AS-BUILT

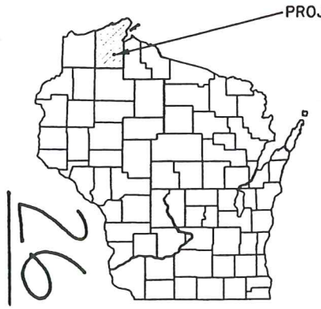
Nov 05

PROJECT ID: 1560-20-71

INDEX OF SHEETS

TOTAL SHEETS = 38

PROJECT LOCATION



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

GRAND VIEW - STH 118
USH 63
BAYFIELD COUNTY

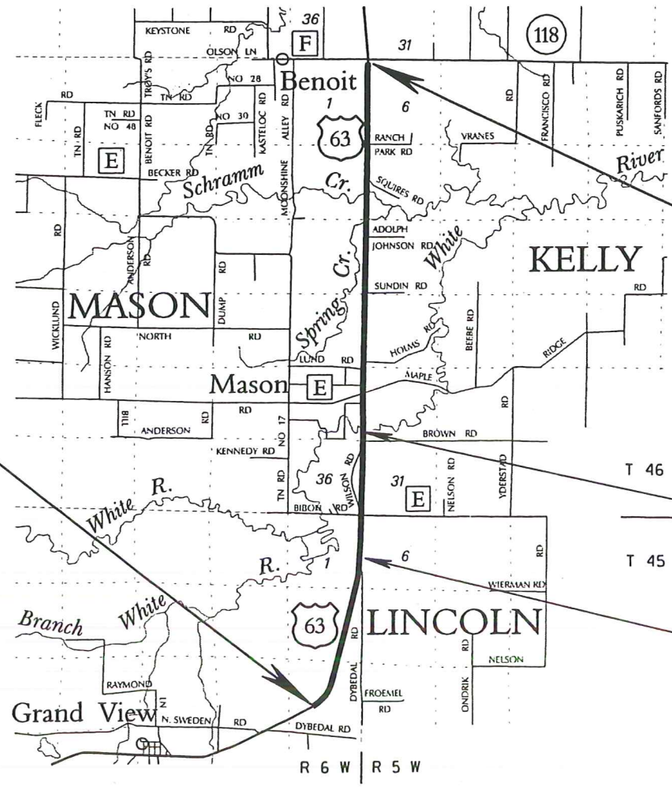
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1560-20-71	STP 2005558	1

1560-20-71
USH 63 **Bayfield** County
Grandview – STH 118
Northwoods Plaving
Ralph Meir.

Start Date: 5/15/06
Completion Date: 11/2/06
Final Contract Cost: #1,876,558

Prime Contractor: Northwoods Paving
Sub Contractors: Century Fence
Chippewa Conc. Services
Fahrnes Asph. Sealers
Mattison Contractors
Pitlik & Wick
Roffers Consti
Safemark

STATE PROJECT NUMBER
1560-20-71



BEGIN PROJECT
STA. 1030+10
Y = 443000 (±200')
X = 1731300 (±200')

END PROJECT
STA. 1494+75

EXCEPTION TO NET ℄
STA 1231+68.67 TO
STA 1232+58.33

EXCEPTION TO NET ℄
STA 1139+76.50 TO
STA 1140+23.38

LAYOUT
SCALE 0 — 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 8.774 MI.

Coordinates are scaled from U.S.G.S. Topographic Maps (Mason and Grand View), Wisconsin Quadrangle, for identification only.

DESIGN DESIGNATION

A.D.T.	(2002)	=	2525
A.D.T.	(2022)	=	3350
D.H.V.	(2022)	=	8.2%
D.		=	60-40
T. % ADT		=	11.3%
DESIGN SPEED		=	55 MPH
ESALS		=	854,100

CONVENTIONAL SYMBOLS

COUNTY LINE		COMBUSTIBLE FLUIDS	CAUTION
CORPORATE LIMITS	P.L. + SR.I	UNDERGROUND UTILITIES	
PROPERTY LINE		GAS	G
LOT LINE		ELECTRIC	E
LIMITED EASEMENT		TELEPHONE OR TELEGRAPH	T
EXISTING RIGHT OF WAY		COMMUNICATIONS LINE	C
PROPOSED OR NEW R/W LINE		SERVICE PEDESTAL	
SURVEY LINE		POWER POLE	
SLOPE INTERCEPT		TELEPHONE POLE	
ORIGINAL GROUND		RAILROAD	
MARSH OR ROCK PROFILE (To be noted as such)		SANITARY SEWER	SAN
		STORM SEWER	SS
MARSH AREA		WATER	W
		EXISTING CULVERT	
WOODED OR SHRUB AREA		PROPOSED CULVERT (Box or Pipe)	
		CULVERT (Profile View)	

COUNTY: BAYFIELD

ORIGINAL PLANS PREPARED BY
NORTHERN WISCONSIN-BASED ENGINEERS, INC.

WISCONSIN
HEATHER J. HARRINGTON
E-27124
HAYWARD WIS.
PROFESSIONAL ENGINEER

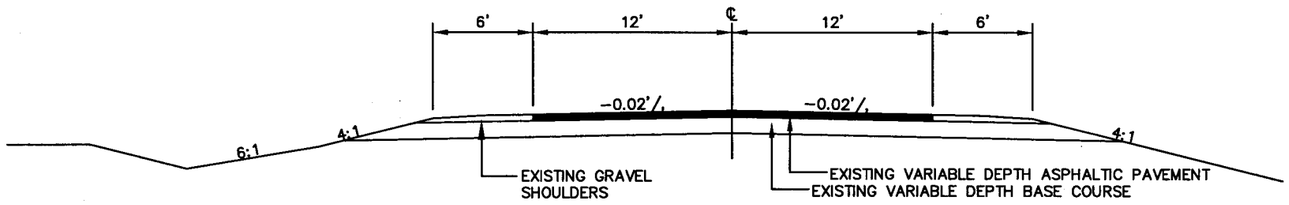
2/4/04 (Date) Heather J Harrington (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	NWBE
Designer	NWBE
Project Manager	HEATHER HARRINGTON
District Examiner	CHRISTINE KOSKI
District Supervisor	LANCE BURGER
C.O. Examiner	Jane Englebretsen

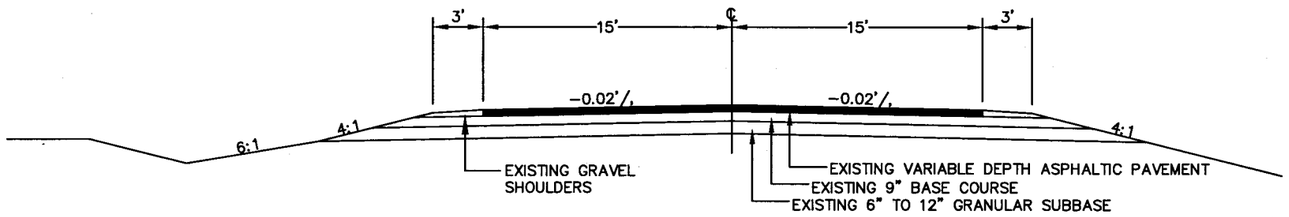
APPROVED FOR DISTRICT OFFICE
DATE: 5-3-05 Cindy Stinchfield (Signature)

E



TYPICAL EXISTING SECTION

STA 1030+10 – STA 1139+76.5



TYPICAL EXISTING SECTION

STA 1140+23.38 – STA 1231+68.67
STA 1232+58.33 – STA 1494+75

STANDARD DETAIL DRAWINGS

8D1–13	CONCRETE CURB, CONCRETE CURB AND GUTTER AND PAVEMENT TIES
8E8–3	TYPICAL INSTALLATIONS OF EROSION BALES/TEMPORARY DITCH CHECKS
8E9–5	SILT FENCE
8F4–5	JOINT TIES FOR CONCRETE PIPE
14B15–4a&b	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION AND ELEMENTS
14B18–4a	STEEL PLATE BEAM GUARD, CLASS "A", (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20–6a	STEEL THRIE BEAM STRUCTURE APPROACH
14B20–6c	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B20–7d	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B24–4a,b&c	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
15A3–1	MARKER POST, FLEXIBLE, FOR CULVERT END
15C4–1	TRAFFIC CONTROL, ADVANCE WARNING SIGNS, 45 MPH OR GREATER TWO–WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C8–9a	PAVEMENT MARKING (MAINLINE)
15C8–9b	PAVEMENT MARKING (INTERSECTIONS)
15C12–2	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D28–1	TRAFFIC CONTROL WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

GENERAL NOTES

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO AN ASSUMED VERTICAL DATUM.

RESTORE SIDEROAD INTERSECTIONS AND PRIVATE ENTRANCES TO EXISTING SURFACE CONDITIONS UNLESS SHOWN OTHERWISE.

WHEN THE QUANTITY OF BASE AGGREGATE DENSE IS MEASURED BY THE TON, THE THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

TACK COAT HAS BEEN ESTIMATED AT AN APPLICATION RATE OF 0.025 GALLONS PER SQUARE YARD, AND SHALL BE PLACED BETWEEN LAYERS OF HMA PAVEMENT TYPE E–1 AND ON THE EXISTING ASPHALTIC SURFACE.

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

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGER'S HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES WHICH HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGER'S HOTLINE.

3–1/2" HMA PAVEMENT TYPE E–1, SHALL BE PLACED IN 2 LAYERS OF SURFACE MATERIAL (12.5mm NOMINAL) AT 1–3/4" EACH. IN SHOULDER PAVING ONLY AREAS, 3" HMA PAVEMENT TYPE E–1, SHALL BE PLACED IN ONE LAYER OF SURFACE MATERIAL.

IN BEAM GUARD AREAS, EXTEND PAVED SHOULDER OUT TO BEAM GUARD FACE.

DEPARTMENT OF NATURAL RESOURCES

NORTHERN REGION HEADQUARTERS
810 WEST MAPLE STREET
SPOONER, WI 54801
ATTN: BILL CLARK
(715) 635–4226

COUNTY SURVEYOR

BOB MICK
78215 STATE HWY B
WASHBURN, WI 54891
(715) 373–5022

DESIGN CONTACT

NWBE, INC.
10597N KANSAS AVENUE
HAYWARD, WI 54843
ATTN: HEATHER HARRINGTON
(715) 634–4334

UTILITIES

D:\Diggershotline.jpg

DIGGER'S HOTLINE
1–800–242–8511
TDD 1–800–542–2289
CALL 3 WORK DAYS
BEFORE YOU DIG

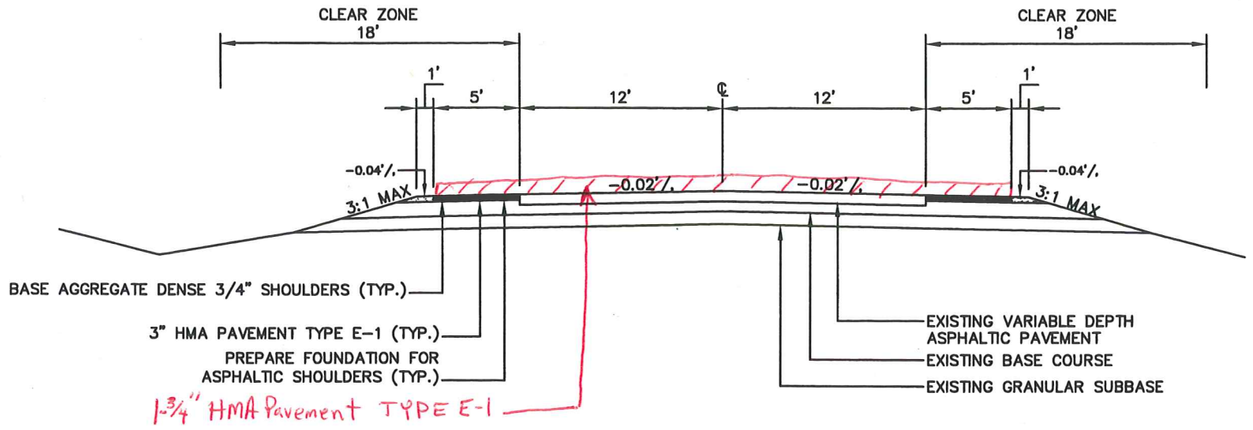
BAYFIELD ELECTRIC COOPERATIVE
P.O. BOX 68
IRON RIVER, WI 54847
ATTN: PHILIP BEEKSMA
(715) 372–4287

XCEL ENERGY – DISTRIBUTION
100 BARSTOW STREET
P.O. BOX 8
EAU CLAIRE, WI 54702–0008
ATTN: BILL TEETERS
(715) 836–1195

XCEL ENERGY – TRANSMISSION
100 BARSTOW STREET
P.O. BOX 8
EAU CLAIRE, WI 54702–0008
ATTN: PAM TAYLOR
(715) 839–1306

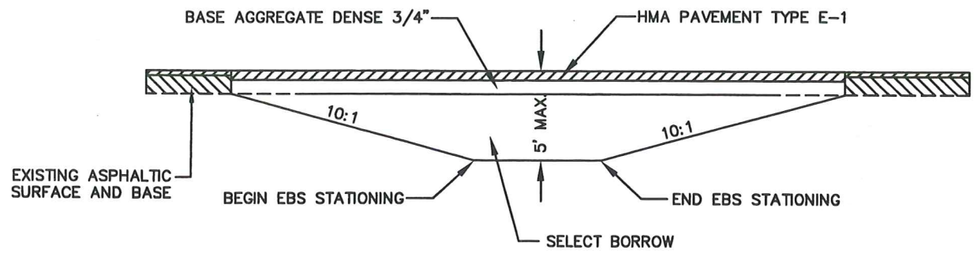
CHEQUAMEGON TELEPHONE CO–OP, INC.
BOX 67
CABLE, WI 54821
ATTN: JOE LABEREE
(715) 798–3303

CENTURYTEL OF NORTHWEST WISCONSIN
P.O. BOX 78
425 ELLINGSON AVENUE
HAWKINS, WI 54530
ATTN: PETE FILIPIAC
(715) 585–6388

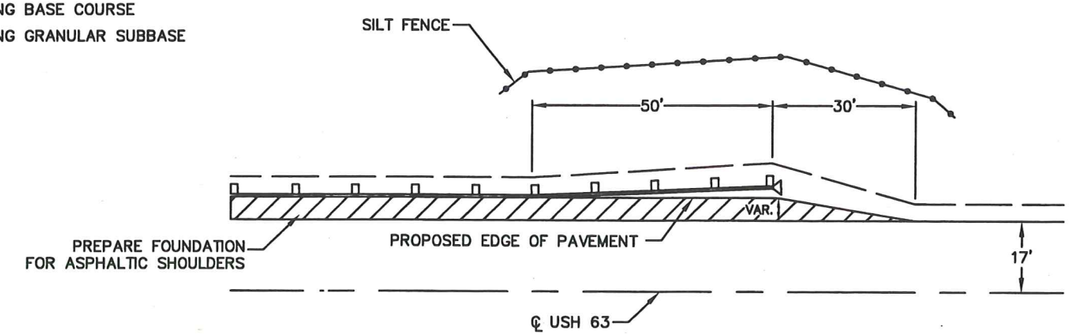


TYPICAL FINISHED SECTION

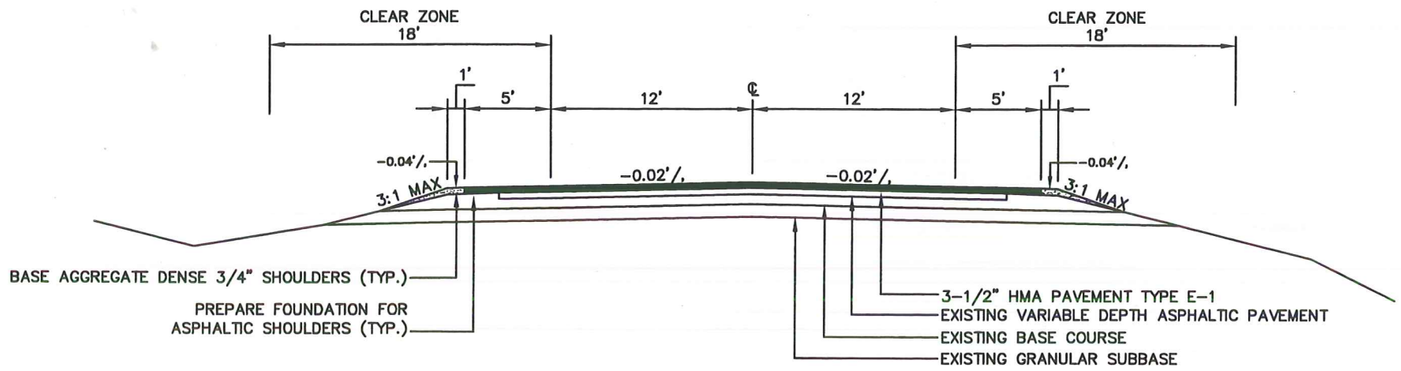
STA 1030+10 – STA 1139+76.5



TRANSITIONS AT EBS LIMITS

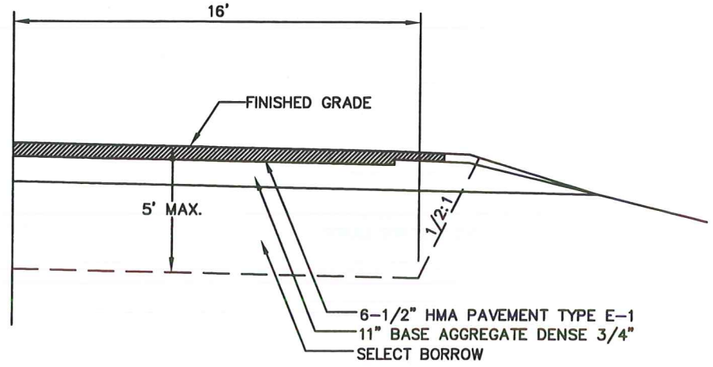


BEAM GUARD TERMINAL DETAIL



TYPICAL FINISHED SECTION

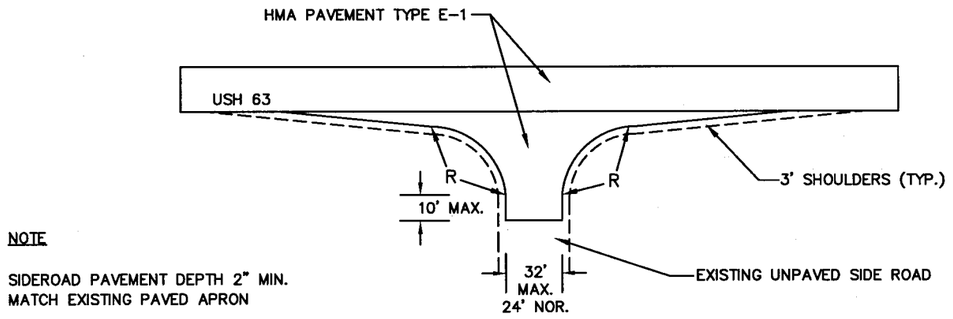
STA 1140+23.38 – STA 1231+68.67
STA 1232+58.33 – STA 1494+75



TYPICAL EBS HALF SECTION

STA 1216+60 – 1219+55
STA 1235+50 – 1239+00
STA 1225+23 - 1226+73

STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	MAINLINE TYPICAL SECTIONS AND CONSTRUCTION DETAILS	SHEET NO: 3	E



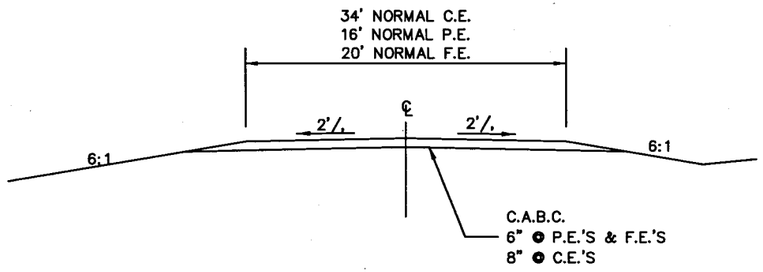
NOTE

SIDEROAD PAVEMENT DEPTH 2" MIN.
MATCH EXISTING PAVED APRON

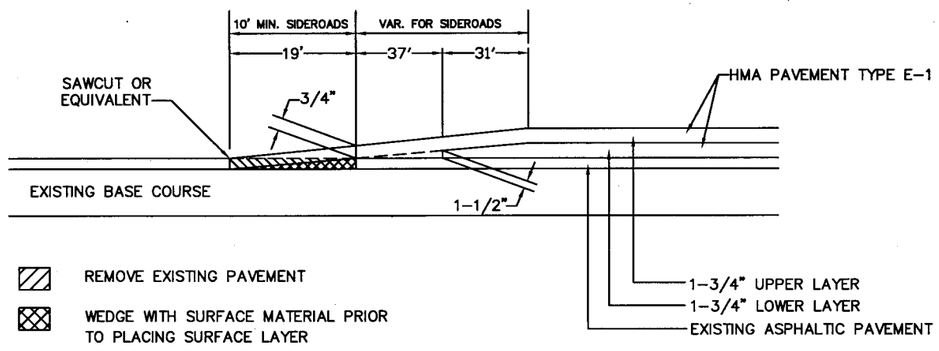
PAVING DETAIL

SIDEROADS WITH EXISTING UNPAVED SURFACE

BIBON RD (RT)
WILSON RD (LT & RT)
BROWN RD (RT)
MAPLE RIDGE RD (RT)
HOLMS RD (RT)
SUNDIN RD (RT)
A JOHNSON RD (RT)
SQUIRES RD (RT)
RANCH PARK RD (RT)

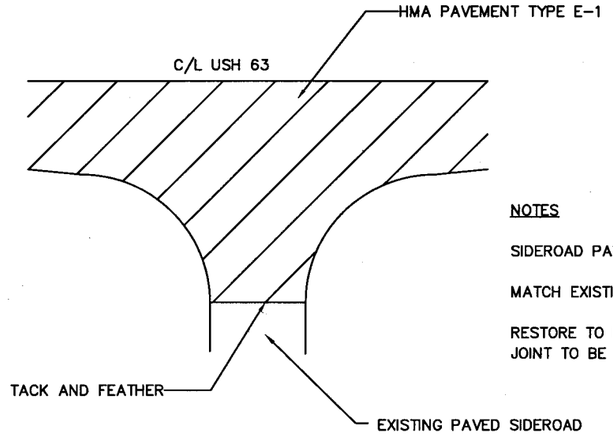


TYPICAL SECTION FOR BASE AGGREGATE ENTRANCES



DETAIL OF BUTT JOINT

STA 1140+23.38
STA 1231+68.67
STA 1232+58.33
STA 1494+75
CTH E (LT & RT)



NOTES

SIDEROAD PAVEMENT DEPTH 2" MIN.

