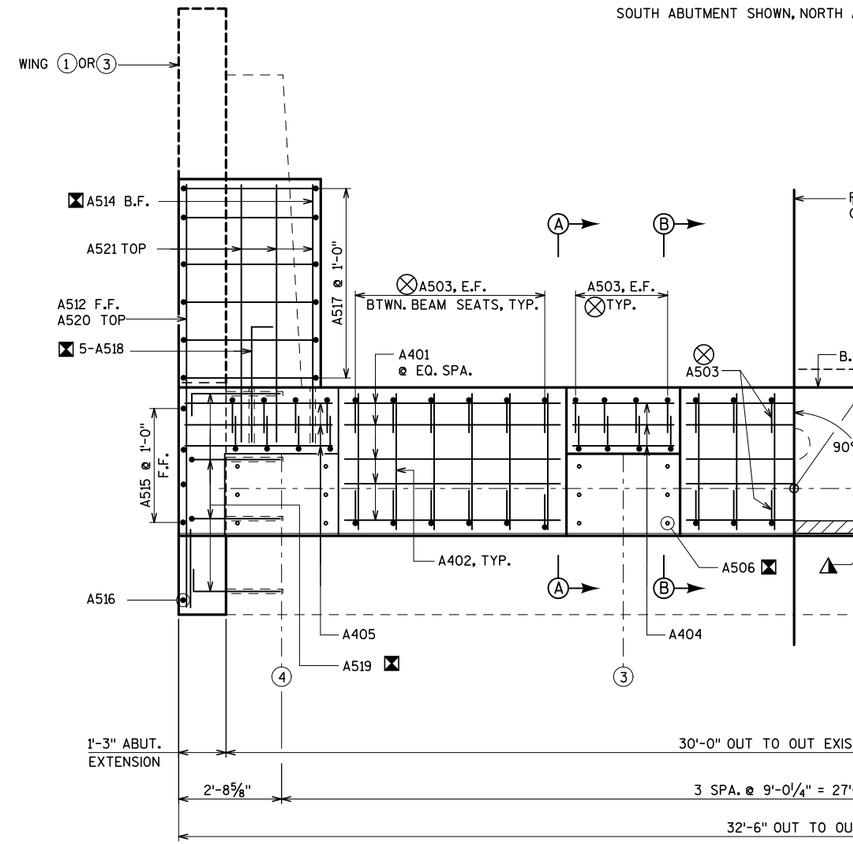
ELEVATION

(LOOKING SOUTH)

SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR

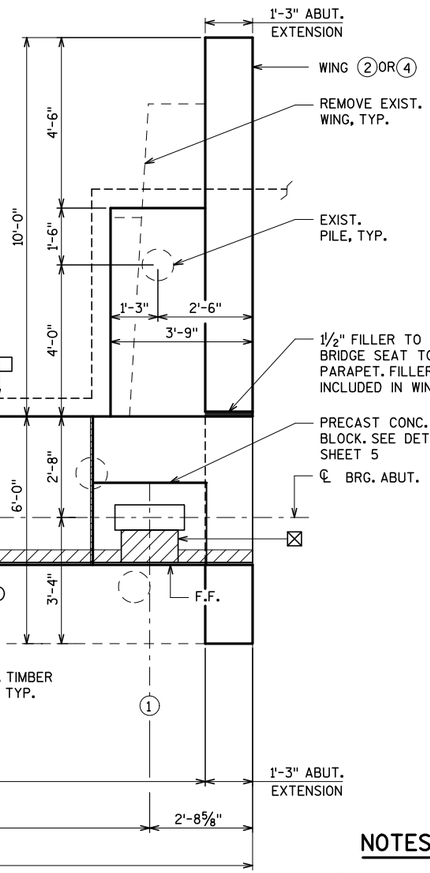


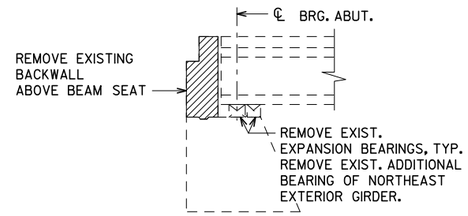
HALF PLAN - DEMOLITION



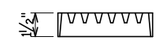
PLAN

SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR

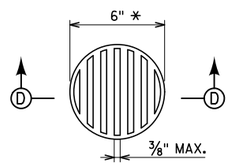




SECTION THRU ABUTMENT - DEMOLITION



SECTION D-D



RODENT SHIELD

* DIMENSIONS ARE APPROXIMATE, THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING, AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM " PIPE UNDERDRAIN WRAPPED 6-INCH."

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO RO MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

NOTES

(S1) ELEVATION OBTAINED BY SUBTRACTING ½" BEARING PAD THICKNESS FROM FIELD DETERMINED BOTTOM ELEVATION OF EXISTING GIRDER.

SEE SHEET 5 SECTIONS A-A & B-B, LEGEND, AND BILL OF BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

ABUTMENT DETAILS (1 OF 2)

SHEET 4 OF 17
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STATE PROJECT NUMBER

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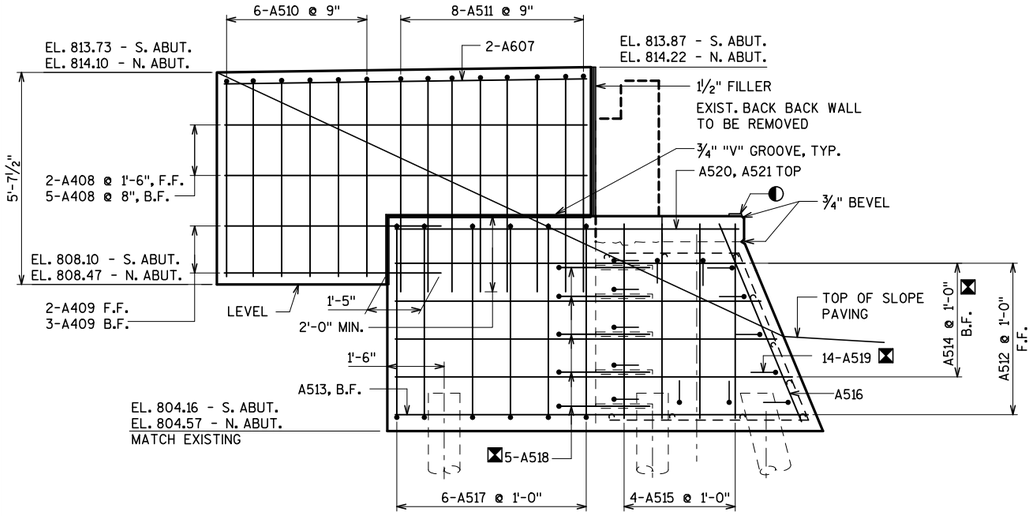
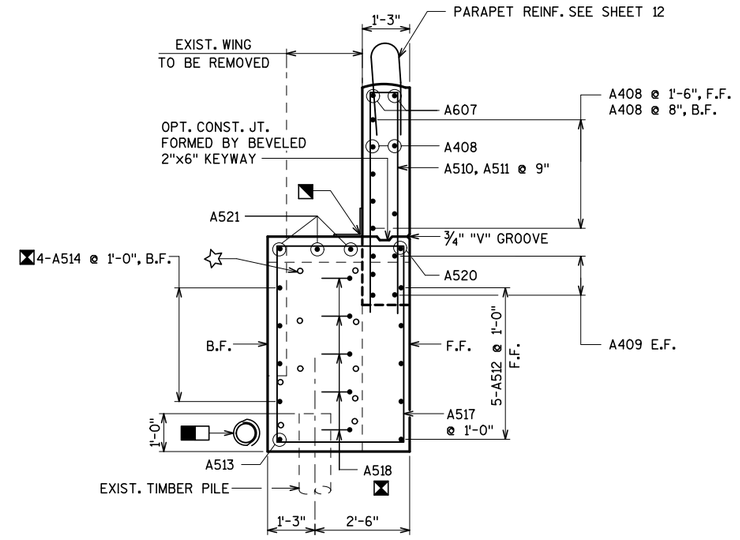
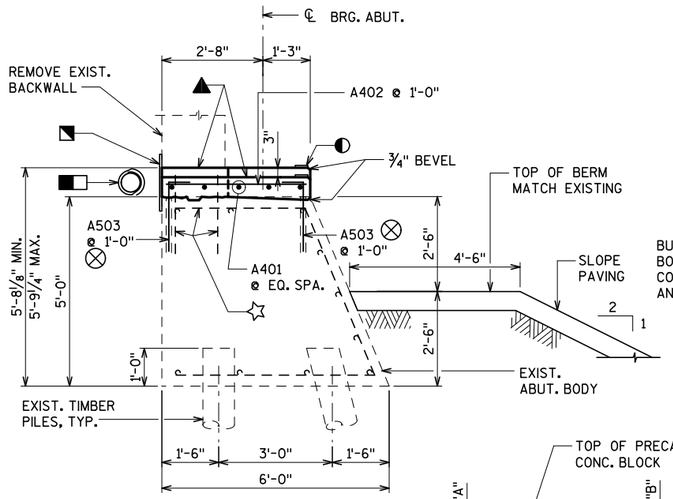


WING ELEVATION

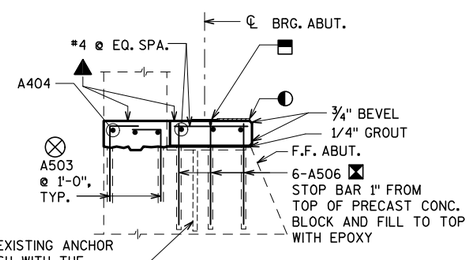
(FRONT FACE)



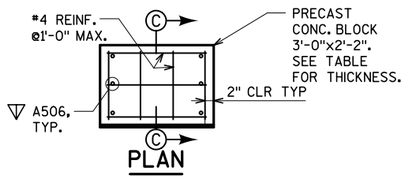
SECTION THRU WINGWALL



SECTION A-A

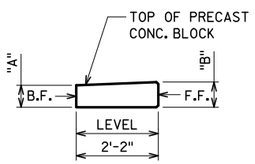


SECTION B-B



PLAN

(SHOWING REINFORCEMENT)

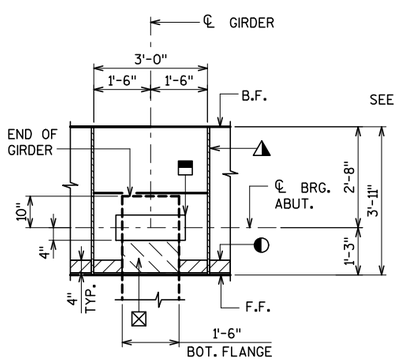


SECTION C-C

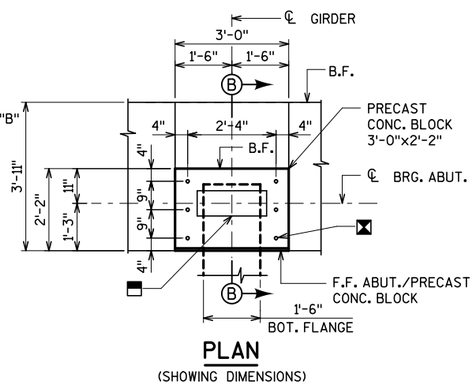
SEE TABLE BELOW FOR DIMENSIONS "A" AND "B"

ABUT.	GIRDER	"A"	"B"
SOUTH ABUT.	1	8¼"	8½"
	3A	8¼"	8½"
	4A	8⅛"	8⅜"
	6	8¼"	8½"
NORTH ABUT.	1	8⅞"	8⅞"
	3A	8⅜"	8⅜"
	4A	8½"	8½"
	6	8½"	8½"

PRECAST CONC. BEARING BLOCK THICKNESS



BEARING PAD DETAIL



PLAN

(SHOWING DIMENSIONS)

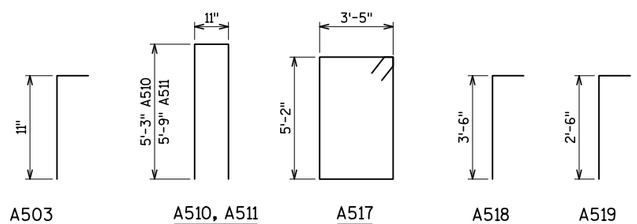
PRECAST CONC. BEARING BLOCK

BILL OF BARS - SOUTH AND NORTH ABUTMENTS

	BAR MARK	COAT	NO. * TOTAL	LENGTH	BENT	BAR ‡ SERIES	LOCATION
	A401	-	30	5'-8"	-	-	TOP, BETWEEN BEAM SEATS
	A402	-	36	3'-7"	-	-	TOP, BETWEEN BEAM SEATS
⊗	A503	-	136	1'-8"	X	-	VERTICAL, BETWEEN BEAM SEATS, E.F.
	A404	-	12	2'-8"	-	-	TOP, AT BEAM SEATS
	A405	-	12	3'-10"	-	-	TOP, AT BEAM SEATS, ENDS
☒	A506	-	48	2'-1"	-	-	VERTICAL, AT BEAM SEATS
	A607	X	8	9'-6"	-	-	WING - TOP
	A408	X	28	9'-6"	-	-	WING - HORIZ.
	A409	X	20	5'-9"	-	-	WING - HORIZ., BOTTOM
	A510	X	24	11'-2"	X	-	WING - VERTICAL
	A511	X	32	12'-2"	X	-	WING - VERTICAL
	A512	-	20	10'-1"	-	X	WING - HORIZ., F.F.
	A513	-	4	5'-2"	-	-	WING - BOTTOM, B.F.
☒	A514	-	16	6'-10"	-	-	WING - HORIZ., B.F. & TOP
	A515	-	16	5'-4"	-	-	WING - VERTICAL, F.F.
	A516	-	4	5'-8"	-	-	WING - VERTICAL, F.F.
	A517	-	24	17'-9"	X	-	WING - VERTICAL
☒	A518	-	20	4'-2"	X	-	WING - HORIZ.
☒	A519	-	56	3'-2"	X	-	WING - ANCHORS
	A520	-	4	9'-1"	-	-	WING- HORIZ. F.F.
	A521	-	12	6'-10"	-	-	WING- HORIZ. TOP

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

* QUANTITY SHOWN IS FOR TWO ABUTMENTS. DIVIDE THE QUANTITY EQUALLY BETWEEN SOUTH AND NORTH ABUTMENTS.



A503 A510, A511 A517 A518 A519

BENDING DIAGRAMS

LEGEND

(LEGEND APPLIES TO SHEETS 4 AND 5)

- 18" RUBBERIZED MEMBRANE WATERPROOFING, SEAL ALL HORIZ. AND VERT. JOINTS ON BACK FACE.
- ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- 4" X ¾" FILLER. LENGTH OF ABUT., TYP.
- ¾" PREFORMED FILLER.
- ½" × 8" X 1'-10" NON-LAMINATED ELASTOMERIC BEARING PAD.
- (X) GIRDER NUMBER
- MASONRY ANCHOR, TYPE L, NO. 5 BARS EMBED 1'-6" IN EXISTING CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.
- ⊗ MASONRY ANCHOR, TYPE S, 5/8-INCH. EMBED 7" INTO EXISTING CONCRETE.
- SALVAGE AND CLEAN EXISTING REINFORCEMENT AND EXTEND FULL LENGTH INTO NEW WORK. EXISTING REINFORCING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. PRESERVE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH BARS INDICATED BY ☒ AND ⊗
- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF UNDERDRAIN.
- STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP INCLUDING PRECAST CONCRETE BLOCKS, BEFORE PLACING BEARING PADS AND LOWERING GIRDERS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

F.F. - FRONT FACE,
B.F. - BACK FACE,
E.F. - EACH FACE

BAR SERIES TABLE [1]

BAR MARK	NO. REQ'D	LENGTH
A512	4 SERIES OF 5	9'-3" TO 10'-11"

1 BUNDLE AND TAG EACH SERIES SEPARATELY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

ABUTMENT DETAILS (2 OF 2)

SHEET 5 OF 17
45

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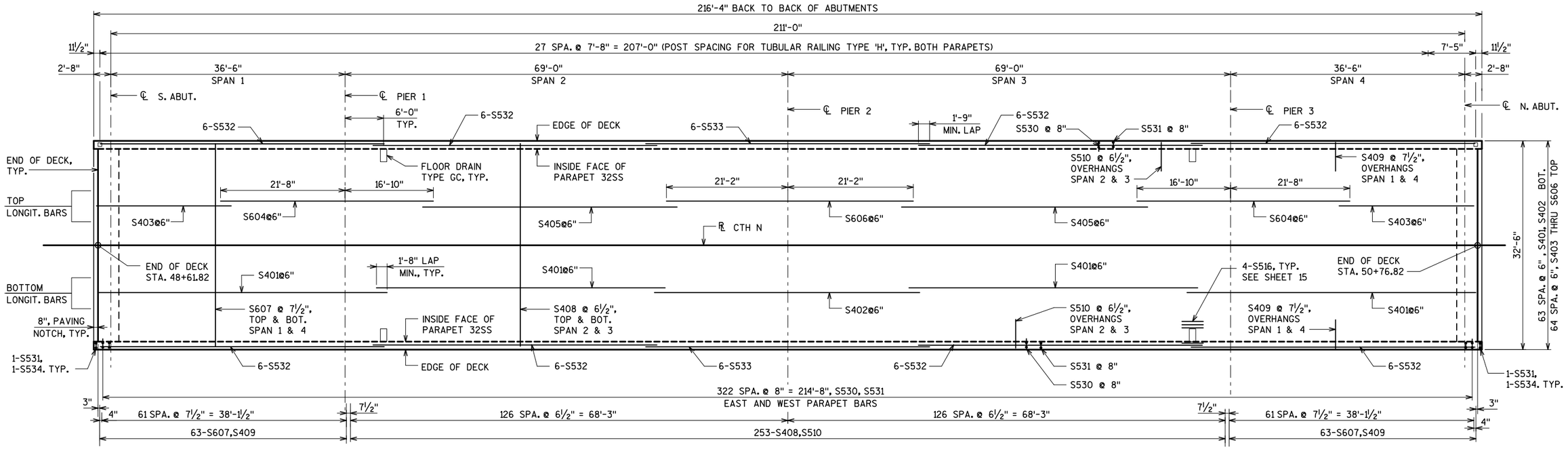

PLAN

NOTES

SEE SHEETS 7 AND 8 FOR SECTIONS AND DETAILS

SEE SHEET 9 FOR BILL OF BARS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY	TB	PLANS CK'D.	BDT

