WIS APR 13

PROJECT ID: 6160-03-73

WITH:

COUNTY: ADAMS

ORDER OF SHEETS

TOTAL SHEETS = 92

27

N

DESIGN DESIGNATION

A.A.D.T. 2012	=	4700
A.A.D.T. 2032	=	5600
D.H.V.	=	8.1%
D.D.	=	62/38
T.	=	10.1%
DESIGN SPEED	=	60
ESALS	=	1,372,400

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (935.36)
- CULVERT (Profile View)

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

NECEDAH - COLOMA

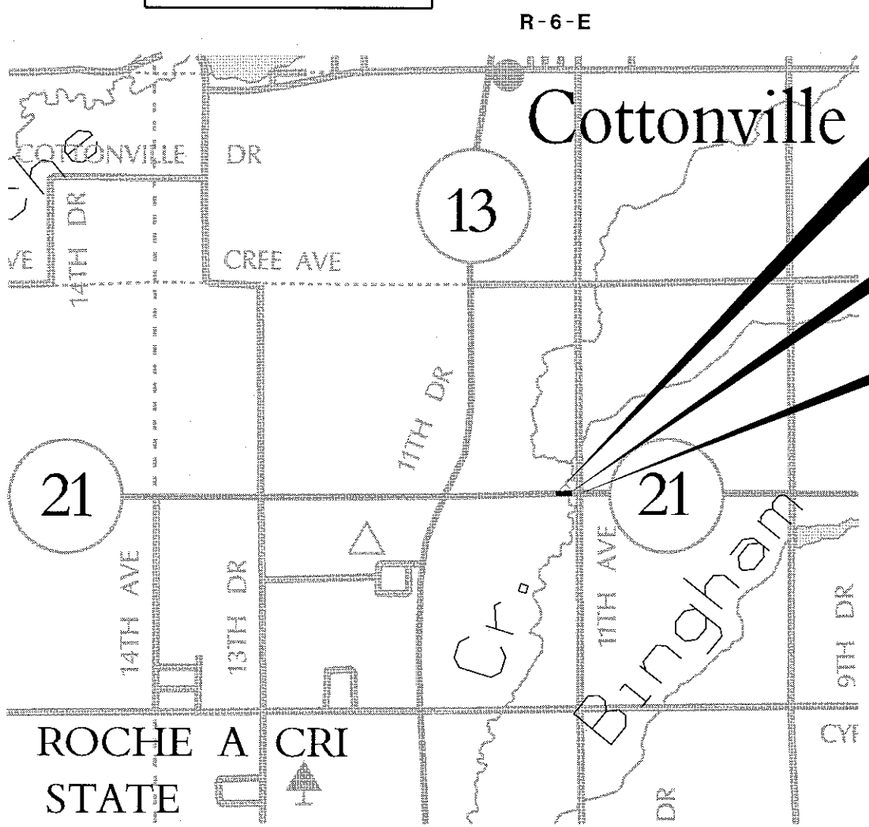
CARTER CREEK BRIDGE B-1-0034

STH 21

ADAMS COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6160-03-73	WISC 2013225	1

STATE PROJECT NUMBER
6160-03-73



BEGIN PROJECT
STA. 41+00
Y 240060.05
X 535663.47

B-01-34
STA. 43+84.69

END PROJECT
STA. 50+50
Y 240074.95
X 536613.33

LAYOUT
SCALE 0 MI.

TOTAL NET LENGTH OF CENTERLINE = .180 MI.

-"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), ADAMS COUNTY."

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NORM JENSEN
Designer	NORTH CENTRAL REGION
Project Manager	KEVIN GARRIGAN
Regional Examiner	CHERYL SIMON
Regional Supervisor	MIKE KRETSCHMER
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 10/15/12 (Signature)

E

GENERAL NOTES

PAVING LIMITS AT INTERSECTIONS ARE TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

PAVEMENT REMOVAL WILL BE TO THE NEAREST JOINT OR A SAWED EDGE WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.

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

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

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

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

2

UTILITIES

ADAMS-COLUMBIA ELECTRIC COOPERATIVE
401 E LAKE ST
PO BOX 70
FRIENDSHIP, WI 53934
JIM GOODMAN 1-800-831-8629 EXT 216

FRONTIER COMMUNICATIONS
100 COMMUNICATIONS DRIVE
SUN PRAIRIE, WI 53590
JERRY MOORE
608-742-9507

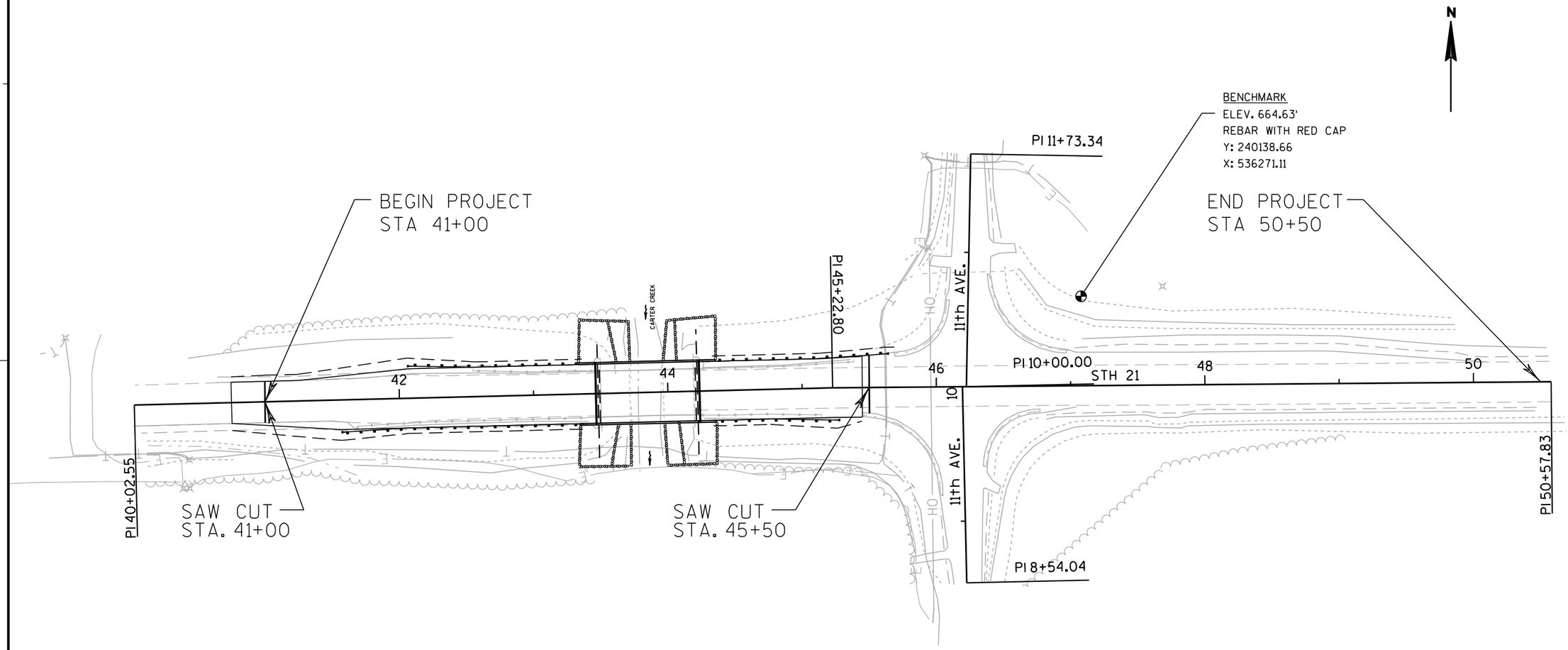
DNR

CATHERINE BLESER
ENVIRONMENTAL ANALYSIS AND REVIEW SPECIALIST
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
3911 FISH HATCHERY RD
FITCHBURG WI 53711
(608)275-3308
Catherine.Bleser@Wisconsin.gov

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
Or Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

2



PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	PROJECT OVERVIEW	SHEET	E

2

2

LEGEND

EXISTING ASPHALTIC PAVEMENT

HMA PAVEMENT TYPE E-3

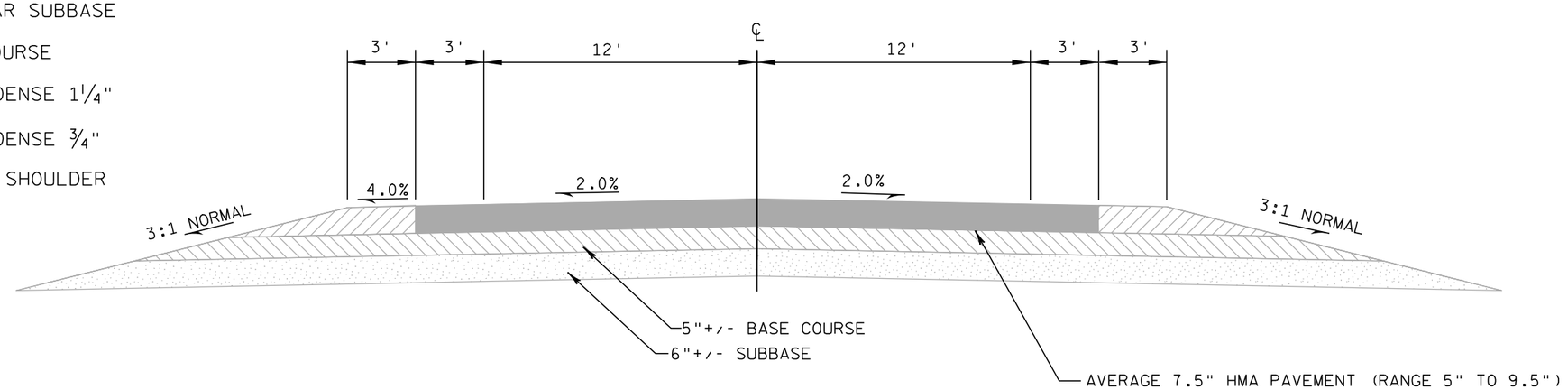
EXISTING GRANULAR SUBBASE

EXISTING BASE COURSE

BASE AGGREGATE DENSE 1¼"

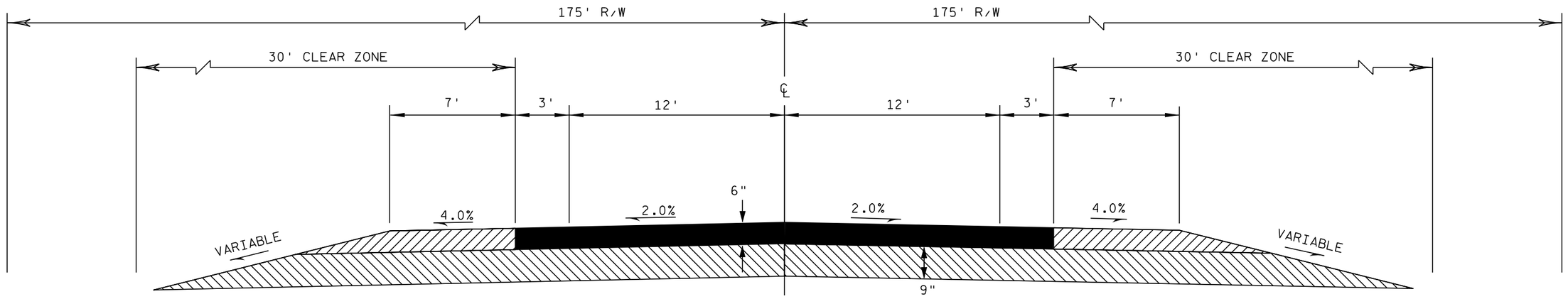
BASE AGGERGATE DENSE ¾"

EXISTING GRAVEL SHOULDER



EXISTING TYPICAL SECTION

STH 21



PROPOSED TYPICAL SECTION

STH 21
41+00 - 43+23
44+47 - 45+50

ASPHALT NOTE:
PAVE IN THREE LIFTS
1¾" 12.5mm UPPER
1¾" 12.5mm UPPER
2½" 19.0mm LOWER

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	TYPICAL SECTIONS	SHEET	E

FILE NAME : p:\projects\D4_61600303EC\020301_ts.dgn PLOT DATE : 12-JAN-2012 10:48 PLOT BY : dotc7s PLOT NAME : PLOT SCALE : 150:1
WISDOT/CADDS SHEET 42

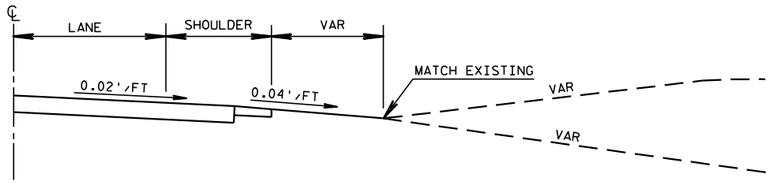
2

RUNOFF COEFFICIENT TABLE

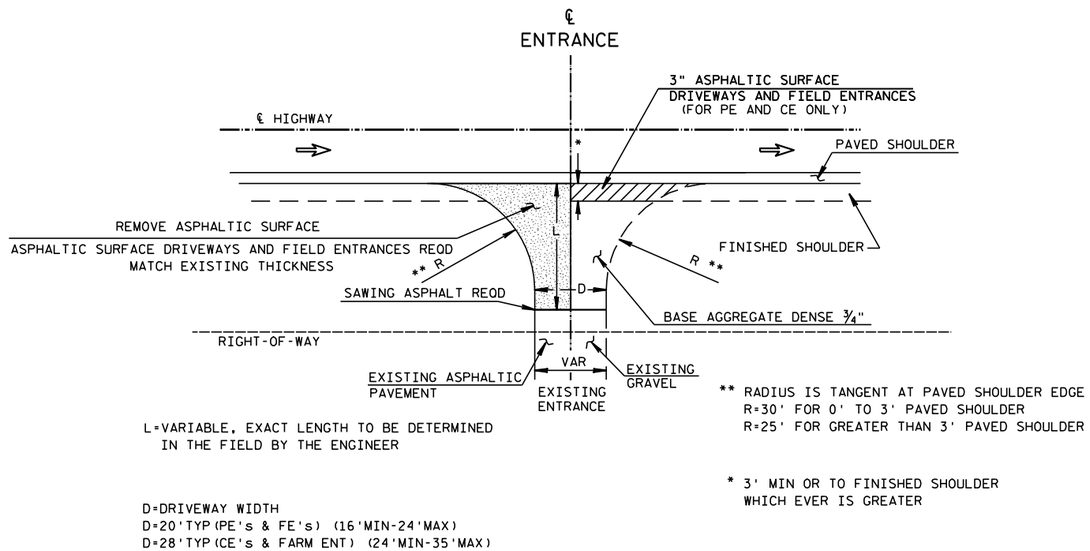
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .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 = 0.48 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.13 ACRES

2



TYPICAL PROFILE VIEW



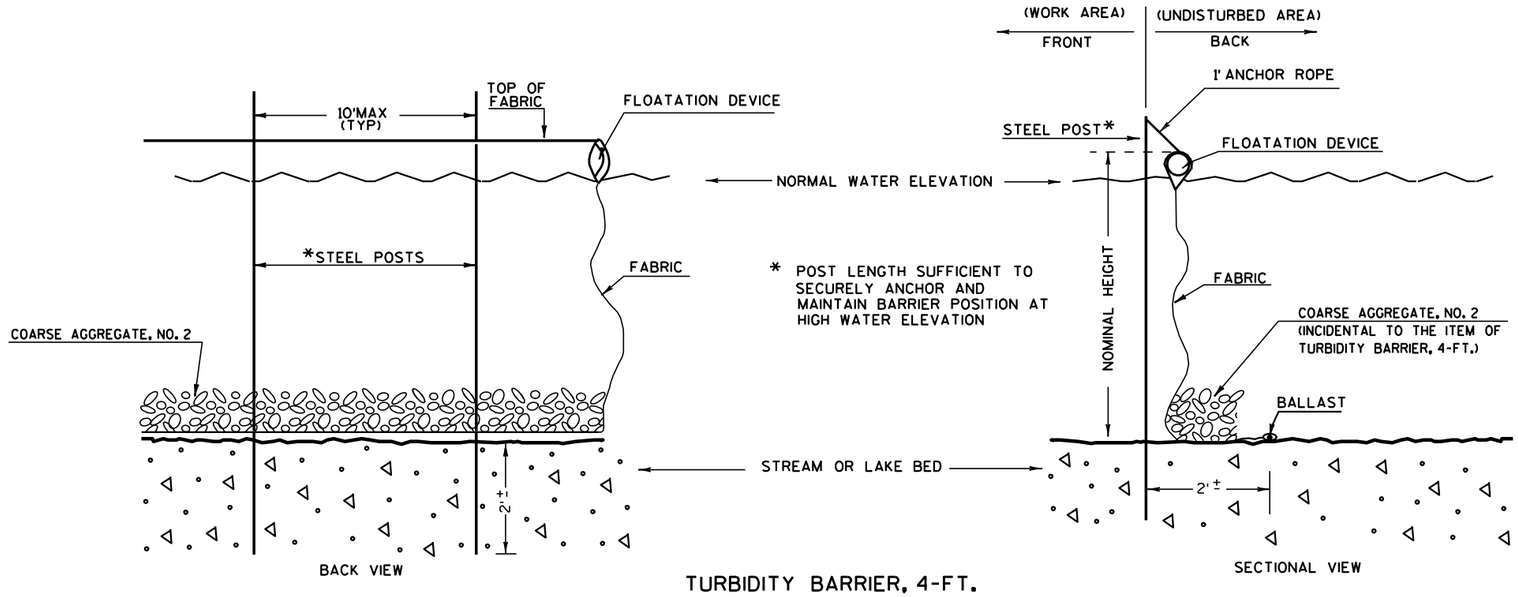
PLAN VIEW

RURAL DRIVEWAY INTERSECTION DETAIL
(PE, FE & CE)
(FOR RESURFACING PROJECTS)

PROJECT NO:6160-03-73	HWY: STH 21	COUNTY: ADAMS	CONSTRUCTION DETAIL	SHEET B	E

FILE NAME : p:\projects\D4_61600303EC\021002_cd.dgn PLOT DATE : 12-JAN-2012 10:48 PLOT BY : dotc7s PLOT NAME : PLOT SCALE : 200:1
WISDOT/CADDS SHEET 42

2



TURBIDITY BARRIER, 4-FT.

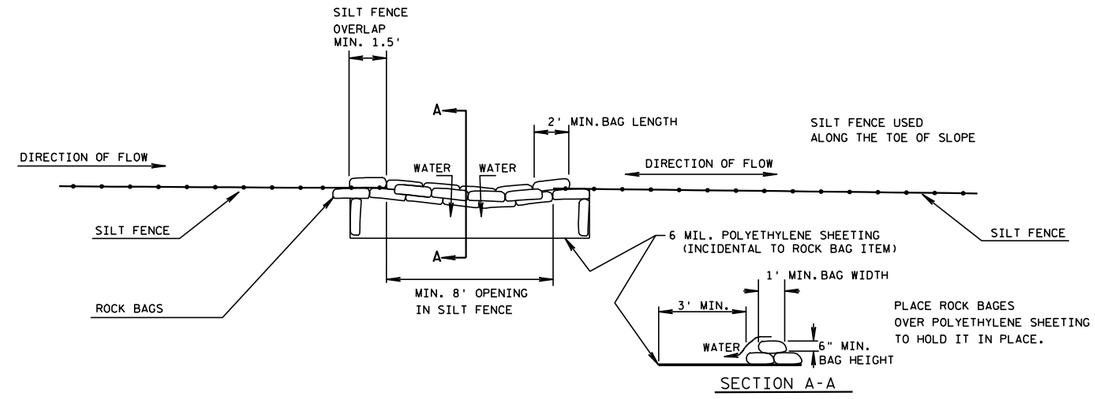
NOTE: USE TURBIDITY BARRIER WHEN REMOVING EXISTING BRIDGE AND DURING CONSTRUCTION OF NEW BRIDGE.

COARSE AGGREGATE, NO. 2 MATERIAL USED TO ANCHOR TURBIDITY BARRIERS, 4-FT. CAN BE USED AS STREAMED AGGREGATE IF APPROVED BY THE ENGINEER.

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	CONSTRUCTION DETAIL	SHEET C	E

FILE NAME : p:\projects\D4_61600303EC\021003_cd.dgn PLOT DATE : 12-JAN-2012 10:49 PLOT BY : dotc7s PLOT NAME : PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

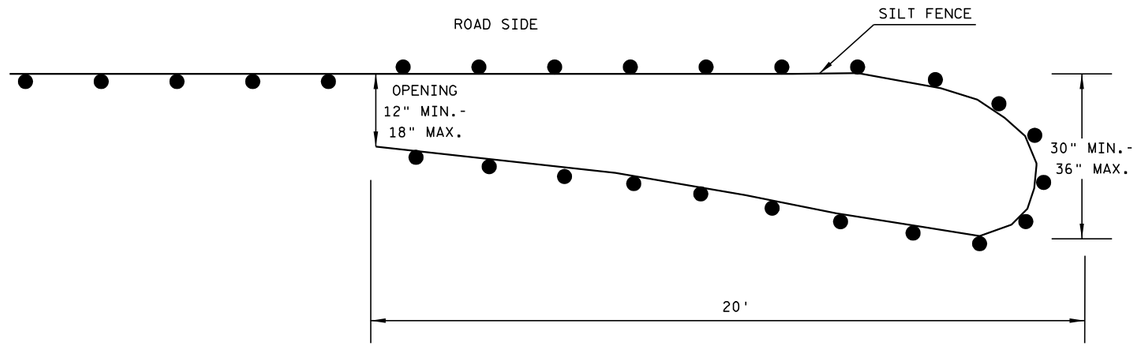
2



ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL

(SEE EROSION CONTROL PLAN FOR RELIEF LOCATIONS)

2



PLAN VIEW

GENERAL NOTES:

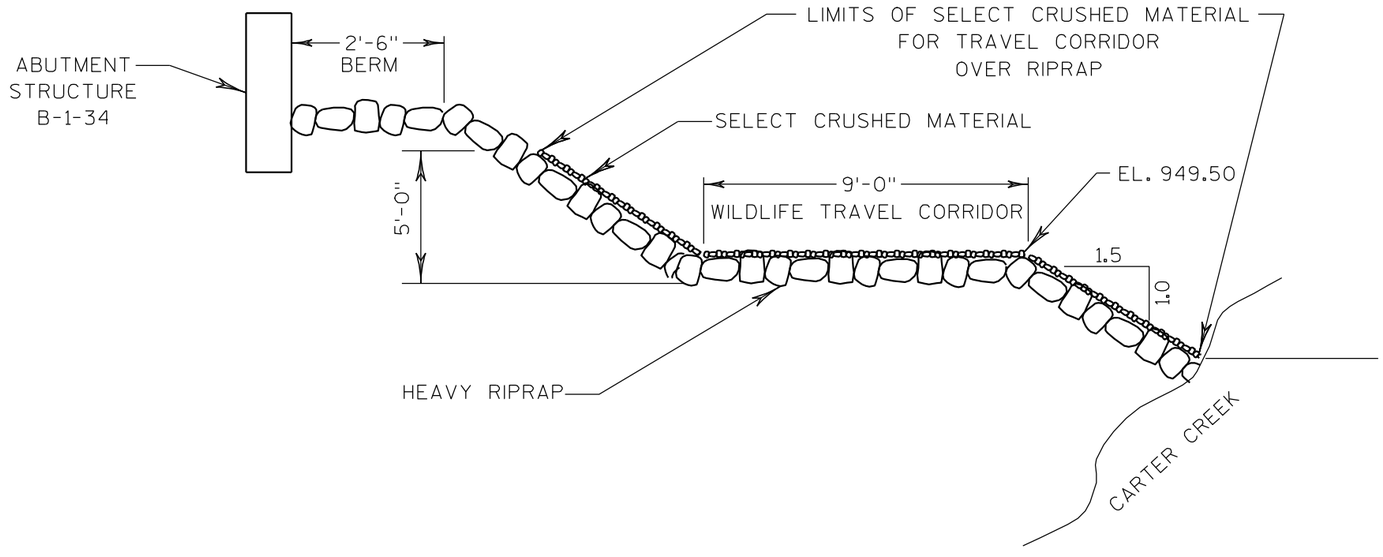
THE PURPOSE OF THE TURTLE TURN-AROUNDS ARE TO REDIRECT THE TURTLES AWAY FROM THE CONSTRUCTION ZONE.
DESIGN SHOULD ALSO INCLUDE TRENCHED-IN SEDIMENT FENCING AND FENCING SUPPORTS ON UPSLOPE SIDE OF FENCE.
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND.

TEMPORARY TURTLE TURN-AROUND DETAIL

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	CONSTRUCTION DETAIL TEMPORARY TURTLE TURN-AROUND	SHEET E	E

FILE NAME : p:\projects\D4_61600303EC\021005_cd.dgn PLOT DATE : 12-JAN-2012 10:49 PLOT BY : dotc7s PLOT NAME : 021001cd.dgn PLOT SCALE : 200:1
WISDOT/CADDS SHEET 42

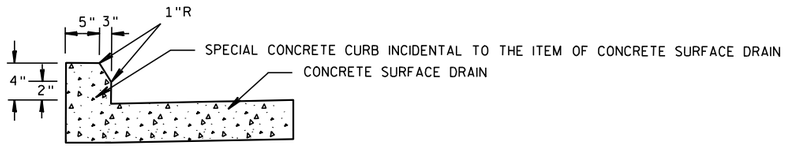
2



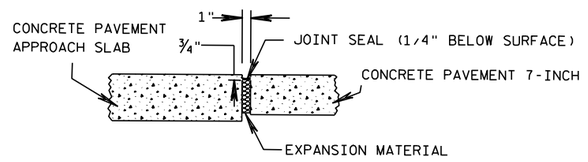
WILDLIFE TRAVEL CORRIDOR DETAIL

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	CONSTRUCTION DETAIL	SHEET F	E

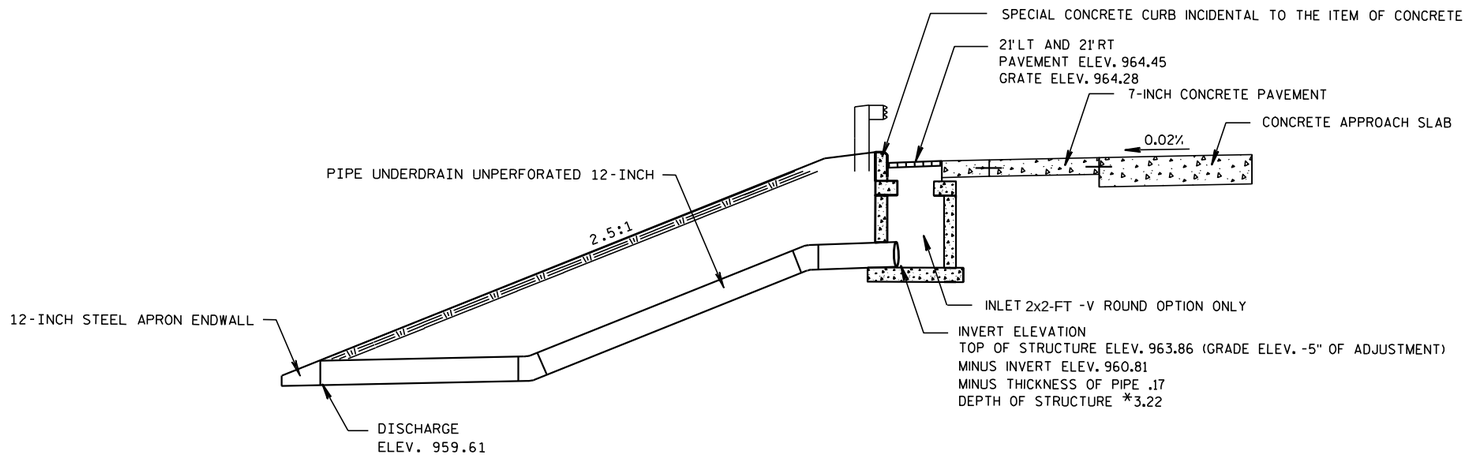
2



SPECIAL CONCRETE CURB



1" EXPANSION JOINT DETAIL



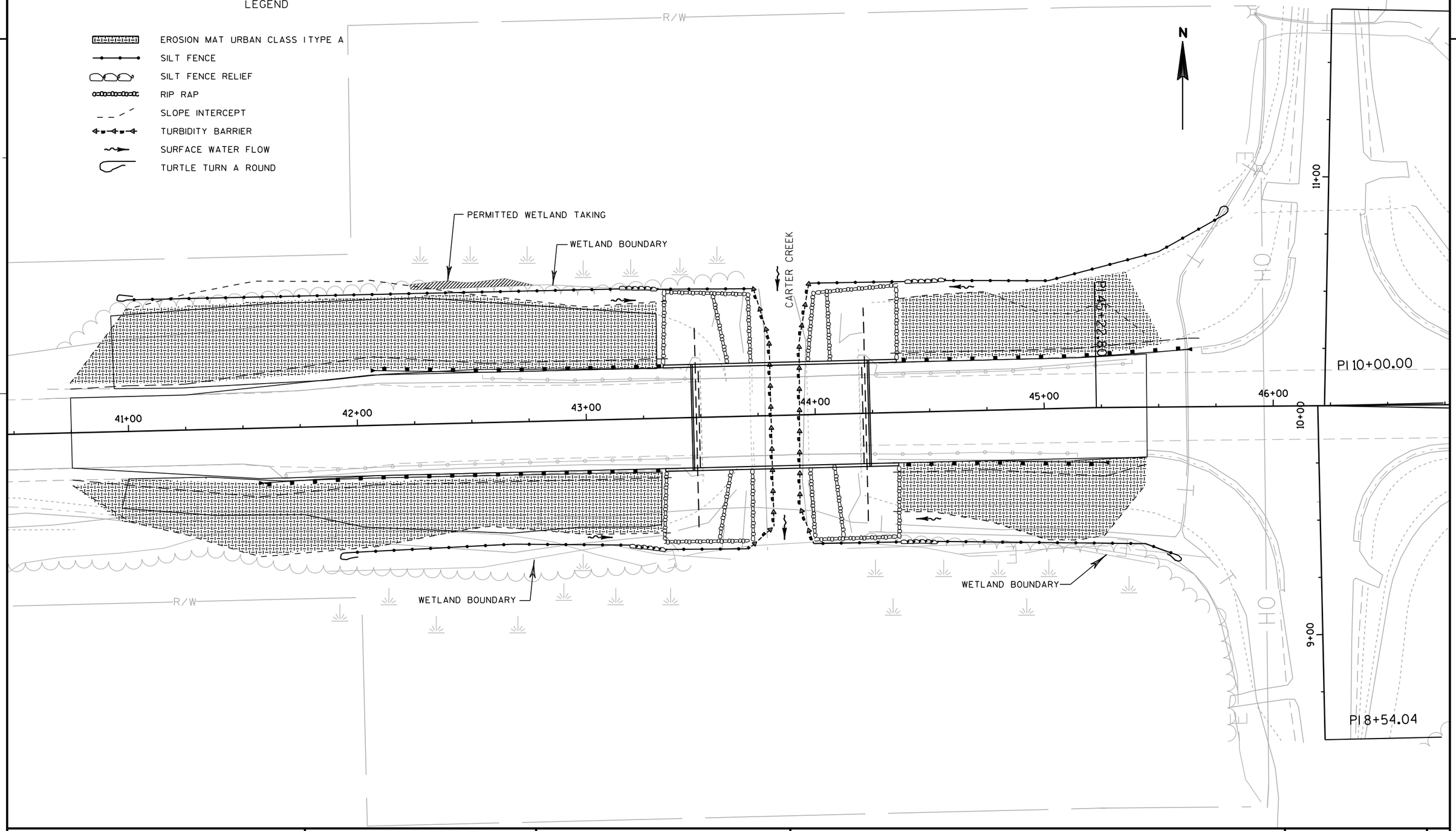
CONCRETE SURFACE DRAIN DROP INLET

NOTE: SEE STANDARD DETAIL DRAWINGS "CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES", AND "CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES" FOR ADDITIONAL INFORMATION

2

LEGEND

- EROSION MAT URBAN CLASS I TYPE A
- SILT FENCE
- SILT FENCE RELIEF
- RIP RAP
- SLOPE INTERCEPT
- TURBIDITY BARRIER
- SURFACE WATER FLOW
- TURTLE TURN A ROUND



PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	EROSION CONTROL	SHEET E

FILE NAME : p:\projects\D4_61600303EC\022001_ec.dgn PLOT DATE : 12-JAN-2012 10:49 PLOT BY : dotc7s PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

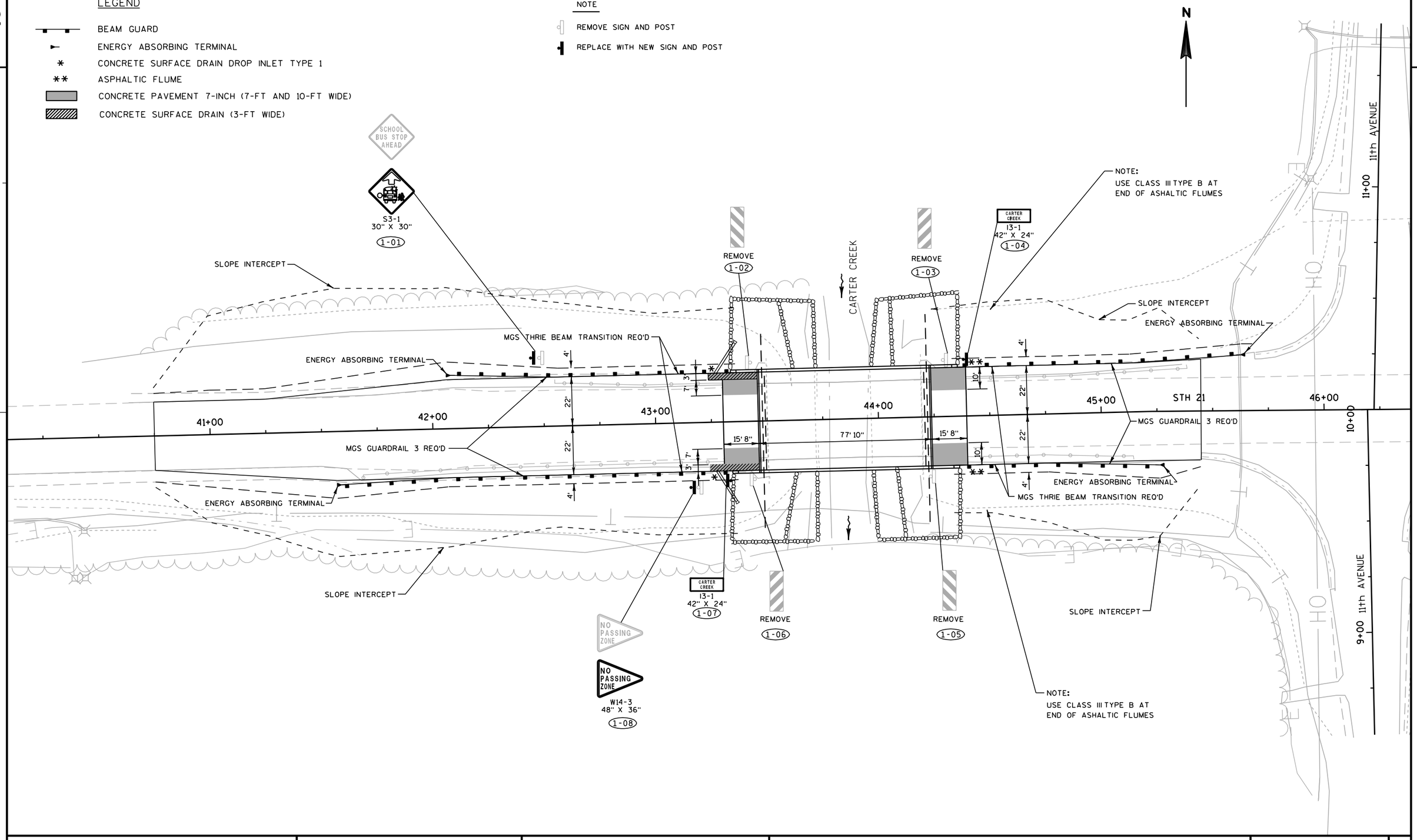
2

LEGEND

- BEAM GUARD
- ENERGY ABSORBING TERMINAL
- * CONCRETE SURFACE DRAIN DROP INLET TYPE 1
- ** ASPHALTIC FLUME
- CONCRETE PAVEMENT 7-INCH (7-FT AND 10-FT WIDE)
- CONCRETE SURFACE DRAIN (3-FT WIDE)

NOTE

- REMOVE SIGN AND POST
- REPLACE WITH NEW SIGN AND POST



PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	PLAN DETAIL / PERMANENT SIGNING	SHEET E

2

2

NOTE

REMOVE SIGN AND POST

REPLACE WITH NEW SIGN AND POST

N

BENCHMARK
ELEV. 664.63'
REBAR WITH RED CAP
Y: 240138.66
X: 536271.11

11th AVENUE

11+00

10+00

9+00

45+00

STH 21

46+00

47+00

48+00

49+00

50+00

STOP
R1-1
36" X 36"
2-01

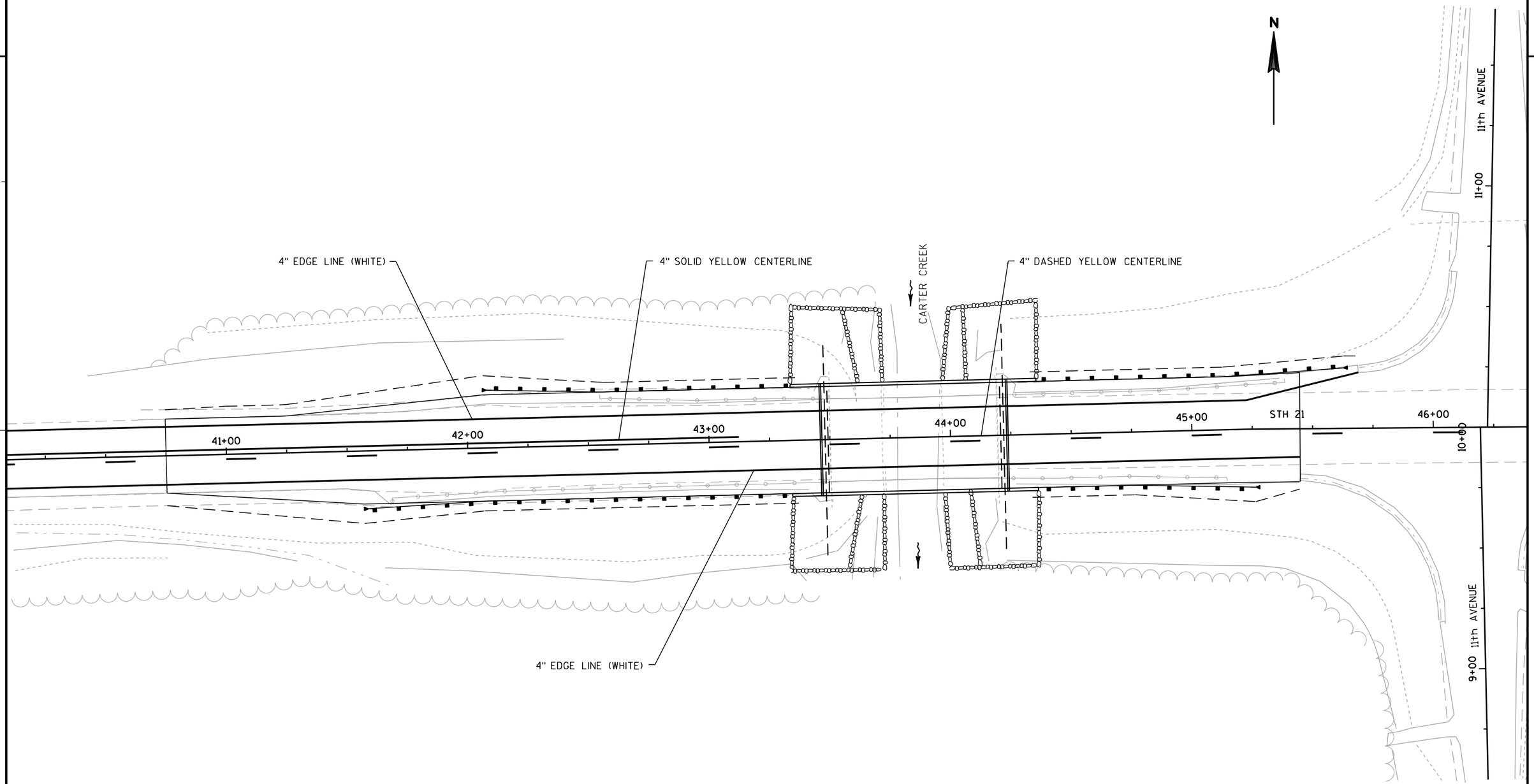
STOP
R1-1
36" X 36"
2-02

STOP
R1-1
36" X 36"
2-03

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	PERMANENT SIGNING	SHEET	E

FILE NAME : p:\projects\D4_61600303EC\023202_ps.dgn PLOT DATE : 12-JAN-2012 10:50 PLOT BY : dotc7s PLOT NAME : PLOT SCALE : 40:1

2



PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	PAVEMENT MARKING	SHEET	E

2

2

N

BENCHMARK
ELEV. 664.63'
REBAR WITH RED CAP
Y: 240138.66
X: 536271.11

11th AVENUE

11+00

4" DASHED YELLOW CENTERLINE

8" CHANNELIZING (WHITE)

18" STOP LINE (WHITE)

4" EDGE LINE (WHITE)

4" EDGE LINE (WHITE)

45+00

STH 21

46+00

47+00

48+00

49+00

50+00

10+00

9+00

11th AVENUE

18" STOP LINE (WHITE)

4" EDGE LINE (WHITE)

4" EDGE LINE (WHITE)

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	PAVEMENT MARKING	SHEET	E

NOTE: LANE CLOSURE TAPER SHALL BE USED WHEN CONTRACTORS EQUIPMENT OR WORKMEN OCCUPY A NORMAL DRIVING LANE OR ARE PARKED OR WORKING ON THE SHOULDER.

6:00 AM TO 8:00 PM

INTERVAL	EB	WB	SECONDS
1	G	R	27
2	Y	R	4
3	R	R	34
4	R	G	27
5	R	Y	4
6	R	R	34

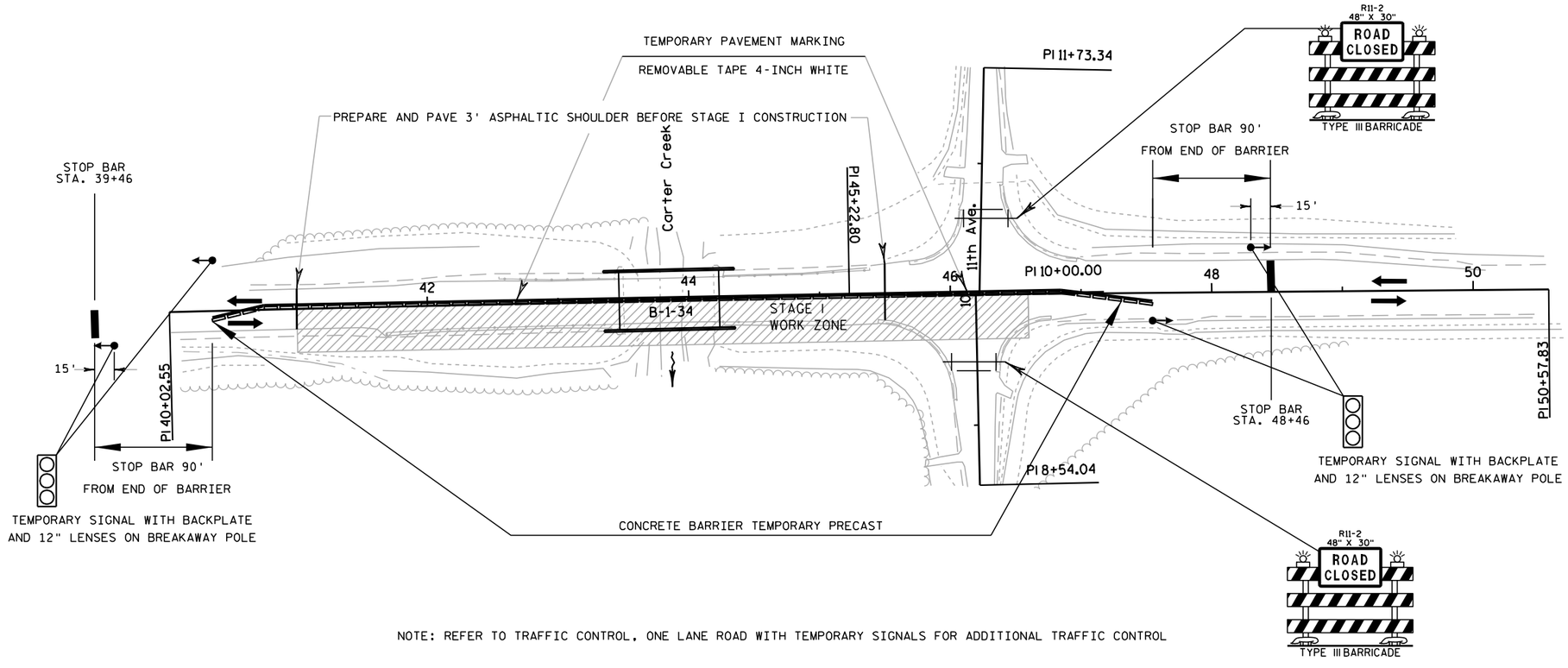
EMERGENCY FR FR
FLASH
CYCLE LENGTH = 130 SEC.
NOTE: THE ALL-RED CLEARANCE (INTERVAL 3 & 6) IS BASED ON A STOPLINE TO STOPLINE DISTANCE = 900 FT IF THIS DISTANCE IS MODIFIED IN THE FIELD CONTACT THE NC REGION TRAFFIC SECTION FOR TIMING MODIFICATION.

8:00 PM TO 6:00 AM

INTERVAL	EB	WB	SECONDS
1	G	R	19
2	Y	R	4
3	R	R	34
4	R	G	19
5	R	Y	4
6	R	R	34

EMERGENCY FR FR
FLASH
CYCLE LENGTH = 114 SEC.
NOTE: THE ALL-RED CLEARANCE (INTERVAL 3 & 6) IS BASED ON A STOPLINE TO STOPLINE DISTANCE = 900 FT IF THIS DISTANCE IS MODIFIED IN THE FIELD CONTACT THE NC REGION TRAFFIC SECTION FOR TIMING MODIFICATION.

N



NOTE: REFER TO TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS FOR ADDITIONAL TRAFFIC CONTROL

NOTE: SEE DETAIL "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ALL SIGNING PLACEMENT INFORMATION.

NOTE: EXISTING SPEED LIMIT IS 55 MPH.

LEVELS ON • 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	TRAFFIC CONTROL STAGE 1	SHEET	E

FILE NAME : p:\projects\D4_61600303EC\025001_tc.dgn PLOT DATE : 12-JAN-2012 10:50 PLOT BY : dotc7s PLOT NAME : PLOT SCALE : 100:1

NOTE: LANE CLOSURE TAPER SHALL BE USED WHEN CONTRACTORS EQUIPMENT OR WORKMEN OCCUPY A NORMAL DRIVING LANE OR ARE PARKED OR WORKING ON THE SHOULDER.

6:00 AM TO 8:00 PM

INTERVAL	EB	WB	SECONDS
1	G	R	27
2	Y	R	4
3	R	R	34
4	R	G	27
5	R	Y	4
6	R	R	34

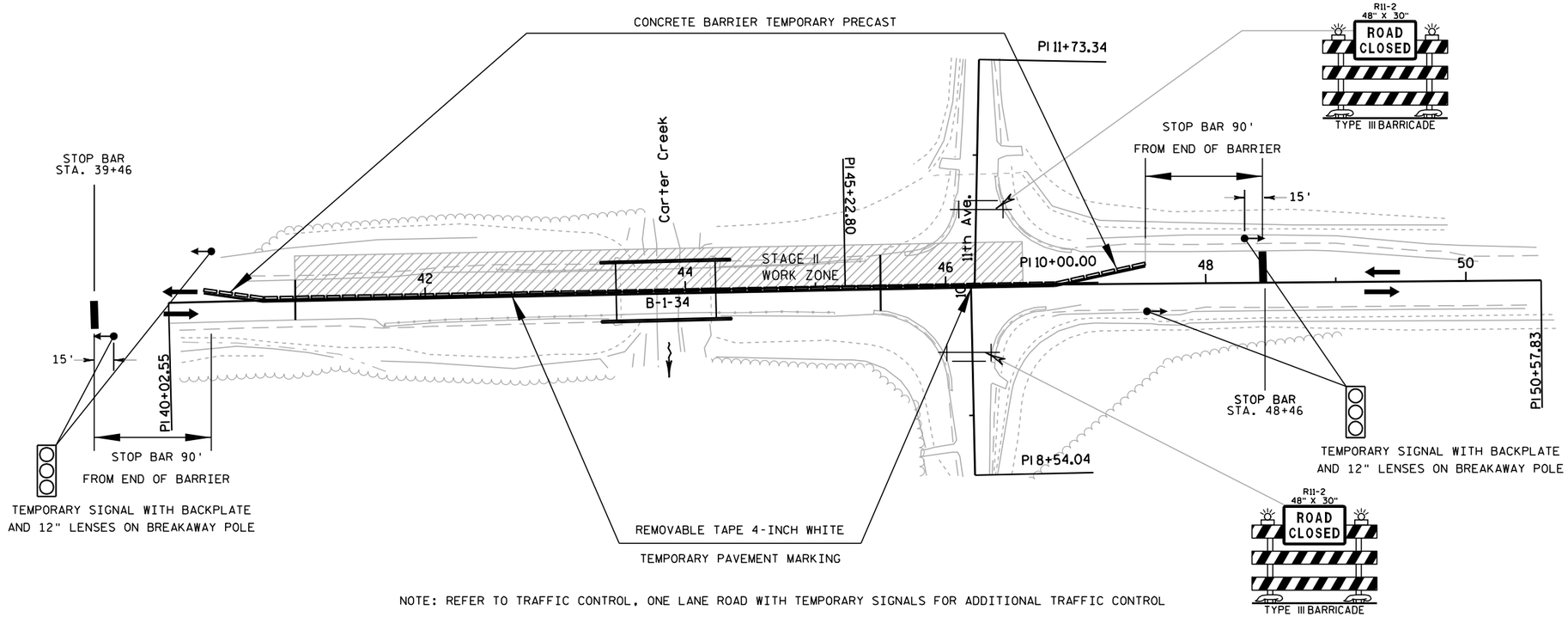
EMERGENCY FR FR
FLASH
CYCLE LENGTH = 130 SEC.
NOTE: THE ALL-RED CLEARANCE (INTERVAL 3 & 6) IS BASED ON A STOPLINE TO STOPLINE DISTANCE = 900 FT IF THIS DISTANCE IS MODIFIED IN THE FIELD CONTACT THE NC REGION TRAFFIC SECTION FOR TIMING MODIFICATION.

