SWL

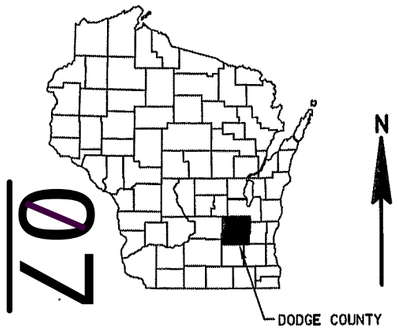
FEB 2016

PROJECT ID: 3898-00-70
WITH: 3906-00-72

COUNTY: DODGE

ORDER OF SHEETS

TOTAL SHEETS = 56



DESIGN DESIGNATION

A.A.D.T.	2015	=	1300
A.A.D.T.	2035	=	1400
D.H.V.		=	168
D.D.		=	60/40
T.		=	6.3%
DESIGN SPEED		=	50 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

PLAN OF PROPOSED IMPROVEMENT

CTH G - CTH SS

(SHAW BROOK BRIDGE B-14-0216)

CTH S

DODGE COUNTY

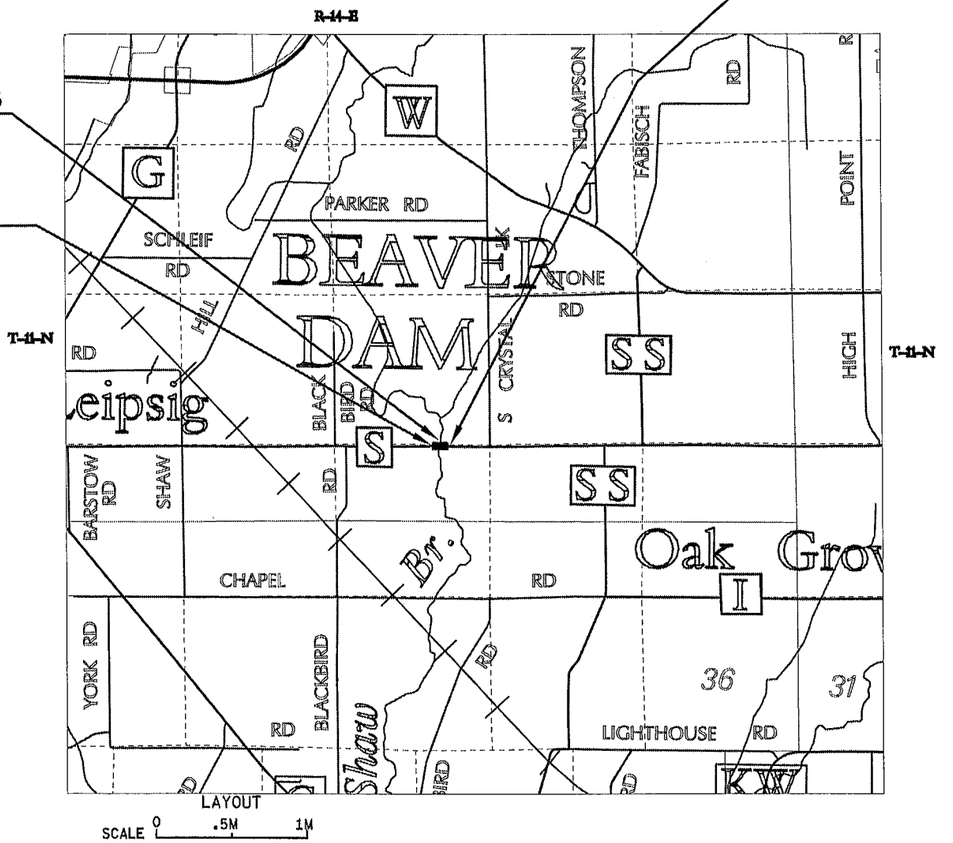
STATE PROJECT NUMBER
3898-00-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3898-00-70	WISC 2016015	1

END PROJECT
STA 11+65

STRUCTURE B-14-216

BEGIN PROJECT
STA 8+25
Y = 702816.759
X = 854591.595



TOTAL NET LENGTH OF CENTERLINE = 0.064 MI

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

ACCEPTED FOR
DODGE COUNTY

DATE: 9-28-2015 (Signature)

HIGHWAY COMMISSIONER
TITLE

ORIGINAL PLANS PREPARED BY
OMNI ASSOCIATES

WISCONSIN
JUDITH ANN WILSON
E-22940
NEENAH, WI
PROFESSIONAL ENGINEER
9/24/15

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	OMNNI ASSOCIATES
Designer	OMNNI ASSOCIATES
Management Consultant	KJOHNSON ENGINEERS

APPROVED FOR THE DEPARTMENT

DATE: 10/28/15 (Signature)

E

GENERAL NOTES

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

FILL AS SHOWN ON THE PLANS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM COMMON EXCAVATION. THE ALLOWANCE USED FOR EXPANDING THE FILLS TO COMPUTE THE VOLUME OF MATERIAL REQUIRED IS 30 PERCENT. ALL FILL VOLUMES SHOWN ARE THE ACTUAL VOLUMES.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT SHOWN ON THE CROSS SECTIONS. IF EBS IS REQUIRED, IT WILL BE MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS AND LIMITS FOR EBS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES.

PLAN ELEVATIONS = USGS DATUM NAVD88

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

USE SEED MIXTURE NO. 20 ON ALL DISTURBED AREAS.

ALL DISTURBED AREAS, NOT OTHERWISE SURFACED, ARE TO BE TOPSOILED, FERTILIZED, SEEDED AND COVERED WITH EROSION MAT, AS SHOWN ON THE PLANS.

THE ENGINEER IN THE FIELD WILL DETERMINE THE EXACT LOCATIONS OF ALL EROSION CONTROL ITEMS.

WETLAND AREAS ARE SHOWN ON THE PLANS, CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO WORK WITHIN THE SLOPE INTERCEPTS IN THE WETLAND AREAS.

AN ARCHAEOLOGICAL SITE IS LOCATED SOUTH OF CTH S AND EAST OF SHAW BROOK. NO GROUND DISTURBING ACTIVITIES WILL BE ALLOWED BEYOND THE EXISTING RIGHT OF WAY IN THIS AREA. ALSO DO NOT USE THIS AREA FOR BORROW OR WASTE DISPOSAL, OR STAGING OF PERSONNEL, EQUIPMENT AND SUPPLIES.

STOCK PILE SALVAGED RAIL IN THE RIGHT OF WAY. DO NOT STOCKPILE SALVAGED RAIL IN WETLAND OR ARCHAEOLOGICAL AREAS. NOTIFY DODGE COUNTY WHEN SALVAGED RAIL IS READY FOR PICK UP.

EROSION CONTROL NOTES

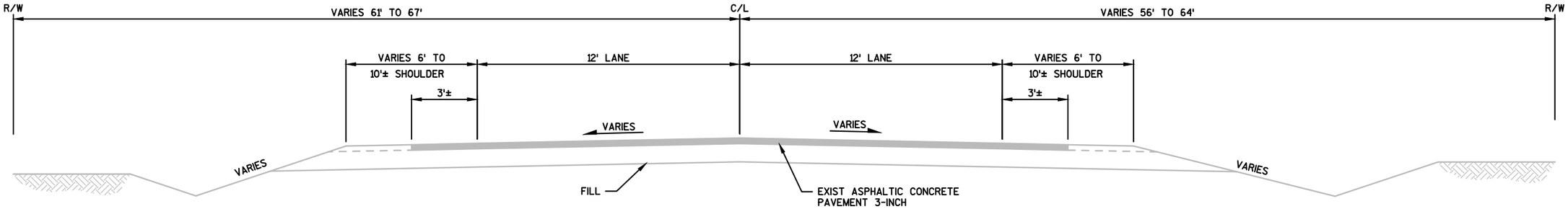
RUNOFF COEFFICIENTS FOR THIS PROJECT: EXISTING PAVEMENT 0.95, EXISTING SLOPES 0.30, NEW PAVEMENT 0.95, NEW SLOPES 0.30.

TOTAL PROJECT AREA = 0.96 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.63 ACRES

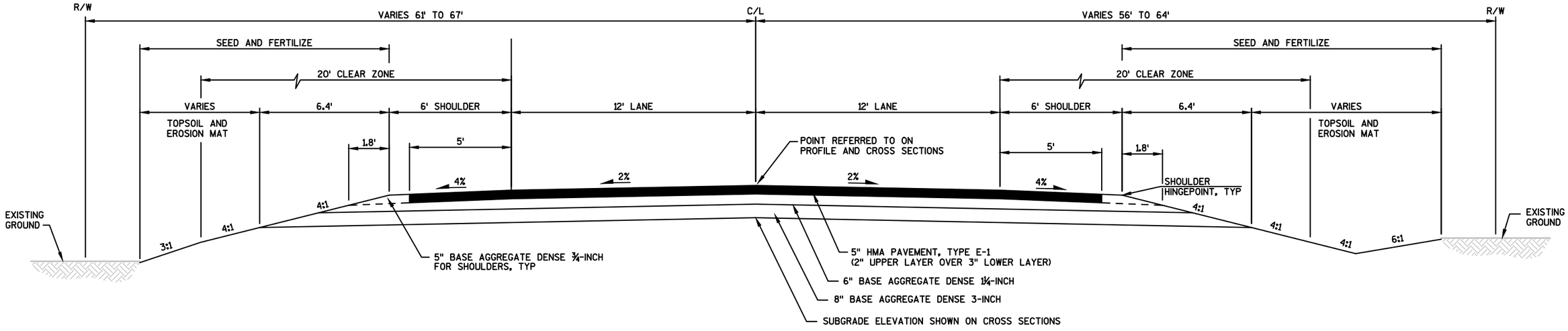
CONTACTS

ELECTRIC	ALLIANT ENERGY / WISCONSIN POWER & LIGHT COMPANY 4902 N. BILTMORE LANE MADISON, WI 53718 ATTN: JASON HOGAN TELEPHONE: (608) 458-4871 EMAIL: jasonhogan@alliantenergy.com ADDITIONAL CONTACT: PERRY BOECK 120 EAST MAPLE STREET BEAVER DAM, WI 53916 TELEPHONE: (920) 887-6061 EMAIL: perryboeck@alliantenergy.com
TELEPHONE	AT&T WISCONSIN 70 EAST DIVISION STREET FOND DU LAC, WI 54935 ATTN: CHUCK BARTELT TELEPHONE: (920) 929-1013 EMAIL: cb1461@att.com
DODGE COUNTY	BRIAN FIELD, HIGHWAY COMMISSIONER 211 EAST CENTER STREET JUNEAU, WI 53039 TELEPHONE: (920) 386-3653 EMAIL: bfield@co.dodge.wi.us
DNR LIAISON	ERIC HEGGELUND DEPARTMENT OF NATURAL RESOURCES 3911 FISH HATCHERY ROAD FITCHBURG, WI 53711 TELEPHONE: (608) 275-3301 EMAIL: eric.heggelund@wisconsin.gov
DESIGNER	JUDY WILSON, P.E. OMNNI ASSOCIATES, INC. ONE SYSTEMS DRIVE APPLETON, WI 554914 TELEPHONE: (920) 830-6129 EMAIL: judy.wilson@omnni.com

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

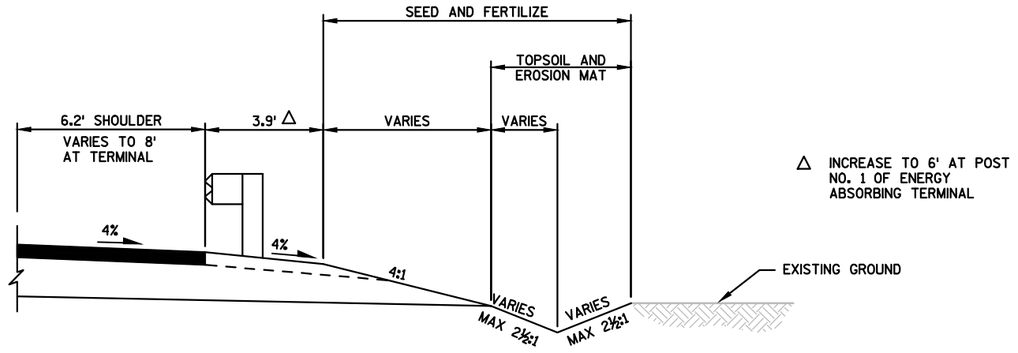


EXISTING TYPICAL SECTION



FINISHED TYPICAL SECTION

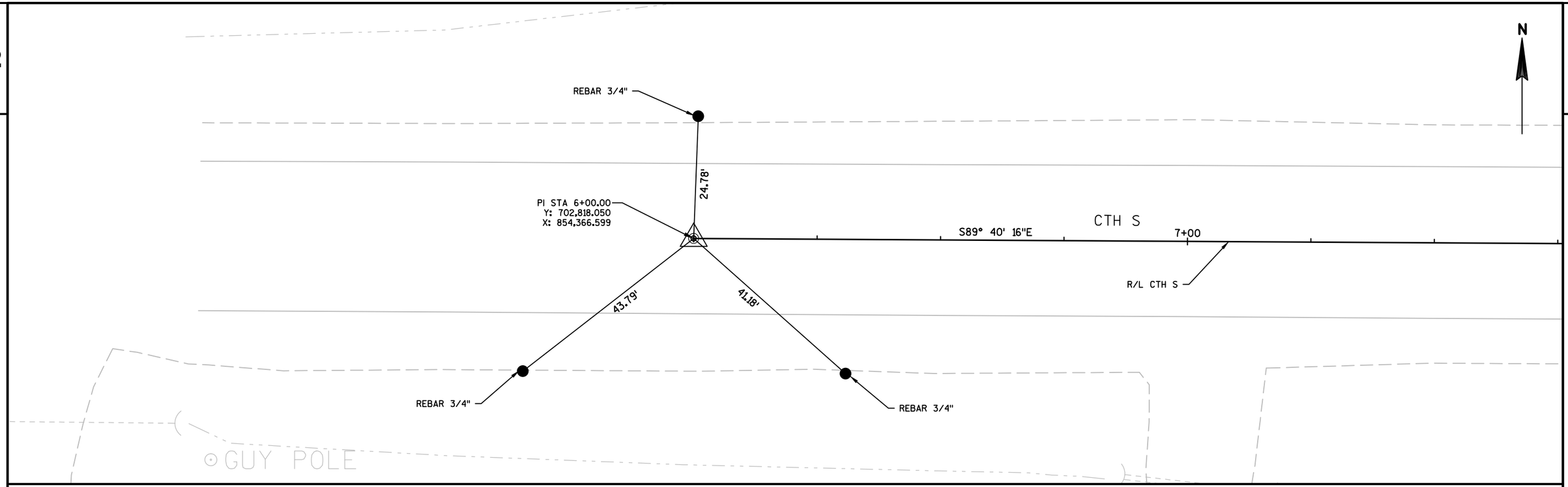
STA 8+25 TO STA 11+65

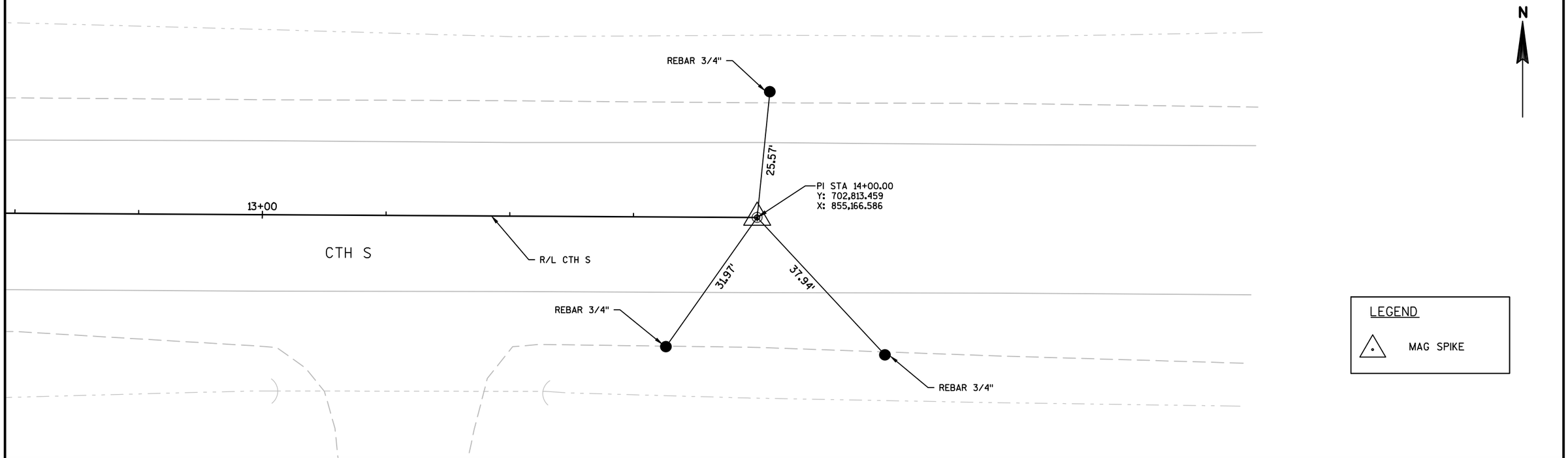


FINISHED TYPICAL SECTION AT BEAM GUARD

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	TYPICAL SECTIONS	SHEET 3	E

2





PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	ALIGNMENT TIES	SHEET 4	E

2

N

EDGE OF WATER

SHAW BROOK

EXIST R/W

SLOPE INTERCEPT

EXIST R/W

SLOPE INTERCEPT

CTH S

7+00 8+00 9+00 10+00 11+00 12+00 13+

R/L CTH S

ASPH ASPH ASPH ASPH

SLOPE INTERCEPT

SLOPE INTERCEPT

EXIST R/W

EXIST R/W

OH

UY POLE

LEGEND

EROSION MAT URBAN CLASS I, TYPE B

SILT FENCE

COFFERDAM

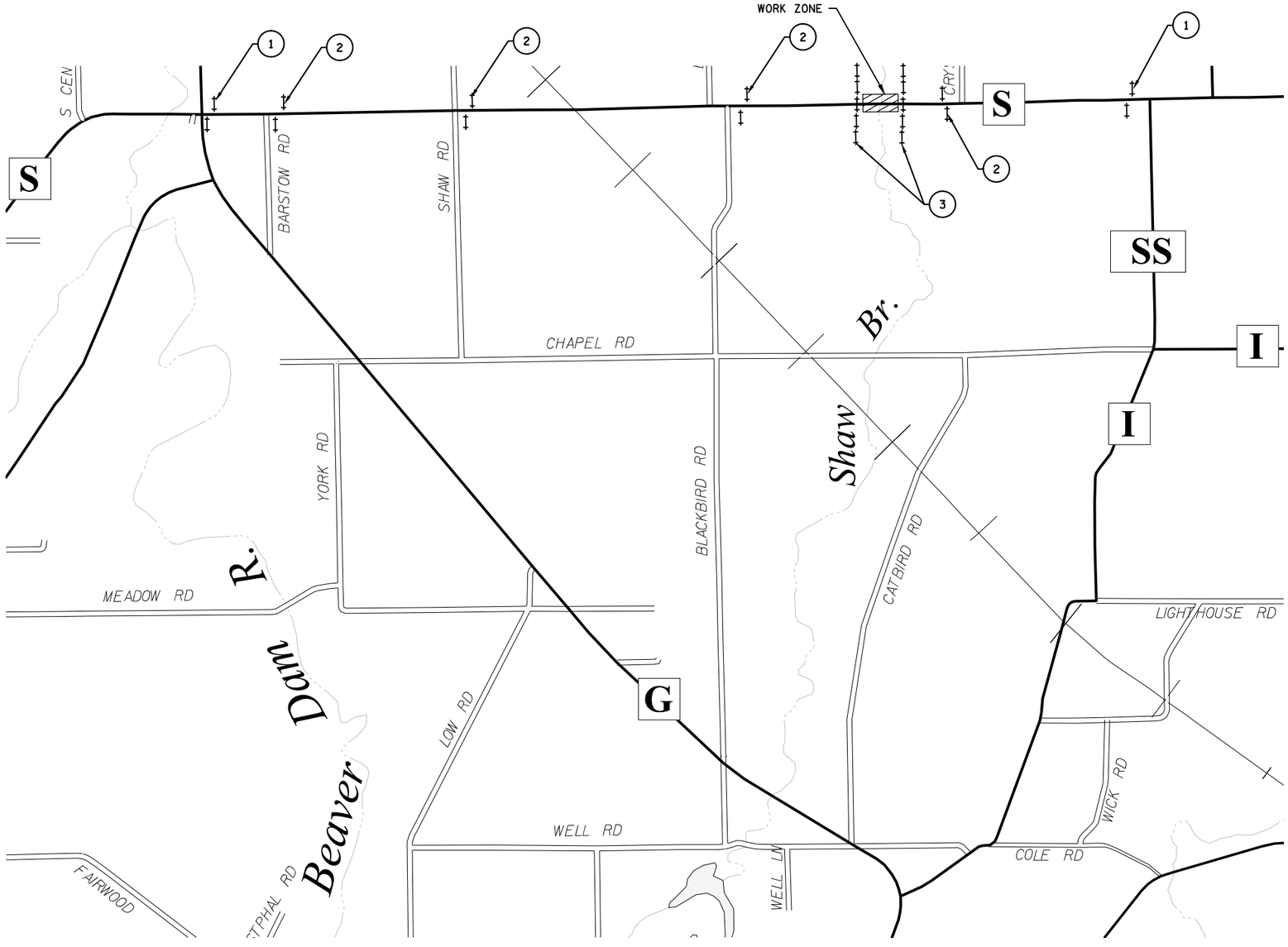
TEMPORARY DITCH CHECK

EDGE OF WATER

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	EROSION CONTROL	SHEET 5	E

2

N



NOTE 1: USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A AND DETAIL E.

NOTE 2: USE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" DETAIL 3

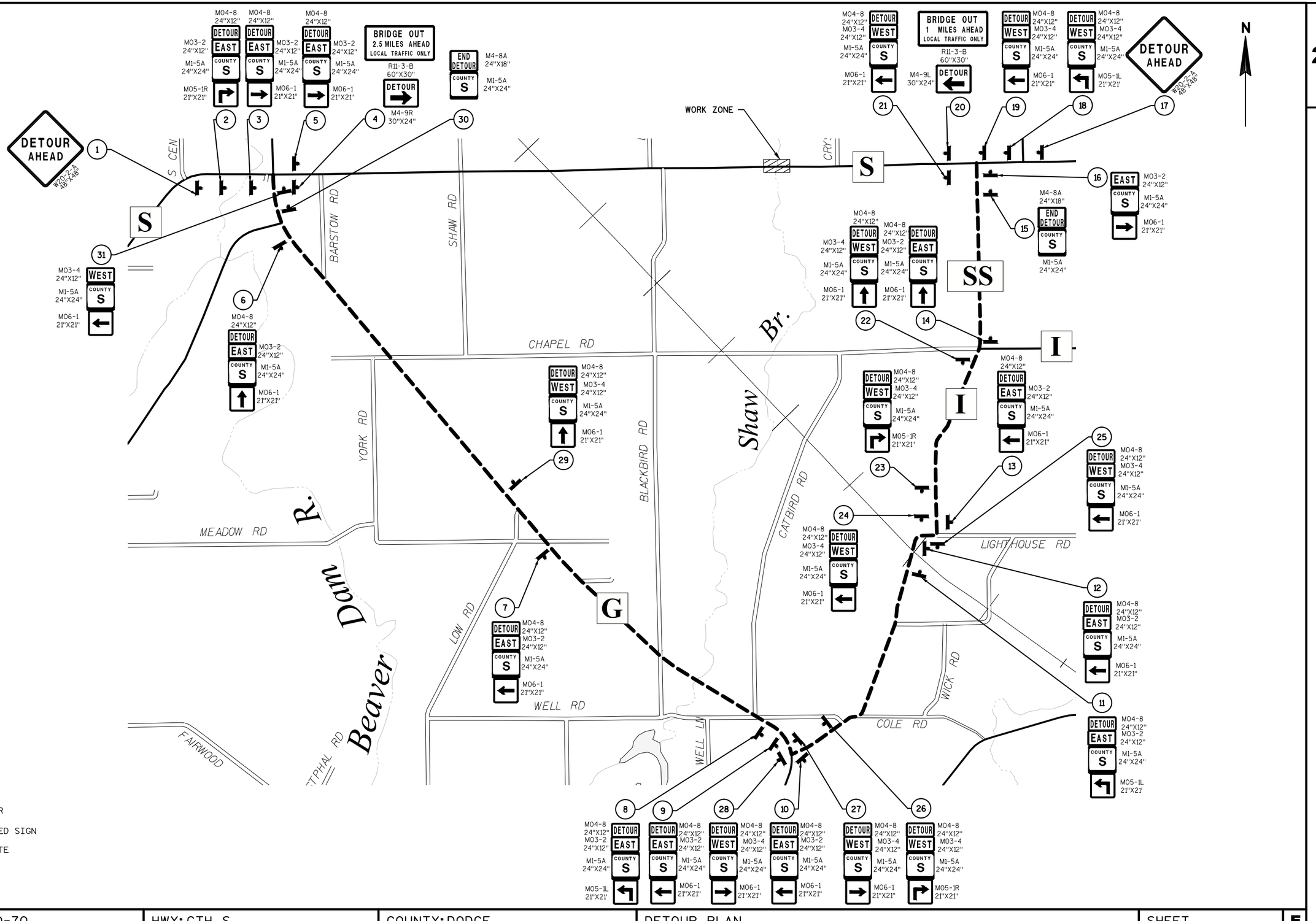
NOTE 3: USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL D

SEE DETOUR PLAN FOR ADDITIONAL SIGNING AND INFORMATION.

LEGEND

TYPE III BARRICADE

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	TRAFFIC CONTROL OVERVIEW	SHEET 6	E



PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	DETOUR PLAN	SHEET 7	E

FILE NAME : F:\TR\JOBS\E2111B14\CIVIL 3D 2014\SHEETSPLAN\E2111B14-027001-DT.DWG
E2111B14-027001-dt

PLOT DATE : 8/25/2015 8:54 AM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1 IN:0.5 MI

WISDOT/CADDS SHEET 42

DATE 30NOV15 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	3898-00-70 QUANTITY
0010	201.0205	Grubbing	STA	2.000	2.000
0020	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0030	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0050	205.0100	Excavation Common **P**	CY	784.000	784.000
0060	206.5000	Cofferdams (structure) 01. B-14-216	LS	1.000	1.000
0080	213.0100	Finishing Roadway (project) 01. 3898-00-70	EACH	1.000	1.000
0100	305.0110	Base Aggregate Dense 3/4-Inch	TON	125.000	125.000
0110	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	620.000	620.000
0120	305.0130	Base Aggregate Dense 3-Inch	TON	900.000	900.000
0130	455.0105	Asphaltic Material PG58-28	TON	20.000	20.000
0140	455.0605	Tack Coat	GAL	85.000	85.000
0150	460.1101	HMA Pavement Type E-1	TON	350.000	350.000
0160	460.2000	Incentive Density HMA Pavement	DOL	230.000	230.000
0170	502.3200	Protective Surface Treatment	SY	202.000	202.000
0180	509.2500	Concrete Masonry Overlay Decks	CY	11.000	11.000
0190	513.7051	Railing Steel Type W (structure) 01. B-14-216	LF	84.000	84.000
0210	516.0500	Rubberized Membrane Waterproofing	SY	13.000	13.000
0220	606.0300	Riprap Heavy	CY	108.000	108.000
0230	614.0920	Salvaged Rail	LF	340.000	340.000
0240	614.2300	MGS Guardrail 3	LF	50.000	50.000
0250	614.2500	MGS Thrie Beam Transition	LF	150.000	150.000
0260	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0270	619.1000	Mobilization	EACH	0.500	0.500
0280	624.0100	Water	MGAL	10.000	10.000
0290	625.0100	Topsoil **P**	SY	1,450.000	1,450.000
0300	628.1504	Silt Fence	LF	660.000	660.000
0310	628.1520	Silt Fence Maintenance	LF	660.000	660.000
0320	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0330	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0340	628.2008	Erosion Mat Urban Class I Type B	SY	1,450.000	1,450.000
0350	628.6005	Turbidity Barriers	SY	40.000	40.000
0360	628.7504	Temporary Ditch Checks	LF	20.000	20.000
0370	629.0210	Fertilizer Type B	CWT	1.500	1.500
0380	630.0120	Seeding Mixture No. 20 **P**	LB	55.000	55.000
0390	630.0200	Seeding Temporary	LB	20.000	20.000
0420	638.2602	Removing Signs Type II	EACH	4.000	4.000
0430	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0440	642.5001	Field Office Type B	EACH	0.500	0.500
0450	643.0100	Traffic Control (project) 01. 3898-00-70	EACH	1.000	1.000
0470	643.0420	Traffic Control Barricades Type III	DAY	1,560.000	1,560.000
0480	643.0705	Traffic Control Warning Lights Type A	DAY	3,120.000	3,120.000
0490	643.0900	Traffic Control Signs	DAY	1,320.000	1,320.000
0500	643.2000	Traffic Control Detour (project) 01. 3898-00-70	EACH	1.000	1.000
0520	643.3000	Traffic Control Detour Signs	DAY	6,480.000	6,480.000
0530	645.0120	Geotextile Fabric Type HR	SY	162.000	162.000
0540	646.0103	Pavement Marking Paint 4-Inch	LF	1,300.000	1,300.000
0550	650.4500	Construction Staking Subgrade	LF	300.000	300.000
0560	650.5000	Construction Staking Base	LF	300.000	300.000
0570	650.6500	Construction Staking Structure Layout (structure) 01. B-14-216	LS	1.000	1.000

3

DATE 30NOV15 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	3898-00-70 QUANTITY
0590	650.9910	Construction Staking Supplemental Control (project) 01. 3898-00-70	LS	1.000	1.000
0610	650.9920	Construction Staking Slope Stakes	LF	300.000	300.000
0620	690.0150	Sawing Asphalt	LF	60.000	60.000
0630	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	150.000	150.000
0640	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	125.000	125.000
0650	SPV.0090	Special 01. Prestressed Girders Box Type 17-Inch	LF	387.000	387.000
0660	SPV.0165	Special 01. Geosynthetic Reinforced Soil Abutment	SF	2,406.000	2,406.000

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

EARTHWORK SUMMARY

STATION TO STATION	LOCATION	205.0100 EXCAVATION COMMON (CY) NOTE 2	SALVAGED / UNUSABLE PAVEMENT MATERIAL (CY)	AVAILABLE MATERIAL (CY) NOTE 3	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) NOTE 4 Factor 1.25	MASS ORDINATE +/- (CY)	WASTE (CY) NOTE 5	208.0100 BORROW (CY)
8+00 TO 9+79	CTH S-WEST	361	43	318	61	76	242	242	0
10+21 TO 11+75	CTH S-EAST	423	40	384	52	65	319	319	0
GRAND TOTAL		**784**	**83**	**702**	**113**	**141**	**561**	**561**	**0**

2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN EXCAVATION COMMON

3) AVAILABLE MATERIAL = EXCAVATION COMMON - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

4) EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR

5) THE ASPHALT FROM THE EXISTING ROADWAY WAS NOT USED IN THE PROPOSED EMBANKMENT AND IS CONSIDERED WASTE MATERIAL WHICH WILL NEED TO BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

GRUBBING

STATION	LOCATION	201.0205 GRUBBING STATION
9+00 - 11+00	CTH S	2
	TOTALS	**2**

REMOVING SMALL PIPE CULVERTS

STATION	DIR	LOCATION	203.0100 EACH	REMARKS
11+30	LT	CTH S	1	18" CMP
		TOTAL	**1**	

ASPHALTIC ITEMS

STATION TO STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG 58-28 TON	455.0605 TACK COAT GAL	460.1101 HMA PAVEMENT E-1 TON
7+80 - STRUCTURE	CTH S	10	45	180
STRUCTURE - 11+90	CTH S	10	40	170
	TOTALS	**20**	**85**	**350**

BASE AGGREGATE DENSE AND WATER

STATION TO STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0130 BASE AGGREGATE DENSE 3-INCH TON	624.0100 WATER MGAL
8+25 - STRUCTURE	CTH S	65	320	465	5.0
STRUCTURE - 11+65	CTH S	60	300	435	5.0
	TOTALS	**125**	**620**	**900**	**10**

SALVAGED RAIL

STATION	LOCATION	614.0920 LF
9+00 - 9+85, RT	CTH S	85
9+00 - 9+85, LT	CTH S	85
10+15 - 11+00, RT	CTH S	85
10+15 - 11+00, LT	CTH S	85
	TOTAL	**340**

STEEL PLATE BEAM GUARD

STATION TO STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
8+76.4 - STRUCTURE, RT	CTH S	12.5	37.5	1
8+76.4 - STRUCTURE, LT	CTH S	12.5	37.5	1
STRUCTURE - 11+23.6, RT	CTH S	12.5	37.5	1
STRUCTURE - 11+23.6, LT	CTH S	12.5	37.5	1
	TOTALS	**50**	**150**	**4**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

LANDSCAPING

STATION TO STATION	LOCATION	625.0100 TOPSOIL SY	630.0200 SEEDING TEMPORARY LB	630.0120 SEEDING NO 20 LB	629.0210 FERTILIZER TYPE B CWT
8+00 - STRUCTURE, RT	CTH S	340	---	12	0.3
8+00 - STRUCTURE, LT	CTH S	190	---	8	0.2
STRUCTURE - 12+00, RT	CTH S	250	---	10	0.2
STRUCTURE - 12+00, LT	CTH S	380	---	13	0.3
UNDISTRIBUTED	CTH S	290	20	12	0.5
	TOTALS	**1,450**	**20**	**55**	**1.5**

TURBIDITY BARRIER

STATION	LOCATION	628.6005 SY
UNDISTRIBUTED	CTH S	40
	TOTAL	**40**

SAWING ASPHALT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
8+25	CTH S	30
11+65	CTH S	30
	TOTAL	**60**

EROSION CONTROL ITEMS

STATION TO STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF
8+00 - STRUCTURE, RT	CTH S	170	170	---	---	340	---
8+00 - STRUCTURE, LT	CTH S	160	160	---	---	190	---
STRUCTURE - 11+75, RT	CTH S	160	160	---	---	250	---
STRUCTURE - 10+50, LT	CTH S	40	40	---	---	380	10
UNDISTRIBUTED	CTH S	130	130	4	2	290	10
	TOTALS	**660**	**660**	**4**	**2**	**1,450**	**20**

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

STATION	LOCATION	DESCRIPTION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
9+85, LT	CTH S	OBJECT MARKER	1	1
9+85, RT	CTH S	OBJECT MARKER	1	1
10+15, LT	CTH S	OBJECT MARKER	1	1
10+15, RT	CTH S	OBJECT MARKER	1	1
		TOTALS	**4**	**4**

CONSTRUCTION STAKING

STATION TO STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	CATEGORY 0020 650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
8+25 - STRUCTURE	CTH S	155	155	---	---	155
STRUCTURE B-14-216	CTH S	---	---	1	---	---
STRUCTURE - 11+65	CTH S	145	145	---	---	145
	TOTALS	**300**	**300**	**1**	**1**	**300**

PAVEMENT MARKING PAINT

STATION	LOCATION	646.0103 4-INCH DASHED YELLOW LF	646.0103 4-INCH SOLID YELLOW LF	646.0103 4-INCH WHITE EDGE LINE LF
8+00 - 12+00	CTH S	100	400	800
	TOTAL	**1,300**		

NOTE: DASHED YELLOW EASTBOUND; SOLID YELLOW WESTBOUND

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 60 DAYS	643.3000 DETOUR SIGNS DAYS	REMARKS
1	CTH S W. OF CTH G	W20-2-A	48 X 48	1	60	60	
2	CTH S W. OF CTH G	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO5-1R	21 X 21	1	60	60	
3	CTH S AT CTH G	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
4	CTH S AT CTH G	R11-3B	60 X 30	1	60	60	
		M4-9R	30 X 24	1	60	60	
5	CTH S AT CTH G	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
6	CTH G S. OF CTH J	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
7	CTH G S. OF LOW RD	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
8	CTH G NW. OF CTH I	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO5-1L	21 X 21	1	60	60	
9	CTH G AT CTH I	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
10	CTH G AT CTH I	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
11	CTH I S. OF LIGHTHOUSE RD	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO5-1L	21 X 21	1	60	60	
12	CTH I AT LIGHTHOUSE RD	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	

PAGE SUBTOTAL 2,580

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL DETOUR SIGN SUMMARY CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 60 DAYS	643.3000 DETOUR SIGNS DAYS	REMARKS
13	CTH I AT LIGHTHOUSE RD	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
14	CTH I AT CTH SS	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
15	CTH SS AT CTH S	MO4-8A	24 X 18	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
16	CTH SS AT CTH S	MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
17	CTH S E. OF CTH SS	W20-2-A	48 X 48	1	60	60	
18	CTH S AT CTH SS	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO5-1L	21 X 21	1	60	60	
19	CTH S AT CTH SS	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
20	CTH S AT CTH SS	R11-3B	60 X 30	1	60	60	
		M4-9L	30 X 24	1	60	60	
21	CTH S AT CTH SS	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
22	CTH SS AT CTH I	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
23	CTH I N. OF LIGHTHOUSE RD	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO5-1R	21 X 21	1	60	60	
24	CTH I AT LIGHTHOUSE RD	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
25	CTH I AT LIGHTHOUSE RD	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	

PAGE SUBTOTAL 2,640

TRAFFIC CONTROL DETOUR SIGN SUMMARY CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 60 DAYS	643.3000 DETOUR SIGNS DAYS	REMARKS
26	CTH I NE. OF CTH G	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO5-1R	21 X 21	1	60	60	
27	CTH I AT CTH G	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
28	CTH I AT CTH G	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
29	CTH G AT LOW RD	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	
30	CTH G AT CTH S	MO4-8A	24 X 18	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
31	CTH G AT CTH S	MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH S
		MO6-1	21 X 21	1	60	60	

PAGE SUBTOTAL 1,260

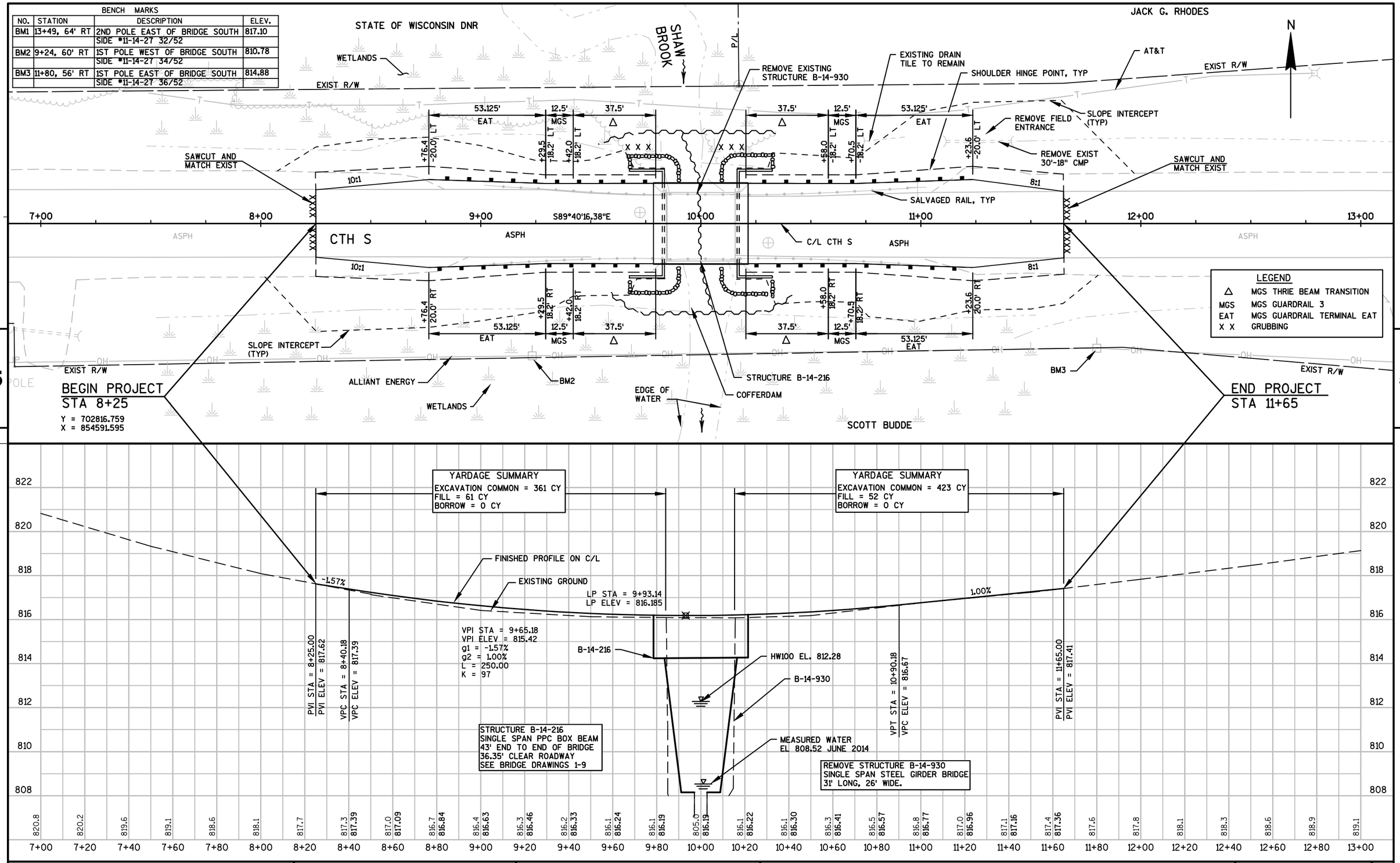
PROJECT TOTAL 6,480

TRAFFIC CONTROL ROAD CLOSURE

LOCATION	APPROX. SERVICE PERIOD 60 DAYS	643.0420 BARRICADES TYPE III NO.	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO.	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS NO.	643.0900 SIGNS DAYS
CTH S AT CTH G	60	2	120	4	240	--	--
CTH S AT BARSTOW RD	60	2	120	4	240	3	180
CTH S AT SHAW RD	60	2	120	4	240	4	240
CTH S AT BLACKBIRD RD	60	2	120	4	240	4	240
CTH S WEST OF BRIDGE	60	7	420	14	840	4	240
CTH S EAST OF BRIDGE	60	7	420	14	840	4	240
CTH S AT CRYSTAL LAKE RD	60	2	120	4	240	3	180
CTH S AT CTH SS	60	2	120	4	240	--	--
TOTALS			**1,560**		**3,120**		**1,320**

BENCH MARKS

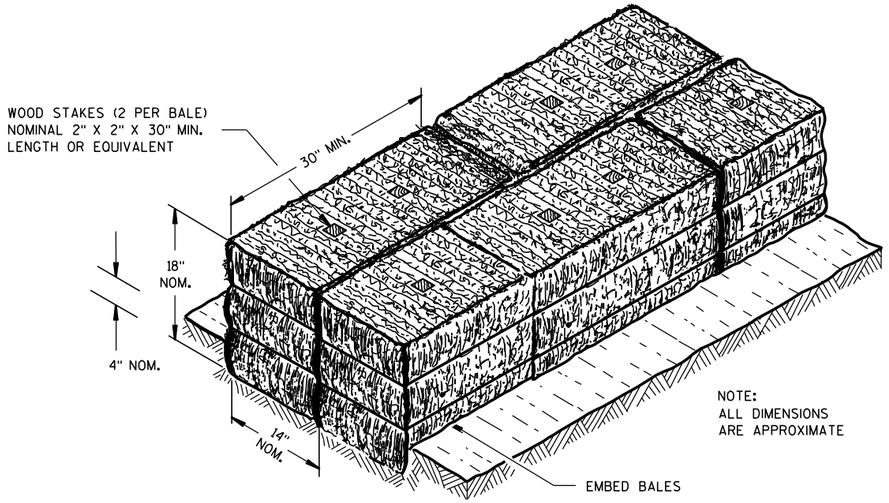
NO.	STATION	DESCRIPTION	ELEV.
BM1	13+49, 64' RT	2ND POLE EAST OF BRIDGE SOUTH SIDE #11-14-27 32/52	817.10
BM2	9+24, 60' RT	1ST POLE WEST OF BRIDGE SOUTH SIDE #11-14-27 34/52	810.78
BM3	11+80, 56' RT	1ST POLE EAST OF BRIDGE SOUTH SIDE #11-14-27 36/52	814.88



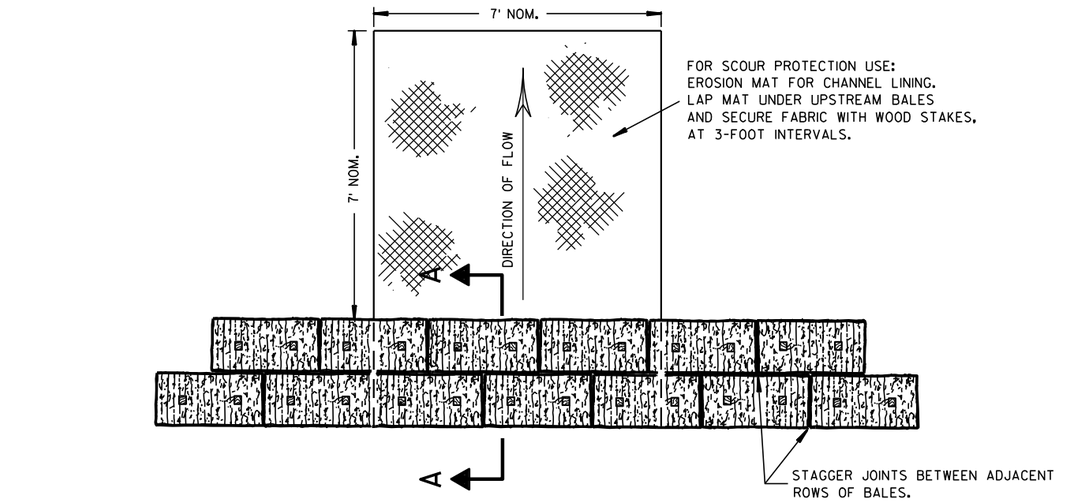
PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	PLAN AND PROFILE: CTH S	SHEET 15	E

Standard Detail Drawing List

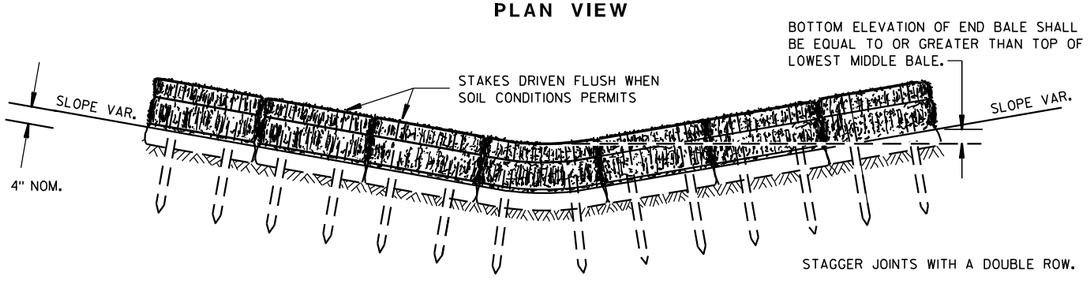
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
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)
14B45-03G	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
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)



SECTION A-A



PLAN VIEW



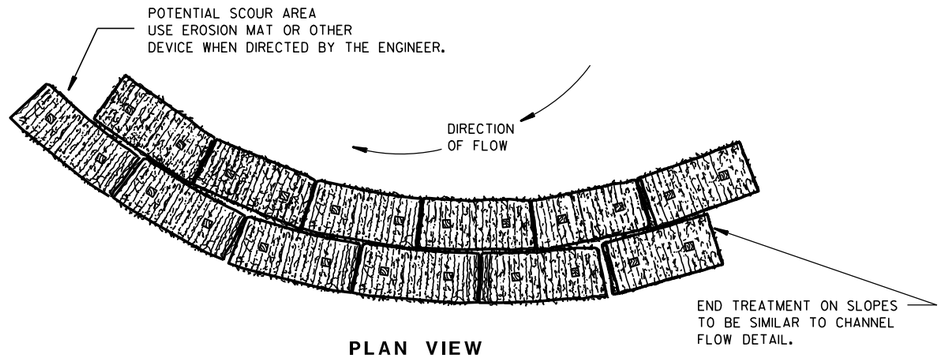
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

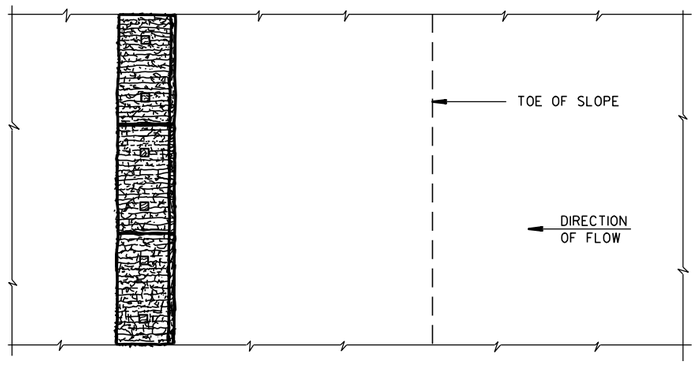
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

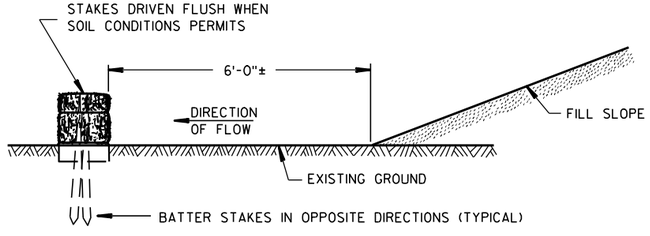


PLAN VIEW

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

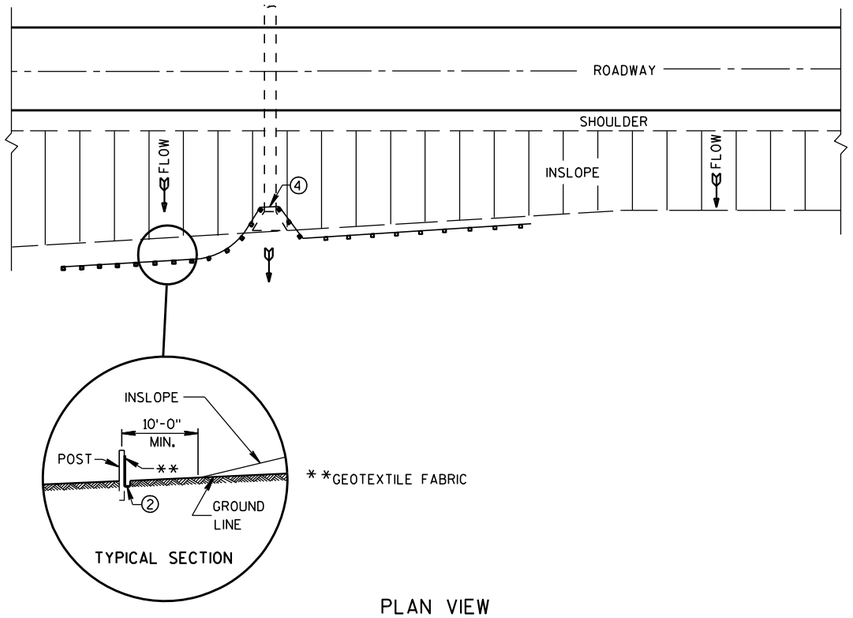
FHWA

6

S.D.D. 8 E 8-3

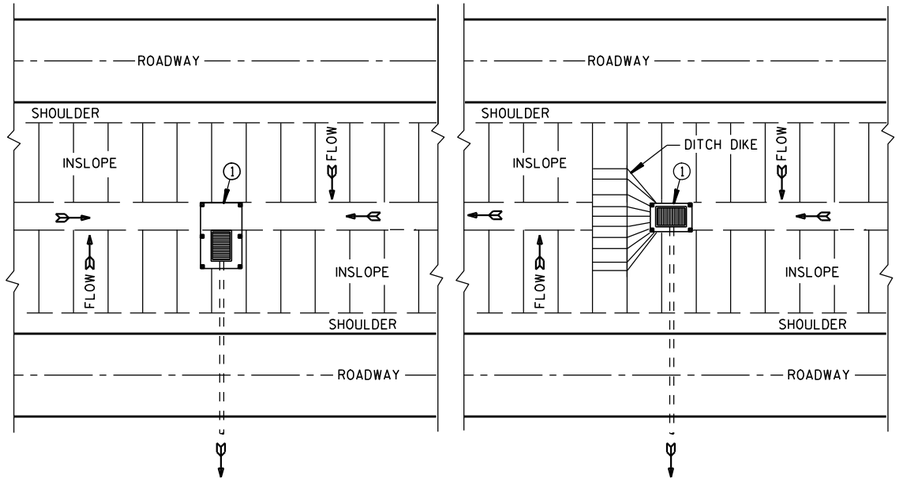
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



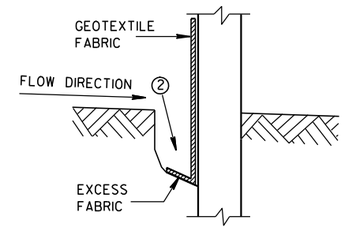
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

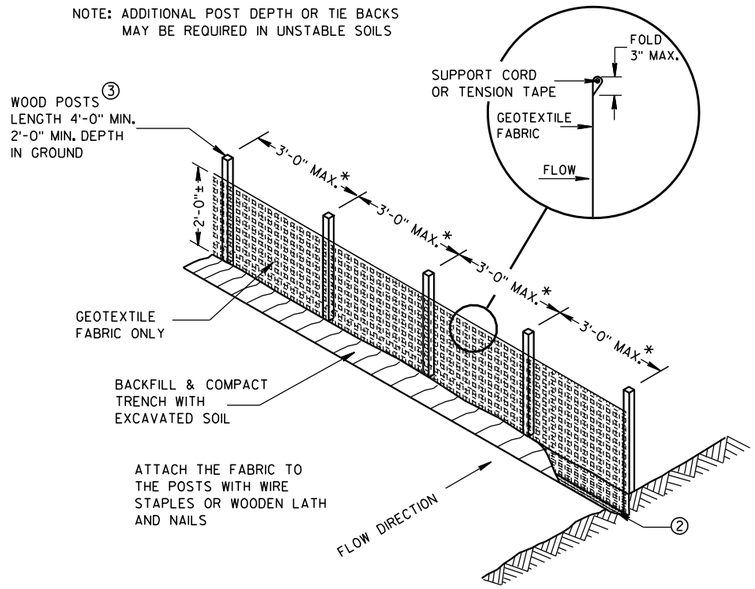
GENERAL NOTES

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

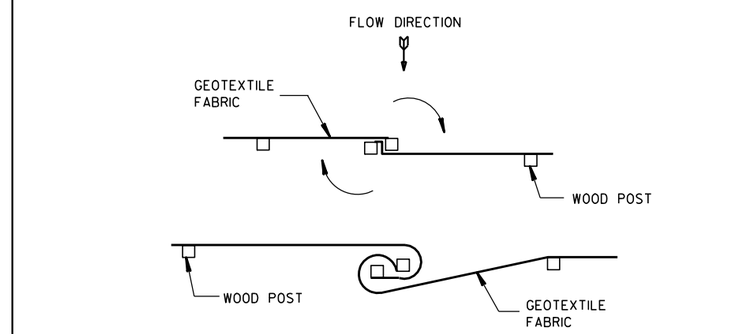
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



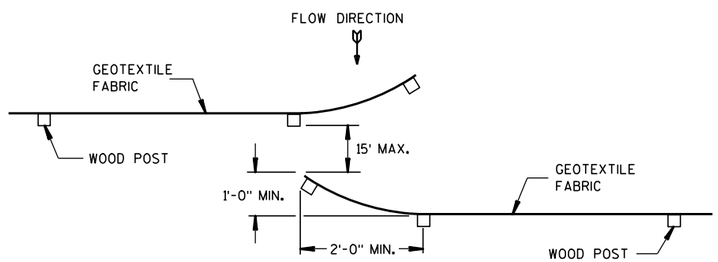
TRENCH DETAIL



SILT FENCE

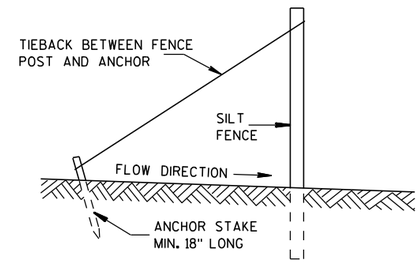


TWIST METHOD



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

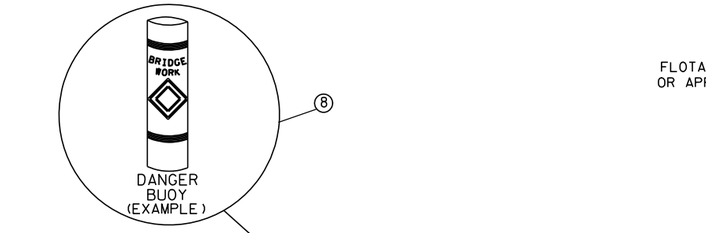
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

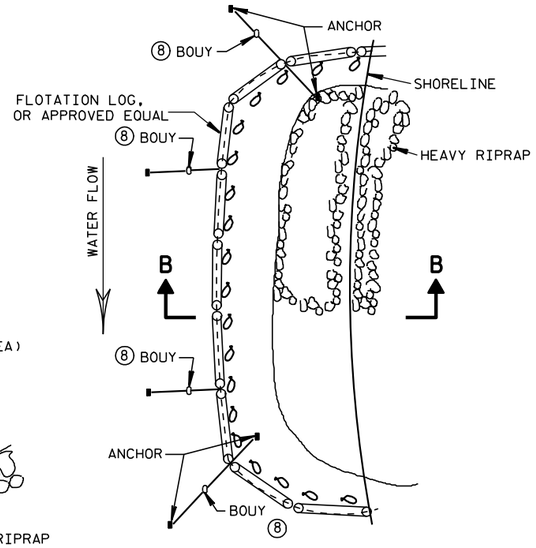
S.D.D. 8 E 9-6

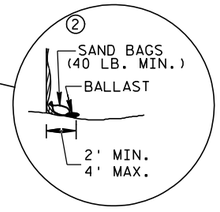
6

S.D.D. 8 E 9-6

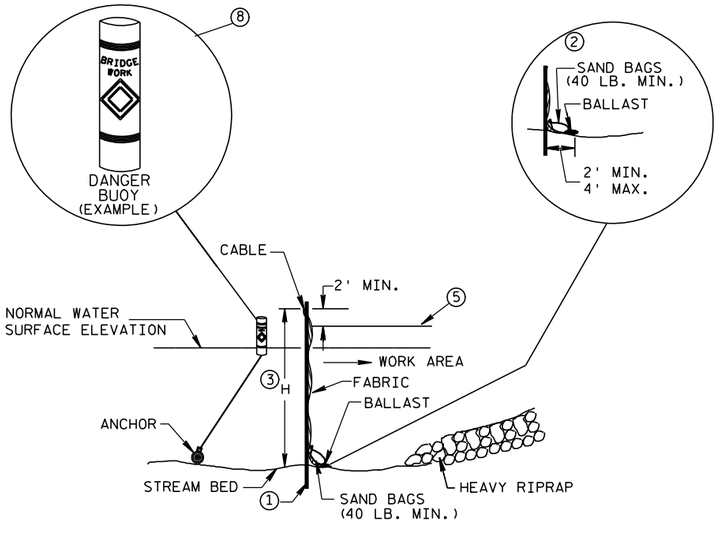


SECTION B-B

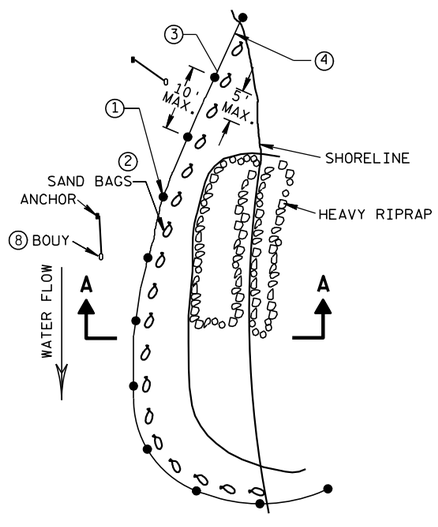




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

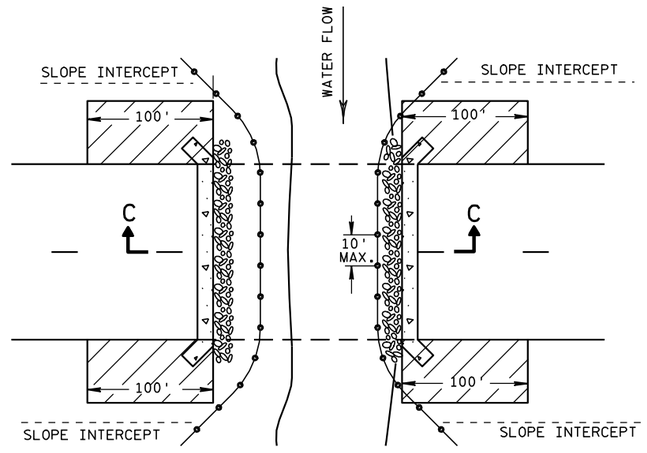
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

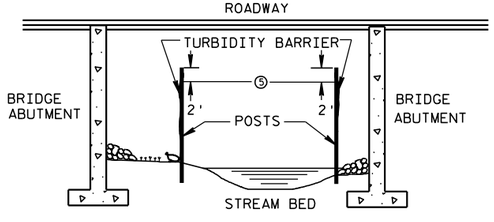
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

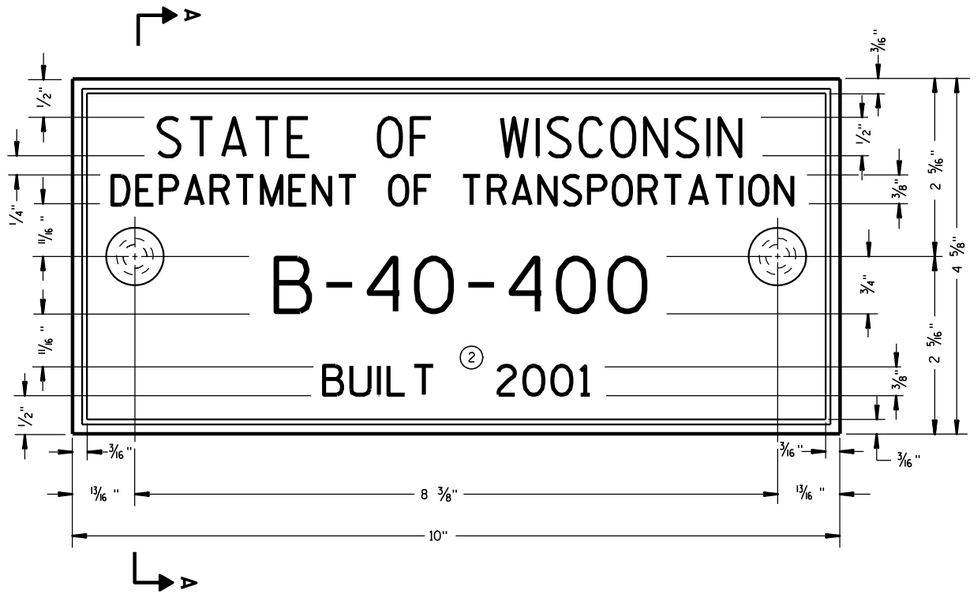
APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

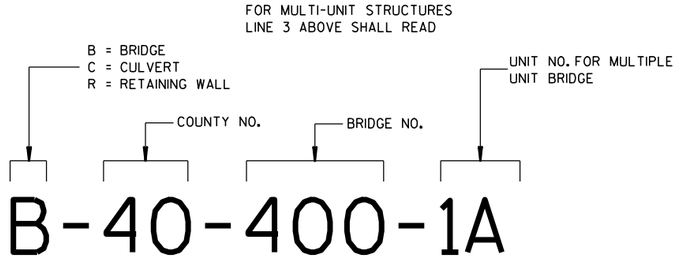
S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2



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



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

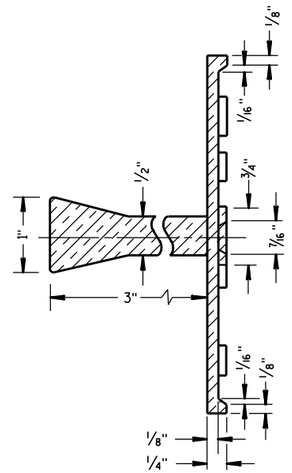
GENERAL NOTES

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.