SUPERSTRUCTURE PLAN

SHEET 6 OF 17
46

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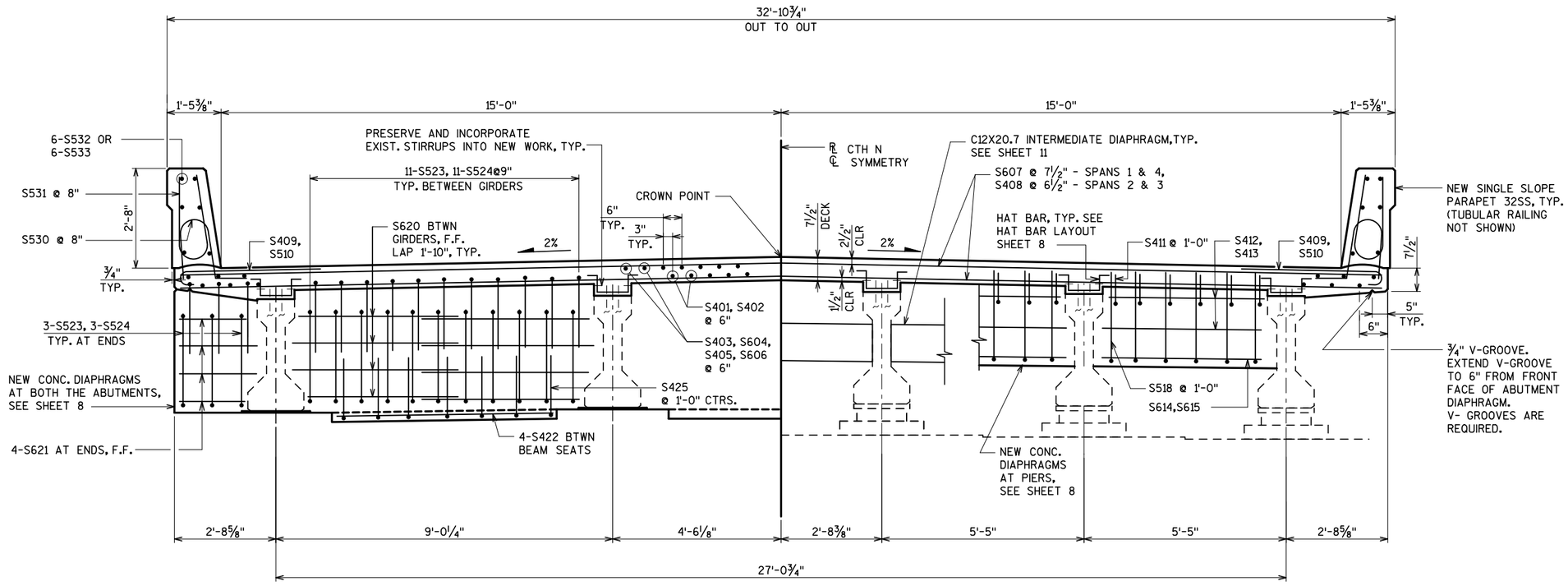
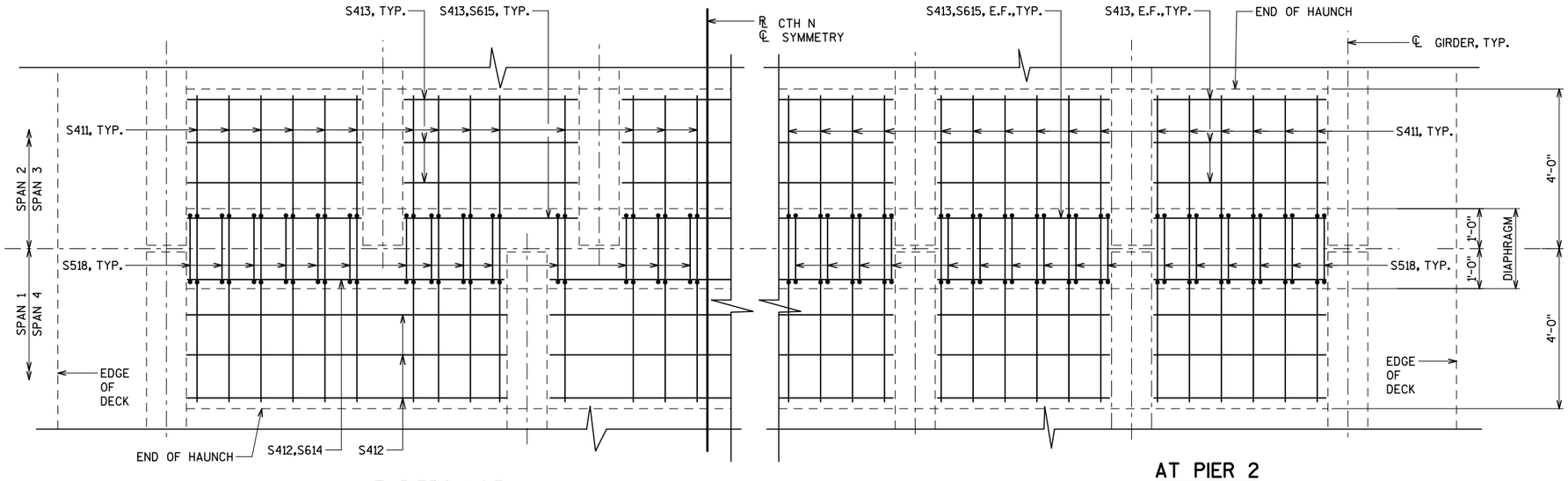


AT ABUTMENTS

(LOOKING AT FRONT FACE)

AT PIERS

DECK REINFORCING SECTION



AT PIERS 1 &3

AT PIER 2

PLAN AT PIER DIAPHRAGM

(DECK BARS NOT SHOWN FOR CLARITY)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

SUPERSTRUCTURE DETAILS (1 OF 3)

SHEET 7 OF 17

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STATE PROJECT NUMBER

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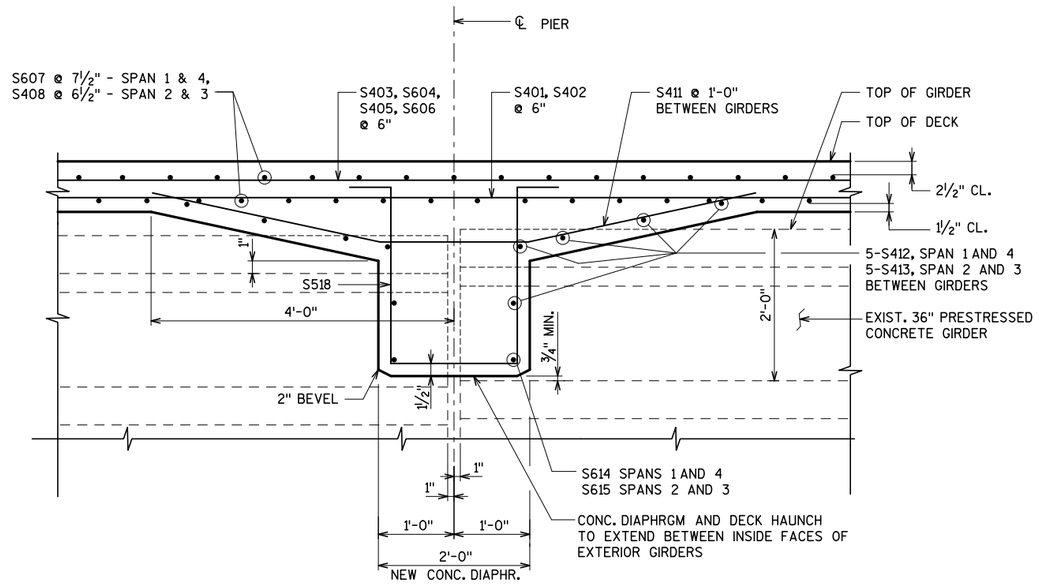
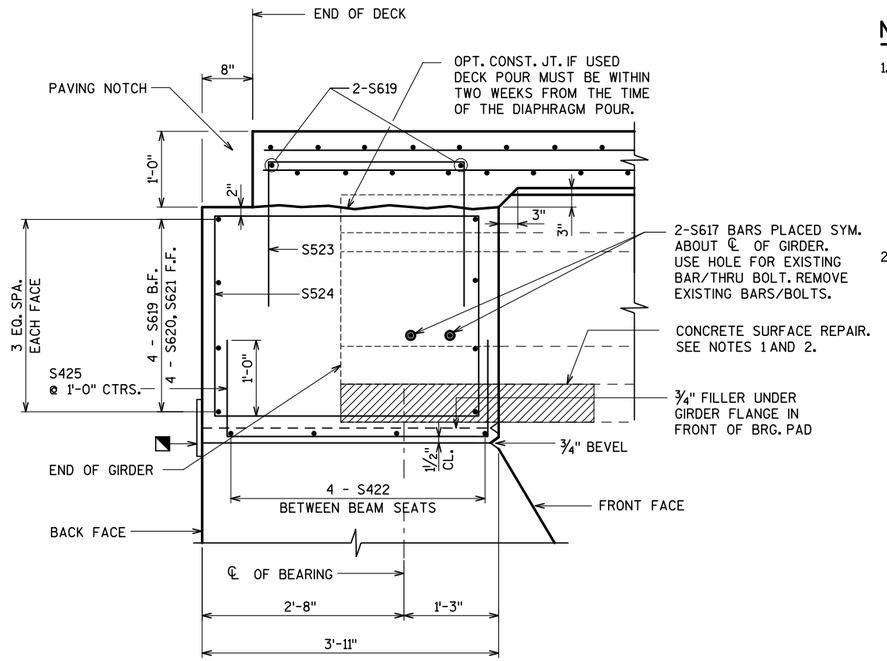


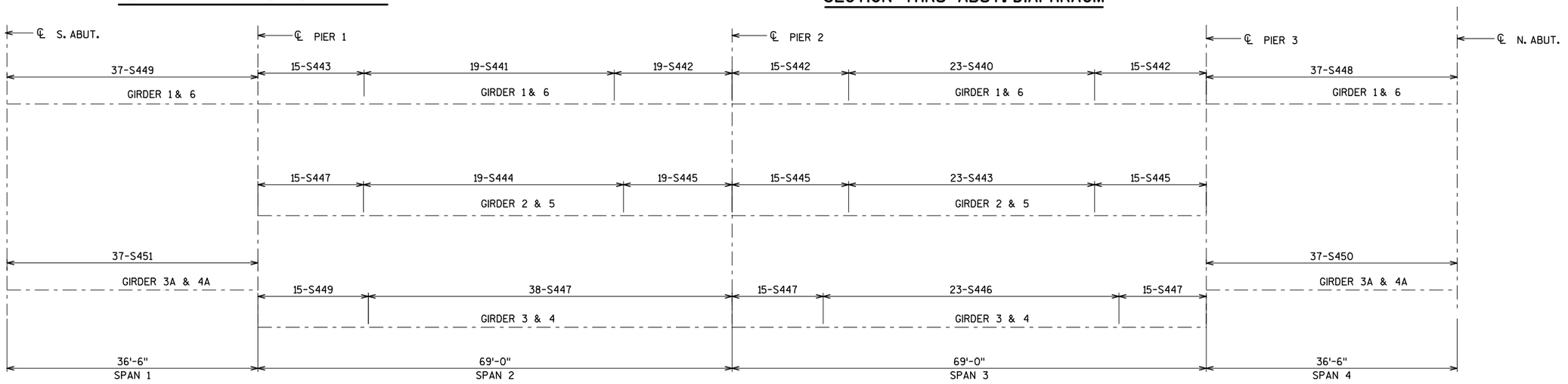
SECTION THRU PIER DIAPHRAGM



SECTION THRU ABUT. DIAPHRAGM

NOTES

1. REMOVE ALL LOOSE RUST, AND OTHER LOOSE DETRIMENTAL FOREIGN MATTER FROM EXPOSED REINFORCEMENT AND PRESTRESSING STRANDS BY WIRE BRUSHING IN ACCORDANCE WITH SSPC-SP2. APPLY EPOXY COATING TO THE CLEANED REINFORCEMENT AND PRESTRESSING STRANDS IN ACCORDANCE WITH 505.2.4.11 OF THE STANDARD SPECIFICATIONS. ALL COSTS INCIDENTAL TO THE BID ITEM "CONCRETE SURFACE REPAIR".
2. PERFORM CONCRETE SURFACE REPAIR ON PORTIONS OF GIRDER THAT IS OUTSIDE THE DIAPHRAGM (ONLY FOR GIRDER 6 AT NORTH ABUTMENT) AFTER THE DECK AND PARAPET HAVE BEEN POURED.



HAT BAR LAYOUT

(NOTE: MATCH SPACING OF HAT BARS TO SPACING OF EXISTING STIRRUPS)

LEGEND

◥ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACK FACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

SUPERSTRUCTURE DETAILS (2 OF 3)

SHEET 8 OF 17

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STATE PROJECT NUMBER

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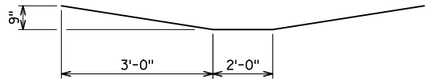
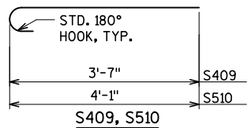
BILL OF BARS

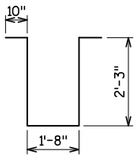
BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	256	45'-0"	-	-	DECK LONGITUDINAL BOTTOM
S402	X	64	41'-4"	-	-	DECK LONGITUDINAL BOTTOM
S403	X	130	18'-4"	-	-	DECK LONGITUDINAL TOP
S604	X	130	38'-6"	-	-	DECK LONGITUDINAL TOP
S405	X	130	34'-4"	-	-	DECK LONGITUDINAL TOP
S606	X	65	42'-4"	-	-	DECK LONGITUDINAL TOP
S607	X	252	32'-2"	-	-	DECK TRANSVERSE TOP & BOTTOM-SPAN 1, 4
S408	X	506	32'-2"	-	-	DECK TRANSVERSE TOP & BOTTOM-SPAN 2, 3
S409	X	252	4'-1"	X	-	DECK TRANSVERSE TOP AT OVERHANGS-SPAN 1, 4
S510	X	506	4'-8"	X	-	DECK TRANSVERSE TOP AT OVERHANGS-SPAN 2, 3
S411	X	86	8'-2"	X	-	DECK LONGITUDINAL BOTTOM AT PIERS
S412	X	30	7'-8"	-	-	DECK HAUNCH & DIAPHRAGM AT PIERS-SPAN 1, 4
S413	X	100	4'-1"	-	-	DECK THAUNCH & DIAPHRAGM AT PIERS-SPAN 2, 3
S614	X	6	7'-8"	-	-	PIER DIAPHRAGMS BOT.-SPAN 1, 4
S615	X	20	4'-1"	-	-	PIER DIAPHRAGMS BOT.-SPAN 2, 3
S516	X	16	5'-0"	-	-	DECK LOGITUDINAL, SIDES OF FLOOR DRAIN
S617	X	16	5'-0"	-	-	ABUT. DIAPHRAGM BAR THRU HOLE IN GIRDER
S518	X	86	7'-4"	X	-	PIER DIAPHRAGMS VERTICAL
S619	X	12	32'-0"	-	-	ABUTMENT DIAPHRAGMS HORIZ, TOP & B.F.
S620	X	48	4'-9"	-	-	ABUTMENT DIAPHRAGMS HORIZ., F.F.
S621	X	16	1'-10"	-	-	ABUTMENT DIAPHRAGMS HORIZ., F.F. AT ENDS
S422	X	24	5'-8"	-	-	ABUTMENT DIAPHRAGMS HORIZ., BTWN BEAM SEATS
S523	X	78	6'-4"	X	-	ABUTMENT DIAPHRAGM VERTICAL TOP
S524	X	78	12'-6"	X	-	ABUTMENT DIAPHRAGM VERTICAL
S425	X	42	5'-10"	X	-	ABUTMENT DIAPHRAGMS BTWN BEAM SEATS
S530	X	646	4'-5"	X	-	PARAPET VERTICAL
S531	X	650	5'-0"	X	-	PARAPET VERTICAL
S532	X	48	45'-0"	-	-	PARAPET LONGITUDINAL
S533	X	12	41'-8"	-	-	PARAPET LONGITUDINAL
S534	X	4	5'-10"	X	-	PARAPET VERTICAL
S440	X	46	2'-8"	X	-	HAT BAR OVER GIRDERS
S441	X	38	2'-8"	X	-	HAT BAR OVER GIRDERS
S442	X	98	2'-9"	X	-	HAT BAR OVER GIRDERS
S443	X	76	2'-9"	X	-	HAT BAR OVER GIRDERS
S444	X	38	2'-10"	X	-	HAT BAR OVER GIRDERS
S445	X	98	2'-10"	X	-	HAT BAR OVER GIRDERS
S446	X	46	2'-11"	X	-	HAT BAR OVER GIRDERS
S447	X	166	2'-11"	X	-	HAT BAR OVER GIRDERS
S448	X	74	3'-0"	X	-	HAT BAR OVER GIRDERS
S449	X	104	3'-0"	X	-	HAT BAR OVER GIRDERS
S450	X	74	3'-2"	X	-	HAT BAR OVER GIRDERS
S451	X	74	3'-3"	X	-	HAT BAR OVER GIRDERS



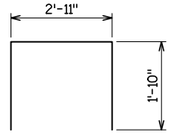
S411



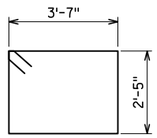
S409, S510



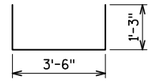
S518



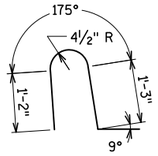
S523



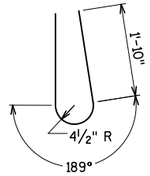
S524



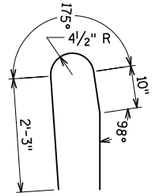
S425



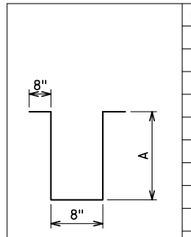
S530



S531



S534



MARK	DIM. A
S440	5¾"
S441	6"
S442	6¼"
S443	6½"
S444	6¾"
S445	7"
S446	7¼"
S447	7½"
S448	7¾"
S449	8"
S450	8¾"
S451	9¼"

S440,S441,S442,S443
S444,S445,S446,S447
S448,S449,S450,S451

BENDING DIAGRAMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

SUPERSTRUCTURE DETAILS (3 OF 3)

SHEET 9 OF 17
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STATE PROJECT NUMBER
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TOP OF DECK ELEVATIONS - SPAN 1

GIRDER/ LOCATION	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1
WEST EDGE	813.89	813.93	813.98	814.03	814.07	814.12	814.16	814.20	814.24	814.27	814.31
W. FLOWLINE	813.91	813.96	814.01	814.05	814.10	814.14	814.18	814.22	814.26	814.30	814.33
1	813.94	813.99	814.04	814.08	814.13	814.17	814.21	814.25	814.29	814.33	814.36
3A	814.12	814.17	814.22	814.26	814.31	814.35	814.39	814.43	814.47	814.51	814.54
PGL	814.21	814.26	814.31	814.35	814.40	814.44	814.48	814.52	814.56	814.60	814.63
4A	814.12	814.17	814.22	814.26	814.31	814.35	814.39	814.43	814.47	814.51	814.54
6	813.94	813.99	814.04	814.08	814.13	814.17	814.21	814.25	814.29	814.33	814.36
E. FLOWLINE	813.91	813.96	814.01	814.05	814.10	814.14	814.18	814.22	814.26	814.30	814.33
EAST EDGE	813.89	813.93	813.98	814.03	814.07	814.12	814.16	814.20	814.24	814.27	814.31
DEAD LOAD DEFLECTION (IN)	0	0	0	0	1/16	1/16	1/16	0	0	0	0