8:00 PM TO 6:00 AM

INTERVAL	EB	WB	SECONDS
1	G	R	19
2	Y	R	4
3	R	R	34
4	R	G	19
5	R	Y	4
6	R	R	34

EMERGENCY FR FR
FLASH
CYCLE LENGTH = 114 SEC.
NOTE: THE ALL-RED CLEARANCE (INTERVAL 3 & 6) IS BASED ON A STOPLINE TO STOPLINE DISTANCE = 900 FT IF THIS DISTANCE IS MODIFIED IN THE FIELD CONTACT THE NC REGION TRAFFIC SECTION FOR TIMING MODIFICATION.

N



NOTE: REFER TO TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS FOR ADDITIONAL TRAFFIC CONTROL

NOTE: SEE DETAIL "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ALL SIGNING PLACEMENT INFORMATION.

NOTE: EXISTING SPEED LIMIT IS 55 MPH.

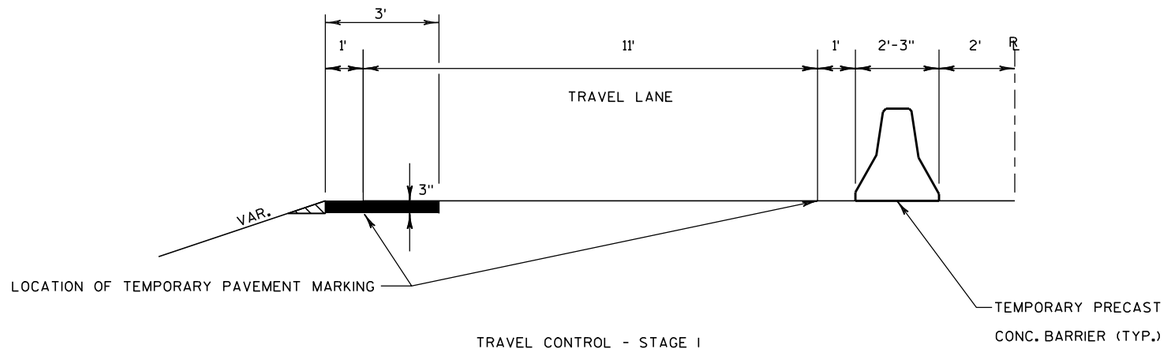
PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	TRAFFIC CONTROL STAGE II	SHEET	E

2

LEGEND

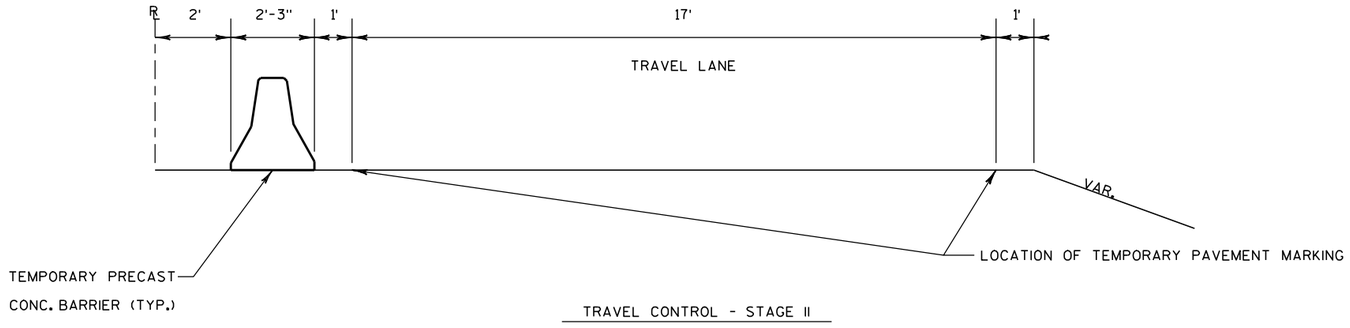
TEMPORARY ASPHALTIC PAVEMENT

TEMPORARY SHOULDER

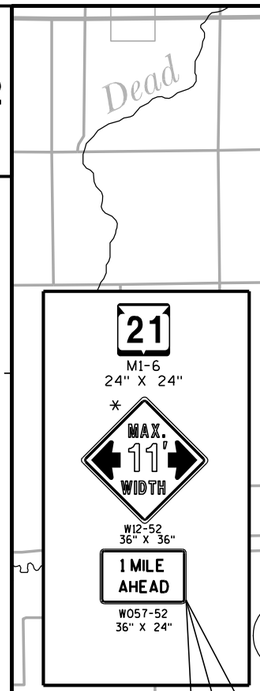


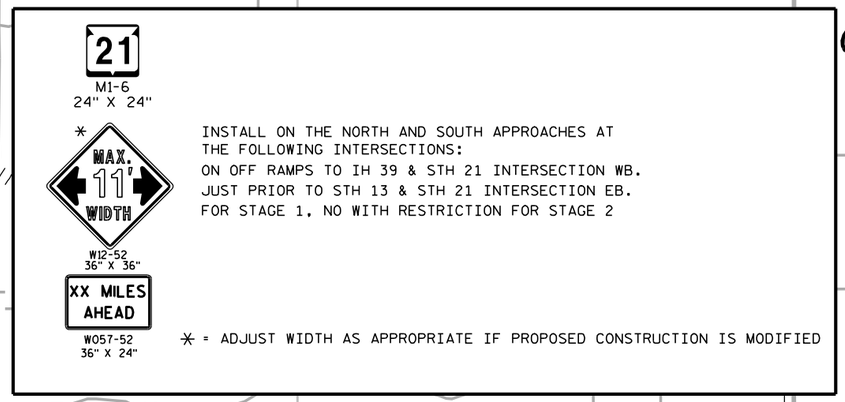
TRAVEL CONTROL - STAGE I

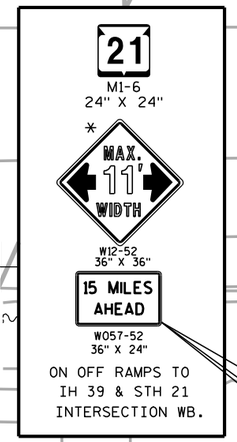
PREPARE & PAVE 3' ASPHALTIC SHOULDER STATION 41+00 - 45+50 BEFORE STAGE I CONSTRUCTION



TRAVEL CONTROL - STAGE II







PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	TRAFFIC CONTROL	SHEET E

FILE NAME : p:\projects\D4_61600303EC\025004_tc.dgn PLOT DATE : 12-JAN-2012 10:50 PLOT BY : dotc7s PLOT NAME : PLOT SCALE : 6000:1

WISDOT/CADDS SHEET 42

DATE 18FEB13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	6160-03-73 QUANTITY
0010	203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL (STRUCTURE) 01. B-1-534	LS	1.000	1.000
0020	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 43+84. 87	LS	1.000	1.000
0030	204.9035.S	REMOVING (ITEM DESCRIPTION) 01. REMOVING OLD BRIDGE DEBRIS	CY	9.000	9.000
0040	205.0100	EXCAVATION COMMON	CY	758.000	758.000
0050	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-1-0034	LS	1.000	1.000
0060	206.6000.S	TEMPORARY SHORING	SF	600.000	600.000
0070	208.0100	BORROW	CY	725.000	725.000
0080	210.0100	BACKFILL STRUCTURE	CY	302.000	302.000
0090	213.0100	FINISHING ROADWAY (PROJECT) 01. 6160-03-73	EACH	1.000	1.000
0100	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	260.000	260.000
0110	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,120.000	1,120.000
0120	415.0070	CONCRETE PAVEMENT 7-INCH	SY	59.300	59.300
0130	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	83.600	83.600
0140	416.0610	DRILLED TIE BARS	EACH	12.000	12.000
0150	416.1010	CONCRETE SURFACE DRAINS	CY	2.800	2.800
0160	455.0105	ASPHALTIC MATERIAL PG58-28	TON	22.500	22.500
0170	455.0605	TACK COAT	GAL	30.000	30.000
0180	460.1103	HMA PAVEMENT TYPE E-3	TON	401.000	401.000
0190	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	260.000	260.000
0200	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	20.000	20.000
0210	465.0315	ASPHALTIC FLUMES	SY	28.000	28.000
0220	502.0100	CONCRETE MASONRY BRIDGES	CY	246.000	246.000
0230	502.3200	PROTECTIVE SURFACE TREATMENT	SY	460.000	460.000
0240	503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	525.000	525.000
0250	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	5,730.000	5,730.000
0260	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	27,530.000	27,530.000
0270	505.0906	BAR COUPLERS NO. 6	EACH	36.000	36.000
0280	505.0908	BAR COUPLERS NO. 8	EACH	14.000	14.000
0290	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	14.000	14.000
0300	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-1-0034	EACH	6.000	6.000
0310	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	28.000	28.000
0320	521.1012	APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	EACH	2.000	2.000
0330	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	2,000.000	2,000.000
0340	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	1,020.000	1,020.000
0350	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	2,040.000	2,040.000
0360	606.0300	RIPRAP HEAVY	CY	620.000	620.000
0370	611.0654	INLET COVERS TYPE V	EACH	2.000	2.000
0380	611.3220	INLETS 2x2-FT	EACH	2.000	2.000
0390	612.0212	PIPE UNDERDRAIN UNPERFORATED 12-INCH	LF	32.000	32.000
0400	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	180.000	180.000
0410	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4.000	4.000
0420	614.0920	SALVAGED RAIL	LF	318.000	318.000
0430	614.0925	SALVAGED GUARDRAIL END TREATMENTS	EACH	4.000	4.000
0440	614.2300	MGS GUARDRAIL 3	LF	161.000	161.000

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DATE 18FEB13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	6160-03-73 QUANTITY
0450	614.2500	MGS THRIE BEAM TRANSITION	LF	157.600	157.600
0460	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0470	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 6160-03-73	EACH	1.000	1.000
0480	619.1000	MOBILIZATION	EACH	1.000	1.000
0490	624.0100	WATER	MGAL	50.000	50.000
0500	625.0100	TOPSOIL	SY	2,254.000	2,254.000
0510	628.1504	SILT FENCE	LF	922.000	922.000
0520	628.1520	SILT FENCE MAINTENANCE	LF	922.000	922.000
0530	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	6.000	6.000
0540	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	3.000	3.000
0550	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	2,254.000	2,254.000
0560	628.2033	EROSION MAT CLASS III TYPE B	SY	8.000	8.000
0570	628.6005	TURBIDITY BARRIERS	SY	140.000	140.000
0580	628.7570	ROCK BAGS	EACH	68.000	68.000
0590	629.0210	FERTILIZER TYPE B	CWT	2.000	2.000
0600	630.0120	SEEDING MIXTURE NO. 20	LB	34.000	34.000
0610	630.0200	SEEDING TEMPORARY	LB	48.000	48.000
0620	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	7.000	7.000
0630	637.0202	SIGNS REFLECTIVE TYPE II	SF	48.630	48.630
0640	638.2602	REMOVING SIGNS TYPE II	EACH	9.000	9.000
0650	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	9.000	9.000
0660	642.5401	FIELD OFFICE TYPE D	EACH	1.000	1.000
0670	643.0100	TRAFFIC CONTROL (PROJECT) 01. 6160-03-73	EACH	1.000	1.000
0680	643.0300	TRAFFIC CONTROL DRUMS	DAY	200.000	200.000
0690	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	408.000	408.000
0700	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	816.000	816.000
0710	643.0900	TRAFFIC CONTROL SIGNS	DAY	2,960.000	2,960.000
0720	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	1,150.000	1,150.000
0730	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	3,965.000	3,965.000
0740	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	195.000	195.000
0750	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	48.000	48.000
0760	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	1,400.000	1,400.000
0770	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	1,884.000	1,884.000
0780	649.1000	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 12-INCH	LF	24.000	24.000
0790	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	475.000	475.000
0800	650.5000	CONSTRUCTION STAKING BASE	LF	475.000	475.000
0810	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-1-0034	LS	1.000	1.000
0820	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 6160-03-73	LS	1.000	1.000
0830	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	475.000	475.000
0840	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. B-1-0034	LS	1.000	1.000
0850	690.0150	SAWING ASPHALT	LF	60.000	60.000
0860	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	45.000	45.000
0870	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,476.000	1,476.000
0880	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR	HRS	1,200.000	1,200.000
0890	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	300.000	300.000
0900	SPV.0195	SPECIAL 01. SELECT CRUSHED MATERIAL FOR CORRIDOR	TON	80.000	80.000

EARTHWORK SUMMARY

STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Cut 1.00 Note 1	Expanded Fill 1.25	Note 8
40+75.00	46.63	19.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41+00.00	47.51	19.25	50.38	43.59	17.77	23.33	43.59	29.16	-3.34
41+25.00	52.99	19.25	104.05	46.53	17.82	71.49	90.11	118.52	-64.00
41+50.00	59.22	19.31	145.78	51.94	17.85	115.66	142.06	263.10	-174.49
41+57.00	60.85	19.81	157.32	15.56	5.07	39.29	157.62	312.22	-213.11
42+00.00	63.45	23.69	127.09	98.98	34.64	226.48	256.60	595.31	-431.87
42+07.00	63.79	23.69	123.73	16.49	6.14	32.51	273.10	635.96	-462.16
42+50.00	67.51	23.44	48.04	104.56	37.53	136.78	377.65	806.94	-566.11
42+57.00	66.65	22.31	42.15	17.39	5.93	11.69	395.04	821.55	-569.26
43+00.00	51.82	22.50	40.51	94.34	35.68	65.82	489.38	903.83	-592.88
43+37.00	40.47	23.25	53.96	63.23	31.35	64.73	552.61	984.74	-641.91
44+33.00	35.71	23.81	51.18	0.00	0.00	0.00	#REF!	0.00	0.00
44+50.00	39.12	24.13	43.55	23.56	15.09	29.82	#REF!	37.28	-28.81
44+75.00	44.05	24.69	42.87	38.51	22.60	40.01	#REF!	87.29	-62.92
45+00.00	52.34	25.63	39.12	44.63	23.30	37.96	#REF!	134.75	-89.04
45+13.00	56.97	26.19	32.07	26.32	12.48	17.14	#REF!	156.17	-96.63
45+26.00	61.31	26.63	25.73	28.48	12.72	13.92	#REF!	173.57	-98.26
45+44.00	71.55	28.06	0.00	44.29	18.23	8.58	#REF!	184.29	-82.92

Total unusable pavement material	**Item # 205.0100 Common Excavation**	Total expanded fill	**Item # 208.0100 Borrow**
314	758	1169	725

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

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BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0120 1 1/4-INCH TON	305.0110 3/4-INCH TON	REMARKS
40+75 - 43+23	RIGHT	400	85	MAINLINE
40+75 - 43+23	LEFT	400	85	MAINLINE
44+47 - 45+50	RIGHT	160	45	MAINLINE
44+47 - 45+50	LEFT	160	45	MAINLINE
	TOTALS	1120	260	

CONCRETE SURFACE DRAINS

STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	416.1010 CONCRETE SURFACE DRAINS CY	611.3220 INLETS 2x2-FT EACH	611.0654 INLET COVERS TYPE V EACH	612.0212 PIPE UNDERDRAIN UNPERFORATED 12-INCH LF	521.1012 AEW FOR CP STEEL 12-INCH EACH
43+24 - 43+46	RIGHT	6	1.4	---	---	---	---
43+24 - 43+46	LEFT	6	1.4	---	---	---	---
43+27	21' LEFT	---	---	1	1	16	1
43+27	21' RIGHT	---	---	1	1	16	1
	TOTALS	12	2.8	2	2	32	2

3

CONCRETE PAVEMENT APPROACH SLAB

STATION - STATION	LOCATION	415.0410 SY	REMARKS
43+30 - 43+46	CL	41.8	
44+23 - 44+39	CL	41.8	
	TOTAL	83.6	

REMOVING OLD BRIDGE DEBRIS

PROJECT	STATION	204.9035.S CY	REMARKS
6160-03-73	43+80	9	BRIDGE
	TOTAL	9	

SALVAGED RAIL

STATION - STATION	LOCATION	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARD END TREATMENT EACH	REMARKS
41+68 - 43+53	RIGHT	146	1	SW QUAD
42+55 - 43+52	LEFT	49	1	NW QUAD
44+16 - 45+39	LEFT	75	1	NE QUAD
44+17 - 45+14	RIGHT	48	1	SE QUAD
	TOTAL	318	4	

CONCRETE BARRIER TEMPORARY PRECAST CONTRACTOR FURNISHED AND DELIVERED

STATION - STATION	LOCATION	603.8000 CONC. BARRIER TEMP. PRECAST DELIVERED LF	603.8125 CONC. BARRIER TEMP. PRECAST INSTALLED LF	REMARKS
37+36 - 47+56	RIGHT	1020	1020	STAGE 1 B-1-34
37+36 - 47+56	LEFT	--	1020	STAGE 2 B-1-34
	TOTAL	1020	2040	

CONCRETE PAVEMENT 7-INCH

STATION - STATION	LOCATION	415.0070 SY	REMARKS
43+30 - 43+46	12' - 19' RIGHT & LEFT	24.4	
44+23 - 44+39	12' - 22' RIGHT & LEFT	34.9	
	TOTAL	59.3	

3

HMA PAVEMENT TYPE E-3

STATION - STATION	465.0125 ASPHALT SURFACE TEMPORARY TON	460.1103 HMA E-3 TON	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	REMARKS
40+75 - 43+30	13.0	286.0	16.0	21.0	MAINLINE
44+47 - 45+50	7.0	115.0	6.5	9.0	MAINLINE
TOTAL	20.0	401.0	22.5	30.0	

ASPHALTIC FLUMES

STATION	LOCATION	465.0315 SY	REMARKS
44+34	RIGHT	14	BETWEEN MGS POSTS 8 AND 9
44+34	LEFT	14	BETWEEN MGS POSTS 12 AND 13
	TOTAL	28	

3

MSG GUARDRAIL

STATION - STATION	LOCATION	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	614.2300 MGS GUARDRAIL 3 LF	614.2500 MSG THRIE BEAM TRANSITION LF	REMARKS
41+56 - 42+09	RIGHT	1	-	-	
42+07 - 42+60	LEFT	1	-	-	
42+09 - 42+95	RIGHT	-	86.0	-	
42+60 - 42+95	LEFT	-	35.0	-	
42+95 - 43+34	RIGHT	-	-	39.4	
42+95 - 43+34	LEFT	-	-	39.4	
44+36 - 44+75	RIGHT	-	-	39.4	
44+36 - 44+75	LEFT	-	-	39.4	
44+75 - 45+15	LEFT	-	40.0	-	
44+75 - 45+28	RIGHT	1	-	-	
45+14 - 45+67	LEFT	1	-	-	
	TOTALS	4.0	161.0	157.6	

3

FERTILIZER AND SEEDING

STATION - STATION	LOCATION	630.0200 SEEDING TEMPORARY LB	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	REMARKS
40+92 - 43+32	LEFT	21	0.5	14	
40+97 - 43+32	RIGHT	12	0.5	10	
44+38 - 45+53	LEFT	9	0.5	6	
44+38 - 45+43	RIGHT	6	0.5	4	
	TOTAL	48	2	34	

WATER

STATION - STATION	LOCATION	624.0100 MGAL	REMARKS
40+75 - 45+50	PROJECT	50	
	TOTAL	50	

3

SILT FENCE

STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF	REMARKS
41+10 - 43+70	LEFT	271	271	
41+90 - 43+70	RIGHT	210	210	
43+97 - 45+78	LEFT	211	211	
43+97 - 45+58	RIGHT	230	230	
	TOTALS	922	922	

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
41+00 - 45+50	6	3	
TOTALS	6	3	

EROSION MAT

STATION	LOCATION	628.2006 URBAN CLASS I TYPE A SY	625.0100 TOPSOIL SY	628.2033 EROSION MAT CLASS III TYPE B SY	REMARKS
40+92 - 43+32	LEFT	858	858	-	
40+97 - 43+32	RIGHT	709	709	-	
44+38 - 45+53	LEFT	355	355	-	
44+38 - 45+43	RIGHT	332	332	-	
44+34	RIGHT	-	-	4	
44+34	LEFT	-	-	4	
	TOTALS	2254	2254	8	

TURBIDITY BARRIERS

STATION - STATION	LOCATION	628.6005 SY	REMARKS
43+80	LEFT & RIGHT	70	
43+93	LEFT & RIGHT	70	
	TOTALS	140	

ROCK BAGS

STATION	LOCATION	628.7570 EACH	REMARKS
44+40	RIGHT	17	SILT FENCE RELIEF
44+40	LEFT	17	SILT FENCE RELIEF
43+25	RIGHT	17	SILT FENCE RELIEF
43+25	LEFT	17	SILT FENCE RELIEF
	TOTAL	68	

TEMPORARY PAVEMENT MARKING

STATION - STATION	649.0100 4-INCH YELLOW LF	649.0400 REMOVABLE TAPE 4 INCH WHITE LF	649.1000 STOP LINE REMOVABLE TAPE 12- INCH LF	REMARKS
48+46 - 55+46	700	--	--	STAGE 1 & 2
32+46 - 39+46	700	--	--	STAGE 1 & 2
39+46	--	--	12	STAGE 1 & 2
48+46	--	--	12	STAGE 1 & 2
40+36 - 47+56	--	720	--	WHITE EDGELINE STAGE 1
40+36 - 47+45	--	720	--	WHITE EDGELINE STAGE 2
41+00 - 45+44	--	444	--	WHITE EDGELINE STAGE 1 RT
PROJECT TOTALS	1400	1884	24	

SIGN LISTING

SIGN NO.	SIGN CODE	MESSAGE	SIZE	634.0616 POSTS WOOD 4X6 INCH 16-FT EACH	637.0202 REFLECT. TYPE II SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
1-01	S3-1	SCHOOL BUS STOP AHEAD	30" x 30"	1	6.25	1	1	
1-02	---	CLEARANCE STRIPER	---	---	---	1	1	REMOVE
1-03	---	CLEARANCE STRIPER	---	---	---	1	1	REMOVE
1-04	I3-1	CARTER CREEK	42" X 24"	1	7.00	---	---	
1-05	---	CLEARANCE STRIPER	---	---	---	1	1	REMOVE
1-06	---	CLEARANCE STRIPER	---	---	---	1	1	REMOVE
1-07	I3-1	CARTER CREEK	42" x 24"	1	7.00	---	---	
1-08	W14-3	NO PASSING ZONE	48" x 36"	1	6.00	1	1	
2-01	R1-1	STOP	36" x 36"	1	7.46	1	1	
2-02	R1-1	STOP	36" x 36"	1	7.46	1	1	
2-03	R1-1	STOP	36" x 36"	1	7.46	1	1	
			TOTALS	7	48.63	9	9	

3

PAVEMENT MARKING EPOXY

STATION - STATION	LENGTH	646.0106 4-INCH WHITE LF	646.0106 4-INCH YELLOW LF	646.0126 8-INCH WHITE LF	647.0566 18-INCH STOP LINE	REMARKS
40+02 LT - 45+69 LT	567	567	---	---	---	EDGE LINE
40+02 RT - 45+45 RT	543	543	---	---	---	EDGE LINE
46+01 LT - 46+23 LT	22	---	---	---	22	STOP LINE
46+20 RT - 46+46 RT	26	---	---	---	26	STOP LINE
46+97 LT - 48+92 LT	195	---	---	195	---	CHANNELIZING
46+77 RT - 50+58 RT	382	382	---	---	---	EDGE LINE
46+97 LT - 50+58 LT	361	361	---	---	---	EDGE LINE
40+02 - 50+58	2112	---	2112	---	---	CENTERLINE
TOTAL		1853	2112	195	48	
GRAND TOTAL		3965				

SAWING ASPHALT

STATION	LOCATION	690.0150 LF	REMARKS
40+75	RIGHT & LEFT	30	BEGINNING OF PROJECT
45+50	RIGHT & LEFT	30	END OF PROJECT
	TOTAL	60	

3

TRAFFIC CONTROL SUMMARY

LOCATION	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.0300 DRUMS DAYS	REMARKS
11TH AVE	408	816	-	
UNDISTRIBUTED	-	-	200	
TOTALS	408	816	200	

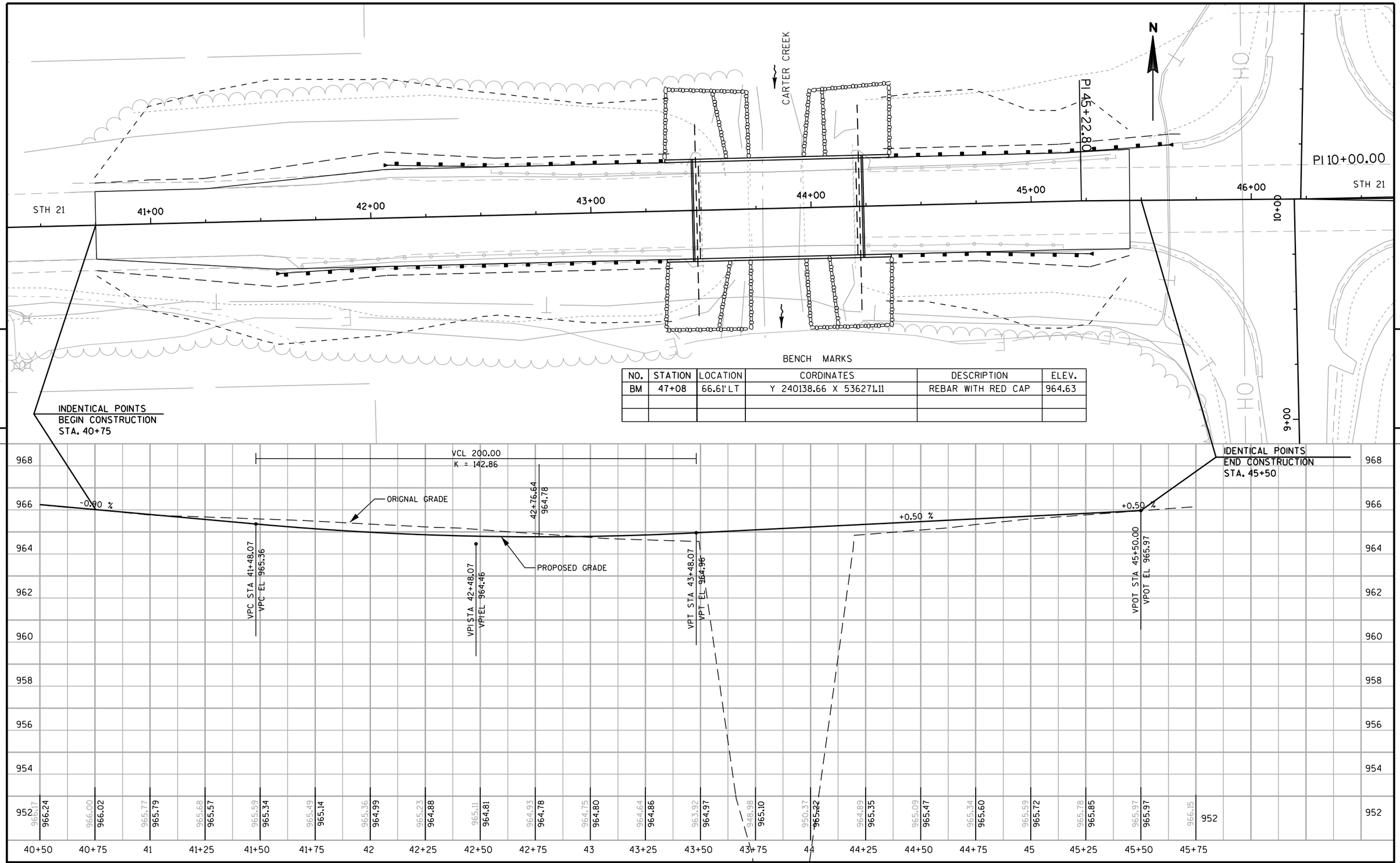
TRAFFIC CONTROL SIGNS

SIGN CODE	MESSAGE	QTY	DAYS	643.0900 SIGN DAYS	REMARKS
W20-1	ROAD WORK AHEAD	2	110	220	
W12-52	MAX WIDTH	2	110	220	
W20-4	ONE LANE ROAD AHEAD	2	110	220	
W14-3	NO PASSING ZONE	2	110	220	
W03-3	TRAFFIC SIGNAL AHEAD	2	110	220	
R10-6	STOP HERE ON RED	2	110	220	
G20-2A	END ROAD WORK	2	110	220	
W5-52L	TIGER BOARD	2	110	220	
W5-52R	TIGER BOARD	2	110	220	
W20-3A	ROAD CLOSED AHEAD	2	110	220	11th Ave.
M1-6	STATE ROUTE MARKER	6	30	180	21/39 & 21/13
W12-52	MAX WIDTH 11'	6	30	180	21/39 & 21/13
W057-52	15 MILES AHEAD	3	30	90	21/39
W057-52	1 MILE AHEAD	3	30	90	21/13
R11-2	ROAD CLOSED	2	110	220	
TOTALS		40	1330	2960	

CONSTRUCTION STAKING

STATION - STATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF	REMARKS
40+75 - 45+50	475	475	1	1	475	PROJECT
TOTALS	475	475	1	1	475	

FILE NAME : N:\pds\design_id\6160-03-03/73 STH 21 Carter Creek Bridge\Quantities\61600373_mp.ppt PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1



BENCH MARKS

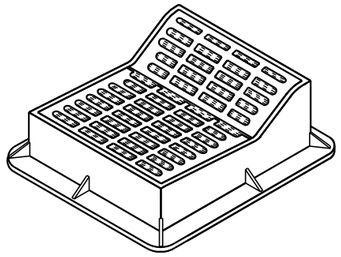
NO.	STATION	LOCATION	CORDINATES	DESCRIPTION	ELEV.
BM	47+08	66.61' LT	Y 240138.66 X 536271.11	REBAR WITH RED CAP	964.63

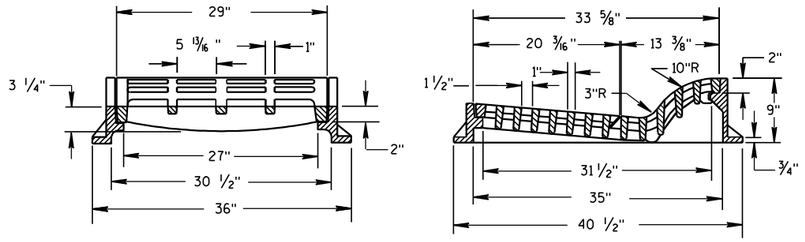
PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	PLAN & PROFILE	SHEET	E

Standard Detail Drawing List

08A05-18C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D03-06	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C08-15B	PAVEMENT MARKING (INTERSECTIONS)
15C08-15C	PAVEMENT MARKING (CLIMBING LANE & PASSING LANE)
15D33-02	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

6



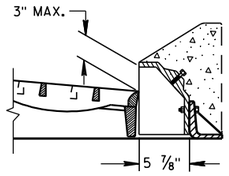


TYPE "F"

(APPROXIMATE WEIGHT 644 LBS.)

FRAME.....302 LBS.
GRATE.....160 LBS.
GRATE.....182 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT CURB BOX 68 LBS.)

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

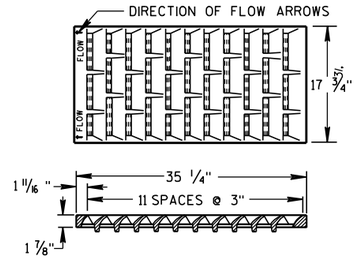
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

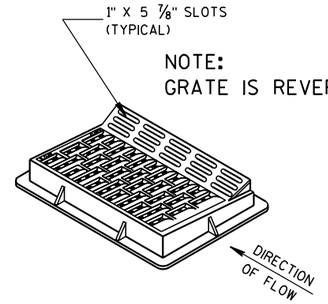
GENERAL NOTES

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.

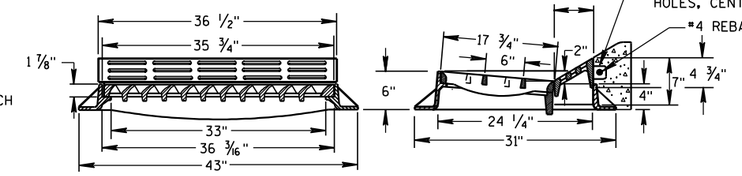
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





NOTE:
GRATE IS REVERSIBLE.

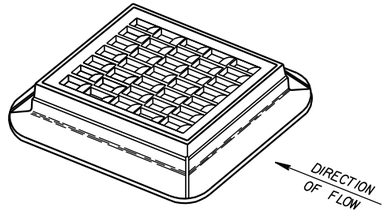


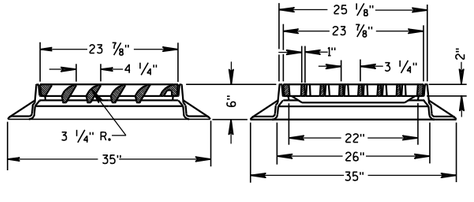
TYPE "HM"

(APPROXIMATE WEIGHT 414 LBS.)
FRAME..... 181 LBS.
GRATE..... 159 LBS.
CURB BOX..... 74 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

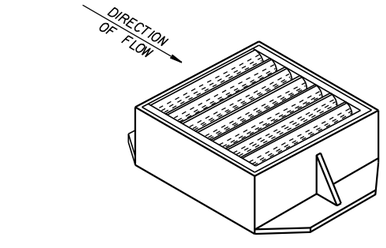


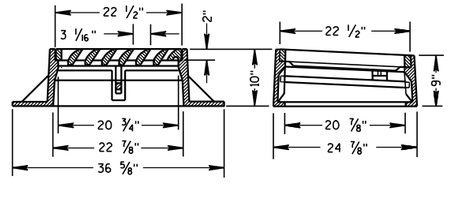


TYPE "S"

(APPROXIMATE WEIGHT 333 LBS.)

FRAME.....164 LBS.
GRATE..... 169 LBS.

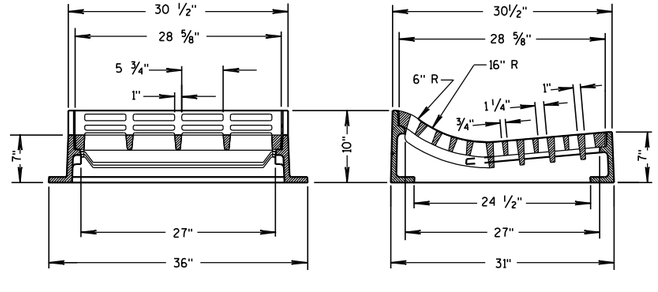




TYPE "V"

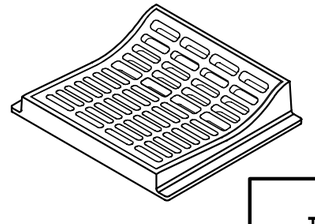
(APPROXIMATE WEIGHT 410 LBS.)

FRAME..... 269 LBS.
GRATE..... 136 LBS.
SAFETY BAR..... 5 LBS.



TYPE "T"

(APPROXIMATE WEIGHT 530 LBS.)
FRAME.....270 LBS.
GRATE.....260 LBS.
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 A 5-18c

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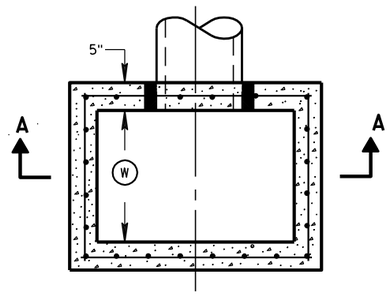
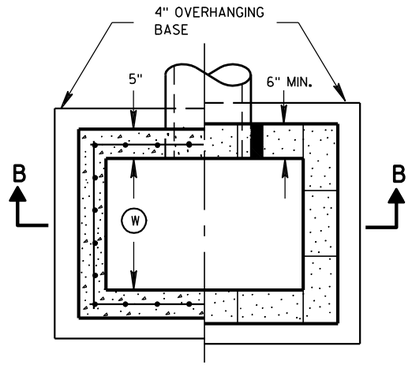
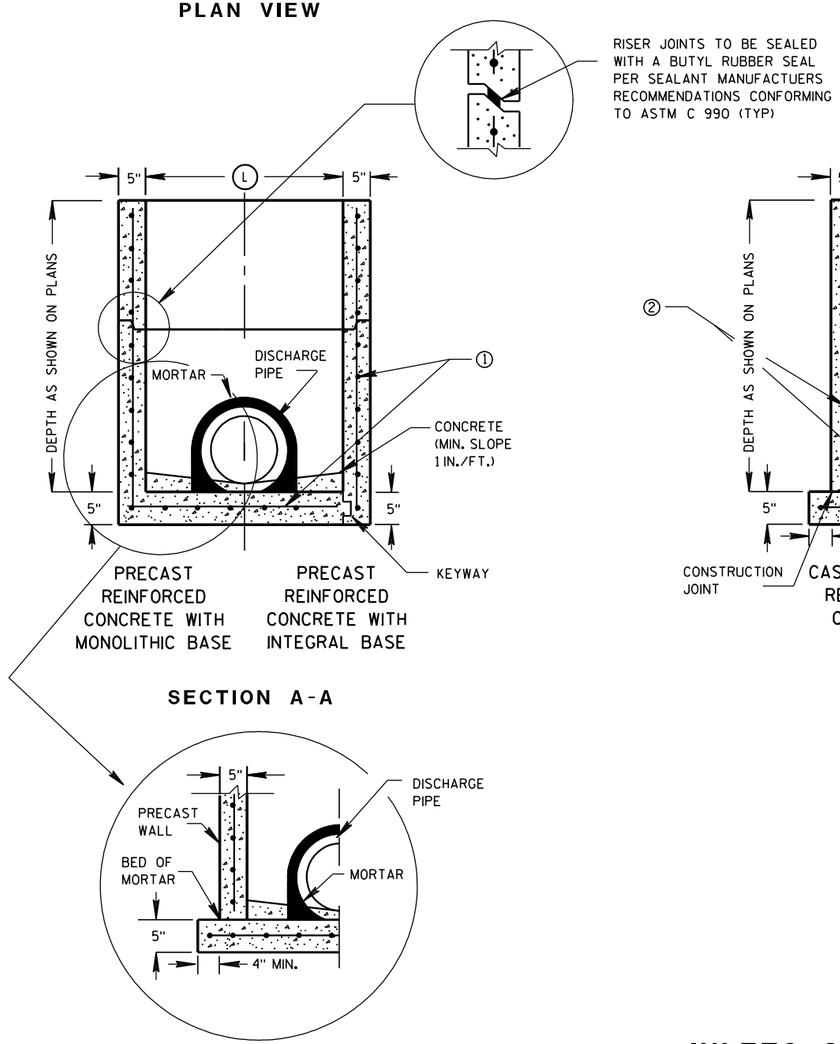
S.D.D. 8 A 5-18c



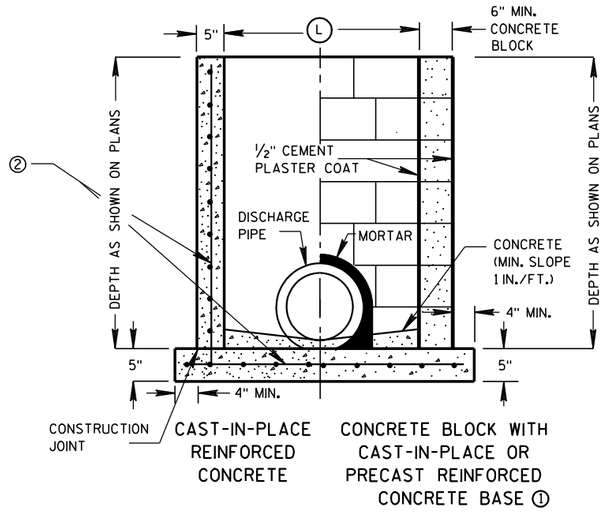
PLAN VIEW



PLAN VIEW



SECTION A-A



SECTION B-B

SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPERATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

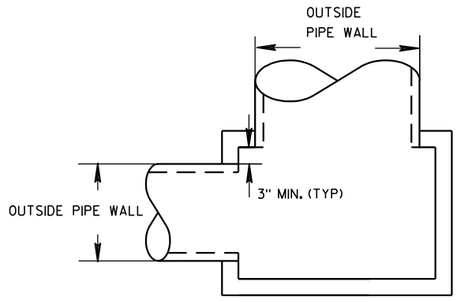
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS DIRECTOR
FHWA — ENGINEER

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S.D.D. 8 C 7-1

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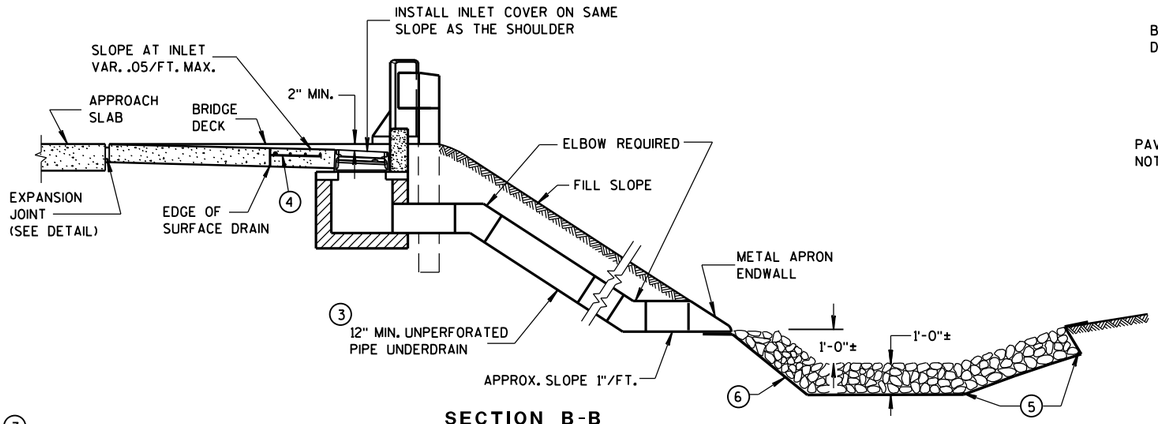
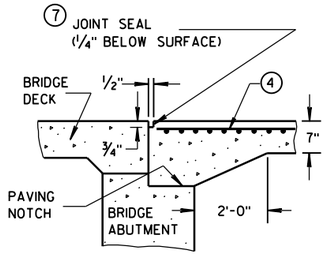
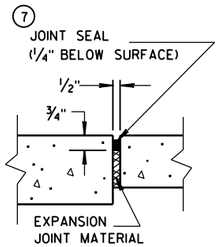
S.D.D. 8 C 7-1



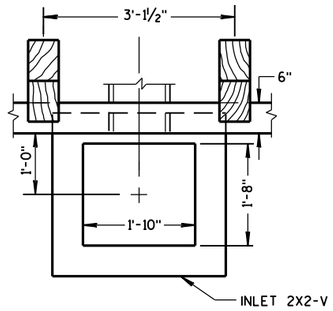
SECTION B-B



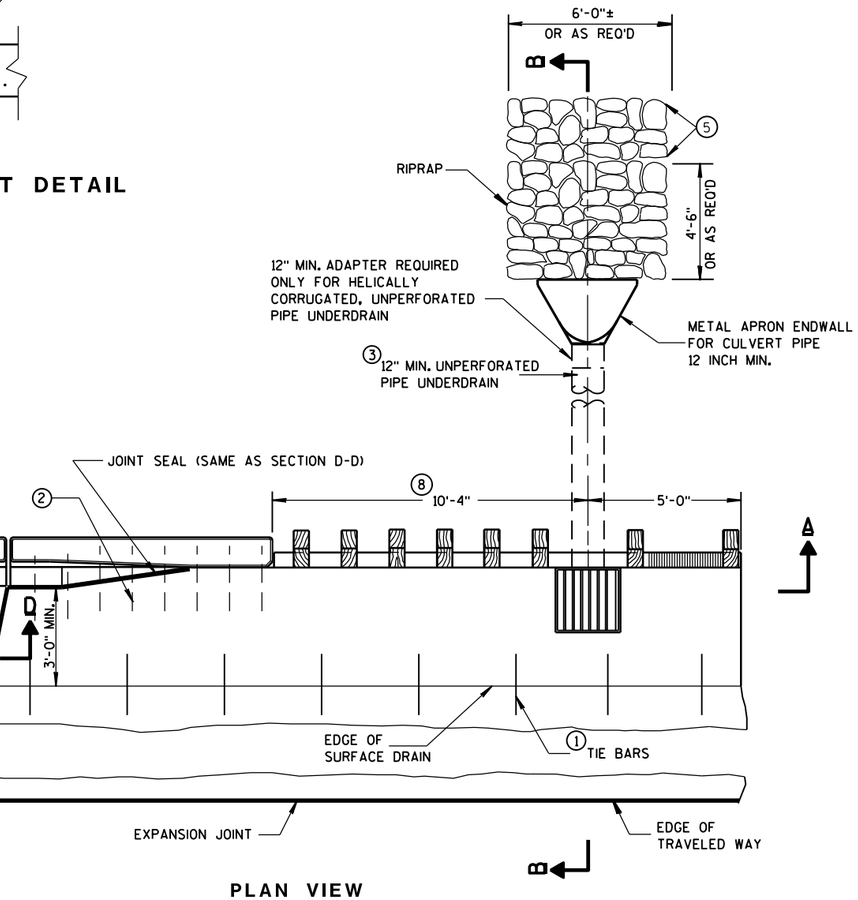
SECTION D-D



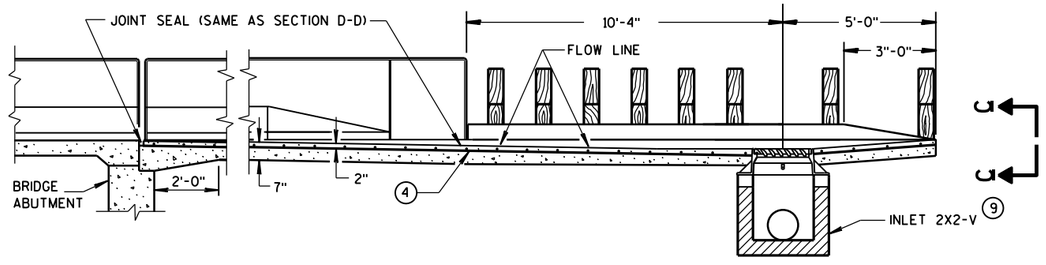
EXPANSION JOINT DETAIL



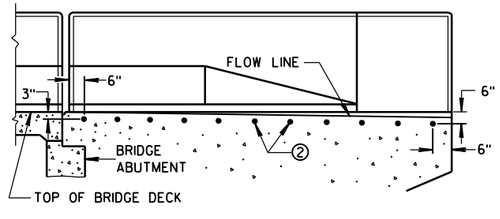
PLAN VIEW



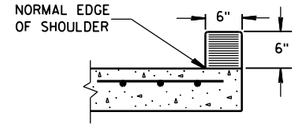
PLAN VIEW



SECTION A-A



LOCATION OF TIE BARS IN WINGWALL



SECTION C-C

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.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.

(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

(6) GEOTEXTILE FABRIC, TYPE 'R'

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".

