WKE Mar 08, 2022

PROJECT ID: 2695-11-70
WITH: N/A
COUNTY: OZAUKEE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

COVERED BRIDGE ROAD

BRIDGE OVER CEDAR CREEK B-45-0013

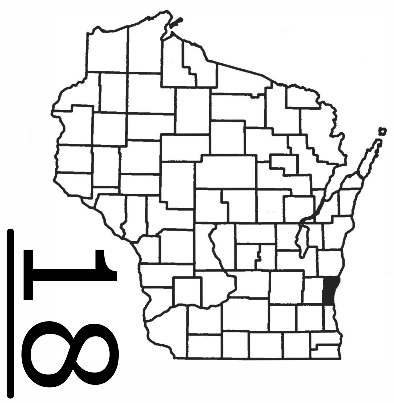
LOCAL STREET
OZAUKEE COUNTY

COUNTY PROJECT NUMBER
2695-11-70

COUNTY PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2695-11-70	WISC 2022242	1

ORDER OF SHEETS

TOTAL SHEETS = 90



18

N

DESIGN DESIGNATION

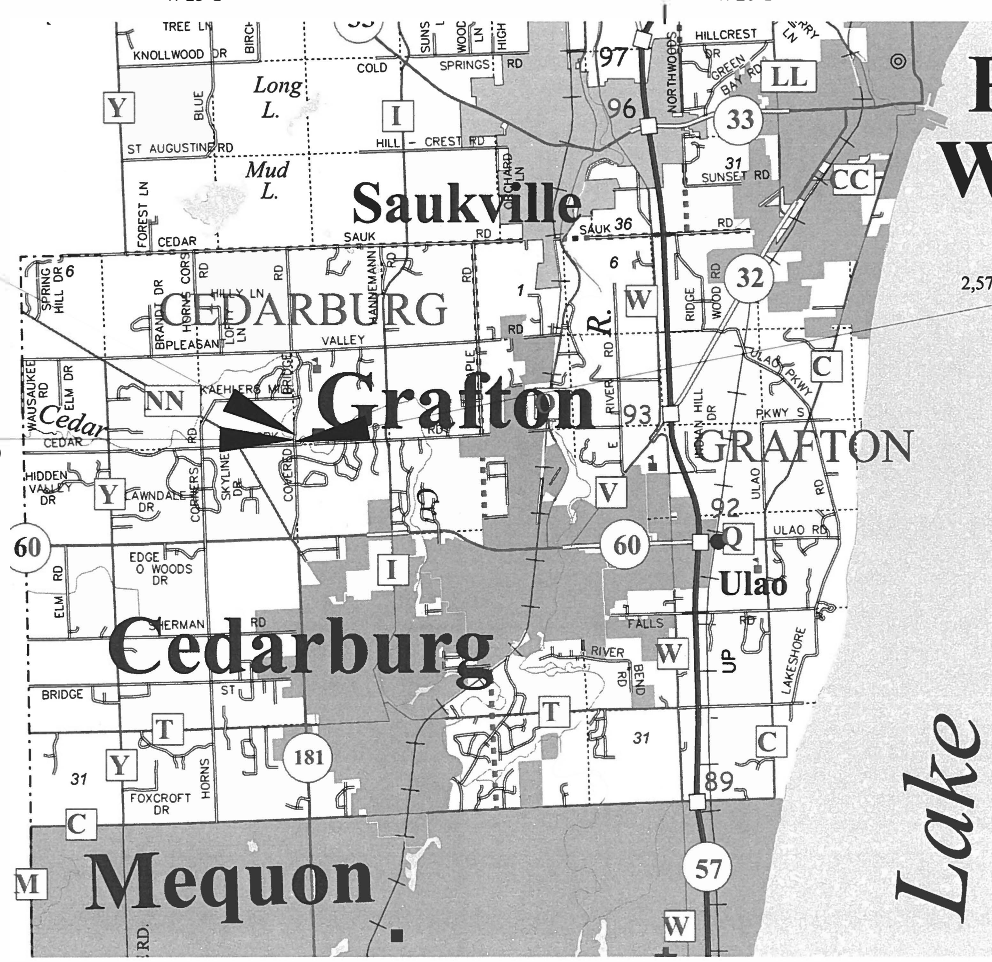
A.A.D.T.	2022	=	965
A.A.D.T.	2042	=	1,330
D.H.V.		=	130
D.D.		=	50/50
T.		=	7.5%
DESIGN SPEED		=	40 MPH
ESALS		=	180,000

BEGIN PROJECT
STA 11+40.00
Y = 408,517.55
X = 580,551.01

STR. B-45-115
STR. B-45-013 TO BE REMOVED
STA. 12+53.28

END PROJECT
STA 13+64.00

R-19-E R-20-E T-10-N T-9-N



CONVENTIONAL SYMBOLS

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

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

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

LAYOUT

SCALE 0 — 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.042

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, OZAUKEE COUNTY, NAD83 (2011), IN US SURVEY FEET

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN 2012 VERTICAL DATUM OF 1988 NAVD88 (2012)

ACCEPTED FOR

TOWN of CEDARBURG

9/1/2021 [signature] Public Works Director
(Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

GRAEF 275 W. WISCONSIN AVE, SUITE 300 MILWAUKEE, WI 53203

WISCONSIN STEVEN T. SCHOWALTER 37305 LISBON, WI PROFESSIONAL ENGINEER

9/1/21 [signature]
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	GRAEF
Designer	GRAEF
PROJECT MANAGER	GREG HAFEMAN
REGIONAL SUPERVISOR	JE FROH EN
C.O. EXAMINER	

APPROVED FOR THE DEPARTMENT
DATE: 09/07/2021 [signature]
(Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM THE ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES OR FROM GRUBBING OF TREES OR STUMPS SHALL BE BACKFILLED WITH GRANULAR BACKFILL AND COMPACTED. GRANULAR BACKFILL MATERIAL IS INCIDENTAL TO THE REMOVAL ITEM.

ALL ELEVATIONS ALONG CURB & GUTTER ARE GIVEN TO THE FLANGE. OFFSETS NOTED ARE TO THE FLANGE OR EDGE OF LANE IF NO CURB, UNLESS OTHERWISE NOTED.

THE LOCATION OF KNOWN EXISTING UTILITIES IN THE VICINITY OF THE PROJECT ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITIES IN THE AREA THAT ARE NOT SHOWN. CONTRACTOR SHALL EXPOSE AND VERIFY DEPTHS AND LOCATIONS OF ALL UTILITIES, KNOW AND UNKNOWN.

SILT FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND MULCH/EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN SEVEN (7) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED.

HMA PAVEMENT

LOCATION	HMA TYPE	LOWER LAYER	UPPER LAYER
4" DEPTH LT	3 LT 58-28 S	2 ¼"	X
	4 LT 58-28 S	X	1 ¾"

INDEX OF TYPICAL SECTION AND DETAIL SHEETS

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
Δ	DELTA
DISCH	DISCHARGE
EOP	EDGE OF PAVEMENT
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

AGENCIES

TOWN OF CEDARBURG
DIRECTOR OF PUBLIC WORKS
MR. JEFF BOERNER
1293 WASHINGTON AVENUE
CEDARBURG, WI 53012
(262) 377-4509
JBOERNER@TOWN.CEDARBURG.WI.US

DEPT. OF NATURAL RESOURCES

WISCONSIN DEPT. OF NATURAL RESOURCES
MS. KRISTINA BETZOLD
2300 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
(414) 343-9646
KRISTINA.BETZOLD@WI.GOV

DESIGN CONTACT

GRAEF
MR. STEVEN SCHOWALTER, P.E.
HONEY CREEK CORPORATE CENTER
275 W. WISCONSIN AVENUE
SUITE 300
MILWAUKEE, WI 53203
(414) 266-9246
STEVEN.SCHOWALTER@GRAEF-USA.COM

UTILITIES

AT&T WISCONSIN
MR. JEFF OLDENBURG
2005 PEWAUKEE ROAD
WAUKESHA, WI 53188
(262) 896-7522
J02376@ATT.COM

SPECTRUM MID-AMERICA LLC
MR. CHARLES BRASILE
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212-4002
(414) 908-4822
CHARLES.BRASILE@CHARTER.COM

WE ENERGIES - ELECTRIC
MR. GREGORY BOERNER
500 S. 116TH STREET
WEST ALLIS, WI 53214
(618) 409-5861
GREGORY.BOERNER@WE-ENERGIES.COM

WE ENERGIES ELECTRIC DISPATCH
1-800-662-4797
WE-UTILITY-RELOCATION@WE-ENERGIES.COM

WE ENERGIES - GAS
MR. JAKE HULBERT
500 S. 116TH STREET
WEST ALLIS, WI 53214
(414) 944-5575
JACOB.HULBERT@WE-ENERGIES.COM

WE ENERGIES ELECTRIC DISPATCH
1-800-261-5325
WE-UTILITY-RELOCATION@WE-ENERGIES.COM

2

2

N

TOWN OF CEDARBURG

CEDAR CREEK

BEGIN PROJECT
STA 11+40

STRUCTURE B-45-115

BP: 8+94.27

PC: 9+72.83

8+00

9+00

10+00

11+00

12+00

13+00

14+00

15+00

16+00

PT: 14+36.45

PI: 15+10.88

PC: 15+26.52

COVERED BRIDGE ROAD

COVERED BRIDGE ROAD

SECTION LINE

SECTION LINE

HISTORIC COVERED BRIDGE

END PROJECT
STA 13+64.00

CEDAR CREEK ROAD

CEDAR CREEK

SECTION LINE

OZAUKEE COUNTY
COVERED BRIDGE PARK

TOWN OF CEDARBURG

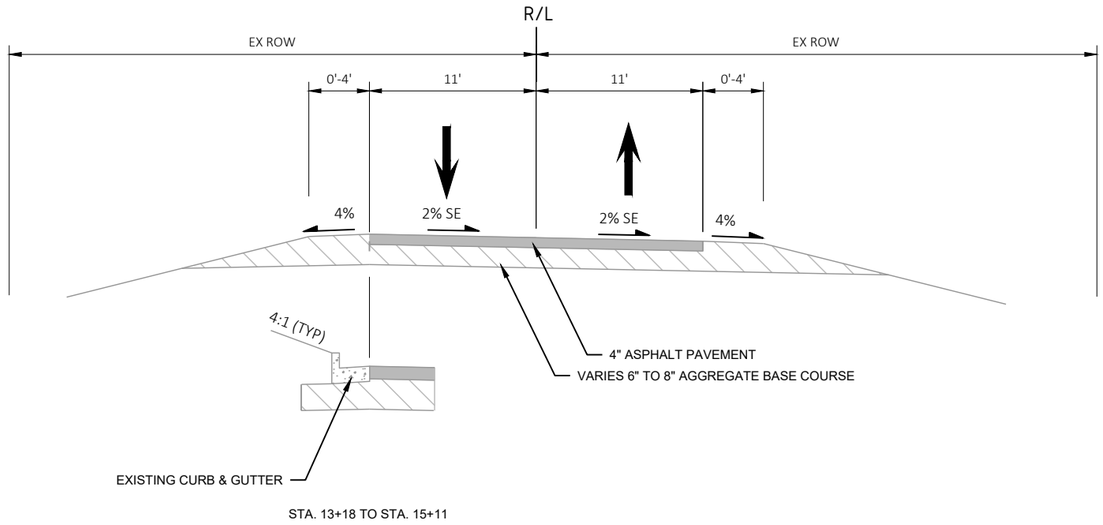
PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : X:\ML\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\020201_PO.DWG
LAYOUT NAME - 020201_po

PLOT DATE : 10/5/2021 5:59 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42

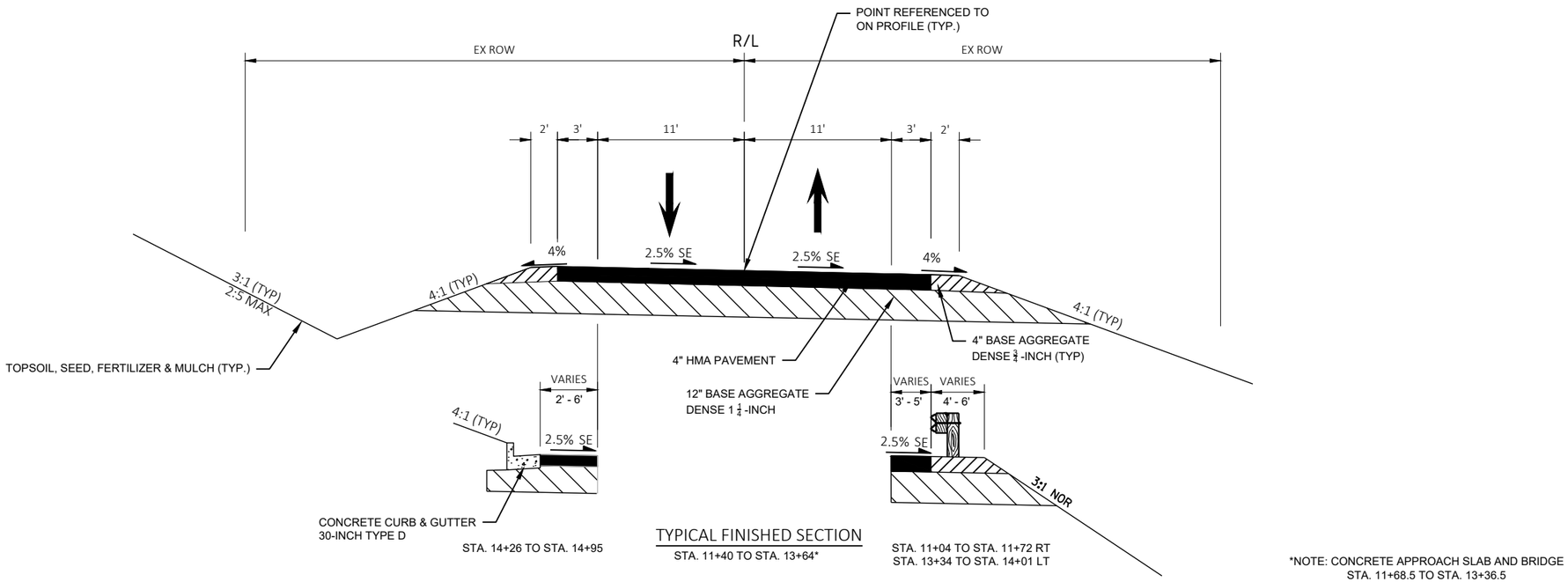
2



STA. 13+18 TO STA. 15+11

EXISTING TYPICAL SECTION

STA. 10+74 TO STA. 15+11



STA. 14+26 TO STA. 14+95

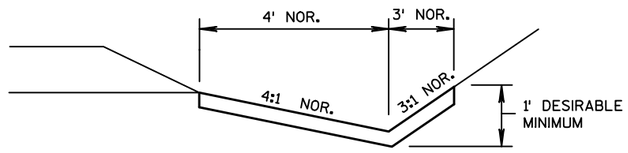
TYPICAL FINISHED SECTION

STA. 11+40 TO STA. 13+64*

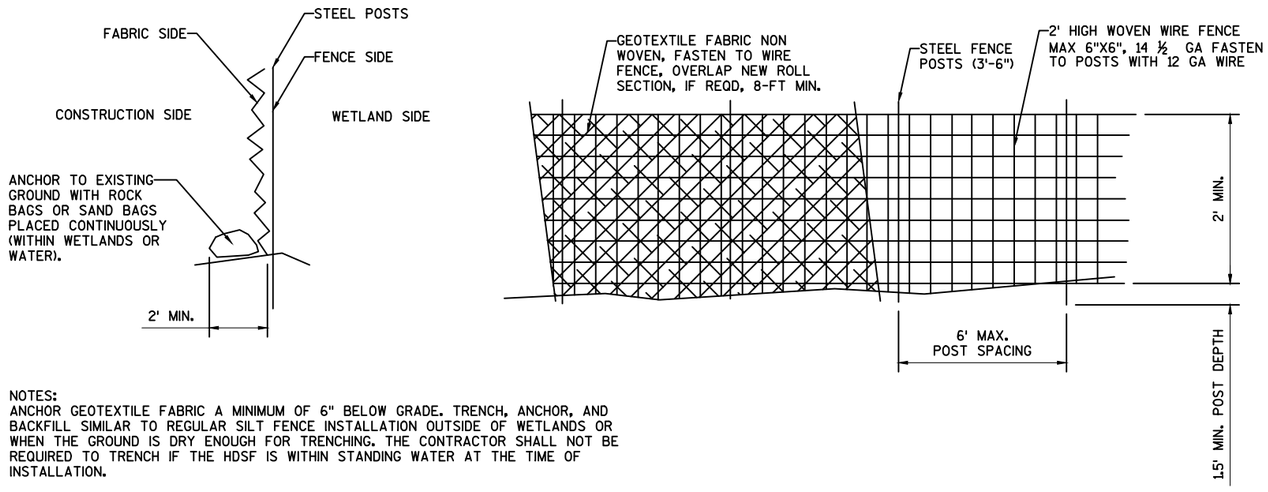
STA. 11+04 TO STA. 11+72 RT
STA. 13+34 TO STA. 14+01 LT

*NOTE: CONCRETE APPROACH SLAB AND BRIDGE
STA. 11+68.5 TO STA. 13+36.5

PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	PLAN: TYPICAL SECTIONS	SHEET 4	E



EROSION MAT DETAIL FOR DITCHES

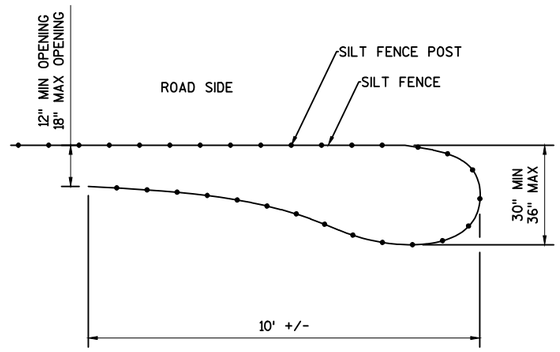


NOTES:
ANCHOR GEOTEXTILE FABRIC A MINIMUM OF 6" BELOW GRADE. TRENCH, ANCHOR, AND BACKFILL SIMILAR TO REGULAR SILT FENCE INSTALLATION OUTSIDE OF WETLANDS OR WHEN THE GROUND IS DRY ENOUGH FOR TRENCHING. THE CONTRACTOR SHALL NOT BE REQUIRED TO TRENCH IF THE HDSF IS WITHIN STANDING WATER AT THE TIME OF INSTALLATION.

ANCHOR MATERIAL IS INCIDENTAL TO SILT FENCE - SNAKE EXCLUSION BARRIER.

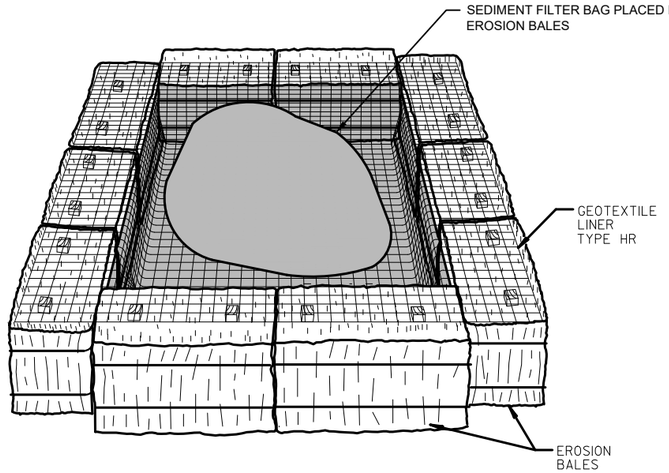
SILT FENCE - SNAKE EXCLUSION FENCING

LOCATIONS SHOWN ON EROSION CONTROL
PLANS OR AS DIRECTED BY THE ENGINEER.



SILT FENCE TURN-AROUND DETAIL

LOCATIONS SHOWN ON EROSION CONTROL
PLANS OR AS DIRECTED BY THE ENGINEER.



(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

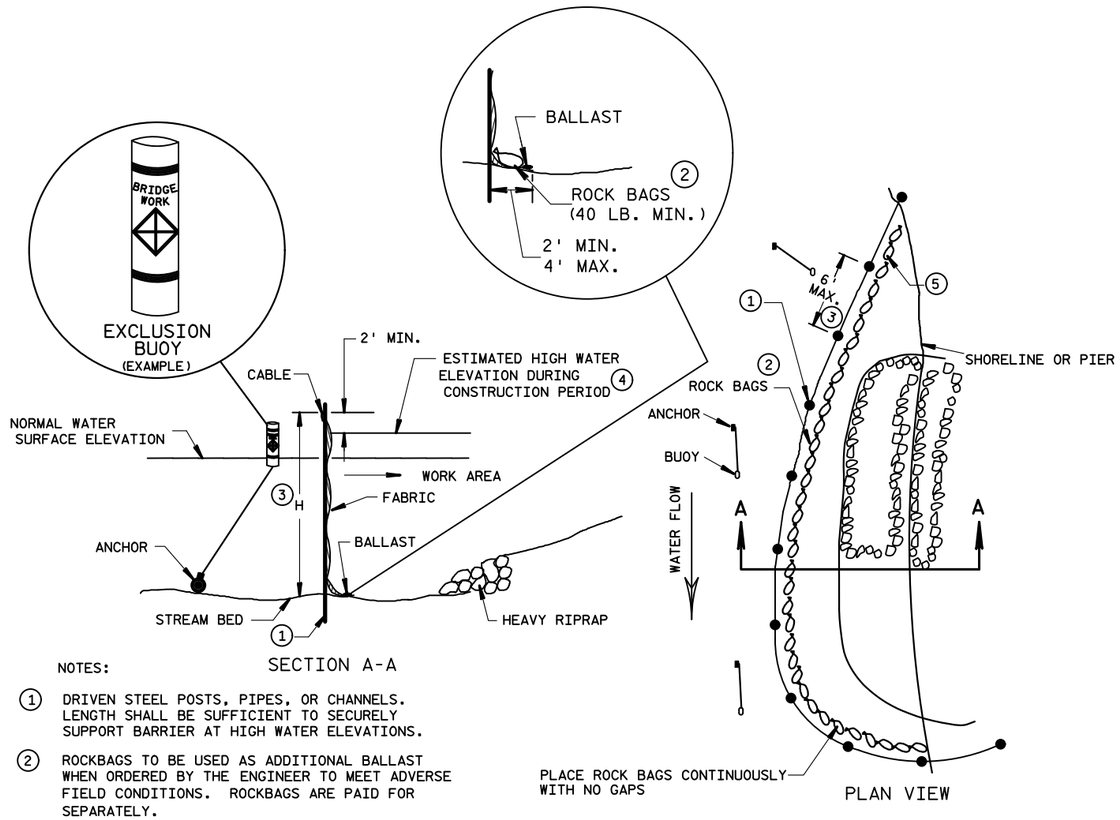
EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

$\frac{800\ C.F.}{1.5\ FT.}$ = 533 S.F.

USE A 20 FT. X 27 FT. BASIN

TEMPORARY SETTLING BASIN



NOTES:

1. DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
2. ROCKBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. ROCKBAGS ARE PAID FOR SEPARATELY.
3. WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
4. ELEVATION VALUE TO BE ESTABLISHED BY THE CONTRACTOR BASED ON THE TIME OF YEAR AND DURATION OF THE ACTIVITY.
5. CONCRETE BARRIER MAY BE USED IN PLACE OF ROCKBAGS AS A FLOW DEFLECTOR DURING ADVERSE FIELD CONDITIONS. TEMPORARY CONCRETE BARRIER IS INCIDENTAL TO THE TURBIDITARY BARRIER ITEM.

TURBIDITY BARRIER DETAIL

2

LEGEND

- PAV1 — 4" HMA PAVEMENT OVER 12" BASE AGGREGATE DENSE 1¼-INCH
- PAV2 — CONCRETE PAVEMENT APPROACH SLAB
- PAV3 — CONCRETE PAVEMENT 8-INCH
- 30D — CONCRETE CURB & GUTTER 30-INCH TYPE D
- AGG — BASE AGGREGATE DENSE ¾-INCH
- EAT — MGS ENERGY ABSORBING TERMINAL
- THR — STEEL THRIE BEAM STRUCTURE APPROACH
- FENCE SAFETY
- CLEARING AND GRUBBING

BRIAN WILLBRANDT &
MARIHELEN HOPPA-WILLBRANDT

JOSE & ERIN ORTIZ
1753 COVERED BRIDGE ROAD

ADAM POEHLMAN
1745 COVERED BRIDGE ROAD

DEBORAH PEPIN
1735 COVERED BRIDGE ROAD

CEDAR CREEK

N

BEGIN PROJECT
STA 11+40

WETLAND BOUNDARY (TYP.)

EX. R/W

SLOPE INTERCEPT (TYP.)

