LAX

APRIL 2015

ORDER OF SHEETS

TOTAL SHEETS = 86

PROJECT ID: 5730-00-61

WITH:

COUNTY: VERNON

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5730-00-61	———	———

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

VIROQUA - RICHLAND CENTER

VIROQUA TO E OF COOK HILL ROAD

STH 56

VERNON COUNTY

STATE PROJECT NUMBER
5730-00-61

N

DESIGN DESIGNATION

A.A.D.T.	2015	=	3100
A.A.D.T.	2035	=	3700
D.H.V.		=	240 (2035)
D.D.		=	59/41
T.		=	7.5%
DESIGN SPEED		=	60 MPH
ESALS		=	150,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

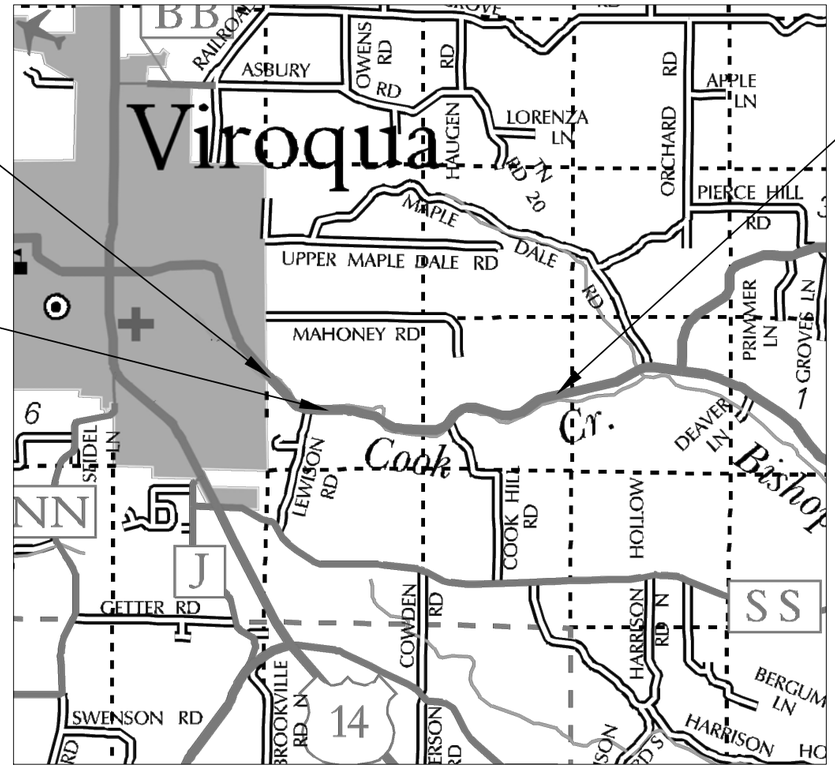
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

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

C-62-0312
BEGIN PROJECT STA: 98+65
X:707400 Y:145880
END WORK STA: 102+50
X:707627 Y:145630

C-62-0313
BEGIN WORK STA: 197+55
X:708778 Y:144783
END WORK STA: 202+00
X:709221 Y:144773



C-62-0358
BEGIN WORK STA: 296+80
X:716873 Y:145237
END PROJECT STA: 303+00
X:717480 Y:145362

LAYOUT SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.00 MILES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	TEAM ENGINEERING
Designer	LEE BALSIGER
Project Manager	TODD WALDO
Regional Examiner	MIKE RUD
Regional Supervisor	REINY YAHNKE

APPROVED FOR THE DEPARTMENT

DATE: 10/14/2014 Todd Waldo (Signature)

E

UTILITY COMPANIES & PERSONNEL

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citydpw@mwt.net

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

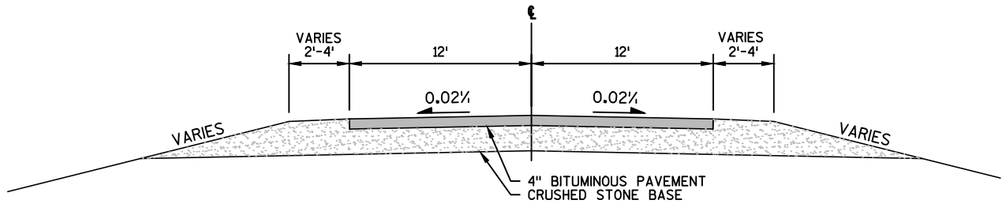
STANDARD ABBREVIATIONS

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

GENERAL NOTES

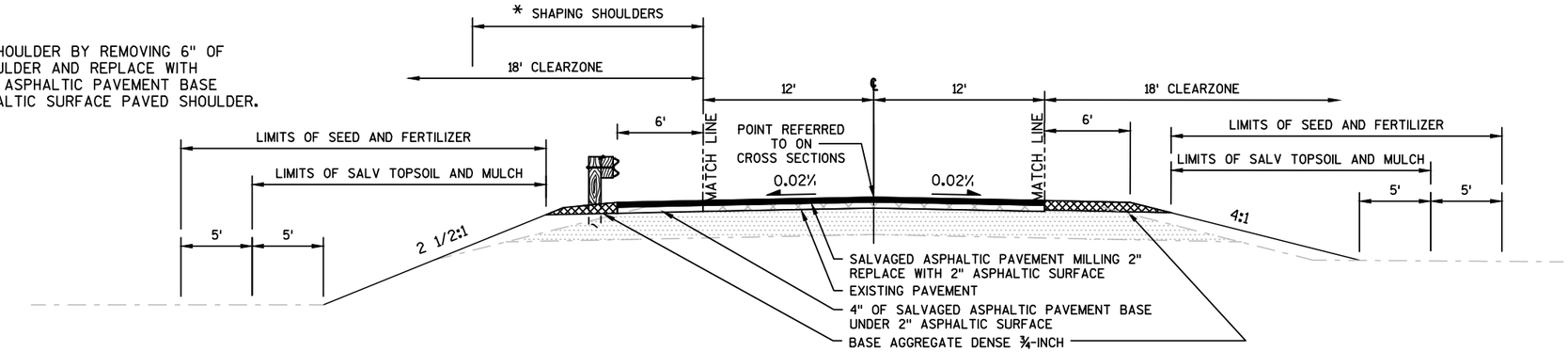
- LOCATION OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- THE CONTRACTOR IS TO WORK WIH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.
- DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- RIGHT OF WAY LINES SHOWN ON CROSS SECTIONS AND PLANS ARE APPROXIMATE.
- NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.
- WHEN PORTIONS OF EXISTING ASPHALTIC SURFACES ARE TO BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION, THE LINE OF SUCH REMOVAL SHALL BE NEATLY DELINEATED WITH A SAW CUT JOINT THROUGH THE ASPHALTIC SURFACE SO THAT REMOVAL OF THE ASPHALT SHALL BE ACCOMPLISHED WITHOUT DAMAGE TO REMAINING PORTIONS. THE LOCATION OF SAW JOINTS AND THE AMOUNT REMOVED AT SIDE ROADS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- EXISTING DRAINAGE DITCHES AND CULVERT PIPES WILL REMAIN FUNCTIONAL DURING EXCAVATION OPERATIONS.
- DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED, AND MULCHED OR SODDED AS DIRECTED BY THE ENGINEER.
- SALVAGED TOPSOIL HAS BEEN COMPUTED BY DIRECT MEASUREMENTS ON THE CROSS SECTIONS PLUS 5 FT BEYOND THE TOE OF SLOPE. SEEDING AND FERTILIZER HAS BEEN COMPUTED BY DIRECT MEASUREMENTS ON THE CROSS SECTIONS PLUS 10 FT.
- TOPSOIL OR SALVAGED TOPSOIL WHERE REQUIRED, IS TO BE PLACED ON ALL CUT AND FILL SLOPES (EXCEPT CHANNEL CHANGE AND MARSH DISPOSAL SLOPES) TO AN APPROXIMATE DEPTH OF 4 INCHES AT THE TIME OF PLACING.
- DIMENSIONS OF RIPRAP PLACEMENT SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- IN THE PERFORMANCE OF THE WORK UNDER THE ITEM "MULCHING", ALL AREAS SEEDED AND FERTILIZED SHALL BE MULCHED AS DIRECTED BY THE ENGINEER.
- PRIOR TO THE PLACEMENT OF MGS OR STEEL PLATE BEAM GUARD, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
- SHAPING, TRIMMING AND DISPOSAL OF EXISTING SHOULDERS WILL BE INCIDENTAL TO THE BID ITEM OF CRUSHED AGGREGATE BASE COURSE.
- EXCESS MATERIAL ON THE EXISTING SHOULDERS SHALL BE SHAPED TO ALLOW A MINIMUM 4 INCH DEPTH OF NEW CRUSHED AGGREGATE SHOULDERS.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN PIPE LAYING OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS TO DRIVEWAY SHALL BE RE-ESTABLISHED IMMEDIATELY AFTER PIPE IN DRIVEWAY AREA IS INSTALLED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.
- PLAN ELEVATIONS = NAVD 88 (2012) GEOID 12A-WI
- PLAN COORDINATES = WCCS VERNON COUNTY NAD 83 (2011)
- WHEN THE QUANTITIES OF ASPHALTIC CONCRETE PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OF THICKNESS OF THE MATERIAL THAT IS SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.
- THE RATE OF APPLICATION FOR TACK COAT IS COMPUTED AT 0.025 GAL/SY.

2



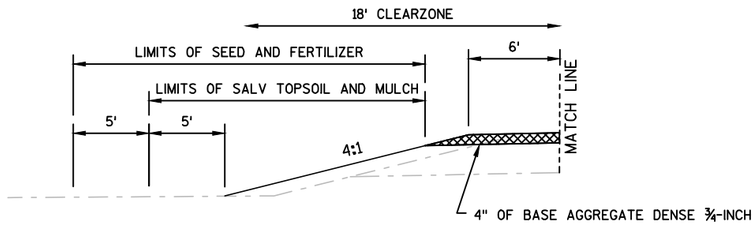
TYPICAL EXISTING SECTION - STH 56

* SHAPING SHOULDER BY REMOVING 6" OF EXISTING SHOULDER AND REPLACE WITH 4" SALVAGED ASPHALTIC PAVEMENT BASE AND 2" ASPHALTIC SURFACE PAVED SHOULDER.



TYPICAL FINISHED SECTION AT C-62-312 - STH 56

STA: 98+65 - 101+00



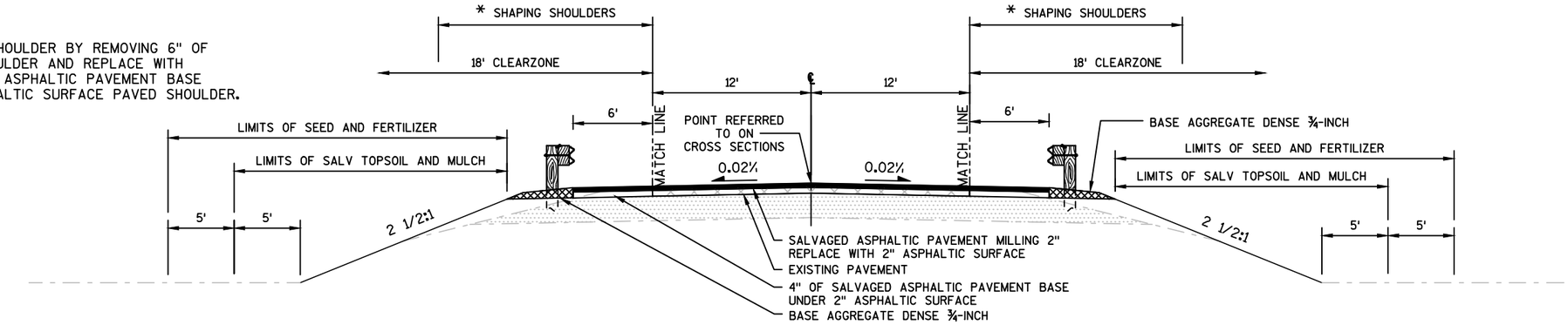
TYPICAL FINISHED HALF SECTION - STH 56

SHOULDER WIDENING
STA: 98+65 - 99+10
STA: 101+00 - 102+05

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	PLAN: TYPICAL SECTIONS	SHEET 4	E

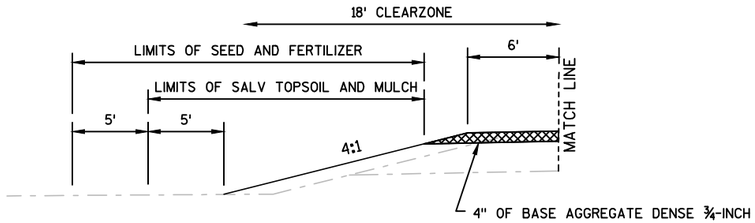
2

* SHAPING SHOULDER BY REMOVING 6" OF EXISTING SHOULDER AND REPLACE WITH 4" SALVAGED ASPHALTIC PAVEMENT BASE AND 2" ASPHALTIC SURFACE PAVED SHOULDER.



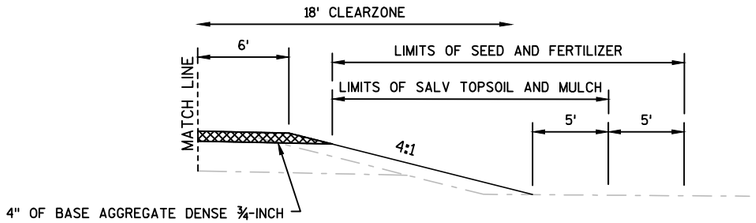
TYPICAL FINISHED SECTION WITH GUARDRAIL - STH 56

STA: 197+90 - 202+00
STA: 298+00 - 301+75



TYPICAL FINISHED HALF SECTION - STH 56

SHOULDER WIDENING
STA: 197+55 - 197+90
STA: 201+00 - 202+00
STA: 296+80 - 298+00
STA: 301+75 - 303+00



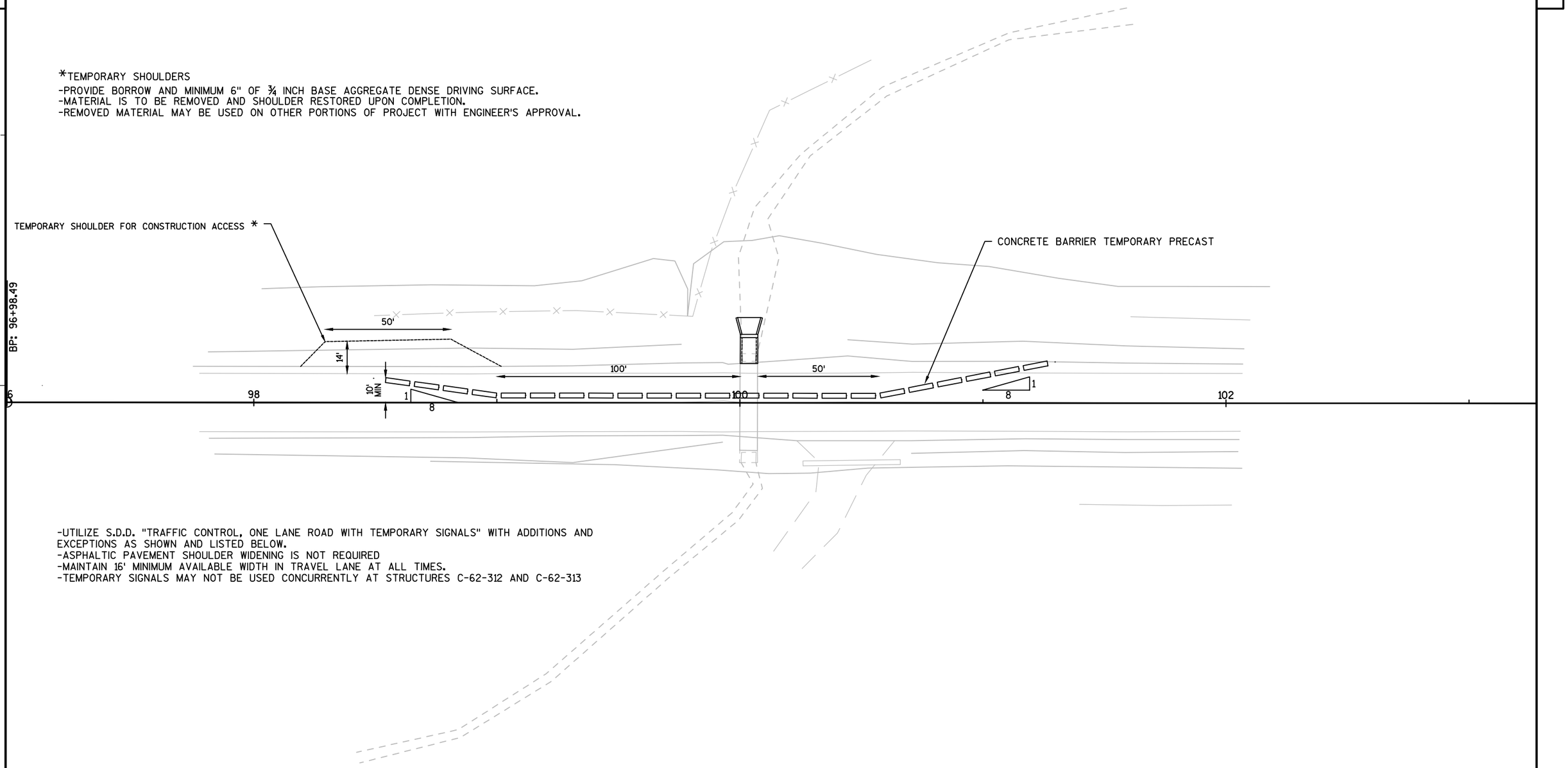
TYPICAL FINISHED HALF SECTION - STH 56

SHOULDER WIDENING
STA: 197+55 - 198+10
STA: 298+00 - 298+40
STA: 301+04 - 301+75

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	PLAN: TYPICAL SECTIONS	SHEET 5	E

2

*TEMPORARY SHOULDERS
-PROVIDE BORROW AND MINIMUM 6" OF ¾ INCH BASE AGGREGATE DENSE DRIVING SURFACE.
-MATERIAL IS TO BE REMOVED AND SHOULDER RESTORED UPON COMPLETION.
-REMOVED MATERIAL MAY BE USED ON OTHER PORTIONS OF PROJECT WITH ENGINEER'S APPROVAL.

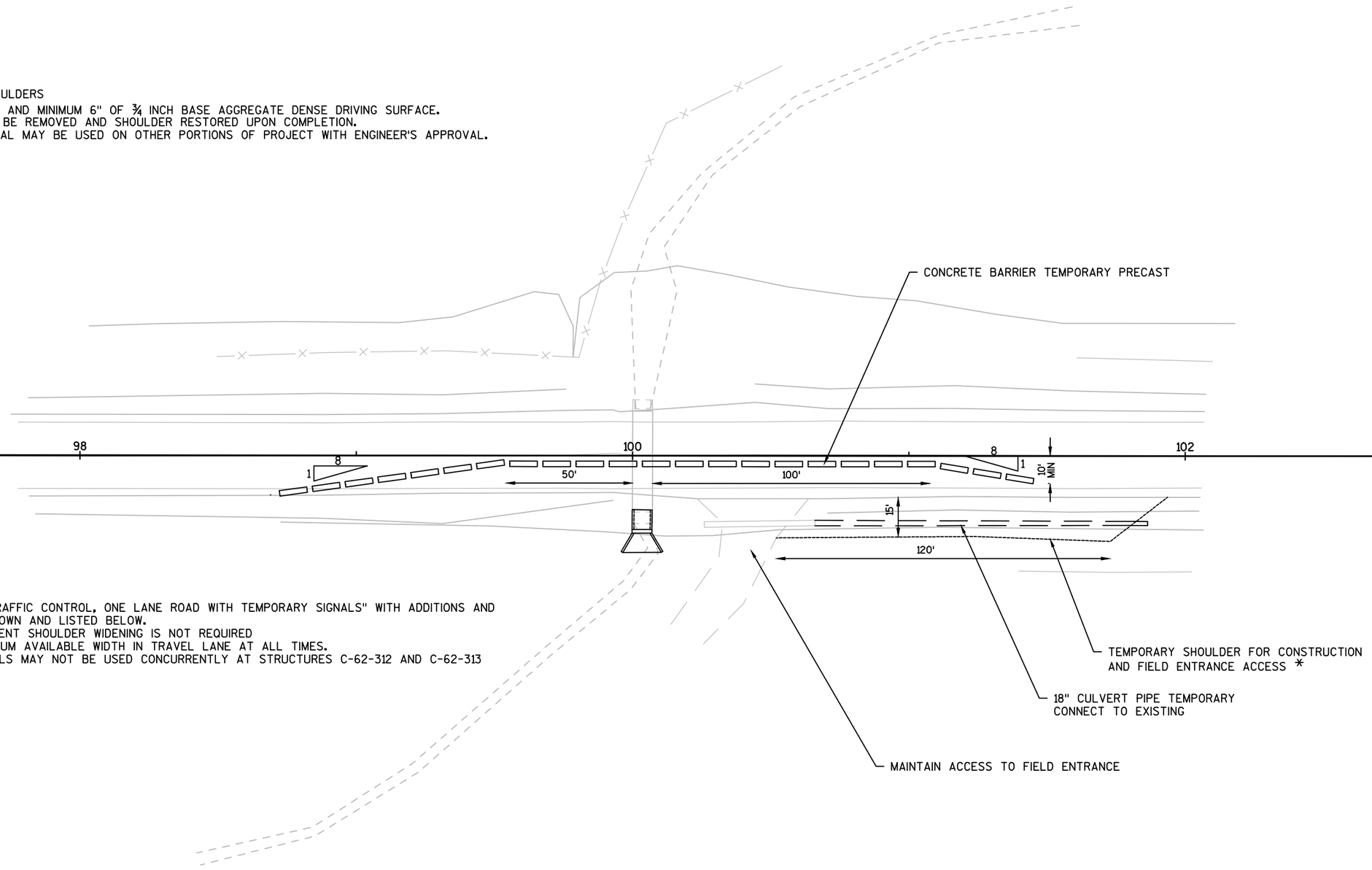


-UTILIZE S.D.D. "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" WITH ADDITIONS AND EXCEPTIONS AS SHOWN AND LISTED BELOW.
-ASPHALTIC PAVEMENT SHOULDER WIDENING IS NOT REQUIRED
-MAINTAIN 16' MINIMUM AVAILABLE WIDTH IN TRAVEL LANE AT ALL TIMES.
-TEMPORARY SIGNALS MAY NOT BE USED CONCURRENTLY AT STRUCTURES C-62-312 AND C-62-313

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	C-62-312 TRAFFIC CONTROL	SHEET 6	E

2

*TEMPORARY SHOULDERS
-PROVIDE BORROW AND MINIMUM 6" OF ¾ INCH BASE AGGREGATE DENSE DRIVING SURFACE.
-MATERIAL IS TO BE REMOVED AND SHOULDER RESTORED UPON COMPLETION.
-REMOVED MATERIAL MAY BE USED ON OTHER PORTIONS OF PROJECT WITH ENGINEER'S APPROVAL.



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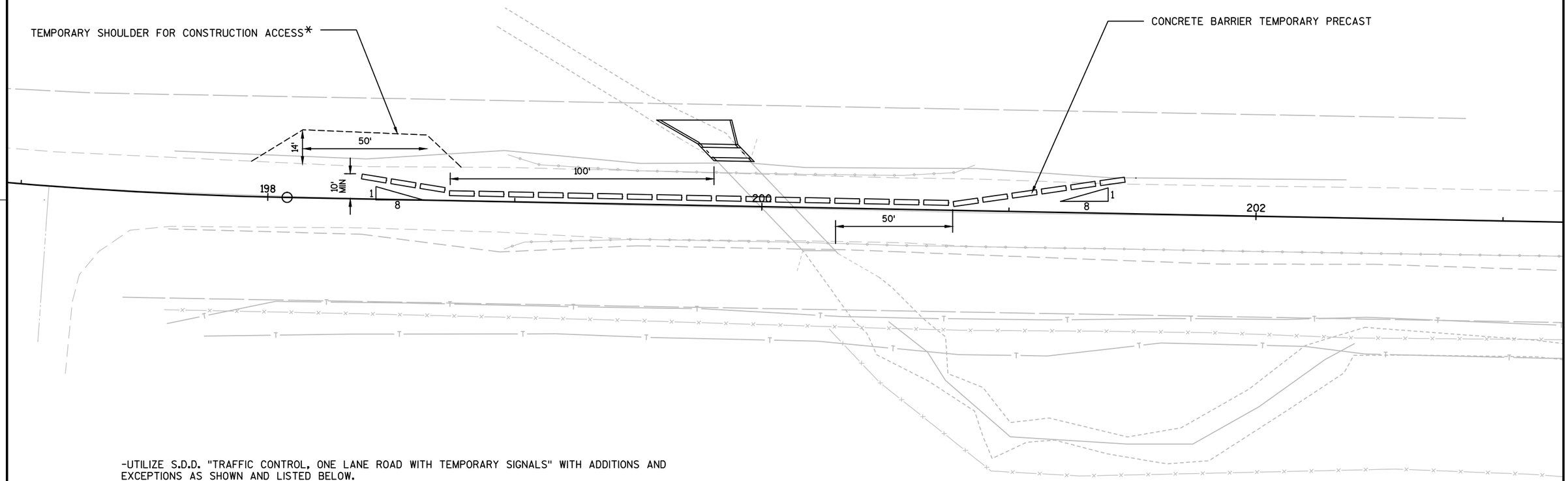
-ASPHALTIC PAVEMENT SHOULDER WIDENING IS NOT REQUIRED
-MAINTAIN 16' MINIMUM AVAILABLE WIDTH IN TRAVEL LANE AT ALL TIMES.
-TEMPORARY SIGNALS MAY NOT BE USED CONCURRENTLY AT STRUCTURES C-62-312 AND C-62-313

PROJECT NO:5730-00-61	HWY:STH 56	COUNTY:VERNON	C-62-312 TRAFFIC CONTROL	SHEET 7	E

2

*TEMPORARY SHOULDERS
-PROVIDE BORROW AND MINIMUM 6" OF ¾ INCH BASE AGGREGATE DENSE DRIVING SURFACE.
-MATERIAL IS TO BE REMOVED AND SHOULDER RESTORED UPON COMPLETION.
-REMOVED MATERIAL MAY BE USED ON OTHER PORTIONS OF PROJECT WITH ENGINEER'S APPROVAL.



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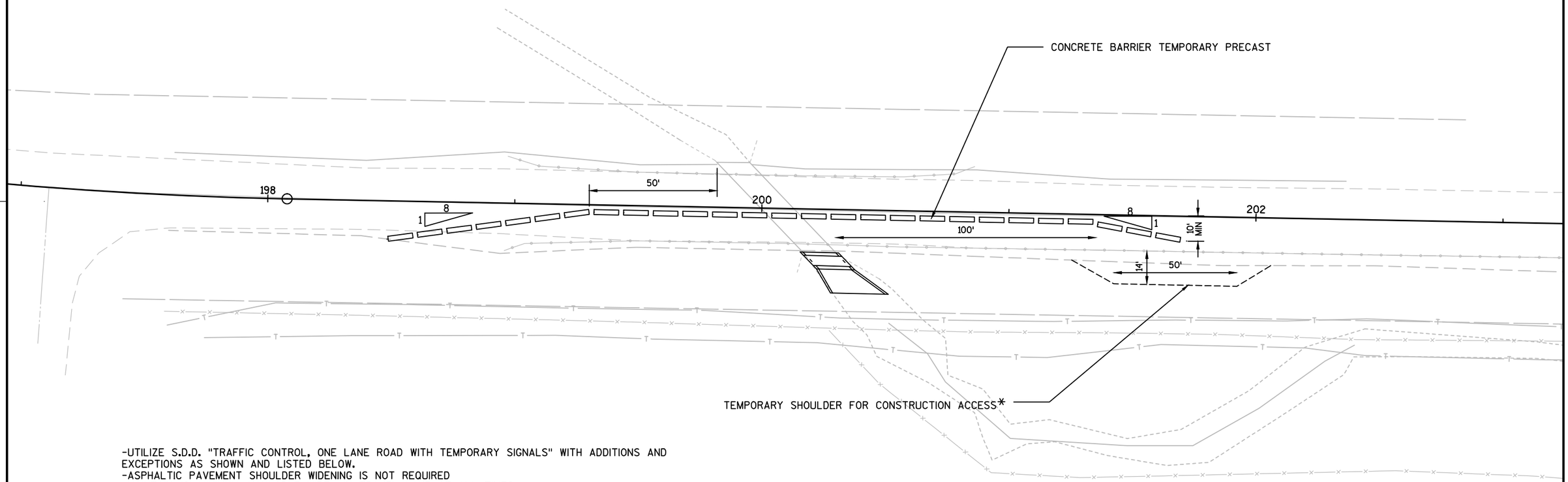
PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	C-62-313 TRAFFIC CONTROL	SHEET 8	E

*TEMPORARY SHOULDERS
-PROVIDE BORROW AND MINIMUM 6" OF ¾ INCH BASE AGGREGATE DENSE DRIVING SURFACE.
-MATERIAL IS TO BE REMOVED AND SHOULDER RESTORED UPON COMPLETION.
-REMOVED MATERIAL MAY BE USED ON OTHER PORTIONS OF PROJECT WITH ENGINEER'S APPROVAL.



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PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	C-62-313 TRAFFIC CONTROL	SHEET 9	E

*TEMPORARY SHOULDERS
-PROVIDE BORROW AND MINIMUM 6" OF ¾ INCH BASE AGGREGATE DENSE DRIVING SURFACE.
-MATERIAL IS TO BE REMOVED AND SHOULDER RESTORED UPON COMPLETION.
-REMOVED MATERIAL MAY BE USED ON OTHER PORTIONS OF PROJECT WITH ENGINEER'S APPROVAL.

-UTILIZE S.D.D. "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS"
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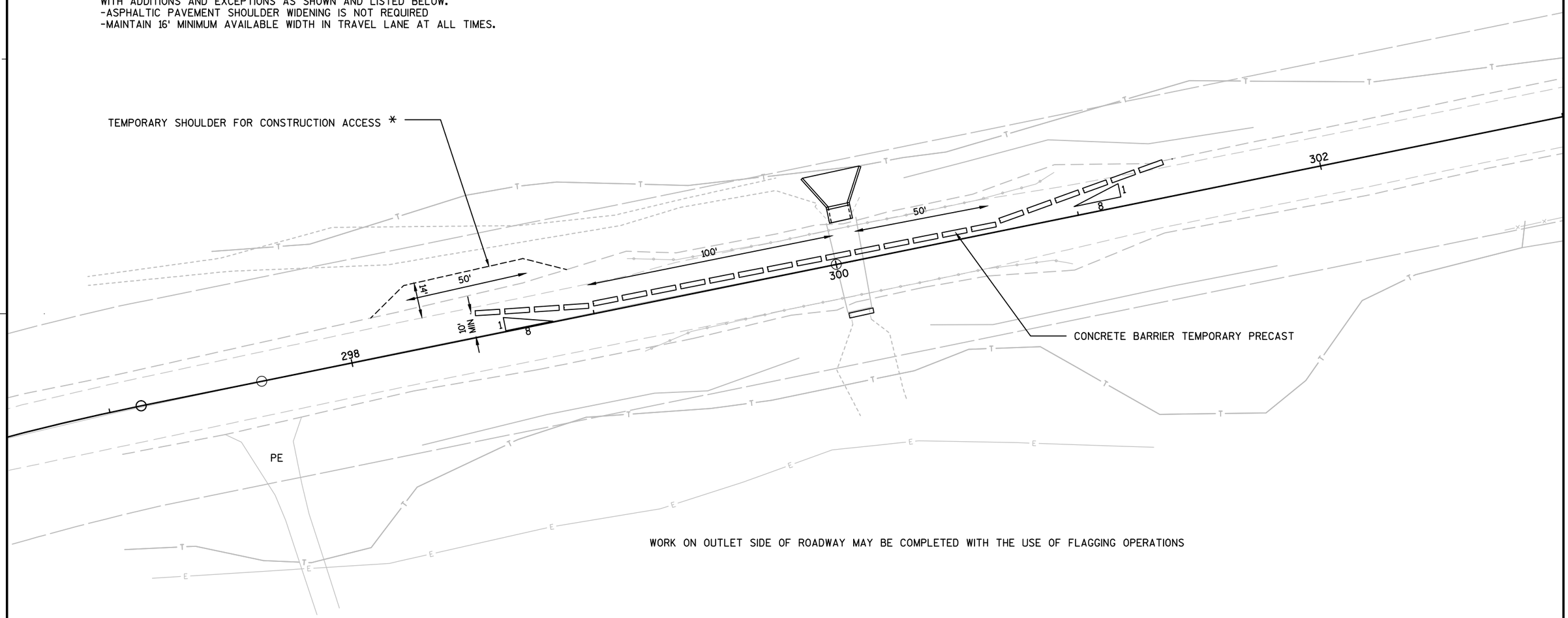


WORK ON OUTLET SIDE OF ROADWAY MAY BE COMPLETED WITH THE USE OF FLAGGING OPERATIONS

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	C-62-358 TRAFFIC CONTROL	SHEET 10	E

DATE 11FEB15 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	5730-00-61 QUANTITY
0010	203.0200	Removing Old Structure (station) 01. 100+03.60	LS	1.000	1.000
0020	203.0200	Removing Old Structure (station) 02. 200+06.75	LS	1.000	1.000
0030	203.0200	Removing Old Structure (station) 03. 300+04.00	LS	1.000	1.000
0040	204.0165	Removing Guardrail	LF	855.000	855.000
0050	205.0100	Excavation Common	CY	620.000	620.000
0060	206.2000	Excavation for Structures Culverts (structure) 01. C-62-312	LS	1.000	1.000
0070	206.2000	Excavation for Structures Culverts (structure) 02. C-62-313	LS	1.000	1.000
0080	206.2000	Excavation for Structures Culverts (structure) 03. C-62-358	LS	1.000	1.000
0090	208.0100	Borrow	CY	2,169.000	2,169.000
0100	210.0100	Backfill Structure	CY	515.000	515.000
0110	213.0100	Finishing Roadway (project) 01. 5730-00-61	EACH	1.000	1.000
0120	305.0110	Base Aggregate Dense 3/4-Inch	TON	490.000	490.000
0130	305.0500	Shaping Shoulders	STA	15.000	15.000
0140	306.0115	Salvaged Asphaltic Pavement Base	CY	165.000	165.000
0150	311.0115	Breaker Run	CY	66.000	66.000
0160	465.0105	Asphaltic Surface	TON	500.000	500.000
0170	490.0200	Salvaged Asphaltic Pavement Milling	SY	2,975.000	2,975.000
0180	502.6102	Masonry Anchors Type S 1/2-Inch	EACH	4.000	4.000
0190	502.6105	Masonry Anchors Type S 5/8-Inch	EACH	118.000	118.000
0200	504.0100	Concrete Masonry Culverts	CY	102.000	102.000
0210	505.0410	Bar Steel Reinforcement HS Culverts	LB	10,080.000	10,080.000
0220	505.0610	Bar Steel Reinforcement HS Coated Culverts	LB	2,315.000	2,315.000
0230	516.0500	Rubberized Membrane Waterproofing	SY	58.000	58.000
0240	520.4018	Culvert Pipe Temporary 18-Inch	LF	120.000	120.000
0250	603.8000	Concrete Barrier Temporary Precast Delivered	LF	950.000	950.000
0260	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,590.000	1,590.000
0270	606.0300	Riprap Heavy	CY	77.000	77.000
0280	614.0305	Steel Plate Beam Guard Class A	LF	302.000	302.000
0290	614.0340	Steel Plate Beam Guard Over Low-Fill Culverts Class A	LF	278.000	278.000
0300	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	3.000	3.000
0310	614.2300	MGS Guardrail 3	LF	250.000	250.000
0320	614.2340	MGS Guardrail 3 L	LF	270.000	270.000
0330	614.2610	MGS Guardrail Terminal EAT	EACH	6.000	6.000
0340	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5730-00-61	EACH	1.000	1.000
0350	619.1000	Mobilization	EACH	1.000	1.000
0360	625.0500	Salvaged Topsoil	SY	5,200.000	5,200.000
0370	627.0200	Mulching	SY	6,500.000	6,500.000
0380	628.1504	Silt Fence	LF	2,330.000	2,330.000
0390	628.1520	Silt Fence Maintenance	LF	2,330.000	2,330.000
0400	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0410	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0420	628.2004	Erosion Mat Class I Type B	SY	50.000	50.000
0430	628.7504	Temporary Ditch Checks	LF	90.000	90.000

3

DATE 11FEB15 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	5730-00-61 QUANTITY
0440	629.0210	Fertilizer Type B	CWT	5.000	5.000
0450	630.0110	Seeding Mixture No. 10	LB	87.000	87.000
0460	630.0300	Seeding Borrow Pit	LB	20.000	20.000
0470	642.5001	Field Office Type B	EACH	1.000	1.000
0480	643.0100	Traffic Control (project) 01. 5730-00-61	EACH	1.000	1.000
0490	643.0300	Traffic Control Drums	DAY	1,500.000	1,500.000
0500	643.0420	Traffic Control Barricades Type III	DAY	75.000	75.000
0510	643.0715	Traffic Control Warning Lights Type C	DAY	750.000	750.000
0520	643.0900	Traffic Control Signs	DAY	1,250.000	1,250.000
0530	645.0105	Geotextile Fabric Type C	SY	228.000	228.000
0540	645.0120	Geotextile Fabric Type HR	SY	189.000	189.000
0550	646.0106	Pavement Marking Epoxy 4-Inch	LF	5,250.000	5,250.000
0560	646.0600	Removing Pavement Markings	LF	7,220.000	7,220.000
0570	649.0200	Temporary Pavement Marking Reflective Paint 4-Inch	LF	5,890.000	5,890.000
0580	649.1400	Temporary Pavement Marking Stop Line Removable Tape 24-Inch	LF	120.000	120.000
0590	650.6500	Construction Staking Structure Layout (structure) 01. C-62-312	LS	1.000	1.000
0600	650.6500	Construction Staking Structure Layout (structure) 02. C-62-313	LS	1.000	1.000
0610	650.6500	Construction Staking Structure Layout (structure) 03. C-62-358	LS	1.000	1.000
0620	650.9920	Construction Staking Slope Stakes	LF	1,450.000	1,450.000
0630	661.0100	Temporary Traffic Signals for Bridges (structure) 01. C-62-312	LS	1.000	1.000
0640	661.0100	Temporary Traffic Signals for Bridges (structure) 02. C-62-313	LS	1.000	1.000
0650	661.0100	Temporary Traffic Signals for Bridges (structure) 03. C-62-358	LS	1.000	1.000
0660	690.0150	Sawing Asphalt	LF	146.000	146.000
0670	SPV.0105	Special 01. Safety Grate Culvert	LS	1.000	1.000

3

REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	204.0165 LF	REMARKS
0010	198+95	-	200+85	LT	190	C-62-313
0010	198+95	-	202+00	RT	305	C-62-313
0010	299+15	-	300+95	LT	180	C-62-358
0010	299+15	-	300+95	RT	180	C-62-358
				TOTAL 0010	855	

SHAPING SHOULDERS

CATEGORY	STATION	TO	STATION	LOCATION	305.0500 STA	REMARKS
0010	98+65	-	102+05	LT & RT	4	C-62-312
0010	197+55	-	202+00	LT & RT	5	C-62-313
0010	298+00	-	301+75	LT & RT	6	C-62-358
				TOTAL 0010	15	

ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	465.0105 TON	REMARKS
0010	99+10	-	101+00	MAINLINE	100	
0010	197+90	-	202+00	MAINLINE	200	
0010	289+00	-	301+75	MAINLINE	200	
				TOTAL 0010	500	

CONSTRUCTION STAKING SLOPE STAKES

CATEGORY	STATION	TO	STATION	LOCATION	650.9920 LF	REMARKS
0010	98+65	-	102+50	STH 56	385	
0010	197+55	-	202+00	STH 56	445	
0010	296+80	-	303+00	STH 56	620	
				TOTAL 0010	1450	

BASE AGGREGATE DENSE 3/4-INCH

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 TON	REMARKS
0010	98+65	-	102+05	LT	60	C-62-312
0010	98+65	-	101+00	RT	40	C-62-312
0010	197+55	-	202+00	LT & RT	160	C-62-313
0010	296+80	-	303+00	LT	110	C-62-358
0010	298+00	-	301+75	RT	80	C-62-358
0010	PROJECT			TEMP SHOULDERS	40	
				TOTAL 0010	490	

SALVAGED ASPHALTIC PAVEMENT BASE

CATEGORY	STATION	TO	STATION	LOCATION	306.0115 CY	REMARKS
0010	99+10	-	101+00	SHOULDERS	30	C-62-312
0010	197+90	-	202+00	SHOULDERS	70	C-62-313
0010	298+00	-	301+75	SHOULDERS	65	C-62-358
				TOTAL 0010	165	

SALVAGED ASPHALTIC PAVEMENT MILLING

CATEGORY	STATION	TO	STATION	LOCATION	490.0200 SY	REMARKS
0010	99+10	-	101+00	MAINLINE	525	C-62-312
0010	197+90	-	202+00	MAINLINE	1300	C-62-313
0010	298+00	-	301+75	MAINLINE	1150	C-62-358
				TOTAL 0010	2975	

CULVERT PIPE TEMPORARY 18-INCH

CATEGORY	STATION	TO	STATION	LOCATION	520.4018 LF	REMARKS
0010	100+60	-	101+80	RT	120	UNDER TEMP SHOULDER
				TOTAL 0010	120	

3

GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	STEEL PLATE BEAM GUARD CLASS A 614.0305 LF	STEEL PLATE BEAM GUARD OVER LOW-FILL CULVERTS CLASS A 614.0340 LF	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 614.0370 EACH	MGS GUARDRAIL 3 614.2300 LF	MGS GUARDRAIL 3 L 614.2340 LF	MGS GUARDRAIL TERMINAL EAT 614.2610 EACH	REMARKS
0010	99+10	-	101+00	LT		88			90	2	C-62-312
0010	197+90	-	201+00	LT	110	95	2				C-62-313
0010	198+10	-	202+00	RT	192	95	1				C-62-313
0010	298+00	-	301+75	LT				180	90	2	C-62-358
0010	298+40	-	301+04	RT				70	90	2	C-62-358
				TOTAL 0010	302	278	3	250	270	6	

TOPSOIL,MULCHING,SEEDING

CATEGORY	STATION	TO	STATION	LOCATION	SALVAGED TOPSOIL 625.0500 SY	MULCHING 627.0200 SY	FERTILIZER TYPE B 629.0210 CWT	SEEDING MIXTURE NO. 10 630.0110 LB	REMARKS
0010	99+10	-	102+05	LT	700	850	0.50	12	C-62-312
0010	99+10	-	101+00	RT	450	600	0.50	8	C-62-312
0010	197+55	-	202+00	LT	900	1150	1.00	15	C-62-313
0010	197+55	-	202+00	RT	1050	1300	1.00	17	C-62-313
0010	296+80	-	303+00	LT	1200	1500	1.00	20	C-62-358
0010	298+00	-	301+75	RT	900	1100	1.00	15	C-62-358
				TOTAL 0010	5200	6500	5	87	

SEEDING BORROW PIT

CATEGORY	LOCATION	630.0300 LB	REMARKS
0010	PROJECT	20	
	TOTAL 0010	20	

EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	SILT FENCE 628.1504 LF	SILT FENCE MAINTENANCE 628.1520 LF	MOBILIZATIONS EROSION CONTROL 628.1905 EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL 628.1910 EACH	EROSION MAT CLASS I TYPE B 628.2004 SY	TEMPORARY DITCH CHECKS 628.7504 LF	REMARKS
0010	99+00	-	102+15	LT & RT	380	380					C-62-312
0010	197+50	-	202+10	LT & RT	700	700				40	C-62-313
0010	296+80	-	303+00	LT & RT	1000	1000					C-62-358
0010	UNDISTRIBUTED				250	250	2	1	50	50	
				TOTAL 0010	2330	2330	2	1	50	90	

TRAFFIC CONTROL

CATEGORY	LOCATION	TRAFFIC CONTROL DRUMS 643.0300 DAY	TRAFFIC CONTROL BARRICADES TYPE III 643.0420 DAY	TRAFFIC CONTROL WARNING LIGHT TYPE C 643.0715 DAY	TRAFFIC CONTROL SIGNS 643.0900 DAY	TEMPORARY PAVEMENT MARKING REFLECTIVE PAINT 4-INCH 649.0200 LF	TEPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH 649.1400 LF	REMARKS
0010	C-62-312	600	30	300	500	2000	48	
0010	C-62-313	600	30	300	500	2180	48	
0010	C-62-358	300	15	150	250	1710	24	
	TOTAL 0010	1500	75	750	1250	5890	120	

CONCRETE BARRIER TEMPORARY PRECAST DELIVERED

CATEGORY	LOCATION	603.8000 LF	REMARKS
0010	C-62-312	300	
0010	C-62-313	340	
0010	C-62-358	310	
	TOTAL 0010	950	

CONCRETE BARRIER TEMPORARY PRECAST INSTALLED

CATEGORY	LOCATION	603.8125 LF	REMARKS
0010	C-62-312	600	
0010	C-62-313	680	
0010	C-62-358	310	
	TOTAL 0010	1590	

REMOVING PAVEMENT MARKINGS

CATEGORY	LOCATION	646.0600 LF	REMARKS
0010	C-62-312	2460	FOR TEMPORARY SIGNALS SET-UP AND REMOVAL
0010	C-62-313	2580	FOR TEMPORARY SIGNALS SET-UP AND REMOVAL
0010	C-62-358	2180	FOR TEMPORARY SIGNALS SET-UP AND REMOVAL
	TOTAL 0010	7220	