(9) SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/4/08 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

FHWA

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S.D.D. 8 D 3-6

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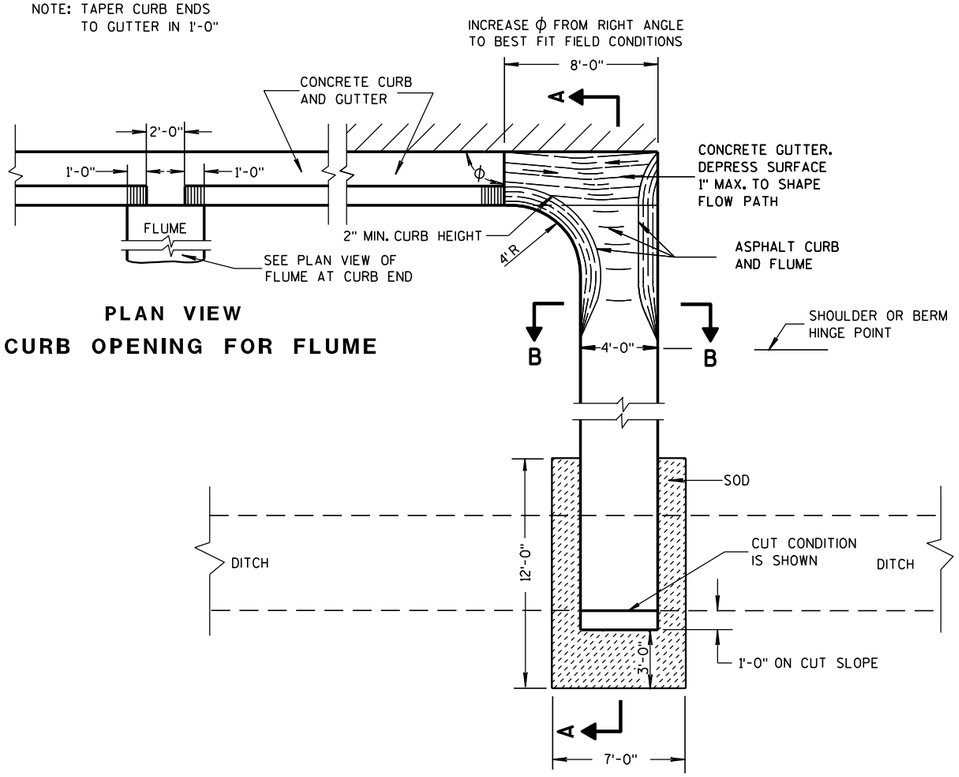
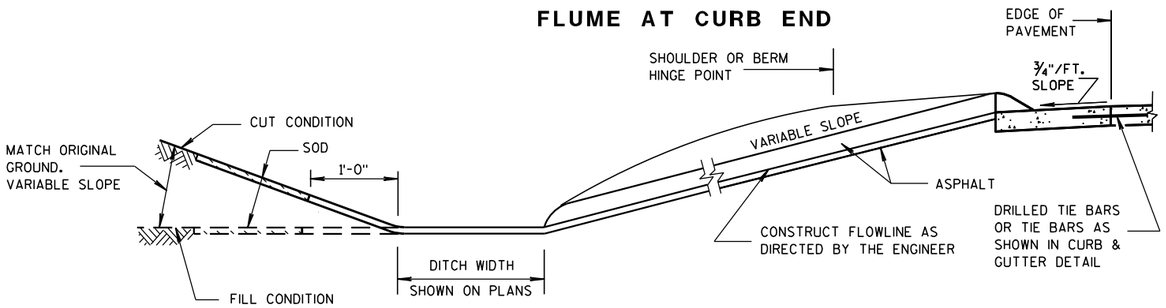
S.D.D. 8 D 3-6

ASPHALTIC FLUME

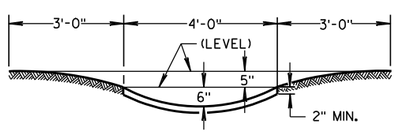


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

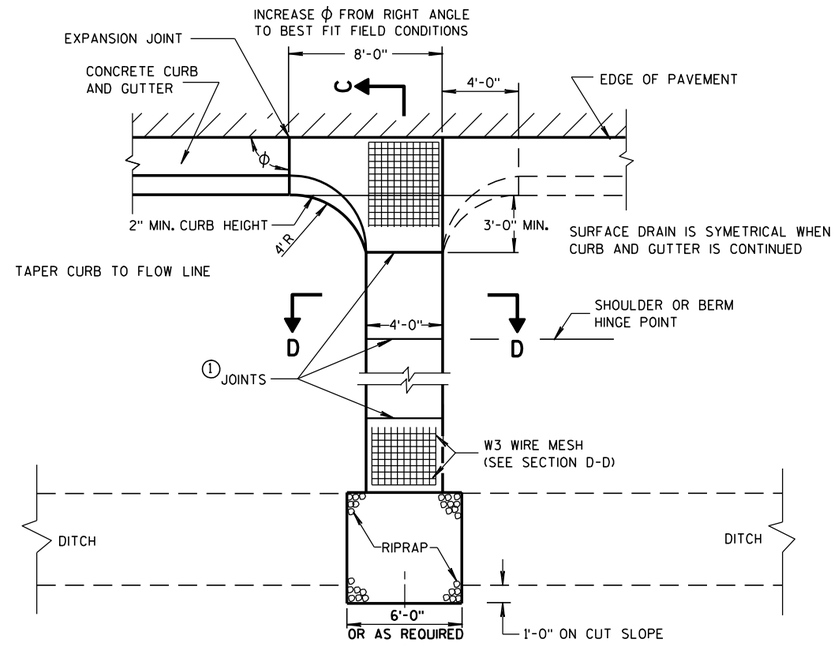
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

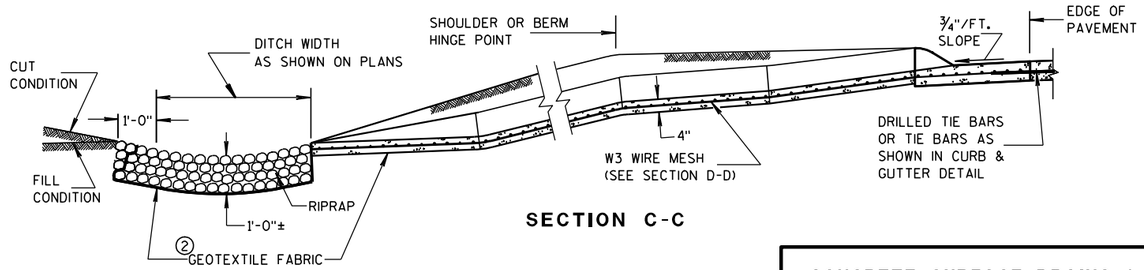
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

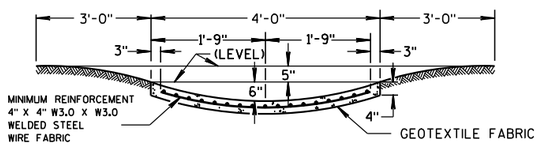
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
34
MENT
FHWA

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S.D.D. 8 D 4-5

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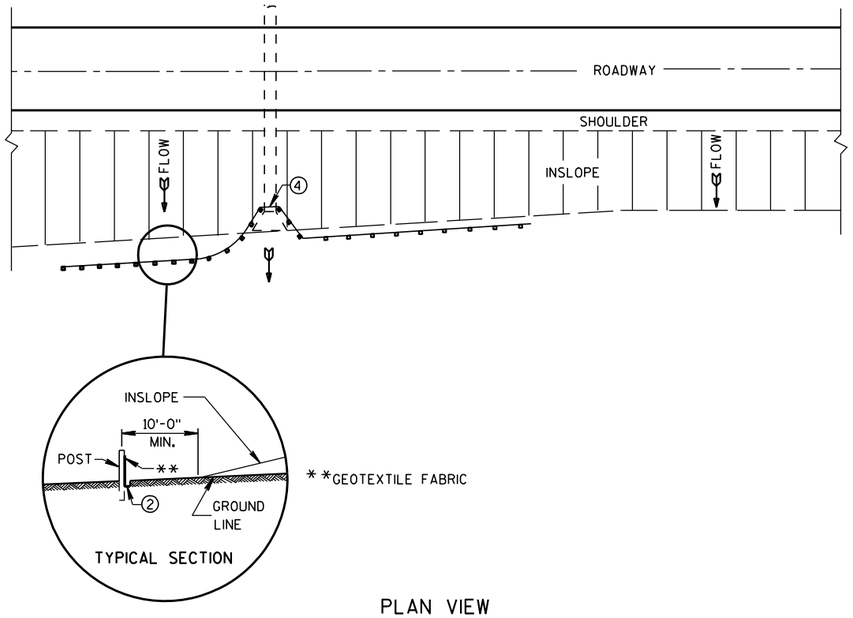
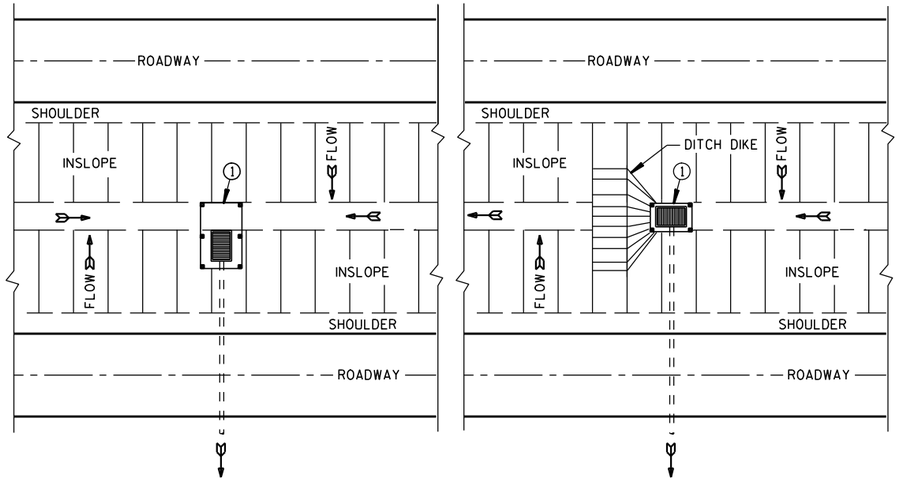
S.D.D. 8 D 4-5



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

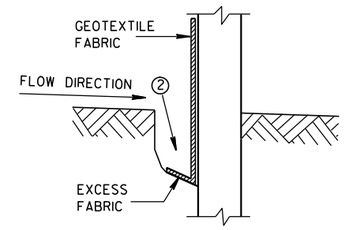
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

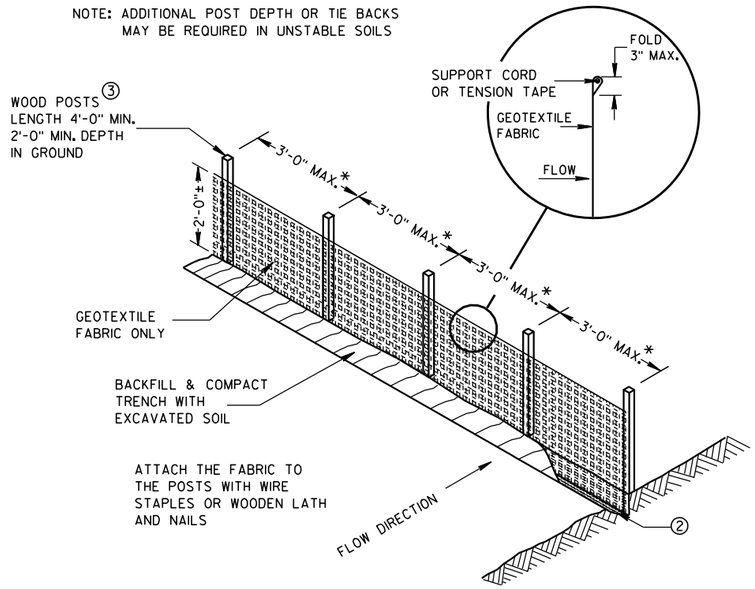
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

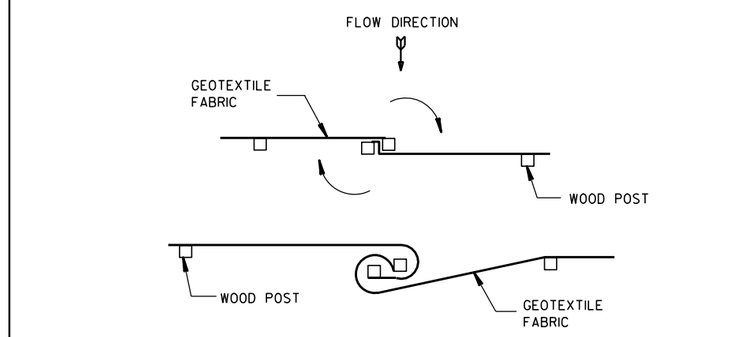


TRENCH DETAIL

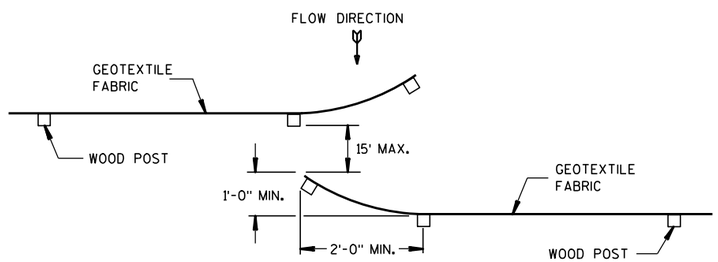


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

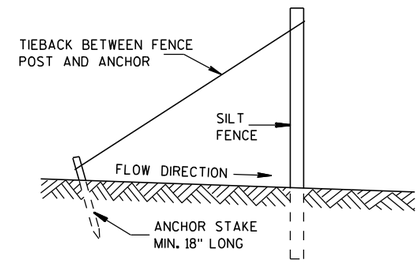


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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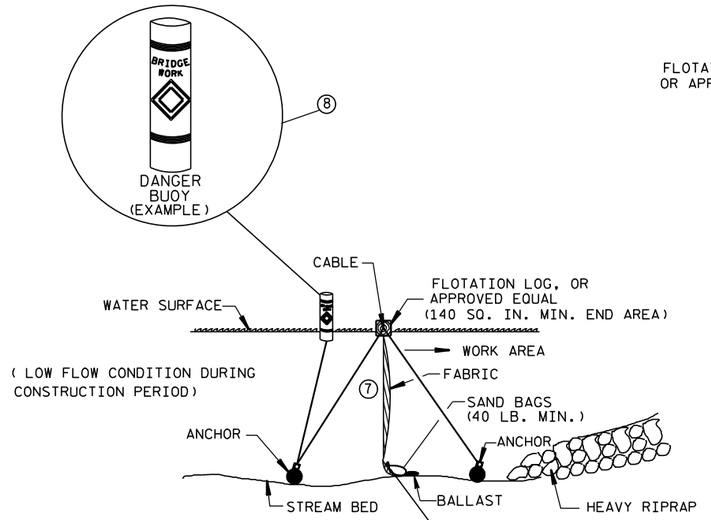
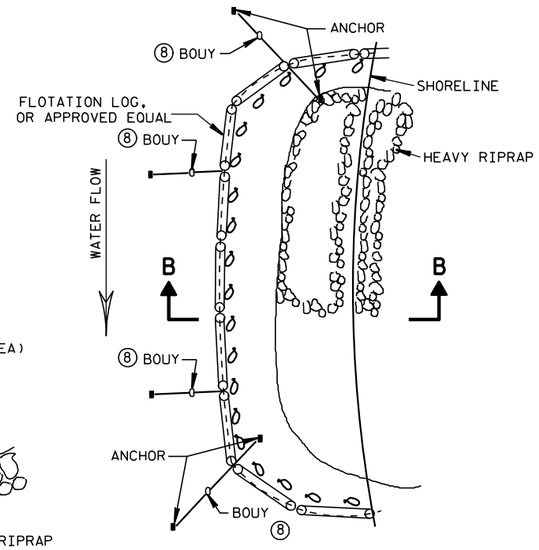
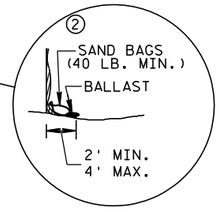
S.D.D. 8 E 9-6

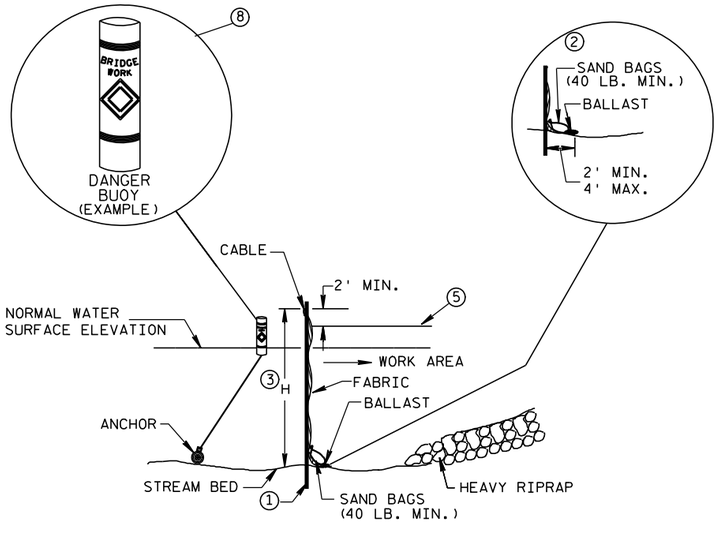


SECTION B-B

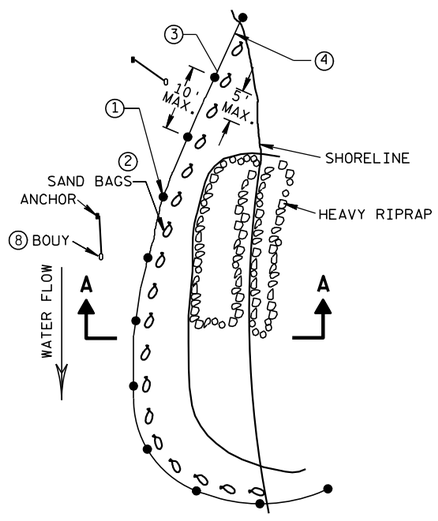




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

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

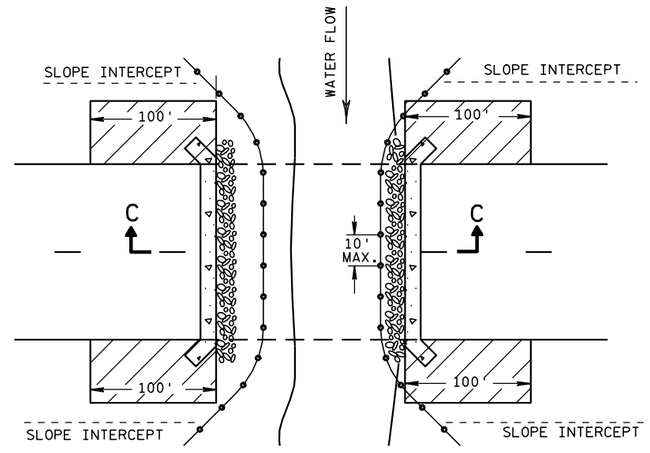
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

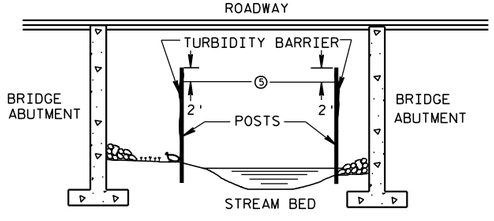
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 E 11-2

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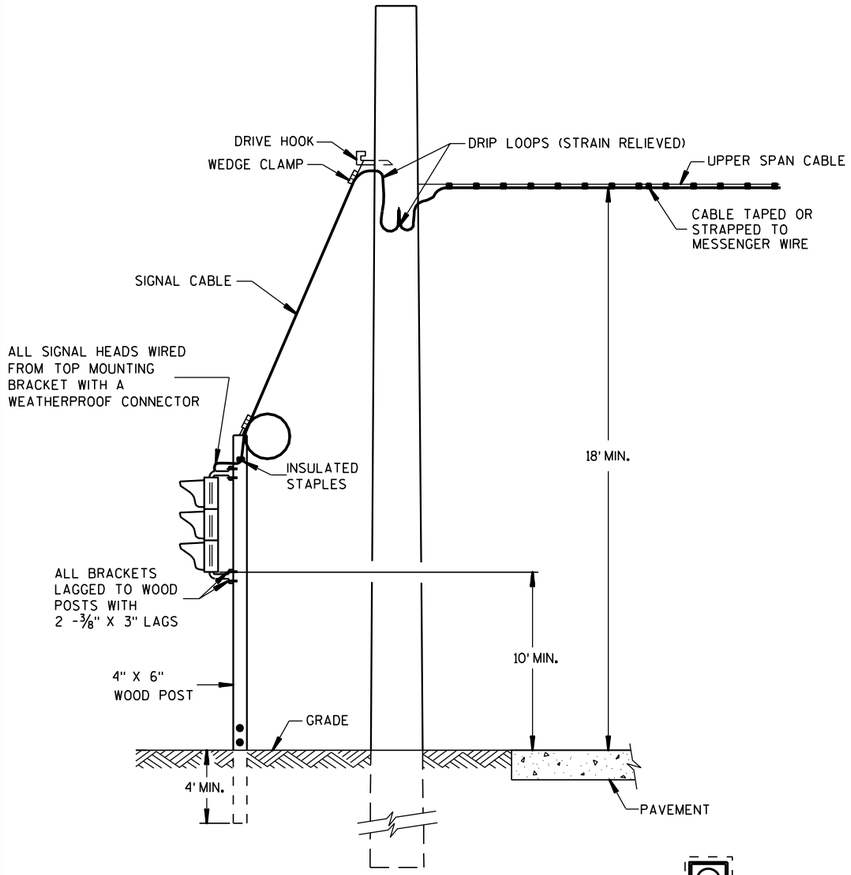
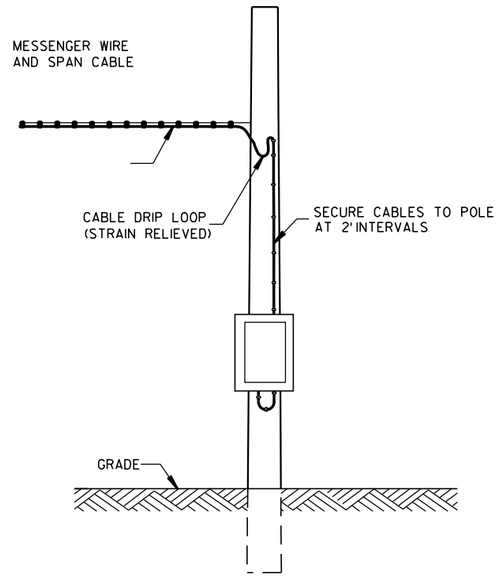
S.D.D. 8 E 11-2



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY PLOLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

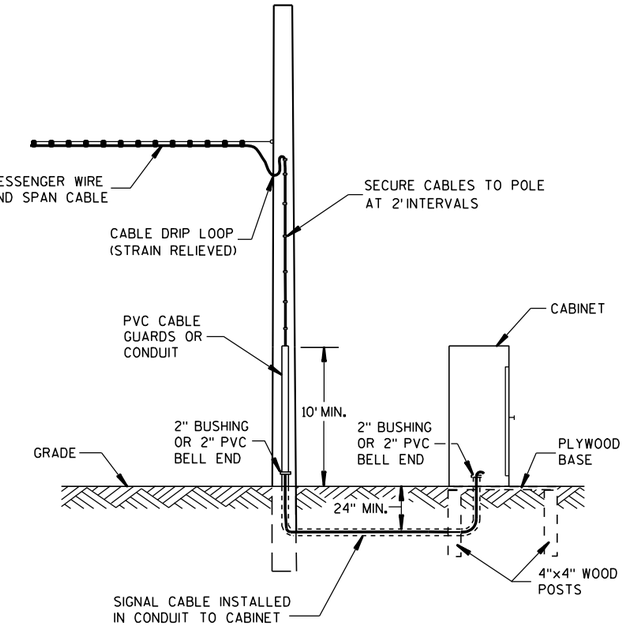
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

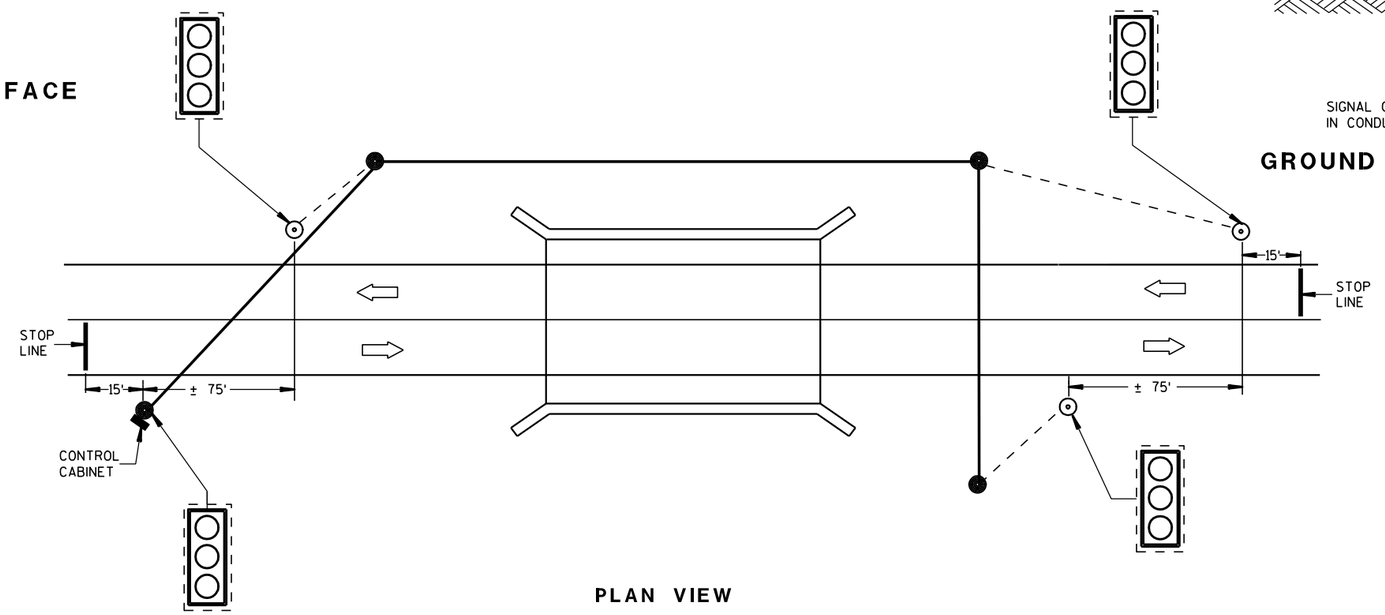
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT

**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.



PLAN VIEW

TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NONBREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE (3-12")
- DIRECTION OF TRAFFIC

MINIMUM POLE LENGHTS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 DATE
/S/ Thomas J. Gosling STATE ELECTRICAL ENGI
FHWA

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S.D.D. 9 G 2-3a

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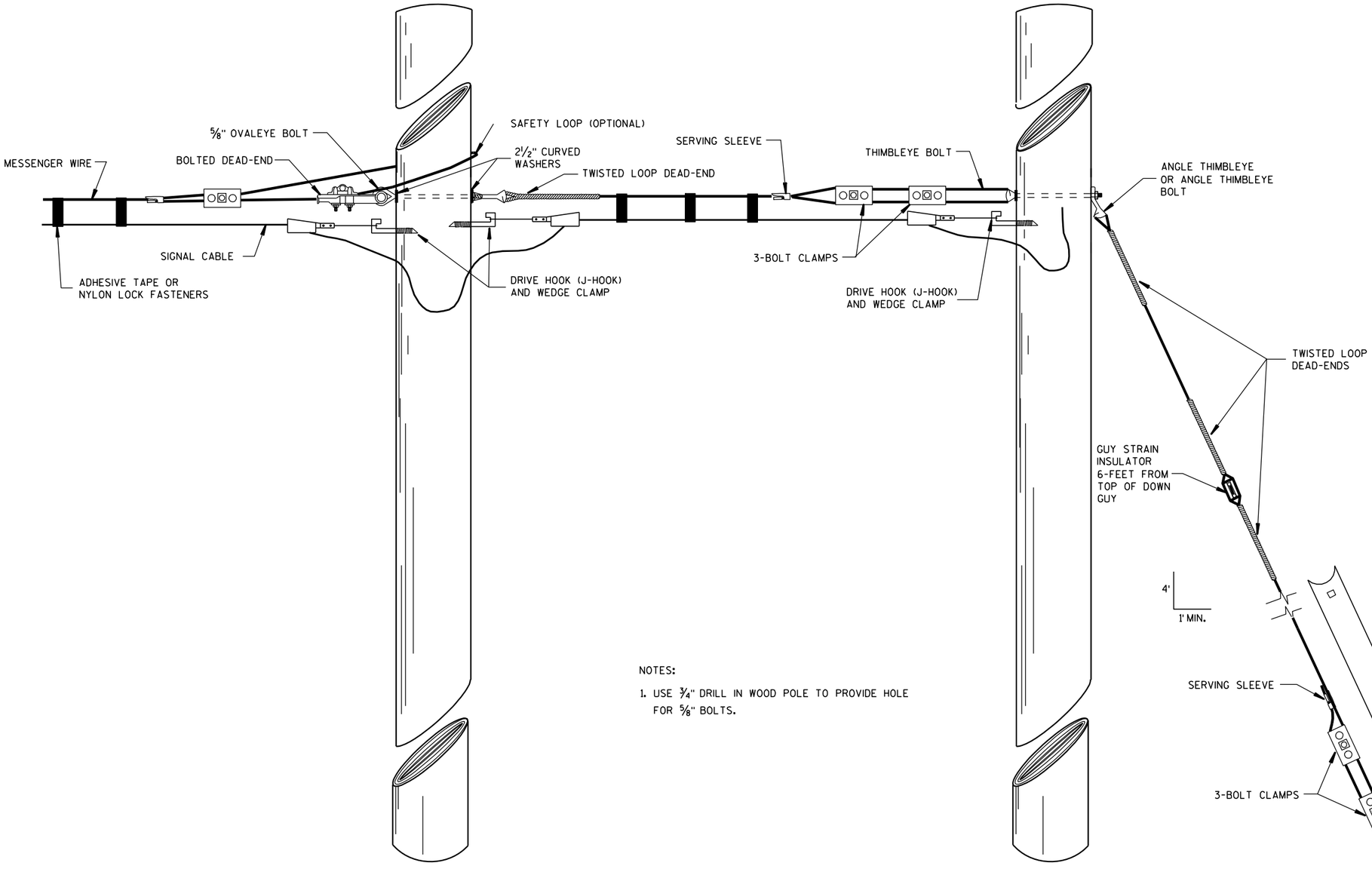
S.D.D. 9 G 2-3a



SPAN WIRE POLE

GUY POLE

NOTES:

1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

/S/ Thomas J. G... STATE ELECTRICAL ENGI

HWYS

FHWA

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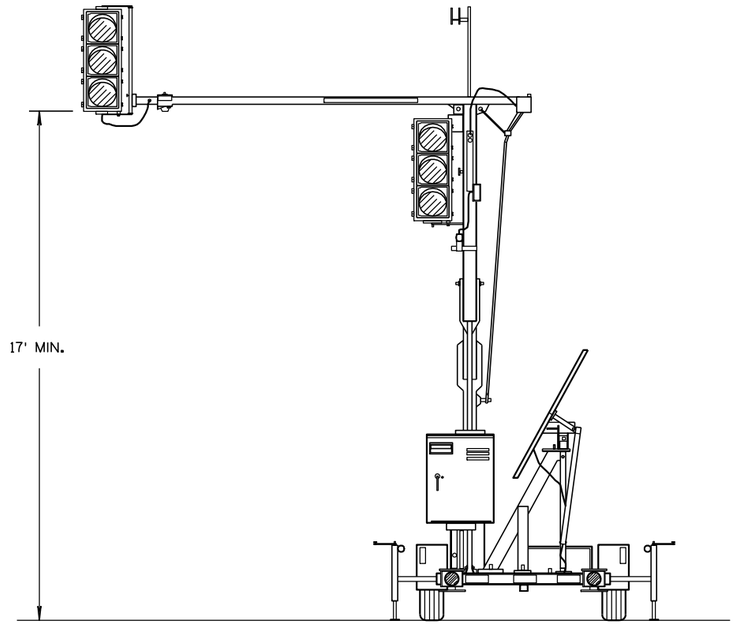
S.D.D. 9 G 2-3b

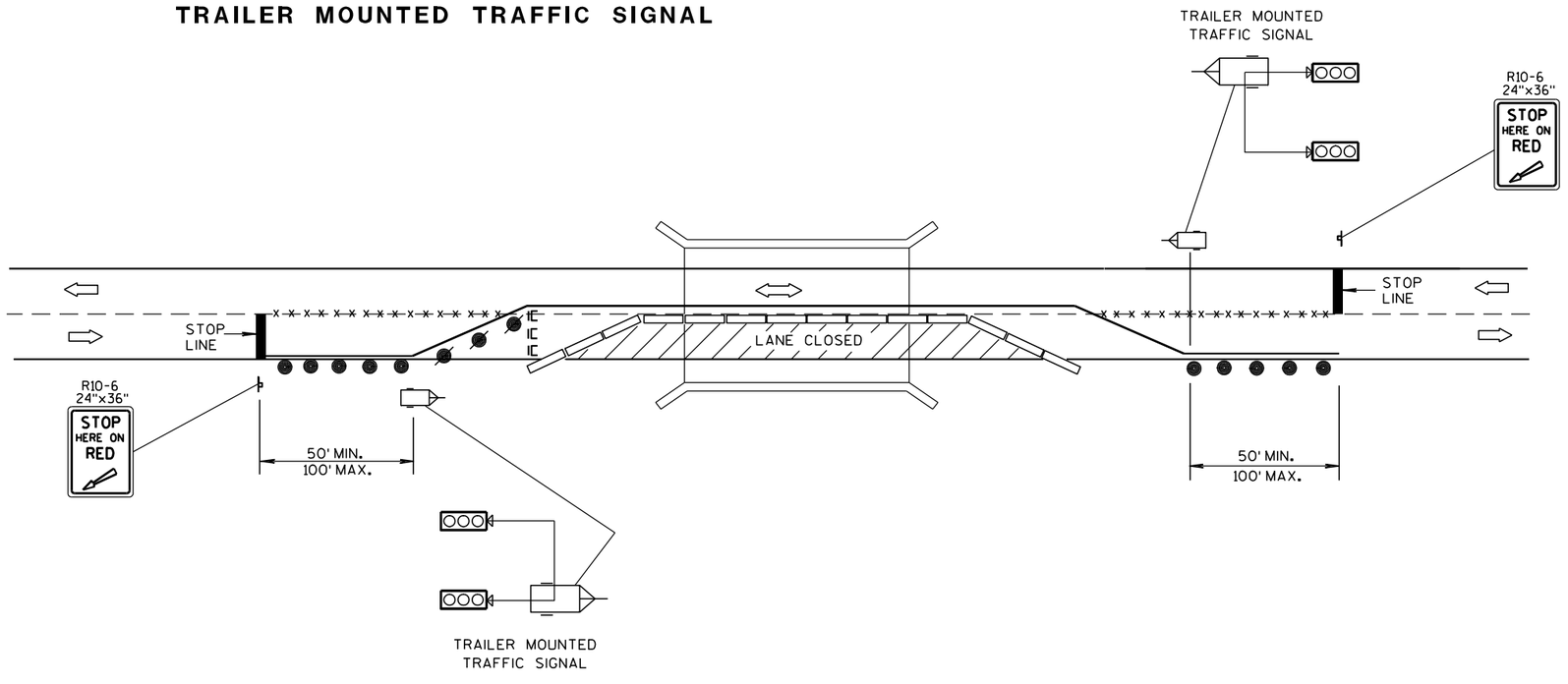


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 — DATE

/S/ Thomas J. Gosling — STATE ELECTRICAL ENGI

HWYS

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S.D.D. 9 G 2-3c

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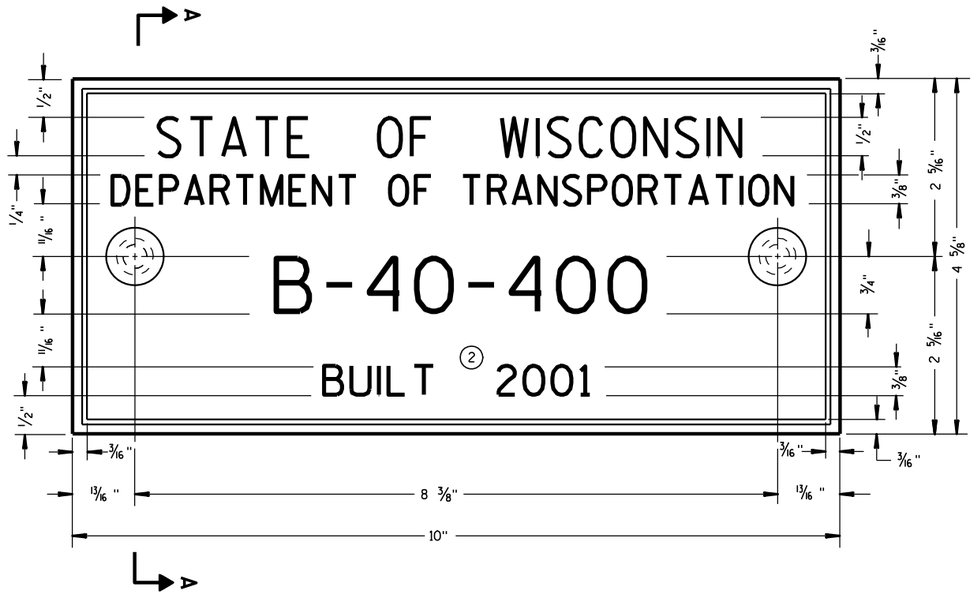
S.D.D. 9 G 2-3c



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

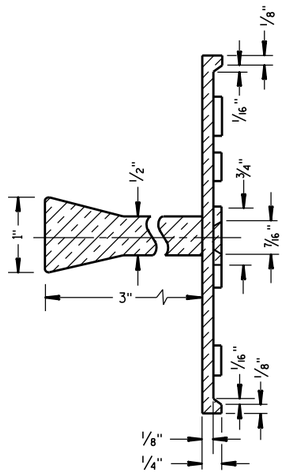
GENERAL NOTES

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

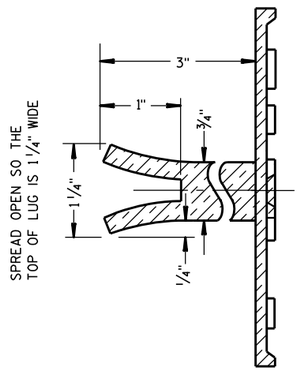
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

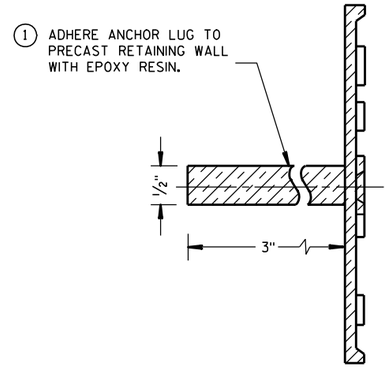
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

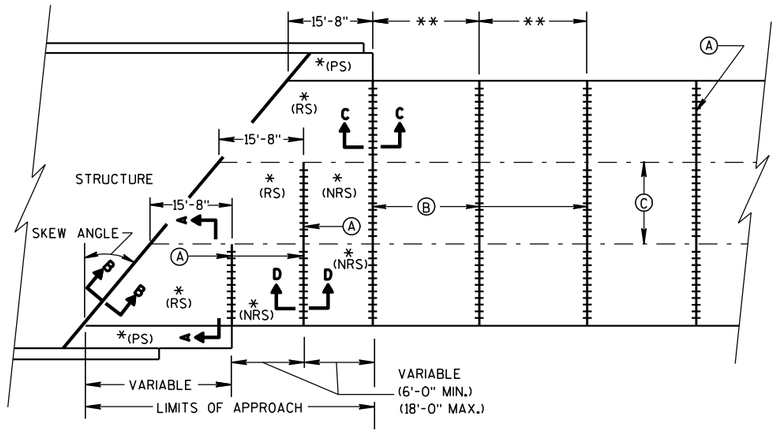
3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

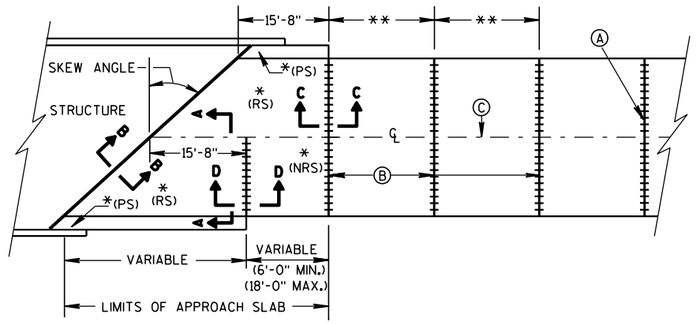
FHWA

6

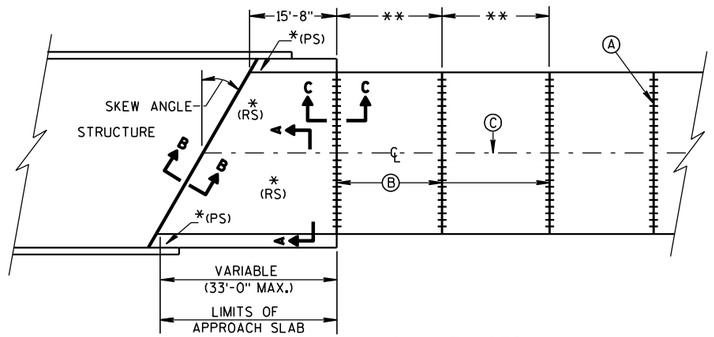
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



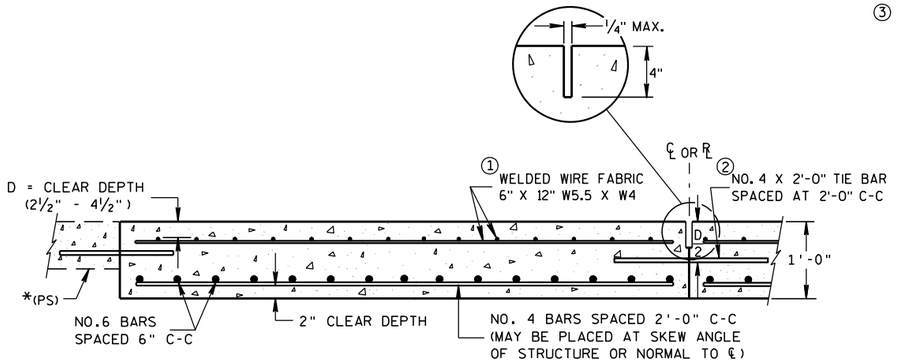
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

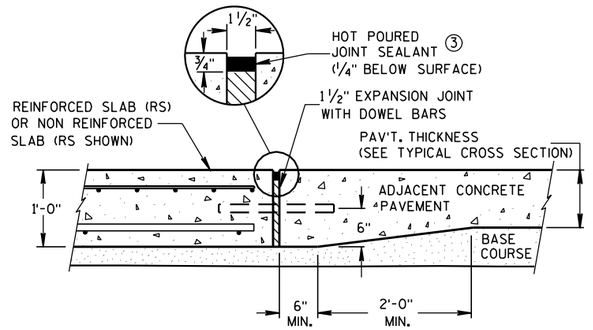
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

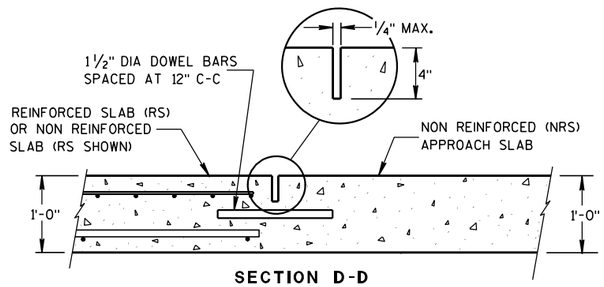
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

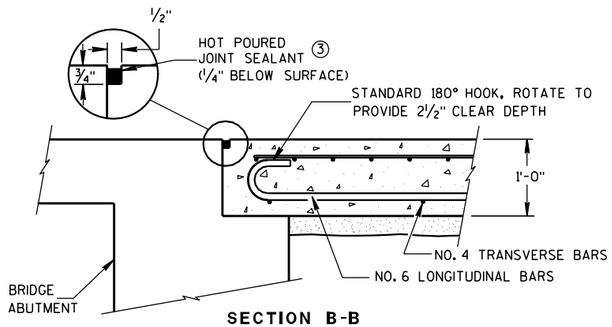
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

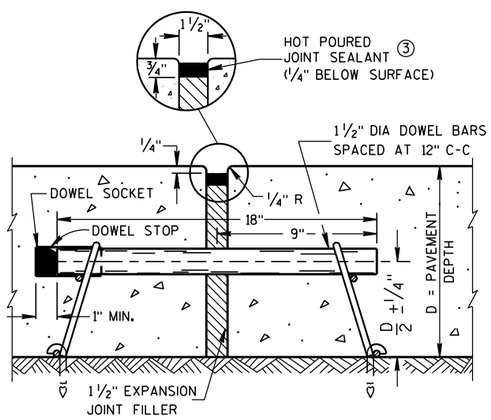
(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



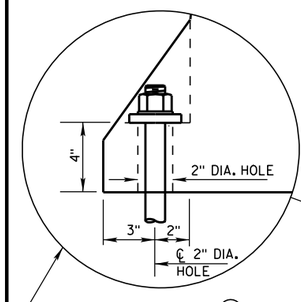
EXPANSION JOINT

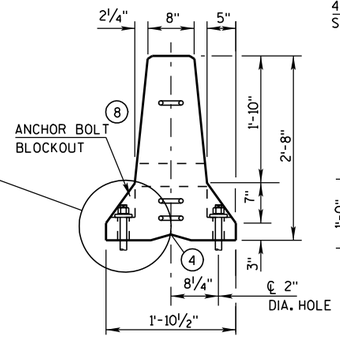
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

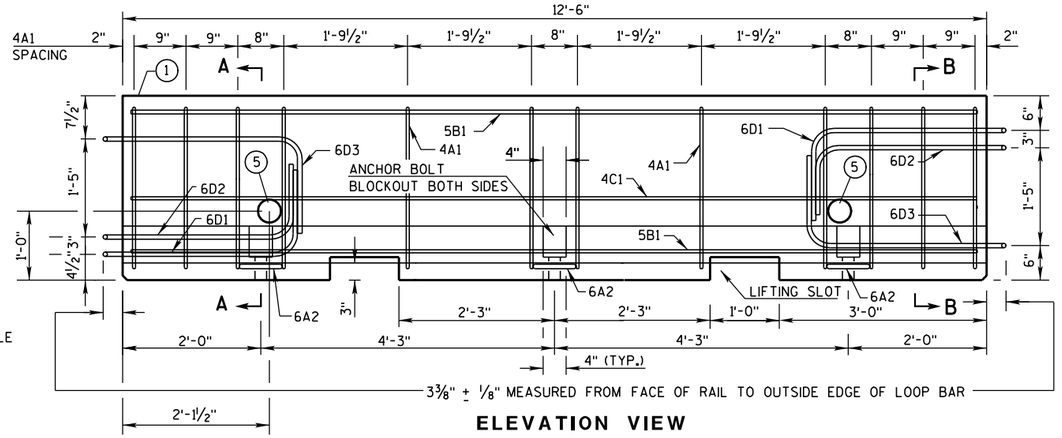
APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE — NEER
FHWA

6
S.D.D. 13 B 2-6

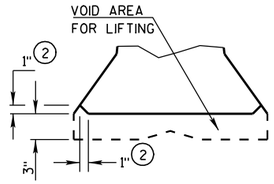




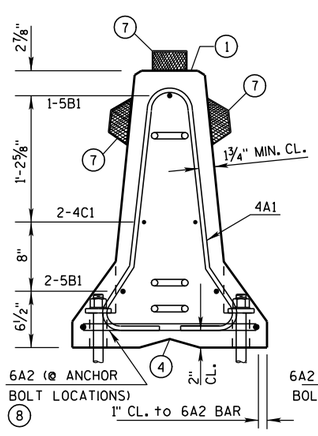
END VIEW



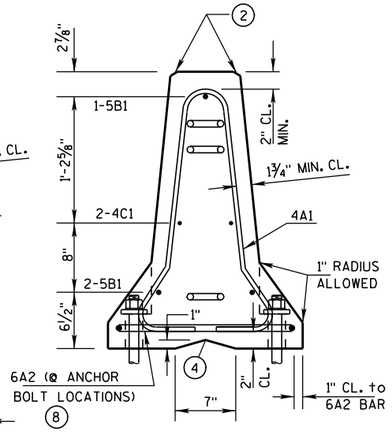
ELEVATION VIEW



DETAIL "B"
LIFTING SLOT DETAIL



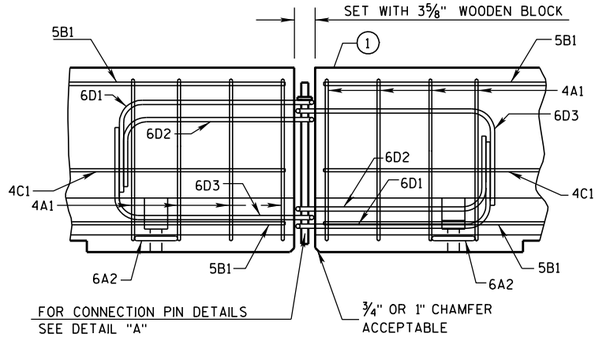
SECTION A-A
(STIRRUP PLACEMENT)



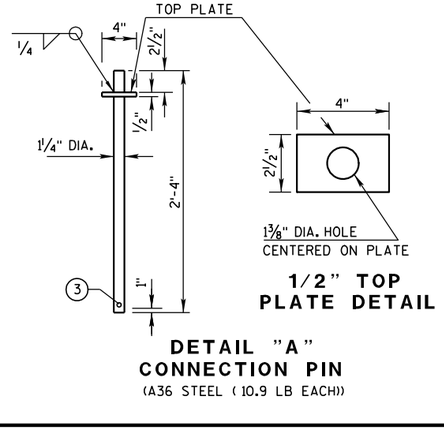
SECTION B-B
(STIRRUP PLACEMENT)

PLAN VIEW

DETAILS OF BARRIER SECTION

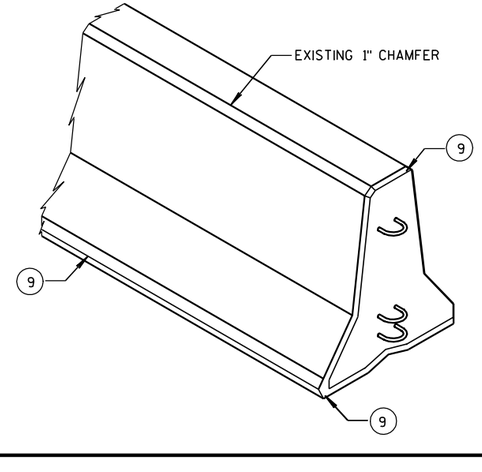


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(a) THRU 14B7-13(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WICBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

(6) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

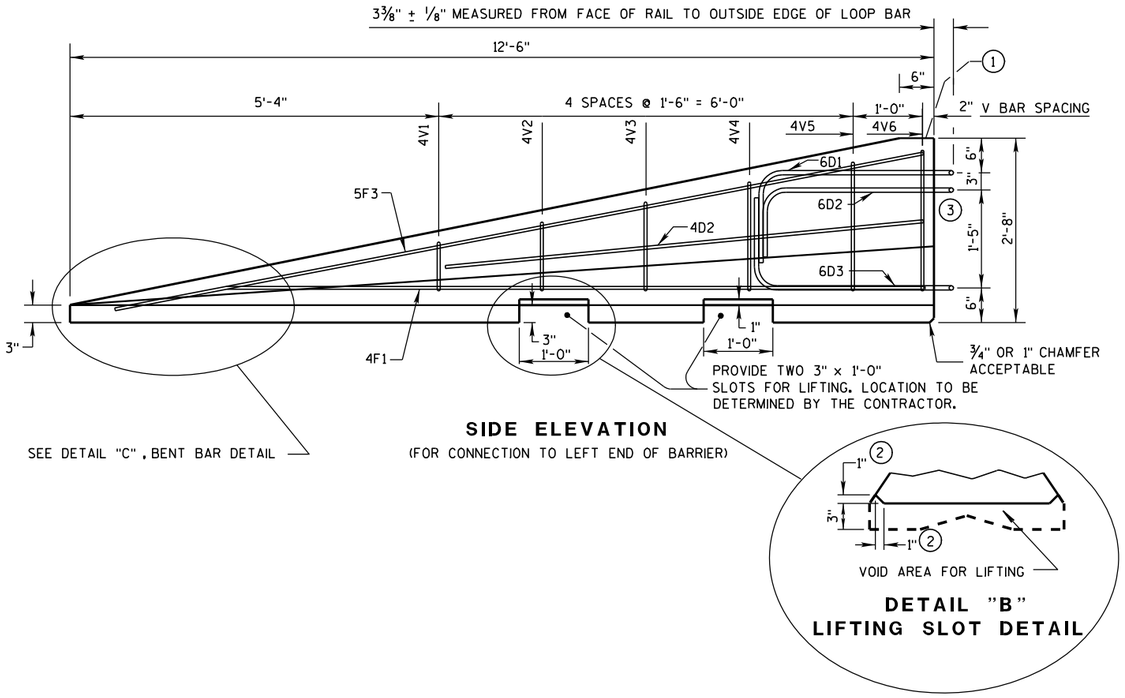
(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

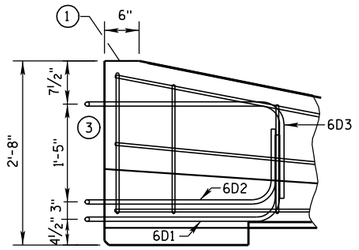
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....