TOP OF DECK ELEVATIONS - SPAN 2

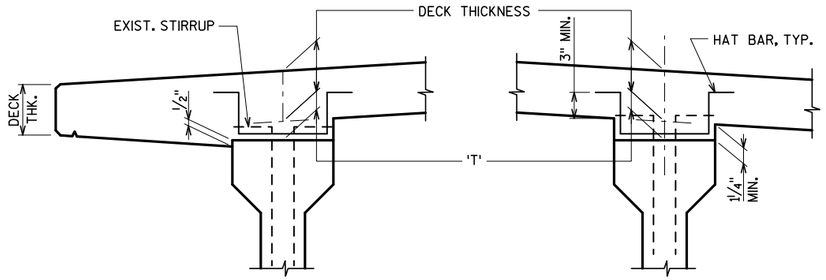
GIRDER/ LOCATION	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 2
WEST EDGE	814.31	814.37	814.43	814.48	814.53	814.57	814.61	814.64	814.66	814.68	814.69
W. FLOWLINE	814.33	814.40	814.45	814.51	814.55	814.59	814.63	814.66	814.69	814.70	814.72
1	814.36	814.43	814.48	814.54	814.58	814.62	814.66	814.69	814.71	814.73	814.75
2	814.47	814.53	814.59	814.64	814.69	814.73	814.77	814.80	814.82	814.84	814.86
3	814.58	814.64	814.70	814.75	814.80	814.84	814.88	814.91	814.93	814.95	814.96
PGL	814.63	814.70	814.75	814.81	814.85	814.89	814.93	814.96	814.99	815.00	815.02
4	814.58	814.64	814.70	814.75	814.80	814.84	814.88	814.91	814.93	814.95	814.96
5	814.47	814.53	814.59	814.64	814.69	814.73	814.77	814.80	814.82	814.84	814.86
6	814.36	814.43	814.48	814.54	814.58	814.62	814.66	814.69	814.71	814.73	814.75
E. FLOWLINE	814.33	814.40	814.45	814.51	814.55	814.59	814.63	814.66	814.69	814.70	814.72
EAST EDGE	814.31	814.37	814.43	814.48	814.53	814.57	814.61	814.64	814.66	814.68	814.69
DEAD LOAD DEFLECTION (IN)	0	1/8	1/4	1/4	3/8	3/8	3/8	1/4	1/4	1/8	0

TOP OF DECK ELEVATIONS - SPAN 3

GIRDER/ LOCATION	PIER 2	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 3
WEST EDGE	814.69	814.70	814.70	814.70	814.69	814.68	814.66	814.64	814.61	814.57	814.53
W. FLOWLINE	814.72	814.73	814.73	814.73	814.72	814.71	814.69	814.66	814.63	814.60	814.56
1	814.75	814.76	814.76	814.76	814.75	814.73	814.72	814.69	814.66	814.63	814.59
2	814.86	814.86	814.87	814.86	814.86	814.84	814.82	814.80	814.77	814.73	814.69
3	814.96	814.97	814.98	814.97	814.97	814.95	814.93	814.91	814.88	814.84	814.80
PGL	815.02	815.03	815.03	815.03	815.02	815.01	814.99	814.96	814.93	814.90	814.86
4	814.96	814.97	814.98	814.97	814.97	814.95	814.93	814.91	814.88	814.84	814.80
5	814.86	814.86	814.87	814.86	814.86	814.84	814.82	814.80	814.77	814.73	814.69
6	814.75	814.76	814.76	814.76	814.75	814.73	814.72	814.69	814.66	814.63	814.59
E. FLOWLINE	814.72	814.73	814.73	814.73	814.72	814.71	814.69	814.66	814.63	814.60	814.56
EAST EDGE	814.69	814.70	814.70	814.70	814.69	814.68	814.66	814.64	814.61	814.57	814.53
DEAD LOAD DEFLECTION (IN)	0	1/8	1/4	1/4	3/8	3/8	3/8	1/4	1/4	1/8	0

TOP OF DECK ELEVATIONS - SPAN 4

GIRDER/ LOCATION	PIER 3	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
WEST EDGE	814.53	814.51	814.48	814.46	814.43	814.40	814.37	814.33	814.30	814.26	814.23
W. FLOWLINE	814.56	814.53	814.51	814.48	814.45	814.42	814.39	814.36	814.32	814.29	814.25
1	814.59	814.56	814.54	814.51	814.48	814.45	814.42	814.39	814.35	814.32	814.28
2A	814.77	814.74	814.72	814.69	814.66	814.63	814.60	814.57	814.53	814.50	814.46
PGL	814.86	814.83	814.81	814.78	814.75	814.72	814.69	814.66	814.62	814.59	814.55
4A	814.77	814.74	814.72	814.69	814.66	814.63	814.60	814.57	814.53	814.50	814.46
6	814.59	814.56	814.54	814.51	814.48	814.45	814.42	814.39	814.35	814.32	814.28
E. FLOWLINE	814.56	814.53	814.51	814.48	814.45	814.42	814.39	814.36	814.32	814.29	814.25
EAST EDGE	814.53	814.51	814.48	814.46	814.43	814.40	814.37	814.33	814.30	814.26	814.23
DEAD LOAD DEFLECTION (IN)	0	0	0	0	1/16	1/16	1/16	0	0	0	0



EXTERIOR GIRDER DETAIL

INTERIOR GIRDER DETAIL

DECK HAUNCH DETAIL

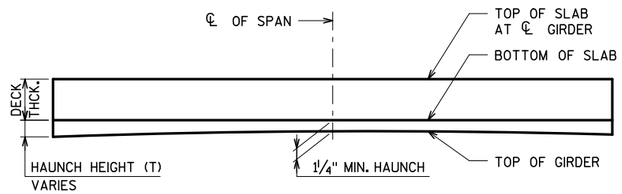
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ¼".

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

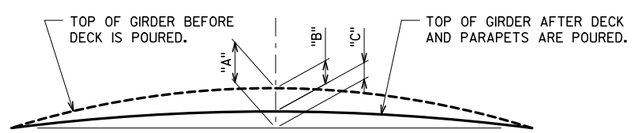
TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
- ¼" POLYMER OVERLAY THICKNESS

= HAUNCH HEIGHT 'T'

NOTE:
AN AVERAGE HAUNCH 'T' OF 4.0"
WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES"



ELEVATION



CAMBER & DEFLECTION DIAGRAM

* "A" = PRESTRESS CAMBER
* "B" = DEAD LOAD DEFLECTION
* "C" = RESIDUAL CAMBER

NOTES

TOP OF DECK ELEVATIONS SHOWN ON THIS SHEET ARE ELEVATIONS OF THE TOP OF 1/4" THICK POLYMER OVERLAY

FOR SUPERSTRUCTURE PLAN SEE SHEET 6

FOR SUPERSTRUCTURE DETAILS, BILL OF BARS AND BENDING DIAGRAMS SEE SHEETS 7 THRU 9

FOR FRAMING PLAN SEE SHEET 11

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

DECK ELEVATIONS

SHEET 10 OF 17
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STATE PROJECT NUMBER

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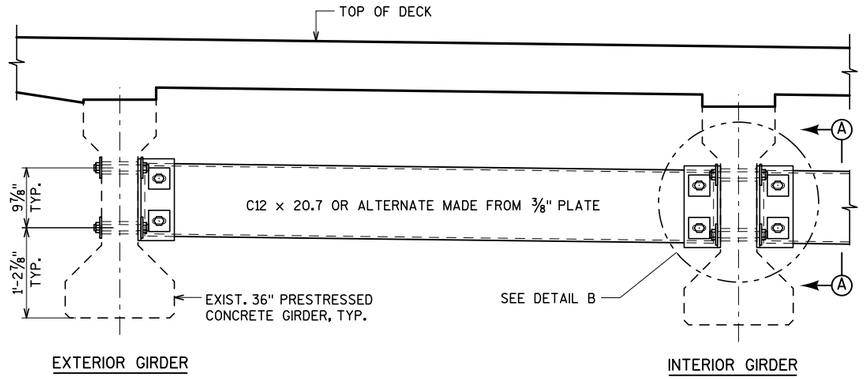
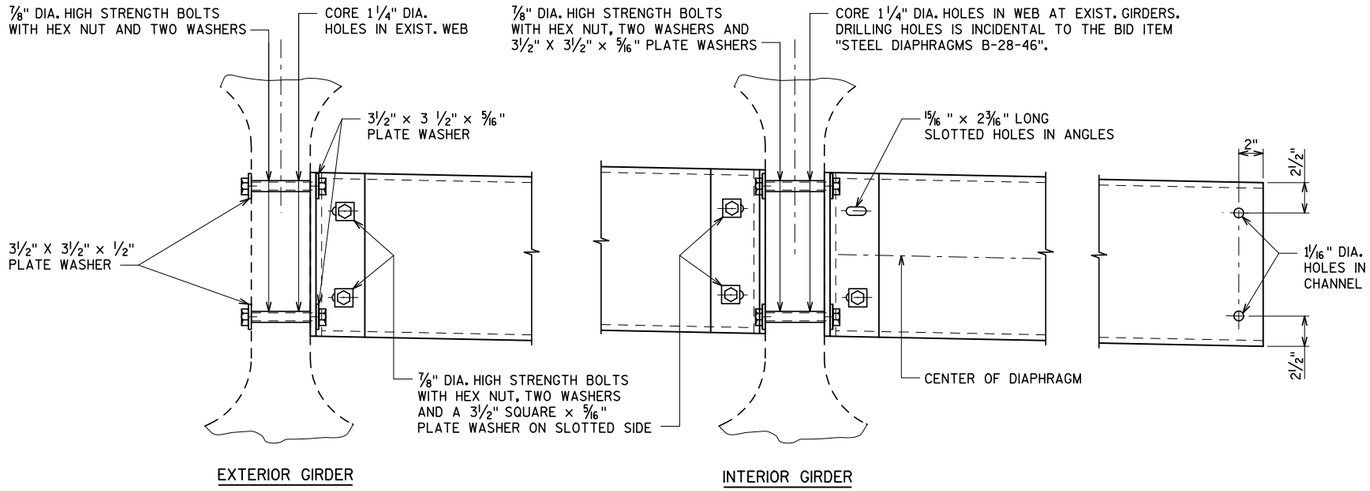
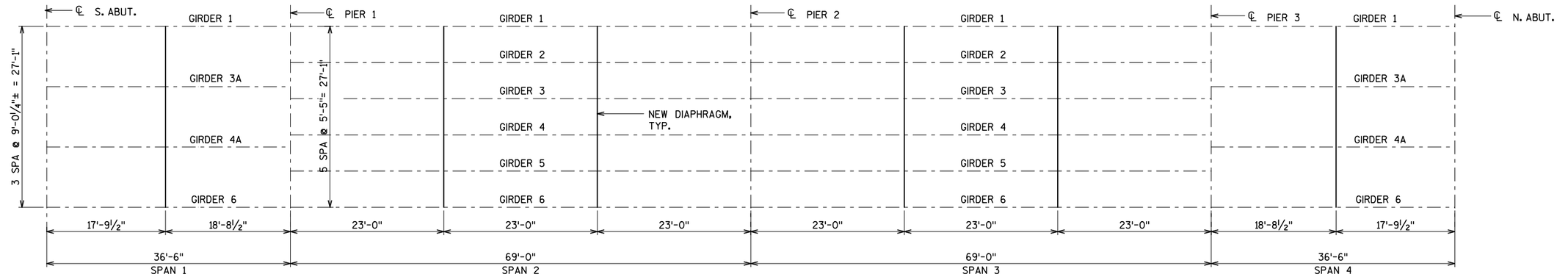


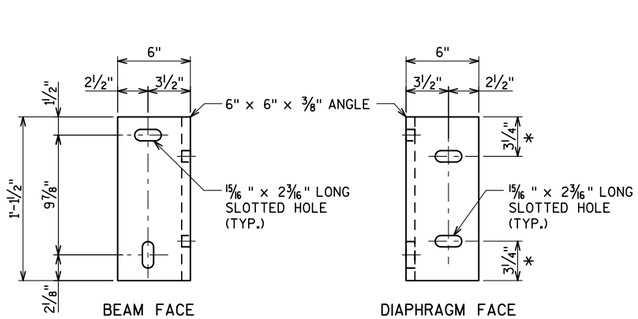
PART TRANSVERSE SECTION AT DIAPHRAGM



DETAIL B

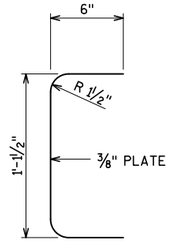


FRAMING PLAN

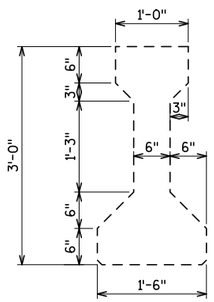


DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM

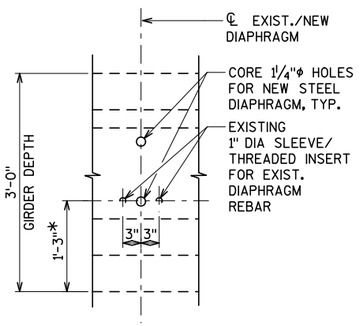


SECTION THRU ALTERNATE DIAPHRAGM



EXISTING GIRDER

(SHOWING DIMENSIONS)



VIEW A-A

* DIMENSION TO ℄ EXIST. SLEEVE

NOTES

ALL DIAPHRAGM MATERIAL SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-28-46", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

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STEEL DIAPHRAGM

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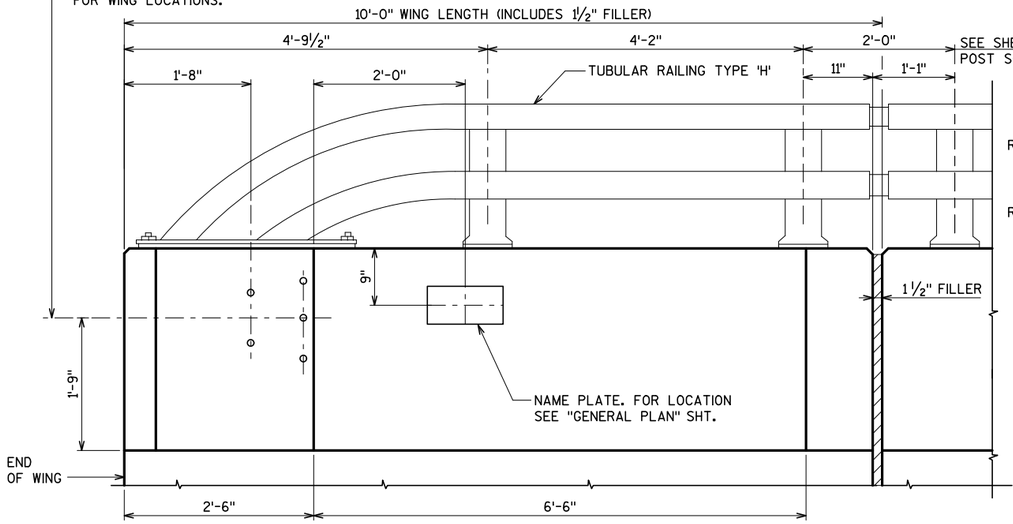
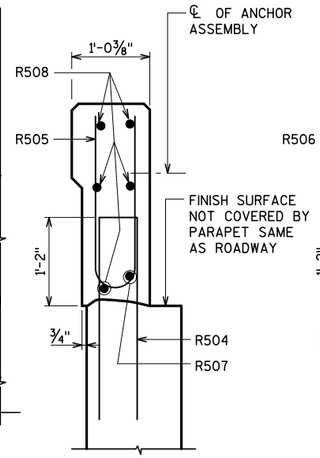
℄ OF ANCHOR ASSEMBLY FOR THRIE BEAM. SEE "GENERAL PLAN" SHT. FOR WING LOCATIONS.

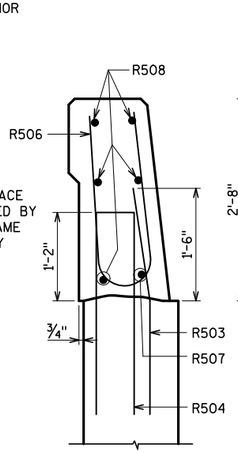


INSIDE ELEVATION



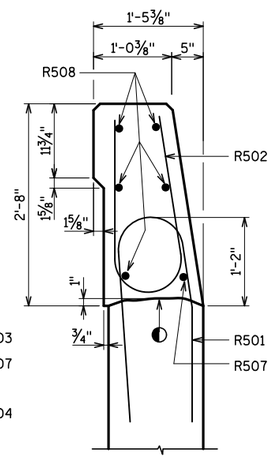
SECTION A-A

(TUBULAR RAILING NOT SHOWN FOR CLARITY)



SECTION B-B

(TUBULAR RAILING NOT SHOWN FOR CLARITY)

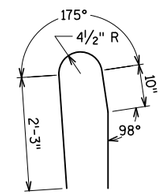


SECTION C-C

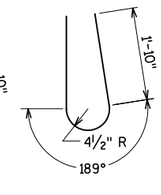
(TUBULAR RAILING NOT SHOWN FOR CLARITY)

BILL OF BARS

BAR MARK	COAT	NO. REQ'D S. ABUT.	NO. REQ'D N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	4	4	5'-10"	X	-	PARAPET VERT.
R502	X	4	4	5'-0"	X	-	PARAPET VERT.
R503	X	24	24	3'-0"	X	-	PARAPET VERT.
R504	X	34	34	5'-7"	X	-	PARAPET VERT.
R505	X	22	22	4'-9"	X	-	PARAPET VERT.
R506	X	12	12	4'-10"	X	-	PARAPET VERT.
R507	X	2	2	9'-7"	X	-	PARAPET HORIZ.
R508	X	10	10	9'-6"	-	-	PARAPET HORIZ.



