SWL MARCH 2015

PROJECT ID: 5991-08-09

COUNTY: LA CROSSE

ORDER OF SHEETS

TOTAL SHEETS = 148

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5991-08-09	WISC 2015122	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CITY OF LA CROSSE, GILLETTE STREET

RIVER VALLEY DRIVE TO STH 16

CTH B

LA CROSSE COUNTY

STATE PROJECT NUMBER
5991-08-09

DESIGN DESIGNATION

A.A.D.T.	(2015)	= 8700
A.A.D.T.	(2035)	= 8900
D.H.V.		= 1250
D.D.		= 59-41
T.		= 5.7%
DESIGN SPEED		= 45
ESALS		= 1,900,000

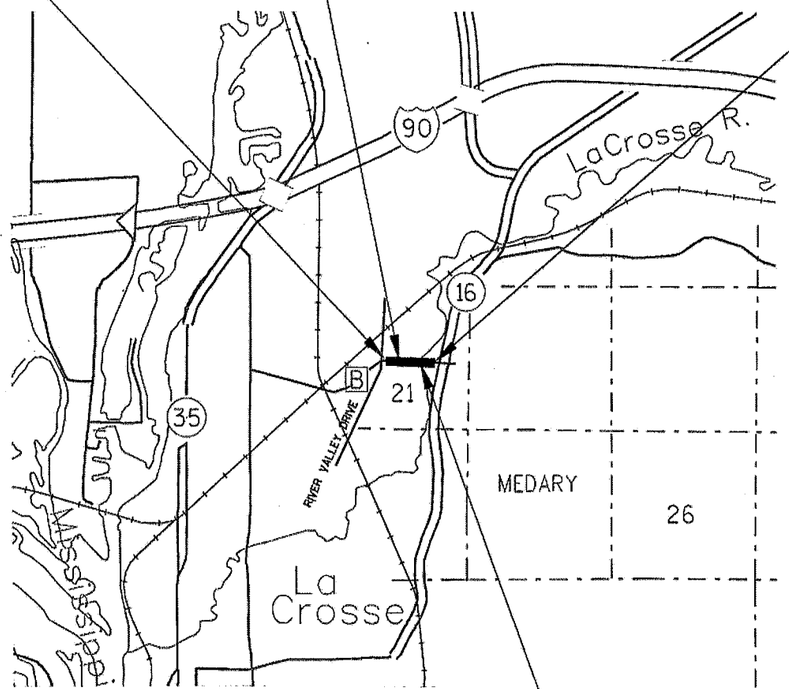
CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
		STORM SEWER	SS
		TELEPHONE	T
MARSH AREA		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
WOODED OR SHRUB AREA		TELEPHONE POLE	

BEGIN PROJECT
STA. 0+11.02 EB
Y = 144,699.92
X = 453,211.63

EXCEPTION TO NET CENTERLINE LENGTH
STA. 2+13.56 EB TO STA. 2+95.69 EB, BRIDGE B-32-158 AND B-32-157

END PROJECT
STA. 19+07.98 EB



LAYOUT
SCALE 0 0.5 MI 1.0 MI

TOTAL NET LENGTH OF CENTERLINE = 0.315 MI

EXCEPTION TO NET CENTERLINE LENGTH
STA. 10+98.19 EB TO STA. 12+64.51 EB, BRIDGE B-32-159

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, LA CROSSE COUNTY, NAD83 (2012), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ACCEPTED FOR
COUNTY OF LA CROSSE

10/30/14 (Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

WISCONSIN
DAN R. HERZBERG
E-28226
EAU CLAIRE
WIS.
PROFESSIONAL ENGINEER

10/27/2014 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor GRAEF
Designer GRAEF
Management Consultant Kjohnson Engineers, Inc

APPROVED FOR THE DEPARTMENT
DATE: 10/30/14 (Signature)

E

FILE NAME : J:\JOBS2014\20142006\CAD\TRANSPORTATION\DWG\SHEETSPLAN\010101_TI.DWG

PLOT DATE : 10/24/2014 11:37 AM PLOT BY : SCHULTZ, ANDREW K. PLOT NAME :

WISDOT/CADDS SHEET 10

GENERAL NOTES

IN ACCORDANCE WITH WISCONSIN STATUTE 182.01, DAMAGE TO TRANSMISSION FACILITIES, CONTRACTOR SHALL BE SOLEY RESPONSIBLE TO NOTIFY DIGGERS HOTLINE AND ANY AFFECTED UTILITIES NOT MEMBERS OF DIGGERS HOTLINE, NOT LESS THAN SEVEN WORKING DAYS PRIOR TO THE START OF ANY EXCAVATION REQUIRED TO PERFORM WORK CONTAINED ON THESE DRAWINGS, AND FURTHER, EXCAVATOR SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF THIS STATUTE RELATIVE TO THE EXCAVATOR'S WORK.

EXISTING CONDITIONS AND TOPOGRAPHIC FEATURES, INCLUDING UTILITIES, HAVE BEEN LOCATED ON A FIELD SURVEY. THE FIELD SURVEY WAS CONDUCTED BY GRAEF DATED FEB. 2014. ALL UNDERGROUND UTILITIES ARE SHOWN TO A REASONABLE DEGREE OF ACCURACY. FURTHER THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.

BENCHMARK LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND SHOULD BE VERIFIED.

WETLANDS ARE PRESENT IN THE PROJECT AREA AND NO DISTURBANCES OUTSIDE THE SLOPE INTERCEPTS IS ALLOWED. STORAGE OF ANY MATERIAL WILL NOT BE PERMITTED IN WETLANDS.

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

SLURRY AND WASTE FROM GRINDING AND CUTTING OPERATIONS WILL NOT BE DISCHARGED TO ANY SURFACE WATERS, WETLANDS OR SLOPES DIRECTLY UPGRADIENT FROM SUCH RESOURCES.

DURING SAW CUTTING AND MILLING PROCEDURES APPROPRIATE MEASURES WILL BE TAKEN TO MINIMIZE FUGITIVE DUST.

BROKEN CONCRETE CONTAINING REBAR SHALL NOT BE USED AS RIPRAP.

THE EXACT LOCATION AND WIDTH OF TEMPORARY ACCESS FOR DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE EXACT LOCATION AND WIDTH OF PRIVATE DRIVEWAYS AND COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. BASE AGGREGATE DENSE WILL BE USED UNDER ALL DRIVEWAYS.

CURB AND GUTTER ELEVATIONS ARE ALONG THE FLANGE LINE UNLESS OTHERWISE NOTED. CURB RADII ARE SHOWN TO THE FRONT FACE OF CURB. EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL RADIUS POINTS IN THE CURB AND GUTTER.

ALL ROADWAY GRADING AND OTHER SITE WORK MUST BE COMPLETED IN ACCORDANCE WITH THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, CURRENT EDITION AND ALL SUPPLEMENTAL.

THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" ISSUED BY THE U.S. DEPARTMENT OF LABOR.

PERIODIC TEMPORARY TRAFFIC CONTROL MAY BE REQUIRED IN ORDER TO COMPLETE THE WORK. PRIOR TO THE BEGINNING WORK ON THIS PROJECT, CONTRACTOR MUST PROVIDE A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL. AFTER APPROVAL, CONTRACTOR MUST NOTIFY ENGINEER 24 HRS. PRIOR TO WORK IMPACTING ANY LIVE TRAFFIC LANES.

THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND SITE IMPROVEMENTS TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES OR SITE IMPROVEMENTS TO REMAIN SHALL BE REPAIRED BY THE CONTRACTOR TO THE OWNERS SPECIFICATIONS AT THE CONTRACTORS EXPENSE.

IN THE EVENT OF ANY DISCREPANCIES AND/OR ERRORS FOUND IN THE DRAWINGS, OR IF PROBLEMS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, BEFORE PROCEEDING WITH THE WORK. IF THE ENGINEER IS NOT NOTIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ANY REVISION.

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSCP	CORRUGATED STEEL CULVERT PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC-YARD
D	DEGREE OF CURVE
	DELTA
DISCH	DISCHARGE
FE	FIELD ENTRANCE
HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
NTS	NOT TO SCALE
PAVT	PAVEMENT
PB	PULL BOX
PC	POINT-OF-CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RAD	RADIUS
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
RCHESS	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL STORM SEWER
RCPSS	REINFORCED CONCRETE PIPE - STORM SEWER
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SIGNAL BASE
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TC	TOP OF CURB
TLE	TEMPORARY LIMITED EASEMENT

DEPT. OF NATURAL RESOURCES

WISCONSIN DEPT. OF NATURAL RESOURCES
LA CROSSE SERVICE CENTER
ATTN: KAREN KALVELAGE
3550 MORMON COULEE ROAD
LA CROSSE, WI. 54601
Karen.Kalvelage@wisconsin.gov

LA CROSSE COUNTY

LA CROSSE COUNTY HIGHWAY DEPARTMENT
ATTN: RON CHAMBERLAIN
301 CARSON ROAD
WEST SALEM, WI. 54669
rchamberlain@lacrossecounty.org

U.S. ARMY CORPS OF ENGINEERS

U.S. ARMY CORPS OF ENGINEERS
ATTN: DAVE STUDENSKI
1114 SOUTH OAK STREET
LA CRESCENT, MN. 55947-1338
dave.a.studenski@usace.army.mil

DESIGN CONTACT

GRAEF
ATTN: DAN HERZBERG
1150 SPRINGHURST DRIVE
SUITE 201
GREEN BAY, WI. 54304-5947
(920) 592-9440
Dan.Herzberg@graef-usa.com

UTILITIES

CENTURY TEL OF WISCONSIN
ATTN: BRIAN STELPLUGH
333 N. FRONT STREET
LA CROSSE, WI. 54601
PHONE; (608) 796-5142
brian.stelplugh@centurylink.com

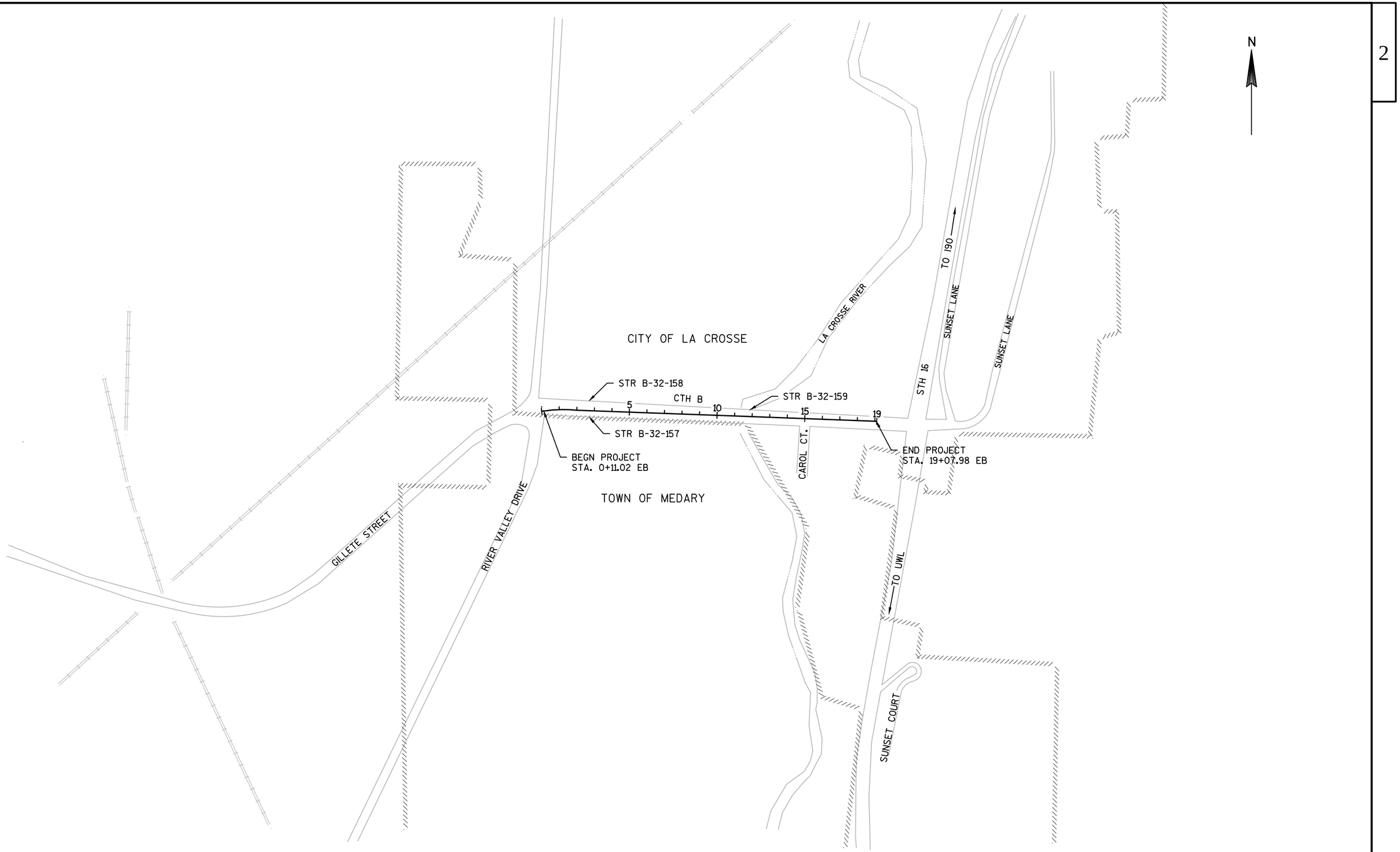
CHARTER COMMUNICATIONS
ATTN: PERRY MCCLELLAN
2701 DANIELS STREET
MADISON, WI. 53718
Perry.McClellan@chartercom.com

CITY OF LA CROSSE
ATTN: DALE HEXOM
5TH FLOOR
400 LA CROSSE STREET
LA CROSSE, WI. 54601
hexomd@cityoflacrosse.org

NORTHERN NATURAL GAS COMPANY
ATTN: JIM CARLSON
8101 BIRCHWOOD CT. STE F
JOHNSTON, IA. 50131
Jim.Carlson@nngco.com

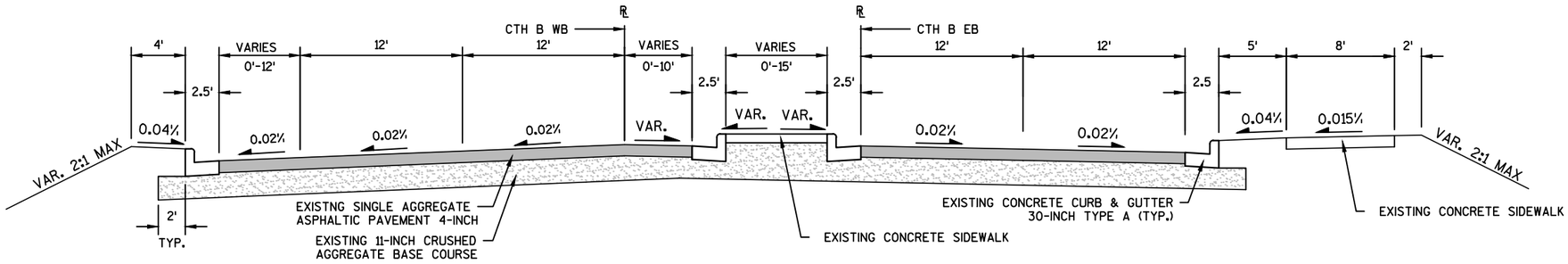
XCEL ENERGY
ATTN: ALEX LUECK
3215 COMMERCE ST.
LA CROSSE, WI. 54603
PHONE (608) 789-3625
CELL (608) 799-6286
alex.j.lueck@xcelenergy.com

*DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



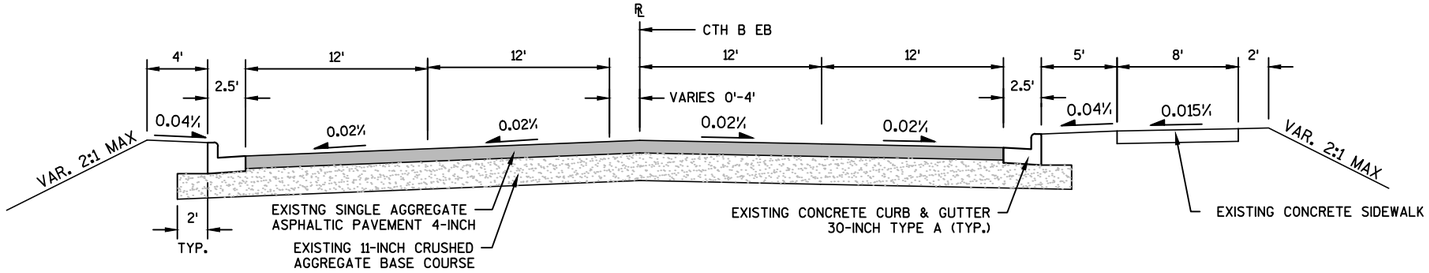
PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : J:\JOBS2014\20142006\CAD\TRANSPORTATION\DWG\SHEETSPLAN\020201_PO.DWG PLOT DATE : 12/17/2014 1:19 PM PLOT BY : ENGLES, BRIAN PLOT NAME : PLOT SCALE : 1 IN:500 FT



EXISTING TYPICAL SECTION - CTH B

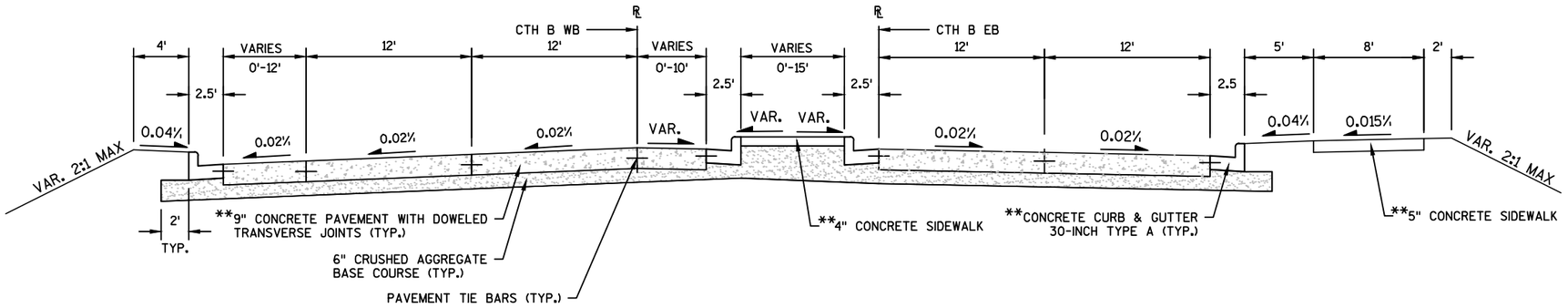
STA 1+74 EB TO STA 2+14 EB
STA 2+95 EB TO STA 3+35 EB



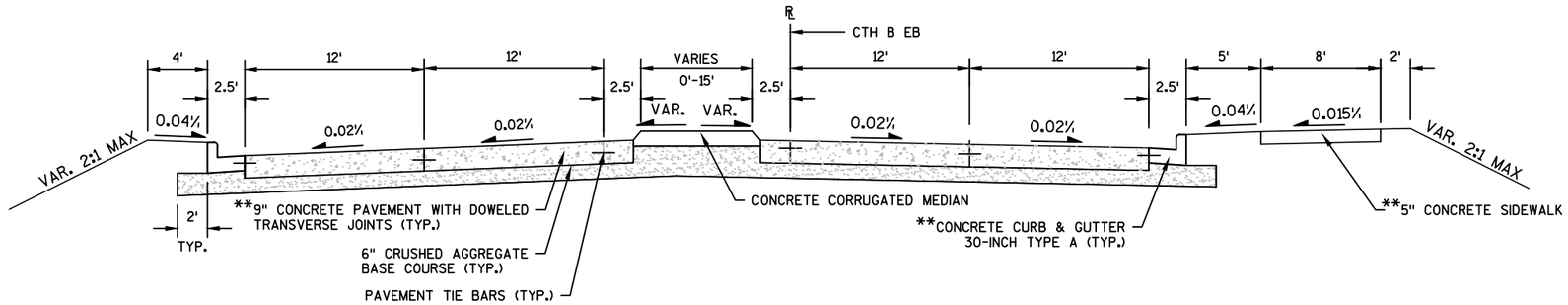
EXISTING TYPICAL SECTION - CTH B

STA 10+55 EB TO STA 10+98 EB
STA 12+64 EB TO STA 13+04 EB

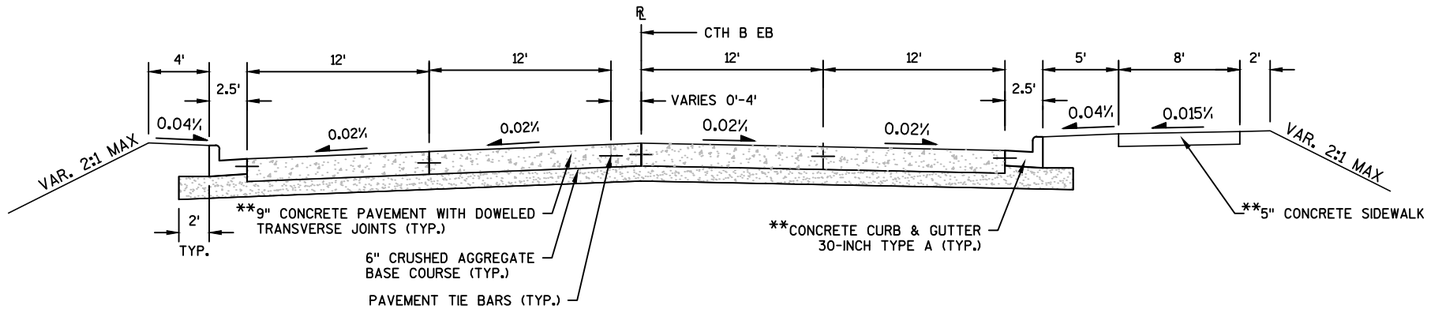
PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	TYPICAL SECTIONS	SHEET 4	E



*EXISTING/PROPOSED TYPICAL SECTION - CTH B
STA 0+11 EB TO STA 5+08 EB



EXISTING/PROPOSED TYPICAL SECTION - CTH B
STA 5+08 EB TO STA 9+02 EB

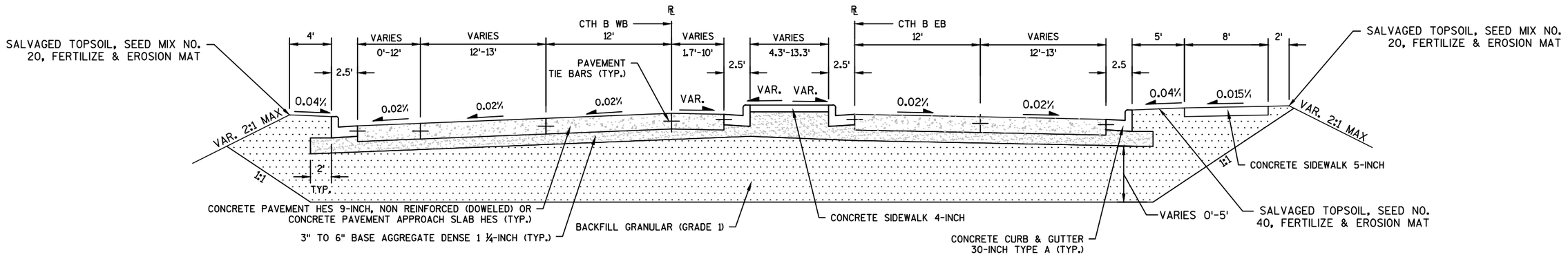


*EXISTING/PROPOSED TYPICAL SECTION - CTH B
STA 9+02 EB TO STA 19+08

*REFER TO PROPOSED TYPICAL SECTION - BRIDGE APPROACHES FOR RECONSTRUCTION LOCATIONS AND DETAILS

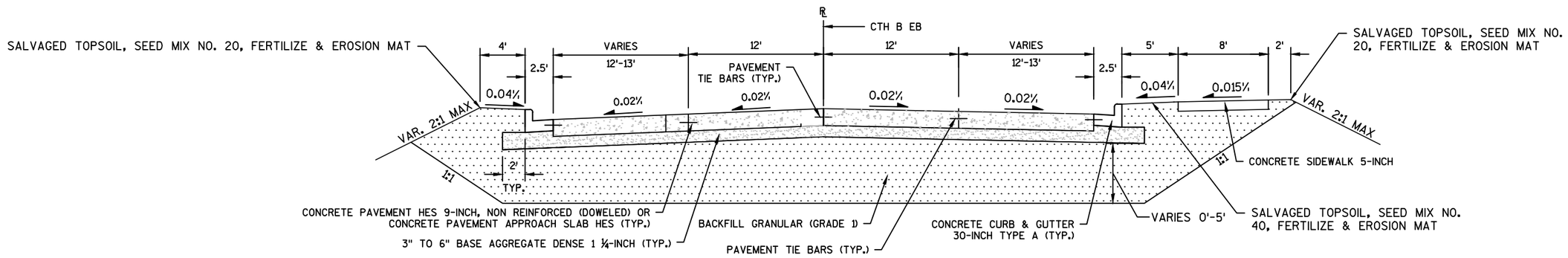
**REFER TO PLAN DETAILS FOR LOCATIONS OF CONCRETE PAVEMENT, CONCRETE SIDEWALK AND CONCRETE CURB & GUTTER REPLACEMENTS

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	TYPICAL SECTIONS	SHEET 5	E



PROPOSED TYPICAL SECTION - BRIDGE APPROACHES

STA 1+09.45 EB TO STA 2+13.56 EB
STA 1+11.05 WB TO STA 2+16.05 WB
STA 2+95.50 EB TO STA 4+13.45 EB
STA 2+98.00 WB TO STA 4+28.63 WB



PROPOSED TYPICAL SECTION - BRIDGE APPROACHES

STA 10+38.09 EB TO STA 10+98.19 EB
STA 12+64.51 EB TO STA 13+71.98 EB

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	TYPICAL SECTIONS	SHEET 6	E

10+00 11+00

CONCRETE ASPHALT

B-32-159

10+52.92, 24.50' RT

CRASH CUSION RESERVE AREA 6'x25'

CURB AND GUTTER ENDS

10+46.92, 24.50' RT

TRANSITION FROM FULL HEAD CURB

10+64.43, 27.05' RT

10+77.92, 25.00' RT

10+97.93, 24.92' RT

** 32-INCH SINGLE FACED NJ SHAPED CONCRETE BARRIER TO 32-INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

*** CONCRETE BARRIER TYPE S32B

REMOVE STUB WING WALL SEE "STUB WING WALL REMOVAL" CONSTRUCTION DETAIL

10+45.00, 31.00' RT

10+38.08, 31.08' RT

10+97.94, 28.17' RT

10+82.94, 28.98' RT

10+77.94, 29.00' RT

B.M. #30

EXISTING

PROPOSED CRASH CUSHION (24" WIDE) BACKSIDE AND FRONTSIDE TRANSITIONS REQUIRED

10+38.08, 39.21' RT

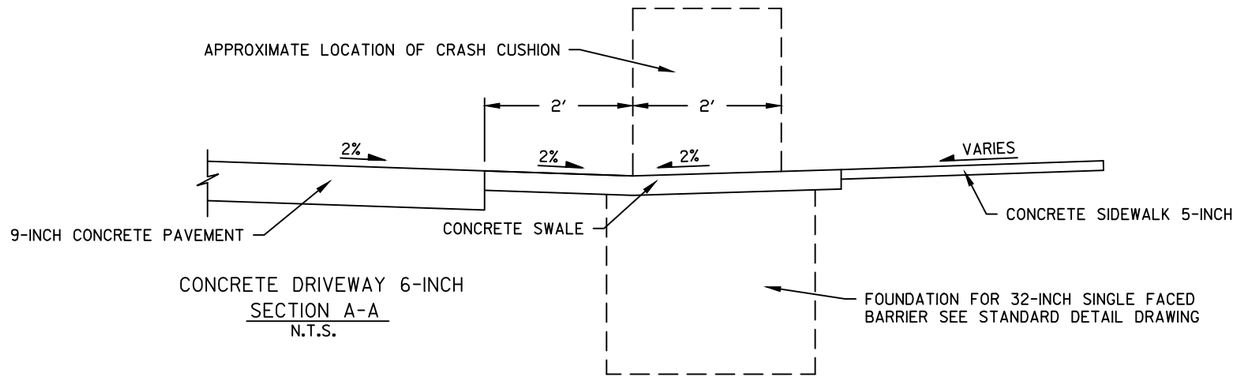
10+45.00, 39.00' RT

10+86.36, 36.24' RT

10+97.74, 36.44' RT

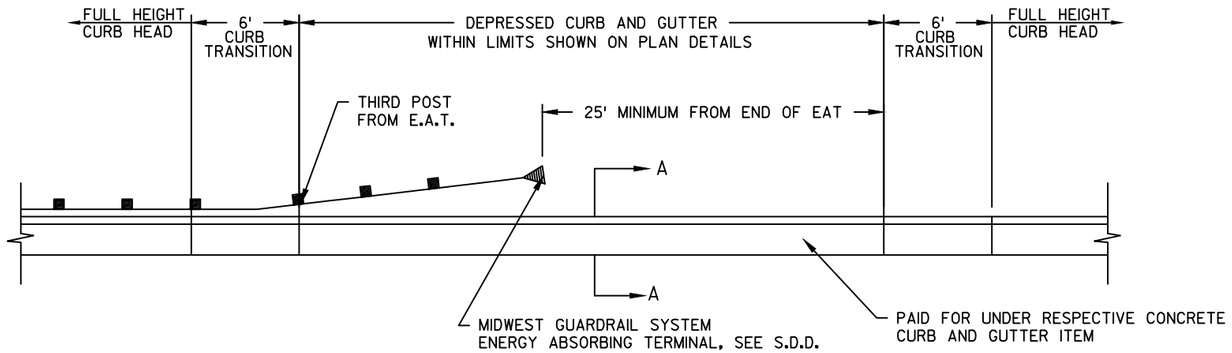
END OF CHAIN LINK FENCE

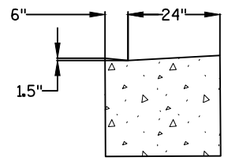
STORM INLET
FLANGE EL. 651.50
12" N. I.E. 647.3
12" S. I.E. 646.9



CONCRETE DRIVEWAY 6-INCH
SECTION A-A
N.T.S.

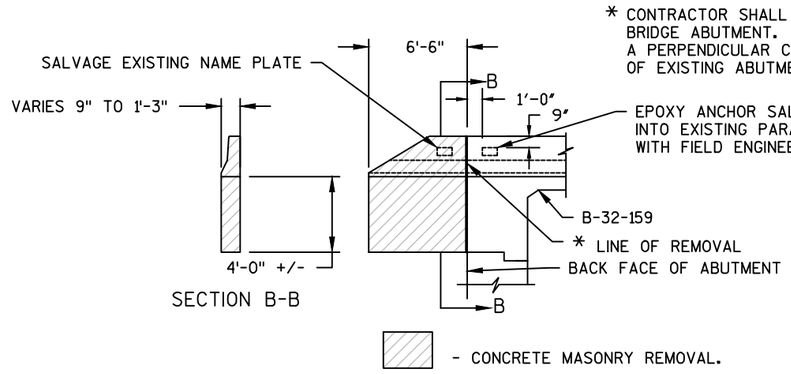
PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	CONSTRUCTION DETAILS	SHEET 7	E





SECTION A-A
DEPRESSED CURB

DEPRESSED CURB HEAD AT BEAM GUARD TERMINAL



NOTE: PAINT/SEAL THE ENDS OF ALL EXISTING EXPOSED REBAR AFTER STUB WING WALL HAS BEEN REMOVED. A "RUBBERIZED MEMBRANE WATERPROOFING" OR AN APPROVED EQUIVILANT IS TO THEN BE ATTACHED TO THE BACK FACE OF THE ABUTMENT BODY WHERE THE STUB WING WALL REMOVAL HAS EXPOSED THE EXISTING REBAR.

STUB WING WALL/PARAPET REMOVAL DETAIL - B-52-159

NO.	NORTHING	EASTING	STA.	OFFSET
CP-1	144771.17	453263.78	0+67.54 WB	-46.10' LT

CP-1

N

CTH B (GILLETTE ST.)

STR. B-32-158

STR. B-32-157

RIVER VALLEY DRIVE

BEGIN PROJECT
STA. 0+11.02 EB

PI STA = 1+07.05 WB
Y = 144729.059
X = 453305.286
DELTA = 8°17'28"
D = 6°21'33"
T = 65.30'
L = 130.38'
R = 901.00'
PC STA = 0+41.75 WB
PT STA = 1+72.13 WB

PI STA = 1+05.60 EB
Y = 144709.012
X = 453305.766
DELTA = 8°17'28"
D = 6°30'13"
T = 63.85'
L = 127.49'
R = 881.00'
PC STA = 0+41.75 EB
PT STA = 1+69.23 EB

N = 144718.769
E = 453198.731

N = 144698.861
E = 453200.653

N84° 29' 02"E

S87° 54' 12"E

S87° 13' 31"E

BP: 0+00.00 WB

PC: 0+41.75 WB

Mid: 1+06.94 WB

PT: 1+72.13 WB

PI: 2+16.06 WB

BP: 0+00.00 EB

PC: 0+41.75 EB

Mid: 1+05.49 EB

PT: 1+69.23 EB

PI: 2+13.29 EB

1+00 WB

2+00 WB

2+00 EB

MATCH EX.

1+11.02, 10.50' RT

0+58.42, -0.16' LT

1+00 EB

1+09.45, 0.00'

1+98.56, 0.00'

2+00.54, -37.16' LT

2+08.07, -37.58' LT

1+11.18, -36.00' LT

1+79.76, -36.00' LT

2+01.19, 10.17' RT

1+09.35, 25.00' RT

1+98.91, 25.00' RT

2+07.28, 25.00' RT

0+58.01, 26.36' RT

0+71.87, 26.01' RT

0+78.05, 25.79' RT

0+94.59, 25.00' RT

1+22.98, 25.00' RT

1+16.80, 25.00' RT

1+09.30, 38.17' RT

1+03.88, 28.76' RT

1+71.28, 25.00' RT

1+65.16, 25.00' RT

1+58.81, 27.00' RT

651.300
651.494
651.694
651.731
651.867
651.922
651.736
652.020
651.810
652.216
652.007
652.205
652.414
652.610
652.410
652.213
652.312
652.389
652.412
652.511
651.617
651.773
651.890
651.865
651.713
651.705
651.761
651.897
651.873
651.812
651.912
652.011
652.040

-2.00%
1.55%
2.00%
1.99%
-2.00%
2.00%
-2.00%
2.00%
-2.00%
2.00%
-2.00%
2.00%
1.99%

CONCRETE
ASPHALT
CONCRETE WALK
STONE WALL
48" STORM SEWER
42" FORCE MAIN STORM SEWER

DRIVEWAY CURB REQUIRED

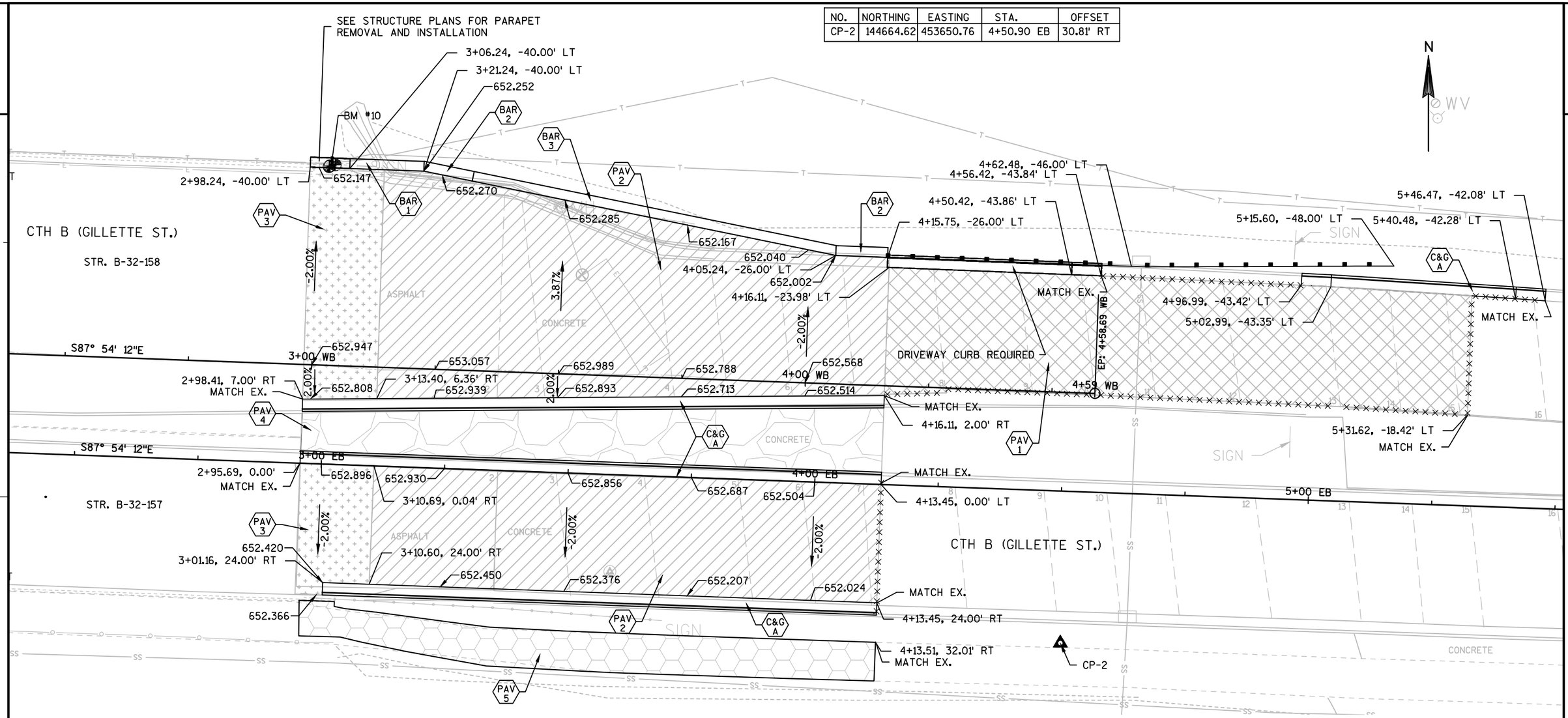
REPLACE EX. CHAIN LINK FENCE WITH NEW 4-FOOT FENCE

LEGEND

PAV 1	CONCRETE PAVEMENT REPLACEMENT SHES
PAV 2	CONCRETE PAVEMENT HES 9-INCH
PAV 3	CONCRETE PAVEMENT APPROACH SLAB
PAV 4	CONCRETE SIDEWALK 4-INCH
PAV 5	CONCRETE SIDEWALK 5-INCH
PAV 6	CONCRETE DRIVEWAY 6-INCH
PAV 7	ASPHALTIC SURFACE
C&G A	CONCRETE CURB & GUTTER 30-INCH TYPE A
C&G D	CONCRETE CURB & GUTTER 30-INCH TYPE D
BAR 1	32-INCH SINGLE FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE BARRIER TRANSITION
BAR 2	32-INCH TO 36-INCH HEIGHT TRANSITION
BAR 3	36-INCH SINGLE SLOPE BARRIER
·XXXX·	SAWING CONCRETE
·YYYY·	SAWING ASPHALT

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	PLAN DETAILS	SHEET 9	E

NO.	NORTHING	EASTING	STA.	OFFSET
CP-2	144664.62	453650.76	4+50.90 EB	30.81' RT



BENCHMARK TABLE

NO.	STA.	OFFSET	DESCRIPTION	ELEVATION
BM #10	3+02.22 WB	-40.38' LT	WISDOT DISC ON TOP OF NE. CORNER OF PARAPET WALL STR#B-32-158	654.707'

LEGEND

PAV 1	CONCRETE PAVEMENT REPLACEMENT SHES	C&G A	CONCRETE CURB & GUTTER 30-INCH TYPE A
PAV 2	CONCRETE PAVEMENT HES 9-INCH	C&G D	CONCRETE CURB & GUTTER 30-INCH TYPE D
PAV 3	CONCRETE PAVEMENT APPROACH SLAB	BAR 1	32-INCH SINGLE FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE BARRIER TRANSITION
PAV 4	CONCRETE SIDEWALK 4-INCH	BAR 2	32-INCH TO 36-INCH HEIGHT TRANSITION
PAV 5	CONCRETE SIDEWALK 5-INCH	BAR 3	36-INCH SINGLE SLOPE BARRIER
PAV 6	CONCRETE DRIVEWAY 6-INCH	·XXXX·	SAWING CONCRETE
PAV 7	ASPHALTIC SURFACE	·YYYY·	SAWING ASPHALT

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	PLAN DETAILS	SHEET 10	E

NO.	NORTHING	EASTING	STA.	OFFSET
CP-3	144638.81	454067.41	8+68.23 EB	41.33' RT

N

EXISTING R/W

PAV 1

6+85.08, -13.31' LT
MATCH EX.

CONCRETE

CONCRETE CORRUGATED MEDIAN

6+00 EB

S87° 54' 12"E

7+00 EB

8+00 EB

MATCH EX.
6+91.68, 0.00'

PAV 1

MATCH EX.
7+22.00, -0.11' LT

MATCH EX.
8+39.82, -8.24' LT

CONCRETE

CTH B (GILLETTE ST.)

6+03.48, 31.63' RT
MATCH EX.

PAV 5

MATCH EX.
6+23.46, 39.71' RT

CONCRETE WALK

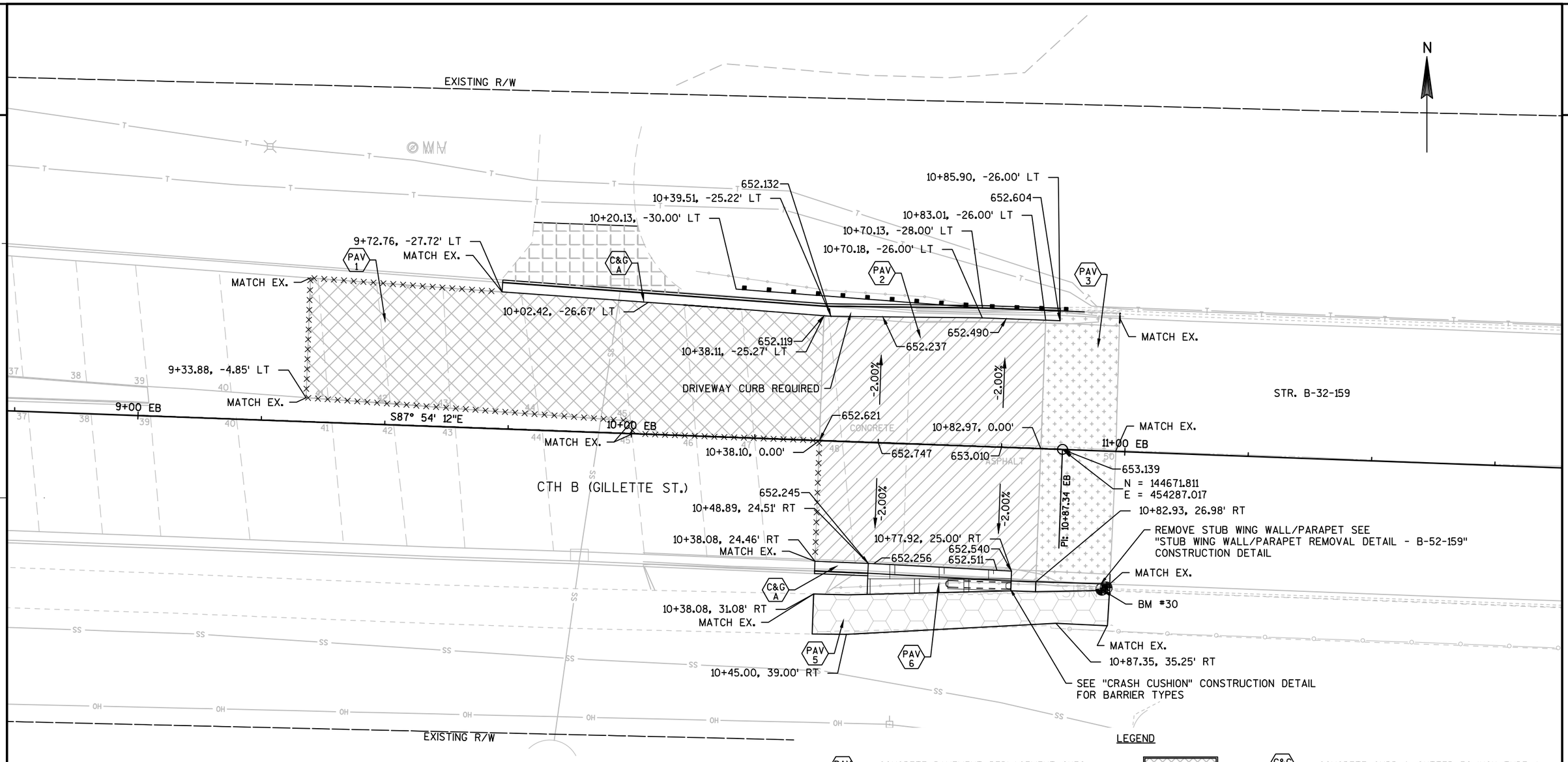
CP-3

EXISTING R/W

LEGEND

PAV 1	CONCRETE PAVEMENT REPLACEMENT SHES	C&G A	CONCRETE CURB & GUTTER 30-INCH TYPE A
PAV 2	CONCRETE PAVEMENT HES 9-INCH	C&G D	CONCRETE CURB & GUTTER 30-INCH TYPE D
PAV 3	CONCRETE PAVEMENT APPROACH SLAB	BAR 1	32-INCH SINGLE FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE BARRIER TRANSITION
PAV 4	CONCRETE SIDEWALK 4-INCH	BAR 2	32-INCH TO 36-INCH HEIGHT TRANSITION
PAV 5	CONCRETE SIDEWALK 5-INCH	BAR 3	36-INCH SINGLE SLOPE BARRIER
PAV 6	CONCRETE DRIVEWAY 6-INCH	·XXXX·	SAWING CONCRETE
PAV 7	ASPHALTIC SURFACE	·YYYY·	SAWING ASPHALT

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	PLAN DETAILS	SHEET 11	E



BENCHMARK TABLE

NO.	STA.	OFFSET	DESCRIPTION	ELEVATION
BM #30	10+96.43 EB	27.91' RT	WISDOT DISC ON TOP OF SW. PARAPET OF STR*B-32-159	655.39'

LEGEND

PAV 1	CONCRETE PAVEMENT REPLACEMENT SHES	C&G A	CONCRETE CURB & GUTTER 30-INCH TYPE A
PAV 2	CONCRETE PAVEMENT HES 9-INCH	C&G D	CONCRETE CURB & GUTTER 30-INCH TYPE D
PAV 3	CONCRETE PAVEMENT APPROACH SLAB	BAR 1	32-INCH SINGLE FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE BARRIER TRANSITION
PAV 4	CONCRETE SIDEWALK 4-INCH	BAR 2	32-INCH TO 36-INCH HEIGHT TRANSITION
PAV 5	CONCRETE SIDEWALK 5-INCH	BAR 3	36-INCH SINGLE SLOPE BARRIER
PAV 6	CONCRETE DRIVEWAY 6-INCH	·XXXX·	SAWING CONCRETE
PAV 7	ASPHALTIC SURFACE	·YYYY·	SAWING ASPHALT

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	PLAN DETAILS	SHEET 12	E

2

EXISTING R/W

N

13+26.61, -27.50' LT
13+17.59, -25.50' LT
13+11.59, -25.50' LT
13+26.58, -25.50' LT
13+57.90, -24.55' LT
13+63.19, -24.39' LT
13+63.90, -24.39' LT
13+71.98, -24.36' LT
13+76.05, -26.00' LT
14+12.92, -26.00' LT
12+76.08, -25.50' LT
12+79.49, -25.50' LT

MATCH EX.

654.267
654.418
654.492
654.530
654.576
654.586
654.749
654.840

MATCH EX.

-32-159

-2.00%

DRIVEWAY CURB REQUIRED

12+00 EB

S87° 52' 59"E

MATCH EX.

654.770

13+00 EB

654.928

655.086

655.245

14+00 EB

MATCH EX.

STR. B-32-159

ASPHALT

CONCRETE

CTH B (GILLETTE ST.)

RAPET SEE
REMOVAL DETAIL - B-52-159"

PAV 3

12+79.53, 25.00' RT
654.270
654.245
12+71.03, 25.00' RT
MATCH EX.

654.510
654.472
654.428
654.567
654.588
654.759
654.761

13+50.27, 24.26' RT
13+71.98, 24.28' RT
13+96.98, 24.31' RT
14+02.98, 24.32' RT
MATCH EX.
MATCH EX.

C&G A

MATCH EX.
12+65.71, 35.25' RT

PAV 5

PAV 2

CONCRETE WALK

DRIVEWAY CURB REQUIRED

13+06.98, 25.00' RT
13+12.98, 25.00' RT
13+18.88, 27.00' RT
13+21.97, 25.00' RT

13+53.39, 24.26' RT
13+59.40, 24.27' RT
13+72.00, 29.00' RT

MATCH EX.
13+71.98, 39.15' RT

OH
SS

EXISTING R/W

LEGEND

PAV 1	CONCRETE PAVEMENT REPLACEMENT SHES	C&G A	CONCRETE CURB & GUTTER 30-INCH TYPE A
PAV 2	CONCRETE PAVEMENT HES 9-INCH	C&G D	CONCRETE CURB & GUTTER 30-INCH TYPE D
PAV 3	CONCRETE PAVEMENT APPROACH SLAB	BAR 1	32-INCH SINGLE FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE BARRIER TRANSITION
PAV 4	CONCRETE SIDEWALK 4-INCH	BAR 2	32-INCH TO 36-INCH HEIGHT TRANSITION
PAV 5	CONCRETE SIDEWALK 5-INCH	BAR 3	36-INCH SINGLE SLOPE BARRIER
PAV 6	CONCRETE DRIVEWAY 6-INCH	·XXXX·	SAWING CONCRETE
PAV 7	ASPHALTIC SURFACE	·YYYY·	SAWING ASPHALT

PROJECT NO:5991-08-09	HWY: CTH B	COUNTY:LA CROSSE	PLAN DETAILS	SHEET 13	E

NO.	NORTHING	EASTING	STA.	OFFSET
CP-4	144607.85	454726.45	15+27.93 EB	48.02' RT

BENCHMARK TABLE

NO.	STA.	OFFSET	DESCRIPTION	ELEVATION
BM #40	15+62.19 EB	96.19' RT	TOP NUT ON HYDRANT SE. QUAD OF CTH 'B' AND CAROL CT.	658.88'

14+66.05, -28.00' LT
C&G A
14+91.06, -24.14' LT
14+97.06, -24.15' LT
MATCH EX.
14+53.56, -24.11' LT
14+47.56, -24.13' LT
MATCH EX.

CONCRETE

15+00 EB
S87° 52' 59"E
16+00 EB
17+00 EB

CTH B (GILLETTE ST.)

MATCH EX.
15+01.66, 24.21' RT
MATCH EX.
14+94.18, 24.18' RT
14+94.51, 28.28' RT
C&G A
15+01.65, 27.45' RT
15+01.97, 27.59' RT
C&G D
14+87.64, 37.79' RT
MATCH EX.
PAV 5
PAV 7
15+14.49, 37.78' RT
CP-4

MATCH EX.
15+75.96, 24.07' RT
C&G A
MATCH EX.
15+93.29, 24.19' RT
C&G D
15+75.93, 27.60' RT
15+87.33, 37.68' RT
MATCH EX.
PAV 5
15+63.14, 37.79' RT

ASPHALT
CONCRETE WALK
SIGN

MATCH EX.
15+23.73, 61.27' RT
MATCH EX.
15+56.36, 61.37' RT

EXISTING R/W
EXISTING R/W
CAROL CT.
BM #40

LEGEND

PAV 1	CONCRETE PAVEMENT REPLACEMENT SHES
PAV 2	CONCRETE PAVEMENT HES 9-INCH
PAV 3	CONCRETE PAVEMENT APPROACH SLAB
PAV 4	CONCRETE SIDEWALK 4-INCH
PAV 5	CONCRETE SIDEWALK 5-INCH
PAV 6	CONCRETE DRIVEWAY 6-INCH
PAV 7	ASPHALTIC SURFACE
C&G A	CONCRETE CURB & GUTTER 30-INCH TYPE A
C&G D	CONCRETE CURB & GUTTER 30-INCH TYPE D
BAR 1	32-INCH SINGLE FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE BARRIER TRANSITION
BAR 2	32-INCH TO 36-INCH HEIGHT TRANSITION
BAR 3	36-INCH SINGLE SLOPE BARRIER
·XXXX·	SAWING CONCRETE
·YYYY·	SAWING ASPHALT
	DETECTABLE WARNING FIELDS YELLOW (2'x2')

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	PLAN DETAILS	SHEET 14	E

NO.	NORTHING	EASTING	STA.	OFFSET
CP-5	144596.28	455136.37	UNK	UNK

WATER TOWER

SIGN

17+00 EB

S87° 52' 59"E

18+00 EB

19+00 EB

END PROJECT
STA. 19+07.98

19+10 EB

EP: 19+10.50 EB

CONCRETE

ASPHALT

CTH B (GILLETTE ST.)

17+78.14, 35.25' RT
MATCH EX.

MATCH EX.
17+82.27, 43.46' RT

PAV 5

CP-5

EXISTING R/W

LEGEND

PAV 1	CONCRETE PAVEMENT REPLACEMENT SHES	C&G A	CONCRETE CURB & GUTTER 30-INCH TYPE A
PAV 2	CONCRETE PAVEMENT HES 9-INCH	C&G D	CONCRETE CURB & GUTTER 30-INCH TYPE D
PAV 3	CONCRETE PAVEMENT APPROACH SLAB	BAR 1	32-INCH SINGLE FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE BARRIER TRANSITION
PAV 4	CONCRETE SIDEWALK 4-INCH	BAR 2	32-INCH TO 36-INCH HEIGHT TRANSITION
PAV 5	CONCRETE SIDEWALK 5-INCH	BAR 3	36-INCH SINGLE SLOPE BARRIER
PAV 6	CONCRETE DRIVEWAY 6-INCH	·XXXX·	SAWING CONCRETE
PAV 7	ASPHALTIC SURFACE	·YYYY·	SAWING ASPHALT

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	PLAN DETAILS	SHEET 15	E

2

N

STR. B-32-159

PI 10+87.34

CTH B (GILLETTE ST.)

TE ST.)

10+00 EB

11+00 EB

12+00 EB

13+00 EB

14+00 EB

15+00 EB

CONCRETE

ASPHALT

CONCRETE WALK

BM #30

(1.1) STA. 12+94.25, 25' LT
2'X2.5' INLET

REMOVE EX. INLET

REMOVE EX. 12" RCP

REMOVE EX. INLET

(1.2) STA. 12+94.25, 25' RT
2'X2.5' INLET

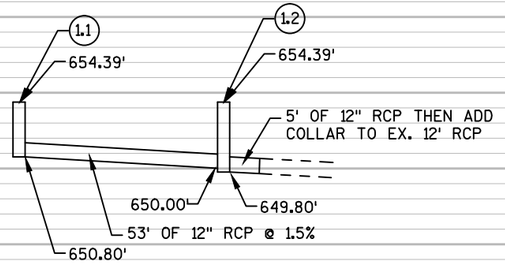
PLACE COLLAR AND
CONNECT TO EX. 12' RCP

CP-4

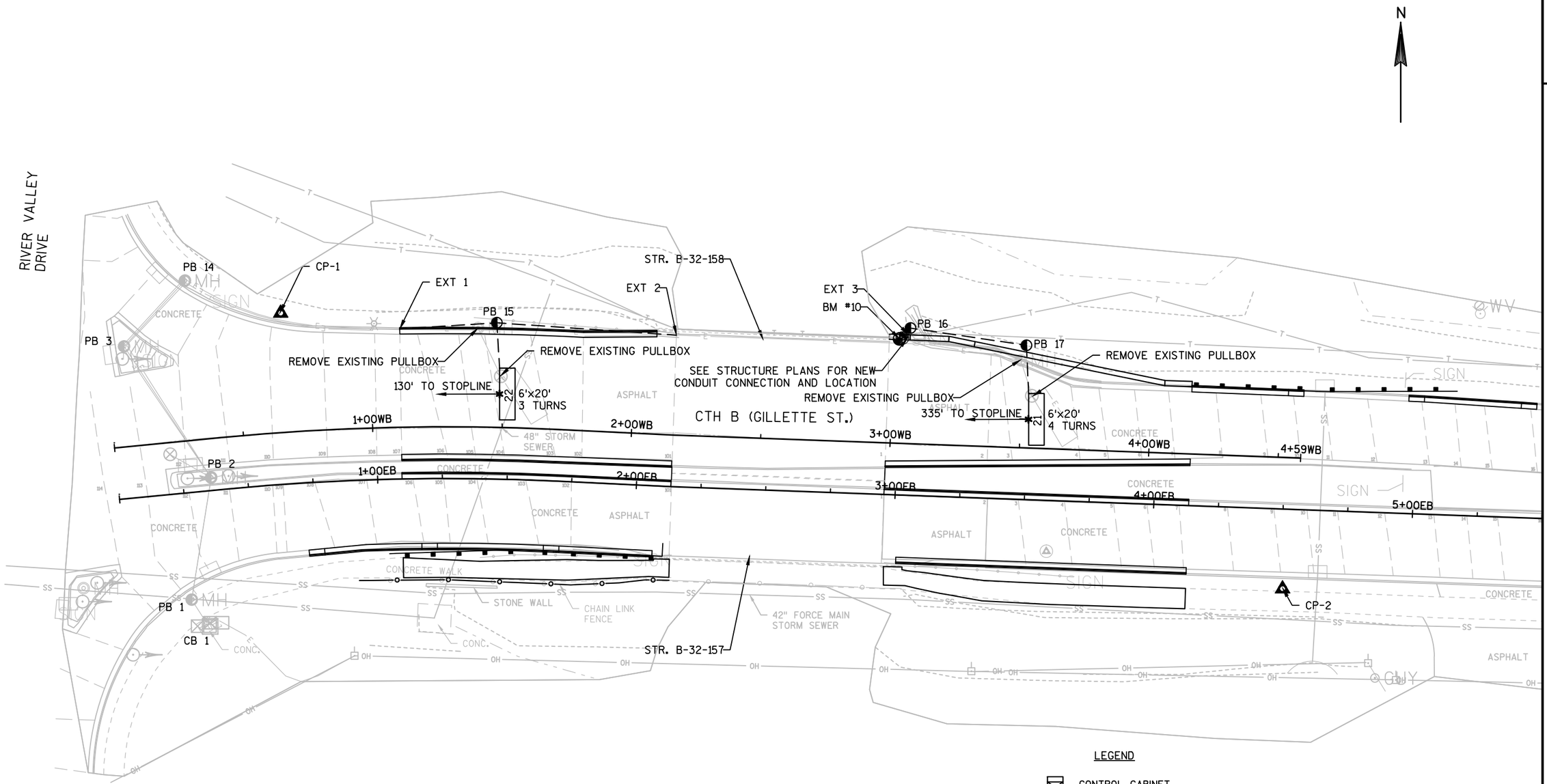
CAROL CT.

BM #40

660
655
650
645
640
635



PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	STORM SEWER	SHEET 16	E



CONSTRUCTION NOTES

1. CONTRACTOR TO ABANDON EXISTING LOOPS AND REMOVE LOOP DETECTOR WIRE AND LEAD-IN CABLE ON EAST LEG OF CTH B.

2. NEW LOOP DETECTORS TO BE INSTALLED FOLLOWING S.D.D. 9F15: LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2).

3. CONTACT THE CITY OF LA CROSSE 3 DAYS PRIOR TO INSTALLING LOOP DETECTOR CABLE. CITY CONTACT IS DALE HEXOM (608) 789-7599.

LEGEND

- CONTROL CABINET
- NON-METALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- PULL BOX, 24"X36"
- LOOP DETECTOR, 1" NON-METALLIC CONDUIT

NOTE: GRAYSCALE REPRESENTS EXISTING

PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	TRAFFIC SIGNALS - LOOP DETECTOR REPLACEMENT	SHEET 17	E

2

2

N

ROAD WORK AHEAD
W20-1-A

RIVER VALLEY DRIVE

MB

CTH B (GILLETTE ST.)

ROAD CLOSED
R11-2
48"X30"

500'

ROAD CLOSED 500 FT
W20-3-D

ROAD CLOSED AHEAD
W20-3-A

LANE CLOSED
R11-2-L
48"X30"

2 WB
2 EB
4 WB
4 EB
4 WB
6 EB
8 EB
10 EB

CTH B (GILLETTE ST.)

LANE CLOSED
R11-2-L
48"X30"

ROAD CLOSED
R11-2
48"X30"

ROAD WORK AHEAD
W20-1-A

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- (A) TYPE A WARNING LIGHT (FLASHING)
- (C) TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD

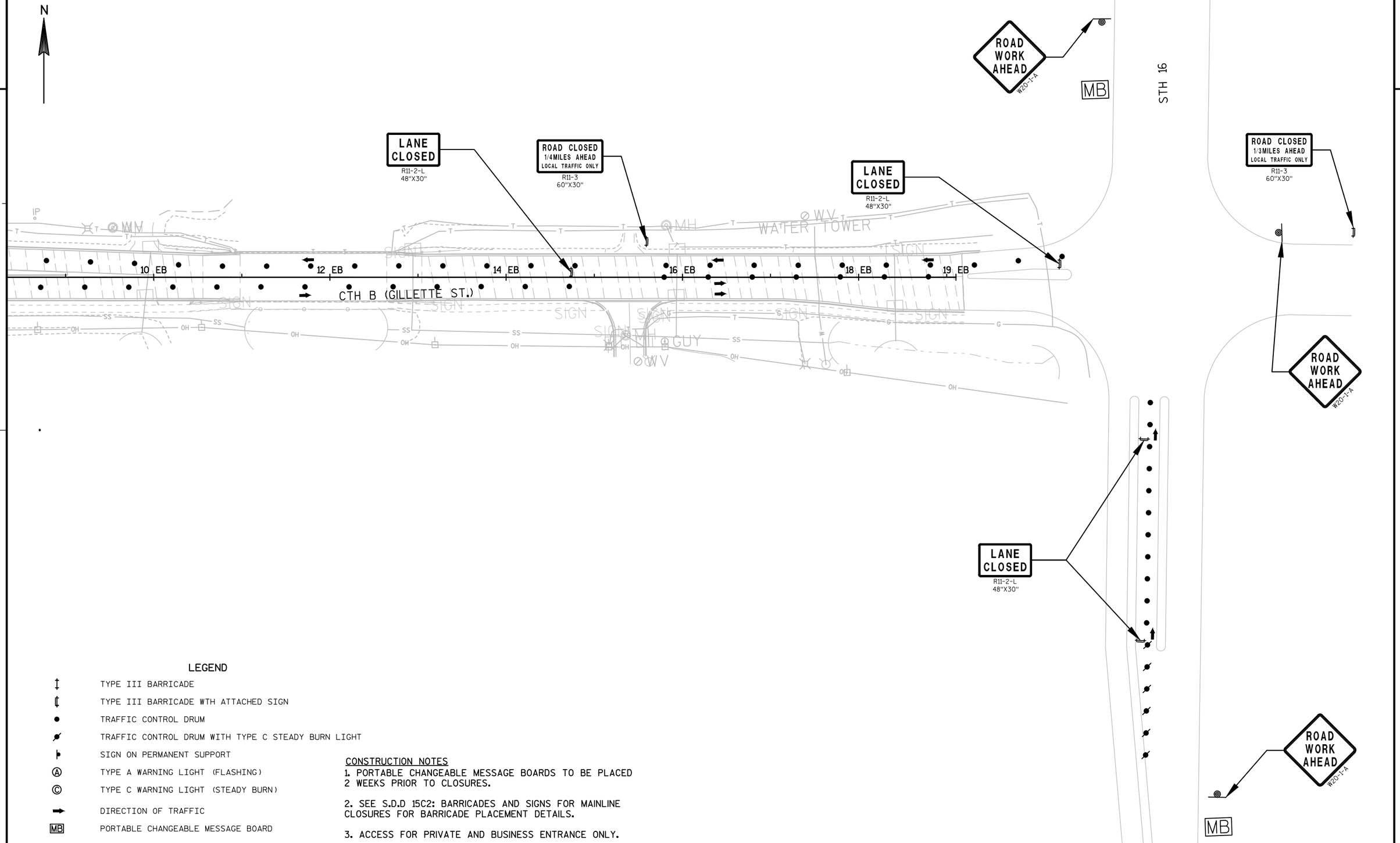
CONSTRUCTION NOTES

1. PORTABLE CHANGEABLE MESSAGE BOARDS TO BE PLACED 2 WEEKS PRIOR TO CLOSURES.

2. SEE S.D.D 15C2: BARRICADES AND SIGNS FOR MAINLINE CLOSURES FOR BARRICADE PLACEMENT DETAILS.

3. ACCESS FOR PRIVATE AND BUSINESS ENTRANCE ONLY.

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	TRAFFIC CONTROL: STAGE 1	SHEET 18	E



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- (A) TYPE A WARNING LIGHT (FLASHING)
- (C) TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD

CONSTRUCTION NOTES

1. PORTABLE CHANGEABLE MESSAGE BOARDS TO BE PLACED 2 WEEKS PRIOR TO CLOSURES.
2. SEE S.D.D 15C2: BARRICADES AND SIGNS FOR MAINLINE CLOSURES FOR BARRICADE PLACEMENT DETAILS.
3. ACCESS FOR PRIVATE AND BUSINESS ENTRANCE ONLY.

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	TRAFFIC CONTROL: STAGE 1	SHEET 19	E

2

2

N

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- (A) TYPE A WARNING LIGHT (FLASHING)
- (C) TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD

ROAD WORK AHEAD
W20-1-A

MB

RIVER VALLEY DRIVE

ROAD CLOSED TO THRU TRAFFIC
R11-4
60"X30"

ROAD CLOSED .3 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
60"X30"

MB

CTH B (GILLETTE ST.)

ROAD WORK AHEAD
W20-1-A

LANE CLOSED
R11-2-L
48"X30"

2 WB
2 EB
4 WB
4 EB
4 WB
6 EB
8 EB
10 EB

CTH B (GILLETTE ST.)

ROAD CLOSED
R11-2
48"X30"

ROAD WORK AHEAD
W20-1-A

MB

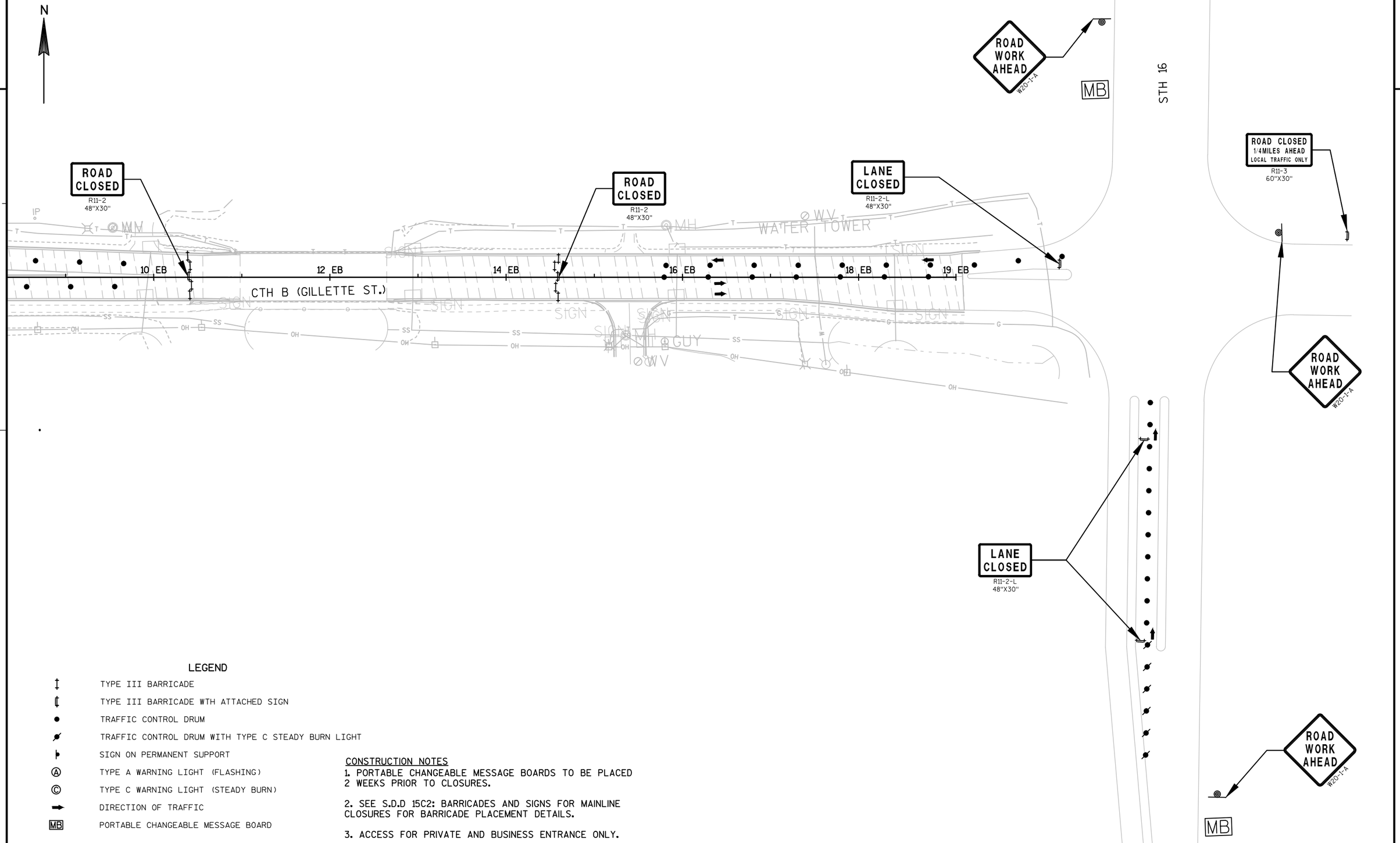
CONSTRUCTION NOTES

1. PORTABLE CHANGEABLE MESSAGE BOARDS TO BE PLACED 2 WEEKS PRIOR TO CLOSURES.

2. SEE S.D.D 15C2: BARRICADES AND SIGNS FOR MAINLINE CLOSURES FOR BARRICADE PLACEMENT DETAILS.

3. ACCESS FOR PRIVATE AND BUSINESS ENTRANCE ONLY.

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	TRAFFIC CONTROL: STAGE 2	SHEET 20	E



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- (A) TYPE A WARNING LIGHT (FLASHING)
- (C) TYPE C WARNING LIGHT (STEADY BURN)
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD

CONSTRUCTION NOTES

1. PORTABLE CHANGEABLE MESSAGE BOARDS TO BE PLACED 2 WEEKS PRIOR TO CLOSURES.
2. SEE S.D.D 15C2: BARRICADES AND SIGNS FOR MAINLINE CLOSURES FOR BARRICADE PLACEMENT DETAILS.
3. ACCESS FOR PRIVATE AND BUSINESS ENTRANCE ONLY.

PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	TRAFFIC CONTROL: STAGE 2	SHEET 21	E

CTH B WESTBOUND DETOUR SIGNAGE

①	②③④⑦⑩⑪⑫⑯	⑰	⑮⑱	⑤⑧⑬	⑥⑨⑭	⑲
WEST M3-4 24"X12"	DETOUR M4-8 24"X12"	DETOUR M4-8 24"X12"	DETOUR M4-8 24"X12"	DETOUR M4-8 24"X12"	DETOUR M4-8 24"X12"	END DETOUR M4-8A 24"X18"
COUNTY B M1-5A 24"X24"	WEST M3-4 24"X12"	WEST M3-4 24"X12"	WEST M3-4 24"X12"	WEST M3-4 24"X12"	WEST M3-4 24"X12"	WEST M3-4 24"X12"
DETOUR AHEAD W20-2-A	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"
	M6-1 21"X21"	M5-1R 21"X21"	M6-1 21"X21"	M5-1L 21"X21"	M6-1 21"X21"	

CTH B EASTBOUND DETOUR SIGNAGE

⑤⑥④⑭	⑤①⑥⑩	⑫⑬⑭⑯	⑦⑧⑨⑮	⑩⑪⑫⑰	⑱⑲	⑳
EAST M3-2 24"X12"	DETOUR M4-8 24"X12"	DETOUR M4-8 24"X12"	DETOUR M4-8 24"X12"	DETOUR M4-8 24"X12"	DETOUR M4-8 24"X12"	END DETOUR M4-8A 24"X18"
COUNTY B M1-5A 24"X24"	EAST M3-2 24"X12"	EAST M3-2 24"X12"	EAST M3-2 24"X12"	EAST M3-2 24"X12"	EAST M3-2 24"X12"	EAST M3-2 24"X12"
DETOUR AHEAD W20-2-A	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"	COUNTY B M1-5A 24"X24"
	M5-1L 21"X21"	M6-1 21"X21"	M6-1 21"X21"	M6-1 21"X21"	M5-1R 21"X21"	

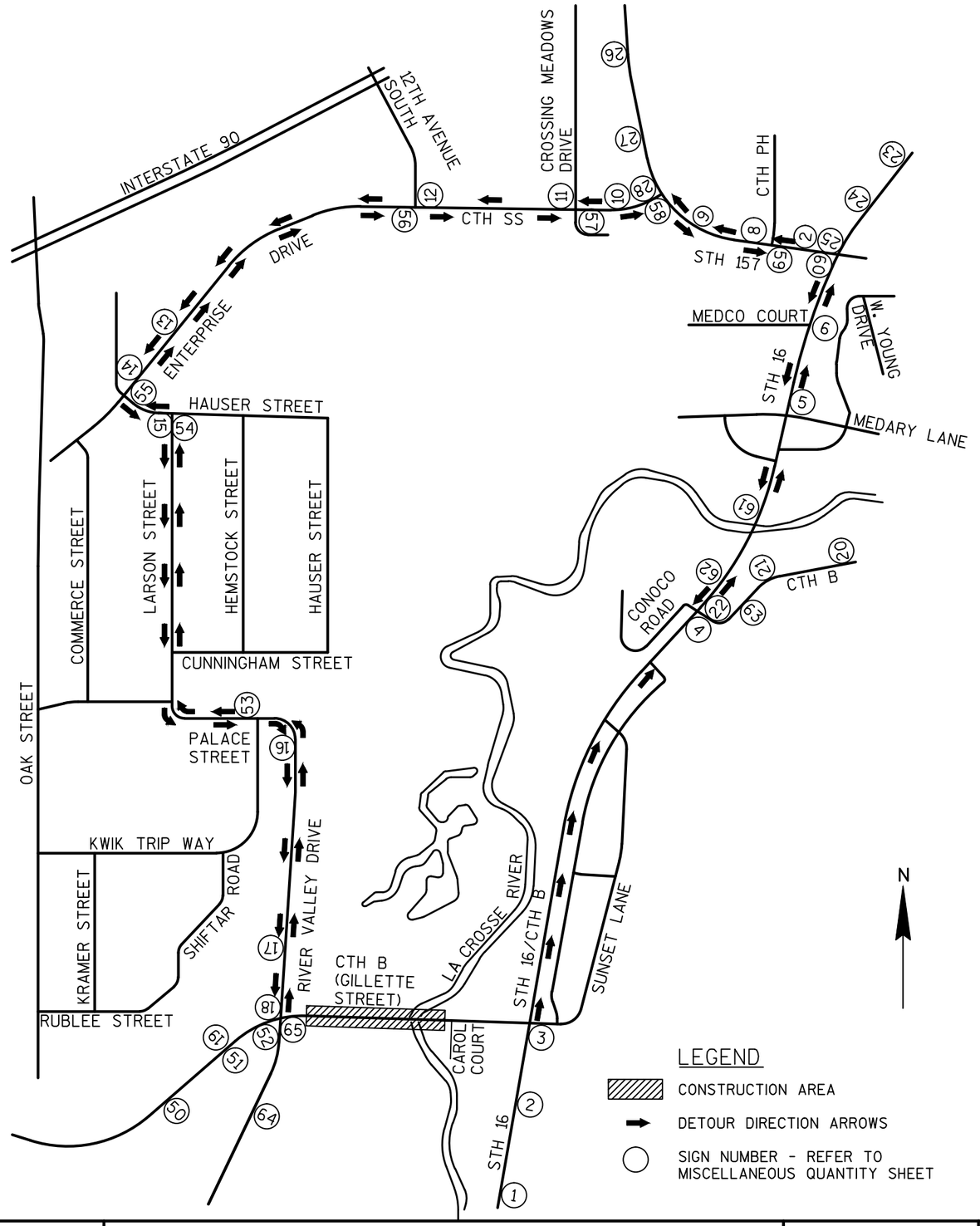
GENERAL NOTES

REFER TO SDD "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR SIGN SPACING AND LOCATIONS.

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

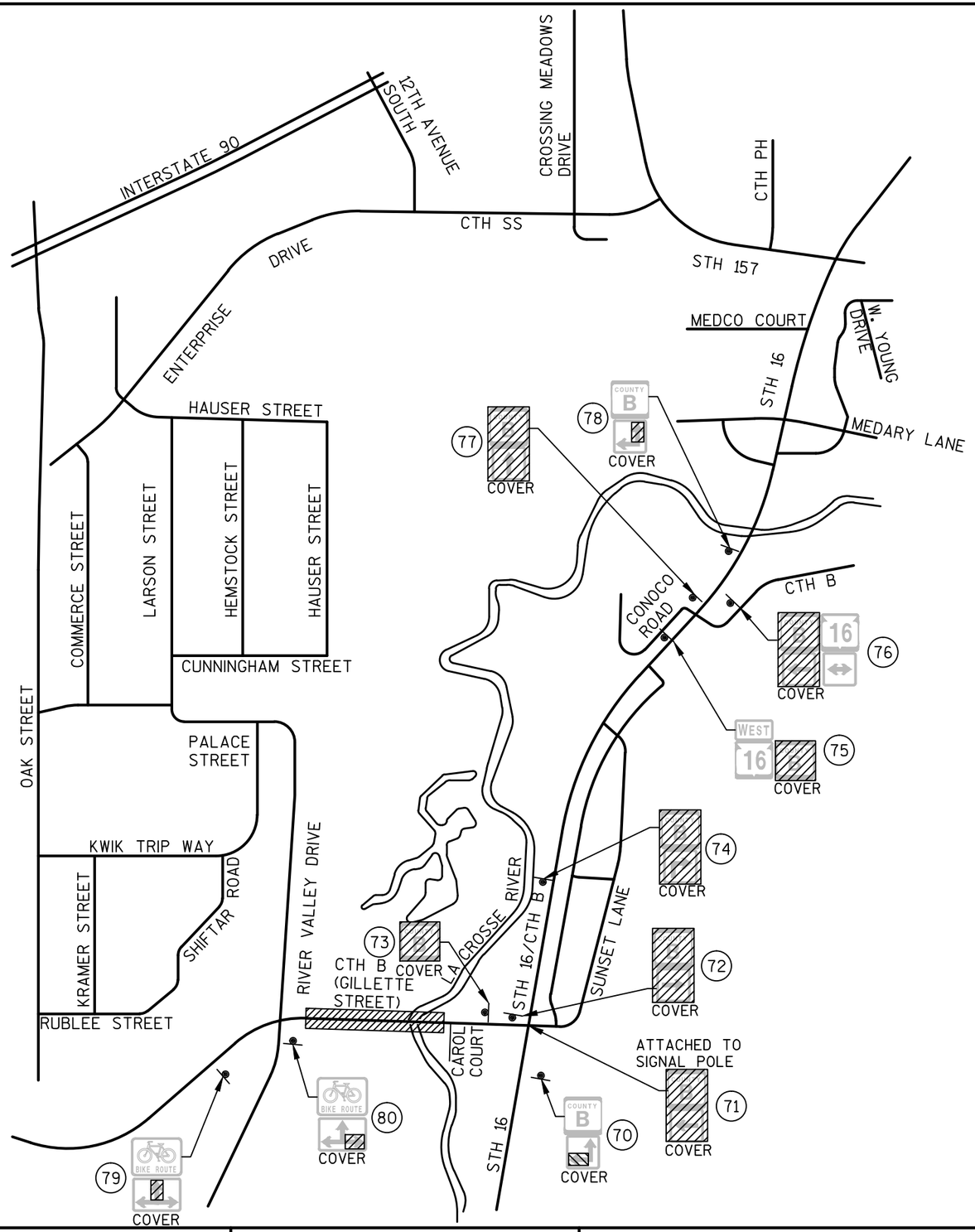
ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

REFER TO "DETOUR PLAN - COVERING SIGNS" FOR ROUTE AND DIRECTION MARKER SIGNS TO BE COVERED.



PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	DETOUR PLAN	SHEET 22	E

2



PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	DETOUR PLAN - COVERING SIGNS	SHEET 23	E

DATE 21JAN15 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	5991-08-09 QUANTITY
0010	203.0200	Removing Old Structure (station) 01. 3+00	LS	1.000	1.000
0020	204.0100	Removing Pavement	SY	1,676.000	1,676.000
0030	204.0110	Removing Asphaltic Surface	SY	166.000	166.000
0040	204.0150	Removing Curb & Gutter	LF	718.000	718.000
0050	204.0155	Removing Concrete Sidewalk	SY	563.000	563.000
0060	204.0170	Removing Fence	LF	120.000	120.000
0070	204.0185	Removing Masonry	CY	2.000	2.000
0080	204.0190	Removing Surface Drains	EACH	1.000	1.000
0090	204.0220	Removing Inlets	EACH	2.000	2.000
0100	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	55.000	55.000
0110	205.0100	Excavation Common	CY	7,199.000	7,199.000
0120	206.1000	Excavation for Structures Bridges (structure) 01. B-32-0158	LS	1.000	1.000
0130	209.0100	Backfill Granular	CY	5,745.000	5,745.000
0140	210.0100	Backfill Structure	CY	2.500	2.500
0150	213.0100	Finishing Roadway (project) 01. 5991-08-09	EACH	1.000	1.000
0160	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,192.000	1,192.000
0170	415.1090	Concrete Pavement HES 9-Inch	SY	2,180.000	2,180.000
0180	415.1410	Concrete Pavement Approach Slab HES	SY	422.000	422.000
0190	416.0160	Concrete Driveway 6-Inch	SY	17.000	17.000
0200	416.0610	Drilled Tie Bars	EACH	413.000	413.000
0210	416.0620	Drilled Dowel Bars	EACH	122.000	122.000
0220	416.1715	Concrete Pavement Repair SHES	SY	130.000	130.000
0230	416.1725	Concrete Pavement Replacement SHES	SY	1,250.400	1,250.400
0240	465.0105	Asphaltic Surface	TON	37.000	37.000
0250	502.0100	Concrete Masonry Bridges	CY	2.000	2.000
0260	502.3200	Protective Surface Treatment	SY	3.500	3.500
0270	502.5002	Masonry Anchors Type L No. 4 Bars	EACH	10.000	10.000
0280	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	190.000	190.000
0290	516.0500	Rubberized Membrane Waterproofing	SY	2.000	2.000
0300	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000
0310	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	1,303.000	1,303.000
0320	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	32.000	32.000
0330	602.0405	Concrete Sidewalk 4-Inch	SF	1,715.000	1,715.000
0340	602.0410	Concrete Sidewalk 5-Inch	SF	3,373.000	3,373.000
0350	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	16.000	16.000
0360	603.1136	Concrete Barrier Type S36	LF	85.000	85.000
0370	603.1332	Concrete Barrier Type S32B	LF	5.000	5.000
0380	603.3111	Concrete Barrier Transition Type NJ32SF to S32	EACH	1.000	1.000
0390	603.3113	Concrete Barrier Transition Type NJ32SF to S36	EACH	1.000	1.000
0400	603.3513	Concrete Barrier Transition Type S32 to S36	EACH	1.000	1.000
0410	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	58.000	58.000
0420	611.0610	Inlet Covers Type BW	EACH	2.000	2.000
0430	611.3225	Inlets 2x2.5-FT	EACH	2.000	2.000
0440	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000
0450	614.0200	Steel Thrie Beam Structure Approach	LF	20.600	20.600

3

DATE 21JAN15 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	5991-08-09 QUANTITY
0460	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000	1.000
0470	614.0805	Crash Cushions Permanent Low Maintenance	EACH	1.000	1.000
0480	614.0920	Salvaged Rail	LF	835.000	835.000
0490	614.0925	Salvaged Guardrail End Treatments	EACH	8.000	8.000
0500	614.2300	MGS Guardrail 3	LF	139.500	139.500
0510	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0520	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0530	616.0204	Fence Chain Link 4-FT	LF	120.000	120.000
0540	619.1000	Mobilization	EACH	1.000	1.000
0550	624.0100	Water	MGAL	12.000	12.000
0560	625.0500	Salvaged Topsoil	SY	1,115.000	1,115.000
0570	628.1504	Silt Fence	LF	1,650.000	1,650.000
0580	628.1520	Silt Fence Maintenance	LF	3,300.000	3,300.000
0590	628.1905	Mobilizations Erosion Control	EACH	8.000	8.000
0600	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0610	628.2008	Erosion Mat Urban Class I Type B	SY	1,115.000	1,115.000
0620	628.7015	Inlet Protection Type C	EACH	14.000	14.000
0630	629.0210	Fertilizer Type B	CWT	0.700	0.700
0640	630.0120	Seeding Mixture No. 20	LB	26.000	26.000
0650	630.0140	Seeding Mixture No. 40	LB	3.300	3.300
0660	630.0200	Seeding Temporary	LB	29.000	29.000
0670	634.0414	Posts Wood 4x4-Inch X 14-FT	EACH	13.000	13.000
0680	637.2210	Signs Type II Reflective H	SF	96.610	96.610
0690	638.2602	Removing Signs Type II	EACH	19.000	19.000
0700	638.3000	Removing Small Sign Supports	EACH	17.000	17.000
0710	642.5001	Field Office Type B	EACH	1.000	1.000
0720	643.0100	Traffic Control (project) 01. 5991-08-09	EACH	1.000	1.000
0730	643.0300	Traffic Control Drums	DAY	4,650.000	4,650.000
0740	643.0420	Traffic Control Barricades Type III	DAY	1,457.000	1,457.000
0750	643.0705	Traffic Control Warning Lights Type A	DAY	1,240.000	1,240.000
0760	643.0715	Traffic Control Warning Lights Type C	DAY	434.000	434.000
0770	643.0900	Traffic Control Signs	DAY	1,116.000	1,116.000
0780	643.0920	Traffic Control Covering Signs Type II	EACH	15.000	15.000
0790	643.1050	Traffic Control Signs PCMS	DAY	380.000	380.000
0800	643.2000	Traffic Control Detour (project) 01. 5991-08-09	EACH	1.000	1.000
0810	643.3000	Traffic Control Detour Signs	DAY	8,370.000	8,370.000
0820	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,751.000	1,751.000
0830	647.0156	Pavement Marking Arrows Epoxy Type 1	EACH	2.000	2.000
0840	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	2.000	2.000
0850	650.4000	Construction Staking Storm Sewer	EACH	2.000	2.000
0860	650.4500	Construction Staking Subgrade	LF	611.000	611.000
0870	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	34.000	34.000
0880	650.7000	Construction Staking Concrete Pavement	LF	611.000	611.000
0890	650.8000	Construction Staking Resurfacing Reference	LF	1,403.000	1,403.000
0900	650.9910	Construction Staking Supplemental Control (project) 01. 5991-08-09	LS	1.000	1.000
0910	650.9920	Construction Staking Slope Stakes	LF	611.000	611.000
0920	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	166.000	166.000
0930	652.0800	Conduit Loop Detector	LF	178.000	178.000
0940	653.0135	Pull Boxes Steel 24x36-Inch	EACH	3.000	3.000

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DATE 21JAN15 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	5991-08-09 QUANTITY
0950	653.0905	Removing Pull Boxes	EACH	4.000	4.000
0960	655.0700	Loop Detector Lead In Cable	LF	795.000	795.000
0970	655.0800	Loop Detector Wire	LF	644.000	644.000
0980	690.0150	Sawing Asphalt	LF	32.000	32.000
0990	690.0250	Sawing Concrete	LF	1,206.000	1,206.000
1000	715.0415	Incentive Strength Concrete Pavement	DOL	800.000	800.000
1010	715.0502	Incentive Strength Concrete Structures	DOL	500.000	500.000
1020	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	600.000	600.000
1030	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

REMOVING PAVEMENT

FROM STATION		TO STATION	LOCATION	204.0100 (SY)
1+09 EB	-	1+75 EB	CTH B EB	211
1+11 WB	-	1+81 WB	CTH B WB	403
3+36 EB	-	4+13 EB	CTH B EB	251
3+38 WB	-	4+16 WB	CTH B WB	306
10+38 EB	-	10+56 EB	CTH B EB & WB	108
13+04 EB	-	13+72 EB	CTH B EB & WB	398
PROJECT TOTAL				1,676

REMOVING ASPHALTIC SURFACE

FROM STATION		TO STATION	LOCATION	204.0110 (SY)
15+02 EB	-	15+76 EB	CAROL COURT	166
PROJECT TOTAL				166

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REMOVING CURB & GUTTER

FROM STATION		TO STATION	LOCATION	204.0150 (LF)
0+72 EB	-	1+09 EB	CTH B EB RT	37
1+75 EB	-	2+13 EB	CTH B EB LT	38
1+75 EB	-	2+07 EB	CTH B EB RT	32
1+80 WB	-	2+08 WB	CTH B WB LT	28
1+80 WB	-	2+16 WB	CTH B WB RT	36
2+98 WB	-	3+37 WB	CTH B WB RT	39
2+96 EB	-	3+36 EB	CTH B EB LT	40
3+01 EB	-	3+36 EB	CTH B EB RT	35
3+06 WB	-	3+37 WB	CTH B WB LT	31
4+16 WB	-	4+56 WB	CTH B WB LT	40
4+97 EB	-	5+46 EB	CTH B WB LT	49
9+73 EB	-	10+38 EB	CTH B WB LT	65
10+56 EB	-	10+86 EB	CTH B EB LT	30
10+56 EB	-	10+86 EB	CTH B EB RT	30
12+71 EB	-	13+04 EB	CTH B EB RT	33
12+76 EB	-	13+04 EB	CTH B EB LT	28
13+72 EB	-	14+03 EB	CTH B EB RT	31
14+48 EB	-	14+97 EB	CTH B EB LT	49
14+94 EB	-	15+13 EB	CTH B EB RT	19
15+65 EB	-	15+93 EB	CTH B EB RT	28
PROJECT TOTAL				718

REMOVING CONCRETE SIDEWALK

FROM STATION		TO STATION	LOCATION	204.0155 (SY)
1+09 EB	-	2+14 EB	MEDIAN	55
1+09 EB	-	2+14 EB	CTH B EB RT	81
2+96 EB	-	4+13 EB	MEDIAN	140
2+96 EB	-	4+13 EB	CTH B EB RT	99
6+03 EB	-	6+23 EB	CTH B EB RT	18
10+38 EB	-	10+98 EB	CTH B EB RT	48
12+66 EB	-	13+72 EB	CTH B EB RT	86
14+88 EB	-	15+11 EB	CTH B EB RT	17
15+66 EB	-	15+87 EB	CTH B EB RT	14
17+77 EB	-	17+83 EB	CTH B EB RT	4
PROJECT TOTAL				563

REMOVING FENCE

FROM STATION		TO STATION	LOCATION	204.0170 (LF)
0+91 EB	-	2+14 EB	CTH B EB RT	120
PROJECT TOTAL				120

REMOVING MASONRY

FROM STATION		TO STATION	LOCATION	204.0185 (CY)
10+92 EB	-	10+98 EB	CTH B EB RT	2
PROJECT TOTAL				2

REMOVING SURFACE DRAINS

STATION	LOCATION	204.0190 (EACH)
3+12 WB	CTH B WB LT	1
PROJECT TOTAL		1

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTE

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REMOVING INLETS

STATION	LOCATION	204.0220 (EACH)
12+94 EB	CTH B WB LT	1
12+94 EB	CTH B EB RT	1
PROJECT TOTAL		2

REMOVING STORM SEWER

STATION	LOCATION	204.0245.12 12-INCH (LF)
12+94 EB	CTH B LT & RT	55
PROJECT TOTAL		55

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EARTHWORK

Division	Location	Roadway	Common Excavation (1) (item # 205.0100) Cut (2)	EBS Excavation (3)	Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13) Factor 1.25	Mass Ordinate +/- (14)	Waste	Backfill Granular Grade 1 (item #209.0100)	Comment:
Division 1	1+03.88 - 2+12.62	CTH B	415	1753	415	0	59	74	-74	0	1828	
	2+95.70 - 5+48.47	CTH B	585	2011	585	0	20	25	-25	0	2036	
	10+05.97 - 10+97.94	CTH B	201	662	201	0	9	11	-11	0	672	
	12+64.53 - 14+97.06	CTH B	371	1202	371	0	6	8	-8	0	1209	
Division 1 Subtotal			1572	5627	1572	0	94	118	-118	0	5745	
Grand Total			1572	5627	1572	0	94	118	-118	0	5745	
		Total Common Exc	7199									

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unusable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Backfill Granular (Grade 1) material.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusable Pavement Material
13) Expanded Fill. Factor = 1.25
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE DENSE 1 1/4-INCH

FROM STATION		TO STATION	LOCATION	305.0120 (TON)	WATER 624.0100 (MGAL)
1+09 EB	-	2+13 EB	CTH B EB	128	1
1+09 EB	-	2+13 EB	MEDIAN	50	1
1+11 WB	-	2+16 WB	CTH B WB	210	2
2+96 EB	-	4+14 EB	CTH B EB	142	1
2+96 EB	-	4+14 EB	MEDIAN	130	1
2+98 WB	-	4+16 WB	CTH B WB	170	2
10+38 EB	-	10+98 EB	CTH B EB	60	1
10+38 EB	-	10+98 EB	CTH B WB	62	1
12+65 EB	-	13+72 EB	CTH B EB	120	1
12+65 EB	-	13+72 EB	CTH B WB	120	1
PROJECT TOTAL				1,192	12

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

CONCRETE PAVEMENT ITEMS

FROM STATION		TO STATION	LOCATION	415.1090 PAVEMENT HES 9-INCH (SY)	415.1410 PAVEMENT APPROACH SLAB HES (SY)	416.016 CONCRETE DRIVEWAY 6-INCH (SY)	416.1715 CONCRETE PAVEMENT REPAIR SHES (SY)	416.1725 CONCRETE PAVEMENT REPLACEMENT SHES (SY)	416.0610 (A) DRILLED TIE BARS (EACH)	416.0620 DRILLED DOWEL BARS (EACH)	690.0250 (B) SAWING CONCRETE (LF)
0+58 EB	-	1+09 EB	CTH B EB	---	---	---	---	145.4	26	16	117
1+09 EB	-	1+99 EB	CTH B EB	246	---	---	---	---	---	---	---
1+11 WB	-	2+01 WB	CTH B WB	469	---	---	---	---	---	---	---
1+99 EB	-	2+13 EB	CTH B EB	---	43	---	---	---	---	---	---
2+01 WB	-	2+16 WB	CTH B WB	---	80	---	---	---	---	---	---
2+96 EB	-	3+11 EB	CTH B EB	---	41	---	---	---	---	---	---
2+98 WB	-	3+13 WB	CTH B WB	---	78	---	---	---	---	---	---
3+11 EB	-	4+13 EB	CTH B EB	274	---	---	---	---	---	---	25
3+13 WB	-	4+16 WB	CTH B WB	426	---	---	---	---	---	---	---
4+16 WB	-	5+32 EB	CTH B WB	---	---	---	---	318.8	64	16	252
6+85 EB	-	8+40 EB	CTH B WB	---	---	---	---	416.2	124	32	360
6+92 EB	-	7+22 EB	CTH B EB	---	---	---	---	81.8	24	32	109
9+34 EB	-	10+38 EB	CTH B WB	---	---	---	---	288.2	86	16	174
10+38 EB	-	10+83 EB	CTH B EB	124	---	---	---	---	---	---	24
10+38 EB	-	10+83 EB	CTH B WB	130	---	---	---	---	---	---	---
10+49 EB	-	10+78 EB	CTH B EB RT	---	---	17	---	---	---	---	---
10+83 EB	-	10+98 EB	CTH B EB	---	45	---	---	---	---	---	---
10+83 EB	-	10+98 EB	CTH B WB	---	47	---	---	---	---	---	---
12+65 EB	-	12+80 EB	CTH B EB	---	43	---	---	---	---	---	---
12+65 EB	-	12+80 EB	CTH B WB	---	45	---	---	---	---	---	---
12+80 EB	-	13+72 EB	CTH B EB	250	---	---	---	---	---	---	24
12+80 EB	-	13+72 EB	CTH B WB	261	---	---	---	---	---	---	24
14+94 EB	-	15+02 EB	CTH B EB RT	---	---	---	---	---	3	---	---
15+76 EB	-	15+93 EB	CTH B EB RT	---	---	---	---	---	7	---	---
			UNDISTRIBUTED AMOUNT	---	---	---	130	---	30	10	---
PROJECT TOTALS				2,180	422	17	130	1,250.4	364	122	1,109

(A) REFER TO 'CONCRETE CURB & GUTTER' TABLE FOR ADDITIONAL QUANTITIES
(B) REFER TO 'SAWING' TABLE FOR ADDITIONAL QUANTITIES

ASPHALTIC SURFACE

FROM STATION		TO STATION	LOCATION	465.0105 (TON)
9+73 EB	-	10+09 EB	BOAT LANDING	7
15+02 EB	-	15+76 EB	CAROL COURT	30
PROJECT TOTAL				37

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

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CONCRETE CURB & GUTTER

FROM STATION		TO STATION	LOCATION	601.0409 30-INCH TYPE A (LF)	601.0411 30-INCH TYPE D (LF)	416.0610 (A) DRILLED TIE BARS (EACH)
0+72 EB	-	2+07 EB	CTH B EB RT	135	---	---
1+09 EB	-	2+13 EB	CTH B EB LT	104	---	---
1+11 WB	-	2+16 WB	CTH B WB RT	105	---	---
1+11 WB	-	2+08 WB	CTH B WB LT	97	---	---
3+01 EB	-	4+13 EB	CTH B EB RT	112	---	---
2+96 EB	-	4+13 EB	CTH B EB LT	118	---	---
2+98 WB	-	4+16 WB	CTH B WB RT	118	---	---
4+16 WB	-	4+56 WB	CTH B WB LT	41	---	---
4+97 EB	-	5+46 EB	CTH B WB LT	49	---	6
9+73 EB	-	10+86 EB	CTH B WB LT	113	---	---
10+38 EB	-	10+49 EB	CTH B EB RT	11	---	---
12+71 EB	-	14+03 EB	CTH B EB RT	132	---	13
12+76 EB	-	13+72 EB	CTH B WB LT	96	---	---
14+48 EB	-	14+97 EB	CTH B EB RT	50	---	20
14+95 EB	-	15+14 EB	CTH B EB RT	6	16	3
15+63 EB	-	15+93 EB	CTH B EB RT	17	16	7
PROJECT TOTALS				1,303	32	49

(A) REFER TO 'CONCRETE PAVEMENT ITEMS' TABLE FOR ADDITIONAL QUANTITIES

CONCRETE SIDEWALK

FROM STATION		TO STATION	LOCATION	602.0405 4-INCH (SF)	602.0410 5-INCH (SF)	602.0505 DETECTABLE WARNING FIELD YELLOW (SF)
1+09 EB	-	2+14 EB	MEDIAN	479	---	---
1+09 EB	-	2+14 EB	CTH B EB RT	---	733	---
2+96 EB	-	4+13 EB	MEDIAN	1,236	---	---
2+97 EB	-	4+13 EB	CTH B EB RT	---	889	---
6+03 EB	-	6+23 EB	CTH B EB RT	---	161	---
10+38 EB	-	10+98 EB	CTH B EB RT	---	439	---
12+66 EB	-	13+72 EB	CTH B EB RT	---	777	---
14+88 EB	-	15+11 EB	CTH B EB RT	---	181	8
15+66 EB	-	15+87 EB	CTH B EB RT	---	154	8
17+77 EB	-	17+83 EB	CTH B EB RT	---	39	---
PROJECT TOTALS				1,715	3,373	16

CONCRETE BARRIER

FROM STATION		TO STATION	LOCATION	603.1136 TYPE S36 (LF)	603.1332 TYPE S32B (LF)	603.3111 TRANSITION TYPE NJ32SF TO S32 (EACH)	603.3113 TRANSITION TYPE NJ32SF TO S36 (EACH)	603.3513 TRANSITION TYPE S32 TO S36 (EACH)
2+98 WB	-	4+18 WB	CTH B WB LT	85	---	---	1	1
10+78 EB	-	10+98 EB	CTH B EB RT	---	5	1	---	---
PROJECT TOTALS				85	5	1	1	1

STORM SEWER PIPES

FROM STRUCTURE NO.	TO STRUCTURE NO.	INLET ELEVATION	OUTLET ELEVATION	SLOPE %	608.0312 STORM SEWER REINFORCED CONCRETE CLASS III 12-INCH (LF)	520.8000 CONCRETE COLLARS FOR PIPE (EACH)
1	2	650.80	650.00	1.5	53	---
2	EXISTING	649.80	---	---	5	1
PROJECT TOTALS					58	1

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

ADJUSTING INLET COVERS

STATION	LOCATION	611.8115 (EACH)
9+97 EB	CTH B WB LT	1
PROJECT TOTAL		1

STORM SEWER STRUCTURES

STRUCTURE NO.	STATION	OFFSET	COVER ELEVATION	TOP OF STRUCTURE ELEVATION	BOTTOM OF STRUCTURE ELEVATION	DEPTH	611.3225 INLETS 2x2.5-FT (EACH)	611.0610 INLET COVERS TYPE BW (EACH)
1.1	12+94.25	26.5' LT	654.39	653.56	650.80	2.76	1	1
1.2	12+94.25	26.5' RT	654.39	653.56	649.80	3.76	1	1
	PROJECT TOTALS						2	2

3

NOTES

1. TOP OF COVER ELEVATION FOR INLETS IN CURBLINE IS FLANGELINE ELEVATION
2. OFFSETS TO STRUCTURES ARE GIVEN TO CENTER OF STRUCTURE
3. DEPTHS OF STRUCTURES ARE MEASURED FROM LOWEST INVERT ELEVATION TO THE TOP OF MASONRY
4. INLET DEPTHS INCLUDE A 6-INCH CASTING ALLOWANCE AND 4-INCH ADJUSTMENT ALLOWANCE

GUARDRAIL

FROM STATION	TO STATION	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH (LF)	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL (EACH)	614.2300 MGS GUARDRAIL 3 (LF)	614.2500 MGS THRIE BEAM TRANSITION (LF)	614.2610 MGS GUARDRAIL TERMAINAL EAT (EACH)
1+04 EB		CTH B EB, 28.8' RT	---	---	---	---	1
1+59 EB	- 2+11 EB	CTH B EB RT	---	---	12.5	39.4	---
4+15 WB	- 4+65 EB	CTH B WB LT	---	---	12.5	39.4	---
5+18 WB		CTH B WB, 48.0' LT	---	---	---	---	1
10+20 EB		CTH B WB, 30.0' LT	---	1	---	---	---
10+70 EB	- 10+91 EB	CTH B WB LT	20.6	---	---	---	---
12+67 EB	- 13+19 EB	CTH B EB RT	---	---	12.5	39.4	---
12+72 EB	- 14+13 EB	CTH B WB LT	---	---	102.0	39.4	---
13+72 EB		CTH B EB, 29.0' RT	---	---	---	---	1
14+66 WB		CTH B WB, 28.0' LT	---	---	---	---	1
PROJECT TOTALS			20.6	1	139.5	157.6	4

CRASH CUSHIONS PERMANENT LOW MAINTENANCE

STATION	LOCATION	614.0805 (EACH)	BACK WIDTH (FT)	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS	COMMENTS
10+78 EB	CTH B EB RT	1	2	OM-3R	TL-2	BIDIRECTIONAL	LEFT	END OF PERMANENT CONCRETE BARRIER TYPE 32B ALONG THE RIGHT SIDE CURB LINE	BACKSIDE AND FRONTSIDE TRANSITIONS REQUIRED
PROJECT TOTAL		1							

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

SALVAGED RAIL AND END TREATMENTS

FROM STATION		TO STATION	LOCATION	SALVAGED RAIL 614.0920 (LF)	SALVAGED END TREATMENTS 614.0925 (EACH)	COMMENTS
1+39 WB	-	2+11 WB	CTH B WB LT	72	1	
1+40 EB	-	2+11 EB	CTH B EB RT	142	1	RAIL ON BOTH SIDES
2+99 EB	-	3+70 EB	CTH B EB RT	142	1	RAIL ON BOTH SIDES
3+00 WB	-	3+74 WB	CTH B WB LT	74	1	
10+12 EB	-	10+91 EB	CTH B EB LT	79	1	
10+42 EB	-	10+95 EB	CTH B EB RT	106	1	RAIL ON BOTH SIDES
12+67 EB	-	13+39 EB	CTH B EB RT	144	1	RAIL ON BOTH SIDES
12+72 EB	-	13+48 EB	CTH B EB LT	76	1	
PROJECT TOTAL				835	8	

3

FENCE CHAIN LINK 4-FT

FROM STATION		TO STATION	LOCATION	616.0204 (LF)
0+91 EB	-	2+14 EB	CTH B EB RT	120
PROJECT TOTAL				120

LANDSCAPING SUMMARY

STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0140 SEEDING MIXTURE NO. 40 LB	630.0200 SEEDING TEMPORARY LB
0+72 EB - 2+09 EB	RT	120	120	0.07	2	1	3
1+11 WB - 2+16 WB	LT	60	60	0.04	2	---	2
2+98 WB - 5+46 EB	LT	265	265	0.17	7	---	7
3+01 EB - 4+13 EB	RT	45	45	0.03	1	0.5	1
10+03 EB - 10+98 EB	LT	130	130	0.08	3	---	3
10+38 EB - 10+98 EB	RT	10	10	0.00	---	0.1	0.2
12+72 EB - 13+72 EB	RT	50	50	0.03	---	1	1
12+76 EB - 14+97 EB	LT	210	210	0.13	6	---	6
SUBTOTALS		890	890	0.6	21	2.6	23.2
UNDISTRIBUTED AMOUNT		225	225	0.1	5	0.7	5.8
PROJECT TOTAL		1,115	1,115	0.7	26	3.3	29

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

SILT FENCE

STATION TO STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF
1+04 EB - 2+17 EB	RT	145	290
1+08 WB - 2+17 WB	LT	120	240
2+94 EB - 4+29 EB	RT	155	310
2+96 WB - 5+52 EB	LT	320	640
10+01 EB - 11+04 EB	LT	115	230
10+32 EB - 11+02 EB	RT	70	140
12+61 EB - 13+77 EB	RT	115	230
12+67 EB - 15+03 EB	LT	280	560
	SUBTOTALS	1,320	2,640
	UNDISTRIBUTED AMOUNT	330	660
	PROJECT TOTALS	1,650	3,300

MOBILIZATIONS EROSION CONTROL

STATION	LOCATION	628.1905 EACH	628.1910 EMERGENCY EACH
0+23 EB - 15+93 EB	CTH B	6	3
	SUBTOTALS	6	3
	UNDISTRIBUTED AMOUNT	2	1
	PROJECT TOTALS	8	4

INLET PROTECTION TYPE C

STATION	LOCATION	628.7015 EACH
0+23 WB	LT	1
0+28 WB	RT	1
0+32 EB	RT	1
4+64 EB	LT & RT	2
9+91 EB	RT	1
9+97 EB	LT	1
12+95 EB	LT & RT	2
15+93 EB	LT & RT	2
	SUBTOTALS	11
	UNDISTRIBUTED AMOUNT	3
	PROJECT TOTALS	14

3

ERECTION AND REMOVALS OF TYPE II SIGNS AND SUPPORTS

STATION	LOCATION	SIGN CODE	SIZE W X H	634.0414 POSTS WOOD 4x4-INCH x 14-FT (EACH)	637.2210 SIGNS TYPE II REFLECTIVE H (SF)	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)	REMARKS
1+02 WB	CTH B WB, 40' LT	D11-1	24"x18"	---	3.00	1	---	EXISTING AND NEW SIGN ON LAMP POST
2+07 EB	CTH B EB, 28.5' RT	---	---	---	---	1	1	---
3+14 WB	CTH B WB, 40.6' LT	---	---	---	---	1	1	---
3+74 EB	CTH B EB, 31' RT	R2-1	30"x36"	1	7.50	1	1	PLACE NEW SIGN AND POST AT STATION 3+74 EB RT
4+95 EB	CTH B EB, 11.5' LT	R3-8V	30"x72"	2	15.00	1	2	---
4+95 EB	CTH B EB, 51.5' LT	R3-8V	30"x72"	2	15.00	1	2	PLACE NEW SIGN AND POSTS AT STATION 5+55 EB LT
10+92 EB	CTH B EB, 28.5' RT	---	---	---	---	1	1	---
12+78 WB	CTH B WB, 28.5' LT	---	---	---	---	1	1	---
13+32 EB	CTH B EB, 31' RT	M1-5A	24"x24"	1	4.00	2	1	PLACE NEW SIGNS AND POST AT STATION 14+10 EB RT
		M5-1L	21"x21"		3.06			
15+17 EB	CTH B EB, 60' RT	W14-1	30"x30"	1	6.25	1	1	REPLACE SIGN AT EXISTING LOCATION
15+66 EB	CTH B EB, 41.5' RT	R1-1	30"x30"	1	5.18	1	1	REPLACE SIGN AT EXISTING LOCATION
17+16 EB	CTH B EB, 39' RT	M1-5A	24"x24"	1	4.00	4	1	REPLACE SIGNS AT EXISTING LOCATION
		M1-6	24"x24"		4.00			
		M6-1	21"x21"		3.06			
		M6-4	21"x21"		3.06			
17+26 WB	CTH B WB, 31.3' LT	I2-3	72"x24"	2	12.00	1	2	REPLACE SIGN AT EXISTING LOCATION
18+25 WB	CTH B WB, 32.5' LT	R2-1	30"x36"	1	7.50	1	1	REPLACE SIGN AT EXISTING LOCATION
18+25 WB	CTH B WB, 34.5' LT	M1-5A	24"x24"	1	4.00	1	1	REPLACE SIGN AT EXISTING LOCATION
	PROJECT TOTALS			13	96.61	19	17	

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

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TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 62 (DAYS)	643.3000 DETOUR SIGNS (DAYS)	643.0920 COVERING SIGNS TYPE II (EACH)	REMARKS
			CTH B WESTBOUND DETOUR				
1	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	W 20-2-A	48"x48"	1	62	62		
2	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
3	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
4	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
5	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M5-1L	21"x21"	1	62	62		
6	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		LEFT
7	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
8	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M5-1L	21"x21"	1	62	62		
9	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		LEFT
10	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
	SUBTOTALS		*39*		*2,418*	*0*	

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 62 (DAYS)	643.3000 DETOUR SIGNS (DAYS)	643.0920 COVERING SIGNS TYPE II (EACH)	REMARKS
			CTH B WESTBOUND DETOUR CONT.				
11	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
12	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
13	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M5-1L	21"x21"	1	62	62		
14	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		LEFT
15	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		RIGHT
16	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
17	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M5-1R	21"x21"	1	62	62		
18	M4-8	24"x12"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		RIGHT
19	M4-8A	24"x18"	1	62	62		
	M3-4	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	SUBTOTALS		*35*		*2,170*	*0*	

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NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL DETOUR SIGN SUMMARY							
SIGN NO.	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 62 (DAYS)	643.3000 DETOUR SIGNS (DAYS)	643.0920 COVERING SIGNS TYPE II (EACH)	REMARKS
CTH B EASTBOUND DETOUR							
50	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	W 20-2-A	48"x48"	1	62	62		
51	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M5-1L	21"x21"	1	62	62		
52	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		LEFT
53	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
54	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		LEFT
55	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		RIGHT
56	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
57	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M5-1R	21"x21"	1	62	62		
58	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		RIGHT
59	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M5-1R	21"x21"	1	62	62		
	SUBTOTALS		*39*		*2,418*	*0*	

TRAFFIC CONTROL DETOUR SIGN SUMMARY							
SIGN NO.	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 62 (DAYS)	643.3000 DETOUR SIGNS (DAYS)	643.0920 COVERING SIGNS TYPE II (EACH)	REMARKS
CTH B EASTBOUND DETOUR CONT.							
60	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		RIGHT
61	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M5-1L	21"x21"	1	62	62		
62	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		LEFT
63	M4-8A	24"x18"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
64	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	W 20-2-A	48"x48"	1	62	62		
65	M4-8	24"x12"	1	62	62		
	M3-2	24"x12"	1	62	62		
	M1-5A	24"x24"	1	62	62		B
	M6-1	21"x21"	1	62	62		AHEAD
70						1	
71						2	ATTACHED TO SIGNAL POLE
72						2	
73						1	
74						2	
75						1	
76						1	
77						2	
78						1	
79						1	
80						1	
	SUBTOTALS		*22*		*1,364*	*15*	
	PROJECT TOTALS		*135*		*8,370*	*15*	

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

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TRAFFIC CONTROL SUMMARY

LOCATION	SERVICE DAYS	643.03 DRUMS NO.	643.03 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 TRAFFIC CONTROL SIGNS NO.	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.1050 TRAFFIC CONTROL SIGNS PCMS NO.	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS
STAGE 1	31	80	2,480	29	899	24	744	8	248	20	620	5	225
STAGE 2	31	70	2,170	18	558	16	496	6	186	16	496	5	155
PROJECT TOTALS		150	4,650	47	1,457	40	1,240	14	434	36	1,116	10	380

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PAVEMENT MARKING

STATION TO STATION	LOCATION	646.0106 4-INCH EPOXY YELLOW SOLID LF	646.0106 4-INCH EPOXY WHITE SOLID LF	646.0106 4-INCH EPOXY WHITE DASHED LF	647.0156 ARROWS EPOXY TYPE 1 EACH	647.0166 ARROWS EPOXY TYPE 2 EACH
0+58 EB - 2+14 EB	RT	156	---	39	---	---
1+10 WB - 2+13 WB	RT	103	103	---	---	---
1+10 WB - 2+13 WB	LT	---	103	26	---	---
1+47 WB	LT & RT	---	---	---	2	2
2+96 EB - 4+13 EB	RT	117	---	29	---	---
2+96 WB - 5+32 EB	LT & RT	236	---	59	---	---
6+85 EB - 8+40 EB	LT	155	---	39	---	---
6+92 EB - 7+22 EB	RT	30	---	8	---	---
9+34 EB - 10+38 EB	LT	104	---	26	---	---
10+38 EB - 10+98 EB	LT & RT	120	---	30	---	---
12+65 EB - 13+72 EB	LT & RT	214	---	54	---	---
	SUBTOTALS	1,235	206	310		
	PROJECT TOTALS		1,751		2	2

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

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CONSTRUCTION STAKING

FROM STATION		TO STATION	LOCATION	650.4000 STORM SEWER (EACH)	650.4500 SUBGRADE (LF)	650.5500 CURB GUTTER AND CURB &GUTTER (LF)	650.7000 CONCRETE PAVEMENT (LF)	650.8000 RESURFACING REFERENCE (LF)	650.9920 SLOPE STAKES (LF)
0+11 EB	-	1+09 EB	CTH B EB	---	---	---	---	98	---
0+10 WB	-	1+11 WB	CTH B WB	---	---	---	---	101	---
1+09 EB	-	2+13 EB	CTH B EB	---	104	---	104	---	104
1+11 WB	-	2+16 WB	CTH B WB	---	105	---	105	---	105
2+96 EB	-	4+13 EB	CTH B EB	---	117	---	117	---	117
2+98 WB	-	4+16 WB	CTH B WB	---	118	---	118	---	118
4+13 EB	-	10+38 EB	CTH B EB	---	---	---	---	625	---
4+16 WB	-	4+59 WB	CTH B WB	---	---	---	---	43	---
10+38 EB	-	10+98 EB	CTH B	---	60	---	60	---	60
12+65 EB	-	13+72 EB	CTH B	---	107	---	107	---	107
15+02 EB	-	15+14 EB	CTH B RT	---	---	17	---	---	0
15+63 EB	-	15+76 EB	CTH B RT	---	---	17	---	---	0
12+94 EB			CTH B LT & RT	2	---	---	---	---	---
13+72 EB	-	19+08 EB	CTH B	---	---	---	---	536	---
PROJECT TOTALS				2	611	34	611	1,403	611

CONDUIT LOOP DETECTOR

LOOP NO.	HOME RUN PB	STATION	LOCATION	SIZE	NO. OF TURNS	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR (LF)	655.0700 LOOP DETECTOR LEAD IN CABLE (LF)	655.0800 LOOP DETECTOR WIRE (LF)
21	PB17	1+48.71 WB	13' LT	6'X20'	4	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY OPTION 2	90	500	370
22	PB15	3+53.14 WB	11' LT	6'X20'	3	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY OPTION 2	88	295	274
						PROJECT TOTALS	178	795	644

* STATION AND LOCATION IS TO FRONT CENTER OF DETECTION LOOP

** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

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CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH

FROM	TO	652.0225 (LF)
EXT1	PB15	38
PB15	EXT2	70
EXT3	PB16	3
PB16	PB17	45
PROJECT TOTAL		156

(C) REFER TO STRUCTURE PLANS FOR ADDITIONAL QUANTITIES

REMOVING PULL BOXES

PULL BOX NO.	STATION	LOCATION	653.0905 EACH
PB15	1+40.2 WB	38.2' LT	1
PB17	3+49.3 WB	33.7' LT	1
PB - LOOP 21	3+54.2 WB	20.1' LT	1
PB - LOOP 22	1+49.1 WB	19.6' LT	1
		PROJECT TOTAL	4

PULL BOXES STEEL 24X36-INCH

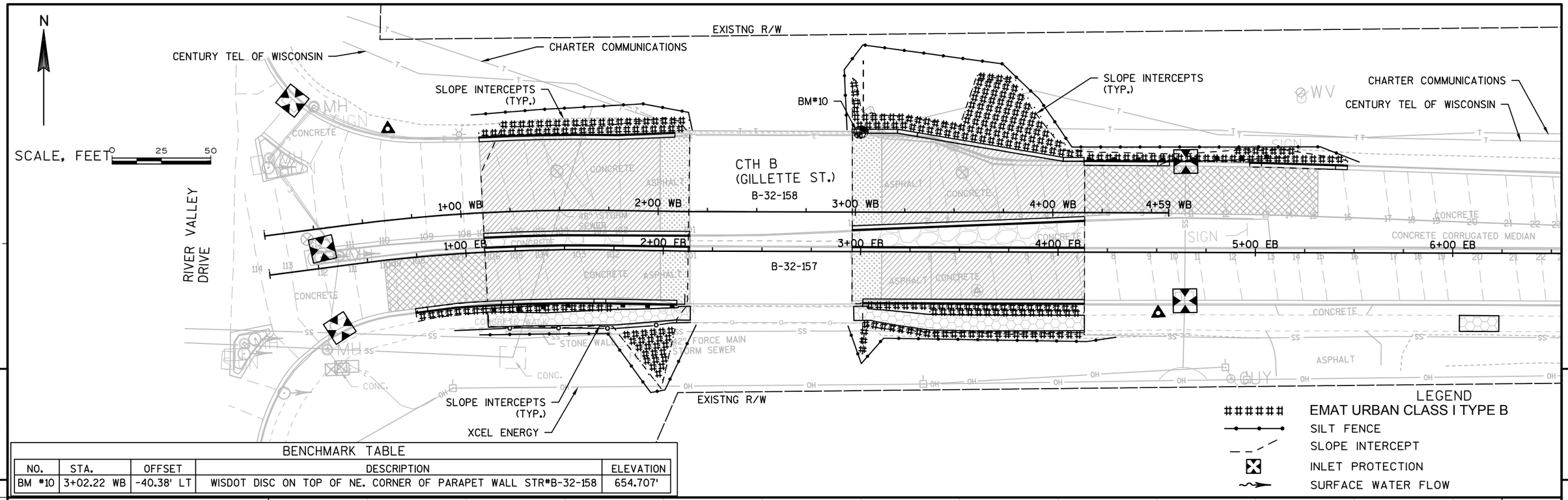
PULL BOX NO.	STATION	LOCATION	653.0135 EACH
PB15	1+47.1 WB	40.4' LT	1
PB16	3+06.2 WB	44.6' LT	1
PB17	3+51.3 WB	39.6' LT	1
		PROJECT TOTAL	3

*FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

SAWING

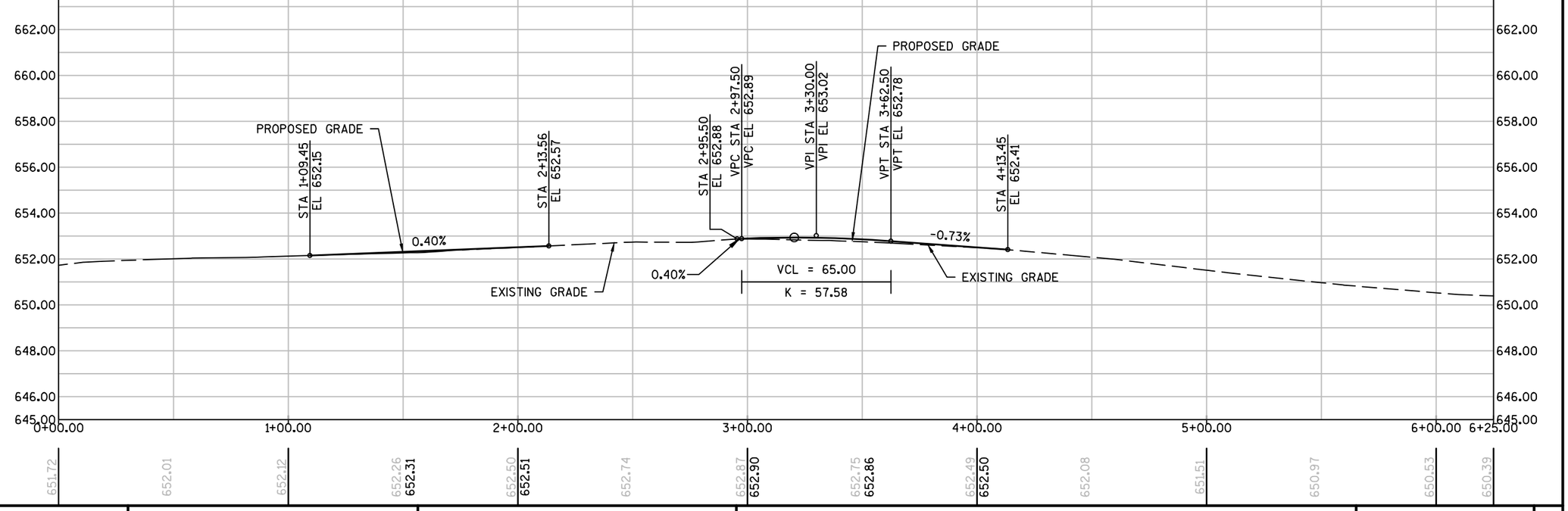
FROM STATION		TO STATION	LOCATION	690.0150 ASPHALT (LF)	690.0250 (B) CONCRETE (LF)
5+32 EB	-	5+48 EB	CTH B WB LT	---	16
14+48 EB	-	14+97 EB	CTH B EB LT	---	50
13+72 EB	-	14+03 EB	CTH B EB RT	---	31
15+24 EB	-	15+56 EB	CAROL COURT	32	---
PROJECT TOTALS				32	97

(B) REFER TO 'CONCRETE PAVING ITEMS' TABLE FOR ADDITIONAL QUANTITIES

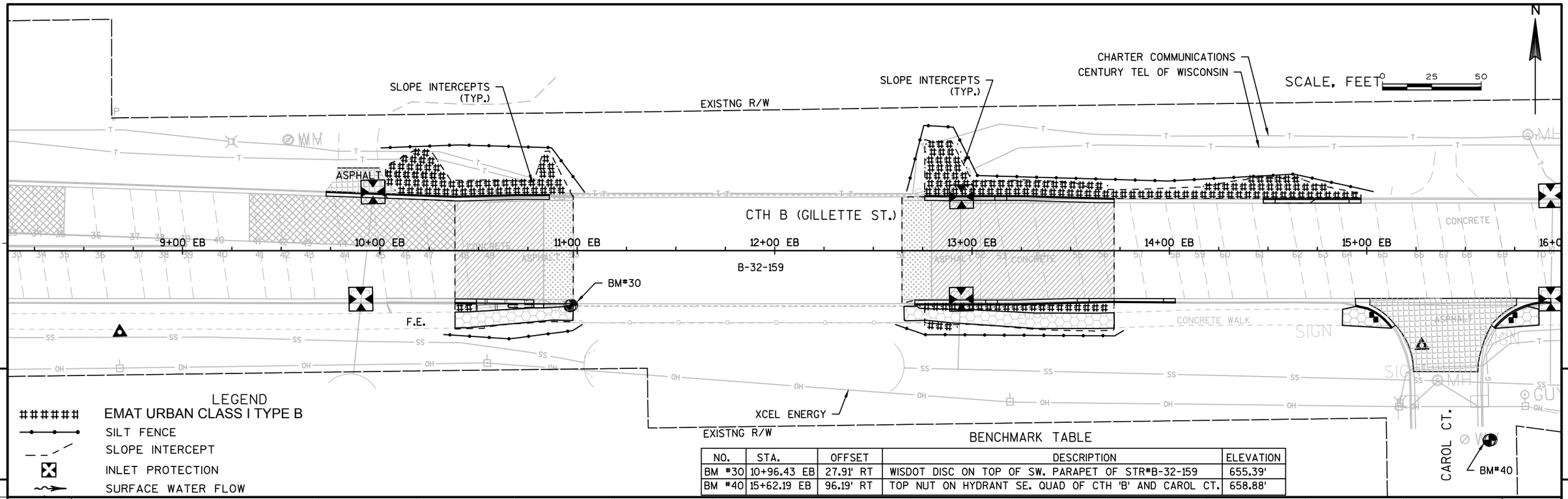


BENCHMARK TABLE

NO.	STA.	OFFSET	DESCRIPTION	ELEVATION
BM #10	3+02.22 WB	-40.38' LT	WISDOT DISC ON TOP OF NE. CORNER OF PARAPET WALL STR*B-32-158	654.707'



PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	PLAN AND PROFILE: CTH B, EB	SHEET 39	E



5

LEGEND

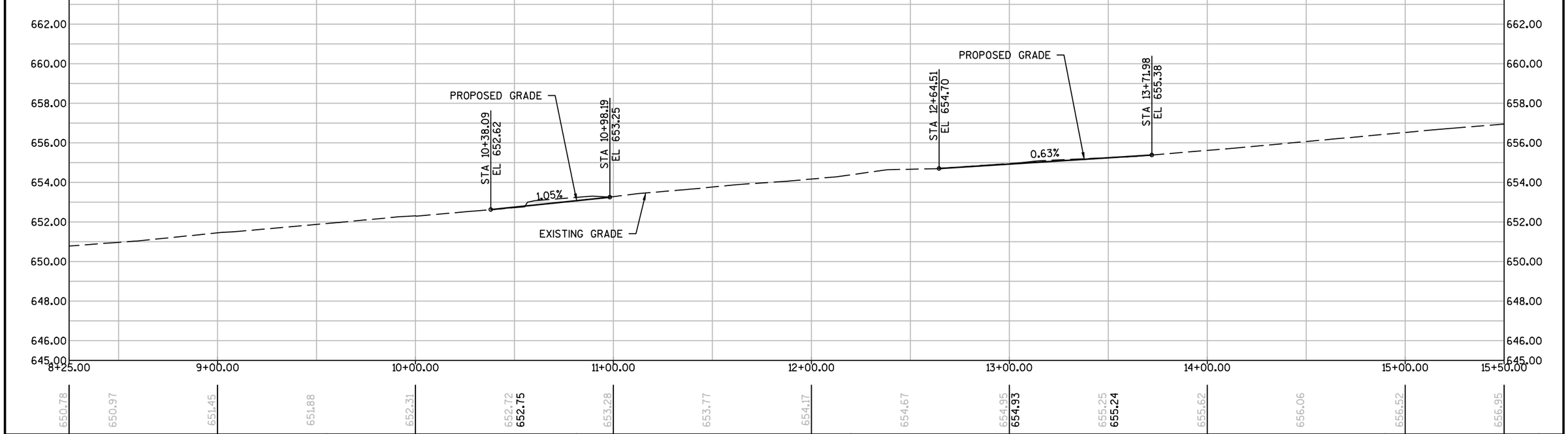
EMAT URBAN CLASS I TYPE B

- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION
- SURFACE WATER FLOW

BENCHMARK TABLE

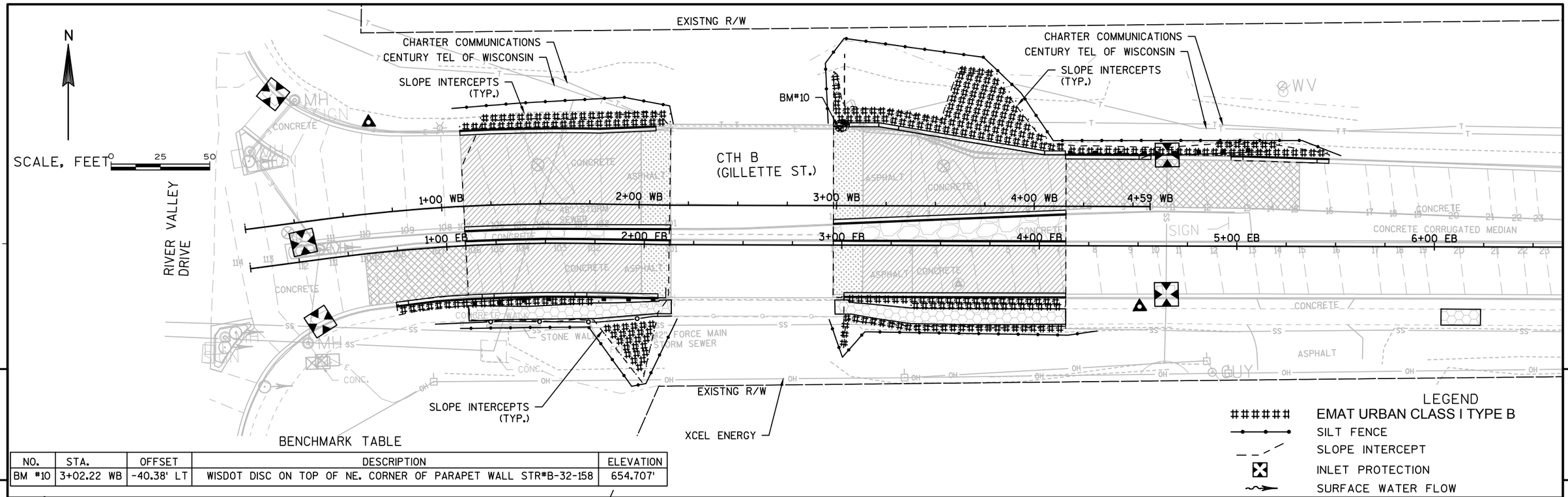
NO.	STA.	OFFSET	DESCRIPTION	ELEVATION
BM *30	10+96.43 EB	27.91' RT	WISDOT DISC ON TOP OF SW. PARAPET OF STR*B-32-159	655.39'
BM *40	15+62.19 EB	96.19' RT	TOP NUT ON HYDRANT SE. QUAD OF CTH 'B' AND CAROL CT.	658.88'

5



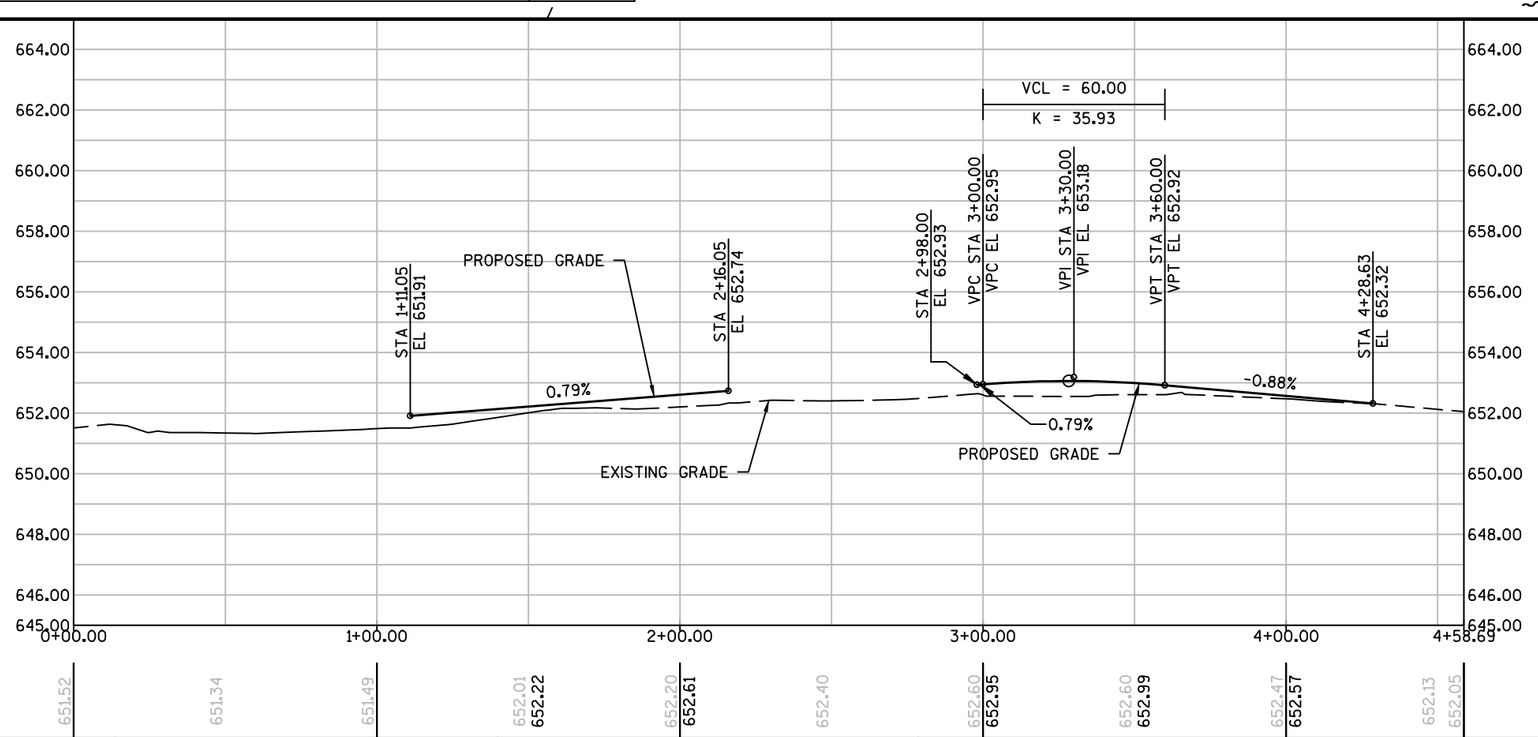
PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	PLAN AND PROFILE: CTH B, EB	SHEET 40	E

FILE NAME : J:\JOBS2014\20142006\CAD\TRANSPORTATION\DWG\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - 050101_PP - 050102_PP
PLOT DATE : 12/17/2014 2:36 PM PLOT BY : SCHULTZ, ANDREW K. PLOT NAME : PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET 44



BENCHMARK TABLE

NO.	STA.	OFFSET	DESCRIPTION	ELEVATION
BM *10	3+02.22 WB	-40.38' LT	WISDOT DISC ON TOP OF NE. CORNER OF PARAPET WALL STR*B-32-158	654.707'

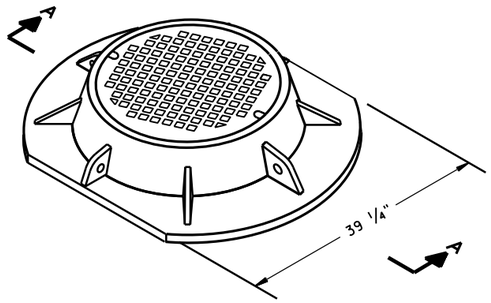


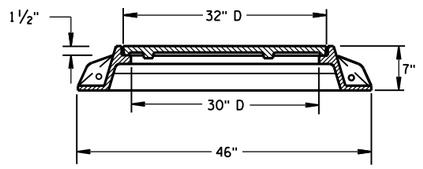
PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	PLAN AND PROFILE: CTH B, WB	SHEET 41	E

Standard Detail Drawing List

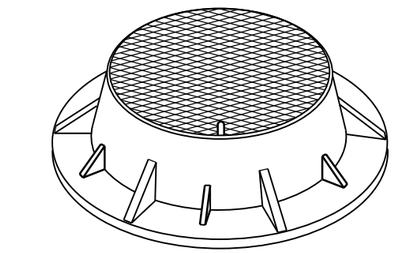
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-08	CONDUIT UNDER PAVED HIGHWAYS
09B04-11	PULL BOX
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)
13B02-07A	CONCRETE BRIDGE APPROACH
13C01-17	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-11A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B15-08A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11D	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B24-08A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B32-03A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03B	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03C	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03D	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-03E	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B33-01A	CONCRETE BARRIER SINGLE SLOPE 32" THRIE BEAM ANCHOR
14B33-01B	CONCRETE BARRIER SINGLE SLOPE 32" THRIE BEAM ANCHOR
14B35-01A	32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SSCB TRANSITION
14B35-01B	32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SSCB TRANSITION
14B35-01C	32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 36-INCH SSCB TRANSITION
14B35-01D	32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 36-INCH SSCB TRANSITION
14B39-01A	32-INCH SSCB TO 36-INCH SSCB HEIGHT TRANSITION
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
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)
14B45-03F	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)
15B03-14A	FENCE CHAIN LINK
15B03-14B	FENCE CHAIN LINK
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
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)

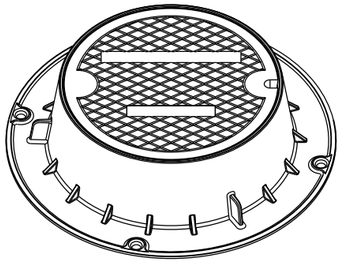
6

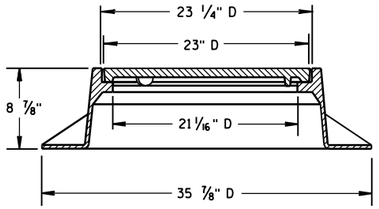


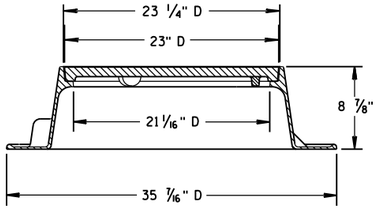


SECTION A-A
TYPE "K"









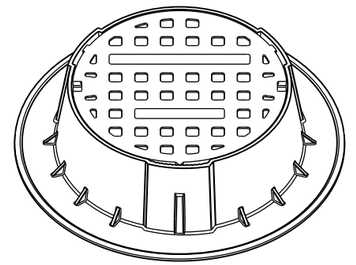
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

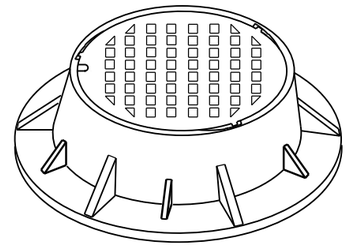
GENERAL NOTES

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.

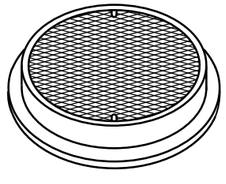
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

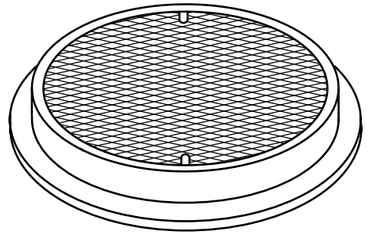
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

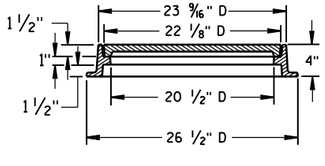




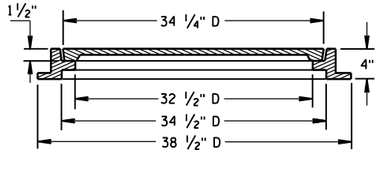
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



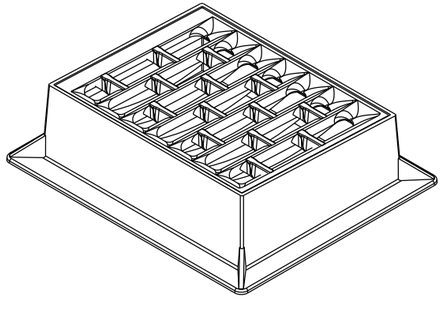


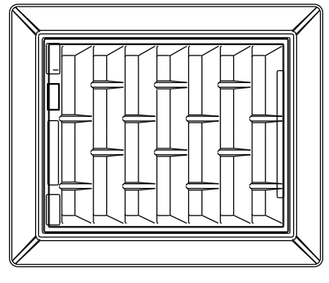


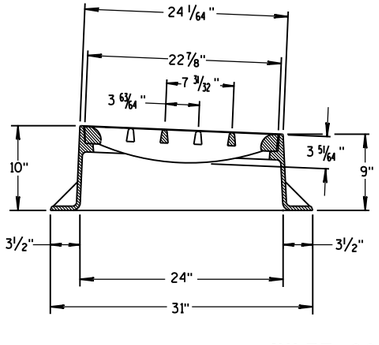
TYPE "L"

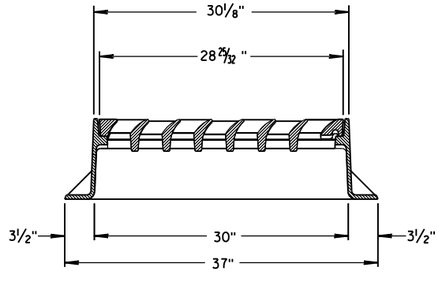


TYPE "M"









INLET COVER TYPE "BW"

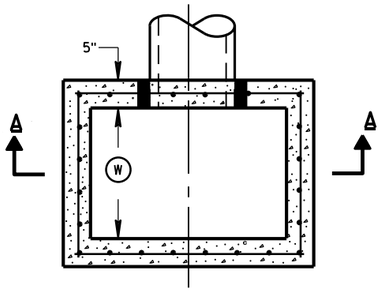
INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

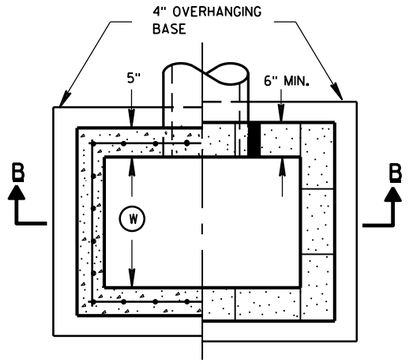
APPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

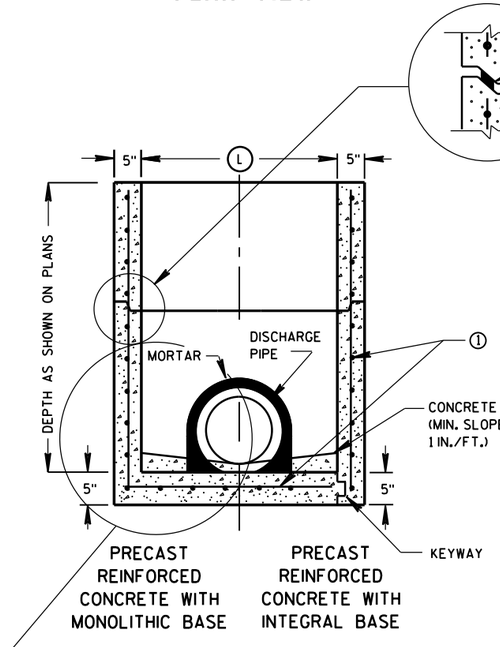
S.D.D. 8 A 5-19d



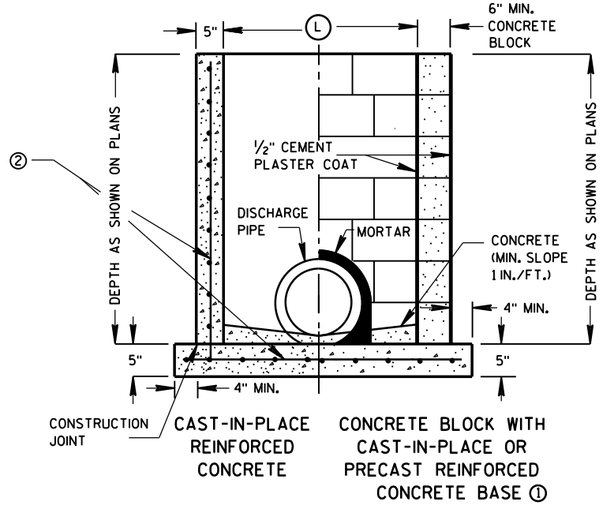
PLAN VIEW



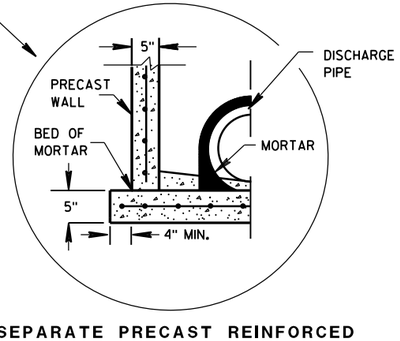
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN 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 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

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

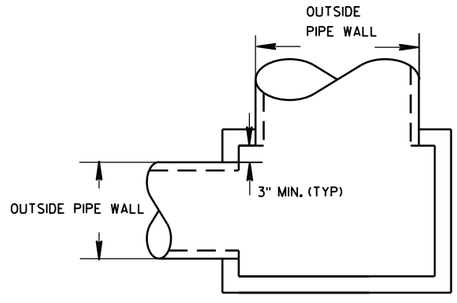
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



DETAIL "A"

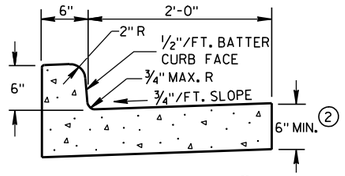
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

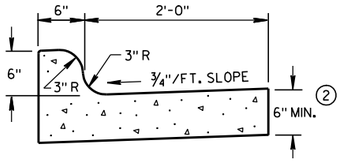
APPROVED
6/5/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DE
ENGINEER

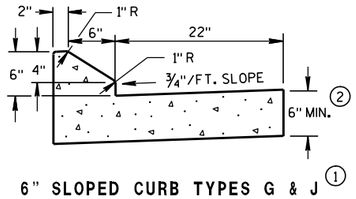
6
S.D.D. 8 C 7-1



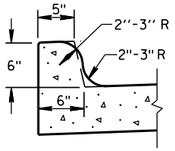
TYPES A & D (1)



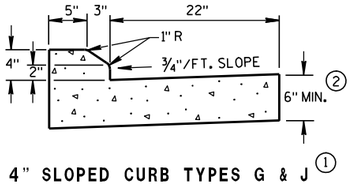
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

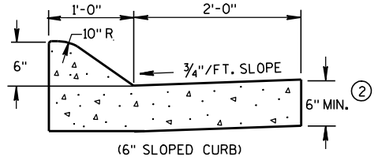


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

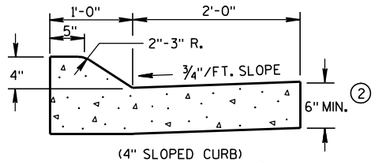


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

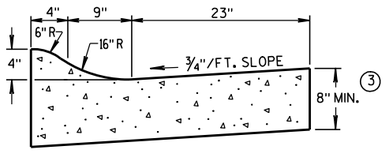


(6" SLOPED CURB)



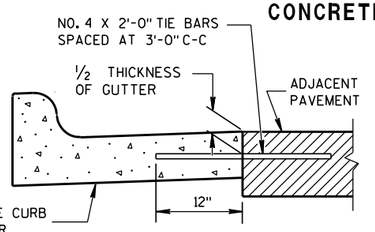
(4" SLOPED CURB)

TYPES A & D (1)

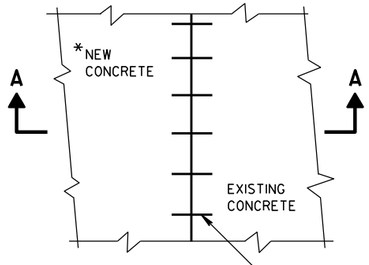


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

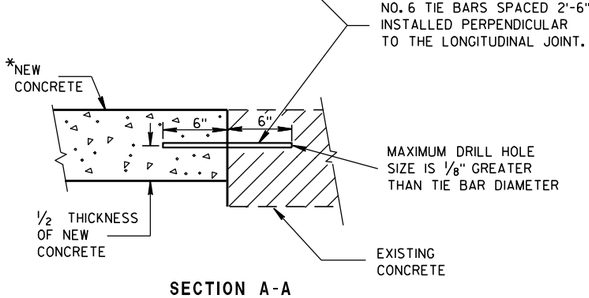


TYPICAL TIE BAR LOCATION (1)



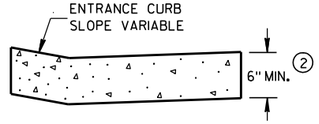
PLAN VIEW

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



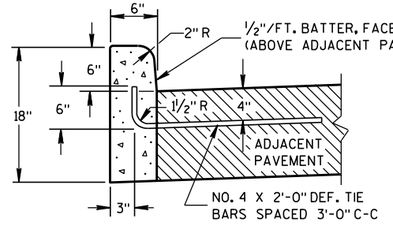
SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



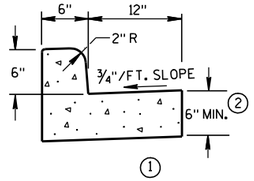
DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)



(1)

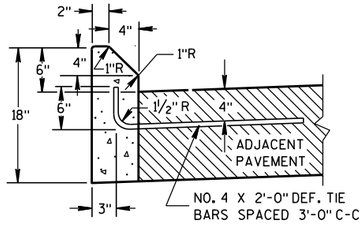
TYPES A & D



(1)

TYPES A & D

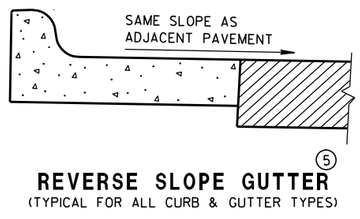
CONCRETE CURB & GUTTER 18"



(1)

TYPES G & J

CONCRETE CURB



(5)

REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)

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.

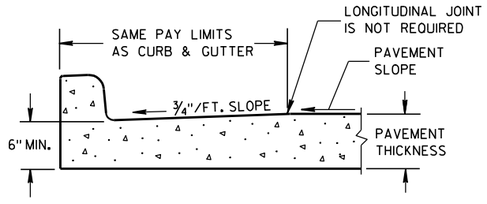
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(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.

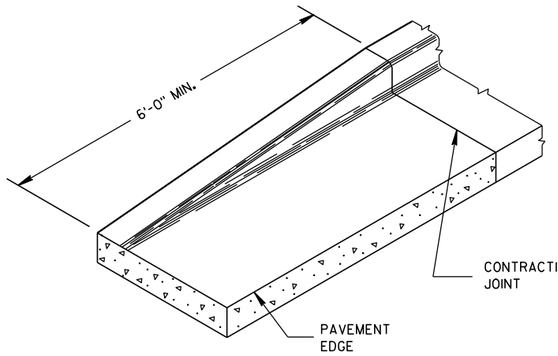
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(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.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

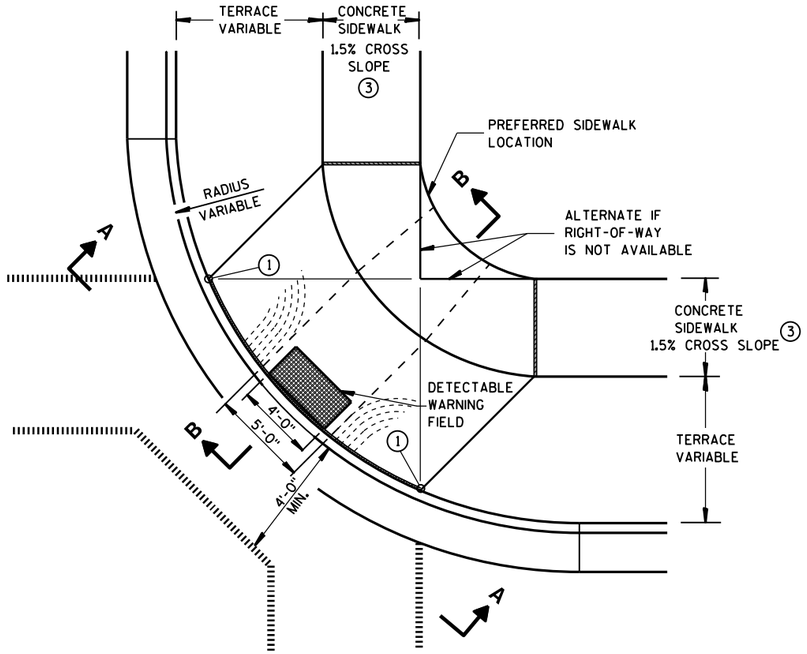
FHWA

6

S.D.D. 8 D 1-17

6

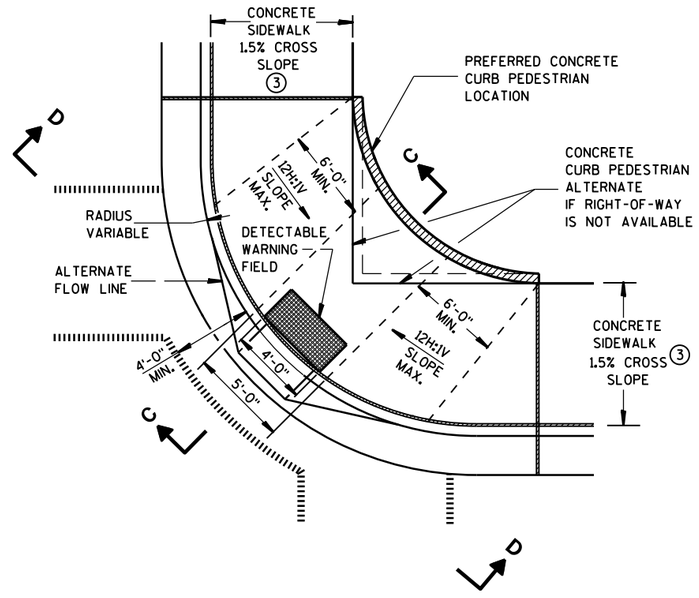
S.D.D. 8 D 1-17



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.

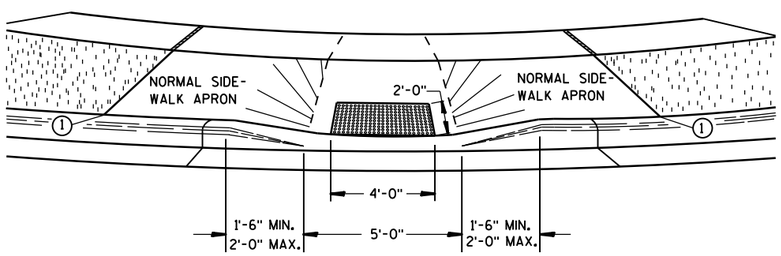
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

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.

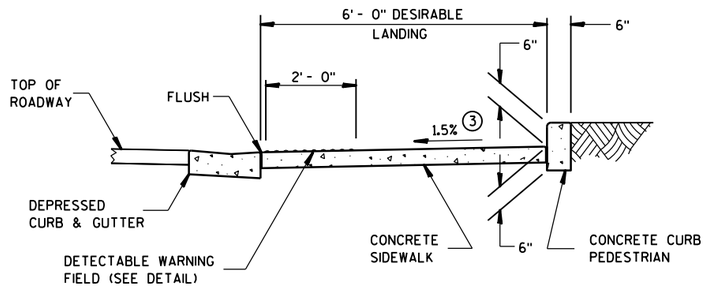
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

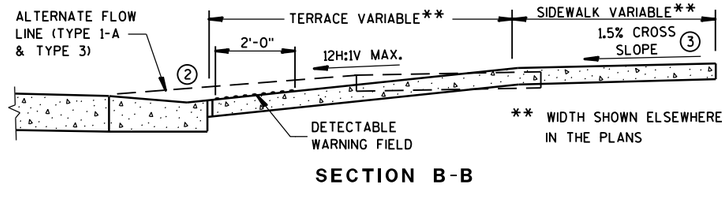
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



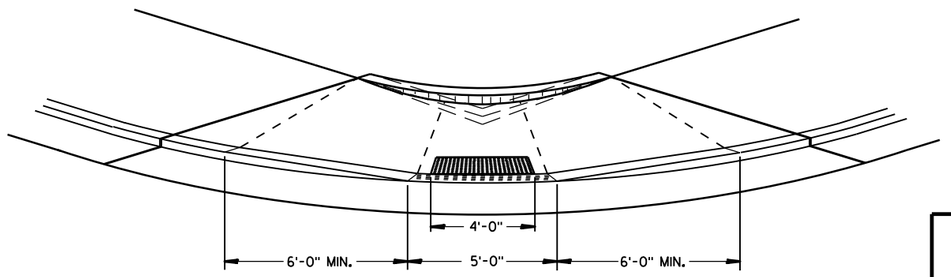
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

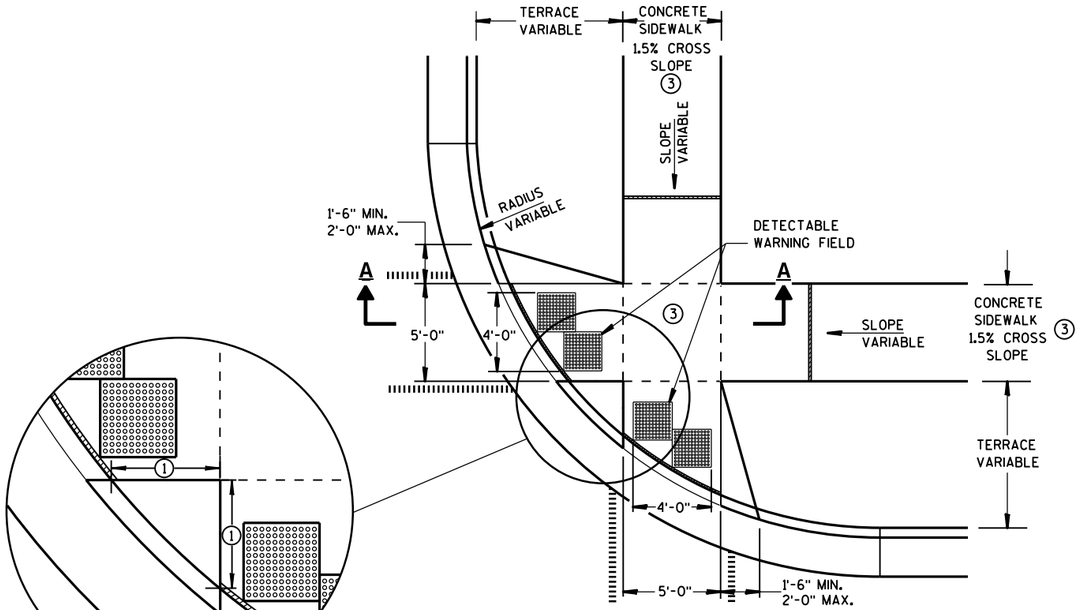
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15a

6

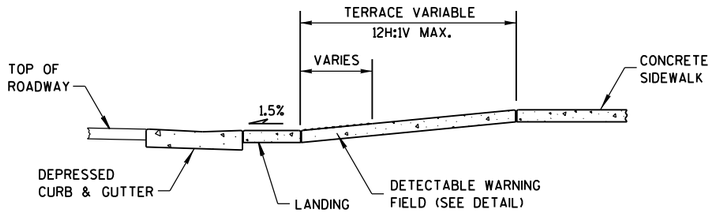
S.D.D. 8 D 5-15a



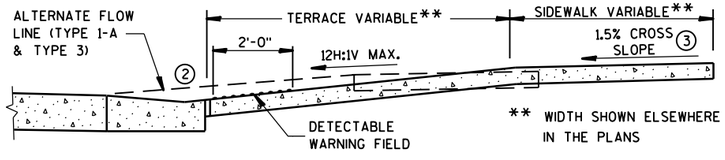
PLAN VIEW

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.