MATCH EXISTING PAVED SURFACE RADII AND TAPERS

RESTORE TO RADIUS POINT (EXACT LOCATION OF FEATHER JOINT TO BE DETERMINED BY THE ENGINEER IN THE FIELD)

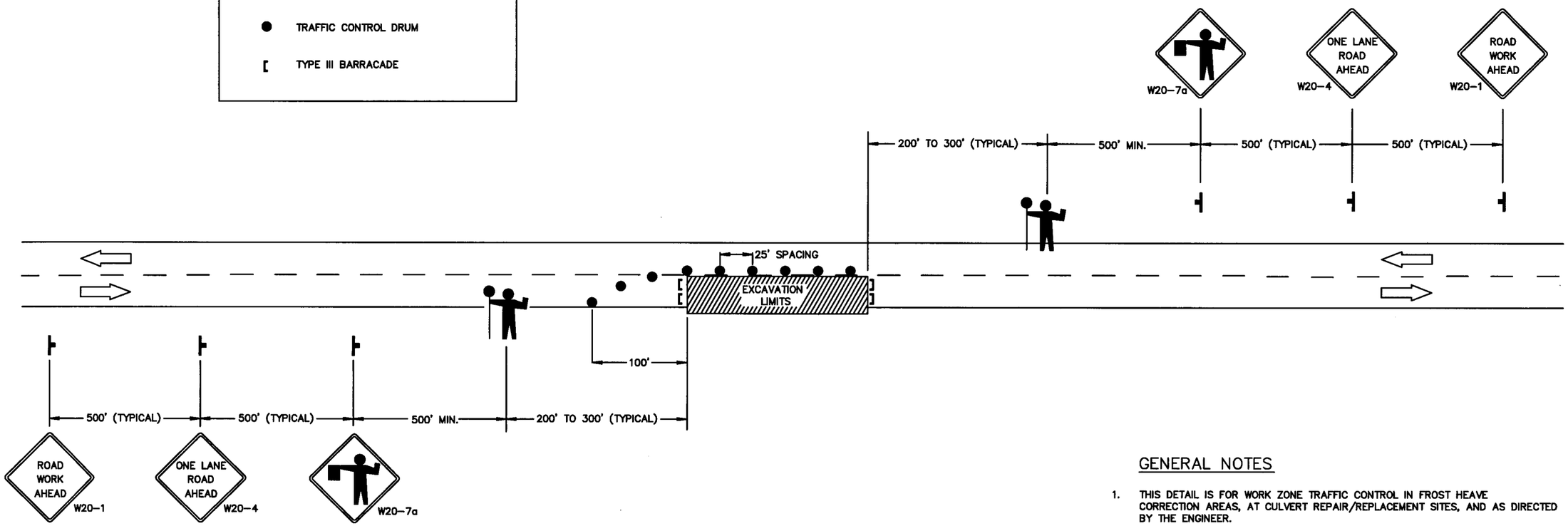
PAVING DETAIL

SIDEROADS WITH EXISTING PAVED SURFACE

LUND RD (LT)

SYMBOLS

- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRACADE



GENERAL NOTES

1. THIS DETAIL IS FOR WORK ZONE TRAFFIC CONTROL IN FROST HEAVE CORRECTION AREAS, AT CULVERT REPAIR/REPLACEMENT SITES, AND AS DIRECTED BY THE ENGINEER.
2. DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATIONS 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.
3. 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 DIRECTED BY THE ENGINEER.
4. 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, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.
5. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
6. SEE S.D.D. FOR MOVING OPERATION WORK ZONE TRAFFIC CONTROL.

STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	TRAFFIC CONTROL IN EXCAVATION AREAS	SHEET NO: 5	E

DATE 01AUG05 — 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	1560-20-71 QUANTITY
0010	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	318.000	318.000
0020	204.0150	REMOVING CURB & GUTTER	LF	90.000	90.000
0030	204.0165	REMOVING GUARDRAIL	LF	632.000	632.000
0040	205.0100	EXCAVATION COMMON	CY	4,350.000	4,350.000
0050	205.9005.S	GRADING SHAPING & FINISHING FOR BEAM GUARD TERMINALS & ANCHORAGES	EACH	8.000	8.000
0060	208.1100	SELECT BORROW	CY	3,629.000	3,629.000
0070	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01. 1560-20-71	LS	1.000	1.000
0080	211.0400	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	STA	930.000	930.000
0090	213.0100	FINISHING ROADWAY (PROJECT) 01. 1560-20-71	EACH	1.000	1.000
0100	301.0100.S	QMP BASE AGGREGATE	TON	10,513.000	10,513.000
0110	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	10,513.000	10,513.000
0120	455.0105	ASPHALTIC MATERIAL PG58-28	TON	1,720.000	1,720.000
0130	455.0605	TACK COAT	GAL	6,355.000	6,355.000
0140	460.1101	HMA PAVEMENT TYPE E-1	TON	28,661.000	28,661.000
0150	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	18,470.000	18,470.000
0160	460.2500.S	QMP HMA PAVEMENT NUCLEAR DENSITY	TON	28,661.000	28,661.000
0170	460.3000	QMP HMA MIXTURE	TON	28,661.000	28,661.000
0180	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	6.000	6.000
0190	520.7000	CLEANING CULVERT PIPES	EACH	9.000	9.000
0200	601.0558	CONCRETE CURB & GUTTER 6-INCH MOUNTABLE 36-INCH TYPE D	LF	90.000	90.000
0210	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH	LF	264.000	264.000
0220	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	150.000	150.000
0230	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	8.000	8.000
0240	614.0620.S	MARKER POSTS CULVERT END FLEXIBLE	EACH	30.000	30.000
0250	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 1560-20-71	EACH	1.000	1.000
0260	619.1000	MOBILIZATION	EACH	1.000	1.000
0270	628.1105	EROSION BALES DELIVERED	EACH	20.000	20.000
0280	628.1110	EROSION BALES INSTALLED	EACH	20.000	20.000
0290	628.1505	SILT FENCE DELIVERED	LF	800.000	800.000
0300	628.1510	SILT FENCE INSTALLED	LF	800.000	800.000
0310	628.1520	SILT FENCE MAINTENANCE	LF	800.000	800.000
0320	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0330	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0340	628.2010	EROSION MAT DELIVERED CLASS I TYPE B	SY	328.000	328.000
0350	628.3010	EROSION MAT INSTALLED CLASS I TYPE B	SY	328.000	328.000
0360	642.5000	FIELD OFFICE TYPE B (PROJECT) 01. 1560-20-71	EACH	1.000	1.000
0370	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1560-20-71	EACH	1.000	1.000
0380	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	92,930.000	92,930.000
0390	646.0406	PAVEMENT MARKING SAME DAY EPOXY 4-INCH	LF	33,673.000	33,673.000
0400	648.0100	LOCATING NO-PASSING ZONES	MI	6.700	6.700
0410	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	25,568.000	25,568.000
0420	690.0100	SAWING EXISTING PAVEMENT	LF	105.000	105.000
0430	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR	HRS	150.000	150.000
0440	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	400.000	400.000
0450	SPV.0060	SPECIAL 01. RESETTING CULVERT ENDS	EACH	2.000	2.000

ASPHALT ITEMS

STATION - STATION	LOCATION	HMA PAVEMENT TYPE E-1 TON	ASPHALTIC MATERIAL PG58-28 TON	ASPHALTIC SURFACE DRIVEWAYS AND F.E. TON	TACK COAT GAL.
1140+23 - 1231+69	MAINLINE	4695	282	---	1219
1232+58 - 1494+75	MAINLINE	13458	808	---	3496
1030+10 - 1139+77	SHOULDERS, LT & RT	2011	121	---	---
1140+23 - 1231+69	SHOULDERS, LT & RT	1955	117	---	407
1232+58 - 1494+75	SHOULDERS, LT & RT	5608	336	---	1165
1216+20 - 1219+95	MAINLINE EBS	234	14	---	---
1235+10 - 1239+40	MAINLINE EBS	268	16	---	---
1138+56 - 1141+44	BEAM GUARD, LT & RT	18	1	---	2
1230+48 - 1233+79	BEAM GUARD, LT & RT	26	2	---	3
1170+58	*CTH E, RT	74	4	---	12
1259+62	*CTH E, LT	74	4	---	12
1277+03	LUND RD, LT	22	1	---	3
1172+08	BIBON RD, LT	14	1	---	2
1175+33	WILSON RD, LT	37	2	---	5
1224+68	WILSON RD, LT	31	2	---	4
1226+40	BROWN RD, RT	23	1	---	3
1259+62	MAPLE RIDGE RD, RT	23	1	---	3
1282+28	HOLMS RD, RT	11	1	---	2
1347+28	SUNDIN RD, RT	11	1	---	2
1370+78	ADOLPH JOHNSON RD, RT	11	1	---	2
1411+28	SQUIRES RD, RT	16	1	---	2
1436+18	RANCH PARK RD, RT	7	1	---	1
1440+43	P.E., RT	---	---	6	1
1491+45 - 1494+75	*STH 118, RT	34	2	---	9
TOTALS:		28661	1720	6	6355

*INCLUDES TURN LANES AND TAPERS

EXCAVATION COMMON

STATION - STATION	LOCATION	C.Y.
1216+20 - 1219+95	MAINLINE EBS	2010
1235+10 - 1239+40	MAINLINE EBS	2340
TOTAL:		4350

SELECT BORROW

STATION - STATION	LOCATION	C.Y.
1216+20 - 1219+95	MAINLINE EBS	1669
1235+10 - 1239+40	MAINLINE EBS	1960
TOTAL:		3629

STEEL THRIE BEAM STRUCTURE APPROACH

STATION - STATION	LOCATION	L.F.
1139+44 - 1139+77	LT	33
1139+44 - 1139+77	RT	33
1140+23 - 1140+56	LT	33
1140+23 - 1140+56	RT	33
1231+36 - 1231+69	LT	33
1231+36 - 1231+69	RT	33
1232+58 - 1232+91	LT	33
1232+58 - 1232+91	RT	33
TOTAL:		264

EROSION BALES

LOCATION	DELIVERED EACH	INSTALLED EACH
UNDISTRIBUTED	20	20

SILT FENCE

STATION - STATION	LOCATION	DELIVERED L.F.	INSTALLED L.F.	MAINTEN. L.F.
1138+17 - 1139+17	RT	100	100	100
1138+54 - 1139+54	LT	100	100	100
1140+46 - 1141+46	RT	100	100	100
1140+84 - 1141+84	LT	100	100	100
1230+09 - 1231+09	RT	100	100	100
1230+46 - 1231+46	LT	100	100	100
1232+81 - 1233+81	RT	100	100	100
1233+19 - 1234+19	LT	100	100	100
TOTAL:		800	800	800

EROSION MAT CLASS I TYPE B

STATION - STATION	LOCATION	DELIVERED S.Y.	INSTALLED S.Y.
1137+57 - 1139+07	RT	41	41
1138+94 - 1139+44	LT	41	41
1140+56 - 1141+06	RT	41	41
1140+94 - 1141+44	LT	41	41
1230+49 - 1230+99	RT	41	41
1230+86 - 1231+36	LT	41	41
1232+91 - 1233+41	RT	41	41
1233+29 - 1233+79	LT	41	41
TOTAL:		328	328

REMOVING ASPHALTIC SURFACE BUTT JOINTS

STATION - STATION	LOCATION	S.Y.
1140+23 - 1140+42	MAINLINE	63
1231+50 - 1231+69	MAINLINE	63
1232+58 - 1232+77	MAINLINE	63
1494+56 - 1494+75	MAINLINE	63
CTH E	RT	33
CTH E	LT	33
TOTAL:		318

REMOVING GUARDRAIL

STATION - STATION	LOCATION	L.F.
1138+98 - 1139+77	LT & RT	158
1140+23 - 1141+02	LT & RT	158
1230+90 - 1231+69	LT & RT	158
1232+58 - 1233+37	LT & RT	158
TOTAL:		632

STEEL PLATE BEAM GUARD CLASS A

STATION - STATION	LOCATION	L.F.
1139+06.5 - 1139+44	RT	37.5
1140+56 - 1140+93.5	LT	37.5
1230+98.5 - 1231+36	RT	37.5
1232+91 - 1233+28.5	LT	37.5
TOTAL:		150

PAVEMENT MARKING EPOXY 4-INCH

STATION - STATION	TYPE	L.F.
1030+10 - 1494+75	WHITE EDGELINE	92930

PAVEMENT MARKING SAME DAY EPOXY 4-INCH

STATION - STATION	TYPE	L.F.
1030+10 - 1494+75	YELLOW CL	33673

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION - STATION	LOCATION	STA.
1030+10 - 1139+77	LT	110
1030+10 - 1139+77	RT	110
1140+23 - 1231+69	LT	92
1140+23 - 1231+69	RT	92
1232+58 - 1494+75	LT	263
1232+58 - 1494+75	RT	263
TOTAL:		930

BASE AGGREGATE DENSE 3/4-INCH

STATION - STATION	LOCATION	TON
1216+20 - 1219+95	MAINLINE EBS	915
1235+10 - 1239+40	MAINLINE EBS	1048
1030+10 - 1139+77	SHOULDER, LT	962
1030+10 - 1139+77	SHOULDER, RT	962
1140+23 - 1231+69	SHOULDER, LT	802
1140+23 - 1231+69	SHOULDER, RT	802
1232+58 - 1494+75	SHOULDER, LT	2302
1232+58 - 1494+75	SHOULDER, RT	2302
SIDEROADS, UNPAVED		45
P.E.'s, UNPAVED		225
BEAM GUARD TERMINALS		148
TOTAL:		10513

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATION	LOCATION	EACH
1138+56.5	RT	1
1138+94	LT	1
1141+06	RT	1
1141+43.5	LT	1
1230+48.5	RT	1
1230+86	LT	1
1233+41	RT	1
1233+78.5	LT	1
TOTAL:		8

TEMPORARY PAVEMENT MARKING 4-INCH

STATION - STATION	TYPE	L.F.
1030+10 - 1494+75	YELLOW CL	25568

LOCATING NO-PASSING ZONES

STATION - STATION	LOCATION	MILES
1030+10 - 1494+75	MAINLINE	6.7

CONCRETE CURB & GUTTER 6-INCH
MOUNTABLE 36-INCH TYPE D

STATION - STATION	LOCATION	L.F.
1258+84 - 1259+34	CTH E, LT	90

REMOVING CURB AND GUTTER

STATION - STATION	LOCATION	L.F.
1258+84 - 1259+34	CTH E, LT	90

CLEANING CULVERT PIPES

STATION	LOCATION	EACH
1095+03	MAINLINE	1
1113+95	MAINLINE	1
1114+00	MAINLINE	1
1114+05	MAINLINE	1
1114+10	MAINLINE	1
1114+15	MAINLINE	1
1218+30	MAINLINE	1
1251+48	MAINLINE	1
1477+65	MAINLINE	1
TOTAL:		9

RESETTING CULVERT ENDS

STATION	LOCATION	EACH
1326+95	LT	1
1326+95	RT	1
TOTAL:		2

JOINT TIES REQUIRED:
2 AT EACH SECTION JOINT AND 2 AT EACH ENDWALL.
JOINT TIES ARE CONSIDERED INCIDENTAL
TO THE PAY ITEM.

MARKER POSTS CULVERT END FLEXIBLE

STATION	LOCATION	EACH
1034+00	LT & RT	2
1095+03	LT & RT	2
1113+95	RT	1
1114+15	LT	1
1206+35	LT & RT	2
1218+30	LT & RT	2
1251+48	LT & RT	2
1326+95	LT & RT	2
1344+24	LT & RT	2
1361+60	LT & RT	2
1375+60	LT & RT	2
1383+46	LT & RT	2
1433+55	LT & RT	2
1444+00	LT & RT	2
1459+50	LT & RT	2
1477+65	LT & RT	2
TOTAL:		30

GRADING SHAPING AND FINISHING FOR BEAM GUARD
TERMINALS AND ANCHORAGES

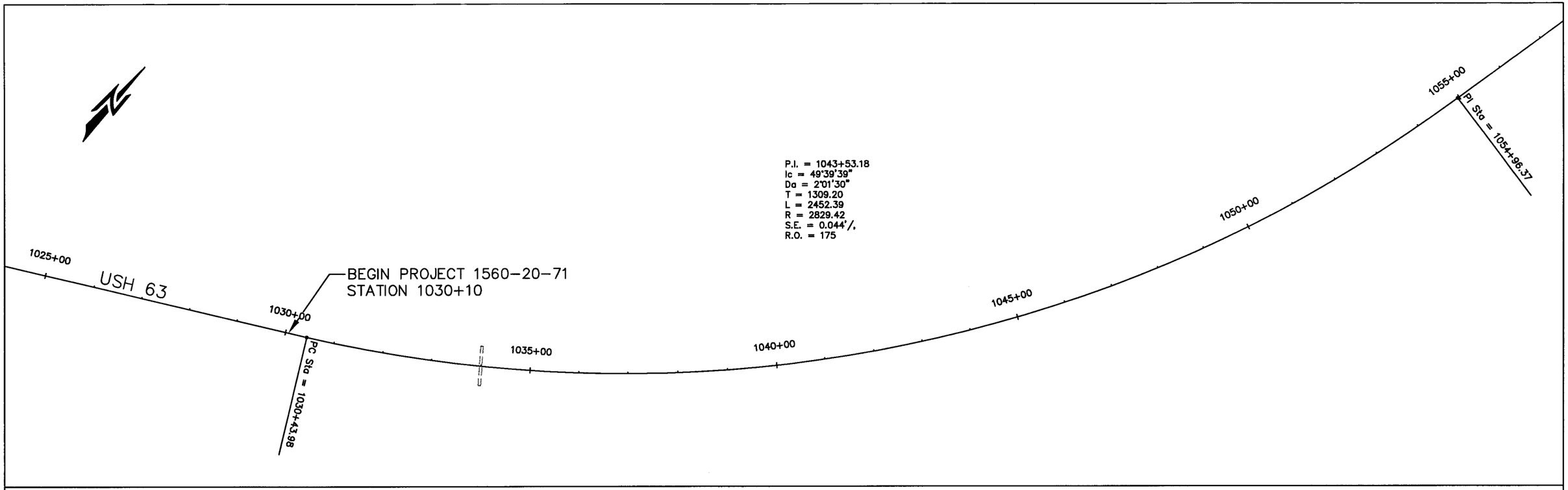
STATION - STATION	LOCATION	EACH
1138+26.5 - 1139+06.5	RT	1
1138+64 - 1139+44	LT	1
1140+56 - 1141+36	RT	1
1140+93.5 - 1141+73.5	LT	1
1230+18.5 - 1230+98.5	RT	1
1230+56 - 1231+36	LT	1
1232+91 - 1233+71	RT	1
1233+28.5 - 1234+08.5	LT	1
TOTAL:		8

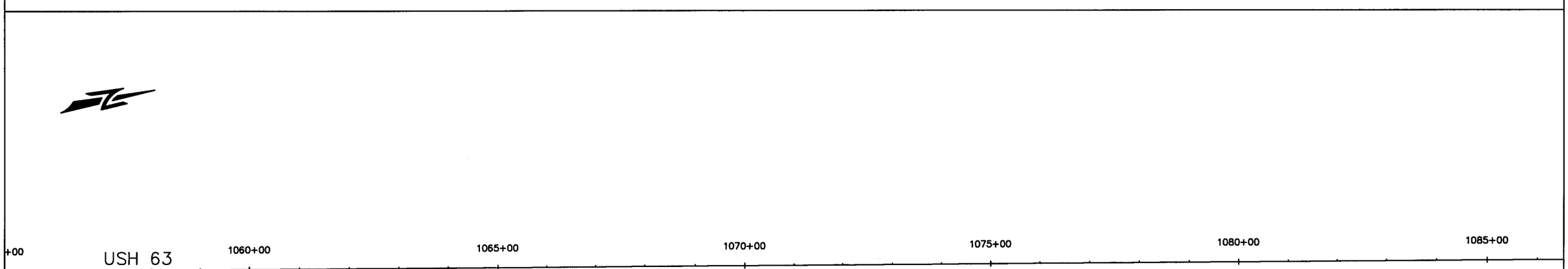
SAWING EXISTING PAVEMENT

STATION	LOCATION	L.F.
1170+58	CTH E, RT	30
1259+62	CTH E, LT	30
1494+75	MAINLINE	45
TOTAL:		105

SALVAGED TOPSOIL, FERTILIZER, SEEDING, MULCHING, EXCAVATION COMMON AND FILL FOR BEAM GUARD TERMINALS
(FOR INFORMATION ONLY)

LOCATION	SALVAGED TOPSOIL S.Y.	FERTILIZER TYPE B CWT	SEEDING MIX NO.10 LB.	SEEDING TEMP. LB.	MULCHING S.Y.	COMMON EXC. C.Y.	FILL(x 1.3) C.Y.
BIBON CREEK BR.							
1138+64 - 1139+44, LT	---	---	---	---	---	22	---
1138+26 - 1139+06, RT	---	---	---	---	---	19	---
1140+94 - 1141+74, LT	---	---	---	---	---	16	---
1140+56 - 1141+36, RT	---	---	---	---	---	16	---
WHITE RIVER BR.							
1230+56 - 1231+36, LT	74	0.05	1	2	94	13	38
1230+18 - 1230+98, RT	36	0.05	1	2	52	12	3
1233+28 - 1234+08, LT	49	0.05	1	2	71	13	22
1232+91 - 1233+71, RT	32	0.05	1	2	84	12	12
TOTALS:	191	0.2	4	8	301	123	75





STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	PLAN SHEET 1030+10 – 1086+00	SCALE, FEET 0 100 200	SHEET NO: 9	E

STA 1095+03
CLEAN CULVERT PIPE
Lined existing 24" x 66' CP

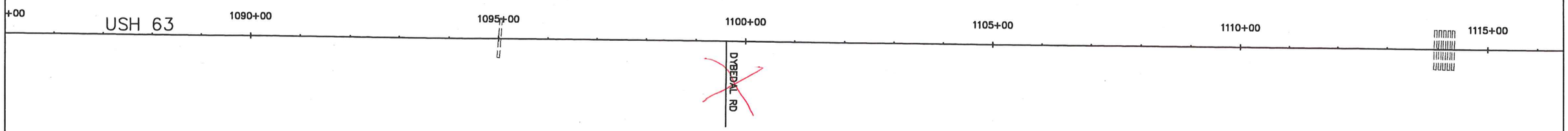
STA 1113+95
CLEAN CULVERT PIPE

STA 1114+00
CLEAN CULVERT PIPE

STA 1114+05
CLEAN CULVERT PIPE

STA 1114+10
CLEAN CULVERT PIPE

STA 1114+15
CLEAN CULVERT PIPE



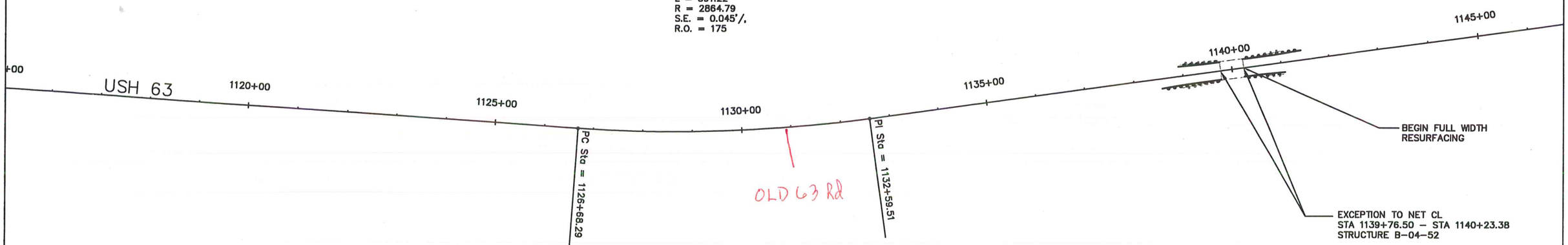
STA 1138+98 – STA 1139+77 LT
REMOVING GUARDRAIL

STA 1138+94 – STA 1139+77 LT
STEEL THRIE BEAM STRUCTURE APPROACH, AND
STEEL PLATE BEAM GUARD ENERGY ABSORBING
TERMINAL REQUIRED.

