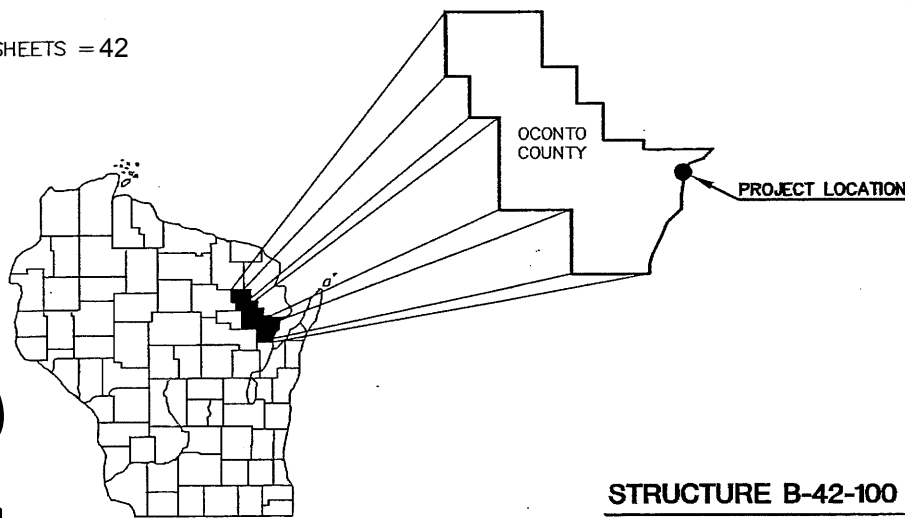


ORDER OF SHEETS

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

TOTAL SHEETS = 42



# STATE OF WISCONSIN

## DEPARTMENT OF TRANSPORTATION

### PLAN OF PROPOSED IMPROVEMENT

# TOWN OF LITTLE RIVER, CTH Y

(CAMBELLS DITCH BRIDGE & APPROACHES)

## CTH Y

## OCONTO COUNTY

STATE PROJECT NUMBER  
**9148-07-71**

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
<b>9148-07-71</b>	WISC 2014271	1

DESIGN DESIGNATION

A.A.D.T. (2014)	=	1000
A.A.D.T. (2034)	=	1200
D.H.V.	=	202
D.D.	=	60/40
T.	=	6.9%
DESIGN SPEED	=	55 MPH
ESALS	=	160,600

CONVENTIONAL SYMBOLS

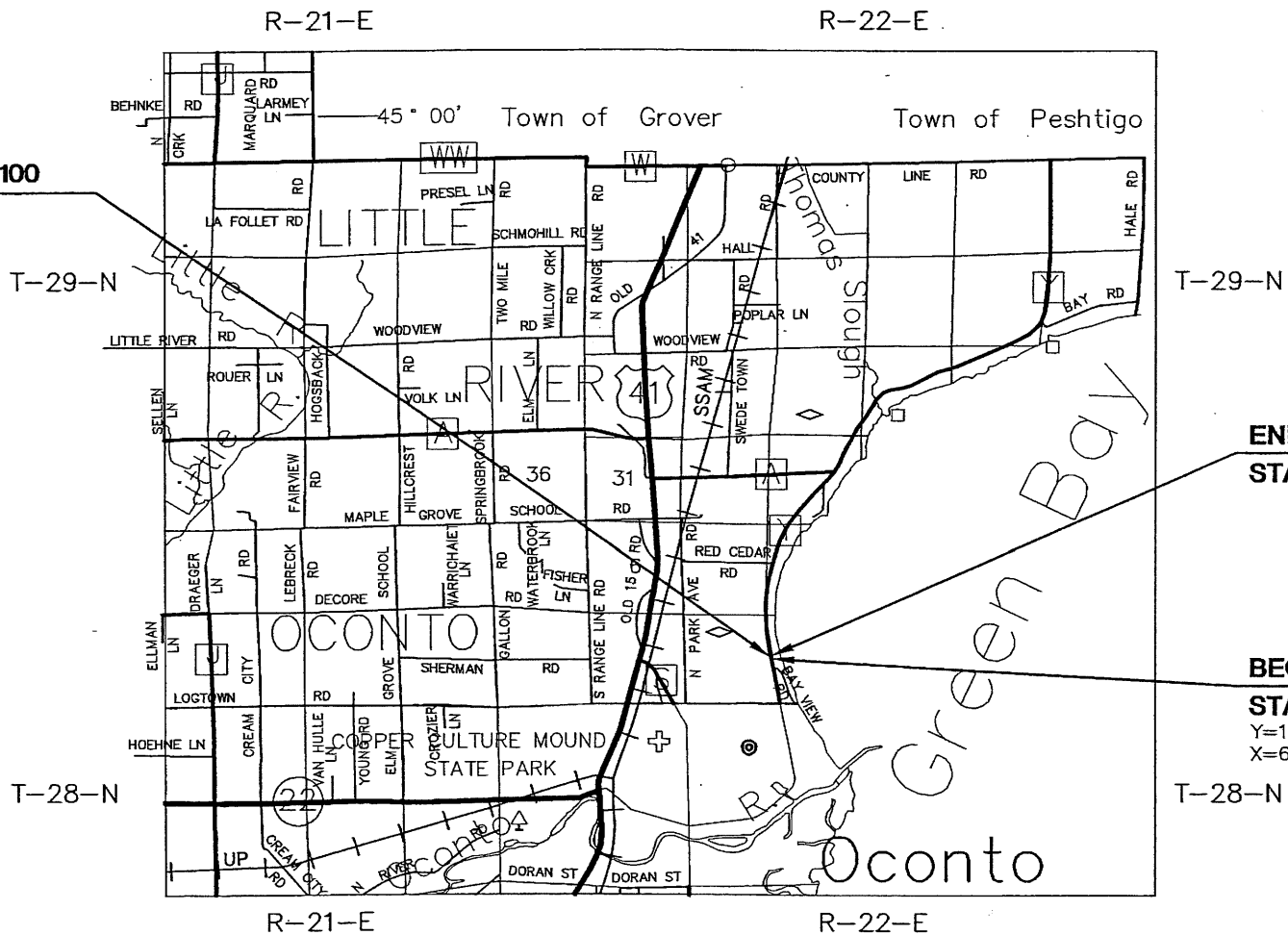
PLAN

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

PROFILE

GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STRUCTURE B-42-100



END PROJECT  
STA 12+50

BEGIN PROJECT  
STA 10+50  
Y=188107.726  
X=616327.952

LAYOUT  
SCALE 0 1 MILES  
TOTAL NET LENGTH OF CENTERLINE = 0.038 MILES

NOTE:  
ALL COORDINATES SHOWN ON THIS PLAN ARE BASED ON THE WISCONSIN COUNTY COORDINATE SYSTEM, OCONTO COUNTY.

ACCEPTED FOR

COUNTY of OCONTO

11-6-13 (Date) *Robert Scanlon* (Highway Commissioner)

ORIGINAL PLANS PREPARED BY

**WESTBROOK**  
Associated Engineers, Inc.

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



2/25/14 (Date) *ALB-S* (Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WESTBROOK
Designer	WESTBROOK
Management Consultant	SEH
C.O. Examiner	

APPROVED FOR THE DEPARTMENT  
DATE: 2/25/14 *Robert Buffone* (Management Consultant Signature)

SEH-NE REGION LPMC

DIGGERSHOTLINE

Dial 811 or (800) 242-8511

www.DiggersHotline.com

**UTILITIES**  
WISCONSIN PUBLIC SERVICE CORPORATION  
700 NORTH ADAMS STREET  
P.O. BOX 19001  
GREEN BAY, WI 54307  
  
ATTN: LORI BUTRY  
PHONE: (920) 433-1703  
EMAIL: labutry@integrysgruop.com

**COUNTY LIAISON**

OCONTO COUNTY HIGHWAY DEPARTMENT  
PO BOX 138  
TRACTOR STREET  
OCONTO, WI 54153  
  
ATTN: PATRICK J. SCANLAN – HIGHWAY COMMISSIONER  
PH: (920) 834-6885  
FAX: (920) 834-6887  
pat.scanlan@co.oconto.wi.us

**WisDNR LIAISON**

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES  
NORTHEAST REGIONAL HEADQUARTERS  
2984 SHAWANO AVE.  
GREEN BAY, WI 54313  
  
ATTN: JIM DOPERALSKI  
(920) 662-5119  
james.doperalski@wisconsin.gov

**GENERAL NOTES**

SILT FENCE TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SILT FENCE SHALL BE IN PLACE PRIOR TO CONSTRUCTION.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE DRIVING LANES AND THE SHOULDERS, ARE TO BE FERTILIZED, SEEDED, TEMPORARY SEEDED AND MULCHED, OR AS DIRECTED BY THE ENGINEER.

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

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

D.O.T. MONUMENT IS TO BE FURNISHED BY THE STATE AND PLACED BY THE CONTRACTOR IN THE SAME WING THAT THE PROPOSED NAME PLATE WILL BE PLACED, AS DIRECTED BY THE ENGINEER.

EROSION MAT SHALL BE PLACED ON SLOPES STEEPER THAN 3:1 AND SHALL EXTEND 5.0’ BEYOND THE SLOPE INTERCEPT WITH THE ORIGINAL GROUND AND AS DIRECTED BY THE ENGINEER.

WETLANDS EXIST IN THE PROJECT AREA. DO NOT DISTURB WETLAND AREAS SHOWN OUTSIDE THE CONSTRUCTION LIMITS. NOTHING IS TO BE STORED WITHIN WETLAND BOUNDARY.

THE 4” HMA PAVEMENT TYPE E-0.3 SHALL BE PLACED IN TWO LIFTS CONSISTING OF A 2¼” LOWER LAYER AND A 1¾” UPPER LAYER.

TIED TO OCONTO COUNTY GPS SURVEY STATIONS "LITTLE RIVER EAST GPS", "LITTLE RIVER GPS", "LITTLE RIVER SOUTH GPS" AND "OCONTO SOUTH GPS" VIA RTK-GPS SURVEY FOR HORIZONTAL AND VERTICAL POSITIONS. HORIZONTAL LATITUDES AND LONGITUDES ARE CONVERTED TO OCONTO COUNTY COORDINATES. ELEVATIONS ARE REFERENCED TO NAVD88 DATUM.

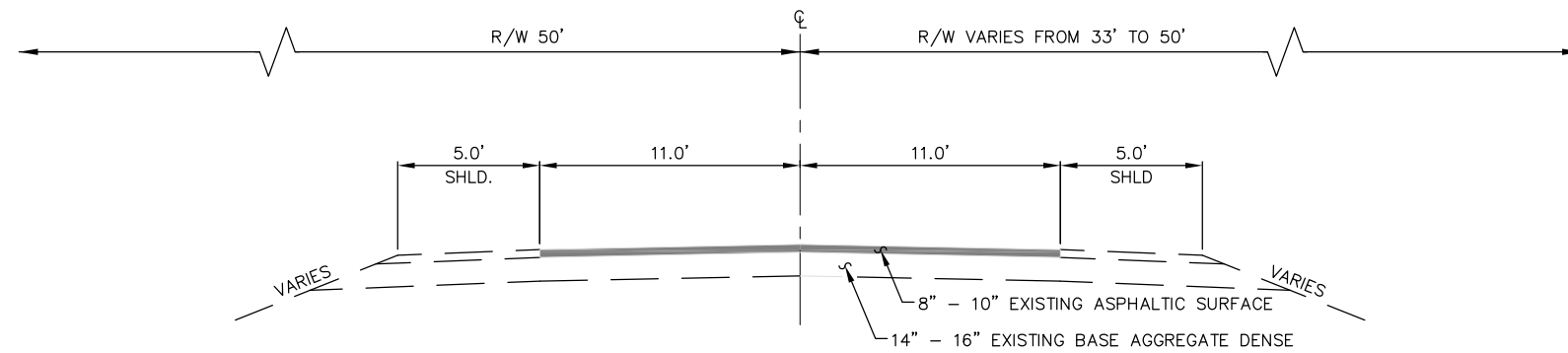
**STANDARD ABBREVIATIONS**

ADT	AVERAGE DAILY TRAFFIC	L.F.	LINEAR FEET	REQ'D.	REQUIRED
AGG.	AGGREGATE	L.H.F.	LEFT HAND FORWARD	RT.	RIGHT
B.M.	BENCH MARK	L.S.	LUMP SUM	R/W	RIGHT-OF-WAY
CL OR CL	CENTERLINE	LT.	LEFT	RD.	ROAD
CR.	CRUSHED	MAX.	MAXIMUM	RDWY.	ROADWAY
C.T.H.	COUNTY TRUNK HIGHWAY	MIN.	MINIMUM	S.	SOUTH
CWT.	HUNDREDWEIGHT	N.	NORTH	SE	SOUTHEAST
C.Y.	CUBIC YARD	NOR.	NORMAL	SHRK.	SHRINKAGE
D.H.	DOUBLE HEADED	PAV'T.	PAVEMENT	S.R.	SIDE ROAD
D.H.V.	DESIGN HOURLY VOLUME	P.C.	POINT OF CURVE	STD.	STANDARD
DIR.	DIRECTED	P.I.	POINT OF INTERSECTION	S.T.H.	STATE TRUNK HIGHWAY
E.	EAST	P.E.	PRIVATE ENTRANCE	STA.	STATION
COR.	CORNER	P.K.	PARKER-KALON NAIL	S.Y.	SQUARE YARD
EL. OR ELEV.	ELEVATION	R OR PL	PROPERTY LINE	T	TANGENT LENGTH OF CURVE
F.E.	FIELD ENTRANCE	P.P.	POWER POLE	T <sub>L</sub>	TRANSIT LINE
FT.	FOOT (FEET)	PROJ.	PROJECT	UNCL.	UNCLASSIFIED EXCAVATION
GAL.	GALLON	P.T.	POINT OF TANGENCY	V	DESIGN SPEED
H.W.	HIGH WATER	PVMT.	PAVEMENT	V.C.	VERTICAL CURVE
IN.	INCHES	R.	RADIUS	VAR.	VARIABLE
K	SIGHT DISTANCE	R.R.	RAILROAD	W.	WEST
L.	LENGTH OF CURVE	REINF.	REINFORCED		

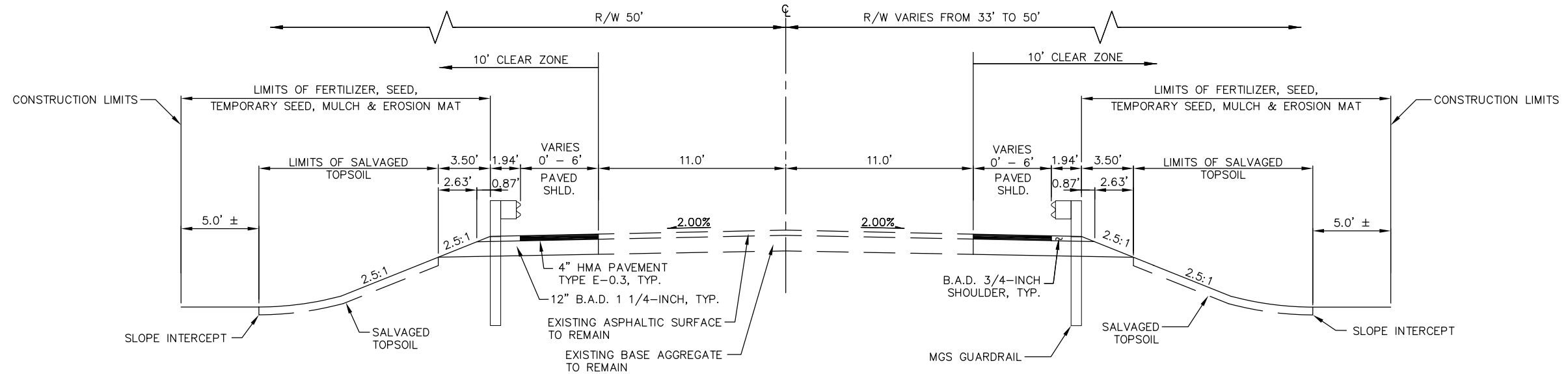
**RUNOFF COEFFICIENT TABLE**

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

TOTAL PROJECT AREA = 0.62 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.32 ACRES

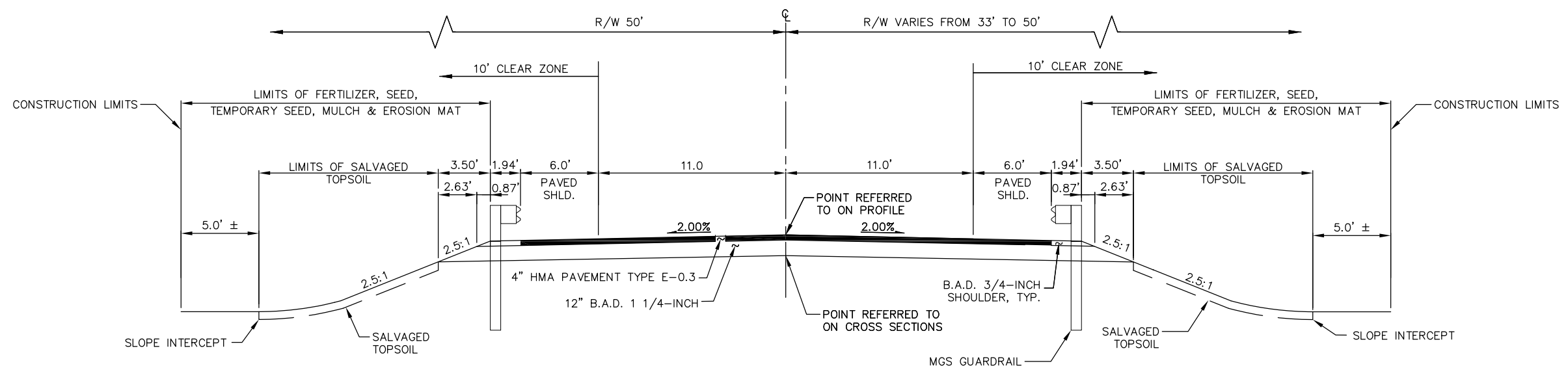


**TYPICAL EXISTING SECTION**



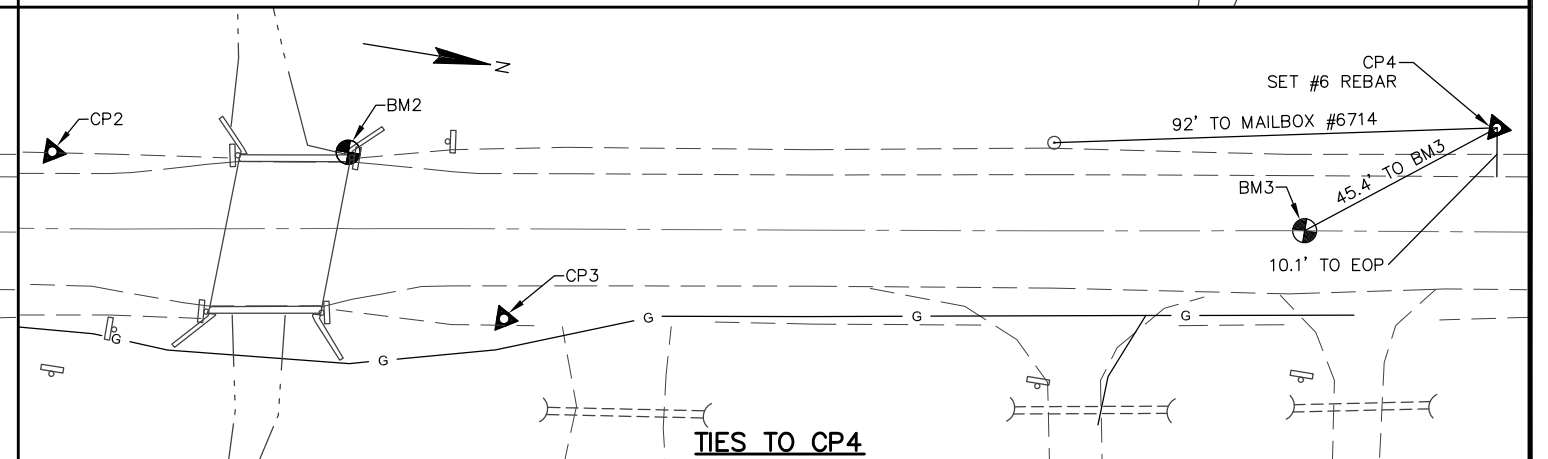
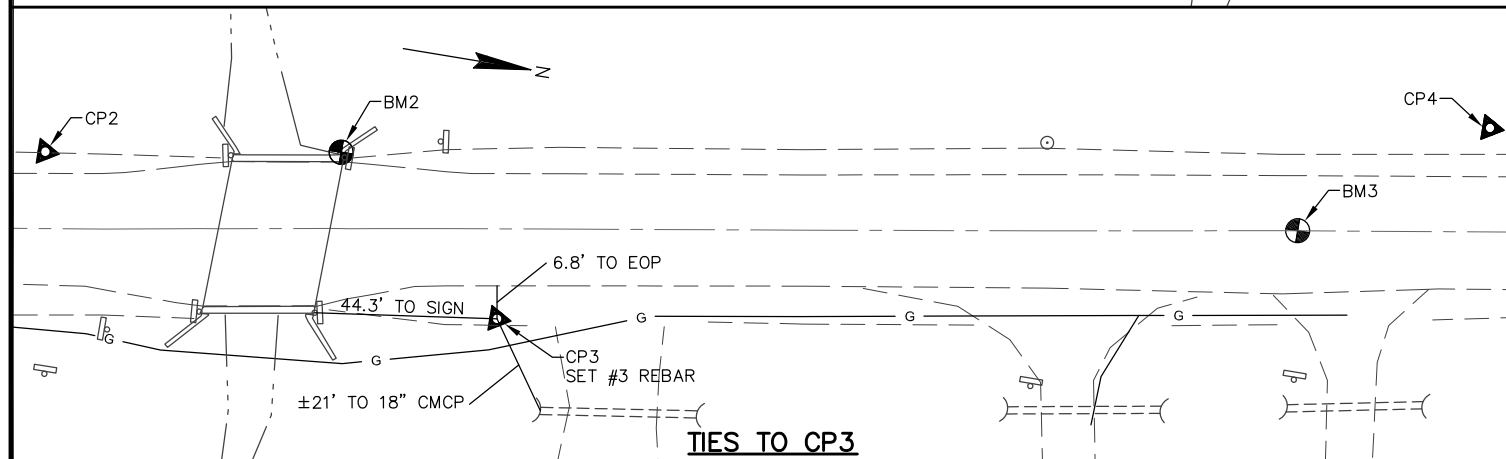
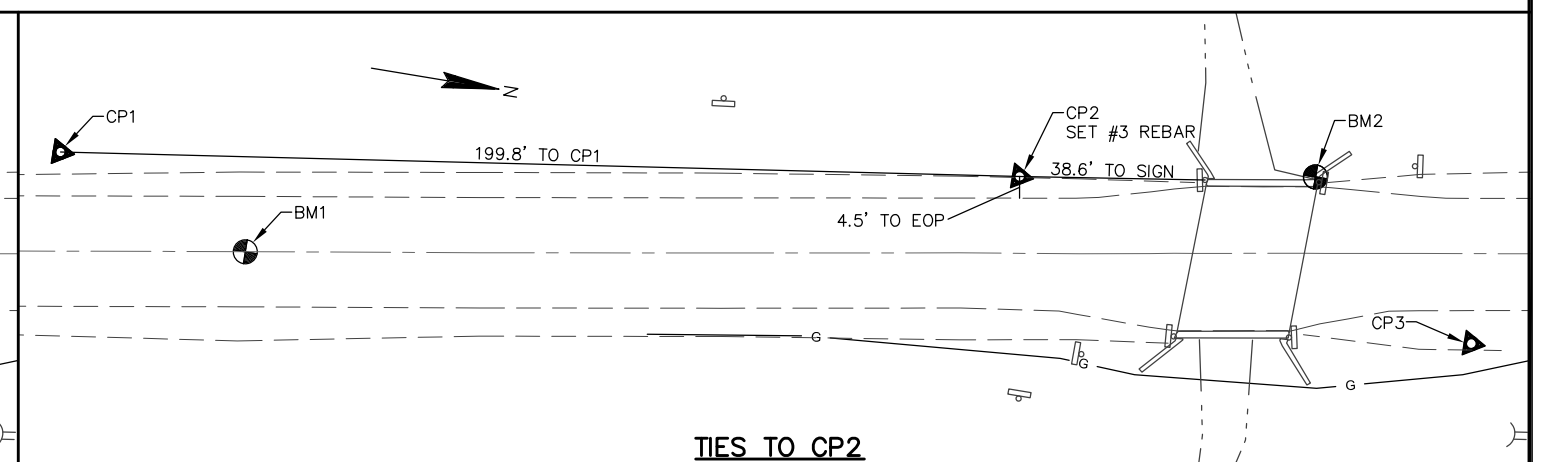
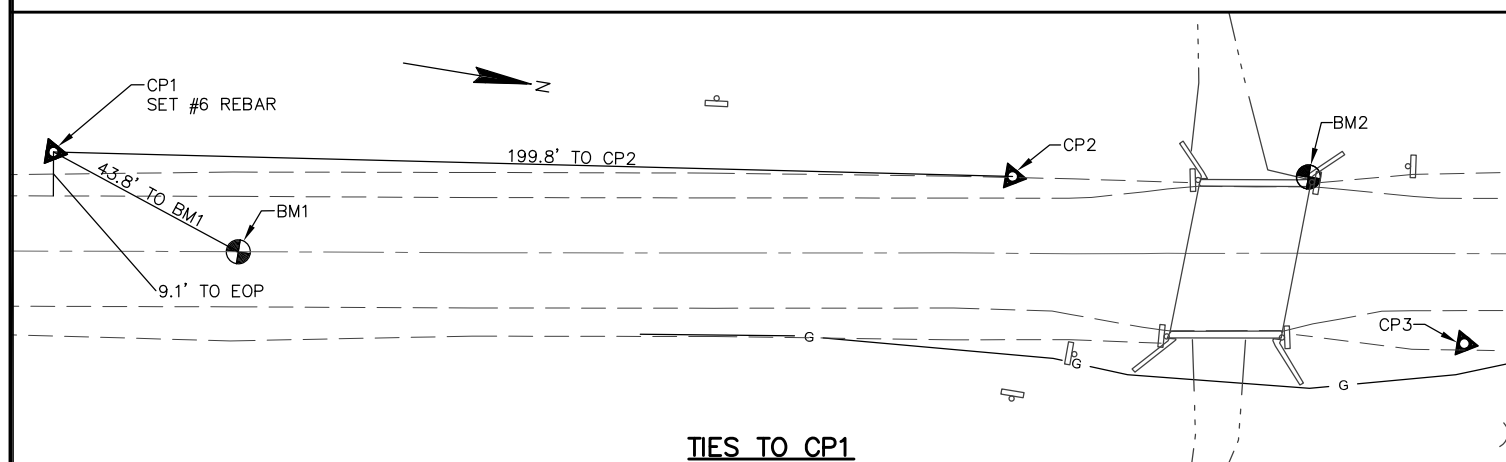
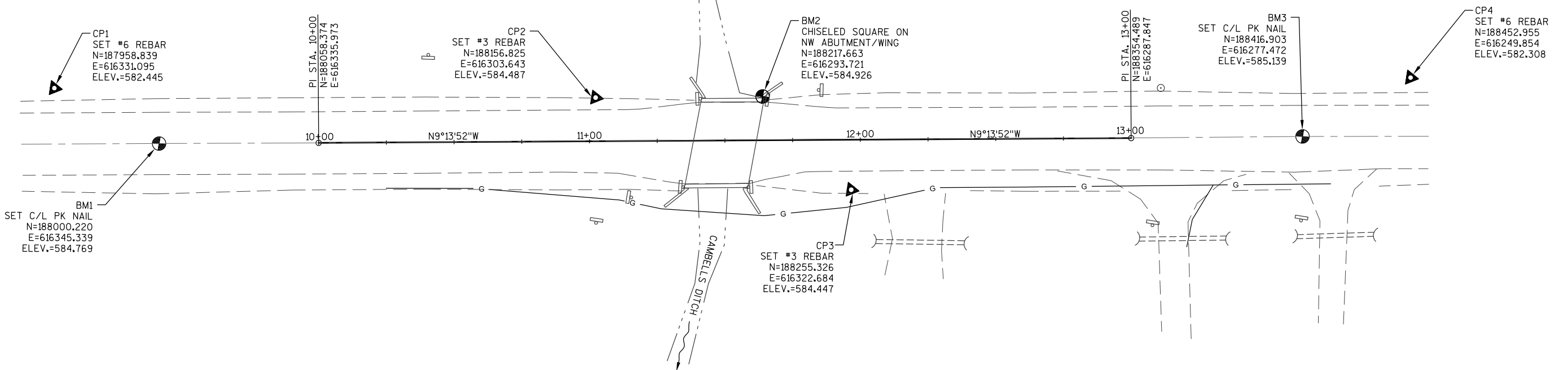
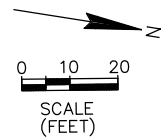
**TYPICAL FINISHED SECTION**

STA. 10+11.38 TO STA. 10+50.00  
STA. 12+50.00 TO STA. 12+80.63



**TYPICAL FINISHED SECTION**

STA. 10+50 TO STA. 11+30.75  
STA. 11+61.25 TO STA. 12+50



DATE 24APR14		E S T I M A T E O F Q U A N T I T I E S			
LINE					9148-07-71
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 11+50	LS	1.000	1.000
0020	205.0100	EXCAVATION COMMON	CY	369.000	369.000
0030	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-42-100	LS	1.000	1.000
0040	210.0100	BACKFILL STRUCTURE	CY	356.000	356.000
0050	213.0100	FINISHING ROADWAY (PROJECT) 01. 9148-07-71	EACH	1.000	1.000
0060	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	25.000	25.000
0070	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	610.000	610.000
0080	455.0105	ASPHALTIC MATERIAL PG58-28	TON	9.000	9.000
0090	455.0605	TACK COAT	GAL	20.000	20.000
0100	460.1100	HMA PAVEMENT TYPE E-O.3	TON	150.000	150.000
0110	502.0100	CONCRETE MASONRY BRIDGES	CY	148.000	148.000
0120	502.3200	PROTECTIVE SURFACE TREATMENT	SY	141.000	141.000
0130	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	5,380.000	5,380.000
0140	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	14,700.000	14,700.000
0150	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-42-100	LS	1.000	1.000
0160	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	22.000	22.000
0170	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	400.000	400.000
0180	606.0300	RIPRAP HEAVY	CY	52.000	52.000
0190	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	134.000	134.000
0200	614.2500	MGS THRIE BEAM TRANSITION	LF	160.000	160.000
0210	614.2610	MGS GUARDRAIL L TERMINAL EAT	EACH	4.000	4.000
0220	619.1000	MOBILIZATION	EACH	1.000	1.000
0230	625.0500	SALVAGED TOPSOIL	SY	350.000	350.000
0240	627.0200	MULCHING	SY	430.000	430.000
0250	628.1504	SILT FENCE	LF	700.000	700.000
0260	628.1520	SILT FENCE MAINTENANCE	LF	1,400.000	1,400.000
0270	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0280	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0290	628.2004	EROSION MAT CLASS I TYPE B	SY	70.000	70.000
0300	628.7504	TEMPORARY DITCH CHECKS	LF	75.000	75.000
0310	629.0210	FERTILIZER TYPE B	CWT	1.000	1.000
0320	630.0110	SEEDING MIXTURE NO. 10	LB	8.000	8.000
0330	630.0200	SEEDING TEMPORARY	LB	16.000	16.000
0340	638.2602	REMOVING SIGNS TYPE I I	EACH	7.000	7.000
0350	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	6.000	6.000
0360	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0370	643.0100	TRAFFIC CONTROL (PROJECT) 01. 9148-07-71	EACH	1.000	1.000
0380	643.0420	TRAFFIC CONTROL BARRICADES TYPE I I I	DAY	408.000	408.000
0390	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	544.000	544.000
0400	643.0900	TRAFFIC CONTROL SIGNS	DAY	408.000	408.000
0410	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	118.000	118.000
0420	646.0103	PAVEMENT MARKING PAINT 4-INCH	LF	450.000	450.000
0430	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	170.000	170.000
0440	650.5000	CONSTRUCTION STAKING BASE	LF	170.000	170.000
0450	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-42-100	LS	1.000	1.000
0460	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 9148-07-71	LS	1.000	1.000
0470	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	170.000	170.000
0480	690.0150	SAWING ASPHALT	LF	46.000	46.000