R501



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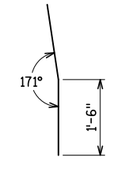
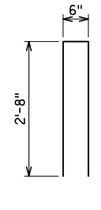
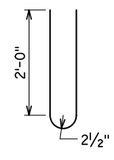


R503



R504



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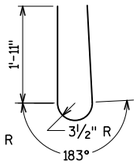

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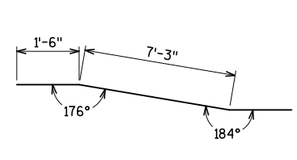
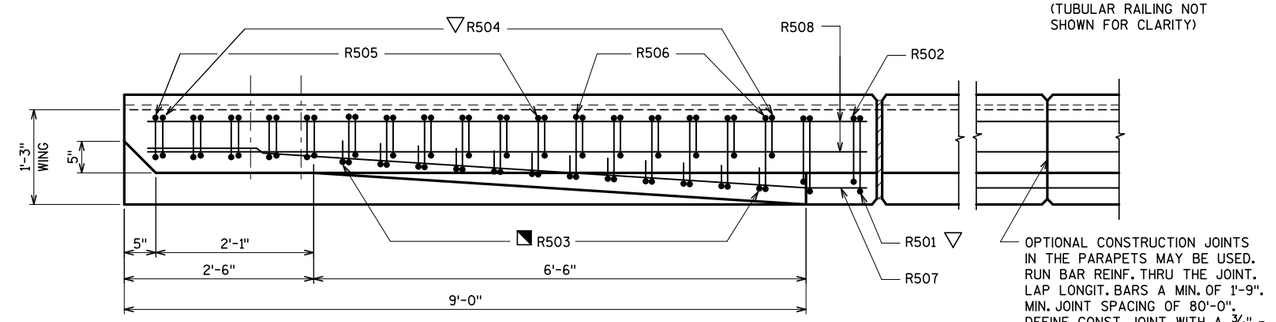
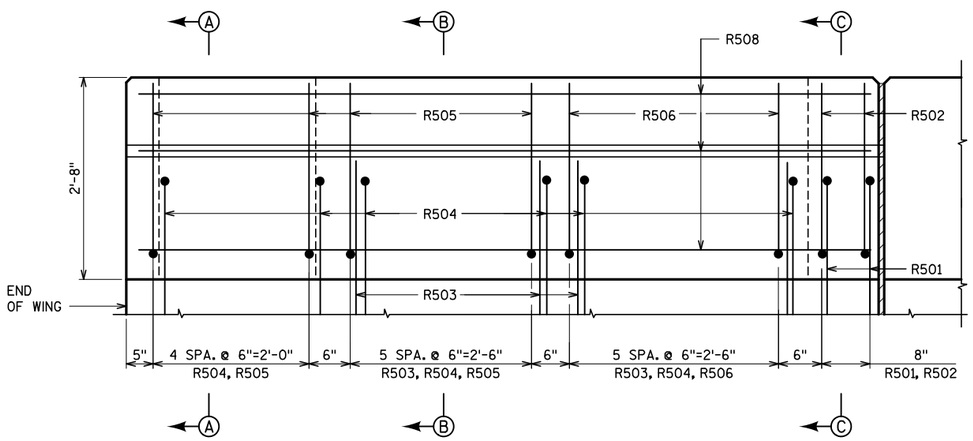


R507



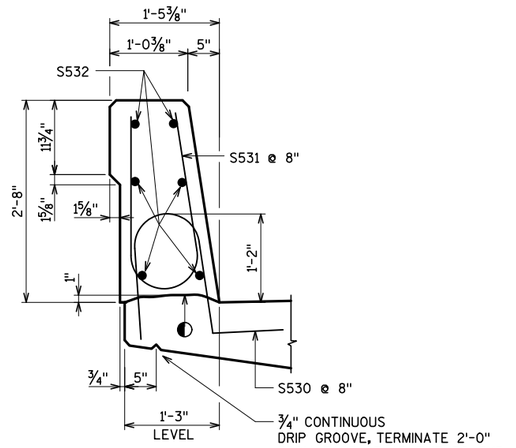
PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" - 'V' GROOVE.



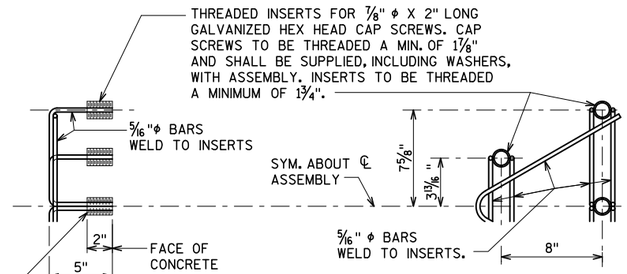
OUTSIDE ELEVATION

(TUBULAR RAILING NOT SHOWN FOR CLARITY)



SECTION THRU PARAPET ON BRIDGE

(TUBULAR RAILING NOT SHOWN FOR CLARITY)



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

LEGEND

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◥ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

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STATE OF WISCONSIN
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STRUCTURE B-28-46

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SINGLE SLOPE PARAPET 32SS

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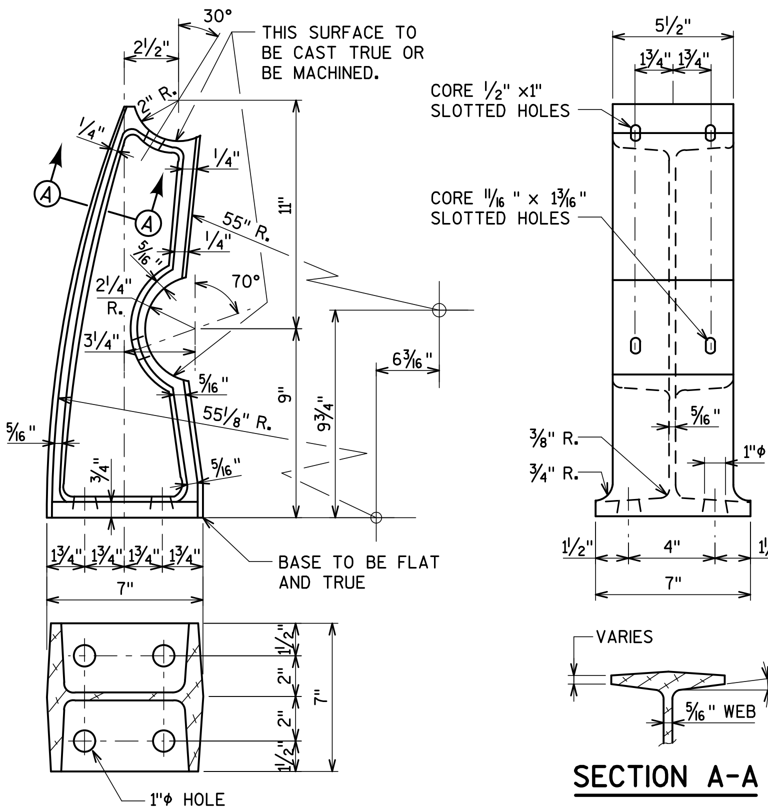
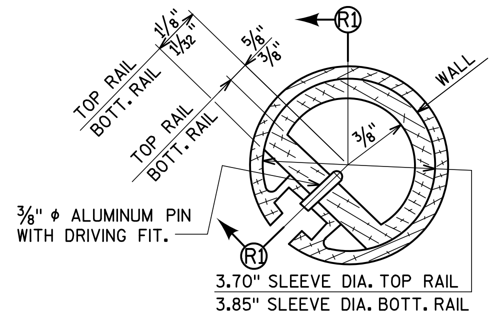
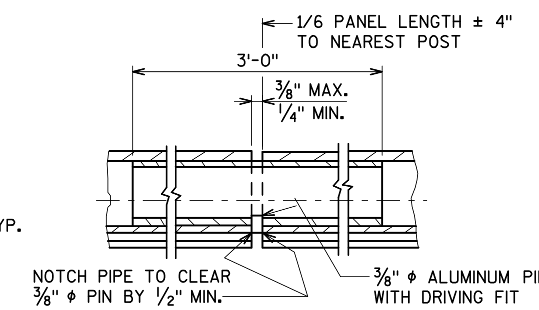


SECTION A-A

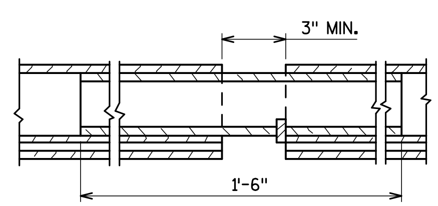
ALUMINUM POST CASTING



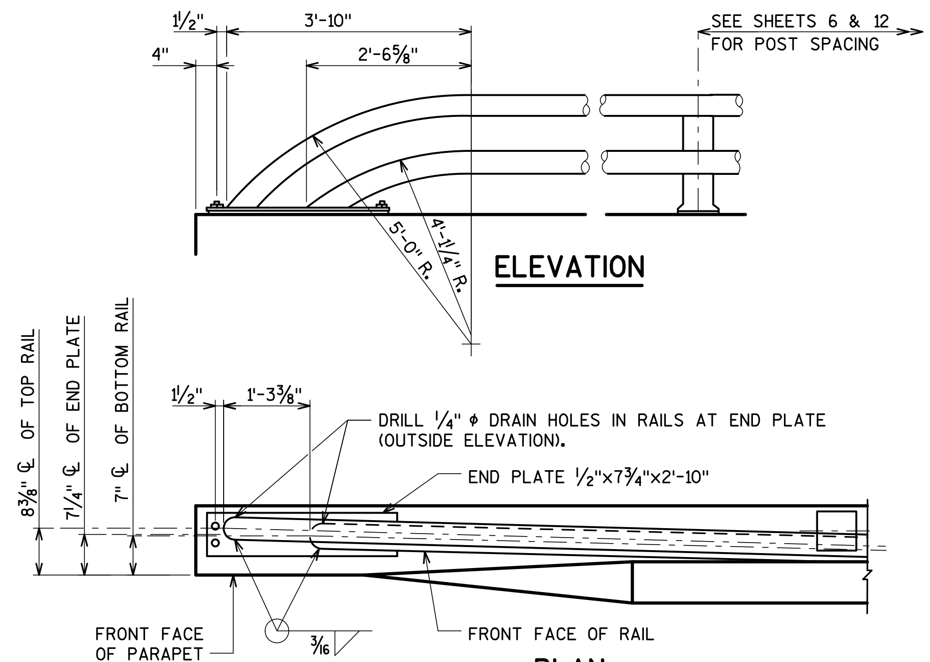
RAIL SPLICE DETAIL



SECTION R1



SLEEVE DETAIL AT ABUTMENT



DETAIL OF RAIL BEND AT ABUTMENTS

GENERAL NOTES

BID ITEM SHALL BE "RAILING TUBULAR TYPE H B-28-46" WHICH INCLUDES ALL ITEMS SHOWN.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

SHIMS SHALL CONFORM TO SAME MATERIAL AS POSTS.

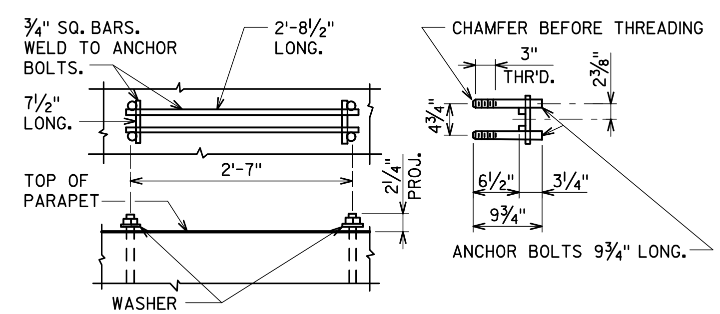
RAILINGS SHALL BE FABRICATED IN 2 AND 3 PANEL LENGTHS.

RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

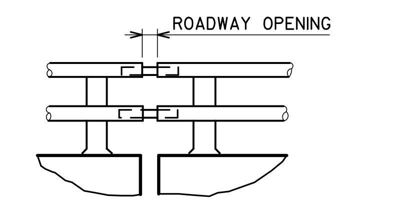
ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF THE POST BASE.

SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQ'D. FOR ALIGNMENT.

FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

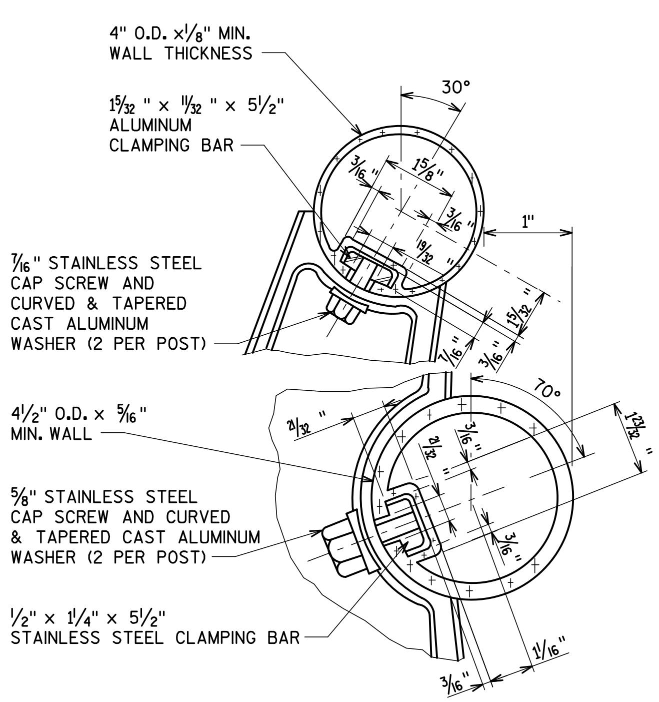


ANCHOR BOLTS AT END PLATE



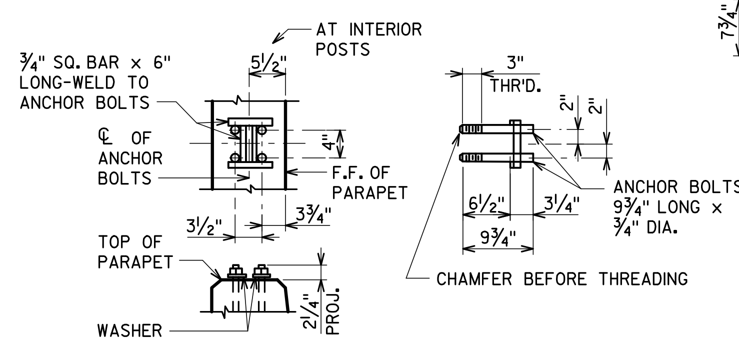
DETAIL AT RAIL OPENINGS

ALL SLEEVE DETAILS SAME AS "RAIL SPLICE DETAIL" UNLESS SHOWN OTHERWISE.

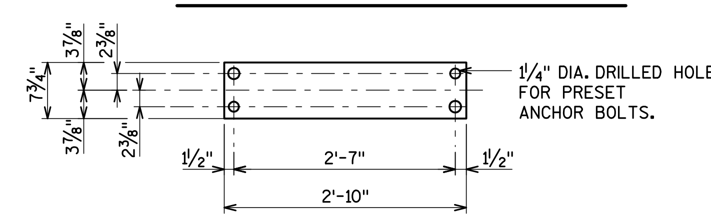


DETAIL OF RAIL ATTACHMENT TO POST

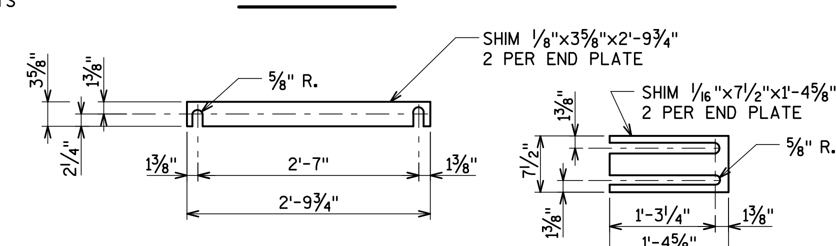
NOTES: MAX. REDUCTION IN DIAMETER OF BENT SECTION SHALL BE 3%
WALL THICKNESS OF TUBING SHOWN ABOVE SHALL BE MIN. NOMINAL AVERAGE WALL THICKNESS.
MAX. REDUCTION IN SLOT WIDTH IN BENT TUBING SHALL BE 3/16".



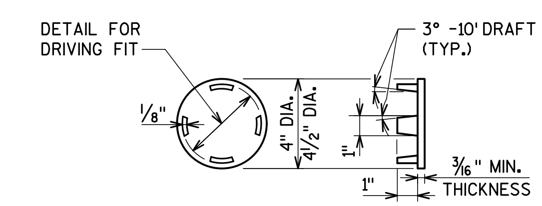
ANCHOR BOLTS AT POSTS



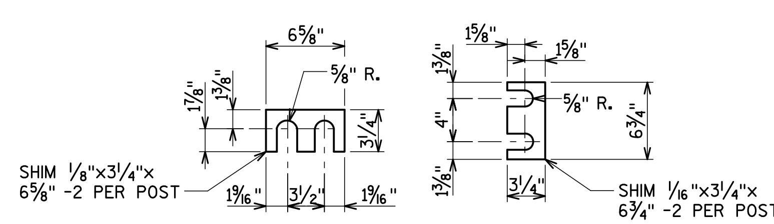
END PLATE



END PLATE SHIM DETAILS



RAIL CLOSURE CAP DETAIL



POST SHIM DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB — PLANS CK'D. BDT

TUBULAR RAILING TYPE 'H' (ALUM.)

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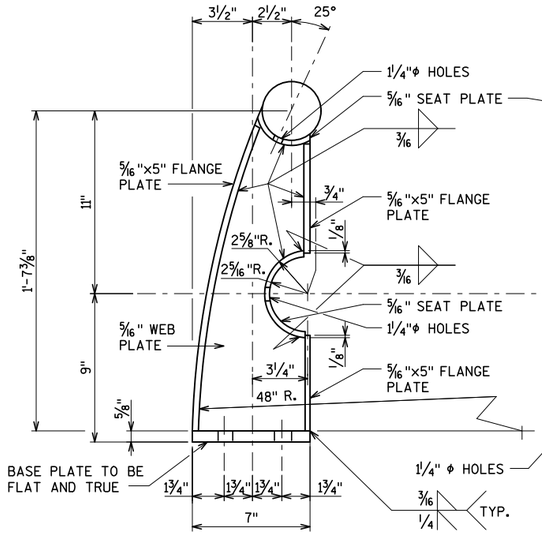
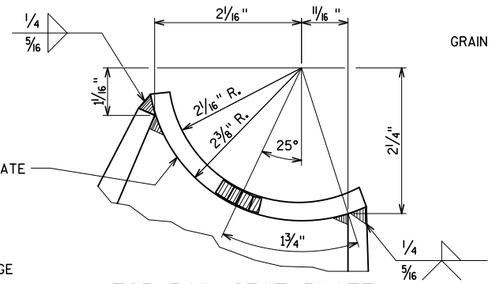
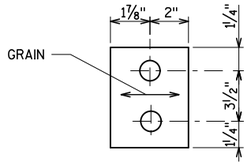


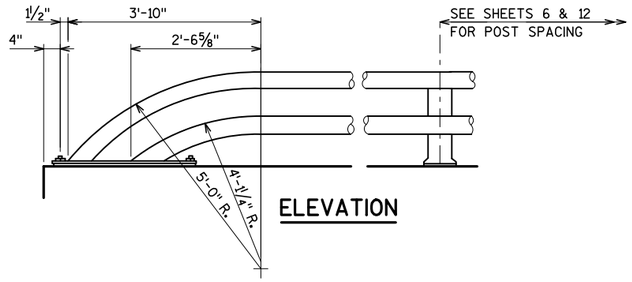
TOP RAIL SEAT PLATE



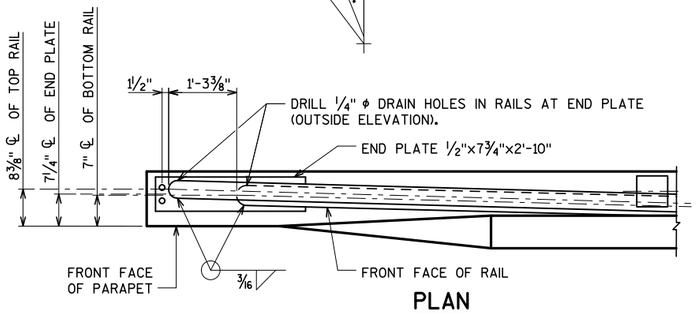
LAYOUT OF TOP RAIL SEAT PLATE



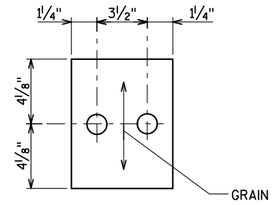
ELEVATION



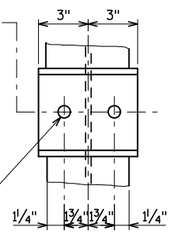
PLAN

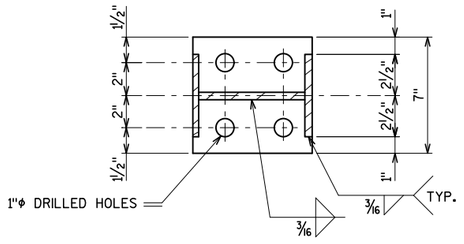


DETAIL OF RAIL BEND AT ABUTMENTS

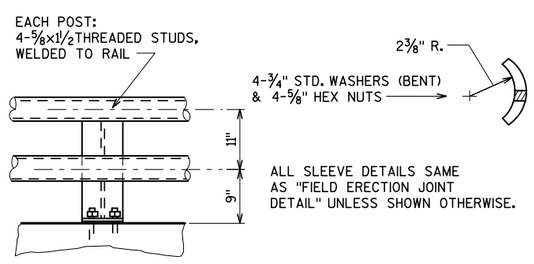


LAYOUT OF BOTTOM RAIL SEAT PLATE

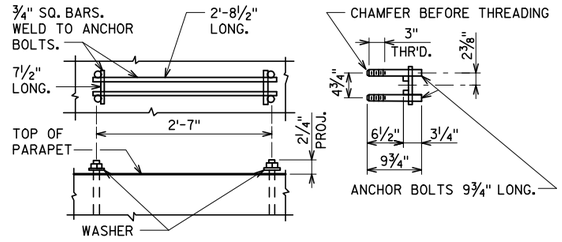




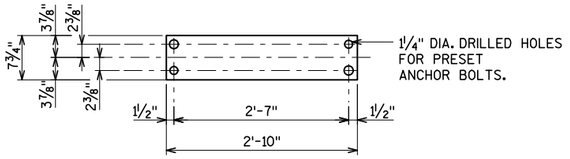
STEEL POST DETAILS



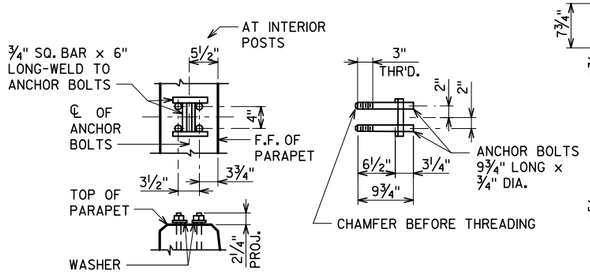
RAIL TO POST CONN.