PAVEMENT MARKING EPOXY 4-INCH

CATEGORY	STATION	TO	STATION	LOCATION	646.0106 LF	REMARKS
0010	97+00	-	103+00	EDGELINES	1200	SOLID WHITE (2X)
0010	97+00	-	103+00	CENTERLINE	150	DASHED YELLOW CENTERLINE
0010	197+00	-	203+00	EDGELINES	1200	SOLID WHITE (2X)
0010	197+00	-	203+00	CENTERLINE	750	SOLID AND DASHED YELLOW CENTERLINE
0010	297+00	-	303+00	EDGELINES	1200	SOLID WHITE (2X)
0010	297+00	-	303+00	CENTERLINE	750	SOLID AND DASHED YELLOW CENTERLINE
				TOTAL 0010	5250	

SAWING ASPHALT

CATEGORY	STATION	690.0150 LF	REMARKS
0010	99+10	24	C-62-312
0010	101+00	24	C-62-312
0010	197+90	24	C-62-313
0010	202+00	26	C-62-313
0010	298+00	24	C-62-358
0010	301+75	24	C-62-358
	TOTAL 0010	146	

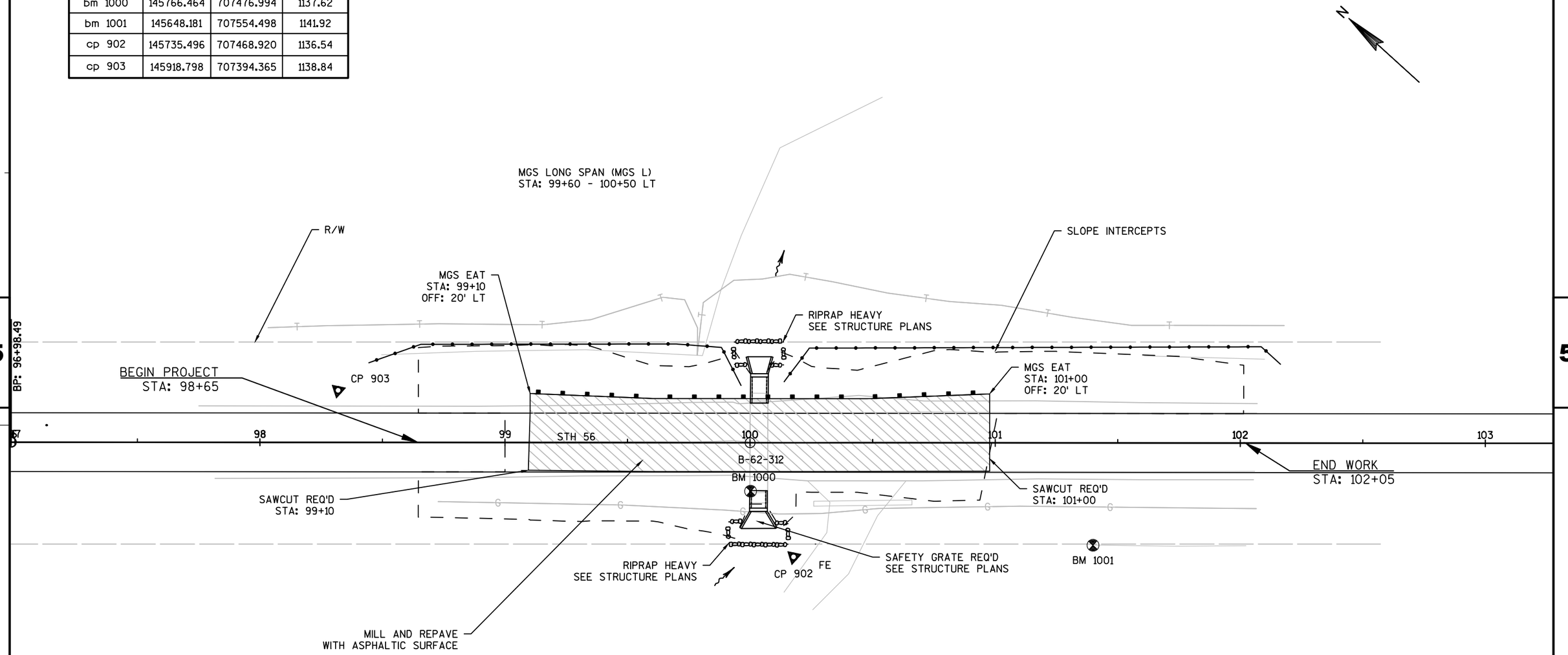
EARTHWORK SUMMARY

Division	From / To Station	Location	Common Excavation (1)	(item # 205.0100)	Salvaged / Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Rock Excavation (7)	Reduced Marsh in Fill (8)	Reduced EBS in Fill (9)	Expanded Marsh Backfill (10)	Expanded EBS Backfill (11)	Expanded Rock (12)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate + / - (14)	Waste	Borrow	Comment:
			Cut (2)	EBS Excavation (3)			(item #205.0500)	(item #205.0200)	Factor	Factor	Factor	Factor	Factor		Factor 1.25			(item #208.0100)	
Division 1																			
	98+64 to 102+00	C-62-312	27			27								303	379	-352		352	
	197+57 to 202+00	C-62-313	52			52								862	1,078	-1,026		1,026	
	296+82 to 302+92	C-62-358	103			103								335	419	-316		316	
Division 1 Subtotal			182	0	0	182	0	0	0	0	0	0	0	1,501	1,876	-1,694	0	1,694	
Division 2																			
	98+58 to 99+00	LT TEMP SHLDR	90			90								90	113	-113	90	113	
	100+47 to 102+00	RT TEMP SHLDR	63			63								50	63	-63	63	63	
	197+80 to 198+70	LT TEMP SHLDR	130			130								110	138	-138	130	138	
	201+34 to 202+00	RT TEMP SHLDR	85			85								80	100	-100	85	100	
	298+00 to 299+00	LT TEMP SHLDR	70			70								50	63	-63	70	63	
Division 2 Subtotal			438*	0	0	438	0	0	0	0	0	0	0	380	475	-475	438	475	
Grand Total			620.00	0.00	0.00	620.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,880.80	2,351.00	-2,169.00	438.00	2,169.00	
Total Common Exc			620.00																

*DIVISION 2 COMMON EXCAVATION IS REMOVAL OF TEMPORARY SHOULDERS

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 20505
7) Rock Excavation item number 205.0200
8) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.1100
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.1100
12) Expanded Rock - Factor = 1.1
13) Expanded Fill. Factor = 1.25
Depending on selections: **Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor**
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
15) Use 111,764 CY of material from Division 1. Borrow Excavation item number 208.0100

POINT TABLE			
POINT NAME	Y	X	ELEVATION
bm 1000	145766.464	707476.994	1137.62
bm 1001	145648.181	707554.498	1141.92
cp 902	145735.496	707468.920	1136.54
cp 903	145918.798	707394.365	1138.84



PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	C-62-312 PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-312_50201_PN.DWG PLOT DATE : 10/1/2014 2:47 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

POINT TABLE			
POINT NAME	Y	X	ELEVATION
bm 1002	144795.159	709002.157	1112.35
bm 1003	144735.644	708778.962	1121.09
cp 900	144725.276	708765.239	1120.46

STEEL PLATE BEAM GUARD
STA: 198+40 LT - 199+40 LT
STA: 200+40 LT- 200+50 LT
STA: 198+60 RT - 199+70 RT
STA: 200+70 RT - 202+00 RT

STEEL PLATE BEAM GUARD OVER
LOW FILL CULVERTS
STA: 199+40 LT - 200+40 LT
STA: 199+70 RT - 200+70 RT

N

MILL AND REPAVE WITH ASPHALTIC SURFACE

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL
STA: 197+90
OFF: 18' LT
NO FLARE

STEEL PLATE BEAM GUARD CLASS A OVER LOW FILL CULVERTS
REQ'D OVER C-62-313

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL
STA: 201+00
OFF: 18' LT
NO FLARE

R/W

BEGIN WORK
STA: 197+55

STEEL PLATE BEAM GUARD

PT: 198+07.79

RIPRAP HEAVY
SEE STRUCTURE PLANS

SAWCUT REQ'D
STA: 202+00

END WORK
STA: 202+00

197 198 199 200 201 202 203

STH 56

BM 1002

C-62-313

SAWCUT REQ'D
STA: 197+80

LEWISON RD

BM 1003

CP 900

STA: 202+00
OFF: 14' RT
MATCH EXISTING GUARDRAIL

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL
STA: 198+10
OFF: 18' RT
NO FLARE

STEEL PLATE BEAM GUARD

RIPRAP HEAVY
SEE STRUCTURE PLANS

STA: 201+00
OFF: 18' RT
BEGIN TAPER

R/W

SURFACE WATER FLOW
SILT FENCE
DITCH CHECK
EROSION MAT
CLASS 1 TYPE B

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	C-62-313 PLAN	SHEET	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-313_50201_PN.DWG PLOT DATE : 10/1/2014 2:47 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

POINT TABLE			
POINT NAME	Y	X	ELEVATION
bm 1004	145267.752	717110.801	964.74
bm 1005	145285.369	717200.644	961.10
cp 901	145226.462	716938.577	961.66
cp 905	145305.439	717315.497	959.93

MGS BEAMGUARD
STA: 298+53 - 299+60 LT
STA: 300+50 - 301+22 LT
STA: 298+93 - 299+60 RT

MGS BEAMGUARD LONG SPAN (MGS L)
STA: 299+60 - 300+50 LT & RT

MGS LONG SPAN (MGS L) REQ'D OVER C-62-358

** C-62-358 CONTAINS WATER AT ALL TIMES **

N

BEGIN WORK
STA: 296+80

MGS EAT
STA: 298+00
OFF: 20' LT

R/W

MGS EAT
STA: 301+75
OFF: 20' LT

SAWCUT REQ'D
STA: 301+75

END WORK
STA: 303+00

MGS EAT
STA: 301+04
OFF: 18' RT
NO FLARE

PT: 297+62.98

297

298

299

300

301

302

STH 56

C-62-358

BM 1005

BM 1004

CP 905

SAWCUT REQ'D
STA: 298+00

CP 901

PE

R/W

MGS EAT
STA: 298+40
OFF: 18' RT
NO FLARE

SLOPE INTERCEPT

MILL AND REPAVE WITH ASPHALTIC SURFACE

RIPRAP HEAVY AT END OF EXISTING APRON
SEE STRUCTURE PLANS

SURFACE WATER FLOW

SILT FENCE

DITCH CHECK

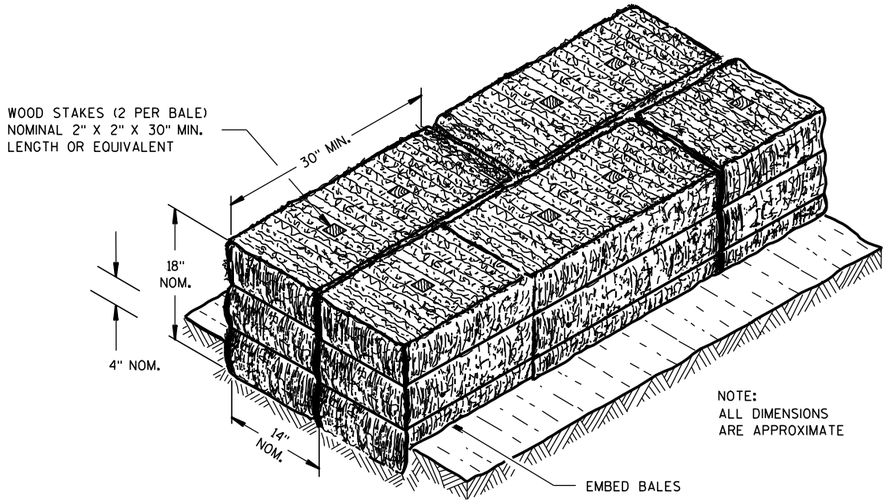
EROSION MAT
CLASS 1 TYPE B

PROJECT NO: 5730-00-31	HWY: STH 56	COUNTY: VERNON	C-62-358 PLAN	SHEET	E

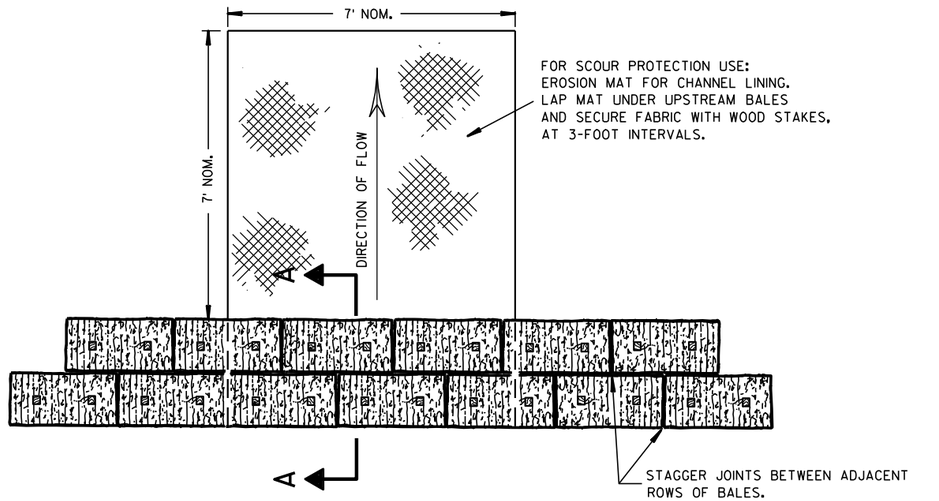
FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-358_50201_PN.DWG PLOT DATE : 10/1/2014 2:47 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

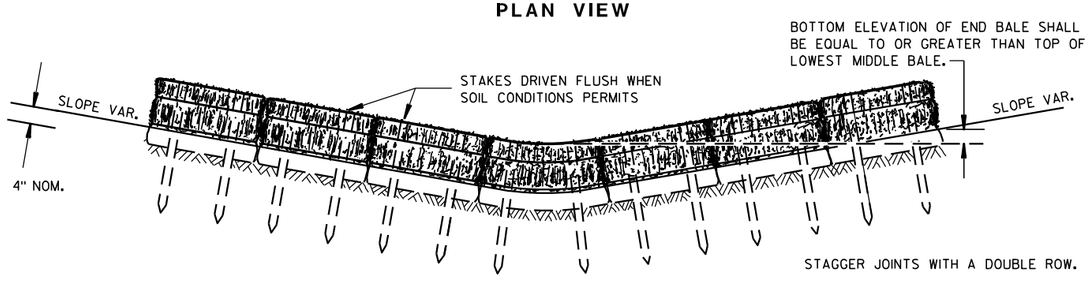
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B15-08A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-08A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B25-01	STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-03A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D28-02	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D33-03	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



SECTION A-A



PLAN VIEW



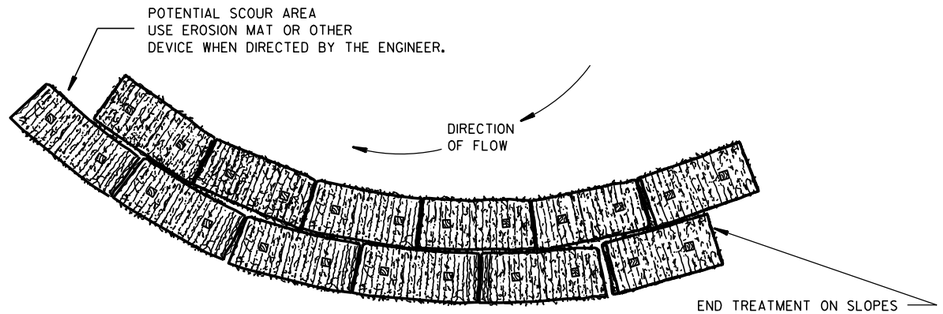
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

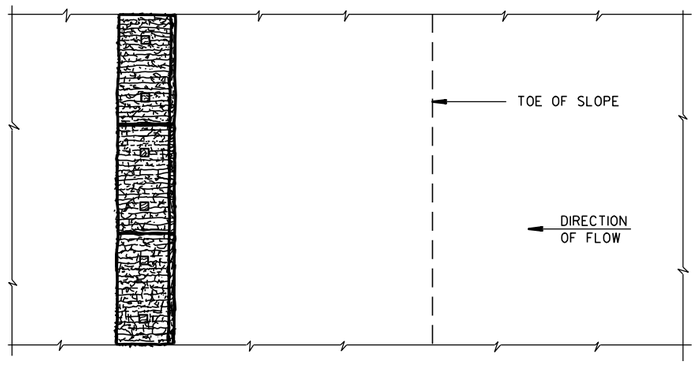
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

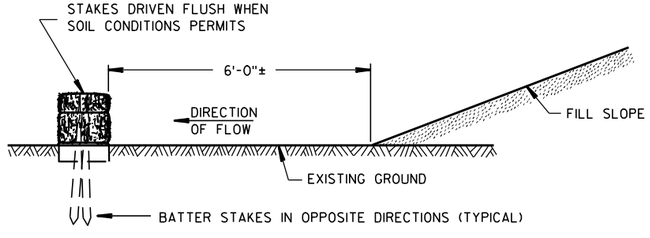


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

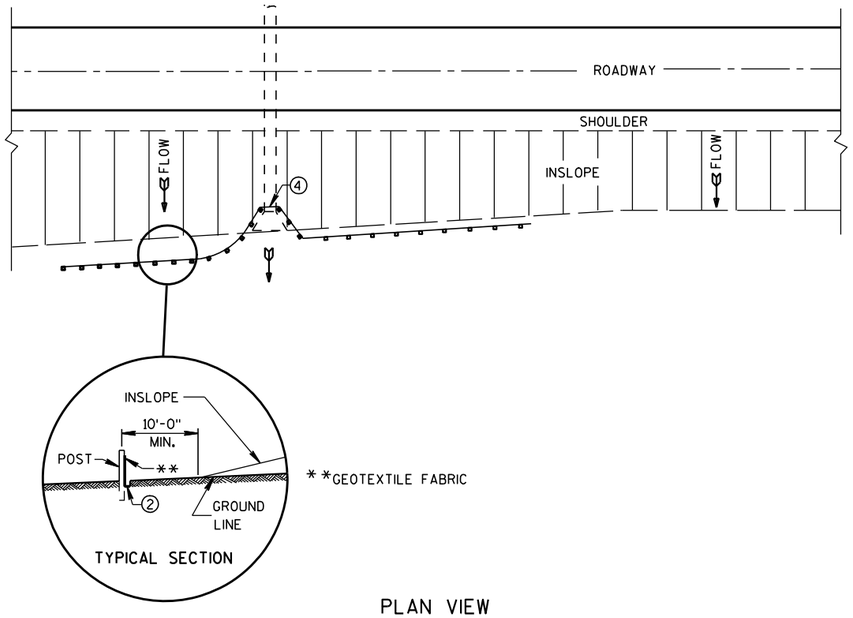
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

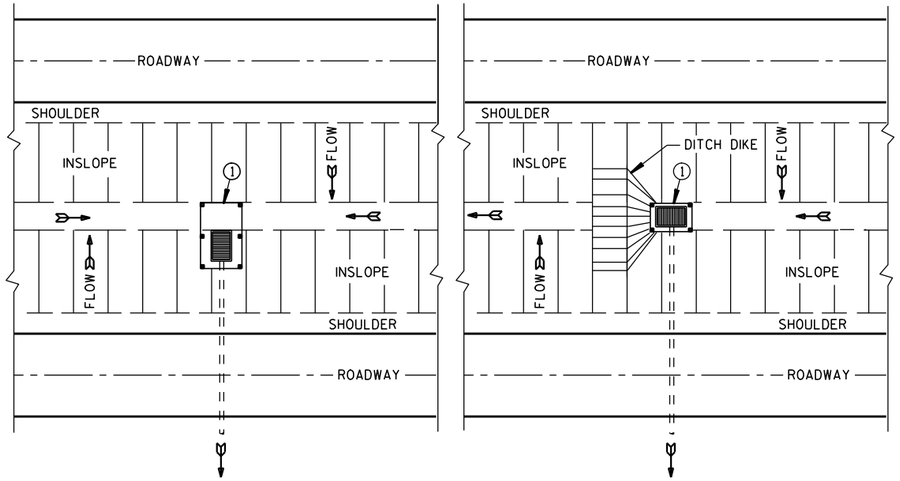
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



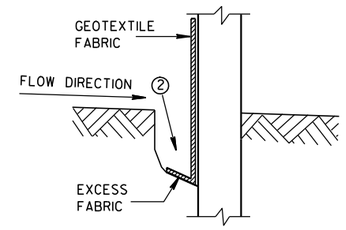
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

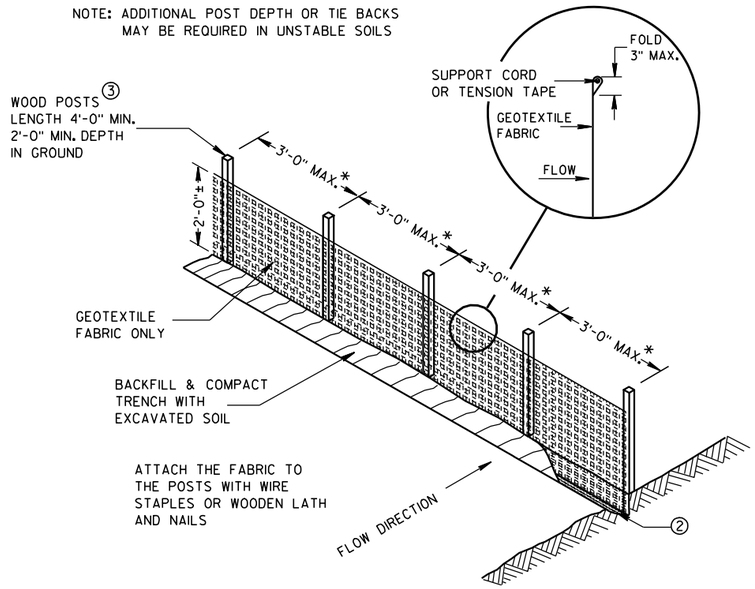
GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

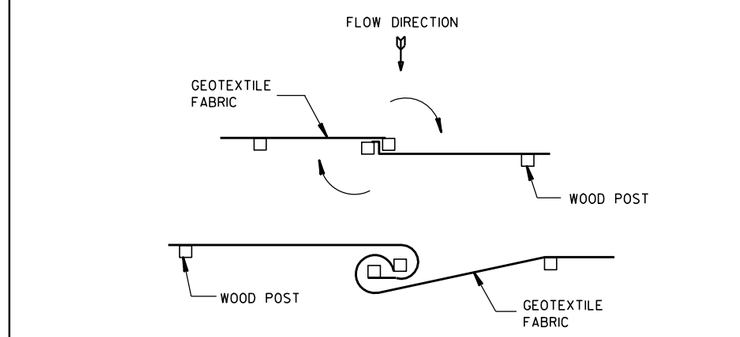


TRENCH DETAIL

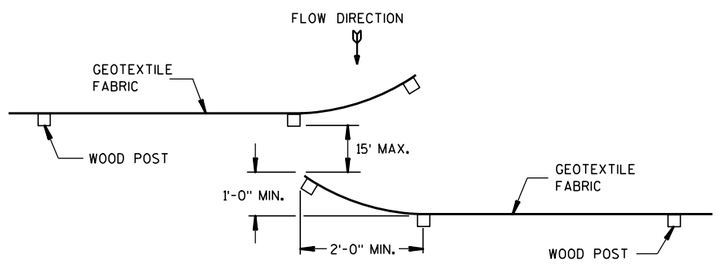


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

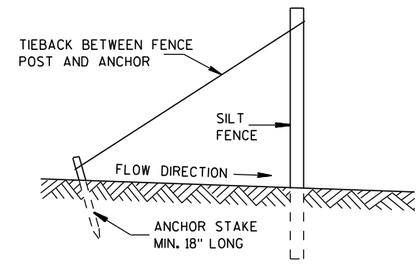


TWIST METHOD



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

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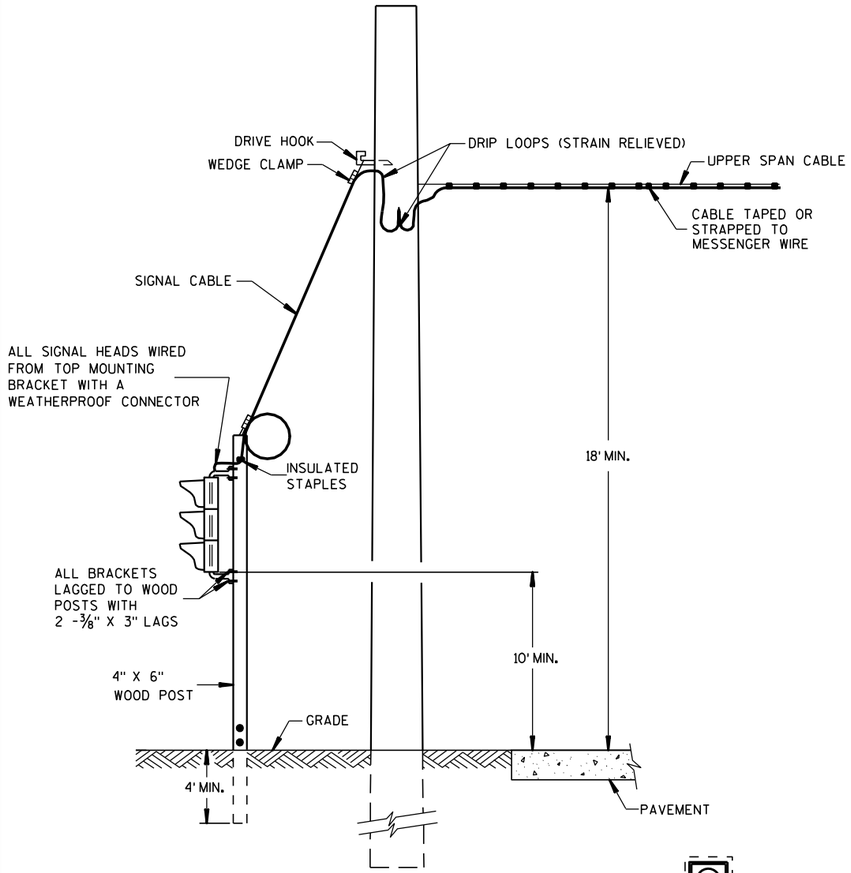
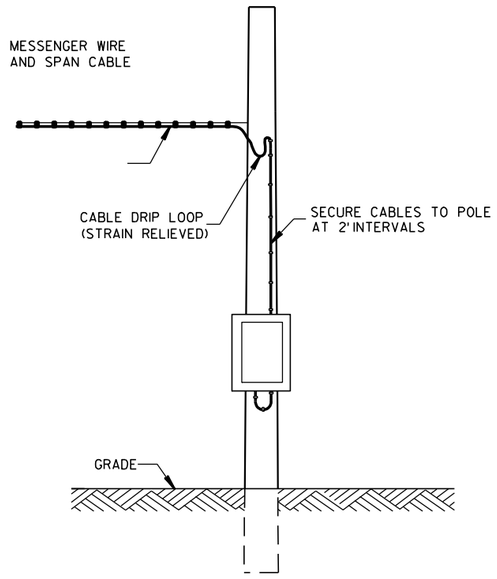
S.D.D. 8 E 9-6



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.

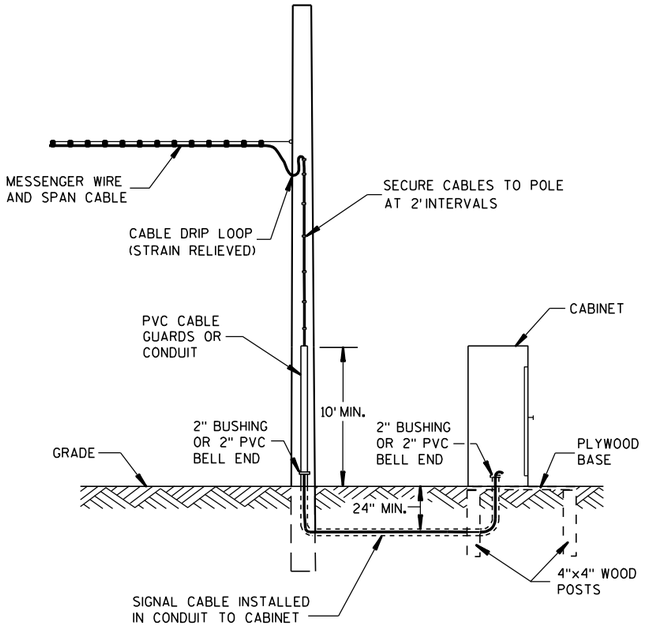
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

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.

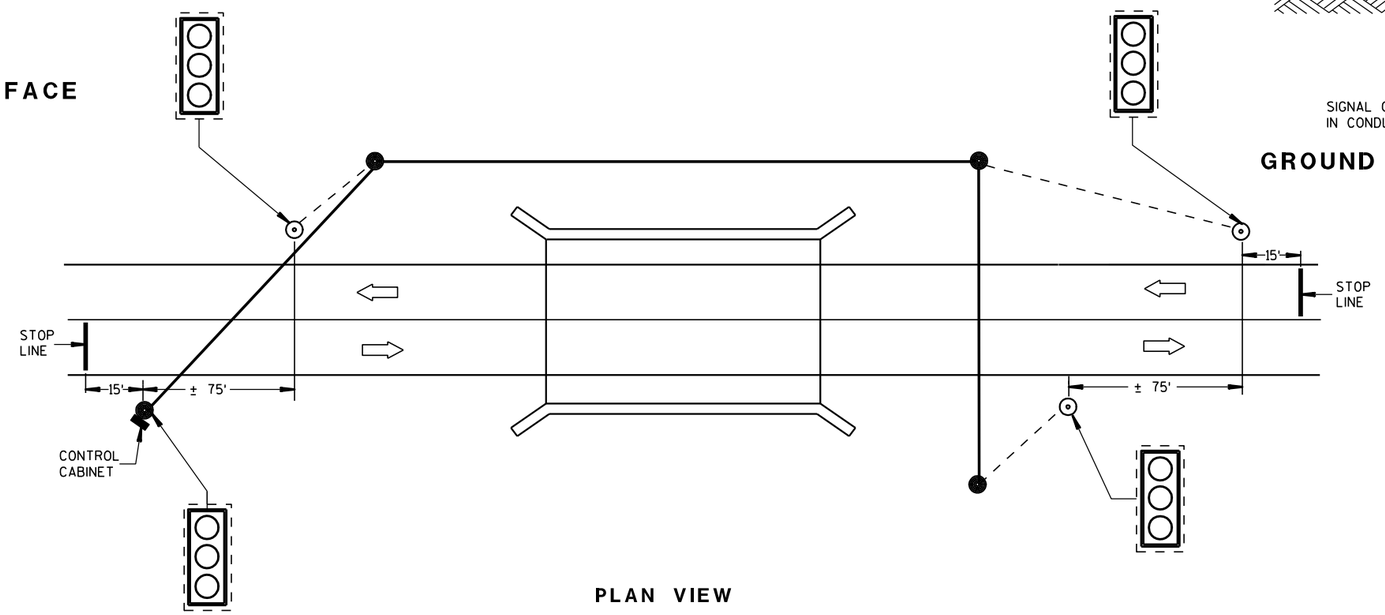
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



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

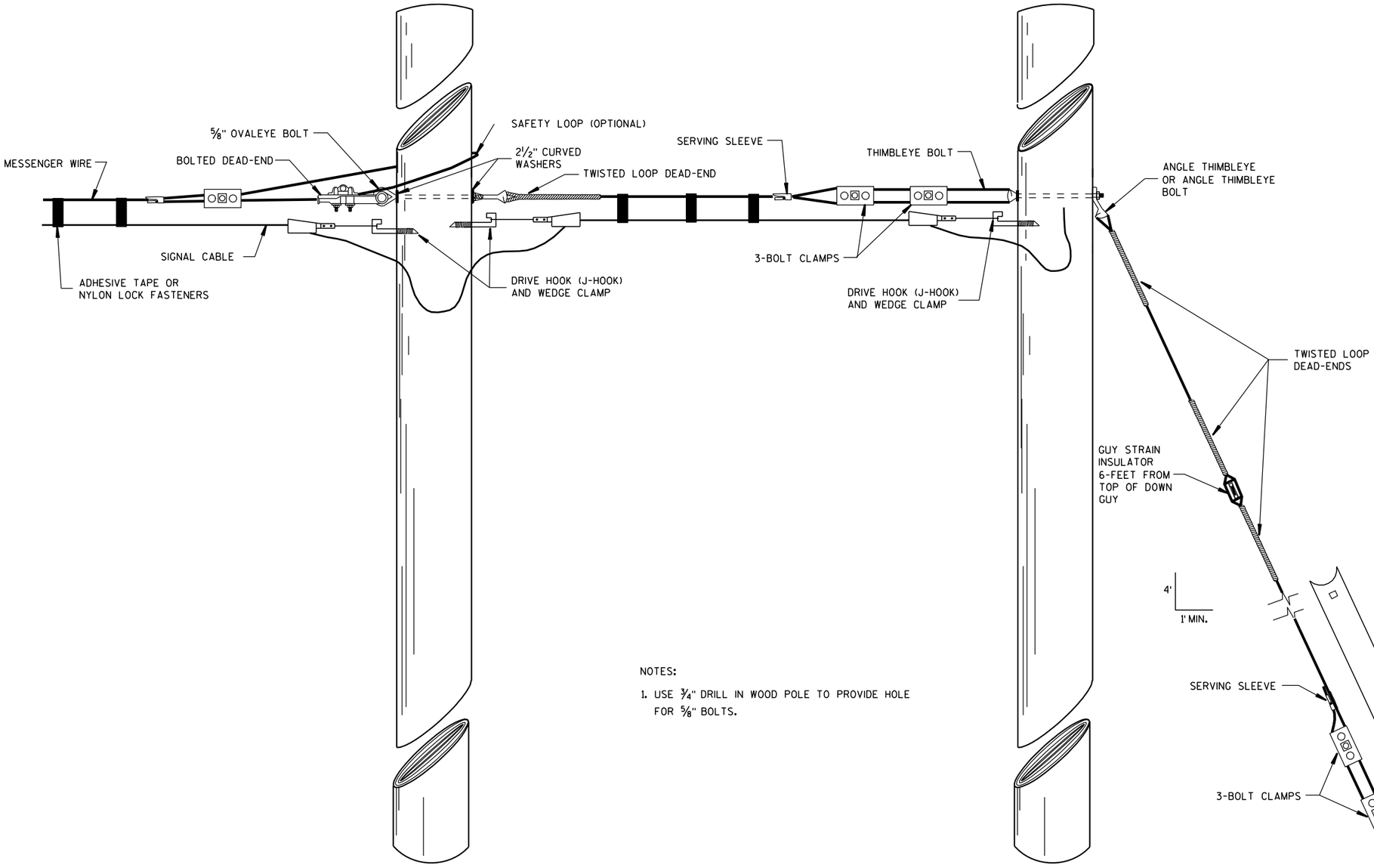
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

/S/ Thomas J. Gosling STATE ELECTRICAL ENGI

FHWA



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

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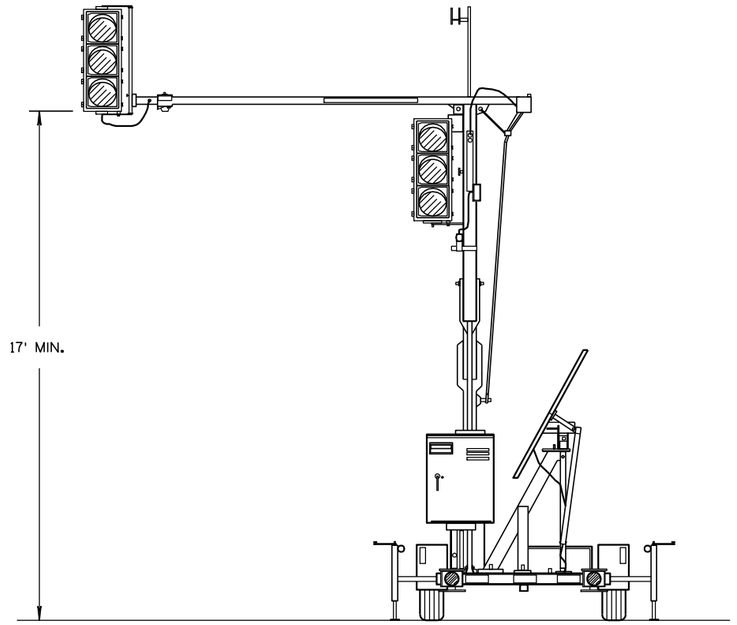
S.D.D. 9 G 2-3b

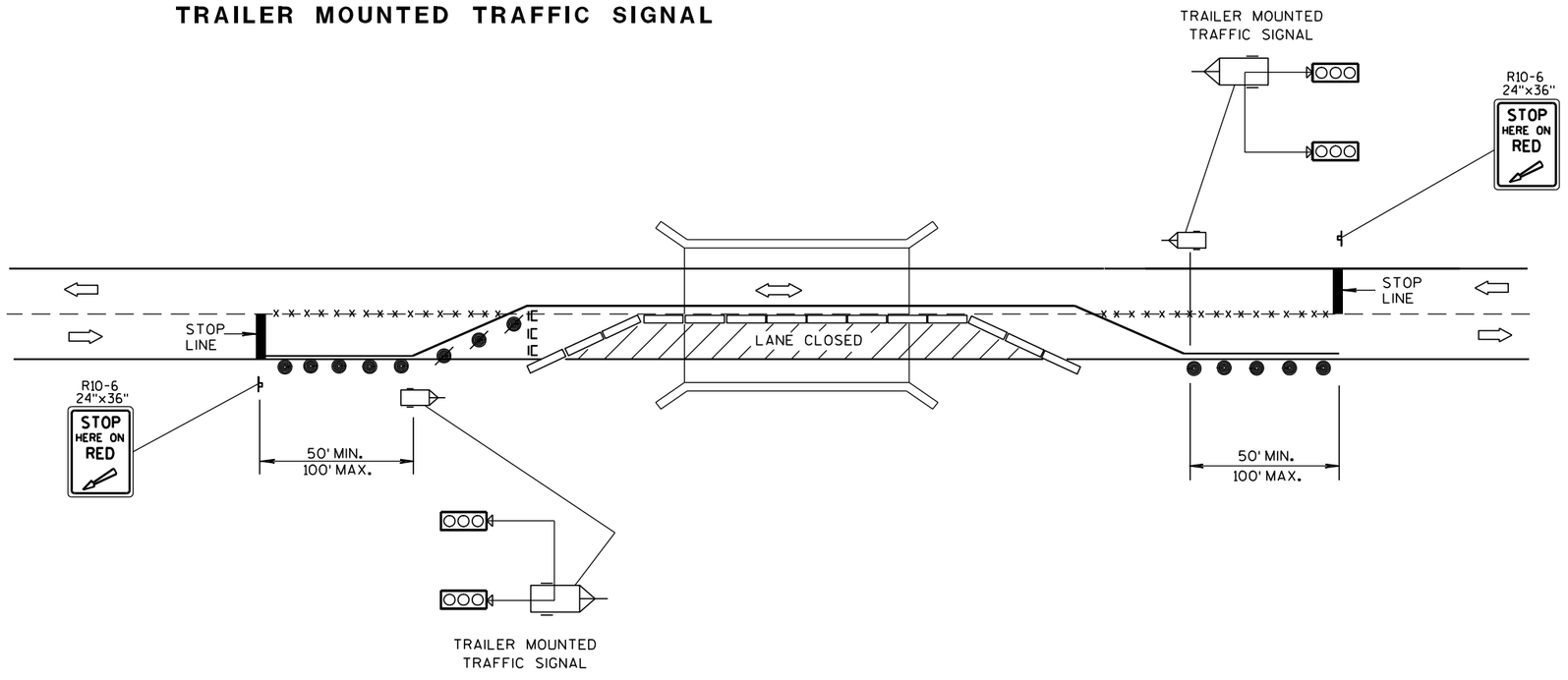


TRAILER MOUNTED TRAFFIC SIGNAL

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 25 — HWYS

FHWA

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

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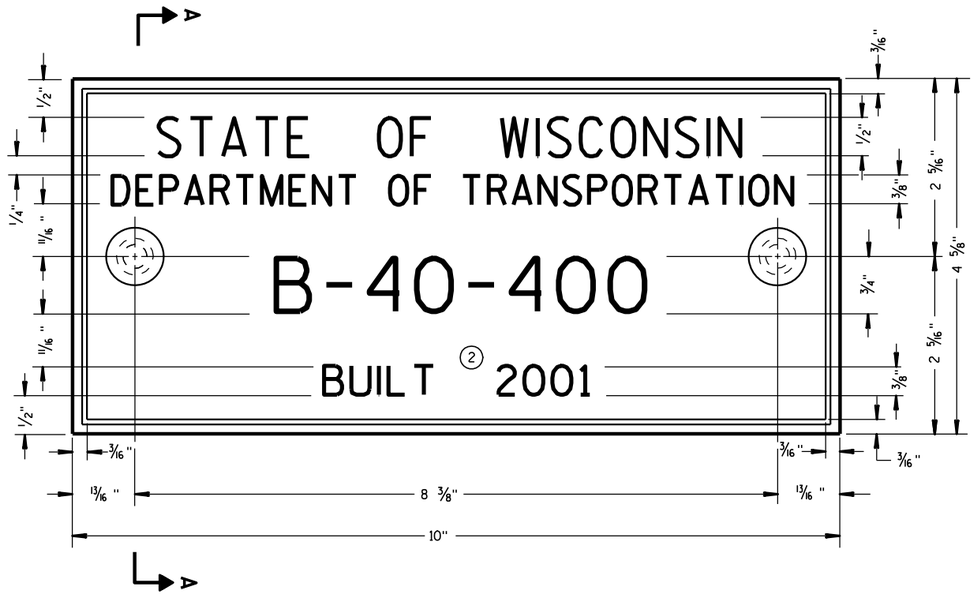
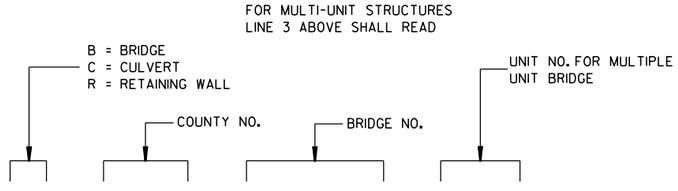
S.D.D. 9 G 2-3c



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

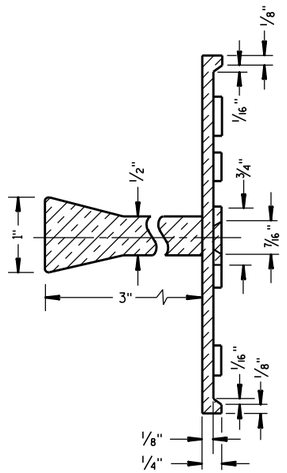
GENERAL NOTES

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

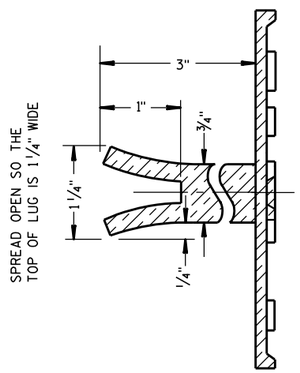
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

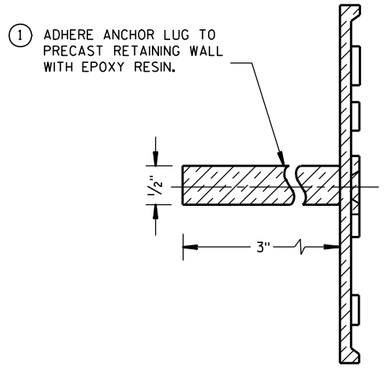
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

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

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S.D.D. 12 A 3-10

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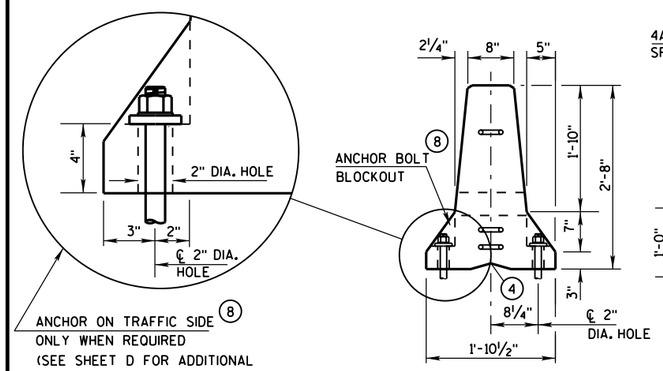
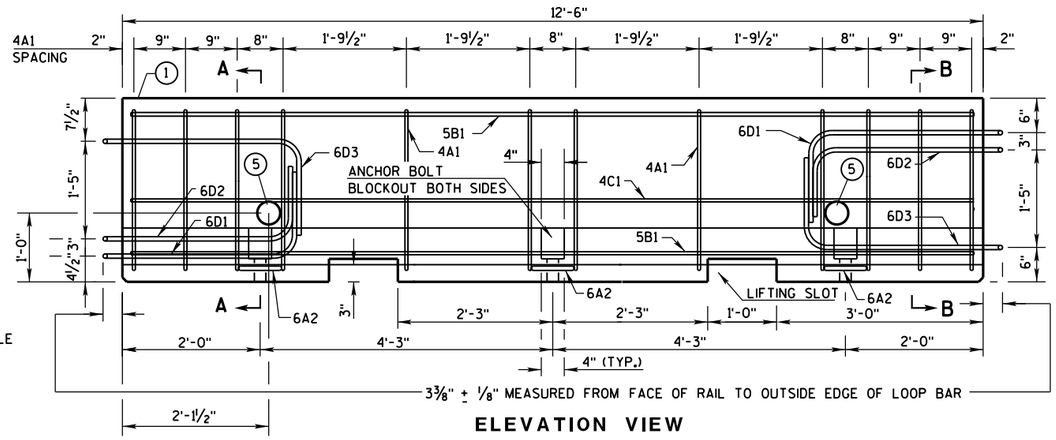
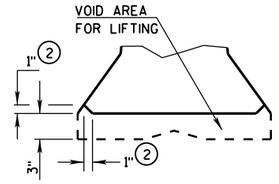
S.D.D. 12 A 3-10



END VIEW



ELEVATION VIEW



DETAIL "B"
LIFTING SLOT DETAIL

GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(a) THRU 14B7-14(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: WI CBTP
- 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.