DATE 24APR14		E S T I M A T E O F Q U A N T I T I E S				
LINE		9148-07-71				
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0490	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,242.000	1,242.000	
0500	ASP.1TOA	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	150.000	150.000	
0510	ASP.1TOG	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	300.000	300.000	

3

BASE AGGREGATE DENSE

STATION – STATION	LOCATION	305.0110 3/4–INCH SHLD. (TON)	305.0120 1¼–INCH BASE (TON)
10+50.00 – 11+30.75	MAINLINE	12	291
11+61.25 – 12+50.00	MAINLINE	13	319
TOTALS		25	610

ASPHALTIC ITEMS

STATION – STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG58–28 (TON)	455.0605 TACK COAT (GAL)	460.1100 HMA PAVEMENT TYPE E–0.3 (TON)
10+50.00 – 11+30.75	MAINLINE	4.3	10	72
11+61.25 – 12+50.00	MAINLINE	4.7	10	78
TOTALS		9.0	20	150

MGS THRIE BEAM TRANSITION

STATION – STATION	LOCATION	614.2500 (LF)
10+94.50 – 11+33.90	MAINLINE, LT	40
10+94.50 – 11+33.90	MAINLINE, RT	40
11+58.10 – 11+97.50	MAINLINE, LT	40
11+58.10 – 11+97.50	MAINLINE, RT	40
TOTAL		160

3

MGS GUARDRAIL TERMINAL EAT

STATION – STATION	LOCATION	614.2610 (EACH)
10+41.40 – 10+94.50	MAINLINE, LT	1
10+41.40 – 10+94.50	MAINLINE, RT	1
11+97.50 – 12+50.60	MAINLINE, RT	1
11+97.50 – 12+50.60	MAINLINE, LT	1
TOTAL		4

FINISHING ITEMS

STATION – STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	627.0200 MULCHING (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0110 SEEDING MIXTURE NO. 10 (LB)	630.0200 SEEDING TEMPORARY (LB)
10+11.36 – 11+30.75	MAINLINE, LT & RT	162	162	0.15	3.1	6.2
11+61.25 – 12+80.63	MAINLINE, LT & RT	180	180	0.16	3.4	6.8
--- – ---	UNDISTRIBUTED	0	80	0.69	1.5	3.0
TOTALS		350	430	1.0	8.0	16.0

EROSION CONTROL ITEMS

STATION – STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)	628.2004 EROSION MAT CLASS I TYPE B (SY)	628.7504 TEMPORARY DITCH CHECKS (LF)
10+11.36 – 11+30.75	MAINLINE, LT & RT	276	552	--	--
11+61.25 – 12+80.63	MAINLINE, LT & RT	294	588	56	--
--- – ---	UNDISTRIBUTED	130	260	14	75
TOTALS		700	1400	70	75

REMOVING SIGNS TYPE II &  
REMOVING SMALL SIGNS SUPPORTS

STATION	LOCATION	CODE	DESCRIPTION	638.2602 SIGNS (EACH)	638.3000 SIGN SUPPORTS (EACH)
11+15	MAINLINE, RT	R12–1	WEIGHT LIMIT	1	1
11+35	MAINLINE, RT	W5–52R	CLEARANCE STRIPER	1	1
11+41	MAINLINE, LT	W5–52L	CLEARANCE STRIPER	1	1
11+59	MAINLINE, RT	W5–52R	CLEARANCE STRIPER	1	1
11+65	MAINLINE, LT	W5–52L	CLEARANCE STRIPER	1	1
13+10	MAINLINE, LT	R12–1	WEIGHT LIMIT	1	1
13+10	MAINLINE, LT	I55–56	ADOPT–A–HIGHWAY	1	0
TOTALS				7	6

PAVEMENT MARKING

STATION – STATION	LOCATION	646.0103 PAINT 4–INCH CENTERLINE YELLOW (LF)	646.0103 PAINT 4–INCH EDGE LINE WHITE (LF)
10+50 – 12+50	MAINLINE	50	400
TOTAL		450	

TRAFFIC CONTROL ITEMS

LOCATION	643.0420 BARRICADES TYPE III (QTY) (DAY)	643.0705 WARNING LIGHTS TYPE A (QTY) (DAY)	643.0900 SIGNS (QTY) (DAY)	COMMENTS
SOUTH APPROACH	– –	– –	1 68	W20–3 (ROAD CLOSED 1000 FT)
SOUTH APPROACH	– –	– –	1 68	W20–3 (ROAD CLOSED 500 FT)
SOUTH APPROACH	3 204	4 272	1 68	R11–2 (BRIDGE OUT)
NORTH APPROACH	3 204	4 272	1 68	R11–2 (BRIDGE OUT)
NORTH APPROACH	– –	– –	1 68	W20–3 (ROAD CLOSED 500 FT)
NORTH APPROACH	– –	– –	1 68	W20–3 (ROAD CLOSED 1000 FT)
TOTALS		408	544	408

LAYOUT ITEMS

STATION – STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE (LF)	650.5000 CONSTRUCTION STAKING BASE (LF)	CATEGORY 0020 650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) B–42–100 (LS)	650.9920 CONSTRUCTION STAKING SLOPE STAKES (LF)
10+50 – 12+50	MAINLINE	170	170	---	170
11+46	MAINLINE	---	---	1	---
TOTALS		170	170	1	170

SAWING ASPHALT

STATION	LOCATION	690.0150 (LF)
10+50	MAINLINE	23
12+50	MAINLINE	23
TOTAL		46

NOTE: UNLESS NOTED, ALL ITEMS ARE IN CATEGORY 0010.

PROJECT NO: 9148–07–71

HWY: CTH Y

COUNTY: OCONTO

MISCELLANEOUS QUANTITIES (1 OF 2)

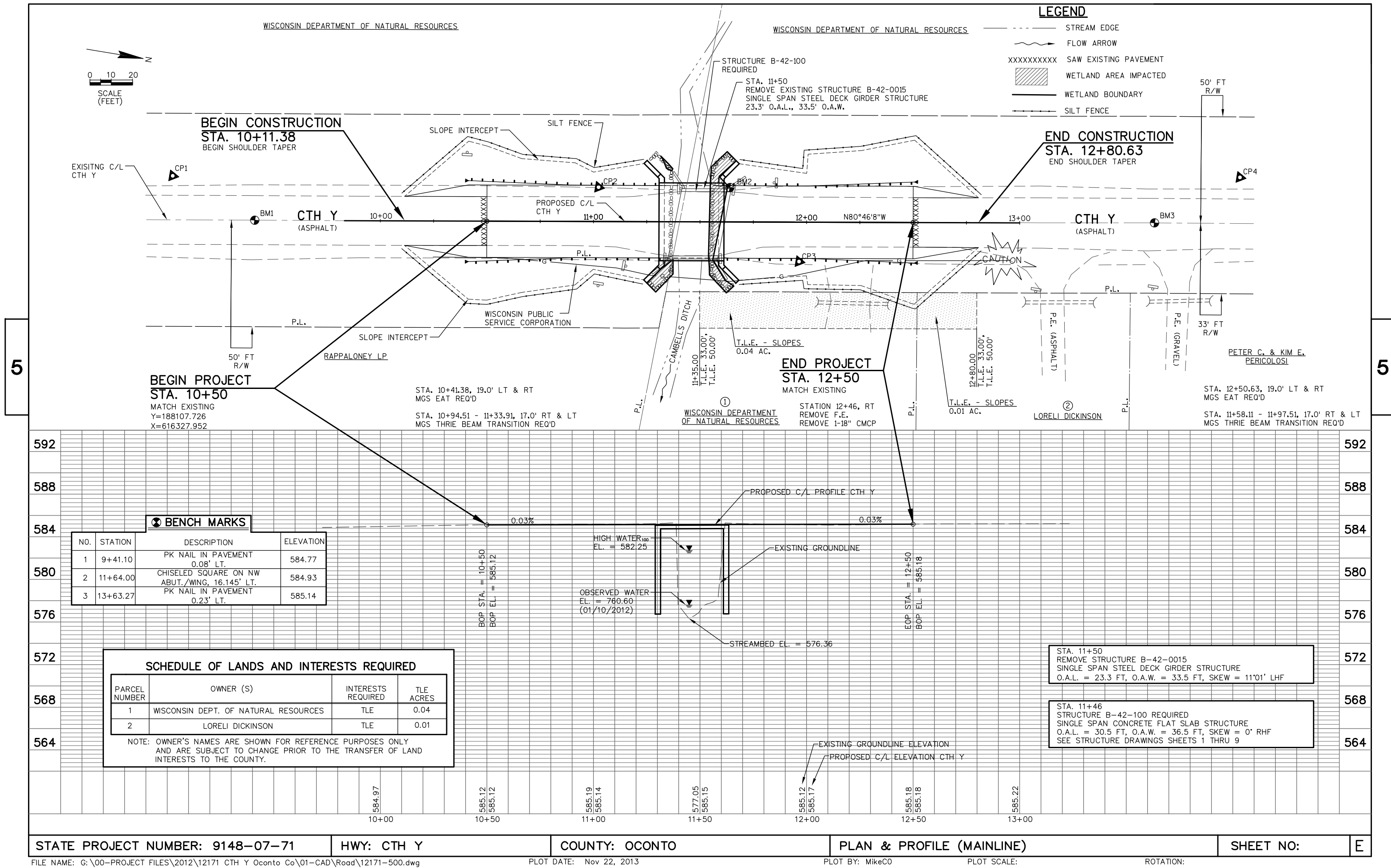
SHEET

E

Division	From/To Station	Location	Common Excavation (1)	(item # 205.0100) EBS Excavation (3)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Rock Excavation (7)	Reduced Marsh in Fill (8)	Reduced EBS in Fill (9)	Expanded Marsh Backfill (10)	Expanded EBS Backfill (11)	Expanded Rock (12)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow	Comment:
			Cut (2)			(item #205.0500)	(item #205.0500)	(item #205.0200)	Factor 0.60	Factor 0.80	Factor 1.50	Factor 1.30	Factor 1.10		Factor 1.30			(item #208.0100)	
	10+11.38 to 11+30.7550+00	South approach	178	0	0	178	0	0	0	0	0	0	0	60	78	100			
						0									0	0			
						0									0	0			
						0									0	0			
Division 1 Subtotal			178	0	0	178	0	0	0	0	0	0	0	0	60	78	100		
	11+61.25 to 12+80.63	North Approach	190	0	0	190	0	0	0	0	0	0	0	103	134	56			
						0									0	0			
						0									0	0			
						0									0	0			
Division 2 Subtotal			190	0	0	190	0	0	0	0	0	0	0	103	134	56		157	
Grand Total			369	0	0	369	0	0	0	0	0	0	0	163	212	157		157	0
Total Common Exc			369																
1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100																			
2) Salvaged/Unusable Pavement Material is included in Cut.																			
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.																			
4) Salvaged/Unusable Pavement Material																			
5) Available Material = Cut - Salvaged/Unusable Pavement Material																			
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500																			
7) Rock Excavation item number 205.0200																			
8) Reduced Marsh in Fill - Excavated Marsh material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6																			
9) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8																			
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.11																			
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.11																			
12) Expanded Rock - Factor = 1.1.																			
13) Expanded Fill. Factor = 1.30																			
Depending on selections:																			
Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor																			
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor																			
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor																			
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor																			
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.																			

NOTE: UNLESS NOTED, ALL ITEMS ARE IN CATEGORY 0010.

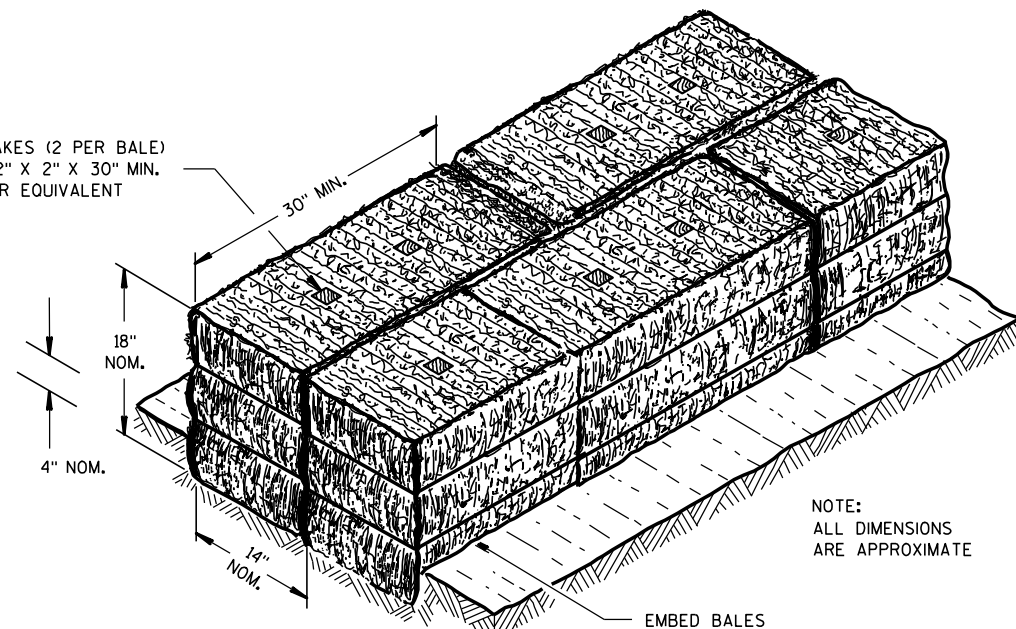




Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	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)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)

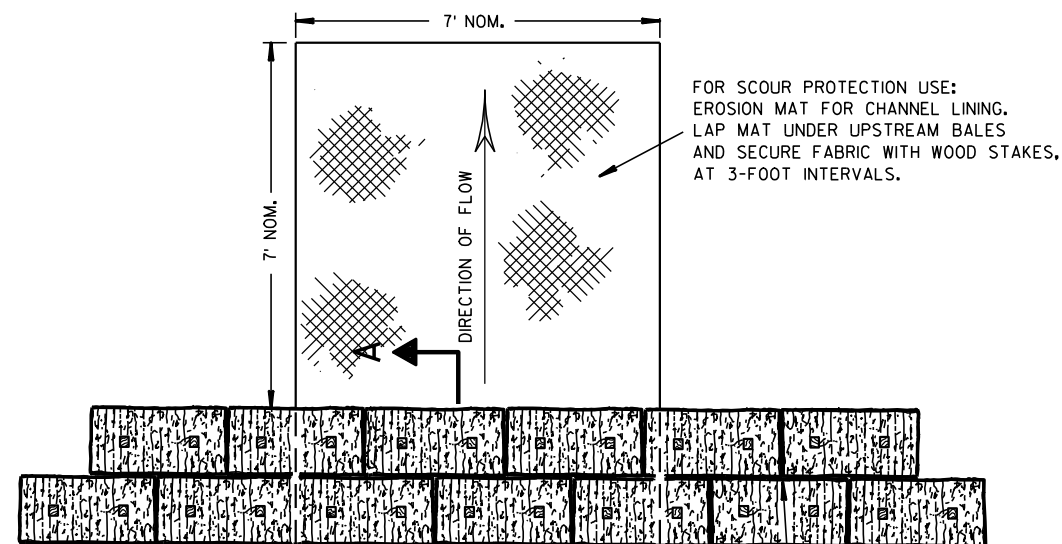
WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT



NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

EMBED BALES

SECTION A-A

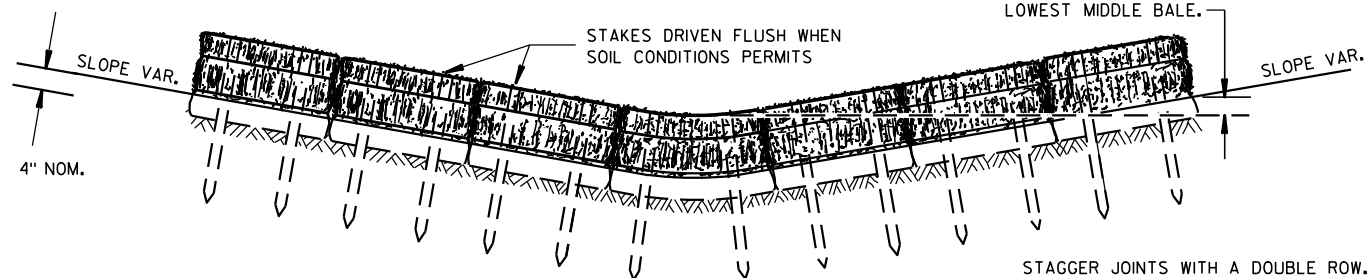


FOR SCOUR PROTECTION USE:  
EROSION MAT FOR CHANNEL LINING.  
LAP MAT UNDER UPSTREAM BALES  
AND SECURE FABRIC WITH WOOD STAKES,  
AT 3-FOOT INTERVALS.

PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT  
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL  
BE EQUAL TO OR GREATER THAN TOP OF  
LOWEST MIDDLE BALE.



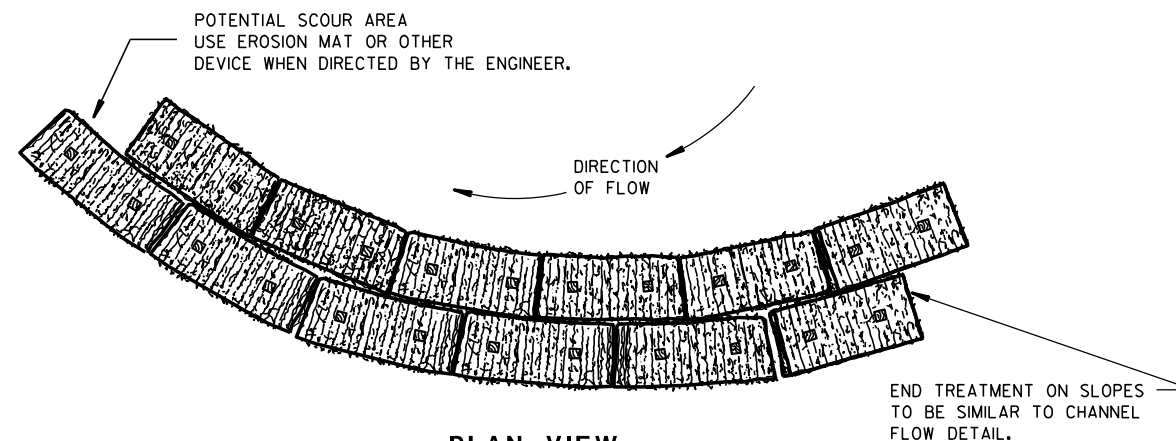
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

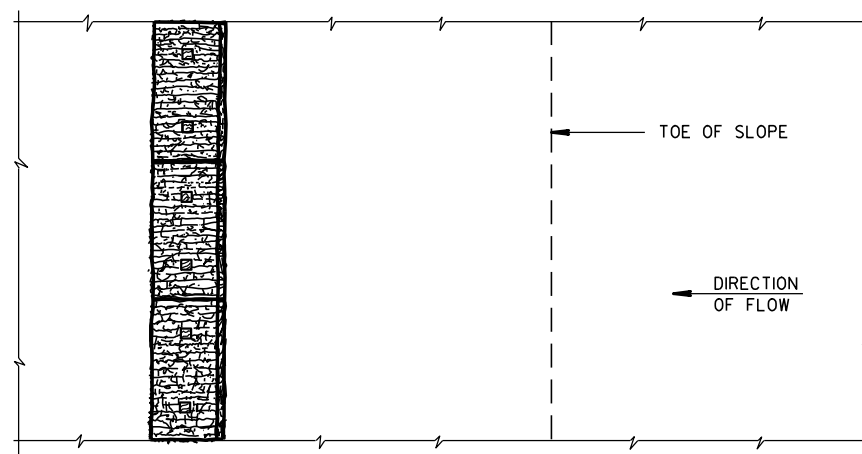
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

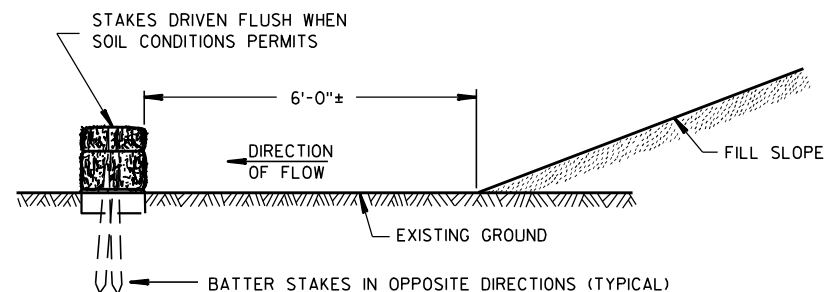


PLAN VIEW

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

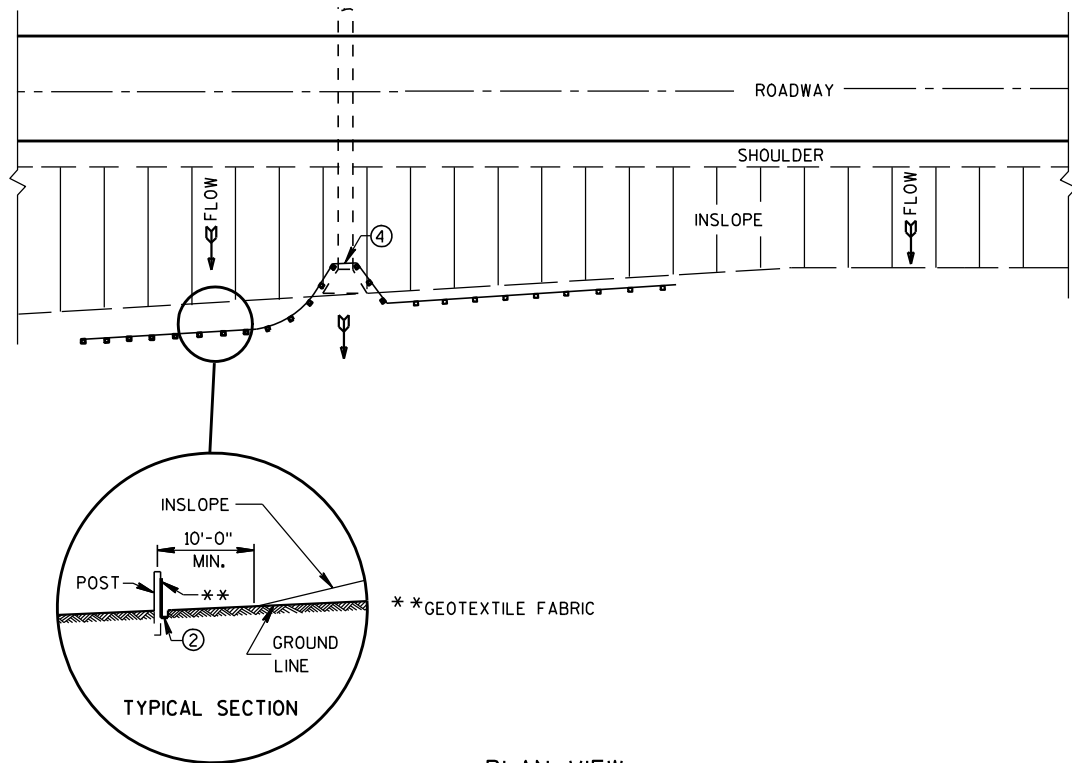
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

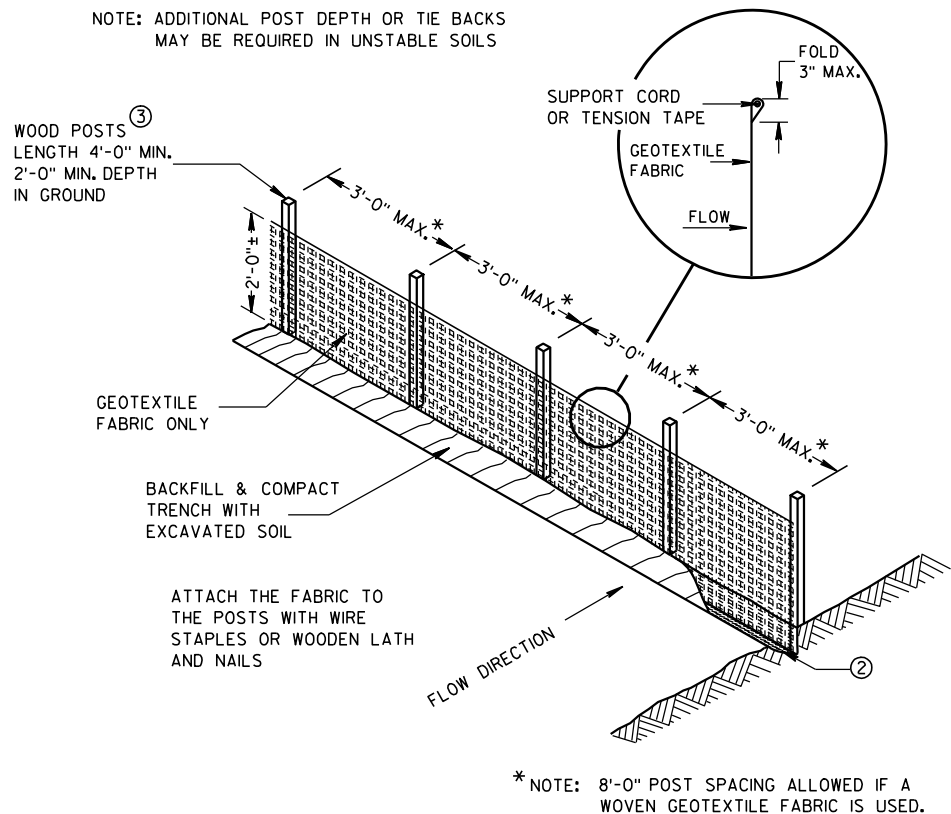
6/04/02  
DATE

/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER

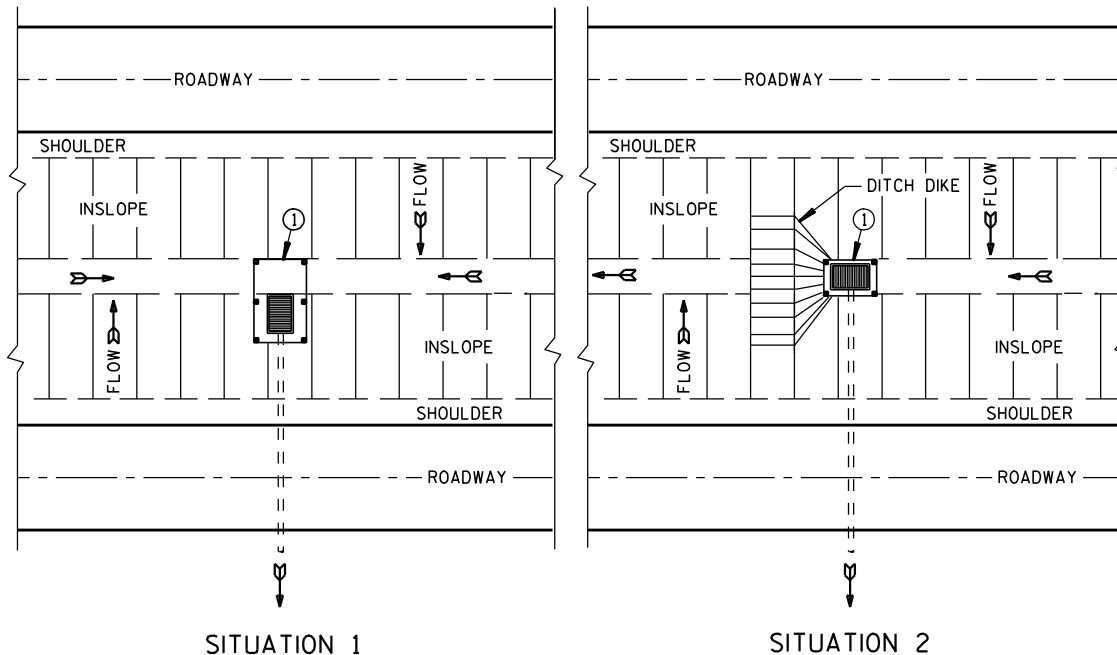
FHWA



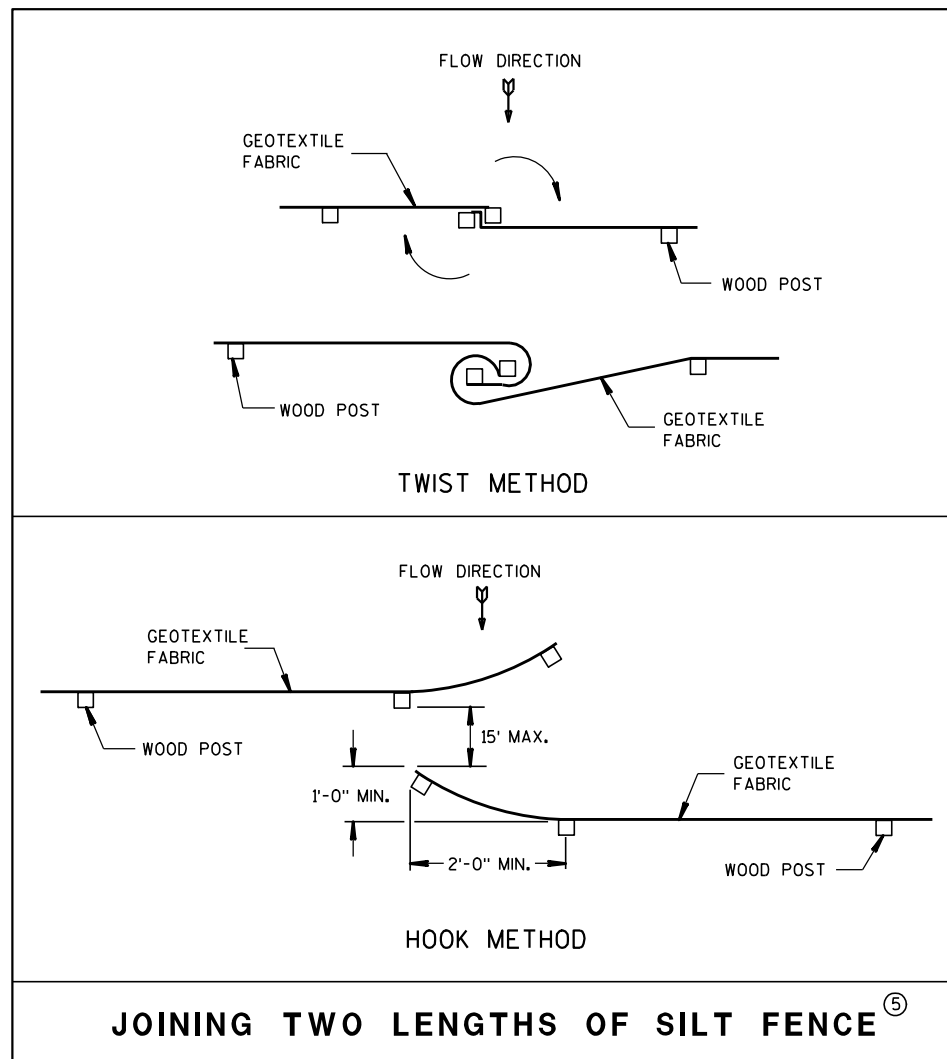
PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

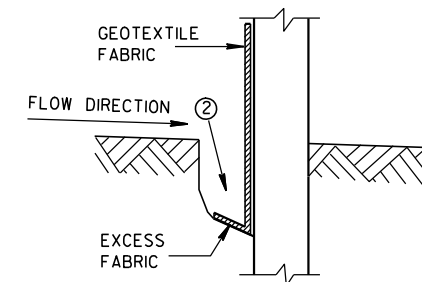


JOINING TWO LENGTHS OF SILT FENCE<sup>⑤</sup>

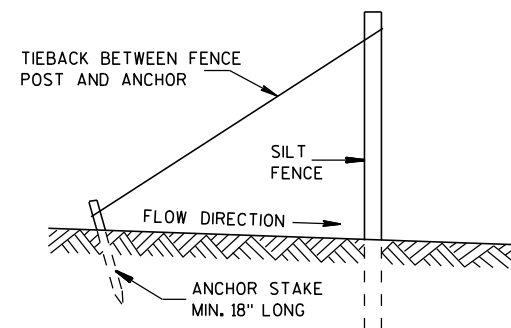
GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL

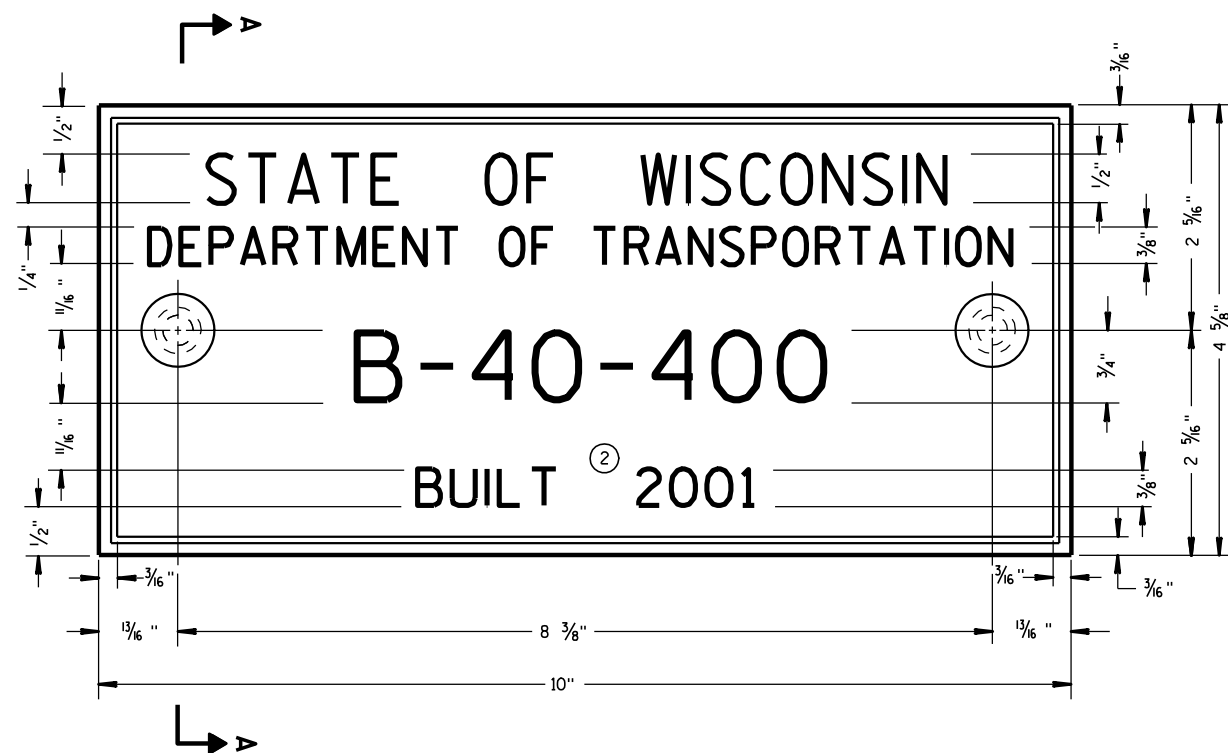


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

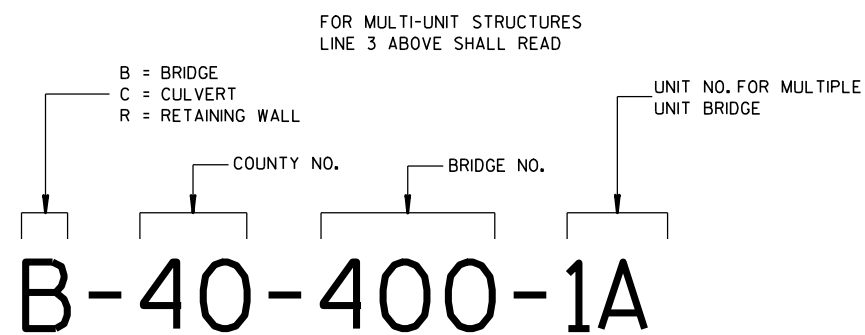
SILT FENCE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



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



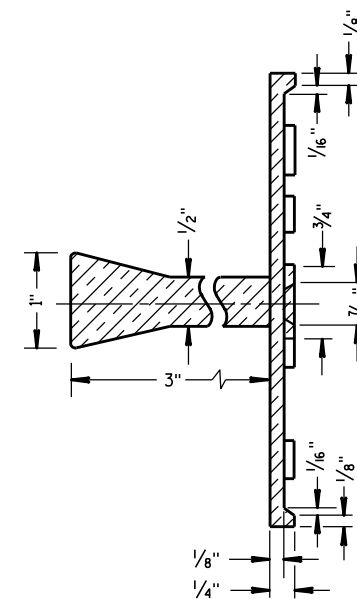
**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

## GENERAL NOTES

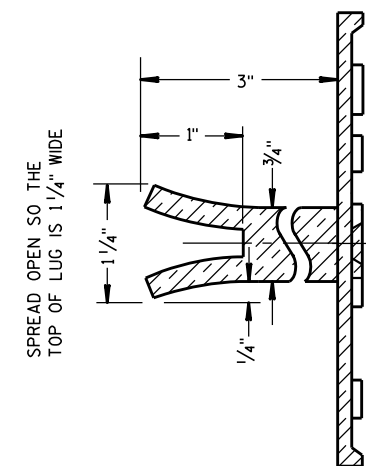
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

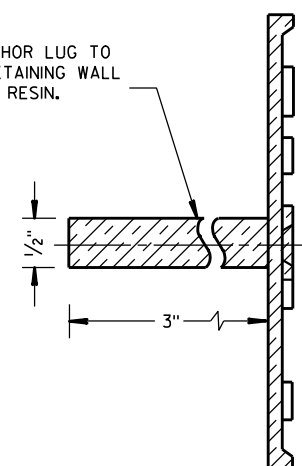


**SECTION A-A**



**ALTERNATE LUG**

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



**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE  
(STRUCTURES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

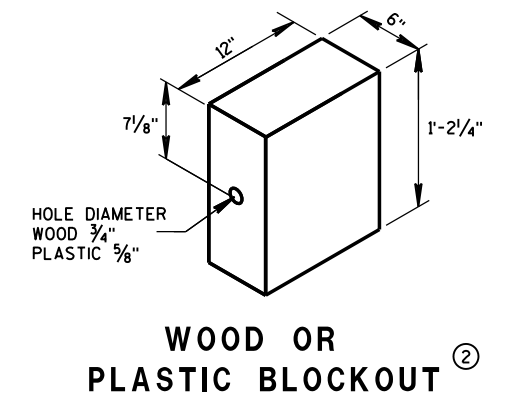
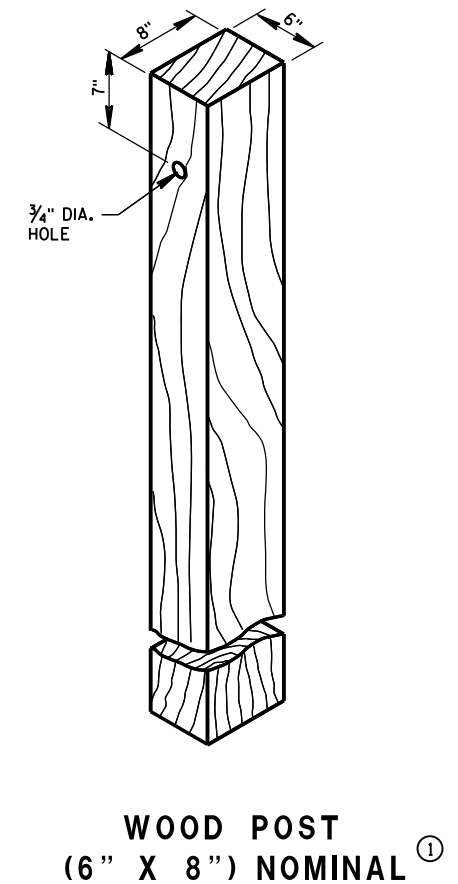
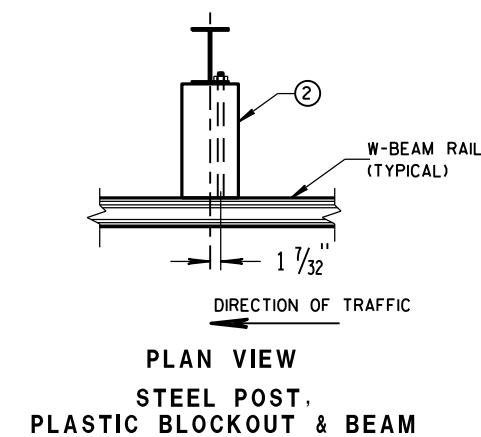
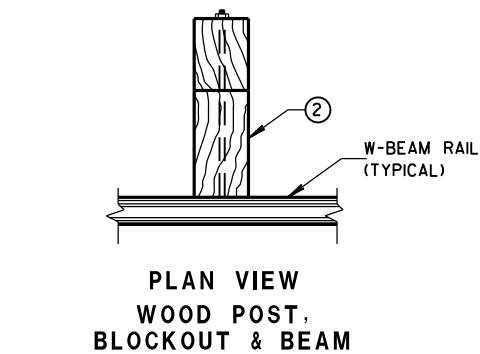
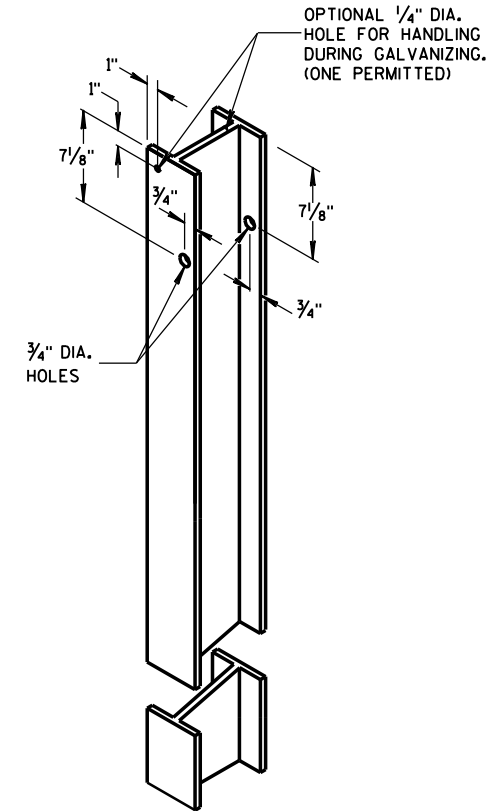
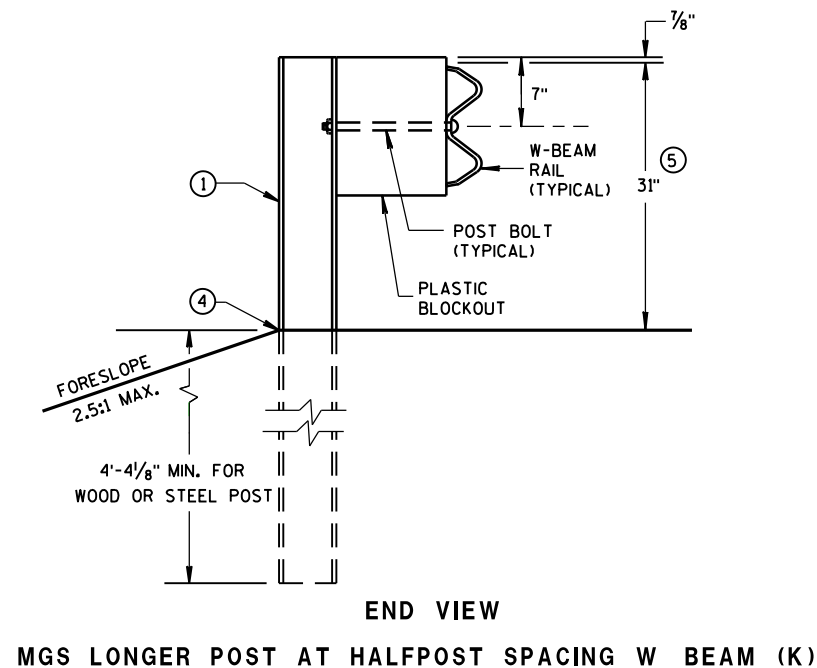
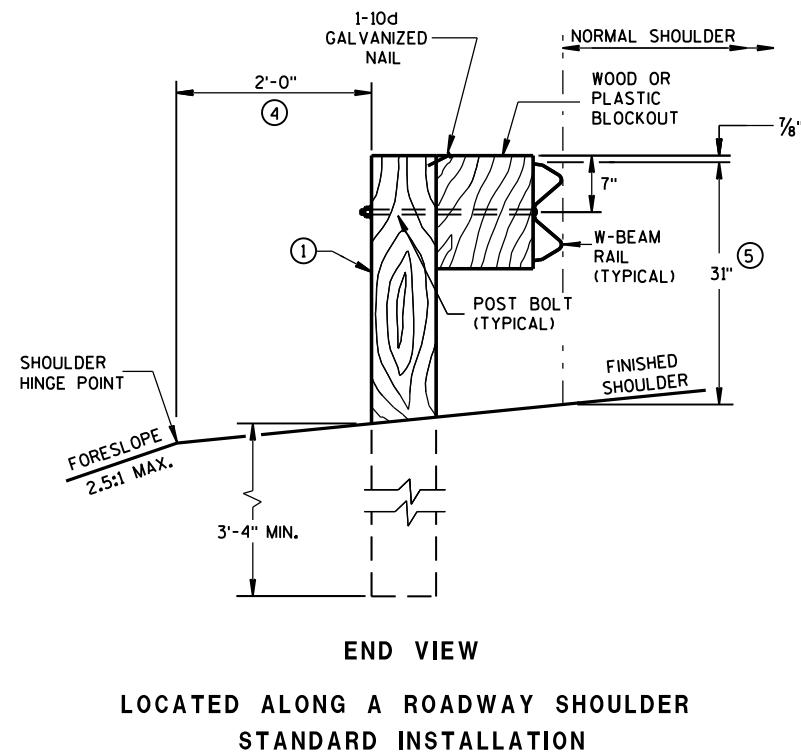
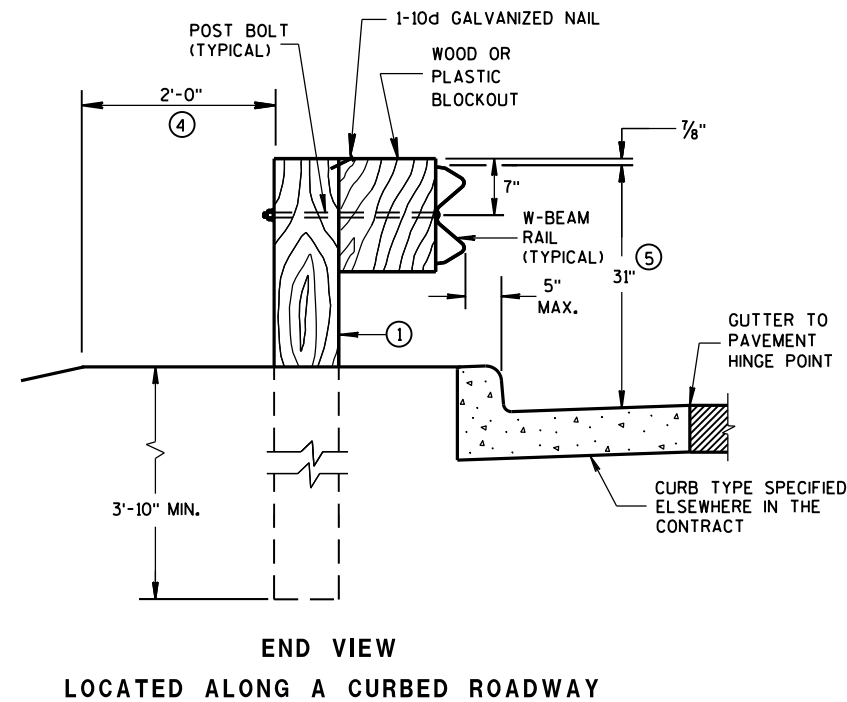
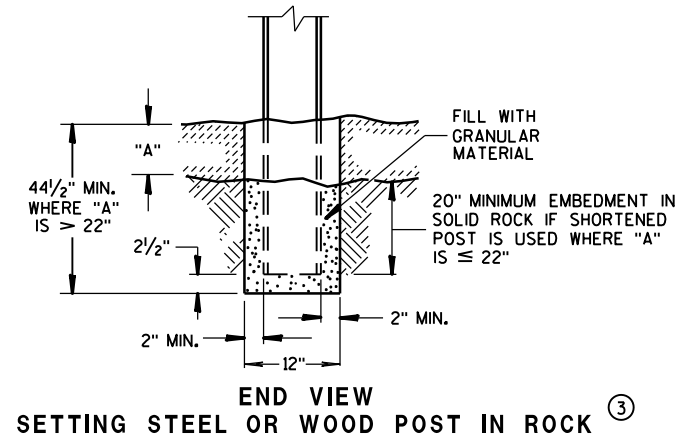
3/26/10  
DATE

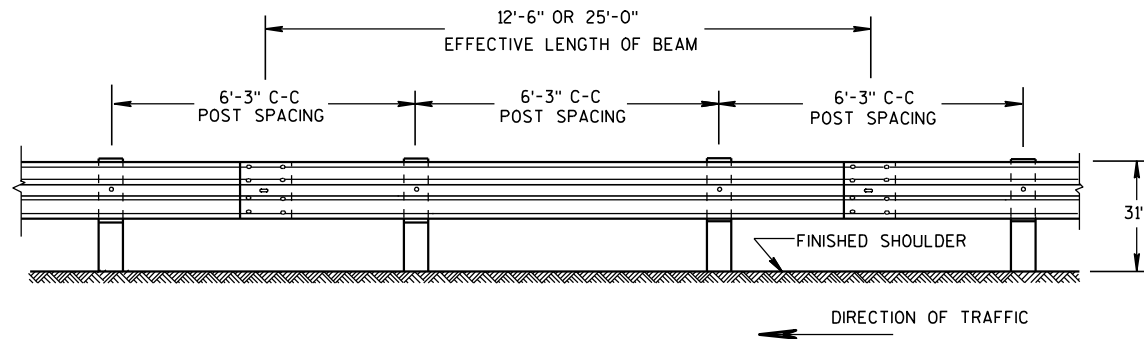
FHWA

/S/ Scot Becker  
CHIEF STRUCTURAL DEVELOPMENT ENGINEER

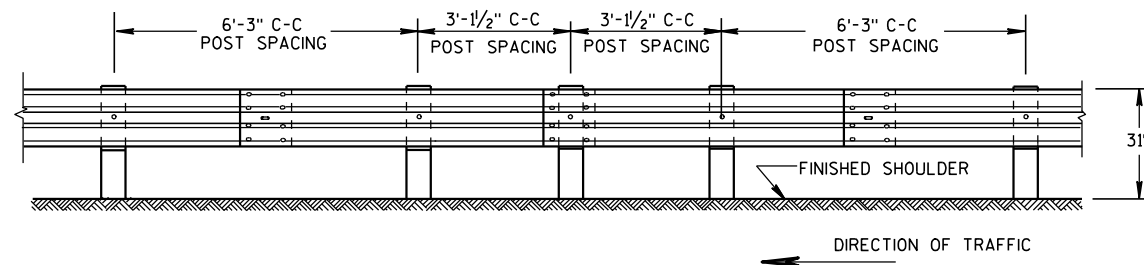
6

- S.D.D. 14 B 42-2a**

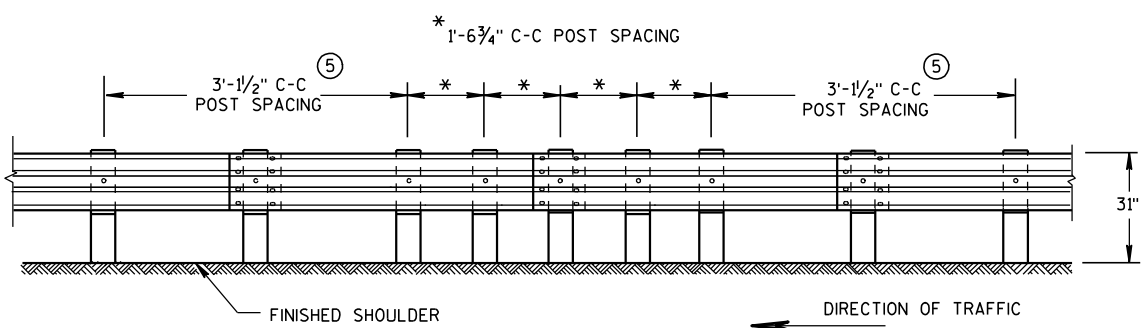




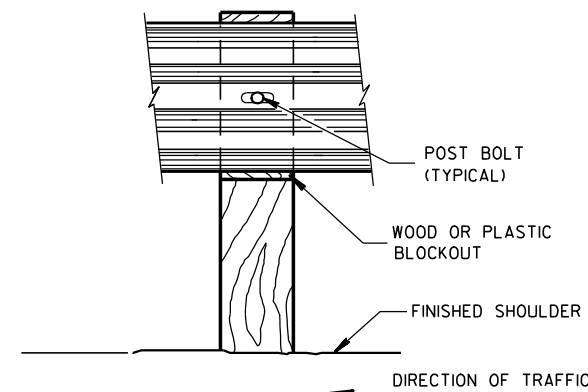
**FRONT VIEW**  
**POST SPACING STANDARD INSTALLATION**



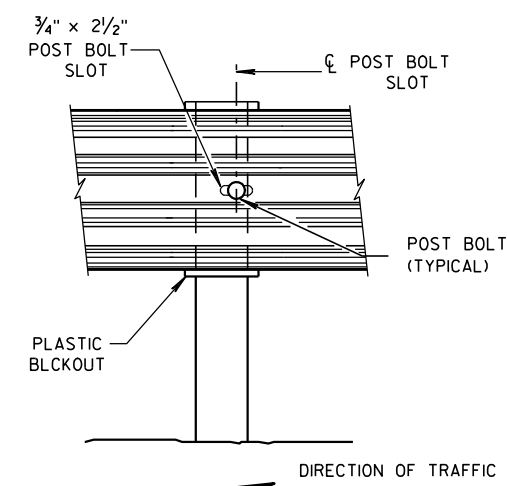
**FRONT VIEW**  
**HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



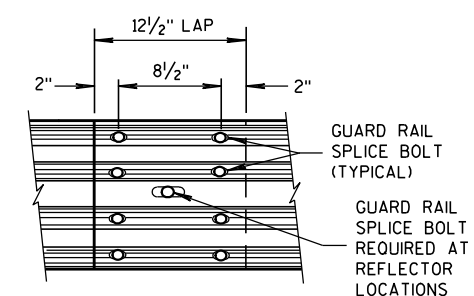
**FRONT VIEW**  
**QUARTER POST SPACING (QS)**



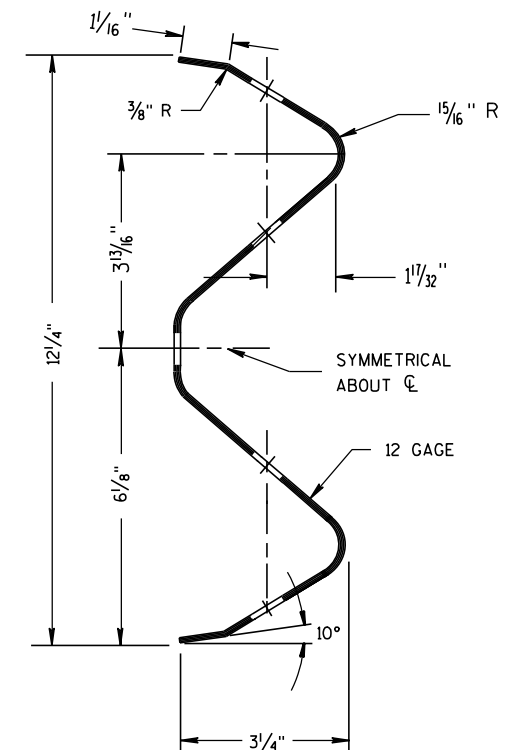
**FRONT VIEW AT WOOD POST**



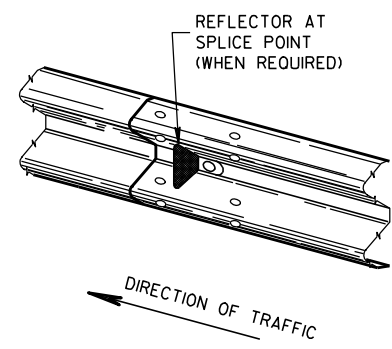
**FRONT VIEW AT STEEL POST**



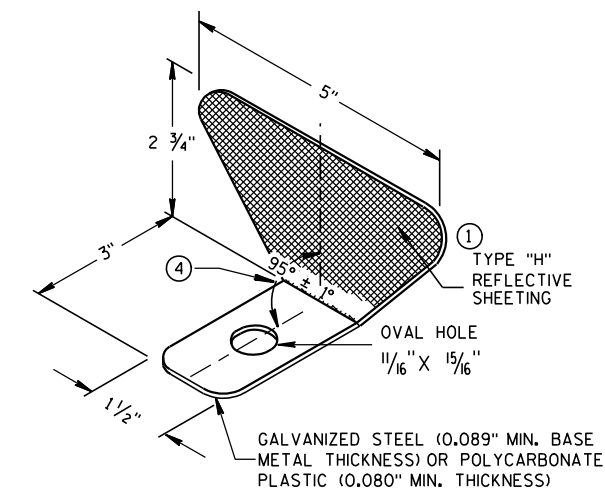
**FRONT VIEW  
MID-SPAN BEAM SPLICE**



**SECTION THRU W-BEAM RAIL**



**ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION**



**GENERAL NOTES**

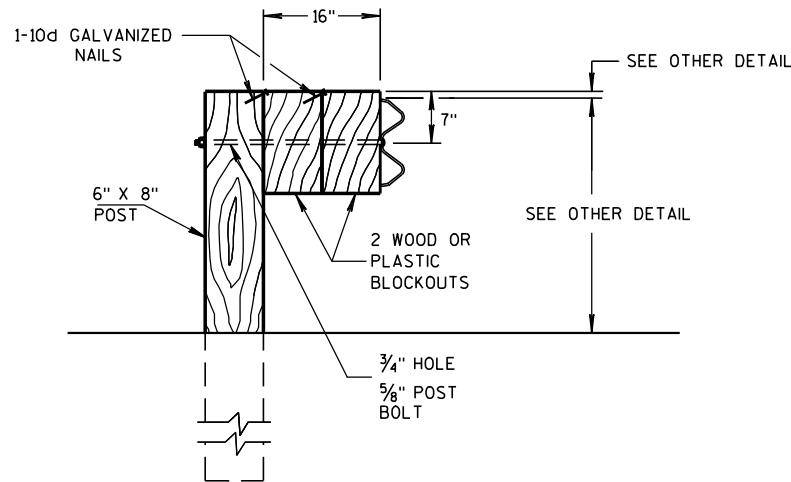
- ① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
  - ② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
  - ③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
  - ④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
  - ⑤ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

**REFLECTOR SPACING**

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ③	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ④	3
	> 200'	100' C-C	2	

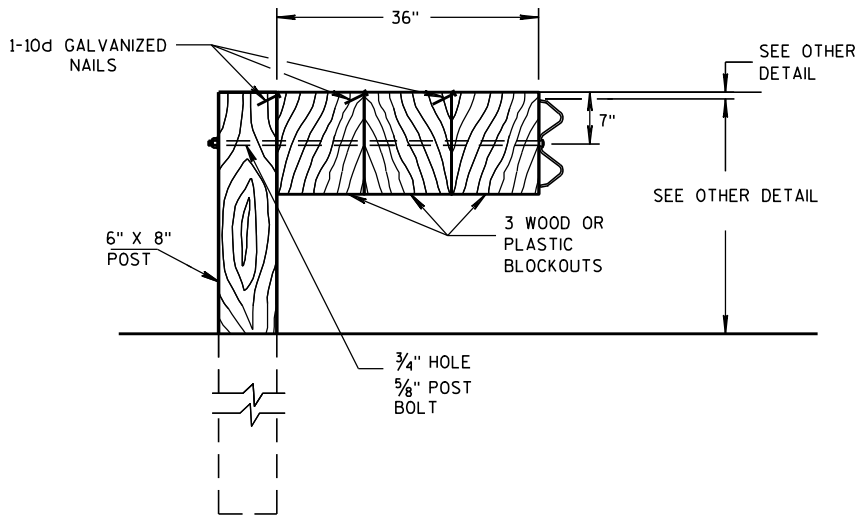
**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



### DETAIL FOR 16" BLOCKOUT DEPTH

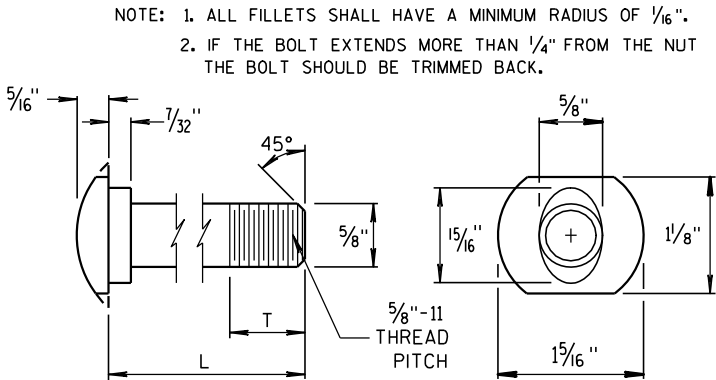
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



### DETAIL FOR 36" BLOCKOUT DEPTH

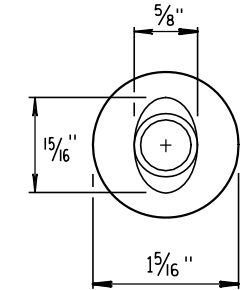
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

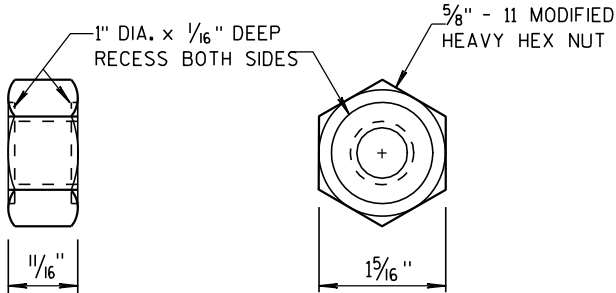


POST BOLT TABLE

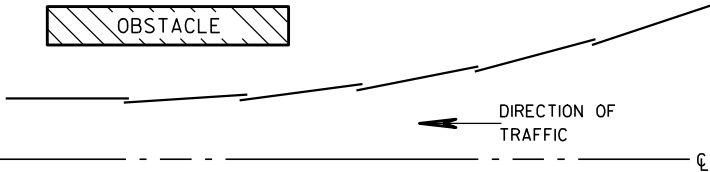
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



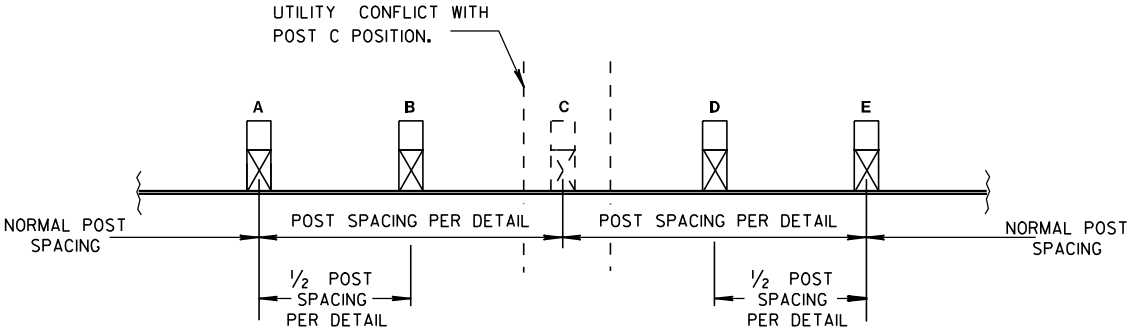
ALTERNATE BOLT HEAD



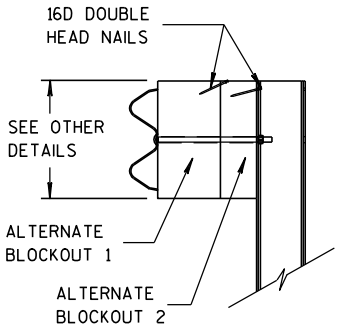
### POST BOLT AND RECESS NUT



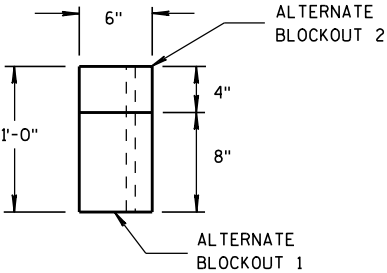
### PLAN VIEW BEAM LAPPING DETAIL



### 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  
11/15/2011  
DATE  
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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.
- (E) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.
- (F) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (G) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (H) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

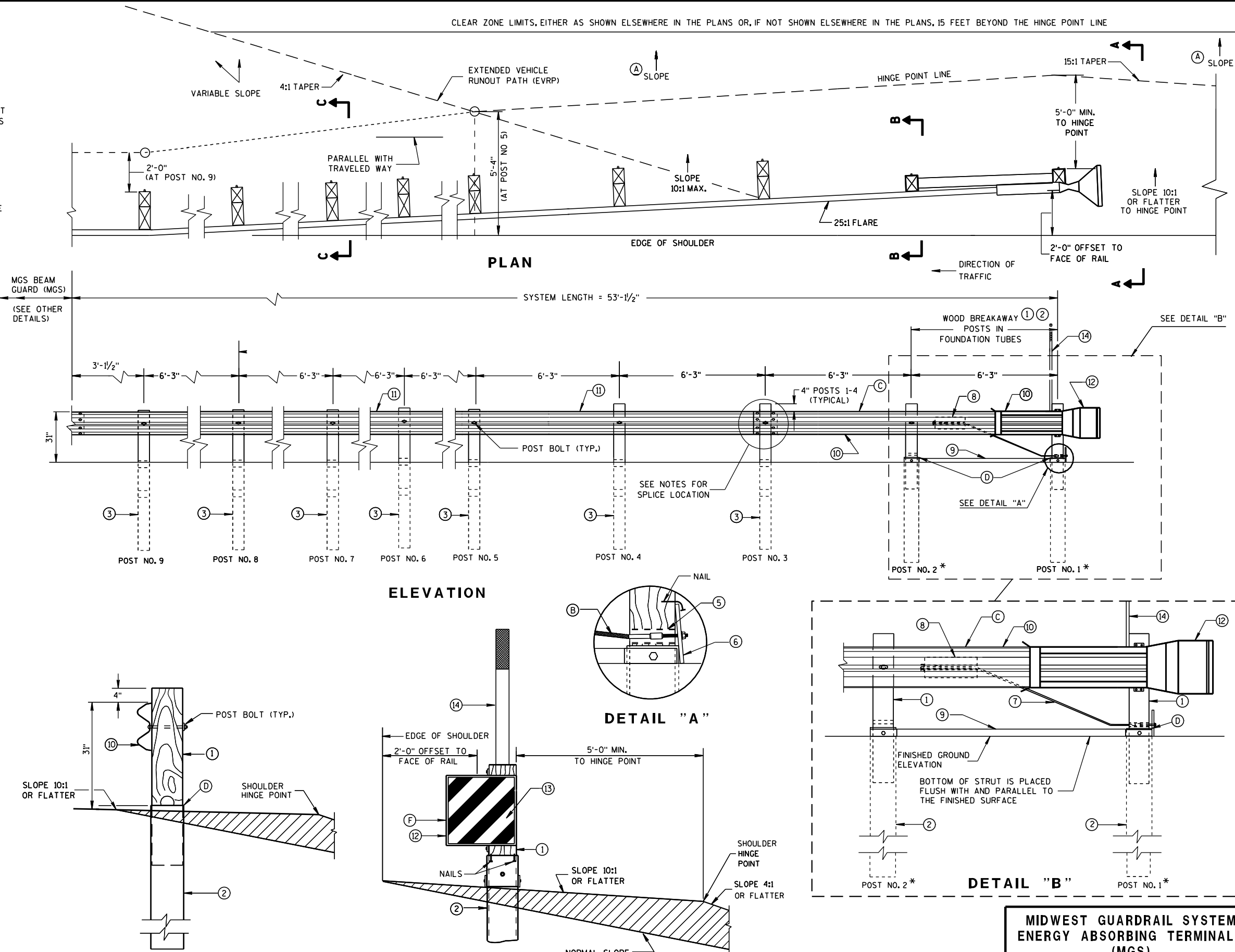
\* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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.

PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE ( $\pm \frac{3}{4}$ ")



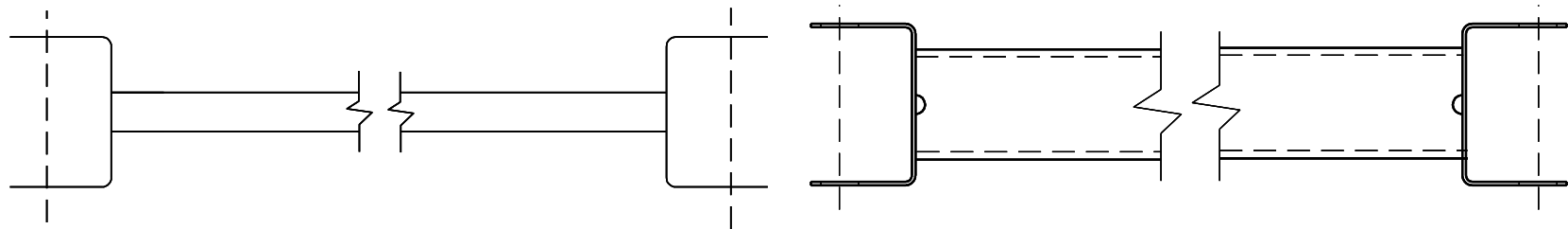
SECTION C-C  
TYPICAL AT POST NOS. 3-9

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

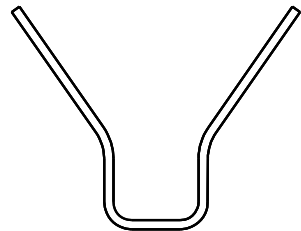
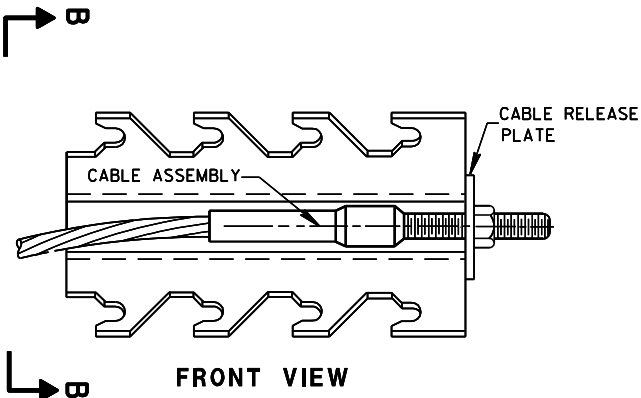
SECTION A-A  
TYPICAL AT POST NO. 1\*

MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

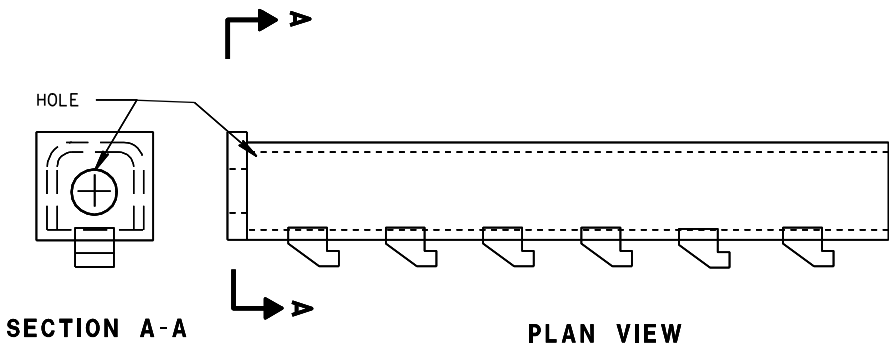
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



9 H  
GENERIC GROUND STRUT

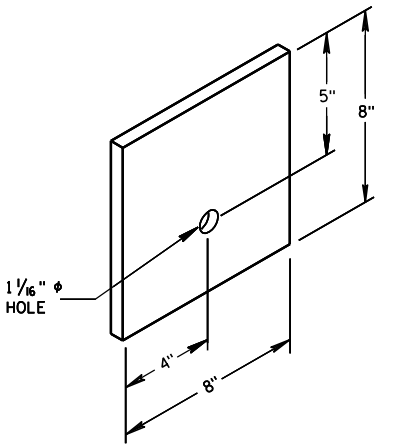


SECTION B-B  
8 H  
GENERIC ANCHOR CABLE BOX



BILL OF MATERIALS

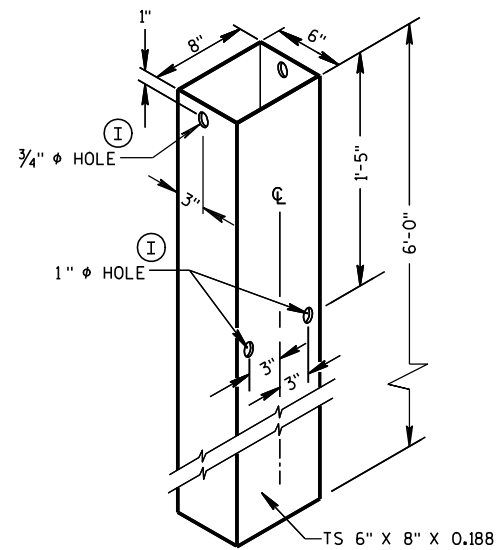
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND 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 H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



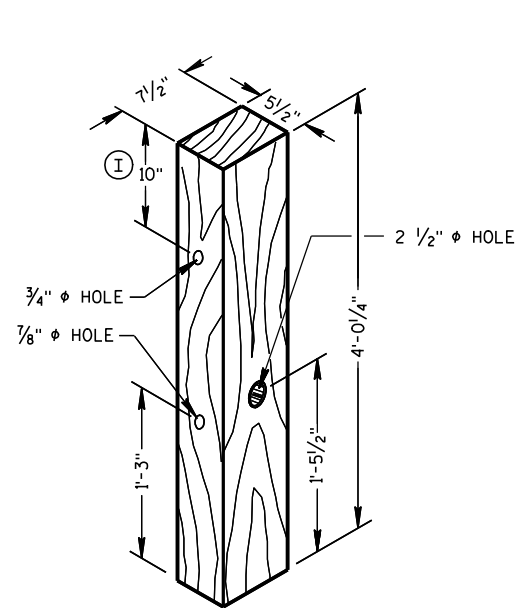
6  
BEARING PLATE

MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

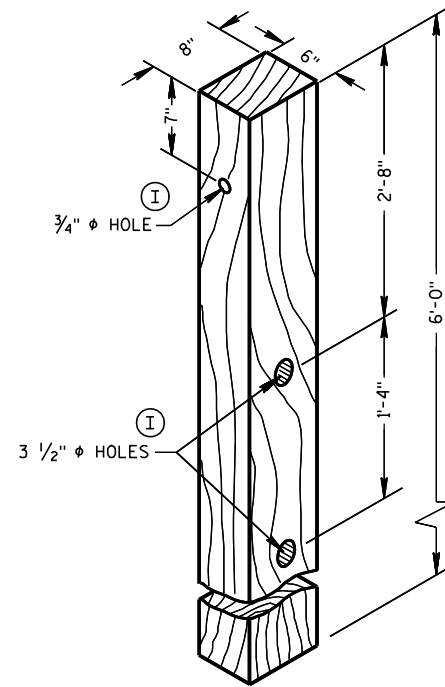
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



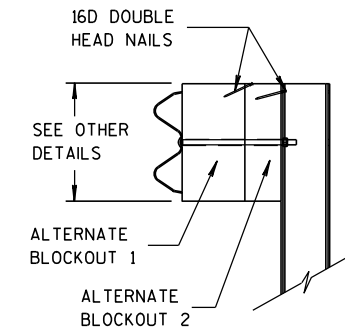
FOUNDATION TUBE ②



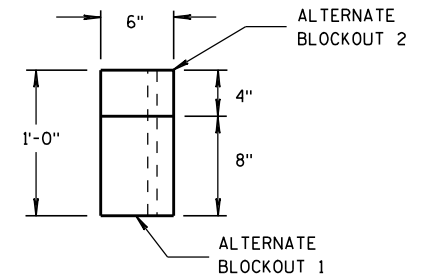
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

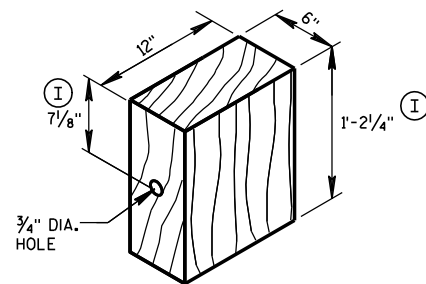


SIDE VIEW



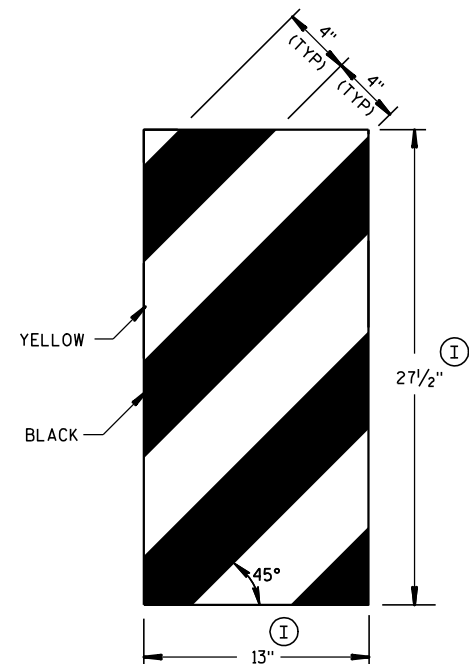
TOP VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

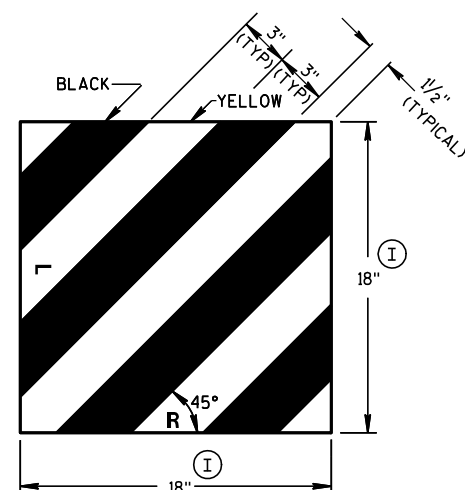


WOOD BLOCKOUT ④

YELLOW REFLECTIVE TAPE  
3" X 9" TYPE H  
REFLECTIVE SHEETING



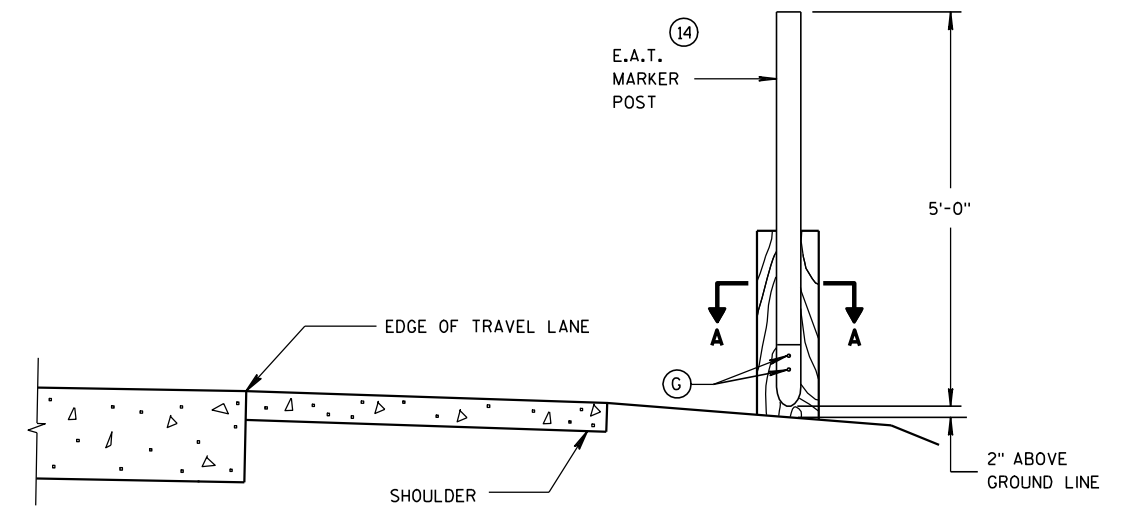
GENERIC REFLECTIVE SHEETING ⑬ ④



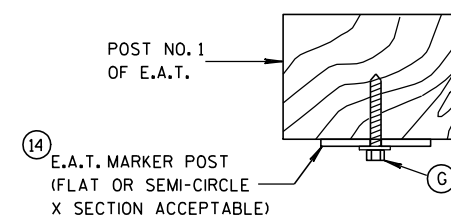
FRONT VIEW

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

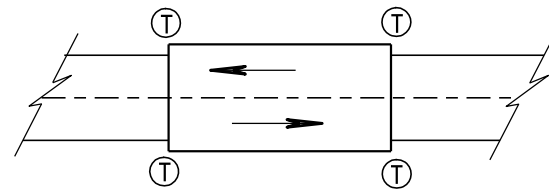
APPROVED

5/23/2011

DATE

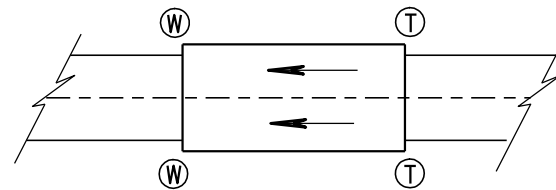
FHWA

/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

## 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".

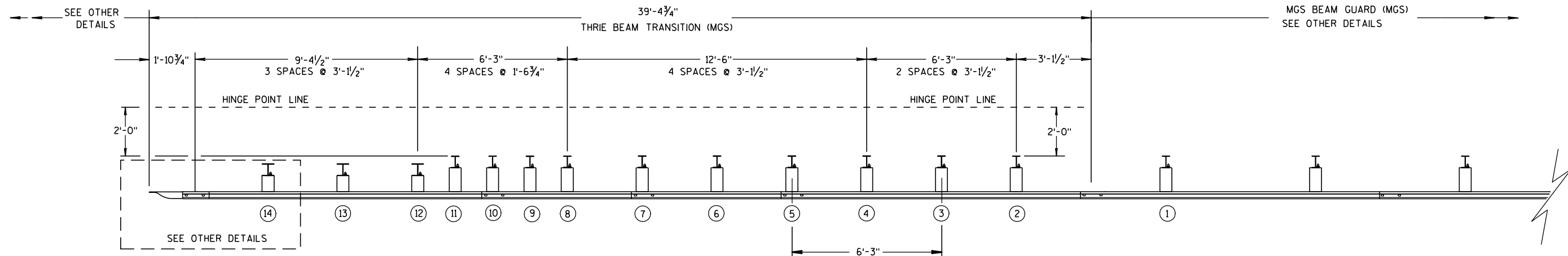
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

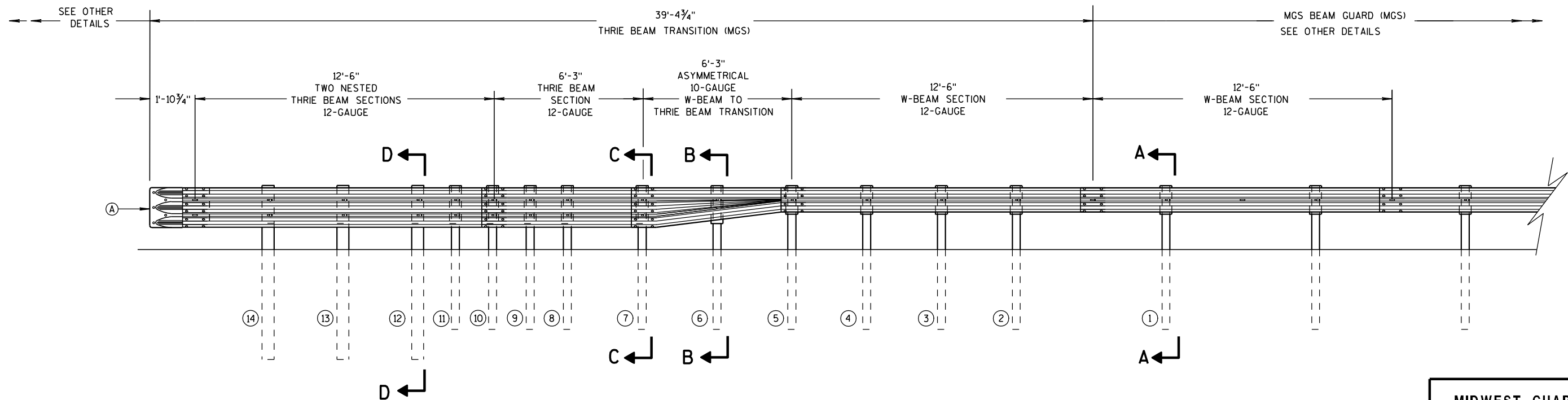
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

## MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

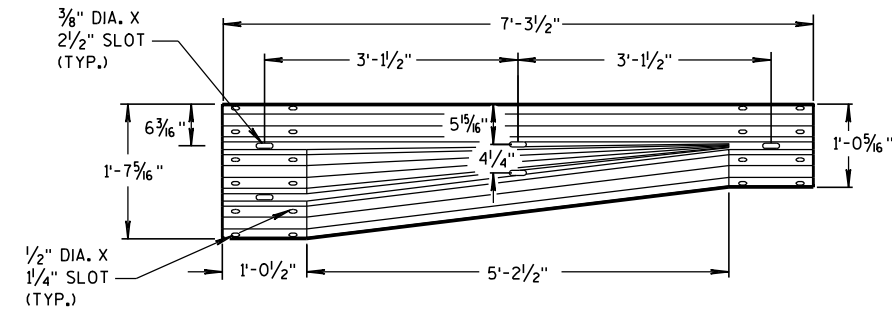
## 6

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

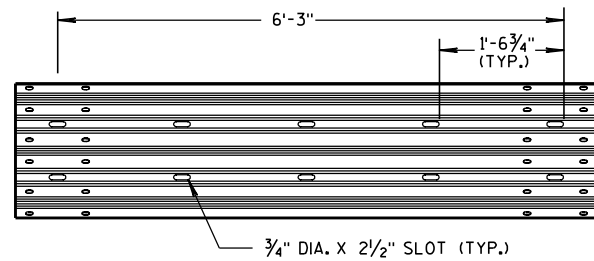


STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

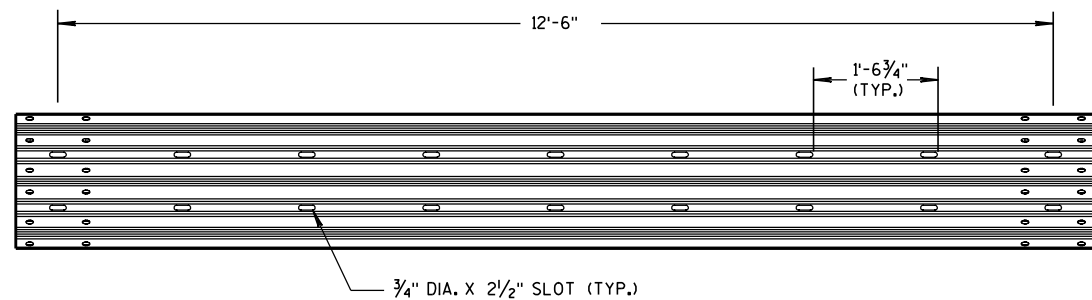
**S.D.D. 14 B 45-3b**



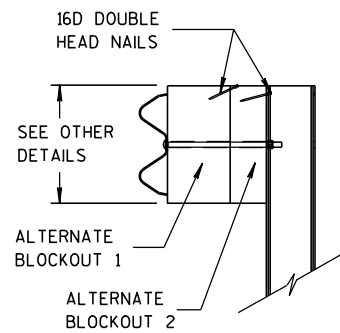
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

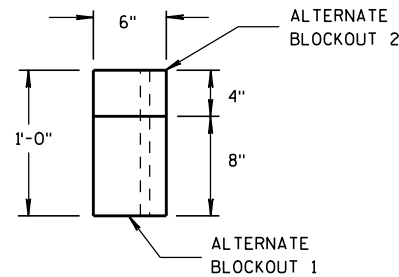


12'-6" THRIE BEAM SECTION

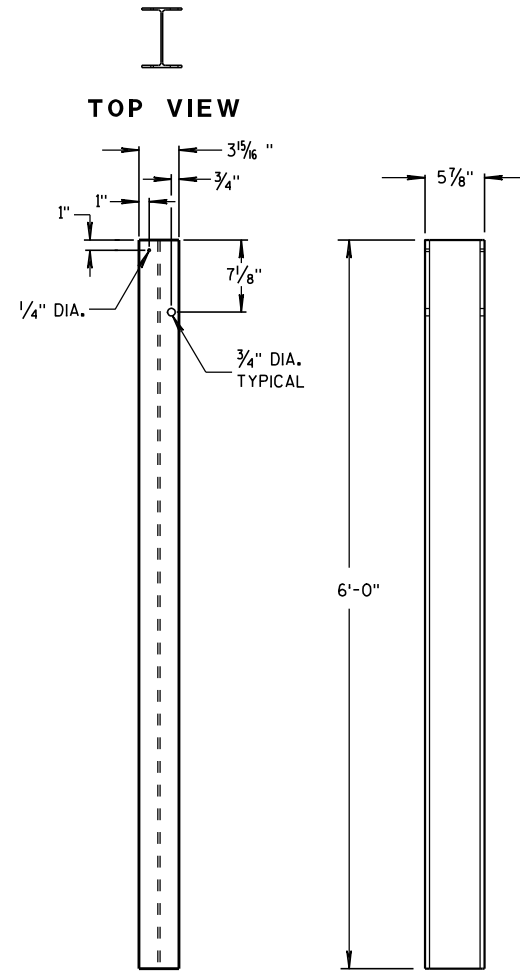


SIDE VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL



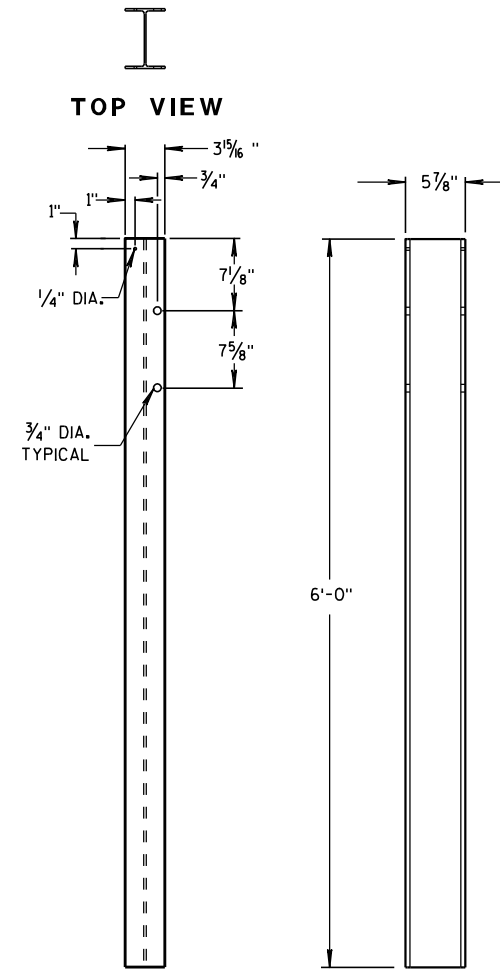
TOP VIEW



FRONT VIEW

SIDE VIEW

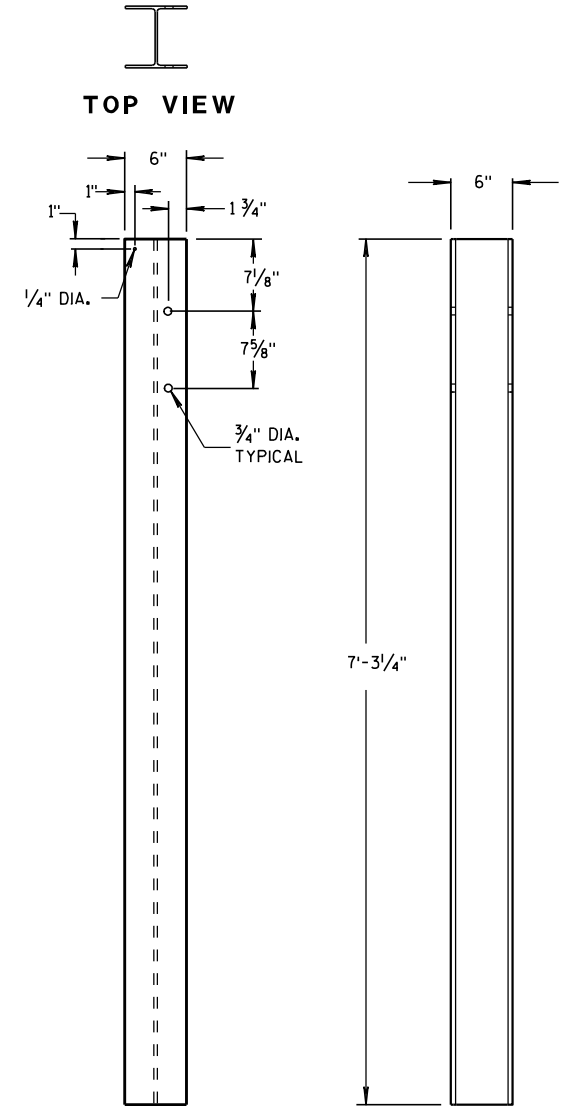
STEEL POSTS 1-5



FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11

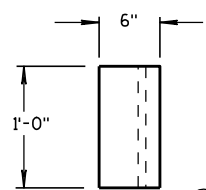


FRONT VIEW

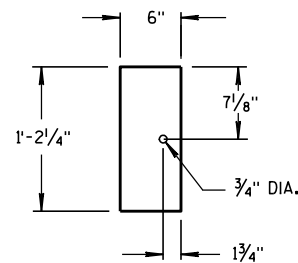
SIDE VIEW

STEEL POSTS 12-14

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

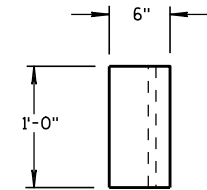


TOP VIEW

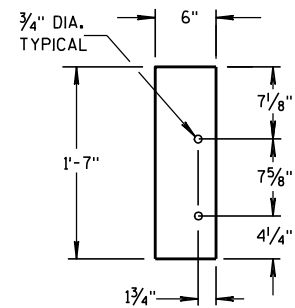


FRONT VIEW

BLOCKOUT  
POSTS 1-5

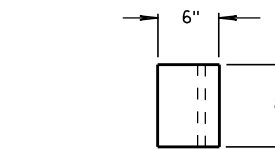


TOP VIEW

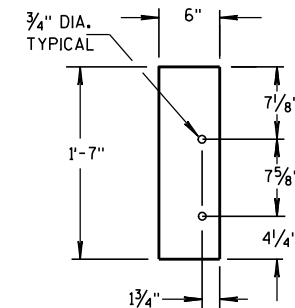


FRONT VIEW

BLOCKOUT  
POSTS 6-11



TOP VIEW



FRONT VIEW

BLOCKOUT  
POSTS 12-14

STEEL POST SIZES

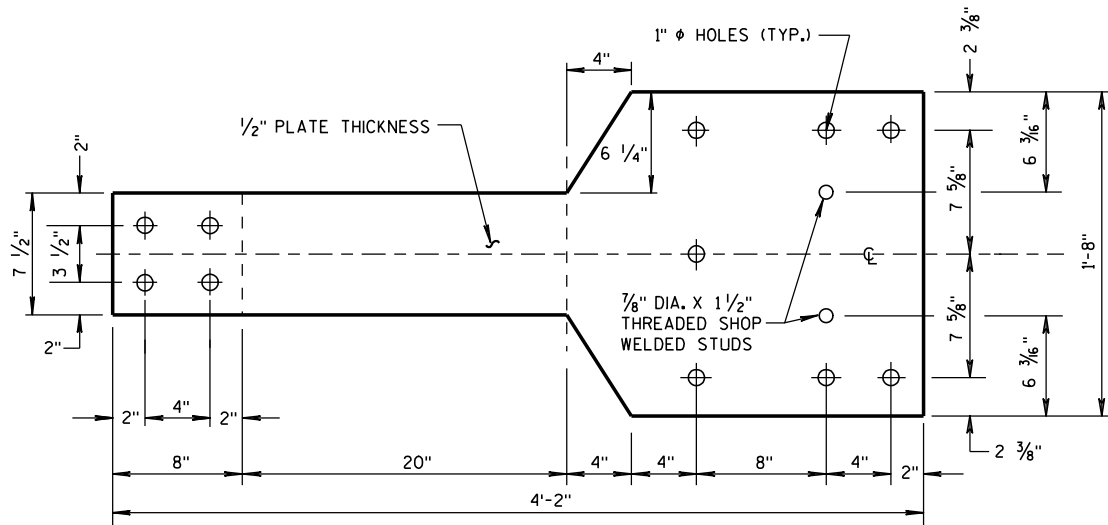
POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 7/8"
⑬	W6x15	87 7/8"
⑭	W6x15	87 7/8"

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

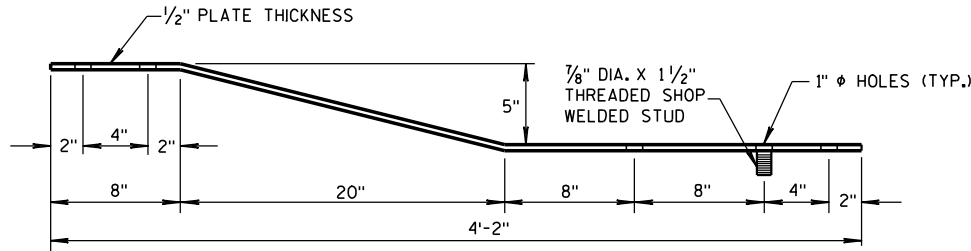
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

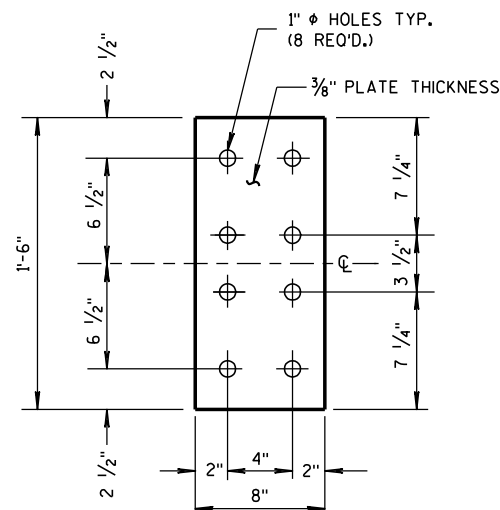
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS  $\pm 1"$ .