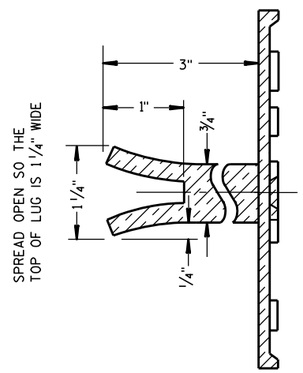
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

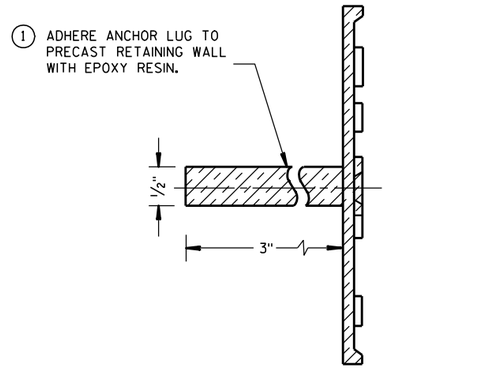
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



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 DEVELOPMENT 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.

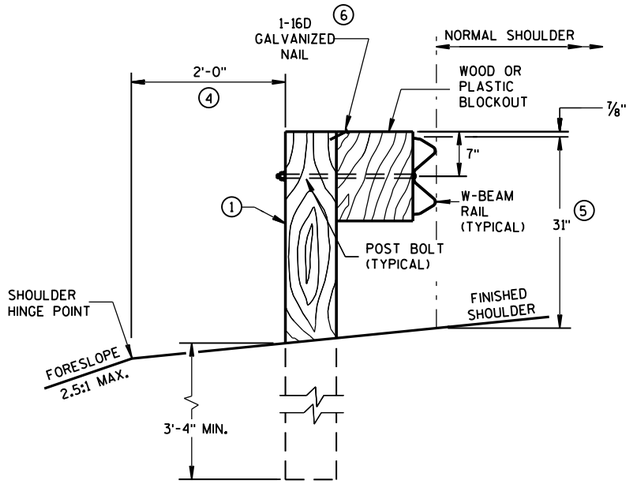
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(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).

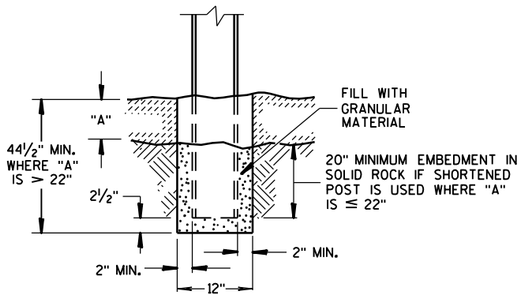
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(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.



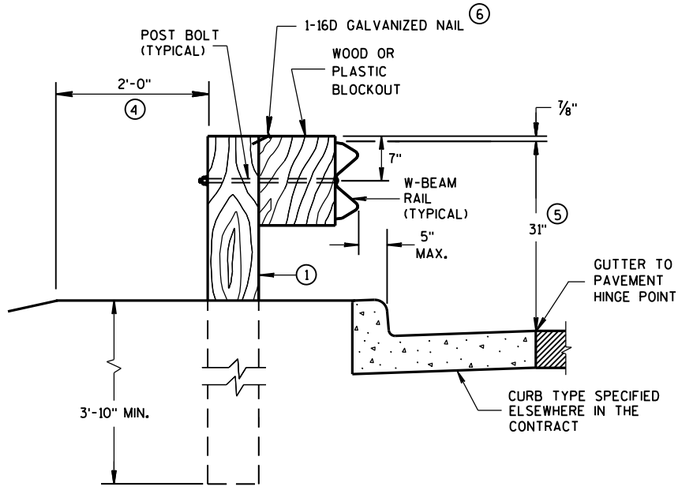
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



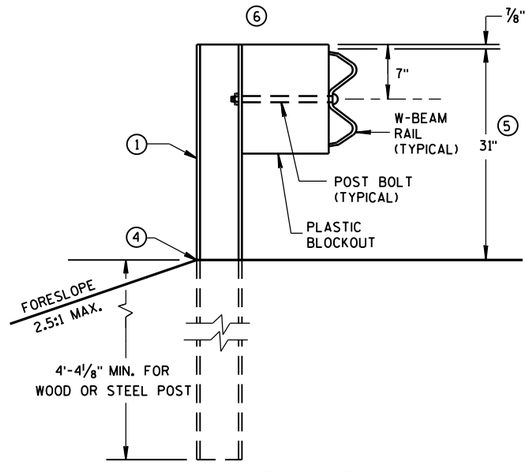
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



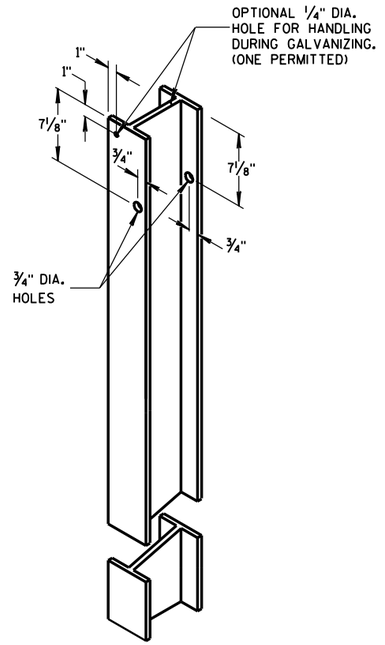
END VIEW

LOCATED ALONG A CURBED ROADWAY

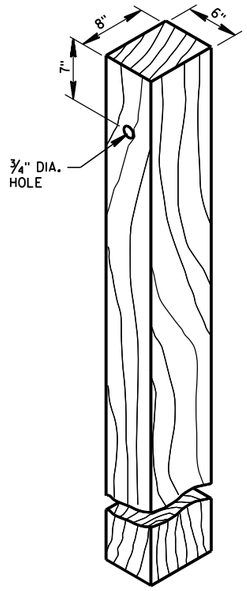


END VIEW

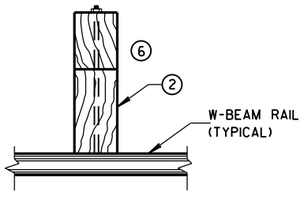
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



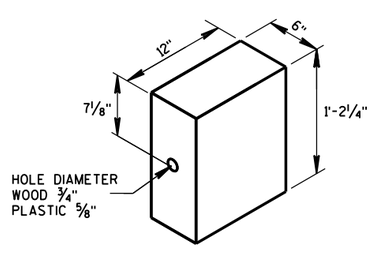
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



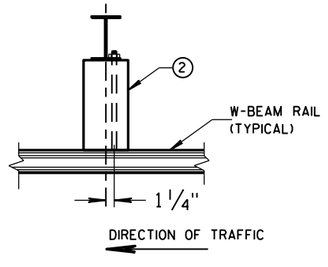
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

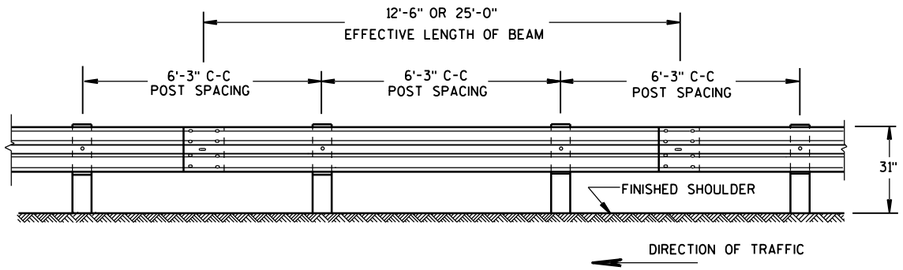


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

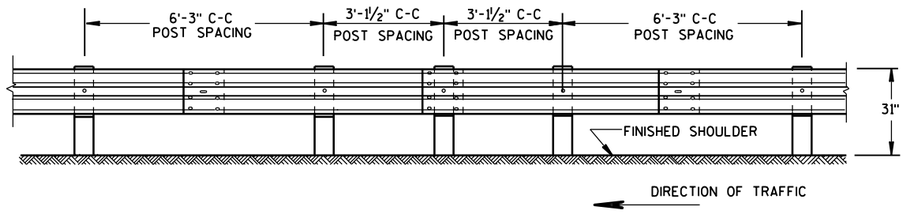
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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



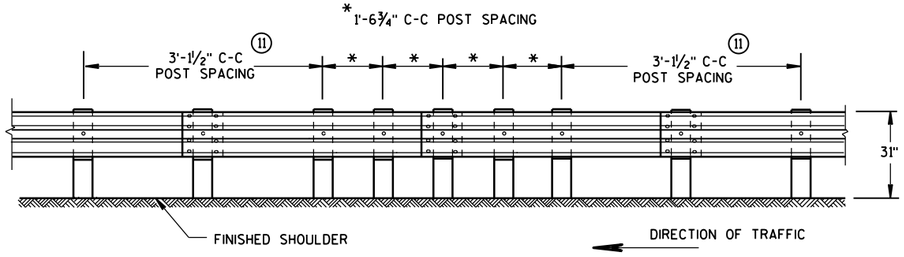
FRONT VIEW

POST SPACING STANDARD INSTALLATION



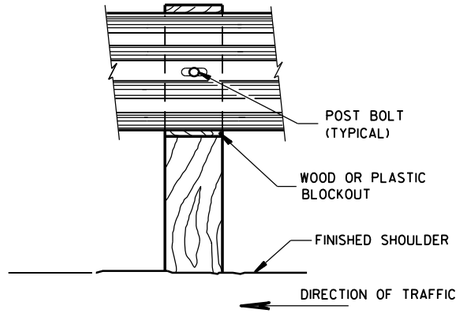
FRONT VIEW

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

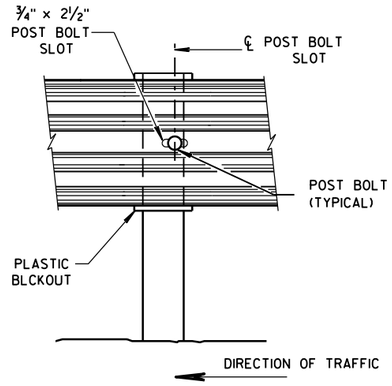


FRONT VIEW

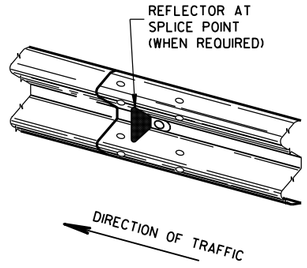
QUARTER POST SPACING (QS)

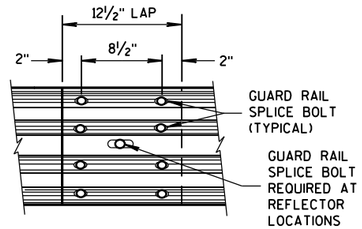


FRONT VIEW AT WOOD POST



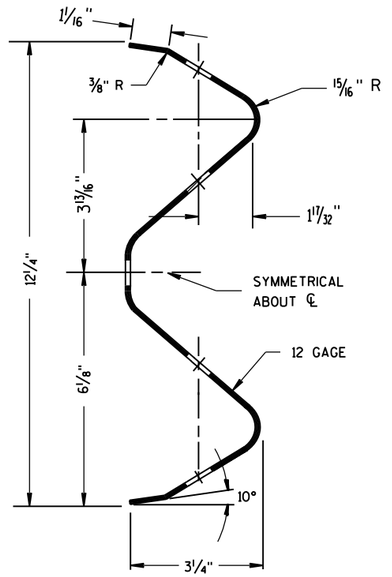
FRONT VIEW AT STEEL POST



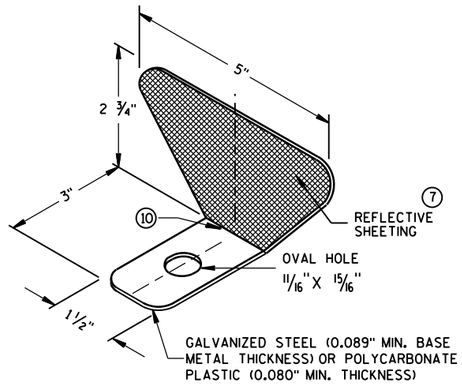


FRONT VIEW

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

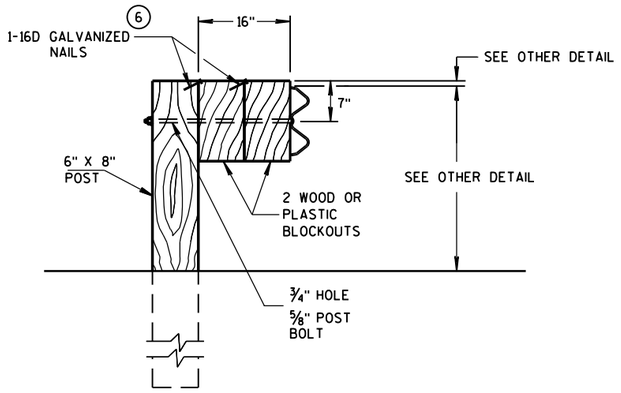
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ⑨ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ⑩	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

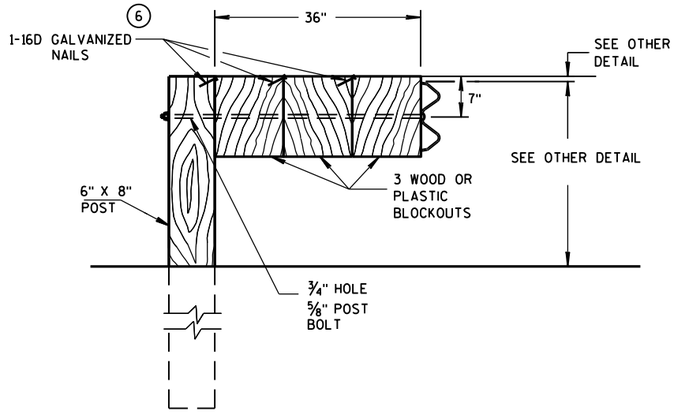
6

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.

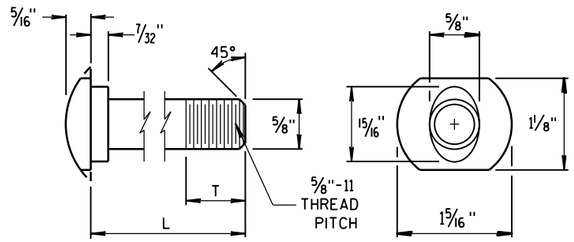


DETAIL FOR 36" BLOCKOUT DEPTH

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.

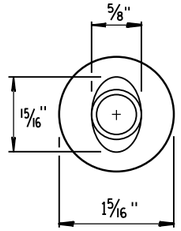
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

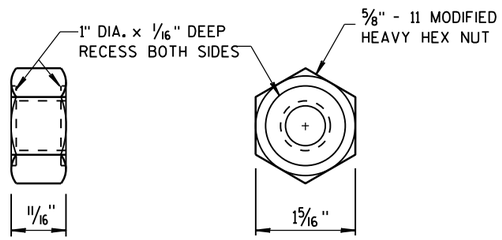


POST BOLT TABLE

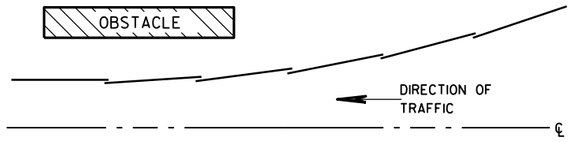
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

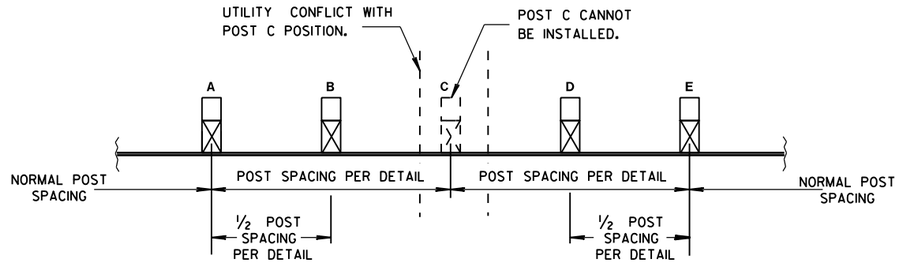


POST BOLT AND RECESS NUT

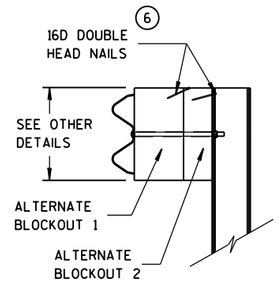


PLAN VIEW

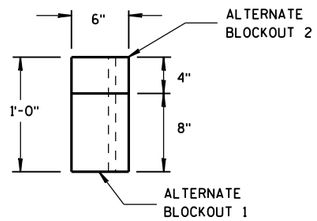
BEAM LAPPING DETAIL



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.

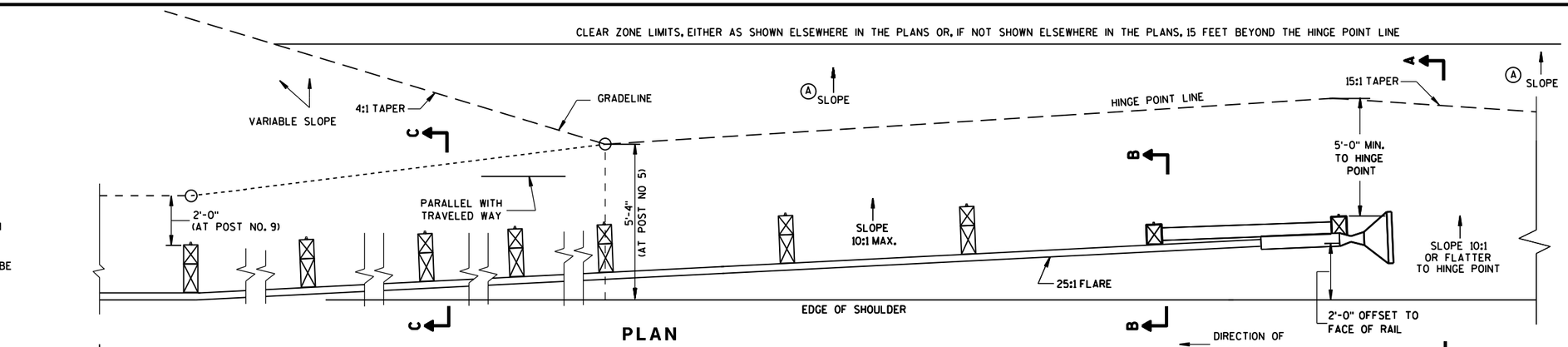
SEE SDD 14B42 FOR MORE INFORMATION.

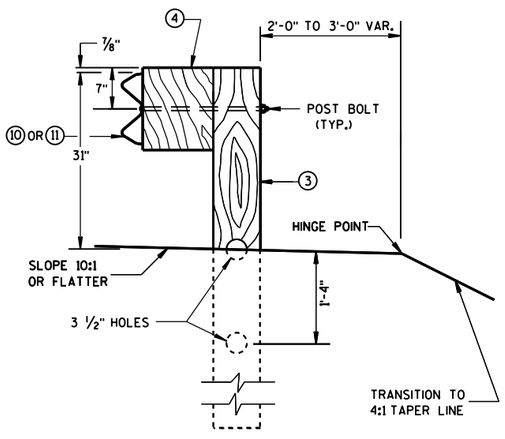
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

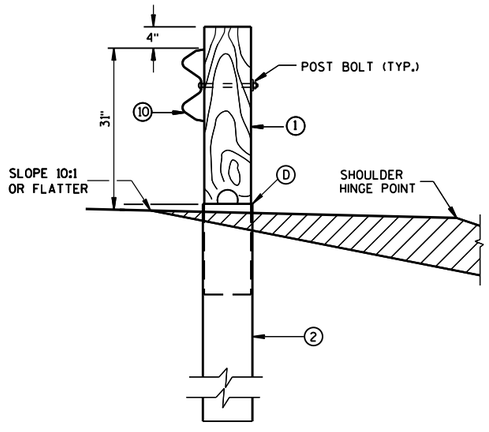
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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.

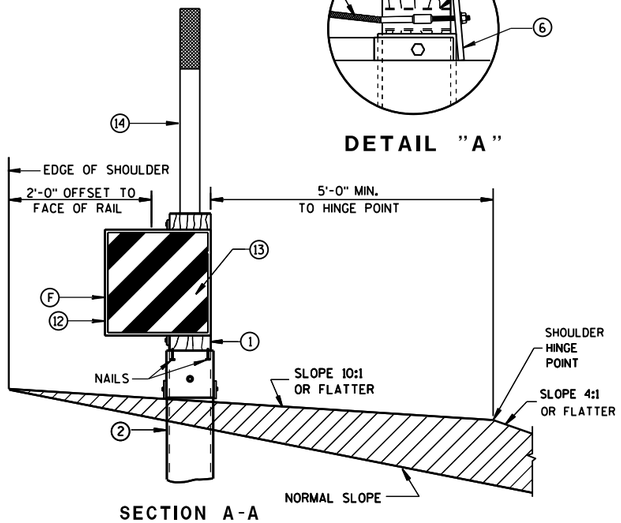




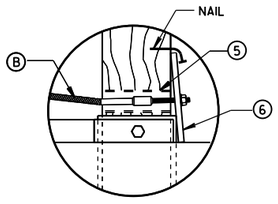
SECTION C-C
TYPICAL AT POST NOS. 3-9



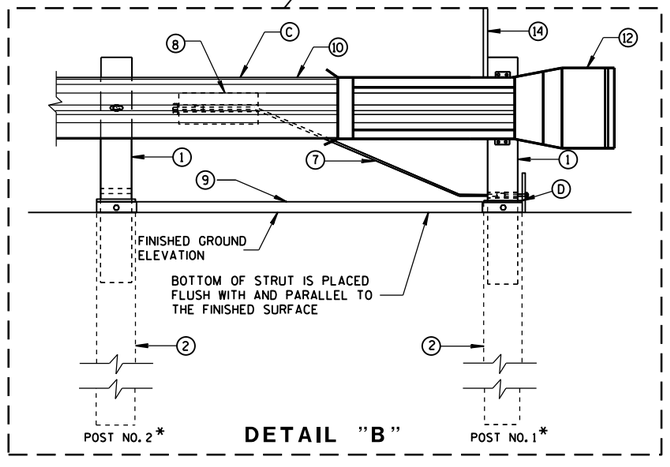
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



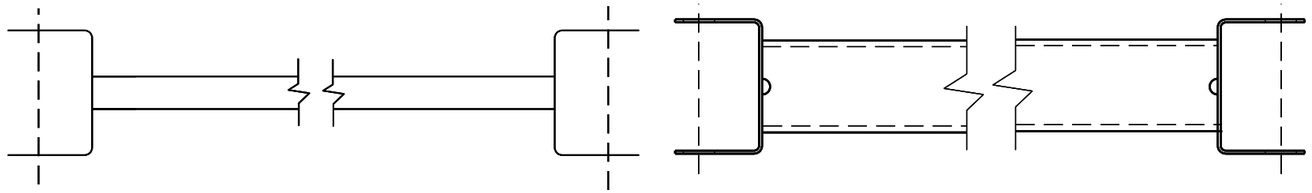
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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

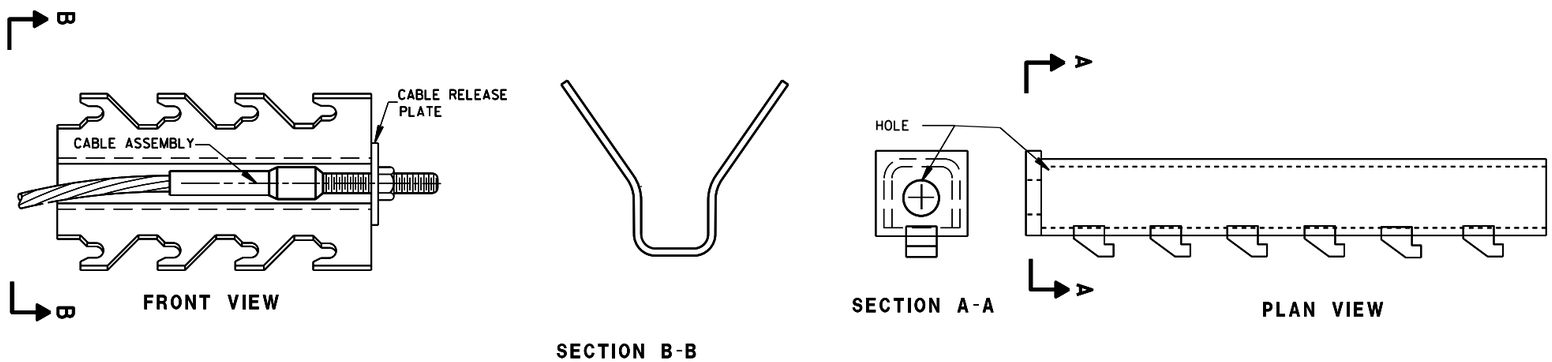
S.D.D. 14 B 44-2a



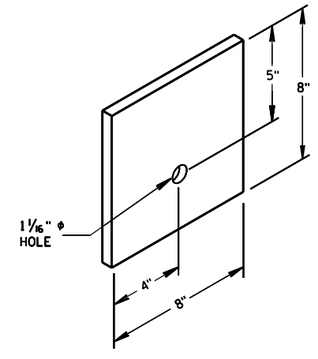
GENERIC GROUND STRUT (9) (H)

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)

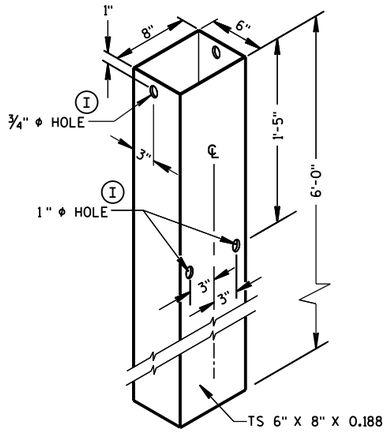


BEARING PLATE (6)

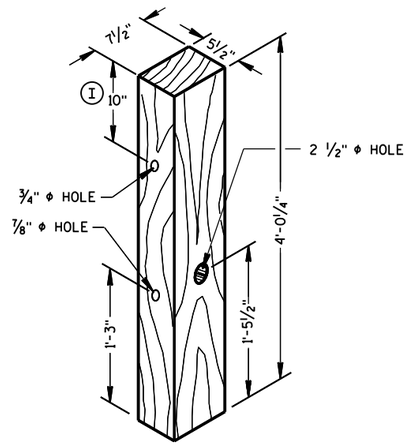
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

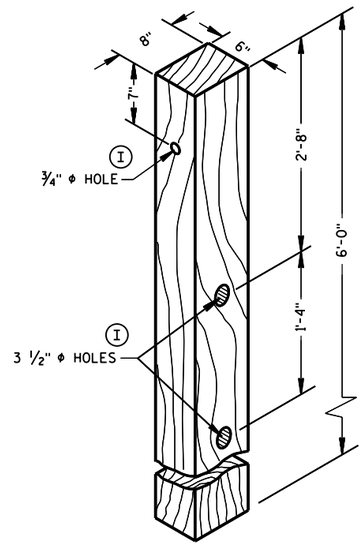


FOUNDATION TUBE (2)



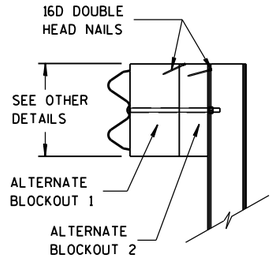
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

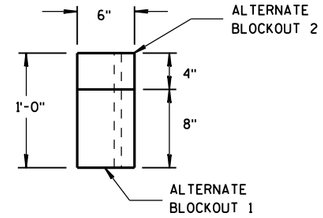


POSTS NUMBER 3-9

WOOD CRT POST (3)

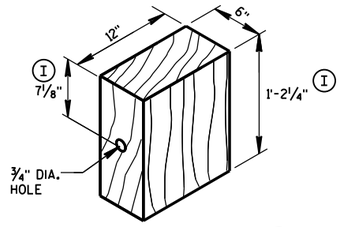


SIDE VIEW



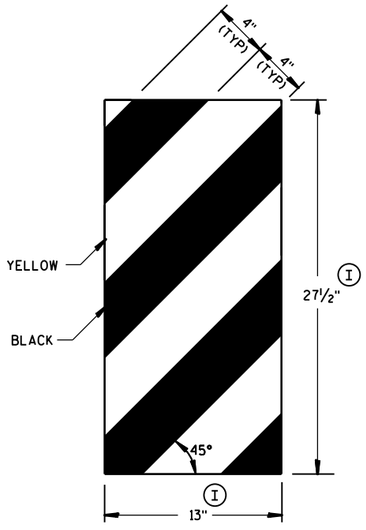
TOP VIEW

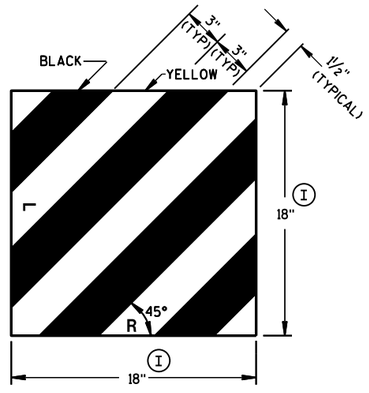
ALTERNATE WOOD BLOCKOUT DETAIL



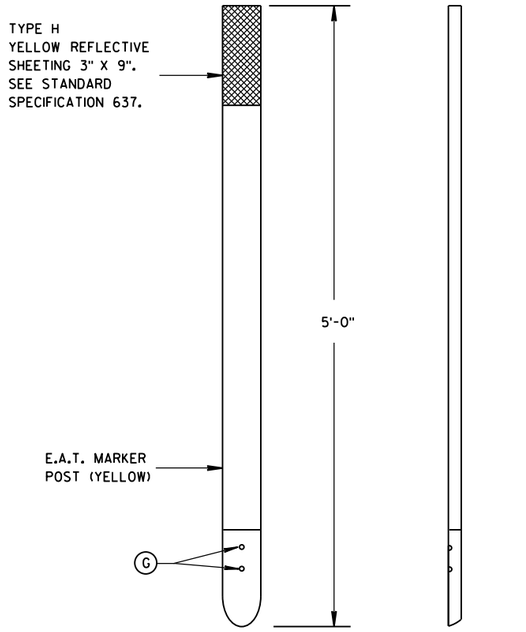
WOOD BLOCKOUT (4)

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





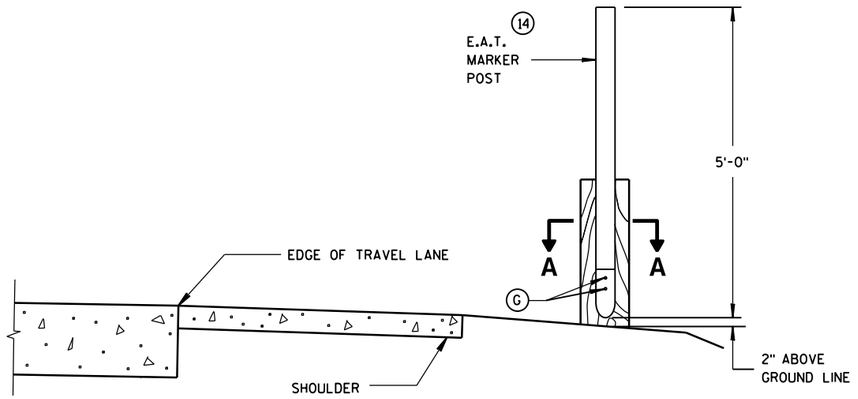
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

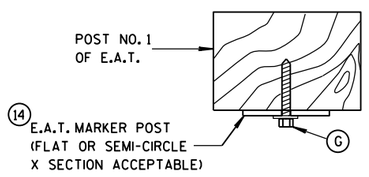
SIDE VIEW

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)

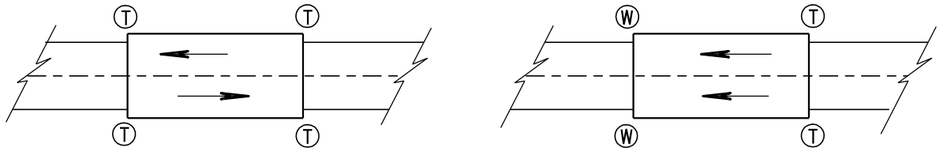


SECTION A-A

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

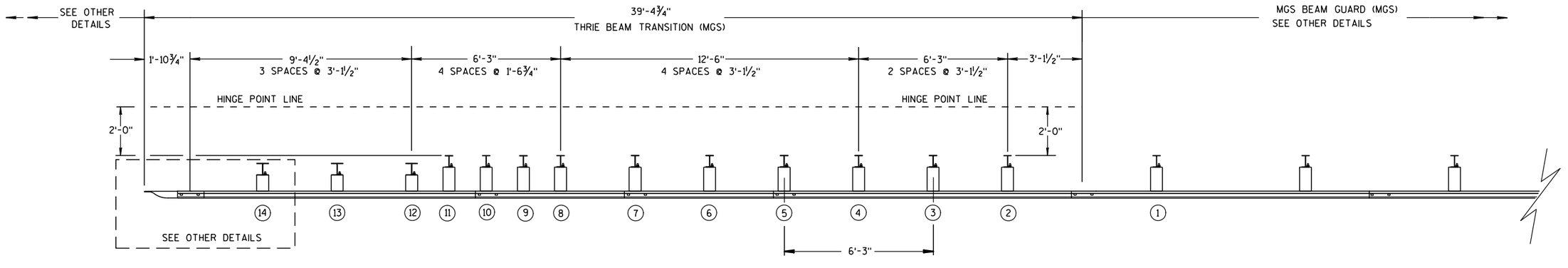
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

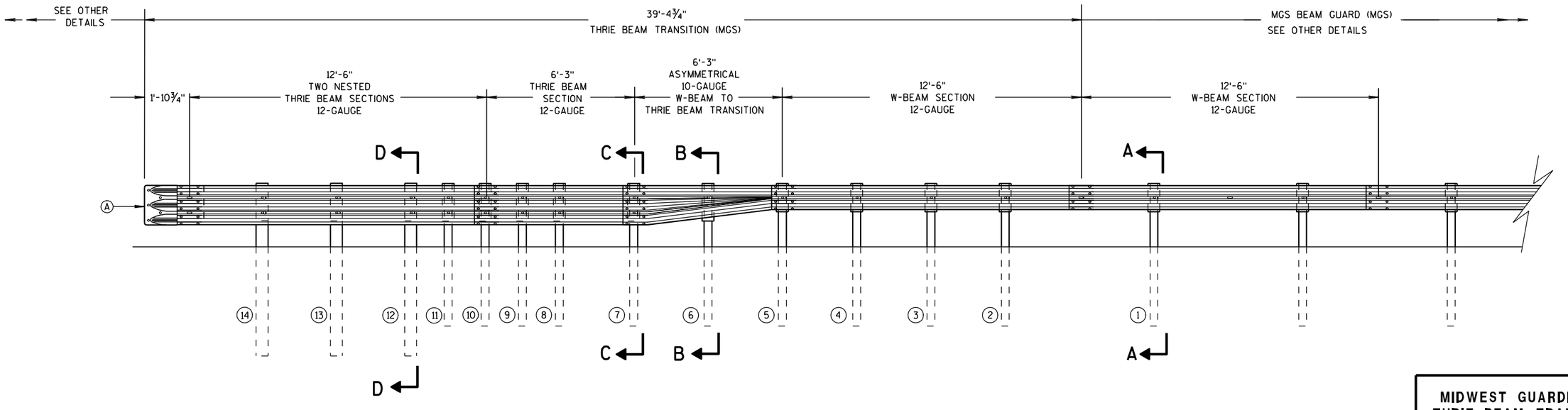
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ 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

6

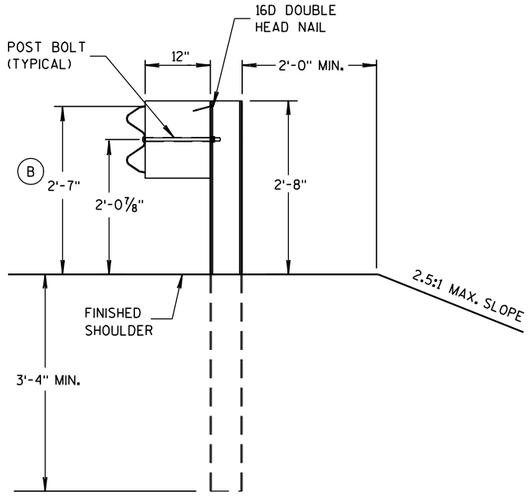
S.D.D. 14 B 45-3a

6

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

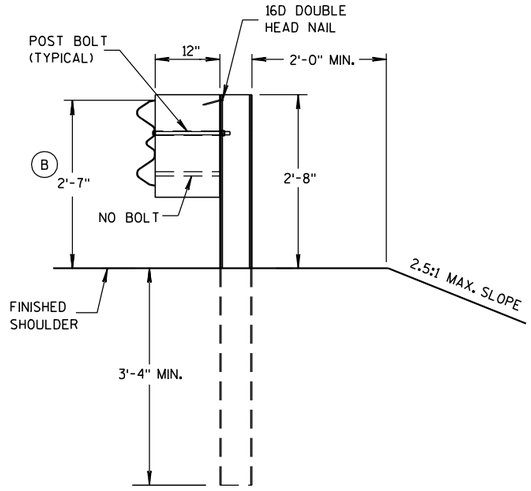
GENERAL NOTES

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



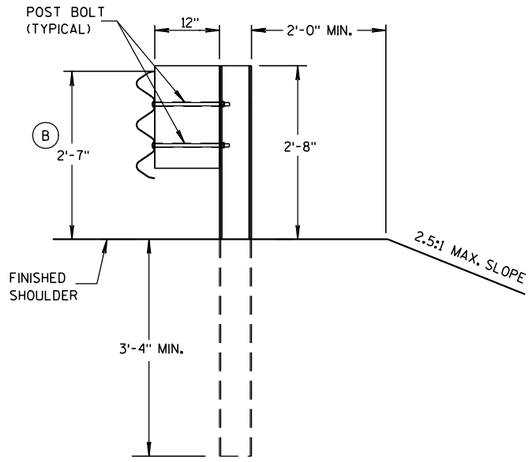
SECTION A-A

POSTS 1-5



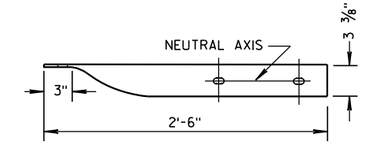
SECTION B-B

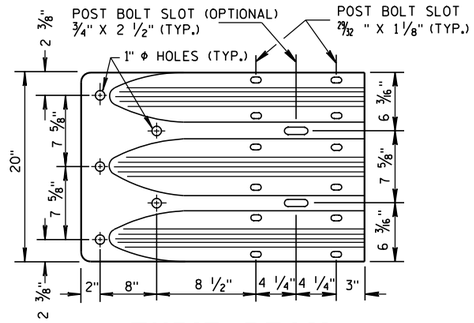
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

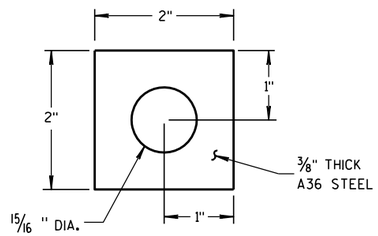
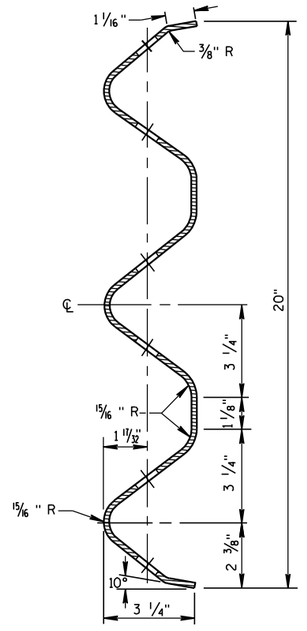
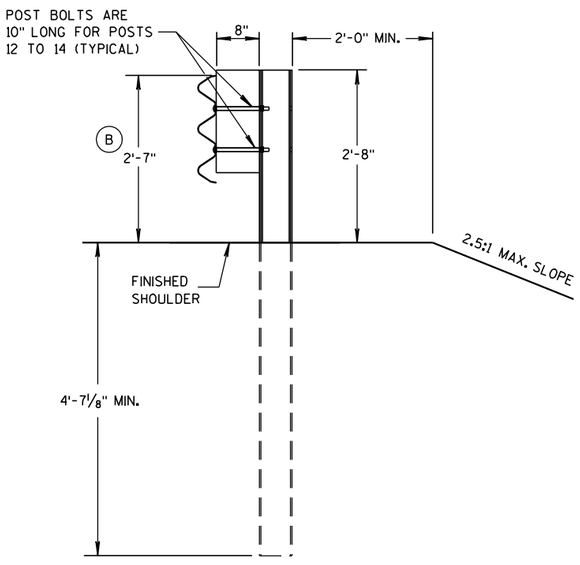


PLATE WASHER DETAIL

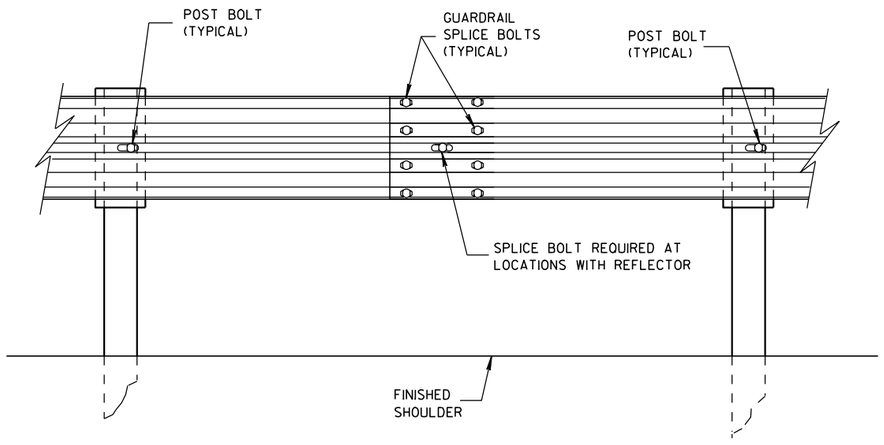


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

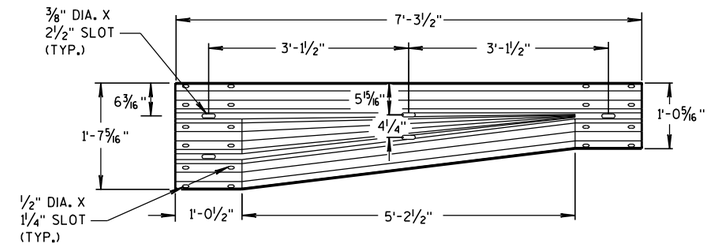
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

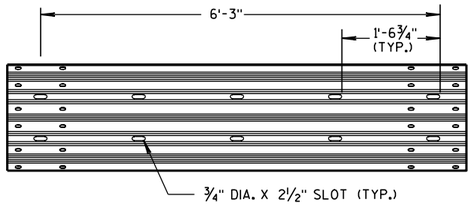
S.D.D. 14 B 45-3b

6

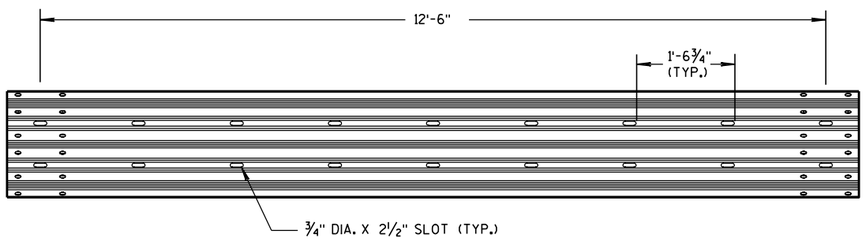
S.D.D. 14 B 45-3b



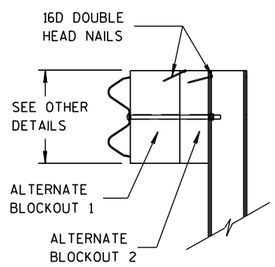
W-BEAM TO THRIE BEAM TRANSITION SECTION



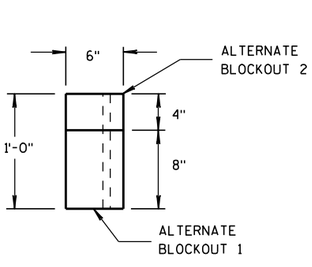
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

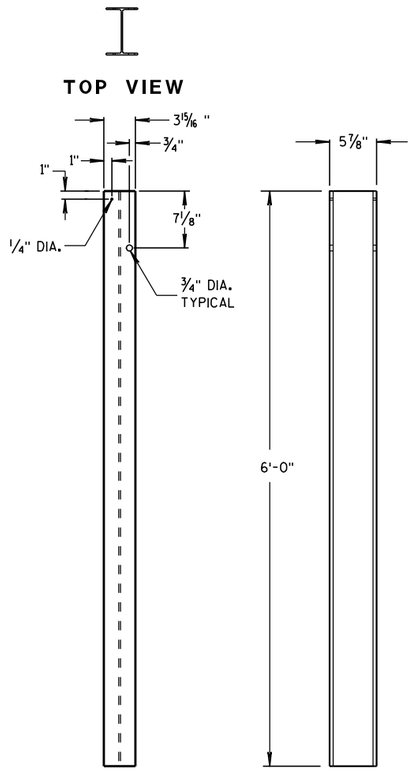


SIDE VIEW



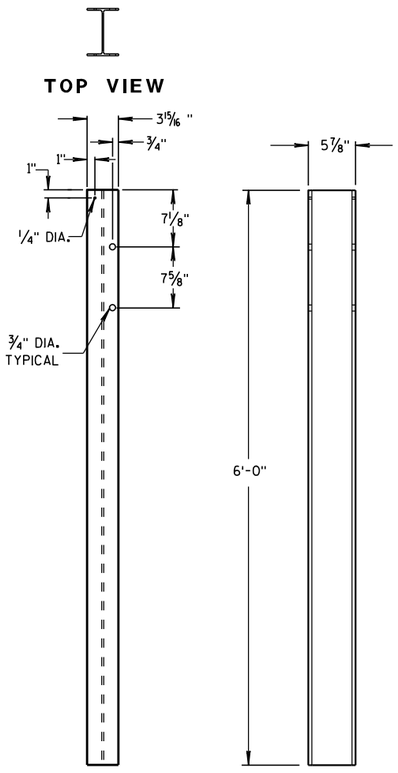
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



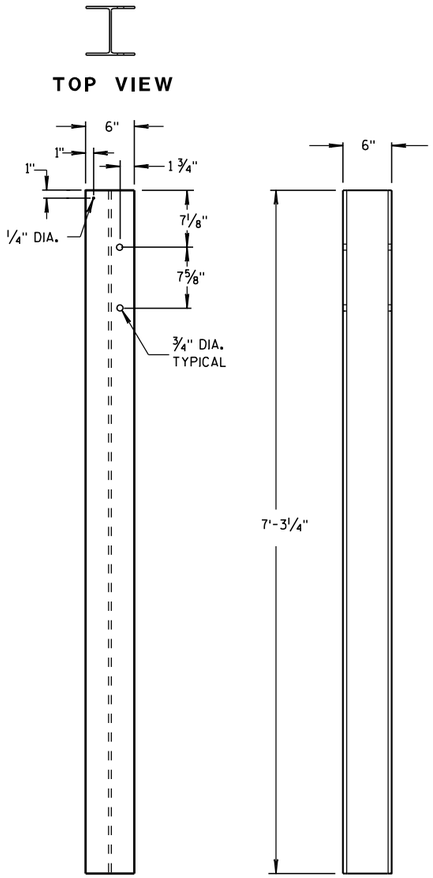
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

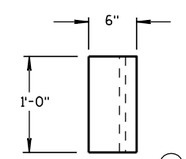
STEEL POSTS 6-11



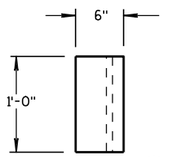
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

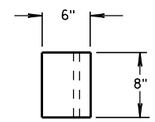
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



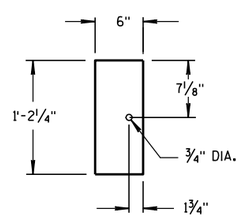
TOP VIEW (1)



TOP VIEW (1)

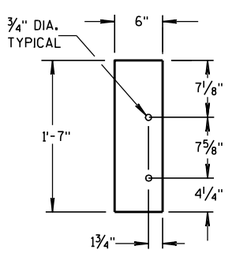


TOP VIEW



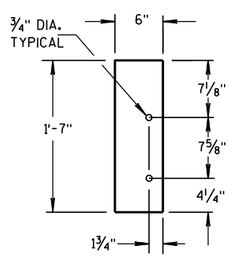
FRONT VIEW

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)

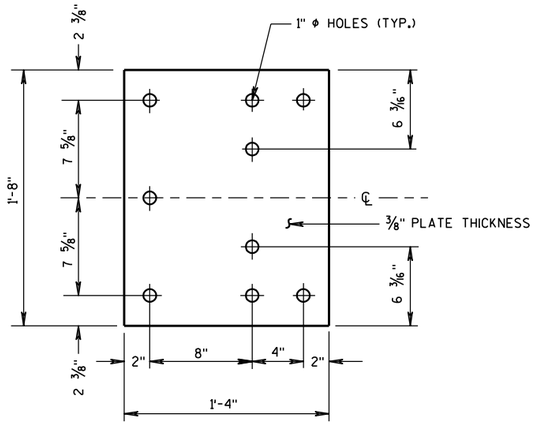
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

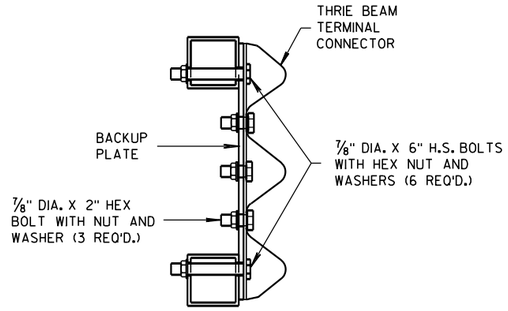
S.D.D. 14 B 45-3c

6

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



BACK-UP PLATE DETAIL

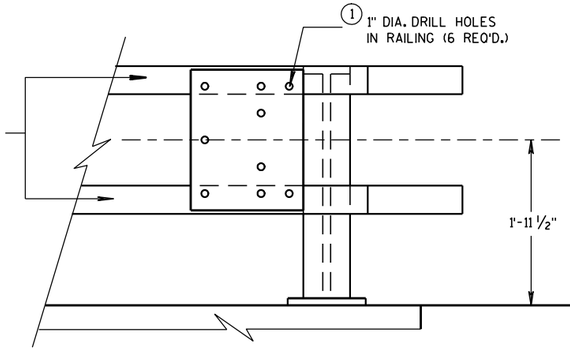


SECTION J-J

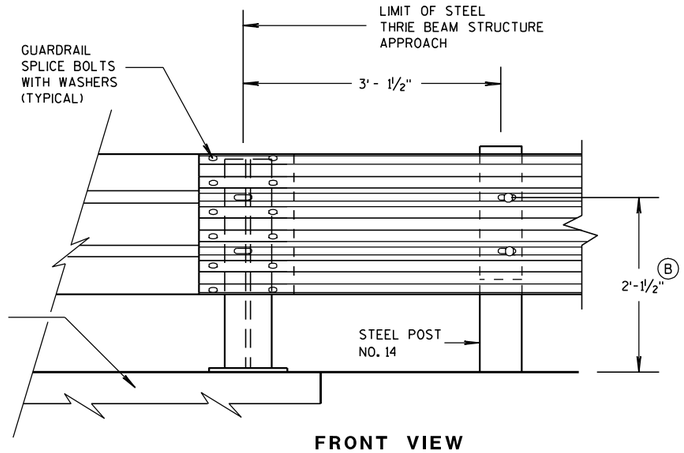
GENERAL NOTES

(1) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

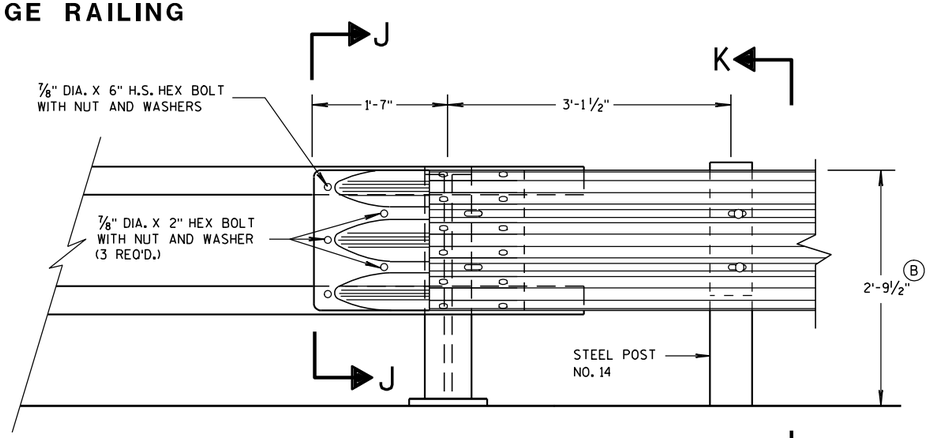


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

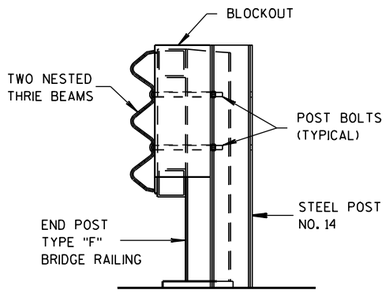


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

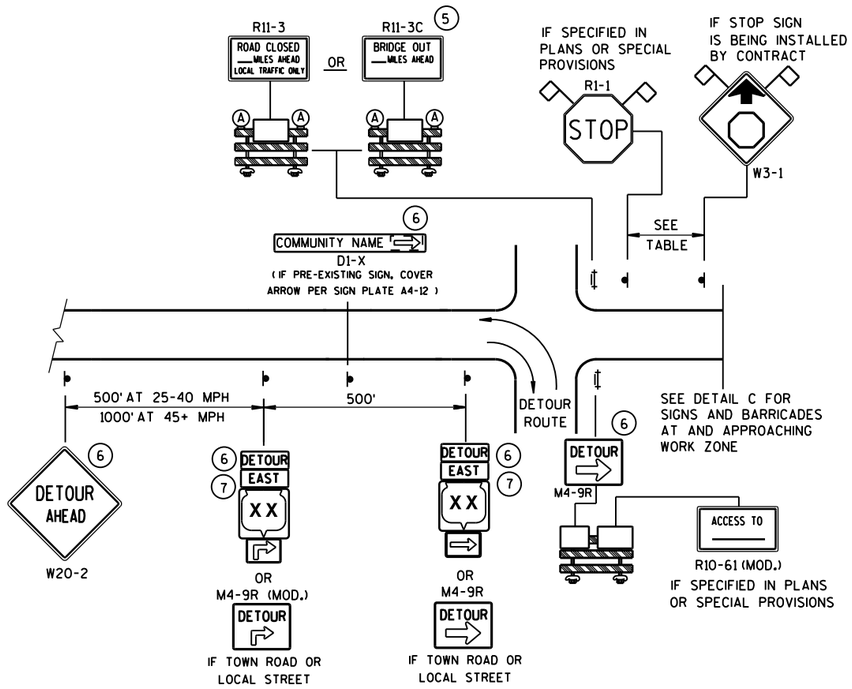
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

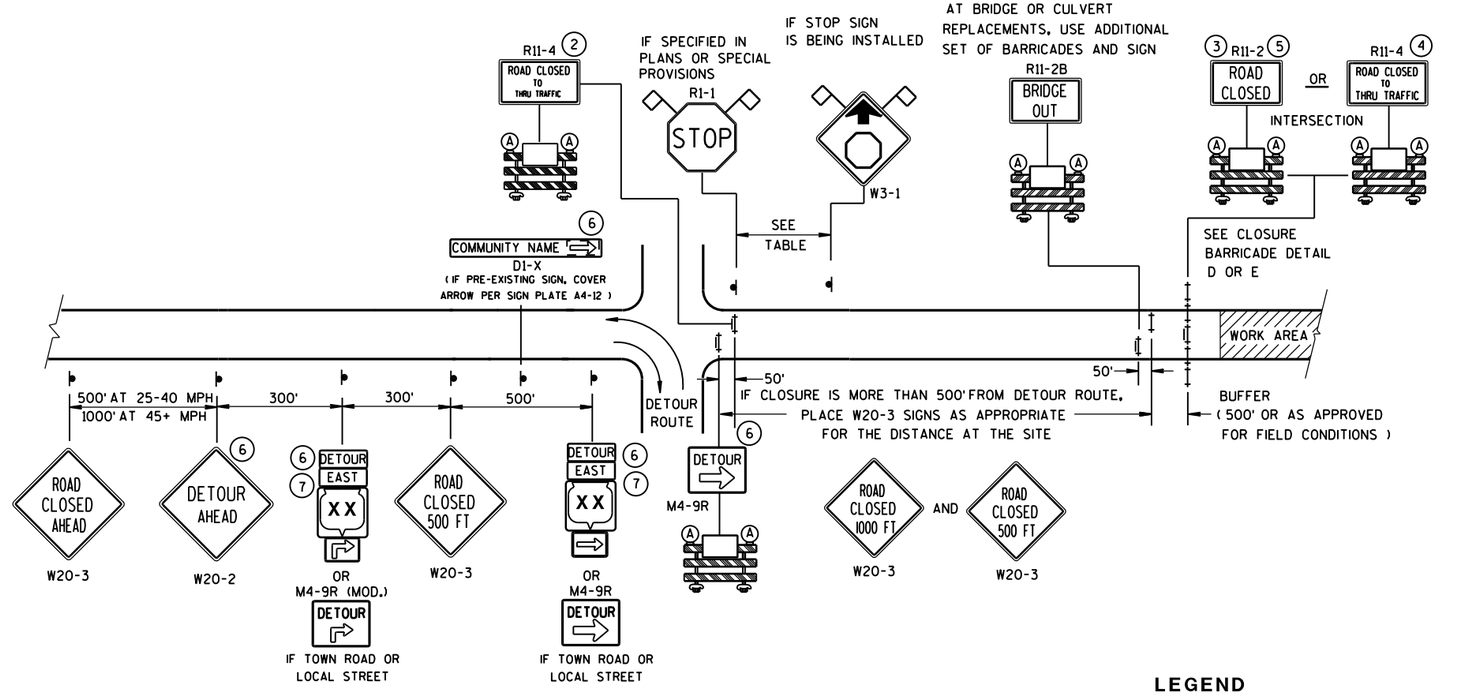
APPROVED
8/31/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 14 B 45-3g



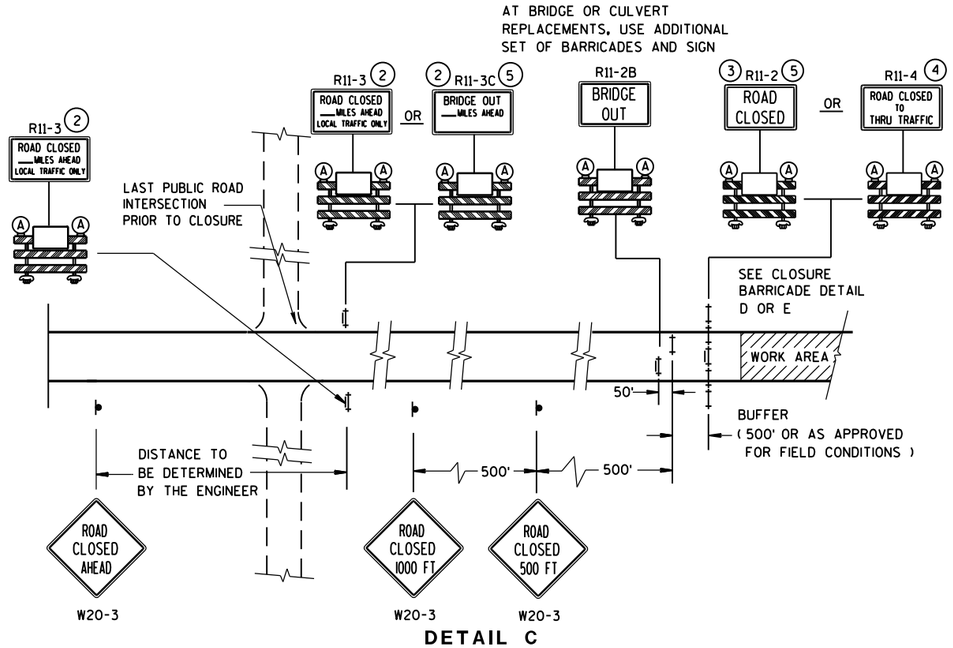
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

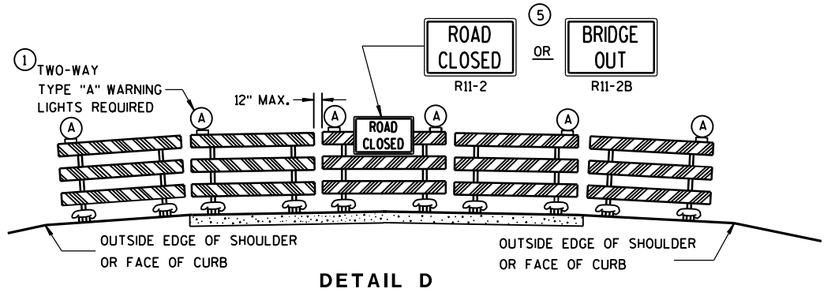
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

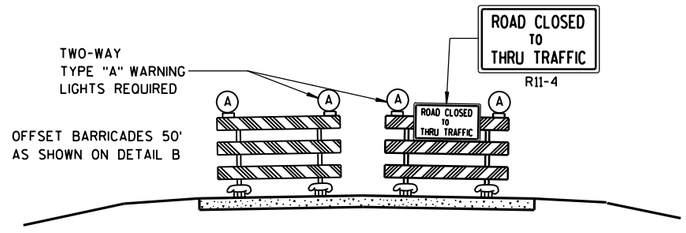
S.D.D. 15 C 2-5a



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.