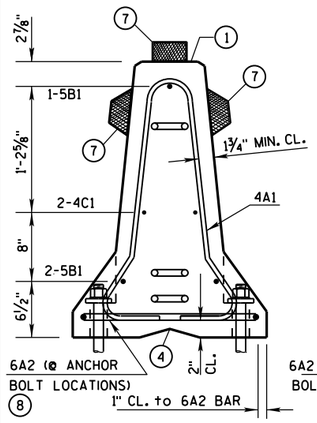
(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

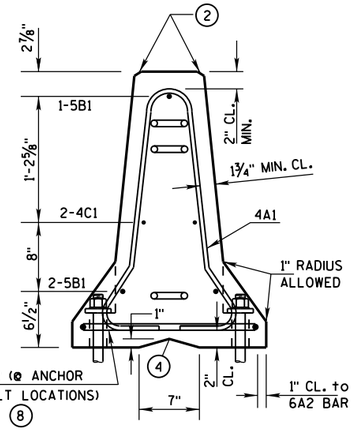
(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED 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.

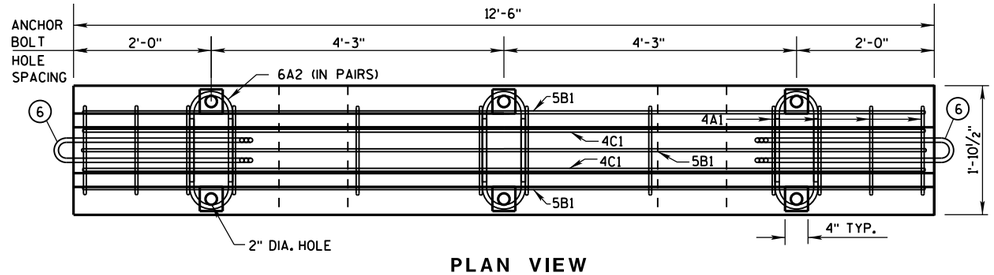
(9) 1" CHAMFER OPTIONAL.



SECTION A-A
(STIRRUP PLACEMENT)

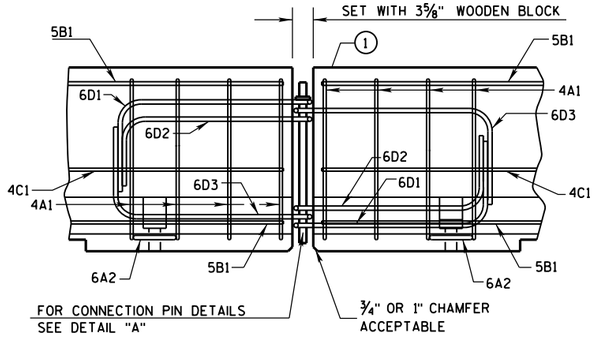


SECTION B-B
(STIRRUP PLACEMENT)

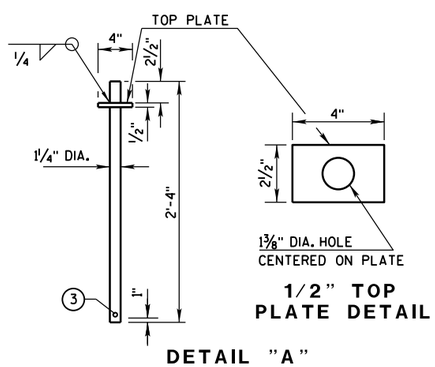


PLAN VIEW

DETAILS OF BARRIER SECTION

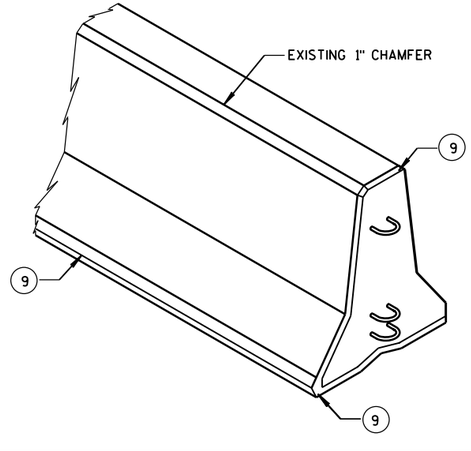


DETAILS OF BARRIER CONNECTION



1/2" TOP
PLATE DETAIL

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



CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 27

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

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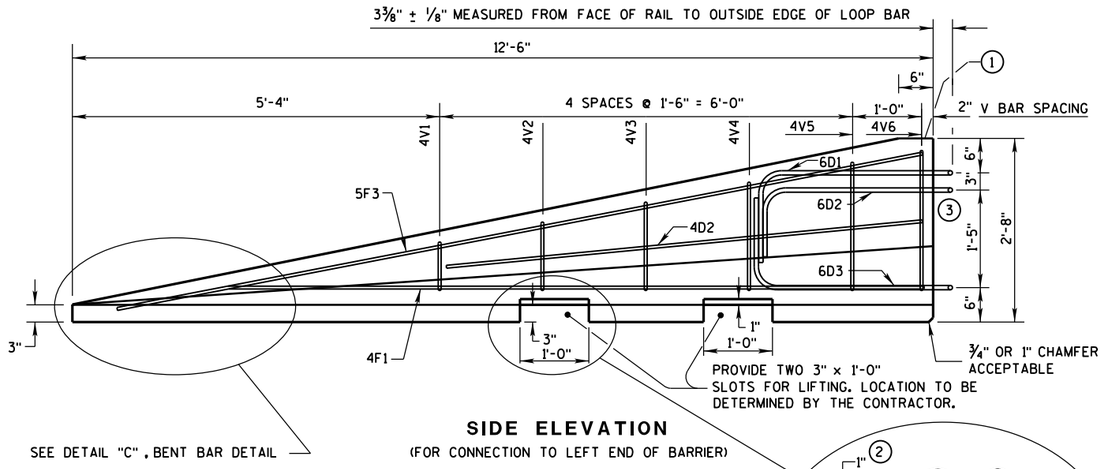
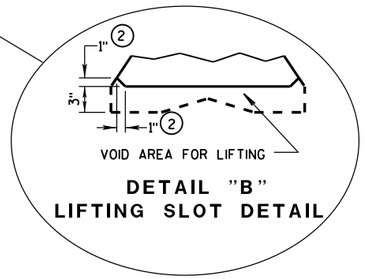
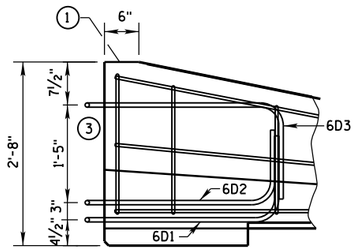
S.D.D. 14 B 7-14a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



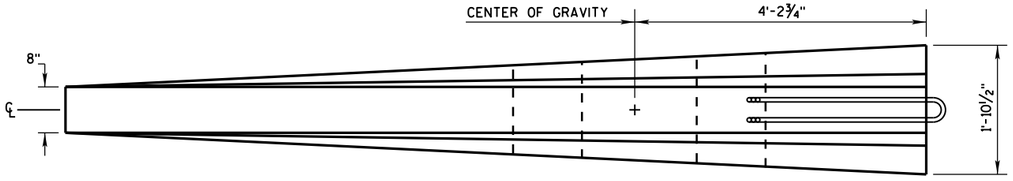
DETAIL "B"
LIFTING SLOT DETAIL



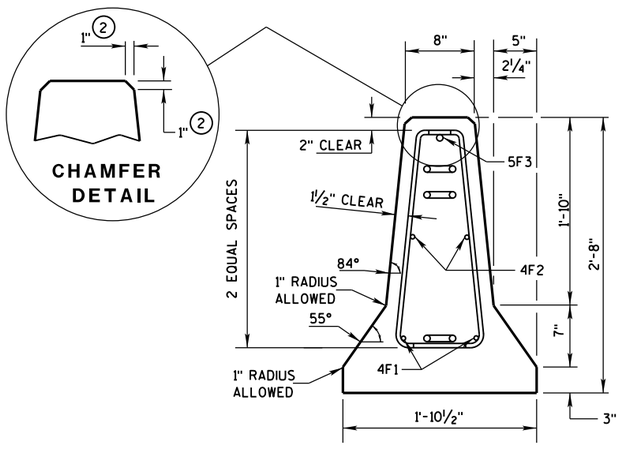
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

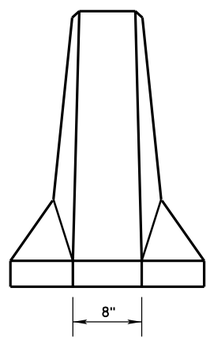
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



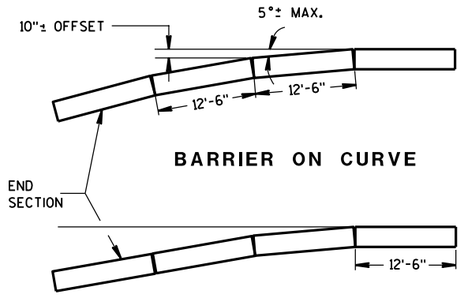
PLAN VIEW



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 TRANSPOI

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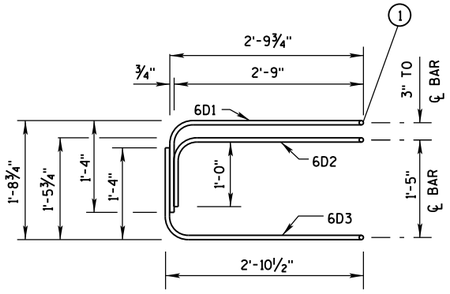
S.D.D. 14 B 7-14b

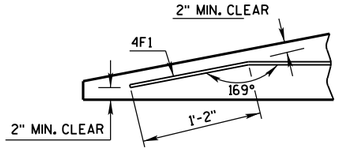
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

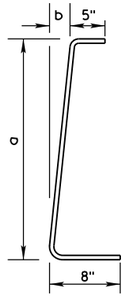
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

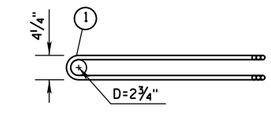
GENERAL NOTES

(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)

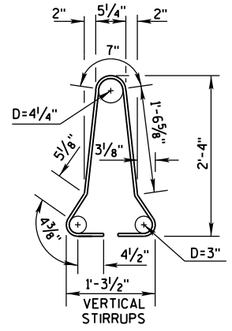
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



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

6A2

ELEVATION VIEW



4A1

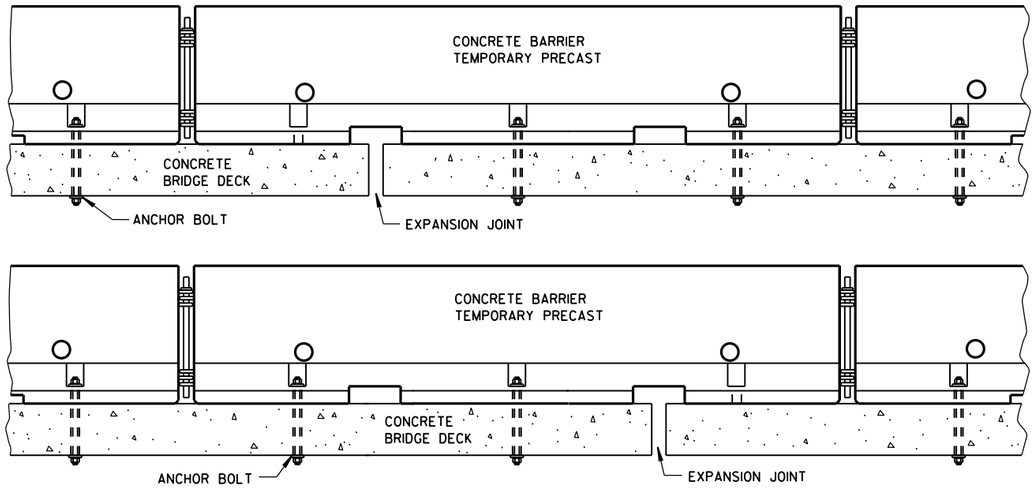
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

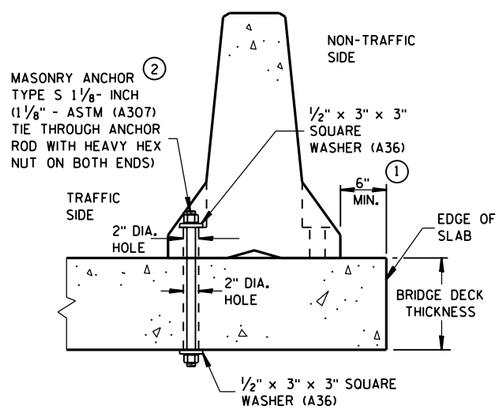
6

S.D.D. 14 B 7-14c



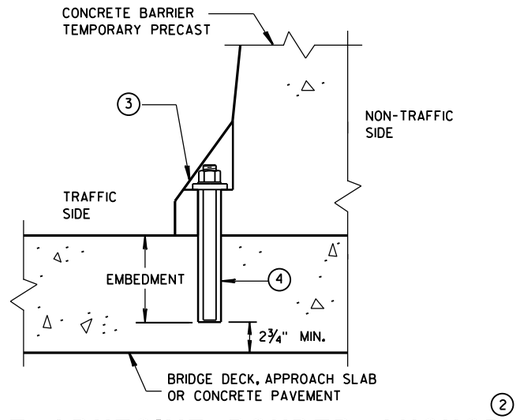
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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 ② 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.

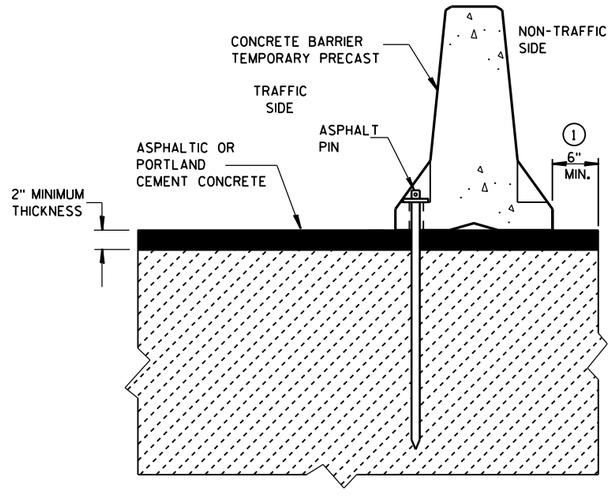
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

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.

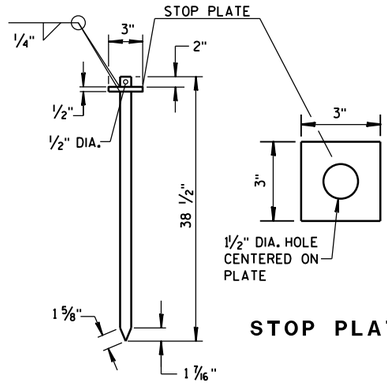
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

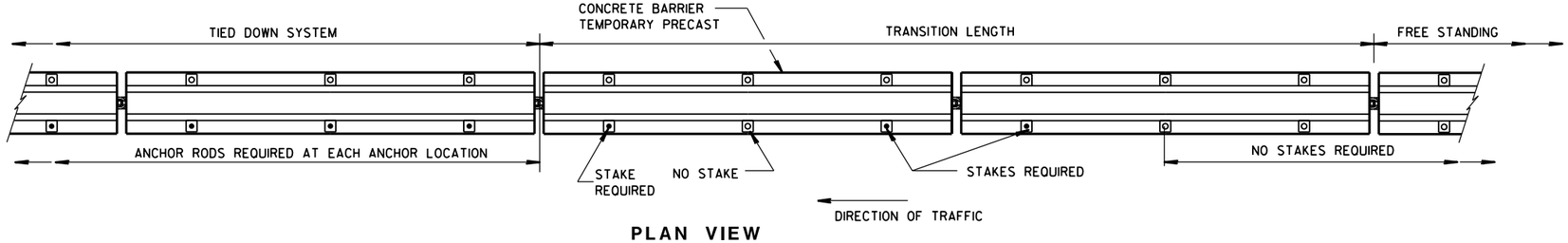
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

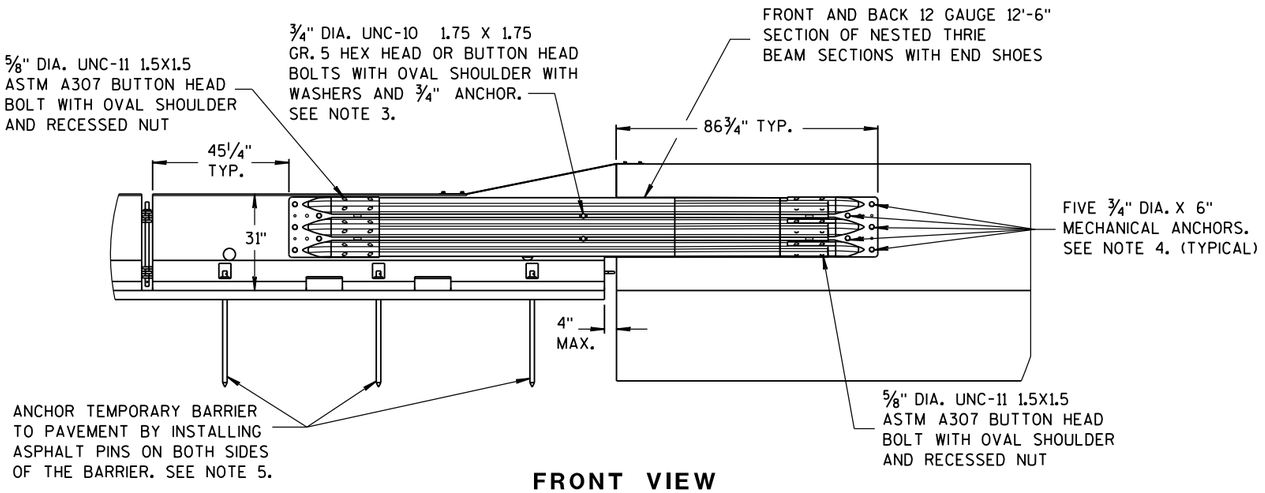
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

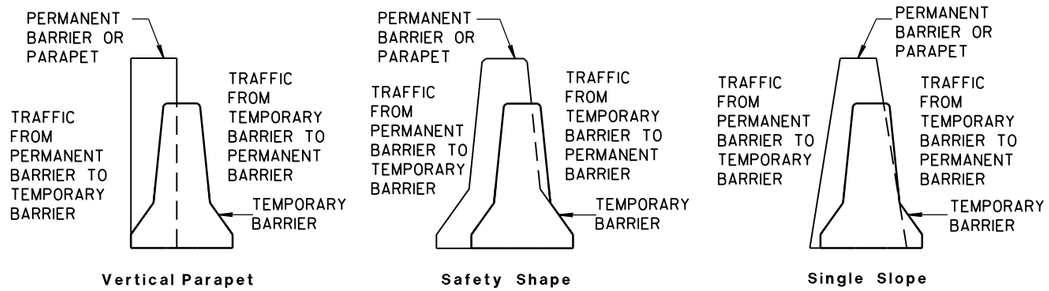
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-14d



FRONT VIEW



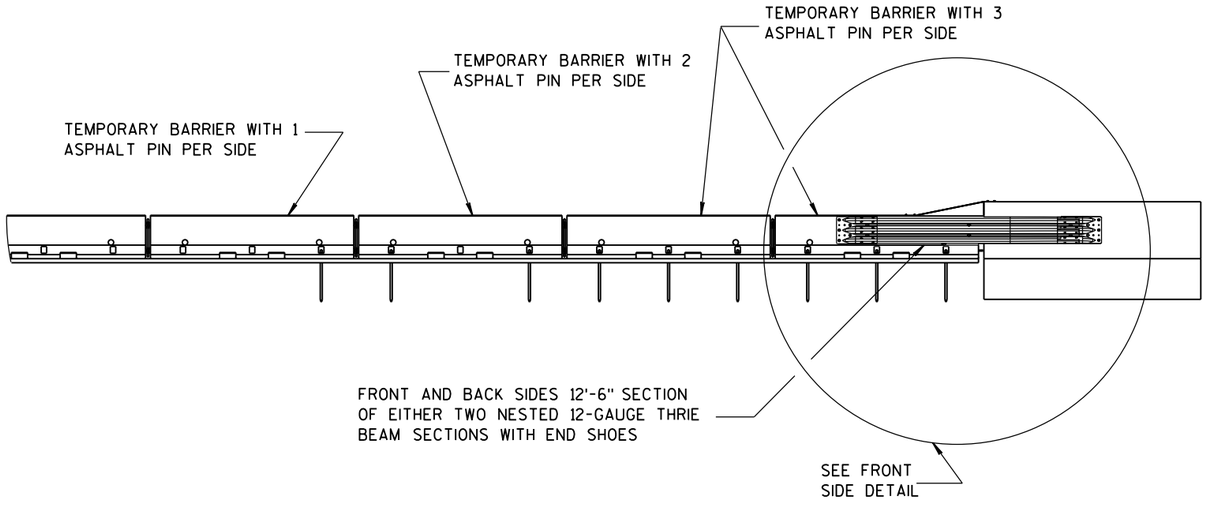
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

NOTES

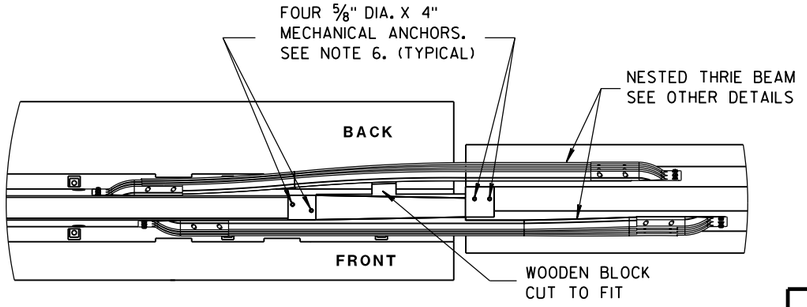
NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

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.

BACK VIEW



FRONT VIEW



PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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

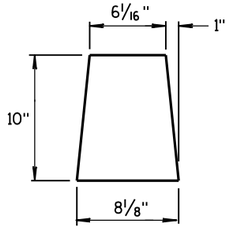
GUSSET 1

GUSSET 2

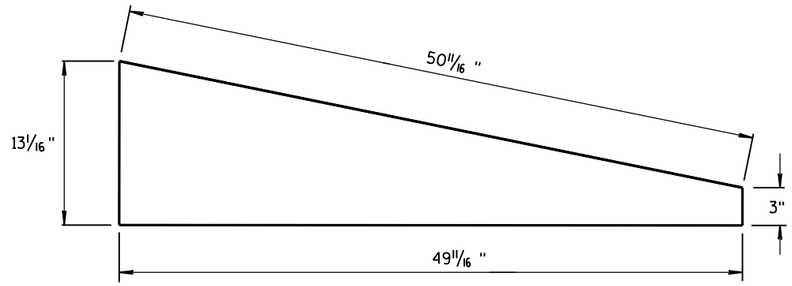
GUSSET 3

GUSSET 4

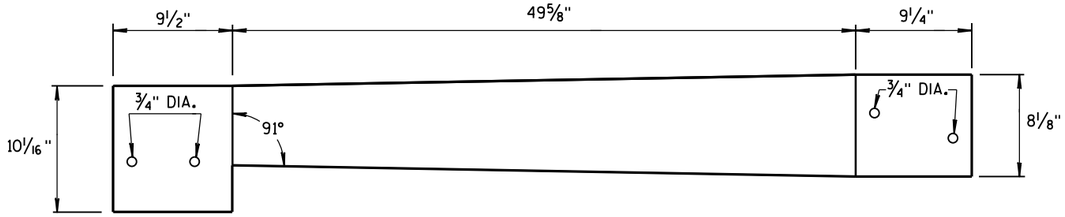
GUSSETS

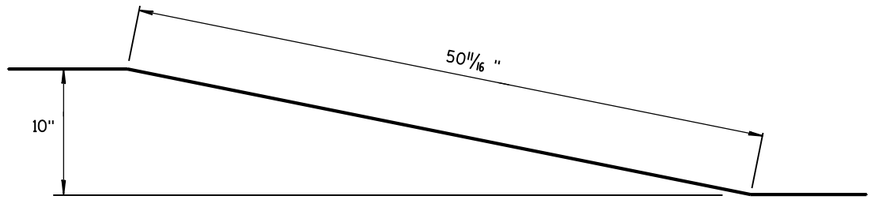


END PLATE

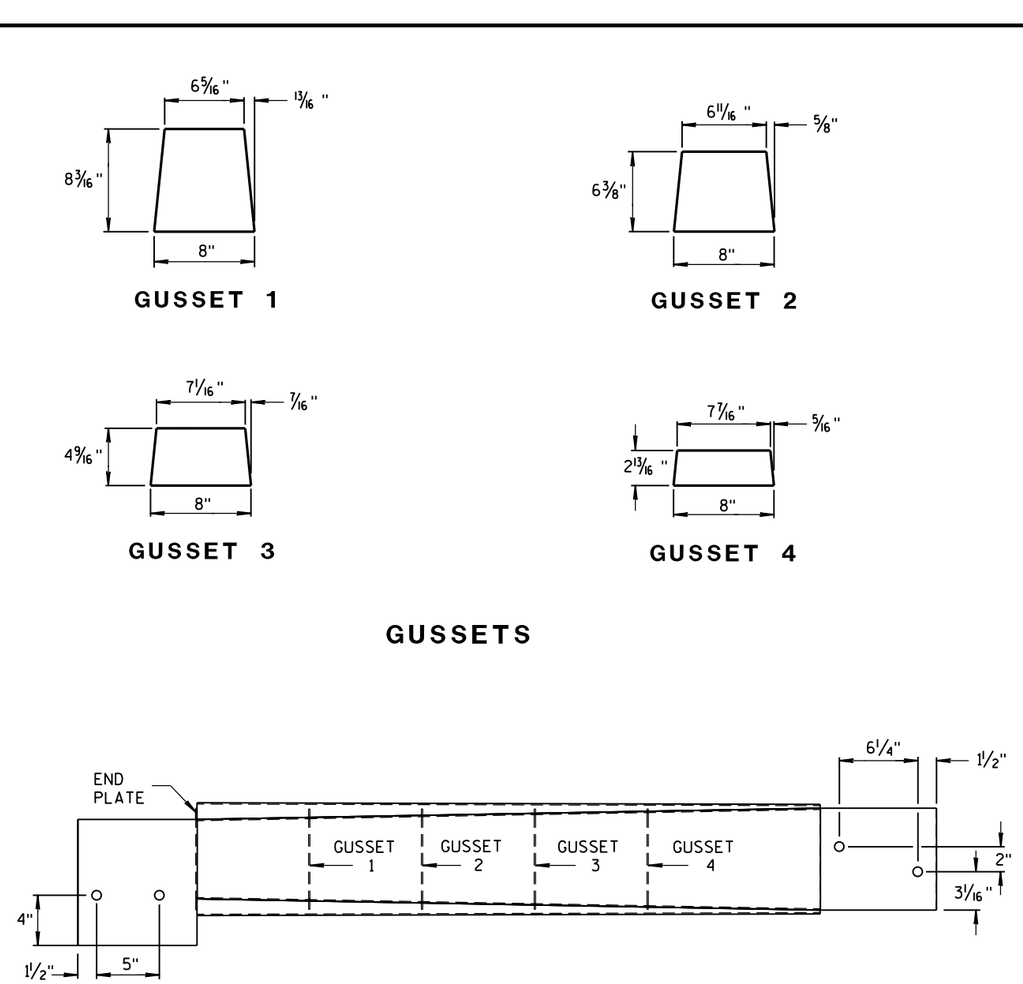


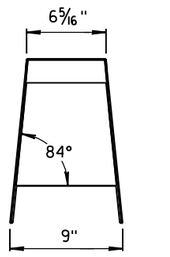
SIDE PLATE





TOP PLATE





SECTION C-C

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.

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.

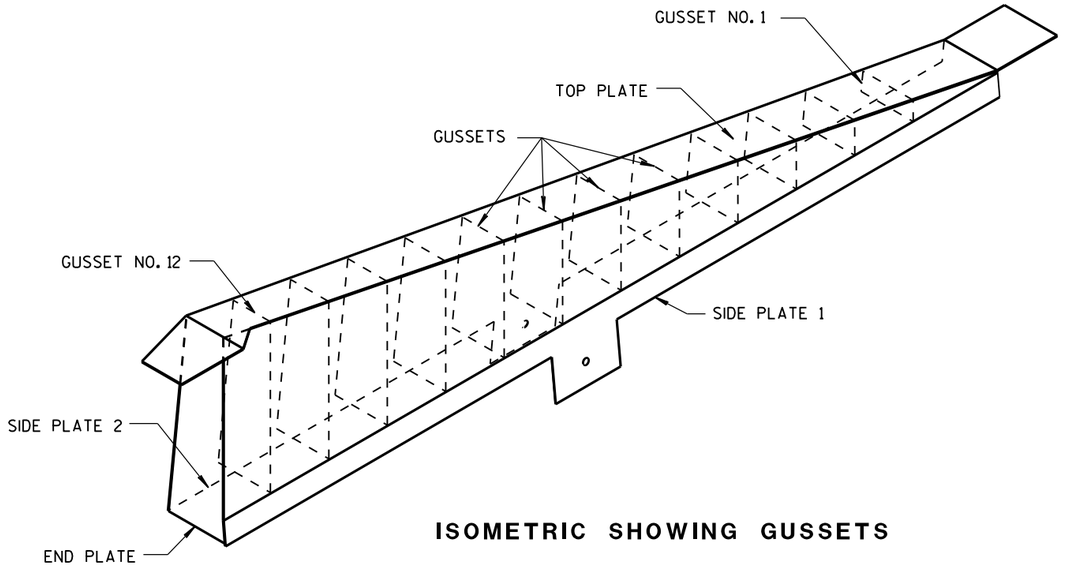
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

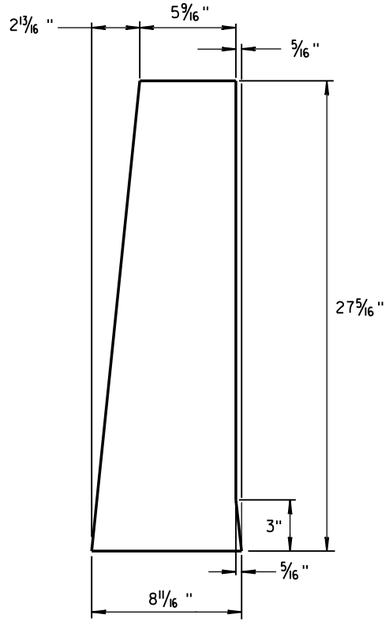
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

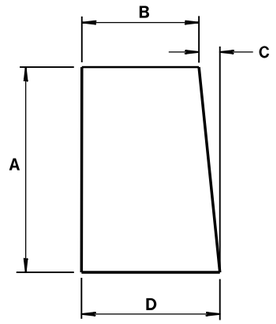


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



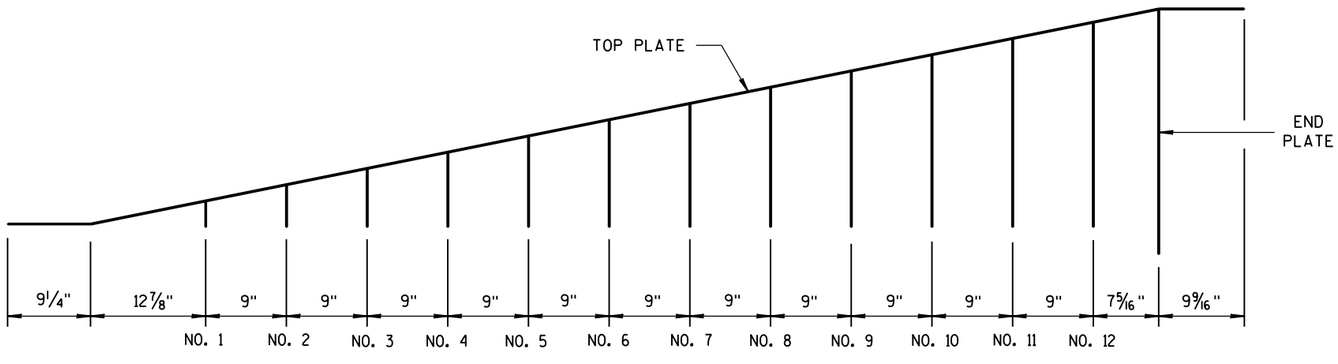
GUSSETS 1 - 12

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

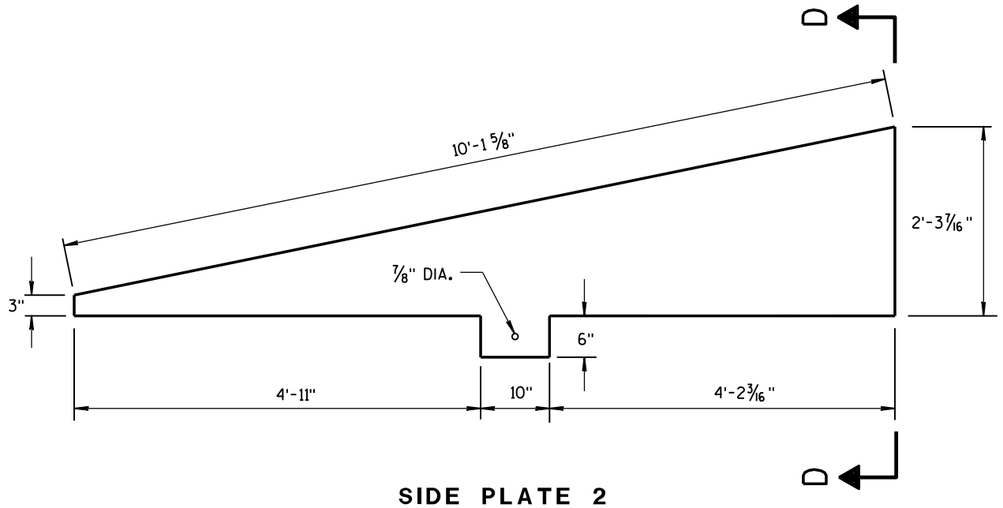
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

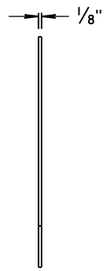
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

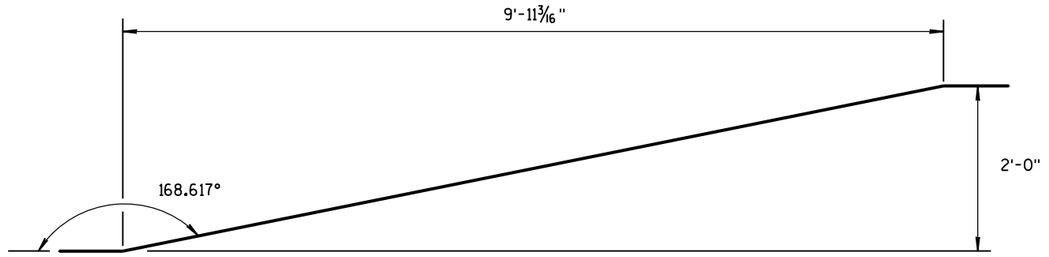
S.D.D. 14 B 7-14g



SIDE PLATE 2

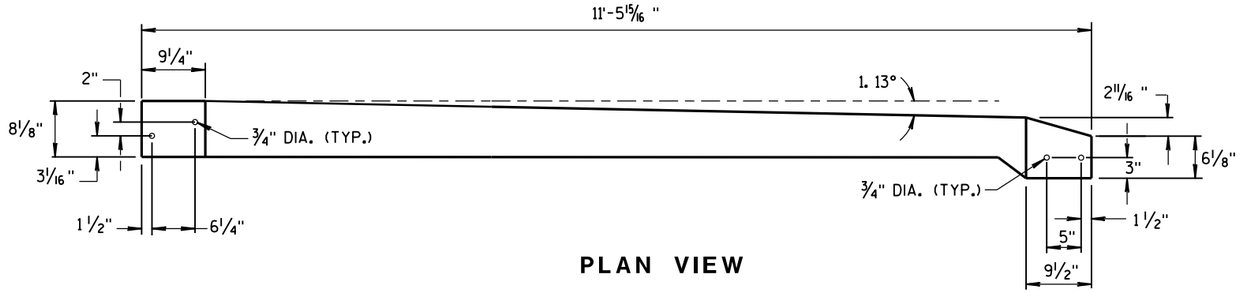


END VIEW



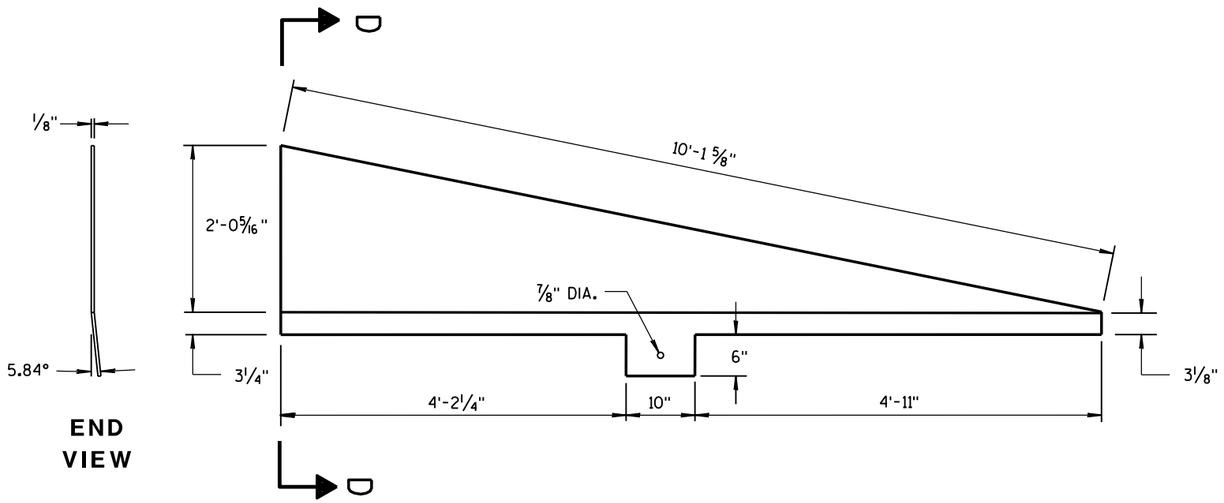
SIDE VIEW

TOP PLATE



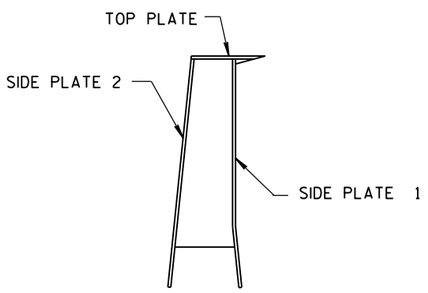
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA

6

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

6

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

GENERAL NOTES

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

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

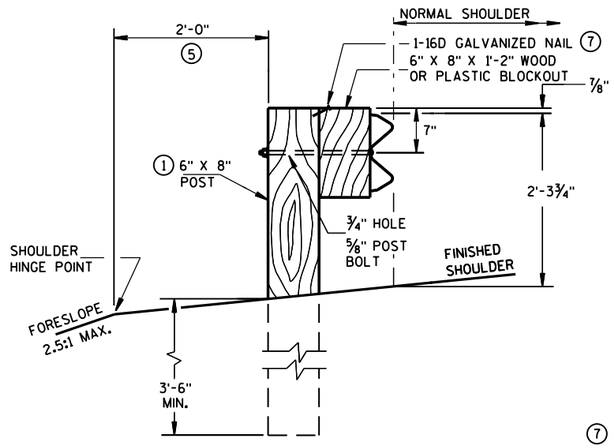
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

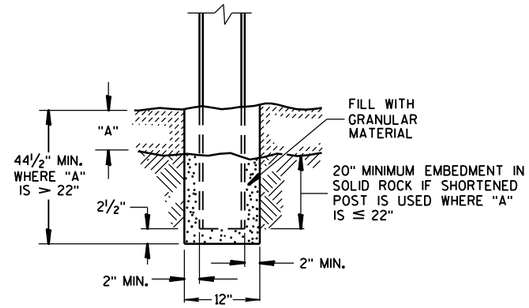
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

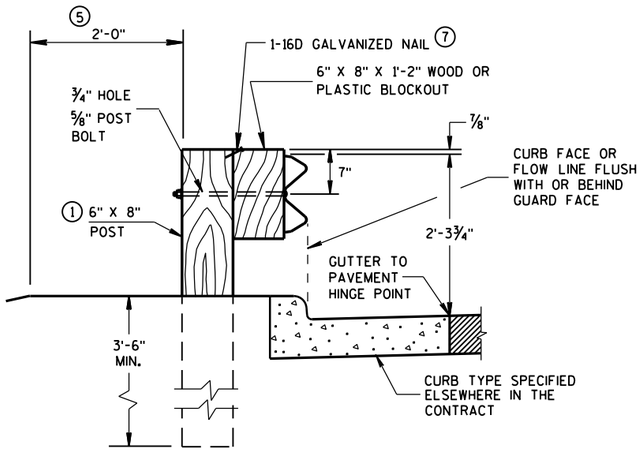
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



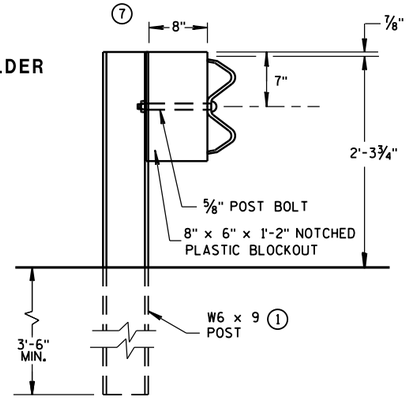
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



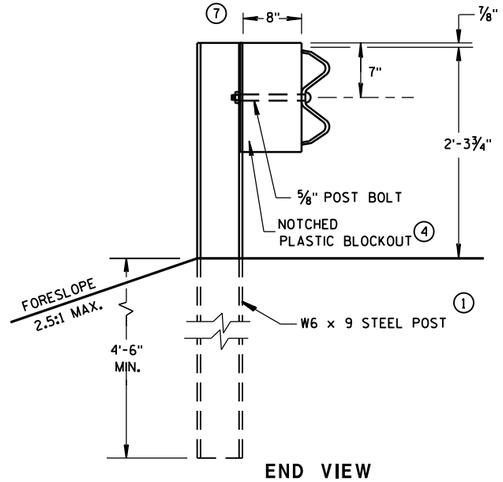
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



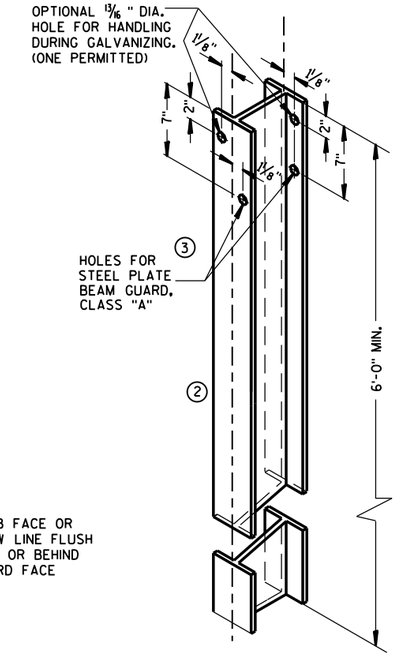
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION

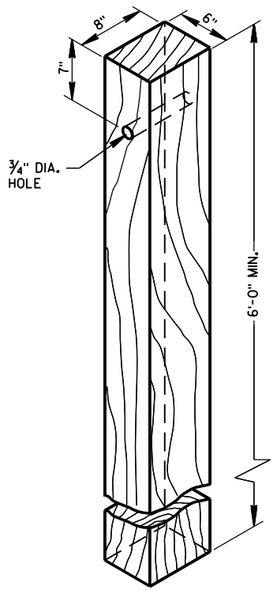


END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

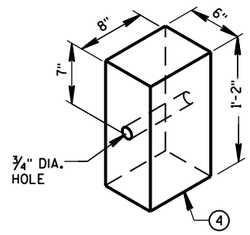


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

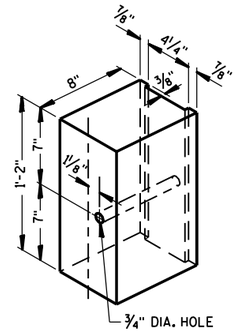
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



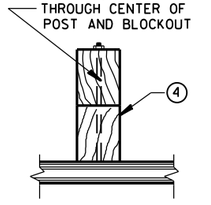
WOOD POST
(6"X8") NOMINAL



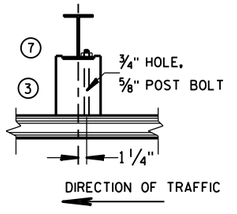
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



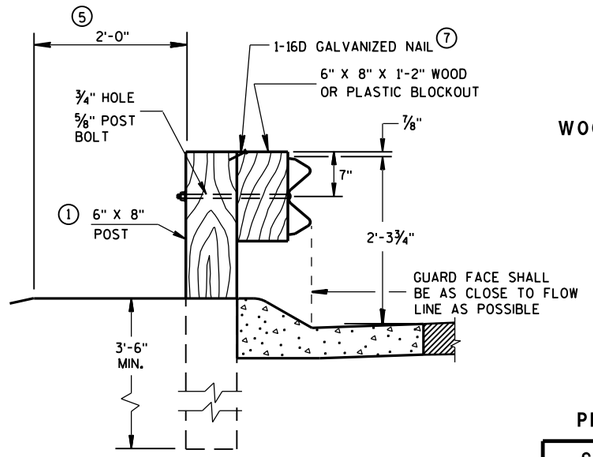
TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 35

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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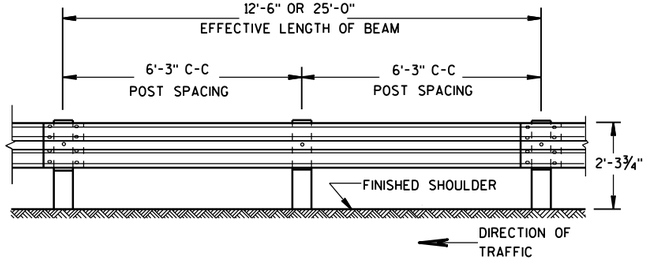
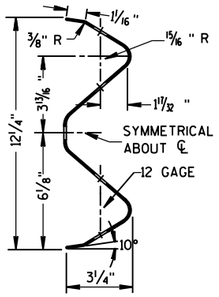
S.D.D. 14 B 15-8a

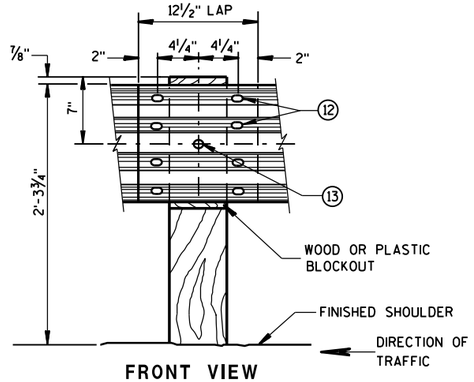


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

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

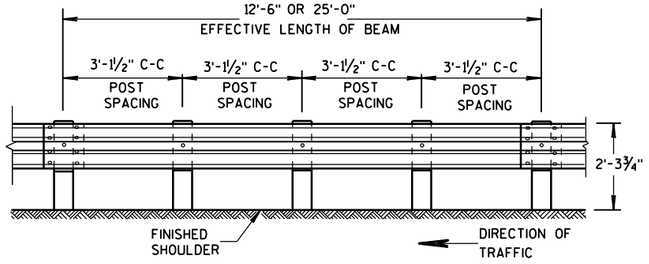
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

(11) PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

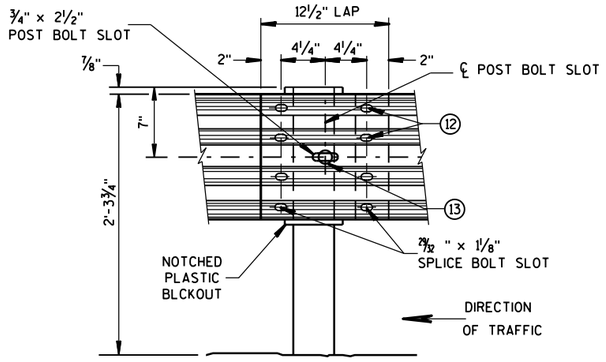
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.