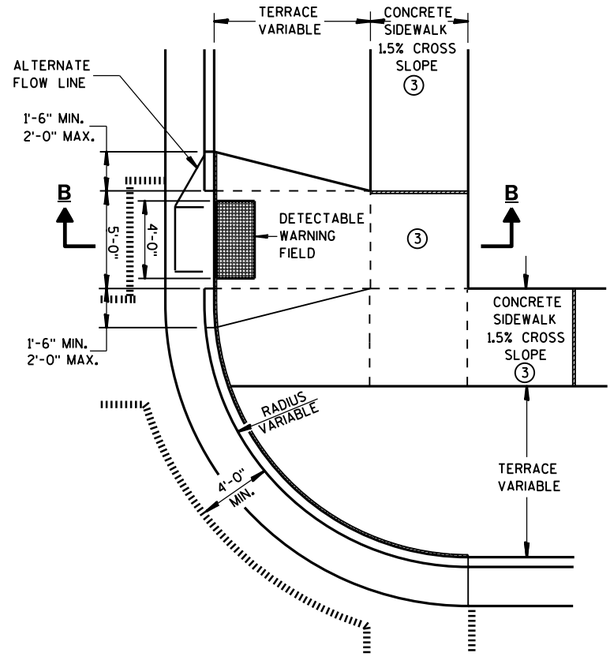
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

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

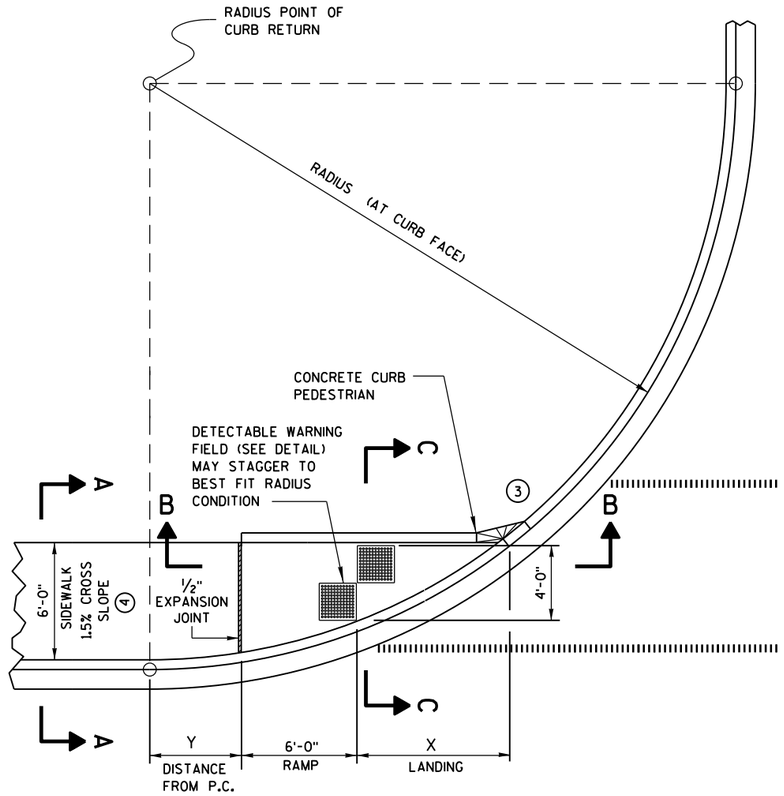
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

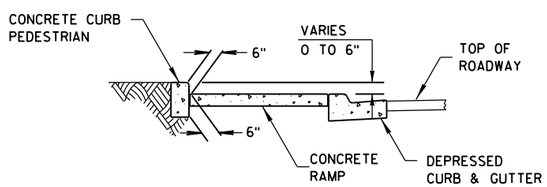
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

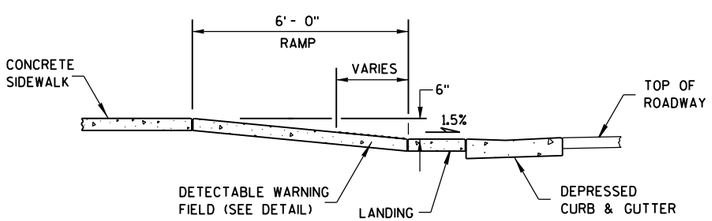
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



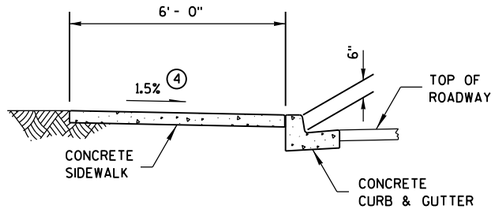
SECTION C-C FOR TYPE 4A



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

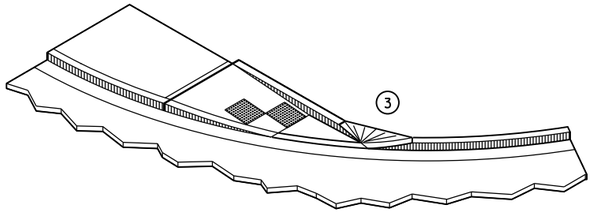
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

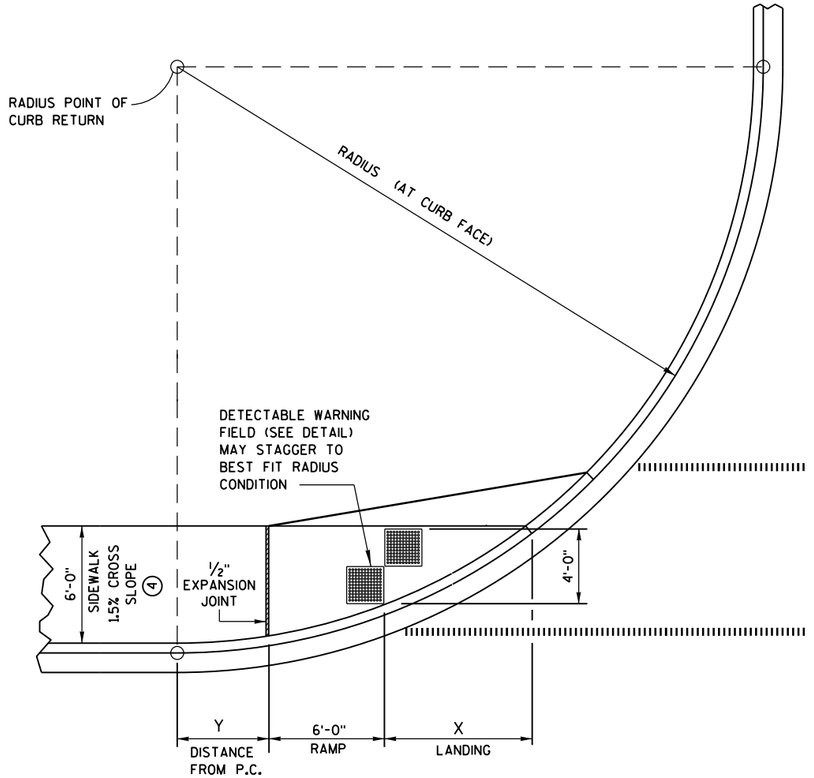
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

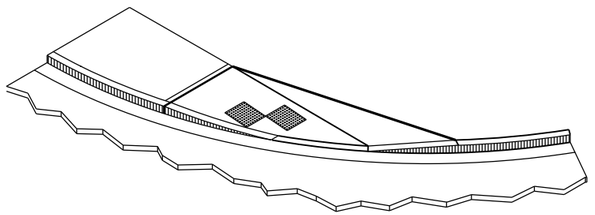
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



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

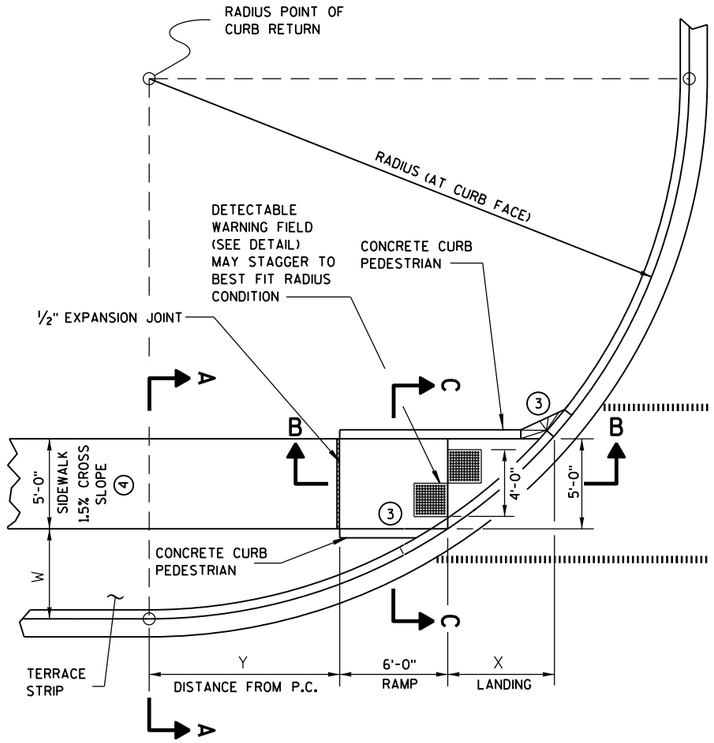
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

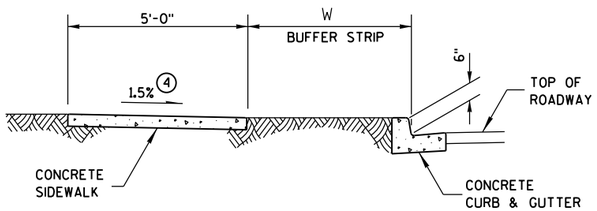
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

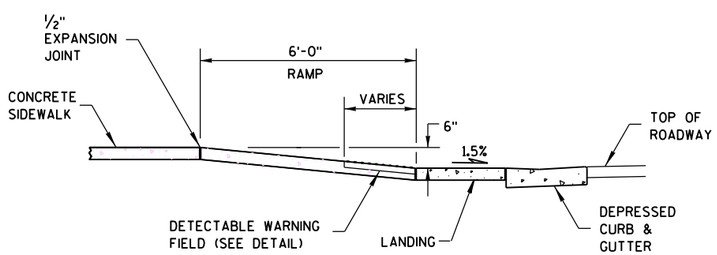
S.D.D. 8 D 5-15c



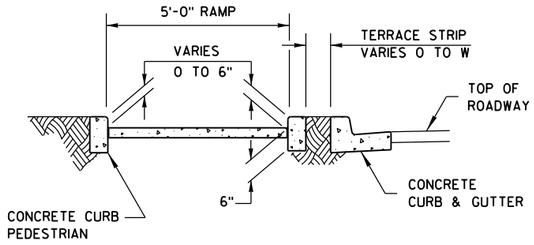
CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



SECTION C-C FOR TYPE 4B

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

GENERAL NOTES

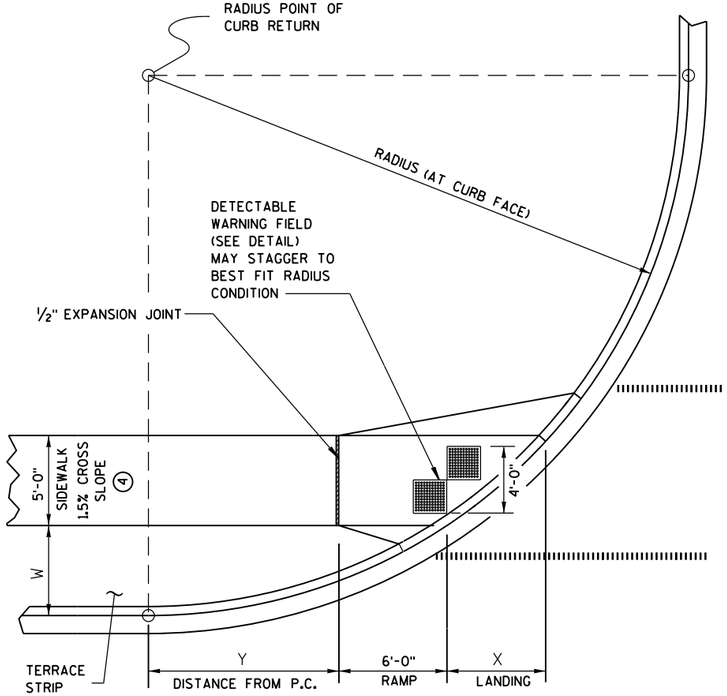
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

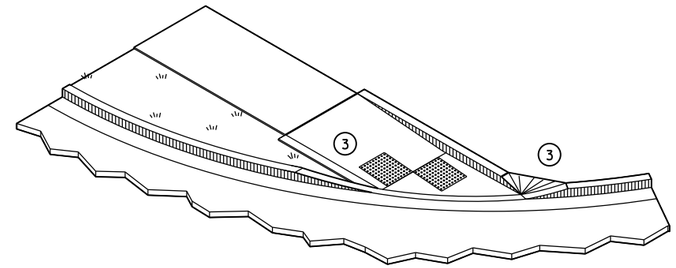
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

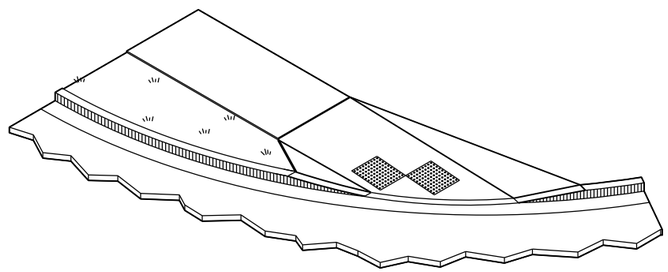
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



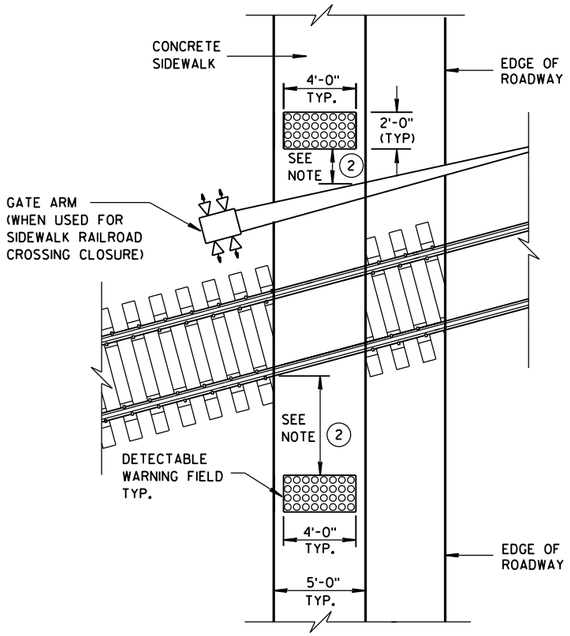
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

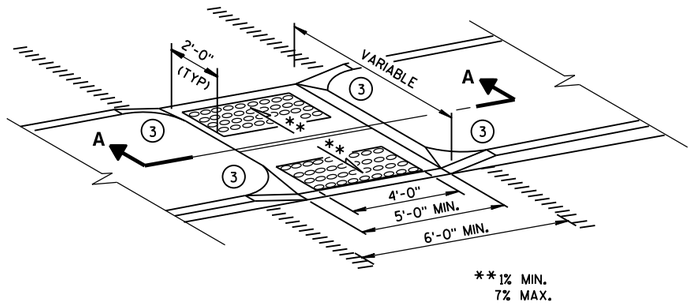
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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%.

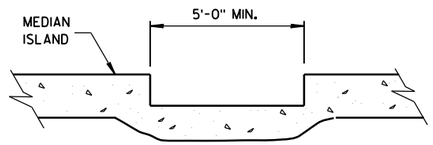
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

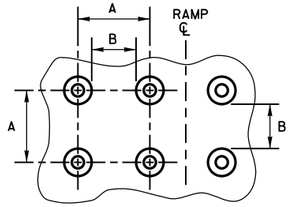
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET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



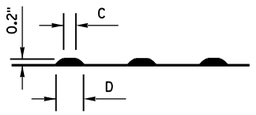
SECTION A-A



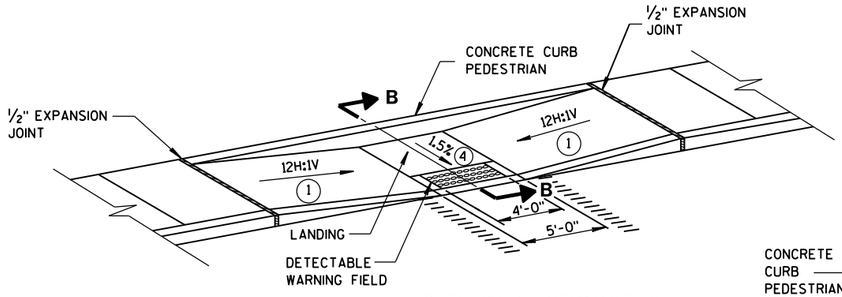
PLAN VIEW

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

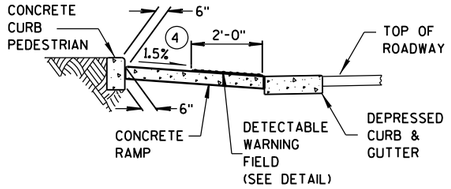
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

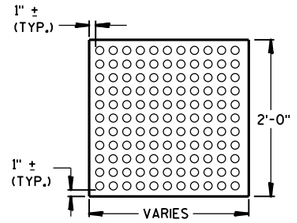


MID-BLOCK CROSSING
TYPE 7A



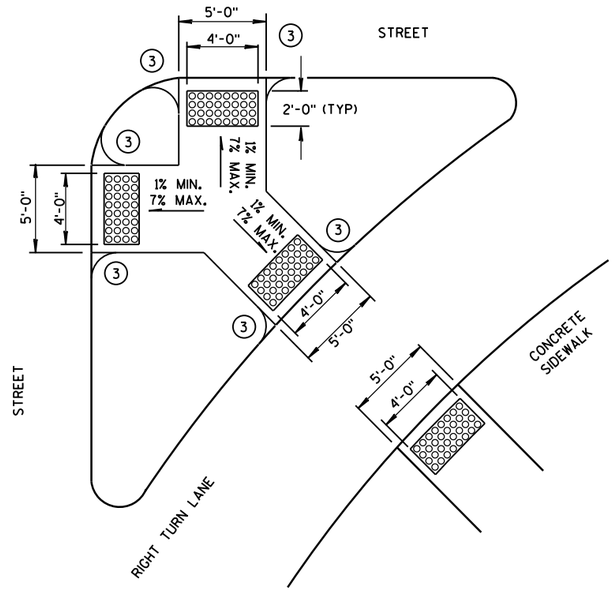
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

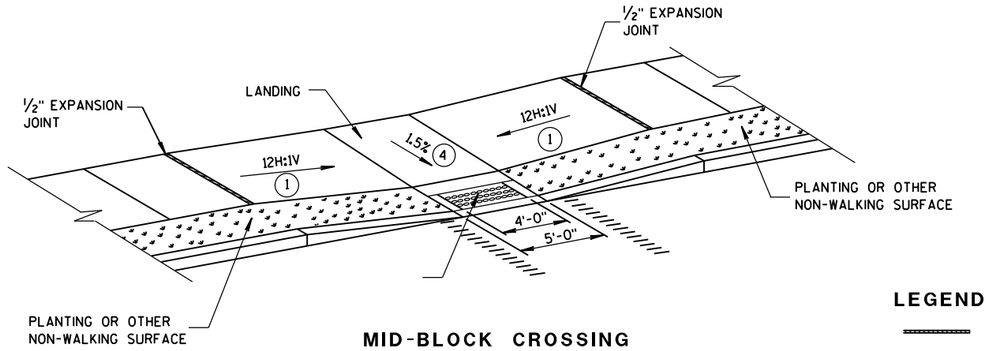


PLAN VIEW

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)

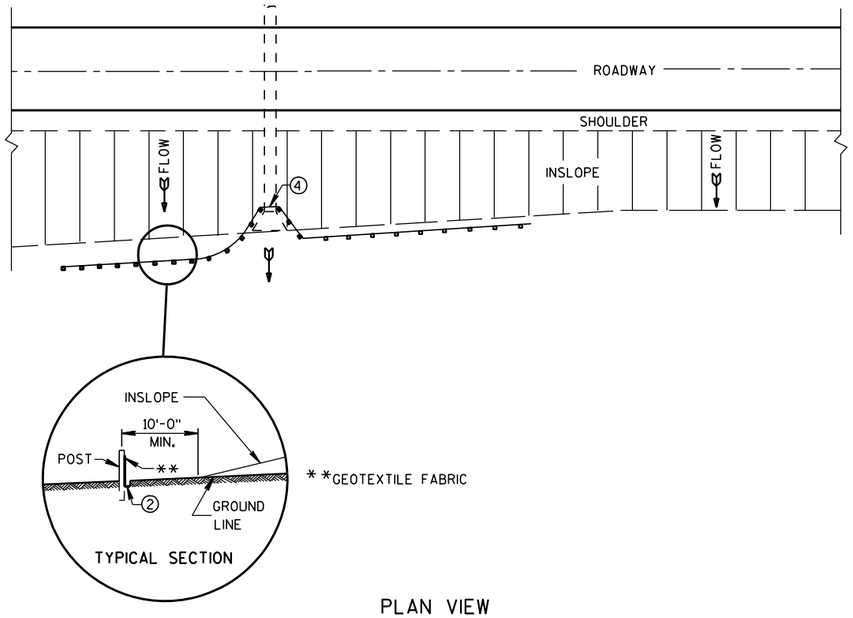
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

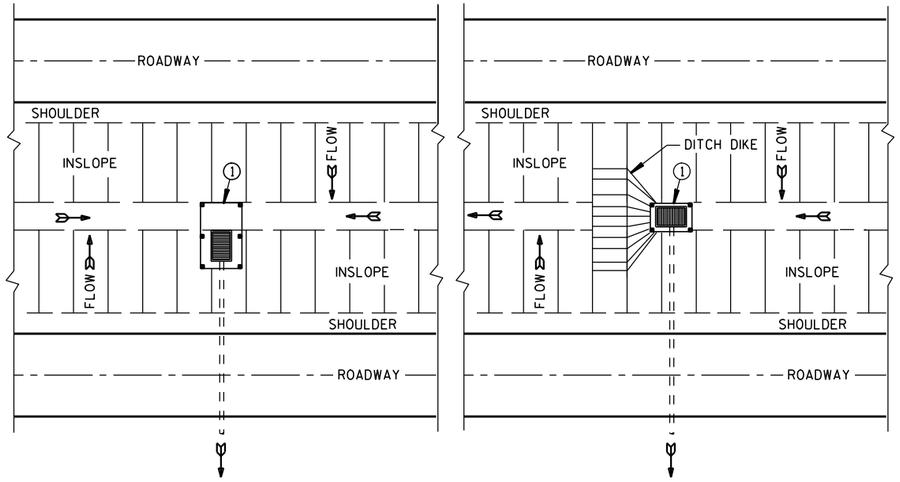
6

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



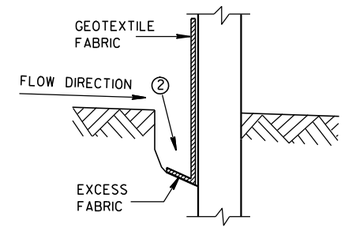
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

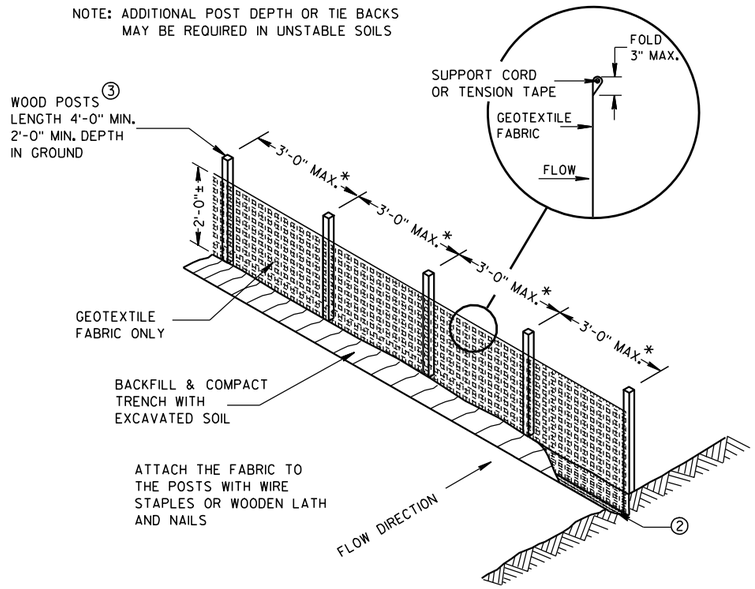
GENERAL NOTES

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

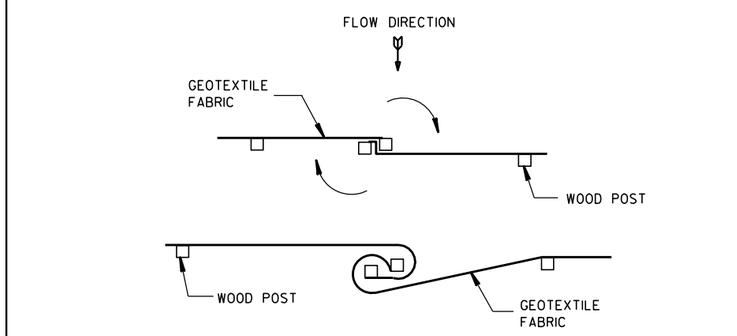
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



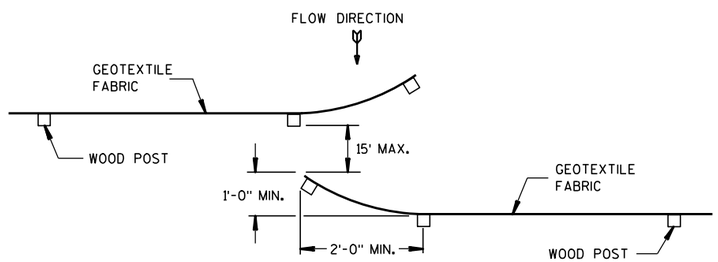
TRENCH DETAIL



SILT FENCE

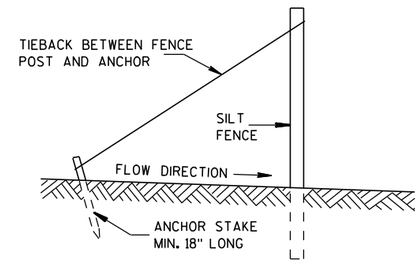


TWIST METHOD



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

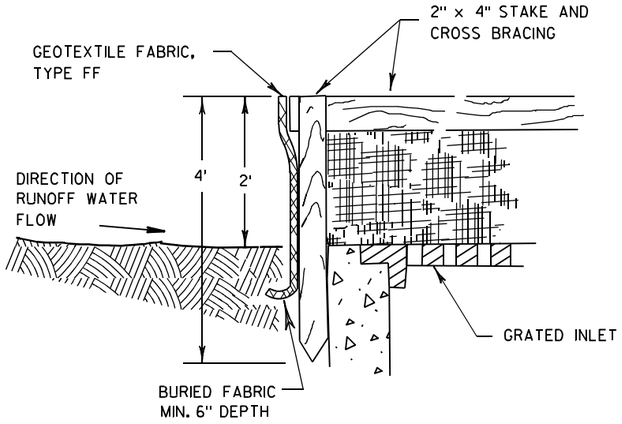
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

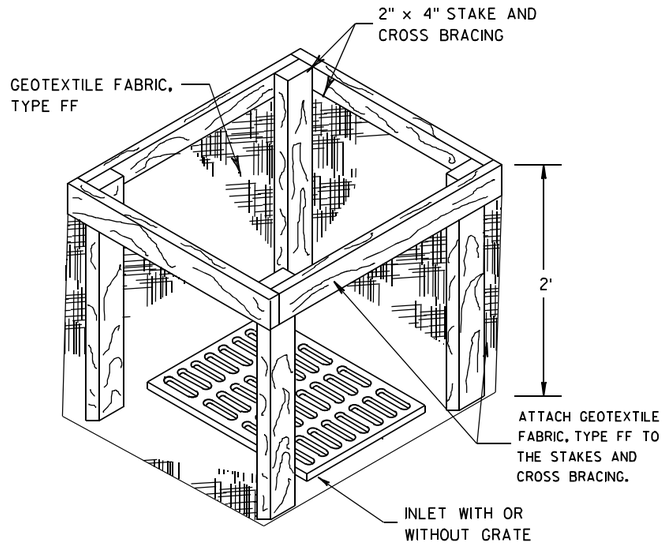
6

S.D.D. 8 E 9-6

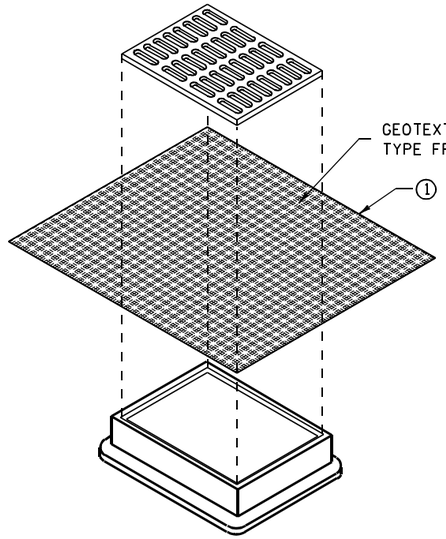
6

S.D.D. 8 E 9-6



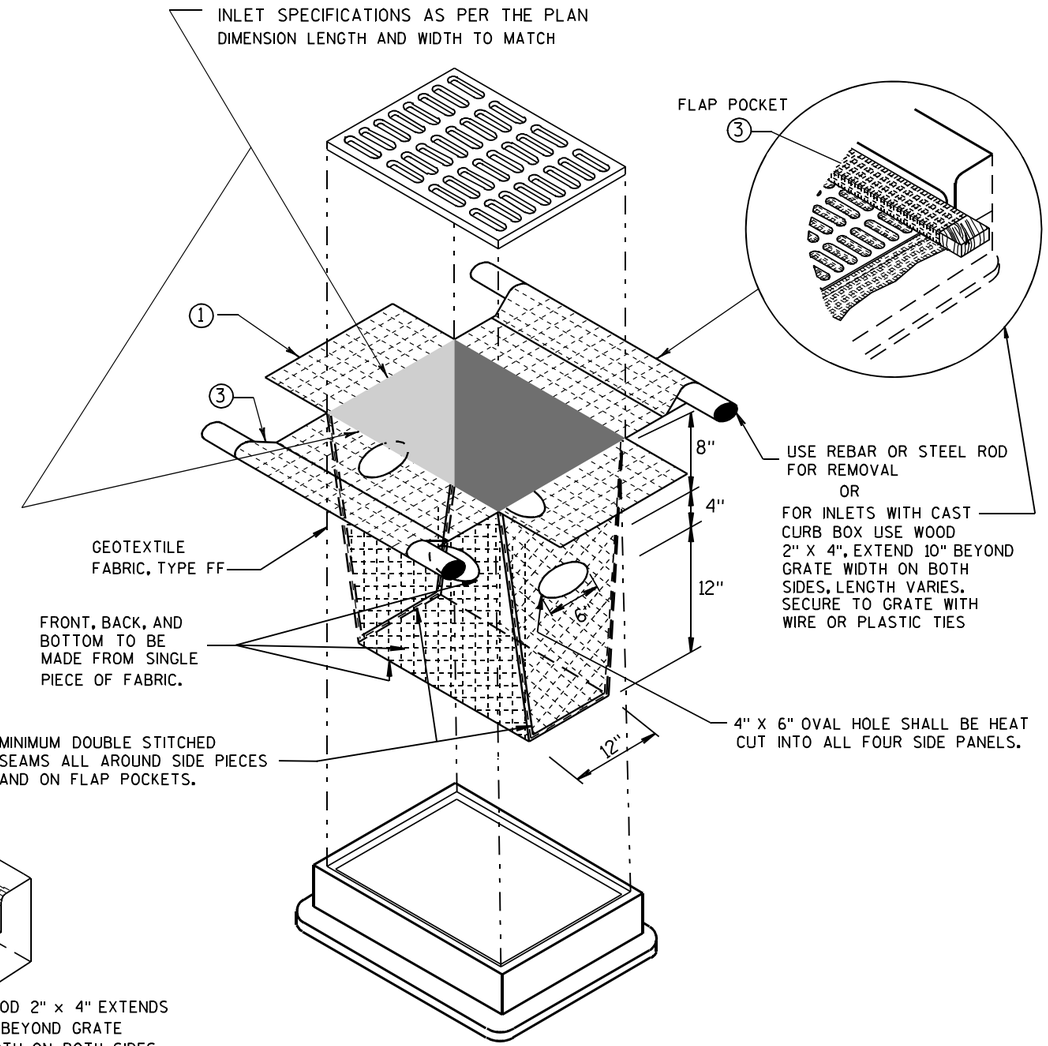


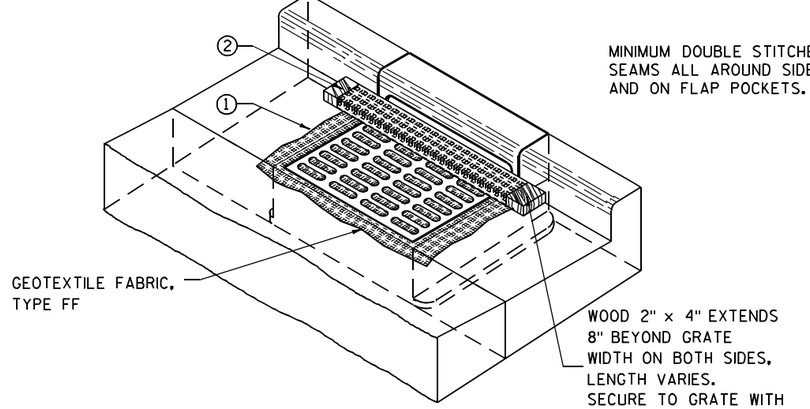
INLET PROTECTION, TYPE A



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.

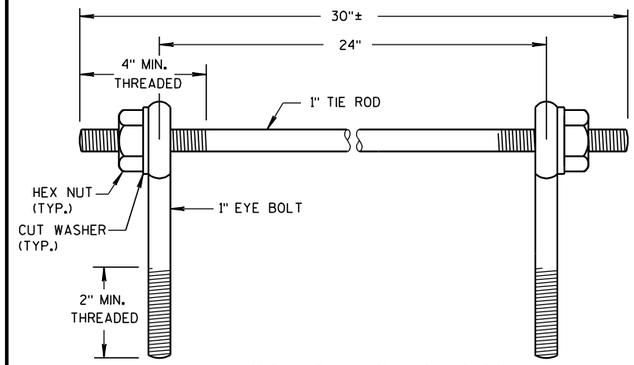
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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

INLET PROTECTION
TYPE A, B, C, AND D

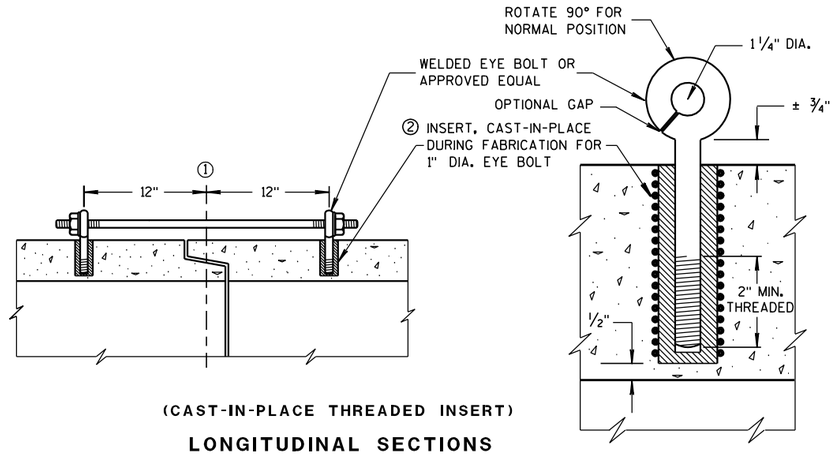
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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



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.

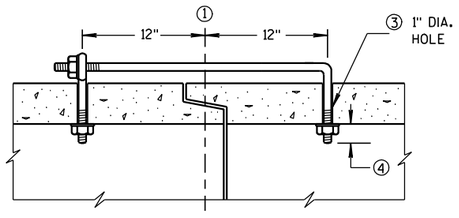
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

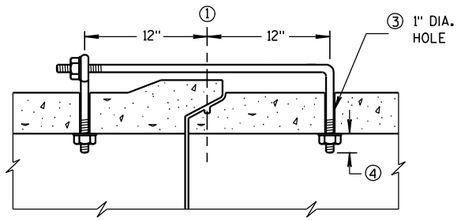
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

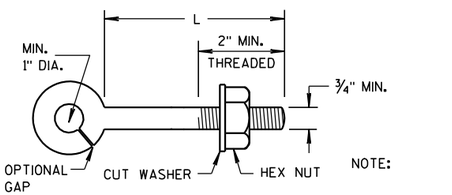


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

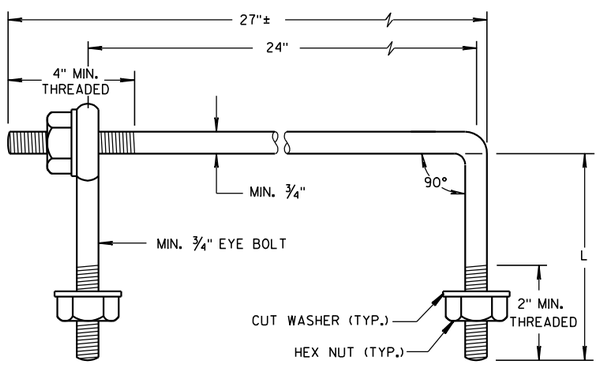
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

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

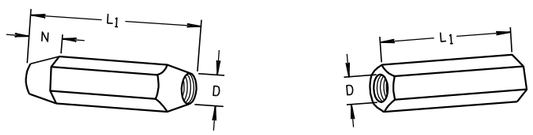
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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 1/16

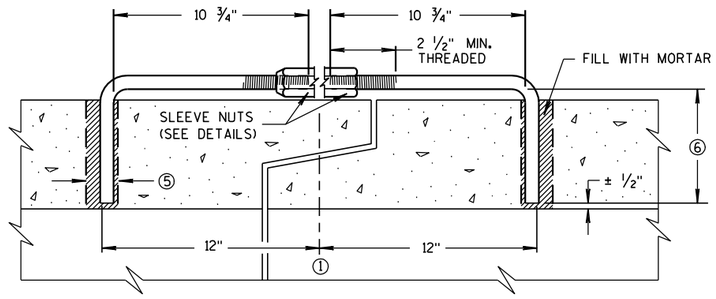
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

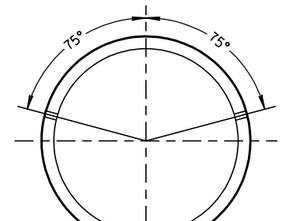
SLEEVE NUTS



LONGITUDINAL SECTION

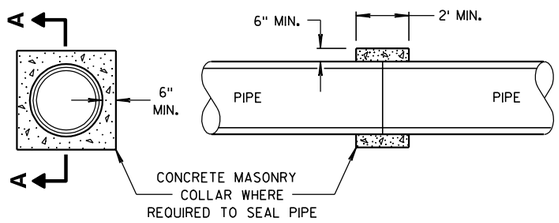
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

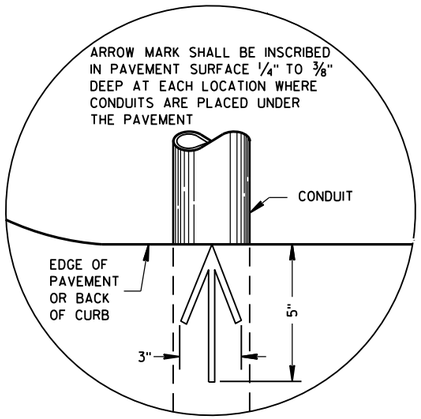
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-7

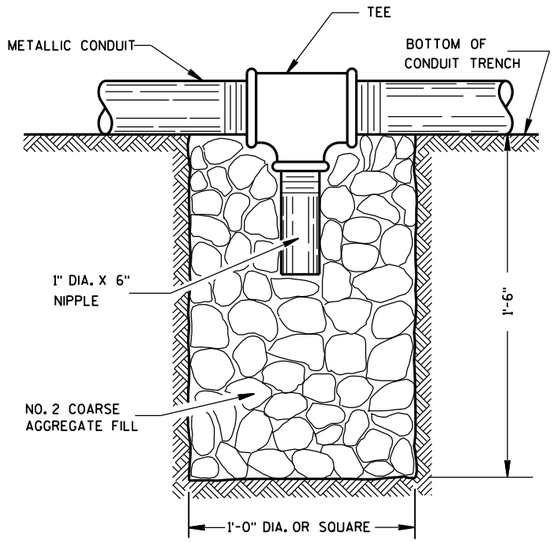
6

S.D.D. 8 F 4-7



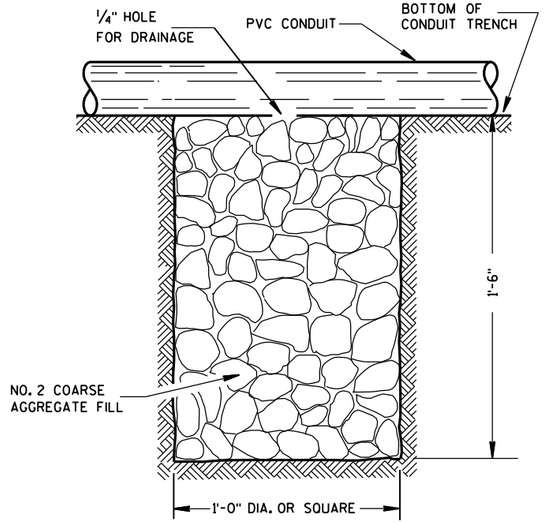
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

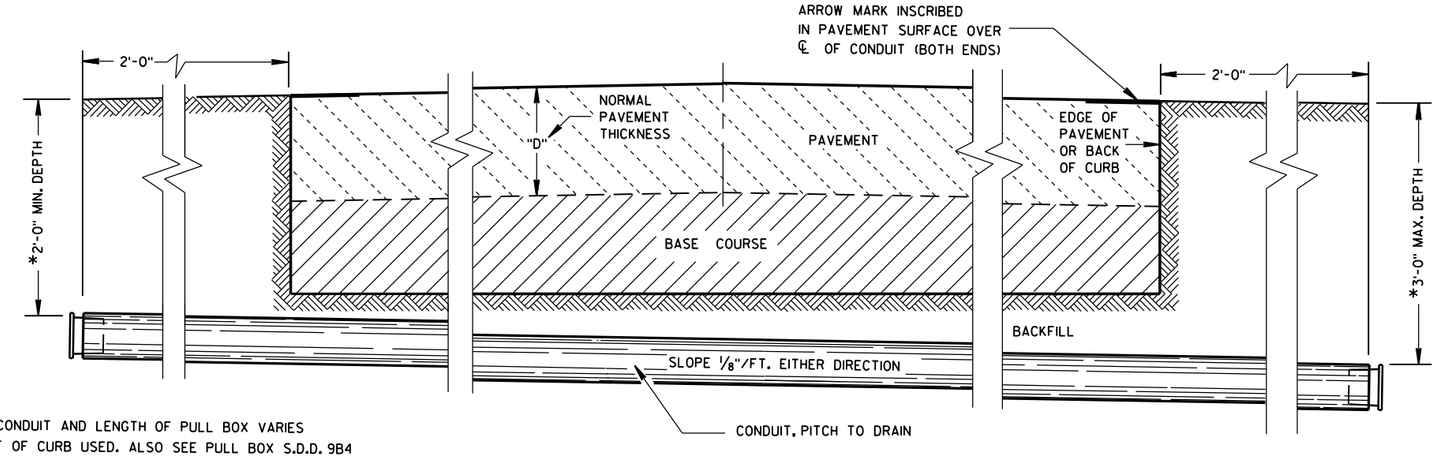
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT UNDER PAVED HIGHWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014 — DATE

/S/ Ahmet Demirbilek — STATE ELECTRICAL

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S.D.D. 9 B 2-8

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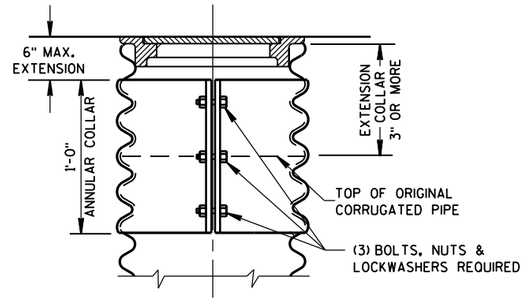
TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

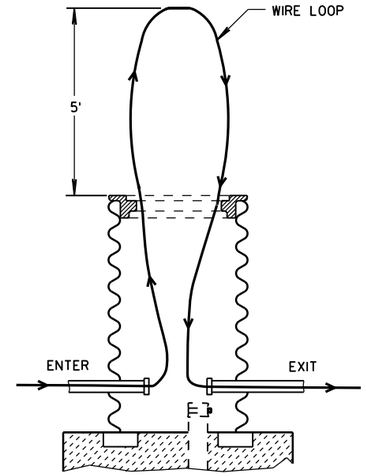
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

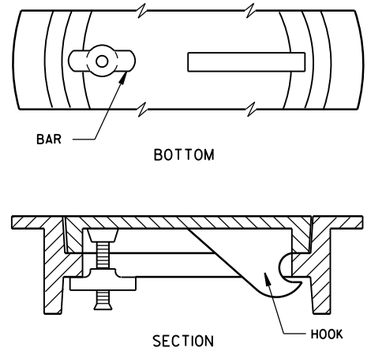
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

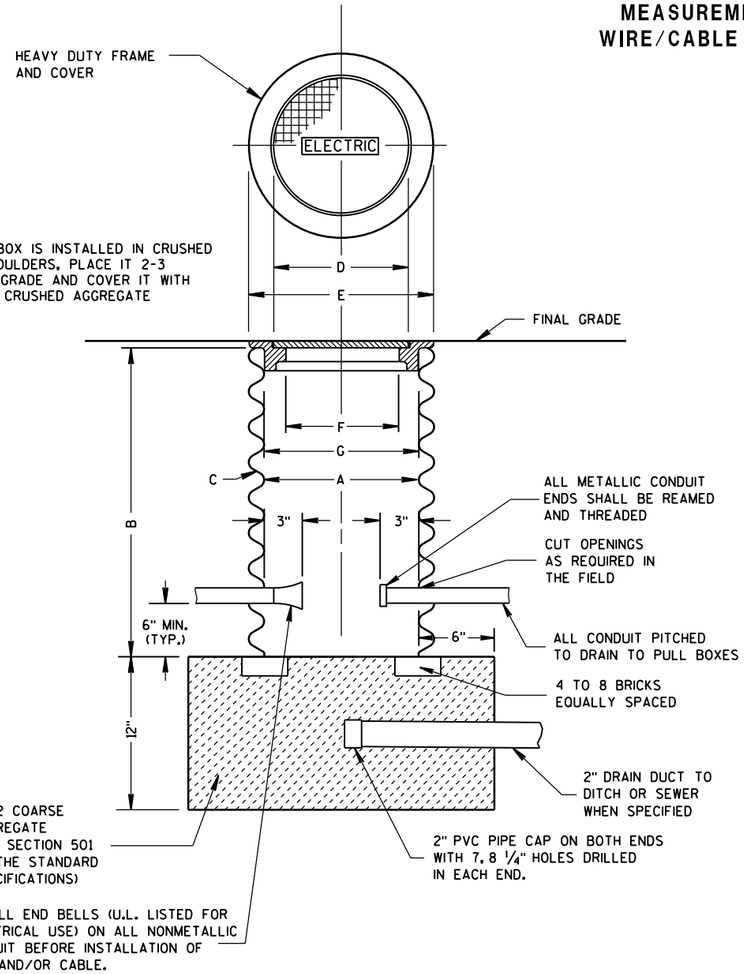


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



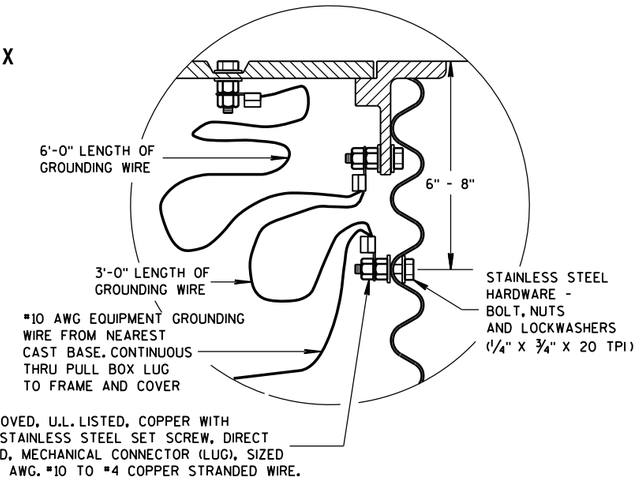
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

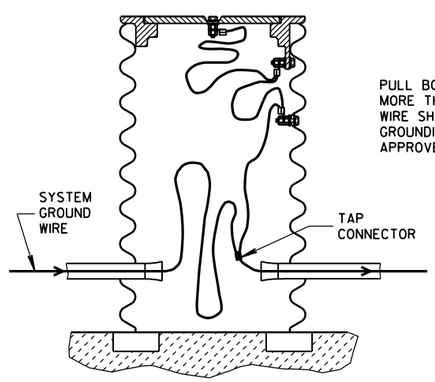


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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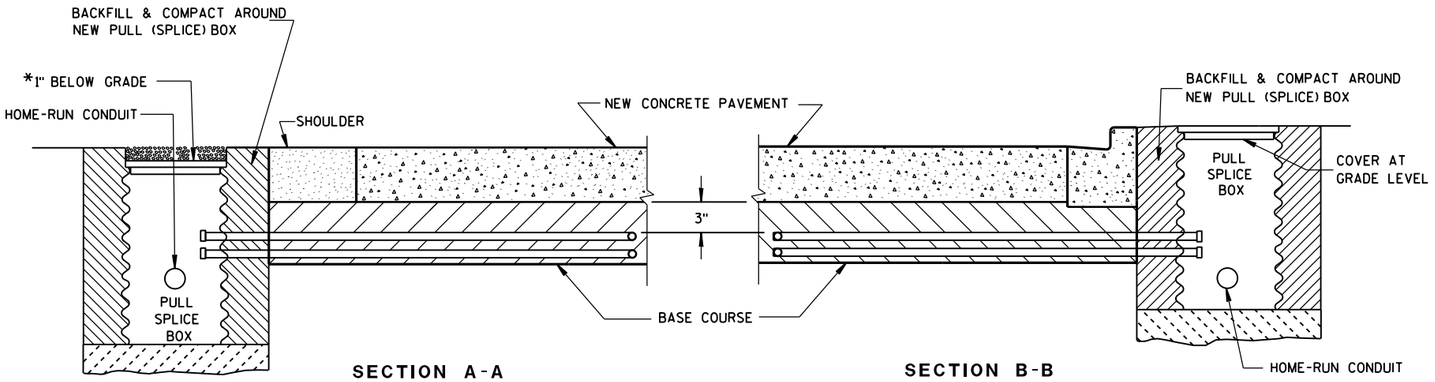


SECTION A-A
NO CURB & GUTTER

SECTION B-B
CURB & GUTTER

*RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

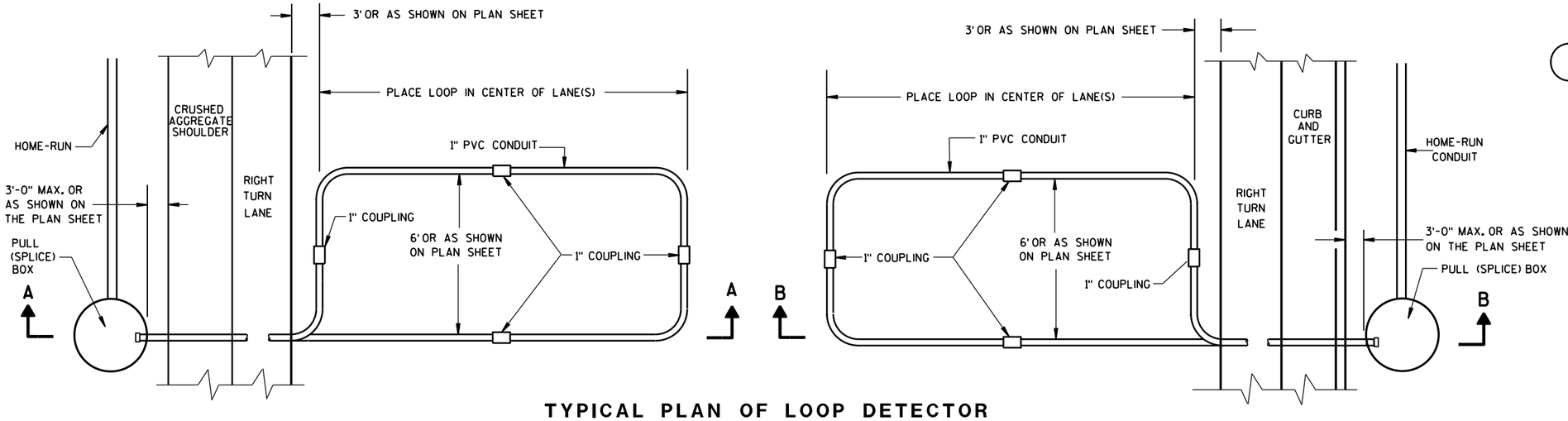
THE #12 AWG. LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

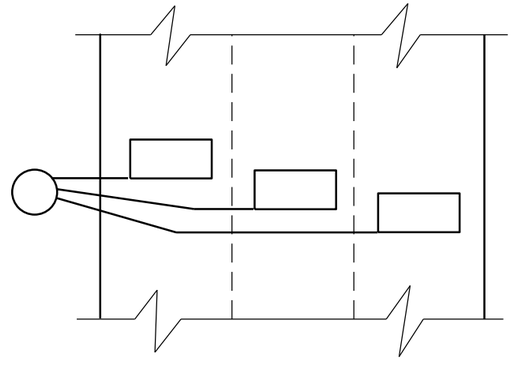
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE, NON-SPLICED CONTINUOUS LENGTH.

PROTECTION OF THE CONDUITS IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.

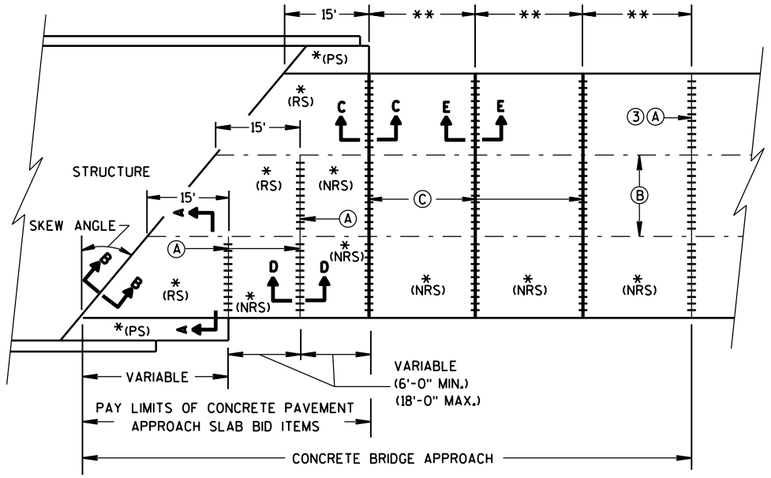


TYPICAL PLAN OF LOOP DETECTOR WITH 24" PULL (SPLICE) BOX

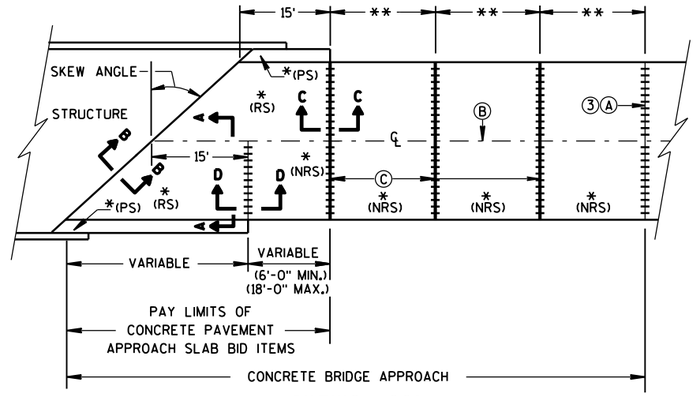


MULTI-LANE INSTALLATION

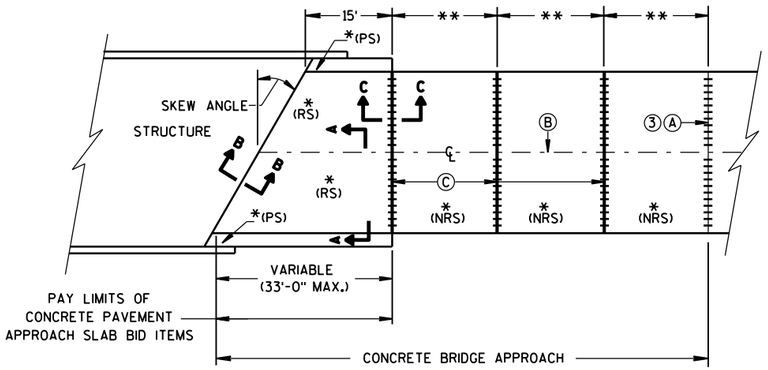
LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED Sept. 2014 — DATE /S/ Ahmet Demirbilek — STATE ELECTRICAL FHWA



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



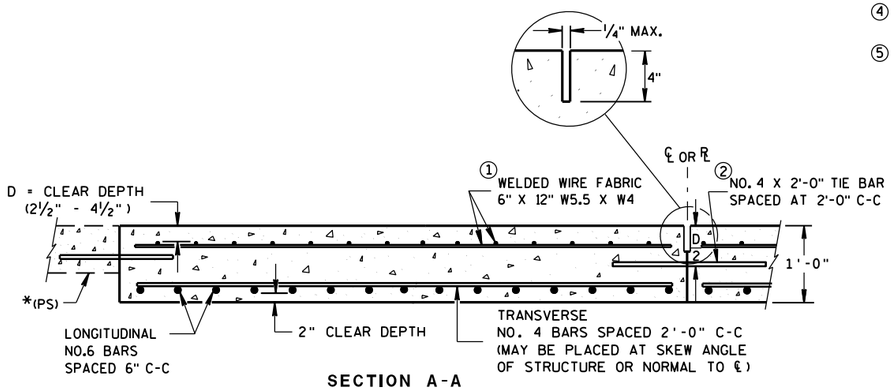
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

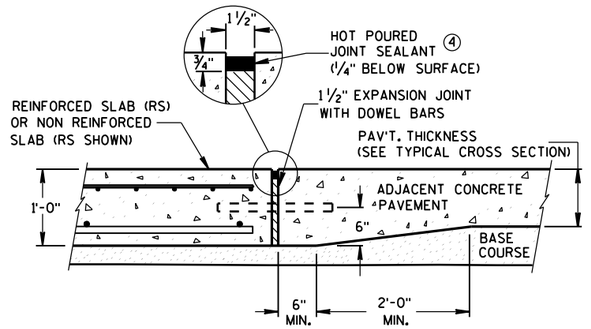
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

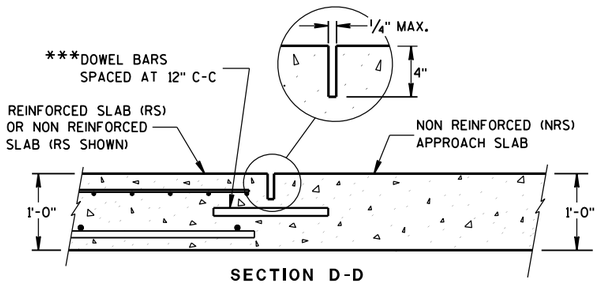
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) STANDARD LONGITUDINAL JOINT AND TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



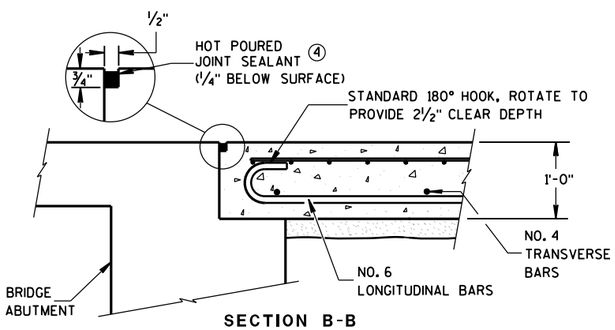
SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

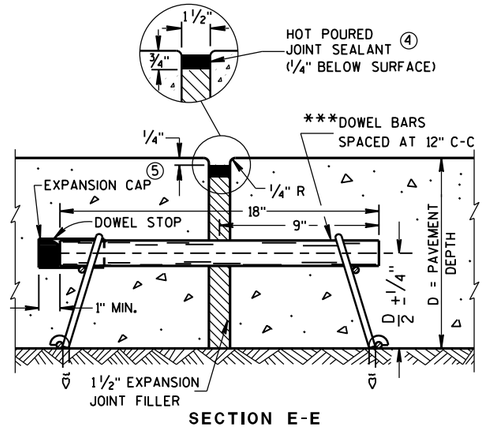
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

1. THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
2. THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
3. DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.
4. USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
5. PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION E-E
EXPANSION JOINT

CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
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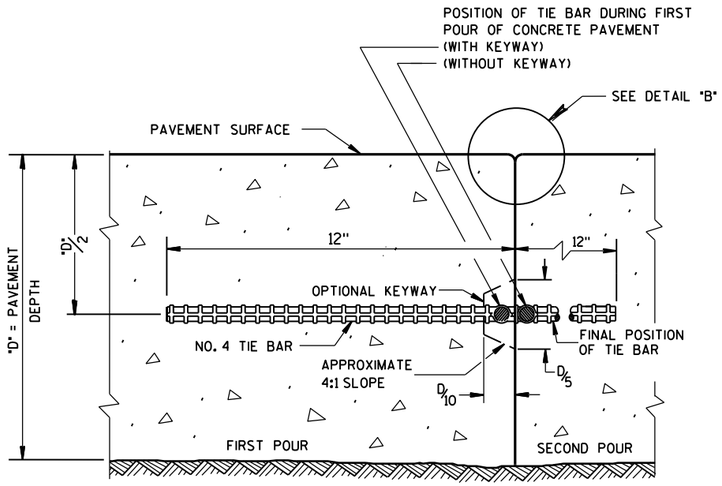
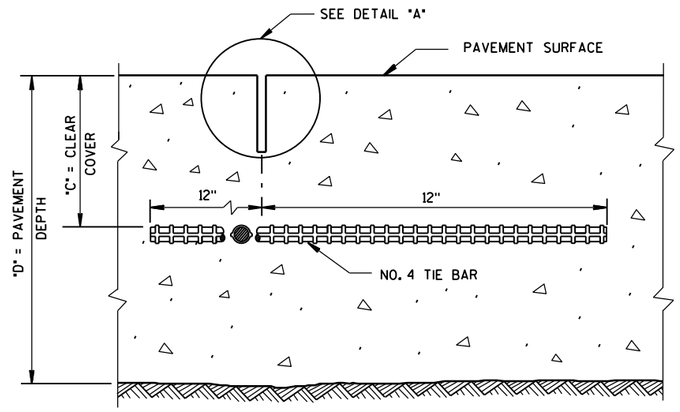


CONSTRUCTION JOINT



SAWED JOINT

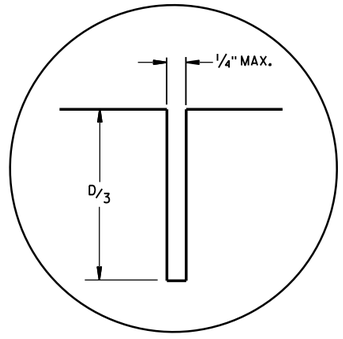
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

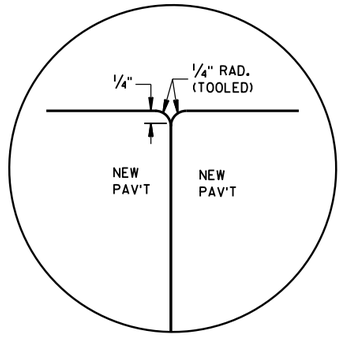
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

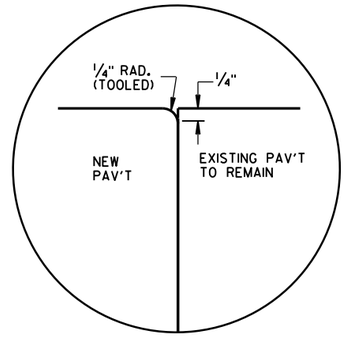
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



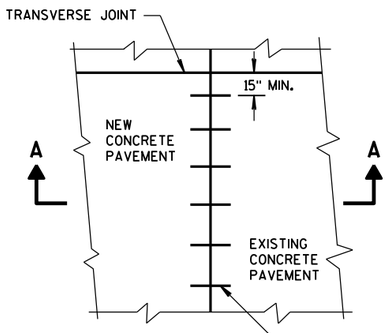
DETAIL "A"



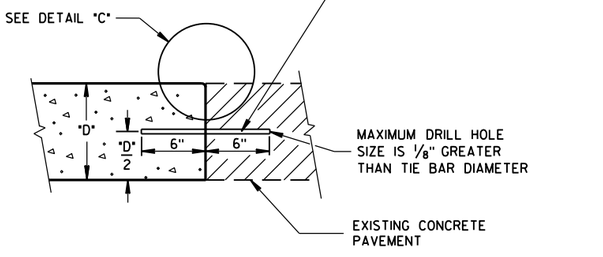
DETAIL "B"



DETAIL "C"



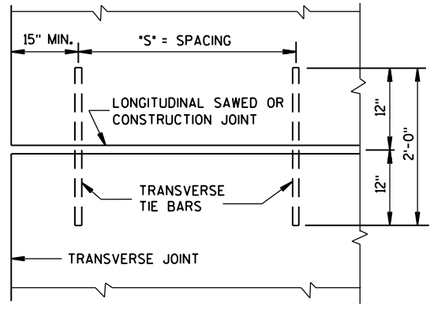
PLAN VIEW



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/2014 DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE ...NEER

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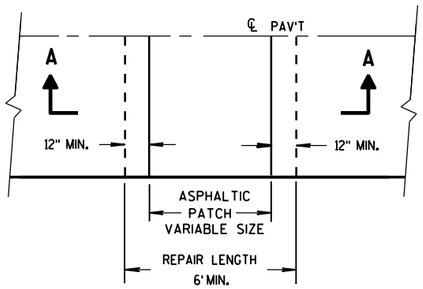
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES. ADDITIONAL SAW CUTS ARE NOT PAID FOR BY THE DEPARTMENT.

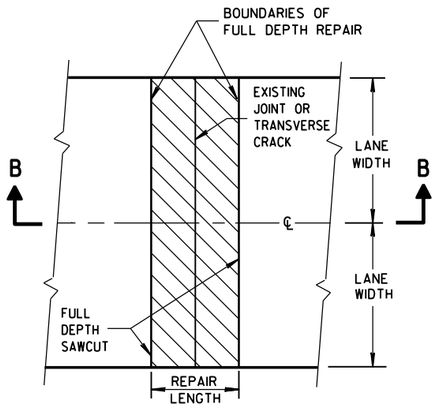
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

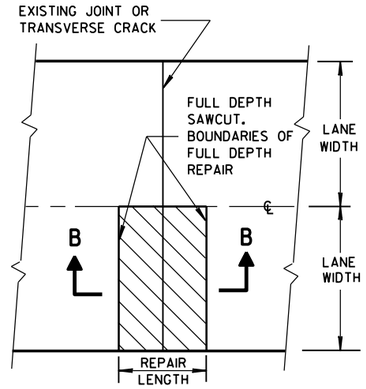
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



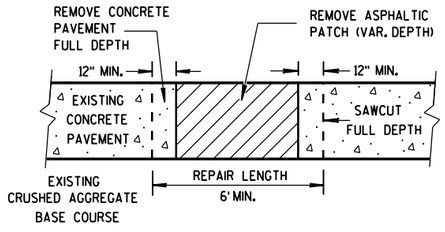
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

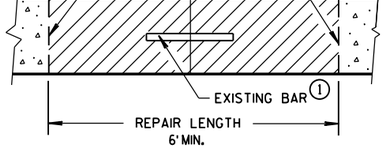
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL



SECTION B-B

CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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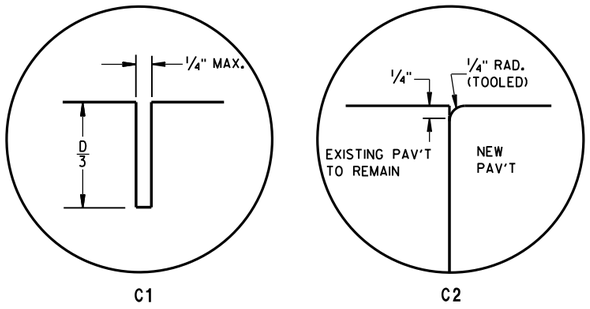
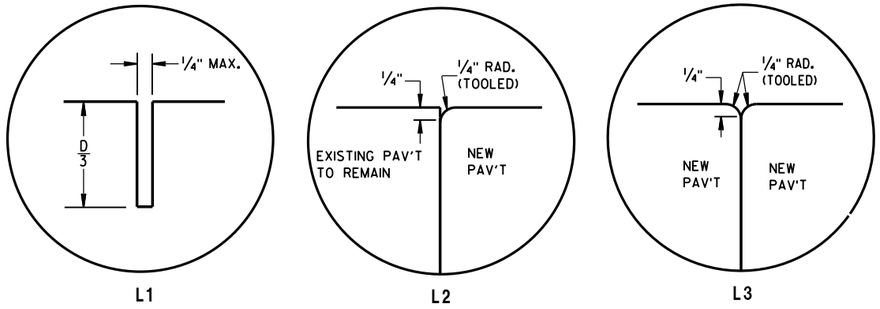


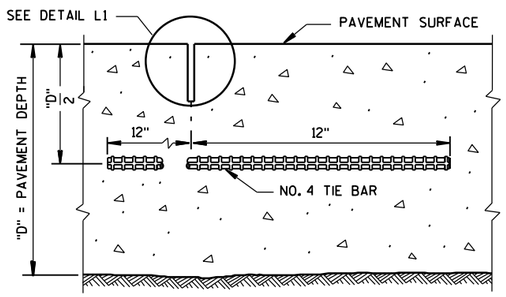
TRANSVERSE JOINTS

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT

GENERAL NOTES

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

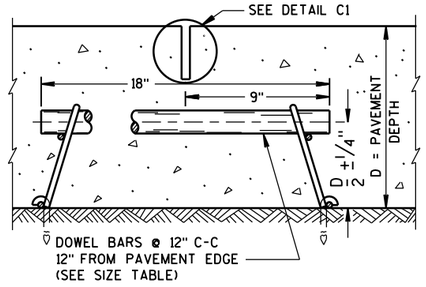
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

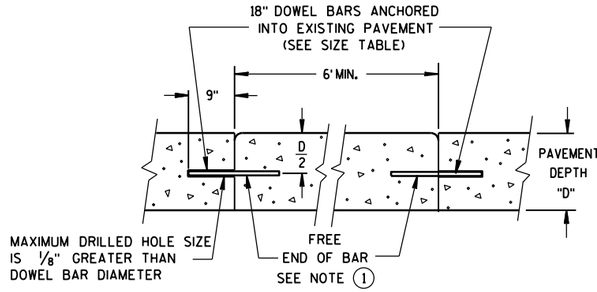
FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

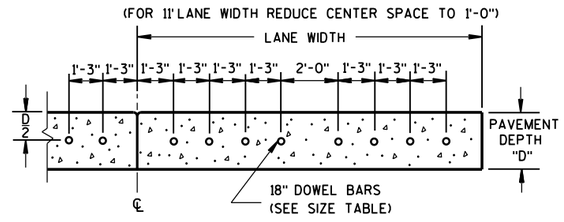


SECTION F-F

CONTRACTION JOINT



SECTION D-D

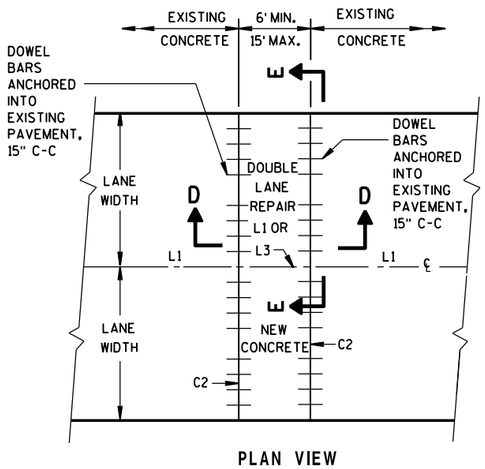


SECTION E-E

DRILLED DOWEL BAR CONSTRUCTION JOINT

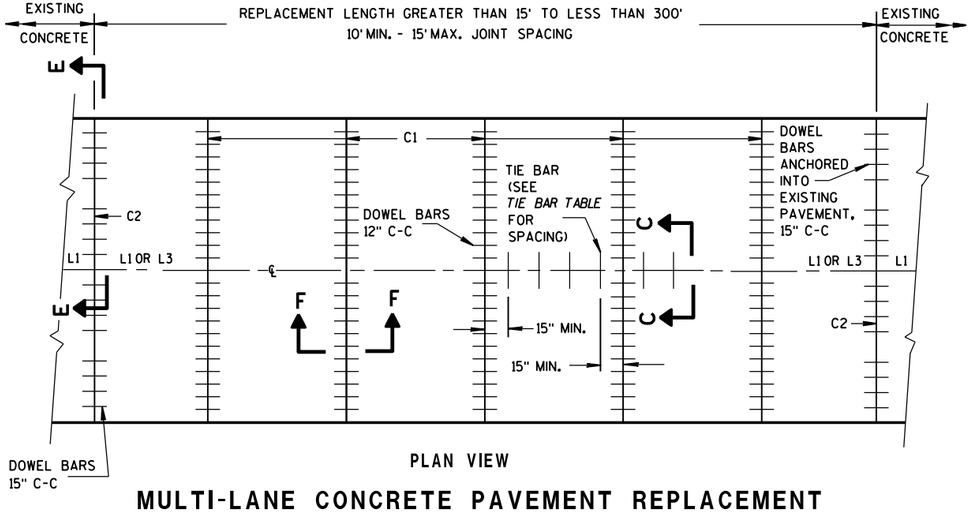
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6",6 1/2"	NONE	12'
7",7 1/2"	1"	14'
8",8 1/2"	1 1/4"	15'
9",9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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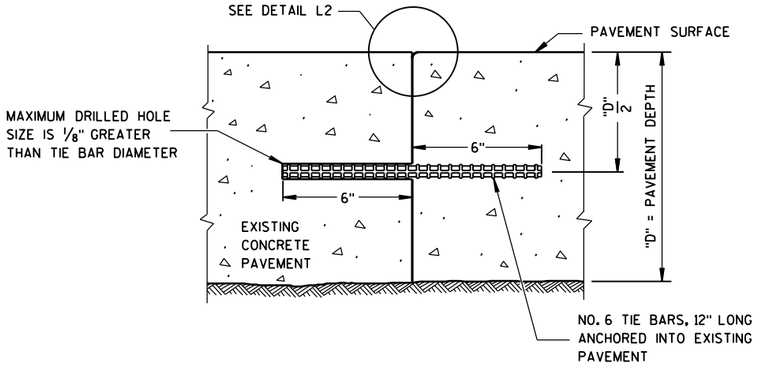


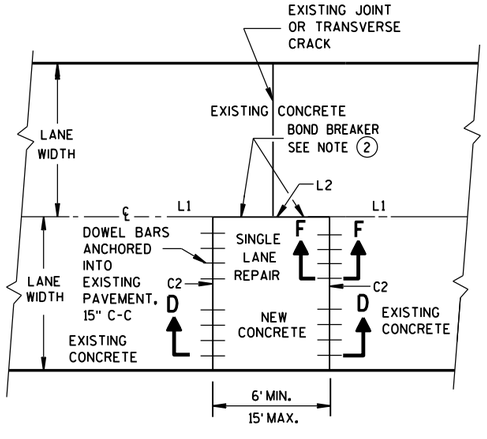
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

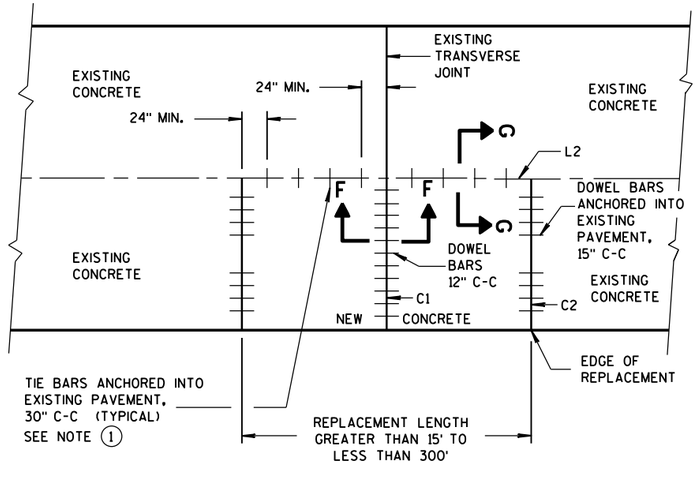
(1) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

(2) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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DATE

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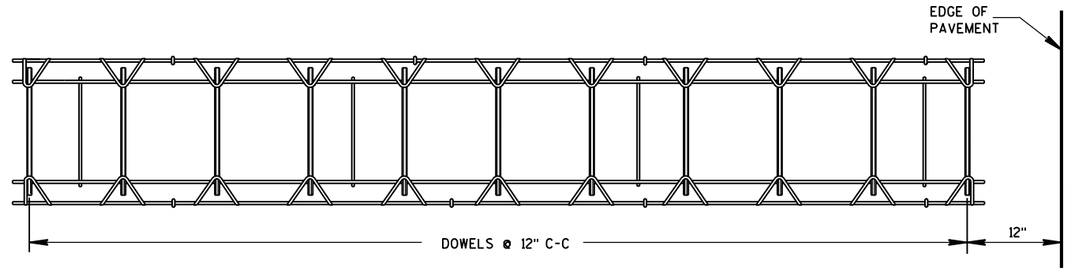
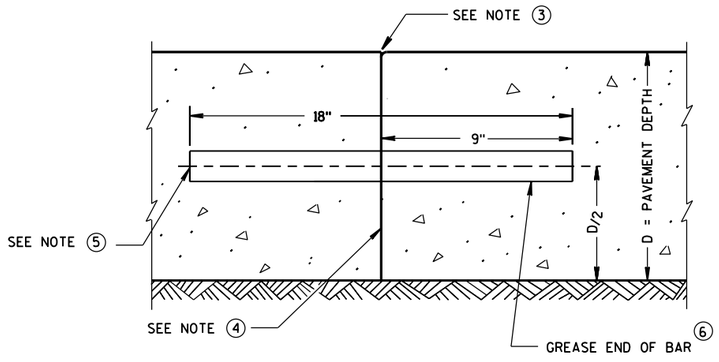


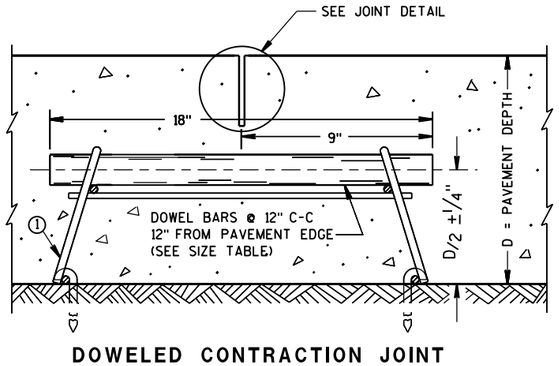
PLAN VIEW

SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



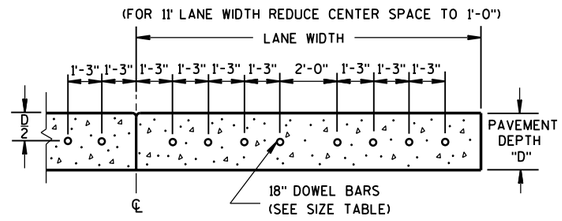
TRANSVERSE CONSTRUCTION JOINT



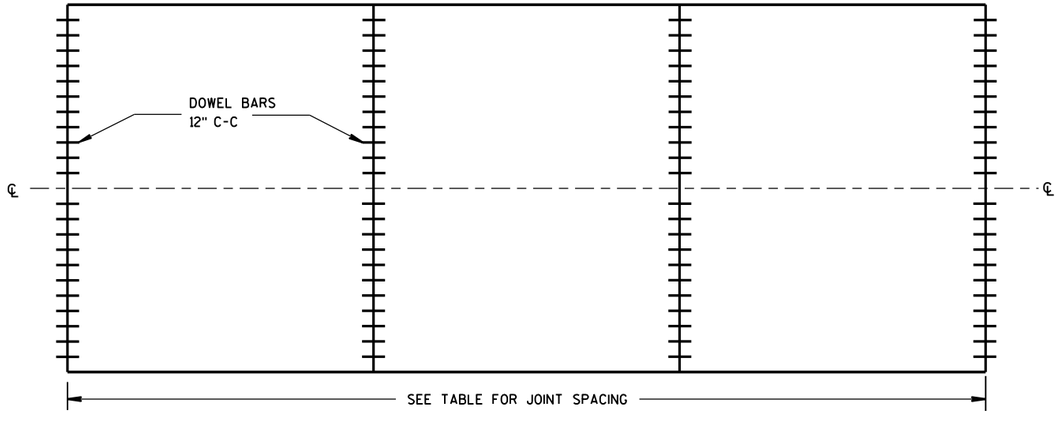
DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE LONGITUDINAL JOINT AND THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① **OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.**

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

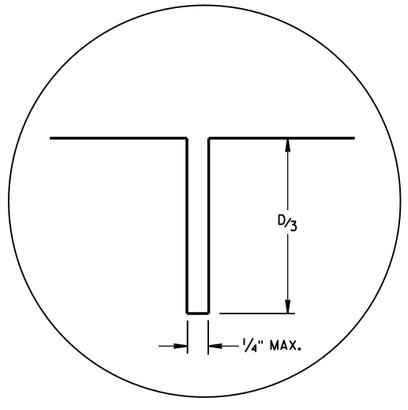
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



JOINT DETAIL

URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
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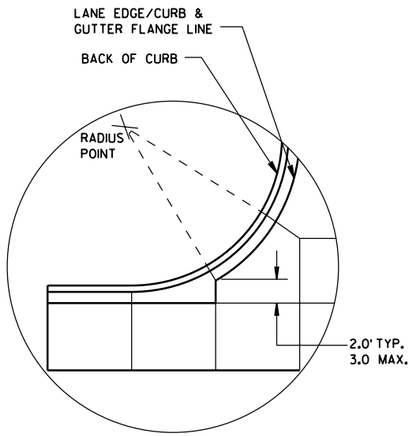
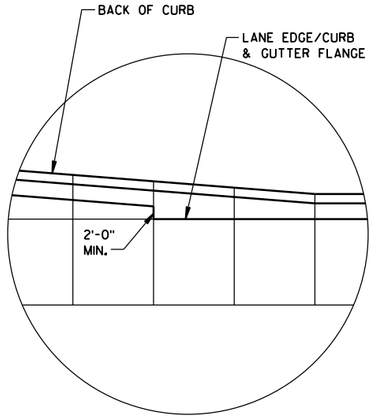
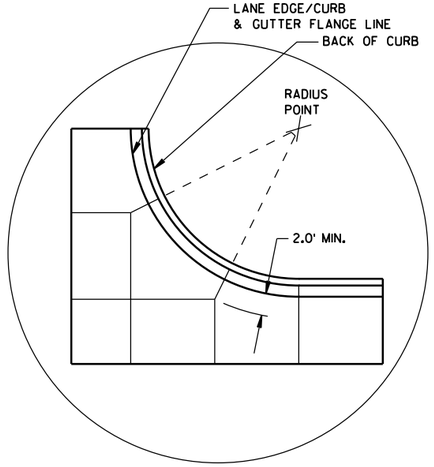


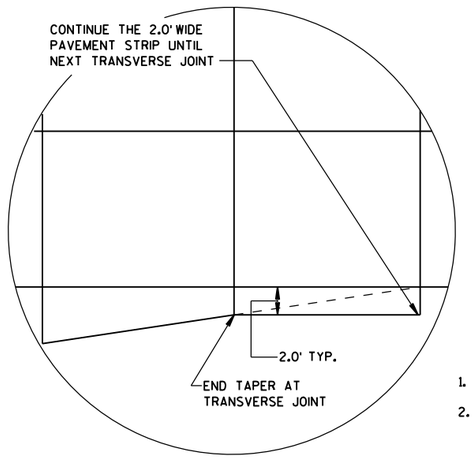
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

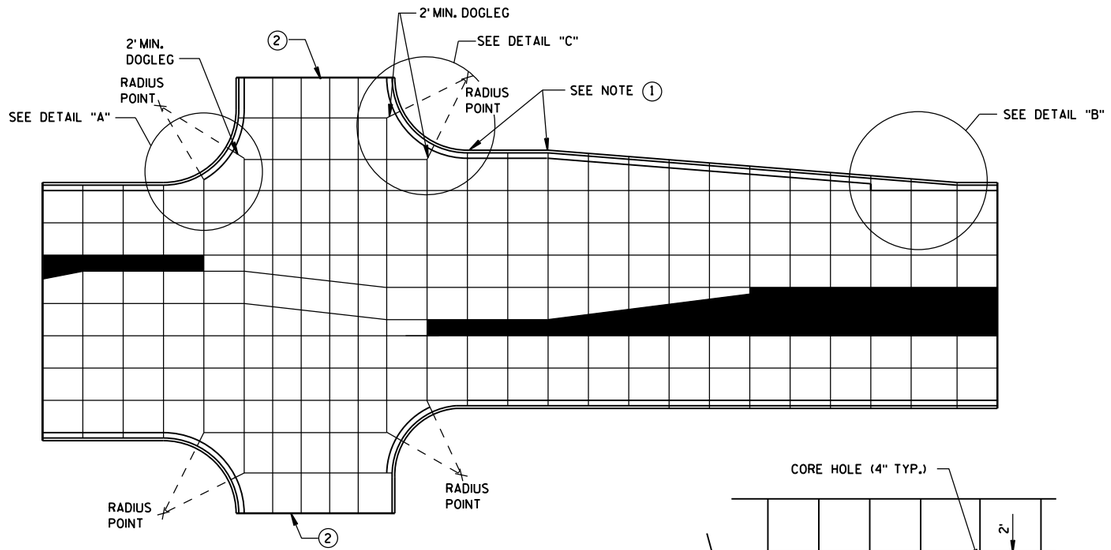
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.