FRONT VIEW

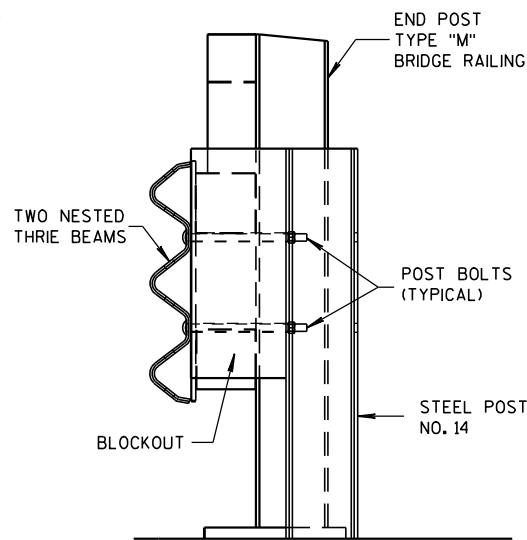


PLAN VIEW  
BACK-UP PLATE DETAIL, TYPE "M"

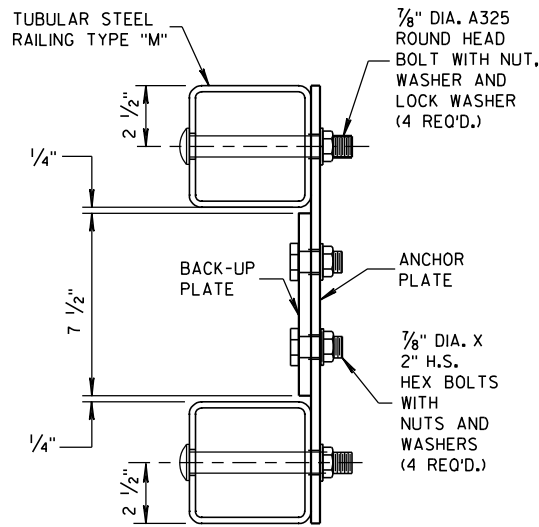


FRONT VIEW

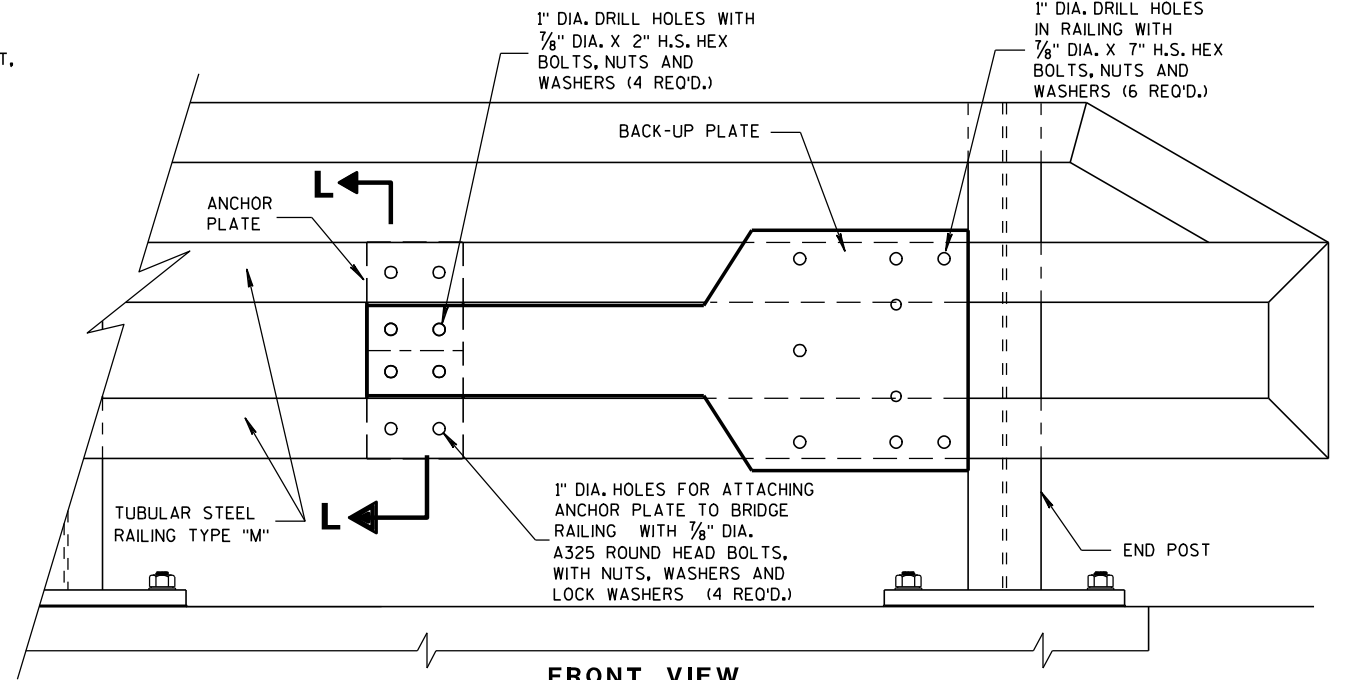
ANCHOR  
PLATE DETAIL,  
TYPE "M"



SECTION M-M

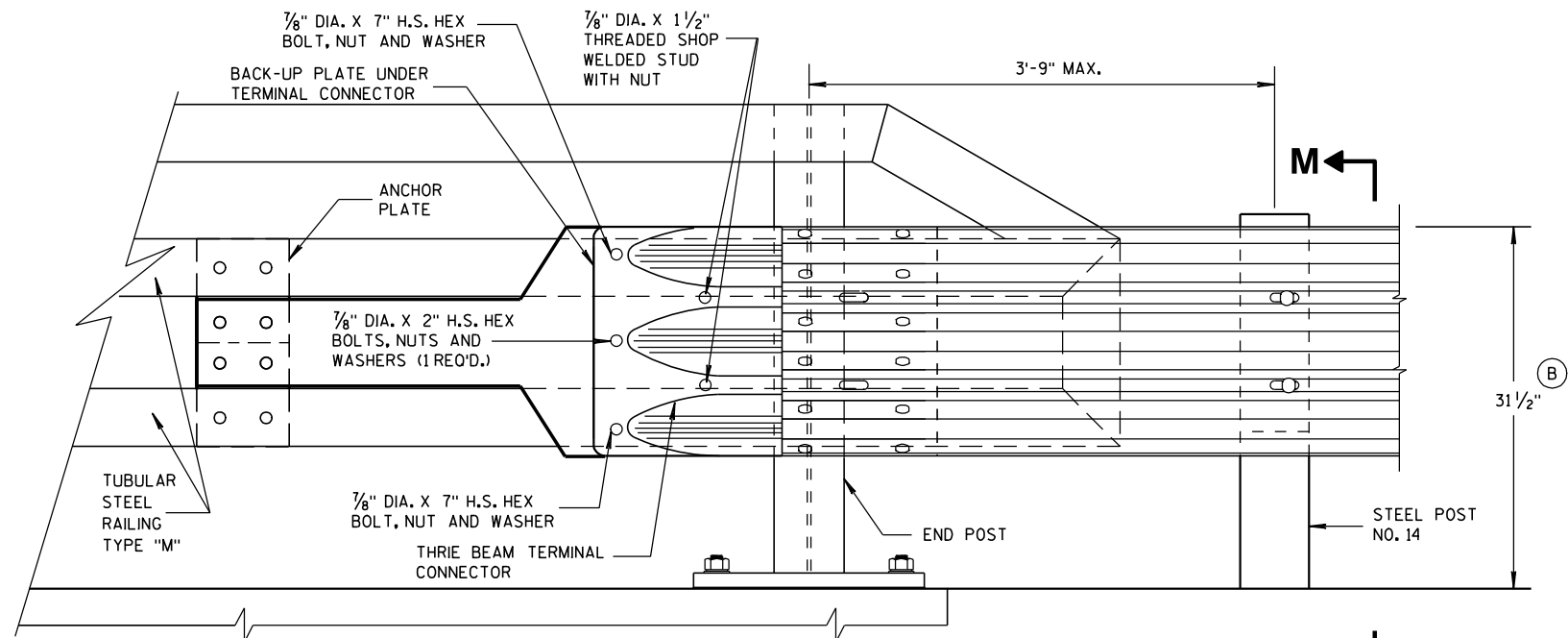


SECTION L-L

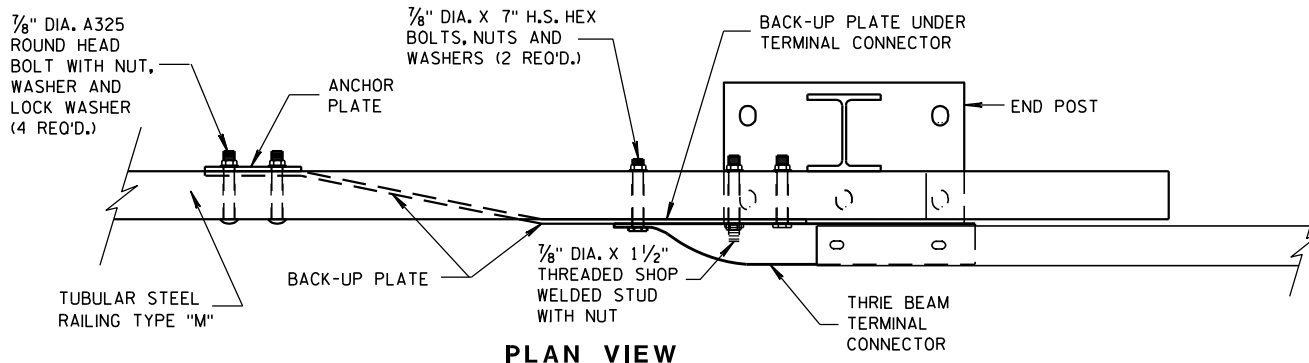


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

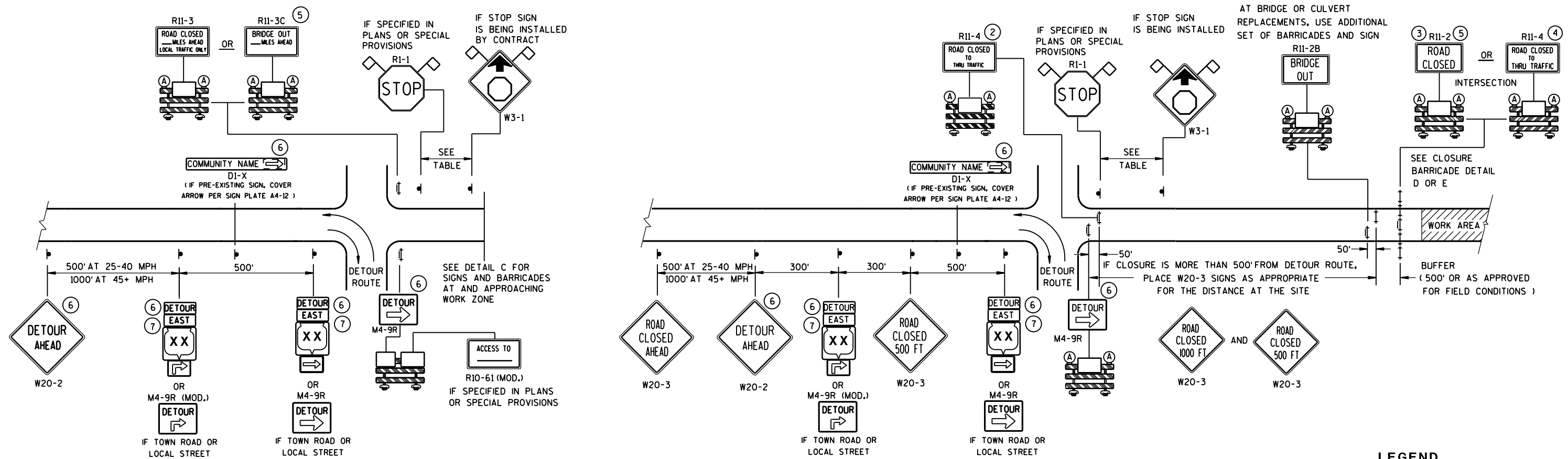
APPROVED

8-31-2012

DATE

FHWA

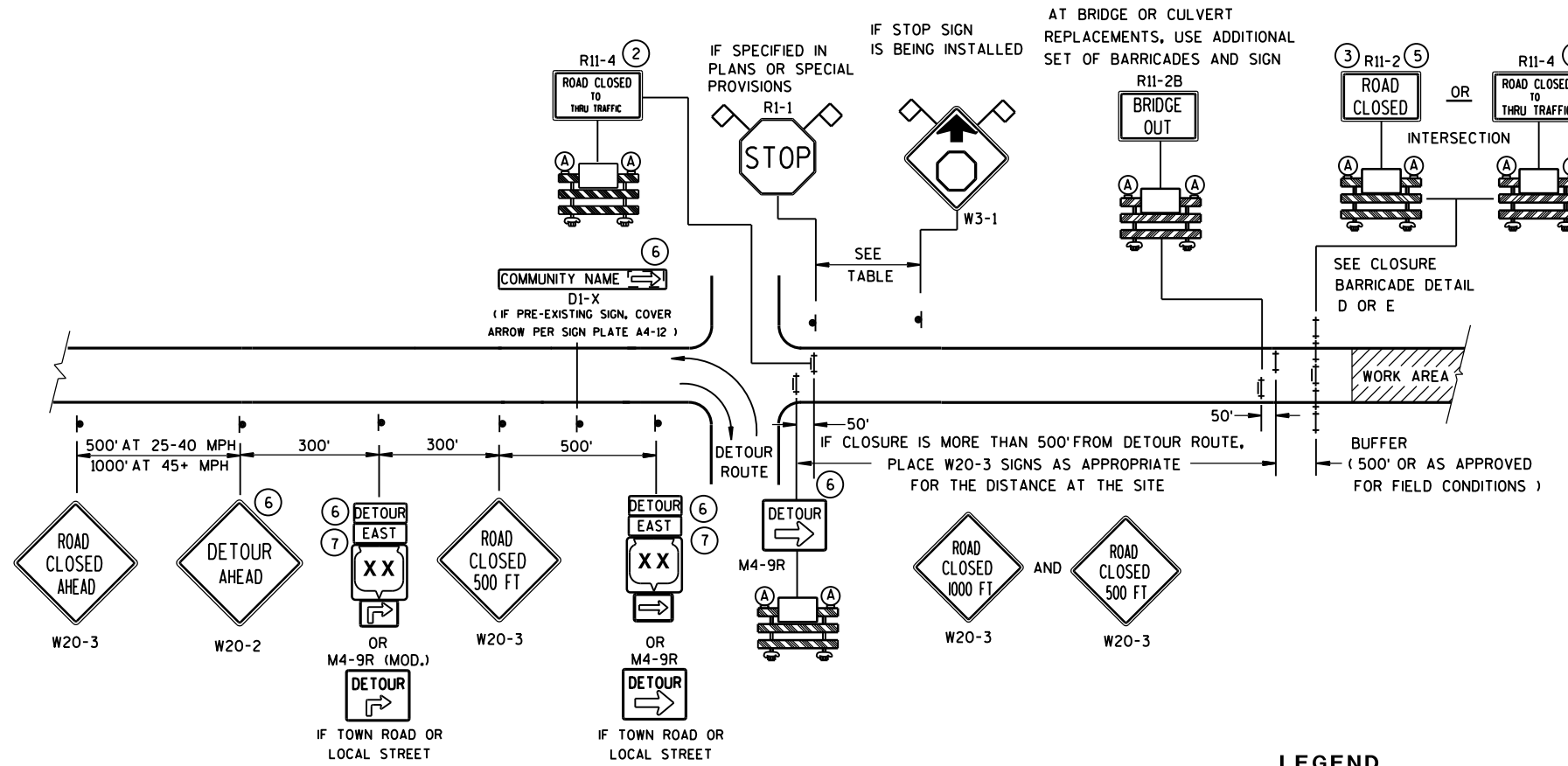
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



DETAIL A

**MAINLINE CLOSURE WITH POSTED DETOUR**

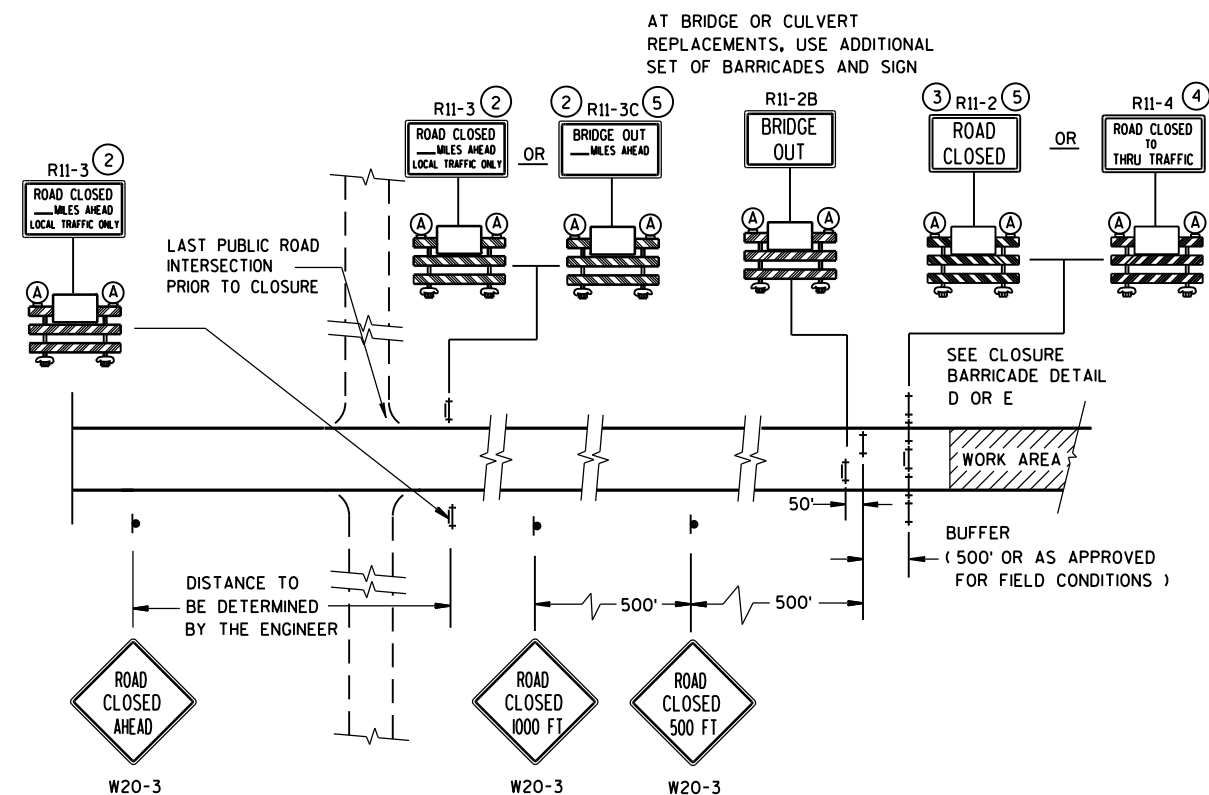
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )



DETAIL B

**MAINLINE CLOSURE WITH POSTED DETOUR**














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



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

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

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

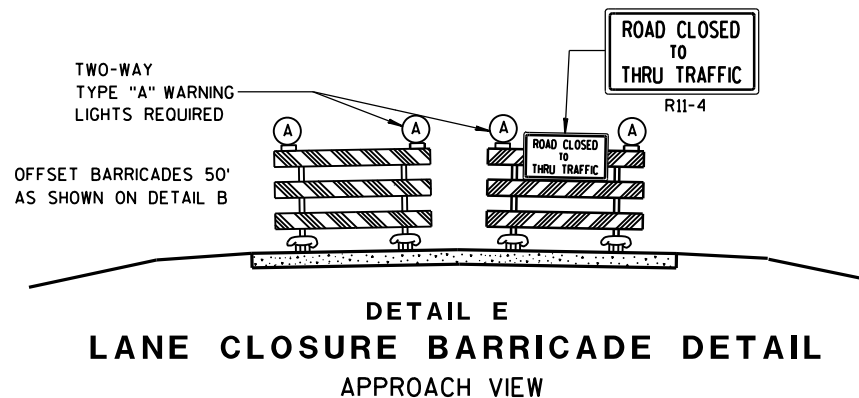
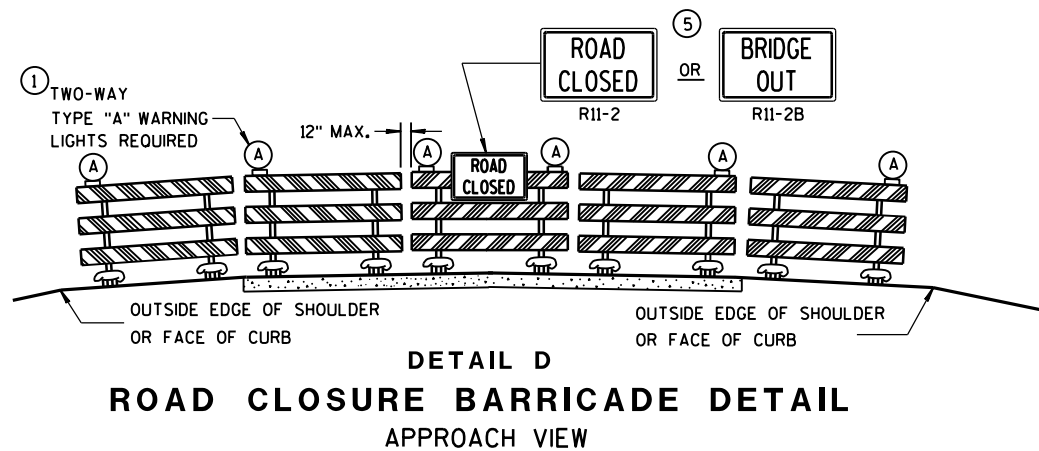
- # LEGEND
-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  WORK AREA
-  M4-8
-  M3-X
-  M1-4
- OR
-  M1-5A
- OR
-  M1-6
-  M05-1
- OR
-  M06-1
-  FLAGS, 16" X 16" MIN., (ORANGE)

## BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

8/2013	/S/ Travis Feltes
DATE	STATE TRAFFIC ENGINEER OF DESIGN
FHWA	





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.

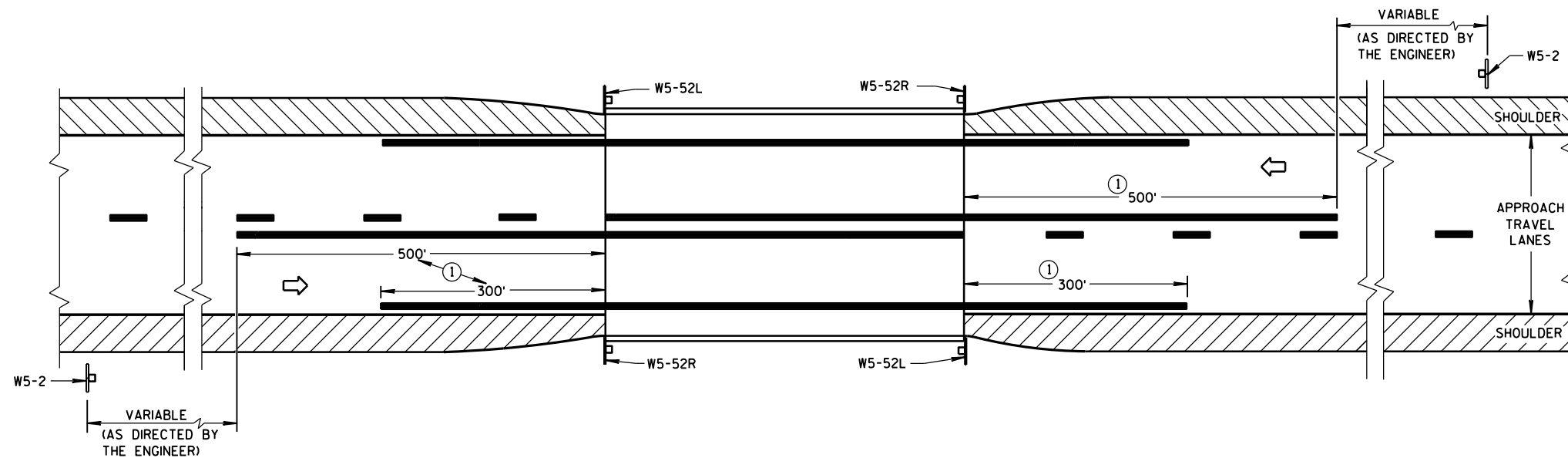
"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

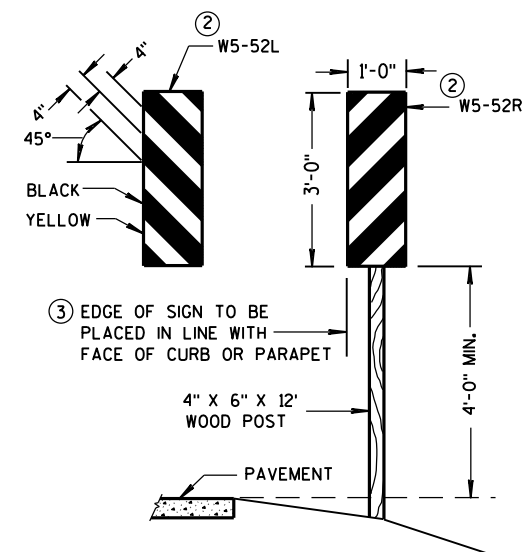
BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