EXISTING ROW OF TREES TO REMAIN

EX. HIGHWAY EASEMENT

STRUCTURE B-45-115

END CONSTRUCTION
STA 14+94.50

PT: 14+36.45

PI: 15+10.88

PC: 15+26.52

CMCP 8279

POST

10+00

11+00

12+00

13+00

14+00

15+00

16+00

COVERED BRIDGE ROAD

FENCE SAFETY

SECTION LINE

BEGIN CONSTRUCTION
STA 11+02.90

CEDAR CREEK ROAD

OZAUKEE COUNTY
COVERED BRIDGE PARK

HISTORIC COVERED BRIDGE

RESET BOULDERS IMPACTED DURING CONSTRUCTION

END PROJECT
STA 13+64.00

PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	PLAN DETAIL	SHEET 7	E

FILE NAME : X:\ML\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021201_pd

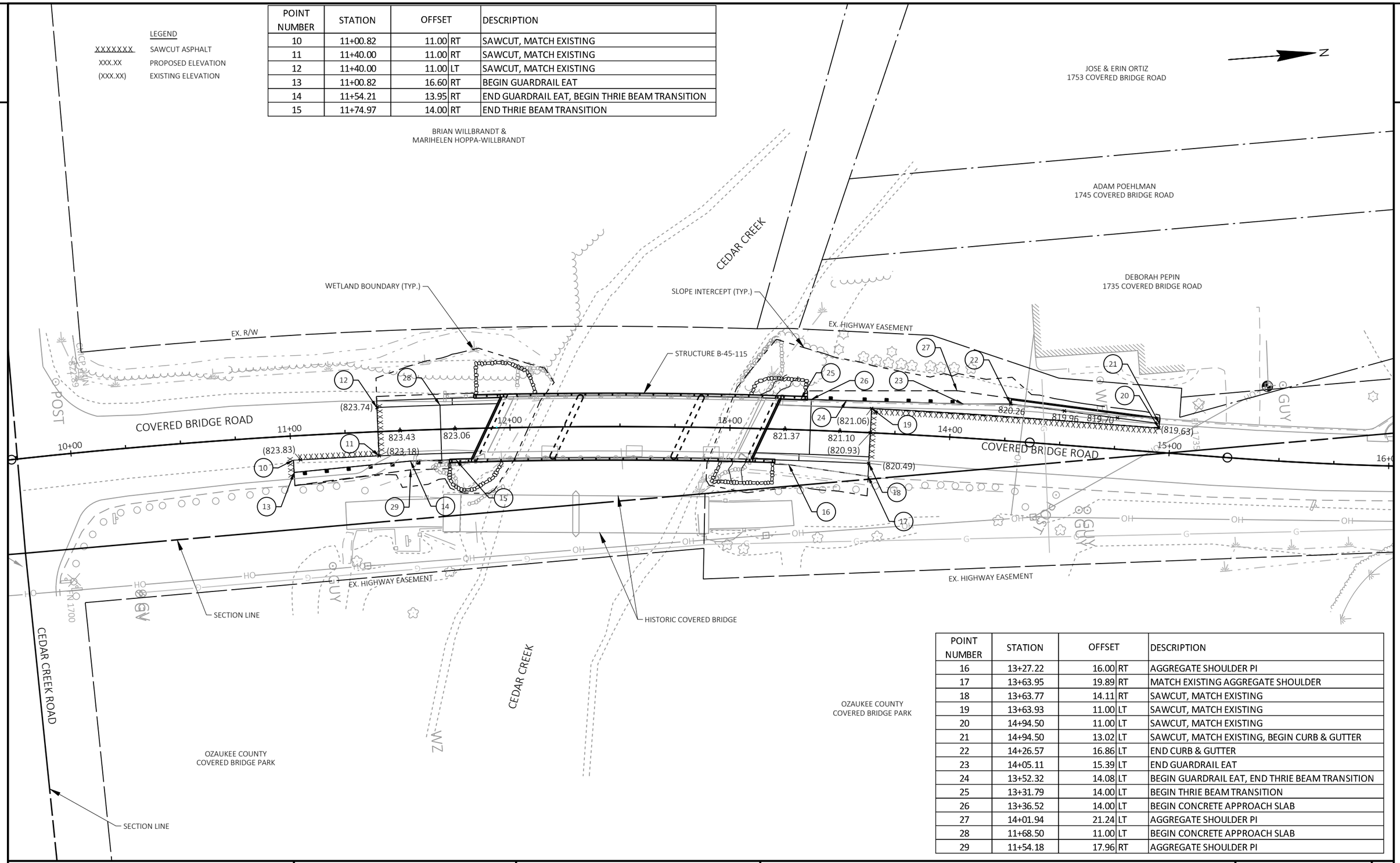
PLOT DATE : 12/27/2021 11:25 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

LEGEND

XXXXXXX	SAWCUT ASPHALT
XXX.XX	PROPOSED ELEVATION
(XXX.XX)	EXISTING ELEVATION

POINT NUMBER	STATION	OFFSET		DESCRIPTION
10	11+00.82	11.00	RT	SAWCUT, MATCH EXISTING
11	11+40.00	11.00	RT	SAWCUT, MATCH EXISTING
12	11+40.00	11.00	LT	SAWCUT, MATCH EXISTING
13	11+00.82	16.60	RT	BEGIN GUARDRAIL EAT
14	11+54.21	13.95	RT	END GUARDRAIL EAT, BEGIN THRIE BEAM TRANSITION
15	11+74.97	14.00	RT	END THRIE BEAM TRANSITION



POINT NUMBER	STATION	OFFSET		DESCRIPTION
16	13+27.22	16.00	RT	AGGREGATE SHOULDER PI
17	13+63.95	19.89	RT	MATCH EXISTING AGGREGATE SHOULDER
18	13+63.77	14.11	RT	SAWCUT, MATCH EXISTING
19	13+63.93	11.00	LT	SAWCUT, MATCH EXISTING
20	14+94.50	11.00	LT	SAWCUT, MATCH EXISTING
21	14+94.50	13.02	LT	SAWCUT, MATCH EXISTING, BEGIN CURB & GUTTER
22	14+26.57	16.86	LT	END CURB & GUTTER
23	14+05.11	15.39	LT	END GUARDRAIL EAT
24	13+52.32	14.08	LT	BEGIN GUARDRAIL EAT, END THRIE BEAM TRANSITION
25	13+31.79	14.00	LT	BEGIN THRIE BEAM TRANSITION
26	13+36.52	14.00	LT	BEGIN CONCRETE APPROACH SLAB
27	14+01.94	21.24	LT	AGGREGATE SHOULDER PI
28	11+68.50	11.00	LT	BEGIN CONCRETE APPROACH SLAB
29	11+54.18	17.96	RT	AGGREGATE SHOULDER PI

PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	PLAN DETAIL	SHEET 8	E

2

2

LEGEND

- SILT FENCE
- TURBIDITY BARRIER
- RIPRAP HEAVY (SEE STRUCTURE PLANS FOR ADDITIONAL DETAILS)
- FLOW ARROW
- TEMPORARY CONCRETE BARRIER FLOW DEFLECTOR (INCIDENTAL TO TURBIDITY BARRIER)
- EROSION MAT CLASS 1, TYPE B, SEED MIX 70, FERTILIZER
- BB — BUTTONBUSH
- RD — REDOSIER DOGWOOD

JOSE & ERIN ORTIZ
1753 COVERED BRIDGE ROAD

BRIAN WILLBRANDT &
MARIHELEN HOPPA-WILLBRANDT

ADAM POEHLMAN
1745 COVERED BRIDGE ROAD

DEBORAH PEPIN
1735 COVERED BRIDGE ROAD

N

STREAMBED (TYP.)

CONCRETE BARRIER FLOW DEFLECTOR

SILT FENCE - SNAKE EXCLUSION BARRIER

WETLAND BOUNDARY (TYP.)

TEMPORARY SETTLING BASIN.
FILTER BAG PLACED INSIDE SETTLING BASIN WITH
GEOTEXTILE FABRIC TYPE HR AND EROSION BALES

CEDAR CREEK

HEAVY RIPRAP PLACED OUTSIDE
OF STREAM ALONG SIDE OF
ABUTMENT. SEE STRUCTURE
PLANS FOR DETAILS (TYP.)

SILT FENCE - SNAKE EXCLUSION BARRIER

EX. R/W

EX. HIGHWAY EASEMENT

STRUCTURE B-45-115

BB

RD

POST

10+00

11+00

12+00

13+00

14+00

15+00

16+0

COVERED BRIDGE ROAD

SILT FENCE - SNAKE EXCLUSION BARRIER

SECTION LINE

EX. HIGHWAY EASEMENT

TEMPORARY SETTLING BASIN.
FILTER BAG PLACED INSIDE SETTLING BASIN WITH
GEOTEXTILE FABRIC TYPE HR AND EROSION BALES

HISTORIC COVERED BRIDGE

SILT FENCE - SNAKE EXCLUSION BARRIER

TURBIDITY BARRIER
ANCHORED WITH ROCK
BAGS PLACED CONTINUOUS
WITH NO GAPS AT THE BASE
OF THE BARRIER (TYP.)

CEDAR CREEK

OZAUKEE COUNTY
COVERED BRIDGE PARK

OZAUKEE COUNTY
COVERED BRIDGE PARK

CEDAR CREEK ROAD

SECTION LINE

PLANT DATA CHART				
SYMBOL	COMMON NAME	SIZE	ROOT TYPE	TOTAL
BB	BUTTON BUSH	3' HT.	CG	4
RD	DOGWOOD, REDOSIER	2' HT.	CG	4

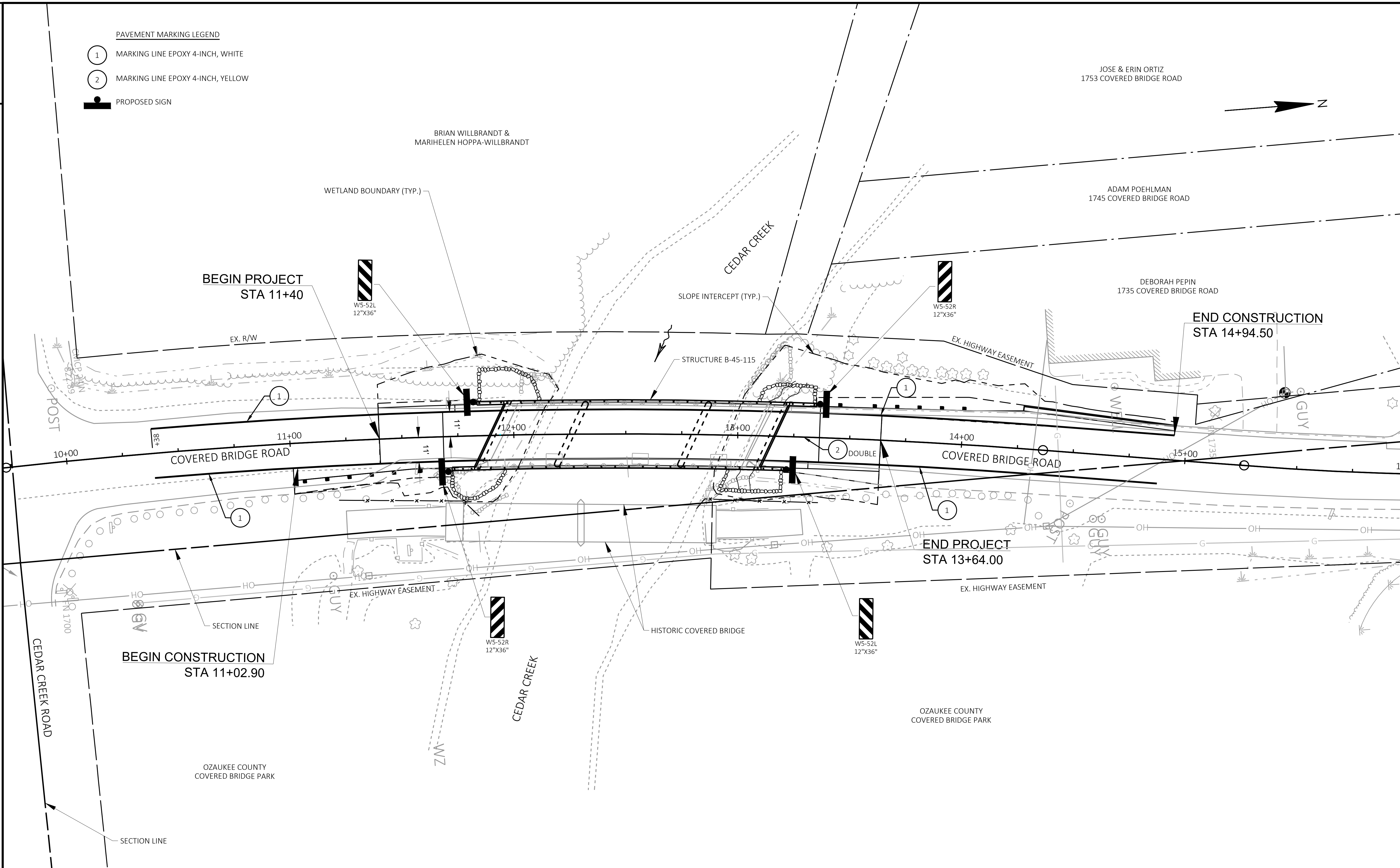
NOTE: EXACT SHRUB LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
PLANTINGS TO BE INSTALLED WITHIN 20' OF CEDAR CREEK

PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	EROSION CONTROL	SHEET 9	E

FILE NAME : X:\ML\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022001_ec

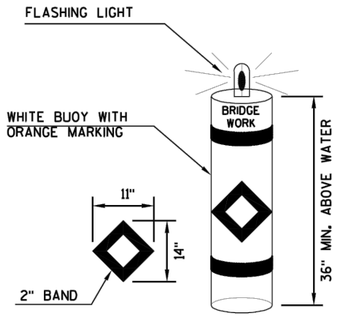
PLOT DATE : 10/5/2021 6:03 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42


PAVEMENT MARKING LEGEND
1 MARKING LINE EPOXY 4-INCH, WHITE
2 MARKING LINE EPOXY 4-INCH, YELLOW
PROPOSED SIGN
N
BRIAN WILLBRANDT &
MARIHELEN HOPPA-WILLBRANDT
JOSE & ERIN ORTIZ
1753 COVERED BRIDGE ROAD
ADAM POEHLMAN
1745 COVERED BRIDGE ROAD
DEBORAH PEPIN
1735 COVERED BRIDGE ROAD
WETLAND BOUNDARY (TYP.)
CEDAR CREEK
SLOPE INTERCEPT (TYP.)
BEGIN PROJECT
STA 11+40
W5-52L
12"X36"
W5-52R
12"X36"
END CONSTRUCTION
STA 14+94.50
EX. R/W
EX. HIGHWAY EASEMENT
STRUCTURE B-45-115
COVERED BRIDGE ROAD
10+00
11+00
12+00
13+00
14+00
15+00
16+00
11'
11'
2 DOUBLE
END PROJECT
STA 13+64.00
SECTION LINE
HISTORIC COVERED BRIDGE
BEGIN CONSTRUCTION
STA 11+02.90
W5-52R
12"X36"
W5-52L
12"X36"
CEDAR CREEK
CEDAR CREEK ROAD
OZAUKEE COUNTY
COVERED BRIDGE PARK
OZAUKEE COUNTY
COVERED BRIDGE PARK
SECTION LINE
GUY
POST
OH
G

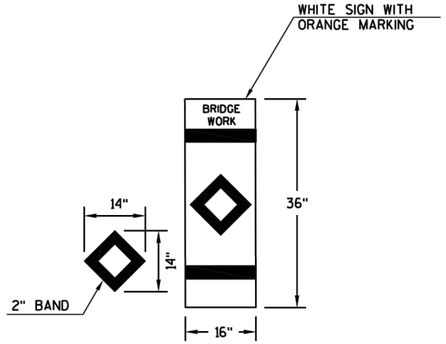
PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	PAVEMENT MARKING AND SIGNING PLAN	SHEET 10	E

FILE NAME : X:\ML\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\023201_PS.DWG
LAYOUT NAME - 021201_pd
PLOT DATE : 10/5/2021 7:26 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



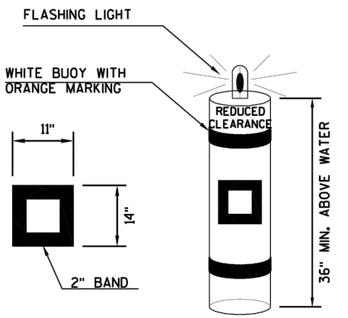
TYPICAL HAZARD WARNING BUOY DETAIL

ALL BUOYS SHALL BE 7" DIAMETER WITH RED FLASHING LIGHTS AT 30 FLASHES/MIN. IF NECESSARY



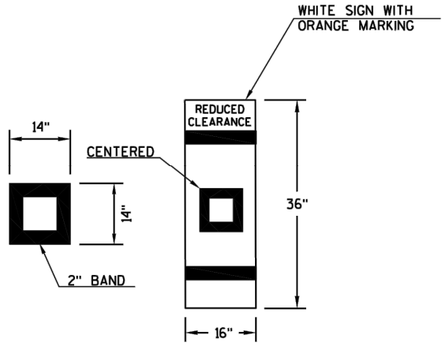
TYPICAL HAZARD WARNING SIGN DETAIL

ALL SIGNS SHALL BE MOUNTED ON A STEEL POSTS



TYPICAL INFORMATIONAL BUOY DETAIL

ALL BUOYS SHALL BE 7" DIAMETER WITH RED FLASHING LIGHTS AT 30 FLASHES/MIN.



TYPICAL INFORMATIONAL SIGN DETAIL

ALL SIGNS SHALL BE MOUNTED ON A STEEL POSTS

NOTES:

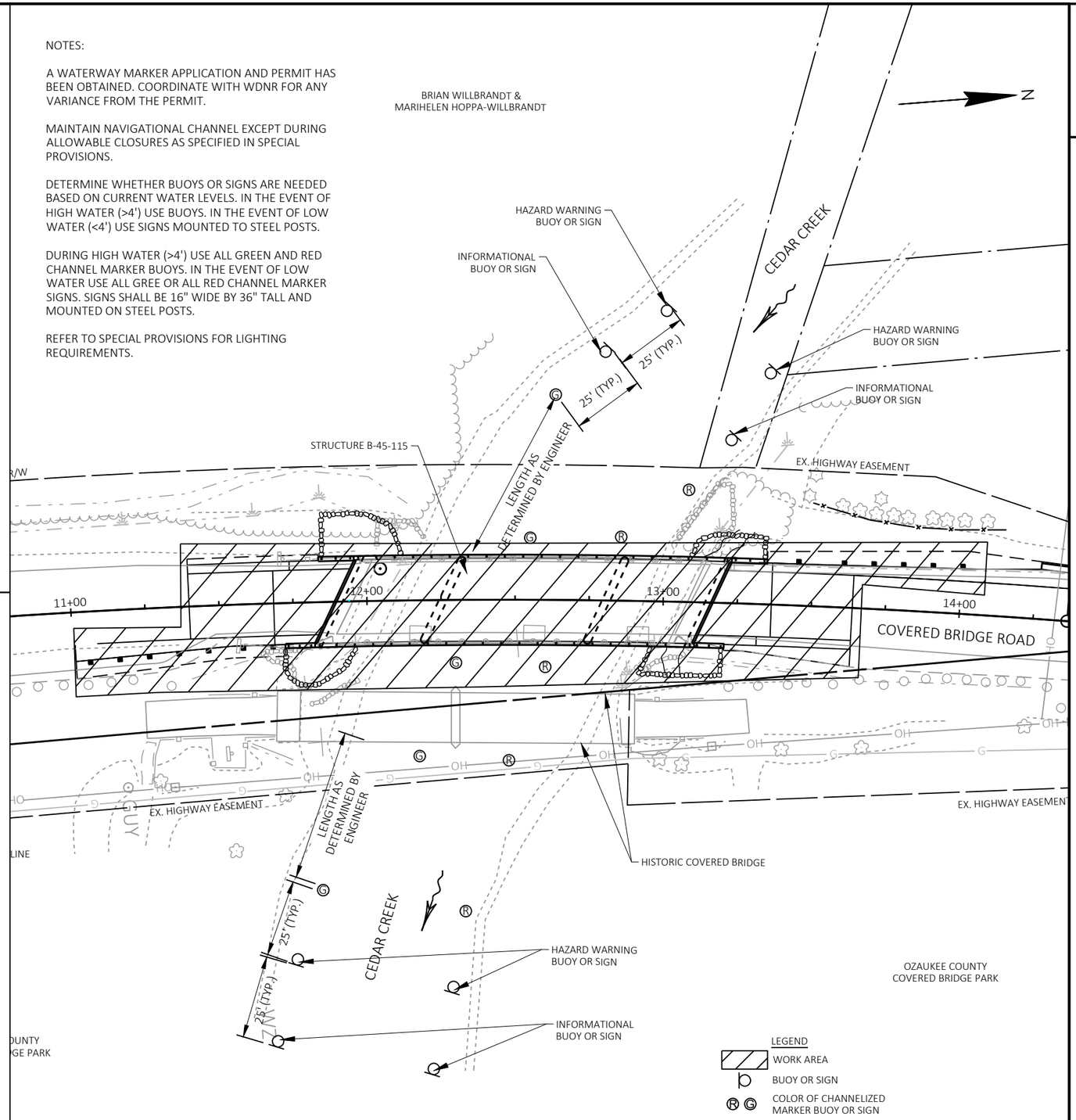
A WATERWAY MARKER APPLICATION AND PERMIT HAS BEEN OBTAINED. COORDINATE WITH WDNR FOR ANY VARIANCE FROM THE PERMIT.

MAINTAIN NAVIGATIONAL CHANNEL EXCEPT DURING ALLOWABLE CLOSURES AS SPECIFIED IN SPECIAL PROVISIONS.

DETERMINE WHETHER BUOYS OR SIGNS ARE NEEDED BASED ON CURRENT WATER LEVELS. IN THE EVENT OF HIGH WATER (>4') USE BUOYS. IN THE EVENT OF LOW WATER (<4') USE SIGNS MOUNTED TO STEEL POSTS.

DURING HIGH WATER (>4') USE ALL GREEN AND RED CHANNEL MARKER BUOYS. IN THE EVENT OF LOW WATER USE ALL GREE OR ALL RED CHANNEL MARKER SIGNS. SIGNS SHALL BE 16" WIDE BY 36" TALL AND MOUNTED ON STEEL POSTS.

REFER TO SPECIAL PROVISIONS FOR LIGHTING REQUIREMENTS.



PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	BOATING TRAFFIC CONTROL - BUOYS AND SIGNS CHANNELIZING	SHEET 11	E

FILE NAME : X:\MIL\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\021002_BUOY_CD.DWG
LAYOUT NAME - 021201_pd
PLOT DATE : 10/5/2021 6:05 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

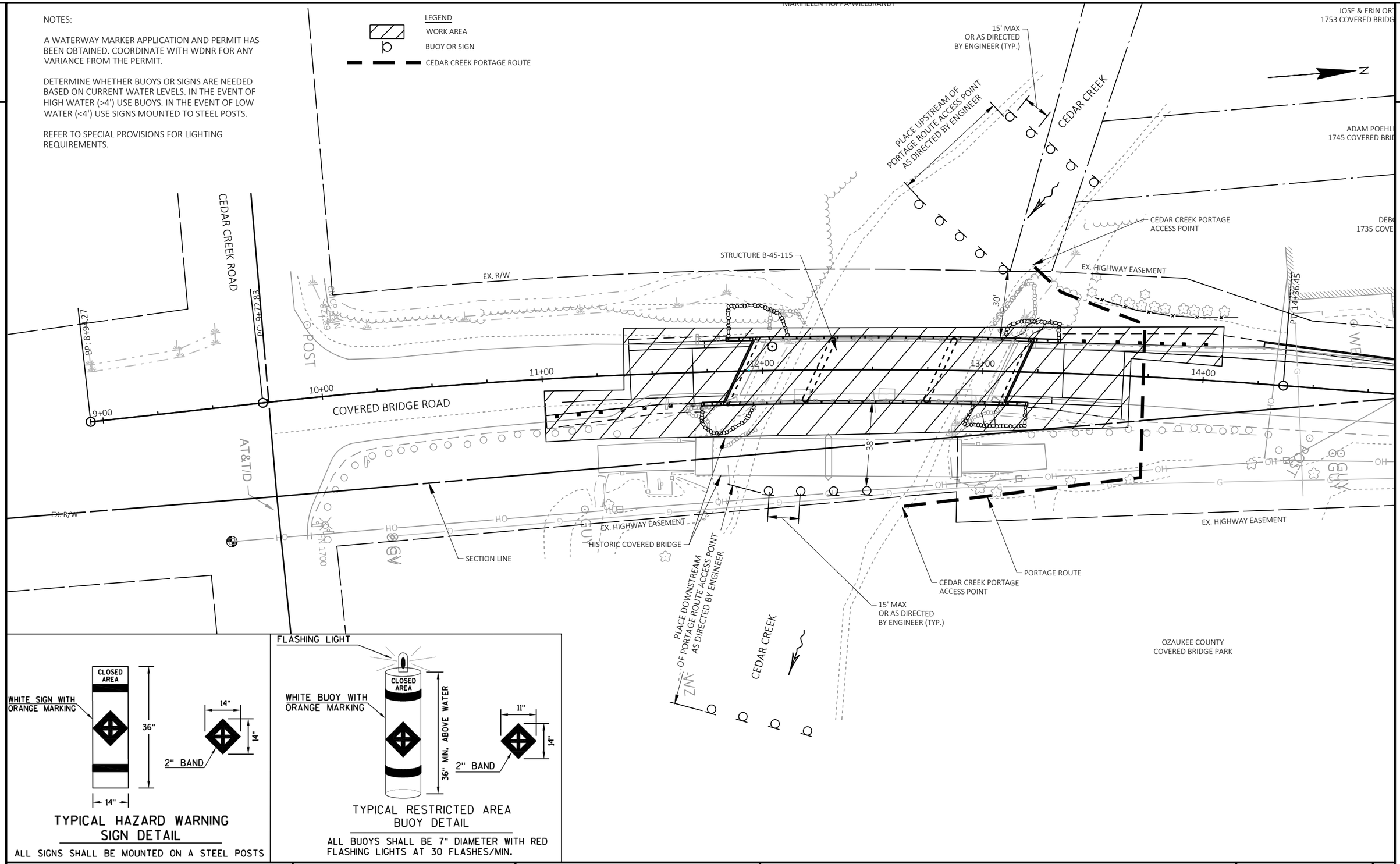
NOTES:

A WATERWAY MARKER APPLICATION AND PERMIT HAS BEEN OBTAINED. COORDINATE WITH WDNR FOR ANY VARIANCE FROM THE PERMIT.

DETERMINE WHETHER BUOYS OR SIGNS ARE NEEDED BASED ON CURRENT WATER LEVELS. IN THE EVENT OF HIGH WATER (>4') USE BUOYS. IN THE EVENT OF LOW WATER (<4') USE SIGNS MOUNTED TO STEEL POSTS.

REFER TO SPECIAL PROVISIONS FOR LIGHTING REQUIREMENTS.

LEGEND
WORK AREA
BUOY OR SIGN
CEDAR CREEK PORTAGE ROUTE



TYPICAL HAZARD WARNING SIGN DETAIL

ALL SIGNS SHALL BE MOUNTED ON A STEEL POSTS

TYPICAL RESTRICTED AREA BUOY DETAIL

ALL BUOYS SHALL BE 7" DIAMETER WITH RED FLASHING LIGHTS AT 30 FLASHES/MIN.

PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	BOATING TRAFFIC CONTROL - CEDAR CREEK CLOSURE	SHEET 12	E

FILE NAME : X:\ML\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\021003_RIVER CLOSURE_CD.DWG
LAYOUT NAME - 021201_pd
PLOT DATE : 10/5/2021 6:06 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

GENERAL NOTES

ALL EXISTING SIGN MESSAGES THAT CONFLICT WITH TRAFFIC CONTROL DETOUR SIGNS SHALL BE COVERED OR REMOVED

SEE 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 M3 SERIES SIGNS WHICH ARE PART OF THE DETOUR ROUTE MARKER SIGNING ASSEMBLY OR ATTACHED TO ANY WARNING SIGN SHALL BE BLACK LETTERING ON A WHITE BACKGROUND

1 — NORTH / COVERED BRIDGE RD — M3-1 24"X12" — 24"X24"
DETOUR AHEAD — W20-2A

2 — DETOUR / NORTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-1 24"X12" — 24"X24" — M6-1 21"X21"

3 — DETOUR / NORTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-1 24"X12" — 24"X24" — M5-1L 21"X21"

4 — DETOUR / NORTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-1 24"X12" — 24"X24" — M6-1 21"X21"

5 — DETOUR / NORTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-1 24"X12" — 24"X24" — M5-1R 21"X21"

6 — DETOUR / NORTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-1 24"X12" — 24"X24" — M6-1 21"X21"

7 — END DETOUR / NORTH / COVERED BRIDGE RD — M4-8A 24"X18" — M3-1 24"X12" — 24"X24"

8 — SOUTH / COVERED BRIDGE RD — M3-3 24"X12" — 24"X24"
DETOUR AHEAD — W20-2A

9 — DETOUR / SOUTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-3 24"X12" — 24"X24" — M6-1 21"X21"

10 — DETOUR / SOUTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-3 24"X12" — 24"X24" — M5-1L 21"X21"

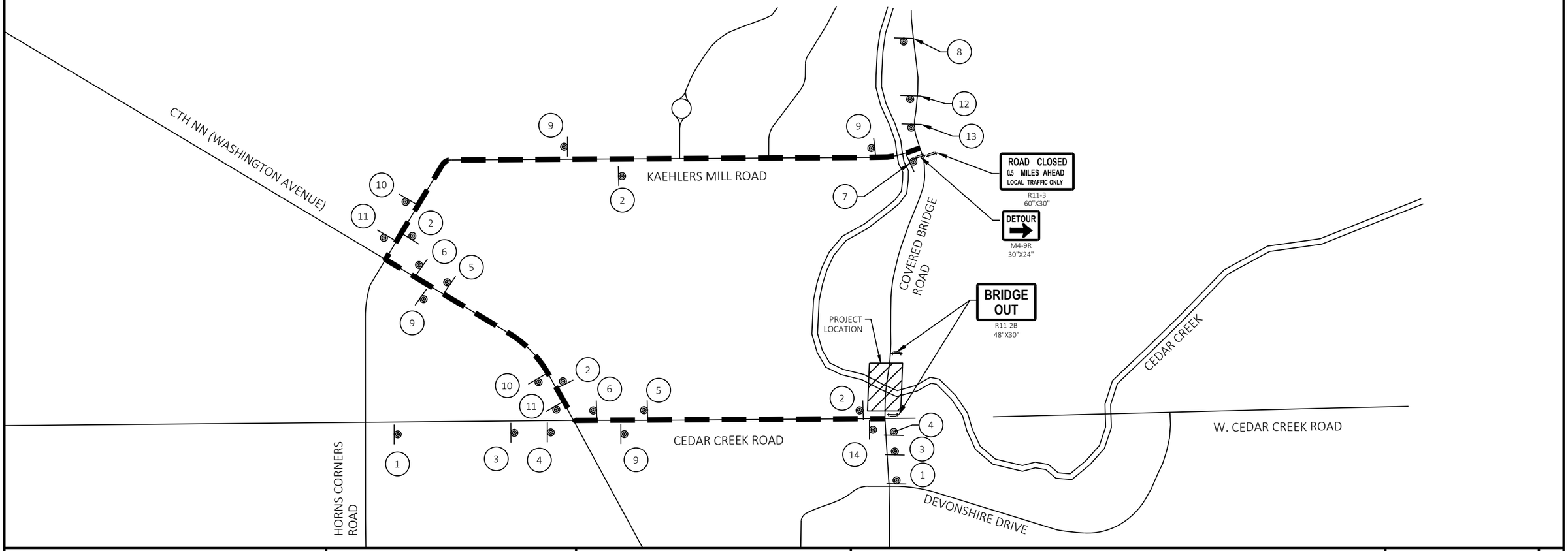
11 — DETOUR / SOUTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-3 24"X12" — 24"X24" — M6-1 21"X21"

12 — DETOUR / SOUTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-3 24"X12" — 24"X24" — M5-1R 21"X21"

13 — DETOUR / SOUTH / COVERED BRIDGE RD — M4-8 24"X12" — M3-3 24"X12" — 24"X24" — M6-1 21"X21"

14 — END DETOUR / SOUTH / COVERED BRIDGE RD — M4-8A 24"X18" — M3-3 24"X12" — 24"X24"

N



PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	DETOUR PLAN	SHEET 13	E

2

2

N

CEDAR CREEK

W. CEDAR CREEK ROAD

KAEHLERS MILL ROAD

BRIDGE OUT
R11-2B

ROAD CLOSED
R11-2

DETOUR
M4-9L

ROAD CLOSED
R11-2

BRIDGE OUT
R11-2B

ROAD CLOSED 500 FT
W20-3D

ROAD CLOSED 1000 FT
W20-3C

COVERED BRIDGE ROAD

DETOUR
M4-9R

ROAD CLOSED
0.5 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- WORK AREA

GENERAL NOTES

SEE SDD "BARRICADES AND SIGNS 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

PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	DETOUR PLAN	SHEET 14	E

FILE NAME : X:\ML\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\025001_TC.DWG
LAYOUT NAME - Plan 1 IN 100 FT

PLOT DATE : 10/5/2021 6:04 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 42

2

N

COVERED BRIDGE ROAD

12+00

11+00

10+00

9+00

CURVE 1
PI STA = 12+05.31
Y = 408582.777
X = 580544.578
DELTA = 10°40'05"
D = 2°18'04"
T = 232.48'
L = 463.62'
R = 2490.00'
PC STA = 9+72.83
PT STA = 14+36.45

CP-501
FENO W/ALUMINUM CAP
STA: 10+59.83, 29.74' RT
N: 408,437.31
E: 580,580.47
EL: 824.12

BM #1
NAIL 0.3' ABG. W. FACE P.P 00-19272 AT
SE. CORNER COVERED BRIDGE RD. &
CEDAR CREEK RD.
STA: 9+51.92, 61.03' RT
N: 408,331.47
E: 580,613.66
EL: 826.78

Y = 408350.411
X = 580551.989

PC: 9+72.83

N1° 49' 36"W
78.56'

BP: 8+94.27

Y = 408271.892
X = 580554.493

WZ
GUY
GV
POST
EN 1700
CMCP 2HIN
821.89

PI: 17+91.43

PT: 17+69.37

Y = 409165.490
X = 580611.767

N0° 26' 06"W
22.06'

Y = 409143.434
X = 580611.934

18+00

17+00

16+00

CMCP1
816.10

CMCP1 B 18IN
816.65

EN 1745 1753

CP-502
FENO W/ALUMINUM CAP
STA: 16+65.02, 22.90' LT
N: 409,040.56
E: 580,586.24
EL: 817.24

CURVE 2
PI STA = 16+48.21
Y = 409021.744
X = 580612.858
DELTA = 9°16'35"
D = 3°49'11"
T = 121.69'
L = 242.85'
R = 1500.00'
PC STA = 15+26.52
PT STA = 17+69.37

BM #2
R.R SPIKE 1.0' ABG. E. FACE P.P
E61-14871 W. SIDE COVERED
BRIDGE RD. AT HOUSE #1735.
STA: 15+42.55, 33.62' LT
N: 408,922.16
E: 580,563.26
EL: 820.12

Y = 408901.497
X = 580594.154

PC: 15+26.52

N8° 50' 29"E
15.64'

PI: 15+10.88

Y = 408886.044
X = 580591.750

N8° 50' 29"E
74.43'

PT: 14+36.45

Y = 408812.499
X = 580580.310

EN 1735

WELL

PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	ALIGNMENT LAYOUT SURVEY CONTROL	SHEET 15	E

FILE NAME : X:\ML\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\027220_AD_CP.DWG
LAYOUT NAME - 027220_ad_cp

PLOT DATE : 10/5/2021 8:56 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:40 FT

2695-11-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0110	Clearing	SY	191.000	191.000
0004	201.0210	Grubbing	SY	191.000	191.000
0006	203.0270	Removing Structure Over Waterway Debris Capture (structure) 01. B-45-13	EACH	1.000	1.000
0008	204.0150	Removing Curb & Gutter	LF	175.000	175.000
0010	205.0100	Excavation Common	CY	172.000	172.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-45-115	LS	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	265.000	265.000
0016	213.0100	Finishing Roadway (project) 01. 2695-11-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	42.000	42.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	331.000	331.000
0022	415.0080	Concrete Pavement 8-Inch	SY	22.000	22.000
0024	415.0410	Concrete Pavement Approach Slab	SY	99.000	99.000
0026	455.0605	Tack Coat	GAL	26.000	26.000
0028	460.2000	Incentive Density HMA Pavement	DOL	40.000	40.000
0030	460.5223	HMA Pavement 3 LT 58-28 S	TON	34.000	34.000
0032	460.5224	HMA Pavement 4 LT 58-28 S	TON	26.000	26.000
0034	502.0100	Concrete Masonry Bridges	CY	391.000	391.000
0036	502.3200	Protective Surface Treatment	SY	513.000	513.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	7,380.000	7,380.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	64,760.000	64,760.000
0042	513.4061	Railing Tubular Type M	LF	310.000	310.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	21.000	21.000
0046	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	990.000	990.000
0048	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	68.000	68.000
0050	606.0300	Riprap Heavy	CY	199.000	199.000
0052	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	147.000	147.000
0054	614.0200	Steel Thrie Beam Structure Approach	LF	42.000	42.000
0056	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0058	616.0700.S	Fence Safety	LF	187.000	187.000
0060	618.0100	Maintenance And Repair of Haul Roads (project) 01. 2695-11-70	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	624.0100	Water	MGAL	6.700	6.700
0066	625.0100	Topsoil	SY	380.000	380.000
0068	628.1104	Erosion Bales	EACH	53.000	53.000
0070	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0072	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0074	628.2004	Erosion Mat Class I Type B	SY	380.000	380.000
0076	628.6005	Turbidity Barriers	SY	226.000	226.000
0078	628.7570	Rock Bags	EACH	226.000	226.000
0080	629.0210	Fertilizer Type B	CWT	0.200	0.200
0082	630.0170	Seeding Mixture No. 70	LB	1.400	1.400
0084	630.0200	Seeding Temporary	LB	11.000	11.000
0086	630.0500	Seed Water	MGAL	9.000	9.000
0088	632.0201	Shrubs (species) (size) (root) 01. Buttonbush CG 3-ft Ht	EACH	4.000	4.000
0090	632.0201	Shrubs (species) (size) (root) 02. Dogwood Redosier CG 2-ft Ht	EACH	4.000	4.000
0092	632.9101	Landscape Planting Surveillance and Care Cycles	EACH	14.000	14.000
0094	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0096	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0098	638.2602	Removing Signs Type II	EACH	4.000	4.000

2695-11-70

Line	Item	Item Description	Unit	Total	Qty
0100	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0102	642.5001	Field Office Type B	EACH	1.000	1.000
0104	643.0420	Traffic Control Barricades Type III	DAY	1,272.000	1,272.000
0106	643.0705	Traffic Control Warning Lights Type A	DAY	2,544.000	2,544.000
0108	643.0900	Traffic Control Signs	DAY	3,816.000	3,816.000
0110	643.0920	Traffic Control Covering Signs Type II	EACH	4.000	4.000
0112	643.5000	Traffic Control	EACH	1.000	1.000
0114	645.0111	Geotextile Type DF Schedule A	SY	107.000	107.000
0116	645.0120	Geotextile Type HR	SY	384.000	384.000
0118	645.0135	Geotextile Type SR	SY	75.000	75.000
0120	646.1020	Marking Line Epoxy 4-Inch	LF	1,812.000	1,812.000
0122	650.5000	Construction Staking Base	LF	223.000	223.000
0124	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	68.000	68.000
0126	650.6500	Construction Staking Structure Layout (structure) 01. B-45-115	LS	1.000	1.000
0128	650.7000	Construction Staking Concrete Pavement	LF	40.000	40.000
0130	650.9910	Construction Staking Supplemental Control (project) 01. 2695-11-70	LS	1.000	1.000
0132	650.9920	Construction Staking Slope Stakes	LF	223.000	223.000
0134	690.0150	Sawing Asphalt	LF	225.000	225.000
0136	715.0502	Incentive Strength Concrete Structures	DOL	2,346.000	2,346.000
0138	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0140	999.1001.S	Seismograph	EACH	1.000	1.000
0142	999.1501.S	Crack and Damage Survey	EACH	1.000	1.000
0144	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	400.000	400.000
0146	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000
0148	SPV.0060	Special 02. Sediment Filter Bag	EACH	2.000	2.000
0150	SPV.0090	Special 01. Silt Fence - Snake Exclusion Fencing	LF	655.000	655.000

3

STREET	STATION	TO	STATION	CLEARING 201.0110 SY	GRUBBING 201.0210 SY
COVERED BRIDGE ROAD	11+40	-	13+64	191	191
		PROJECT TOTAL		191	191

REMOVING CURB & GUTTER

STREET	STATION	TO	STATION	204.0150 LF
COVERED BRIDGE ROAD	11+40	-	13+64	175
		PROJECT TOTAL		175

3

EARTHWORK SUMMARY

Division	From/To Station	Location	Common Excavation (1) (item # 205.0100)		Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow	Comment:
			Cut (2)	EBS Excavation (3)				Factor 1.30				
CATEGORY 0010 COVERED BRIDGE ROAD		Mainline	172	0	23	149	21	28	121	121	-	
PROJECT TOTAL			Total Common Exc	172	23	149	21	28	121	121	-	

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
13) Expanded Fill. Factor = 1.3

Expanded Fill = Unexpanded Fill * Fill Factor

14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

ALL ITEMS CATEGORY 0010

3

FINISHING ROADWAY

PROJECT	213.0100 EACH
2695-11-70	1
PROJECT TOTAL	1

BASE AGGREGATE DENSE 3/4 INCH

STREET	STA	TO	STA	305.0110 TON
COVERED BRIDGE ROAD	11+40	-	13+64	25
PROJECT TOTAL				25

3

BASE AGGREGATE DENSE 1-1/4 INCH

STREET	STA	TO	STA	305.0120 TON
COVERED BRIDGE ROAD	11+40	-	13+64	331
PROJECT TOTAL				331

CONCRETE PAVEMENT 8-INCH

STREET	STATION	TO	STATION	415.0080 SY
COVERED BRIDGE ROAD	11+30	-	13+64	22
PROJECT TOTAL				22

CONCRETE PAVEMENT APPROACH SLAB

STREET	STATION	TO	STATION	415.0410 SY
COVERED BRIDGE ROAD	11+30	-	13+64	99
PROJECT TOTAL				99

ASPHALTIC PAVEMENT

STREET	FROM		TO	455.0605 TACK COAT GAL	460.5223 HMA PAVEMENT 3 LT 58-28 S TON	460.5224 HMA PAVEMENT 4 LT 58-28 S TON
COVERED BRIDGE ROAD	11+40	-	13+64	26	34	26
PROJECT TOTALS				26	34	26

CONCRETE CURB & GUTTER 30-INCH, TYPE D

STREET	STATION	TO	STATION	601.0411 LF
COVERED BRIDGE ROAD	11+40	-	13+64	68
PROJECT TOTAL				68

ALL ITEMS CATEGORY 0010

3

STEEL THRIE BEAM STRUCTURE APPROACH

STREET	STATION	TO	STATION		614.0200 LF
COVERED BRIDGE ROAD	11+54	-	11+75	RT	21
COVERED BRIDGE ROAD	13+32	-	13+52	LT	21
PROJECT TOTAL					42

MGS GUARDRAIL TERMINAL EAT

STREET	STATION	TO	STATION	OFFSET	614.2610 EACH
COVERED BRIDGE ROAD	11+01	-	11+54	RT	1
COVERED BRIDGE ROAD	13+52	-	14+05	LT	1
PROJECT TOTAL					2

3

FENCE SAFETY

STREET	STATION	TO	STATION	616.0700.S LF
COVERED BRIDGE ROAD	11+40	-	13+63	187
PROJECT TOTAL				187

WATER

STREET	FROM		TO	624.0100 MGAL
COVERED BRIDGE ROAD	11+40	-	13+64	5.3
UNDISTRIBUTED				1.3
PROJECT TOTAL				6.7

NOTE: WATER IS FOR BASE PLACEMENT

EROSION BALES

STREET	STATION	TO	STATION	628.1104 EACH
COVERED BRIDGE ROAD	11+40	-	13+64	42
UNDISTRIBUTED				11
PROJECT TOTAL				53

EROSION CONTROL MOBILIZATIONS

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
COVERED BRIDGE ROAD	3	6
PROJECT TOTAL	3	6

EROSION CONTROL

STREET	FROM		TO	625.0100 TOPSOIL SY	628.2004 EROSION MAT CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0170 SEEDING MIXTURE NO. 70 LB	630.0200 SEEDING TEMPORARY LB	SPV.0060.02 SEDIMENT FILTER BAG EACH	630.0500 SEED WATER MGAL
COVERED BRDIGE ROAD	11+40	-	13+64	304	304	0.19	1.1	8	2	7
UNDISTRIBUTED				76	76	0.05	0.3	2	-	2
PROJECT TOTAL				380	380	0.2	1.4	11	2	9

ALL ITEMS CATEGORY 0010

3

STREET	FROM	TO	STATION	628.6005 TURBIDITY BARRIERS SY	628.7570 ROCK BAGS EACH
COVERED BRIDGE ROAD	11+40	-	13+64	181	181
UNDISTRIBUTED				45	45
			PROJECT TOTALS	226	226

LOCATION	632.0201.01 SHRUBS (SPECIES) (SIZE) (ROOT) BUTTONBUSH CG 3-FT HT EACH	632.0201.02 SHRUBS (SPECIES) (SIZE) (ROOT) DOGWOOD REDOSIER CG 2-FT HT EACH	632.9101 LANDSCAPE PLANTING SURVEILLANCE AND CARE CYCLES EACH
SOUTH ABUTMENT	2	2	-
NORTH ABUTMENT	2	2	-
UNDISTRIBUTED	-	-	14
PROJECT TOTALS	4	4	14

3

POSTS WOOD 4X6-INCH X 12-FT

STREET	STATION	TO	STATION	634.0612 EACH
COVERED BRIDGE ROAD	11+40	-	13+63	4
			PROJECT TOTAL	4

SIGNS TYPE II REFLECTIVE F

STREET	STATION	TO	STATION	637.2230 SF
COVERED BRIDGE ROAD	11+40	-	13+64	12
			PROJECT TOTAL	12

ALL ITEMS CATEGORY 0010

3

REMOVING SIGNS TYPE II

STREET	STATION	TO	STATION	638.2602 EACH
COVERED BRIDGE ROAD	11+40	-	13+64	4
			PROJECT TOTAL	4

REMOVING SMALL SIGN SUPPORTS

STREET	STATION	TO	STATION	638.3000 EACH
COVERED BRIDGE ROAD	11+40	-	13+64	4
			PROJECT TOTAL	4

3

TRAFFIC CONTROL

LOCATION	STAGE DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	643.0900 TRAFFIC CONTROL SIGNS	DAY
COVERED BRIDGE ROAD	106	12	1,272	24	2,544	36	3,816
PROJECT TOTALS			1,272		2,544		3,816

TRAFFIC CONTROL COVERING SIGNS TYPE II

LOCATION	EACH	CYCLES	643.0920 SIGNS
UNDISTRIBUTED	4	1	4
PROJECT TOTALS			4

GEOTEXTILE TYPE HR

STREET	STATION	TO	STATION	645.0120 SY
COVERED BRIDGE ROAD	11+40	-	13+64	63
UNDISTRIBUTED				16
			PROJECT TOTAL	79

GEOTEXTILE TYPE SR

STREET	STATION	TO	STATION	645.0135 SY
COVERED BRIDGE ROAD	11+40	-	13+64	--
UNDISTRIBUTED				75
			PROJECT TOTAL	75

MARKING

STREET	LOCATION			646.1020 LINE EPOXY 4-INCH WHITE LF	LINE EPOXY 4-INCH YELLOW LF
COVERED BRIDGE ROAD	11+40	-	13+64	906	906
			PROJECT TOTAL	1,812	

ALL ITEMS CATEGORY 0010

3

CONSTRUCTION STAKING ITEMS

ITEM	QUANTITY	UNIT	DESCRIPTION
650.5000	223	LF	CONSTRUCTION STAKING BASE
650.5500	68	LF	CONSTRUCTION STAKING CURB & GUTTER
650.6500	1	LS	CONSTRUCTION STAKING STRUCTURE LAYOUT B-45-115
650.7000	40	LF	CONSTRUCTION STAKING CONCRETE PAVEMENT
650.9910	1	LS	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (ID 2695-11-70)
650.9920	223	LF	CONSTRUCTION STAKING SLOPE STAKES

3

SAWING ASPHALT

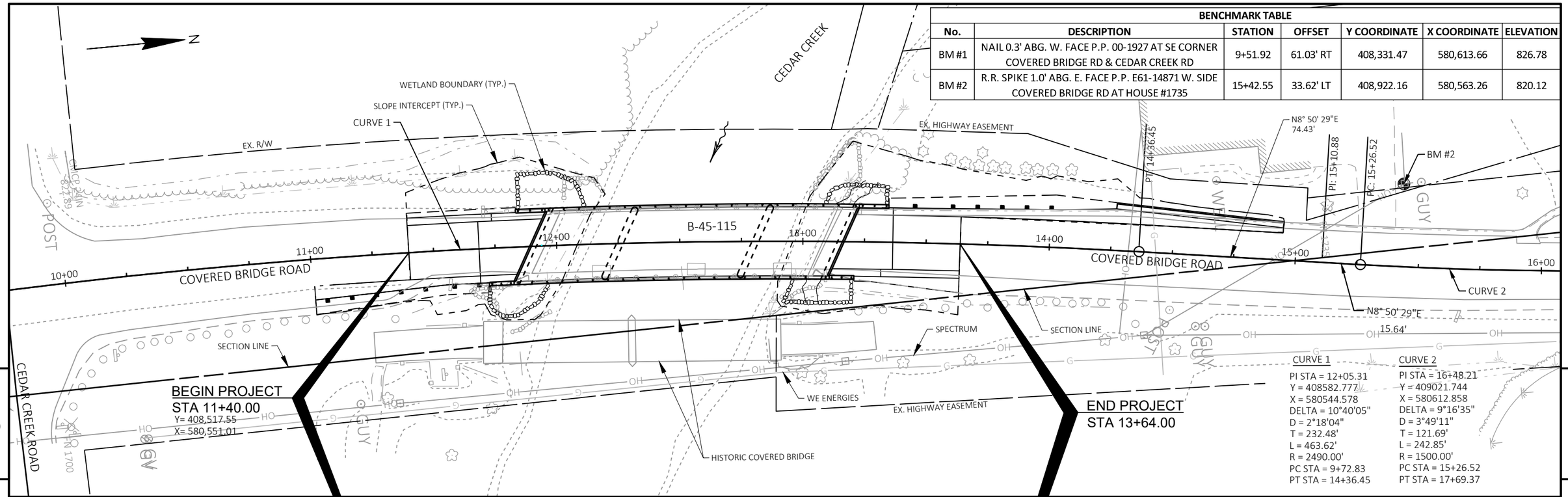
STREET	STATION	TO	STATION	690.0150 LF
COVERED BRIDGE ROAD	11+40	-	13+63	225
			PROJECT TOTAL	225

SILT FENCE

STREET	FROM	TO	STATION	SPV.0090.01 SILT FENCE- SNAKE EXCLUSION FENCING LF
COVERED BRIDGE ROAD	11+40	-	13+64	655
			PROJECT TOTALS	655

ALL ITEMS CATEGORY 0010

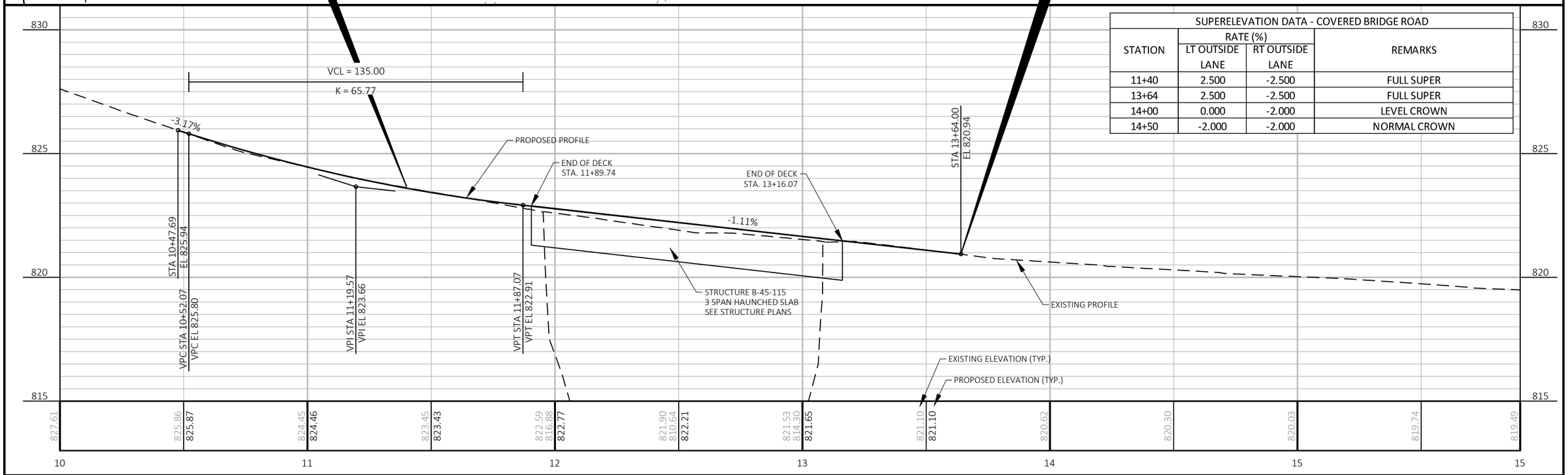
BENCHMARK TABLE						
No.	DESCRIPTION	STATION	OFFSET	Y COORDINATE	X COORDINATE	ELEVATION
BM #1	NAIL 0.3' ABG. W. FACE P.P. 00-1927 AT SE CORNER COVERED BRIDGE RD & CEDAR CREEK RD	9+51.92	61.03' RT	408,331.47	580,613.66	826.78
BM #2	R.R. SPIKE 1.0' ABG. E. FACE P.P. E61-14871 W. SIDE COVERED BRIDGE RD AT HOUSE #1735	15+42.55	33.62' LT	408,922.16	580,563.26	820.12



CURVE 1
PI STA = 12+05.31
Y = 408582.777
X = 580544.578
DELTA = 10°40'05"
D = 2°18'04"
T = 232.48'
L = 463.62'
R = 2490.00'
PC STA = 9+72.83
PT STA = 14+36.45

CURVE 2
PI STA = 16+48.21
Y = 409021.744
X = 580612.858
DELTA = 9°16'35"
D = 3°49'11"
T = 121.69'
L = 242.85'
R = 1500.00'
PC STA = 15+26.52
PT STA = 17+69.37

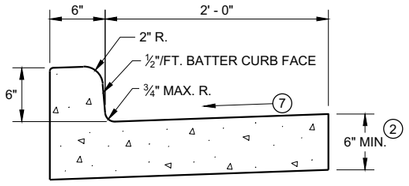
SUPERELEVATION DATA - COVERED BRIDGE ROAD			
STATION	RATE (%) LT OUTSIDE LANE	RATE (%) RT OUTSIDE LANE	REMARKS
11+40	2.500	-2.500	FULL SUPER
13+64	2.500	-2.500	FULL SUPER
14+00	0.000	-2.000	LEVEL CROWN
14+50	-2.000	-2.000	NORMAL CROWN



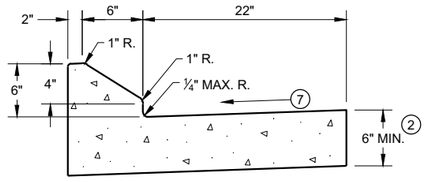
PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	PLAN AND PROFILE: COVERED BRIDGE ROAD	SHEET 24	E

Standard Detail Drawing List

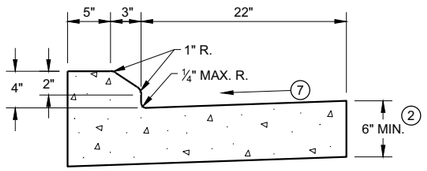
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



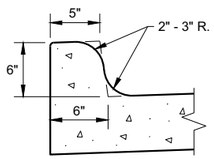
TYPES A (1) & D



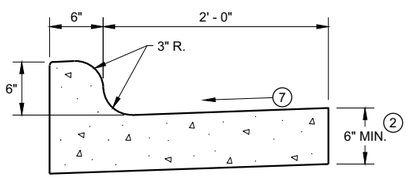
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

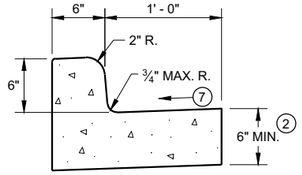


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



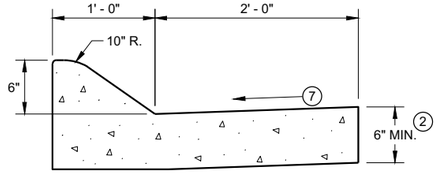
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"



TYPES A (1) & D

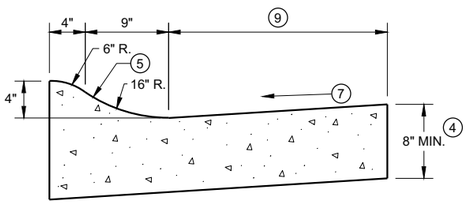
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

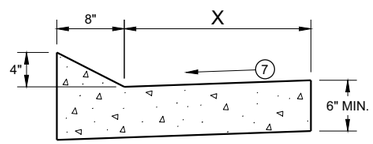
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

TBT & TBTT	X
30"	22"
36"	28"

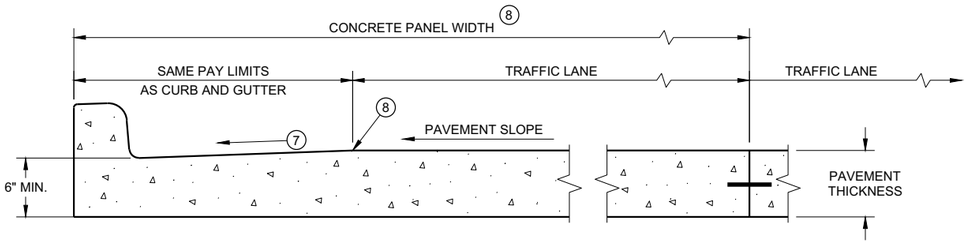


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

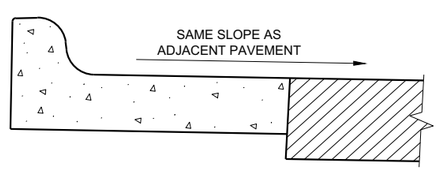
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION 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 AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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 GUTTERS TYPES A, G, K, R, AND TBTT.