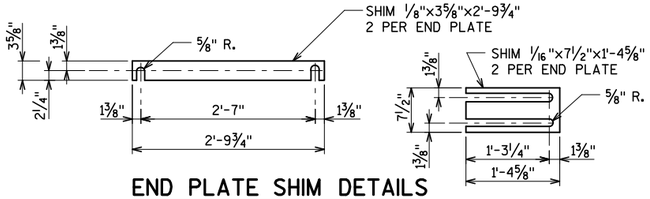
ANCHOR BOLTS AT END PLATE



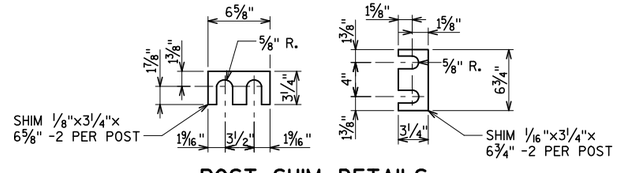
END PLATE



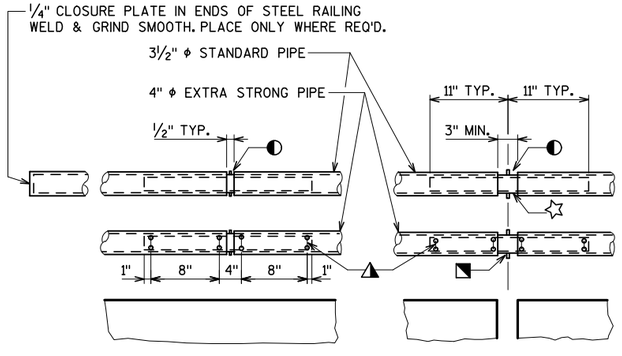
ANCHOR BOLTS AT POSTS



END PLATE SHIM DETAILS



POST SHIM DETAILS



FIELD ERECTION JOINT DETAIL

DETAIL AT RAIL OPENING

GENERAL NOTES

BID ITEM SHALL BE "RAILING TUBULAR TYPE H B-28-46" WHICH INCLUDES ALL ITEMS SHOWN.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM A307. IF A307 IS USED ELECTRO-GALVANIZE NUTS, WASHERS & TOP 3½" OF ANCHOR BOLTS.

CLOSURE ENDS ON STEEL RAILING SHALL BE ¼" PLATE. WELD AND GRIND SMOOTH.

RAILINGS SHALL BE FABRICATED IN 2 AND 3 PANEL LENGTHS.

RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF THE POST BASE.

SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQ'D. FOR ALIGNMENT.

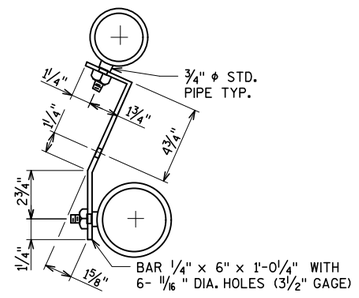
FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

RAILS, POSTS & SHIMS SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709, GRADE 36.

ALL MATERIALS, EXCEPT ANCHORAGES, SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

LEGEND

- ◐ 5/16" x ⅜" WELDED STUDS
- ☆ 3" ϕ STD. PIPE x 1'-10 LONG
- ◥ 3" ϕ EXTRA STRONG PIPE x 1'-10 LONG
- ◭ 11" CIRCUMF. GRIND BEADS SO THAT ½" ϕ WELD BEADS AT 1/3 PTS. ON PIPE SLEEVE FITS FREELY IN THE I.D. OF 4" ϕ EXTRA STRONG PIPE.



SHIPPING BAR

END SECTION ONLY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

TUBULAR RAILING TYPE 'H' (STEEL)

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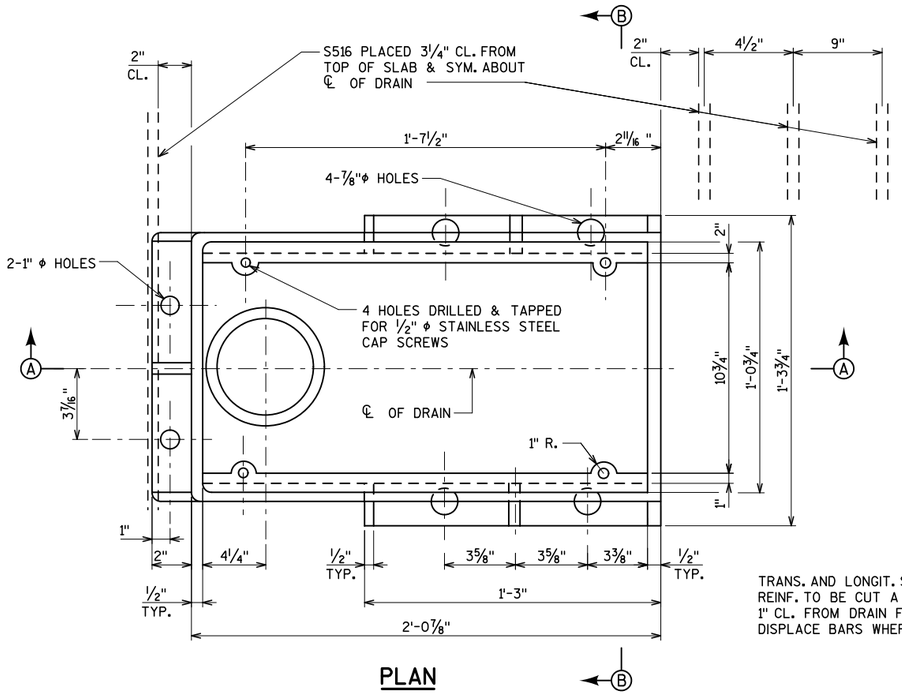
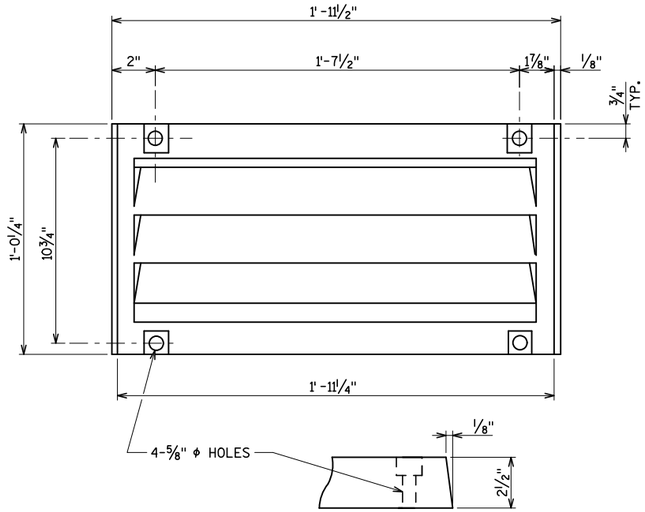


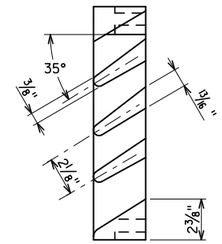
PLAN

TRANS. AND LONGIT. SLAB BAR REINF. TO BE CUT A MAX. OF 1" CL. FROM DRAIN FRAME. DISPLACE BARS WHERE POSSIBLE.



GRATE CASTING DETAIL

ATTACH GRATE TO FRAME FOR SHIPMENT



NOTES

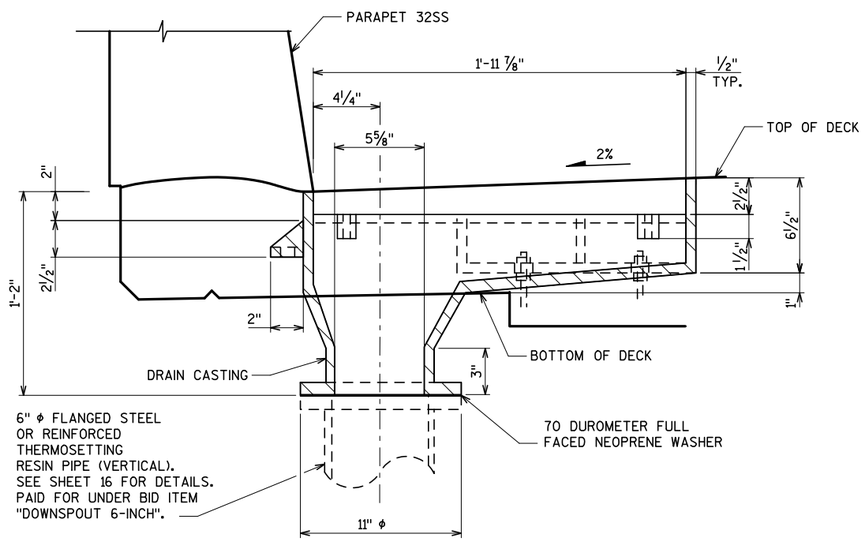
BID ITEM IS "FLOOR DRAINS TYPE GC" AND SHALL INCLUDE ALL ITEMS SHOWN, EXCEPT AS NOTED.

ALL MATERIAL FOR TYPE "GC" CASTING, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO ASTM A48, CLASS 30. (APPROXIMATE WEIGHT = 225#)

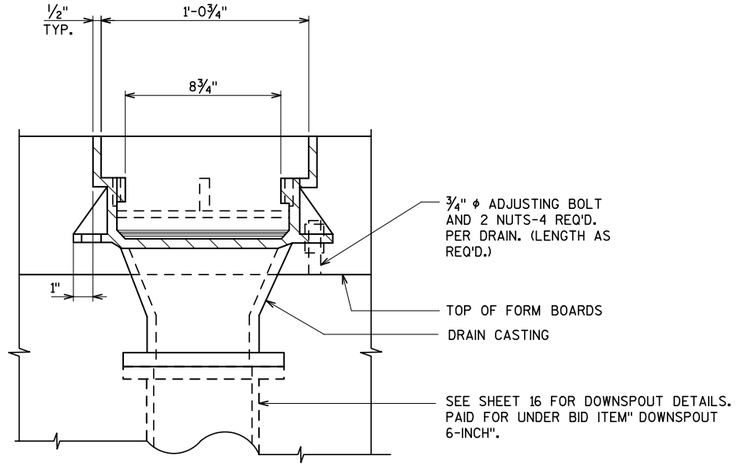
MATERIAL FOR BRACKETS SHALL CONFORM TO ASTM A36.

THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

FLANGED 6" DIA. DOWNSPOUTS SHALL BE EITHER CAST STEEL OR REINFORCED THERMOSETTING RESIN PIPE CONFORMING TO SECTION 514 OF THE STANDARD SPECIFICATIONS.



SECTION A-A



SECTION B-B

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

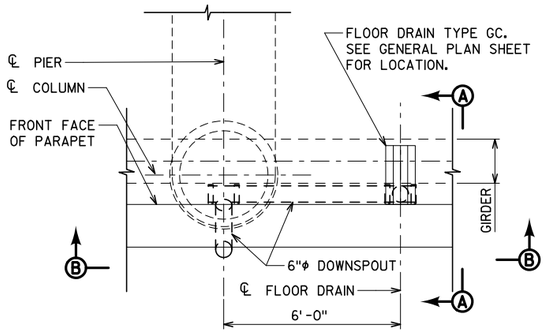
DRAWN BY TB | PLANS CK'D. BDT

FLOOR DRAIN TYPE 'GC'

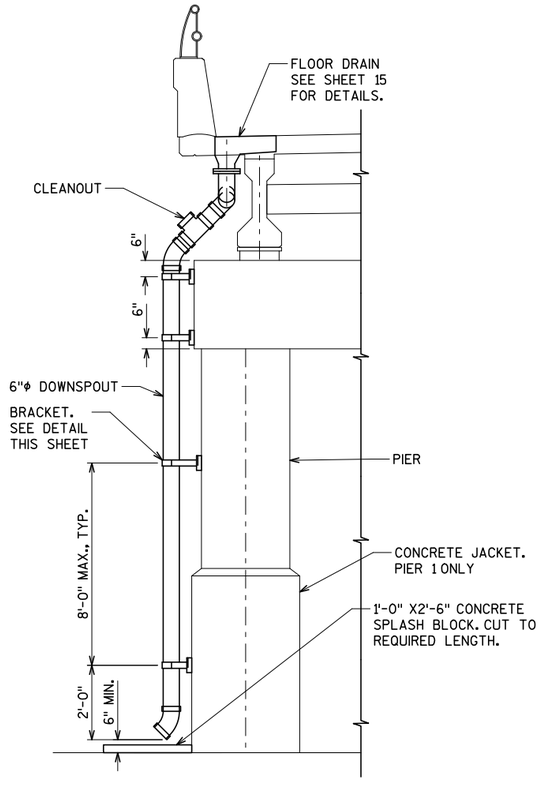
SHEET 15 OF 17

55

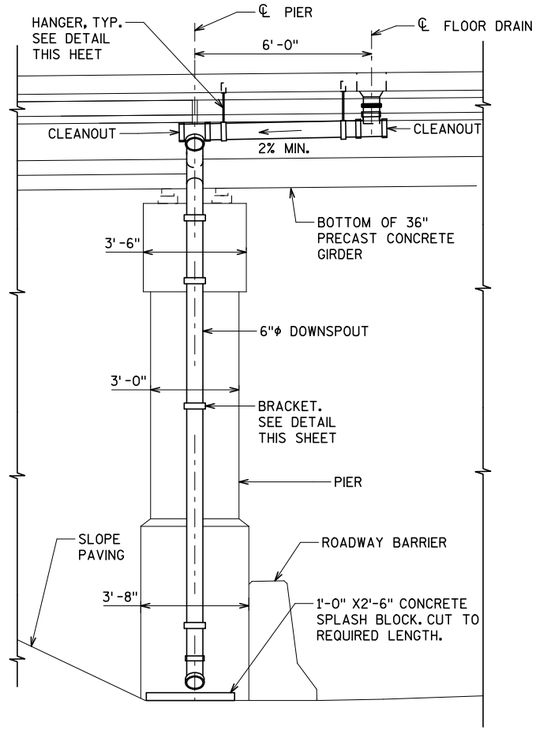
STATE PROJECT NUMBER
1066-06-70



PLAN



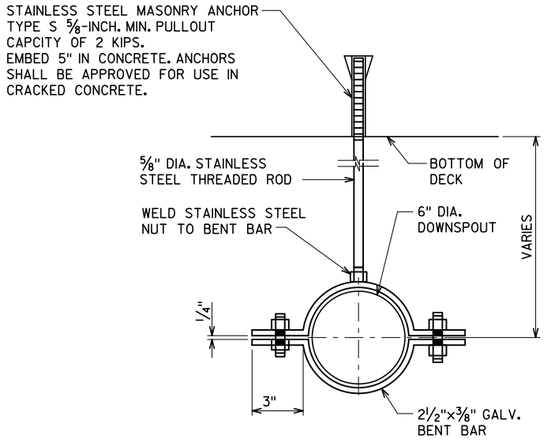
SECTION A-A



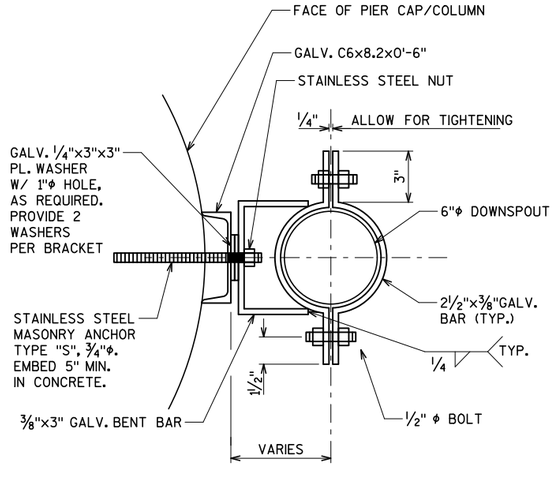
VIEW B-B

NOTES

1. BID ITEM IS "DOWNSPOUT 6-INCH" AND SHALL INCLUDE ALL ITEMS SHOWN.
2. 6" DIA. DOWNSPOUTS SHALL BE REINFORCED THERMOSETTING RESIN PIPING (RTRP).
3. ALL BRACKET STEEL SHOWN AND BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENTS OF S1 OF ASTM A563.