FRONT VIEW

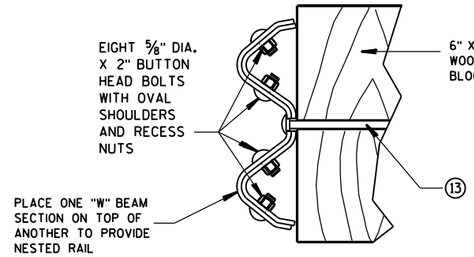
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

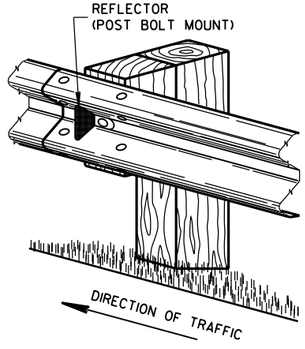


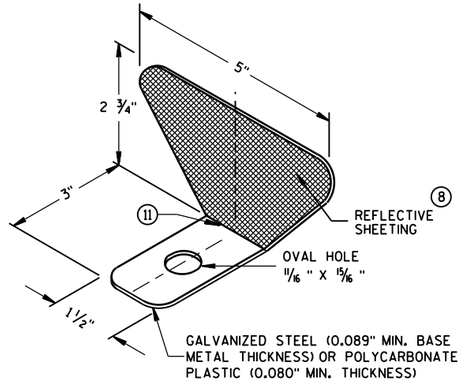
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING (9)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (10)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 (11)	3
	> 200'	100' C-C	2	





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (8)

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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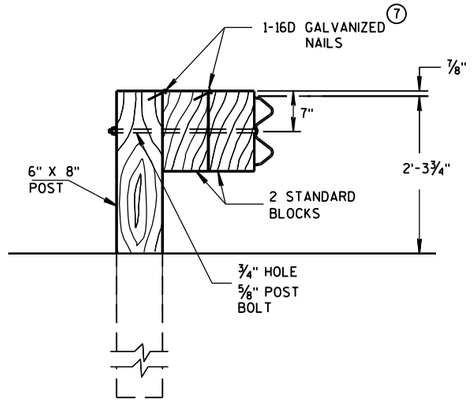
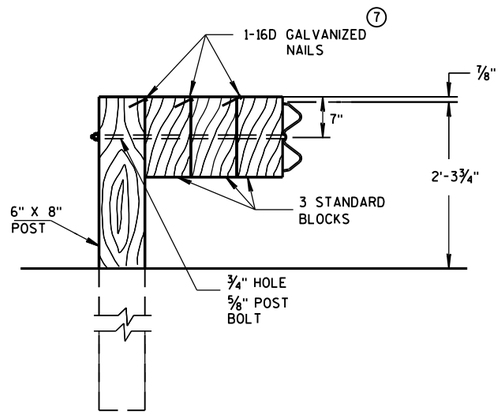
S.D.D. 14 B 15-8b



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

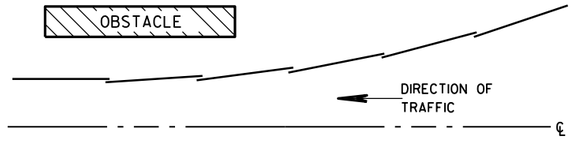


DETAIL FOR TRIPLE BLOCKS

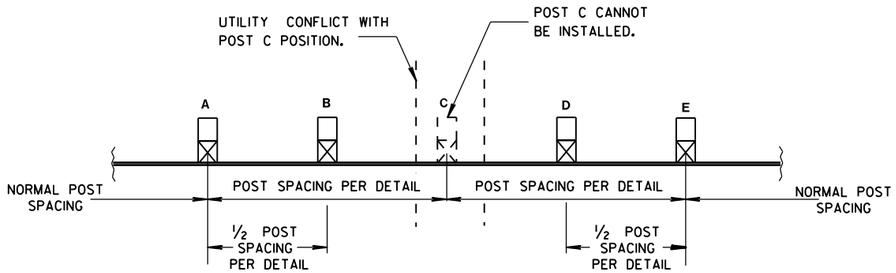
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

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



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 14 B 15-8c

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
(2)	**	STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
(3)	2	SOIL PLATE: 2'-0" X 1'-6" X ¼" **
(4)	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
(5)	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
(6)	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
(7)	1	BEARING PLATE
(8)	1	BCT CABLE ASSEMBLY
(9)	1	CABLE ANCHOR BOX
(10)	1	STRUT & YOKE
(11)	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
(12)	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
(13)	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
(14)	1	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(15)	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ø X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

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

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

(C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

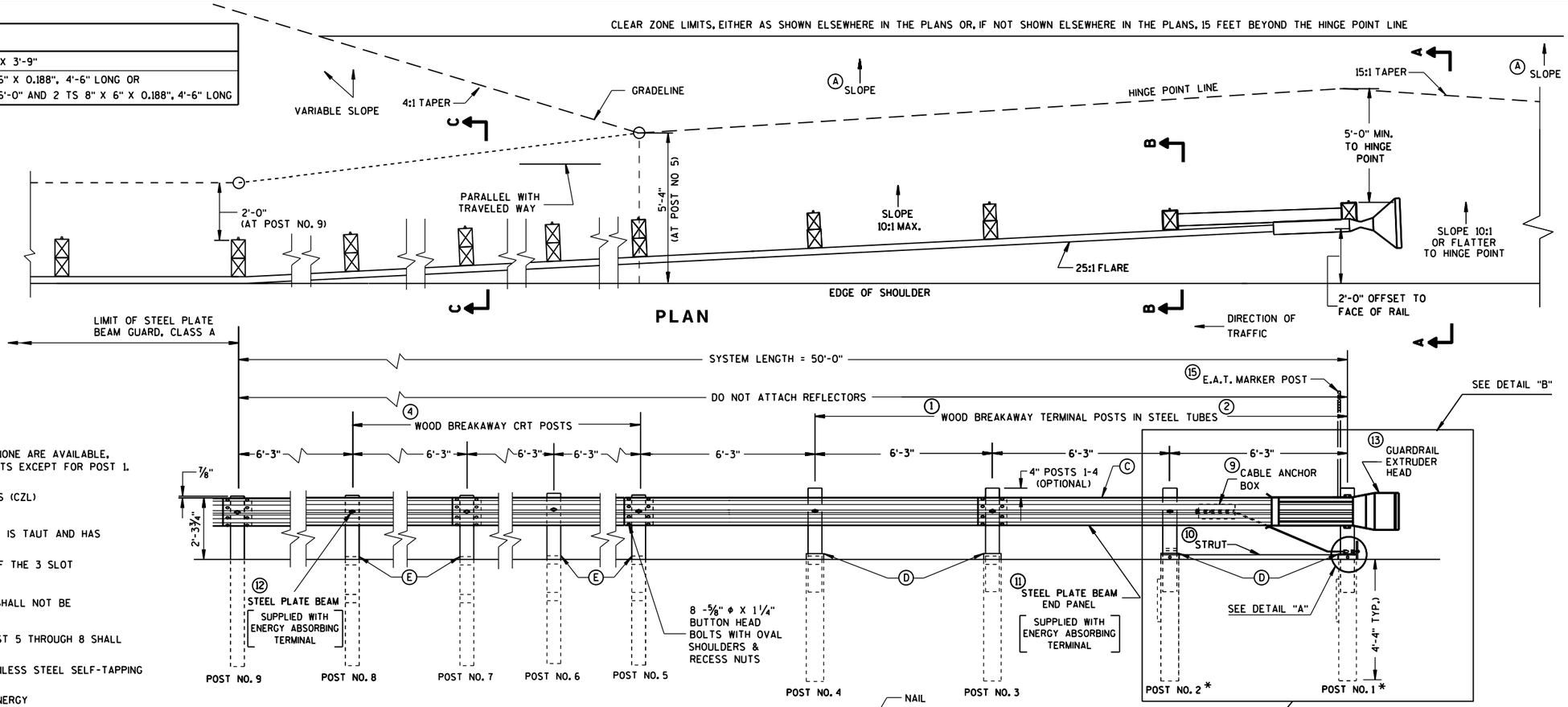
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

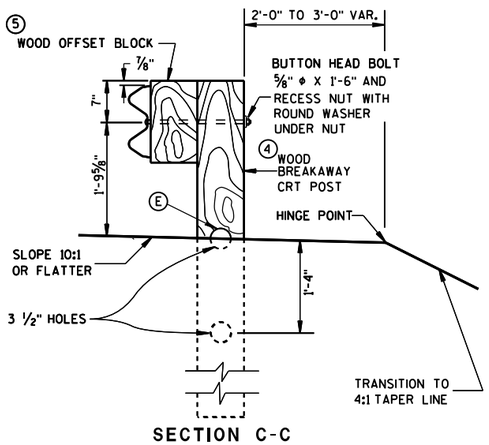
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

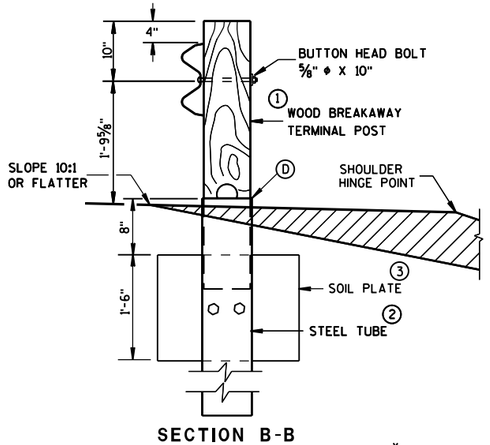
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.

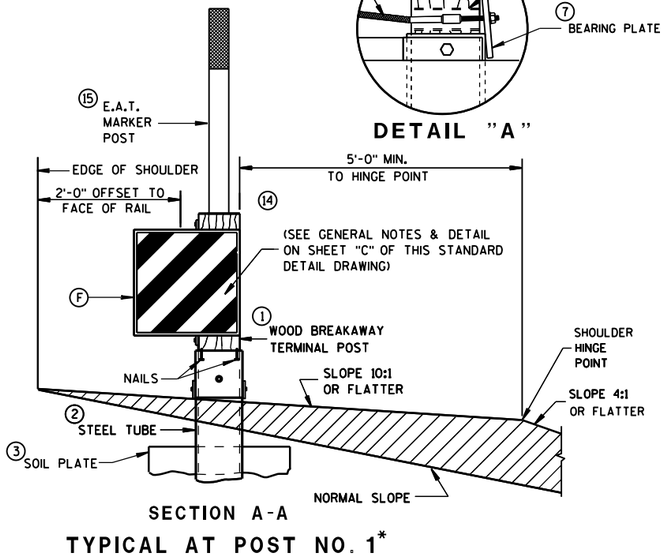




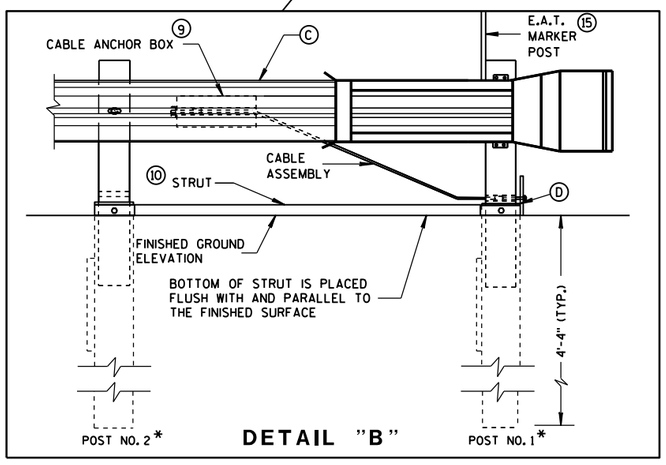
SECTION C-C
TYPICAL AT POST NOS. 6, 8



SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "B"

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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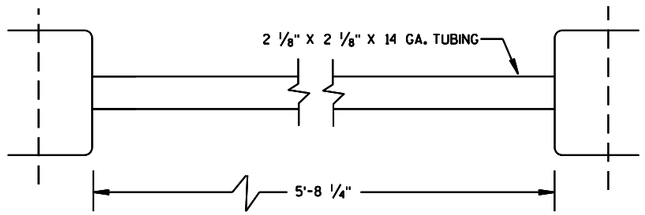
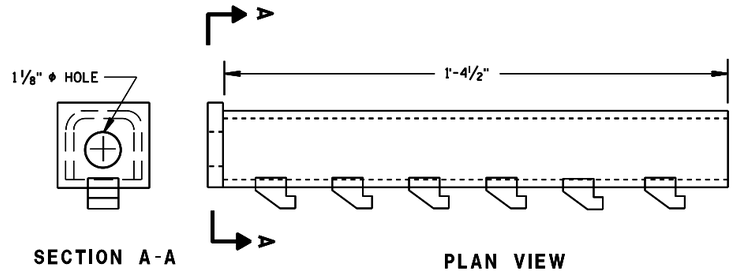
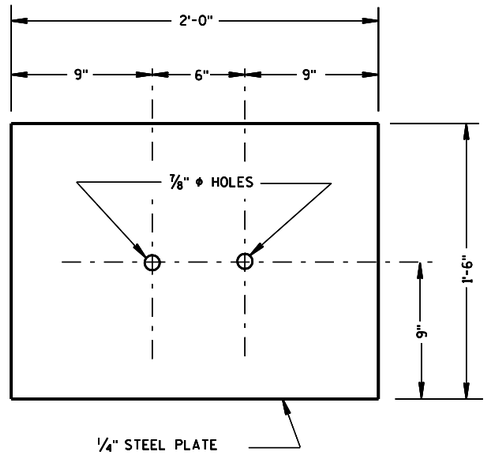


⑩ STRUT DETAIL (SKT-350)

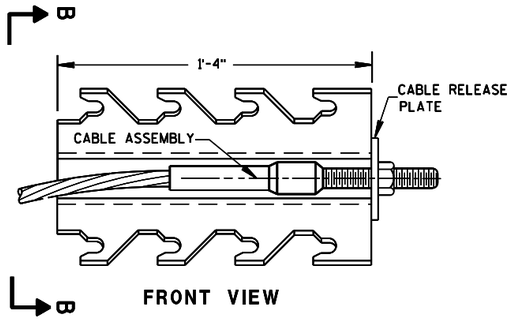


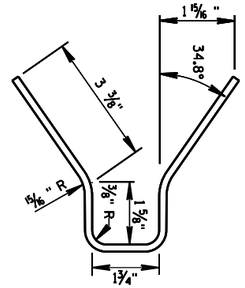
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



③ SOIL PLATE

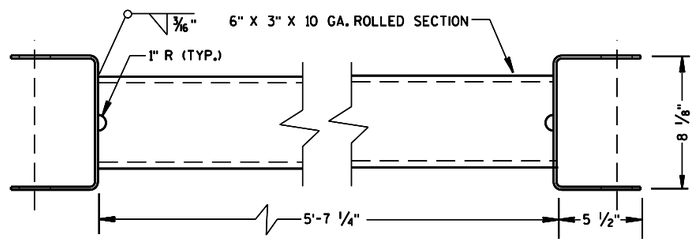
(SKT-350, ET-2000/ET-2000 PLUS)





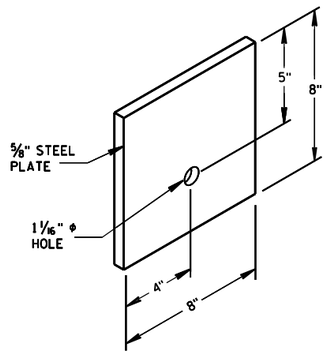
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE

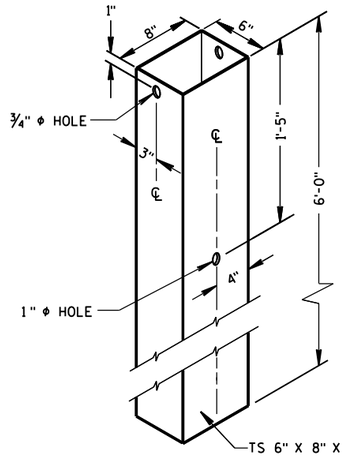
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

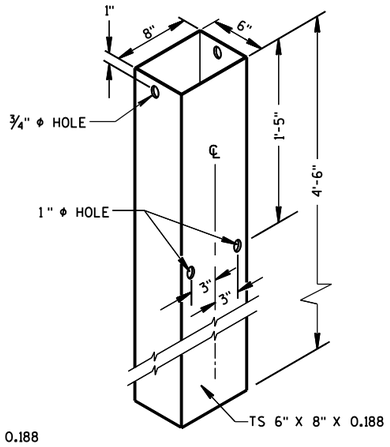
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

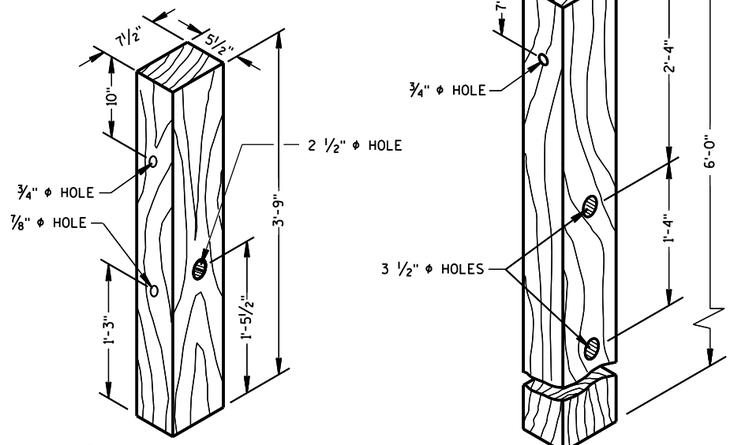
S.D.D. 14 B 24-8b



② 72" STEEL TUBE
(POSTS NO. 1-4



② 54" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST
(POSTS NO. 1-4

④ CRT POST
(POSTS NO'S 5-8

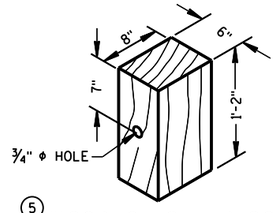
WOOD BREAKAWAY POSTS

GENERAL NOTES

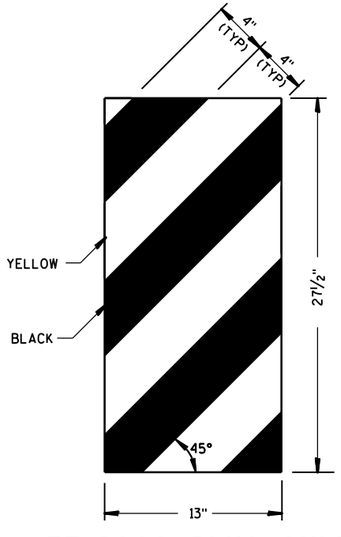
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

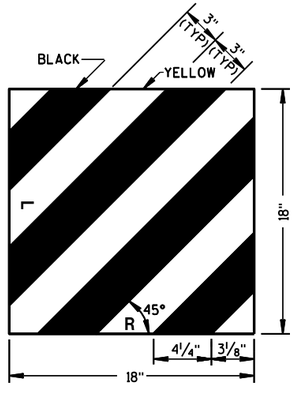
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

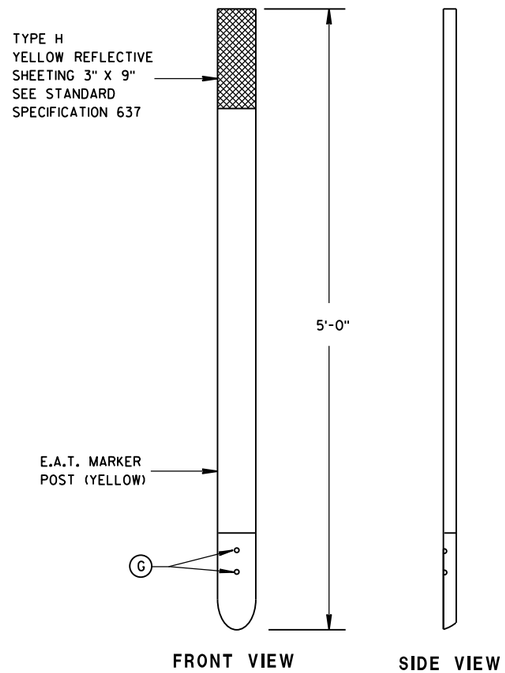


ET-2000 PLUS ONLY



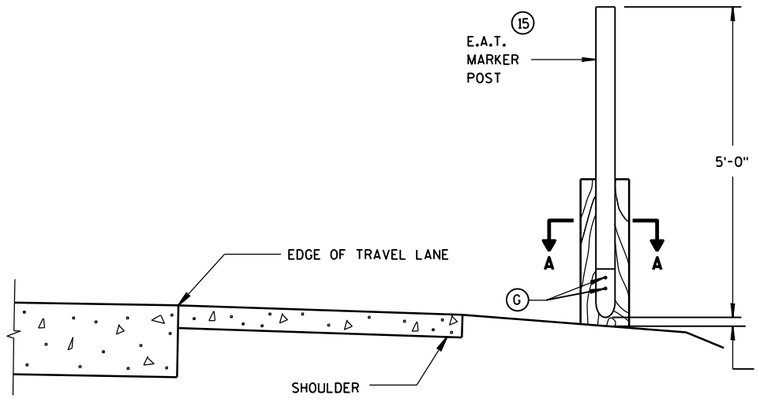
ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS

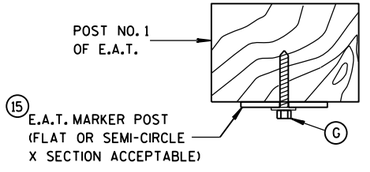


FRONT VIEW SIDE VIEW

⑮ E.A.T. MARKER POST



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

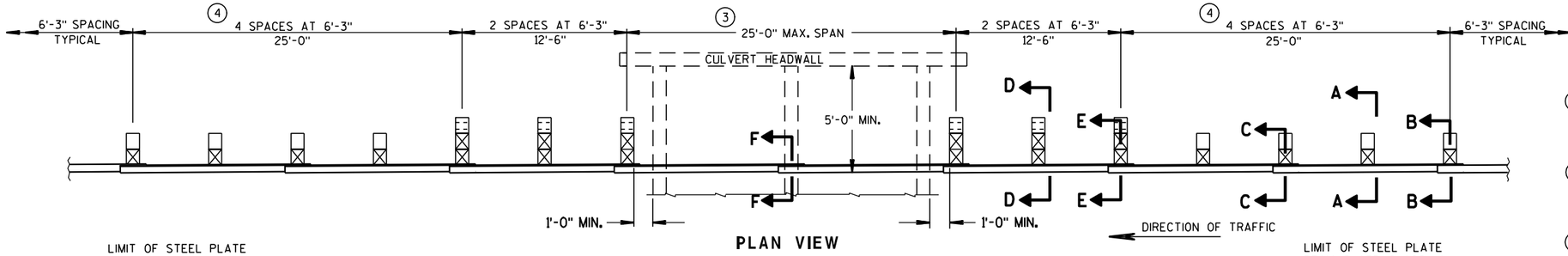
APPROVED
June 2014 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS ENGINEER
FHWA

6

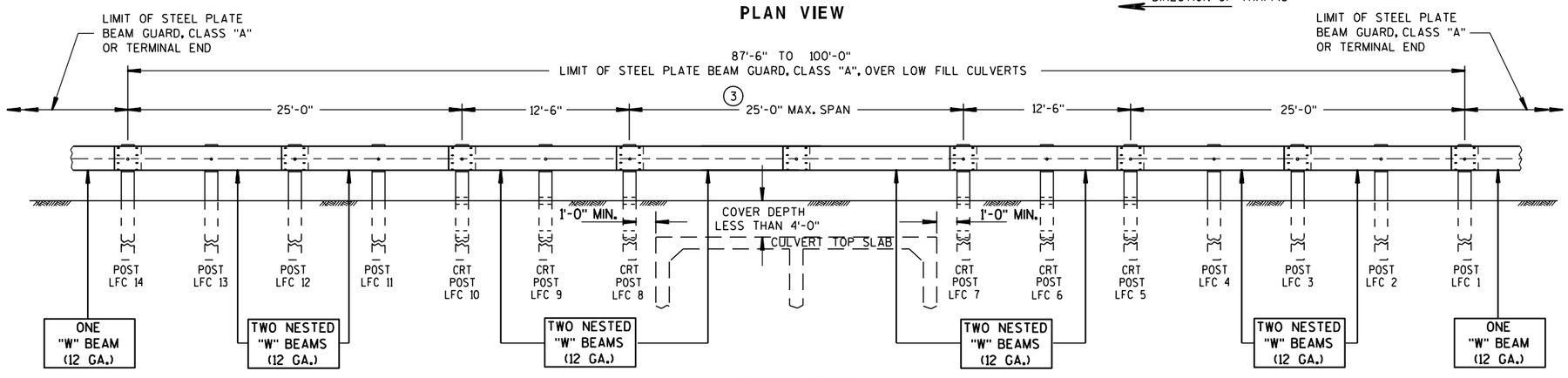
S.D.D. 14 B 24-8c

6

S.D.D. 14 B 24-8c



PLAN VIEW



FRONT VIEW

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD OVER LOW FILL CULVERTS

GENERAL NOTES

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

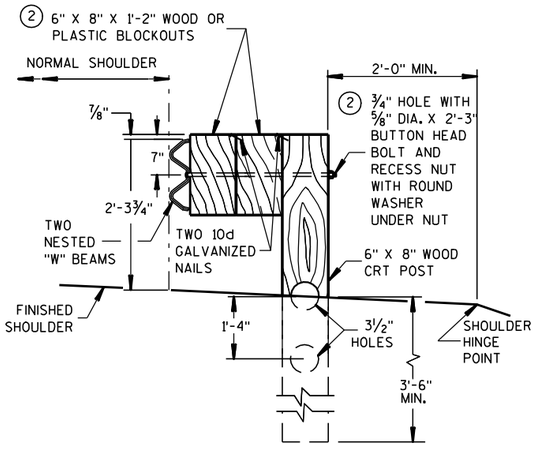
(1) MAINTAIN THE NESTING OF EACH NESTED PAIR OF "W" BEAM SECTIONS THROUGH SPLICES. ORIENTATE NESTED "W" BEAM SPLICES IN THE DIRECTION OF TRAFFIC AS THE PLAN VIEW SHOWS. SEE S.D.D. 14 B 15 FOR SPLICE INSTALLATION.

(2) THE CONTRACTOR MAY USE APPROVED PLASTIC BLOCKOUTS IN LIEU OF WOOD BLOCKOUTS. SEE S.D.D. 14 B 15 FOR TYPICAL BLOCKOUT, SPLICE AND REFLECTOR INSTALLATIONS. USE BOLT SIZES AND LENGTHS AS SHOWN ON THIS DETAIL.

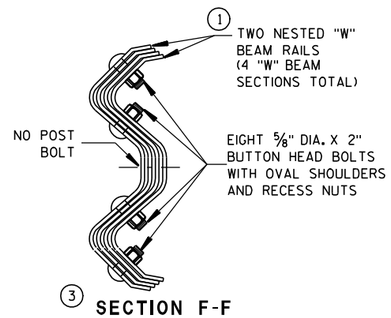
(3) PROVIDE 12'-6", 18'-9" AND 25'-0" SPANS ONLY. USE A MAXIMUM OF ONE SPLICE LOCATED ANYWHERE WITHIN THE SPAN SECTION. LOCATE ALL OTHER SPLICES AT BEAM GUARD POSTS.

(4) IN THE FIRST AND LAST 25 FOOT SECTIONS (POSTS LFC 1-4 & LFC 11-14), THE CONTRACTOR MAY USE W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS OR 6" X 8" WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS. DO NOT MIX STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS AND WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS IN THE SAME INSTALLATION.

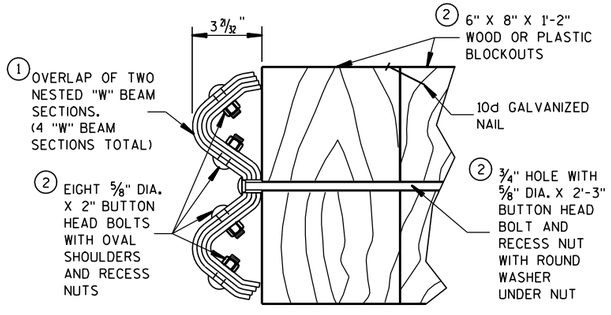
(5) WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK, THE PLAN TYPICAL SECTIONS OR DETAILS MAY SHOW, OR THE ENGINEER MAY ALLOW, THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. BUILD AS THE PLAN SHOWS OR ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST SOIL DEPTH TO 4'-6" OR MORE.



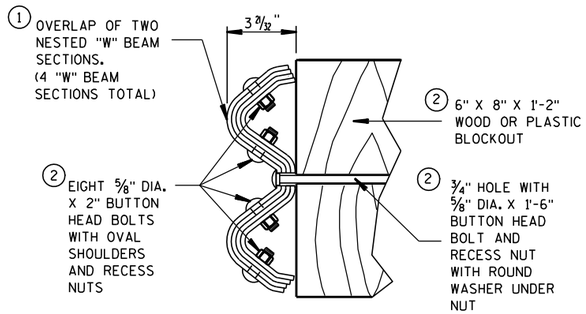
SECTION D-D
TYPICAL CRT POST LFC 6 AND 9



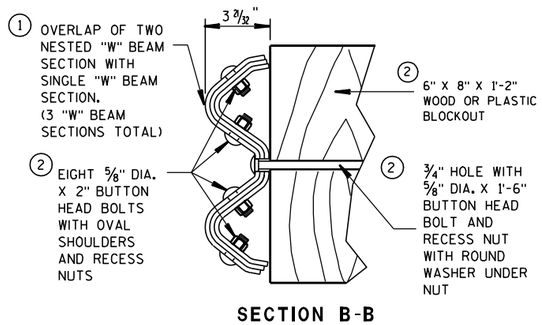
SECTION F-F
BEAM SPLICE IN SPAN OVER CULVERT



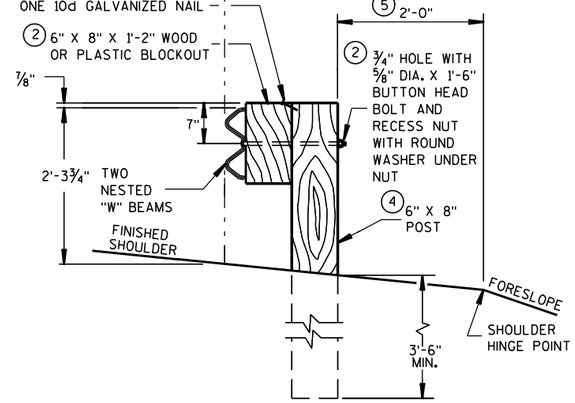
SECTION E-E
TYPICAL CRT POST LFC 5, 7, 8 AND 10



SECTION C-C
TYPICAL AT POSTS LFC 3 AND 12



SECTION B-B
TYPICAL AT POSTS LFC 1 AND 14



SECTION A-A
TYPICAL AT POST LFC 2,4,11,13

STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/8/00 DATE
/S/ John Have... CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 25-1

GENERAL NOTES

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

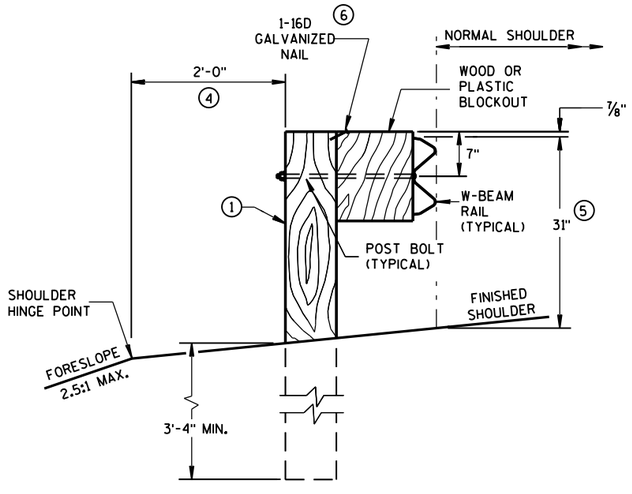
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

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

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

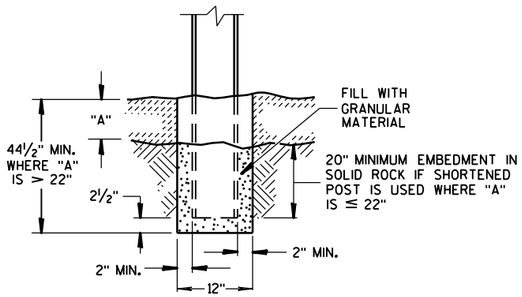
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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



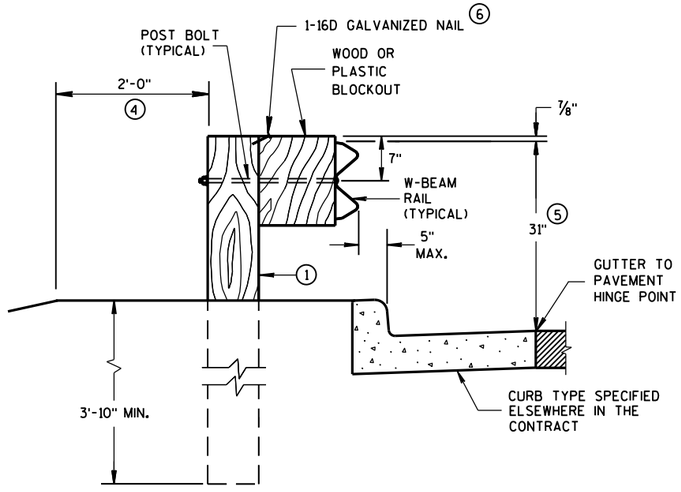
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



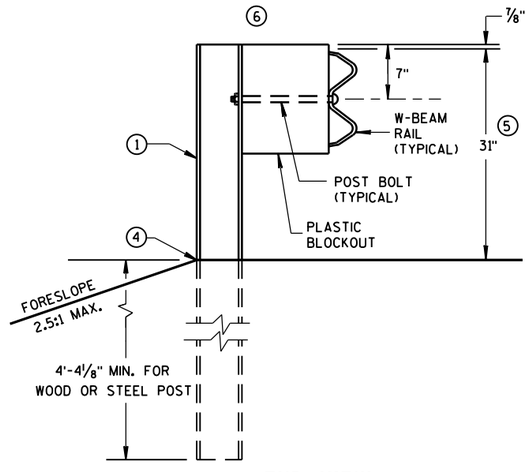
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



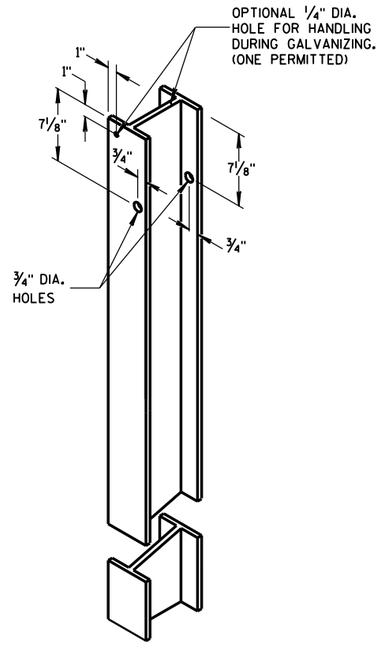
END VIEW

LOCATED ALONG A CURBED ROADWAY

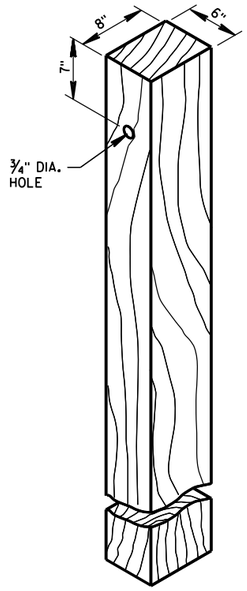


END VIEW

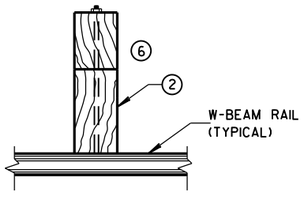
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



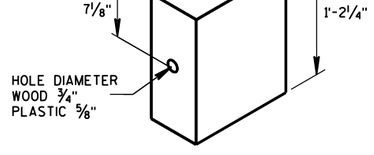
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



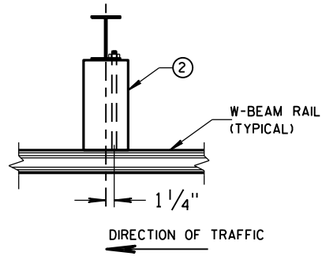
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

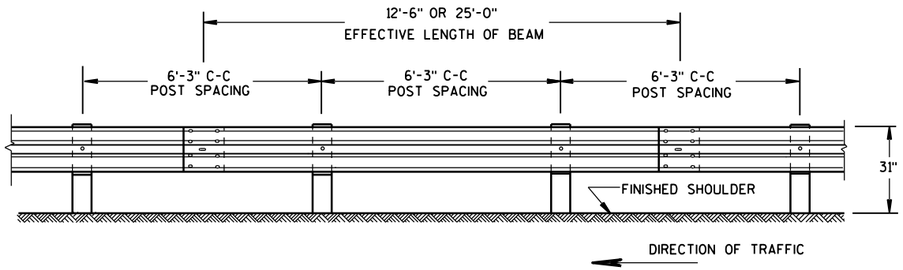


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

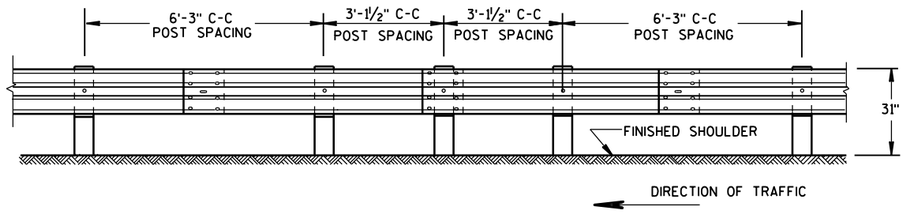
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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



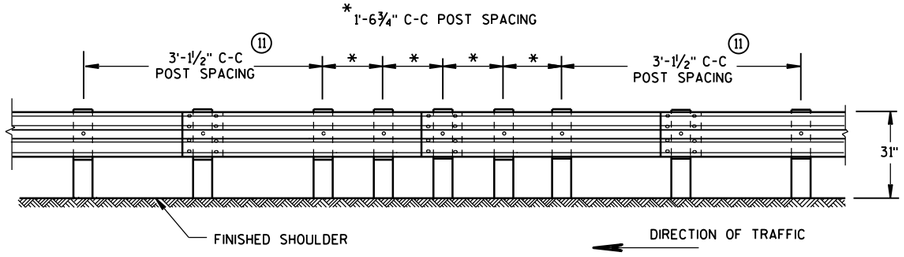
FRONT VIEW

POST SPACING STANDARD INSTALLATION



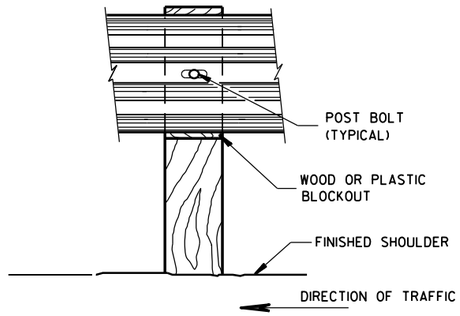
FRONT VIEW

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

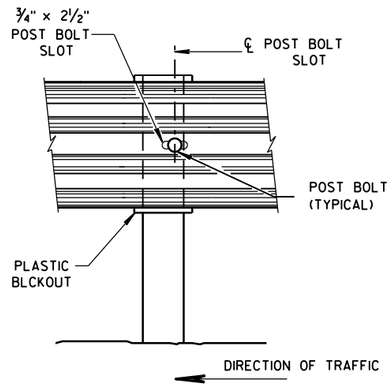


FRONT VIEW

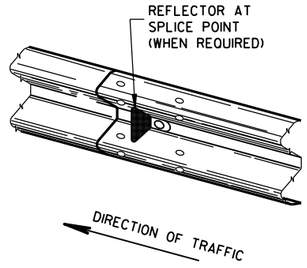
QUARTER POST SPACING (QS)

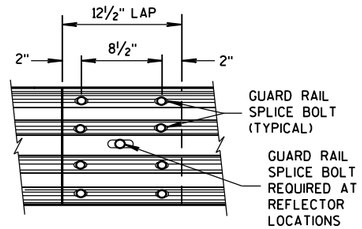


FRONT VIEW AT WOOD POST

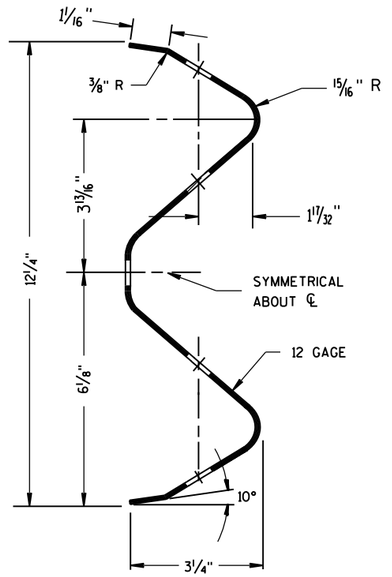


FRONT VIEW AT STEEL POST

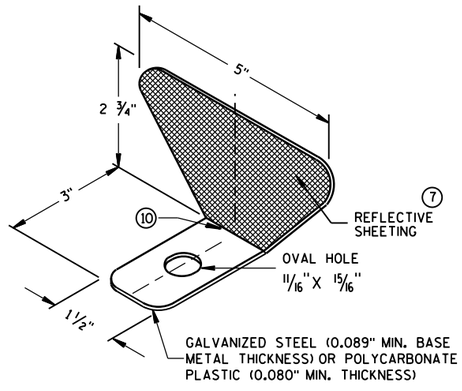




FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

GENERAL NOTES

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

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

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

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

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

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

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

REFLECTOR SPACING ⑧

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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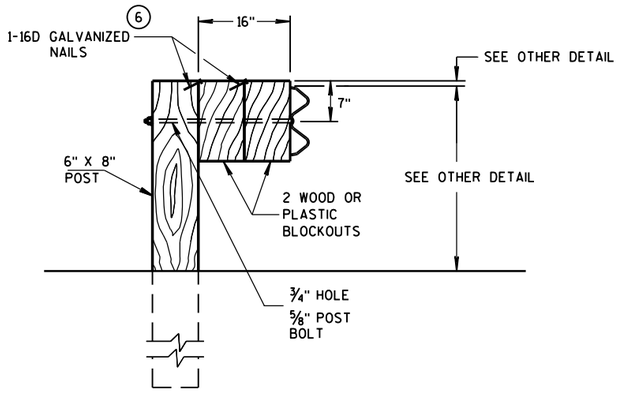
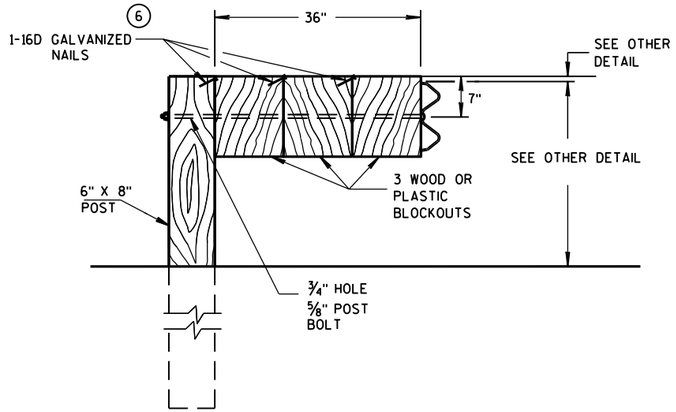
S.D.D. 14 B 42-3b