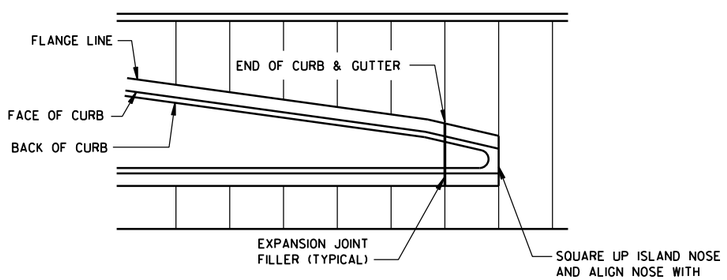


STANDARD INTERSECTION

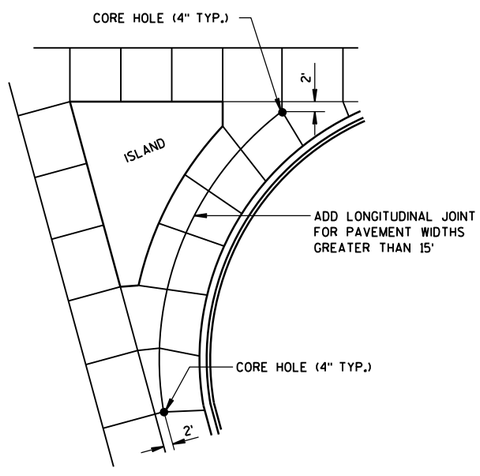
PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'

SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

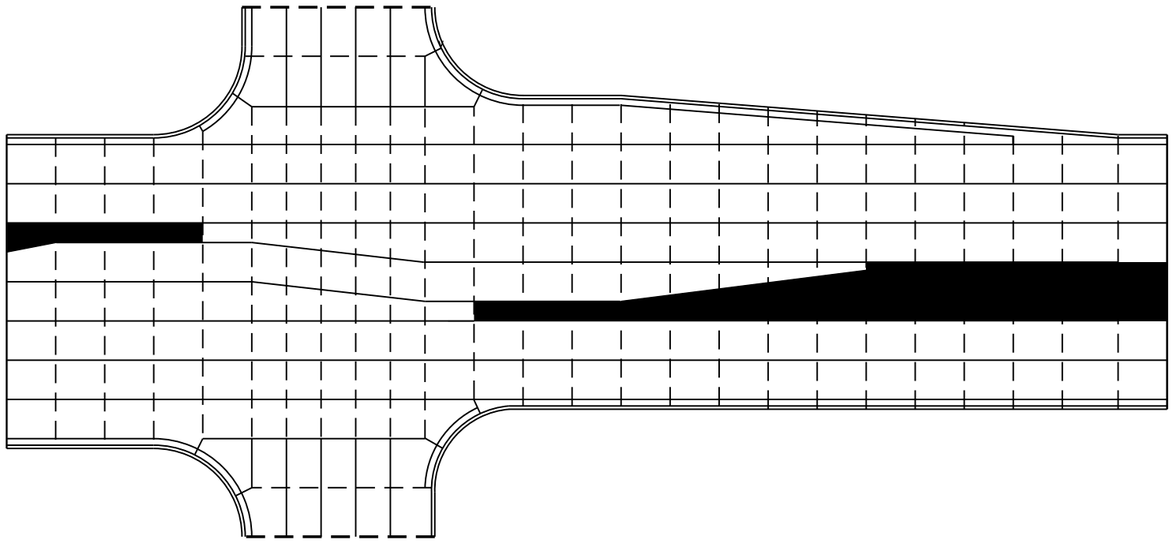
6
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

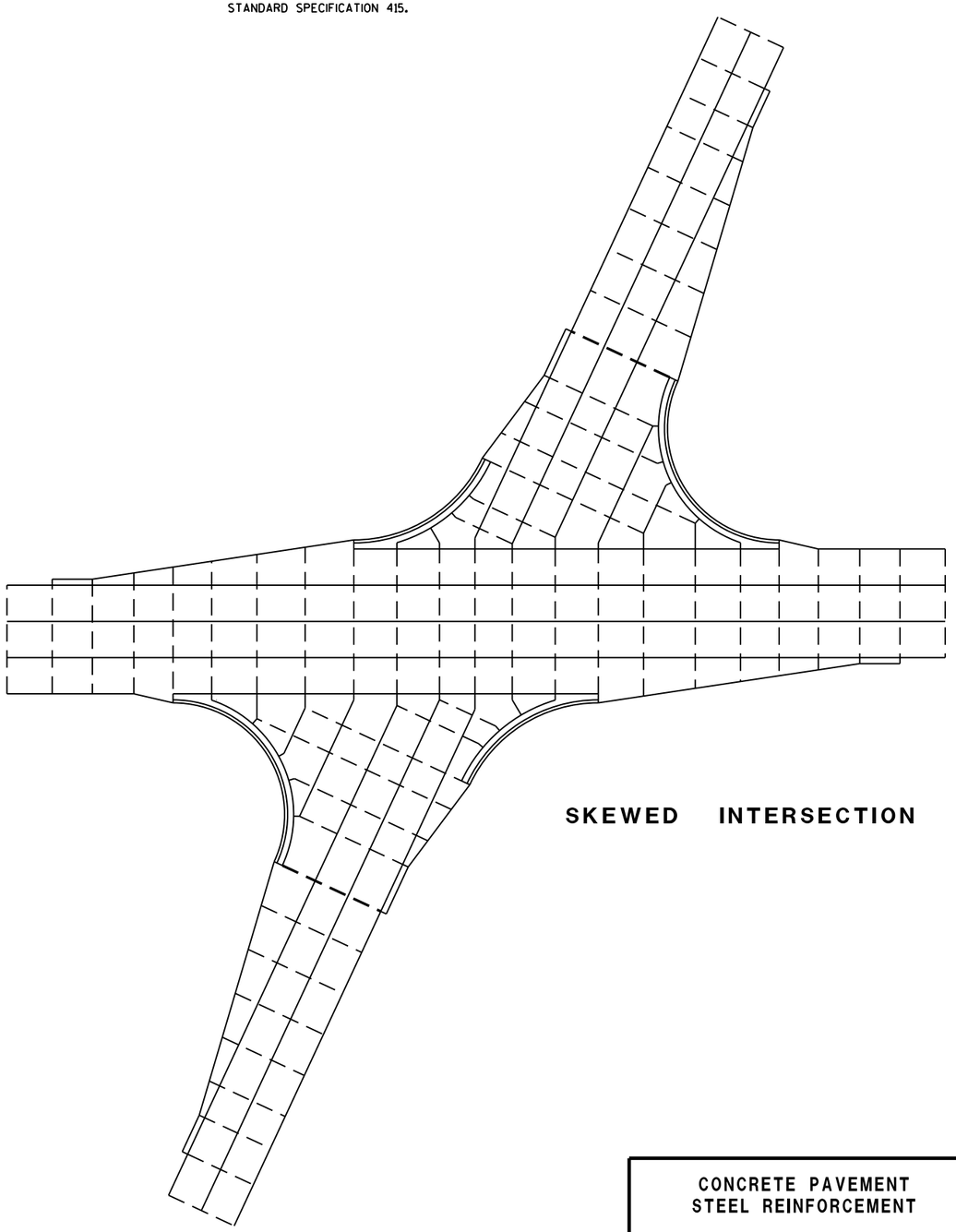
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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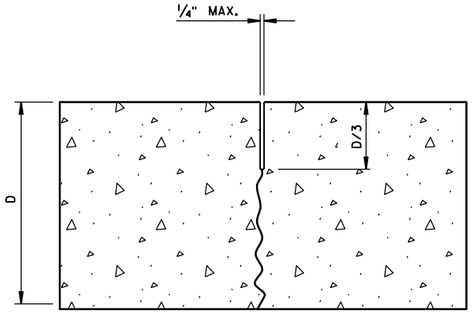
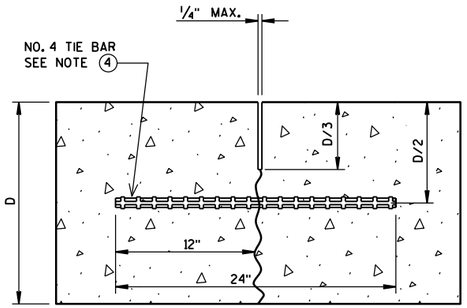


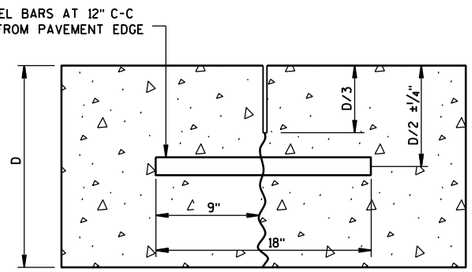
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

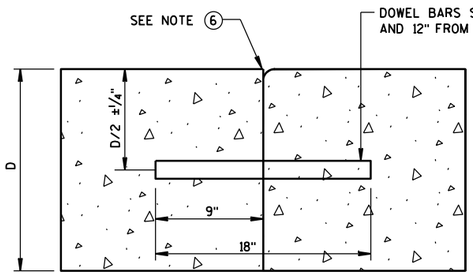
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.



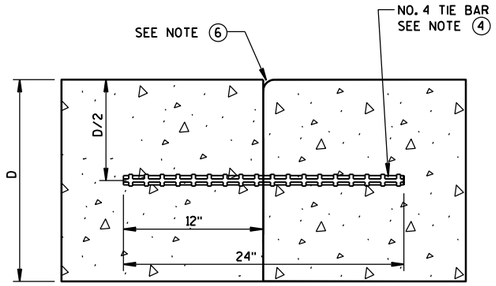
DOWELED-TRANSVERSE

CONTRACTION JOINTS

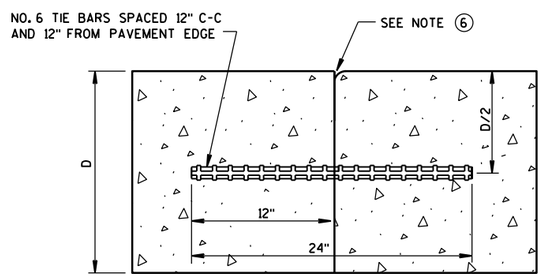
SEE NOTE (2)



DOWELED TRANSVERSE

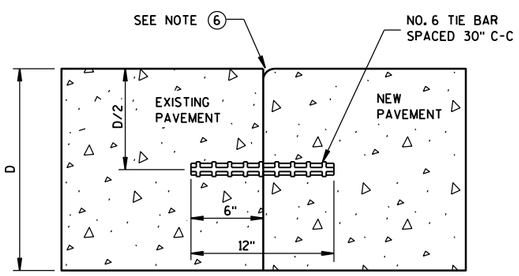


TIED LONGITUDINAL



TIED TRANSVERSE

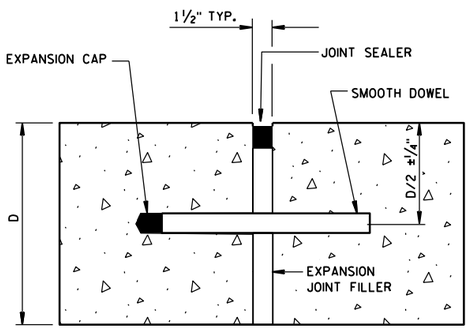
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

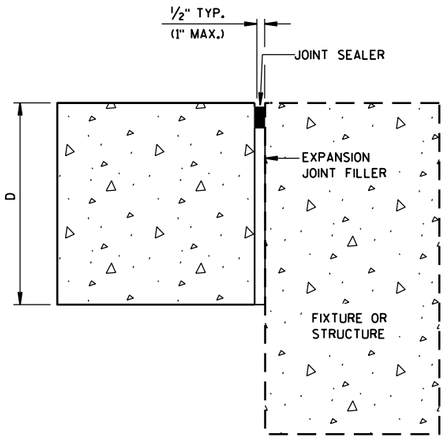
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

STATE OF WISCONSIN
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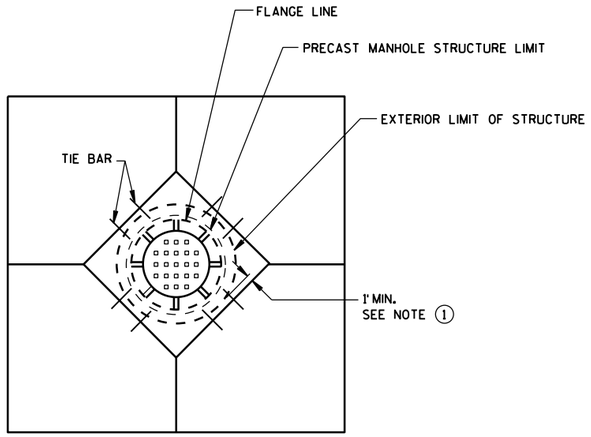
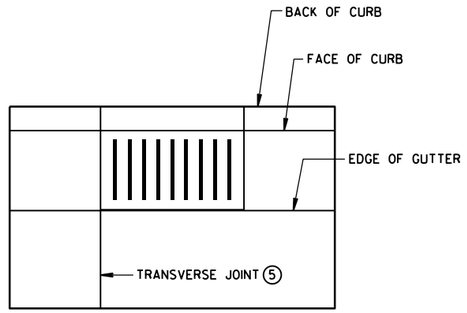
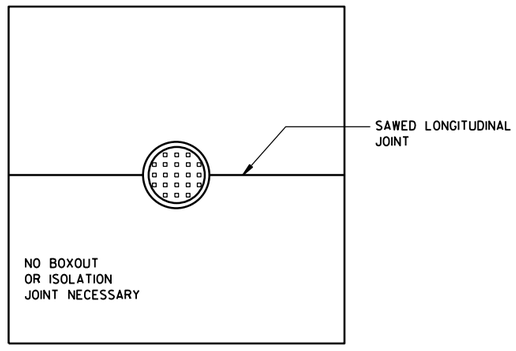


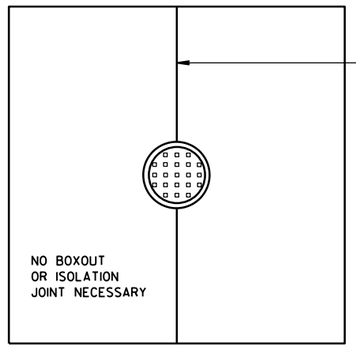
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



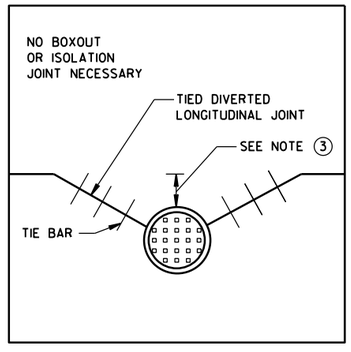
INLET WITH TRANSVERSE JOINT



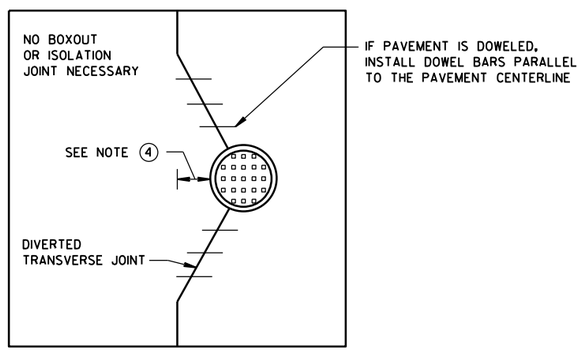
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE

NEER

FHWA

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GENERAL NOTES

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

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

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

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

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

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

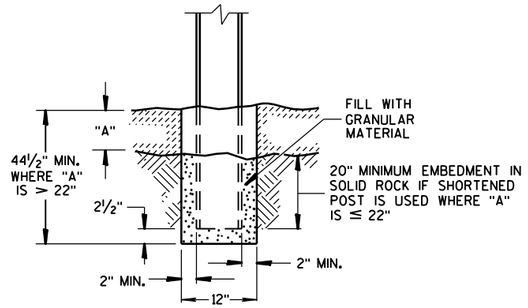
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

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

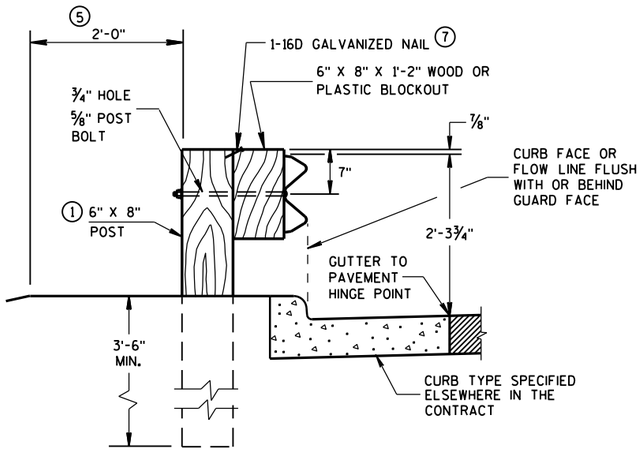
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

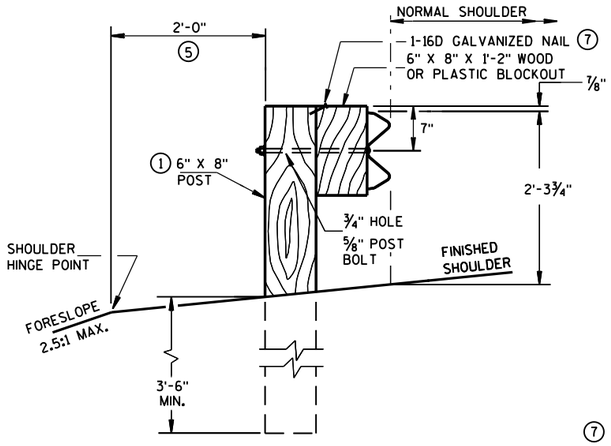
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



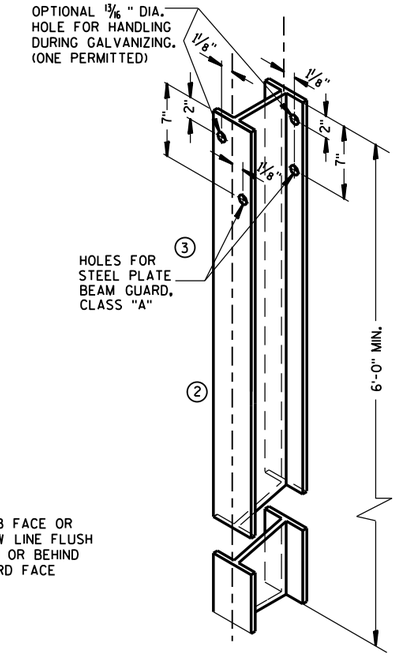
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



END VIEW
LOCATED ALONG A CURBED ROADWAY

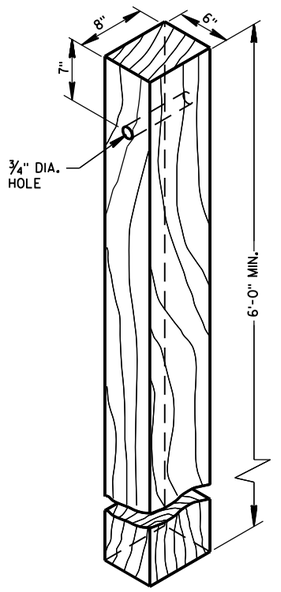


END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION

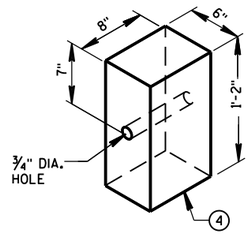


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

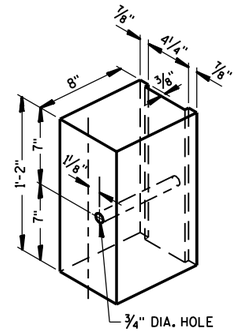
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



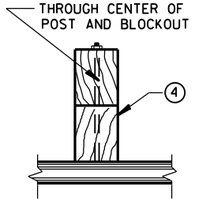
WOOD POST
(6"X8") NOMINAL



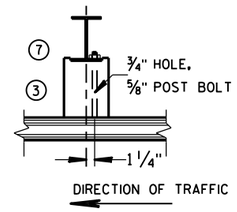
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



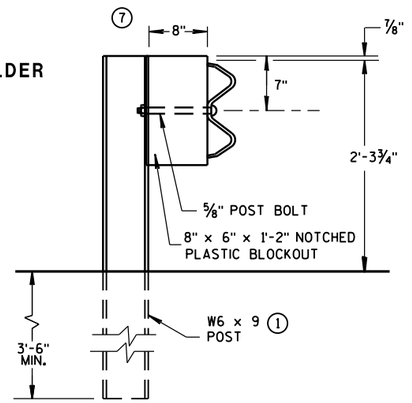
TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



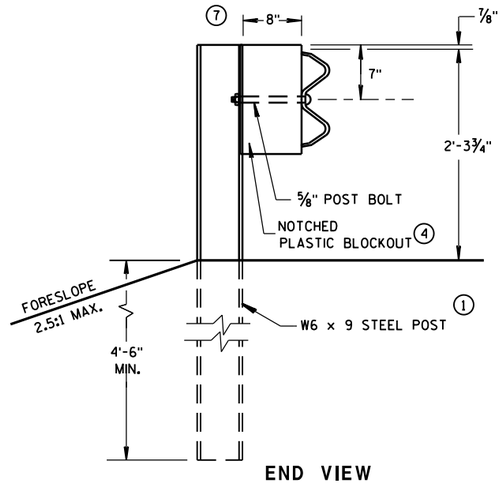
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



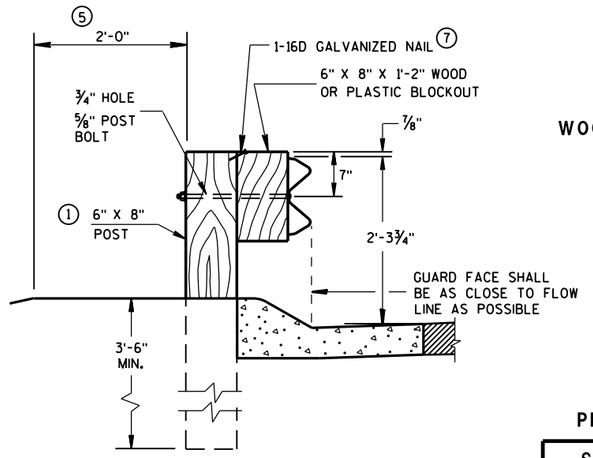
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



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



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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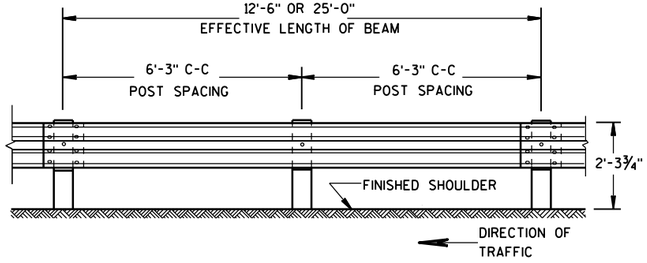
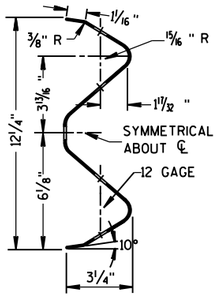
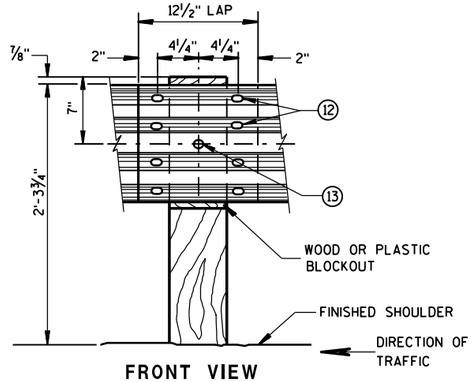


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

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

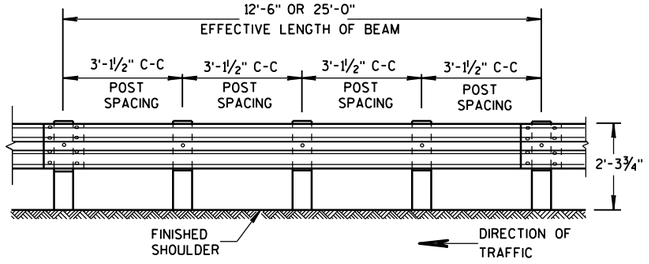
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

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

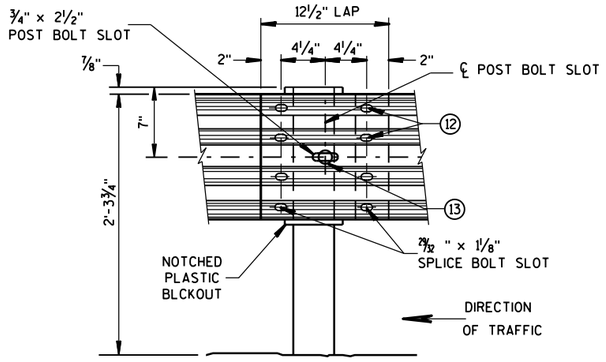
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

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



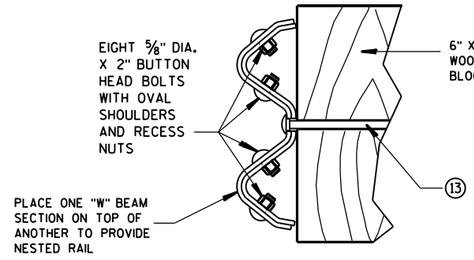
FRONT VIEW

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



FRONT VIEW

BEAM SPLICE AT STEEL POST



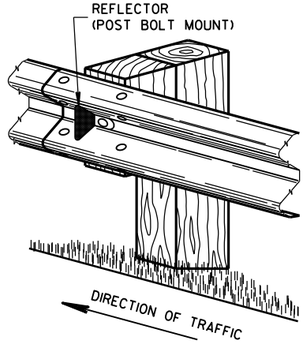
NESTED W BEAM (NW)

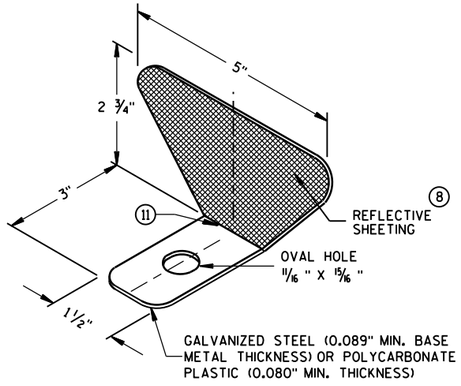
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

REFLECTOR SPACING (9)

	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 (10) 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 (11)	3





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (8)

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

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DEPARTMENT OF TRANSPOR

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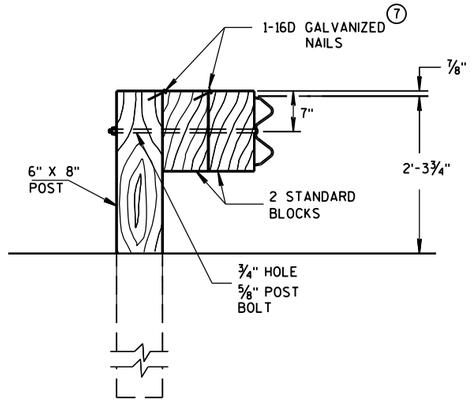
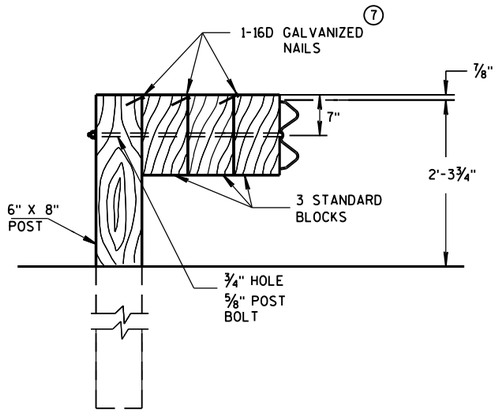


DETAIL FOR DOUBLE BLOCKS

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

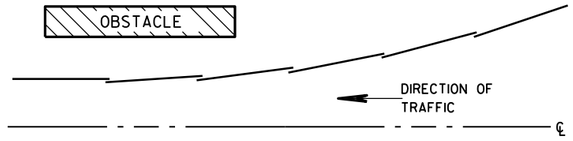


DETAIL FOR TRIPLE BLOCKS

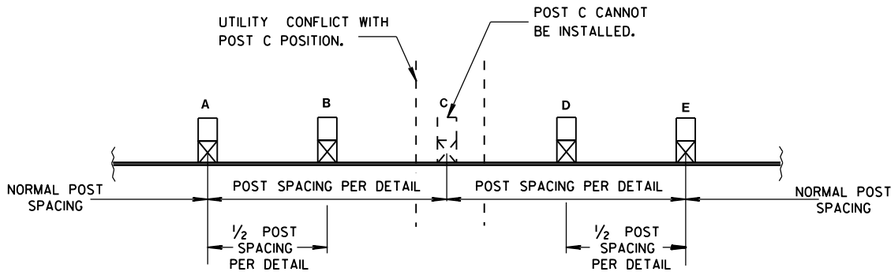
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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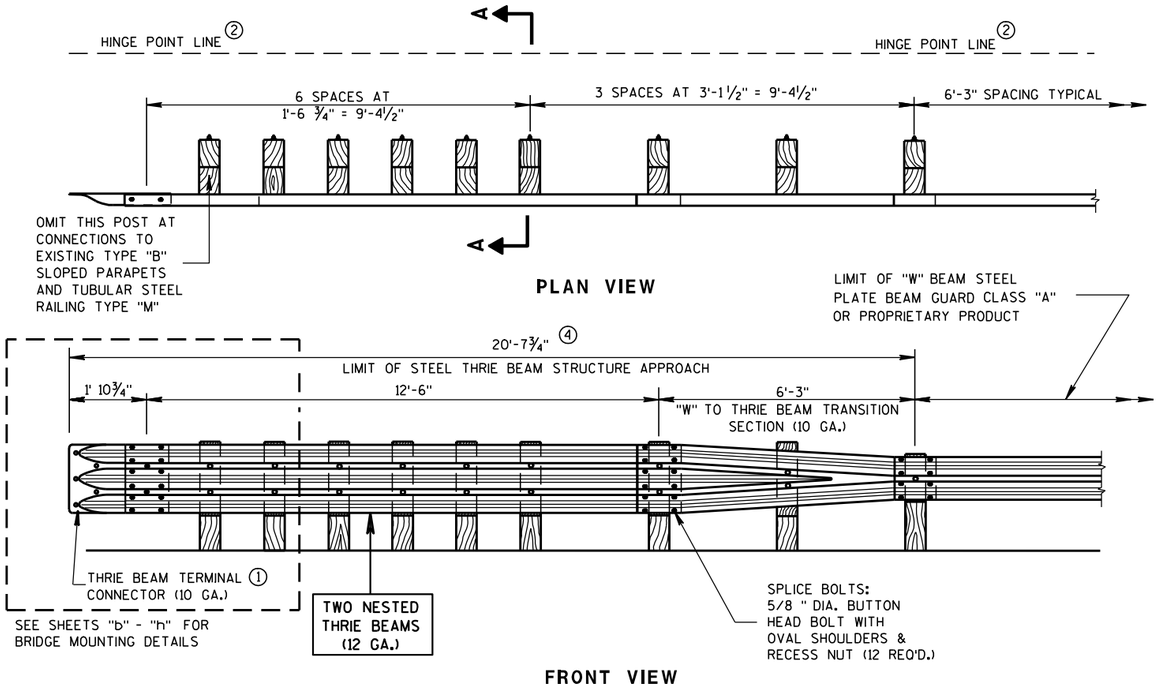
S.D.D. 14 B 15-8c



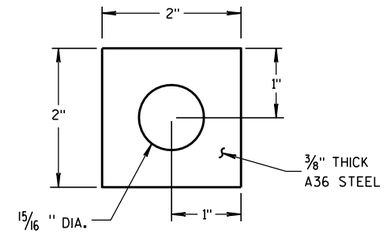


PLATE WASHER DETAIL

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".

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

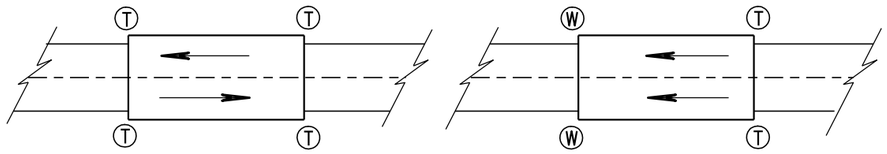
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

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

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

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



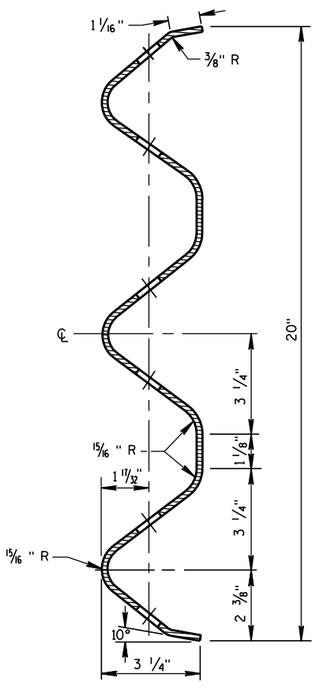
TWO WAY TRAFFIC

ONE WAY TRAFFIC

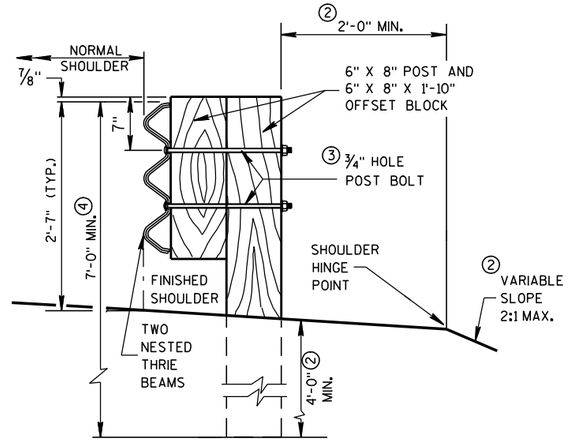
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

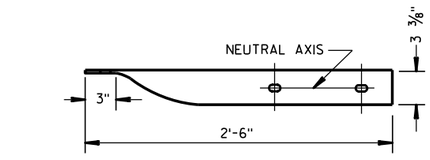
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

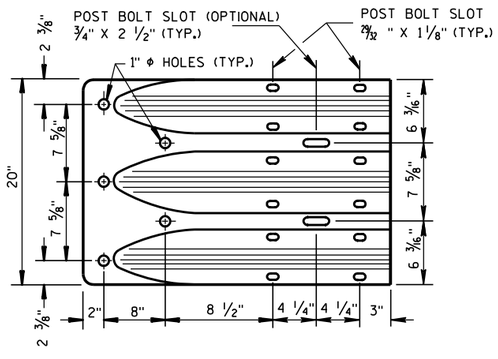


SECTION THRU THRIE BEAM RAIL ELEMENT

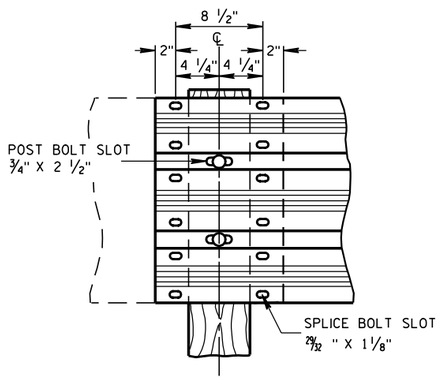


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS 170 ENGINEER

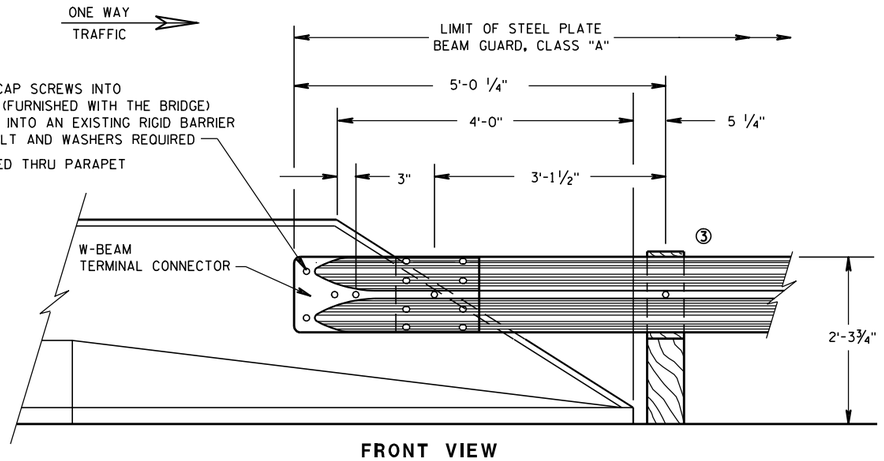
FHWA

6

S.D.D. 14 B 20-11a

6

S.D.D. 14 B 20-11a



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

GENERAL NOTES

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

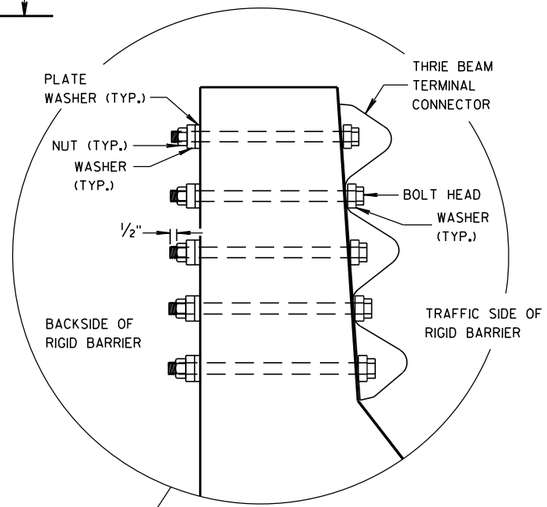
BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

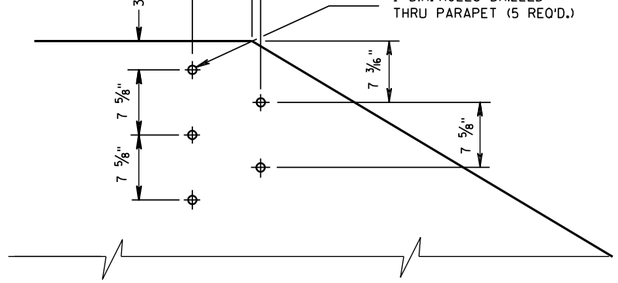
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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 TERMINAL CONNECTOR. 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.

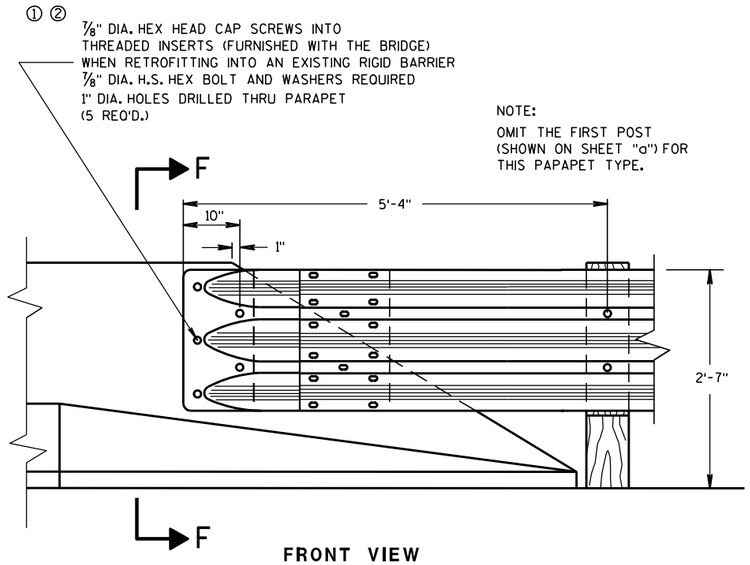
③ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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

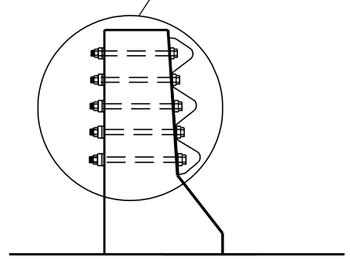




DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION F-F

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 14 B 20-11d

BILL OF MATERIALS

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

GENERAL NOTES

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

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

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

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

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

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

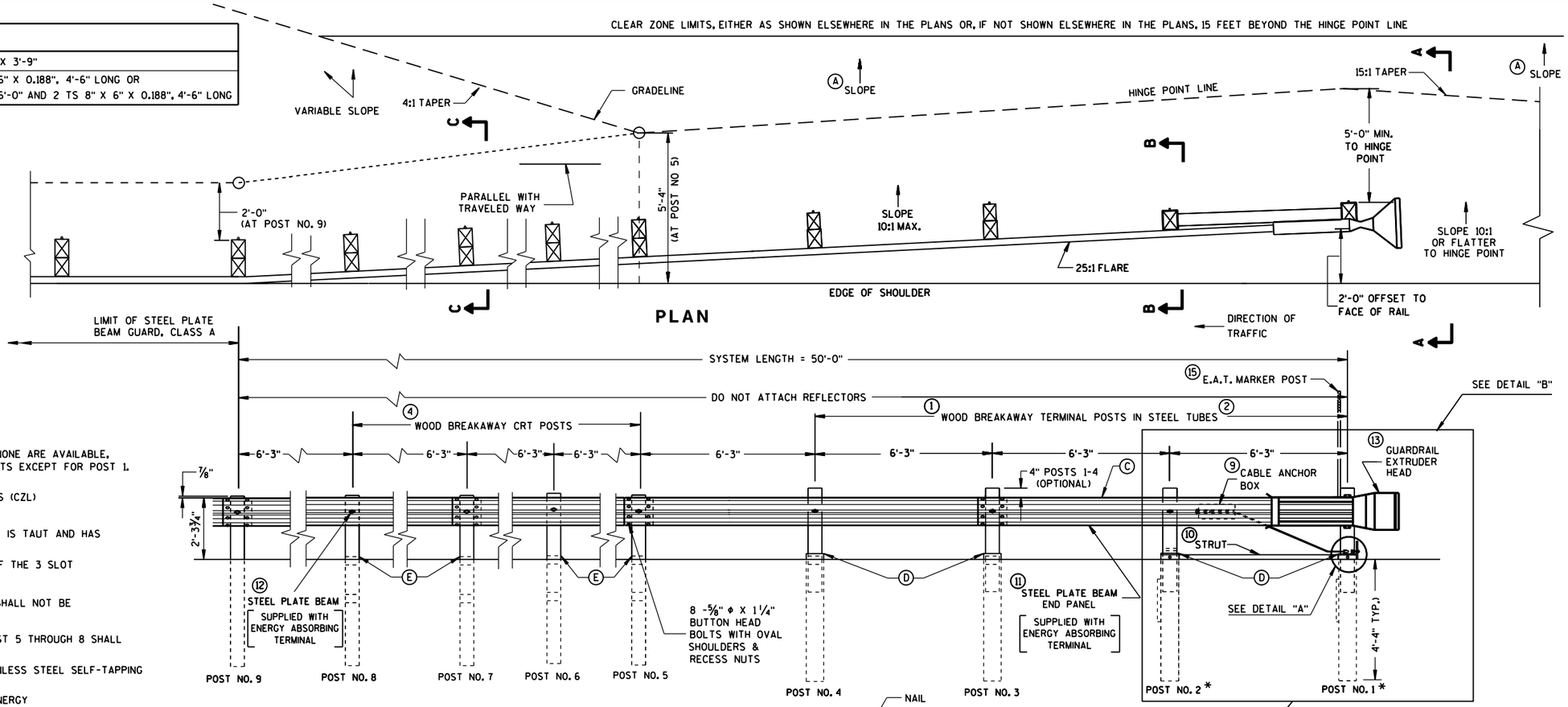
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

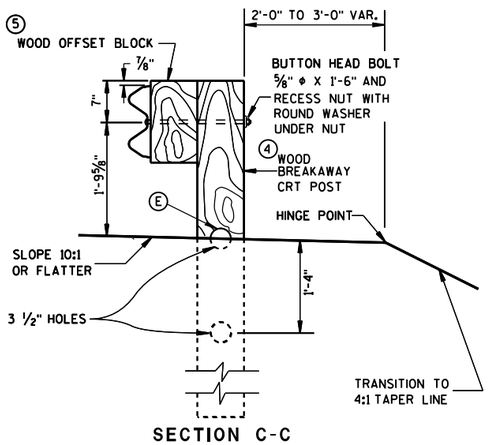
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

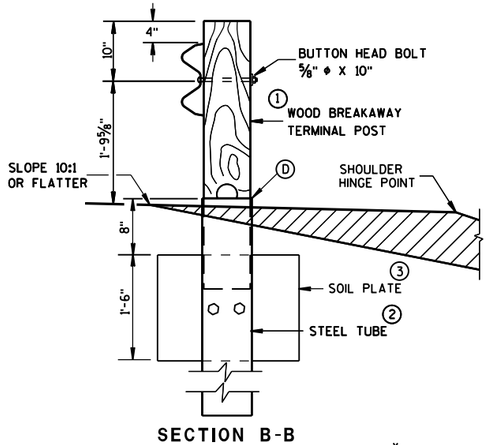
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

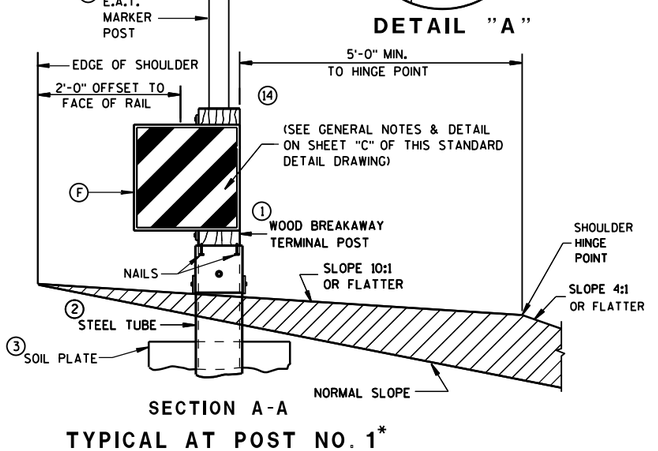




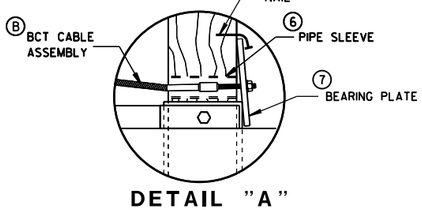
SECTION C-C
TYPICAL AT POST NOS. 6, 8



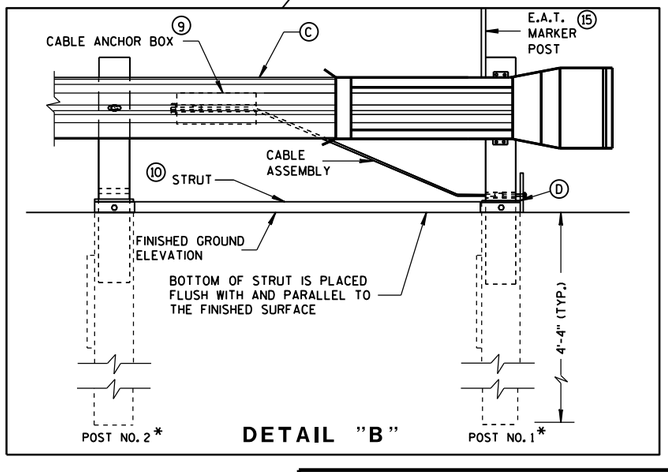
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

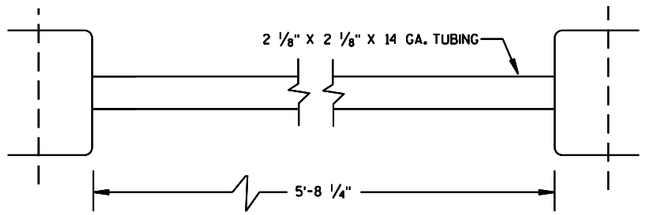


DETAIL "B"

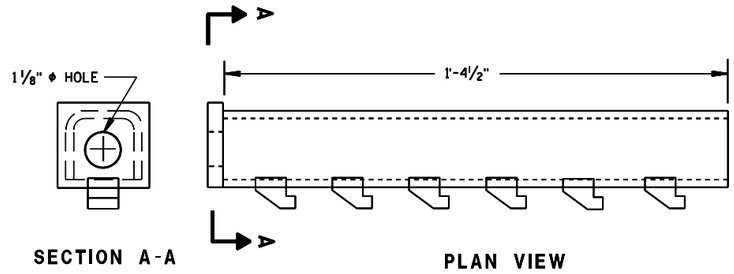
STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

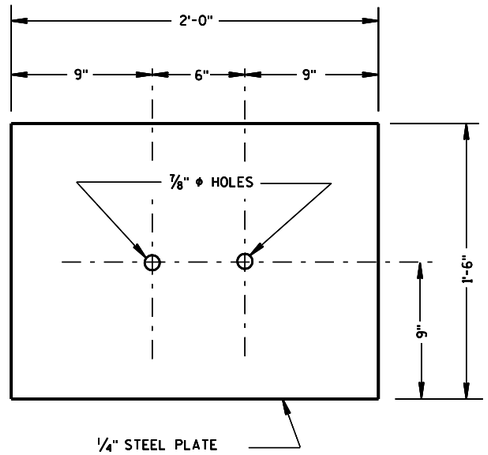
6
S.D.D. 14 B 24-8a



⑩ STRUT DETAIL (SKT-350)

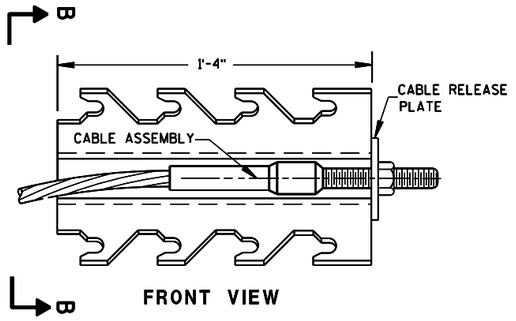


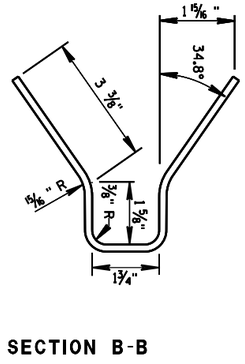
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



③ SOIL PLATE

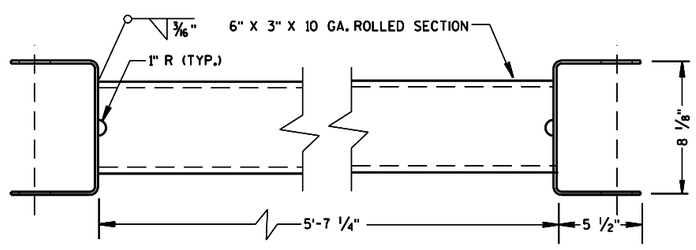
(SKT-350, ET-2000/ET-2000 PLUS)





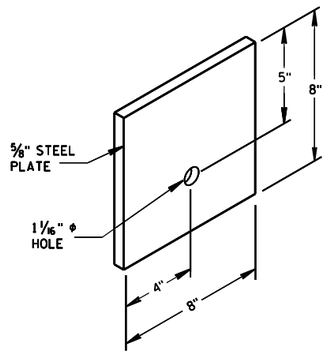
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE

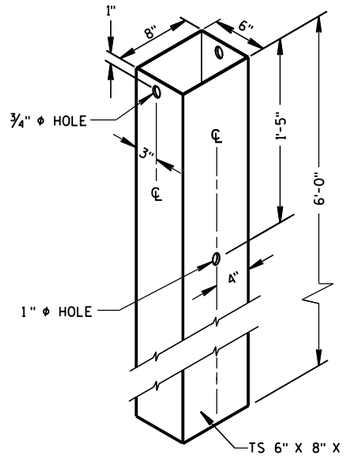
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

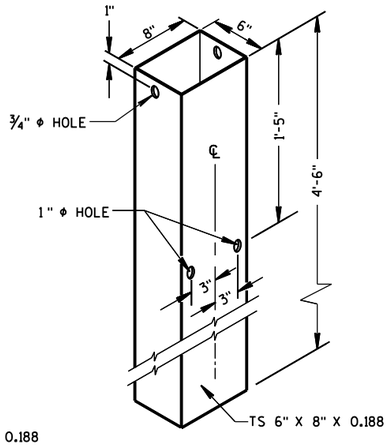
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

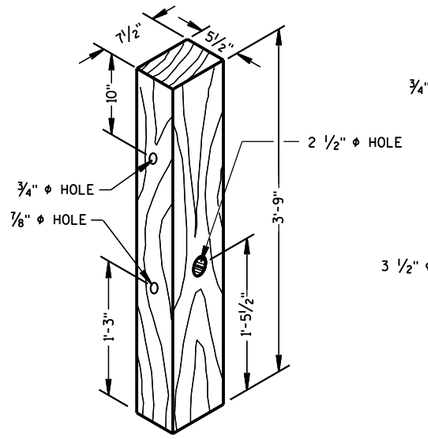
S.D.D. 14 B 24-8b



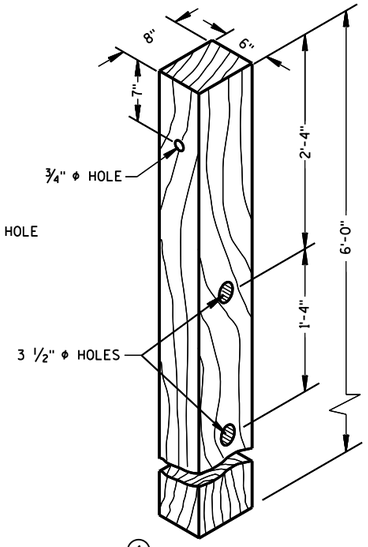
② 72" STEEL TUBE
(POSTS NO. 1-4



② 54" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST
(POSTS NO. 1-4



④ CRT POST
(POSTS NO'S 5-8

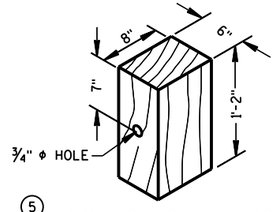
WOOD BREAKAWAY POSTS

GENERAL NOTES

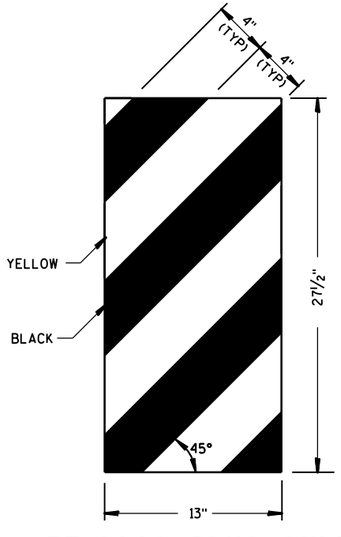
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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

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

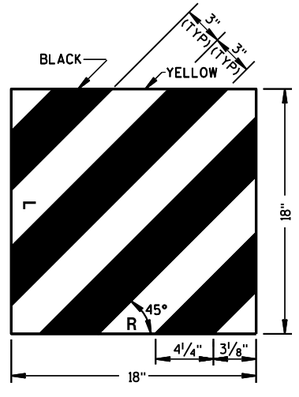
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



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

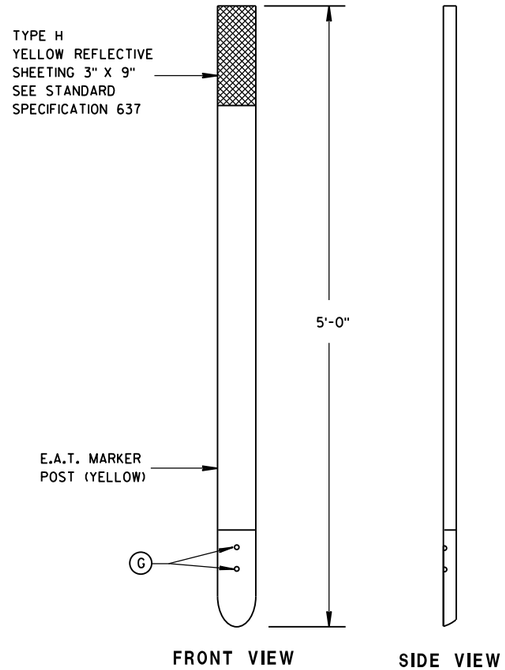


ET-2000 PLUS ONLY



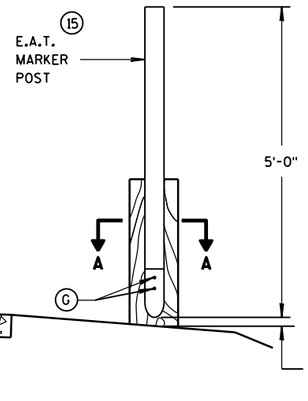
ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS



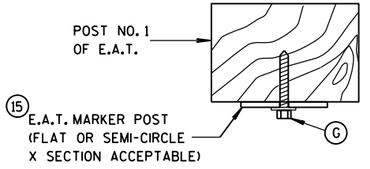
FRONT VIEW SIDE VIEW

⑮ E.A.T. MARKER POST



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

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



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

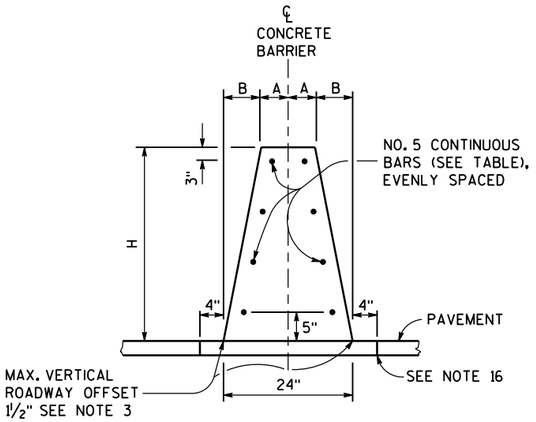
APPROVED
June 2014 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS ENGINEER
FHWA

6

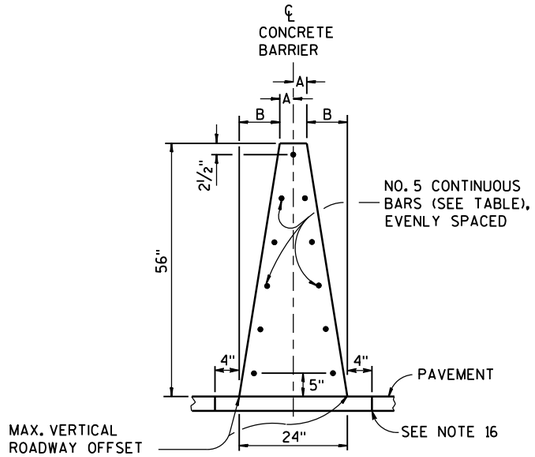
S.D.D. 14 B 24-8c

6

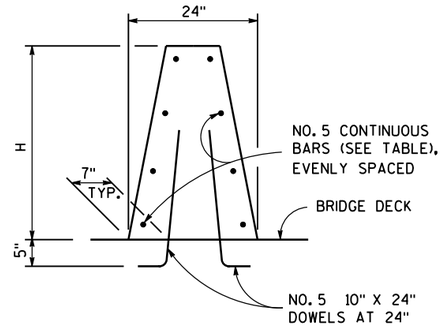
S.D.D. 14 B 24-8c



32-INCH, 36-INCH OR 42-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S32, TYPE S36, AND TYPE S42)



56-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S56)



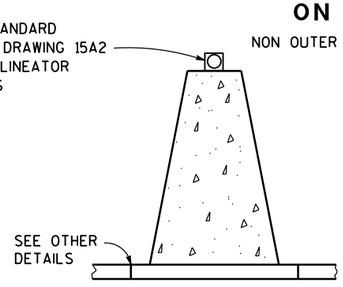
SINGLE SLOPE CONCRETE BARRIER ON BRIDGE

NON OUTER PARAPET APPLICATION

GENERAL NOTES

1. WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.
2. EXPANSION JOINTS IN CONCRETE BARRIER SHALL BE LOCATED AT ALL DECK, AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL SHALL BE THE SAME SIZE AS JOINT OR ½" MINIMUM.
3. WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1½", USE TYPE A
4. PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.
5. EXCEPT IN ANCHORS, VERTICAL REINFORCING STIRRUP NOT REQUIRED FOR ROADWAY OFFSETS LESS THAN 1'-0".
6. FOR TYPE S32, TYPE S36, TYPE S42, AND S56 MONOLITHIC FOOTING OR DOWELED FOOTING WITH 2-#8 x 8" @ 2'-0".
7. STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL 2 FEET. BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
8. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.
9. WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.
10. USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
11. 2" CLEAR COVER TYPICAL.
12. COLD-JOINTS MAY BE USED BETWEEN ANCHOR INSTALLATIONS. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED.
13. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 NO ADDITIONAL VERTICAL STEEL NEEDED. IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A REQUIRES VERTICAL STEEL. SEE OTHER DETAIL.
14. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 DEPTH OF FOOTING 10". IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A MATCH TOTAL HEIGHT OF SINGLE SLOPE BARRIER RETAINING WALL.
15. FOR ALL BARRIER TYPES SHOWN, ANCHOR IS REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN ON DRAWING OR DETAILS SHOWN ON S.D.D. 14B33. ANCHORS INCIDENTAL TO CBSS.
16. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6¼	5¾	8
42	5¼	6¾	10
56	3	9	11



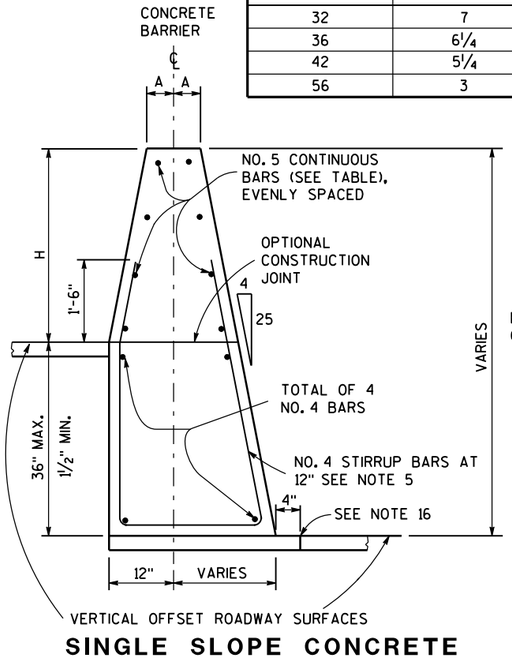
DELINEATION

DELINEATOR SPACING ON HORIZONTAL CURVES

RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

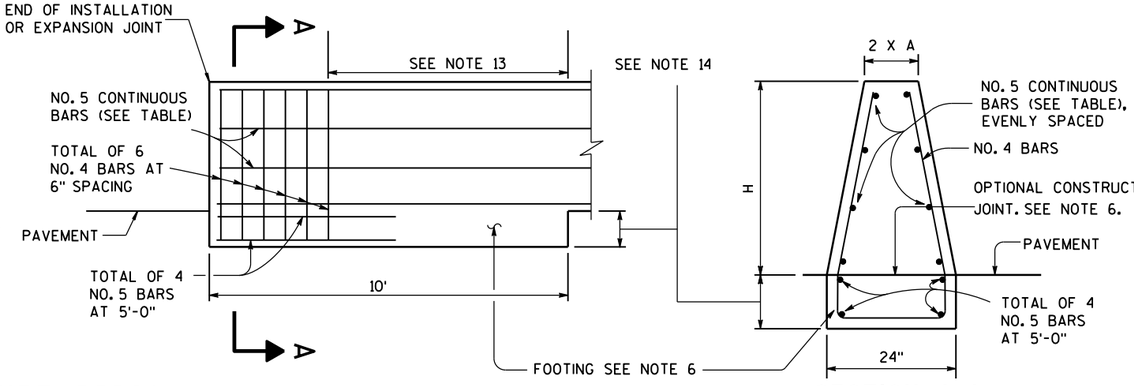
DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

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



SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)

(BETWEEN ADJACENT ROADWAYS)



END ANCHOR SINGLE SLOPE CONCRETE BARRIER

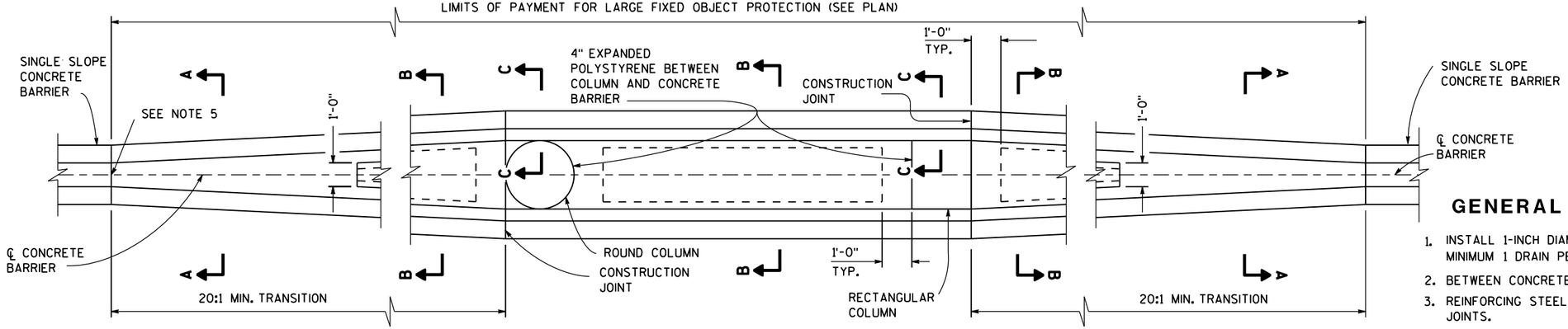
AT CONSTRUCTION JOINT

SECTION A-A

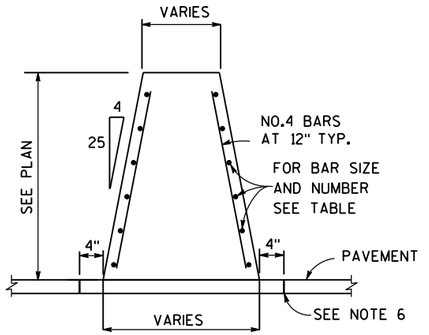
CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

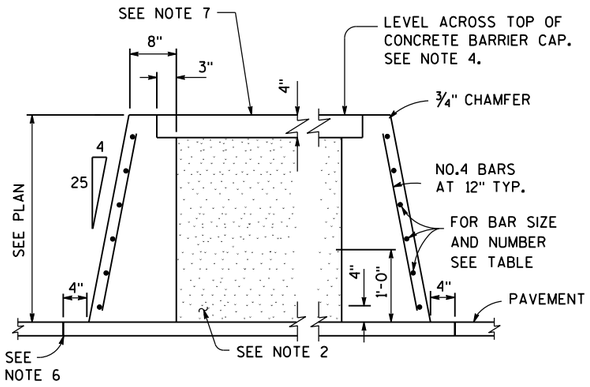
6
S.D.D. 14 B 32-3a



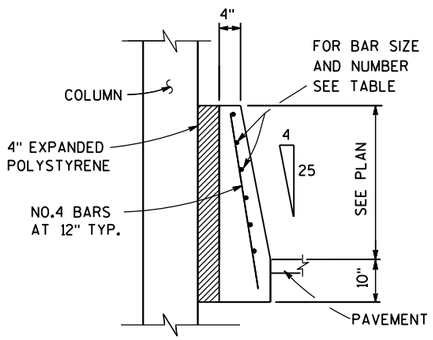
LARGE FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56



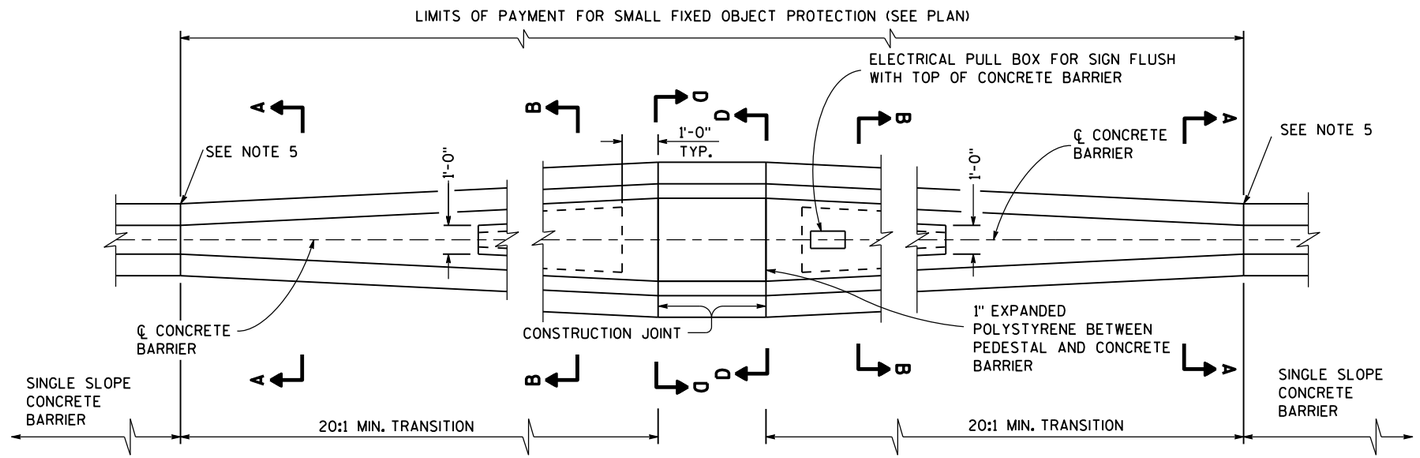
SECTION A-A



SECTION B-B



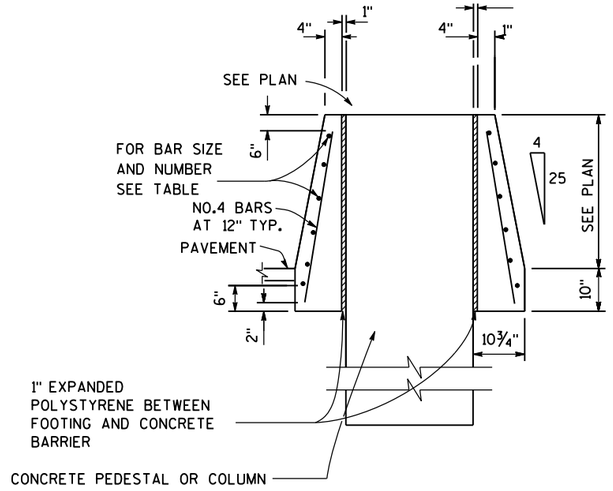
SECTION C-C



SMALL FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56

GENERAL NOTES

1. INSTALL 1-INCH DIAMETER DRAIN PIPE EVERY 20 FEET OF CROSS SECTION B-B. MINIMUM 1 DRAIN PER CAVITY.
2. BETWEEN CONCRETE BARRIER WALLS FILL WITH GRANULAR BACKFILL GRADE 2
3. REINFORCING STEEL SHALL EXTEND CONTINUOUS THROUGH CONSTRUCTION JOINTS.
4. ADJUST HEIGHT OF CONCRETE BARRIER WALL ON LOW SIDE OF OFFSET OR SUPERELEVATED ROADWAYS TO PROVIDE LEVEL GRADE ACROSS TOP OF CONCRETE CAP.
5. IF FIXED OBJECT PROTECTION IS INSTALLED FIRST, USE COLD JOINTS. IF CBSS PLACED FIRST, USE EXPANSION JOINT.
6. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. SAWING OF CONCRETE SHOULDER IS INCIDENTAL TO CONCRETE BARRIER BID ITEM. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.
7. USE NO. 3 BAR SPACED 12 INCHES CENTER TO CENTER (PLACED IN EACH DIRECTION) OR EQUIVALENT WIRE MESH.