HANGER DETAIL



BRACKET DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

DRAWN BY TB | PLANS CK'D. BDT

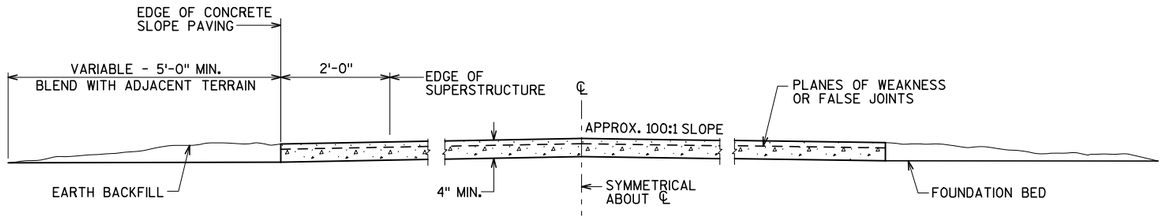
DOWNSPOUT

SHEET 16 OF 17
56

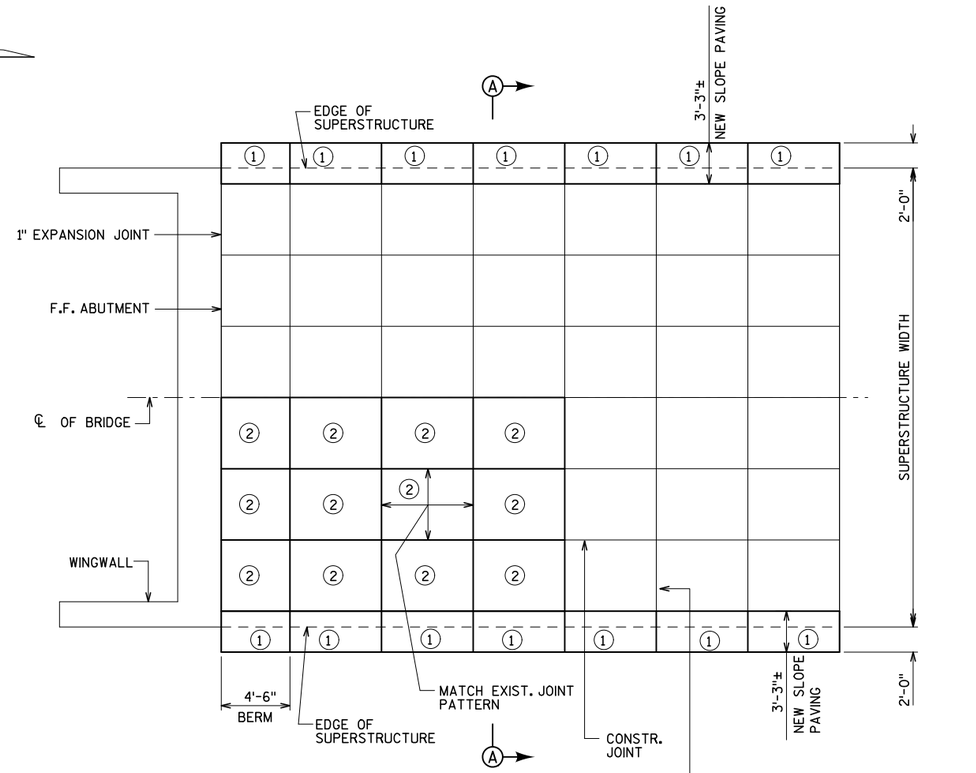
8

8

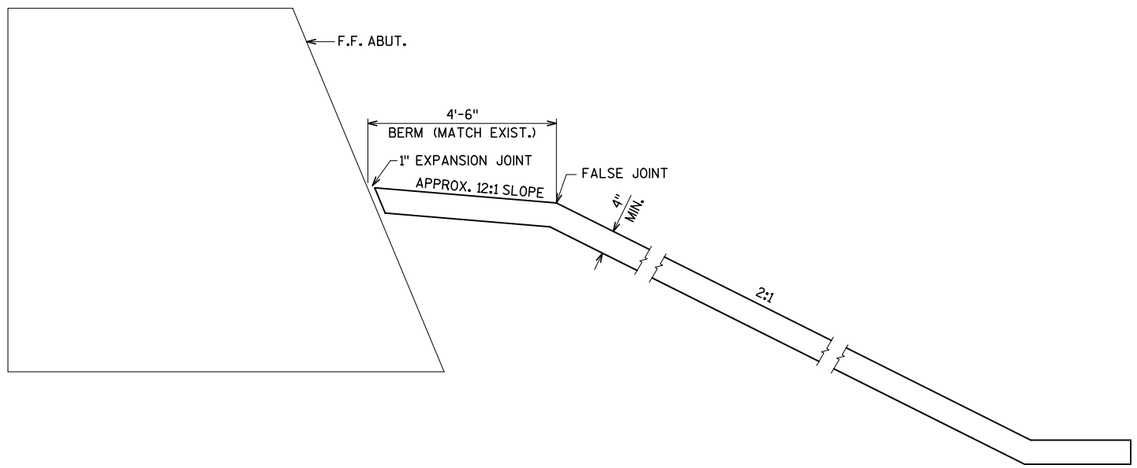
STATE PROJECT NUMBER
1066-06-70



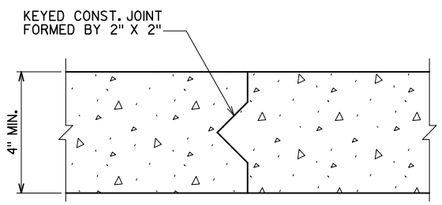
SECTION A-A



CONSTRUCTION JOINT DESIGN



TYPICAL SECTION



CONSTRUCTION JOINT

LEGEND

① NEW SLOPE PAVING PANELS (FOR NORTH AND SOUTH ABUTMENTS)

② REMOVE AND REPLACE EXISTING SLOPE PAVING PANELS (ONLY FOR NORTH ABUTMENT)

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN HEREON SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-28-46

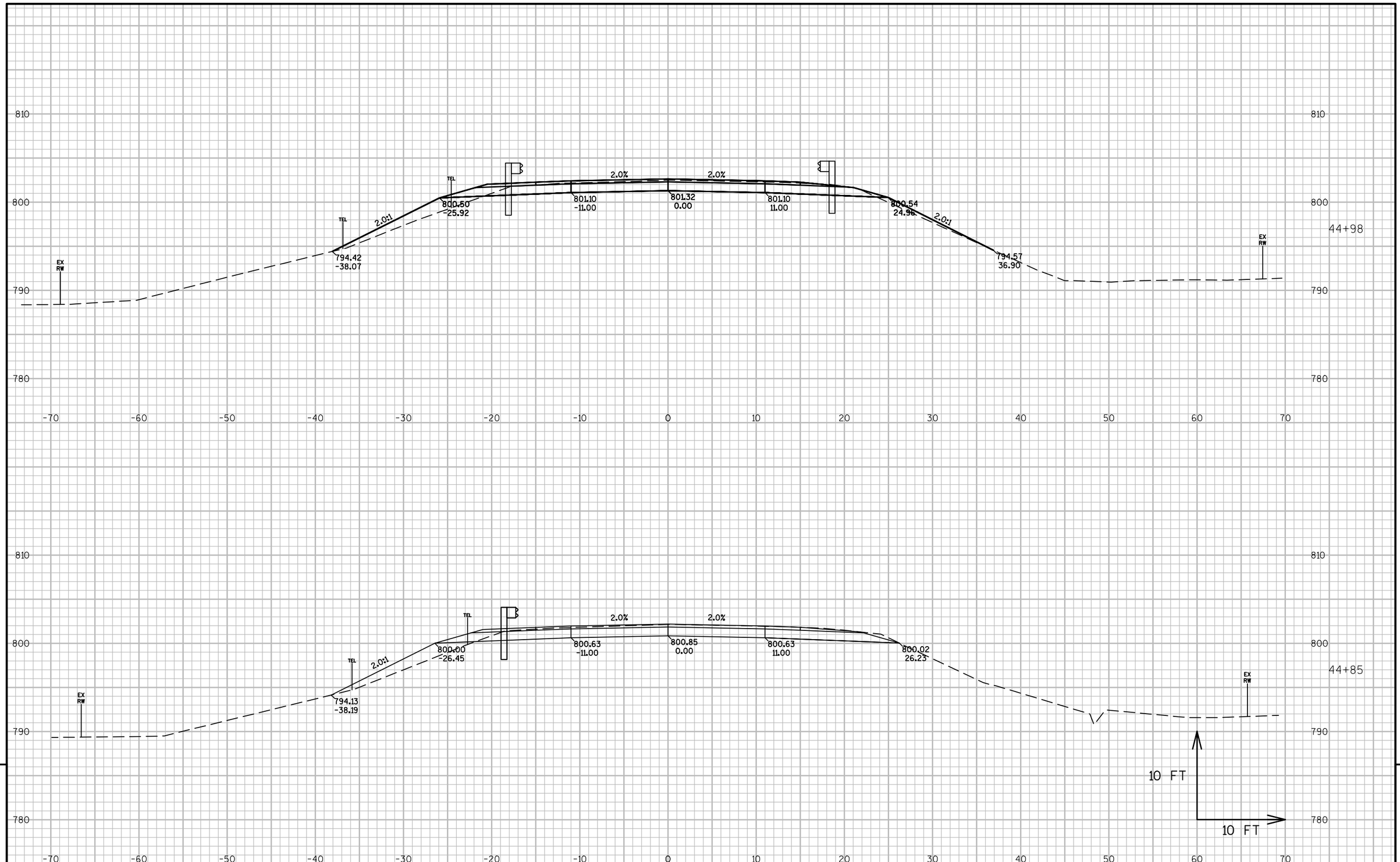
DRAWN BY	TB	PLANS CK'D.	BDT

SLOPE PAVING

SHEET 17 OF 17

8

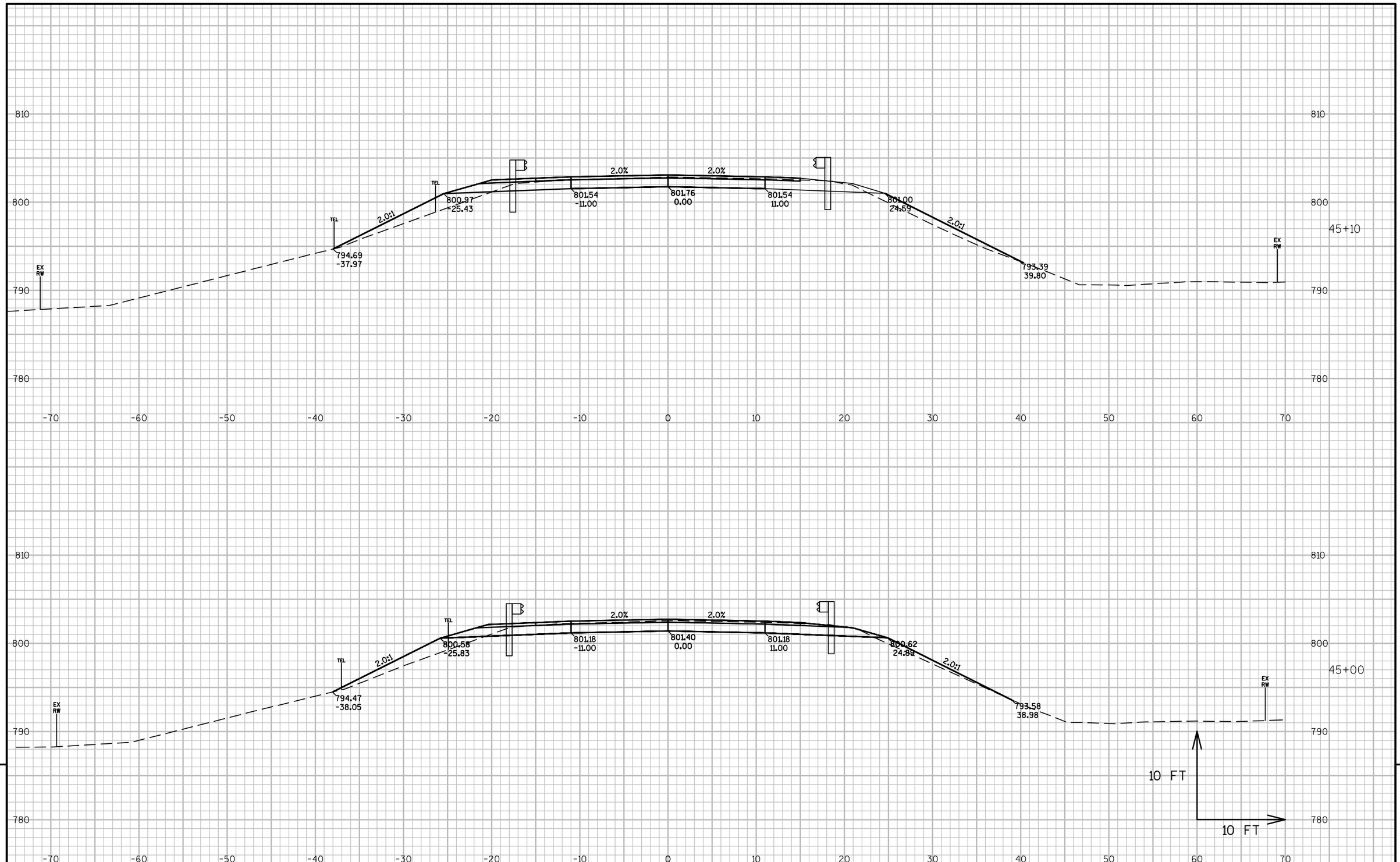
8



PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 58	E

FILE NAME : N:\PDS\C3D\10660601\SHEETSPLAN\090201-XS\090201-XSEC.DWG
LAYOUT NAME - SECTION SHEET - (11)

PLOT DATE : 5/8/2015 2:58 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:10 FT

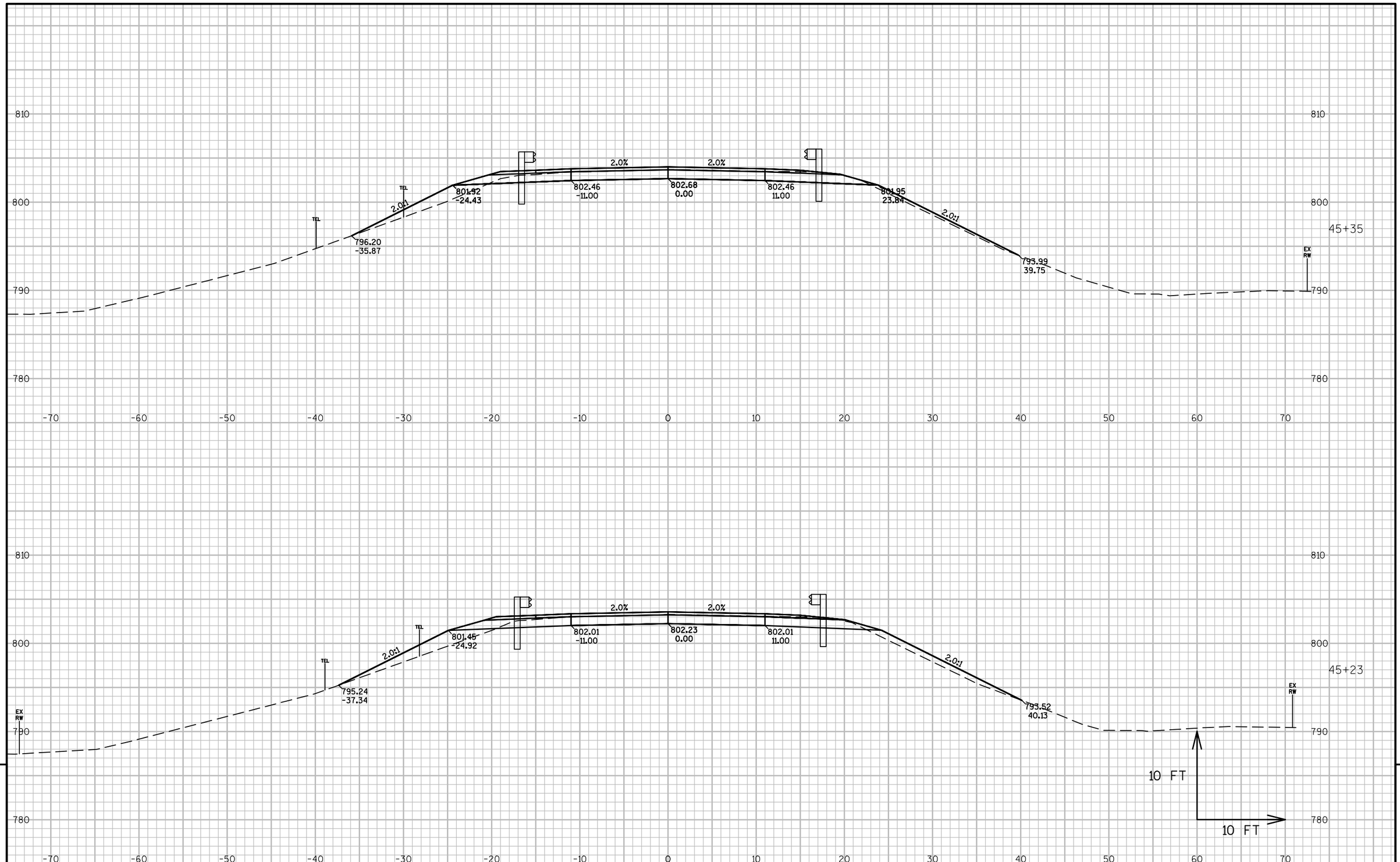


PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 59 E

FILE NAME : N:\PDS\C3D\10660601\SHEETSPLAN\090201-XS\090201-XSEC.DWG
LAYOUT NAME - SECTION SHEET - (12)

PLOT DATE : 5/8/2015 2:58 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



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PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 60	E

FILE NAME : N:\PDS\C3D\10660601\SHEETSPLAN\090201-XS\090201-XSEC.DWG
LAYOUT NAME - SECTION SHEET - (13)