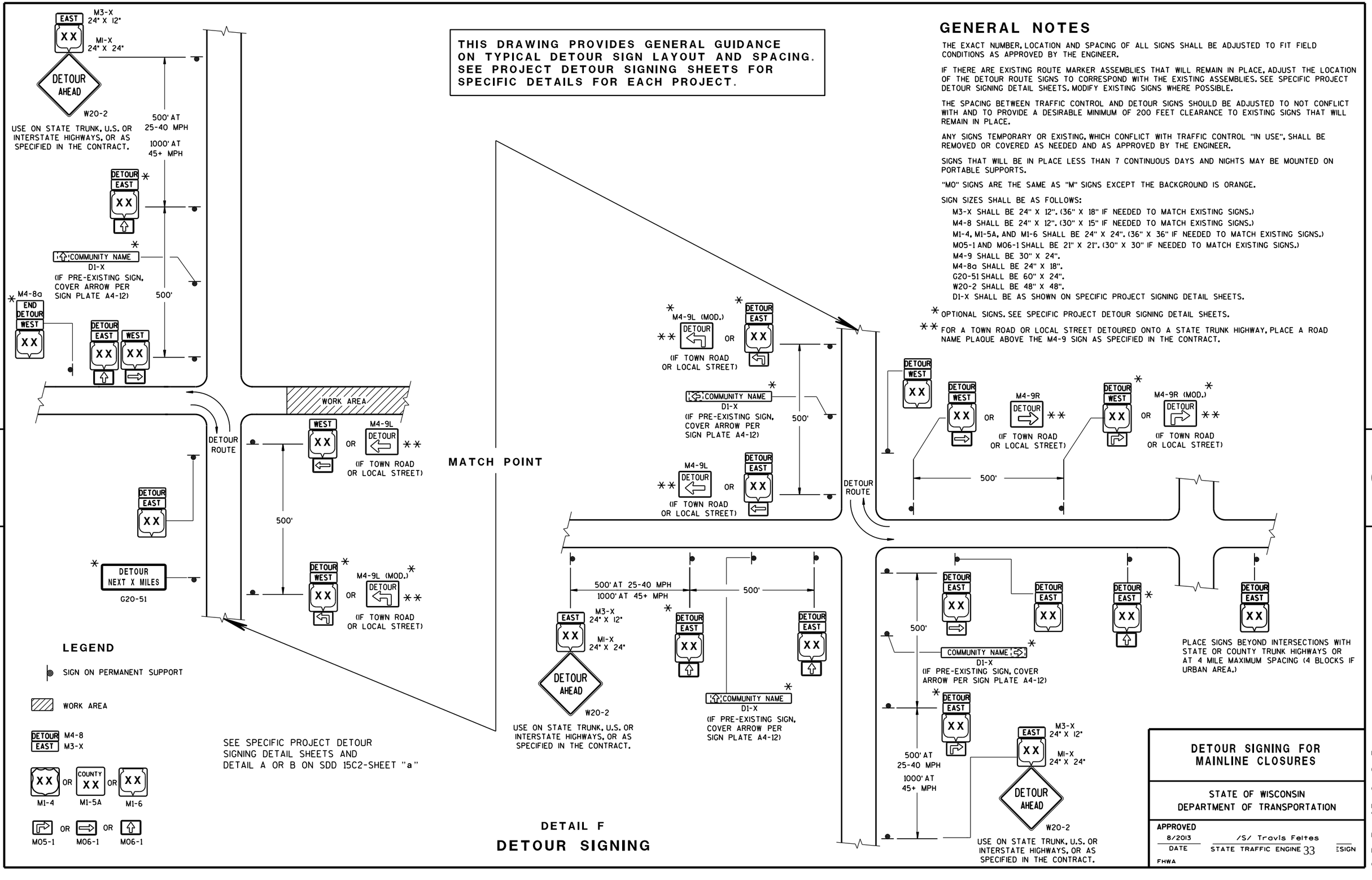
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.)
- MO5-1 AND MO6-1 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

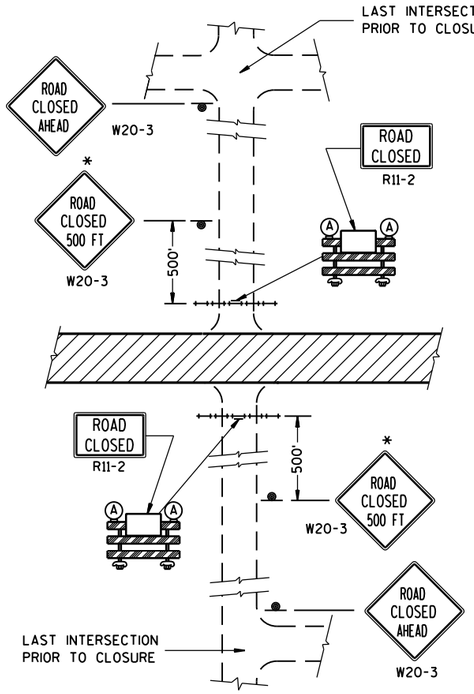
DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

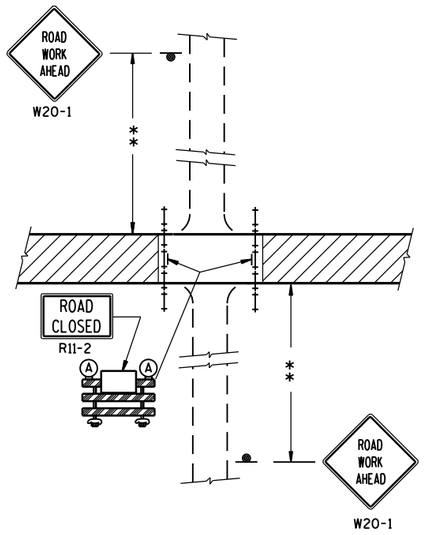
FHWA

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



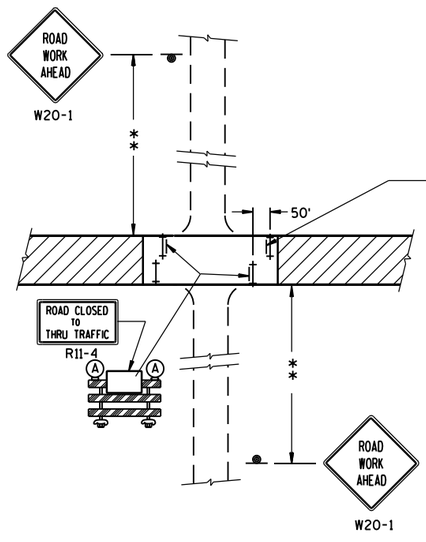
DETAIL 1

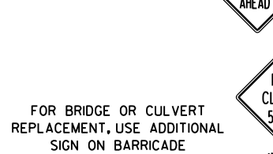
(NO ACCESS TO PROJECT)



DETAIL 2

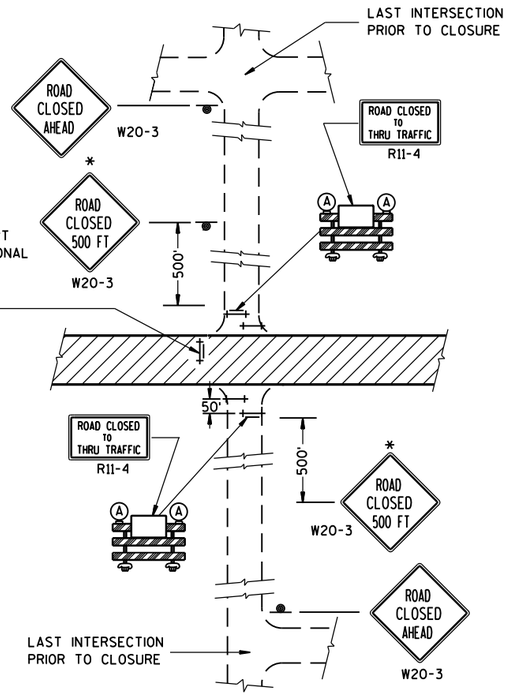
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

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.

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

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 AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

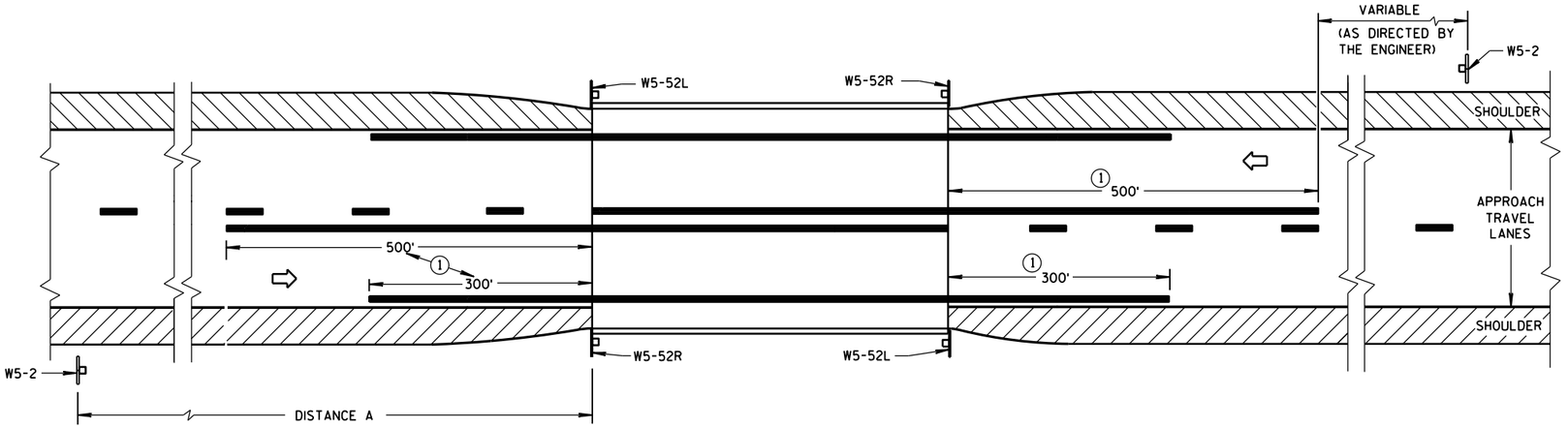
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 3-2

6

S.D.D. 15 C 3-2



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.

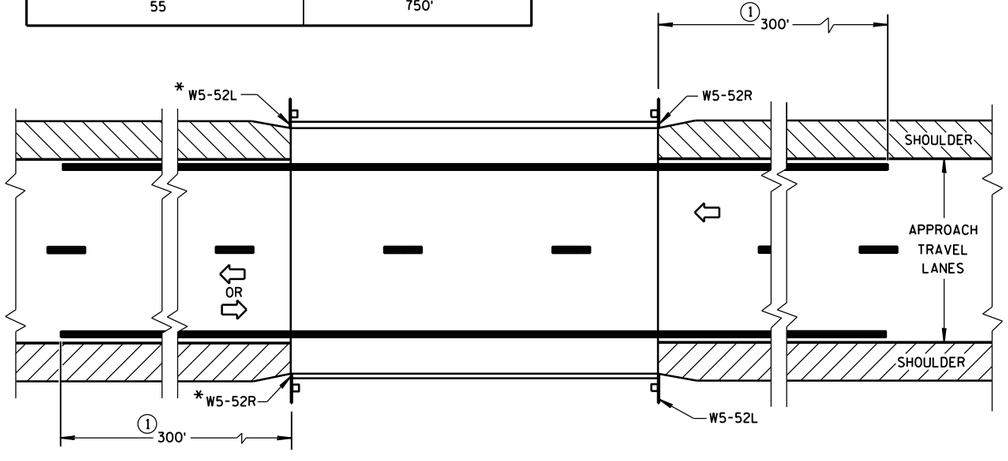
DISTANCE TABLE

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

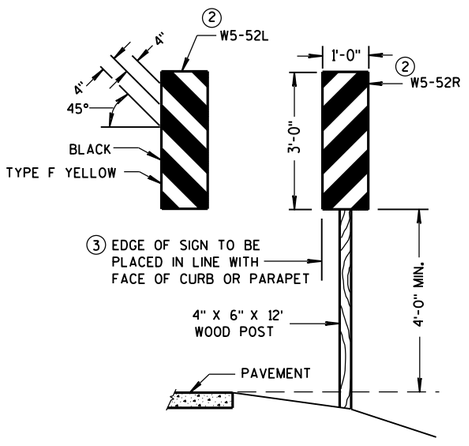


*OMIT ON ONE-WAY TRAVELLED WAYS

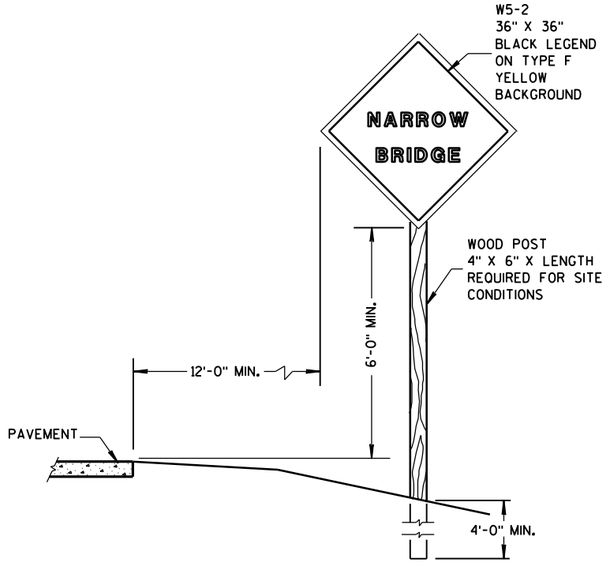
SITUATION 2

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

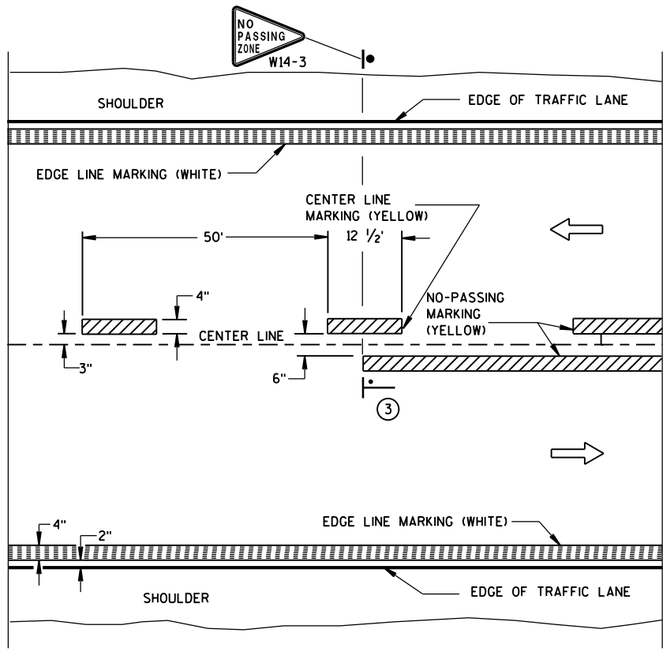
3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

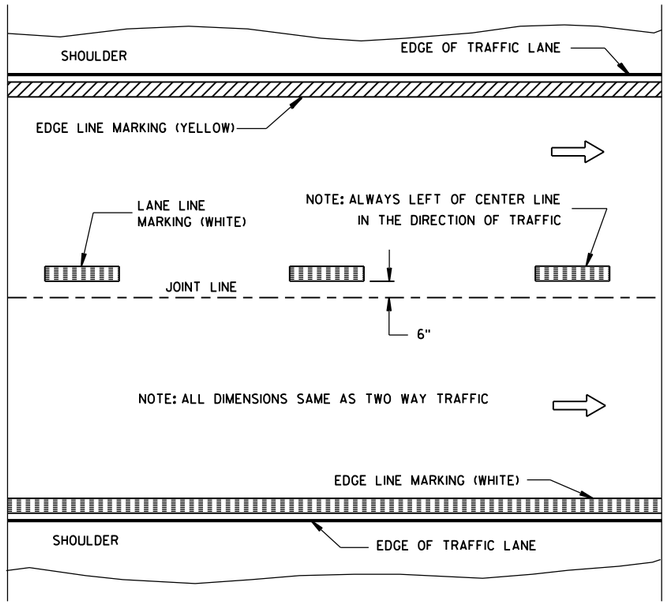
FHWA

6

S.D.D. 15 C 6-7

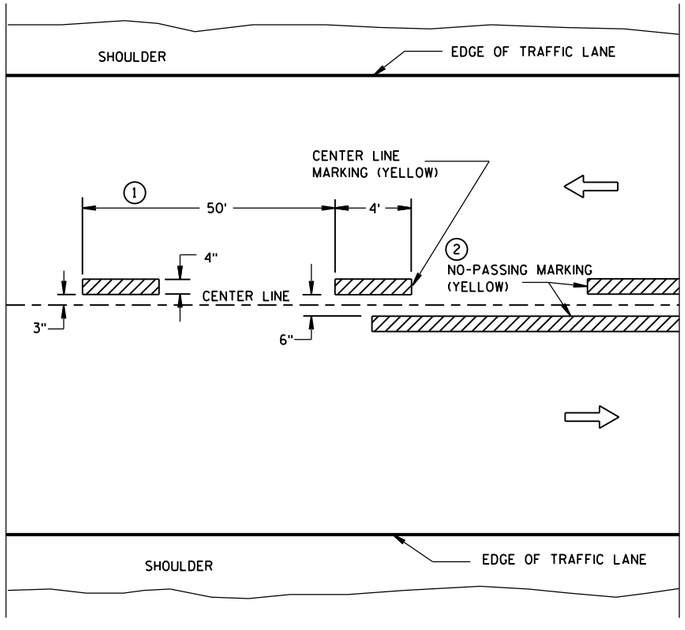


TWO WAY TRAFFIC

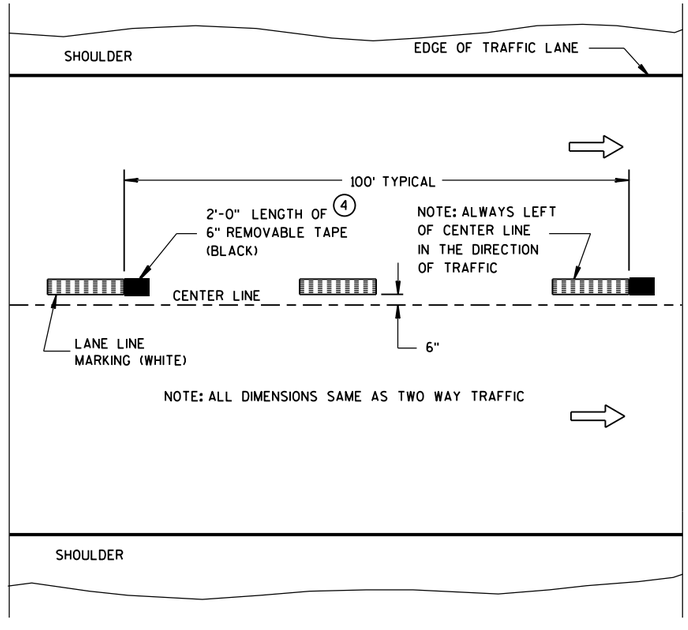


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

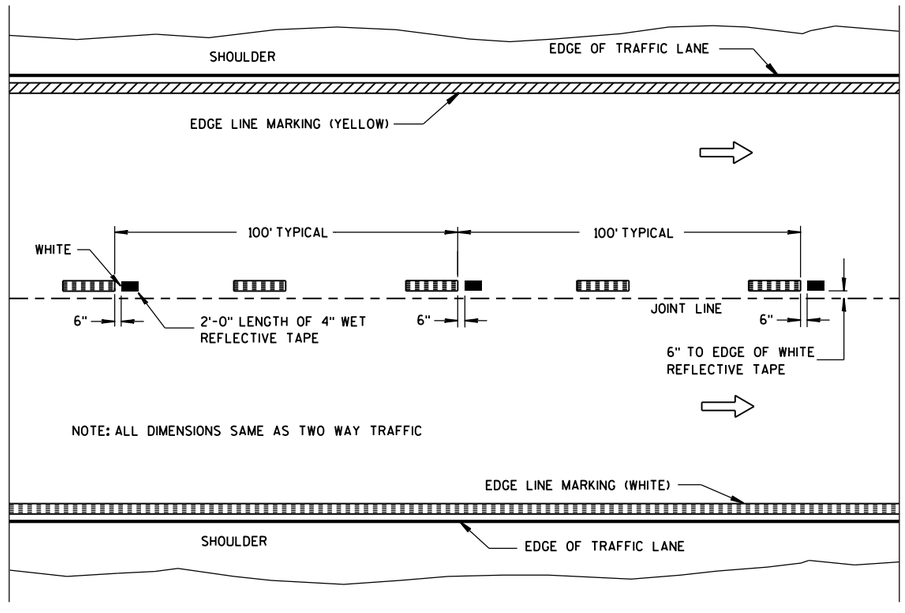
GENERAL NOTES

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

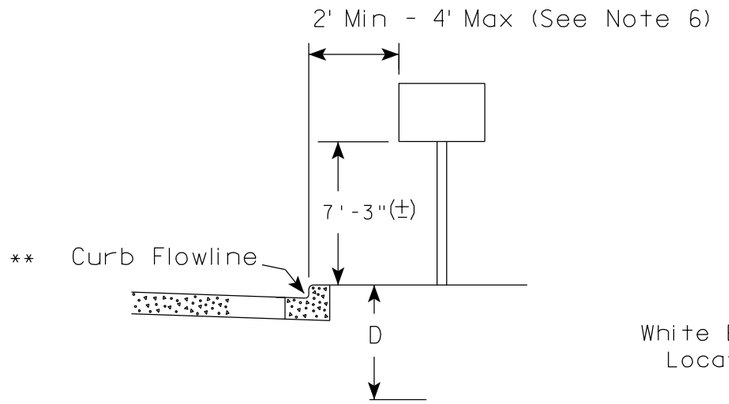
6

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

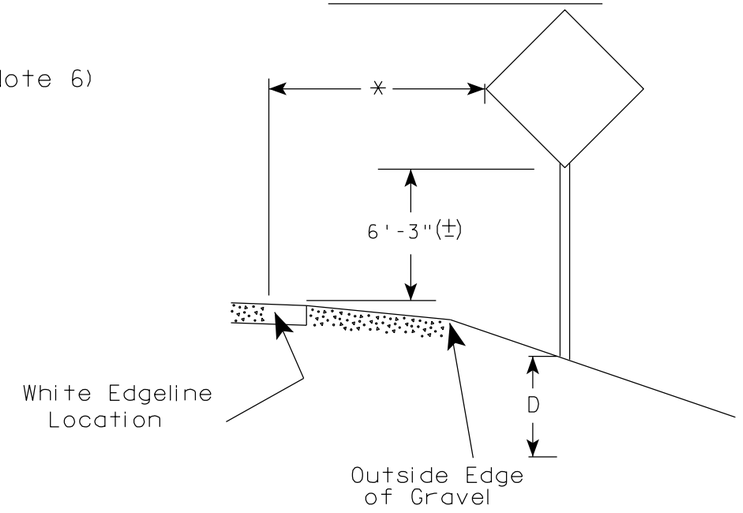
6

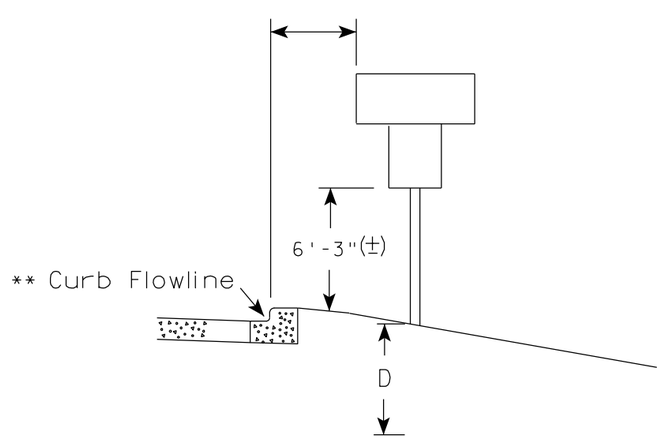
S.D.D. 15 C 8-16a

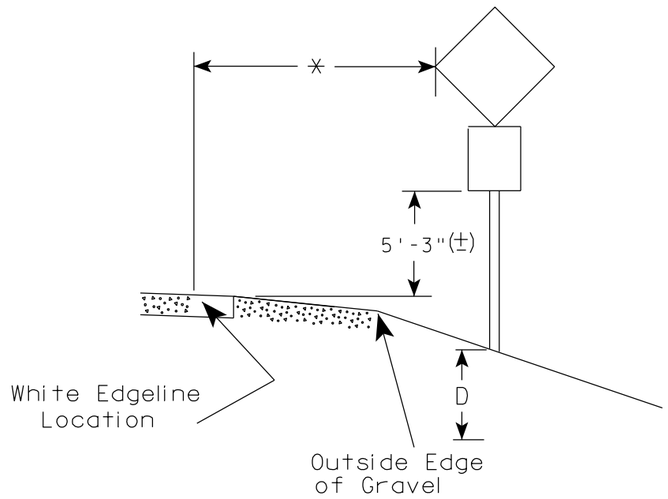
URBAN AREA



RURAL AREA (See Note 2)







** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

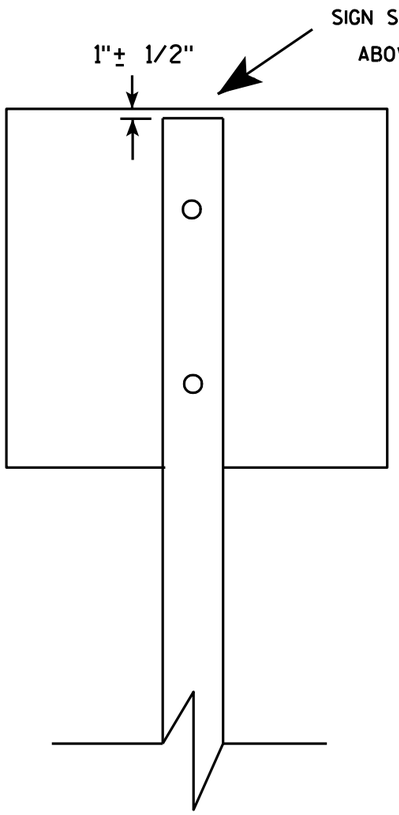
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

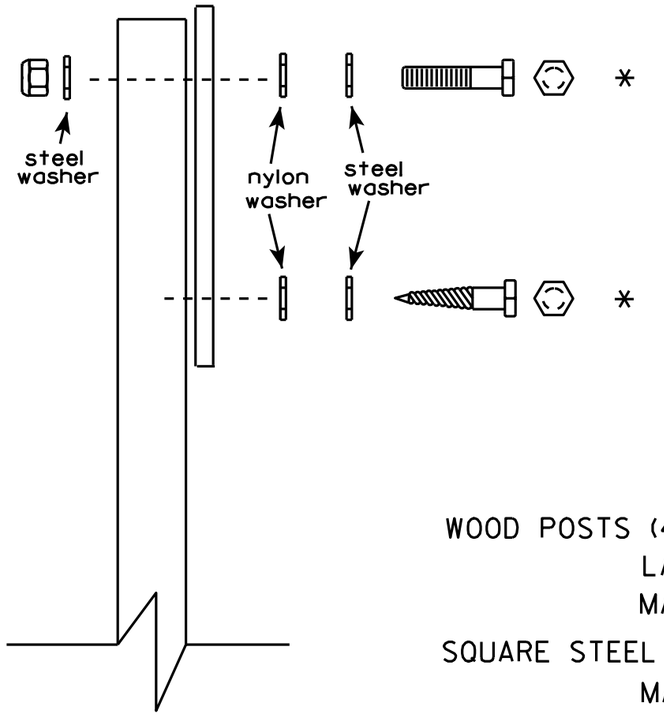
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	SIGNS	SHEET NO:	E





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

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

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")

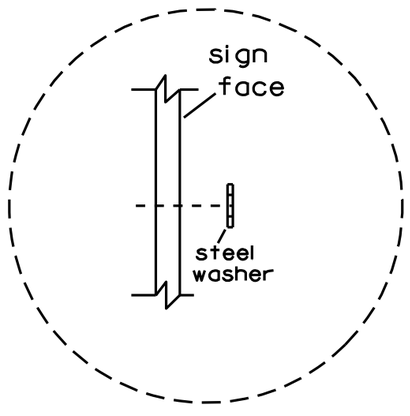
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts

RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

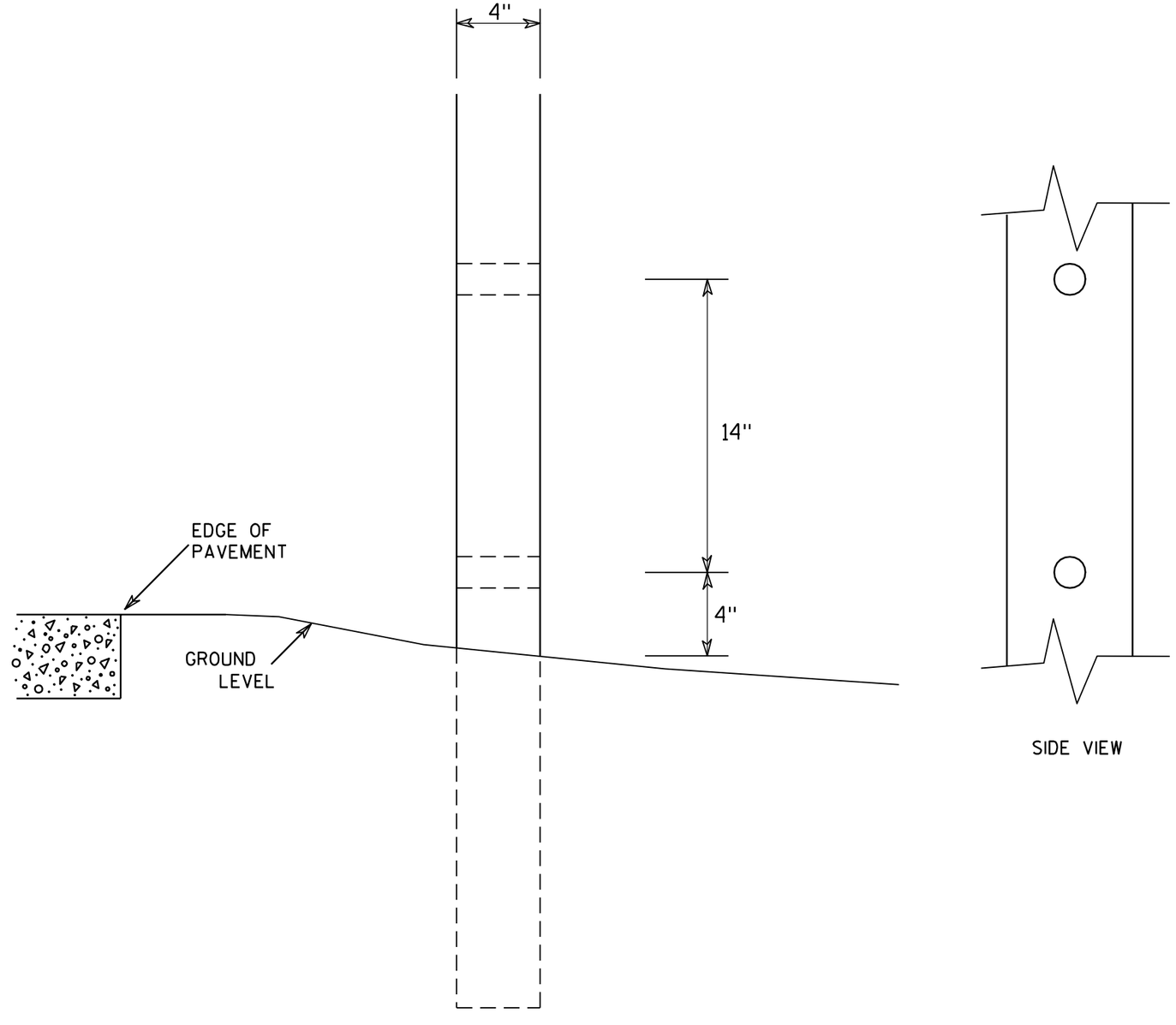
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	SIGNS	SHEET NO: 38	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A48.DGN PLOT DATE : 23-MAR-2010 10:15 PLOT BY : ditjph

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

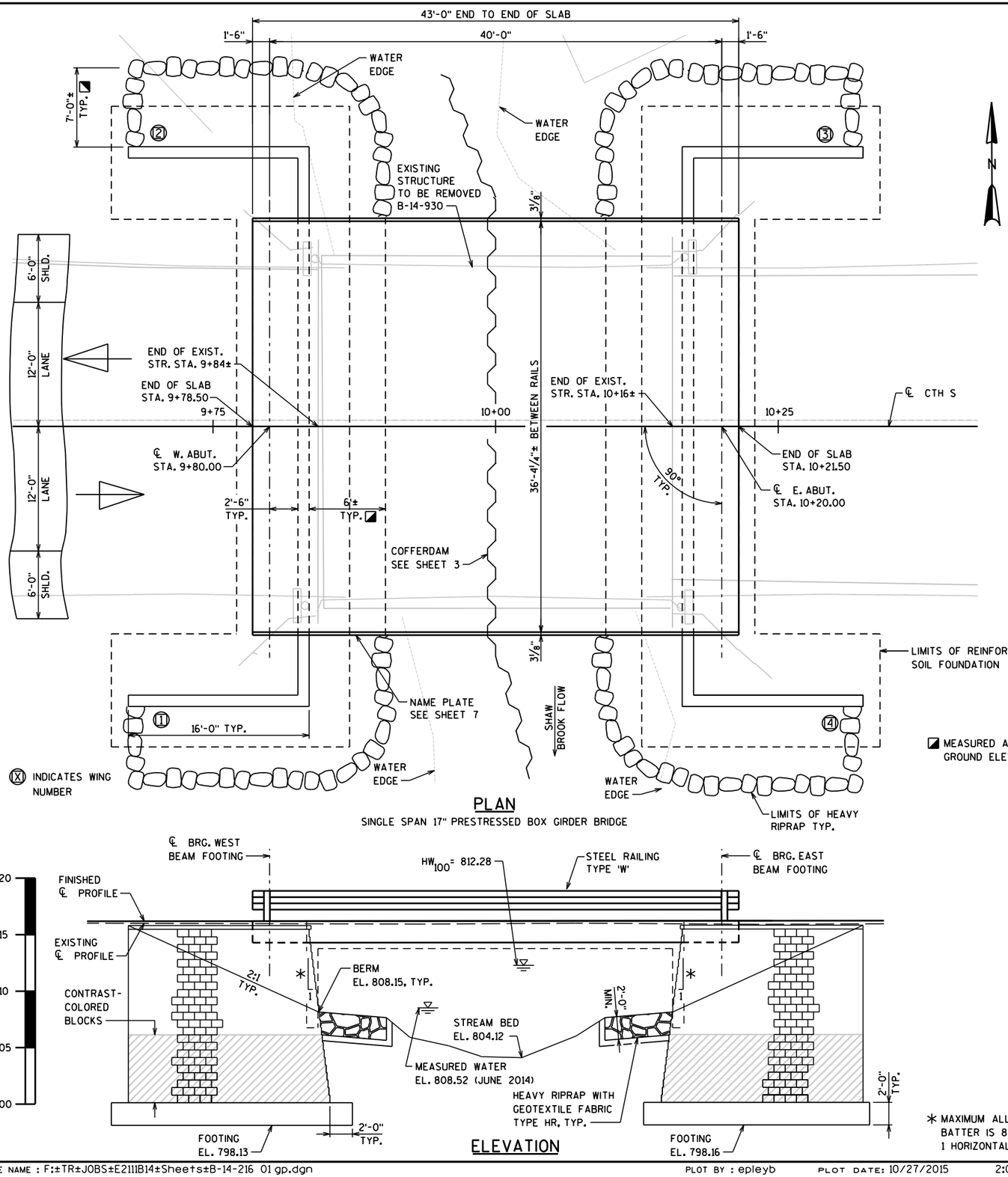
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	SIGNS	SHEET NO: 39	E

STATE PROJECT NUMBER
3898-00-70



PLAN

SINGLE SPAN 17" PRESTRESSED BOX GIRDER BRIDGE

◪ MEASURED AT FINISH GROUND ELEVATION

ELEVATION

✱ MAXIMUM ALLOWABLE WALL BATTER IS 8 VERTICAL TO 1 HORIZONTAL OR 7.1 DEGREES.

TRAFFIC DATA

ADT = 1,300 (2015)
1,400 (2035)
RDS = 50 M.P.H.

DESIGN DATA

STRUCTURE IS DESIGNED FOR FUTURE WEARING SURFACE OF 20#/SQ. FT.

LIVE LOAD:

- DESIGN LOADING — HL-93
- INVENTORY RATING FACTOR — RF = 1.36
- OPERATING RATING FACTOR — RF = 1.78
- MAX. STD. PERMIT VEHICLE LOAD — 250 KIPS

MATERIAL PROPERTIES:

- CONCRETE MASONRY OVERLAY, GRADE E OR C — f'c = 4,000 PSI
- PRESTRESSED GIRDERS CONCRETE MASONRY — f'c = 5,000 PSI
- STRANDS, 0.5" ϕ ULTIMATE TENSILE STRENGTH — fy = 270,000 PSI
- HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 PSI

LIST OF DRAWINGS

HYDRAULIC DATA

- Q_{100} — 771 C.F.S.
- VELOCITY — 4.56 F.P.S.
- HIGH WATER — EL. 812.28 (100 YEAR)
- HIGH WATER — EL. 810.67 (2 YEAR)
- WATERWAY AREA — 169 S.F.
- DRAINAGE AREA — 25.8 SQ. MILES
- OVERTOPPING FREQUENCY = N/A
- SCOUR CRITICAL CODE = 8

FOUNDATION DATA

FACTORED BEARING RESISTANCE OF 5,000 PSF AT BOTTOM OF REINFORCED SOIL FOUNDATION.

WISCONSIN
KRISTOFER R. OLSON
E-35236
APPLETON, WI
PROFESSIONAL ENGINEER

10/27/15

CONSULTANT CONTACT

KRISTOFER OLSON
OMNNI ASSOCIATES, INC.
(920) 735-6900

BRIDGE OFFICE CONTACT

WILLIAM DREHER
(608) 266-8489

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
OMNNI ASSOCIATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher SDR 12/15/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-14-216

CTH S OVER SHAW BROOK

COUNTY	TOWN
DODGE	BEAVER DAM

DESIGN SPEC.	LOAD
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS	HL-93

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
BRE	KRO	BRE	KRO

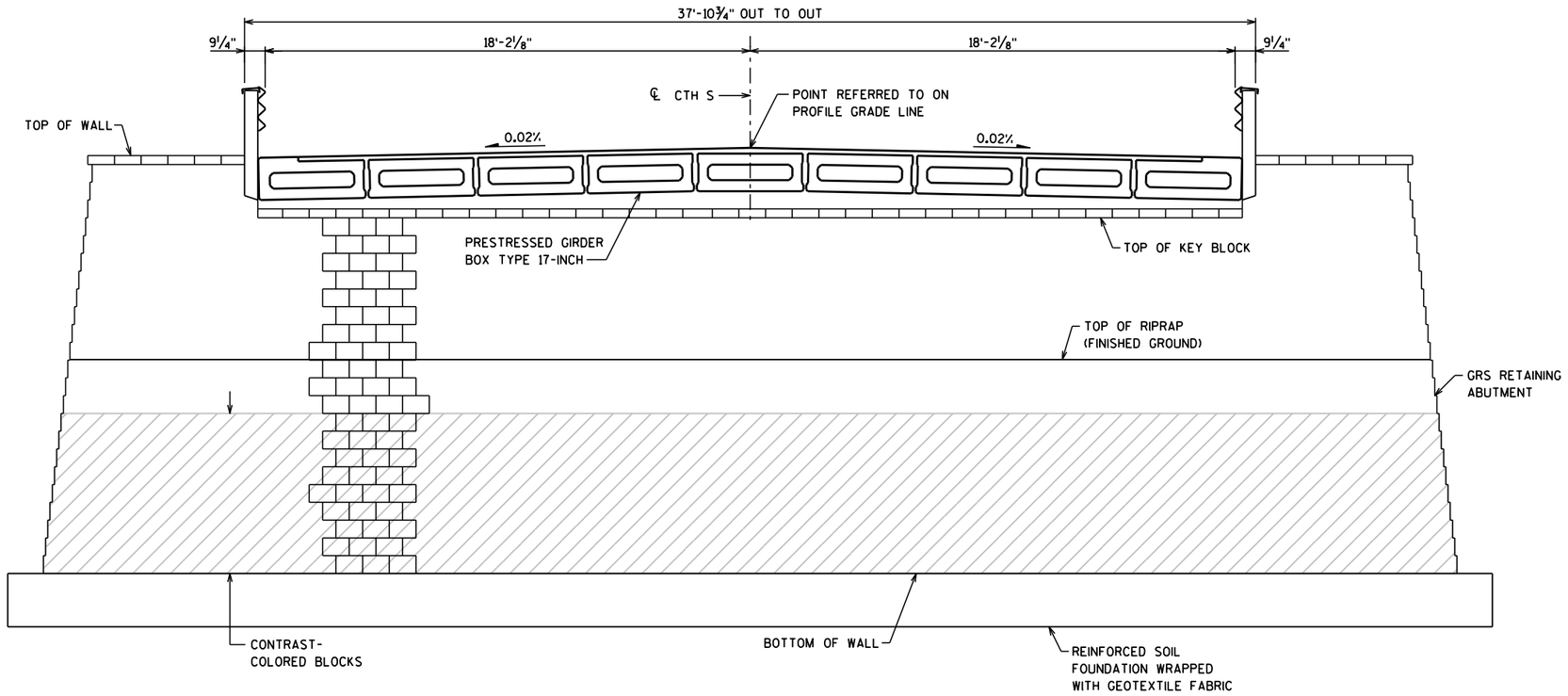
GENERAL PLAN

SHEET 1 OF 9

40

FILE NAME : F:±TR±JOBS±E2111B14±Sheets±B-14-216 01 gp.dgn
PLOT BY : epleyb
PLOT DATE: 10/27/2015 2:04:53 PM

STATE PROJECT NUMBER
3898-00-70



CROSS SECTION THRU STRUCTURE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CHANNEL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

THIS BRIDGE WILL REPLACE THE EXISTING SINGLE SPAN CONCRETE DECK ON STEEL GIRDER BRIDGE WITH TIMBER RETAINING ABUTMENTS. THE STRUCTURE WAS BUILT IN 1947.

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION.

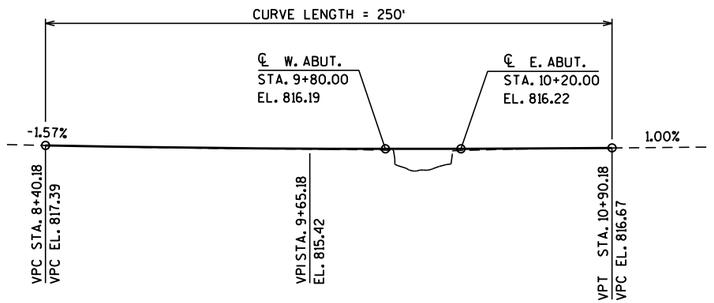
PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP, SIDES, AND 1'-0" OF THE UNDERSIDE OF THE SUPERSTRUCTURE.

PROTECT MODULAR BLOCK DURING PLACEMENT OF HEAVY RIPRAP.

THE FOLLOWING WEBSITE IS AVAILABLE FOR ADDITIONAL REFERENCE INFORMATION RELATED TO CONSTRUCTION OF GEOSYNTHETIC REINFORCED SOIL WALLS: www.fhwa.dot.gov/everydaycounts/technology/grs_ibs

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 10+00)	LS	-----	-----	-----	1
206.5000	COFFERDAMS (B-14-216)	LS	-----	-----	-----	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	202	-----	-----	202
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	11	-----	-----	11
513.7051	RAILING STEEL TYPE W (B-14-216)	LF	84	-----	-----	84
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	13	-----	-----	13
606.0300	RIPRAP HEAVY	CY	-----	54	54	108
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	-----	81	81	162
SPV.0090	PRESTRESSED GIRDER BOX TYPE 17-INCH	LF	387	-----	-----	387
SPV.0165	GEOSYNTHETIC REINFORCED SOIL ABUTMENT	SF	-----	1,203	1,203	2,406
	NON-BID ITEMS					
	EXPANDED POLYSTYRENE	SIZE	——	——	——	2"



PROFILE GRADE LINE

BENCH MARKS (NAVD 88)

NO.	STATION	DESCRIPTION	ELEV.
1	13+49, 64' RT.	2ND POLE EAST OF BRIDGE SOUTH SIDE *11-14-27 32/52	817.10
2	9+24, 60' RT.	1ST POLE WEST OF BRIDGE SOUTH SIDE *11-14-27 34/52	810.78
3	11+80, 56' RT.	1ST POLE EAST OF BRIDGE SOUTH SIDE *11-14-27 36/52	814.88

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-216

DRAWN BY BRE | PLANS CK'D. KRO

CROSS SECTION & QUANTITIES

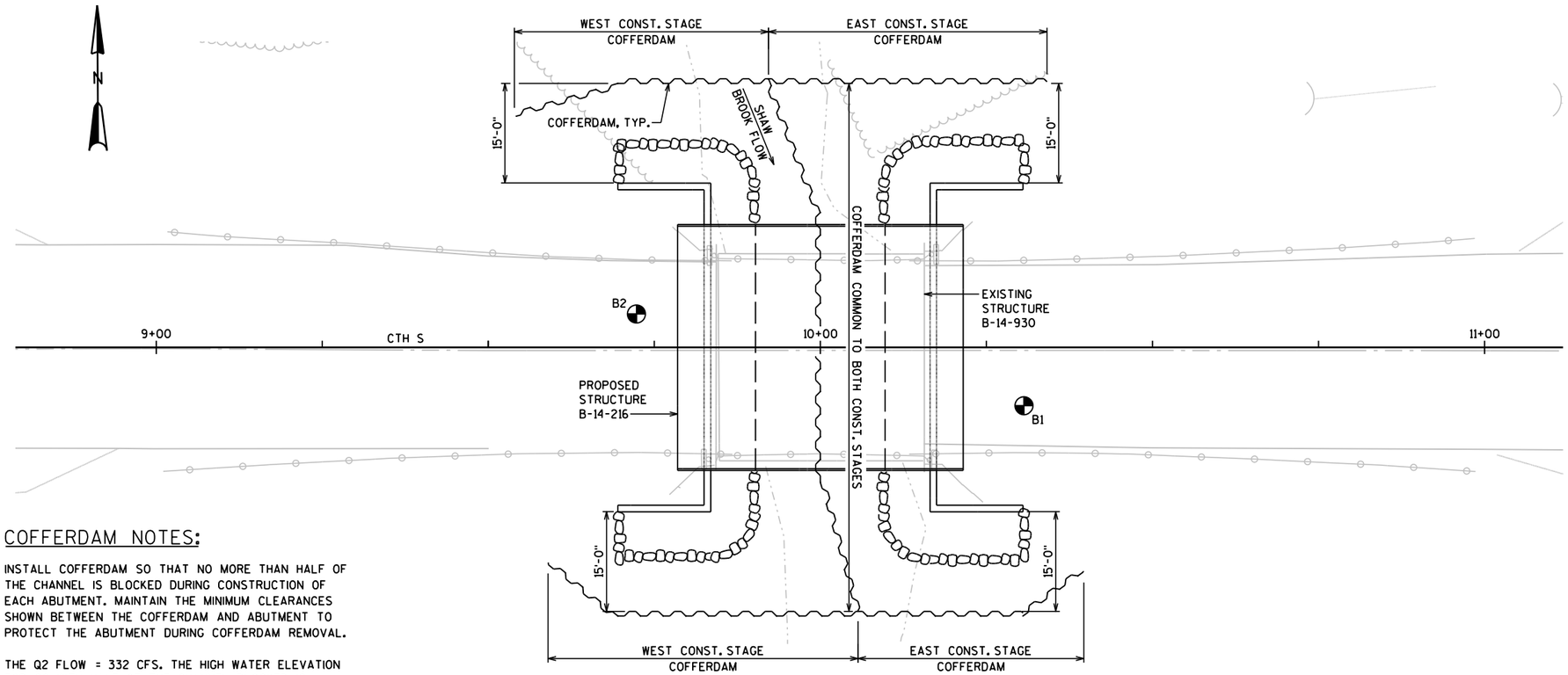
SHEET 2 OF 9

41

8

8

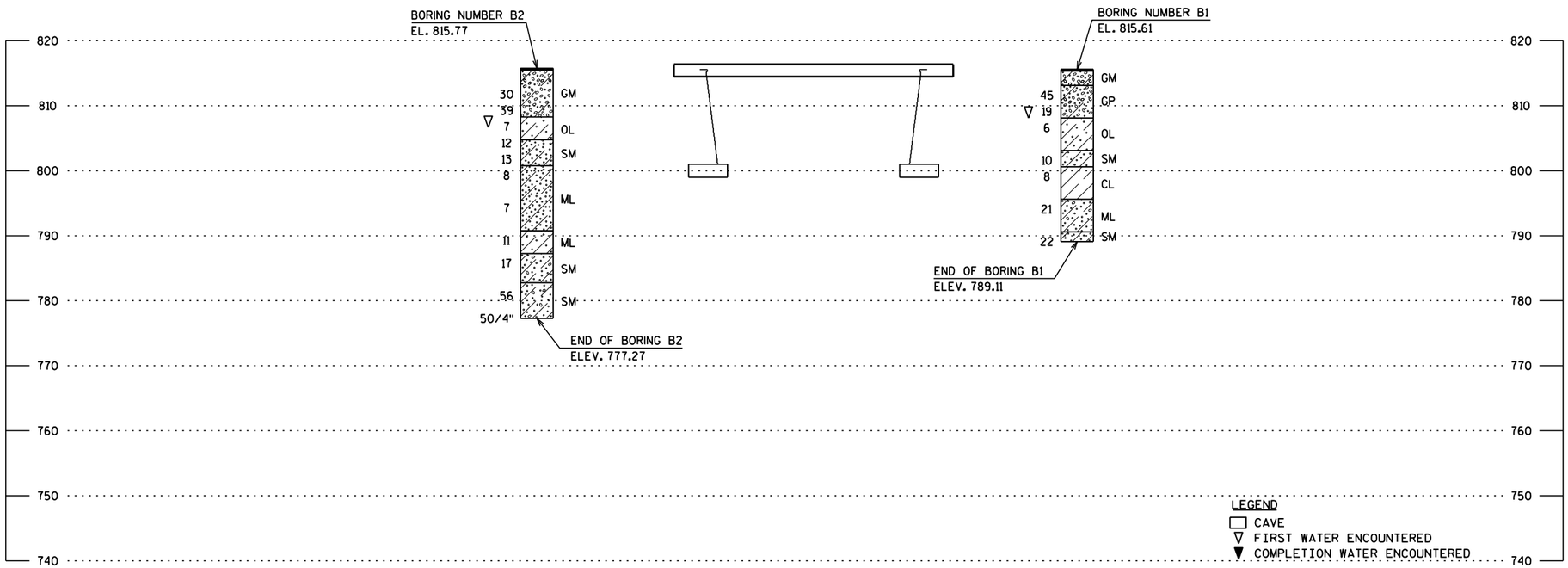
STATE PROJECT NUMBER
3898-00-70



COFFERDAM NOTES:

INSTALL COFFERDAM SO THAT NO MORE THAN HALF OF THE CHANNEL IS BLOCKED DURING CONSTRUCTION OF EACH ABUTMENT. MAINTAIN THE MINIMUM CLEARANCES SHOWN BETWEEN THE COFFERDAM AND ABUTMENT TO PROTECT THE ABUTMENT DURING COFFERDAM REMOVAL.

THE Q2 FLOW = 332 CFS. THE HIGH WATER ELEVATION FOR Q2 WITH HALF OF THE CHANNEL BLOCKED IS APPROXIMATELY 813.00.



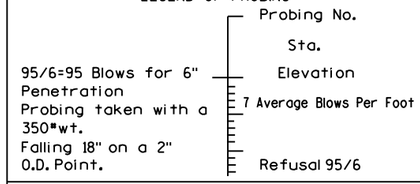
ABBREVIATIONS

F — Fine M — Medium C — Coarse
Ws — Weathered So — Sound

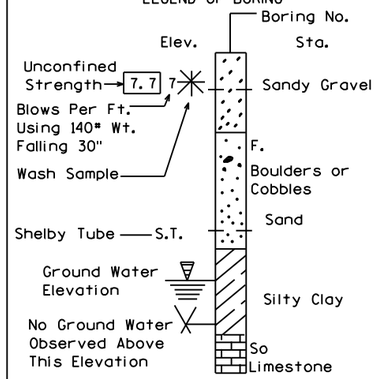
MATERIAL SYMBOLS

Topsoil, Silt, Sandstone
Sand, Peat, Limestone
Gravel, Clay, Igneous Rock

LEGEND OF PROBING



LEGEND OF BORING



Unless otherwise specified, the blows per foot at the locations indicated are based on driving a O.D.x1. 4" I.D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-14-216

DRAWN BY: BRE PLANS CK'D.: KRO

SUBSURFACE EXPLORATION

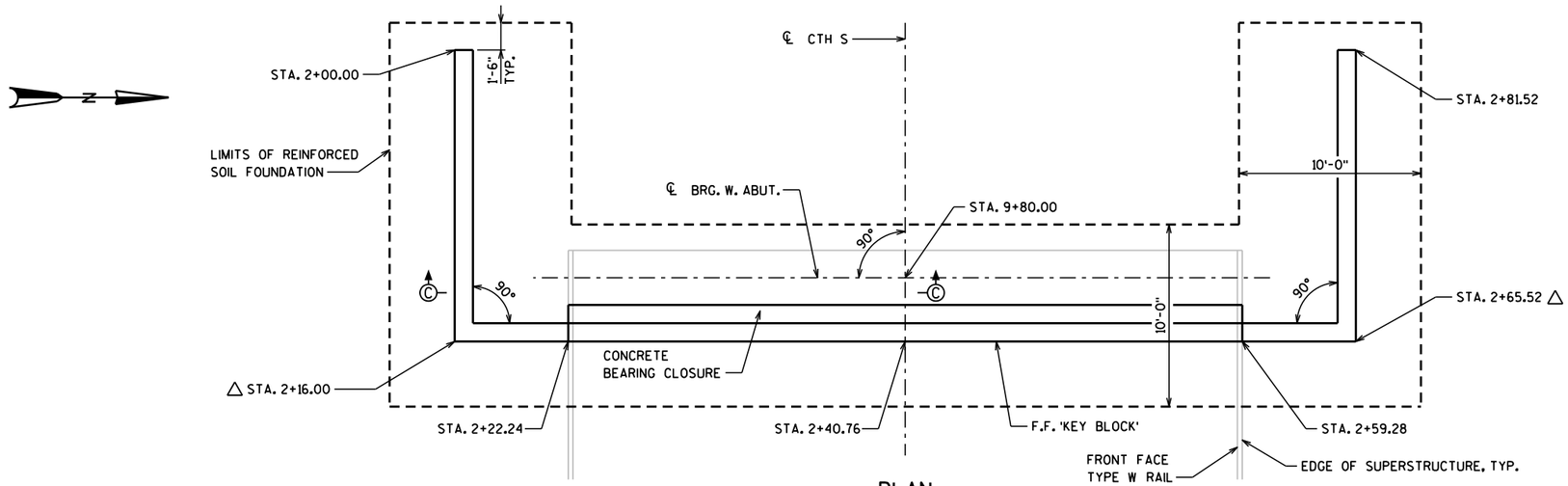
SHEET 3 OF 9

42

8

8

STATE PROJECT NUMBER
3898-00-70



PLAN

NOTES:

ALL WALL STATIONING AND OFFSETS ARE GIVEN AT THE FRONT FACE OF THE 'KEYBLOCK'. SEE WALL SECTIONS FOR LOCATION OF THE 'KEYBLOCK'.

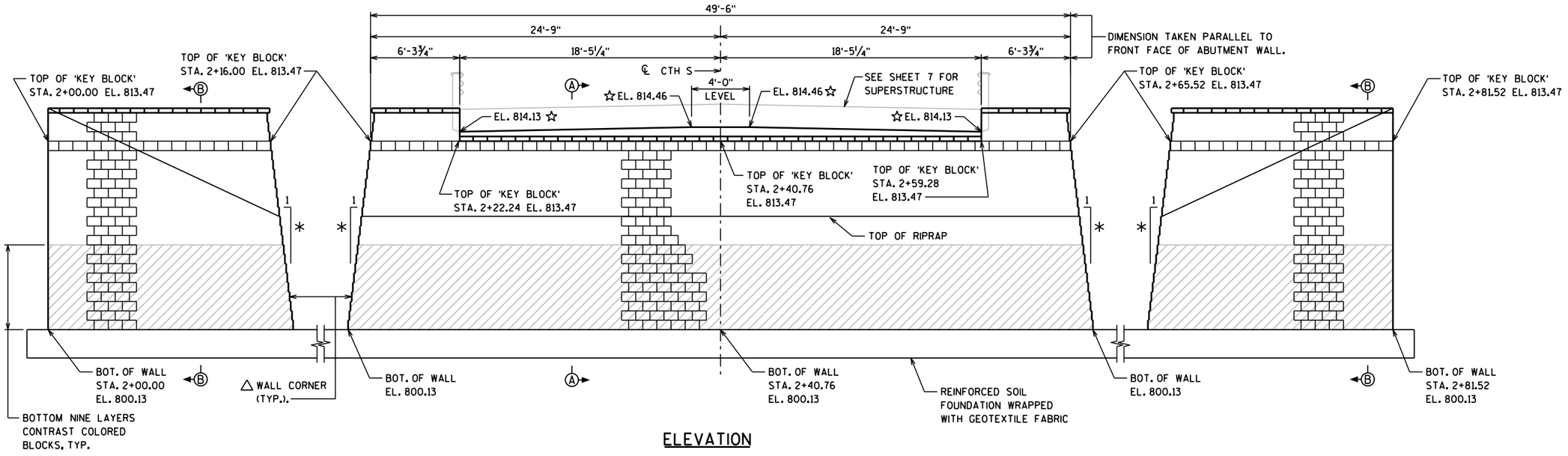
SEE WALL SECTIONS AND 'GRS ABUTMENT INFORMATION' TABLE FOR REQUIRED LENGTHS OF GEOSYNTHETIC REINFORCEMENT.

△ PROVIDE CORNER BLOCKS AND/OR DETAILS COMPATIBLE WITH THE SELECTED MODULAR BLOCKS SYSTEM. ROUNDED CORNERS ARE ALLOWABLE.

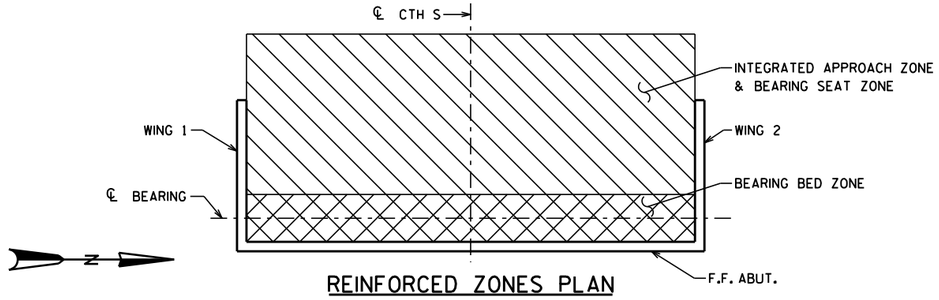
☆ BEARING SEAT/TOP OF CAST IN PLACE CONCRETE BEARING CLOSURE. SEE SHEET 6 FOR ADDITIONAL DETAILS.

CIP CONCRETE BEARING CLOSURE INCIDENTAL TO GRS-IBS WALL CONSTRUCTION, PAID FOR AS GEOSYNTHETIC REINFORCED SOIL ABUTMENT.

∗ MAXIMUM ALLOWABLE WALL BATTER IS 8 VERTICAL TO 1 HORIZONTAL OR 7.1 DEGREES.



ELEVATION



REINFORCED ZONES PLAN

NOTE: SEE SHEET 6 FOR LAYER DESCRIPTIONS

WALL STATION	ROADWAY ALIGN. STATION	ROADWAY STATION OFFSET (FT)	OFFSET DIRECTION	WALL HT. (FT)	BOTTOM WALL EL.	FINISHED GROUND EL.	TOP WALL EL.
2+00.00	9+67.50	24.75	RT	15.67	800.13	815.80	815.80
2+16.00	9+83.50	24.75	RT	15.67	800.13	808.15	815.80
2+22.24	9+83.50	18.52	RT	15.67	800.13	808.15	815.80
2+22.24	9+83.50	18.52	RT	13.67	800.13	808.15	813.80
2+40.76	9+83.50	0.00	- - -	13.67	800.13	808.15	813.80
2+59.28	9+83.50	18.52	LT	13.67	800.13	808.15	813.80
2+59.28	9+83.50	18.52	LT	15.67	800.13	808.15	815.80
2+65.52	9+83.50	24.75	LT	15.67	800.13	808.15	815.80
2+81.52	9+67.50	24.75	LT	15.67	800.13	815.80	815.80

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-216

DRAWN BY BRE | PLANS CK'D. KRO

WEST GRS-IBS ABUTMENT

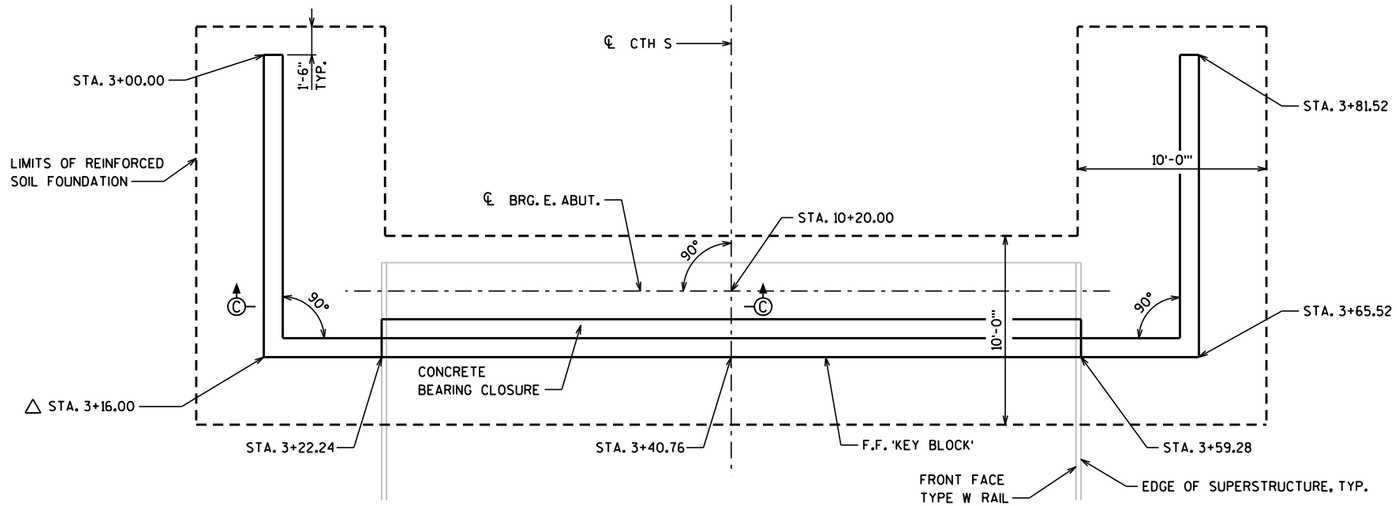
SHEET 4 OF 9

43

8

8

STATE PROJECT NUMBER
3898-00-70



PLAN

NOTES:

ALL WALL STATIONING AND OFFSETS ARE GIVEN AT THE FRONT FACE OF THE 'KEYBLOCK'. SEE WALL SECTIONS FOR LOCATION OF THE 'KEYBLOCK'.

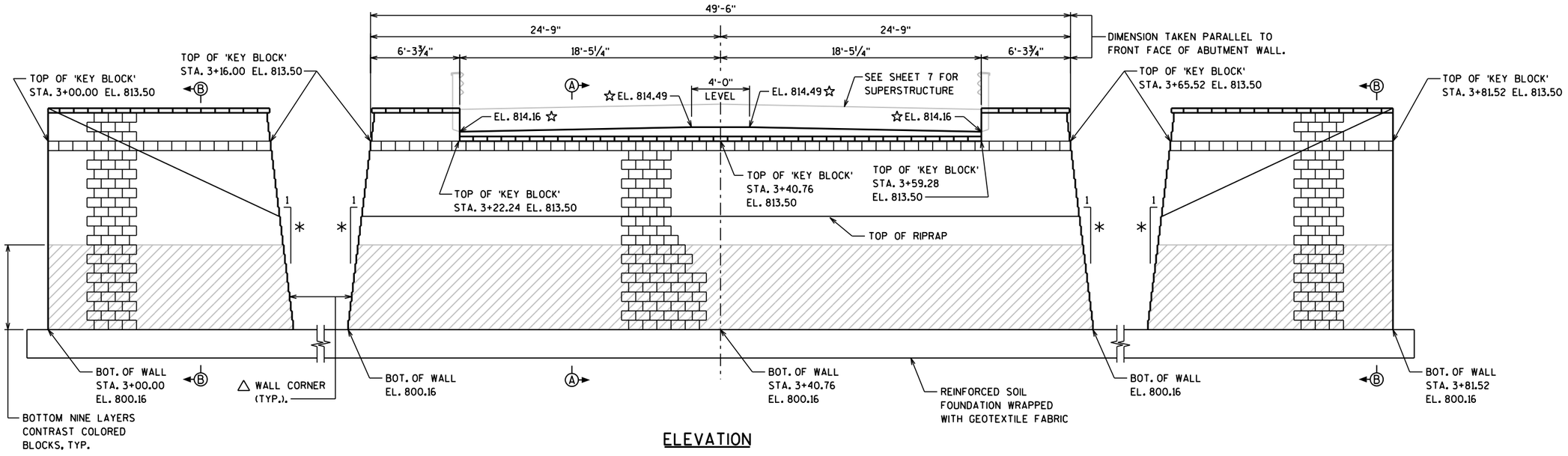
SEE WALL SECTIONS AND 'GRS ABUTMENT INFORMATION' TABLE FOR REQUIRED LENGTHS OF GEOSYNTHETIC REINFORCEMENT.

△ PROVIDE CORNER BLOCKS AND/OR DETAILS COMPATIBLE WITH THE SELECTED MODULAR BLOCKS SYSTEM. ROUNDED CORNERS ARE ALLOWABLE.

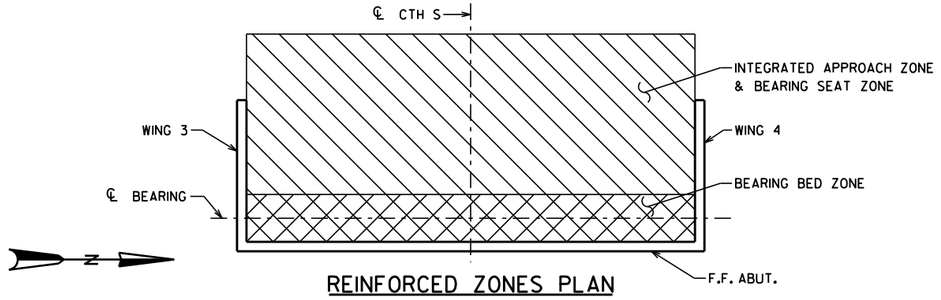
☆ BEARING SEAT/TOP OF CAST IN PLACE CONCRETE BEARING CLOSURE. SEE SHEET 6 FOR ADDITIONAL DETAILS.

CIP CONCRETE BEARING CLOSURE INCIDENTAL TO GRS-IBS WALL CONSTRUCTION, PAID FOR AS GEOSYNTHETIC REINFORCED SOIL ABUTMENT.

✳ MAXIMUM ALLOWABLE WALL BATTER IS 8 VERTICAL TO 1 HORIZONTAL OR 7.1 DEGREES.