### SITUATION 1

#### WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET



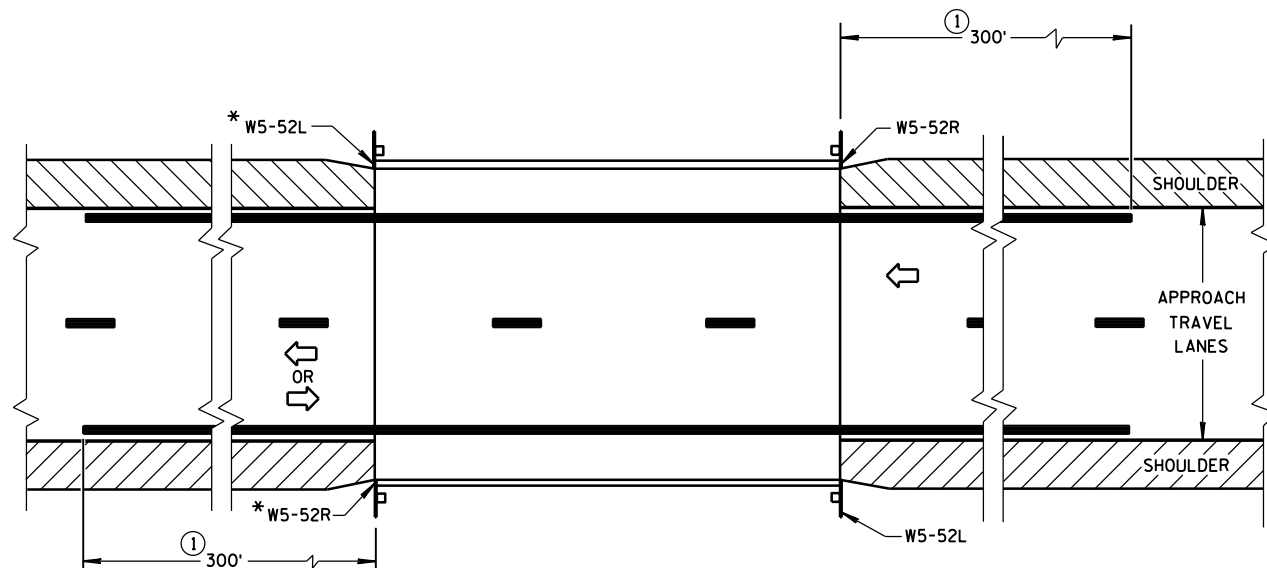
### OBJECT MARKER PLACEMENT

### 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.

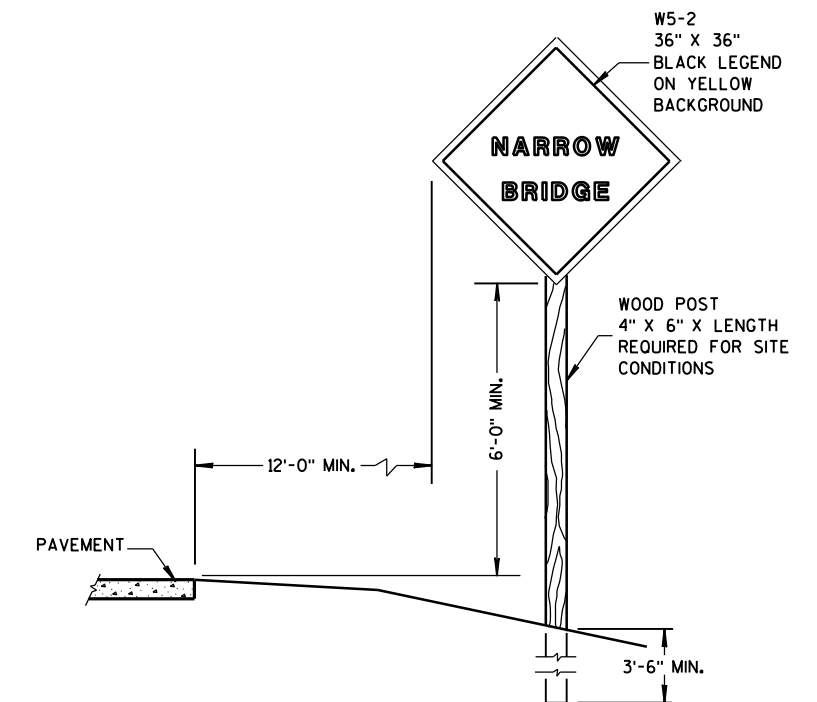


\*OMIT ON ONE-WAY TRAVELLED WAYS

### 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.



### SIGN PLACEMENT

#### SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

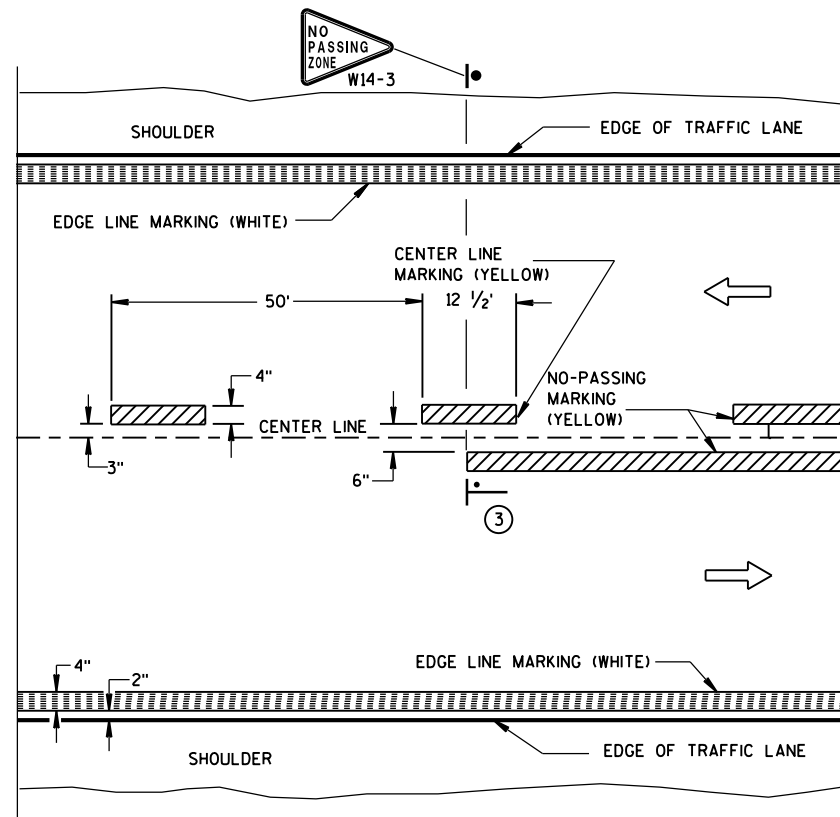
3/4/2013

DATE

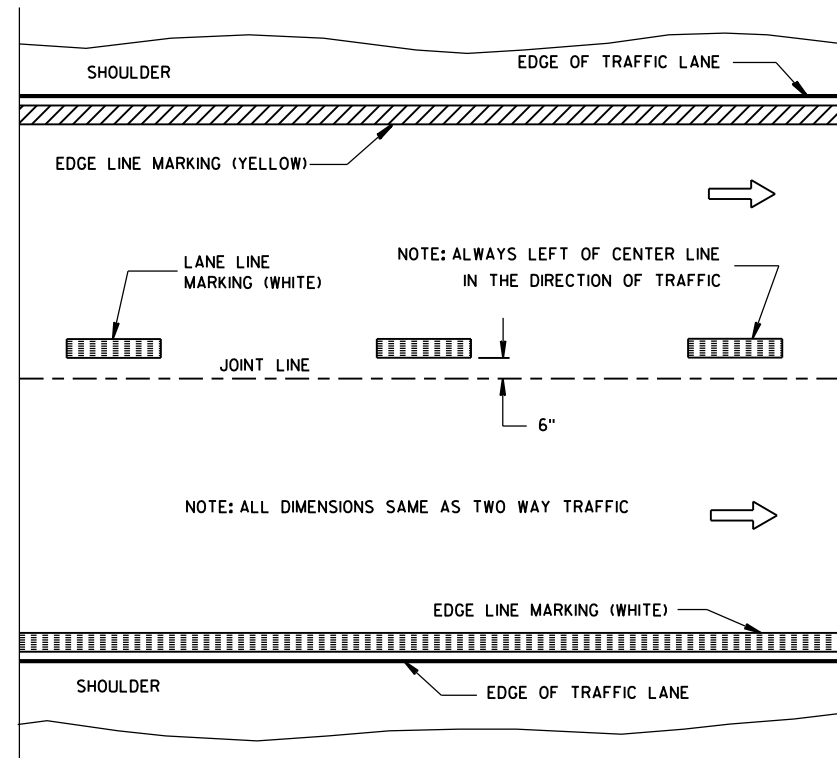
FHWA

/S/ Travis Feltes

STATE TRAFFIC ENGINEER OF DESIGN

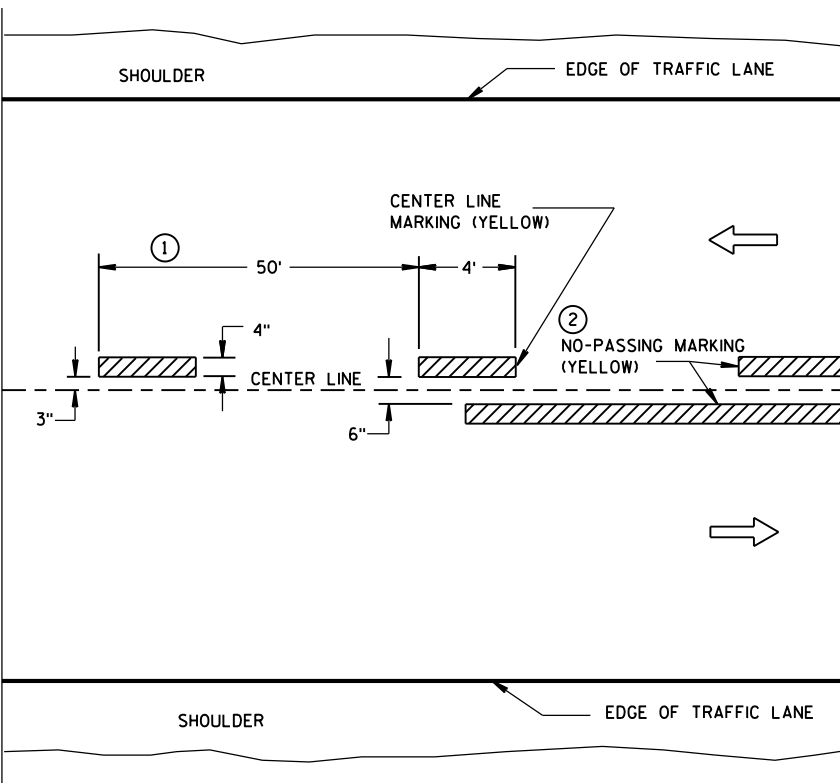


TWO WAY TRAFFIC

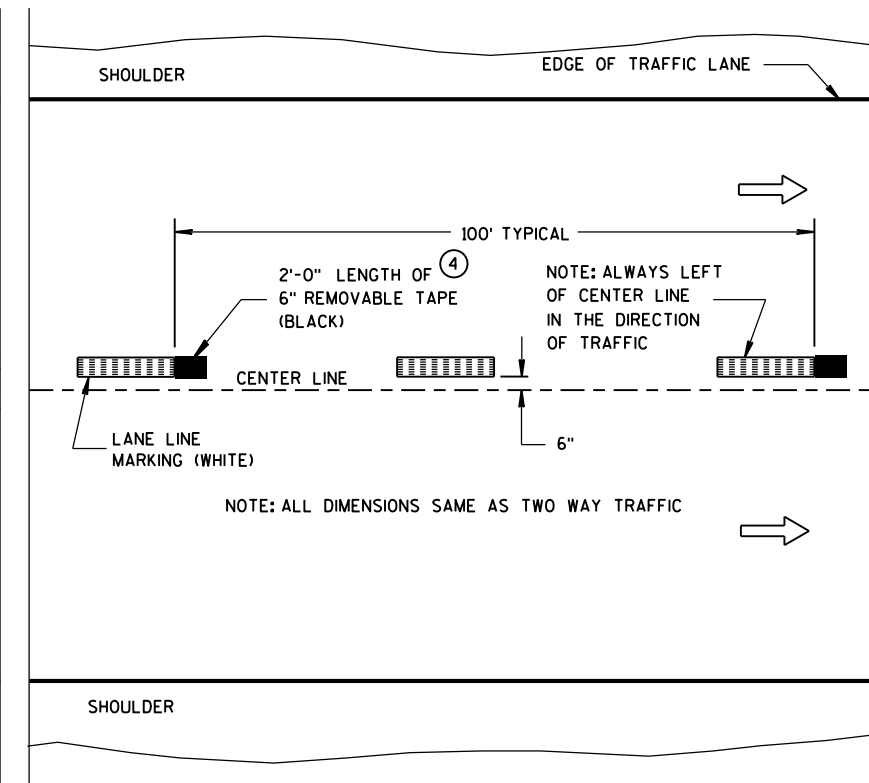


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

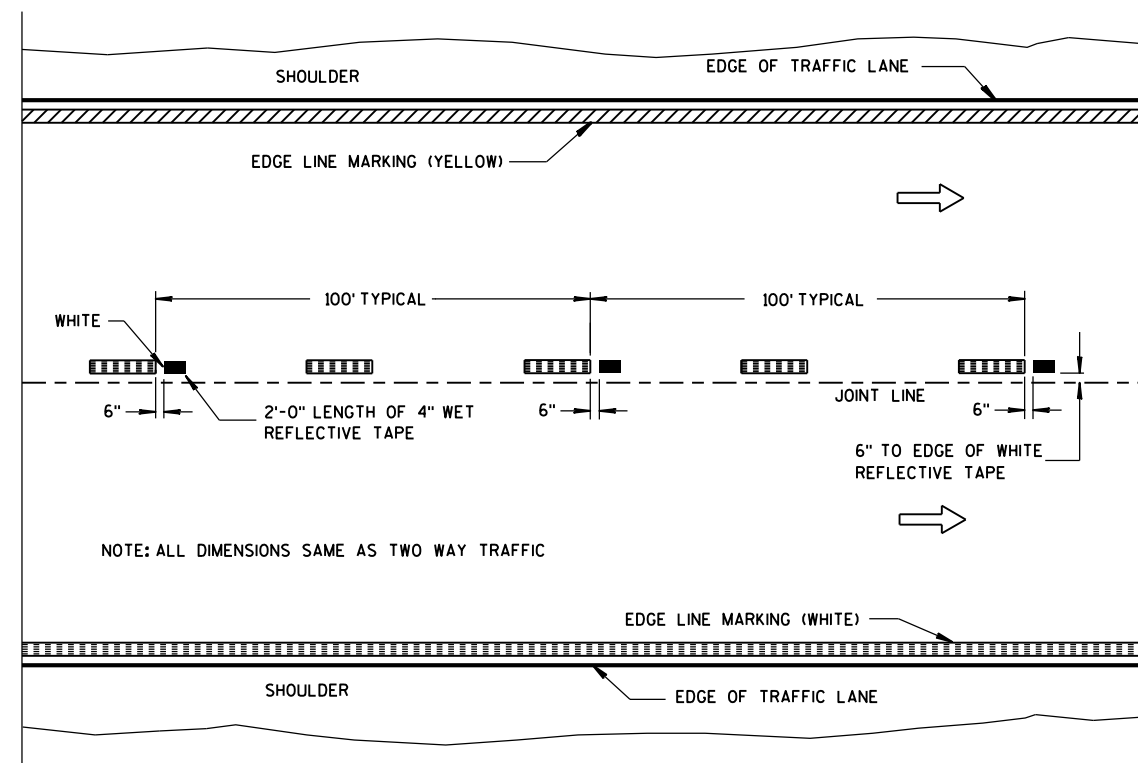
## GENERAL NOTES

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  
FHWA

/S/ Travis Feltes  
STATE TRAFFIC ENGINEER

DESIGN DATA

LIVE LOAD:  
DESIGN LOADING \_\_\_\_\_ HL-93  
INVENTORY RATING FACTOR \_\_\_\_\_ 1.26  
OPERATING RATING FACTOR \_\_\_\_\_ 1.63  
WISCONSIN STANDARD PERMIT VEHICLE RATING (WS.-SPV): \_\_\_\_\_ 250 KIPS  
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:  
CONCRETE MASONRY, DECK \_\_\_\_\_  $f_c$  = 4,000 p.s.i.  
ALL OTHER \_\_\_\_\_  $f_c$  = 3,500 p.s.i.  
HIGH-STRENGTH BAR STEEL REINFORCEMENT \_\_\_\_\_  $f_y$  = 60,000 p.s.i.

FOUNDATION DATA:  
ABUTMENTS TO BE SUPPORTED ON HP10x42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 80 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATE 25 FT PILE LENGTHS AT SOUTH ABUTMENT AND 25 FT PILE LENGTHS AT NORTH ABUTMENT.

THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA  
A.A.D.T. (2014) \_\_\_\_\_ 1000  
A.A.D.T. (2034) \_\_\_\_\_ 1200  
DESIGN SPEED \_\_\_\_\_ 60 M.P.H.

HYDRAULIC DATA  
Q100 \_\_\_\_\_ 650 c.f.s.  
Q100 (THRU BRIDGE) \_\_\_\_\_ 650 c.f.s.  
Q100 (ROAD) \_\_\_\_\_ N/A c.f.s.  
DRAINAGE AREA \_\_\_\_\_ 8.0 SQ. MI.  
WATERWAY AREA @ Q100 \_\_\_\_\_ 96 SQ. FT.  
VELOCITY \_\_\_\_\_ 6.74 f.p.s.  
HIGH WATER100 ELEVATION \_\_\_\_\_ 582.25 ft  
SCOUR CRITICAL CODE \_\_\_\_\_ 8  
Q2 \_\_\_\_\_ 245 c.f.s.  
Q2 ELEVATION \_\_\_\_\_ 580.84 ft  
REGULATORY H.W. LAKE MICHIGAN \_\_\_\_\_ 585.2 ft



11-25-13

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

CONSULTANT CONTACT  
ANDY KNUTSON, P.E., S.E.  
(608) 588-7866

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION AND QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENTS
5. ABUTMENT DETAILS
6. SUPERSTRUCTURE
7. SUPERSTRUCTURE DETAILS
8. TUBULAR STEEL RAILING, TYPE M
9. TUBULAR STEEL RAILING, TYPE M

BENCH MARKS

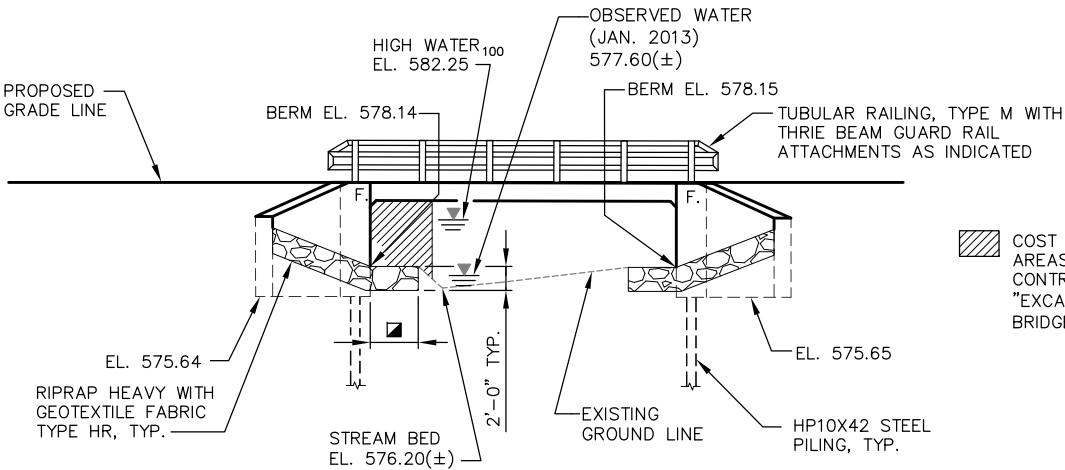
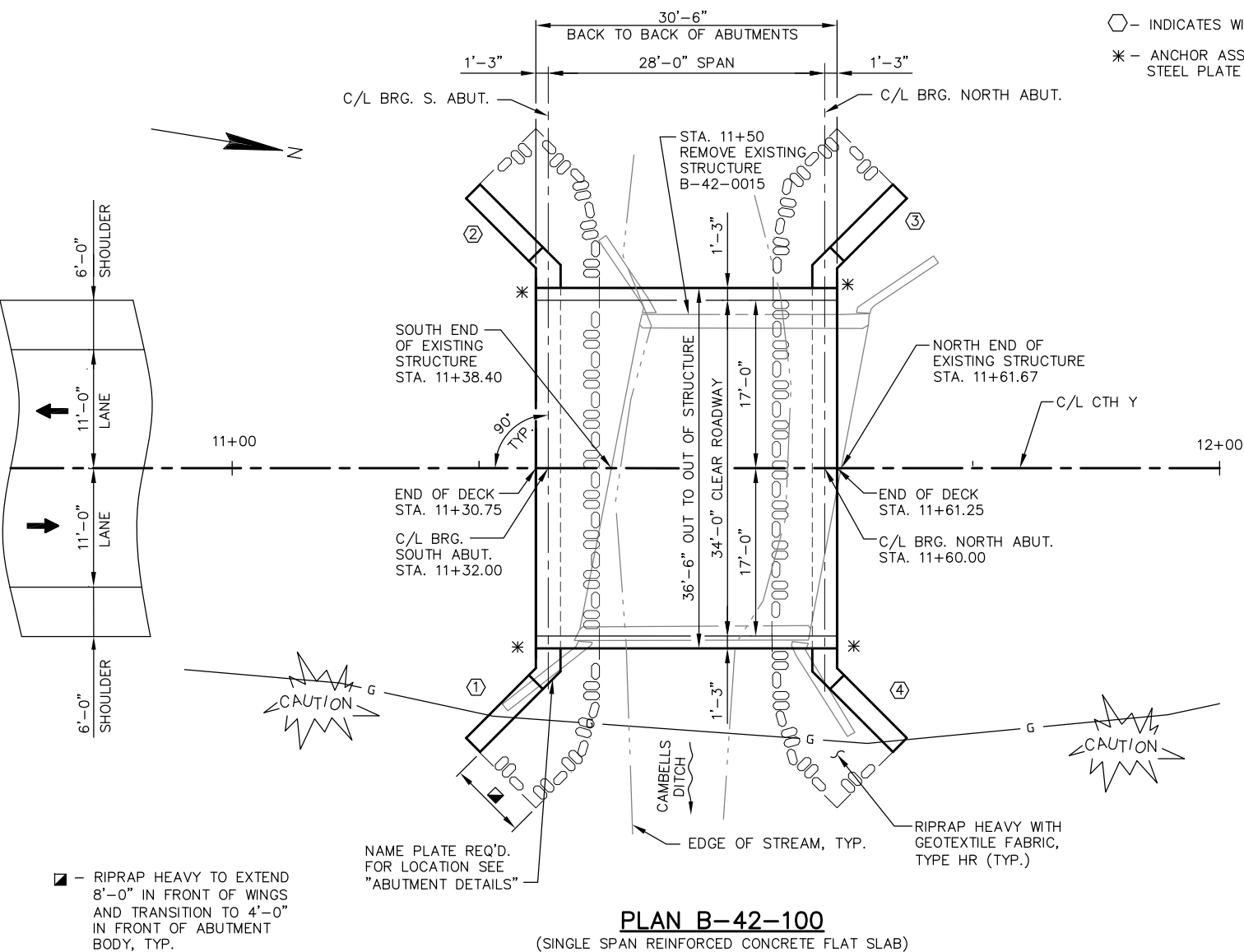
NO.	STATION	DESCRIPTION	ELEVATION
1	9+41.10	PK NAIL IN PAVEMENT 0.08' LT.	584.77
2	11+64.00	CHISELED SQUARE ON NW ABUT./WING, 16.145' LT.	584.93
3	13+63.27	PK NAIL IN PAVEMENT 0.23' LT.	585.14

PLAN B-42-100

(SINGLE SPAN REINFORCED CONCRETE FLAT SLAB)

ELEVATION

(NORMAL TO C/L CTH Y)



COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES (B-42-100)"

NO.	DATE	REVISION	BY
<b>WESTBROOK</b> Associated Engineers, Inc. 619 EAST HOXIE STREET P.O. BOX 429 SPRING GREEN, WI 53588 PHONE (608) 588-7866 FAX (608) 588-7954			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> KAR CHIEF STRUCTURES DESIGN ENGINEER		DATE <b>04/16/14</b>	
<b>STRUCTURE B-42-100</b>			
CTH Y OVER CAMBELLS DITCH			
COUNTY	OCONTO	TOWN/VILLAGE	LITTLE RIVER
DESIGN SPEC. AASHTO LRFD DESIGN SPEC.			
DESIGNED BY	JAP	DESIGN CK'D.	MIR
DRAWN BY	JAP	PLANS CK'D.	ACK
GENERAL PLAN			SHEET 1 OF 9

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

THE STREAM BED IN FRONT OF THE ABUTMENT SHALL BE COVERED WITH RIPRAP HEAVY AS SHOWN ON THE "GENERAL PLAN" AND "ABUTMENT DETAILS".

THE FINISHED GRADED SECTION SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

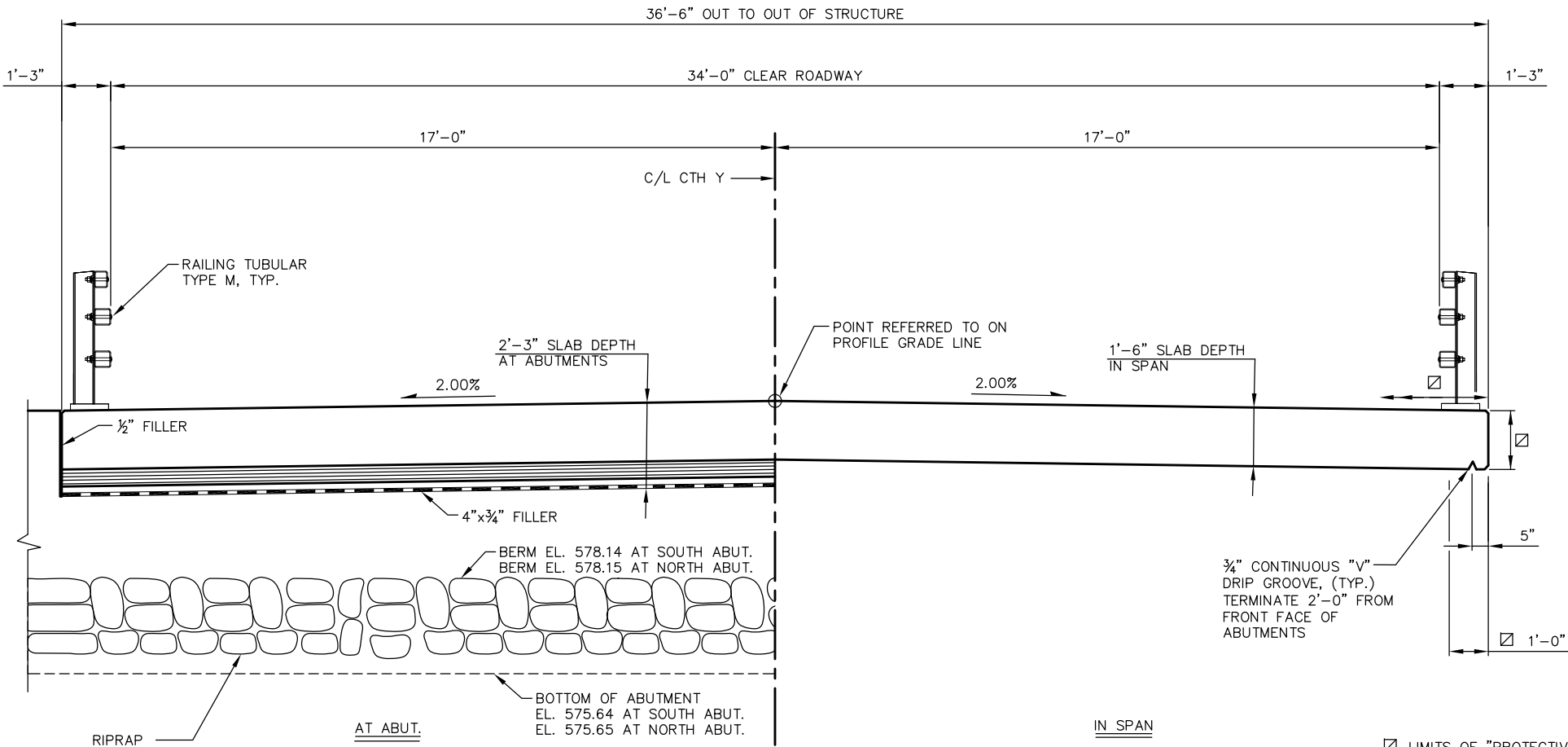
AT THE BACKFACE OF THE ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF THE ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

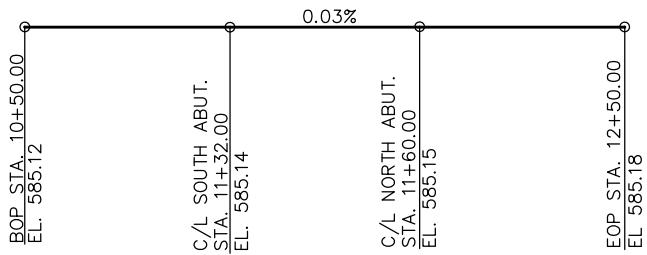
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

THE EXISTING STRUCTURE (B-42-0015) TO BE REMOVED IS A SINGLE SPAN STEEL DECK GIRDER STRUCTURE WITH AN OVERALL LENGTH OF 23.3' AND A CLEAR ROADWAY WIDTH OF 33.5'.



CROSS SECTION THRU ROADWAY  
(PILING NOT SHOWN FOR CLARITY)

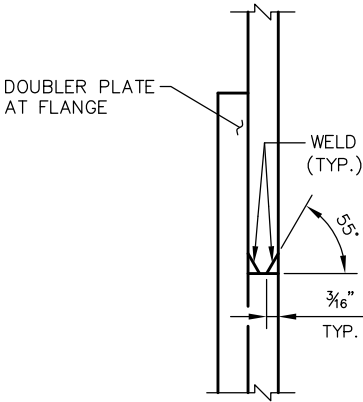
LIMITS OF "PROTECTIVE SURFACE TREATMENT", COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS



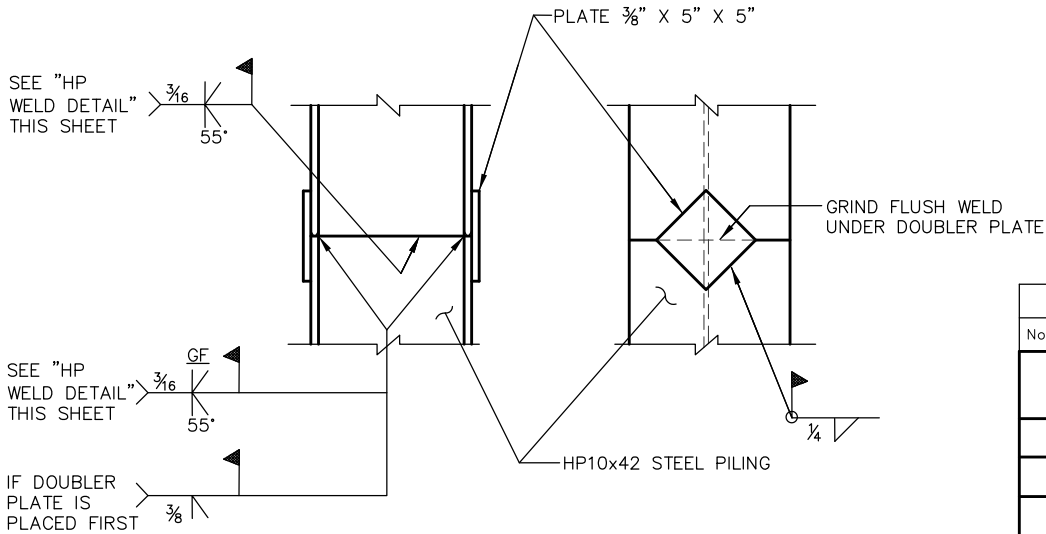
PROFILE GRADE LINE, CTH Y

TOTAL ESTIMATED QUANTITIES

	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER-STRUCTURE	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 11+50	LS	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-42-100)	LS	---	---	---	1
210.0100	BACKFILL STRUCTURE	CY	178	178	---	356
502.0100	CONCRETE MASONRY BRIDGES	CY	40	40	68	148
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	141	141
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2690	2690	---	5380
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1415	1415	11870	14700
513.4060	RAILING TUBULAR TYPE M (B-42-100)	LS	---	---	---	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	11	---	22
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	200	200	---	400
606.0300	RIPRAP HEAVY	CY	26	26	---	52
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	67	67	---	134
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	59	59	---	118
(NON-BID ITEM)	FILLER	SIZE	---	---	---	1/2" & 3/4"



HP WELD DETAIL  
FLANGE SHOWN, WEB SIMILAR



PILE SPLICE DETAILS

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-100			
Drawn By JAP		Plans Checked MIR	
CROSS SECTION AND QUANTITIES			SHEET 2 OF 9

SOIL BORINGS  
BY: MIDWEST ENGINEERING SERVICES, INC.  
2740-F PACKERLAND DRIVE  
GREEN BAY, WI 54313  
ON: FEBRUARY 18, 2013

SUBSURFACE INVESTIGATION REPORT  
BY: MIDWEST ENGINEERING SERVICES, INC.  
2740-F PACKERLAND DRIVE  
GREEN BAY, WI 54313  
ON: MARCH 5, 2013

STATE PROJECT NUMBER

9148-07-71

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE  
WS - WEATHERED SO-SOUND

MATERIAL SYMBOLS

ASPHALT SILT SANDSTONE  
SAND PEAT LIMESTONE  
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO. STA. ELEVATION  
95/6= BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.  
7 AVERAGE BLOWS PER FOOT  
REFUSAL 95/6

LEGEND OF BORING

BORING NO. STA. Elev.  
UNCONFINED STRENGTH  
BLOWS PER FT. USING 140# WT. FALLING 30"  
WASH SAMPLE  
SHELBY TUBE-S.T.  
GROUND WATER ELEVATION  
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION  
SANDY GRAVEL  
F. BOULDERS OR COBBLES  
SAND  
SILTY CLAY  
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" 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 WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

No.	Date	Revision	By
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STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
STRUCTURES DESIGN SECTION