6
S.D.D. 14 B 7-13a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)

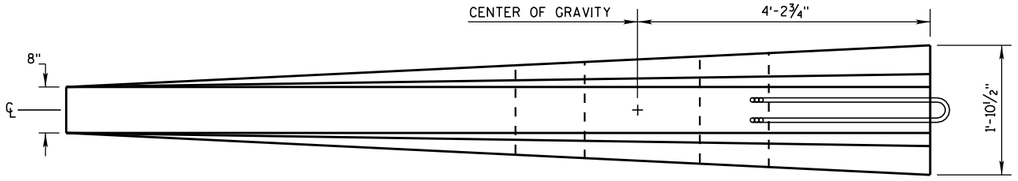
DETAIL "B"
LIFTING SLOT DETAIL



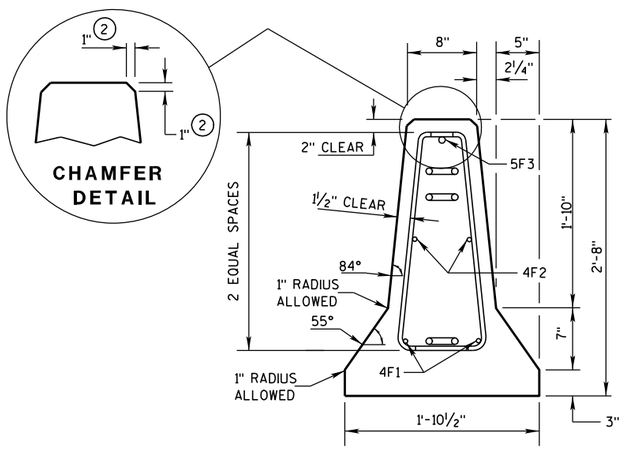
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

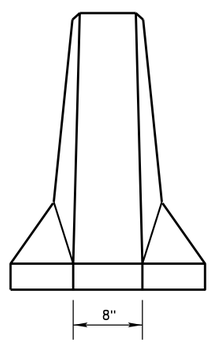
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



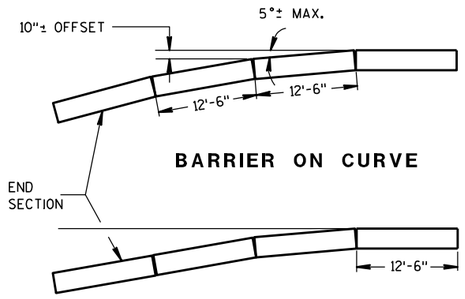
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 7-13b

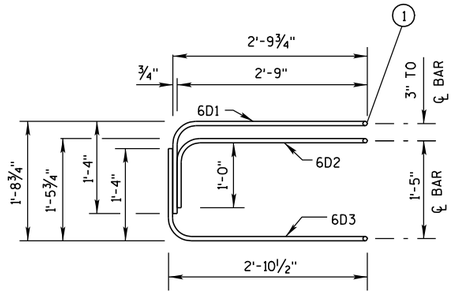
6

S.D.D. 14 B 7-13b

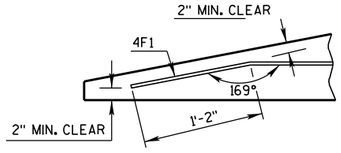
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

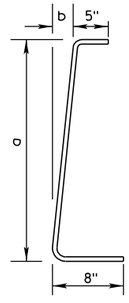
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

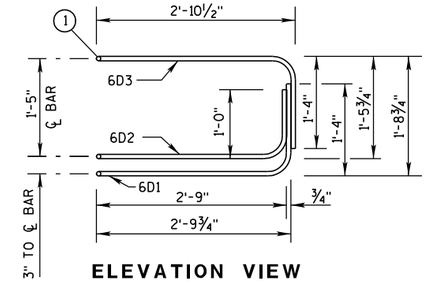
GENERAL NOTES

(1) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

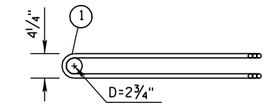
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

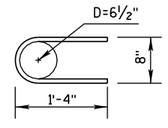
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



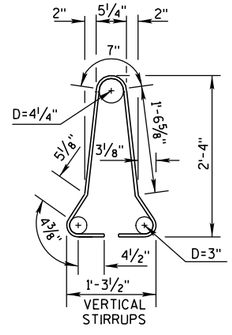
ELEVATION VIEW



PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



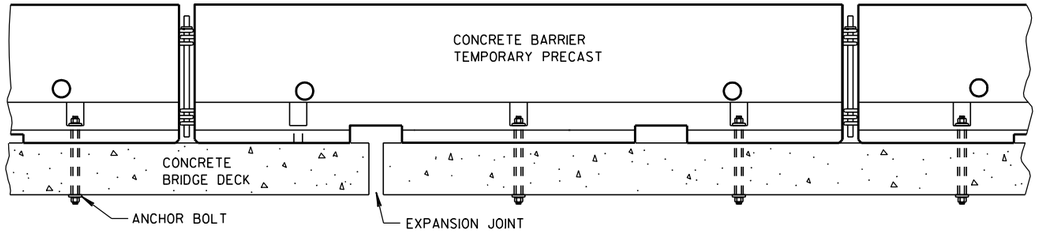
6A2



4A1

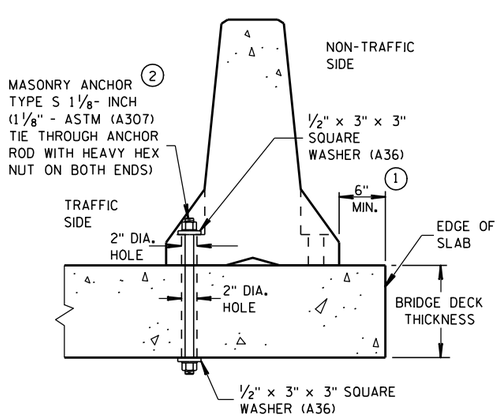
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"



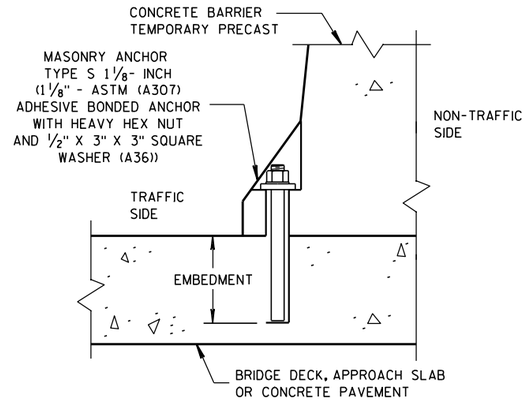
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

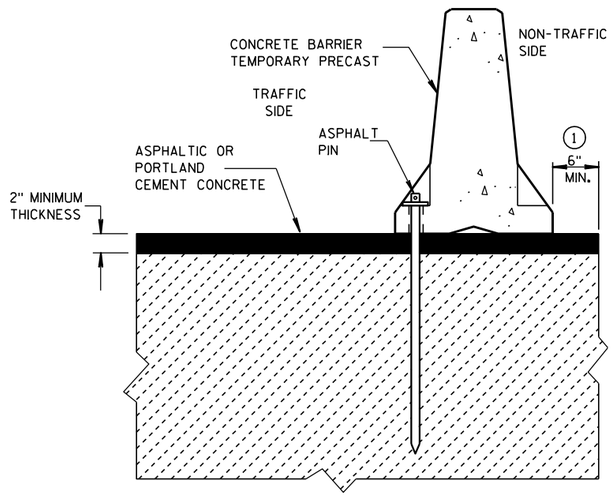
1. CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT. IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

2. ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

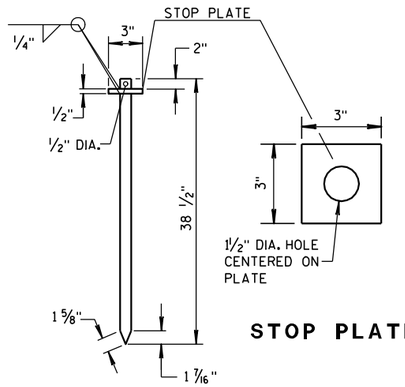
   WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

   UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALLANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

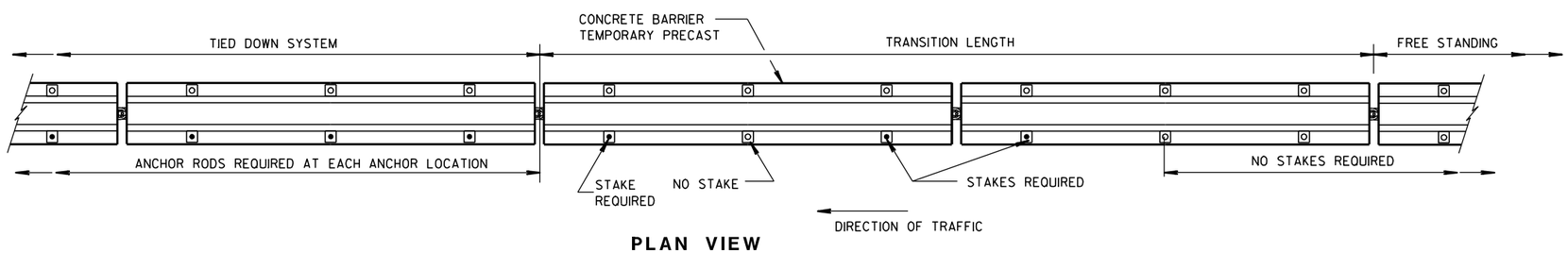
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



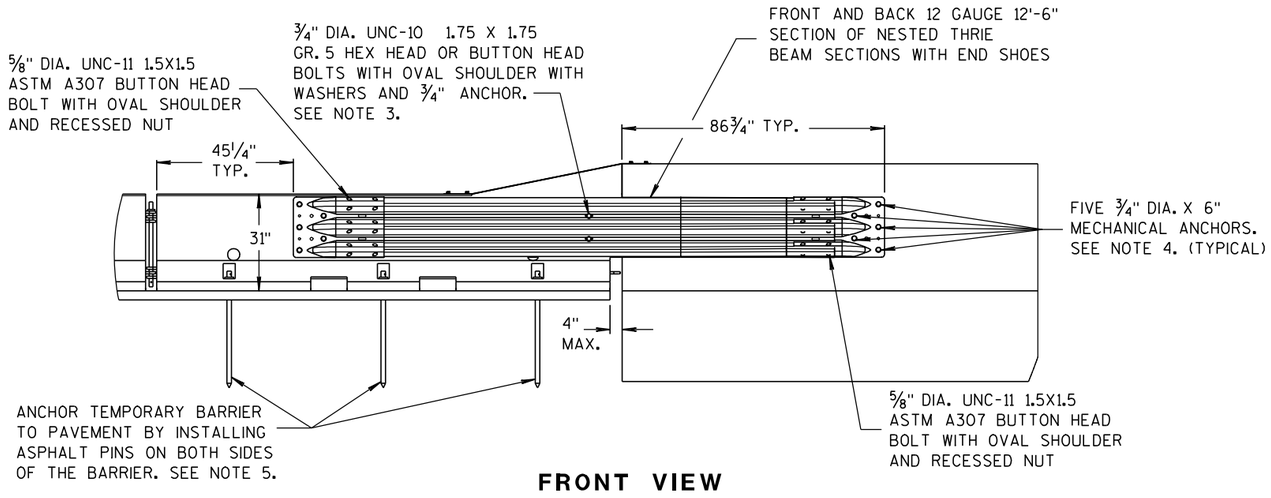
PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

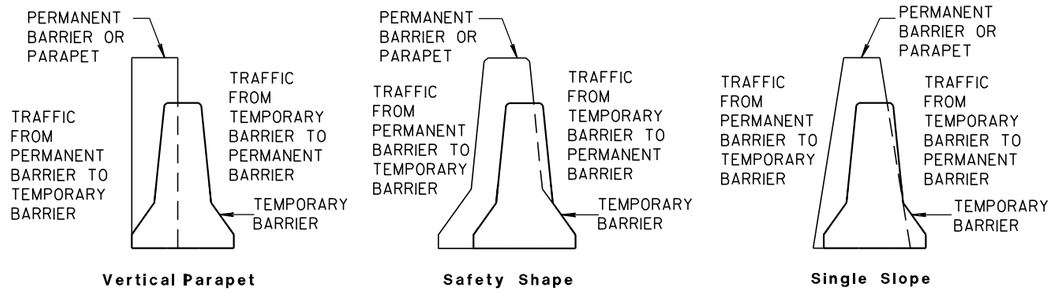
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

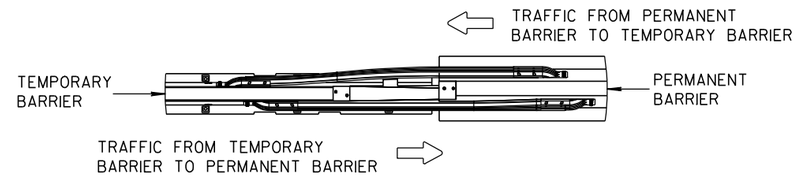


FRONT VIEW

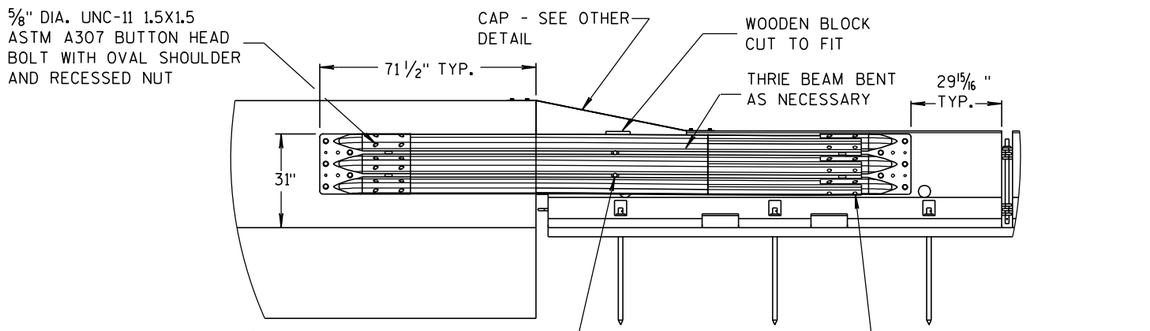
NOTES

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

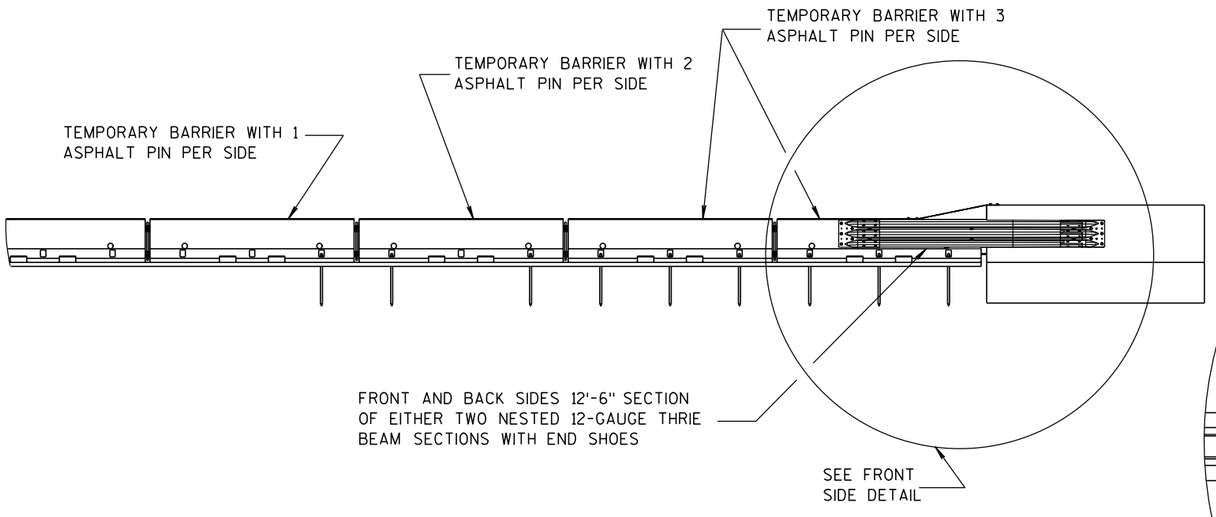




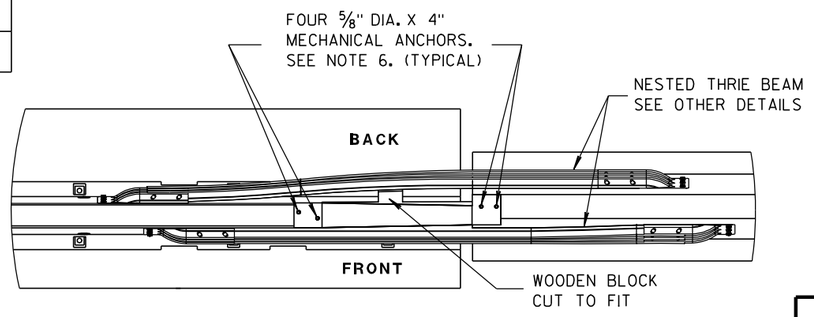
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



BACK VIEW



FRONT VIEW



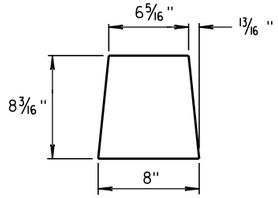
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

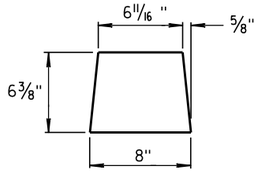
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

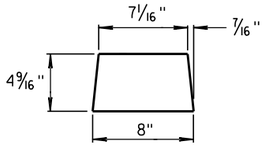
6
S.D.D. 14 B 7-13e



GUSSET 1



GUSSET 2



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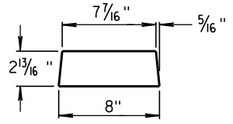
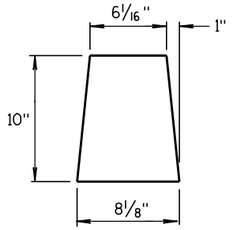
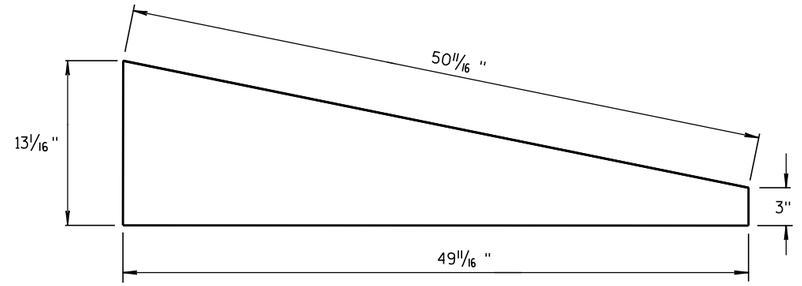


GUSSET 4

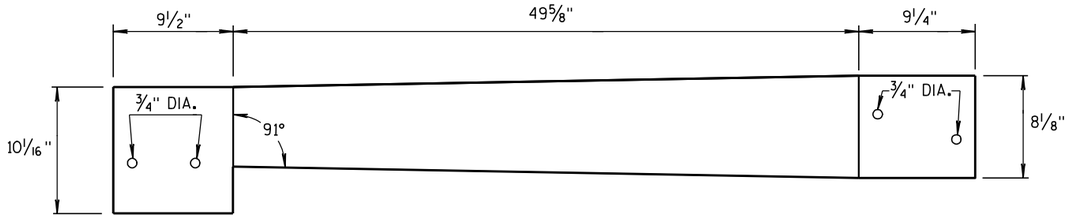
GUSSETS

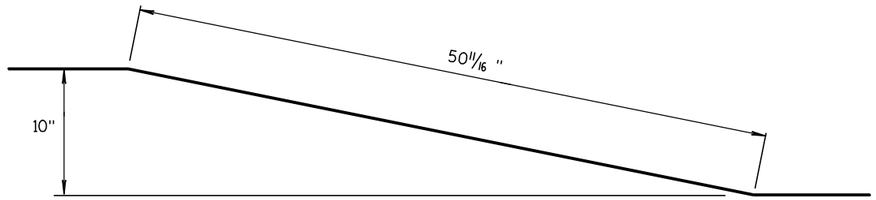


END PLATE

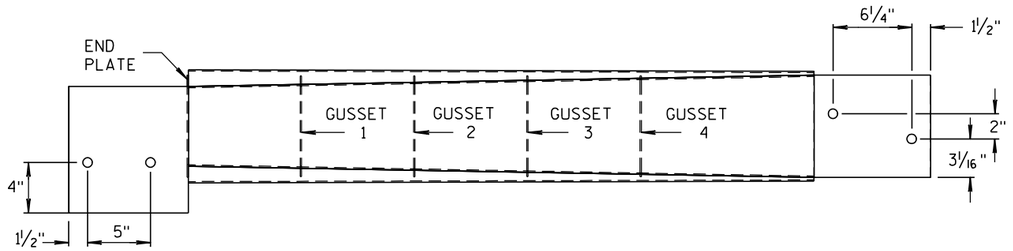


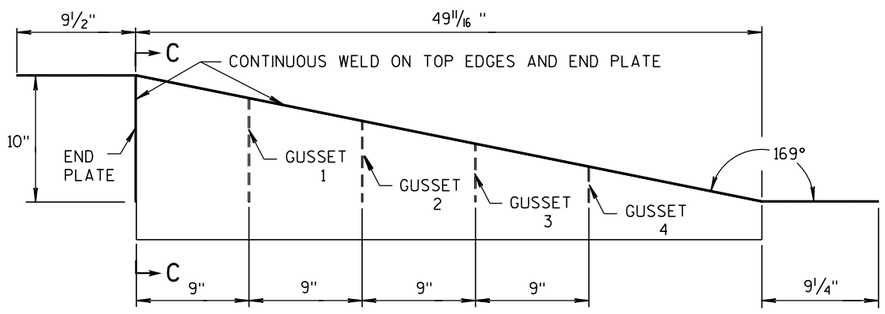
SIDE PLATE

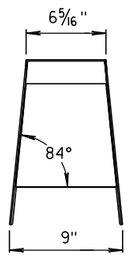




TOP PLATE







SECTION C-C

NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

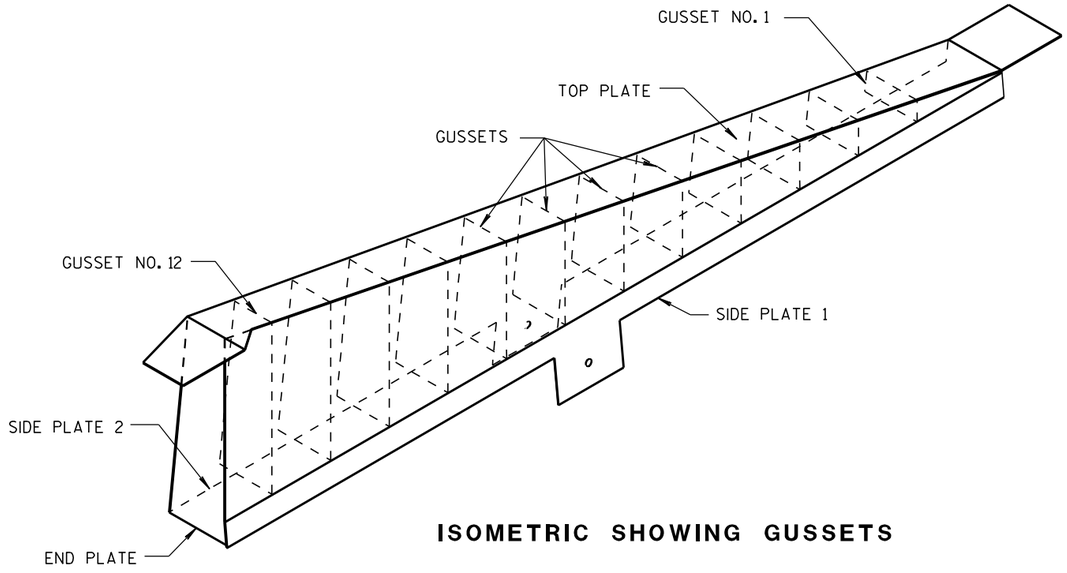
SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

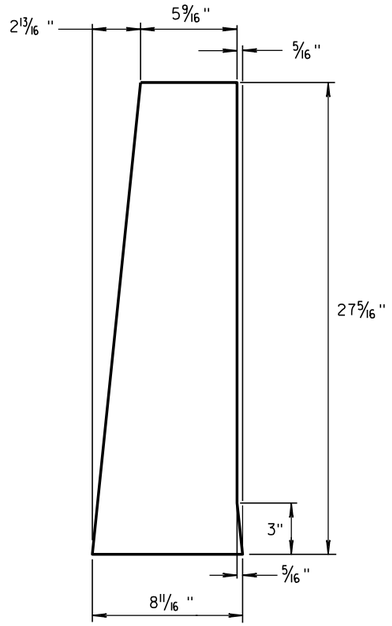
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 7-13f

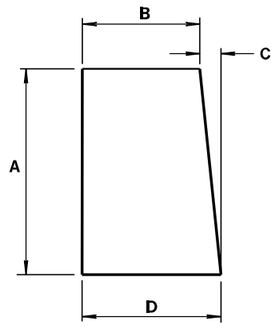


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



GUSSETS 1 - 12

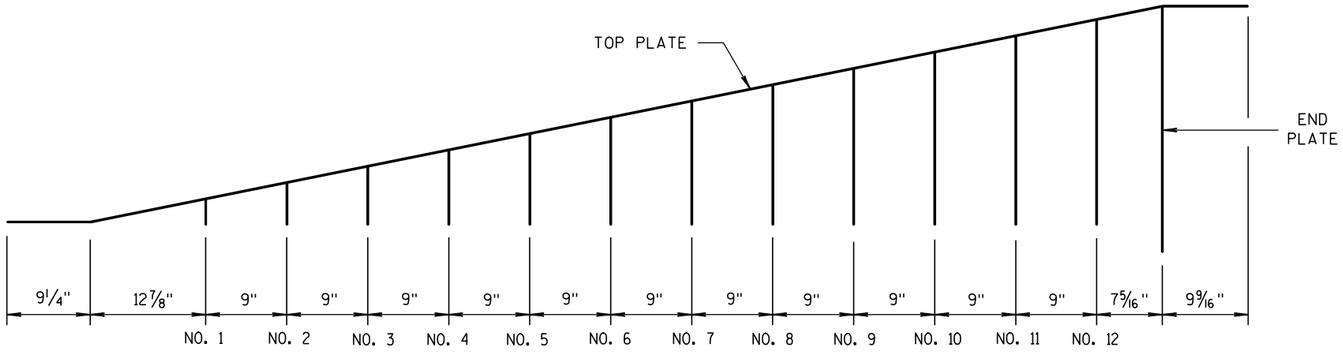
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS

GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



GUSSET LOCATION

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

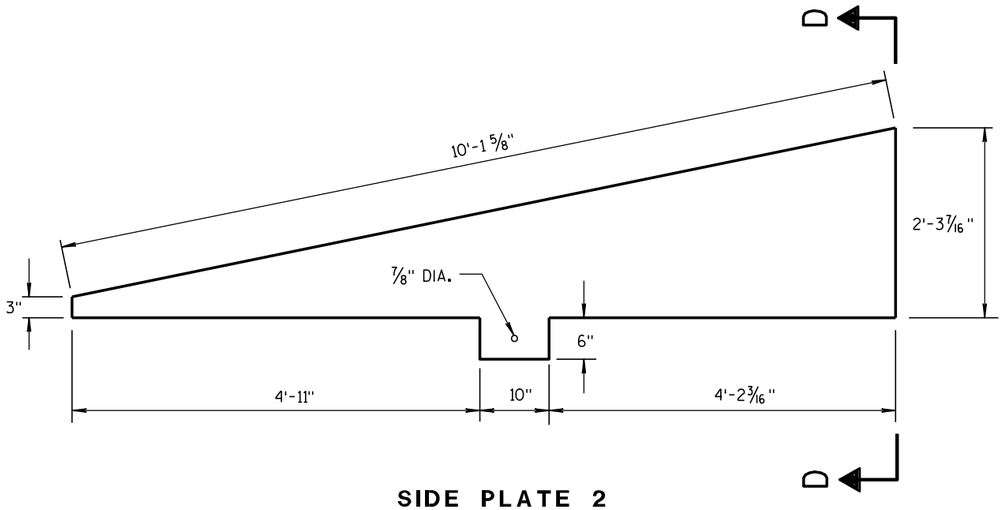
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....T

6

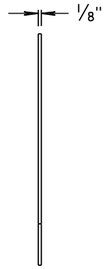
S.D.D. 14 B 7-13g

6

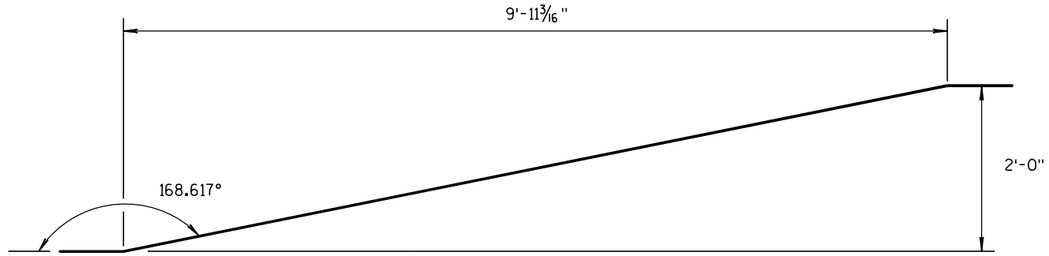
S.D.D. 14 B 7-13g



SIDE PLATE 2

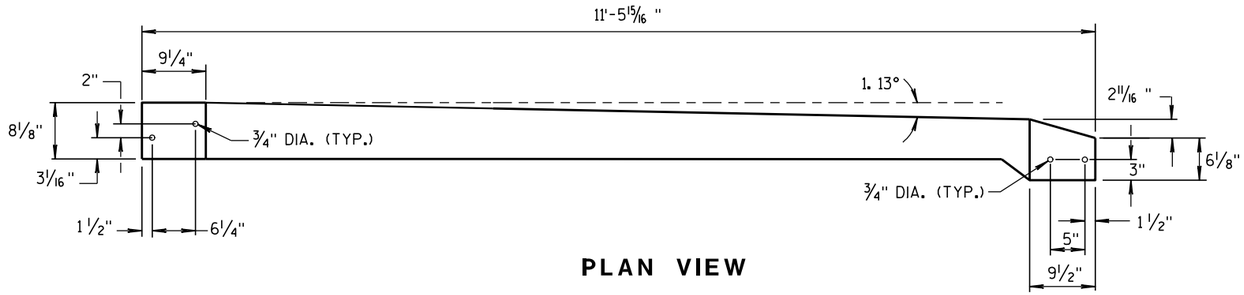


END VIEW



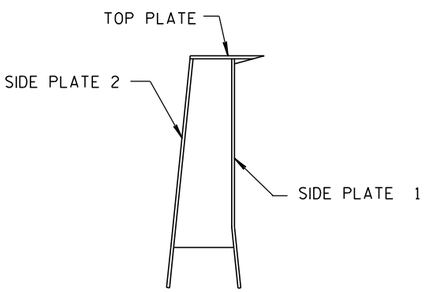
SIDE VIEW

TOP PLATE

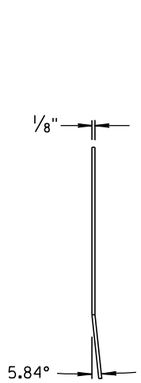


PLAN VIEW

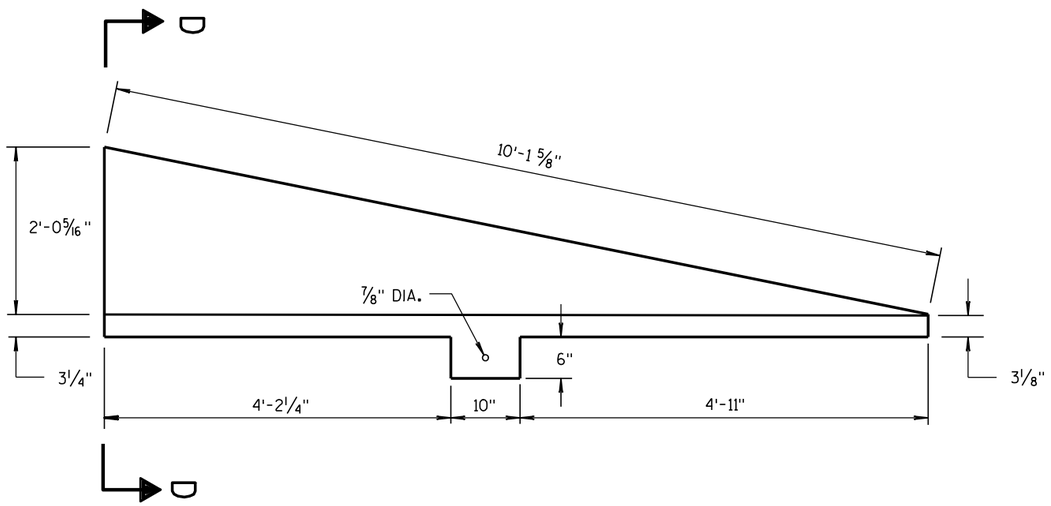
TOP PLATE



SECTION D-D



END VIEW



SIDE PLATE 1

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

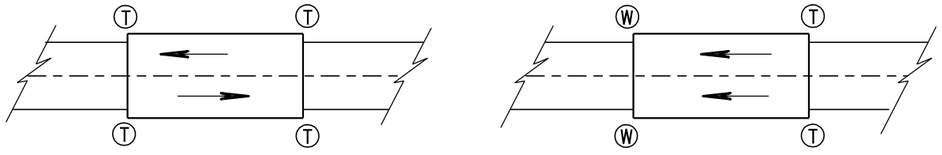
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 8/31/2012 DATE /S/ Jerry H. ROADWAY STANDARDS ENGINEER 49 ENT
FHWA

6

S.D.D. 14 B 7-13h

6

S.D.D. 14 B 7-13h



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

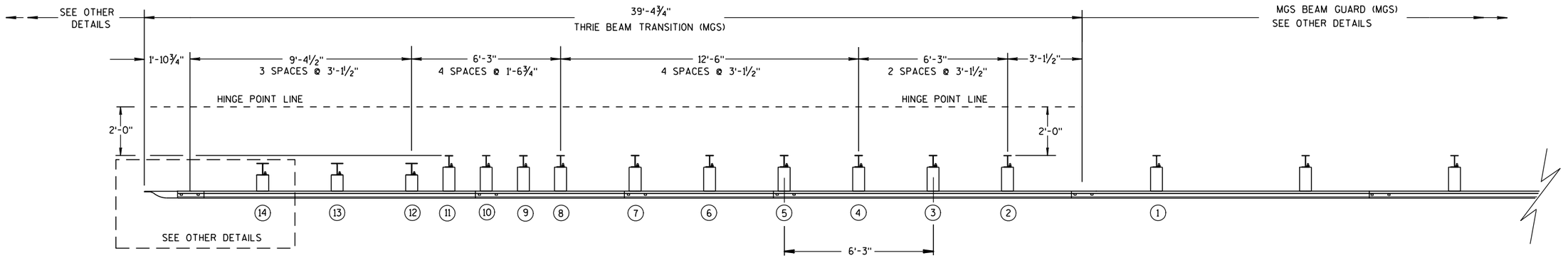
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

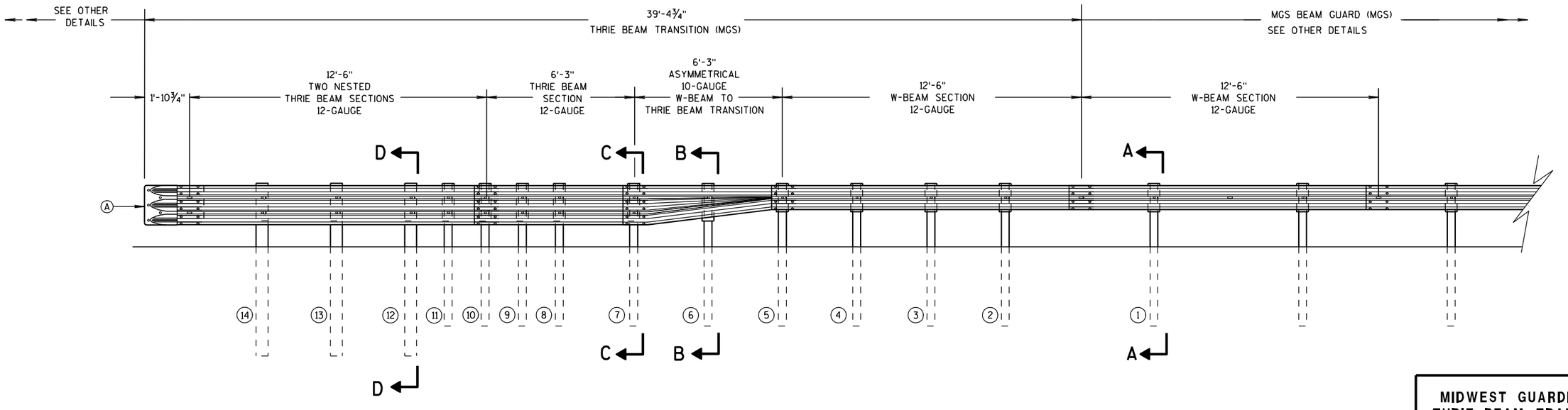
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	50

6

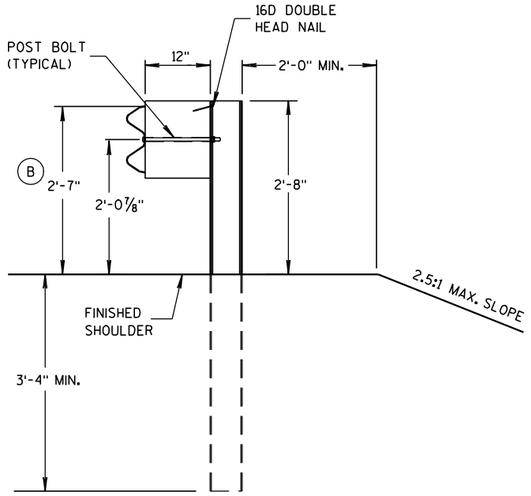
S.D.D. 14 B 45-3a

6

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

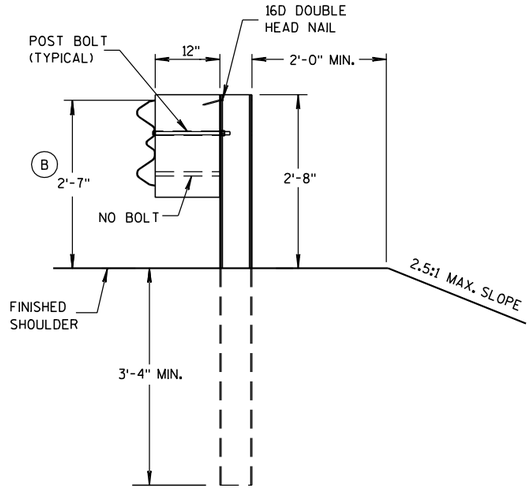
GENERAL NOTES

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



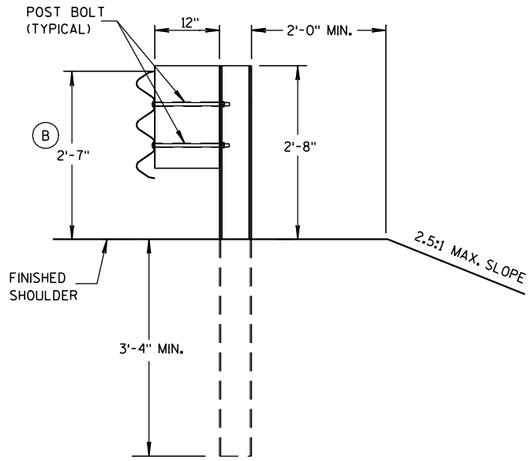
SECTION A-A

POSTS 1-5



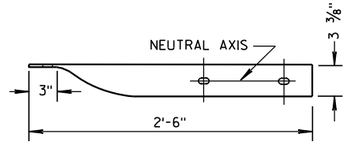
SECTION B-B

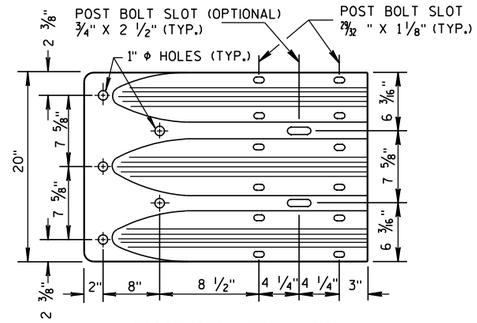
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

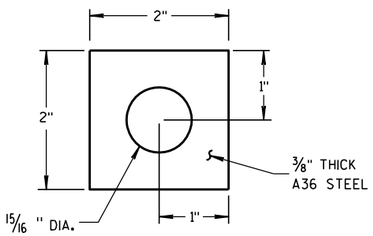
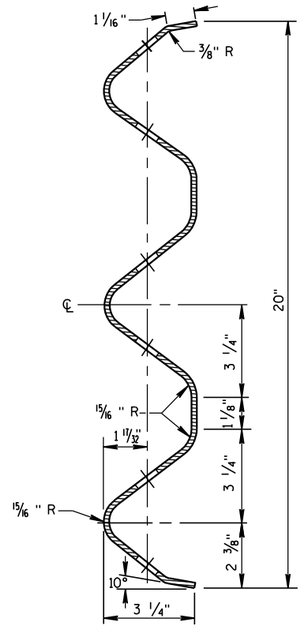
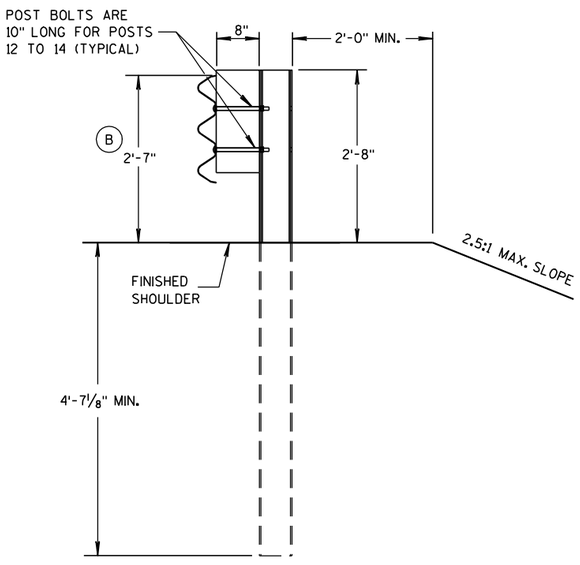


PLATE WASHER DETAIL

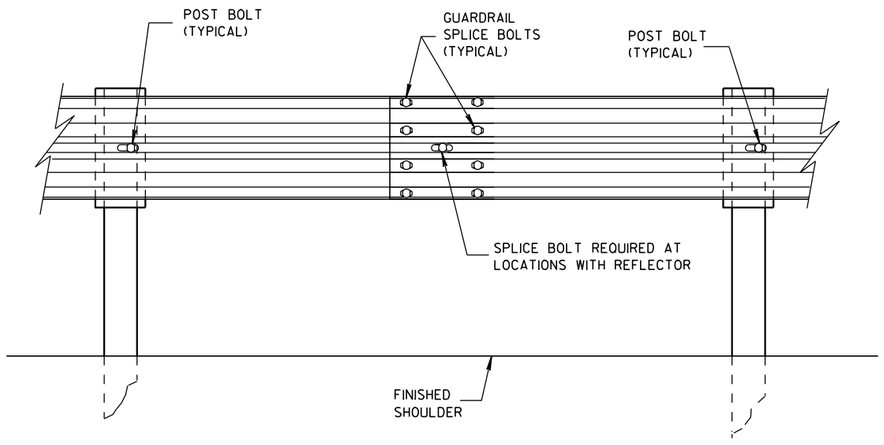


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

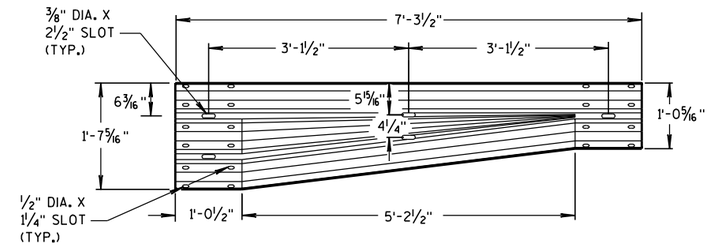
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

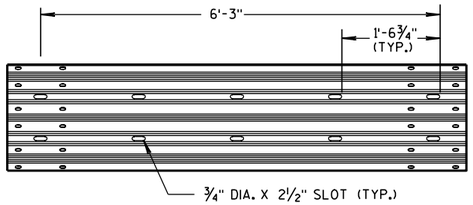
S.D.D. 14 B 45-3b

6

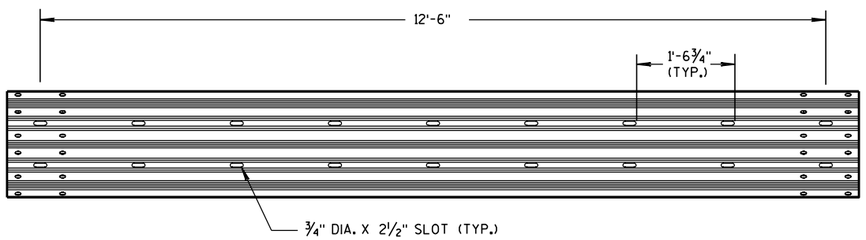
S.D.D. 14 B 45-3b



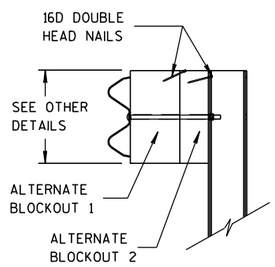
W-BEAM TO THRIE BEAM TRANSITION SECTION



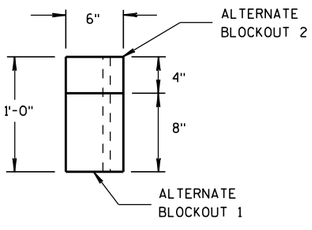
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

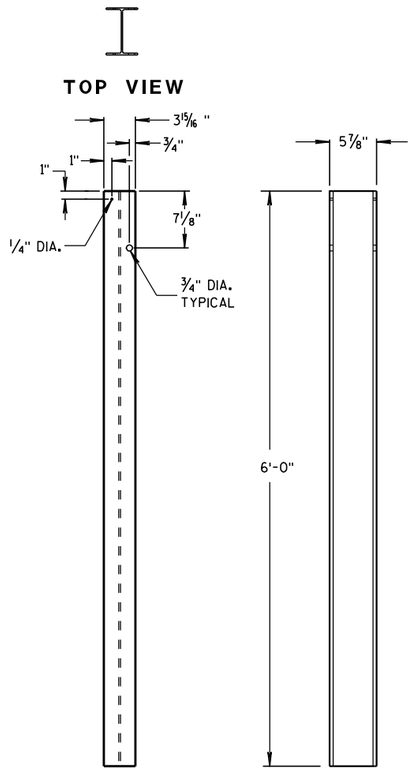


SIDE VIEW

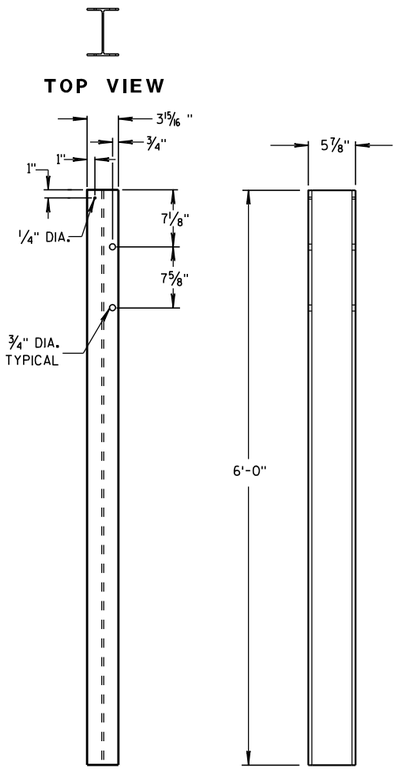


TOP VIEW

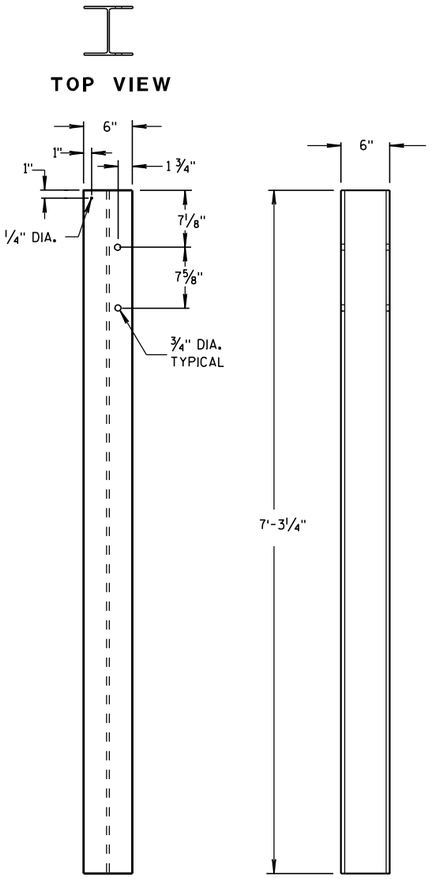
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

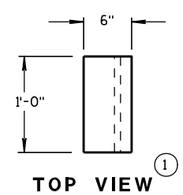


STEEL POSTS 6-11

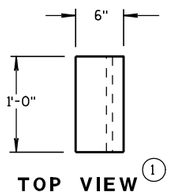


STEEL POSTS 12-14

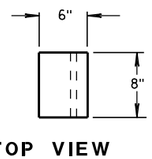
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



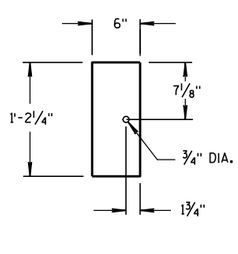
TOP VIEW (1)



TOP VIEW (1)

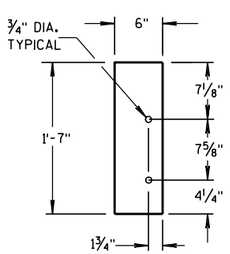


TOP VIEW



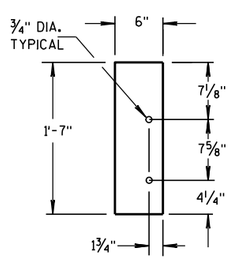
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