ELEVATION



REINFORCED ZONES PLAN

NOTE: SEE SHEET 6 FOR LAYER DESCRIPTIONS

WALL STATION	ROADWAY ALIGN. STATION	ROADWAY STATION OFFSET (FT)	OFFSET DIRECTION	WALL HT. (FT)	BOTTOM WALL EL.	FINISHED GROUND EL.	TOP WALL EL.
3+00.00	10+32.50	24.75	LT	15.67	800.16	815.83	815.83
3+16.00	10+16.50	24.75	LT	15.67	800.16	808.15	815.83
3+22.24	10+16.50	18.52	LT	15.67	800.16	808.15	815.83
3+22.24	10+16.50	18.52	LT	13.67	800.16	808.15	813.83
3+40.76	10+16.50	0.00	- - -	13.67	800.16	808.15	813.83
3+59.28	10+16.50	18.52	RT	13.67	800.16	808.15	813.83
3+59.28	10+16.50	18.52	RT	15.67	800.16	808.15	815.83
3+65.52	10+16.50	24.75	RT	15.67	800.16	808.15	815.83
3+81.52	10+32.50	24.75	RT	15.67	800.16	815.83	815.83

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-216

DRAWN BY BRE | PLANS CK'D. KRO

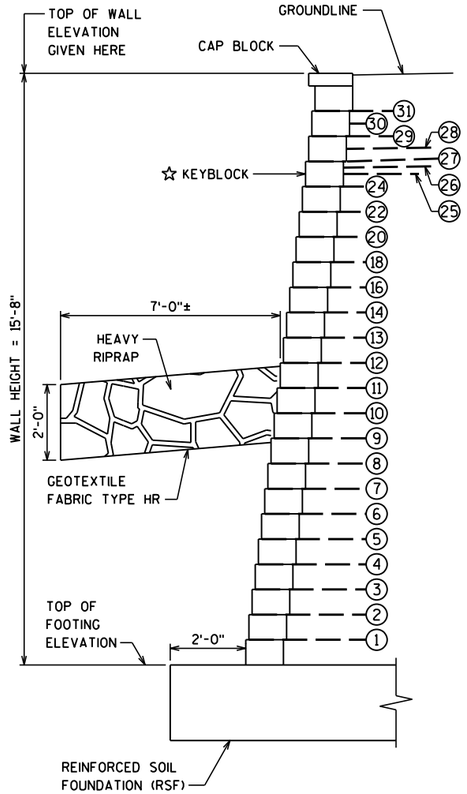
EAST GRS-IBS ABUTMENT

SHEET 5 OF 9

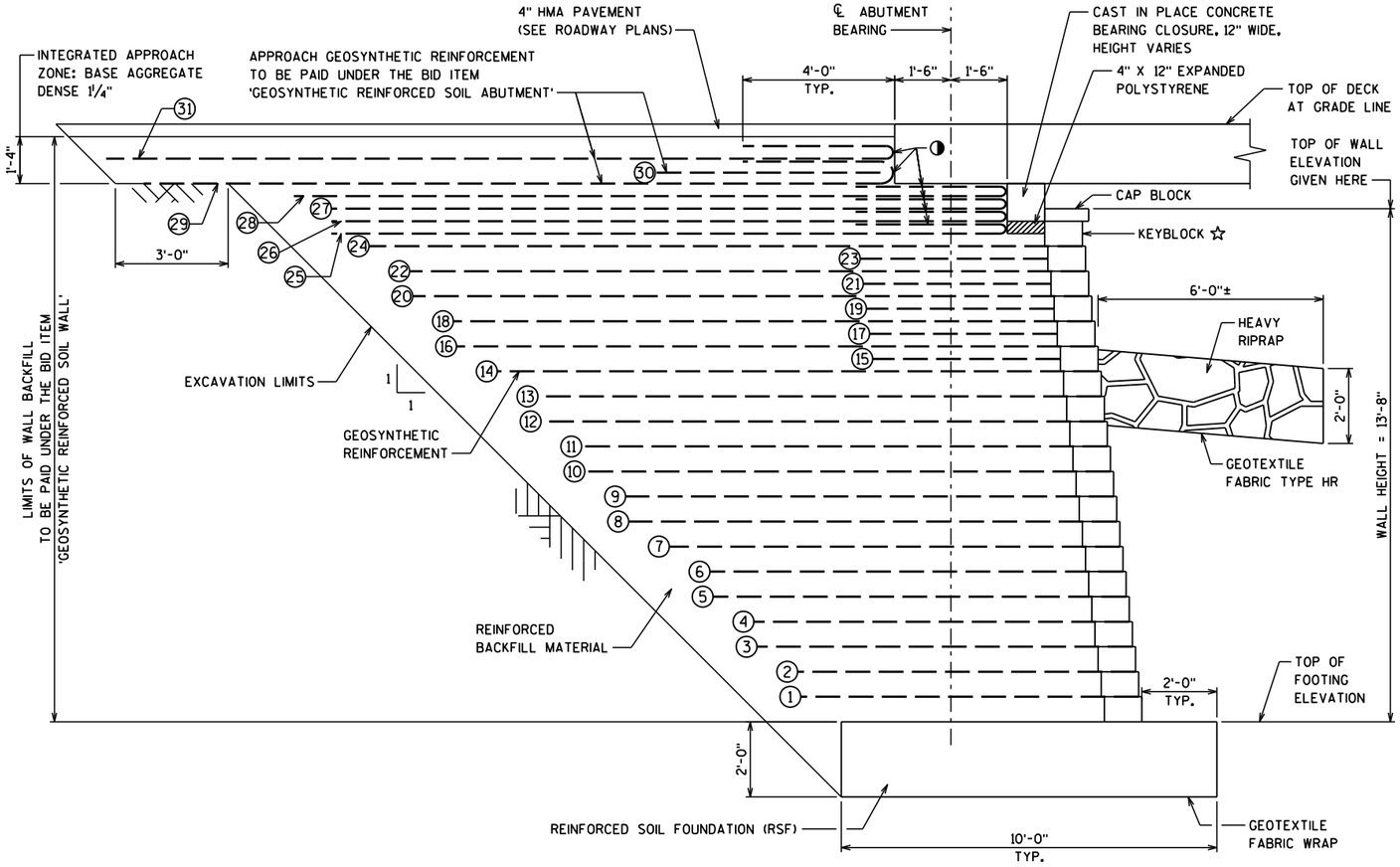
44

8

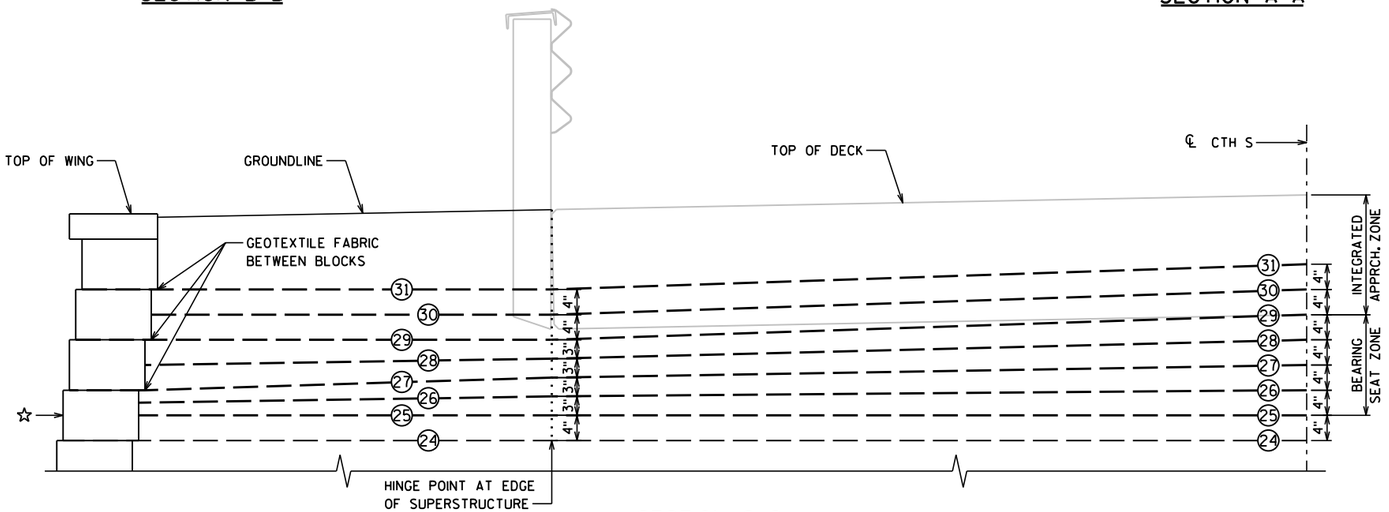
8



SECTION B-B



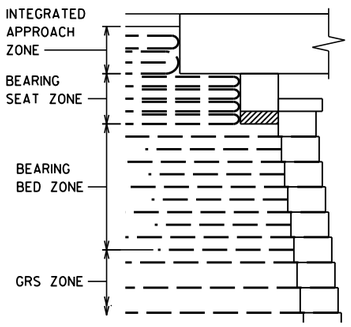
SECTION A-A



SECTION C-C

(FROM KEYBLOCK UP)

SHOWING VARYING LAYER THICKNESSES TO ACCOMMODATE CROWN



LAYER DESCRIPTIONS

GRS WALL INFORMATION

LAYER NUMBER	MINIMUM LENGTH * OF GEOTEXTILE FABRIC (FT.)	WEST ELEV. ±	EAST ELEV. ±
1	9	800.80	800.83
2	9	801.46	801.49
3	10	802.13	802.16
4	10	802.80	802.83
5	11	803.46	803.49
6	11	804.13	804.16
7	12	804.80	804.83
8	13	805.46	805.49
9	13	806.13	806.16
10	14	806.80	806.83
11	14	807.46	807.49
12	15	808.13	808.16
13	15	808.80	808.83
14	16	809.46	809.49
15	5	809.80	809.83
16	17	810.13	810.16
17	5	810.46	810.49
18	17	810.80	810.83
19	5	811.13	811.16
20	18	811.46	811.49
21	5	811.80	811.83
22	18	812.13	812.16
23	5	812.46	812.49
24	19	812.80	812.83
25	18	813.13	813.16
26	18	813.46	813.49
27	18	813.80	813.83
28	19	814.13	814.16
29	20	814.46	814.49
30	6	814.80	814.83
31	21	815.13	815.16

NOTES:

☆ KEYBLOCK: FRONT FACE OF KEY BLOCK LOCATION TO BE HELD REGARDLESS OF MODULAR BLOCK SIZE OR BATTER.

(X) INDICATES GEOSYNTHETIC REINFORCEMENT LAYER NUMBER, FOR LENGTHS, SEE 'GRS WALL INFORMATION' TABLE.

◑ 4'-0" WRAP

* LENGTH MEASURED FROM FRONT FACE OF MODULAR BLOCK TO END OF GEOTEXTILE FABRIC. (DOES NOT INCLUDE WRAPPED GEOTEXTILE FABRIC WHERE APPLICABLE.)

STATE PROJECT NUMBER

3898-00-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-216

DRAWN BY BRE | PLANS CK'D. KRO

GRS-IBS ABUTMENT DETAILS

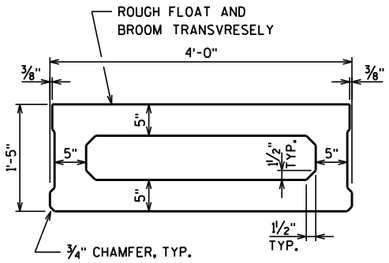
SHEET 6 OF 9

45

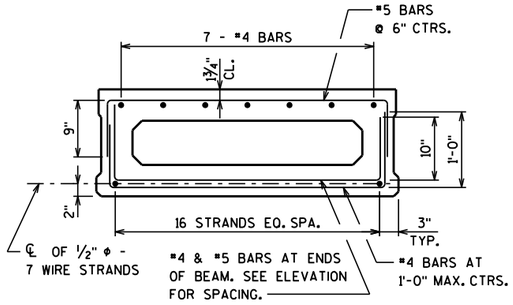
8

8

STATE PROJECT NUMBER
3898-00-70

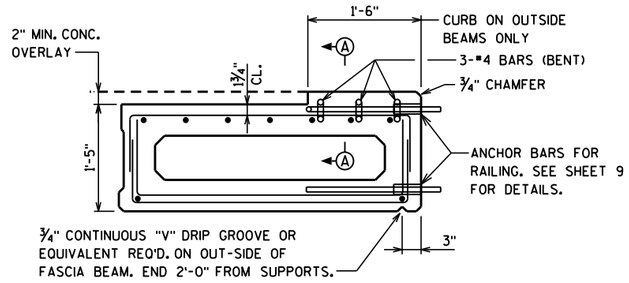


SECTION THRU GIRDER



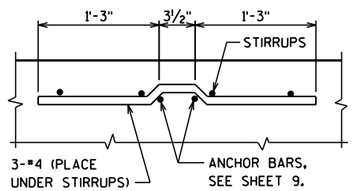
SECTION THRU INTERIOR GIRDER

⊖ SPACING SHOWN FOR TOP STIRRUPS ARE MAXIMUMS. THE CONTRACTOR MAY ELECT (AT NO ADJUSTMENT IN BID PRICE) TO REDUCE THE SPACING OF THESE BARS OR TO ADD ADDITIONAL REINFORCEMENT TO FACILITATE TYING OF THE REINFORCEMENT.

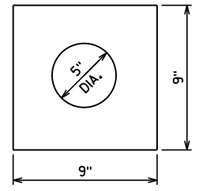


SECTION THRU EXTERIOR GIRDER

REINFORCING & PRESTRESSING SAME AS INTERIOR GIRDER.

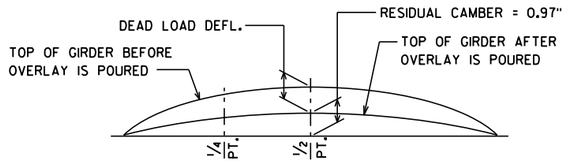


SECTION A-A



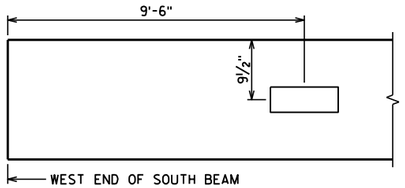
SEAL WASHER

(MAY ALSO BE ROUND)

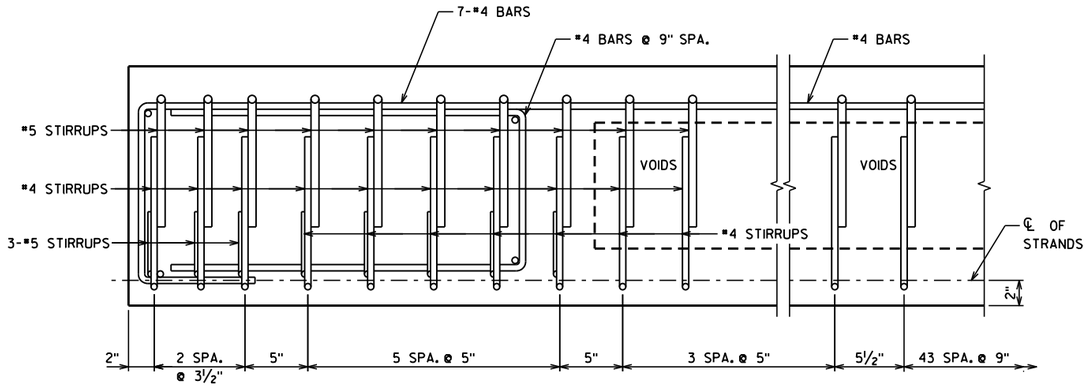


DEAD LOAD DEFLECTION DIAGRAM

NOTE: DEAD LOAD DEFLECTIONS ARE THEORETICAL AND MAY VARY FROM ACTUAL FIELD CONDITIONS

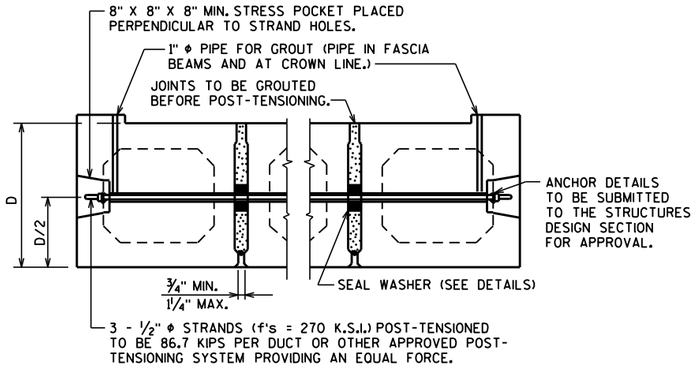


NAME PLATE LOCATION

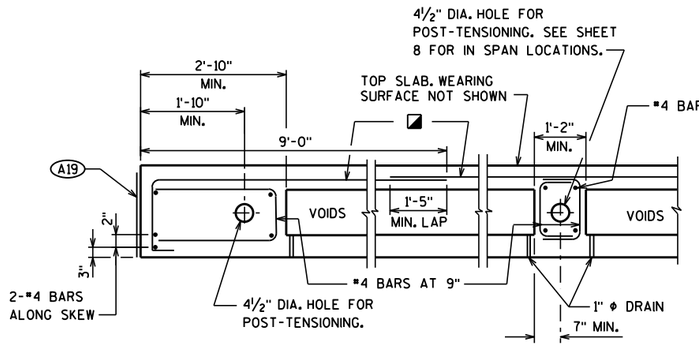


PART GIRDER ELEVATION

(TRANSVERSE BARS NOT LABELED ARE #4 BARS.)



POST-TENSIONING DETAILS

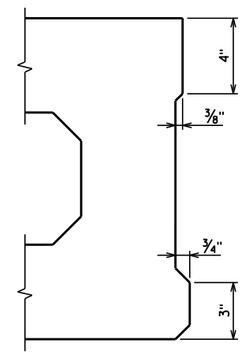


AT ENDS IN SPAN

TYPICAL LONGITUDINAL SECTION

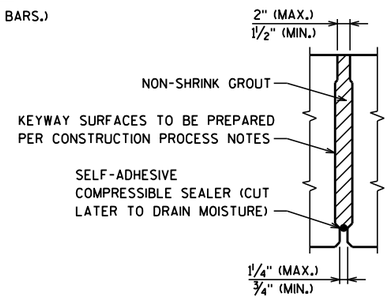
◪ 7-#4 BARS

(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. PLACE CONTINUOUS ALONG GIRDER ENDS ALIGNED WITH BOTTOM OF GIRDERS.



SHEAR KEY RECESS DETAIL

OMIT SHEAR KEY ON EXTERIOR FACE OF EXTERIOR GIRDERS.



SHEAR KEY DETAIL

GIRDER DATA

SPAN	LOCATION	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)		CONC. STRGTH. f'c (p.s.i.)	DIA. OF STRAND	UNDRAPED PATTERN		
			1/4 PT.	1/2 PT.			TOTAL NO. OF STRANDS	f'ci (p.s.i.) *	TOTAL INITIAL PRESTRESS FORCE (KIPS)
1	ALL	43'-0"	1/32"	1/16"	5000	0.5"	16	4250	495.7

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-216

DRAWN BY BRE | PLANS CK'D. KRO

PRESTRESSED GIRDER BOX TYPE 17-INCH

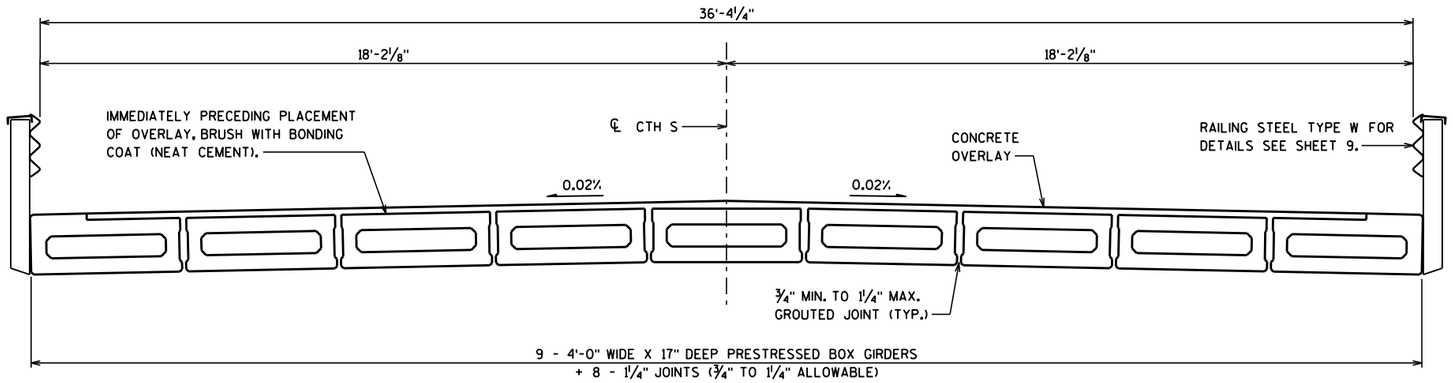
SHEET 7 OF 9

8

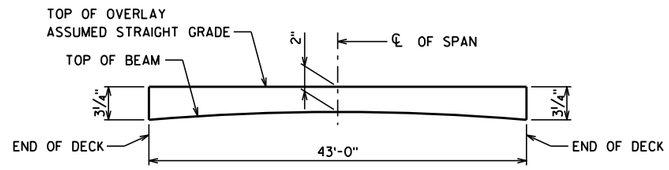
8

FILE NAME : F:±TR±JOBS±E2111B14±Sheets±B-14-216 07 girder.dgn PLOT BY : epleyb PLOT DATE: 12/15/2015 8:49:00 AM

STATE PROJECT NUMBER
3898-00-70



CROSS SECTION THRU ROADWAY



OVERLAY THICKNESS ELEVATION DIAGRAM

NOTES:

THE CONCRETE MIX FOR THE PRESTRESSED BOX GIRDERS SHALL CONFORM TO SECTION 503.2.2 OF THE STANDARD SPECIFICATIONS.

THE CEMENT AND FINE AGGREGATE FOR THE GROUT BETWEEN THE POST-TENSIONED BEAMS SHALL BE PROPORTIONED BY WEIGHT AS INDICATED IN THE STANDARD SPECIFICATION.

THE CEMENT USED SHALL BE TYPE 1. WATER SHALL BE ADDED IN AMOUNTS AS NECESSARY TO OBTAIN APPROXIMATELY A 5" SLUMP OR TO A CONSISTENCY TO INSURE THAT THE VOIDS ARE COMPLETELY FILLED. THE GROUT SHALL BE RODDED TO INSURE THAT THE VOIDS ARE COMPLETELY FILLED.

STRANDS SHALL BE FLUSH WITH END OF UNIT.

VOIDS SHALL BE VENTED AND DRAINED BY CASTING (2)-1" DIA TUBES AT EACH END OF THE VOID SEGMENT. LOCATE TUBES AT BOTTOM EDGES OF THE CORNER FILLETS.

FOUR WAY SLING MUST BE USED TO ENGAGE ALL 4 LIFTING DEVICES ON BOTH ENDS OF UNITS.

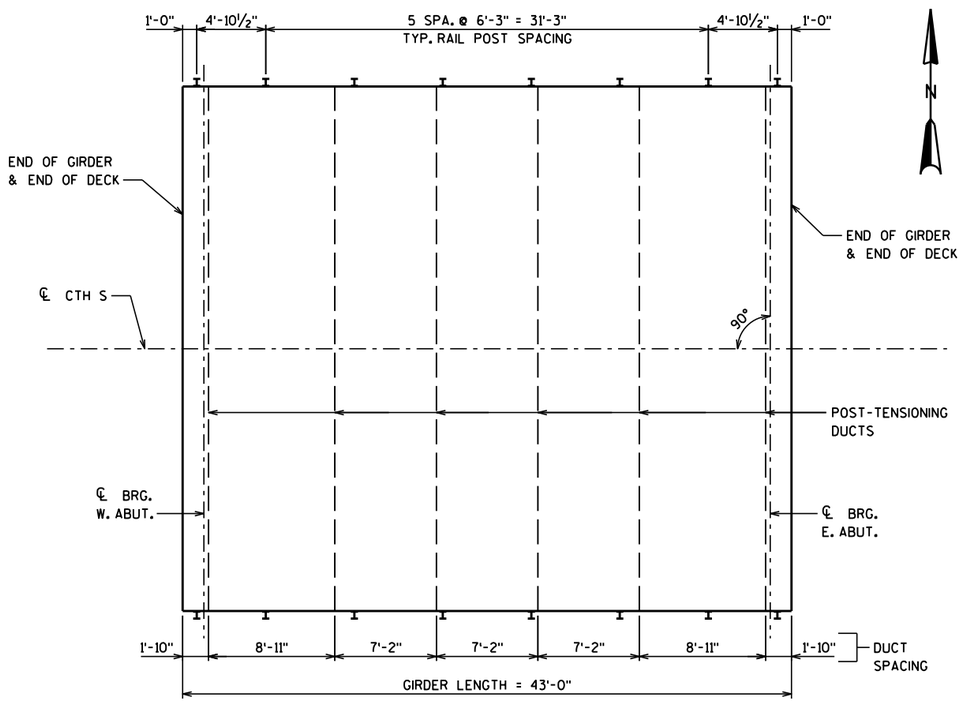
POST-TENSIONING OF THE TRANSVERSE TENDONS SHALL NOT BEGIN UNTIL THE GROUT BETWEEN THE PRECAST BEAMS HAS BEEN ALLOWED TO CURE FOR 48 HOURS AND GROUT HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI.

CONCRETE OVERLAY SHALL NOT BE POURED UNTIL AFTER THE POST-TENSIONING HAS BEEN COMPLETED.

SEAL WASHER SHALL BE SPONGE NEOPRENE GASKET 3¾" MIN. THICKNESS. STRESS POCKETS SHALL BE FILLED WITH CHLORIDE FREE NON-SHRINK GROUT AFTER POST-TENSIONING (REFER TO SPECIAL PROVISIONS FOR NON-SHRINK GROUT SPECIFICATIONS.)

TRANSITION BETWEEN CHANGING SLOPES OF POST-TENSIONING DUCTS SHALL BE PROVIDED BY EITHER A CIRCULAR OR PARABOLIC CURVE WITH A MINIMUM LENGTH OF 3'-0".

POST-TENSIONING DUCTS SHALL BE PRESSURE GROUTED FROM ONE GROUT PIPE UNTIL ALL ENTRAPPED AIR IS EXPELLED AND GROUT BEGINS TO FLOW FROM THE OPEN GROUT PIPE. THE OPEN GROUT PIPE SHALL BE CLOSED AND A PRESSURE OF 50 PSI MAINTAINED FOR 15 SECONDS. THE GROUT COMPOSITION SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-216

DRAWN BY BRE | PLANS CK'D. KRO

SUPERSTRUCTURE

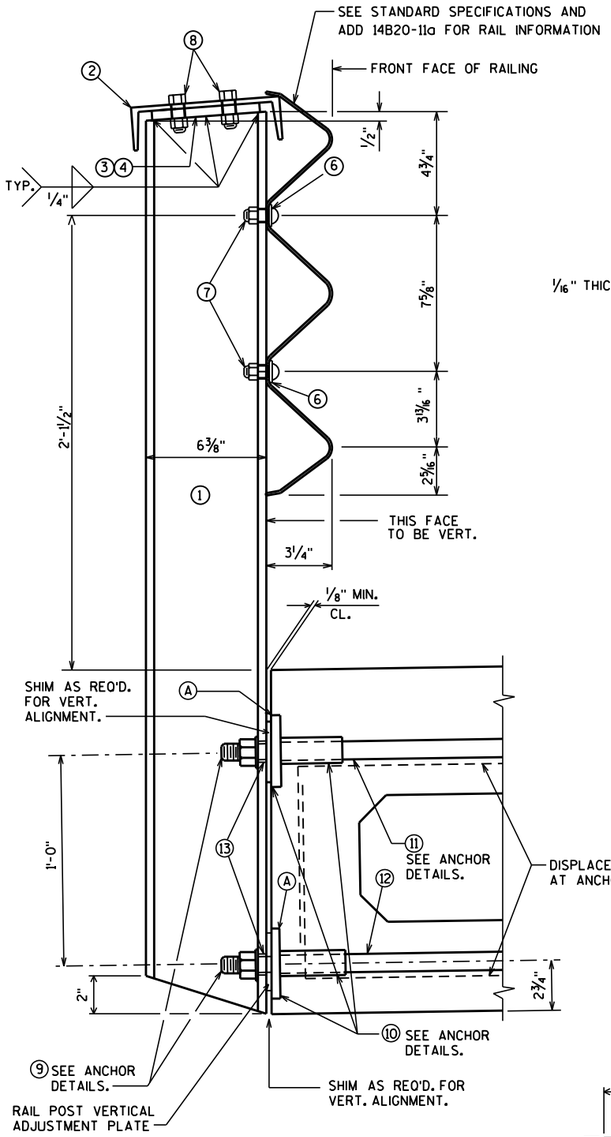
SHEET 8 OF 9

47

8

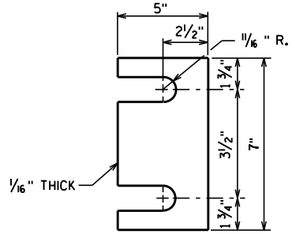
8

STATE PROJECT NUMBER
3898-00-70



SECTION THRU RAILING

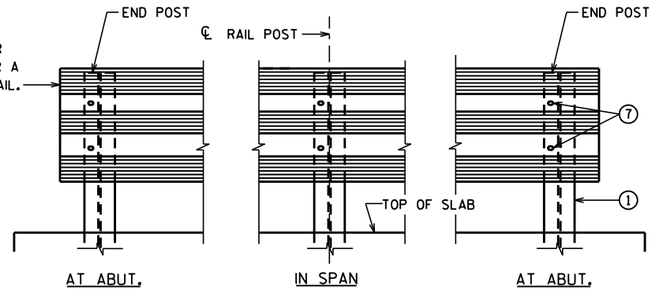
Ⓐ SEAL TOP & VERT. EDGES OF SHIMS, VERT. ADJUSTMENT PLATES, AND POST TO GIRDER CONTACT AREAS WITH NON-STAINING GRAY BITUMINOUS JOINT SEALER.



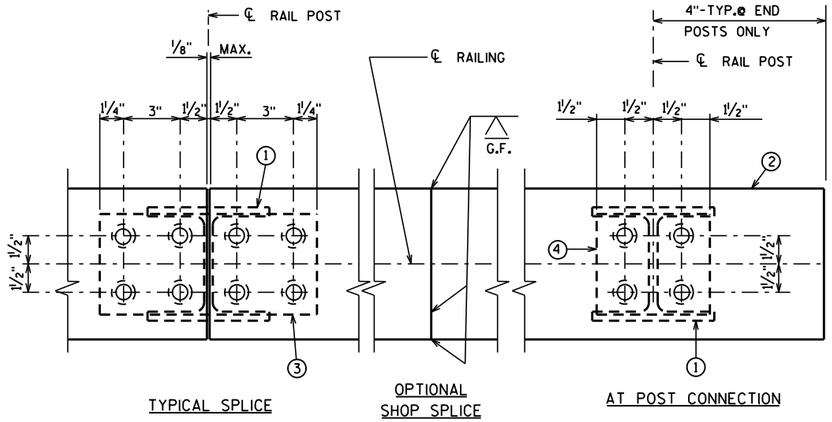
POST SHIM DETAIL

(14 PER POST)

AT END POSTS, RAIL MEMBER SHALL HAVE PROVISIONS FOR A SPLICE TO A THRIE BEAM RAIL.

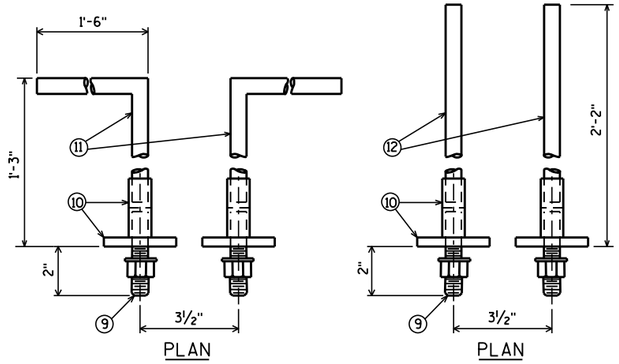


ELEVATION



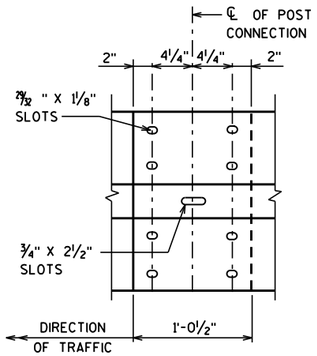
TYPICAL SPLICE — OPTIONAL SHOP SPLICE — AT POST CONNECTION

CHANNEL MEMBER DETAILS



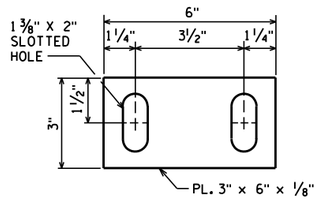
ANCHOR DETAILS

ANCHORS MAY BE FABRICATED IN A CAGE IF OPTED BY THE MFG'R.



RAIL MEMBER SPLICE

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



RAIL POST VERTICAL ADJUSTMENT PLATE

(1 PER POST)

LEGEND

① W6x25 WITH 2 - 3/4" x 2 1/2" VERTICAL SLOTS IN FLG. (SLOT ON OTHER SIDE OF WEB IS OPTIONAL) FOR NO.7. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.

② C8 x 11.5, WITH 13/16 " DIA. HOLES FOR NO.8.

③ PLATE, 1/2" x 5 3/4" x 11 1/2". 1 1/4" DIA. HOLES IN PLATE. 13/16 " DIA. HOLES IN CHANNEL. (AT TYPICAL SPLICE)

④ PLATE 1/2" x 5 3/4" x 6" AT BASIC POST CONNECTION. 1 1/4" DIA. HOLES IN PLATE. 13/16 " DIA. HOLES IN CHANNEL.

⑥ 1 3/4" x 3" MOUNTING BOLT WASHER (GALVANIZED).

⑦ 5/8" DIA. BUTTON HEAD POST MOUNTING BOLT WITH ROUND WASHER AND NUT.

⑧ 5/8" DIA. x 2" HEX. BOLTS WITH NUT AND TWO WASHERS EACH.

⑨ 1" DIA. STUD WITH NUT & WASHER. FOUR REQ'D. PER POST, A325.*

⑩ THREADED BAR COUPLER FOR 1" ø STUD. ACCEPTABLE PRODUCTS ARE WILLIAMS REBAR FLANGE COUPLERS BY WILLIAMS FORM ENGINEERING CORP. OR DOWEL BAR REPLACEMENTS BY DAYTON SUPERIOR. FOUR REQ'D. PER POST. EXPOSED FLANGE TO BE GALVANIZED.*

⑪ ANCHOR BAR 1" DIA. THREADED REINFORCEMENT BAR BENT AS SHOWN IN ANCHOR DETAILS, GRADE 60. TWO REQ'D. PER POST. (TOP)**

⑫ ANCHOR BAR, 1" DIA. THREADED REINFORCEMENT BAR (STRAIGHT), GRADE 60. TWO REQ'D. PER POST. (BOTTOM)**

⑬ 1 1/4" x 1 3/4" SLOTTED HOLES IN POST FOR STUD NO. 9. LONG DIMENSION OF SLOTTED HOLE TO BE VERTICAL.

*SHALL BE MECHANICALLY GALVANIZED OR ELECTRO-PLATED.

**NOT GALVANIZED OR ELECTRO-PLATED.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE W B-14-216" WHICH SHALL INCLUDE ITEMS 1-8 & 13. ITEMS 9-12 SHALL BE INCLUDED IN "PRESTRESSED GIRDER BOX TYPE 17-INCH".

ITEMS 1-8 SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND POST WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQUIRED FOR ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

CHANNEL MEMBER SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF EIGHT (EXCEPT AT ABUTMENTS).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-216

DRAWN BY BRE | PLANS CK'D. KRO

RAILING STEEL TYPE W

SHEET 9 OF 9

48

8

8

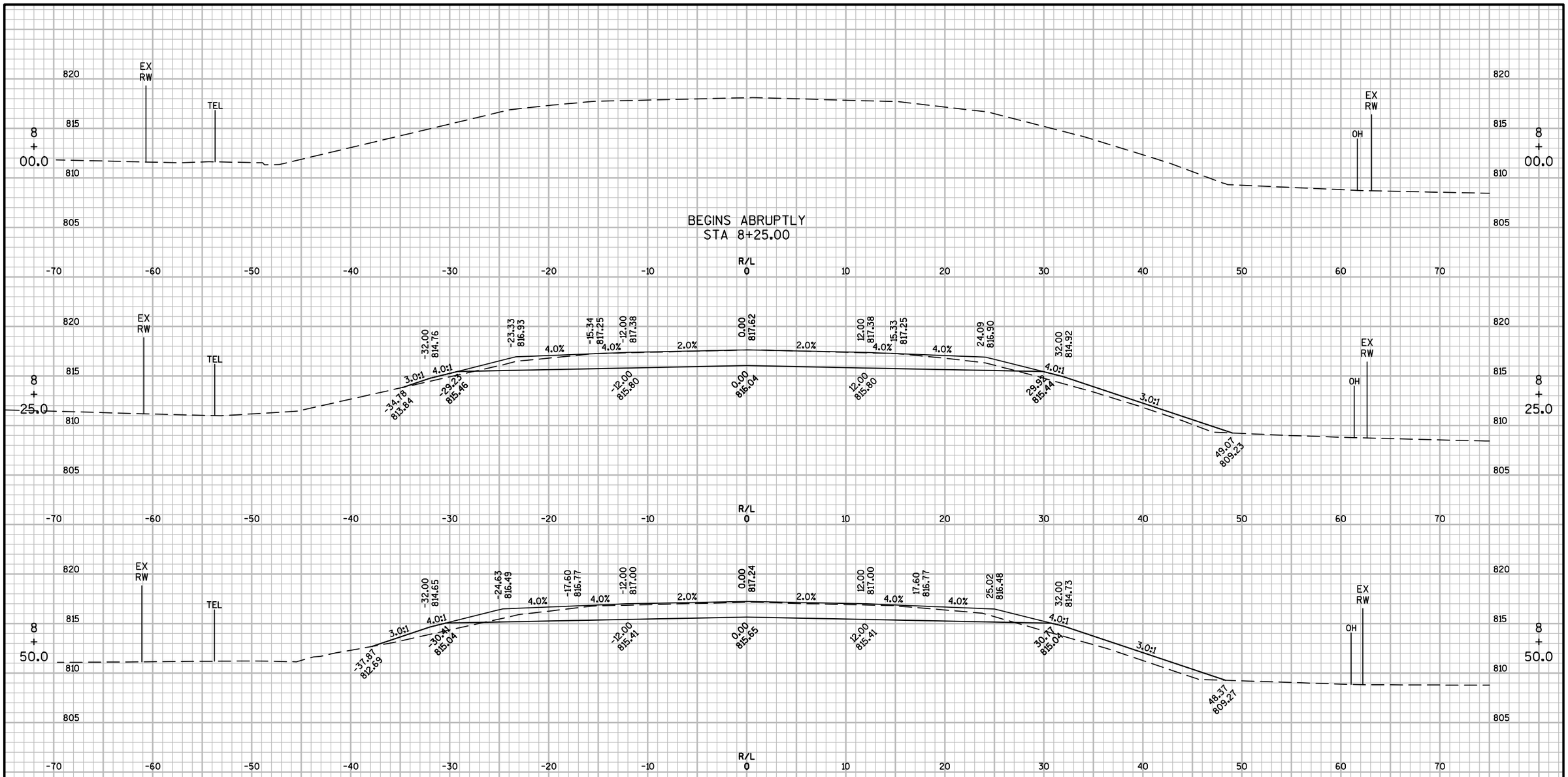
CTH S - WEST EARTHWORK DETAIL

STATION	AREA (SF)			INCREMENTAL VOLUME (CY)			CUMULATIVE VOLUME (CY)		
	CUT	SALV / UNUSED PAVT MATERIAL	FILL	CUT NOTE 1	SALV / UNUSED PAVT MATERIAL NOTE 2	FILL	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE
8+25.0	71	7.5	12	0	0	0	0	0	0
8+50.0	66	7.5	21	63	7	15	63	19	37
8+76.4	67	7.5	21	65	7	20	128	44	70
9+01.4	64	7.5	6	61	7	12	189	59	108
9+29.5	68	7.5	2	69	8	4	258	64	164
9+50.0	60	7.5	4	49	6	2	306	67	204
9+78.5	43	7.5	9	54	8	7	360	76	242
9+79.0	0	0.0	0	0	0	0	361	76	242

CTH S - EAST EARTHWORK DETAIL

STATION	AREA (SF)			INCREMENTAL VOLUME (CY)			CUMULATIVE VOLUME (CY)		
	CUT	SALV / UNUSED PAVT MATERIAL	FILL	CUT NOTE 1	SALV / UNUSED PAVT MATERIAL NOTE 2	FILL	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE
10+21.0	0	0.0	0	0	0	0	0	0	0
10+21.5	37	7.5	12	0	0	0	0	0	0
10+50.0	56	7.5	9	49	8	11	49	14	28
10+70.5	68	7.5	12	47	6	8	97	24	59
10+98.6	89	7.5	18	82	8	16	178	43	113
11+23.6	119	7.5	6	96	7	11	274	57	189
11+48.6	87	7.5	3	95	7	4	369	63	271
11+64.8	93	7.5	2	54	5	1	423	65	319

NOTE 1: CUT INCLUDES SALVAGED / UNUSABLE PAVEMENT VOLUME.
NOTE 2: SALVAGED / UNUSABLE PAVEMENT MATERIAL NOT SHOWN IN CROSS SECTIONS.



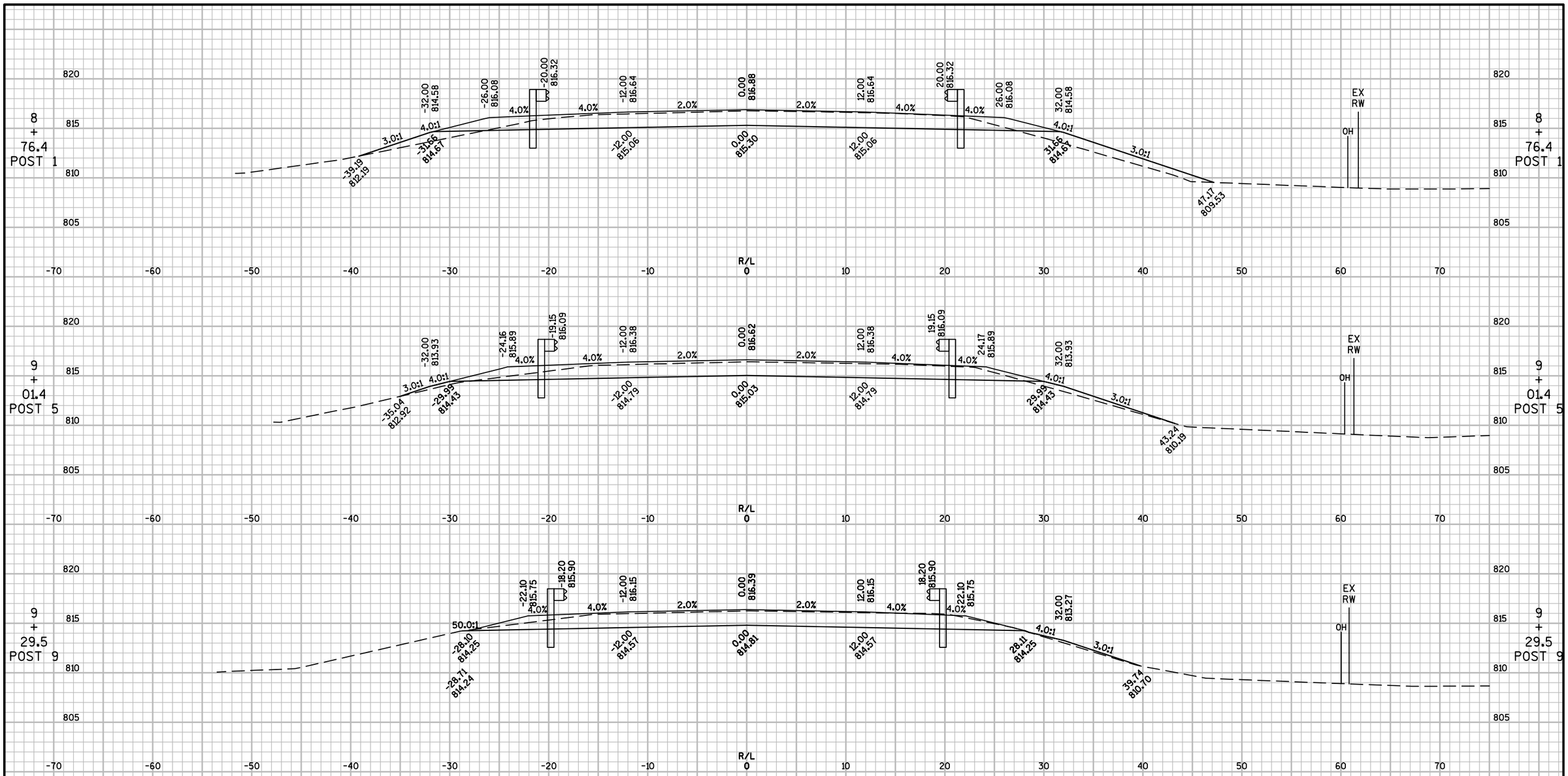
9

9

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	CROSS SECTIONS: CTH S	SHEET 50	E

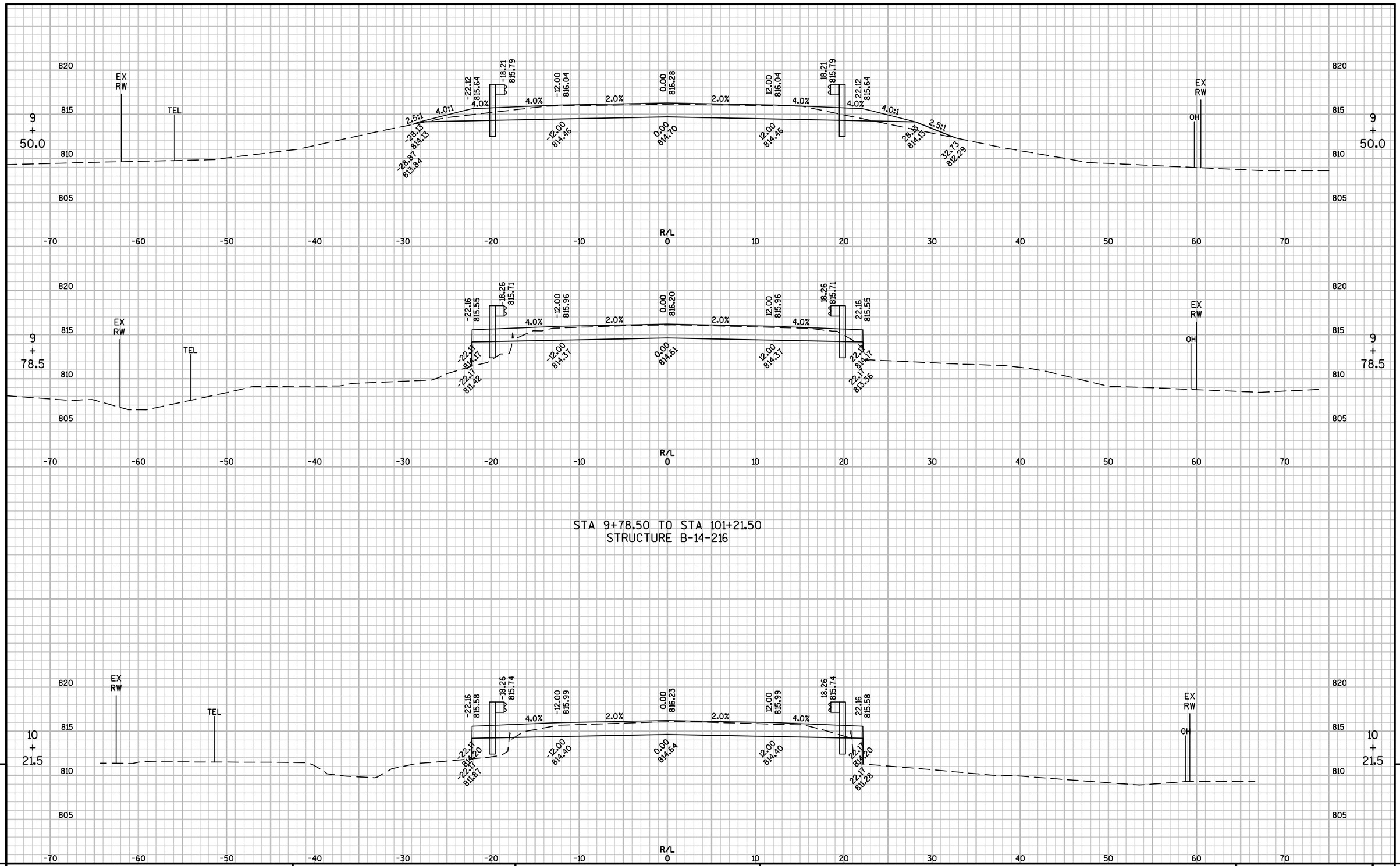
FILE NAME : F:\TR\JOBS\E2111B14\CIVIL 3D 2014\SHEETSPLAN\E2111B14-090200-XS.DWG
LAYOUT NAME - E2111B14-090201-XS

PLOT DATE : 10/13/2015 2:35 PM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF



PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	CROSS SECTIONS: CTH S	SHEET 51	E

FILE NAME : F:\TR\JOBS\E2111B14\CIVIL 3D 2014\SHEETSPLAN\E2111B14-090200-XS.DWG
LAYOUT NAME - E2111B14-090202-XS
PLOT DATE : 8/25/2015 11:58 AM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49

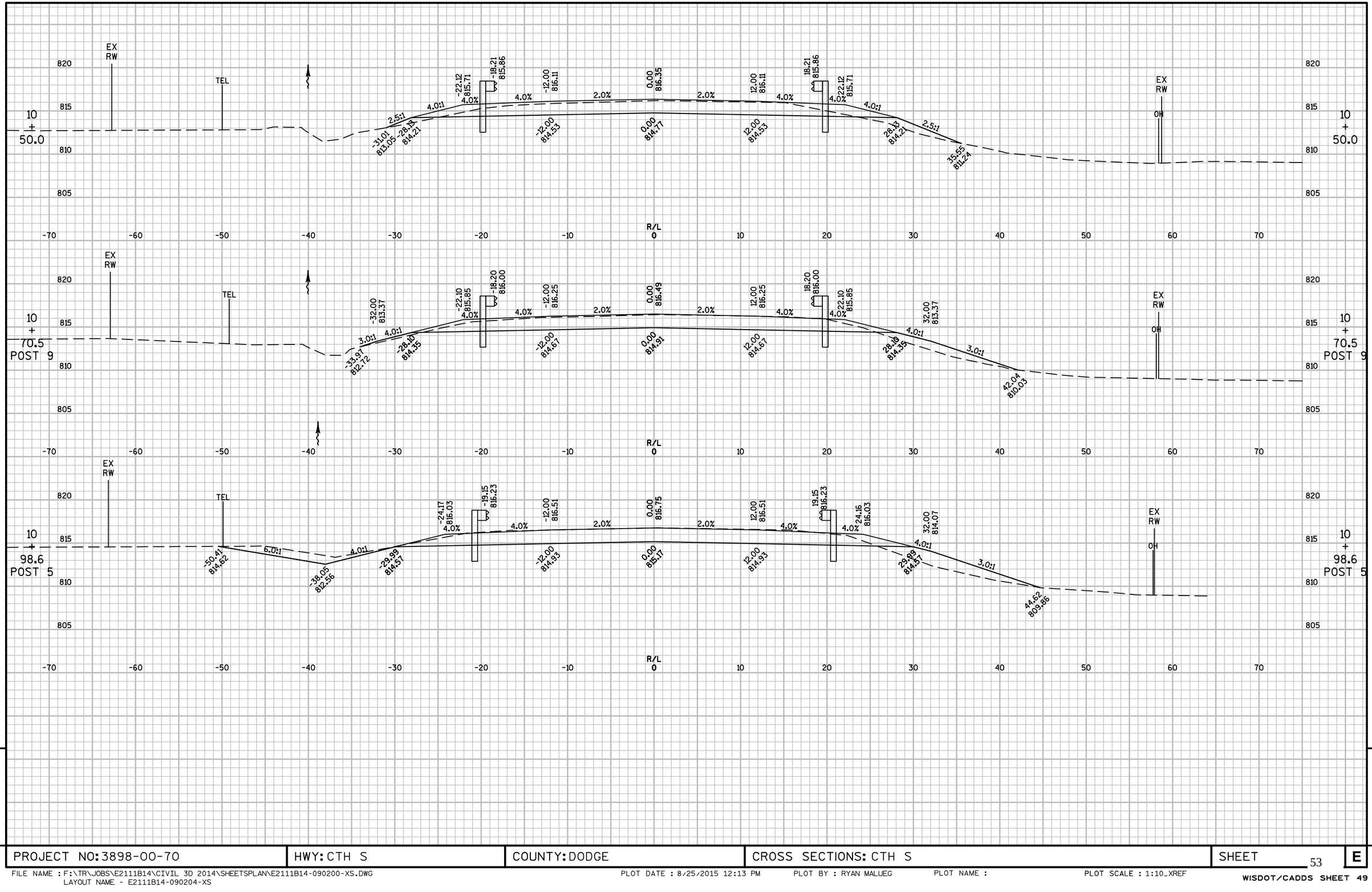


9

9

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	CROSS SECTIONS: CTH S	SHEET 52	E

FILE NAME : F:\TR\JOBS\E2111B14\CIVIL 3D 2014\SHEETSPLAN\E2111B14-090200-XS.DWG
LAYOUT NAME - E2111B14-090203-XS
PLOT DATE : 8/25/2015 12:03 PM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49

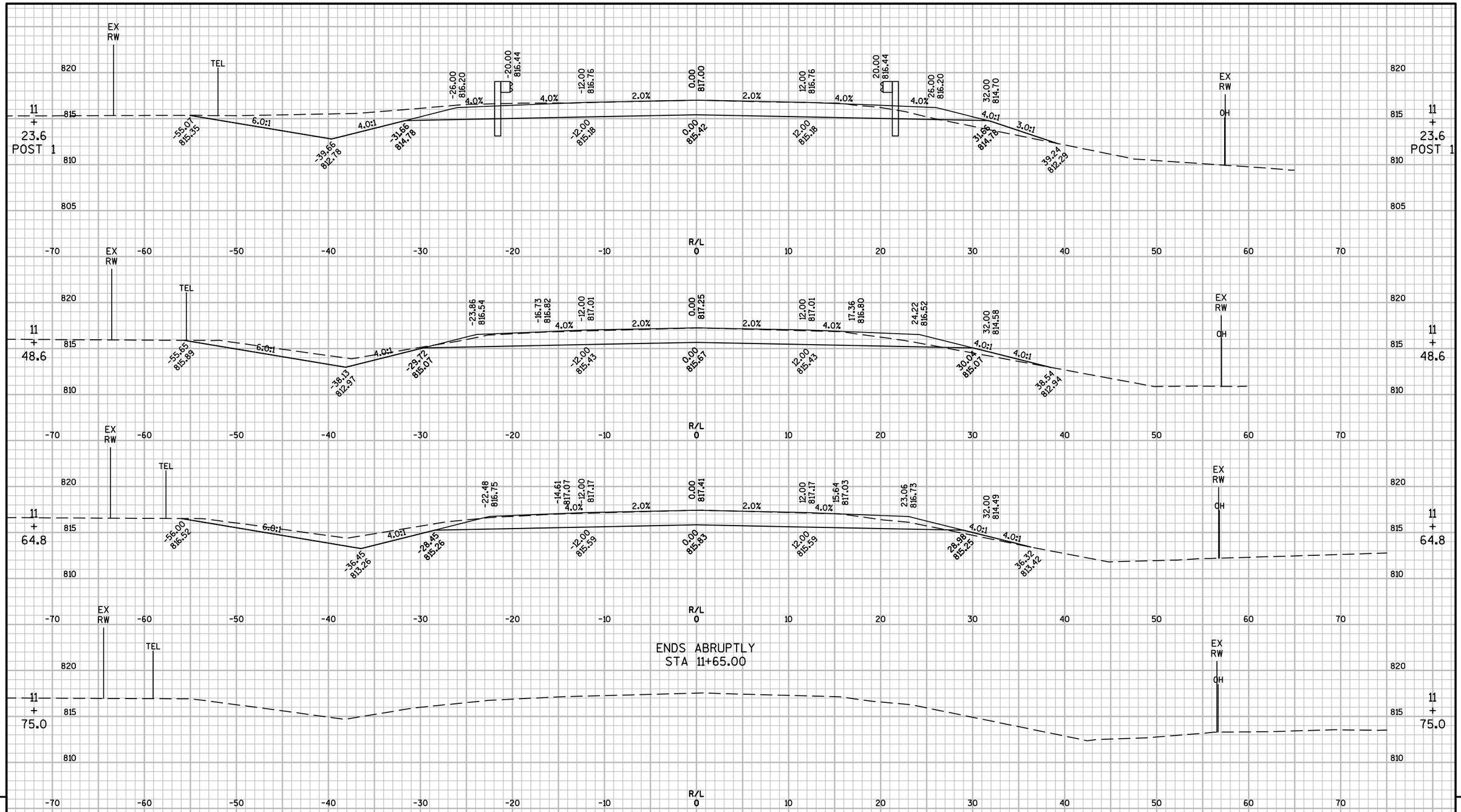


PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	CROSS SECTIONS: CTH S	SHEET 53	E

FILE NAME : F:\TR\JOBS\E2111B14\CIVIL 3D 2014\SHEETSPLAN\E2111B14-090200-XS.DWG
LAYOUT NAME - E2111B14-090204-XS

PLOT DATE : 8/25/2015 12:13 PM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 3898-00-70	HWY: CTH S	COUNTY: DODGE	CROSS SECTIONS: CTH S	SHEET 54	E

FILE NAME : F:\TR\JOBS\E2111B14\CIVIL 3D 2014\SHEETSPLAN\E2111B14-090200-XS.DWG
LAYOUT NAME - E2111B14-090205-XS
PLOT DATE : 10/13/2015 2:36 PM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

SWL

FEB 2016

ORDER OF SHEETS

TOTAL SHEETS = 58

PROJECT ID: 3906-00-72

WITH: 3898-00-70

COUNTY: DODGE

07

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

LOWELL - STH 26

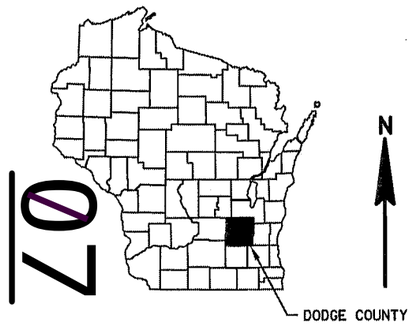
(PRATT CREEK BRIDGE B-14-0217)

CTH KW

DODGE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3906-00-72	WISC 2016016	1

STATE PROJECT NUMBER
3906-00-72



DESIGN DESIGNATION

A.A.D.T. 2015	=	440
A.A.D.T. 2035	=	500
D.H.V.	=	82
D.D.	=	60/40
T.	=	4.2%
DESIGN SPEED	=	50 MPH
ESALS	=	37,000

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

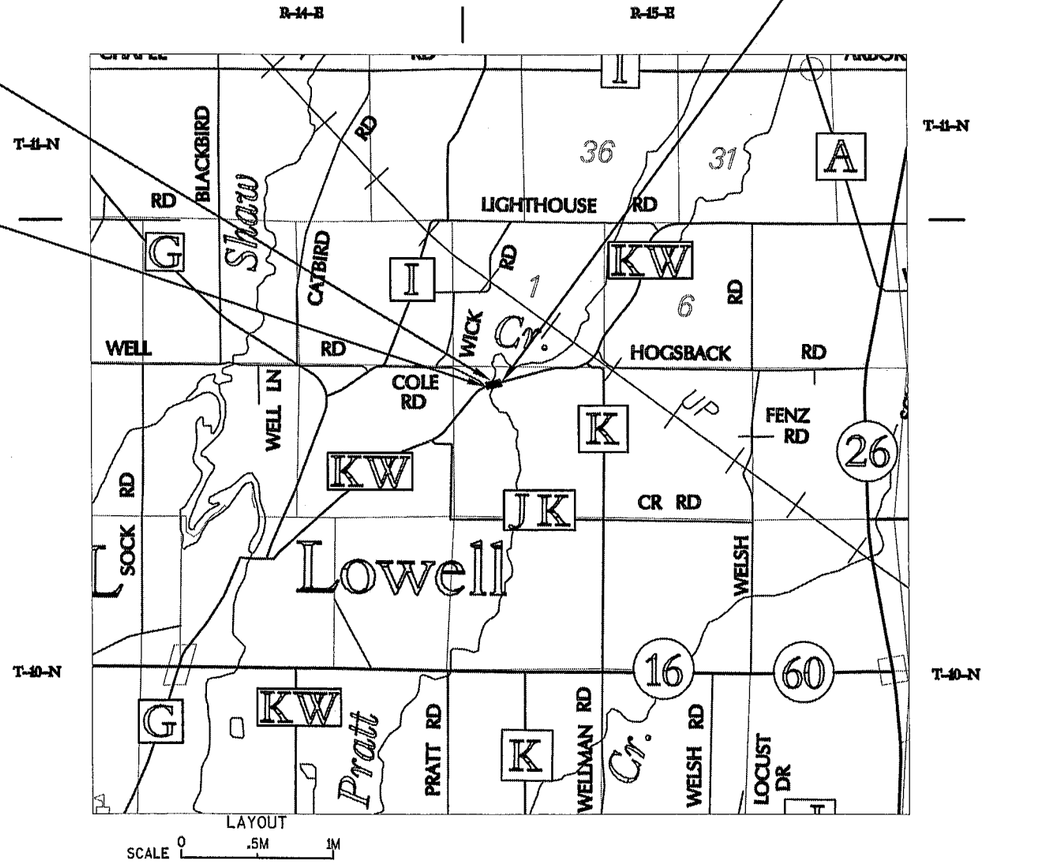
PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

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

STRUCTURE B-14-217

BEGIN PROJECT
STA 8+30
Y = 686508.429
X = 860462.832

END PROJECT
STA 11+70



LAYOUT
SCALE 0 .5M 1M

TOTAL NET LENGTH OF CENTERLINE = 0.064 MI

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

ACCEPTED FOR
DODGE COUNTY

DATE: 9-28-2015 (Signature)

HIGHWAY COMMISSIONER
TITLE

ORIGINAL PLANS PREPARED BY
OMNNI ASSOCIATES

WISCONSIN
JUDITH ANN WILSON
E-22940
NEENAH, WI
PROFESSIONAL ENGINEER

9/24/15

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	OMNNI ASSOCIATES
Designer	OMNNI ASSOCIATES
Management Consultant	KJOHNSON ENGINEERS

APPROVED FOR THE DEPARTMENT

DATE: 10/29/15 (Signature)

E

GENERAL NOTES

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

FILL AS SHOWN ON THE PLANS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM COMMON EXCAVATION. THE ALLOWANCE USED FOR EXPANDING THE FILLS TO COMPUTE THE VOLUME OF MATERIAL REQUIRED IS 30 PERCENT. ALL FILL VOLUMES SHOWN ARE THE ACTUAL VOLUMES.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT SHOWN ON THE CROSS SECTIONS. IF EBS IS REQUIRED, IT WILL BE MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS AND LIMITS FOR EBS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES.

PLAN ELEVATIONS = USGS DATUM NAVD88

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

USE SEED MIXTURE NO. 20 ON ALL DISTURBED AREAS.

ALL DISTURBED AREAS, NOT OTHERWISE SURFACED, ARE TO BE TOPSOILED, FERTILIZED, SEEDED AND COVERED WITH EROSION MAT, AS SHOWN ON THE PLANS.

THE ENGINEER IN THE FIELD WILL DETERMINE THE EXACT LOCATIONS OF ALL EROSION CONTROL ITEMS.

WETLAND AREAS ARE SHOWN ON THE PLANS, CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO WORK WITHIN THE SLOPE INTERCEPTS IN THE WETLAND AREAS.

STOCK PILE SALVAGED RAIL IN THE RIGHT OF WAY. DO NOT STOCKPILE SALVAGED RAIL IN WETLAND AREAS. NOTIFY DODGE COUNTY WHEN SALVAGED RAIL IS READY FOR PICK UP.

EROSION CONTROL NOTES

RUNOFF COEFFICIENTS FOR THIS PROJECT: EXISTING PAVEMENT 0.95, EXISTING SLOPES 0.30, NEW PAVEMENT 0.95, NEW SLOPES 0.30.