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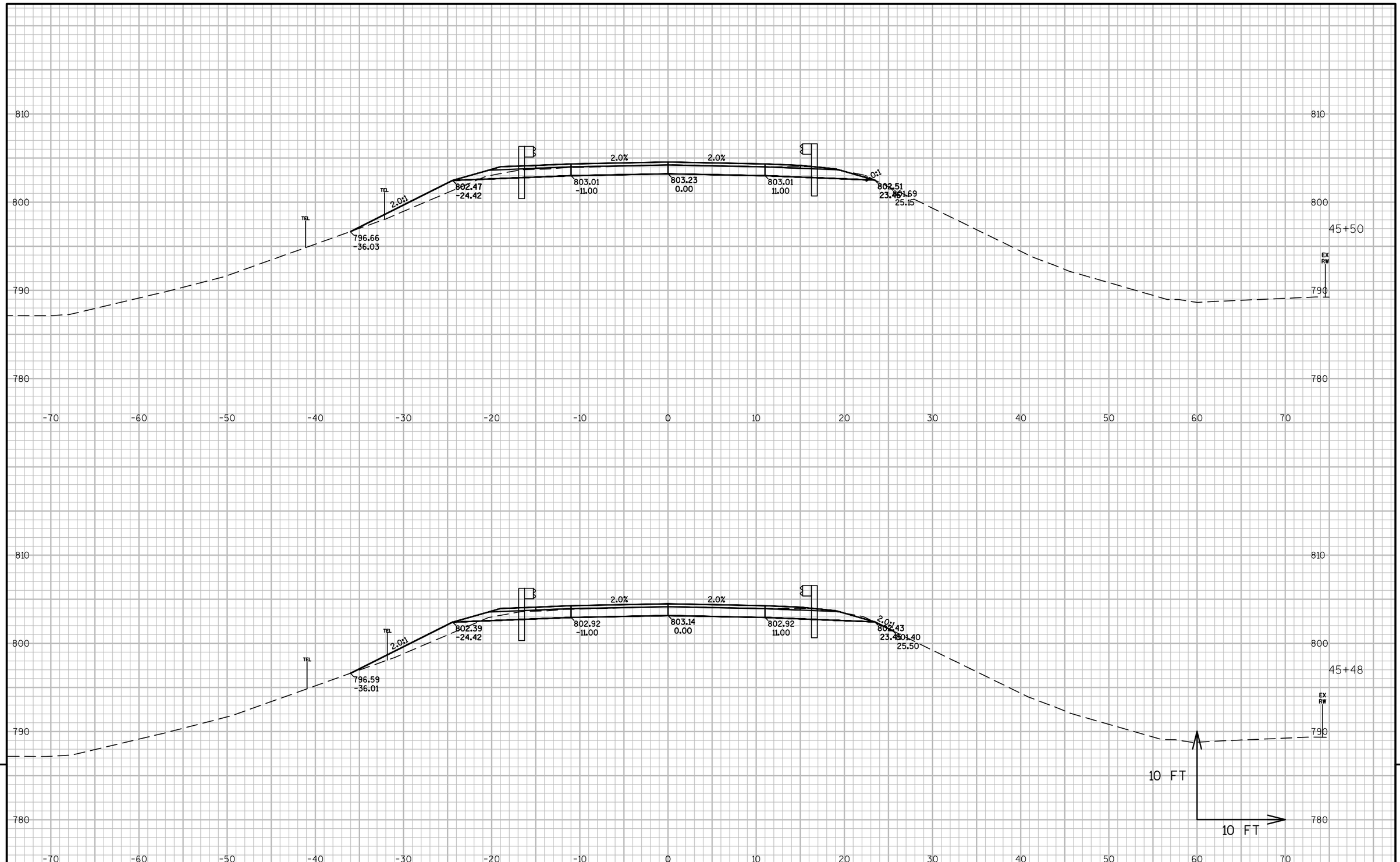

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PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 61	E

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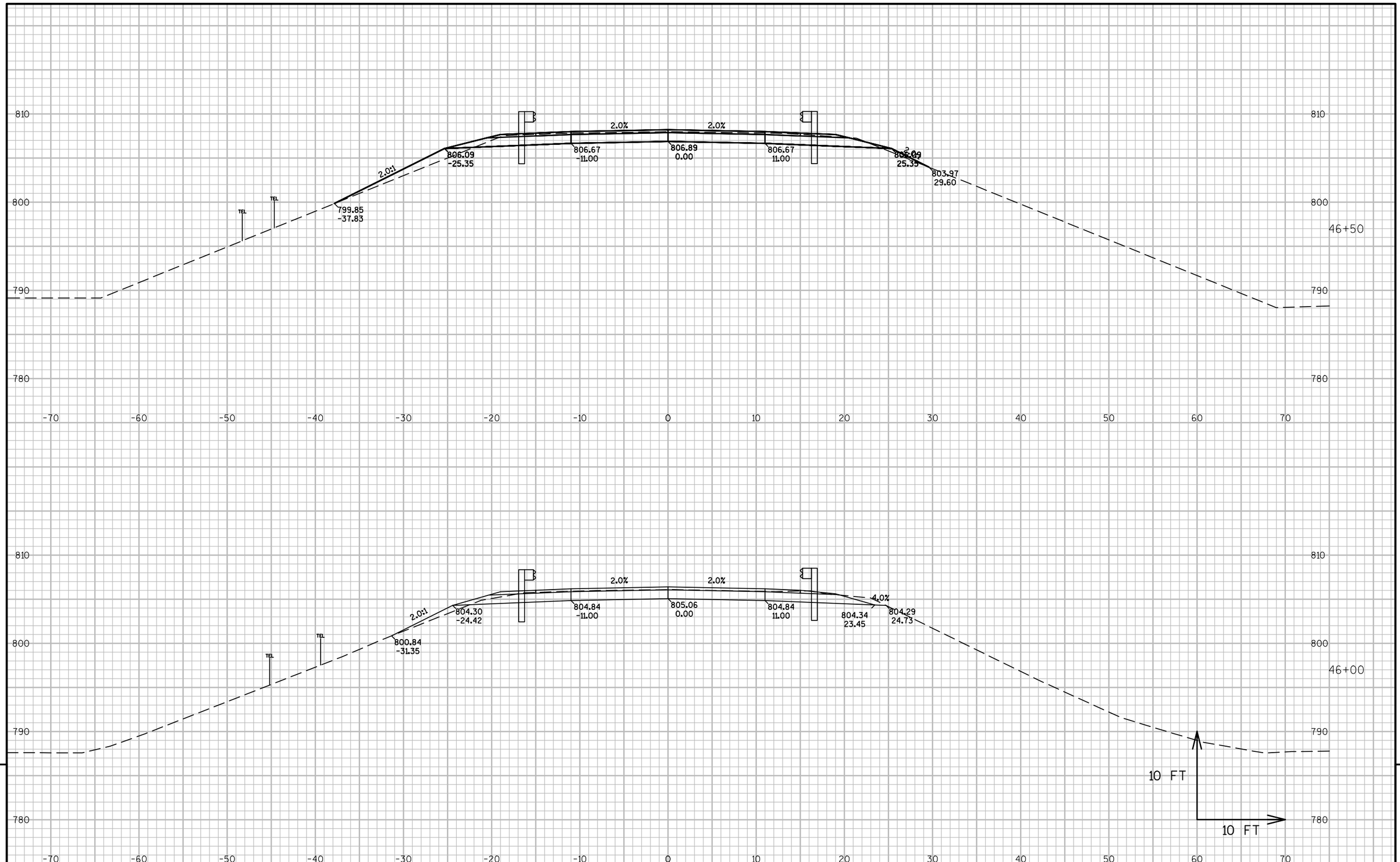
LAYOUT NAME - SECTION SHEET - (14)

PLOT DATE : 5/8/2015 2:58 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



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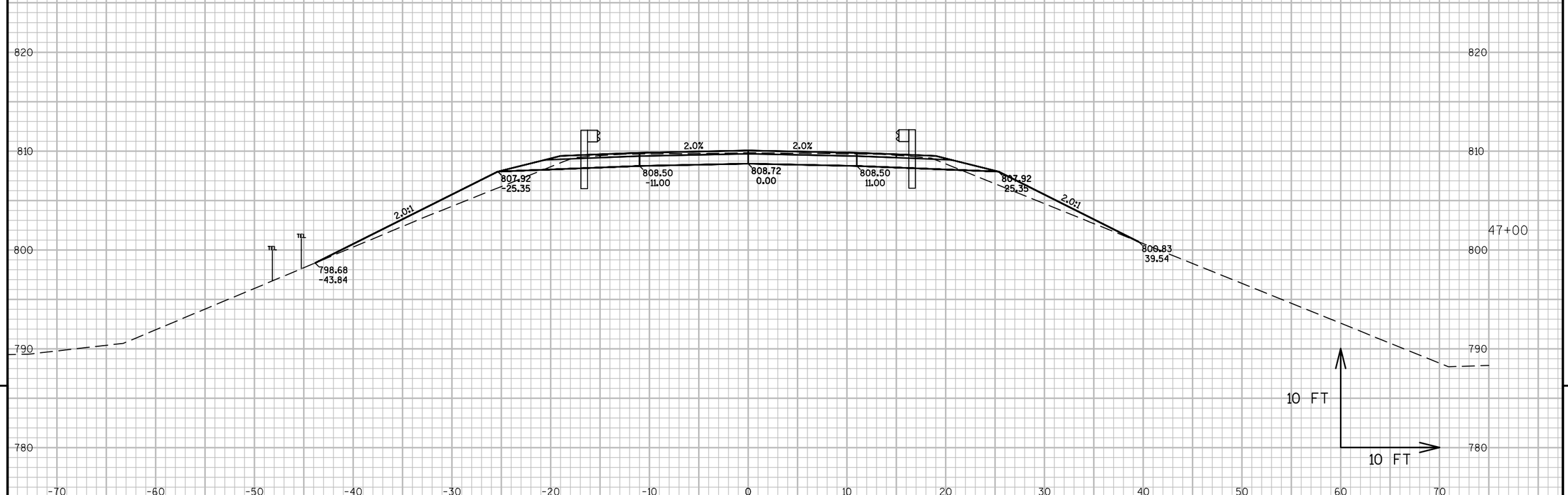
PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 62	E

9

FILE NAME : N:\PDS\C3D\10660601\SHEETSPLAN\090201-XS\090201-XSEC.DWG
LAYOUT NAME - SECTION SHEET - (15)

PLOT DATE : 5/8/2015 2:58 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



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PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 63	E

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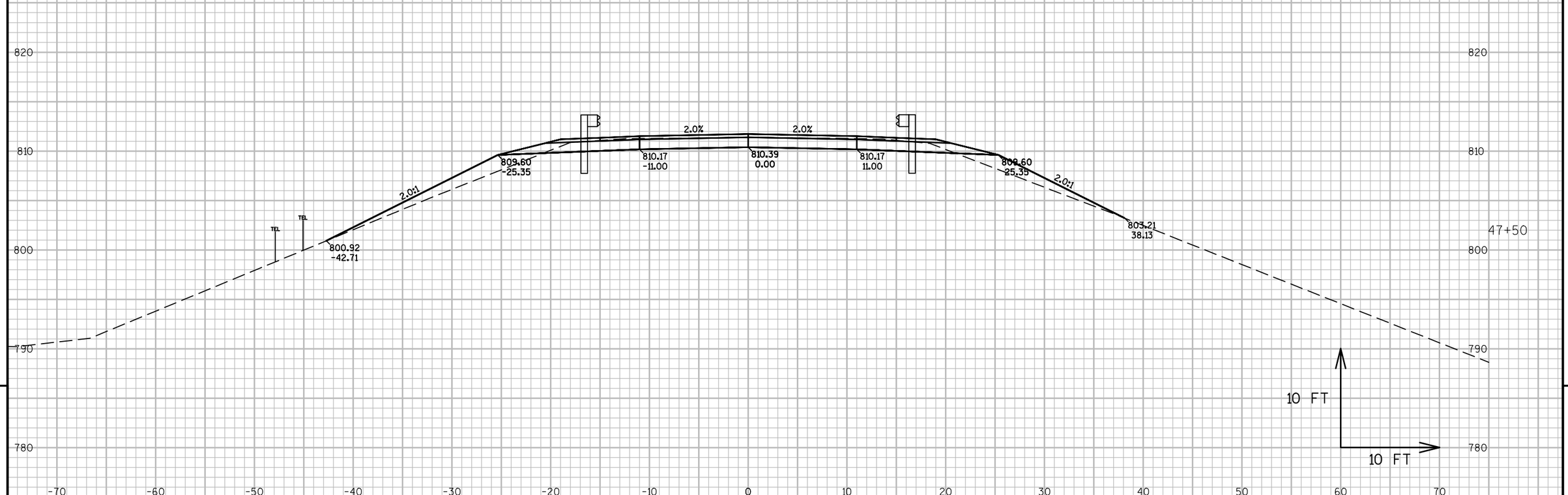

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PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 64	E

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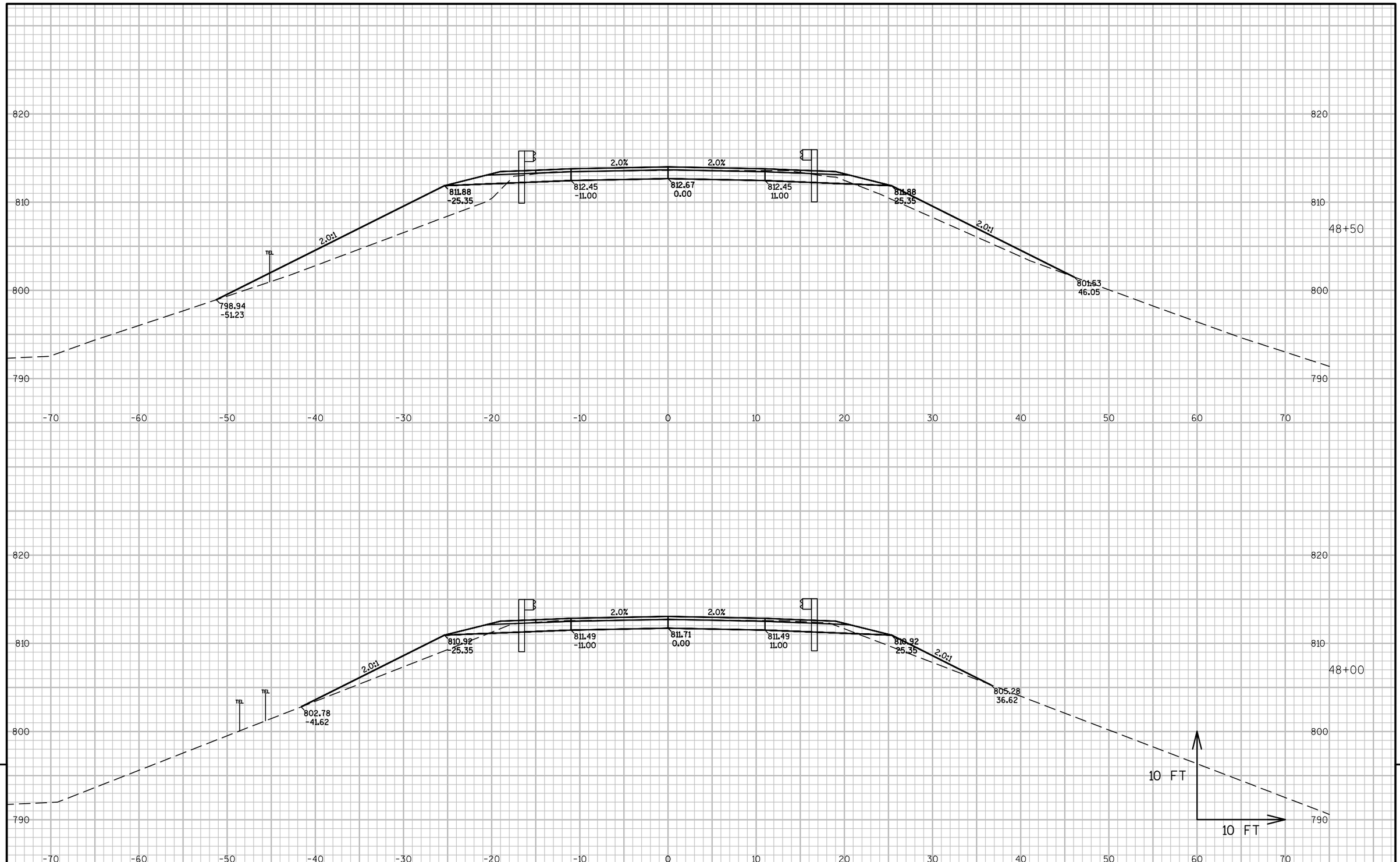

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PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 65	E

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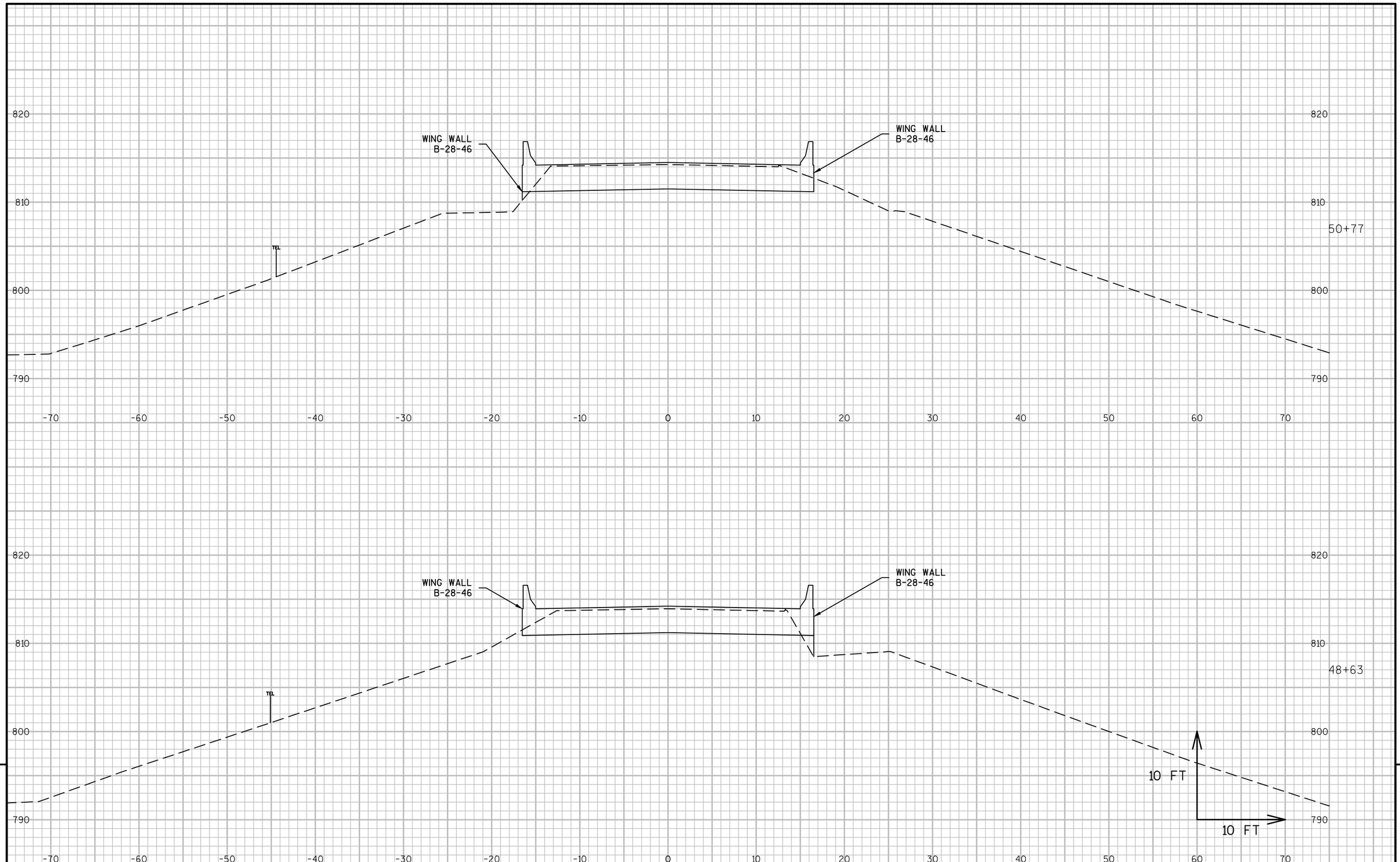
LAYOUT NAME - SECTION SHEET - (18)

PLOT DATE : 5/8/2015 2:58 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



9

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PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 66	E

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LAYOUT NAME - SECTION SHEET - (19)