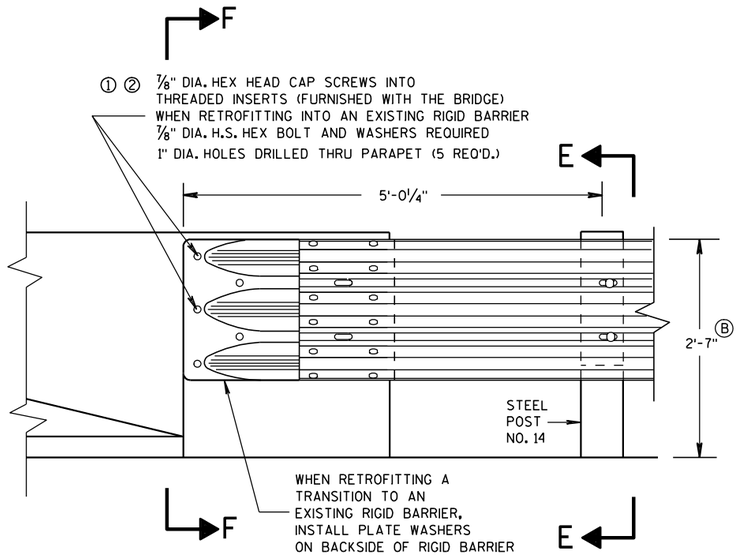
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

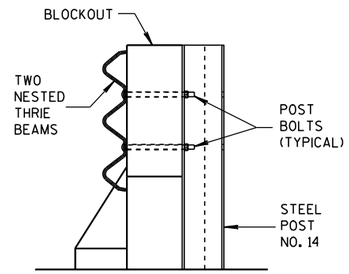
S.D.D. 14 B 45-3c

6

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



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

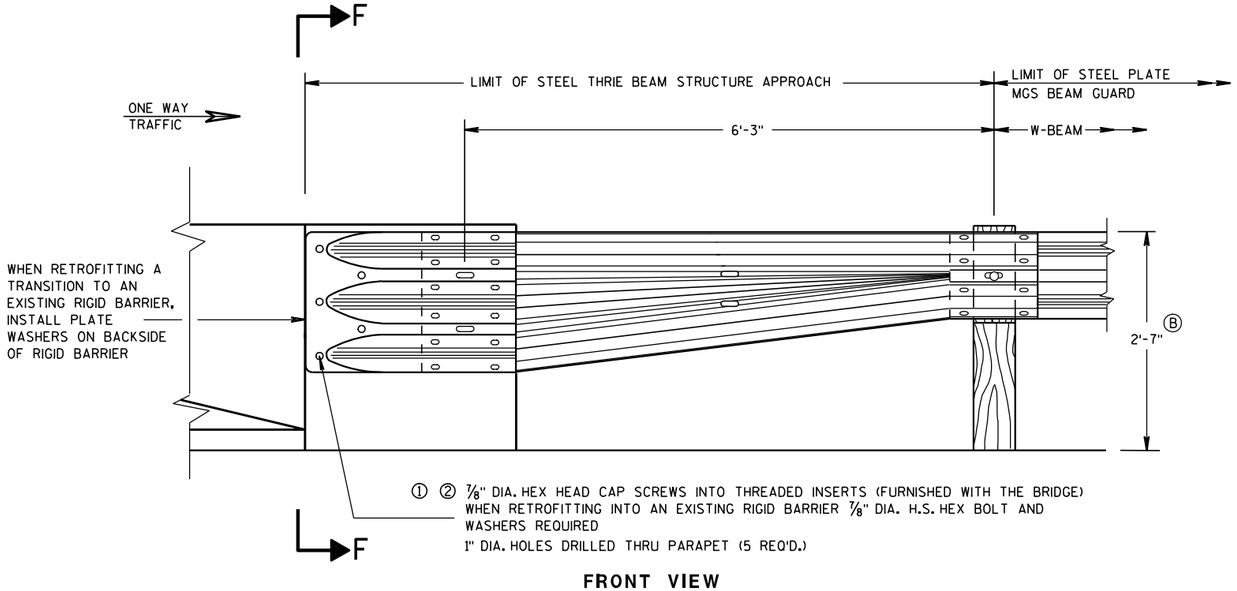
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

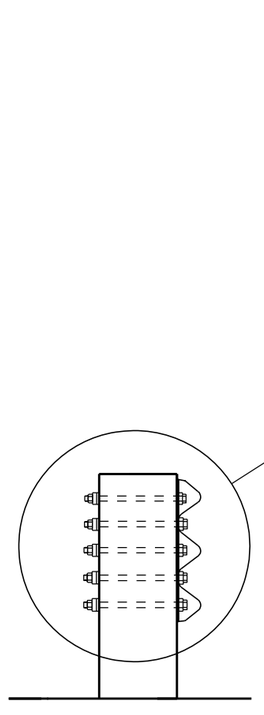
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

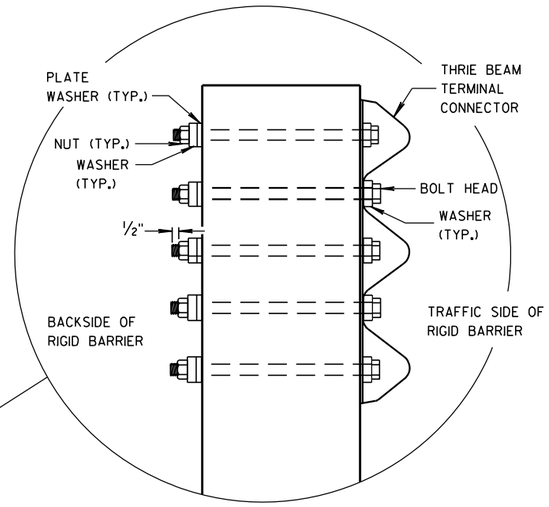
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW





W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

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

FHWA

GENERAL NOTES

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

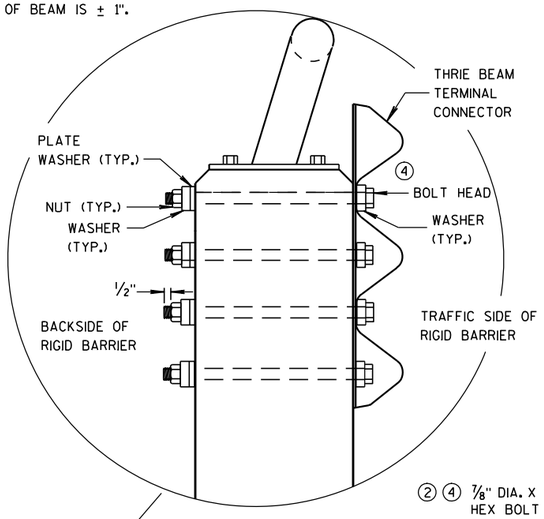
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

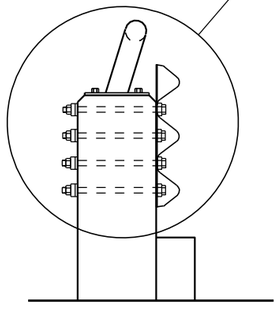
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

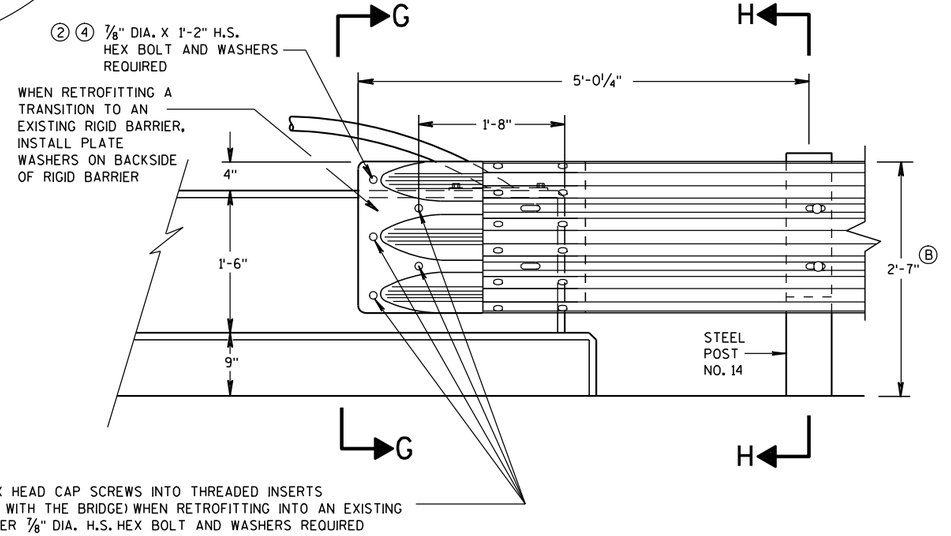
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

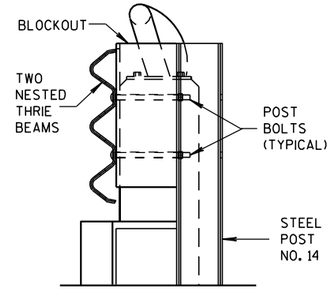




SECTION G-G

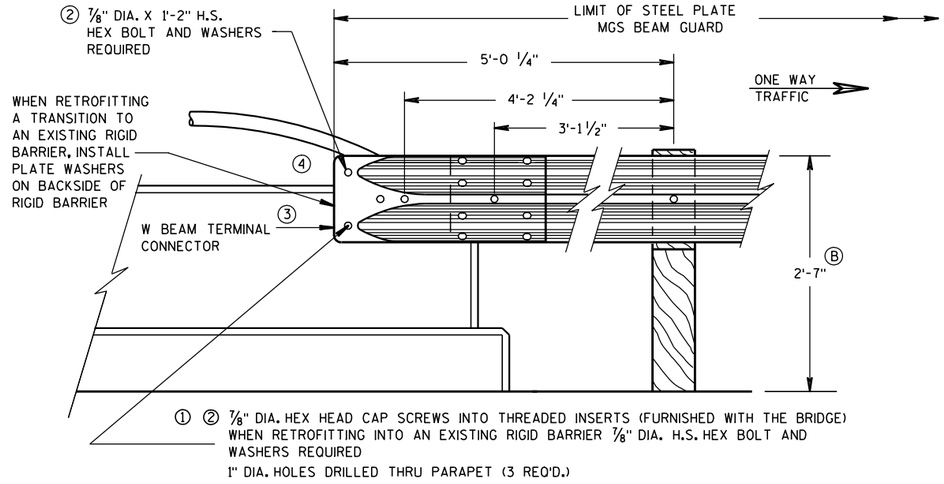


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8-31-2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
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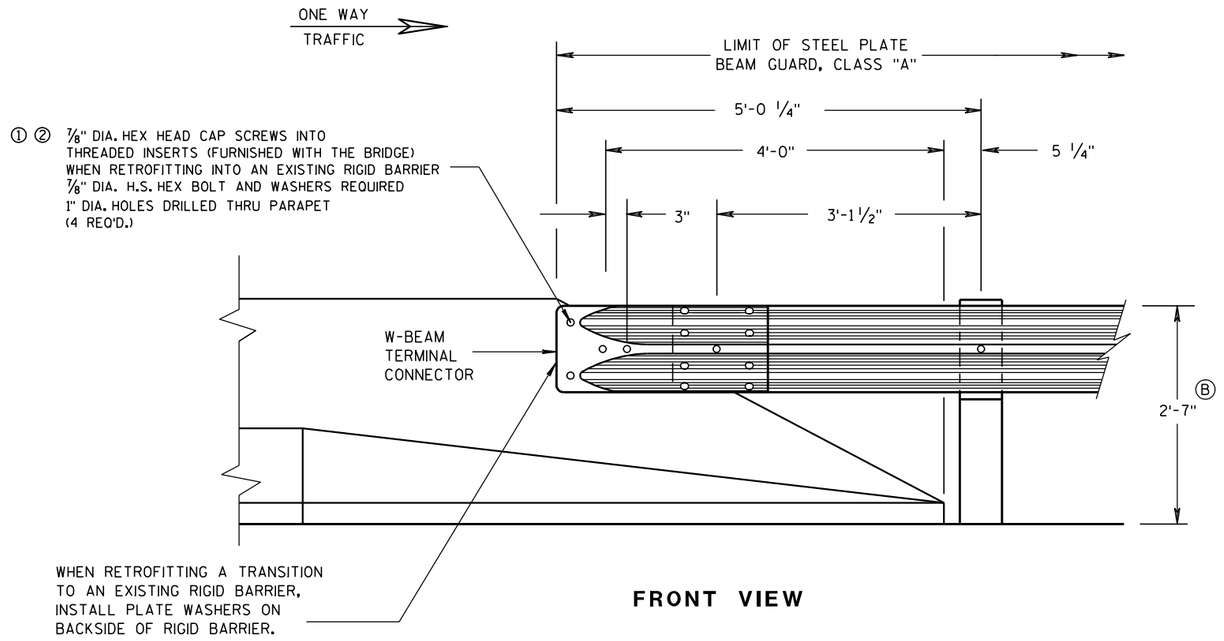


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

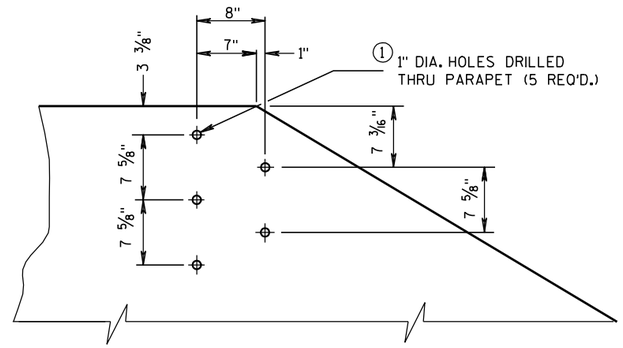
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

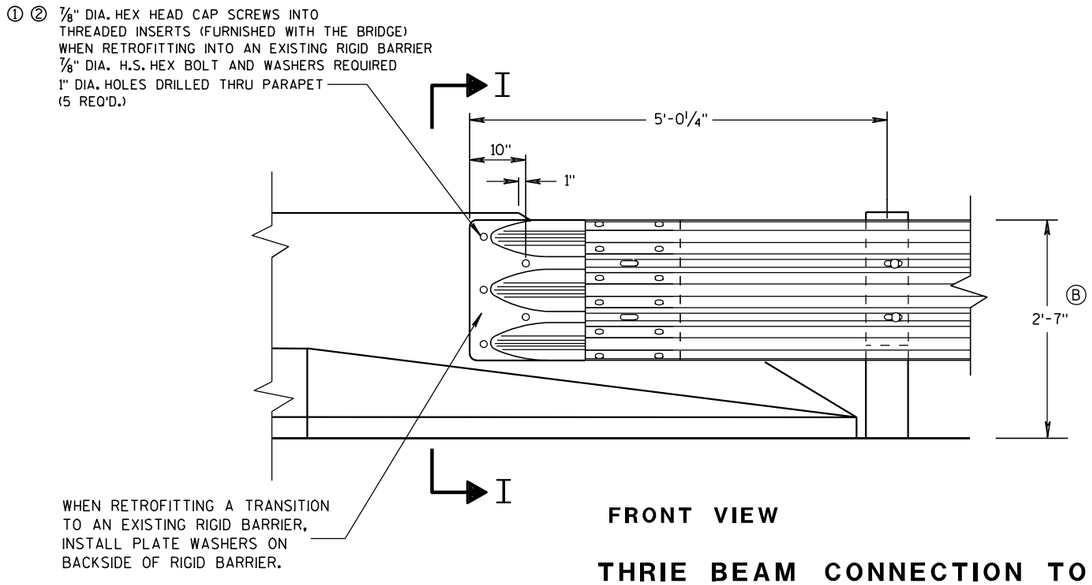
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

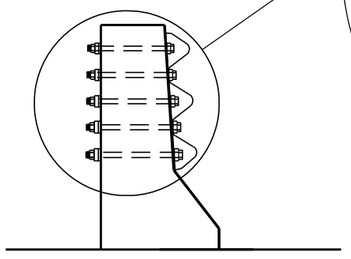
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



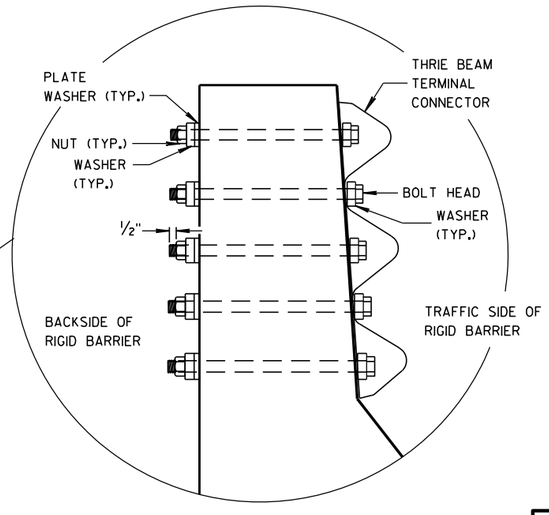
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

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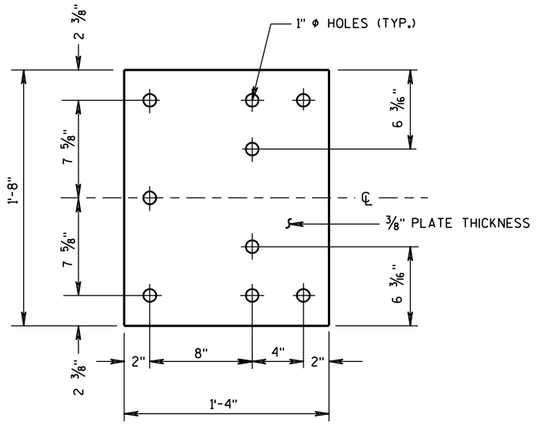
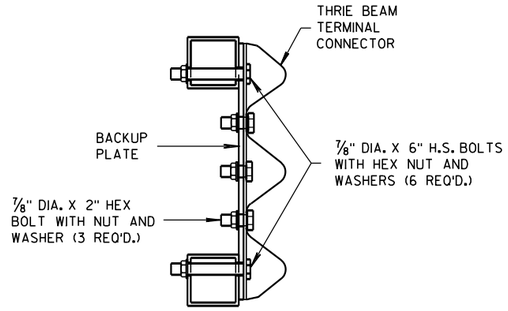


BACK-UP PLATE DETAIL

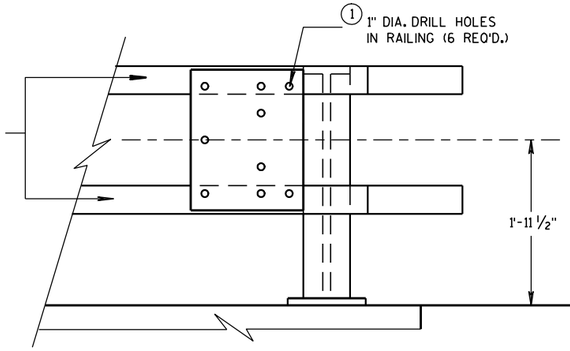


SECTION J-J

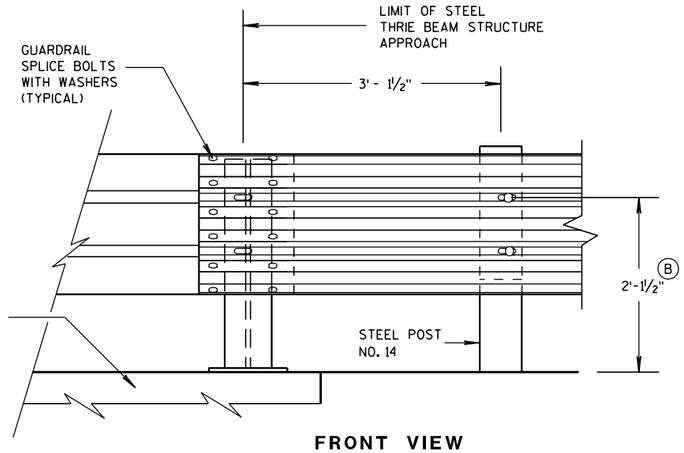
GENERAL NOTES

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

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

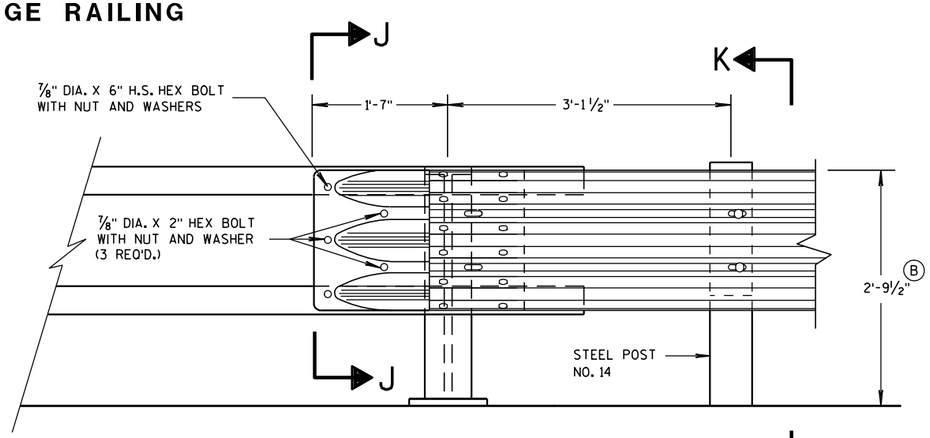


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

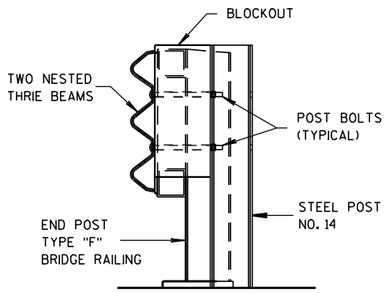


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8/31/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
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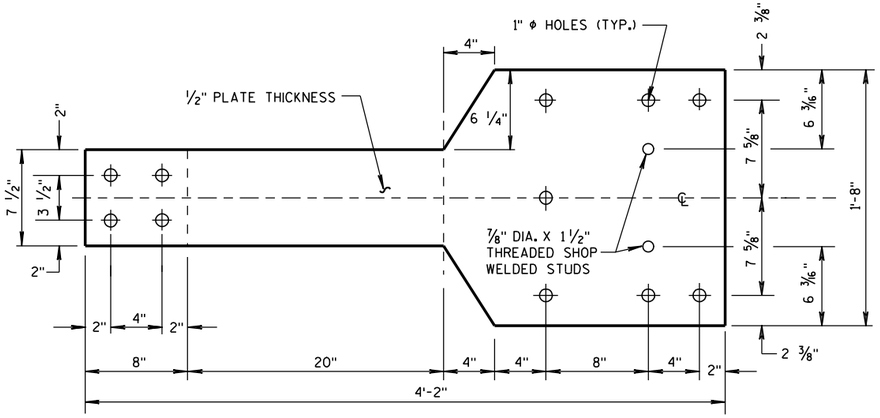
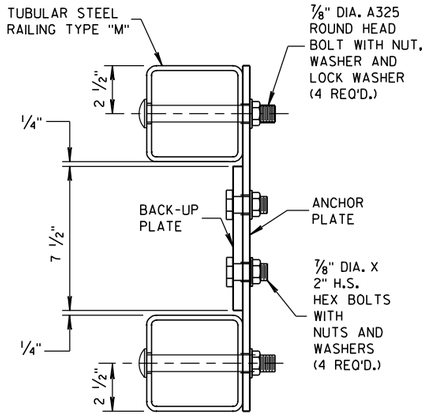
GENERAL NOTES

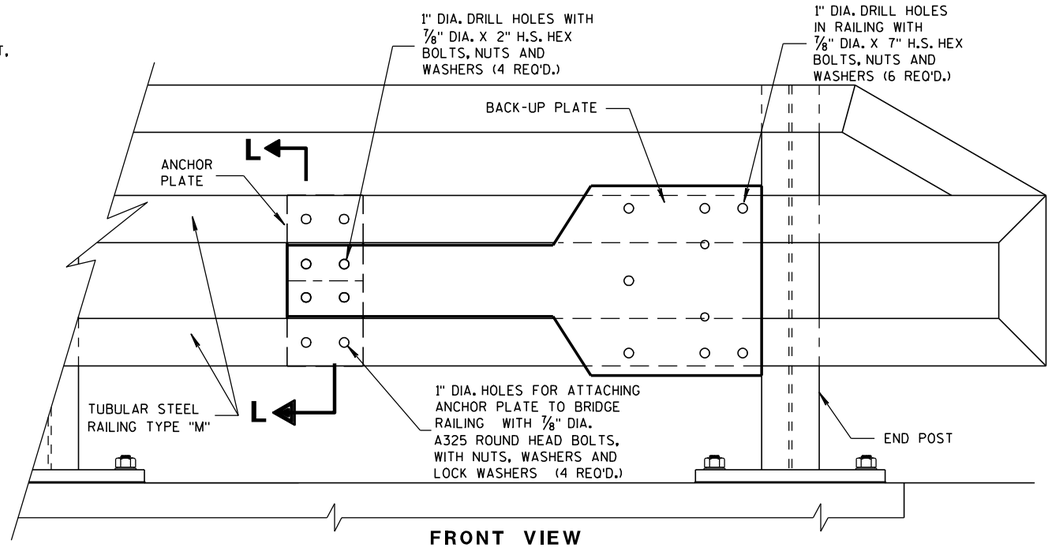
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

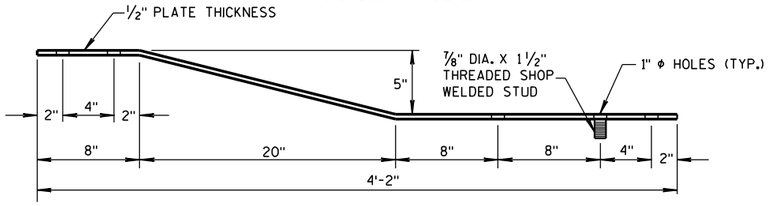


SECTION L-L



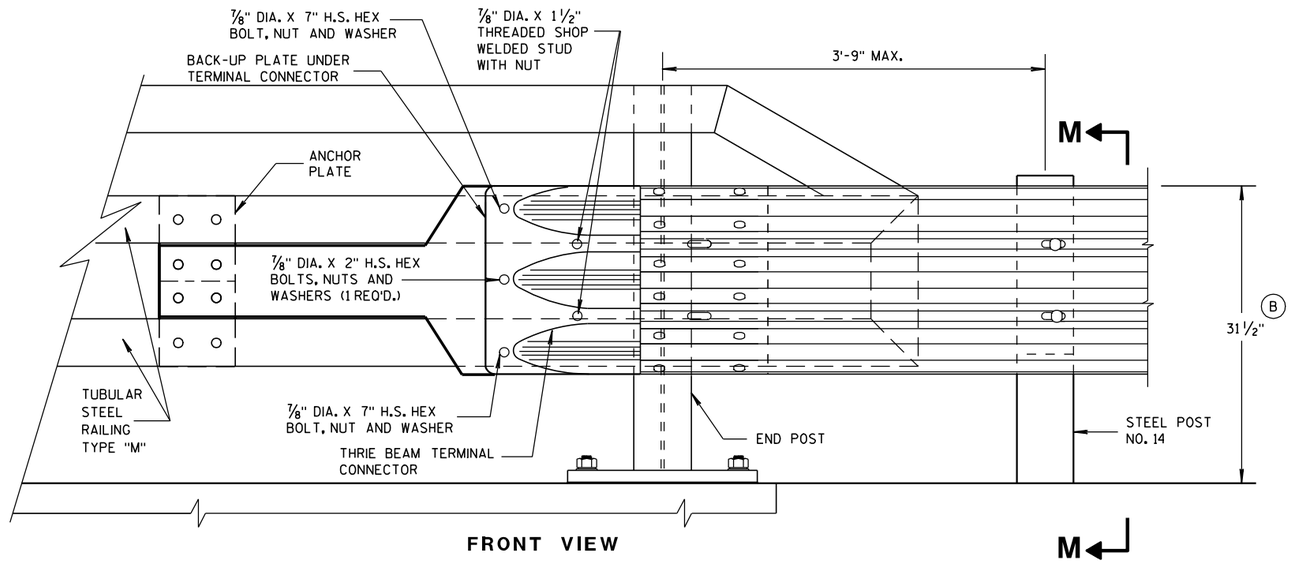
FRONT VIEW

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

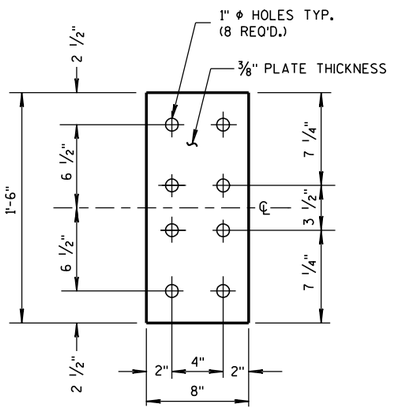


PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

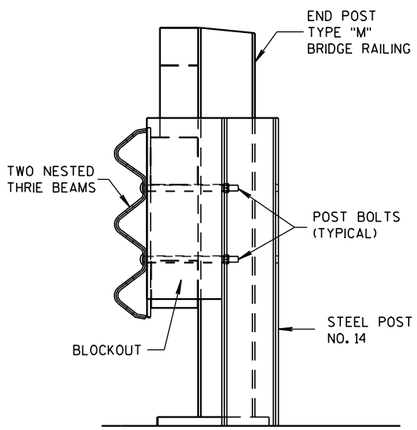


FRONT VIEW

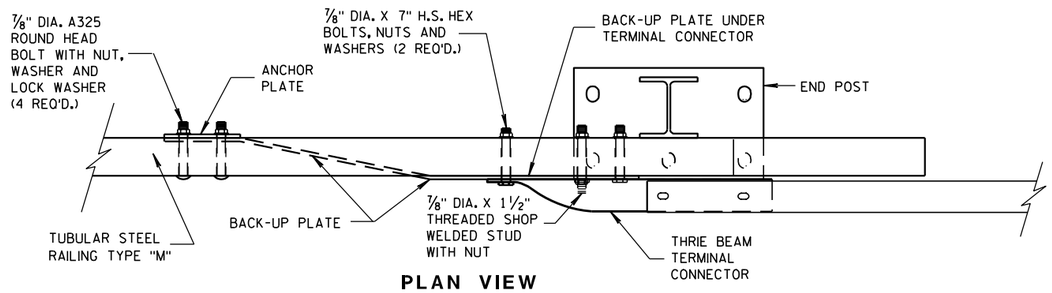


FRONT VIEW

ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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8-31-2012 DATE
/S/ Jerry H. [illegible]
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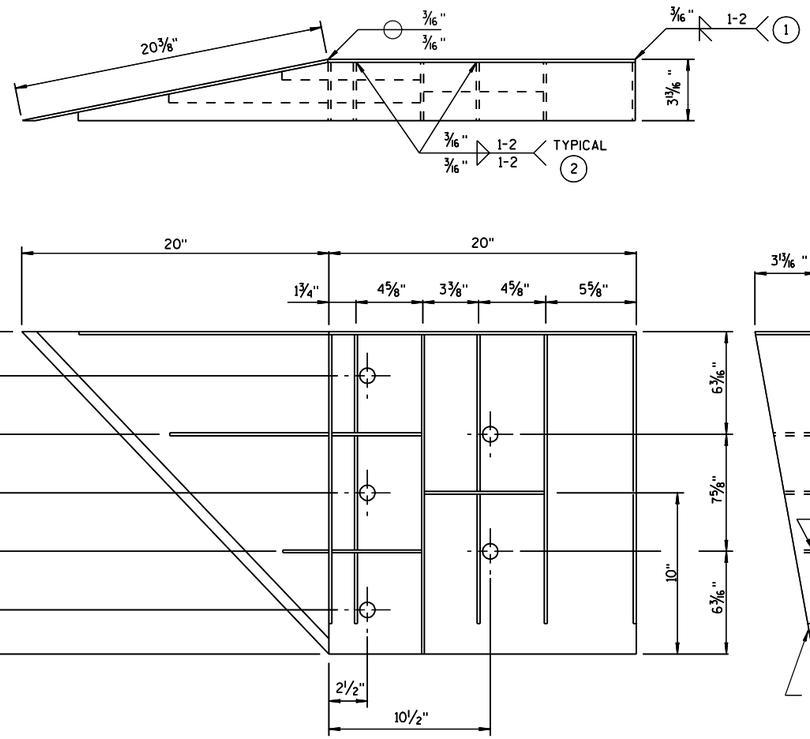

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

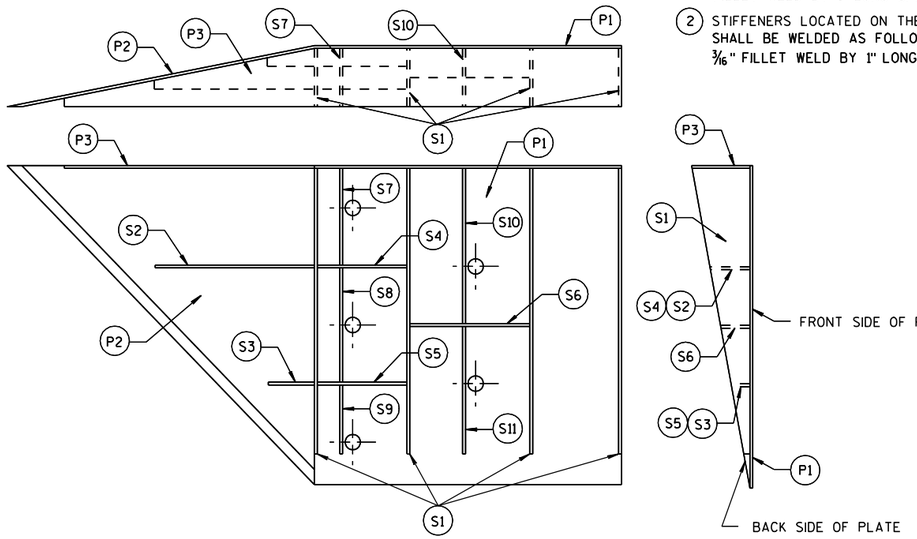

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE ⅜" THICK.

ALL STIFFENERS ARE ¼" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND ⅜" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
⅜" FILLET WELD BY 1" LONG SPACED AT 2".

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	⅜"
P2	1		20" x 20" x 28⁹⁄₁₆"	⅜"
P3	1		39" x 3⅝" x 20" x 19⅝"	⅜"
S1	4		18⁷⁄₁₆" x 3⅝" x 18¾"	¼"
S2	1		10¼" x 2⁷⁄₁₆" x 10⅜" x ½"	¼"
S3	1		3" x 1¹⁄₁₆" x 3⅛" x ½"	¼"
S4	1		6⅛" x 2⁷⁄₁₆"	¼"
S5	1		6⅛" x 1¹⁄₁₆"	¼"
S6	1		7¾" x 1¾"	¼"
S7	1		2⁹⁄₁₆" x 6" x 3⅝" x 5⅞"	¼"
S8	1		1⁵⁄₃₂" x 7½" x 2½" x 7⅜"	¼"
S9	1		6¹⁄₁₆" x 6⅜" x 1³⁄₃₂"	¼"
S10	1		1⅞" x 9⅞" x 3⅝" x 9¹¹⁄₁₆"	¼"
S11	1		8½" x 8¾" x 1¹³⁄₁₆"	¼"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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DATE

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ROADWAY STANDARDS ENGINEER

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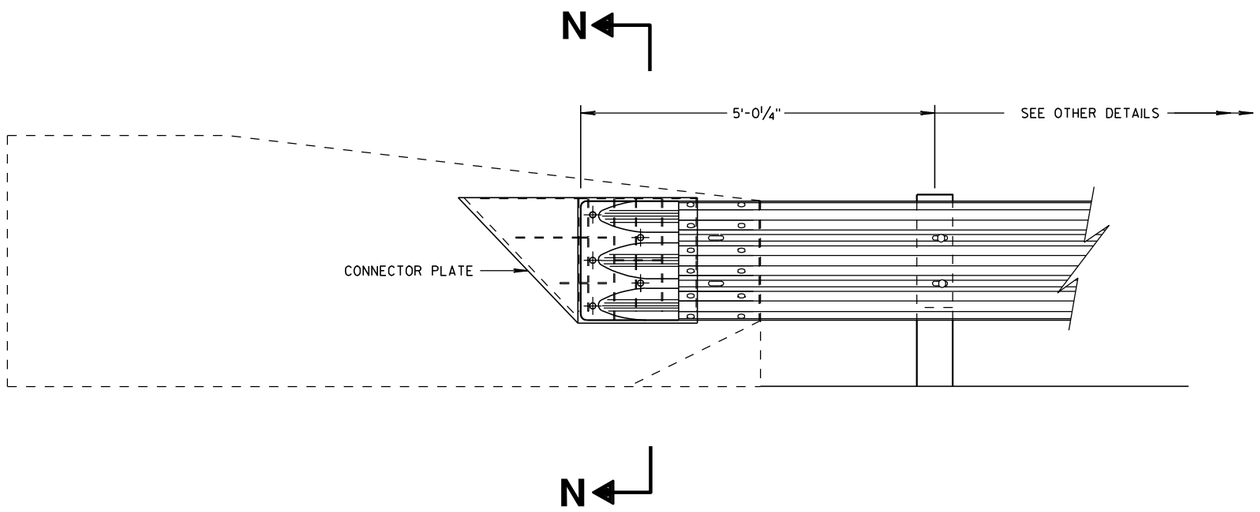
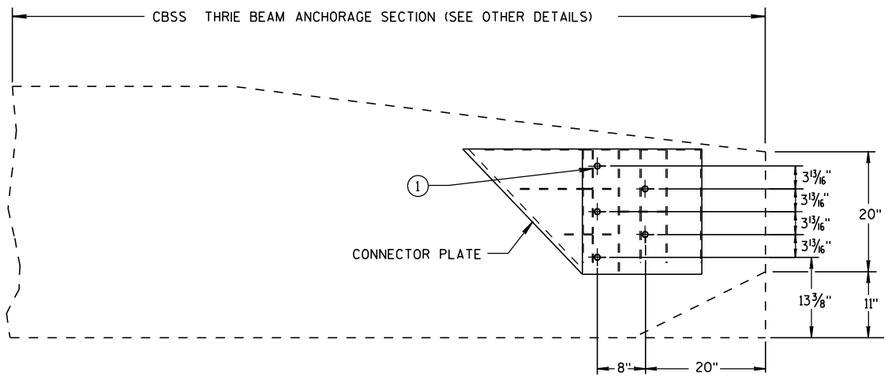


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

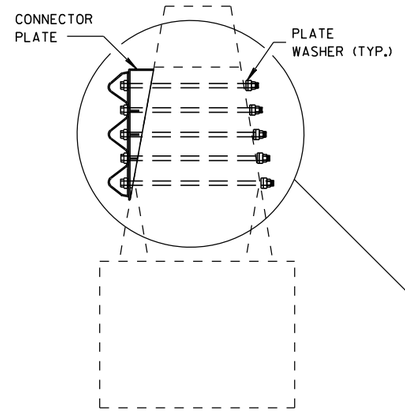


SINGLE SLOPE CONNECTION PLATE PLACEMENT

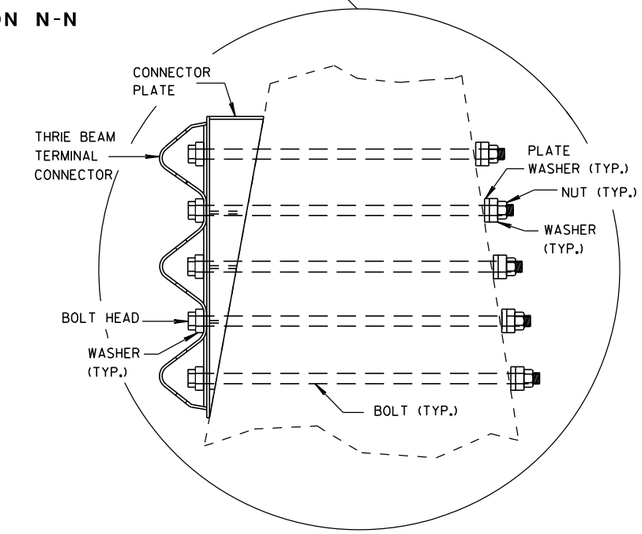
GENERAL NOTES

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

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

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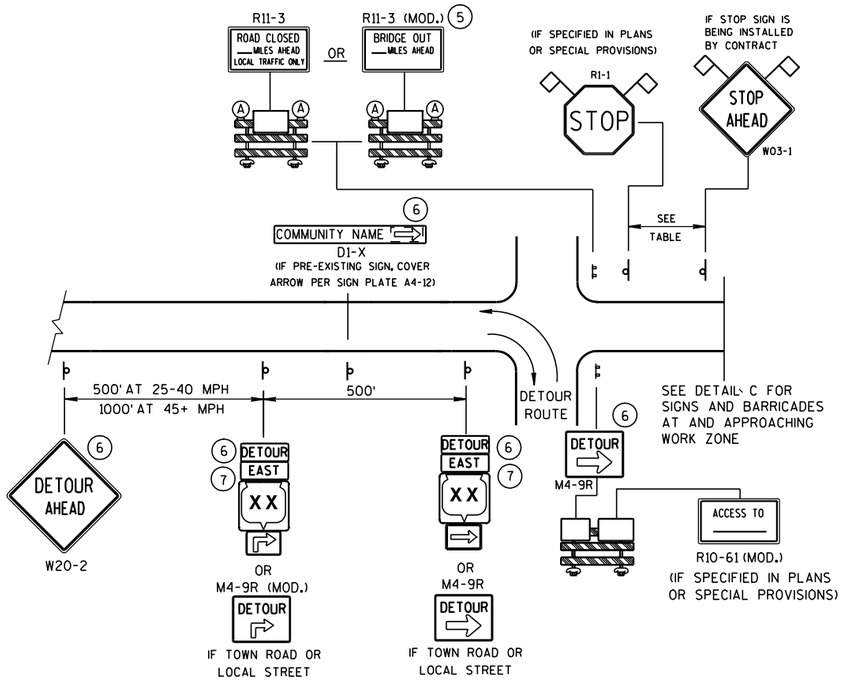
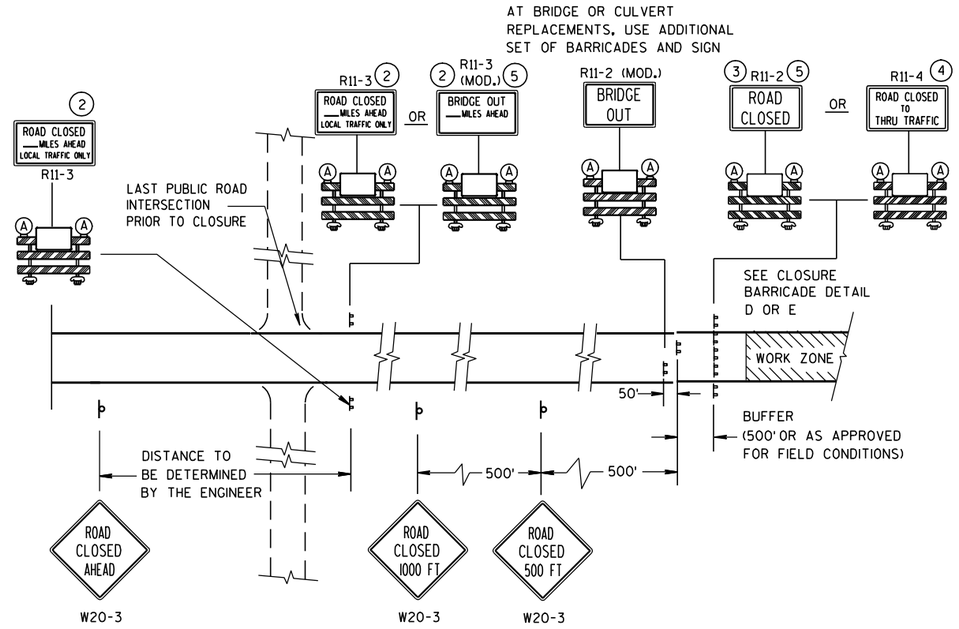
S.D.D. 14 B 45-3j



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

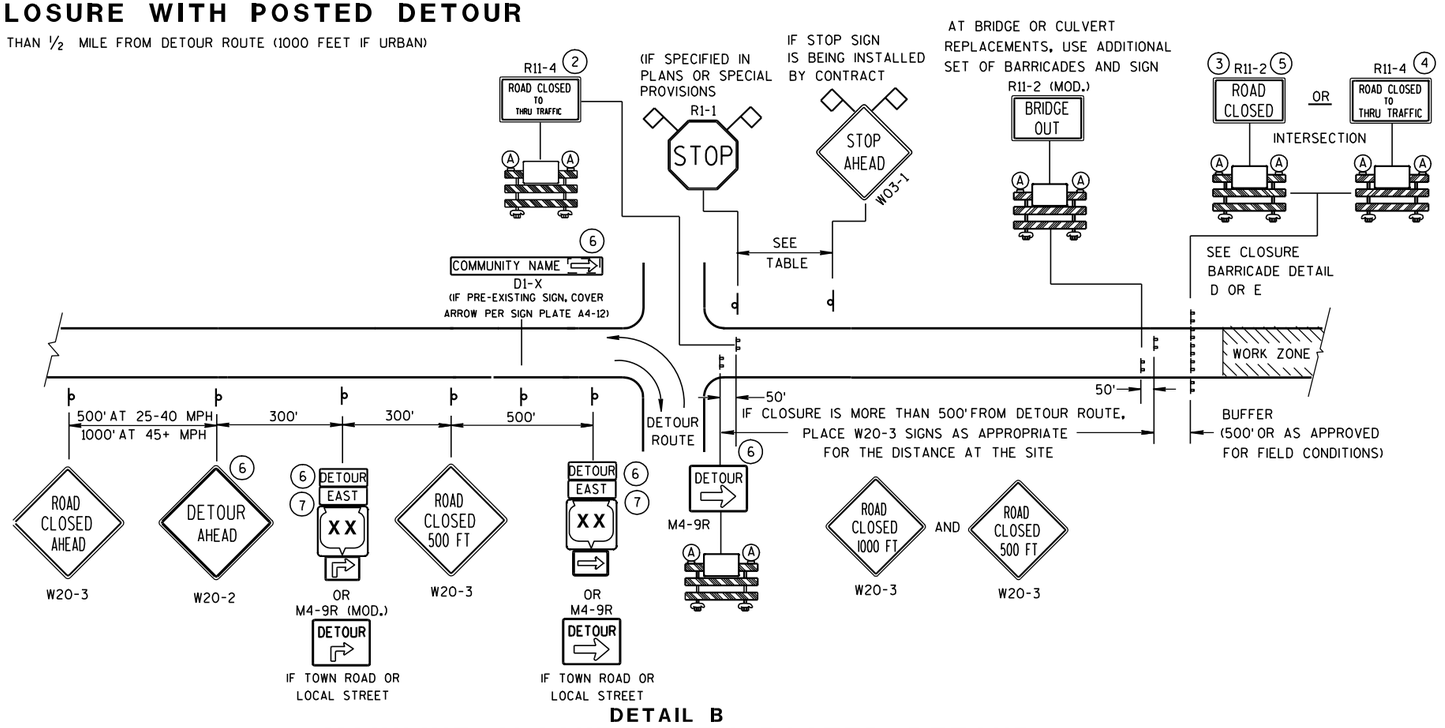


DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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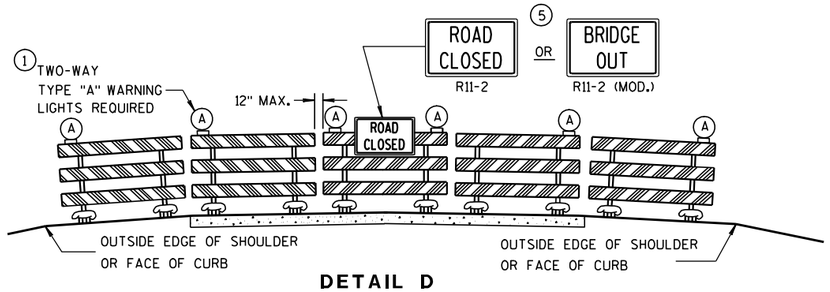
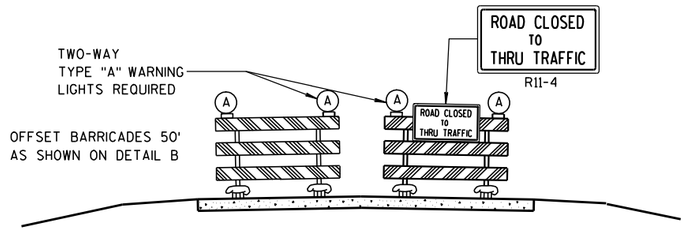
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a 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.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"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 AND 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