STA 1140+23 – STA 1141+02 LT
REMOVING GUARDRAIL

STA 1140+23 – STA 1141+43.5 LT
STEEL THRIE BEAM STRUCTURE APPROACH,
STEEL PLATE BEAM GUARD CLASS A, AND
STEEL PLATE BEAM GUARD ENERGY ABSORBING
TERMINAL REQUIRED.

P.I. = 1129+64.95
Ic = 11°49'28"
Da = 2°00'00"
T = 296.66
L = 591.22
R = 2864.79
S.E. = 0.045'/.
R.O. = 175



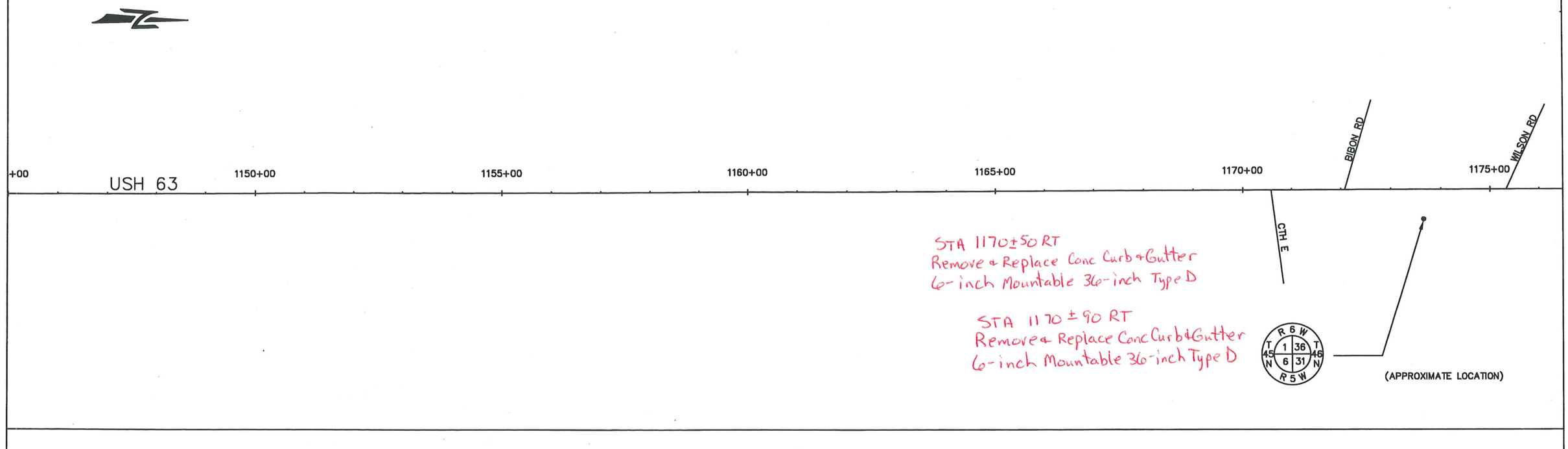
STA 1138+98 – STA 1139+77 RT
REMOVING GUARDRAIL

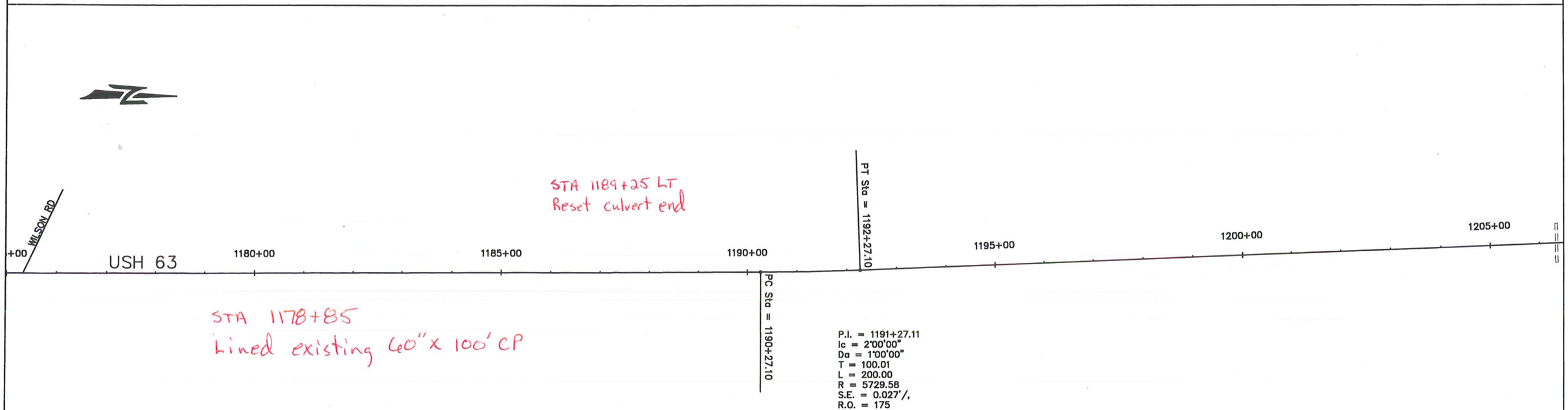
STA 1138+56.5 – STA 1139+77 RT
STEEL THRIE BEAM STRUCTURE APPROACH,
STEEL PLATE BEAM GUARD CLASS A, AND
STEEL PLATE BEAM GUARD ENERGY ABSORBING
TERMINAL REQUIRED.

STA 1140+23 – STA 1141+02 RT
REMOVING GUARDRAIL

STA 1140+23 – STA 1141+06 RT
STEEL THRIE BEAM STRUCTURE APPROACH, AND
STEEL PLATE BEAM GUARD ENERGY ABSORBING
TERMINAL REQUIRED.

STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	PLAN SHEET 1086+00 – 1146+00	SCALE, FEET 0 100 200	SHEET NO: 10	E





STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	PLAN SHEET 1146+00 – 1206+00	SCALE, FEET 0 100 200	SHEET NO: 11	E

STA 1218+30
CLEAN CULVERT PIPE

STA 1230+90 – STA 1231+69 LT
REMOVING GUARDRAIL

STA 1230+86 – STA 1231+69 LT
STEEL THRIE BEAM STRUCTURE APPROACH, AND
STEEL PLATE BEAM GUARD ENERGY ABSORBING
TERMINAL REQUIRED.

STA 1232+58 – STA 1233+37 LT
REMOVING GUARDRAIL

STA 1232+58 – STA 1233+78.5 LT
STEEL THRIE BEAM STRUCTURE APPROACH,
STEEL PLATE BEAM GUARD CLASS A, AND
STEEL PLATE BEAM GUARD ENERGY ABSORBING
TERMINAL REQUIRED.

WILSON RD

+00 USH 63 1210+00 1215+00 1220+00 1225+00 1230+00 1235+00

STA 1216+60
BEGIN EBS

STA 1219+55
END EBS

STA 1225±23
Begin EBS

BROWN RD

STA 1226+73
End EBS

STA 1230+90 – STA 1231+69 RT
REMOVING GUARDRAIL

STA 1230+48.5 – STA 1231+69 RT
STEEL THRIE BEAM STRUCTURE APPROACH,
STEEL PLATE BEAM GUARD CLASS A, AND
STEEL PLATE BEAM GUARD ENERGY ABSORBING
TERMINAL REQUIRED.

STA 1232+58 – STA 1233+37 RT
REMOVING GUARDRAIL

STA 1232+58 – STA 1233+41 RT
STEEL THRIE BEAM STRUCTURE APPROACH, AND
STEEL PLATE BEAM GUARD ENERGY ABSORBING
TERMINAL REQUIRED.

EXCEPTION TO NET CL
STA 1231+68.67 – STA 1232+58.33
STRUCTURE B-4-35
DO NOT OVERLAY EXISTING STRUCTURE

STA 1251+48
CLEAN CULVERT PIPE

STA 1258+84 – 1259+34 LT
REMOVE & REPLACE CONCRETE CURB &
GUTTER 6-INCH MOUNTABLE 36-INCH TYPE D

PI Sta = 1260+28.29

STA 1259±75 LT
Remove & Replace Conc. C&G.
6-inch Mountable 36-in Type D

CTH E

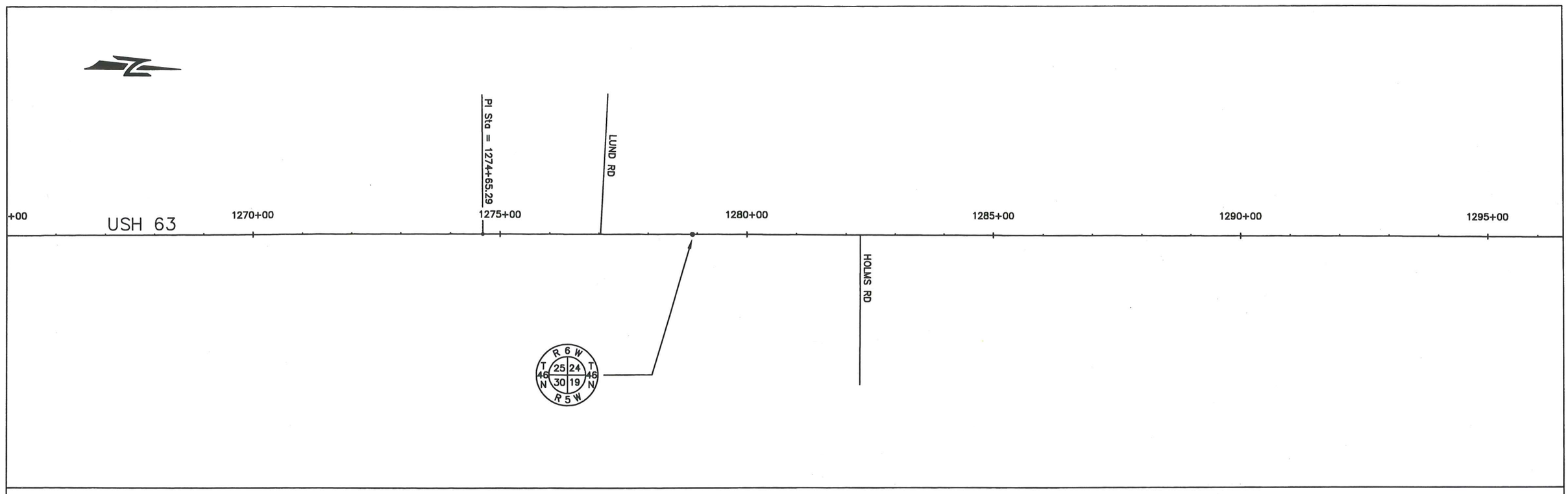
+00 1240+00 USH 63 1245+00 1250+00 1255+00 1260+00 1265+00

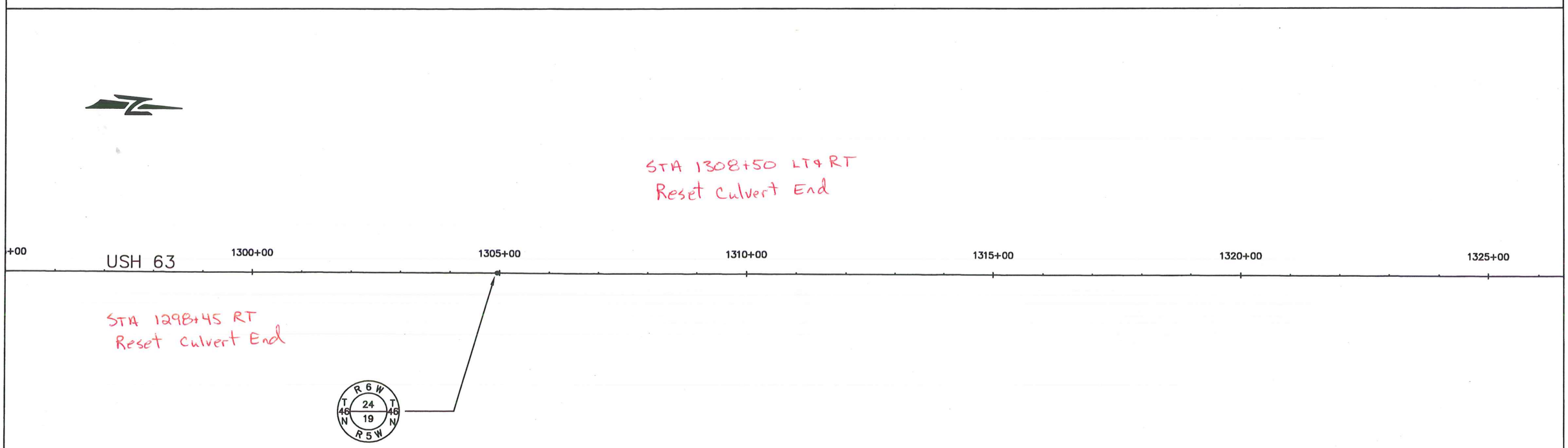
STA 1235+50
BEGIN EBS

STA 1239+00
END EBS

MAPLE RIDGE RD

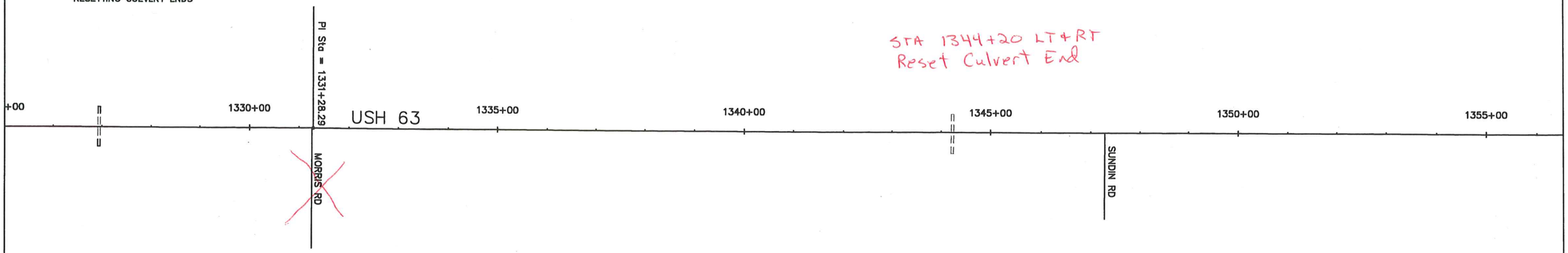
STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	PLAN SHEET 1206+00 – 1266+00	SCALE, FEET 0 100 200	SHEET NO: 12	E



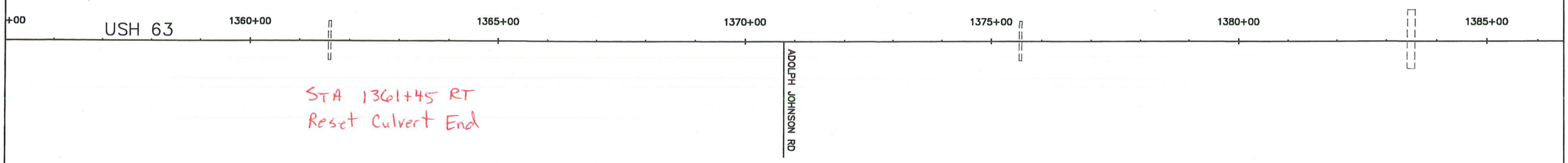


STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	PLAN SHEET 1266+00 – 1326+00	SCALE, FEET 0 100 200	SHEET NO: 13	E

STA 1326+95 ~~LT~~ & RT
RESETTING CULVERT ENDS



STA 1344+20 LT & RT
Reset Culvert End



STA 1361+45 RT
Reset Culvert End

STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	PLAN SHEET 1326+00 – 1386+00	SCALE, FEET 0 100 200	SHEET NO: 14	E

STA 1412+75 – STA 1414+50 LT
Steel plate Beam Guard Class A and
Steel plate Beam Guard Energy
Absorbing Terminals
installed

+00 USH 63 1390+00 1395+00 1400+00 1405+00 1410+00 1415+00

PI Sta = 1409+28.29

SQUIRES RD

STA 1412+10 – STA 1413+60 RT
Steel Plate Beam Guard Class A and
Steel Plate Beam Guard Energy
Absorbing Terminals installed

+00 USH 63 1420+00 1425+00 1430+00 1435+00 1440+00 1445+00

STA 1433+62 RT
Reset Culvert End

RANCH PARK RD

STATE PROJECT NUMBER: 1560–20–71	HWY: USH 63	COUNTY: BAYFIELD	PLAN SHEET 1386+00 – 1446+00	SCALE, FEET 0 100 200	SHEET NO: 15	E

+00 USH 63 1450+00 1455+00 1460+00 1465+00 1470+00 1475+00

STA 1460+41 RT
Reset Culvert End

STA 1477+65
CLEAN CULVERT PIPE

+00 1480+00 USH 63 1485+00 1490+00

PC Sta = 1491+89.30

P.I. = 1497+15.50
Ic = 5°15'30"
Da = 0°30'00"
T = 526.20
L = 1051.67
R = 11459.16
S.E. = 0.020'/,
R.O. = 175

CTH F

1495+00 1500+00

PT Sta = 1502+40.96

STA 1496±0 LT
Remove & Replace Conc. C&G
6-inch Mountable 36-in Type D

STA 1496±50 LT
Remove & Replace Conc. C&G.
6-inch Mountable 36-in Type D

STA 1496±0 RT
Remove & Replace Conc C&G
6-inch Mountable 36-in Type D

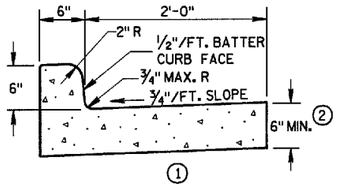
STA 1496±50 RT
Remove & Replace Conc C&G
6-inch Mountable 36-in Type D

STH 118

END PROJECT 1560-20-71
STATION ~~1494+75~~
1497±25

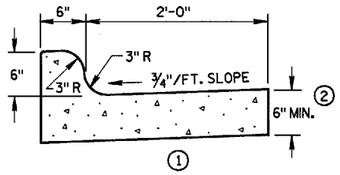
STH 118 INTERSECTION
Removed existing 24" CP
Installed 1-24" x110' CP and 2 AEWs

STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	PLAN SHEET 1446+00 – 1494+75	SCALE, FEET 0 100 200	SHEET NO: 16	E



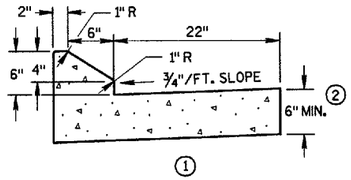
1

TYPES A & D



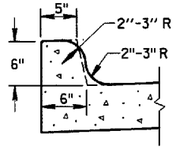
1

TYPES K & L



1

TYPES G & J

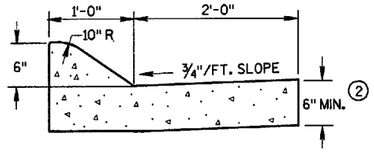


OPTIONAL CURB SHAPE

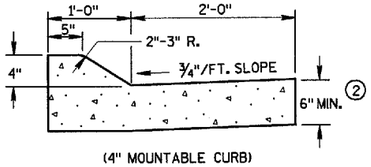
1

FOR TYPES K & L

CONCRETE CURB & GUTTER 30"



(6" MOUNTABLE CURB)



(4" MOUNTABLE CURB)

1

TYPES A & D

CONCRETE CURB & GUTTER 36"

GENERAL NOTES

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

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

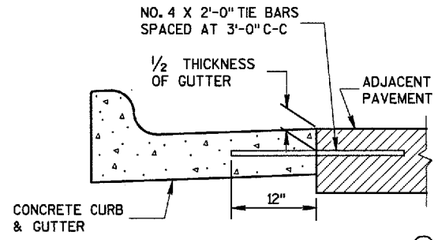
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G AND K.