(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) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) 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.

(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

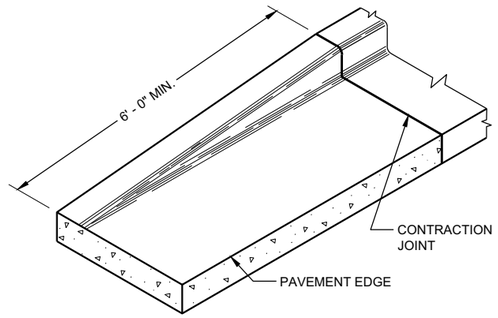
(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

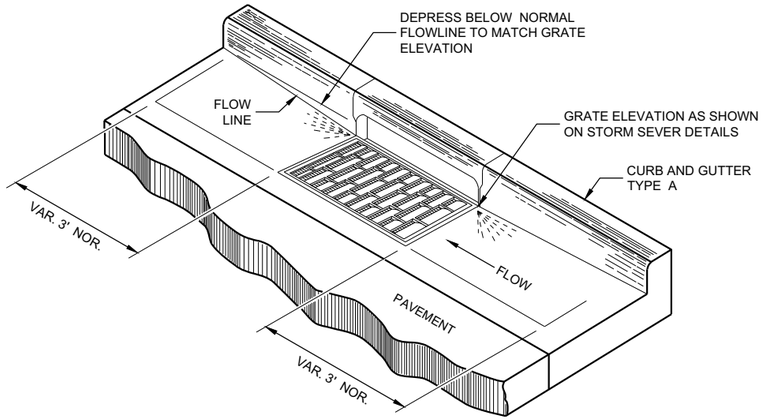
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 08D01 - 22a



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

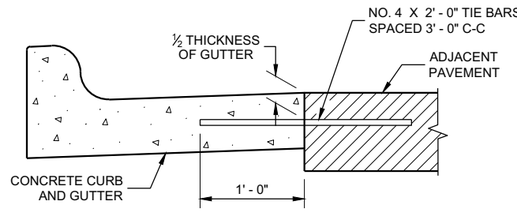
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

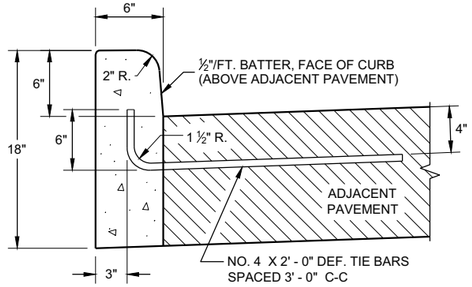
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(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.

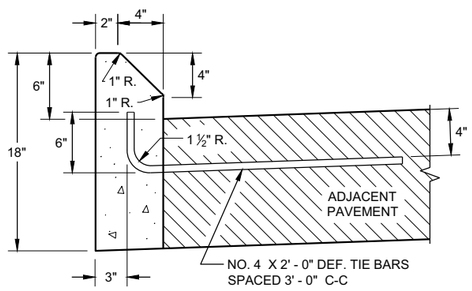
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

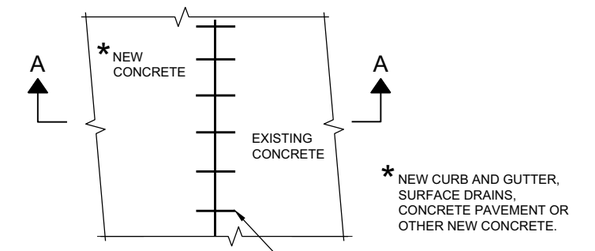


TYPES A (1) & D

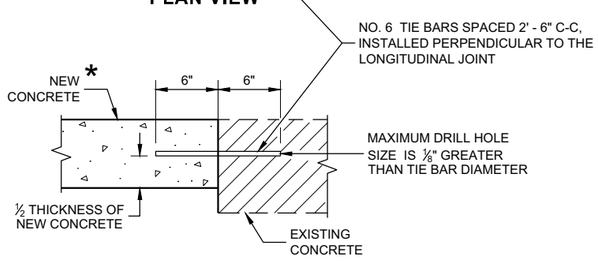


TYPES G (1) & J

CONCRETE CURB

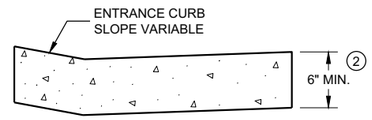


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

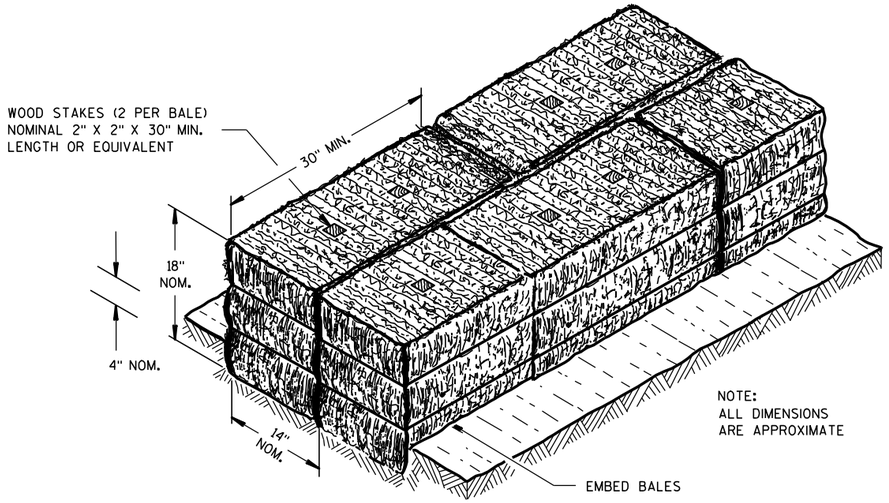
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER

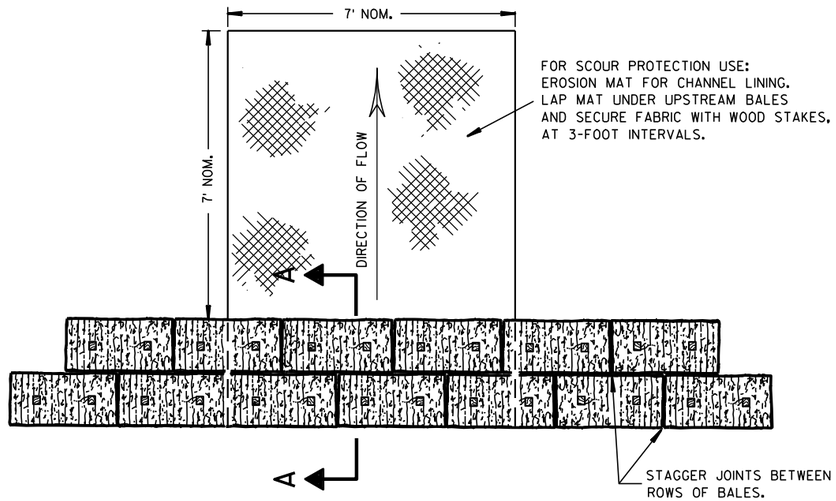
FHWA

6

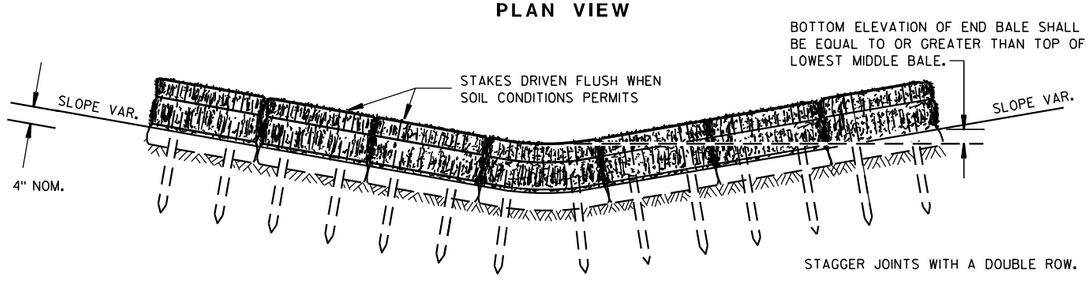
SDD08D01 - 22b



SECTION A-A



PLAN VIEW



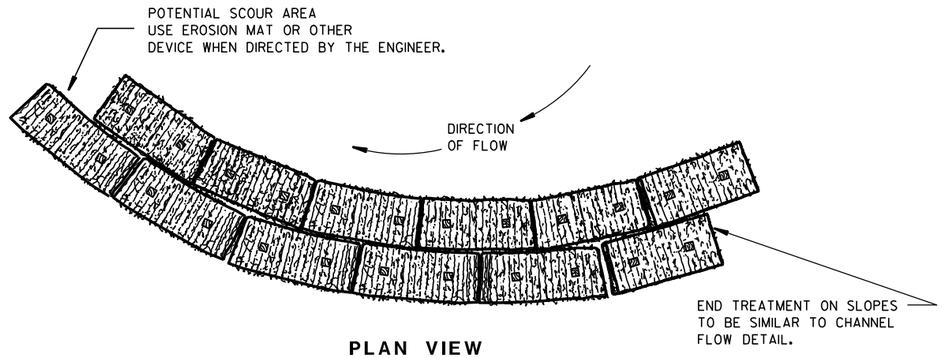
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

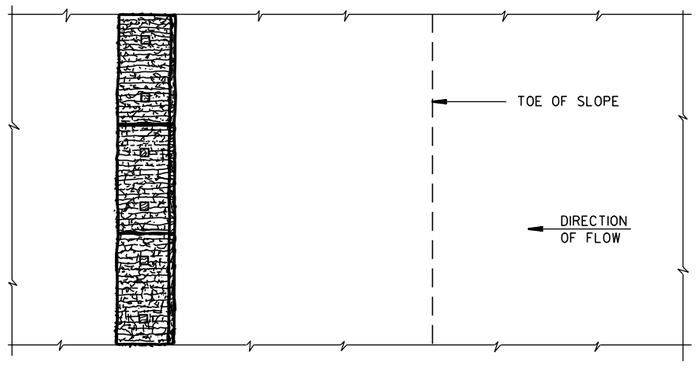
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

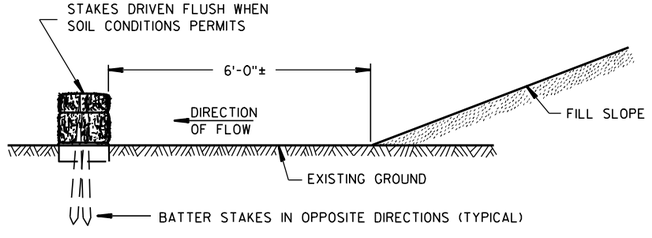


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

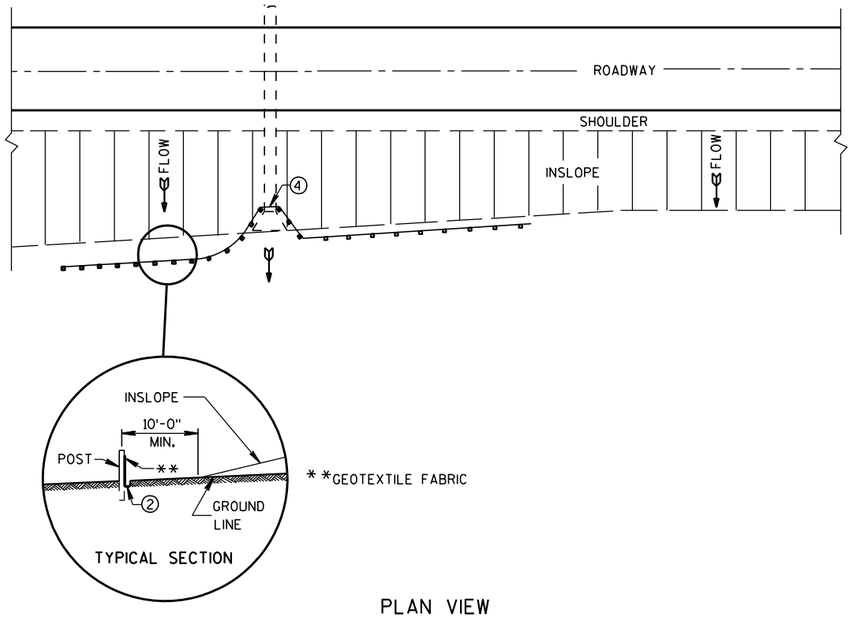
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

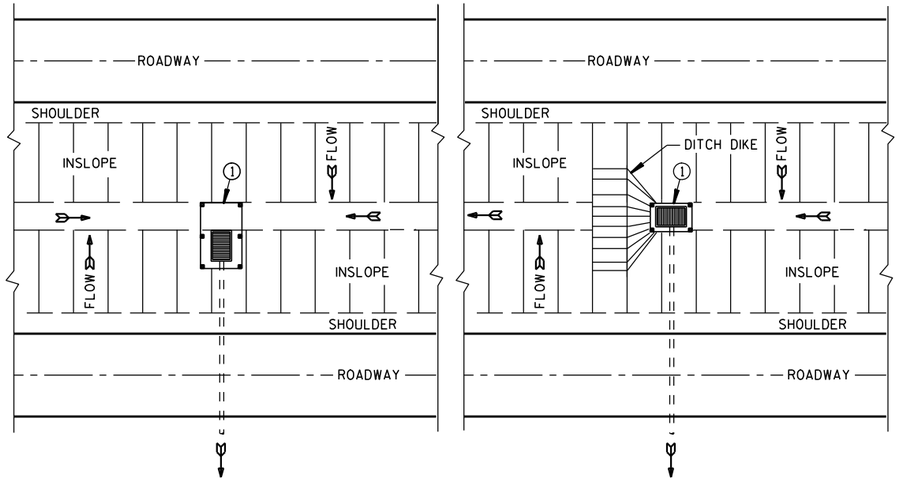
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



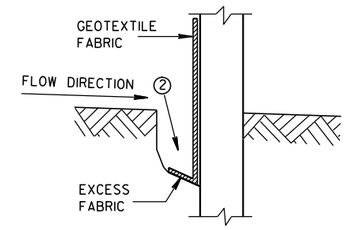
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

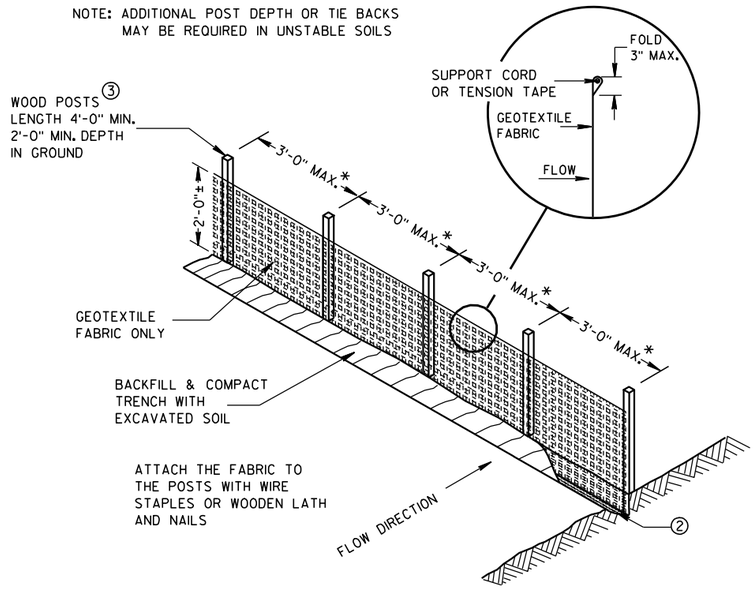
GENERAL NOTES

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

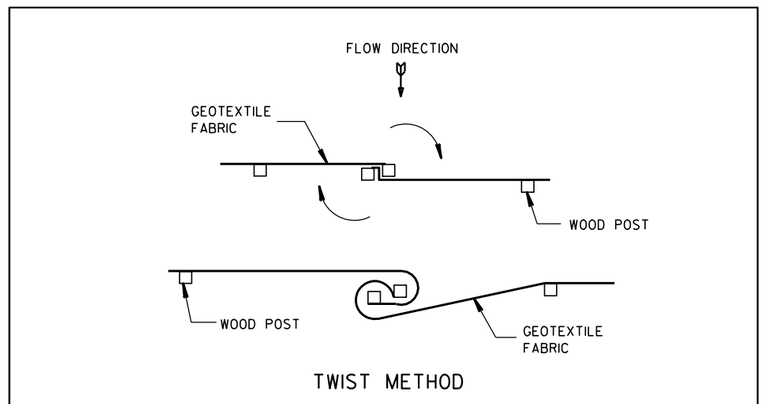
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



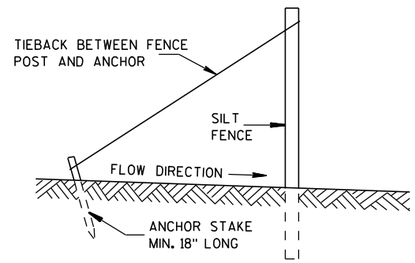
TRENCH DETAIL



SILT FENCE



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

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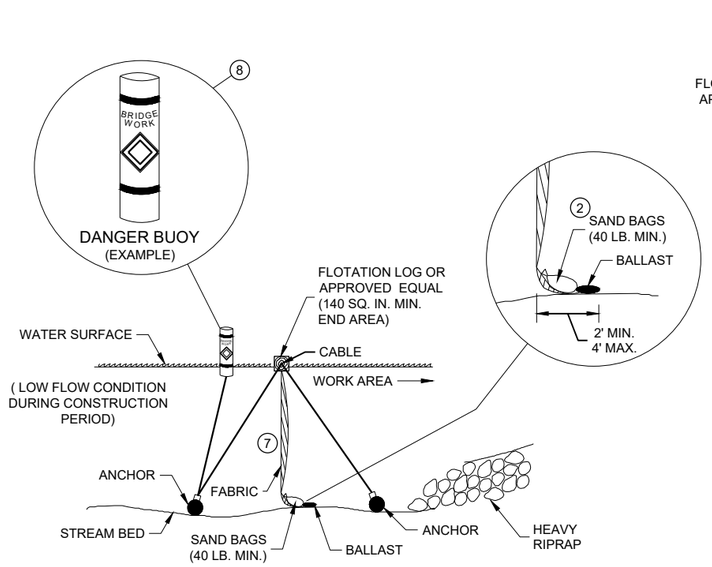
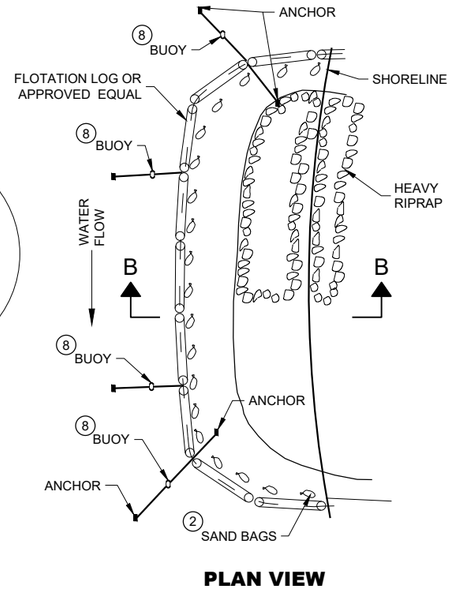
S.D.D. 8 E 9-6

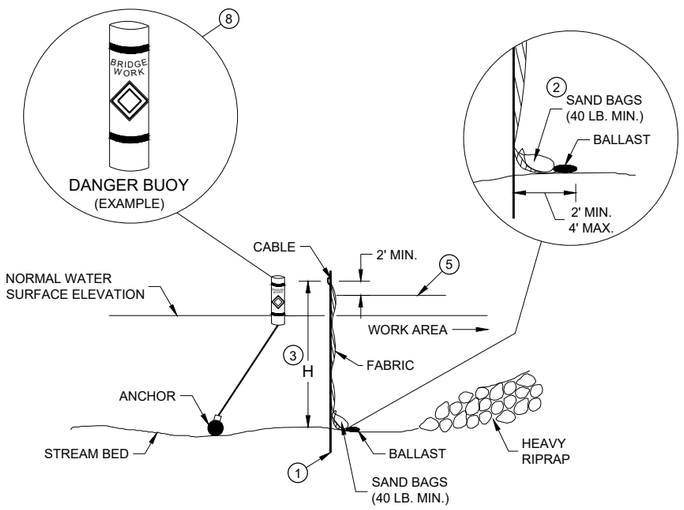


SECTION B - B

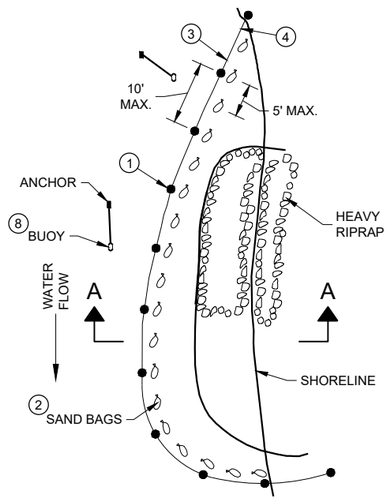


PLAN VIEW

TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A - A



PLAN VIEW

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

(3) WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.

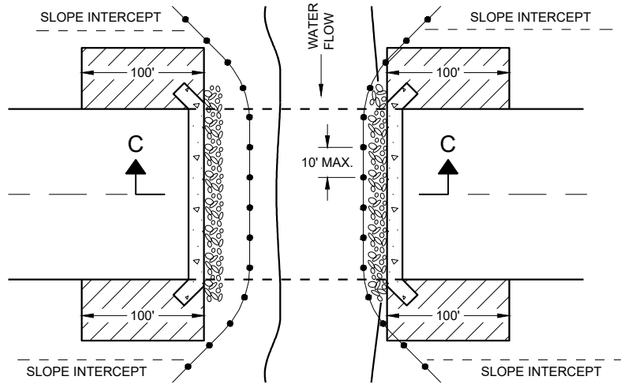
(4) IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

(5) ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.