TOTAL PROJECT AREA = 1.02 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.80 ACRES

CONTACTS

TELEPHONE
TDS TELECOM
16924 W. VICTOR ROAD
NEW BERLIN, WI 53151
LOCAL CONTACT: MIKE JOHNSON
TELEPHONE: (262) 754-3052
EMAIL: michael.johnson@tdstelecom.com

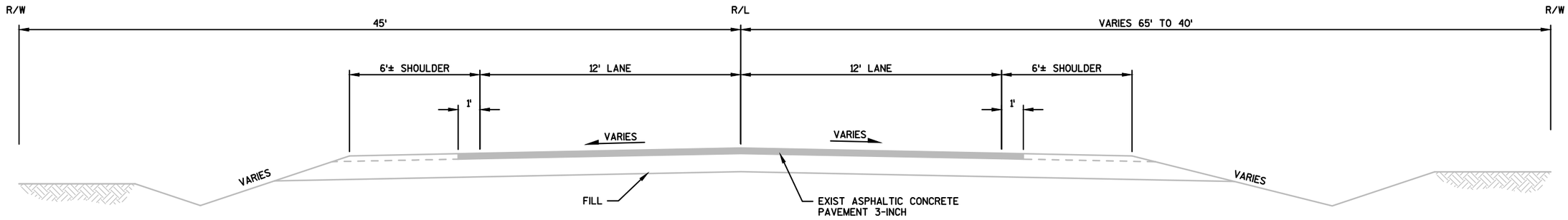
DODGE COUNTY
BRIAN FIELD, HIGHWAY COMMISSIONER
211 EAST CENTER STREET
JUNEAU, WI 53039
TELEPHONE: (920) 386-3653
EMAIL: bfield@co.dodge.wi.us

DNR LIAISON
ERIC HEGGELUND
DEPARTMENT OF NATURAL RESOURCES
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
TELEPHONE: (608) 275-3301
EMAIL: eric.heggelund@wisconsin.gov

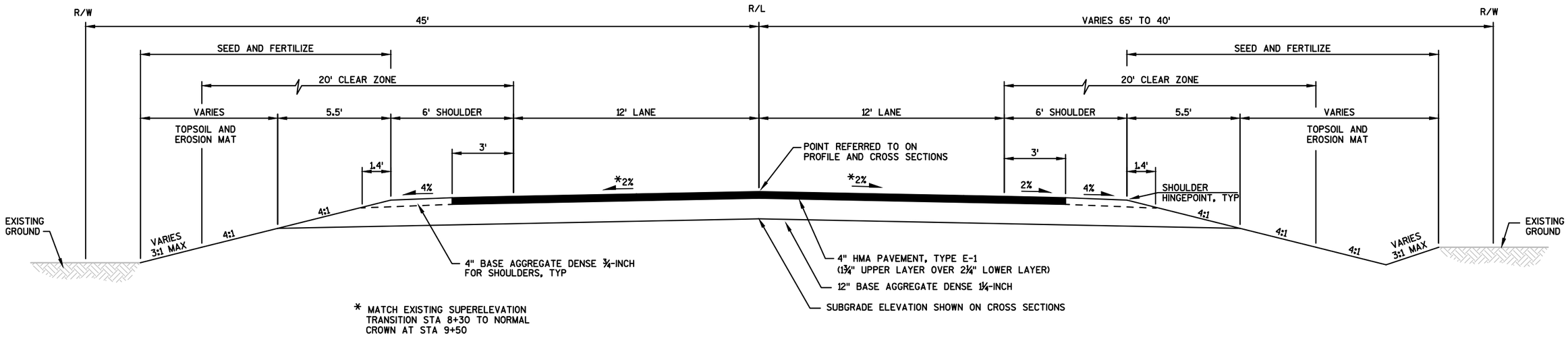
DESIGNER
JUDY WILSON, P.E.
OMNNI ASSOCIATES, INC.
ONE SYSTEMS DRIVE
APPLETON, WI 54914
TELEPHONE: (920) 830-6129
EMAIL: judy.wilson@omnni.com

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

** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



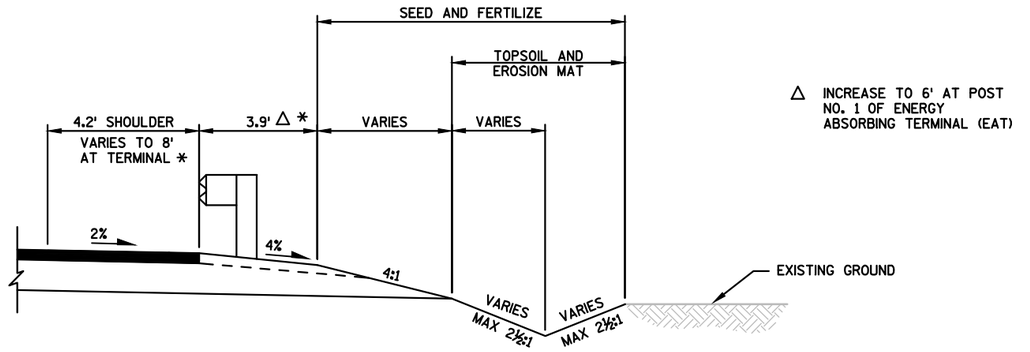
EXISTING TYPICAL SECTION



* MATCH EXISTING SUPERELEVATION TRANSITION STA 8+30 TO NORMAL CROWN AT STA 9+50

FINISHED TYPICAL SECTION

STA 8+30 TO STA 11+70

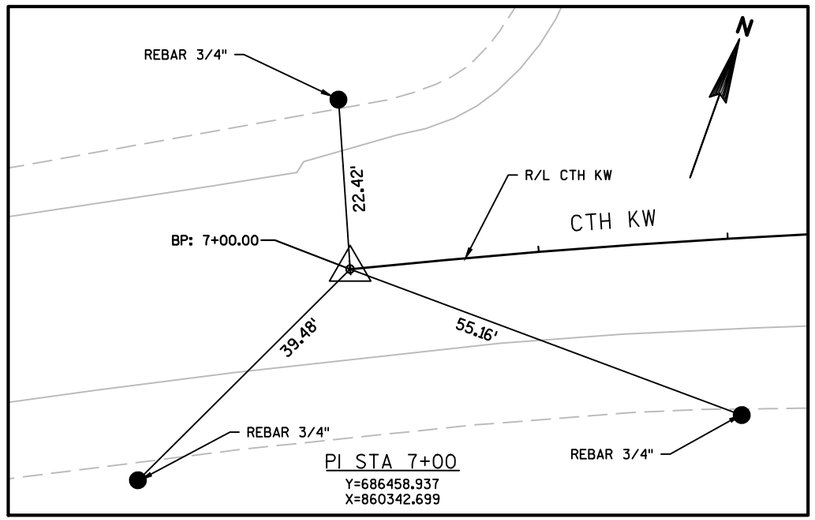


△ INCREASE TO 6' AT POST NO. 1 OF ENERGY ABSORBING TERMINAL (EAT)

FINISHED TYPICAL SECTION AT BEAM GUARD

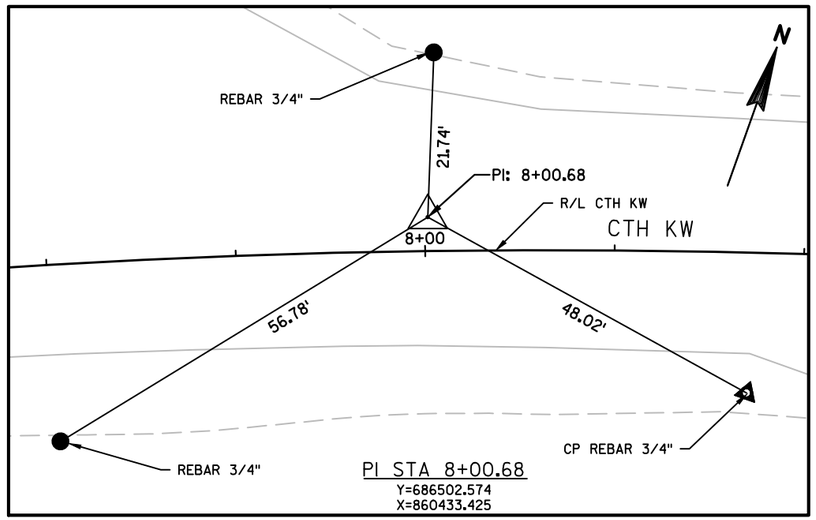
* FOR EAT AT STA 8+54.2, LT, USE 6 FOOT SHOULDER TO POST NO. 1, AND 4' FROM POST NO. 1 TO HINGE. FOR EAT AT STA 11+54.5, LT USE 5' FROM POST NO. 1 TO HINGE. SEE PLAN AND PROFILE AND CROSS SECTIONS FOR DETAILS.

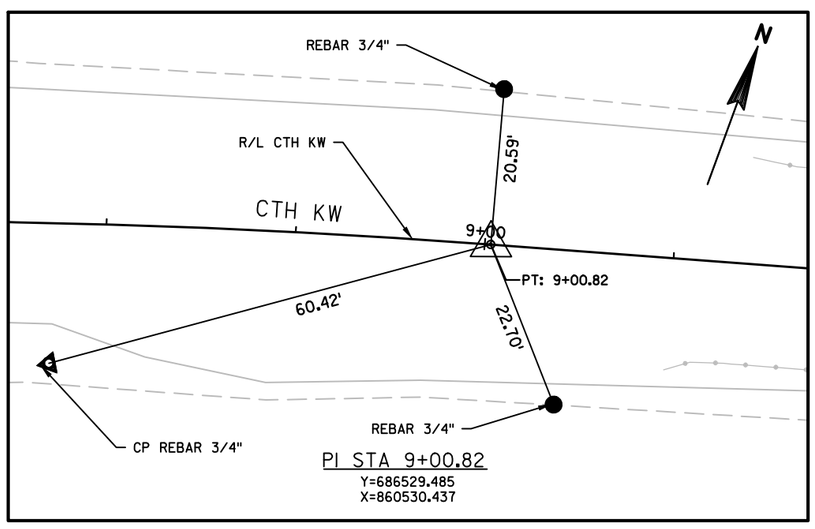
PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	TYPICAL SECTIONS	SHEET 3	E

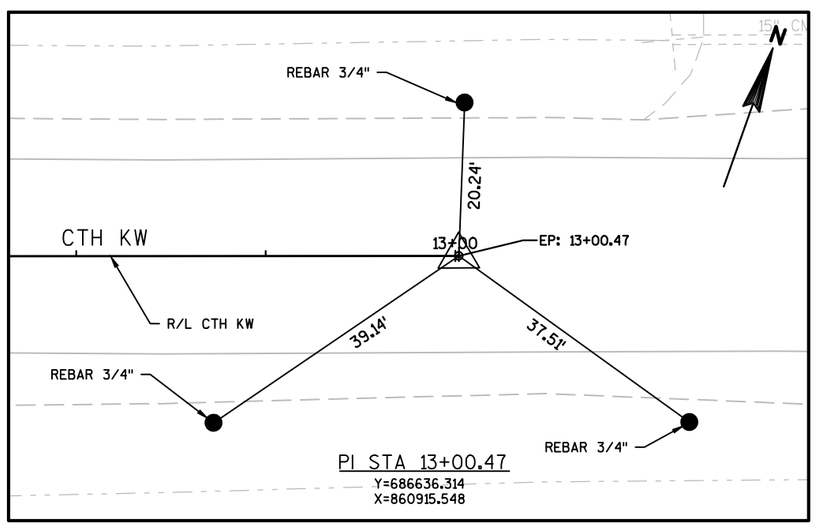


LEGEND

MAG SPIKE







PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	ALIGNMENT TIES	SHEET 4	E

2

N

COLE RD

24" CMP

PRATT CREEK

SLOPE INTERCEPT

EXIST R/W

SLOPE INTERCEPT

PT: 9+00.82

BP: 7+00.00

8+00

9+00

ASPH

10+00

11+00

ASPH

XXXX XXXX XXXX XXXX

12+00

CTH KW

13+00

ASPH

EP: 13+00.47

XXXX XXXX XXXX XXXX

ASPH

SLOPE INTERCEPT

EXIST R/W

SLOPE INTERCEPT

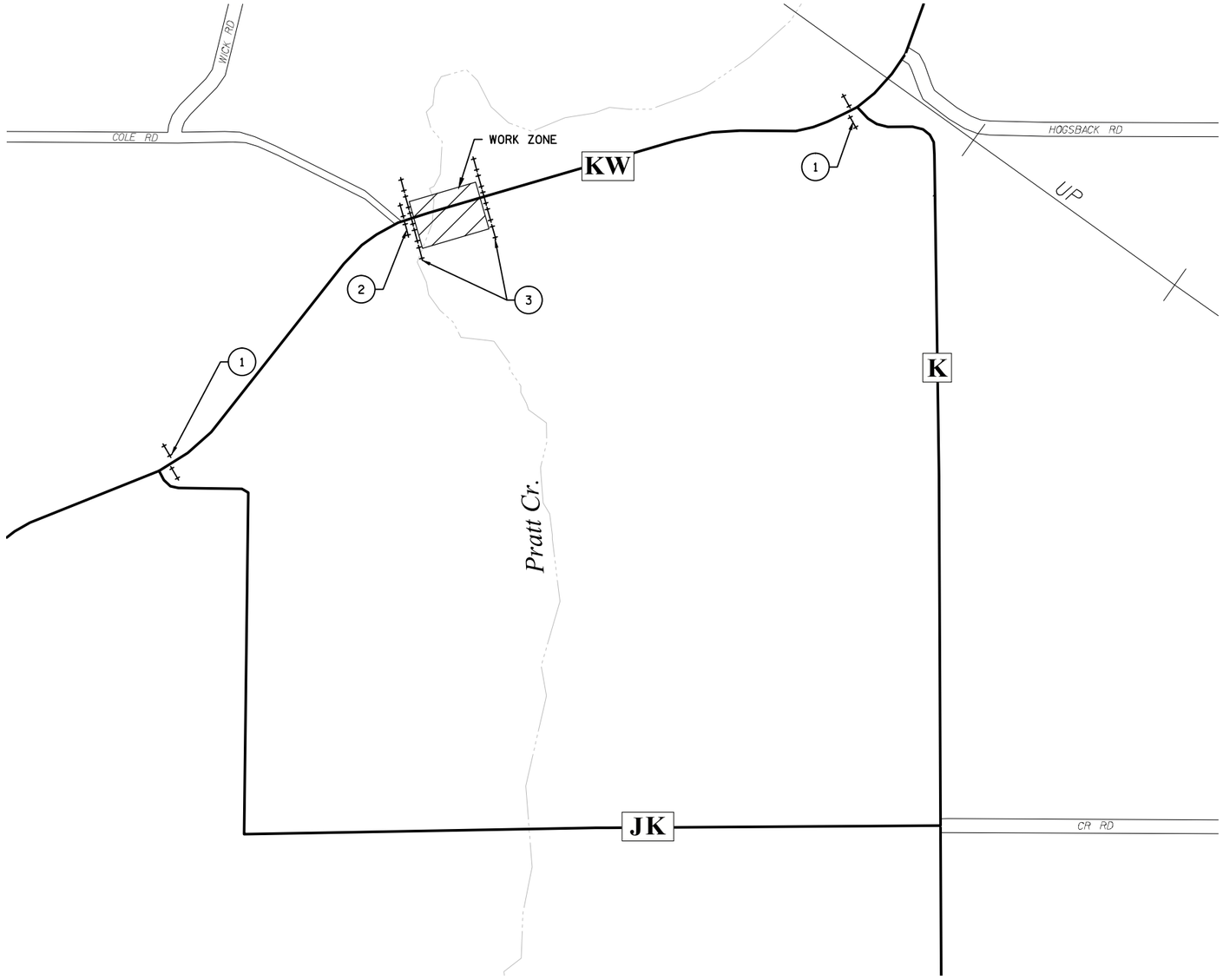
EDGE OF WATER

LEGEND

- SILT FENCE
- COFFERDAM
- TEMPORARY DITCH CHECK
- EROSION MAT URBAN CLASS I, TYPE B

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	EROSION CONTROL	SHEET 5	E

2



NOTE 1: USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A AND DETAIL E.

NOTE 2: USE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" DETAIL 3

NOTE 3: USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL D

SEE DETOUR PLAN FOR ADDITIONAL SIGNING AND INFORMATION.

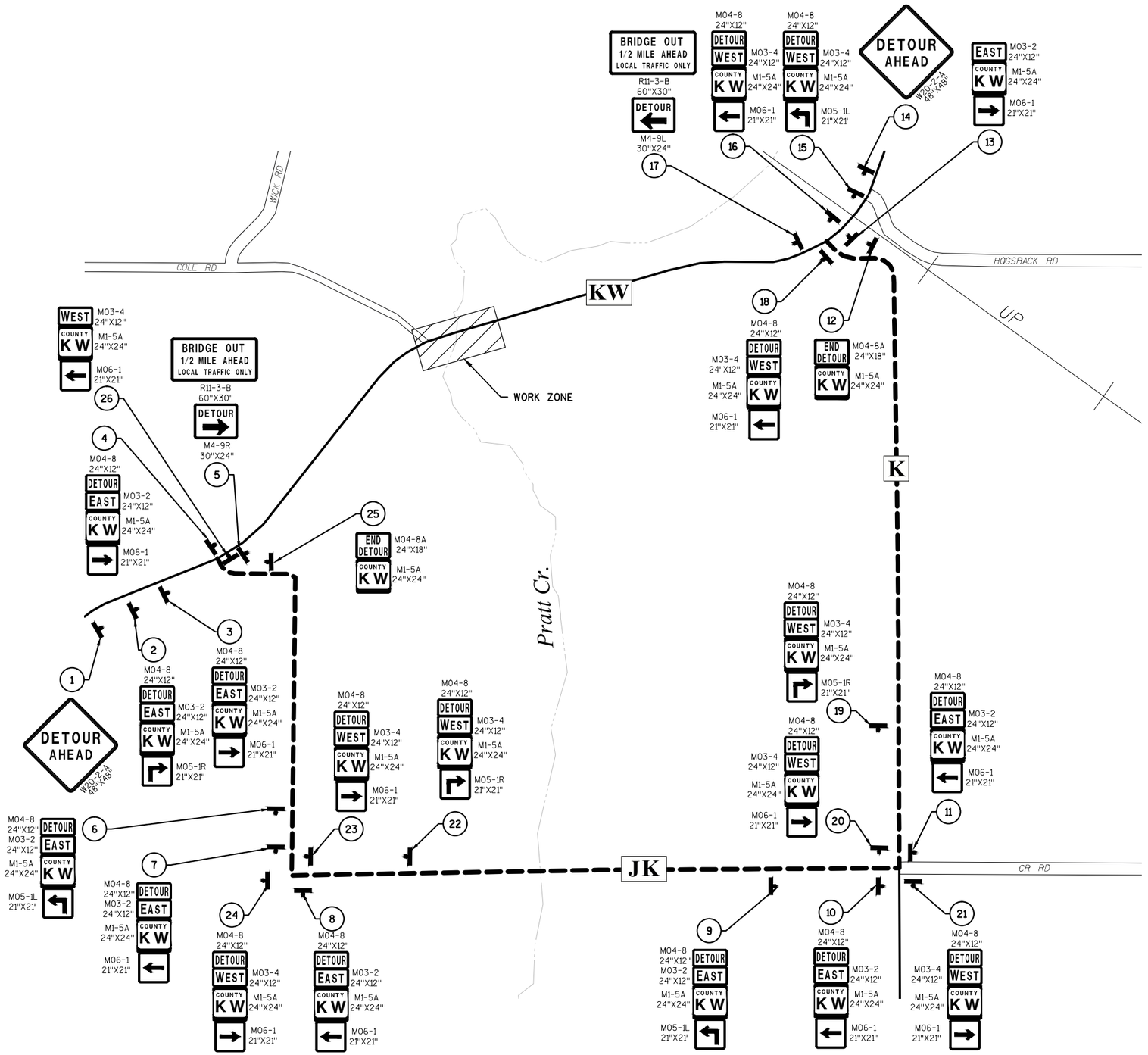
LEGEND

I TYPE III BARRICADE

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	TRAFFIC CONTROL OVERVIEW	SHEET 6	E

2

N



LEGEND

- 00 — SIGN NUMBER
- POST MOUNTED SIGN
- DETOUR ROUTE
- WORK AREA

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	DETOUR PLAN	SHEET 7	E

DATE 30NOV15 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	3906-00-72 QUANTITY
0010	201.0205	Grubbing	STA	3.000	3.000
0040	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 02. 10+00	LS	1.000	1.000
0050	205.0100	Excavation Common **P**	CY	645.000	645.000
0070	206.5000	Cofferdams (structure) 02. B-14-217	LS	1.000	1.000
0090	213.0100	Finishing Roadway (project) 02. 3906-00-72	EACH	1.000	1.000
0100	305.0110	Base Aggregate Dense 3/4-Inch	TON	120.000	120.000
0110	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,375.000	1,375.000
0130	455.0105	Asphaltic Material PG58-28	TON	16.000	16.000
0140	455.0605	Tack Coat	GAL	90.000	90.000
0150	460.1101	HMA Pavement Type E-1	TON	285.000	285.000
0160	460.2000	Incentive Density HMA Pavement	DOL	190.000	190.000
0170	502.3200	Protective Surface Treatment	SY	195.000	195.000
0180	509.2500	Concrete Masonry Overlay Decks	CY	10.000	10.000
0200	513.7051	Railing Steel Type W (structure) 02. B-14-217	LF	90.000	90.000
0210	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0220	606.0300	Riprap Heavy	CY	112.000	112.000
0230	614.0920	Salvaged Rail	LF	220.000	220.000
0240	614.2300	MGS Guardrail 3	LF	150.000	150.000
0250	614.2500	MGS Thrie Beam Transition	LF	150.000	150.000
0260	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0270	619.1000	Mobilization	EACH	0.500	0.500
0280	624.0100	Water	MGAL	9.000	9.000
0290	625.0100	Topsoil **P**	SY	1,650.000	1,650.000
0300	628.1504	Silt Fence	LF	800.000	800.000
0310	628.1520	Silt Fence Maintenance	LF	800.000	800.000
0320	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0330	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0340	628.2008	Erosion Mat Urban Class I Type B	SY	1,650.000	1,650.000
0350	628.6005	Turbidity Barriers	SY	60.000	60.000
0360	628.7504	Temporary Ditch Checks	LF	30.000	30.000
0370	629.0210	Fertilizer Type B	CWT	1.500	1.500
0380	630.0120	Seeding Mixture No. 20 **P**	LB	60.000	60.000
0390	630.0200	Seeding Temporary	LB	20.000	20.000
0400	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0410	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0420	638.2602	Removing Signs Type II	EACH	5.000	5.000
0430	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0440	642.5001	Field Office Type B	EACH	0.500	0.500
0460	643.0100	Traffic Control (project) 02. 3906-00-72	EACH	1.000	1.000
0470	643.0420	Traffic Control Barricades Type III	DAY	1,200.000	1,200.000
0480	643.0705	Traffic Control Warning Lights Type A	DAY	2,400.000	2,400.000
0490	643.0900	Traffic Control Signs	DAY	660.000	660.000
0510	643.2000	Traffic Control Detour (project) 02. 3906-00-72	EACH	1.000	1.000
0520	643.3000	Traffic Control Detour Signs	DAY	5,280.000	5,280.000
0530	645.0120	Geotextile Fabric Type HR	SY	168.000	168.000
0540	646.0103	Pavement Marking Paint 4-Inch	LF	1,630.000	1,630.000
0550	650.4500	Construction Staking Subgrade	LF	420.000	420.000
0560	650.5000	Construction Staking Base	LF	420.000	420.000
0580	650.6500	Construction Staking Structure Layout (structure) 02. B14-217	LS	1.000	1.000

3

DATE 30NOV15 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	3906-00-72 QUANTITY
0600	650.9910	Construction Staking Supplemental Control (project) 02. 3906-00-72	LS	1.000	1.000
0610	650.9920	Construction Staking Slope Stakes	LF	420.000	420.000
0620	690.0150	Sawing Asphalt	LF	240.000	240.000
0630	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	150.000	150.000
0640	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	125.000	125.000
0650	SPV.0090	Special 01. Prestressed Girders Box Type 17-Inch	LF	368.000	368.000
0660	SPV.0165	Special 01. Geosynthetic Reinforced Soil Abutment	SF	2,020.000	2,020.000

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

EARTHWORK SUMMARY

STATION TO STATION	LOCATION	205.0100 EXCAVATION COMMON (CY) NOTE 2	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (CY)	AVAILABLE MATERIAL (CY) NOTE 3	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) NOTE 4 Factor 1.25	MASS ORDINATE (CY)	WASTE (CY) NOTE 5	208.0100 BORROW (CY)
7+66 TO 9+78	CTH KW - SOUTH	296	46	250	106	133	117	117	0
10+22 TO 12+34	CTH KW - NORTH	349	38	311	124	155	157	157	0
GRAND TOTAL		645	83	561	230	287	274	274	0

2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN EXCAVATON COMMON

3) AVAILABLE MATERIAL = EXCAVATION COMMON - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

4) EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR

5) THE ASPHALT FROM THE EXISTING ROADWAY WAS NOT USED IN THE PROPOSED EMBANKMENT AND IS CONSIDERED WASTE MATERIAL WHICH WILL NEED TO BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

GRUBBING

STATION	LOCATION	201.0205 GRUBBING STATION
8+00 - 11+00	CTH KW	3
	TOTALS	**3**

SALVAGED RAIL

STATION	LOCATION	614.0920 LF
9+25 - 9+80, RT	CTH KW	55
9+35 - 9+90, LT	CTH KW	55
10+10 - 10+65, RT	CTH KW	55
10+25 - 10+80, LT	CTH KW	55
	TOTAL	**220**

BASE AGGREGATE DENSE AND WATER

STATION TO STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
7+65 - STRUCTURE	CTH KW	55	650	4.0
STRUCTURE - 12+35	CTH KW	65	725	5.0
	TOTALS	**120**	**1,375**	**9**

ASPHALTIC ITEMS

STATION TO STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG 58-28 TON	455.0605 TACK COAT GAL	460.1101 HMA PAVEMENT E-1 TON
7+65 - STRUCTURE	CTH S	8	45	140
STRUCTURE - 12+35	CTH S	8	45	145
	TOTALS	**16**	**90**	**285**

STEEL PLATE BEAM GUARD

STATION TO STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
8+45.5 - STRUCTURE, RT	CTH KW	37.5	37.5	1
8+54.2 - STRUCTURE, LT	CTH KW	37.5	37.5	1
STRUCTURE - 11+45.8, RT	CTH KW	37.5	37.5	1
STRUCTURE - 11+54.5, LT	CTH KW	37.5	37.5	1
	TOTALS	**150**	**150**	**4**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

LANDSCAPING

STATION TO STATION	LOCATION	625.0100 TOPSOIL SY	630.0200 SEEDING TEMPORARY LB	630.0120 SEEDING NO 20 LB	629.0210 FERTILIZER TYPE B CWT
7+65 - STRUCTURE, RT	CTH KW	340	---	12	0.3
8+20 - STRUCTURE, LT	CTH KW	270	---	10	0.2
STRUCTURE - 12+50, RT	CTH KW	230	---	10	0.2
STRUCTURE - 12+50, LT	CTH KW	470	---	16	0.4
UNDISTRIBUTED	CTH KW	340	20	12	0.4
TOTALS		**1,650**	**20**	**60**	**1.5**

TURBIDITY BARRIER

STATION	LOCATION	628.6005 SY
UNDISTRIBUTED	CTH KW	60
TOTAL		**60**

SAWING ASPHALT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
7+65 - 8+30	CTH KW	95
11+70 - 12+35	CTH KW	145
TOTAL		**240**

EROSION CONTROL ITEMS

STATION TO STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF
7+50 - STRUCTURE, RT	CTH KW	220	220	---	---	340	---
8+00 - STRUCTURE, LT	CTH KW	160	160	---	---	270	---
STRUCTURE - 12+50, RT	CTH KW	230	230	---	---	230	---
STRUCTURE - 12+50, LT	CTH KW	20	20	---	---	470	20
UNDISTRIBUTED	CTH KW	170	170	4	2	340	10
TOTALS		**800**	**800**	**4**	**2**	**1,650**	**30**

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

STATION	LOCATION	DESCRIPTION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
9+70, LT	CTH KW	PRATT CREEK	1	1
9+75, RT	CTH KW	OBJECT MARKER	1	1
9+85, LT	CTH KW	OBJECT MARKER	1	1
10+10, RT	CTH KW	OBJECT MARKER	1	1
10+20, LT	CTH KW	OBJECT MARKER	1	1
TOTALS			**5**	**5**

SIGNS REFLECTIVE TYPE II & POSTS WOOD

STATION	LOCATION	CODE	SIGN SIZE HORIZ X VERT IN X IN	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.2230 SIGNS TYPE II RELFECTIVE F SF
9+65, RT	CTH KW	W5-52R	12 X 36	1	3
9+75, LT	CTH KW	W5-52L	12 X 36	1	3
10+25, RT	CTH KW	W5-52L	12 X 36	1	3
10+30, LT	CTH KW	W5-52R	12 X 36	1	3
		TOTALS		**4**	**12**

CONSTRUCTION STAKING

STATION TO STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	CATEGORY 0020 650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
7+65 - STRUCTURE	CTH KW	210	210	---	---	210
STRUCTURE B-14-217	CTH KW	---	---	1	---	---
STRUCTURE - 12+35	CTH KW	210	210	---	---	210
TOTALS		**420**	**420**	**1**	**1**	**420**

PAVEMENT MARKING PAINT

STATION	LOCATION	646.0103 4-INCH DASHED YELLOW LF	4-INCH SOLID YELLOW LF	4-INCH WHITE EDGE LINE LF
7+50 - 12+50	CTH KW	130	500	1,000
TOTAL		**1,630**		

NOTE: DASHED YELLOW EASTBOUND; SOLID YELLOW WESTBOUND

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 60 DAYS	643.3000 DETOUR SIGNS DAYS	REMARKS
1	CTH KW W. OF CTH JK	W20-2-A	48 X 48	1	60	60	
2	CTH KW W. OF CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO5-1R	21 X 21	1	60	60	
3	CTH KW AT CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
4	CTH KW AT CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
5	CTH KW AT CTH JK	R11-3B	60 X 30	1	60	60	
		M4-9R	30 X 24	1	60	60	
6	CTH JK N. OF CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO5-1L	21 X 21	1	60	60	
7	CTH JK AT CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
8	CTH JK AT CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
9	CTH JK W. OF CTH K	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO5-1L	21 X 21	1	60	60	
10	CTH JK AT CTH K	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
11	CTH JK AT CTH K	MO4-8	24 X 12	1	60	60	
		MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
12	CTH K AT CTH KW	MO4-8A	24 X 18	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
13	CTH K AT CTH KW	MO3-2	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	

PAGE SUBTOTAL 2,640

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL DETOUR SIGN SUMMARY CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 60 DAYS	643.3000 DETOUR SIGNS DAYS	REMARKS
14	CTH KW E. OF CTH K	W20-2-A	48 X 48	1	60	60	
15	CTH KW E. OF CTH K	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO5-1L	21 X 21	1	60	60	
16	CTH KW AT CTH K	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
17	CTH KW AT CTH K	R11-3B	60 X 30	1	60	60	
		M4-9L	30 X 24	1	60	60	
18	CTH KW AT CTH K	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
19	CTH K N. OF CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO5-1R	21 X 21	1	60	60	
20	CTH K AT CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
21	CTH K AT CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
22	CTH JK W. OF CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO5-1R	21 X 21	1	60	60	
23	CTH JK AT CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
24	CTH JK AT CTH JK	MO4-8	24 X 12	1	60	60	
		MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	
25	CTH JK AT CTH KW	MO4-8A	24 X 18	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
26	CTH JK AT CTH KW	MO3-4	24 X 12	1	60	60	
		M1-5A	24 X 24	1	60	60	CTH KW
		MO6-1	21 X 21	1	60	60	

PAGE SUBTOTAL 2,640

PROJECT TOTAL 5,280

TRAFFIC CONTROL ROAD CLOSURE

LOCATION	APPROX. SERVICE PERIOD 60 DAYS	643.0420 BARRICADES TYPE III NO.	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO.	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS NO.	643.0900 SIGNS DAYS
CTH KW AT CTH JK	60	2	120	4	240	--	--
CTH KW AT COLE ROAD	60	2	120	4	240	3	180
CTH KW WEST OF BRIDGE	60	7	420	14	840	4	240
CTH KW EAST OF BRIDGE	60	7	420	14	840	4	240
CTH KW AT CTH K	60	2	120	4	240	--	--
TOTALS			**1,200**		**2,400**		**660**

LEGEND

△	MGS THRIE BEAM TRANSITION
MGS	MGS GUARDRAIL 3
EAT	MGS GUARDRAIL TERMINAL EAT
XXX	GRUBBING

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
BM1	9+80, 14' RT	CHISELED SQUARE ON W END OF CONC ON BRIDGE OVER PRATT CREEK, S SIDE CTH KW	808.38
BM2	10+19.6, 14.5' LT	CHISELED SQUARE ON E END OF CONC ON BRIDGE OVER PRATT CREEK, N SIDE CTH KW	808.35
BM3	7+17, 51' LT	MAG NAIL IN CMP @ THE WESTERLY CORNER OF CTH KW & COLE RD	805.75

CHARLES A. NEIS TRUST
COLE RD
PRATT CREEK
WETLANDS
SLOPE INTERCEPT
REMOVING EXISTING STRUCTURE B-14-8
BM3
BM2
EXIST R/W
53.125' EAT
25' MGS
12.5' MGS
37.5'
+54.2 18' LT
+07.3 18' LT
+32.3 16.2' LT
+44.8 16.2' LT
+63.8 16.2' LT
+76.3 16.2' LT
+01.3 18.0' LT
+54.5 20' LT
SAWCUT AND MATCH EXISTING, TYP
ASPH
18'
8+00
9+00
10+00
11+00
12+00
PT=9+00.82
N74°29'45.67"E
SALVAGED RAIL, TYP
R/L CTH KW
CTH KW
15:1
10:1
BEGIN CONSTRUCTION
STA 7+65.00
PI STA = 8+00.68
Y = 686502.574
X = 860433.425
DELTA = 010°10'57"
D = 005°04'14"
T = 100.68
L = 200.82
R = 1130.00
PC STA = 7+00.00
PT STA = 9+00.82
SE=4.5%
+45.5 20' RT
+98.7 18' RT
+23.7 16.2' RT
+36.2 16.2' RT
+55.2 16.2' RT
+67.7 16.2' RT
+92.1 18' RT
+45.8 20' RT
END CONSTRUCTION
STA 12+34.50
BEGIN PROJECT
STA 8+30.00
Y = 686508.429
X = 860462.832
END PROJECT
STA 11+70.00
BM1
EDGE OF WATER
COFFERDAM
STRUCTURE B-14-217
SHOULDER HINGE POINT, TYP
TDS TELECOM
ALAN D. LEONARD

5 5

YARDAGE SUMMARY
EXCAVATION COMMON = 296 CY
FILL = 106 CY
BORROW = 0 CY

YARDAGE SUMMARY
EXCAVATION COMMON = 349 CY
FILL = 124 CY
BORROW = 0 CY

FINISHED PROFILE ON C/L
EXISTING GROUND
-0.01%
0.50%
PVI STA = 8+30.00
PVI ELEV = 807.97
PVI STA = 11+70.00
PVI ELEV = 807.93
B-14-217
HW100=EL. 803.45
B-14-8
MEASURED WATER EL 799.81 JULY 2014
SPECIAL DITCH, LT

STRUCTURE B-14-217
SINGLE SPAN PPC BOX BEAM
46' END TO END OF BRIDGE
32.4' CLEAR ROADWAY
SEE BRIDGE DRAWINGS 1-9

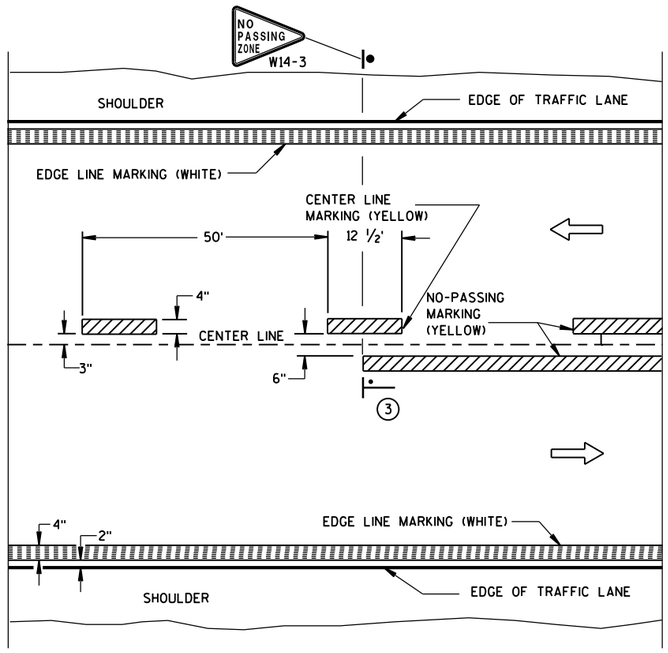
REMOVE STRUCTURE B-14-8
SINGLE SPAN STEEL GIRDER BRIDGE
30' LONG, 28.5' WIDE

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	PLAN AND PROFILE: CTH KW	SHEET E

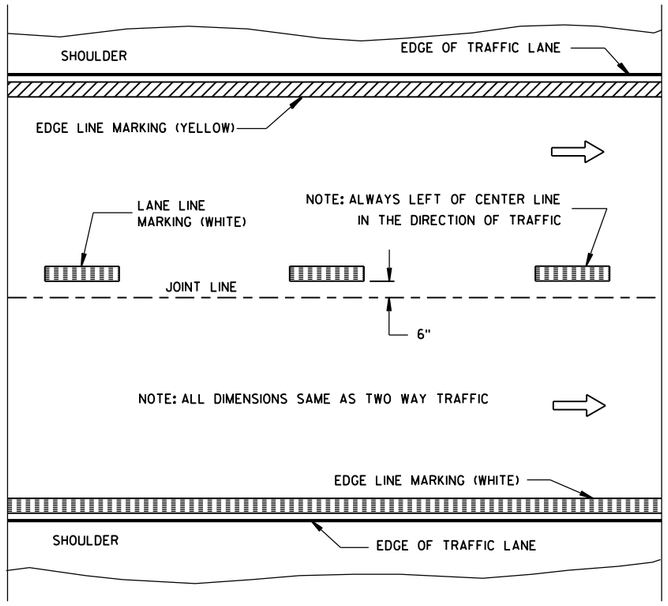
FILE NAME : F:\TR\JOBS\E2111A14\CIVIL 3D 2014\SHEETSPLAN\E2111A14-050100-PP.DWG
CTH KW - E2111A14-050101-PP
PLOT DATE : 10/14/2015 8:59 AM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:40_XREF
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
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)
14B45-03G	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
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)

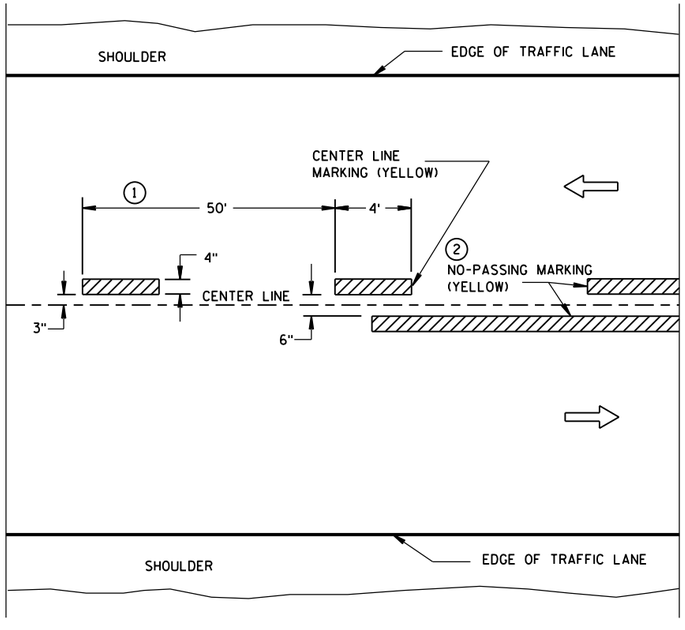


TWO WAY TRAFFIC

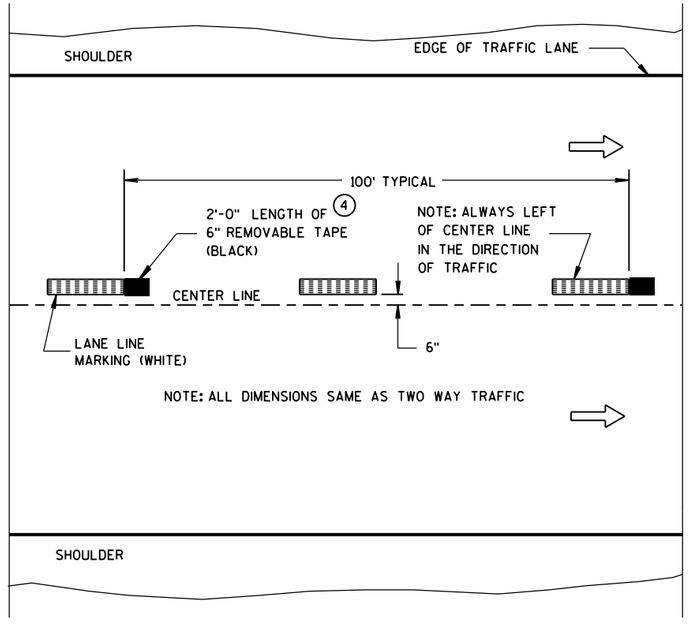


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

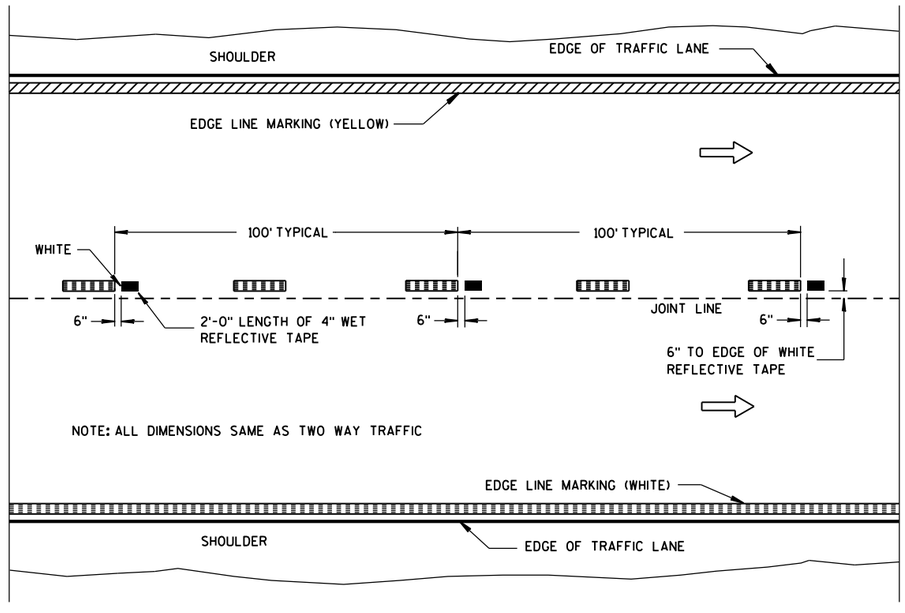
GENERAL NOTES

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

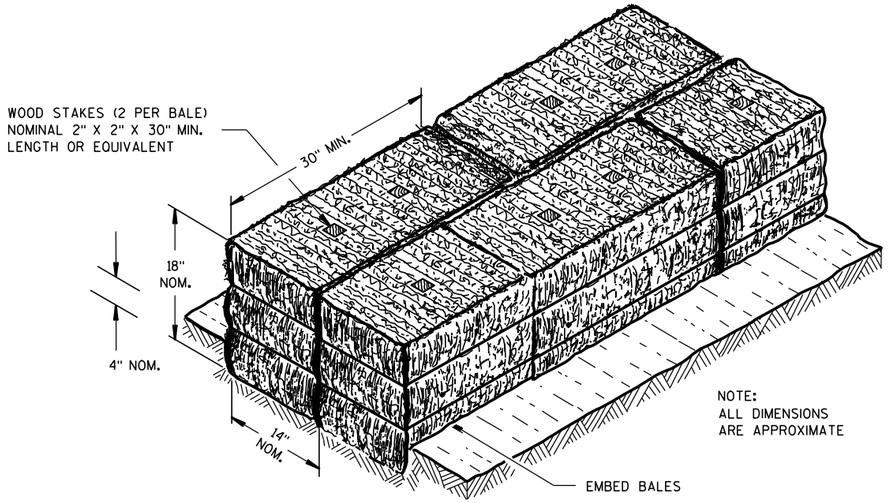
FHWA

6

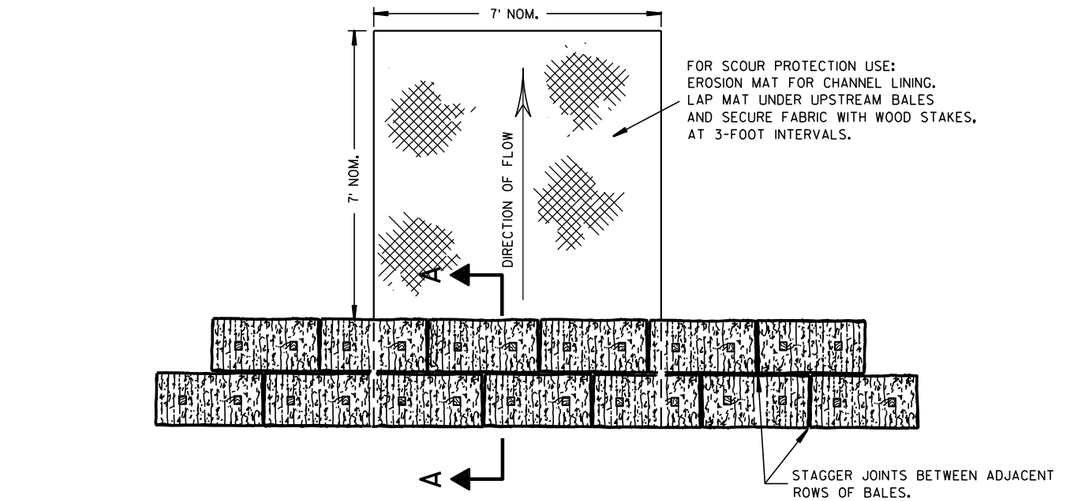
S.D.D. 15 C 8-16a

6

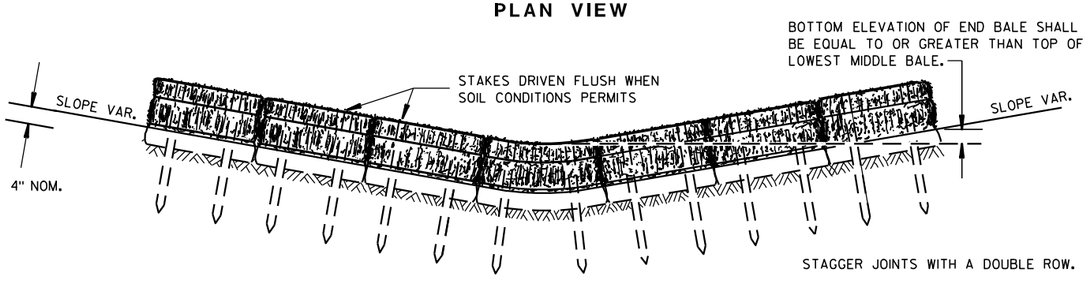
S.D.D. 15 C 8-16a



SECTION A-A



PLAN VIEW



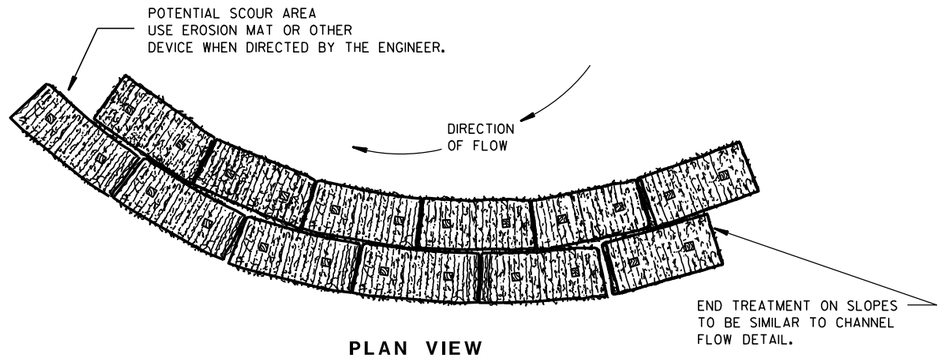
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

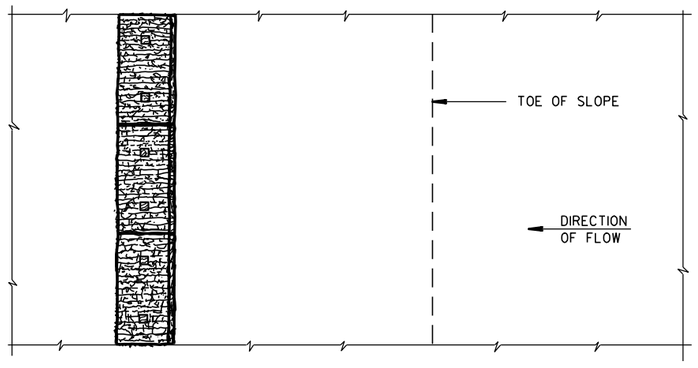
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

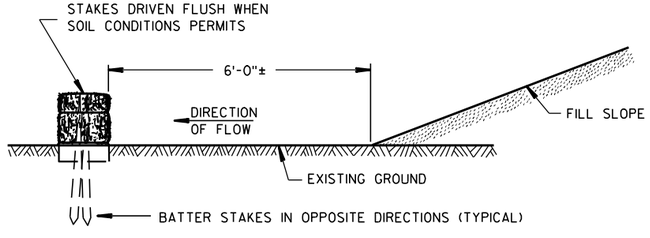


PLAN VIEW

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

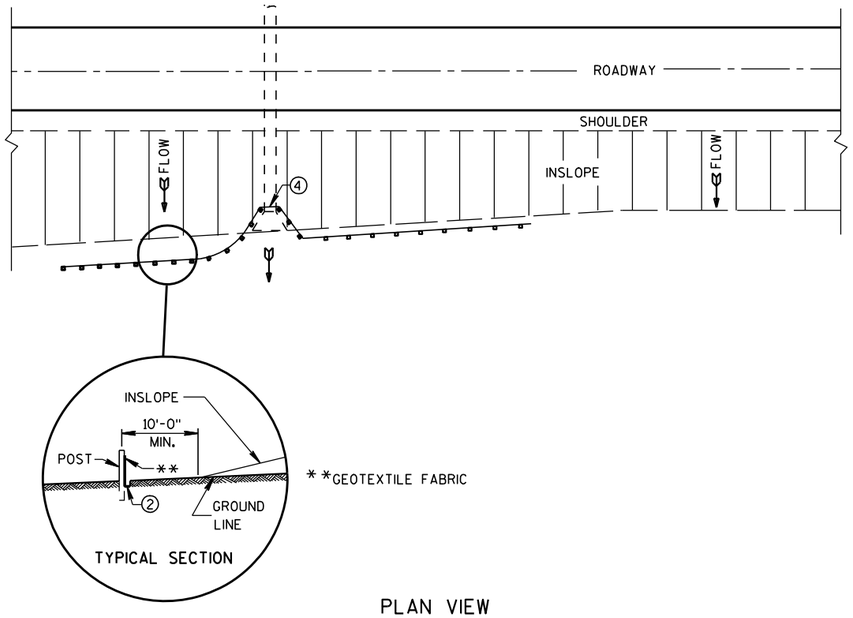
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

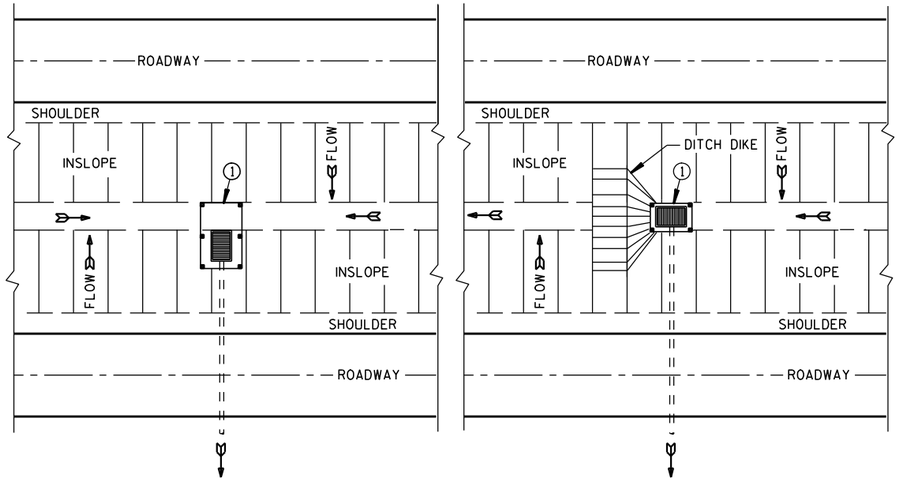
6

S.D.D. 8 E 8-3



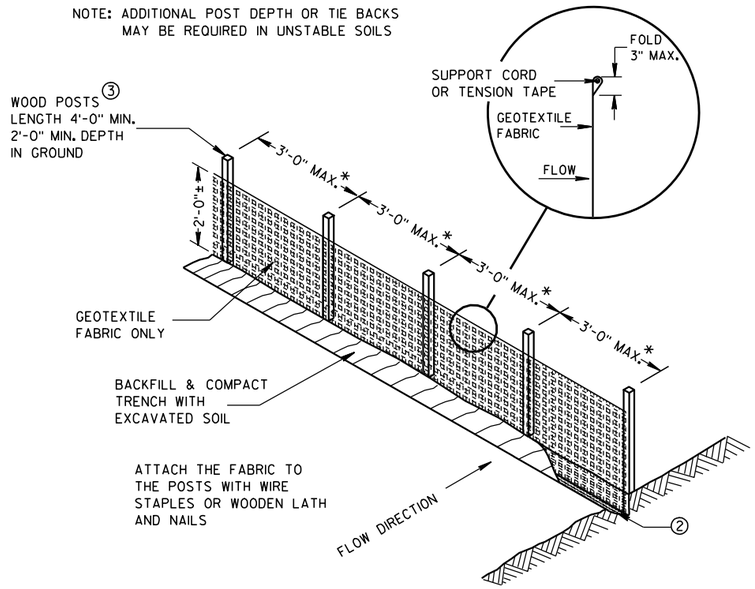
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



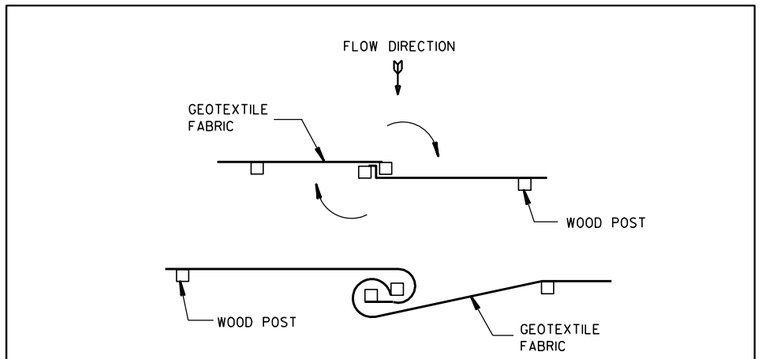
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

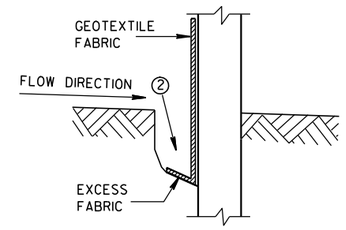


JOINING TWO LENGTHS OF SILT FENCE 5

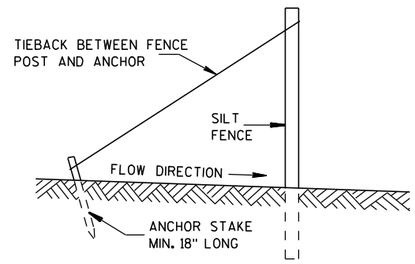
GENERAL NOTES

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 TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

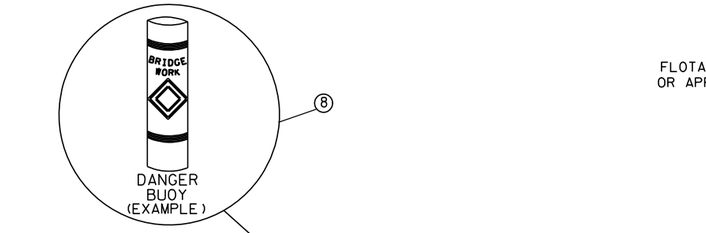
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

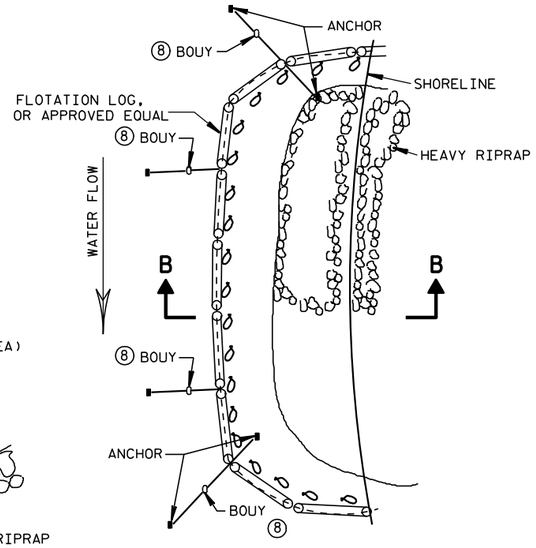
S.D.D. 8 E 9-6

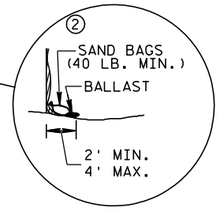
6

S.D.D. 8 E 9-6

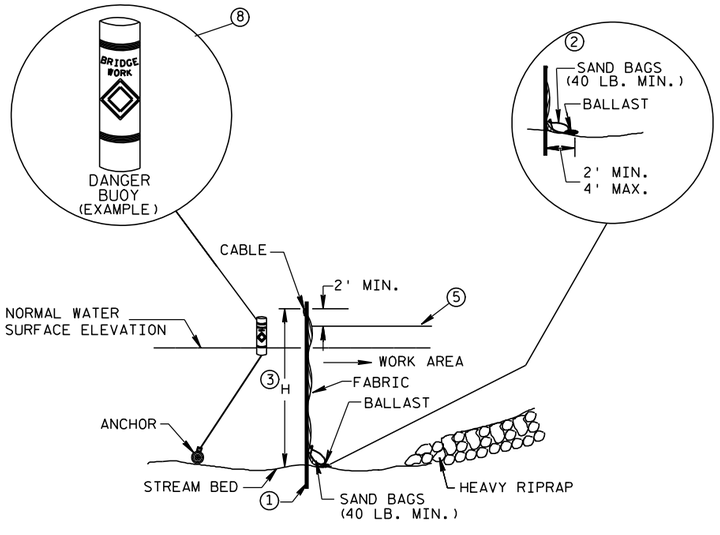


SECTION B-B

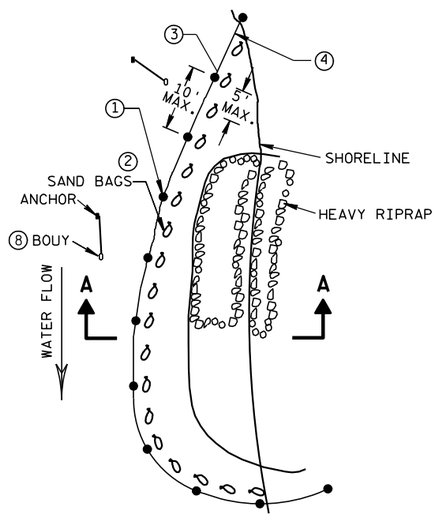




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

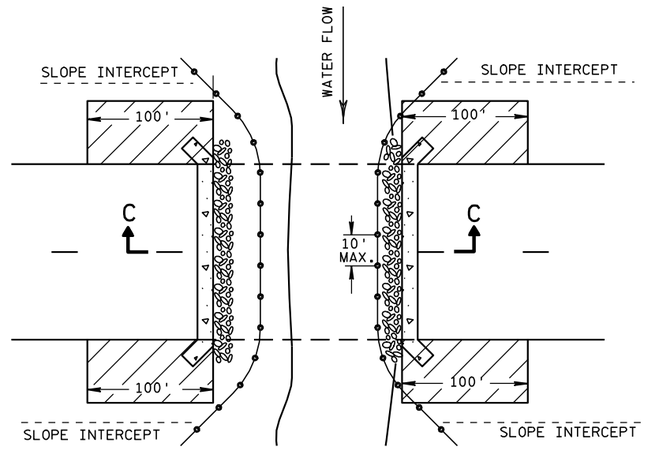
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

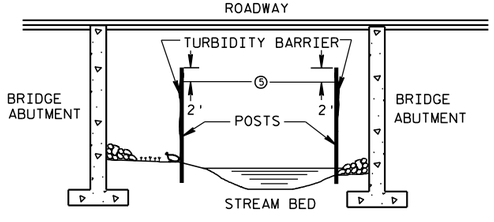
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



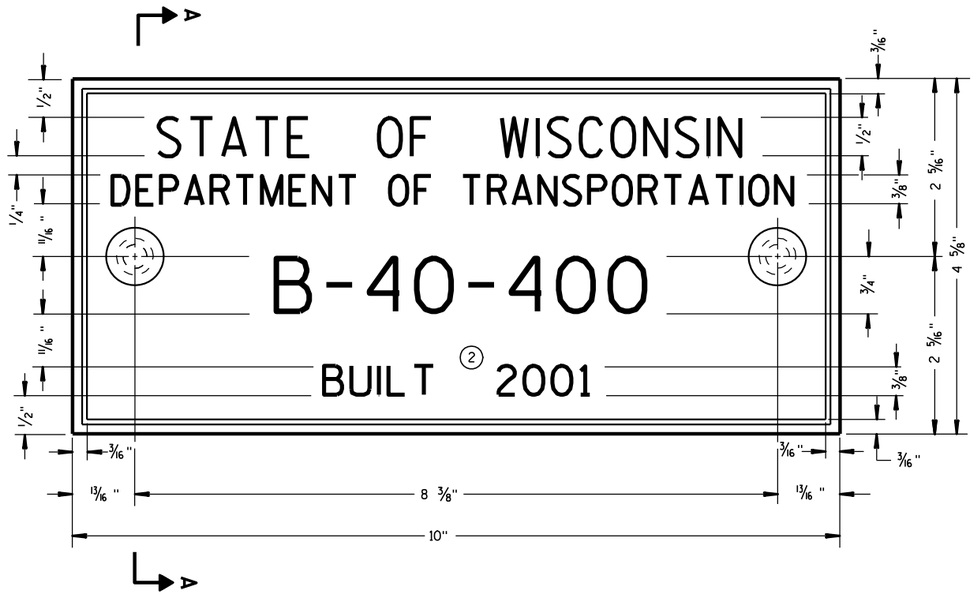
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

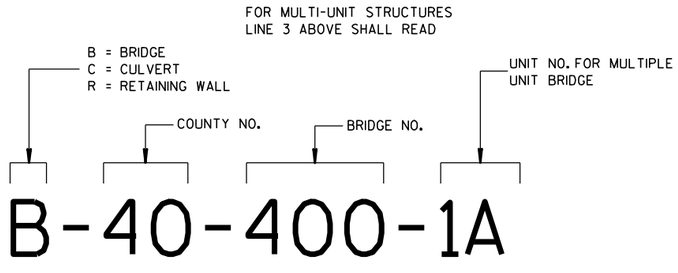
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



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



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

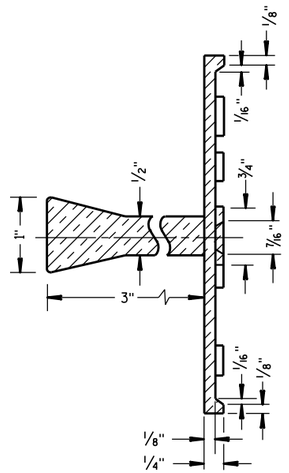
GENERAL NOTES

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.

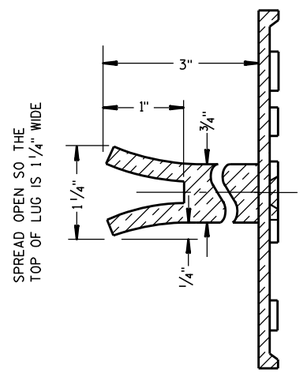
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

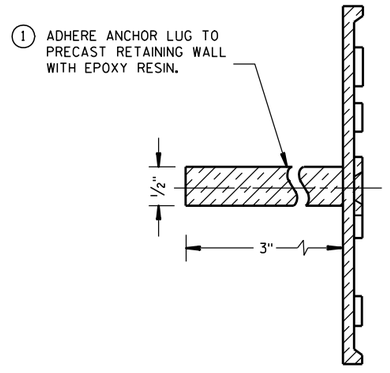
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



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 DEVELOPMENT 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.