DETAIL FOR 16" BLOCKOUT DEPTH

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

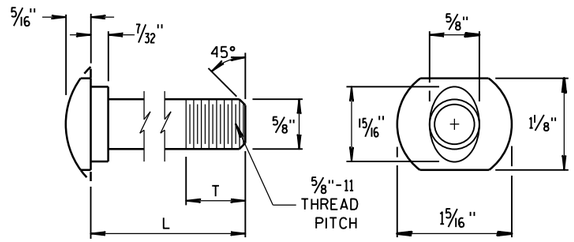


DETAIL FOR 36" BLOCKOUT DEPTH

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

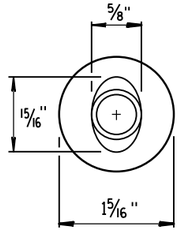
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

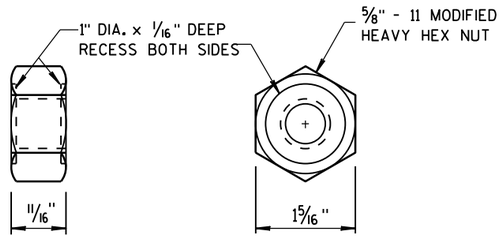


POST BOLT TABLE

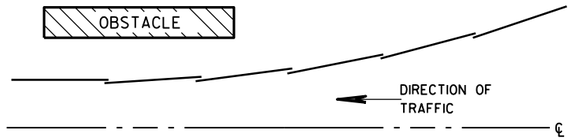
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

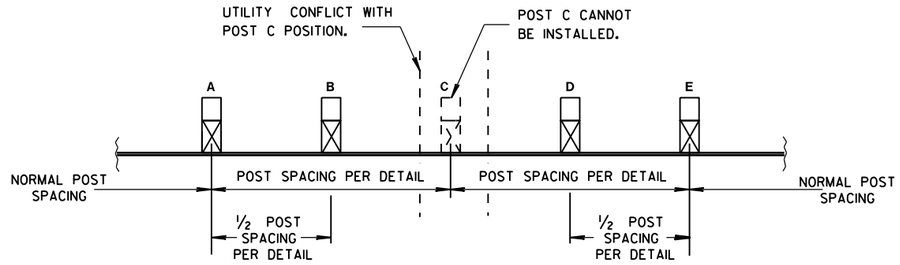


POST BOLT AND RECESS NUT

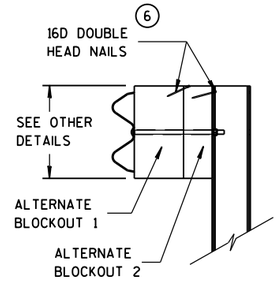


PLAN VIEW

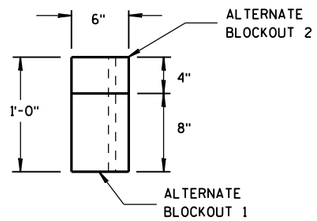
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS (44 ENT
ENGINEER
FHWA

6

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

6

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

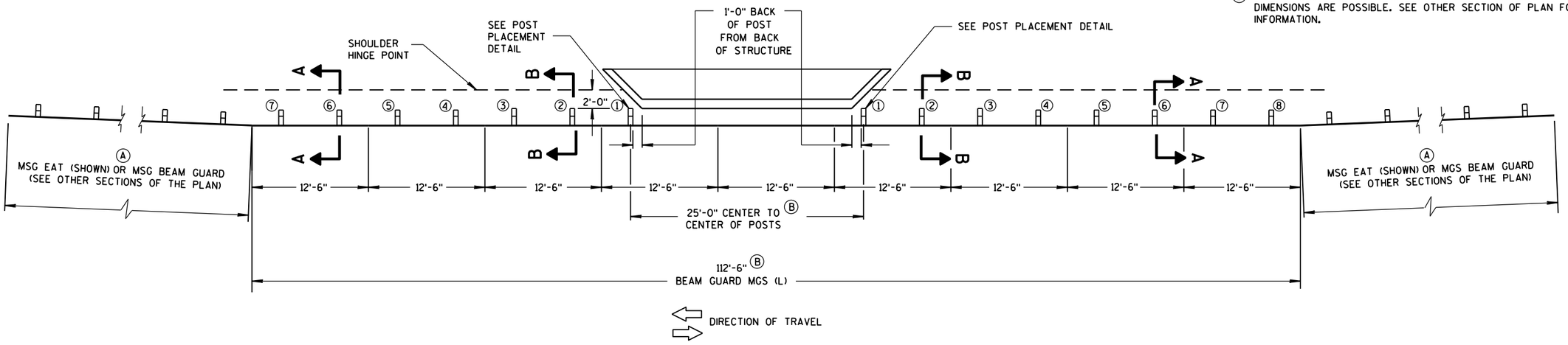
GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

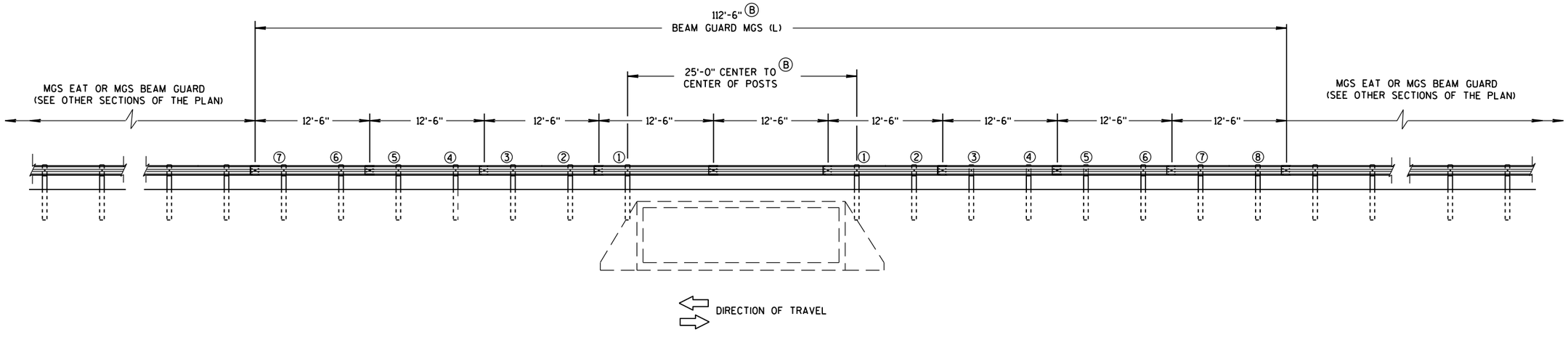
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
STATE OF WISCONSIN DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 43-3a

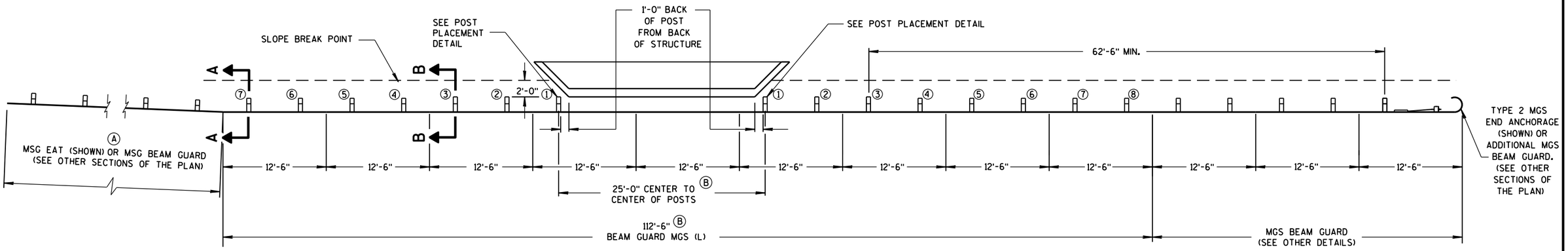
GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

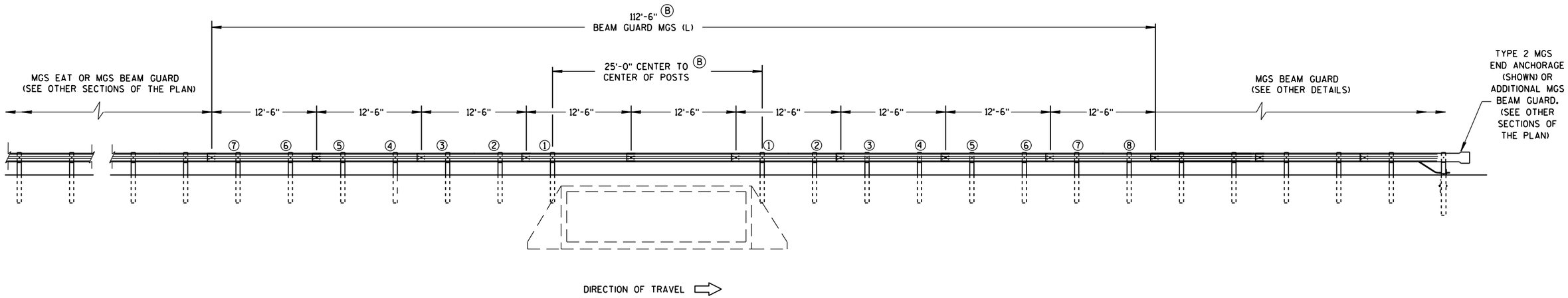
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW

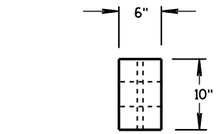


ELEVATION VIEW

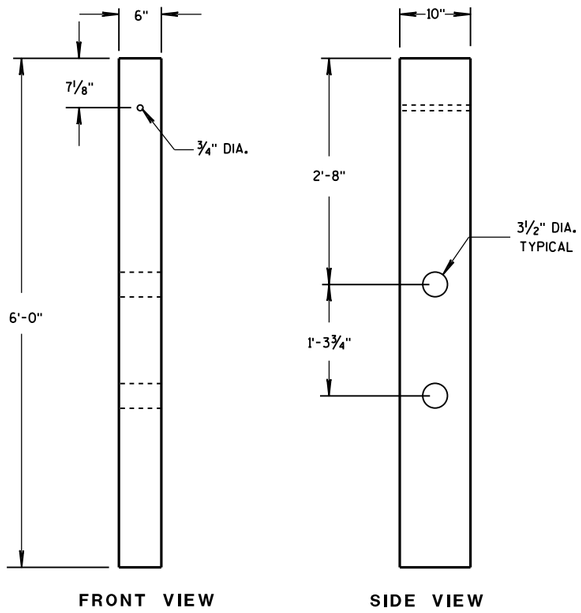
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPOI	46

6
S.D.D. 14 B 43-3b

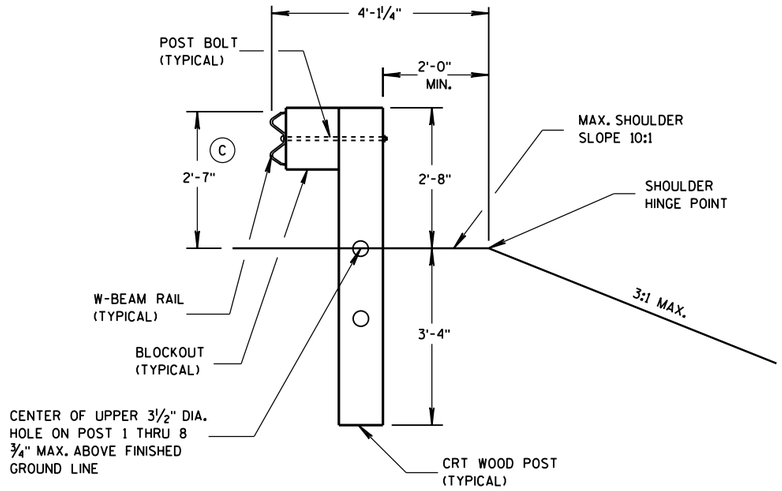


PLAN VIEW



FRONT VIEW SIDE VIEW

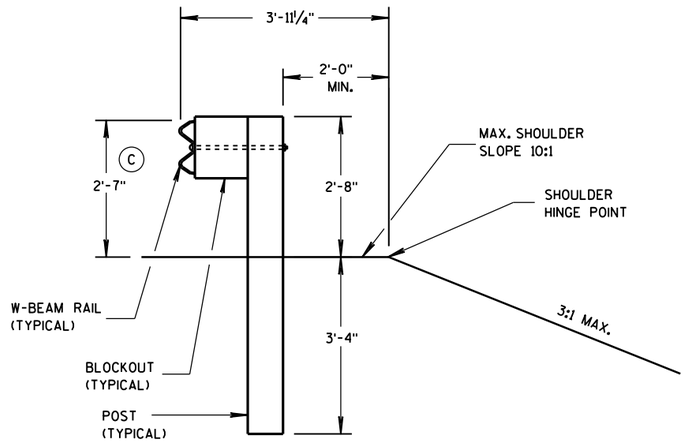
CRT WOOD POST



SECTION B-B

POSTS NO. 1-3

SEE OTHER DETAILS



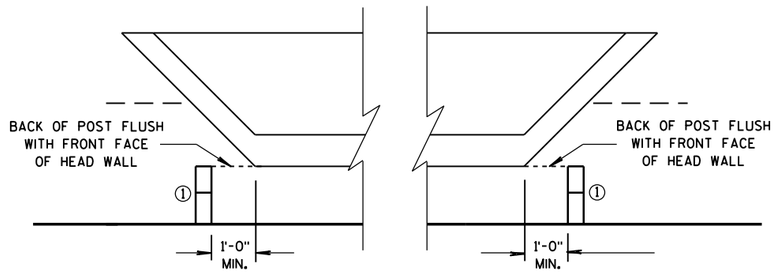
SECTION A-A

POSTS NO. 4-8

SEE OTHER DETAILS

GENERAL NOTES

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



POST PLACEMENT DETAIL

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/10/2013
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

6
S.D.D. 14 B 43-3c

GENERAL NOTES

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

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

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

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

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

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

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

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

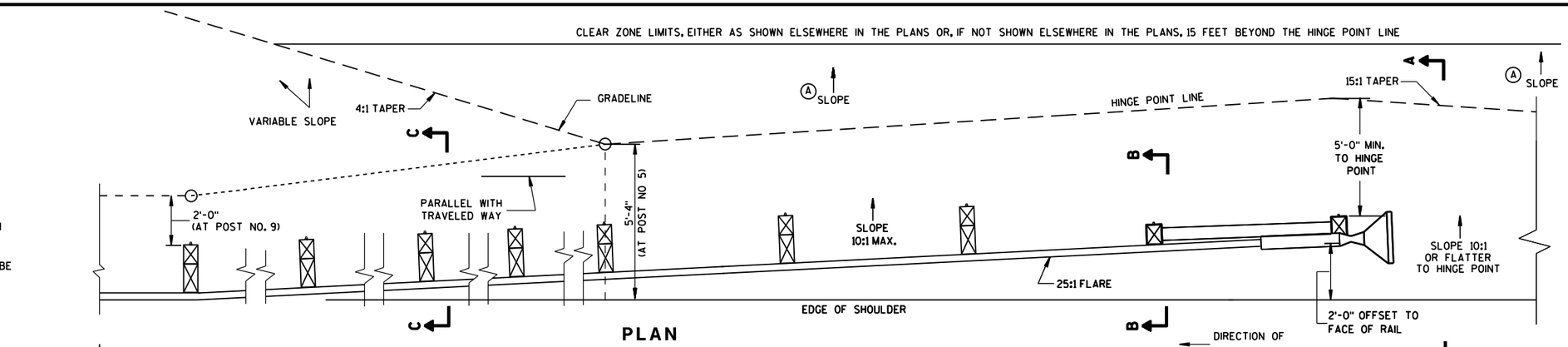
SEE SDD 14B42 FOR MORE INFORMATION.

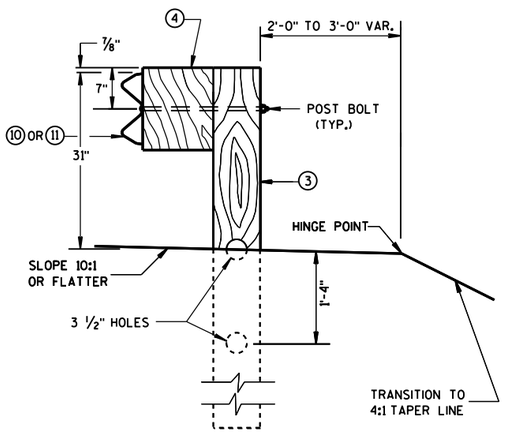
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

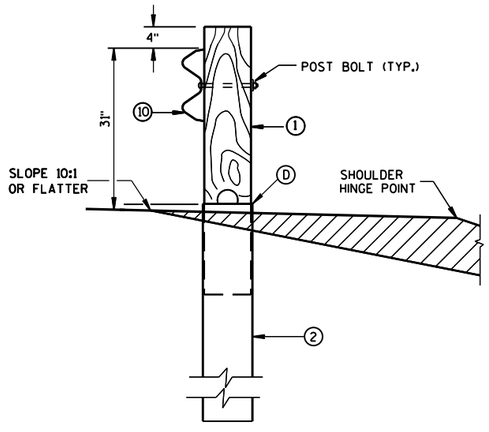
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

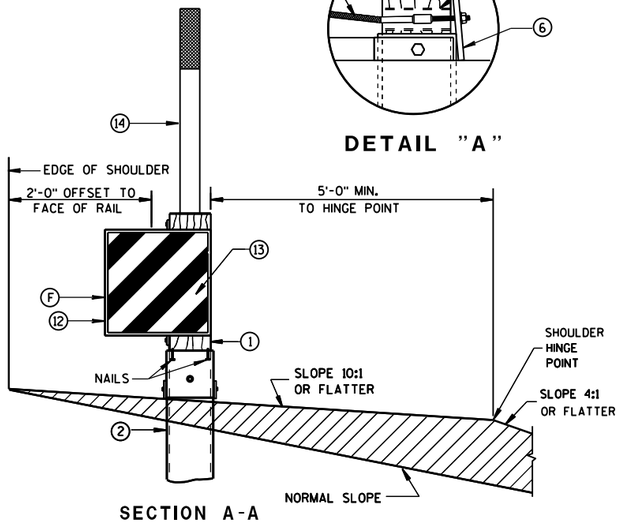




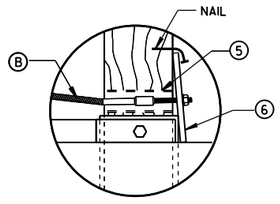
SECTION C-C
TYPICAL AT POST NOS. 3-9



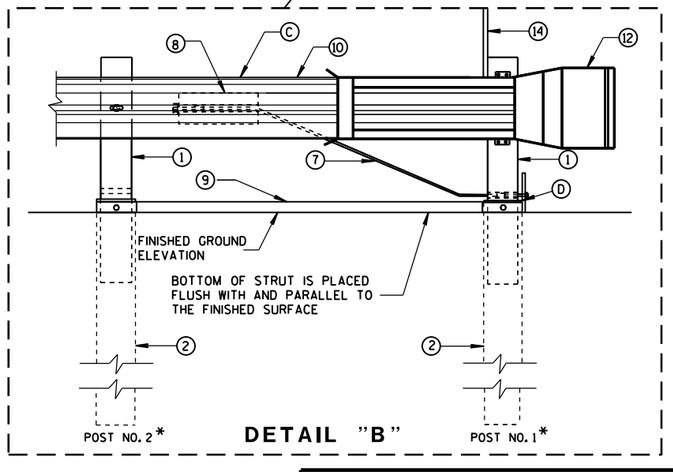
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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

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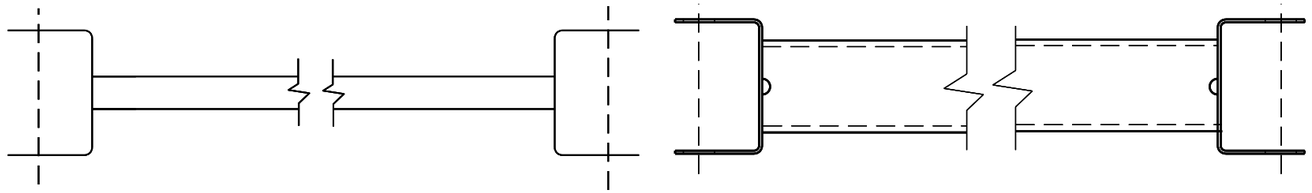
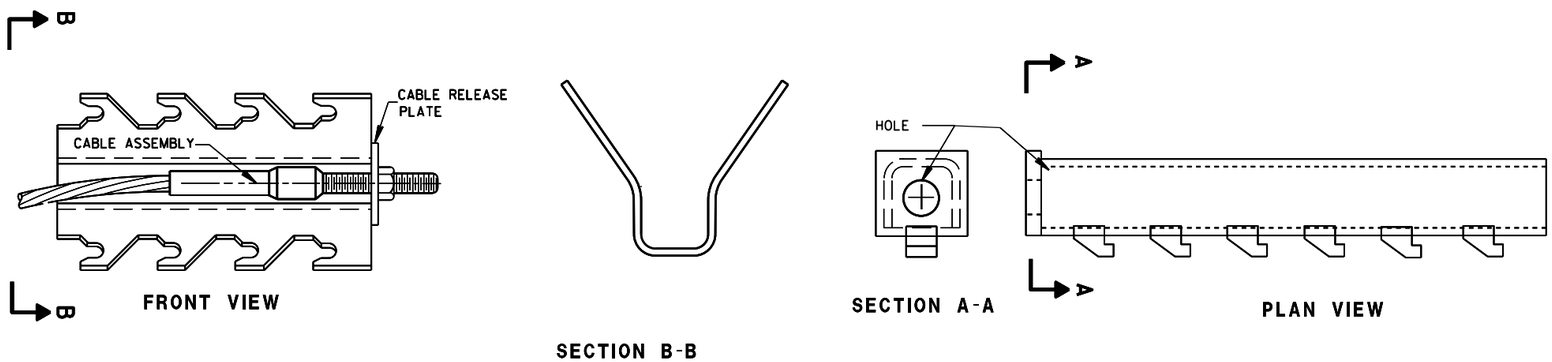


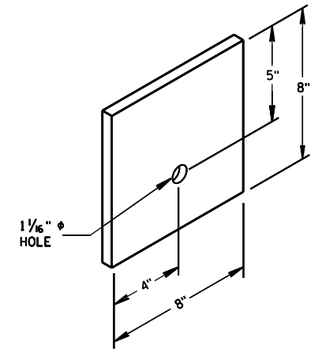
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



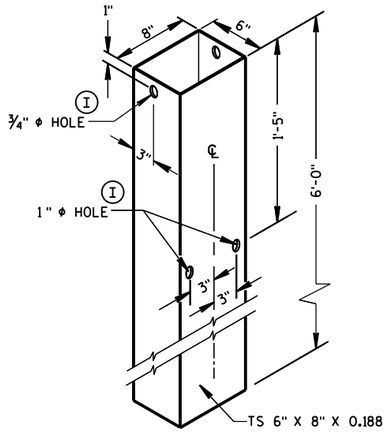
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

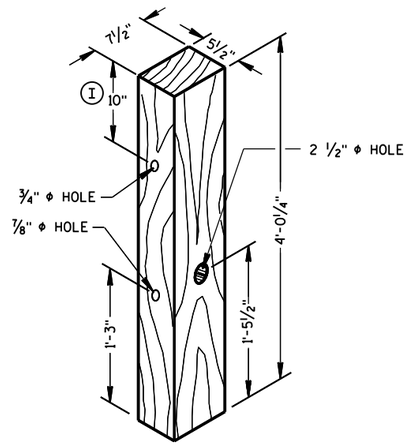
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

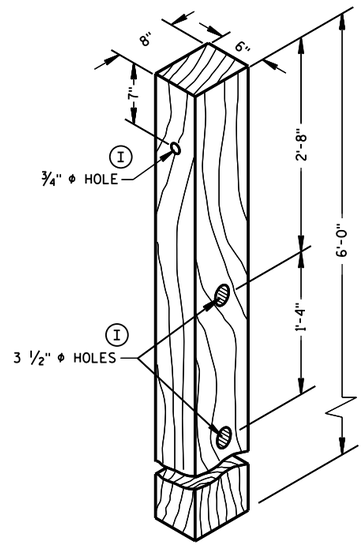


FOUNDATION TUBE (2)



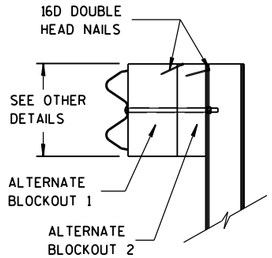
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

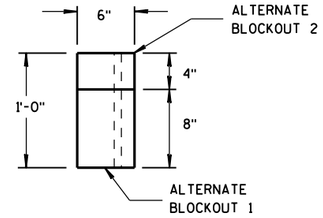


POSTS NUMBER 3-9

WOOD CRT POST (3)

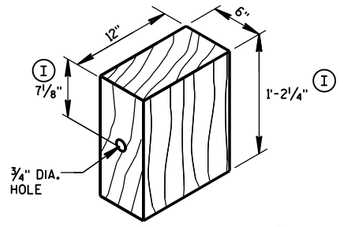


SIDE VIEW



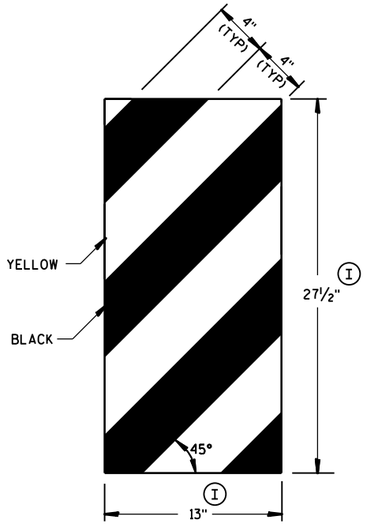
TOP VIEW

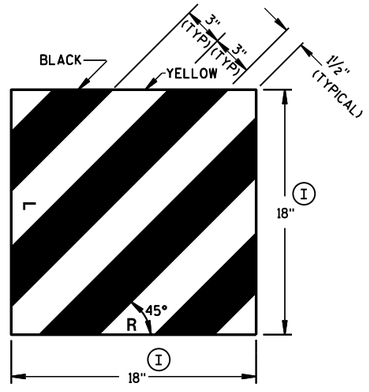
ALTERNATE WOOD BLOCKOUT DETAIL



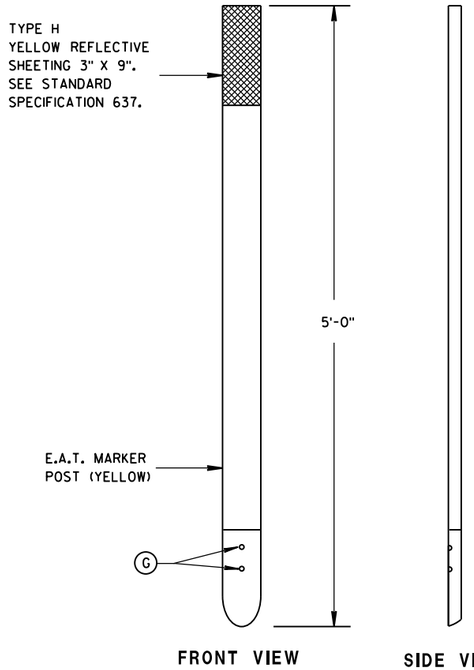
WOOD BLOCKOUT (4)

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





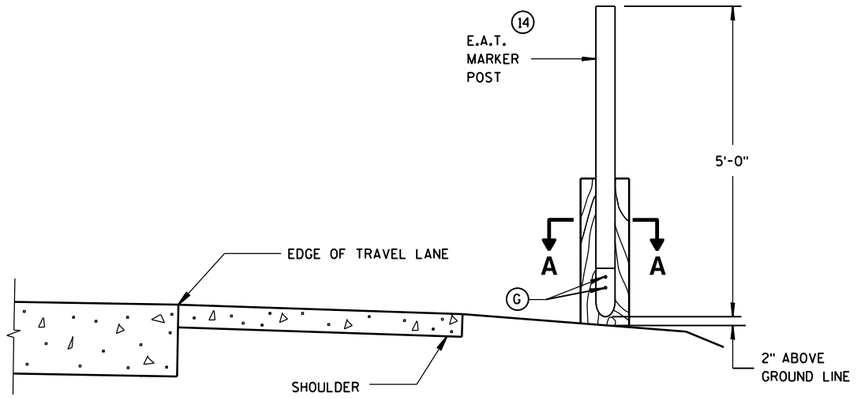
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

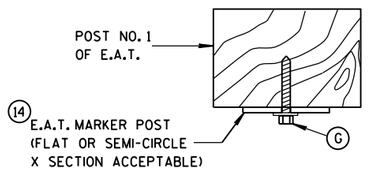
SIDE VIEW

E.A.T. MARKER POST (14)



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

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



SECTION A-A

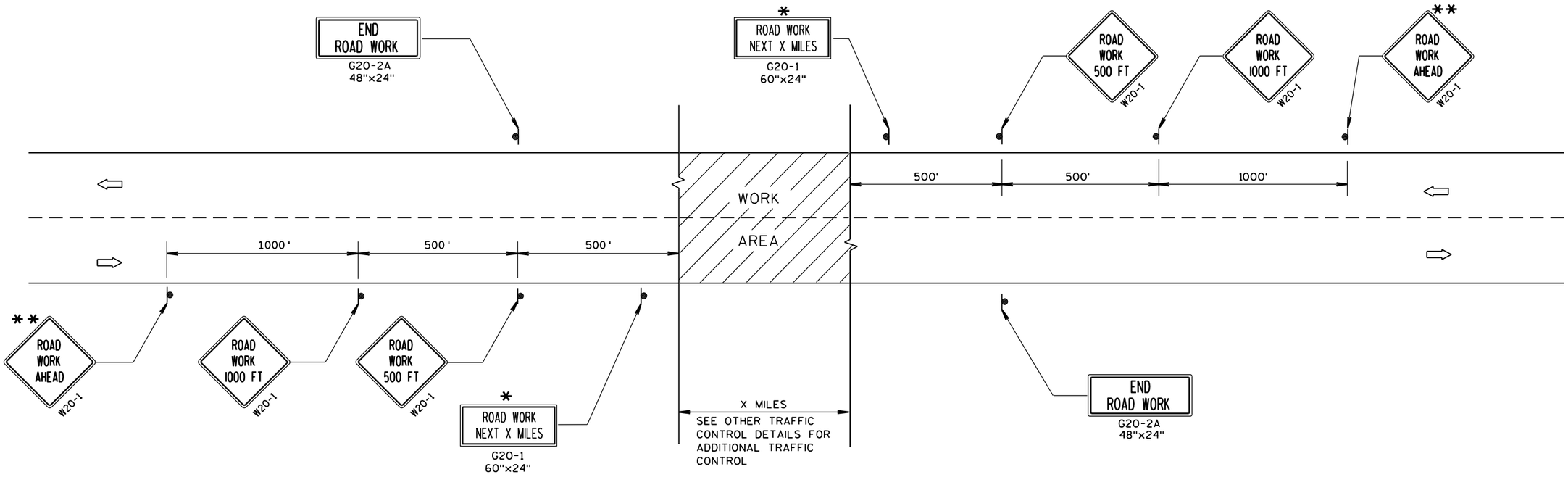
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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.

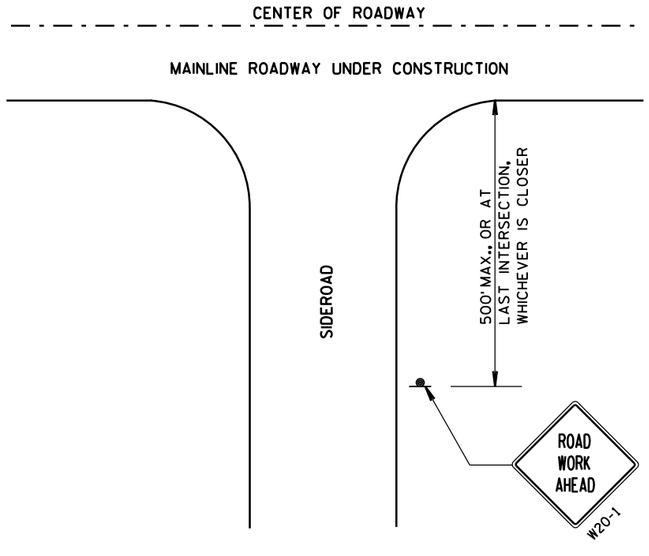
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

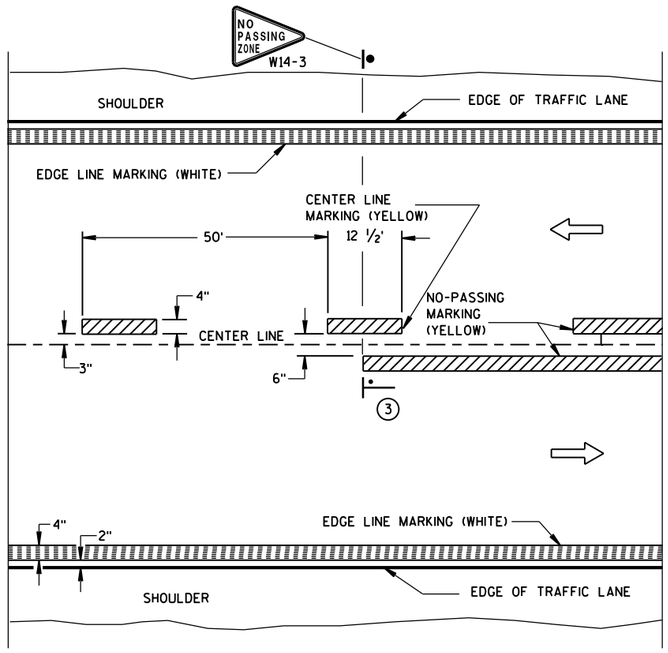
SIGN

6

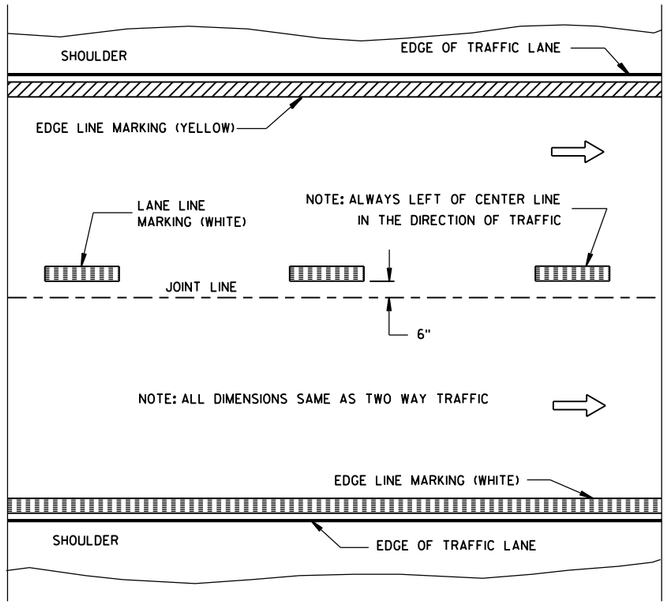
S.D.D. 15 C 4-2

6

S.D.D. 15 C 4-2

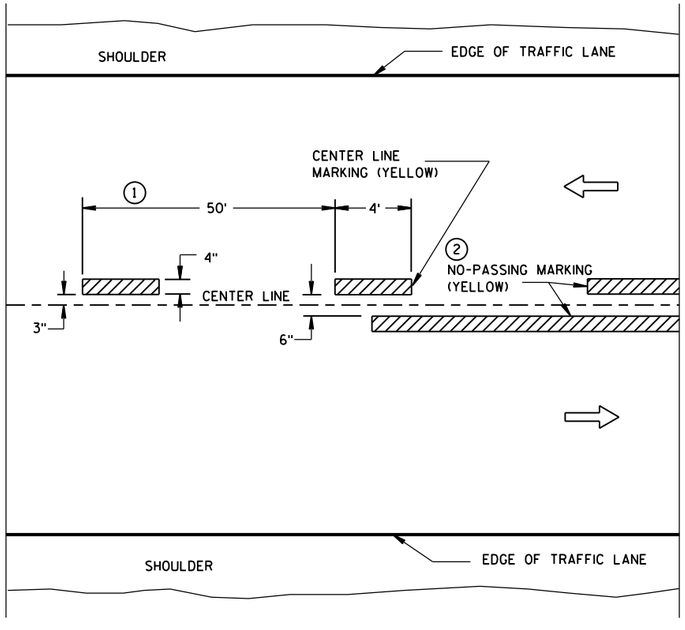


TWO WAY TRAFFIC

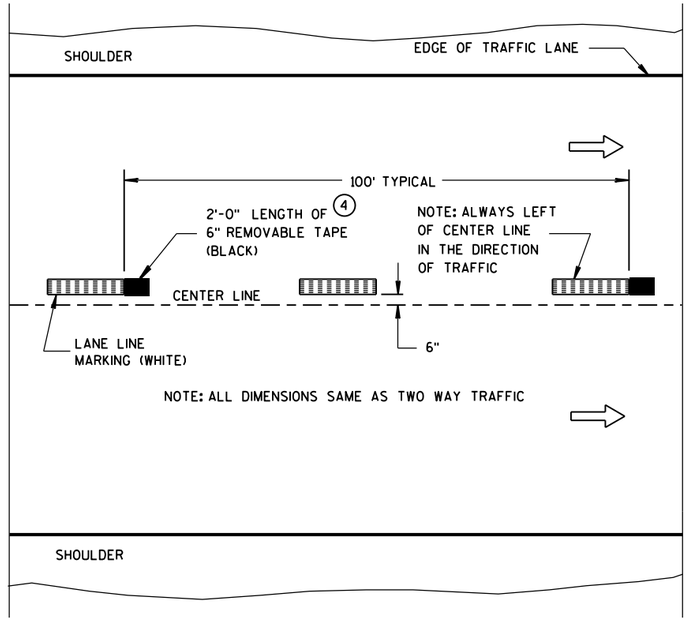


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

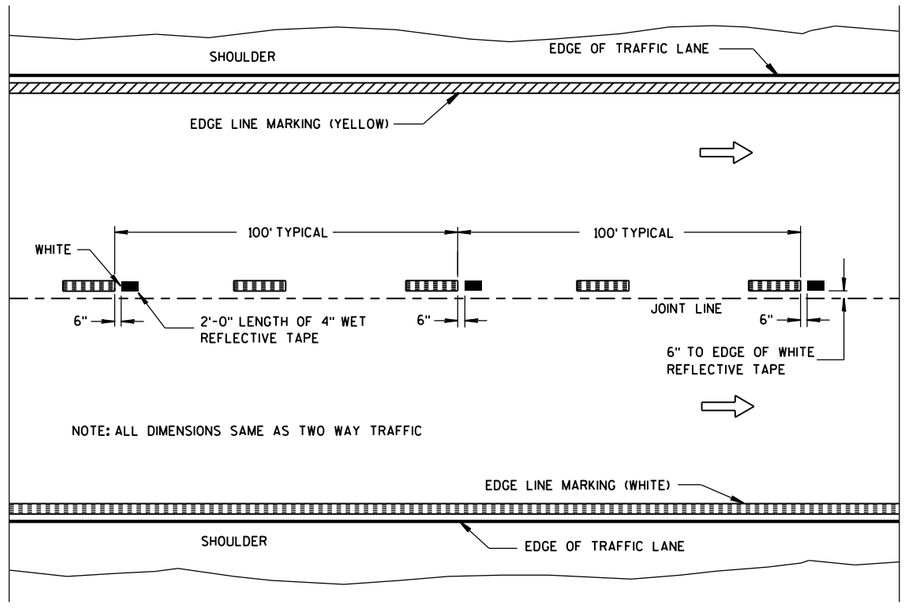
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

6

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

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

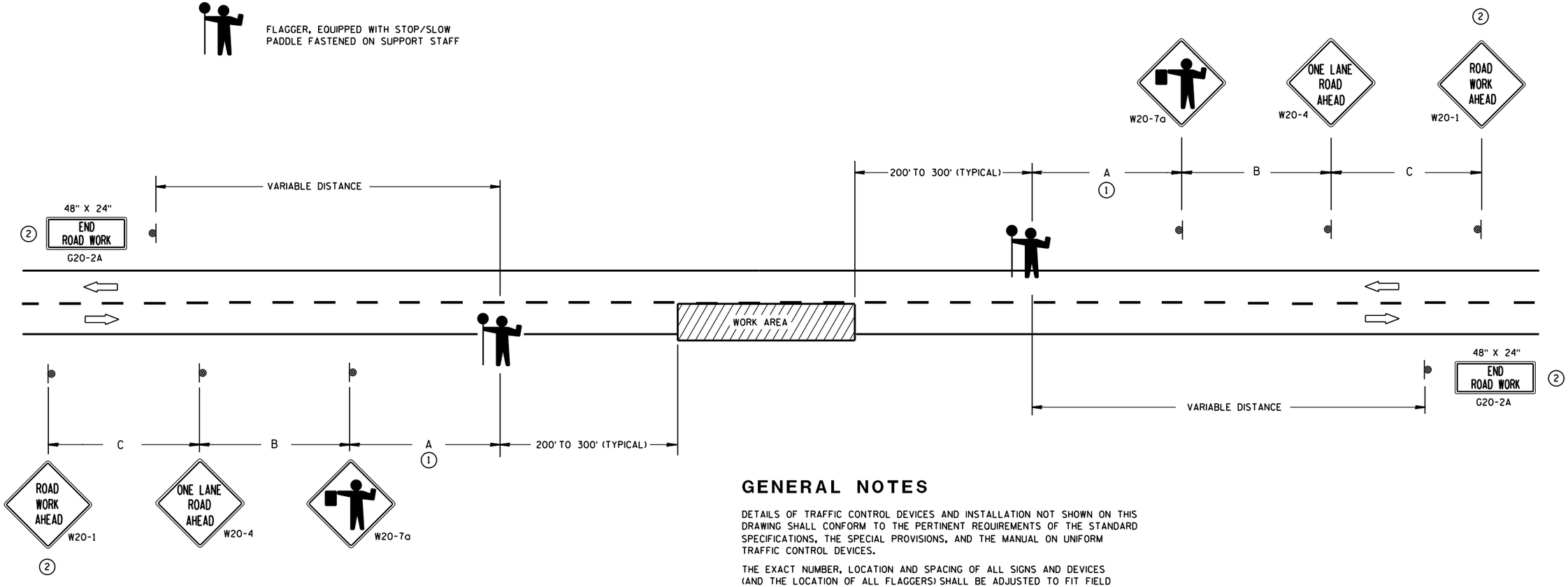
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

BE PREPARED TO STOP
W3-4

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 C 12-4

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

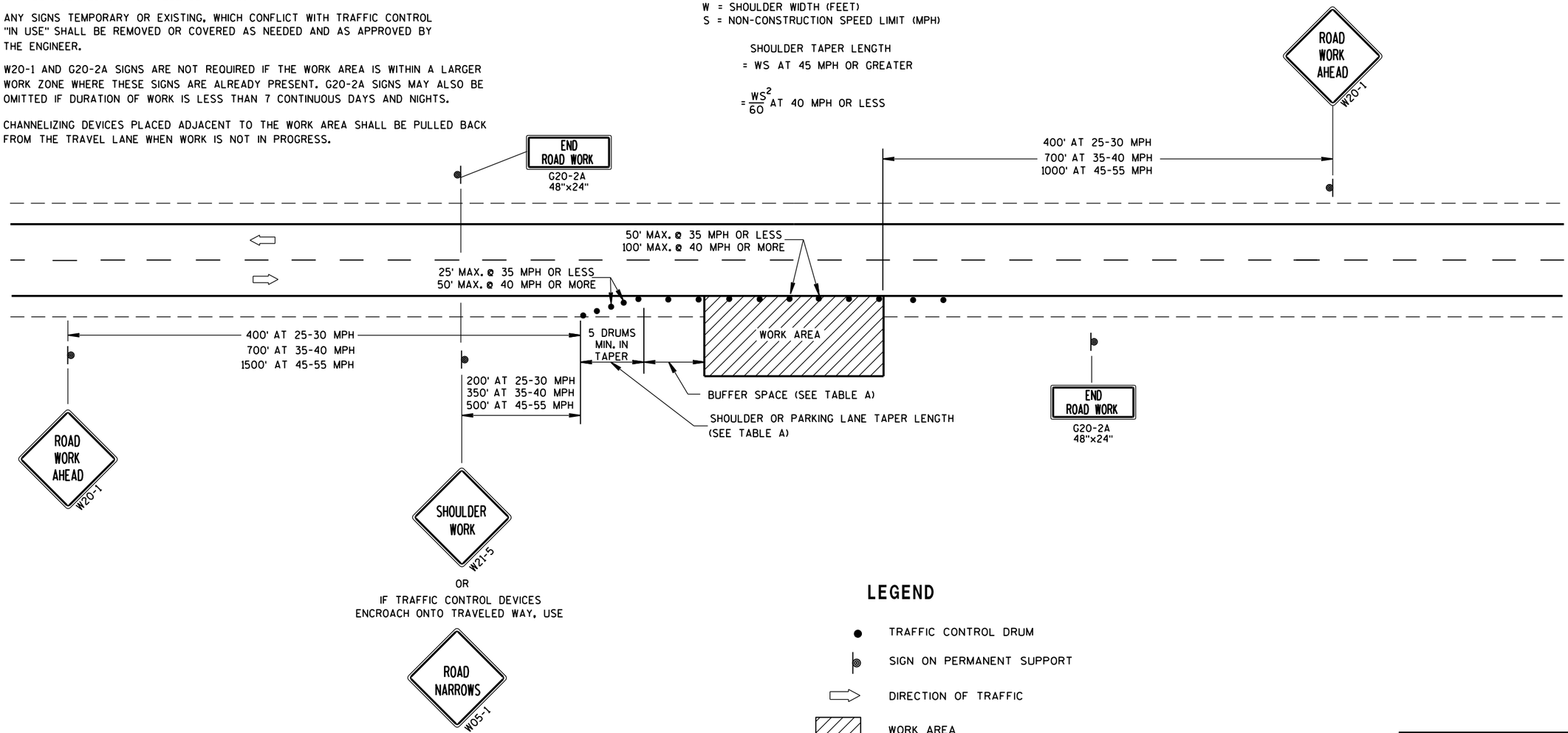
TABLE A

S \ W	SHOULDER TAPER LENGTH (FEET) 4	6	8	10	BUFFER SPACE (FEET)
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
= WS AT 45 MPH OR GREATER

$= \frac{WS^2}{60}$ AT 40 MPH OR LESS



LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 D 28-2

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE

W057-52
36"x24"

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.

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.

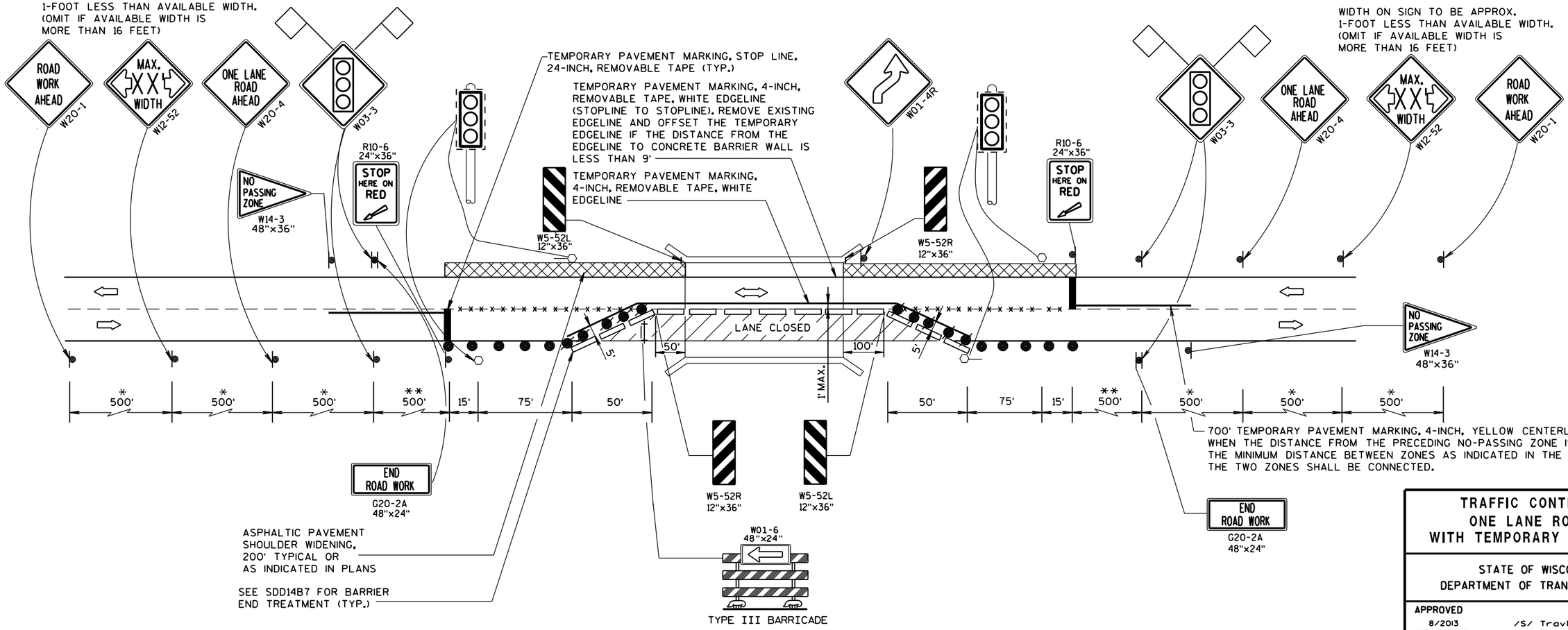
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

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

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

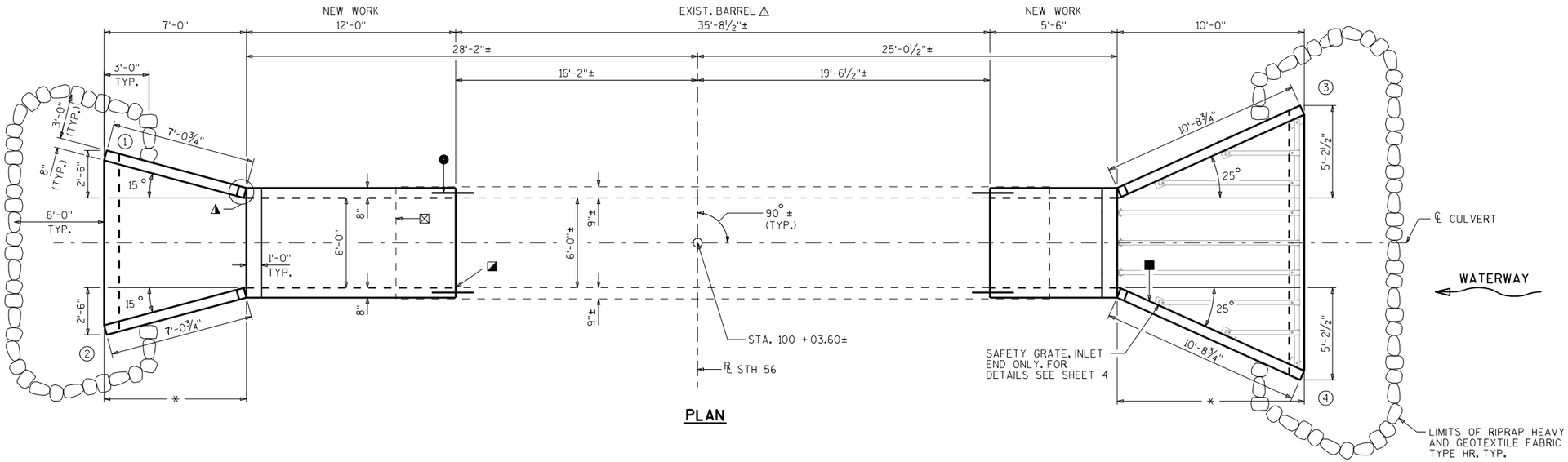
6

S.D.D. 15 D 33-3

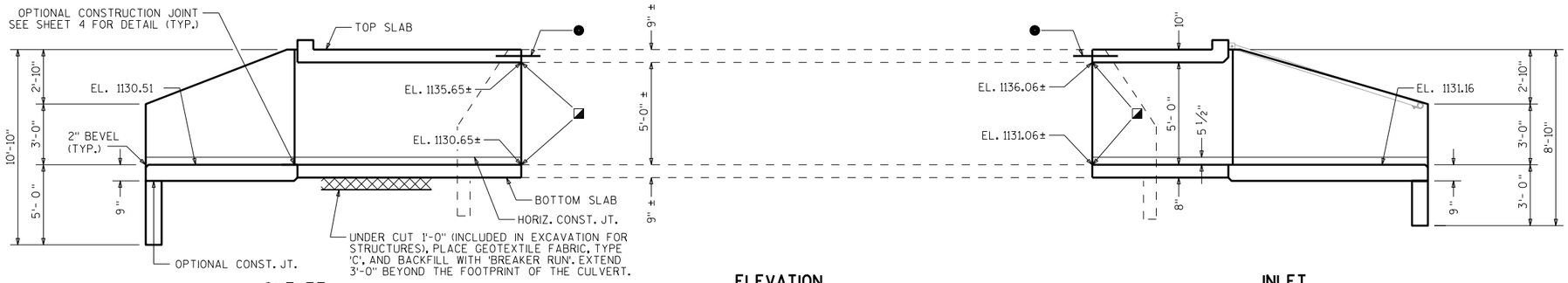
NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.

STATE PROJECT NUMBER
5730-00-61

- ▲ SEE CORNER DETAILS SHEET 4
- ■ NAME PLATE LOCATION (SEE SHT 4)
- △ EXIST. BARREL TO REMAIN IN PLACE
- ∗ BUILD APRON AND END OF BOX LEVEL
- ◪ INSIDE WALLS TO MATCH EXISTING (TYP.)
- ⊠ REMOVE EXISTING APRON AND WINGS. EXTEND EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK. (TYP. BOTH SIDES)
- ◯ INDICATES WING NUMBER
- ● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).



PLAN



OUTLET ELEVATION INLET

LIST OF DRAWINGS

STRUCTURE DESIGN CONTACT:
DANIELLE DE TENNIS (608) 266-8689
LAURA SHADEWALD (608) 267-9592

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

EARTHLOAD: DESIGNED FOR 1.0 TO 3.0 FT. OF FILL.

ULTIMATE DESIGN STRESSES:
CONCRETE MASONRY, GRADE A-FA ——— f'_c = 3500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — f_y = 60000 P.S.I.

TRAFFIC VOLUME

STH 56
A.D.T. = 3700 (2035)
R.D.S. = 60 M.P.H.

TOTAL ESTIMATED QUANTITIES

BID ITEMS

203.0200	REMOVING OLD STRUCTURE STA. 100+03.60	1	LS
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-62-312	1	LS
210.0100	BACKFILL STRUCTURE	138	CY
311.0115	BREAKER RUN	18	CY
502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	36	EACH
504.0100	CONCRETE MASONRY CULVERTS	24	CY
505.0410	BAR STEEL REINFORCEMENT HS CULVERTS	2,610	LB
505.0610	BAR STEEL REINFORCEMENT HS COATED CULVERTS	680	LB
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	18	SY
606.0300	RIPRAP HEAVY	21	CY
645.0105	GEOTEXTILE FABRIC TYPE C	64	SY
645.0120	GEOTEXTILE FABRIC TYPE HR	50	SY
SPV.0105	SAFETY GRATE CULVERT	1	LS

NON-BID ITEMS

FILLER	3/4"	SIZE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-62-312" SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS IN CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES
ACCEPTED William C. Dreher LLS 11/10/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-62-312

STH 56 OVER UNNAMED WATERWAY

COUNTY VERNON | TOWN/~~CITY/VILLAGE~~ VIROQUA

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DFD	DESIGN CK'D.	MWB	DRAWN BY	DFD	PLANS CK'D.	MWB

LAYOUT

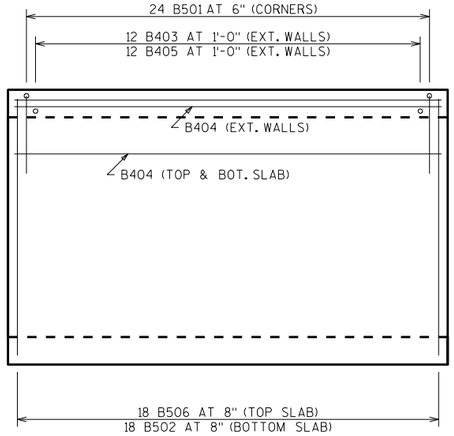
SHEET 1 OF 4

56

I.D. 5730-00-31A

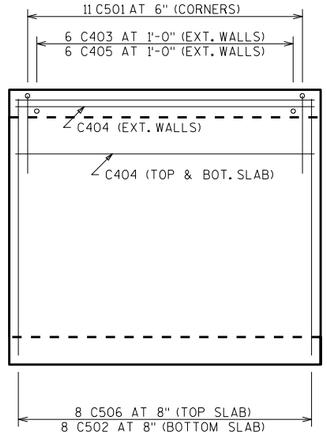
DATE: JULY 2014

SCALE = 4



PLAN VIEW OF OUTLET EXTENSION

APRON AND HEADER ARE NOT SHOWN.



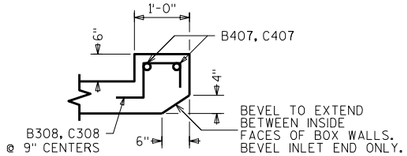
PLAN VIEW OF INLET EXTENSION

APRON AND HEADER ARE NOT SHOWN.

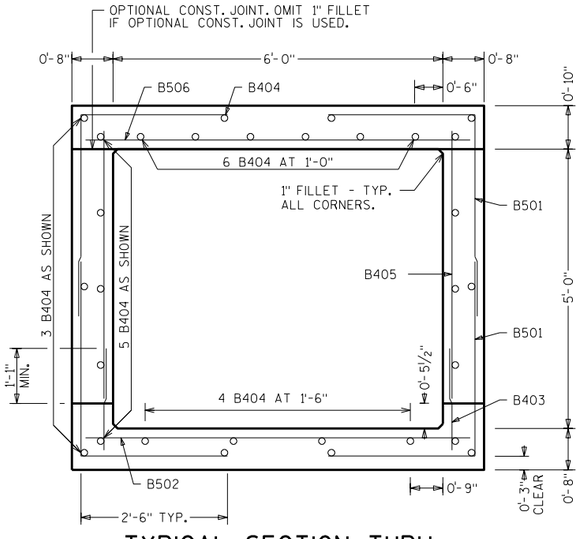
BILL OF BARS

THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

MARK	NUMBER REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501	96	6-3	2-6	NO	CORNERS
B502	18	7-0		NO	BOTTOM SLAB TRANS.
B403	24	2-0		NO	WALLS-DOWELS VERT.
B404	30	11-6		NO	TOP&BOTTOM SLAB & WALL
B405	24	5-2		NO	WALLS VERT.
B506	18	7-0		NO	TOP SLAB TRANS.
B407	2	7-0		NO	HEADERS HORIZ.
B308	10	2-11	YES	NO	HEADER STIRRUPS VERT.
● B509	18	2-6		NO	VERT. CONST. JOINT
C501	44	6-3	2-6	NO	CORNERS
C502	8	7-0		NO	BOTTOM SLAB TRANS.
C403	12	2-0		NO	WALLS-DOWELS VERT.
C404	30	5-0		NO	TOP&BOTTOM SLAB & WALL
C405	12	5-2		NO	WALLS VERT.
C506	8	7-0		NO	TOP SLAB TRANS.
C407	2	7-0		NO	HEADERS HORIZ.
C308	10	2-7	YES	NO	HEADER STIRRUPS VERT.
● C509	18	2-6		NO	VERT. CONST. JOINT

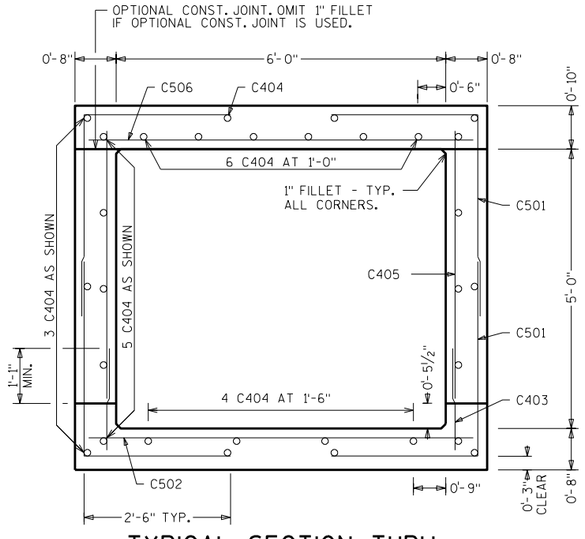


SECTION THRU TOP HEADER



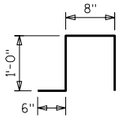
TYPICAL SECTION THRU OUTLET EXTENSION

ALL LONGIT. BARS NOT LABELED ARE B404 AS SHOWN

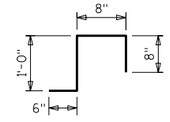


TYPICAL SECTION THRU INLET EXTENSION

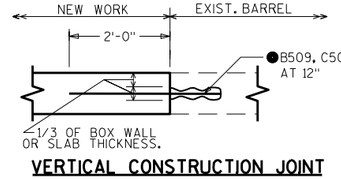
ALL LONGIT. BARS NOT LABELED ARE C404 AS SHOWN



B308



C308



VERTICAL CONSTRUCTION JOINT

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-312

DRAWN BY DFD | PLANS CK'D. MWB

BOX DETAILS

SHEET 2

57

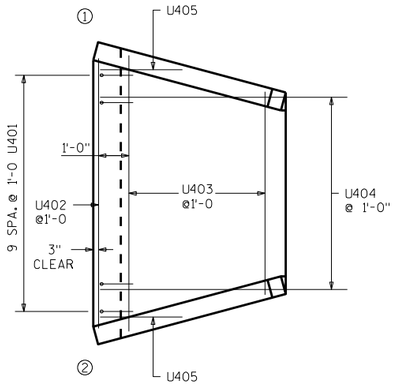
SCALE = 4.0

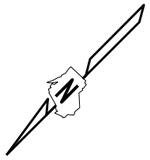
8

8

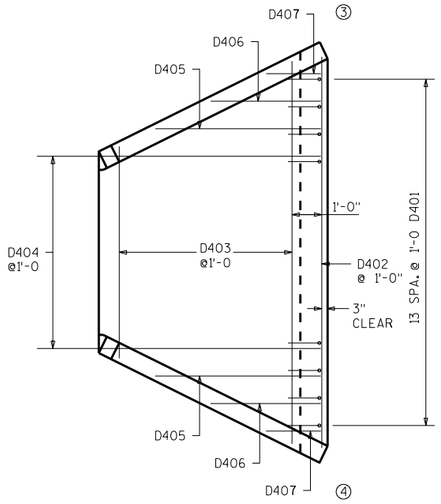
STATE PROJECT NUMBER

5730-00-61

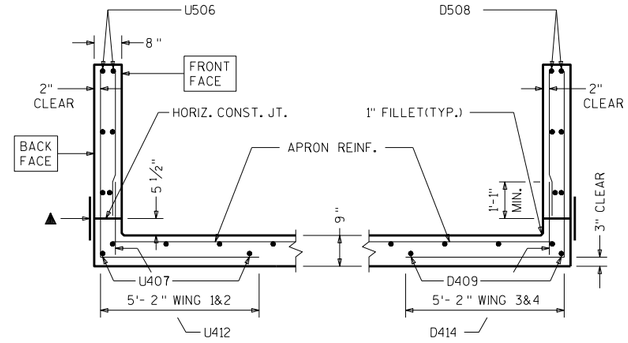




APRON REINF.

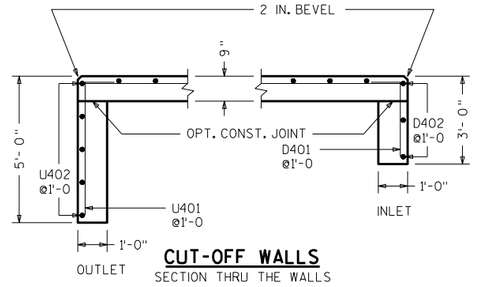


▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).



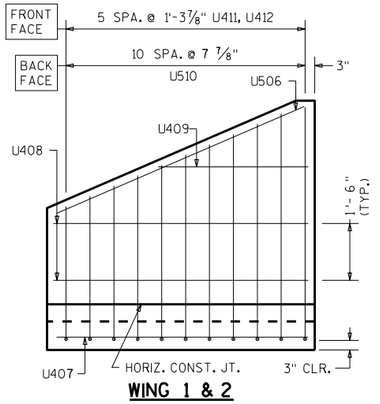
SECTION THRU WINGS

AT RIGHT ANGLES TO WING WALLS

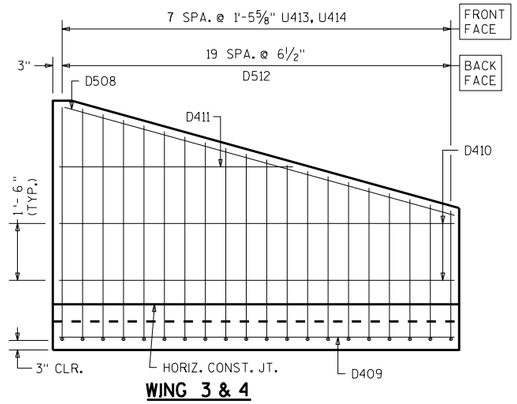


CUT-OFF WALLS

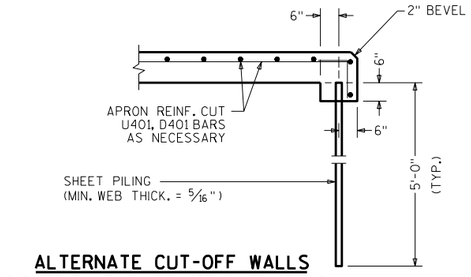
SECTION THRU THE WALLS



WING 1 & 2



WING 3 & 4



ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-312

DRAWN BY DFD | PLANS CK'D. MWB

APRON DETAILS

SHEET 3

58

SCALE =

STATE PROJECT NUMBER

5730-00-61

BILL OF BARS

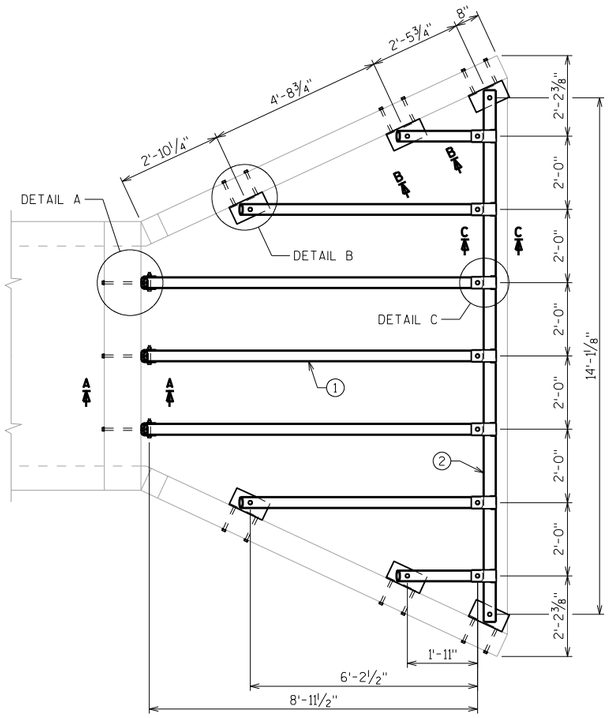
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401		10	5 - 6	1 - 0		OUTLET APRON AND CUTOFF WALL
U402		5	10 - 3			OUTLET APRON AND CUTOFF WALL
U403		6	8 - 8		*	" APRON
U404		8	9 - 0			" APRON
U405		2	2 - 11			" APRON
U506		4	7 - 2			WINGS 1 AND 2 -HORIZONTAL -BOTH FACES
U407		4	6 - 7			WING "-HORIZONTAL -APRON BOTT. SLAB
U408		8	6 - 7			WING "-HORIZONTAL - BOTH FACES
U409		4	4 - 1			WING "-HORIZONTAL - BOTH FACES
U510	X	22	9 - 11	5 - 2	*	WING "-VERTICAL - BACK FACE
U411		12	3 - 10		*	WING "-VERTICAL - FRONT FACE
U412	X	12	2 - 1			WINGS 1 AND 2 - DOWELS - FRONT FACE
D401		14	3 - 6	1 - 0		INLET APRON AND CUTOFF WALL
D402		3	15 - 2			INLET APRON AND CUTOFF WALL
D403		9	11 - 4		*	" APRON
D404		8	12 - 0			" APRON
D405		2	7 - 6			" APRON
D406		2	5 - 5			" APRON
D407		2	3 - 3			" APRON
D508		4	10 - 5			WINGS 3 AND 4 -HORIZONTAL -BOTH FACES
D409		4	10 - 3			WING "-HORIZONTAL -APRON BOTT. SLAB
D410		8	10 - 3			WING "-HORIZONTAL - BOTH FACES
D411		4	6 - 3			WING "-HORIZONTAL - BOTH FACES
D512	X	40	9 - 10	5 - 2	*	WING "-VERTICAL - BACK FACE
D413		16	3 - 10		*	WING "-VERTICAL - FRONT FACE
D414	X	16	2 - 1			WINGS 3 AND 4 - DOWELS - FRONT FACE

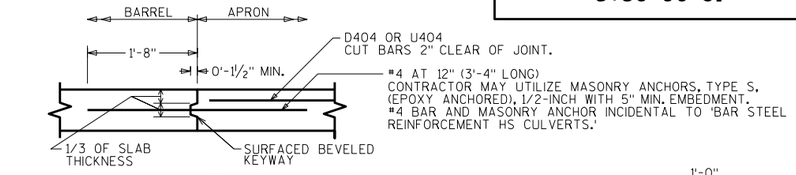
* LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE --- BUNDLE AND TAG EACH SERIES SEPARATELY

BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
U403	1 SERIES OF 6	7 - 4 TO 10 - 0
U510	2 SERIES OF 11	8 - 6 TO 11 - 3
U411	2 SERIES OF 6	2 - 5 TO 5 - 2
D403	1 SERIES OF 6	7 - 7 TO 15 - 1
D512	2 SERIES OF 20	8 - 5 TO 11 - 3
D413	2 SERIES OF 8	2 - 5 TO 5 - 2

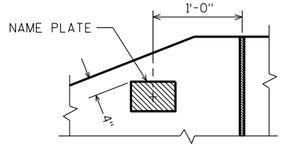


SAFETY GRATE PLAN

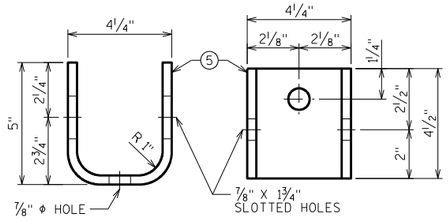


OPTIONAL CONSTRUCTION JOINT

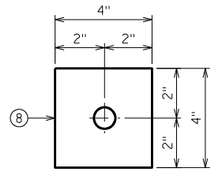
2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.



NAME PLATE LOCATION WING 4



HEADWALL BRACKET



SHIM DETAIL

SAFETY GRATE NOTES

BID ITEM SHALL BE "SAFETY GRATE CULVERT" WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

PIPE SHALL MEET THE REQUIREMENTS OF ASTM A53, SCHEDULE 40, GRADE B, INCLUDING GALVANIZING.

BOLTS AND LOCK NUTS SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN COMPLIANCE WITH ASTM A153. WASHERS SHALL BE MADE OF STEEL AND MEET THE DIMENSIONAL REQUIREMENTS OF ANSI B 18.22.1 TABLE 2 PLAIN WASHERS.

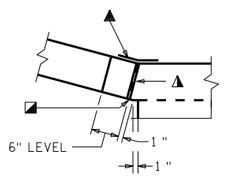
PLATES, BENT PLATES, AND ANGLES SHALL CONFORM TO ASTM A709 GRADE 36 AND SHALL BE GALVANIZED PER ASTM A-123

ALL PIPES, FITTINGS AND HARDWARE REQUIRED SHALL BE GALVANIZED AFTER CUTTING, WELDING, DRILLING AND FABRICATION.

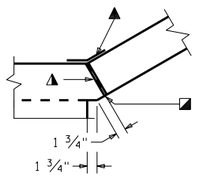
CONTRACTOR MAY ENCOUNTER REINFORCING STEEL WHEN DRILLING THROUGH THE EXISTING STRUCTURE WALLS.

LEGEND

1. 3" Φ NOMINAL PIPE, 3 1/2" O.D.
2. 3 1/2" Φ NOMINAL PIPE, 4" O.D.
3. 3/4" Φ BOLT, LOCK NUT AND WASHERS.
4. HOLES ARE TO BE MADE WITH EQUIPMENT DESIGNED TO CUT THROUGH CONCRETE AND REINFORCING STEEL.
5. 3/8" X 4 1/2" BENT PLATE. ALL BENDING OF PLATES SHALL BE ACCOMPLISHED WITHOUT CRACKING MATERIAL.
6. 6" X 4" X 12" X 3/8" ANGLE WITH 7/8" Φ HOLES.
7. 3/8" X 4" BENT PLATE. ALL BENDING OF PLATES SHALL BE ACCOMPLISHED WITHOUT CRACKING MATERIAL.
8. 4" X 4" X 1/4" PLATE WITH 7/8" Φ HOLE.



CORNER 1



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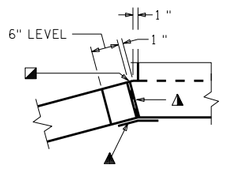
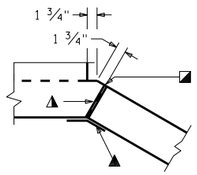


CORNER 2



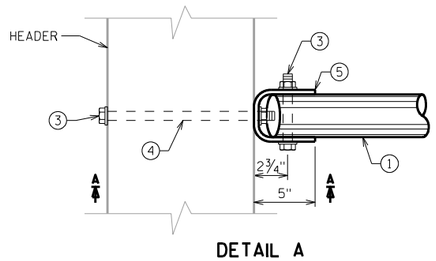
CORNER 4

▲ 3/4" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.

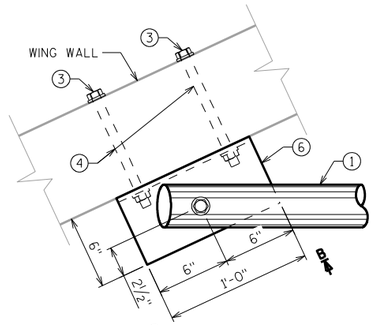
◪ 1" BEVEL TYPICAL

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.

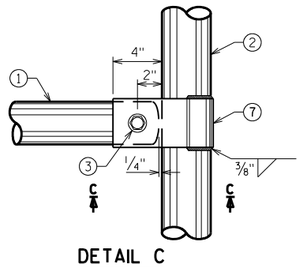
CORNER DETAILS



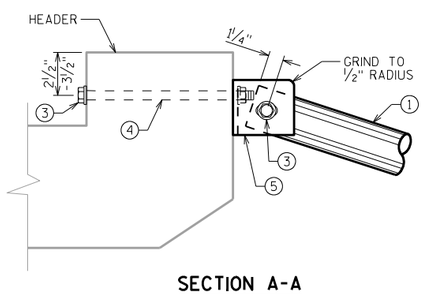
DETAIL A



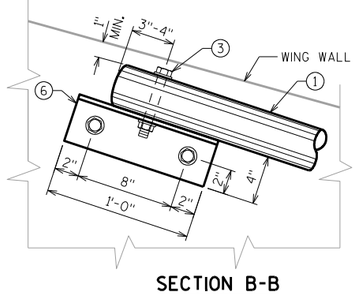
DETAIL B



DETAIL C



SECTION A-A



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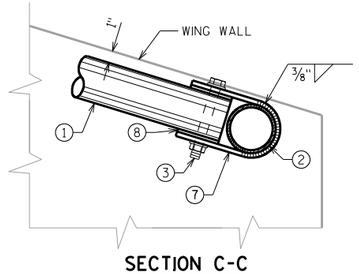


SECTION C-C

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-312

DRAWN BY DFD | PLANS CK'D. MWB

DETAILS

SHEET 4

59

SCALE =

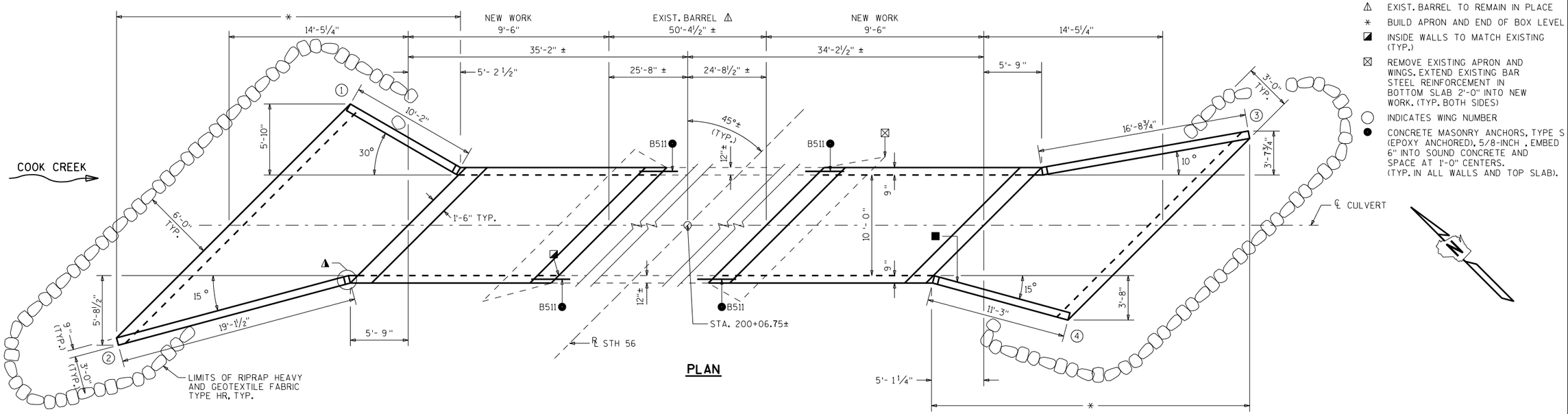
8

8

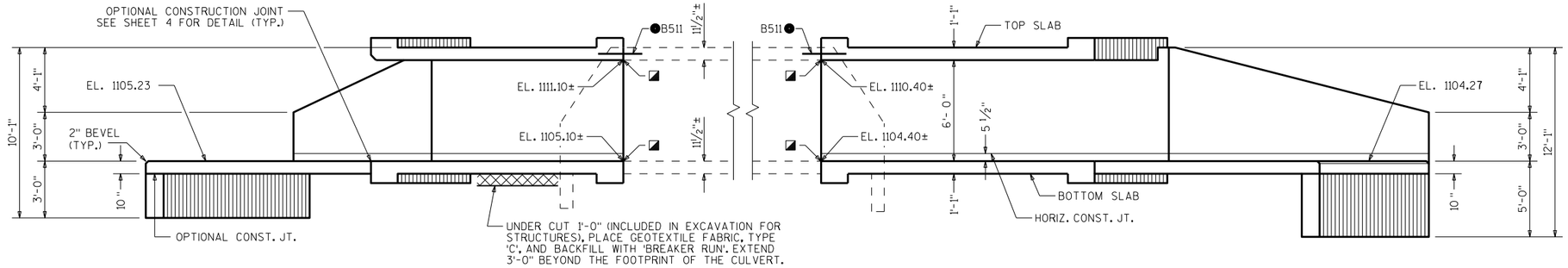
NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.

STATE PROJECT NUMBER
5730-00-61

- ◭ SEE CORNER DETAILS SHEET 4
- ■ NAME PLATE LOCATION (SEE SHT 4)
- ⚠ EXIST. BARREL TO REMAIN IN PLACE
- ∗ BUILD APRON AND END OF BOX LEVEL
- ◪ INSIDE WALLS TO MATCH EXISTING (TYP.)
- ⊠ REMOVE EXISTING APRON AND WINGS. EXTEND EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK. (TYP. BOTH SIDES)
- ◯ INDICATES WING NUMBER
- ● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).



PLAN



INLET **ELEVATION** **OUTLET**

LIST OF DRAWINGS

STRUCTURE DESIGN CONTACT:
DANIELLE DE TENNIS (608) 266-8689
LAURA SHADEWALD (608) 267-9592

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)

EARTHLOAD: DESIGNED FOR 1.0 TO 2.5 FT. OF FILL.

ULTIMATE DESIGN STRESSES:
CONCRETE MASONRY, GRADE A-FA ——— f'_c = 3500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — f_y = 60000 P.S.I.

TRAFFIC VOLUME

STH 56
A.D.T. = 3700 (2035)
R.D.S. = 60 M.P.H.

TOTAL ESTIMATED QUANTITIES

BID ITEMS

203.0200	REMOVING OLD STRUCTURE STA. 200+06.75	1	LS
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-62-313	1	LS
210.0100	BACKFILL STRUCTURE	247	CY
311.0115	BREAKER RUN	34	CY
502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	48	EACH
504.0100	CONCRETE MASONRY CULVERTS	56	CY
505.0410	BAR STEEL REINFORCEMENT HS CULVERTS	5,200	LB
505.0610	BAR STEEL REINFORCEMENT HS COATED CULVERTS	860	LB
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	26	SY
606.0300	RIPRAP HEAVY	38	CY
645.0105	GEOTEXTILE FABRIC TYPE C	112	SY
645.0120	GEOTEXTILE FABRIC TYPE HR	89	SY

NON-BID ITEMS

FILLER	3/4"	SIZE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-62-313" SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS IN CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES
ACCEPTED William C. Dreher LLS 2/4/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-62-313

STH 56 OVER COOK CREEK

COUNTY	TOWN, ~~CITY, VILLAGE~~
VERNON	VIROQUA

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DFD	DESIGN CK'D.	NAR	DRAWN BY	DFD	PLANS CK'D.	NAR

LAYOUT

SHEET 1 OF 4

60

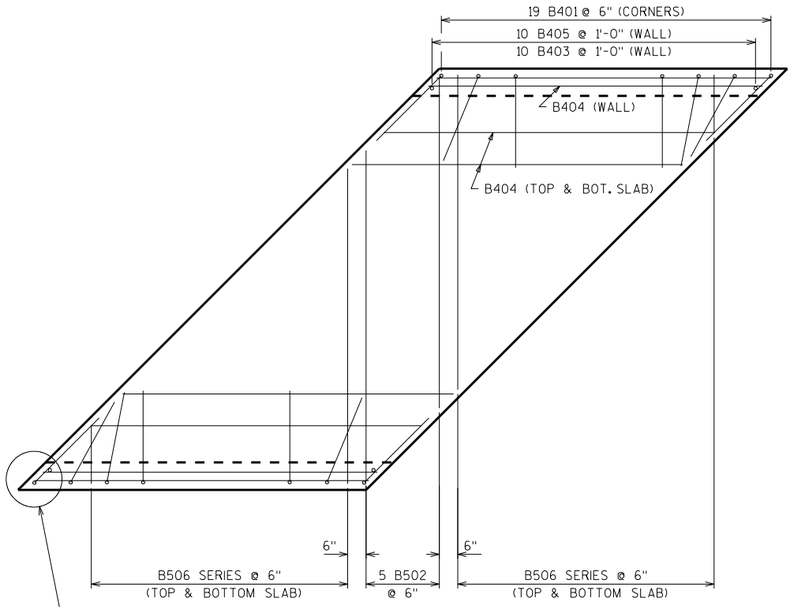
SCALE = 4

I.D. 5730-00-31B

DATE: JULY 2014

STATE PROJECT NUMBER

5730-00-61



PLAN VIEW OF EXTENSION PANEL

APRON AND HEADERS ARE NOT SHOWN.

BILL OF BARS

THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

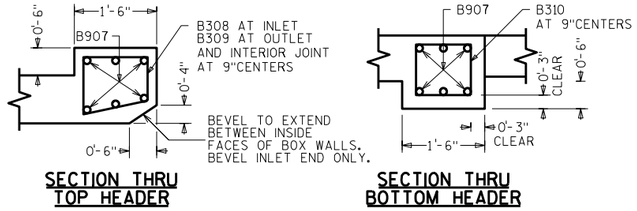
MARK	NUMBER REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B401	152	7-0	2-6		CORNERS
B502	20	9-0	NO		TOP &BOTTOM SLAB TRANS.
B403	40	2-5	NO		WALLS-DOWELS VERT.
B404	70	9 -0	NO		TOP&BOTTOM SLAB & WALL
B405	40	6-3	NO		WALLS VERT.
B506	120	5-0	NO	*	TOP & BOTTOM SLAB TRANS.
B907	24	15-9	NO		HEADERS HORIZ.
B308	22	4-11	YES		HEADER STIRRUPS VERT. INLET
B309	22	5-3	YES		HEADER STIRRUPS VERT. OUTLET
B310	44	4-9	YES		HEADER STIRRUPS VERT. BOTTOM
● B511	48	2-6	NO		VERT.CONST.JOINT

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

BAR SERIES TABLE

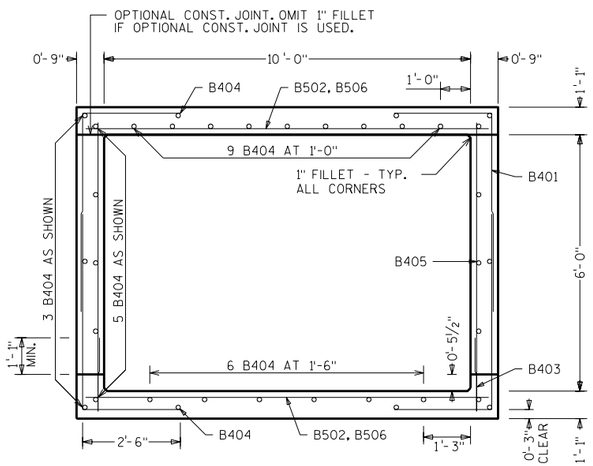
BUNDLE AND TAG EACH SERIES SEPARATELY

BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
B506	8 SERIES OF 15	1 - 6 TO 8 - 6



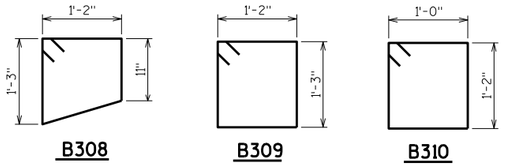
SECTION THRU TOP HEADER

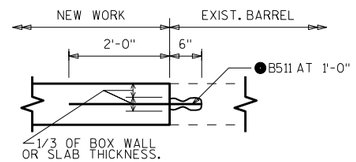
SECTION THRU BOTTOM HEADER



TYPICAL SECTION THRU EXTENSION PANEL

ALL BARS NOT LABELED ARE B404 AS SHOWN





VERTICAL CONSTRUCTION JOINT

TYP. WALLS AND TOP SLAB

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-313

DRAWN BY DFD | PLANS CK'D. NAR

BOX DETAILS

SHEET 2

61

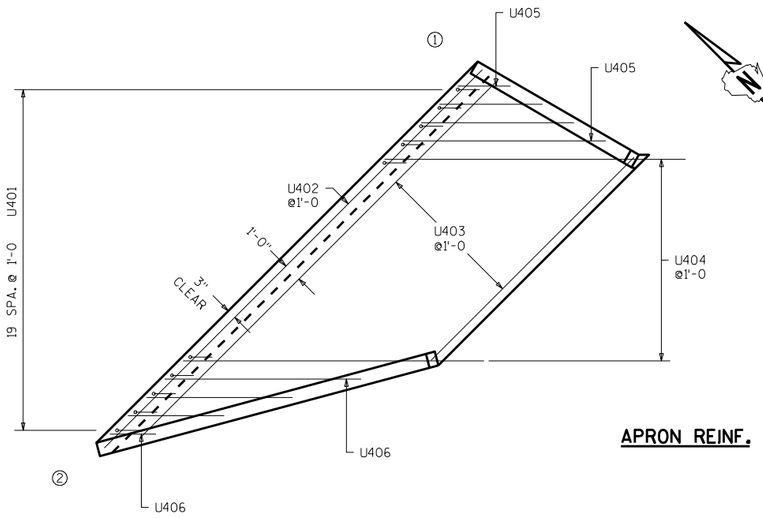
SCALE = 4.0

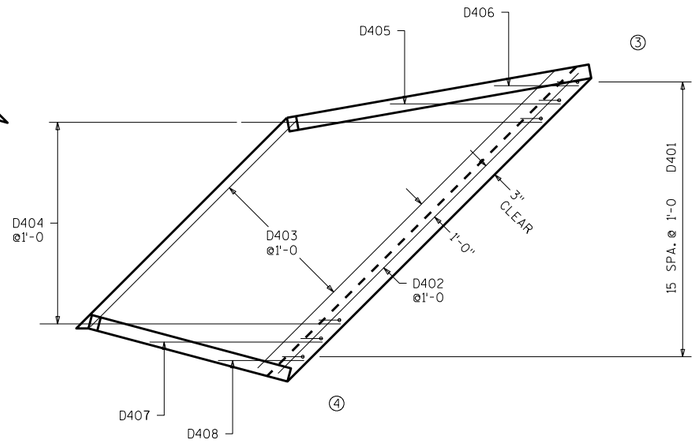
8

8

STATE PROJECT NUMBER

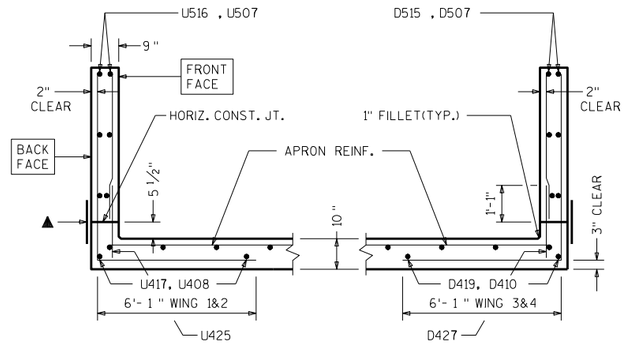
5730-00-61





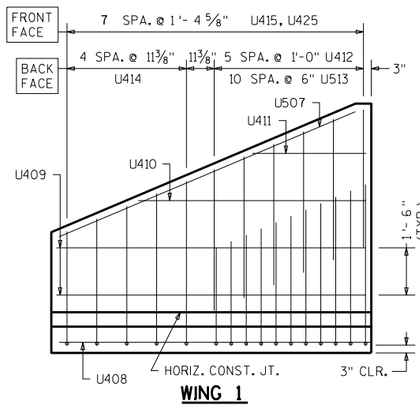
APRON REINF.

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).

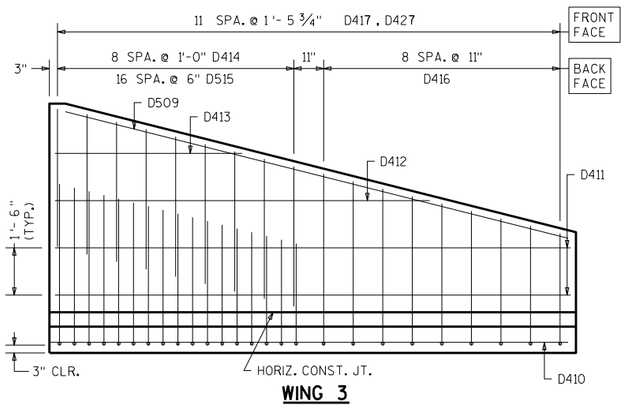


SECTION THRU WINGS

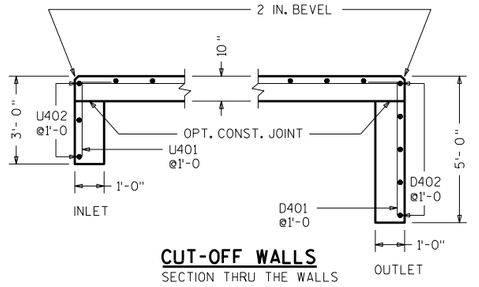
AT RIGHT ANGLES TO WING WALLS



WING 1

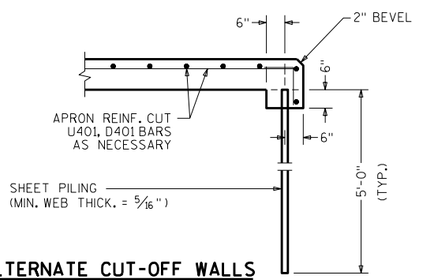


WING 3



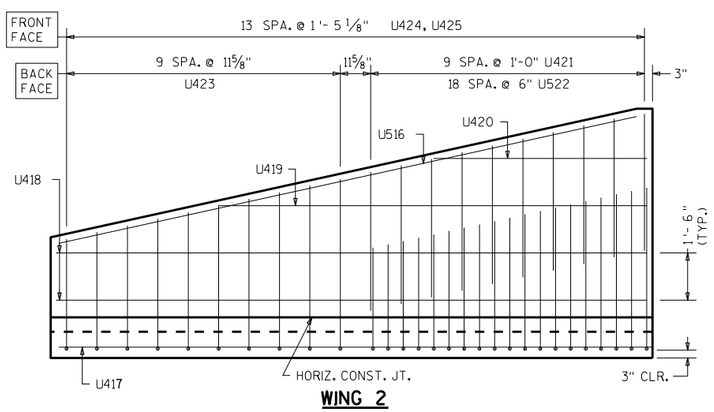
CUT-OFF WALLS

SECTION THRU THE WALLS

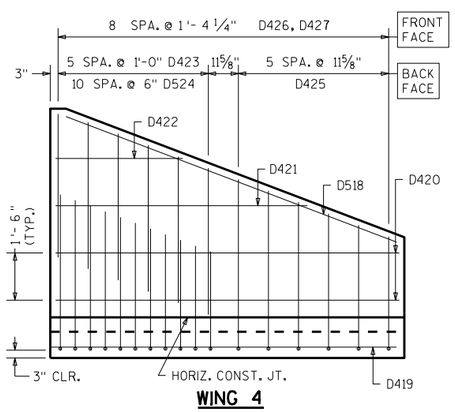


ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.



WING 2



WING 4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-313

DRAWN BY DFD | PLANS CK'D. NAR

APRON DETAILS

SHEET 3

62

8

8

SCALE =

STATE PROJECT NUMBER

5730-00-61

BILL OF BARS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

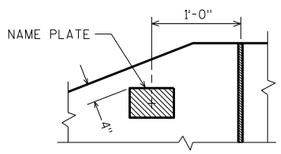
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401		20	3 - 6	1 - 0		INLET APRON AND CUTOFF WALL
U402		3	29 - 2			INLET APRON AND CUTOFF WALL
U403		9	22 - 8		*	" APRON
U404		12	16 - 5			" APRON
U405		4	7 - 0		*	" APRON
U406		4	7 - 3		*	" APRON
U507		2	10 - 4			WING 1 -HORIZONTAL - BOTH FACES
U408		2	9 - 9			WING "-HORIZONTAL -APRON BOTT. SLAB
U409		4	9 - 9			WING "-HORIZONTAL - BOTH FACES
U410		2	7 - 4			WING "-HORIZONTAL - BOTH FACES
U411		2	3 - 10			WING "-HORIZONTAL - BOTH FACES
U412		6	4 - 0			WING "-VERTICAL - BACK FACE
U513	X	11	9 - 11	6 - 1	*	WING "-VERTICAL - BACK FACE
U414	X	5	10 - 3	6 - 1	*	WING "-VERTICAL - BACK FACE
U415		8	4 - 5		*	WING "-VERTICAL - FRONT FACE
U516		2	18 - 10			WING 2 -HORIZONTAL - BOTH FACES
U417		2	18 - 8			WING "-HORIZONTAL -APRON BOTT. SLAB
U418		4	18 - 8			WING "-HORIZONTAL - BOTH FACES
U419		2	13 - 11			WING "-HORIZONTAL - BOTH FACES
U420		2	7 - 1			WING "-HORIZONTAL - BOTH FACES
U421		10	4 - 0			WING "-VERTICAL - BACK FACE
U522	X	19	10 - 0	6 - 1	*	WING "-VERTICAL - BACK FACE
U423	X	10	10 - 4	6 - 1	*	WING "-VERTICAL - BACK FACE
U424		14	4 - 5		*	WING "-VERTICAL - FRONT FACE
U425	X	22	2 - 2			WINGS 1 AND 2 - DOWELS - FRONT FACE
D401		16	5 - 6	1 - 0		OUTLET APRON AND CUTOFF WALL
D402		5	23 - 2			OUTLET APRON AND CUTOFF WALL
D403		9	19 - 9		*	" APRON
D404		12	16 - 5			" APRON
D405		1	9 - 7			" APRON
D406		1	4 - 11			" APRON
D407		1	9 - 2			" APRON
D408		1	4 - 6			" APRON
D509		2	16 - 6			WING 3 -HORIZONTAL - BOTH FACES
D410		2	16 - 3			WING "-HORIZONTAL -APRON BOTT. SLAB
D411		4	16 - 3			WING "-HORIZONTAL - BOTH FACES
D412		2	12 - 2			WING "-HORIZONTAL - BOTH FACES
D413		2	6 - 3			WING "-HORIZONTAL - BOTH FACES
D414		9	4 - 6			WING "-VERTICAL - BACK FACE
D515	X	17	9 - 6	6 - 1	*	WING "-VERTICAL - BACK FACE
D416	X	9	10 - 4	6 - 1	*	WING "-VERTICAL - BACK FACE
D417		12	4 - 5		*	WING "-VERTICAL - FRONT FACE
D518		2	11 - 4			WING 4 -HORIZONTAL - BOTH FACES
D419		2	10 - 10			WING "-HORIZONTAL -APRON BOTT. SLAB
D420		4	10 - 10			WING "-HORIZONTAL - BOTH FACES
D421		2	8 - 2			WING "-HORIZONTAL - BOTH FACES
D422		2	4 - 3			WING "-HORIZONTAL - BOTH FACES
D423		6	4 - 6			WING "-VERTICAL - BACK FACE
D524	X	11	9 - 7	6 - 1	*	WING "-VERTICAL - BACK FACE
D425	X	6	10 - 4	6 - 1	*	WING "-VERTICAL - BACK FACE
D426		9	4 - 5		*	WING "-VERTICAL - FRONT FACE
D427	X	21	2 - 2			WINGS 3 AND 4 - DOWELS - FRONT FACE

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

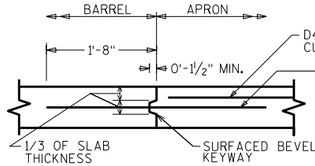
BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY

BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
U403	1 SERIES OF 9	16 - 10 TO 28 - 5
U405	1 SERIES OF 4	2 - 11 TO 11 - 1
U406	1 SERIES OF 4	3 - 2 TO 11 - 4
U513	1 SERIES OF 11	8 - 11 TO 10 - 11
U414	1 SERIES OF 5	9 - 5 TO 11 - 1
U415	1 SERIES OF 8	2 - 3 TO 6 - 4
U522	1 SERIES OF 19	9 - 0 TO 10 - 11
U423	1 SERIES OF 10	9 - 5 TO 11 - 4
U424	1 SERIES OF 14	2 - 3 TO 6 - 4
D403	1 SERIES OF 9	16 - 3 TO 23 - 2
D515	1 SERIES OF 17	8 - 5 TO 10 - 5
D416	1 SERIES OF 9	9 - 5 TO 11 - 3
D417	1 SERIES OF 12	2 - 3 TO 6 - 4
D524	1 SERIES OF 11	8 - 5 TO 10 - 11
D425	1 SERIES OF 6	9 - 5 TO 11 - 4
D426	1 SERIES OF 9	2 - 3 TO 6 - 4

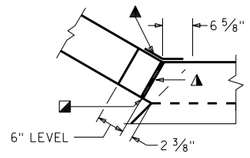


NAME PLATE LOCATION
WING 4

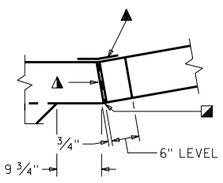


OPTIONAL CONSTRUCTION JOINT

2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.



CORNER 1

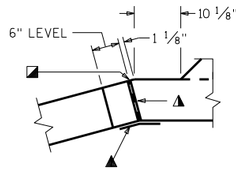


CORNER 3

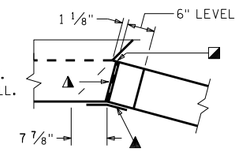
△ ¾" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.

◪ 1" BEVEL TYPICAL

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.



CORNER 2



CORNER 4

CORNER DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-313

DRAWN BY DFD | PLANS CK'D. NAR

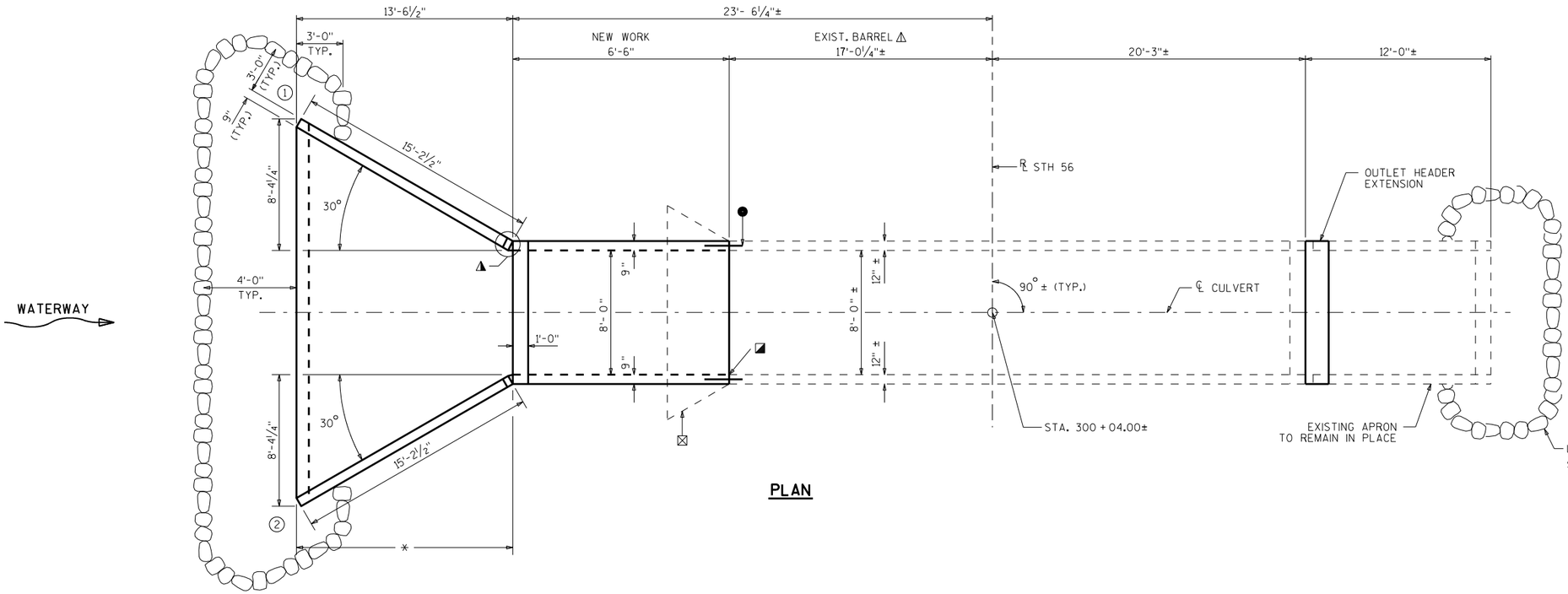
DETAILS

SHEET 4

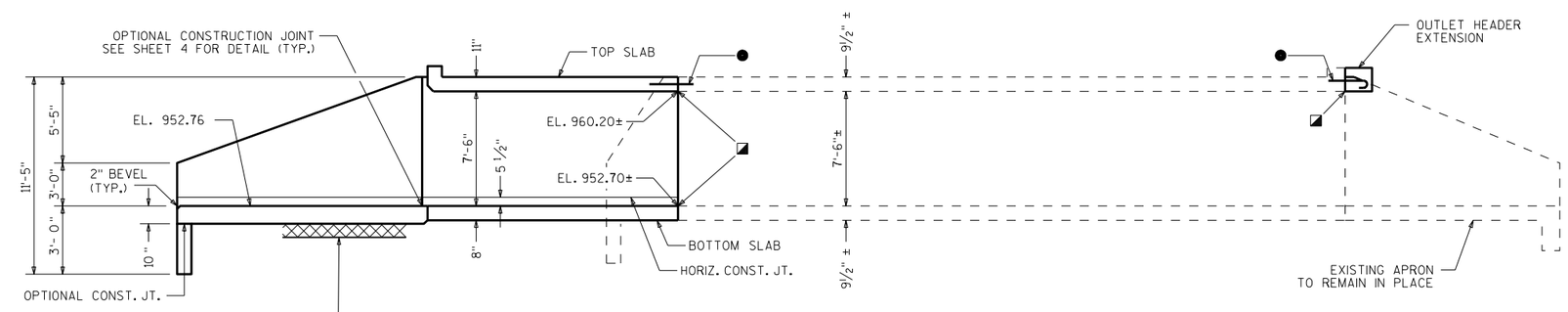
63

SCALE =

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.



PLAN



INLET **ELEVATION** **OUTLET**

STATE PROJECT NUMBER

5730-00-61

- ⚠ SEE CORNER DETAILS SHEET 4
- ⚠ EXIST. BARREL TO REMAIN IN PLACE
- ∗ BUILD APRON AND END OF BOX LEVEL
- ◪ INSIDE WALLS TO MATCH EXISTING (TYP.)
- ⊠ REMOVE EXISTING APRON AND WINGS. EXTEND EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK. (TYP. BOTH SIDES)
- ◯ INDICATES WING NUMBER
- ● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).

LIST OF DRAWINGS

STRUCTURE DESIGN CONTACT:
DANIELLE DE TENNIS (608) 266-8689
LAURA SHADEWALD (608) 267-9592

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)

EARTHLOAD: DESIGNED FOR 1.0 TO 2.0 FT. OF FILL.

ULTIMATE DESIGN STRESSES:
CONCRETE MASONRY, GRADE A-FA ——— f'_c = 3500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — f_y = 60000 P.S.I.

TRAFFIC VOLUME

STH 56
A.D.T. = 3700 (2035)
R.D.S. = 60 M.P.H.

TOTAL ESTIMATED QUANTITIES

BID ITEMS

203.0200	REMOVING OLD STRUCTURE STA. 300+04.00	1	LS
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-62-358	1	LS
210.0100	BACKFILL STRUCTURE	130	CY
311.0115	BREAKER RUN	14	CY
502.6102	MASONRY ANCHORS TYPE S 1/2-INCH	4	EACH
502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	34	EACH
504.0100	CONCRETE MASONRY CULVERTS	22	CY
505.0410	BAR STEEL REINFORCEMENT HS CULVERTS	2270	LB
505.0610	BAR STEEL REINFORCEMENT HS COATED CULVERTS	775	LB
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	14	SY
606.0300	RIPRAP HEAVY	18	CY
645.0105	GEOTEXTILE FABRIC TYPE C	52	SY
645.0120	GEOTEXTILE FABRIC TYPE HR	50	SY

NON-BID ITEMS

FILLER	3/4"	SIZE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-62-358" SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS IN CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 11/10/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-62-358

STH 56 OVER UNNAMED STREAM

COUNTY	TOWN/~~CITY/VILLAGE~~
VERNON	VIROQUA

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DFD	DESIGN CK'D.	MWB	DRAWN BY	DFD	PLANS CK'D.	MWB

LAYOUT

SHEET 1 OF 4

64

I.D. 5730-00-31C

DATE: JULY 2014

SCALE = 4

8

8

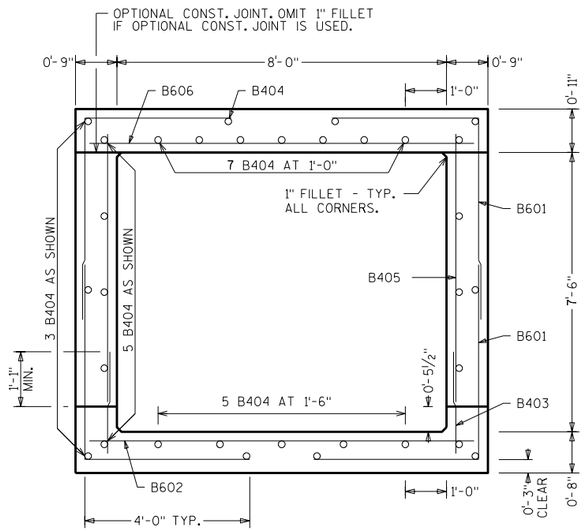
STATE PROJECT NUMBER

5730-00-61

BILL OF BARS

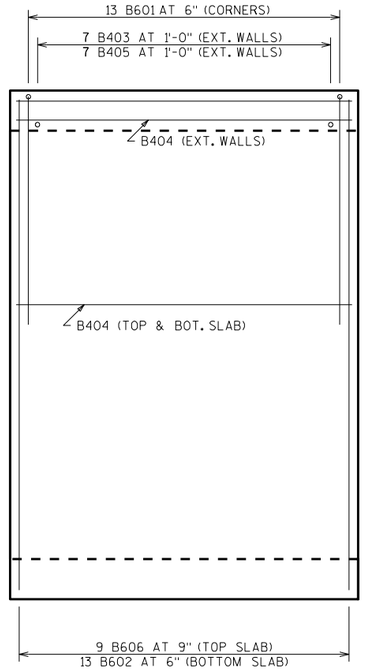
THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

MARK	NUMBER REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B601	52	9-3	4-0	NO	CORNERS
B602	13	9-2		NO	BOTTOM SLAB TRANS.
B403	14	2-0		NO	WALLS-DOWELS VERT.
B404	32	6-0		NO	TOP&BOTTOM SLAB & WALL
B405	14	7-6		NO	WALLS VERT.
B606	9	9-2		NO	TOP SLAB TRANS.
B407	2	9-2		NO	HEADERS HORIZ.
B308	13	3-2	YES	NO	HEADER STIRRUPS VERT.
● B509	24	2-6		NO	VERT. CONST. JOINT



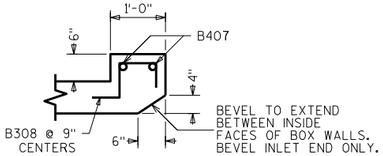
TYPICAL SECTION THRU INLET EXTENSION

ALL LONGIT. BARS NOT LABELED ARE B404 AS SHOWN

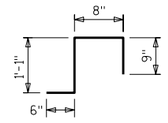


PLAN VIEW OF INLET EXTENSION

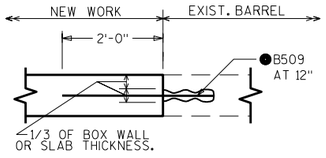
APRON AND HEADER ARE NOT SHOWN.



SECTION THRU TOP HEADER



B308



VERTICAL CONSTRUCTION JOINT

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-358

DRAWN BY DFD | PLANS CK'D. MWB

BOX DETAILS

SHEET 2

65

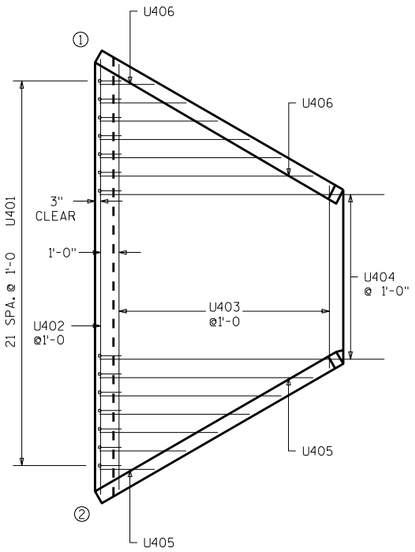
SCALE = 4.0

8

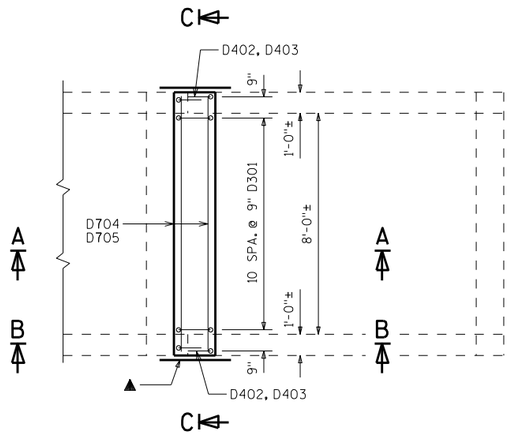
8

STATE PROJECT NUMBER

5730-00-61

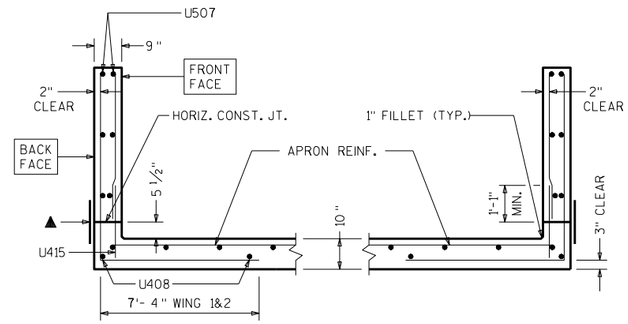


INLET APRON



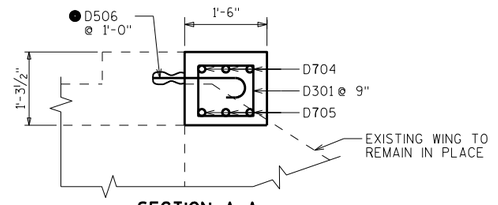
OUTLET HEADER EXTENSION

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).



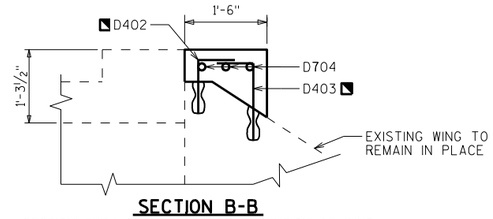
SECTION THRU WINGS

AT RIGHT ANGLES TO WING WALLS



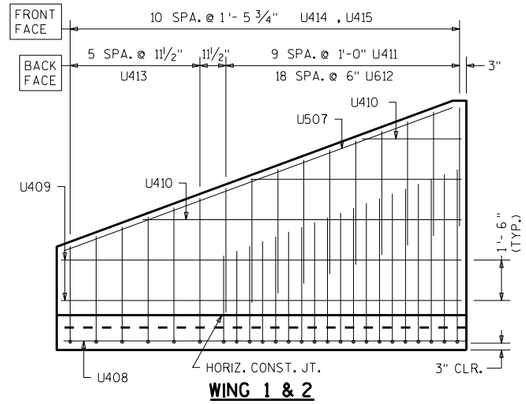
SECTION A-A

SECTION THRU OUTLET HEADER EXTENSION

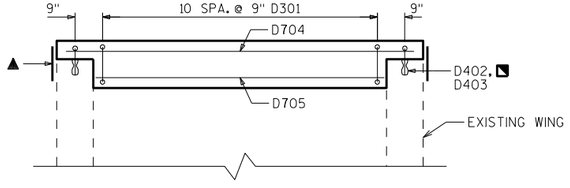


SECTION B-B

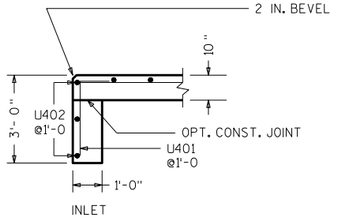
SECTION THRU OUTLET HEADER EXTENSION AT WING



WING 1 & 2

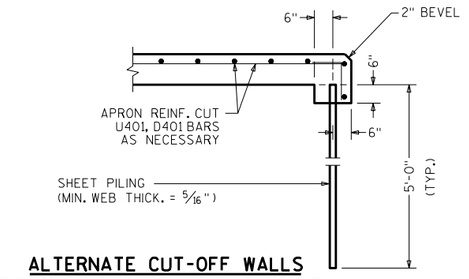


SECTION C-C



CUT-OFF WALLS

SECTION THRU THE WALLS



ALTERNATE CUT-OFF WALLS

THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS.

◥ CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 1/2-INCH , EMBED 6" INTO SOUND CONCRETE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-358

DRAWN BY DFD | PLANS CK'D. MWB

APRON DETAILS

SHEET 3

66

SCALE =

8

8

STATE PROJECT NUMBER

5730-00-61

BILL OF BARS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401		22	3 - 6	1 - 0		INLET APRON AND CUTOFF WALL
U402		3	23 - 6			INLET APRON AND CUTOFF WALL
U403		13	16 - 4		*	" APRON
U404		10	15 - 7			" APRON
U405		6	7 - 4		*	" APRON
U406		6	7 - 4		*	" APRON
U507		4	15 - 8			WINGS 1 AND 2 -HORIZONTAL -BOTH FACES
U408		4	14 - 10			WING "-HORIZONTAL -APRON BOTT. SLAB
U409		8	14 - 10			WING "-HORIZONTAL - BOTH FACES
U410		12	7 - 11		*	WING "-HORIZONTAL - BOTH FACES
U411		20	4 - 6			WING "-VERTICAL - BACK FACE
U612	X	38	11 - 4	7 - 4	*	WING "-VERTICAL - BACK FACE
U413	X	12	11 - 8	7 - 4	*	WING "-VERTICAL - BACK FACE
U414		22	5 - 1		*	WING "-VERTICAL - FRONT FACE
U415	X	22	2 - 1			WINGS 1 AND 2 - DOWELS - FRONT FACE
D301		11	4 - 8	X		OUTLET HEADER STIRRUPS
◥ D402		2	1 - 5	0 - 8		OUTLET HEADER VERTICAL DOWELS
◥ D403		2	1 - 11	0 - 8		OUTLET HEADER VERTICAL DOWELS
D704		3	9 - 6			OUTLET HEADER HORIZONTAL - TOP
D705		3	7 - 6			OUTLET HEADER HORIZONTAL - BOTTOM
● D506		10	2 - 1	X		OUTLET HEADER HORIZONTAL DOWELS

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

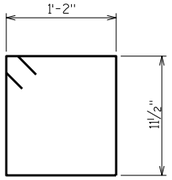
BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY

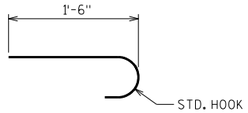
BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
U403	1 SERIES OF 13	9 - 5 TO 23 - 3
U405	1 SERIES OF 6	3 - 0 TO 11 - 8
U406	1 SERIES OF 6	3 - 0 TO 11 - 8
U410	4 SERIES OF 3	3 - 10 TO 11 - 11
U612	2 SERIES OF 19	9 - 9 TO 13 - 0
U413	2 SERIES OF 6	10 - 9 TO 12 - 6
U414	2 SERIES OF 11	2 - 5 TO 7 - 9

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH , EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS.

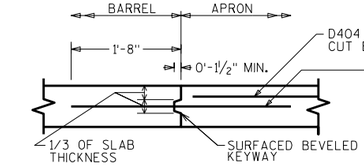
◥ CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 1/2-INCH , EMBED 6" INTO SOUND CONCRETE



D301

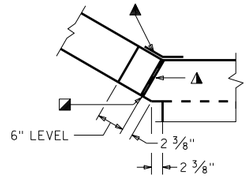


D506

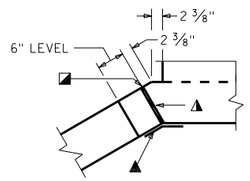


OPTIONAL CONSTRUCTION JOINT

2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.



CORNER 1



CORNER 2

▲ ¾" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.

◪ 1" BEVEL TYPICAL

▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.

CORNER DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-62-358

DRAWN BY DFD | PLANS CK'D. MWB

DETAILS

SHEET 4

67

8

8

SCALE =

C-62-312

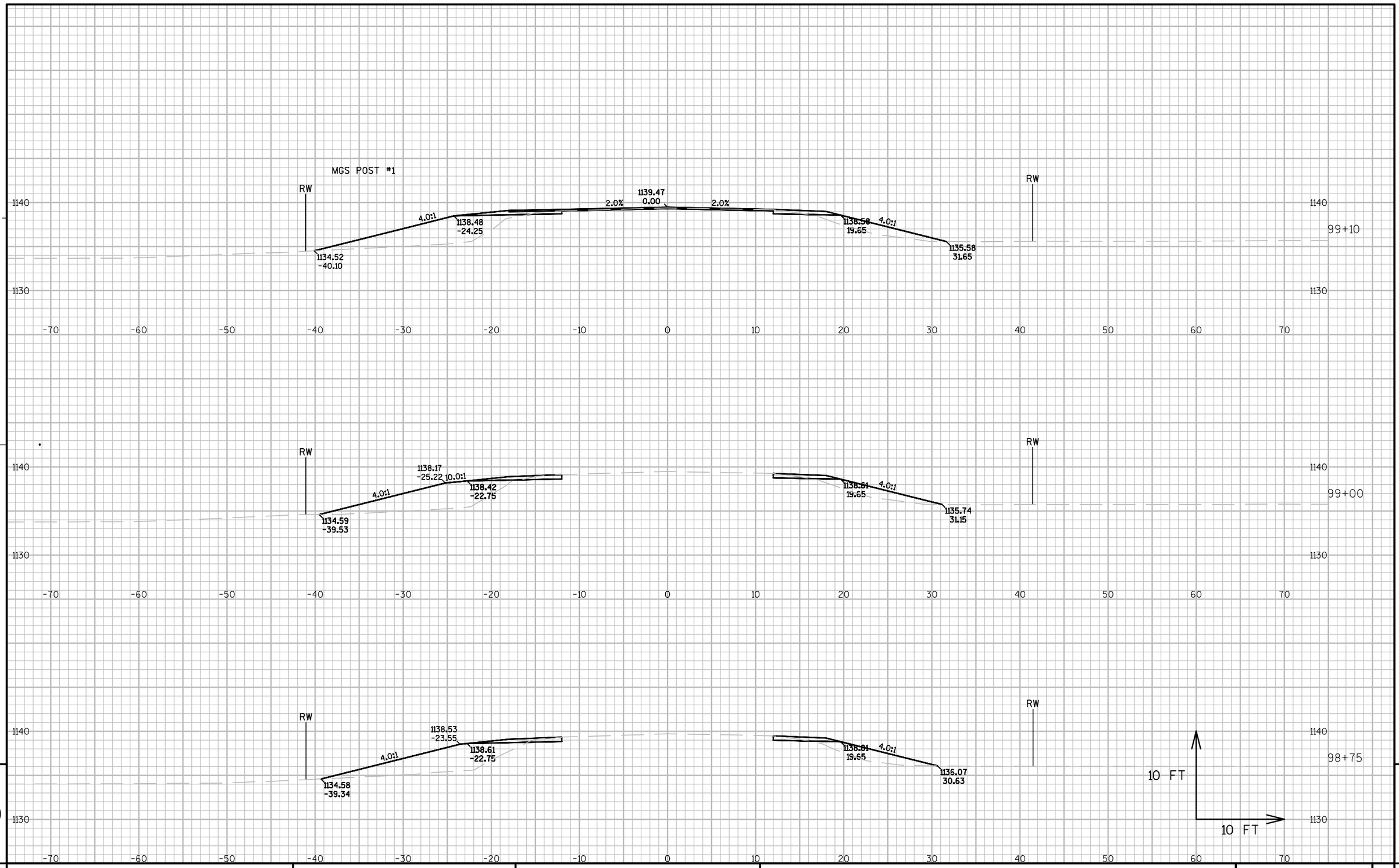
STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged / Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	
									Note 1	Note 2	Note 3				1.00 Note 1	1.25	1.50 Note 4	1.10	1.30 Note 5	0.60 Note 6	0.80 Note 7	Note 8
98+64.64	9864.64	0.00	2.42	0.00	49.23	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
98+99.95	9899.95	35.31	2.68	0.00	48.88	0.00	0.00	0.00	3	0	64	0	0	0	3	80	0	0	0	0.00	0.00	-76.86
99+50	9950.00	50.05	1.19	0.00	36.51	0.00	0.00	0.00	4	0	79	0	0	0	7	179	0	0	0	0.00	0.00	-172.19
100+50	10050.00	100.00	3.50	0.00	8.07	0.00	0.00	0.00	9	0	83	0	0	0	16	282	0	0	0	0.00	0.00	-266.69
101+00	10100.00	50.00	1.48	0.00	18.57	0.00	0.00	0.00	5	0	25	0	0	0	20	313	0	0	0	0.00	0.00	-292.91
101+50	10150.00	50.00	2.01	0.00	14.76	0.00	0.00	0.00	3	0	31	0	0	0	23	352	0	0	0	0.00	0.00	-328.25
102+00	10200.00	50.00	1.56	0.00	8.78	0.00	0.00	0.00	3	0	22	0	0	0	27	379	0	0	0	0.00	0.00	-352.19

C-62-313

STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged / Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	
									Note 1	Note 2	Note 3				1.00 Note 1	1.25	1.50 Note 4	1.10	1.30 Note 5	0.60 Note 6	0.80 Note 7	Note 8
197+57.49	19757.49	0.00	3.79	0.00	11.41	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
198+00	19800.00	42.51	0.00	0.00	48.47	0.00	0.00	0.00	3	0	47	0	0	0	3	59	0	0	0	0.00	0.00	-55.94
198+50	19850.00	50.00	0.67	0.00	77.05	0.00	0.00	0.00	1	0	116	0	0	0	4	204	0	0	0	0.00	0.00	-200.59
199+00	19900.00	50.00	4.17	0.00	47.28	0.00	0.00	0.00	4	0	115	0	0	0	8	348	0	0	0	0.00	0.00	-339.99
199+50	19950.00	50.00	2.24	0.00	86.54	0.00	0.00	0.00	6	0	124	0	0	0	14	503	0	0	0	0.00	0.00	-488.93
201+00	20100.00	150.00	6.23	0.00	42.50	0.00	0.00	0.00	24	0	358	0	0	0	38	951	0	0	0	0.00	0.00	-913.45
201+50	20150.00	50.00	3.21	0.00	27.93	0.00	0.00	0.00	9	0	65	0	0	0	46	1,033	0	0	0	0.00	0.00	-986.22
202+00	20200.00	50.00	3.31	0.00	11.15	0.00	0.00	0.00	6	0	36	0	0	0	52	1,078	0	0	0	0.00	0.00	-1,025.41

C-62-358

STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
			Cut	Salvaged / Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged / Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	
									Note 1	Note 2	Note 3				1.00 Note 1	1.25	1.50 Note 4	1.10	1.30 Note 5	0.60 Note 6	0.80 Note 7	Note 8
296+82.32	29682.32	0.00	1.51	0.00	7.03	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
297+00	29700.00	17.68	1.44	0.00	4.05	0.00	0.00	0.00	1	0	4	0	0	0	1	5	0	0	0	0.00	0.00	-3.57
297+50	29750.00	50.00	3.35	0.00	1.44	0.00	0.00	0.00	4	0	5	0	0	0	5	11	0	0	0	0.00	0.00	-5.49
298+00	29800.00	50.00	4.08	0.00	11.13	0.00	0.00	0.00	7	0	12	0	0	0	12	25	0	0	0	0.00	0.00	-13.15
298+50	29850.00	50.00	4.21	0.00	27.07	0.00	0.00	0.00	8	0	35	0	0	0	20	70	0	0	0	0.00	0.00	-49.68
299+00	29900.00	50.00	8.88	0.00	13.77	0.00	0.00	0.00	12	0	38	0	0	0	32	117	0	0	0	0.00	0.00	-84.83
299+50	29950.00	50.00	5.76	0.00	17.32	0.00	0.00	0.00	14	0	29	0	0	0	46	153	0	0	0	0.00	0.00	-107.27
300+50	30050.00	100.00	6.89	0.00	18.25	0.00	0.00	0.00	23	0	66	0	0	0	69	235	0	0	0	0.00	0.00	-166.19
301+00	30100.00	50.00	10.31	0.00	23.17	0.00	0.00	0.00	16	0	38	0	0	0	85	283	0	0	0	0.00	0.00	-198.20
301+50	30150.00	50.00	1.84	0.00	26.28	0.00	0.00	0.00	11	0	46	0	0	0	96	340	0	0	0	0.00	0.00	-244.19
302+00	30200.00	50.00	0.91	0.00	14.43	0.00	0.00	0.00	3	0	38	0	0	0	99	388	0	0	0	0.00	0.00	-288.77
302+50	30250.00	50.00	1.26	0.00	5.89	0.00	0.00	0.00	2	0	19	0	0	0	101	411	0	0	0	0.00	0.00	-310.28
302+92.61	30292.61	42.61	1.24	0.00	2.54	0.00	0.00	0.00	2	0	7	0	0	0	103	419	0	0	0	0.00	0.00	-316.63



PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-312	SHEET 69	E

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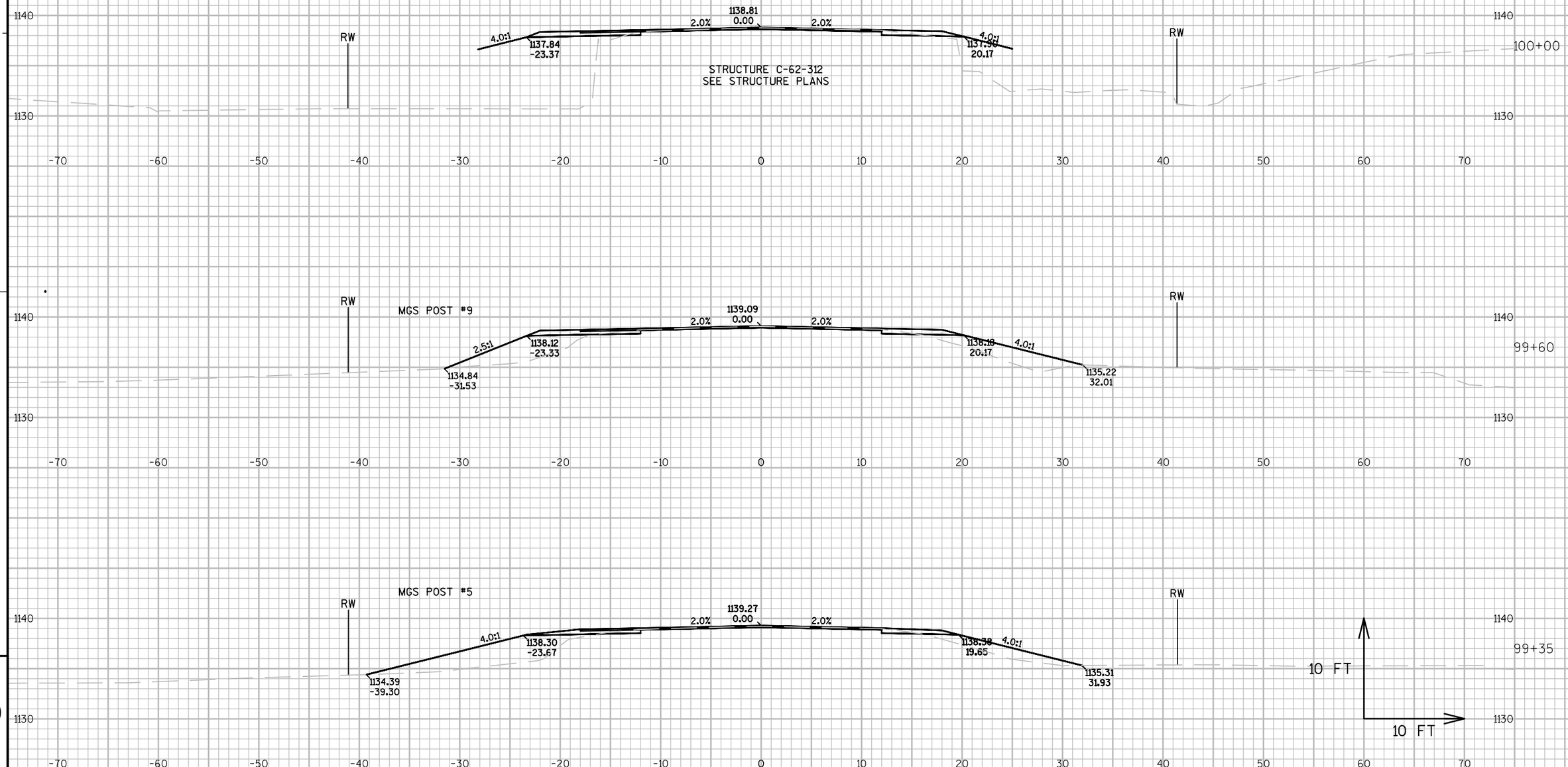
LAYOUT NAME - SECTION SHEET - (7)

PLOT DATE : 10/1/2014 2:47 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



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9

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-312	SHEET 70	E

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LAYOUT NAME - SECTION SHEET - (8)

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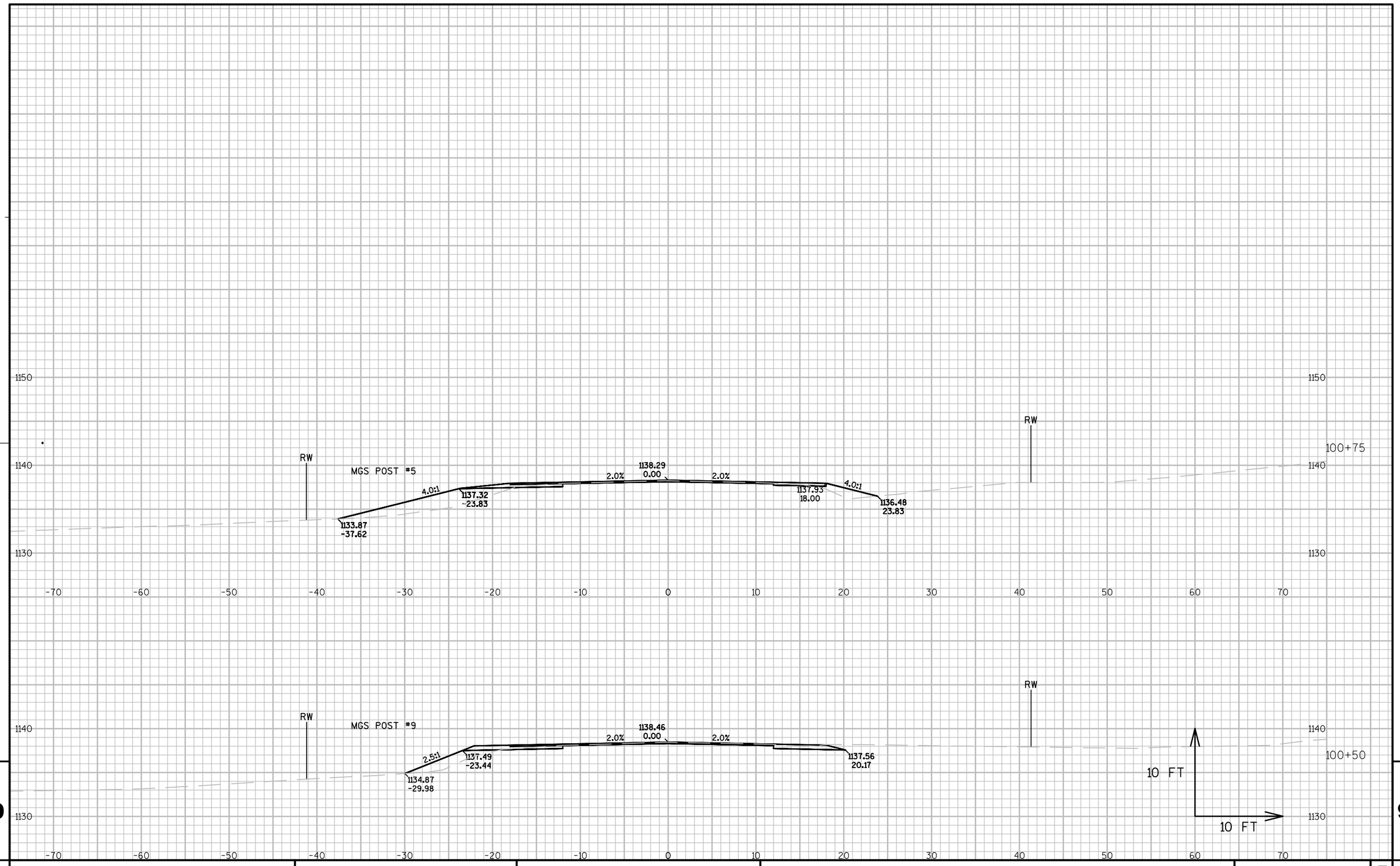
WISDOT/CADDS SHEET 49