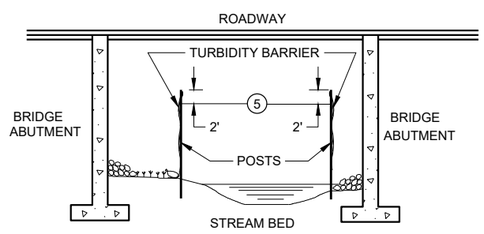
(6) FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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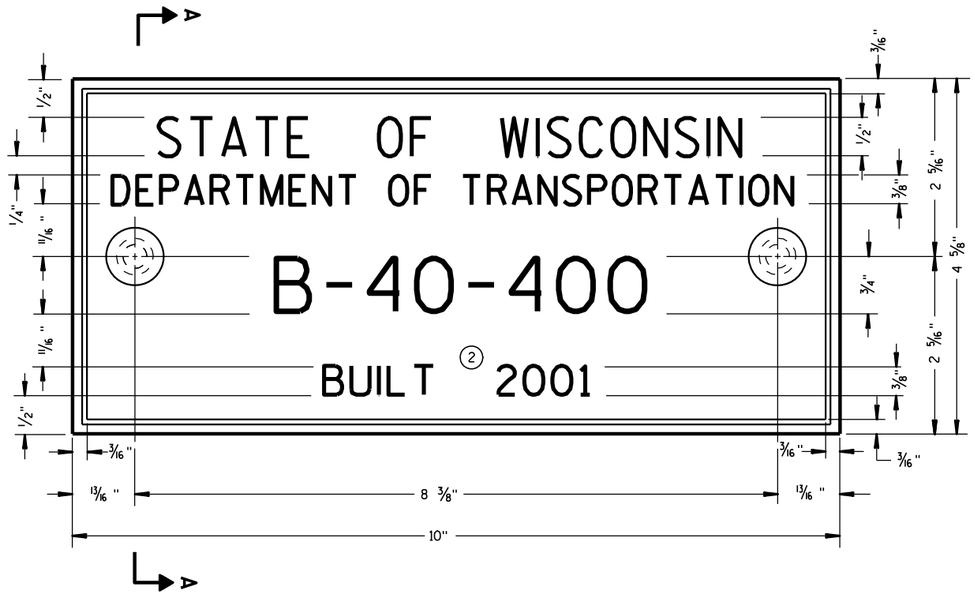
SDD 08E11 - 02



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

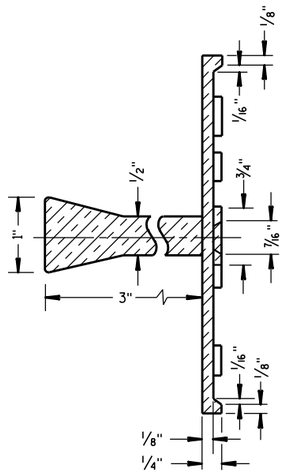
GENERAL NOTES

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

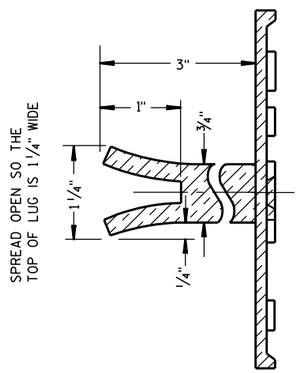
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

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



SECTION A-A



ALTERNATE LUG

FOR MULTI-UNIT STRUCTURES LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

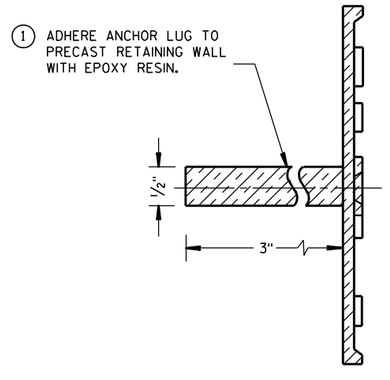
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

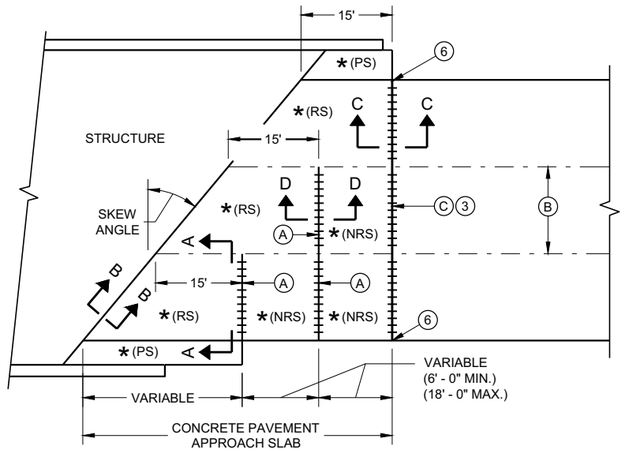
3/26/10 DATE

/S/ Scot Beck-- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

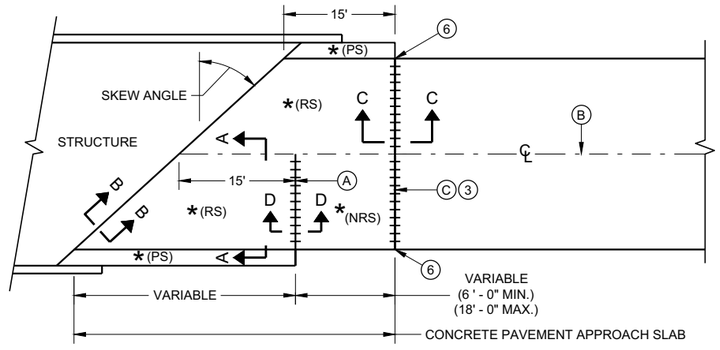
FHWA

6

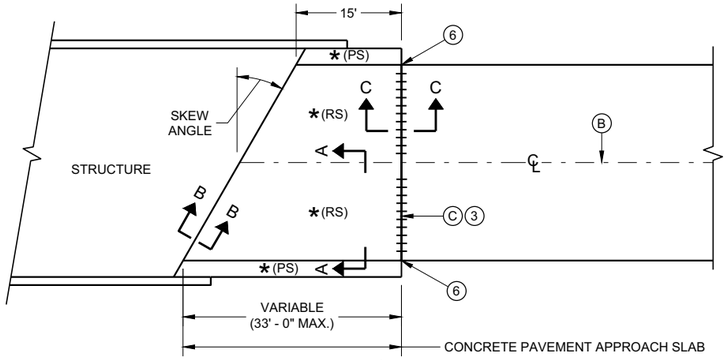
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

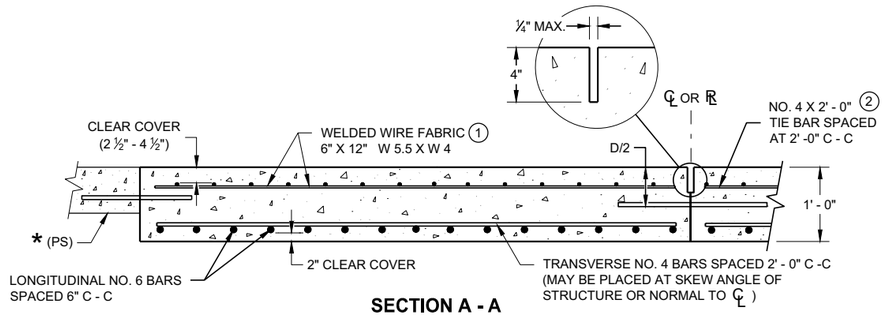
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

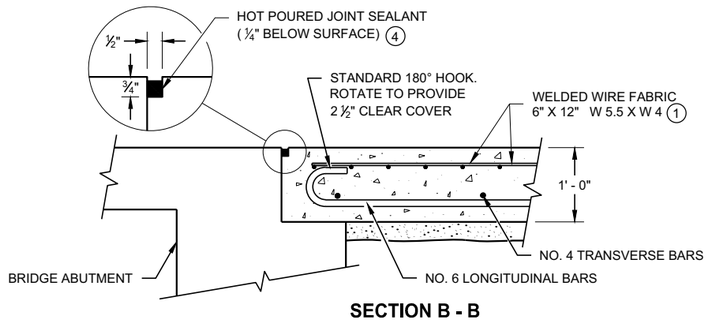
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

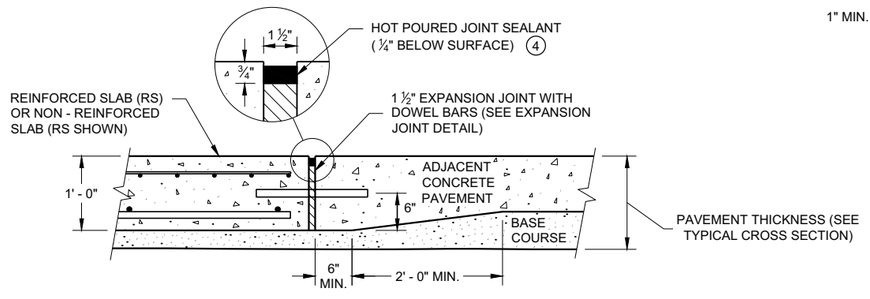
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL



SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

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 THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

(4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

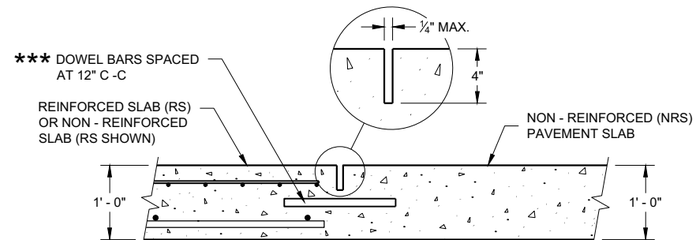
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

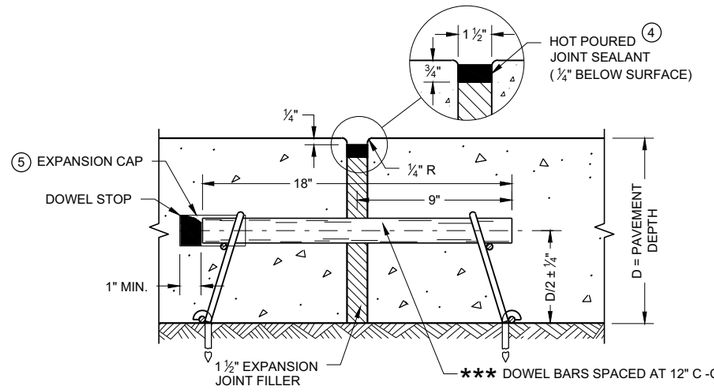
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVIS

FHWA

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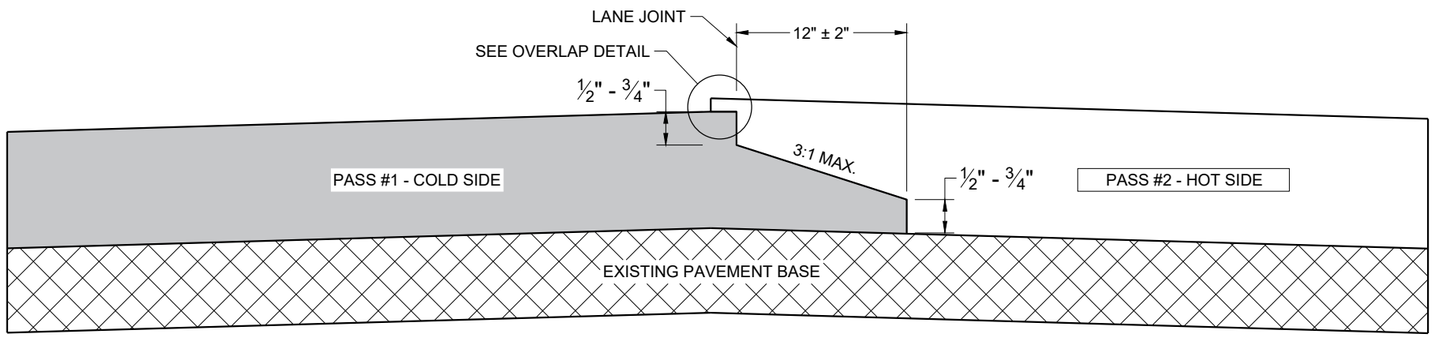
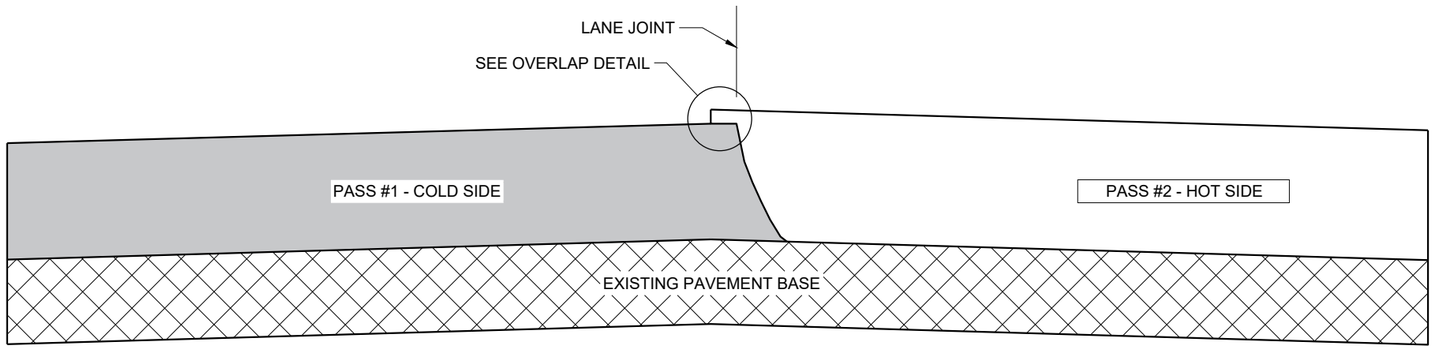
SDD 13B02 - 09a

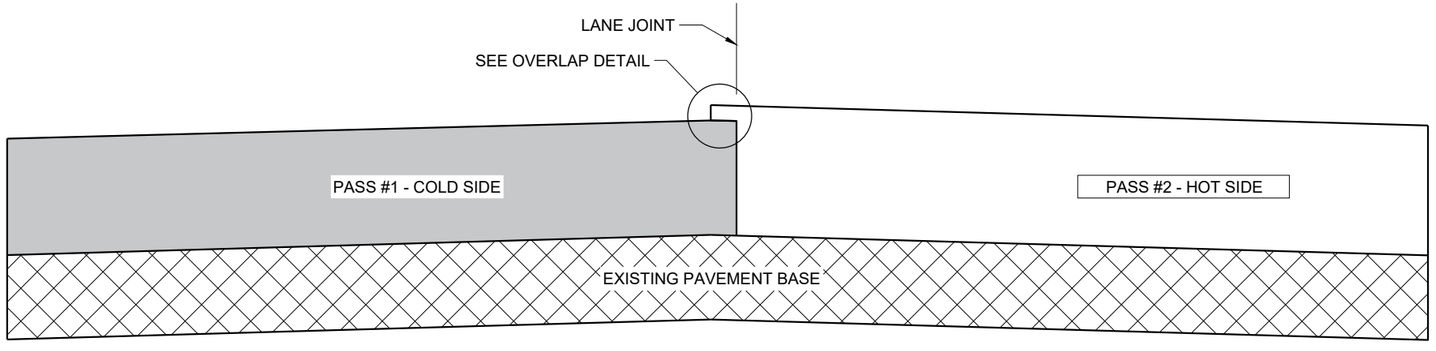
SDD 13B02 - 09a



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

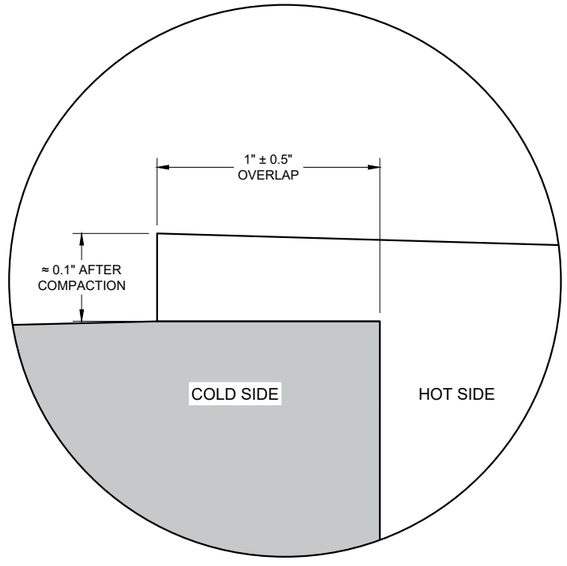
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 0.5" AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



OVERLAP DETAIL (TYPICAL)

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SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

(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.

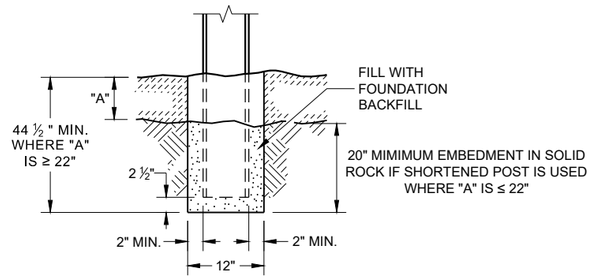
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL 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).

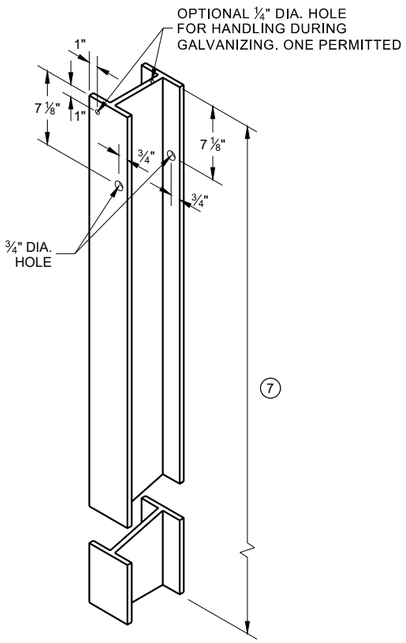
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

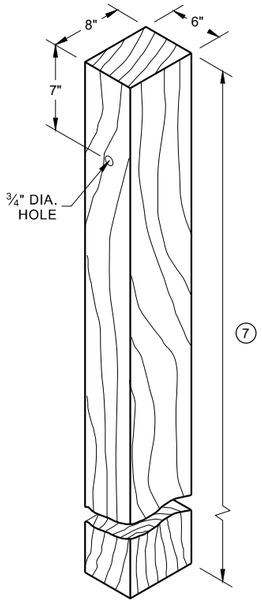
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



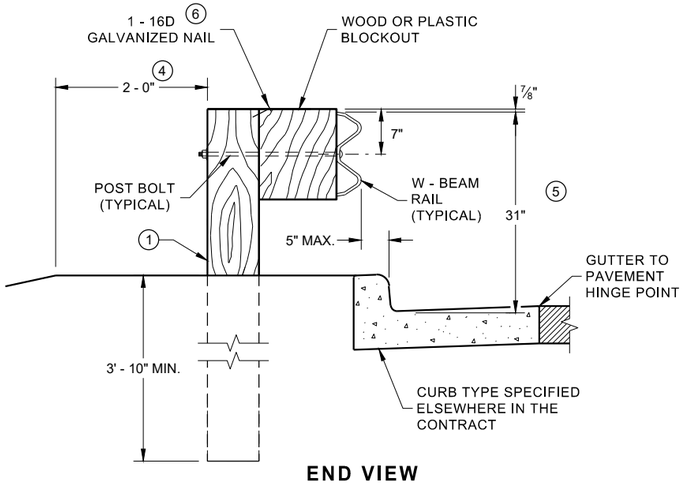
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



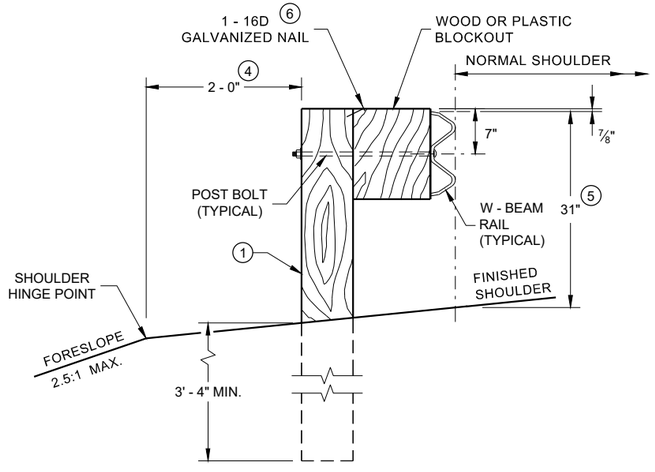
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



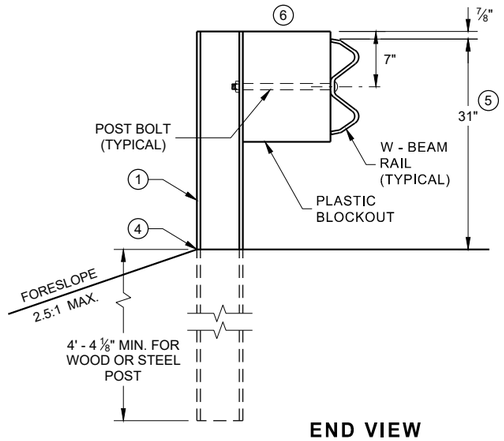
WOOD POST (6" X 8") NOMINAL (1)



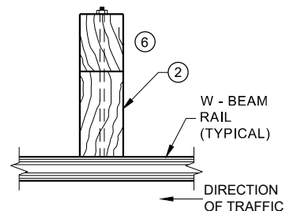
END VIEW
LOCATED ALONG A CURBED ROADWAY



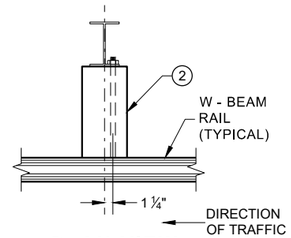
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



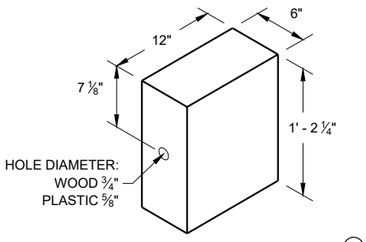
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

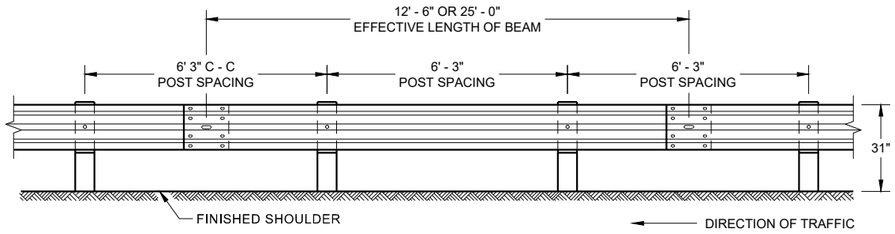
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

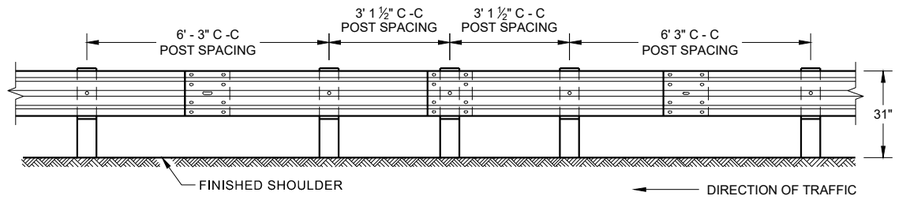
SDD 14B42 - 07a

6

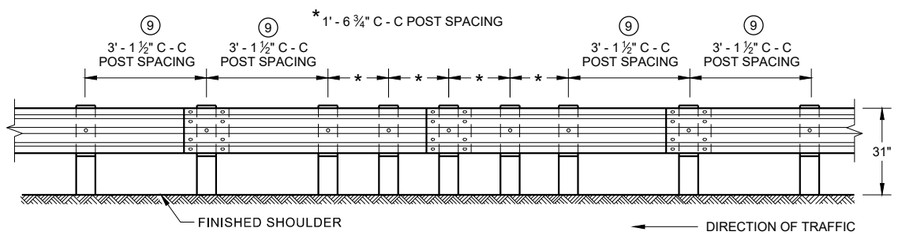
SDD 14B42 - 07a



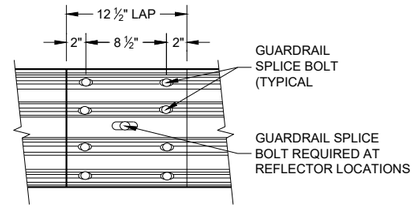
FRONT VIEW
POST SPACING STANDARD INSTALLATION



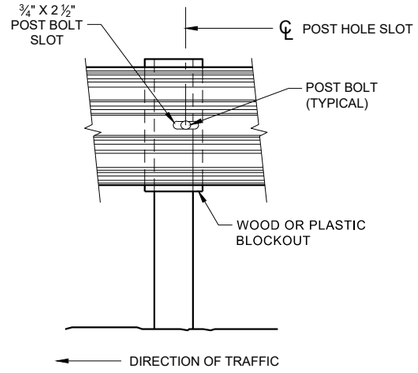
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



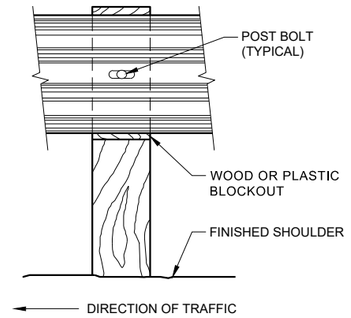
FRONT VIEW
QUARTER POST SPACING (QS)



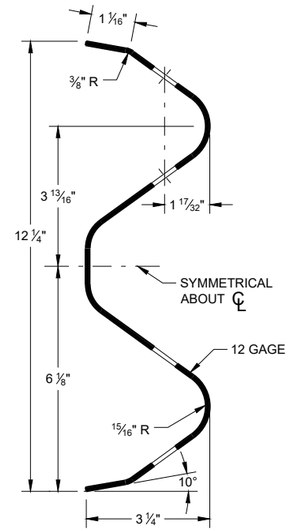
FRONT VIEW
MID-SPAN BEAM SPLICE



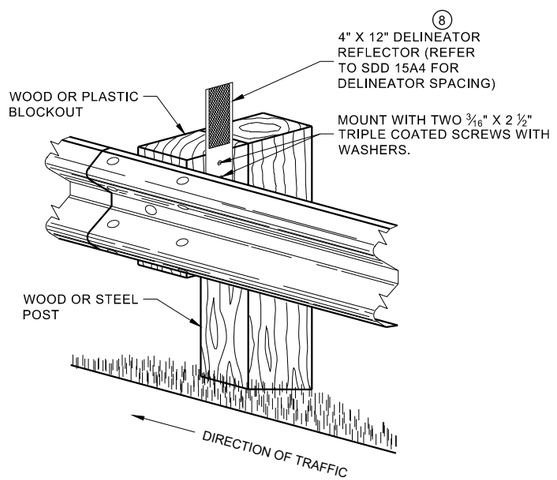
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

⑨ 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.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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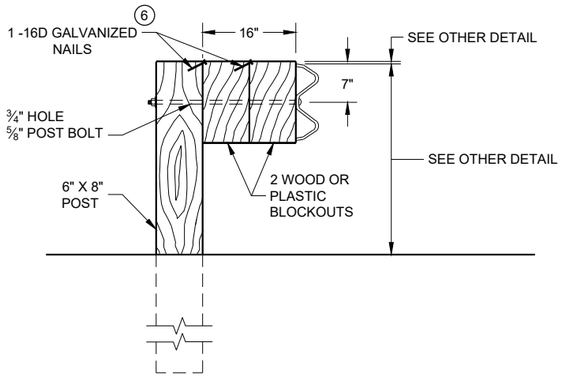
SDD 14B42 - 07b

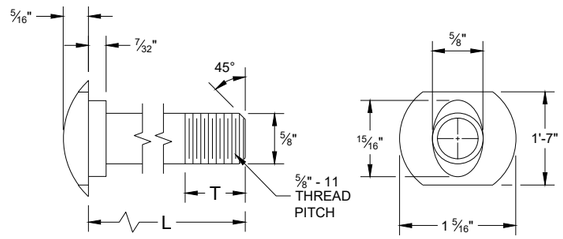


DETAIL FOR 16" BLOCKOUT DEPTH

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.