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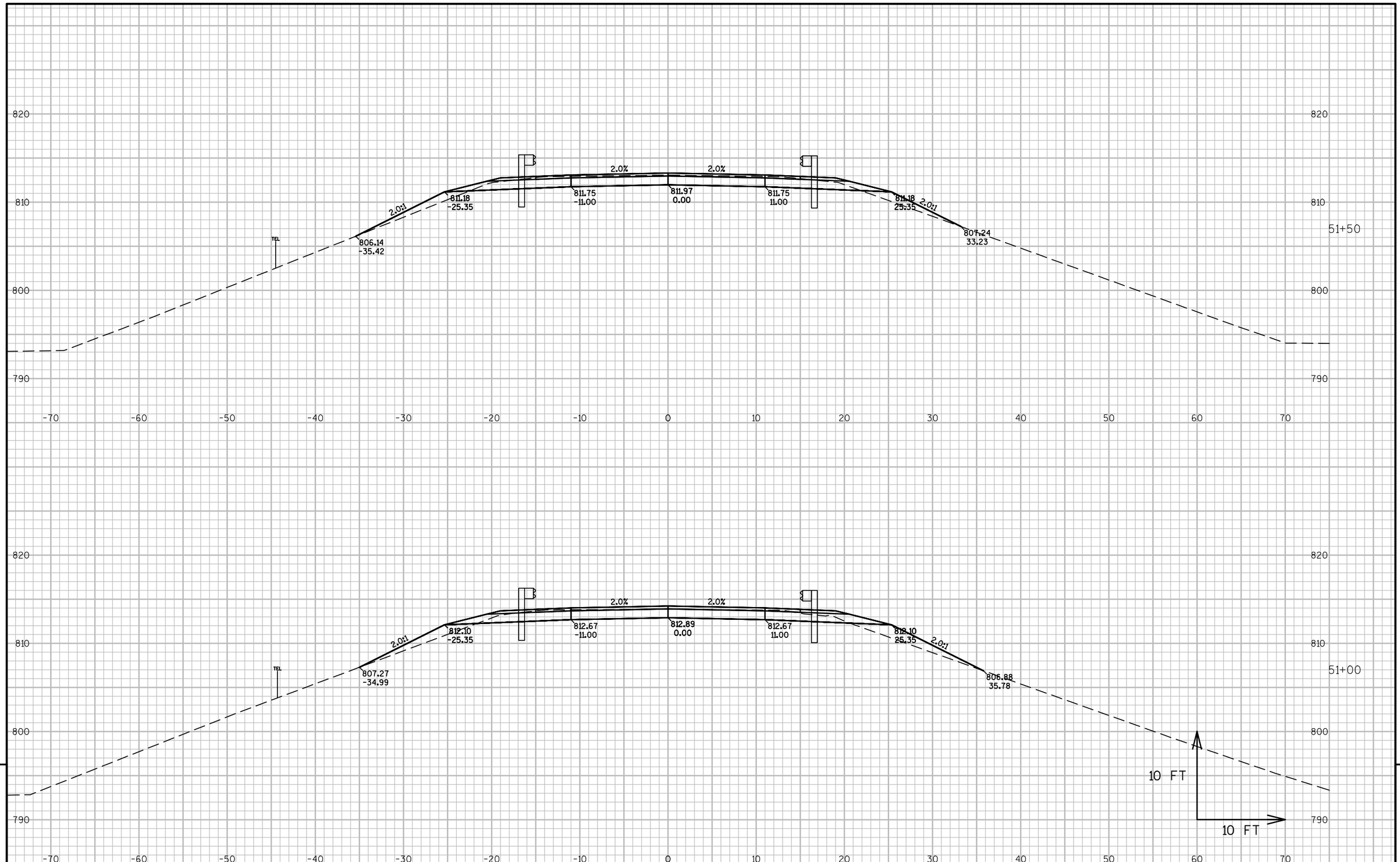
WISDOT/CADDS SHEET 49



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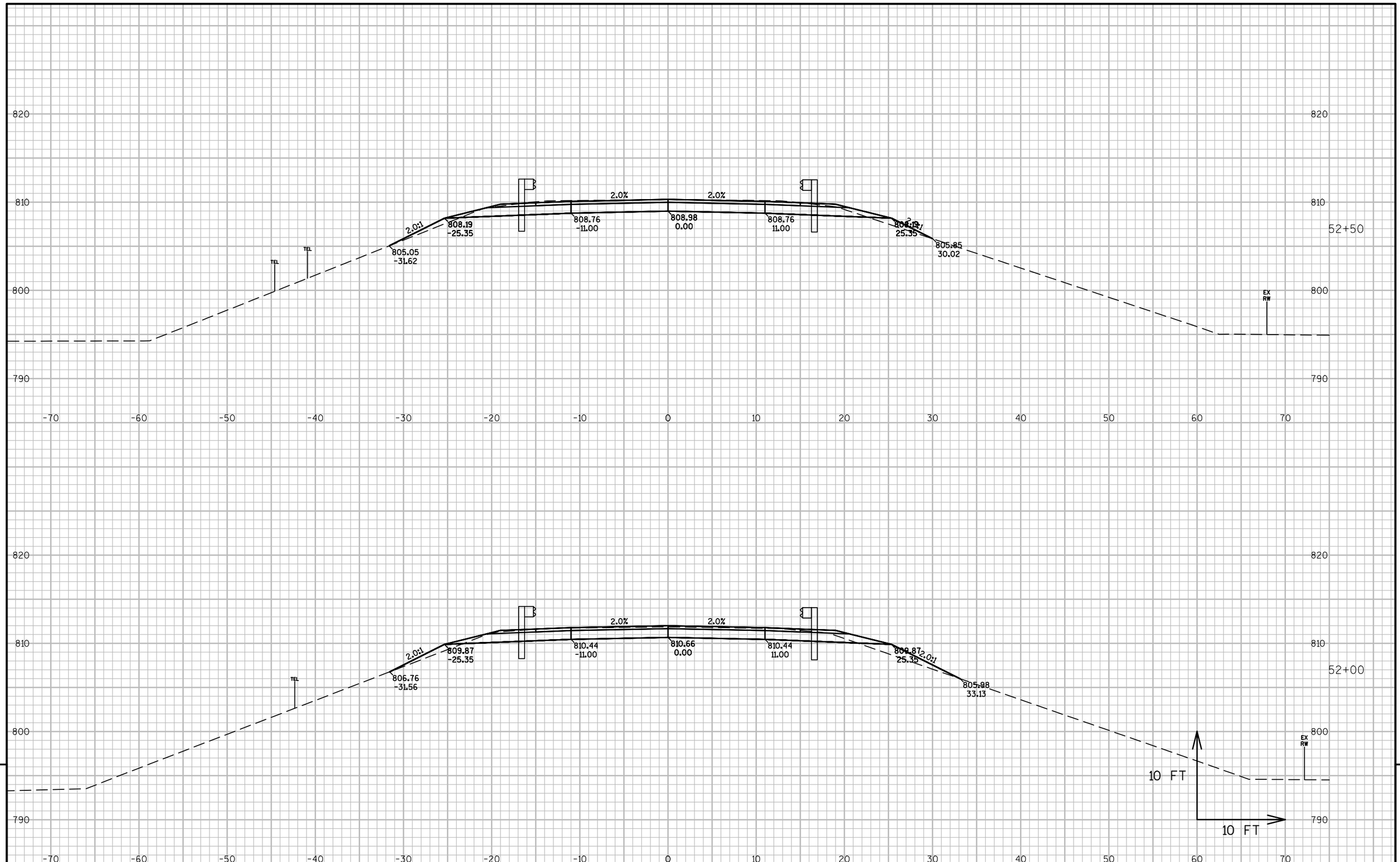

PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 68	E

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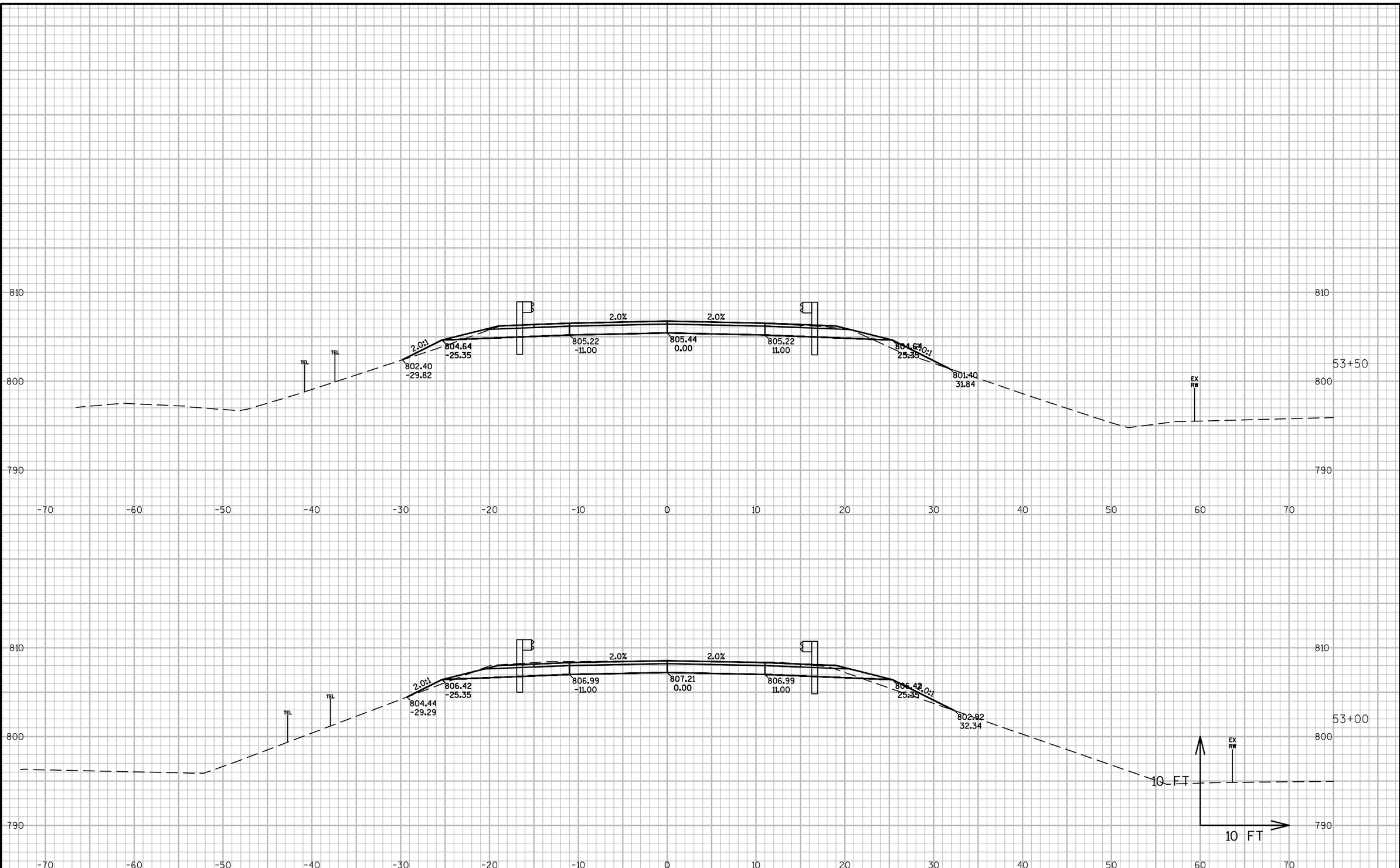

PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 69	E

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LAYOUT NAME - SECTION SHEET - (22)

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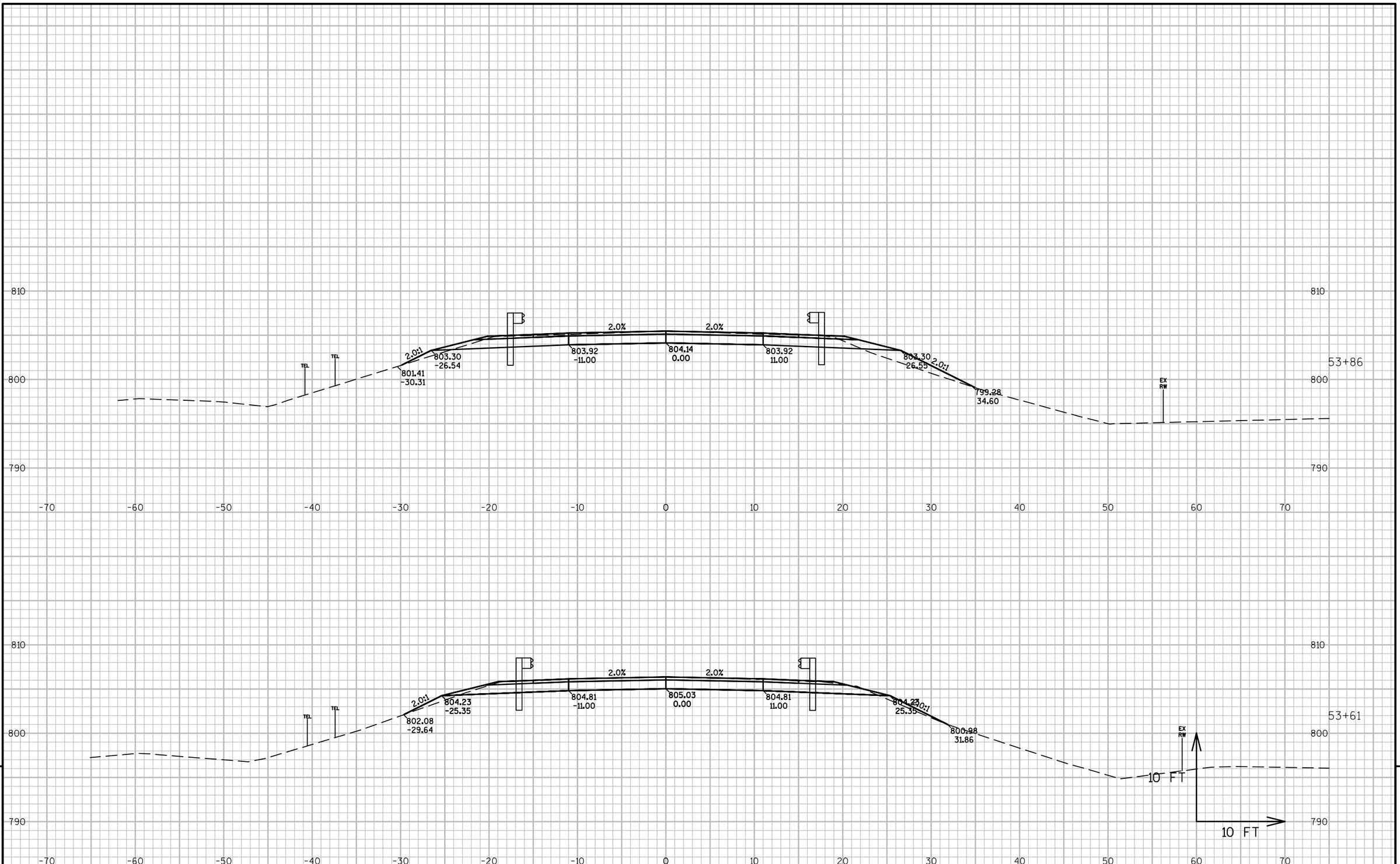
WISDOT/CADDS SHEET 49



PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 70	E

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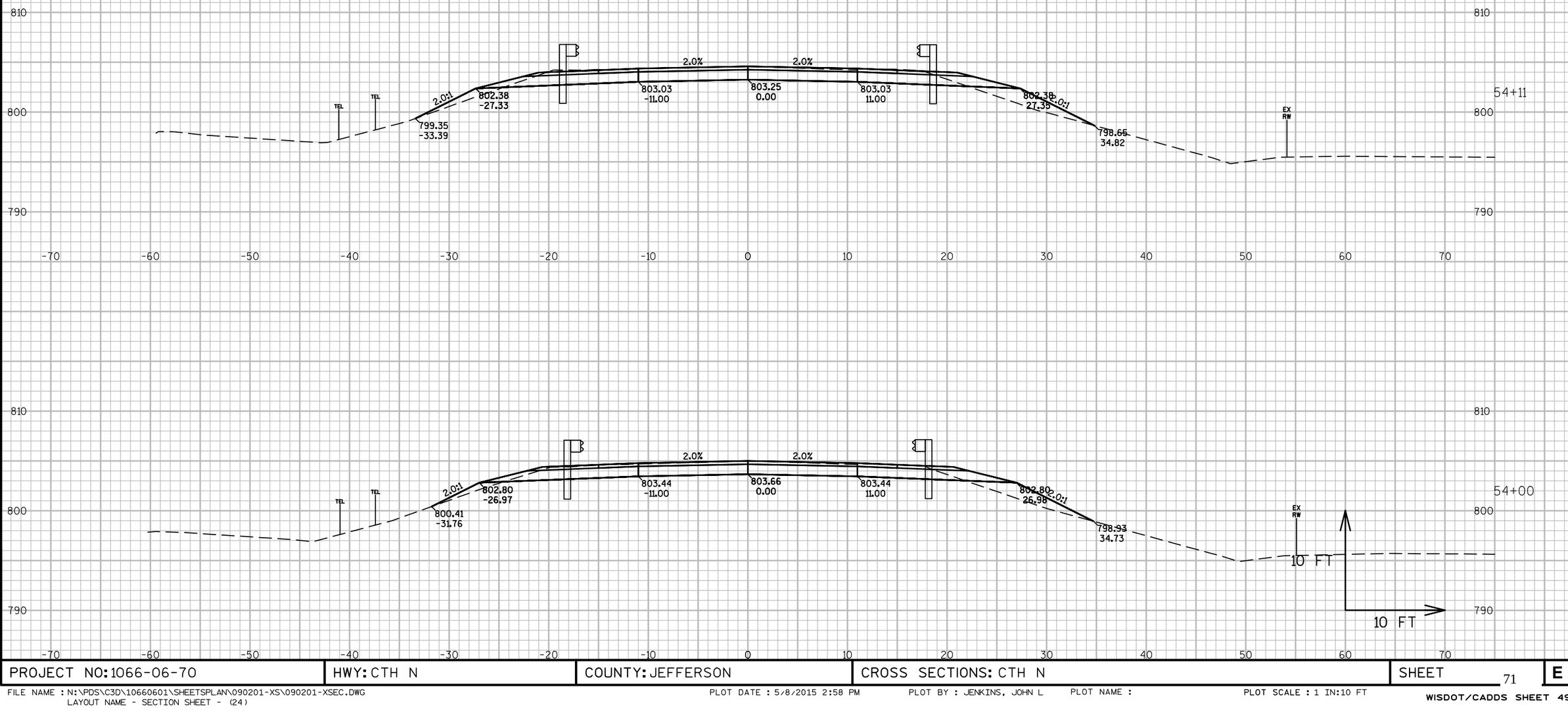
LAYOUT NAME - SECTION SHEET - (23)

PLOT DATE : 5/8/2015 2:58 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



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PROJECT NO: 1066-06-70	HWY: CTH N	COUNTY: JEFFERSON	CROSS SECTIONS: CTH N	SHEET 71	E

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LAYOUT NAME - SECTION SHEET - (24)

PLOT DATE : 5/8/2015 2:58 PM PLOT BY : JENKINS, JOHN L PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

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