APPROVED

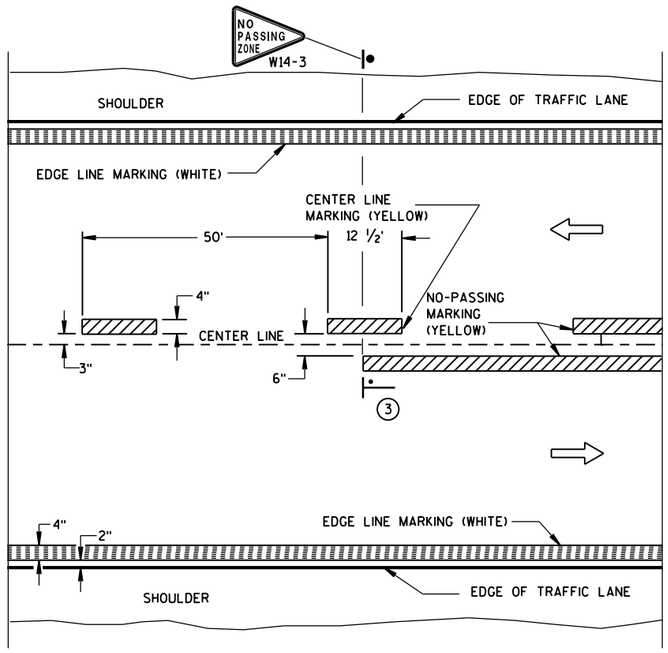
9/16/03 — DATE

/S/ Thomas N. N[illegible] — CHIEF SIGNS AND MARKINGS ENGINEER

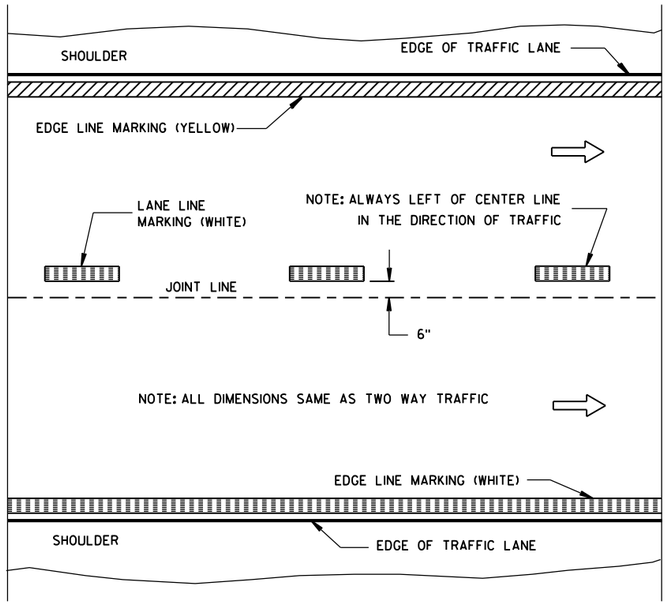
FHWA

6

S.D.D. 15 C 2-4b

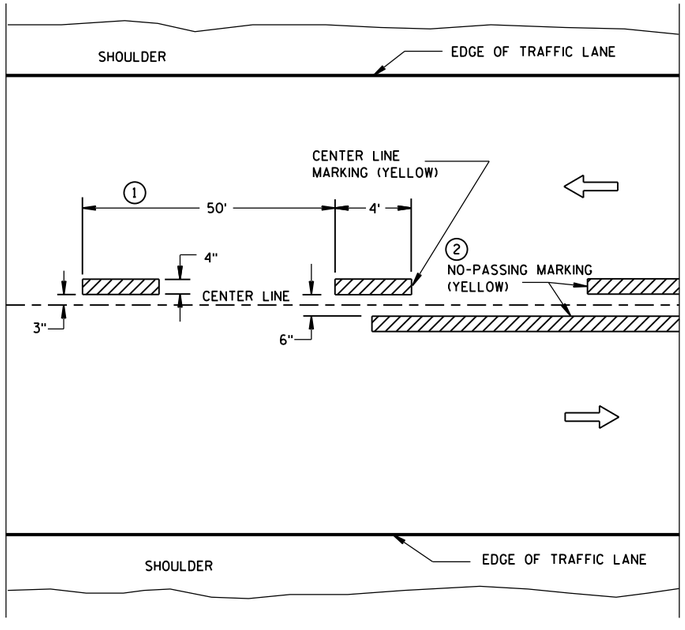


TWO WAY TRAFFIC

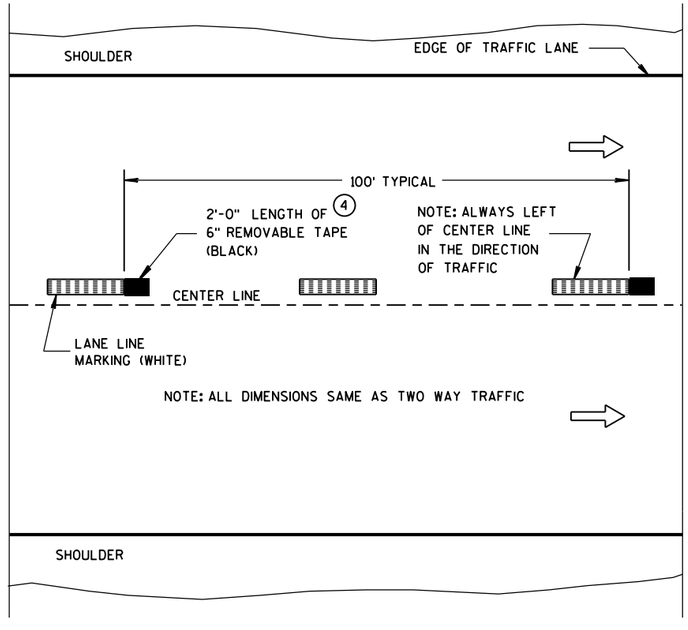


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

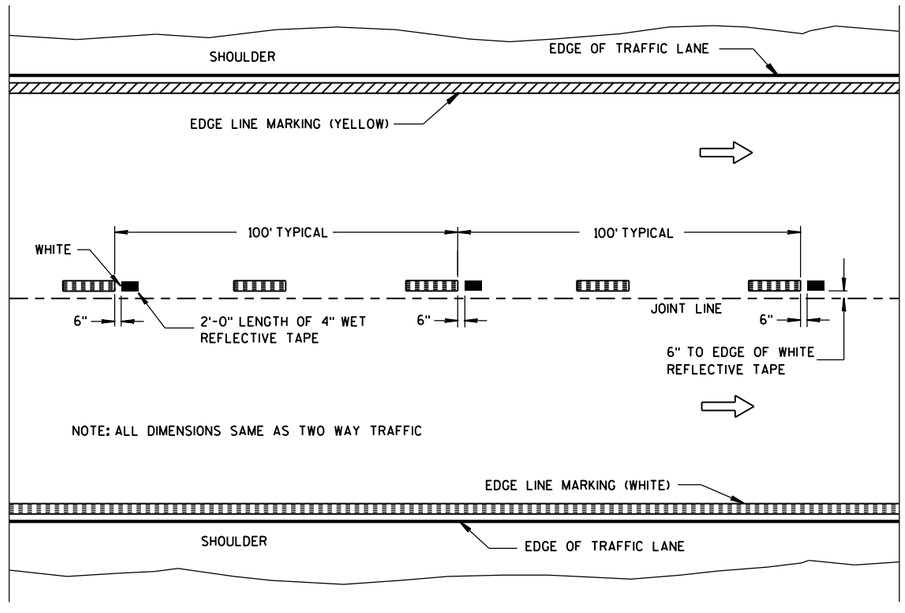
GENERAL NOTES

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

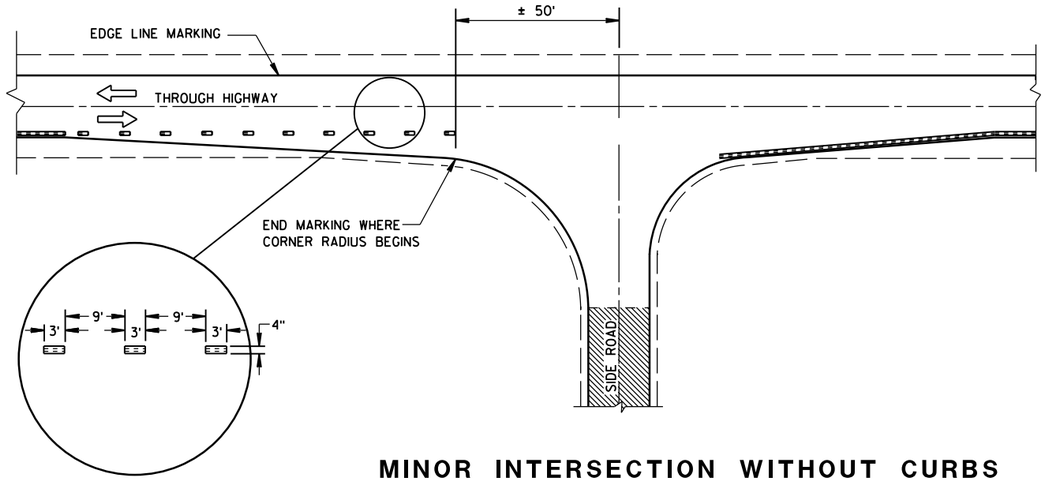
APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

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

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

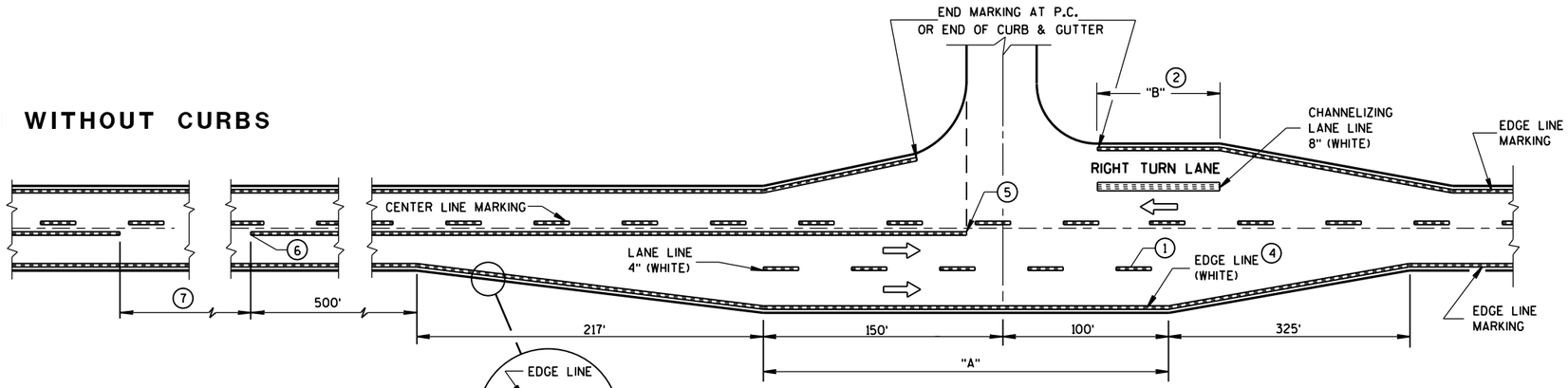
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

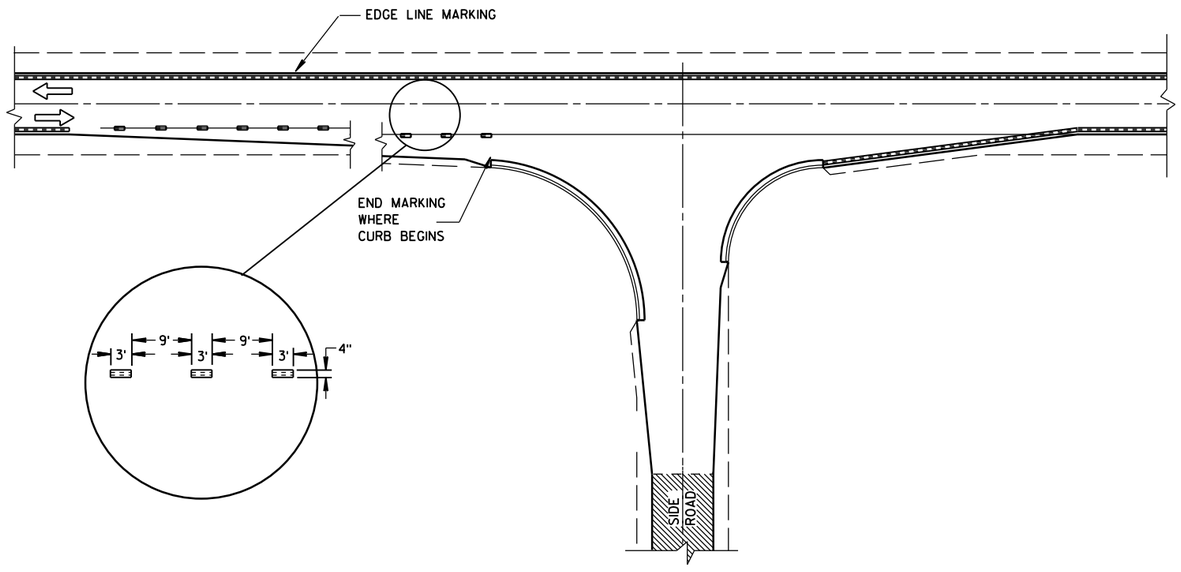
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



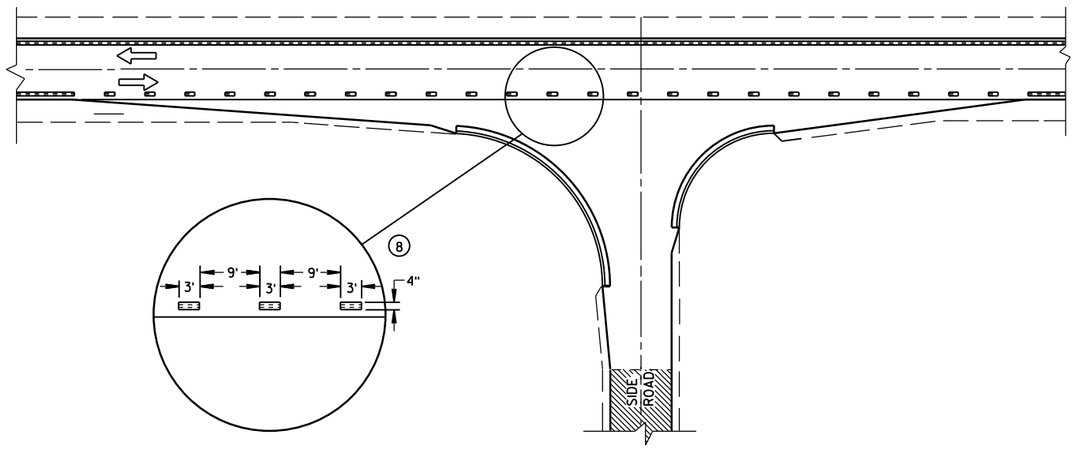
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

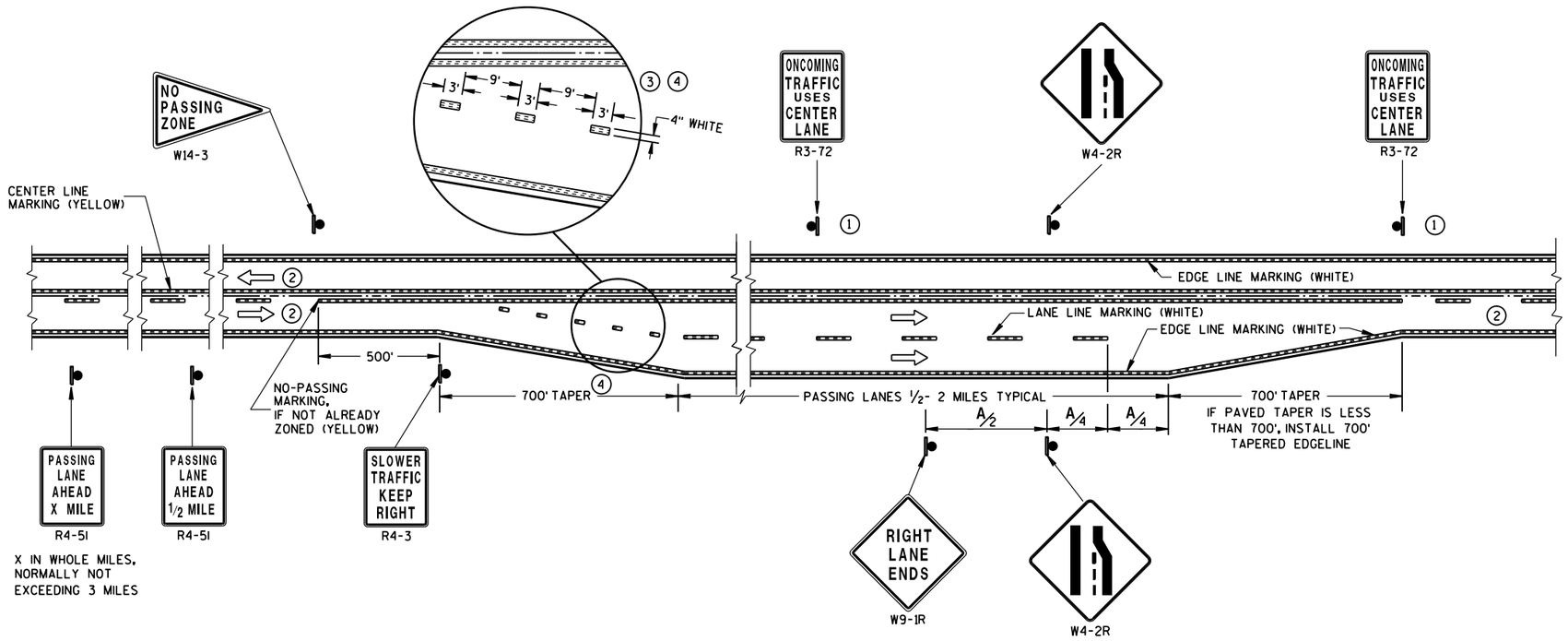
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

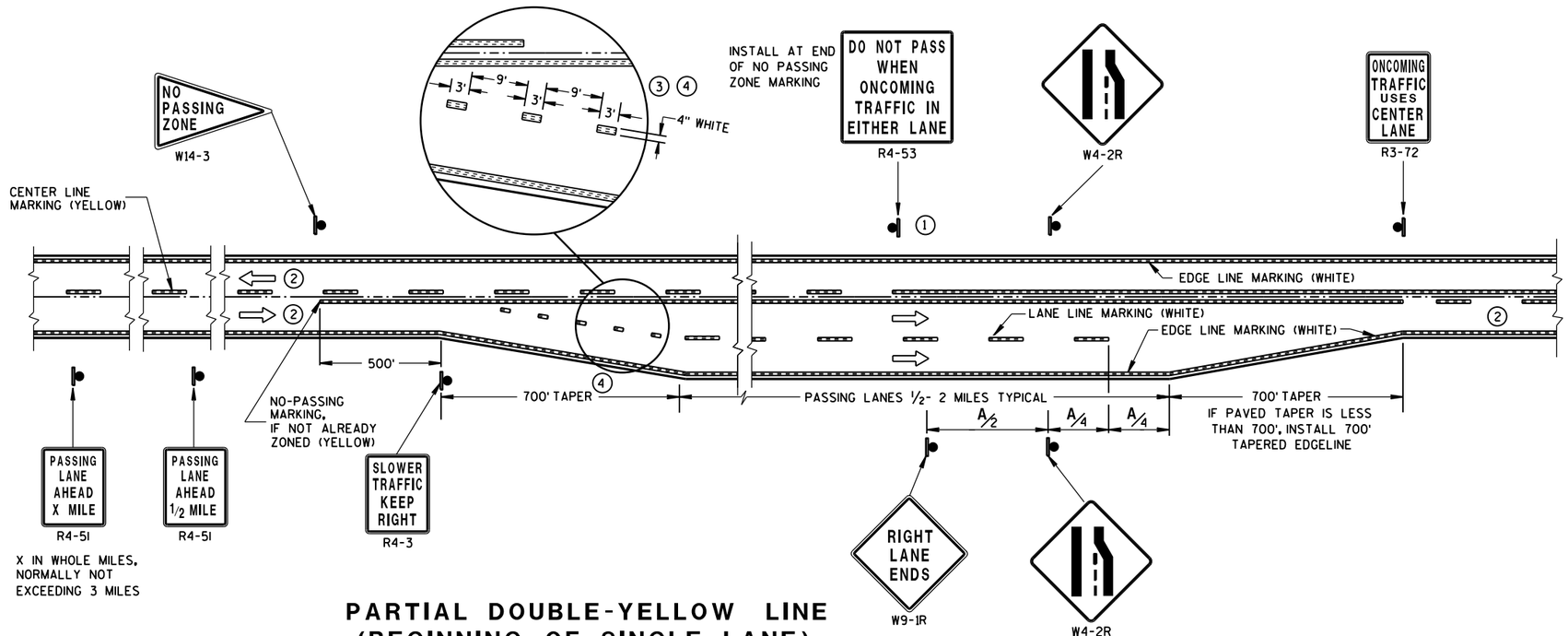
S.D.D. 15 C 8-15b

6

S.D.D. 15 C 8-15b



SOLID DOUBLE-YELLOW LINE
(THROUGHOUT ENTIRE PASSING/CLIMBING LANE)



PARTIAL DOUBLE-YELLOW LINE
(BEGINNING OF SINGLE LANE)

GENERAL NOTES

1. SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
2. THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
3. THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3'LINE 9'GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
4. WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING/CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	750
50	850
55	950

PAVEMENT MARKING & SIGNING (CLIMBING LANE & PASSING LANE)

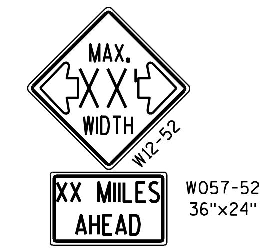
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 C 8-15c

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- FLAGS, 16"x16" MIN., ORANGE
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC FLOW
- 4" X 6" WOOD POST



INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

GENERAL NOTES :

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

NON-OPERATIONAL EQUIPMENT OR MATERIAL SHALL BE LOCATED BEHIND THE PRECAST CONCRETE BARRIER.

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

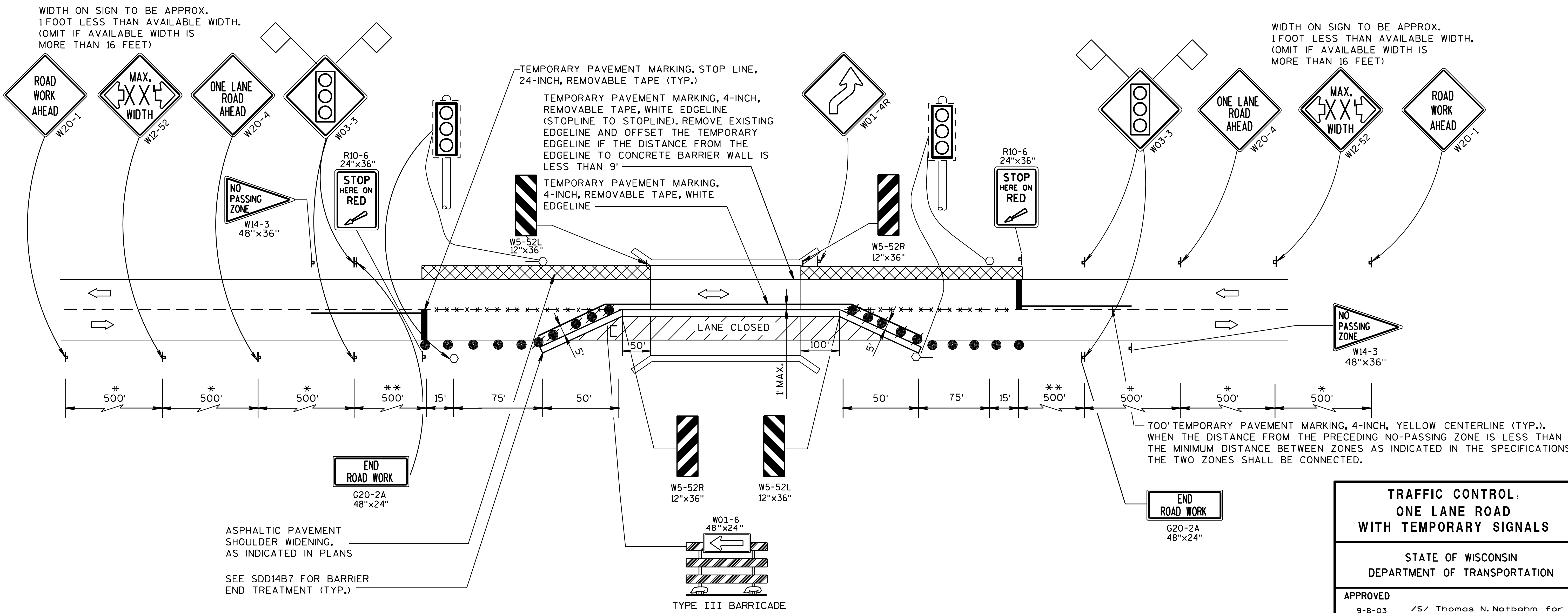
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500' SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350' TYPICAL SPACING. FOR 25-30 MPH, USE 200' TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

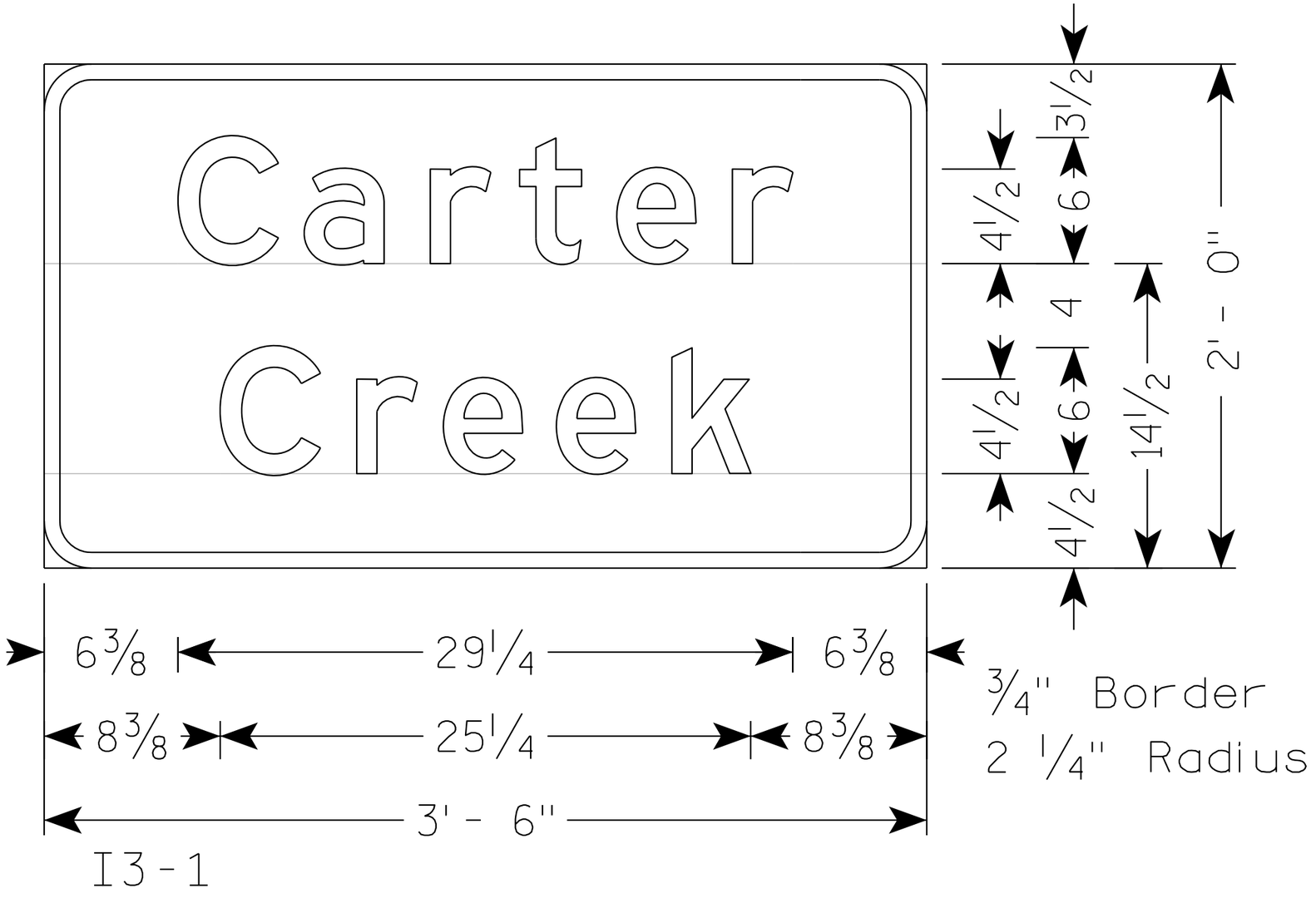
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-8-03 DATE
/S/ Thomas N. Notbohm for
CHIEF SIGNS AND MARI 65 IEER
FHWA

S.D.D. 15 D 33-2

NOTES

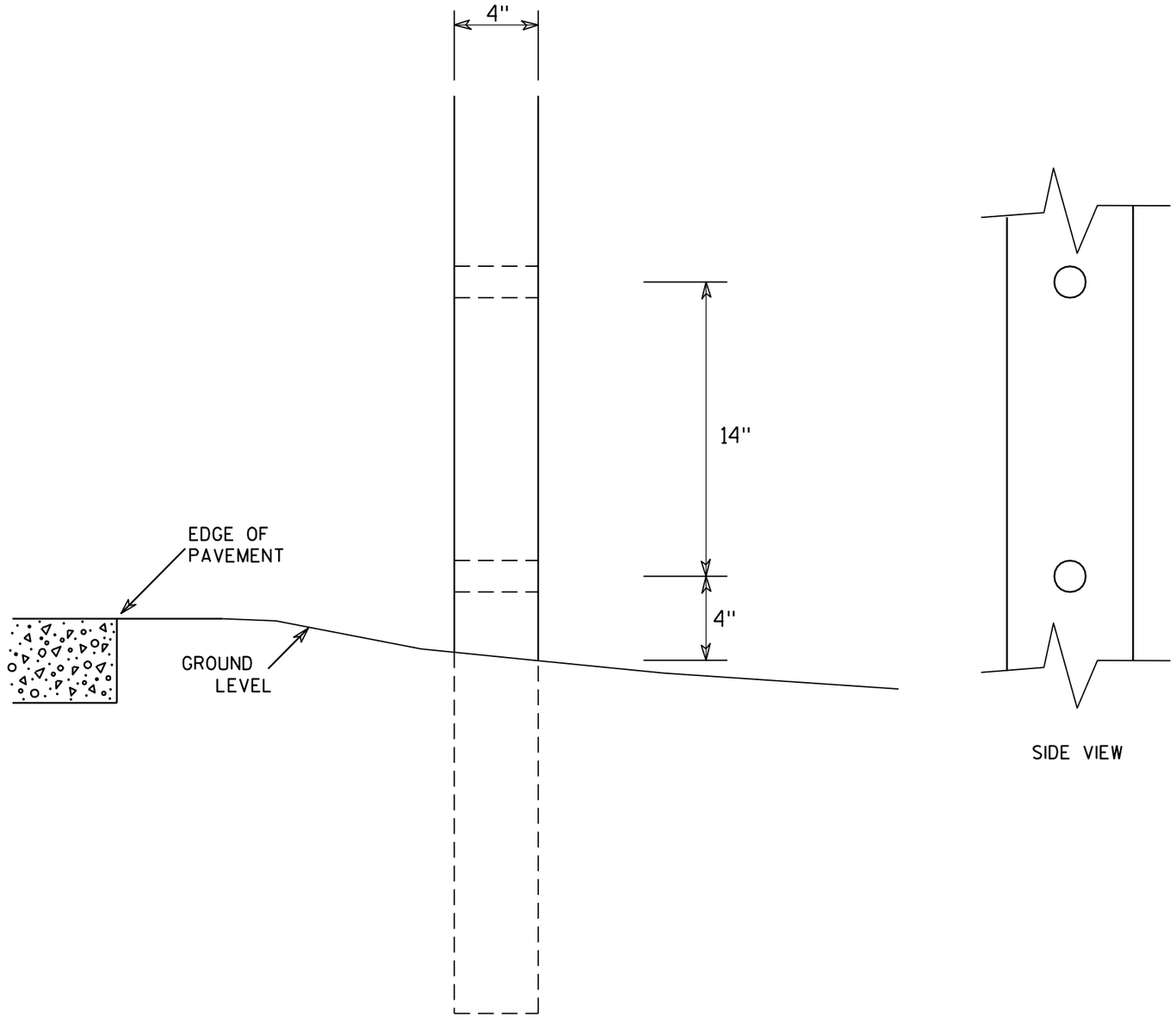
1. All Sign Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White
3. Message Series - E



7

7

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	PERMANENT SIGNING	SHEET NO: E



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

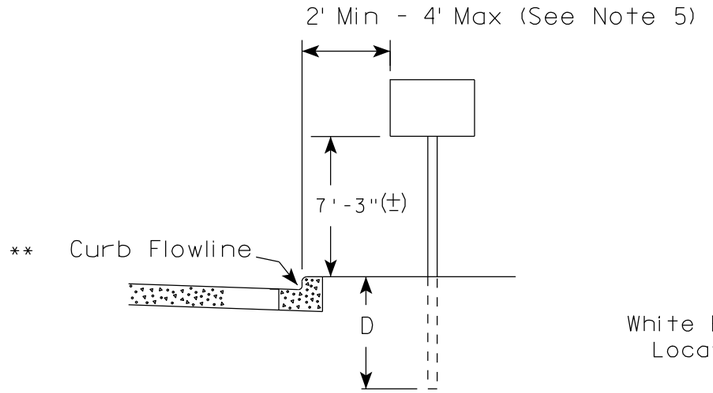
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

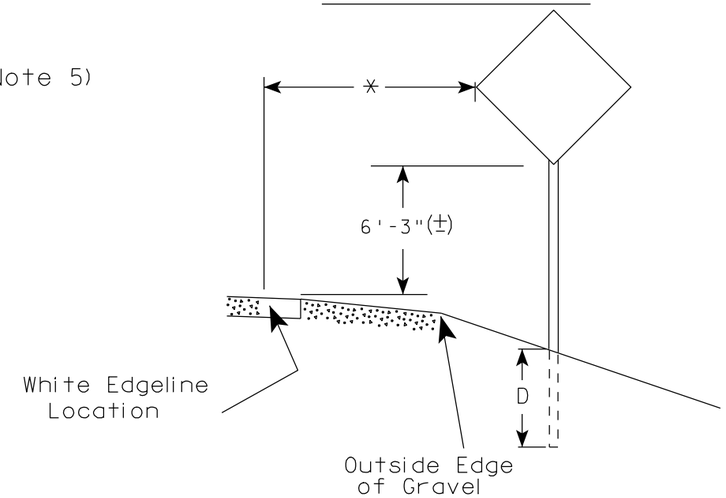
DATE 3/27/97 PLATE NO. A4-11.2

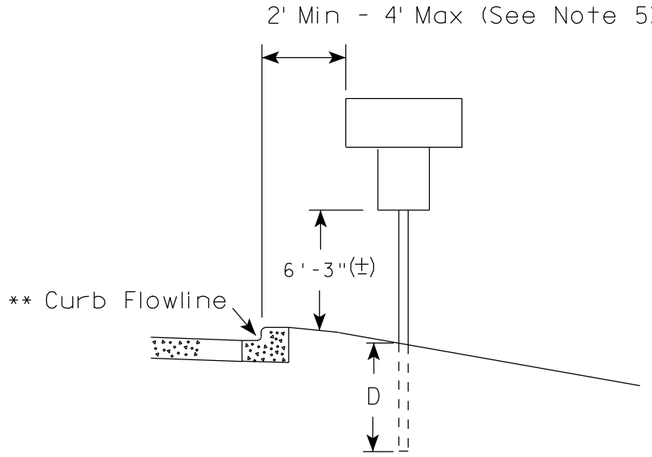
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 67	E

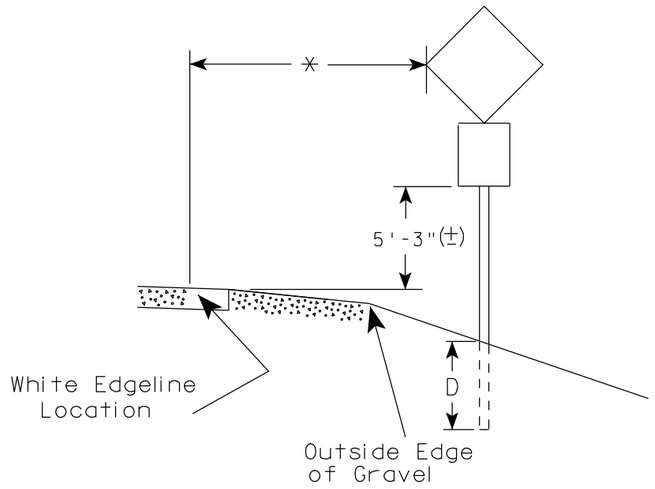
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

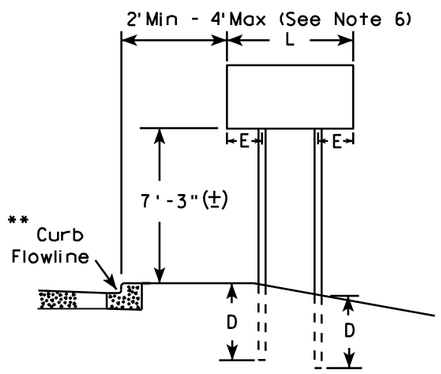
DATE 9/21/2011 PLATE NO. A4-3.16

7

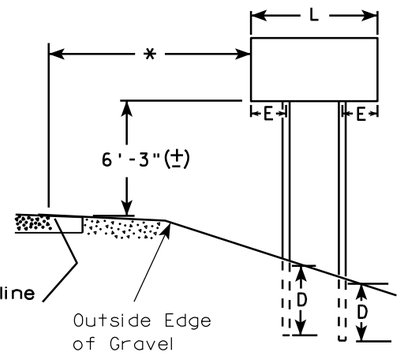
7

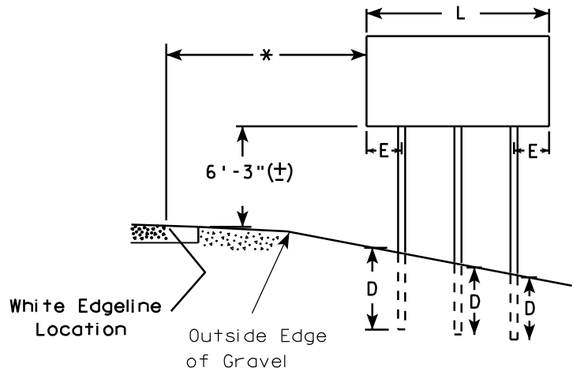
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 68 | E

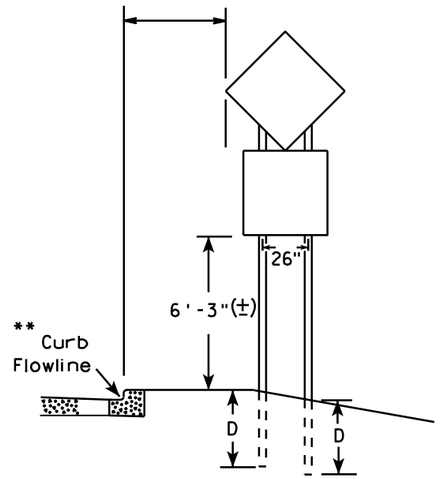
URBAN AREA



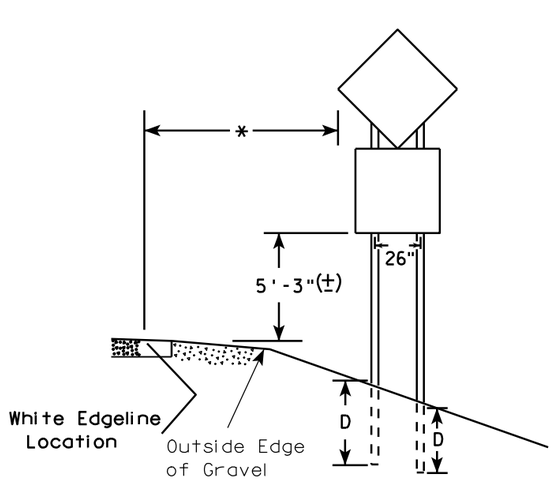
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
*** Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

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

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

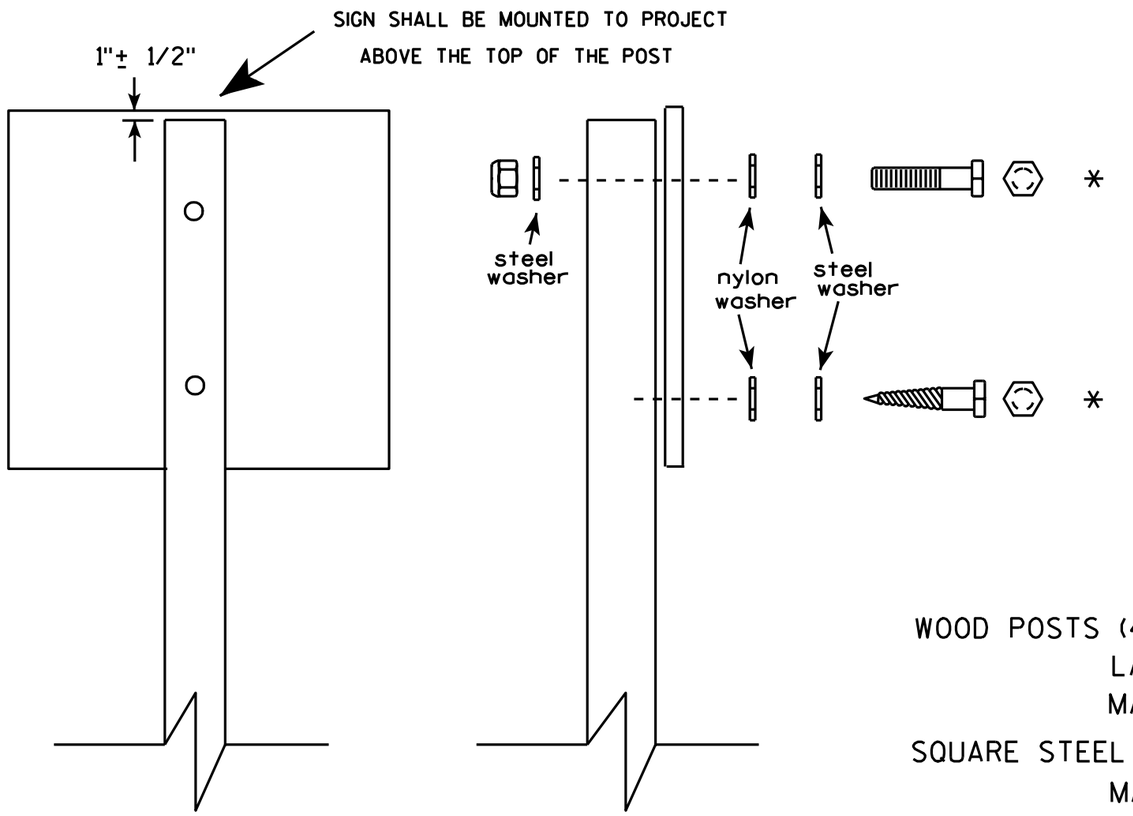
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 69	E



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

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

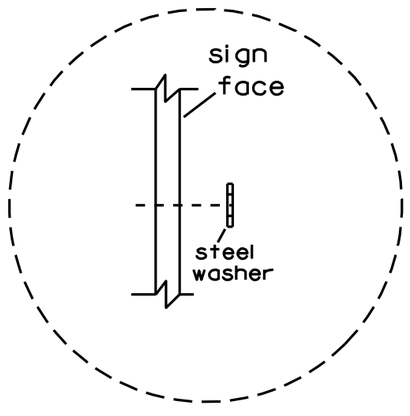
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

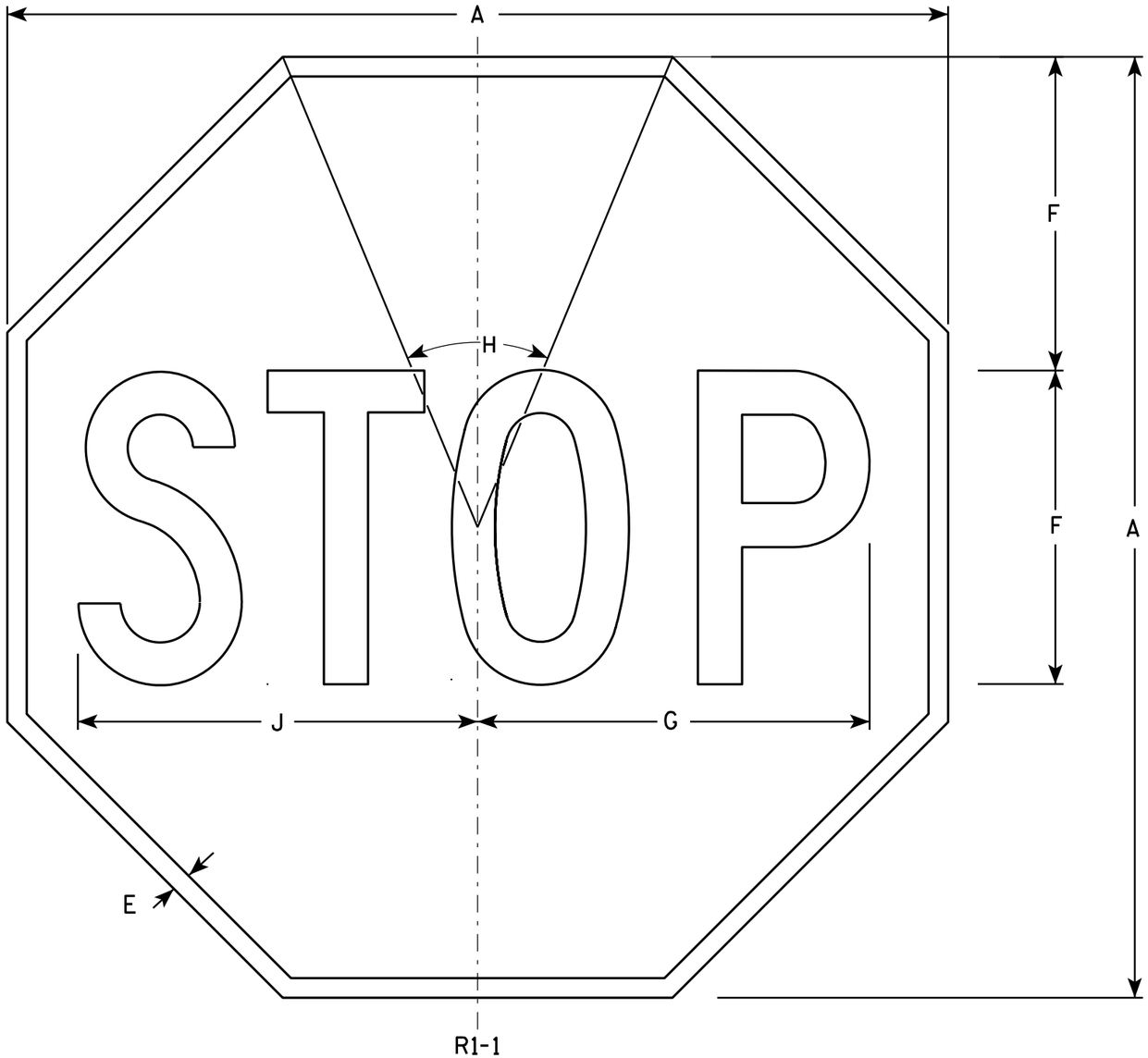
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 70 E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

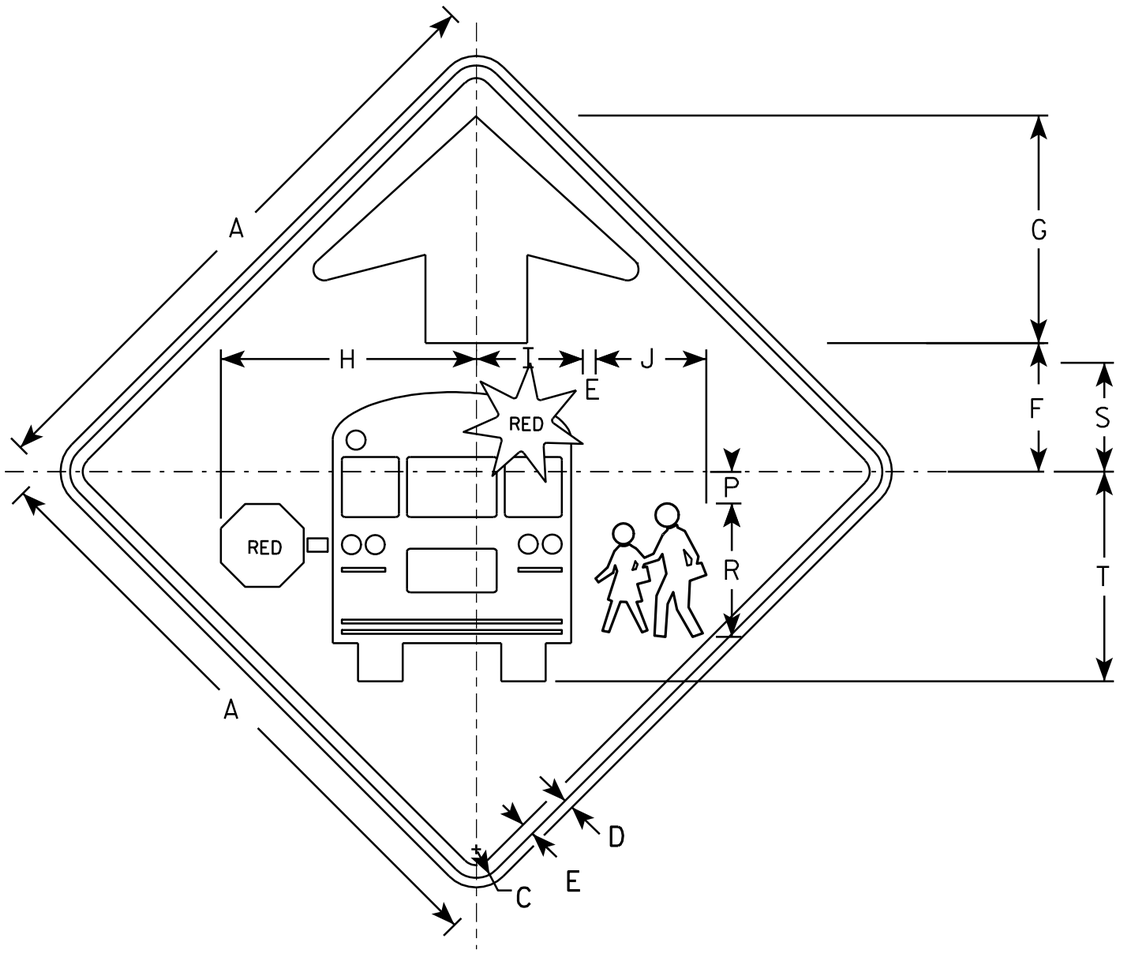
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

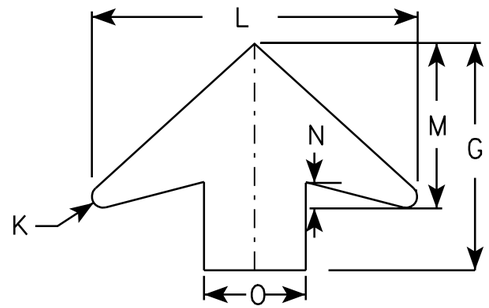
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 71	E



S3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW-GREEN
   Message - BLACK except as noted
   Circles except PEDS- RED BACKGROUND
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	12 1/2	5 1/4	5 1/2	1/2	16	8	1 1/4	5	1 1/2		6 5/8	5 3/8	10 3/8							6.25
2	36		1 5/8	5/8	3/4	7 1/2	13 1/2	15 1/8	6 1/4	6 1/2	5/8	19 1/4	9 3/4	1 5/8	6	1 7/8		7 7/8	6 3/8	12 3/8							9.0
3	48		2 1/4	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
4	48		2 1/4	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
5																											

STANDARD SIGN
S3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

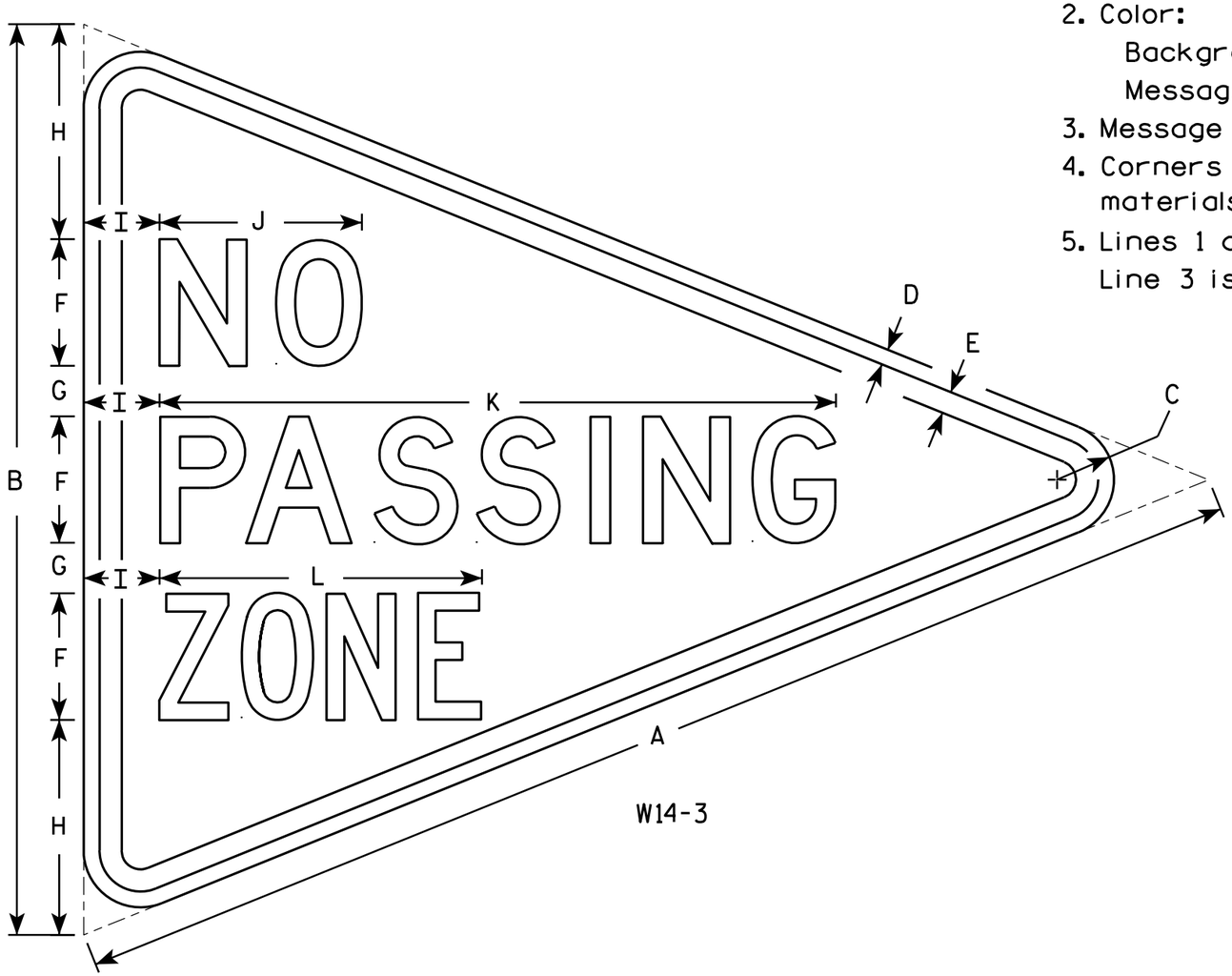
DATE 6/8/10 PLATE NO. S3-1.6

PROJECT NO:

SHEET NO: 72 E

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See note 5
4. Corners and borders shall be rounded on all base materials for this sign.
5. Lines 1 and 2 are Series D.
   Line 3 is series C.