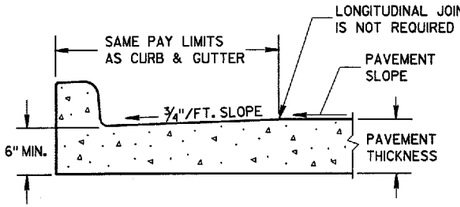
(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

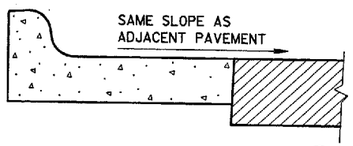


1

TYPICAL TIE BAR LOCATION



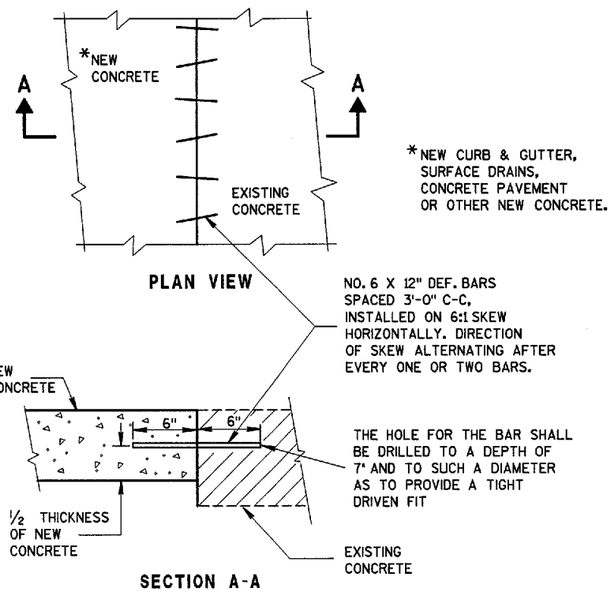
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



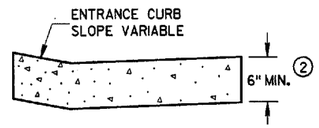
3

REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)

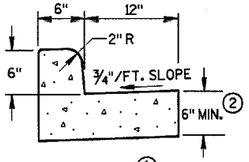


PAVEMENT TIES



DRIVEWAY ENTRANCE CURB

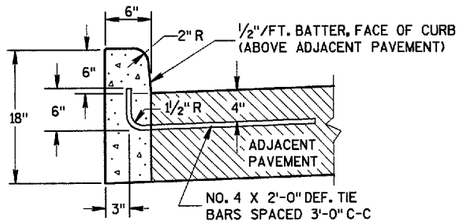
(WHEN DIRECTED BY THE ENGINEER)



1

TYPES A & D

CONCRETE CURB & GUTTER 18"



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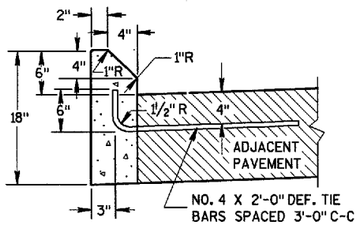
TYPES A & D



1

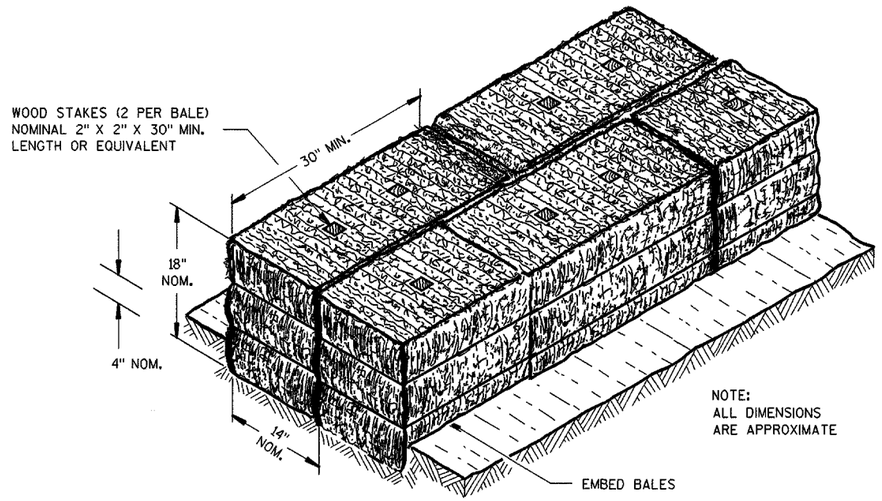
TYPES G & J

CONCRETE CURB

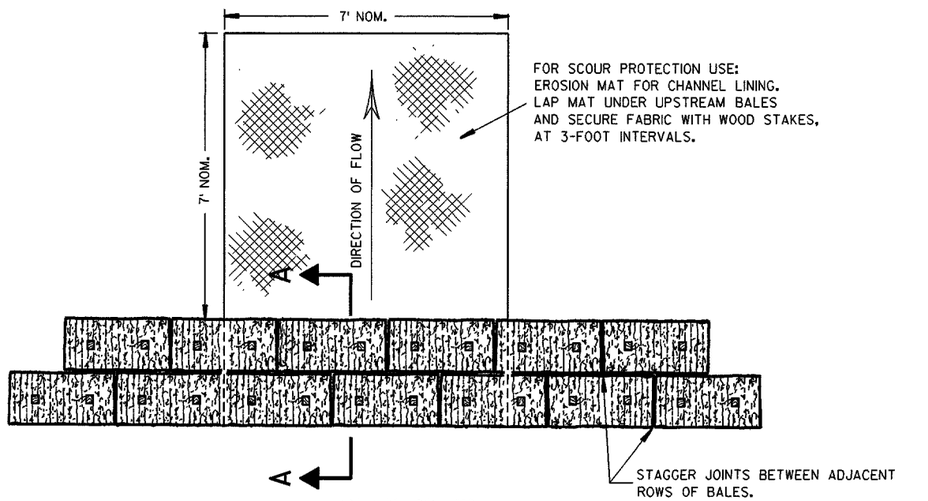
CONCRETE CURB, CONCRETE CURB & GUTTER AND PAVEMENT TIES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 04/16/99 DATE	Roy L. Amundson CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

S.D.D. 8 D 1-13

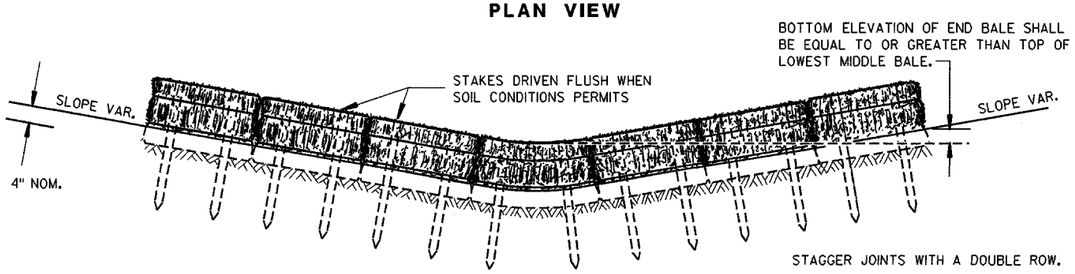
S.D.D. 8 D 1-13



SECTION A-A



PLAN VIEW



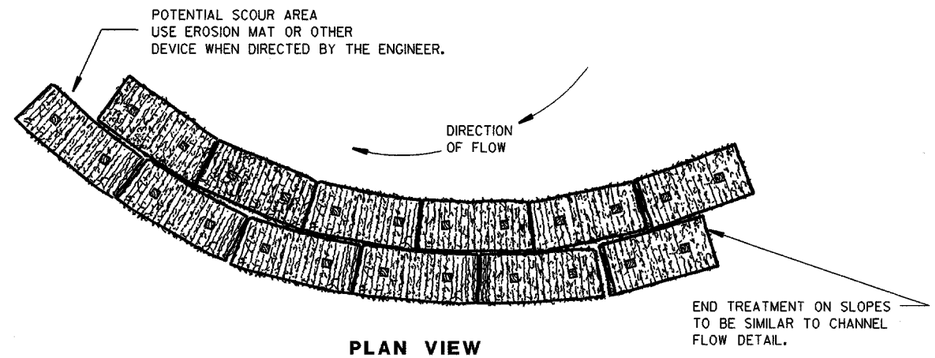
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

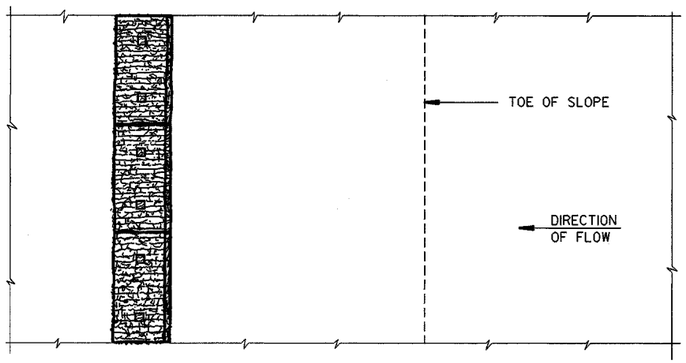
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

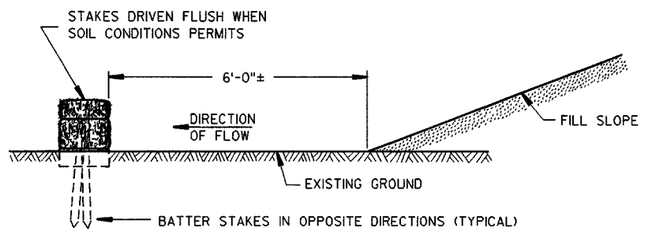


PLAN VIEW

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

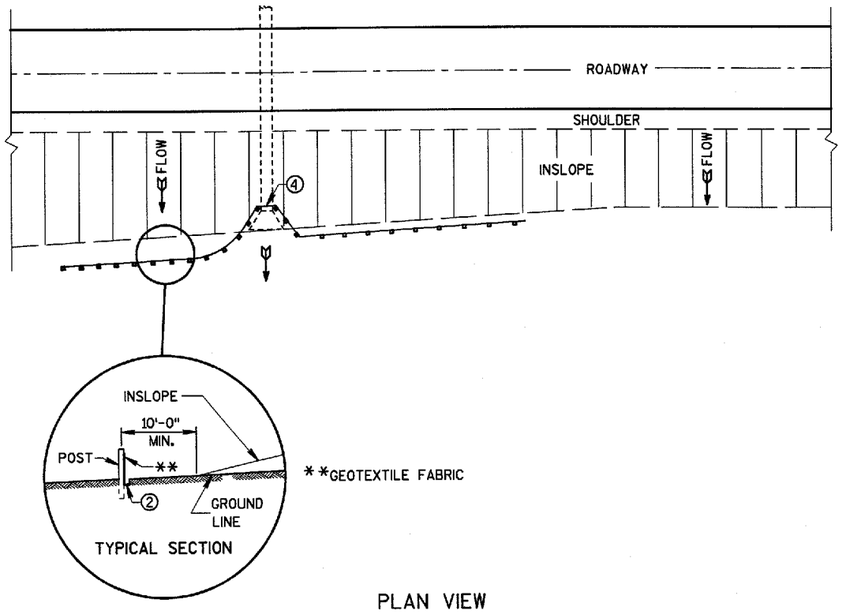
APPROVED
6/4/02
DATE

CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

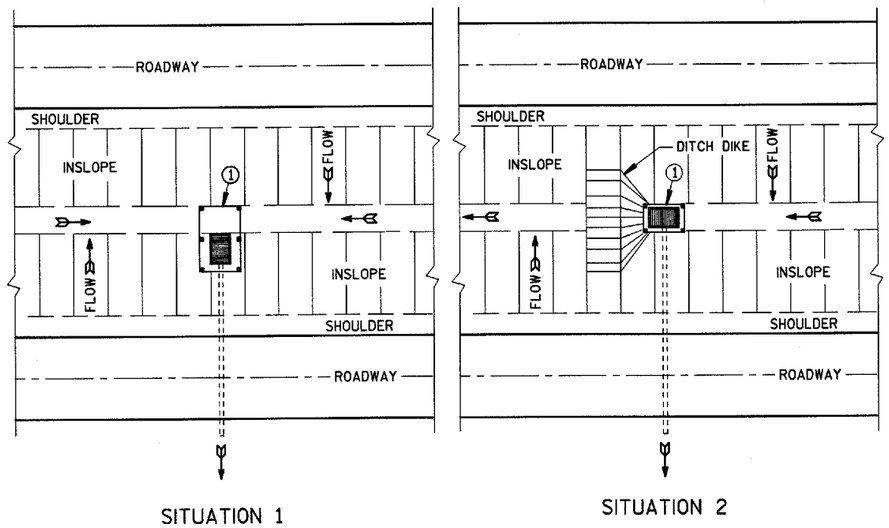
S.D.D. 8 E 8-3

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

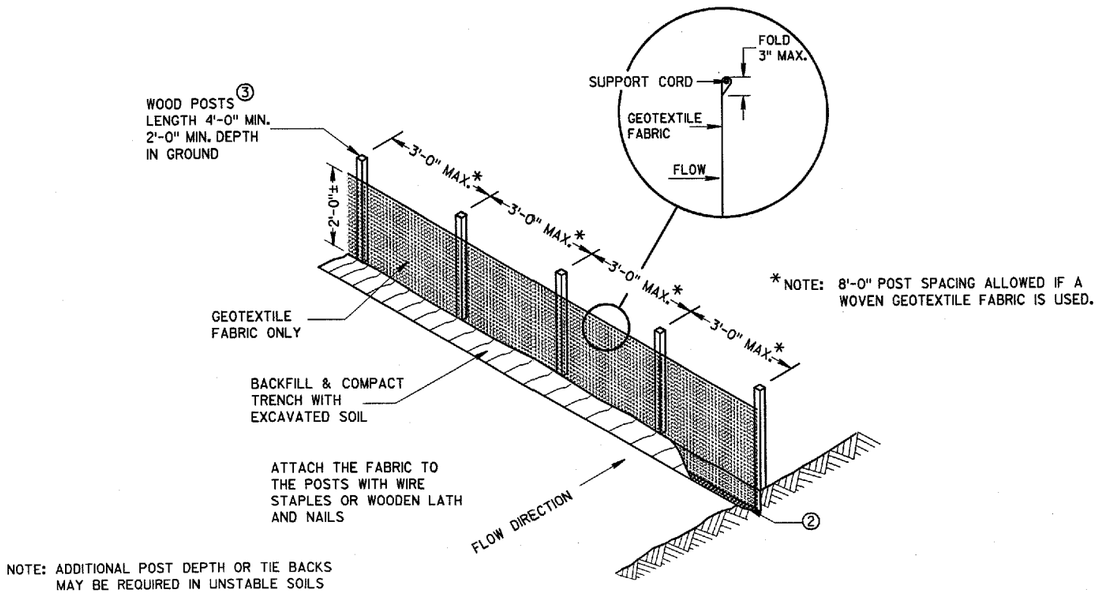
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

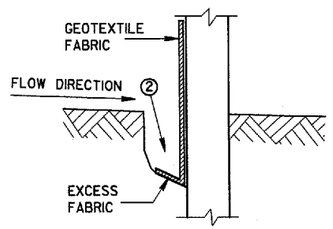
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF $1\frac{1}{8}$" X $1\frac{1}{8}$" OF OAK OR HICKORY.

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

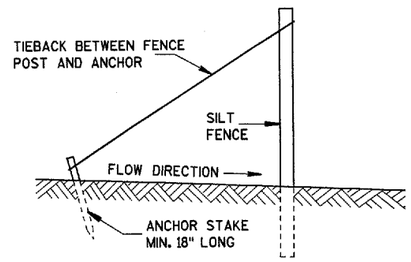


NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

SILT FENCE



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

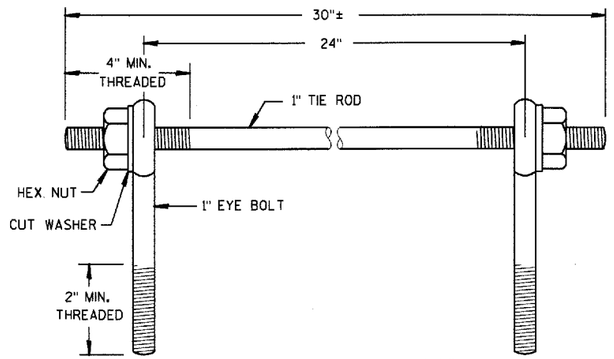
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 03/06/00 DATE — CHIEF ROADWAY DEVELOPMENT ENGINEER

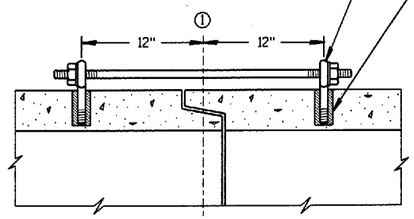
FHWA

S.D.D. 8 E 9-5

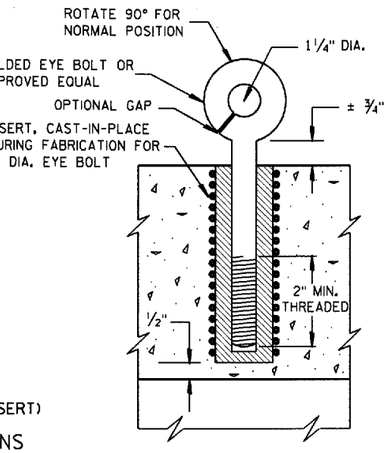
S.D.D. 8 E 9-5



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)



LONGITUDINAL SECTIONS

GENERAL NOTES

CONCRETE CULVERT PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED ON THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES. UNLESS OTHERWISE STATED IN THE CONTRACT THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE CULVERT PIPE AS INDICTED ON THE PLANS AND BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO CILVERT PIPE, REINFORCED CONCRETE CULVERT PIPE, OR REINFORCED CONCRETE PIPE CATTLE PASS.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

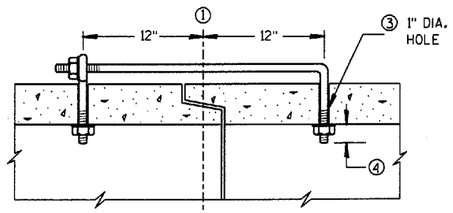
③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12" FROM ℄ OF TONGUE AND GROOVE.

④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2".

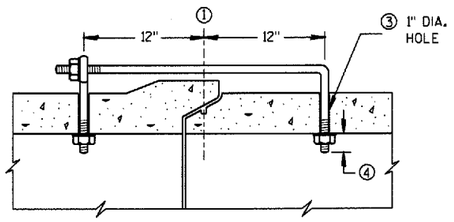
⑤ ROD DIAMETER + 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(TONGUE & GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

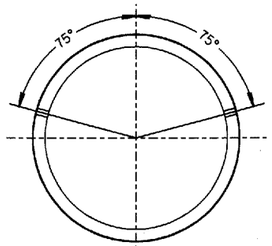
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

ADJUSTABLE TIE ROD TABLE

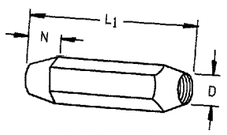
PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



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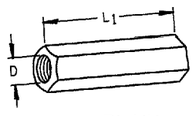
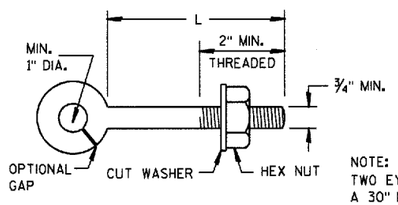


PLAIN

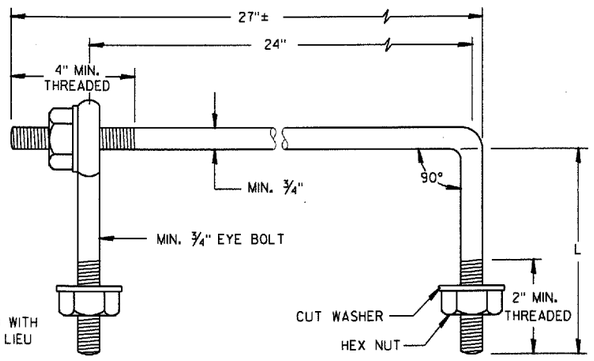
RIGHT AND LEFT THREADS

SLEEVE NUTS



EYE BOLT

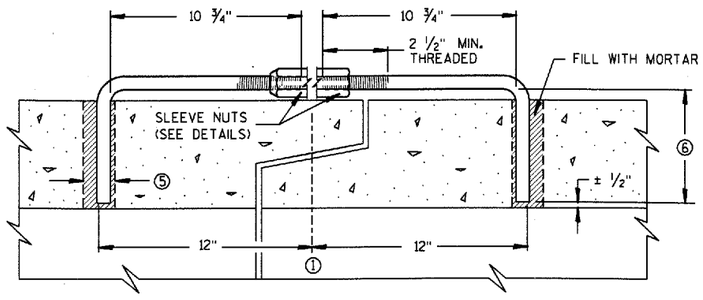
NOTE:
TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



LONGITUDINAL SECTION

(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

JOINT TIES FOR CONCRETE PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 9/10/92 DATE

STATE DESIGN ENGINEER FOR HWYS

FHWA

S.D.D. 8 F 4-5

S.D.D. 8 F 4-5

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.

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

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO AASHTO M183. GALVANIZE 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.