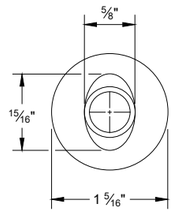
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

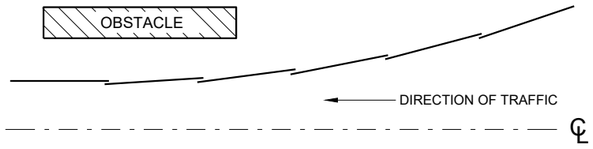


POST BOLT TABLE

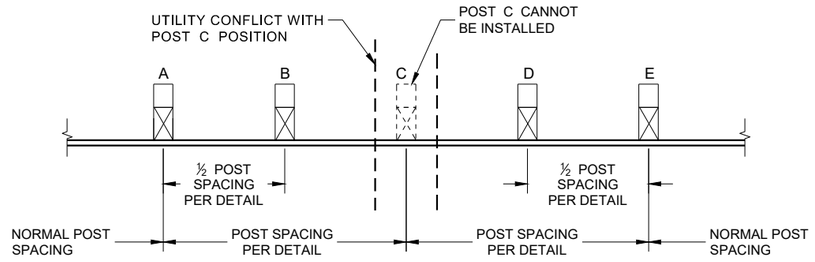
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



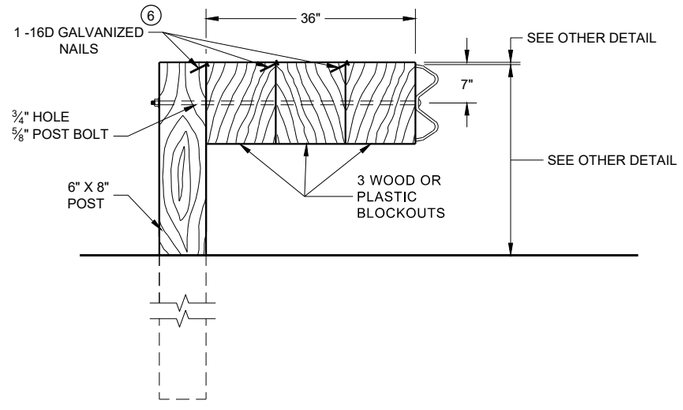
ALTERNATE BOLT HEAD



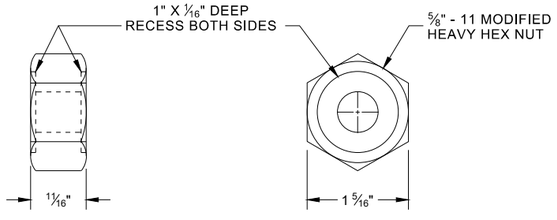
PLAN VIEW
BEAM LAPPING DETAIL



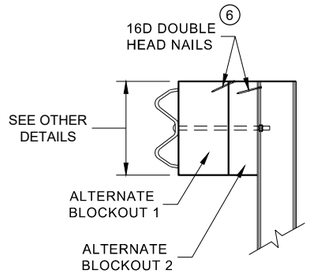
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



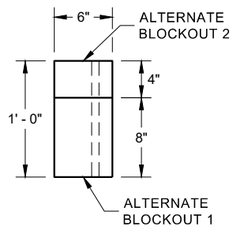
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

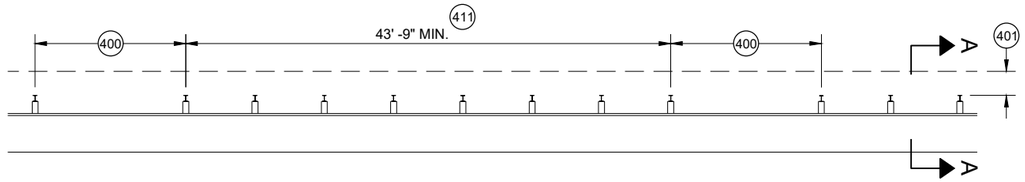
ALTERNATE WOOD BLOCKOUT DETAIL

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.

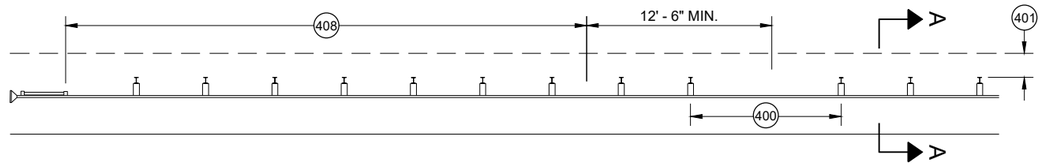
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

(6) WHEN USING STEEL POST AD 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.

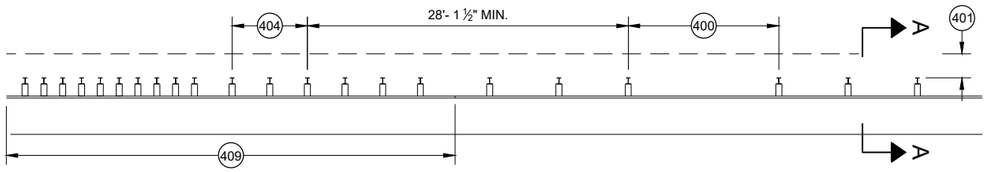
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



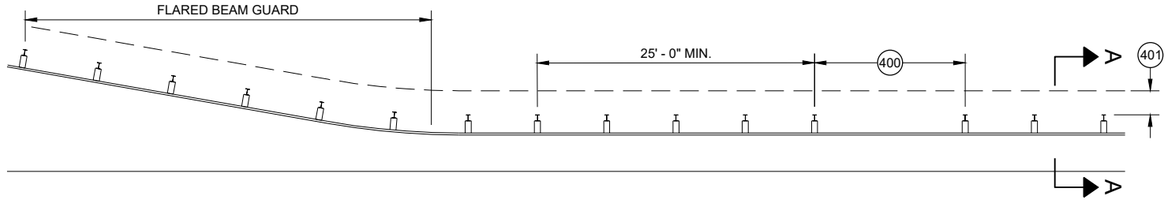
MISSING POST IN MGS GUARDRAIL



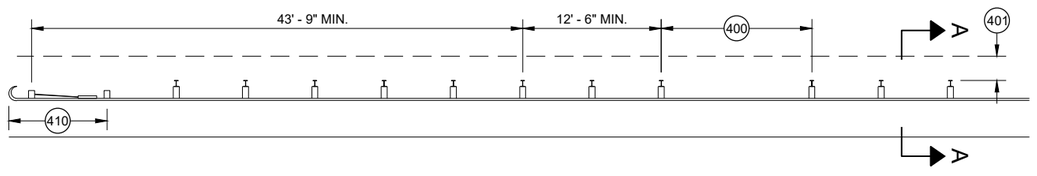
MISSING POST IN MGS GUARDRAIL NEAR EAT



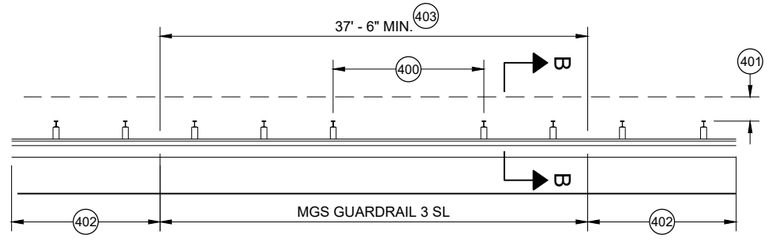
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

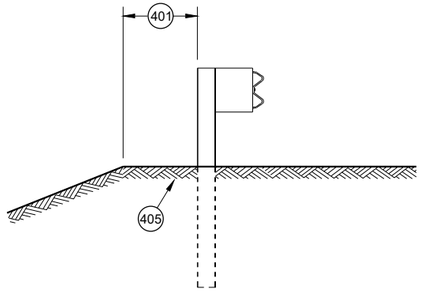


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

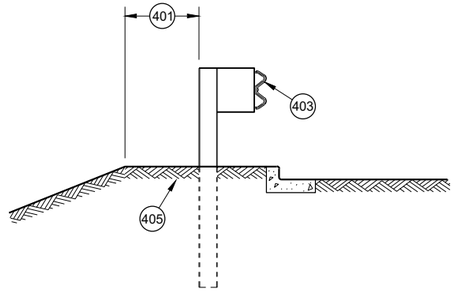


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(400) MAX SPAN 12' - 6"
(401) 2' MIN.
(402) MGS GUARDRAIL 3
(403) NESTING BEAM GUARD
(404) ASYMMETRIC TRANSITION
(405) SOIL WELL DRAINED AND COMPACTED
(406) SEE OTHER DRAWINGS IN THIS SDD
(407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
(408) SEE SDD 14B44
(409) SEE SDD 14B45
(410) SEE SDD 14B47
(411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B42 - 07d

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 MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

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

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

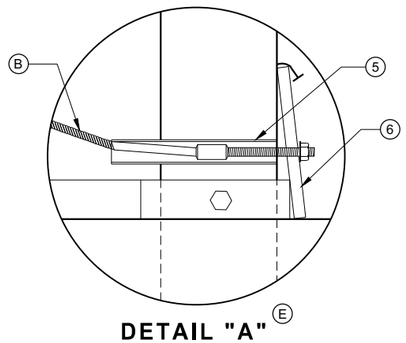
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

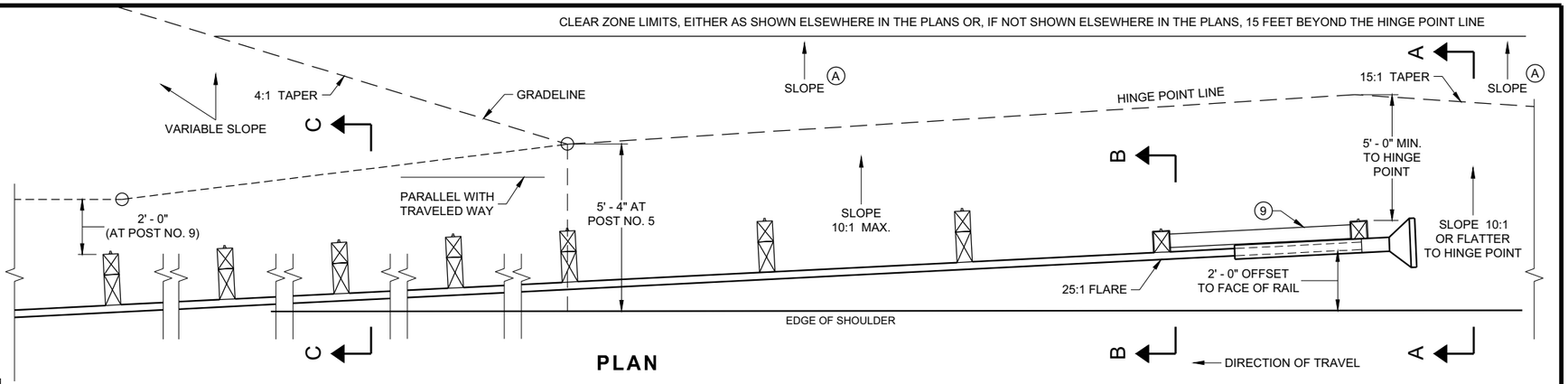
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

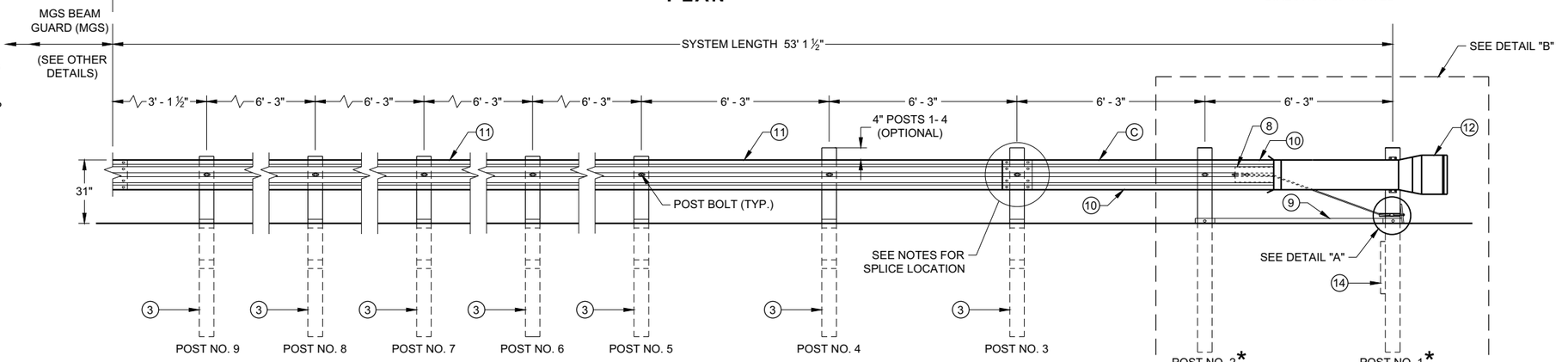
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



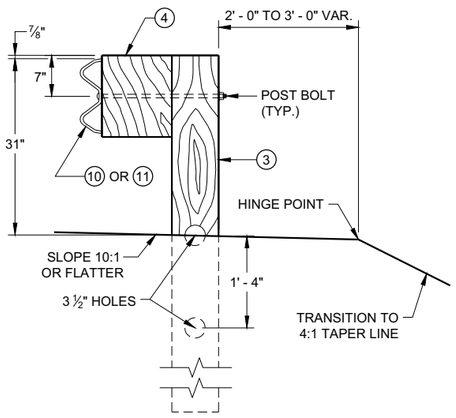
DETAIL "A" (E)



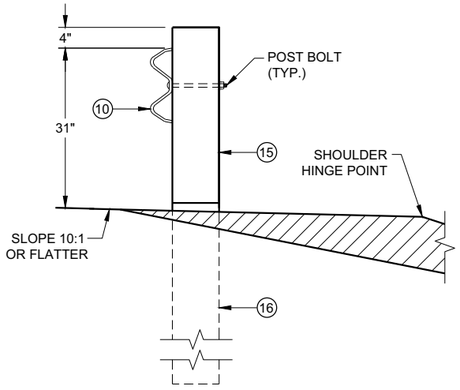
PLAN



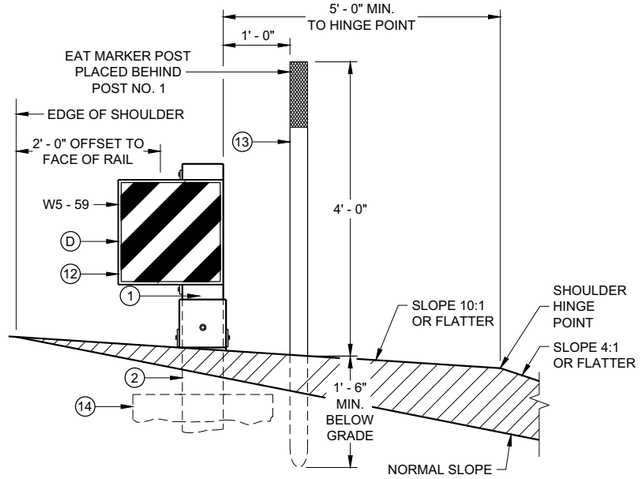
ELEVATION



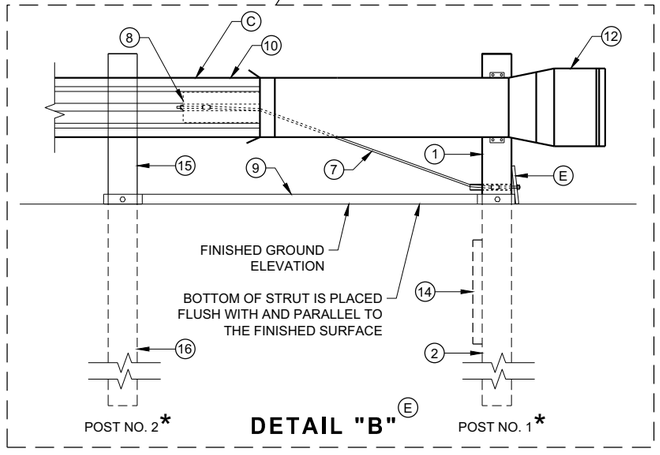
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



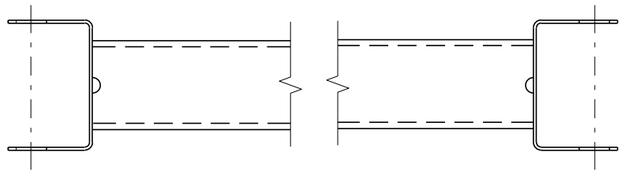
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

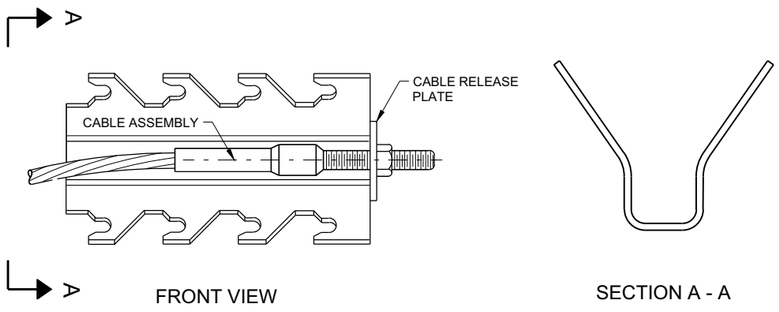
SDD 14B44 - 04a



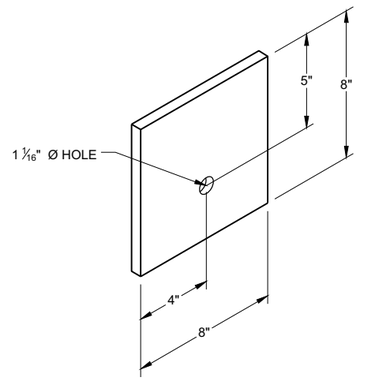
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
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	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

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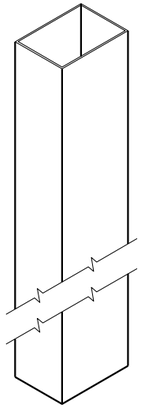
SDD 14B44 - 04b

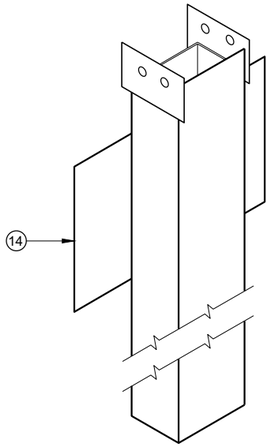
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

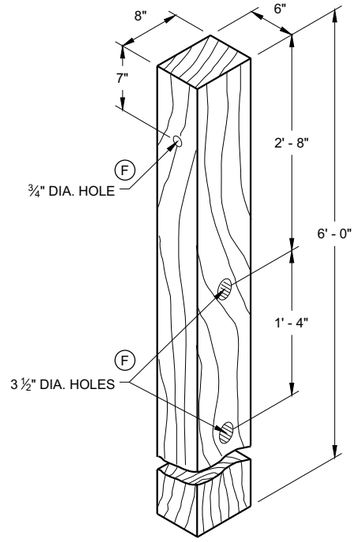
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



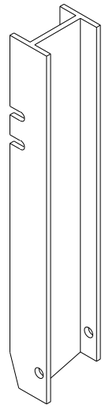
UPPER POST NO. 1 (1) (E)



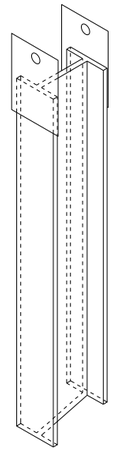
LOWER POST NO. 1 (2) (E)



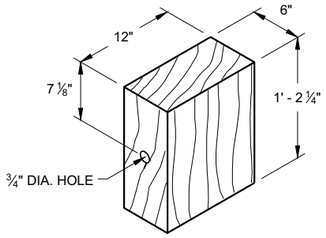
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



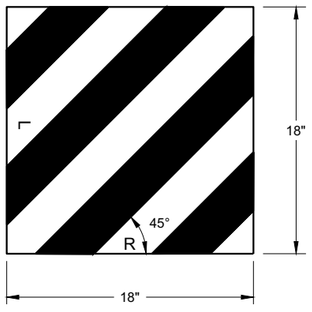
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)



WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



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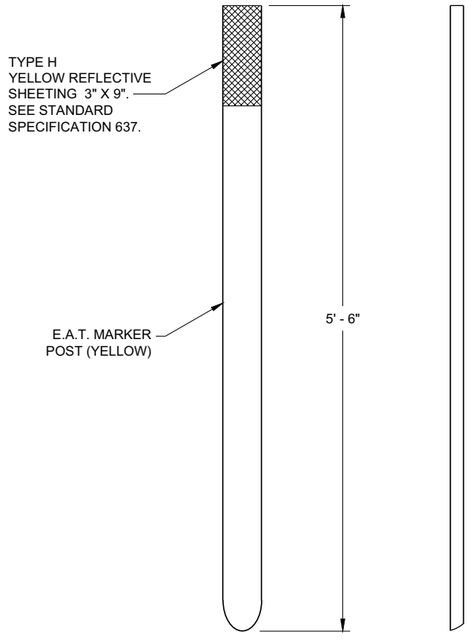
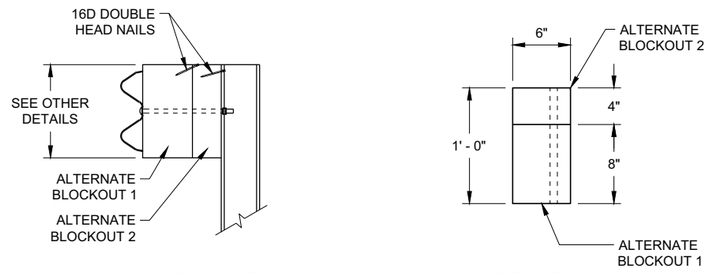
REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

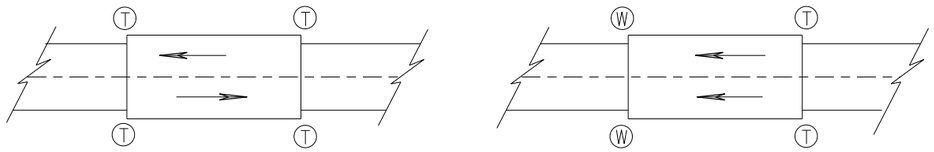
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B44 - 04c



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

GENERAL NOTES

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.

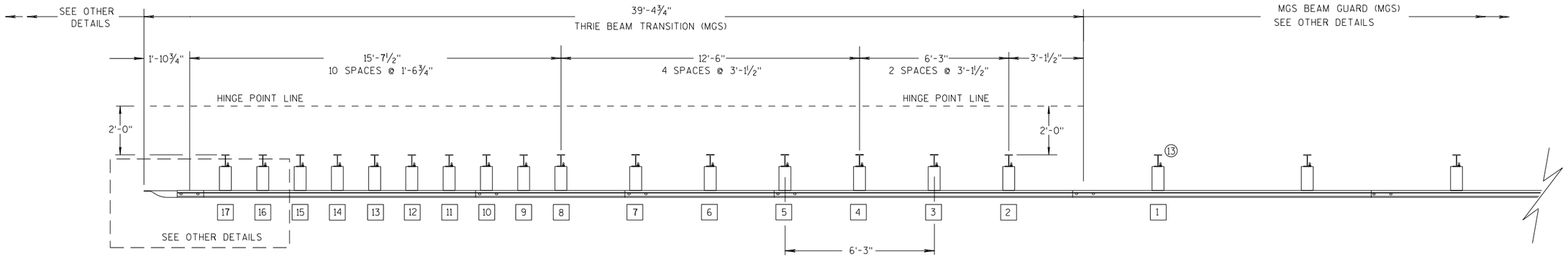
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

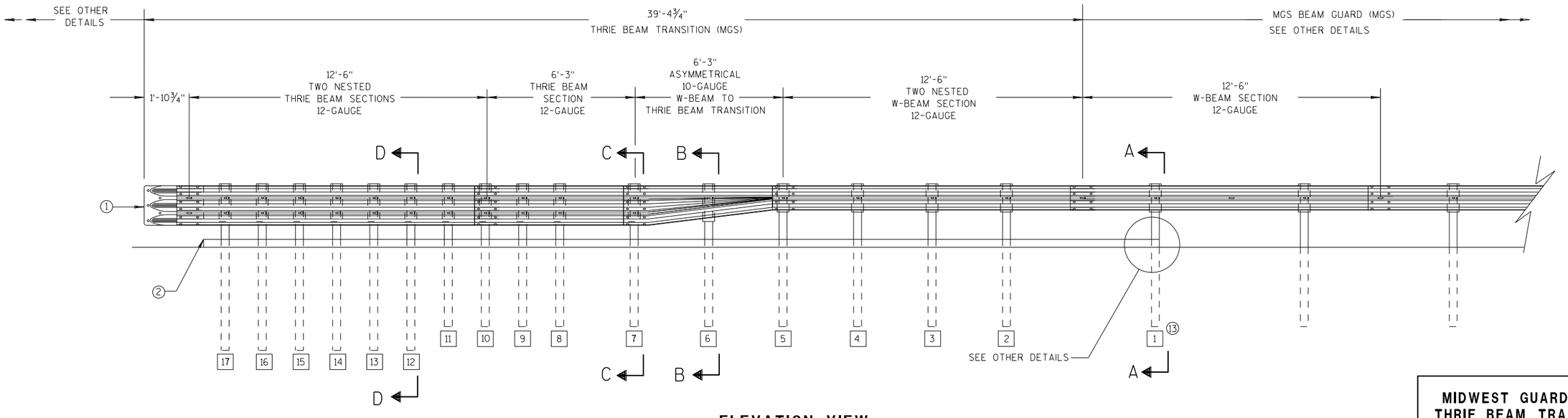
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-5a

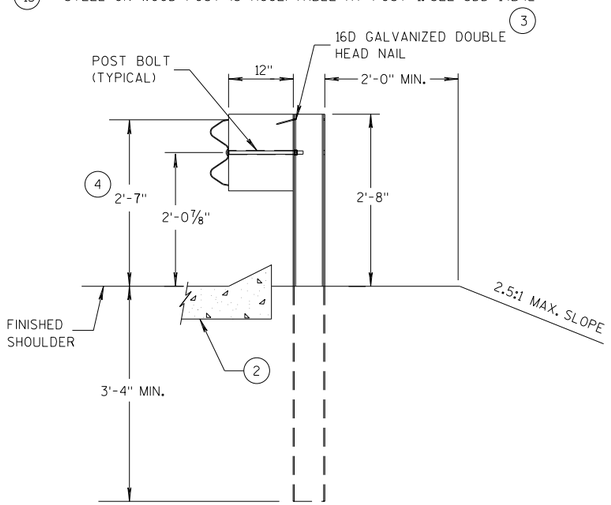
GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

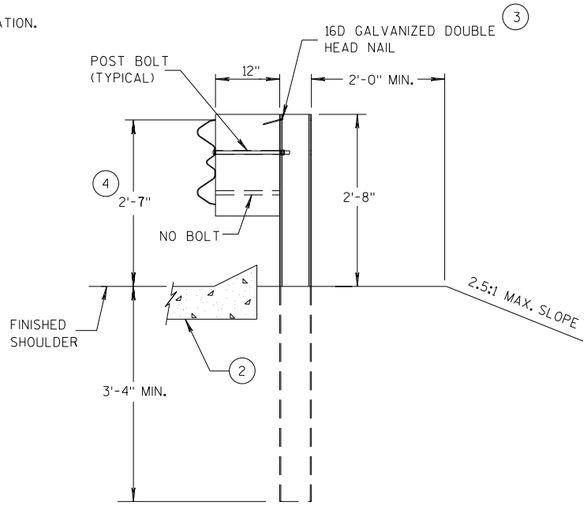
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