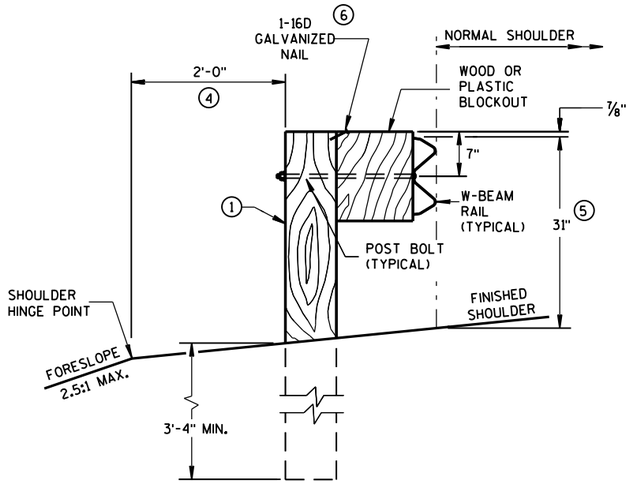
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(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).

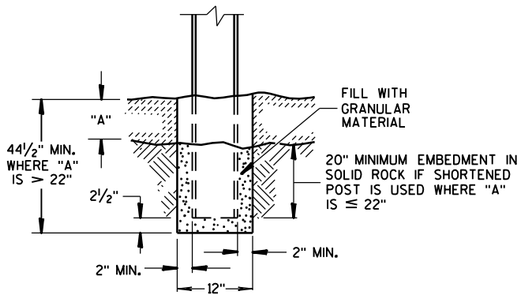
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(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.



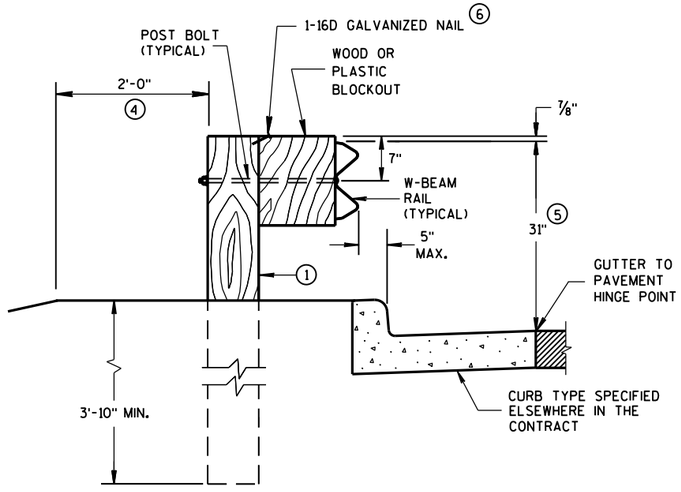
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



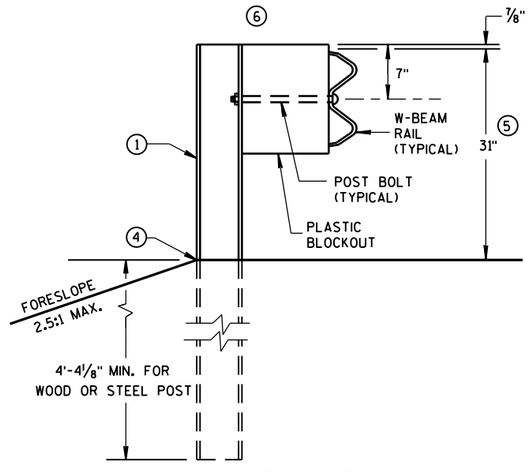
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



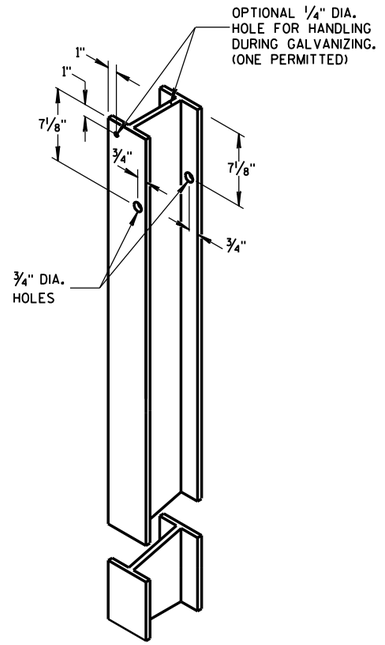
END VIEW

LOCATED ALONG A CURBED ROADWAY

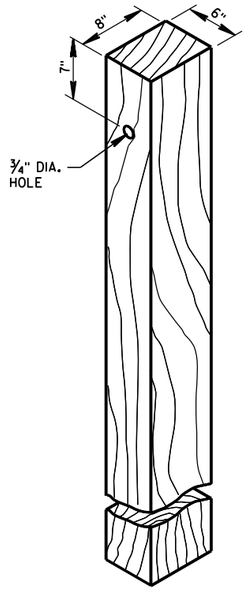


END VIEW

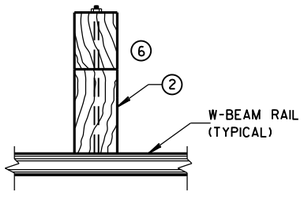
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



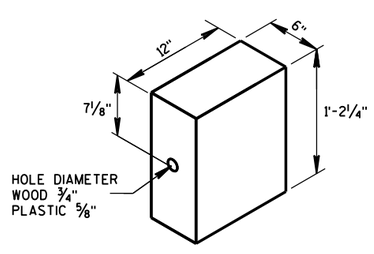
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



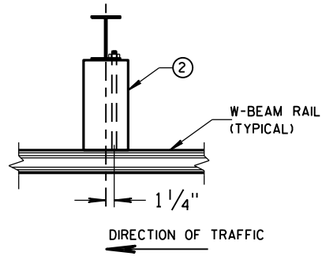
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

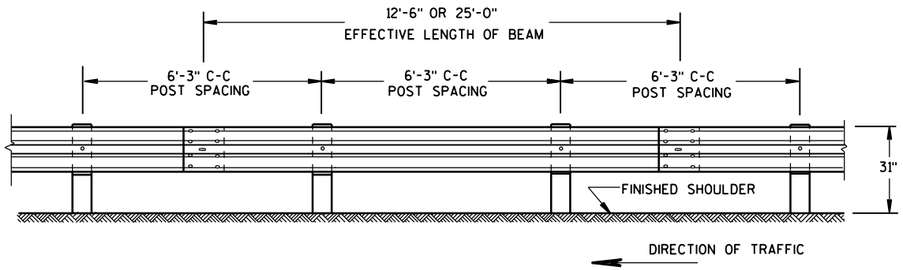


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

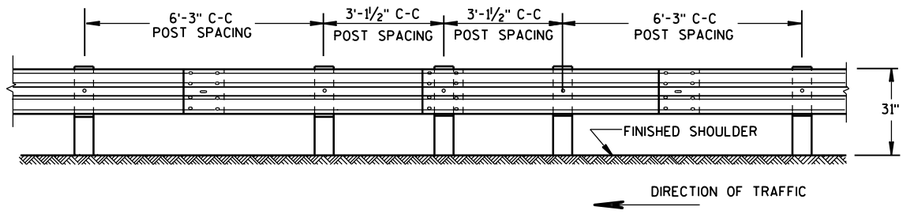
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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



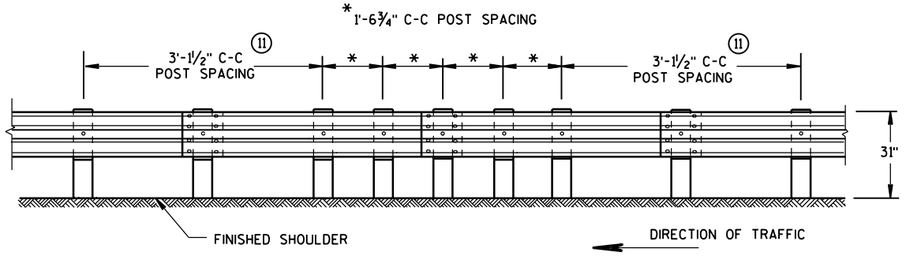
FRONT VIEW

POST SPACING STANDARD INSTALLATION



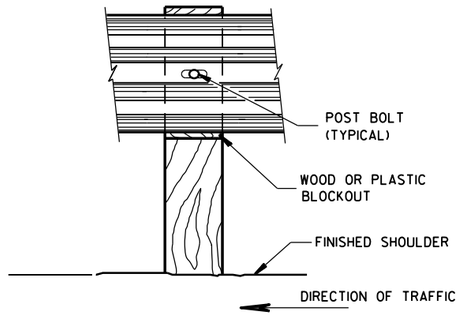
FRONT VIEW

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

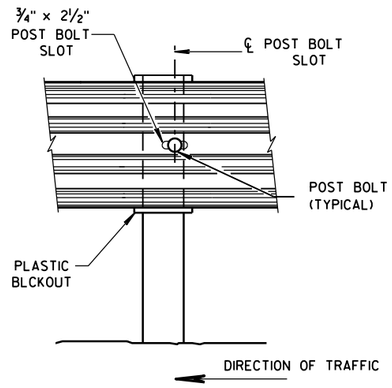


FRONT VIEW

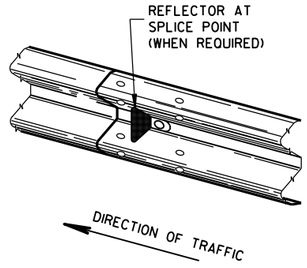
QUARTER POST SPACING (QS)

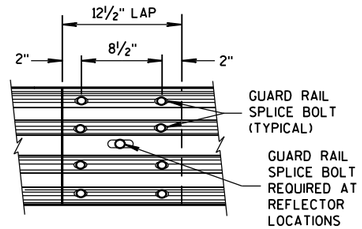


FRONT VIEW AT WOOD POST

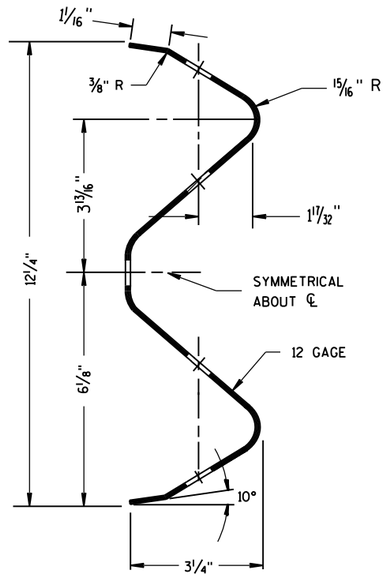


FRONT VIEW AT STEEL POST

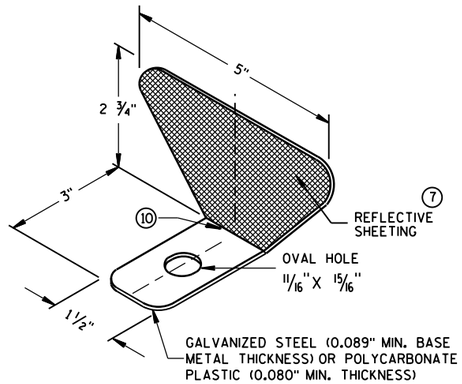




FRONT VIEW
MID-SPAN BEAM SPLICE



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

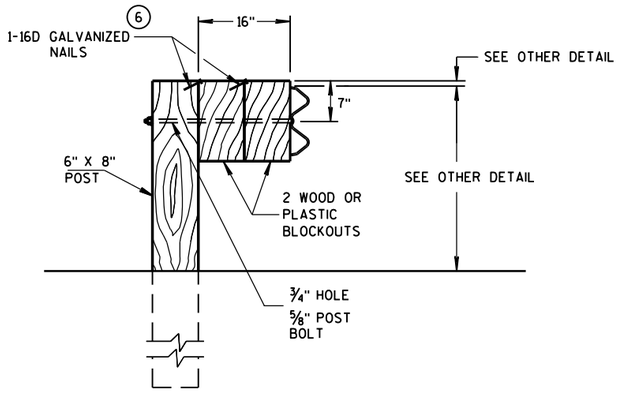
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ⑨ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ⑩	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

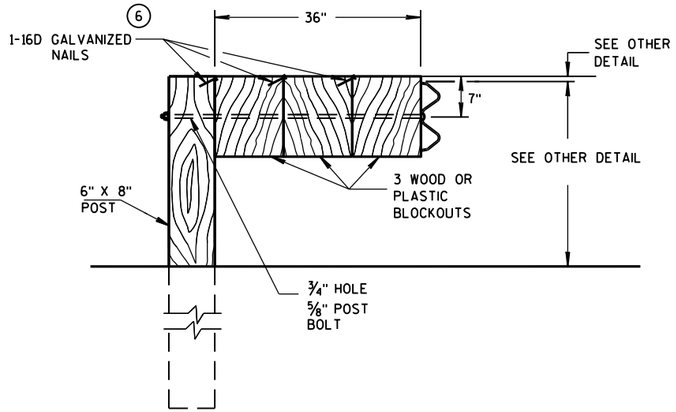
6

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.

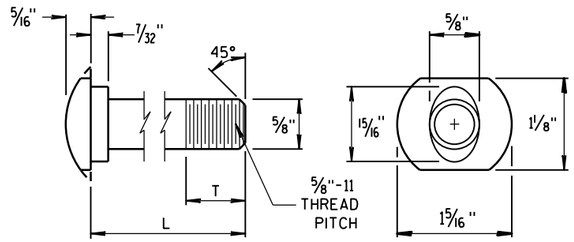


DETAIL FOR 36" BLOCKOUT DEPTH

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.

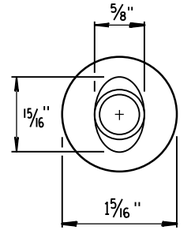
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

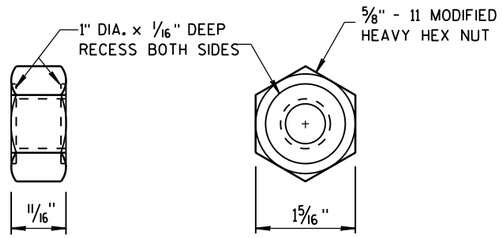


POST BOLT TABLE

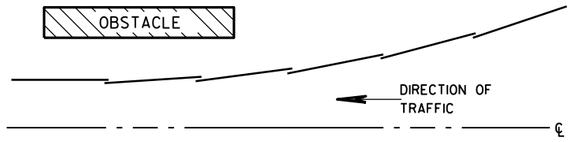
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

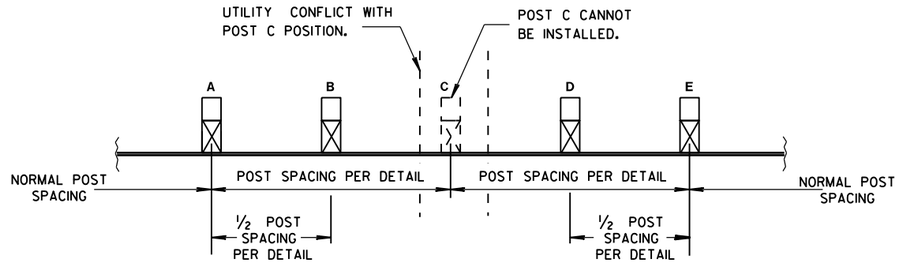


POST BOLT AND RECESS NUT

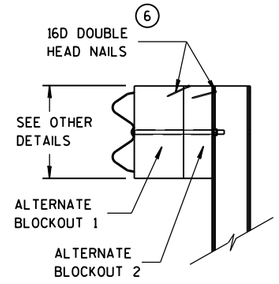


PLAN VIEW

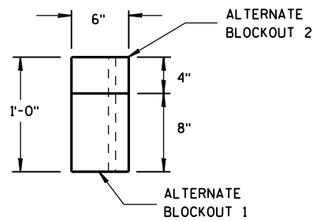
BEAM LAPPING DETAIL



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.

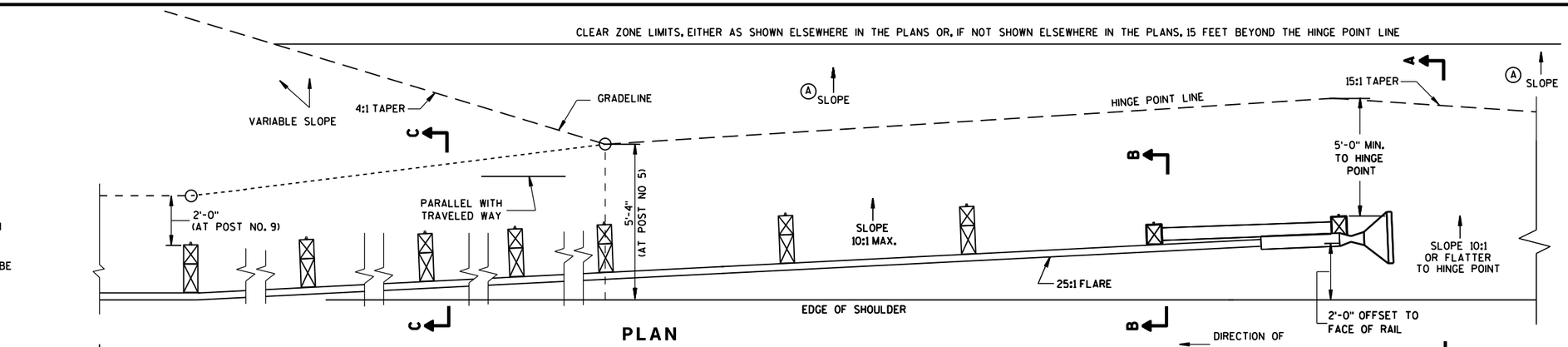
SEE SDD 14B42 FOR MORE INFORMATION.

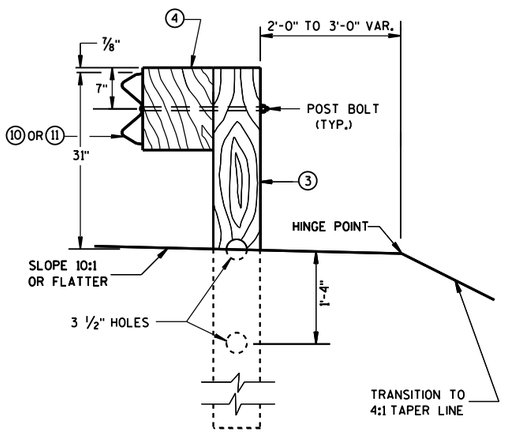
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

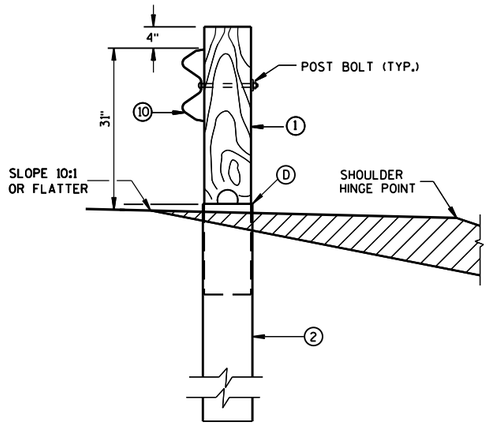
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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.

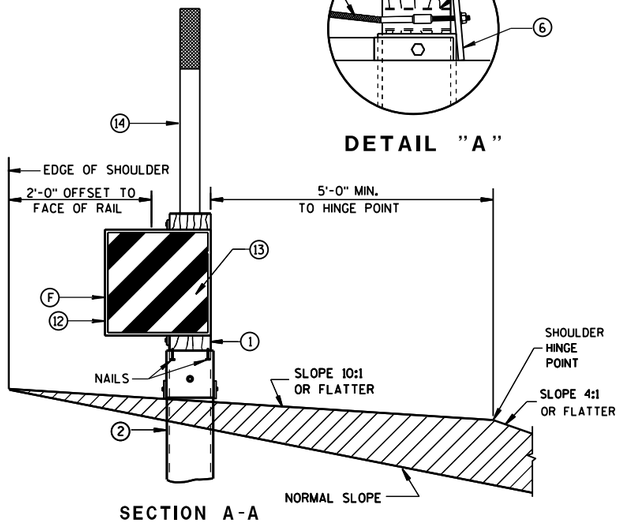




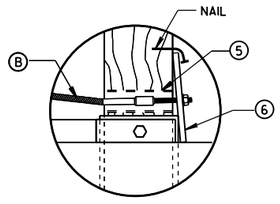
SECTION C-C
TYPICAL AT POST NOS. 3-9



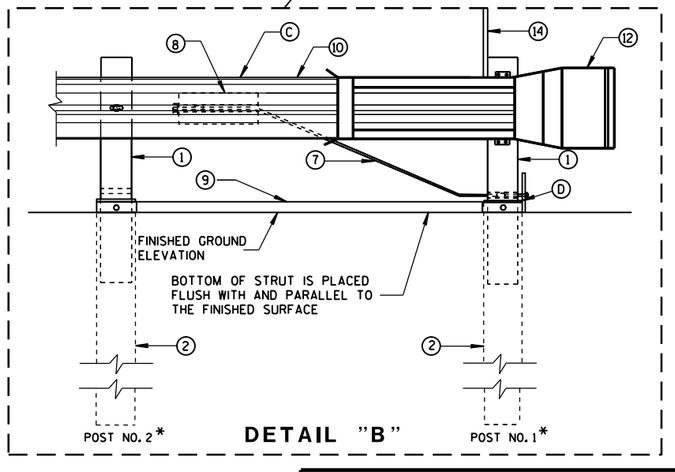
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



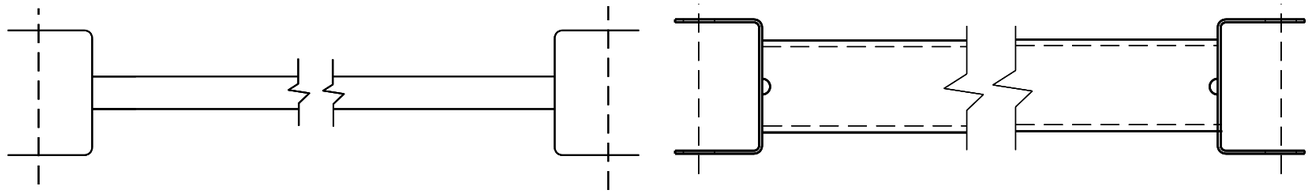
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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

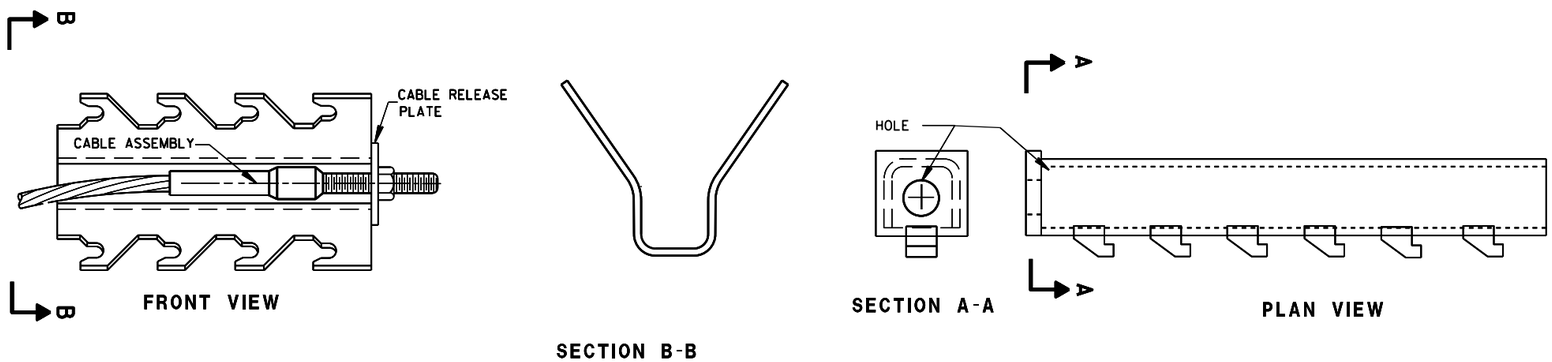
S.D.D. 14 B 44-2a



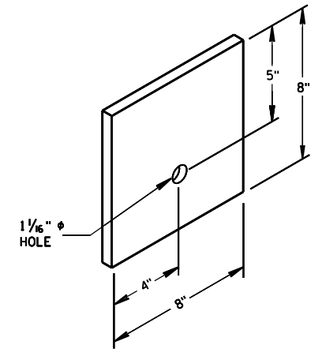
GENERIC GROUND STRUT (9) (H)

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)



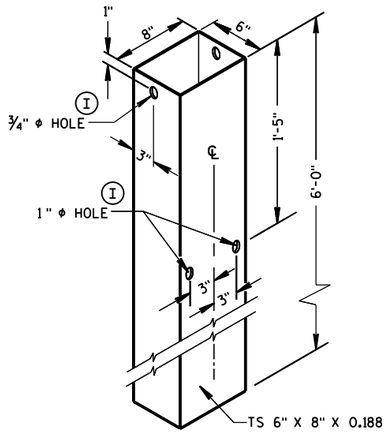
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

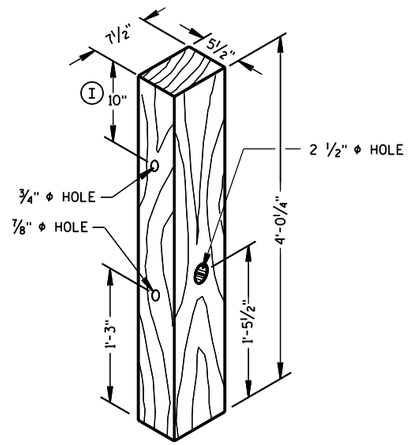
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

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

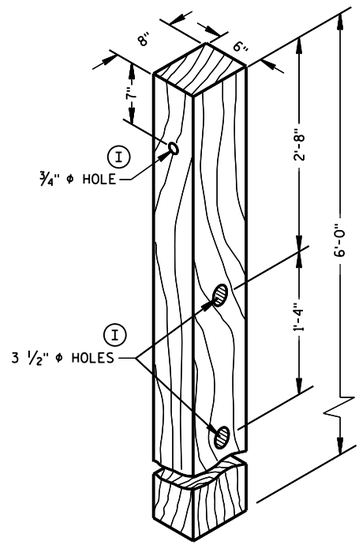


FOUNDATION TUBE (2)



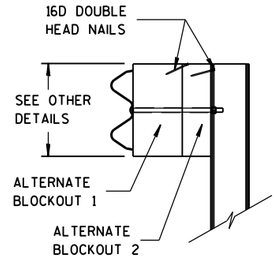
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

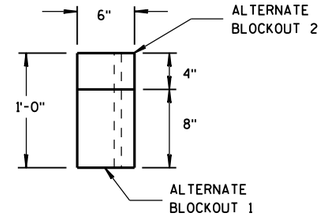


POSTS NUMBER 3-9

WOOD CRT POST (3)

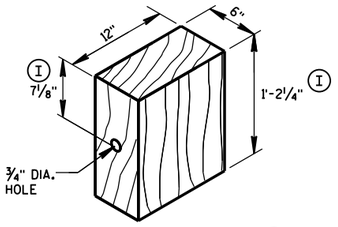


SIDE VIEW



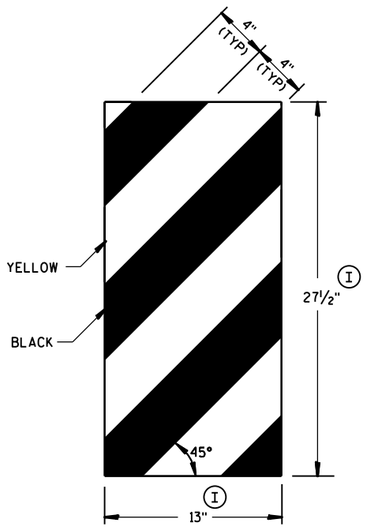
TOP VIEW

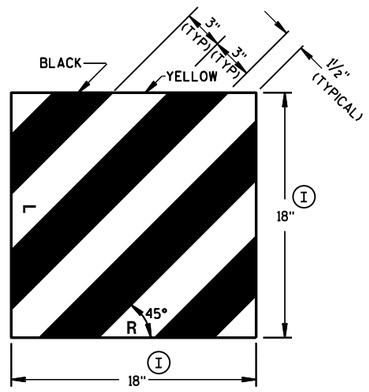
ALTERNATE WOOD BLOCKOUT DETAIL



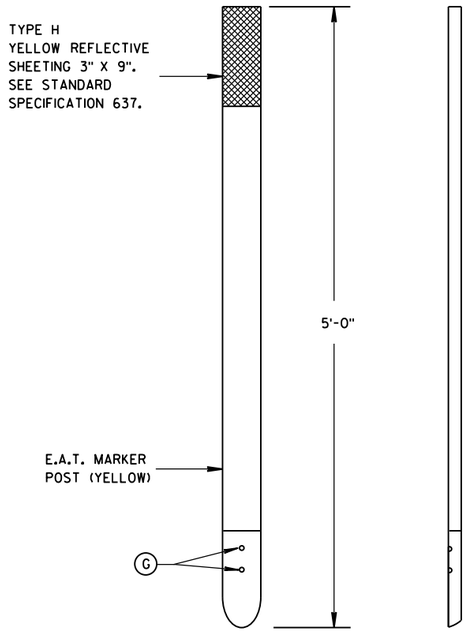
WOOD BLOCKOUT (4)

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





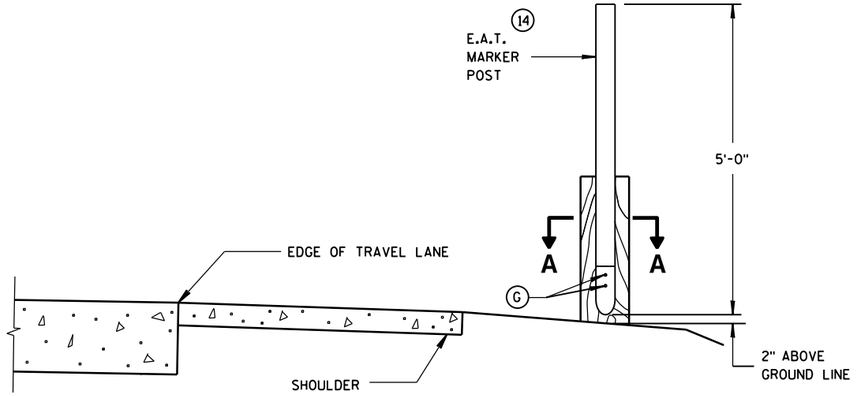
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

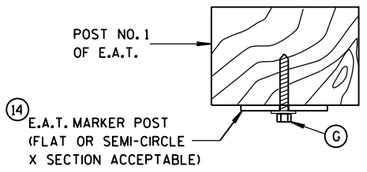
SIDE VIEW

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

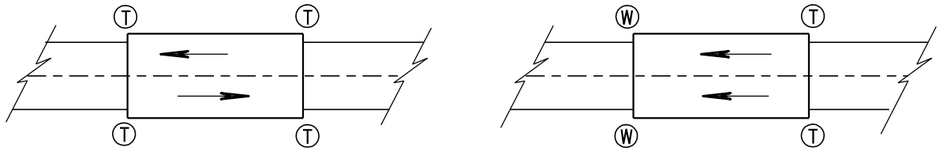
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

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

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

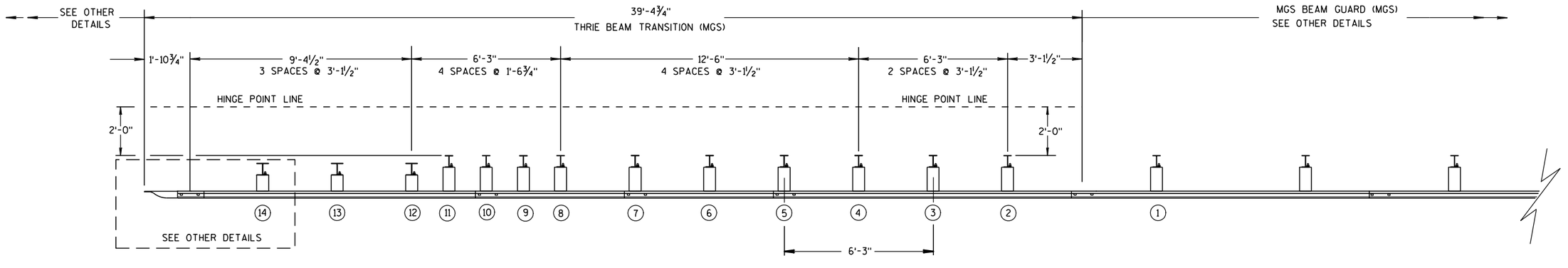
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

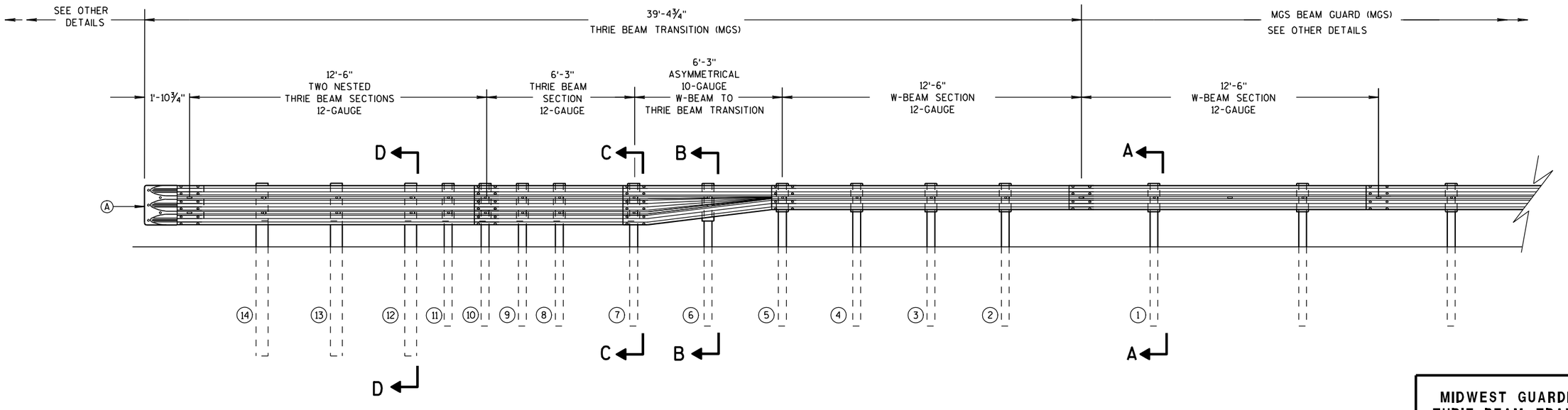
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ 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

6

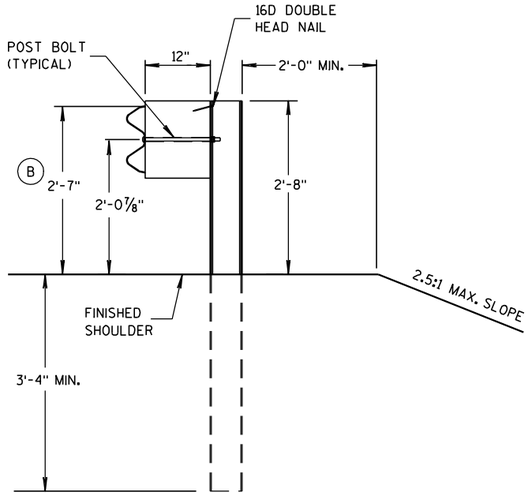
S.D.D. 14 B 45-3a

6

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

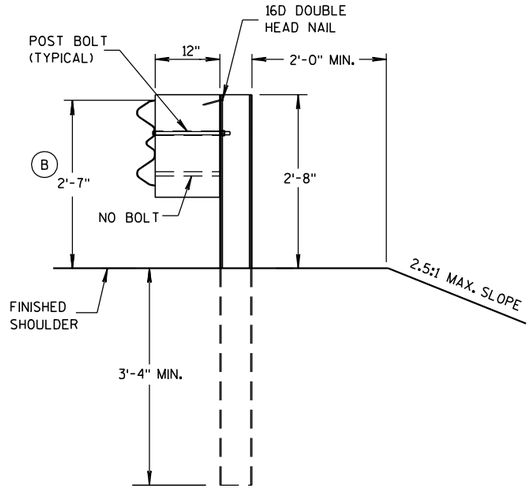
GENERAL NOTES

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



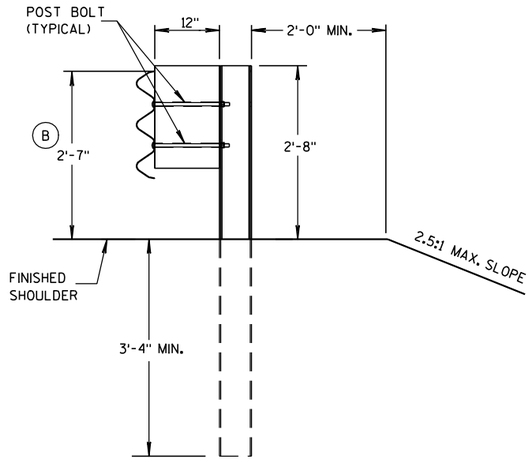
SECTION A-A

POSTS 1-5



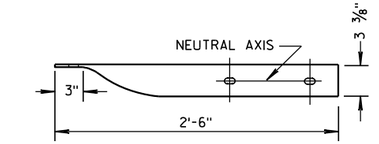
SECTION B-B

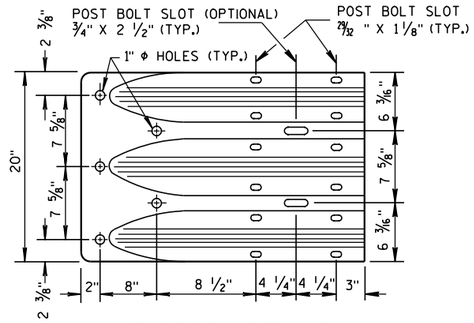
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

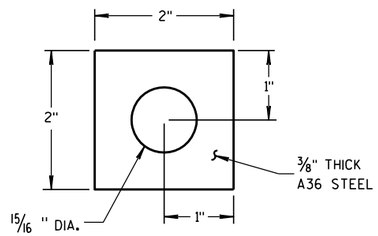
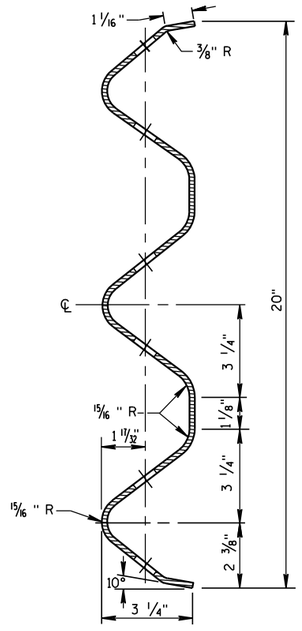
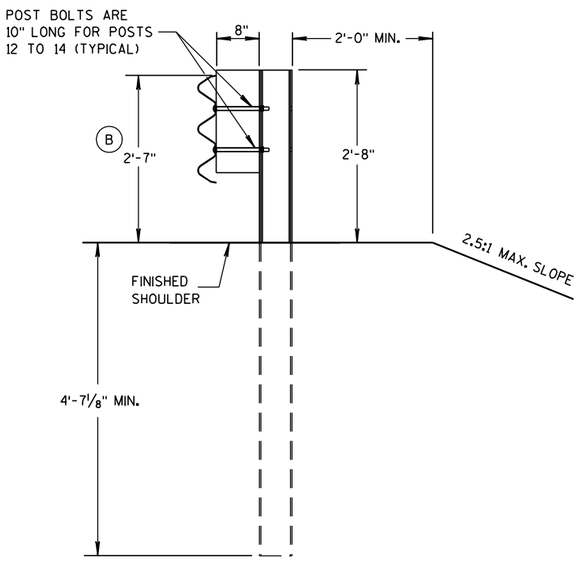


PLATE WASHER DETAIL

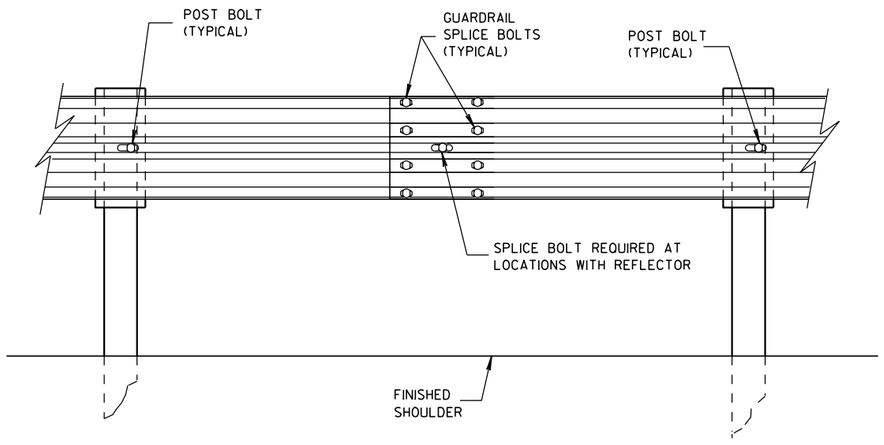


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

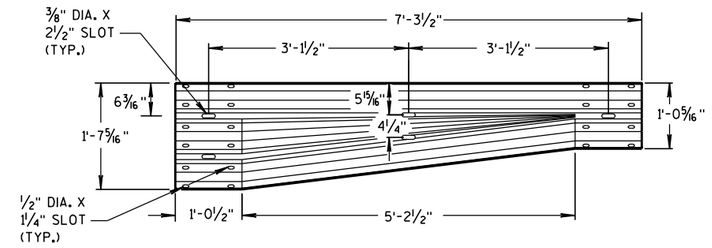
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

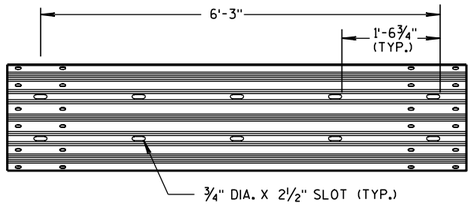
S.D.D. 14 B 45-3b

6

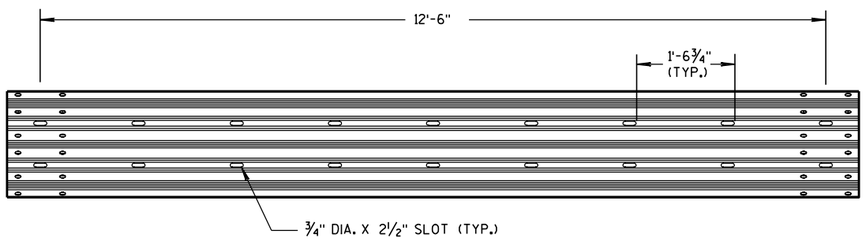
S.D.D. 14 B 45-3b



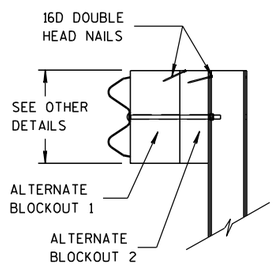
W-BEAM TO THRIE BEAM TRANSITION SECTION



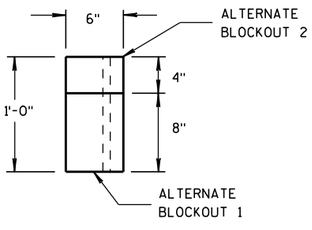
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

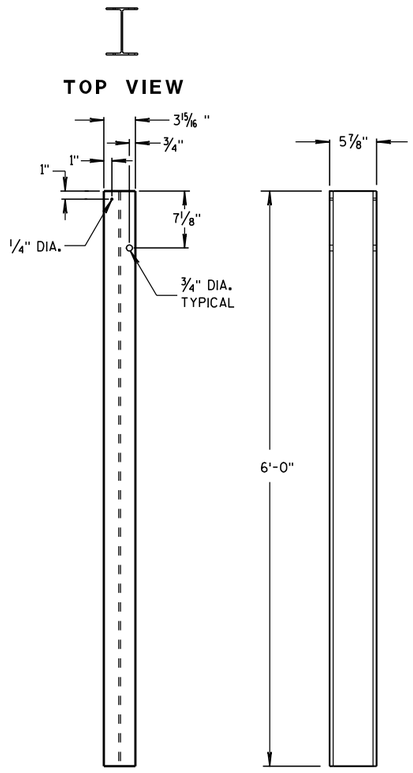


SIDE VIEW



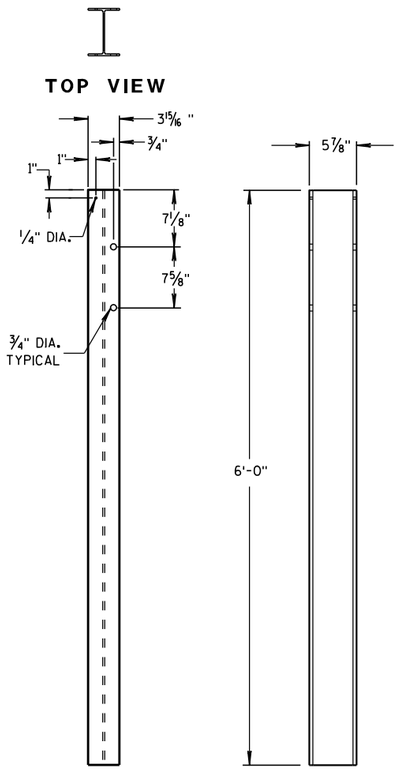
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



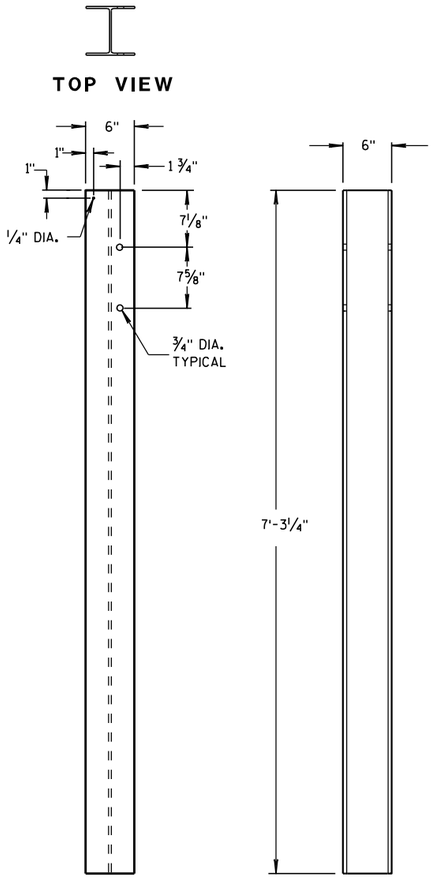
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

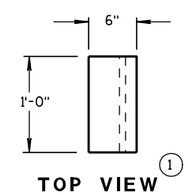
STEEL POSTS 6-11



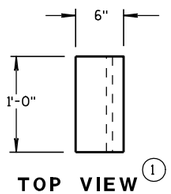
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

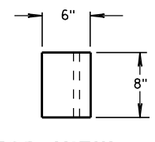
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



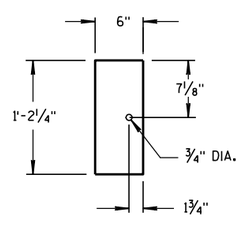
TOP VIEW (1)



TOP VIEW (1)

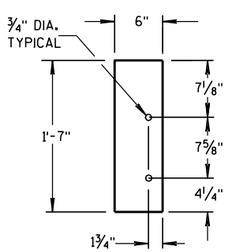


TOP VIEW



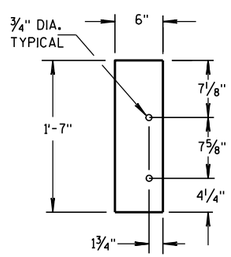
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

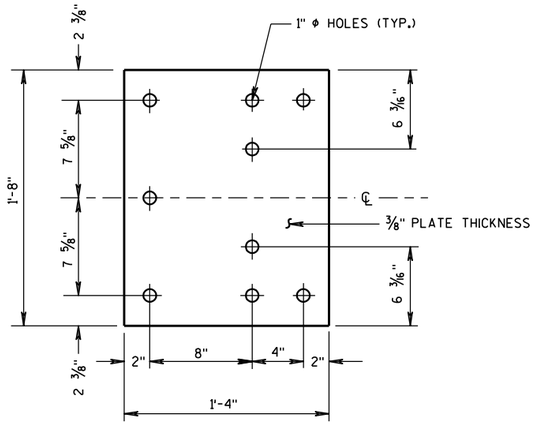
POST NUMBER	SECTION TYPE	LENGTH
(1)	W6x9	72"
(2)	W6x9	72"
(3)	W6x9	72"
(4)	W6x9	72"
(5)	W6x9	72"
(6)	W6x9	72"
(7)	W6x9	72"
(8)	W6x9	72"
(9)	W6x9	72"
(10)	W6x9	72"
(11)	W6x9	72"
(12)	W6x15	87 1/8"
(13)	W6x15	87 1/8"
(14)	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

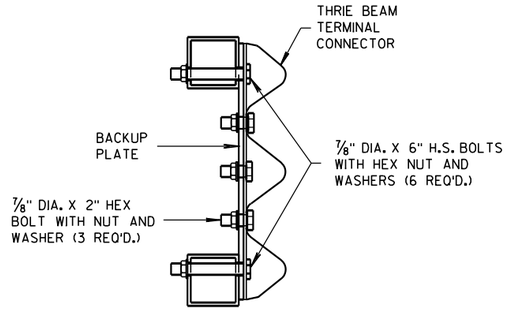
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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



BACK-UP PLATE DETAIL

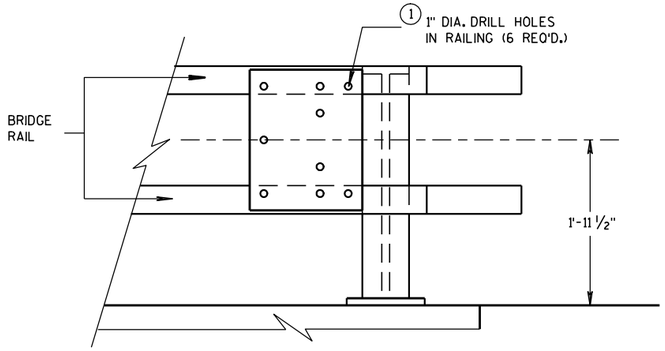


SECTION J-J

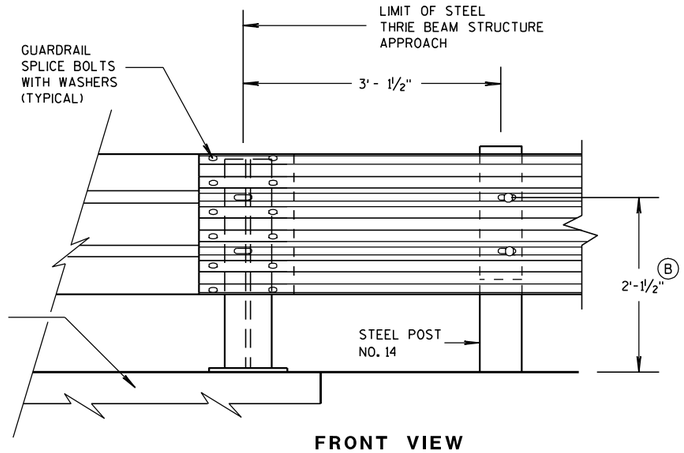
GENERAL NOTES

(1) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

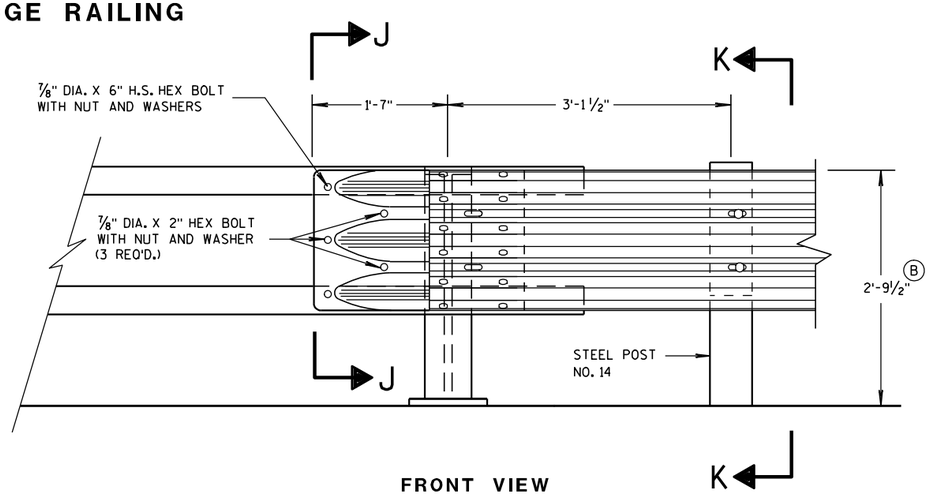


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

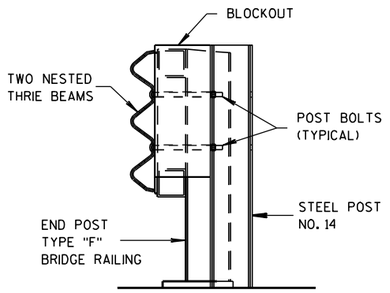


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

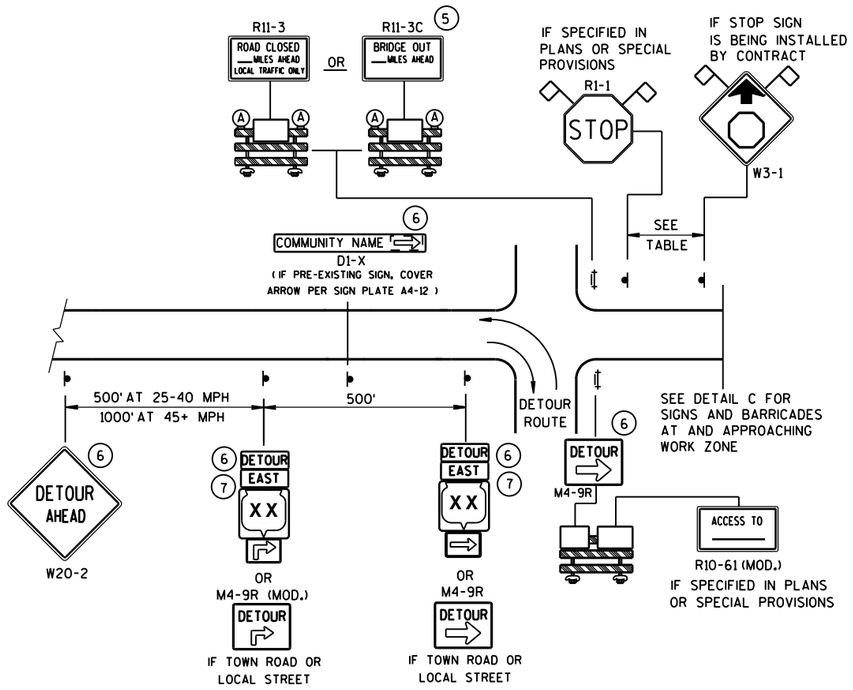
APPROVED
8/31/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

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

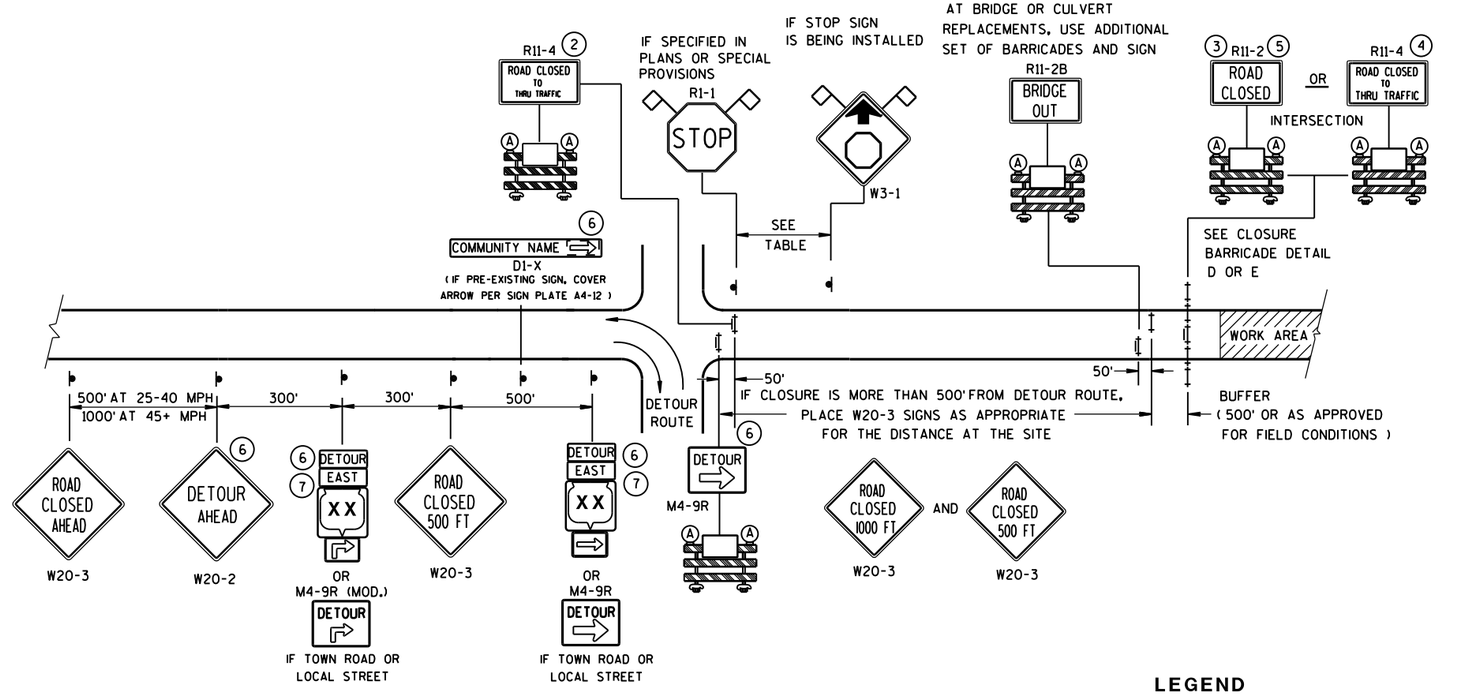
6

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



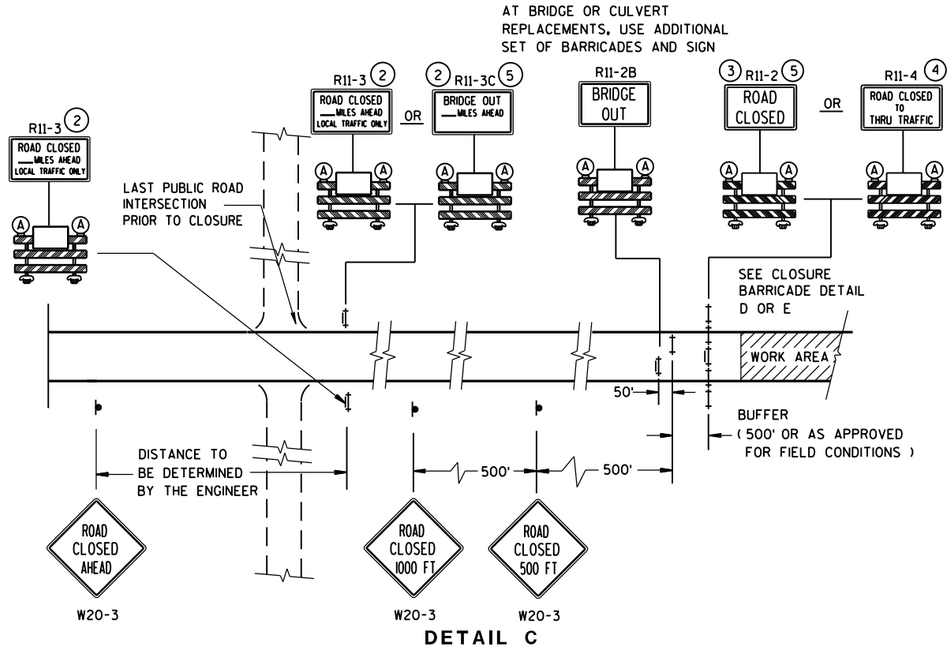
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

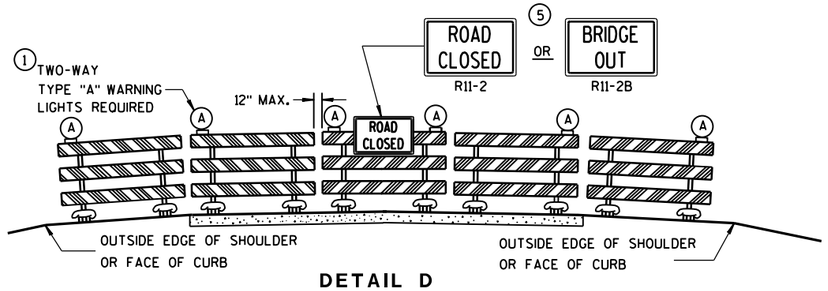
8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

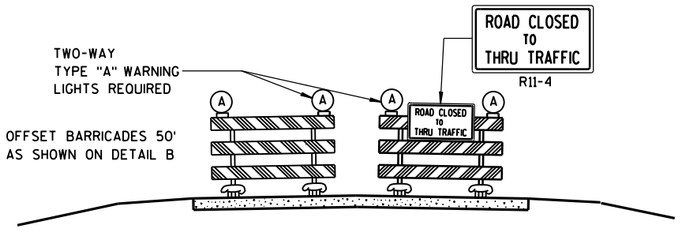
S.D.D. 15 C 2-5a



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.