SECTION D-D

BARRIER HEIGHT H INCHES	BAR SIZE	NUMBER OF BARS EACH
32	4	6
36	4	6
42	5	6
56	5	9

CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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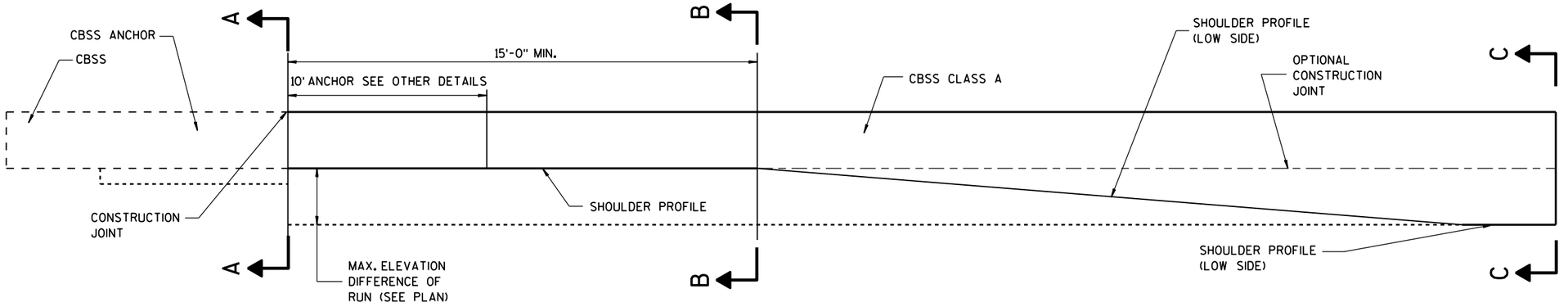
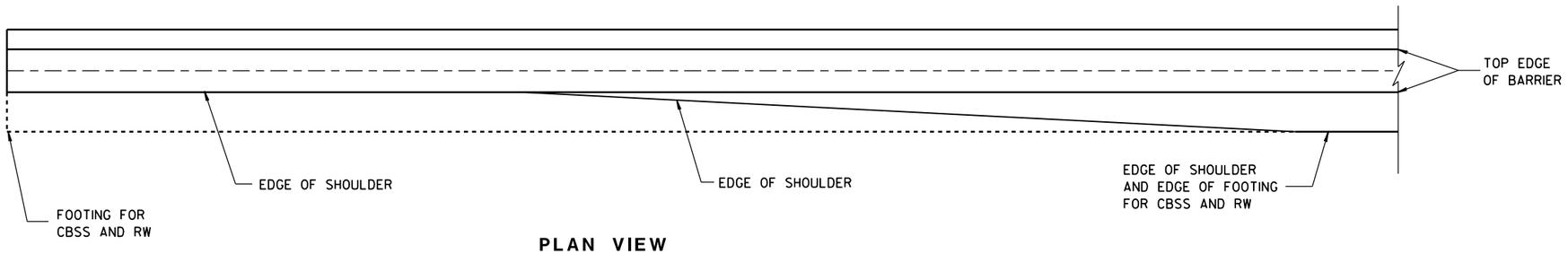
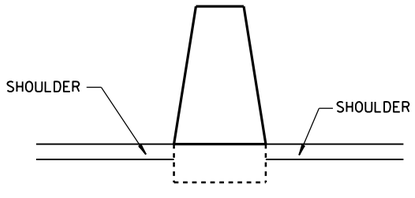
S.D.D. 14 B 32-3b



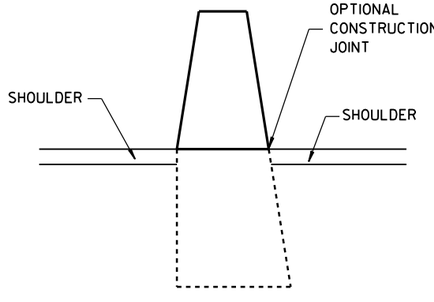
ELEVATION VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



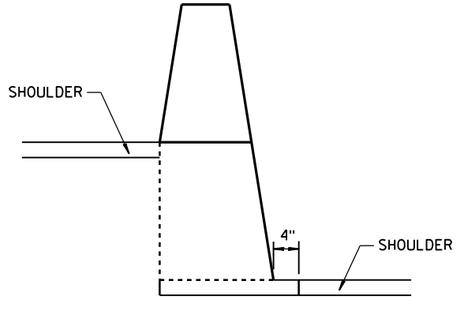
PLAN VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



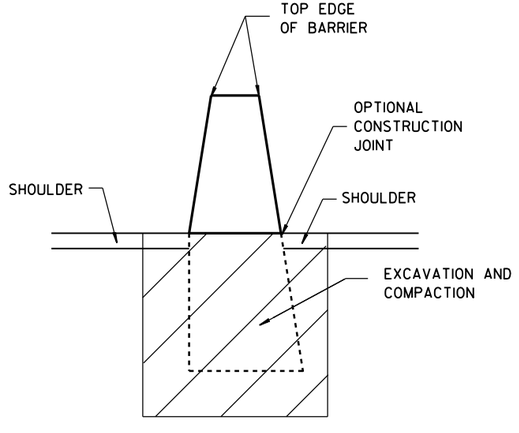
SECTION A-A



SECTION B-B



SECTION C-C



CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 32-3c

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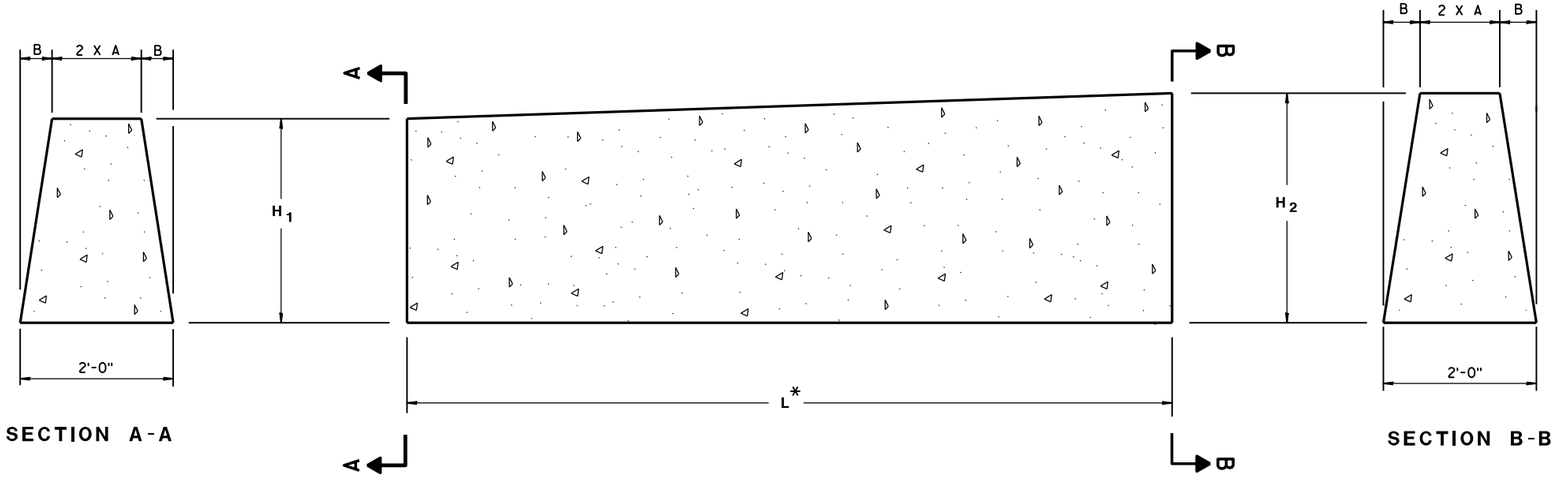
S.D.D. 14 B 32-3c



SECTION A-A

SECTION B-B

DOUBLE COLD JOINT HEIGHT TRANSITION

BARRIER DIMENSIONS

BARRIER HEIGHT INCHES	A INCHES	B INCHES
32	7	5
36	6 1/4	5 3/4
42	5 1/4	6 3/4
56	3	9

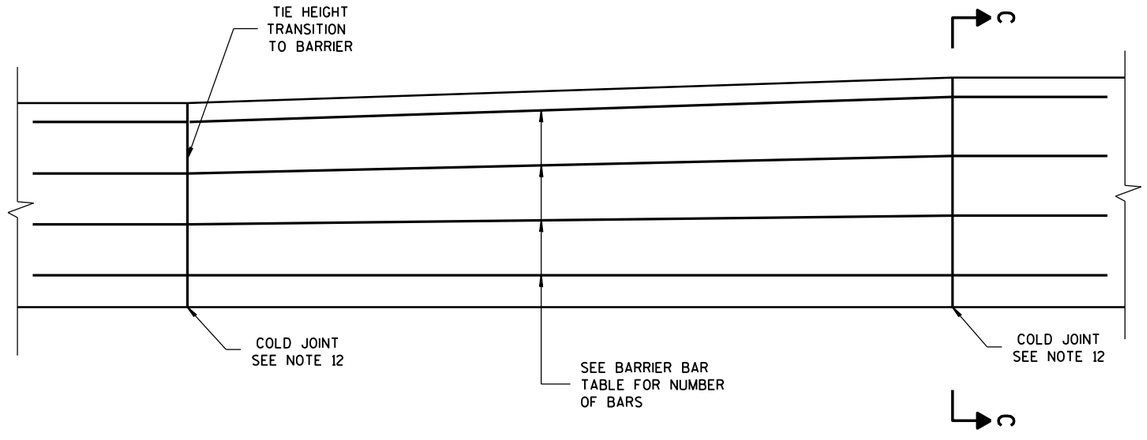
MULTIPLE HEIGHT TRANSITIONS MAY BE USED IN SEQUENCE TO GET TO APPROPRIATE HEIGHT.

USE COLD JOINT TO CONNECT MULTIPLE HEIGHT TRANSITIONS.

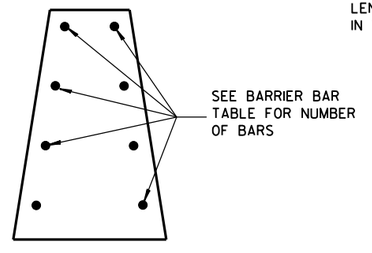
BARRIER BARS

H_1	H_2	L*	NUMBER OF NO. 5 BARS
32"	36"	10'-0"	8
36"	42"	10'-6"	10
42"	56"	24'-6"	11

*
LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF CBSS.



STEEL REINFORCEMENT DETAIL



SECTION C-C

CONCRETE BARRIER SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

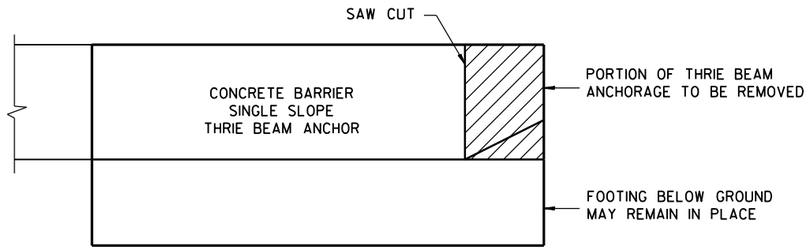
FHWA

6

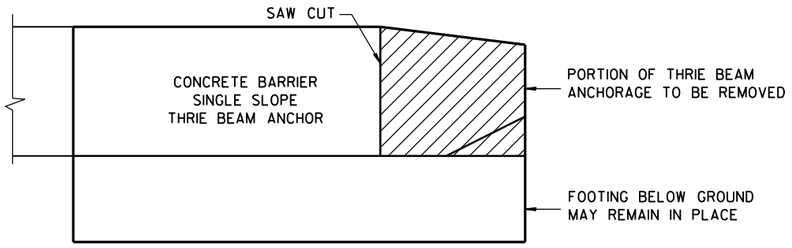
S.D.D. 14 B 32-3d

6

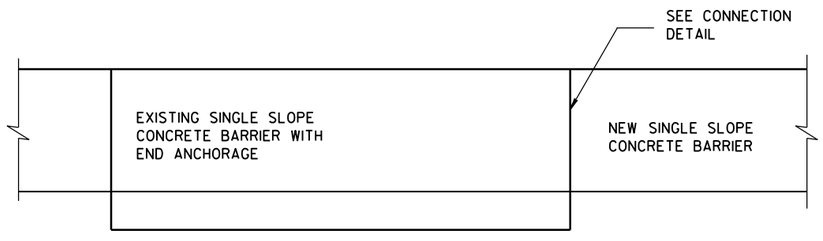
S.D.D. 14 B 32-3d



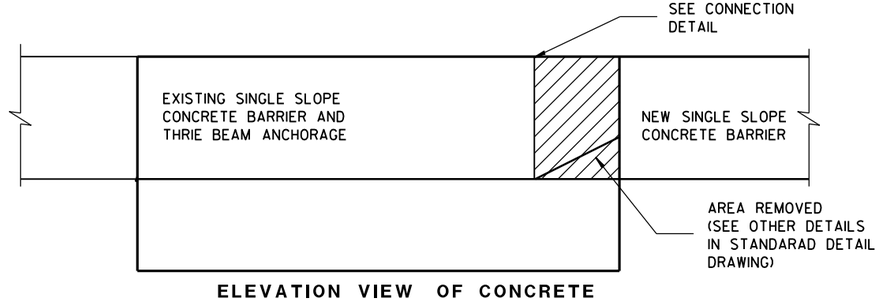
REMOVAL AREA OF
32" CONCRETE THRIE BEAM ANCHORAGE



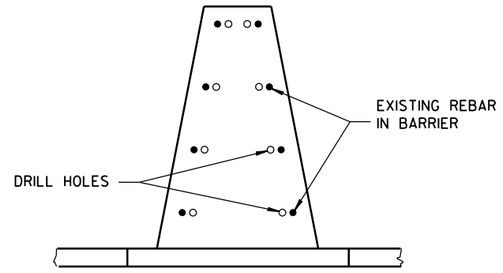
REMOVAL AREA OF CONCRETE THRIE BEAM
ANCHORAGE WITH HEIGHT GREATER THAN 32"



ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR END ANCHORAGE



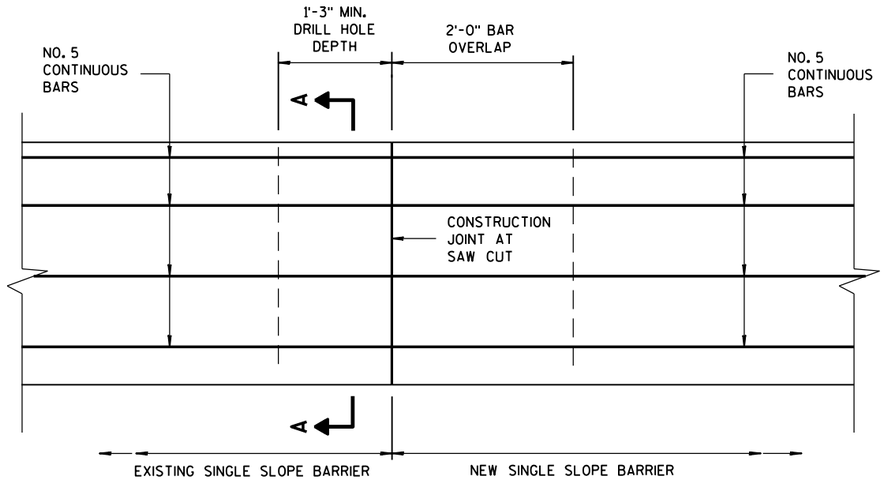
ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR THRIE BEAM TERMINAL



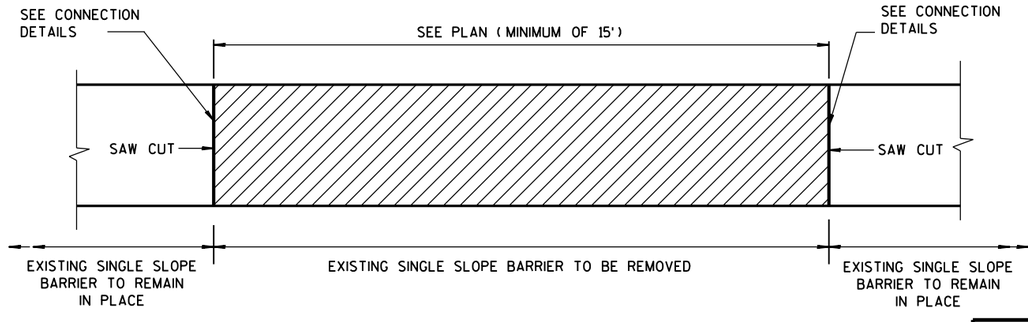
SECTION A-A

GENERAL NOTES

1. THE NUMBER OF DRILL HOLES IS EQUAL TO THE NUMBER OF REBAR IN BARRIER (SEE OTHER DETAILS).
2. MINIMUM DEPTH OF DRILL HOLES IS 1'-3".
3. DRILL HOLES TO BE A MINIMUM OF 4 INCHES FROM THE EDGE OF CONCRETE.
4. INSTALL EPOXY COATED NO. 5 BARS IN DRILL HOLES.
5. END ANCHORAGE MAY OR MAY NOT BE PRESENT ON EXISTING BARRIER.
6. REMOVE THRIE BEAM ANCHORAGE AS SHOWN.



CONNECTION OF EXISTING SINGLE SLOPE CONCRETE BARRIER TO
NEW SINGLE SLOPE CONCRETE BARRIER



ELEVATION FILE
BARRIER REMOVAL AND REPLACEMENT

CONCRETE BARRIER
SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

RETROFIT OR REPAIR SINGLE SLOPE CONCRETE BARRIER

6

S.D.D. 14 B 32-3e

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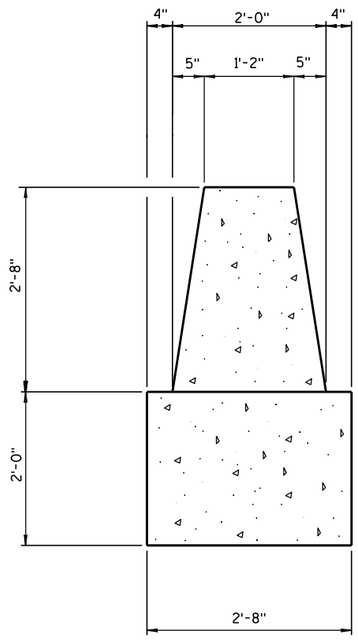
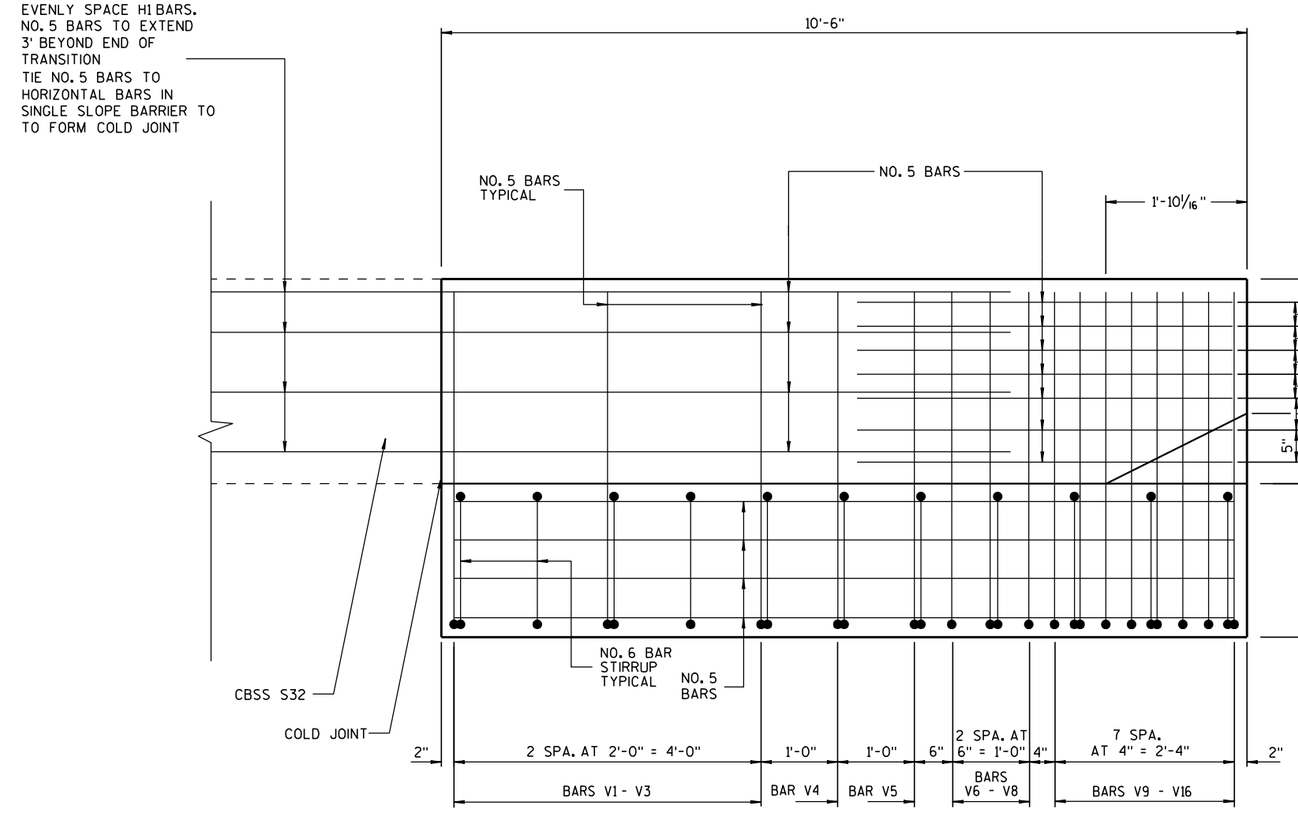
S.D.D. 14 B 32-3e

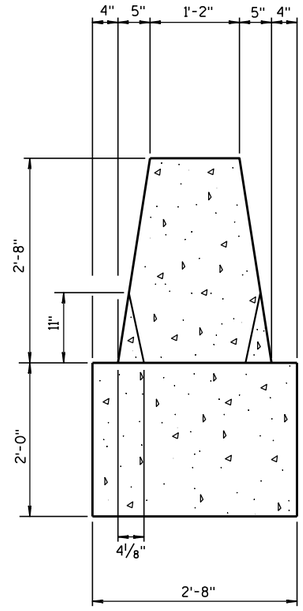


SECTION A-A

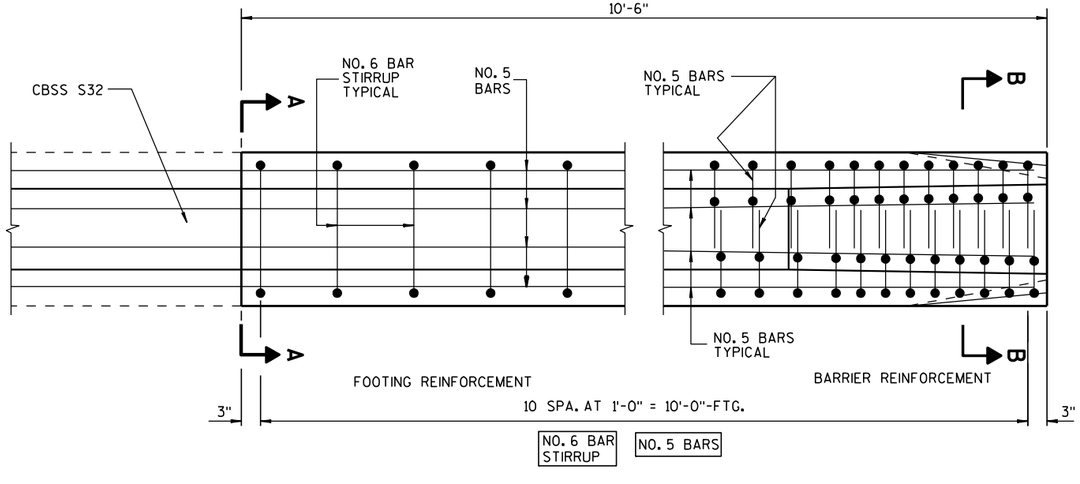


SEE SECTIONS (1) THRU (16)

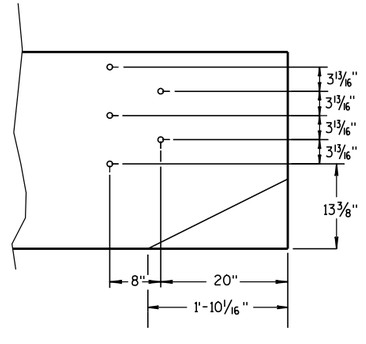
ELEVATION VIEW



SECTION B-B



PLAN VIEW



PVC PIPE LOCATIONS

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE 3/4" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THRIE BEAM ANCHOR INCIDENTAL TO CONCRETE BARRIER ITEM.

INSTALL SCHEDULE 40 PVC PIPE 1" DIAMETER AT LOCATIONS INDICATED.

EXTEND PVC PIPE COMPLETELY THROUGH BARRIER.

CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE of BARRIER.

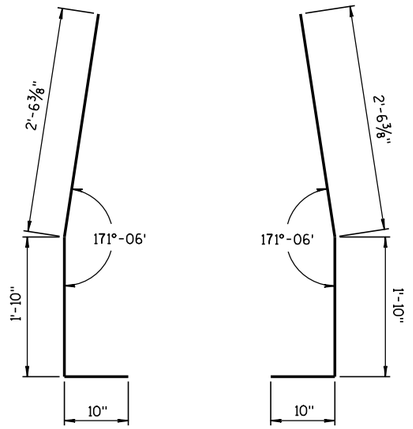
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

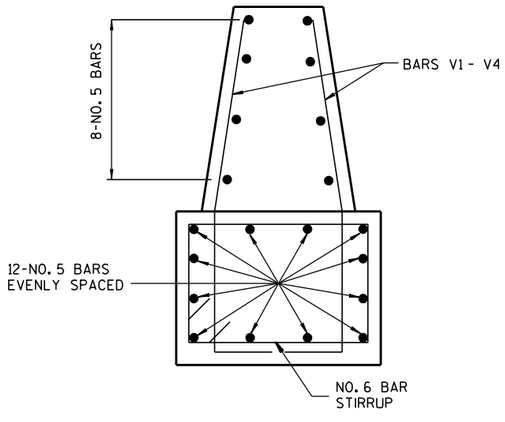
CONCRETE BARRIER
SINGLE SLOPE 32"
THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

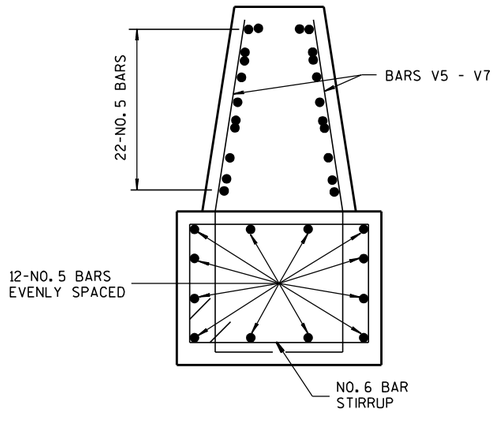
6
S.D.D. 14 B 33-1a



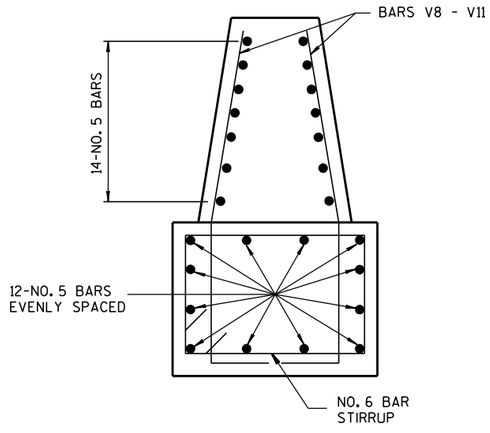
BAR BENDING DETAIL
FOR BARS V1 - V11



BAR DETAIL
SECTIONS 1 - 4



BAR DETAIL
SECTIONS 5 - 7

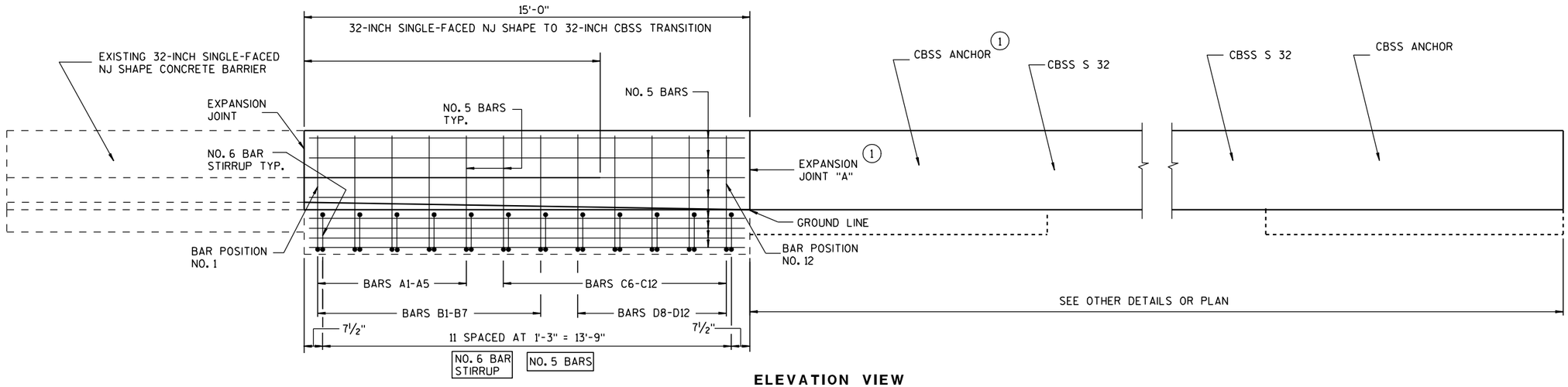


BAR DETAIL
SECTIONS 8 - 11

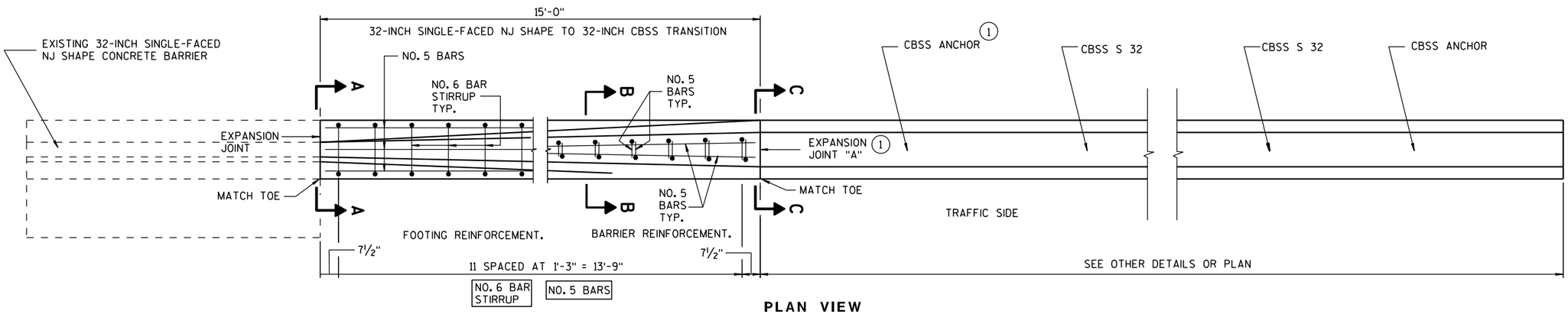
CONCRETE BARRIER
SINGLE SLOPE 32"
THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

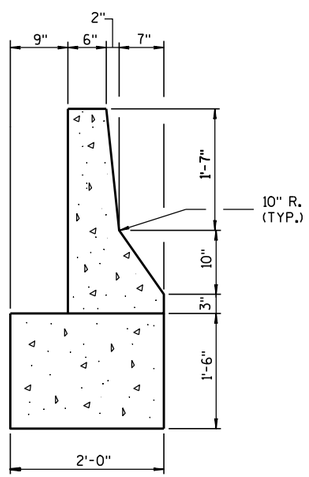
6
S.D.D. 14 B 33-1b



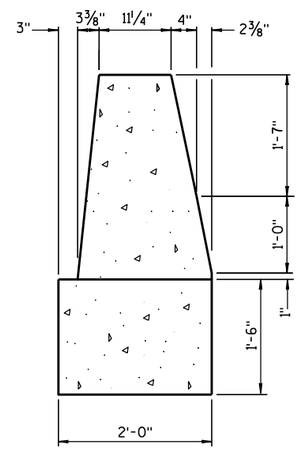
ELEVATION VIEW



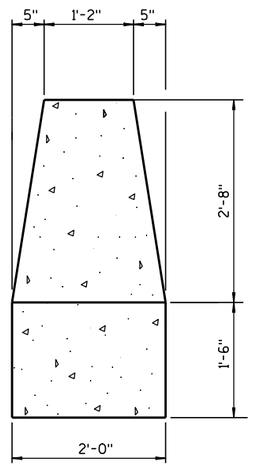
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD -JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD-JOINT IS USED ANCHOR NOT REQUIRED.

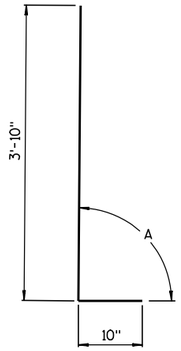
32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 35-1a

"A" BAR CHART
BAR POSITIONS NO.1 - NO.5

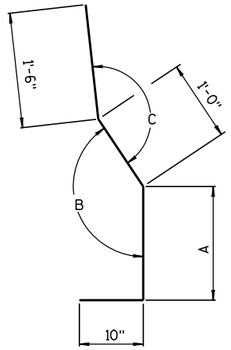
BAR	A
A1	90°
A2	89°-15'
A3	88°-50'
A4	88°-15'
A5	87°-50'



"A" BAR
BENDING DETAIL

"B" BAR CHART
BAR POSITIONS NO.1 - NO. 7

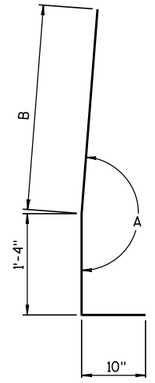
BAR	A	B	C
B1	1'-6"	146°-20'	152°-40'
B2	1'-6"	149°-25'	156°-35'
B3	1'-6"	152°-35'	160°-30'
B4	1'-5½"	155°-20'	163°-55'
B5	1'-5½"	158°-30'	167°-50'
B6	1'-5"	161°-45'	171°-50'
B7	1'-5"	164°-20'	175°-10'



"B" BAR
BENDING DETAIL

"C" BAR CHART
BAR POSITIONS NO. 6 - NO. 12

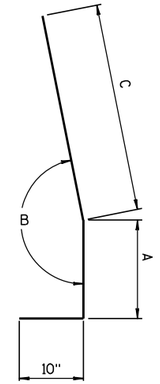
BAR	A	B
C6	176°	2'-6"
C7	175°-05'	2'-6"
C8	174°-25'	2'-6"
C9	173°-45'	2'-6¼"
C10	172°-50'	2'-6¼"
C11	172°-10'	2'-6½"
C12	171°-30'	2'-6½"



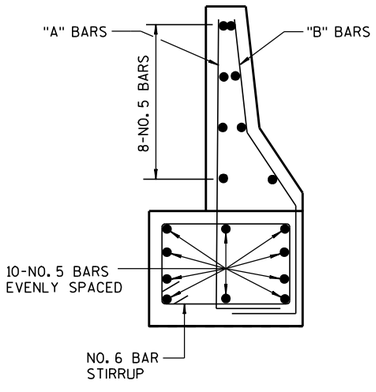
"C" BAR
BENDING DETAIL

"D" BAR CHART
BAR POSITIONS NO. 8 - NO. 12

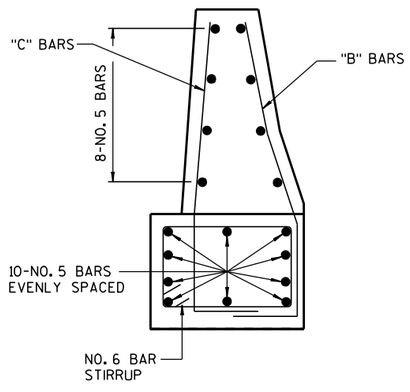
BAR	A	B	C
D8	1'-5"	168°-05'	2'-6"
D9	1'-5"	168°-50'	2'-6"
D10	1'-5"	169°-25'	2'-6"
D11	1'-4"	170°-10'	2'-6½"
D12	1'-4"	170°-50'	2'-6½"



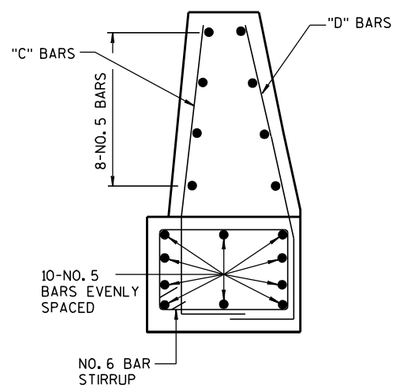
"D" BAR
BENDING DETAIL



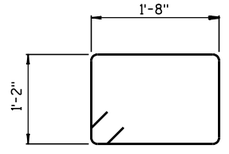
BAR DETAIL
BAR POSITIONS NO. 1 - NO. 5



BAR DETAIL
BAR POSITION NO. 6 - NO. 8



BAR DETAIL
BAR POSITIONS NO. 9 - NO. 12



STIRRUP BAR
BENDING DETAIL

32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

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

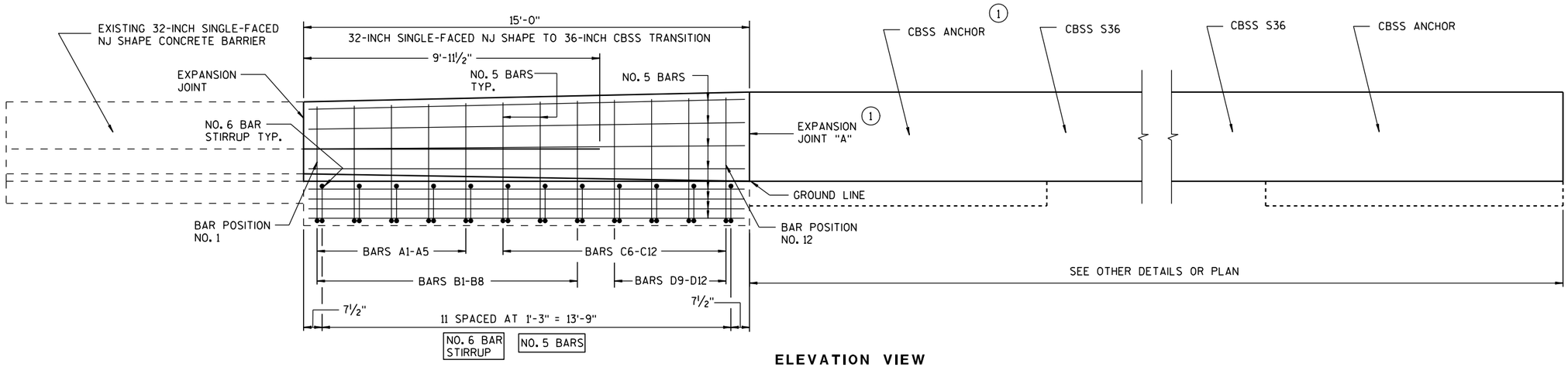
FHWA

6

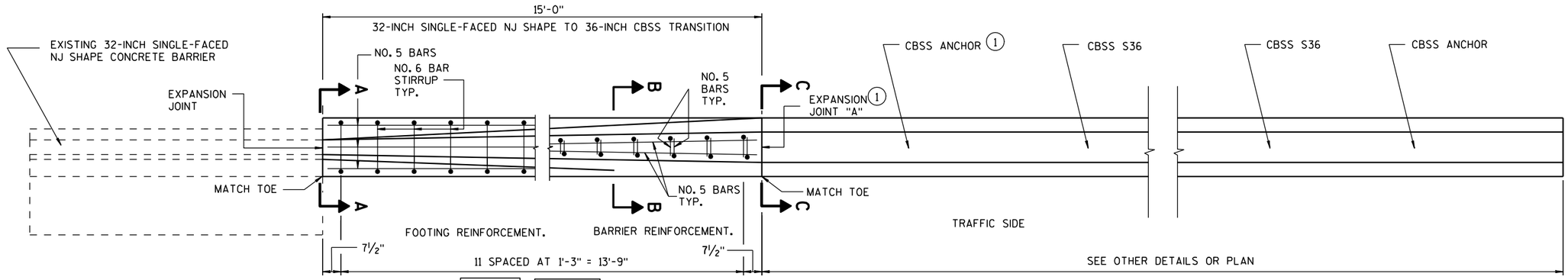
S.D.D. 14 B 35-1b

6

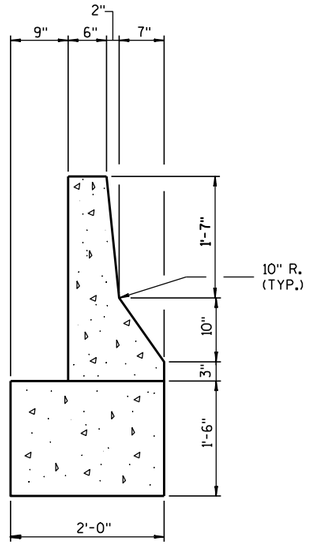
S.D.D. 14 B 35-1b



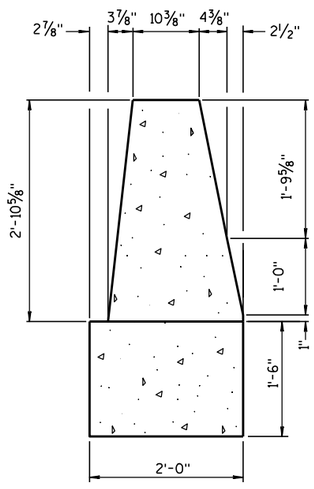
ELEVATION VIEW



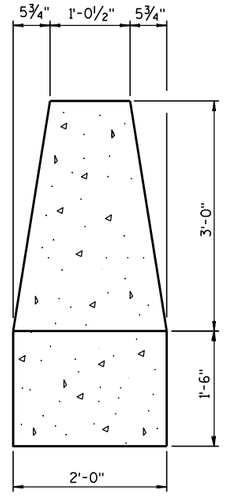
PLAN VIEW



SECTION A-A



SECTION B-B



SECTION C-C

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

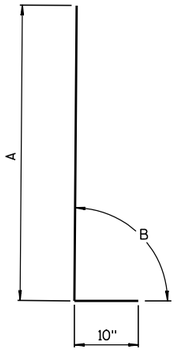
2" CLEAR COVER TYPICAL.

(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD-JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD-JOINT IS USED ANCHOR NOT REQUIRED.

32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 36-INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

"A" BAR CHART
BAR POSITIONS NO.1 - NO.5

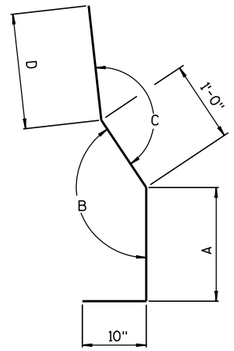
BAR	A	B
A1	3'-10"	89°-35'
A2	3'-10"	88°-40'
A3	3'-11"	87°-50'
A4	3'-11"	87°-10'
A5	3'-11½"	86°-15'



"A" BAR
BENDING DETAIL

"B" BAR CHART
BAR POSITIONS NO.1 - NO. 8

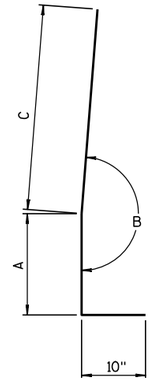
BAR	A	B	C	D
B1	1'-6"	146°-20'	152°-40'	1'-6"
B2	1'-6"	149°-25'	156°-45'	1'-6"
B3	1'-6"	152°-40'	160°-55'	1'-6½"
B4	1'-6"	155°-40'	164°-30'	1'-7"
B5	1'-5½"	158°-30'	167°-55'	1-'7"
B6	1'-5"	161°-45'	172°	1'-7½
B7	1'-5"	164°-25'	175°-05'	1'-8"
B8	1'-5"	167°-30'	179°	1'-8"



"B" BAR
BENDING DETAIL

"C" BAR CHART
BAR POSITIONS NO. 6 - NO. 12

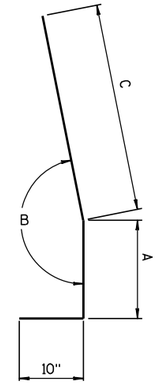
BAR	A	B	C
C6	1'-4"	175°-35'	2'-8"
C7	1'-4"	174°-45'	2'-8"
C8	1'-4"	174°	2'-8½"
C9	1'-4"	173°-15'	2'-9"
C10	1'-4"	172°-45'	2'-9½"
C11	1'-3½"	172°	2'-9½"
C12	1'-3½"	171°-15'	2'-10"



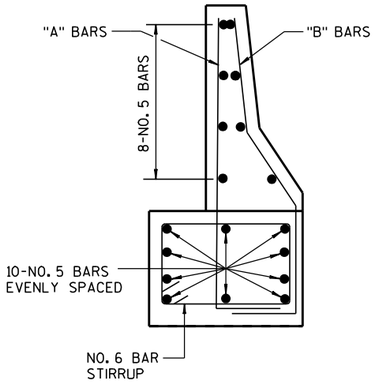
"C" BAR
BENDING DETAIL

"D" BAR CHART
BAR POSITIONS NO. 9 - NO. 12

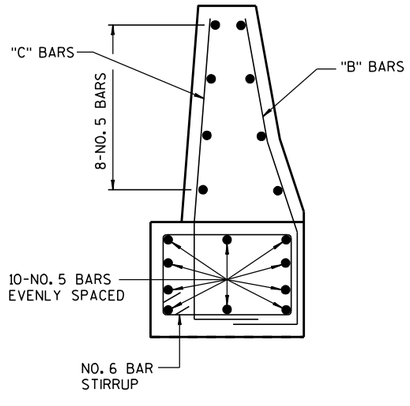
BAR	A	B	C
D9	1'-5"	168°-45'	2'-8½"
D10	1'-4½"	169°-30'	2'-9"
D11	1'-4"	170°-15'	2'-9½"
D12	1'-4"	170°-40'	2'-10"



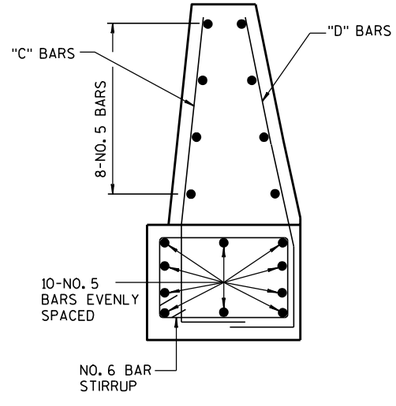
"D" BAR
BENDING DETAIL



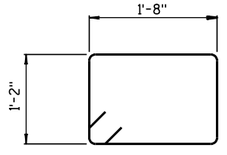
BAR DETAIL
BAR POSITIONS NO. 1 - NO. 5



BAR DETAIL
BAR POSITION NO. 6 - NO. 8



BAR DETAIL
BAR POSITIONS NO. 9 - NO. 12



STIRRUP BAR
BENDING DETAIL

32-INCH SINGLE-FACED NJ SHAPE
CONCRETE BARRIER TO 36-INCH SINGLE
SLOPE CONCRETE BARRIER TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

6

S.D.D. 14 B 35-1d

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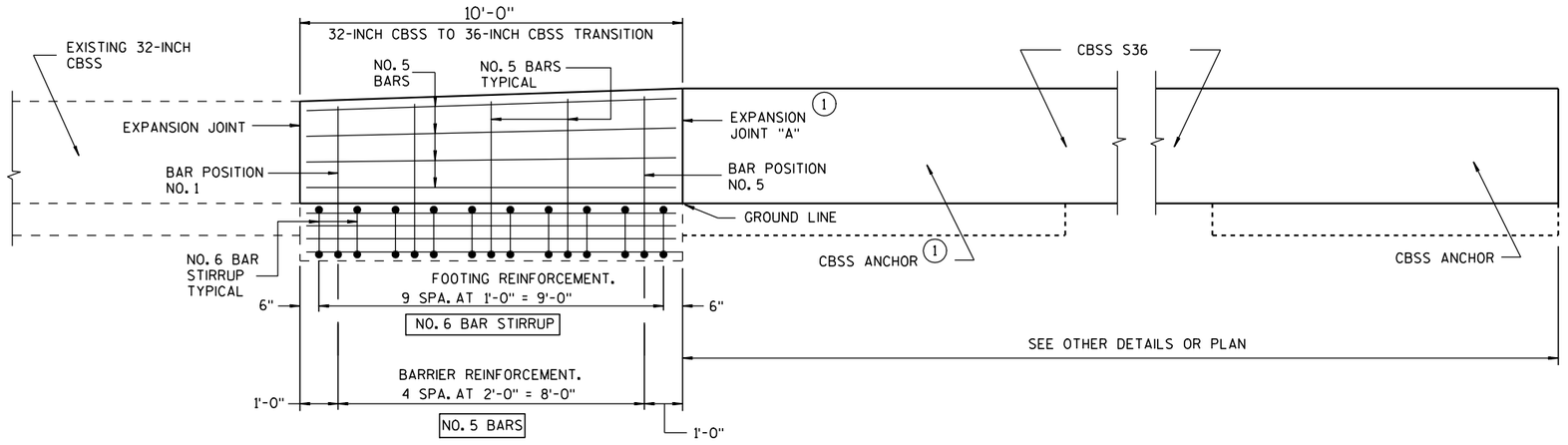
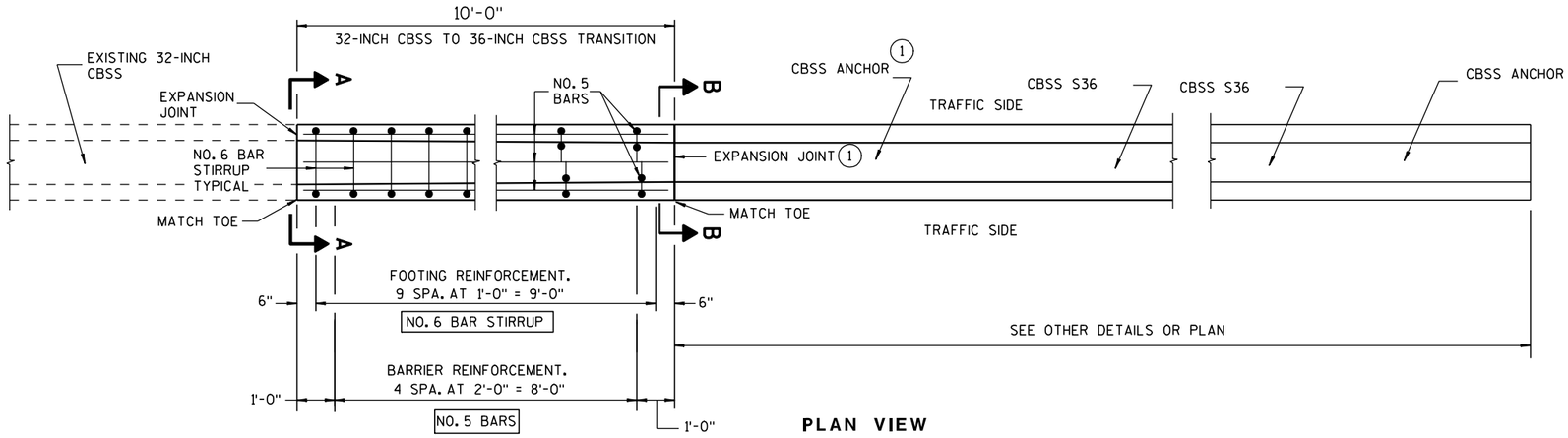
S.D.D. 14 B 35-1d



ELEVATION VIEW



PLAN VIEW

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

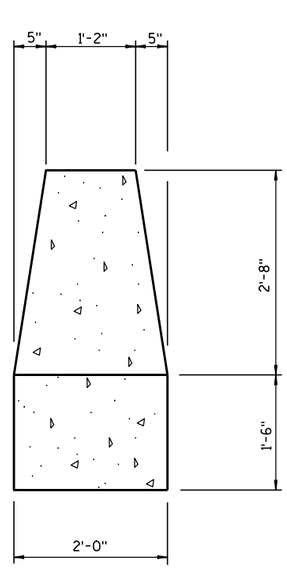
4000 PSICONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE $\frac{3}{4}$" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

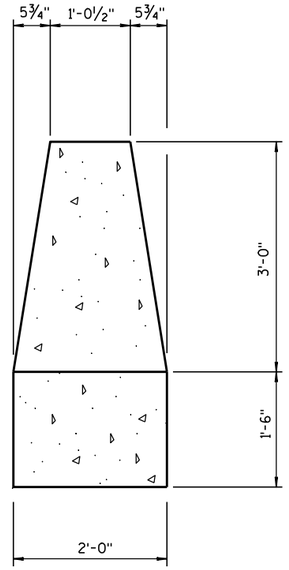
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

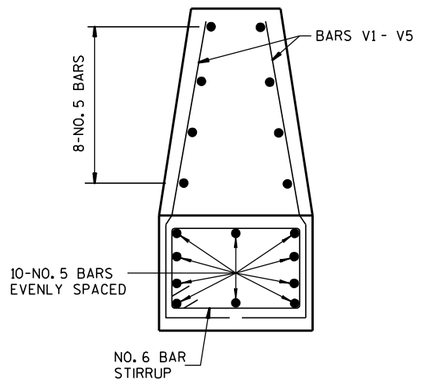
(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD-JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD-JOINT IS USED ANCHOR NOT REQUIRED.



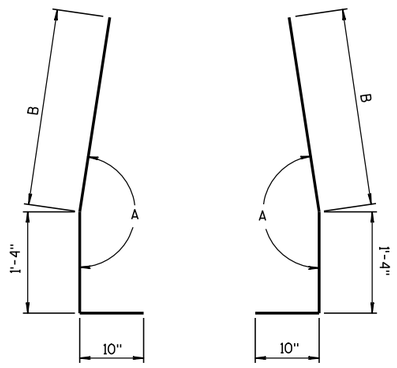
SECTION A-A



SECTION B-B



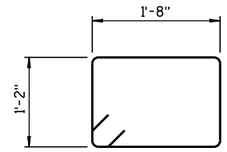
BAR DETAIL
BAR POSITION NO. 1 - NO. 5



BAR BENDING DETAIL
FOR BARS V1 - V5

BAR CHART
SECTIONS V1 - V5

BAR	A	B
V1	171°-10'	2'-6½"
V2	171°-05'	2'-8"
V3	170°-55'	2'-9"
V4	170°-40'	2'-9½"
V5	171°	2'-10"



STIRRUP BAR
BENDING DETAIL

32-INCH SINGLE SLOPE CONCRETE BARRIER TO 36-INCH SINGLE SLOPE CONCRETE BARRIER HEIGHT TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-3-2010 DATE
/S/ Jerry H. ---- ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 14 B 39-1a

GENERAL NOTES

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

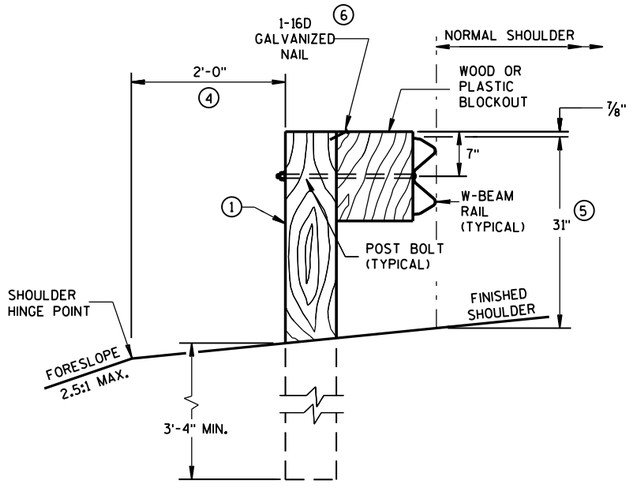
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

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

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

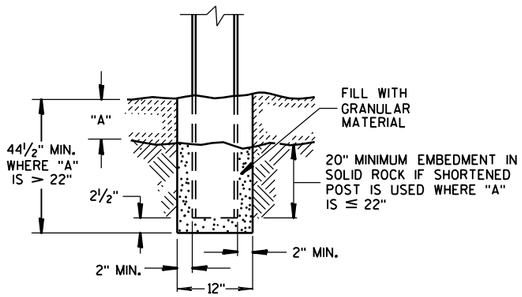
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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



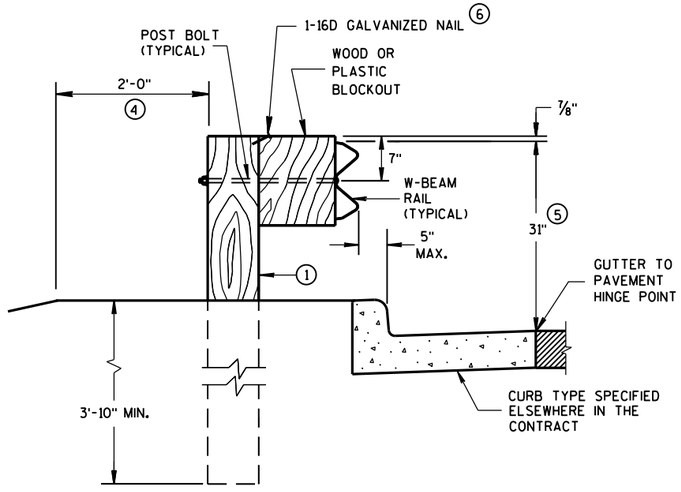
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



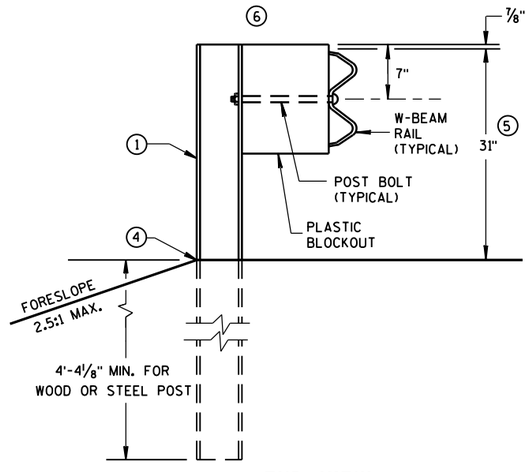
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



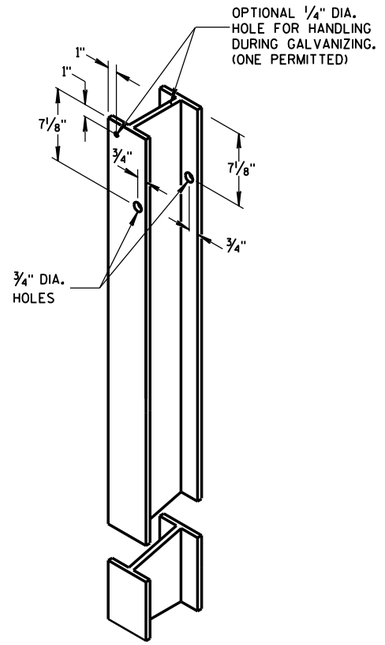
END VIEW

LOCATED ALONG A CURBED ROADWAY

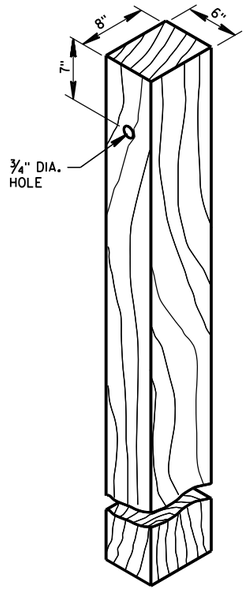


END VIEW

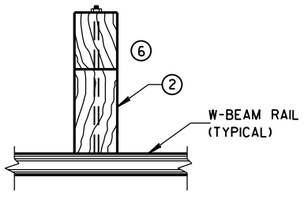
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



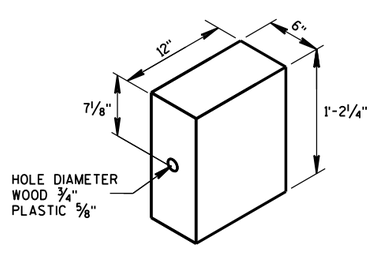
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



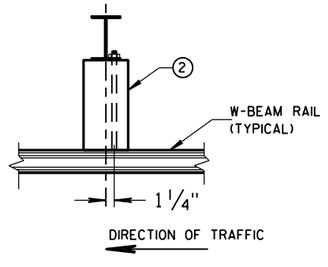
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

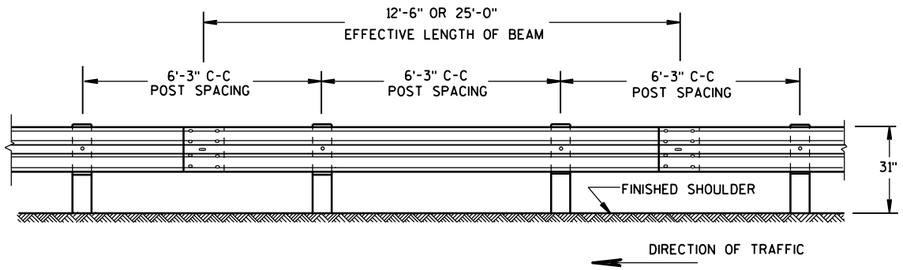


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

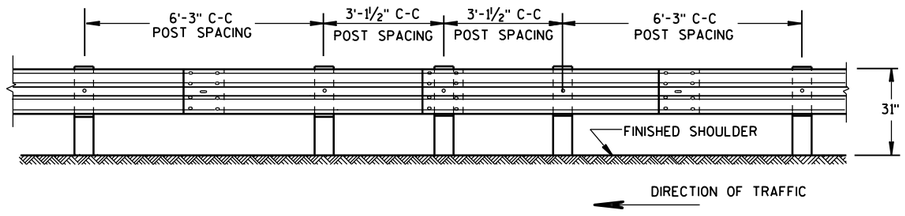
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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



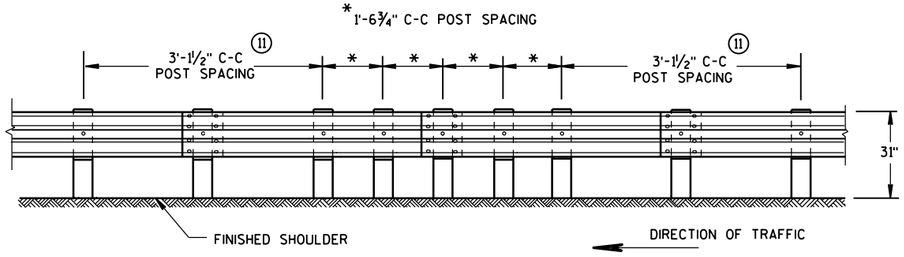
FRONT VIEW

POST SPACING STANDARD INSTALLATION



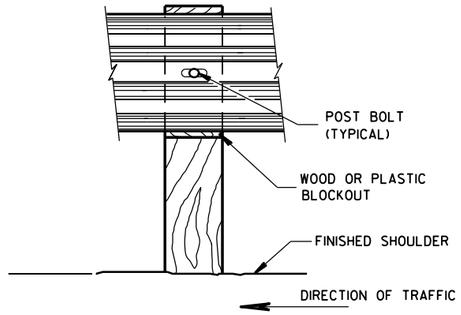
FRONT VIEW

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

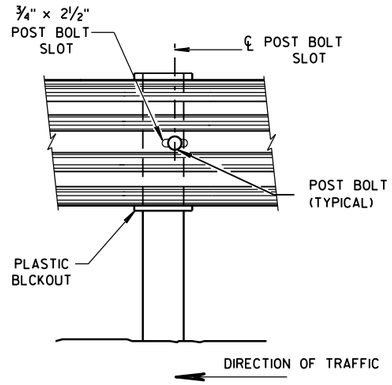


FRONT VIEW

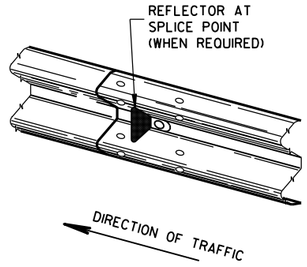
QUARTER POST SPACING (QS)

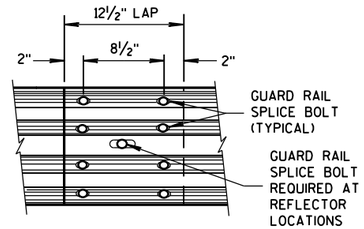


FRONT VIEW AT WOOD POST



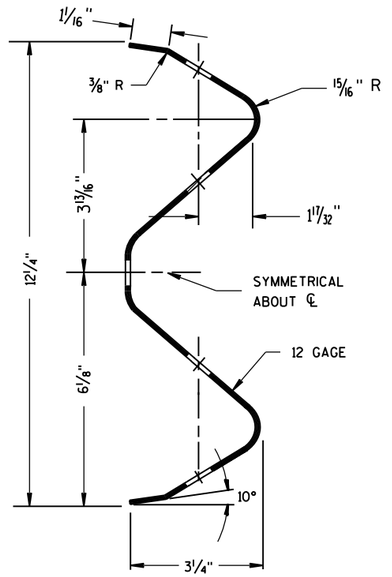
FRONT VIEW AT STEEL POST



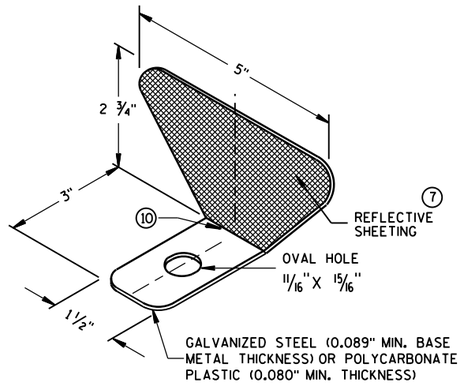


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

GENERAL NOTES

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

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

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

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

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

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

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

REFLECTOR SPACING ⑧

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
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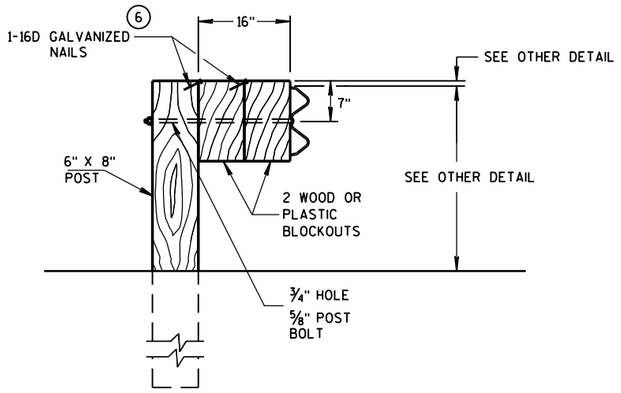
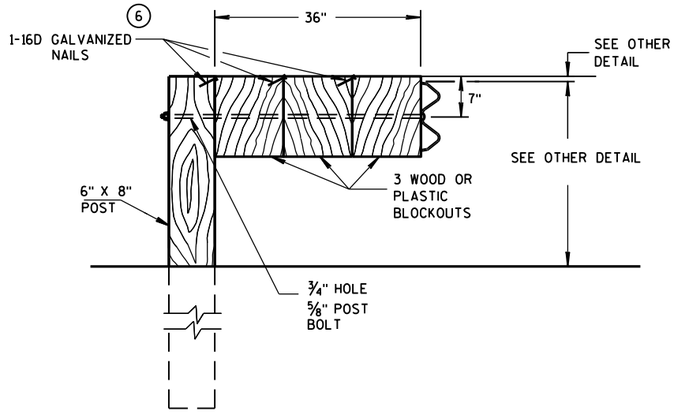


DETAIL FOR 16" BLOCKOUT DEPTH

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

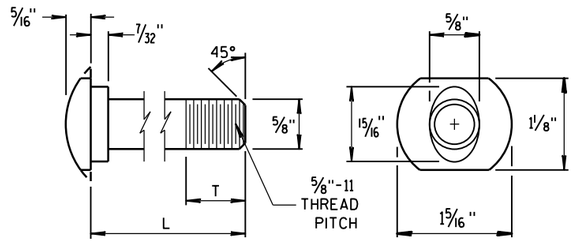


DETAIL FOR 36" BLOCKOUT DEPTH

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

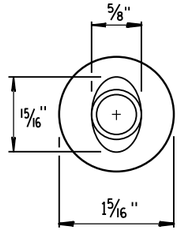
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

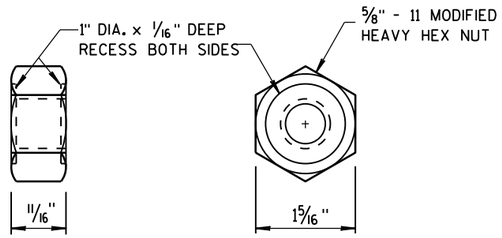


POST BOLT TABLE

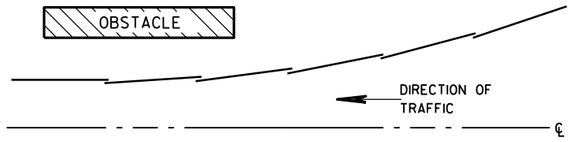
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

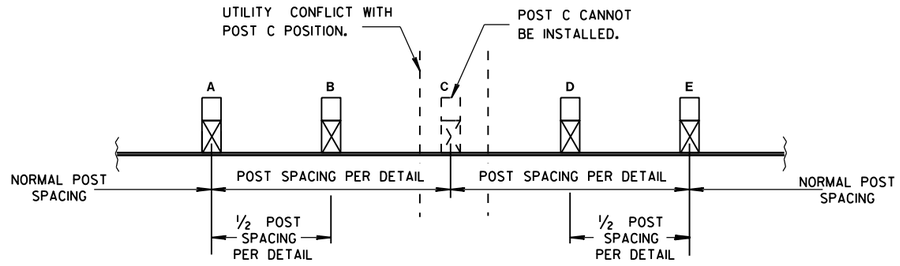


POST BOLT AND RECESS NUT

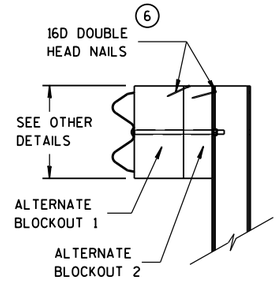


PLAN VIEW

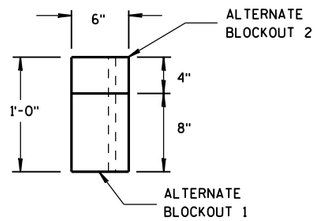
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

GENERAL NOTES

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

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

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

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

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

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

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

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

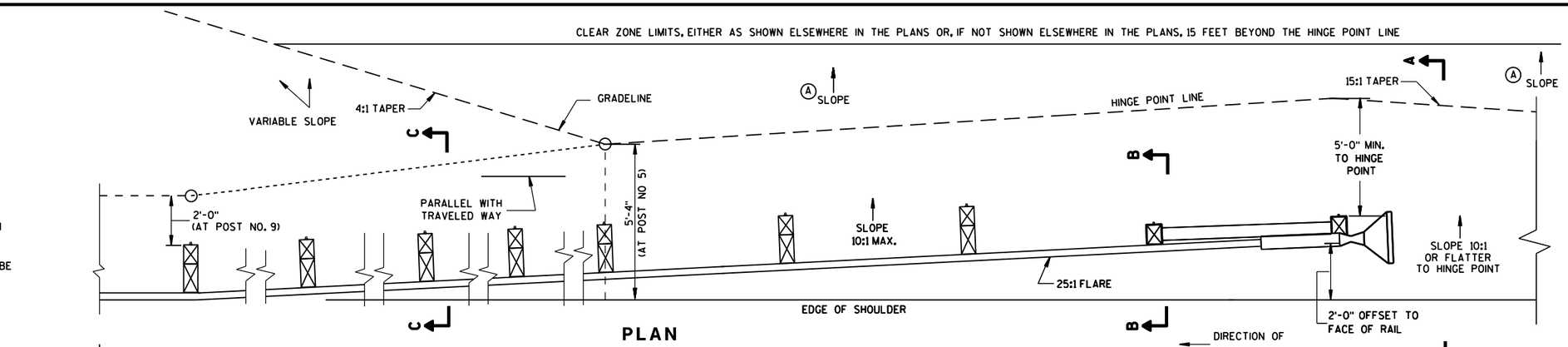
SEE SDD 14B42 FOR MORE INFORMATION.

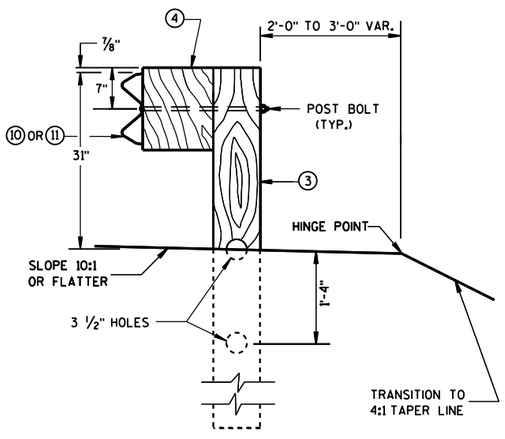
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

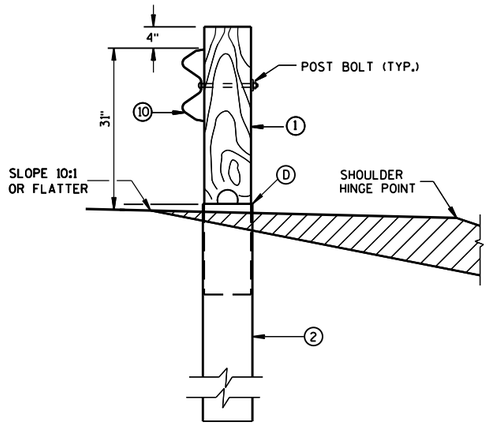
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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

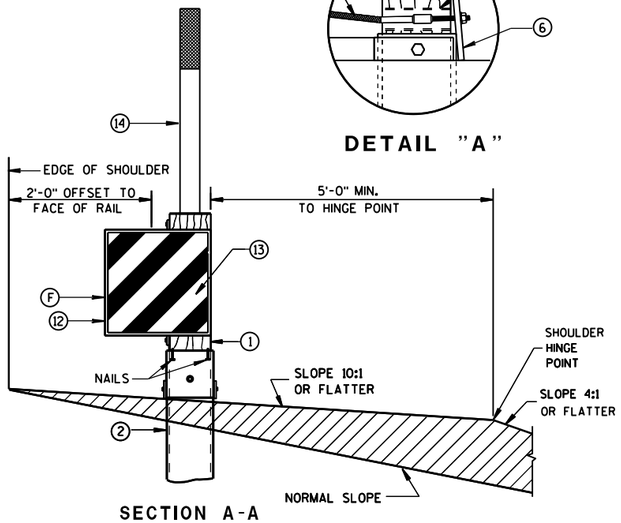




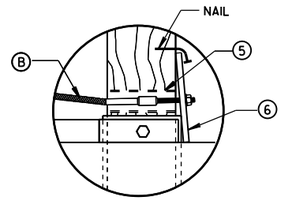
SECTION C-C
TYPICAL AT POST NOS. 3-9



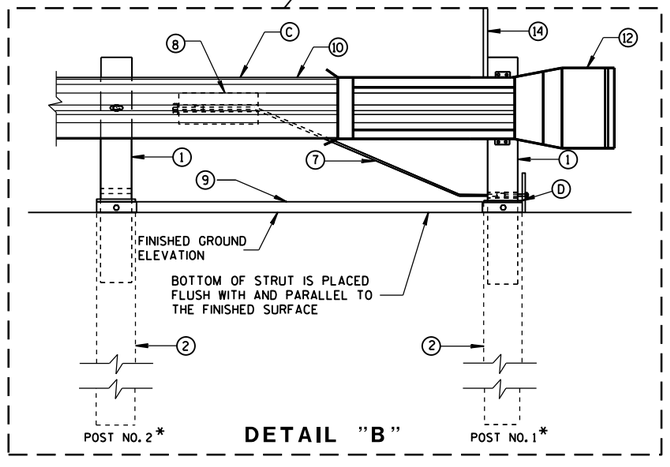
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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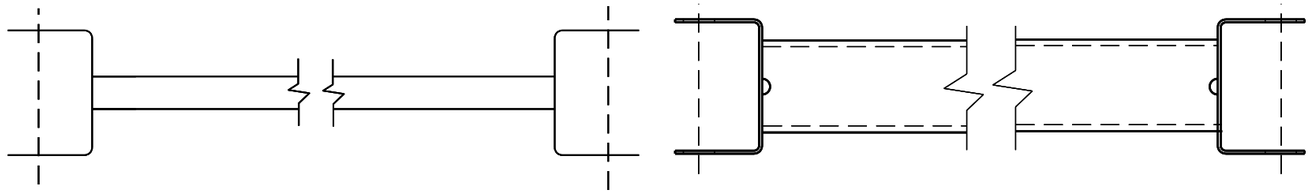
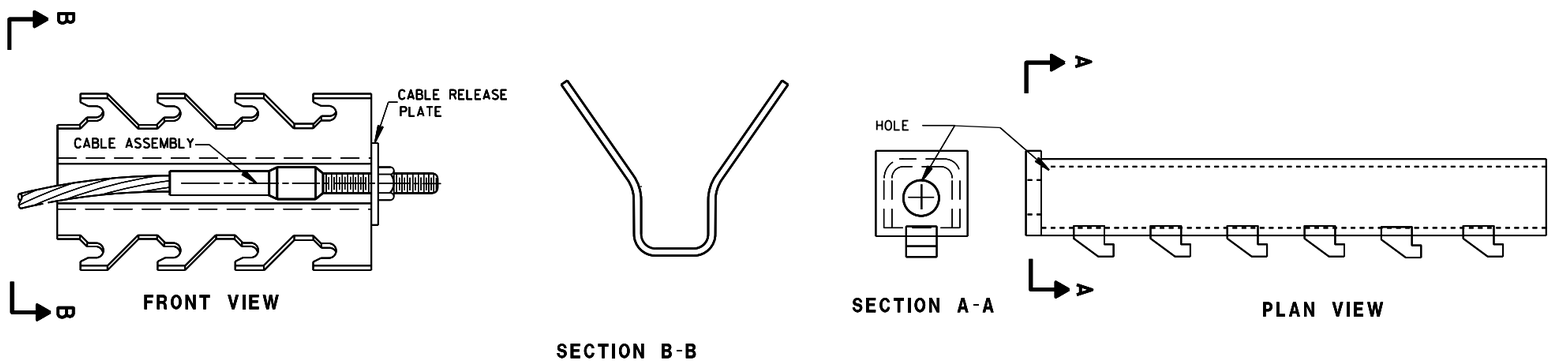
S.D.D. 14 B 44-2a



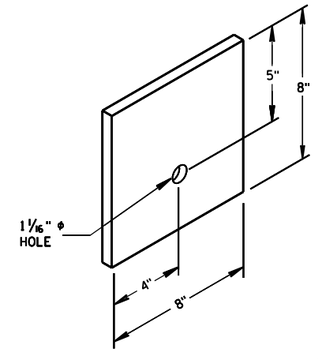
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX (8) (H)



BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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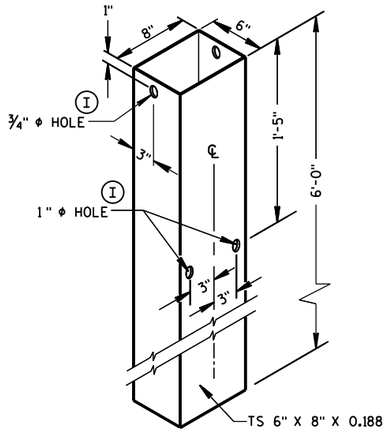
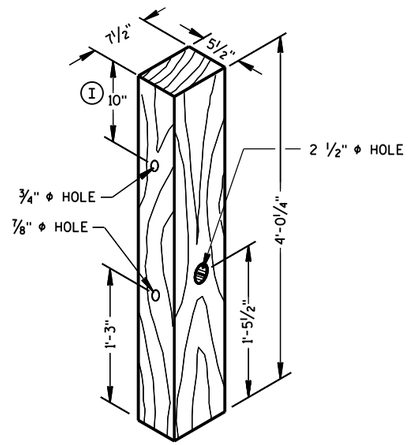
S.D.D. 14 B 44-2b

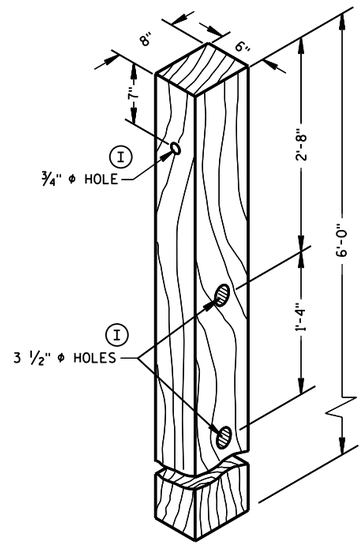


FOUNDATION TUBE (2)



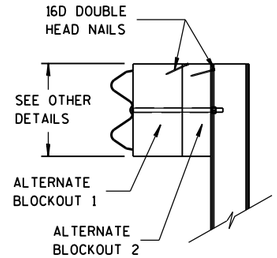
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

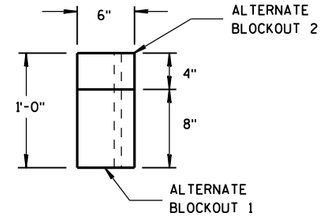


POSTS NUMBER 3-9

WOOD CRT POST (3)

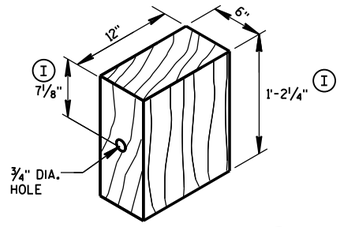


SIDE VIEW



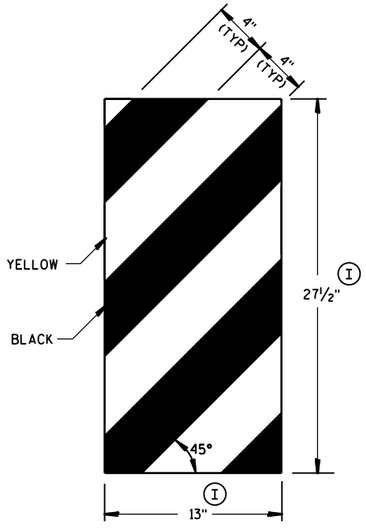
TOP VIEW

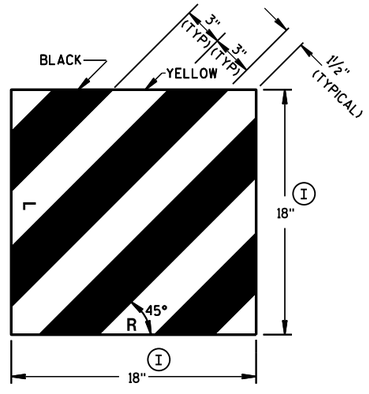
ALTERNATE WOOD BLOCKOUT DETAIL



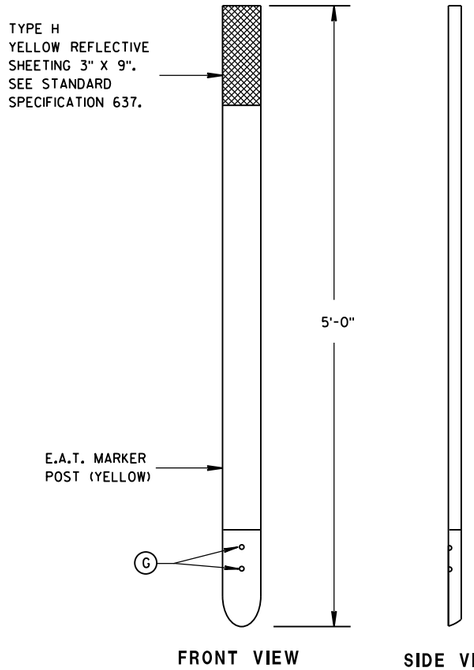
WOOD BLOCKOUT (4)

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





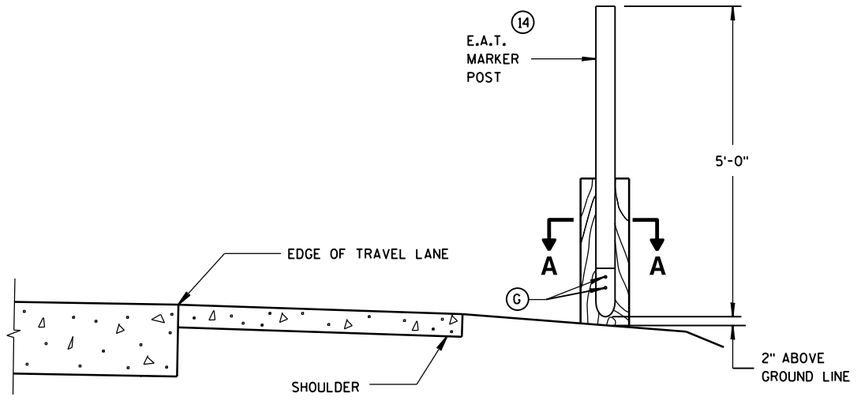
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

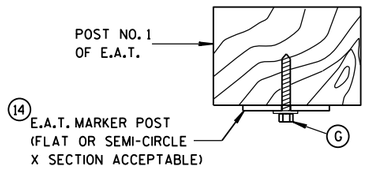
SIDE VIEW

E.A.T. MARKER POST (14)



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

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



SECTION A-A

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

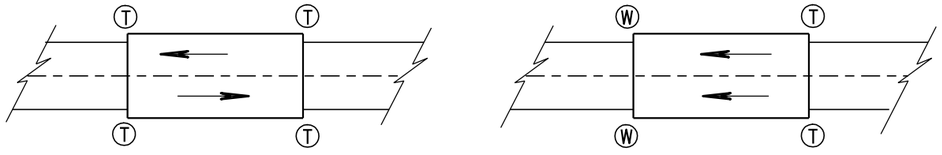
APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

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

6

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



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

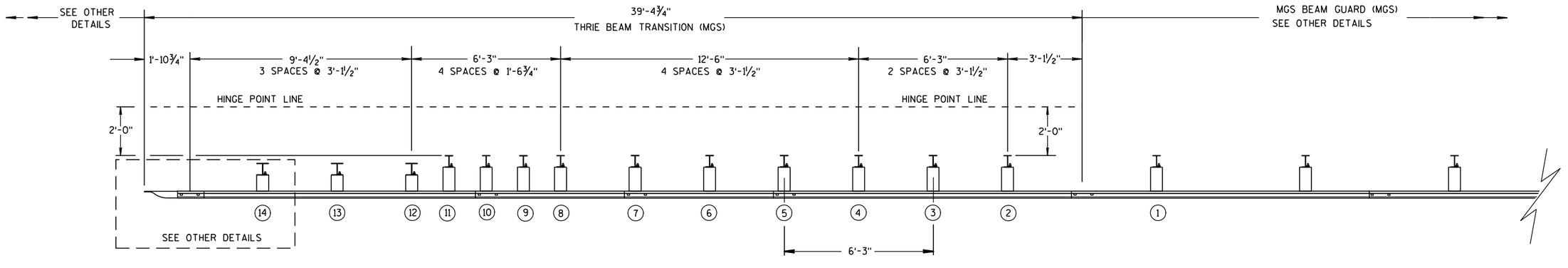
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

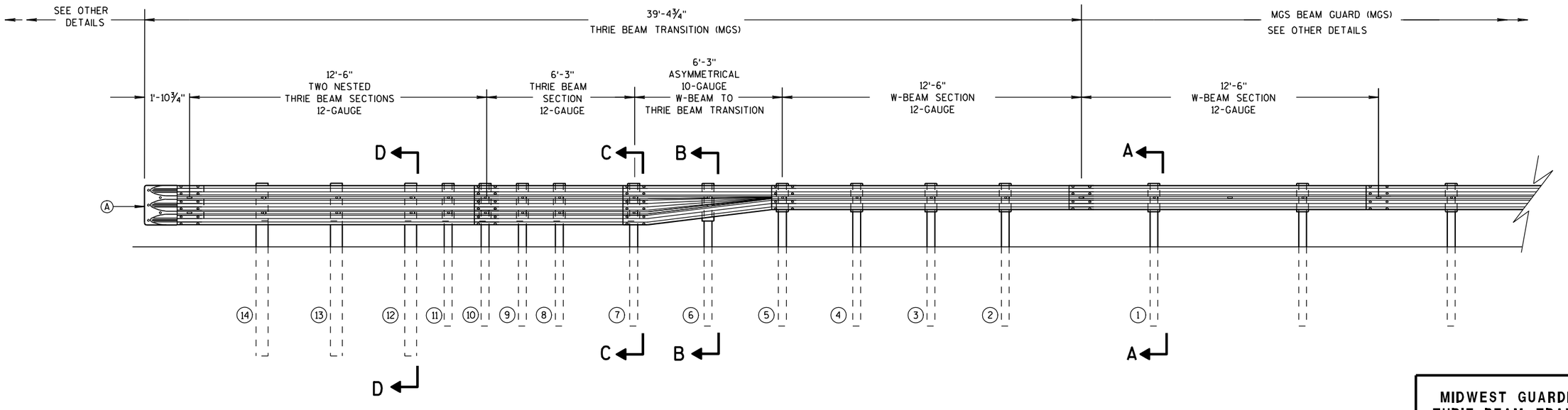
TRANSITION USES STEEL POSTS ONLY.