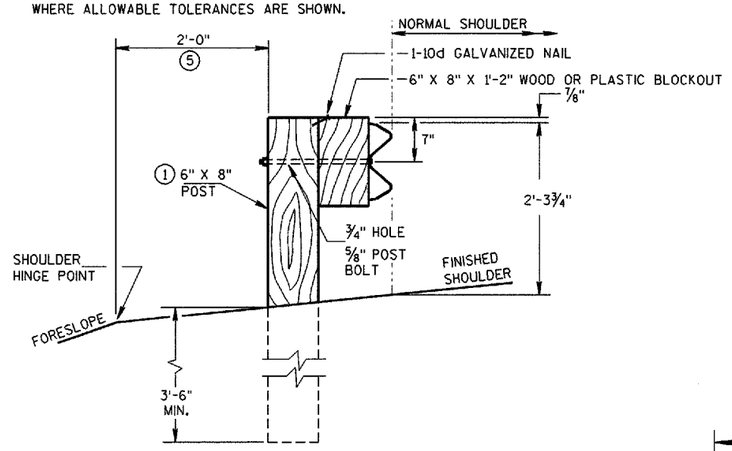
(5) WHEN SPECIFIED IN THE PLANS, THE 2-FOOT MINIMUM TO HINGE POINT MAY BE REDUCED OR ELIMINATED IF EXISTING CONDITIONS DO NOT PERMIT THE DESIRABLE EARTHWORK.

INCREASE POST LENGTH TO PROVIDE A MINIMUM EMBEDMENT OF 3'-6" IF THE SHOULDER HINGE POINT IS LOCATED IN FRONT OF THE POST.

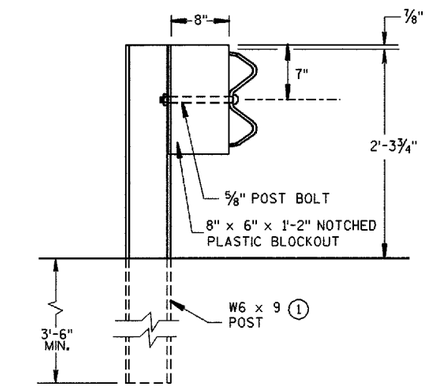
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED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

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

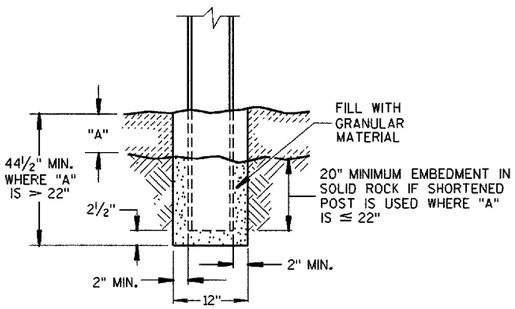
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



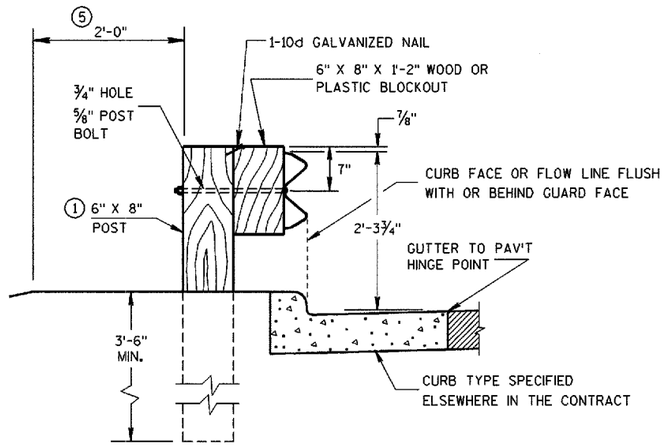
END VIEW
LOCATED ALONG A ROADWAY SHOULDER



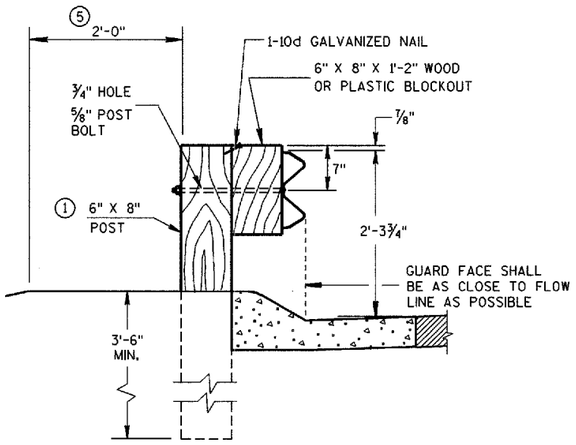
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE



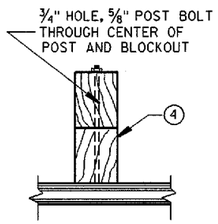
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



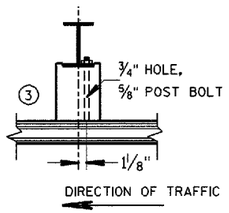
END VIEW
LOCATED ALONG A CURBED ROADWAY



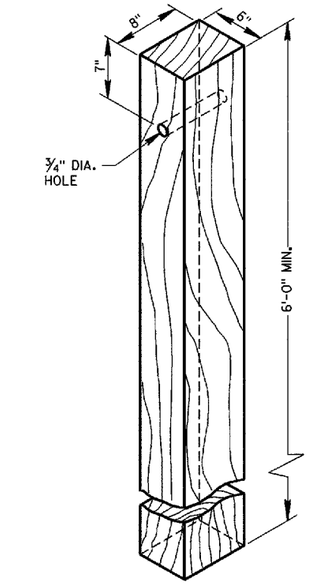
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY



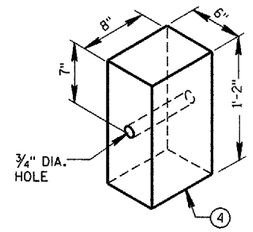
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



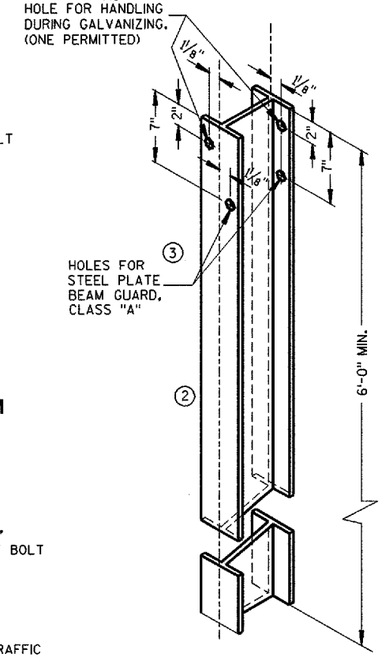
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



WOOD POST
(6"X8") NOMINAL

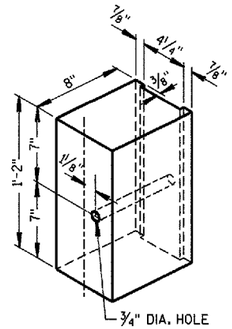


WOOD OR PLASTIC
BLOCKOUT FOR WOOD POSTS



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

ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



NOTCHED PLASTIC BLOCKOUT
FOR STEEL POSTS

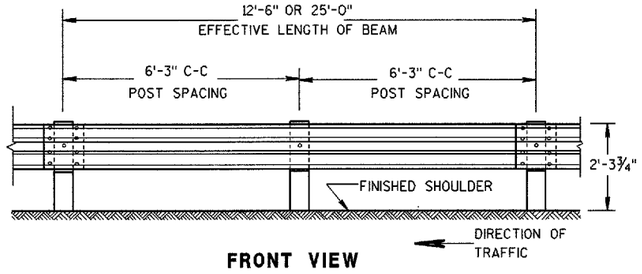
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

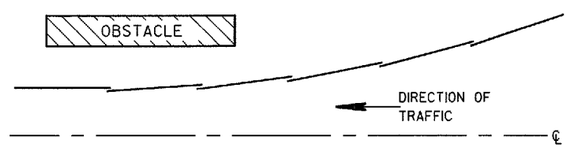
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 15-4a

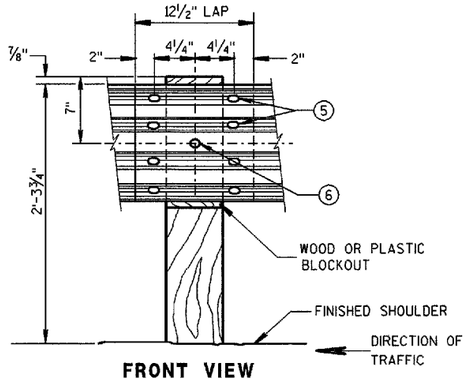
S.D.D. 14 B 15-4a



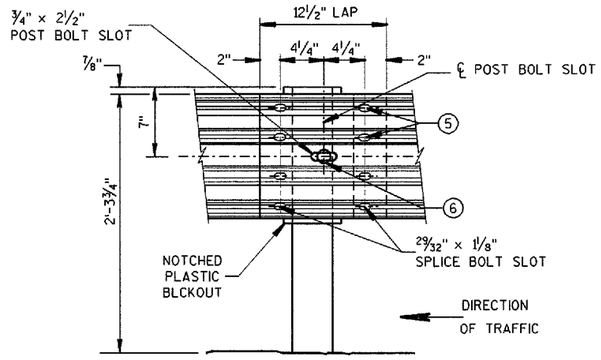
FRONT VIEW



PLAN VIEW
BEAM LAPPING DETAIL



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW
BEAM SPLICE AT STEEL POST

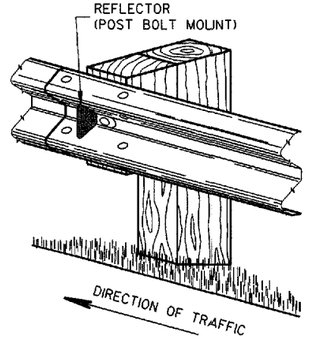
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

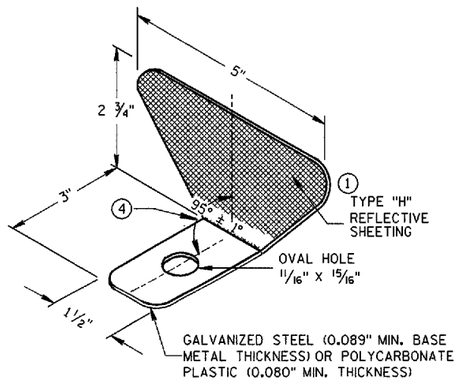
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 -⅝" ϕ X 1¼" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. ⅝" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.

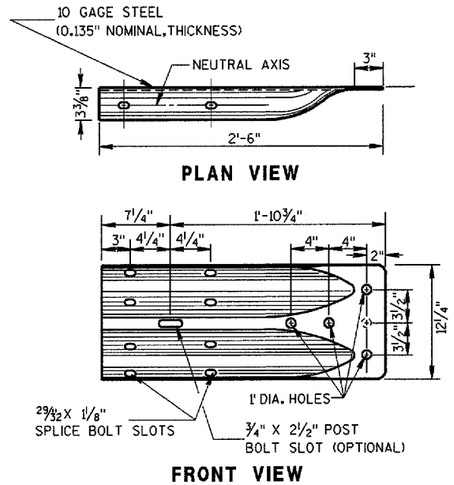
REFLECTOR SPACING (2)

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

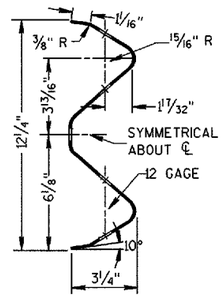




ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)



W BEAM TERMINAL CONNECTOR
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION THRU W BEAM

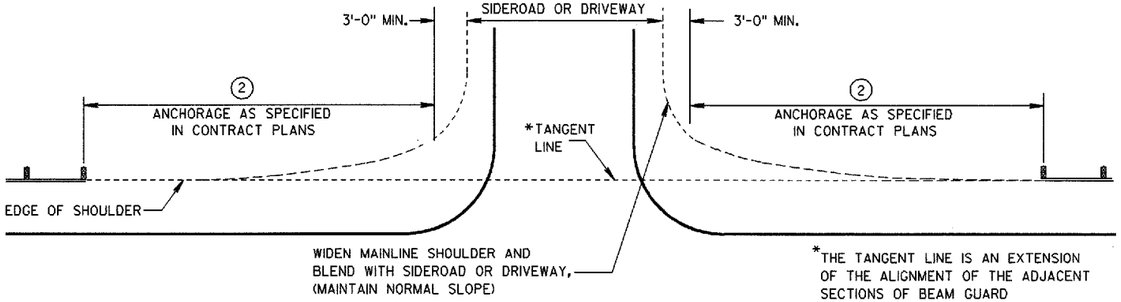
STEEL PLATE BEAM GUARD,
CLASS 'A',
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

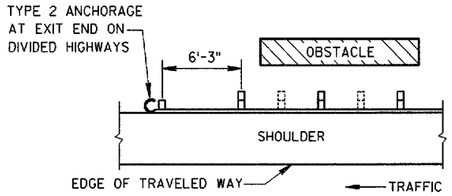
APPROVED
12/08/00
DATE
John Haverberg
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 14 B 15-4b

S.D.D. 14 B 15-4b



BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

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.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH 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.

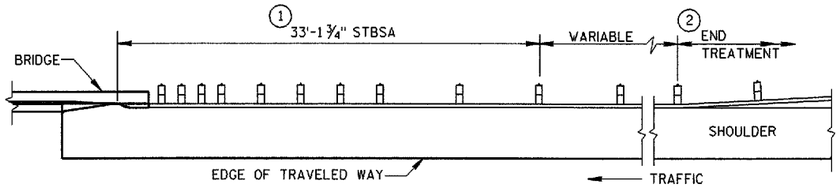
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) USE STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA).

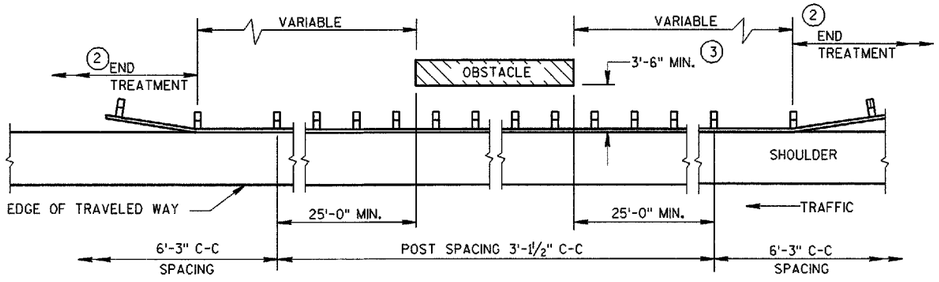
(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3) DESIGN DEFLECTION OF W-BEAM BARRIER SYSYTEM

LATERAL DISTANCE TO FIXED OBJECT	POST SPACING
3'-6" TO 4'-6"	3' - 1½"
4'-6" AND OVER	6' - 3"

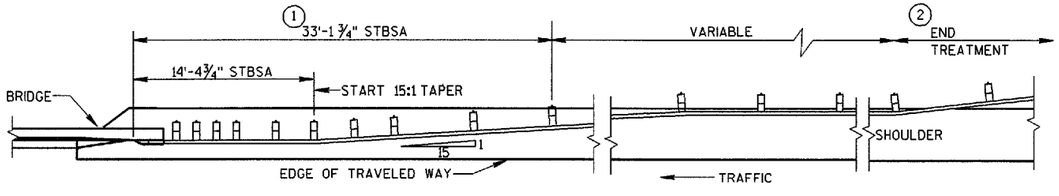


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OSBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")



BEAM GUARD AT NARROW BRIDGES

(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

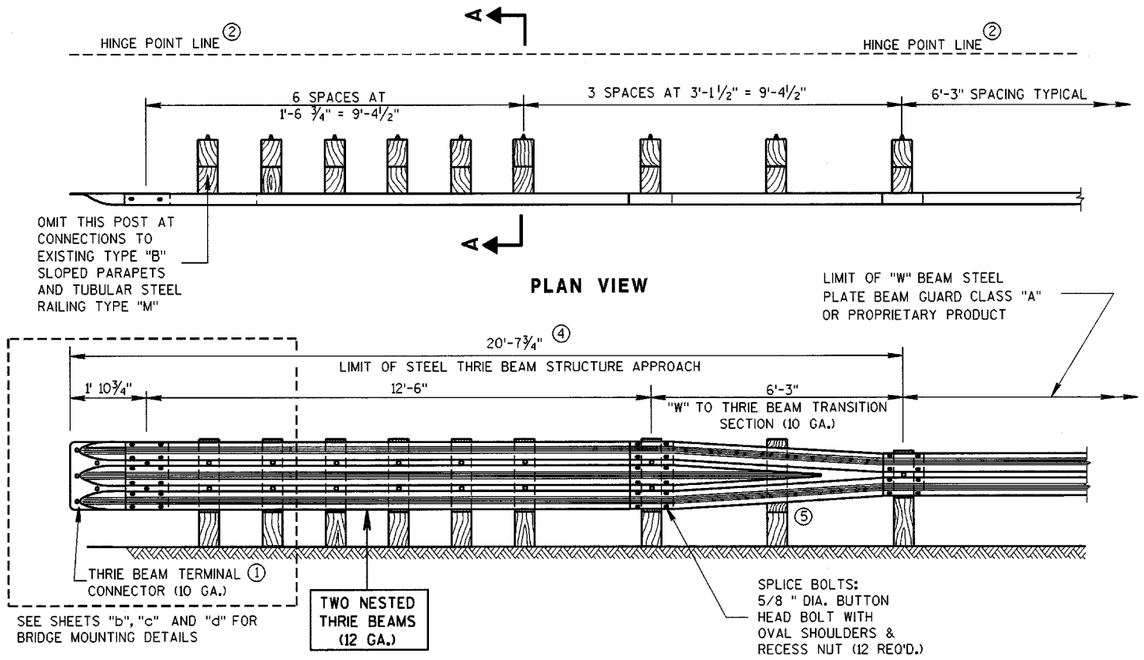
STEEL PLATE BEAM GUARD, CLASS 'A' (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)

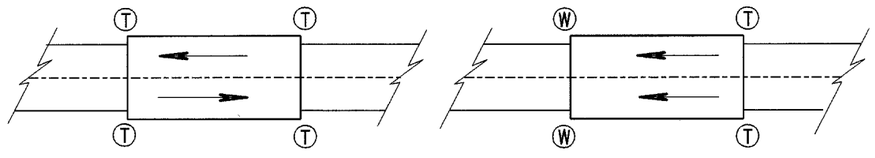
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 12/08/00 DATE
John Haverberg
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 14 B 18-4a

S.D.D. 14 B 18-4a

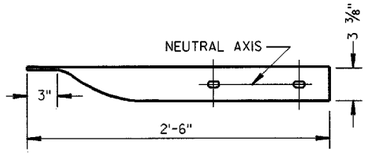


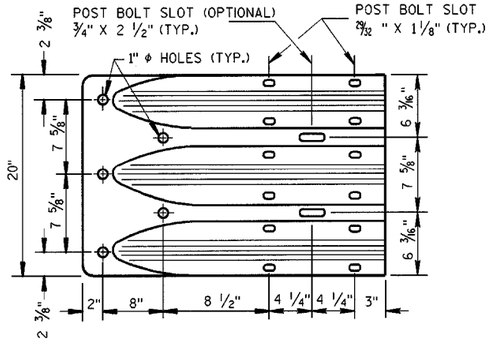


Ⓣ THRIE BEAM CONNECTION

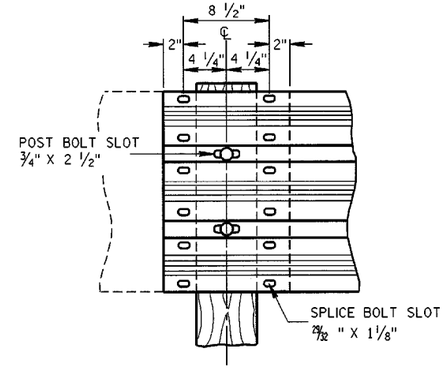
Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

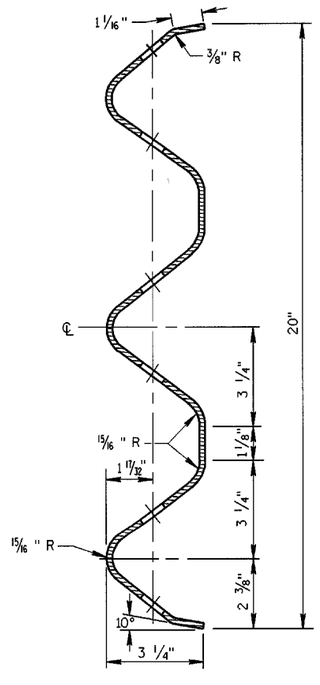




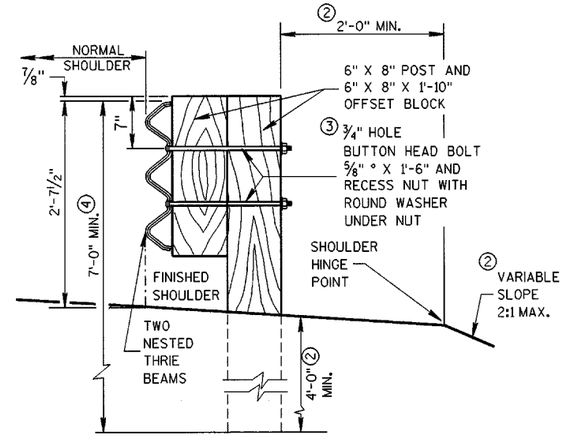
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION A-A

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.

FURNISH AND CONSTRUCT THRIE BEAM STRUCTURAL APPROACH ACCORDING TO THE REQUIREMENTS OF SECTION 614 OF THE STANDARD SPECIFICATIONS. THRIE BEAM SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M180, CLASS "A", TYPE 2.

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

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

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 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY, (SEE SDD 14 B 15-4a).

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F-1554, GRADE 55. NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-563 DH.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.