STRUCTURE B-42-100

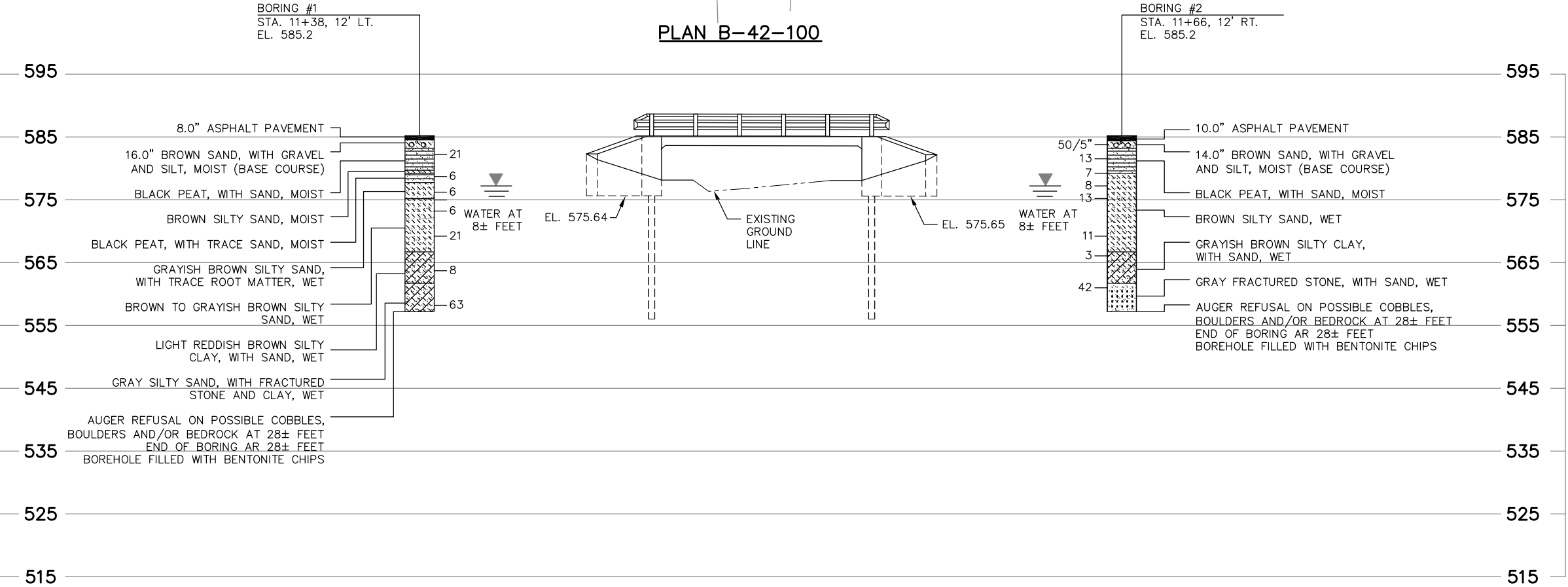
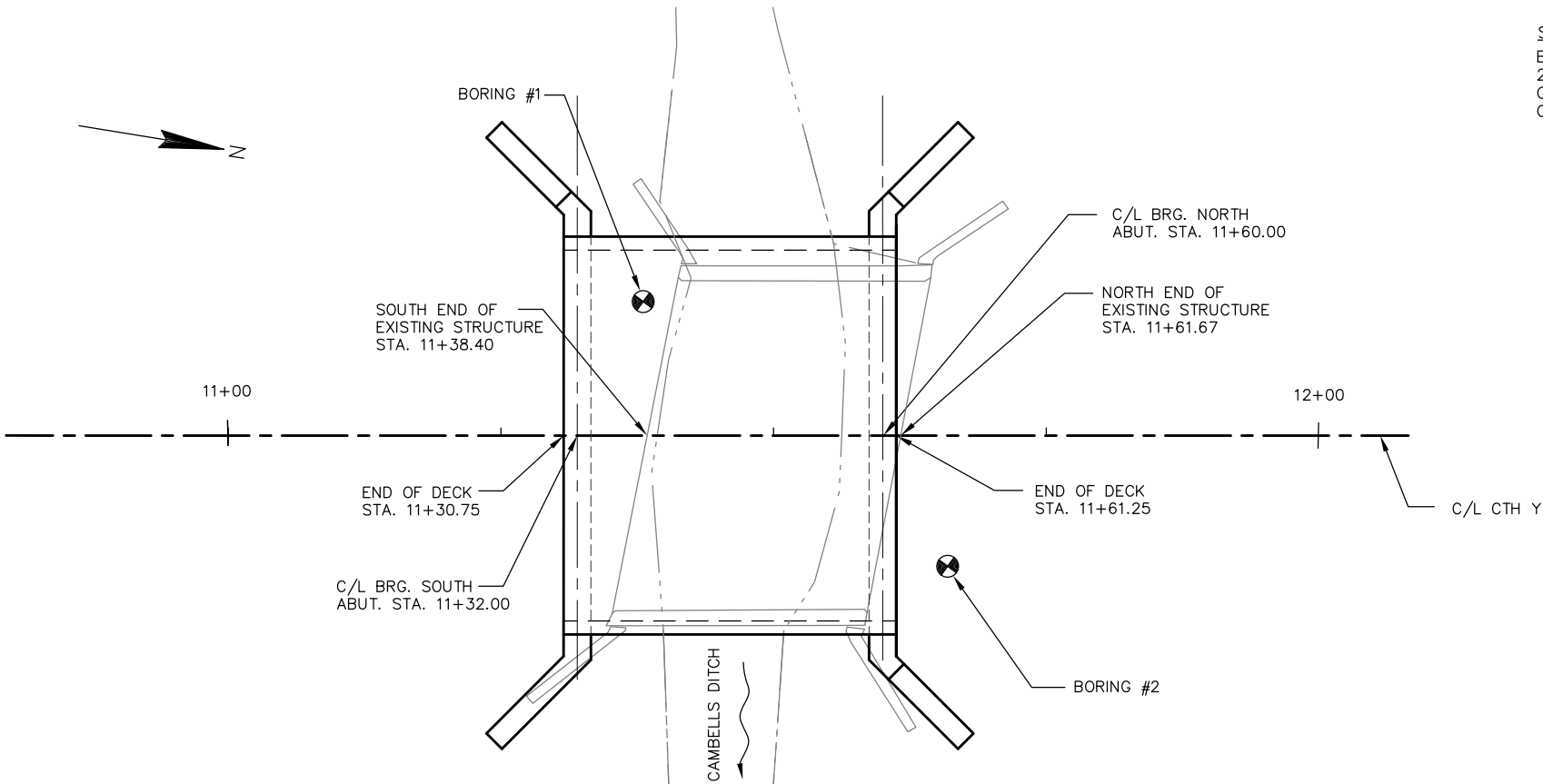
Drawn By RBV Plans Checked MIR

SUBSURFACE EXPLORATION

SHEET 3 OF 9

I.D. 9148-07-71

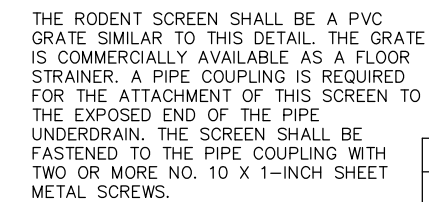
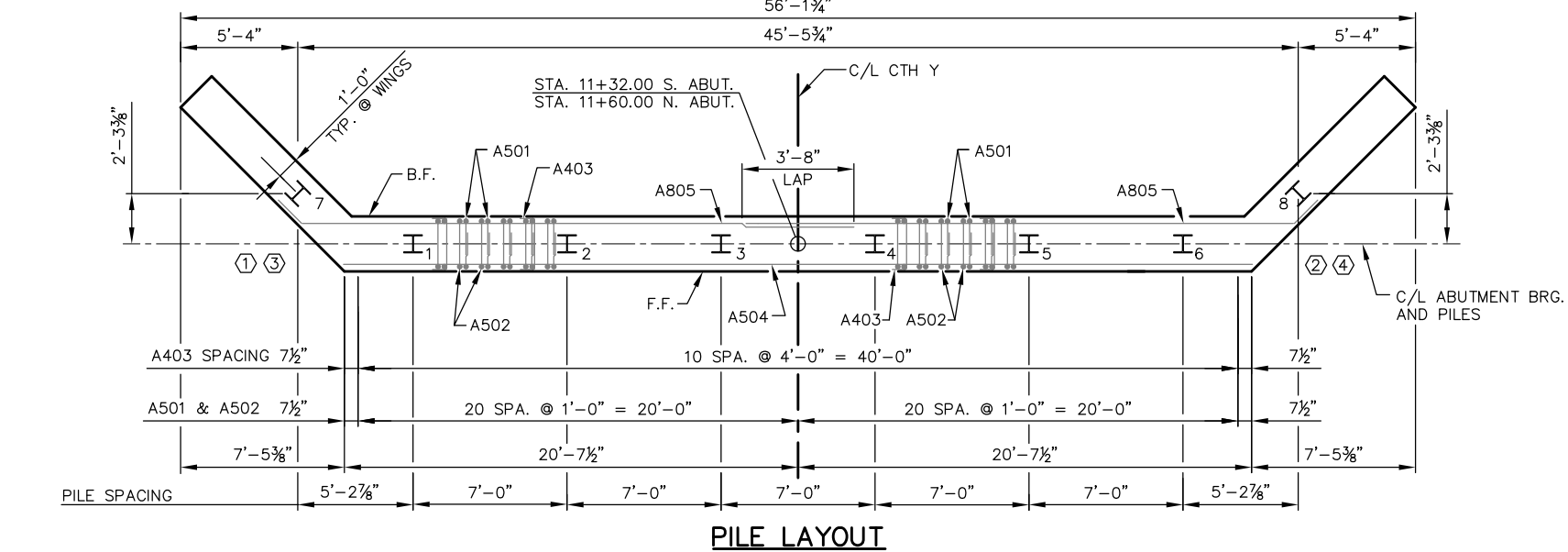
PLOT DATE: Nov 22, 2013



8

8

FILE: 03-12171\_bor.dwg  
PLOT SCALE: 1/8" = 1'-0"



- DO NOT PLACE FILL ABOVE THREE  
FEET FROM THE BOTTOM OF THE  
ABUTMENT UNTIL SUPERSTRUCTURE  
IS IN PLACE.

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-100			
Drawn By		JAP	Plans Checked MIR
ABUTMENTS		SHEET 4 OF 9	

COATED = 2,830 LBS.  
UNCOATED = 5,380 LBS.

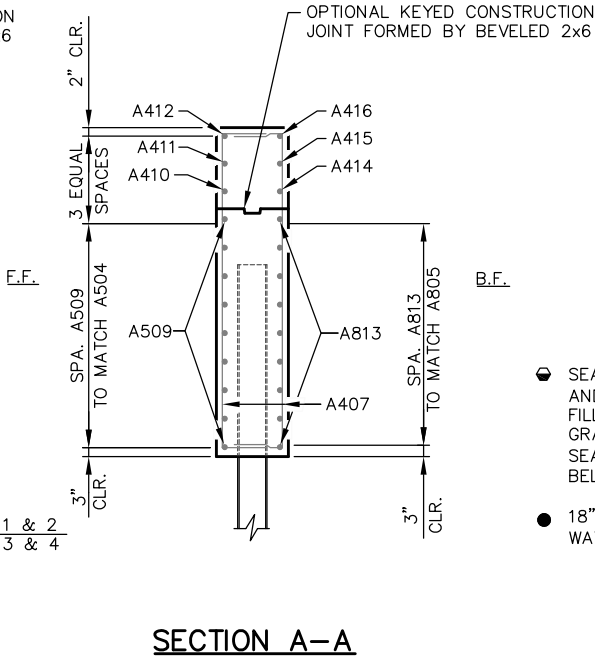
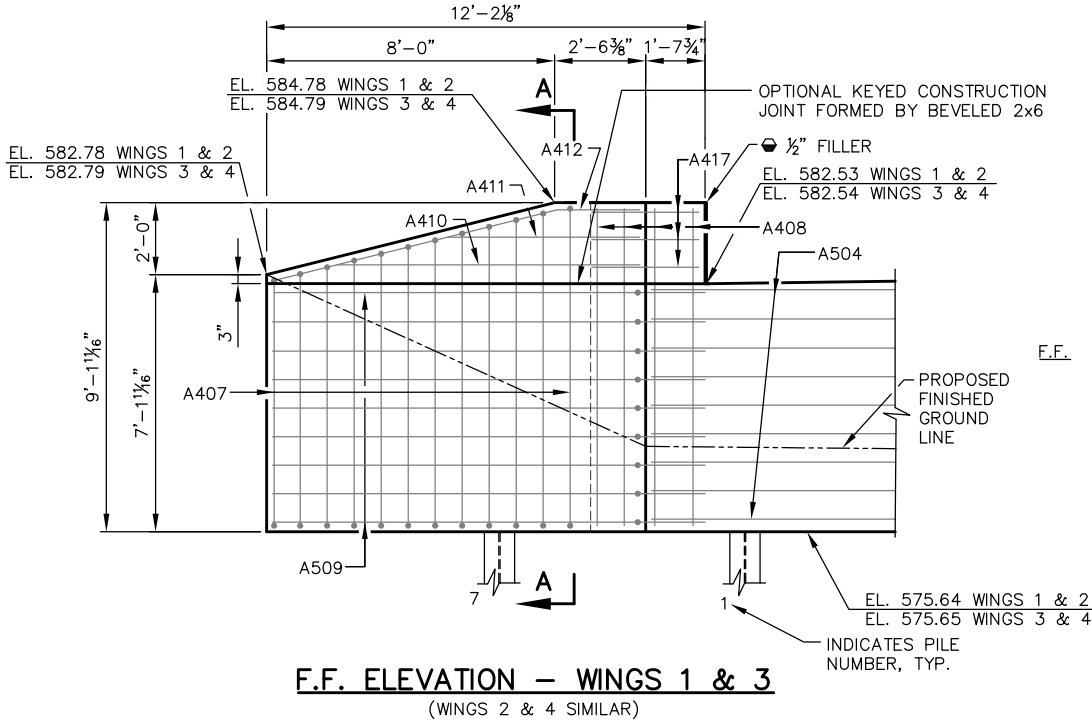
BILL OF BARS  
BOTH ABUTMENTS

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
A501		164	7-10	X		BODY - F.F. & B.F. VERT.
A502		82	6-11	X		BODY - TIES @ TOP VERT.
A403		66	2-9	X		BODY - TIES. HORIZ.
A504		18	41-2			BODY - F.F. HORIZ.
A805		36	26-2	X		BODY - B.F. HORIZ.
A506	72		2-0			BODY - DOWELS VERT.
A407	96		10-2	X	X	WINGS 1 THRU 4 - F.F. & B.F. VERT.
A408	24		8-8			WINGS 1 THRU 4 - F.F. & B.F. VERT.
A509	36		11-8	X		WINGS 1 THRU 4 - F.F. HORIZ.
A410	4		8-5			WINGS 1 THRU 4 - F.F. HORIZ.
A411	4		5-4			WINGS 1 THRU 4 - F.F. HORIZ.
A412	4		10-5	X		WINGS 1 THRU 4 - F.F. - TOP HORIZ.
A813	36		13-3	X		WINGS 1 THRU 4 - B.F. HORIZ.
A414	4		6-11			WINGS 1 THRU 4 - B.F. HORIZ.
A415	4		3-10			WINGS 1 THRU 4 - B.F. HORIZ.
A416	4		9-0	X		WINGS 1 THRU 4 - B.F. - TOP HORIZ.
A417	12		3-8	X		WINGS 1 THRU 4 - F.F. CORNER HORIZ.
A418	12		2-9	X		WINGS 1 THRU 4 - B.F. CORNER HORIZ.

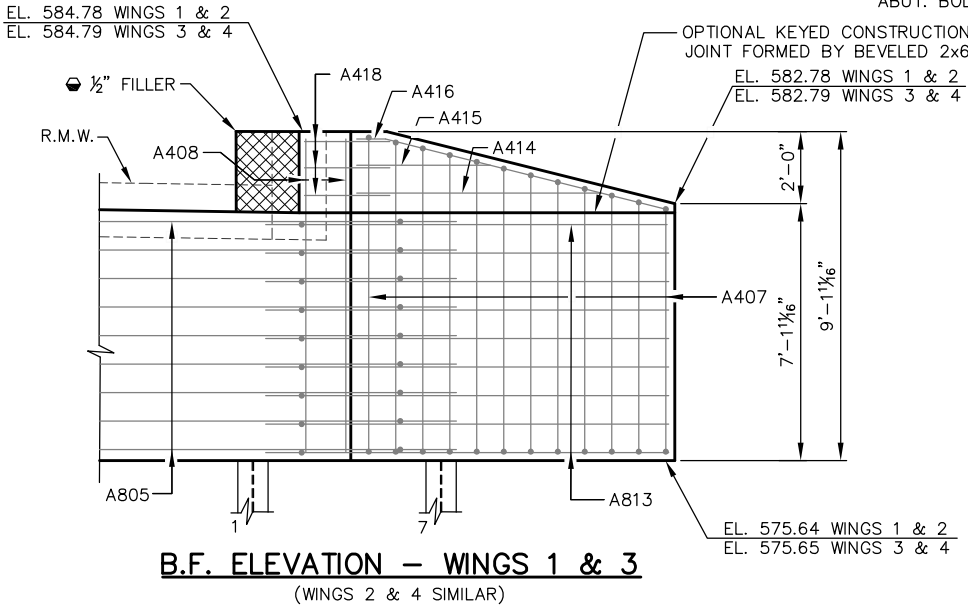
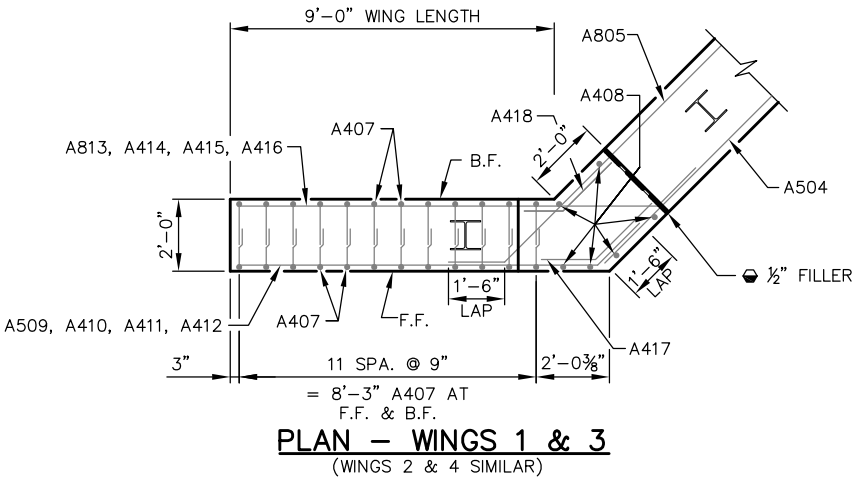
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

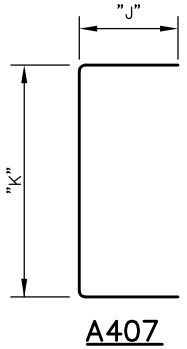
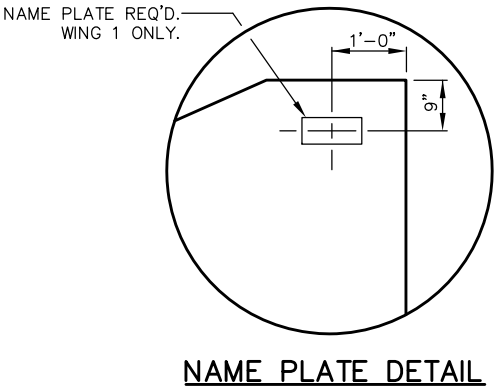
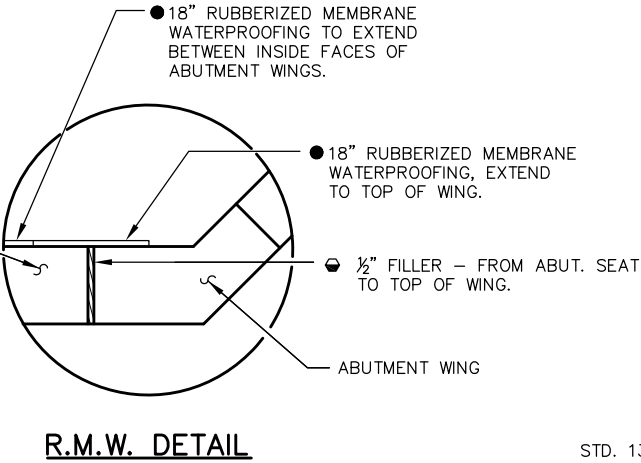
ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.



- SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2\"/>
- 18\"/>



F.F. - FRONT FACE  
B.F. - BACK FACE

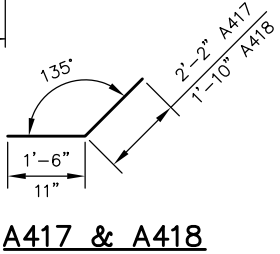
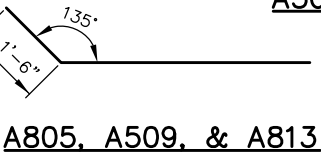
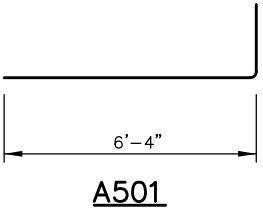
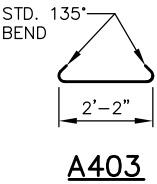
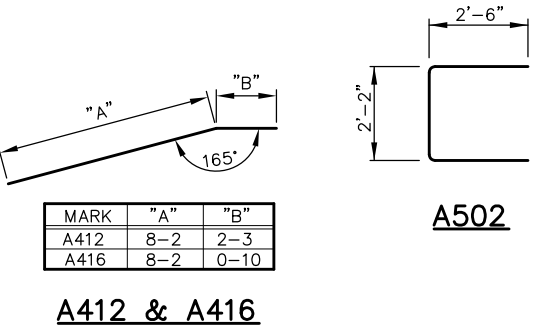


MARK	"J"	"K"
A407	1-4	6-8
		6-10
		7-0
		7-3
		7-5
		7-7
		7-10
		8-0
		8-2
		8-4
		8-7
		8-8

BAR SERIES TABLE

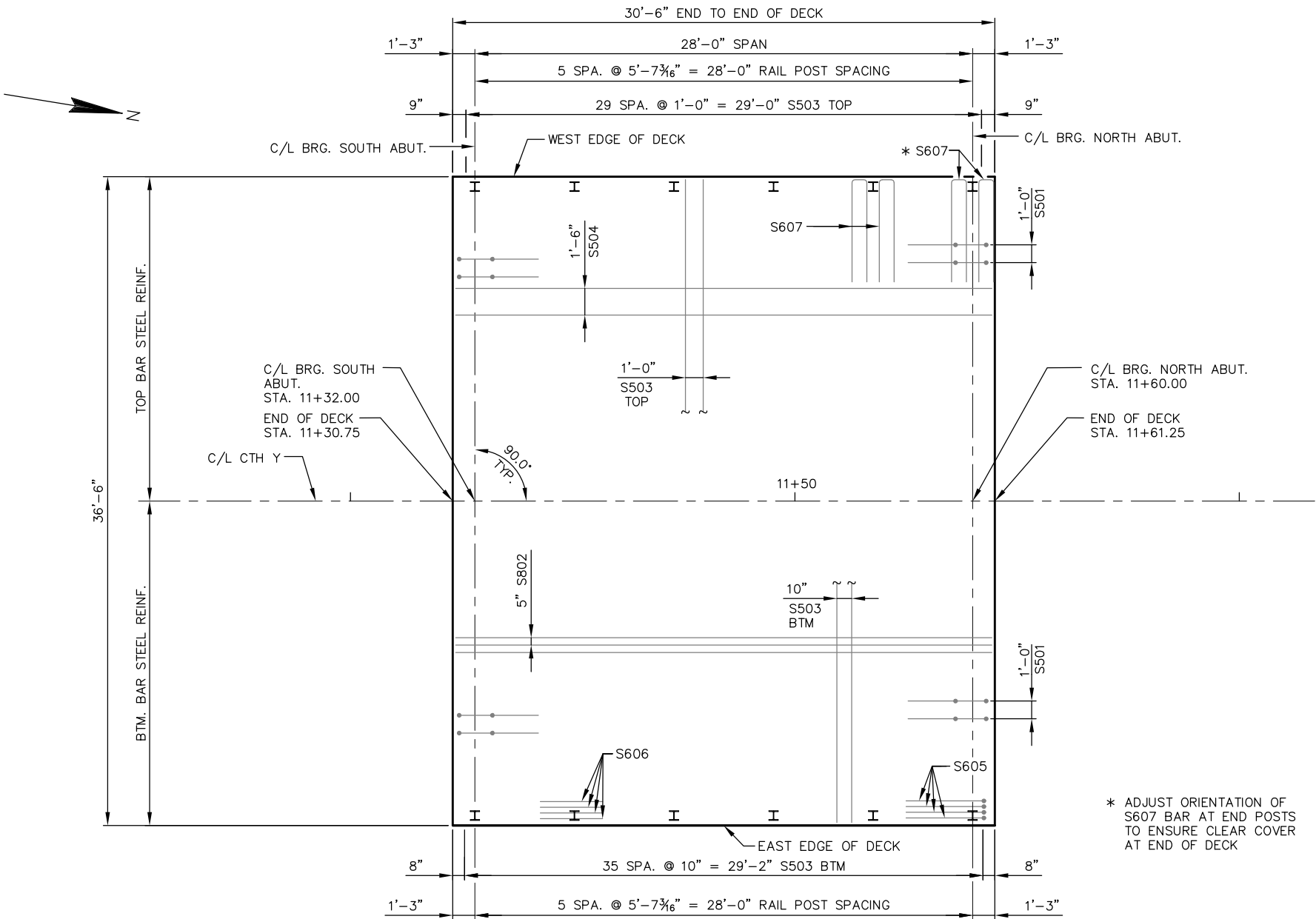
MARK	No. REQ'D.	LENGTH
A407	8 SERIES OF 12	9-2 TO 11-2

BUNDLE AND TAG EACH SERIES SEPARATELY

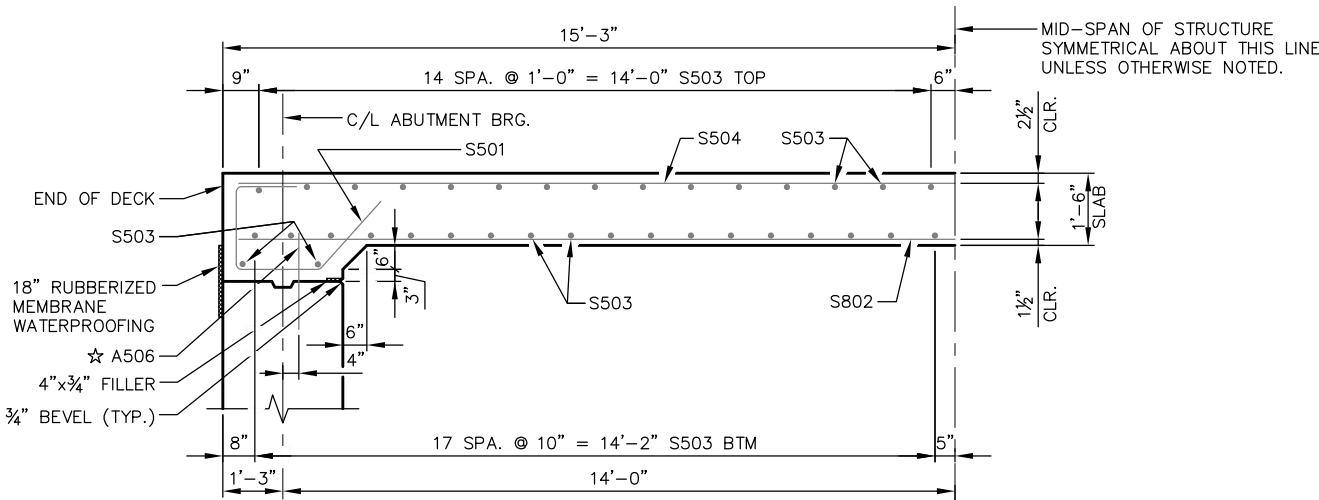


No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-100			
Drawn By JAP		Plans Checked MIR	
ABUTMENT DETAILS			SHEET 5 OF 9





**PLAN**  
(SHOWING BAR STEEL REINFORCEMENT)  
(ABUTMENTS AND WINGS NOT SHOWN FOR CLARITY)



**PARTIAL LONGITUDINAL SECTION**  
(LOOKING WEST)

**NOTES:**

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY.

BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+)

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF ABUTMENTS AND 5/10 POINT TO VERIFY CAMBER. TAKE ELEVATIONS ALONG CROWN OR C/L.

**TOP OF DECK ELEVATIONS**

STA.	SPAN PT.	C/L	W. DECK EDGE	E. DECK EDGE
11+32.00	0.0	585.14	584.78	584.78
11+34.80	0.1	585.15	584.79	584.79
11+37.60	0.2	585.15	584.79	584.79
11+40.40	0.3	585.15	584.79	584.79
11+43.20	0.4	585.15	584.79	584.79
11+46.00	0.5	585.15	584.79	584.79
11+48.80	0.6	585.15	584.79	584.79
11+51.60	0.7	585.15	584.79	584.79
11+54.40	0.8	585.15	584.79	584.79
11+57.20	0.9	585.15	584.79	584.79
11+60.00	1.0	585.15	584.79	584.79

\* ADJUST ORIENTATION OF S607 BAR AT END POSTS TO ENSURE CLEAR COVER AT END OF DECK

☆ A506 @ 1'-0" CTRS., SEE "ABUTMENTS" FOR DETAILS

☆ SEE "ABUTMENTS" FOR PLACEMENT OF A506 BARS.

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-100			
Drawn By		JAP	Plans Checked MIR
SUPERSTRUCTURE			SHEET 6 OF 9

BILL OF BARS  
SUPERSTRUCTURE

COATED = 11870 LBS.

STATE PROJECT NUMBER

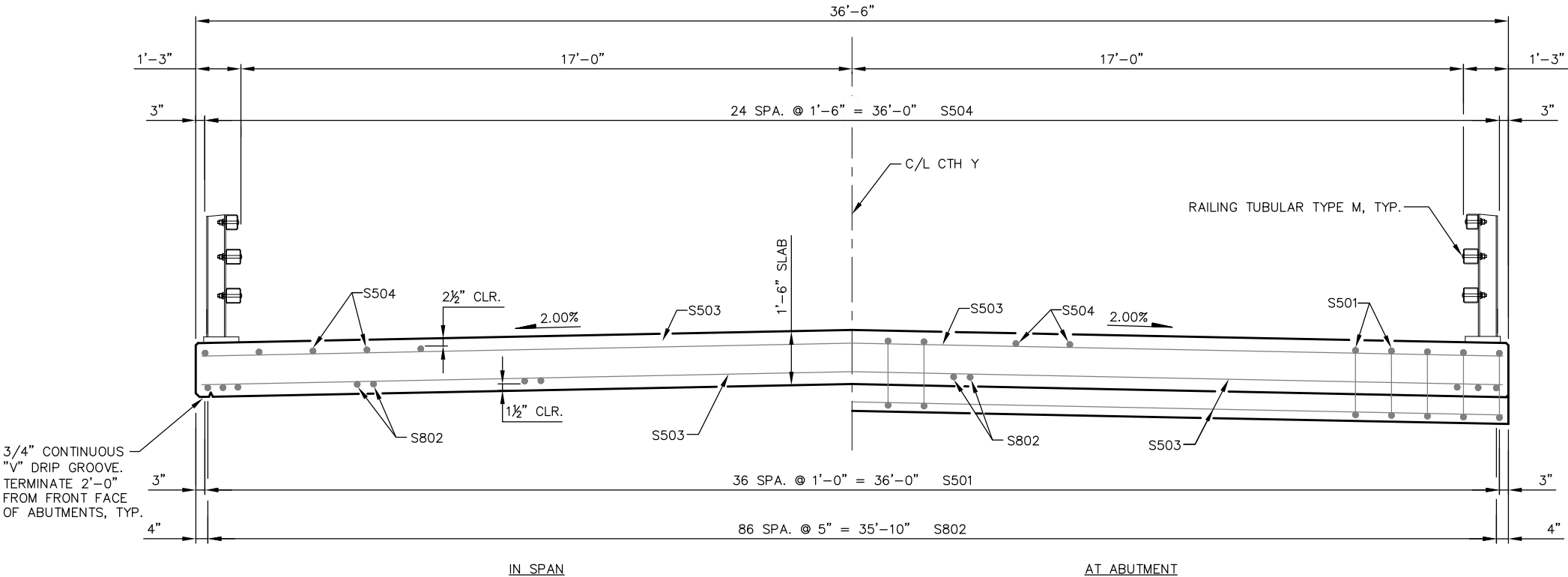
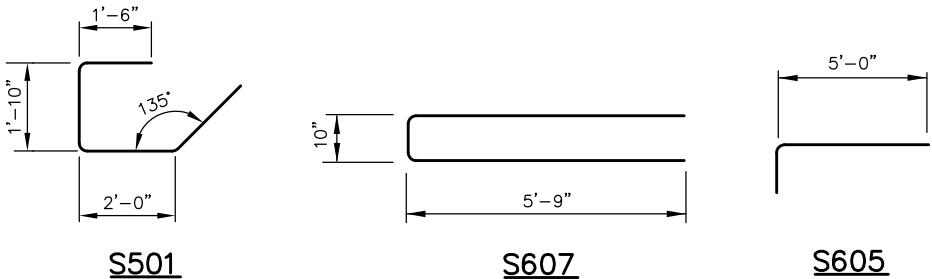
9148-07-71

MARK	NUMBER REQ'D.		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
S501	74		7-1	X		SLAB AT ABUTMENT - TIES LONGIT.
S802	87		30-2			SLAB - BOTTOM LONGIT.
S503	70		36-2			SLAB - TOP & BOTTOM TRANS.
S504	25		30-2			SLAB - TOP LONGIT.
① S605	16		6-8	X		SLAB AT EXTERIOR RAIL POSTS LONGIT.
① S606	32		6-0			SLAB AT INTERIOR RAIL POSTS LONGIT.
① S607	24		12-0	X		SLAB AT ALL RAIL POSTS TRANS.

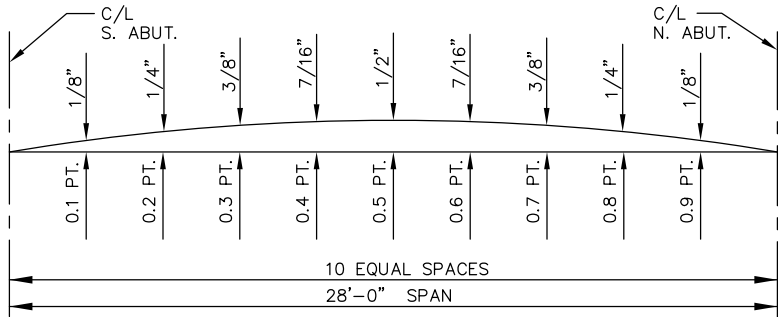
① SEE "SUPERSTRUCTURE" & "TUBULAR STEEL RAILING, TYPE M" FOR PLACEMENT.

THE FIRST DIGIT OF A 3 DIGIT MARK OR THE FIRST TWO DIGITS OF A 4 DIGIT MARK SIGNIFIES THE BAR SIZE.

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.



SECTION THROUGH DECK



SLAB CAMBER DIAGRAM

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. DEADLOAD DEFLECTION ONLY EQUALS APPROXIMATELY 1/3 OF THE CAMBER VALUES SHOWN.

SURVEY TOP OF SLAB ELEVATIONS

	SOUTH ABUTMENT	5/10 PT.	NORTH ABUTMENT
WEST EDGE OF SLAB			
C/L CTH Y			
EAST EDGE OF SLAB			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE C/L OF ABUTMENTS AND AT 5/10 POINT TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

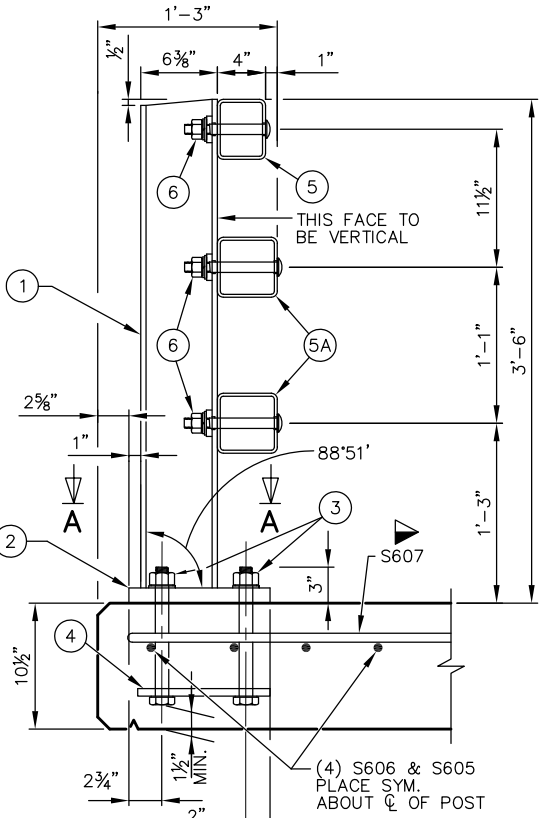
TOP OF SLAB ELEVATION AT FINAL GRADE  
LESS + SLAB THICKNESS  
PLUS - CAMBER  
PLUS - FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)  
EQUALS = TOP OF SLAB FALSEWORK ELEVATION.

No.	Date	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-100			
Drawn By	JAP	Plans Checked	MIR
SUPERSTRUCTURE DETAILS			SHEET 7 OF 9

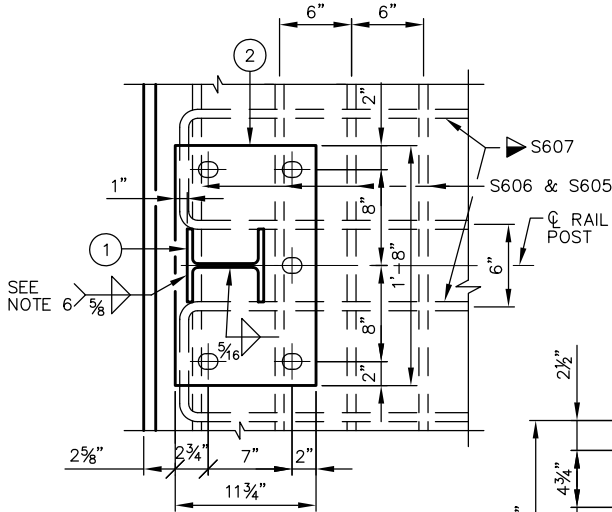
I.D. 9148-07-71

PLOT DATE: Nov 22, 2013

FILE: 07-12171\_ssdet.dwg  
PLOT SCALE: 1/8" = 1'-0"



SECTION THRU RAILING ON DECK

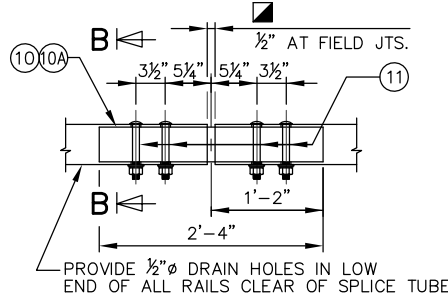


SECTION A-A

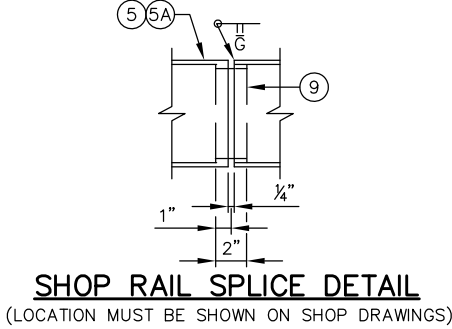
SEE SECOND SHEET OF "TUBULAR STEEL RAILING, TYPE M" FOR LEGEND & NOTES.

TIE TO TOP MAT OF STEEL.

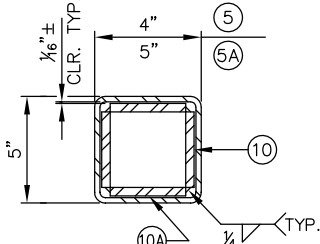
RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT AND 1/2" OPENING FOR A1 ABUTMENT



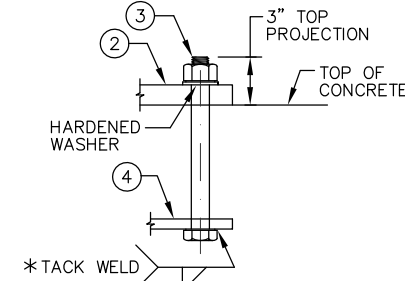
FIELD ERECTION JOINT DETAIL



SHOP RAIL SPLICE DETAIL  
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

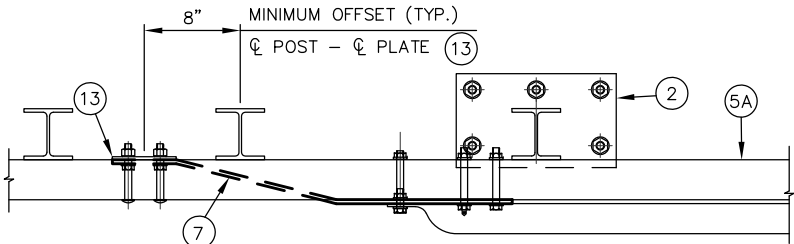


SECTION B-B

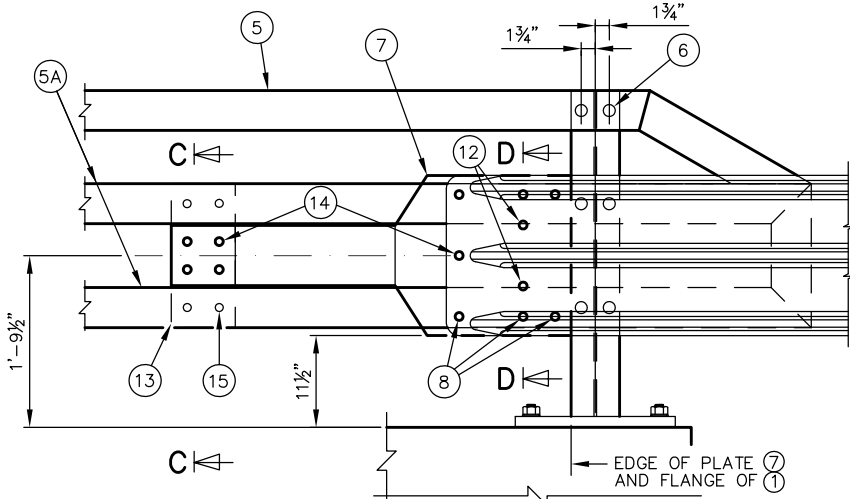


ANCHOR BOLTS

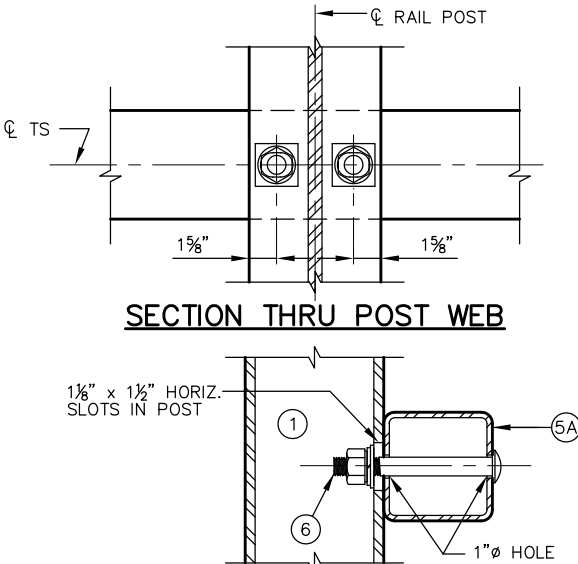
\* FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTABILITY.



TOP VIEW AT END POST  
(THREE BEAM RAIL ATTACHMENT)



DETAIL AT END POST  
(THREE BEAM RAIL ATTACHMENT)



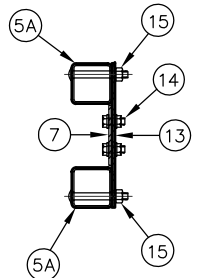
SECTION THRU POST WEB



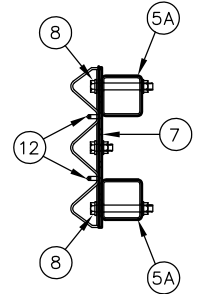
SECTION THRU RAIL

NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

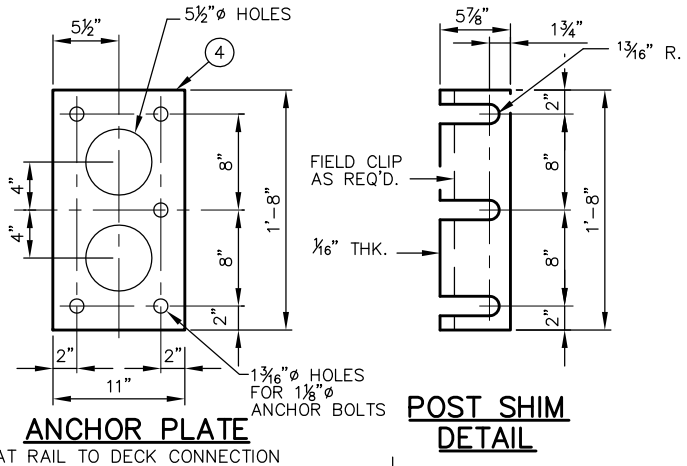
TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C

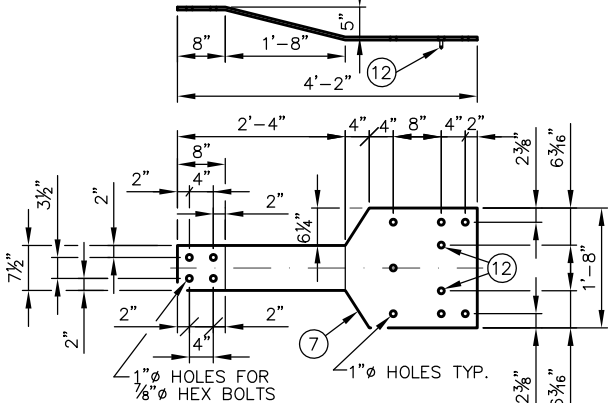


SECTION D-D

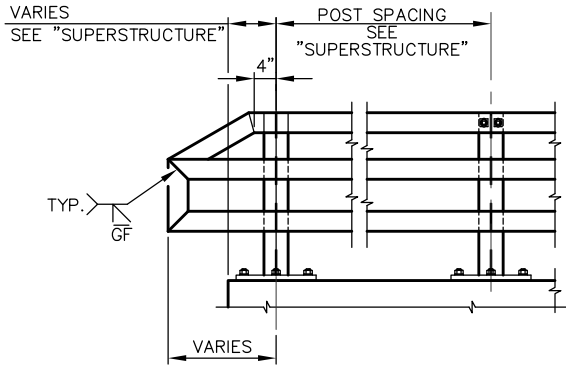


ANCHOR PLATE  
AT RAIL TO DECK CONNECTION

POST SHIM  
DETAIL



BACK-UP PLATE DETAIL  
AT BEAM GUARD ATTACHMENTS



PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-100			
DRAWN BY	CDS	PLANS CK'D	MIR
TUBULAR STEEL RAILING, TYPE M		SHEET 8 OF 9	

LEGEND

- ①

W6 x 25 WITH 1<sup>1</sup>/<sub>8</sub>" X 1<sup>1</sup>/<sub>2</sub>" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ②

PLATE 1<sup>1</sup>/<sub>4</sub>" x 11<sup>3</sup>/<sub>4</sub>" x 1'-8" WITH 1<sup>5</sup>/<sub>16</sub>" X 1<sup>5</sup>/<sub>8</sub>" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③

ASTM A449 - 1<sup>1</sup>/<sub>8</sub>" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10<sup>3</sup>/<sub>4</sub>" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- ④

5<sup>8</sup>/<sub>8</sub>" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1<sup>3</sup>/<sub>16</sub>" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- ⑤

TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A

TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥

7<sup>8</sup>/<sub>8</sub>" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3<sup>1</sup>/<sub>16</sub>" X 1<sup>15</sup>/<sub>8</sub>" X 1<sup>15</sup>/<sub>8</sub>" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- ⑦

1<sup>1</sup>/<sub>2</sub>" THK. BACK-UP PLATE WITH 2 - 7<sup>8</sup>/<sub>8</sub>" X 1<sup>1</sup>/<sub>2</sub>" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧

1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7<sup>8</sup>/<sub>8</sub>" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨

SPLICE SLEEVE FABRICATED FROM 1<sup>1</sup>/<sub>4</sub>" PLATE. PROVIDE "SLIDING FIT".
- ⑩

3<sup>8</sup>/<sub>8</sub>" X 3<sup>5</sup>/<sub>8</sub>" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 10A

3<sup>8</sup>/<sub>8</sub>" X 2<sup>5</sup>/<sub>8</sub>" X 2'-4" PLATE USED IN NO. 5, 3<sup>8</sup>/<sub>8</sub>" X 3<sup>5</sup>/<sub>8</sub>" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪

7<sup>8</sup>/<sub>8</sub>"ø A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1<sup>5</sup>/<sub>16</sub>" X 1<sup>1</sup>/<sub>4</sub>" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1<sup>5</sup>/<sub>16</sub>" X 2<sup>1</sup>/<sub>4</sub>" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
- ⑫

7<sup>8</sup>/<sub>8</sub>" DIA. X 1<sup>1</sup>/<sub>2</sub>" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬

3<sup>8</sup>/<sub>8</sub>" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑭

7<sup>8</sup>/<sub>8</sub>" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D).
- ⑮

1"ø HOLES IN TUBES NO. 5A FOR 7<sup>8</sup>/<sub>8</sub>" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M (B-42-100)" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 ksi. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-100			
DRAWN BY		CDS	PLANS CK'D
			MIR
TUBULAR STEEL RAILING, TYPE M			SHEET 9 OF 9

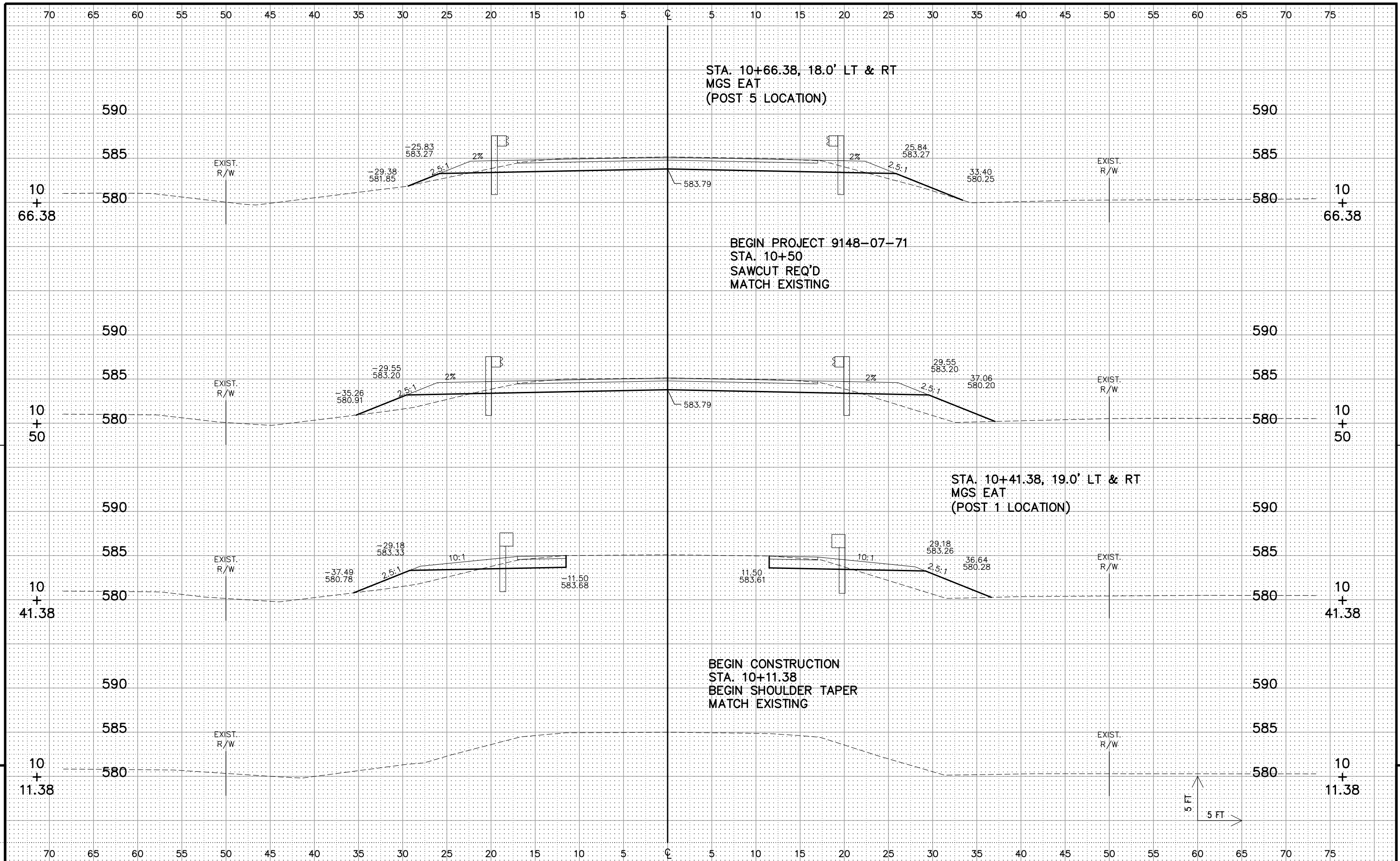
DIVISION 1 MAINLINE APPROACH 1

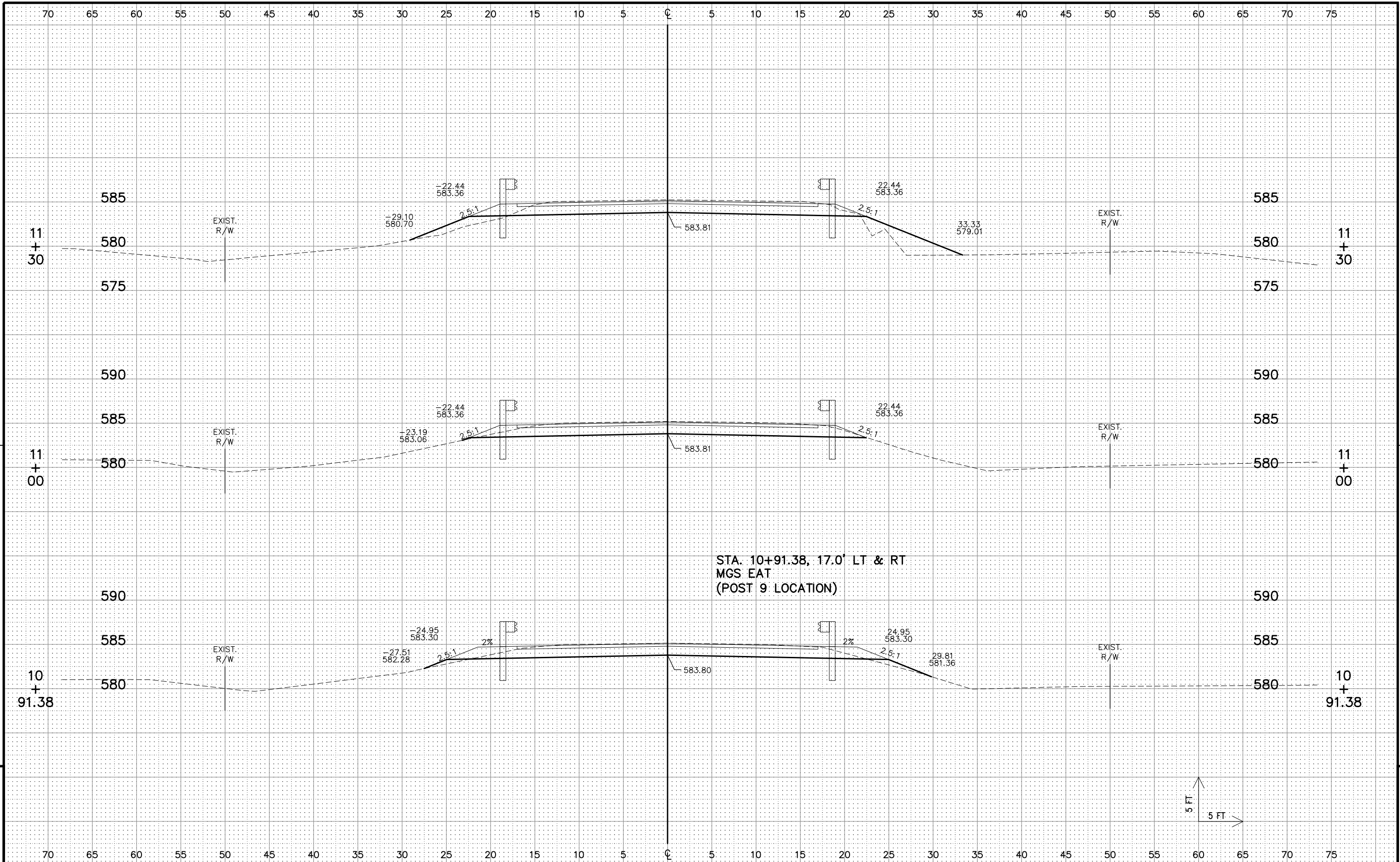
STATION	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
		Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00 Note 1	Expanded Fill 1.3	Expanded Marsh	Expanded Rock	Expanded EBS	Reduced Marsh	Reduced EBS		
																Backfill 1.50 Note 4		Backfill 1.30 Note 5	in Fill 0.60 Note 6	In Fill 0.80 Note 7		
10+11.38		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10+41.38	30	17	0	33	0	0	0	9	0	18	0	0	0	9	24	0	0	0	0	-15		
10+50.00	9	52	0	29	0	0	0	11	0	10	0	0	0	20	37	0	0	0	0	-17		
10+66.38	16	53	0	7	0	0	0	32	0	11	0	0	0	52	51	0	0	0	0	1		
10+91.38	25	53	0	3	0	0	0	49	0	5	0	0	0	101	57	0	0	0	0	44		
11+00.00	9	54	0	4	0	0	0	17	0	1	0	0	0	118	59	0	0	0	0	59		
11+30.75	31	53	0	22	0	0	0	60	0	15	0	0	0	178	78	0	0	0	0	100		
									0													
							Column totals	178	0	60	0	0	0									

DIVISION 1 MAINLINE APPROACH 2

STATION	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
		Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.3	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh in Fill 0.60	Reduced EBS In Fill 0.80		
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	Note 8															
11+61.25		58	0	71	0	0	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	
12+00.00	39	52	0	2	0	0	0	78	0	52	0	0	0	78	68	0	0	0	0	0	10	
12+00.63	1	52	0	5	0	0	0	1	0	0	0	0	0	80	68	0	0	0	0	0	11	
12+25.63	25	56	0	8	0	0	0	50	0	6	0	0	0	129	76	0	0	0	0	0	53	
12+50.00	24	53	0	39	0	0	0	49	0	21	0	0	0	179	104	0	0	0	0	0	75	
12+50.63	1	20	0	40	0	0	0	1	0	1	0	0	0	180	105	0	0	0	0	0	74	
12+80.63	30	0	0	0	0	0	0	11	0	22	0	0	0	190	134	0	0	0	0	0	56	
							Column totals	190	0	103	0	0	0									

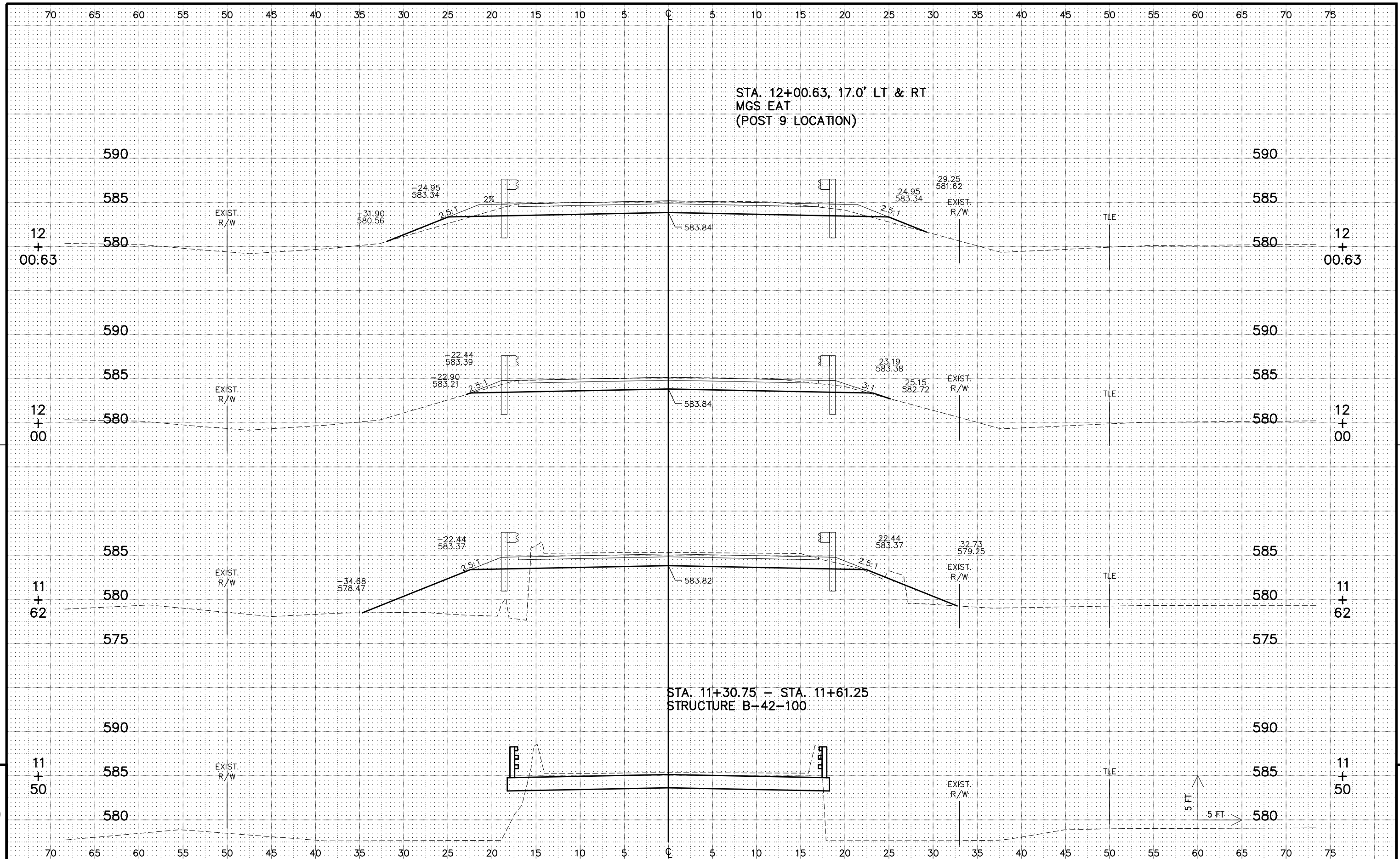
Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
5 - Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor]]
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut + EBS + Marsh Exc) - ((Fill - (Reduced Marsh in Fill) - (Reduced EBS in Fill) - (Expanded Rock)) * Fill Factor))]
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Cut or Borrow: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]



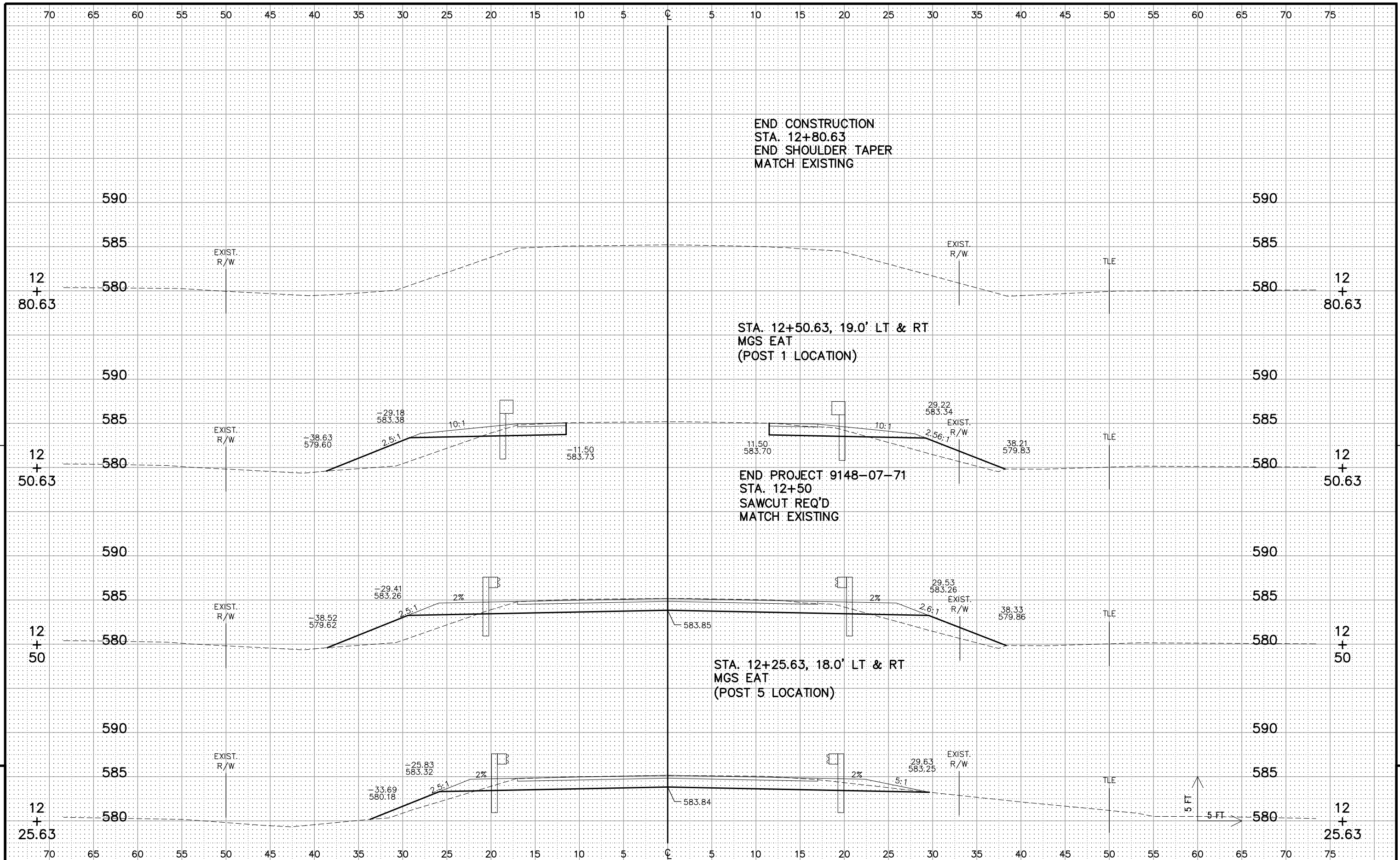


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## ***Wisconsin Department of Transportation***

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