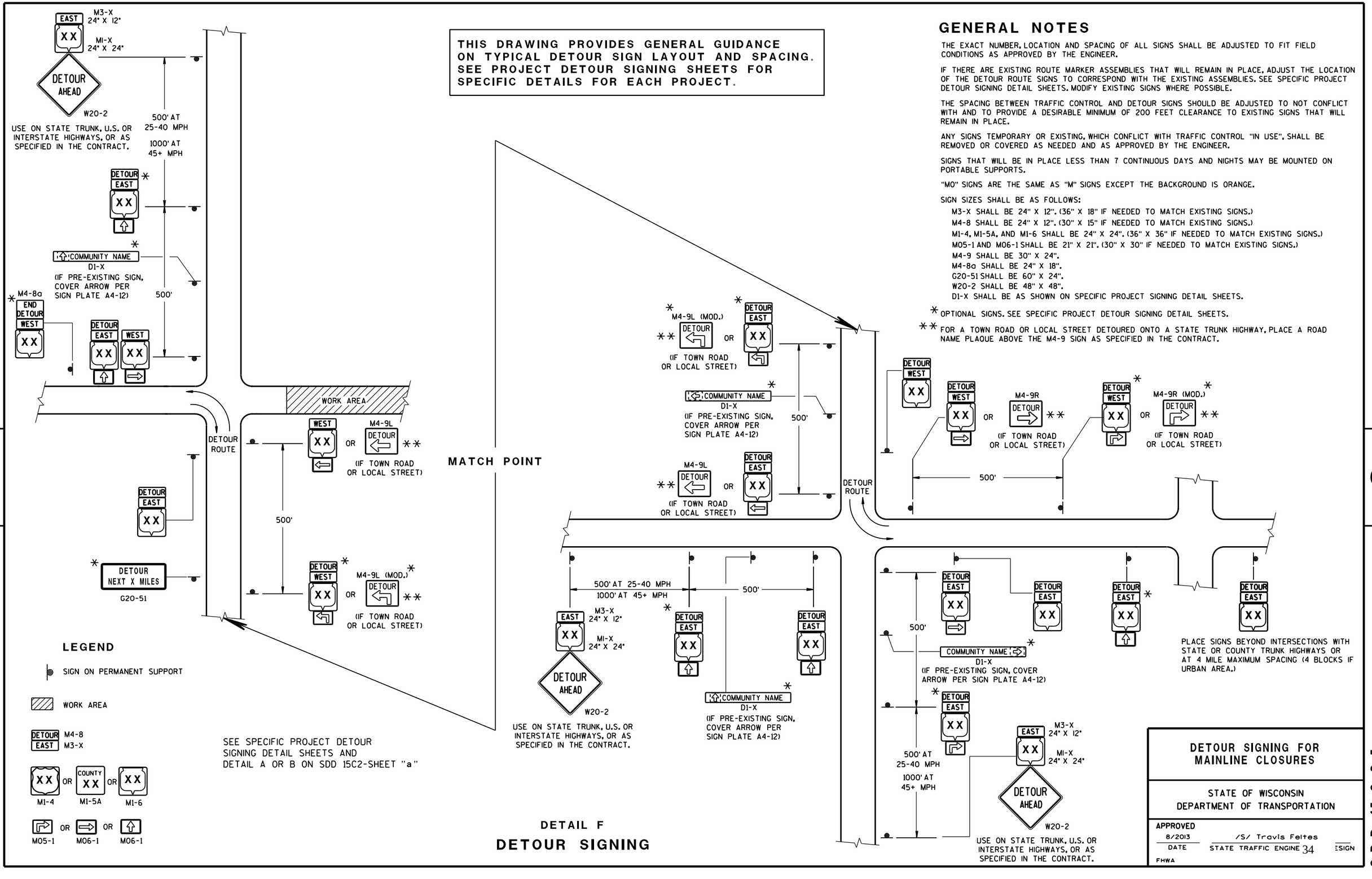
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.)
- MO5-1 AND MO6-1 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

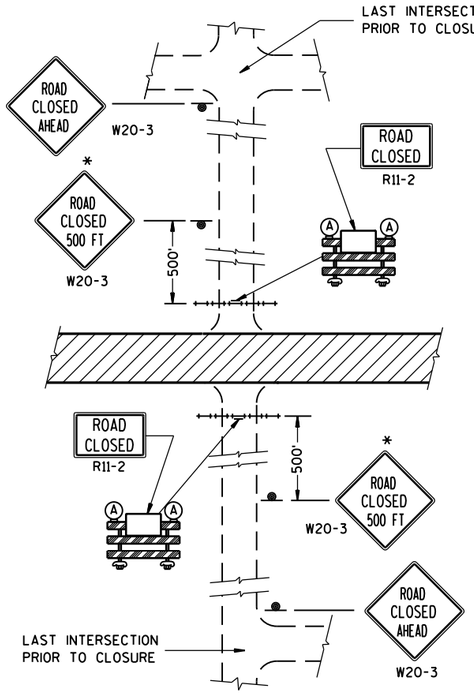
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

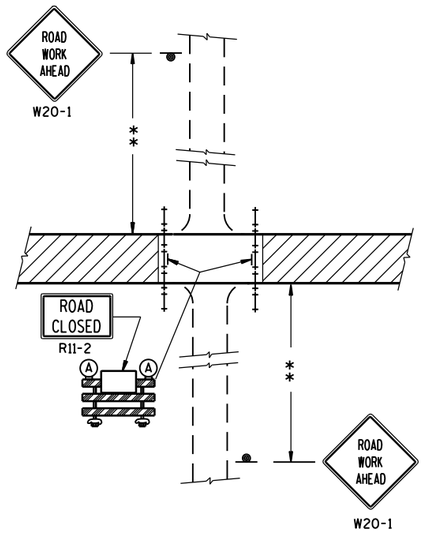
S.D.D. 15 C 2-5c

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



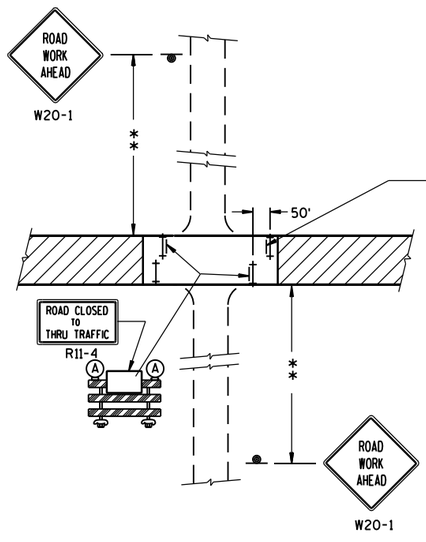
DETAIL 1

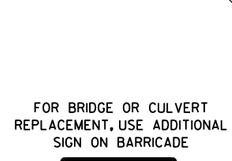
(NO ACCESS TO PROJECT)



DETAIL 2

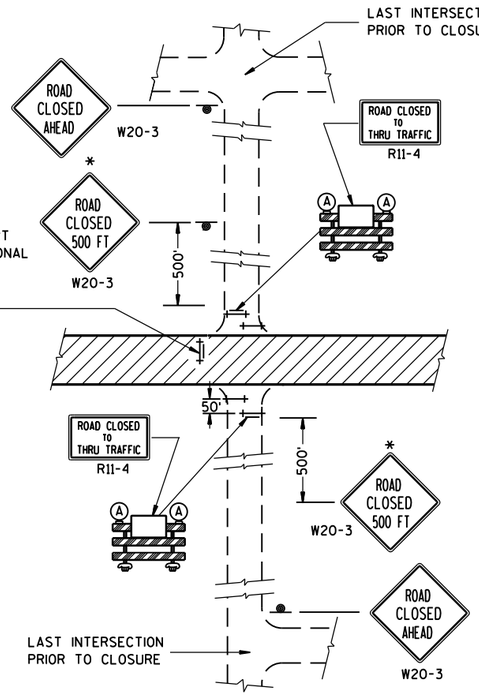
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

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.

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

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 AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

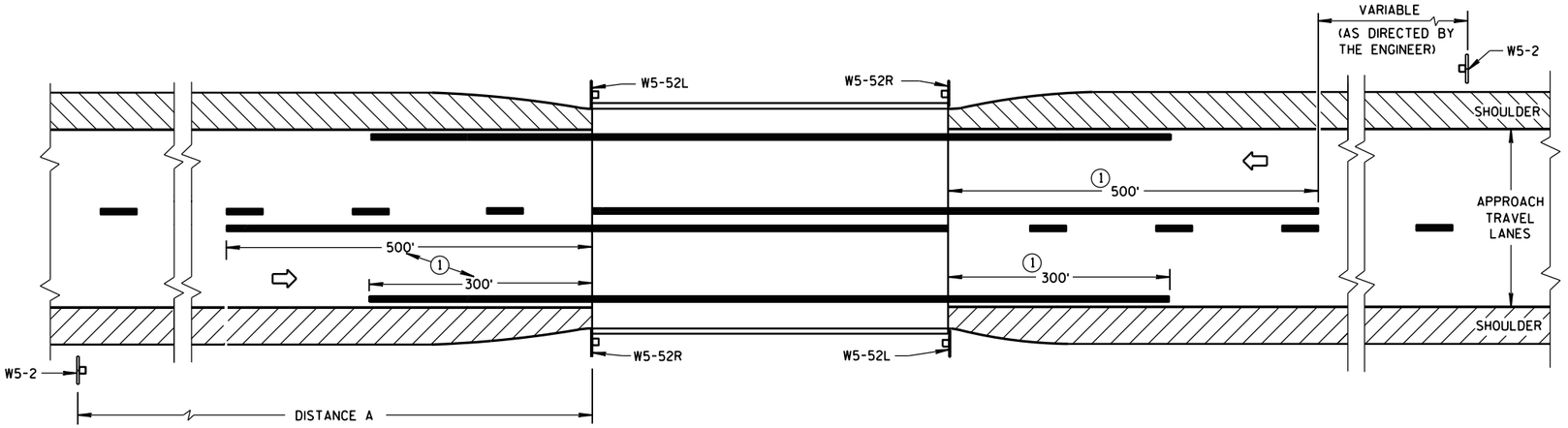
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 3-2

6

S.D.D. 15 C 3-2



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.

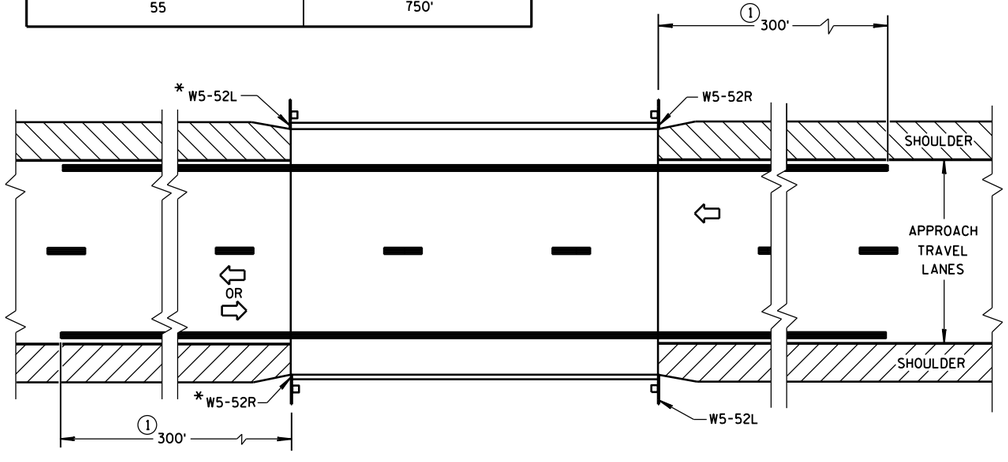
DISTANCE TABLE

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

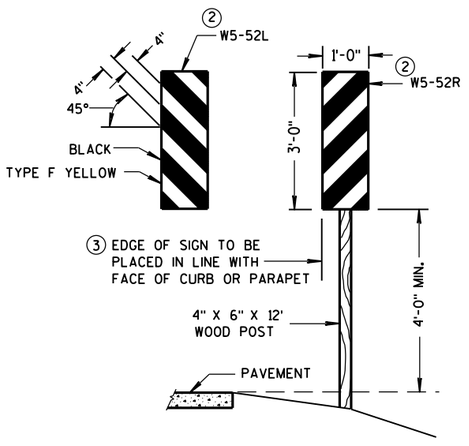


*OMIT ON ONE-WAY TRAVELLED WAYS

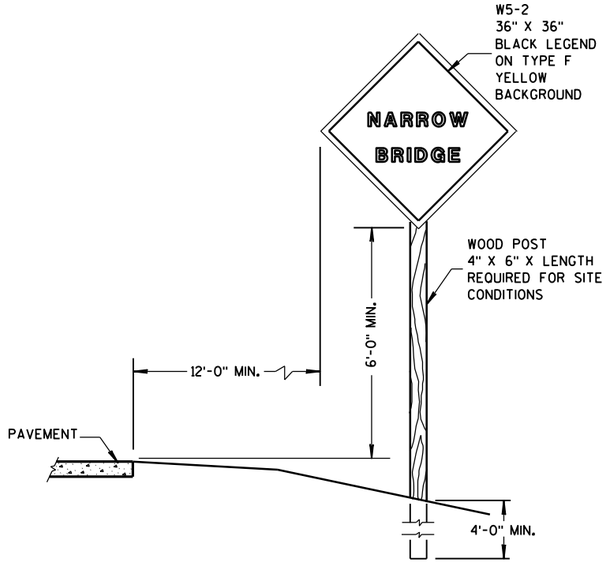
SITUATION 2

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

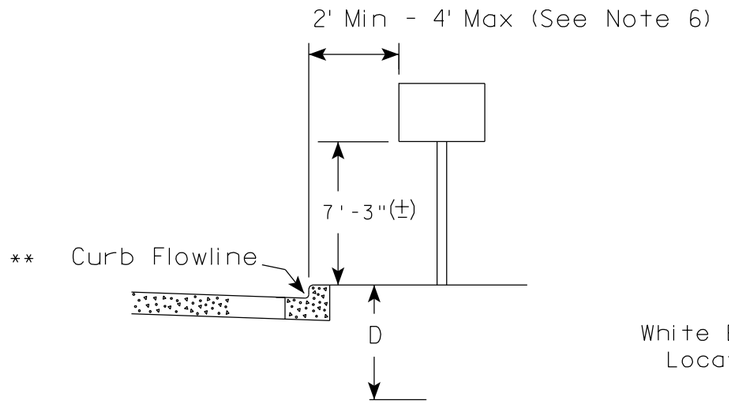
/S/ Travis Feltes STATE TRAFFIC ENGINEER

FHWA

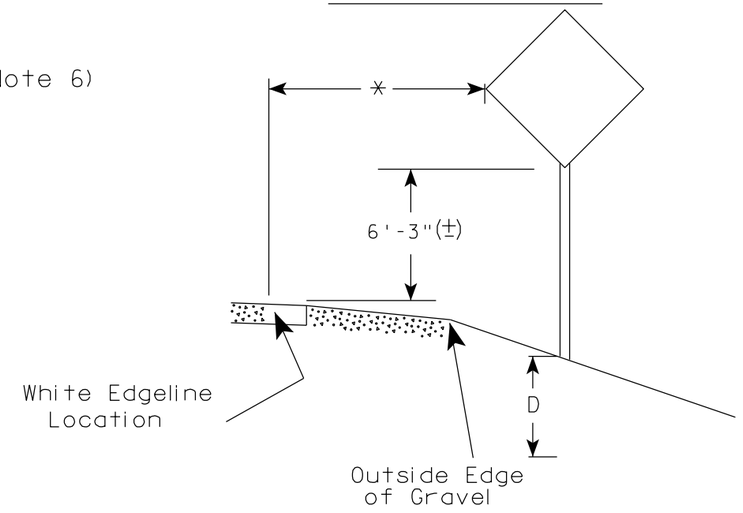
6

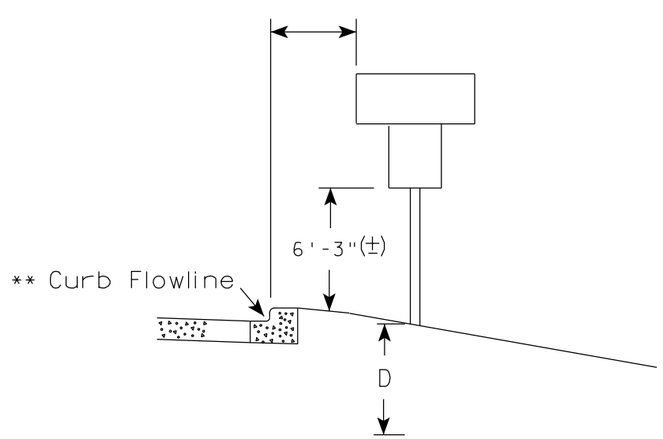
S.D.D. 15 C 6-7

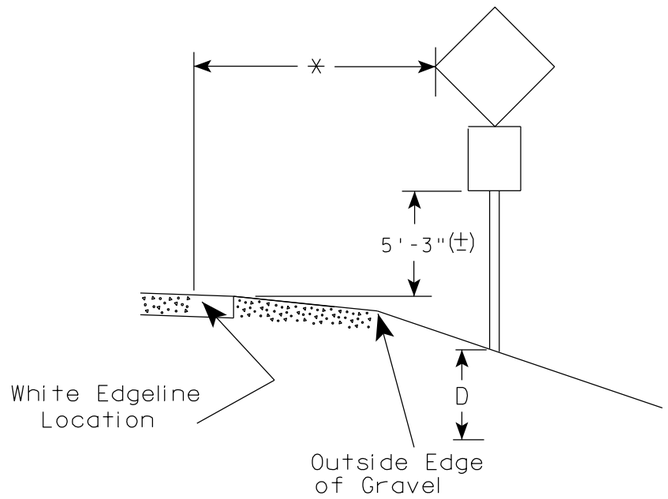
URBAN AREA



RURAL AREA (See Note 2)







** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

7

7

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

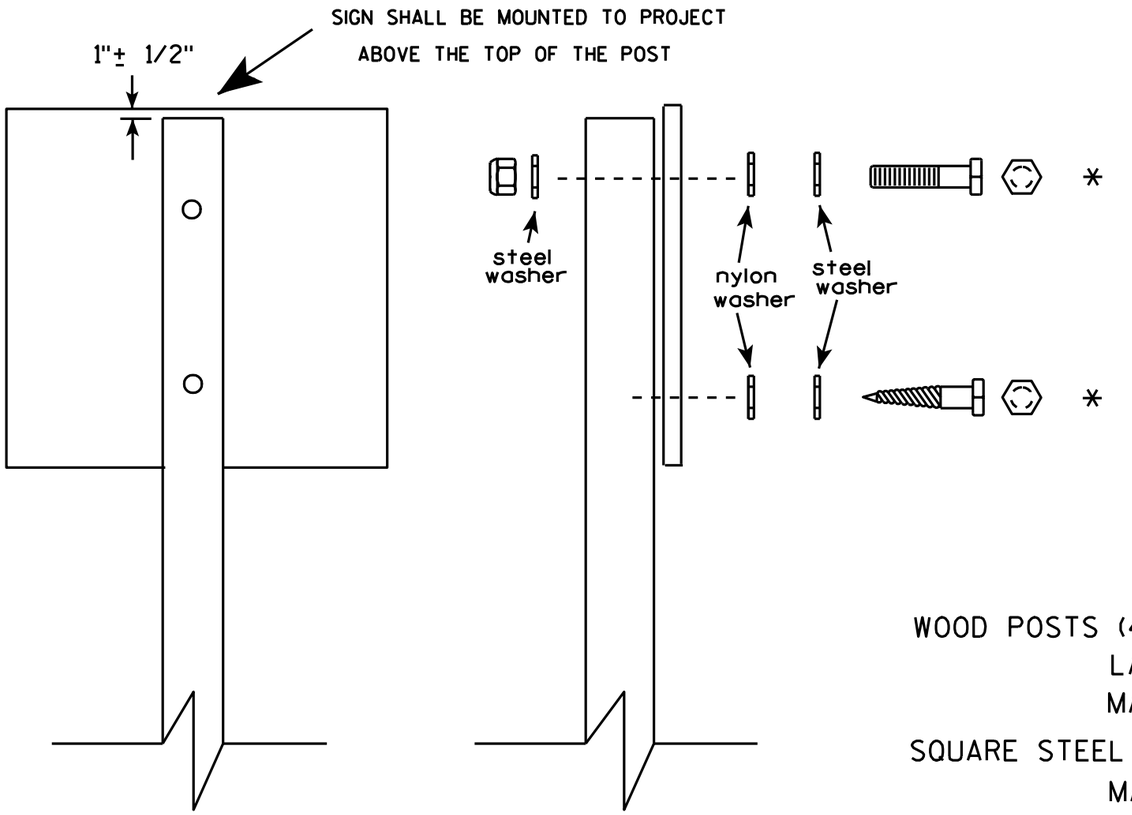
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	SIGNS	SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43.DGN PLOT DATE : 12-NOV-2014 14:03 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 99.237937:1.000000 WISDOT/CADDS SHEET 42



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

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

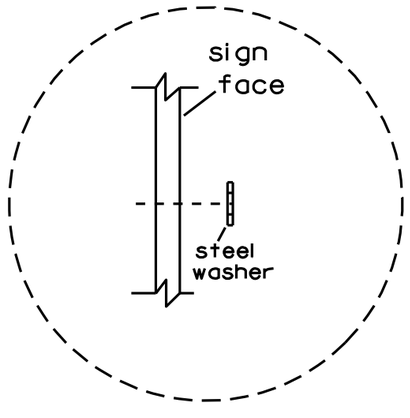
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

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

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

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

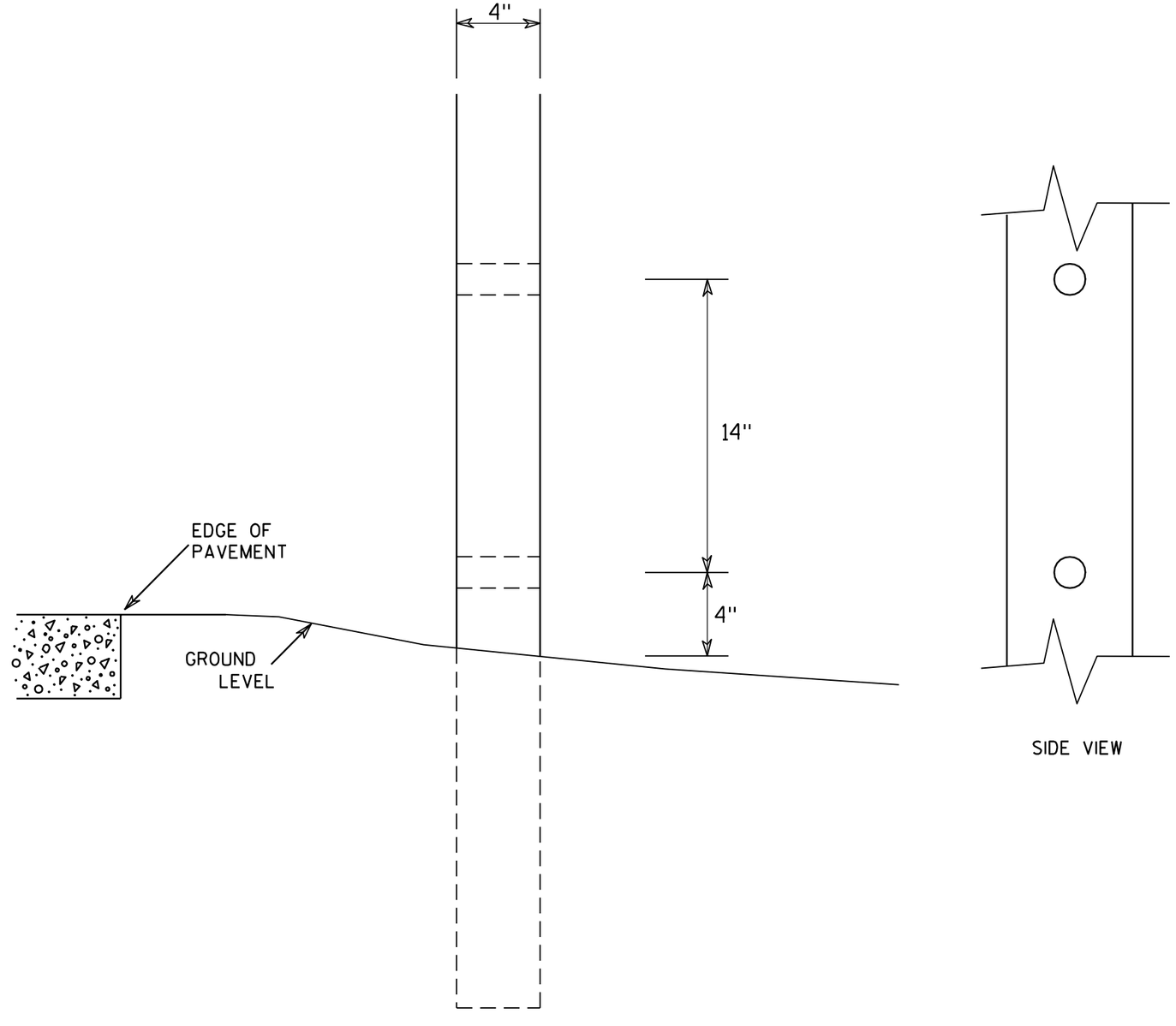
ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	SIGNS	SHEET NO: 38	E



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

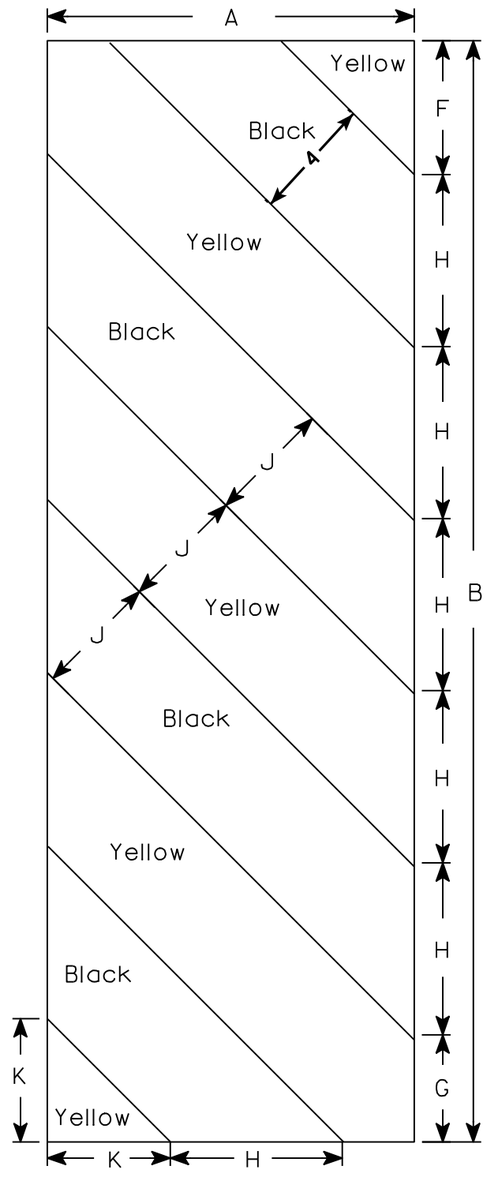
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

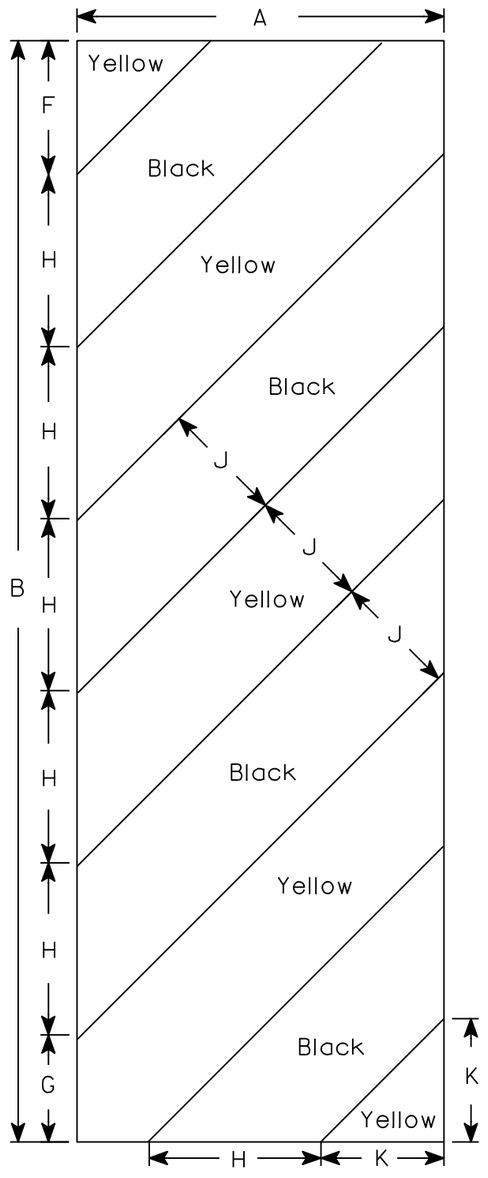
DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	SIGNS	SHEET NO: 39	E

FILE NAME : C:\Users\Projects\tr_stdplate\A411.DGN PLOT DATE : 10-NOV-2005 10:09 PLOT BY : DOTSJA PLOT NAME : PLOT SCALE : 6.207338:1.000000 WISDOT/CADDS SHEET 42



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

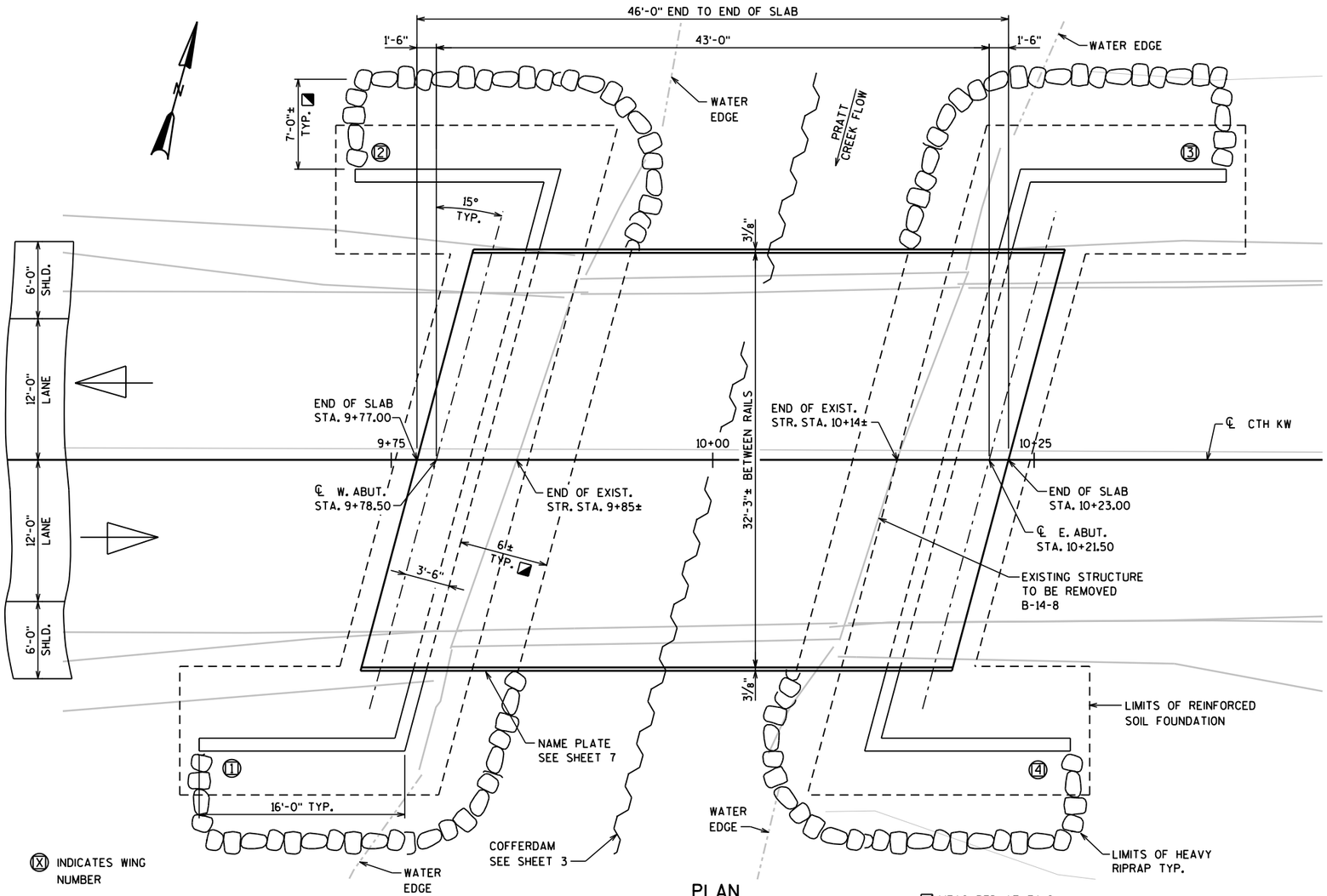
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

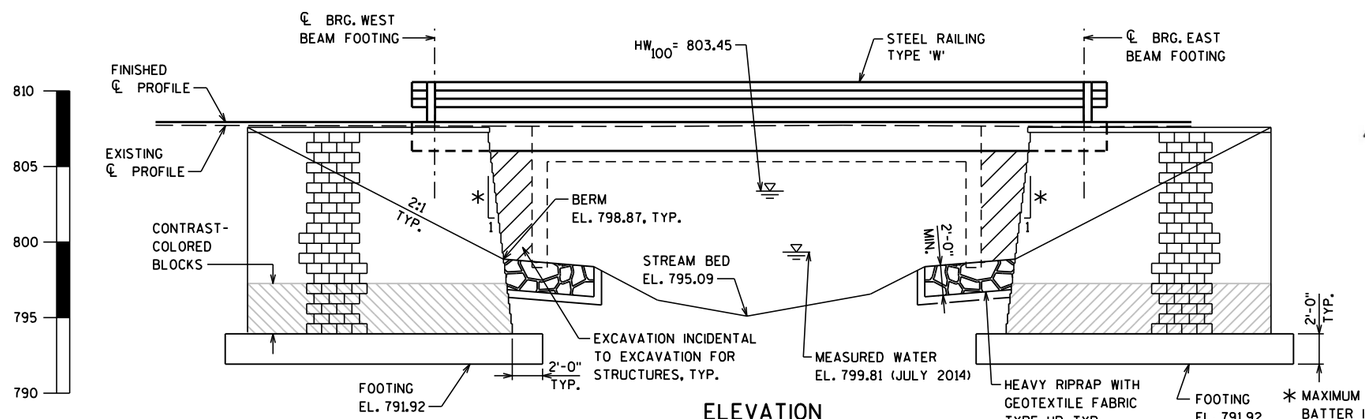
PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	SIGNS	SHEET NO: 40	E

STATE PROJECT NUMBER
3906-00-72



PLAN

SINGLE SPAN 17" PRESTRESSED BOX GIRDER BRIDGE



ELEVATION

TRAFFIC DATA

ADT = 440 (2015)
500 (2035)
RDS = 50 M.P.H.

DESIGN DATA

STRUCTURE IS DESIGNED FOR FUTURE WEARING SURFACE OF 20#/SQ. FT.

LIVE LOAD:

DESIGN LOADING	HL-93
INVENTORY RATING FACTOR	RF = 1.55
OPERATING RATING FACTOR	RF = 2.01
MAX. STD. PERMIT VEHICLE LOAD	250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY OVERLAY, GRADE E OR C	f'c = 4,000 PSI
PRESTRESSED GIRDERS CONCRETE MASONRY	f'c = 5,000 PSI
STRANDS, 0.5" ϕ ULTIMATE TENSILE STRENGTH	fy = 270,000 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy = 60,000 PSI

HYDRAULIC DATA

Q_{100}	836 C.F.S.
VELOCITY	4.48 F.P.S.
HIGH WATER	EL. 803.45 (100 YEAR)
HIGH WATER	EL. 801.30 (2 YEAR)
WATERWAY AREA	187 S.F.
DRAINAGE AREA	24.1 SQ. MILES

OVERTOPPING FREQUENCY = N/A
SCOUR CRITICAL CODE = 8

FOUNDATION DATA

FACTORED BEARING RESISTANCE OF 5,000 PSF AT BOTTOM OF REINFORCED SOIL FOUNDATION.

LIST OF DRAWINGS

WISCONSIN
KRISTOFER R. OLSON
E-35236
APPLETON, WI
PROFESSIONAL ENGINEER

10/27/2015

CONSULTANT CONTACT

KRISTOFER OLSON
OMNNI ASSOCIATES, INC.
(920) 735-6900

BRIDGE OFFICE CONTACT

WILLIAM DREHER
(608) 266-8489

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
OMNNI ASSOCIATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher SDR 12/15/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-14-217

CTH KW OVER PRATT CREEK

COUNTY: DODGE	TOWN: LOWELL
DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS	LOAD: HL-93
DESIGNED BY: BRE	DESIGN CK'D.: KRO
DRAWN BY: BRE	PLANS CK'D.: KRO

GENERAL PLAN

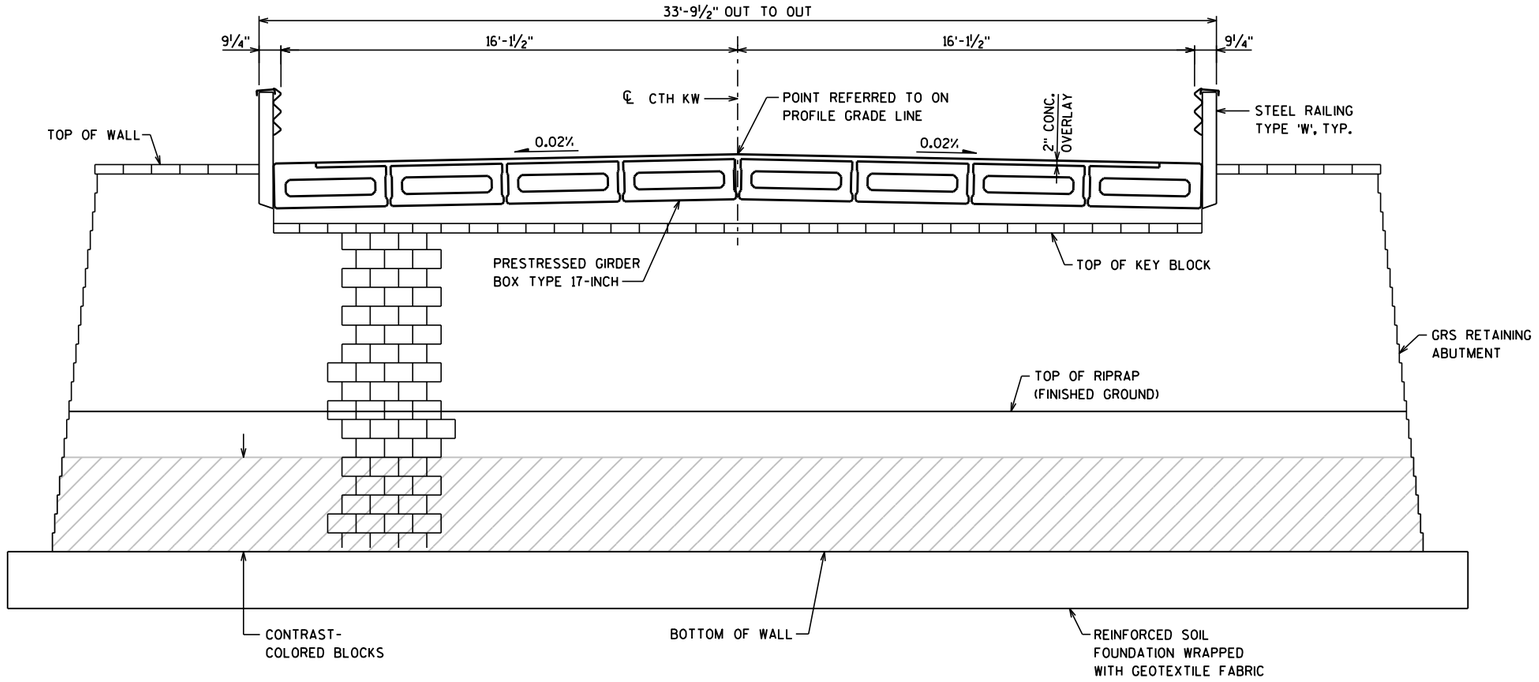
SHEET 1 OF 9

41

8

8

STATE PROJECT NUMBER
3906-00-72



CROSS SECTION THRU STRUCTURE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CHANNEL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

THIS BRIDGE WILL REPLACE THE EXISTING SINGLE SPAN CONCRETE DECK ON STEEL GIRDER BRIDGE WITH TIMBER RETAINING ABUTMENTS. THE STRUCTURE WAS BUILT IN 1950.

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION.

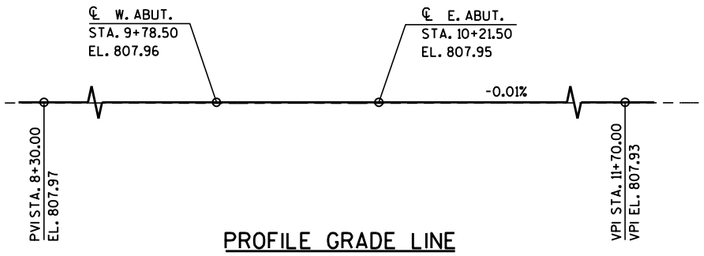
PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP, SIDES, AND 1'-0" OF THE UNDERSIDE OF THE SUPERSTRUCTURE.

PROTECT MODULAR BLOCK DURING PLACEMENT OF HEAVY RIPRAP.

THE FOLLOWING WEBSITE IS AVAILABLE FOR ADDITIONAL REFERENCE INFORMATION RELATED TO CONSTRUCTION OF GEOSYNTHETIC REINFORCED SOIL WALLS: www.fhwa.dot.gov/everydaycounts/technology/grs_ibs

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 10+00)	LS	-----	-----	-----	1
206.5000	COFFERDAMS (B-14-217)	LS	-----	-----	-----	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	195	-----	-----	195
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	10	-----	-----	10
513.7051	RAILING STEEL TYPE W (B-14-217)	LF	90	-----	-----	90
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12	-----	-----	12
606.0300	RIPRAP HEAVY	CY	-----	56	56	112
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	-----	84	84	168
SPV.0090	PRESTRESSED GIRDER BOX TYPE 17-INCH	LF	368	-----	-----	368
SPV.0165	GEOSYNTHETIC REINFORCED SOIL ABUTMENT	SF	-----	1,010	1,010	2,020
	NON-BID ITEMS					
	EXPANDED POLYSTYRENE	SIZE	——	——	——	2"



PROFILE GRADE LINE

BENCH MARKS (NAVD 88)

NO.	STATION	DESCRIPTION	ELEV.
1	9+80, 14' RT.	CHISELED SQUARE AT END OF CONCRETE ON SW CORNER OF BRIDGE OVER PRATT CREEK.	808.38
2	10+20, 14' LT.	CHISELED SQUARE AT END OF CONCRETE ON NE CORNER OF BRIDGE OVER PRATT CREEK.	808.35

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-217

DRAWN BY BRE | PLANS CK'D. KRO

CROSS SECTION & QUANTITIES

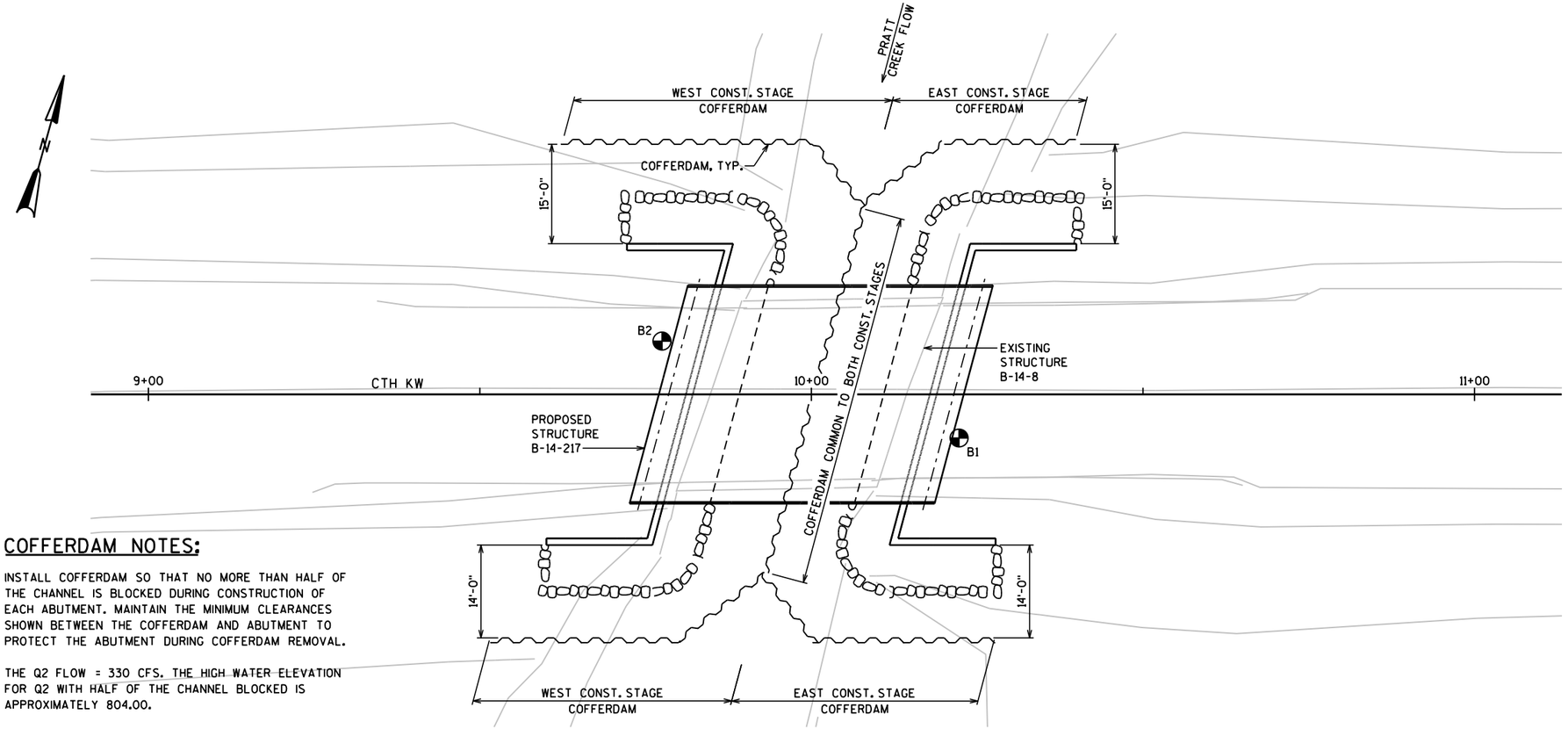
SHEET 2 OF 9

42

8

8

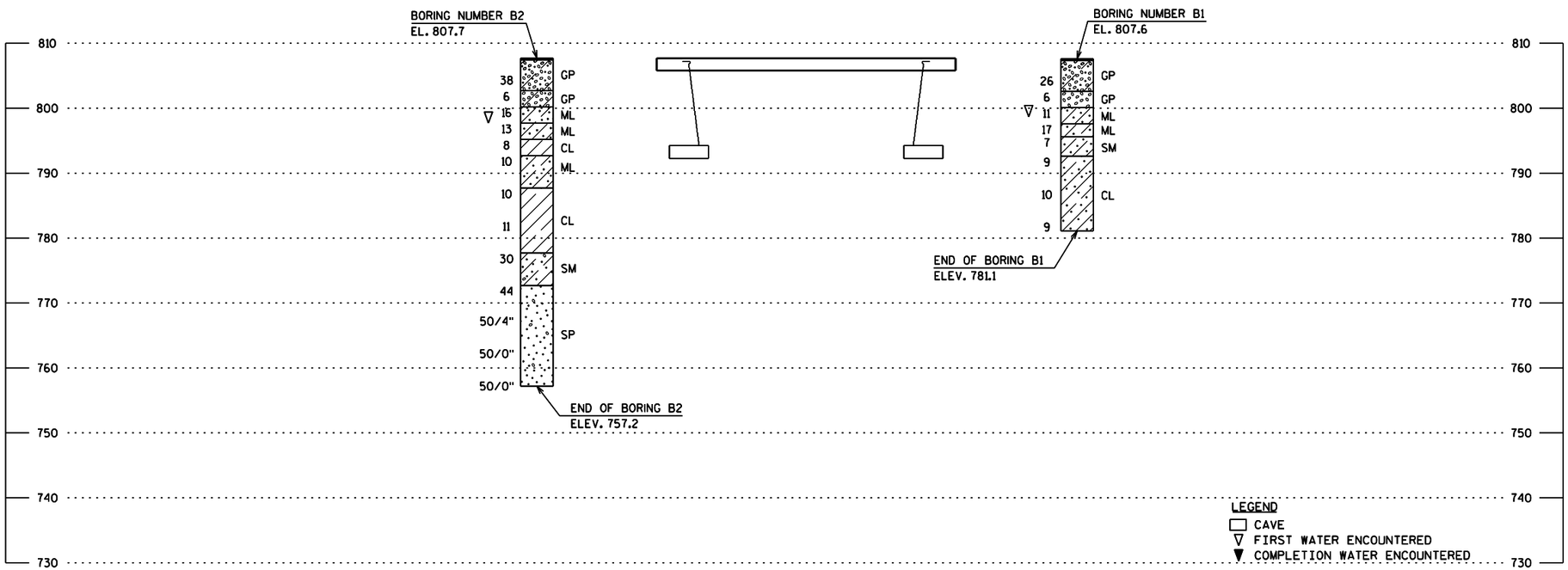
STATE PROJECT NUMBER
3906-00-72



COFFERDAM NOTES:

INSTALL COFFERDAM SO THAT NO MORE THAN HALF OF THE CHANNEL IS BLOCKED DURING CONSTRUCTION OF EACH ABUTMENT. MAINTAIN THE MINIMUM CLEARANCES SHOWN BETWEEN THE COFFERDAM AND ABUTMENT TO PROTECT THE ABUTMENT DURING COFFERDAM REMOVAL.

THE Q2 FLOW = 330 CFS. THE HIGH WATER ELEVATION FOR Q2 WITH HALF OF THE CHANNEL BLOCKED IS APPROXIMATELY 804.00.



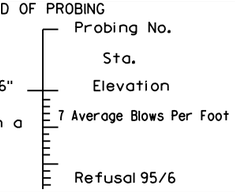
ABBREVIATIONS

F — Fine M — Medium C — Coarse
Ws — Weathered So — Sound

MATERIAL SYMBOLS

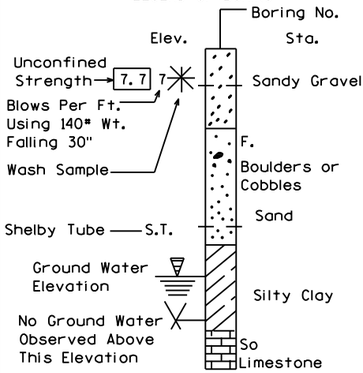
Topsoil, Silt, Sandstone
Sand, Peat, Limestone
Gravel, Clay, Igneous Rock

LEGEND OF PROBING



95/6=95 Blows for 6" Penetration
Probing taken with a 350#wt.
Falling 18" on a 2" O.D. Point.

LEGEND OF BORING



Unless otherwise specified, the blows per foot at the locations indicated are based on driving a O.D.x1.4" I.D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-217

DRAWN BY BRE | PLANS CK'D. KRO

SUBSURFACE EXPLORATION

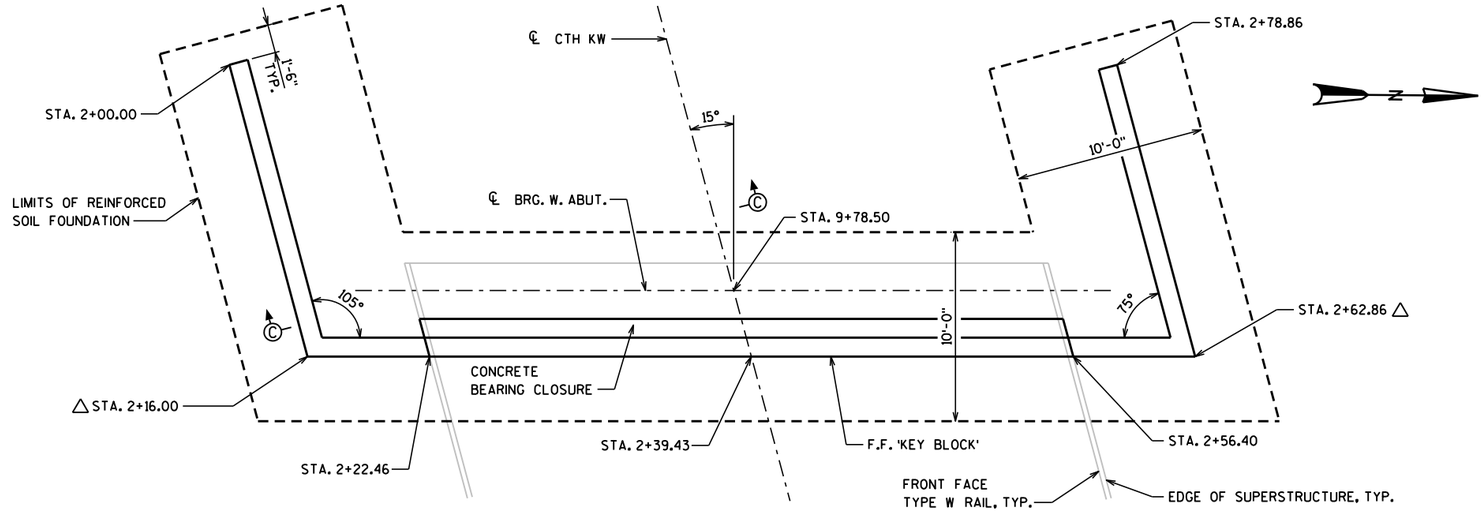
SHEET 3 OF 9

43

8

8

STATE PROJECT NUMBER
3906-00-72



PLAN

NOTES:

ALL WALL STATIONING AND OFFSETS ARE GIVEN AT THE FRONT FACE OF THE 'KEYBLOCK'. SEE WALL SECTIONS FOR LOCATION OF THE 'KEYBLOCK'.

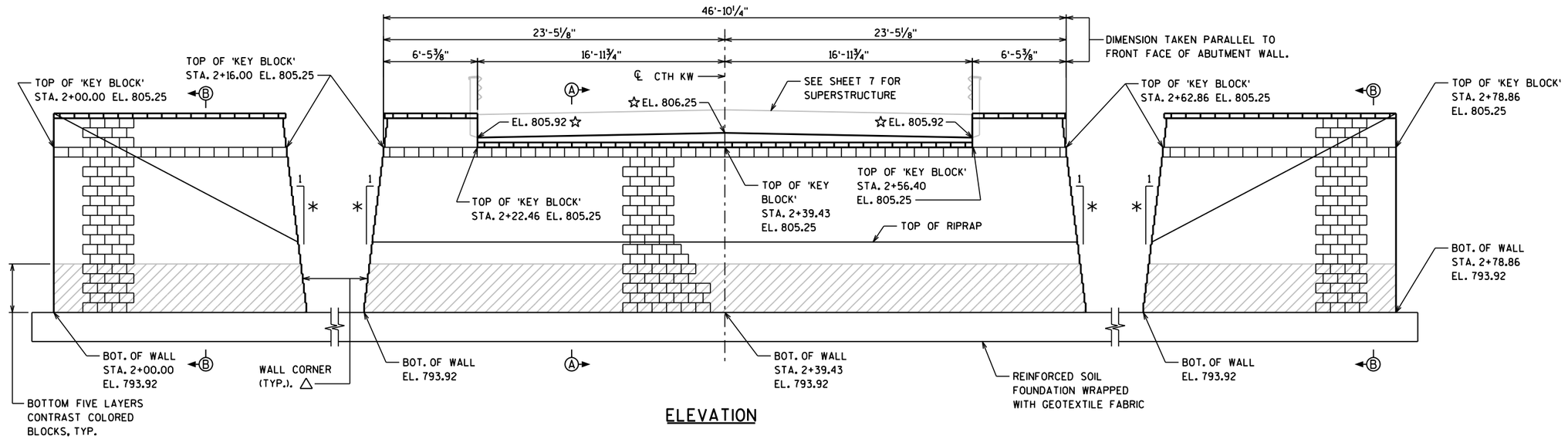
SEE WALL SECTIONS AND 'GRS ABUTMENT INFORMATION' TABLE FOR REQUIRED LENGTHS OF GEOSYNTHETIC REINFORCEMENT.

△ PROVIDE CORNER BLOCKS AND/OR DETAILS COMPATIBLE WITH THE SELECTED MODULAR BLOCKS SYSTEM. ROUNDED CORNERS ARE ALLOWABLE.

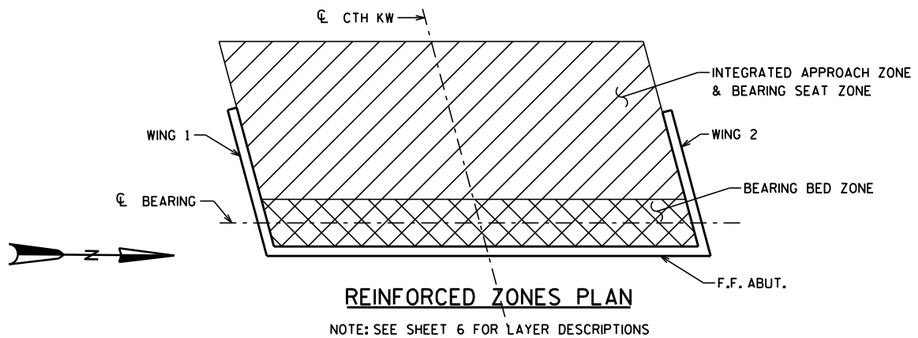
☆ BEARING SEAT/TOP OF CAST IN PLACE CONCRETE BEARING CLOSURE. SEE SHEET 6 FOR ADDITIONAL DETAILS.

CIP CONCRETE BEARING CLOSURE INCIDENTAL TO GRS-IBS WALL CONSTRUCTION, PAID FOR AS GEOSYNTHETIC REINFORCED SOIL ABUTMENT.

✳ MAXIMUM ALLOWABLE WALL BATTER IS 8 VERTICAL TO 1 HORIZONTAL OR 7.1 DEGREES.



ELEVATION



REINFORCED ZONES PLAN

NOTE: SEE SHEET 6 FOR LAYER DESCRIPTIONS

WALL STATION	ROADWAY ALIGN. STATION	ROADWAY STATION OFFSET (FT)	OFFSET DIRECTION	WALL HT. (FT)	BOTTOM WALL EL.	FINISHED GROUND EL.	TOP WALL EL.
2+00.00	9+60.06	22.63	RT	13.67	793.92	807.03	807.59
2+16.00	9+76.06	22.63	RT	13.67	793.92	798.87	807.59
2+22.46	9+77.73	16.39	RT	13.67	793.92	798.87	807.59
2+22.46	9+77.73	16.39	RT	11.67	793.92	798.87	805.59
2+39.43	9+82.12	0.00	- - -	11.67	793.92	798.87	805.59
2+56.40	9+86.52	16.39	LT	11.67	793.92	798.87	805.59
2+56.40	9+86.52	16.39	LT	13.67	793.92	798.87	807.59
2+62.86	9+88.19	22.63	LT	13.67	793.92	798.87	807.59
2+78.86	9+72.19	22.63	LT	13.67	793.92	807.03	807.59

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-217

DRAWN BY BRE | PLANS CK'D. KRO

WEST GRS-IBS ABUTMENT

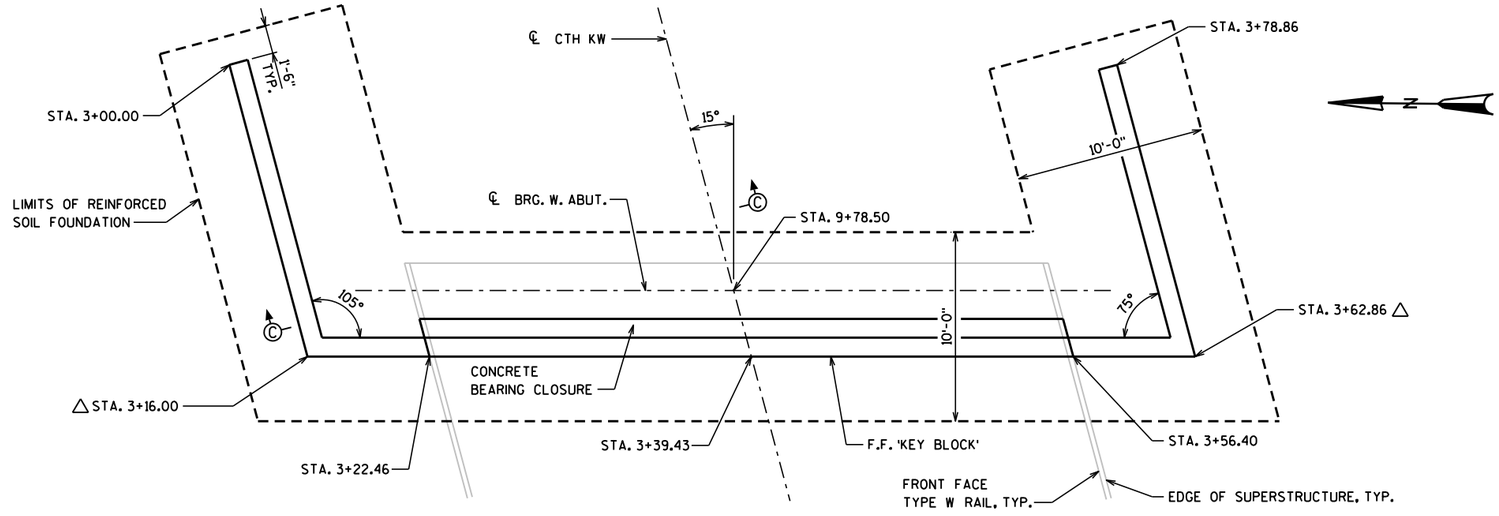
SHEET 4 OF 9

44

8

FILE NAME : F:±TR±JOBS±E2111A14±Sheets±B-14-217 04 w abut.dgn PLOT BY : epleyb PLOT DATE: 10/15/2015 10:27:13 AM

STATE PROJECT NUMBER
3906-00-72



PLAN

NOTES:

ALL WALL STATIONING AND OFFSETS ARE GIVEN AT THE FRONT FACE OF THE 'KEYBLOCK'. SEE WALL SECTIONS FOR LOCATION OF THE 'KEYBLOCK'.

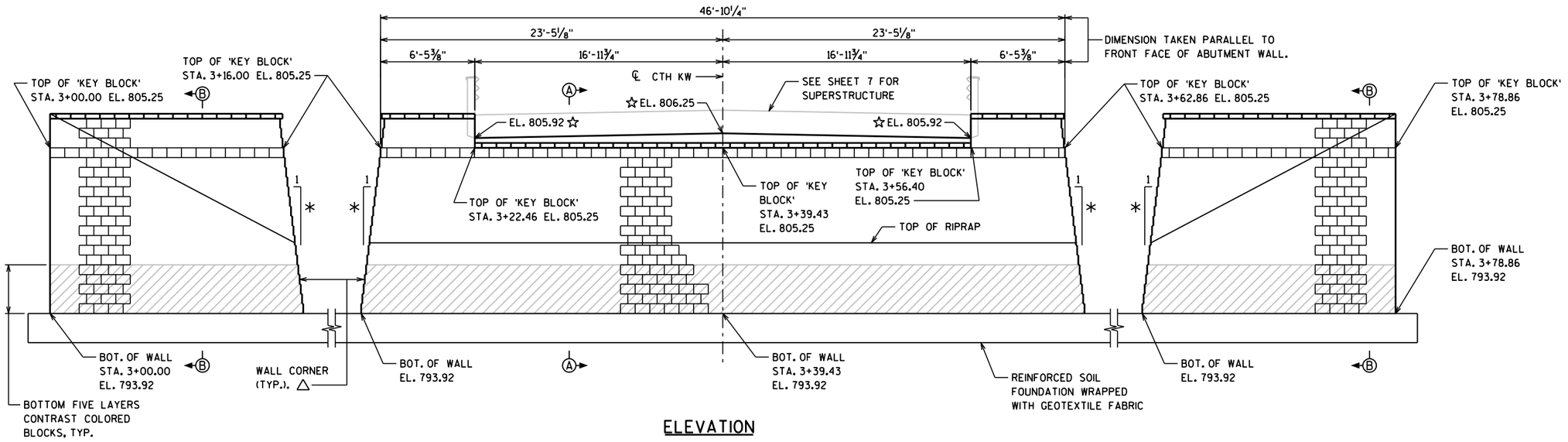
SEE WALL SECTIONS AND 'GRS ABUTMENT INFORMATION' TABLE FOR REQUIRED LENGTHS OF GEOSYNTHETIC REINFORCEMENT.

△ PROVIDE CORNER BLOCKS AND/OR DETAILS COMPATIBLE WITH THE SELECTED MODULAR BLOCKS SYSTEM. ROUNDED CORNERS ARE ALLOWABLE.

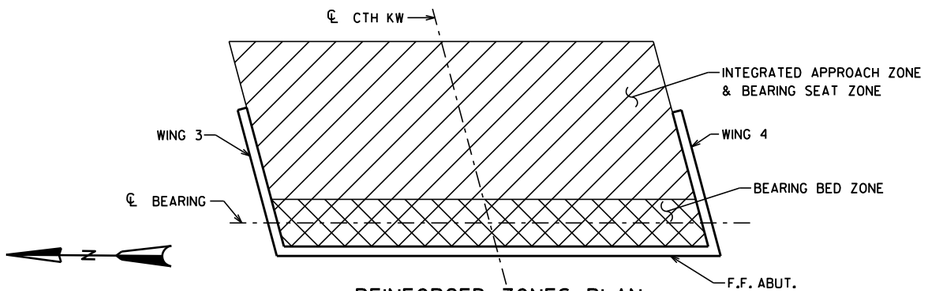
☆ BEARING SEAT/TOP OF CAST IN PLACE CONCRETE BEARING CLOSURE. SEE SHEET 6 FOR ADDITIONAL DETAILS.

CIP CONCRETE BEARING CLOSURE INCIDENTAL TO GRS-IBS WALL CONSTRUCTION, PAID FOR AS GEOSYNTHETIC REINFORCED SOIL ABUTMENT.

✳ MAXIMUM ALLOWABLE WALL BATTER IS 8 VERTICAL TO 1 HORIZONTAL OR 7.1 DEGREES.