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

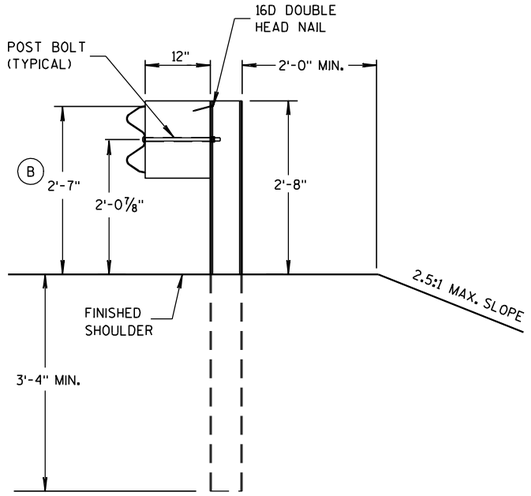
S.D.D. 14 B 45-3a

6

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

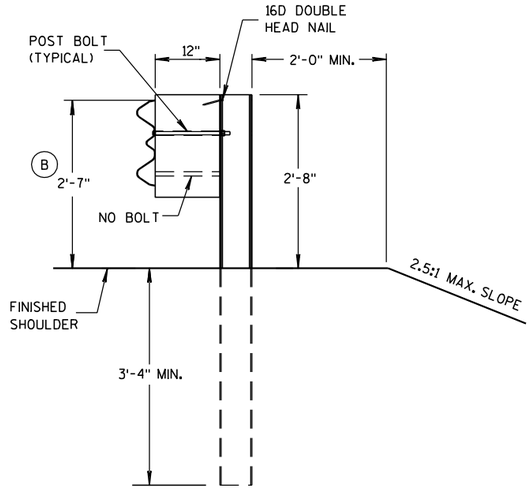
GENERAL NOTES

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



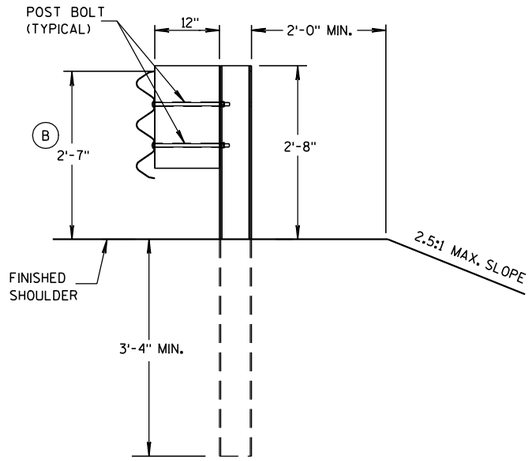
SECTION A-A

POSTS 1-5



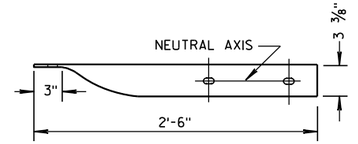
SECTION B-B

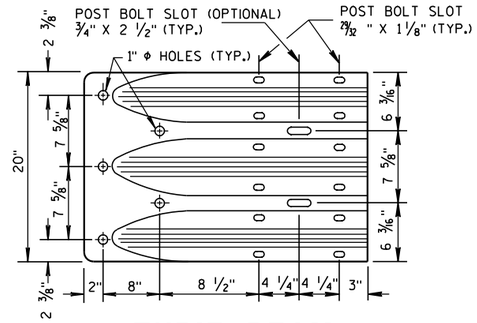
POST 6



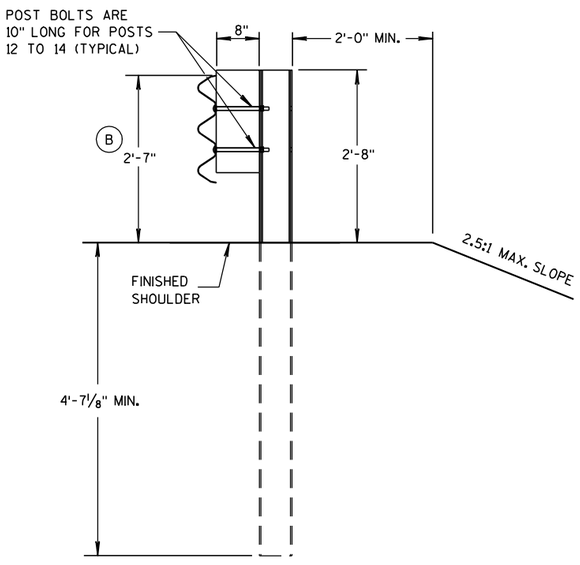
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

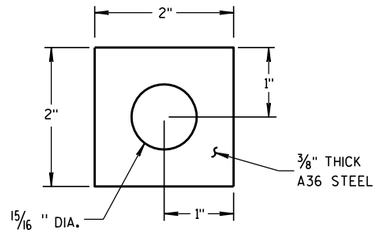
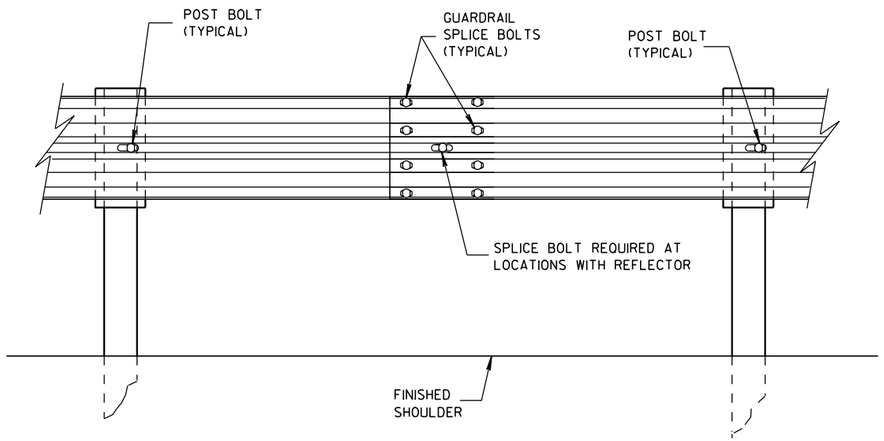
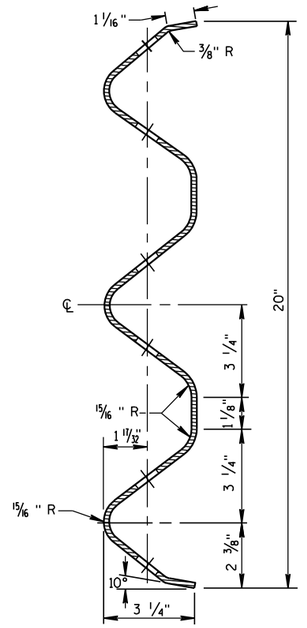


PLATE WASHER DETAIL



SPLICE DETAIL



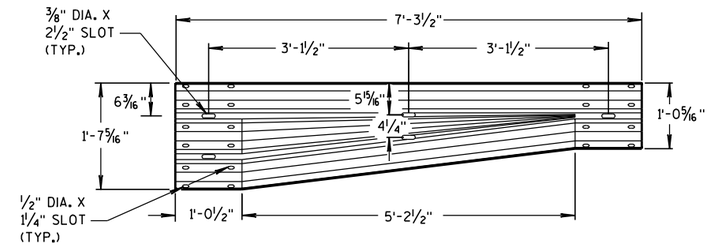
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

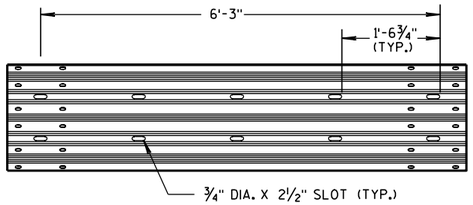
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

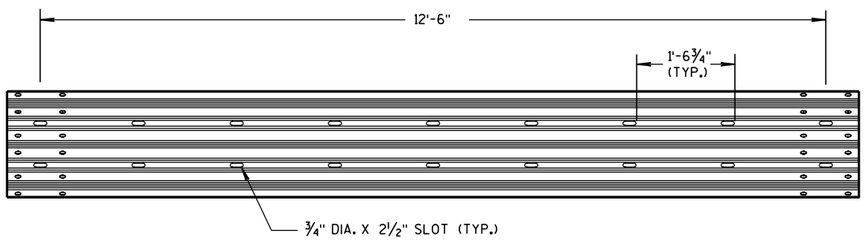
S.D.D. 14 B 45-3b



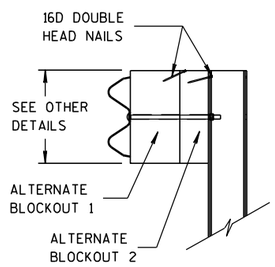
W-BEAM TO THRIE BEAM TRANSITION SECTION



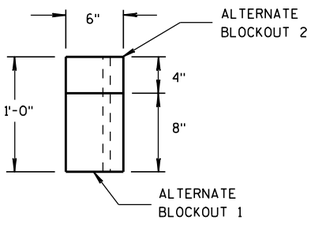
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

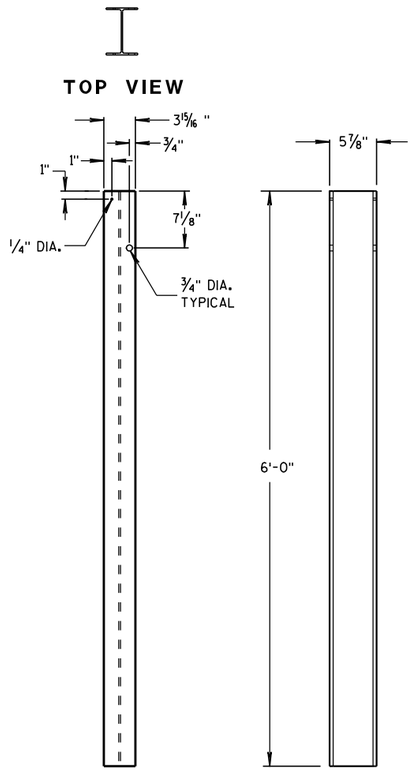


SIDE VIEW



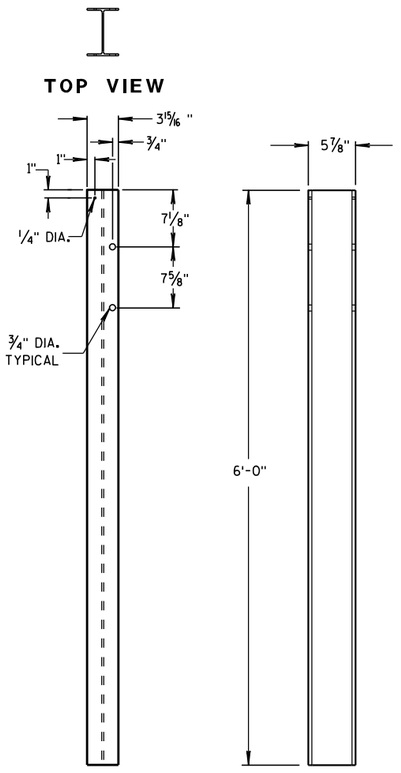
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



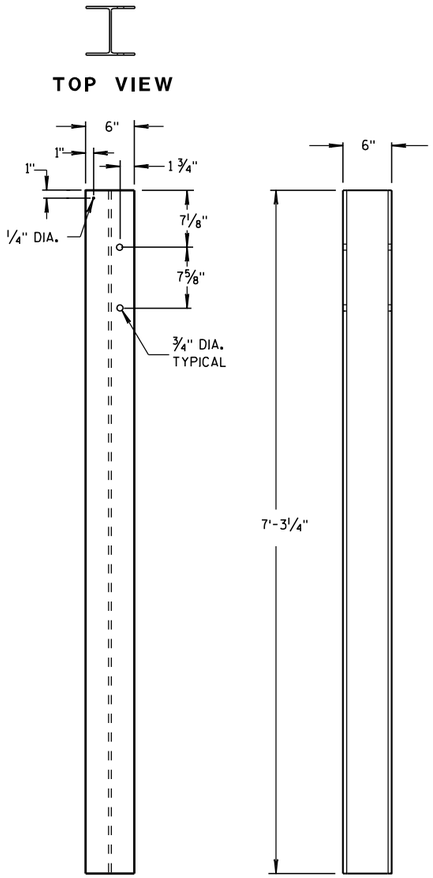
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

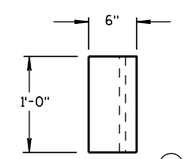
STEEL POSTS 6-11



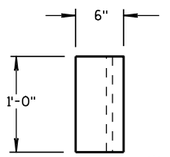
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

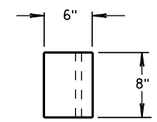
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



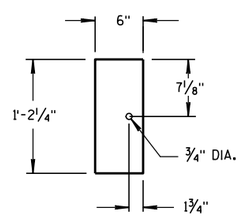
TOP VIEW (1)



TOP VIEW (1)

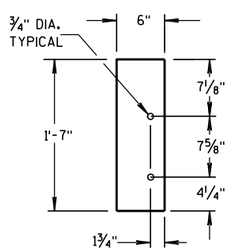


TOP VIEW



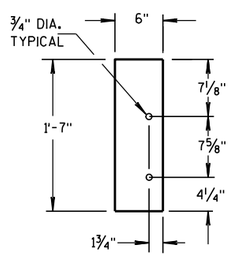
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

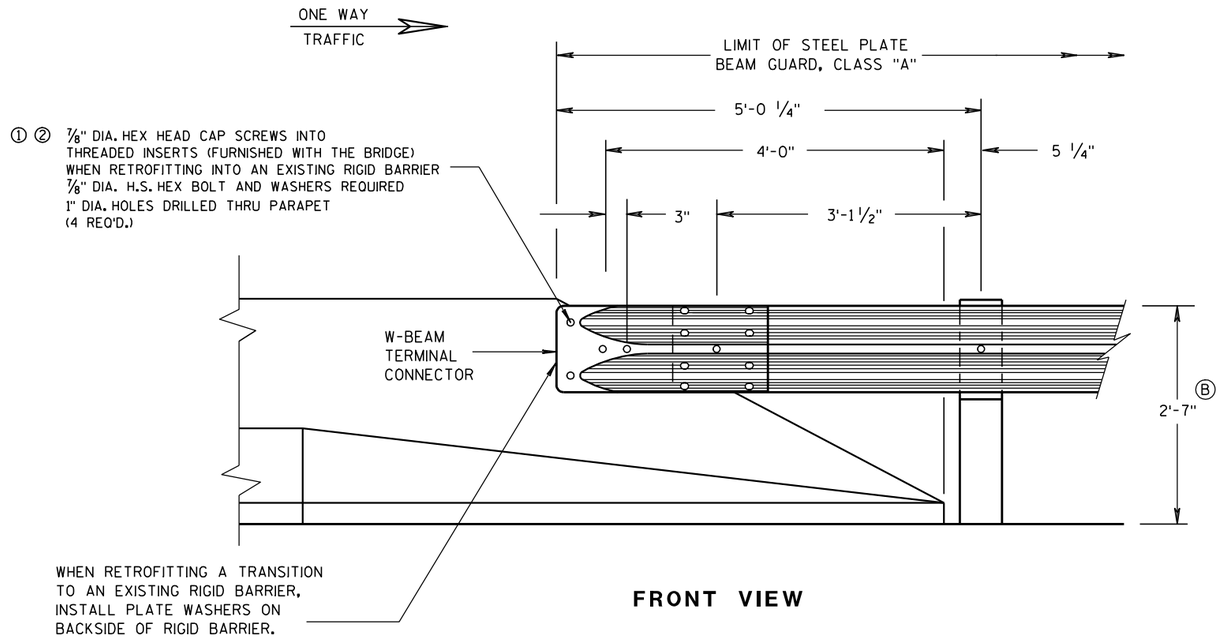
STEEL POST SIZES

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

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

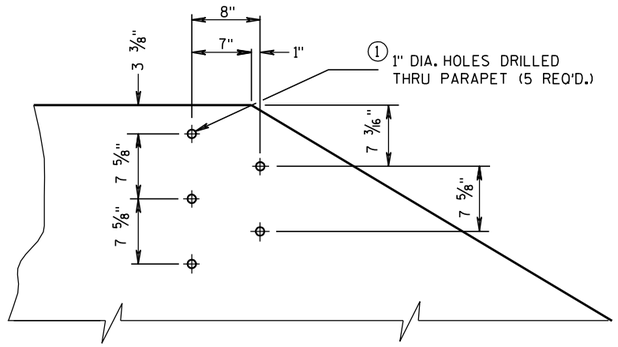
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

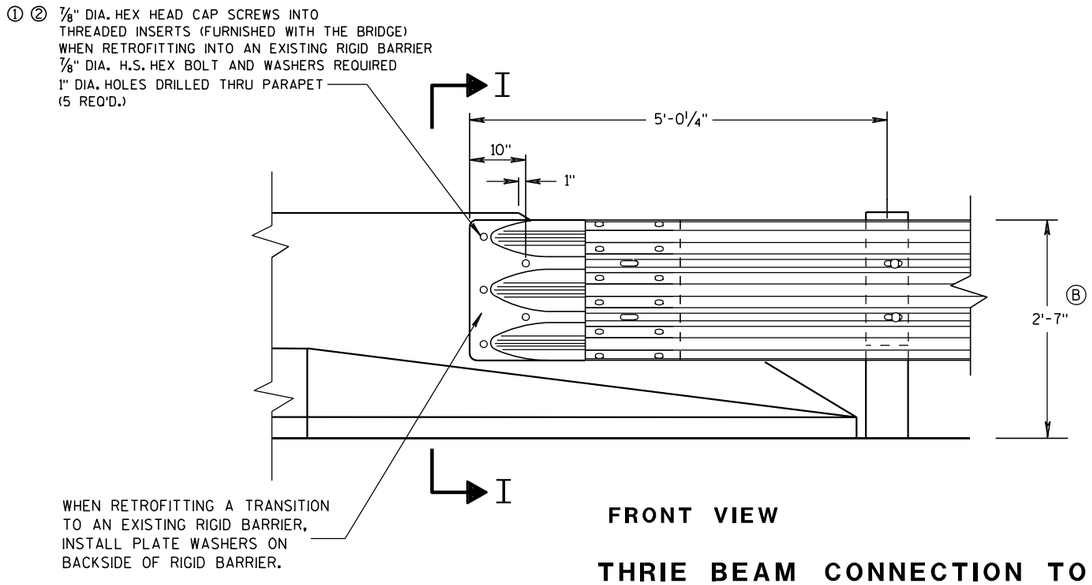
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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.

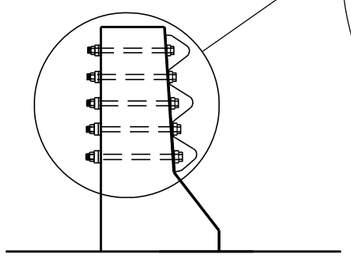
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



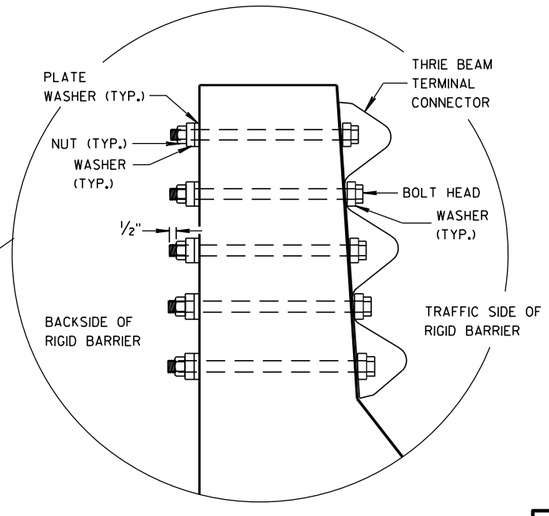
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



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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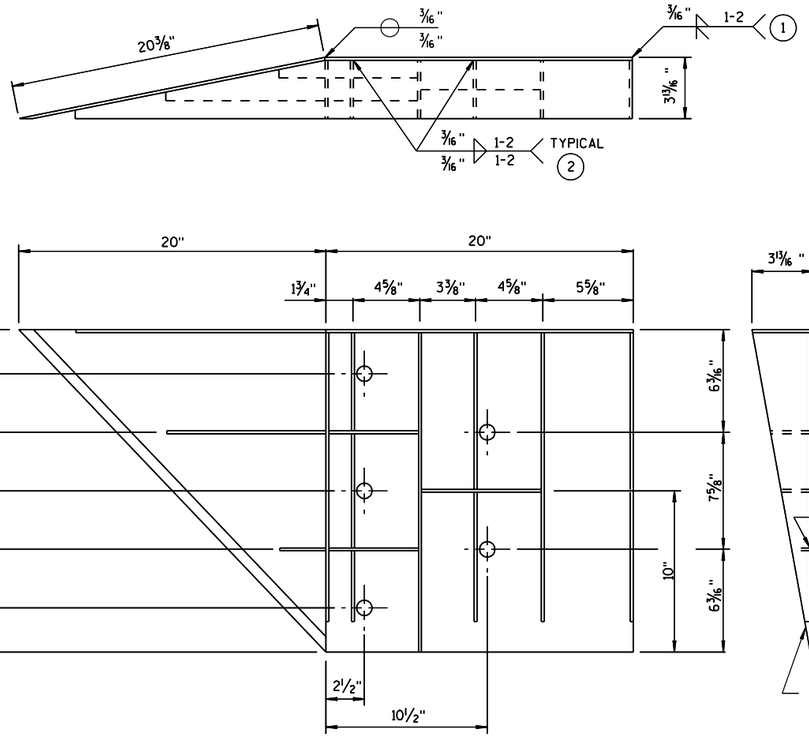
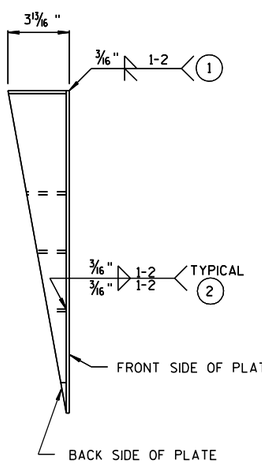
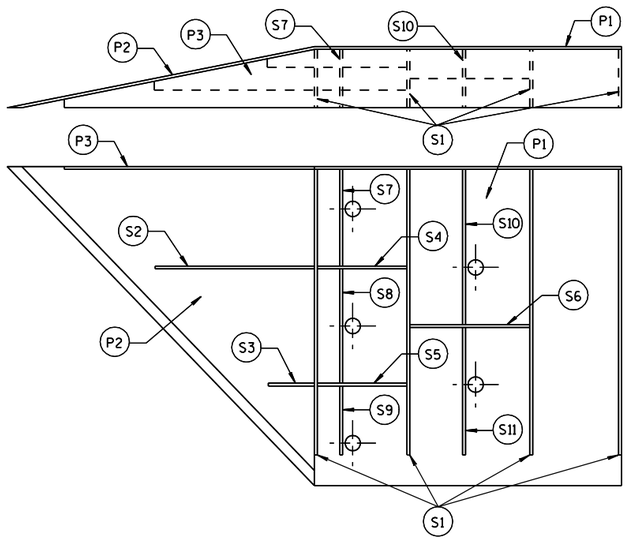




WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)



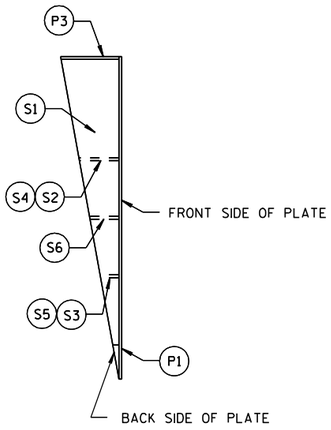


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE ⅜" THICK.

ALL STIFFENERS ARE ¼" THICK.

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

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

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	⅜"
P2	1		20" x 20" x 28⁹⁄₁₆"	⅜"
P3	1		39" x 3⅝" x 20" x 19⁵⁄₁₆"	⅜"
S1	4		18⁷⁄₁₆" x 3⅝" x 18¾"	¼"
S2	1		10¼" x 2⁷⁄₁₆" x 10⅜" x ½"	¼"
S3	1		3" x 1⁹⁄₁₆" x 3⅛" x ½"	¼"
S4	1		6⅛" x 2⁷⁄₁₆"	¼"
S5	1		6⅛" x 1⁹⁄₁₆"	¼"
S6	1		7¾" x 1¾"	¼"
S7	1		2⁹⁄₁₆" x 6" x 3⅝" x 5⅞"	¼"
S8	1		1⁵⁄₃₂" x 7½" x 2½" x 7⅜"	¼"
S9	1		6⁹⁄₁₆" x 6⅜" x 1³⁄₃₂"	¼"
S10	1		1⅞" x 9⅞" x 3⅝" x 9¹¹⁄₁₆"	¼"
S11	1		8½" x 8¾" x 1¹³⁄₁₆"	¼"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H ---- — ROADWAY STANDARDS ENGINEER
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S.D.D. 14 B 45-3i

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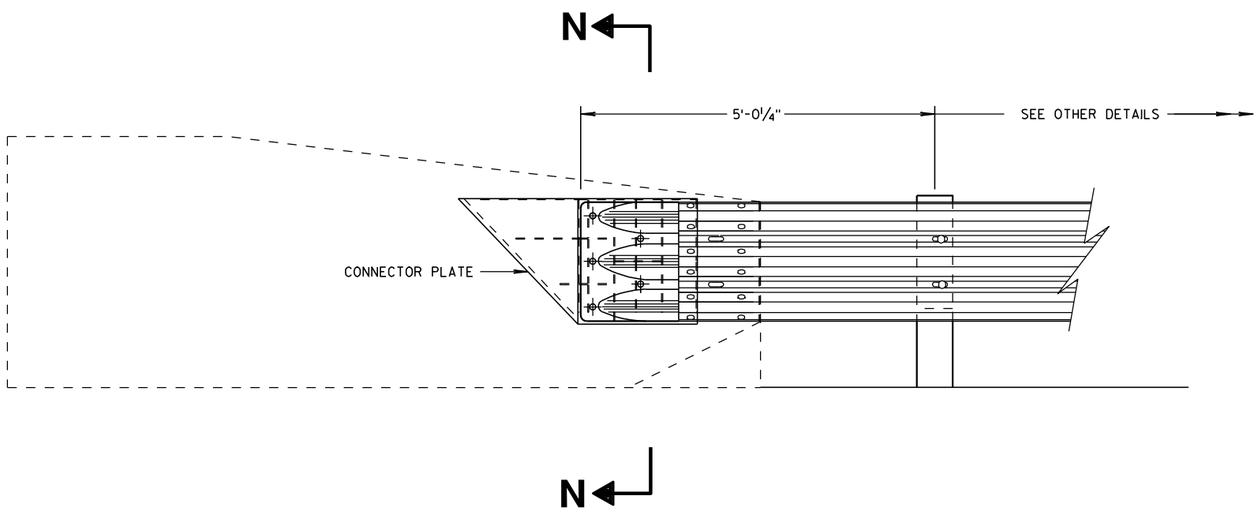
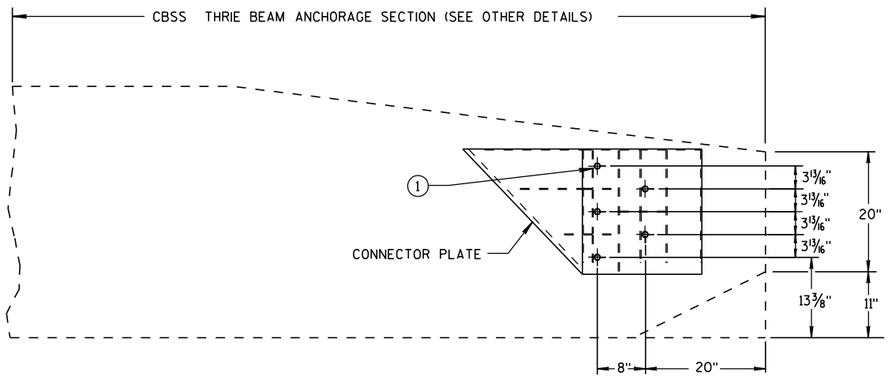
S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

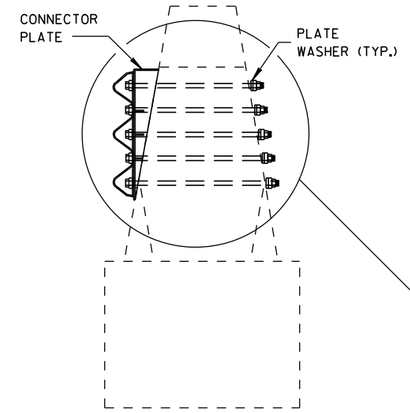


SINGLE SLOPE CONNECTION PLATE PLACEMENT

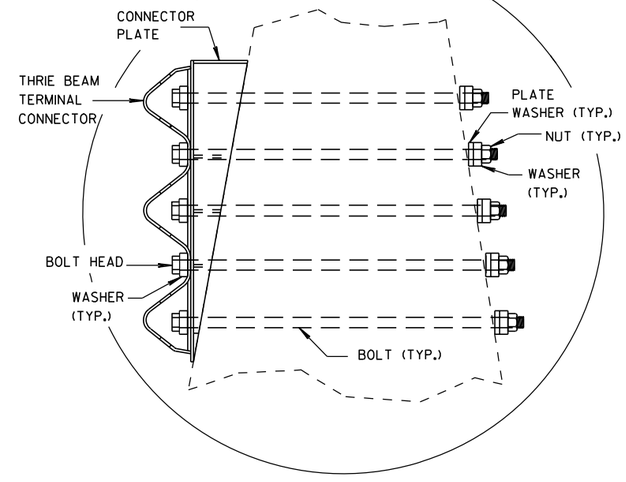
GENERAL NOTES

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 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

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

FHWA

6

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

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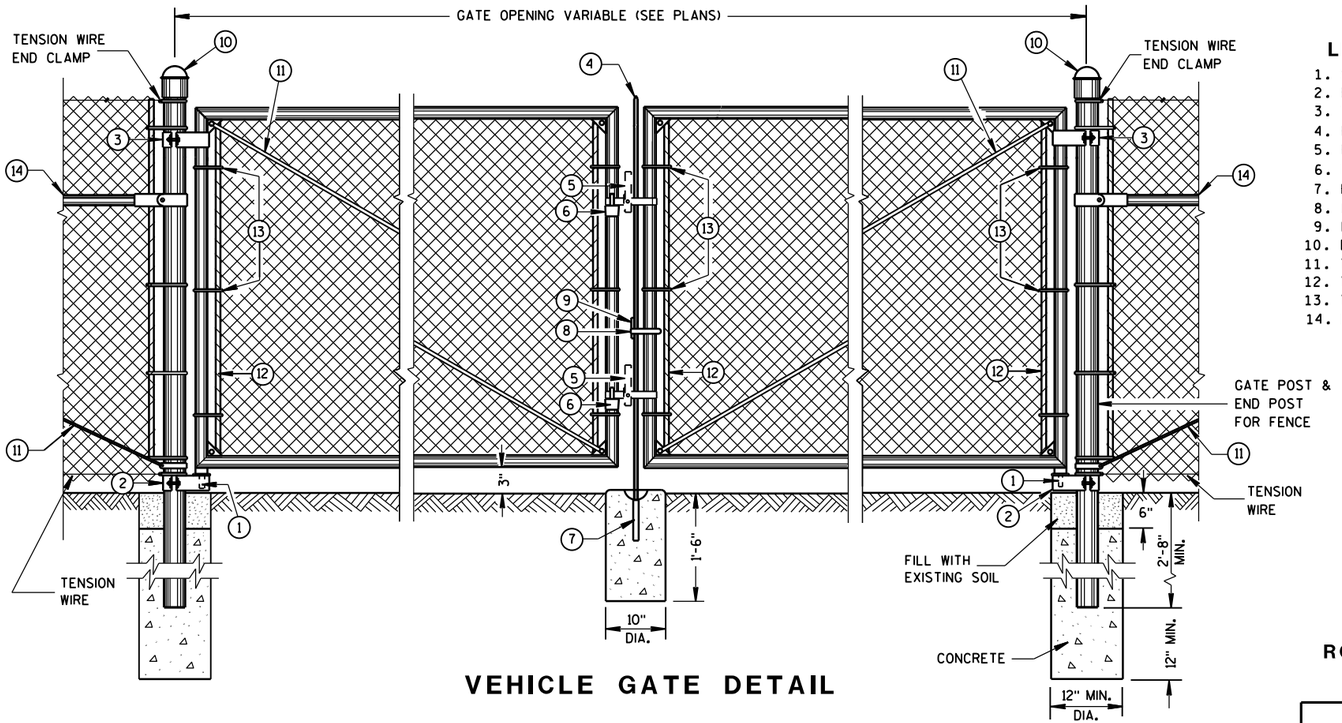
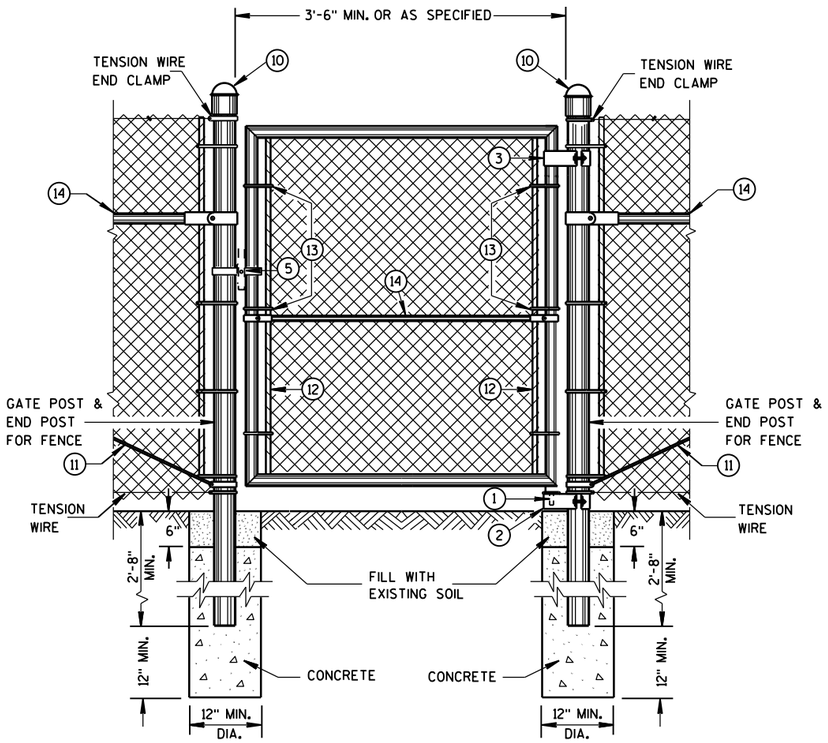
S.D.D. 14 B 45-3j



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

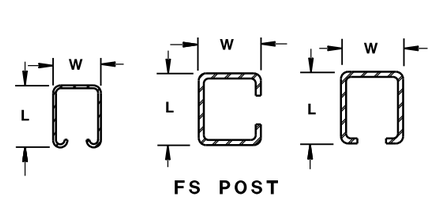
FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

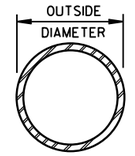
FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.



FS POST



SP POST & RAIL

CROSS SECTIONS OF POSTS AND RAILS

ROLLED-FORMED STEEL FENCE POST (2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

ROUND STEEL FENCE POST (1.8 OZ./SQ. FT. COATING)

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

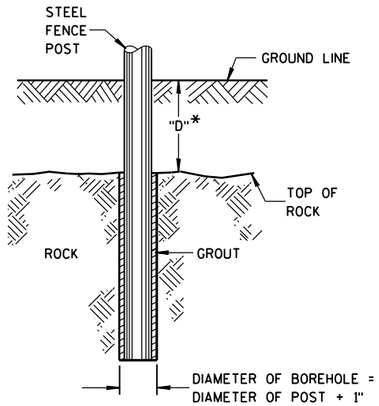
BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

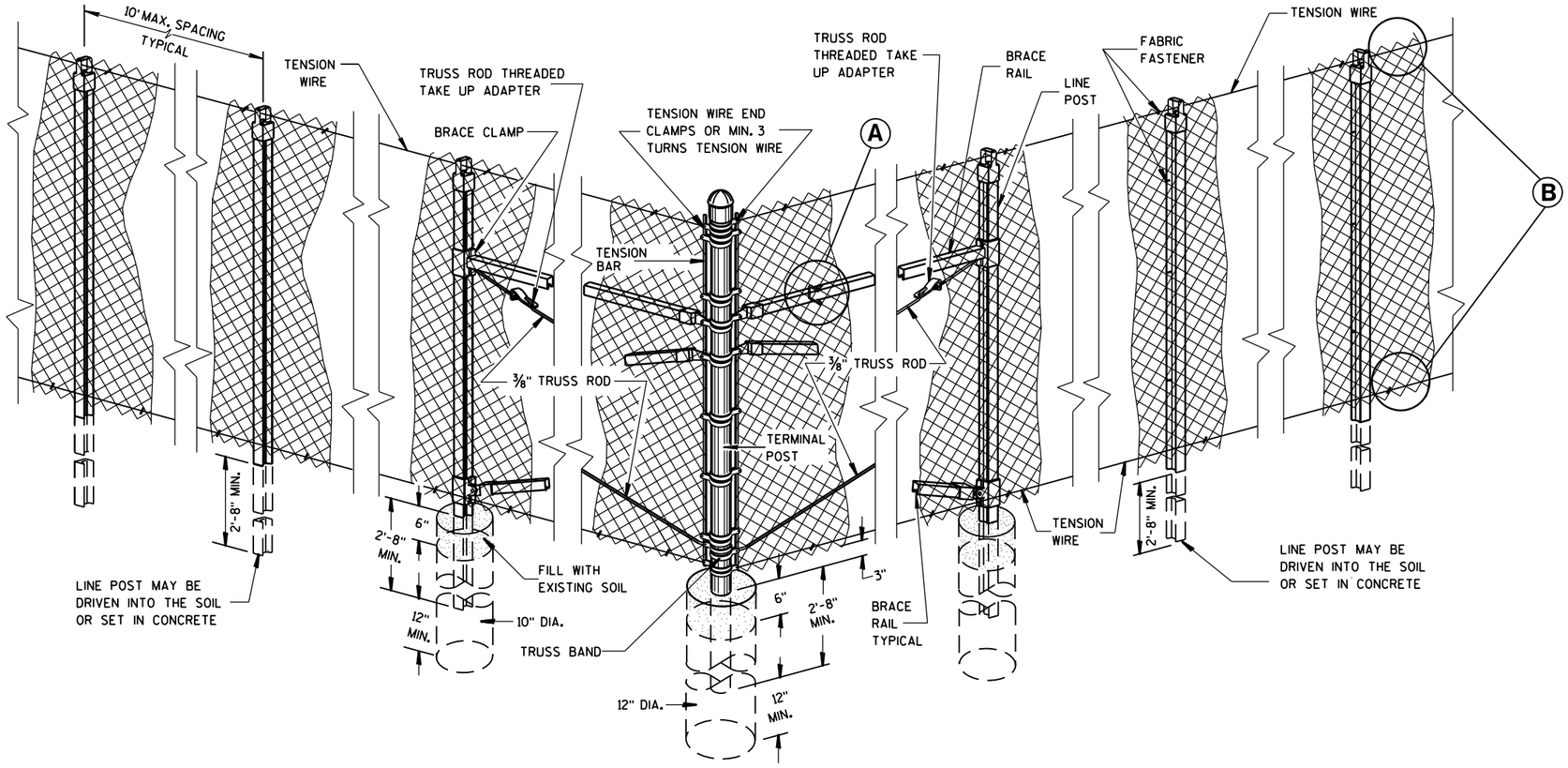
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

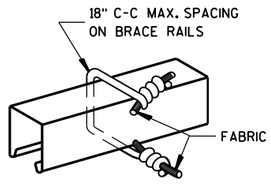


*IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST



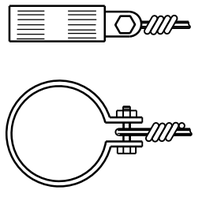
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



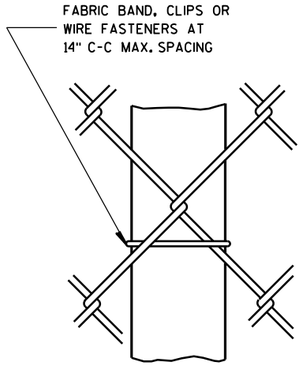
BRACE RAIL

FABRIC FASTENER

Ⓐ



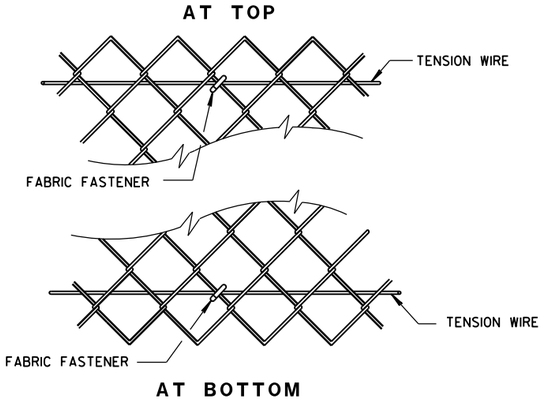
TENSION WIRE END CLAMP



LINE POST

FABRIC FASTENER

AT TOP



AT BOTTOM

SELVAGES

Ⓑ

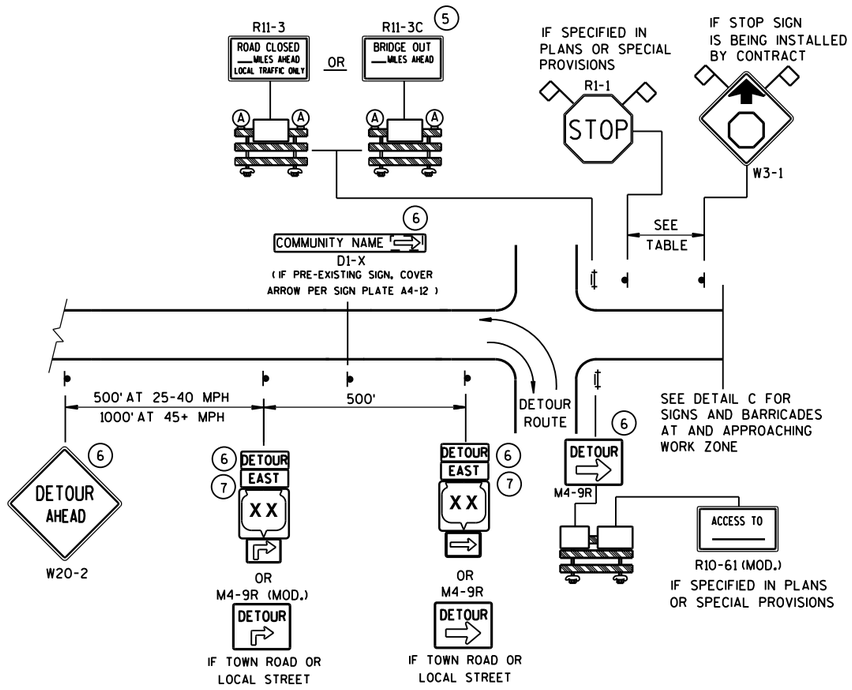
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Nov. 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS D ENGINEER
FHWA

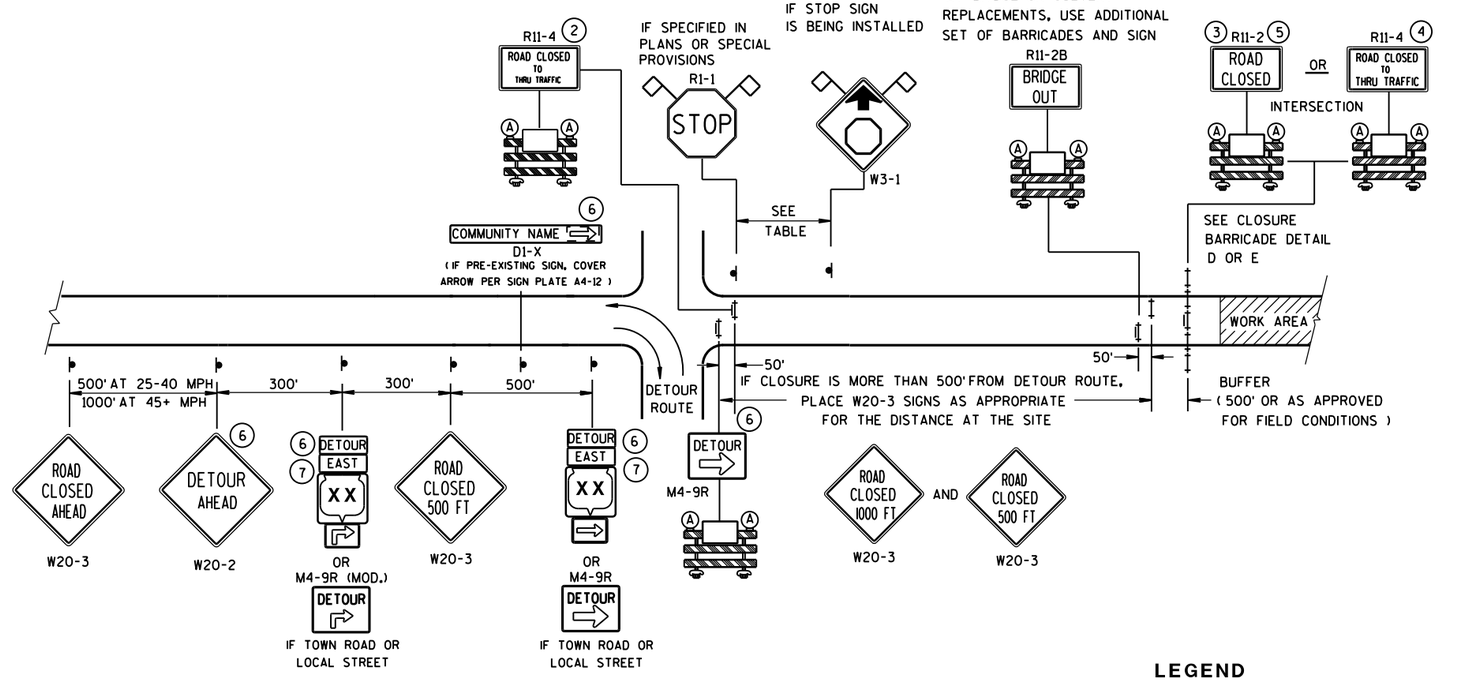
6

S.D.D. 15 B 3-14b



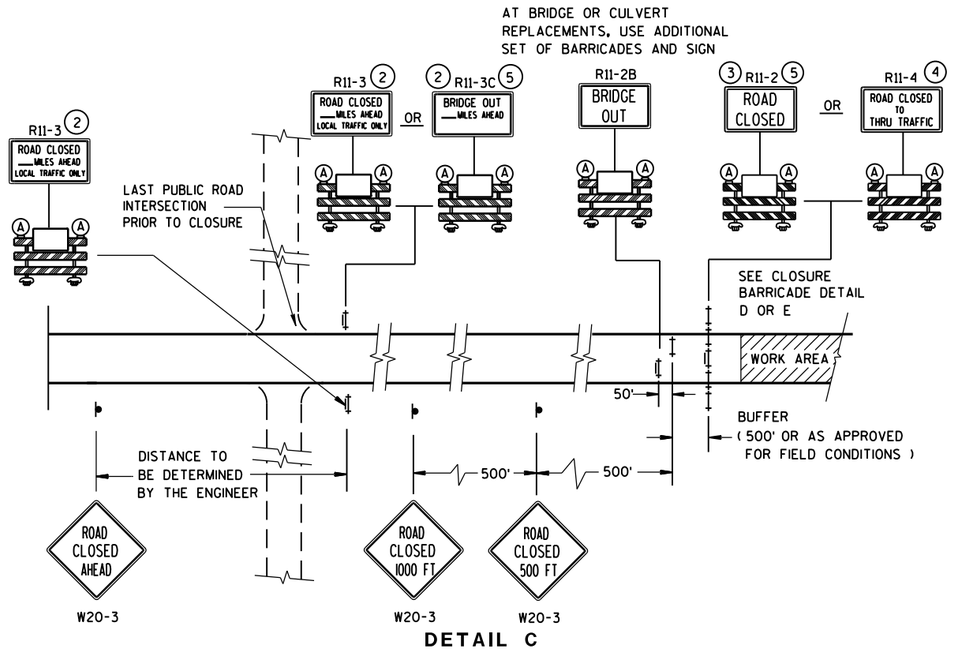
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

6

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

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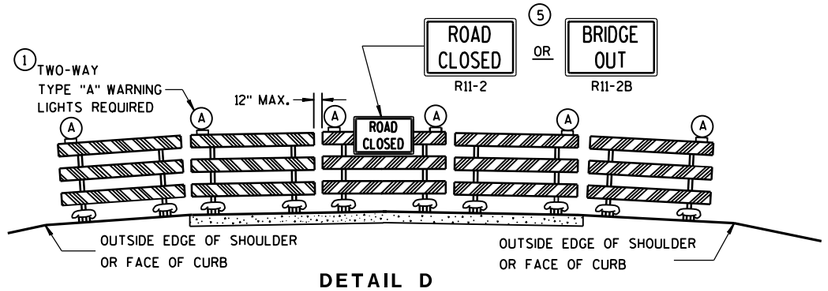
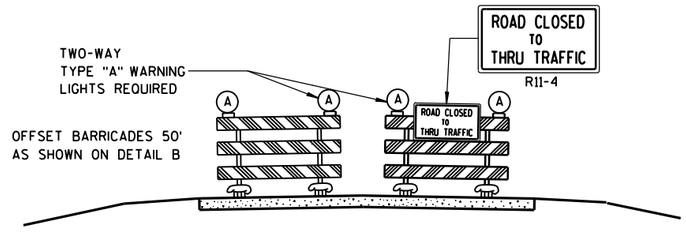
S.D.D. 15 C 2-5a



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

6

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.

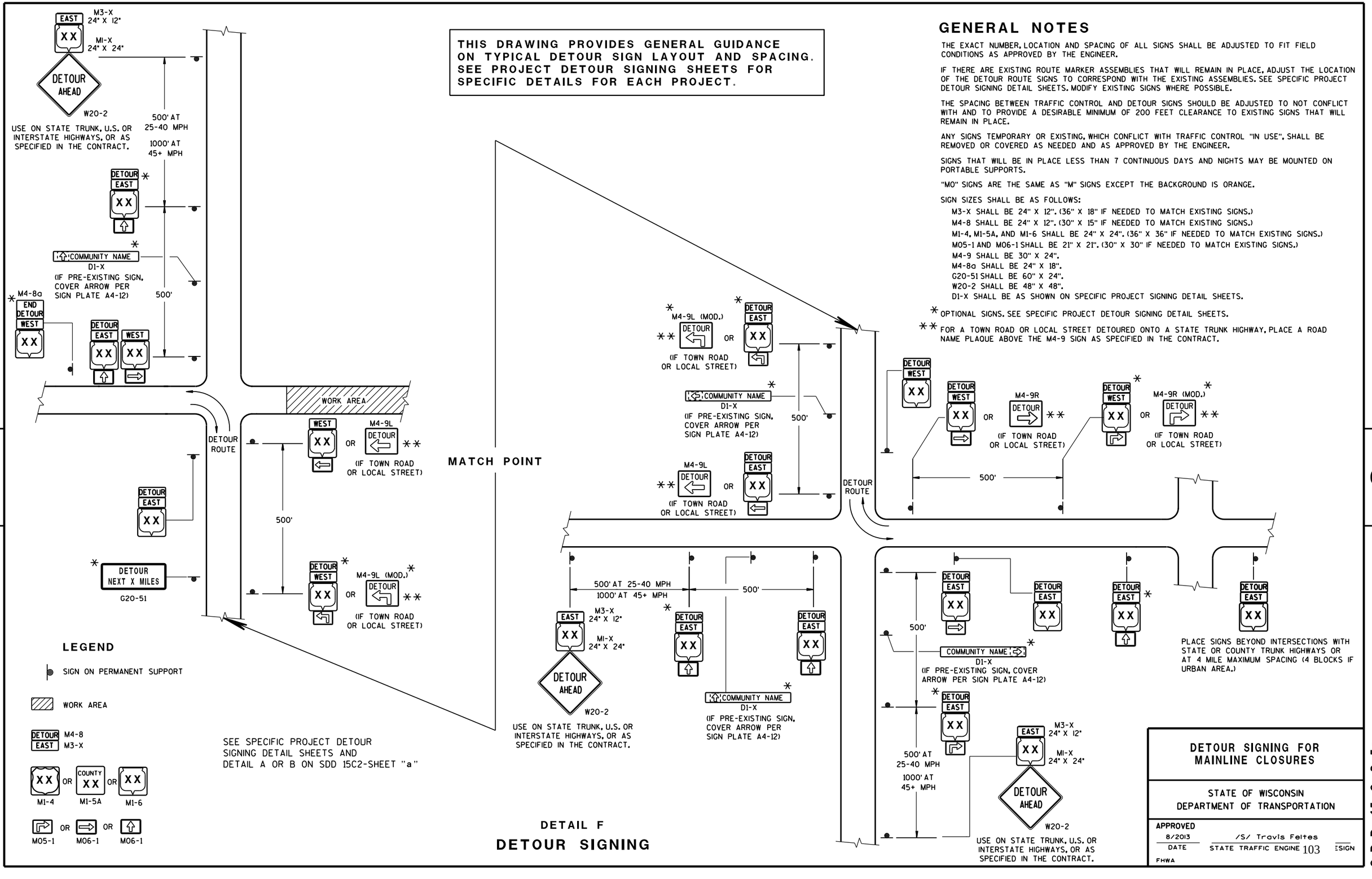
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.)
- MO5-1 AND MO6-1 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.



LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- MO5-1 OR MO6-1 OR MO6-1

DETAIL F

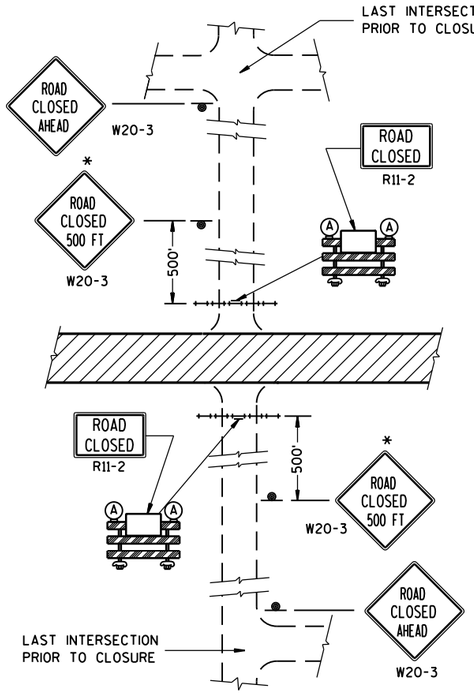
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

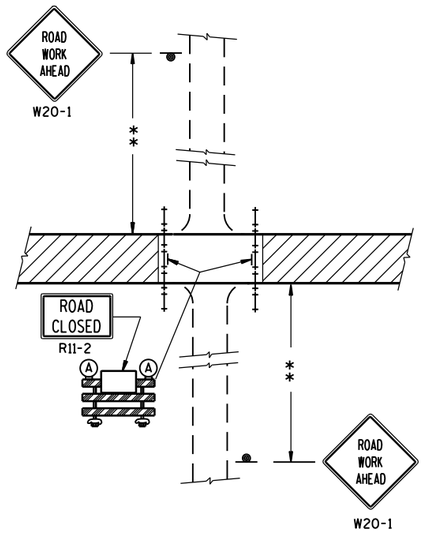
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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



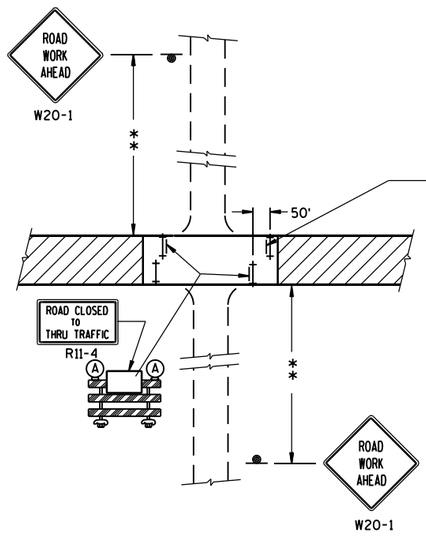
DETAIL 1

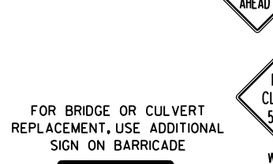
(NO ACCESS TO PROJECT)



DETAIL 2

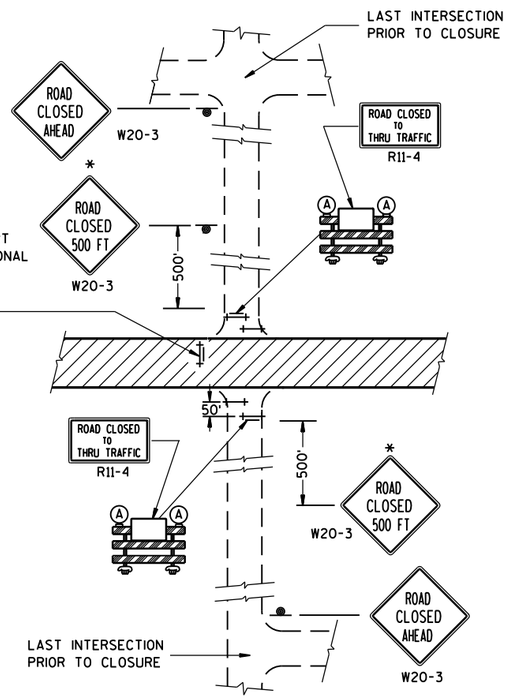
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





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

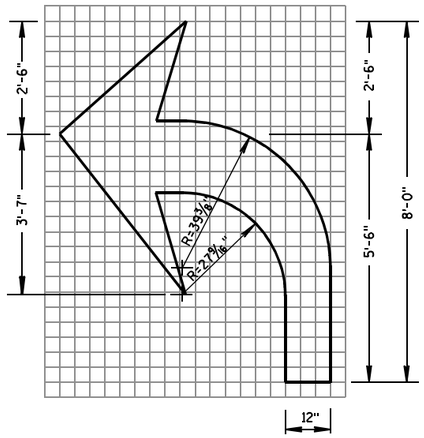
6

S.D.D. 15 C 3-2
S.D.D. 15 C 3-2

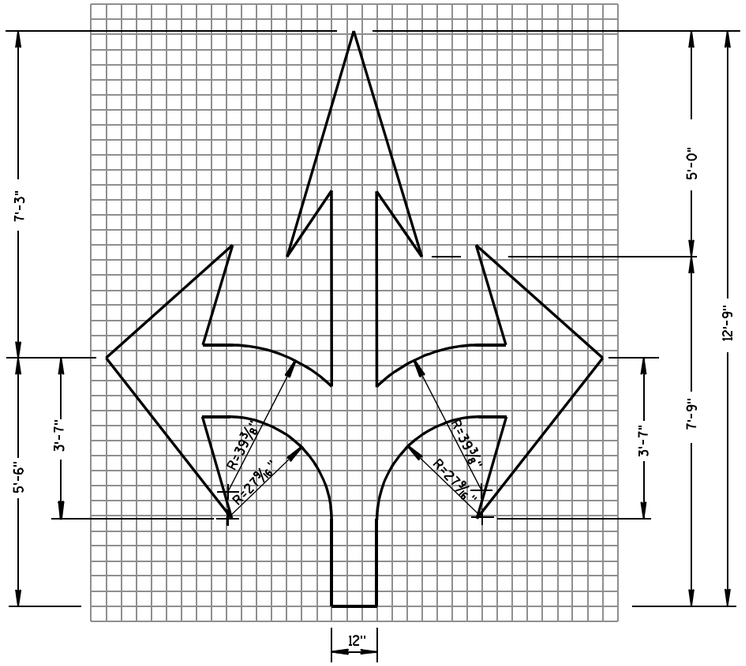
GENERAL NOTES

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

ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



TYPE 2



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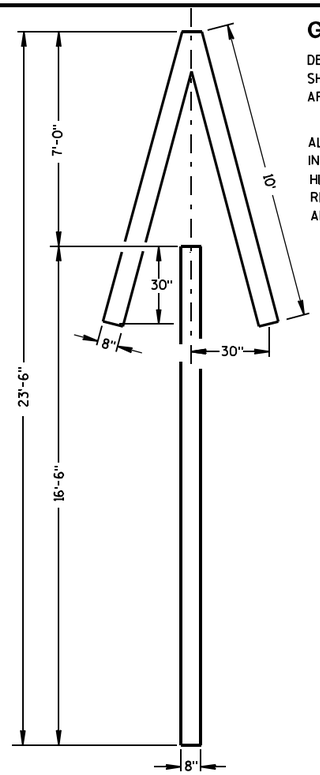

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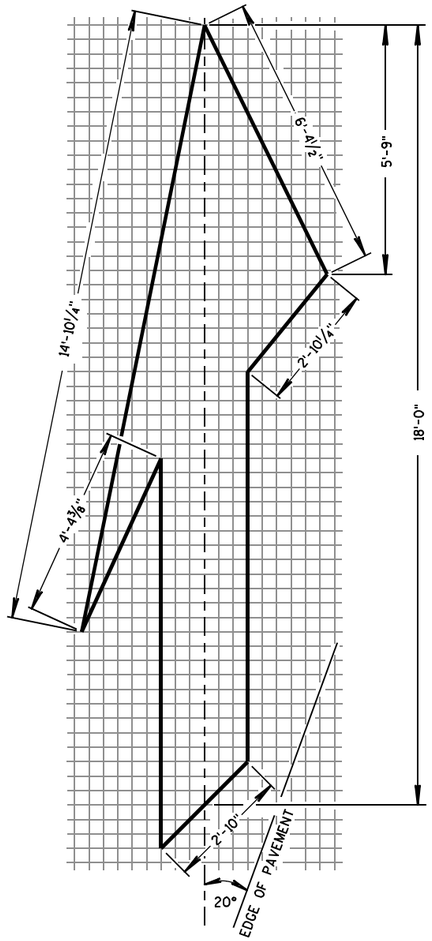
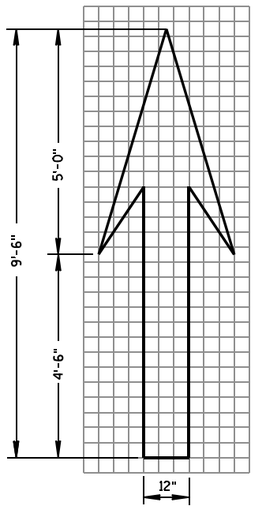
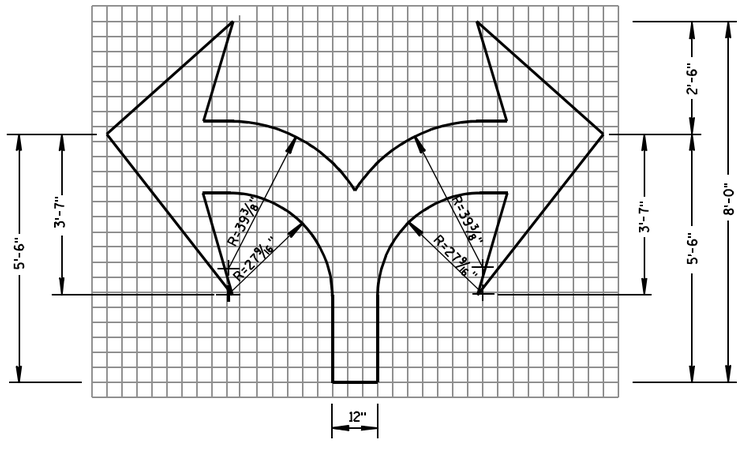


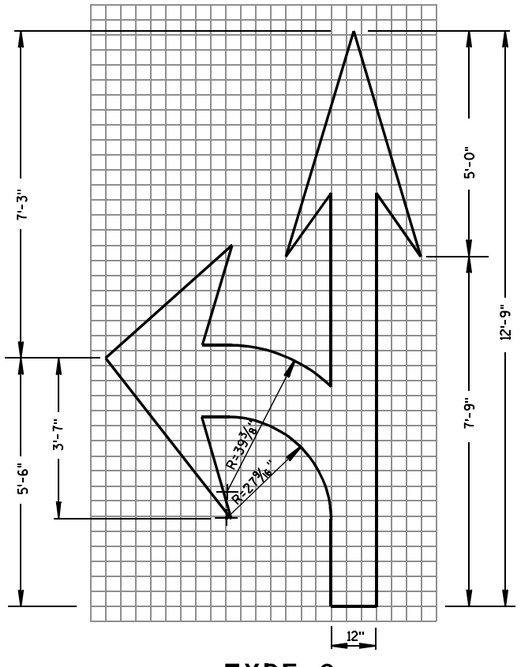
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

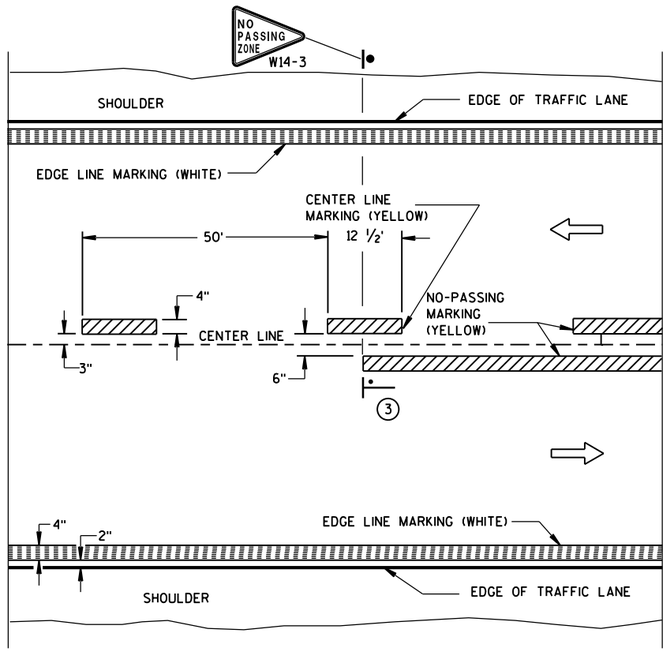
APPROVED

7/1/11 — DATE

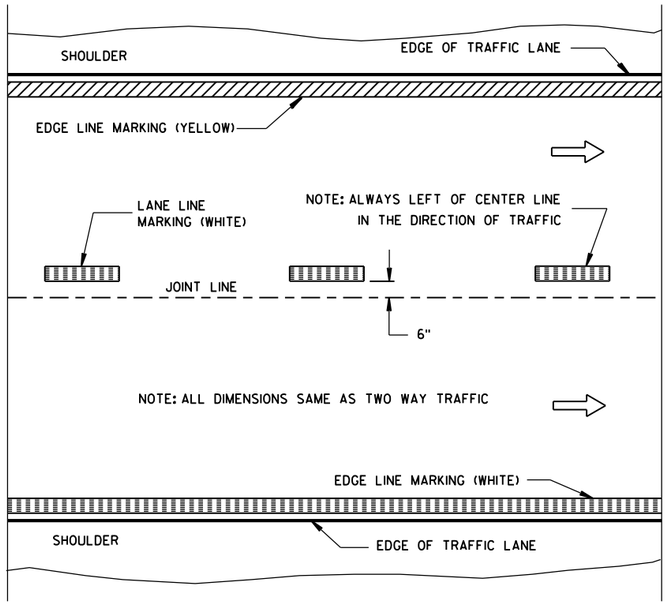
/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

FHWA

S.D.D. 15 C 7-12c

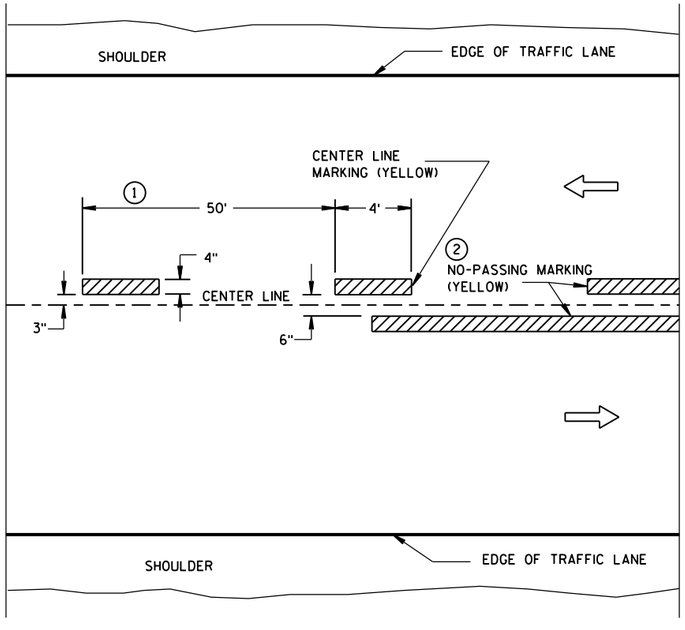


TWO WAY TRAFFIC

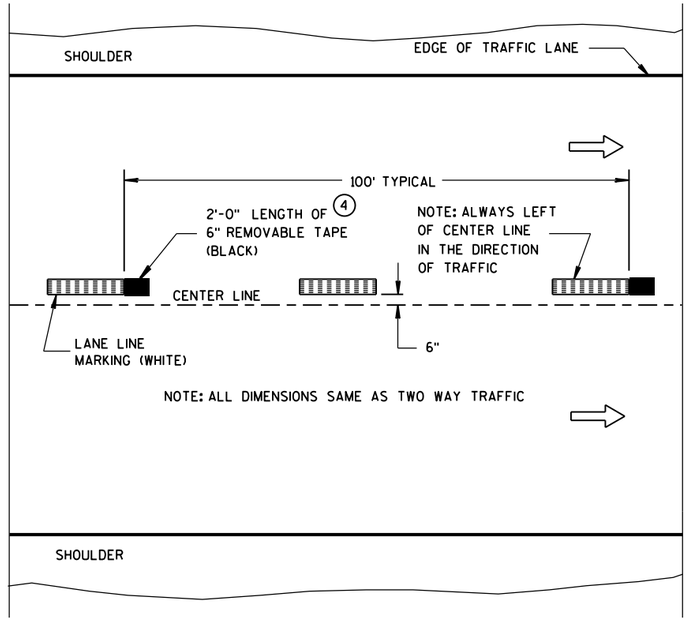


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

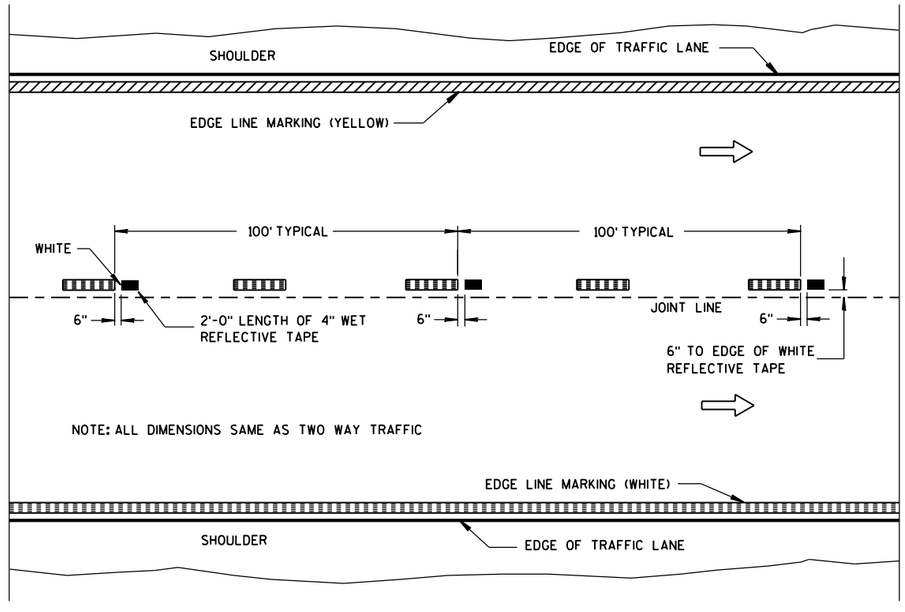
GENERAL NOTES

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

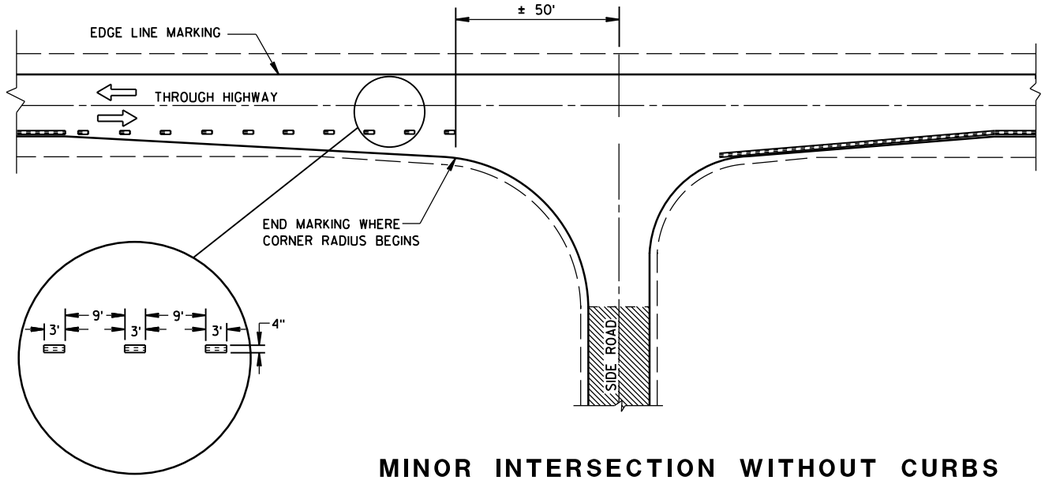
FHWA

6

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

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

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

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

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

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

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

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

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

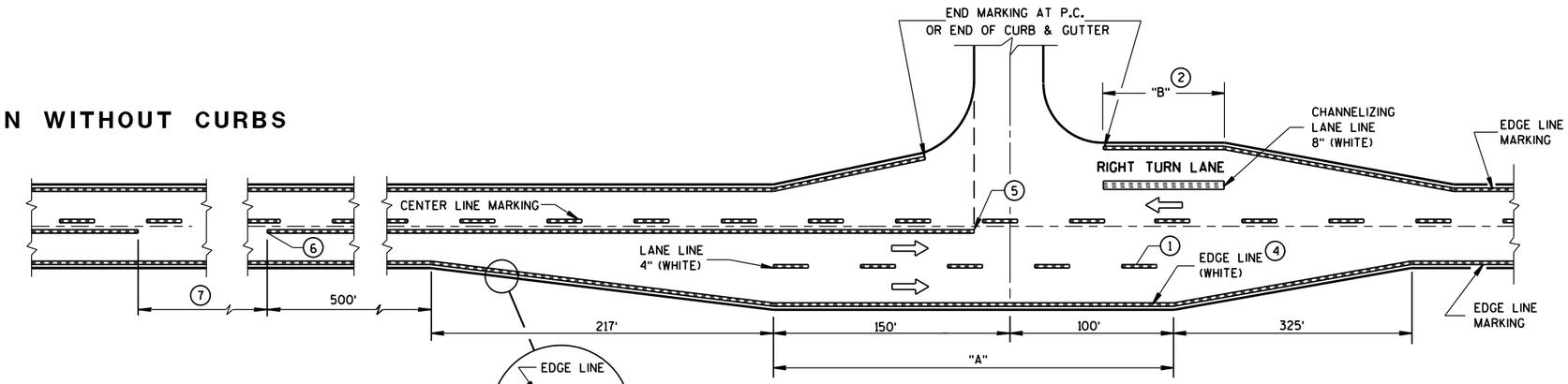
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