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PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-312	SHEET 71	E

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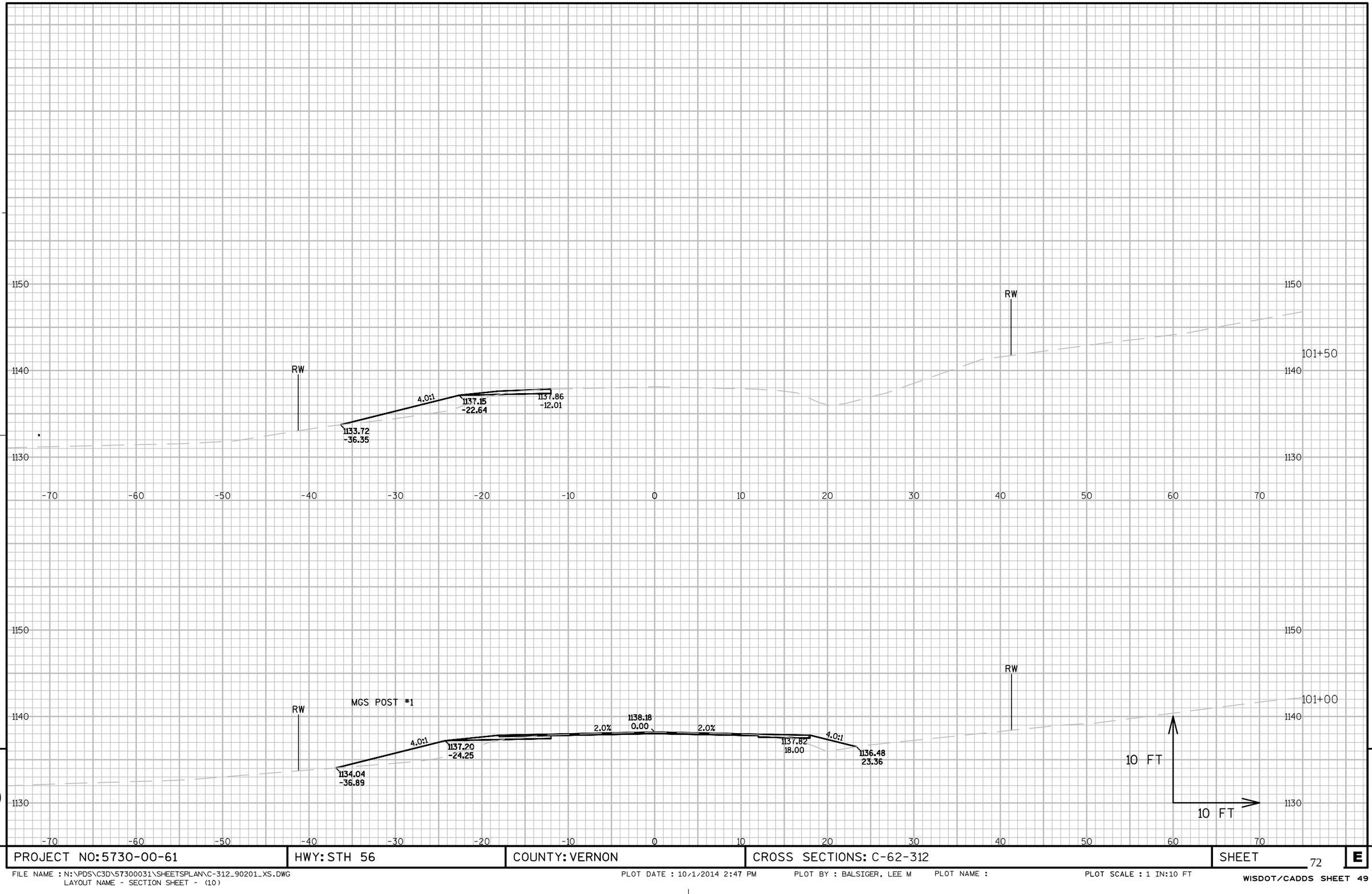
LAYOUT NAME - SECTION SHEET - (9)

PLOT DATE : 10/1/2014 2:47 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:10 FT



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PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-312	SHEET 72	E

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LAYOUT NAME - SECTION SHEET - (10)

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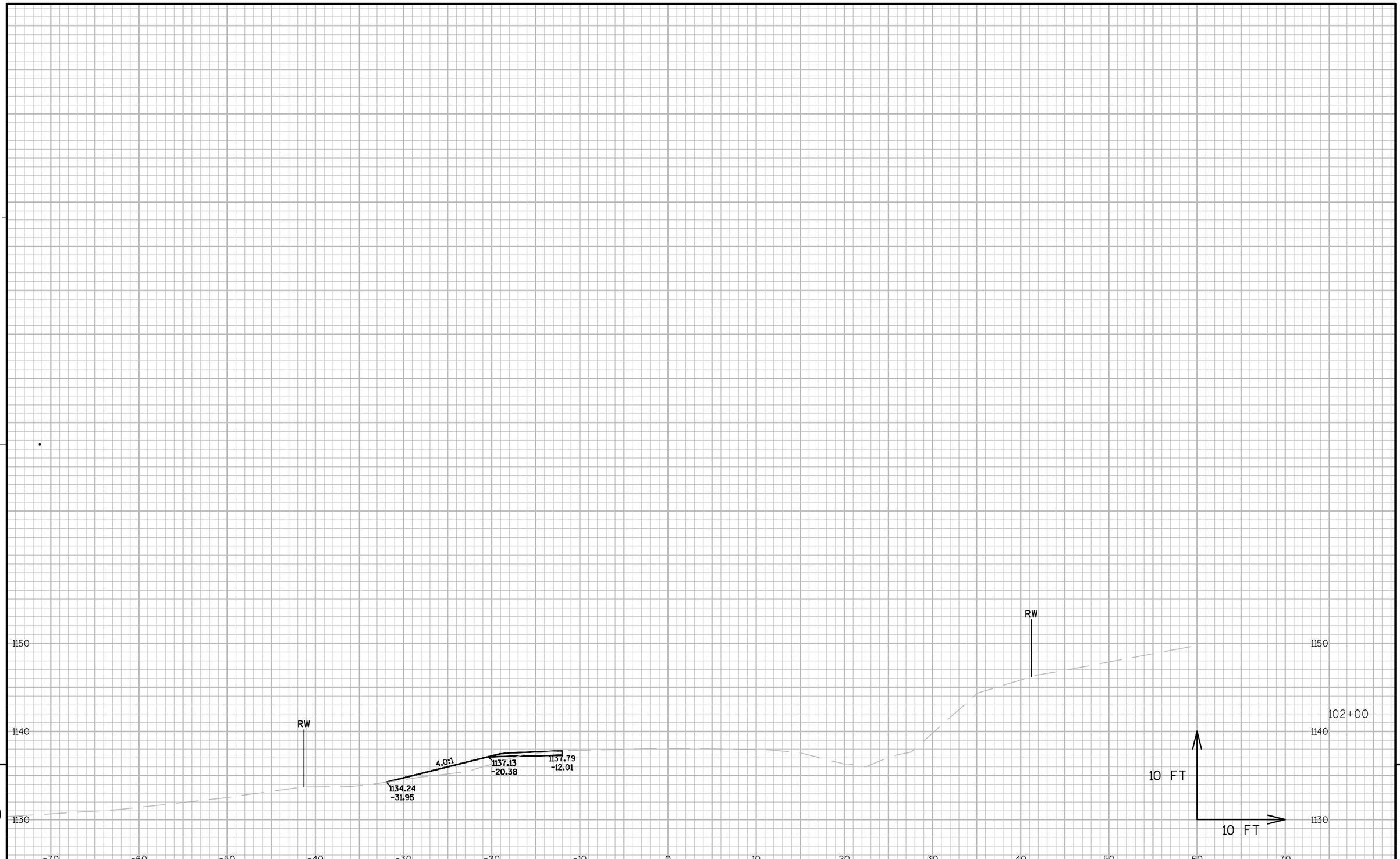

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PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-312	SHEET 73	E

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LAYOUT NAME - SECTION SHEET - (11)

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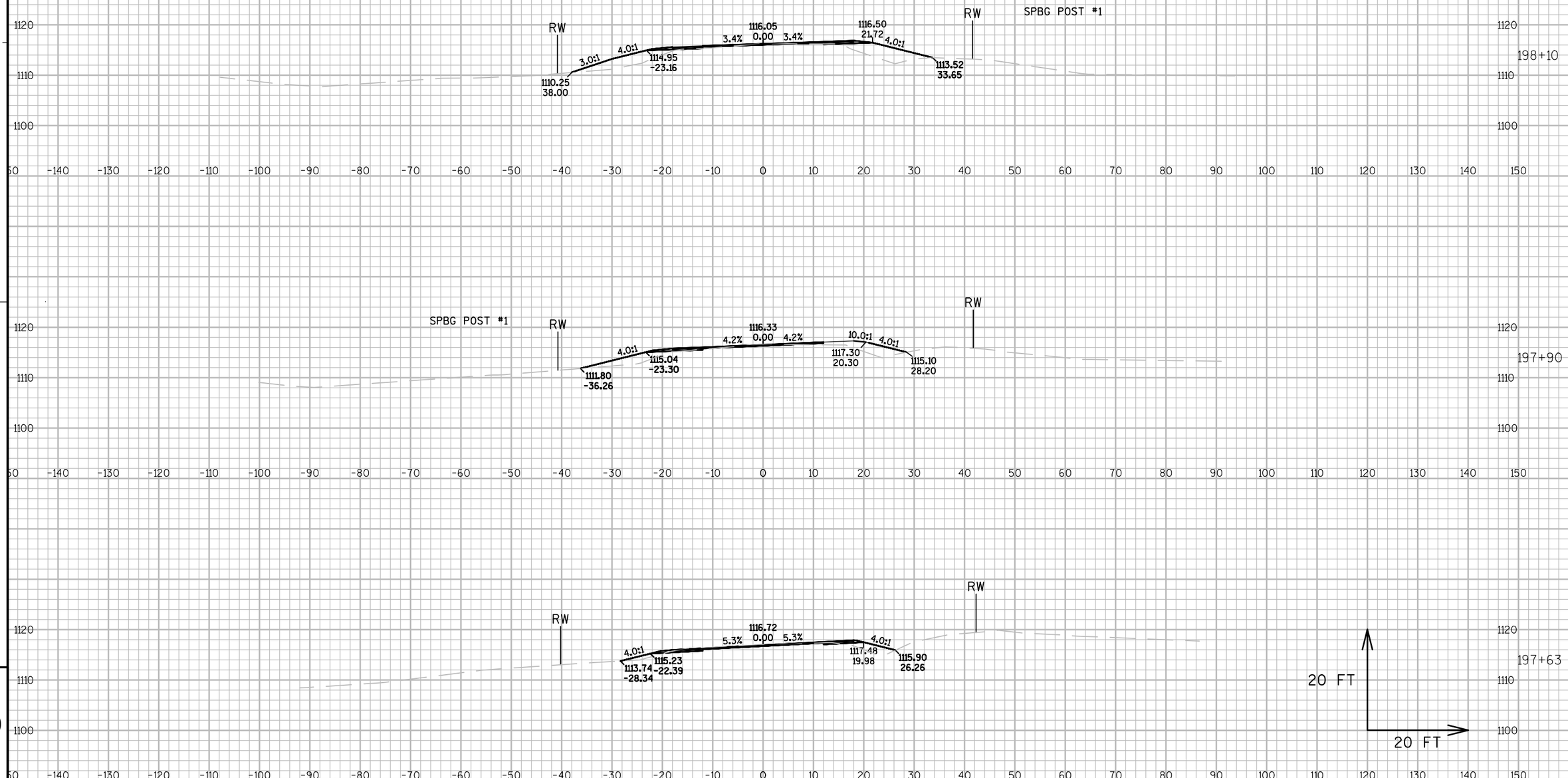

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PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-313	SHEET 74	E

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LAYOUT NAME - SECTION SHEET - (27)

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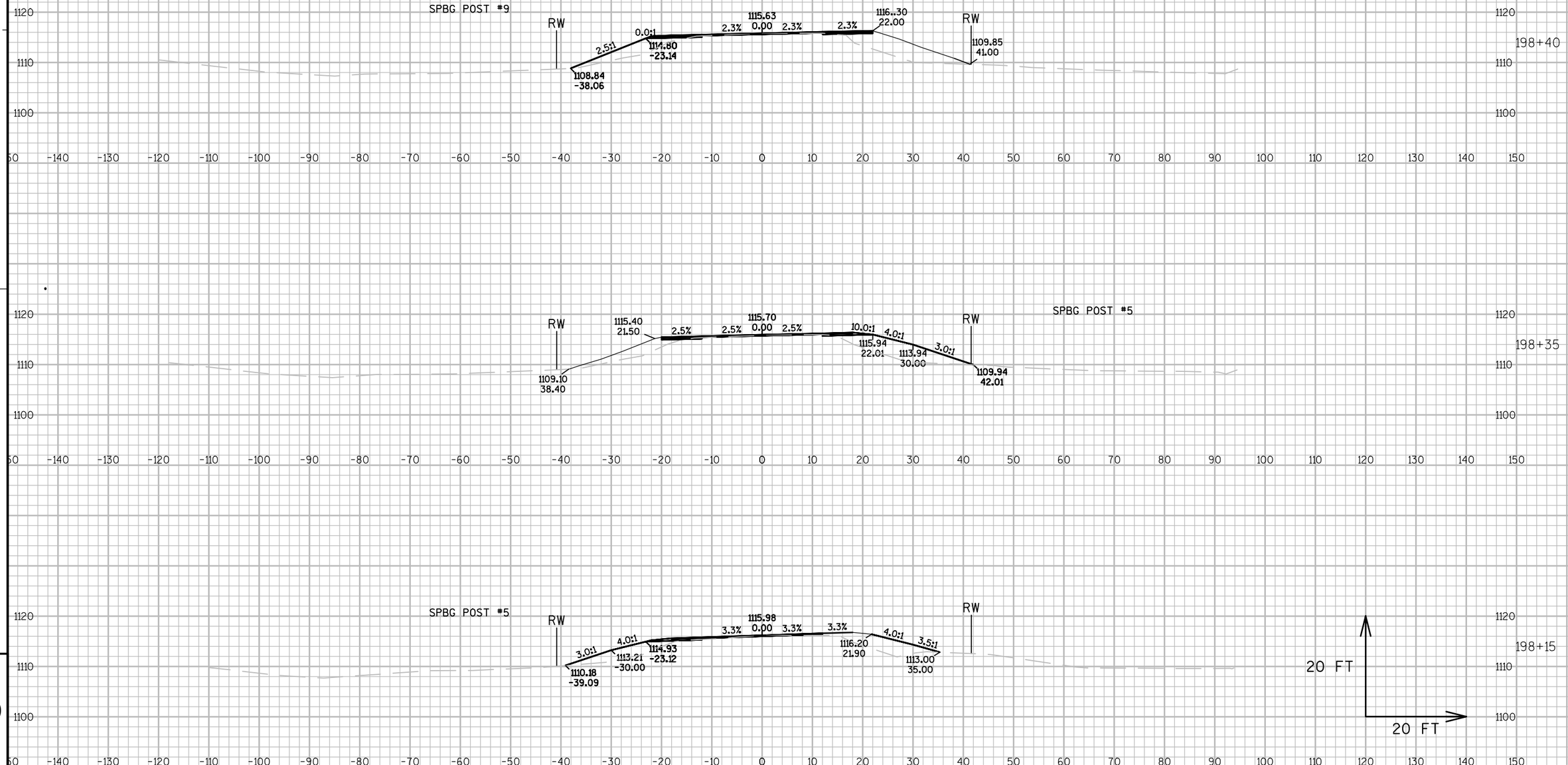
WISDOT/CADDS SHEET 49



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PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-313	SHEET 75	E

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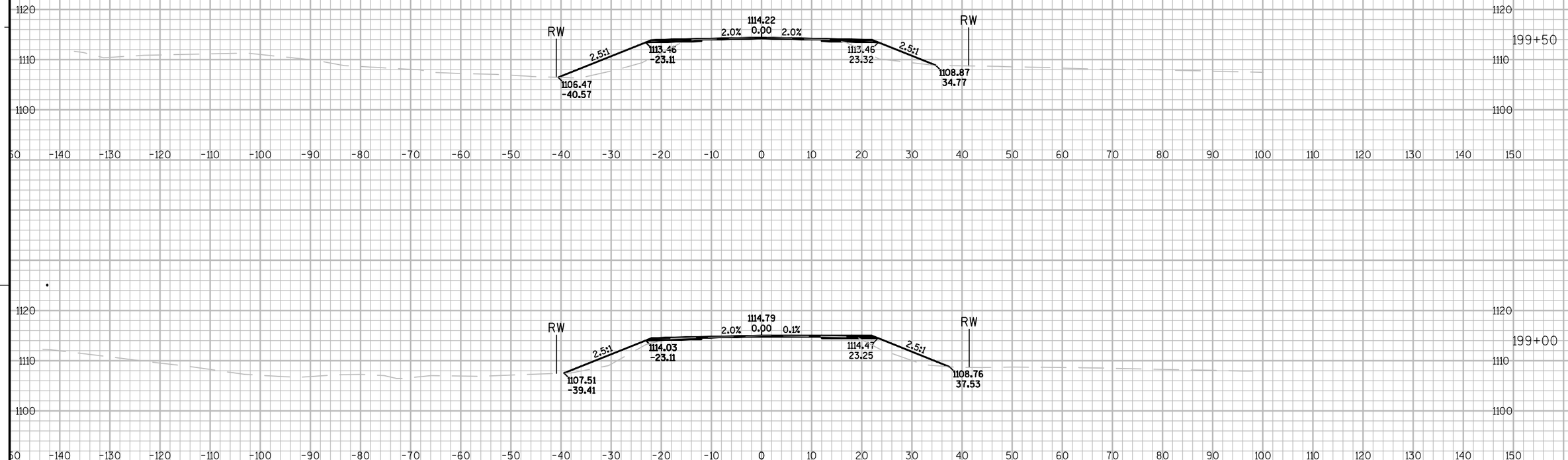
LAYOUT NAME - SECTION SHEET - (28)

PLOT DATE : 10/13/2014 11:33 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



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PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-313	SHEET 76	E

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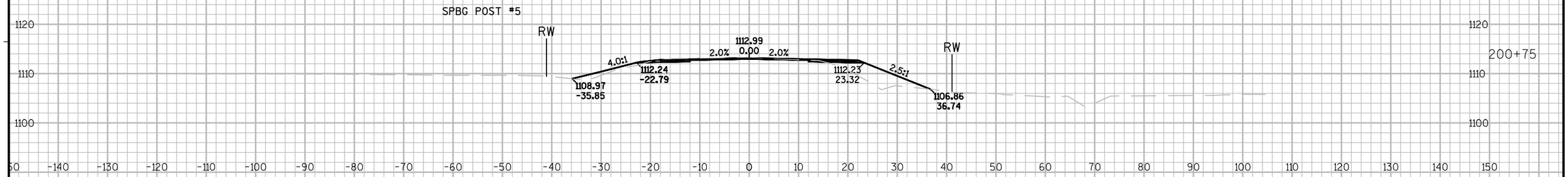
LAYOUT NAME - SECTION SHEET - (29)

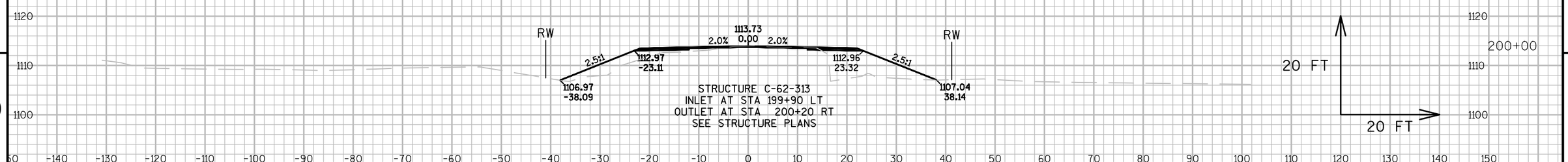
PLOT DATE : 10/13/2014 11:33 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

SPBG POST #5



SPBG POST #9



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PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-313	SHEET 77	E

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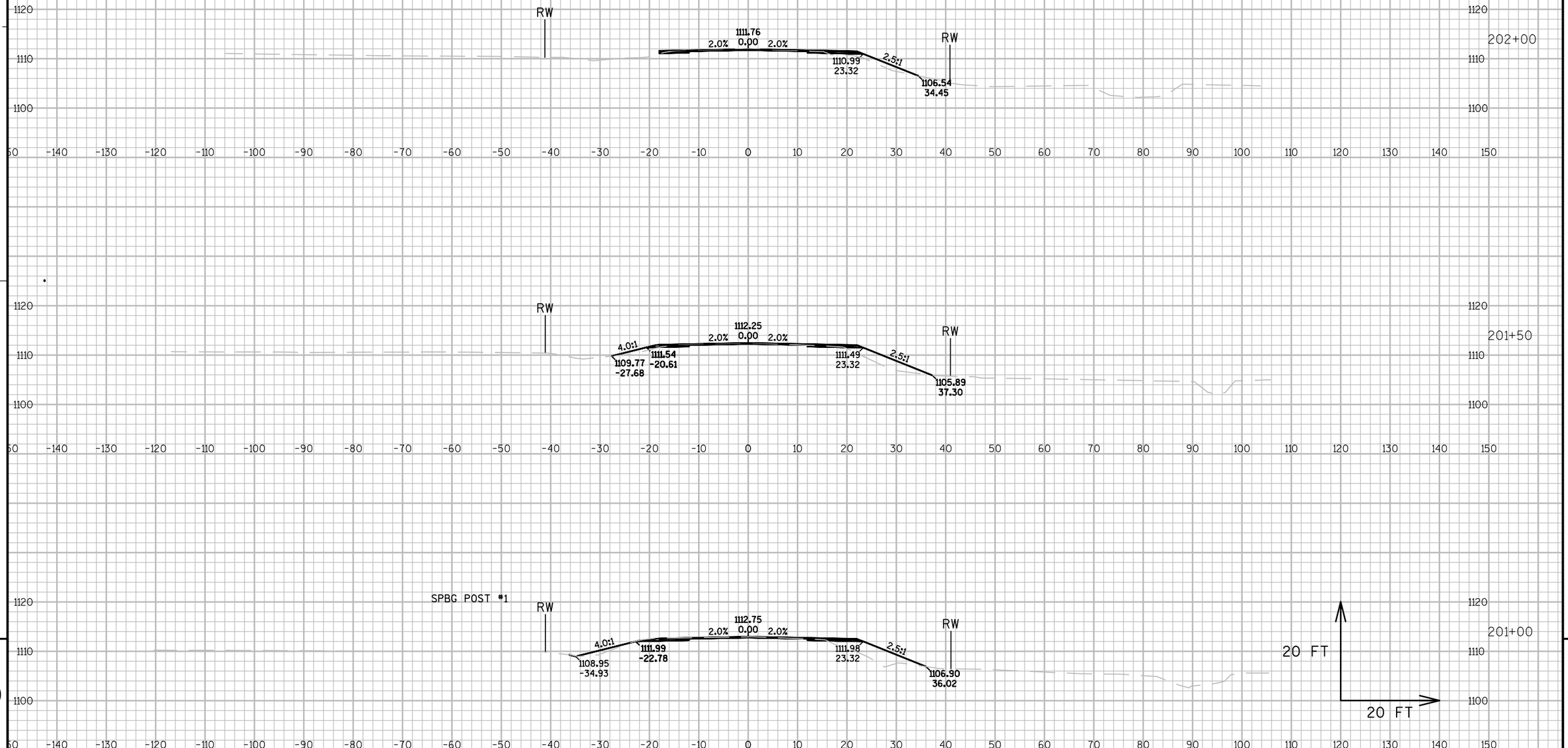
LAYOUT NAME - SECTION SHEET - (30)

PLOT DATE : 10/13/2014 11:33 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

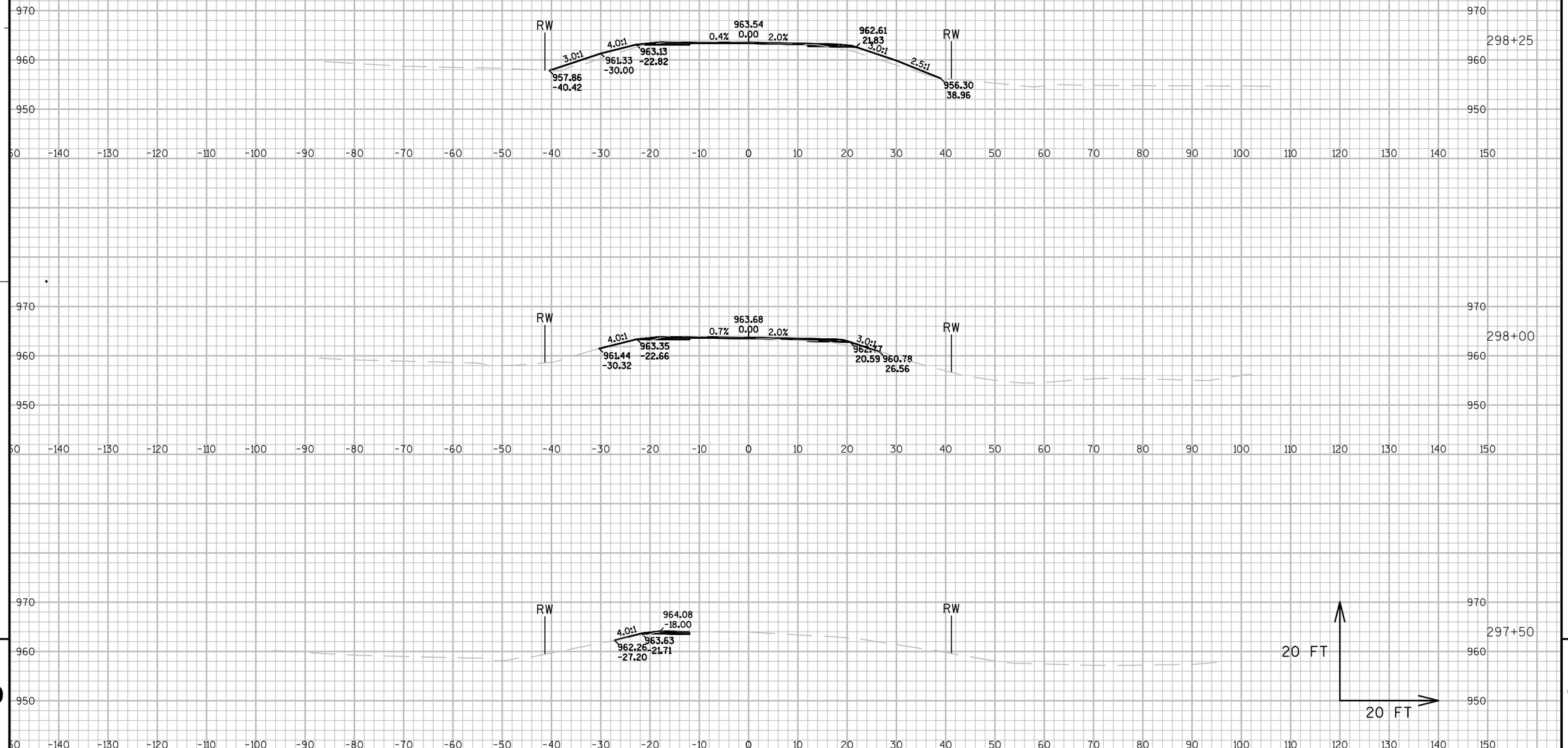


PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-313	SHEET 78	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-313_90201_XS.DWG
LAYOUT NAME - SECTION SHEET - (31)

PLOT DATE : 10/13/2014 11:33 AM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-358	SHEET 79	E

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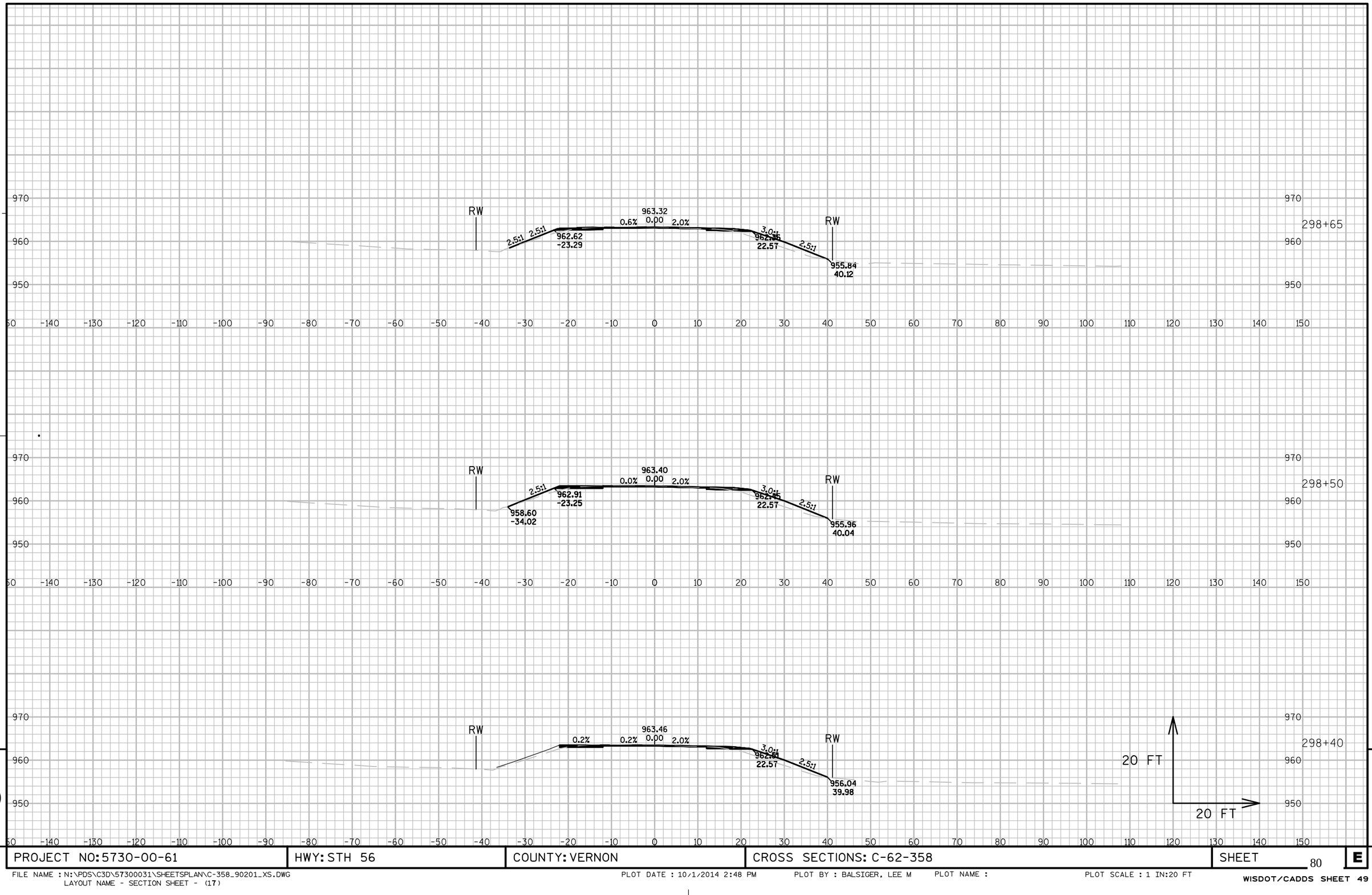
LAYOUT NAME - SECTION SHEET - (16)

PLOT DATE : 10/1/2014 2:48 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

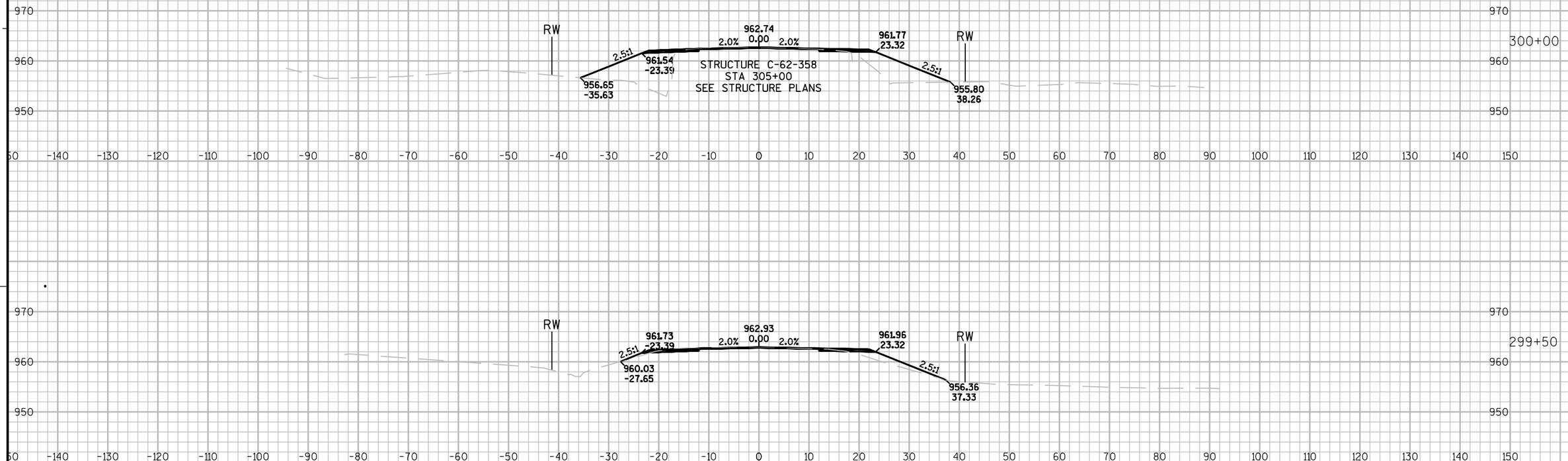


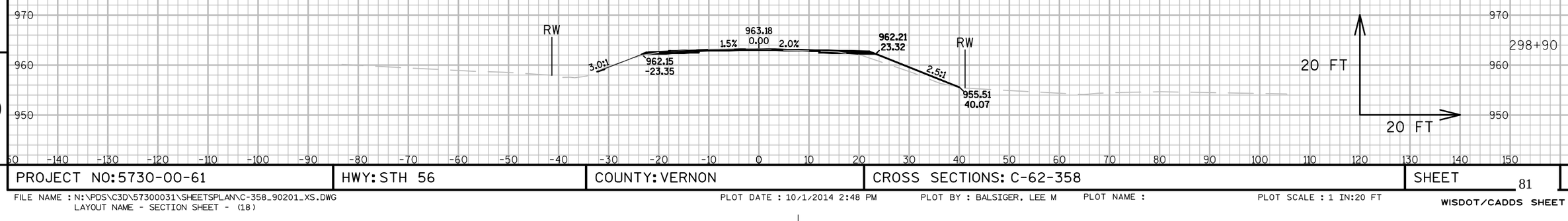
PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-358	SHEET 80	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-358_90201_XS.DWG
LAYOUT NAME - SECTION SHEET - (17)

PLOT DATE : 10/1/2014 2:48 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49





9

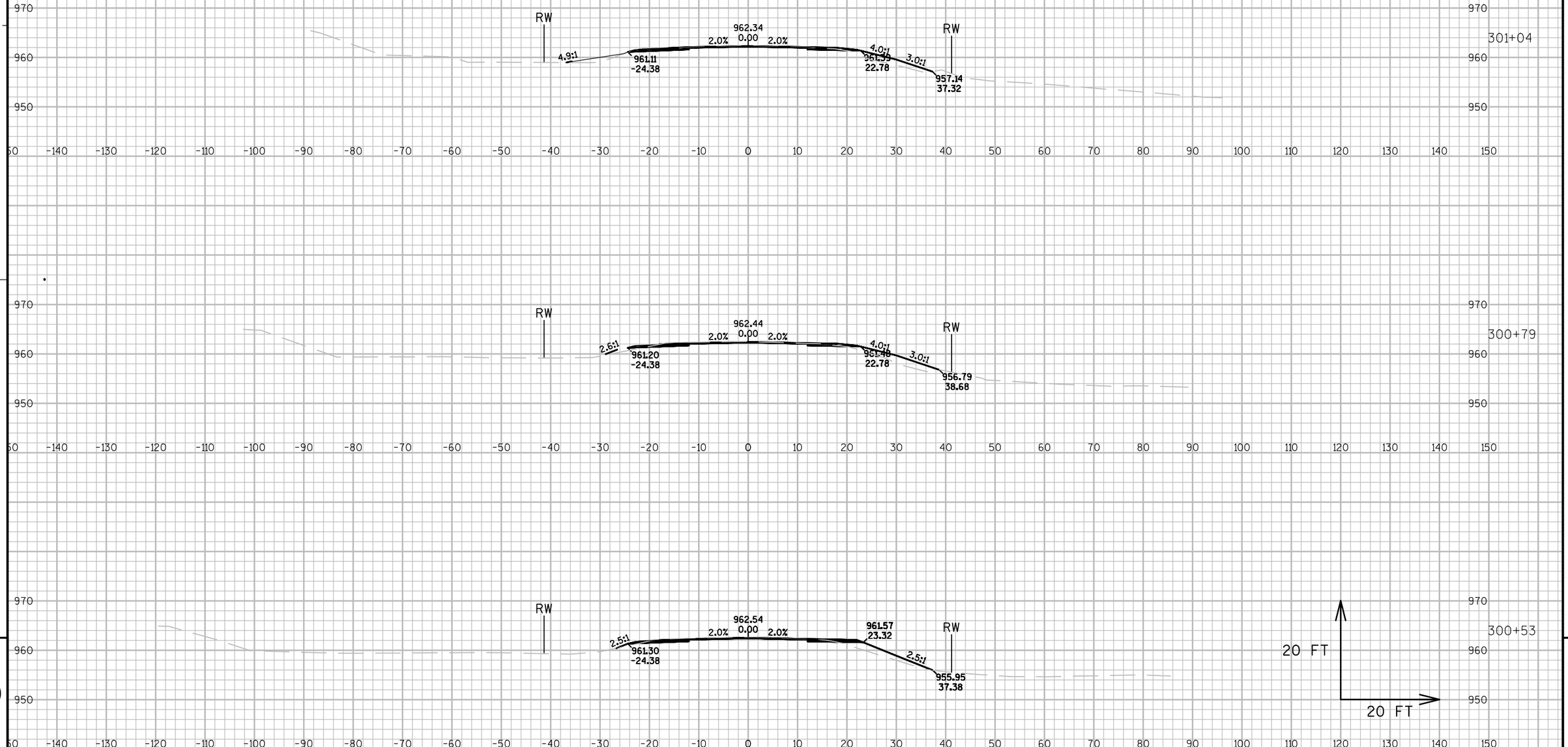
9

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-358	SHEET 81	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-358_90201_XS.DWG
LAYOUT NAME - SECTION SHEET - (18)

PLOT DATE : 10/1/2014 2:48 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

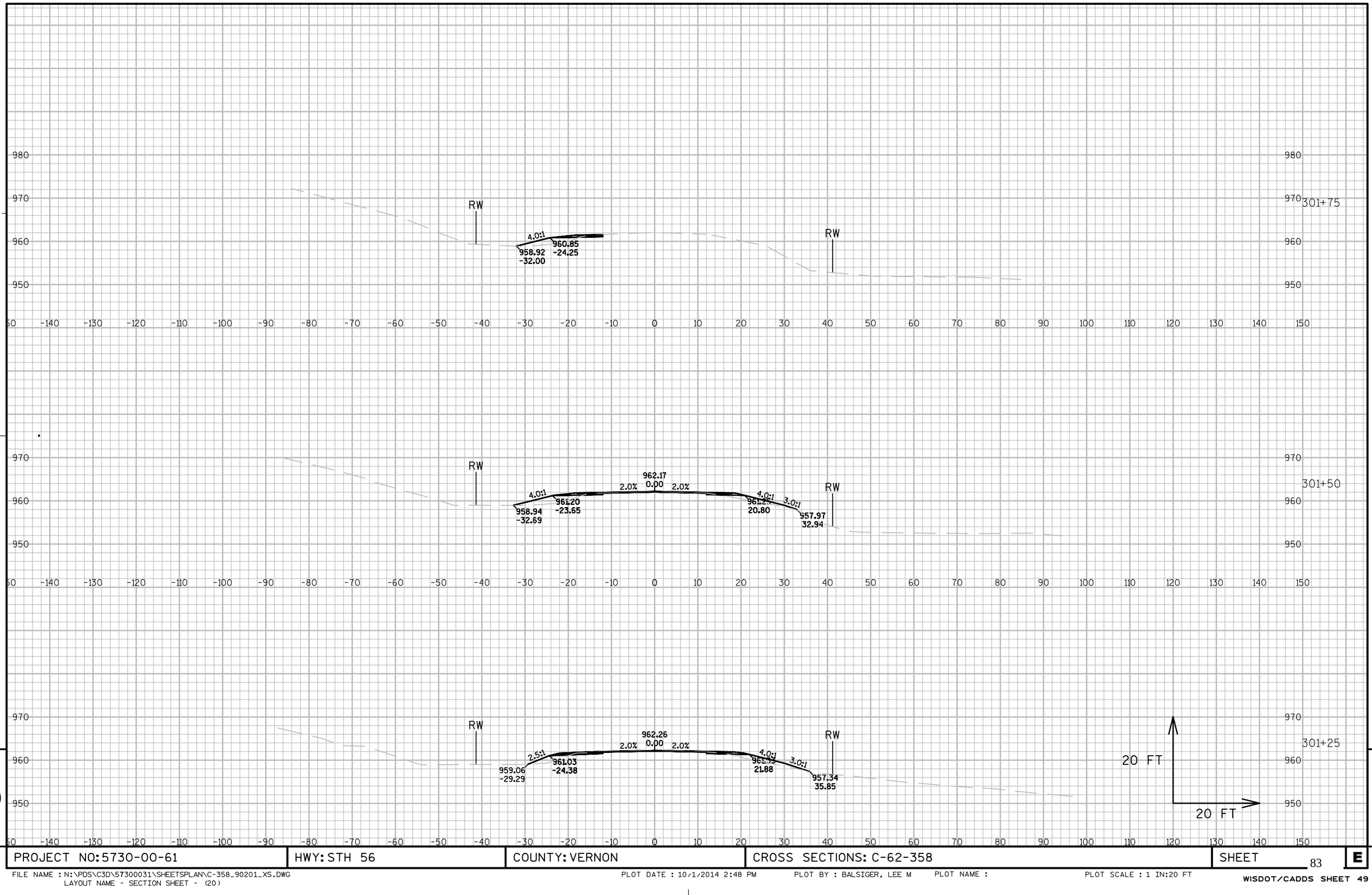
9

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-358	SHEET 82	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-358_90201_XS.DWG
LAYOUT NAME - SECTION SHEET - (19)

PLOT DATE : 10/1/2014 2:48 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



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9

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-358	SHEET 83	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-358_90201_XS.DWG
LAYOUT NAME - SECTION SHEET - (20)

PLOT DATE : 10/1/2014 2:48 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

980
970
960
950
RW
4.0:1
959.60
-26.89
960.81
-22.05
302+50
RW
RW
980
970
960
950
RW
4.0:1
959.25
-30.62
960.85
-24.23
RW
302+00
20 FT
20 FT
-50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
-140 -130 -120 -110 -100 -90 -80 -70 -60

9

9

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-358	SHEET 84	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-358_90201_XS.DWG
LAYOUT NAME - SECTION SHEET - (21)

PLOT DATE : 10/1/2014 2:48 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

990
980
970
960
950

RW

960.72
-20.19
960.44
-21.30

RW

302+93

20 FT

20 FT

-150 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90

9

9

PROJECT NO: 5730-00-61	HWY: STH 56	COUNTY: VERNON	CROSS SECTIONS: C-62-358	SHEET 85	E

FILE NAME : N:\PDS\C3D\57300031\SHEETSPLAN\C-358_90201_XS.DWG
LAYOUT NAME - SECTION SHEET - (22)

PLOT DATE : 10/1/2014 2:48 PM PLOT BY : BALSIGER, LEE M PLOT NAME : PLOT SCALE : 1 IN:20 FT

Wisconsin Department of Transportation

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