⑤ DO NOT ATTACH POST IN "W" TO THRIE BEAM TRANSITION SECTION.

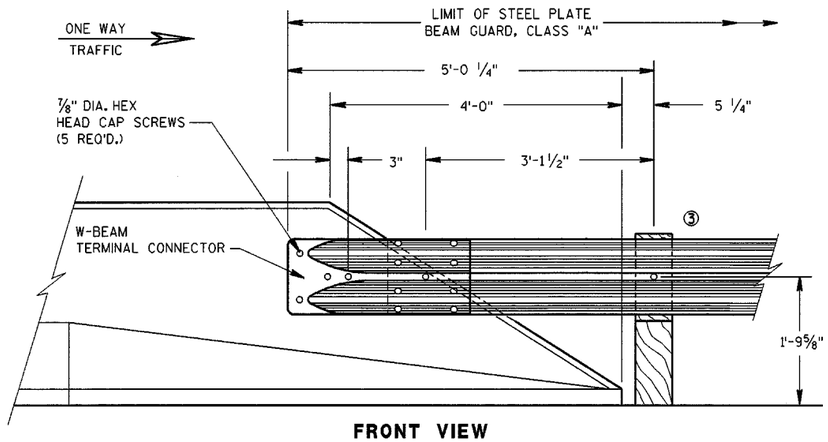
6

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 20-6a

S.D.D. 14 B 20-6a



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

GENERAL NOTES

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

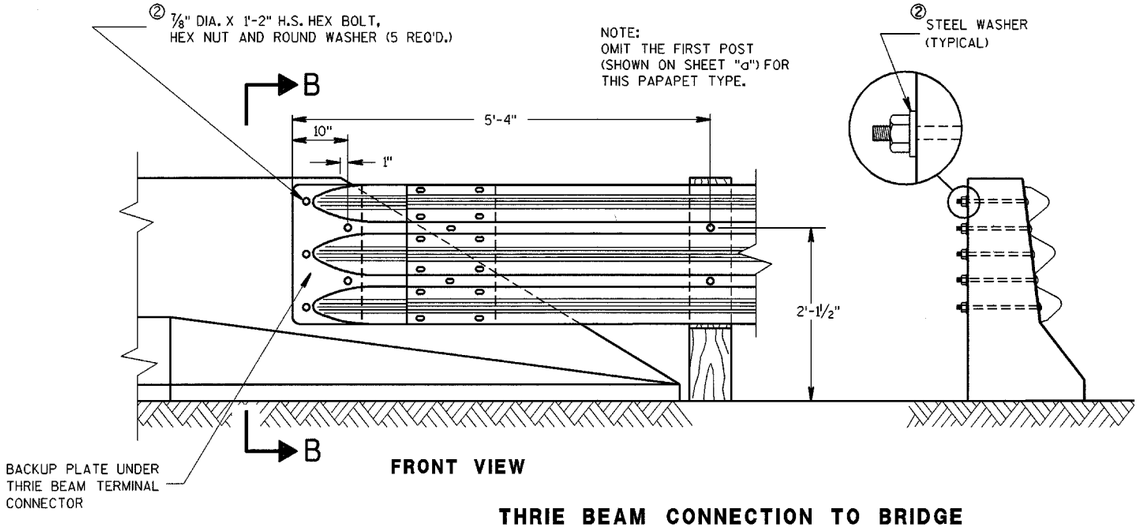
BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325, AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

① INCLUDE THE PAYMENT FOR DRILLING BOLT HOLES THROUGH THE PARAPET, AND THE BACKUP PLATE AND ALL BOLTS, NUTS AND WASHERS IN THE ITEM "STEEL THRIE BEAM STRUCTURAL APPROACH".

② EACH BOLT AT THE BACK FACE OF THE PARAPET REQUIRES A HARDENED ROUND STEEL WASHER WITH A 2 1/4" O.D. X 5/32 " THICK.

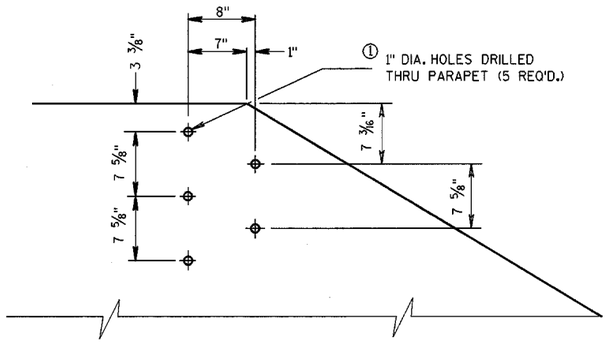
③ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.



FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

6

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

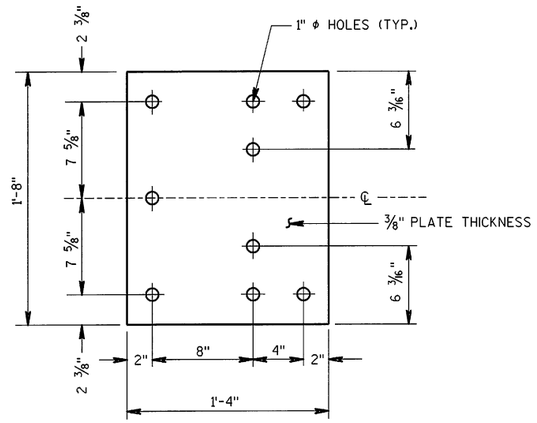
APPROVED 7/12/04
DATE

CHIEF ROADSIDE DEVELOPMENT ENGINEER

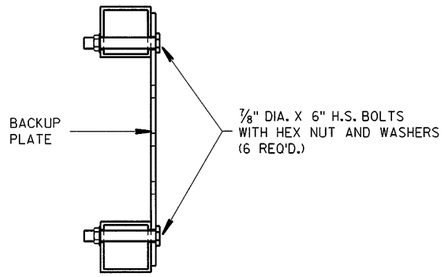
FHWA

S.D.D. 14 B 20-6c

S.D.D. 14 B 20-6c



BACK-UP PLATE DETAIL



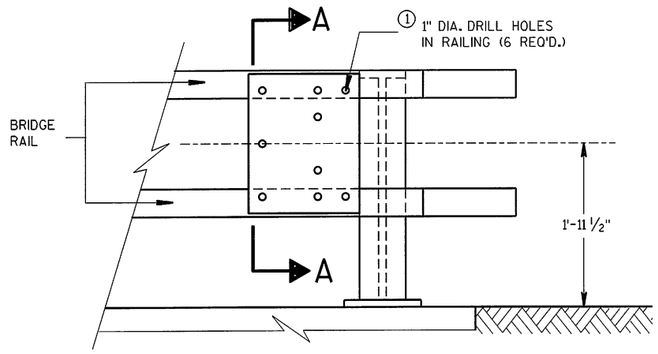
SECTION A-A

GENERAL NOTES

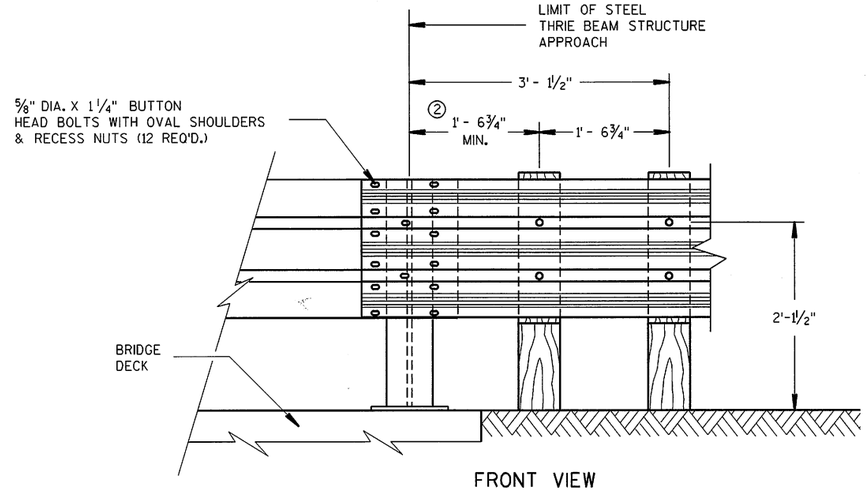
BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

① INCLUDE THE PAYMENT FOR DRILLING HOLES IN RAILING IN THE ITEM "STEEL THRIE BEAM STRUCTURE APPROACH".

② VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.

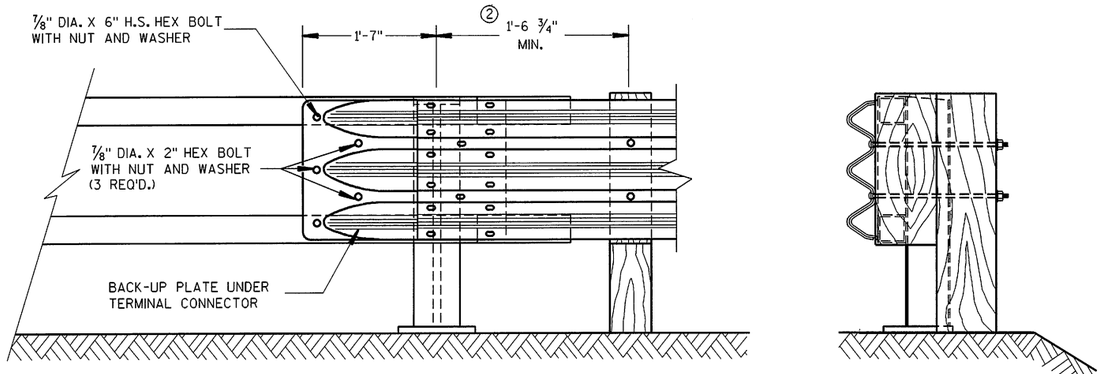


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW

END VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 08/14/04 DATE

CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 14 B 20-7d

6

S.D.D. 14 B 20-7d

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
(2)	4	STEEL TUBE: TS 8" X 6" X 0.188", 4'-6" LONG
(3)	4	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	REFLECTIVE SHEETING: 18" X 18"

GENERAL NOTES

(A) USE 3:1 OR FLATTER SLOPE FOR INSTALLATION ON EXISTING HIGHWAYS.

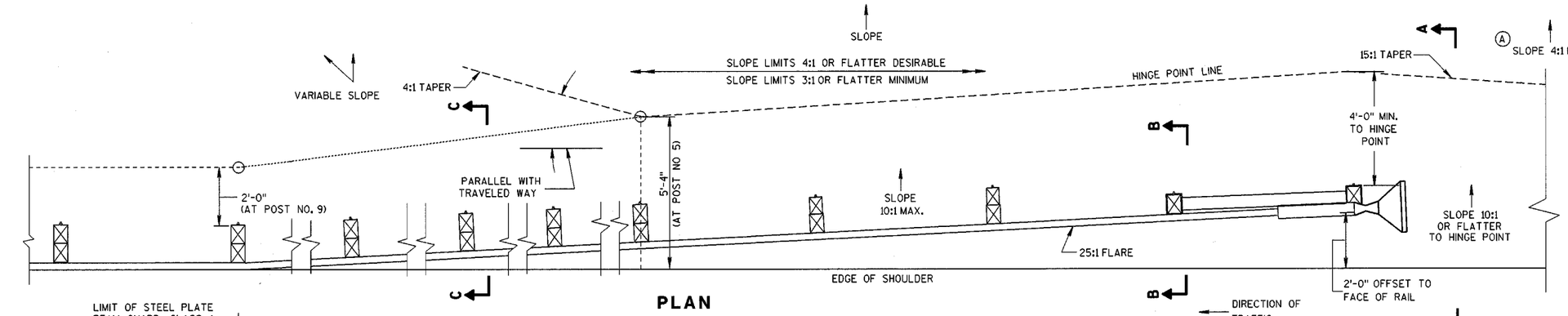
(B) DO NOT ATTACH GUARDRAIL TO POST BLOCKS AT POSTS NO. 3, 5 & 7.

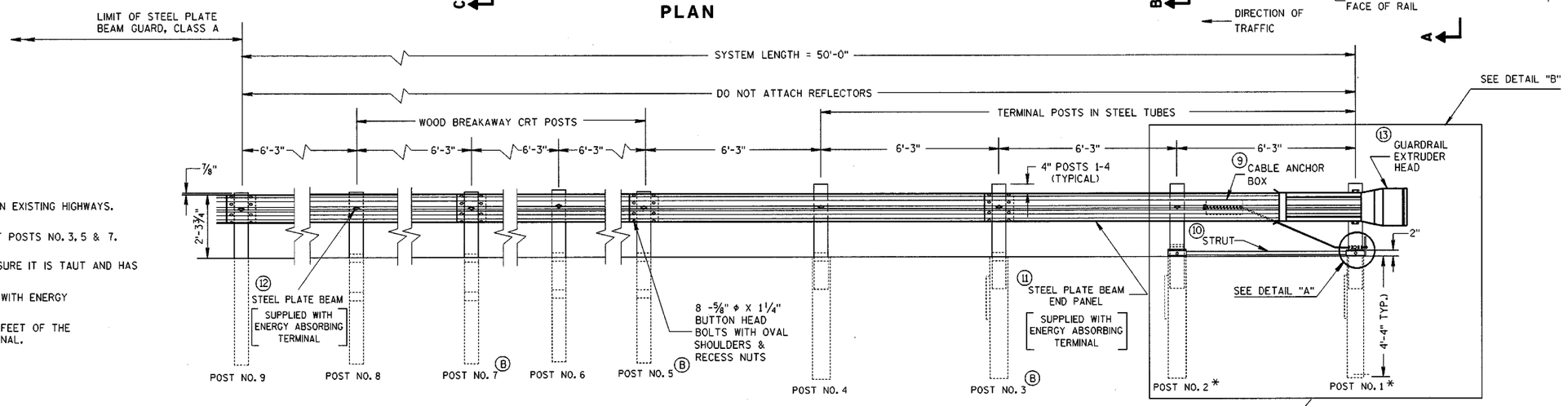
(C) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

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

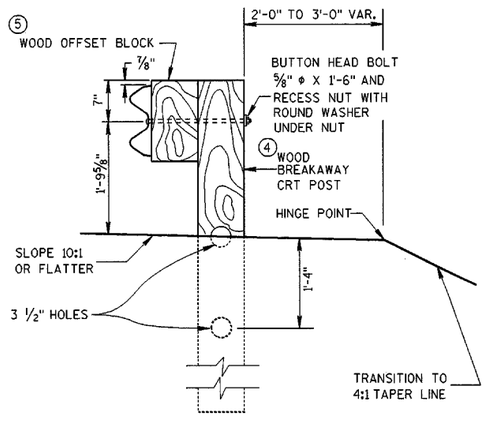
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

*DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



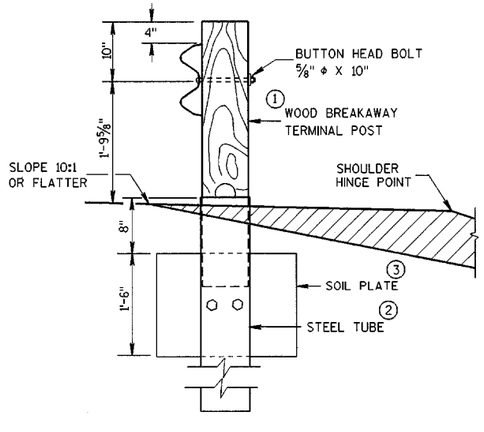


ELEVATION



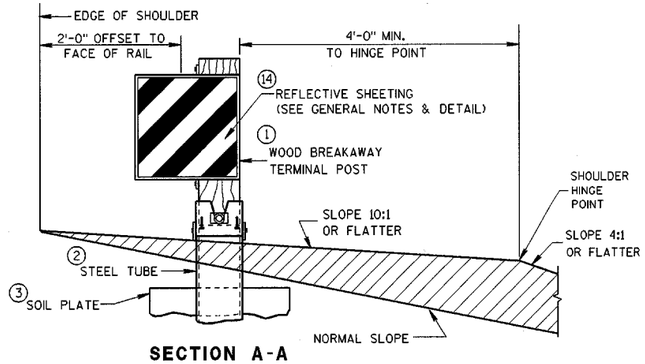
SECTION C-C

TYPICAL AT POST NOS. 4, 6, 8



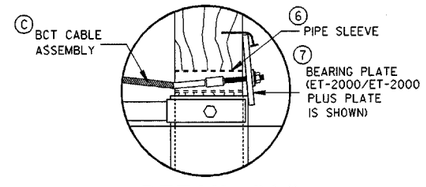
SECTION B-B

TYPICAL AT POST NO. 2*

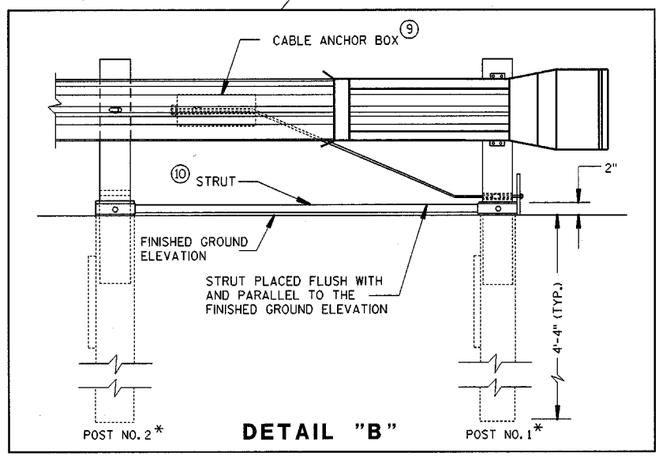


SECTION A-A

TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

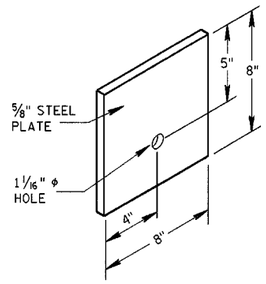
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

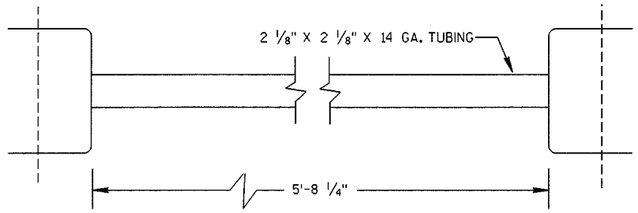
S.D.D. 14 B 24-4a

6

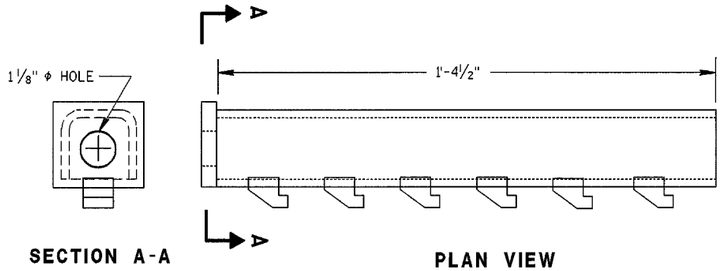
S.D.D. 14 B 24-4a



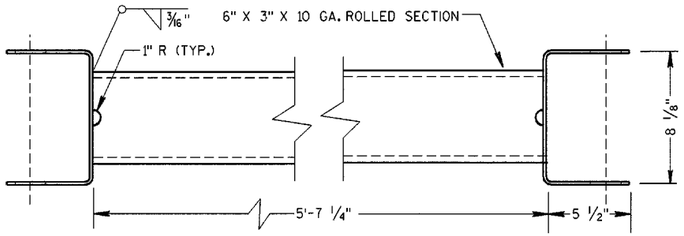
STEEL BEARING PLATE (SKT-350)



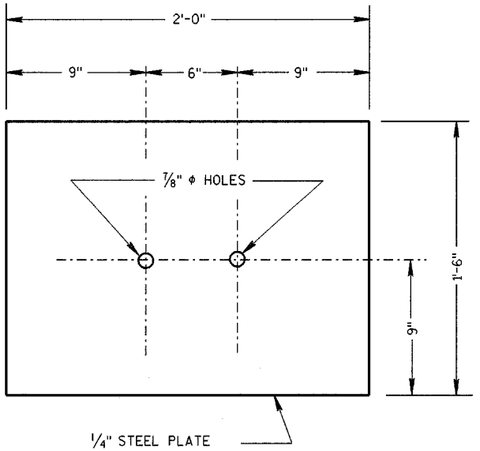
STRUT DETAIL (SKT-350)



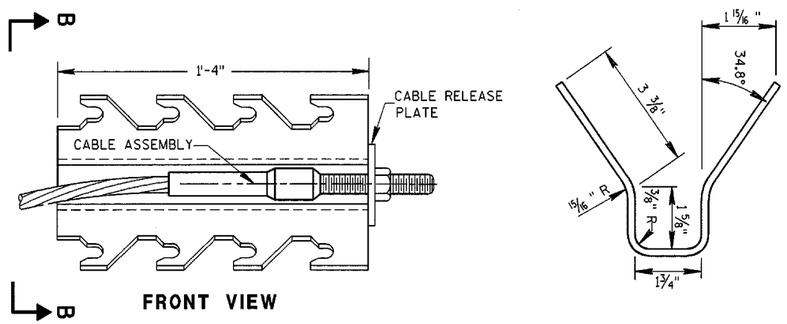
CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



STRUT DETAIL (ET-2000/ET-2000 PLUS)

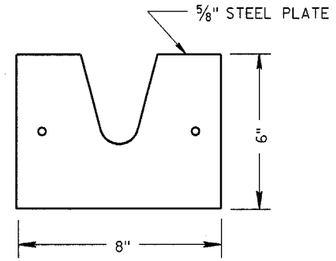


SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

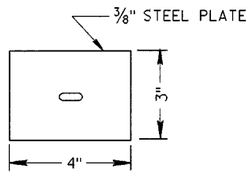


CABLE ANCHOR BOX (SKT-350)

(SKT-350)



STEEL BEARING PLATE
(ET-2000/ET-2000 PLUS)



BEARING PLATE WASHER
(ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)

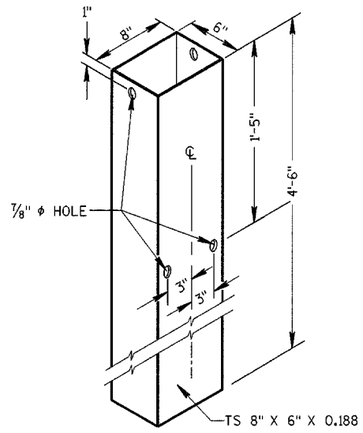
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 24-4b

S.D.D. 14 B 24-4b

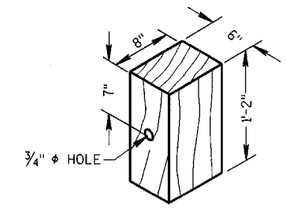


STEEL TUBE

(POSTS NO. 1-4

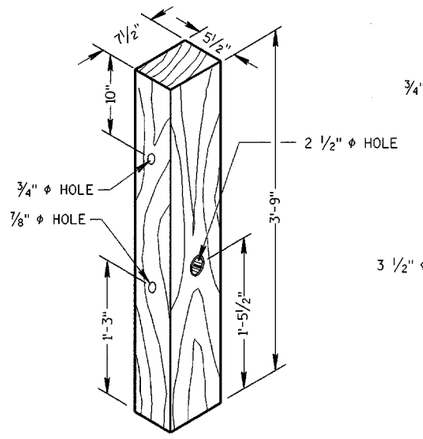
THE STEEL TUBE SHALL CONFORM

TO REQUIREMENTS OF ASTM A500



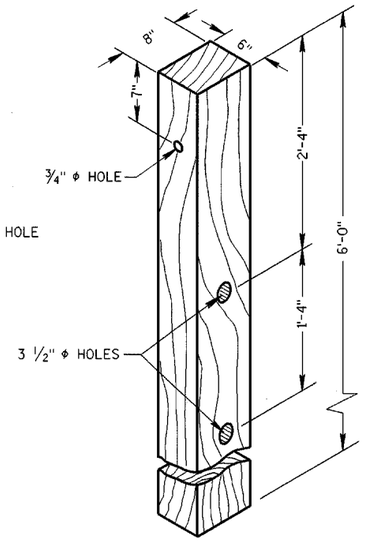
WOOD OFFSET BLOCK

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



TERMINAL POST

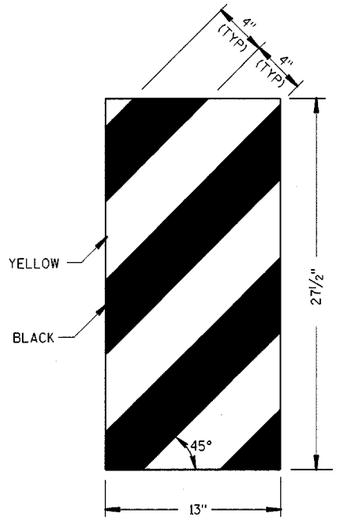
(POSTS NO. 1-4



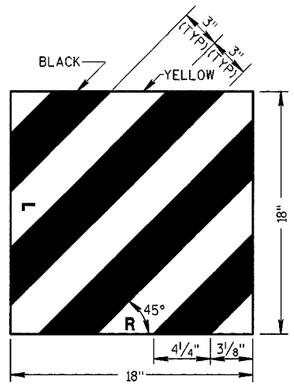
CRT POST

(POSTS NO'S 5-8

WOOD BREAKAWAY POSTS



ET-2000 PLUS ONLY



ET-2000 AND SKT-350

REFLECTIVE SHEETING DETAILS

GENERAL NOTES

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

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL SHALL BE EITHER THE EXTRUDER TERMINAL (ET-2000), OR THE SEQUENTIAL KINKING TERMINAL (SKT-350). THE CONTRACTOR SHALL NOT INTERMIX PROPRIATERY PRODUCT MATERIALS.

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

REFLECTIVE SHEETING - SHALL CONFORM TO ASTM SPECIFICATION D4956-94, REFLECTIVE SHEETING TYPE III, BACKING CLASS 4, PERFORMANCE REQUIREMENT TYPE III. THE MESSAGE AND LINES SHALL BE APPLIED TO THE SIGNS BY THE SILK SCREEN STENCIL PROCESS USING A BLACK OR DARK STENCIL PASTE AS A TYPE APPROVED BY THE MANUFACTURER OF THE FACE MATERIAL TO WHICH IT IS TO BE APPLIED. MESSAGE UNITS CUT FROM NONREFLECTIVE SHEETING AND APPLIED TO THE SIGN FACE ARE NOT ACCEPTABLE. AFTER THE APPROACH END OF THE STEEL PLATE BEAM GUARD INSTALLATION IS COMPLETE, CLEAN THE AREA WHERE THE REFLECTIVE SHEETING WILL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION. ONCE CLEAN, APPLY REFLECTIVE SHEETING DIRECTLY TO THE STEEL PLATE BEAM GUARD AS SHOWN. THE CONTRACTOR SHALL TURN OVER THE MANUFACTURERS WARRANTY FOR THE REFLECTIVE SHEETING TO THE DEPARTMENT FOR POTENTIAL DEALING WITH THE MANUFACTURER. PAYMENT OF REFLECTIVE SHEETING IS INCIDENTAL TO STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL.

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 1/2" 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.

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 6/25/03
DATE

CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

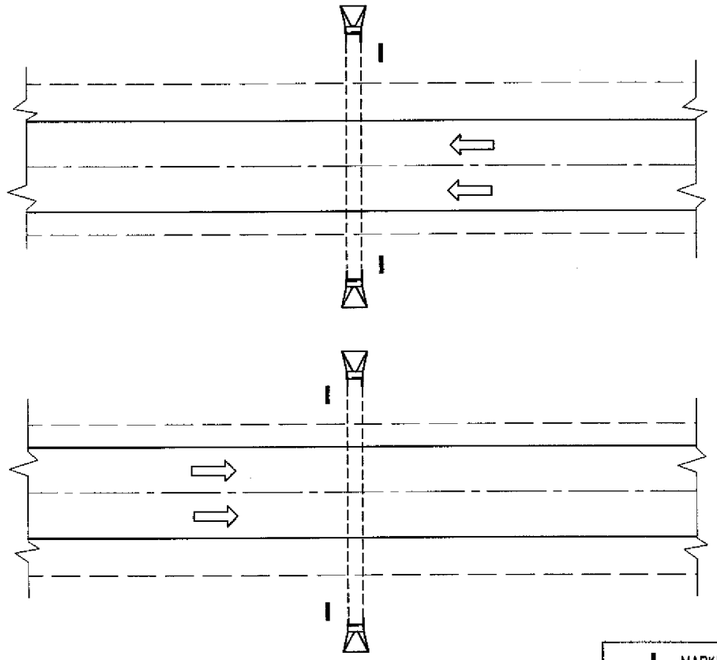
6

S.D.D. 14 B 24-4c

S.D.D. 14 B 24-4c

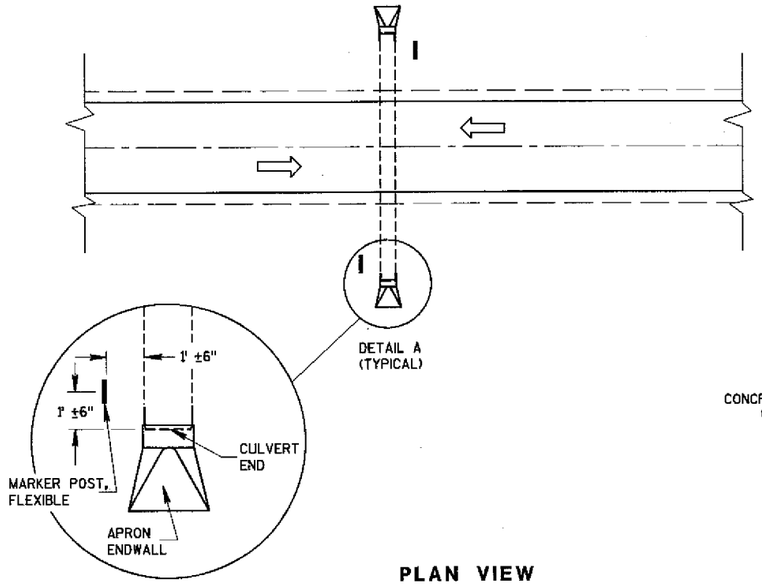
GENERAL NOTES

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.



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

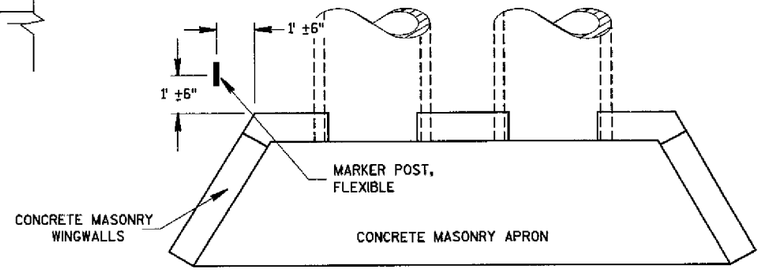
PLAN VIEW

UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

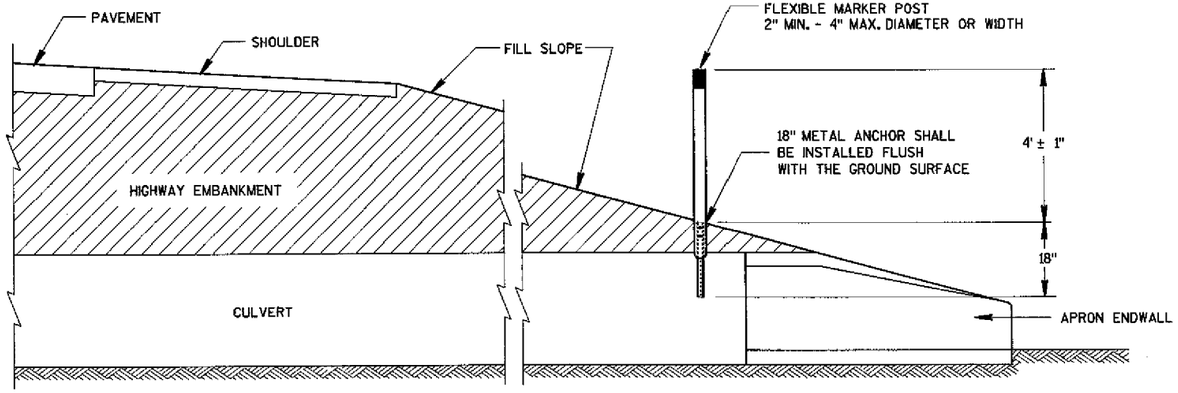
DIRECTION OF TRAFFIC FLOW

FLEXIBLE MARKER POST LOCATION



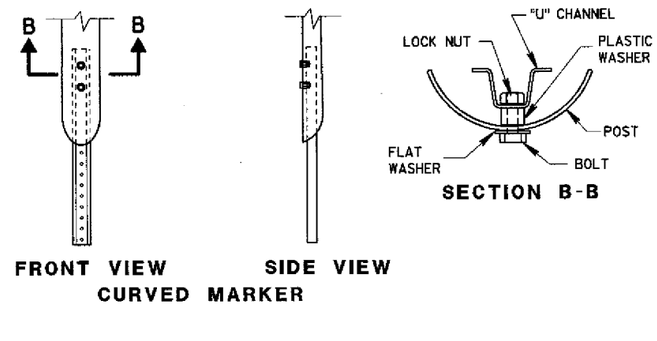
PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH



CROSS SECTION

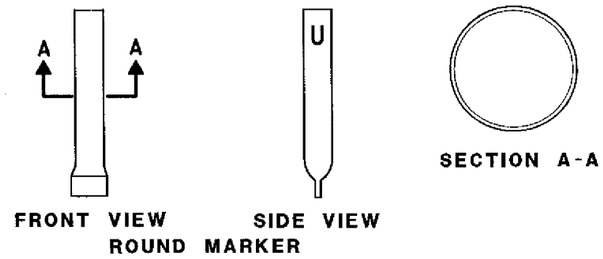
FLEXIBLE MARKER POST



FRONT VIEW — SIDE VIEW

CURVED MARKER

SECTION B-B

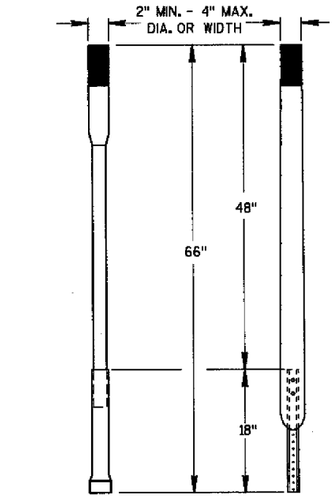


FRONT VIEW — SIDE VIEW

ROUND MARKER

SECTION A-A

FLEXIBLE MARKER POST ANCHORS



ALTERNATE 1 — ALTERNATE 2

FLEXIBLE MARKER POST

MARKER POST, FLEXIBLE, FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 10/01/98
DATE

CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

S.D.D. 15 A 3-1

S.D.D. 15 A 3-1

TWO-LANE ROADWAY

SYMBOLS

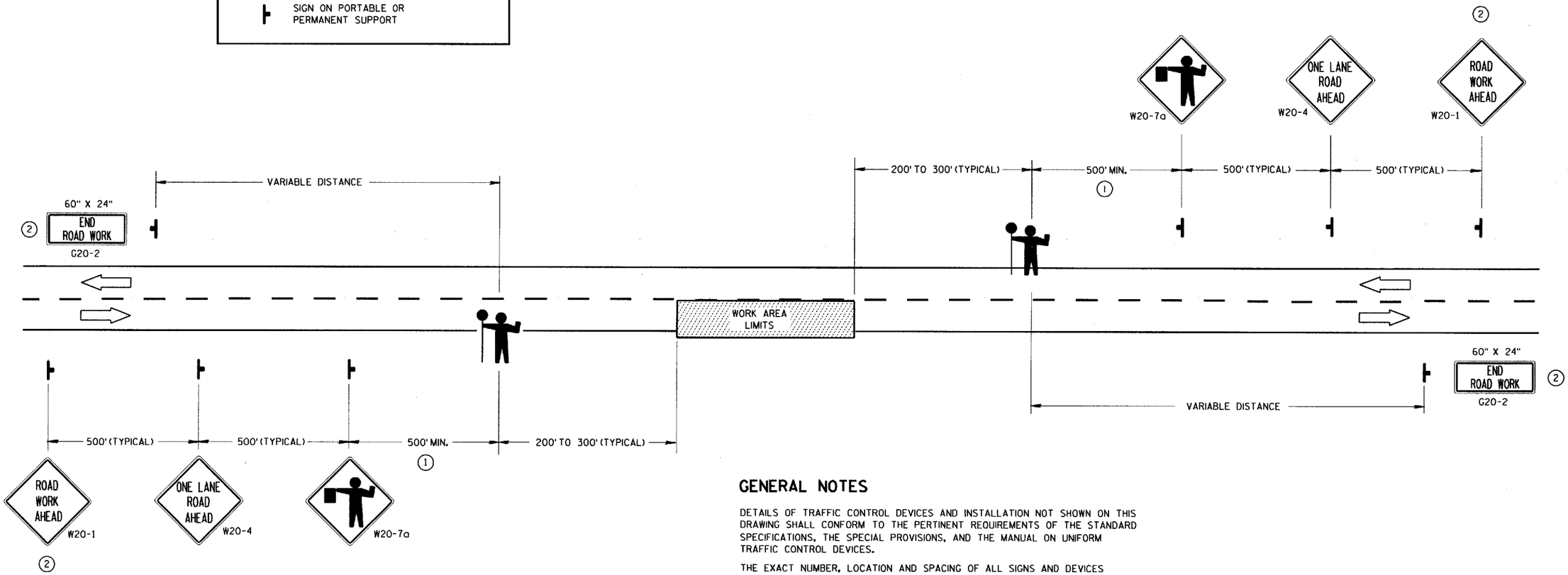
WORK AREA

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

SIGN ON PORTABLE OR PERMANENT SUPPORT

BE PREPARED TO STOP
W20-7b

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 DIRECTED 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 DIRECTED 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 DIRECTED 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, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

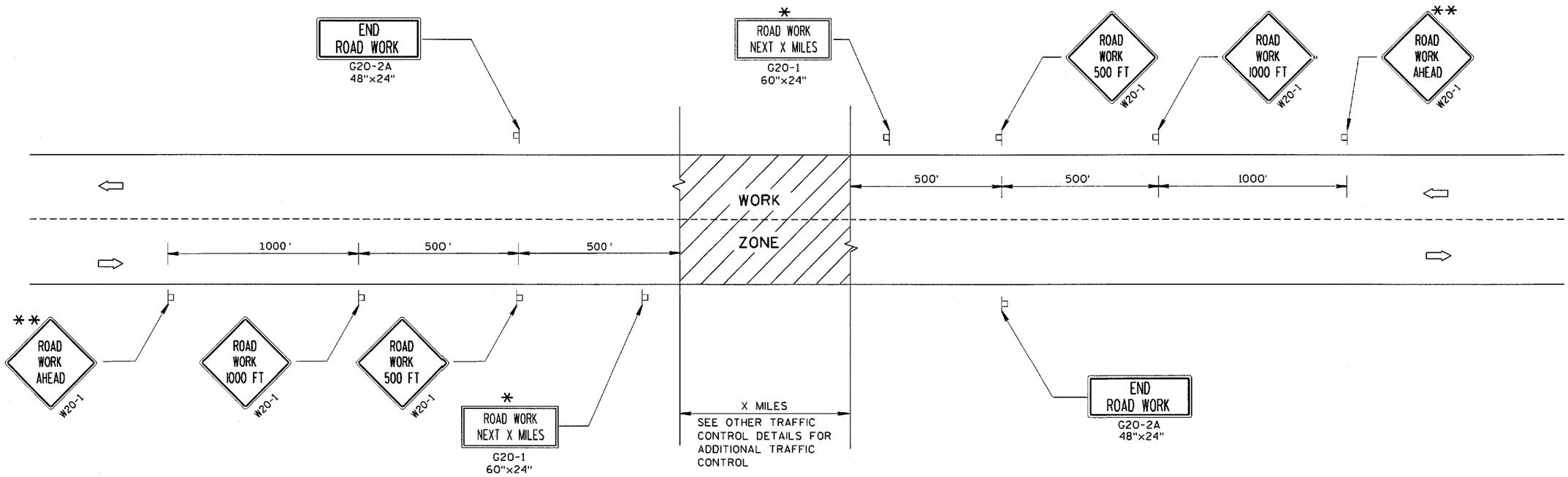
APPROVED
2/17/94
DATE

Peter T. Rusch
STATE TRAFFIC ENGINEER FOR HWYS

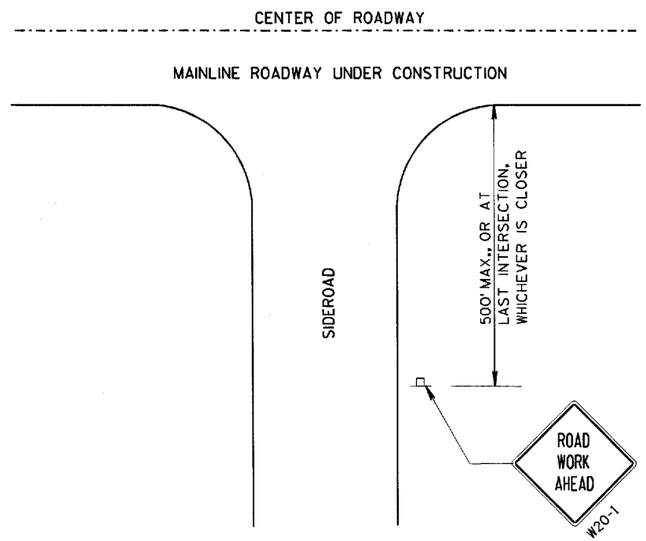
FHWA

S.D.D. 15 C 12-2

S.D.D. 15 C 12-2



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 OR SIGNING.