ELEVATION



REINFORCED ZONES PLAN

NOTE: SEE SHEET 6 FOR LAYER DESCRIPTIONS

WALL STATION	ROADWAY ALIGN. STATION	ROADWAY STATION OFFSET (FT)	OFFSET DIRECTION	WALL HT. (FT)	BOTTOM WALL EL.	FINISHED GROUND EL.	TOP WALL EL.
3+00.00	10+39.94	22.63	LT	13.67	793.92	807.03	807.59
3+16.00	10+23.94	22.63	LT	13.67	793.92	798.87	807.59
3+22.46	10+22.27	16.39	LT	13.67	793.92	798.87	807.59
3+22.46	10+22.27	16.39	LT	11.67	793.92	798.87	805.59
3+39.43	10+17.88	0.00	- - -	11.67	793.92	798.87	805.59
3+56.40	10+13.48	16.39	RT	11.67	793.92	798.87	805.59
3+56.40	10+13.48	16.39	RT	13.67	793.92	798.87	807.59
3+62.86	10+11.81	22.63	RT	13.67	793.92	798.87	807.59
3+78.86	10+27.81	22.63	RT	13.67	793.92	807.03	807.59

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-217

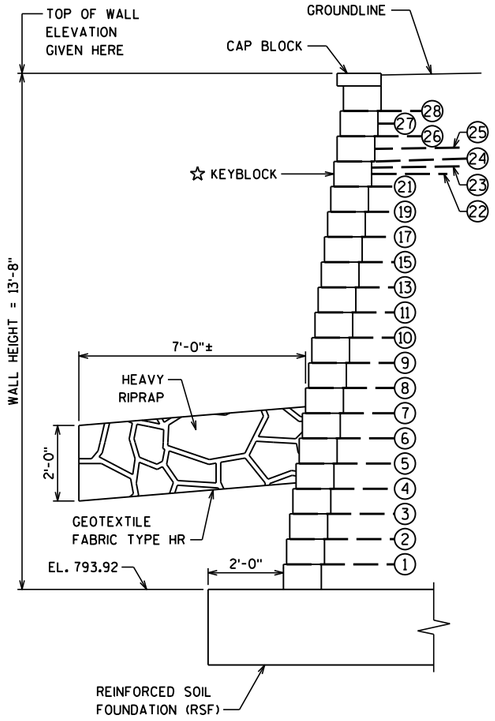
DRAWN BY BRE | PLANS CK'D. KRO

EAST GRS-IBS ABUTMENT

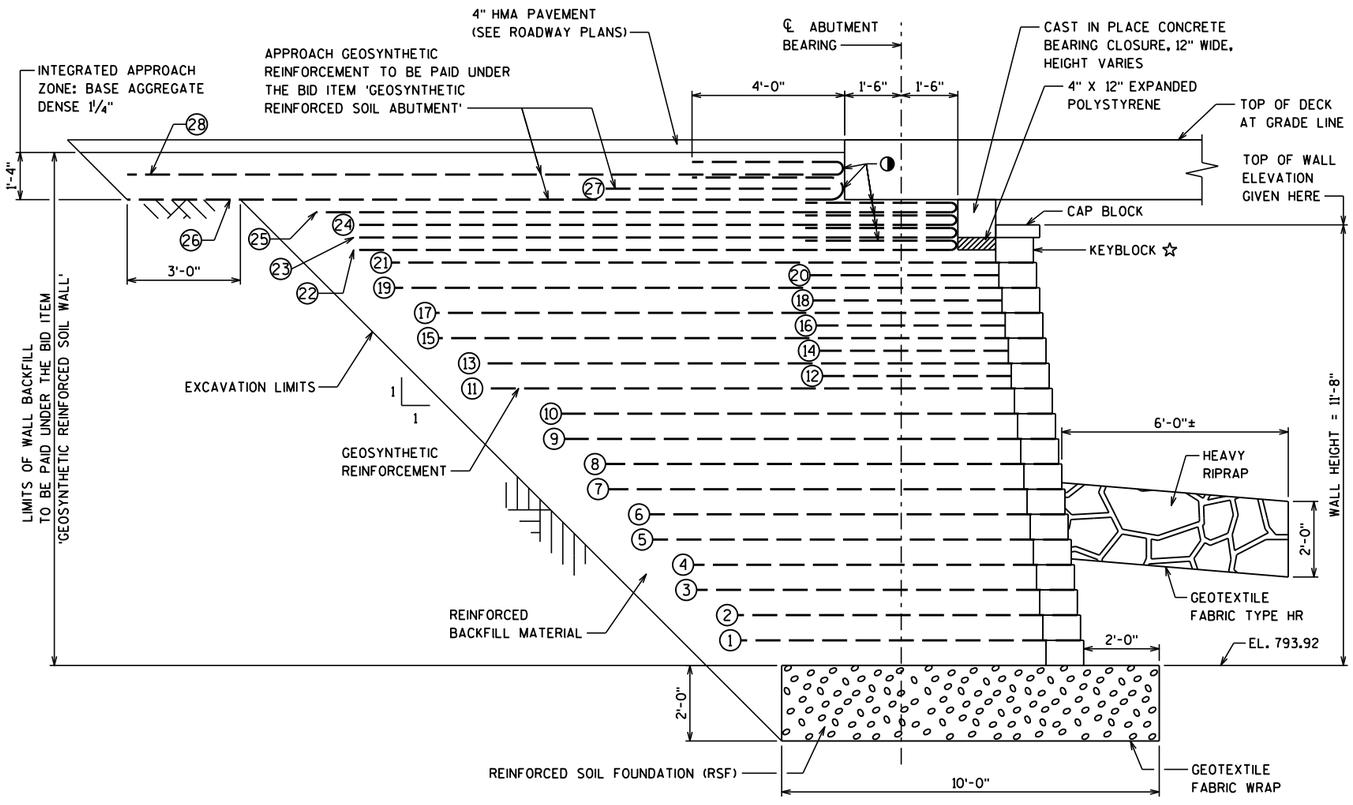
SHEET 5 OF 9

45

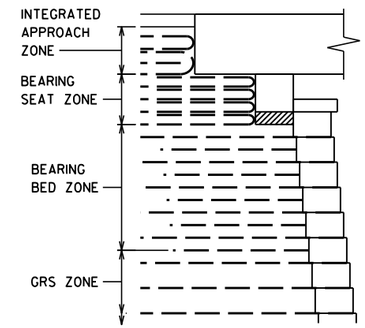
STATE PROJECT NUMBER
3906-00-72



SECTION B-B



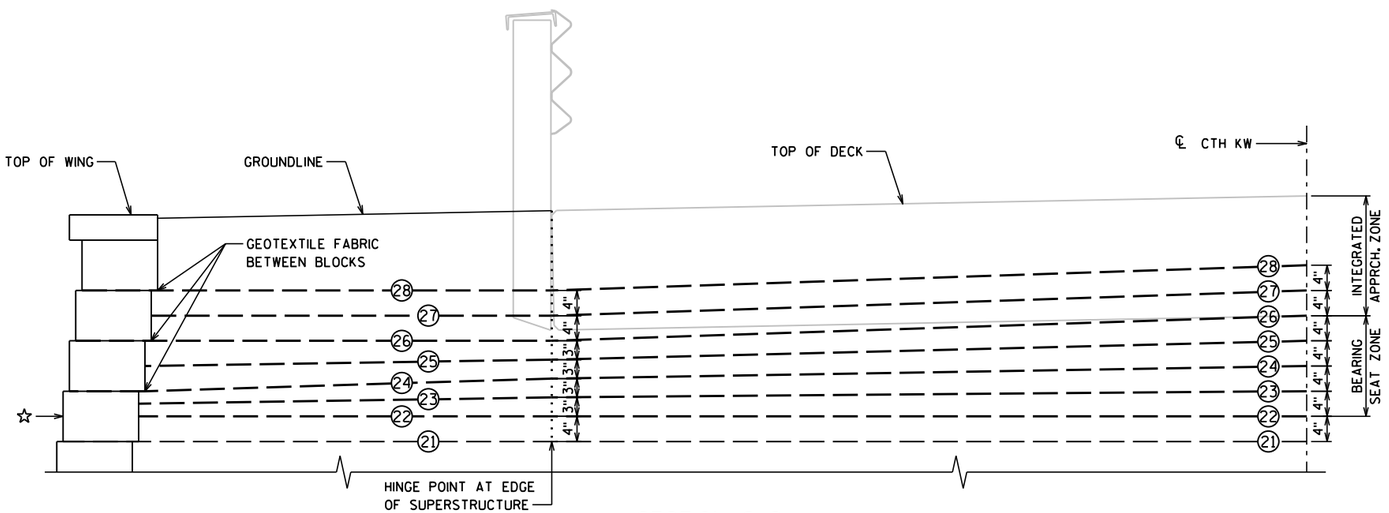
SECTION A-A



LAYER DESCRIPTIONS

GRS WALL INFORMATION

LAYER NUMBER	MINIMUM LENGTH * OF GEOTEXTILE FABRIC (FT.)	℄ ELEV. ±
1	9	794.59
2	9	795.26
3	10	795.93
4	10	796.60
5	11	797.27
6	11	797.94
7	12	798.61
8	12	799.28
9	13	799.95
10	13	800.62
11	15	801.29
12	5	801.62
13	15	801.95
14	5	802.28
15	16	802.61
16	5	802.94
17	16	803.27
18	5	803.60
19	17	803.93
20	5	804.26
21	17	804.59
22	16	804.92
23	16	805.25
24	16	805.58
25	17	805.91
26	19	806.24
27	6	806.57
28	19	806.90



SECTION C-C

(FROM KEYBLOCK UP)

SHOWING VARYING LAYER THICKNESSES TO ACCOMMODATE CROWN

NOTES:

☆ KEYBLOCK: FRONT FACE OF KEY BLOCK LOCATION TO BE HELD REGARDLESS OF MODULAR BLOCK SIZE OR BATTER.

(X) INDICATES GEOSYNTHETIC REINFORCEMENT LAYER NUMBER, FOR LENGTHS, SEE 'GRS WALL INFORMATION' TABLE.

◑ 4'-0" WRAP

* LENGTH MEASURED FROM FRONT FACE OF MODULAR BLOCK TO END OF GEOTEXTILE FABRIC. (DOES NOT INCLUDE WRAPPED GEOTEXTILE FABRIC WHERE APPLICABLE.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-217

DRAWN BY BRE | PLANS CK'D. KRO

GRS-IBS ABUTMENT DETAILS

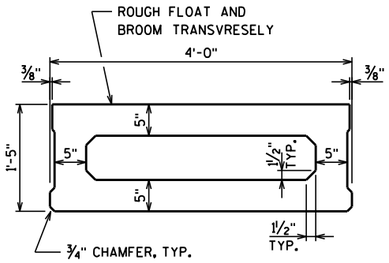
SHEET 6 OF 9

46

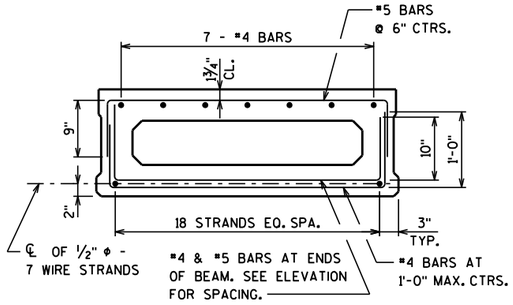
8

8

STATE PROJECT NUMBER
3906-00-72

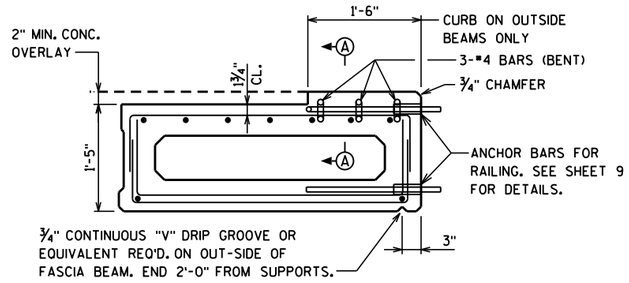


SECTION THRU GIRDER



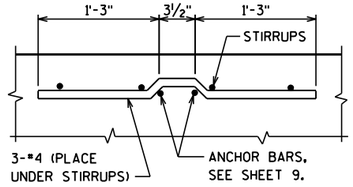
SECTION THRU INTERIOR GIRDER

⊖ SPACING SHOWN FOR TOP STIRRUPS ARE MAXIMUMS. THE CONTRACTOR MAY ELECT (AT NO ADJUSTMENT IN BID PRICE) TO REDUCE THE SPACING OF THESE BARS OR TO ADD ADDITIONAL REINFORCEMENT TO FACILITATE TYING OF THE REINFORCEMENT.

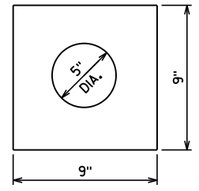


SECTION THRU EXTERIOR GIRDER

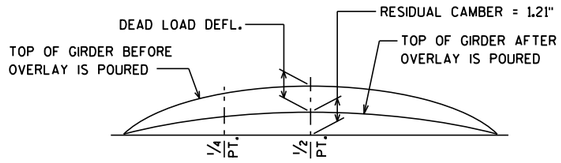
REINFORCING & PRESTRESSING SAME AS INTERIOR GIRDER.



SECTION A-A

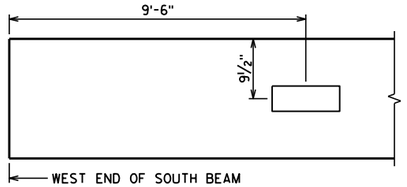


SEAL WASHER
(MAY ALSO BE ROUND)

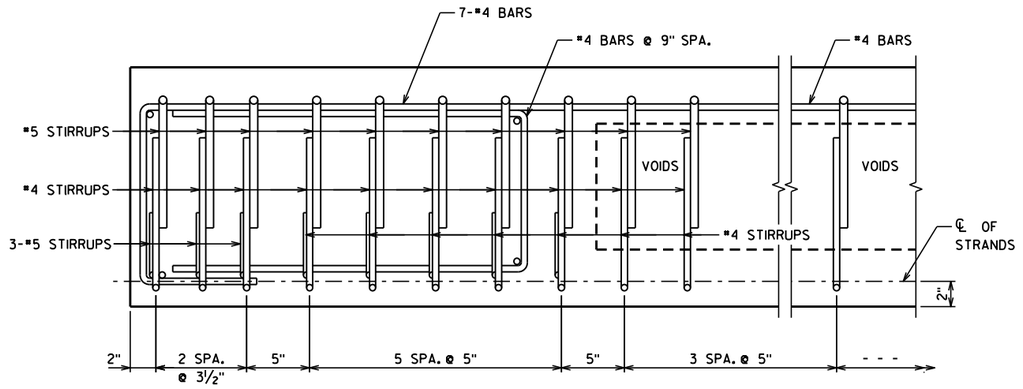


DEAD LOAD DEFLECTION DIAGRAM

NOTE: DEAD LOAD DEFLECTIONS ARE THEORETICAL AND MAY VARY FROM ACTUAL FIELD CONDITIONS

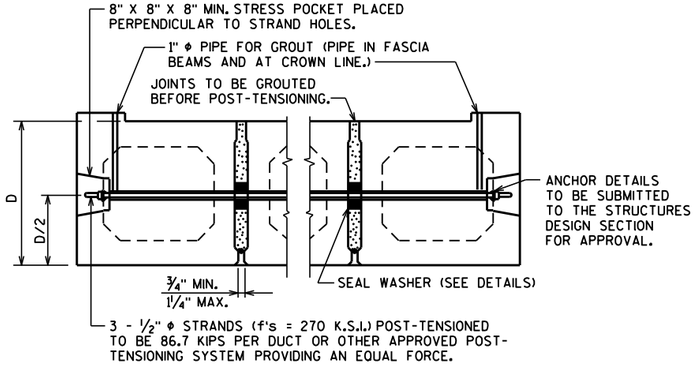


NAME PLATE LOCATION

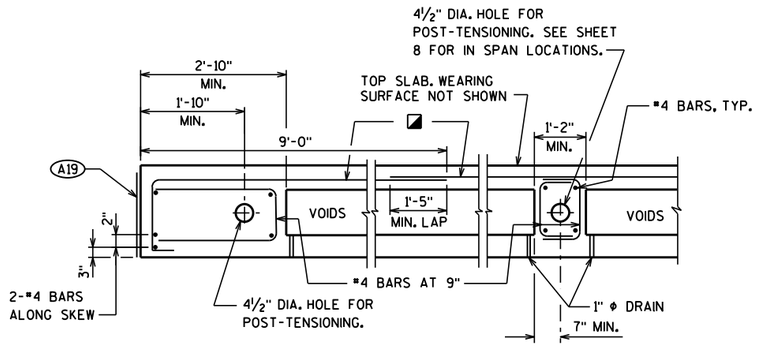


PART GIRDER ELEVATION

(TRANSVERSE BARS NOT LABELED ARE #4 BARS.)



POST-TENSIONING DETAILS

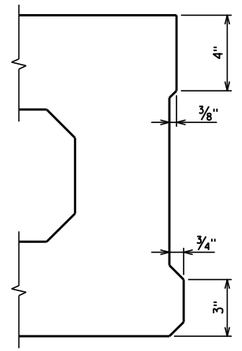


AT ENDS IN SPAN

TYPICAL LONGITUDINAL SECTION

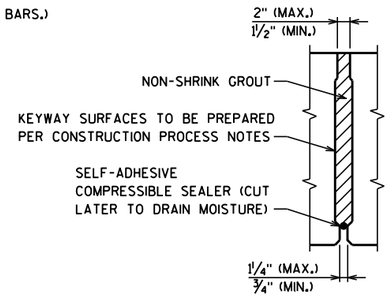
◪ 7-#4 BARS

(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. PLACE CONTINUOUS ALONG GIRDER ENDS ALIGNED WITH BOTTOM OF GIRDERS.



SHEAR KEY RECESS DETAIL

OMIT SHEAR KEY ON EXTERIOR FACE OF EXTERIOR GIRDERS.



SHEAR KEY DETAIL

GIRDER DATA

SPAN	LOCATION	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/4 PT.	DEAD LOAD DEFL. (IN.) 1/2 PT.	CONC. STRGTH. f'c (p.s.i.)	DIA. OF STRAND	UNDRAPED PATTERN TOTAL NO. OF STRANDS	UNDRAPED PATTERN f'ci (p.s.i.) *	UNDRAPED PATTERN TOTAL INITIAL PRESTRESS FORCE (KIPS)
1	ALL	46'-0"	1/16"	3/32"	5000	0.5"	18	4250	557.7

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-217

DRAWN BY BRE | PLANS CK'D. KRO

PRESTRESSED GIRDER BOX TYPE 17-INCH

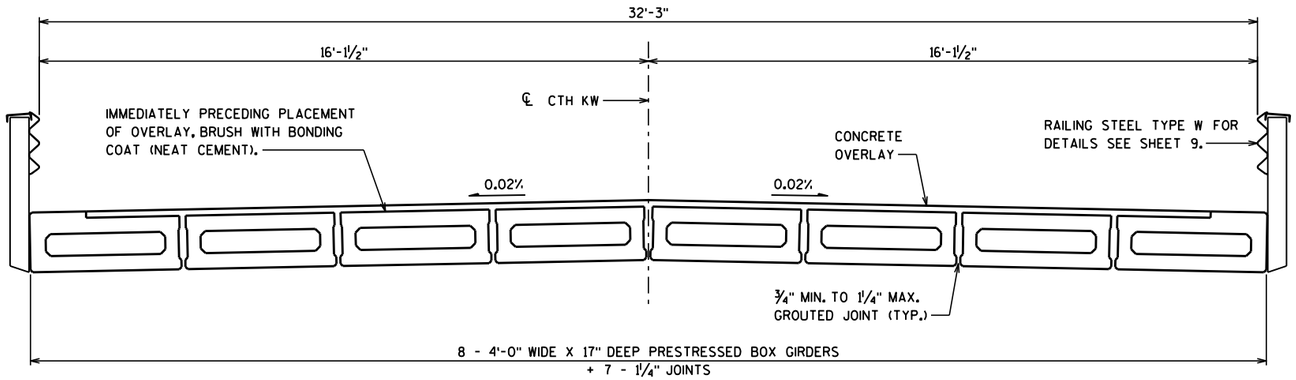
SHEET 7 OF 9

47

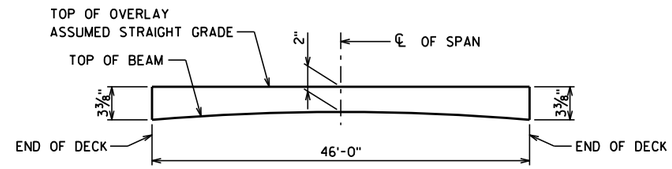
8

8

STATE PROJECT NUMBER
3906-00-72



CROSS SECTION THRU ROADWAY



OVERLAY THICKNESS ELEVATION DIAGRAM

NOTES:

THE CONCRETE MIX FOR THE PRESTRESSED BOX GIRDERS SHALL CONFORM TO SECTION 503.2.2 OF THE STANDARD SPECIFICATIONS.

THE CEMENT AND FINE AGGREGATE FOR THE GROUT BETWEEN THE POST-TENSIONED BEAMS SHALL BE PROPORTIONED BY WEIGHT AS INDICATED IN THE STANDARD SPECIFICATION.

THE CEMENT USED SHALL BE TYPE 1. WATER SHALL BE ADDED IN AMOUNTS AS NECESSARY TO OBTAIN APPROXIMATELY A 5" SLUMP OR TO A CONSISTENCY TO INSURE THAT THE VOIDS ARE COMPLETELY FILLED. THE GROUT SHALL BE RODDED TO INSURE THAT THE VOIDS ARE COMPLETELY FILLED.

STRANDS SHALL BE FLUSH WITH END OF UNIT.

VOIDS SHALL BE VENTED AND DRAINED BY CASTING (2)-1" DIA TUBES AT EACH END OF THE VOID SEGMENT. LOCATE TUBES AT BOTTOM EDGES OF THE CORNER FILLETS.

FOUR WAY SLING MUST BE USED TO ENGAGE ALL 4 LIFTING DEVICES ON BOTH ENDS OF UNITS.

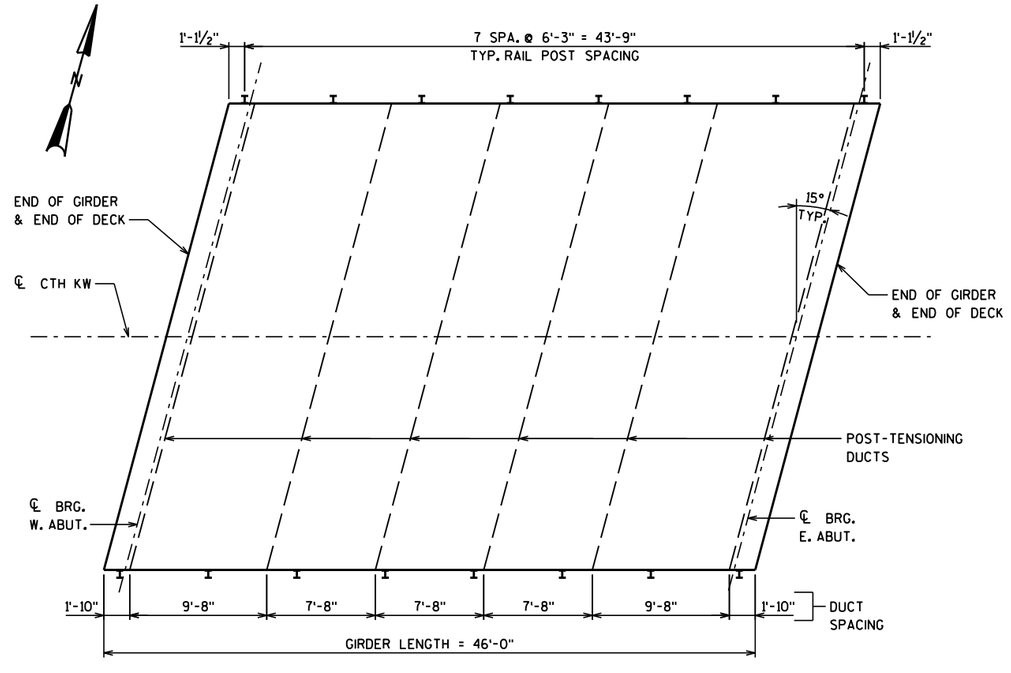
POST-TENSIONING OF THE TRANSVERSE TENDONS SHALL NOT BEGIN UNTIL THE GROUT BETWEEN THE PRECAST BEAMS HAS BEEN ALLOWED TO CURE FOR 48 HOURS AND GROUT HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI.

CONCRETE OVERLAY SHALL NOT BE POURED UNTIL AFTER THE POST-TENSIONING HAS BEEN COMPLETED.

SEAL WASHER SHALL BE SPONGE NEOPRENE GASKET ¾" MIN. THICKNESS. STRESS POCKETS SHALL BE FILLED WITH CHLORIDE FREE NON-SHRINK GROUT AFTER POST-TENSIONING (REFER TO SPECIAL PROVISIONS FOR NON-SHRINK GROUT SPECIFICATIONS.)

TRANSITION BETWEEN CHANGING SLOPES OF POST-TENSIONING DUCTS SHALL BE PROVIDED BY EITHER A CIRCULAR OR PARABOLIC CURVE WITH A MINIMUM LENGTH OF 3'-0".

POST-TENSIONING DUCTS SHALL BE PRESSURE GROUTED FROM ONE GROUT PIPE UNTIL ALL ENTRAPPED AIR IS EXPELLED AND GROUT BEGINS TO FLOW FROM THE OPEN GROUT PIPE. THE OPEN GROUT PIPE SHALL BE CLOSED AND A PRESSURE OF 50 PSI MAINTAINED FOR 15 SECONDS. THE GROUT COMPOSITION SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS.



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-217

DRAWN BY BRE | PLANS CK'D. KRO

SUPERSTRUCTURE

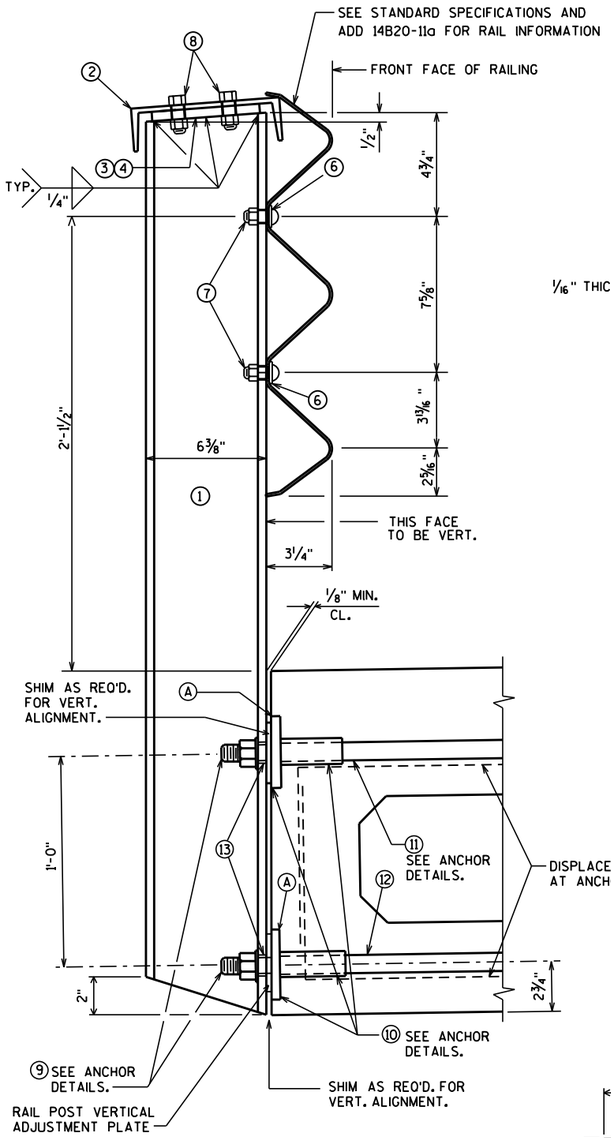
SHEET 8 OF 9

48

8

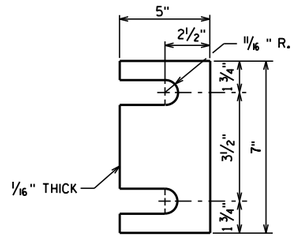
8

STATE PROJECT NUMBER
3906-00-72



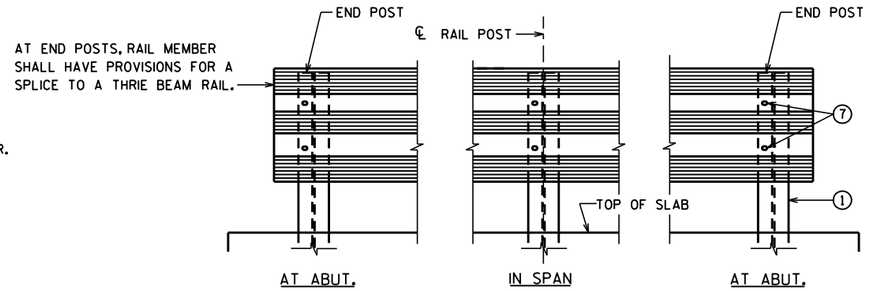
SECTION THRU RAILING

(A) SEAL TOP & VERT. EDGES OF SHIMS, VERT. ADJUSTMENT PLATES, AND POST TO GIRDER CONTACT AREAS WITH NON-STAINING GRAY BITUMINOUS JOINT SEALER.

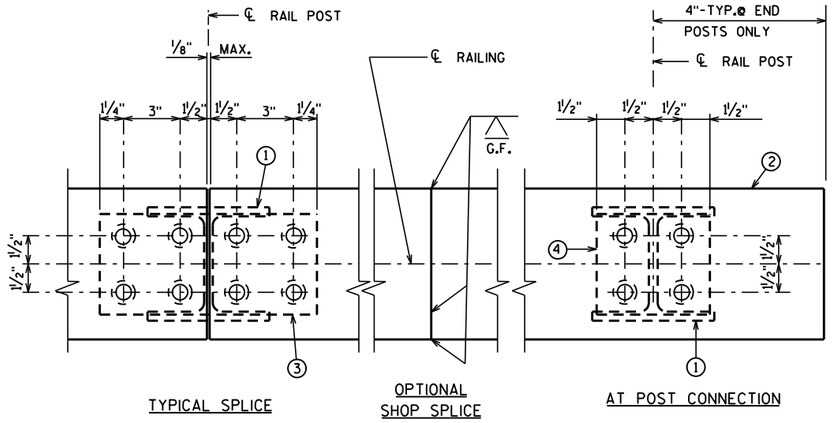


POST SHIM DETAIL

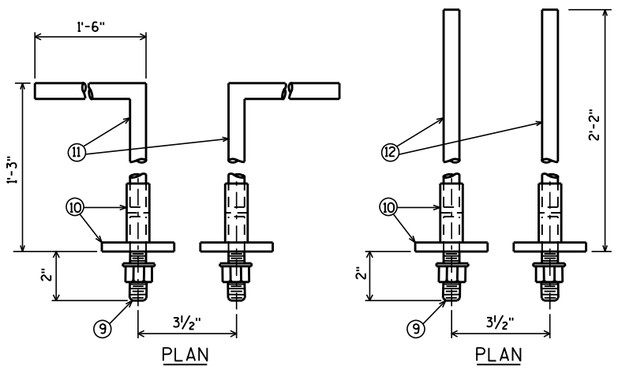
(14 PER POST)



ELEVATION

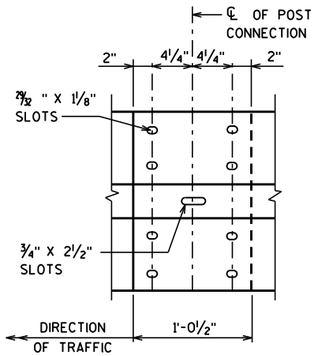


CHANNEL MEMBER DETAILS



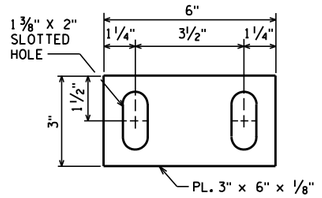
ANCHOR DETAILS

ANCHORS MAY BE FABRICATED IN A CAGE IF OPTED BY THE MFG'R.



RAIL MEMBER SPLICE

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



RAIL POST VERTICAL ADJUSTMENT PLATE

(1 PER POST)

LEGEND

(1) W6x25 WITH 2 - 3/4" x 2 1/2" VERTICAL SLOTS IN FLG. (SLOT ON OTHER SIDE OF WEB IS OPTIONAL) FOR NO.7. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.

(2) C8 x 11.5, WITH 13/16 " DIA. HOLES FOR NO.8.

(3) PLATE, 1/2" x 5 3/4" x 11 1/2". 1 1/4" DIA. HOLES IN PLATE. 13/16 " DIA. HOLES IN CHANNEL. (AT TYPICAL SPLICE)

(4) PLATE 1/2" x 5 3/4" x 6" AT BASIC POST CONNECTION. 1 1/4" DIA. HOLES IN PLATE. 13/16 " DIA. HOLES IN CHANNEL.

(6) 1 3/4" x 3" MOUNTING BOLT WASHER (GALVANIZED).

(7) 5/8" DIA. BUTTON HEAD POST MOUNTING BOLT WITH ROUND WASHER AND NUT.

(8) 5/8" DIA. x 2" HEX. BOLTS WITH NUT AND TWO WASHERS EACH.

(9) 1" DIA. STUD WITH NUT & WASHER. FOUR REQ'D. PER POST, A325.*

(10) THREADED BAR COUPLER FOR 1" ø STUD. ACCEPTABLE PRODUCTS ARE WILLIAMS REBAR FLANGE COUPLERS BY WILLIAMS FORM ENGINEERING CORP. OR DOWEL BAR REPLACEMENTS BY DAYTON SUPERIOR. FOUR REQ'D. PER POST. EXPOSED FLANGE TO BE GALVANIZED.*

(11) ANCHOR BAR 1" DIA. THREADED REINFORCEMENT BAR BENT AS SHOWN IN ANCHOR DETAILS, GRADE 60. TWO REQ'D. PER POST. (TOP)**

(12) ANCHOR BAR, 1" DIA. THREADED REINFORCEMENT BAR (STRAIGHT), GRADE 60. TWO REQ'D. PER POST. (BOTTOM)**

(13) 1 1/4" x 1 3/4" SLOTTED HOLES IN POST FOR STUD NO. 9. LONG DIMENSION OF SLOTTED HOLE TO BE VERTICAL.

*SHALL BE MECHANICALLY GALVANIZED OR ELECTRO-PLATED.

**NOT GALVANIZED OR ELECTRO-PLATED.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE W B-14-217" WHICH SHALL INCLUDE ITEMS 1-8 & 13. ITEMS 9-12 SHALL BE INCLUDED IN "PRESTRESSED GIRDER BOX TYPE 17-INCH".

ITEMS 1-8 SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND POST WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQUIRED FOR ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

CHANNEL MEMBER SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF EIGHT (EXCEPT AT ABUTMENTS).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-217

DRAWN BY BRE | PLANS CK'D. KRO

RAILING STEEL TYPE W

SHEET 9 OF 9

49

8

8

CTH KW - WEST EARTHWORK DETAIL

STATION	AREA (SF)			INCREMENTAL VOLUME (CY)			CUMULATIVE VOLUME (CY)		
	CUT	SALV / UNUSED PAVT MATERIAL	FILL	CUT	SALV / UNUSED PAVT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
							1.00	1.25	
				NOTE 1	NOTE 2		NOTE 1		
7+65.9	12	0	1	0	0	0	0	0	0
8+00.0	12	0	1	15	0	1	15	2	13
8+30.0	12	0	1	13	0	1	28	4	24
8+30.0	58	8	25	0	0	0	28	4	24
8+45.5	56	8	39	33	4	18	61	27	29
8+54.2	55	9	37	18	3	12	78	42	29
8+70.5	53	9	35	32	5	22	111	69	29
8+79.2	52	9	37	17	3	12	127	84	29
8+95.5	51	9	30	31	5	20	158	109	29
9+04.2	51	9	15	16	3	7	175	118	34
9+23.7	52	9	4	37	6	7	212	126	56
9+32.3	51	9	3	17	3	1	228	128	68
9+50.0	49	8	4	33	5	2	261	130	93
9+77.0	20	8	0	35	8	2	296	133	117

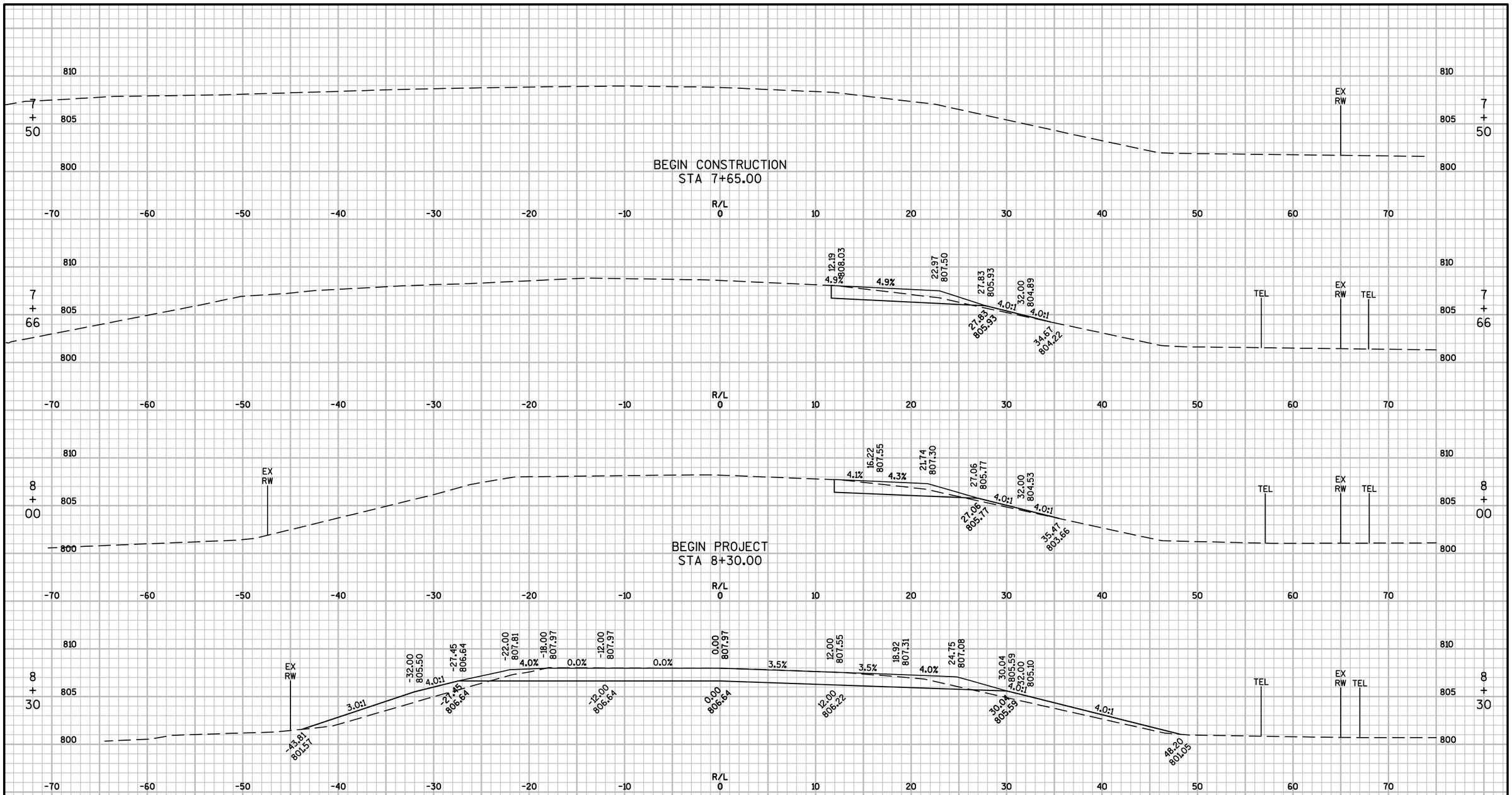
CTH KW - EAST EARTHWORK DETAIL

STATION	AREA (SF)			INCREMENTAL VOLUME (CY)			CUMULATIVE VOLUME (CY)		
	CUT	SALV / UNUSED PAVT MATERIAL	FILL	CUT	SALV / UNUSED PAVT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
							1.00	1.25	
				NOTE 1	NOTE 2		NOTE 1		
10+23.0	17	7	1	0	0	0	0	0	0
10+50.0	52	7	16	34	6	8	34	10	17
10+67.7	54	7	12	35	4	9	69	22	36
10+76.3	55	8	12	18	2	4	86	26	47
10+95.8	56	8	16	40	5	10	126	39	69
11+04.5	57	8	19	18	2	6	144	46	77
11+20.8	58	7	20	34	4	12	179	61	92
11+29.5	58	7	22	19	2	7	197	70	100
11+45.8	59	7	25	35	4	14	233	87	113
11+54.5	60	7	24	19	2	8	252	97	120
11+70.0	62	6	20	35	4	13	287	113	136
11+70.0	27	0	20	0	0	0	287	113	136
12+00.0	27	0	15	30	0	19	317	137	142
12+25.0	26	0	9	25	0	11	342	151	153
12+34.0	17	0	7	7	0	3	349	155	157

NOTE 1: CUT INCLUDES SALVAGED / UNUSABLE PAVEMENT VOLUME.
NOTE 2: SALVAGED / UNUSABLE PAVEMENT MATERIAL NOT SHOWN IN CROSS SECTIONS.

9

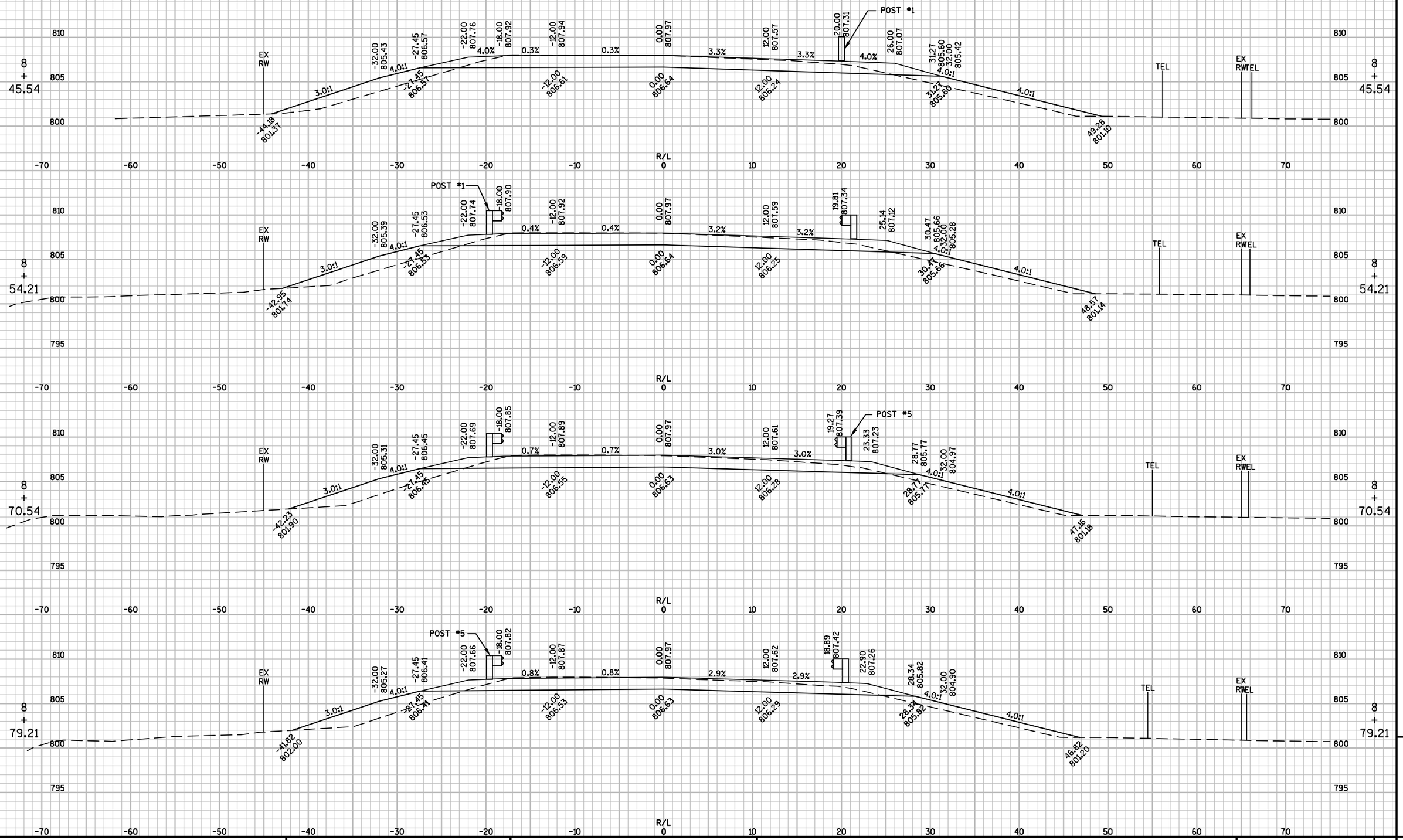
9



9

9

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	CROSS SECTIONS: CTH KW	SHEET 51	E



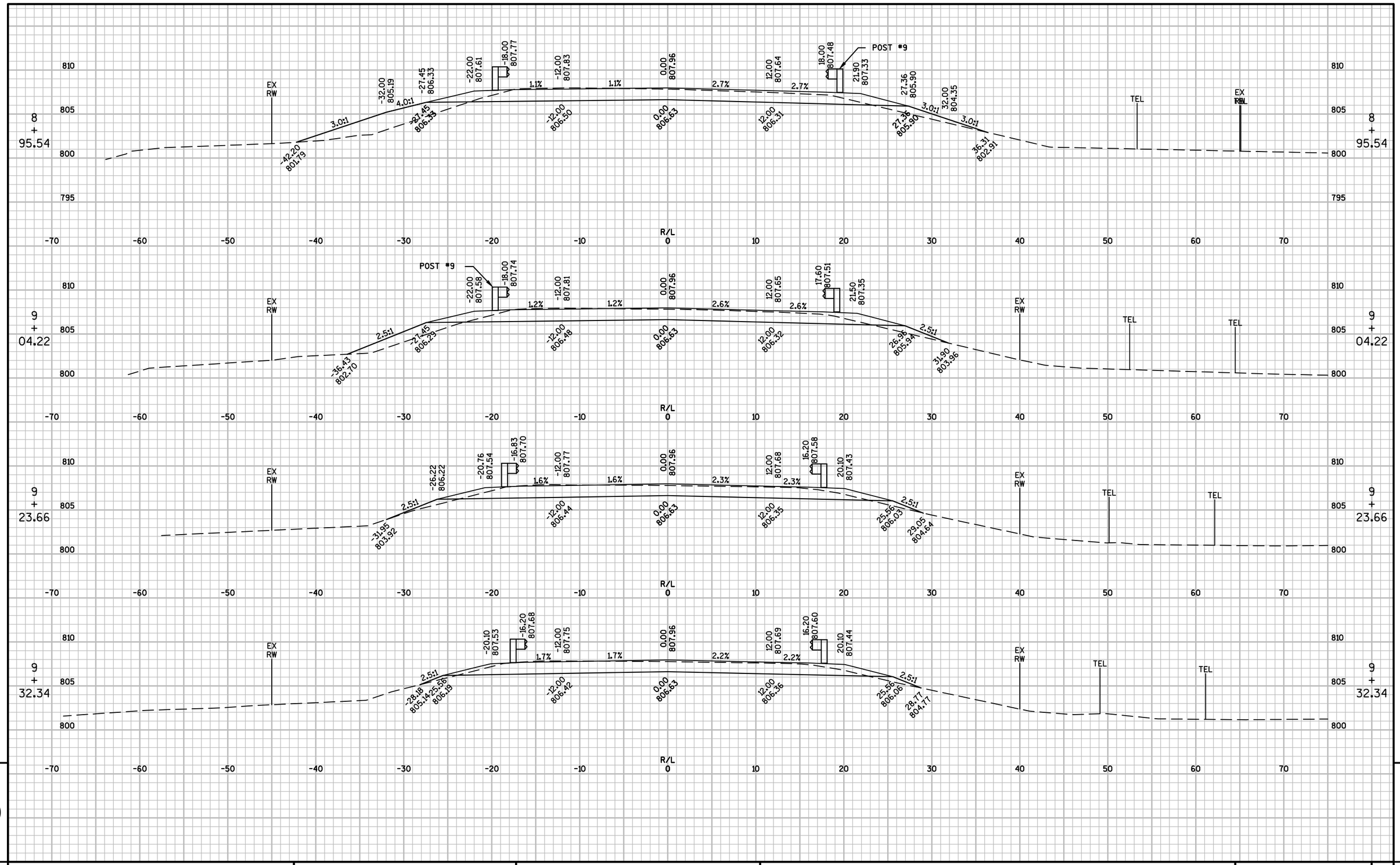
9

9

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	CROSS SECTIONS: CTH KW	SHEET 52	E

FILE NAME : F:\TR\JOBS\E2111A14\CIVIL 3D 2014\SHEETSPLAN\E2111A14-090200-XS.DWG
LAYOUT NAME - E2111A14-090202-XS

PLOT DATE : 8/24/2015 2:55 PM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF

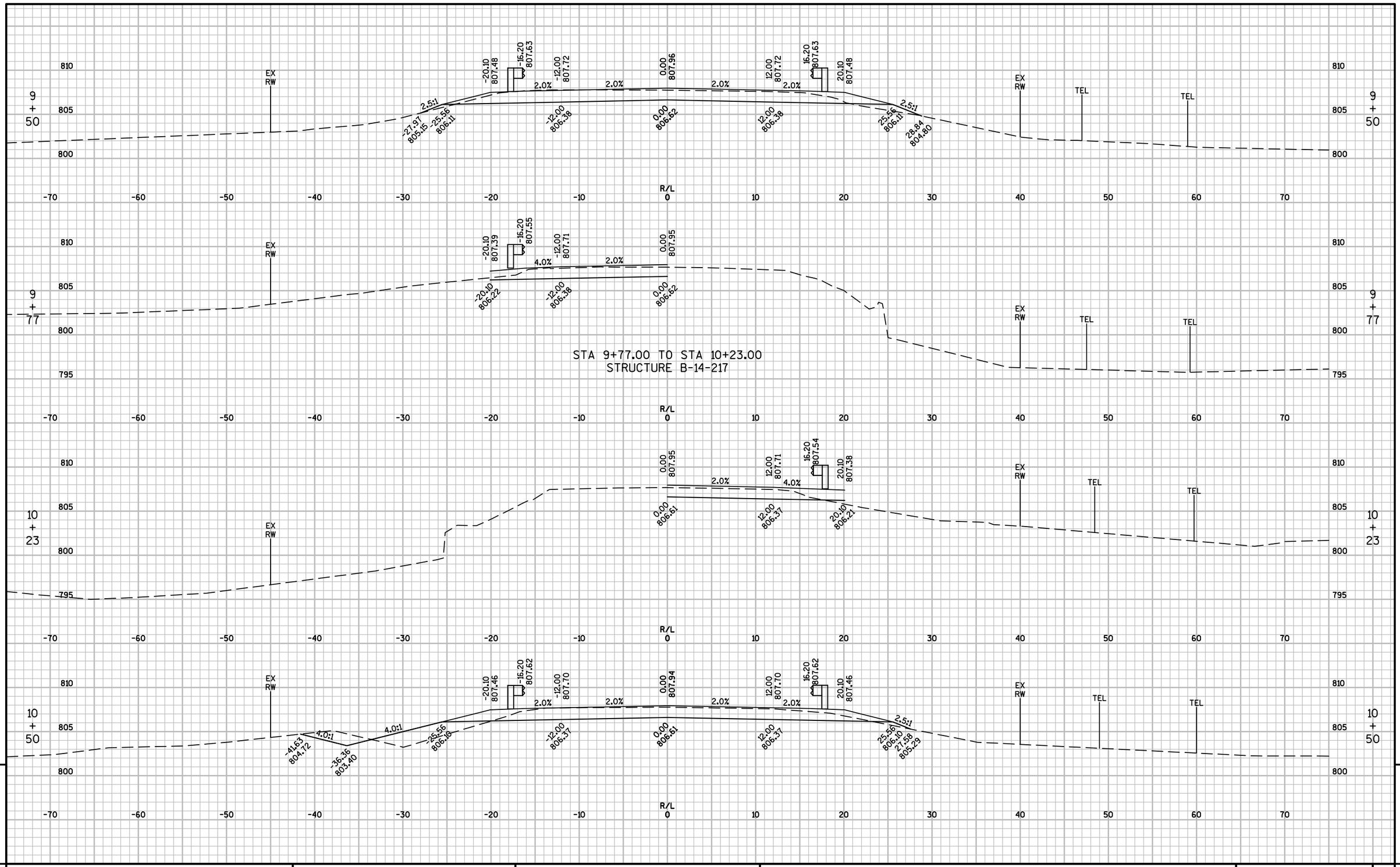


9

9

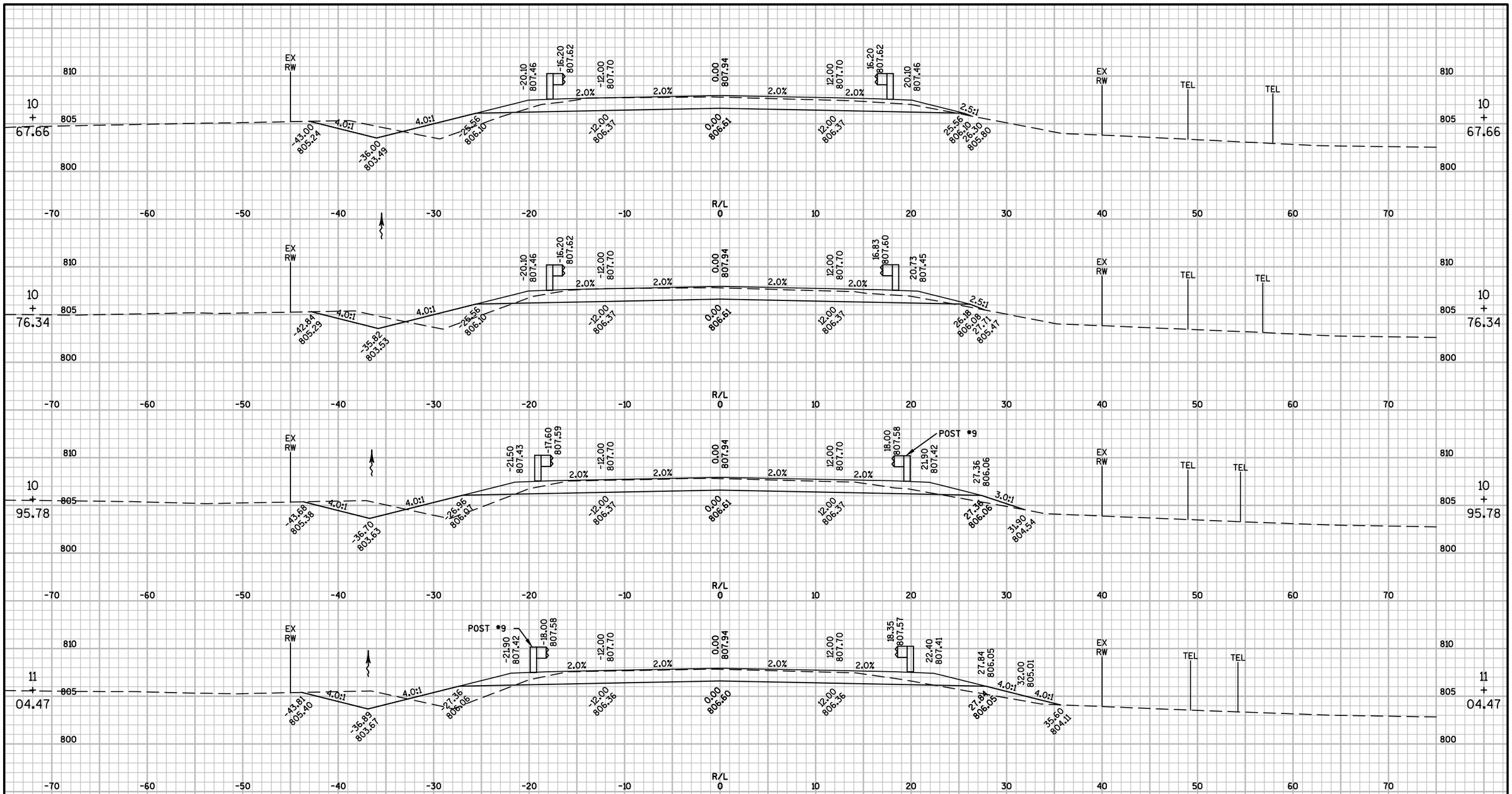
PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	CROSS SECTIONS: CTH KW	SHEET 53	E

FILE NAME : F:\TR\JOBS\E2111A14\CIVIL 3D 2014\SHEETSPLAN\E2111A14-090200-XS.DWG
LAYOUT NAME - E2111A14-090203-XS
PLOT DATE : 8/25/2015 6:34 AM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	CROSS SECTIONS: CTH KW	SHEET 54	E

FILE NAME : F:\TR\JOBS\E2111A14\CIVIL 3D 2014\SHEETSPLAN\E2111A14-090200-XS.DWG
LAYOUT NAME - E2111A14-090204-XS
PLOT DATE : 8/25/2015 6:33 AM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF



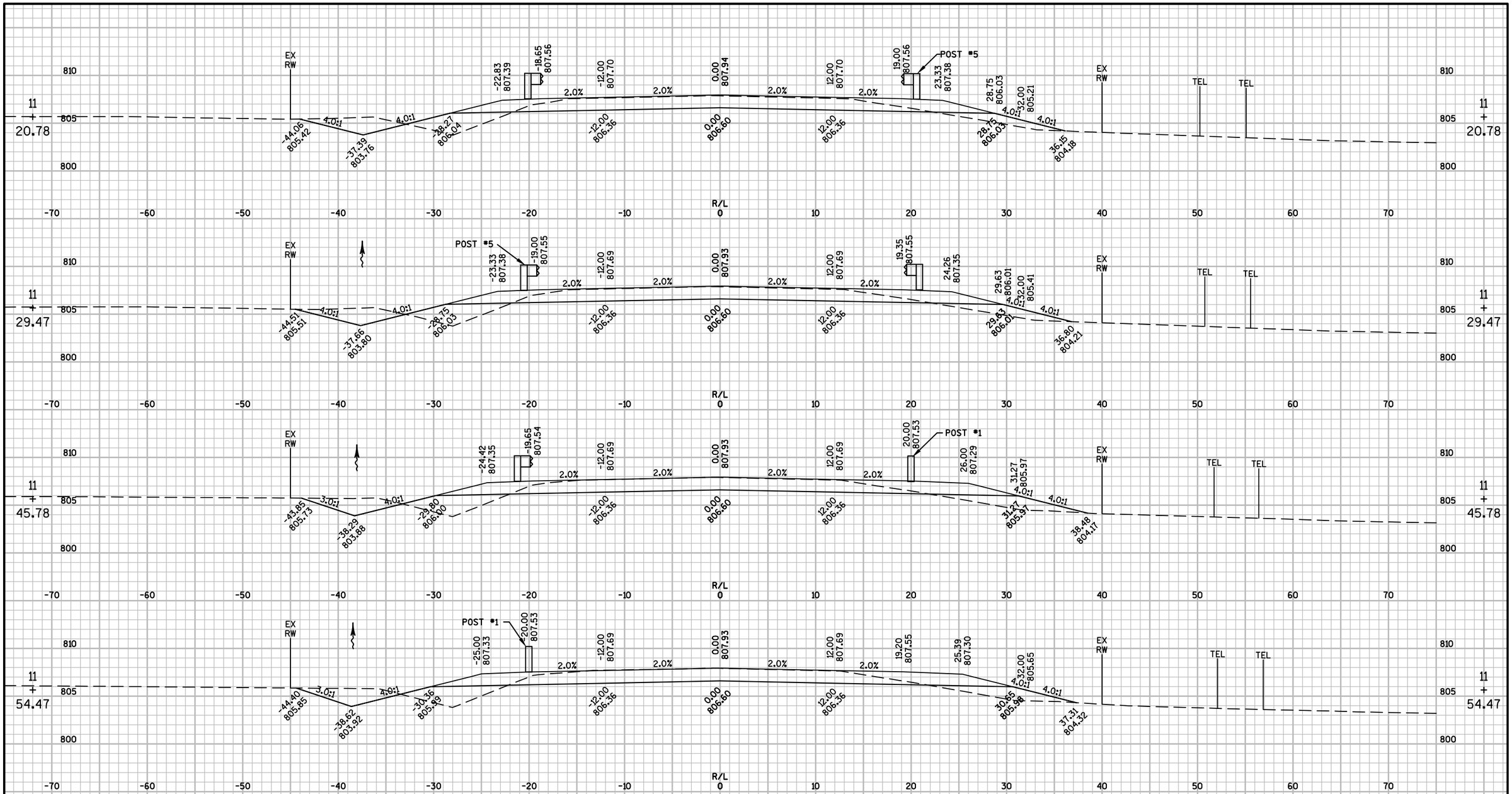
9

9

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	CROSS SECTIONS: CTH KW	SHEET 55	E

FILE NAME : F:\TR\JOBS\E2111A14\CIVIL 3D 2014\SHEETSPLAN\E2111A14-090200-XS.DWG
LAYOUT NAME - E2111A14-090205-XS

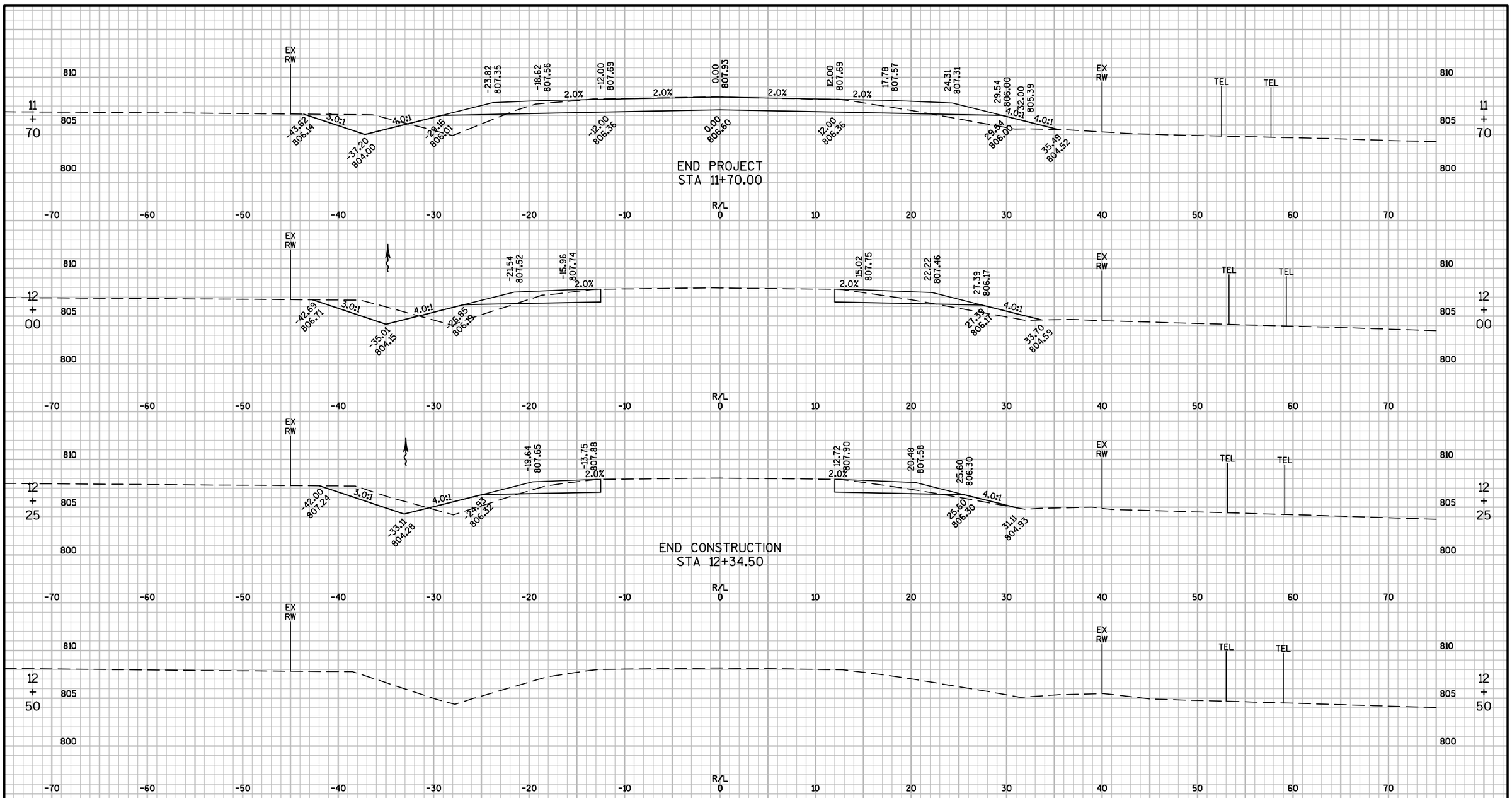
PLOT DATE : 8/25/2015 7:51 AM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF



9

9

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	CROSS SECTIONS: CTH KW	SHEET 56	E



9

9

PROJECT NO: 3906-00-72	HWY: CTH KW	COUNTY: DODGE	CROSS SECTIONS: CTH KW	SHEET 57	E

FILE NAME : F:\TR\JOBS\E2111A14\CIVIL 3D 2014\SHEETSPLAN\E2111A14-090200-XS.DWG
LAYOUT NAME - E2111A14-090207-XS

PLOT DATE : 8/25/2015 7:56 AM PLOT BY : RYAN MALUEG PLOT NAME : PLOT SCALE : 1:10_XREF

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov