RHI NOV 2014

PROJECT ID: 9650-16-61/9650-16-70

WITH: N/A

COUNTY: LANGLADE

ORDER OF SHEETS

TOTAL SHEETS = 174

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9650-16-61	WISC 2014393	1
9650-16-70	WISC 2014394	1

NEOPIT - ANTIGO

W BR RED RIVER CULVERT EXTENSION

STH 47

LANGLADE COUNTY

STATE PROJECT NUMBER

9650-16-61

NEOPIT - ANTIGO

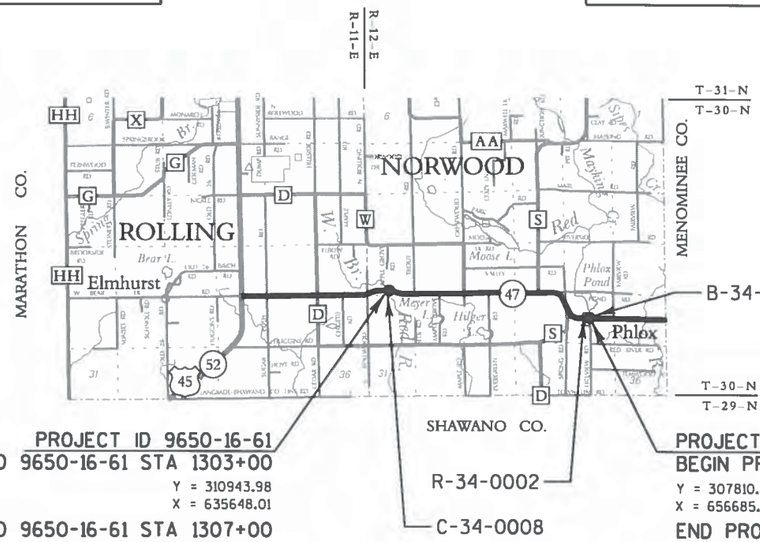
RED RIVER BRIDGE, B-34-0046

STH 47

LANGLADE COUNTY

STATE PROJECT NUMBER

9650-16-70



PROJECT ID 9650-16-61

BEGIN PROJECT ID 9650-16-61 STA 1303+00

Y = 310943.98

X = 635648.01

END PROJECT ID 9650-16-61 STA 1307+00

PROJECT ID 9650-16-70

BEGIN PROJECT ID 9650-16-70 STA 1077+08

Y = 307810.88

X = 656685.97

END PROJECT ID 9650-16-70 STA 1081+28

DESIGN DESIGNATION		9650-16-61 (C-34-0008)	9650-16-70 (B-34-0046)
A.A.D.T. 2013	=	1250	650
A.A.D.T. 2033	=	1500	800
D.H.V.	=	UNKNOWN	UNKNOWN
D.D.	=	63/37	63/37
T.	=	9.9%	9.9%
DESIGN SPEED	=	55 MPH	40 MPH
ESALS	=	N/A	N/A

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

LAYOUT

SCALE 0 1.5 MI.

PROJECT ID 9650-16-61 = 0.076 MI.

PROJECT ID 9650-16-70 = 0.080 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), 'LANGLADE' COUNTY. HORIZONTAL DATUM NAD 83, (91). ALL DISTANCES ARE GROUND. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO NAVD 1988.

ORIGINAL PLANS PREPARED BY

emcs.inc

630 South 36th Avenue

Wausau, WI 54401

715.845.1081 Fax 715.845.1099

WISCONSIN

STEPHANIE G. CHRISTENSEN E35808 WAUSAU, WI

PROFESSIONAL ENGINEER

Stephanie G. Christensen

10/21/2013

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	EMCS, INC.
Designer	EMCS, INC.
Project Manager	DANIEL ERVA
Regional Examiner	CHERYL SIMON
Regional Supervisor	ANNA WISNER

APPROVED FOR THE DEPARTMENT

DATE: 10/21/13 Anna Wisner (Signature)

E

2

GENERAL NOTES

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

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.

PLACE HMA PAVEMENT LAYERS WITH THE FOLLOWING THICKNESS AND NOMINAL SIZES:

HMA PAVEMENT TYPE E-1 2-INCH (MAINLINE)
LAYER THICKNESS = 2-INCH (12.5 MM) PG58-28

HMA PAVEMENT TYPE E-1 4-INCH (PAVED SHOULDERS, FULL DEPTH)
UPPER LAYER THICKNESS = 2-INCH (12.5 MM) PG58-28
LOWER LAYER THICKNESS = 2-INCH (12.5 MM) PG58-28

HMA PAVEMENT TYPE E-1 5.5-INCH (MAINLINE, FULL DEPTH)
UPPER LAYER THICKNESS = 2.5-INCH (12.5 MM) PG58-28
LOWER LAYER THICKNESS = 3-INCH (12.5 MM) PG58-28

DESIGN NOTES

CROSS SECTION AND EARTHWORK AT STRUCTURE C-34-0008 (PROJECT ID 9650-16-61) PROVIDED BY WISDOT NORTH CENTRAL REGION.

STRUCTURE PLANS FOR C-34-0008 AND B-34-0046 PROVIDED BY WISDOT BUREAU OF STRUCTURES

ORDER OF SECTION 2 SHEETS

UTILITIES

ALLIANT ENERGY
(ELECTRIC DISTRIBUTION)
DAVID BERTRAM
708 NE 7TH STREET
MARION, WI 54950
(715) 754-4348
MOBILE: (715) 903-0173
davebertram@alliantenergy.com

ATC MANAGEMENT, INC.
(ELECTRIC TRANSMISSION)
JAMES BRIGGS
W234 N2000 RIDGEVIEW PARKWAY COURT
WAUKESHA, WI 53188
(262) 506-6974
MOBILE: (414) 651-1830
jbriggs@atcllc.com

CITY GAS COMPANY
(GAS)
ROD MADESON
809 5TH AVENUE
ANTIGO, WI 54409
(715) 627-4351
MOBILE: (715) 216-3571
madeson@citygasantigo.com

FRONTIER COMMUNICATIONS
(COMMUNICATIONS)
CALVIN KLADE
1851 N 14TH STREET
WAUSAU, WI 54401
(715) 847-1525
MOBILE: (715) 573-2110
calvin.klade@ftr.com

WISCONSIN PUBLIC SERVICE CORPORATION
(ELECTRIC DISTRIBUTION)
DON LUTZOW
P.O. BOX 1166
WAUSAU, WI 54402
(715) 627-3011
MOBILE: (715) 493-7802
DALutzow@wisconsinpublicservice.com

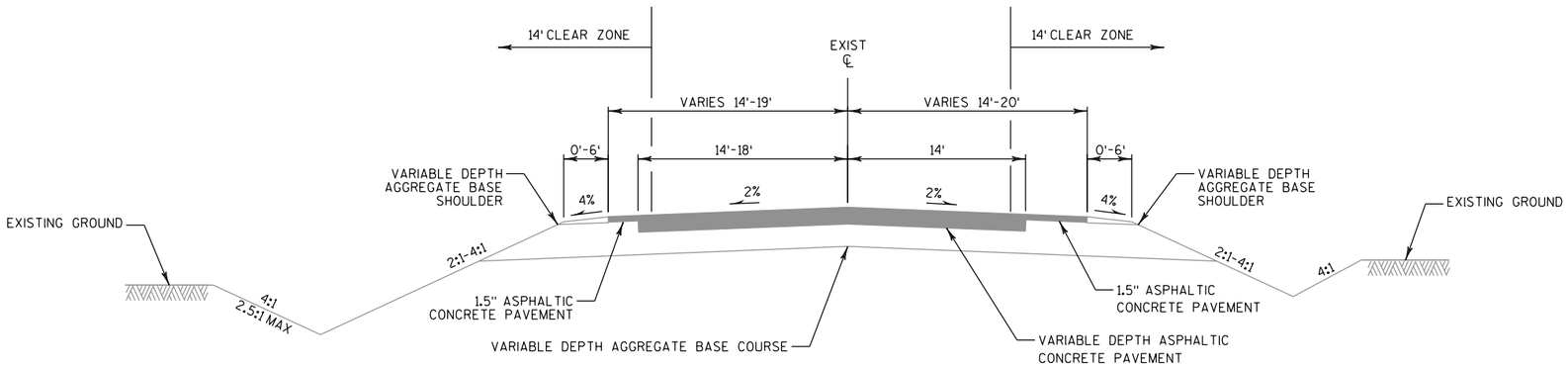
DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

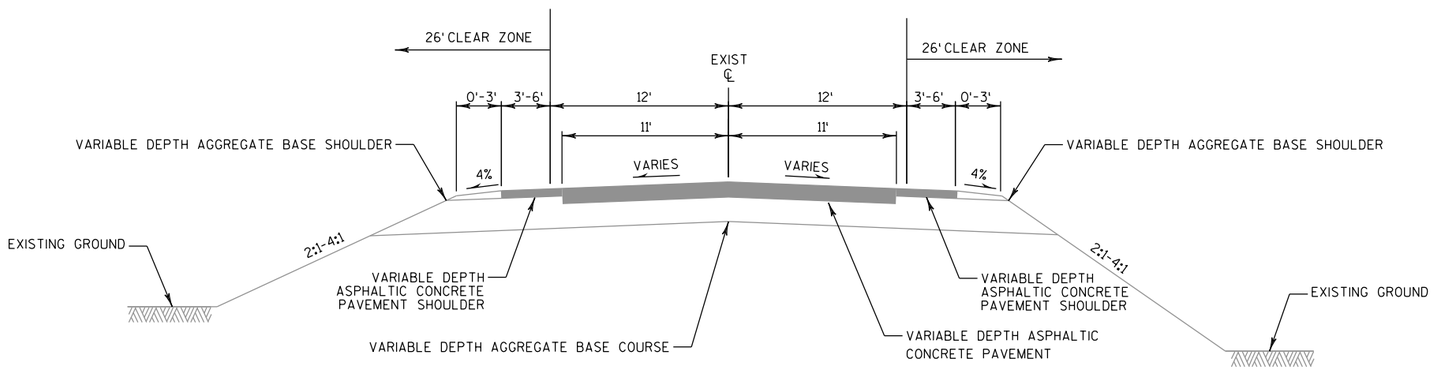
WISCONSIN STATUTE 182.0175 (1974) REQUIRES MINIMUM OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

OTHER CONTACTS

DNR LIAISON
JON SIMONSEN
DNR NORTHERN REGION HEADQUARTERS
107 SUTLIFF AVE
RHINELANDER, WI 54501
715-365-8916
JONATHAN.SIMONSEN@WISCONSIN.GOV



TYPICAL EXISTING SECTION
STH 47
STA 1077+08 - STA 1081+28
RED RIVER
B-34-0839



TYPICAL EXISTING SECTION
STH 47
STA 1303+00 - STA 1307+00
W. BRANCH RED RIVER
C-34-0008

NOTE:

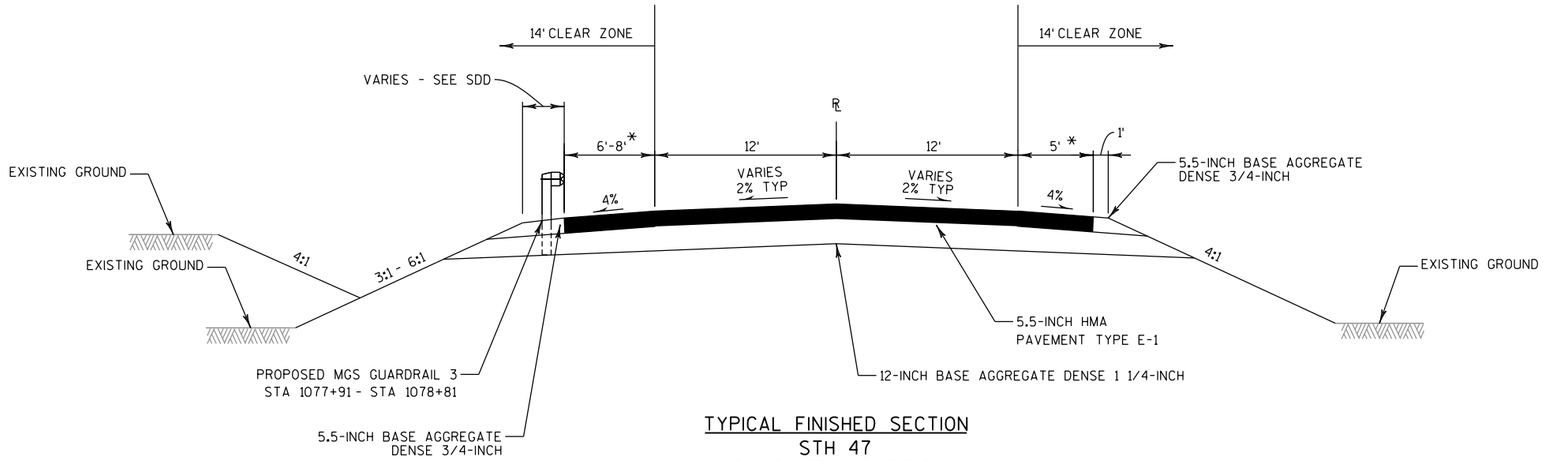
CROSS SLOPE AT C-34-0008
VARIES DUE TO SUPERELEVATION

PROJECT NO: 9650-16-61, 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	TYPICAL SECTIONS	SHEET 3	E

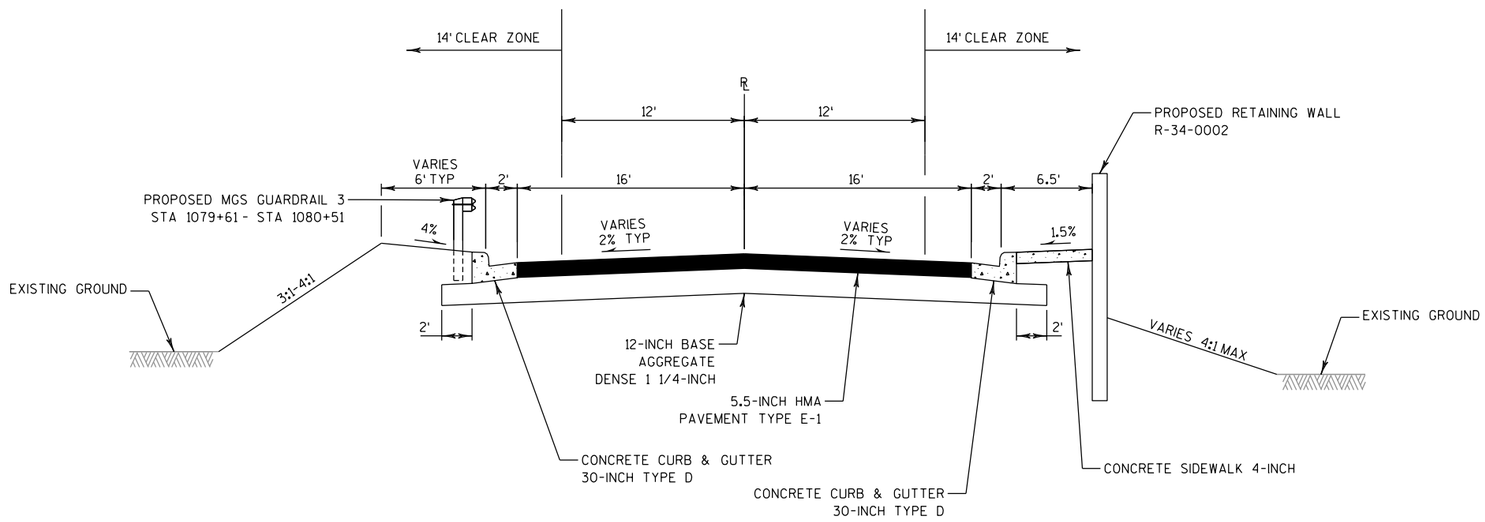
FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\020301_ts.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:20

WISDOT/CADDS SHEET 42

* TAPER PAVED SHOULDER TO MATCH EXISTING WIDTH AT MATCH LIMITS



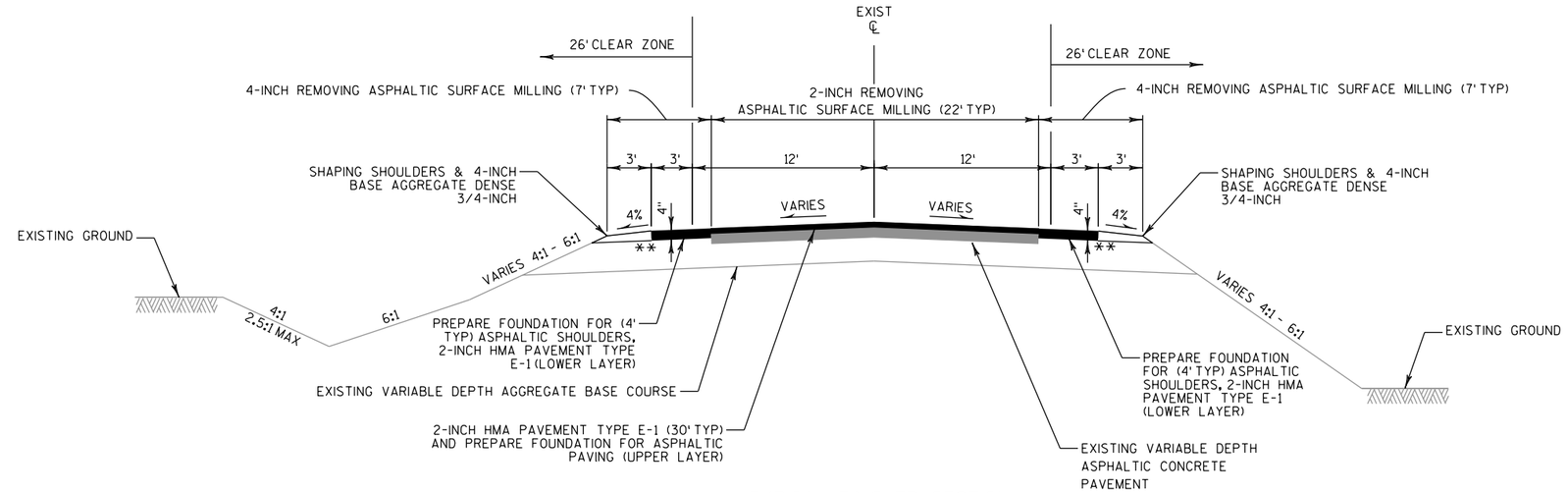
TYPICAL FINISHED SECTION
STH 47
STA 1077+08 - STA 1078+91
RED RIVER
B-34-0046



TYPICAL FINISHED SECTION
STH 47
STA 1079+51 - STA 1081+28
RED RIVER
B-34-0046

PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	TYPICAL SECTIONS	SHEET 4	E

2



TYPICAL FINISHED SECTION

STH 47

STA 1303+00 - STA 1307+00

W. BRANCH RED RIVER

C-34-0008

NOTES:

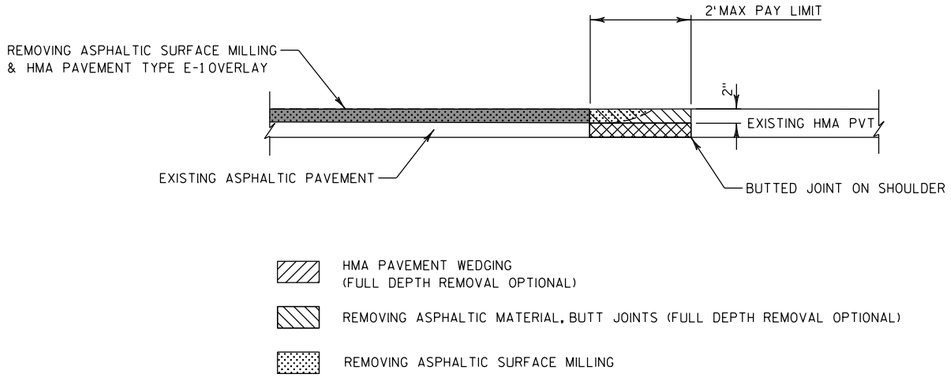
THE REFERENCE LINE MAY NOT COINCIDE WITH THE CROWN LINE IN ALL LOCATIONS

FOR FULL DEPTH PATCH AT TEMPORARY CULVERT SEE SECTION 5 PLAN SHEETS

CROSS SLOPE AT C-34-0008 VARIES DUE TO SUPERELEVATION

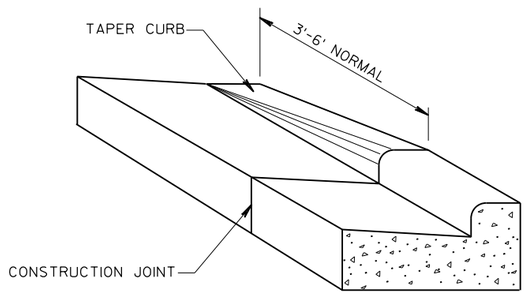
** PLACE PAVEMENT SAFETY EDGE, SEE SDD SAFETY EDGE FOR ADDITIONAL INFORMATION

PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	TYPICAL SECTIONS	SHEET 5	E

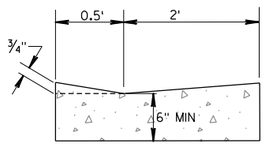


DETAIL OF REMOVING ASPHALTIC SURFACE BUTT JOINT

STA 1303+00
STA 1307+00



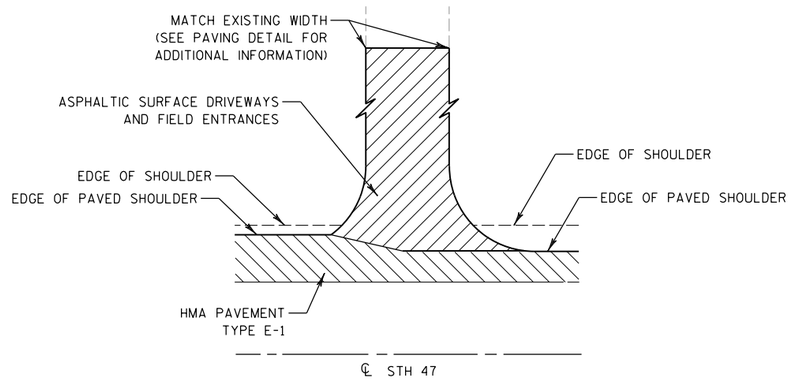
DETAIL OF CURB & GUTTER TERMINI



CONCRETE CURB & GUTTER 30-INCH TYPE D WITH NO CURB HEAD

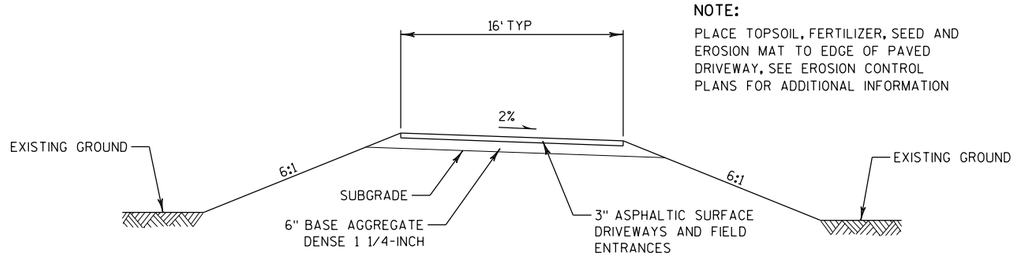
NO CURB HEAD IN FRONT OF GUARDRAIL TERMINAL
TO BE PAID FOR AS CONCRETE CURB & GUTTER 30-INCH TYPE D
(FOR DETAILS NOT SHOWN, SEE SDD CONCRETE CURB,
CONCRETE CURB & GUTTER AND TIES)

STA 1080+38 TO STA 1080+81, LT



RURAL DRIVEWAY INTERSECTION DETAIL

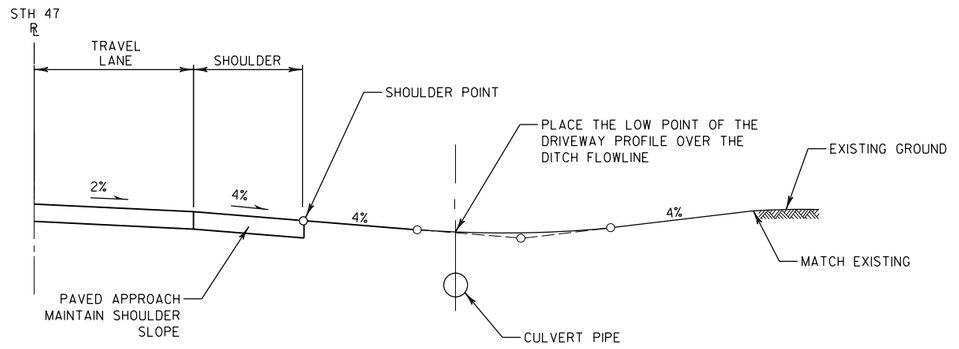
PLAN VIEW



NOTE:

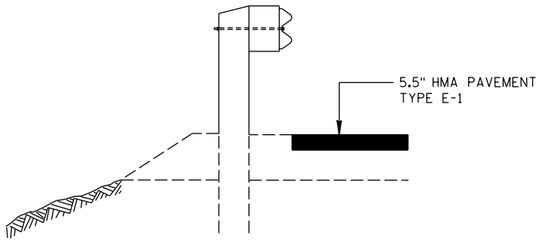
PLACE TOPSOIL, FERTILIZER, SEED AND EROSION MAT TO EDGE OF PAVED DRIVEWAY, SEE EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION

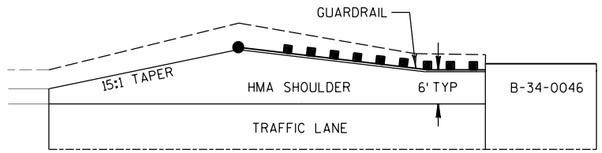
TYPICAL CROSS SECTION FOR PRIVATE DRIVEWAY



TYPICAL RURAL DRIVEWAY DETAIL IN DITCH GRADING

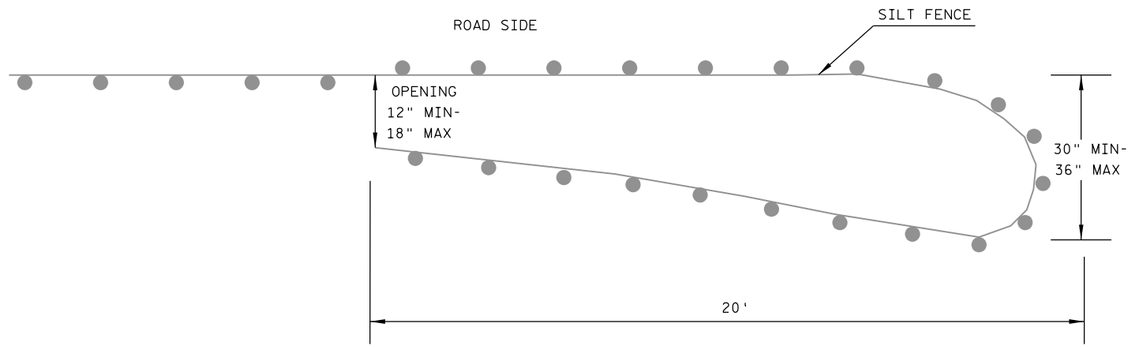
STA 1077+62 RT





DETAIL FOR ASPHALTIC SHOULDER AT GUARDRAIL

STA 1077+91 - STA 1078+81, LT



PLAN VIEW

NOTE:

SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

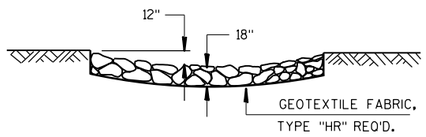
TEMPORARY SMALL ANIMAL TURN-AROUND DETAIL

C-34-0008
B-34-0046

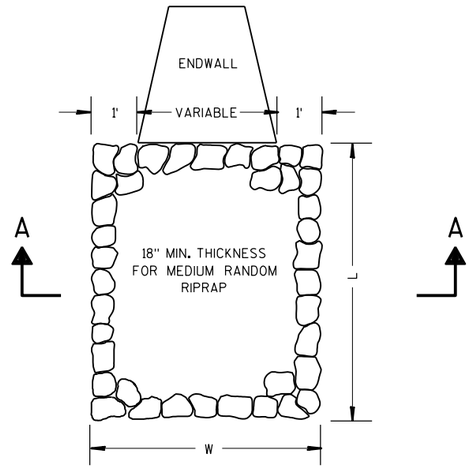
RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 2.5 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.5 ACRES

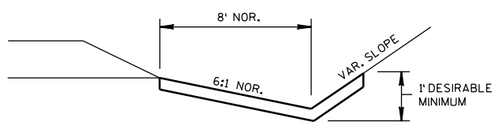


SECTION A-A



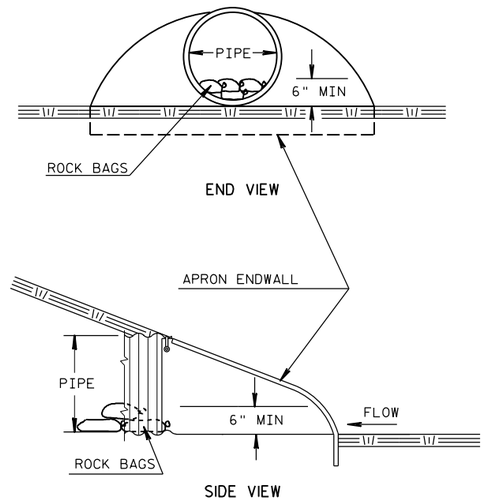
MEDIUM RANDOM RIPRAP TREATMENT AT CULVERTS

STA 1078+94 RT (9X10)
STA 1079+62 LT (5X10)
STA 1080+40 RT (5X10)



EROSION MAT DETAIL FOR DITCHES

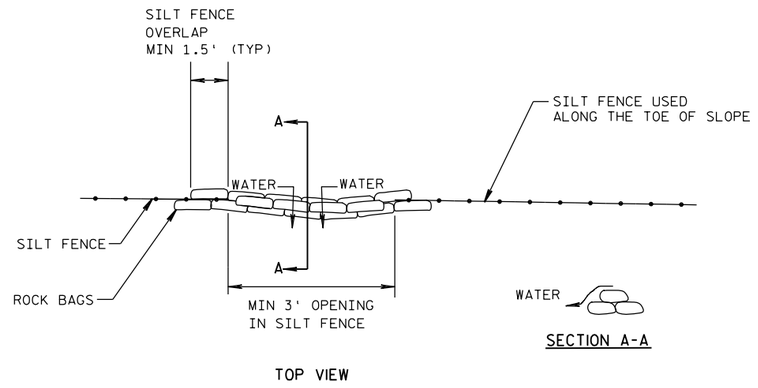
NOTE:
SEE EROSION CONTROL PLANS FOR
ADDITIONAL INFORMATION



CULVERT PIPE CHECKS

INSTALL ON INLET END

NOTE:
SEE EROSION CONTROL PLANS FOR
ADDITIONAL INFORMATION

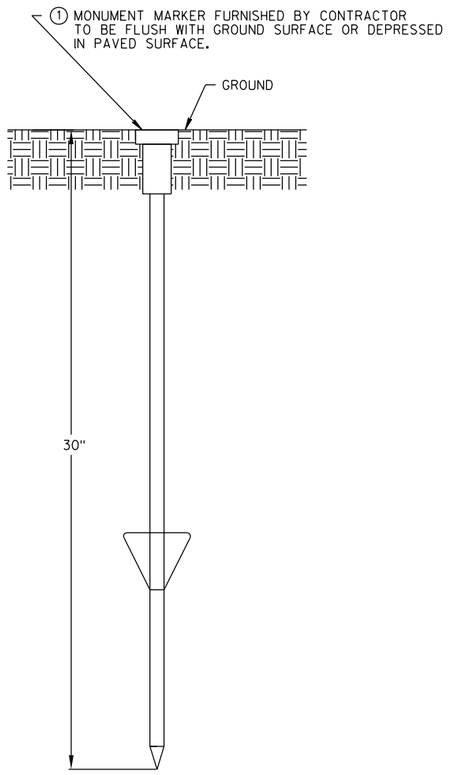


ROCK BAGS SILT FENCE RELIEF DETAIL

PAID AS ROCK BAGS

NOTE:
SEE EROSION CONTROL PLANS FOR
ADDITIONAL INFORMATION

① WIS DOT MONUMENT CAP MARKER LOGO (SSDR130)
CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING



(FRONT VIEW)
BERNSTEN DRIVABLE MONUMENT SSDR130

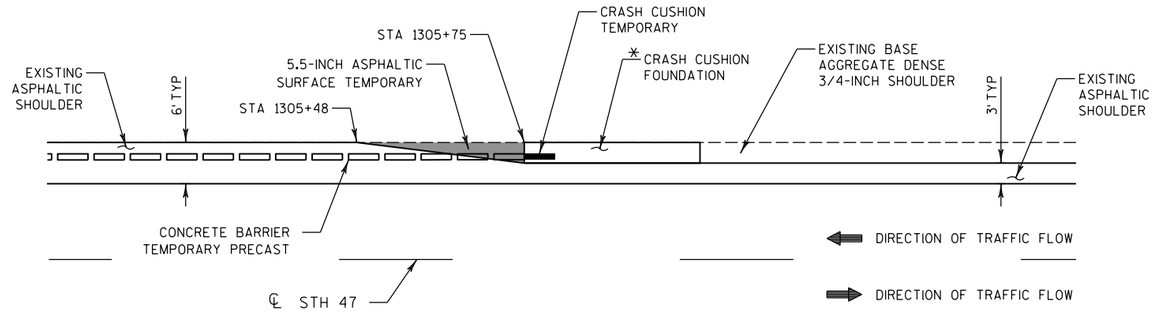
GENERAL NOTES:

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.

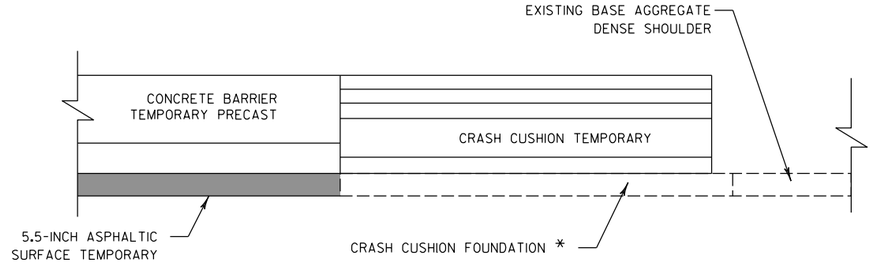
LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

① CONTRACTOR WILL SUPPLY.

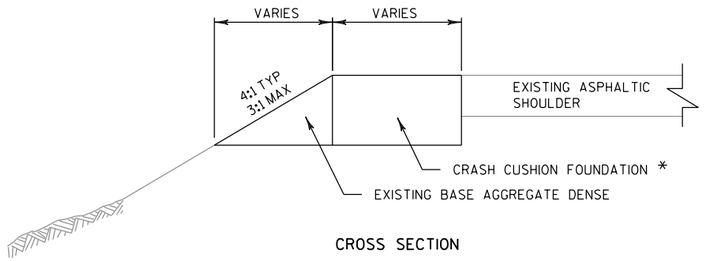
LANDMARK REFERENCE MONUMENT DETAIL



PLAN



SIDEVIEW



CROSS SECTION

NOTES:

SEE TRAFFIC CONTROL PLANS FOR TEMPORARY BARRIER LOCATIONS.

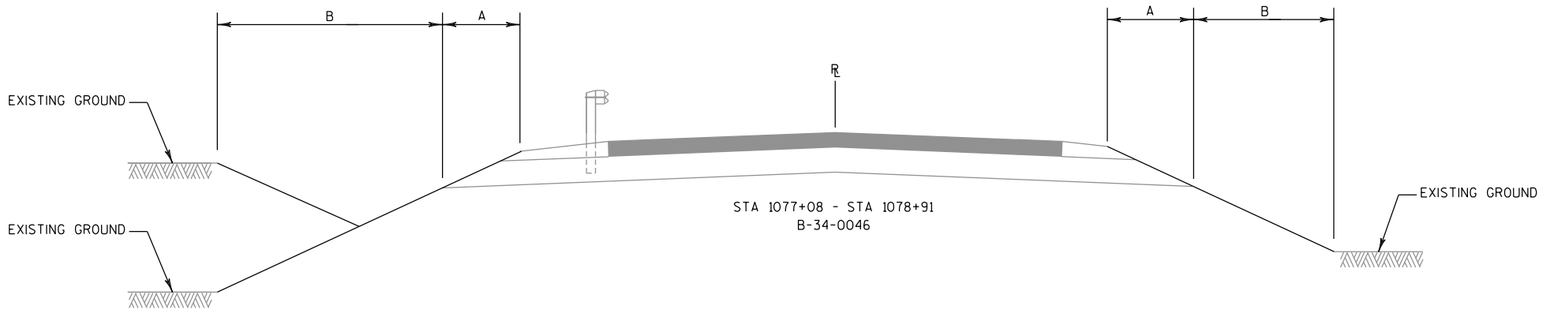
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY BARRIER" FOR ADDITIONAL INFORMATION.

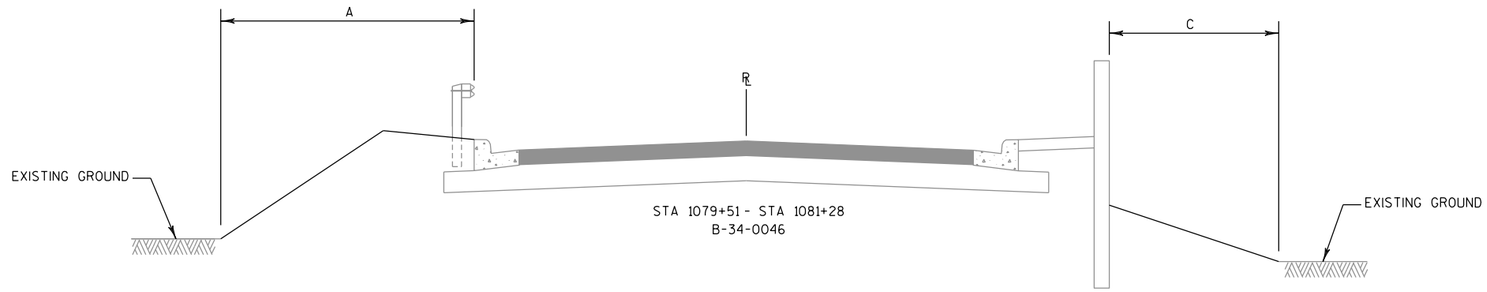
* CRASH CUSHION FOUNDATION DIMENSIONS AS SPECIFIED BY MANUFACTURER. INCIDENTAL TO CRASH CUSHION TEMPORARY.

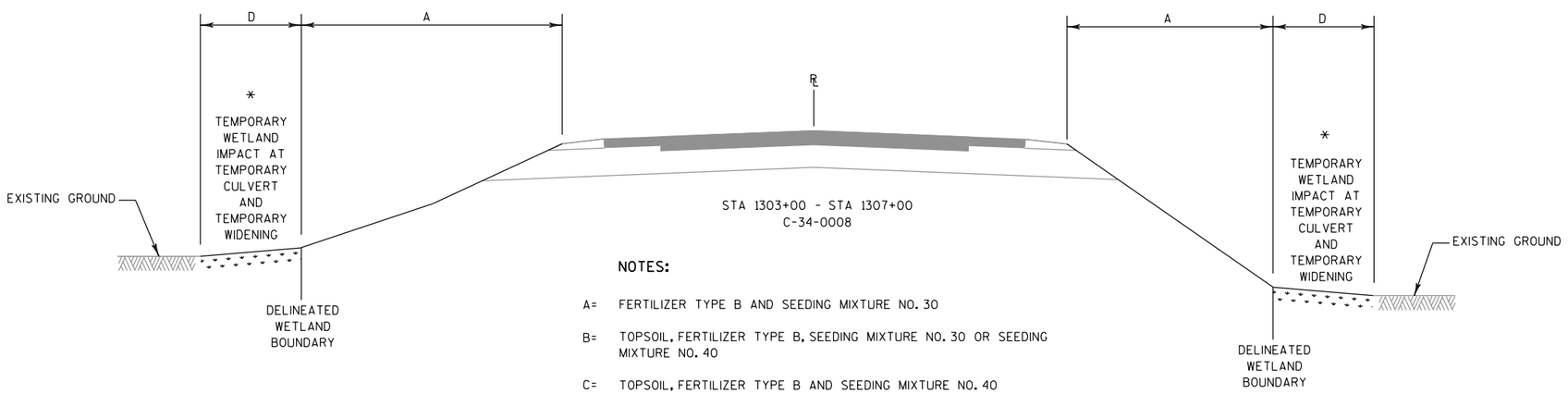
FOR ADDITIONAL INFORMATION SEE SDD "CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS".

DETAIL OF SHOULDER PAVING AT CRASH CUSHION

C-34-0008







NOTES:

A= FERTILIZER TYPE B AND SEEDING MIXTURE NO. 30

B= TOPSOIL, FERTILIZER TYPE B, SEEDING MIXTURE NO. 30 OR SEEDING MIXTURE NO. 40

C= TOPSOIL, FERTILIZER TYPE B AND SEEDING MIXTURE NO. 40

D= TEMPORARY WETLAND IMPACTS AT TEMPORARY CULVERT AND TEMPORARY WIDENING: TOPSOIL, FERTILIZER TYPE B AND SEEDING MIXTURE NO. 75

* RESTORE TO ORIGINAL GRADE

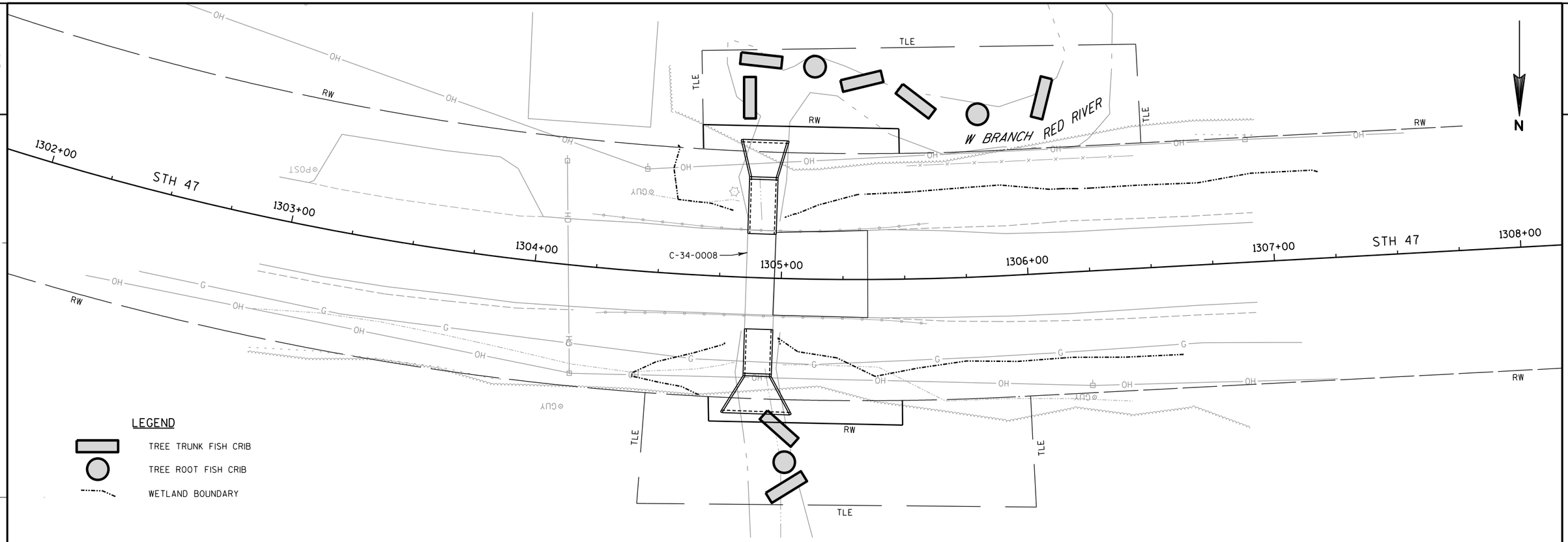
PLACE SEEDING MIXTURE NO. 30 AND SEEDING MIXTURE NO. 40 PER STANDARD SPECIFICATIONS

SEE EROSION CONTROL PLANS FOR EROSION MAT AND OTHER EROSION CONTROL ITEMS

FINISHING ITEMS DETAIL

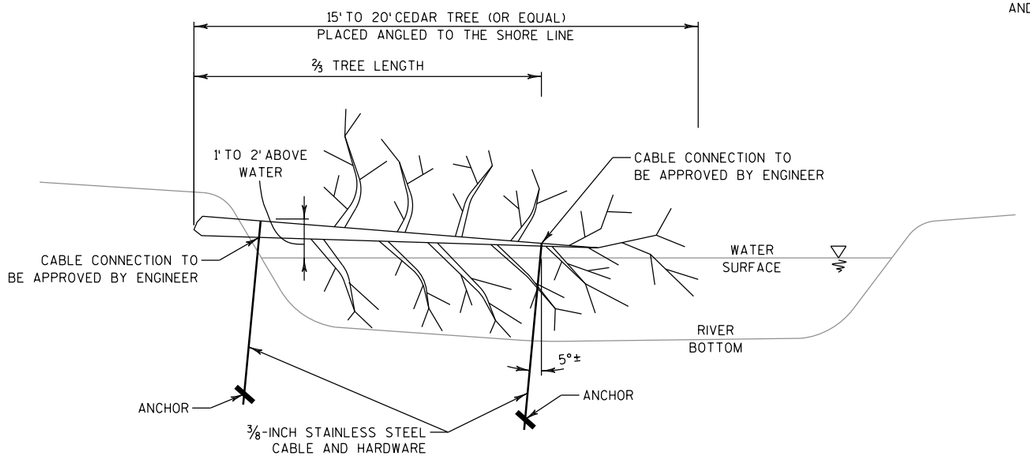
STH 47

PROJECT NO: 9650-16-61, 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CONSTRUCTION DETAILS	SHEET 10	E

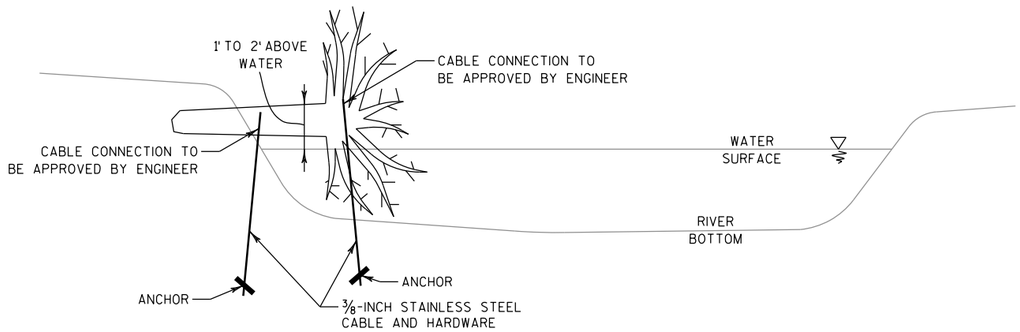


FISH CRIB DETAILS

THE EXACT LOCATIONS WILL BE DETERMINED BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES AND THE ENGINEER IN THE FIELD



TREE TRUNK FISH CRIB



TREE ROOT FISH CRIB

PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	CONSTRUCTION DETAILS - FISH CRIBS	SHEET 11	E

LEGEND

- (B1) BASE AGGREGATE DENSE 3/4-INCH, 5.5"
- (C1) CONCRETE CURB & GUTTER 30-INCH TYPE D
- (C2) CONCRETE CURB & GUTTER 30-INCH TYPE D WITH NO CURB HEAD (SEE CONSTRUCTION DETAILS)
- (D1) ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES, 3"
- (F1) ASPHALTIC FLUME
- (H1) HMA PAVEMENT TYPE E-1, 5.5"
- (W1) CONCRETE SIDEWALK 4-INCH
- (W2) CONCRETE SIDEWALK 6-INCH
- (W3) CURB RAMP DETECTABLE WARNING FIELD, NATURAL PATINA
- (W4) CONCRETE CURB RAMP TYPE 4A1

XXXXX SAWING ASPHALT

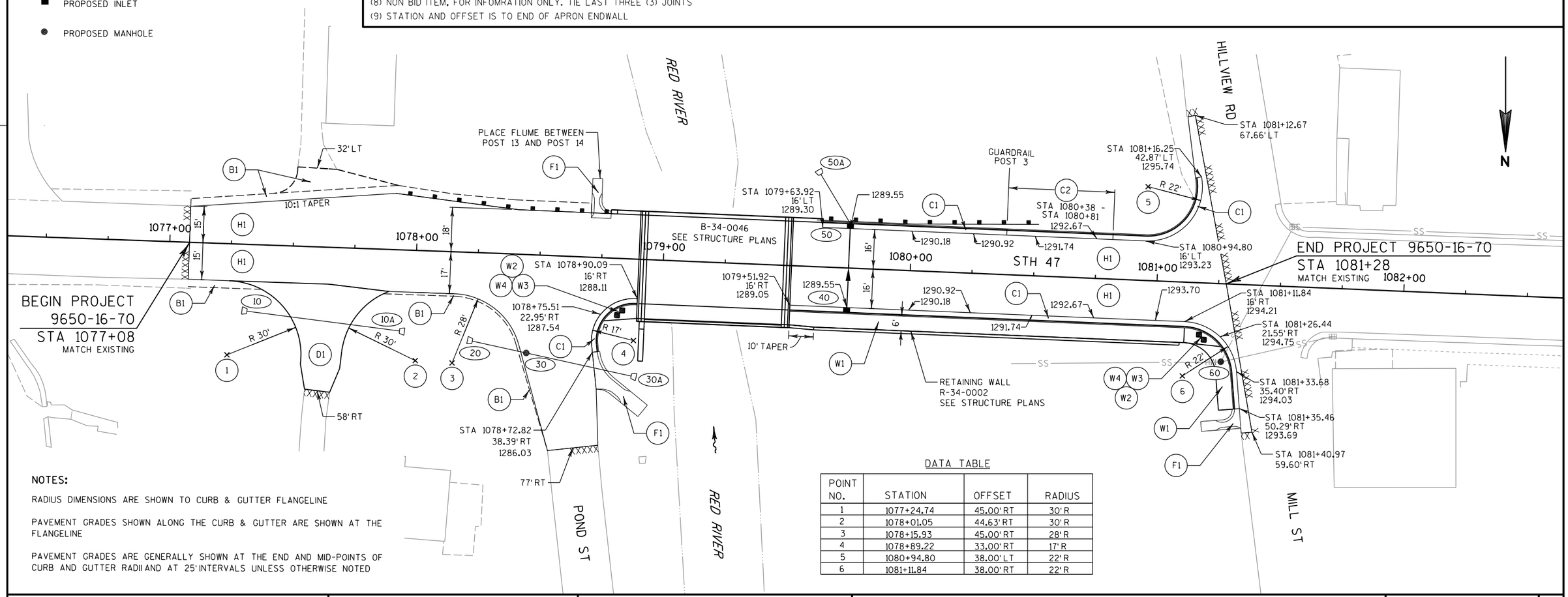
■ PROPOSED INLET

● PROPOSED MANHOLE

STORM SEWER

STRUCT NO.	STATION	(1) OFFSET	C-C (FT)	TO STRUCT	CATCH BASIN TYPE / COVER	MH TYPE / COVER	(2) RIM/ GRATE ELEV.	(3) TOS ELEV.	(4) DEPTH (FT)	DISCHARGE PIPE SIZE (IN)	DISCHARGE PIPE TYPE/ MATERIAL	DISCHARGE PIPE (5) CLASS	INLET ELEV.	DISCHARGE ELEV.	(6) LENGTH (FT)	(7) SLOPE (%)	(8) PIPE JOINT TIES	REMARKS (9)
10	1077+32	27' RT	---	10A	---	---	---	---	---	24	CPRC	IV	1284.95	1284.75	62	0.32	6	APRON ENDWALL REQUIRED
10A	1077+94	33' RT	---	DITCH	---	---	---	---	---	24	---	IV	---	1284.75	---	---	6	APRON ENDWALL
20	1078+24	36' RT	---	30	---	---	---	---	---	24	SSPRC	IV	1284.65	1283.15	20	7.50	6	APRON ENDWALL REQUIRED
30	1078+46	40' RT	---	30A	---	4-FT DIAM / J	1287.00	1285.75	2.60	24	SSPRC	IV	1283.15	1280.65	44	5.90	---	INCLUDES 6" ADJUSTMENT
30A	1078+91	48' RT	---	DITCH	---	---	---	---	---	24	---	IV	---	1280.65	---	---	6	APRON ENDWALL
40	1079+75	17' RT	34.0	50	2X3-FT / H	---	1289.34	1288.51	6.13	18	SSPRC	III	1284.38	1284.22	31	0.50	---	INCLUDES 24" SUMP AND 6" ADJUSTMENT
50	1079+75	17' LT	24.4	50A	2X3-FT / H	---	1289.34	1288.51	6.29	18	SSPRC	III	1284.22	1284.10	23	0.50	---	INCLUDES 24" SUMP AND 6" ADJUSTMENT
50A	1079+62	38' LT	---	DITCH	---	---	---	---	---	18	---	III	---	1284.10	---	---	6	APRON ENDWALL
60	1081+27	31.6' RT	---	---	---	J	1294.74	---	---	---	---	---	---	---	---	---	---	ADJUST MANHOLE

(1) STRUCTURE OFFSET IS TO CENTER OF STRUCTURE
(2) RIM ELEVATION FOR MANHOLE AND FIELD INLET TO CENTER OF CASTING. RIM ELEVATION FOR INLET IN CURB AND GUTTER IS SUBTRACT 1-INCH FROM FLOW LINE ELEVATION
(3) TOP OF STRUCTURE ELEVATION (TOS) DETERMINED BY SUBTRACTING CASTING HEIGHT AND 6-INCHES, FOR ADJUSTMENT, FROM RIM ELEVATION
(4) DEPTH OF STRUCTURE CALCULATED BY SUBTRACTING INLET ELEV. FROM TOS AND ADDING SUMP DEPTH
(5) CLASS IV PIPE USED WHEN HEIGHT OF COVER IS 0 - 2 FEET
(6) PIPE LENGTH IS MEASURED FROM INSIDE WALL OF STRUCTURE TO INSIDE WALL OF STRUCTURE
(7) PIPE SLOPE IS CALCULATED USING PIPE LENGTH BETWEEN INSIDE WALL OF STRUCTURE TO INSIDE WALL OF STRUCTURE
(8) NON BID ITEM, FOR INFOMRATION ONLY. TIE LAST THREE (3) JOINTS
(9) STATION AND OFFSET IS TO END OF APRON ENDWALL



DATA TABLE

POINT NO.	STATION	OFFSET	RADIUS
1	1077+24.74	45.00' RT	30' R
2	1078+01.05	44.63' RT	30' R
3	1078+15.93	45.00' RT	28' R
4	1078+89.22	33.00' RT	17' R
5	1080+94.80	38.00' LT	22' R
6	1081+11.84	38.00' RT	22' R

NOTES:

RADIUS DIMENSIONS ARE SHOWN TO CURB & GUTTER FLANGELINE

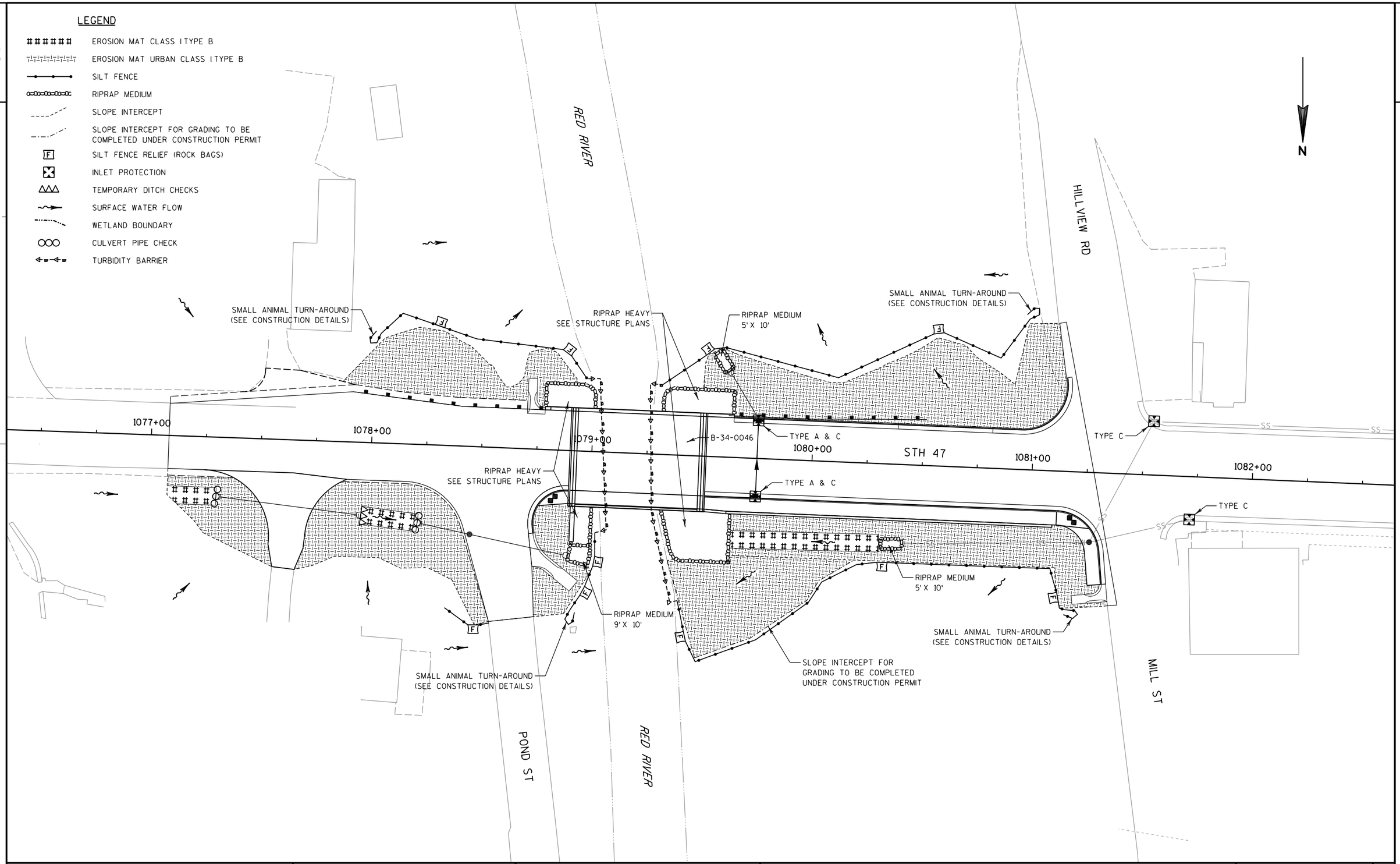
PAVEMENT GRADES SHOWN ALONG THE CURB & GUTTER ARE SHOWN AT THE FLANGELINE

PAVEMENT GRADES ARE GENERALLY SHOWN AT THE END AND MID-POINTS OF CURB AND GUTTER RADII AND AT 25'INTERVALS UNLESS OTHERWISE NOTED

2

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- RIPRAP MEDIUM
- SLOPE INTERCEPT
- SLOPE INTERCEPT FOR GRADING TO BE COMPLETED UNDER CONSTRUCTION PERMIT
- F — SILT FENCE RELIEF (ROCK BAGS)
- INLET PROTECTION
- TEMPORARY DITCH CHECKS
- SURFACE WATER FLOW
- WETLAND BOUNDARY
- CULVERT PIPE CHECK
- TURBIDITY BARRIER



PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	EROSION CONTROL	SHEET 13	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\022001_ec.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:40

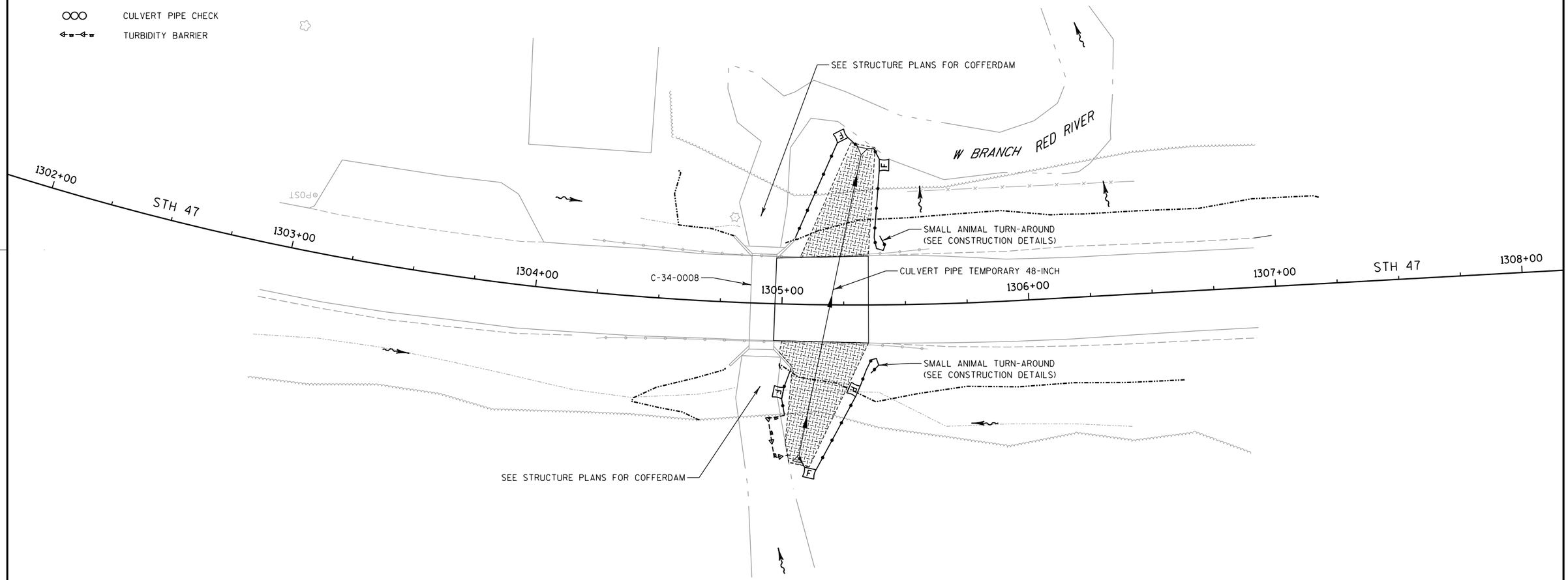
WISDOT/CADDS SHEET 42

2

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- RIPRAP MEDIUM
- SLOPE INTERCEPT
- SILT FENCE RELIEF (ROCK BAGS)
- INLET PROTECTION
- TEMPORARY DITCH CHECKS
- SURFACE WATER FLOW
- WETLAND BOUNDARY
- CULVERT PIPE CHECK
- TURBIDITY BARRIER

N



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	EROSION CONTROL - TEMPORARY CULVERT	SHEET 14	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\022002_ec.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:40

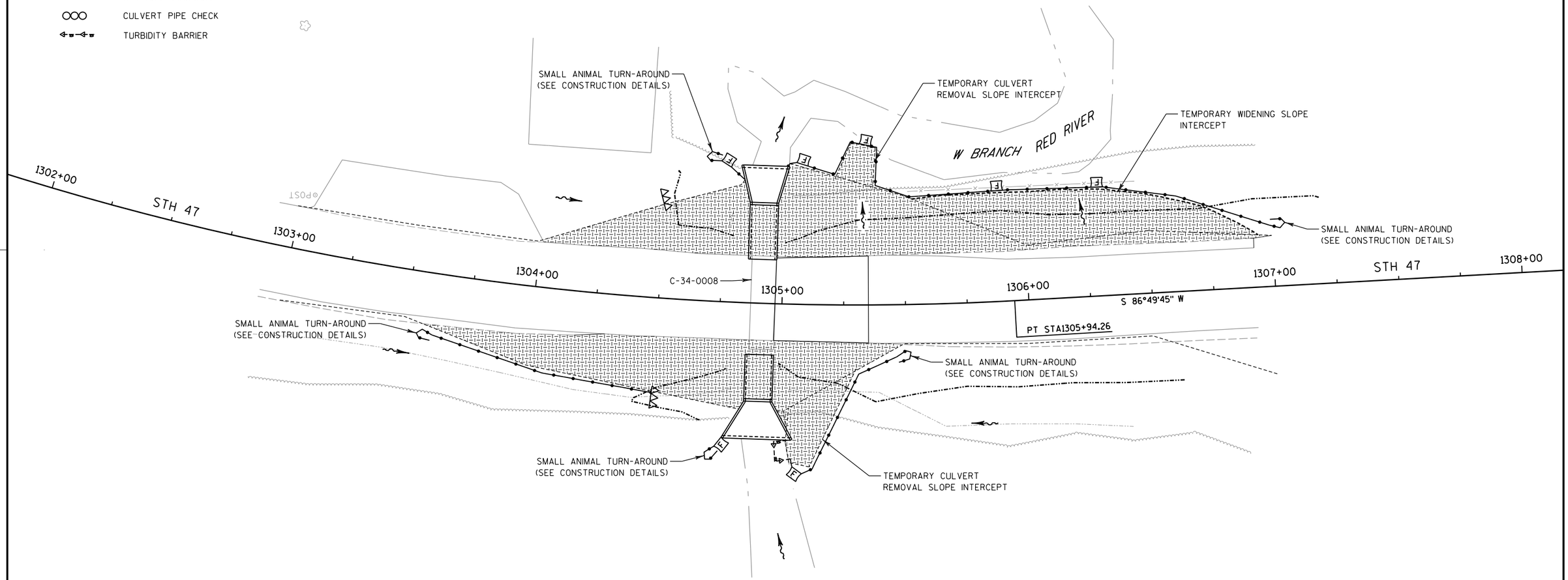
WISDOT/CADDS SHEET 42

2

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- RIPRAP MEDIUM
- SLOPE INTERCEPT
- SILT FENCE RELIEF (ROCK BAGS)
- INLET PROTECTION
- TEMPORARY DITCH CHECKS
- SURFACE WATER FLOW
- WETLAND BOUNDARY
- CULVERT PIPE CHECK
- TURBIDITY BARRIER

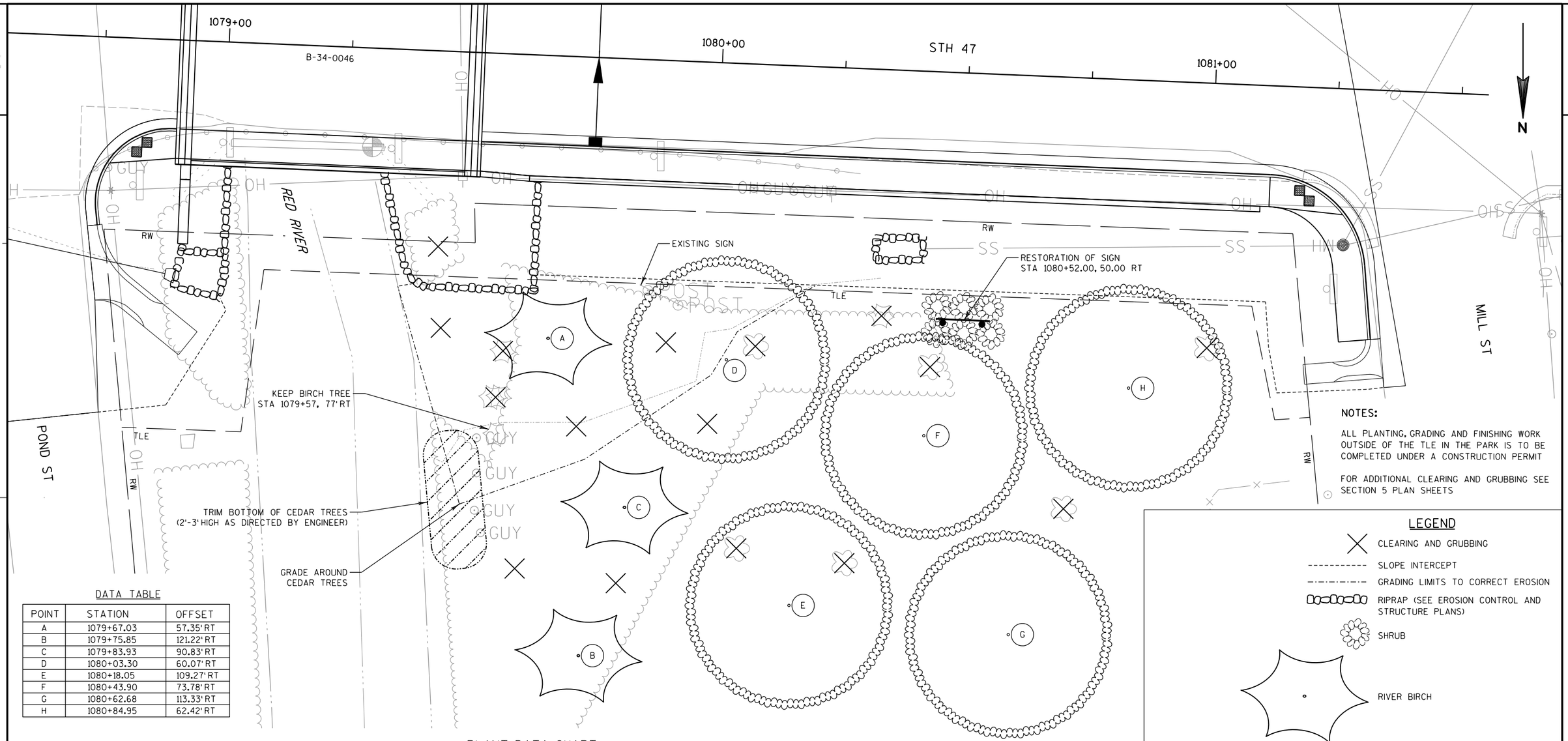
N



NOTE:

SEE SECTION 5 PLAN SHEET FOR
PERMITTED WETLAND IMPACTS

PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	EROSION CONTROL - ULTIMATE CONDITION	SHEET 15	E



DATA TABLE

POINT	STATION	OFFSET
A	1079+67.03	57.35' RT
B	1079+75.85	121.22' RT
C	1079+83.93	90.83' RT
D	1080+03.30	60.07' RT
E	1080+18.05	109.27' RT
F	1080+43.90	73.78' RT
G	1080+62.68	113.33' RT
H	1080+84.95	62.42' RT

NOTES:

ALL PLANTING, GRADING AND FINISHING WORK OUTSIDE OF THE TLE IN THE PARK IS TO BE COMPLETED UNDER A CONSTRUCTION PERMIT

FOR ADDITIONAL CLEARING AND GRUBBING SEE SECTION 5 PLAN SHEETS

LEGEND

- CLEARING AND GRUBBING
- SLOPE INTERCEPT
- GRADING LIMITS TO CORRECT EROSION
- RIPRAP (SEE EROSION CONTROL AND STRUCTURE PLANS)
- SHRUB
- RIVER BIRCH
- RED MAPLE

PLANT DATA CHART

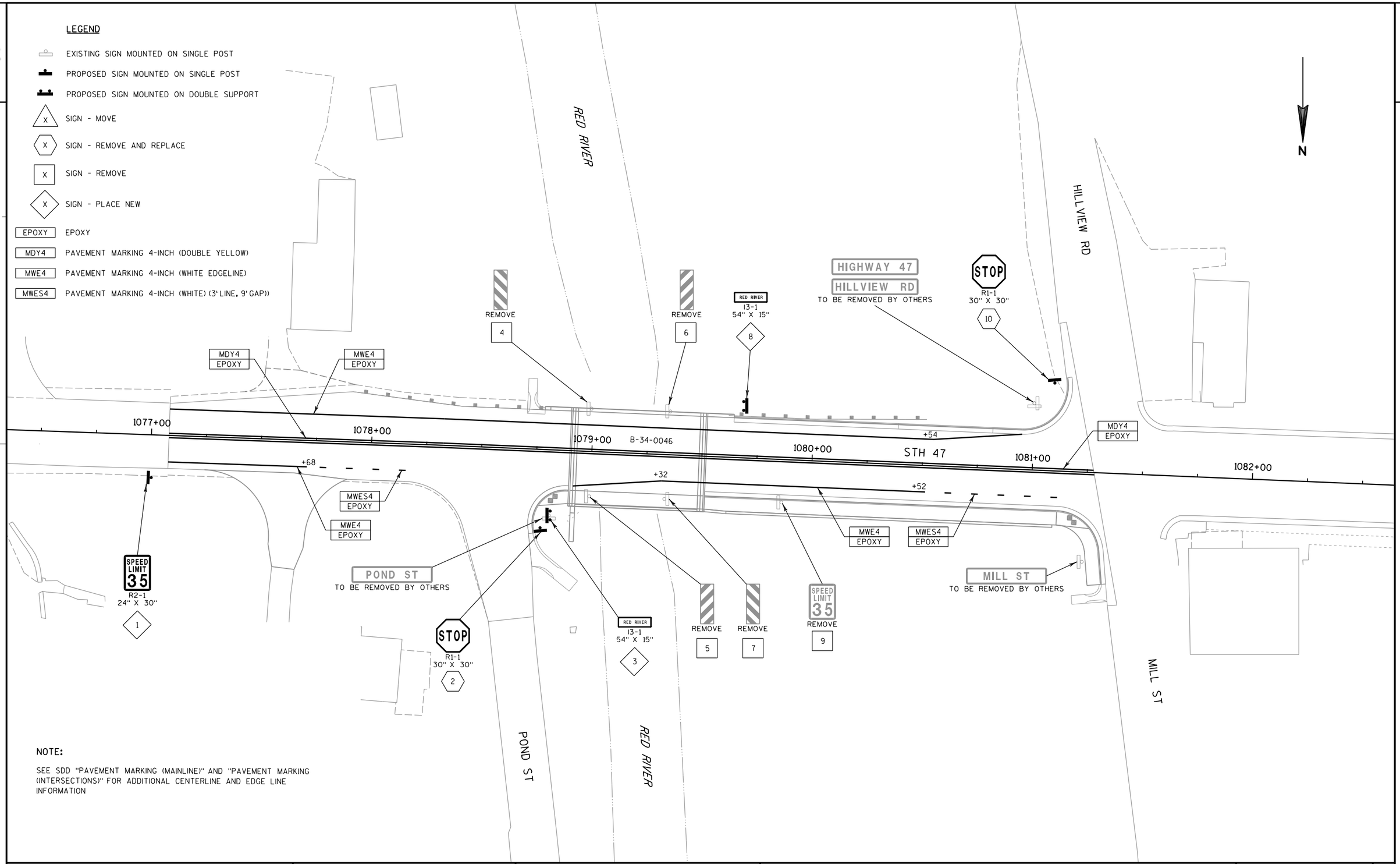
SYM	COMMON NAME	SCIENTIFIC NAME	TYPE	AVE. MATURE HEIGHT	SIZE (CAL. OR HT.) WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE BALL/POT DIAM.	BALL/POT DEPTH	ROOT SPREAD	PLANT HOLE DIAM.	PLANT HOLE DEPTH	BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROJECT REQ'D	MULCH RING DIAM.
CAT 0030															
	LARGE DECIDUOUS TREES														
RM	MAPLE, RED	ACER RUBRUM	1	50'	2" CAL.	B&B	24"	14"	--	48"	14"	YES	4	NO	60"
	MEDIUM DECIDUOUS TREES														
RB	BIRCH, RIVER	BETULA NIGRA	1	50'	2" CAL.	B&B	24"	14"	--	48"	14"	YES	4	NO	60"
	SMALL DECIDUOUS SHRUBS														
AWS	SPIRAEA, ANTHONY WATERER	SPIRAEA X BUMALDA 'ANTHONY WATERER'	1	4'	1.5' HT.	CG	--	--	10"	34"	6.5"	NO	2	NO	46"

PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	LANDSCAPING PLAN	SHEET 16	E

2

LEGEND

- EXISTING SIGN MOUNTED ON SINGLE POST
- PROPOSED SIGN MOUNTED ON SINGLE POST
- PROPOSED SIGN MOUNTED ON DOUBLE SUPPORT
- X — SIGN - MOVE
- X — SIGN - REMOVE AND REPLACE
- X — SIGN - REMOVE
- X — SIGN - PLACE NEW
- EPOXY — EPOXY
- MDY4 — PAVEMENT MARKING 4-INCH (DOUBLE YELLOW)
- MWE4 — PAVEMENT MARKING 4-INCH (WHITE EDGELINE)
- MWES4 — PAVEMENT MARKING 4-INCH (WHITE) (3' LINE, 9' GAP))



NOTE:

SEE SDD "PAVEMENT MARKING (MAINLINE)" AND "PAVEMENT MARKING (INTERSECTIONS)" FOR ADDITIONAL CENTERLINE AND EDGE LINE INFORMATION

PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	PERMANENT SIGNING AND PAVEMENT MARKING	SHEET 17	E

2

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- (REM) REMOVING PAVEMENT MARKINGS
- (TY) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, YELLOW
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

WORK IN STAGE 1

REMOVE GUARDRAIL, INSTALL TEMPORARY CULVERT PIPE, PATCH PAVEMENT, INSTALL COFFERDAM, AND INSTALL CONCRETE BARRIER TEMPORARY PRECAST (SEE STAGE 2) ON STH 47 AT WEST BRANCH RED RIVER.

TRAFFIC

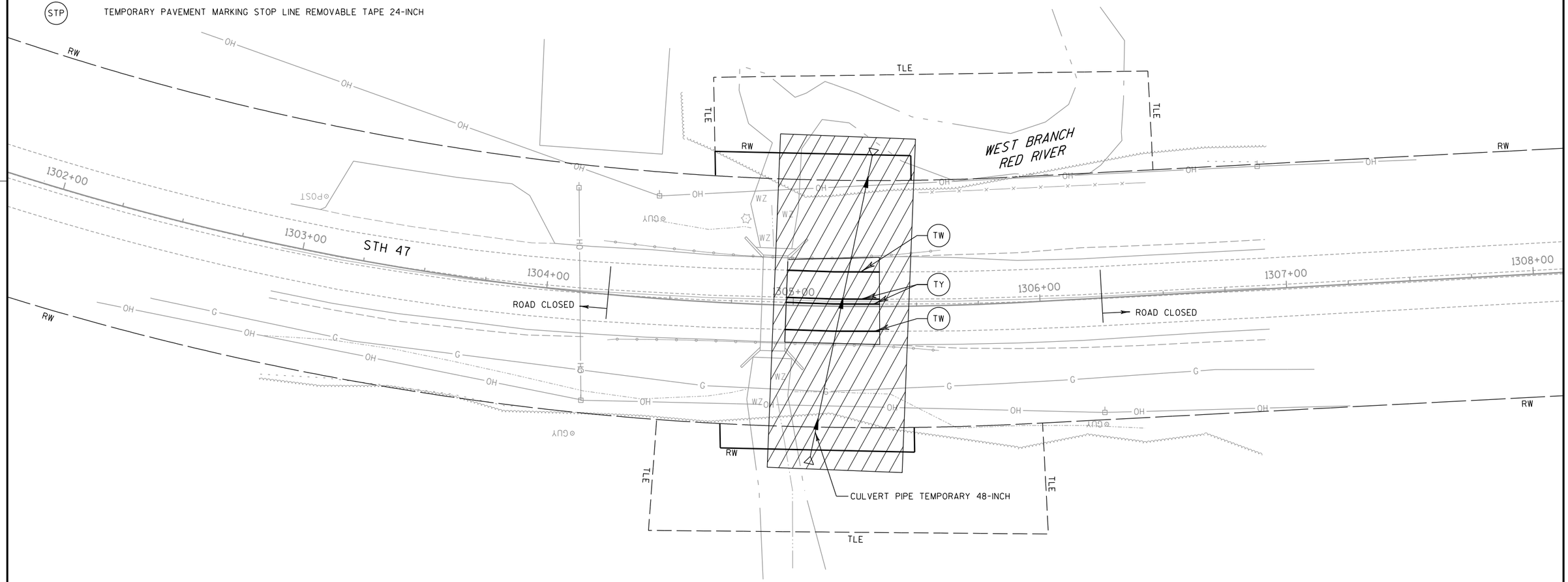
STH 47 UNDER DETOUR. STH 47 AT RED RIVER BRIDGE (B-34-0046) OPEN TO LOCAL TRAFFIC. STH 47 AT WEST BRANCH RED RIVER (C-34-0008) CLOSED OVERNIGHT.

NOTE:

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" AND DETOUR SHEET FOR ADDITIONAL INFORMATION.

N

2



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	TRAFFIC CONTROL - STAGE 1 - C-34-0008	SHEET 18	E

2

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- (REM) REMOVING PAVEMENT MARKINGS
- (TY) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, YELLOW
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

WORK IN STAGE 2

COMPLETE TEMPORARY SIGNALS, TEMPORARY PAVEMENT MARKING, AND TRAFFIC CONTROL ITEMS ON STH 47 AT WEST BRANCH RED RIVER.

TRAFFIC

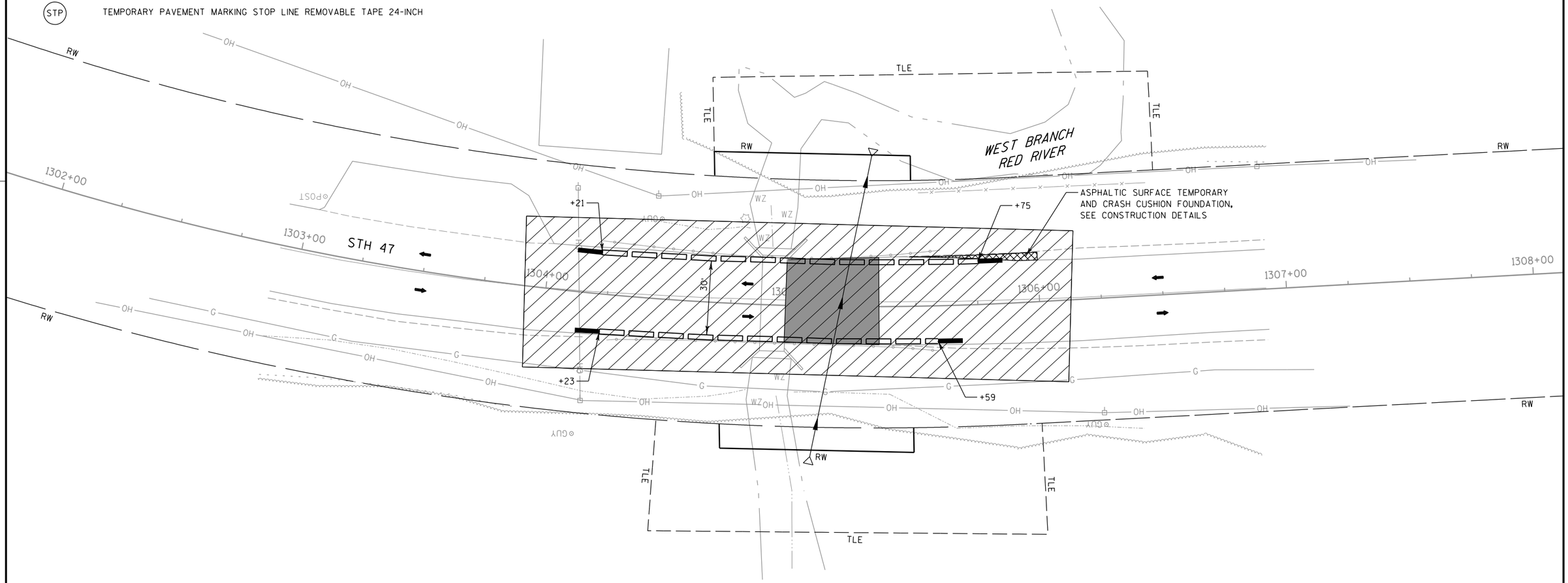
STH 47 UNDER DETOUR AND RED RIVER (B-34-0046) CLOSED. STH 47 AT WEST BRANCH RED RIVER (C-34-0008) OPEN TO TRAFFIC, SINGLE LANE CLOSURE UNDER FLAGGING.

NOTE:

SEE SDD'S "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" AND "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)".

STAGE 2 IS ONLY NECESSARY IF TEMPORARY SIGNALS ARE NOT INSTALLED AND WORK ON CULVERT C-34-0008 HAS NOT STARTED. IF SIGNALS ARE IN PLACE STAGE 2 IS NOT REQUIRED. STAGE 3 SHALL BE IN PLACE ONCE ANY PERMANENT WORK ASSOCIATED WITH CULVERT C-34-0008 BEGINS.

N



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	TRAFFIC CONTROL - STAGE 2 - C-34-0008	SHEET 19	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\026101_s2.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:40

2

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- (REM) REMOVING PAVEMENT MARKINGS
- (TY) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, YELLOW
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

WORK IN STAGE 3
EXTEND BOX CULVERT C-34-0008, GRADE FILL SLOPES, FINISHING AND EROSION CONTROL ON STH 47 (RT) AT WEST BRANCH RED RIVER.

TRAFFIC
STH 47 UNDER DETOUR AND RED RIVER (B-34-0046) CLOSED. STH 47 AT WEST BRANCH RED RIVER (C-34-0008) OPEN TO TRAFFIC, CONTROLLED BY TEMPORARY SIGNALS AT CULVERT.

NOTE:
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

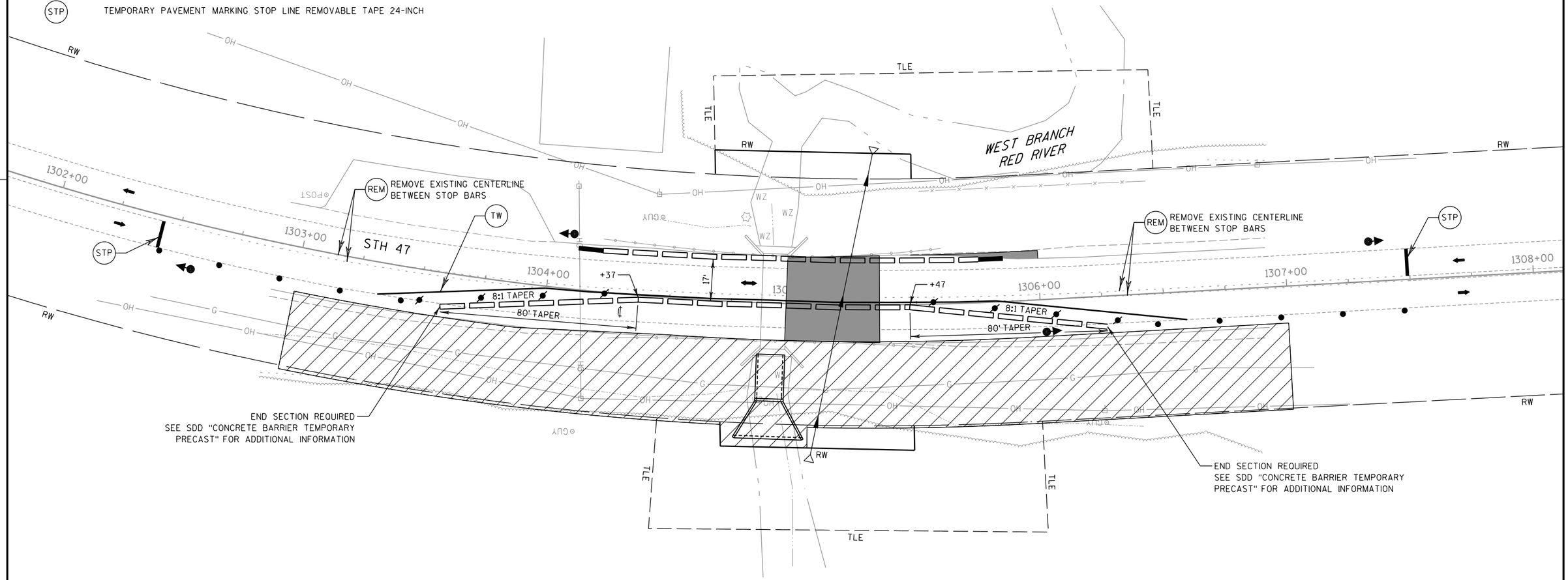
SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

SIGNAL TIMING
SIGNAL TIMING PROVIDED BY NC REGION-RHINELANDER, TRAFFIC SECTION.

6:00AM - 8:00PM
EB: GREEN = 15, Y = 4, AR = 20
WB: GREEN = 15, Y = 4, AR = 20

8:00PM - 6:00PM
EB: GREEN = 10, Y = 4, AR = 20
WB: GREEN = 10, Y = 4, AR = 20

N



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	TRAFFIC CONTROL - STAGE 3 - C-34-0008	SHEET 20	E

2

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- (REM) REMOVING PAVEMENT MARKINGS
- (TY) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, YELLOW
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

WORK IN STAGE 4

EXTEND BOX CULVERT C-34-0008, GRADE FILL SLOPES, FINISHING AND EROSION CONTROL ON STH 47 (LT) AT WEST BRANCH RED RIVER.

TRAFFIC

STH 47 UNDER DETOUR AND RED RIVER (B-34-0046) CLOSED. STH 47 AT WEST BRANCH RED RIVER (C-34-0008) OPEN TO TRAFFIC, CONTROLLED BY TEMPORARY SIGNALS AT CULVERT.

NOTE:

SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

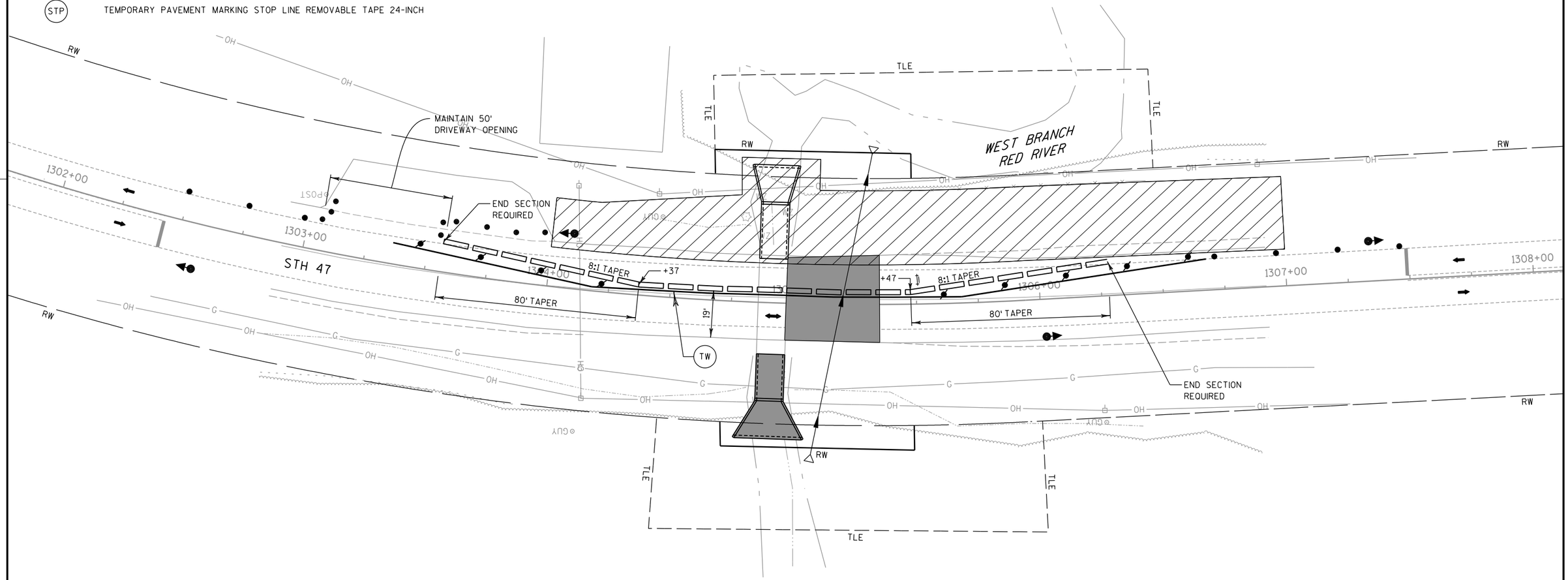
SIGNAL TIMING

SIGNAL TIMING PROVIDED BY NC REGION-RHINELANDER, TRAFFIC SECTION.

6:00AM - 8:00PM
EB: GREEN = 15, Y = 4, AR = 20
WB: GREEN = 15, Y = 4, AR = 20

8:00PM - 6:00PM
EB: GREEN = 10, Y = 4, AR = 20
WB: GREEN = 10, Y = 4, AR = 20

N



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	TRAFFIC CONTROL - STAGE 4 - C-34-0008	SHEET 21	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\026301_s4.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

2

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- WORK ZONE
- TEMPORARY WIDENING
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- (REM) REMOVING PAVEMENT MARKINGS
- (TY) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, YELLOW
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

WORK IN STAGE 5

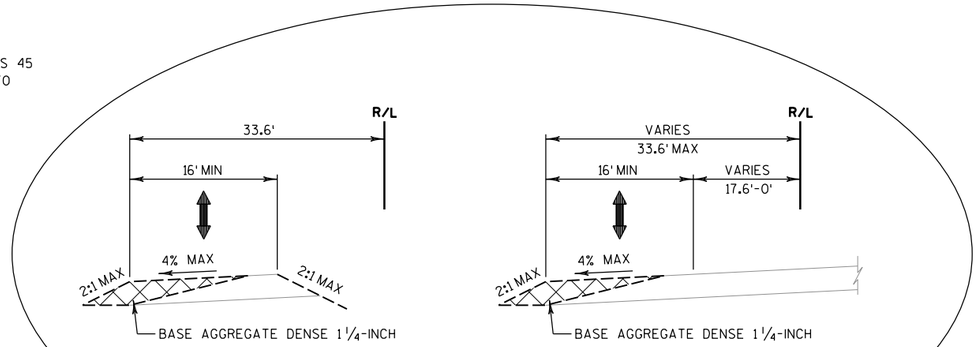
TEMPORARY WIDENING, REMOVE NORTH HALF OF TEMPORARY CULVERT, REMOVE NORTH COFFERDAM, AND PATCH PAVEMENT ON STH 47 AT WEST BRANCH RED RIVER.

TRAFFIC

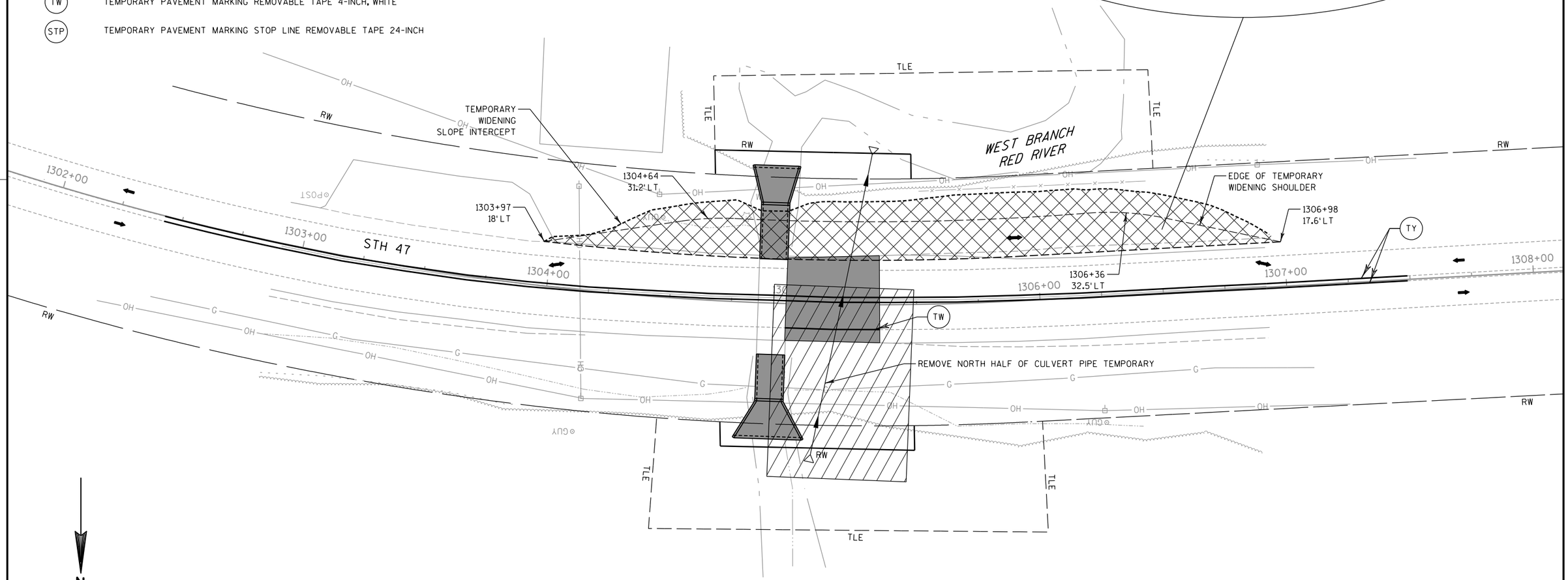
STAGE 5 AS SHOWN ASSUMES STH 47 TRAFFIC IS STILL UNDER DETOUR AND THE RED RIVER BRIDGE (B-34-0046) IS CLOSED TO ALL TRAFFIC.

STH 47 AT WEST BRANCH RED RIVER (C-34-0008) OPEN TO TRAFFIC, SINGLE LANE CLOSURES UNDER FLAGGING WITH A 16' MINIMUM LANE WIDTH. STAGE 5 TRAFFIC WILL BE ON TEMPORARY BASE AGGREGATE DENSE 1 1/4-INCH WIDENING.

NOTE:
SEE SDD'S "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" AND "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)".



TEMPORARY WIDENING TYPICAL SECTIONS



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	TRAFFIC CONTROL - STAGE 5 - C-34-0008	SHEET 22	E

2

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- WORK ZONE
- TEMPORARY WIDENING
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- (REM) REMOVING PAVEMENT MARKINGS
- (TY) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, YELLOW
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

WORK IN STAGE 6

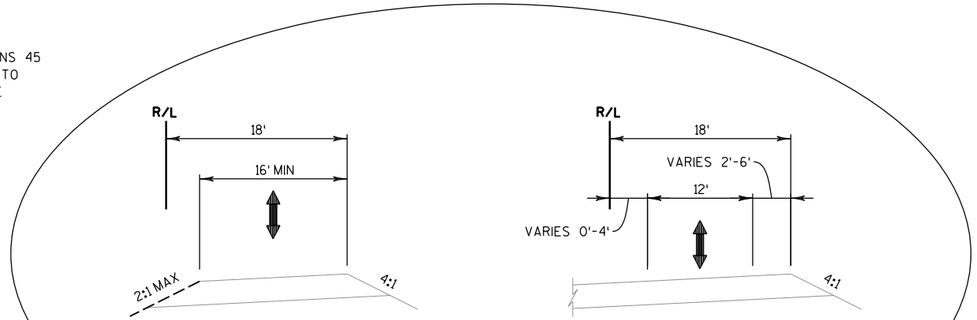
REMOVE SOUTH HALF OF TEMPORARY CULVERT. REMOVE TEMPORARY WIDENING, RESTORATION, AND PATCH PAVEMENT ON STH 47 AT WEST BRANCH RED RIVER.

TRAFFIC

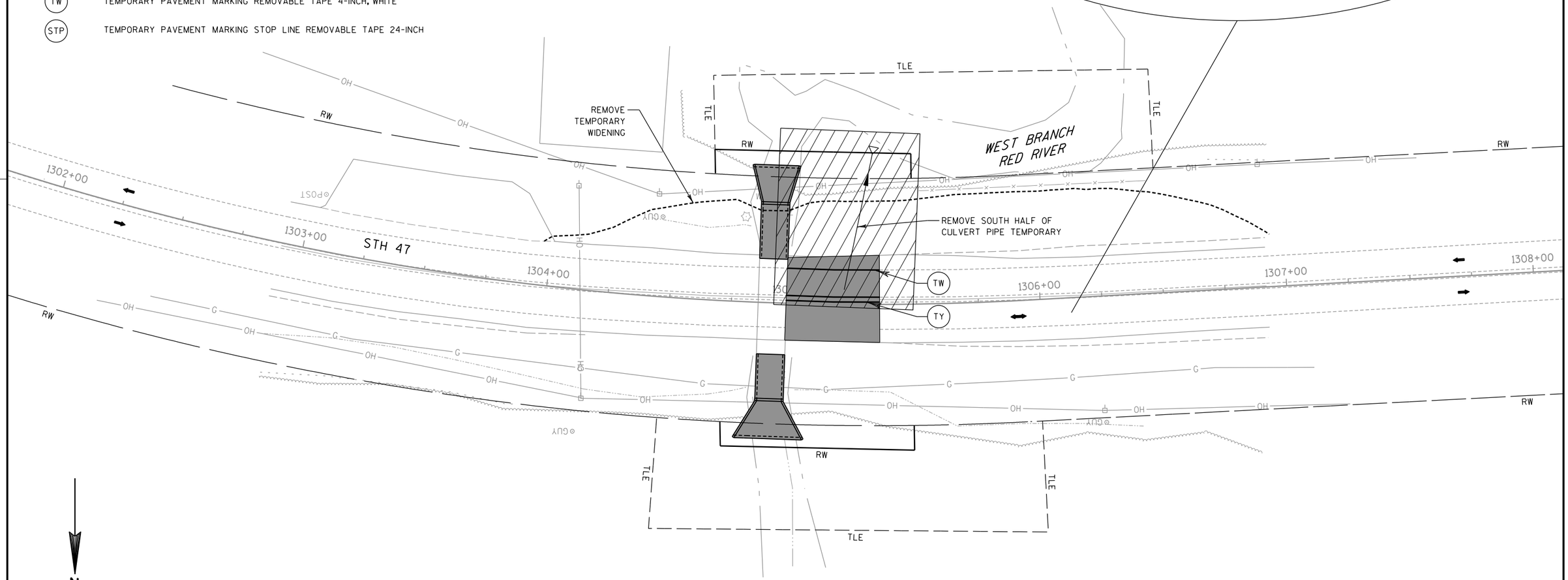
STAGE 6 AS SHOWN ASSUMES STH 47 TRAFFIC IS STILL UNDER DETOUR AND THE RED RIVER BRIDGE (B-34-0046) IS CLOSED TO ALL TRAFFIC.

STH 47 AT WEST BRANCH RED RIVER (C-34-0008) OPEN TO TRAFFIC, SINGLE LANE CLOSURES UNDER FLAGGING WITH A 16' MINIMUM LANE WIDTH. STAGE 6 TRAFFIC WILL BE ON THE EXISTING RIGHT LANE OF STH 47.

NOTE:
SEE SDD'S "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" AND "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)".



CULVERT REMOVAL TYPICAL SECTIONS



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	TRAFFIC CONTROL - STAGE 6 - C-34-0008	SHEET 23	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\026501_s6.dgn PLOT DATE : 4/23/2014 PLOT BY : emo PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

2

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- CRASH CUSHION TEMPORARY
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- (REM) REMOVING PAVEMENT MARKINGS
- (TY) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, YELLOW
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

WORK IN STAGE 7

MILL AND OVERLAY PAVEMENT, PAVEMENT MARKING, AND FINISHING ITEMS ON STH 47 AT WEST BRANCH RED RIVER.

TRAFFIC

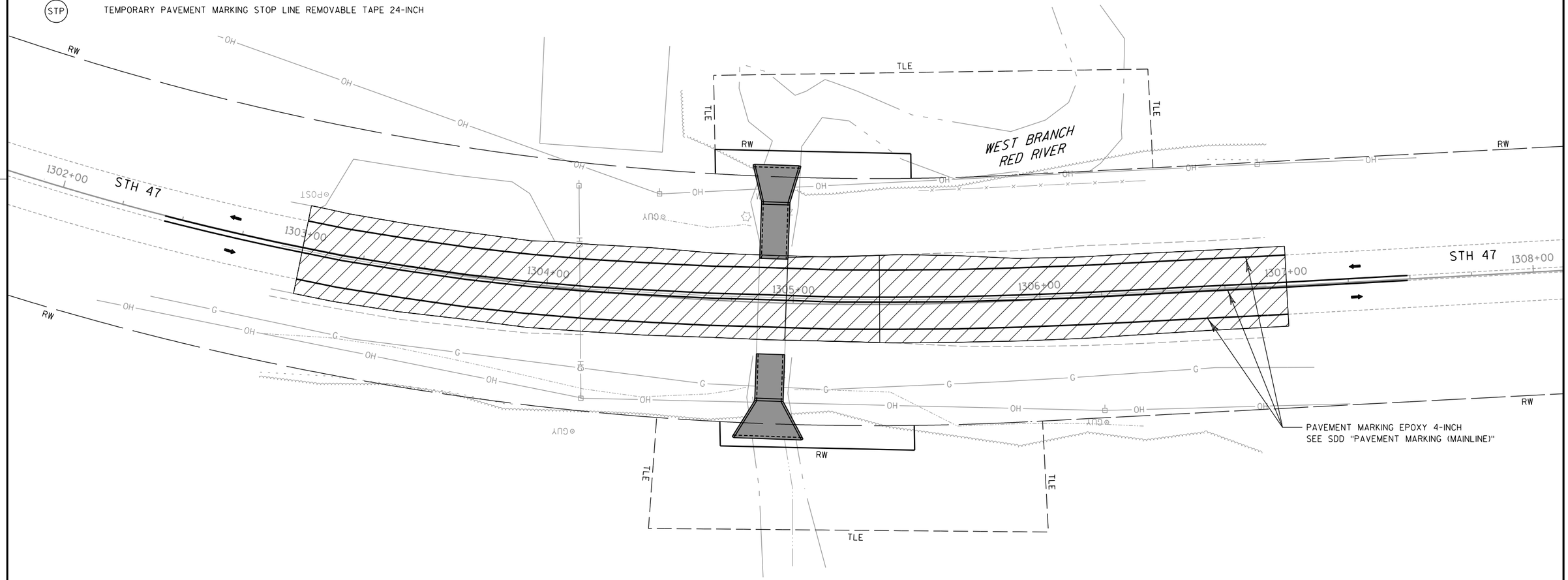
STAGE 7 AS SHOWN ASSUMES STH 47 TRAFFIC IS STILL UNDER DETOUR AND THE RED RIVER BRIDGE (B-34-0046) IS CLOSED TO ALL TRAFFIC.

STH 47 AT WEST BRANCH RED RIVER (C-34-0008) OPEN TO TRAFFIC, SINGLE LANE CLOSURES UNDER FLAGGING.

NOTE:

SEE SDD'S "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" AND "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)".

N



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	TRAFFIC CONTROL - STAGE 7 - C-34-0008	SHEET 24	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\026601_s7.dgn PLOT DATE : 4/23/2014 PLOT BY : emo PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

GENERAL NOTES FOR TRAFFIC CONTROL

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

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

3) "WO" SIGNS ARE THE SAME A "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

4) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED. EQUIP WITH TYPE "A" (LOW INTENSITY FLASHING) LIGHTS PER SDDS.

5) MAINTAIN ALL EXISTING STOP SIGNS AT ALL TIMES.

6) FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C WARNING LIGHT.

7) A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER.

8) TRAFFIC CONTROL DETAILS ARE PROVIDED FOR STRUCTURE C-34-0008. SEE STANDARD DETAIL DRAWINGS FOR OTHER TRAFFIC CONTROL DEVICES.

NOTES:

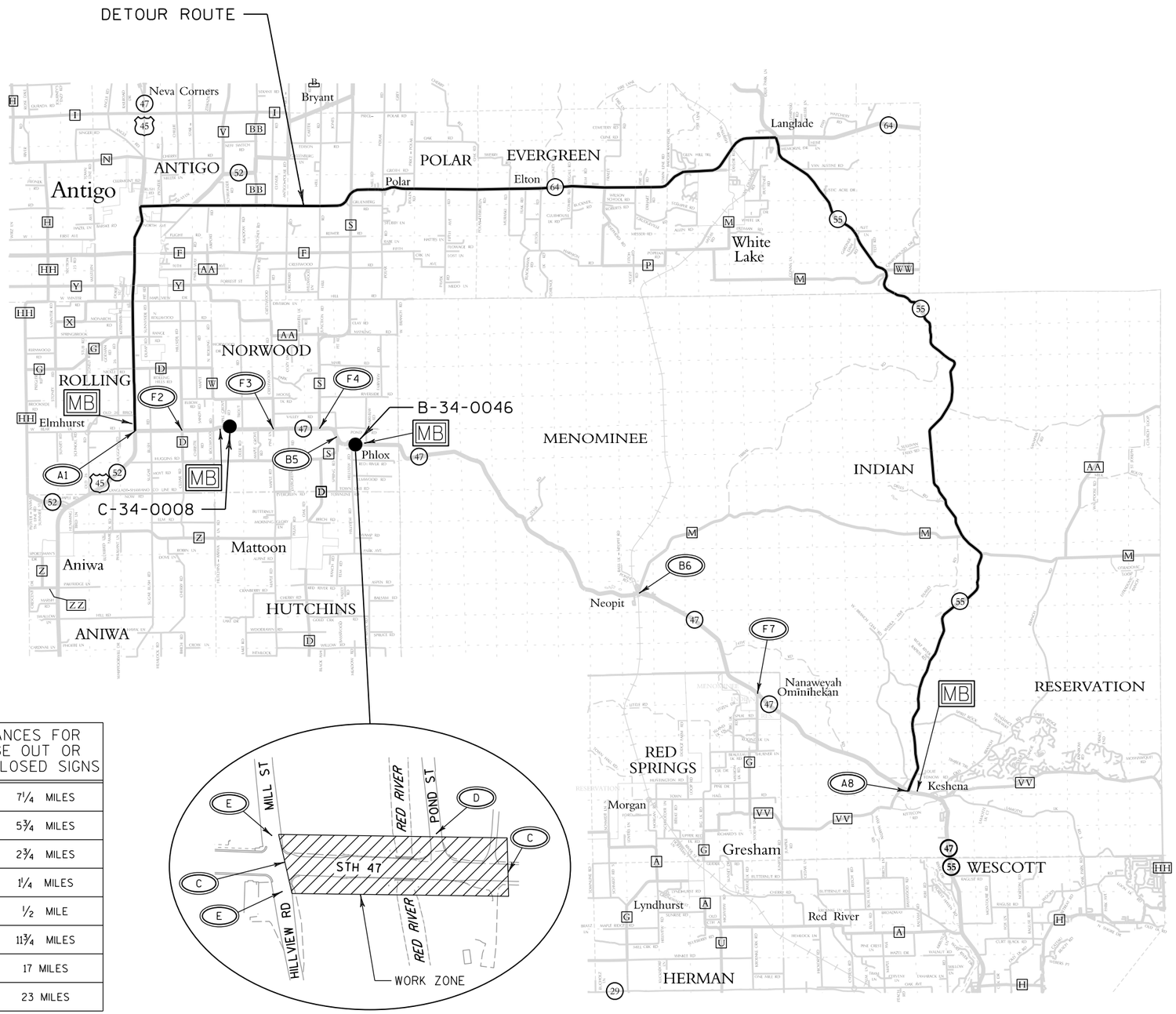
\# ADJUST TRAFFIC CONTROL PCMS MESSAGE AS NEEDED BASED ON WORK ZONE AREAS AND CONSTRUCTION SCHEDULE AS APPROVED BY THE ENGINEER.

CONSIDER GEOMETRICS WHEN LOCATING MESSAGE BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE BOARD FOR A MINIMUM OF 1000 FEET IN FRONT OF THE MESSAGE BOARD.

PLACE MESSAGE BOARDS AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY. THE LOCATION SELECTED SHOULD BE AT OR SLIGHTLY ABOVE THE ELEVATION OF THE ROADWAY. THE SITE SHOULD BE VISITED TO ASSURE VISIBILITY, SAFETY AND MAINTENANCE CONSIDERATIONS.

PLACE TRAFFIC CONTROL SIGNS PCMS AND DISPLAY THE "PRIOR TO CONSTRUCTION" MESSAGE 7 DAYS PRIOR TO THE EXPECTED START OF THE PROPOSED WORK. ADJUST THE MESSAGE DATE ACCORDINGLY.

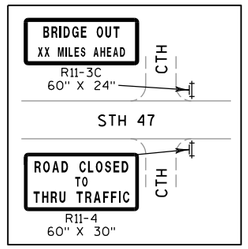
TRAFFIC CONTROL SIGNS PCMS MESSAGES		
	PRIOR TO CONSTRUCTION	
PCMS SIGN LOCATION	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
# USH 45/ STH 47/ STH 52 AT W BEAR LAKE RD	STH 47 BRIDGE CLOSING	DATE
# STH 47 0.1 MILES WEST OF C-34-0008	STH 47 BRIDGE CLOSING	DATE
# STH 47 0.2 MILES EAST OF B-34-0046	STH 47 BRIDGE CLOSING	DATE
# STH 47 / STH 55 0.2 MILES EAST OF COURTHOUSE LN	STH 47 BRIDGE CLOSING	DATE



DISTANCES FOR BRIDGE OUT OR ROAD CLOSED SIGNS	
A1	7¼ MILES
F2	5¾ MILES
F3	2¾ MILES
F4	1¼ MILES
B5	½ MILE
B6	11¾ MILES
F7	17 MILES
A8	23 MILES

LEGEND

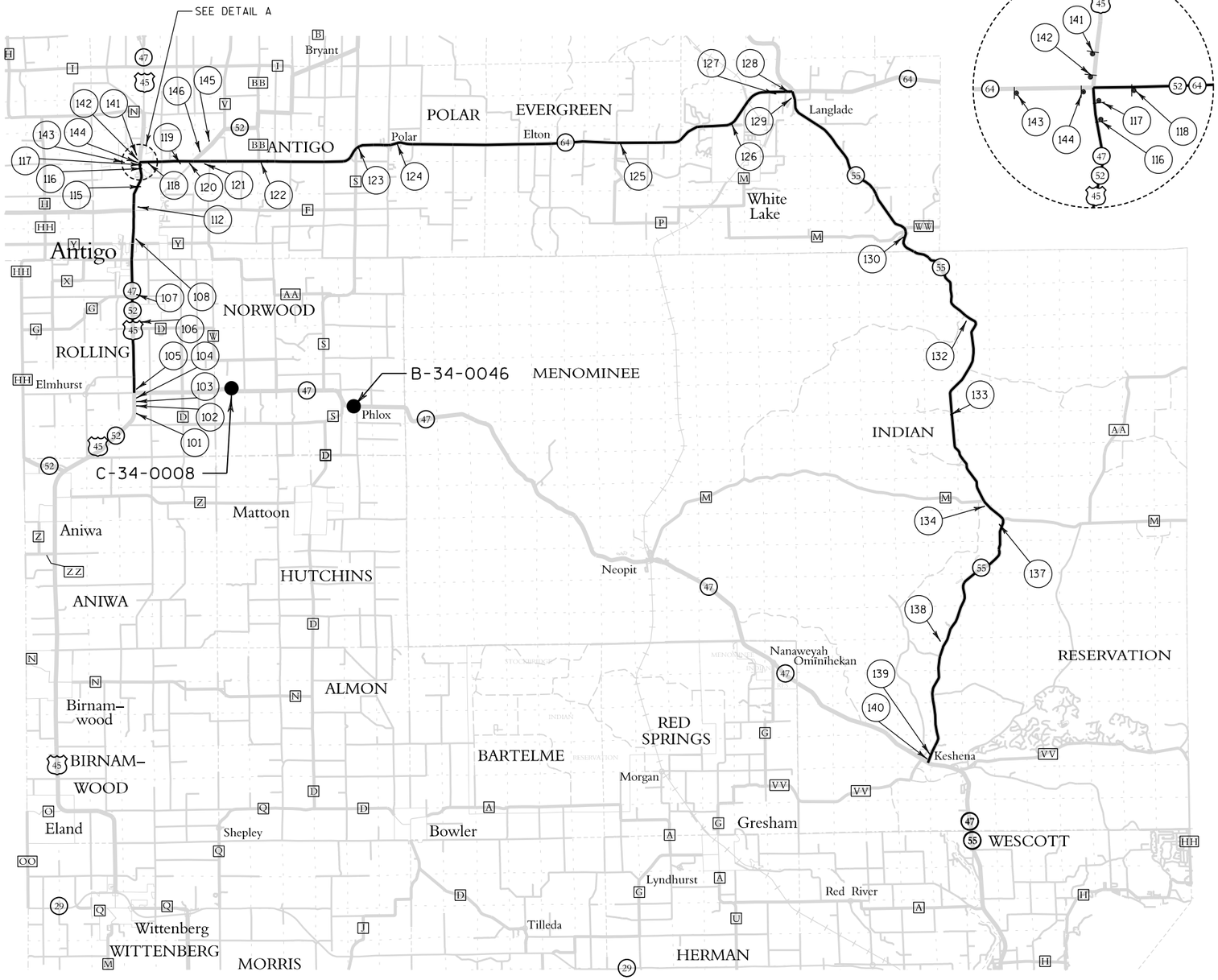
- MB — TRAFFIC CONTROL SIGN PCMS
- ℄ — TYPE III BARRICADE WITH ATTACHED SIGN
- A* — SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL A
- B* — SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL C
- C — SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL D
- D — SEE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" DETAIL 4
- E — SEE TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL IN SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC"
- F* —



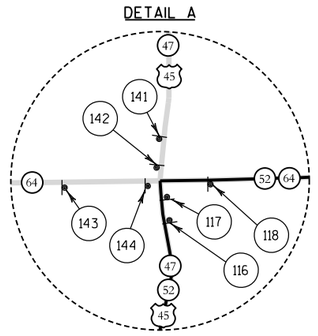
PROJECT NO: 9650-16-61, 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	TRAFFIC CONTROL AND DETOUR OVERVIEW	SHEET 25	E

NOTES:

* PAID FOR AS TRAFFIC CONTROL DETOUR SIGN



DETAIL A



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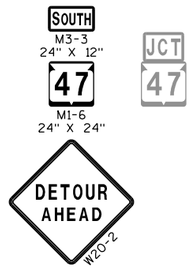

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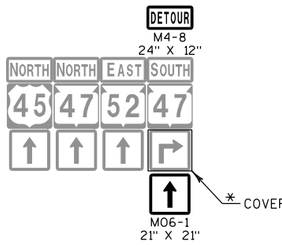

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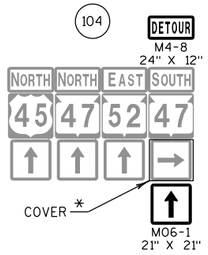

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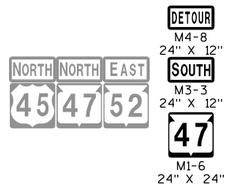

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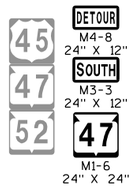

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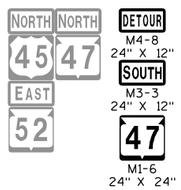

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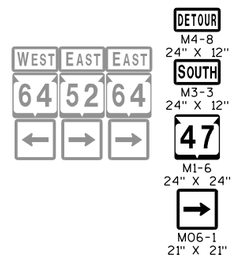
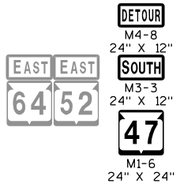
117



PROJECT NO: 9650-16-61, 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	DETOUR - STH 47 SOUTH	SHEET 26	E

2

(118)



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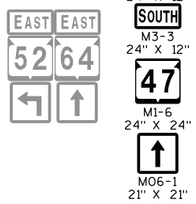

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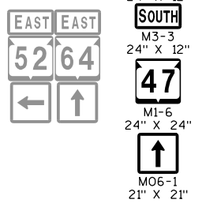
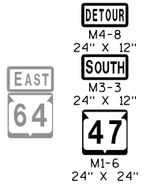


(121) (122) (123) (124) (125) (126)



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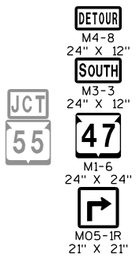

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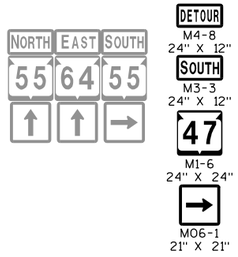

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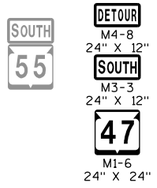

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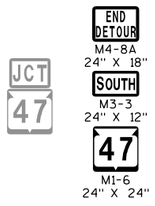

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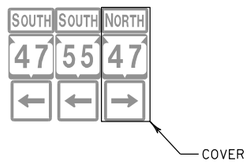
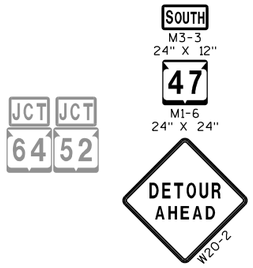
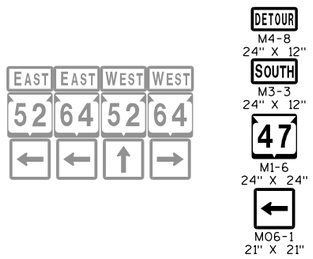


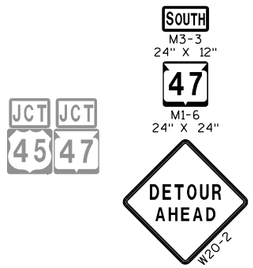
(141) ON USH 45/STH 47 NORTH OF STH 64



(142) ON USH 45/STH 47 NORTH OF STH 64



(143) ON STH 64 WEST OF USH 45/STH 47



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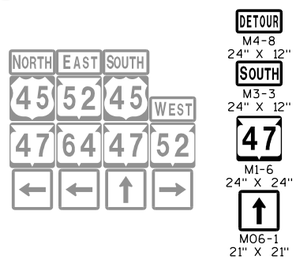
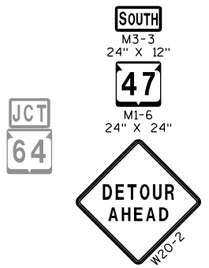
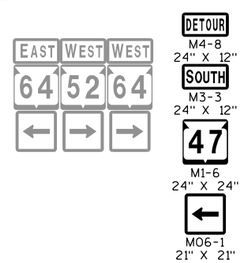


(145) ON STH 52 NORTH OF STH 64



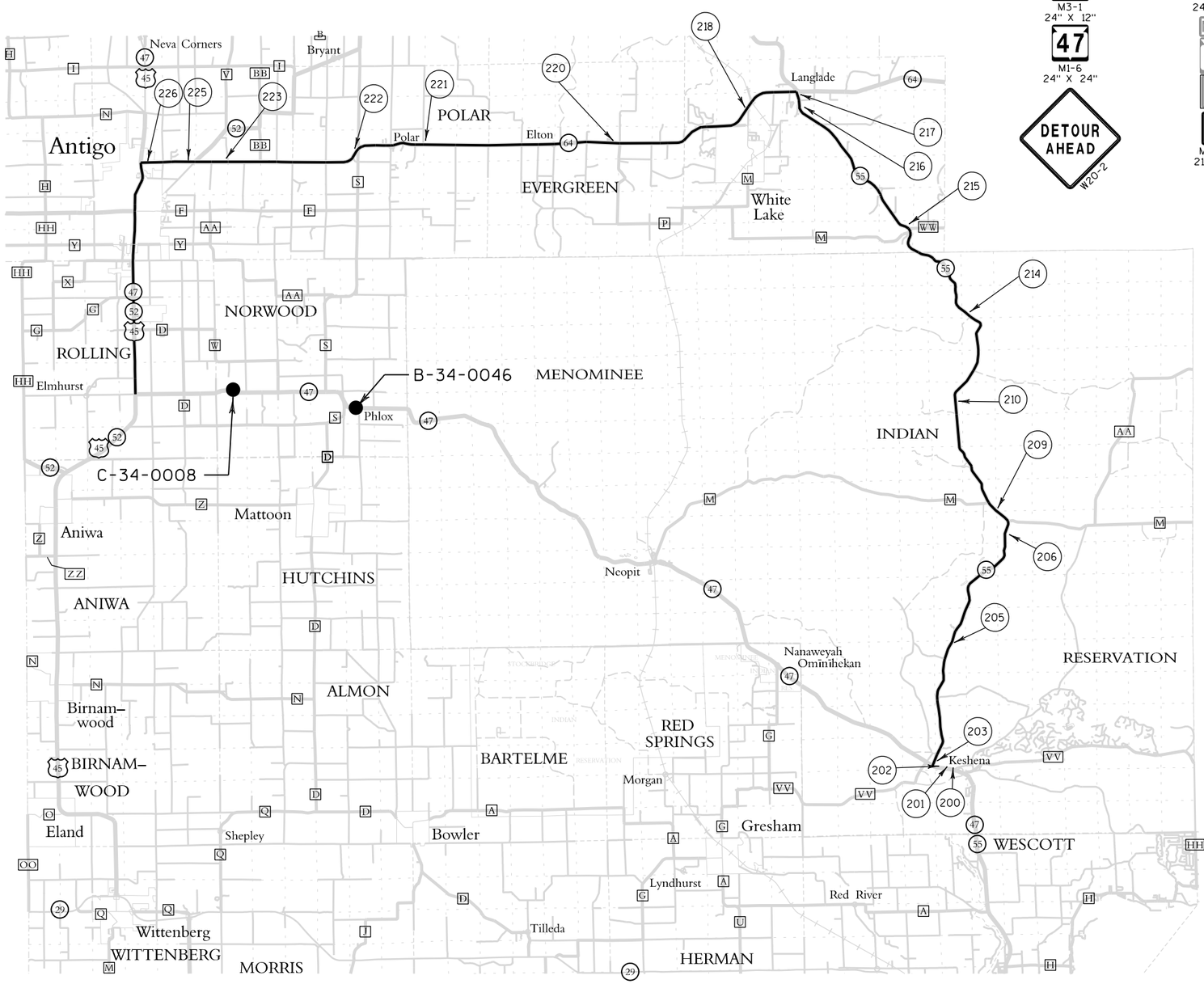
(146) ON STH 52 NORTH OF STH 64



PROJECT NO: 9650-16-61, 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	DETOUR - STH 47 SOUTH	SHEET 27	E

NOTES:

* PAID FOR AS TRAFFIC CONTROL DETOUR SIGN



200

NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"
DETOUR AHEAD
W20-2

201

DETOUR
M4-8
24" X 12"
NORTH NORTH
47 55
* COVER
MO5-1R
21" X 21"

202

NORTH
55
DETOUR
M4-8
24" X 12"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"
MO6-1
21" X 21"

203 205 206 209 210 214 215

NORTH
55
DETOUR
M4-8
24" X 12"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"

216

JCT
64
DETOUR
M4-8
24" X 12"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"
MO5-1L
21" X 21"

217

WEST NORTH EAST
64 55 64
DETOUR
M4-8
24" X 12"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"
MO6-1
21" X 21"

218 220 221 222

EAST
64
DETOUR
M4-8
24" X 12"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"

223

WEST WEST EAST
52 64 52
DETOUR
M4-8
24" X 12"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"
MO6-1
21" X 21"

224

WEST WEST EAST
52 64 52
DETOUR
M4-8
24" X 12"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"
MO6-1
21" X 21"

225

WEST WEST
52 64
DETOUR
M4-8
24" X 12"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"

226

JCT JCT
45 47
END DETOUR
M4-8A
24" X 18"
NORTH
M3-1
24" X 12"
47
M1-6
24" X 24"

PROJECT NO: 9650-16-61, 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	DETOUR - STH 47 NORTH	SHEET 28	E

DATE 28AUG14 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	9650-16-61 QUANTITY	9650-16-70 QUANTITY
0010	201.0105	CLEARING	STA	5.000	2.000	3.000
0020	201.0205	GRUBBING	STA	5.000	2.000	3.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	2.000		2.000
0040	203.0200	REMOVING OLD STRUCTURE (STATION) 01. 1304+91.56	LS	1.000	1.000	
0050	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. STA 1079+21	LS	1.000		1.000
0060	204.0110	REMOVING ASPHALTIC SURFACE	SY	290.000	290.000	
0070	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	16.000	16.000	
0080	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	1,550.000	1,550.000	
0090	204.0150	REMOVING CURB & GUTTER	LF	44.000		44.000
0100	204.0165	REMOVING GUARDRAIL	LF	665.000	275.000	390.000
0110	204.0170	REMOVING FENCE	LF	100.000	100.000	
0120	205.0100	EXCAVATION COMMON	CY	1,382.000	177.000	1,205.000
0130	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-34-46	LS	1.000		1.000
0140	206.2000	EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 01. C-34-08	LS	1.000	1.000	
0150	206.5000	COFFERDAMS (STRUCTURE) 01. C-34-08	LS	1.000	1.000	
0160	208.0100	BORROW	CY	322.000	322.000	
0170	210.0100	BACKFILL STRUCTURE	CY	670.000	320.000	350.000
0180	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01. 9650-16-61	LS	1.000	1.000	
0190	211.0400	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	STA	8.000	8.000	
0200	213.0100	FINISHING ROADWAY (PROJECT) 01. 9650-16-61	EACH	1.000	1.000	
0210	213.0100	FINISHING ROADWAY (PROJECT) 02. 9650-16-71	EACH	1.000		1.000
0220	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	120.000	75.000	45.000
0230	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,905.000	500.000	1,405.000
0240	305.0500	SHAPING SHOULDERS	STA	8.000	8.000	
0250	311.0115	BREAKER RUN	CY	27.000	27.000	
0260	455.0105	ASPHALTIC MATERIAL PG58-28	TON	43.000	15.000	28.000
0270	455.0605	TACK COAT	GAL	80.000	39.000	41.000
0280	460.1101	HMA PAVEMENT TYPE E-1	TON	760.000	260.000	500.000
0290	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	490.000	170.000	320.000
0300	465.0110	ASPHALTIC SURFACE PATCHING	TON	5.000	5.000	
0310	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	20.000		20.000
0320	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	35.000	35.000	
0330	465.0315	ASPHALTIC FLUMES	SY	40.000		40.000
0340	502.0100	CONCRETE MASONRY BRIDGES	CY	214.000		214.000
0350	502.3200	PROTECTIVE SURFACE TREATMENT	SY	398.000		398.000
0360	502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	EACH	40.000	40.000	
0370	503.0136	PRESTRESSED GIRDER TYPE I 36-INCH	LF	354.000		354.000
0380	504.0100	CONCRETE MASONRY CULVERTS	CY	78.000	78.000	
0390	504.0500	CONCRETE MASONRY RETAINING WALLS	CY	64.000		64.000
0400	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	5,130.000		5,130.000
0410	505.0410	BAR STEEL REINFORCEMENT HS CULVERTS	LB	5,025.000	5,025.000	
0420	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	25,510.000		25,510.000
0430	505.0610	BAR STEEL REINFORCEMENT HS COATED CULVERTS	LB	3,910.000	3,910.000	

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DATE 28AUG14 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	9650-16-61 QUANTITY	9650-16-70 QUANTITY
0440	505.0615	BAR STEEL REINFORCEMENT HS COATED RETAINING WALLS	LB	5,810.000		5,810.000
0450	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	12.000		12.000
0460	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-34-46	EACH	5.000		5.000
0470	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	55.000	24.000	31.000
0480	517.1010.S	CONCRETE STAINING (STRUCTURE) 01. B-34-46	SF	75.000		75.000
0490	517.1010.S	CONCRETE STAINING (STRUCTURE) 02. R-34-02	SF	1,145.000		1,145.000
0500	517.1015.S	CONCRETE STAINING MULTI-COLOR (STRUCTURE) 01. B-34-46	SF	259.000		259.000
0510	517.1015.S	CONCRETE STAINING MULTI-COLOR (STRUCTURE) 02. R-34-02	SF	185.000		185.000
0520	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 01. B-34-46	SF	259.000		259.000
0530	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 02. R-34-02	SF	185.000		185.000
0540	520.4048	CULVERT PIPE TEMPORARY 48-INCH	LF	124.000	124.000	
0550	522.0324	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH	LF	62.000		62.000
0560	522.1018	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	EACH	1.000		1.000
0570	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	4.000		4.000
0580	532.0500.S	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH	SF	1,145.000		1,145.000
0590	550.0500	PILE POINTS	EACH	12.000		12.000
0600	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	570.000		570.000
0610	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	400.000		400.000
0620	602.0405	CONCRETE SIDEWALK 4-INCH	SF	1,140.000		1,140.000
0630	602.0415	CONCRETE SIDEWALK 6-INCH	SF	120.000		120.000
0640	602.0515	CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA	SF	16.000		16.000
0650	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	424.000	424.000	
0660	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	834.000	834.000	
0670	606.0200	RIPRAP MEDIUM	CY	12.000		12.000
0680	606.0300	RIPRAP HEAVY	CY	201.000		201.000
0690	608.0318	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH	LF	54.000		54.000
0700	608.0424	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH	LF	66.000		66.000
0710	611.0530	MANHOLE COVERS TYPE J	EACH	2.000		2.000
0720	611.0624	INLET COVERS TYPE H	EACH	2.000		2.000
0730	611.1230	CATCH BASINS 2X3-FT	EACH	2.000		2.000
0740	611.2004	MANHOLES 4-FT DIAMETER	EACH	1.000		1.000
0750	611.8110	ADJUSTING MANHOLE COVERS	EACH	1.000		1.000
0760	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	350.000		350.000
0770	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2.000		2.000
0780	614.0905	CRASH CUSHIONS TEMPORARY	EACH	4.000	4.000	
0790	614.2500	MGS THRIE BEAM TRANSITION	LF	78.800		78.800
0800	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	2.000		2.000
0810	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 9650-16-61	EACH	1.000	1.000	

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DATE 28AUG14 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	9650-16-61 QUANTITY	9650-16-70 QUANTITY
0820	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 02. 9650-16-70	EACH	1.000		1.000
0830	619.1000	MOBILIZATION	EACH	1.000	0.300	0.700
0840	621.0100	LANDMARK REFERENCE MONUMENTS	EACH	4.000		4.000
0850	624.0100	WATER	MGAL	7.000	2.000	5.000
0860	625.0100	TOPSOIL	SY	3,980.000	1,680.000	2,300.000
0870	628.1504	SILT FENCE	LF	1,575.000	800.000	775.000
0880	628.1520	SILT FENCE MAINTENANCE	LF	1,575.000	800.000	775.000
0890	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	8.000	4.000	4.000
0900	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	2.000	2.000
0910	628.2004	EROSION MAT CLASS I TYPE B	SY	130.000		130.000
0920	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	3,850.000	1,680.000	2,170.000
0930	628.6005	TURBIDITY BARRIERS	SY	190.000	50.000	140.000
0940	628.7005	INLET PROTECTION TYPE A	EACH	3.000		3.000
0950	628.7015	INLET PROTECTION TYPE C	EACH	5.000		5.000
0960	628.7504	TEMPORARY DITCH CHECKS	LF	75.000	45.000	30.000
0970	628.7555	CULVERT PIPE CHECKS	EACH	10.000		10.000
0980	628.7570	ROCK BAGS	EACH	825.000	450.000	375.000
0990	629.0210	FERTILIZER TYPE B	CWT	2.200	1.300	0.900
1000	630.0130	SEEDING MIXTURE NO. 30	LB	51.000	27.000	24.000
1010	630.0140	SEEDING MIXTURE NO. 40	LB	20.000		20.000
1020	630.0175	SEEDING MIXTURE NO. 75	LB	4.000	4.000	
1030	632.0101	TREES (SPECIES, ROOT, SIZE) 01. RED MAPLE, B&B, 2" CAL	EACH	5.000		5.000
1040	632.0101	TREES (SPECIES, ROOT, SIZE) 02. RIVER BIRCH, B&B, 2" CAL	EACH	3.000		3.000
1050	632.0201	SHRUBS (SPECIES, ROOT, SIZE) 01. ANTHONY WATERER SPIRAEA, CG, 1.5' HT	EACH	6.000		6.000
1060	632.9101	LANDSCAPE PLANTING SURVEILLANCE AND CARE CYCLES	EACH	12.000		12.000
1070	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	3.000		3.000
1080	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	1.000		1.000
1090	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	7.000	4.000	3.000
1100	637.2210	SIGNS TYPE II REFLECTIVE H	SF	50.620	24.000	26.620
1110	638.2602	REMOVING SIGNS TYPE II	EACH	7.000		7.000
1120	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	7.000		7.000
1130	642.5001	FIELD OFFICE TYPE B	EACH	1.000	0.250	0.750
1140	643.0100	TRAFFIC CONTROL (PROJECT) 01. 9650-16-61	EACH	1.000	1.000	
1150	643.0100	TRAFFIC CONTROL (PROJECT) 02. 9650-16-70	EACH	1.000		1.000
1160	643.0300	TRAFFIC CONTROL DRUMS	DAY	1,175.000	725.000	450.000
1170	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	2,946.000	66.000	2,880.000
1180	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	5,096.000	56.000	5,040.000
1190	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	255.000	255.000	
1200	643.0900	TRAFFIC CONTROL SIGNS	DAY	3,762.000	882.000	2,880.000
1210	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	1.000		1.000
1220	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	28.000		28.000
1230	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 9650-16-70	EACH	1.000		1.000
1240	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	15,750.000		15,750.000
1250	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	435.000		435.000
1260	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	3,300.000	1,815.000	1,485.000
1270	646.0600	REMOVING PAVEMENT MARKINGS	LF	1,015.000	1,015.000	
1280	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	1,980.000	1,980.000	

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DATE 28AUG14 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	9650-16-61 QUANTITY	9650-16-70 QUANTITY
1290	649.1400	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH	LF	24.000	24.000	
1300	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	6.000		6.000
1310	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	360.000		360.000
1320	650.5000	CONSTRUCTION STAKING BASE	LF	360.000		360.000
1330	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	400.000		400.000
1340	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	1.000	1.000	
1350	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. C-34-08	LS	1.000	1.000	
1360	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 02. B-34-46	LS	1.000		1.000
1370	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 03. R-34-02	LS	1.000		1.000
1380	650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	LF	400.000	400.000	
1390	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 9650-16-61	LS	1.000	1.000	
1400	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 02. 9650-16-70	LS	1.000		1.000
1410	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	760.000	400.000	360.000
1420	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. 9650-16-61	LS	1.000	1.000	
1430	690.0150	SAWING ASPHALT	LF	330.000	140.000	190.000
1440	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	2,136.000	468.000	1,668.000
1450	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR	HRS	1,200.000		1,200.000
1460	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	600.000		600.000
1470	SPV.0030	SPECIAL 01. FERTILIZER FOR LAWN TYPE TURF	CWT	0.800		0.800
1480	SPV.0060	SPECIAL 01. BOULDERS	EACH	10.000		10.000
1490	SPV.0060	SPECIAL 02. TREE TRUNK FISH CRIB	EACH	7.000	7.000	
1500	SPV.0060	SPECIAL 03. TREE ROOT FISH CRIB	EACH	3.000	3.000	
1510	SPV.0090	SPECIAL 01. FENCE CHAIN LINK POLYMER COATED 4-FT	LF	16.000		16.000
1520	SPV.0105	SPECIAL 01. SALVAGED STREAM SEDIMENT	LS	1.000	1.000	
1530	SPV.0105	SPECIAL 02. RAILING STEEL TYPE C2 GALVANIZED B-34-46	LS	1.000		1.000
1540	SPV.0105	SPECIAL 03. RAILING STEEL TYPE C2 GALVANIZED R-34-02	LS	1.000		1.000
1550	SPV.0105	SPECIAL 04. RESTORATION OF SIGN	LS	1.000		1.000
1560	SPV.0105	SPECIAL 05. TRACKING MATS	LS	1.000	1.000	
1570	SPV.0120	SPECIAL 01. WATER FOR SEEDED AREAS	MGAL	27.000		27.000
1580	SPV.0180	SPECIAL 01. PREPARING TOPSOIL FOR LAWN TYPE TURF	SY	1,110.000		1,110.000

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CLEARING AND GRUBBING ITEMS

STATION - STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
PROJECT 9650-16-61			
CAT 0010			
1304+50 - 1305+50	LT & RT	2	2
PROJECT 9650-16-61 TOTALS		2	2
PROJECT 9650-16-70			
CAT 0010			
1078+00 - 1081+00	LT & RT	3	3
PROJECT 9650-16-70 TOTALS		3	3
TOTALS		5	5

REMOVING ASPHALTIC SURFACE ITEMS

STATION - STATION	LOCATION	204.0110 SY	204.0115 BUTT JOINTS SY	204.0120 MILLING SY	COMMENTS
PROJECT 9650-16-61					
CAT 0010					
1303+00 - 1307+00	LT&RT	--	16	1,550	
1304+97 - 1305+35	LT&RT	290	--	--	
PROJECT 9650-16-61 TOTALS		290	16	1,550	

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	FOR INFORMATIONAL USE ONLY SIZE (INCH)	MATERIAL	LENGTH (FT)	COMMENTS
PROJECT 9650-16-70						
CAT 0010						
1077+55	RT	1	18	CMCP	34	DRIVEWAY
1078+60	RT	1	24	CMCP	48	POND STREET
PROJECT 9650-16-70 TOTAL		2				

REMOVING CURB & GUTTER

STATION - STATION	LOCATION	204.0150 LF
PROJECT 9650-16-70		
CAT 0010		
1081+00 - 1081+15	LT	22
1081+18 - 1081+35	RT	22
PROJECT 9650-16-70 TOTAL		44

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REMOVING GUARDRAIL AND FENCE

STATION - STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	204.0170 REMOVING FENCE LF
PROJECT 9650-16-61			
CAT 0010			
1304+20 - 1305+60	LT	139	--
1304+26 - 1305+59	RT	136	--
1305+50 - 1306+50	LT	--	100
PROJECT 9650-16-61 TOTALS		275	100
PROJECT 9650-16-70			
CAT 0010			
1078+05 - 1080+29	LT	225	--
1078+71 - 1080+29	RT	165	--
PROJECT 9650-16-70 TOTALS		390	0
TOTALS		665	100

SHAPING SHOULDERS

STATION - STATION	LOCATION	305.0500 STA
PROJECT 9650-16-61		
CAT 0010		
1303+00 - 1307+00	LT	4
1303+00 - 1307+00	RT	4
PROJECT 9650-16-61 TOTAL		8

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BASE AGGREGATE DENSE ITEMS

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	COMMENTS
PROJECT 9650-16-61				
CAT 0010				
1303+00 - 1307+00	LT&RT	75	200	
1303+97 - 1306+98	LT	--	300	TEMPORARY WIDENING
PROJECT 9650-16-61 TOTALS		75	500	
PROJECT 9650-16-70				
CAT 0010				
1077+08 - 1078+91	LT&RT	45	820	INLCUDES DRIVEWAY AND SIDE STREET
1079+51 - 1081+28	LT&RT	--	585	INLCUDES SIDE STREETS
PROJECT 9650-16-70 TOTALS		45	1,405	
TOTALS		120	1,905	

EARTHWORK SUMMARY

DIVISION	LOCATION	EXCAVATION COMMON (NOTE 1) (ITEM #205.0100)	SALVAGED / UNUSEABLE PAVEMENT MATERIAL (NOTE 3)	AVAILABLE MATERIAL (NOTE 4)	UNEXPANDED FILL (NOTE 5)	EXPANDED FILL (NOTE 6)	MASS ORDINATE +/- (NOTE 7)	BORROW (ITEM #208.0100)
		CUT (NOTE 2)				FACTOR 1.25		
ID 9650-16-61								
1	W BR RED RIVER BRIDGE CULVERT EXTENSION	27	0	27	399	499	-472	472
1	W BR RED RIVER BRIDGE CULVERT EXTENSION (TEMPORARY BAD REMOVAL)	150	0	150	0	0	150	-150
TOTALS		177	0	177	399	499	-322	322

DIVISION	LOCATION	EXCAVATION COMMON (NOTE 1) (ITEM #205.0100)	SALVAGED / UNUSEABLE PAVEMENT MATERIAL (NOTE 3)	AVAILABLE MATERIAL (NOTE 4)	UNEXPANDED FILL (NOTE 5)	EXPANDED FILL (NOTE 6)	MASS ORDINATE +/- (NOTE 7)	WASTE
		CUT (NOTE 2)				FACTOR 1.25		
ID 9650-16-70								
1	STH 47 (RED RIVER BRIDGE, B-34-46)	1,205	144	1,061	295	369	692	692
TOTALS		1,205	144	1,061	295	369	692	692

1) NO EBS IS ANTICIPATED. IF EBS IS REQUIRED IT WILL BE PAID AS COMMON EXCAVATION. ITEM NUMBER 205.0100
2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
3) SALVAGED/UNUSABLE PAVEMENT MATERIAL EQUALS AREA OF PROJECT PAVEMENT REMOVAL * TYPICAL EXISTING PAVEMENT DEPTH (ASSUME 5.5 INCHES ON STH 47)
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
5) UNEXPANDED FILL IS A SUM OF CROSS SECTION AREAS FROM EACH DIVISIONAL SHEET
6) EXPANDED FILL FACTOR = 1.25, EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR
7) 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.

HMA AND ASPHALTIC PAVEMENT ITEMS

STATION - STATION	LOCATION	211.0100 PREPARE FOUNDATION FOR ASPHALTIC PAVING (9650-16-61) LS	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1101 HMA PAVEMENT TYPE E-1 TON	465.0110 ASPHALTIC SURFACE PATCHING TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0125 ASPHALTIC SURFACE TEMPORARY TON	465.0315 ASPHALTIC FLUMES SY	COMMENTS
PROJECT 9650-16-61											
CAT 0010											
1303+00 - 1307+00	LT&RT	1	8	12	35	210	5	--	--	--	
1304+97 - 1305+35	LT&RT	--	--	3	4	50	--	--	35	--	
PROJECT 9650-16-61 TOTALS		1	8	15	39	260	5	0	35	0	
PROJECT 9650-16-70											
CAT 0010											
1077+08 - 1078+91	LT&RT	--	--	16	23	285	--	20	--	30	INCLUDES SIDE STREET
1079+51 - 1081+28	LT&RT	--	--	12	18	215	--	--	--	10	INCLUDES SIDE STREETS
PROJECT 9650-16-70 TOTALS		0	0	28	41	500	0	20	0	40	
TOTALS		1	8	43	80	760	5	20	35	40	

CULVERT PIPE ITEMS

STATION	LOCATION	520.4048 CULVERT PIPE TEMPORARY 48-INCH LF	522.0324 CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	*522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH
PROJECT 9650-16-61					
CAT 0010					
1304+19	LT & RT	124	--	--	1
PROJECT 9650-16-61 TOTALS		124	0	0	1
PROJECT 9650-16-70					
CAT 0010					
1077+63	RT	--	62	2	--
PROJECT 9650-16-70 TOTALS		0	62	2	0
TOTALS		124	62	2	1

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

CONCRETE CURB & GUTTER 30-INCH TYPE D

STATION - STATION	LOCATION	601.0411 LF
PROJECT 9650-16-70		
CAT 0010		
1078+72 - 1078+90	RT	26
1079+64 - 1081+17	LT	169
1079+52 - 1081+36	RT	205
PROJECT 9650-16-70 TOTAL		400

STORM SEWER AND INLET ITEMS

STATION - STATION	LOCATION	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH EACH	*522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH LF	608.0424 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	611.0530 MANHOLE COVERS TYPE J EACH	611.0624 INLET COVERS TYPE H EACH	611.1230 CATCH BASINS 2X3-FT EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.8110 ADJUSTING MANHOLE COVERS EACH
PROJECT 9650-16-70										
CAT 0010										
1078+34 - 1078+94	RT	--	2	--	66	1	--	--	1	--
1079+62 - 1079+75	LT & RT	1	--	54	--	--	2	2	--	--
1081+27	RT	--	--	--	--	1	--	--	--	1
PROJECT 9650-16-70 TOTALS		1	2	54	66	2	2	2	1	1

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

CONCRETE SIDEWALK ITEMS

STATION - STATION	LOCATION	602.0405 4-INCH SF	602.0415 6-INCH SF	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA SF	COMMENTS
PROJECT 9650-16-70					
CAT 0010					
1078+76 - 1078+90	RT	--	58	8	
1079+52 - 1081+33	RT	1,140	62	8	INCLUDING MILL STREET
PROJECT 9650-16-70 TOTALS		1,140	120	16	

CONCRETE BARRIER TEMPORARY PRECAST ITEMS

STATION - STATION	LOCATION	603.8000 DELIVERED LF	603.8125 INSTALLED LF	614.0905 CRASH CUSHION TEMPORARY EACH	CRASH TEST CONDITION	OBJECT MARKING PATTERN	WIDTH REQUIREMENT FT	COMMENTS
PROJECT 9650-16-61								
CAT 0010								
1304+21 - 1305+76	LT	152	152	2	TL-3	OM-3R	2	STAGE 2
1304+23 - 1305+59	RT	138	138	2	TL-3	OM-3L	2	STAGE 2
1303+58 - 1306+27	RT	134	272	--	--	--	--	STAGE 3
1303+56 - 1306+28	LT	--	272	--	--	--	--	STAGE 4
PROJECT 9650-16-61 TOTALS		424	834	4				

3

GUARDRAIL ITEMS

STATION - STATION	LOCATION	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
PROJECT 9650-16-70			
CAT 0010			
1077+91 - 1078+81	LT	39.4	1
1079+61 - 1080+51	LT	39.4	1
PROJECT 9650-16-70 TOTALS		78.8	2

WATER

LOCATION	624.0100 MGAL
PROJECT 9650-16-61	
CAT 0010	
PROJECT	2
PROJECT 9650-16-61 TOTAL	2
PROJECT 9650-16-70	
CAT 0010	
PROJECT	5
PROJECT 9650-16-70 TOTAL	5
TOTAL	7

NOTE: WATER PROVIDED FOR COMPACTION OF SUBGRADE AND BASE AGGREGATE

MONUMENT ITEMS

LOCATION	621.0100 LANDMARK REFERENCE MONUMENTS EACH
PROJECT 9650-16-70	
CAT 0010	
CENTER OF SEC 26, T30N, R12E	4
PROJECT 9650-16-70 TOTALS	4

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 9650-16-61		
CAT 0010		
PROJECT	4	2
PROJECT 9650-16-61 TOTALS	4	2
PROJECT 9650-16-70		
CAT 0010		
PROJECT	4	2
PROJECT 9650-16-70 TOTALS	4	2
TOTALS	8	4

EROSION CONTROL ITEMS

STATION - STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.6005 TURBIDITY BARRIERS SY	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH	645.0120 GEOTEXTILE FABRIC TYPE HR SY	COMMENTS
PROJECT 9650-16-61												
CAT 0010												
1303+00 - 1307+00	LT&RT	--	180	180	20	--	--	--	--	150	--	TEMPORARY CULVERT
1303+00 - 1307+00	LT&RT	--	460	460	20	--	--	30	--	210	--	ULTIMATE CONDITION
UNDISTRIBUTED	--	--	160	160	10	--	--	15	--	90	--	
PROJECT 9650-16-61 TOTALS		0	800	800	50	0	0	45	0	450	0	
PROJECT 9650-16-70												
CAT 0010												
1077+08 - 1078+91	LT&RT	3	200	200	40	--	--	15	4	150	12	
1079+51 - 1081+28	LT&RT	9	420	420	70	2	4	--	4	150	23	
UNDISTRIBUTED		--	155	155	30	1	1	15	2	75	--	
PROJECT 9650-16-70 TOTALS		12	775	775	140	3	5	30	10	375	35	
TOTALS		12	1,575	1,575	190	3	5	75	10	825	35	

NOTES: ROCK BAGS ARE FOR SILT FENCE RELIEF
SEE STRUCTURE PLANS FOR RIPRAP HEAVY QUANTITY

FINISHING ITEMS

STATION - STATION	LOCATION	625.0100 TOPSOIL SY	628.2004 EROSION MAT CLASS I TYPE B SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0140 SEEDING MIXTURE NO. 40 LB	630.0175 SEEDING MIXTURE NO. 75 LB	SPV.0030.01 FERTILIZER FOR LAWN TYPE TURF CWT	SPV.0120.01 WATER FOR SEEDED AREAS MGAL	SPV.0180.01 PREPARING TOPSOIL FOR LAWN TYPE TURF SY	COMMENTS
PROJECT 9650-16-61												
CAT 0010												
1303+00 - 1307+00	LT&RT	198	--	198	0.2	3	--	1	--	--	--	TEMPORARY CULVERT
1303+00 - 1307+00	LT&RT	1,143	--	1,143	0.8	18	--	2	--	--	--	ULTIMATE CONDITION
UNDISTRIBUTED	--	339	0	339	0.3	6	0	1	0.0	0	0	
PROJECT 9650-16-61 TOTALS		1,680	0	1,680	1.3	27	0	4	0.0	0	0	
PROJECT 9650-16-70												
CAT 0010												
1077+08 - 1078+91	LT&RT	718	42	676	0.3	9	5	--	0.2	7	273	
1079+51 - 1081+28	LT&RT	1,121	62	1,059	0.4	10	11	--	0.4	14	611	
UNDISTRIBUTED	--	461	26	435	0.2	5	4	0	0.2	6	226	
PROJECT 9650-16-70 TOTALS		2,300	130	2,170	0.9	24	20	0	0.8	27	1,110	
TOTALS		3,980	130	3,850	2.2	51	20	4	0.8	27	1,110	

TYPE II SIGNS AND SUPPORTS

SIGN NO.	SIGN CODE	W X H	634.0612 POSTS WOOD 4x6-INCH X 12-FT EACH	634.0614 POSTS WOOD 4x6-INCH X 14-FT EACH	634.0616 POSTS WOOD 4x6-INCH X 16-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
PROJECT 9650-16-61								
CAT 0010								
11	I3-1	72 X 24	--	--	2	12.00	--	--
12	I3-1	72 X 24	--	--	2	12.00	--	--
PROJECT 9650-16-61 TOTALS			0	0	4	24.00	0	0
PROJECT 9650-16-70								
CAT 0010								
1	R2-1	24 X 30	--	--	1	5.00	--	--
2	R1-1	30 X 30	--	--	1	5.18	1	1
3	I3-1	54 X 15	2	--	--	5.63	--	--
4	--	-- X --	--	--	--	--	1	1
5	--	-- X --	--	--	--	--	1	1
6	--	-- X --	--	--	--	--	1	1
7	--	-- X --	--	--	--	--	1	1
8	I3-1	54 X 15	1	1	--	5.63	--	--
9	--	-- X --	--	--	--	--	1	1
10	R1-1	30 X 30	--	--	1	5.18	1	1
PROJECT 9650-16-70 TOTALS			3	1	3	26.62	7	7
TOTALS			3	1	7	50.62	7	7

TRAFFIC CONTROL DETOUR ITEMS

LOCATION	DAYS	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II NO.	CYCLES	EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS NO.	DAYS	**SIGN POSTS EACH
PROJECT 9650-16-70							
CAT 0010							
PROJECT	90	1	1	1	175	15,750	52
PROJECT 9650-16-70 TOTALS				1		15,750	52

NOTES: COVER TYPE II SIGNS ONCE FOR THE DURATION OF THE DETOUR
TRAFFIC CONTROL DEVICES NOT SHOWN ON DETOUR SHEETS ARE PAID UNDER STANDARD TRAFFIC CONTROL ITEMS
**NON-BID ITEM, ITEM AND QUANTITY LISTED FOR BID INFORMATION ONLY

TRAFFIC CONTROL ITEMS

LOCATION	DAYS	643.0300 DRUMS NO.	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III NO.	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO.	643.0705 WARNING LIGHTS TYPE A DAYS	643.0715 WARNING LIGHTS TYPE C NO.	643.0715 WARNING LIGHTS TYPE C DAYS	643.0900 SIGNS NO.	643.0900 SIGNS DAYS	643.1050 SIGNS PCMS NO.	643.1050 SIGNS PCMS DAYS	COMMENTS
PROJECT 9650-16-61														
CAT 0010														
PROJECT	2	40	80	18	36	28	56	--	--	14	28	--	--	STAGE 1 - C-34-08
PROJECT	5	--	--	--	--	--	--	--	--	8	40	--	--	STAGE 2 - C-34-08
PROJECT	15	18	270	1	15	--	--	8	120	18	270	--	--	STAGE 3 - C-34-08
PROJECT	15	25	375	1	15	--	--	9	135	16	240	--	--	STAGE 4 - C-34-08
PROJECT	5	--	--	--	--	--	--	--	--	8	40	--	--	STAGE 5 - C-34-08
PROJECT	5	--	--	--	--	--	--	--	--	8	40	--	--	STAGE 6 - C-34-08
PROJECT	28	--	--	--	--	--	--	--	--	8	224	--	--	STAGE 7 - C-34-08
PROJECT 9650-16-61 TOTALS			725		66		56		255		882		0	
PROJECT 9650-16-70														
CAT 0010														
PROJECT	7	--	--	--	--	--	--	--	--	--	--	4	28	PRIOR TO CONSTRUCTION
PROJECT	90	5	450	32	2,880	56	5,040	--	--	32	2,880	--	--	
PROJECT 9650-16-70 TOTALS			450		2,880		5,040		0		2,880		28	
TOTALS			1,175		2,946		5,096		255		3,762		28	

PAVEMENT MARKING ITEMS

STATION - STATION	LOCATION	646.0106 EPOXY 4-INCH (SOLID WHITE) LF	646.0106 EPOXY 4-INCH (WHITE SKIPS) LF	646.0106 EPOXY 4-INCH (SOLID YELLOW) LF	646.0600 REMOVING PAVEMENT MARKING LF	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE) LF	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (YELLOW) LF	649.1400 TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH (WHITE) LF	COMMENTS
PROJECT 9650-16-61									
CAT 0010									
1302+43 - 1307+49	LT&RT	800	--	1,015	--	--	--	--	
1304+97 - 1305+35	LT&RT	--	--	--	--	76	76	--	STAGE 1
1302+43 - 1307+49	LT&RT	--	--	--	1,015	329	--	24	STAGE 3
1302+43 - 1307+49	LT&RT	--	--	--	--	333	--	--	STAGE 4
1302+43 - 1307+49	LT&RT	--	--	--	--	38	1,015	--	STAGE 5
1302+43 - 1307+49	LT&RT	--	--	--	--	38	75	--	STAGE 6
PROJECT 9650-16-61 TOTALS		800	0	1,015	1,015	814	1,166	24	
			1,815			1,980			
PROJECT 9650-16-70									
CAT 0010									
1077+08 - 1078+92	LT&RT	614	27	844	--	--	--	--	
PROJECT 9650-16-70 TOTALS		614	27	844	0	0	0	0	
			1,485			0			
TOTALS			3,300		1,015	1,980		24	

CONSTRUCTION STAKING ITEMS

STATION	LOCATION	650.4000 STORM SEWER EACH	650.4500 SUBGRADE LF	650.5000 BASE LF	650.5500 CURB GUTTER AND CURB & GUTTER LF	650.6500.01 STRUCTURE LAYOUT (C-34-08) LS	650.6500.02 STRUCTURE LAYOUT (B-34-46) LS	650.6500.03 STRUCTURE LAYOUT (R-34-02) LS	650.8000 RESURFACING REFERENCE LF	650.9910.01 SUPPLEMENTAL CONTROL (9650-16-61) LS	650.9910.02 SUPPLEMENTAL CONTROL (9650-16-70) LS	650.9920 SLOPE STAKES LF	COMMENTS
PROJECT 9650-16-61													
CAT 0010													
1303+00 - 1307+00	LT&RT	--	--	--	--	--	--	--	400	--	--	400	
PROJECT		--	--	--	--	1	--	--	--	1	--	--	
PROJECT 9650-16-61 TOTALS		0	0	0	0	1	0	0	400	1	0	400	
PROJECT 9650-16-70													
CAT 0010													
1077+08 - 1078+91	LT&RT	3	183	183	26	--	--	--	--	--	--	183	INCLUDES SIDE ROAD
1079+51 - 1081+28	LT&RT	3	177	177	374	--	--	--	--	--	--	177	INCLUDES SIDE ROADS
PROJECT		--	--	--	--	--	1	1	--	--	1	--	
PROJECT 9650-16-70 TOTALS		6	360	360	400	0	1	1	0	0	1	360	
TOTALS		6	360	360	400	1	1	1	400	1	1	760	

TEMPORARY TRAFFIC SIGNALS FOR BRIDGES

STATION - STATION	LOCATION	661.0100 (C-34-08) LS
PROJECT 9650-16-61		
CAT 0010		
1303+00 - 1307+00	LT & RT	1
PROJECT 9650-16-61 TOTALS		1

SAWING ASPHALT

STATION - STATION	LOCATION	690.0150 LF
PROJECT 9650-16-61		
CAT 0010		
1304+97 - 1305+35	LT&RT	140
PROJECT 9650-16-61 TOTAL		140
PROJECT 9650-16-70		
CAT 0010		
1077+08 - 1078+91	LT&RT	51
1079+51 - 1081+28	LT&RT	139
PROJECT 9650-16-70 TOTAL		190
TOTAL		330

3

BOULDERS

LOCATION	SPV.0060.01 EACH
PROJECT 9650-16-70	
CAT 0010	
UPSTREAM OF STRUCTURE B-34-46	5
DOWNSTREAM OF STRUCTURE B-34-46	5
PROJECT 9650-16-70 TOTAL	10

FISH CRIB ITEMS

LOCATION	SPV.0060.02 TREE TRUNK FISH CRIB EACH	SPV.0060.03 TREE ROOT FISH CRIB EACH
PROJECT 9650-16-61		
CAT 0010		
PROJECT	7	3
PROJECT 9650-16-61 TOTALS	7	3

TRACKING MATS

LOCATION	SPV.0105.05 LS
PROJECT 9650-16-61	
CAT 0010	
PROJECT	1
PROJECT 9650-16-61 TOTALS	1

3

RESTORATION OF SIGN

STATION	LOCATION	SPV.0105.04 LS
PROJECT 9650-16-70		
CAT 0040		
1080+52	RT	1
PROJECT 9650-16-70 TOTAL		1

TREE AND SHRUB ITEMS

STATION - STATION	LOCATION	632.0101.01 TREES (RED MAPLE, B&B, 2" CAL) EACH	632.0101.02 TREES (RIVER BIRCH, B&B, 2" CAL) EACH	632.0201.01 SHRUBS (ANTHONY WATERER SPIRAEA, CG, 1.5' HT) EACH	632.9101 LANDSCAPING PLANTING SURVEILLANCE AND CARE CYCLES EACH
PROJECT 9650-16-70					
CAT 0040					
1079+67 - 1080+85	RT	5	3	6	12
PROJECT 9650-16-70 TOTALS		5	3	6	12

TRANSPORTATION PROJECT PLAT NO: 9650-16-20 - 4.12

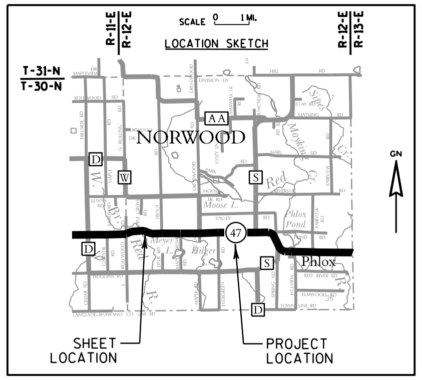
THAT PART OF LOT 3 OF CSM 248196, VOLUME 1, PAGE 256, LOCATED IN PART OF THE SE1/4 OF THE SW1/4 AND PART OF THE SW1/4 OF THE SE1/4 OF SECTION 19, TOWNSHIP 30 NORTH, RANGE 12 EAST, TOWN OF NORWOOD, LANGLADE COUNTY, WISCONSIN

RELOCATION ORDER STH 47, LANGLADE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

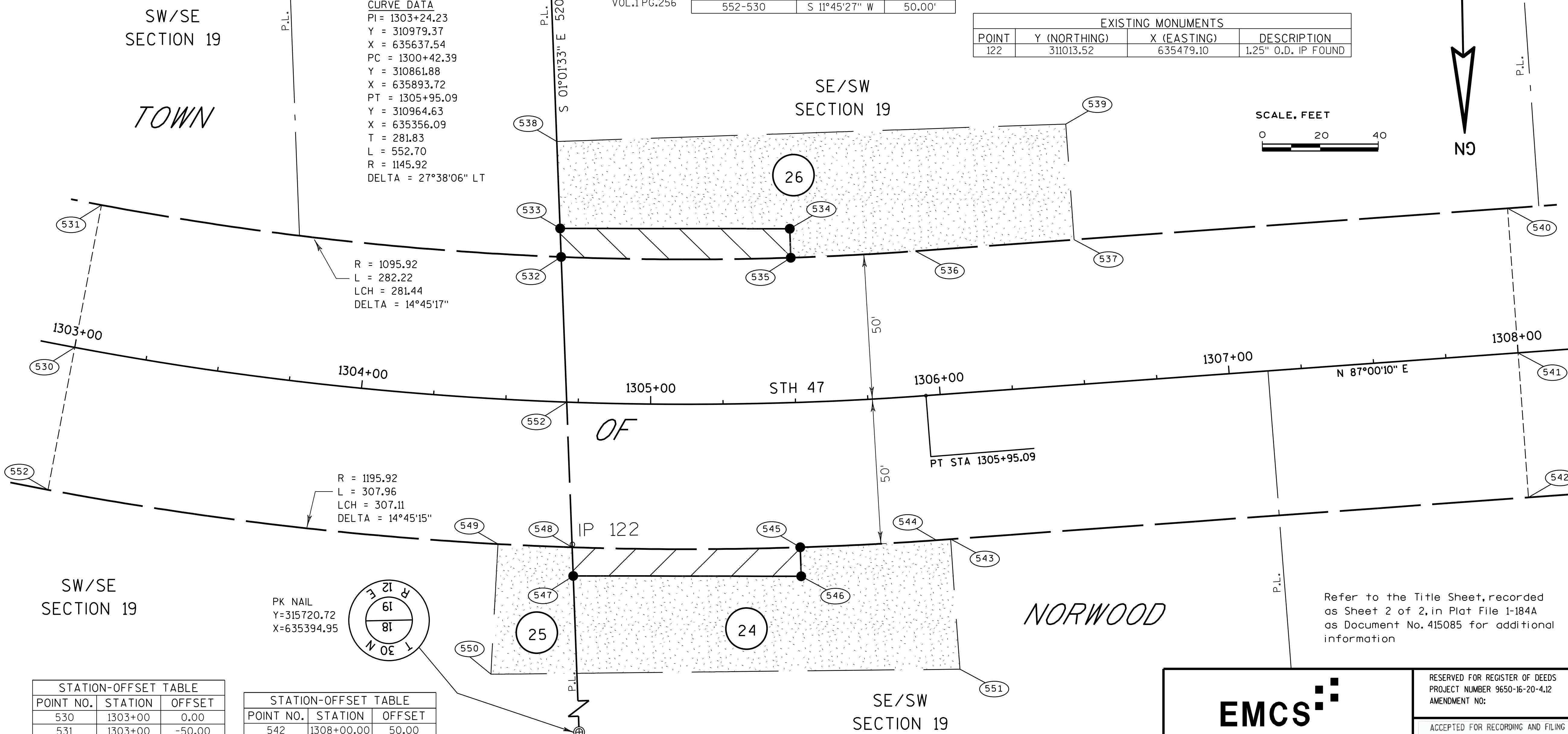
NOTE: THE ALIGNMENT USED FOR THIS TRANSPORTATION PROJECT PLAT DIFFERS FROM THE CONSTRUCTION ALIGNMENT.



COURSE TABLE		
COURSE	BEARING	DISTANCE
N 1/4 SEC.30-530	S 20°52'31" E	453.00'
530-531	S 11°45'27" W	50.00'
531-532	N 82°25'16" W	159.71'
532-533	S 1°01'33" E	9.86'
533-534	N 88°46'33" W	79.27'
534-535	N 0°44'33" W	10.00'
535-536	S 88°07'49" W	43.12'
536-540	S 87°00'10" W	204.91'
540-541	N 2°59'50" W	50.00'
541-542	N 2°59'50" W	50.00'
542-544	N 87°00'10" E	204.91'
544-545	N 88°07'49" E	47.06'
545-546	N 0°44'33" W	10.00'
546-547	S 88°45'35" E	78.68'
547-548	S 1°01'33" E	9.87'
548-552	S 82°36'23" E	182.00'
552-530	S 11°45'27" W	50.00'

EXISTING MONUMENTS			
POINT	Y (NORTHING)	X (EASTING)	DESCRIPTION
122	311013.52	635479.10	1.25" O.D. IP FOUND

CURVE DATA
PI = 1303+24.23
Y = 310979.37
X = 635637.54
PC = 1300+42.39
Y = 310861.88
X = 635893.72
PT = 1305+95.09
Y = 310964.63
X = 635356.09
T = 281.83
L = 552.70
R = 1145.92
DELTA = 27°38'06" LT



Refer to the Title Sheet, recorded as Sheet 2 of 2, in Plat File 1-184A as Document No. 415085 for additional information

STATION-OFFSET TABLE		
POINT NO.	STATION	OFFSET
530	1303+00	0.00
531	1303+00	-50.00
532	1304+67.14	-50.00
533	1304+66.34	-59.83
534	1305+50	-60.00
535	1305+50	-50.00
536	1305+95.09	-50.00
537	1306+50	-50.00
538	1304+63.80	-89.73
539	1306+50	-90.00
540	1308+00	-50.00
541	1308+00	0.00

STATION-OFFSET TABLE		
POINT NO.	STATION	OFFSET
542	1308+00.00	50.00
543	1306+00.00	50.00
544	1305+95.09	50.00
545	1305+50.00	50.00
546	1305+50.00	60.00
547	1304+75.22	59.84
548	1304+74.56	50.00
549	1304+50.00	50.00
550	1304+50.00	95.00
551	1306+00.00	95.00
552	1303+00.00	50.00

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERSTS TO THE DEPARTMENT.

PARCEL		INTEREST	R/W ACRES REQUIRED			TLE
NUMBER	OWNERS	REQUIRED	NEW	EXISTING	TOTAL	ACRES
24	WISCONSIN STATE DNR	FEE & TLE	0.017	0.279	0.296	0.113
25	TATRO'S DIRT WORKS LLC	TLE	---	0.761	0.761	0.028
26	RJ HILGER & SONS INC	FEE & TLE	0.019	0.389	0.408	0.150

EMCS

I, KEVIN C. BOYER, REGISTERED LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT, I HAVE SURVEYED TRANSPORTATION PROJECT PLAT 9650-16-20-4.12 AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

__________ DATE: 10/20/2011
KEVIN C. BOYER
REGISTERED LAND SURVEYOR NUMBER 2675
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

__________ DATE: __________
(SIGNATURE)
(PRINTED NAME) __________

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 9650-16-20-4.12
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN LANGLADE COUNTY, WISCONSIN AT 12:10 PM ON 10/31/2011 AS DOCUMENT # 415317 AND FILED IN Plat File 1-184B
Sandra Fischer
SIGNATURE OF REGISTER OF DEEDS

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\Plan\040112_rp.dgn PLOT DATE : 11/4/2011 PLOT BY : tgr PLOT NAME : PLOT SCALE : 1:40
APPRAISAL PLAT DATE :

9650-16-20 4.12

TRANSPORTATION PROJECT PLAT NO: 9650-16-21- 4.01

THAT PART OF LOT 1 OF CSM 300711 AND PART OF BLOCK D OF THE ORIGINAL PLAT OF PHLOX, LOCATED IN AND PART OF THE SE1/4 OF THE NW1/4; THAT PART OF LOT 1 OF CSM 402104 LOCATED IN AND PART OF THE SW1/4 OF THE NE1/4; THAT PART OF LOT 1 OF CSM 312395 LOCATED IN AND PART OF THE NE1/4 OF THE SW1/4; THAT PART OF OUTLOT 1 AND OUTLOT 2 OF CSM 360178 AND PART OF LOT 2 OF CSM 312395 LOCATED IN AND PART OF THE NW1/4 OF THE SE1/4; ALL LOCATED IN SECTION 26, TOWNSHIP 30 NORTH, RANGE 12 EAST, TOWN OF NORWOOD, LANGLADE COUNTY, WISCONSIN.

RELOCATION ORDER STH 47 LANGLADE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

COURSE TABLE		
COURSE	BEARING	DISTANCE
W1/4 SEC. 26-100	S 87°52'34" E	2193.75'
100-101	N 2°53'43" W	3.25'
101-102	N 2°53'43" W	29.88'
102-103	S 87°52'34" E	165.86'
103-104	N 0°55'07" W	8.01'
104-118	S 87°52'34" E	75.29'
118-130	N 5°08'24" W	40.32'
130-131	S 89°31'46" E	33.16'
131-106	S 5°08'24" E	25.39'
106-107	S 49°12'21" E	25.23'
107-108	S 87°52'34" E	107.00'
108-109	S 2°02'55" W	38.97'
109-110	S 2°02'55" W	2.03'
110-111	S 2°02'55" W	41.00'
111-112	N 87°52'34" W	131.24'
112-113	S 2°07'26" W	7.21'
113-114	N 87°36'03" W	97.41'
114-115	N 87°36'03" W	53.65'
115-116	N 2°23'57" E	14.48'
116-117	N 87°52'34" W	110.77'
117-100	N 2°53'43" W	33.13'
100-C1/4 SEC. 26	S 87°52'34" E	164.71'
E1/4 SEC. 26 - 110	N 87°52'34" W	2234.74'
110 - C1/4 SEC. 26	N 87°52'34" W	231.72'
S1/4 SEC. 26 - 114	N 00°54'58" W	2602.15'
114 - C1/4 SEC. 26	N 00°54'58" W	47.81'
N1/4 SEC. 26 - 104	S 00°55'07" E	2718.78'
103 - C1/4 SEC. 26	S 00°55'07" E	33.05'

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, LANGLADE COUNTY, NAD 83 (1991) IN U.S. SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS OF PUBLIC RECORD".

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR STH 47 ESTABLISHED FROM PREVIOUS PROJECT 7828, THE ORIGINAL PLAT OF PHLOX, CSM 300711, CSM 402104, CSM 312395 AND CSM 360178.
EXISTING HIGHWAY RIGHT-OF-WAY FOR SIDE ROADS ESTABLISHED FROM THE ORIGINAL PLAT OF PHLOX, CSM 300711, CSM 402104, CSM 312395 AND FROM THE CENTERLINE OF EXISTING PAVEMENTS.

A **TEMPORARY LIMITED EASEMENT** (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLES EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

(200) FRONTIER COMMUNICATIONS OF WISCONSIN, LLC
NO EASEMENT OF RECORD - PARCEL 3,4

(201) AMERICAN TRANSMISSION COMPANY, LLC
DOC. 347737 - PARCEL 2,4,6

(202) ALLIANT ENERGY
DOC. 204872- PARCEL 2
DOC. 243415- PARCEL 3
DOC. 268253- PARCEL 5

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER(S)	INTEREST REQUIRED
200	FRONTIER COMMUNICATIONS OF WISCONSIN, LLC	RELEASE OF RIGHTS
201	AMERICAN TRANSMISSION COMPANY, LLC	RELEASE OF RIGHTS
202	ALLIANT ENERGY	RELEASE OF RIGHTS

NOTE:
SECTION LINE AND ℄ ARE NOT PARALLEL. RW IS PARALLEL TO SECTION LINES, NOT ALIGNMENT.

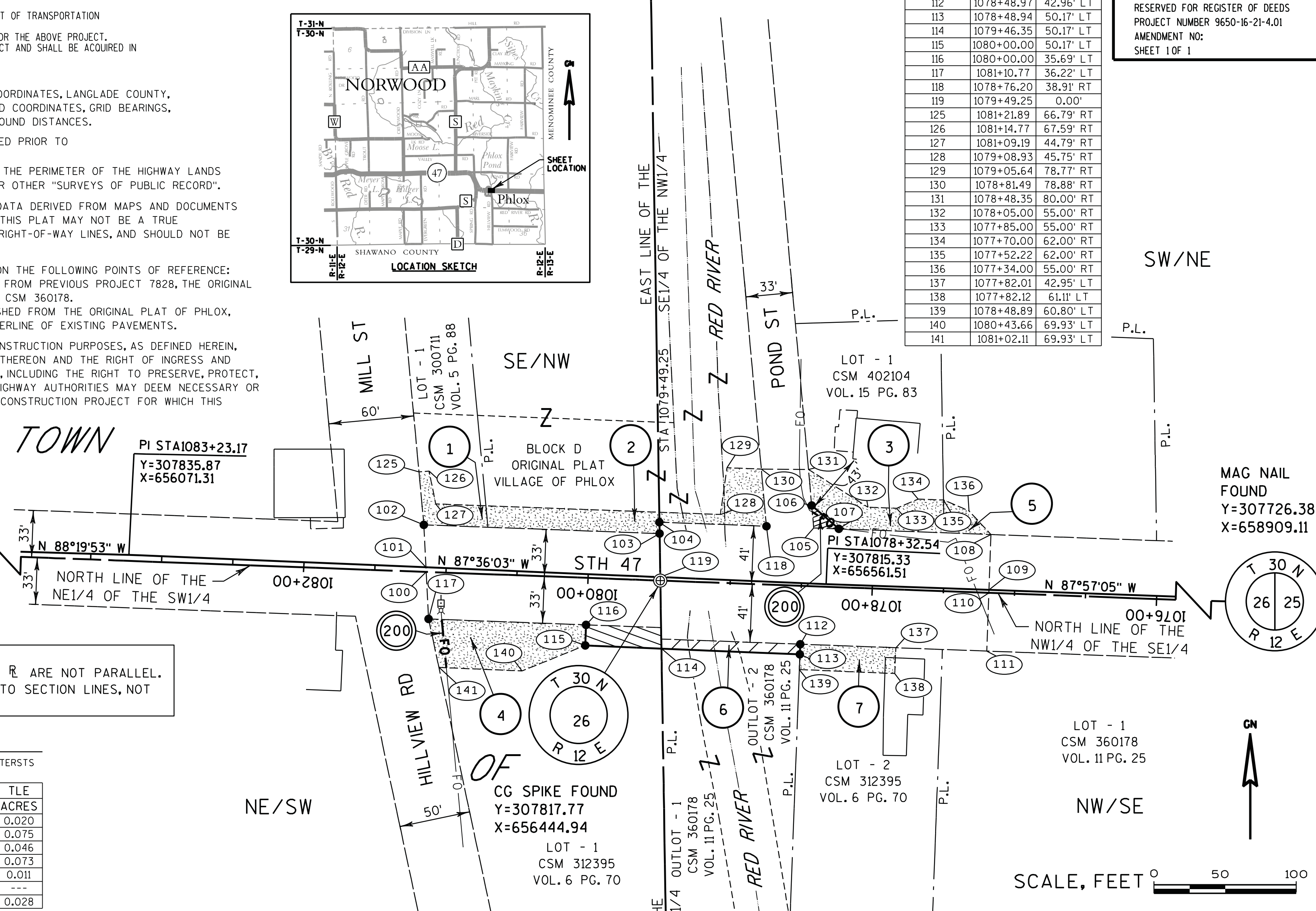
SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERSTS TO THE DEPARTMENT.

PARCEL		INTEREST	R/W ACRES REQUIRED			TLE
NUMBER	OWNERS	REQUIRED	NEW	EXISTING	TOTAL	ACRES
1	GREGORY & ROBIN VERHASSELT	TLE	---	---	---	0.020
2	TOWN OF NORWOOD	TLE	---	---	---	0.075
3	RYAN JANSSEN	FEE/TLE	0.003	---	0.003	0.046
4	CRAIG WILHELM	FEE/TLE	0.179	---	0.179	0.073
5	THOMAS J. HERRMANN	TLE	---	---	---	0.011
6	DENNIS D & DIANNE K LIGHTFOOT	FEE	0.016	---	0.016	---
7	CHARLES E KLEMP	TLE	---	---	---	0.028

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION CONTACT THE PLANNING DEPARTMENT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN RHINELANDER

ALL TLES SHOWN ON THIS SHEET ARE FOR SLOPE GRADING. EXISTING BUILDINGS WHICH OCCUPY TLE AREAS WILL NOT BE AFFECTED



STATION-OFFSET TABLE		
POINT NO.	STATION	OFFSET
100	1081+13.82	3.23' LT
101	1081+14.12	0.00'
102	1081+16.88	29.75' RT
103	1079+51.02	30.55' RT
104	1079+51.49	38.55' RT
105	1078+42.93	39.07' RT
106	1078+45.01	54.82' RT
107	1078+25.00	39.11' RT
108	1077+18.00	38.97' RT
109	1077+18.00	0.00'
110	1077+18.00	2.03' LT
111	1077+18.00	43.03 LT
112	1078+48.97	42.96' LT
113	1078+48.94	50.17' LT
114	1079+46.35	50.17' LT
115	1080+00.00	50.17' LT
116	1080+00.00	35.69' LT
117	1081+10.77	36.22' LT
118	1078+76.20	38.91' RT
119	1079+49.25	0.00'
125	1081+21.89	66.79' RT
126	1081+14.77	67.59' RT
127	1081+09.19	44.79' RT
128	1079+08.93	45.75' RT
129	1079+05.64	78.77' RT
130	1078+81.49	78.88' RT
131	1078+48.35	80.00' RT
132	1078+05.00	55.00' RT
133	1077+85.00	55.00' RT
134	1077+70.00	62.00' RT
135	1077+52.22	62.00' RT
136	1077+34.00	55.00' RT
137	1077+82.01	42.95' LT
138	1077+82.12	61.11' LT
139	1078+48.89	60.80' LT
140	1080+43.66	69.93' LT
141	1081+02.11	69.93' LT

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN LANGLADE COUNTY, WISCONSIN AT ... AS DOCUMENT ... AND FILED IN ...
SIGNATURE OF REGISTER OF DEEDS

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 9650-16-21-4.01
AMENDMENT NO:
SHEET 1 OF 1

CONVENTIONAL ABBREVIATIONS

ACCESS POINT/ DRIVEWAY CONNECTION	AP	RELEASE OF RIGHTS	ROR
ACCESS RIGHTS	AR	REMAINING	REM.
ACRES	AC.	RIGHT-OF-WAY	R/W
AND OTHERS	ET.AL.	SECTION	SEC.
CENTERLINE	C/L	STATION	STA.
CERTIFIED SURVEY MAP	CSM	TEMPORARY LIMITED EASEMENT	TLE
CORNER	COR.	VOLUME	VOL.
DOCUMENT	DOC.		
EASEMENT	EASE.		
HIGHWAY EASEMENT	H.E.		
LAND CONTRACT	LC		
MONUMENT	MON.		
PAGE	PG.		
PERMANENT LIMITED EASEMENT	PLE		
PROPERTY LINE	P.L.		
RECORDED AS	(100')		
REFERENCE LINE	R/L		

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	DELTA
LENGTH OF CURVE	L
TANGENT	TAN

CONVENTIONAL SYMBOLS

FOUND IRON PIPE/PIN — I.P. (1" UNLESS NOTED)
R/W MONUMENT — (SET)
R/W STANDARD — (SET)
SIGN — ISIGN
SECTION CORNER MONUMENT
SECTION CORNER SYMBOL
FEE (HATCH VARIES)
TEMPORARY LIMITED EASEMENT
PERMANENT LIMITED EASEMENT
R/W BOUNDARY POINT — RWB20
PARCEL NUMBER — 02
SIGN NUMBER (OFF PREMISE) — 21
BUILDING

PROPOSED R/W LINE
EXISTING H.E. LINE
PROPERTY LINE
LOT & TIE LINES
SLOPE INTERCEPTS
CORPORATE LIMITS
NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)
NO ACCESS (BY ACQUISITION)
NO ACCESS (BY STATUTORY AUTHORITY)
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
EXISTING CENTERLINE
PROPOSED REFERENCE LINE
PARALLEL OFFSET

CONVENTIONAL UTILITY SYMBOLS

WATER	W
GAS	G
TELEPHONE	T
OVERHEAD TRANSMISSION LINES	OH
ELECTRIC	E
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	SS

NON COMPENSABLE / COMPENSABLE
POWER POLE
TELEPHONE POLE
TELEPHONE PEDESTAL
ELECTRIC TOWER

EMCS

I, KEVIN C. BOYER, REGISTERED LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT, I HAVE SURVEYED TRANSPORTATION PROJECT PLAT 9650-16-21-4.01 AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

DATE: 06/18/2013
KEVIN C. BOYER, RLS-2675

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION
DATE:
(SIGNATURE)
(PRINTED NAME)

BEGIN PROJECT
9650-16-70
STA 1077+08
Y=307810.88
X=656685.97
MATCH EXISTING

STA 1077+91 TO STA 1078+81
MGS THRIE BEAM TRANSITION &
MGS GUARDRAIL TERMINAL EAT

ATC & ALLIANT ENERGY (ELECTRIC)

LANDMARK REFERENCE MONUMENTS (DO NOT REESTABLISH SECTION CORNER ON BRIDGE DECK)

T 30 N
26
R 12 E

STA 1079+61 TO STA 1080+51
MGS THRIE BEAM TRANSITION &
MGS GUARDRAIL TERMINAL EAT
(PLACE FACE OF RAIL 5-INCHES BACK FROM FACE OF CURB)

RED RIVER

HILLVIEW RD

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
8	1079+30, 20' RT	CHISELED "X" ON TOP OF CURB	1292.69
9	1082+93, 23' LT	RR SPIKE IN POWER POLE	1299.73

X = CLEARING AND GRUBBING

+/- STA 1083+91
CONTROL POINT 8
Y=307804.22
X=656001.46
0.75" REBAR SET
W/ BLUE EMCS CAP

SLOPE INTERCEPT
TLE
FRONTIER COMMUNICATIONS (TELEPHONE)
CITY GAS (GAS)
FEE
BASE AGG PE
REMOVING GUARDRAIL
RW
CAUTION
REMOVING CURB & GUTTER

PI STA 1078+32.54
Y=307815.33
X=656561.51

B-34-0046

1077+00 | 1078+00 | 1079+00 | 1080+00 | STH 47 | 1081+00 | 1082+00 | 1083+00

N 87°57'05" W

N 87°36'03" W

END PROJECT 9650-16-70
STA 1081+28
MATCH EXISTING

BM 9

PI STA 1083+23.17
Y=307835.87
X=656071.31

ATC & ALLIANT ENERGY (ELECTRIC)
REMOVING SMALL PIPE CULVERT
REMOVING GUARDRAIL
FRONTIER COMMUNICATIONS (TELEPHONE)
0.32%
ASPH PE
SLOPE INTERCEPT
TLE
FEE
POND ST
BM 8
RETAINING WALL R-34-0002
GRADE TO CORRECT EXISTING EROSION ISSUES
SEE LANDSCAPING PLAN FOR ADDITIONAL CLEARING AND GRUBBING AND TREE PLANTING TO BE COMPLETED UNDER CONSTRUCTION PERMIT
PARK
EXISTING STORM SEWER TO REMAIN
ALLIANT ENERGY (ELECTRIC)
MILL ST
ADJUST SS MH

+/- STA 1075+70
CONTROL POINT 7
Y=307836.98
X=656834.45
0.75" REBAR SET
W/ BLUE EMCS CAP

FRONTIER COMMUNICATIONS (COMMUNICATIONS)
END CONSTRUCTION, 77' RT

PLACE BOULDERS IN THE RED RIVER PER THE SPECIAL PROVISIONS

SLOPE INTERCEPT FOR GRADING TO BE COMPLETED UNDER CONSTRUCTION PERMIT

N

STA 1079+21
REMOVE STRUCTURE B-34-0839
1 SPAN
CONCRETE GIRDER DECK
30' OVERALL LENGTH
38' OVERALL WIDTH

STA 1079+21
STRUCTURE B-34-0046 REQ'D
1 SPAN
36" PRESTRESSED CONCRETE GIRDER
42' CLEAR ROADWAY
0° RHF

VPI STA 1077+08.00
VPI EL 1288.88
VPC STA 1077+68.00
VPC EL 1288.35
VCL = 340'
K = 64
LP STA 1078+24.38
LP EL 1288.10
-0.88%
VPI STA 1079+38.00
VPI EL 1286.86
FINISHED PROFILE
FINISHED PROFILE ELEVATION
EXISTING PROFILE ELEVATION
VPI STA 1081+28.00
VPI EL 1295.25
4.41%
VPT STA 1081+08.00
VPT EL 1294.36
EXISTING PROFILE

1077+00	1078+00	1079+00	1080+00	1081+00	1082+00	1083+00
1288.89	1288.72 / 1288.73	1288.51 / 1288.51	1288.29 / 1288.29	1288.15 / 1288.15	1288.01 / 1288.10	1288.11 / 1288.15
1288.21	1288.30	1288.65 / 1288.55	1288.90 / 1288.89	1289.23 / 1289.33	1289.59 / 1289.87	1290.29 / 1290.50
1291.08 / 1291.24	1291.94 / 1292.06	1292.90 / 1292.99	1294.01 / 1294.02	1295.11 / 1295.11	1296.22	1297.33
1297.89	1298.43	1298.98	1299.49	1299.88		

PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	PLAN & PROFILE	SHEET 46	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\050101_pp.dgn | PLOT DATE : 8/5/2014 | PLOT BY : emo | PLOT NAME : | PLOT SCALE : 1:40

WISDOT/CADDS SHEET 30

LEGEND

- REMOVING ASPHALTIC SURFACE APPROXIMATE 40' WIDTH

- INSTALL 4-INCH ASPHALTIC SURFACE TEMPORARY OVER 12-INCH BASE AGGREGATE DENSE AFTER INSTALLATION OF TEMPORARY CULVERT PIPE

-REMOVE TEMPORARY CULVERT PIPE & PATCH WITH 5.5-INCHES HMA PAVEMENT TYPE E-1 OVER 12-INCH BASE AGGREGATE DENSE.

DELINEATED WETLAND BOUNDARY

PERMITTED WETLAND IMPACTS

PROPOSED SIGN MOUNTED ON DOUBLE SUPPORT

X — SIGN - PLACE NEW

STH 47
CURVE 1 DATA

PI = 1303+15.39
Y = 310981.49
X = 635645.80
PC = 1300+24.48
Y = 310857.08
X = 635908.77
PT = 1305+94.26
Y = 310965.40
X = 635355.34
T = 290.91
L = 569.78
R = 1145.92
DELTA = 28°29'19" LT
D = 05°00'00"
SE = 5.5%
SE TRANSITION (T) = 200
RO (RUNOFF) = 147

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
5	1301+22, 43' RT	RR SPIKE IN POWER POLE	1380.97
6	1310+25, 47' RT	RR SPIKE IN POWER POLE	1378.22

X = CLEARING AND GRUBBING

N

REMOVE FALLEN TREE, INCIDENTAL TO CLEARING AND GRUBBING

TEMPORARY SLOPE INTERCEPT, WETLAND AREAS TO BE RESTORED AFTER REMOVAL OF CULVERT PIPE TEMPORARY (SEE CONSTRUCTION DETAILS)

PLACE FISH CRIBS IN THE WEST BRANCH RED RIVER, SEE CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION

REMOVE BARREL IN RIVER, INCIDENTAL TO FISH CRIB ITEMS

WEST BRANCH RED RIVER
13-1
72" X 24"
12

REMOVING FENCE

TEMPORARY SLOPE INTERCEPT, WIDENING AREA TO BE RESTORED AFTER TEMPORARY WIDENING IS REMOVED

FRONTIER (TELEPHONE)

SLOPE INTERCEPT

REMOVING GUARDRAIL

CULVERT PIPE TEMPORARY
48-INCH STA 1305+19
SKEW 12° LHF

WPS (ELECTRIC)

REMOVING GUARDRAIL

PT STA1305+94.26

SLOPE INTERCEPT

CITY GAS (GAS)

WPS (ELECTRIC)

SLOPE INTERCEPT

WEST BRANCH RED RIVER
13-1
72" X 24"
11

EXTEND C-34-0008
(SEE STRUCTURE PLANS)

TEMPORARY SLOPE INTERCEPT, WETLAND AREAS TO BE RESTORED AFTER REMOVAL OF CULVERT PIPE TEMPORARY (SEE CONSTRUCTION DETAILS)

W BRANCH RED RIVER

1302+00 STH 47 1303+00 1304+00 CURVE 1 1305+00 1306+00 S 86°49'45" W 1307+00 STH 47 1308+00

100' BM 5

90' CONTROL POINT 5
Y=310943.47
X=635824.24
0.75" REBAR SET
W/ BLUE EMCS CAP

CONTROL POINT 6
Y=310978.46
X=634899.06
0.75" REBAR SET
W/ BLUE EMCS CAP 240'

BM 6 210'

BEGIN PROJECT
9650-16-61
STA 1303+00
Y = 310943.98
X = 635648.01
BUTT JOINT REQ'D

END PROJECT
9650-16-61
STA 1307+00
BUTT JOINT REQ'D

RW, OH, G, TLE, POST, GUY, CAUTION

NOTE:

SEE SDD "PAVEMENT MARKING (MAINLINE)" FOR NO PASSING CENTERLINE AND EDGE LINE PERMANENT PAVEMENT MARKING

PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	PLAN	SHEET 47	E

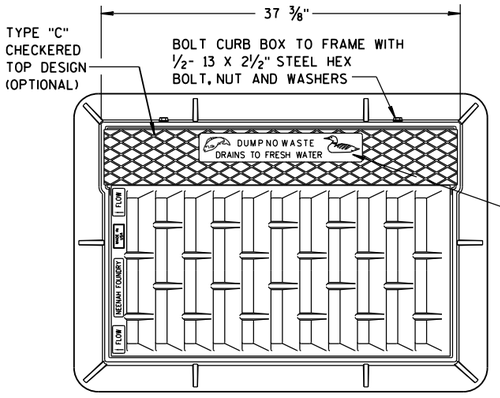
FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\050102_pp.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 44

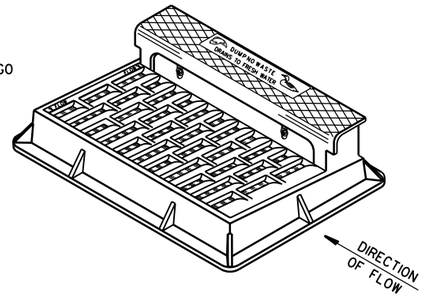
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08A09-01	CATCH BASINS 2X3-FT AND 2.5X3-FT
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
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)
14A02-01	TREE PLANTING DETAIL
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B29-01	SAFETY EDGE
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
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

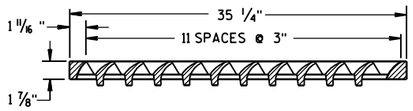
6

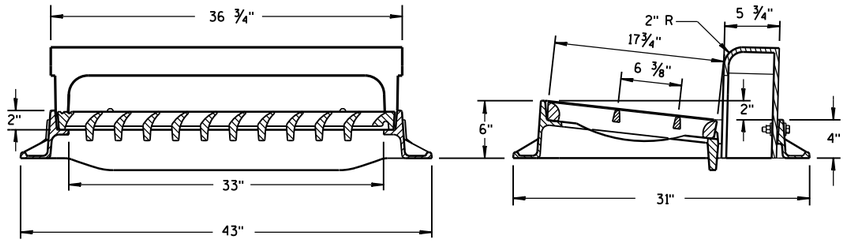


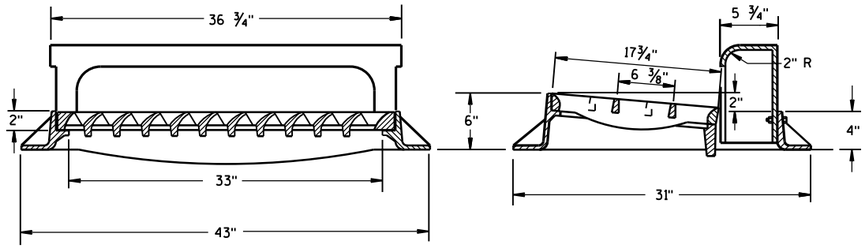
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

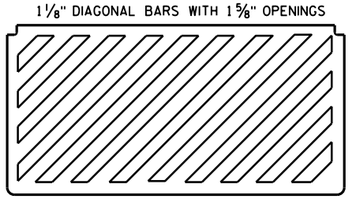






TYPE "H"

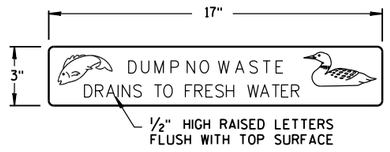
NOTE: EITHER CASTING IS ACCEPTABLE



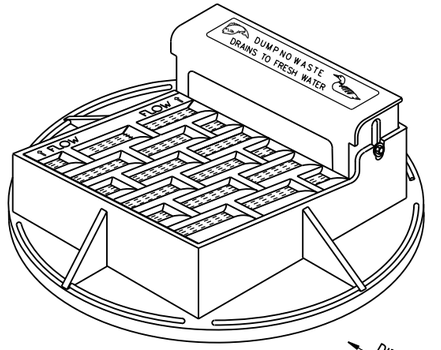
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

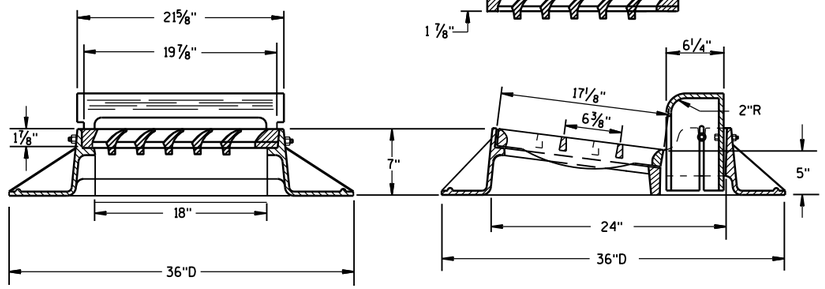


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



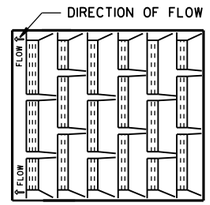
TYPE "A"

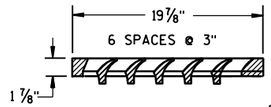
GENERAL NOTES

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.

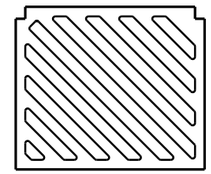
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.





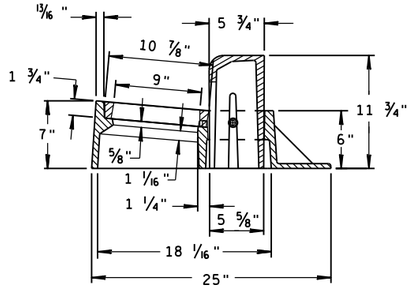
1" DIAGONAL BARS WITH 1 1/2" OPENINGS

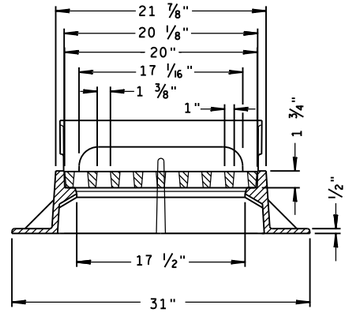


SPECIAL GRATE FOR TYPE "A" COVER

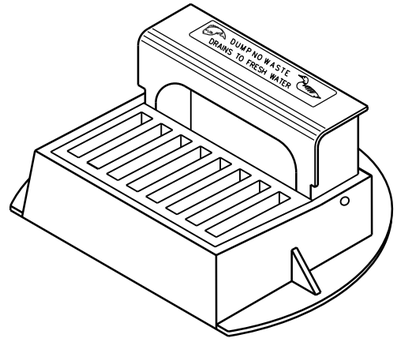
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





TYPE "Z"

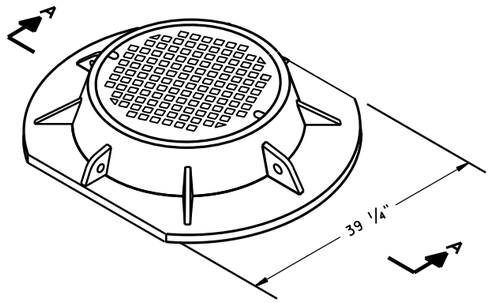


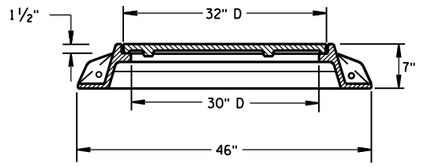
INLET COVERS
TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

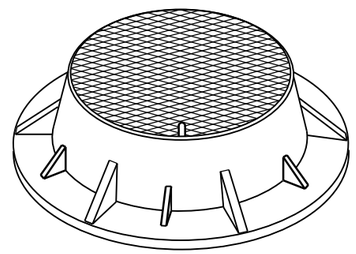
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

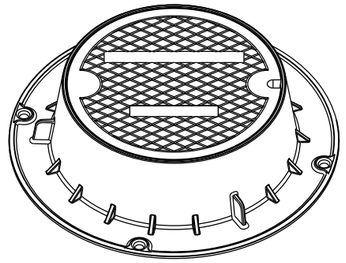
S.D.D. 8 A 5-19a

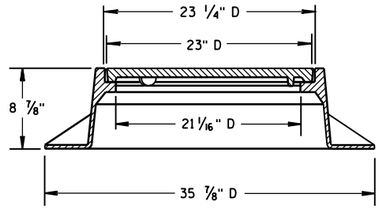


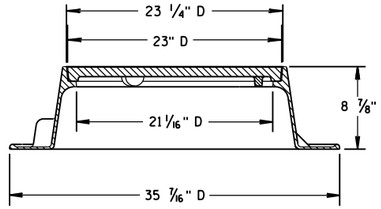


SECTION A-A
TYPE "K"









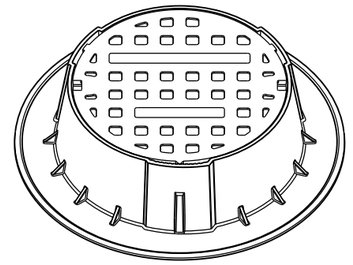
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

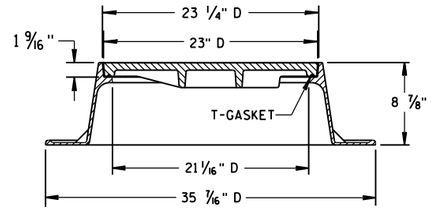
GENERAL NOTES

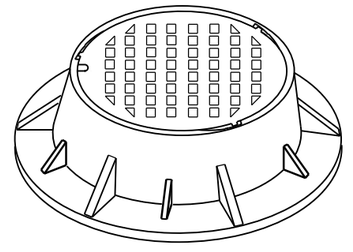
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

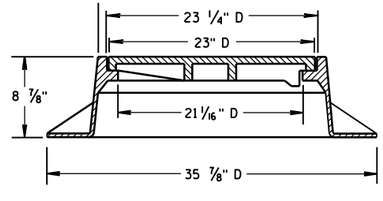
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

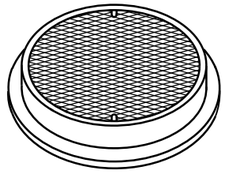


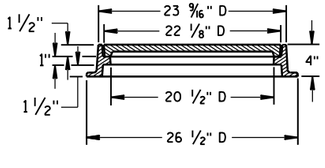




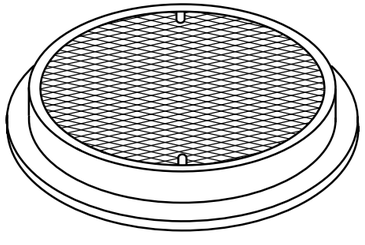


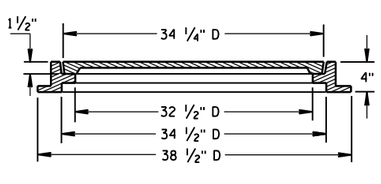
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



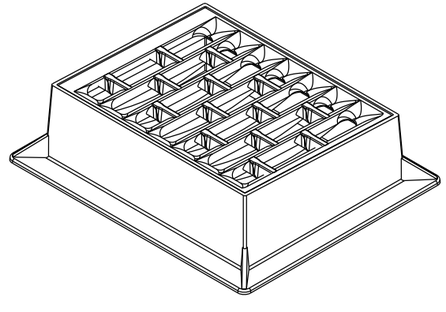


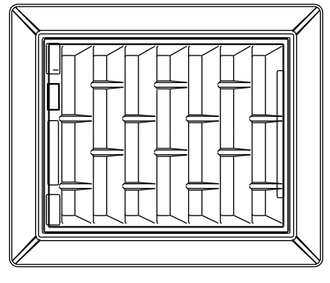
TYPE "L"

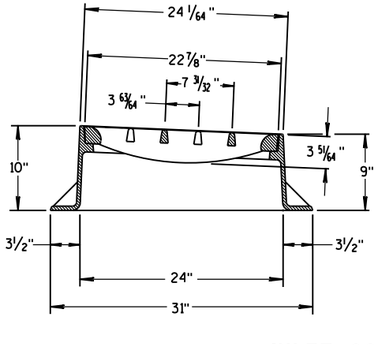


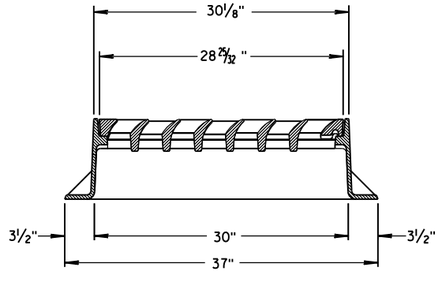


TYPE "M"









INLET COVER TYPE "BW"

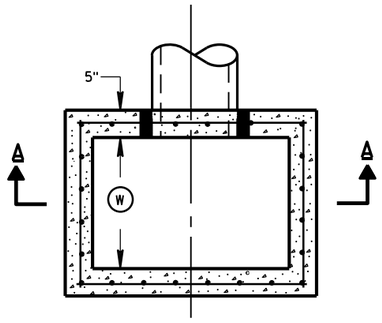
INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

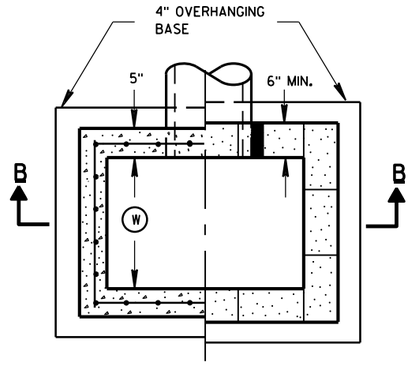
APPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

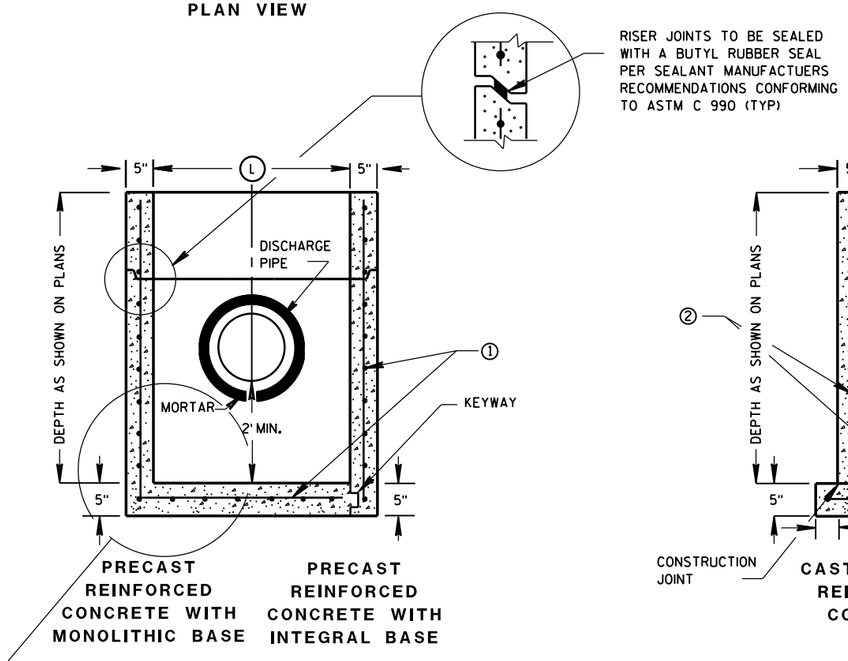
S.D.D. 8 A 5-19d



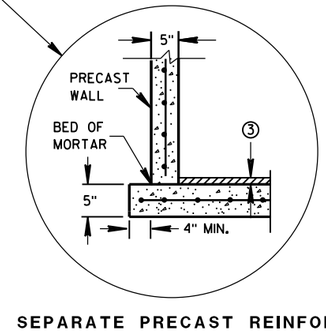
PLAN VIEW



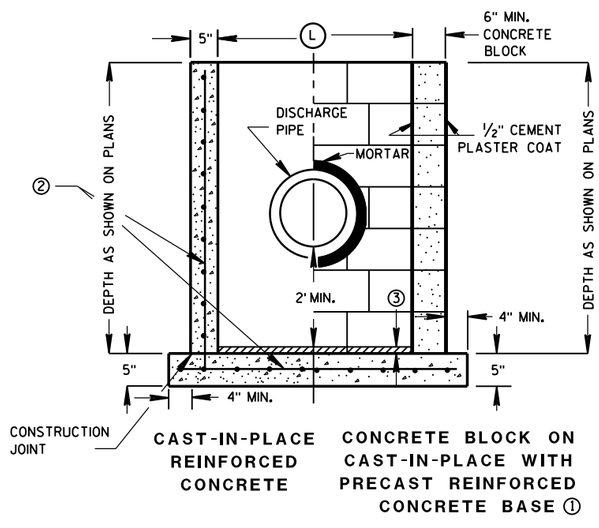
PLAN VIEW



SECTION A-A



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION



SECTION B-B

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

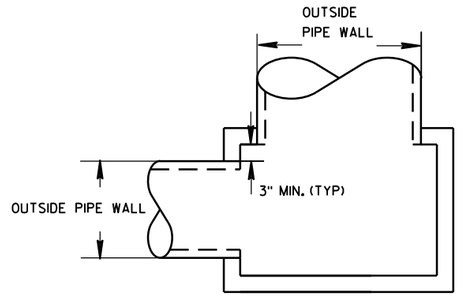
③ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER MATRIX

CATCH BASIN SIZE		INLET COVER TYPE	F	ALL H'S
	WIDTH (W) (FT)	LENGTH (L) (FT)		
2X3-FT	2	3		X
2.5X3-FT	2.5	3	X	

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	WIDTH (IN)	LENGTH (IN)
2X3-FT	12	24
2.5X3-FT	18	24

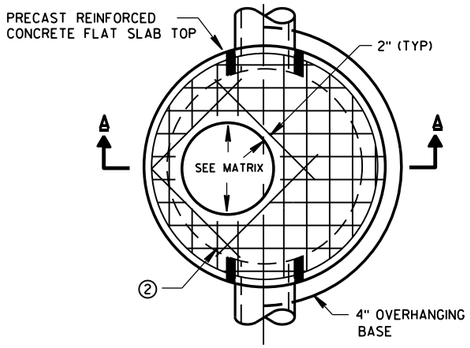


DETAIL "A"

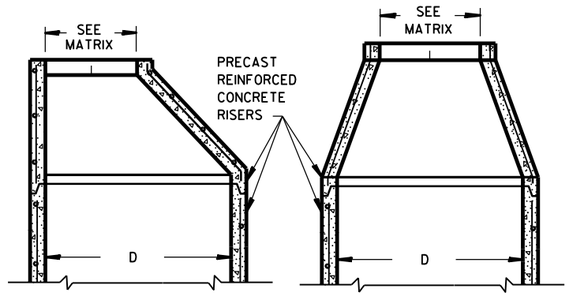
CATCH BASINS 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

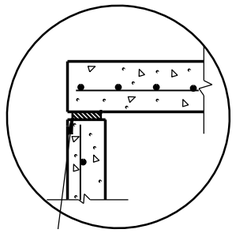


PLAN VIEW CIRCULAR OPENING

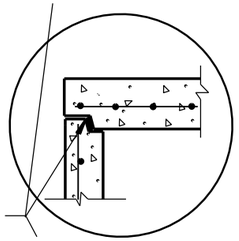


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

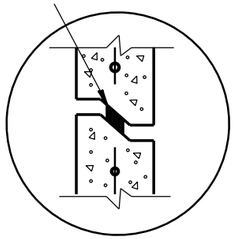


TOP WITH PLAIN END JOINT



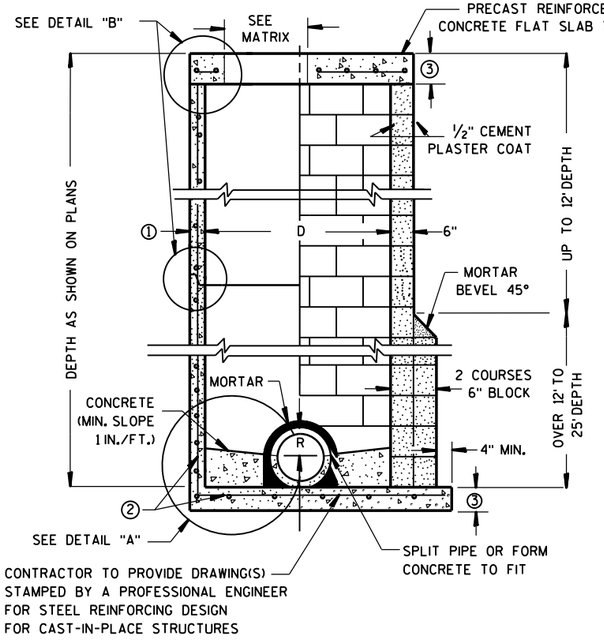
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



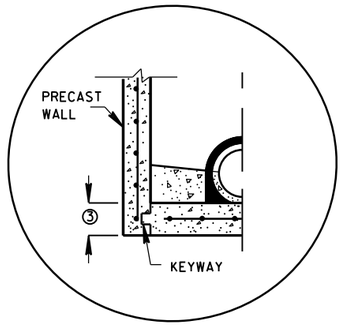
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

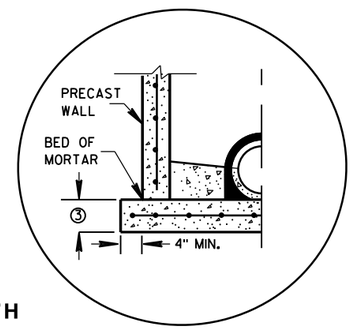


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

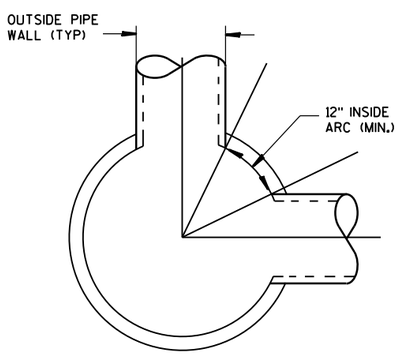


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

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

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

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

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

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

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6/5/2012 — DATE
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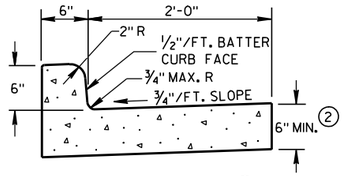
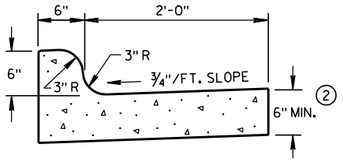
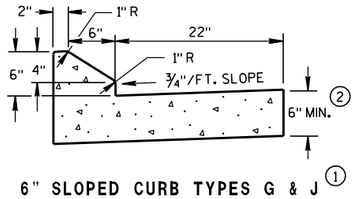


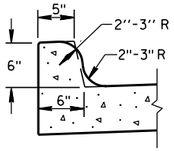
TYPES A & D (1)



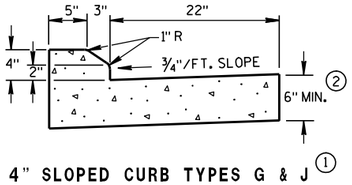
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

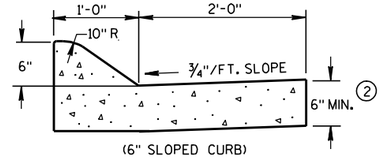


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

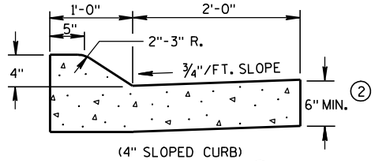


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

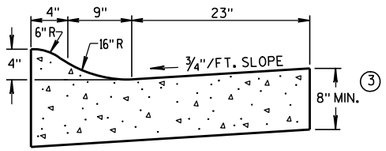


(6" SLOPED CURB)



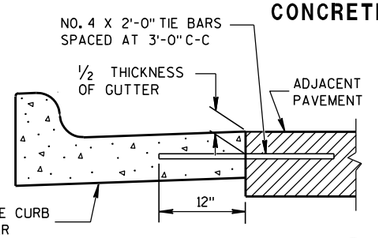
(4" SLOPED CURB)

TYPES A & D (1)

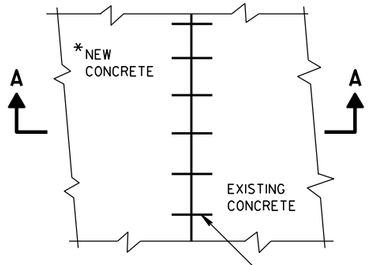


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

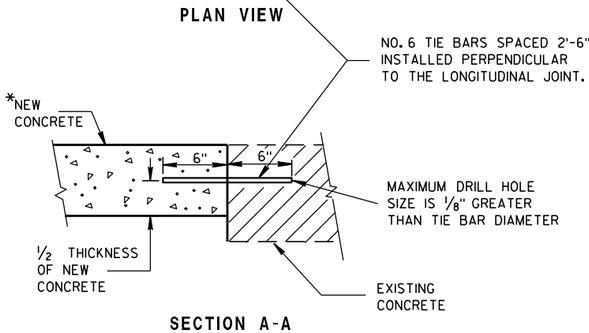


TYPICAL TIE BAR LOCATION (1)



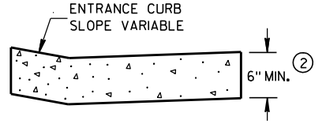
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW

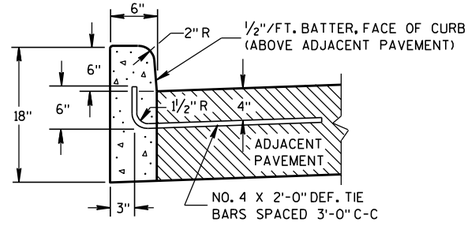


SECTION A-A

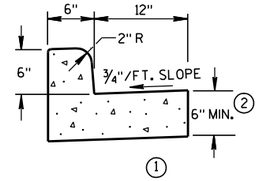
TIE BARS DRILLED INTO EXISTING PAVEMENT



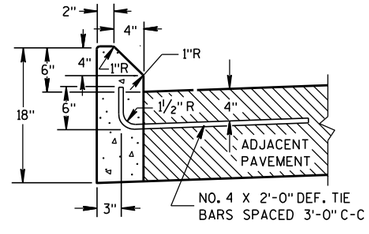
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



(1)
TYPES A & D

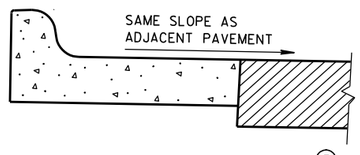


(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"

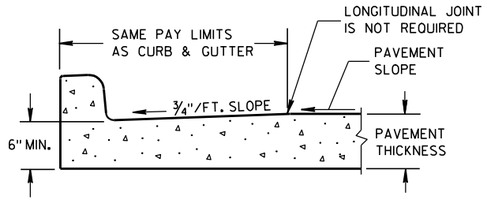


(1)
TYPES G & J

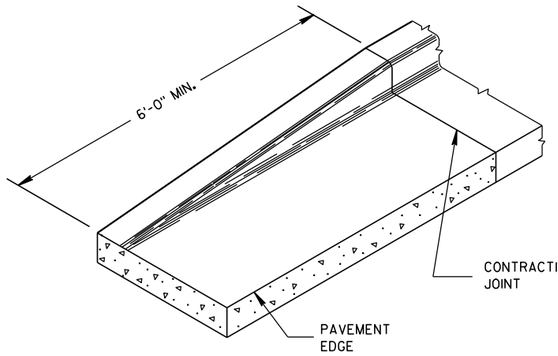
CONCRETE CURB



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

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 AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

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

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

(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
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9/4/08 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
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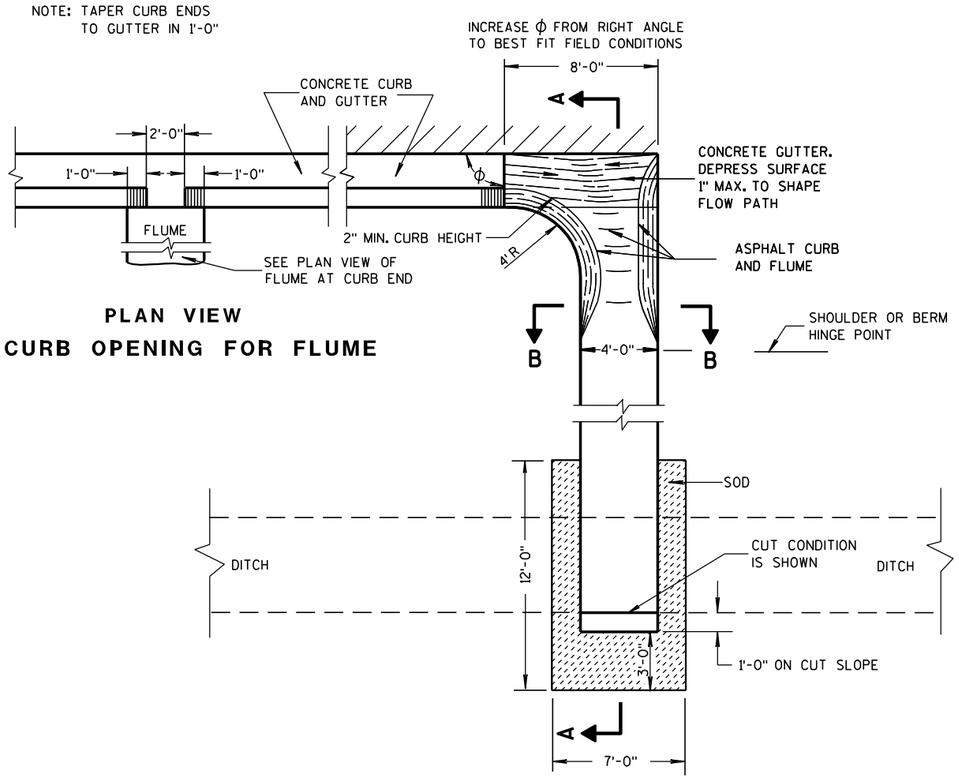
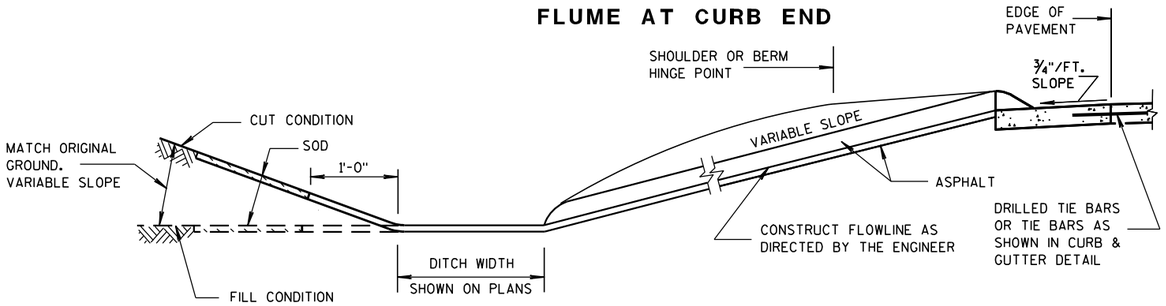
ASPHALTIC FLUME

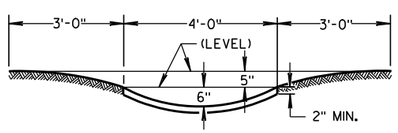


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

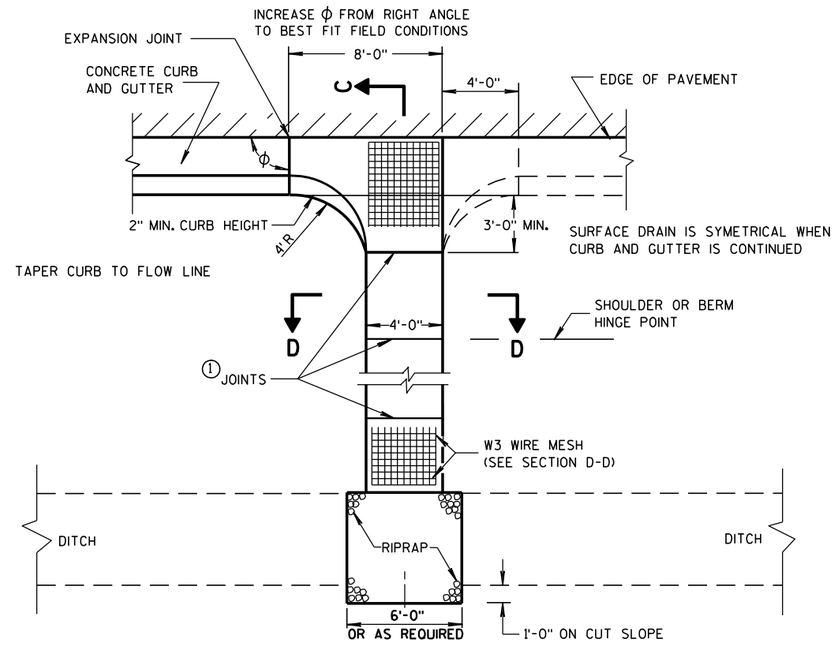
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE ⅛ TO ¼ INCH WIDE BY 1½ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

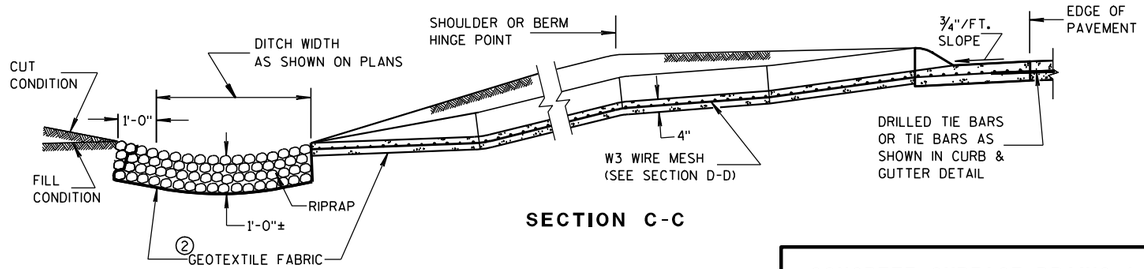
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

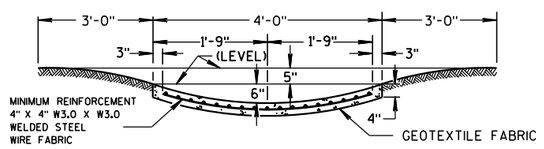
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

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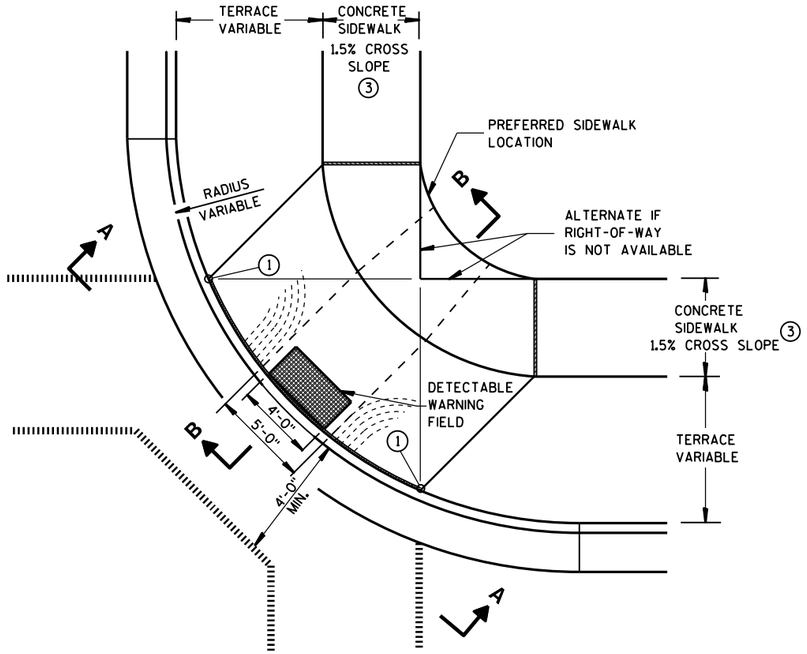
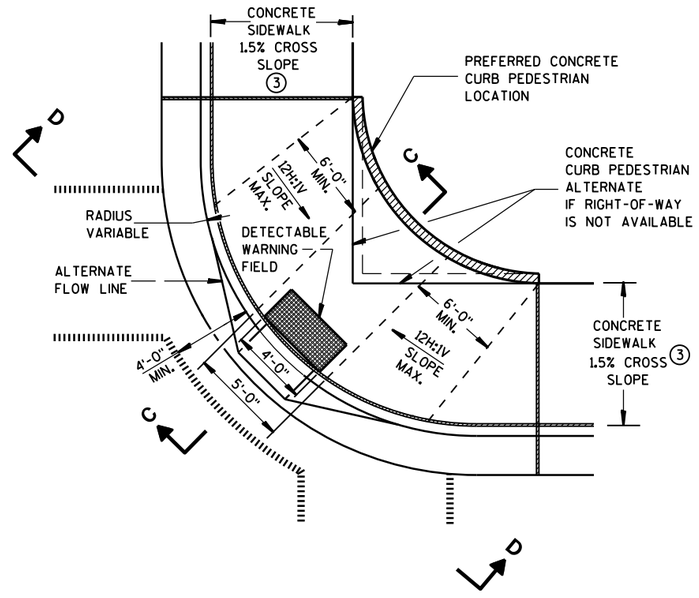


PLAN VIEW

TYPE 1 RAMP

(CENTER OF CORNER RADIUS)



PLAN VIEW

TYPE 1-A RAMP

(NO TERRACE)

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.

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

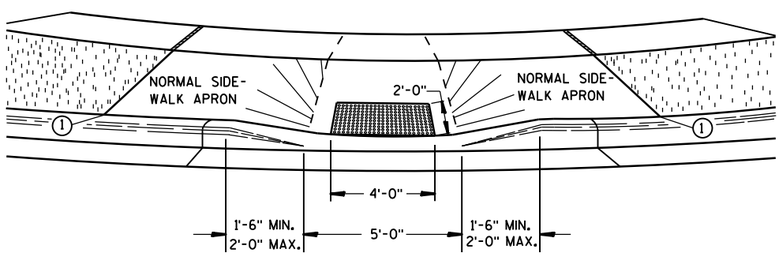
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

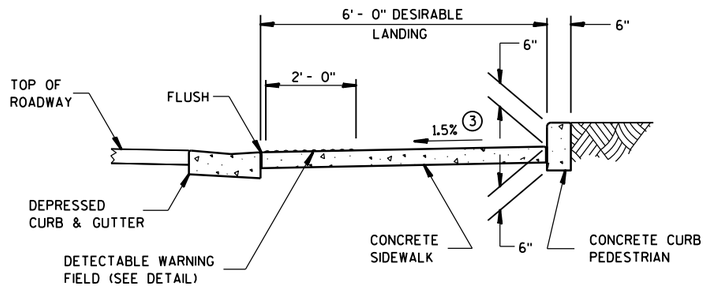
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

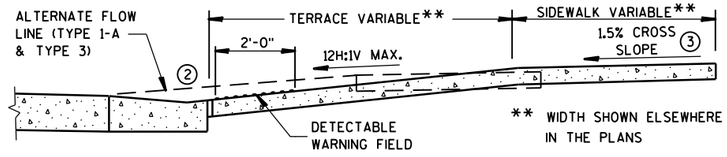
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



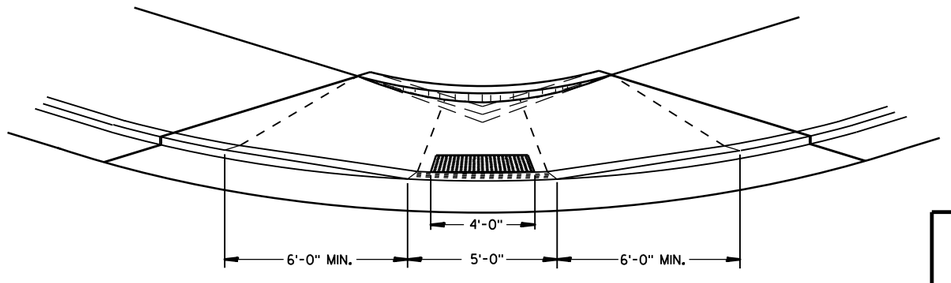
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
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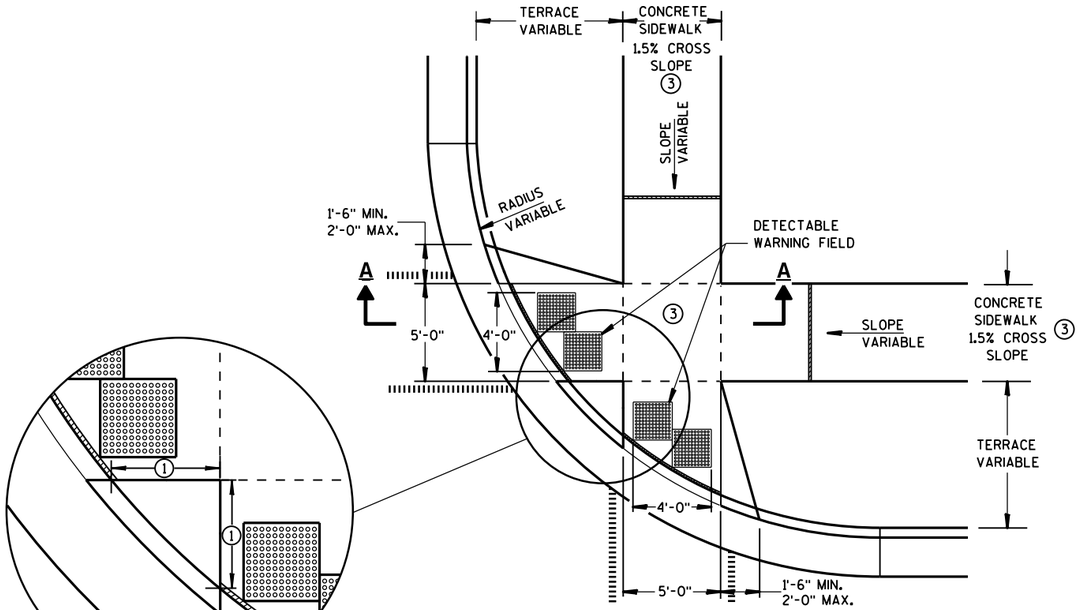
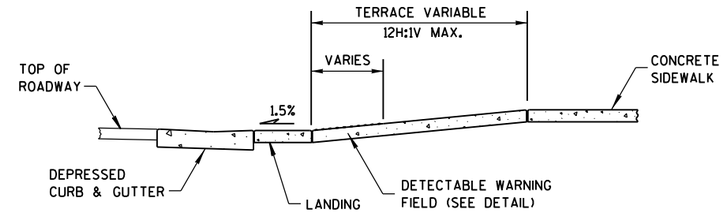
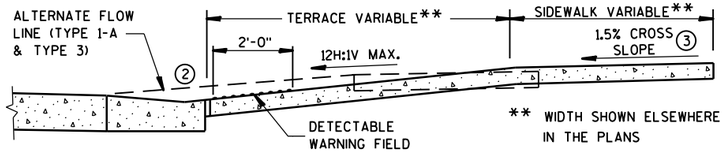
S.D.D. 8 D 5-15a



PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)



SECTION A-A



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

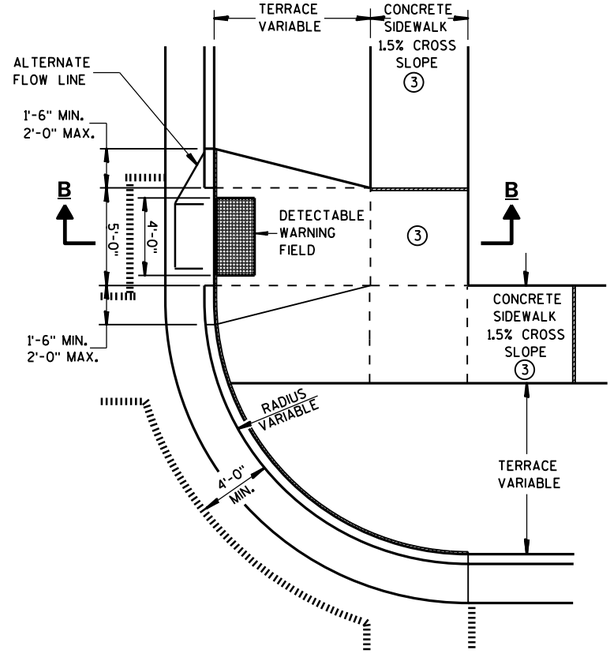
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



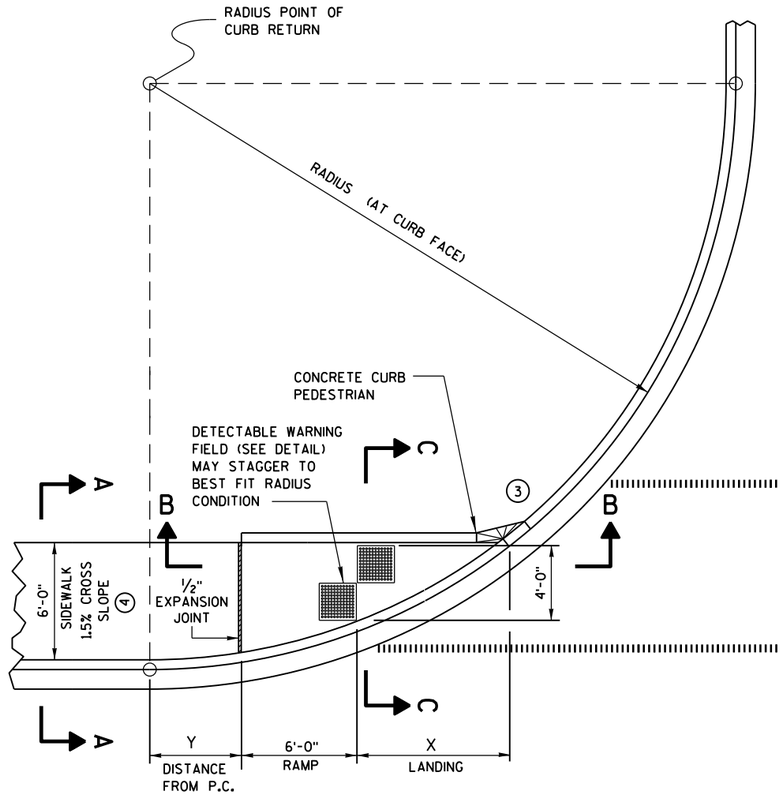
PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

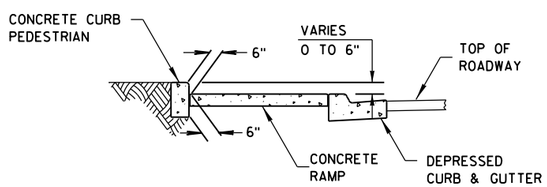
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

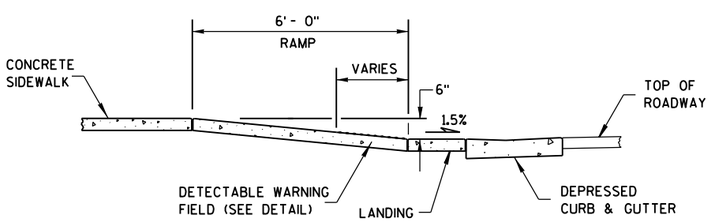
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



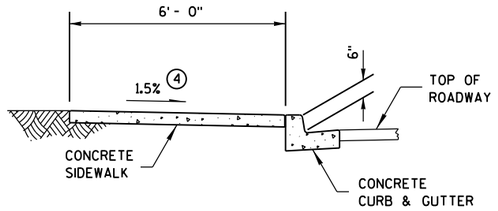
SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1¾"	2'-7¼"
30 FEET	7'-11¾"	4'-8¼"
40 FEET	9'-5¼"	6'-5"
50 FEET	10'-8¾"	7'-11¼"
60 FEET	11'-10¼"	9'-3½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

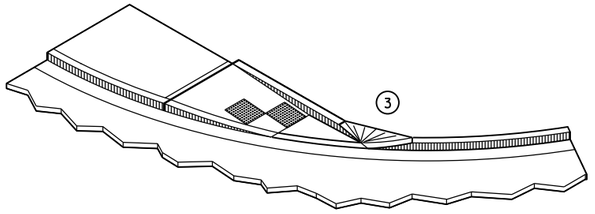
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

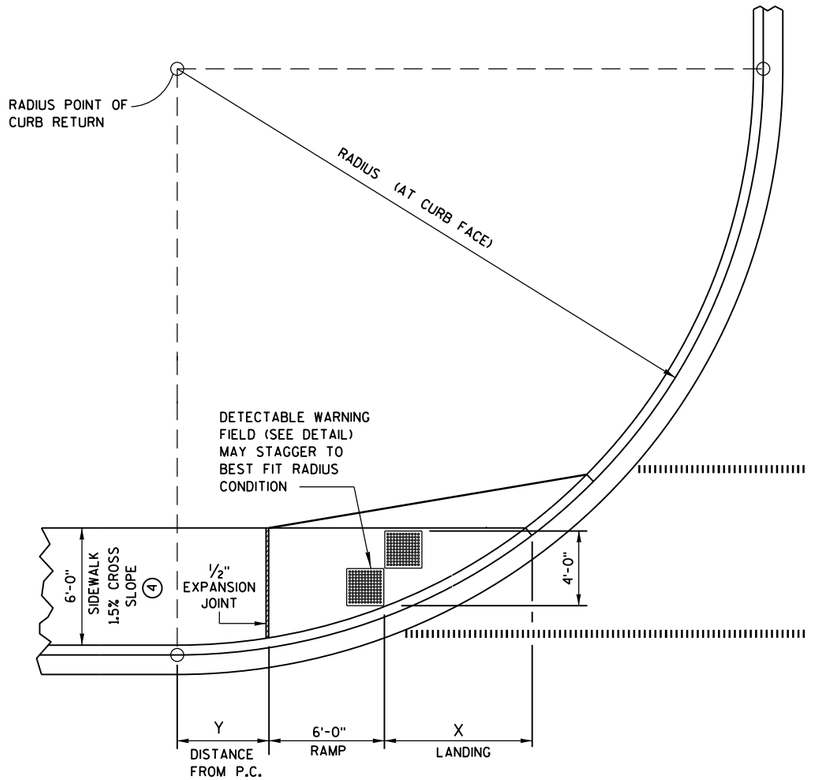
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

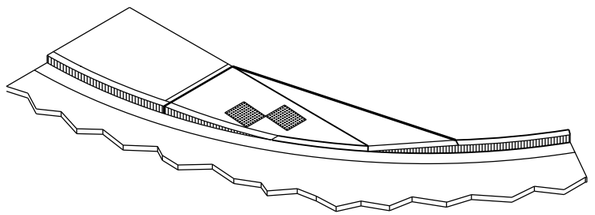
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

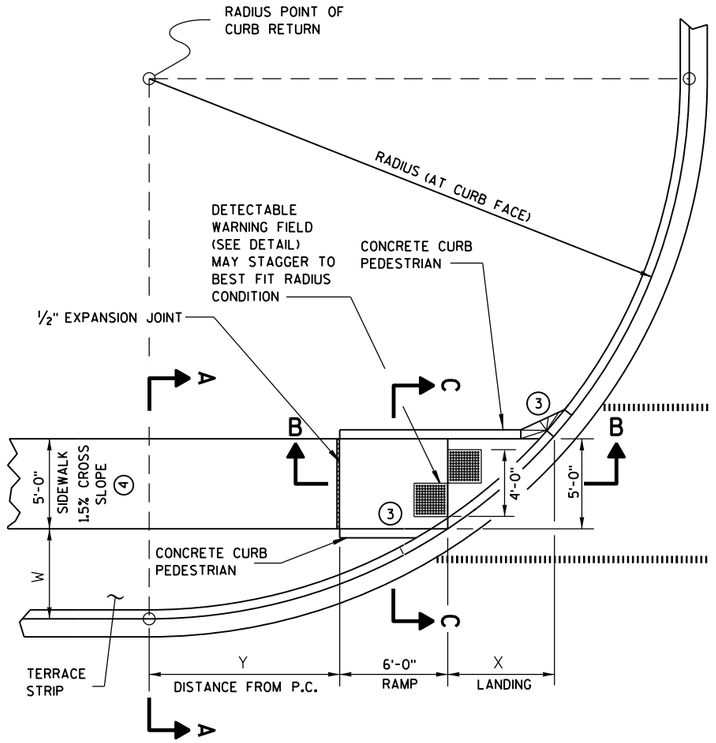
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15c



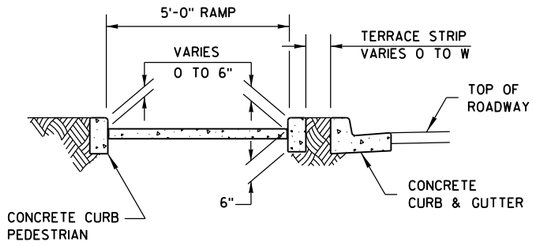
CURB RAMP TYPE 4B
PLAN VIEW

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5½"	4'-6½"	4'-8½"	6'-0"	4'-1"	7'-2¾"	3'-7"	8'-3½"	3'-1½"	9'-2½"
30 FEET	7'-3¾"	7'-1"	6'-5½"	8'-11½"	5'-9¼"	10'-7"	5'-2½"	12'-0"	4'-8¾"	13'-3¼"
40 FEET	8'-9½"	9'-2½"	7'-10"	11'-5¼"	7'-1"	13'-4½"	6'-5¾"	15'-¾"	5'-11½"	16'-7¼"
50 FEET	10'-¾"	11'-¾"	9'-¼"	13'-7¼"	8'-2½"	15'-9½"	7'-6½"	17'-9"	6'-11¾"	19'-6¼"
60 FEET	11'-2½"	12'-8¾"	10'-¾"	15'-6½"	9'-2¼"	17'-11¾"	8'-5¾"	20'-1¾"	7'-10½"	22'-1½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION C-C FOR TYPE 4B

GENERAL NOTES

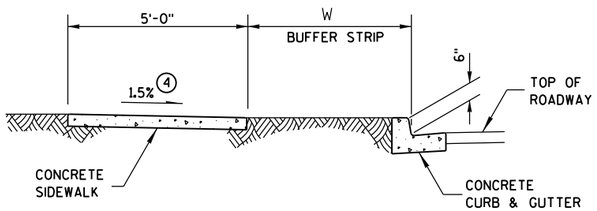
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

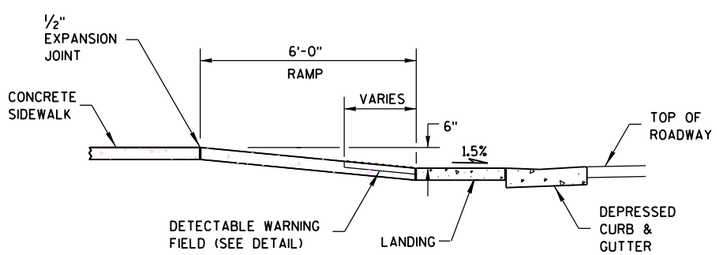
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

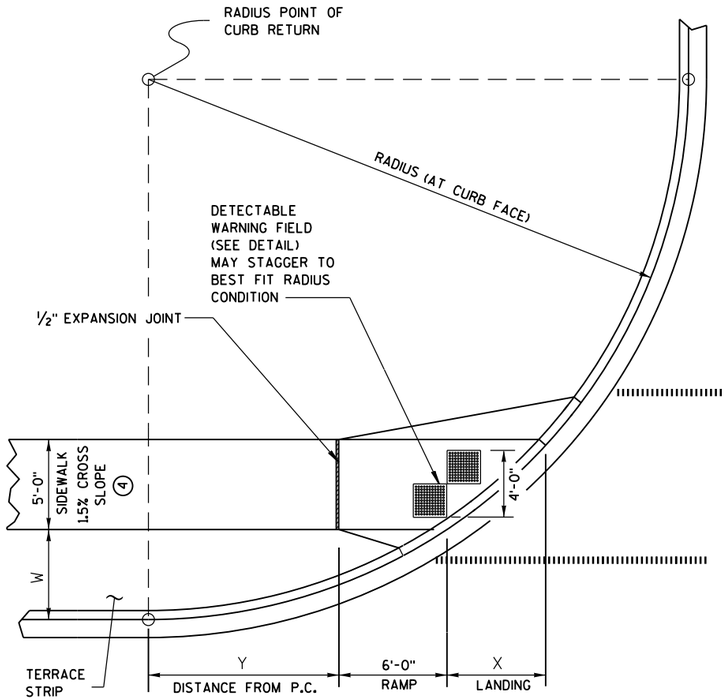
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



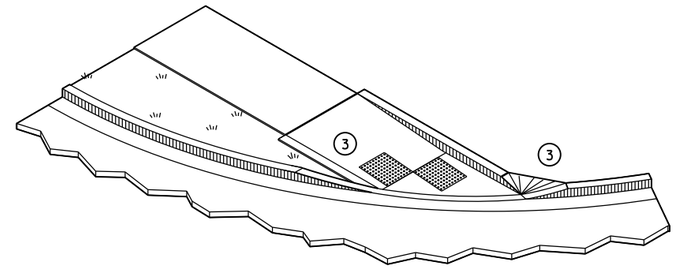
SECTION A-A FOR TYPE 4B



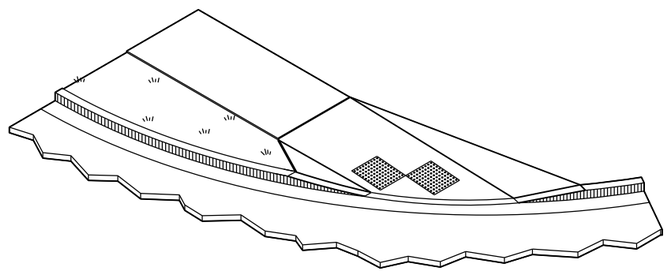
SECTION B-B FOR TYPE 4B



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



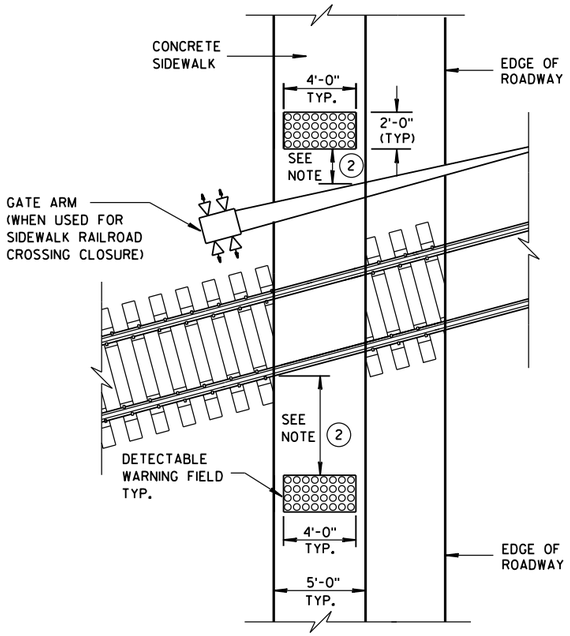
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS
TYPE 4B AND 4B1

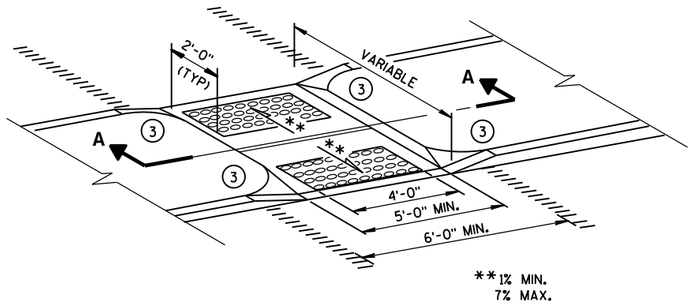
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

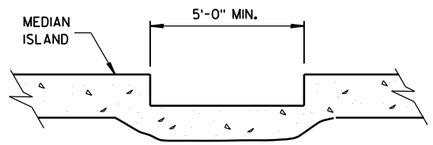
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(1) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

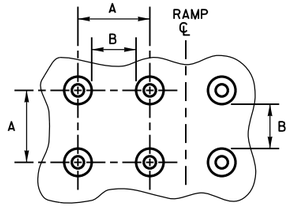
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



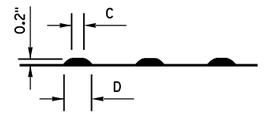
SECTION A-A



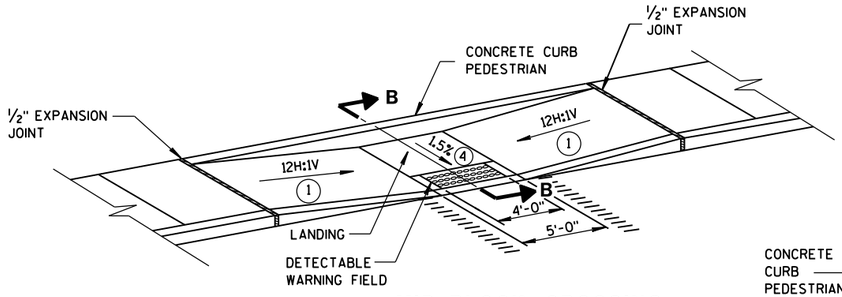
PLAN VIEW

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

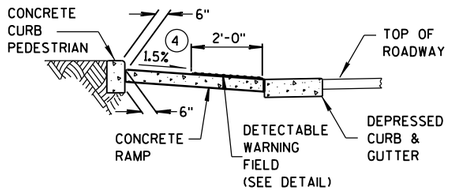
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

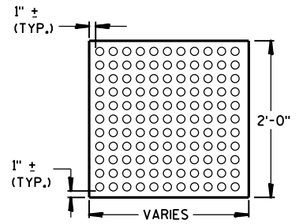


MID-BLOCK CROSSING
TYPE 7A



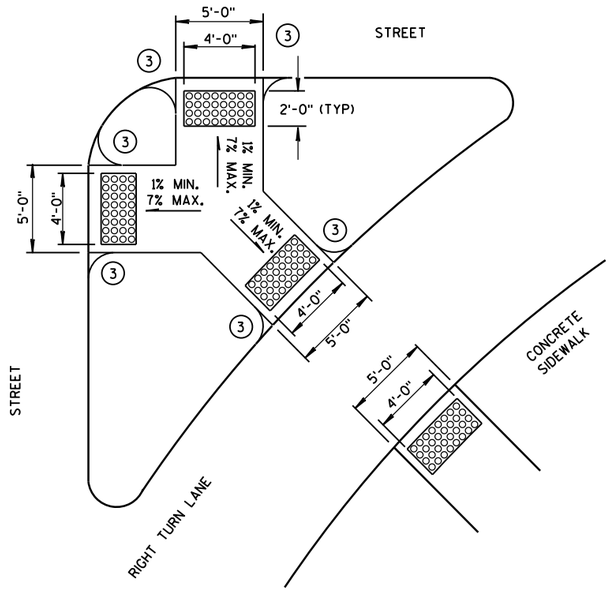
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

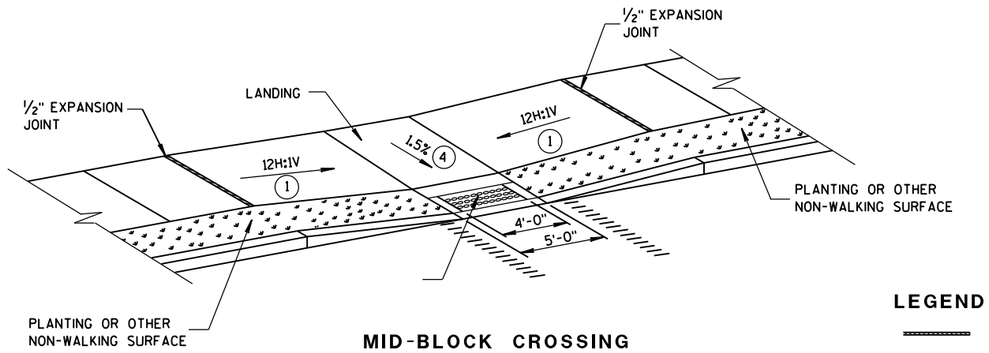


PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

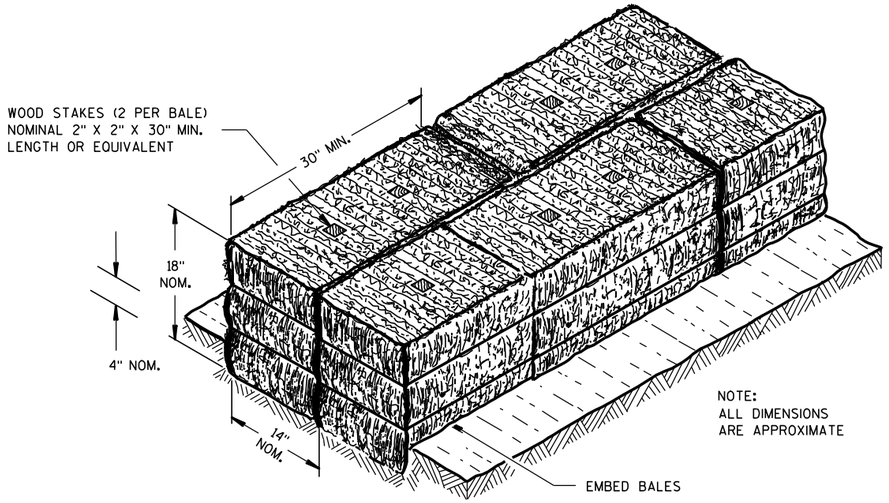
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

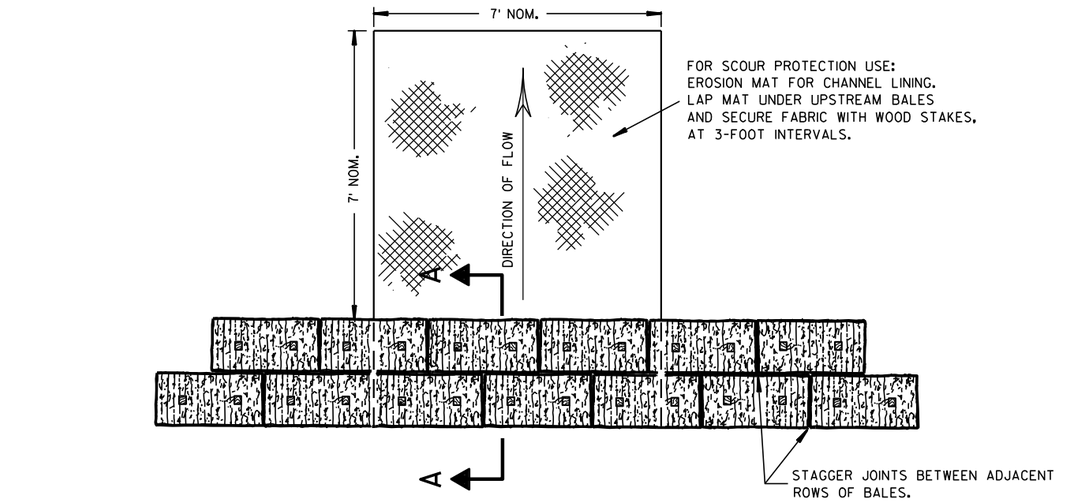
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

6

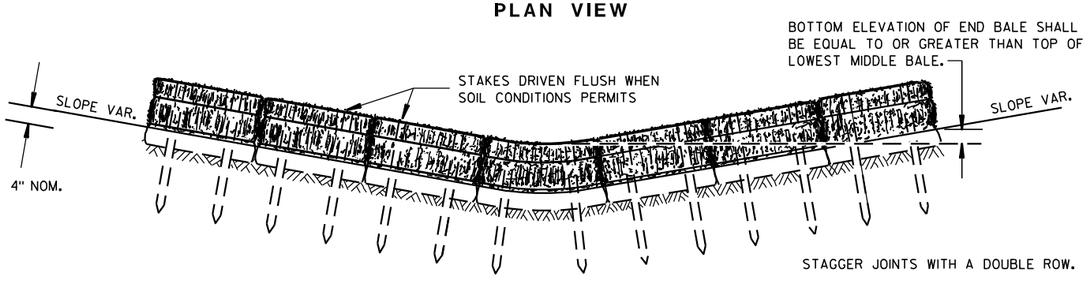
S.D.D. 8 D 5-15e



SECTION A-A



PLAN VIEW



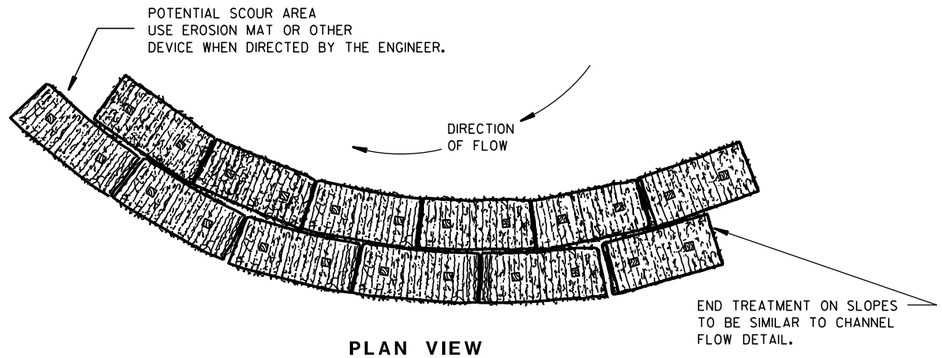
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

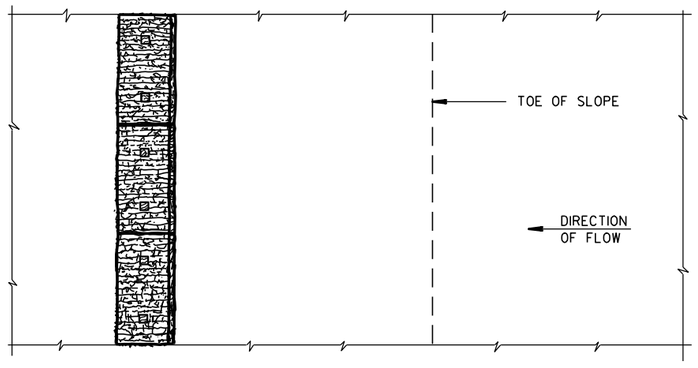
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

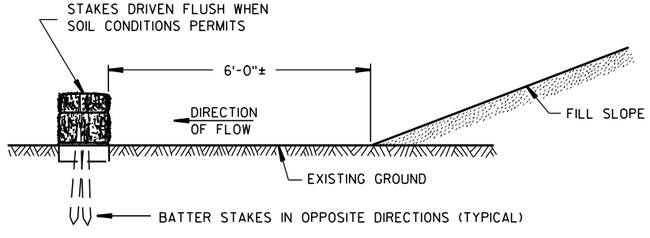


PLAN VIEW

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

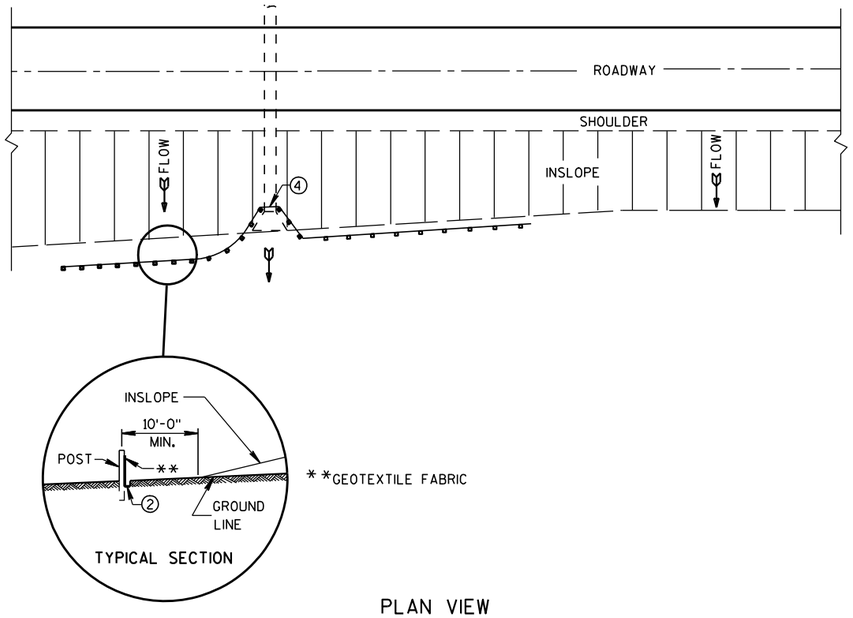
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

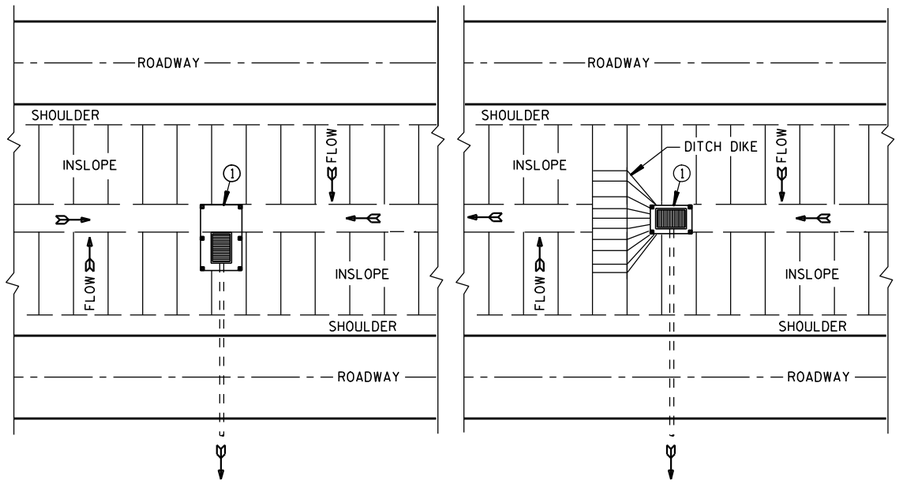
6

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.

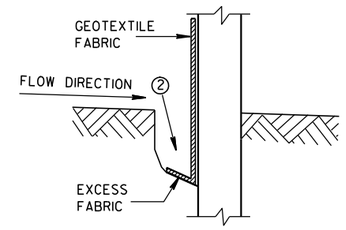
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

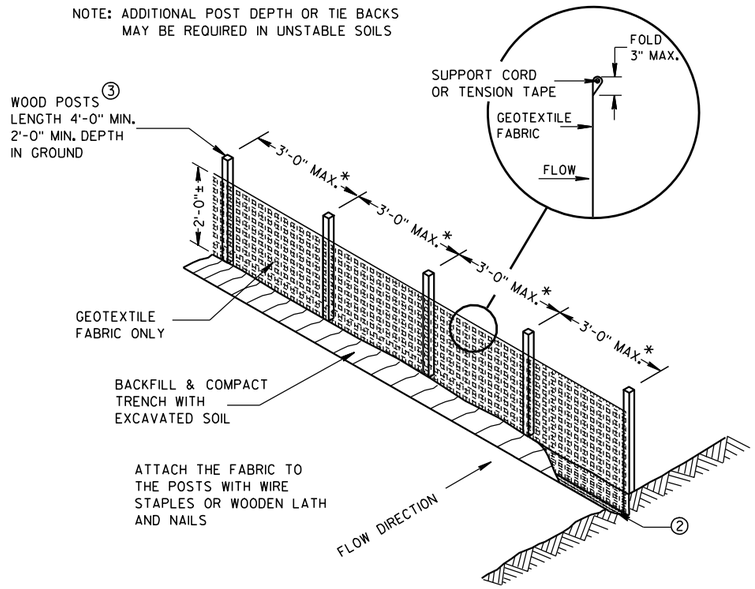
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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.

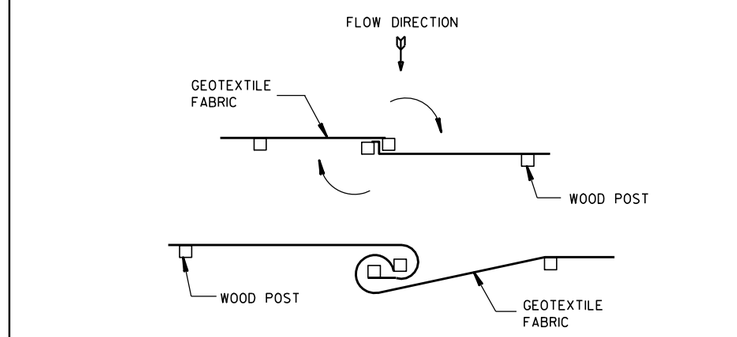


TRENCH DETAIL

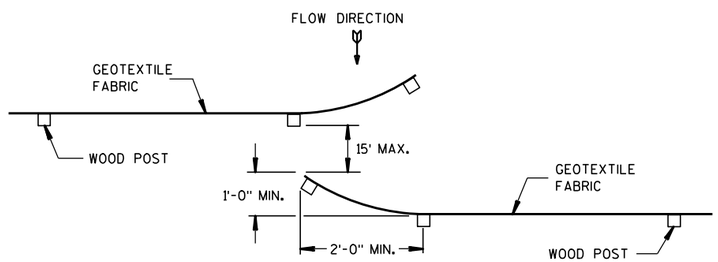


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

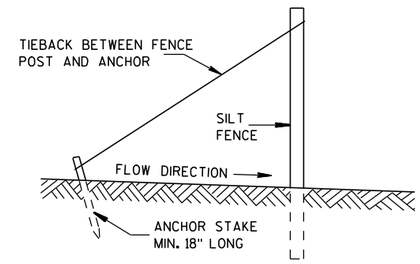


TWIST METHOD



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

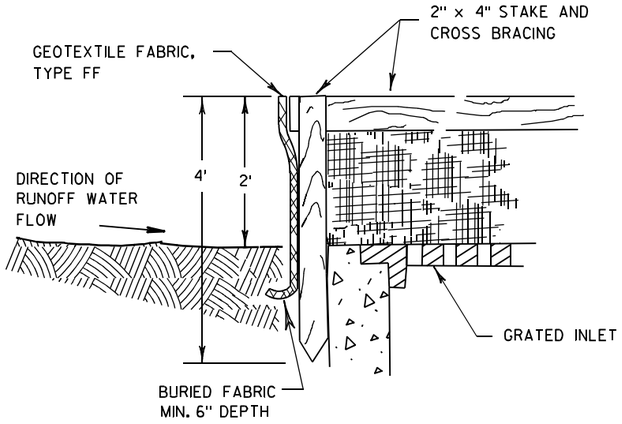
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

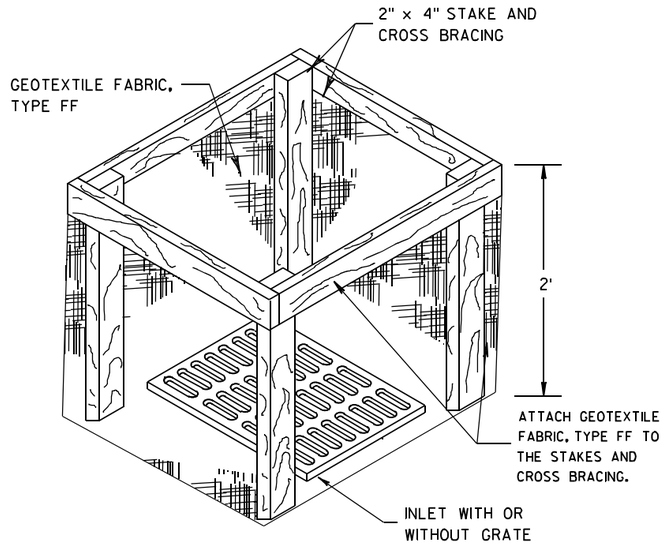
6

S.D.D. 8 E 9-6

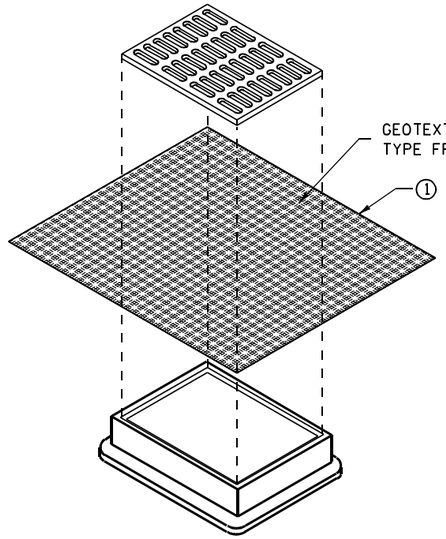
6

S.D.D. 8 E 9-6



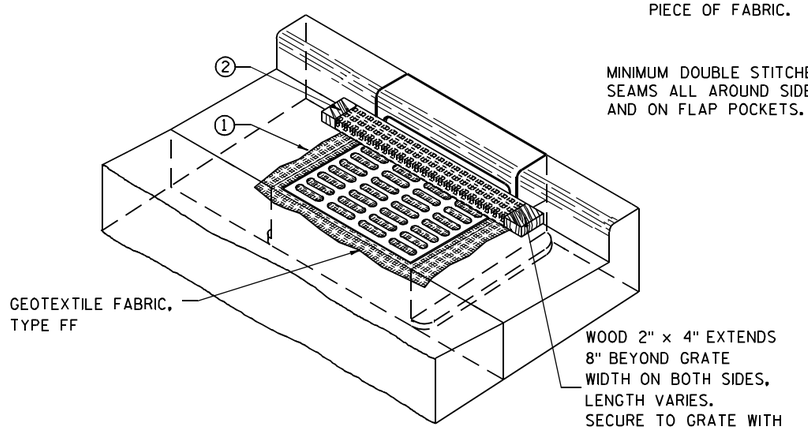


INLET PROTECTION, TYPE A

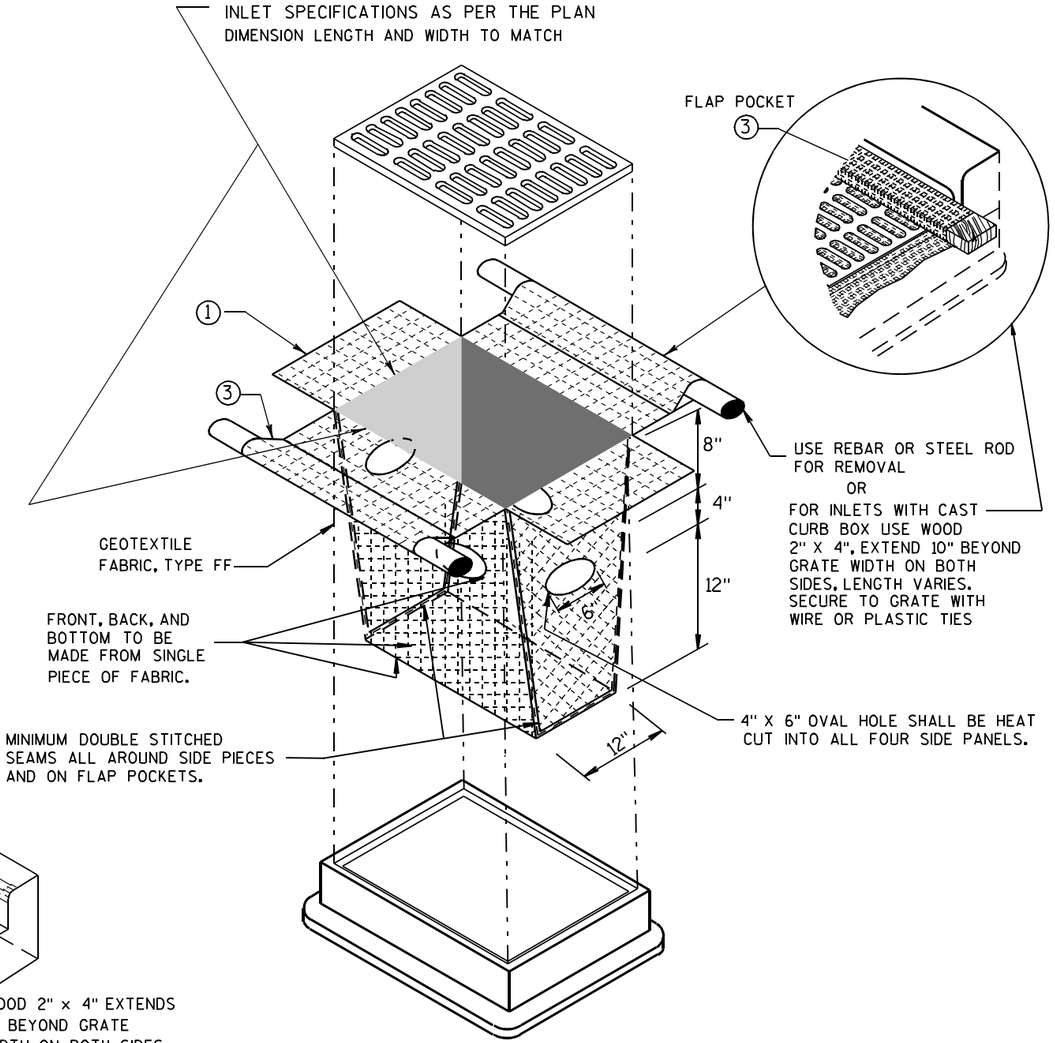


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

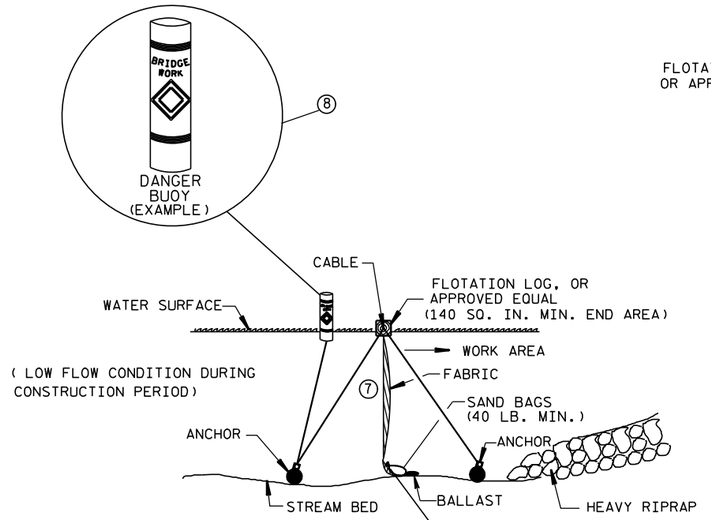
APPROVED

10/16/02
DATE

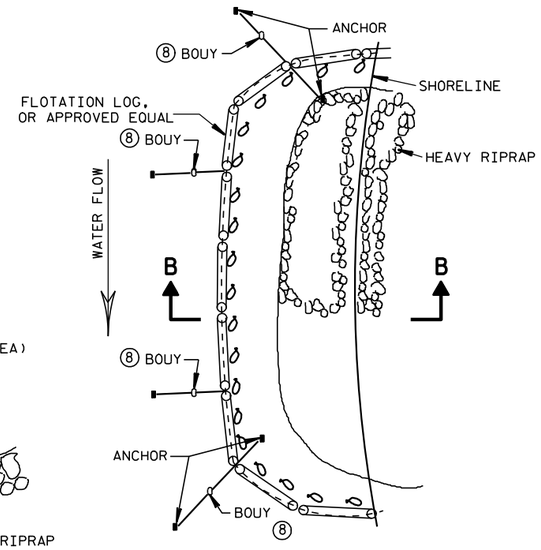
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

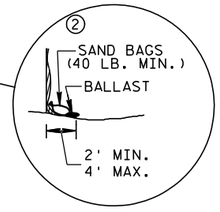
FHWA

6
S.D.D. 8 E 10-2

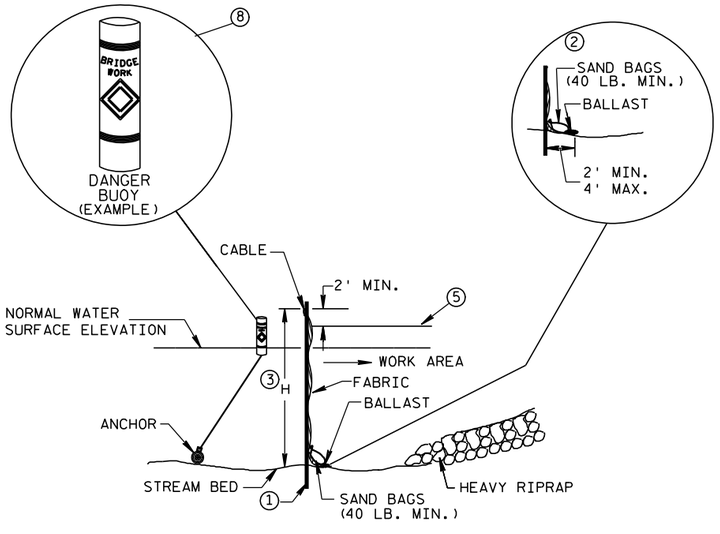


SECTION B-B

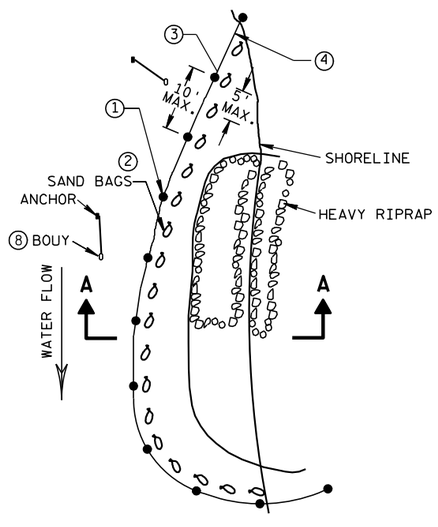




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

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

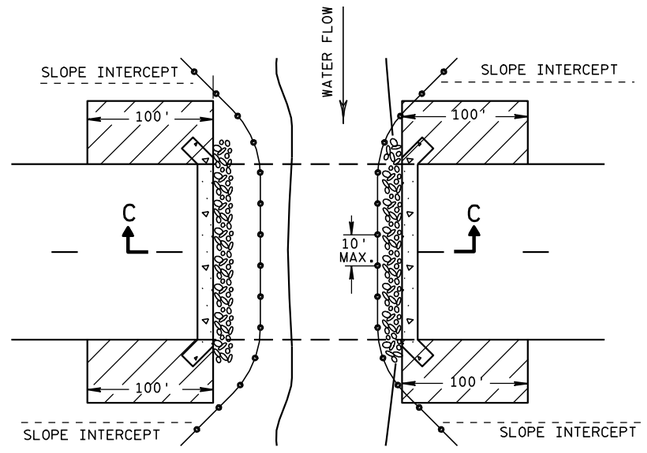
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

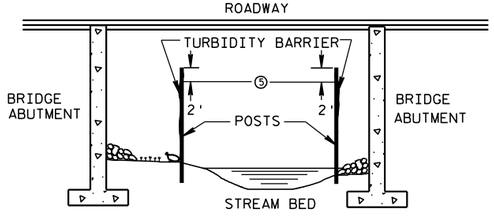
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 E 11-2

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S.D.D. 8 E 11-2

METAL APRON ENDWALLS

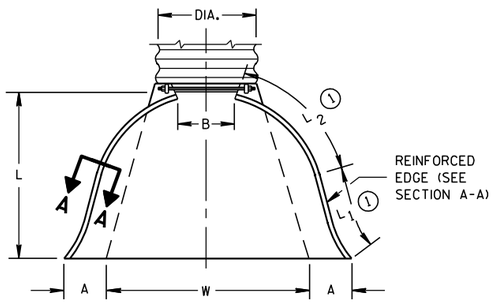
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

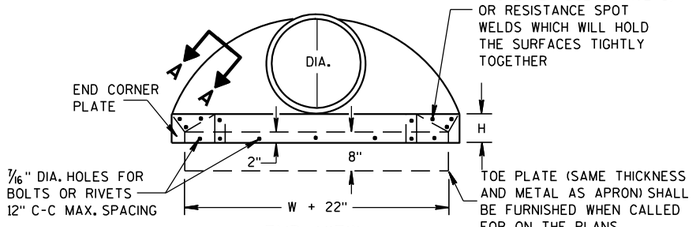
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

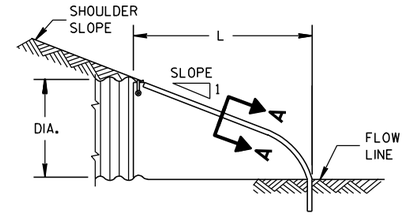
*MINIMUM
**MAXIMUM



PLAN VIEW

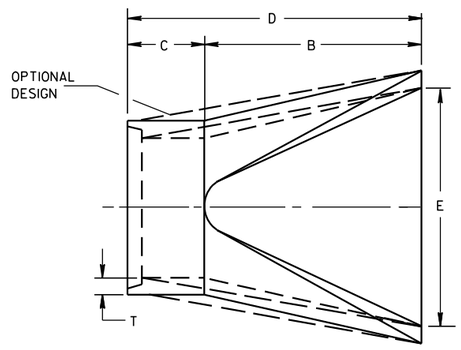


END VIEW

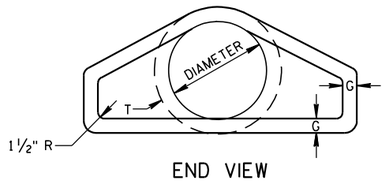


SIDE ELEVATION

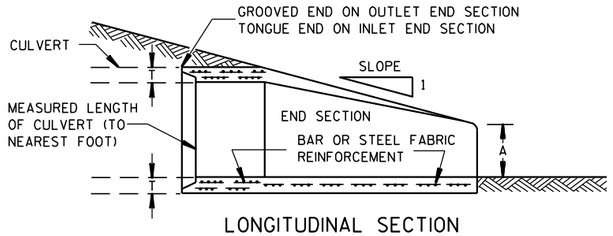
METAL ENDWALLS



PLAN

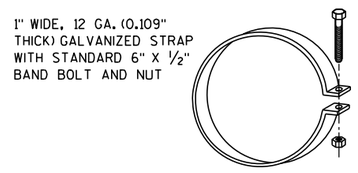


END VIEW



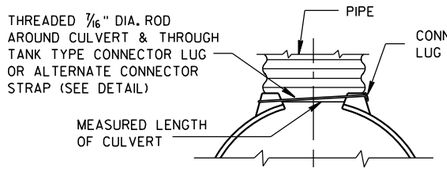
LONGITUDINAL SECTION

CONCRETE ENDWALLS

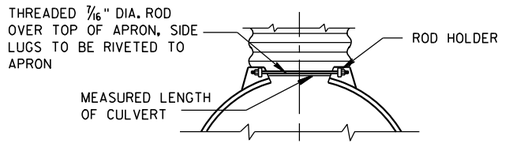


ALTERNATE FOR TYPE 1 CONNECTION

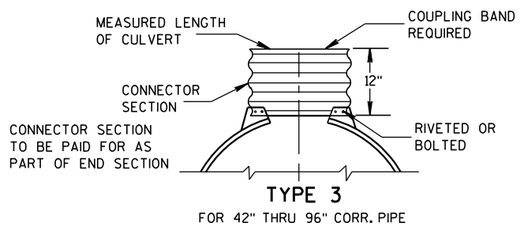
END SECTION CONNECTOR STRAP



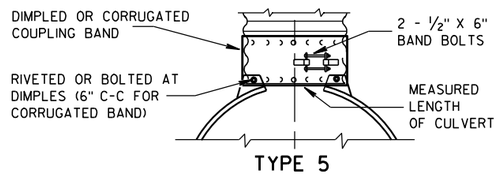
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

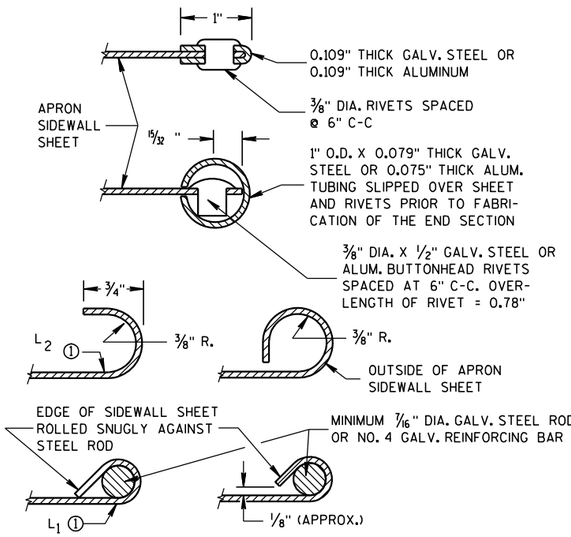
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 — DATE
/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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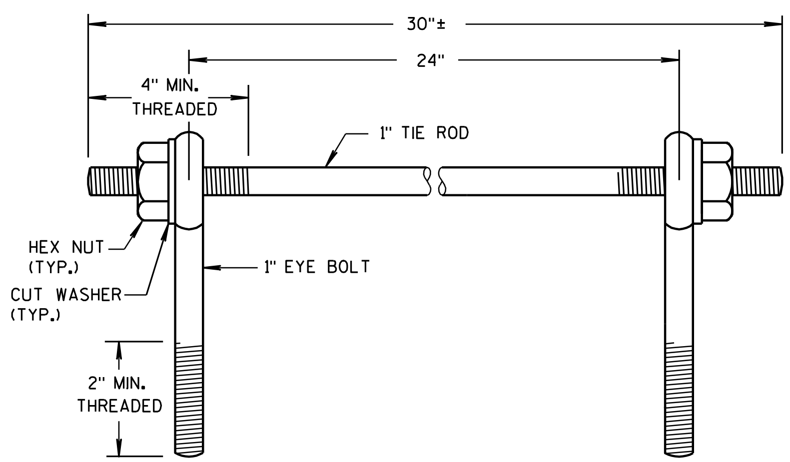
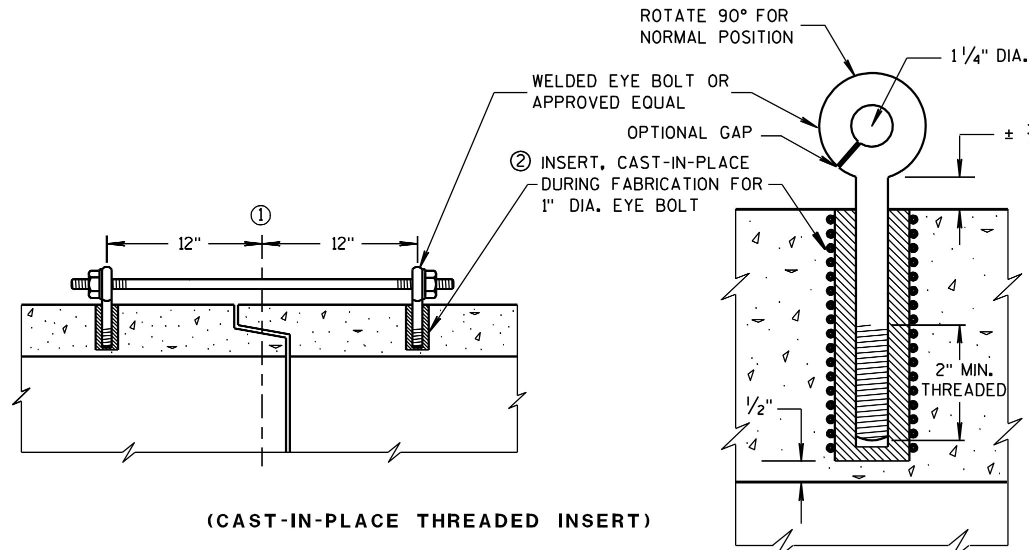
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 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 APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND 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 THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

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

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

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

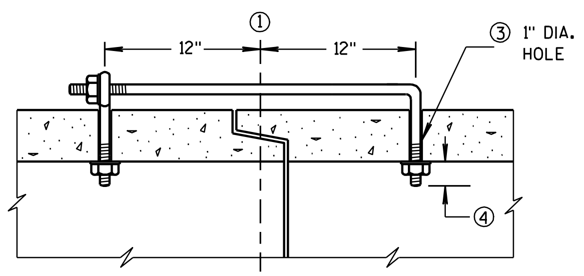
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

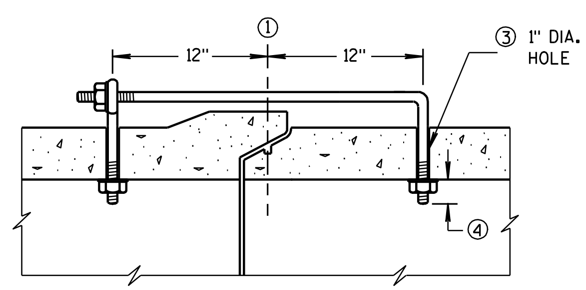
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

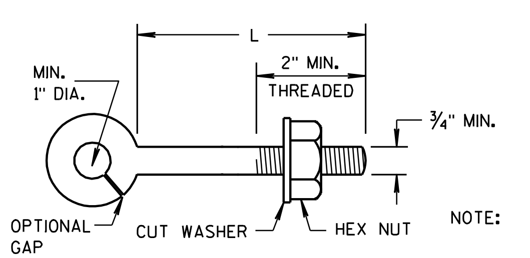


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

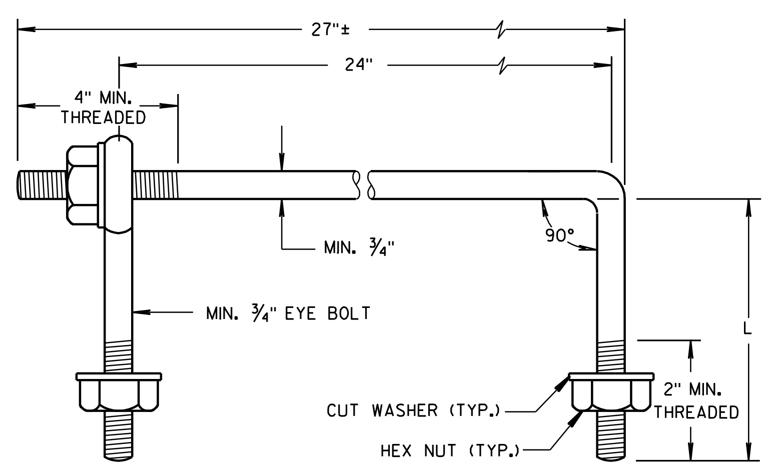
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH: TONGUE & GROOVE PIPE	L = LENGTH: 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"	



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

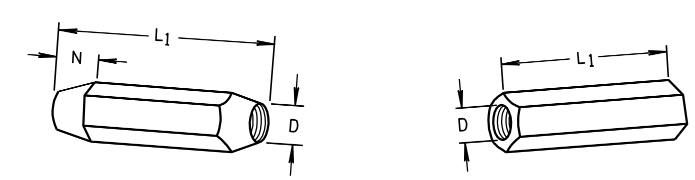
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

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 7/16

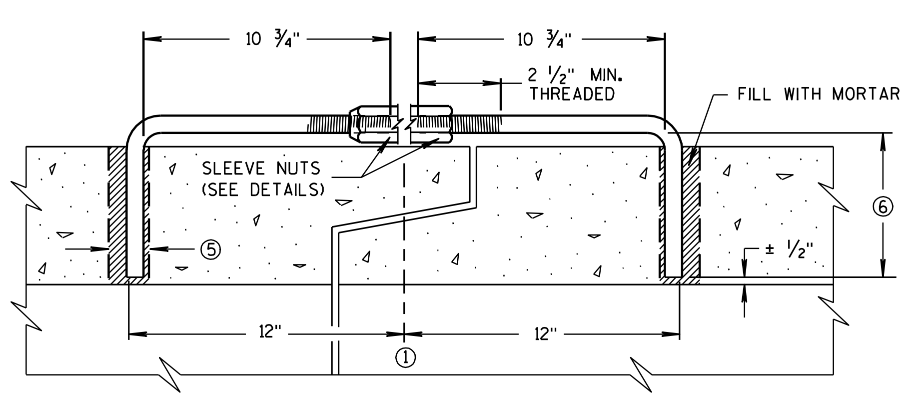
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

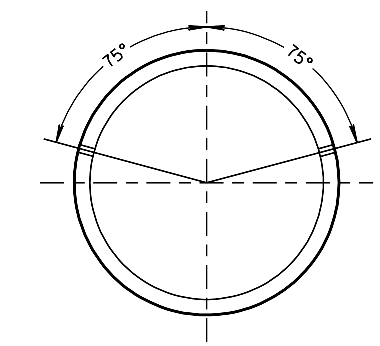
SLEEVE NUTS



LONGITUDINAL SECTION

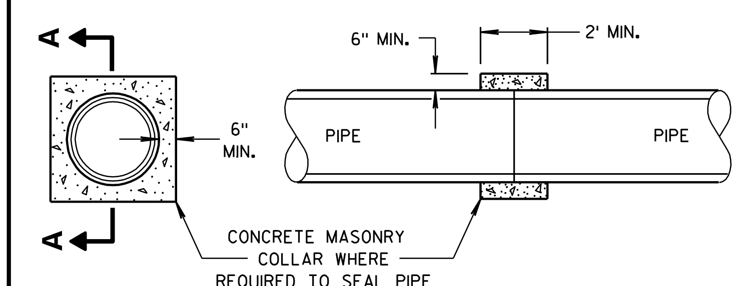
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

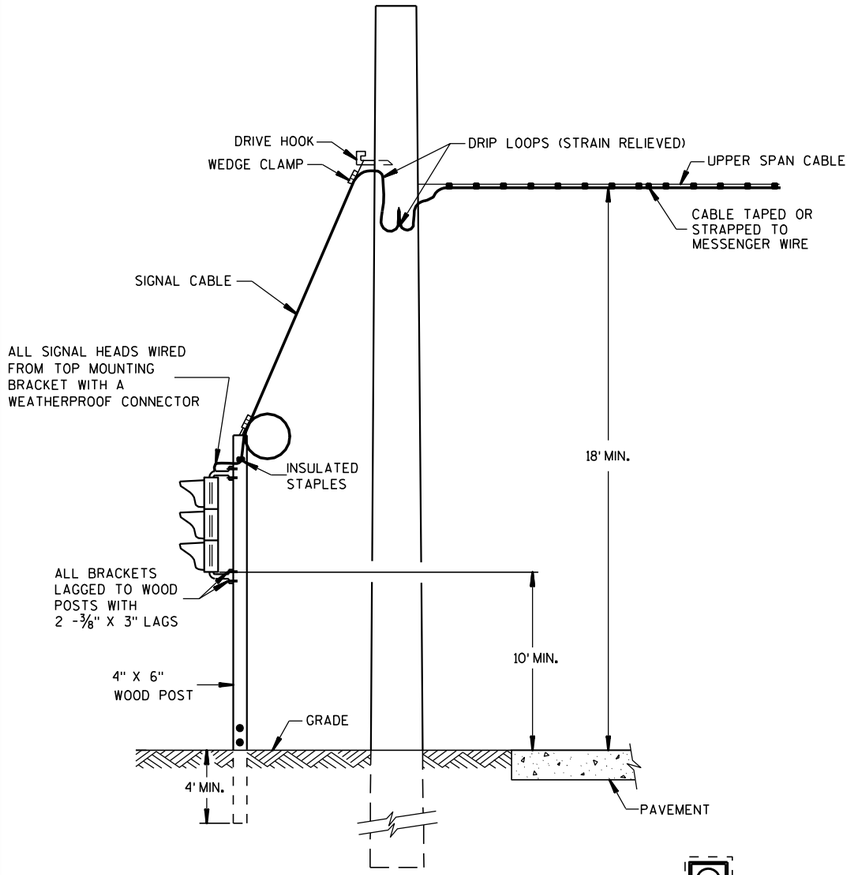
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

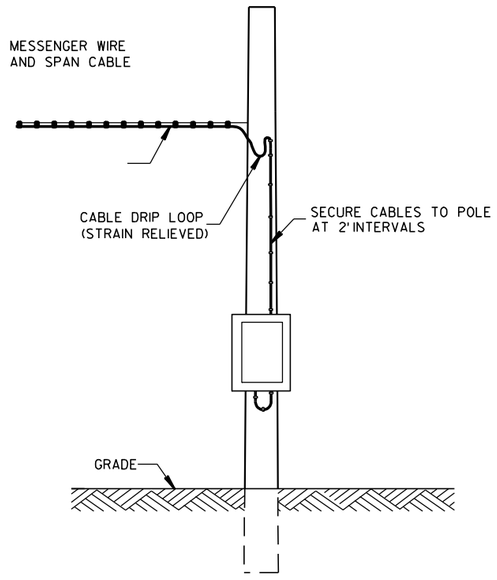
APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6 6

S.D.D. 8 F 4-7 S.D.D. 8 F 4-7



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.

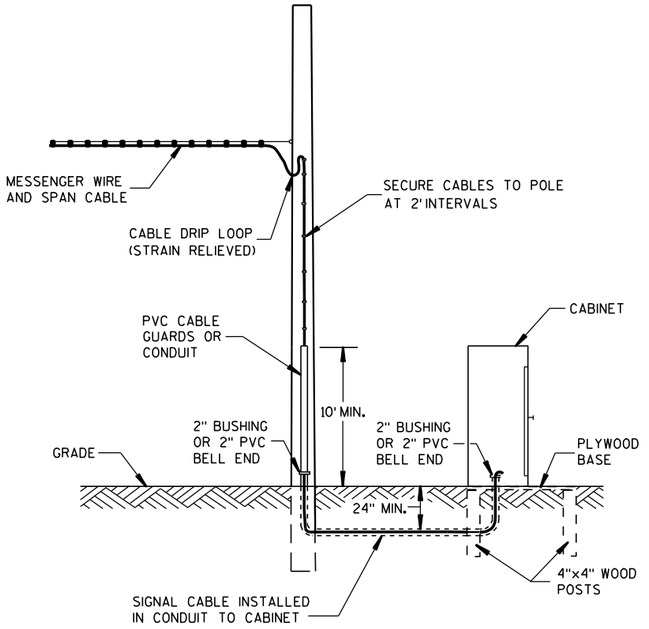
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

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.

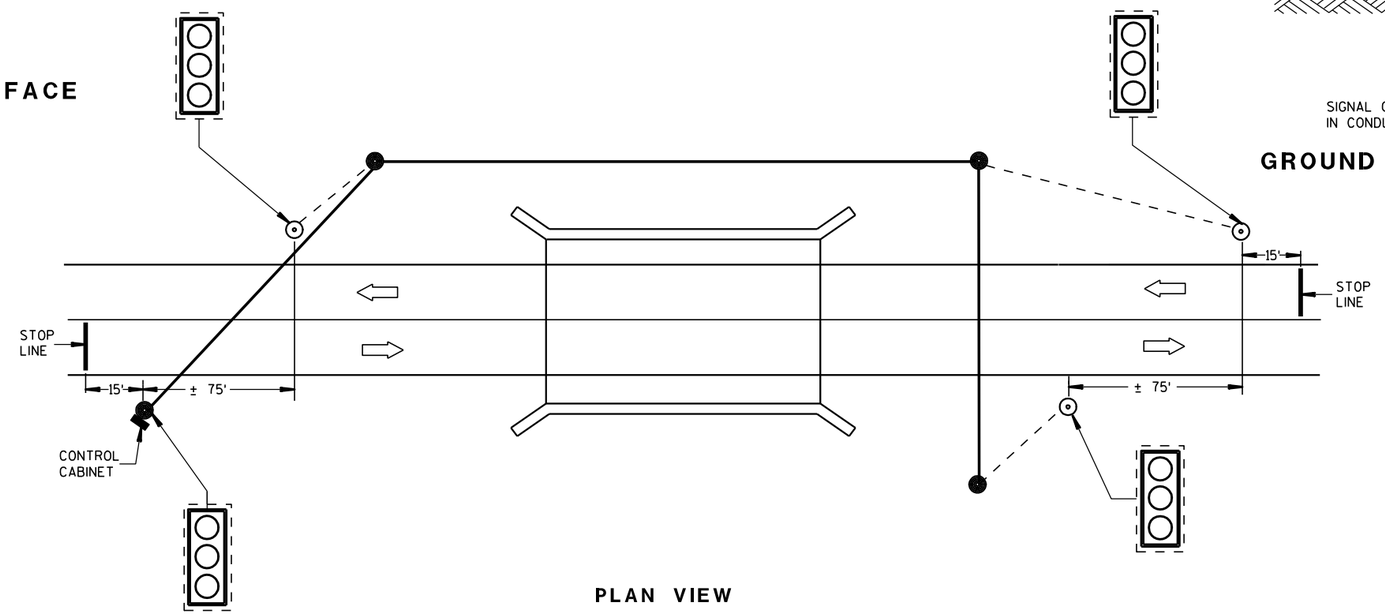
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



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
66
HWYS
FHWA

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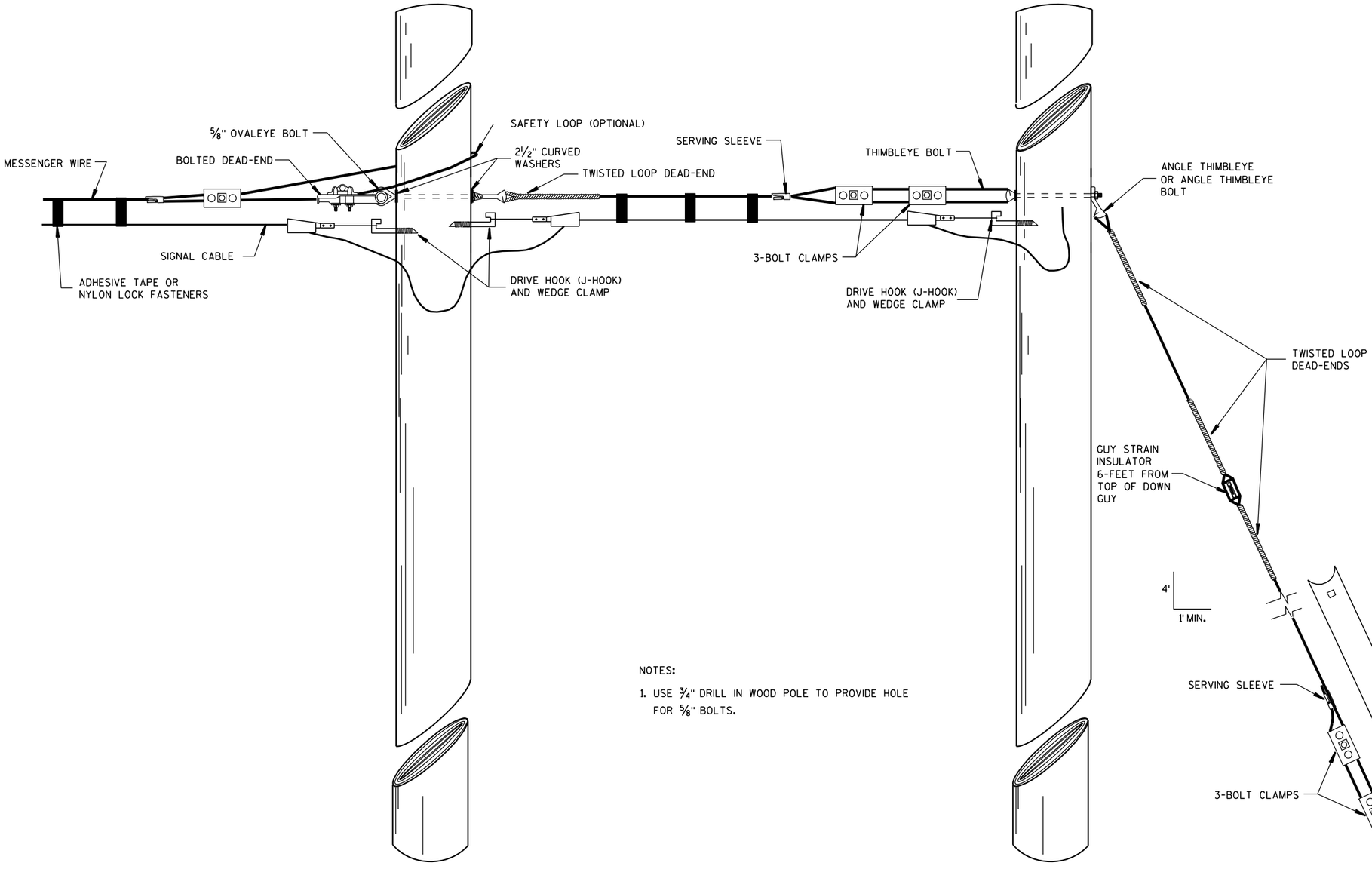
S.D.D. 9 G 2-3a

6

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



SPAN WIRE POLE

GUY POLE

NOTES:

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

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

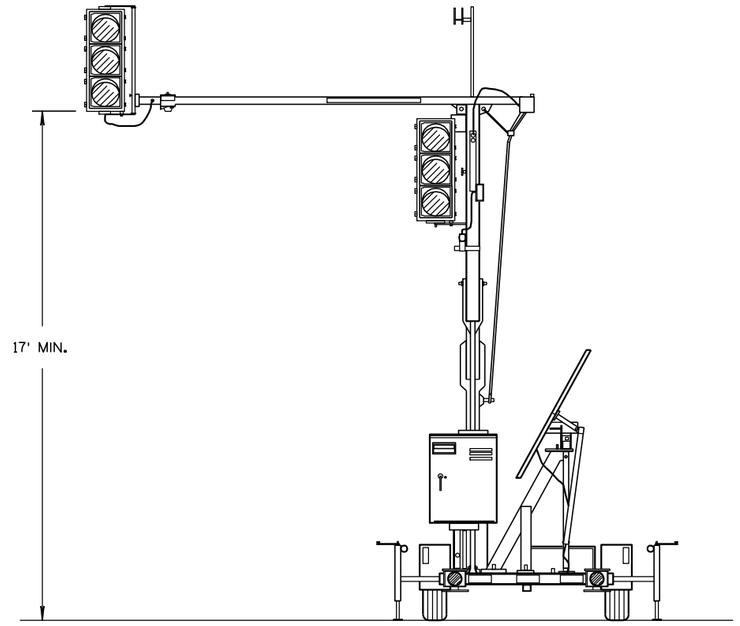
/S/ Thomas J. G... STATE ELECTRICAL ENGI

HWYS

FHWA

6

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

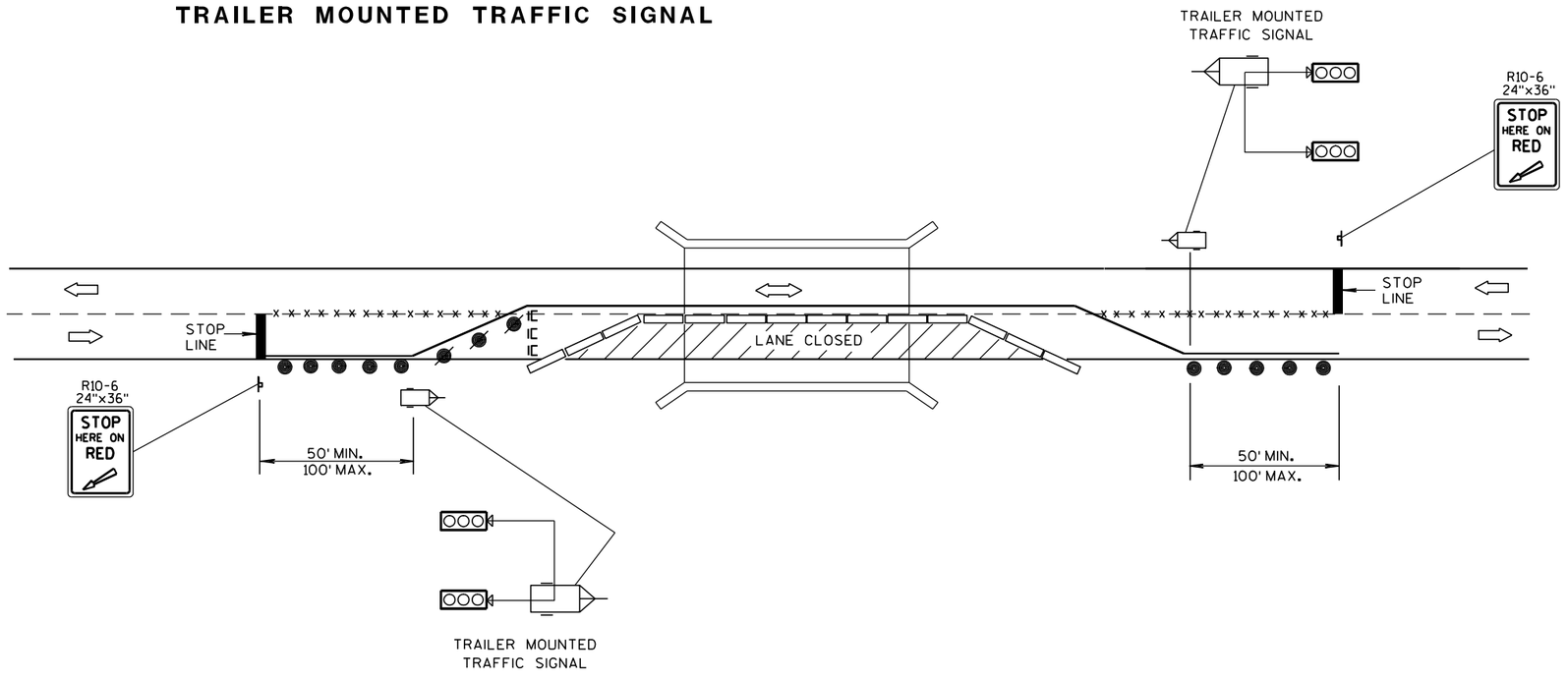


TRAILER MOUNTED TRAFFIC SIGNAL

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

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HWYS

FHWA

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

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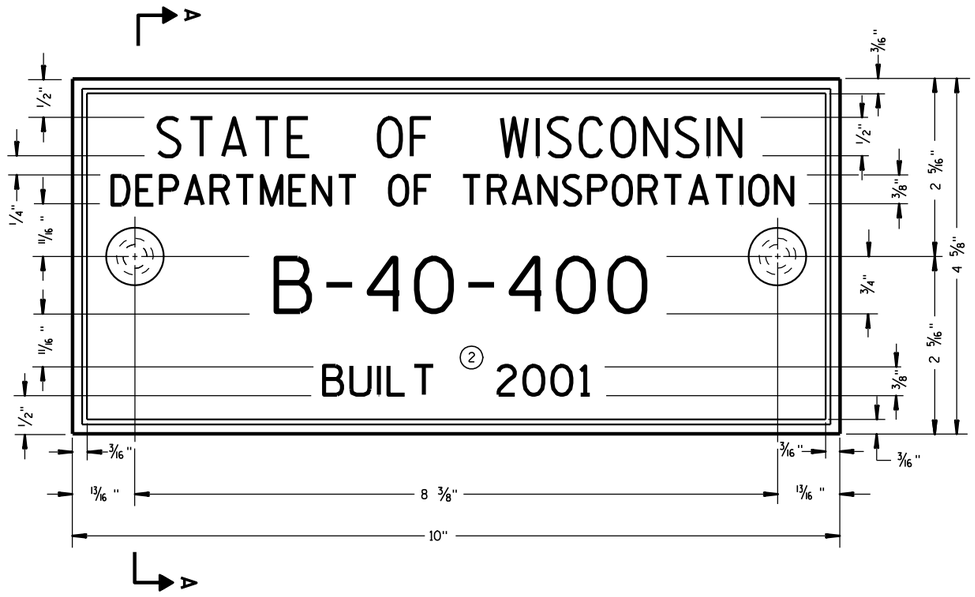
S.D.D. 9 G 2-3c



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

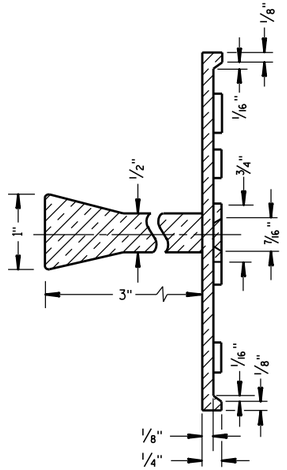
GENERAL NOTES

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.

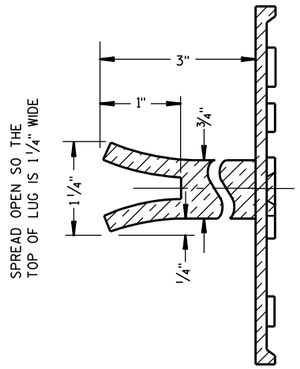
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

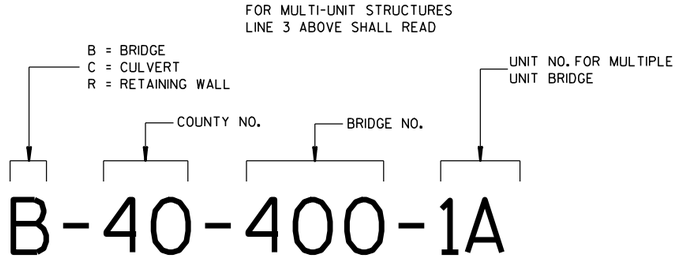
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



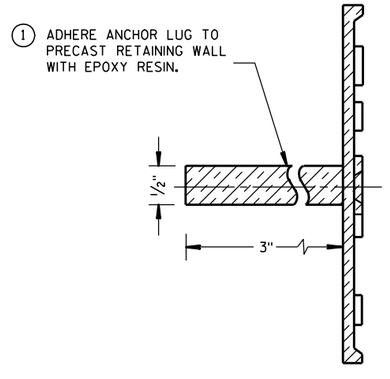
SECTION A-A



ALTERNATE LUG



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES



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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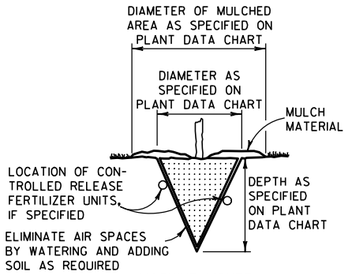
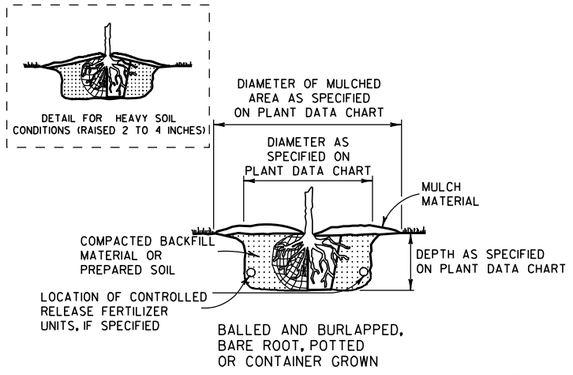
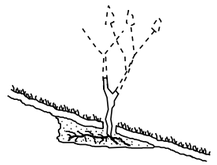
S.D.D. 12 A 3-10



MACHINE MOVED

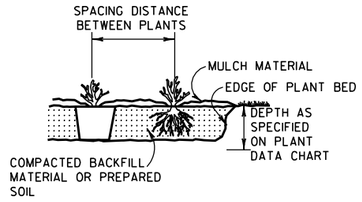


BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



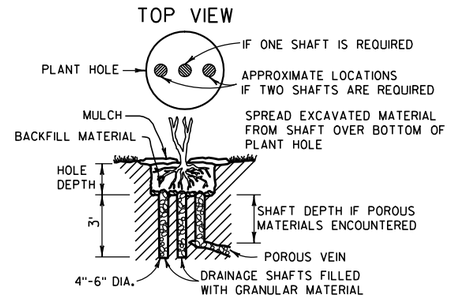
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

NOTE:
1) ENGINEER SHALL REQUIRE 3 SLITS IN POT TO SPEED DETERIORATION
2) METAL, PLASTIC OR OTHER NONDEGRADABLE POTS SHALL BE REMOVED PRIOR TO PLANTING



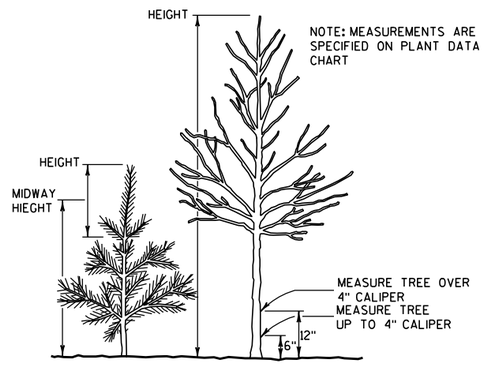
PREPARED BED (BARE ROOT AND POTTED)

PLANTING

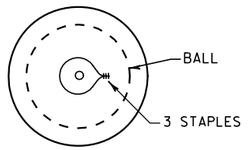


NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

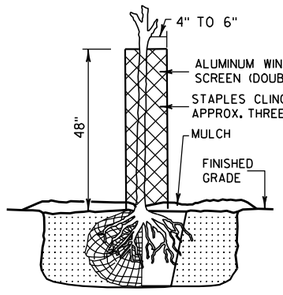
DRAINING



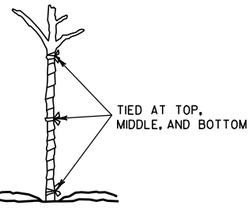
MEASURING



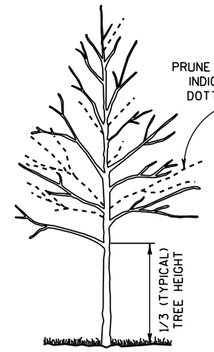
TOP VIEW



RODENT PROTECTION



WRAPPING



TALL DECIDUOUS TREES (ASH, MAPLE, LINDEN, OAK)

SINGLE STEMMED LOW DECIDUOUS TREES (CRABS AND OTHER SINGLE STEM TYPE)

MULTI-STEMMED LOW DECIDUOUS TREES OR LARGE SHRUBS (HAWTHORN, SERVICEBERRY)

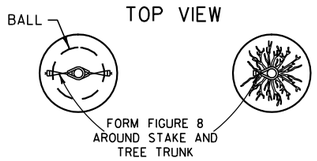
NOTE: WHEN PRUNING, PRESERVE CHARACTER AND SHAPE OF TREE. AVOID LEAVING STUBS - REMOVE BRANCH OR TWIG BACK TO THE NEAREST CROTCH
1) PRUNE TO REMOVE DEAD AND BROKEN BRANCHES
2) PRUNE TO REMOVE BRANCHES THAT TOUCH OR ARE TOO CLOSE TO OTHER BRANCHES

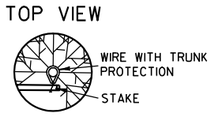
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

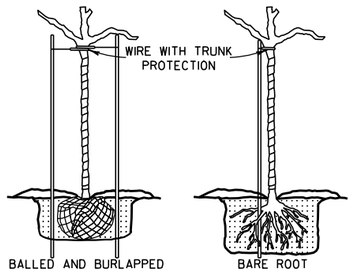
SUMAC

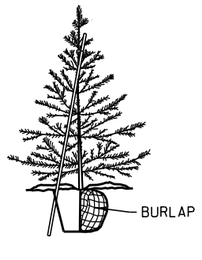
TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

PRUNING



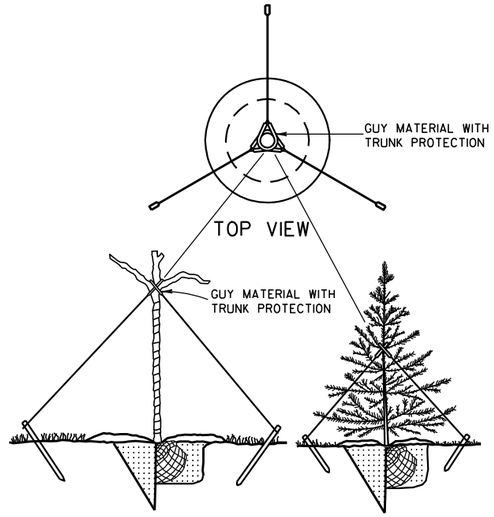






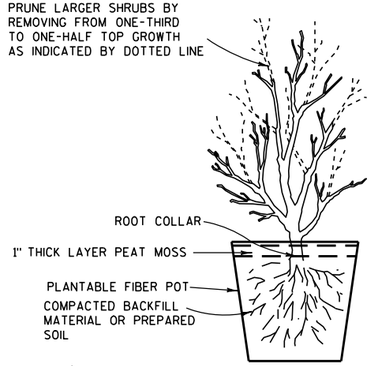
NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.

BRACING



GUYING

PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE



POTTING

NOTES

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

BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/11/94
DATE
/S/ Rory L. Rhinesmith
CHIEF METHODS DEVELOPMENT ENGINEER
FHWA

S.D.D. 14 A 2-1

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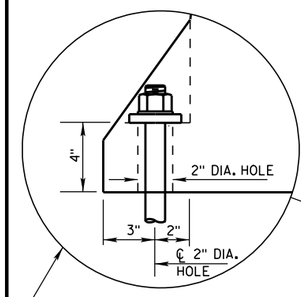
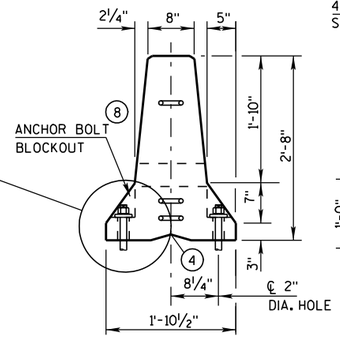
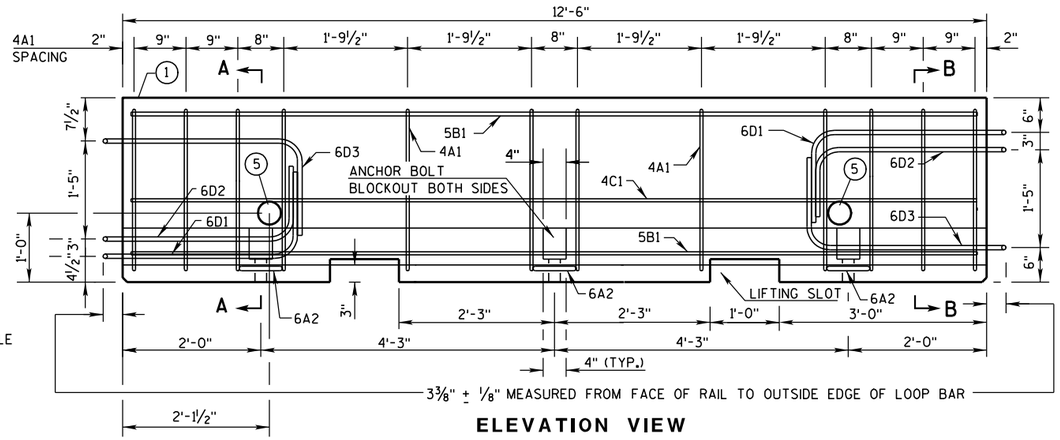
S.D.D. 14 A 2-1



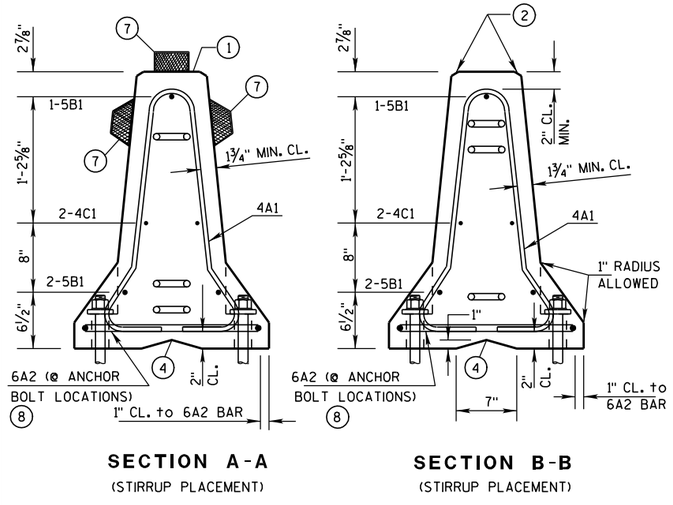
ANCHOR ON TRAFFIC SIDE (8) ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL)



END VIEW

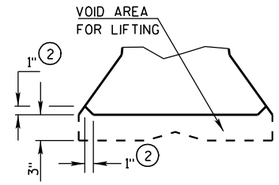


ELEVATION VIEW

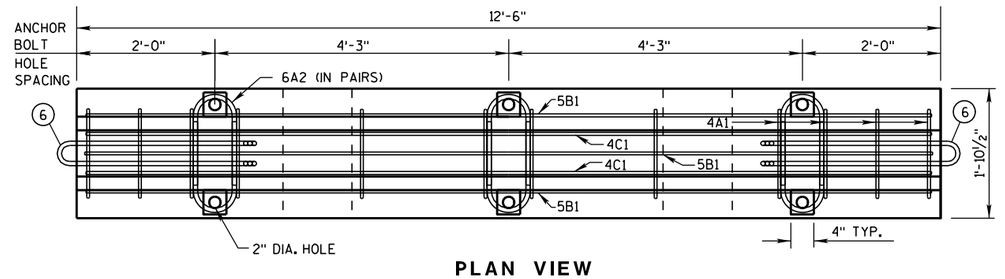


SECTION A-A
(STIRRUP PLACEMENT)

SECTION B-B
(STIRRUP PLACEMENT)

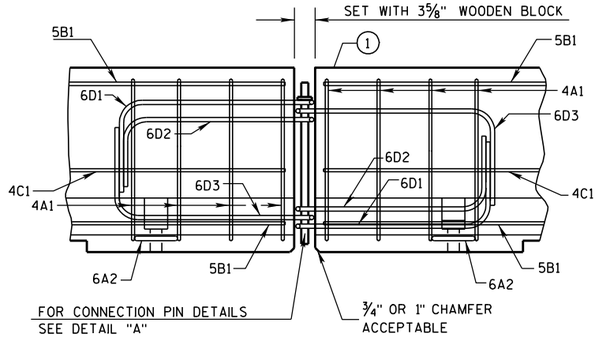


DETAIL "B"
LIFTING SLOT DETAIL

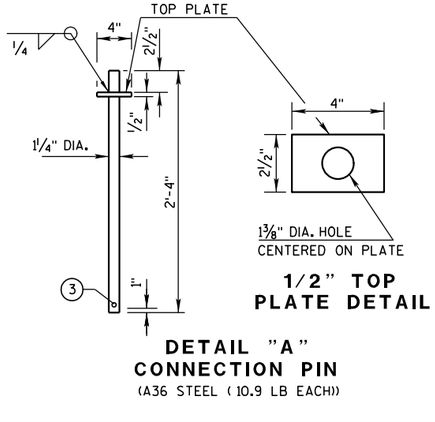


PLAN VIEW

DETAILS OF BARRIER SECTION

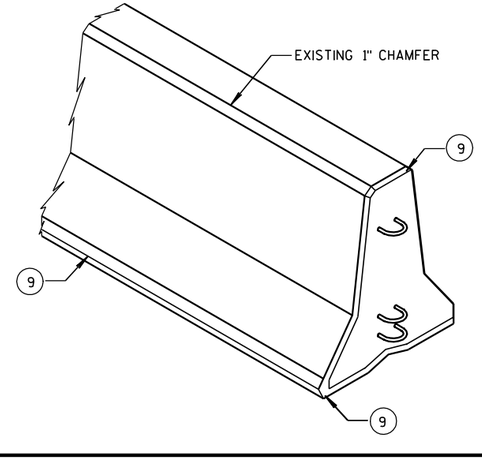


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



GENERAL NOTES

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

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

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

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

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

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

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

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

(2) 1" CHAMFER TO PREVENT SPALLING.

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

(4) "V" NOTCH IS OPTIONAL.

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

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

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

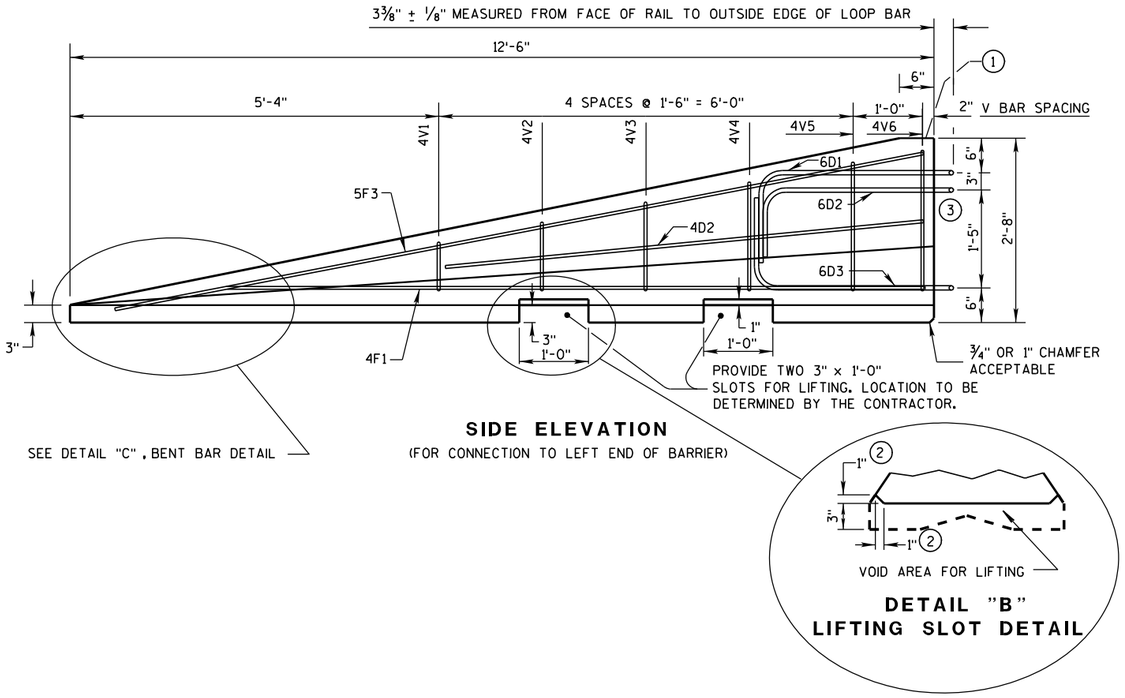
(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....

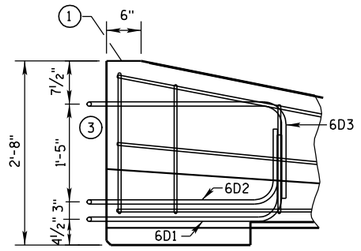
6
S.D.D. 14 B 7-13a



SIDE ELEVATION

(FOR CONNECTION TO LEFT END OF BARRIER)

DETAIL "B"
LIFTING SLOT DETAIL

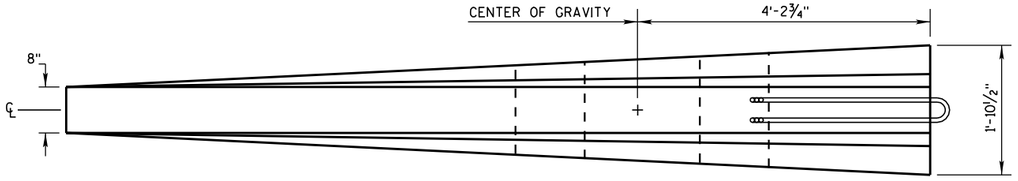


SIDE ELEVATION

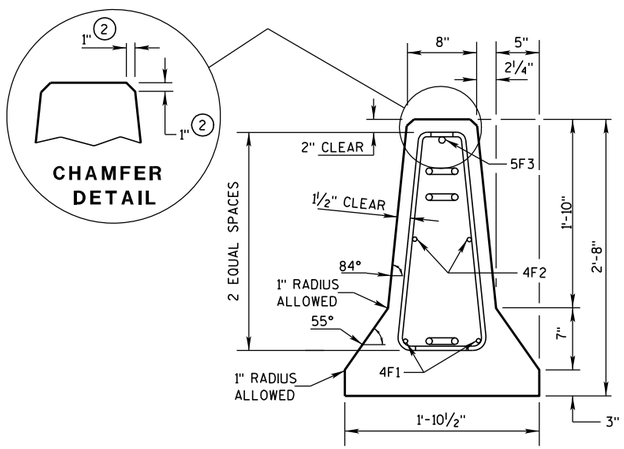
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

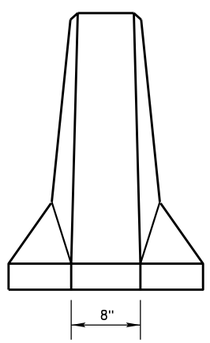
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



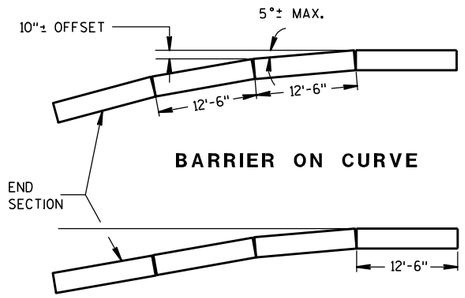
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

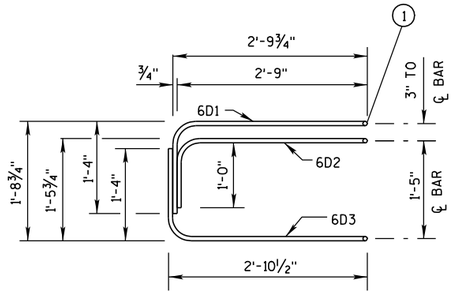
6

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

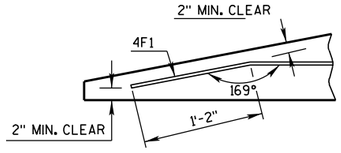
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

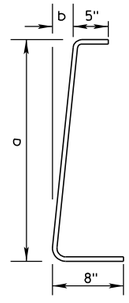
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

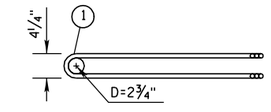
GENERAL NOTES

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

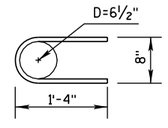
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

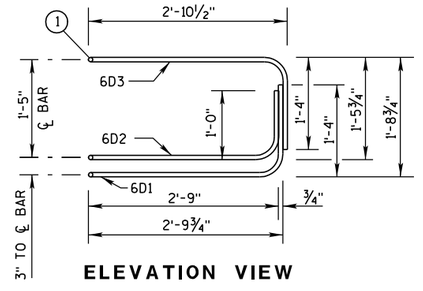
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



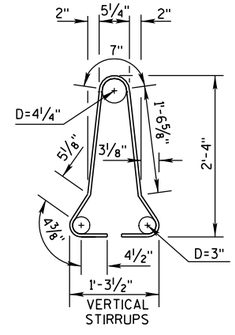
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



ELEVATION VIEW



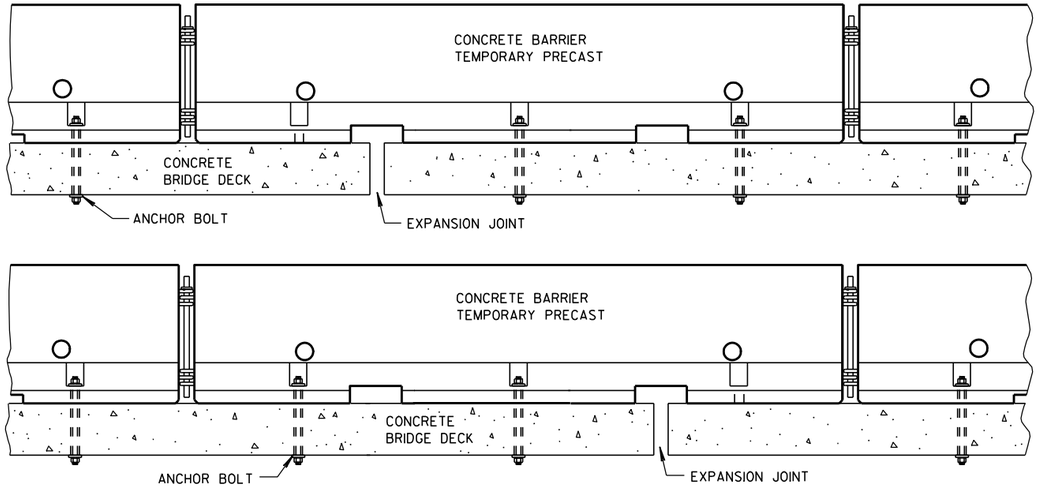
4A1

BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

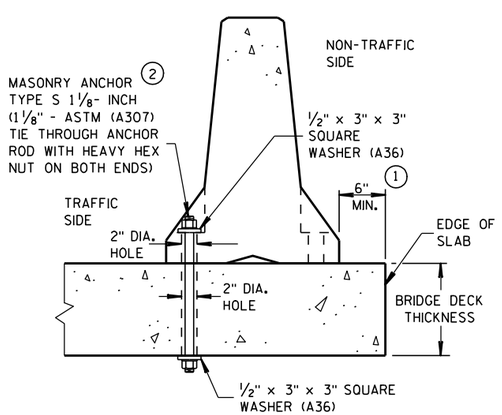
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



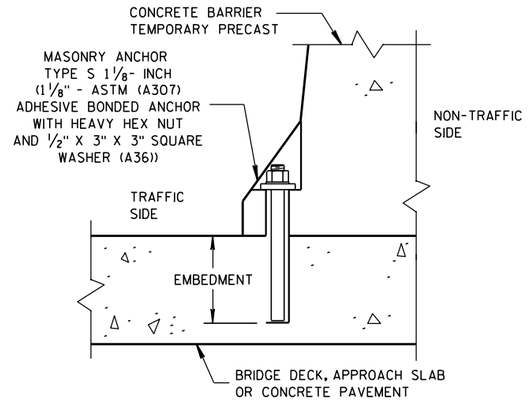
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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

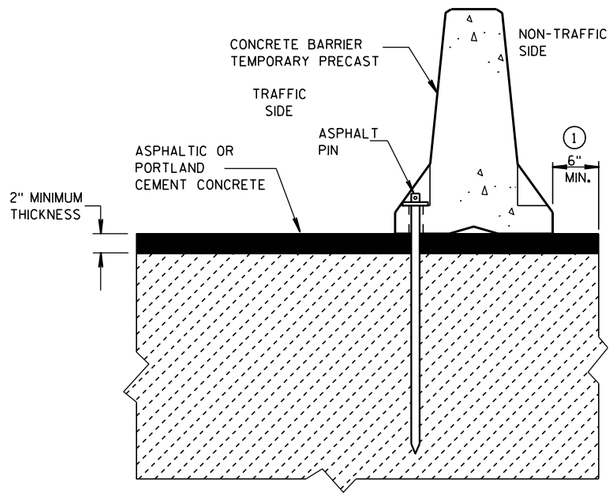
(1) CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED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

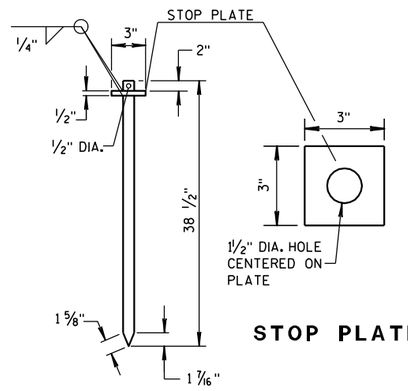
WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE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



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

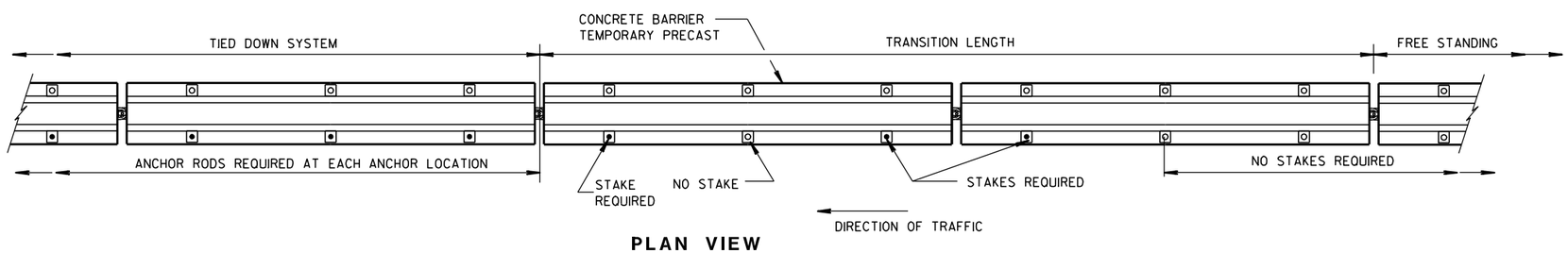
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

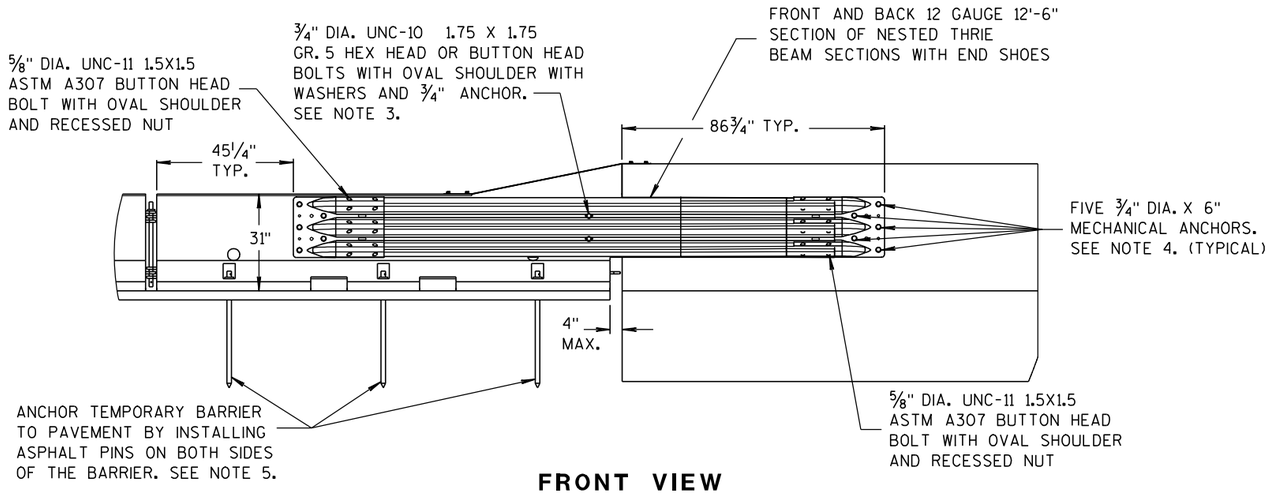
FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

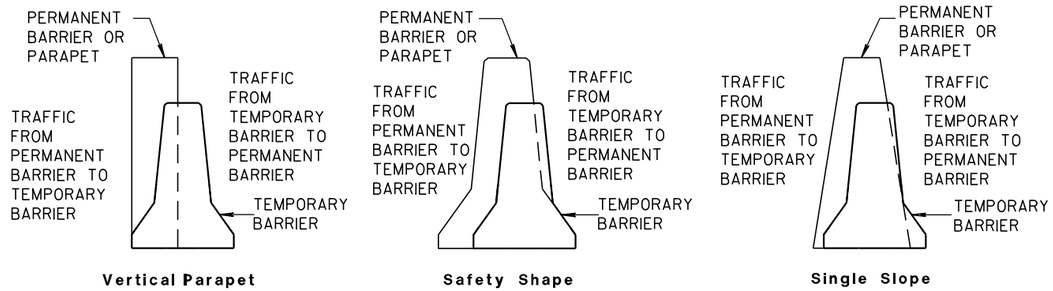
6
S.D.D. 14 B 7-13d

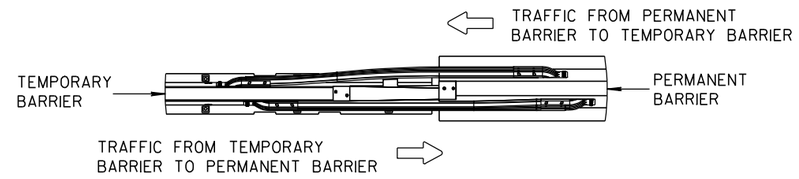


FRONT VIEW

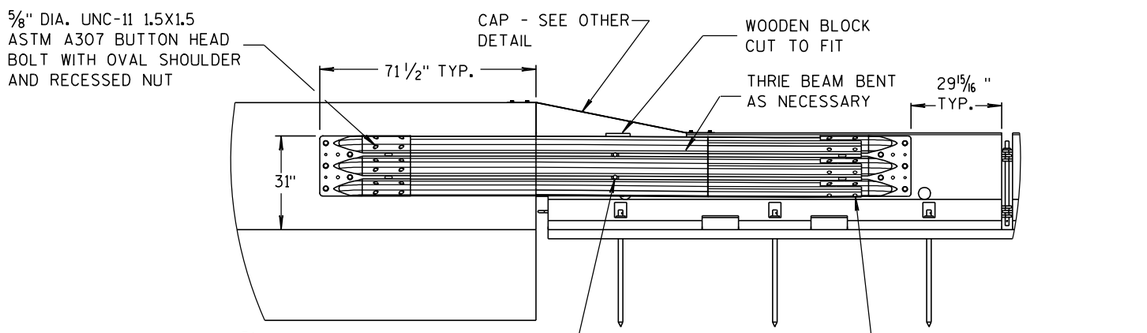
NOTES

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15¼" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

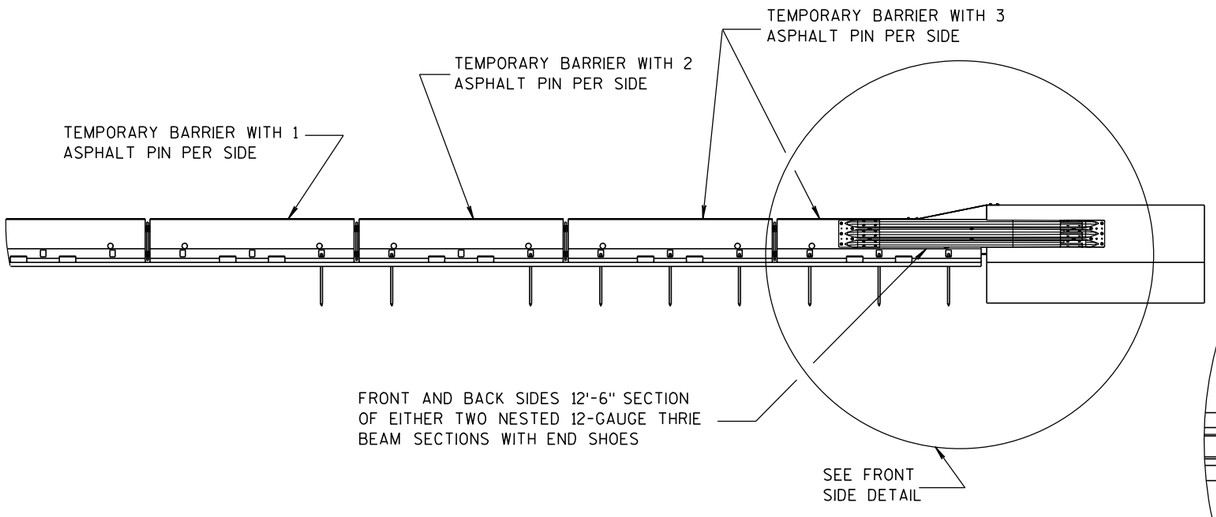




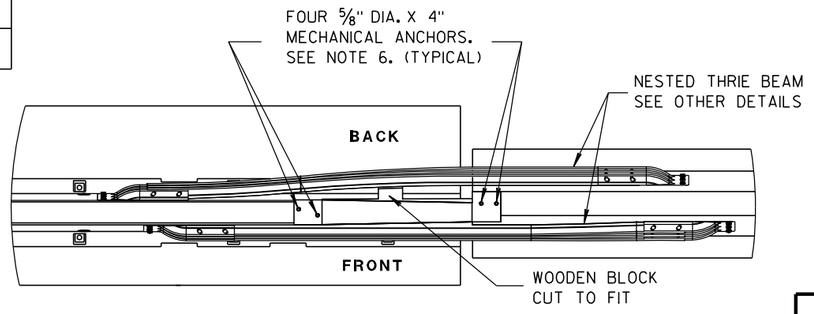
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



BACK VIEW



FRONT VIEW



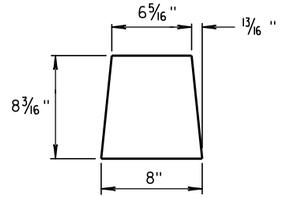
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

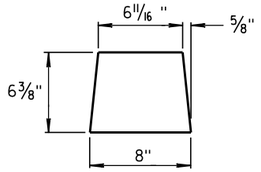
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

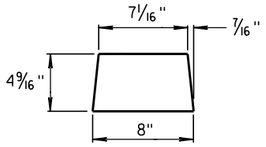
6
S.D.D. 14 B 7-13e



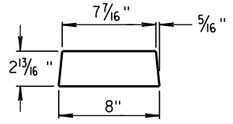
GUSSET 1



GUSSET 2

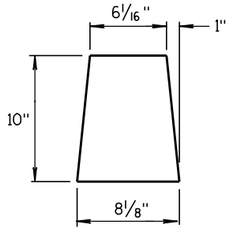


GUSSET 3

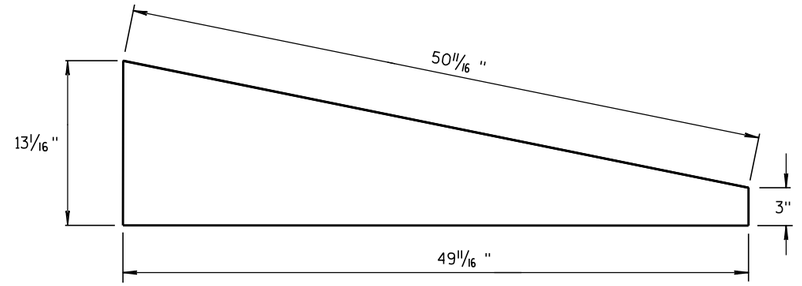


GUSSET 4

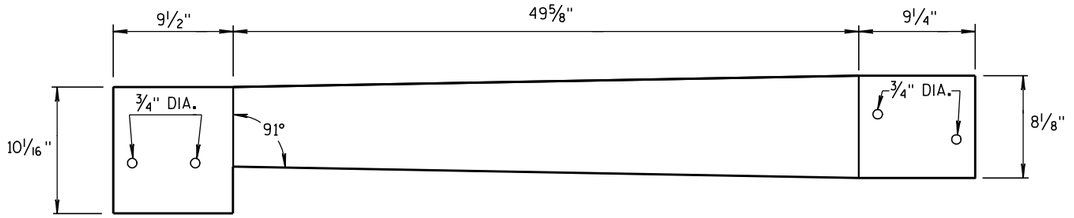
GUSSETS

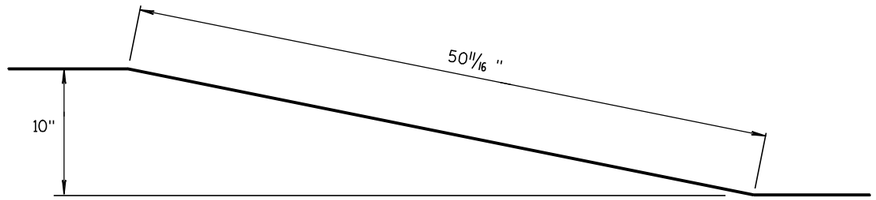


END PLATE

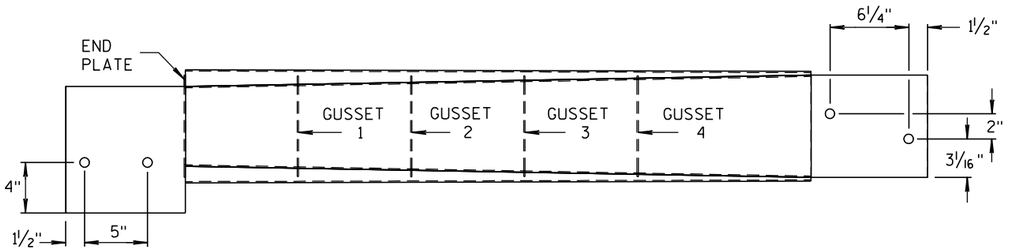


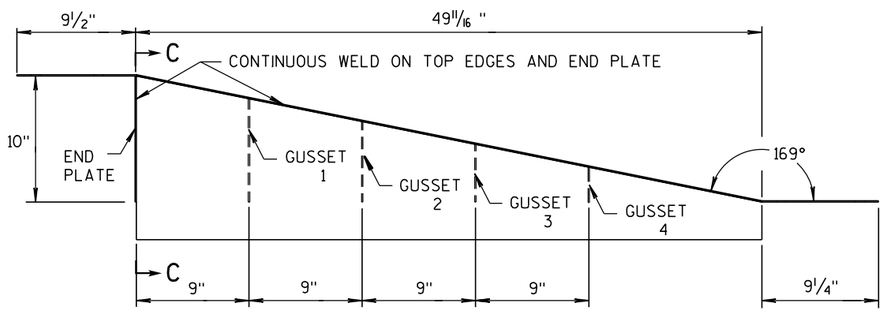
SIDE PLATE

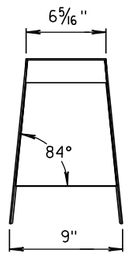




TOP PLATE







SECTION C-C

NOTES

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

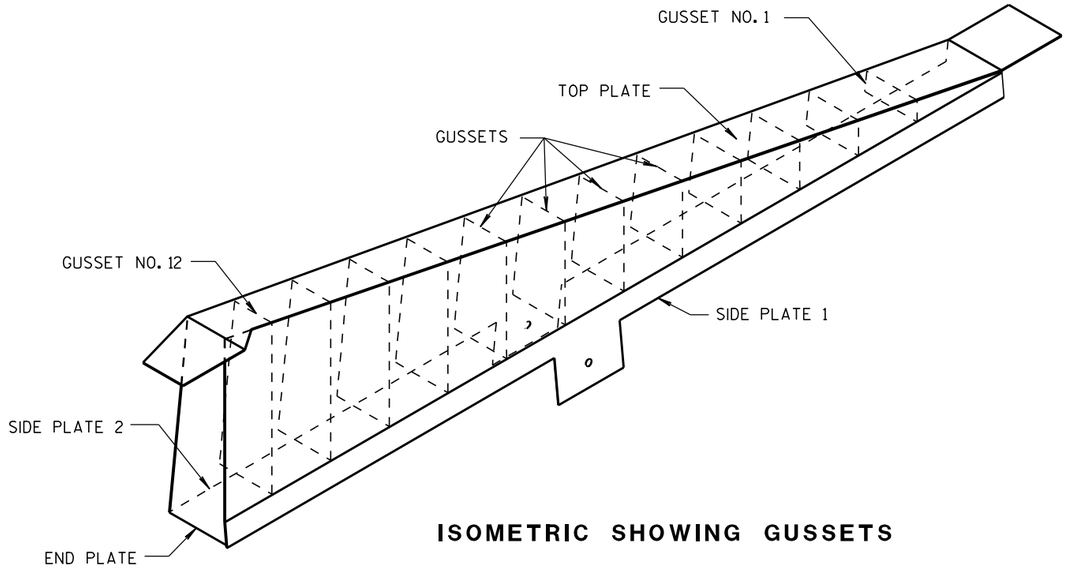
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

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

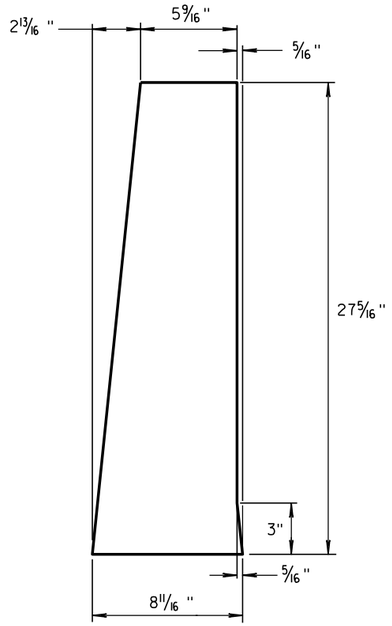
SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

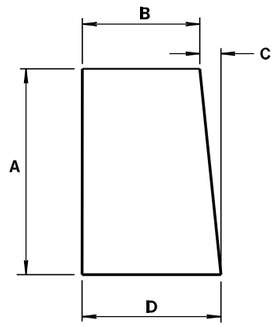


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



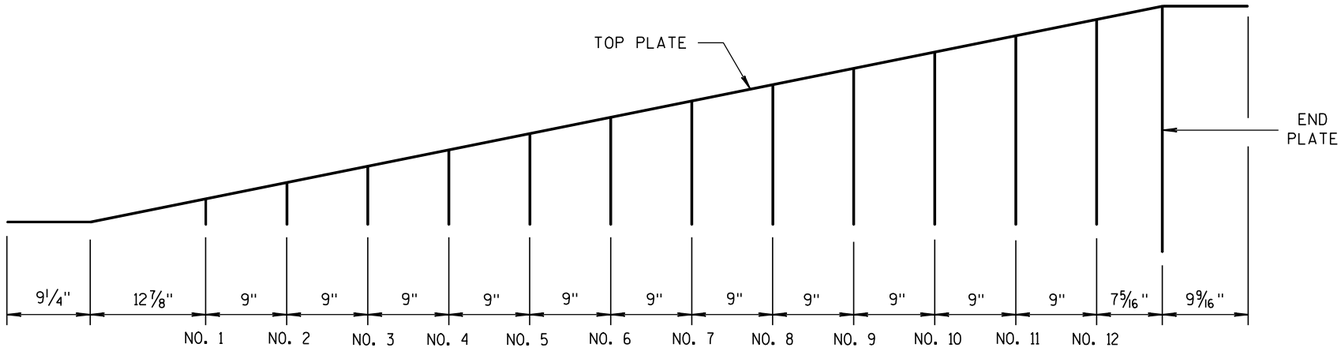
GUSSETS 1 - 12

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 TRANSPORTATION

6

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

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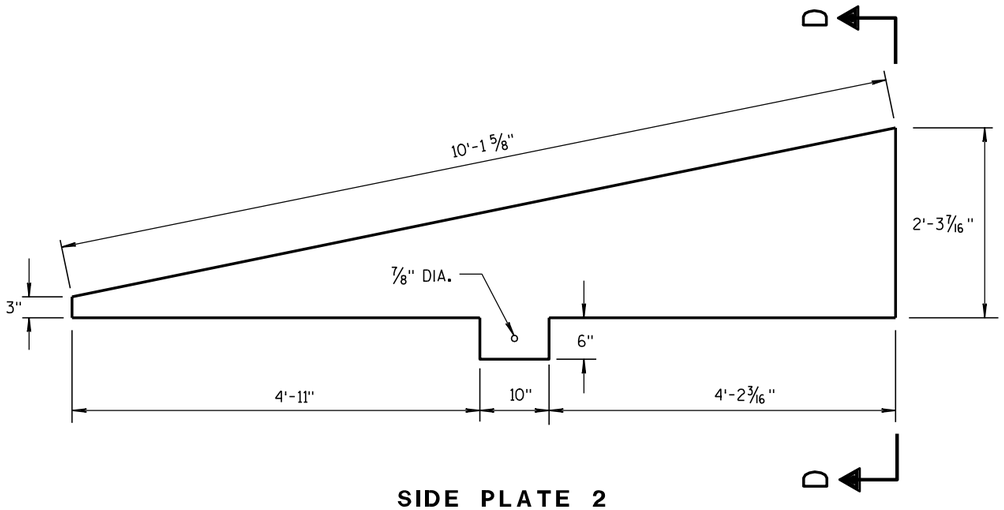
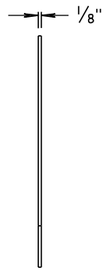
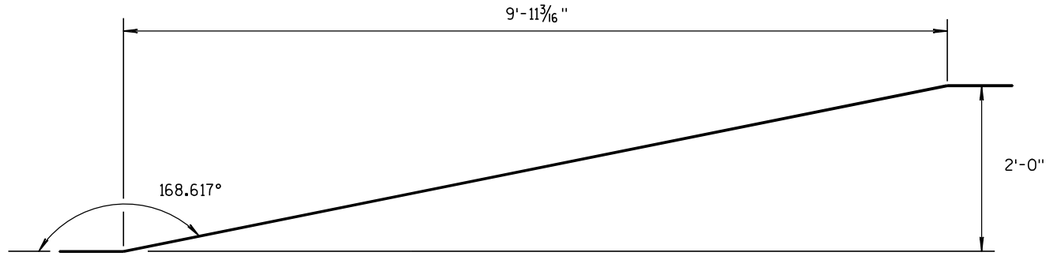
S.D.D. 14 B 7-13g



SIDE PLATE 2

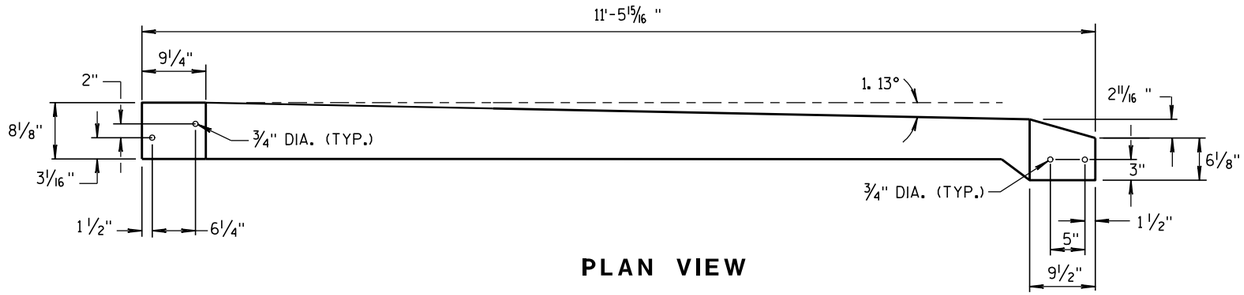


END VIEW



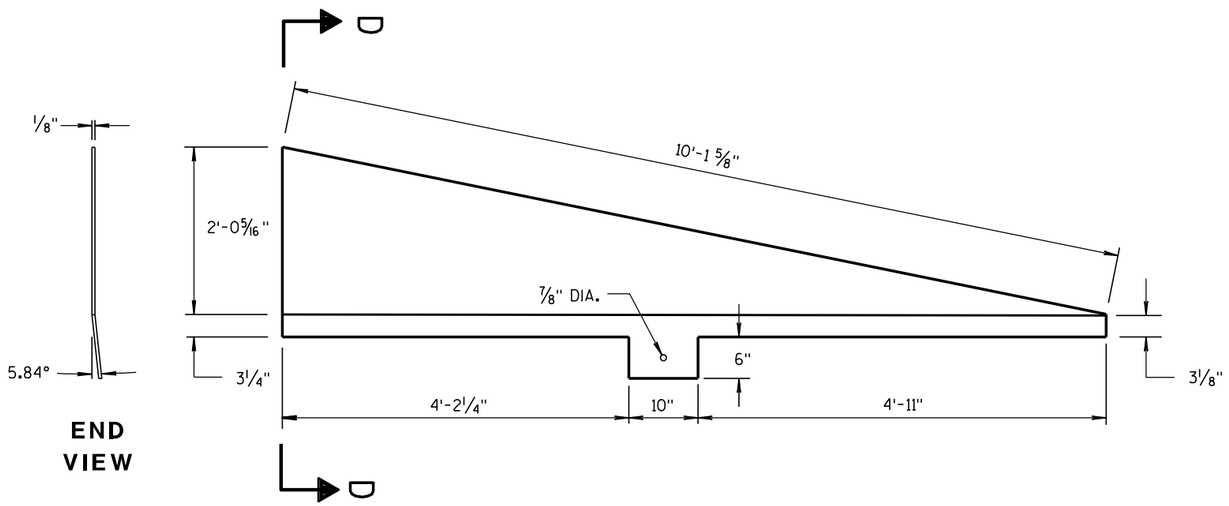
SIDE VIEW

TOP PLATE



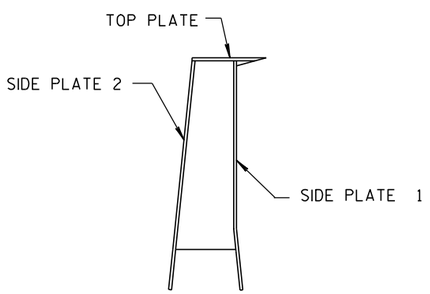
PLAN VIEW

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
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARD ENGINEER
ENT
FHWA

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

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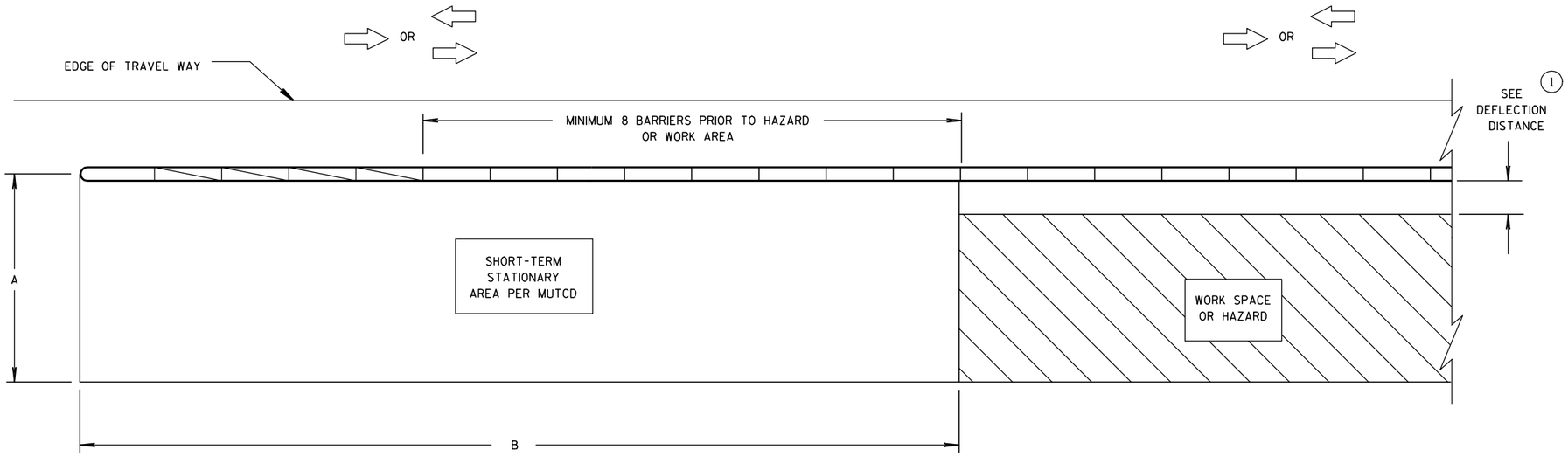
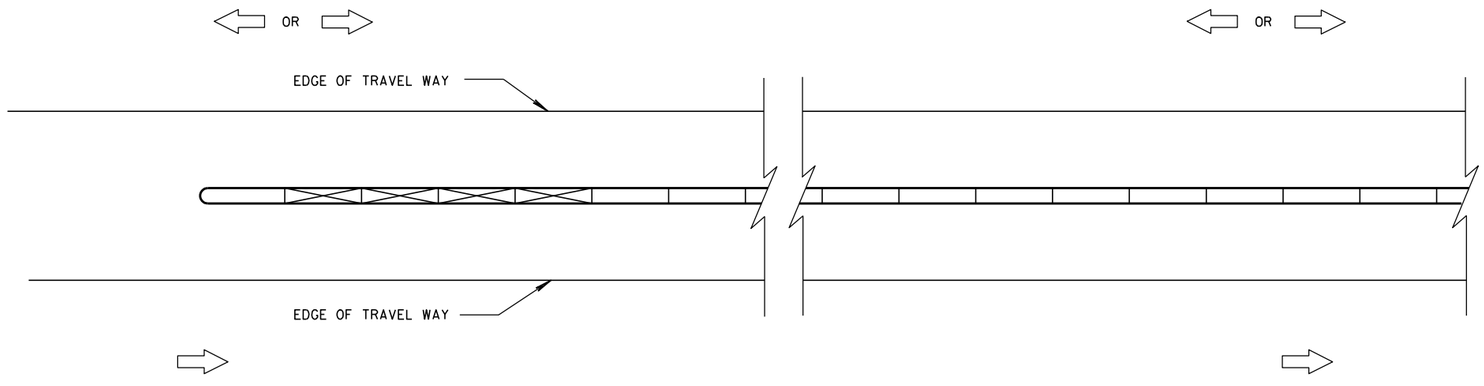
S.D.D. 14 B 7-13h



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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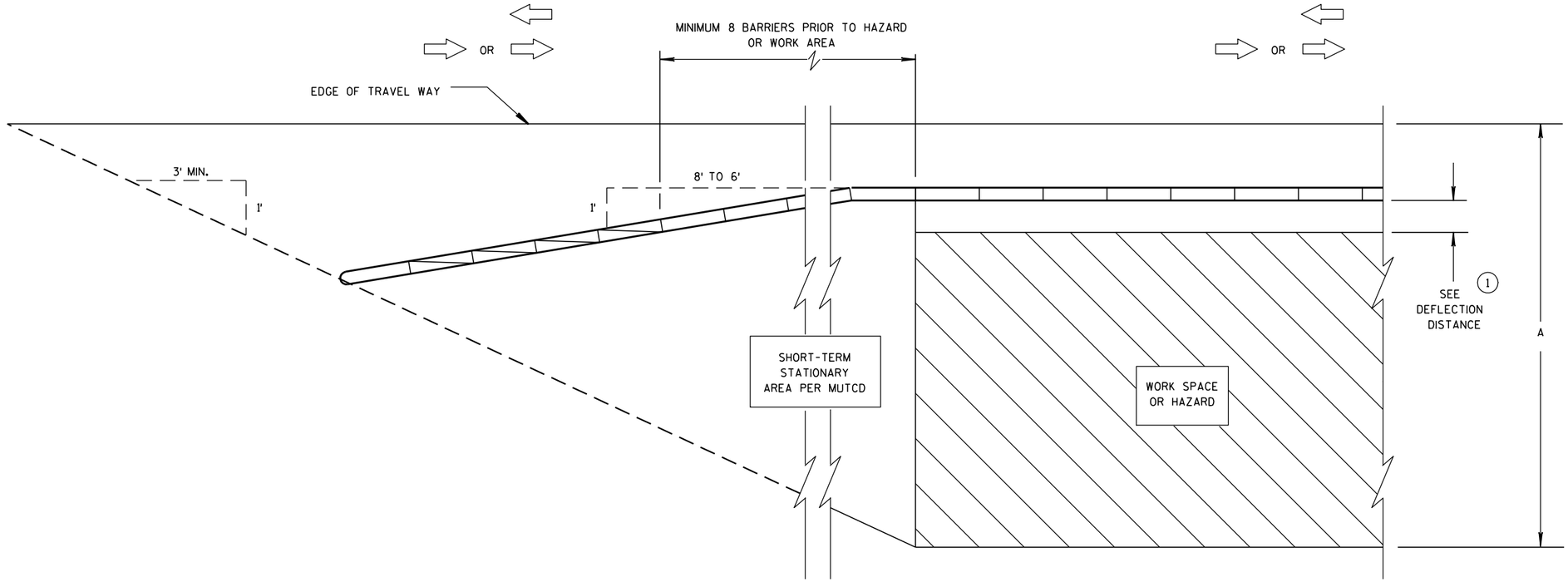
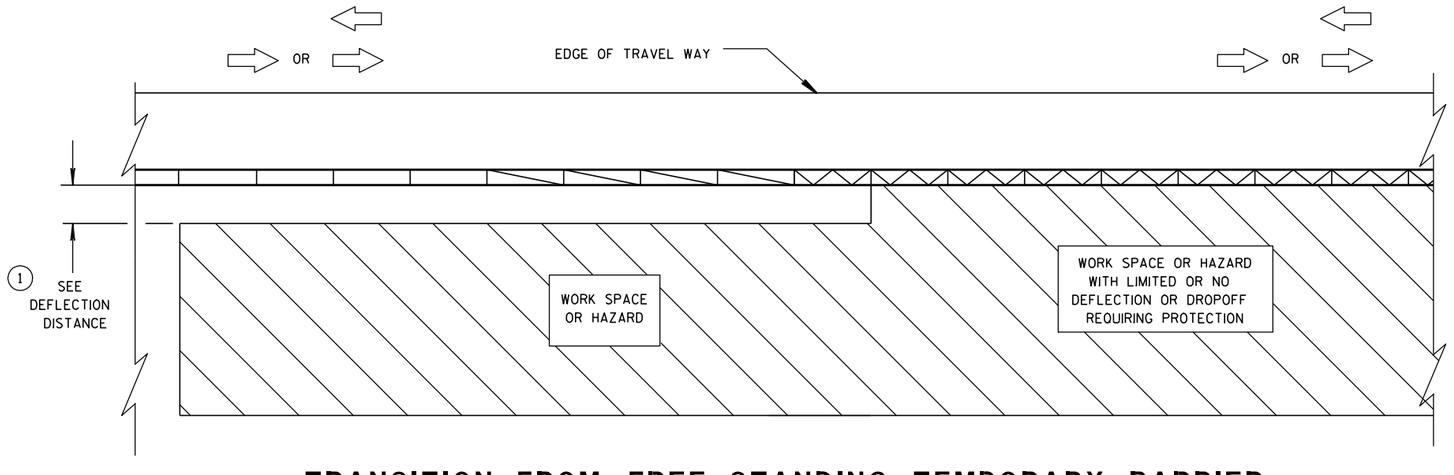
S.D.D. 14 B 8-1a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

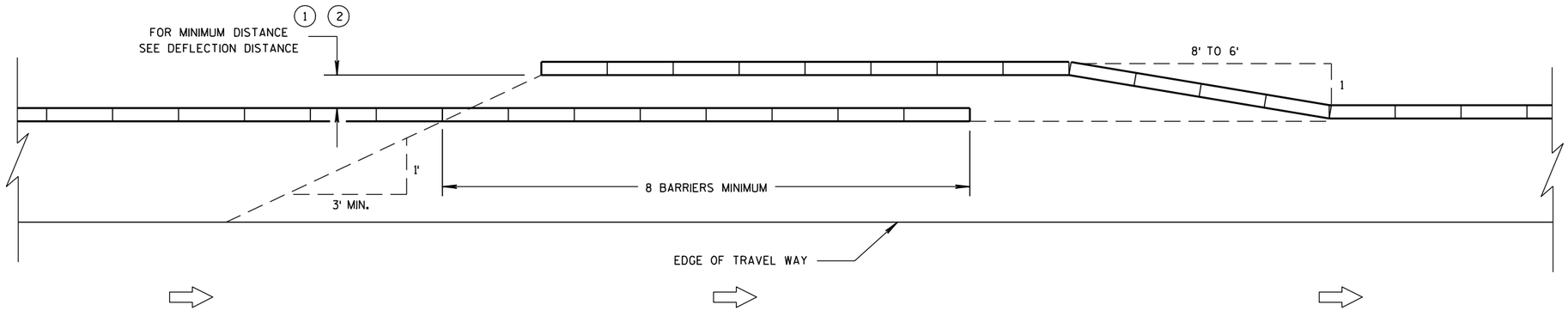
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

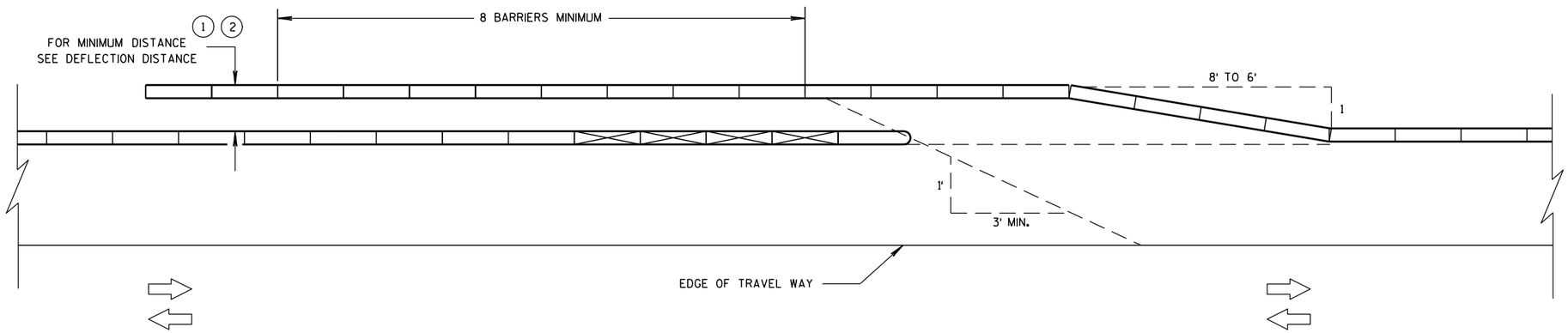
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

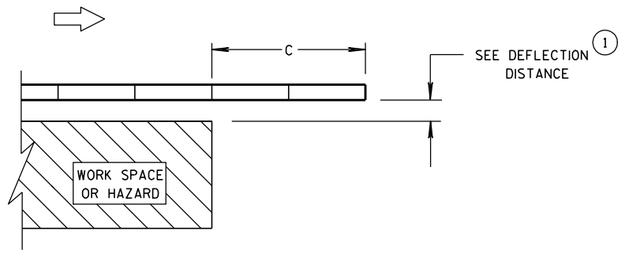
S.D.D. 14 B 8-1b



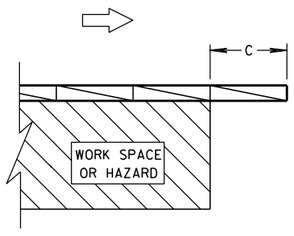
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

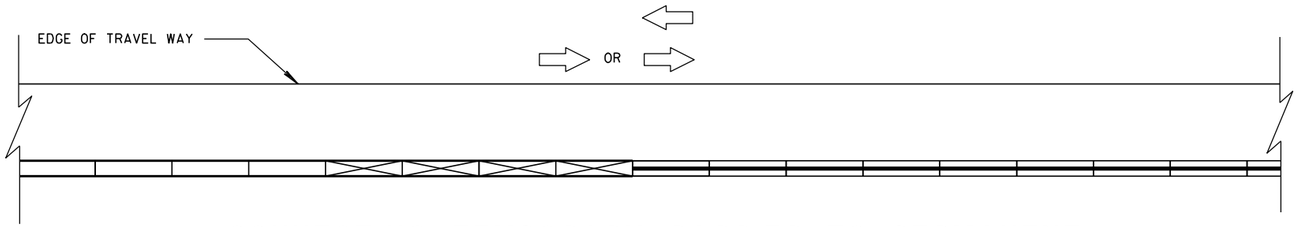
LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

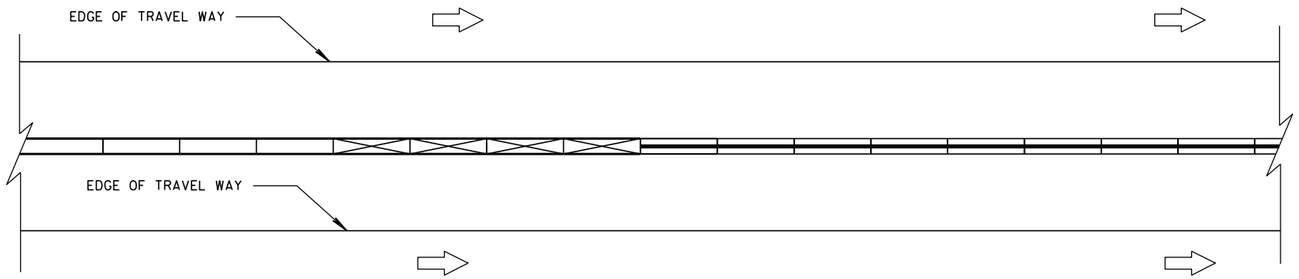
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 8-1c



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

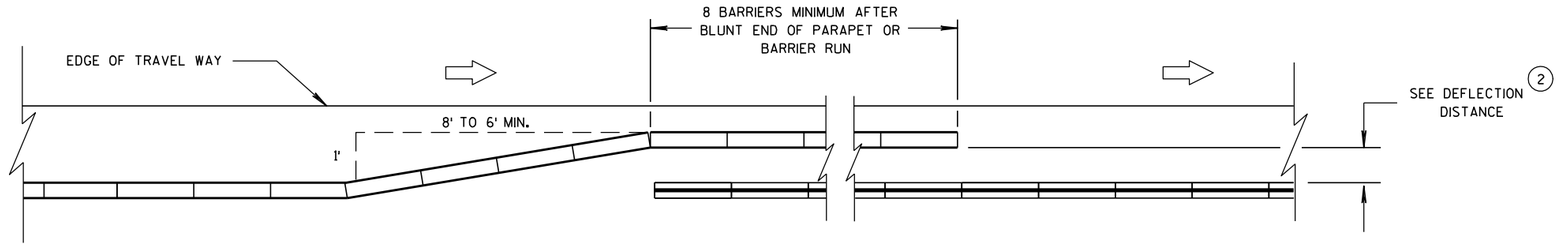
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

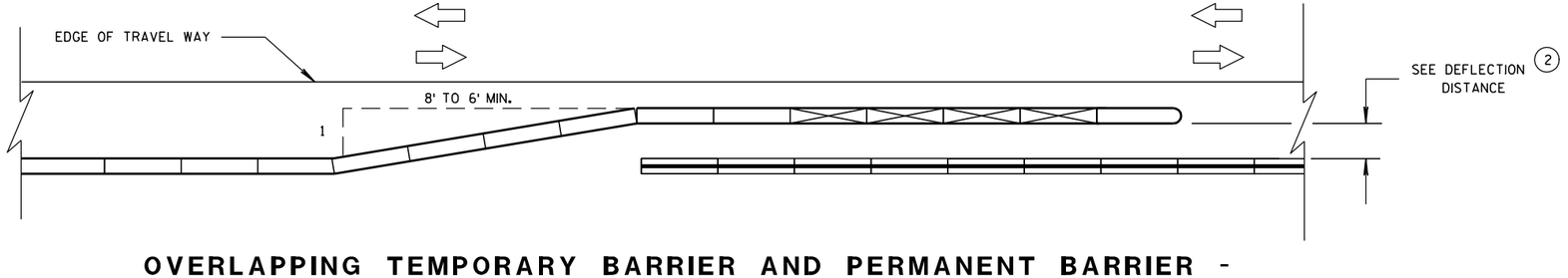
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

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

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S.D.D. 14 B 8-1d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

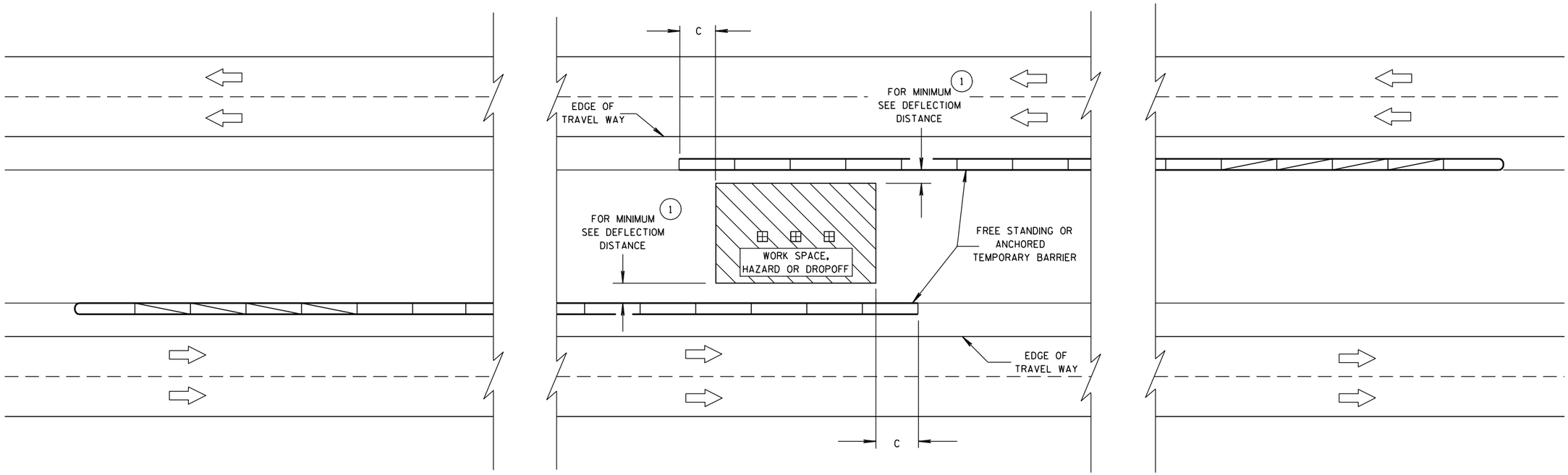
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER

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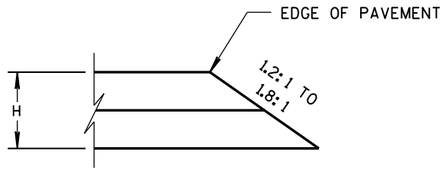
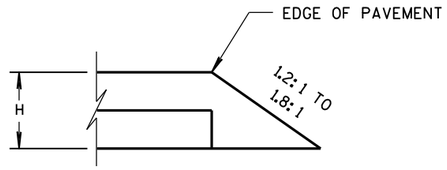
S.D.D. 14 B 8-1e



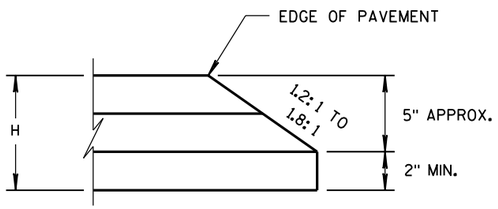
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



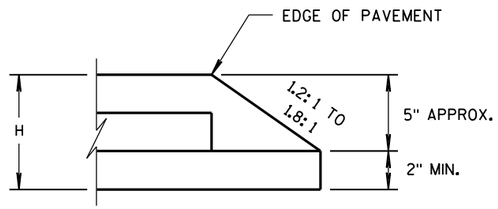
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

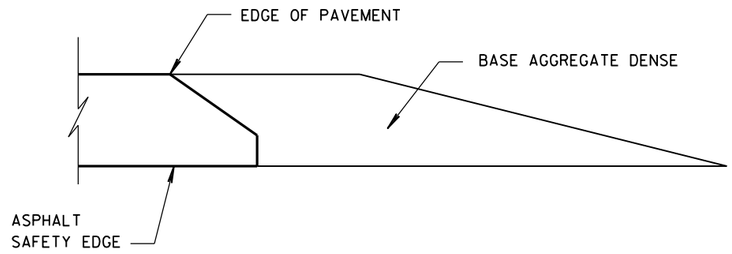
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

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S.D.D. 14 B 29-1

SAFETY EDGE SM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

GENERAL NOTES

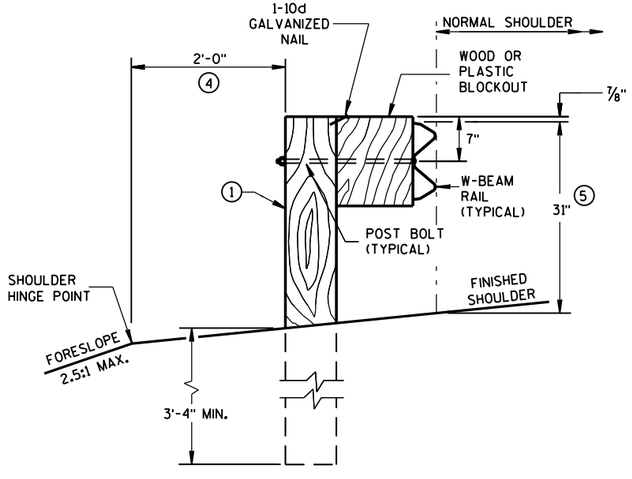
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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 2½INCHES 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.

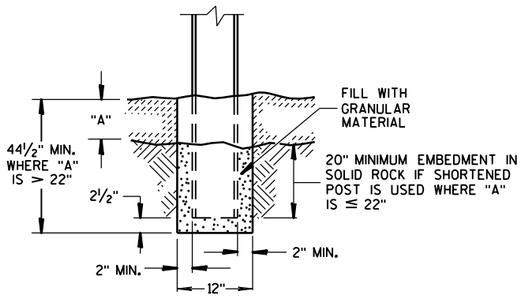
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

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".



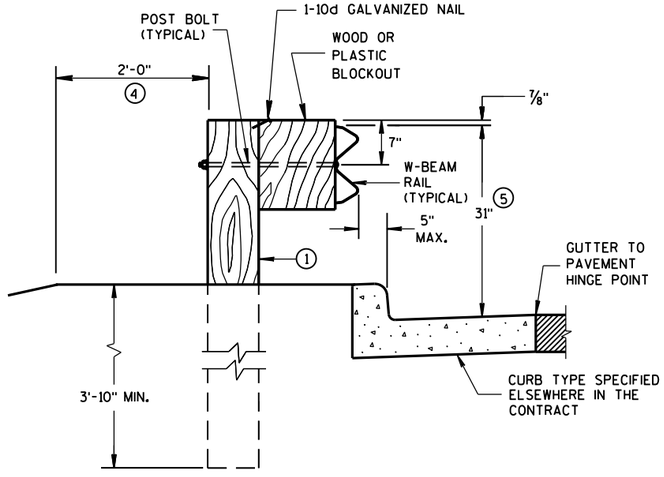
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



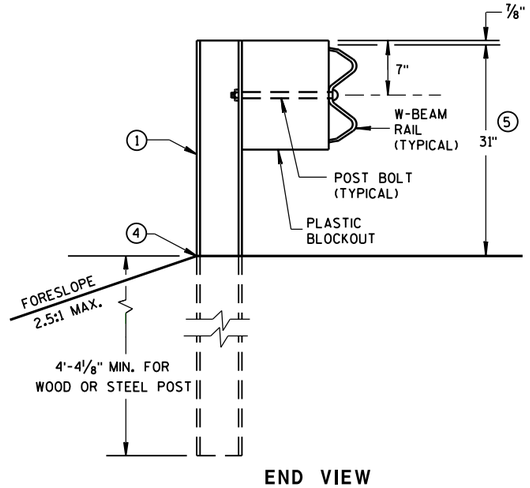
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



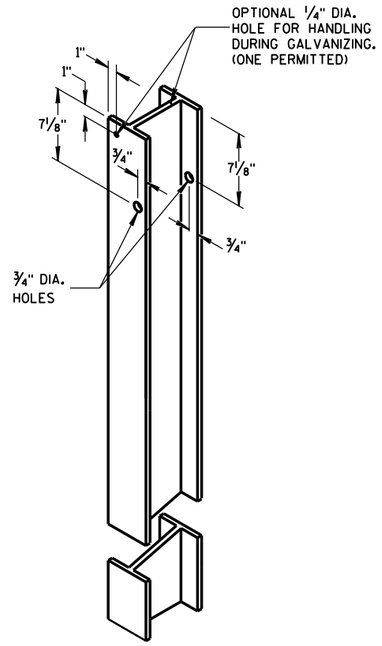
END VIEW

LOCATED ALONG A CURBED ROADWAY

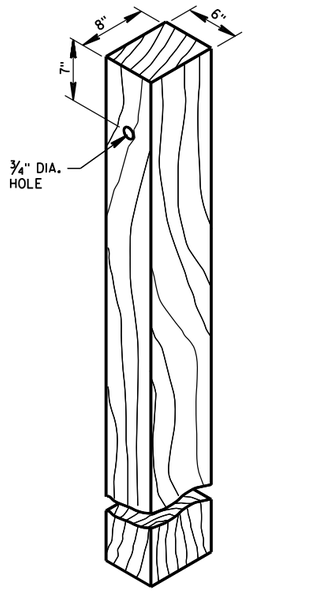


END VIEW

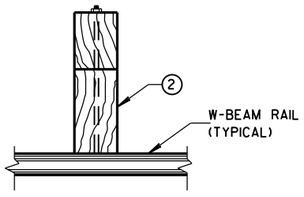
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



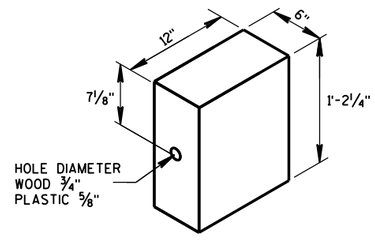
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



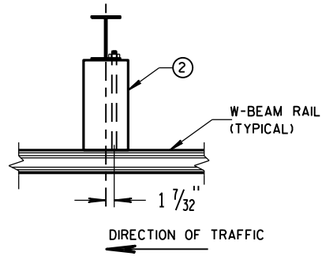
WOOD POST
(6" X 8") NOMINAL ①



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
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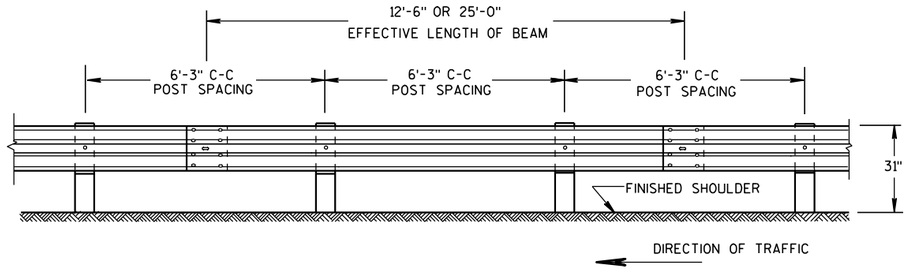
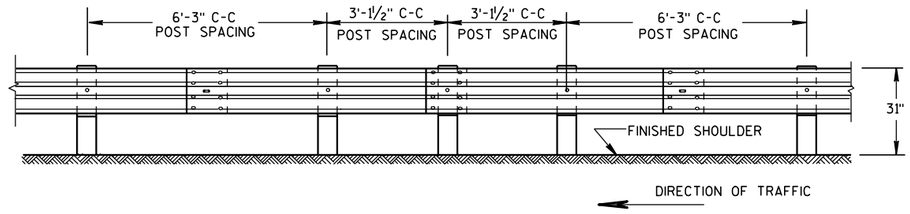


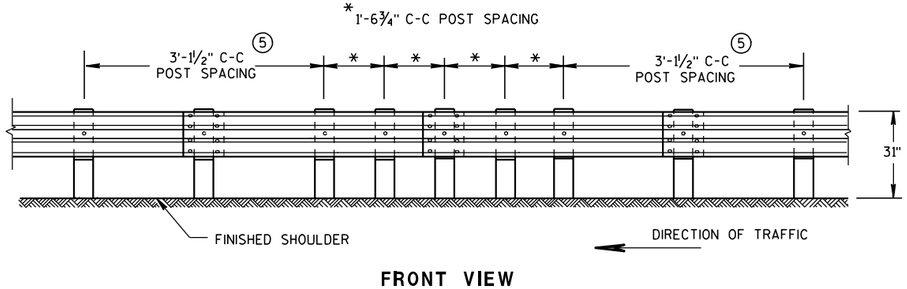
FRONT VIEW

POST SPACING STANDARD INSTALLATION



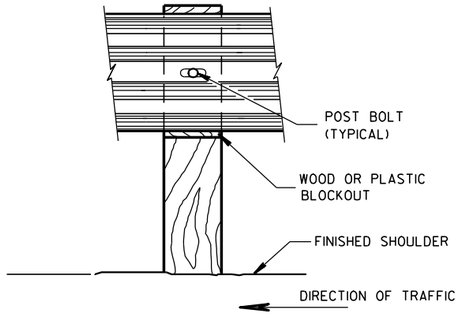
FRONT VIEW

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

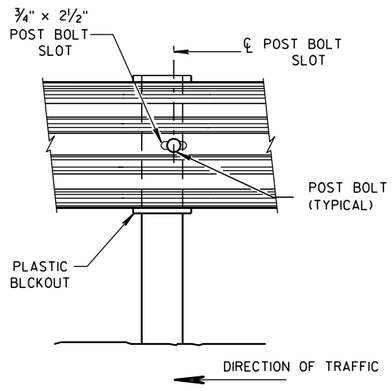


FRONT VIEW

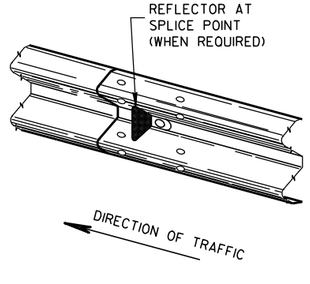
QUARTER POST SPACING (QS)

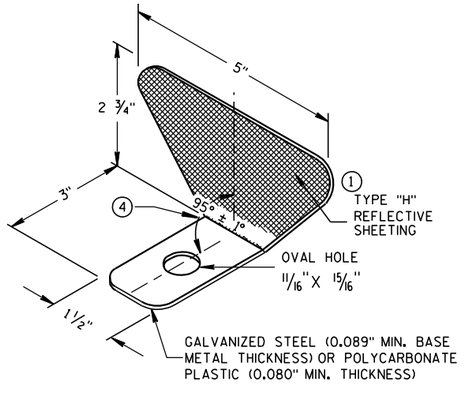


FRONT VIEW AT WOOD POST

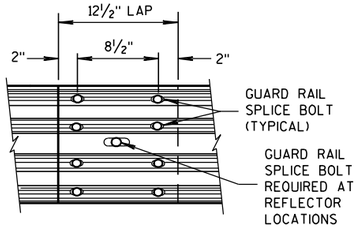


FRONT VIEW AT STEEL POST



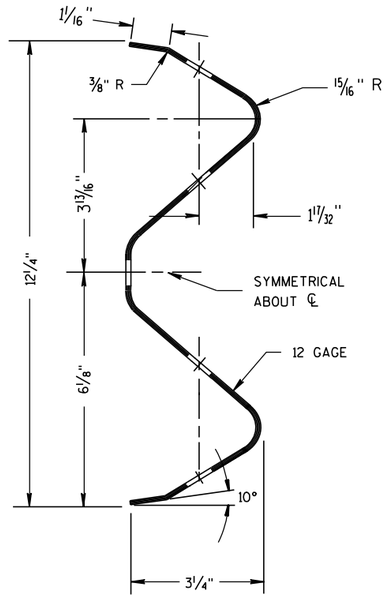


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

GENERAL NOTES

① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

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

POST BOLTS ARE A 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 ②

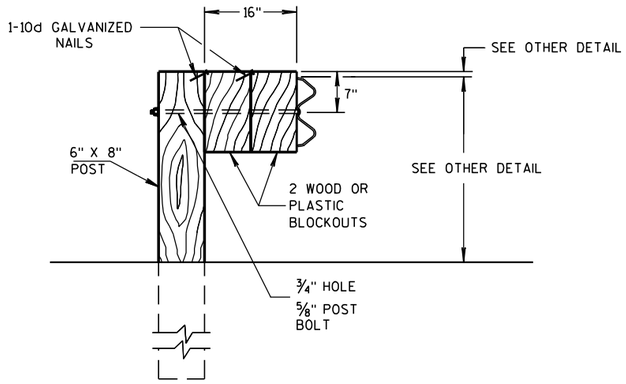
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

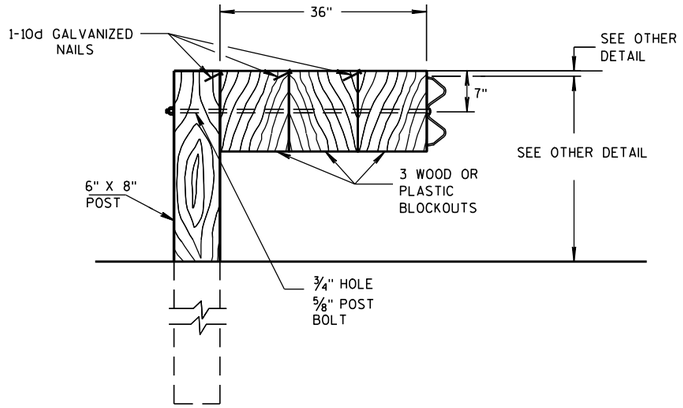
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



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.

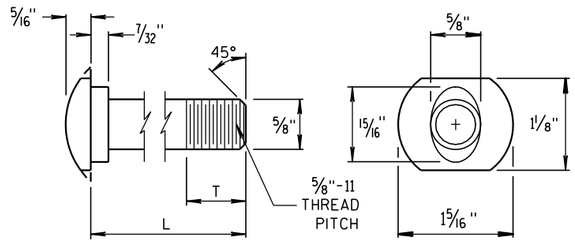


DETAIL FOR 36" BLOCKOUT DEPTH

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.

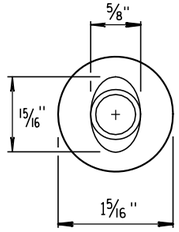
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

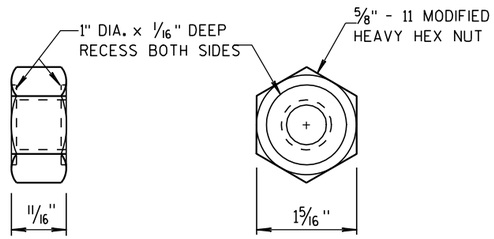


POST BOLT TABLE

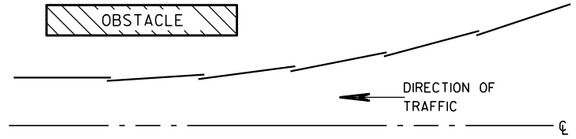
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

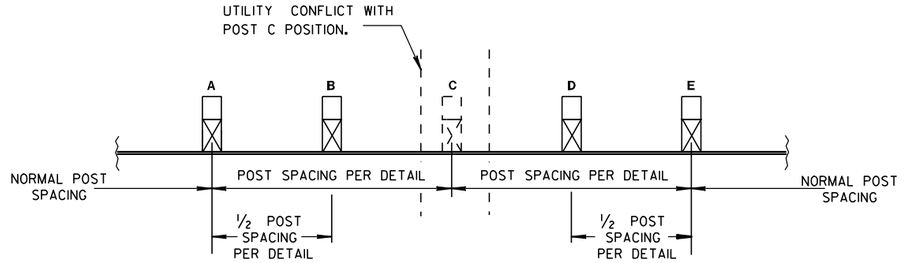


POST BOLT AND RECESS NUT

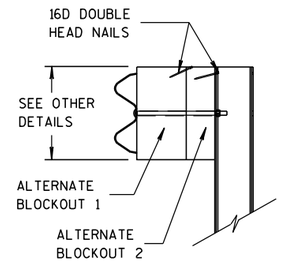


PLAN VIEW

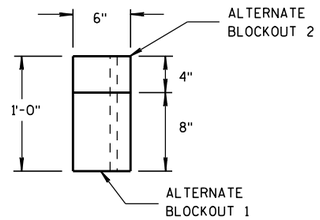
BEAM LAPPING DETAIL



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	
11/15/2011 DATE	/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA	87 ENT

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S.D.D. 14 B 42-2c

GENERAL NOTES

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

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

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

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

(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(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.

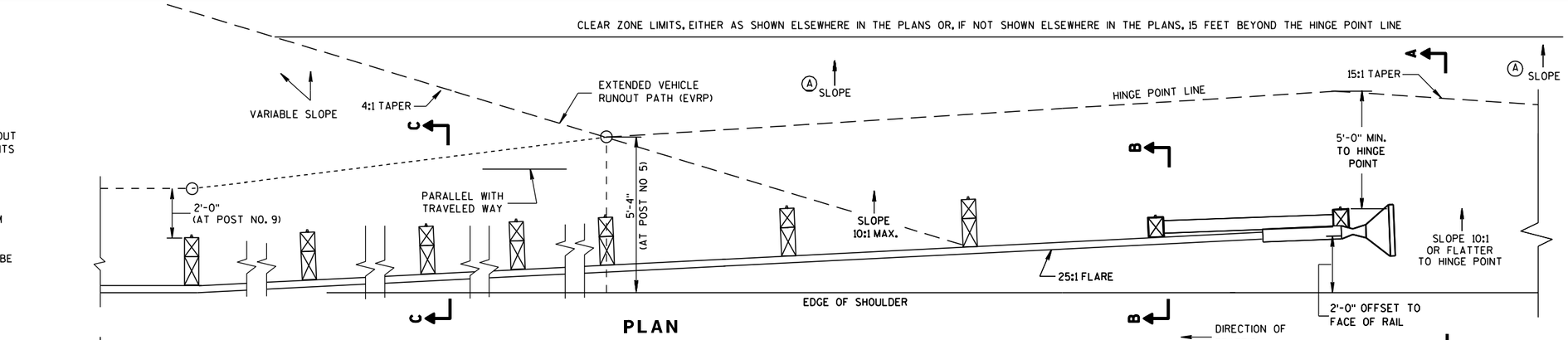
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

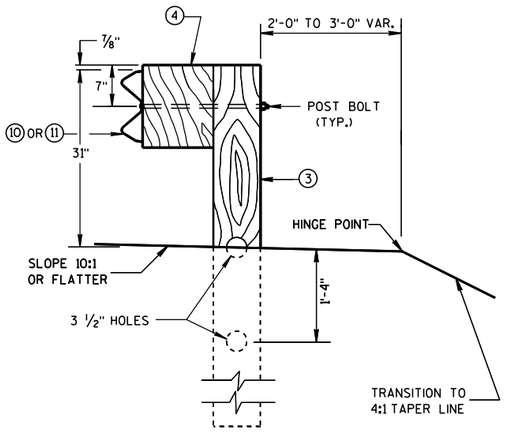
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

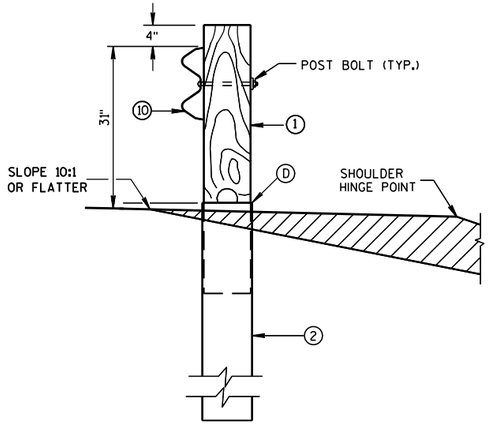
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

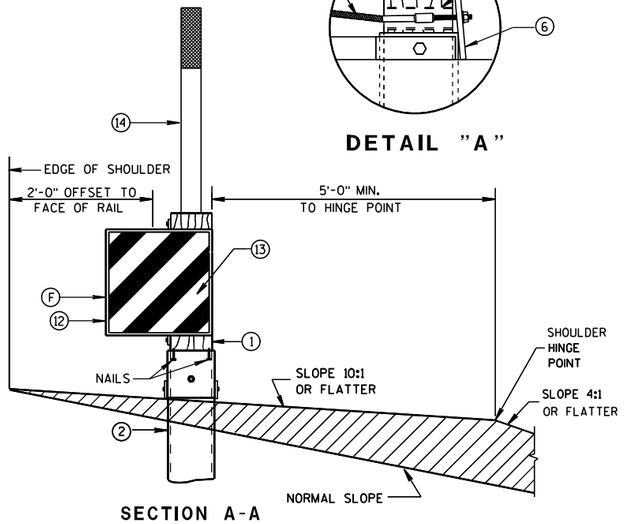




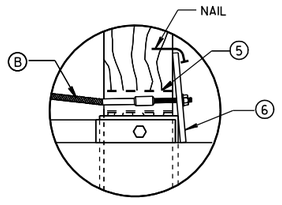
SECTION C-C
TYPICAL AT POST NOS. 3-9



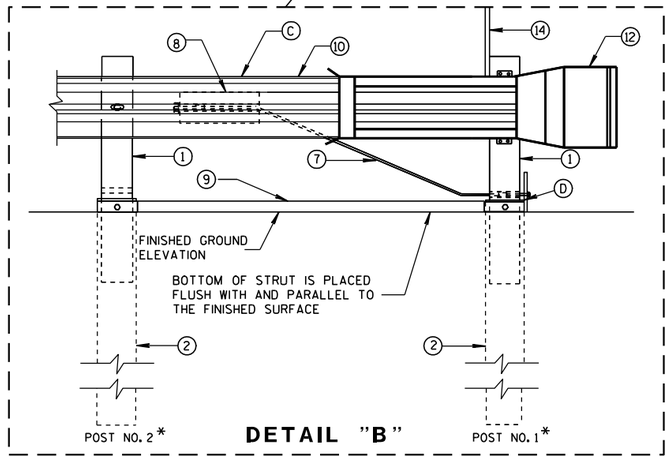
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 44-1a

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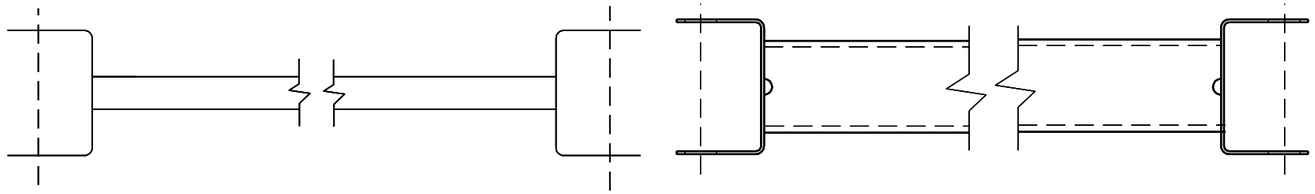
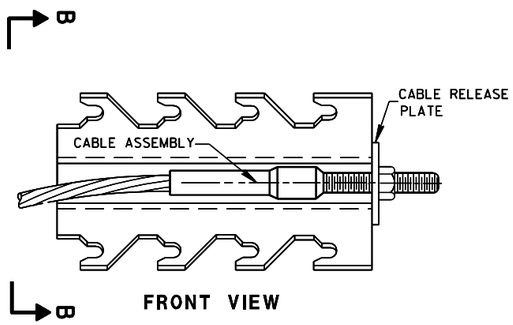


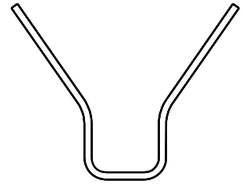
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

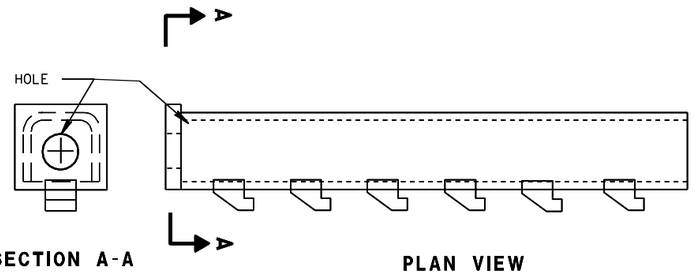
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



FRONT VIEW



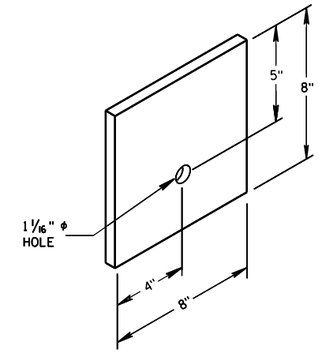
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



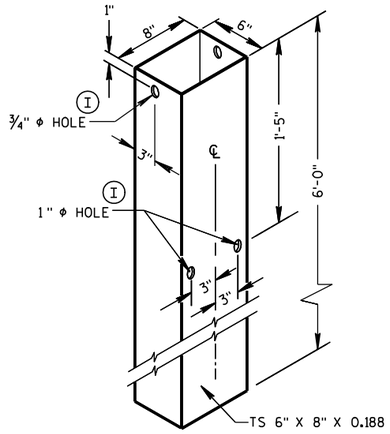
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

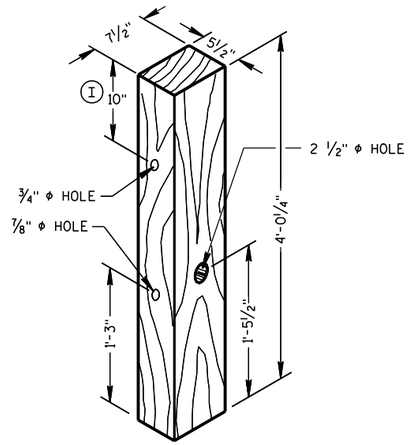
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

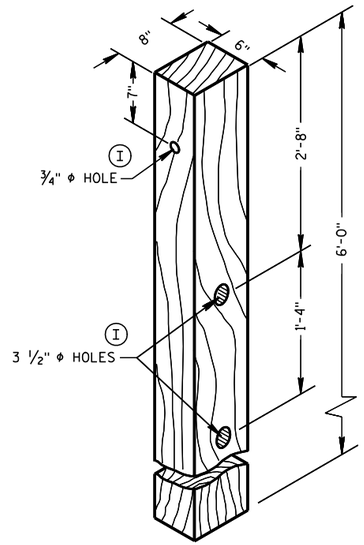


FOUNDATION TUBE (2)



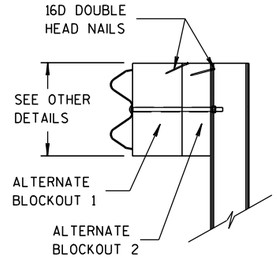
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

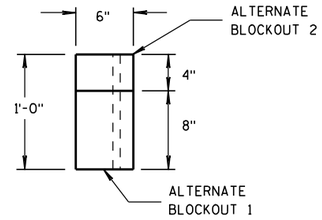


POSTS NUMBER 3-9

WOOD CRT POST (3)

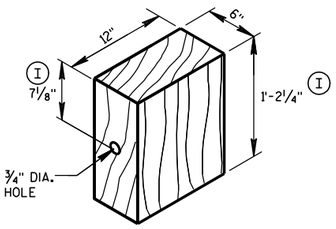


SIDE VIEW



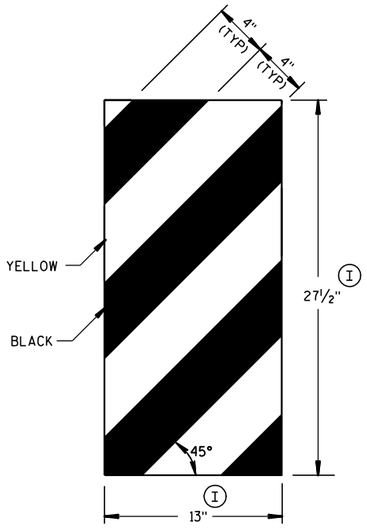
TOP VIEW

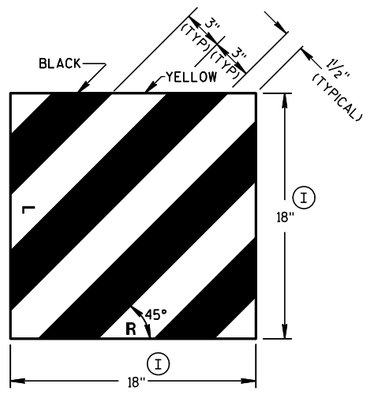
ALTERNATE WOOD BLOCKOUT DETAIL



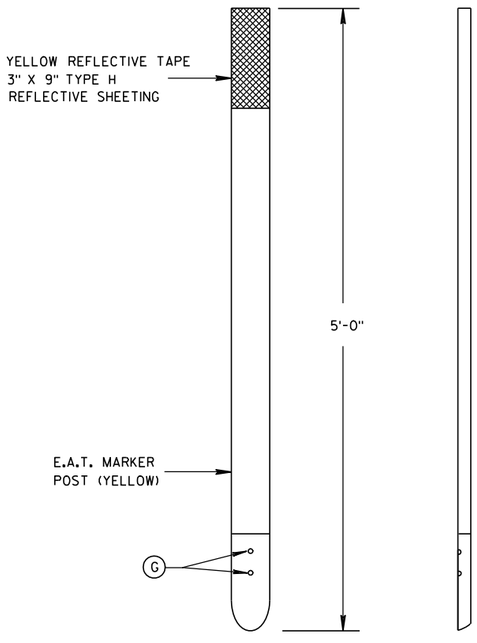
WOOD BLOCKOUT (4)

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





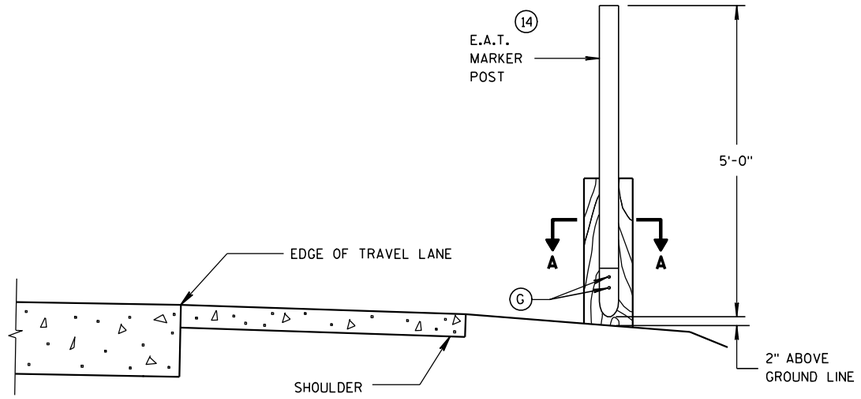
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

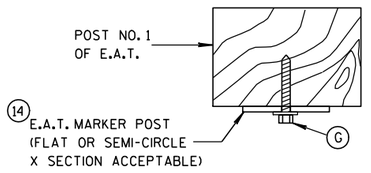
SIDE VIEW

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

5/23/2011
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS 90
ENGINEER

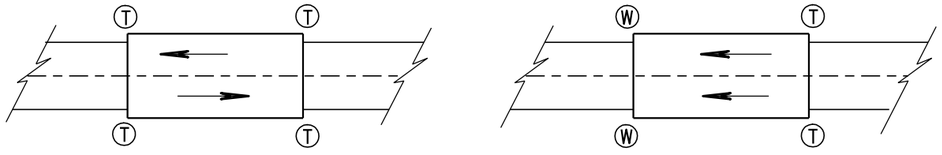
FHWA

6

S.D.D. 14 B 44-1c

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

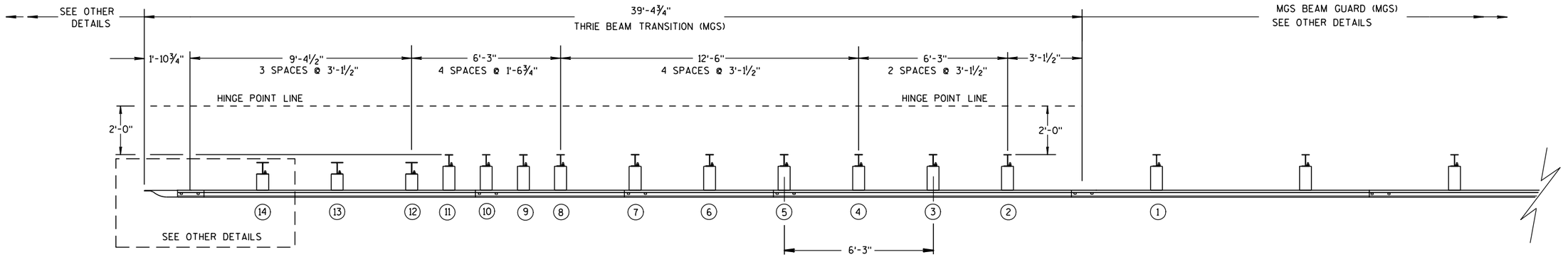
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

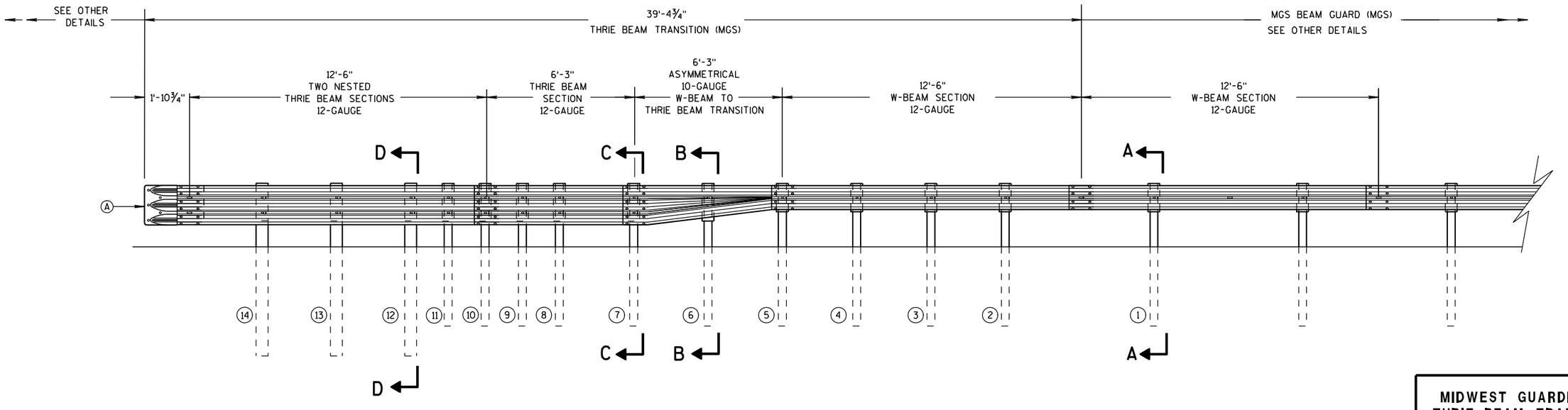
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

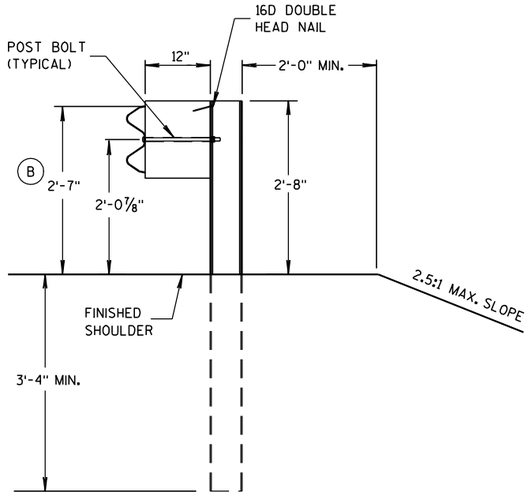
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

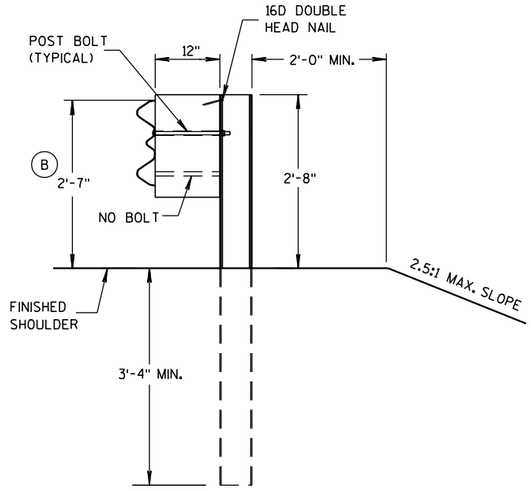
GENERAL NOTES

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



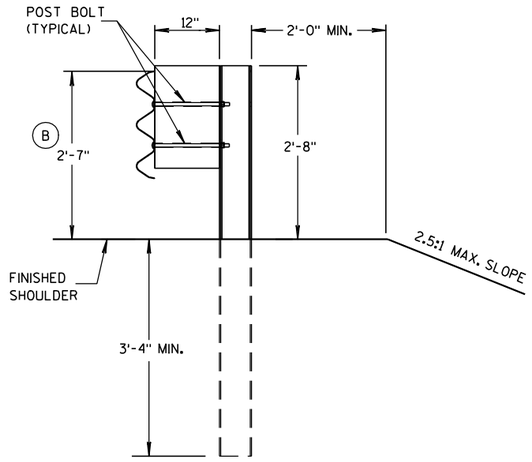
SECTION A-A

POSTS 1-5



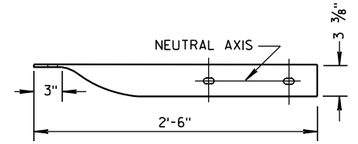
SECTION B-B

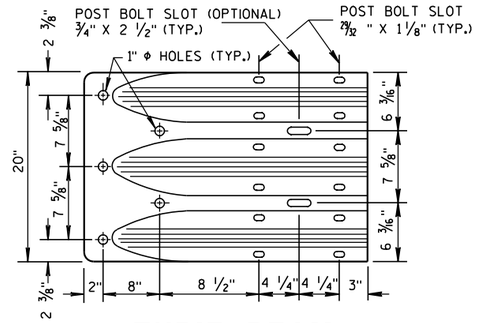
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

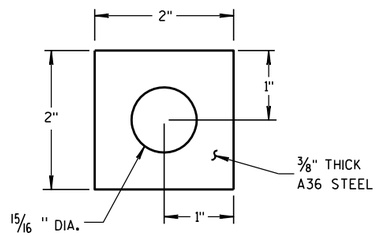
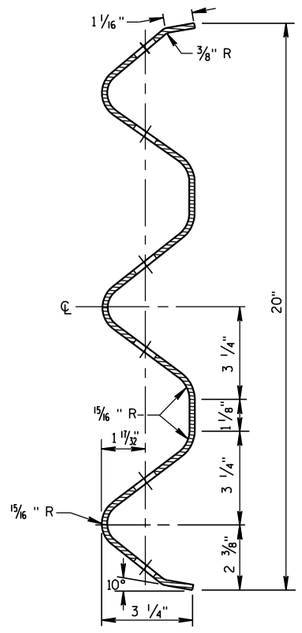
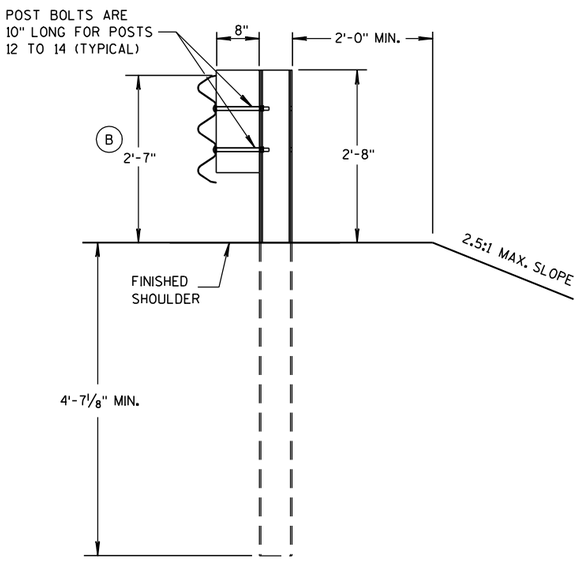


PLATE WASHER DETAIL

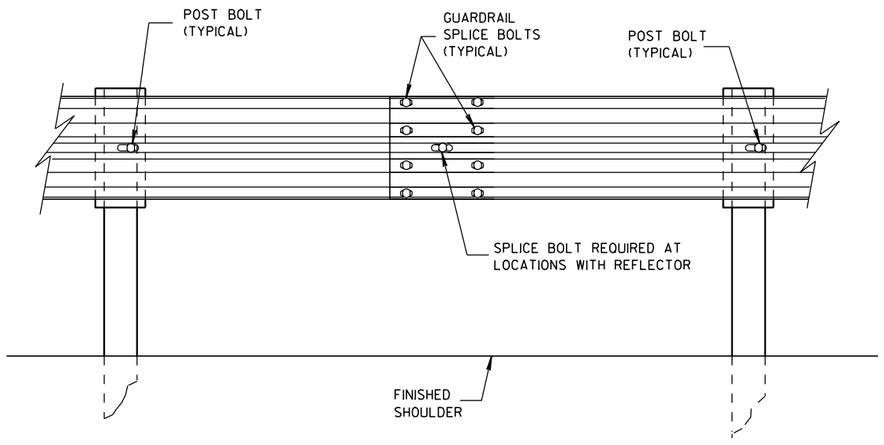


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



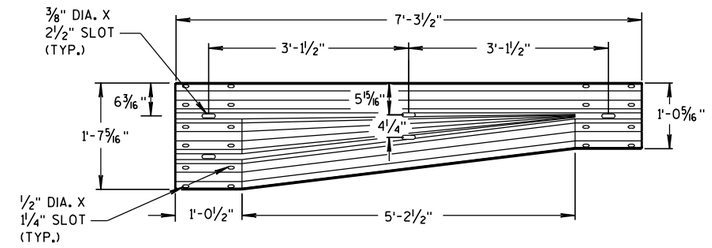
SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

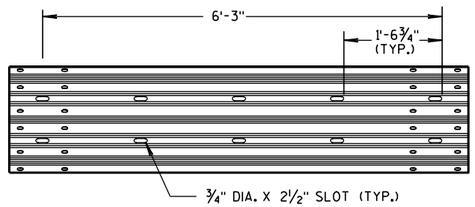
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6

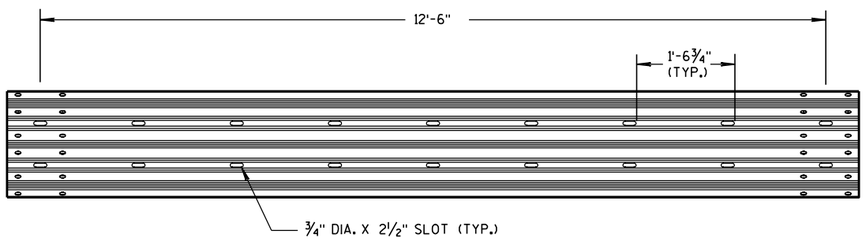
S.D.D. 14 B 45-3b



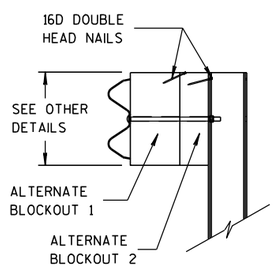
W-BEAM TO THRIE BEAM TRANSITION SECTION



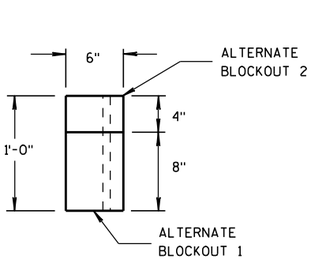
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

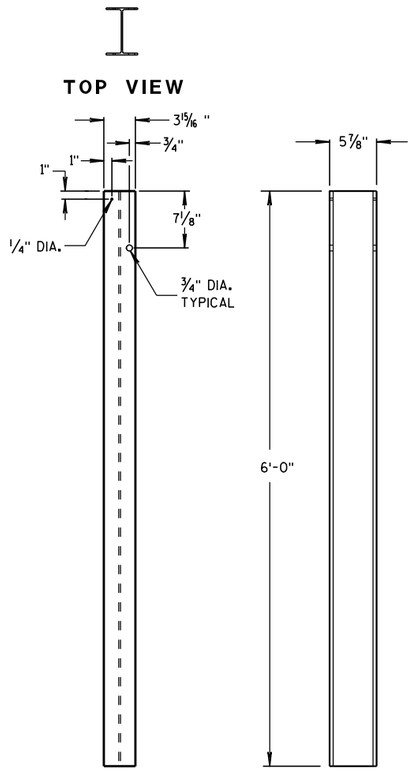


SIDE VIEW

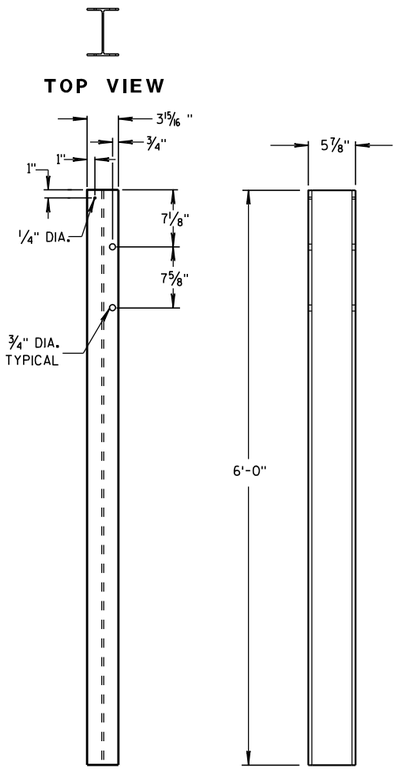


TOP VIEW

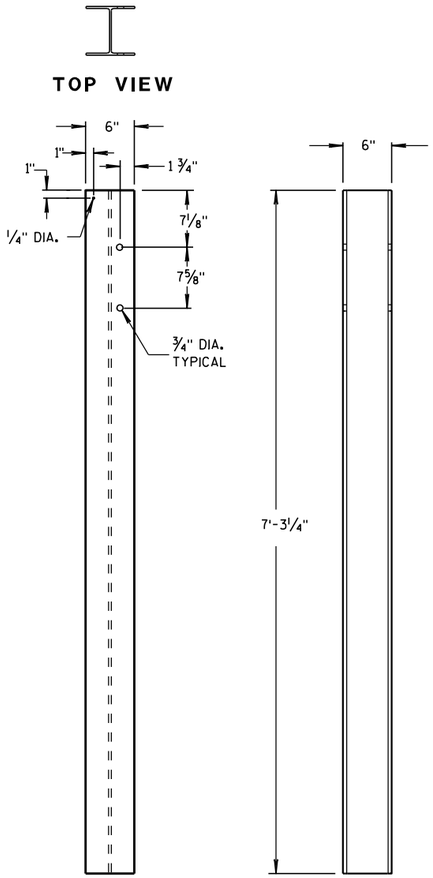
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

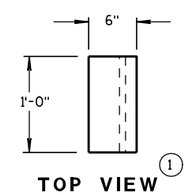


STEEL POSTS 6-11

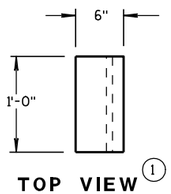


STEEL POSTS 12-14

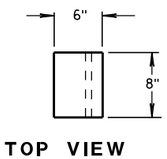
1 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



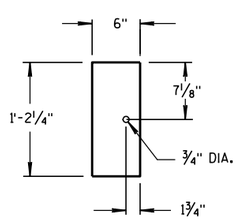
TOP VIEW (1)



TOP VIEW (1)

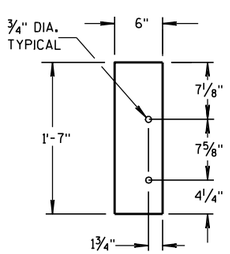


TOP VIEW



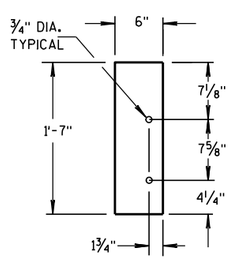
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

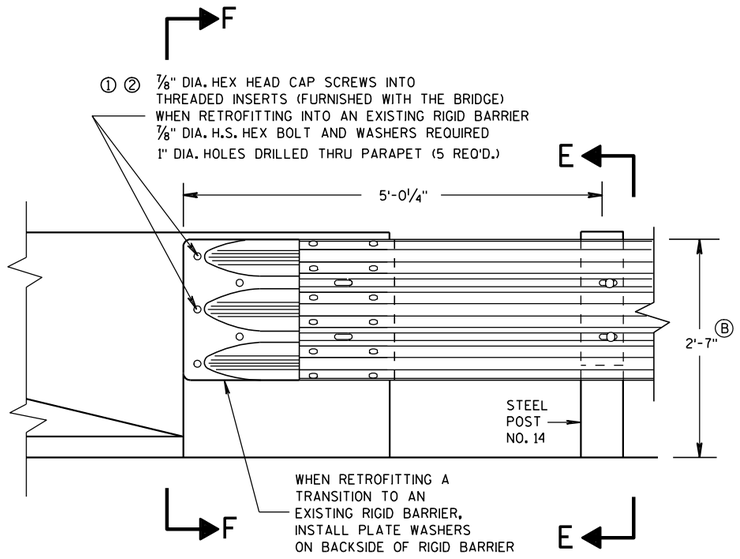
STEEL POST SIZES

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

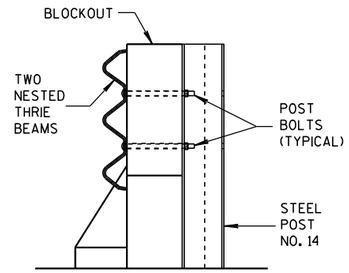
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

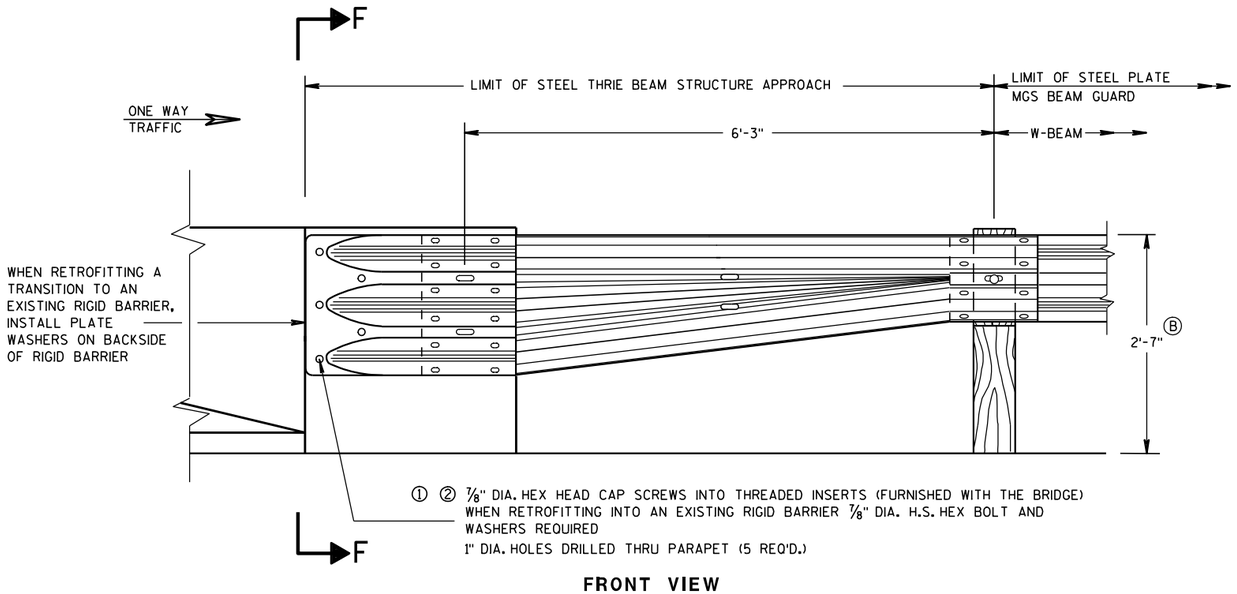
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

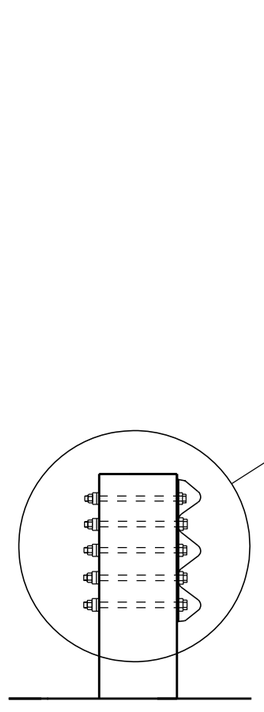
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

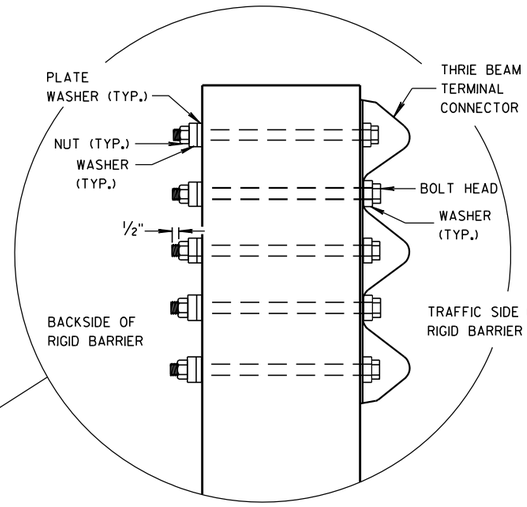
THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW



SECTION F-F



W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

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

FHWA

GENERAL NOTES

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

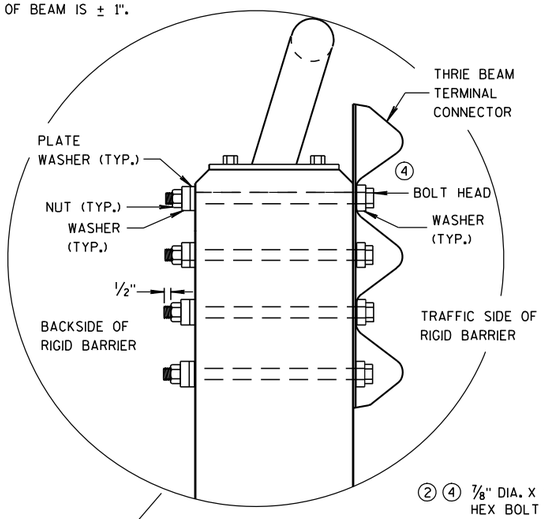
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

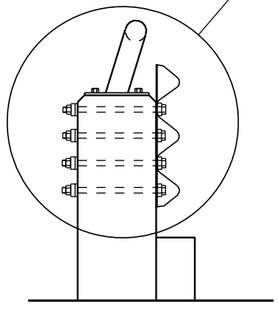
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

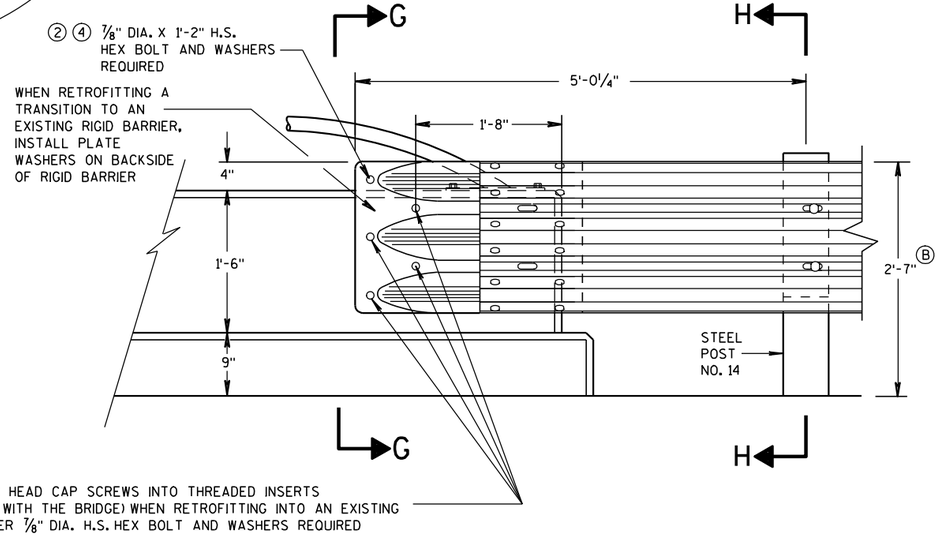
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

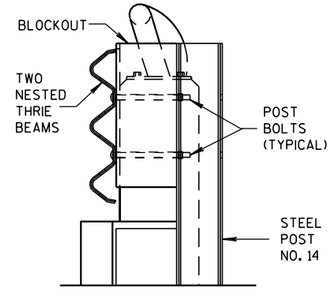




SECTION G-G

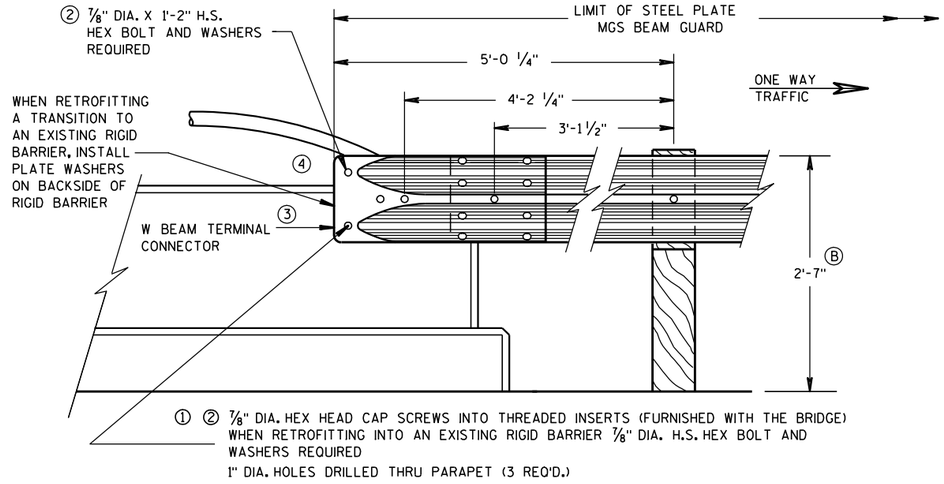


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS (95) ENGINEER

FHWA

6

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

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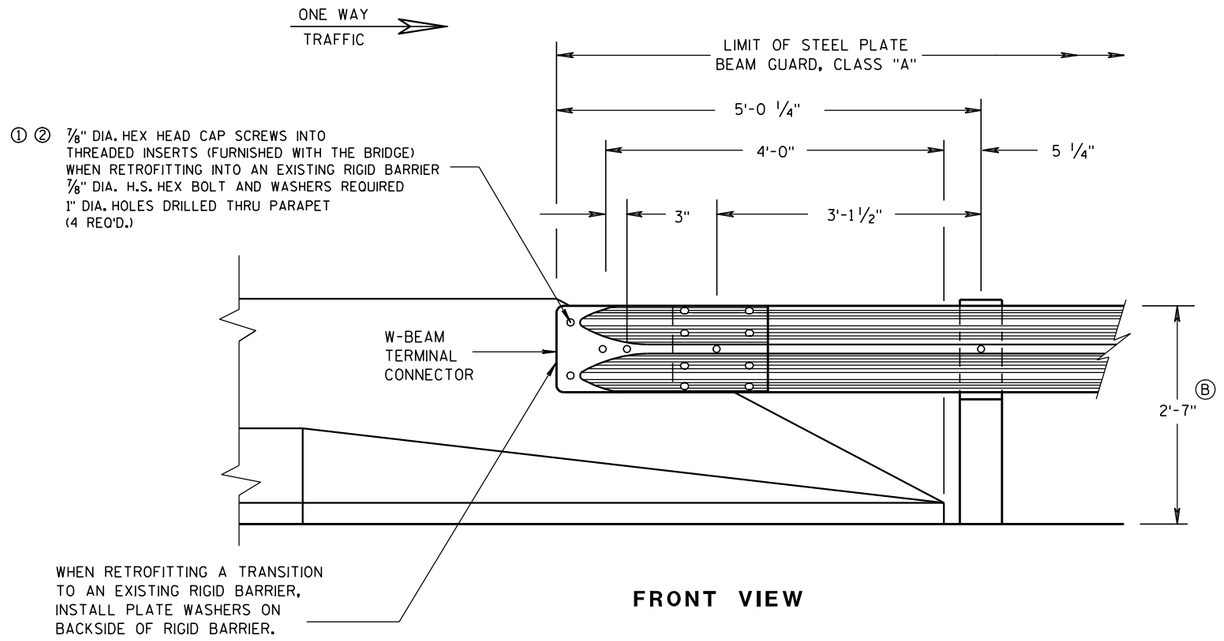
S.D.D. 14 B 45-3e



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

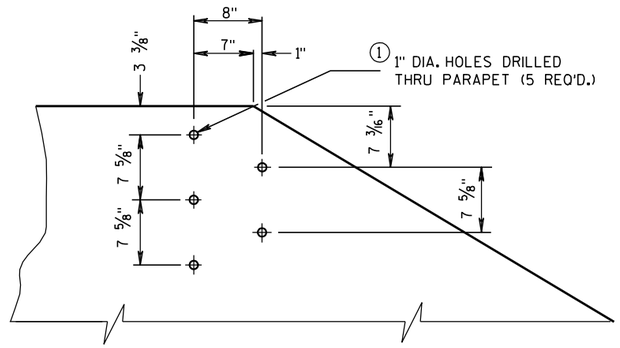
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

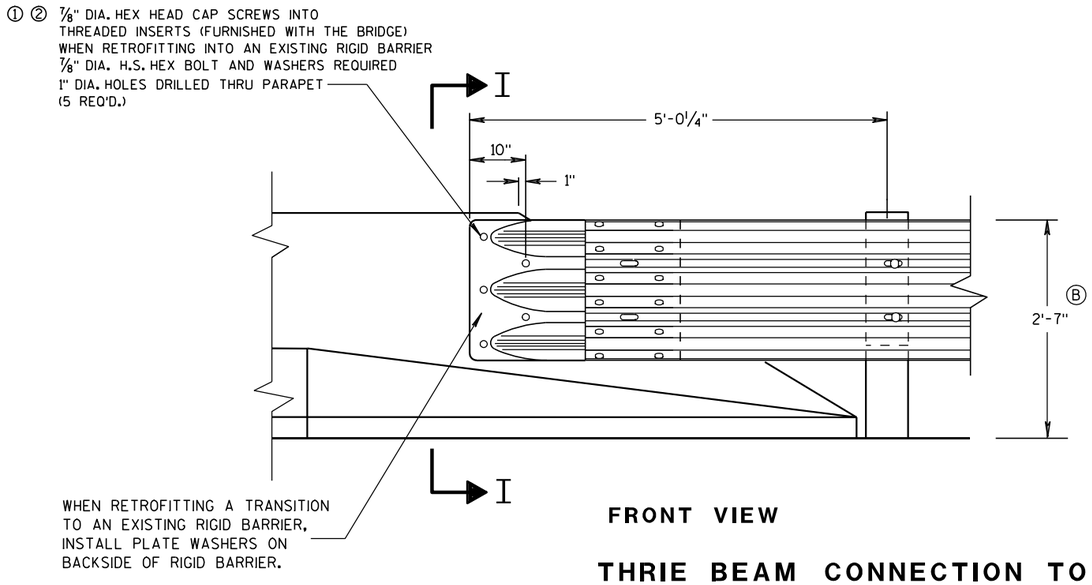
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

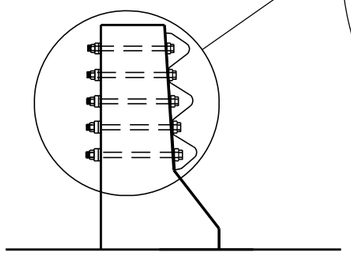
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



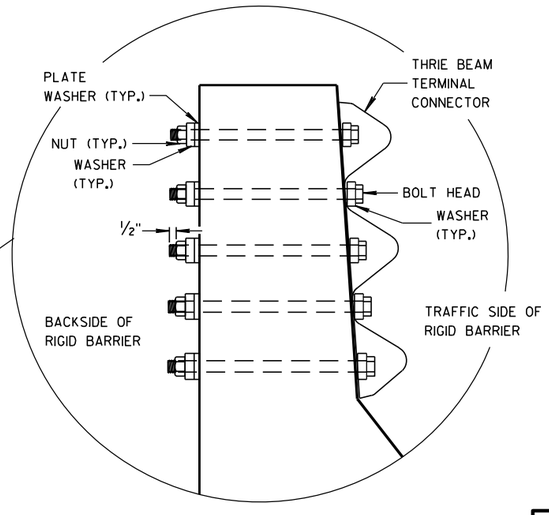
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

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FHWA

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

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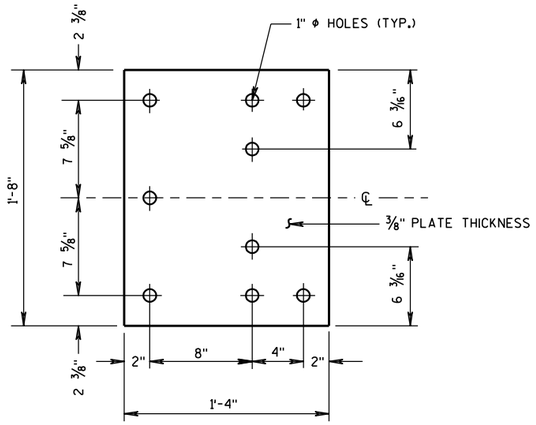
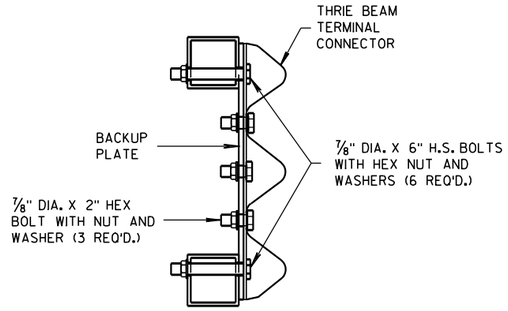
S.D.D. 14 B 45-3f



BACK-UP PLATE DETAIL

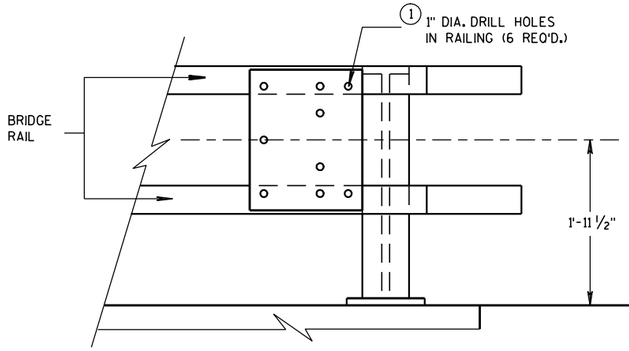


SECTION J-J

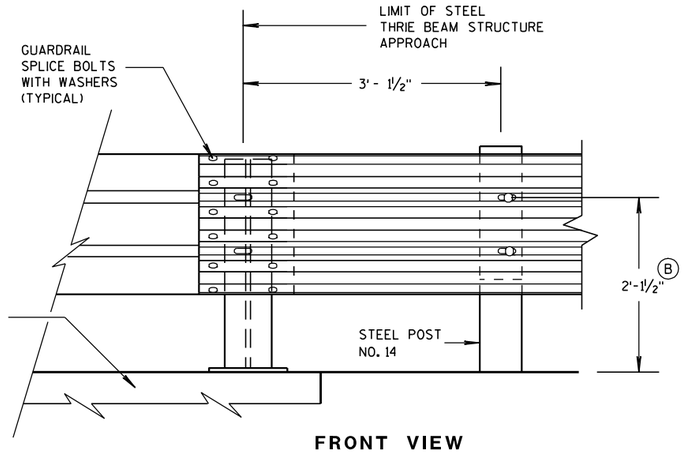
GENERAL NOTES

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

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

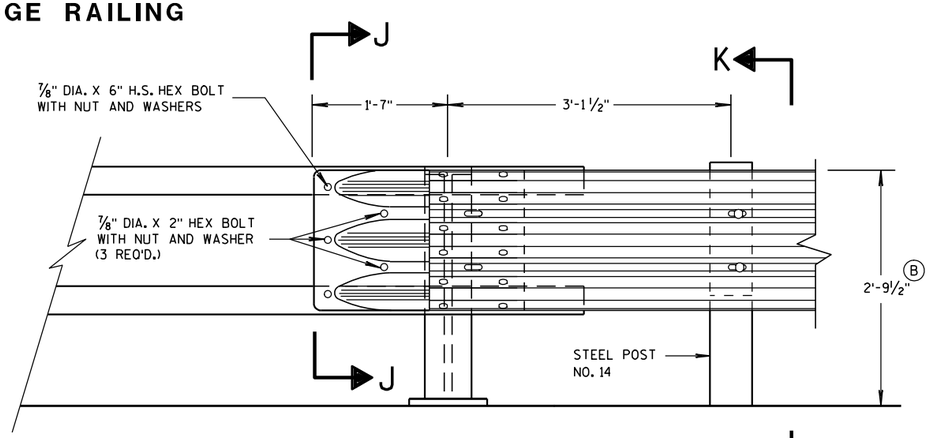


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

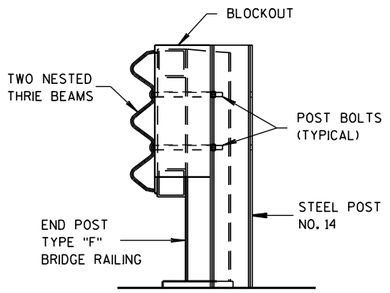


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

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

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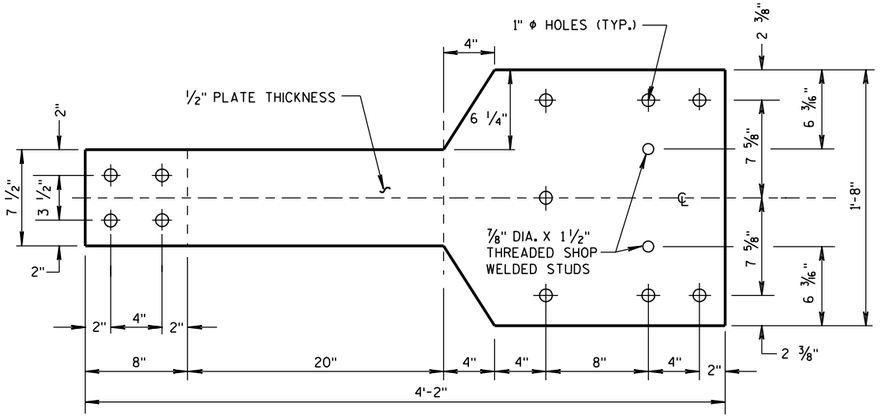
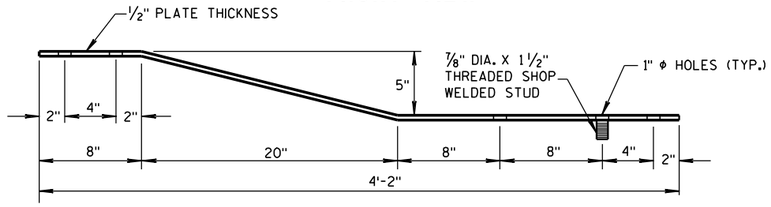
S.D.D. 14 B 45-3g

GENERAL NOTES

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

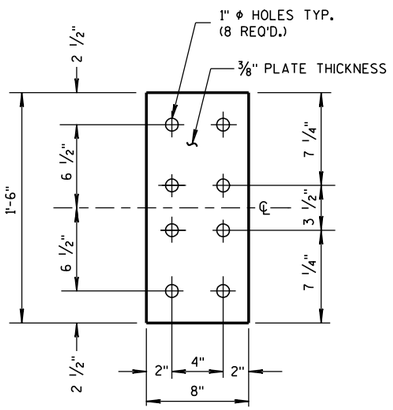


FRONT VIEW



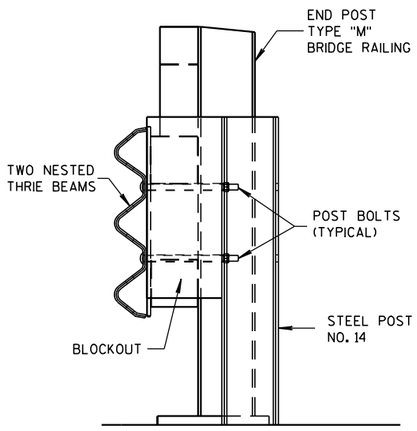
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

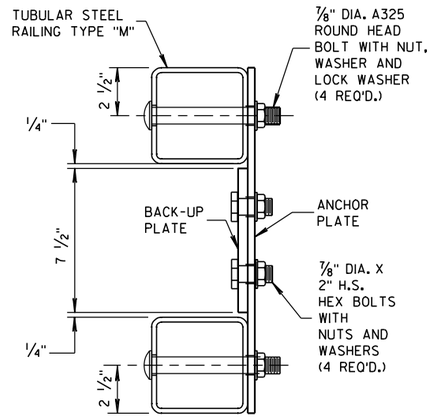


FRONT VIEW

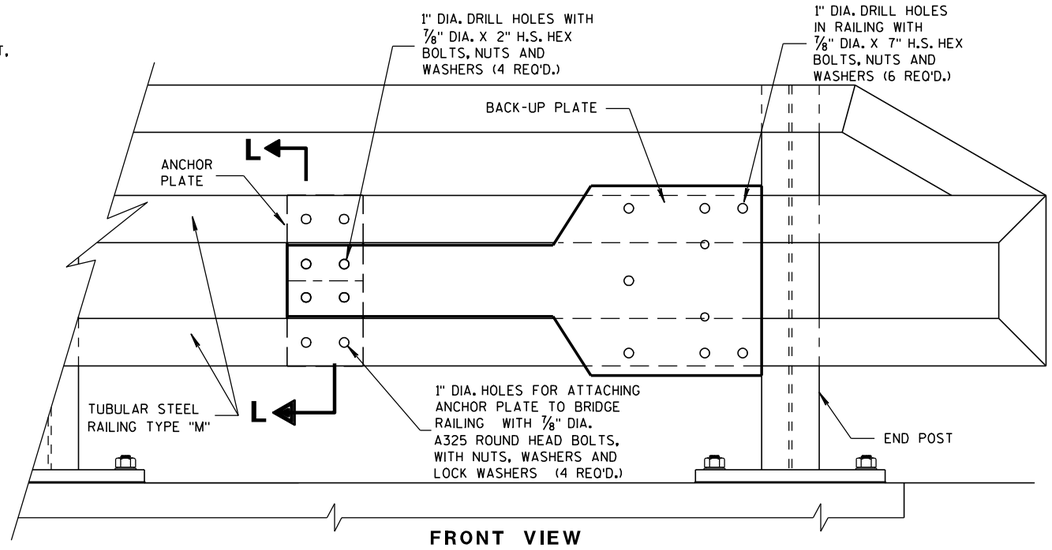
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

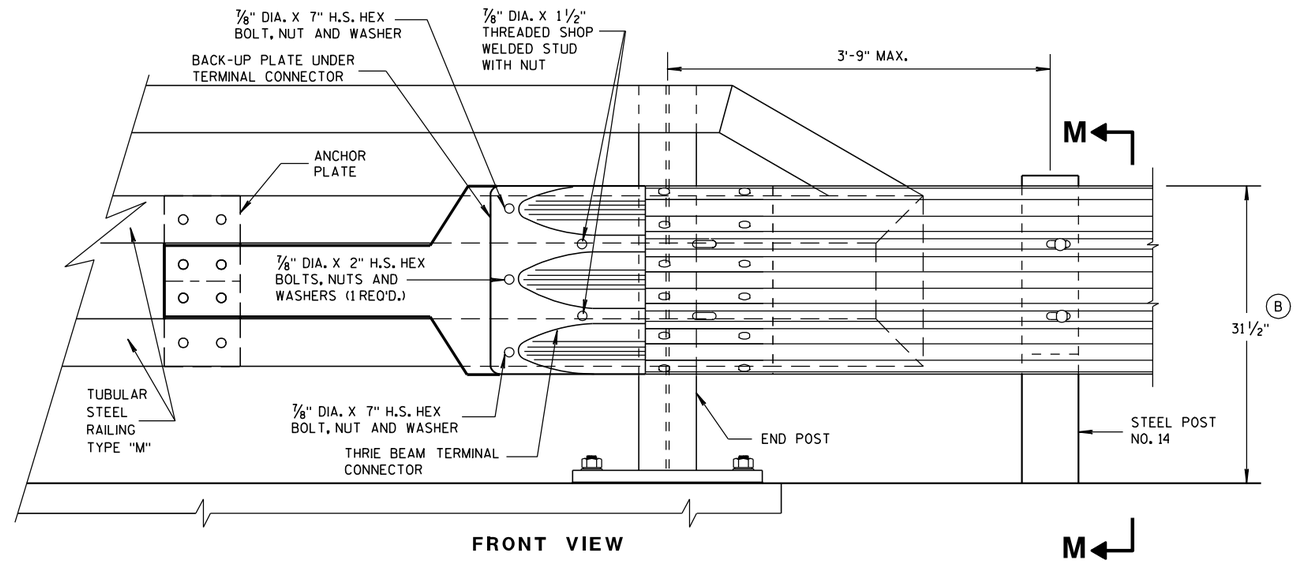


SECTION L-L

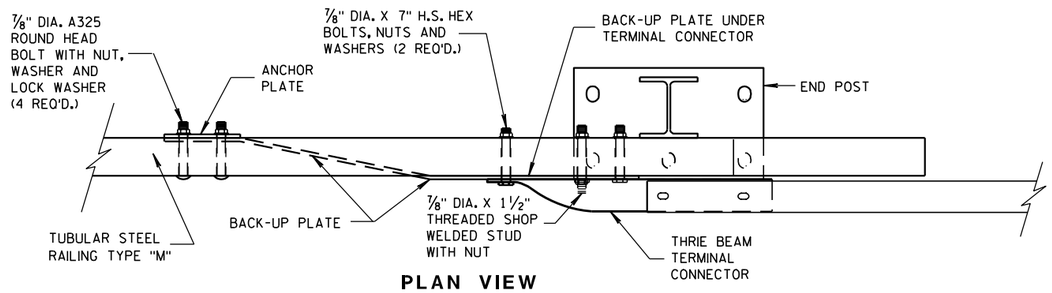


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

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S.D. 14 B 45-3h

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S.D. 14 B 45-3h

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

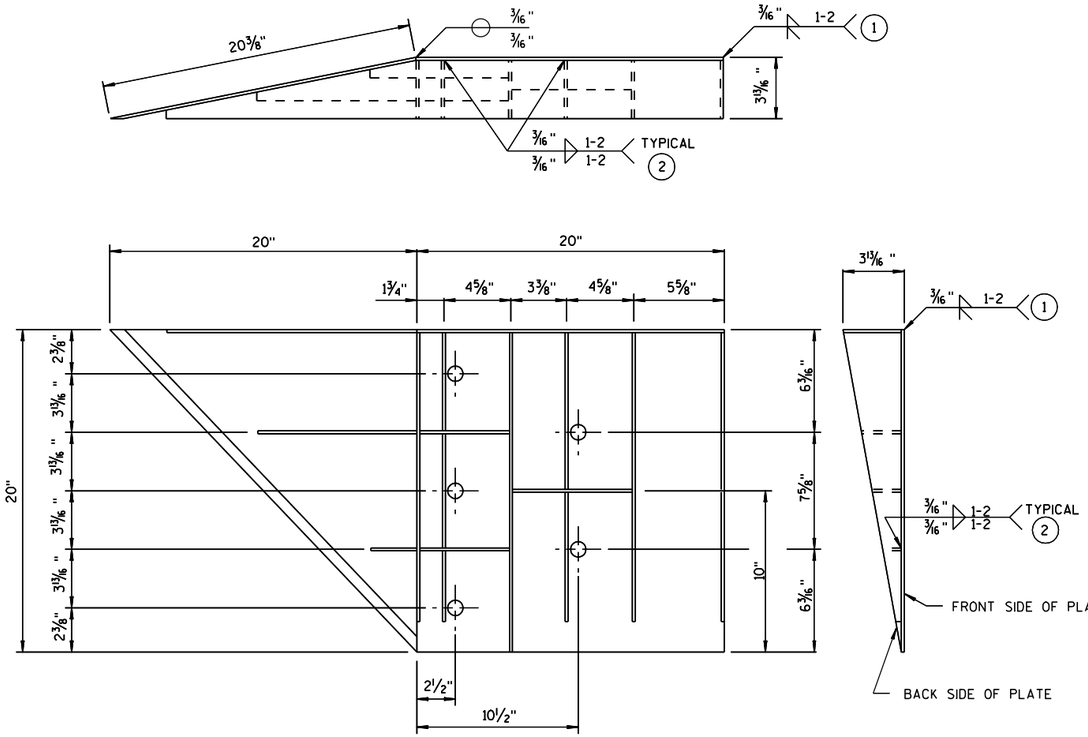
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

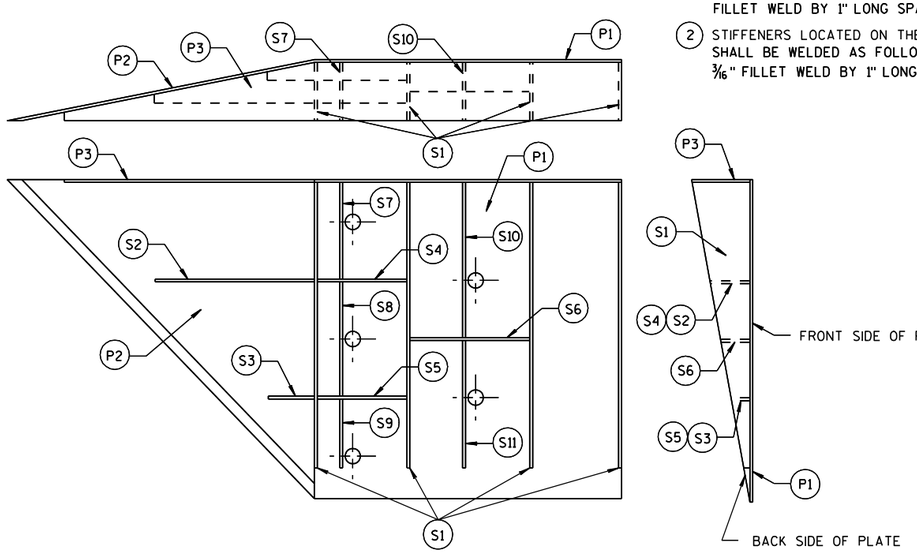


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H ---- — ROADWAY STANDARDS ENGINEER
FHWA

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

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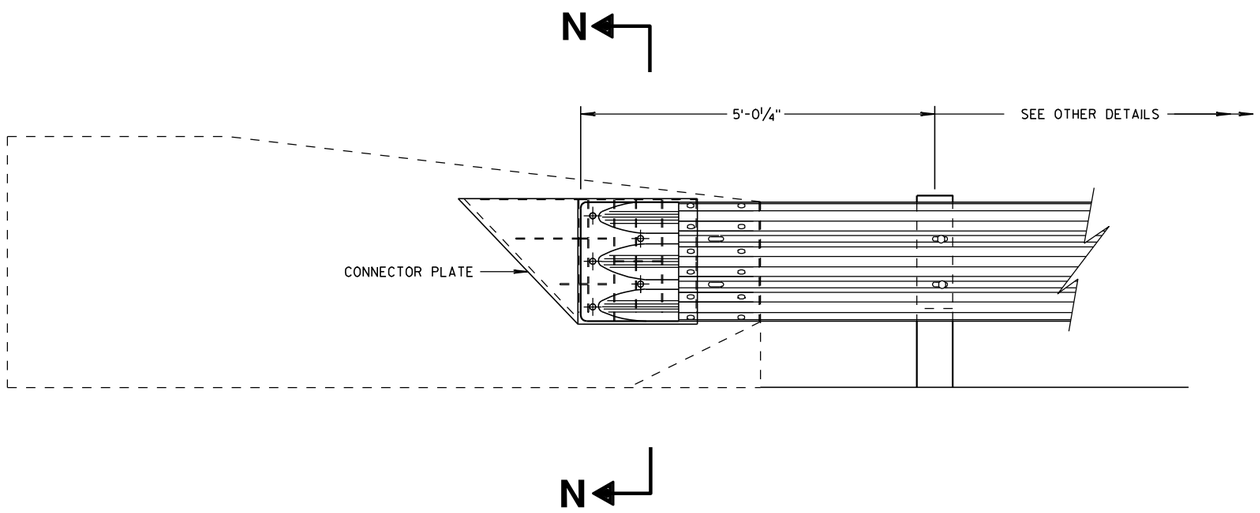
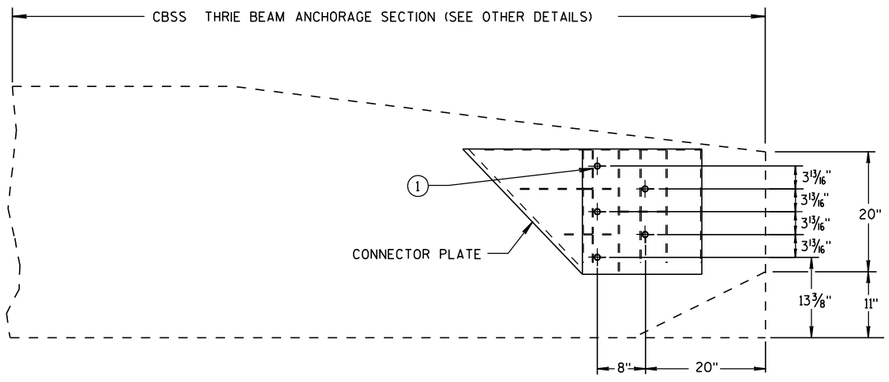
S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

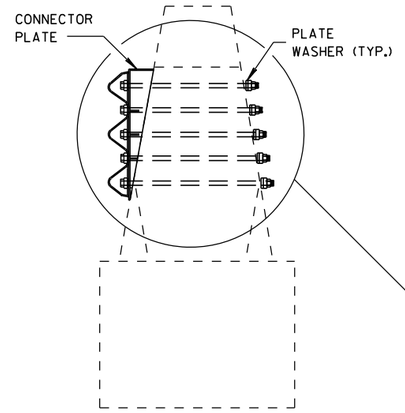


SINGLE SLOPE CONNECTION PLATE PLACEMENT

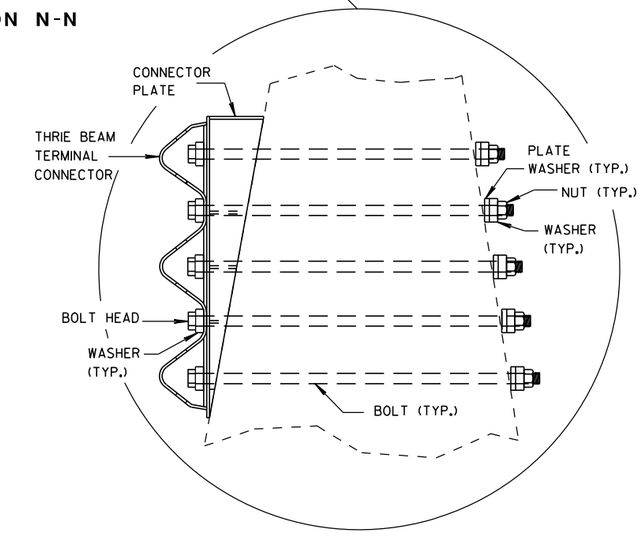
GENERAL NOTES

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

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

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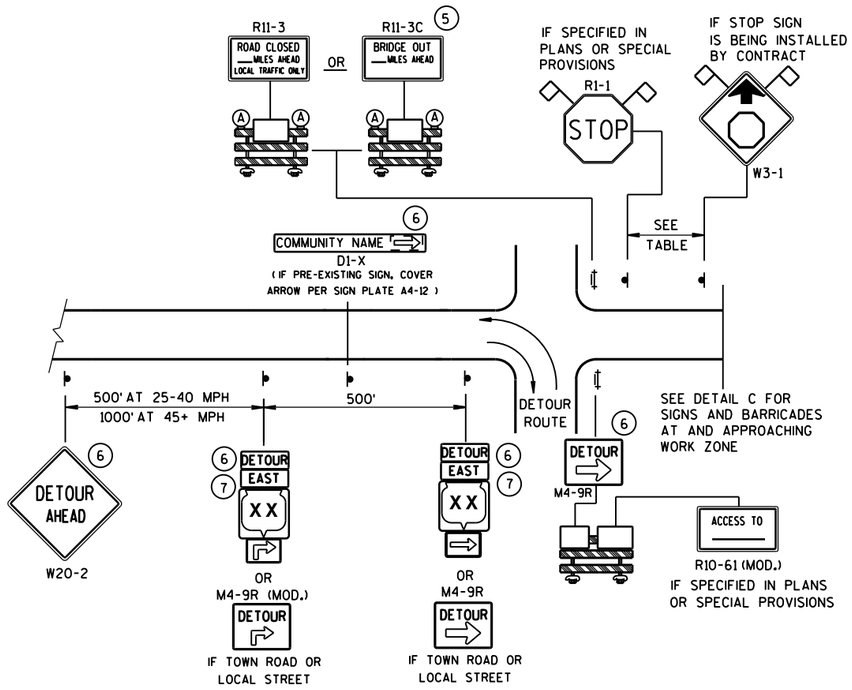
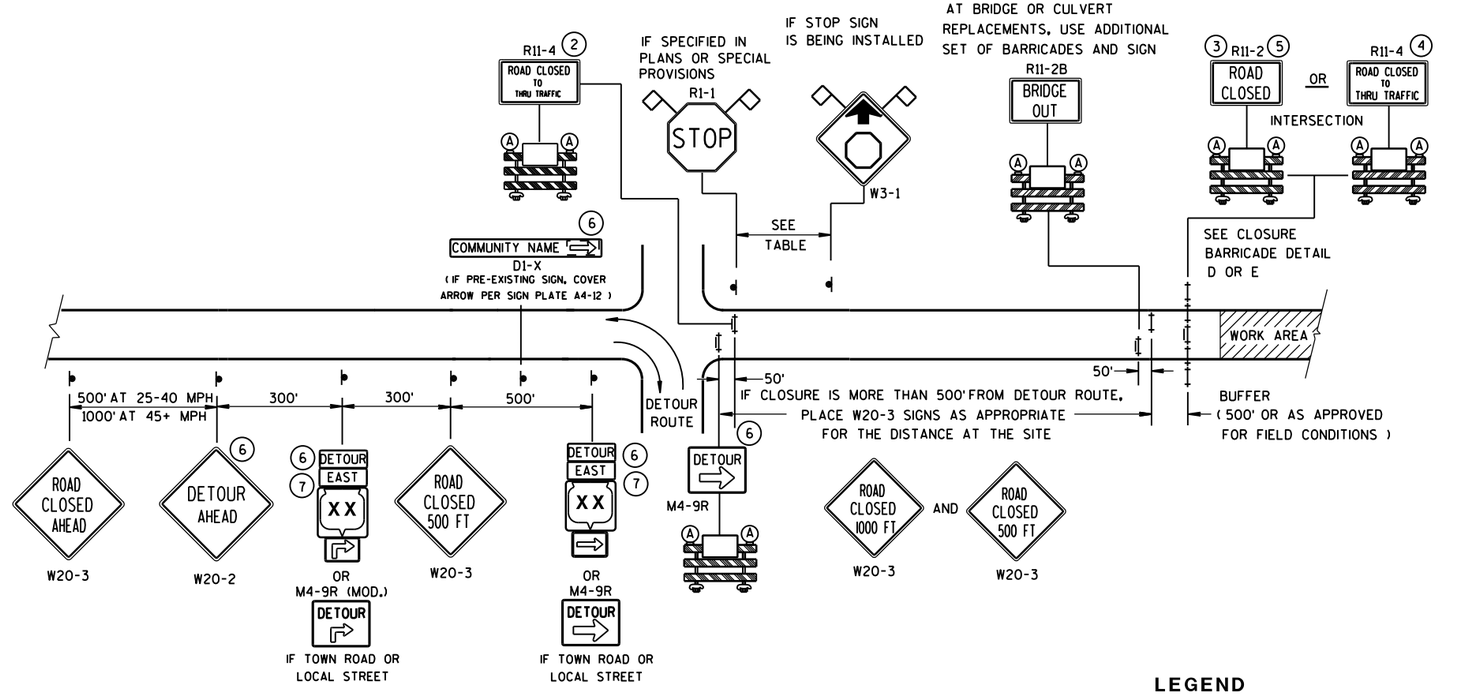


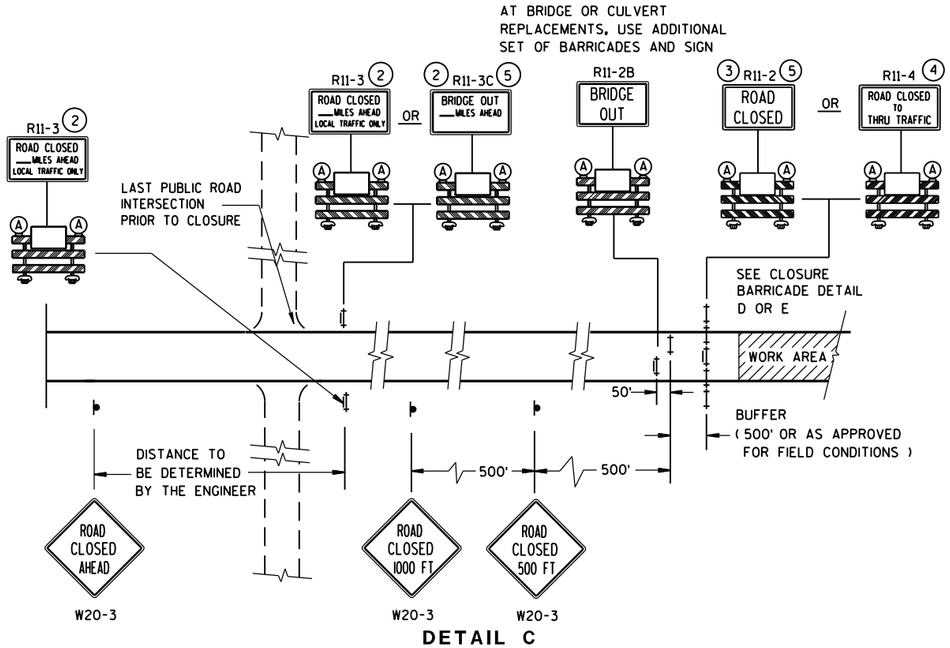
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

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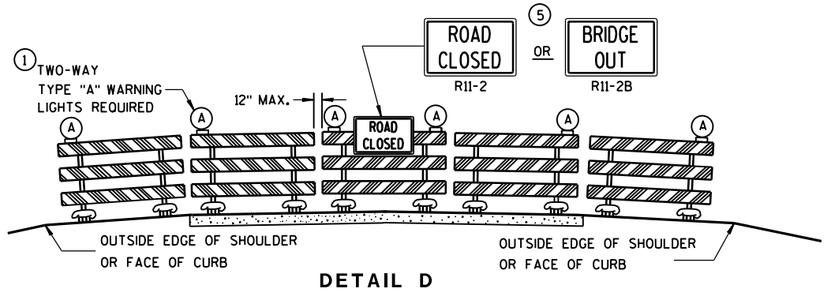
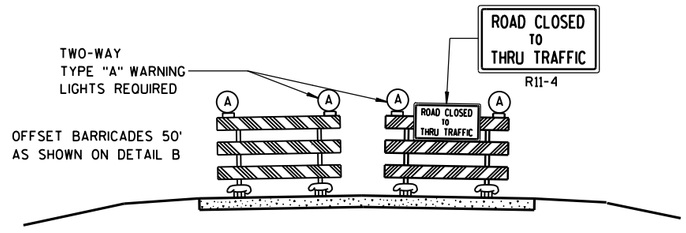
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

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

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

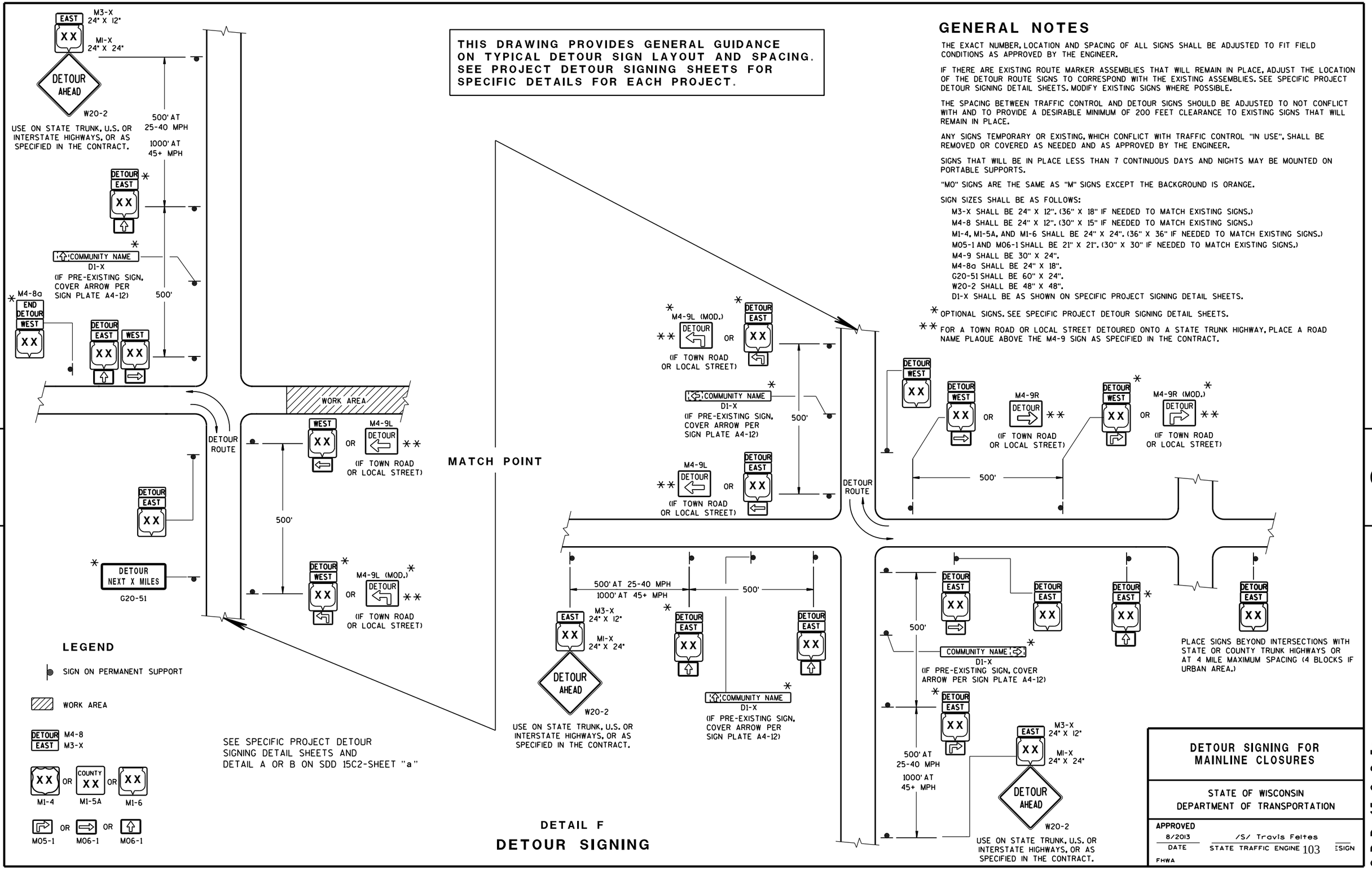
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETAIL F

DETOUR SIGNING

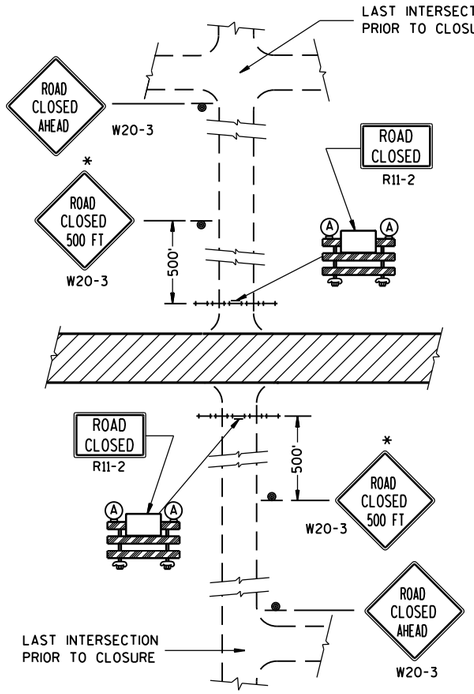
DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

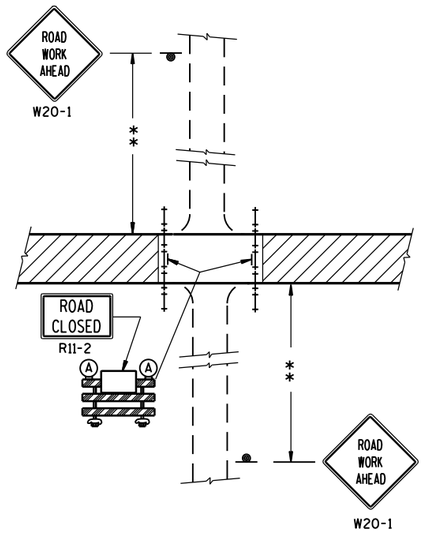
S.D.D. 15 C 2-5c

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



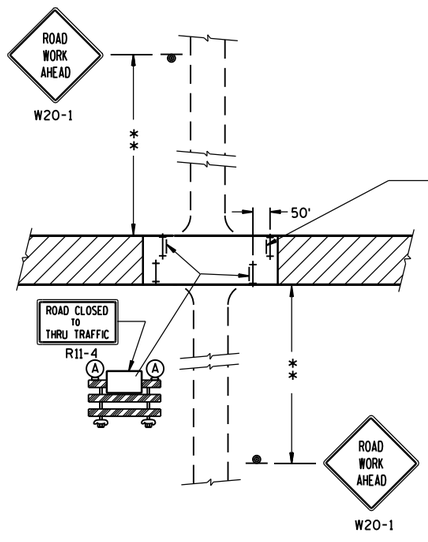
DETAIL 1

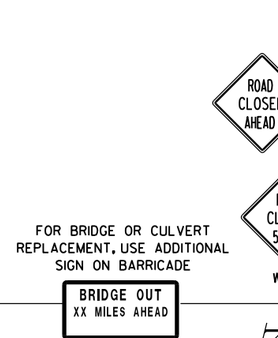
(NO ACCESS TO PROJECT)



DETAIL 2

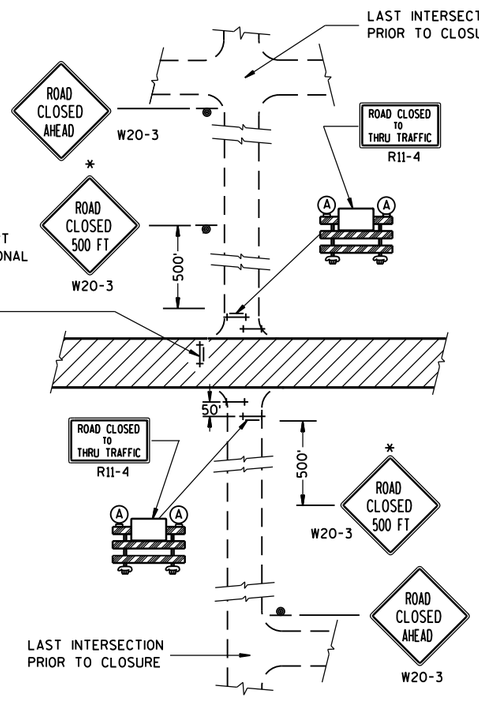
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





DETAIL 3

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



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

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

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

LEGEND

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

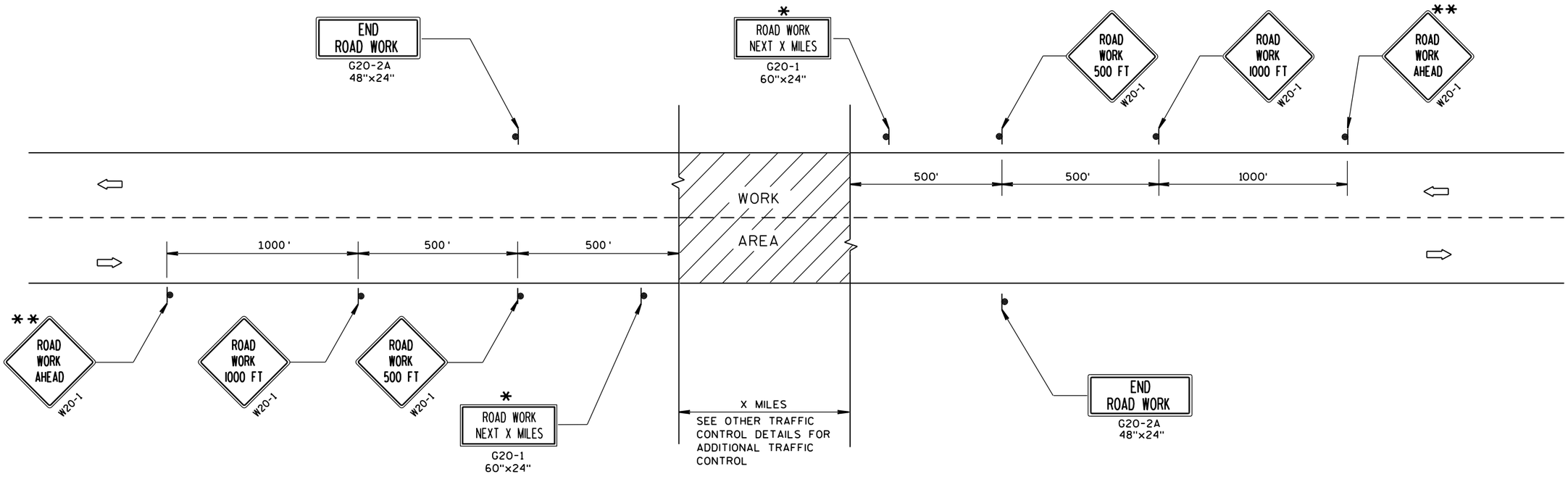
BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 C 3-2



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.

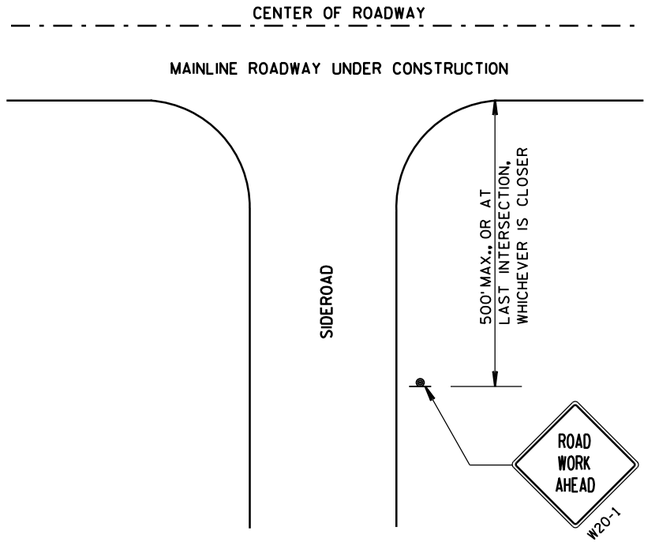
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

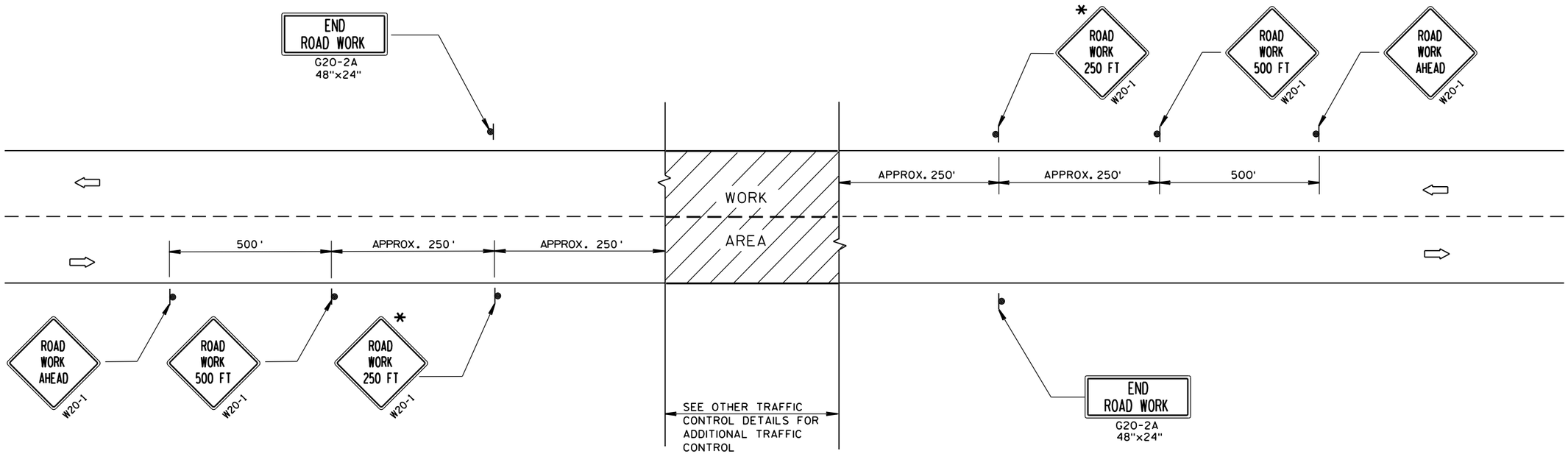
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

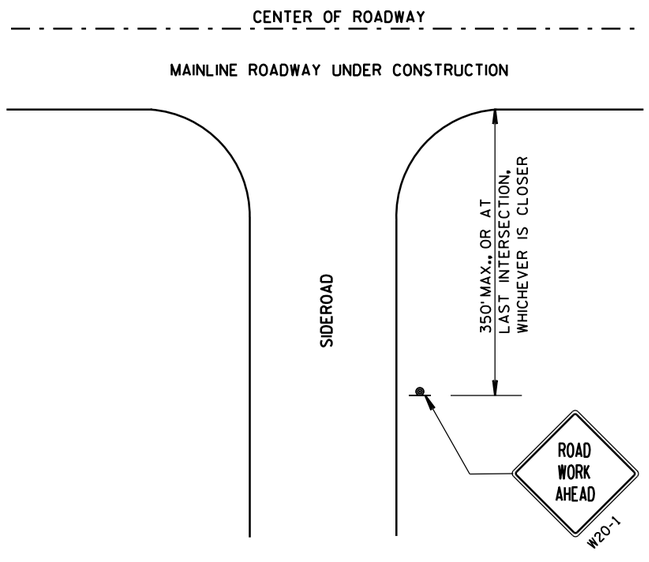
S.D.D. 15 C 4-2

6

S.D.D. 15 C 4-2



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 DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

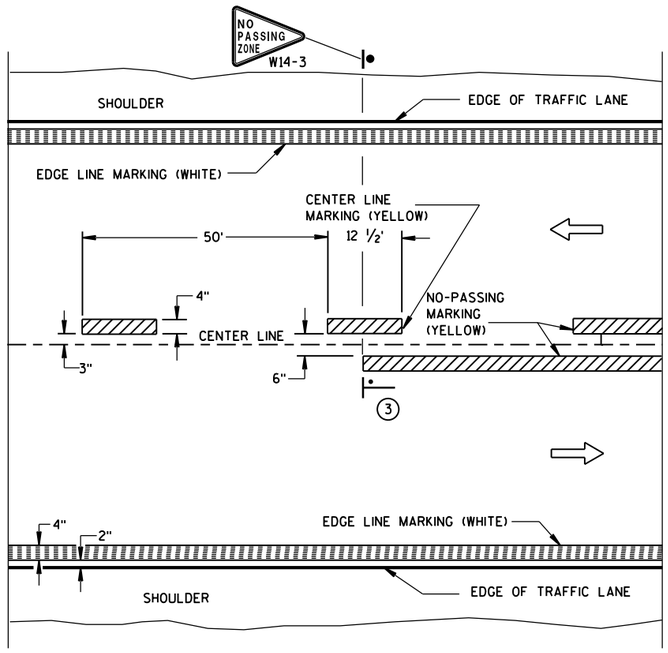
/S/ Travis Feltes — STATE TRAFFIC ENGINEER

SIGN

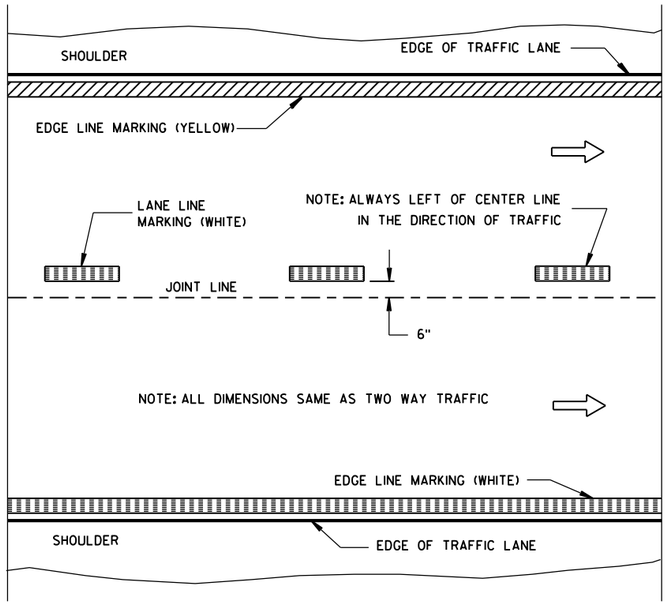
FHWA

6

S.D.D. 15 C 5-2

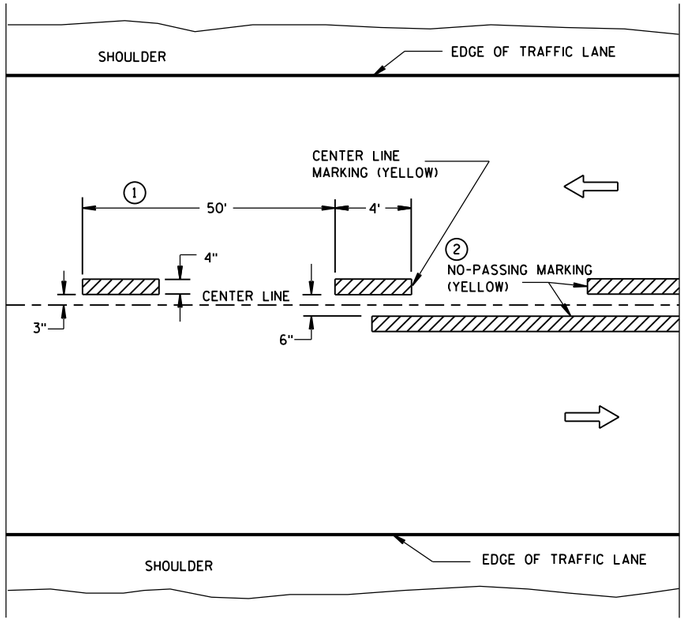


TWO WAY TRAFFIC

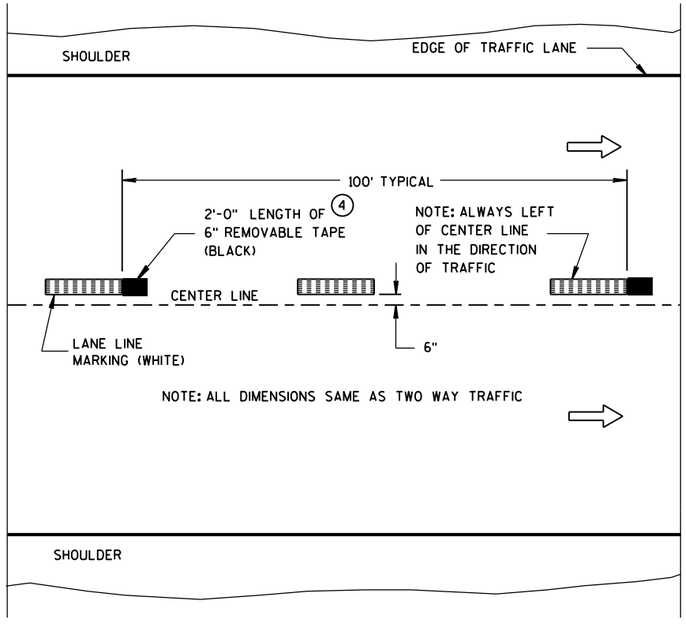


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

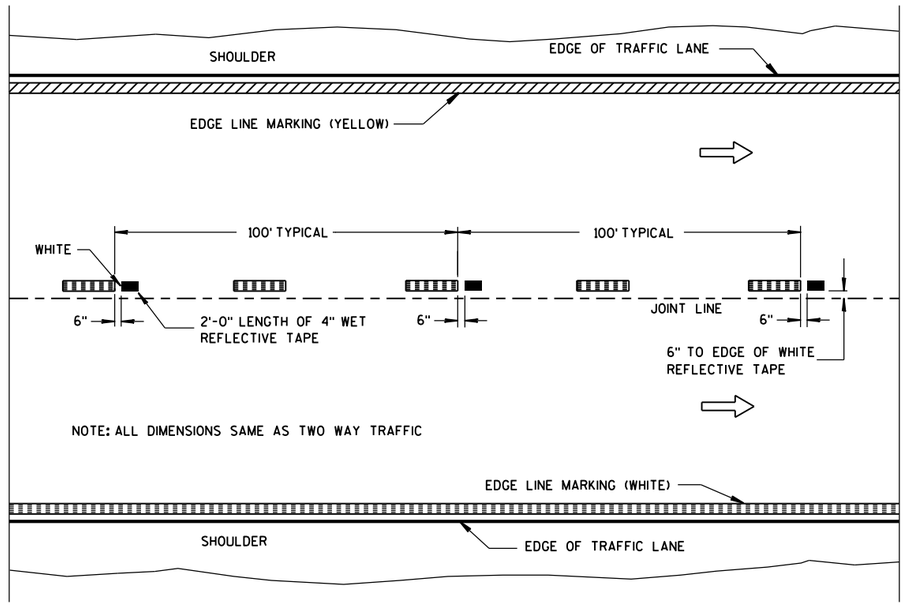
GENERAL NOTES

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

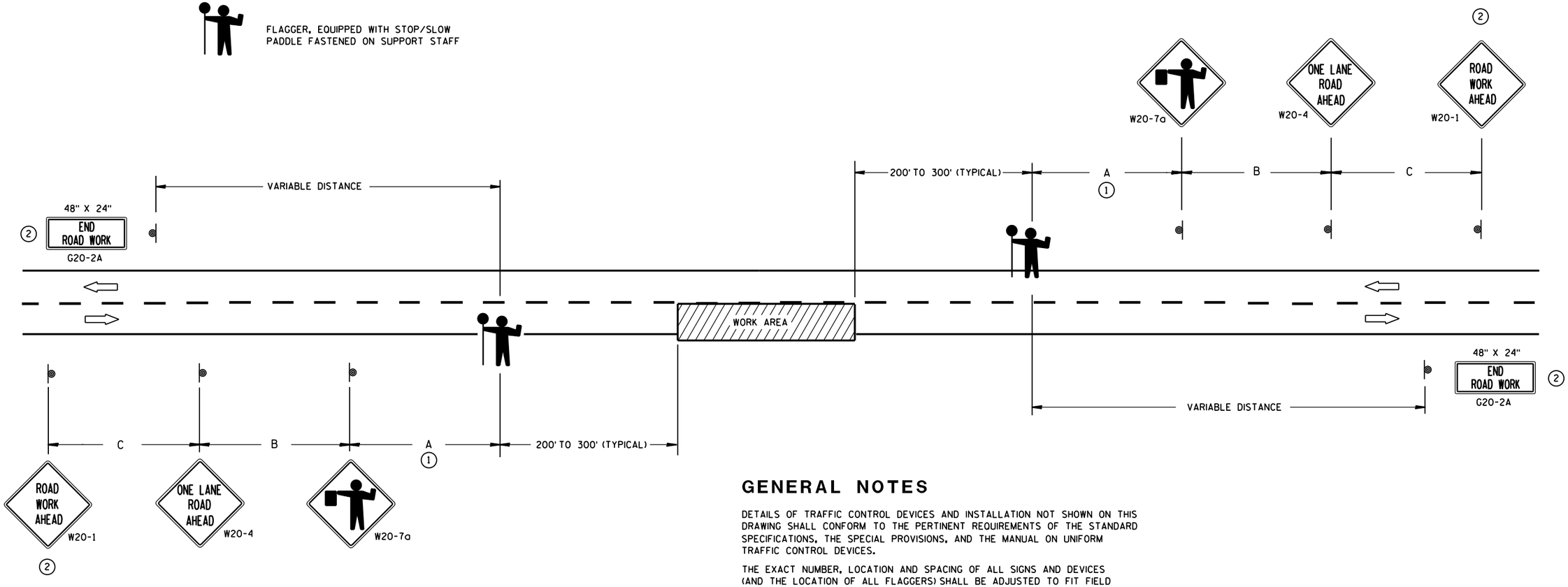
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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

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

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.

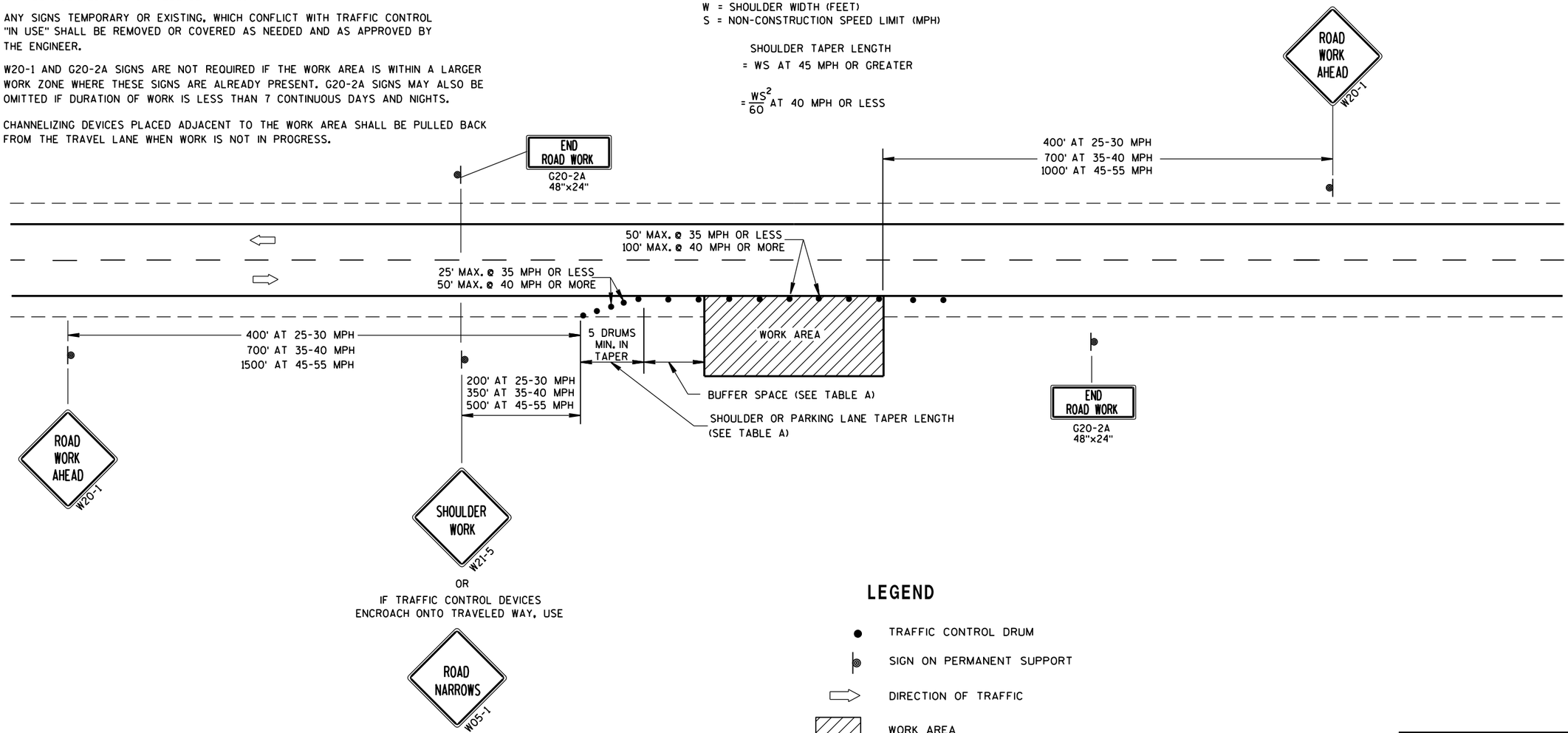
TABLE A

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.

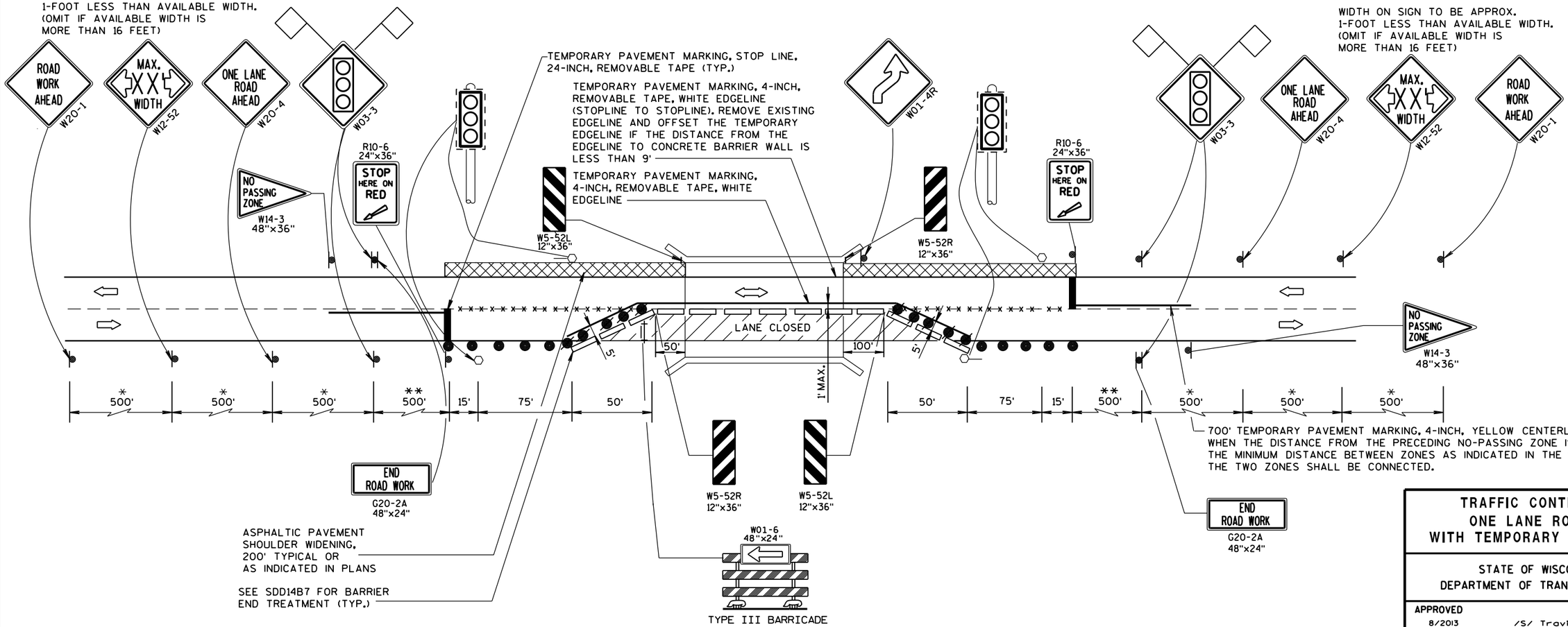
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.



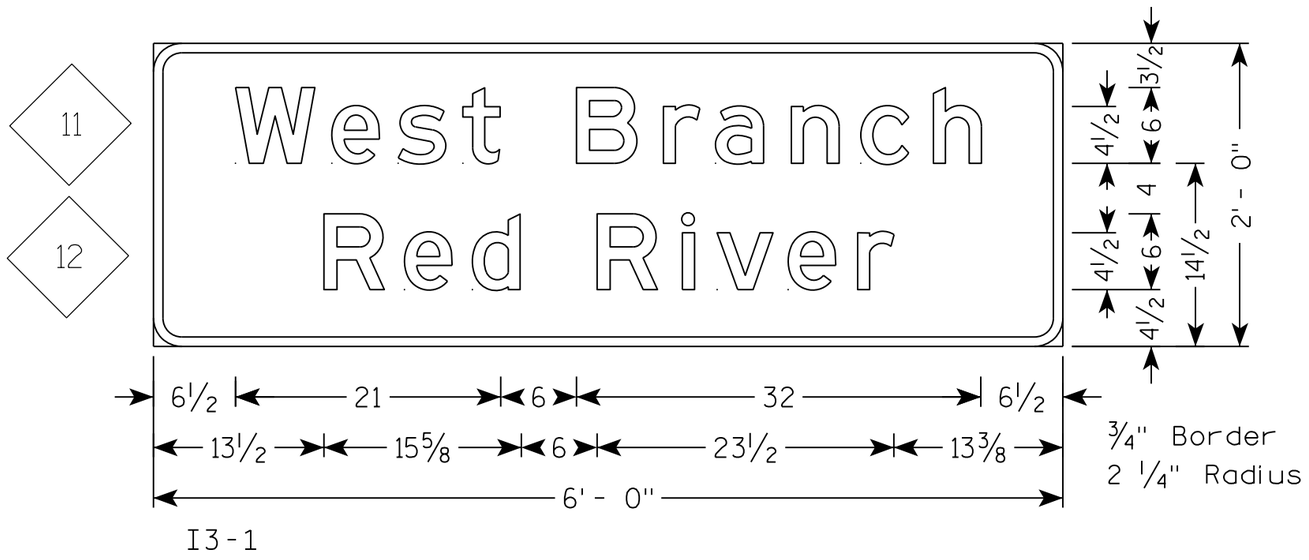
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

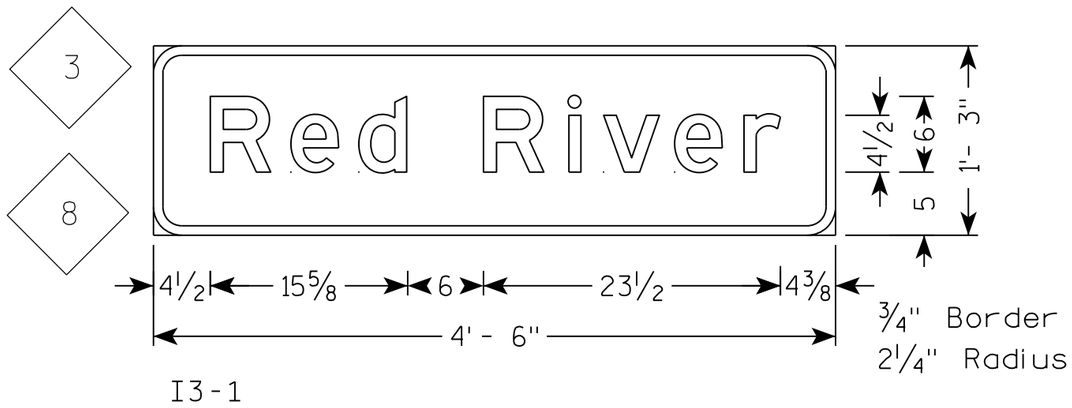
6

S.D.D. 15 D 33-3



NOTES

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



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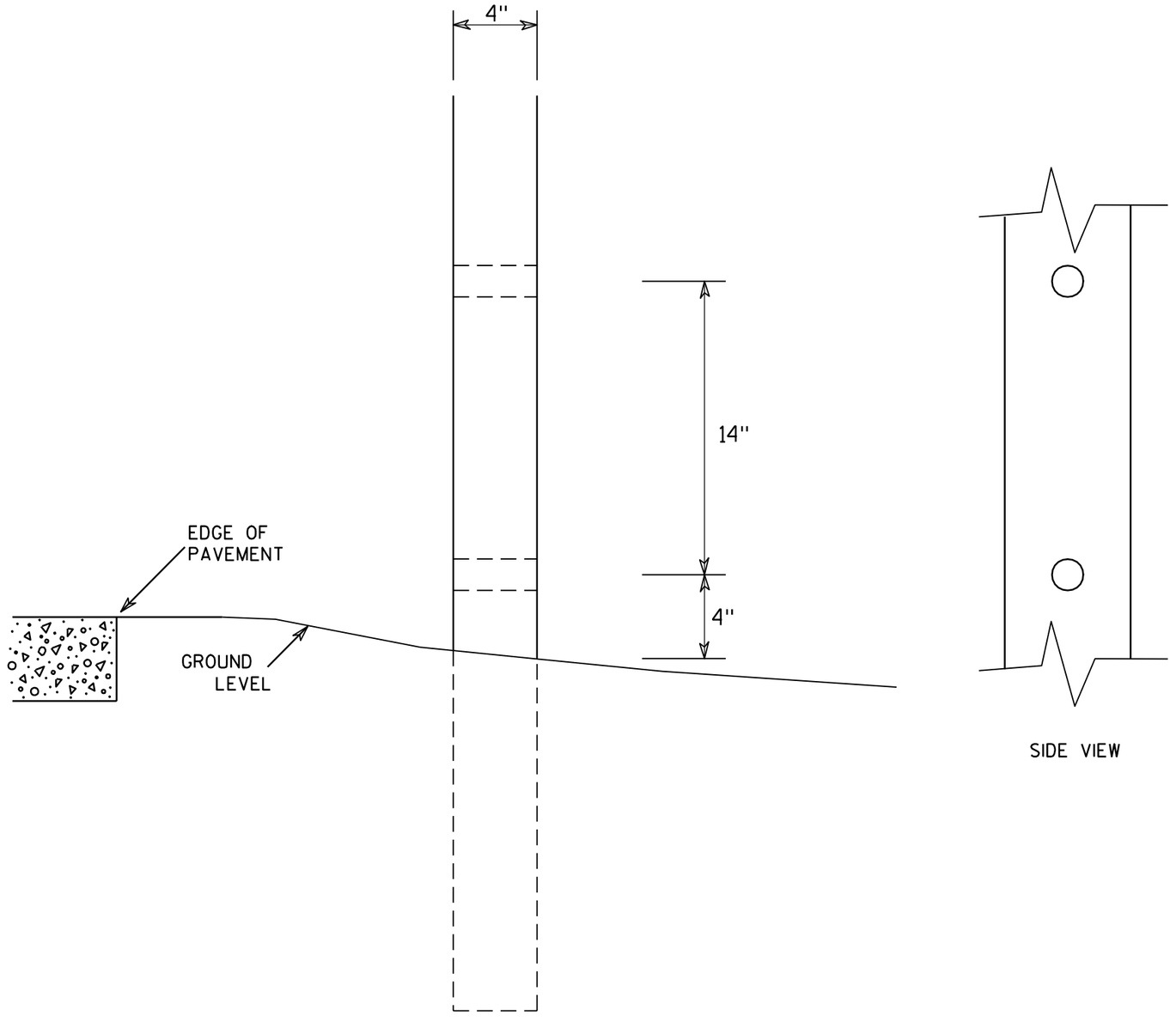
PROJECT NO: 9650-16-61, 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	SIGNING DETAIL	SHEET 111	E



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

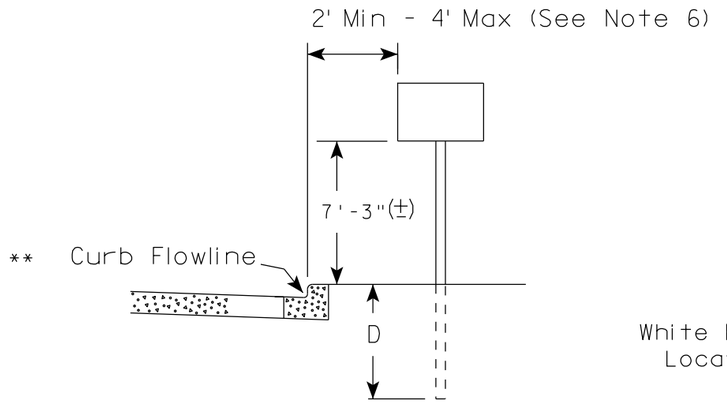
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

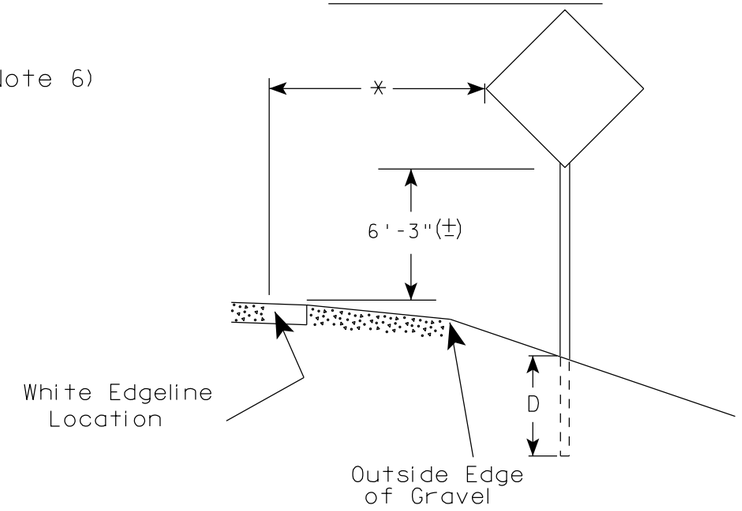
DATE 3/27/97 PLATE NO. A4-11.2

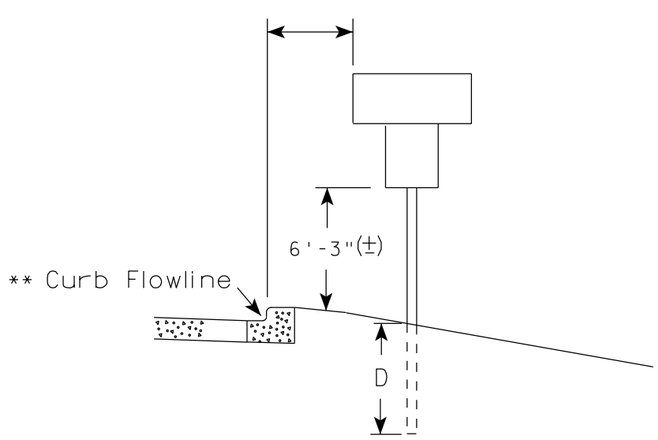
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 112	E

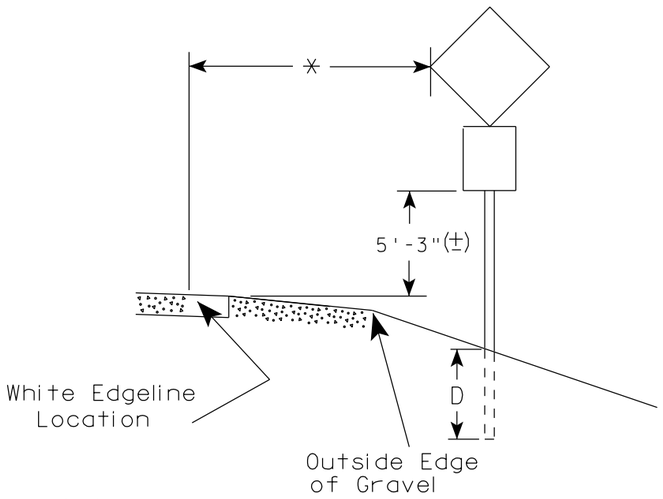
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

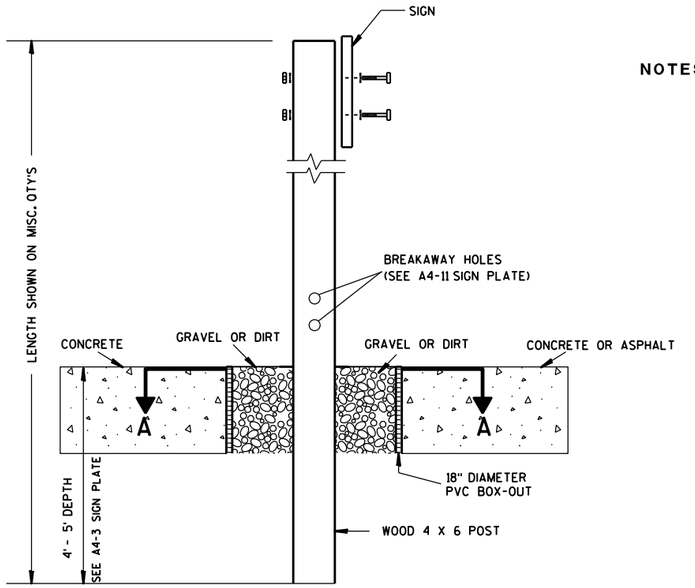
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

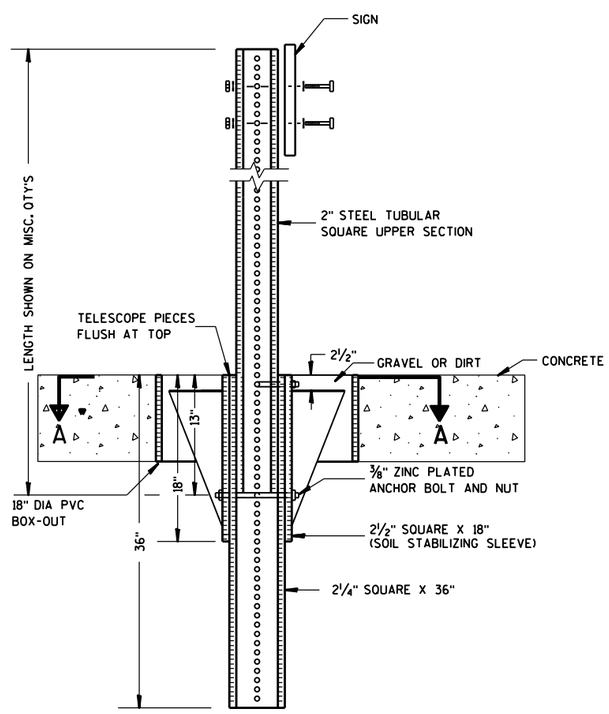
7



ELEVATION VIEW

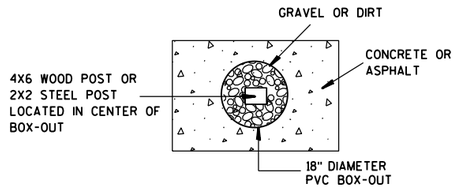
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

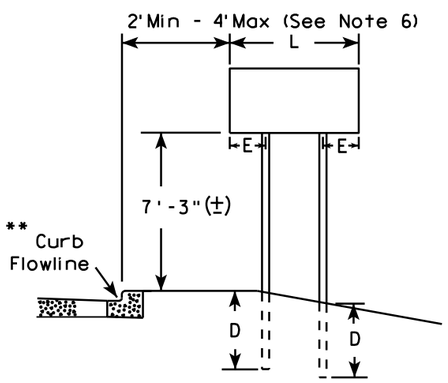
APPROVED Matthew R Rauch
for State Traffic Engineer

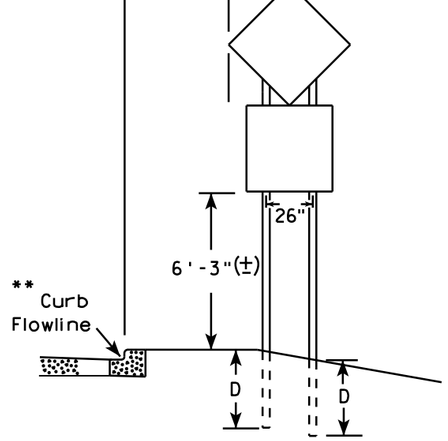
DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

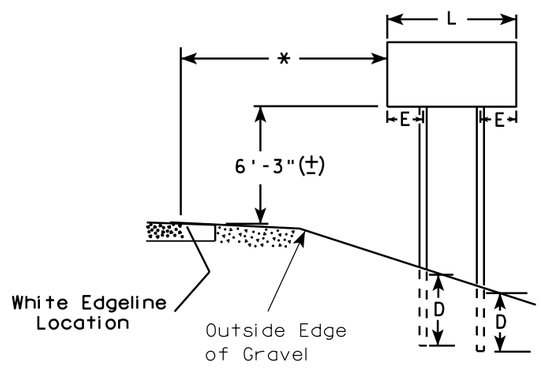
URBAN AREA

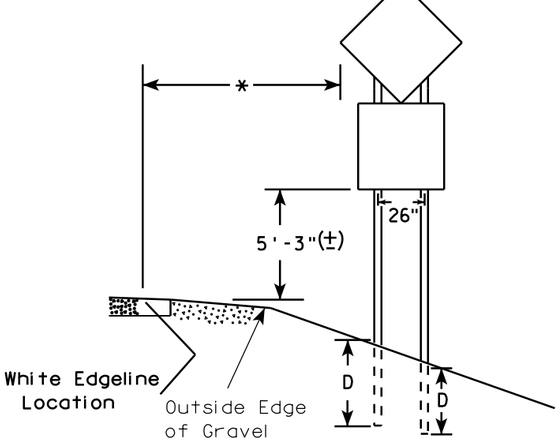




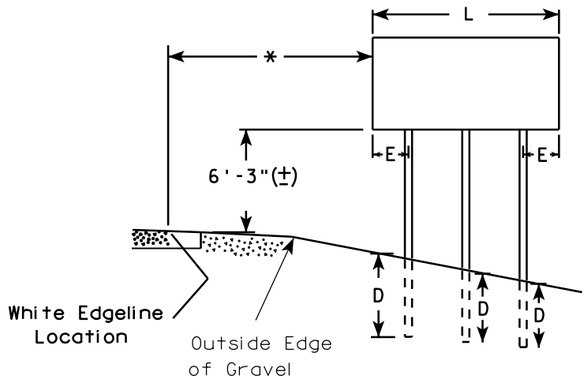
48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)





48" DIAMOND WARNING SIGN



GENERAL NOTES

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

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

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

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

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

***

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

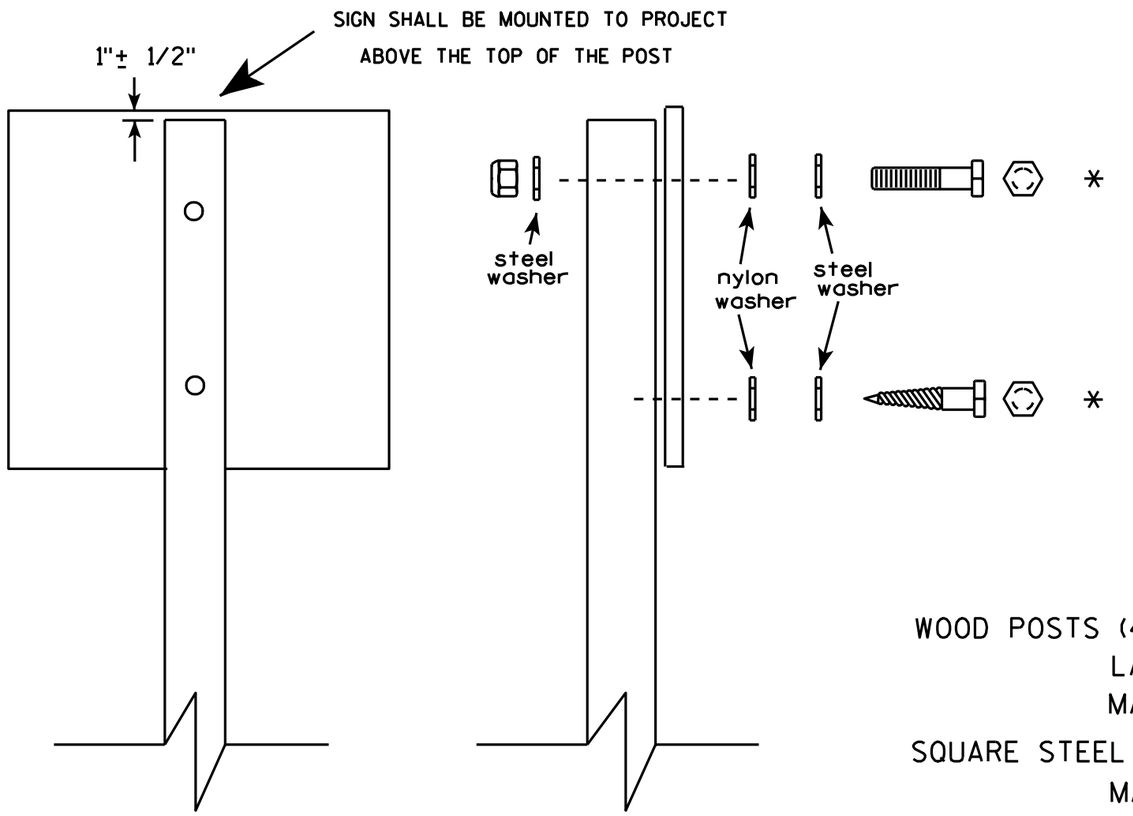
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/29/14 PLATE NO. A4-4 13

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A44.DGN PLOT DATE : 30-APR-2014 13:10 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 107.021305:1.000000 WISDOT/CADDS SHEET 42



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

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

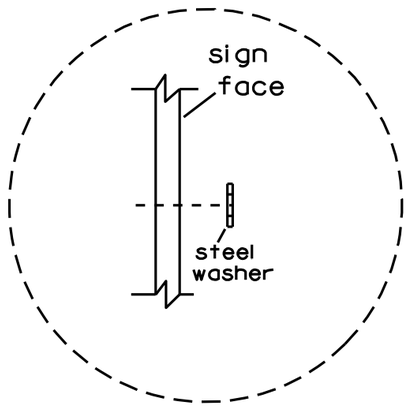
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

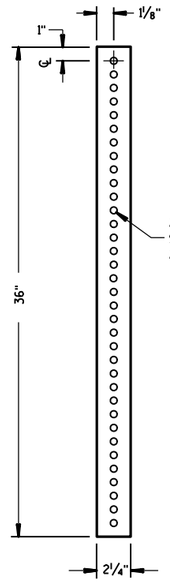
7

PROJECT NO:

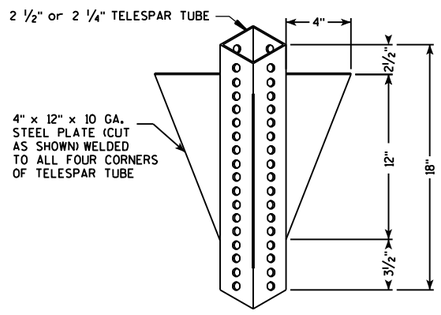
SHEET NO: 116 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

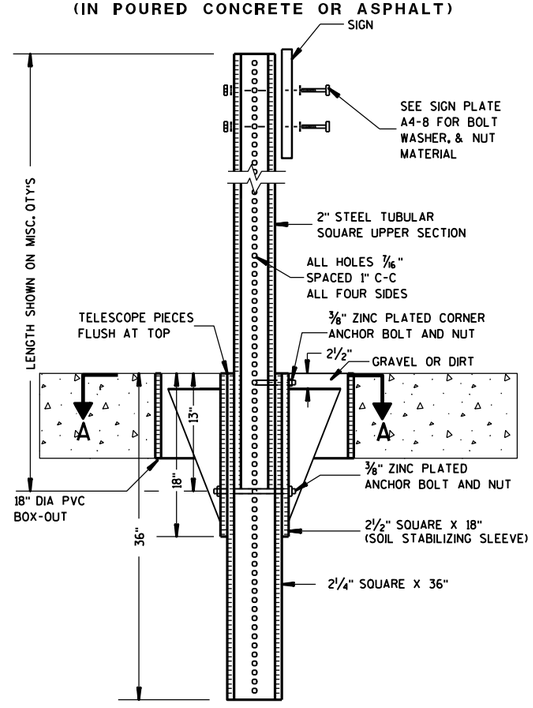
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



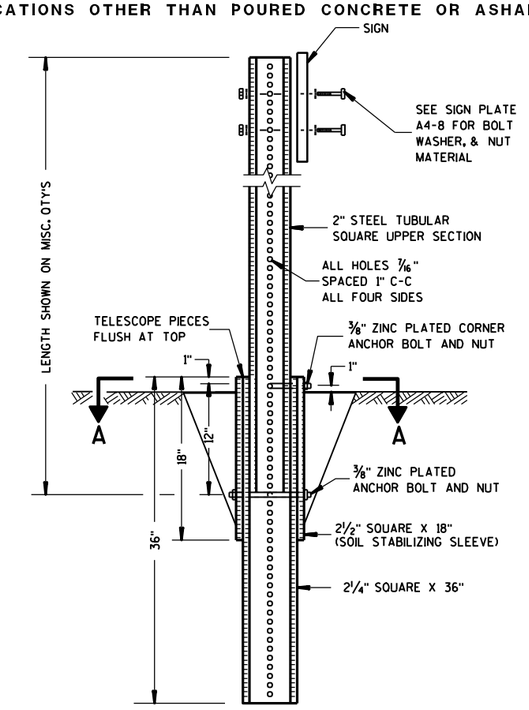
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

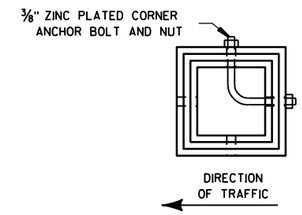


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASHALT)





SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL SIGN POST A4-9

WISCONSIN DEPT OF TRANSPORTATION

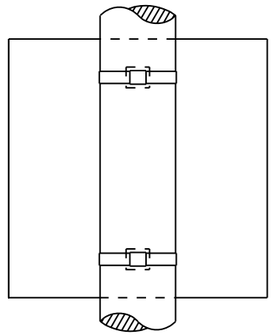
APPROVED Matthew R Rauch
for State Traffic Engineer

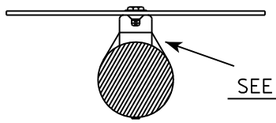
DATE 5/30/12 PLATE NO. A4-9.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 117	E

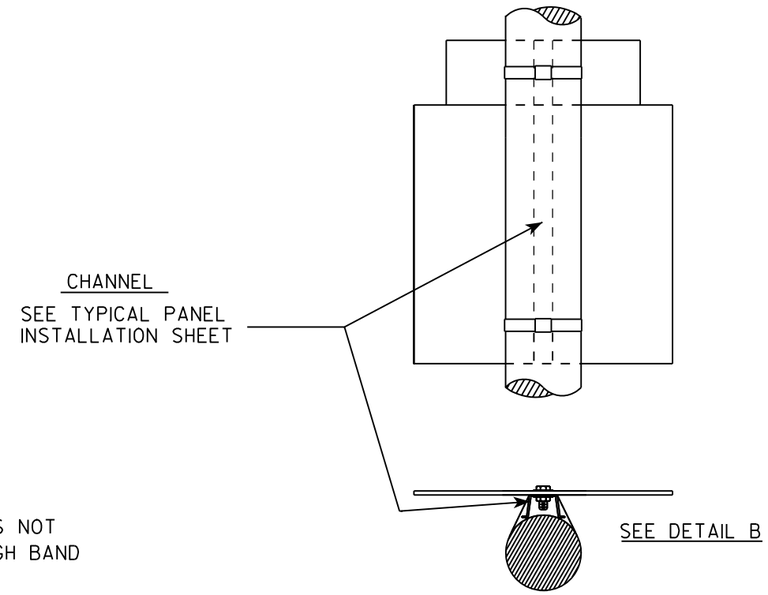
BANDING

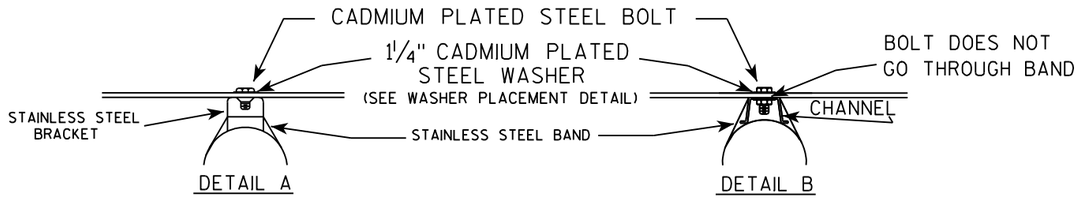
SINGLE SIGN



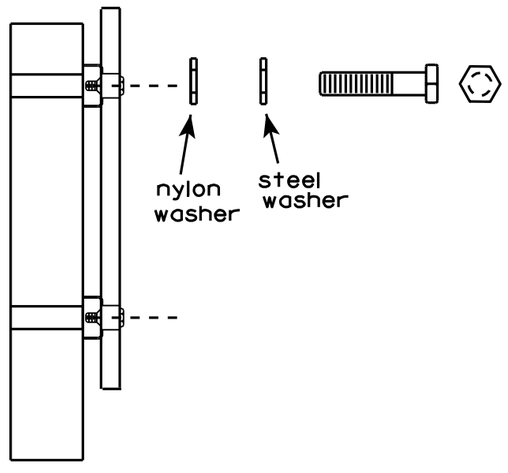


"J" ASSEMBLY





WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

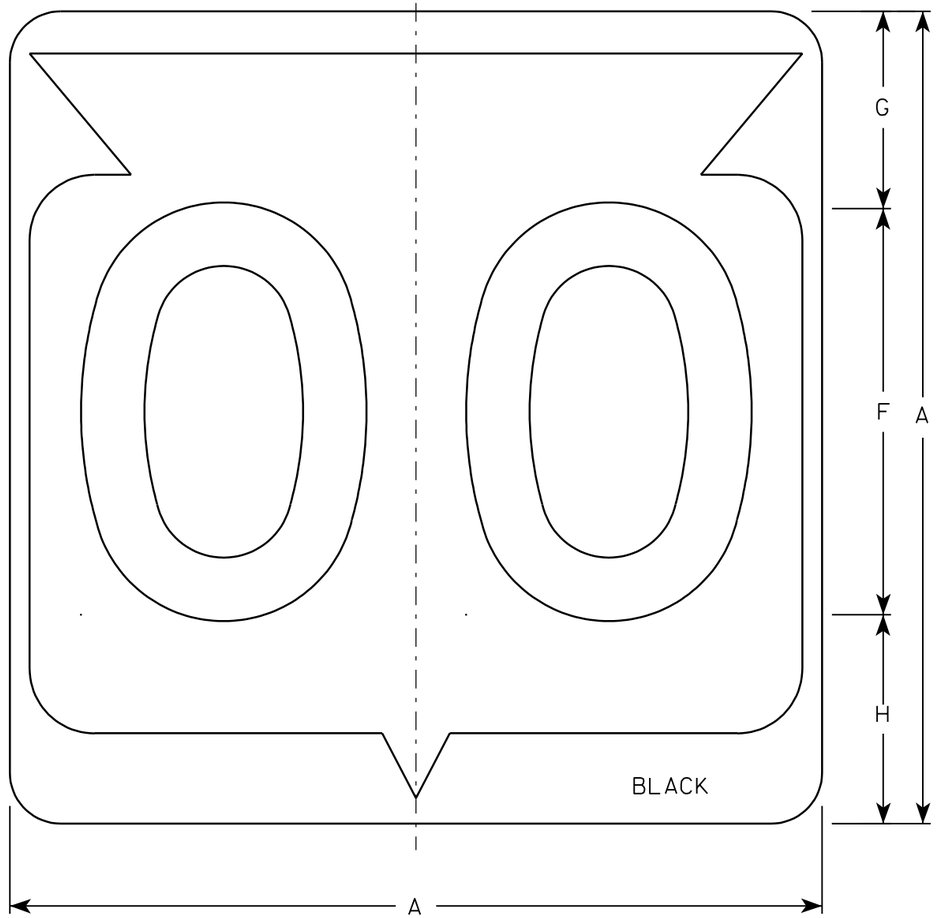
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

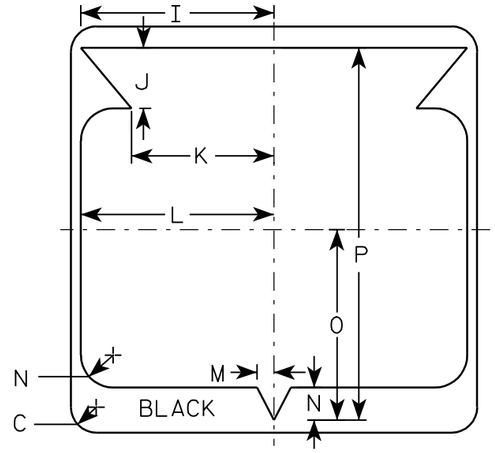
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 118	E



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

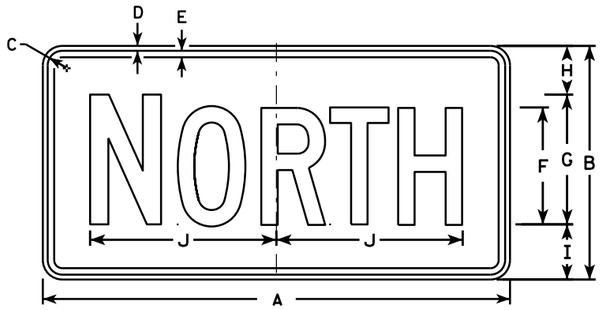
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

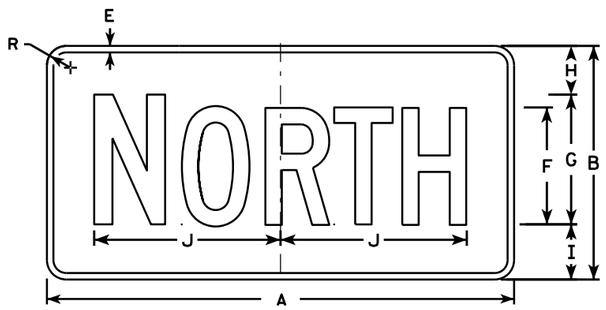
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 119	E



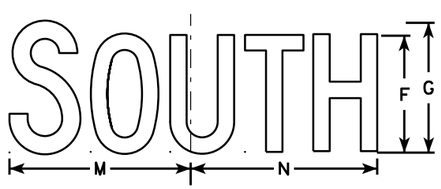
M3-1
MK3-1
MM3-1
MN3-1



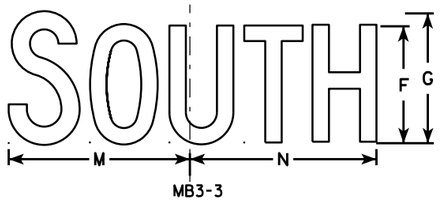
MB3-1

M3-2
MK3-2
MM3-2
MN3-2

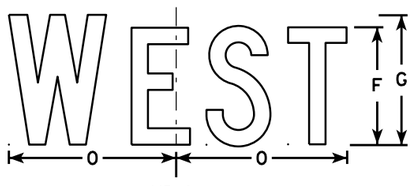
MB3-2



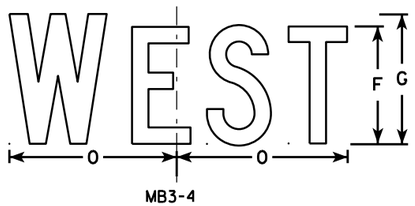
M3-3
MK3-3
MM3-3
MN3-3



MB3-3



M3-4
MK3-4
MM3-4
MN3-4



MB3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

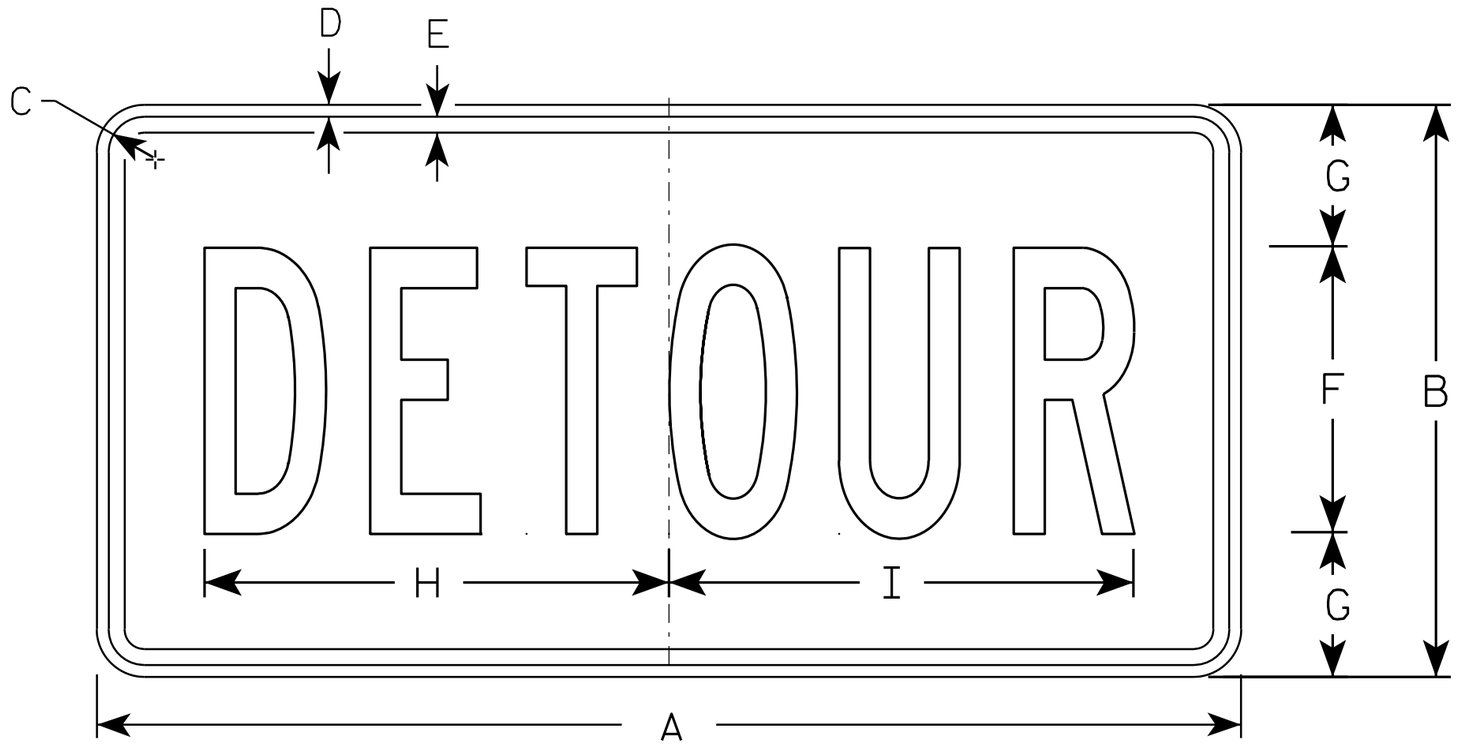
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/30/14 PLATE NO M3-1.13

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



M4-8

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

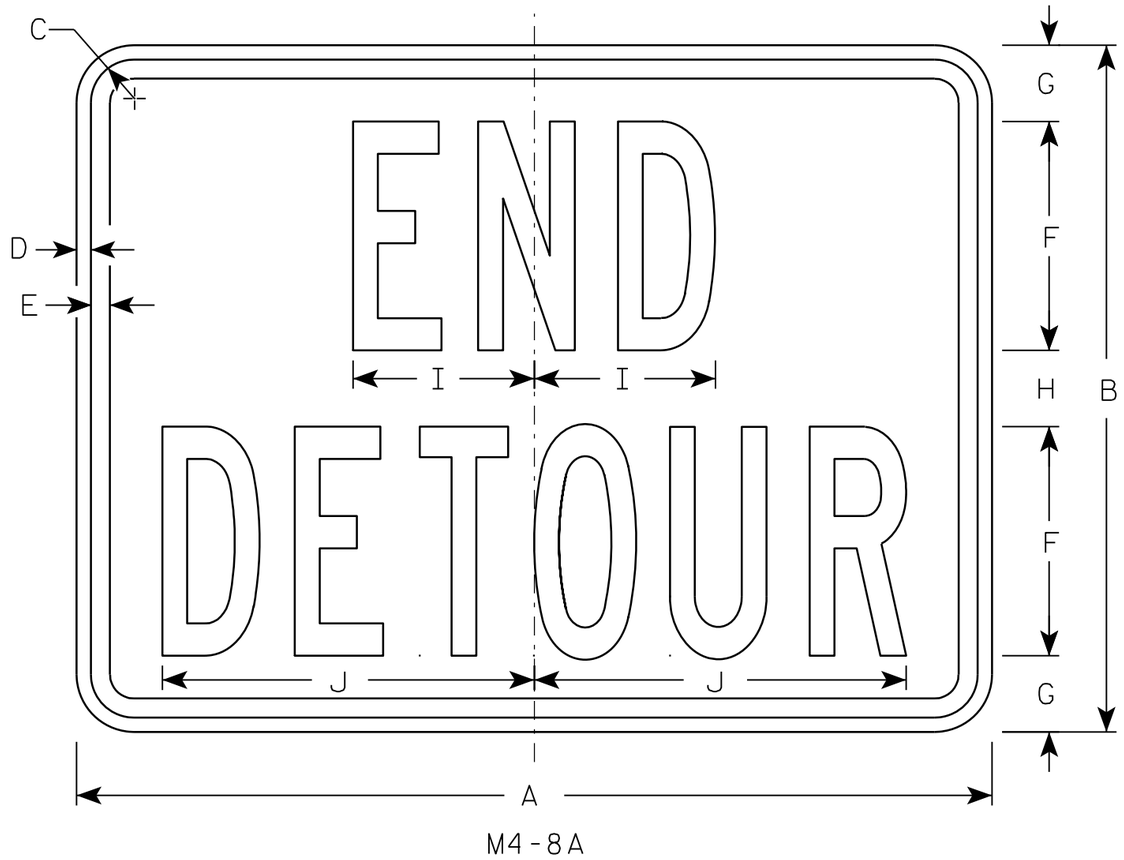
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 121	E



M4-8A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

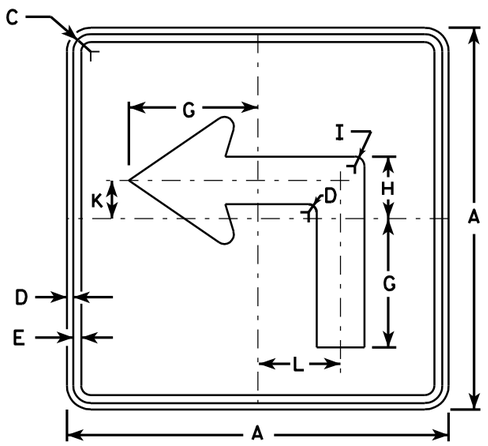
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

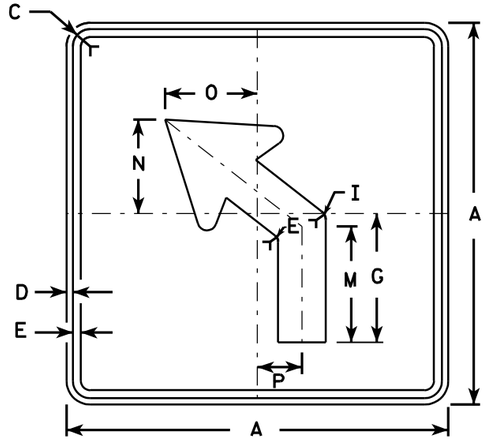
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

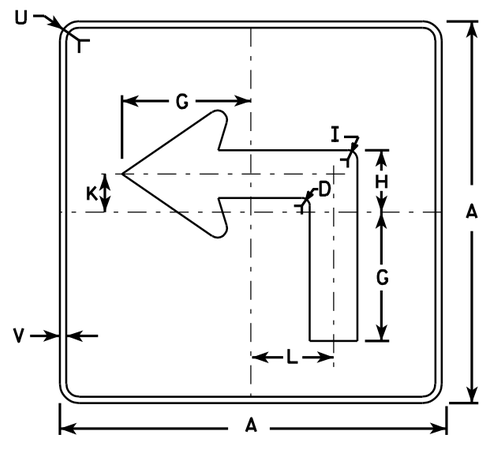
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 122	E



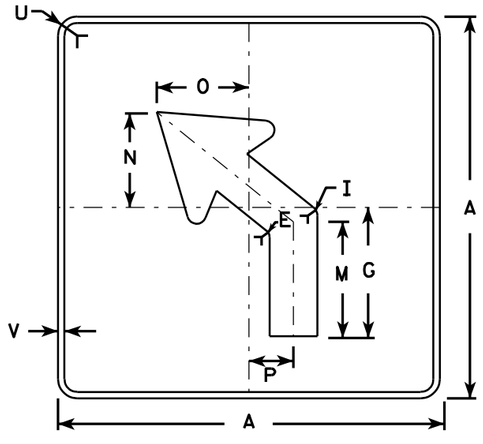
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



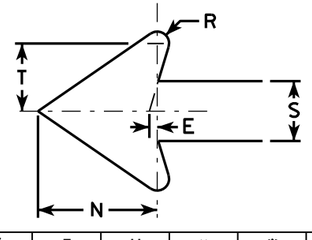
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



MB5-1L
MG5-1L
MN5-1L



MB5-2L
MG5-2L
MN5-2L



NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M5-1 and M5-2 Background - White - Type H Reflective
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White - Type H Reflective
   MG5-1 and MG5-2 Background - Green
   Message - White - Type H Reflective
   MK5-1 and MK5-2 Background - Green
   Message - White Type H Reflective
   MM5-1 and MM5-2 Background - White - Type H Reflective
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White - Type H Reflective
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow - Type H Reflective
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

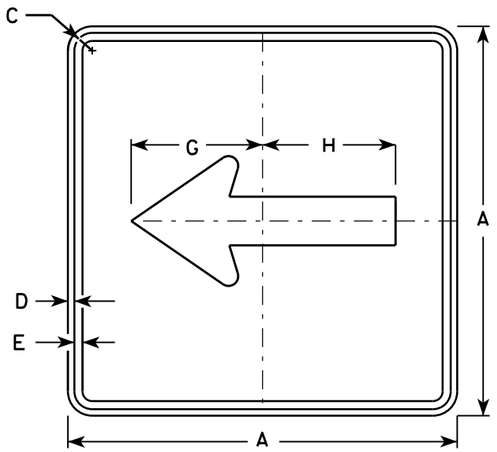
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

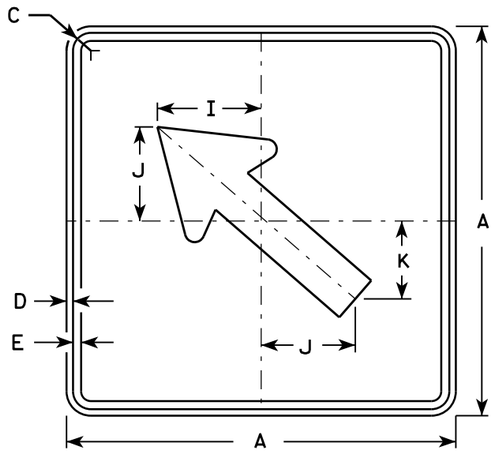
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M5-1.12

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 123 | E



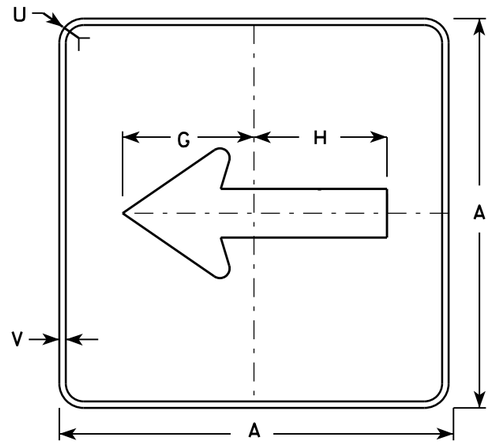
M6-1
MK6-1
MM6-1
MN6-1
MO6-1
MP6-1
MR6-1



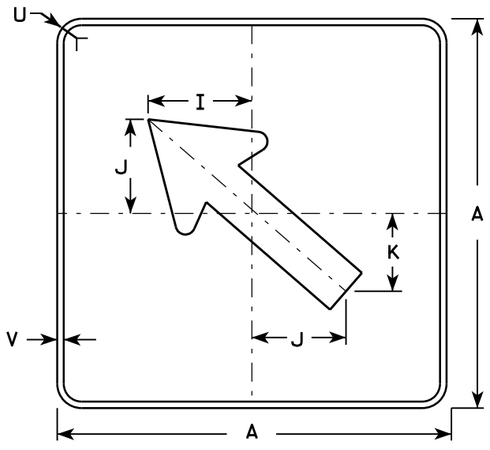
M6-2
MK6-2
MM6-2
MN6-2
MO6-2
MP6-2
MR6-2

NOTES

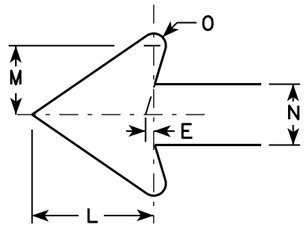
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MG6-1 and MG6-2 Background - Green
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1



MB6-2



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

STANDARD SIGN
M6-1 & M6-2
SERIES

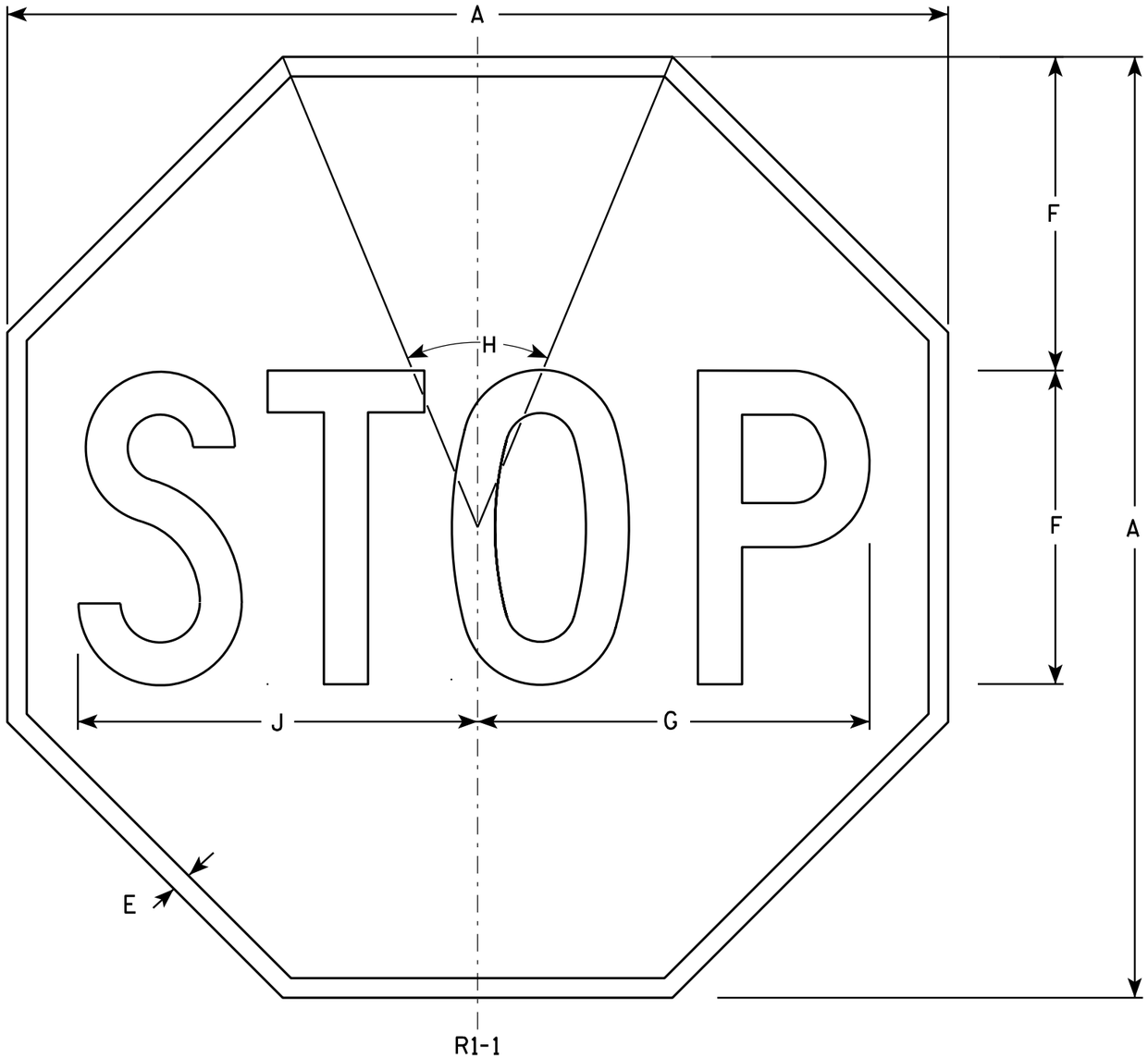
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/03/14 PLATE M6-1.14

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 03-JUL-2014 14:28 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 11.675051:1.000000
WISDOT/CADDS SHEET 42



NOTES

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

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

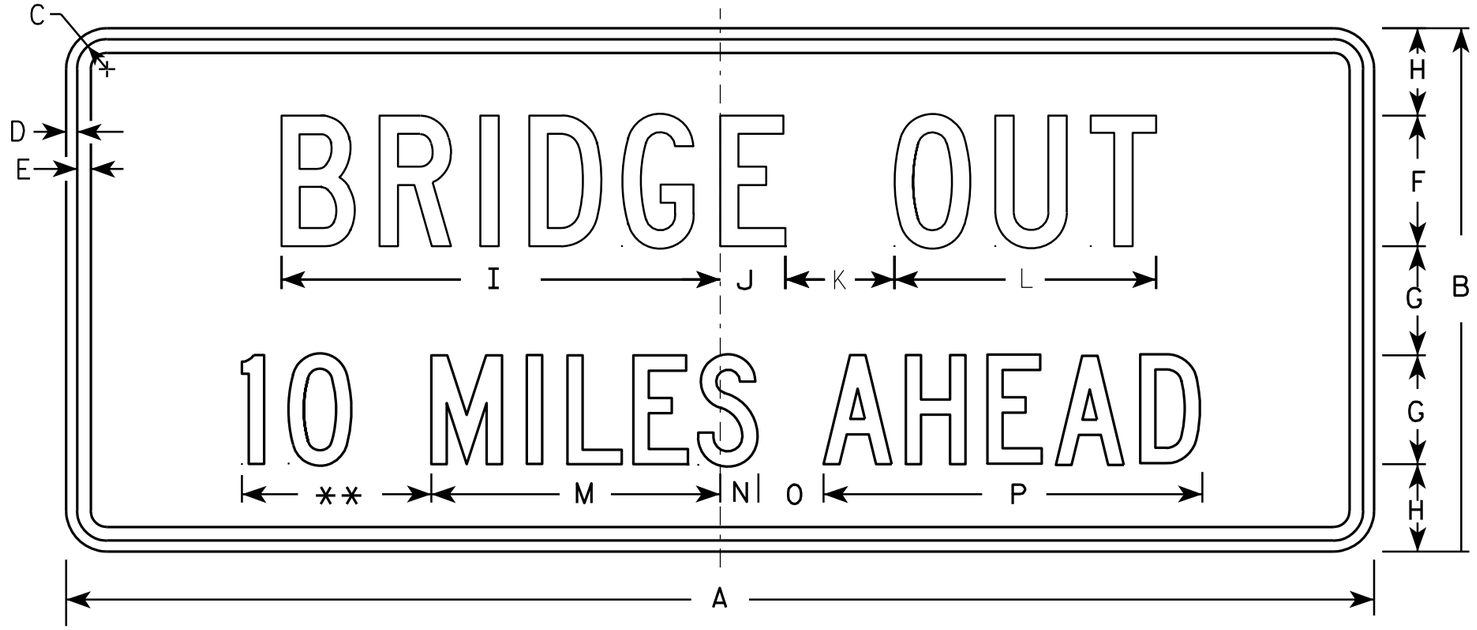
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 125	E



R11-3C

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

** See Note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4											3.75
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8											10.0
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8											10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-3C.2

PROJECT NO:

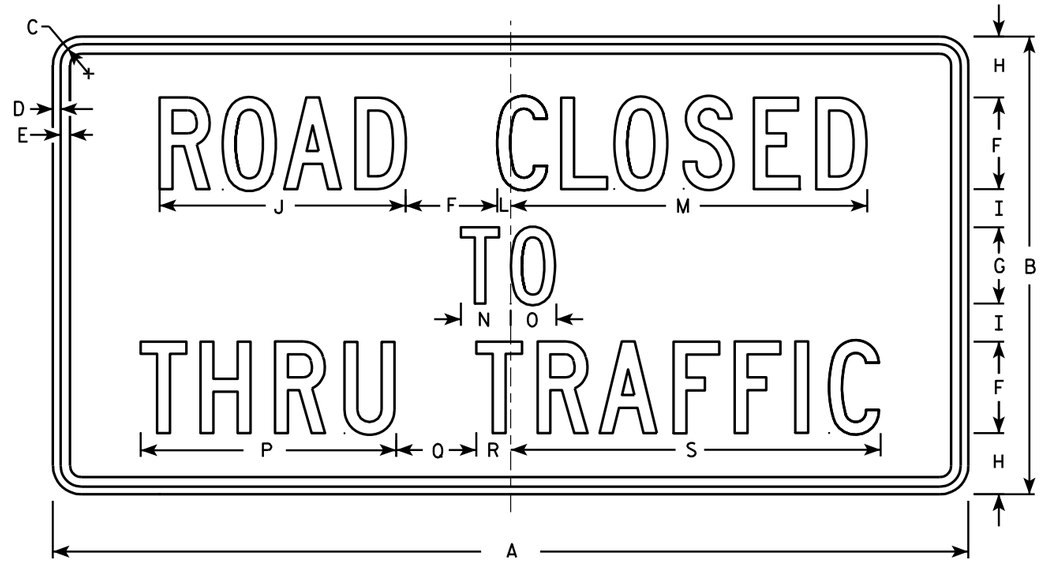
SHEET NO: 126 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R113C.DGN PLOT DATE : 01-APR-2011 14:15 PLOT BY : mscj9h

WISDOT/CADDS SHEET 42

7

7



R11-4

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

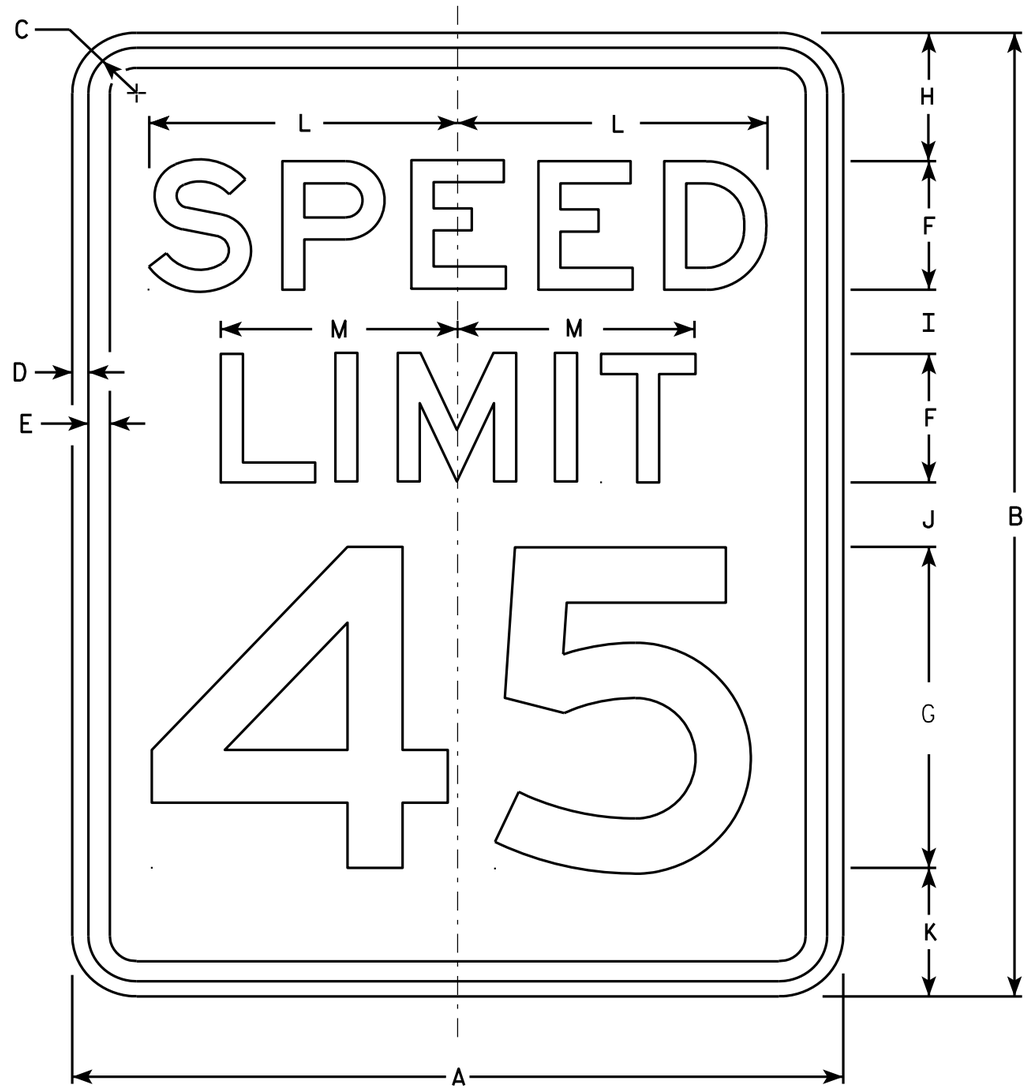
STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 127 | E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

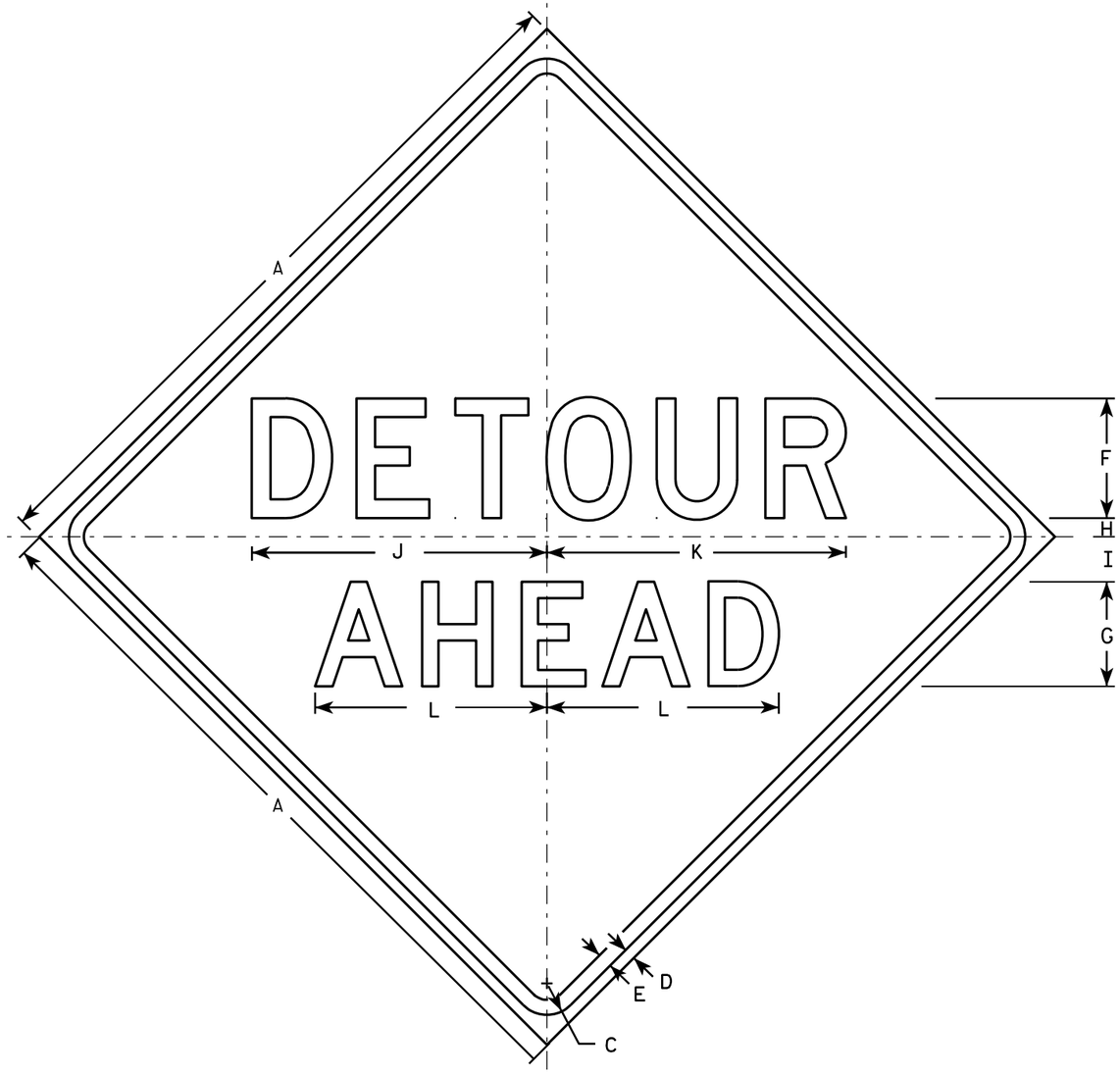
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

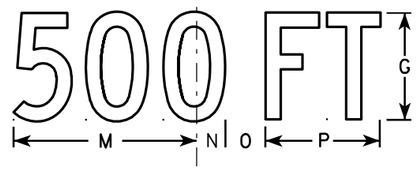
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

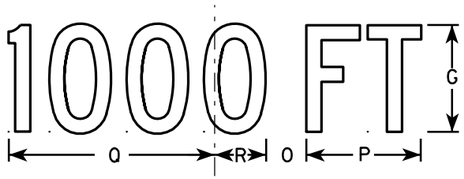
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 128 | E



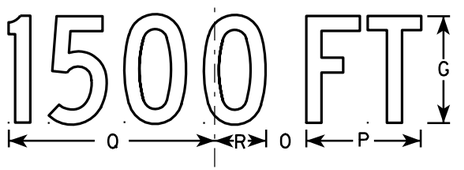
W20-2A



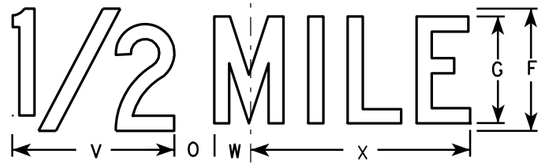
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
   Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 129 E

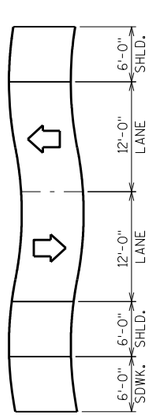
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W202.DGN PLOT DATE : 18-MAR-2011 10:00 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42

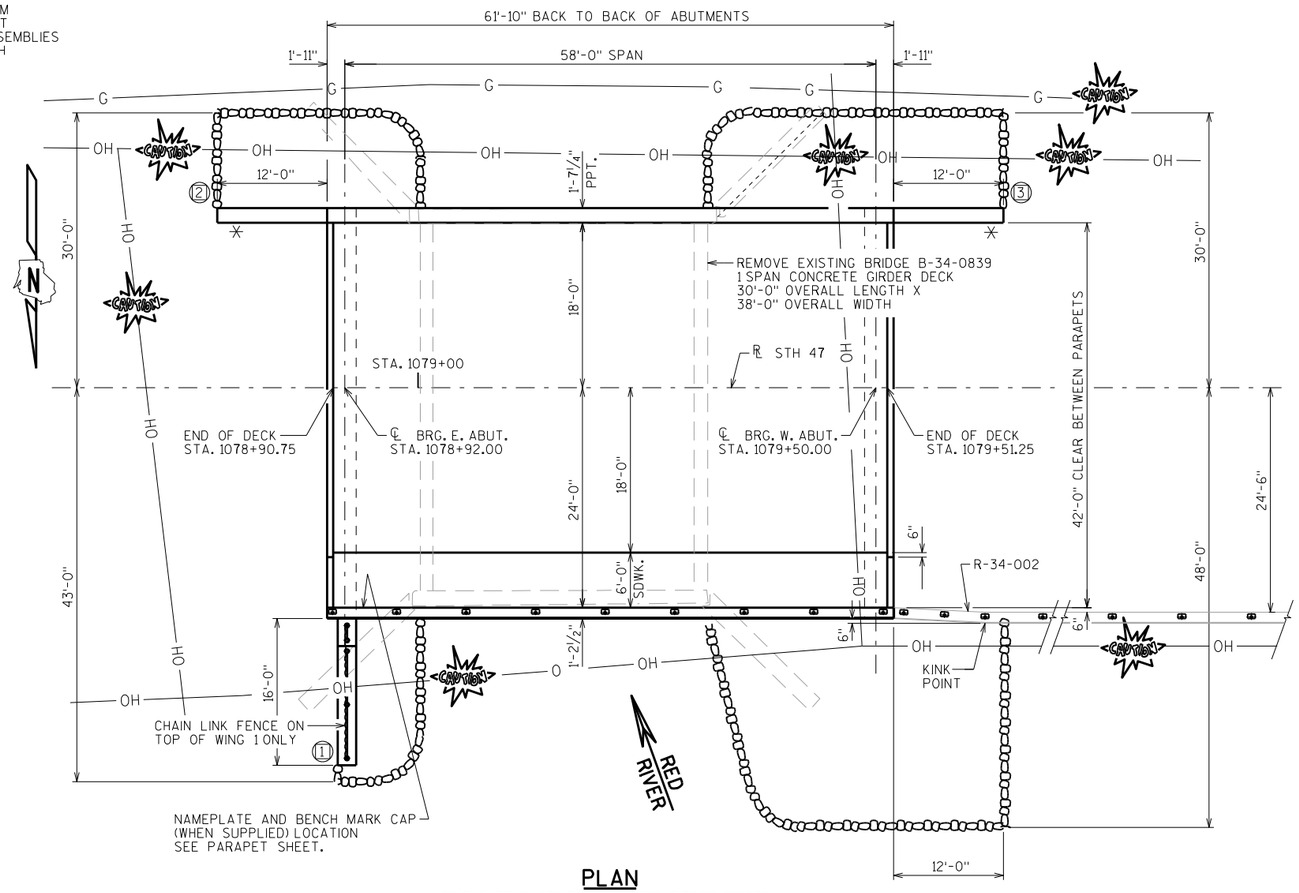
STATE PROJECT NUMBER

9650-16-70

✳ PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

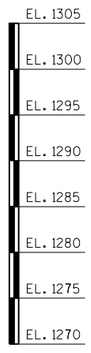
(1) INDICATES WING NUMBER

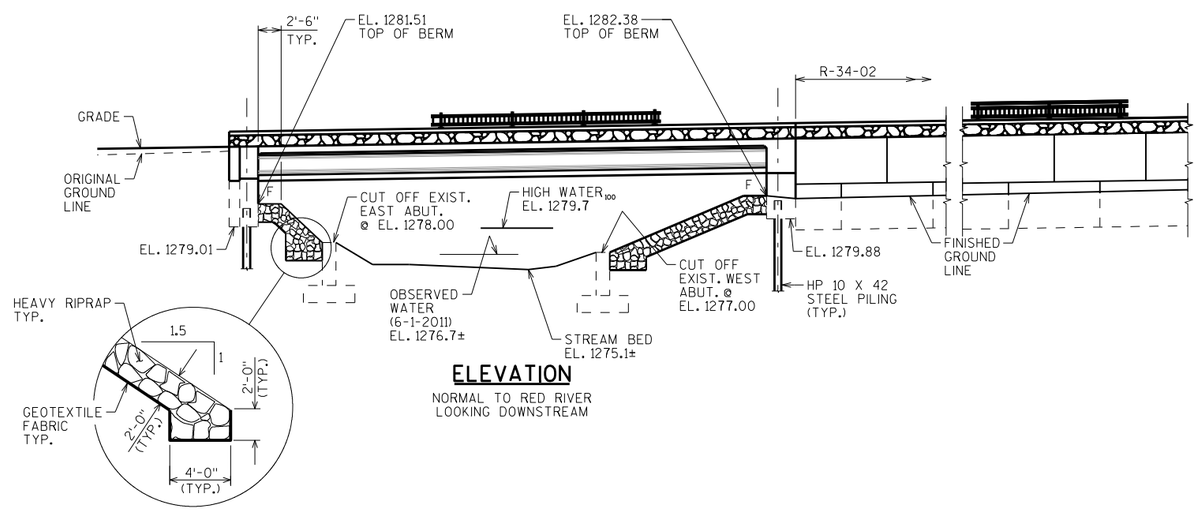




PLAN

SINGLE SPAN, 36" PRESTRESSED GIRDER BRIDGE





ELEVATION

NORMAL TO RED RIVER LOOKING DOWNSTREAM

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.08
OPERATING RATING FACTOR: RF=1.41
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

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

ULTIMATE DESIGN STRESSES:

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

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

36" PRESTRESSED GIRDERS, CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS - 0.5" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ✳✳PER PILE
AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 50'-0" LONG (EAST ABUT.)
ESTIMATED 45'-0" LONG (WEST ABUT.).

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 450 C.F.S.
VEL. =3.2 F.P.S.
HW.= EL. 1279.7
WATERWAY AREA= 141 SQ. FT.
DRAINAGE AREA= 21.4 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 =160 C.F.S.
$HW._2$ = EL. 1278.1

TRAFFIC VOLUME

STH 47
A.D.T.=730 (2014)
R.D.S.=35 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. EAST ABUTMENT
5. EAST ABUTMENT DETAILS
6. WEST ABUTMENT
7. WEST ABUTMENT DETAILS
8. 36" PRESTRESSED GIRDER DETAILS
9. STEEL DIAPHRAGM
10. SUPERSTRUCTURE CROSS SECTION
11. SUPERSTRUCTURE DETAILS
12. SINGLE SLOPE PARAPET SS32 (MODIFIED)
13. VERTICAL FACE PARAPET TYPE 'A' (MODIFIED)
14. COMBINATION RAIL TYPE "C2"
15. FENCING DETAILS

STRUCTURE DESIGN CONTACTS:
MATT COUPAR (608) 266-5083
DAVE KIEKBUSCH (608) 266-5084

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 3/13/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-34-46

STH 47 OVER THE RED RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
LANGLADE	NORWOOD

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
MWL	MSC	DDS	MSC

GENERAL PLAN

SHEET 1 OF 15

130

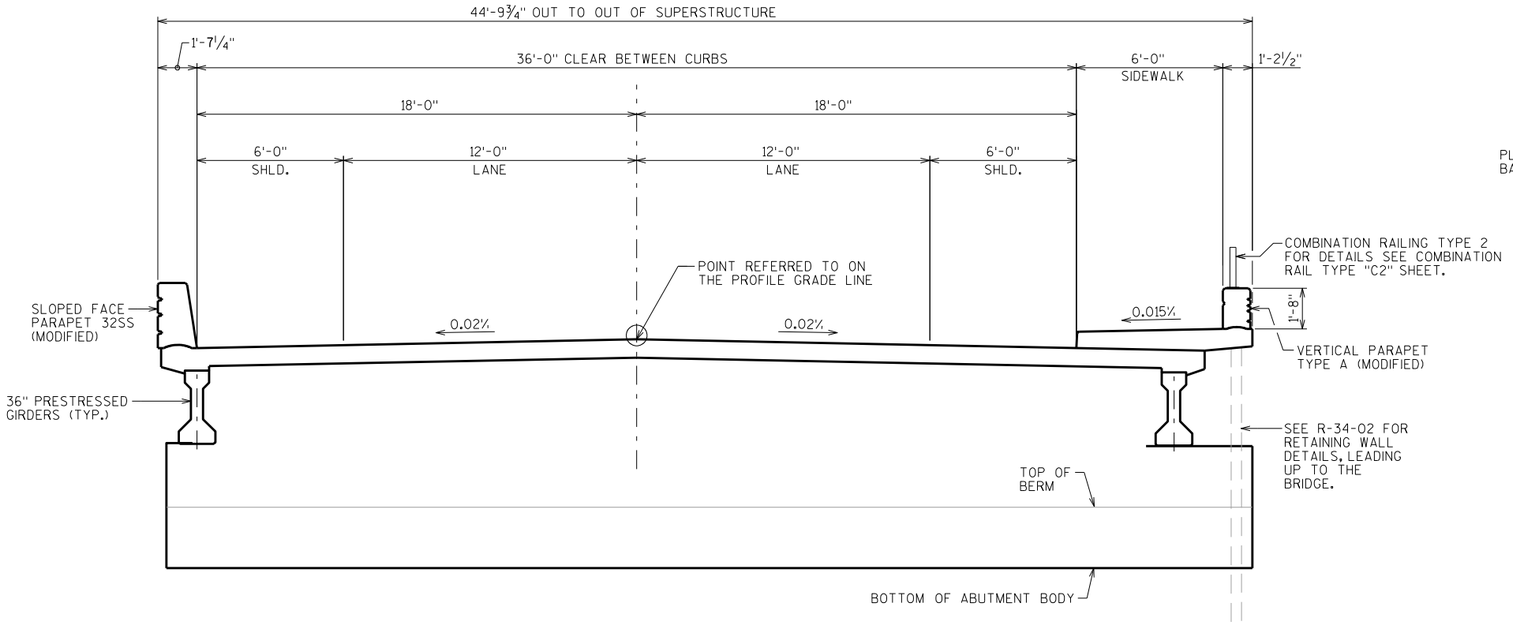
I.D. 9650-16-00

DATE: OCT. 2013

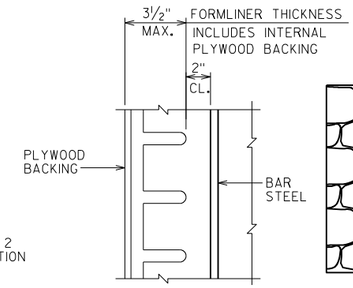
SCALE = 8

STATE PROJECT NUMBER

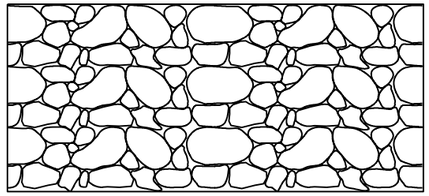
9650-16-70



CROSS SECTION THRU ROADWAY - LOOKING WEST



SECTION THRU FORMLINER



FIELD STONE - RANDOM SIZES BETWEEN 6" & 24" RELIEF = 2½"

FORMLINER DETAILS

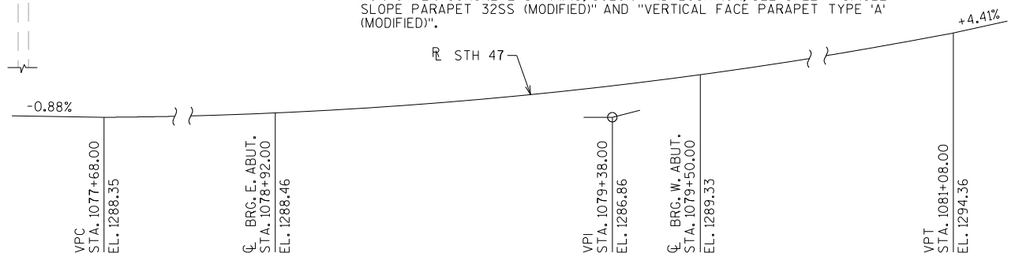
ARCHITECTURAL SURFACE TREATMENT NOTES

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

THIS ARCHITECTURAL SURFACE TREATMENT SHALL BE MULTI-COLORED STAINED TO COLORS THAT CLOSELY MATCH THE RIPRAP THAT WILL BE USED AT THE SITE. THE COST OF STAINING THE ARCHITECTURAL SURFACE TREATMENT IS INCLUDED IN THE BID ITEM "CONCRETE STAINING MULTI-COLOR STRUCTURE B-34-46.

FOR OTHER CONCRETE STAINING, COLOR AND LOCATION, SEE SHEET "SINGLE SLOPE PARAPET 32SS (MODIFIED)" AND "VERTICAL FACE PARAPET TYPE 'A' (MODIFIED)".



PROFILE GRADE LINE - STH 47

VERT. CURVE = 340'

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	EAST ABUT.	WEST ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 1079+21.00	LS	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-34-46	LS	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	200	150	350
502.0100	CONCRETE MASONRY BRIDGES	CY	125	49	40	214
502.3200	PROTECTIVE SURFACE TREATMENT	SY	341	———	———	341
503.0136	PRESTRESSED GIRDER TYPE I 36-INCH	LF	354	———	———	354
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	2,640	2,490	5,130
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	22,260	2,070	1,180	25,510
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	———	6	6	12
506.4000	STEEL DIAPHRAGMS B-34-46	EACH	5	———	———	5
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	14	10	24
517.1010.S	CONCRETE STAINING B-34-46	SF	63	6	6	75
517.1015.S	CONCRETE STAINING MULTI-COLOR B-34-46	SF	207	26	26	259
517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-34-46	SF	207	26	26	259
550.0500	PILE POINTS	EACH	———	6	6	12
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	———	300	270	570
606.0300	RIPRAP HEAVY	CY	———	61	140	201
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	105	75	180
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	1	1	2
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	———	139	261	400
SPV.0090	FENCE CHAIN LINK POLYMER COATED 4-FT.	LF	———	16	———	16
SPV.0105	RAILING STEEL TYPE C2 GALVANIZED B-34-46	LS	———	———	———	1
	NON-BID ITEMS					
	FILLER	SIZE	———	———	———	½" & ¾"
	EXPANDED POLYSTYRENE	SIZE	———	———	———	1"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE, TOP OF SIDEWALK AND VERTICAL PORTION OF CURB AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS. DO NOT APPLY IN AREAS TO RECEIVE CONCRETE STAIN.

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

AT ABUTMENTS, HP 12X53 STEEL PILING MAY BE USED IN LIEU OF HP 10X42 STEEL PILING. PAYMENT SHALL BE BASED ON BID PRICE FOR HP 10X42 STEEL PILING.

FOR MORE INFORMATION ABOUT ARCHITECTURAL SURFACE TREATMENT, SEE BID ITEM "ARCHITECTURAL SURFACE TREATMENT B-34-46".

FOR MORE INFORMATION ON STAINING OF ARCHITECTURAL SURFACE TREATMENT, SEE BID ITEM "CONCRETE STAINING MULTI-COLOR B-34-46".

STAIN EXTERIOR PARAPET CAP, STAIN COLOR SHALL BE LIGHT BROWN (FEDERAL COLOR NO. 33722). FOR MORE INFORMATION SEE BID ITEM "CONCRETE STAINING B-34-46".

THE COMBINATION RAILING TYPE C2 GALVANIZED SHALL BE PAINTED BLACK (FEDERAL COLOR NO. 27038)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY DDS | PLANS CK'D. MSC

CROSS SECTION & QUANTITIES

SHEET 2

131

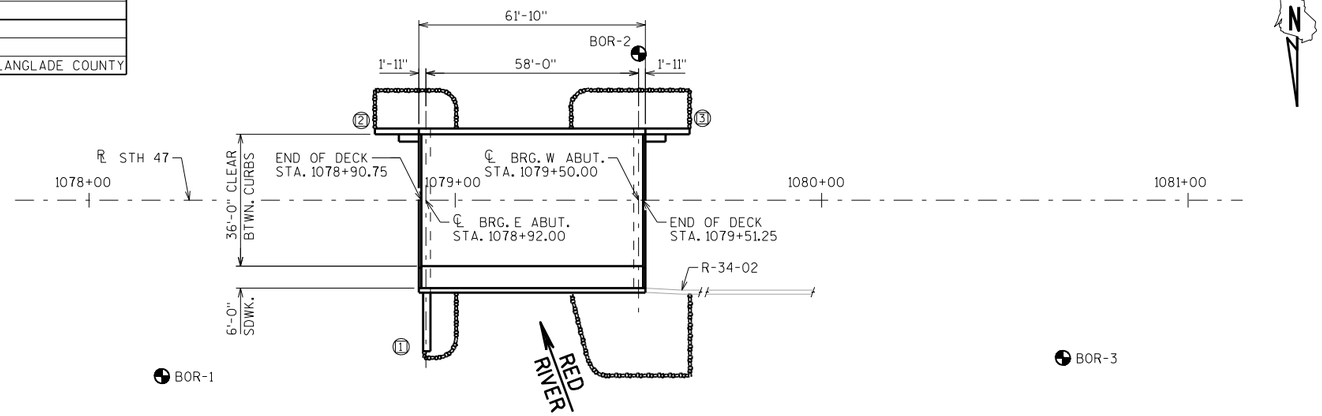
SCALE = 3.0

8

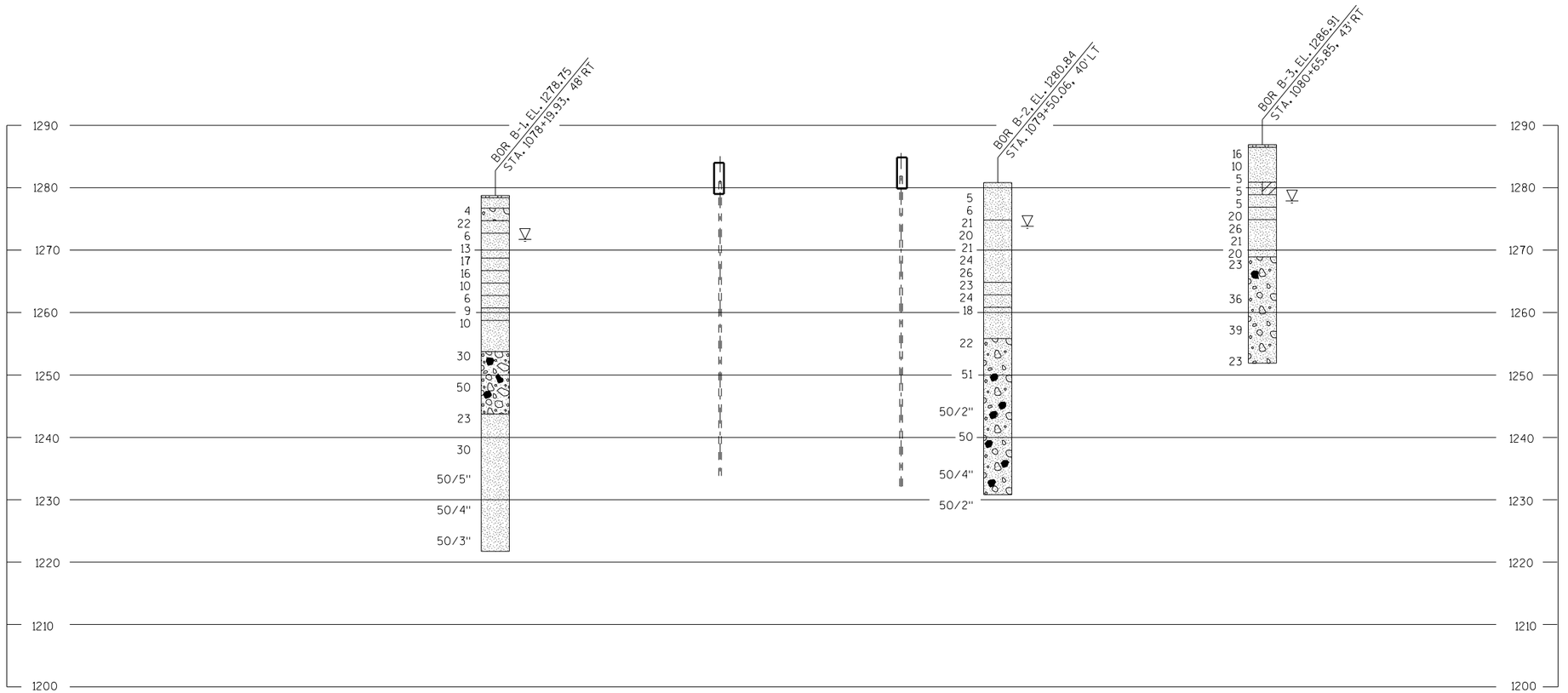
8

NEOPIT - ANTIGO
RED RIVER BRIDGE

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	4/16/2013	307865.6247	656445.7993
2	4/17/2013	307776.4925	656445.8225
3	4/17/2013	307861.5445	656334.515
BORINGS COMPLETED BY: RIVER VALLEY TESTING			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) LANGLADE COUNTY			



PLAN



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

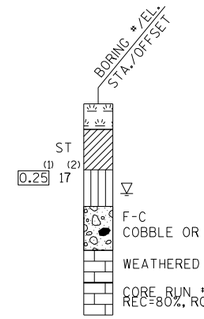
STATE PROJECT NUMBER

9650-16-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY PR/DDS | PLANS CK'D. MSC

SUBSURFACE EXPLORATION

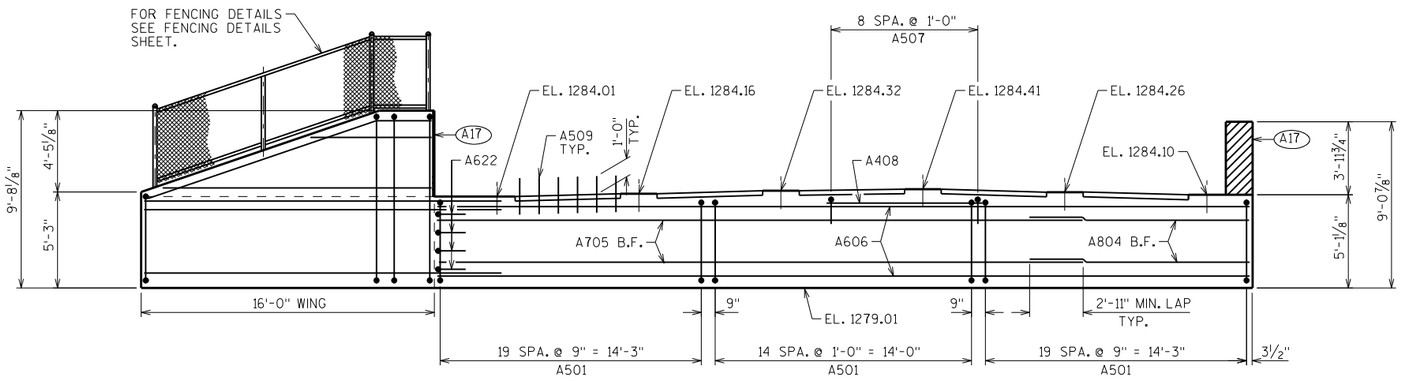
SHEET 3

132

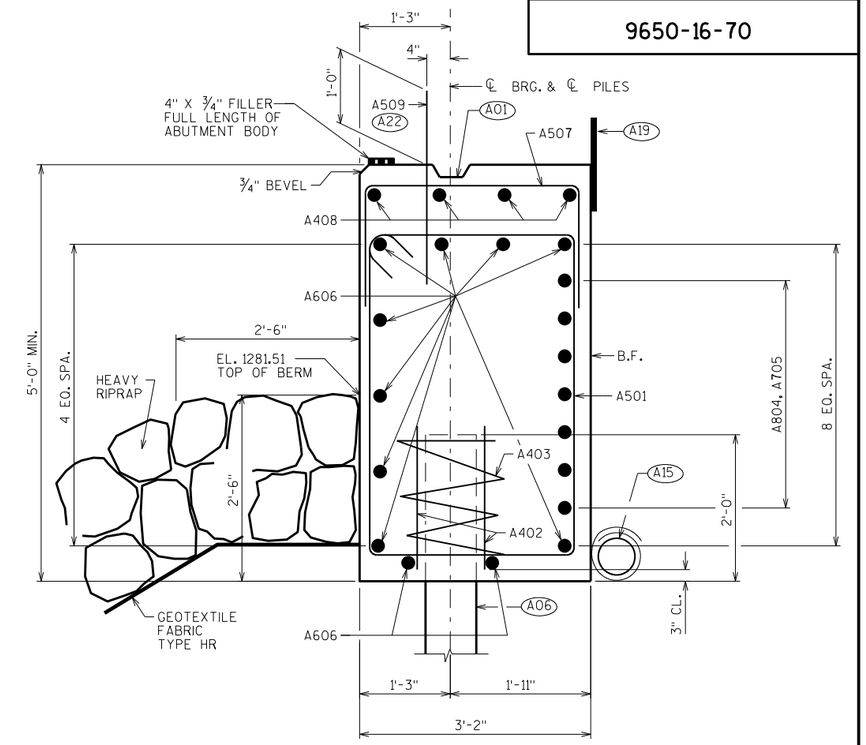
SCALE = 10

STATE PROJECT NUMBER

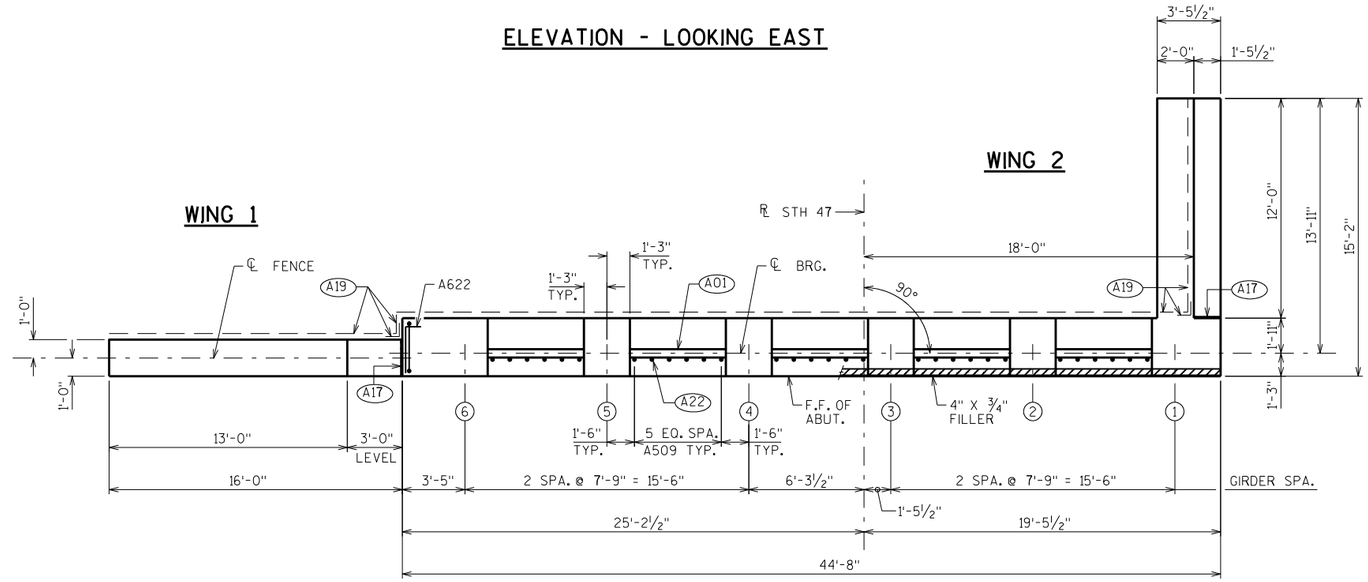
9650-16-70



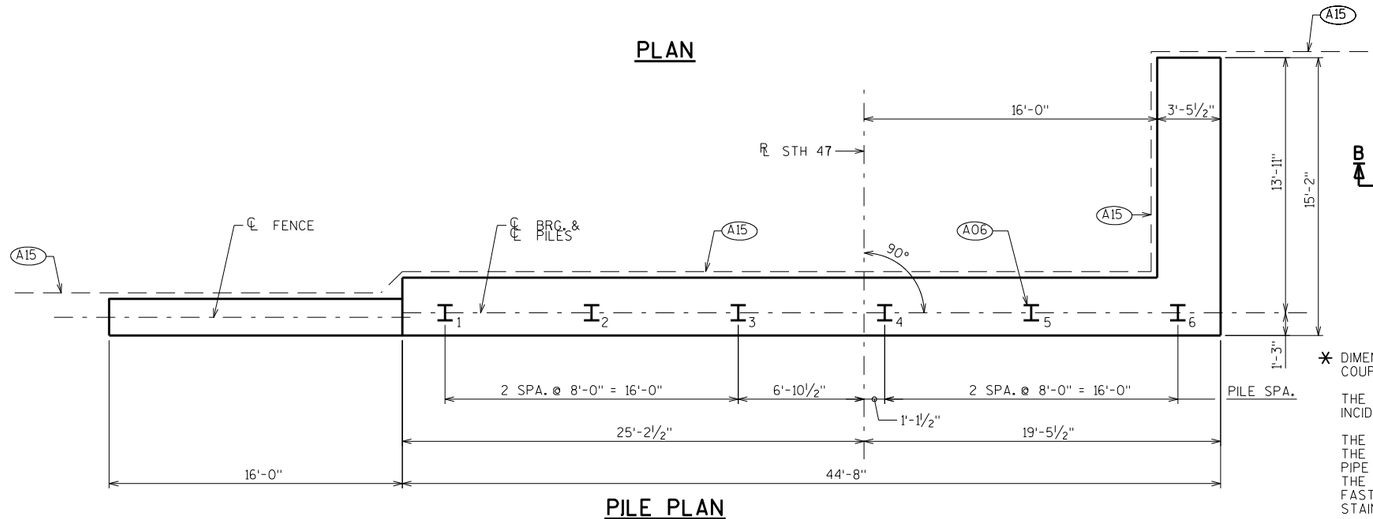
ELEVATION - LOOKING EAST



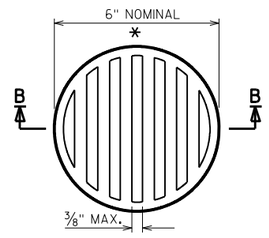
SECTION THRU BODY



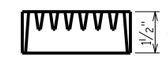
PLAN



PILE PLAN



RODENT SHIELD DETAIL



SECTION B-B

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2" X 6".

(A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

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

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

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

(A22) A509 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

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

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY DDS | PLANS CK'D. MSC

EAST ABUTMENT

SHEET 4

133

SCALE = 4

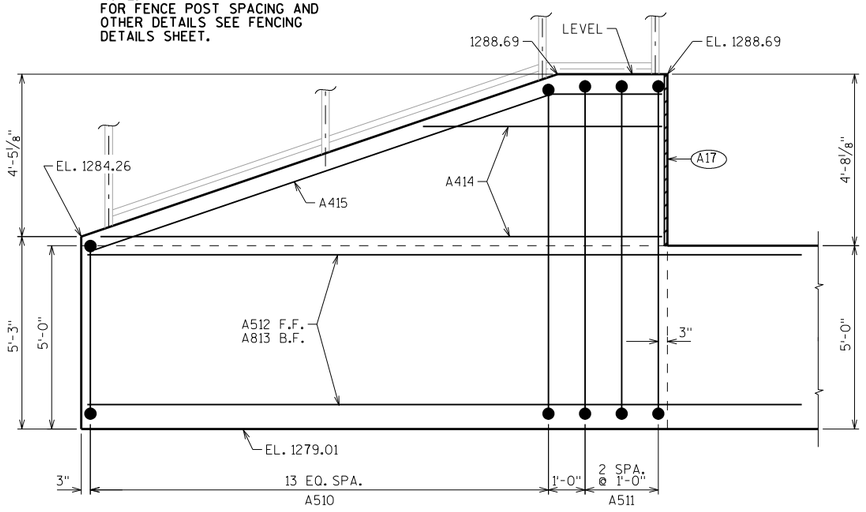
8

8

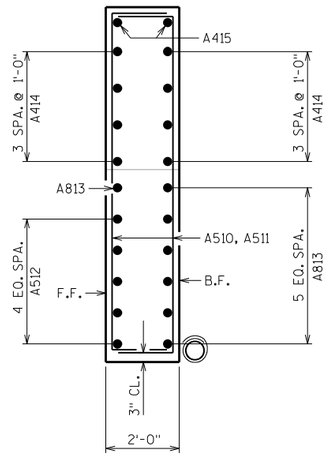
STATE PROJECT NUMBER

9650-16-70

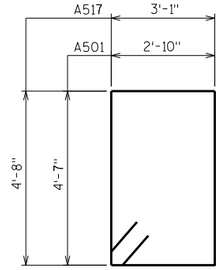
NOTE:
FOR FENCE POST SPACING AND OTHER DETAILS SEE FENCING DETAILS SHEET.



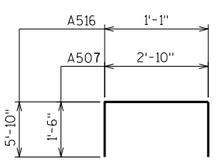
ELEVATION - WING 1



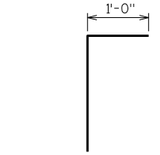
SECTION THRU WING 1



A501, A517



A507, A516



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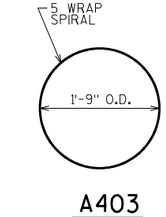

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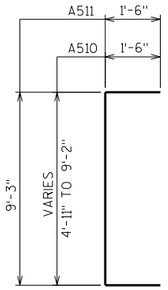


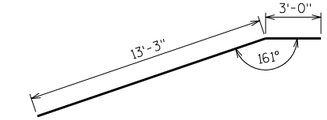
A510, A511

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		55	15'-6"	X		BODY - STIRRUP
A402		12	2'-3"			BODY - VERT. - 2 PER BODY PILES
A403		6	28'-0"	X		BODY - 1 PER BODY PILE
A804		7	12'-0"			BODY - HORIZ. - B.F.
A705		7	35'-3"			BODY - HORIZ. - B.F.
A606		11	44'-4"			BODY - HORIZ.
A507		9	5'-7"	X		BODY - VERT.
A408		4	8'-9"			BODY - HORIZ. - TOP
A509		30	2'-0"			DOWEL BARS
A510	X	28	9'-10"	X	⚠	WING 1 - VERT.
A511	X	6	12'-0"	X		WING 1 - VERT.
A512	X	5	17'-9"			WING 1 - HORIZ.
A813	X	7	19'-8"			WING 1 - HORIZ.
A414	X	8	10'-11"		⚠	WING 1 - HORIZ.
A415	X	2	16'-3"	X		WING 1 - VERT.
A516	X	17	12'-6"	X		WING 2 - VERT.
A517	X	13	16'-2"	X		WING 2 - STIRRUP
A518	X	6	14'-6"			WING 2 - HORIZ.
A619	X	9	13'-11"			WING 2 - HORIZ.
A420	X	8	11'-8"			WING 2 - HORIZ.
A621	X	2	11'-8"			WING 2 - HORIZ.
A622		4	3'-8"	X		BODY - HORIZ. - B.F.

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

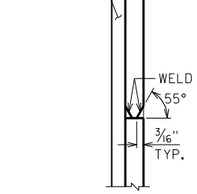


A415

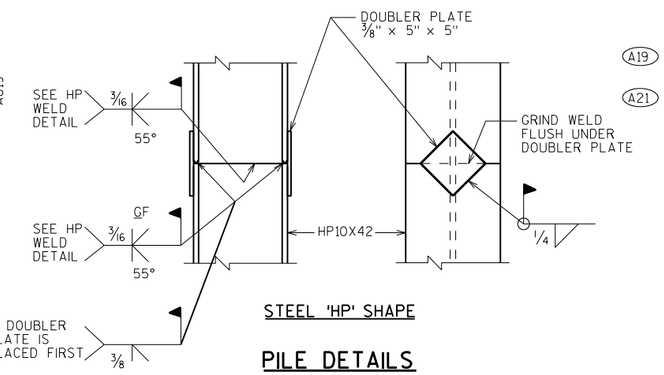
BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
A510	2 SERIES OF 14	7'-8" TO 11'-11"
A414	2 SERIES OF 4	6'-6" TO 15'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY.

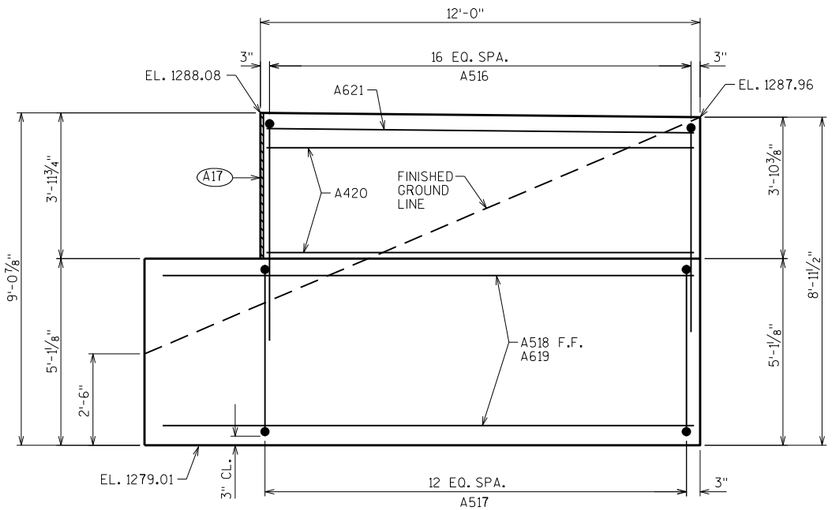


HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

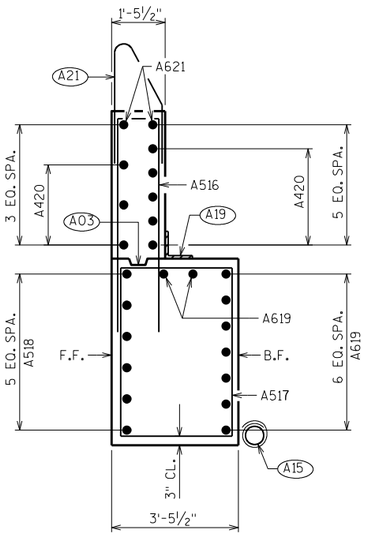


STEEL 'HP' SHAPE

PILE DETAILS



ELEVATION - WING 2



SECTION THRU WING 2

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2"x6". (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

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

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

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

(A21) FOR PPT. BARS & DIMENSIONS SEE SINGLE SLOPE PARAPET 32SS (MODIFIED) SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY DDS | PLANS CK'D. MSC

EAST ABUTMENT DETAILS

SHEET 5

134

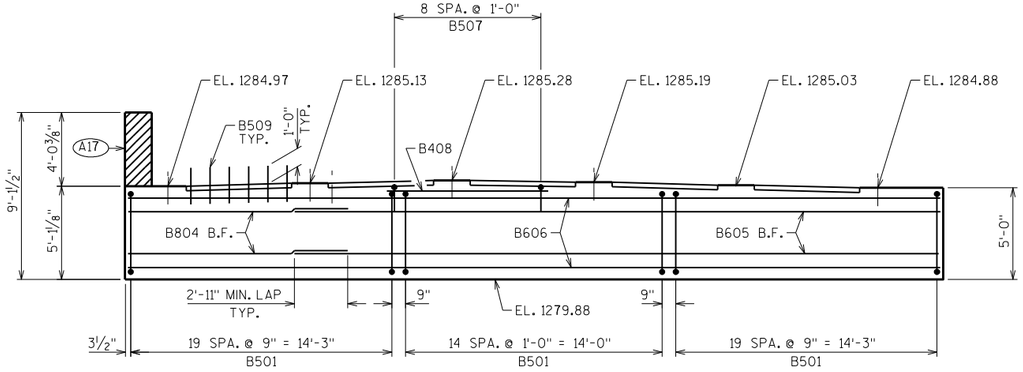
SCALE = 2

8

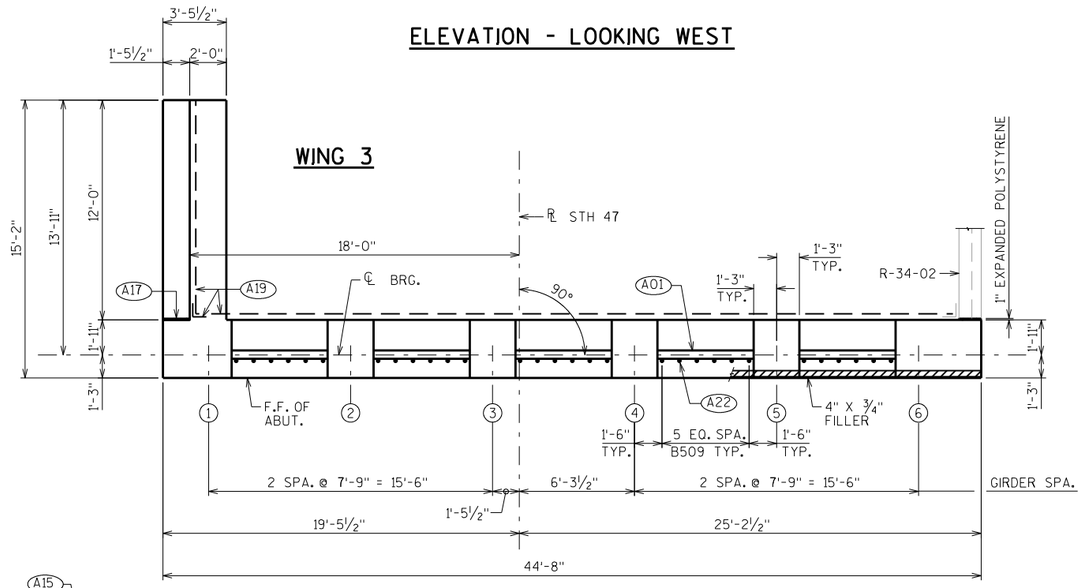
8

STATE PROJECT NUMBER

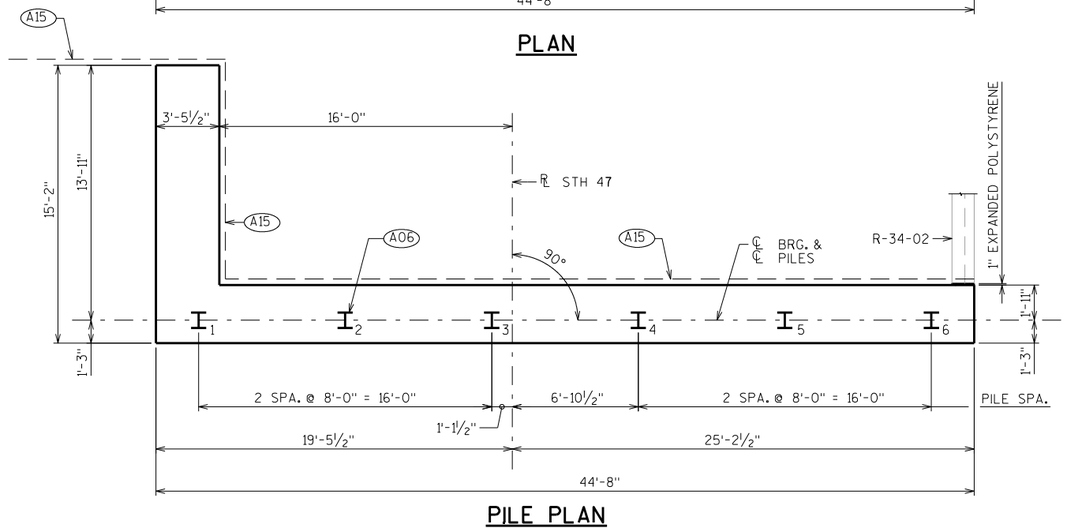
9650-16-70



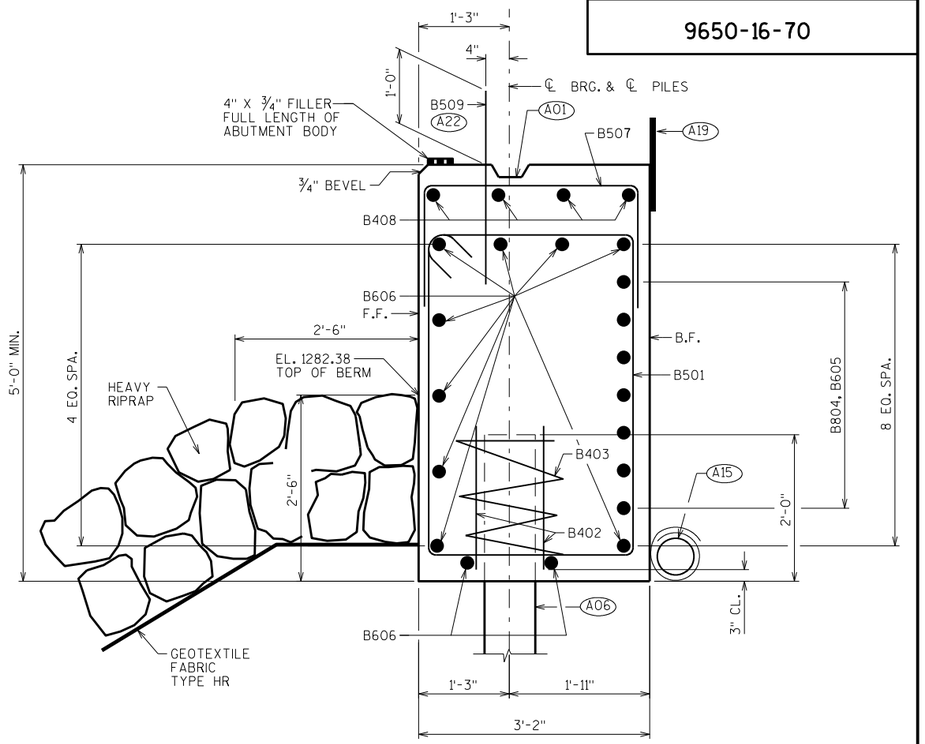
ELEVATION - LOOKING WEST



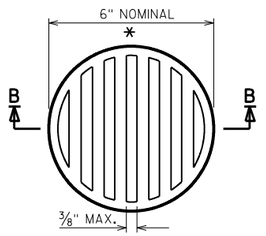
PLAN



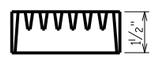
PILE PLAN



SECTION THRU BODY



RODENT SHIELD DETAIL



SECTION B-B

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

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

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

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2"x6".

(A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

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

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

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

(A22) B509 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

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STRUCTURE B-34-46

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WEST ABUTMENT

SHEET 6

135

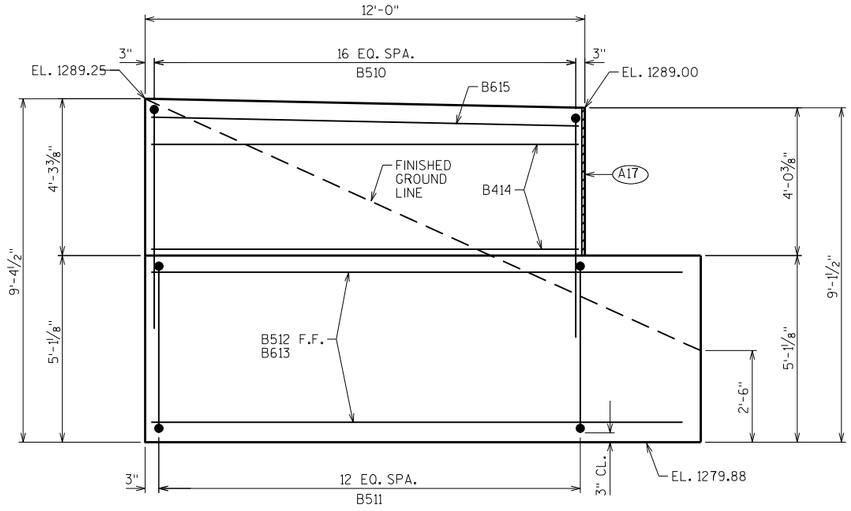
SCALE = 4

8

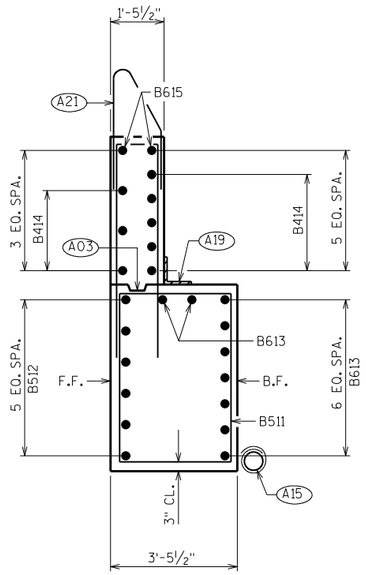
8

STATE PROJECT NUMBER

9650-16-70



ELEVATION - WING 3

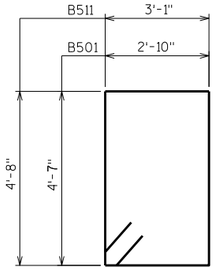


SECTION THRU WING 3

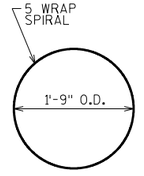
BILL OF BARS

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

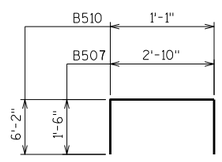
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		55	15'-6"	X		BODY - STIRRUP
B402		12	2'-3"			BODY - VERT. - 2 PER BODY PILES
B403		6	28'-0"	X		BODY - 1 PER BODY PILE
B804		7	12'-0"			BODY - HORIZ. - B.F.
B605		7	35'-3"			BODY - HORIZ. - B.F.
B606		11	44'-4"			BODY - HORIZ.
B507		9	5'-7"	X		BODY - HORIZ. - VERT.
B408		4	8'-9"			BODY - HORIZ. - TOP
B509		30	2'-0"			DOWEL BARS
B510	X	17	13'-2"	X		WING 3 - VERT.
B511	X	13	16'-2"	X		WING 3 - STIRRUP
B512	X	6	14'-6"			WING 3 - HORIZ.
B613	X	9	13'-11"			WING 3 - HORIZ.
B414	X	8	11'-8"			WING 3 - HORIZ.
B615	X	2	11'-8"			WING 3 - HORIZ.



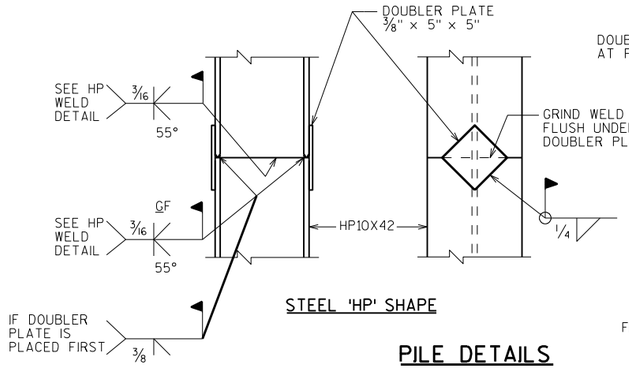
B501, B511



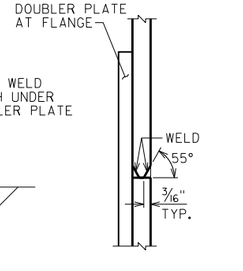
B403



B507, B510



STEEL 'HP' SHAPE



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE DETAILS

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2"x6". (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

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

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

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

(A21) FOR PPT. BARS & DIMENSIONS SEE SINGLE SLOPE PARAPET 32SS (MODIFIED) SHEET.

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STRUCTURE B-34-46

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WEST ABUTMENT DETAILS

SHEET 7

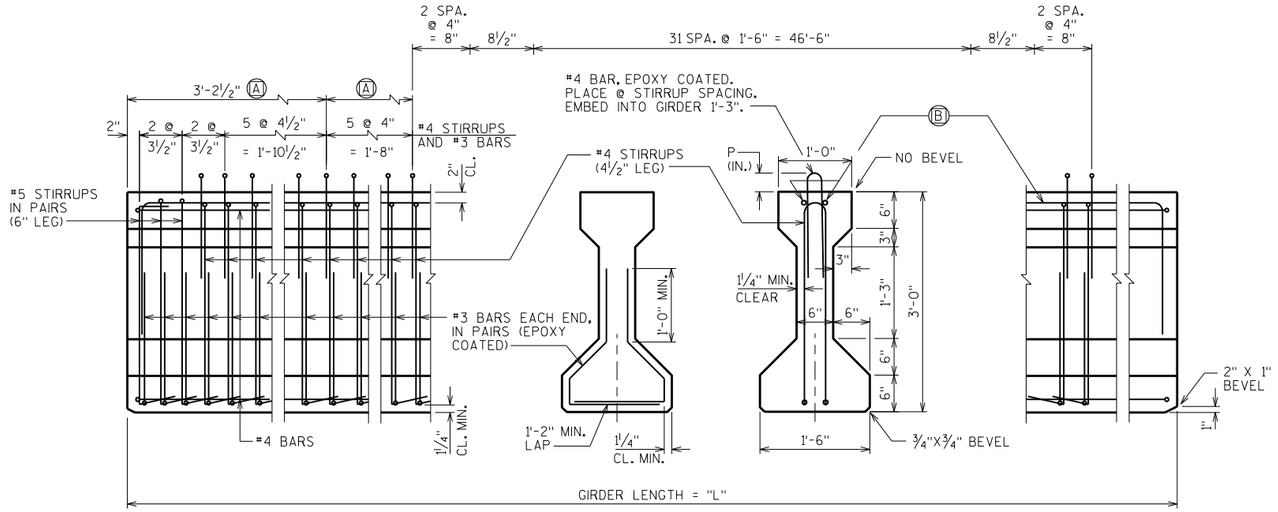
136

8

8

SCALE = 2

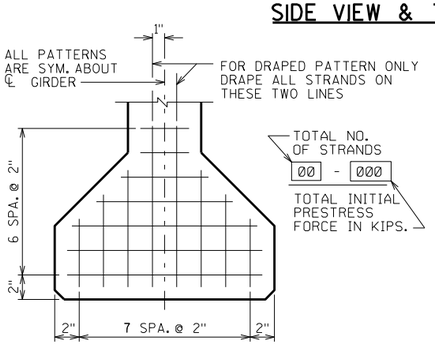
STATE PROJECT NUMBER
9650-16-70



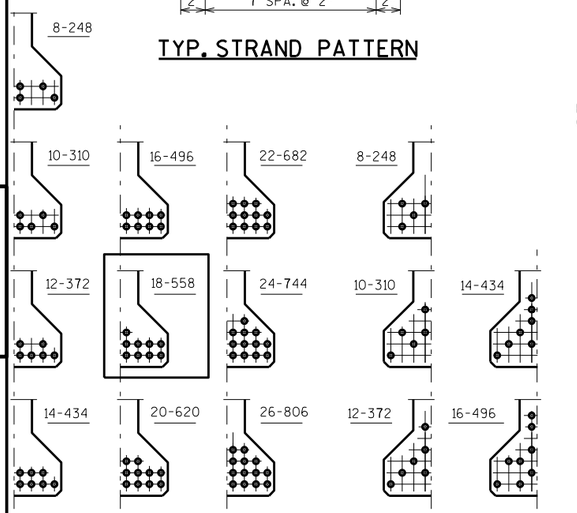
SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS

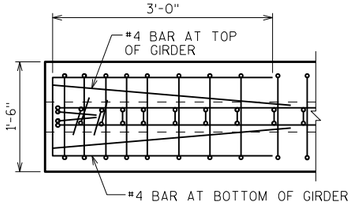


TYP. STRAND PATTERN

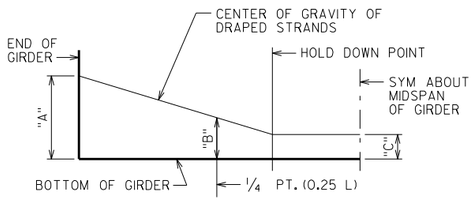


DRAPED PATTERN
0.5"ϕ STRANDS

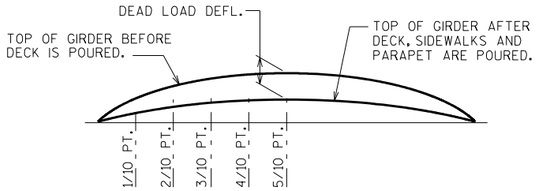
UNDRAPED PATTERN
0.5"ϕ STRANDS



TOP VIEW OF GIRDER ENDS



DRAPED STRAND PROFILE



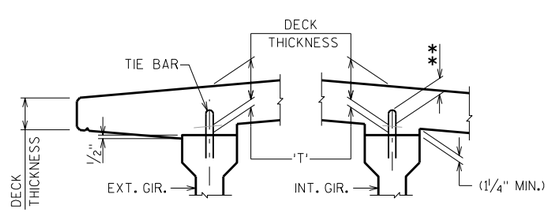
DEAD LOAD DEFLECTION DIAGRAM

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	1.4

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DECK HAUNCH DETAIL

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

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

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

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

NOTE: AN AVERAGE HAUNCH ('T') OF 3" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" OF THE TOP FLANGE.

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

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

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

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

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

PRESTRESSING STRANDS SHALL BE (0.5" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

BEND EACH END OF #4 STIRRUPS 4½" AND #5 STIRRUPS 6".

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

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1ST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1	1-6	59'-0"	0.2	0.4	0.6	0.7	0.7	0.7	0.6	0.4	0.2	8,000	8"	7"	8"	0.5	18	6,400	32	11	14	4		

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STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

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36" PRESTRESSED GIRDER DETAILS

SHEET 8

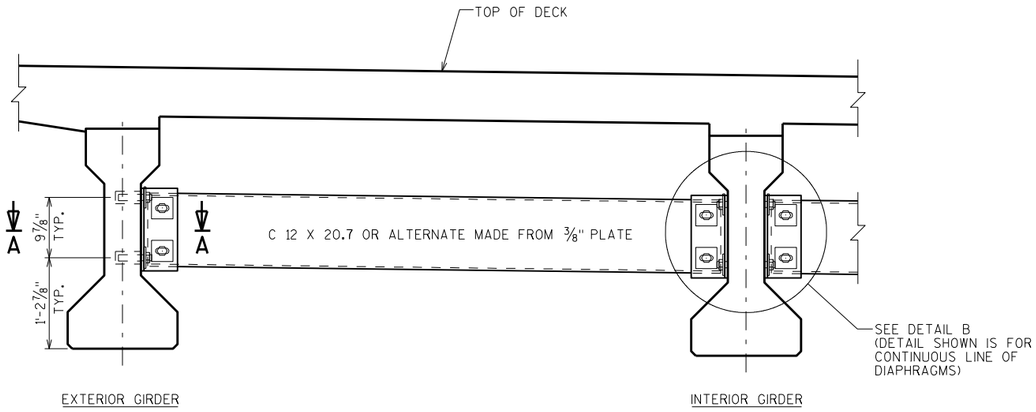
137

SCALE = 1

8

8

STATE PROJECT NUMBER
9650-16-70



PART TRANSVERSE SECTION AT DIAPHRAGM

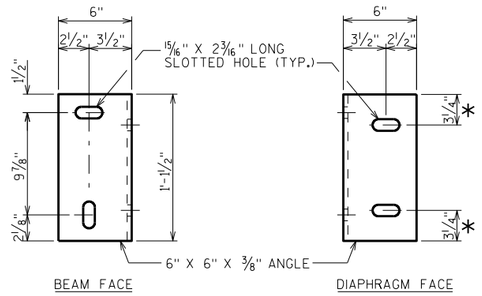
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-34-46", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

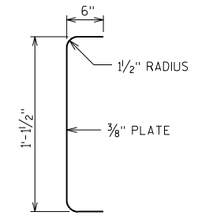
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

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

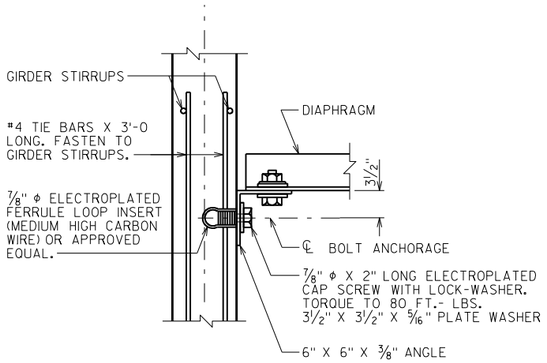


DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM

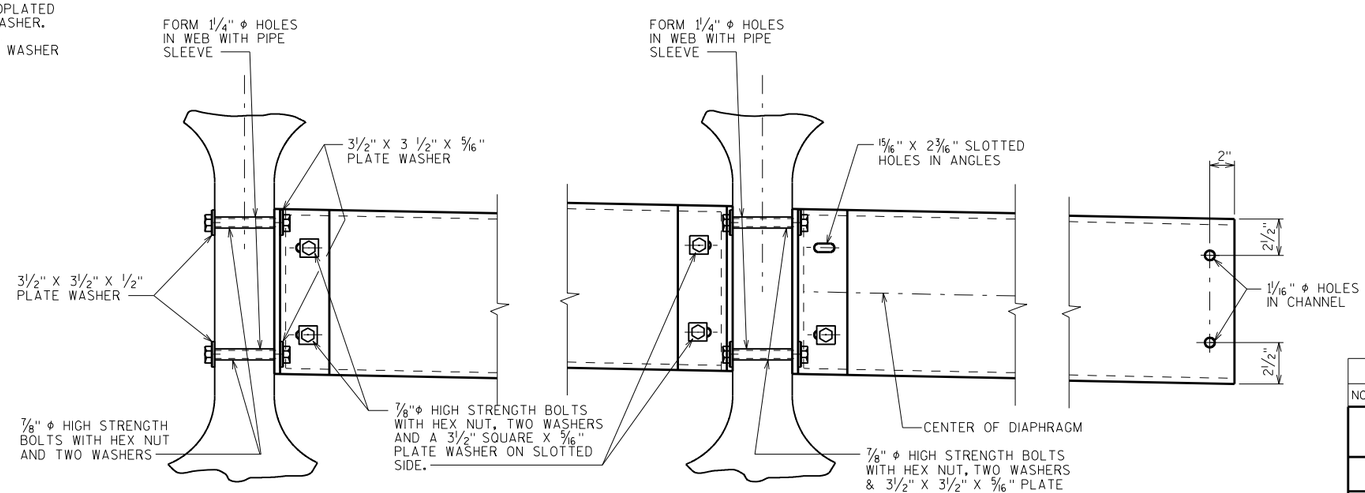


SECTION THRU ALTERNATE DIAPHRAGM



SECTION A-A

(FOR EXTERIOR ATTACHMENT)



(FOR STAGGERED DIAPHRAGM)

DETAIL B

(FOR CONTINUOUS LINE OF DIAPHRAGMS)

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STEEL DIAPHRAGM

SHEET 9

138

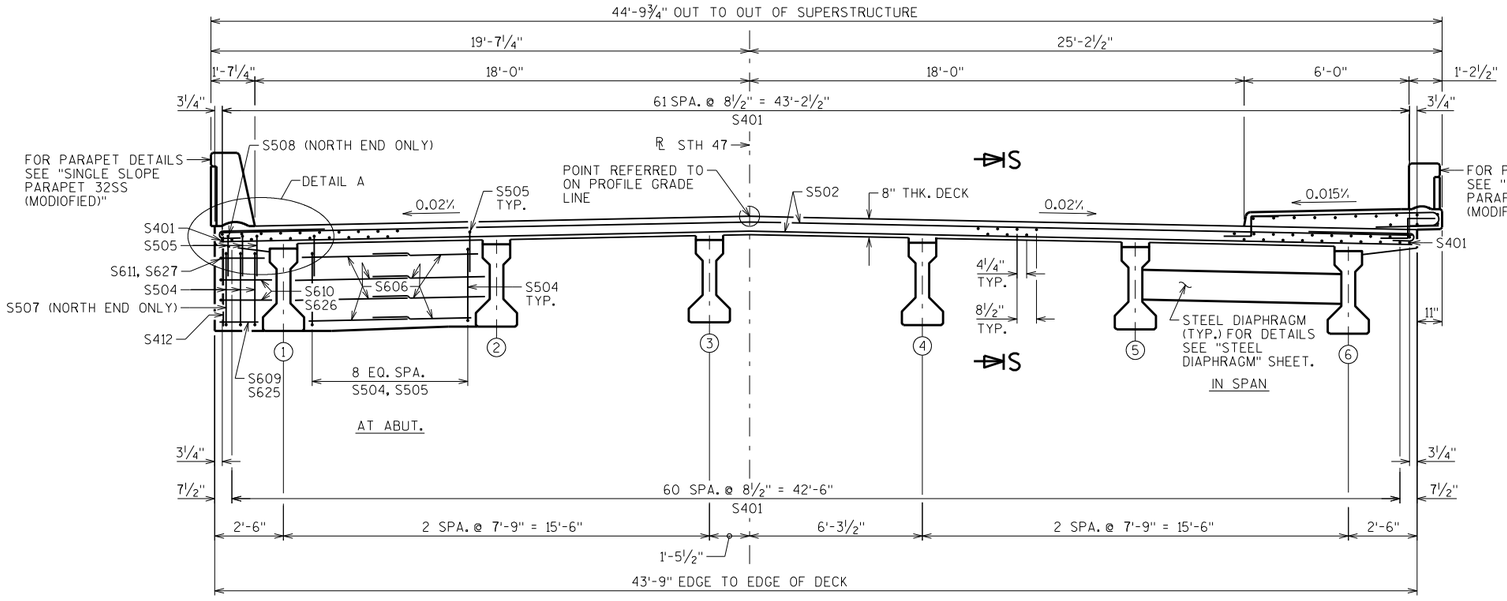
SCALE = 1

8

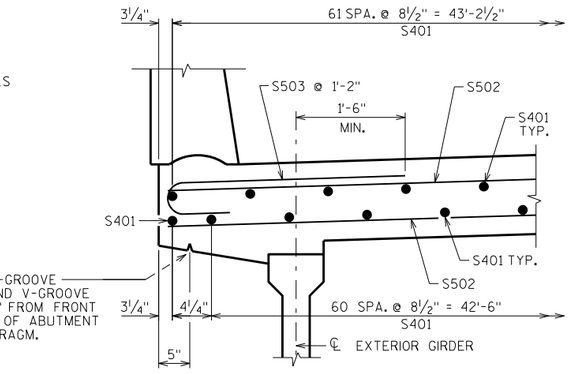
8

STATE PROJECT NUMBER

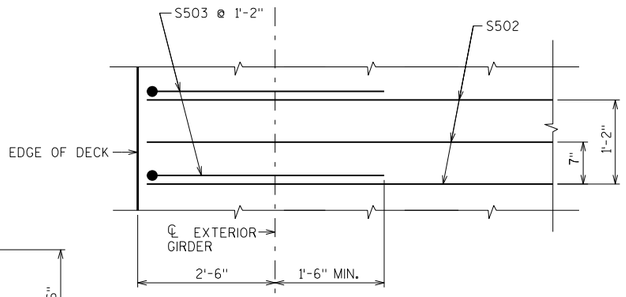
9650-16-70



CROSS SECTION THRU ROADWAY - LOOKING EAST

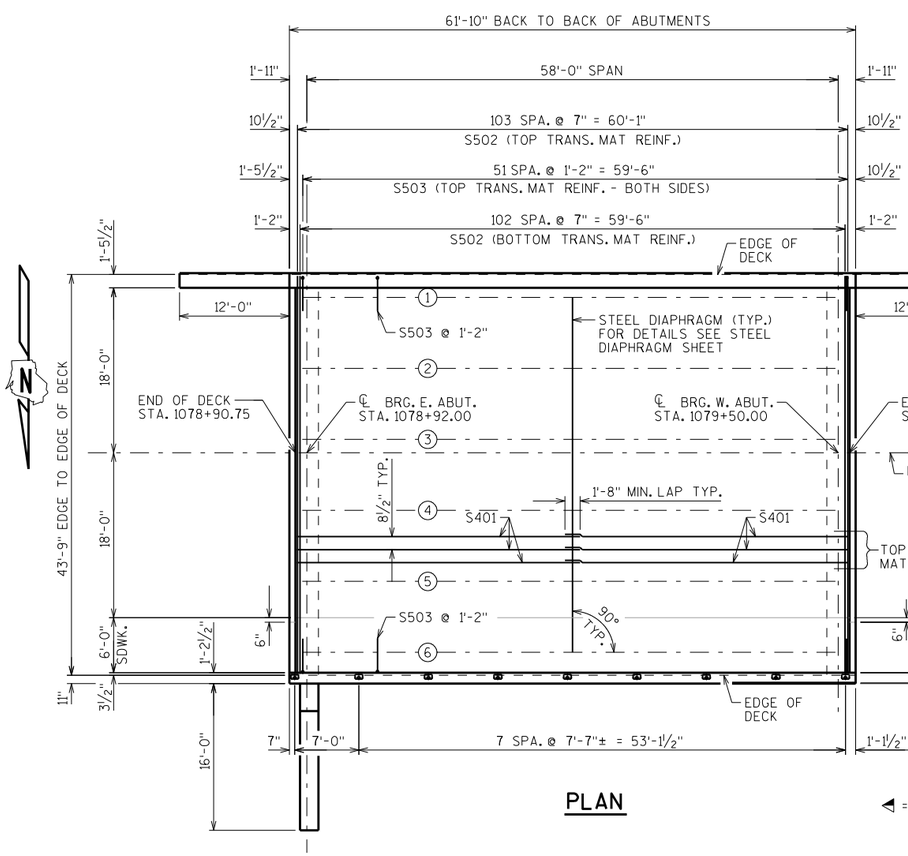


SECTION



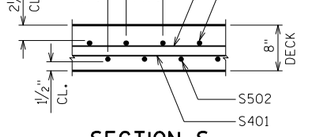
PLAN

DETAIL A

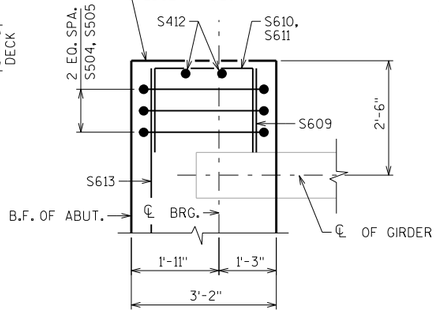


PLAN

◀ = 8" X SIDEWALK DEPTH PAVING NOTCH

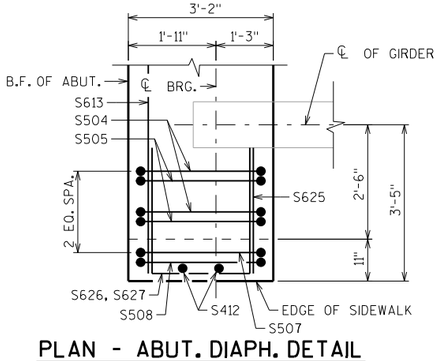


SECTION S



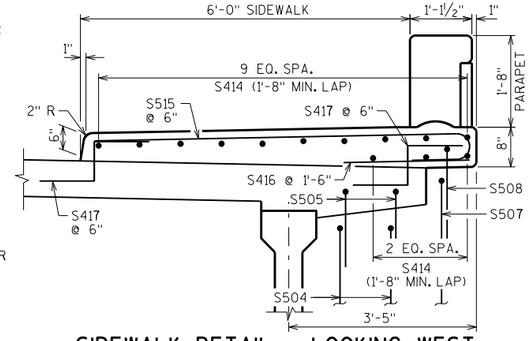
PLAN - ABUT. DIAPH. DETAIL

SOUTH END
EAST ABUTMENT SHOWN, WEST ABUTMENT SIMILAR



PLAN - ABUT. DIAPH. DETAIL

NORTH END
EAST ABUTMENT SHOWN, WEST ABUTMENT SIMILAR



SIDEWALK DETAIL - LOOKING WEST

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STRUCTURE B-34-46

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SUPERSTRUCTURE CROSS SECTION

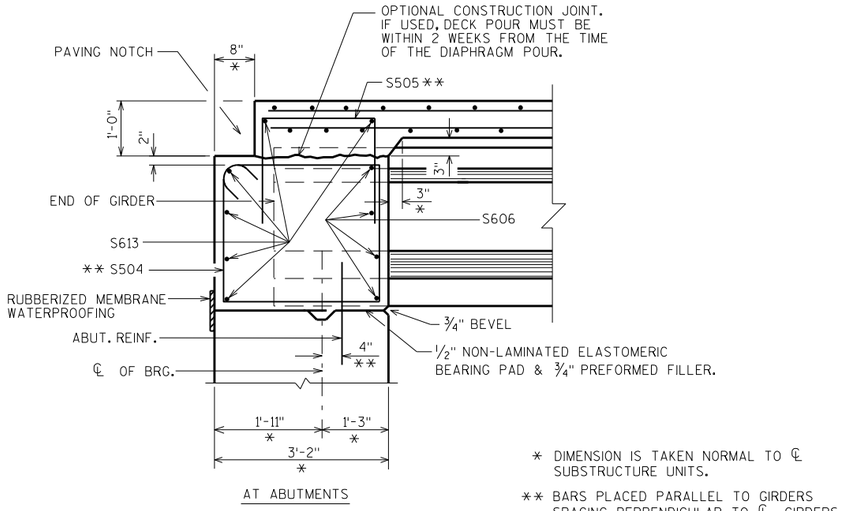
SHEET 10

139

SCALE = 8

8

8

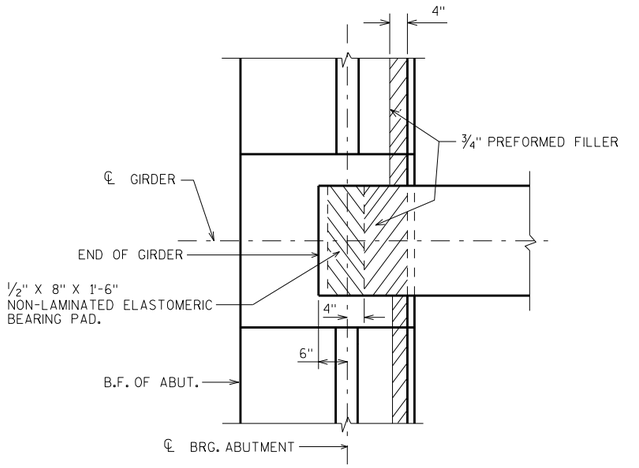


AT ABUTMENTS

PART LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO ℄ GIRDERS



BEARING PAD DETAIL

TOP OF DECK ELEVATIONS

	℄ BRG. E. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ BRG. W. ABUT.
LT EOD	1288.10	1288.16	1288.23	1288.31	1288.39	1288.47	1288.56	1288.66	1288.76	1288.86	1288.97
GIRDER 1	1288.12	1288.19	1288.25	1288.33	1288.41	1288.49	1288.58	1288.68	1288.78	1288.88	1288.99
GIRDER 2	1288.28	1288.34	1288.41	1288.48	1288.56	1288.65	1288.74	1288.83	1288.93	1289.04	1289.15
GIRDER 3	1288.43	1288.50	1288.56	1288.64	1288.72	1288.80	1288.89	1288.99	1289.09	1289.19	1289.30
GIRDER 4	1288.34	1288.40	1288.47	1288.54	1288.62	1288.70	1288.79	1288.89	1288.99	1289.09	1289.21
GIRDER 5	1288.18	1288.24	1288.31	1288.39	1288.47	1288.55	1288.64	1288.73	1288.83	1288.94	1289.05
GIRDER 6	1288.03	1288.09	1288.16	1288.23	1288.31	1288.39	1288.48	1288.58	1288.68	1288.78	1288.90
RT EOD	1287.98	1288.04	1288.11	1288.18	1288.26	1288.34	1288.43	1288.53	1288.63	1288.73	1288.85

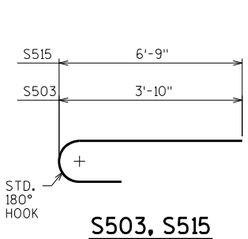
STATE PROJECT NUMBER

9650-16-70

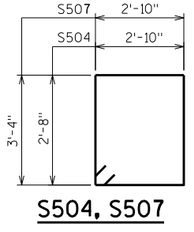
BILL OF BARS

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

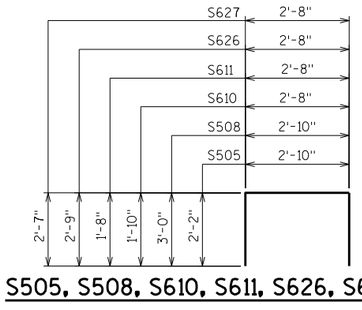
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	250	30'-11"			DECK - LONGITUDINAL - TOP & BOTTOM
S502	X	207	43'-5"			DECK - TRANSVERSE - TOP & BOTTOM
S503	X	104	4'-5"	X		DECK - TRANSVERSE - TOP - EDGE OF DECK
S504	X	100	11'-8"	X		ABUT. DIAPH. - STIRRUPS
S505	X	100	6'-11"	X		ABUT. DIAPH. - VERT.
S606	X	80	5'-0"			ABUT. DIAPH. - HORIZ. - BETWEEN GIRDERS
S507	X	2	13'-0"	X		ABUT. DIAPH. - STIRRUP - NORTH END ONLY
S508	X	2	8'-7"	X		ABUT. DIAPH. - VERT. - NORTH END ONLY
S609	X	2	1'-5"			ABUT. DIAPH. - HORIZ. - SOUTH END
S610	X	4	6'-0'	X		ABUT. DIAPH. - HORIZ. - SOUTH END
S611	X	2	5'-8"	X		ABUT. DIAPH. - HORIZ. - SOUTH END
S412	X	8	2'-9"			ABUT. DIAPH. - VERT. - ENDS
S613	X	12	43'-5"			ABUT. DIAPH. - HORIZ. - B.F.
S414	X	26	30'-11"			SIDEWALK - LONGITUDINAL
S515	X	121	7'-4"	X		SIDEWALK - TRANSVERSE - TOP
S416	X	41	2'-0'			SIDEWALK - TRANSVERSE - BOTTOM
S417	X	242	2'-5"	X		SIDEWALK - VERT.
S518	X	94	5'-0"	X		PARAPET SS32 - VERT.
S519	X	92	4'-5"	X		PARAPET SS32 - VERT.
S520	X	2	5'-10"	X		PARAPET SS32 - VERT. - AT PAVING NOTCH
S521	X	12	31'-8"			PARAPET SS32 - HORIZ.
S522	X	64	4'-8"	X		PARAPET A - VERT
S523	X	2	7'-5"	X		PARAPET A - VERT.
S424	X	8	31'-6"			PARAPET A- HORIZ.
S625	X	2	2'-4"			ABUT. DIAPH. - HORIZ. - NORTH END
S626	X	4	7'-10"	X		ABUT. DIAPH. - HORIZ. - NORTH END
S627	X	2	7'-6'	X		ABUT. DIAPH. - HORIZ. - NORTH END



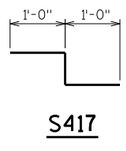
S503, S515



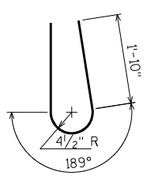
S504, S507



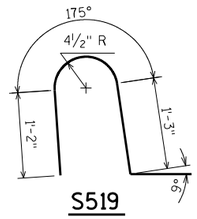
S505, S508, S610, S611, S626, S627



S417



S518



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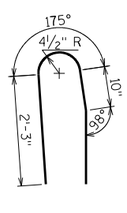

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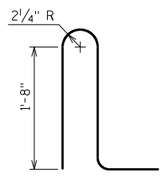
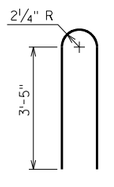


S522



S523

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY DDS | PLANS CK'D. MSC

SUPERSTRUCTURE DETAILS

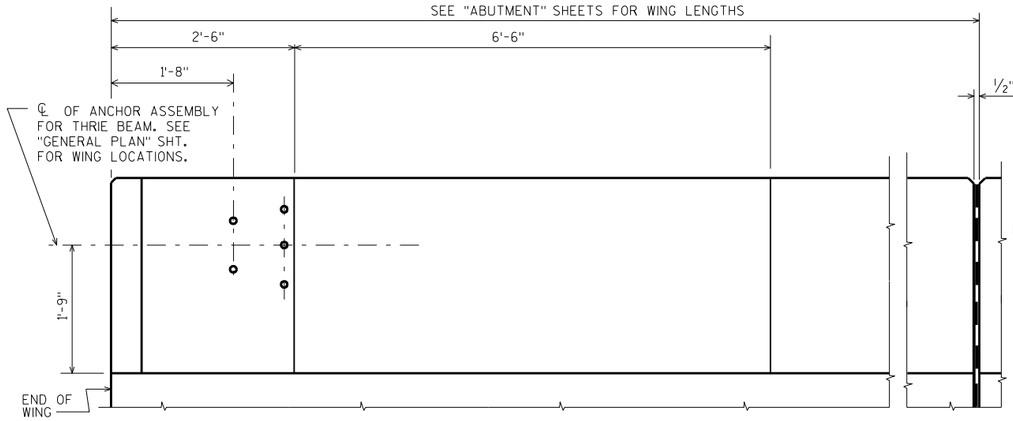
SHEET 11

140

SCALE = 1.3333

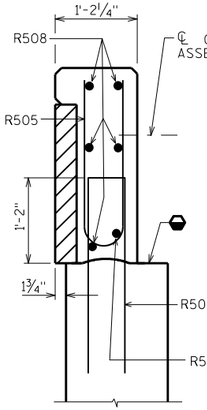
STATE PROJECT NUMBER

9650-16-70

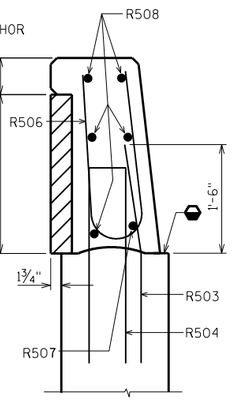


INSIDE ELEVATION

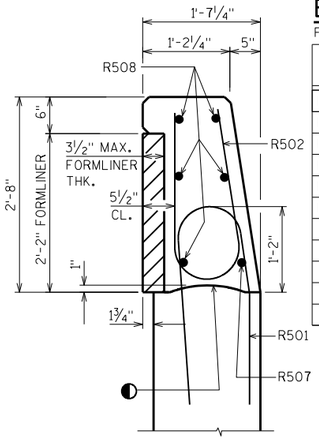
■ AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



SECTION A



SECTION B

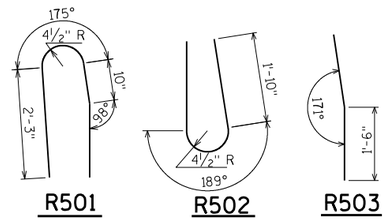


SECTION C

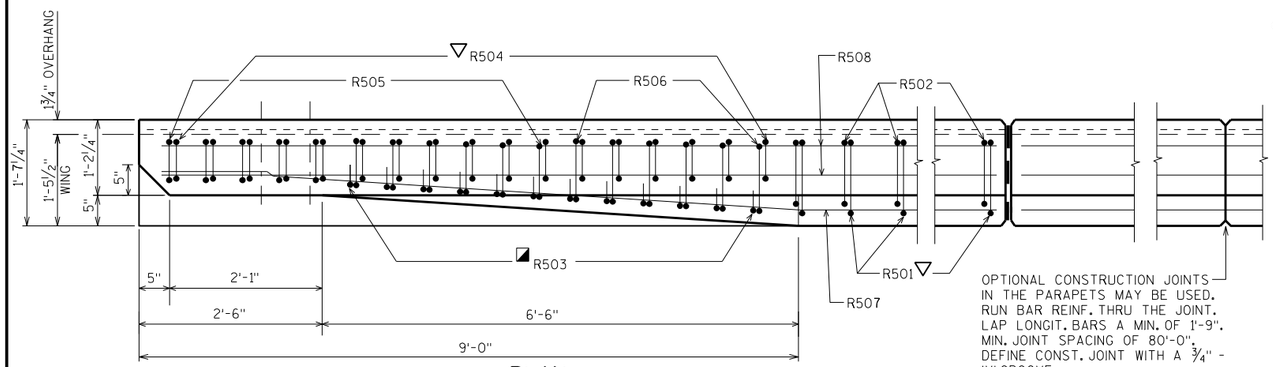
BILL OF BARS

FOR ABUTMENT PARAPETS

BAR MARK	COAT	EAST ABUT.	WEST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	5	5	5-10	X		PARAPET VERT.
R502	X	5	5	5-0	X		PARAPET VERT.
R503	X	12	12	3-0	X		PARAPET VERT.
R504	X	17	17	5-7	X		PARAPET VERT.
R505	X	11	11	4-9	X		PARAPET VERT.
R506	X	6	6	4-10	X		PARAPET VERT.
R507	X	1	1	11-8	X		PARAPET HORIZ.
R508	X	5	5	11-8			PARAPET HORIZ.

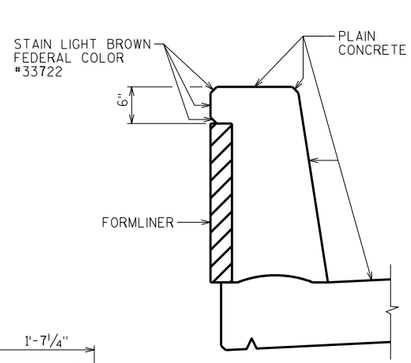


● FINISH SURFACE NOT COVERED BY PARAPET SAME AS ROADWAY.

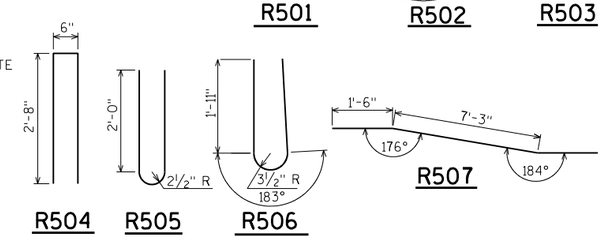


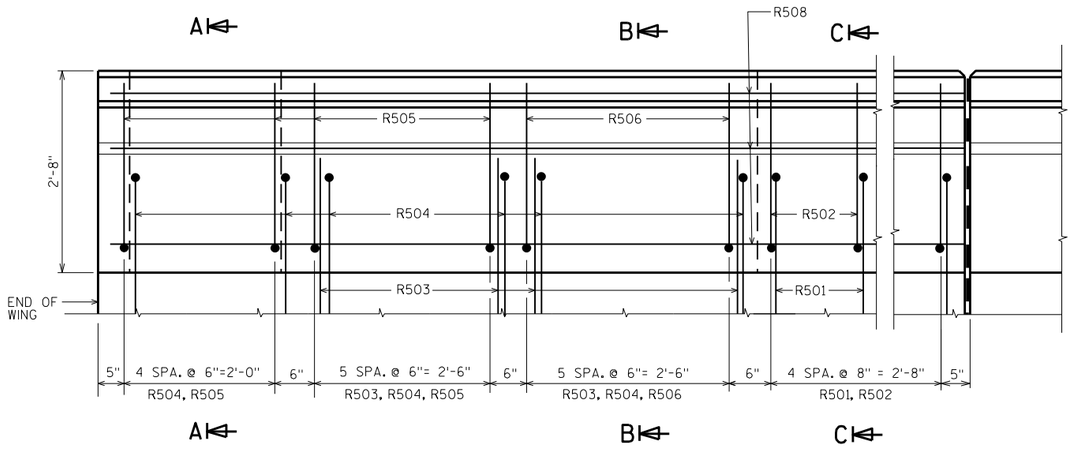
PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" - 'V' GROOVE.

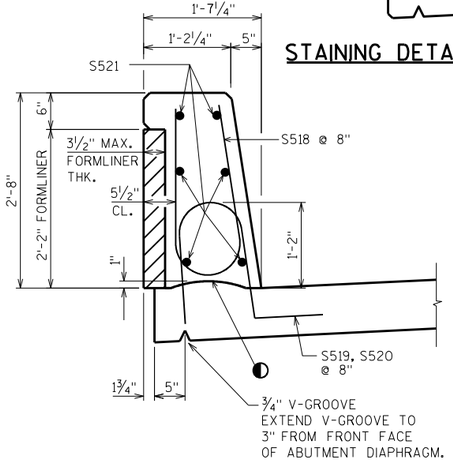


STAINING DETAIL

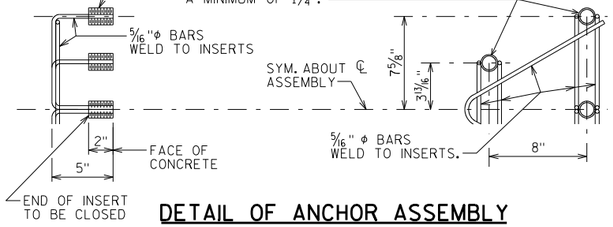




OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

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

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

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 OR S503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY DDS | PLANS CK'D. MSC

SINGLE SLOPE PARAPET SS32 (MODIFIED)

SHEET 12

141

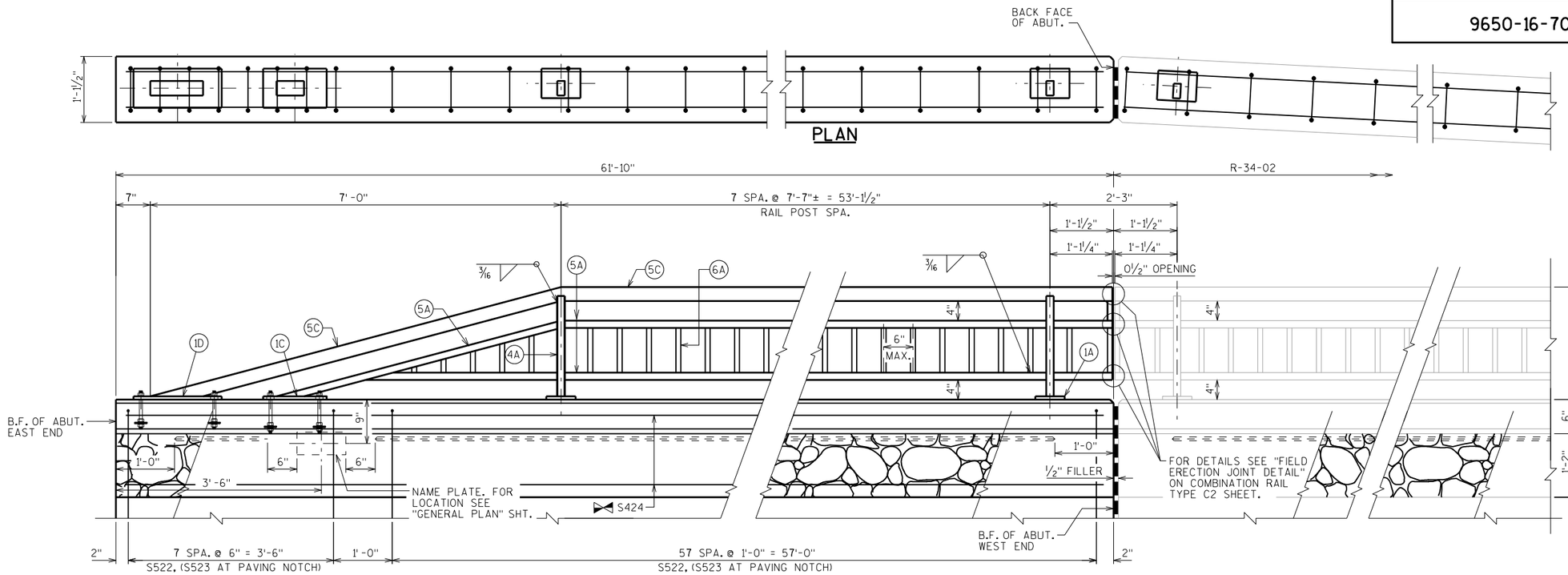
SCALE = 1

8

8

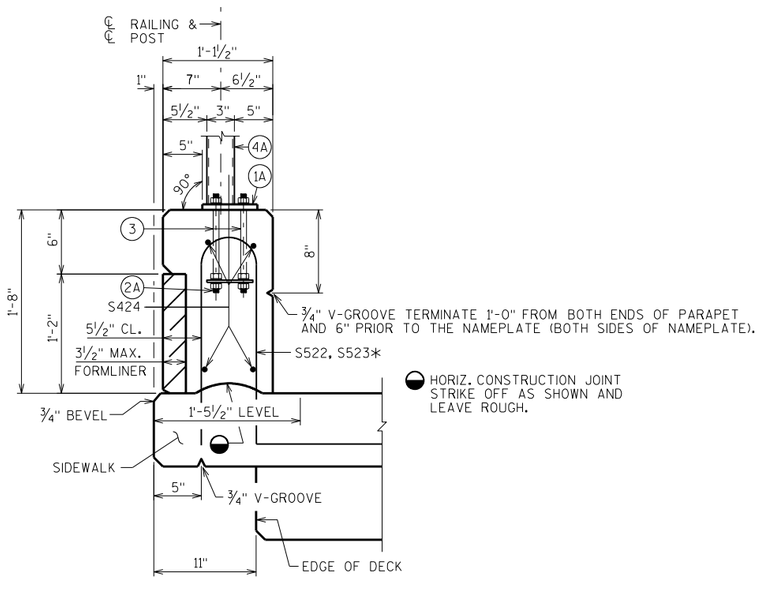
STATE PROJECT NUMBER

9650-16-70



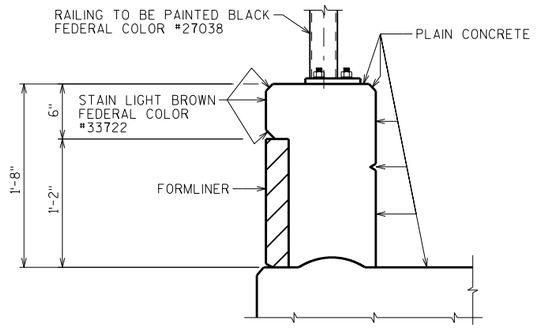
OUTSIDE ELEVATION OF PARAPET

⋈ = LAP S424 BARS A MIN. OF 1'-5".



SECTION THRU PARAPET ON BRIDGE

* ADJUST LOCATIONS OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING.



STAINING DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY DDS | PLANS CK'D. MSC

VERTICAL FACE PARAPET TYPE 'A' (MODIFIED)

SHEET 13

142

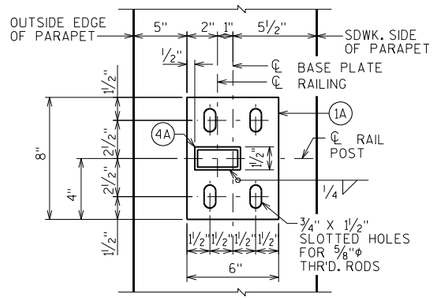
SCALE = 1

8

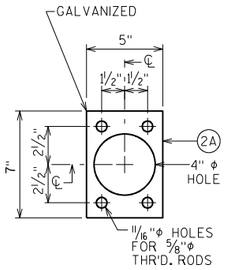
8

STATE PROJECT NUMBER

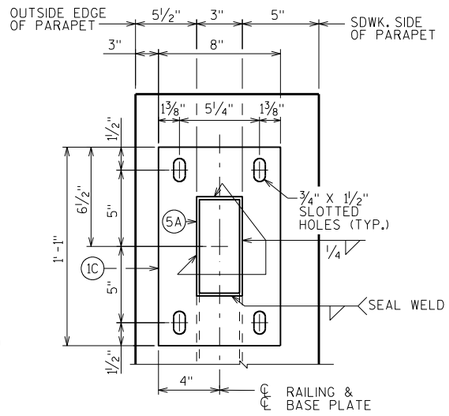
9650-16-70



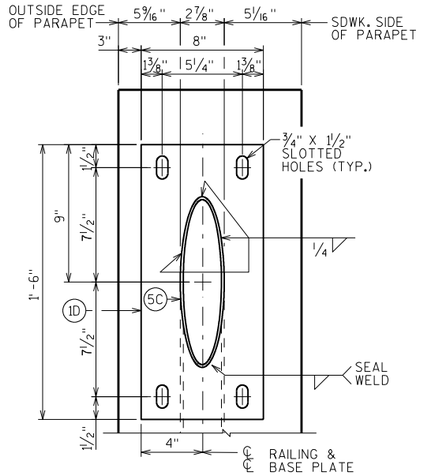
TYPICAL RAIL POST BASE PLATE



ANCHOR PLATE



END RAIL BASE PLATE



END RAIL BASE PLATE

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(1D) PLATE ⅝" X 8" X 1'-6" WITH ¾" X 1½" SLOTTED HOLES

(2A) ¼" X 5" X 7" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(3) ⅝" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE: 4 EQUIVALENT STAINLESS STEEL CONCRETE MASONRY ANCHORS TYPE S ⅝-INCH. EMBED 7" IN CONCRETE FOR RAIL POSTS. EMBED 5" IN CONCRETE FOR END RAILS.)

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(5C) STRUCTURAL TUBING 2½" φ (STANDARD SIZE) (2.875" O.D.). WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

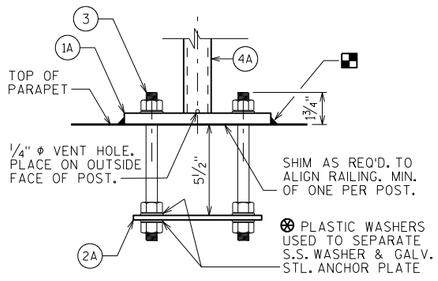
(6A) BAR 1" X 1" PICKETS. WELD TO NO. 5. PLACE VERTICAL.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

(9B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2"φ (STANDARD SIZE) (2.375 O.D.).

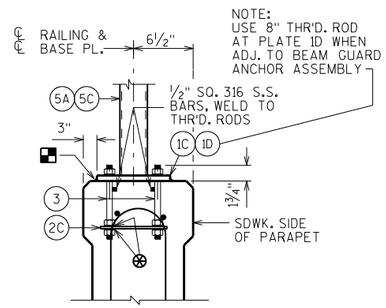
(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL JTS.)

(10B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2" φ (STANDARD SIZE) (2.375" O.D.) (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)



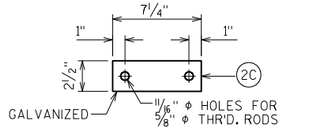
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



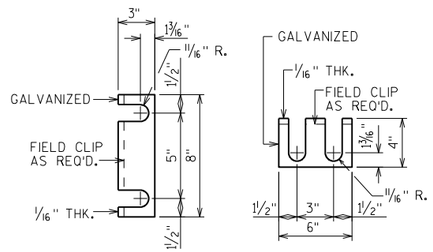
ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN TYPE "S" ANCHORS ARE USED.



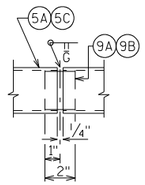
END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES
2 REQ'D. PER END RAIL BASE PLATE



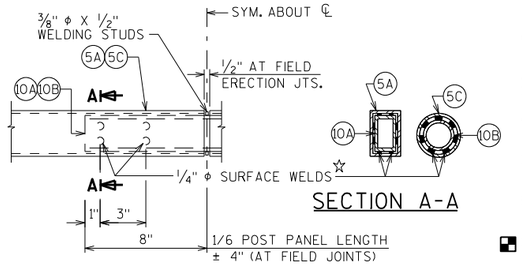
RAIL POST SHIM DETAIL

(2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

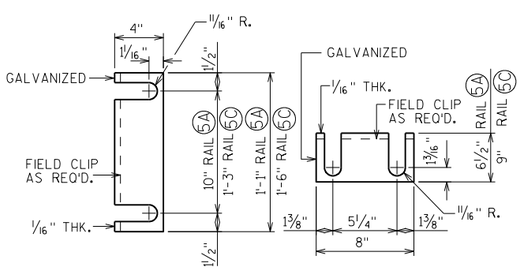
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION A-A

FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



END RAIL SHIM DETAIL

(2 SETS PER POST)

RAILING NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C2 GALVANIZED B-34-46", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

■ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038, BLACK.

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY DDS | PLANS CK'D. MSC

COMBINATION RAIL TYPE "C2"

SHEET 14

143

SCALE = 1

8

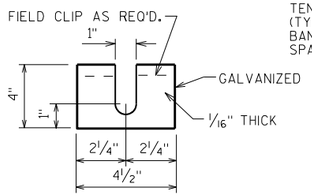
8

STATE PROJECT NUMBER

9650-16-70

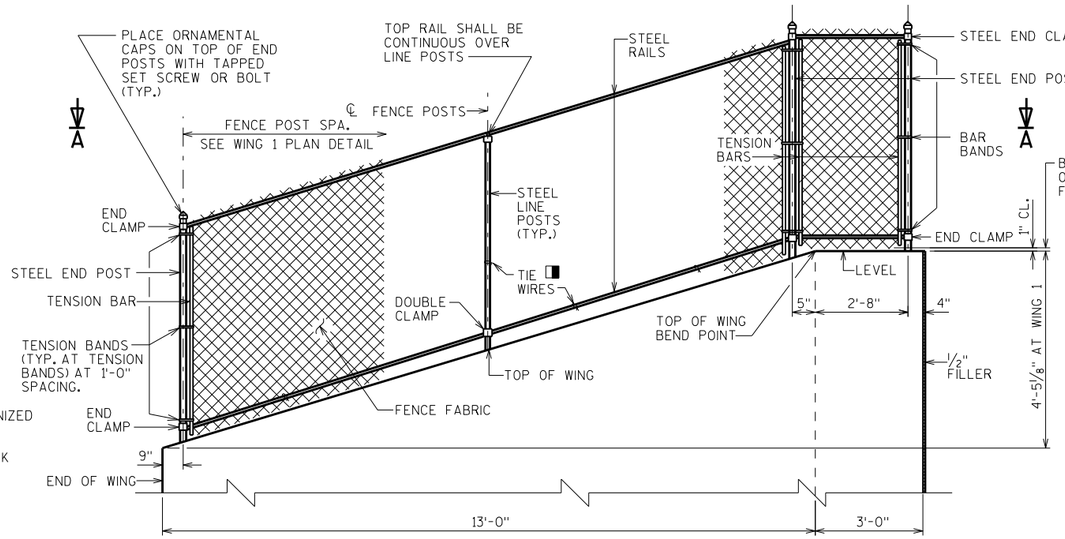
FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12

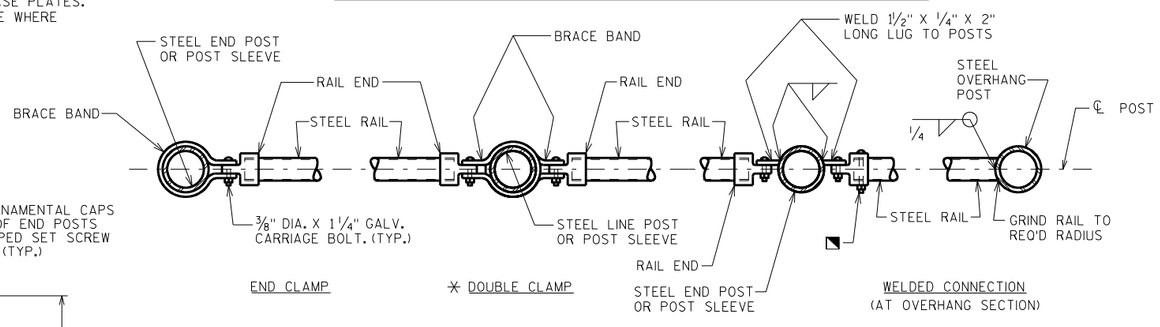


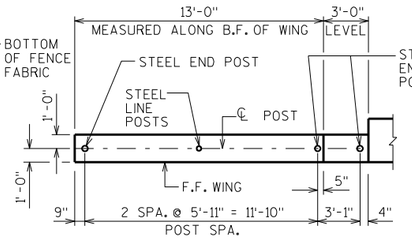
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.



PARTIAL ELEVATION OF ABUT. WING & FENCE

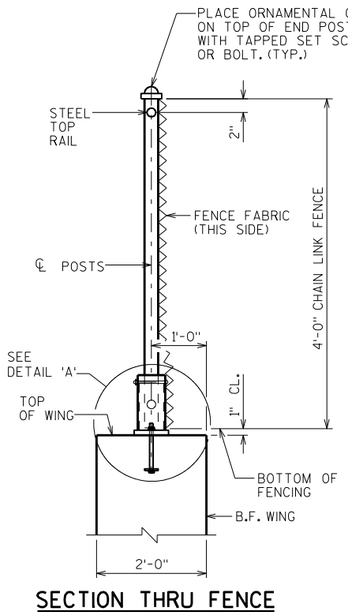




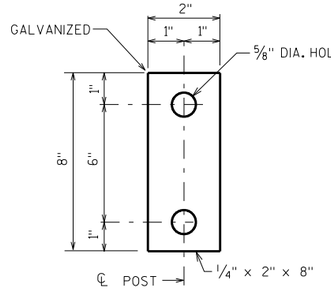
WING 1 PLAN DETAIL

SECTION A-A

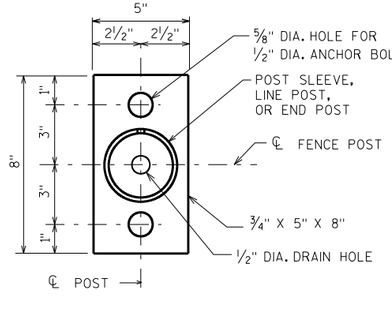
NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS



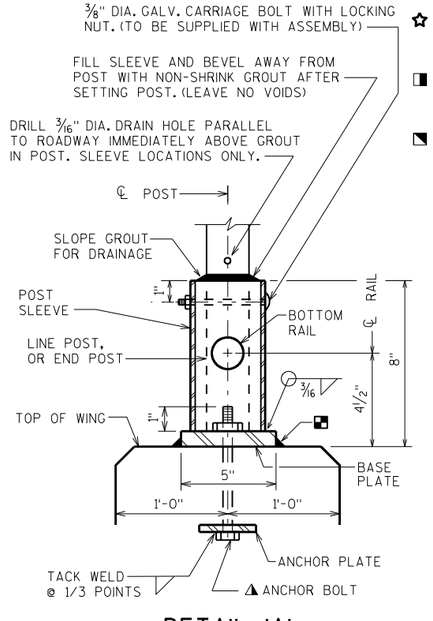
SECTION THRU FENCE



ANCHOR PLATE



BASE PLATE



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.

GENERAL NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 4-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

■ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

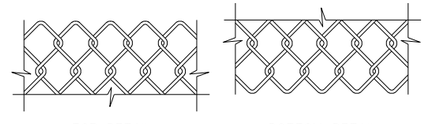
▲ 1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE "S", 1/2" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR 1/2" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ☆

☆ MASONRY ANCHOR TYPE S 1"2-INCH. EMBED 6" IN CONCRETE. ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.

◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◥ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.



TOP DETAIL BOTTOM DETAIL

FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-34-46

DRAWN BY DDS | PLANS CK'D. MSC

FENCING DETAILS

SHEET 15

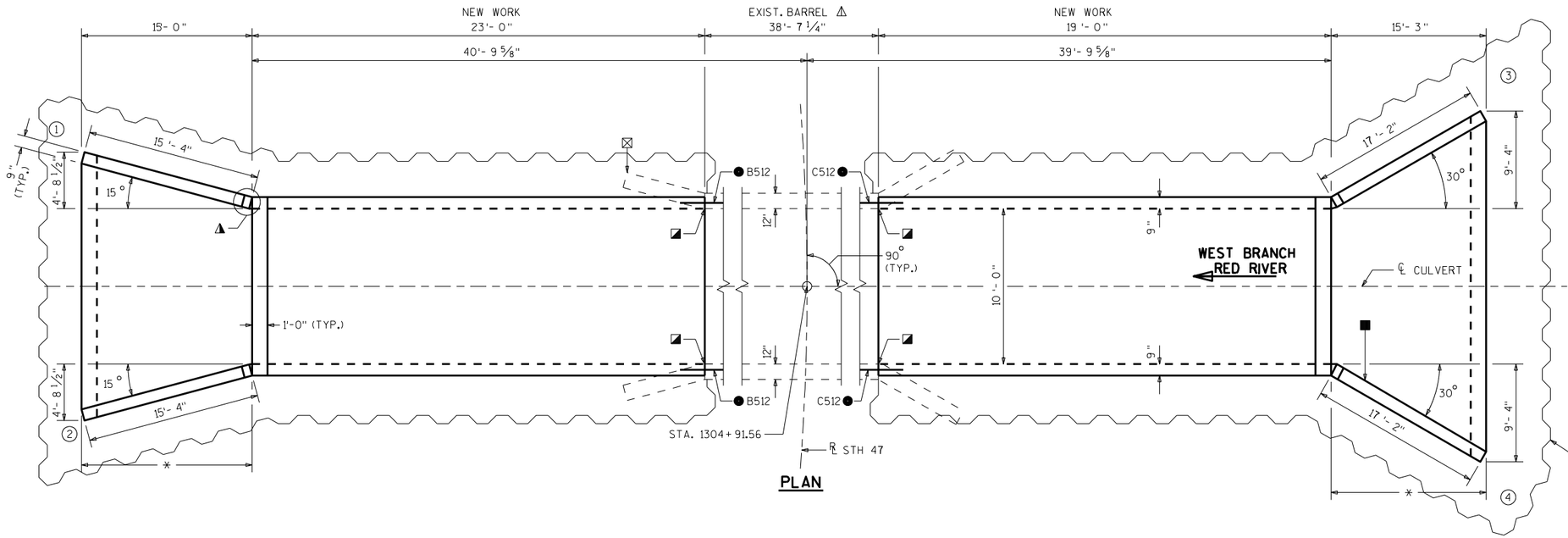
144

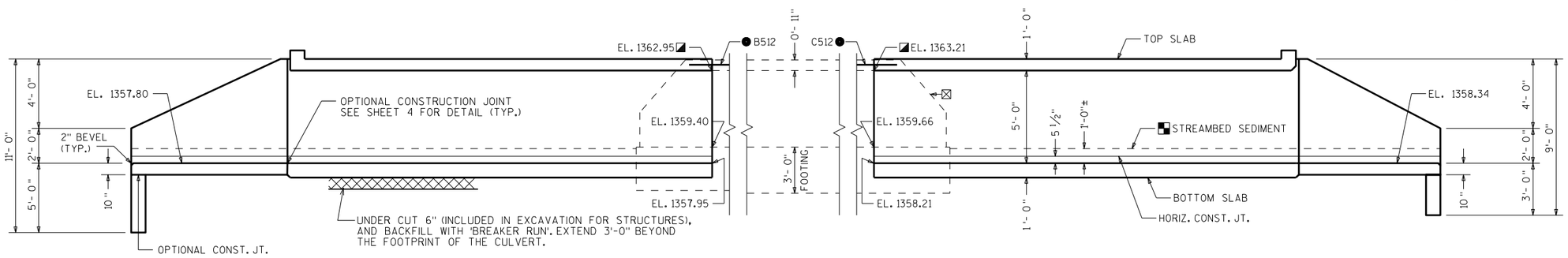
8

8

SCALE = 5.33333

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.





STATE PROJECT NUMBER

9650-16-60

- ▲ SEE CORNER DETAILS (SHT 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 1'-3" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).
- ◪ REPLACE STREAMBED SEDIMENT IN CULVERT EXTENSION TO A DEPTH OF 1'-0"± PAID FOR UNDER 'SALVAGED STREAM SEDIMENT'

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 3.5 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.

INVERTS TO BE SET 1'-0" MIN. BELOW STREAMBED.

TRAFFIC VOLUME

STH 47
A.D.T. = 1800 (2033)
R.D.S. = 55 M.P.H.

TOTAL ESTIMATED QUANTITIES

BID ITEMS

203.0200	REMOVING OLD STRUCTURE STA. 1304+91.56	1	LS
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-34-8	1	LS
206.5000	COFFERDAMS C-34-8	1	LS
210.0100	BACKFILL STRUCTURE	320	CY
311.0115	BREAKER RUN	27	CY
502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	40	EACH
504.0100	CONCRETE MASONRY CULVERTS	78	CY
505.0410	BAR STEEL REINFORCEMENT HS CULVERTS	5025	LB
505.0610	BAR STEEL REINFORCEMENT HS COATED CULVERTS	3910	LB
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	24	SY
SPV.0105	SALVAGED STREAM SEDIMENT	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 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 DEVELOPMENT SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON 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 6/23/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE C-34-8

STH 47 OVER WEST BRANCH RED RIVER

COUNTY LANGLADE | TOWN ~~CITY/VILLAGE~~ NORWOOD

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

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

LAYOUT

SHEET 1 OF 4

145

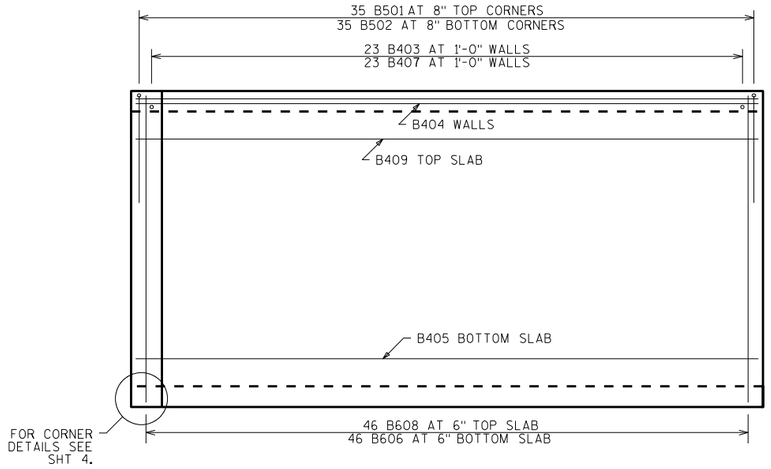
I.D. 9650-16-30A

DATE: MAY 2013

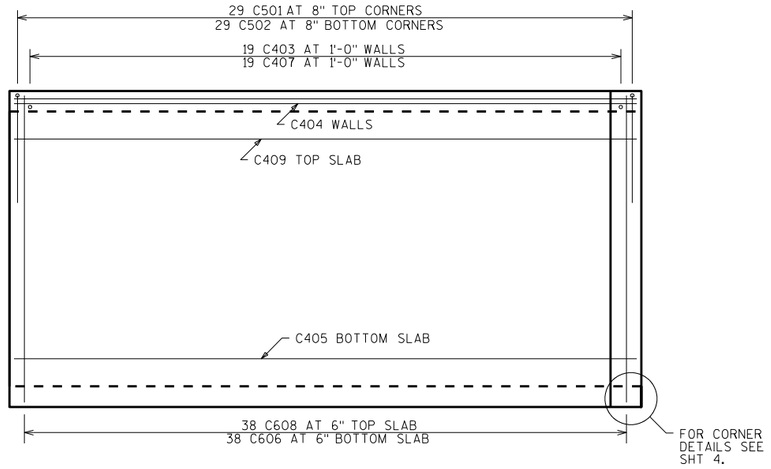
SCALE = 4

STATE PROJECT NUMBER

9650-16-30



PLAN VIEW OF OUTLET EXTENSION

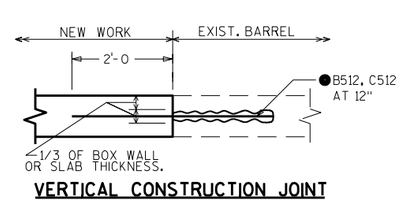


PLAN VIEW OF INLET EXTENSION

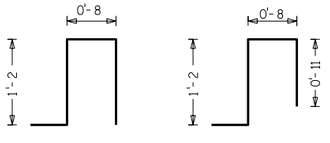
BILL OF BARS

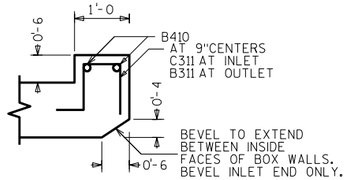
THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B501	X	70	7 - 9	3 - 3	TOP CORNERS
B502		70	7 - 9	3 - 3	BOTTOM CORNERS
B403		46	2 - 3		WALLS-DOWELS VERT.
B404		10	22 - 6		WALLS TRANS.
B405		10	22 - 6		BOTTOM SLAB LONGIT.
B606		46	11 - 2		BOTTOM SLAB TRANS.
B407		46	5 - 4		WALLS VERT.
B608	X	46	11 - 2		TOP SLAB TRANS.
B409	X	16	22 - 6		TOP SLAB LONGIT.
B410	X	2	11 - 2		HEADERS HORIZ.
B311	X	16	3 - 3	X	HEADER STIRRUPS VERT.
B512		20	3 - 3		VERT. CONST. JOINT
C501	X	58	7 - 9	3 - 3	TOP CORNERS
C502		58	7 - 9	3 - 3	BOTTOM CORNERS
C403		38	2 - 3		WALLS-DOWELS VERT.
C404		10	18 - 6		WALLS TRANS.
C405		10	18 - 6		BOTTOM SLAB LONGIT.
C606		38	11 - 2		BOTTOM SLAB TRANS.
C407		38	5 - 4		WALLS VERT.
C608	X	38	11 - 2		TOP SLAB TRANS.
C409	X	16	18 - 6		TOP SLAB LONGIT.
C410	X	2	11 - 2		HEADERS HORIZ.
C311	X	16	3 - 0	X	HEADER STIRRUPS VERT.
C512		20	3 - 3		VERT. CONST. JOINT

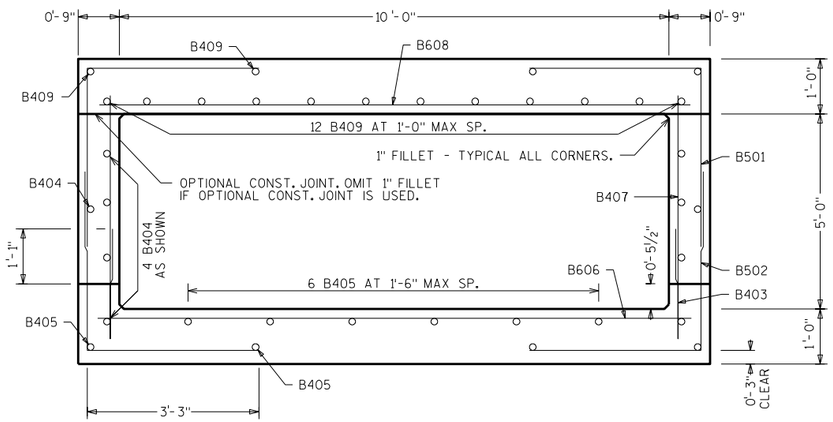


VERTICAL CONSTRUCTION JOINT

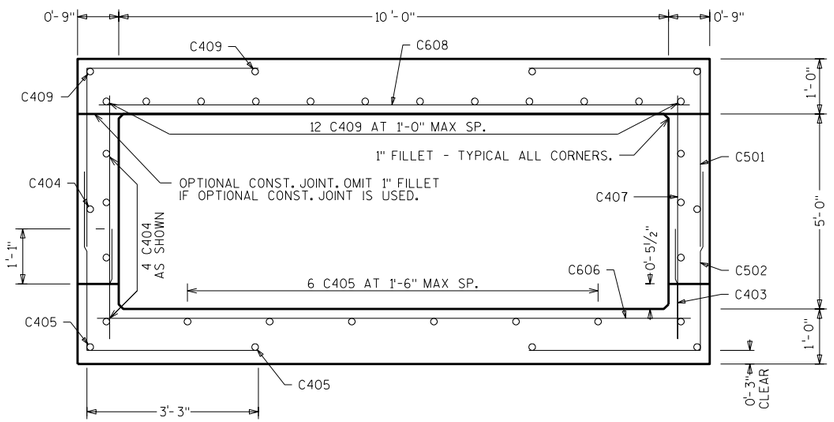




SECTION THRU TOP HEADER



TYPICAL SECTION THRU OUTLET EXTENSION



TYPICAL SECTION THRU INLET EXTENSION

● CONCRETE MASONRY ANCHORS, TYPE S (EPOXY ANCHORED), 5/8-INCH, EMBED 1'-3" 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-34-8

DRAWN BY DFD | PLANS CK'D. NAR

EXTENSION DETAILS

SHEET 2

146

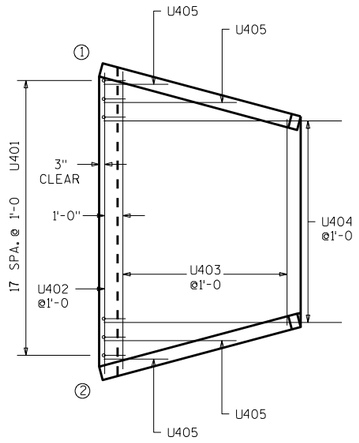
SCALE = 4

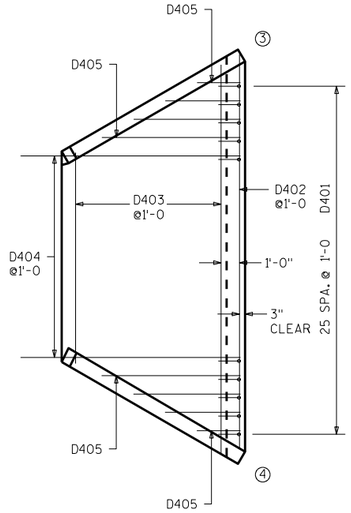
8

8

STATE PROJECT NUMBER

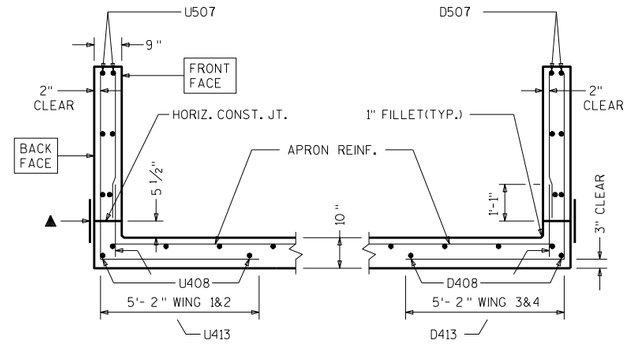
9650-16-60





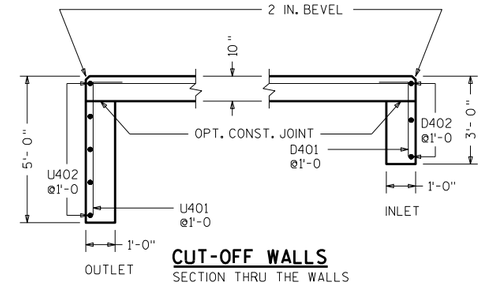
APRON REINF.

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



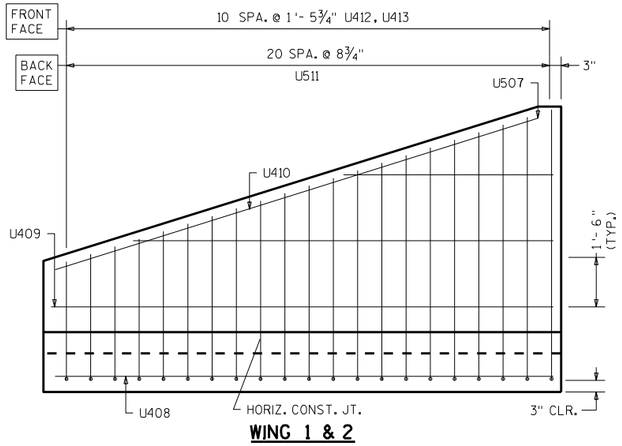
SECTION THRU WINGS

AT RIGHT ANGLES TO WING WALLS

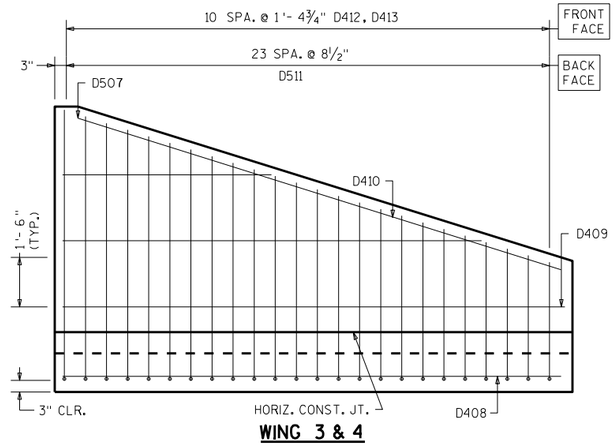


CUT-OFF WALLS

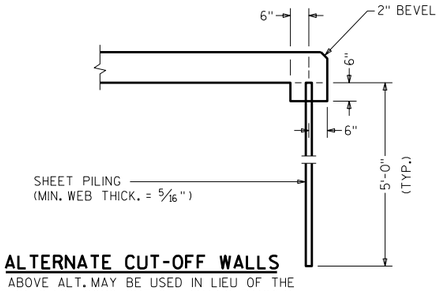
SECTION THRU THE WALLS



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-34-8

DRAWN BY DFD | PLANS CK'D. NAR

APRON DETAILS

SHEET 3

147

SCALE = 4

STATE PROJECT NUMBER

9650-16-60

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.

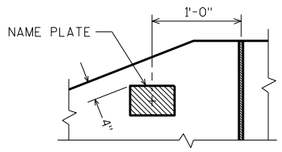
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401		18	5 - 6	1 - 0		OUTLET APRON AND CUTOFF WALL
U402		5	18 - 0			OUTLET APRON AND CUTOFF WALL
U403		14	15 - 0		*	OUTLET APRON
U404		12	17 - 0			OUTLET APRON
U405		6	7 - 3		*	OUTLET APRON
U507		4	15 - 2			WINGS 1 AND 2 -HORIZONTAL - BOTH FACES
U408		4	14 - 11			WINGS 1 AND 2 -HORIZ. - APRON BOTT. SLAB
U409		4	14 - 11			WINGS 1 AND 2 -HORIZONTAL - BOTH FACES
U410		8	10 - 2			WINGS 1 AND 2 -HORIZONTAL - BOTH FACES
U511	X	42	9 - 6	5 - 2	*	WINGS 1 AND 2 -VERTICAL - BACK FACE
U412		22	3 - 4		*	WINGS 1 AND 2 -VERTICAL - FRONT FACE
U413	X	22	2 - 2			WINGS 1 AND 2 -DOWELS - FRONT FACE
D401		26	3 - 6	1 - 0		INLET APRON AND CUTOFF WALL
D402		3	27 - 4			INLET APRON AND CUTOFF WALL
D403		14	19 - 9		*	INLET APRON
D404		12	17 - 3			INLET APRON
D405		14	8 - 2		*	INLET APRON
D507		4	16 - 11			WINGS 3 AND 4 -HORIZONTAL - BOTH FACES
D408		4	16 - 9			WINGS 3 AND 4 -HORIZ. - APRON BOTT. SLAB
D409		4	16 - 9			WINGS 3 AND 4 -HORIZONTAL - BOTH FACES
D410		8	11 - 5			WINGS 3 AND 4 -HORIZONTAL - BOTH FACES
D511	X	48	9 - 6	5 - 2	*	WINGS 3 AND 4 -VERTICAL - BACK FACE
D412		26	3 - 4		*	WINGS 3 AND 4 -VERTICAL - FRONT FACE
D413	X	26	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.