LEGEND

⊢ POST MOUNTED SIGN

⇨ DIRECTION OF TRAFFIC FLOW

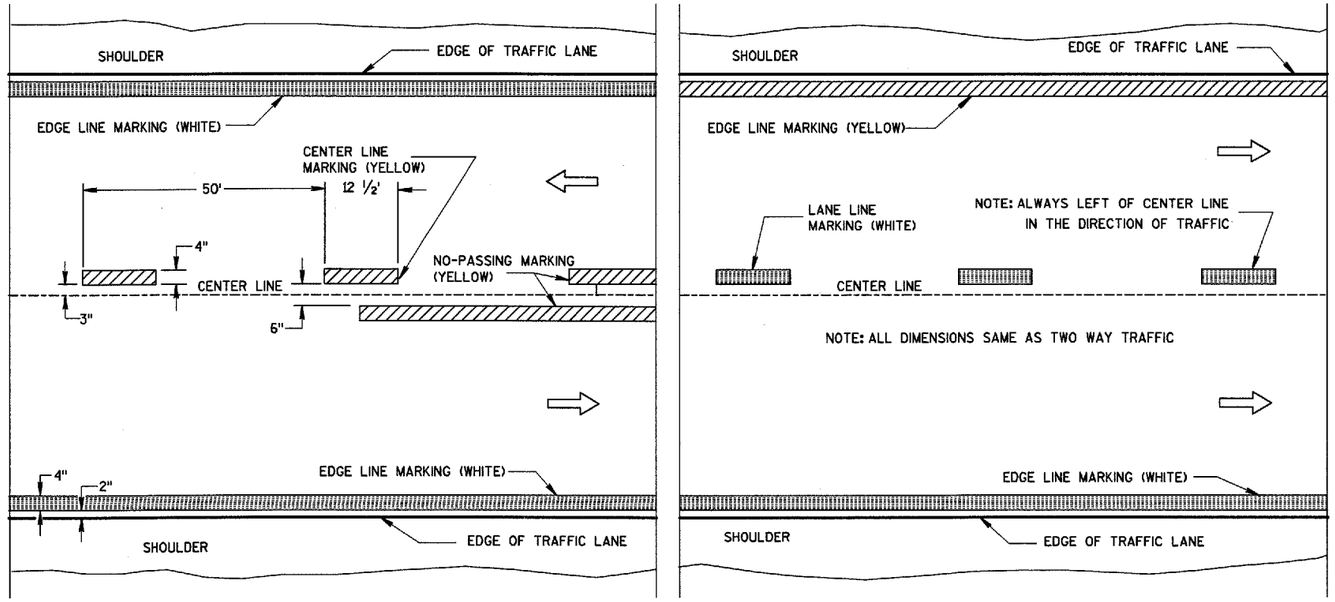
TRAFFIC CONTROL,
ADVANCE WARNING SIGNS
45 M.P.H. OR GREATER
TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 DATE
Christa J. Spang
CHIEF SIGNS AND MARKING ENGINEER
FHWA

S.D.D. 15 C 4-1

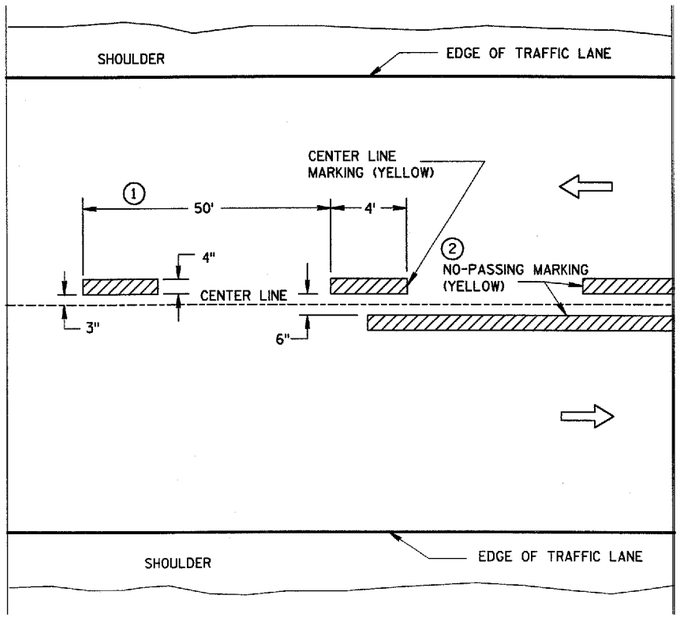
S.D.D. 15 C 4-1



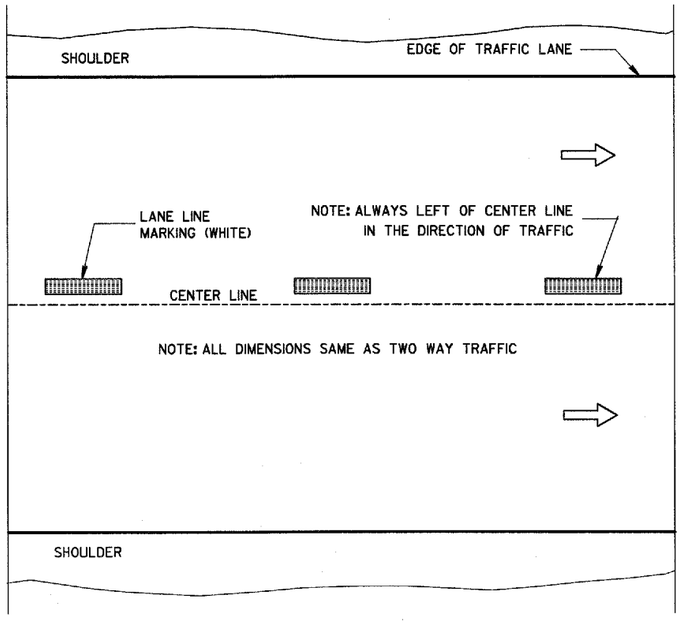
TWO WAY TRAFFIC

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.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

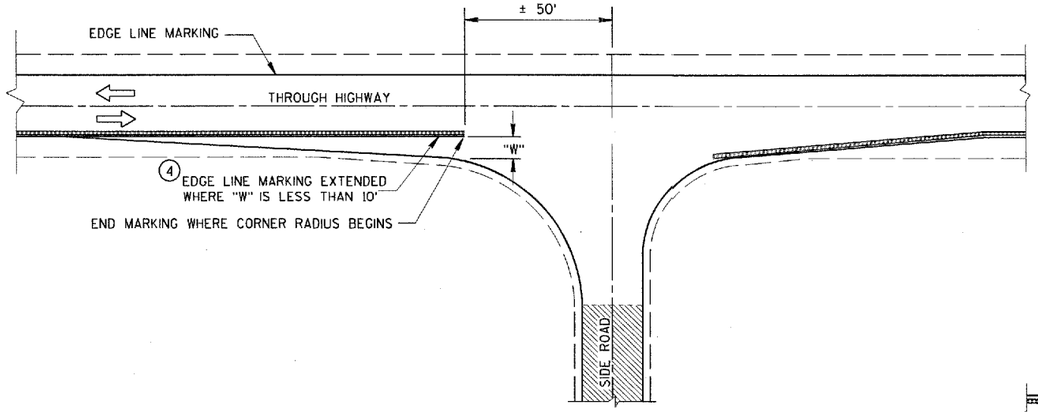
PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2-17-00
DATE
Charles J. Sparg
CHIEF SIGNS AND MARKING ENGINEER
FHWA

S.D.D. 15 C 8-9a

S.D.D. 15 C 8-9a



MINOR INTERSECTION WITHOUT CURBS

NOTES

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

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

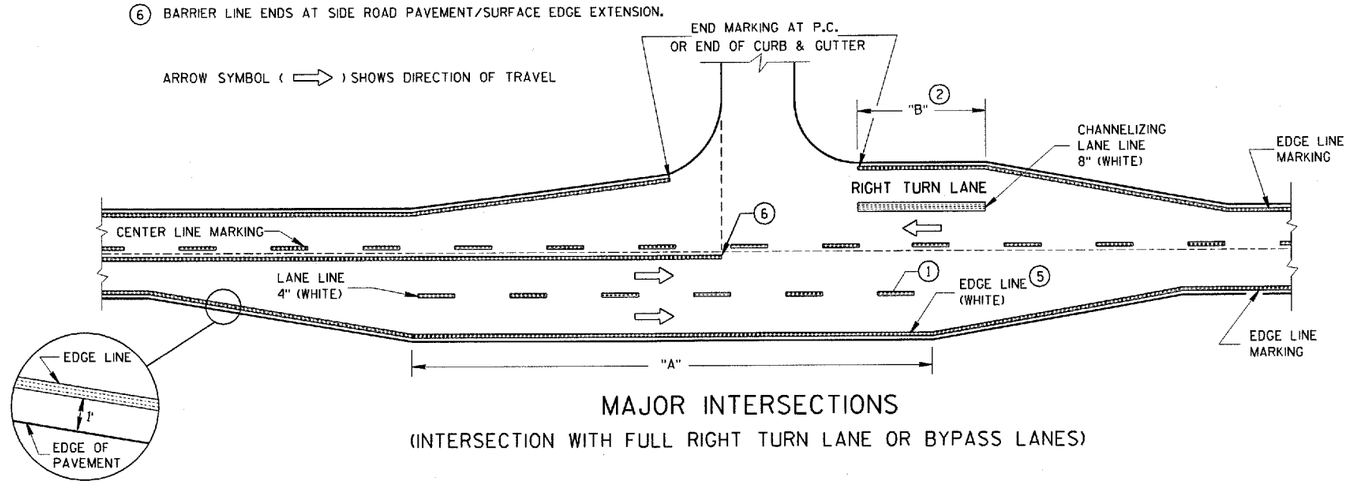
② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

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

④ LOCATE THE EDGE LINE ALONG THE TAPER WHERE "W" IS 10' OR MORE.

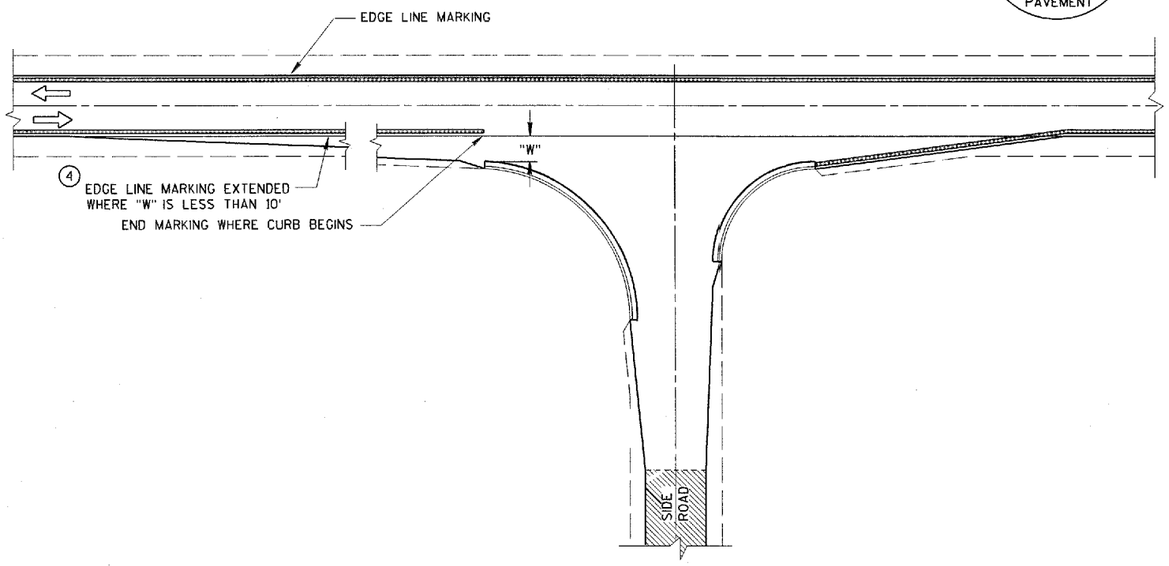
⑤ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

⑥ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.



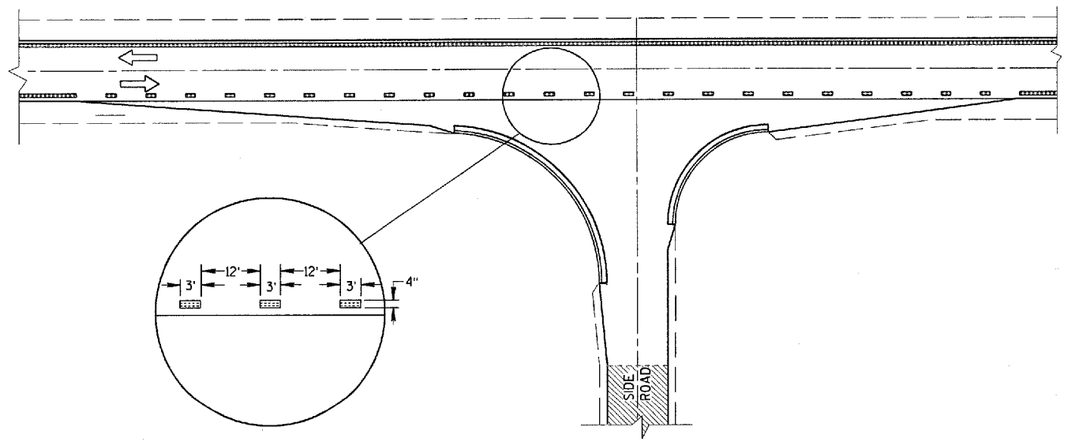
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 15 C 8-9b

S.D.D. 15 C 8-9b

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.

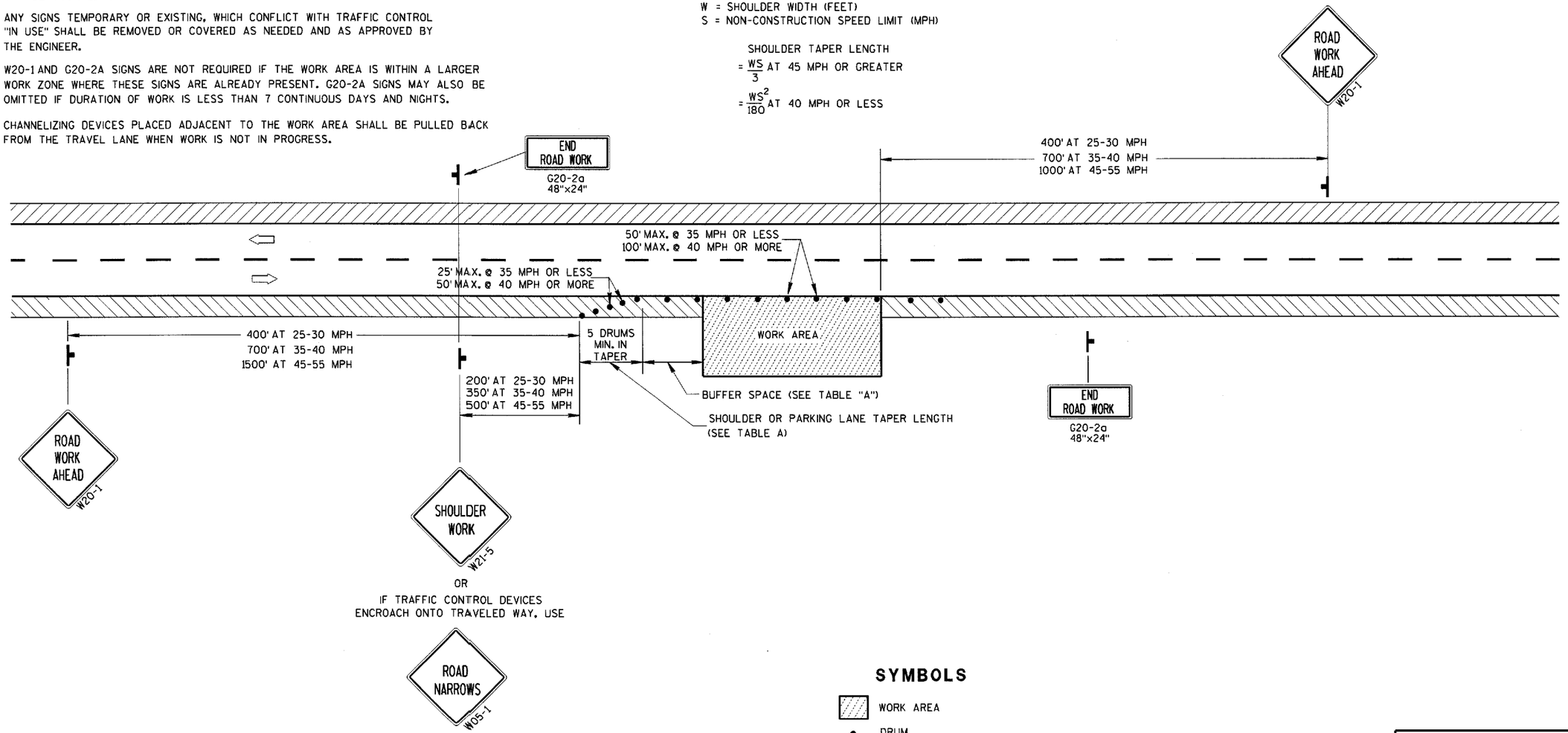
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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
$= \frac{WS}{3}$ AT 45 MPH OR GREATER
$= \frac{WS^2}{180}$ AT 40 MPH OR LESS



SYMBOLS

- WORK AREA
- DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 DATE
Curtis J. Spong
CHIEF SIGNS AND MARKING ENGINEER
FHWA

S.D.D. 15 D 28-1

S.D.D. 15 D 28-1

USH 63 EARTHWORK VOLUMES AT BEAMGUARD TERMINALS

STATION	END AREA CUT (S.F.)	END AREA FILL (S.F.)	COMMON C.Y.	FILL C.Y.	FILL (EXP. 30%) C.Y.
Bibon Creek					
1138+26.5, RT	0	0	0	0	---
1138+56.5, RT	12.9	0	7.2	0	---
1139+06.5, RT	0	0	11.9	0	---
1138+64, LT	0	0	0	0	---
1138+94, LT	15.2	0	8.4	0	---
1139+44, LT	0	0	14.1	0	---
1140+56, RT	0	0	0	0	---
1141+06, RT	10.5	0	9.7	0	---
1141+36, RT	0	0	5.8	0	---
1140+93.5, LT	0	0	0	0	---
1141+43.5, LT	10.5	0	9.7	0	---
1141+73.5, LT	0	0	5.8	0	---
White River					
1230+18.5, RT	0	0	0	0	---
1230+48.5, RT	8.1	1.5	4.5	0.8	1
1230+98.5, RT	0	0	7.5	1.4	1.8
1230+56, LT	0	0	0	0	---
1230+86, LT	8.7	20.1	4.8	11.2	14.6
1231+36, LT	0	0	8.1	18.6	24.2
1232+91, RT	0	0	0	0	---
1233+41, RT	6.7	8.4	7.8	5.4	7
1233+71, RT	0	0	4.4	3	3.9
1233+28.5, LT	0	0	0	0	---
1233+78.5, LT	8.6	11.2	8.0	10.4	13.5
1234+08.5, LT	0	0	4.5	6.2	8.1
TOTALS:			122	57	74

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

105 100 95

R/W 100' LT

4:1

-0.02'/.

STA =1141+43.5 LT
MATCH EXISTING STATION 1140+93.5 LT, 1141+73.5 LT

100 95 90

-0.02'/.

4:1

R/W >200' RT

STA =1141+06 RT
MATCH EXISTING STATION 1140+56 RT, 1141+36 RT

105 100 95

R/W 100' LT

-0.02'/.

STA =1138+94 LT
MATCH EXISTING STATION 1138+64 LT, 1139+44 LT

105 100 95

ELEVATIONS ASSUMED

-0.02'/.

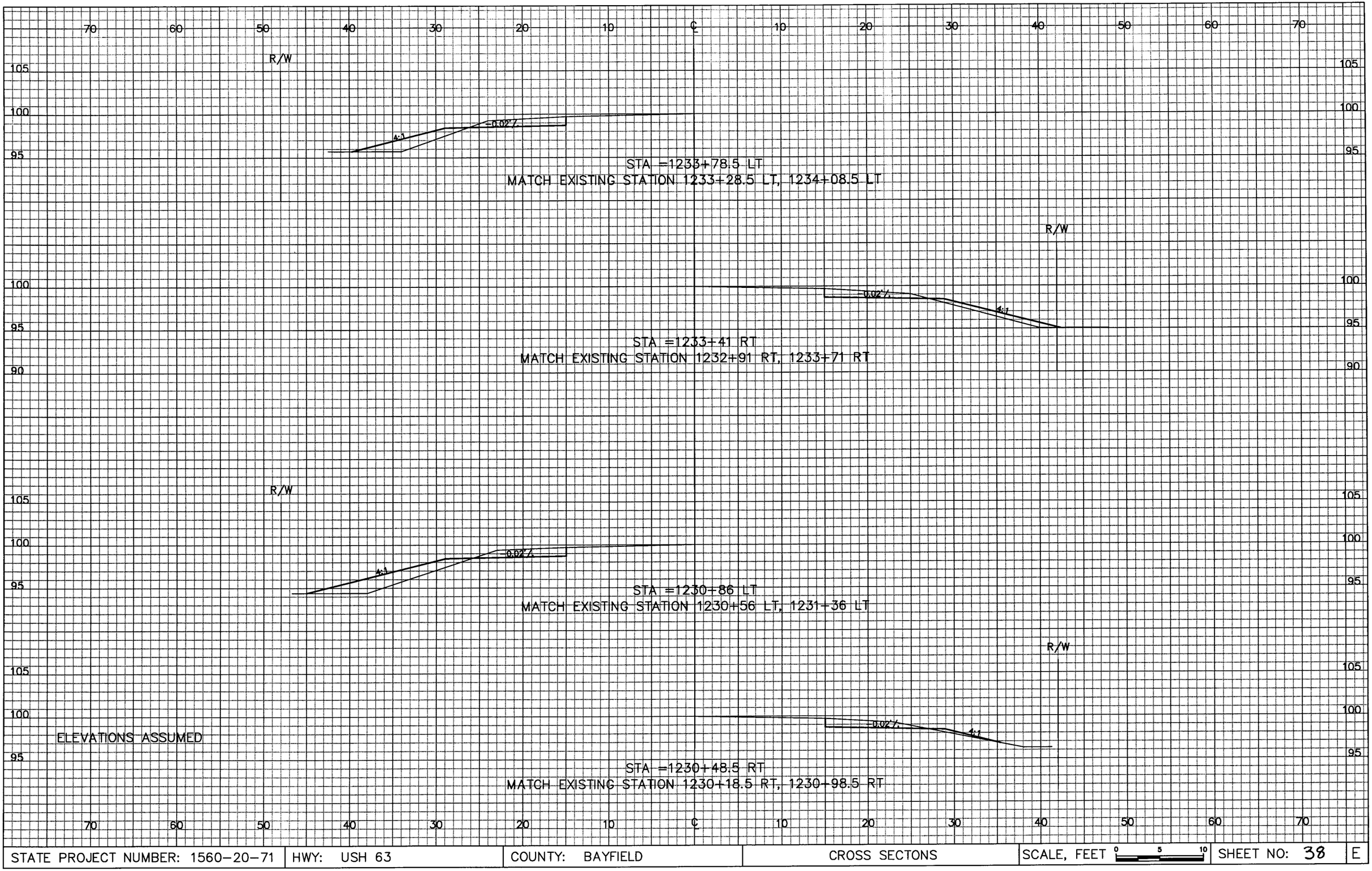
4:1

R/W >200' RT

STA =1138+56.5 RT
MATCH EXISTING STATION 1138+26.5 RT, 1139+06.5 RT

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	CROSS SECTONS	SCALE, FEET 0 5 10	SHEET NO: 37	E



STATE PROJECT NUMBER: 1560-20-71	HWY: USH 63	COUNTY: BAYFIELD	CROSS SECTONS	SCALE, FEET 0 5 10	SHEET NO: 38	E