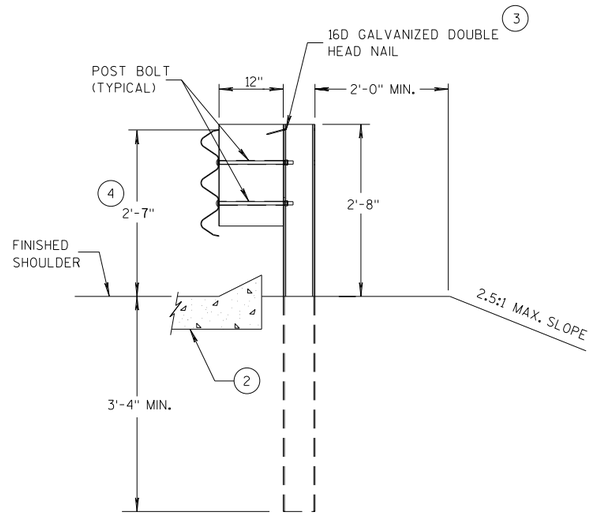
SECTION A-A (13)

POSTS 1-5



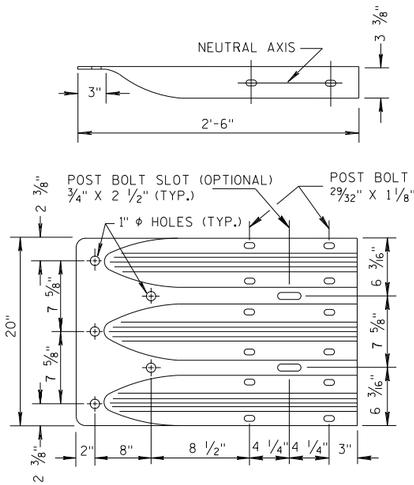
SECTION B-B

POST 6

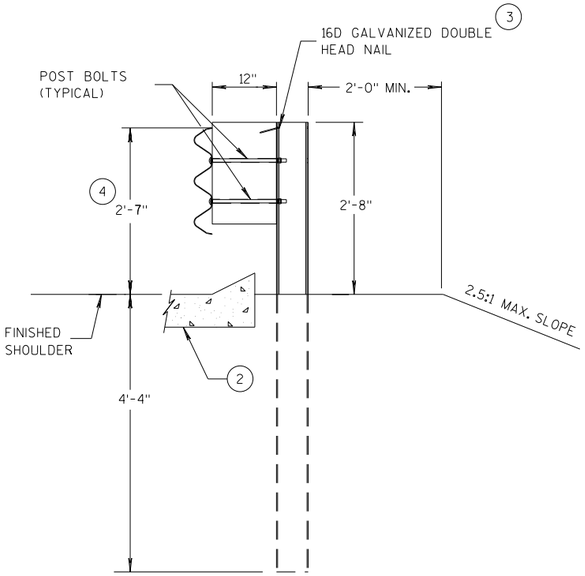


SECTION C-C

POSTS 7-11

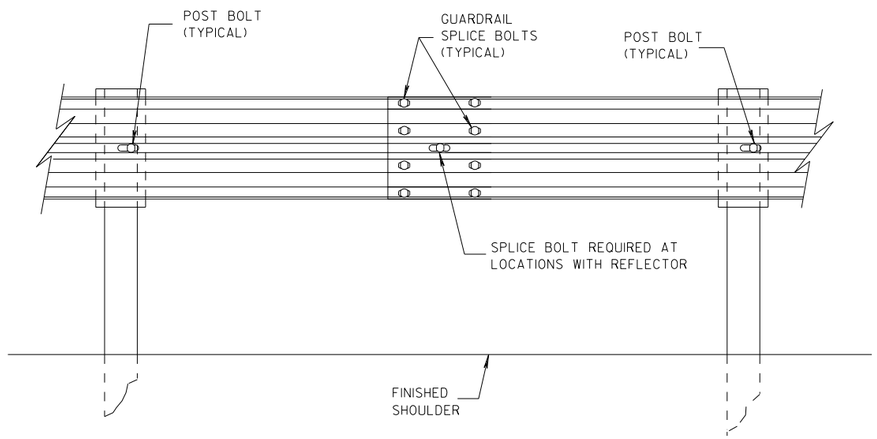


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

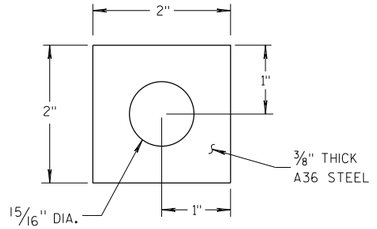
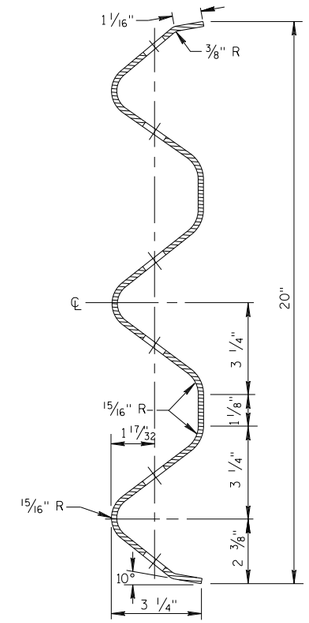


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

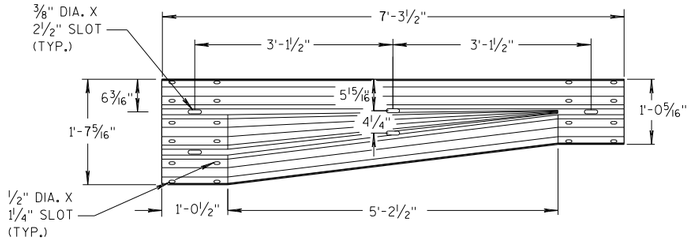
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

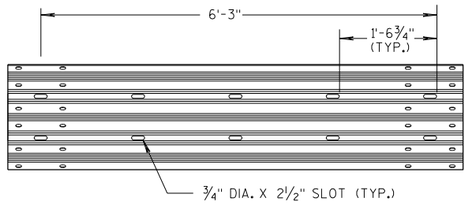
S.D.D. 14 B 45-5b

6

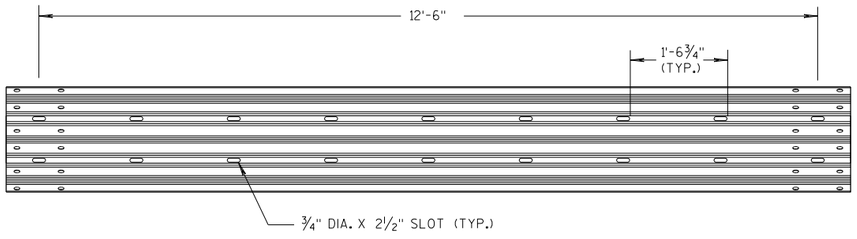
S.D.D. 14 B 45-5b



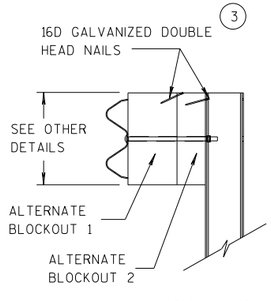
W-BEAM TO THRIE BEAM TRANSITION SECTION



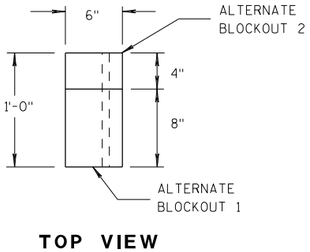
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

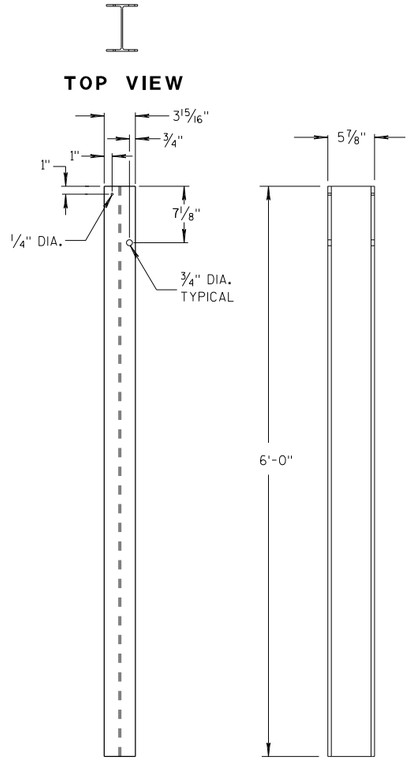


SIDE VIEW



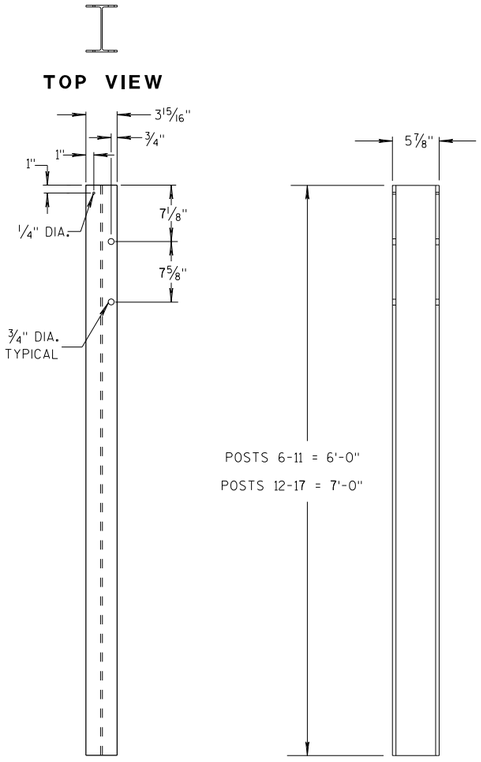
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



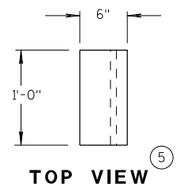
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

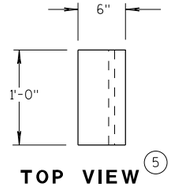


FRONT VIEW SIDE VIEW

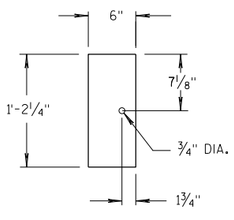
STEEL POSTS 6-17



TOP VIEW (5)

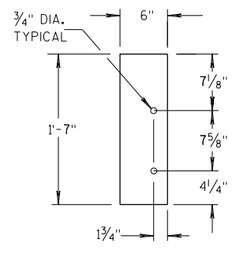


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) 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.

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

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

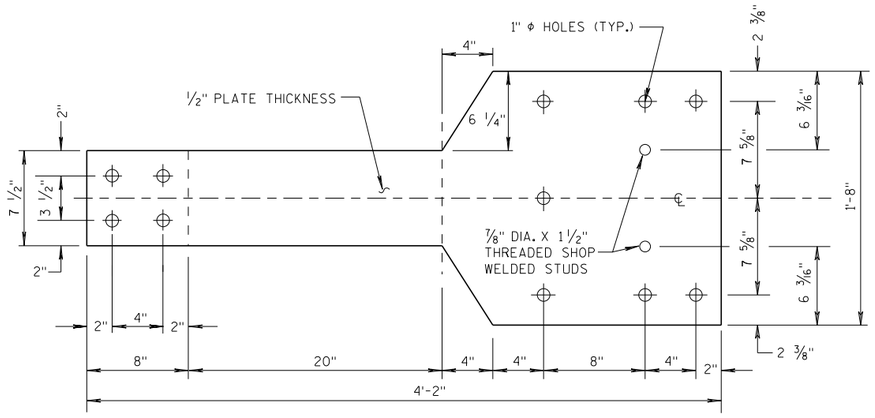
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

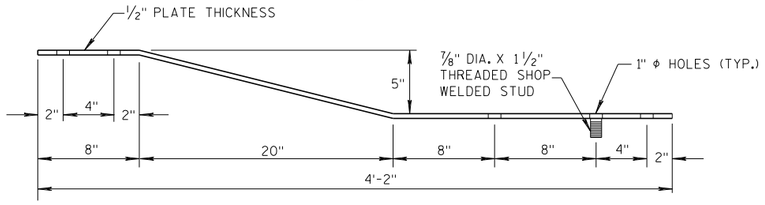
6
S.D.D. 14 B 45-5c

GENERAL NOTES

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

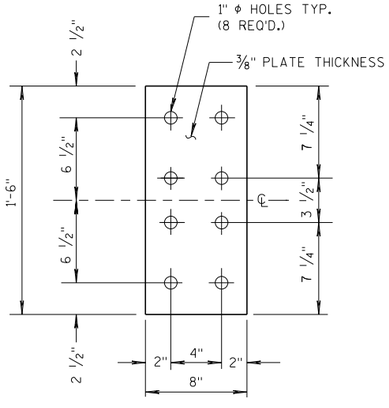


FRONT VIEW



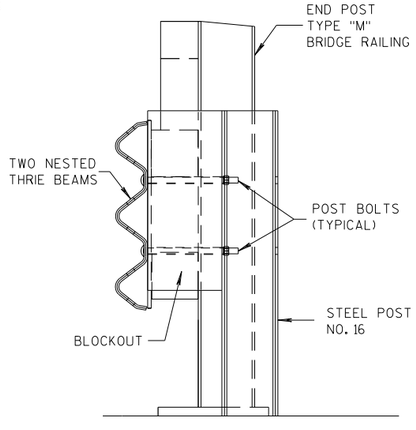
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

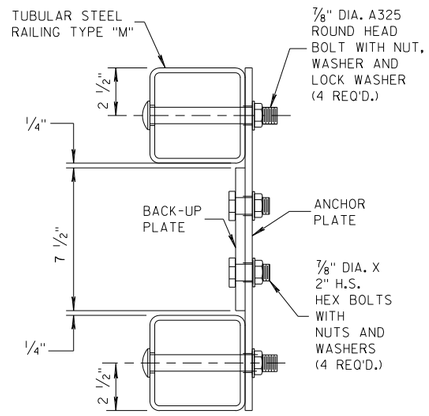


FRONT VIEW

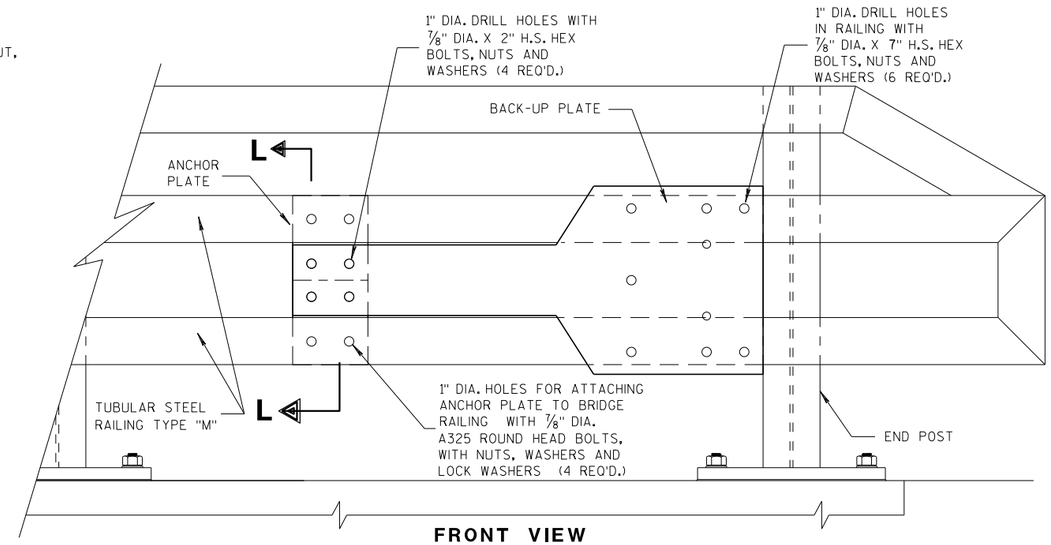
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

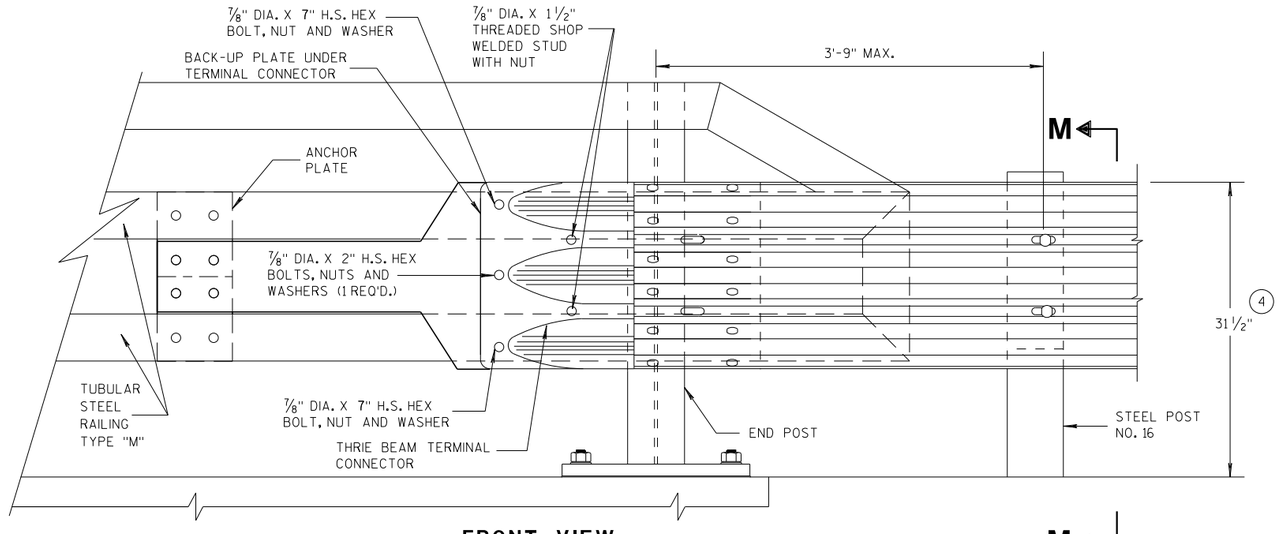


SECTION L-L

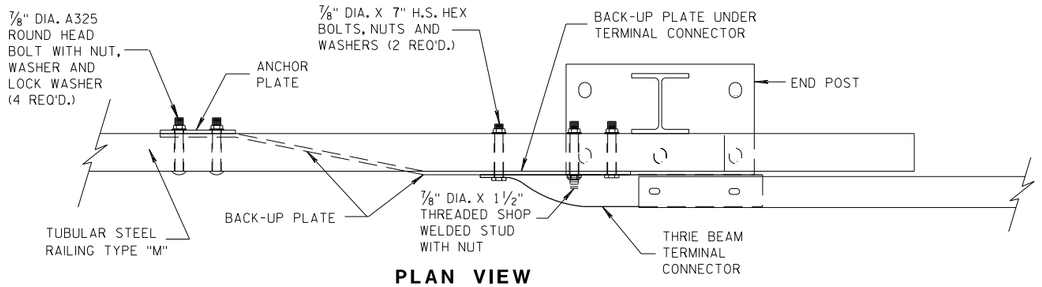


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

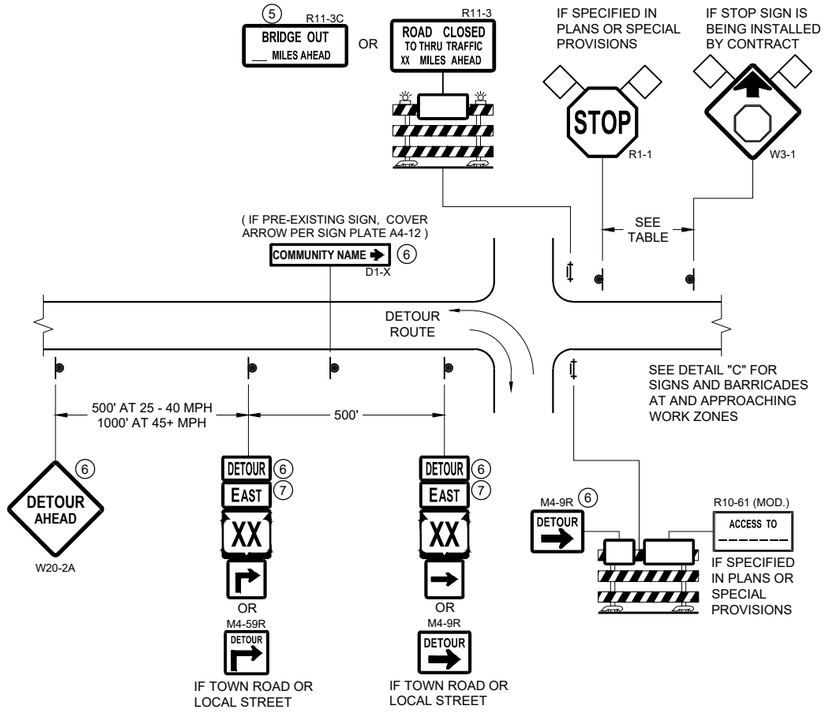
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

6

S.D.D. 14 B 45-5h

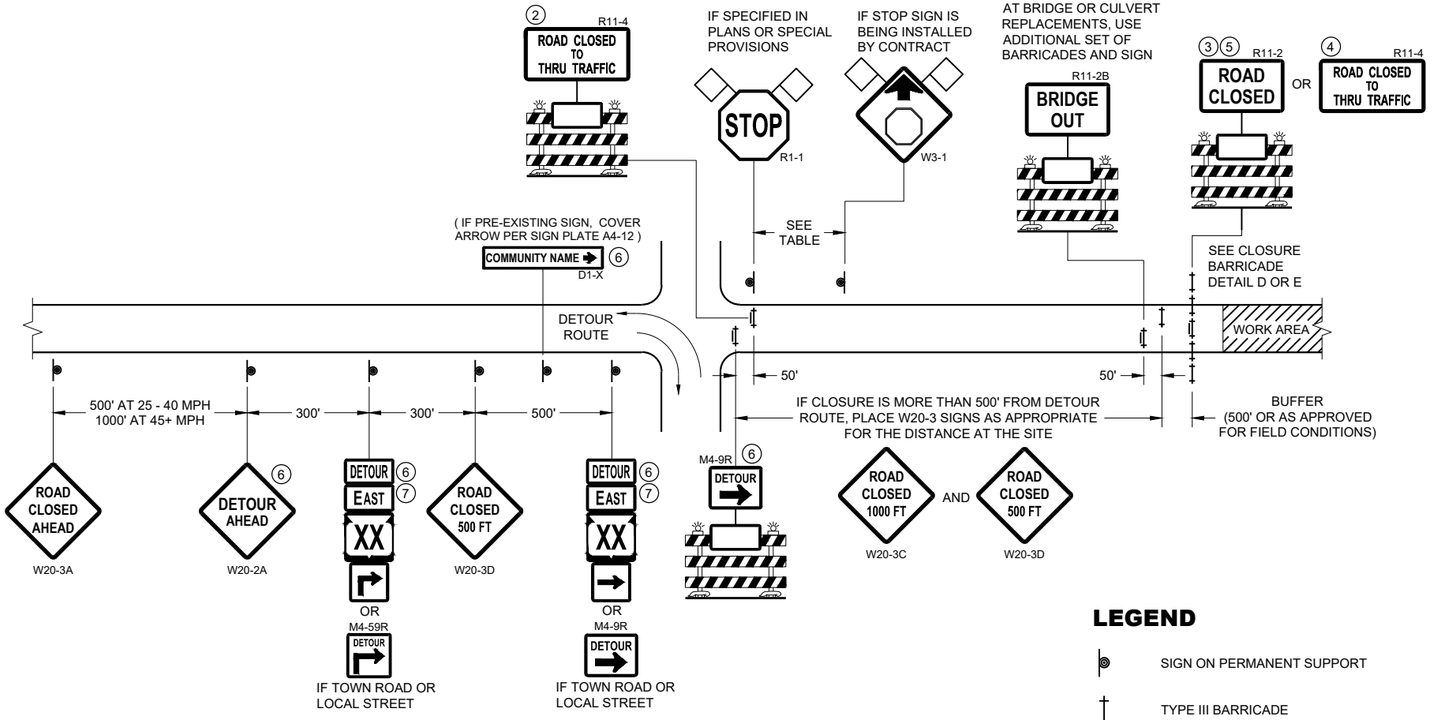
6

S.D.D. 14 B 45-5h



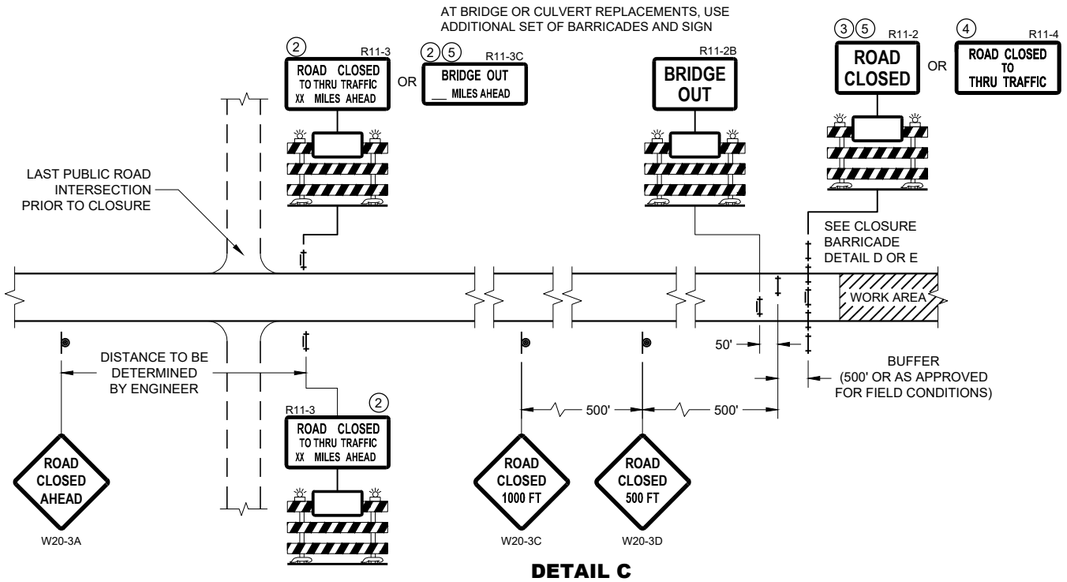
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO 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
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

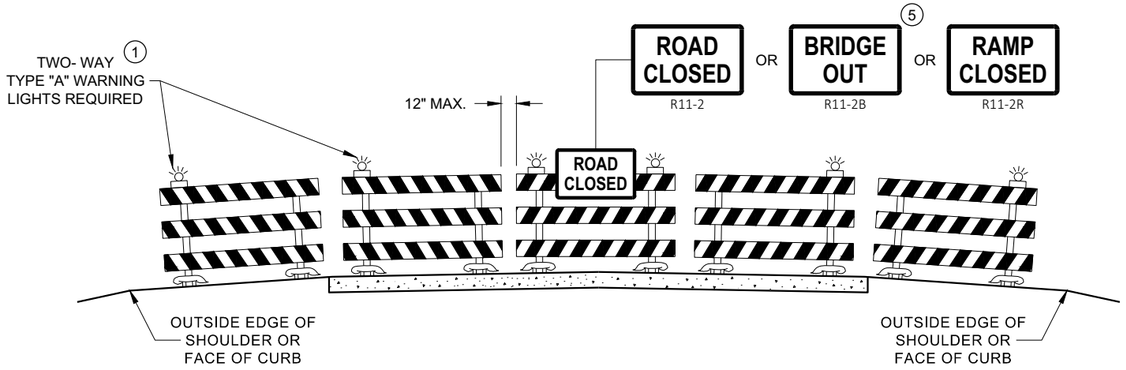
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

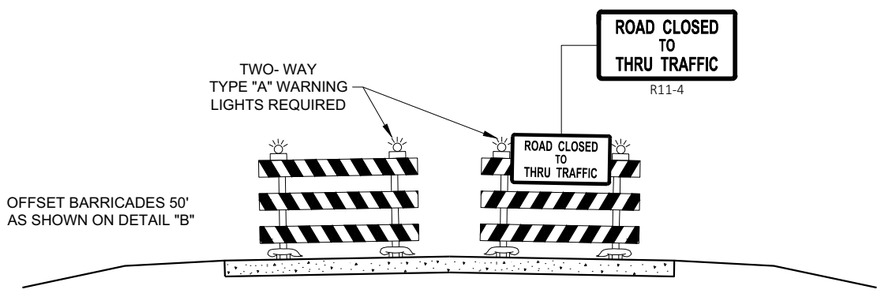
6

SDD 15C02 - 08a

SDD 15C02 - 08a



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 THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL 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 SHALL, 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" (36" X 18" 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)
- 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 AN 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 ROAD 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 VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

6

SDD 15C02 - 08b

6

SDD 15C02 - 08b

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1 OR M06 - 1

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.