W14-3

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 73	E

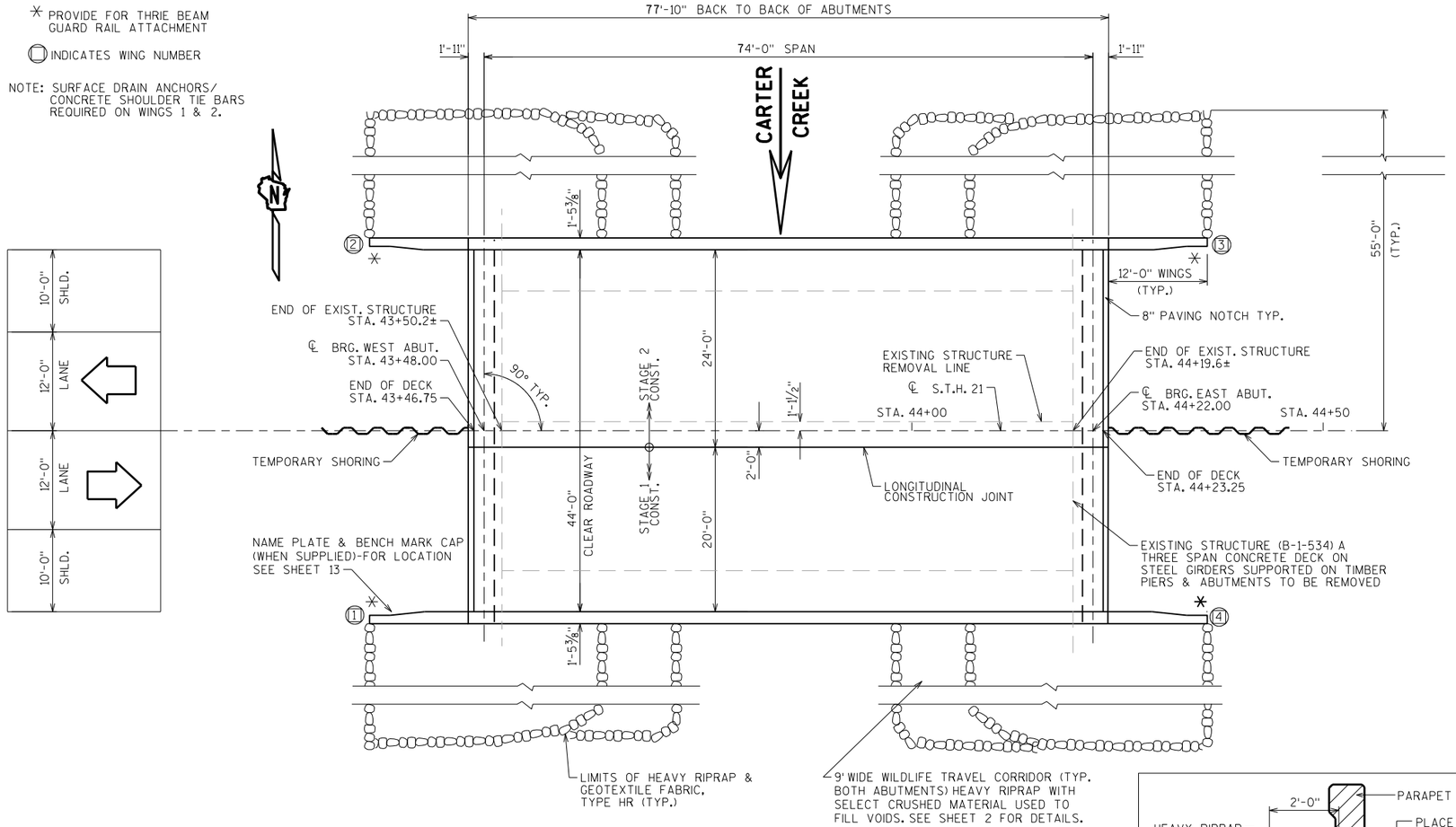
STATE PROJECT NUMBER

6160-03-73

✳ PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT

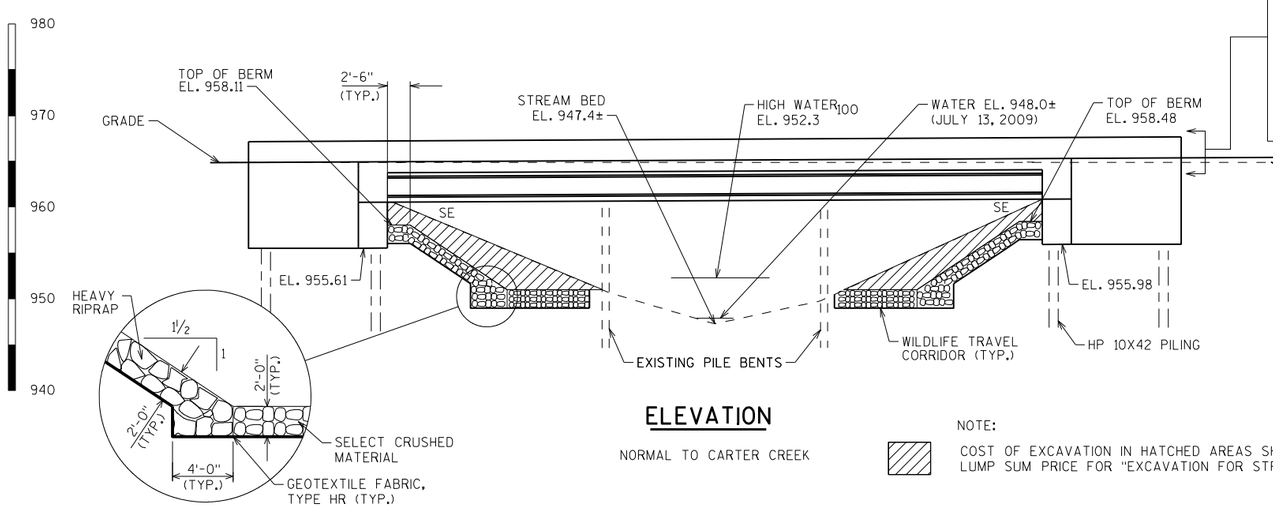
ⓝ INDICATES WING NUMBER

NOTE: SURFACE DRAIN ANCHORS/ CONCRETE SHOULDER TIE BARS REQUIRED ON WINGS 1 & 2.



PLAN

SINGLE SPAN - 36W" PRESTRESSED GIRDERS

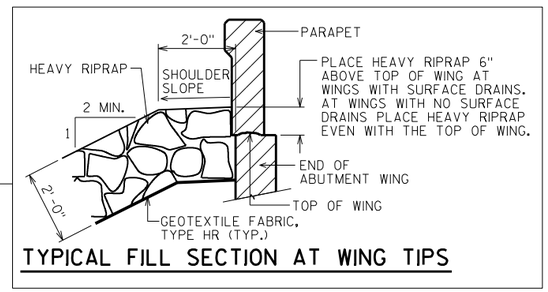


ELEVATION

NORMAL TO CARTER CREEK

NOTE:

COST OF EXCAVATION IN HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-1-34"



TYPICAL FILL SECTION AT WING TIPS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING; HL-93
INVENTORY RATING FACTOR; RF=1.29
OPERATING RATING FACTOR; RF=1.67
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV); 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB— f'c = 4,000 P.S.I. ALL OTHER— f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

36W" PRESTRESSED GIRDERS, CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 100'-0" LONG.

** 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 VOLUME

S.T.H. 21
A.D.T.=4790 (2032)
R.D.S.=60 M.P.H.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 400 C.F.S.
VEL. = 6.3 F.P.S.
HW.= EL. 952.3
WATERWAY AREA= 63.5 SQ. FT.
DRAINAGE AREA= 47.5 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 =180 C.F.S.
$HW._2$ = EL. 950.9

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. 36W" PRESTRESSED GIRDER DETAILS
9. 36W" PRESTRESSED GIRDER DETAILS
10. STEEL DIAPHRAGM
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. SLOPED FACE PARAPET LF

STRUCTURE DESIGN CONTACT:

DANIELLE DE TENNIS (608) 266-8689
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS — CHIEF STRUCTURES DESIGN ENGINEER — 2/5/13 DATE

STRUCTURE B-1-34

STH 21 OVER CARTER CREEK

COUNTY	TOWN/~~CITY/VILLAGE~~
ADAMS	PRESTON

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DFD	DESIGN CK'D.	SDR	DRAWN BY	DFD	PLANS CK'D.	WWR

GENERAL PLAN

SHEET 1 OF 13

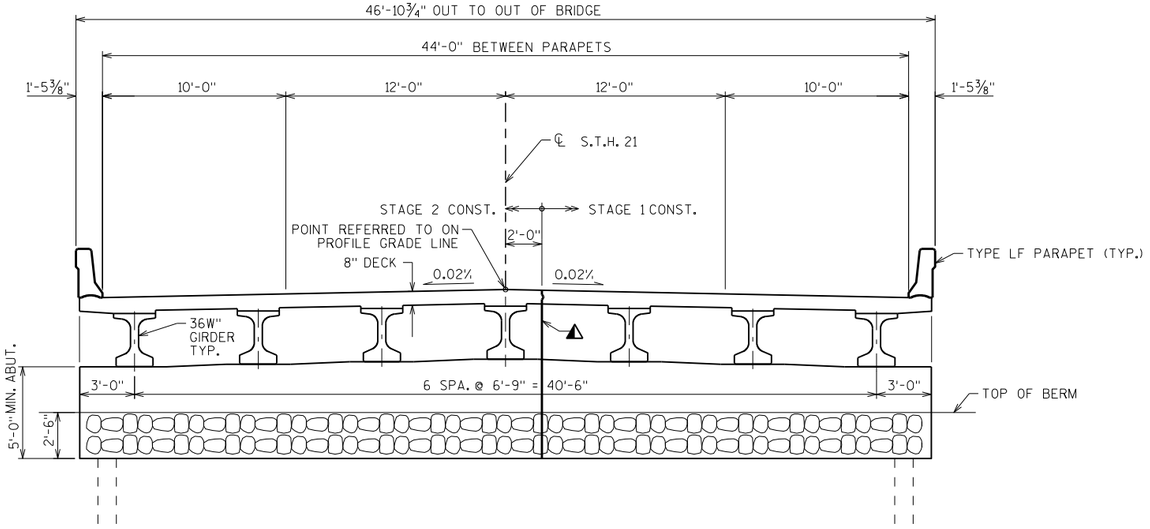
74

I.D. 6160-03-03

DATE: SEPT. 2011

SCALE =

STATE PROJECT NUMBER
6160-03-73



CROSS SECTION THRU ROADWAY LOOKING EAST

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.

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

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

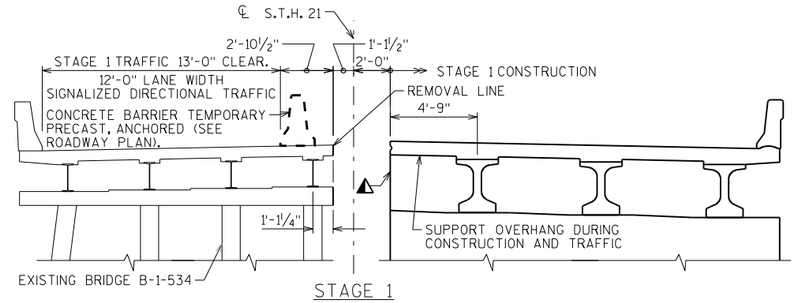
CONCRETE FOR ABUTMENT DIAPHRAGMS SHALL BE PLACED WITH THE DECK CONCRETE. NO OPTIONAL CONSTRUCTION JOINT WILL BE PERMITTED.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

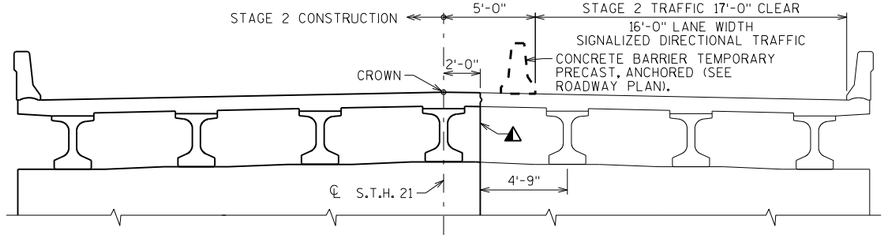
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE, INCLUDING FRONT FACE AND TOP OF LF PARAPET, AND INCLUDING PARAPET ON FOOTINGS AND WINGS.

ALL VOIDS BETWEEN HEAVY RIPRAP IN WILDLIFE TRAVEL CORRIDOR SHALL BE "FILLED" USING SELECT CRUSHED MATERIAL. WORK SHALL BE PAID FOR AS "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR."



STAGE 1

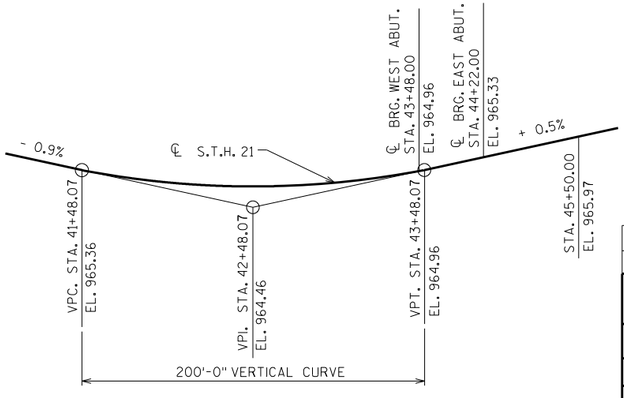


STAGE 2

CONSTRUCTION STAGING

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	EAST ABUT.	WEST ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 43+84.87	LS	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-1-34	LS	———	———	———	1
206.6000.S	TEMPORARY SHORING	SF	———	300	300	600
210.0100	BACKFILL STRUCTURE	CY	———	151	151	302
502.0100	CONCRETE MASONRY BRIDGES	CY	148	49	49	246
502.3200	PROTECTIVE SURFACE TREATMENT	SY	440	10	10	460
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	525	———	———	525
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	2,860	2,870	5,730
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	23,090	2,225	2,245	27,530
505.0906	BAR COUPLERS NO. 6	EACH	14	11	11	36
505.0908	BAR COUPLERS NO. 8	EACH	———	7	7	14
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	———	7	7	14
506.4000	STEEL DIAPHRAGMS B-1-34	EACH	6	———	———	6
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	14	14	28
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	———	1,000	1,000	2,000
606.0300	RIPRAP HEAVY	CY	———	310	310	620
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	90	90	180
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	———	———	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	———	575	575	1150
SPV.0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	———	40	40	80
	NON-BID ITEMS					
	FILLER	SIZE	———	———	———	½" & ¾"
			———	———	———	



PROFILE GRADE LINE FOR S.T.H. 21

⚠ LONGIT. CONTRUCTION JOINT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

CROSS SECTION & QUANTITIES

SHEET 2

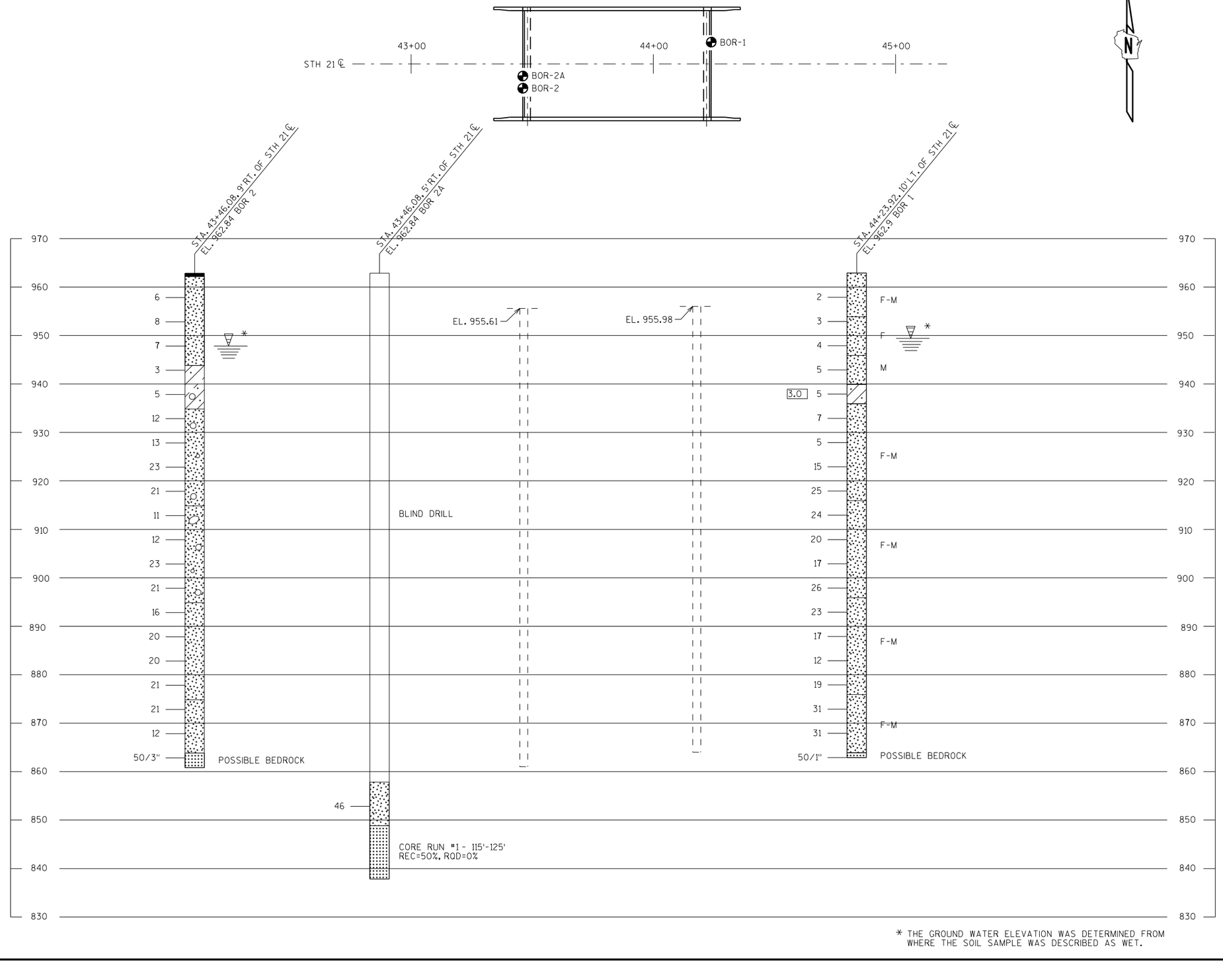
75

SCALE = 4

8

8

STH 21 OVER CARTER CREEK
NECEDAH - COLOMA



* THE GROUND WATER ELEVATION WAS DETERMINED FROM WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.

STATE PROJECT NUMBER

6160-03-73

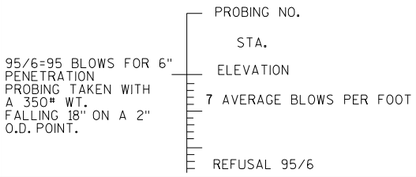
ABBREVIATIONS

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

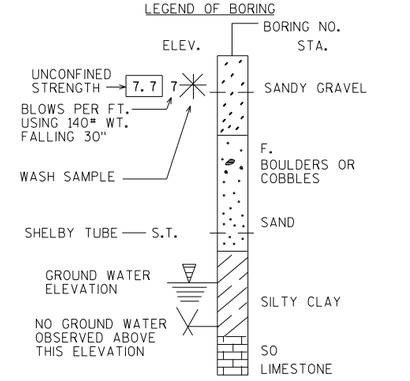
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 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 THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD PLANS CK'D. WWR

SUBSURFACE EXPLORATION

SHEET 3

76

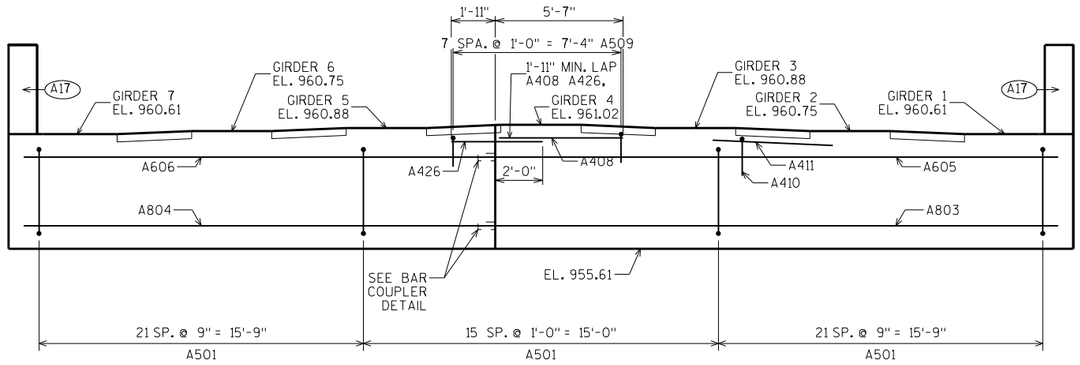
SCALE = 4

8

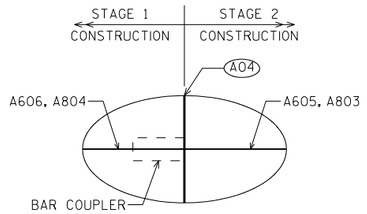
8

STATE PROJECT NUMBER

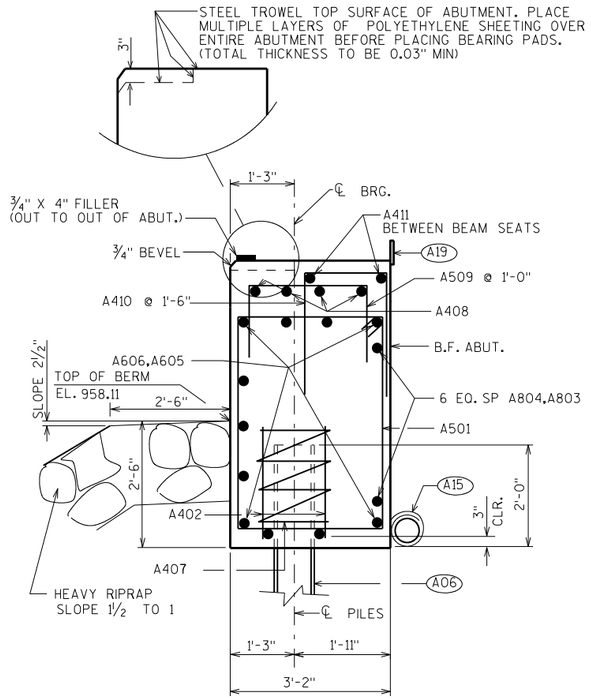
6160-03-73



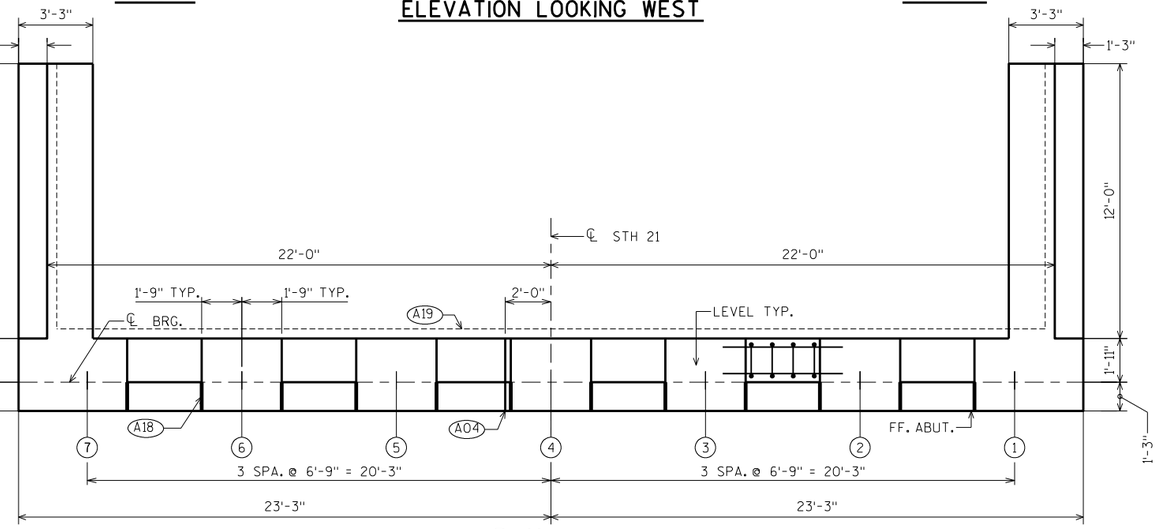
ELEVATION LOOKING WEST



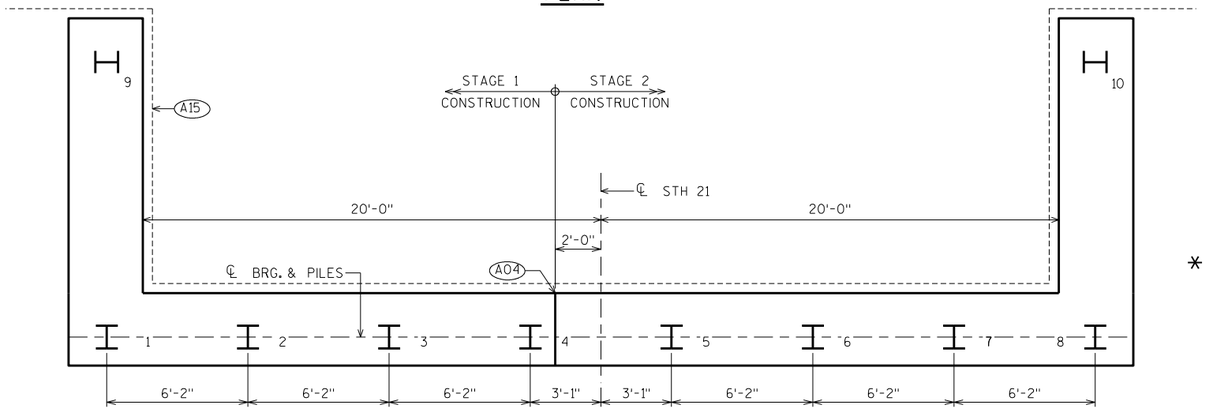
BAR COUPLER DETAIL



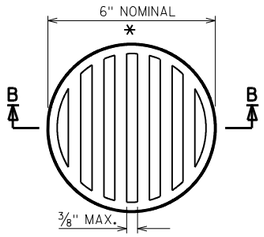
SECTION THRU BODY



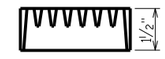
PLAN



PILE PLAN



RODENT SCREEN DETAIL



SECTION B-B

(A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE.

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED LONG WITH A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH, SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

WEST ABUTMENT

SHEET 4

77

SCALE = 3.2

8

8

STATE PROJECT NUMBER

6160-03-73

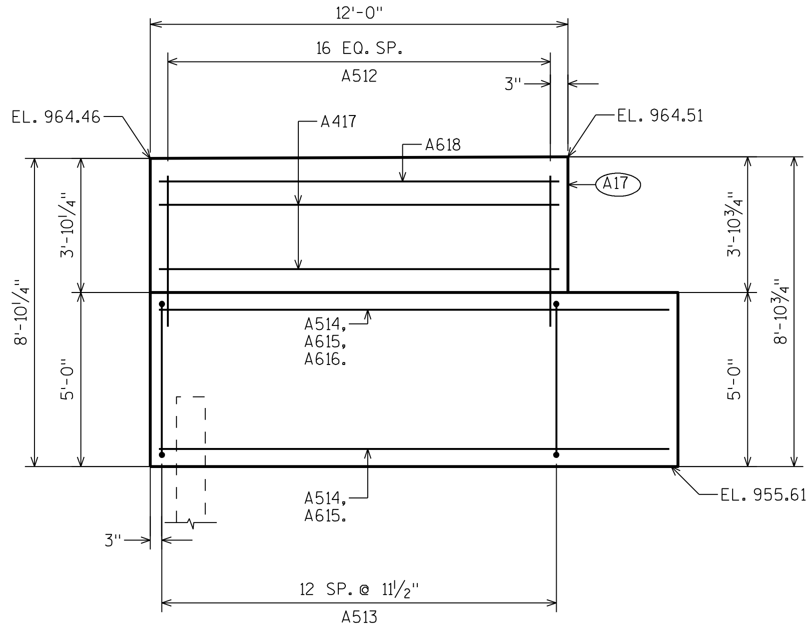
(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A16) A427 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS 2'-0" LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".

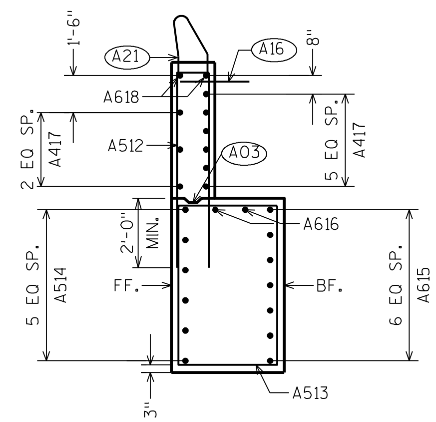
(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT. 13

◪ BAR LENGTH HAS BEEN COMPUTED TO CL OF LONGITUDINGAL CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS



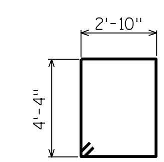
WING 1 ELEVATION



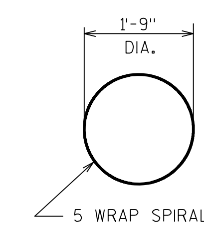
WING 1 SECTION

BILL OF BARS

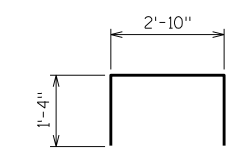
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		58	15'-0"	X		BODY-STIRRUPS
A402		16	2'-3"			PILES- 2 PER PILE
A803		7	25'-1"			BODY-HORIZONTAL ◪
A804		7	21'-1"			BODY-HORIZONTAL ◪
A605		11	25'-1"			BODY-HORIZONTAL ◪
A606		11	21'-1"			BODY-HORIZONTAL ◪
A407		8	28'-0"	X		PILES-1 PER PILE
A508		4	5'-5"			BODY-HORZ. OVER GIR. 4
A509		8	5'-3"	X		BODY-TOP OVER GIR. 4
A410		24	3'-11"	X		BODY-BETWEEN BEAM SEATS
A411		12	2'-11"			BODY-HORZ. EXT
A512	X	17	12'-0"	X		WING 1-VERTICAL
A513	X	13	15'-8"	X		WING 1-STIRRUP
A514	X	6	14'-6"			WING 1-HORIZONTAL
A615	X	7	14'-0"			WING 1-HORIZONTAL
A616	X	2	14'-0"			WING 1-HORIZONTAL
A417	X	9	11'-8"			WING 1-HORIZONTAL
A618	X	2	11'-8"			WING 1-HORIZONTAL
A519	X	17	12'-0"	X		WING 2-VERTICAL
A520	X	13	15'-8"	X		WING 2-STIRRUP
A521	X	6	14'-6"			WING 2-HORIZONTAL
A622	X	7	14'-0"			WING 2-HORIZONTAL
A623	X	2	14'-0"			WING 2-HORIZONTAL
A424	X	9	11'-8"			WING 2-HORIZONTAL
A625	X	2	11'-8"			WING 2-HORIZONTAL
A426		4	4'-0"			BODY-HORIZ. OVER GIR. 4 - STAGE 1
A427	X	24	2'-0"			SURFACE DRAIN ANCHORS



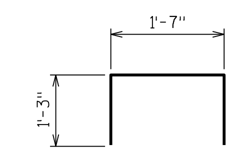
A501



A407



A509



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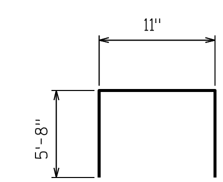
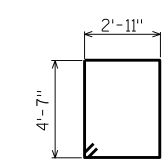
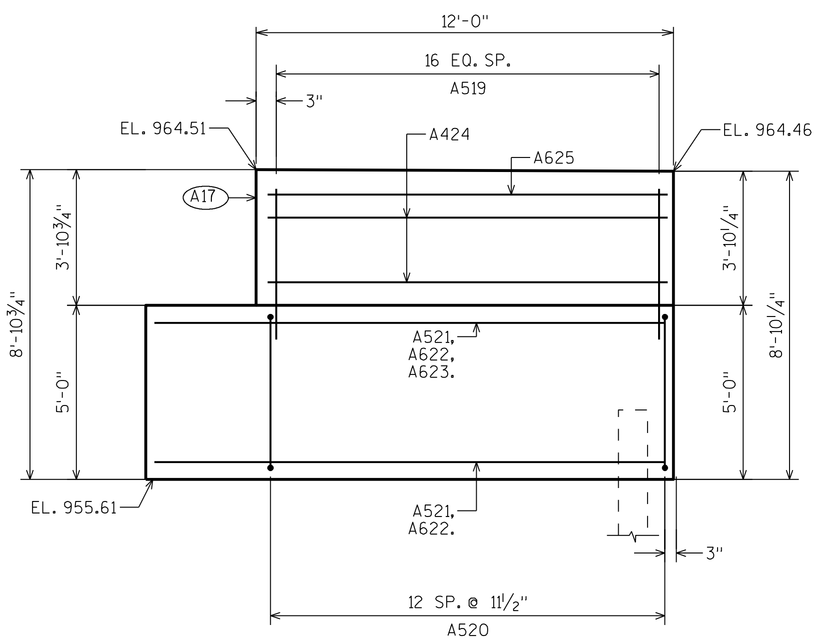


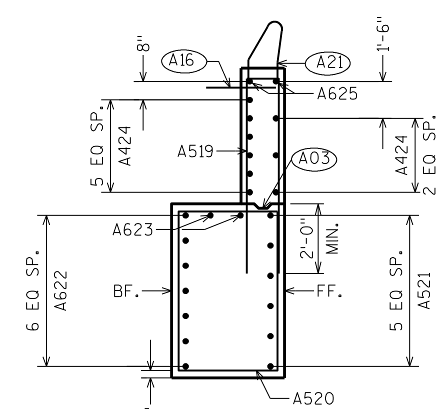
A512, A519



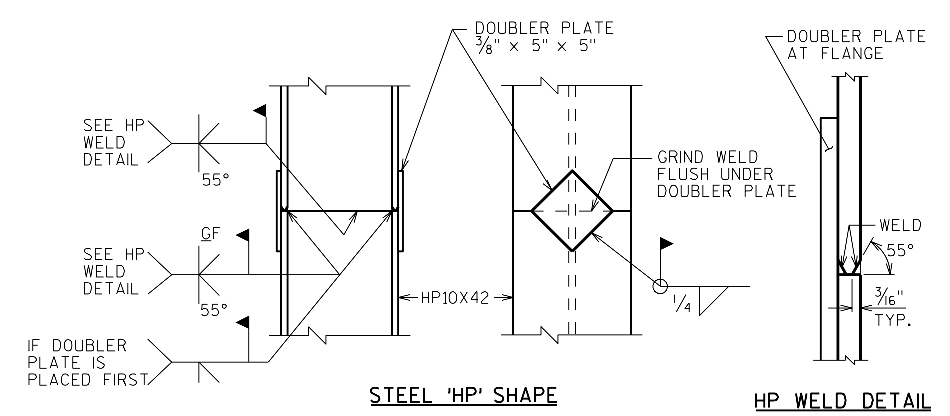
A513, A520



WING 2 ELEVATION



WING 2 SECTION



PILE DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD PLANS CK'D. WWR

WEST ABUTMENT DETAILS

SHEET 5

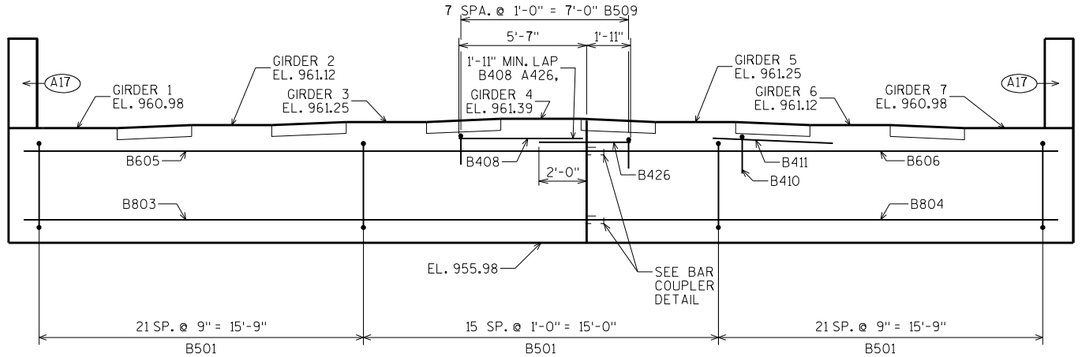
8

8

SCALE = 2.67

STATE PROJECT NUMBER

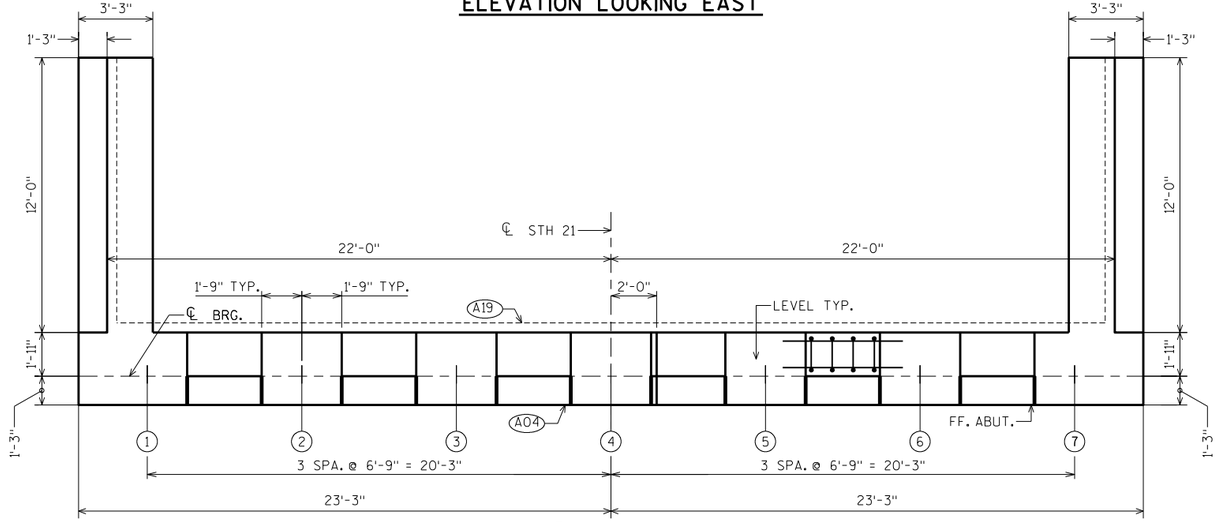
6160-03-73



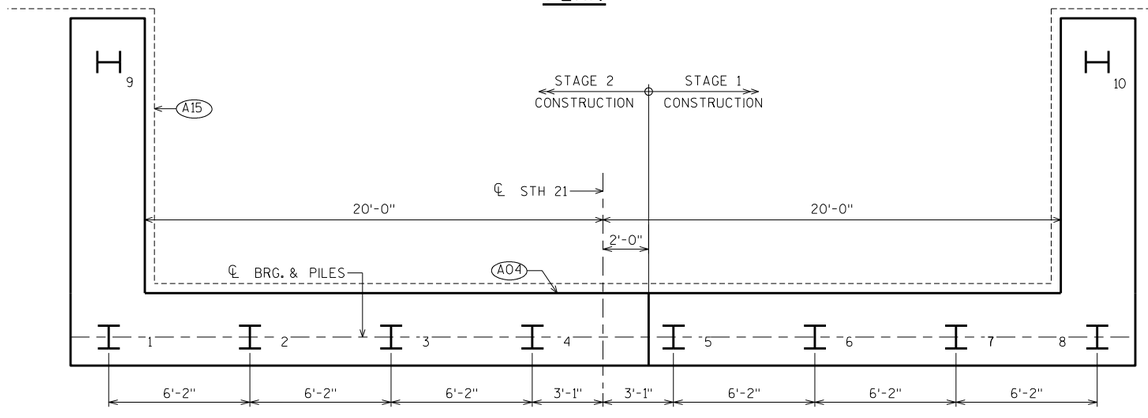
WING 3

ELEVATION LOOKING EAST

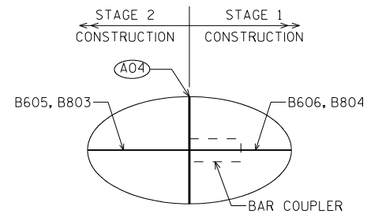
WING 4



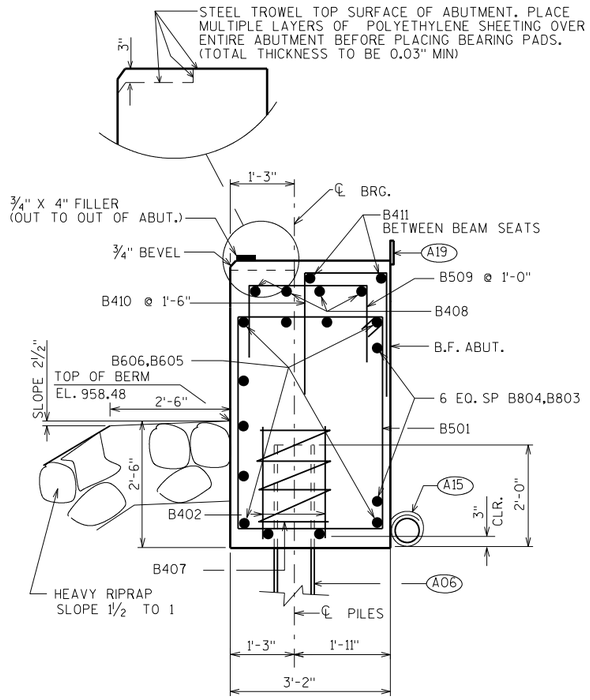
PLAN



PILE PLAN



BAR COUPLER DETAIL



SECTION THRU BODY

(A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE.

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED LONG WITH A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE.