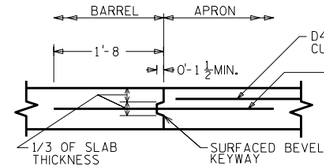
BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY

BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
U403	1 SERIES OF 14	11 - 6 TO 18 - 6
U405	2 SERIES OF 3	3 - 6 TO 11 - 0
U410	4 SERIES OF 2	7 - 5 TO 12 - 11
U511	2 SERIES OF 21	7 - 6 TO 11 - 6
U412	2 SERIES OF 11	1 - 4 TO 5 - 4
D403	1 SERIES OF 14	12 - 3 TO 27 - 3
D405	2 SERIES OF 7	2 - 11 TO 13 - 4
D406	4 SERIES OF 2	8 - 3 TO 14 - 6
D511	2 SERIES OF 24	7 - 5 TO 11 - 6
D412	2 SERIES OF 13	1 - 4 TO 5 - 4

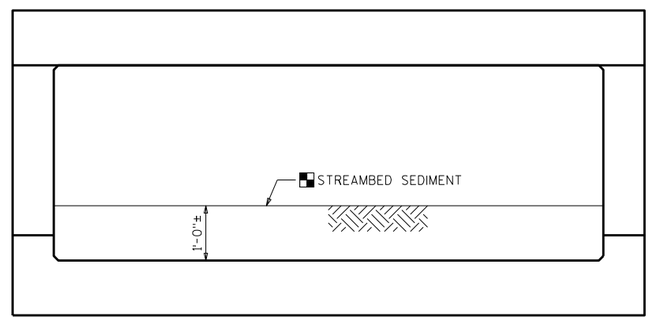


NAME PLATE LOCATION
WING 4



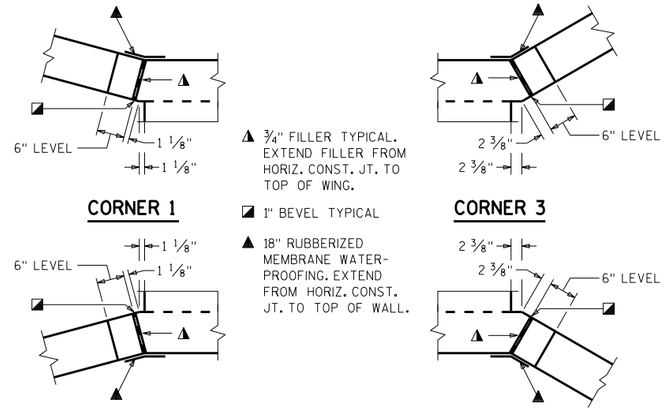
OPTIONAL CONSTRUCTION JOINT

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



SECTION THRU BOX

REPLACE STREAMBED SEDIMENT IN CULVERT EXTENSION TO A DEPTH OF 1'-0"± PAID FOR UNDER 'SALVAGED STREAM SEDIMENT'



CORNER 1

CORNER 2

CORNER 3

CORNER 4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-34-8

DRAWN BY DFD | PLANS CK'D. NAR

DETAILS

SHEET 4

148

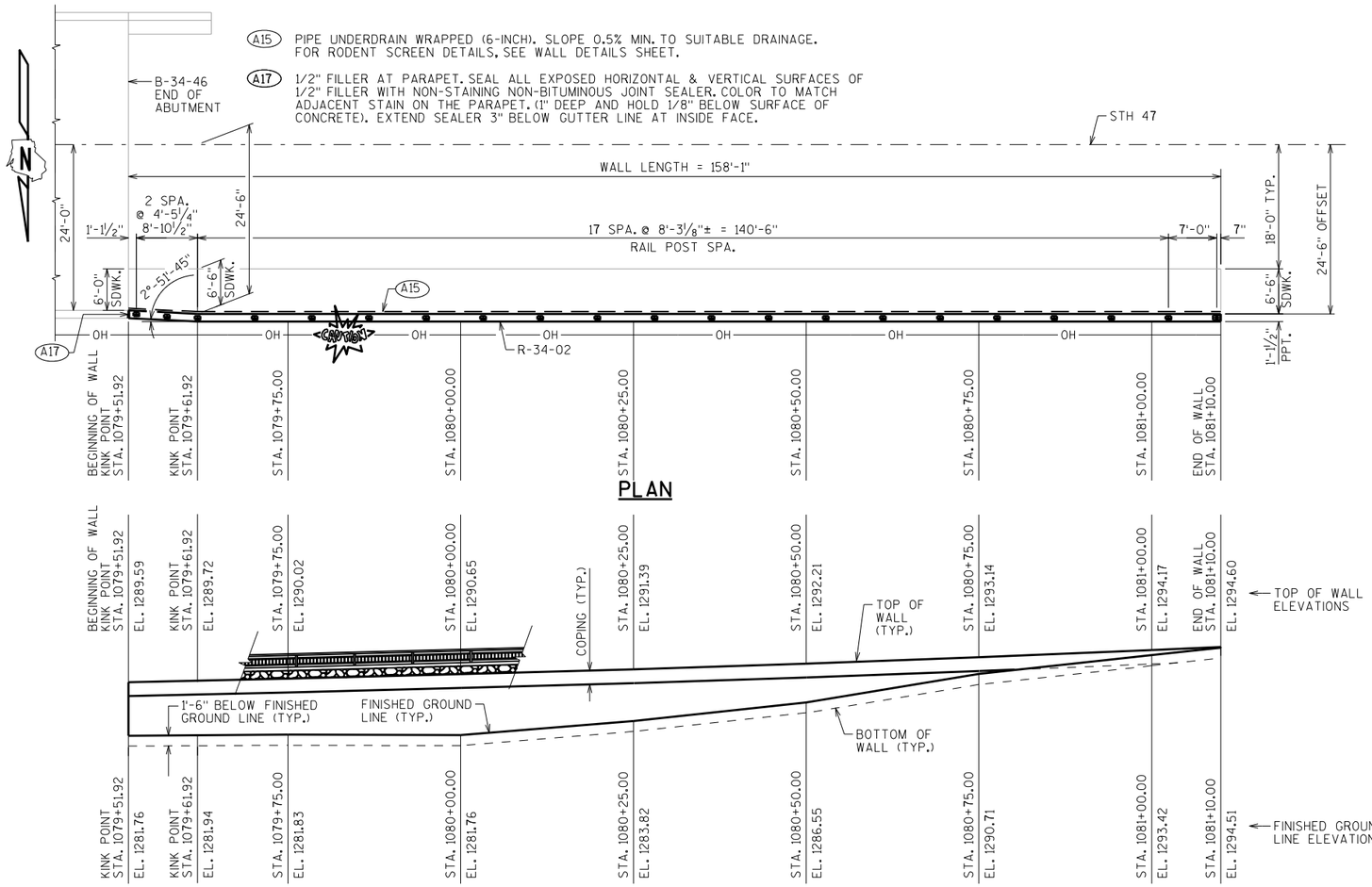
8

8

SCALE = 4

STATE PROJECT NUMBER

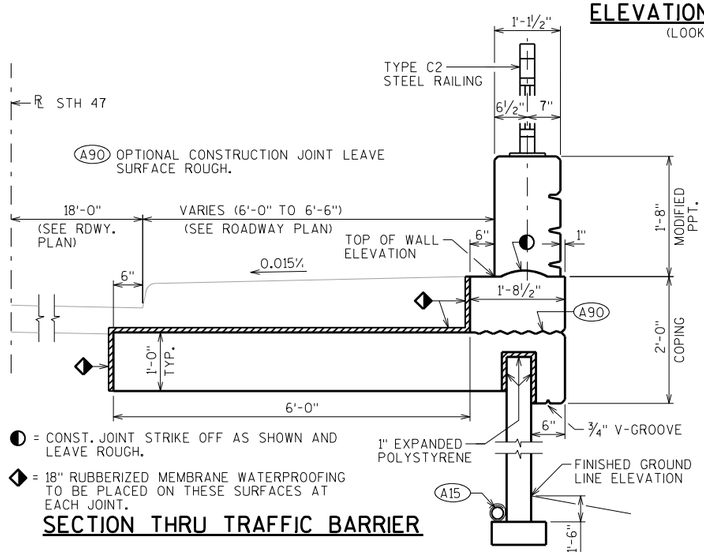
9650-16-70



PLAN

ELEVATION - LOOKING SOUTH

(LOOKING @ F.F. OF WALL)



◐ = CONST. JOINT STRIKE OFF AS SHOWN AND LEAVE ROUGH.

◆ = 18" RUBBERIZED MEMBRANE WATERPROOFING TO BE PLACED ON THESE SURFACES AT EACH JOINT.

SECTION THRU TRAFFIC BARRIER

SOIL PARAMETERS

SOIL DESCRIPTION	FRICTION ANGLE (DEGREES)	COHESION (PSF)	UNIT WEIGHT (PCF)
GRANULAR BACKFILL, (WITHIN THE WALL IN THE REINFORCING ZONE)	30	0	120
F-M SAND SOME SILT, (BEHIND THE REINFORCEMENT ZONE)	30	0	120
B-3			
LOOSE FIRM M-C SAND WITH GRAVEL, SOME ORGANICS ELEV. 1285.1 TO ELEV. 1280.9	30	0	110
LOOSE MEDIUM SAND WITH CLAY ELEV. 1280.9 TO ELEV. 1278.9	30	0	110
LOOSE M-C SAND ELEV. 1278.9 TO ELEV. 1276.9	31	0	110
FIRM COURSE SAND WITH GRAVEL ELEV. 1276.9 TO ELEV. 1274.9	34	0	120
FIRM COURSE SAND, LITTLE GRAVEL ELEV. 1274.9 TO ELEV. 1268.9	35	0	125
VERY DENSE F-M SAND ELEV. 1268.9 TO ELEV. 1266.9	40	0	130
FIRM-DENSE COURSE SAND WITH GRAVEL, SOME BOULDERS ELEV. 1266.9 TO ELEV. 1251.9	35	0	125

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH".

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ROADWAY SIDE AND TOP OF PARAPET ALONG WITH THE 6" IN FRONT OF PARAPET. DO NOT APPLY IN AREAS TO RECEIVE CONCRETE STAIN.

THE RETAINING WALL SHALL BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPE BEHIND WALL AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE OF 240 PSF.

ULTIMATE DESIGN STRESSES

CONCRETE MASONRY RETAINING WALLS — f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

ALLOWABLE WALL SYSTEMS

WALL CONCRETE PANEL M.S.E.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	DESCRIPTION	QTY.	UNITS
502.3200	PROTECTIVE SURFACE TREATMENT	57	SY
504.0500	CONCRETE MASONRY RETAINING WALLS	64	CY
505.0615	BAR STEEL REINFORCEMENT HS COATED RETAINING WALLS	5,810	LB
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	7	SY
517.1010.S	CONCRETE STAINING R-34-02	1,145	SF
517.1015.S	CONCRETE STAINING MULTI-COLOR R-34-02	185	SF
517.1050.S	ARCHITECTURAL SURFACE TREATMENT	185	SF
532.0500.S	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH	1,145	SF
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	170	LF
SPV.0105	RAILING STEEL TYPE C2 GALVANIZED R-34-02	1	LS

NON-BID ITEMS

FILLER — 1/2" & 1" SIZE
EXPANDED POLYSTYRENE — 1" SIZE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS				
WALL HEIGHT (FEET)[1]	9.2	9.6	10.3	7.1
EXPOSED WALL HEIGHT (FEET)	7.7	8.1	8.8	5.6
LENGTH OF REINFORCEMENT (FEET)[3]	8	8	8	8
LENGTH OF REINFORCEMENT/WALL HEIGHT	N/A	N/A	N/A	N/A
WALL STATION	1079+50	1079+75	1080+00	1080+50
BORING	B-3	B-3	B-3	B-3
CAPACITY TO DEMAND RATION[4]				
SLIDING (CDR_{req}>1.0)	1.4	1.4	1.3	1.7
ECCENTRICITY (CDR_{req}>1.0)	1.7	1.6	1.4	2.8
GLOBAL STABILITY (CDR_{req}>1.0)	N/A[5]	1.1	1.1	N/A[5]
BEARING RESISTANCE (CDR_{req}>1.0)	1.7	1.6	2.1	3.0
FACTORED BEARING RESISTANCE (PSF)	3,400	3,350	4,800	5,000

NOTE:
1. THE WALL HEIGHT INCLUDES AN EMBEDMENT OF 1.5 FEET.
2. THE WALL STABILITY EVALUATION INCLUDED A SURCHARGE LOAD OF 240 PSF.
3. THE LENGTH OF REINFORCEMENT IS THE MINIMUM REQUIRED LENGTH.
4. CDR VALUES ARE PRESENTED IN CHAPTER 14 OF THE BRIDGE MANUAL.
5. N/A NOT APPLICABLE, GLOBAL SLOPE STABILITY WAS EVALUATED AT THE CRITICAL WALL LOCATION.

LIST OF DRAWINGS

1. WALL CONCRETE PANEL M.S.E.
2. WALL DETAILS
3. VERTICAL FACE PARAPET TYPE 'A' (MODIFIED)
4. COMBINATION RAIL TYPE C2
5. SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACTS:
MATT COUPAR (608) 266-5083
DAVID KIEKBUSCH (608) 266-5084

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 3/13/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE R-34-02

STH 47

COUNTY: LANGLADE — TOWN: ~~CITY/VILLAGE~~ NORWOOD

DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	MWL	DESIGN CK'D.	MSC	DRAWN BY	DDS	PLANS CK'D.	MSC

WALL CONCRETE PANEL M.S.E

SHEET 1 OF 5

149

I.D. 9650-16-00

DATE: OCT. 2013

SCALE = 10

STATE PROJECT NUMBER
9650-16-70

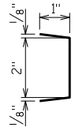
■ 18" RUBBERIZED MEMBRANE WATERPROOFING TO BE PLACED ON THESE SURFACES AT EACH JOINT.

◐ IF THE OPTIONAL CONST. JOINT IS USED, PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGITUDINAL JOINT. THE MEMBRANE WATERPROOFING SEALING THE OPTIONAL CONST. JOINT IS INCIDENTAL TO THE CONRETE MASONRY BID ITEM.

BILL OF BARS

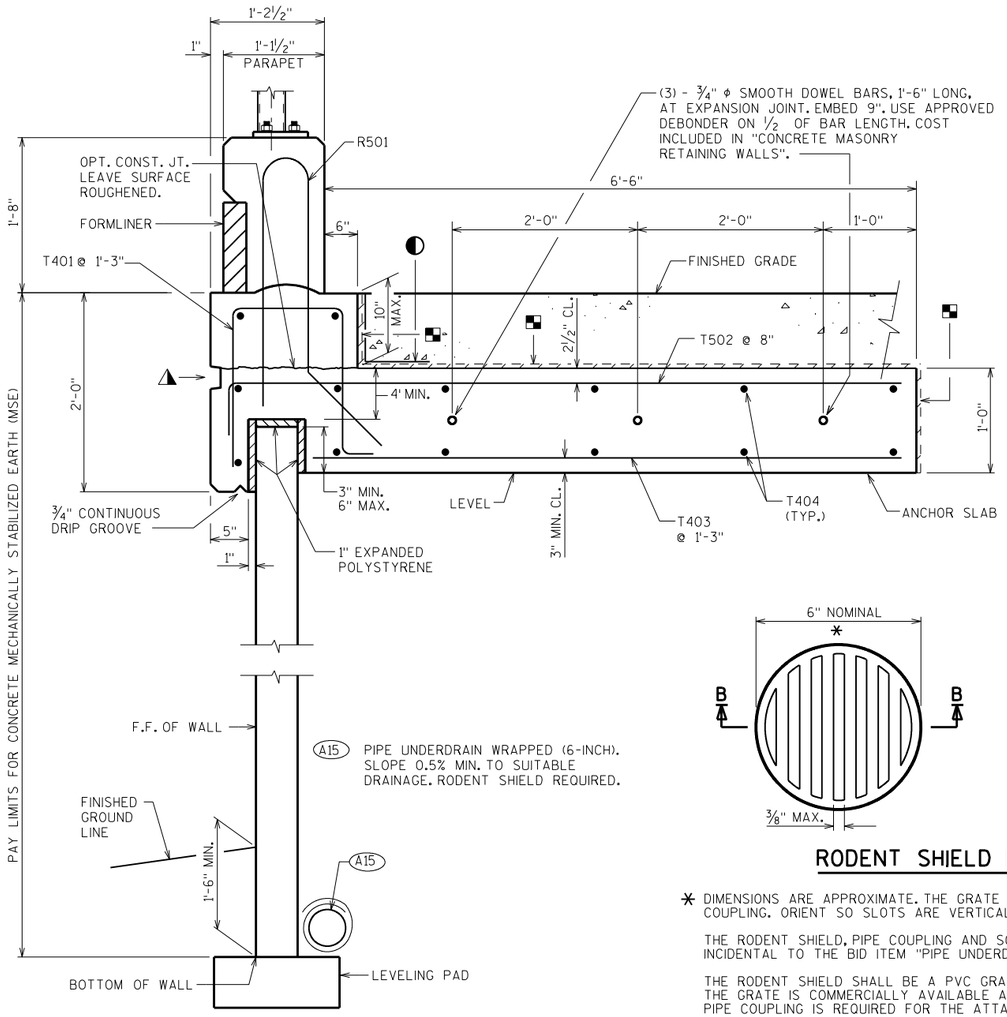
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
T401	X	127	4'-9"	X		CONC. TRAFFIC BARRIER - VERT.
T502	X	237	8'-0"	X		CONC. TRAFFIC BARRIER - TRANSVERSE
T403	X	127	6'-3"			CONC. TRAFFIC BARRIER - TRANSVERSE
T404	X	14	157'-8"			CONC. TRAFFIC BARRIER - LONGITUDINAL



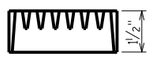
RUSTICATION DETAIL

▲ PROVIDE RUSTICATION IF OPT. CONST. JOINT IS USED.



CAST-IN-PLACE CONCRETE TRAFFIC BARRIER DETAIL FOR PRECAST WALL PANELS

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPET AND ANCHOR SLAB BETWEEN EXPANSION JOINTS MAY BE USED. RUN BAR REINFORCEMENT THRU THE JOINT. DEFINE CONSTRUCTION JOINT WITH A ¾"-V GROOVE.



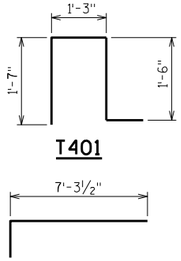
SECTION B-B

RODENT SHIELD DETAIL

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

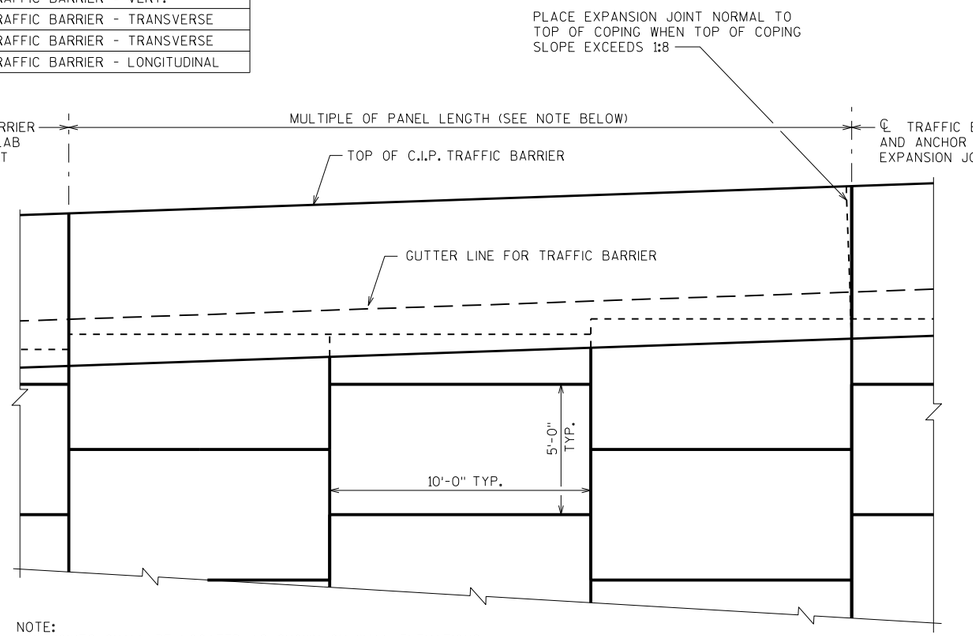
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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



T401

T502

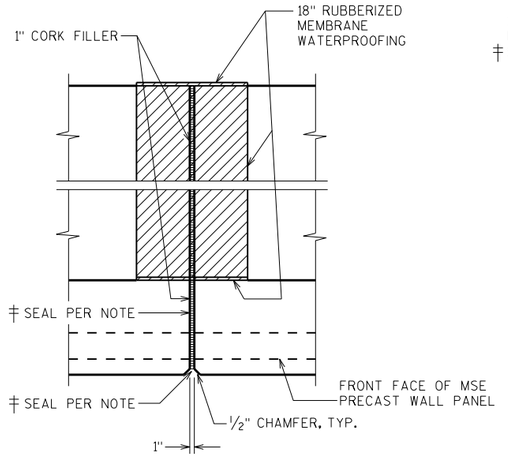


NOTE:
ALL JOINTS SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.

C.I.P. TRAFFIC BARRIER PARTIAL ELEVATION

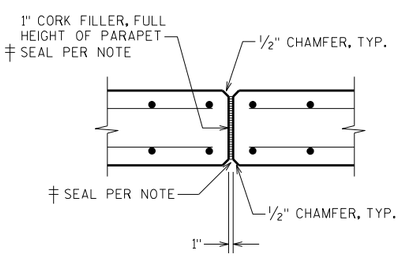
CONCRETE WALL PANELS SHALL BE 5'-0" X 10'-0"

‡ SEAL ALL EXPOSED HORIZONTAL & VERTICAL SURFACES OF FILLER WITH NON-STAINING NON-BITUMINOUS JOINT SEALER. COLOR TO MATCH ADJACENT STAIN ON BARRIER AND PARAPET - OTHERWISE GRAY. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)



⊛ ANCHOR SLAB EXPANSION JOINT DETAIL

⊛ EXPANSION JOINTS TO BE SPACED AT A MINIMUM OF 20' AND A MAXIMUM OF 30'. LOCATE EXPANSION JOINTS OVER WALL JOINTS. DO NOT RUN BAR STEEL THRU JOINT, EXCEPT FOR DOWEL BARS. JOINT TO EXTEND FULL DEPTH OF PARAPET AND ANCHOR SLAB.



⊛ TRAFFIC BARRIER EXPANSION JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-34-02

DRAWN BY DDS | PLANS CK'D. MSC

WALL DETAILS

SHEET 2

150

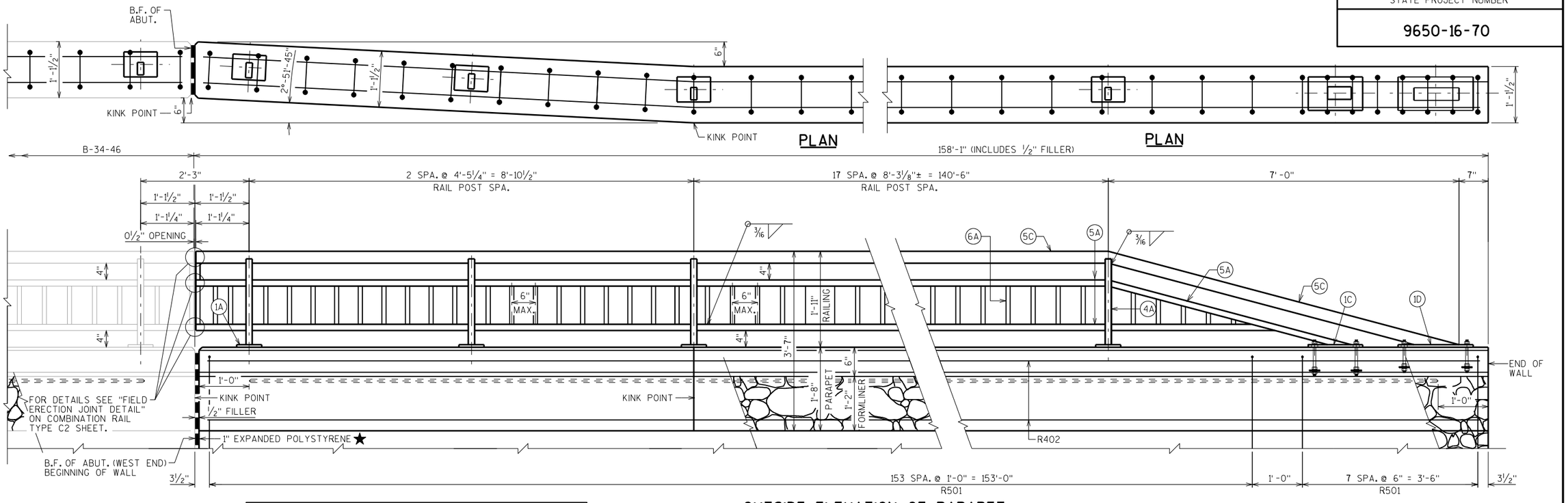
SCALE = 1

8

8

STATE PROJECT NUMBER

9650-16-70

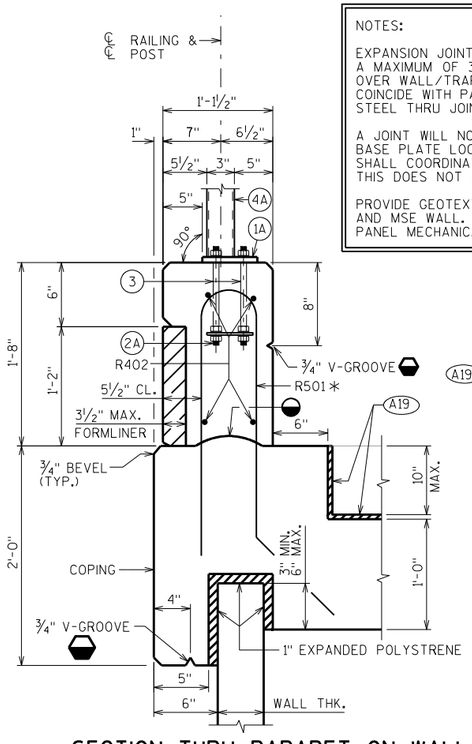


NOTES:

EXPANSION JOINTS TO BE SPACED AT A MINIMUM OF 20'-0" AND A MAXIMUM OF 30'-0". LOCATE EXPANSION JOINTS IN PARAPET OVER WALL/TRAFFIC BARRIER JOINTS. ALL JOINTS SHALL COINCIDE WITH PANEL JOINT ON FRONT FACE. DO NOT RUN BAR STEEL THRU JOINTS.

A JOINT WILL NOT BE ALLOWED UNDER OR WITHIN 3" OF A RAIL BASE PLATE LOCATION. THE WALL DESIGNER/MANUFACTURER SHALL COORDINATE WITH THE RAIL MANUFACTURER TO MAKE SURE THIS DOES NOT OCCUR.

PROVIDE GEOTEXTILE FABRIC BETWEEN BACKFACE OF ABUTMENT AND MSE WALL. PAID FOR UNDER BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH".



SECTION THRU PARAPET ON WALL

* ADJUST LOCATIONS OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING.

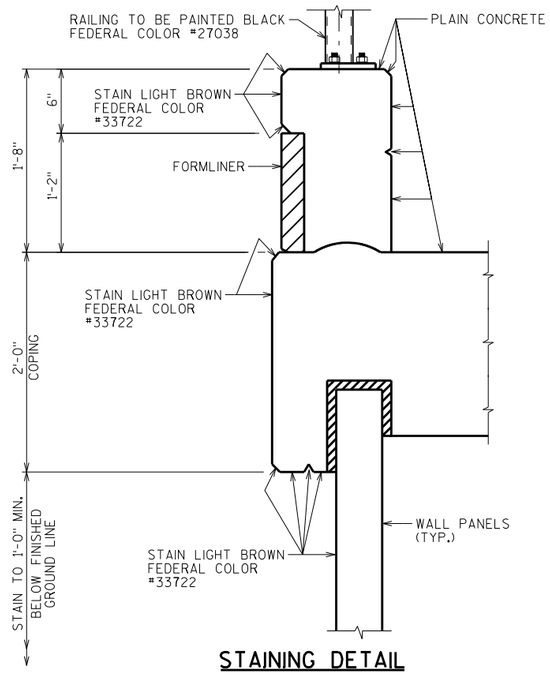
A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERTICAL JOINTS AT BACKFACE.

TERMINATE 1'-0" FROM EACH END OF WALL/PARAPET.

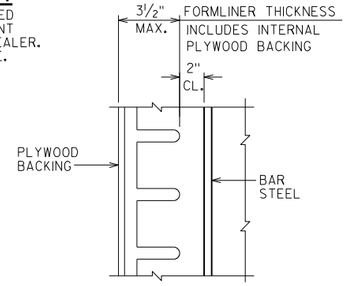
HORIZ. CONSTRUCTION JOINT STRIKE OFF AS SHOWN AND LEAVE ROUGH.

OUTSIDE ELEVATION OF PARAPET

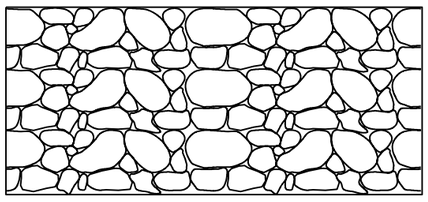
★ SEAL EXPOSED VERTICAL SURFACE OF THE 1" EXPANDED POLYSTYRENE ALONG THE BACKFACE OF THE ABUTMENT WITH A NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.



STAINING DETAIL



SECTION THRU FORMLINER



FIELD STONE - RANDOM SIZES BETWEEN 6" & 24" RELIEF = 2½"

FORMLINER DETAILS

ARCHITECTURAL SURFACE TREATMENT NOTES

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

THIS ARCHITECTURAL SURFACE TREATMENT SHALL BE MULTI-COLORED STAINED TO COLORS THAT CLOSELY MATCH THE RIPRAP HEAVY THAT WILL BE USED AT THE SITE. THE COST OF STAINING THE ARCHITECTURAL SURFACE TREATMENT IS INCLUDED IN THE BID ITEM "CONCRETE STAINING MULTI-COLOR STRUCTURE R-34-02.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-34-02

DRAWN BY DDS | PLANS CK'D. MSC

VERTICAL FACE PARAPET TYPE 'A' (MODIFIED)

SHEET 3

151

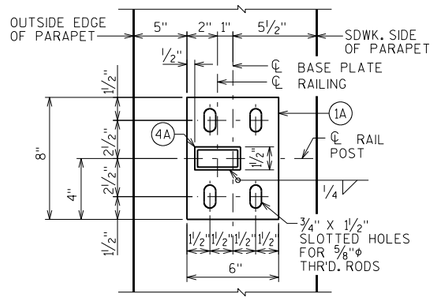
SCALE = 1

8

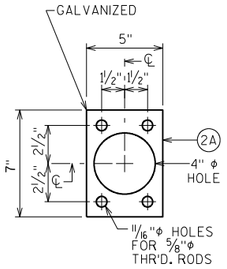
8

STATE PROJECT NUMBER

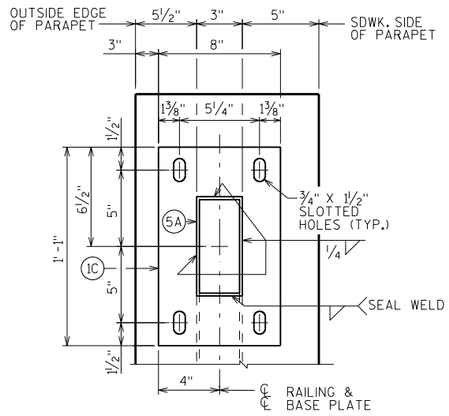
9650-16-70



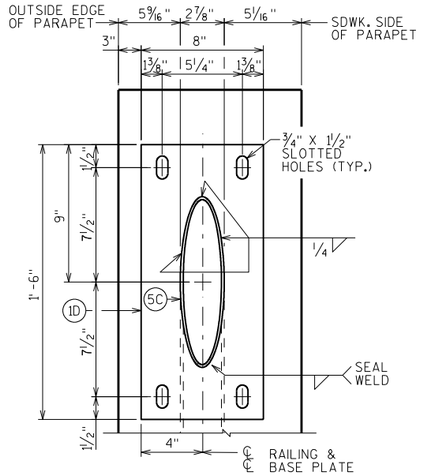
TYPICAL RAIL POST BASE PLATE



ANCHOR PLATE



END RAIL BASE PLATE



END RAIL BASE PLATE

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(1D) PLATE ⅝" X 8" X 1'-6" WITH ¾" X 1½" SLOTTED HOLES

(2A) ¼" X 5" X 7" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16" φ HOLES FOR THR'D. RODS NO. 3.

(3) ⅝" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE: 4 EQUIVALENT STAINLESS STEEL CONCRETE MASONRY ANCHORS TYPE S ⅝-INCH. EMBED 7" IN CONCRETE FOR RAIL POSTS. EMBED 5" IN CONCRETE FOR END RAILS.)

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(5C) STRUCTURAL TUBING 2½" φ (STANDARD SIZE) (2.875" O.D.). WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

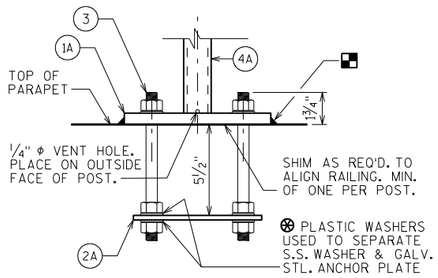
(6A) BAR 1" X 1" PICKETS. WELD TO NO. 5. PLACE VERTICAL.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

(9B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2" φ (STANDARD SIZE) (2.375" O.D.)

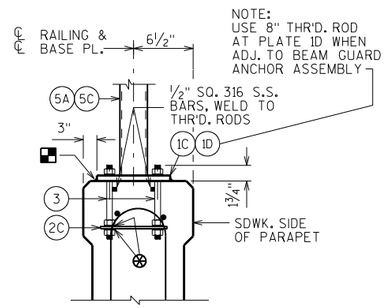
(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL JTS.)

(10B) CIRCULAR SLEEVE FABRICATED FROM STRUCTURAL TUBING 2" φ (STANDARD SIZE) (2.375" O.D.) (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)



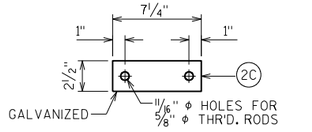
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



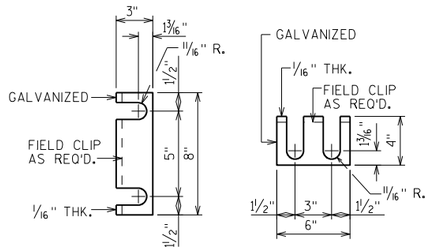
ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN TYPE "S" ANCHORS ARE USED.



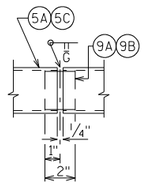
END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES
2 REQ'D. PER END RAIL BASE PLATE



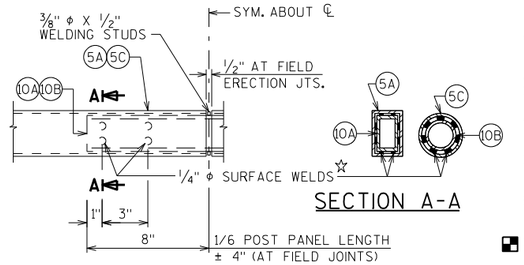
RAIL POST SHIM DETAIL

(2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

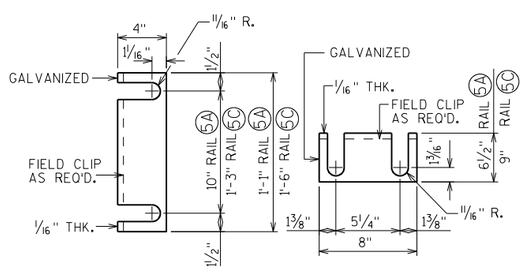
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION A-A

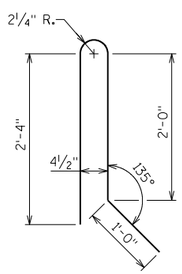
FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



END RAIL SHIM DETAIL

(2 SETS PER POST)



R501

BILL OF BARS

BAR MARK	COAT	QTY.	LENGTH	BENT	LOCATION
R501	X	162	5-11	X	PARAPET VERT.
R402	X	4	157-8		PARAPET HORIZ.

RAILING NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C2 GALVANIZED R-34-02", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

■ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038, BLACK.

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-34-02

DRAWN BY DDS | PLANS CK'D. MSC

COMBINATION RAIL TYPE "C2"

SHEET 4

152

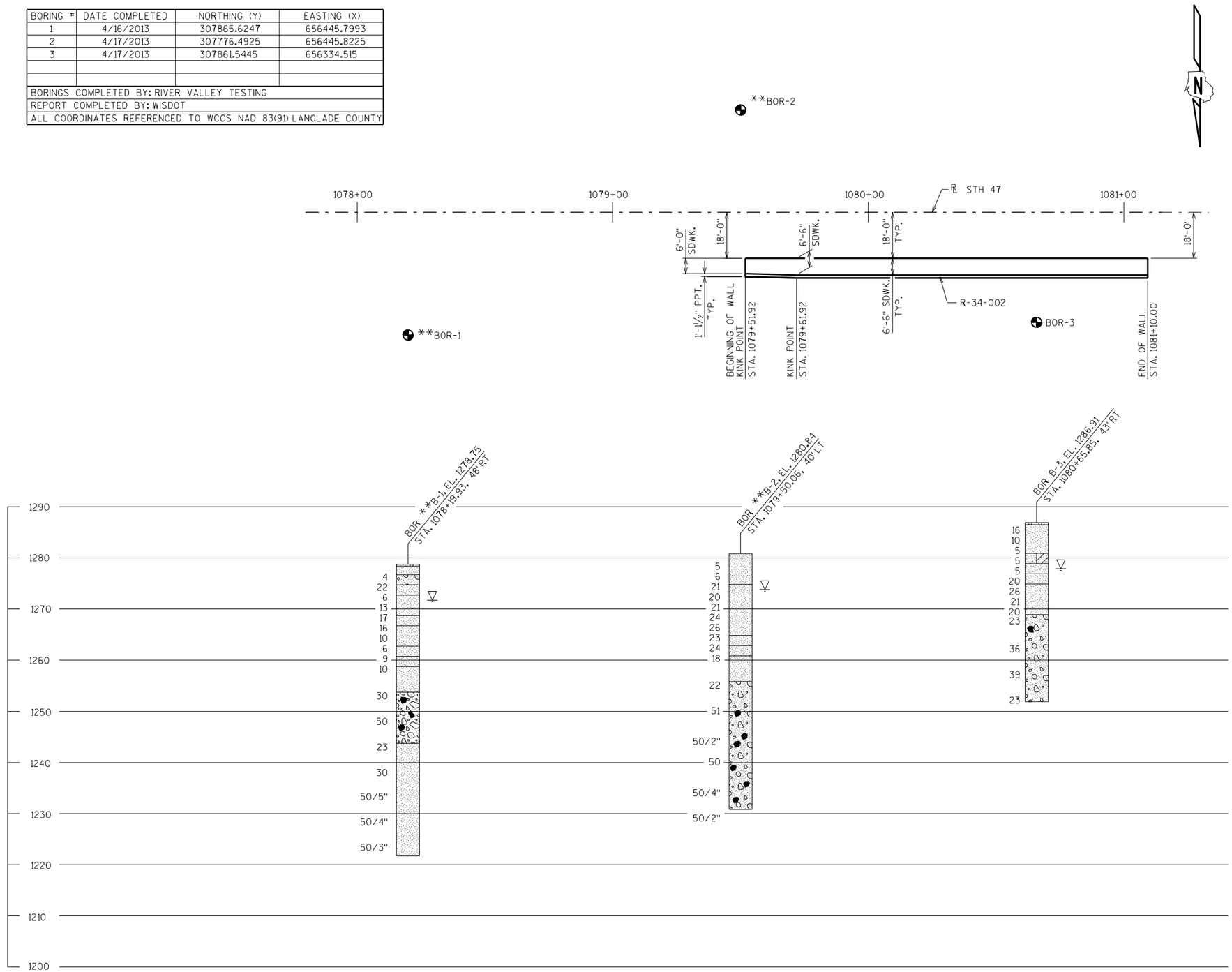
SCALE = 1

8

8

NEOPIT - ANTIGO
RED RIVER BRIDGE

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	4/16/2013	307865.6247	656445.7993
2	4/17/2013	307776.4925	656445.8225
3	4/17/2013	307861.5445	656334.515
BORINGS COMPLETED BY: RIVER VALLEY TESTING			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) LANGLADE COUNTY			



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

** BORINGS 1 AND 2 ARE FOR INFORMATION ONLY

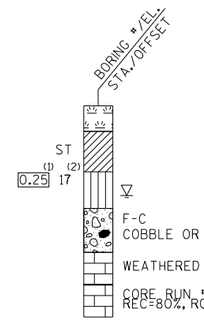
STATE PROJECT NUMBER

9650-16-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-34-02

DRAWN BY PR/DDS | PLANS CK'D. MSC

SUBSURFACE EXPLORATION

SHEET 5

153

SCALE = 10

9650-16-61

W BR RED RIVER CULVERT EXTENSION

STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
		CUT	FILL	CUT NOTE 1	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	NOTE 3
1303+00		3	1	0	0	0	0	0
1303+50	50	4	0	7	2	7	2	5
1304+00	50	4	1	8	1	15	4	11
1304+50	50	0	24	4	23	19	32	-13
1304+83	33	0	115	0	85	19	138	-119
1304+90	7	0	183	0	39	19	187	-167
1305+00	10	0	179	0	67	19	270	-251
1305+02	2	0	152	0	12	19	286	-266
1305+50	48	0	14	0	147	20	470	-450
1306+00	50	0	2	1	15	20	488	-468
1306+50	50	1	3	2	5	22	494	-472
1307+00	50	4	1	5	4	27	499	-472
			COLUMN TOTALS	27	399			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
3 - MASS ORDINATE	((CUT) - ((FILL) * FILL FACTOR))

9650-16-70

RED RIVER BRIDGE, B-34-0046

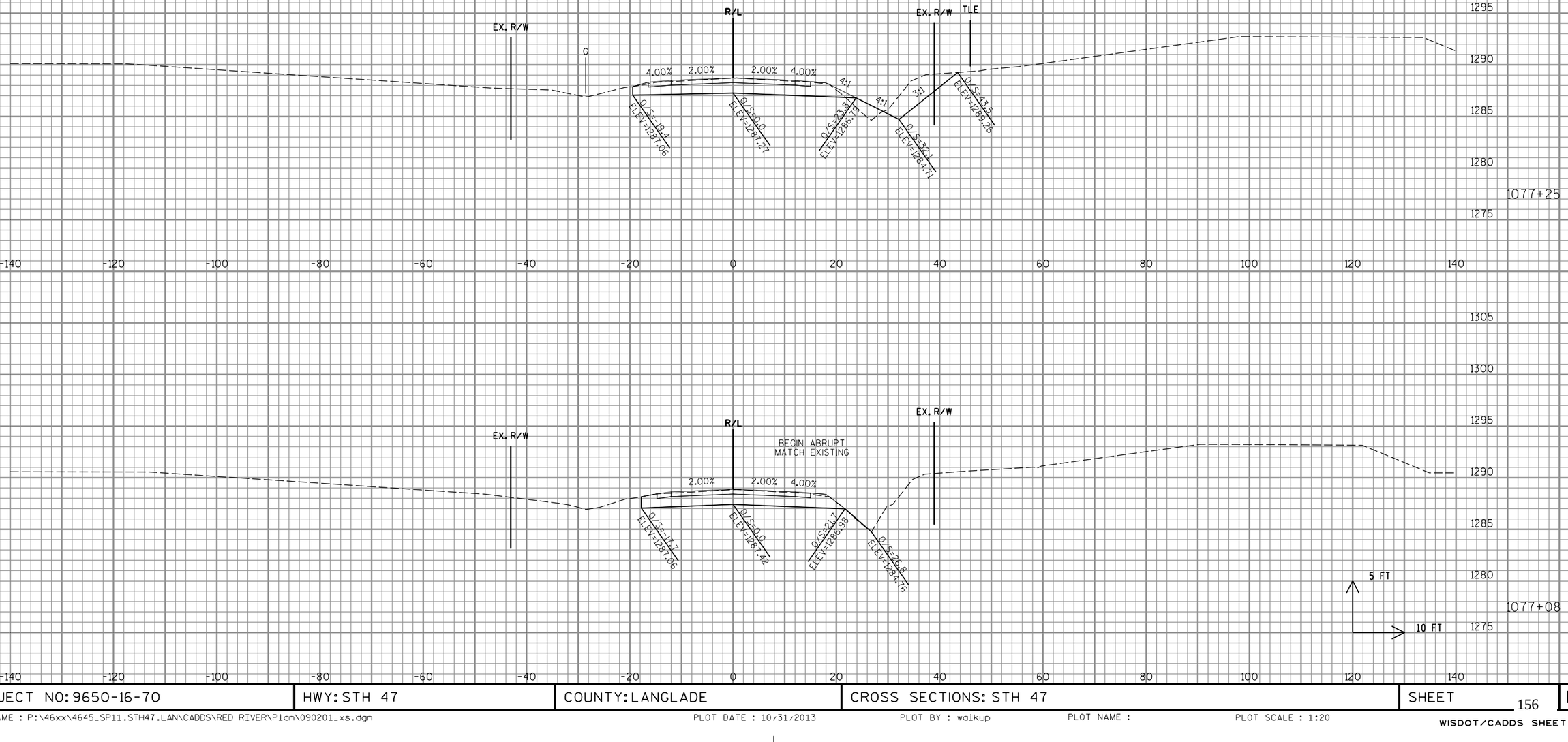
STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
1077+08		51	0	0	0	0	0	0
1077+25	17	75	6	40	2	40	2	37
1077+50	25	101	3	81	4	121	7	114
1077+62	12	119	0	49	1	170	8	162
1077+75	13	129	0	60	0	230	8	221
1077+89	14	90	4	57	1	286	10	277
1078+00	11	92	6	37	2	323	12	311
1078+15	15	89	12	50	5	373	18	355
1078+25	10	90	14	33	5	407	24	383
1078+39	14	91	6	47	5	454	31	423
1078+50	11	95	16	38	4	492	36	456
1078+66	16	128	2	66	5	558	43	515
1078+75	9	97	32	38	6	595	50	545
1078+91	16	0	0	29	9	624	62	562
			COLUMN TOTALS	624	49			

9650-16-70

RED RIVER BRIDGE, B-34-0046

STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
1079+51		172	7	0	0	0	0	0
1079+75	24	95	41	119	21	119	27	92
1080+00	25	103	27	92	31	210	66	144
1080+05	5	109	26	20	5	230	72	158
1080+25	20	98	40	77	25	307	103	204
1080+30	5	90	43	17	8	324	113	211
1080+50	20	80	58	63	37	387	159	227
1080+55	5	81	53	15	10	402	172	229
1080+75	20	57	58	51	41	453	224	229
1081+00	25	63	14	56	33	509	265	243
1081+25	25	58	37	56	23	565	294	270
1081+28	3	46	30	6	4	570	299	271
1081+41	13	0	0	11	7	581	308	273
			COLUMN TOTALS	581	246			

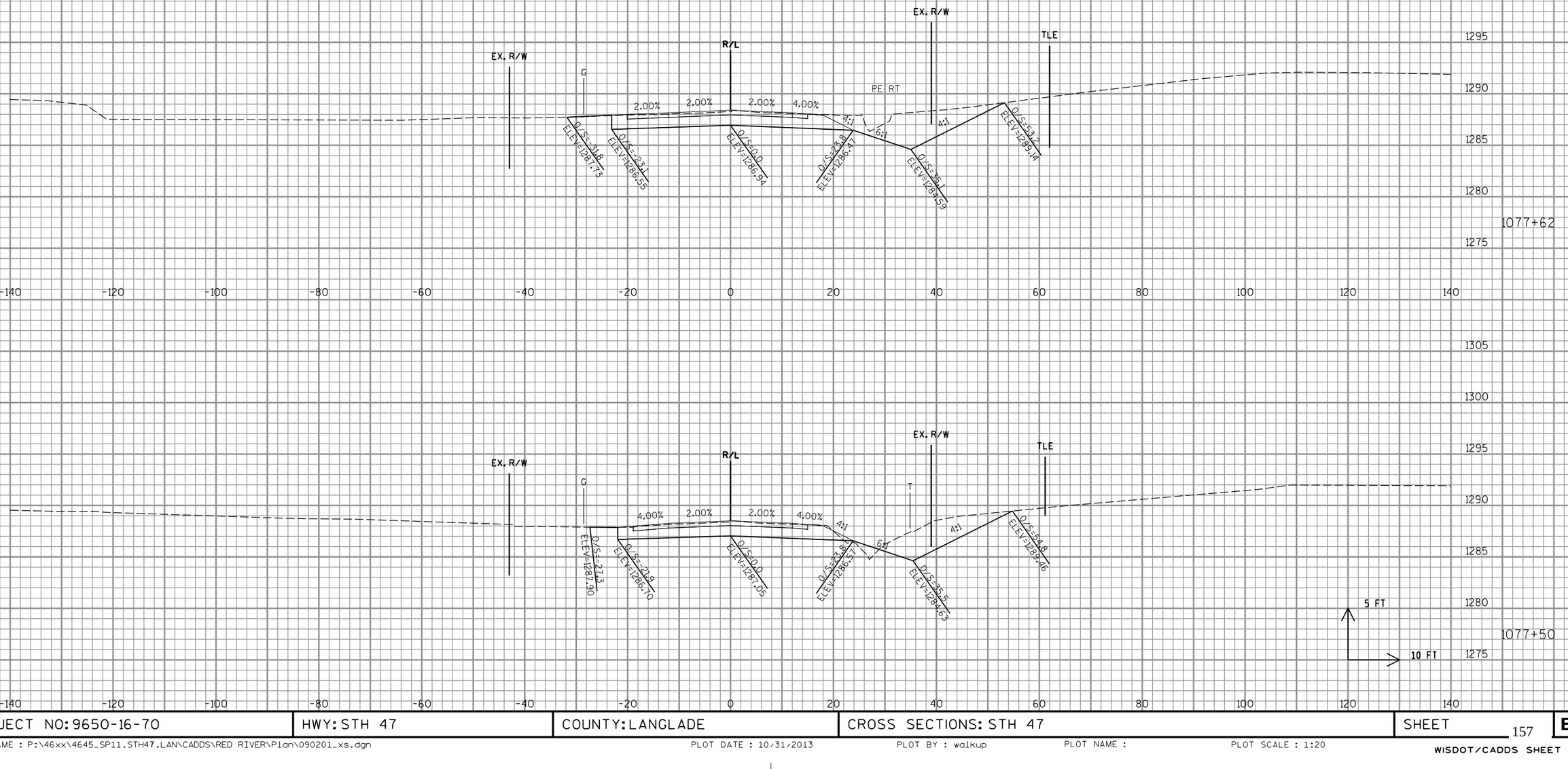
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
3 - MASS ORDINATE	((CUT) - ((FILL) * FILL FACTOR))



PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 156	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\090201_xs.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:20

WISDOT/CADDS SHEET 21



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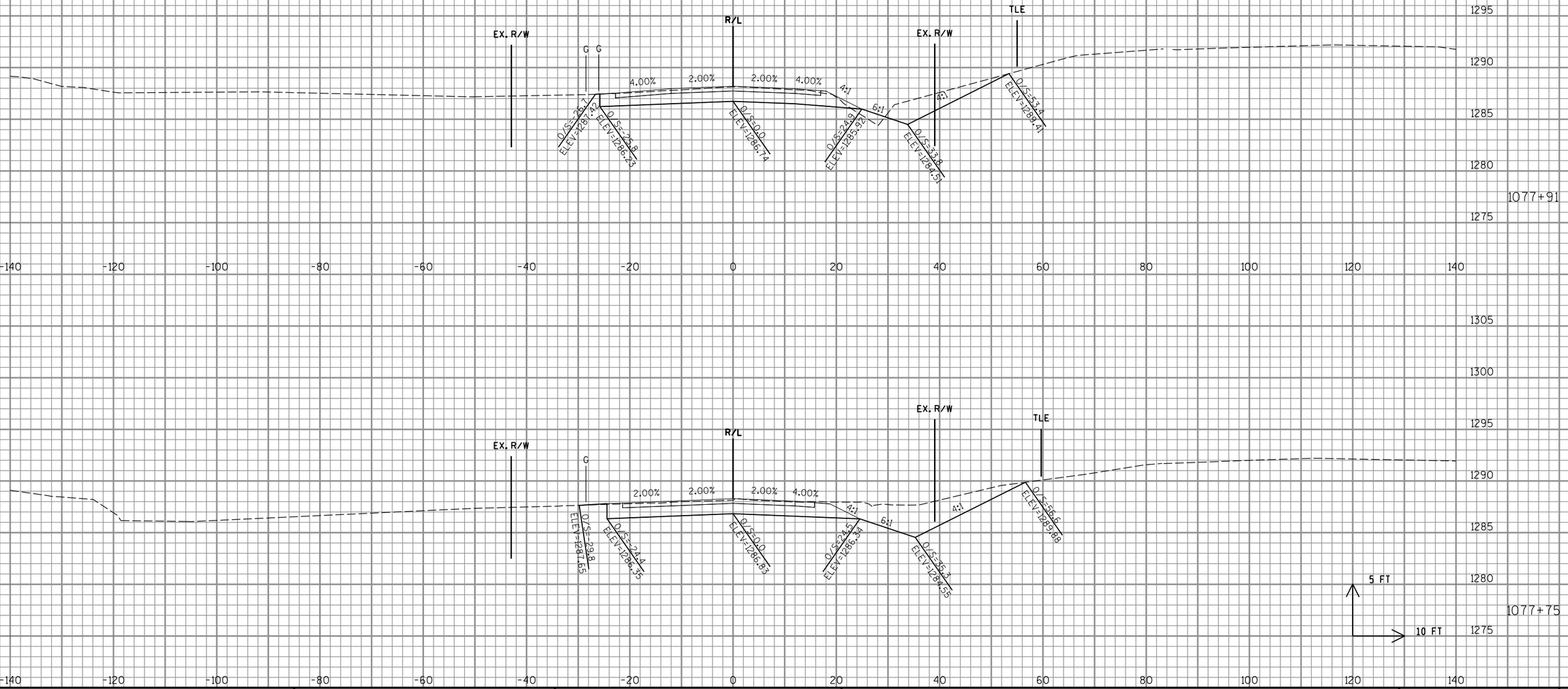
PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 157	E



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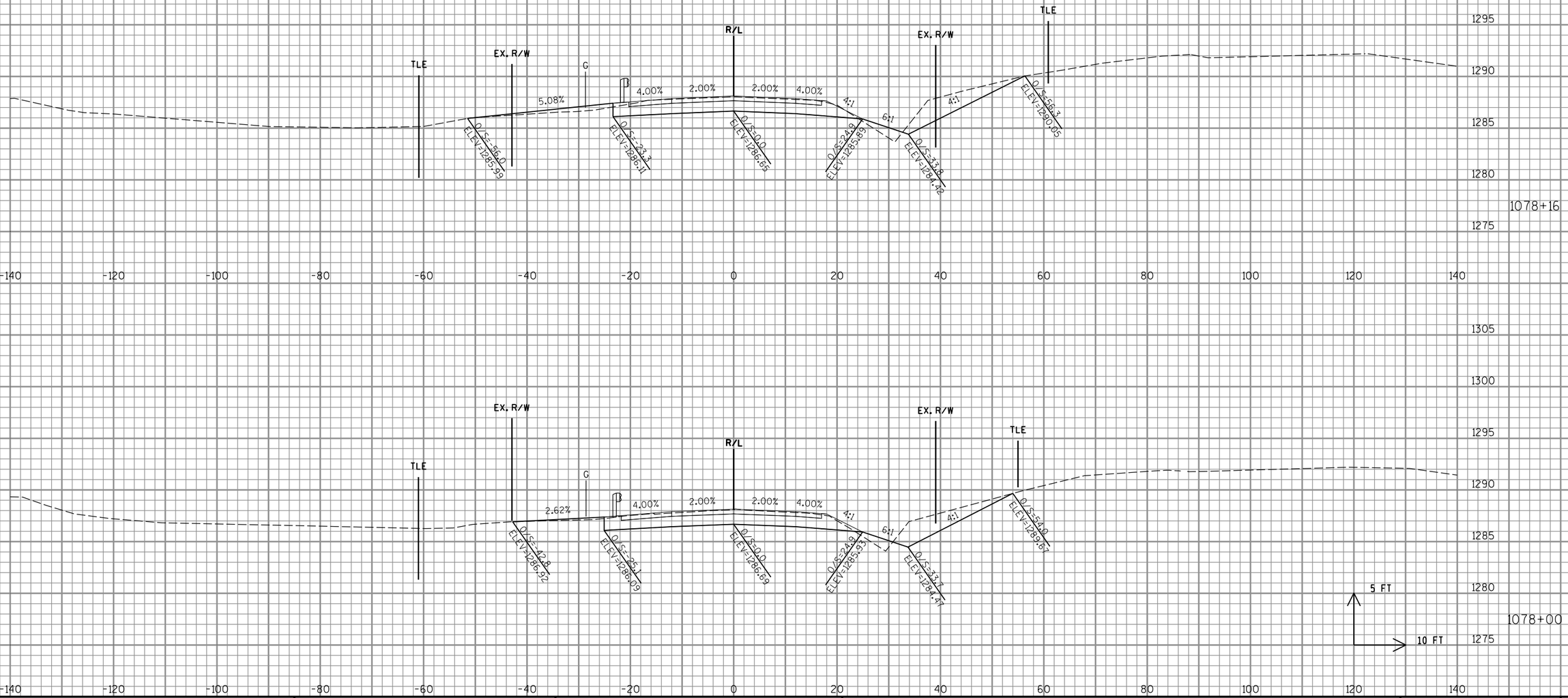
PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 158	E



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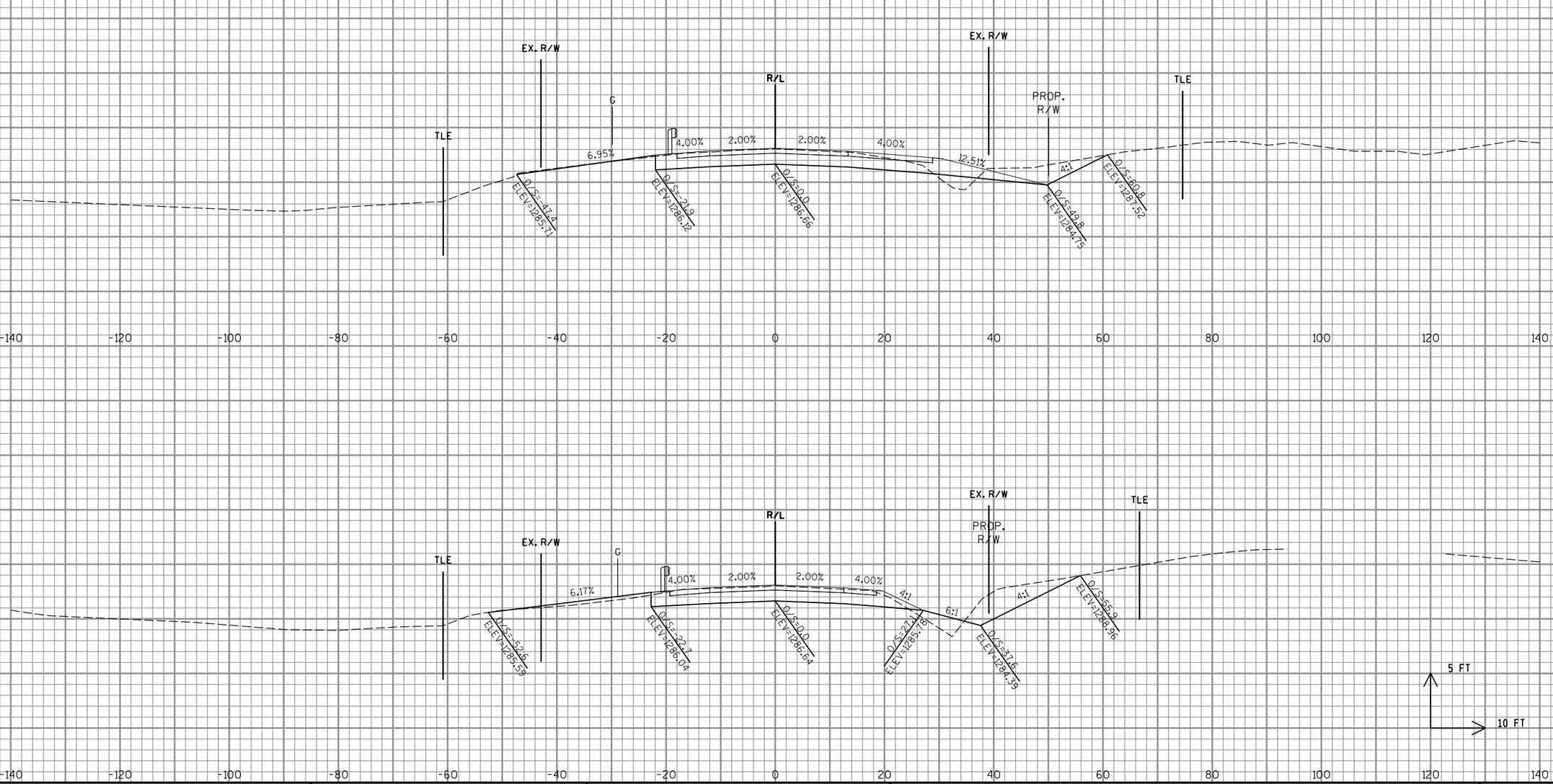
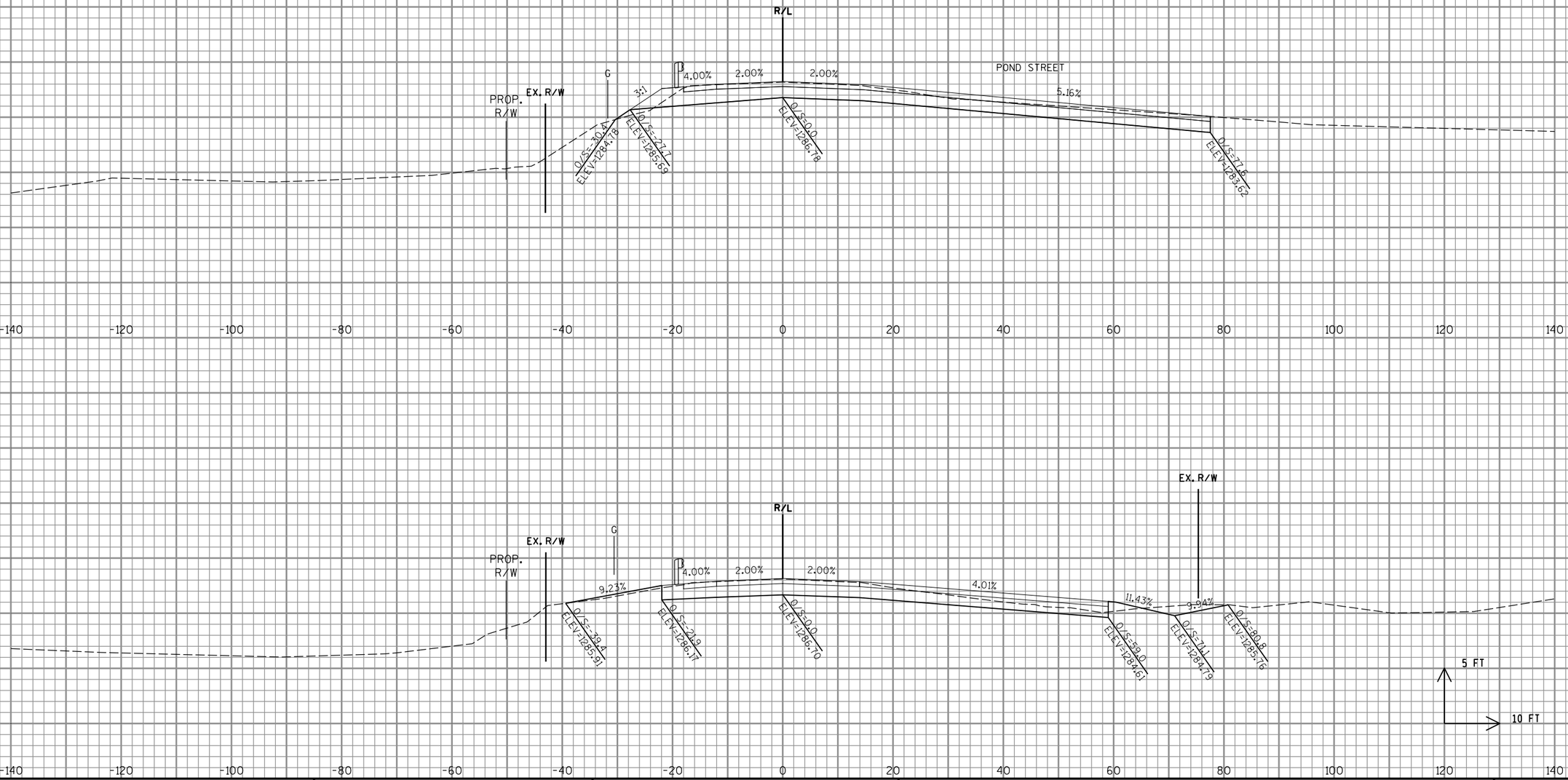
PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 159	E



PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 160	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\090201_xs.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:20

WISDOT/CADDS SHEET 21



PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 161	E

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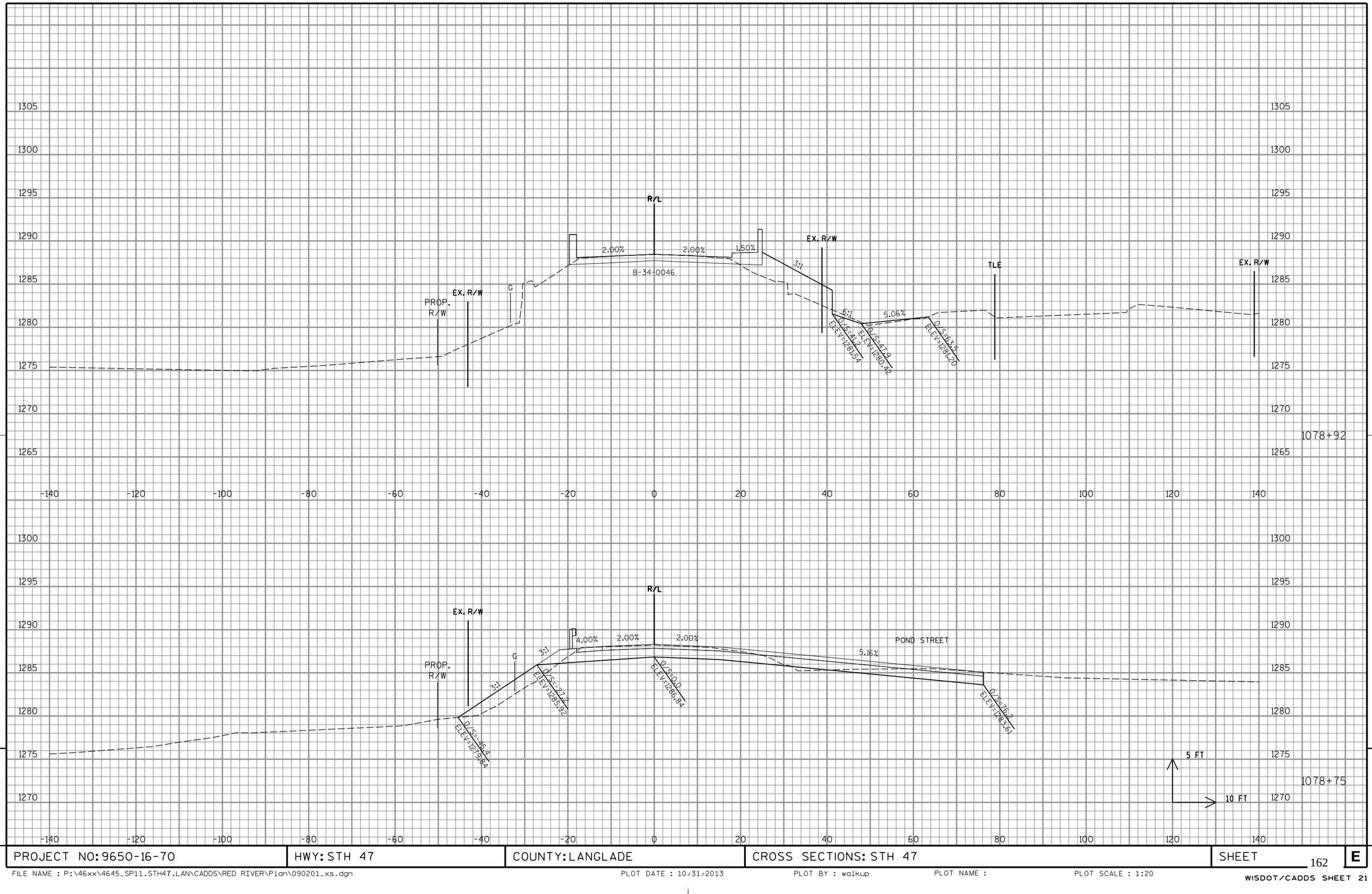
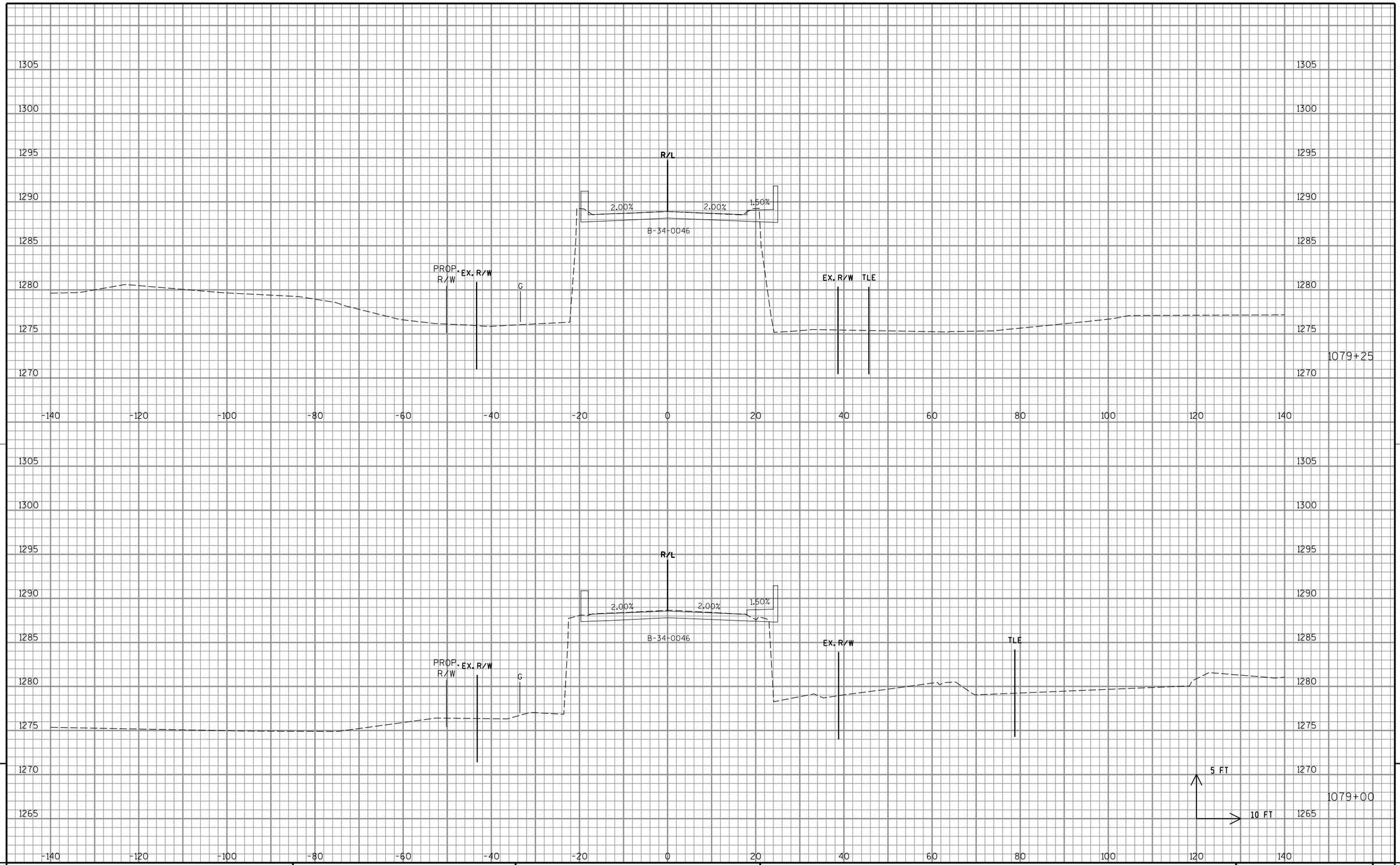
WISDOT/CADDS SHEET 21



PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 162	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\090201_xs.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:20

WISDOT/CADDS SHEET 21



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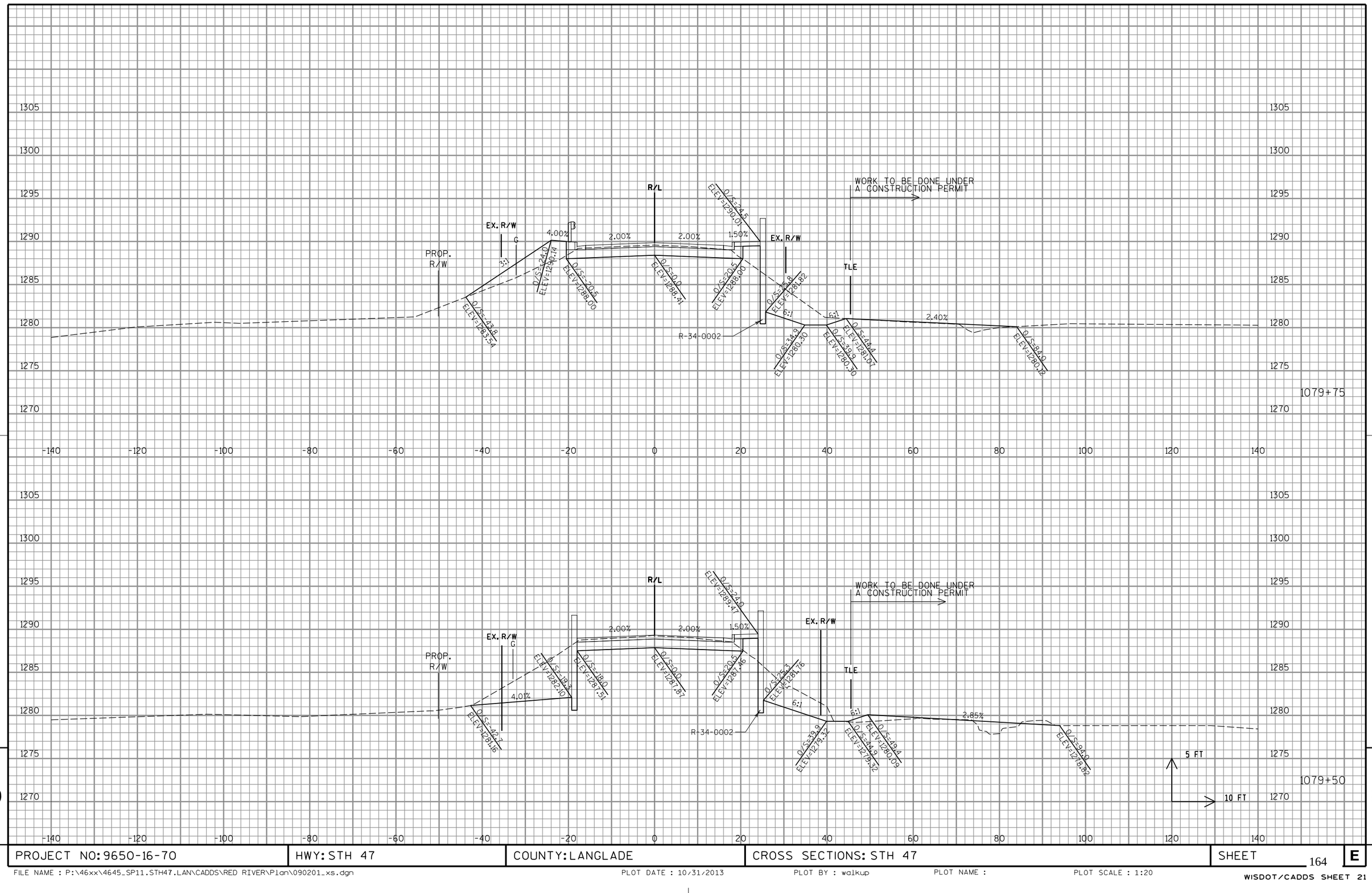
PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 163	E



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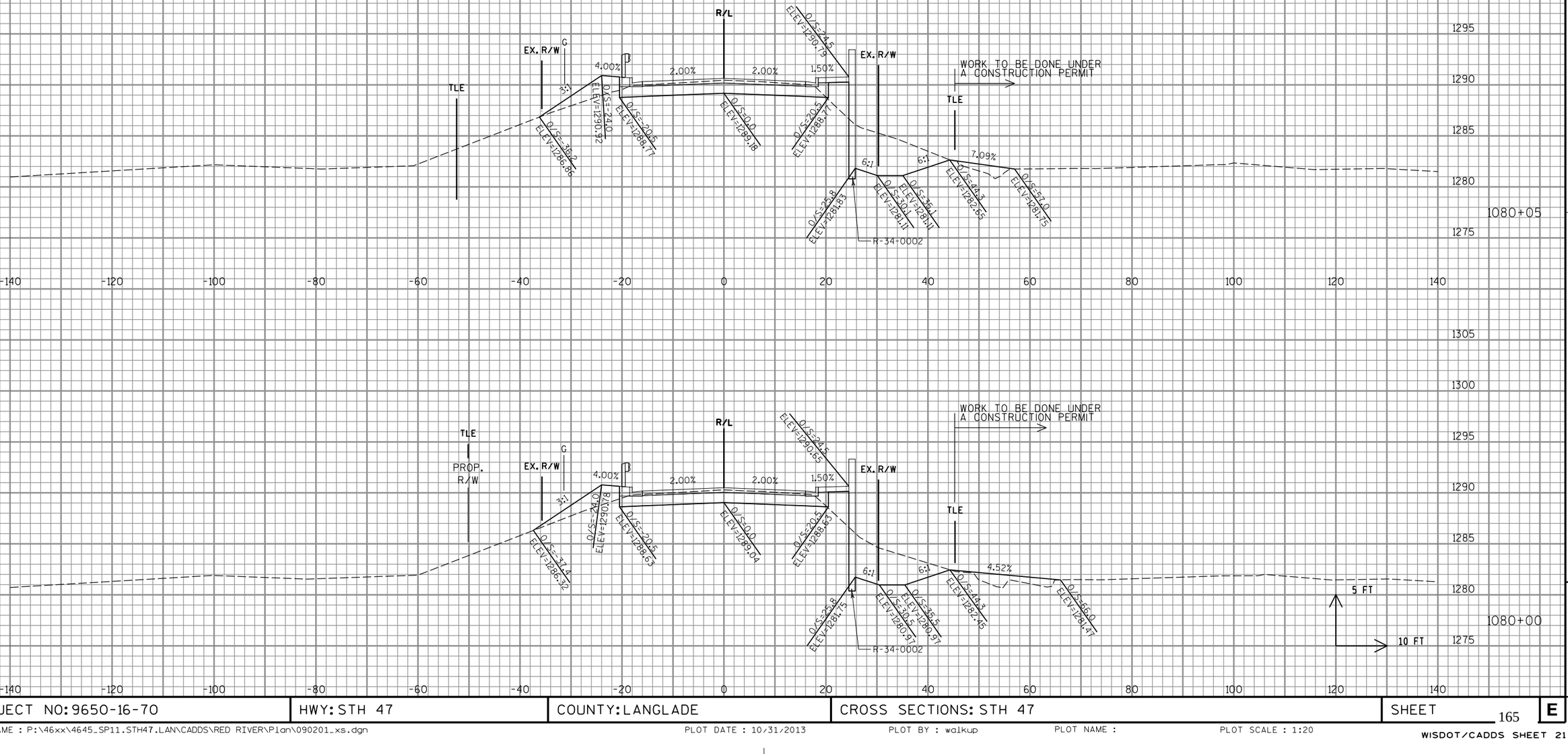
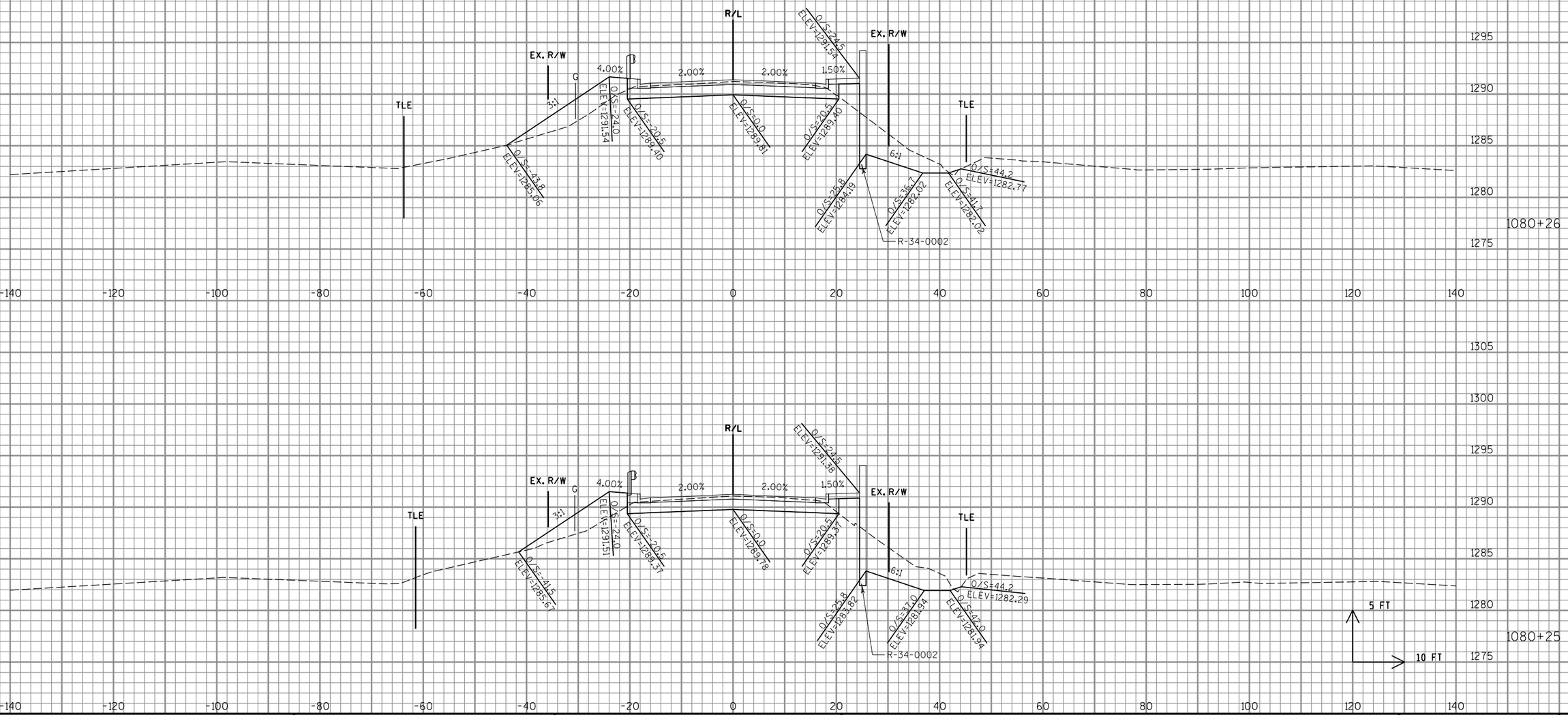
PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 164	E



PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 165	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\090201_xs.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:20

WISDOT/CADDS SHEET 21



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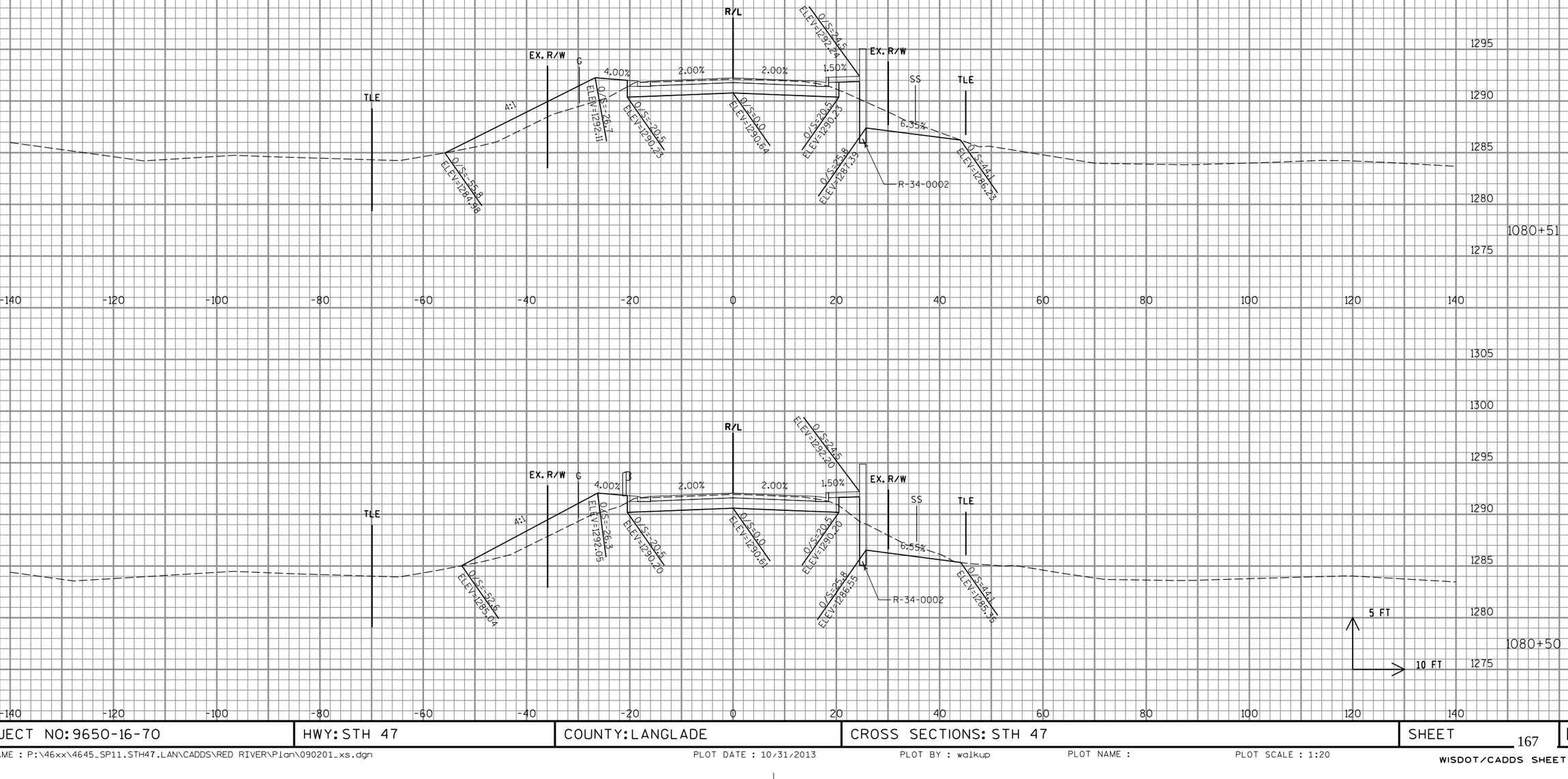
PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 166	E



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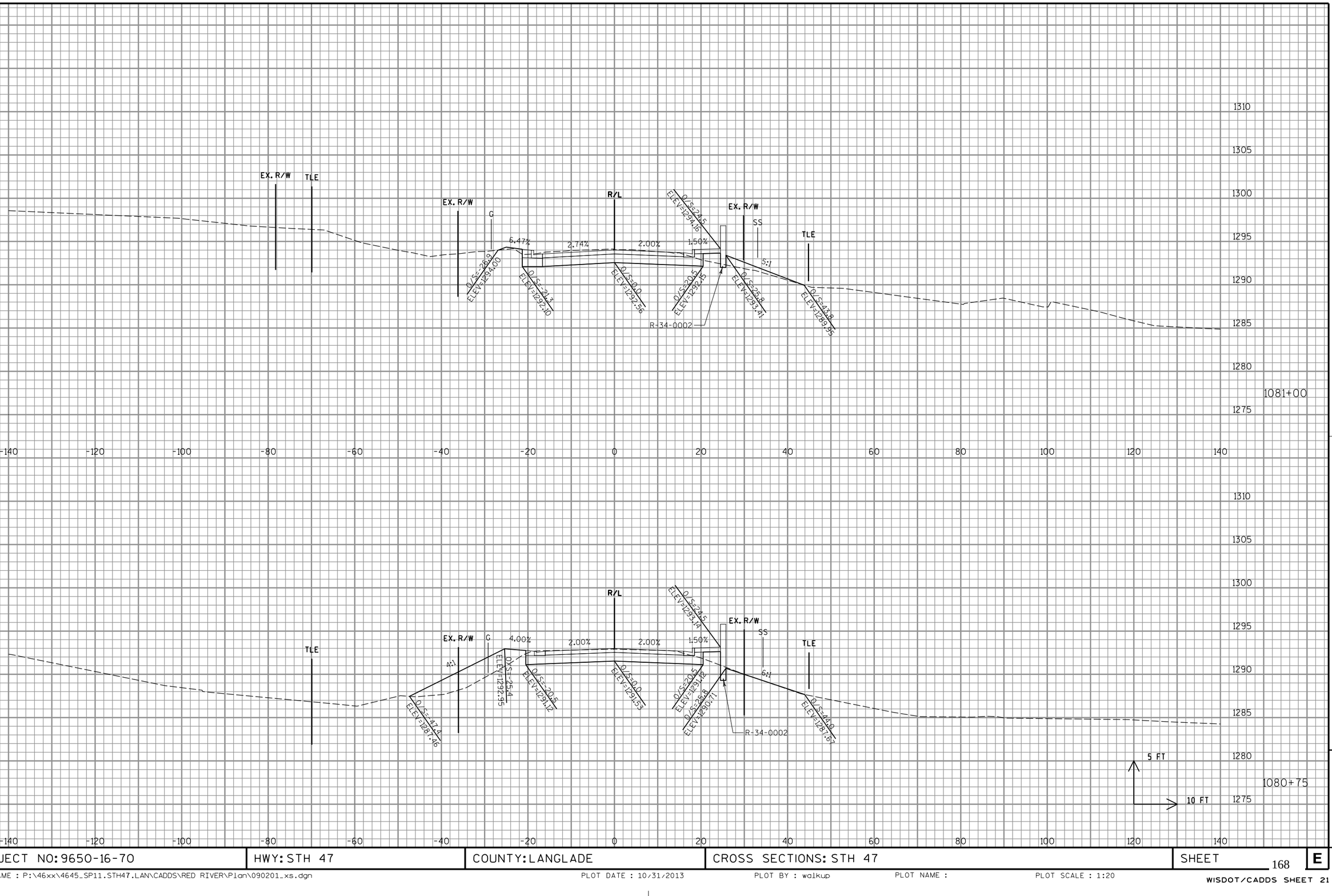
PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 167	E

FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\090201_xs.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:20
WISDOT/CADDS SHEET 21



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PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 168	E

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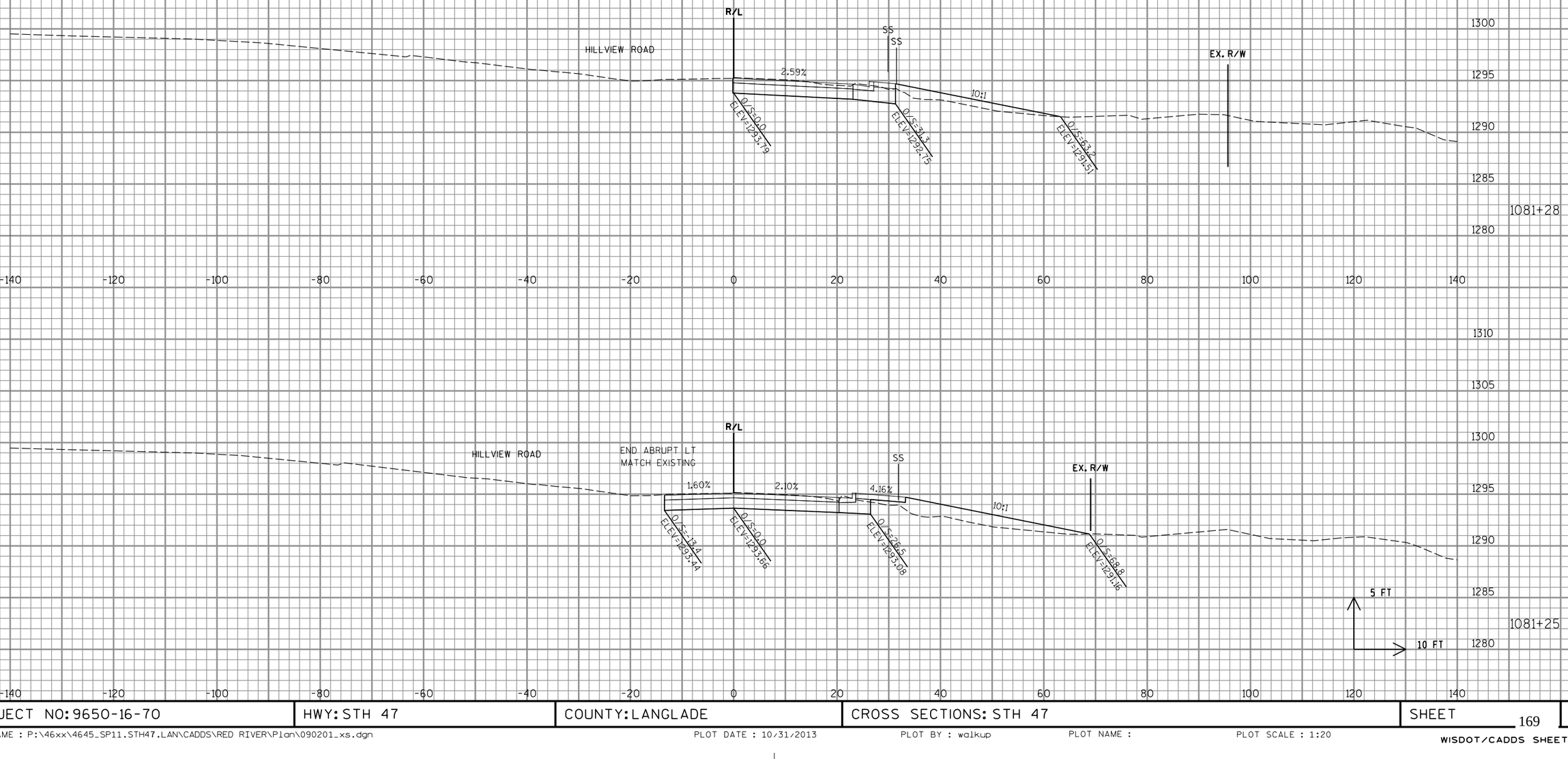
WISDOT/CADDS SHEET 21



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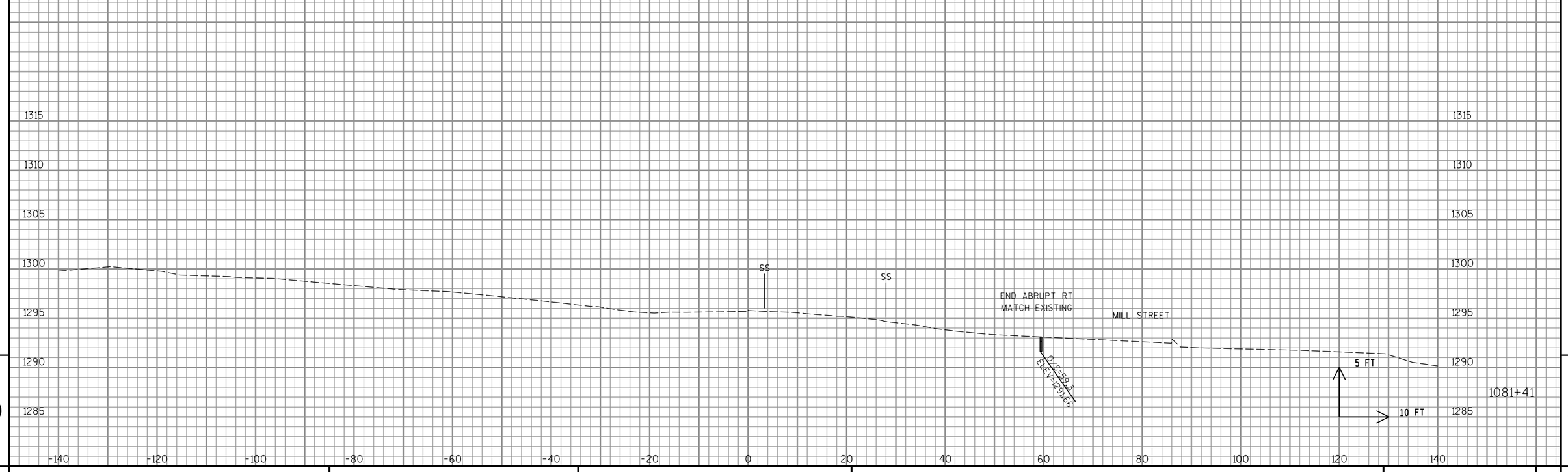
PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 169	E



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PROJECT NO: 9650-16-70	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47	SHEET 170	E

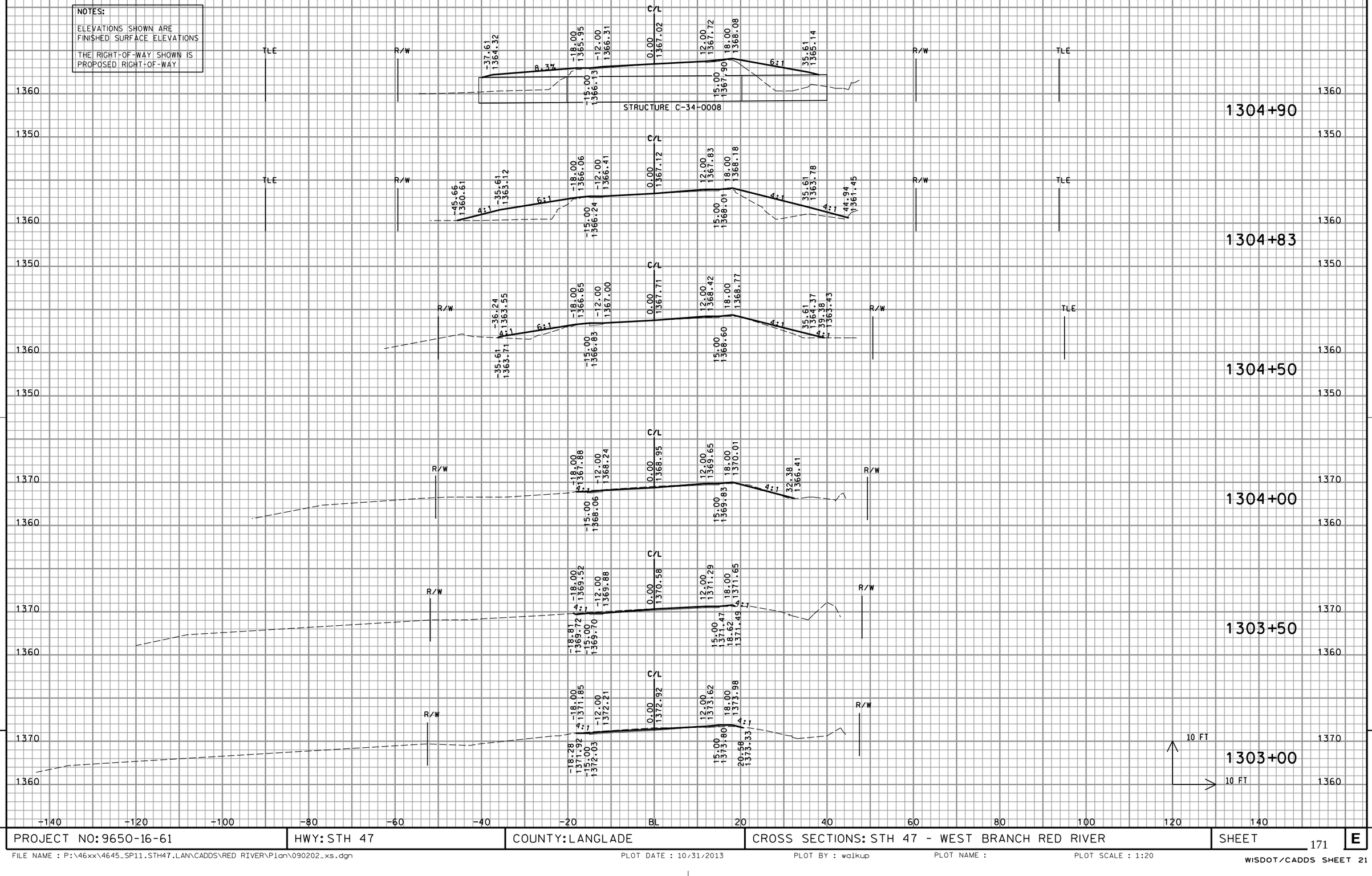
FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\090201_xs.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:20

WISDOT/CADDS SHEET 21

NOTES:

ELEVATIONS SHOWN ARE FINISHED SURFACE ELEVATIONS

THE RIGHT-OF-WAY SHOWN IS PROPOSED RIGHT-OF-WAY



PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47 - WEST BRANCH RED RIVER	SHEET 171	E

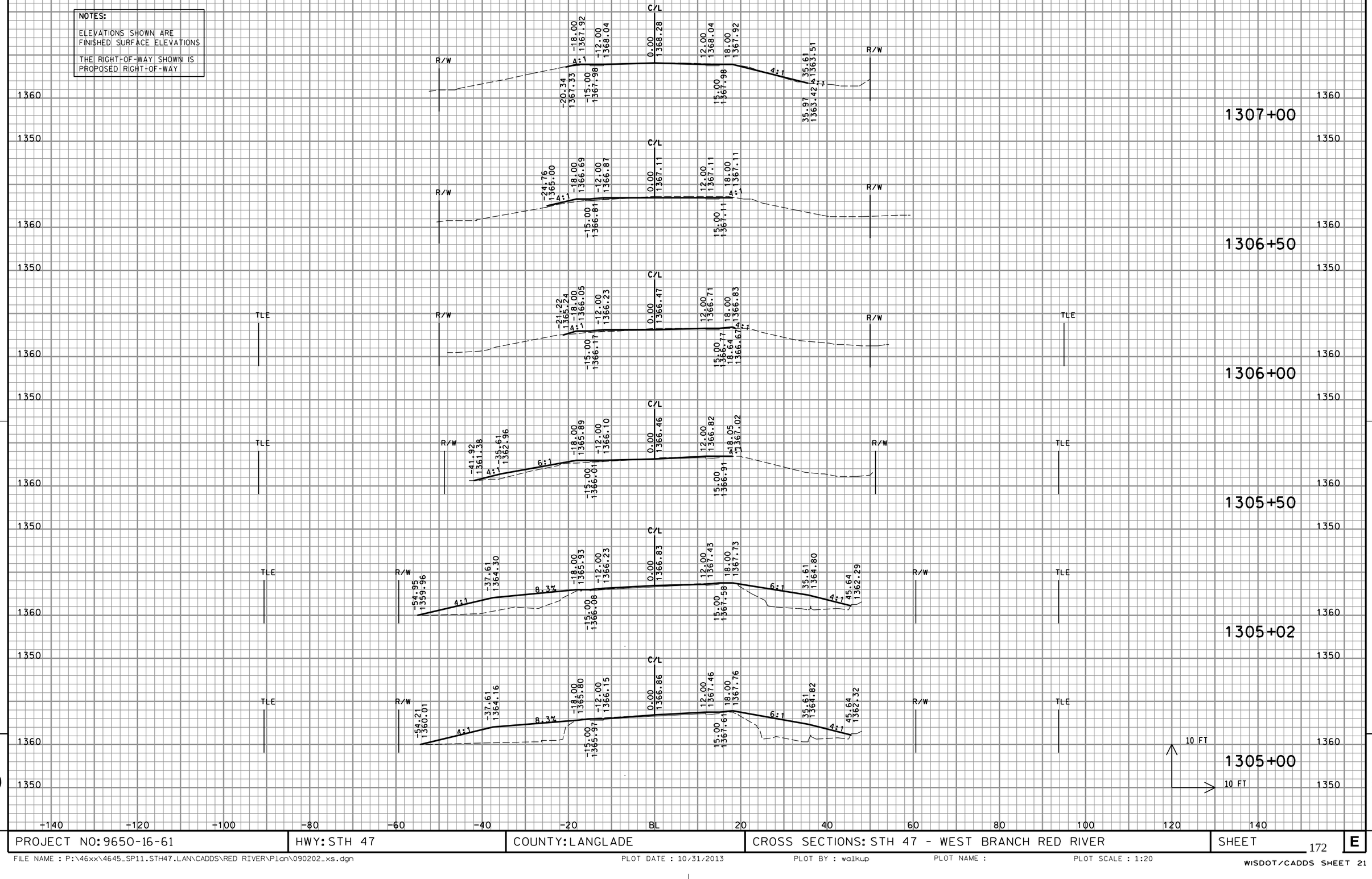
FILE NAME : P:\46xx\4645_SP11.STH47.LAN\CADDS\RED RIVER\Plan\090202_xs.dgn PLOT DATE : 10/31/2013 PLOT BY : walkup PLOT NAME : PLOT SCALE : 1:20

WISDOT/CADDS SHEET 21

NOTES:

ELEVATIONS SHOWN ARE FINISHED SURFACE ELEVATIONS

THE RIGHT-OF-WAY SHOWN IS PROPOSED RIGHT-OF-WAY



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PROJECT NO: 9650-16-61	HWY: STH 47	COUNTY: LANGLADE	CROSS SECTIONS: STH 47 - WEST BRANCH RED RIVER	SHEET 172	E

Notes

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