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

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

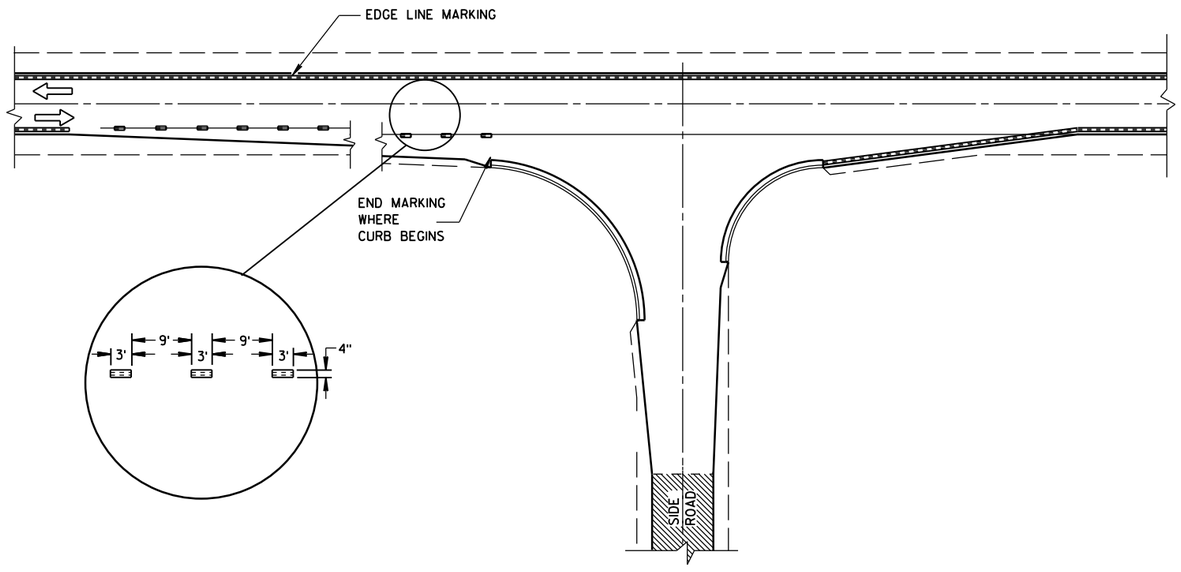
(7)

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



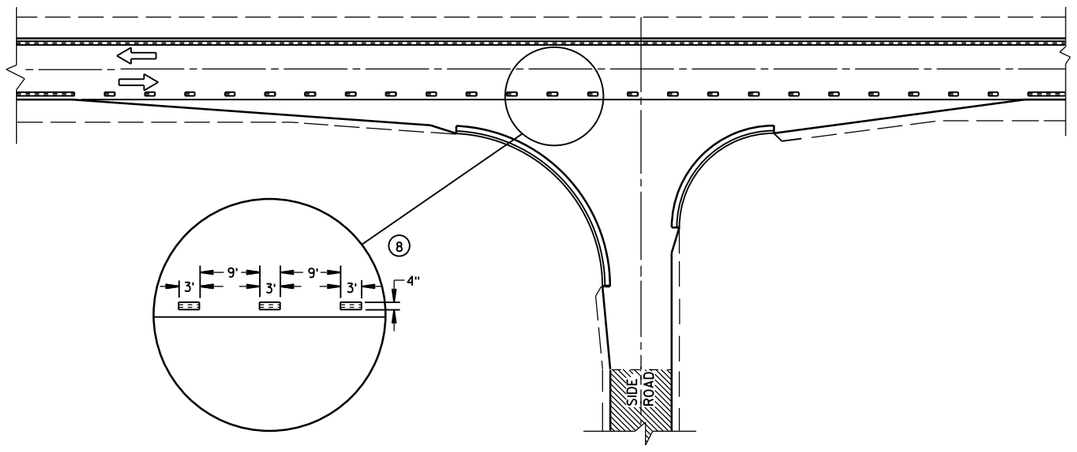
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 107

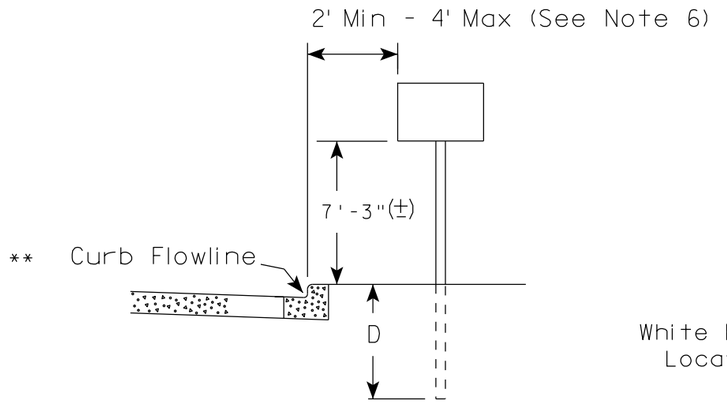
6

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

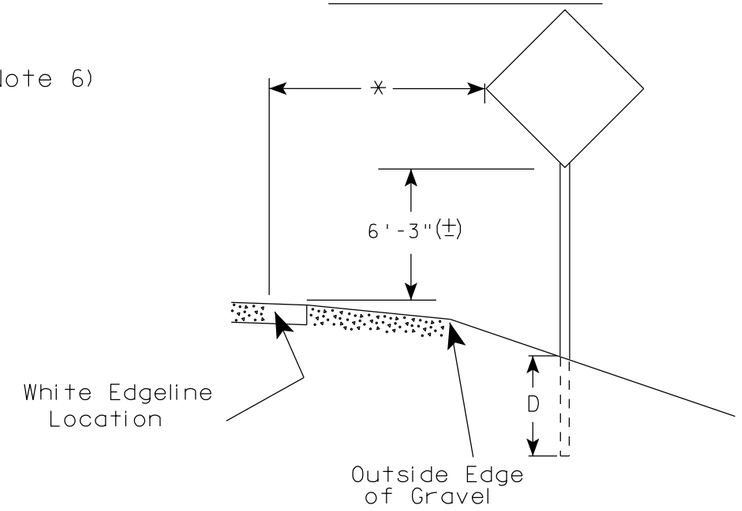
6

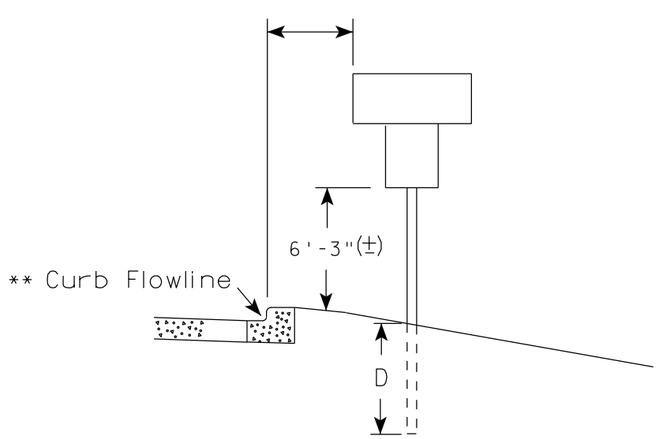
S.D.D. 15 C 8-16b

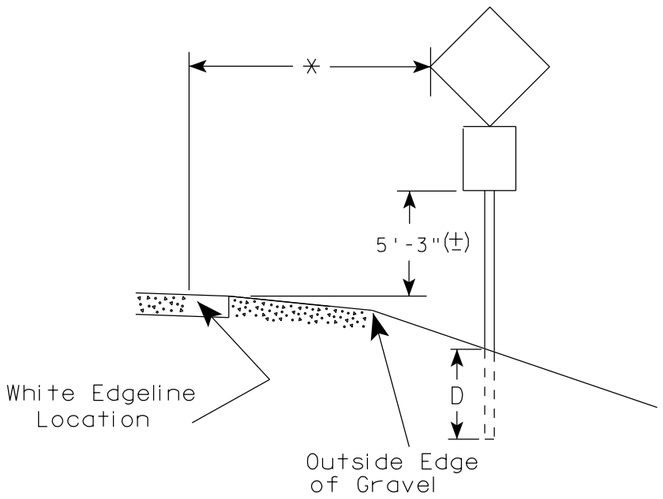
URBAN AREA



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

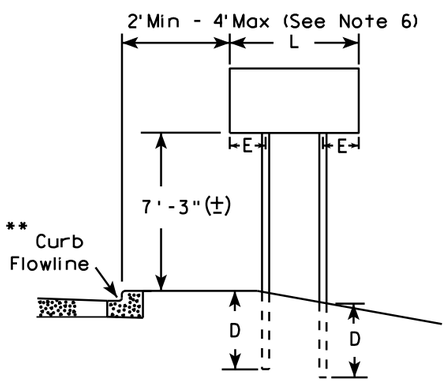
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

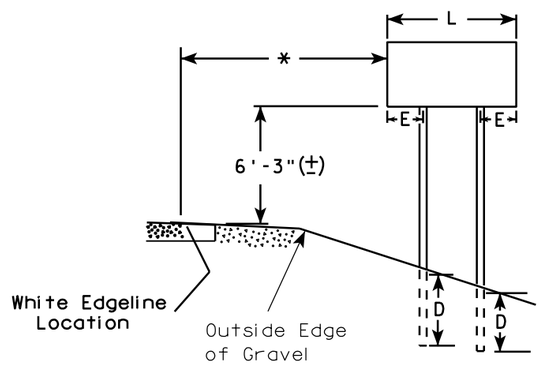
DATE 9/30/13 PLATE NO. A4-3.18

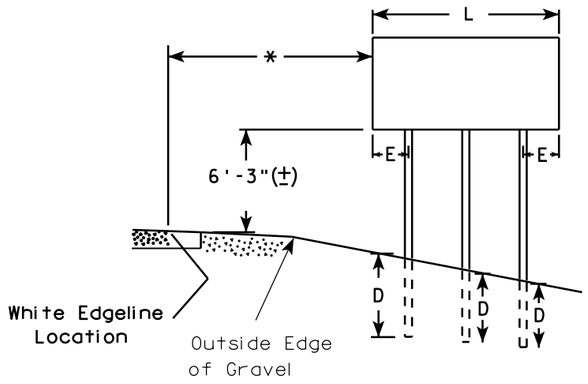
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

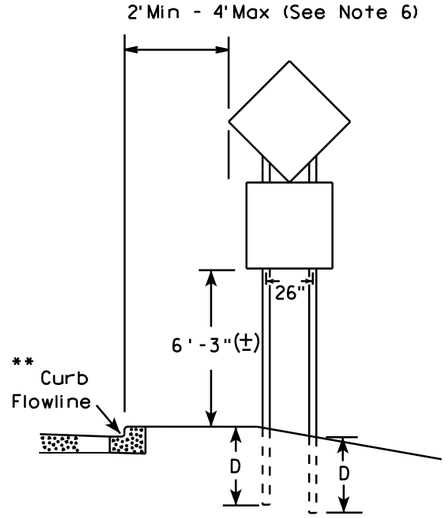
URBAN AREA



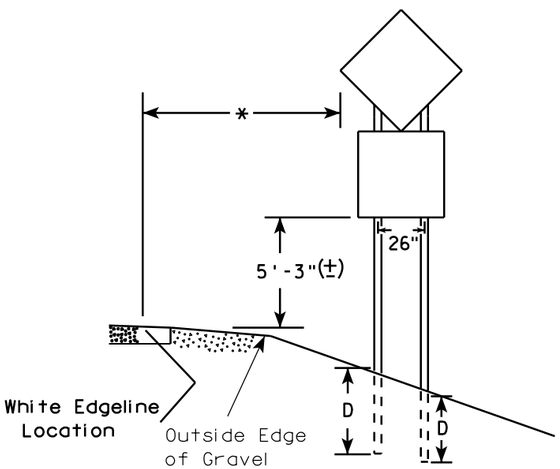
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



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'

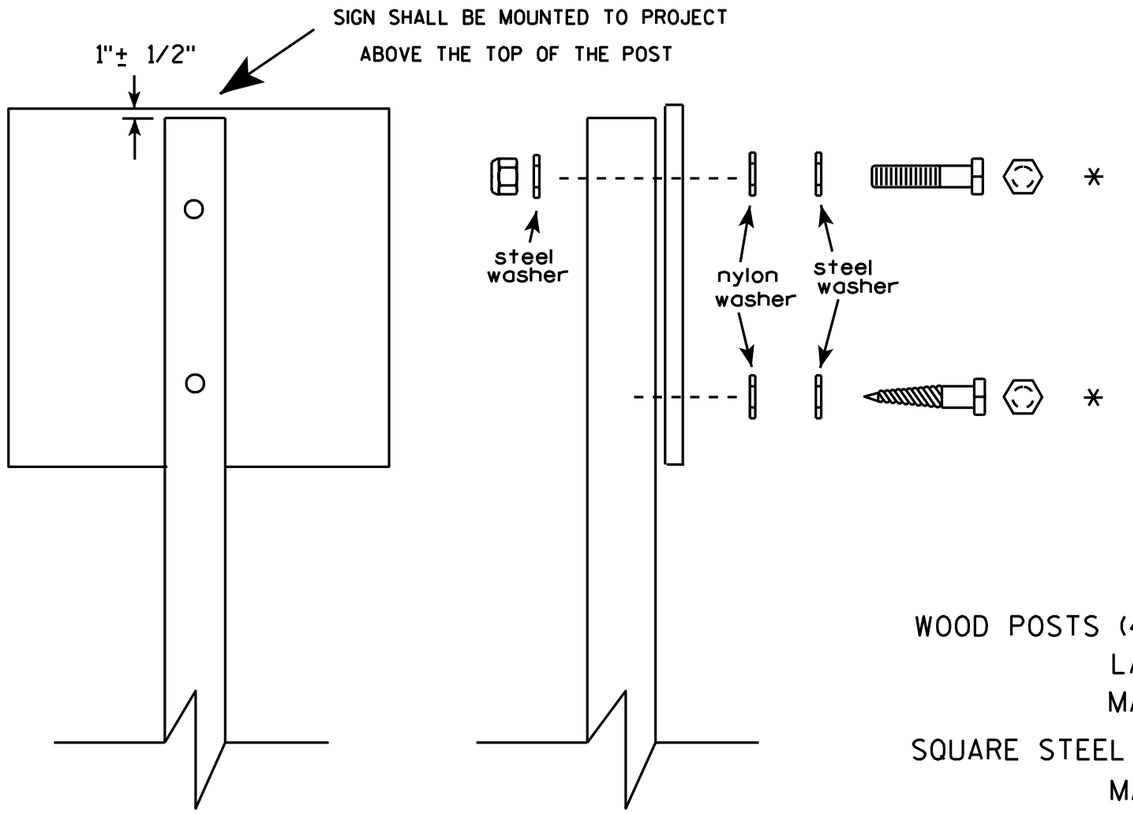
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

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



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

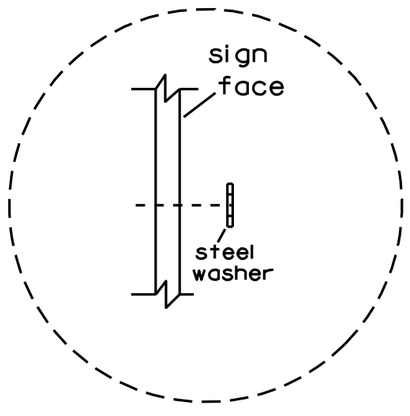
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

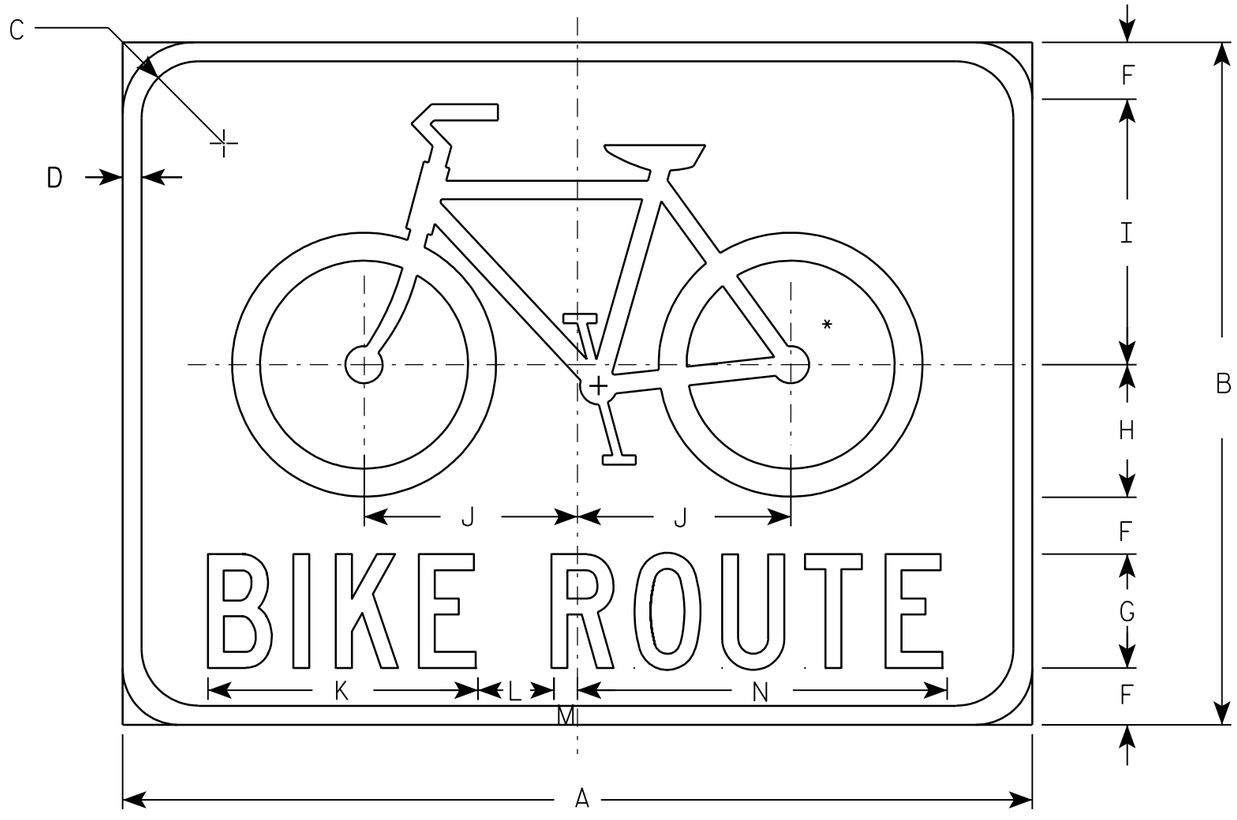
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 110 E



D11-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - GREEN
   Message - WHITE
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.

* See W11-1 for symbol design

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 450 mm
3	750 mm X 600 mm
4	
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.	Area m2
1																												
2	24	18	1 1/2	1/2		1 1/2	3	3 1/2	7	5 5/8	7 1/8	2	5/8	9 3/4													3.0	0.27
3	30	24	1 1/4	5/8		2	4	4 3/4	9 1/4	7 1/2	9 1/2	2 5/8	7/8	13													5.0	0.45
4																												
5																												

STANDARD SIGN
D11-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/24/04 PLATE NO. D11-1.1

PROJECT NO:

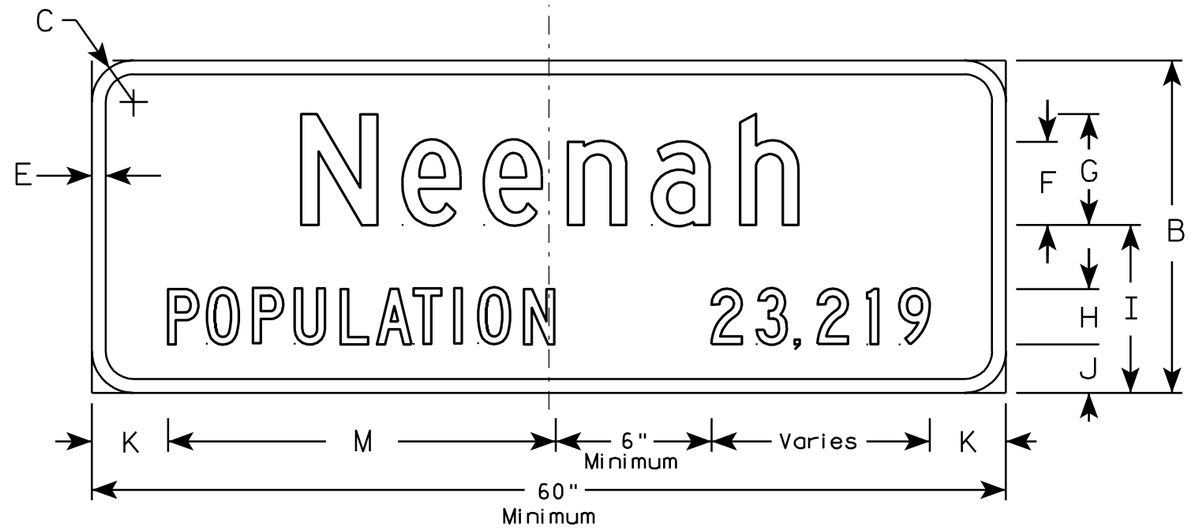
SHEET NO: 111 E

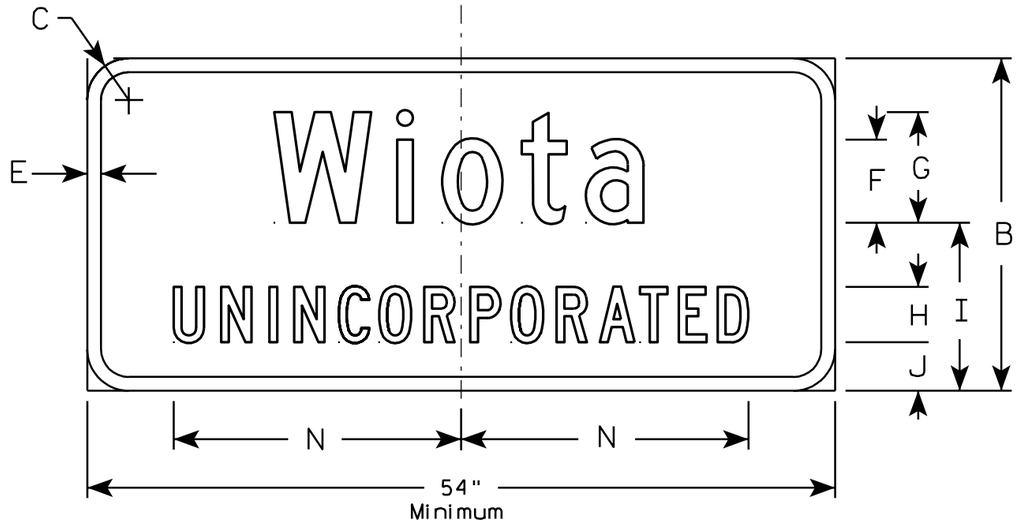
FILE NAME : C:\Users\Projects\tr_stdplate\D111.DGN PLOT DATE : 17-MAR-2005 10:38 PLOT BY : DOTDZK

WISDOT/CADDS SHEET 42

7

7





NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White - Type H Reflective
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. First line is Series D, and the second line is series C.
6. Horizontal board length will be in 6 inch increments to accomodate variable messages. Minimum dimensions are noted. Substitute appropriate population figure but note the minimum 6 inch spacing between the word and the numerals. Optically balance the Community name around the centerline of the sign.

Metric equivalent for this sign is:

SIZE	
1	
2	Varies mm X 600 mm
3	
4	
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.	Area m2
1																												
2	Varies	24	3		1	6	8	4	12 1/8	3 1/2	5 1/2		28	20 3/4													Varies	Varies
3																												
4																												
5																												

TYPICAL SIGN
I2-3

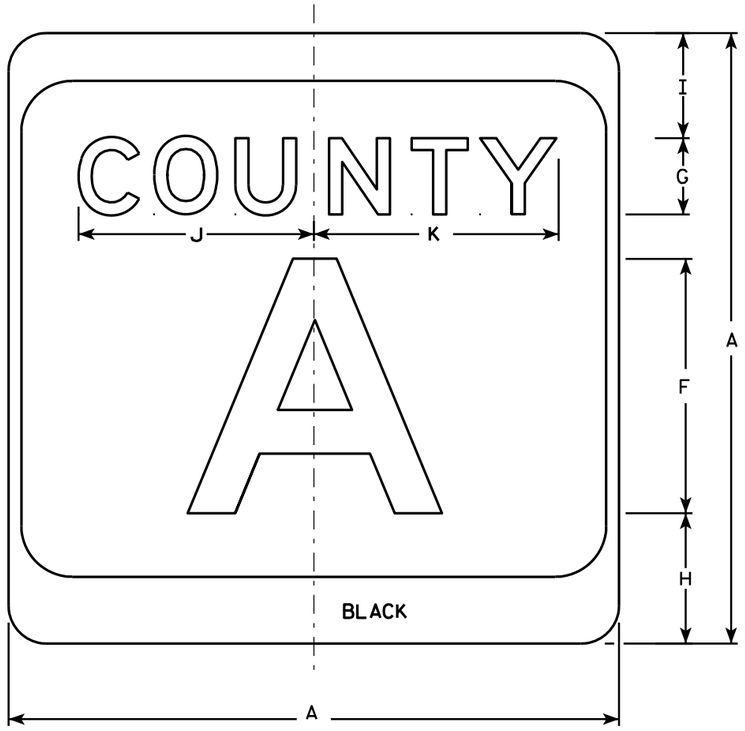
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

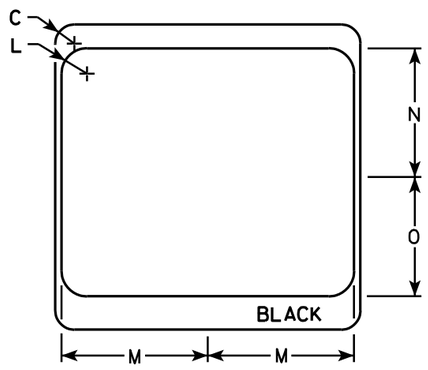
DATE 1/17/02 PLATE NO. I2-3.5

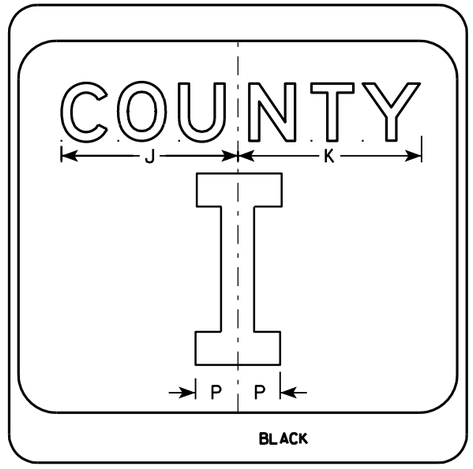
STATE PROJECT NUMBER:	HWY:	COUNTY:			SHEET NO: 112	E

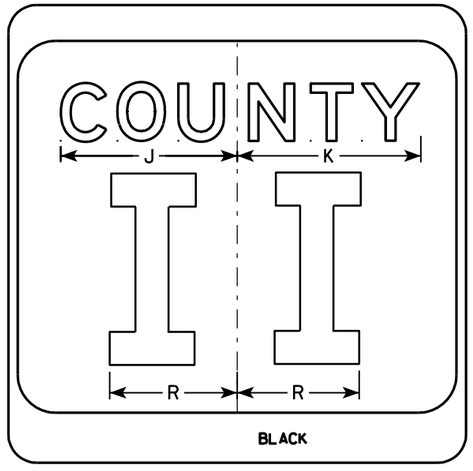
58.59.60.61. 63
18.
10.11.
LEVELS ON • 1.2.3. 5.6.7.
7
7



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   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. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

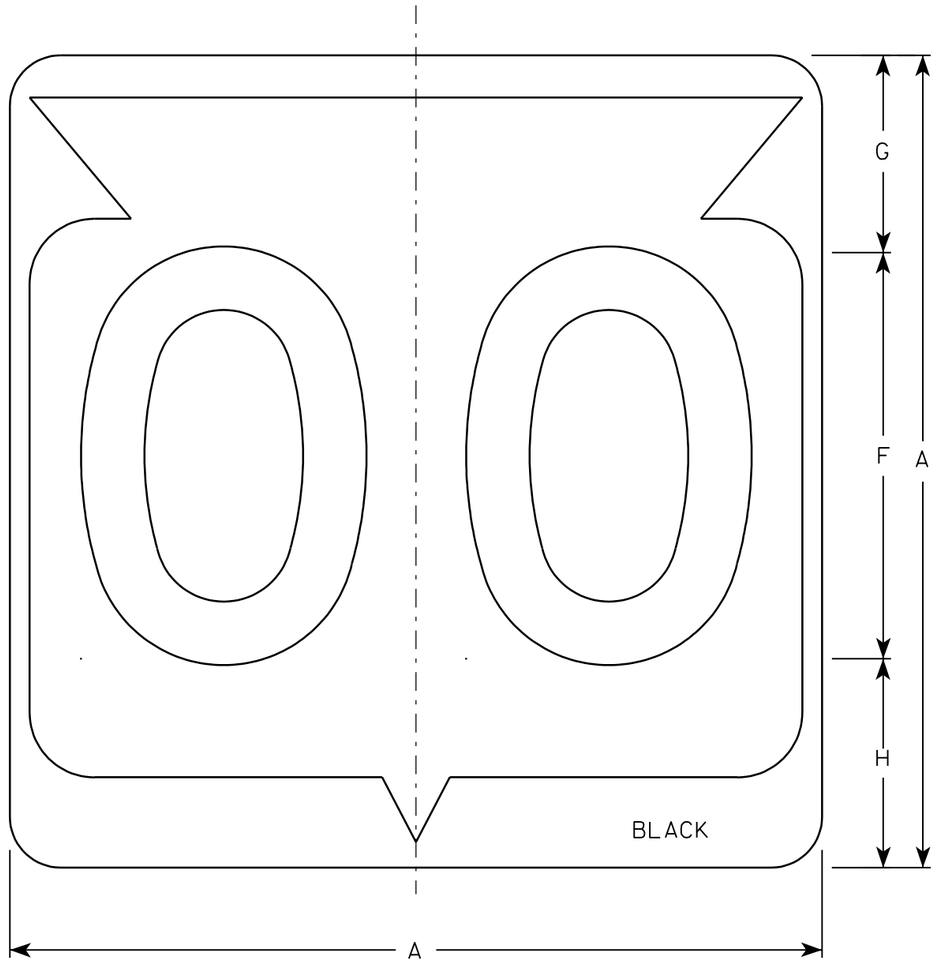
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

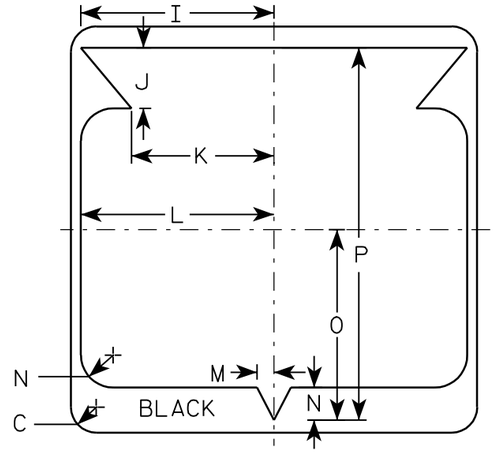
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 113	E



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

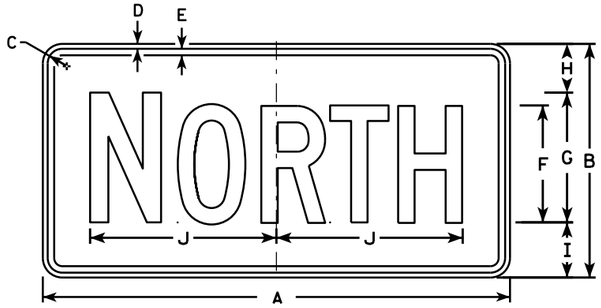
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

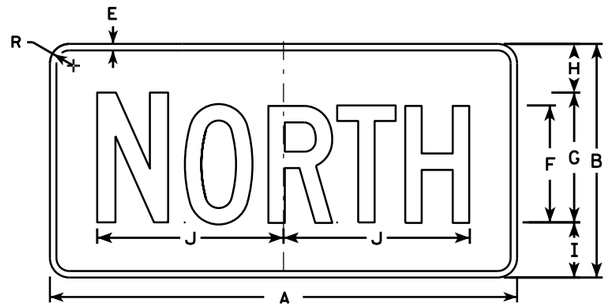
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 114	E

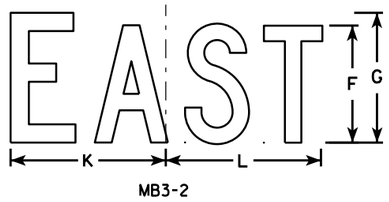


M3-1
MK3-1
MM3-1
MN3-1

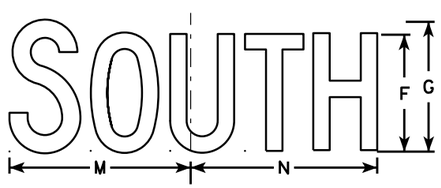


MB3-1

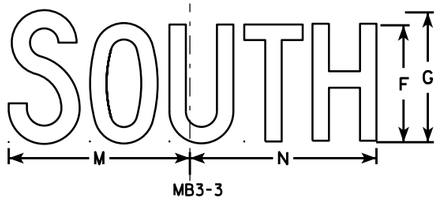
M3-2
MK3-2
MM3-2
MN3-2



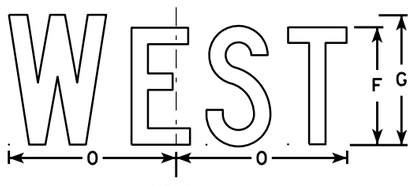
MB3-2



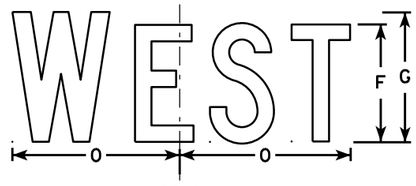
M3-3
MK3-3
MM3-3
MN3-3



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

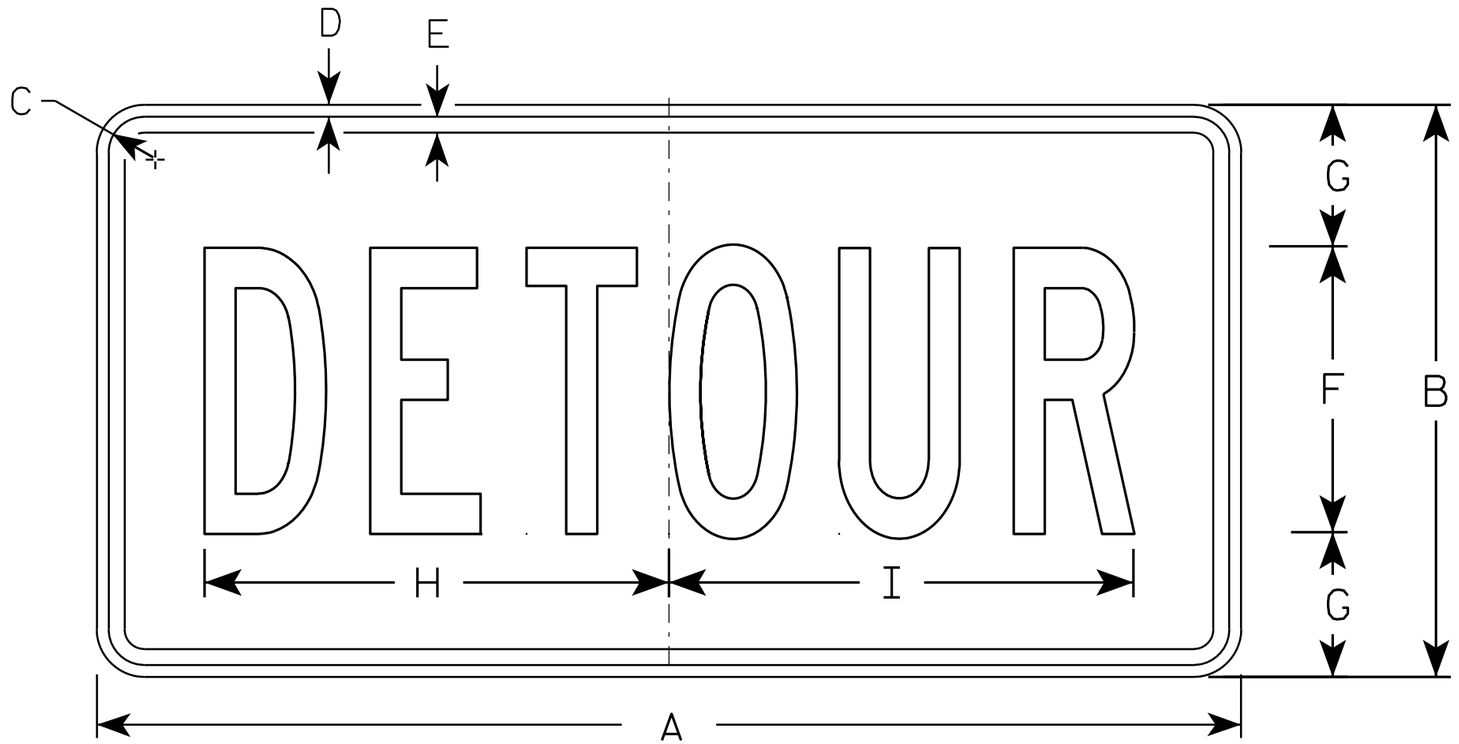
STANDARD SIGNS
M3-1 thur M3-4
SERIES

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																											

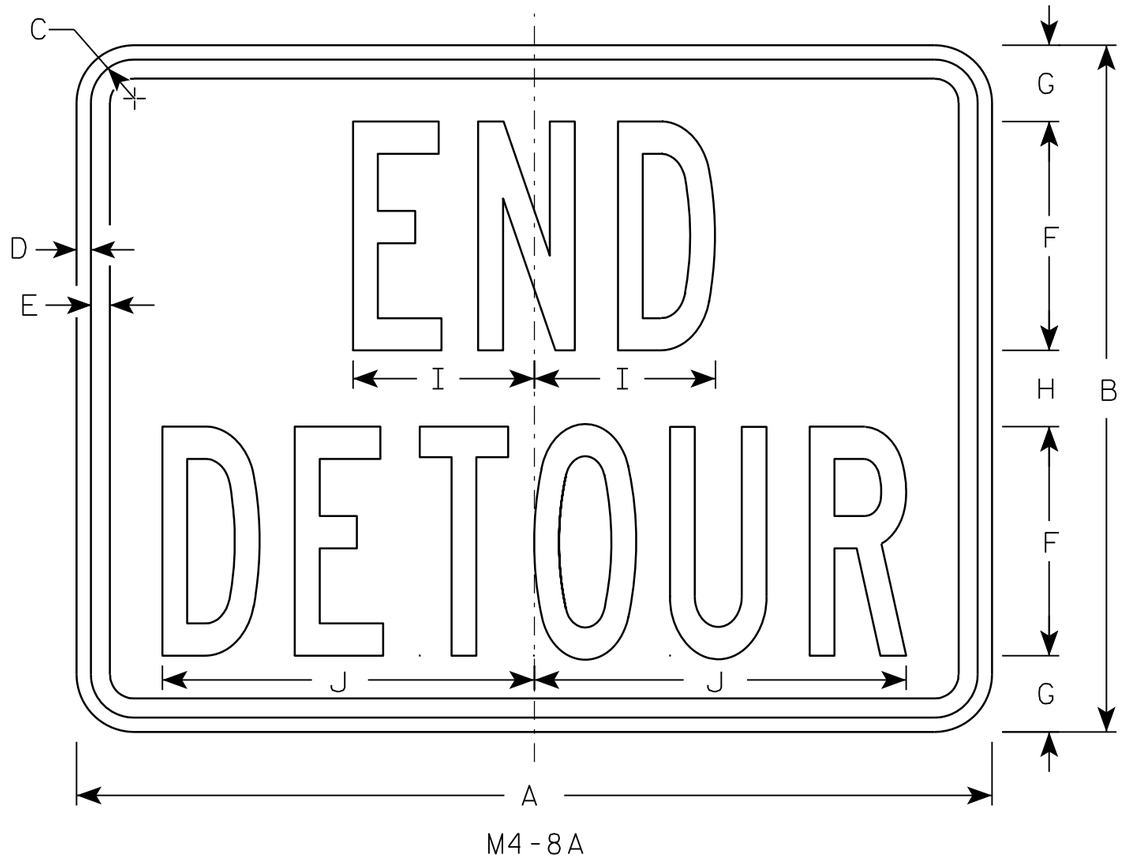
STANDARD SIGN
M4-8

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: 116	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																											

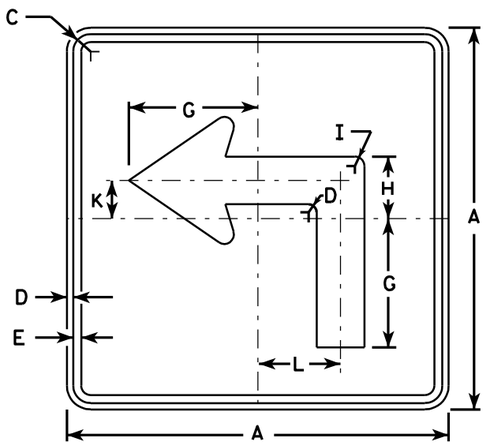
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

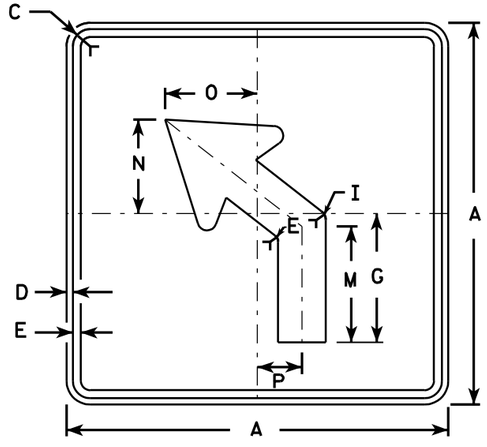
APPROVED Matthew R Rauch
for State Traffic Engineer

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

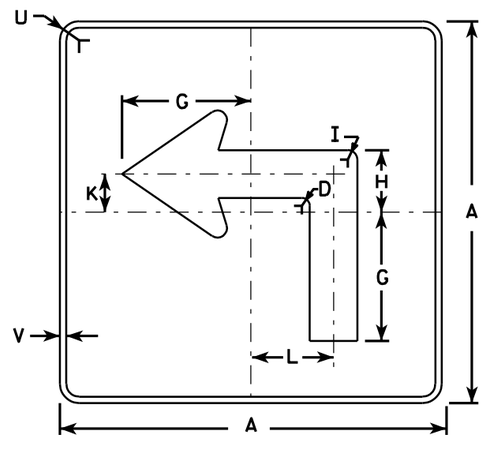
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 117	E



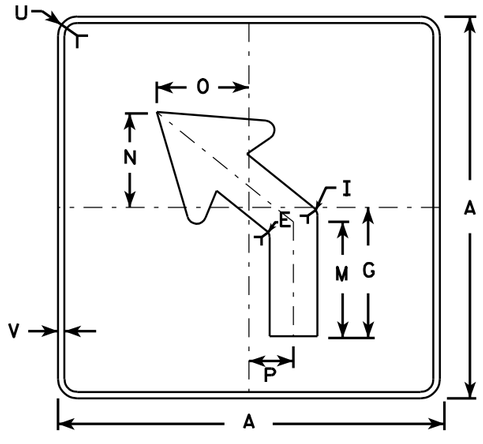
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



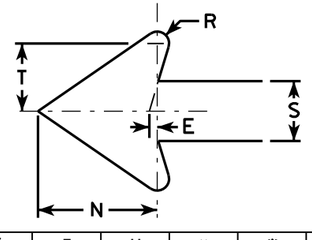
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



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

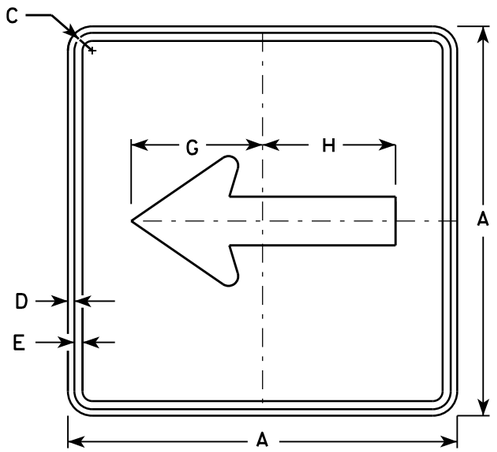
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

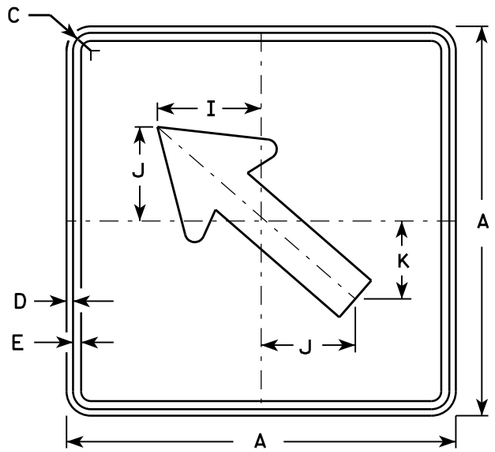
APPROVED Matthew R Rauch
for State Traffic Engineer

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

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



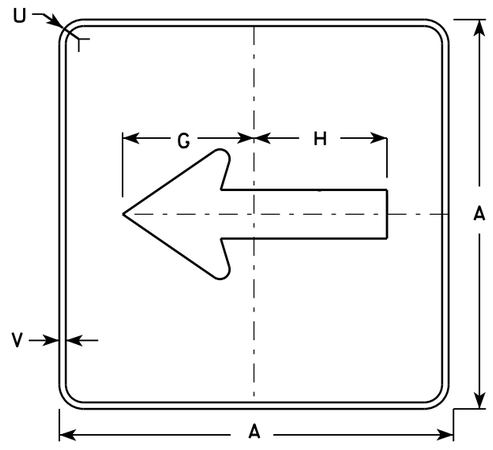
M6-1
MK6-1
MM6-1
MN6-1
MO6-1
MP6-1
MR6-1



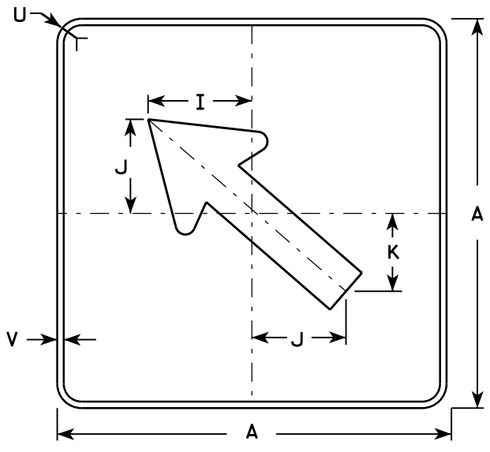
M6-2
MK6-2
MM6-2
MN6-2
MO6-2
MP6-2
MR6-2

NOTES

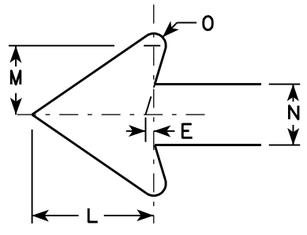
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - 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

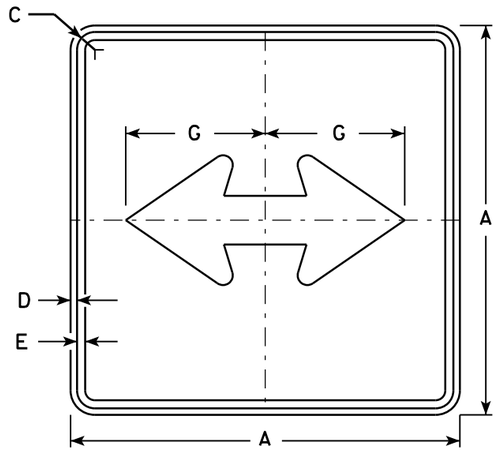
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

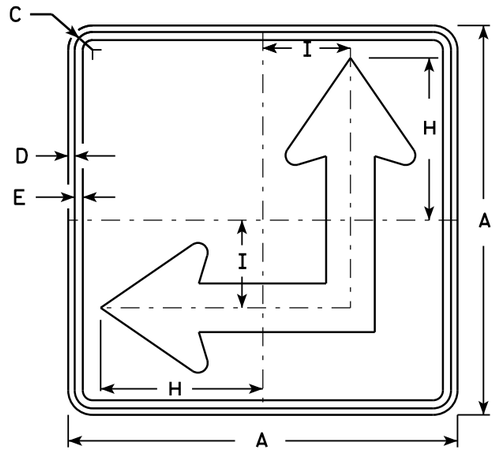
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/03/14 PLATE M6-1.14

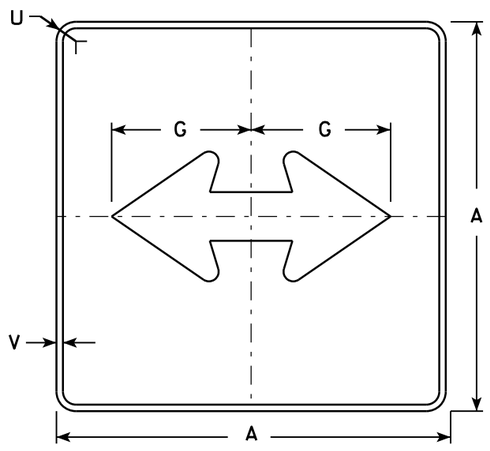
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



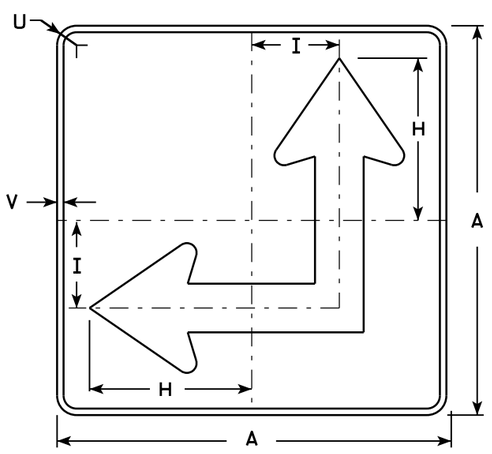
M6-4
MK6-4
MM6-4
MN6-4
MO6-4
MP6-4
MR6-4



M6-6
MK6-6
MM6-6
MN6-6
MO6-6
MP6-6
MR6-6



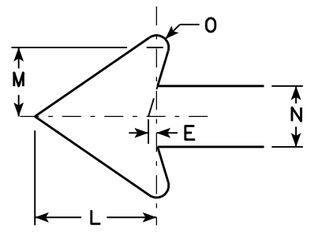
MB6-4



MB6-6

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. M6-4 and M6-6 Background - White
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White
   MK6-4 and MK6-6 Background - Green
   Message - White
   MM6-4 and MM6-6 Background - White
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White
   MO6-4 and MO6-6 Background - Orange - Type F Reflective
   Message - Black
   MP6-4 and MP6-6 Background - White
   Message - Blue
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow
5. M6-6R same as M6-6L except arrow points ahead and 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 1/2	8 3/4	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	12 1/2	6 3/4			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	12 1/2	6 3/4			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	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

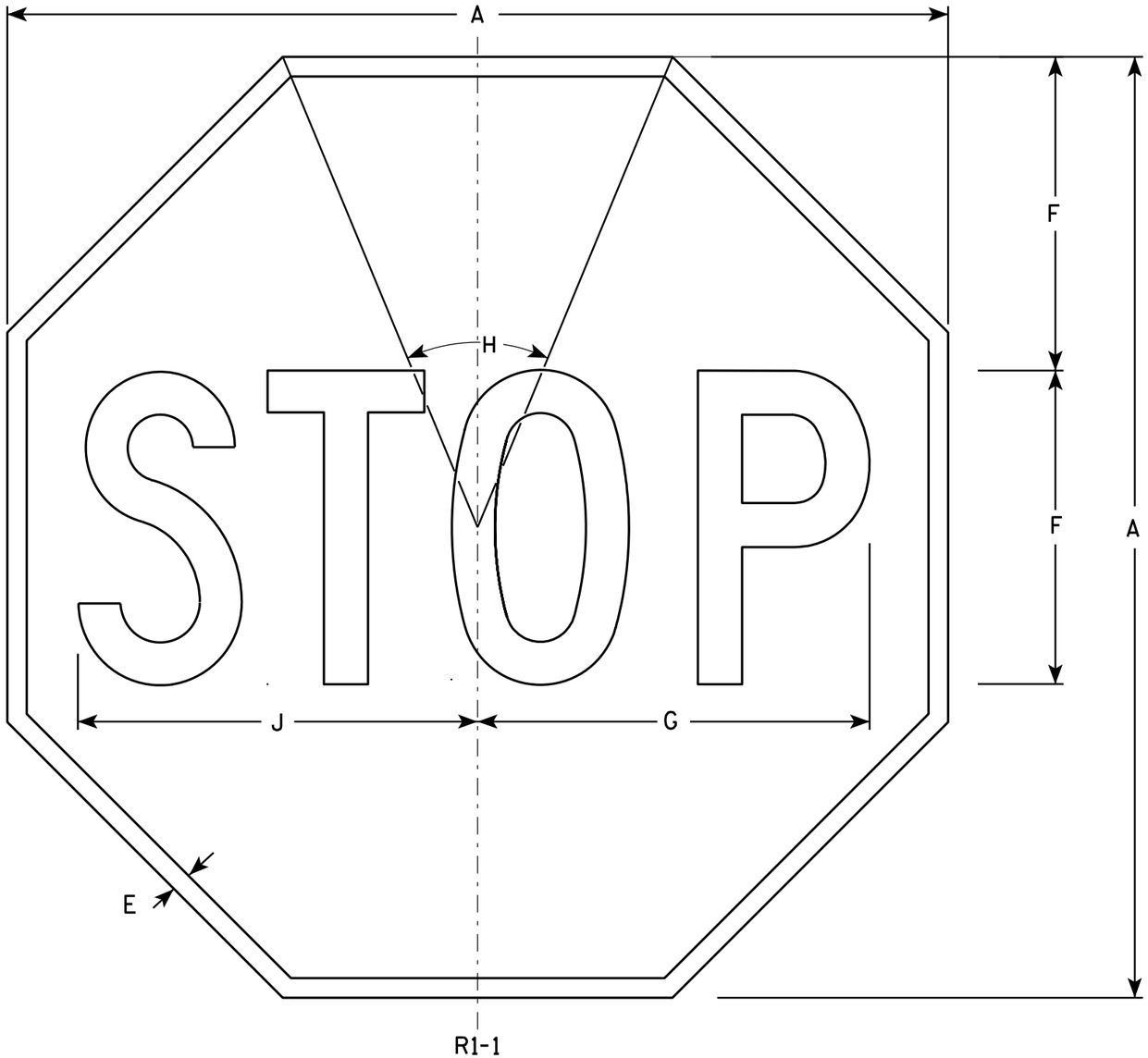
STANDARD SIGN M6-4 & M6-6 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 7/03/14 PLATE M6-4.9

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



NOTES

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

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

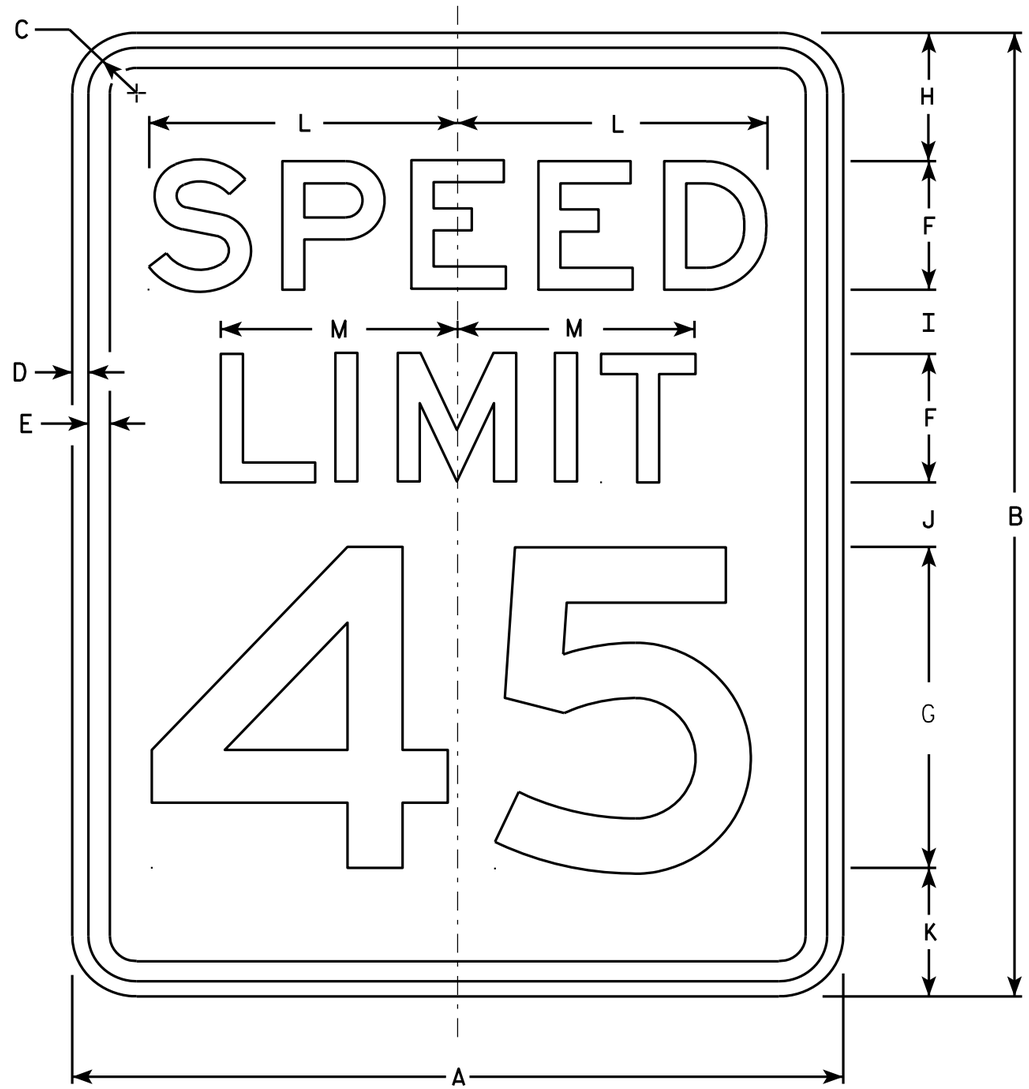
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 121	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

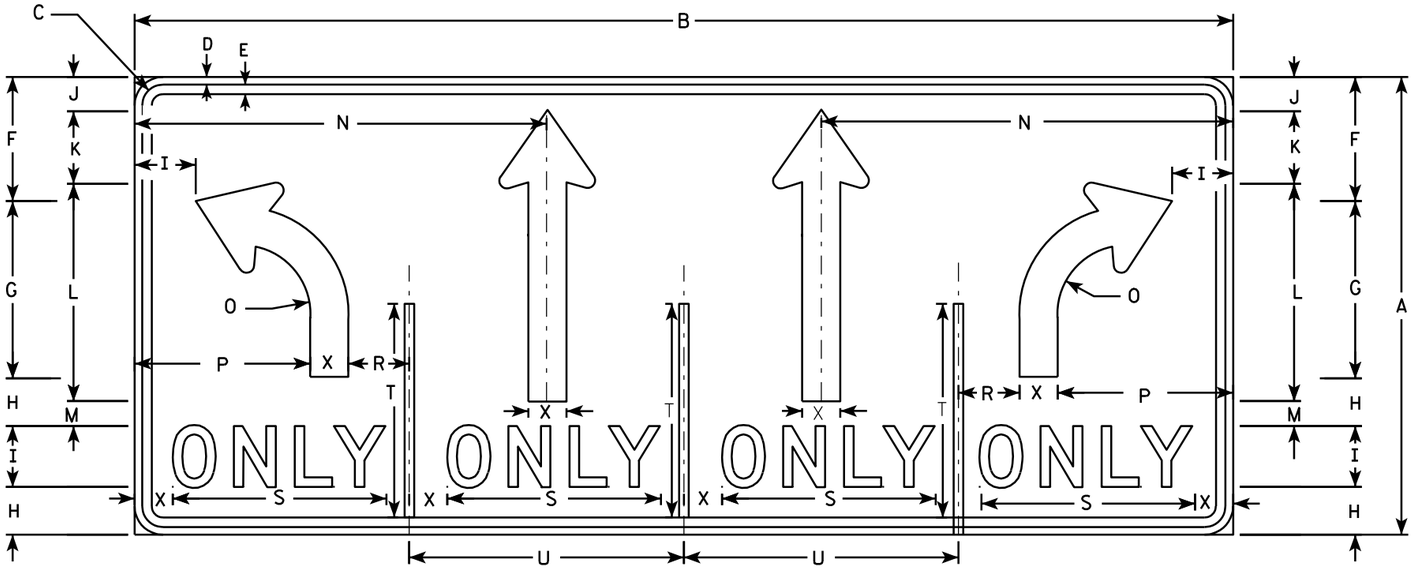
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

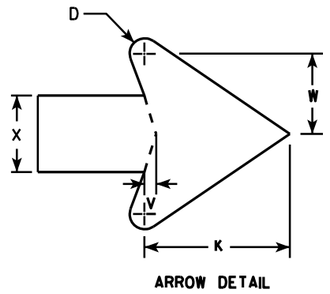
DATE 5/26/10 PLATE NO. R2-1.13

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

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R21.DGN PLOT DATE : 28-MAY-2010 08:32 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 4.717577:1.000000
WISDOT/CADDS SHEET 42



R3-8V



ARROW DETAIL

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 - D
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	30	72	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	2 1/4	4 3/4	14 1/4	1 5/8	27	4 1/2	11 1/2		4	14	14	18	3/8	2 5/8	2 1/2			15.0
2M	30	72	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	2 1/4	4 3/4	14 1/4	1 5/8	27	4 1/2	11 1/2		4	14	14	18	3/8	2 5/8	2 1/2			15.0
3																											
4	48	108	2 1/4	3/4	1	14 3/8	17 1/4	5 3/8	6	5 3/8	7 1/8	21 1/2	3	40 1/2	7 1/4	17 1/4		6	20 5/8	22 3/8	27	5/8	4	3 3/4			36.0
5	48	108	2 1/4	3/4	1	14 3/8	17 1/4	5 3/8	6	5 3/8	7 1/8	21 1/2	3	40 1/2	7 1/4	17 1/4		6	20 5/8	22 3/8	27	5/8	4	3 3/4			36.0

STANDARD SIGN
R3-8V

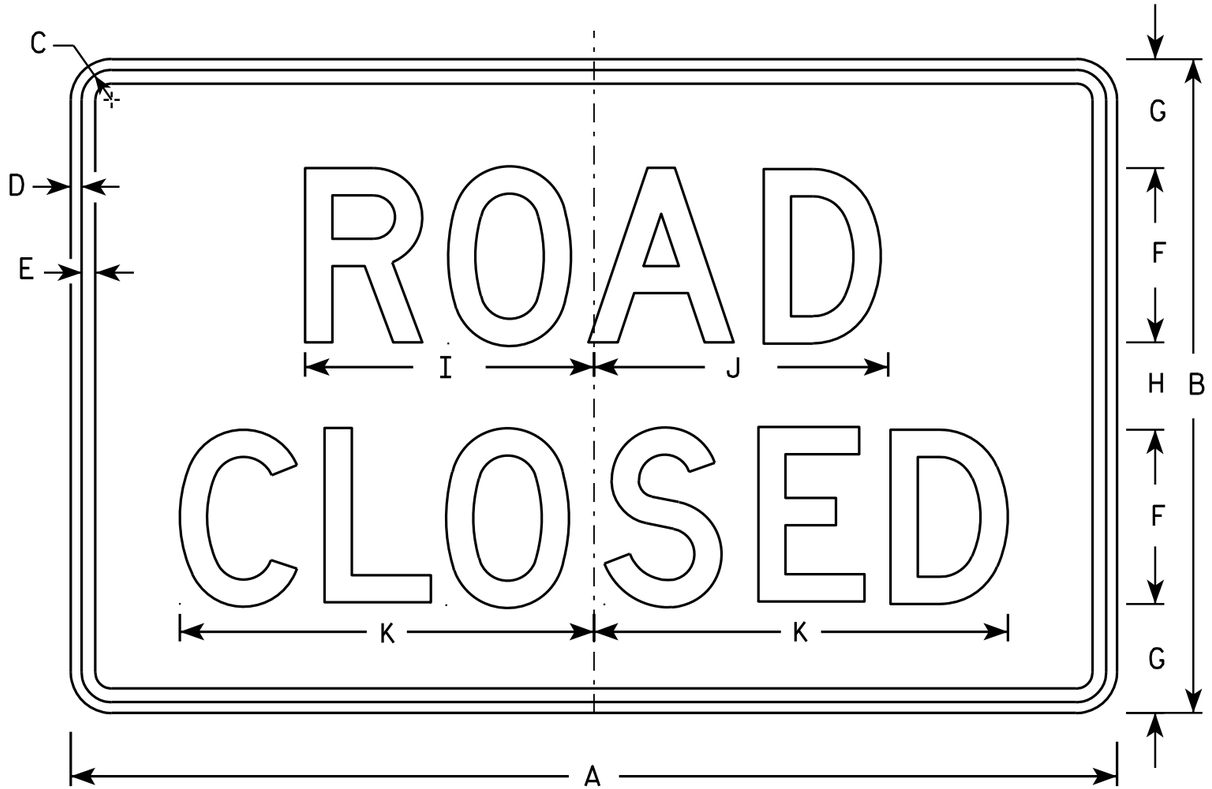
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/18/11 PLATE NO. R3-8V.3

PROJECT NO:

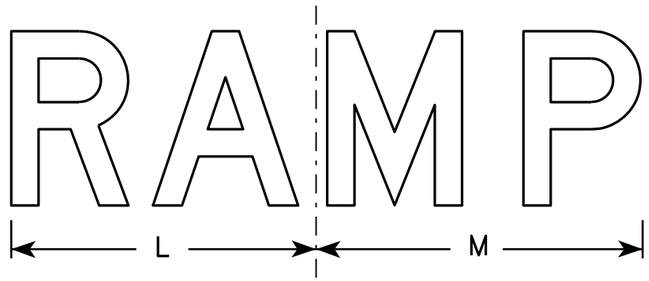
SHEET NO: 123 E



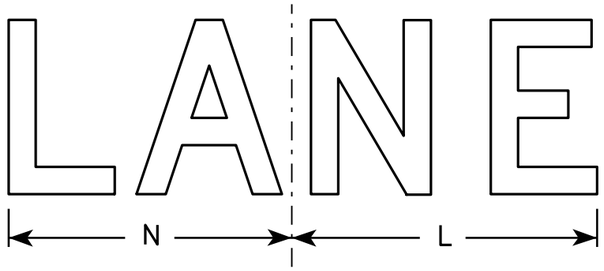
R11-2

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 - D
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. Modify the message as required.



R11-2R



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

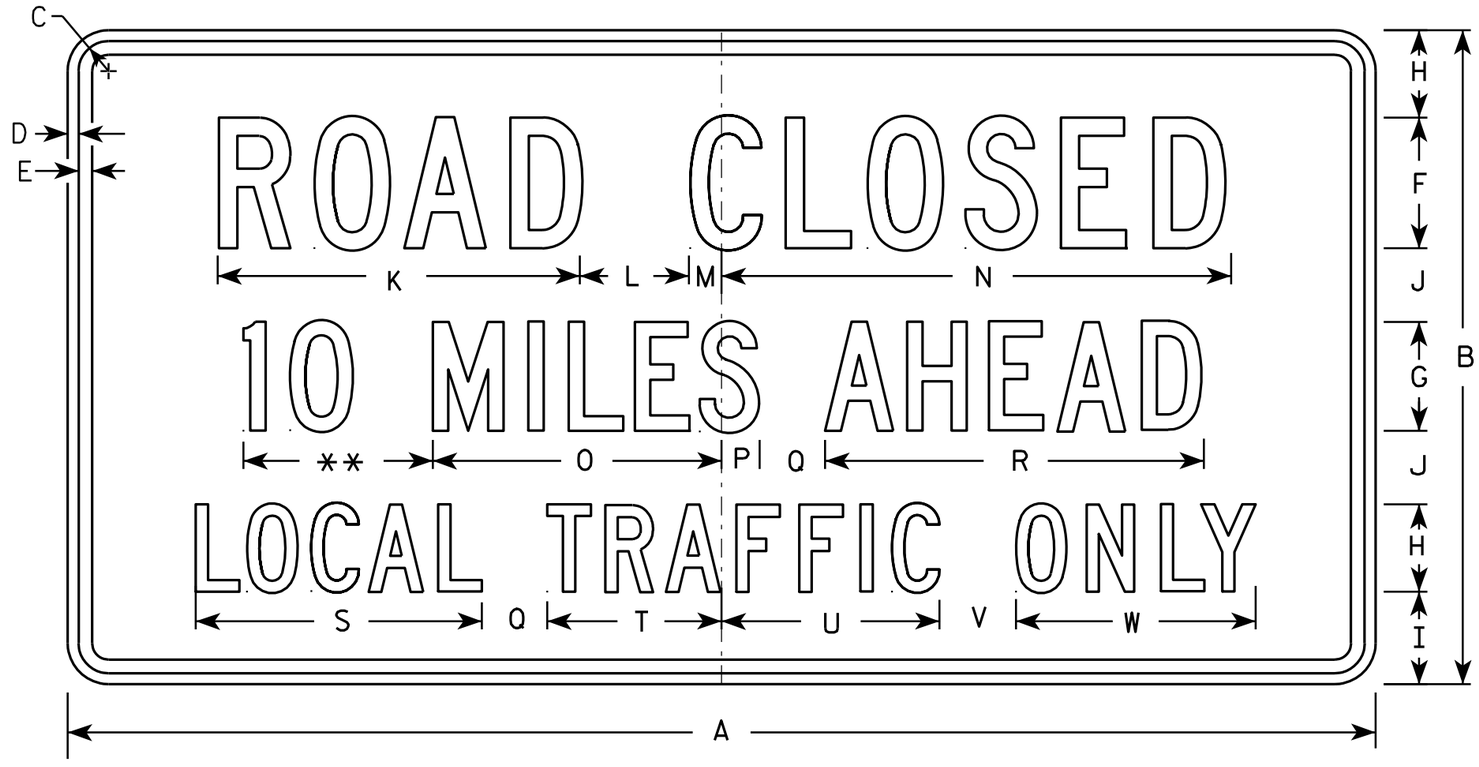
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 124	E



R11-3

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	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	11 1/8	3	1 1/8	15 1/4	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4				4.5
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11				12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11				12.5
3																											
4																											
5																											

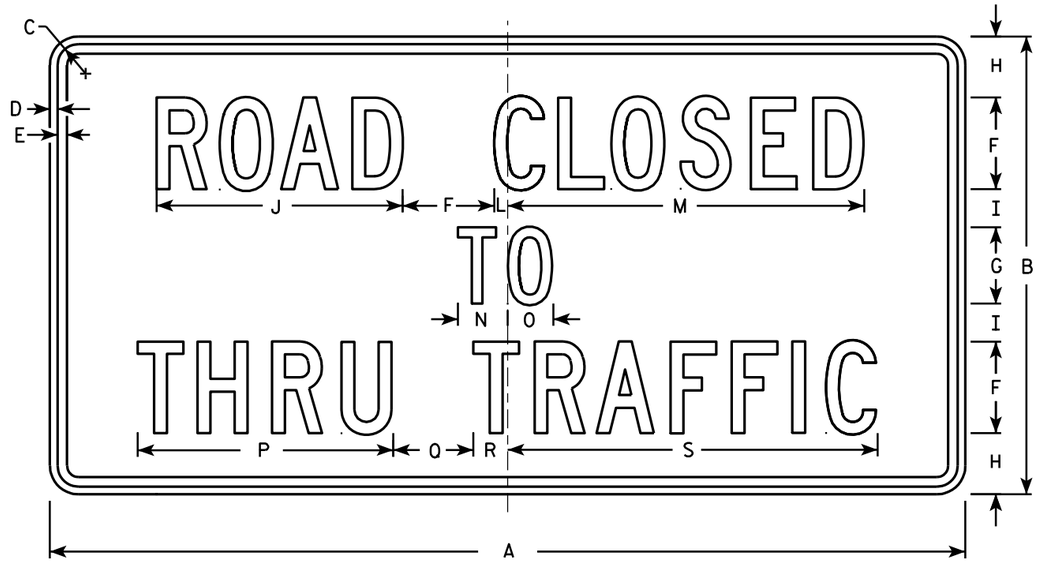
STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-3.6

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



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																											

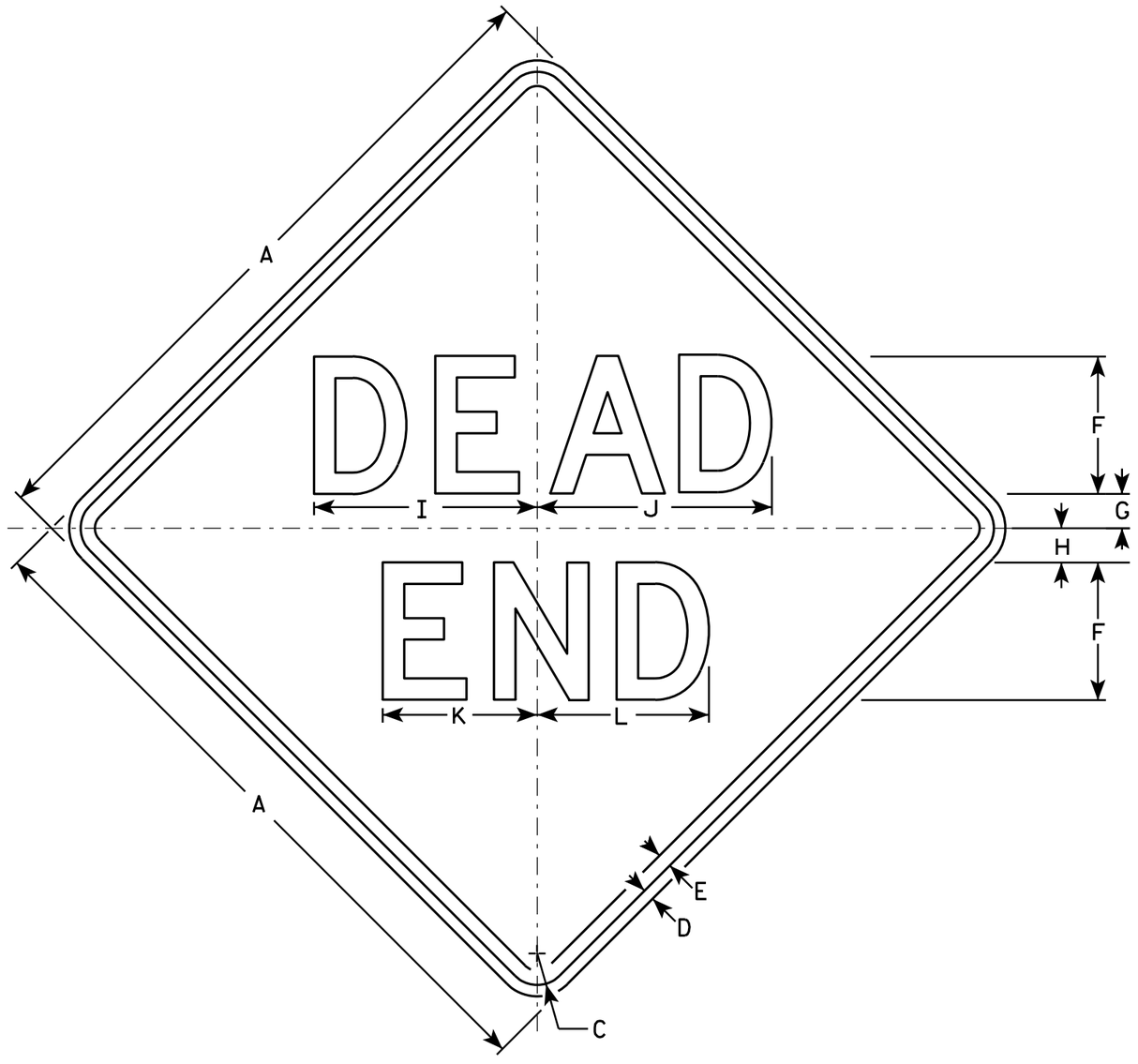
STANDARD SIGN
R11 - 4

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: 126	E



W14-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - D
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	24		1 1/8	3/8	1/2	5	1	2	8 1/4	8 5/8	5 5/8	6 1/4															4.0
2S	30		1 3/8	1/2	5/8	6	1 1/2	2 1/2	9 3/4	10 1/4	6 3/4	7 1/2															6.25
2M	30		1 3/8	1/2	5/8	6	1 1/2	2 1/2	9 3/4	10 1/4	6 3/4	7 1/2															6.25
3	36		1 5/8	5/8	3/4	7	2	3	11 3/8	12	7 7/8	8 3/4															9.0
4																											
5																											