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(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

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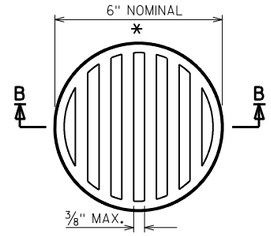
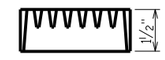


RODENT SCREEN DETAIL



SECTION B-B

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

EAST ABUTMENT

SHEET 6

79

SCALE = 3.2

8

8

STATE PROJECT NUMBER

6160-03-73

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

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(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT. 13

◪ BAR LENGTH HAS BEEN COMPUTED TO CL OF LONGITUDINGAL CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS

BILL OF BARS

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B804		7	21'-1"			BODY-HORIZONTAL ◪
B605		11	25'-1"			BODY-HORIZONTAL ◪
B606		11	21'-1"			BODY-HORIZONTAL ◪
B407		8	28'-0"	X		PILES-1 PER PILE
B408		4	5'-5"			BODY-HORZ. OVER GIRS. 3
B509		8	5'-3"	X		BODY-TOP OVER GIRS. 3-4
B410		24	3'-11"	X		BODY-BETWEEN BEAM SEATS
B411		12	2'-11"			BODY-HORZ. EXT
B512	X	17	12'-4"	X		WING 3-VERTICAL
B513	X	13	15'-8"	X		WING 3-STIRRUP
B514	X	6	14'-6"			WING 3-HORIZONTAL
B615	X	7	14'-0"			WING 3-HORIZONTAL
B616	X	2	14'-0"			WING 3-HORIZONTAL
B417	X	9	11'-8"			WING 3-HORIZONTAL
B618	X	2	11'-8"			WING 3-HORIZONTAL
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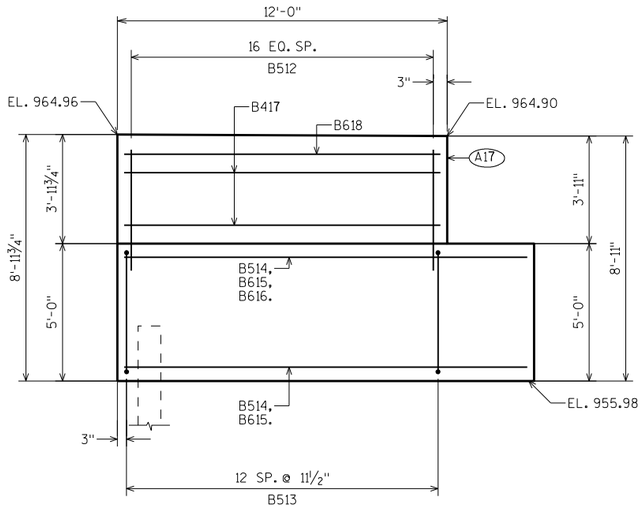
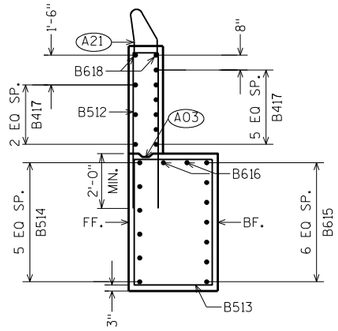
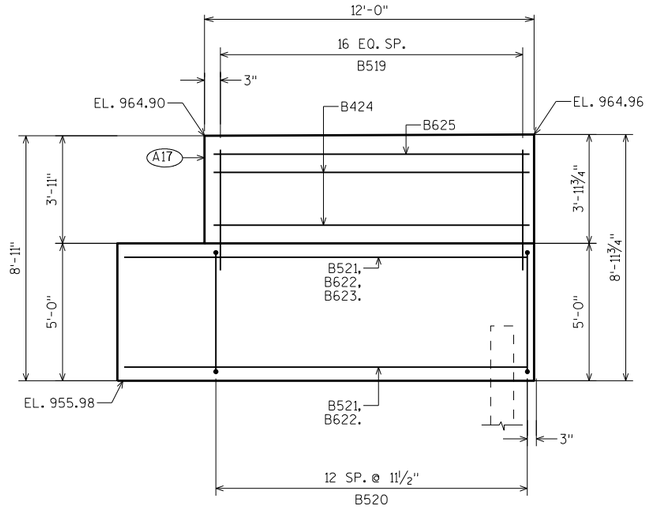
B520	X	13	15'-8"	X		WING 4-STIRRUP
B521	X	6	14'-6"			WING 4-HORIZONTAL
B622	X	7	14'-0"			WING 4-HORIZONTAL
B623	X	2	14'-0"			WING 4-HORIZONTAL
B424	X	9	11'-8"			WING 4-HORIZONTAL
B625	X	2	11'-8"			WING 4-HORIZONTAL
B426		4	4'-0"			BODY-HORIZ. OVER GIR 4 - STAGE 1



WING 3 ELEVATION



WING 3 SECTION



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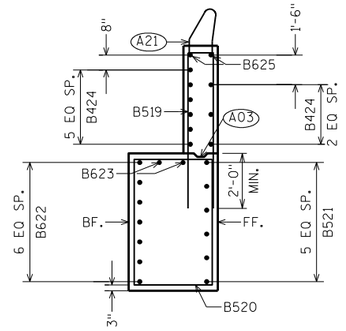
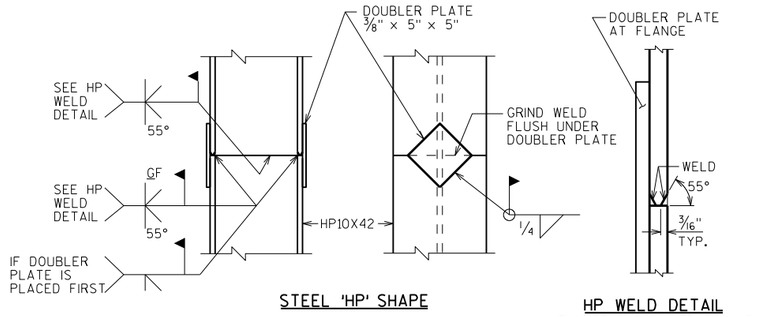


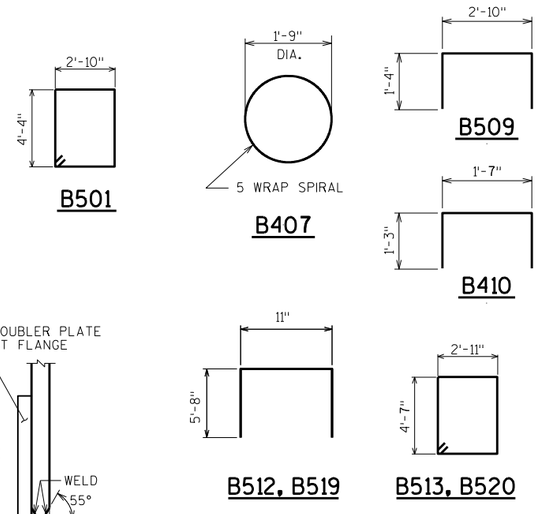
WING 4 SECTION



STEEL 'HP' SHAPE

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE DETAILS



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

EAST ABUTMENT DETAILS

SHEET 7

80

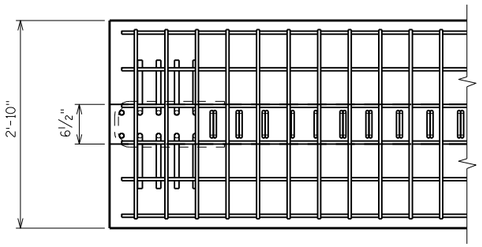
8

8

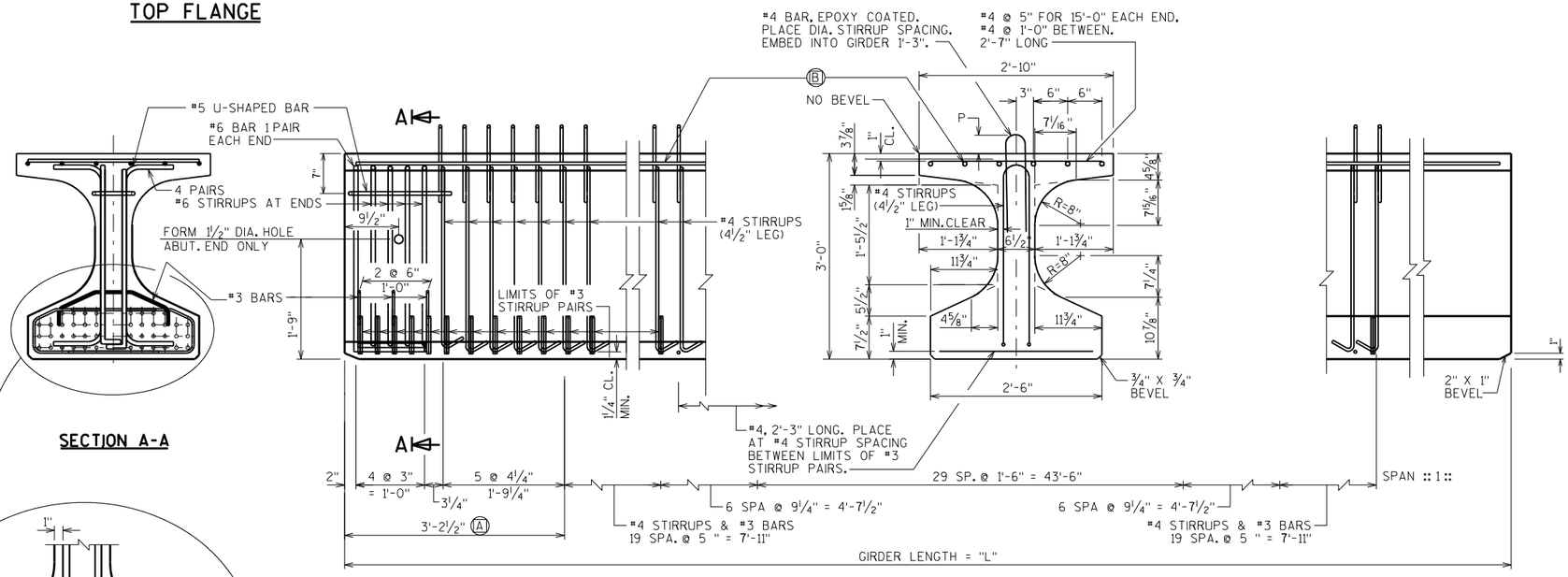
SCALE = 2.67

STATE PROJECT NUMBER

6160-03-73



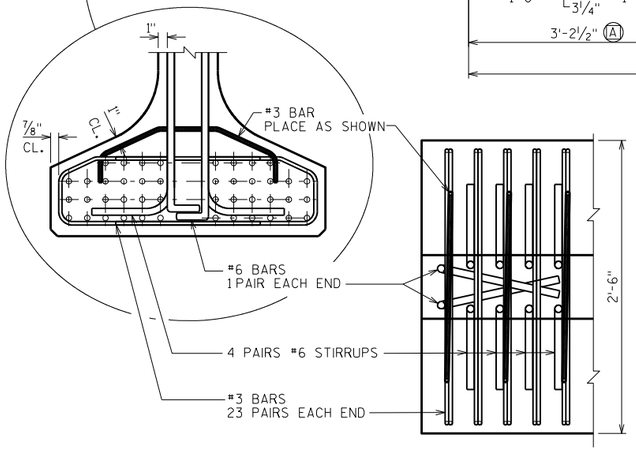
TOP FLANGE



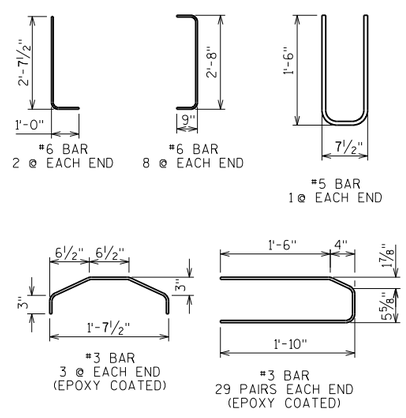
SIDE VIEW & TYP. SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

(B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"



BOTTOM FLANGE



GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.6"ϕ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 1 OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1ST ⅓ OF GIRDER	"P" MID ⅓ OF GIRDER	"P" END ⅓ OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.)	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.)
1	1-7	75.00	0.3	0.5	0.7	0.8	0.9	0.8	0.7	0.5	0.3	8000	7	7	7	0.60	20	6400	32	11	14	4	0	0

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

36W" PRESTRESSED GIRDER DETAILS

SHEET 8

81

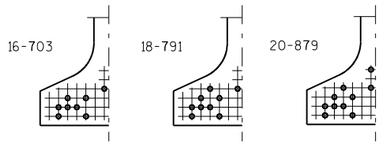
SCALE = 1

8

8

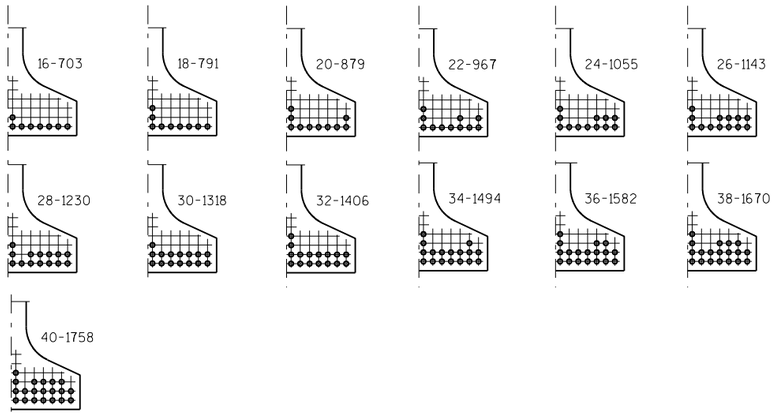
STATE PROJECT NUMBER

6160-03-73



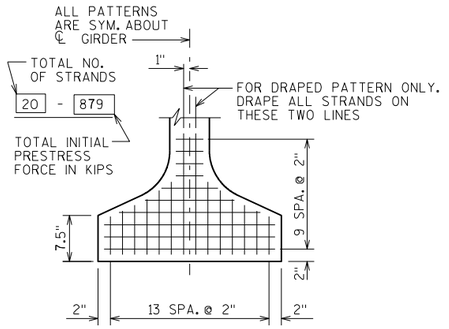
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"Φ STRANDS

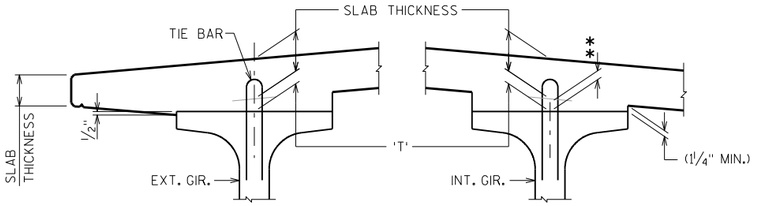


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"Φ STRANDS



TYP. STRAND PATTERN



SLAB HAUNCH DETAIL

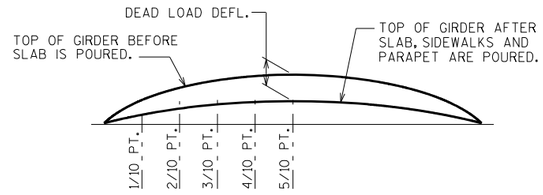
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

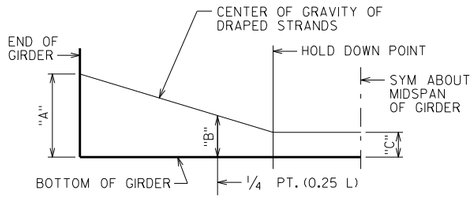
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2⅝" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN

SPAN	CAMBER (IN.)
1	1.18

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'. USE ACTUAL GIRDER SHOTS.
THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

36W" PRESTRESSED GIRDER DETAILS

SHEET 9

82

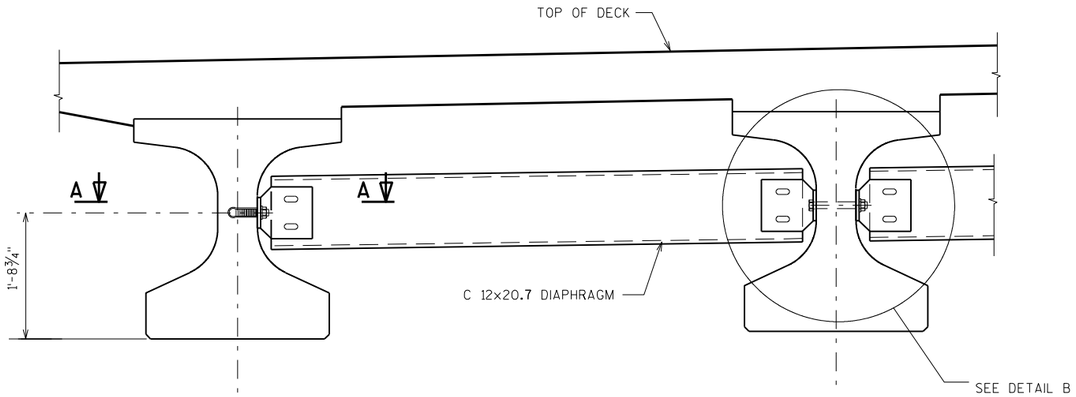
8

8

SCALE = 1

STATE PROJECT NUMBER

6160-03-73



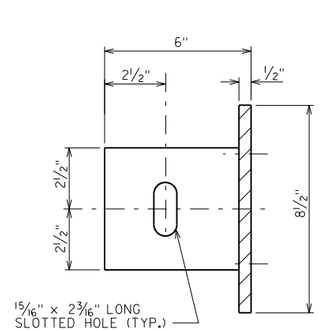
PART TRANSVERSE SECTION AT DIAPHRAGM

NOTES

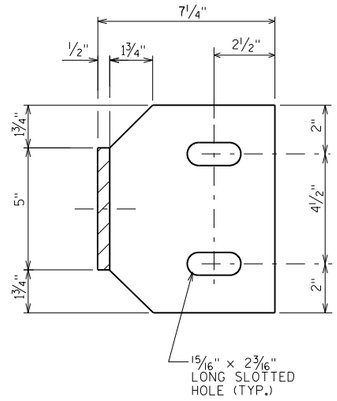
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-1-34", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT. ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

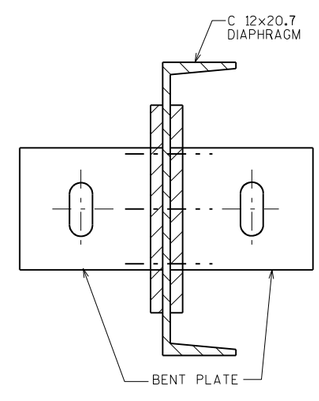
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY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



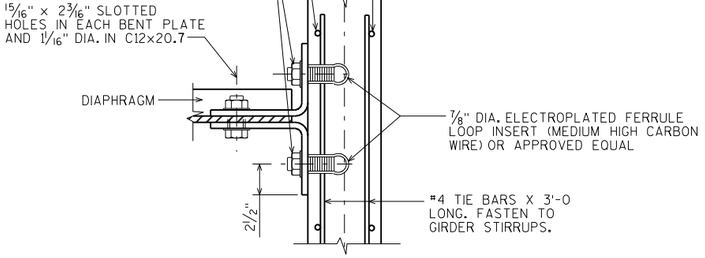
BEAM FACE



DIAPHRAGM FACE

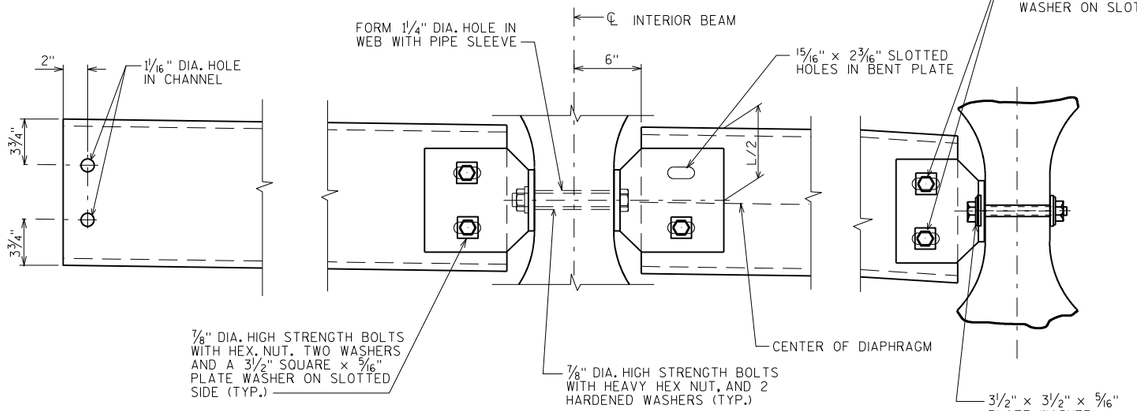


ATTACHMENT TO CHANNEL



SECTION A-A

(FOR EXTERIOR ATTACHMENT)



(FOR CONTINUOUS LINE OF DIAPHRAGMS)

(FOR STAGGERED DIAPHRAGMS)

DETAIL B

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

STEEL DIAPHRAGM

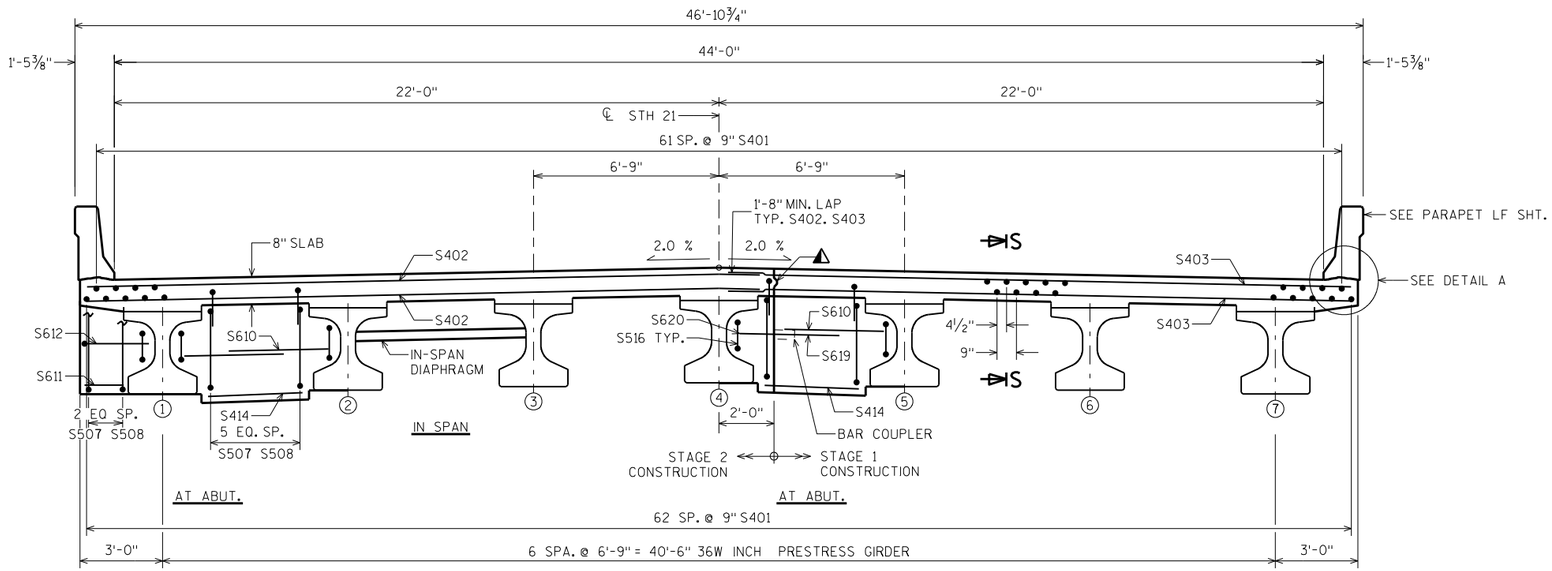
SHEET 10

83

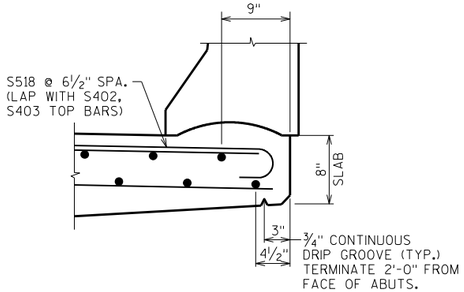
SCALE = 1

STATE PROJECT NUMBER

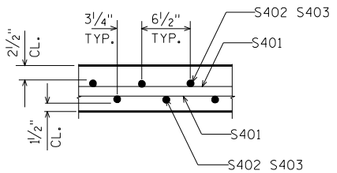
6130-03-73



CROSS SECTION THRU ROADWAY
(LOOKING EAST)

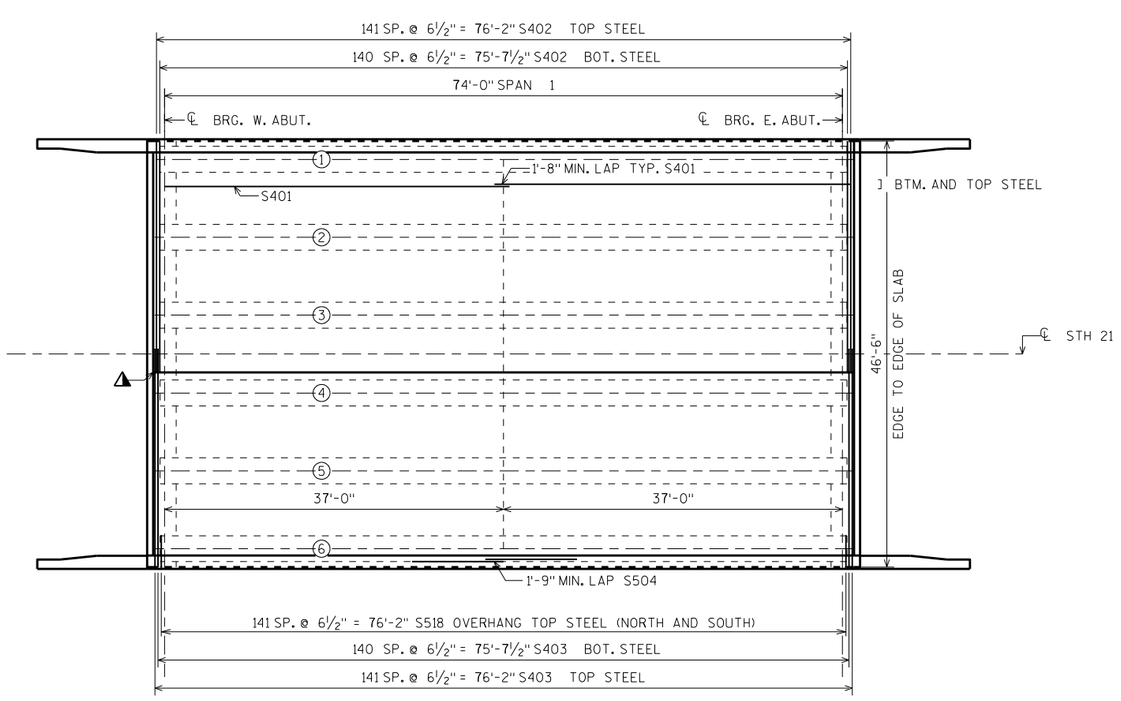


DETAIL A



SECTION S-S

⚠ LONGIT. CONTRUCTION JOINT



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

SUPERSTRUCTURE

SHEET 11

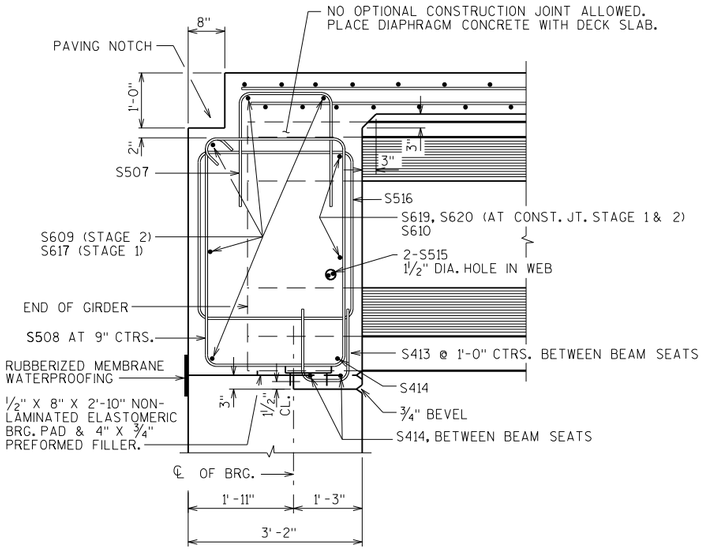
84

SCALE = 2.67

THU JUN 17 14:17:16 2010

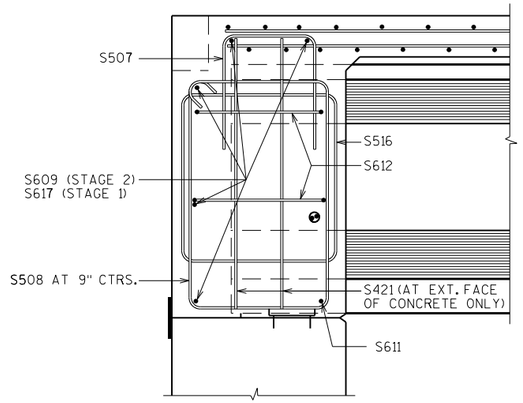
STATE PROJECT NUMBER

6160-03-73



AT ABUTMENTS

BAR LENGTH HAS BEEN COMPUTED TO CL OF LONGITUDINGAL CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS

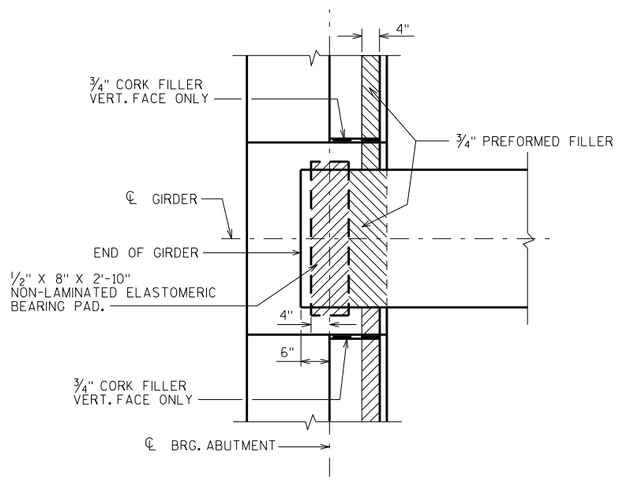


END DIAPHRAGM

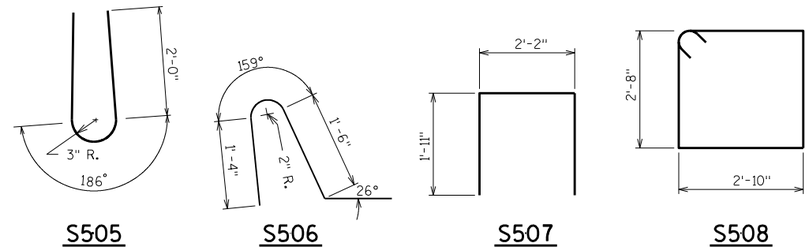
BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	250	38'-11"			LONGITUDINAL TOP & BOTTOM
S402	X	283	24'-11"			TRANSVERSE
S403	X	283	22'-11"			TRANSVERSE
S504	X	20	39'-8"			PARAPET LF
S505	X	234	4'-10"	X		PARAPET LF
S506	X	234	4'-2"	X		PARAPET LF
S507	X	84	5'-9"	X		ABUT. DIAPHRAGM
S508	X	84	11'-8"	X		ABUT. DIAPHRAGM
S609	X	10	25'-1"			ABUT. DIAPHRAGM (STAGE 2) ◪
S610	X	66	4'-0"			ABUT. DIAPHRAGM
S611	X	4	1'-4"			ABUT. DIAPHRAGM
S612	X	8	7'-2"	X		ABUT. DIAPHRAGM
S413	X	60	3'-3"	X		ABUT. DIAPHRAGM
S414	X	24	2'-11"			ABUT. DIAPHRAGM
S515	X	28	6'-0"			ABUT. DIAPHRAGM
S516	X	28	9'-0"	X		ABUT. DIAPHRAGM
S617	X	10	21'-1"			ABUT. DIAPHRAGM (STAGE 1) ◪
S518	X	284	3'-11"	X		TRANSVERSE OVERHANG
S619	X	4	2'-3"			ABUTMENT DIAPHRAGM BTWN GIR. 4 & 5 - STAGE 1 ◪
S620	X	4	1'-7"			ABUTMENT DIAPHRAGM BTWN GIR. 4 & 5 - STAGE 2 ◪
S421	X	8	3'-4"			ABUTMENT DIAPHRAGM ENDS - VERT

PART LONGIT. SECTION



BEARING PAD DETAIL



TOP OF DECK ELEVATIONS

	W. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	E. ABUT.
EOD	964.52	964.56	964.59	964.63	964.67	964.70	964.74	964.78	964.82	964.85	964.89
GIR. 1	964.55	964.59	964.62	964.66	964.69	964.73	964.78	964.80	964.85	964.89	964.92
GIR. 2	964.69	964.73	964.77	964.81	964.84	964.88	964.91	964.95	964.99	965.02	965.06
GIR. 3	964.82	964.87	964.91	964.95	964.99	965.01	965.05	965.08	965.12	965.16	965.20
GIR. 4	964.96	965.00	965.03	965.07	965.11	965.14	965.18	965.22	965.26	965.29	965.33
CONST. JT.	964.92	964.96	964.99	965.03	965.07	965.10	965.14	965.18	965.22	965.25	965.29
GIR. 5	964.82	964.87	964.91	964.95	964.99	965.01	965.05	965.08	965.12	965.16	965.20
GIR. 6	964.69	964.73	964.77	964.81	964.84	964.88	964.91	964.95	964.99	965.02	965.06
GIR. 7	964.55	964.59	964.62	964.66	964.69	964.73	964.78	964.80	964.85	964.89	964.92
EOD	964.52	964.56	964.59	964.63	964.67	964.70	964.74	964.78	964.82	964.85	964.89

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

SUPERSTRUCTURE DETAILS

SHEET 12

85

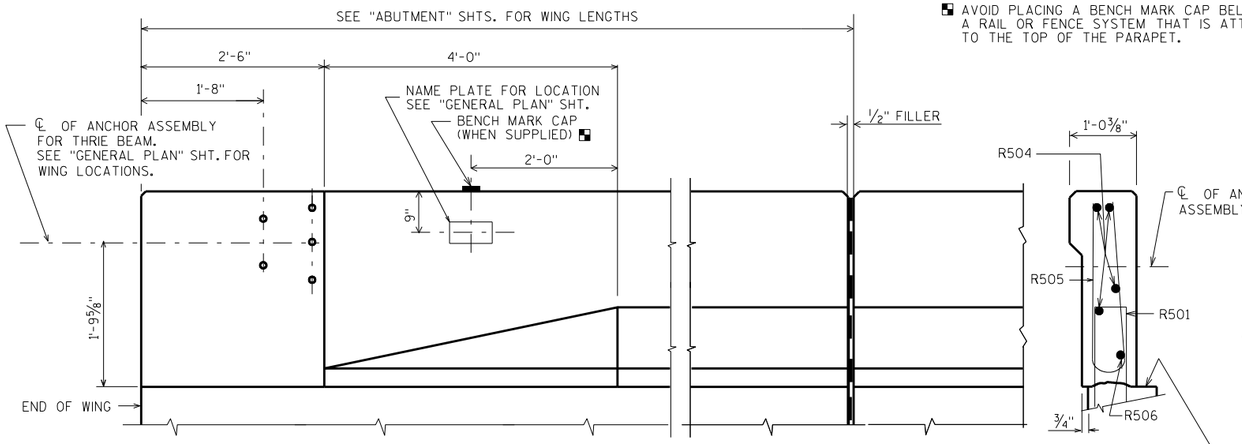
SCALE = 1.33

8

8

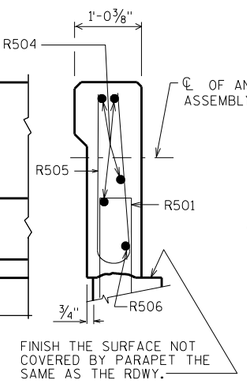
STATE PROJECT NUMBER

6160-03-73

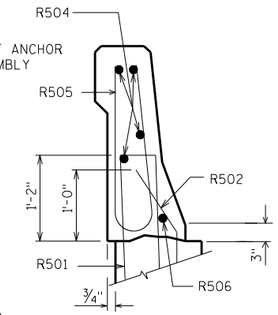


INSIDE ELEVATION

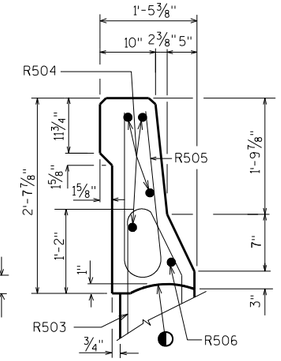
■ AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



SECTION A



SECTION B

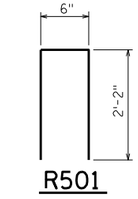


SECTION C

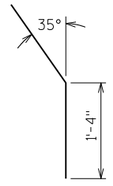
BILL OF BARS

FOR ABUTMENT PARAPETS

BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	28	28	4-7	X		PARAPET VERT.
R502	X	16	16	2-4	X		PARAPET VERT.
R503	X	16	16	4-7	X		PARAPET VERT.
R504	X	8	8	11'-7"			PARAPET HORIZ.
R505	X	44	44	4-10	X		PARAPET VERT.
R506	X	2	2	11'-7"	X		PARAPET HORIZ.



R501



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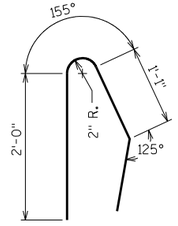

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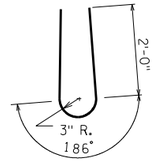
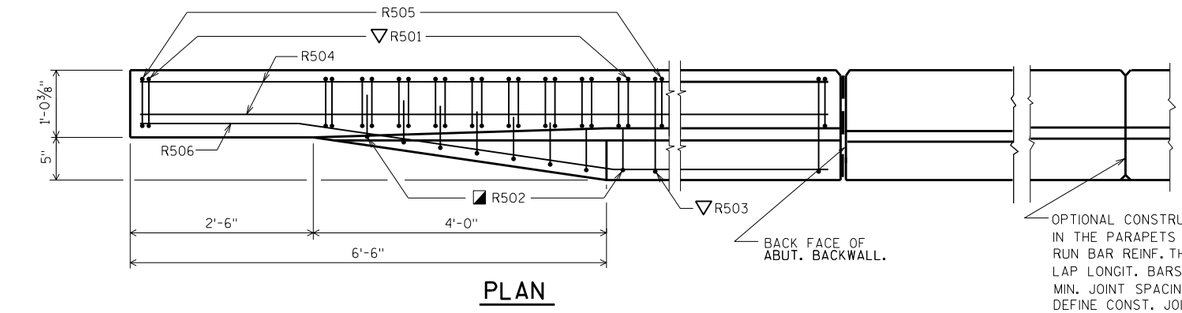
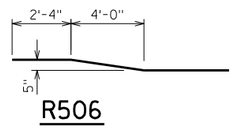


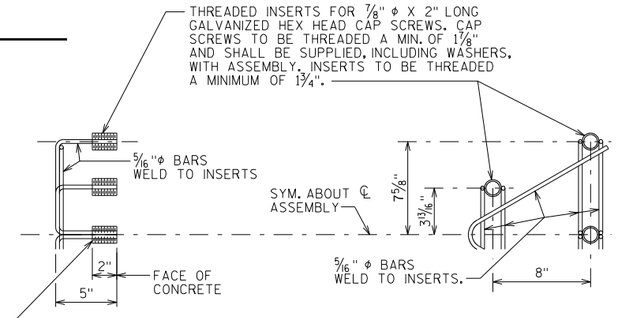
R505



PLAN



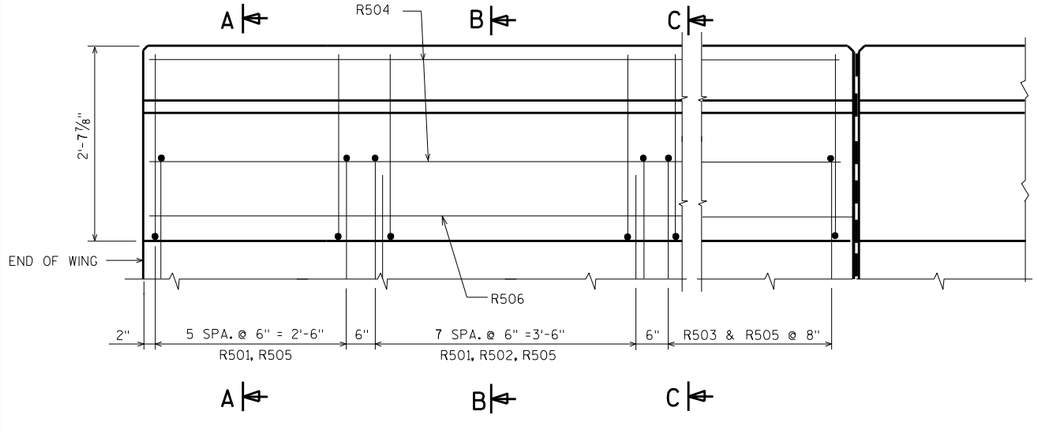
R506



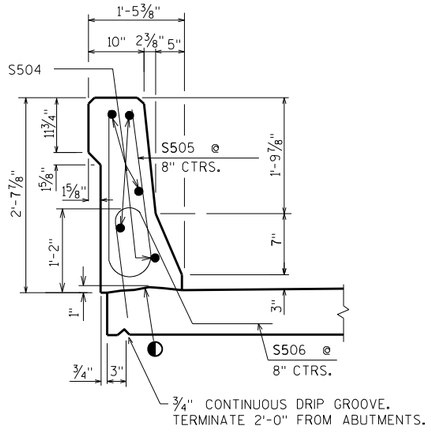
DETAIL OF ANCHOR ASSEMBLY

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

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



OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-1-34

DRAWN BY DFD | PLANS CK'D. WWR

SLOPED FACE PARAPET LF

SHEET 13

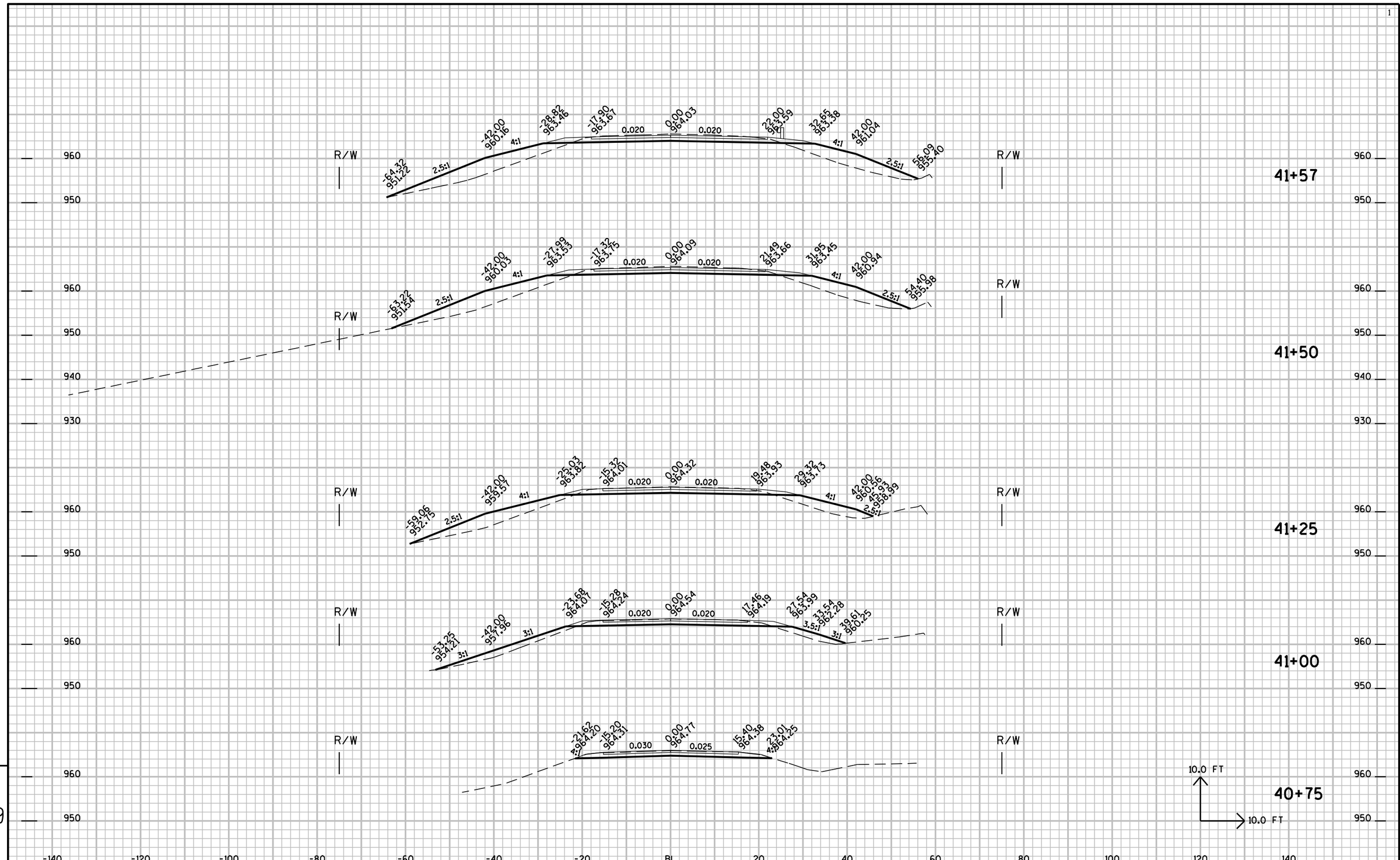
86

SCALE = 1

8

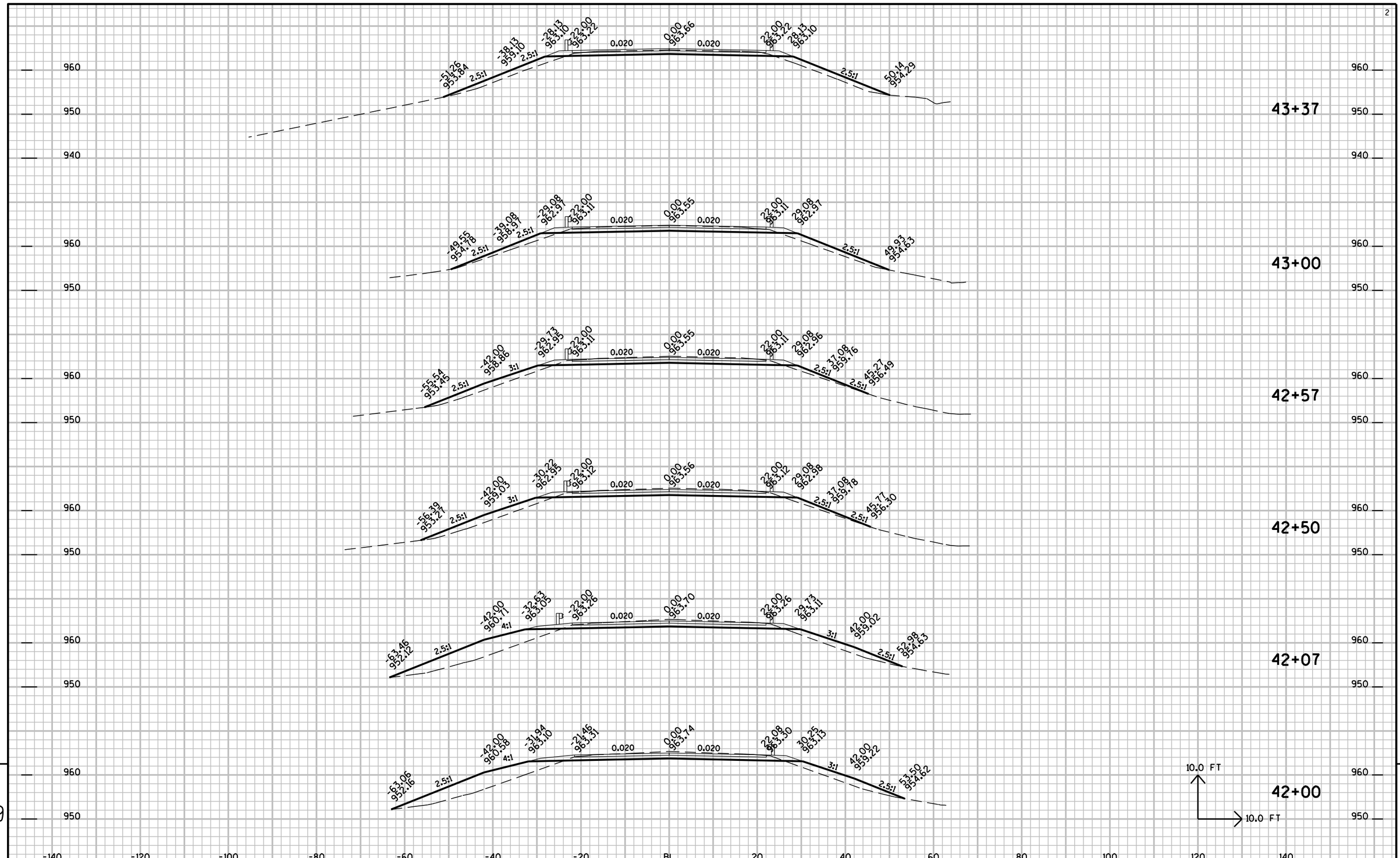
12 7 12

8



PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	CROSS SECTIONS:	SHEET NO: E

FILE NAME : p:\projects\D4_61600303EC\0900201_XS.DGN PLOT DATE : 12-JAN-2012 10:51 PLOT BY : dotc7s PLOT NAME : PLOT SCALE : 2:1



9

9

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	CROSS SECTIONS:	SHEET NO:	E

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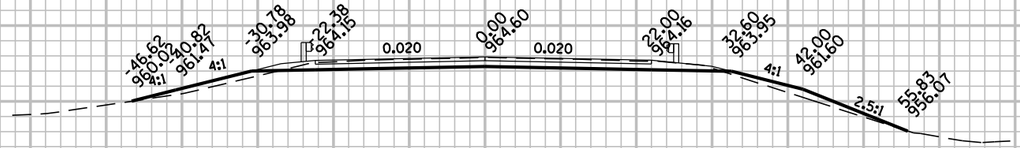
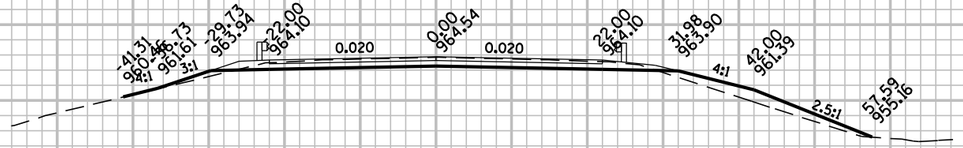
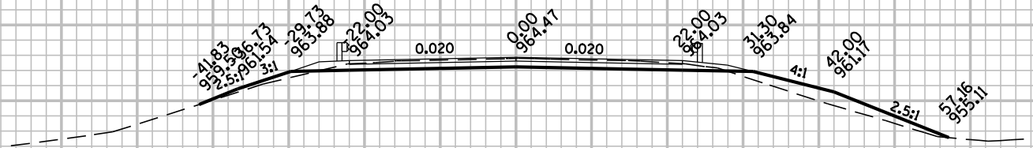


45+26



45+13



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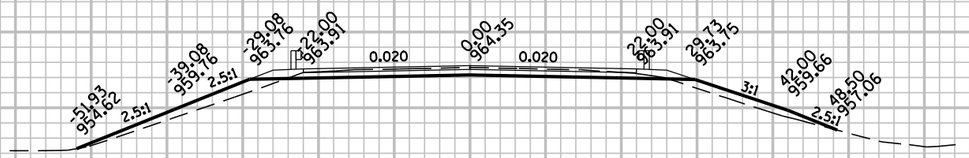
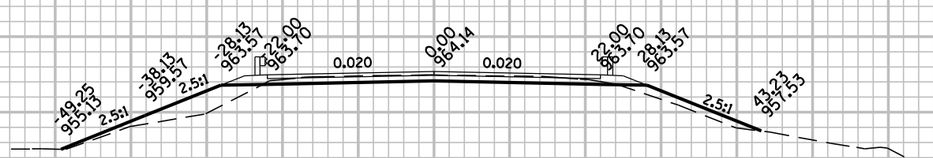
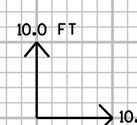


44+75

44+50



44+33



960
950

-140 -120 -100 -80 -60 -40 -20 BL 20 40 60 80 100 120 140

9

9

PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	CROSS SECTIONS:	SHEET NO:	E

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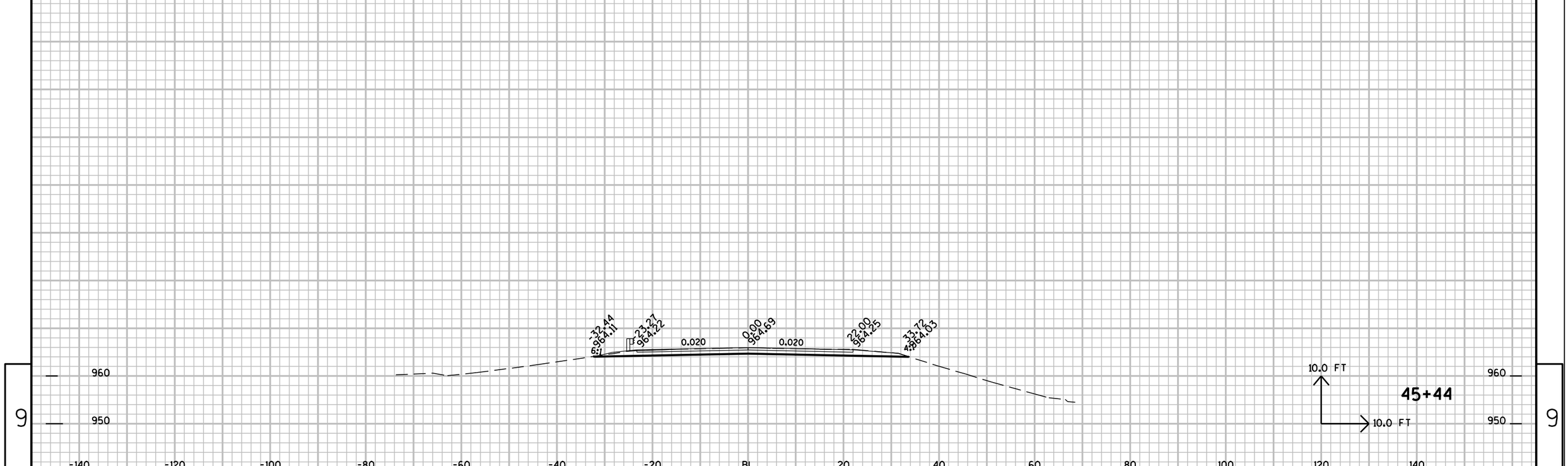

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PROJECT NO: 6160-03-73	HWY: STH 21	COUNTY: ADAMS	CROSS SECTIONS:	SHEET NO: 90	E

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Notes

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