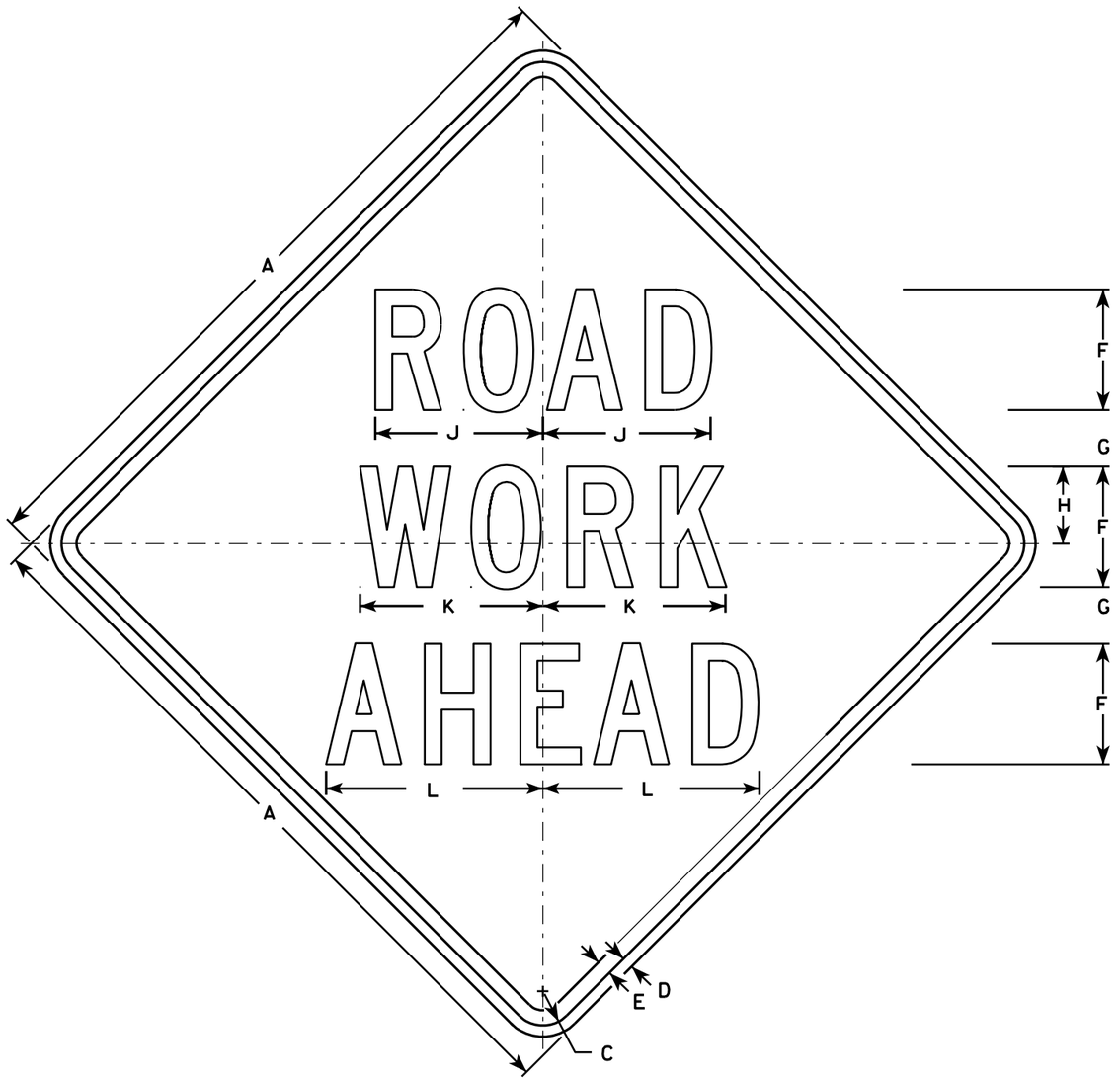
STANDARD SIGN
W14-1

WISCONSIN DEPT OF TRANSPORTATION

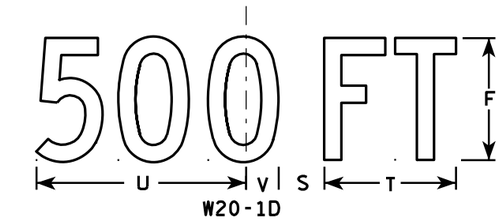
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W14-1.7

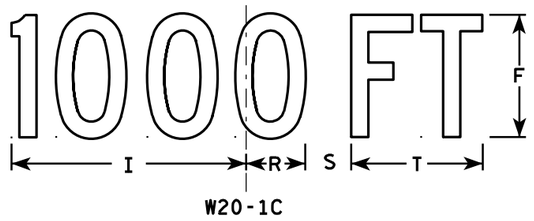
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 127	E



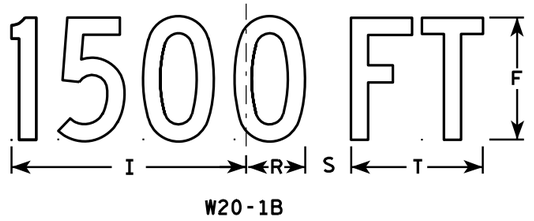
W20-1A



W20-1D

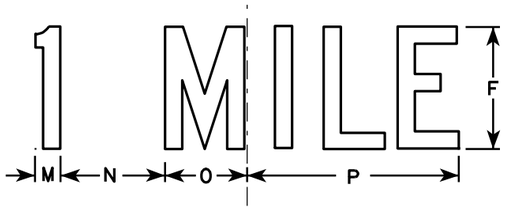


W20-1C



W20-1B

W20-1G



W20-1F

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 - 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	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	1 7/8	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-1.9

PROJECT NO:

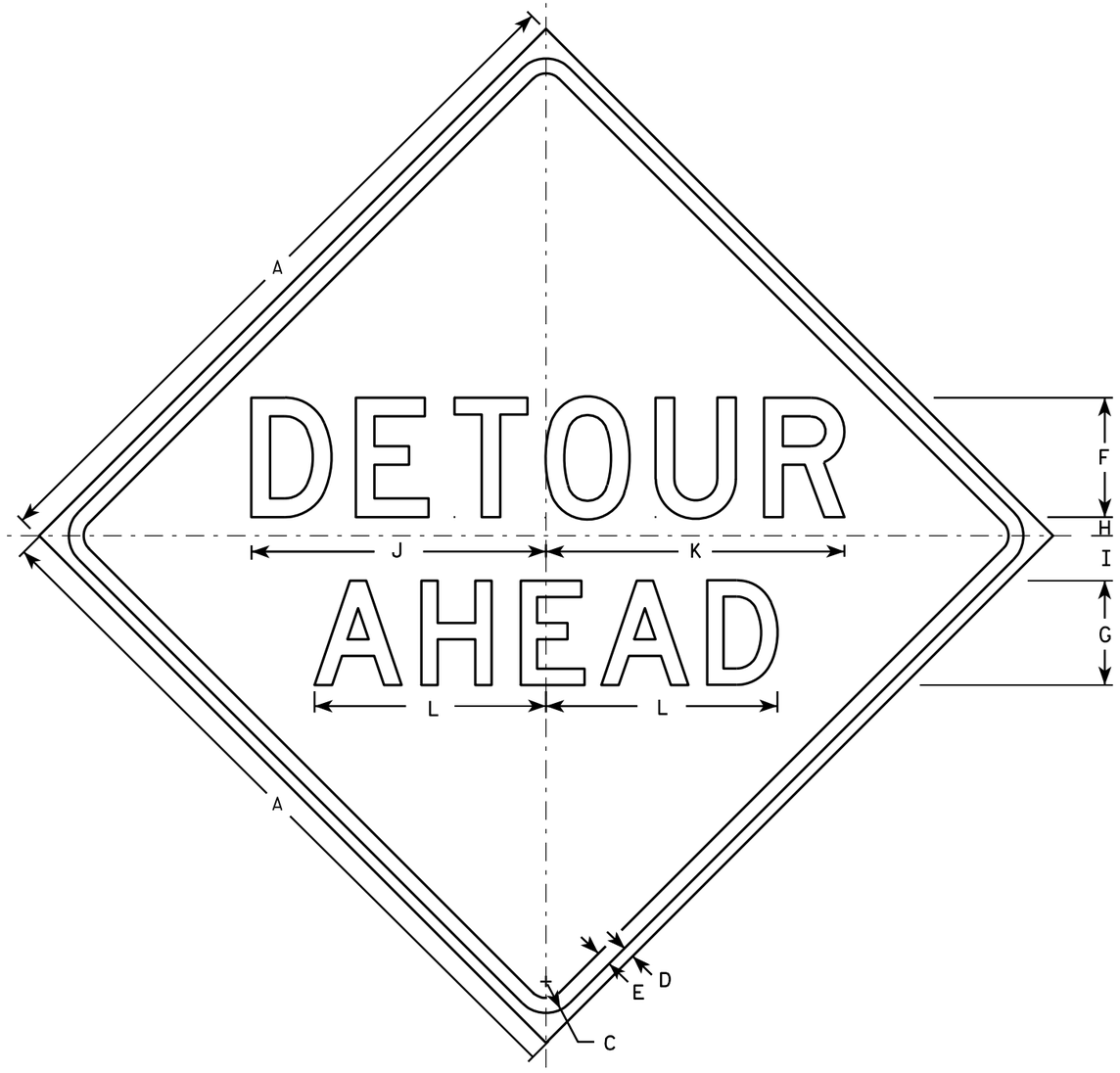
SHEET NO: 128 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W201.DGN PLOT DATE : 18-MAR-2011 09:56 PLOT BY : mscj9h

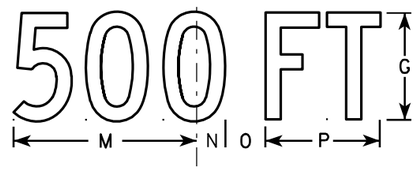
WISDOT/CADDS SHEET 42

7

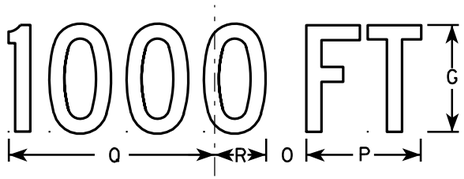
7



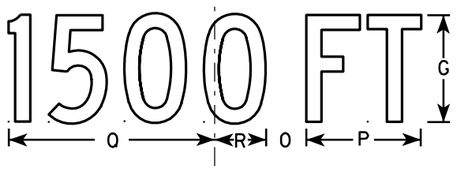
W20-2A



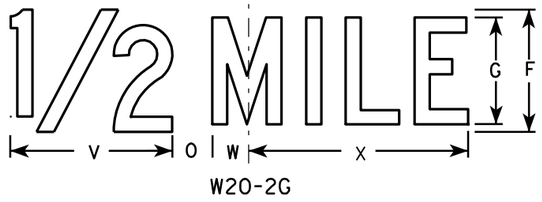
W20-2D



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	O	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

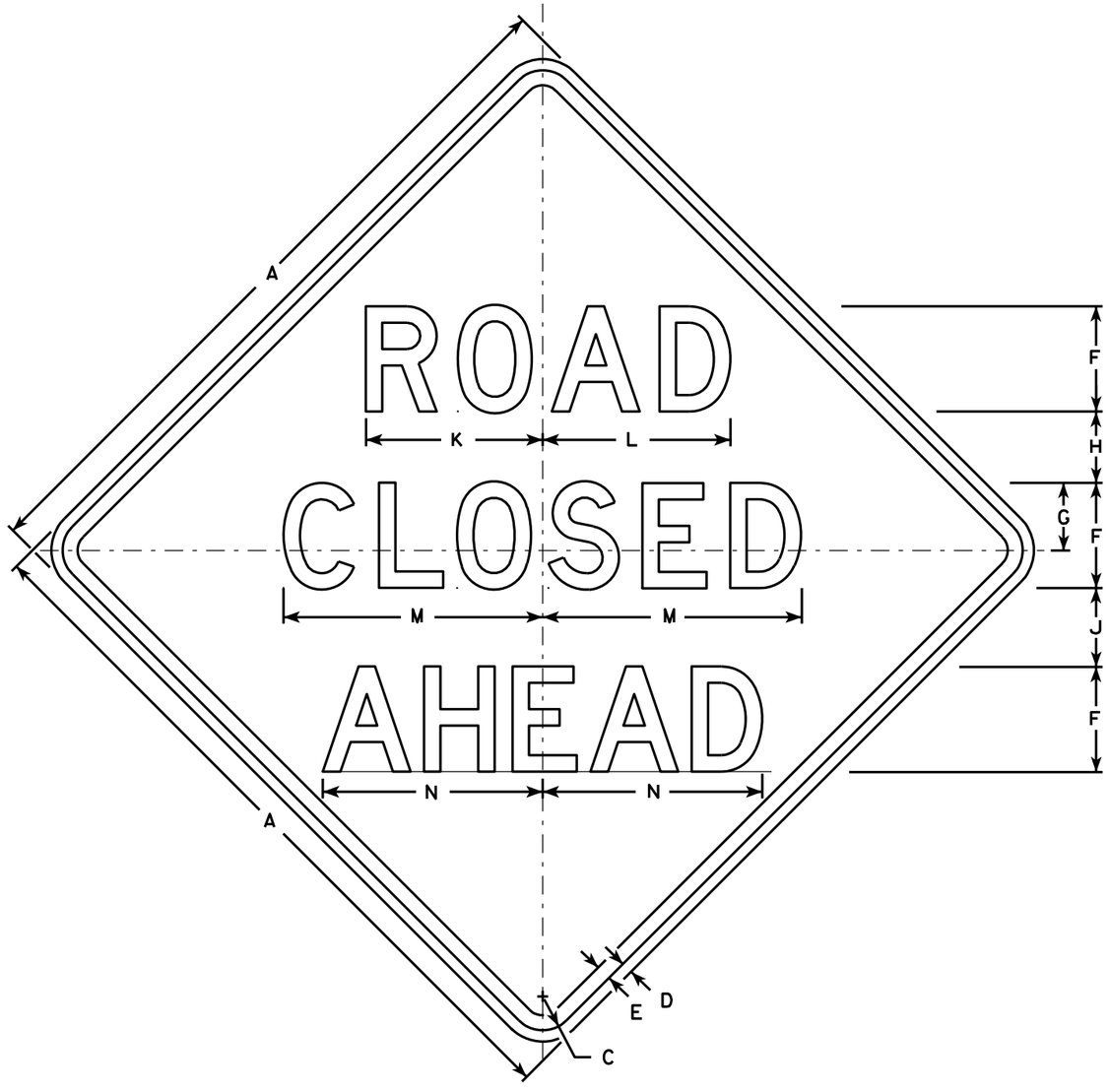
STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

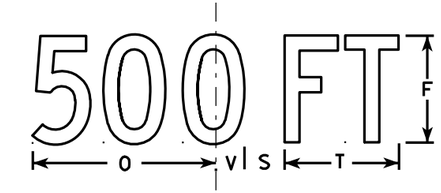
APPROVED Matthew R Rauch
for State Traffic Engineer

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

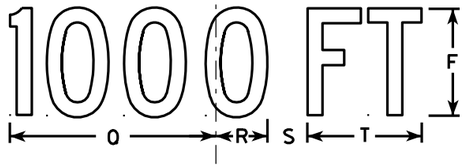
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 129	E



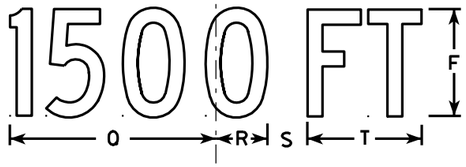
W20-3A



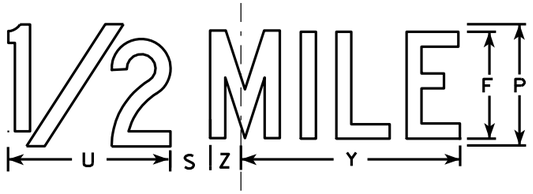
W20-3D



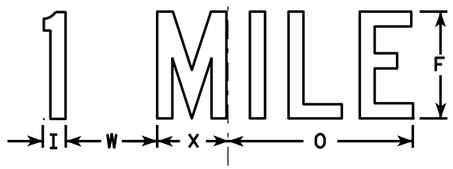
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
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   Message - Black
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5. Lines 1 and 2 are Series D.
   Line 3 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	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 130 | E

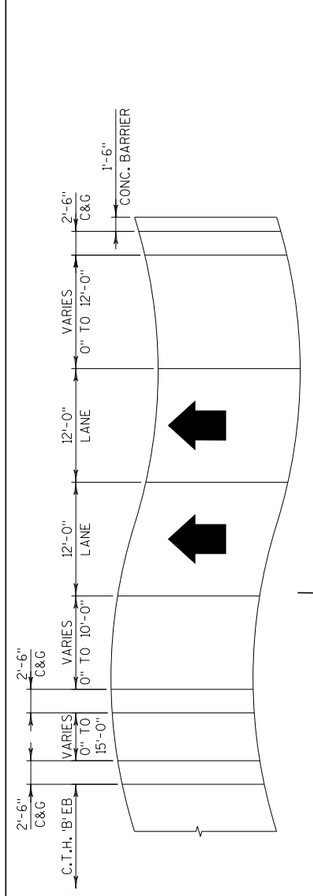
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN PLOT DATE : 18-MAR-2011 12:08 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000

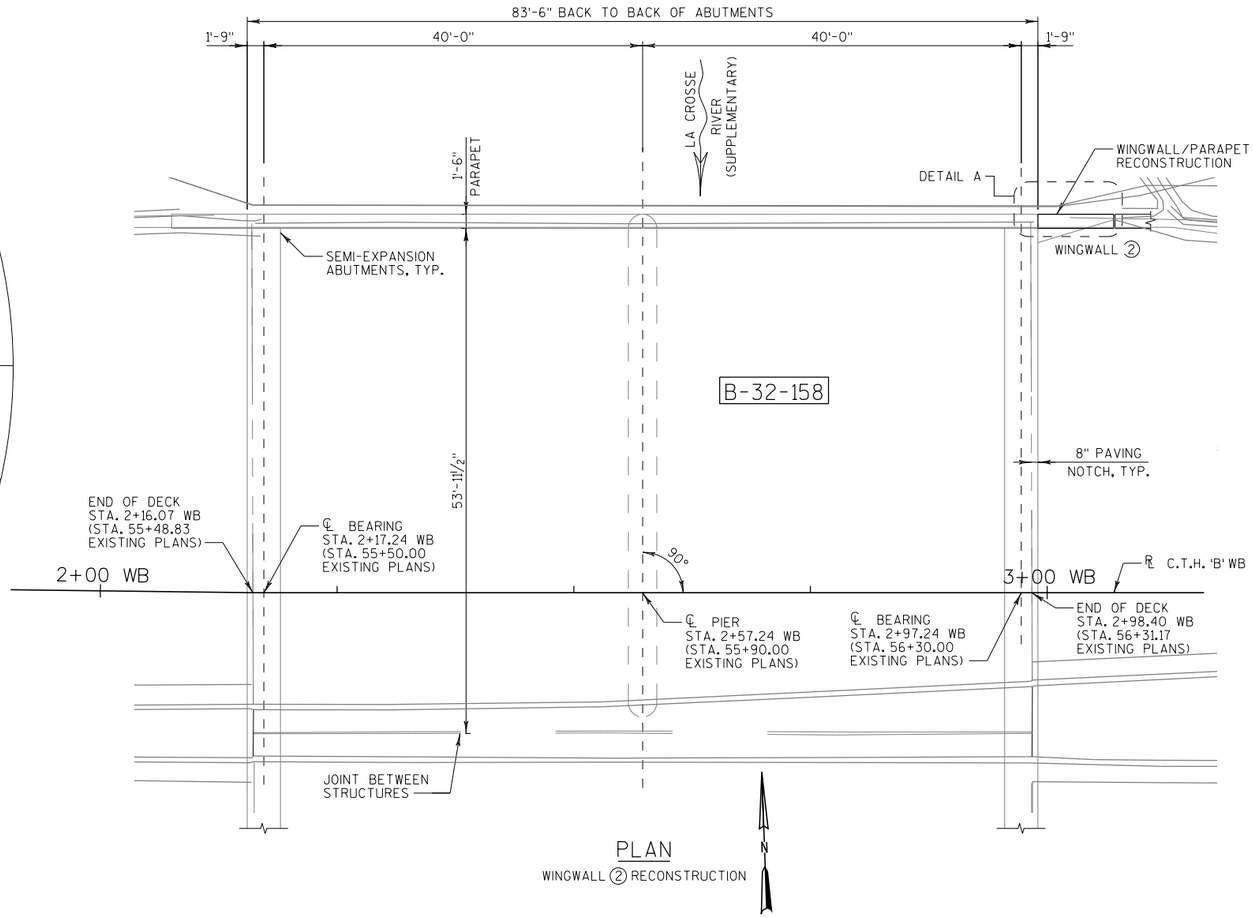
WISDOT/CADDS SHEET 42

7

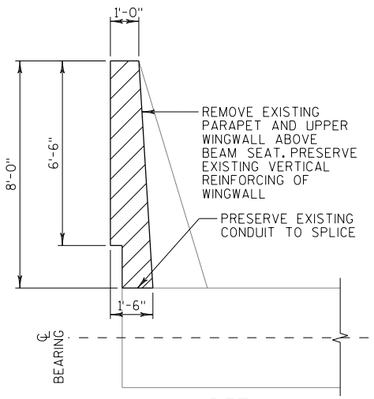
7

STATE PROJECT NUMBER
5991-08-09

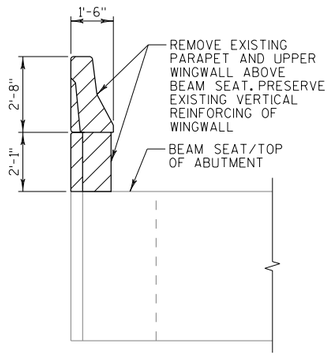




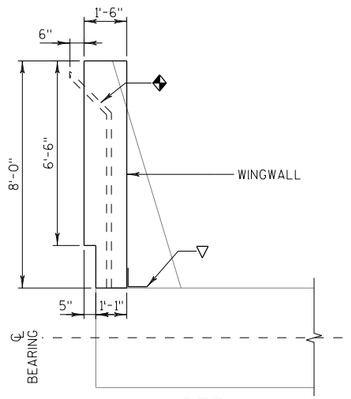
PLAN
WINGWALL (2) RECONSTRUCTION



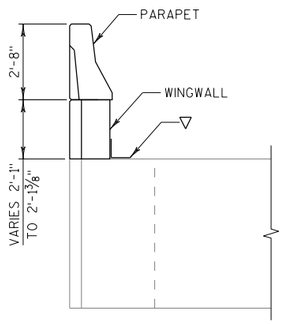
DETAIL A - DEMOLITION



PARTIAL ELEVATION - DEMOLITION



DETAIL A - RECONSTRUCTION



PARTIAL ELEVATION - RECONSTRUCTION

GENERAL NOTES

THE PROPOSED WORK INCLUDES WINGWALL/PARAPET RECONSTRUCTION.

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

ALL DETAILS, MATERIALS AND FABRICATION SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE SPECIFICATIONS OF THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION.

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPET.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS. ORIGINAL PLANS ARE AVAILABLE FROM B.O.S.

THE EXISTING ROADWAY SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENT WINGWALL RECONSTRUCTION.

CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAILED DRAWINGS. THE NEW NAME PLATE SHALL SHOW THE ORIGINAL CONSTRUCTION YEAR OF 1991.

THE EXISTING STRUCTURE, B-32-158, IS A 2-SPAN CONCRETE HAUNCHED SLAB STRUCTURE WITH AN OVERALL WIDTH OF 55'-5½" AND AN OVERALL LENGTH OF 83'-6".

ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	EAST ABUT.	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 3+00	LS	1	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-32-158	LS	1	1
210.0100	BACKFILL STRUCTURE	CY	2.5	2.5
502.0100	CONCRETE MASONRY BRIDGES	CY	2.0	2.0
502.3200	PROTECTIVE SURFACE TREATMENT	SY	3.5	3.5
502.5002	MASONRY ANCHORS TYPE L NO. 4 BARS	EACH	10	10
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	190	190
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	2	2
652.0225	CONDUIT RIGID NON-METALLIC SCHEDULE 40 2-INCH	LF	10	10

DESIGN DATA:

LIVE LOAD:
ULTIMATE DESIGN
STRESSES (NEW WORK);
CONCRETE MASONRY
SUPERSTRUCTURE..... f'c = 4,000 PSI
CONCRETE MASONRY
SUBSTRUCTURE..... f'c = 3,500 PSI
BAR STEEL REINFORCEMENT,
GRADE 60..... fy = 60,000 PSI

TRAFFIC DATA:

CTH B
A.D.T. = 8,700 (2015)
= 8,900 (2035)

LIST OF DRAWINGS

1. GENERAL PLAN AND DETAILS
2. WINGWALL AND PARAPET DETAILS

LEGEND

▽ 18" RUBBERIZED MEMBRANE WATERPROOFING ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE

◆ 2" NON-METALLIC CONDUIT

WISCONSIN
JEFFREY S. ROSNER
34316-006
DE PERE, WI
PROFESSIONAL ENGINEER

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER, P.E. 608-266-8489

CONSULTANT CONTACT:
JEFFREY S. ROSNER, P.E. 920-592-9440

NO.	DATE	REVISION	BY

GRAEF
1150 Springhurst Drive
Suite 201
Green Bay, WI 54304-5947
920 / 592 9440
920 / 592 9445 fax
www.graef-usa.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 11/20/14
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-32-158

C.T.H. 'B' OVER LA CROSSE RIVER

COUNTY	TOWN ~~CITY / VILLAGE~~
LA CROSSE	MEDARY

DESIGN SPEC.
REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JSR	AML	AMZ	AML

GENERAL PLAN AND DETAILS

SHEET 1 OF 2
131

I.D.

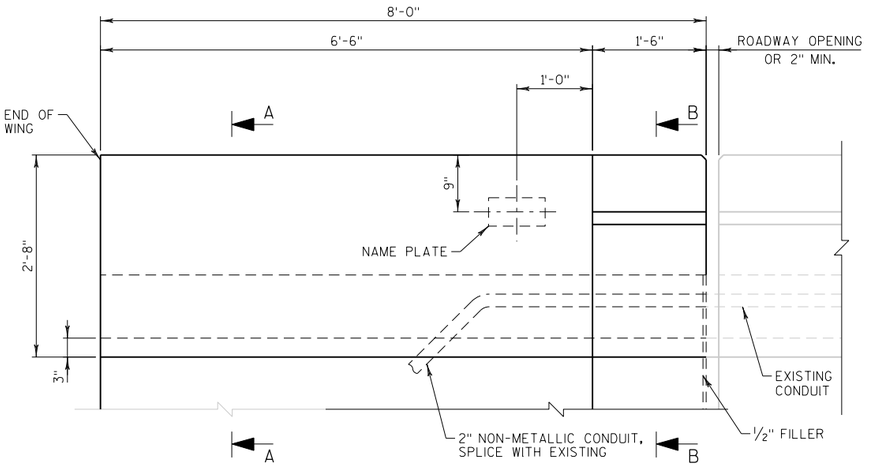
DATE:

8

8

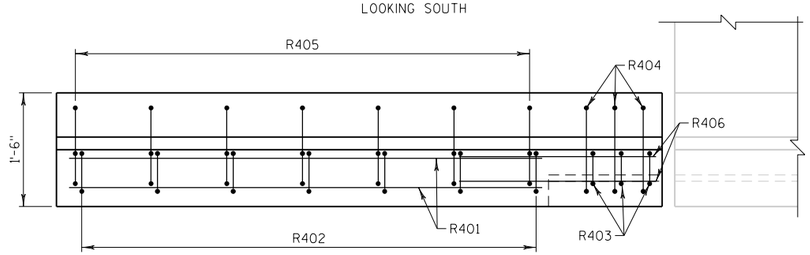
J:±JOBS2014±20142006±CAD±STRUCTURAL±00±B-32-158_01.DGN 10/21/2014 9:37:08 AM

STATE PROJECT NUMBER
5991-08-09

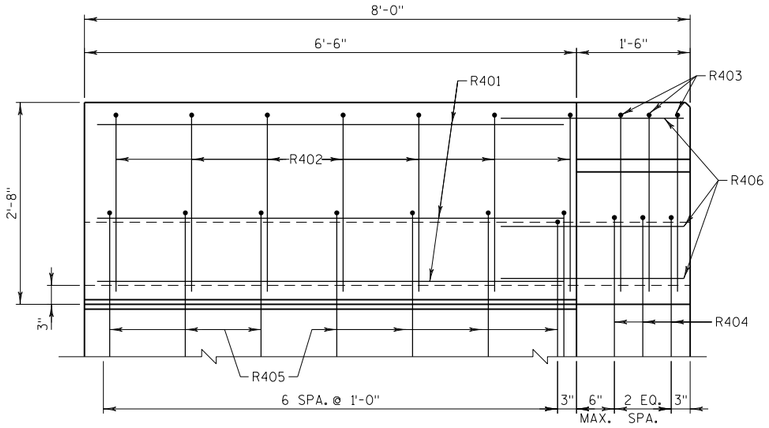


ELEVATION OF RAIL PARAPET

LOOKING SOUTH

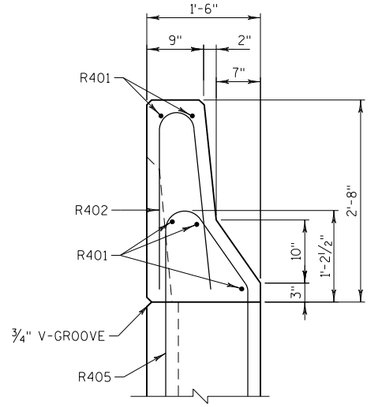


PART PLAN OF PARAPET

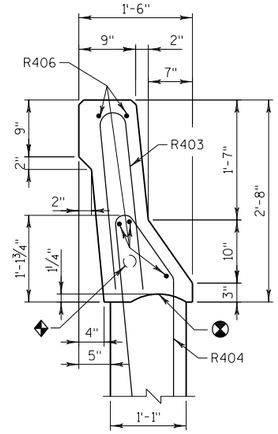


OUTSIDE FACE OF PARAPET AND REINFORCING

LOOKING SOUTH



SECTION A

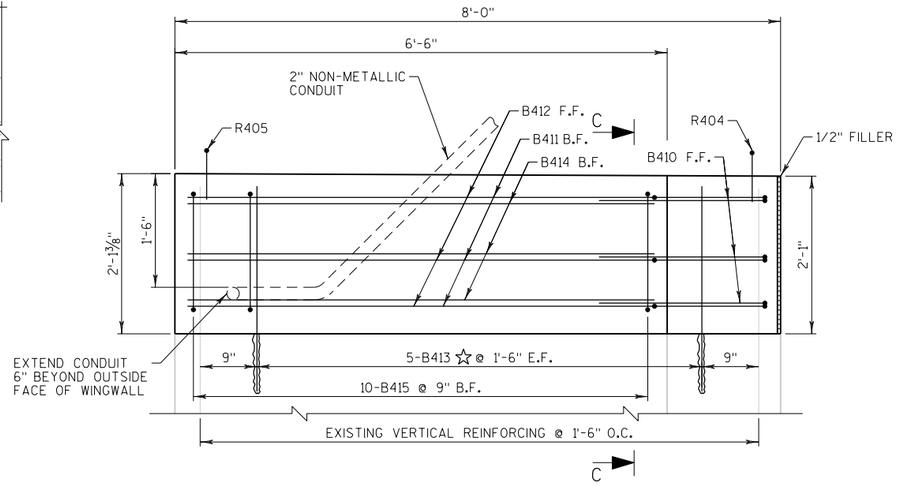


SECTION B

BILL OF BARS						
MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
B410	X	3	3'-8"		X	WING 2 HORIZ., F.F.
B411	X	3	8'-3"		X	WING 2 HORIZ., B.F.
B412	X	3	7'-1"			WING 2 HORIZ., F.F.
B413	X	10	2'-5"			WING 2 VERT.
B414	X	3	6'-2"			WING 2 HORIZ. B.F.
B415	X	10	3'-7"		X	WING 2 VERT. B.F.
R401	X	5	6'-2"			WING 2 PARAPET HORIZ.
R402	X	7	5'-0"		X	WING 2 PARAPET VERT.
R403	X	3	4'-10"		X	WING 2 PARAPET VERT.
R404	X	3	4'-7"		X	WING 2 PARAPET DOWEL
R405	X	7	5'-8"		X	WING 2 PARAPET DOWEL
R406	X	5	3'-6"			WING 2 PARAPET HORIZ.

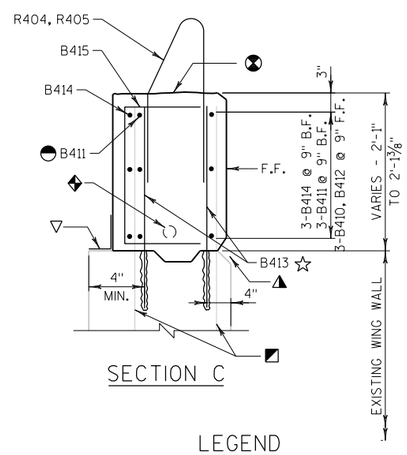
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



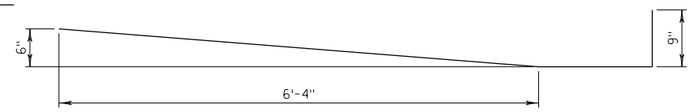
ELEVATION - WING 2

LOOKING SOUTH AT THE OUTSIDE FACE

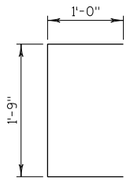


SECTION C

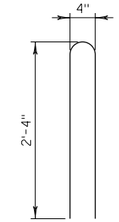
B410, B412



B411



B415



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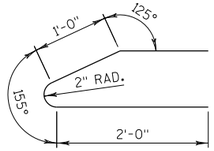

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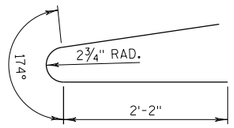

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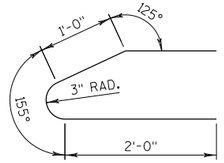

R405

LEGEND

- ▽ 18" RUBBERIZED MEMBRANCE WATERPROOFING ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- ⊗ CONST. JOINT - STRIKE OFF AS SHOWN & LEAVE ROUGH.
- ▲ 3/4" V-GROOVE ON F.F. OF WINGWALL
- ☆ "MASONRY ANCHORS TYPE L NO. 4 BARS" EMBED 6" CONCRETE MINIMUM.
- ◩ PRESERVE EXISTING REINFORCING.
- ◓ ALIGN WITH EXISTING VERTICAL REINFORCING LAYOUT.
- ◆ 2" NON-METALLIC CONDUIT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-32-158

DRAWN BY AMZ | PLANS CK'D. AML

WINGWALL AND PARAPET DETAILS

SHEET 2 OF 2
132

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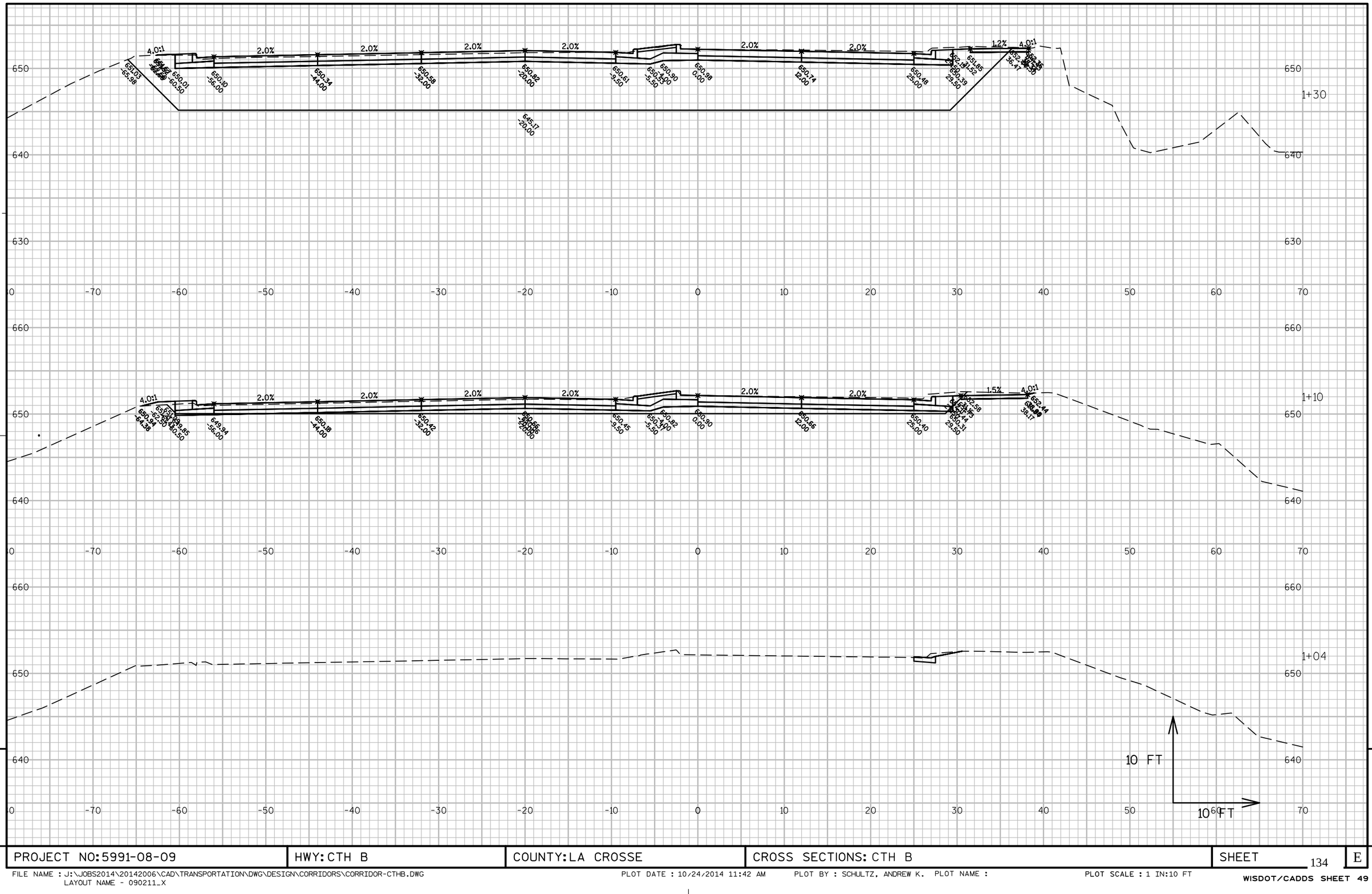
J:±JOBS2014±20142006±CAD±STRUCTURAL±00±B-32-158_02.DGN 10/21/2014 9:55:52 AM

FILE=
SCALE =

STATION	LENGTH	END-AREA CUT	END-AREA FILL	VOLUME INCREMENTAL CUT	VOLUME INCREMENTAL FILL	VOLUME CUMULATIVE CUT	VOLUME CUMULATIVE FAC	VOLUME CUMULATIVE FILL	VOLUME CUMULATIVE FAC	MASS HAUL
		SQ FT		CU YD		CU YD		CU YD		CU YD
01+03.88		0.9	0.0							
	5.76			7.2	0.0	7.2	1.0	0.0	1.25	7.2
01+09.64		66.3	0.0							
	20.12			261.5	0.1	268.7	1.0	0.1	1.25	268.6
01+29.76		635.4	0.2							
	20.24			474.3	0.2	743.0	1.0	0.4	1.25	742.6
01+50.00		630.0	0.5							
	5.59			130	0.1	873.0	1.0	0.5	1.25	872.5
01+55.59		625.8	0.3							
	44.41			1022	46.0	1895.4	1.0	58.0	1.25	1837.4
02+00.00		617.4	55.7							
	12.62			273	13.0	2168.4	1.0	74.3	1.25	2094.2
02+12.62		550.6	0.0							
Bridge										
02+95.70		516.7	35.7							
	4.30			87.2	4.0	2255.6	1.0	79.3	1.25	2176.4
03+00.00		578.4	13.9							
	50.00			1118	13.9	3373.5	1.0	96.6	1.25	3276.9
03+50.00		629.0	1.0							
	50.00			1114	1.0	4487.8	1.0	97.9	1.25	4389.9
04+00.00		574.5	0.1							
	13.45			170.1	0.1	4657.9	1.0	98.0	1.25	4559.9
04+13.45		108.2	0.2							
	52.15			104.5	0.2	4762.4	1.0	98.3	1.25	4664.2
04+65.60		0.0	0.0							
	25.00			0	0.4	4762.4	1.0	98.8	1.25	4663.7
04+90.60		0.0	0.9							
	25.00			0.7	0.5	4763.1	1.0	99.4	1.25	4663.7
05+15.60		1.5	0.1							
	30.85			1	0.1	4764.1	1.0	99.5	1.25	4664.6
05+46.45		0.2	0.0							

STATION	LENGTH	END-AREA CUT	END-AREA FILL	VOLUME INCREMENTAL CUT	VOLUME INCREMENTAL FILL	VOLUME CUMULATIVE CUT	VOLUME CUMULATIVE FAC	VOLUME CUMULATIVE FILL	VOLUME CUMULATIVE FAC	MASS HAUL
		SQ FT		CU YD		CU YD		CU YD		CU YD
10+05.97		0.9	2.2							
	14.16			0.9	3.6	4765.0	1.0	104.0	1.25	4661.0
10+20.13		2.4	11.5							
	17.97			26.3	3.9	4791.3	1.0	108.9	1.25	4682.4
10+38.10		76.6	0.2							
	7.03			52.5	0.1	4843.8	1.0	109.0	1.25	4734.8
10+45.13		326.6	0.3							
	4.87			68.3	0.1	4912.1	1.0	109.1	1.25	4803.0
10+50.00		431.1	0.4							
	20.13			316.5	0.4	5228.6	1.0	109.6	1.25	5119.0
10+70.13		417.9	0.7							
	27.81			398.1	0.4	5626.7	1.0	110.1	1.25	5516.6
10+97.94		355.1	0.1							
Bridge										
12+64.53		356.5	0.0							
	35.47			514.6	0.0	6141.3	1.0	110.1	1.25	6031.2
13+00.00		426.9	0.0							
	22.00			350.6	0.0	6491.9	1.0	110.1	1.25	6381.8
13+22.00		433.8	0.0							
	25.00			397.4	0.2	6889.3	1.0	110.4	1.25	6778.9
13+47.00		424.5	0.3							
	3.00			47.1	0.0	6936.4	1.0	110.4	1.25	6826.0
13+50.00		423.0	0.5							
	21.98			202.1	0.6	7138.5	1.0	111.1	1.25	7027.4
13+71.98		73.6	1.0							
	44.07			60	1.7	7198.5	1.0	113.3	1.25	7085.3
14+16.05		0.0	1.1							
	25.00			0	1.6	7198.5	1.0	115.3	1.25	7083.3
14+41.05		0.0	2.4							
	25.00			0.3	1.5	7198.8	1.0	117.1	1.25	7081.7
14+66.05		0.8	0.9							
	31.01			0.4	0.5	7199.2	1.0	117.8	1.25	7081.5
14+97.06		0.0	0.0							



9	PROJECT NO:5991-08-09	HWY:CTH B	COUNTY:LA CROSSE	CROSS SECTIONS: CTH B	SHEET 134 E

9

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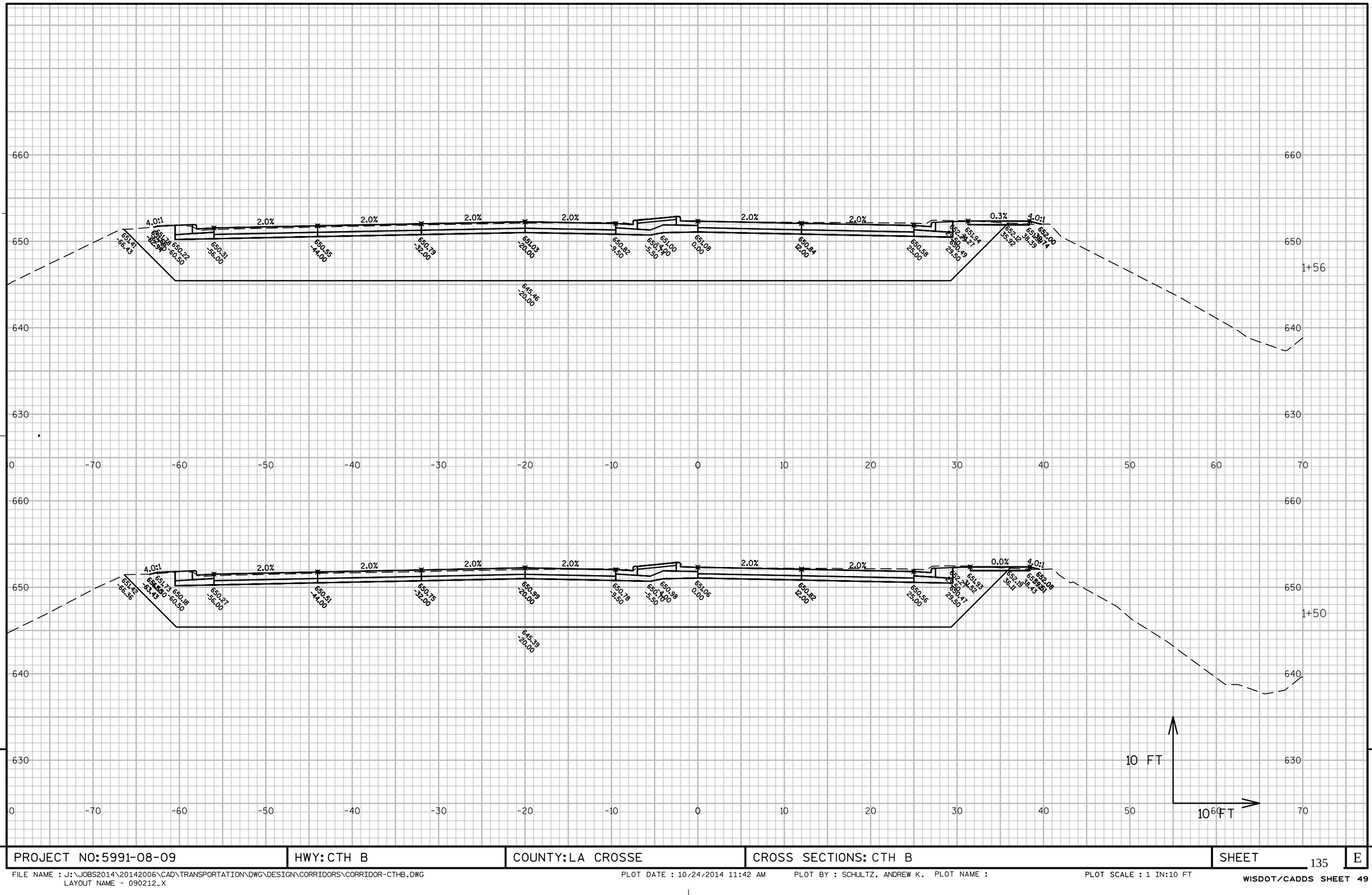
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49



PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 135	E

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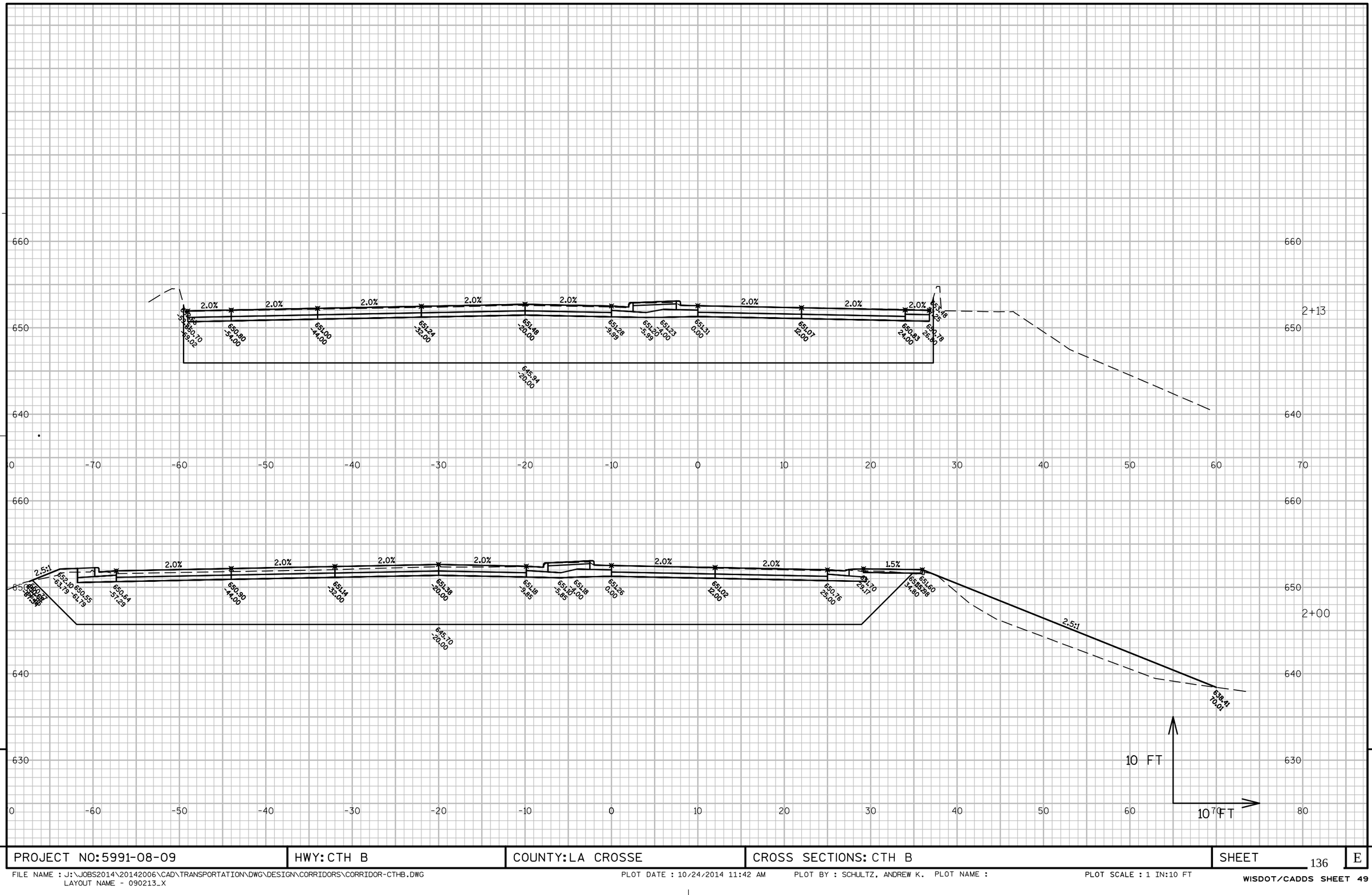
WISDOT/CADDS SHEET 49



PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 136	E

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LAYOUT NAME - 090213_X

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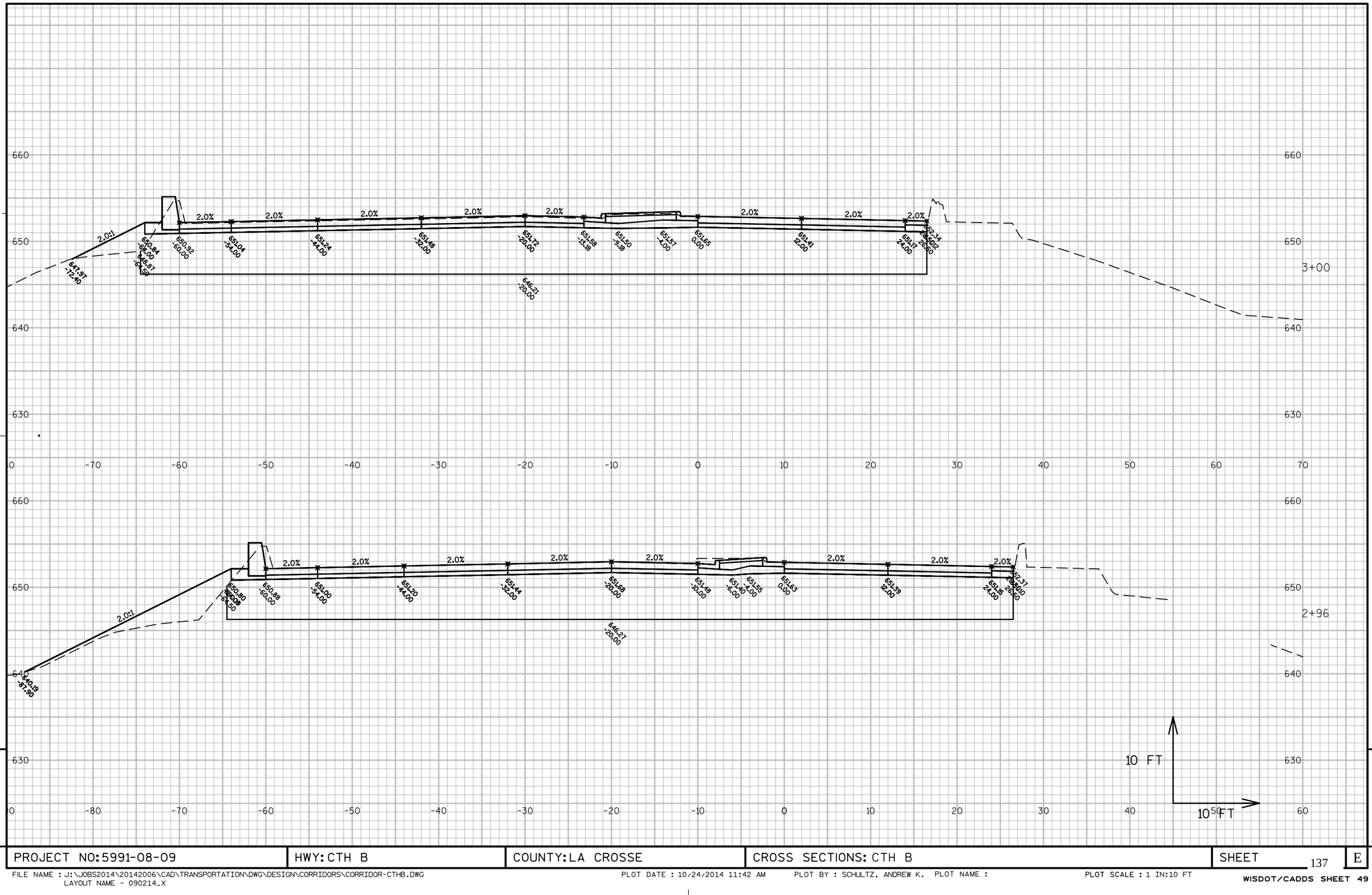
WISDOT/CADDS SHEET 49



PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 137	E

FILE NAME : J:\JOBS2014\20142006\CAD\TRANSPORTATION\DWG\DESIGN\CORRIDORS\CORRIDOR-CTHB.DWG
LAYOUT NAME - 090214_X

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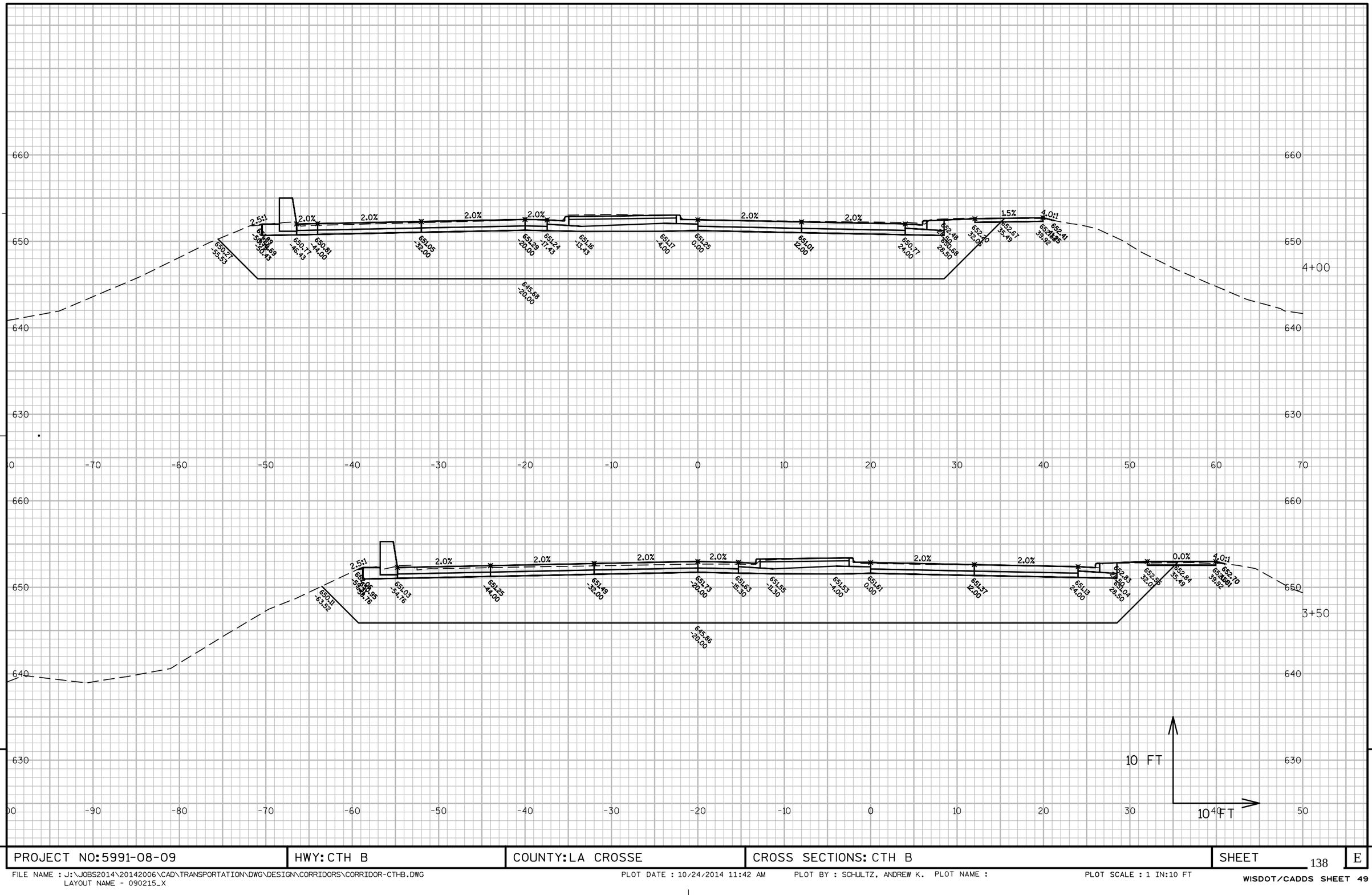

PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 138	E

FILE NAME : J:\JOBS2014\20142006\CAD\TRANSPORTATION\DWG\DESIGN\CORRIDORS\CORRIDOR-CTHB.DWG
LAYOUT NAME - 090215_X

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WISDOT/CADDS SHEET 49

660
650
640
630
3.0:1
4+66
4+13
2.0%
1.5%
4.0:1
10 FT
10 FT
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 139	E

FILE NAME : J:\JOBS2014\20142006\CAD\TRANSPORTATION\DWG\DESIGN\CORRIDORS\CORRIDOR-CTHB.DWG
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660
650
640
630
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70
3.0:1
5+16
4+91
10 FT
10 FT

9

PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 140	E

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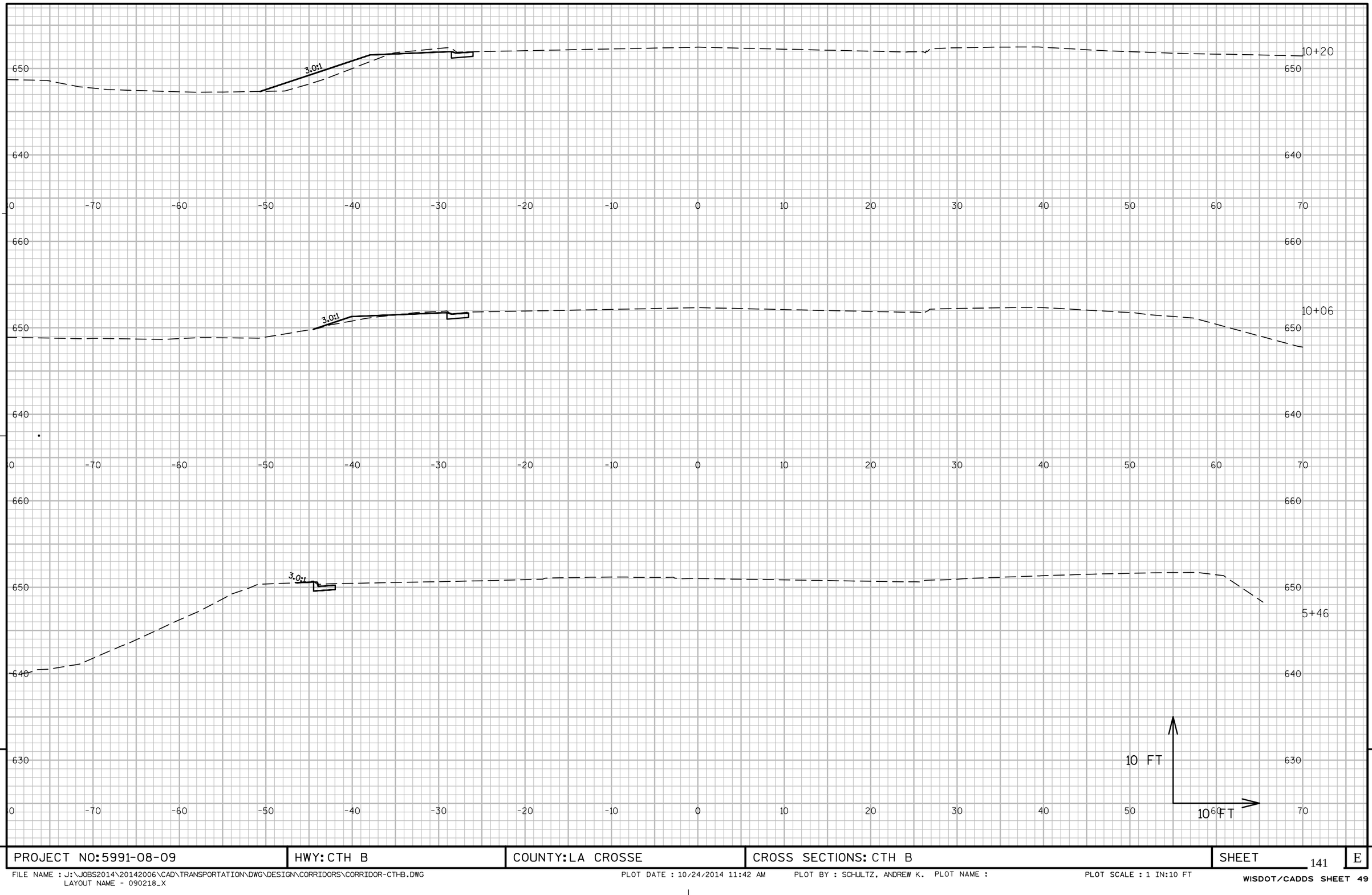

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PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 141	E

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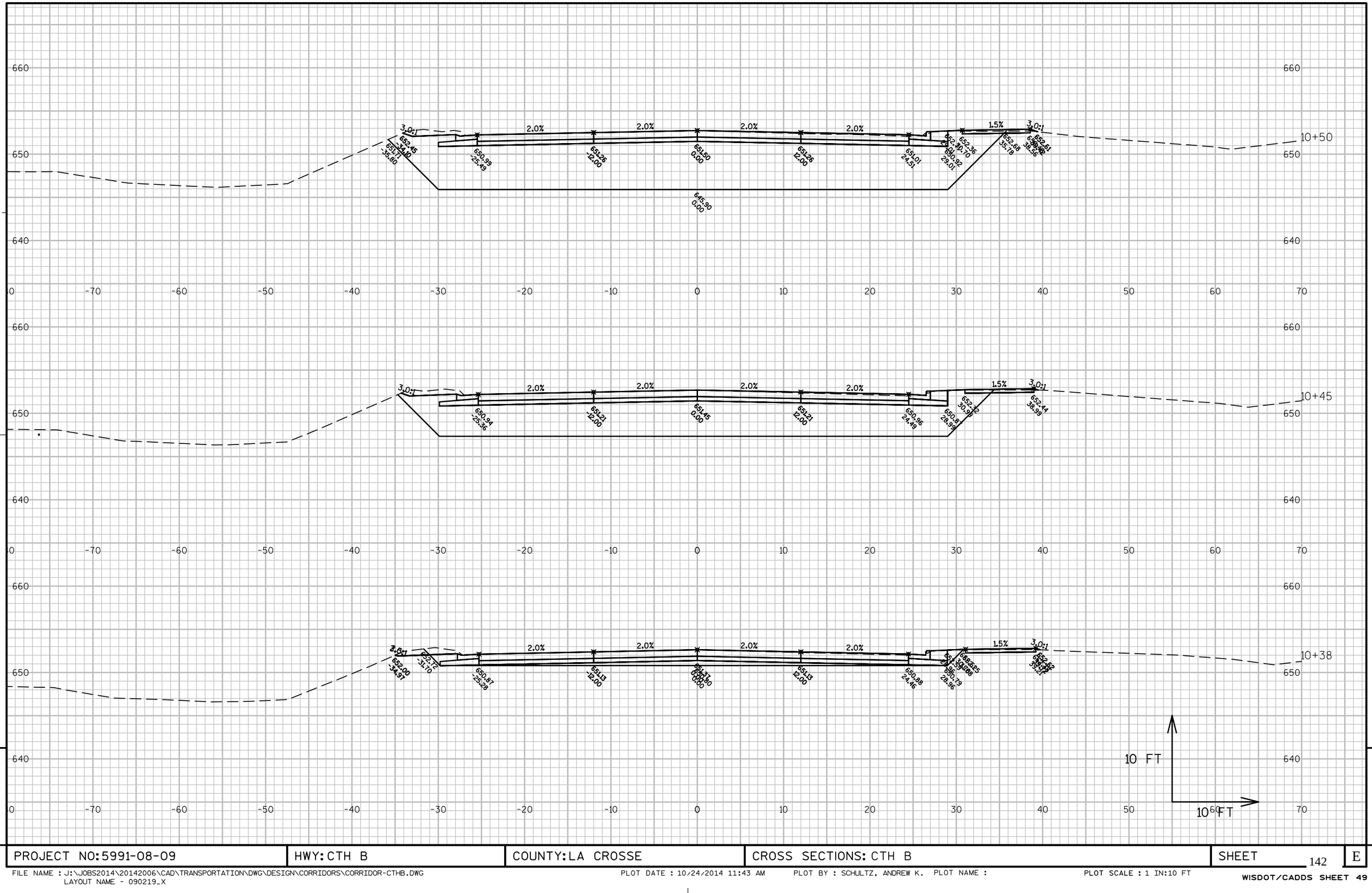
WISDOT/CADDS SHEET 49



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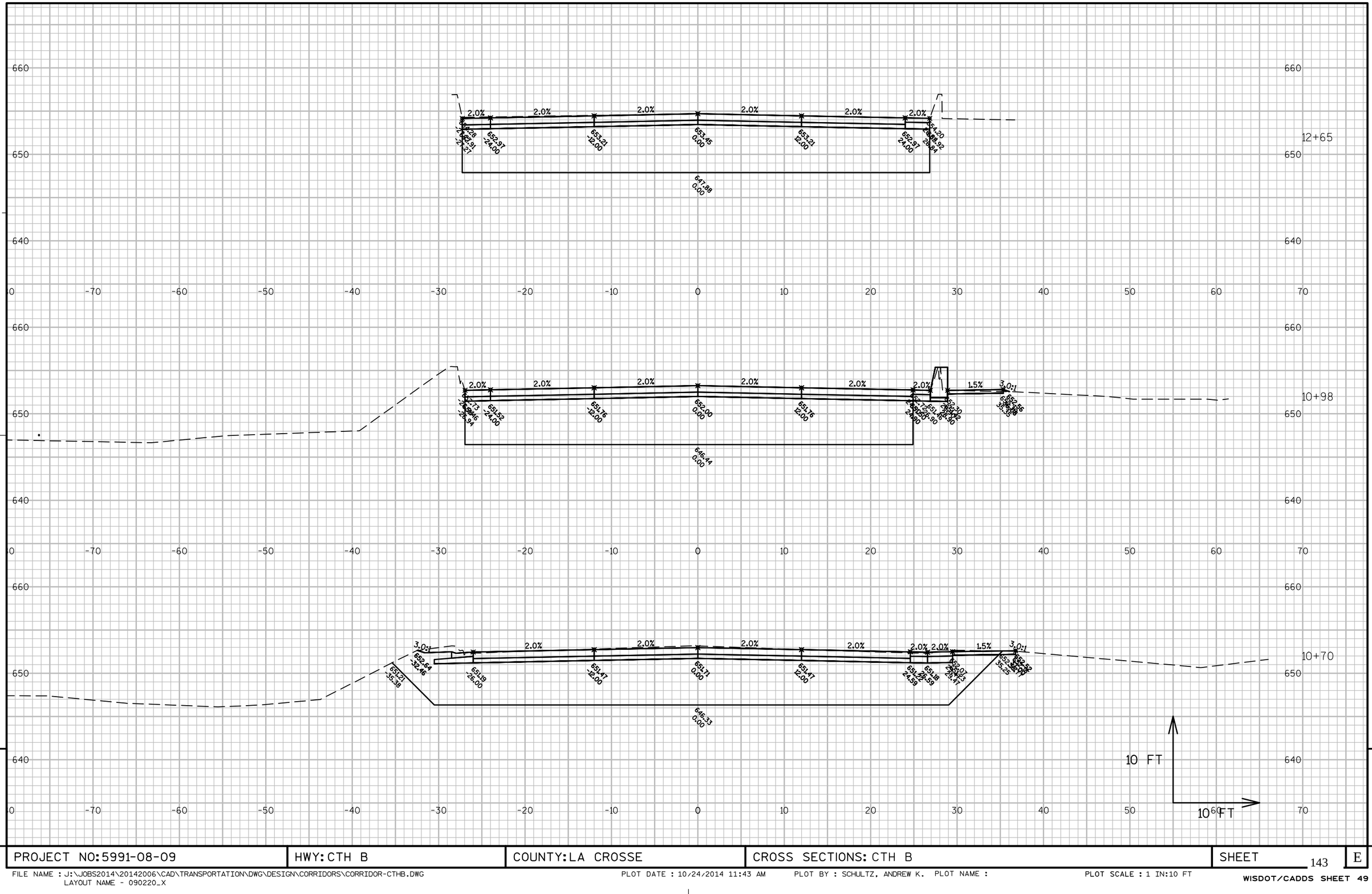

PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 143	E

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LAYOUT NAME - 090220_X

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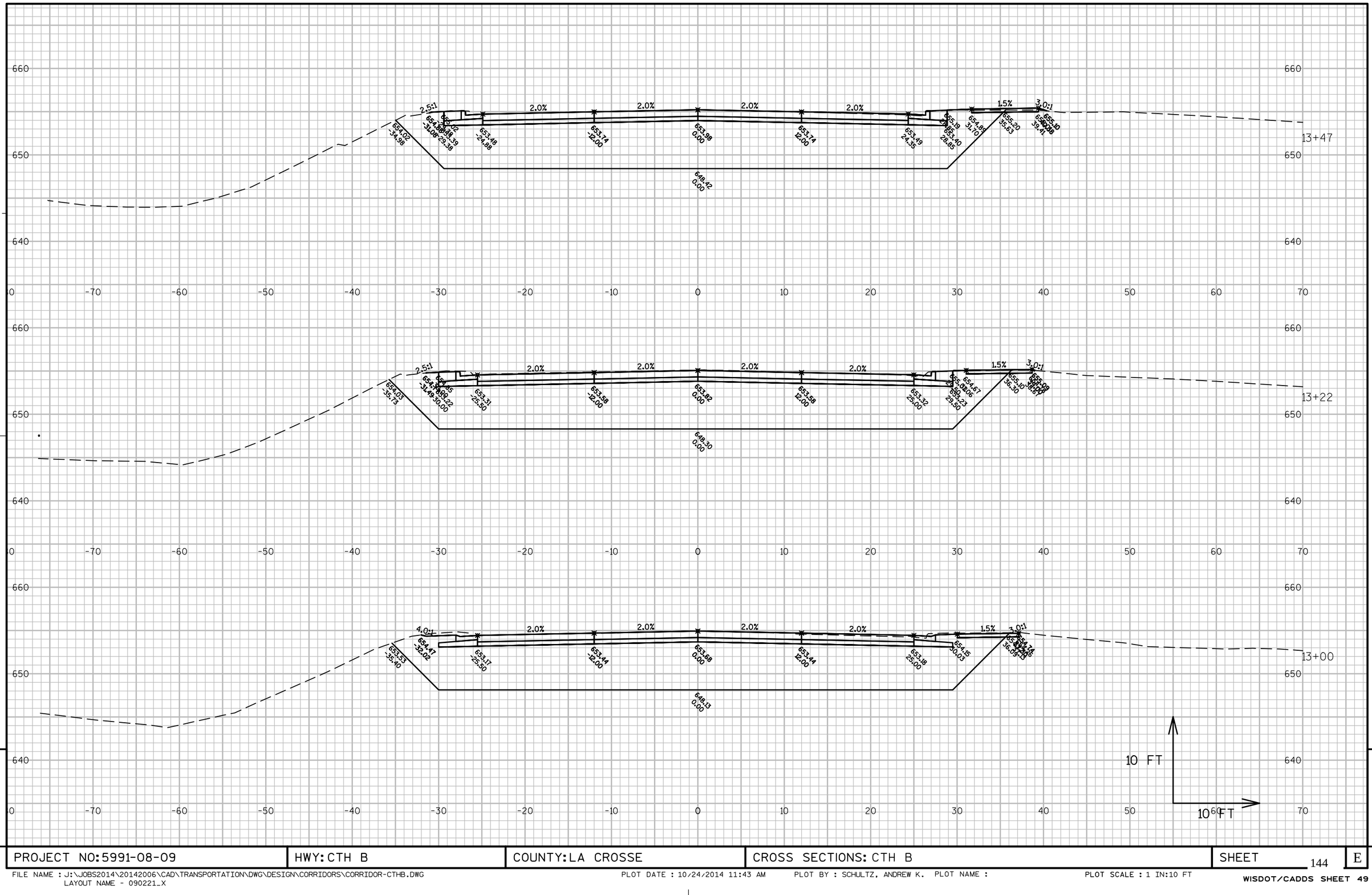
WISDOT/CADDS SHEET 49



PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 144	E

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LAYOUT NAME - 090221_X

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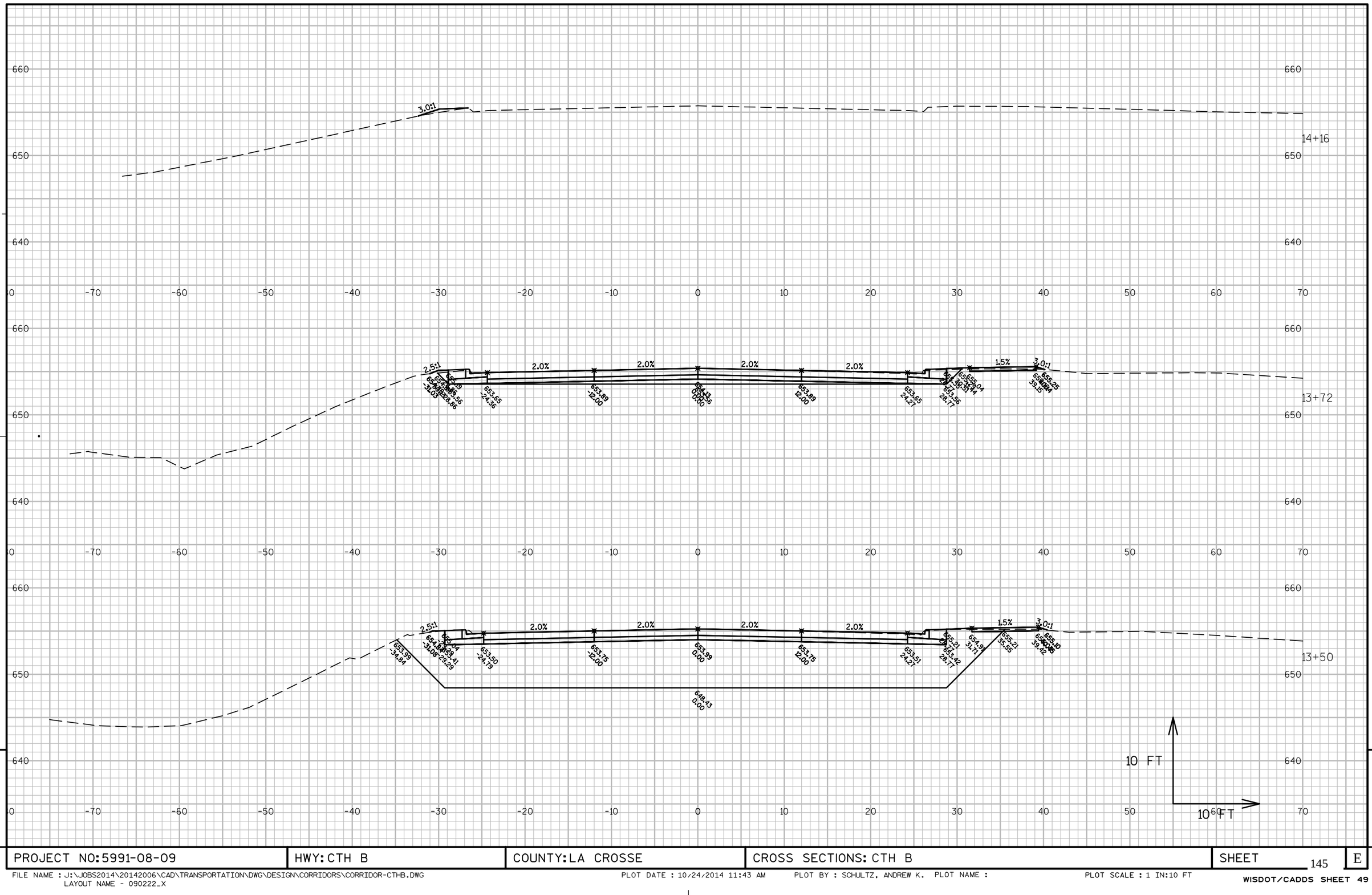
WISDOT/CADDS SHEET 49



PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 145	E

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LAYOUT NAME - 090222_X

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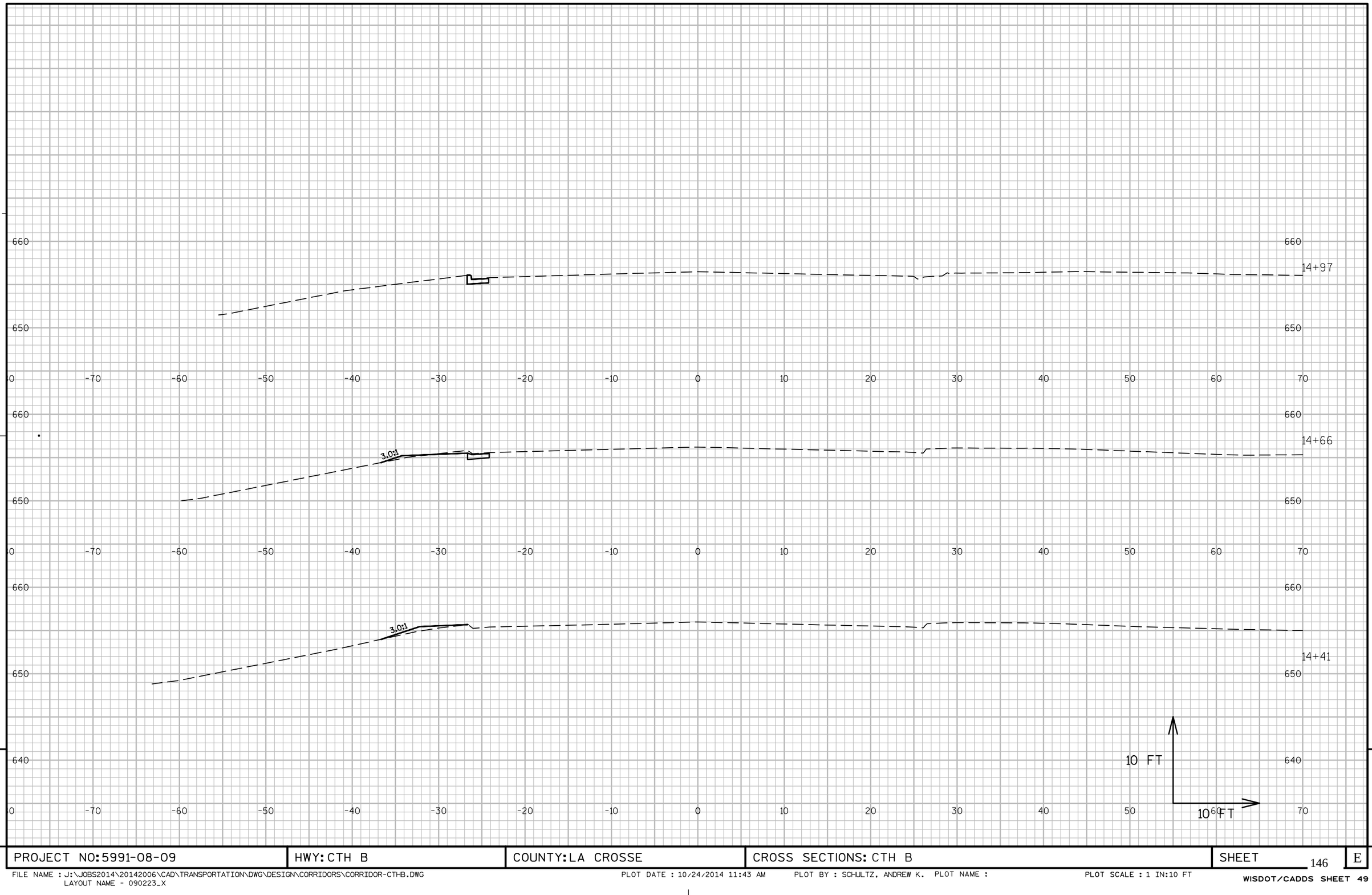
WISDOT/CADDS SHEET 49



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PROJECT NO: 5991-08-09	HWY: CTH B	COUNTY: LA CROSSE	CROSS SECTIONS: CTH B	SHEET 146	E

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LAYOUT NAME - 090223_X

PLOT DATE : 10/24/2014 11:43 AM PLOT BY : SCHULTZ, ANDREW K. PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

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