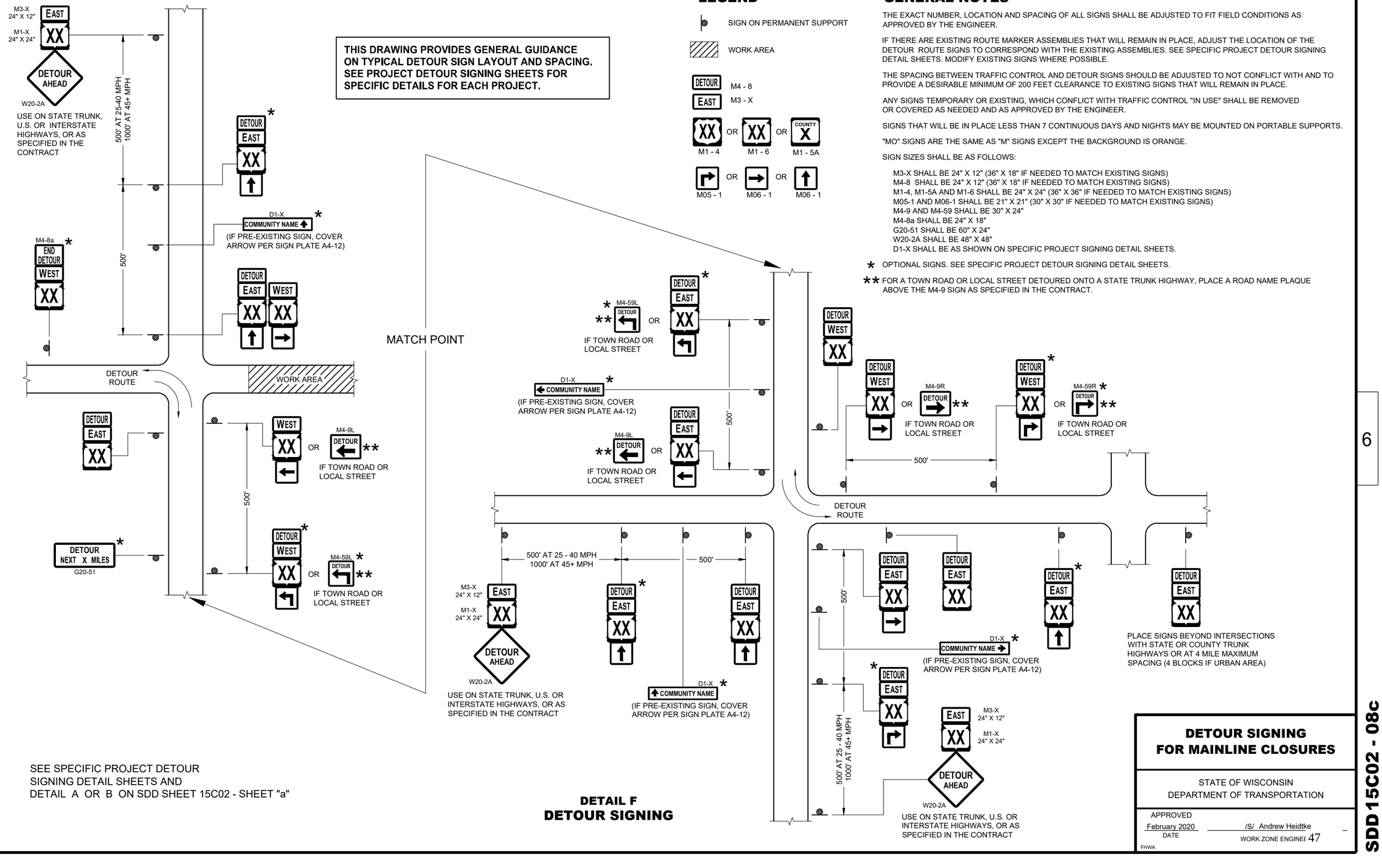
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A 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.



SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

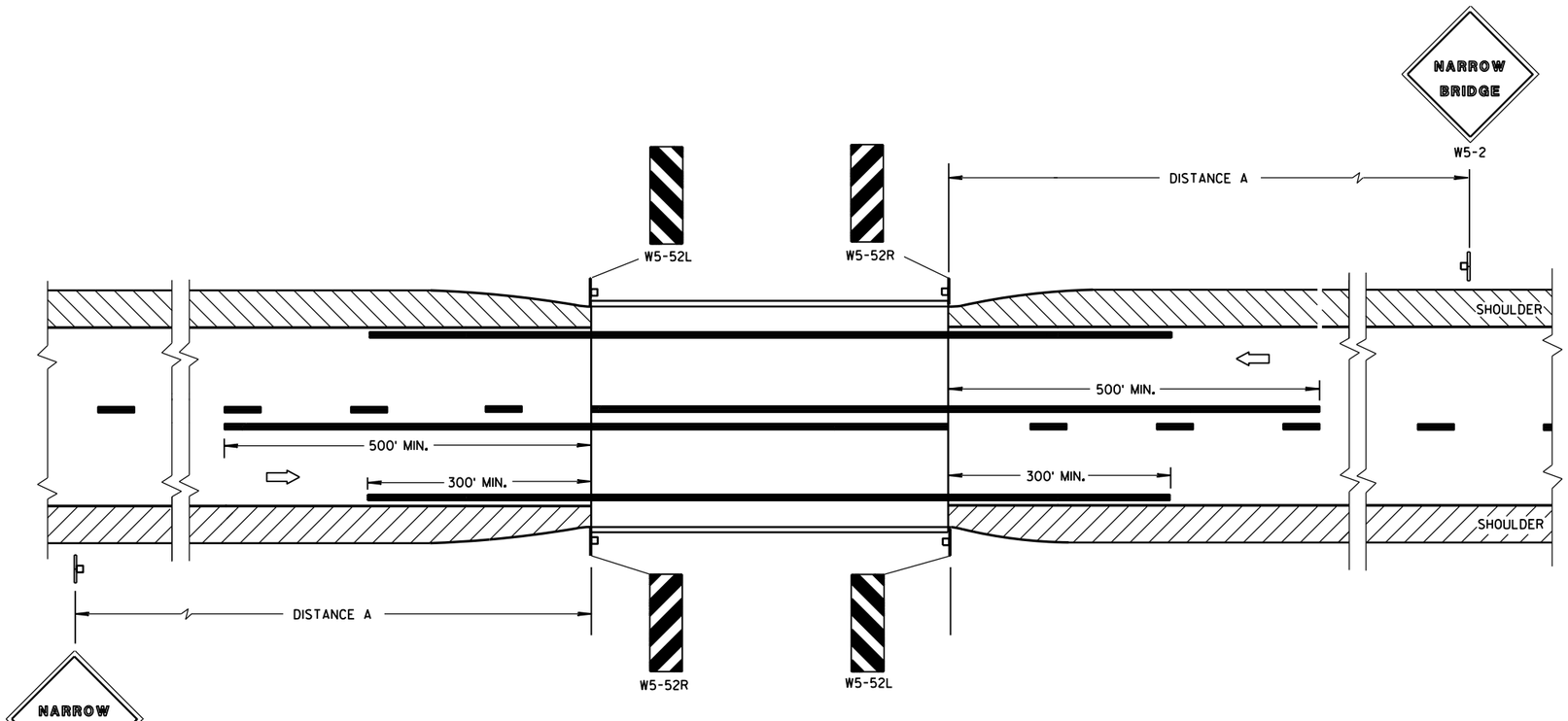
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15C02 - 08c

SDD 15C02 - 08c



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

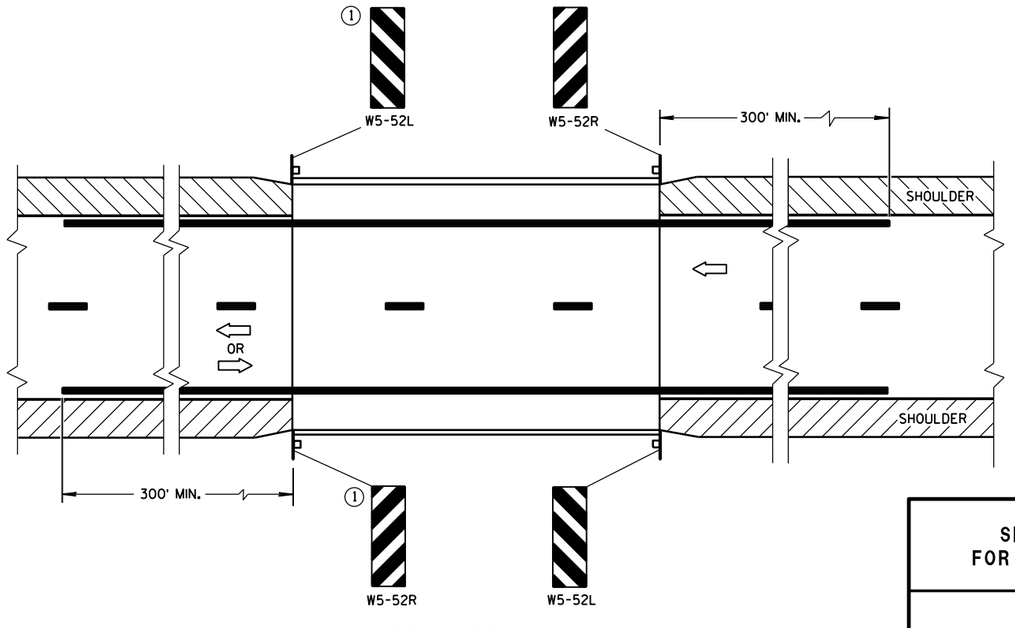
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

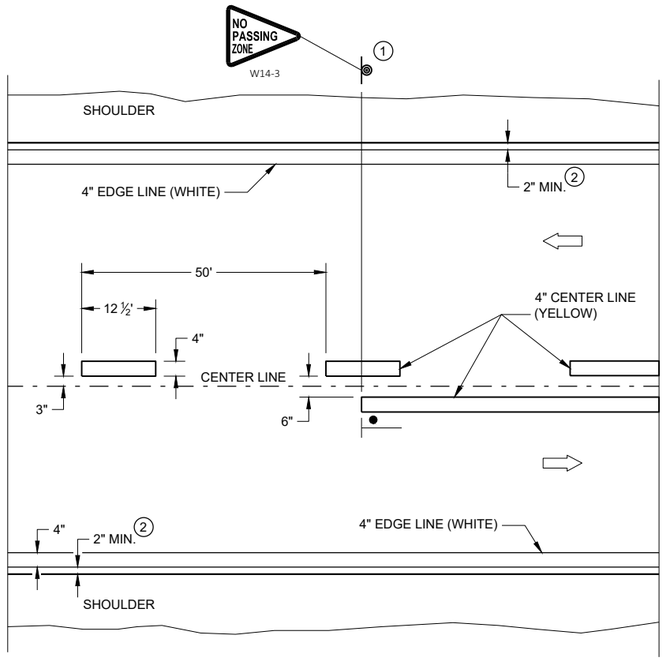
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

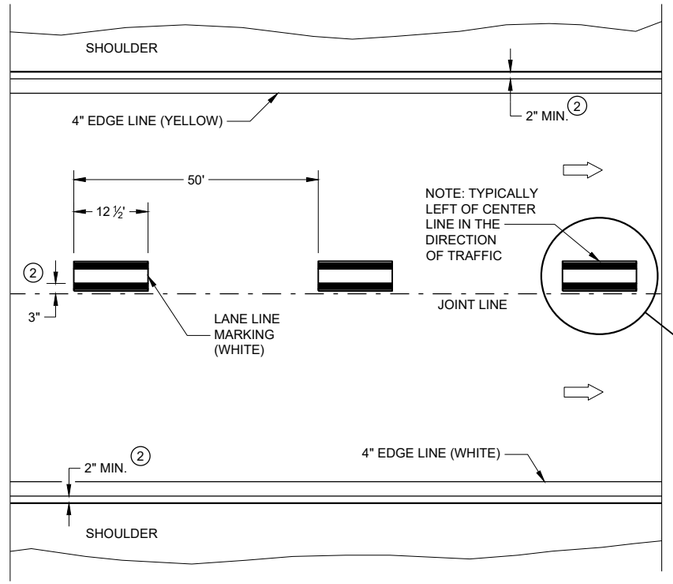
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]EER
FHWA

6

S.D.D. 15 C 6-9

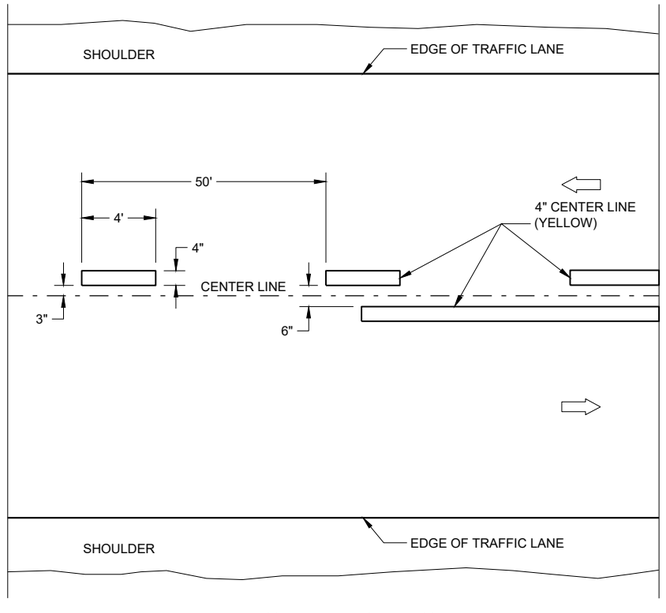


TWO WAY TRAFFIC

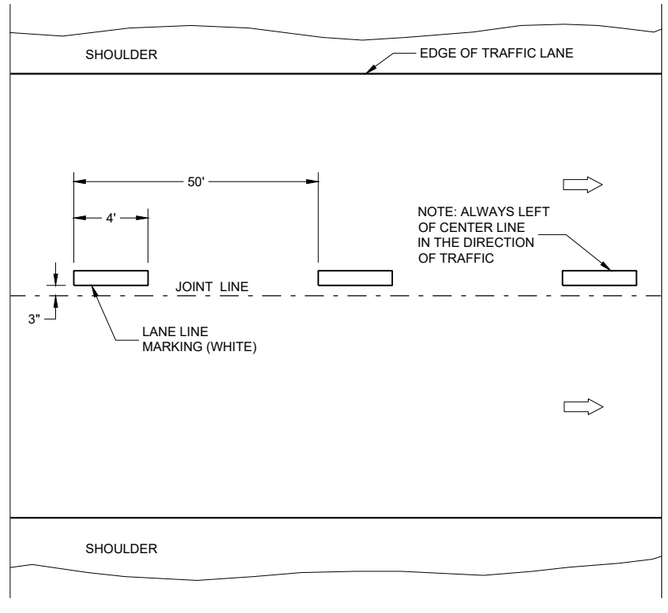


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

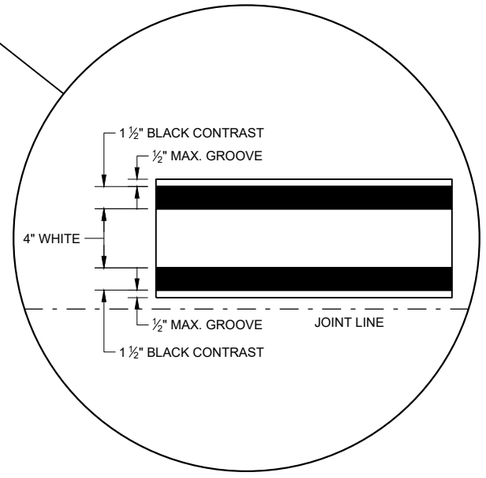
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

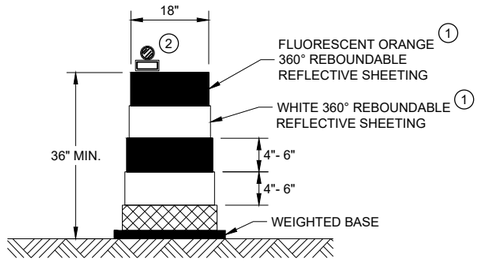
APPROVED
February 2020 — DATE
/S/ Matthew Rauch — STATEWIDE SIGNING AND M ENGINEER
FHWA

SDD 15C08 - 20a

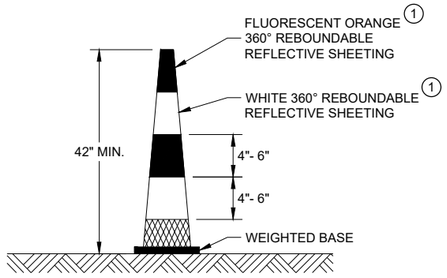
SDD 15C08 - 20a

GENERAL NOTES

1. REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
2. LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

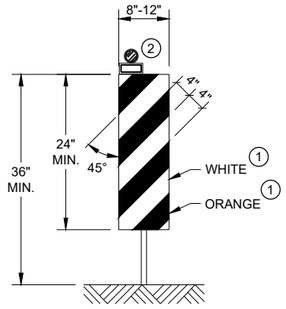


DRUM



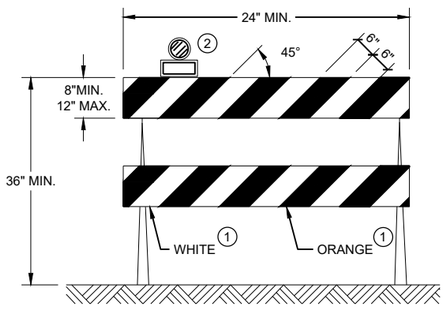
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



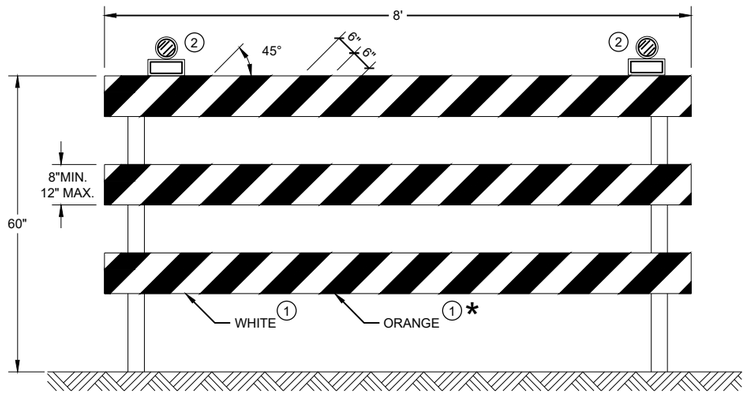
VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

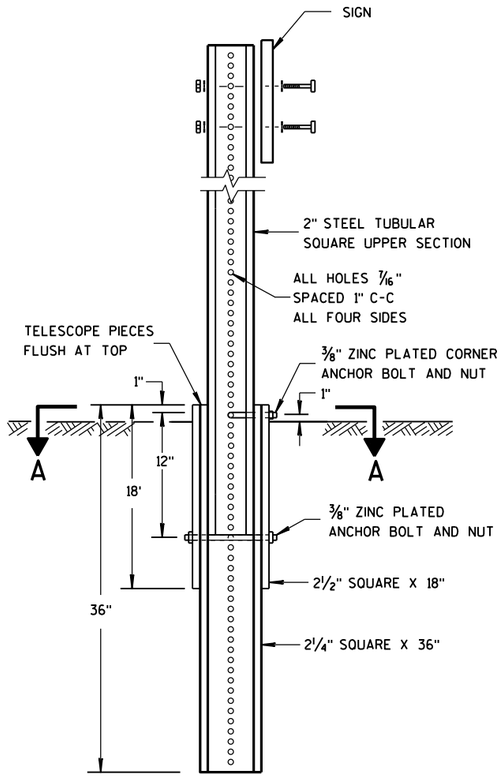
APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6

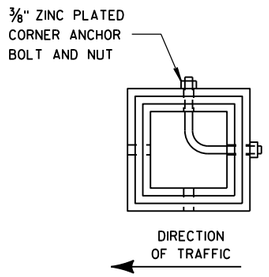
SDD15C11 - 09b

6

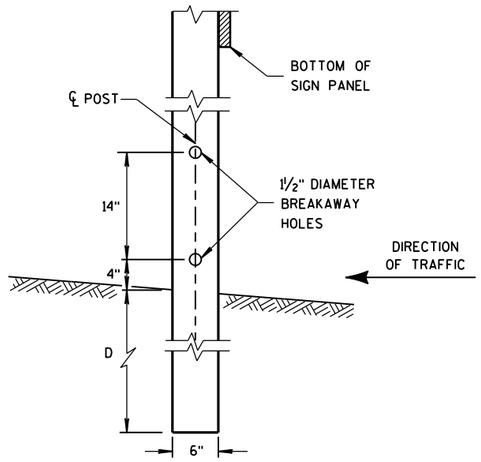
SDD15C11 - 09b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



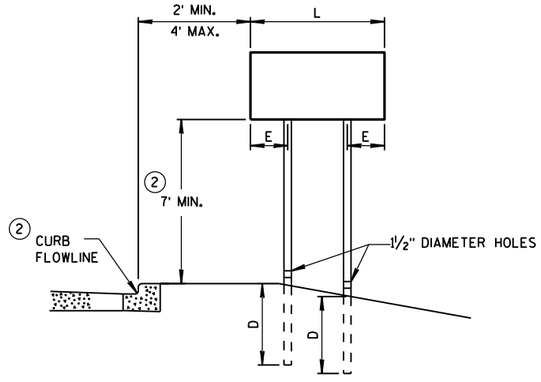
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

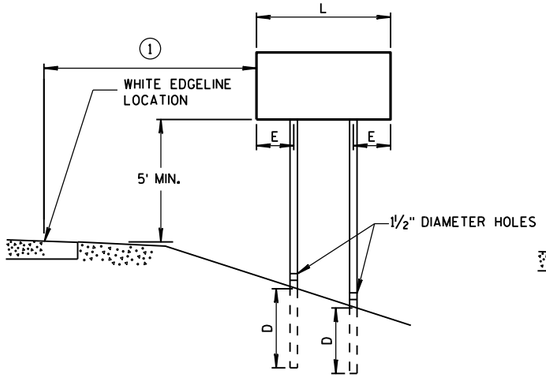
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

(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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

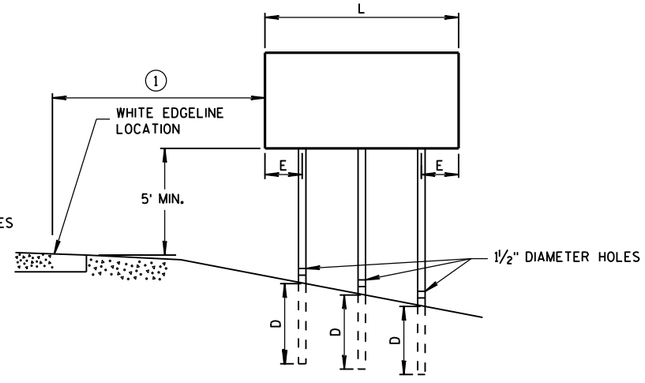
(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA



RURAL AREA



POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

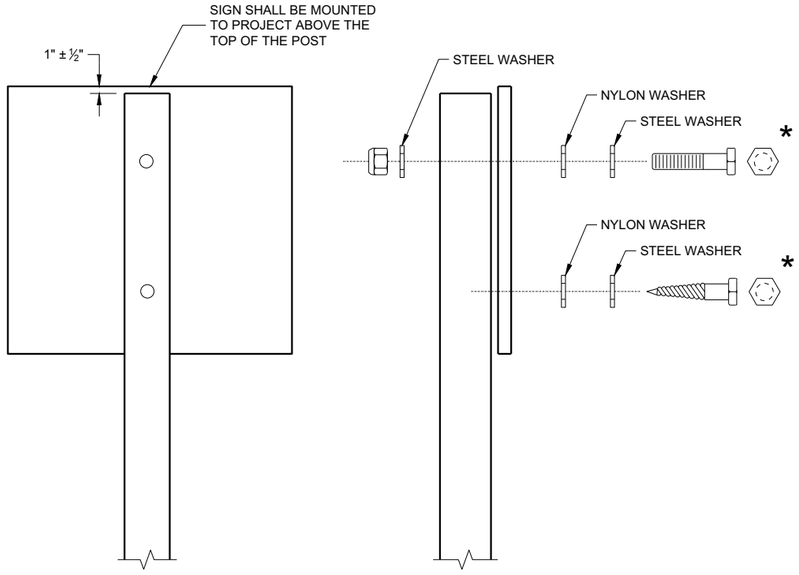
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 D 38-2a



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 POST (4" x 6")
LAG SCREWS - ⅜" x 3"
MACHINE BOLTS - 5/16" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ⅜" x 3 ¼" LENGTH W/NUTS
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH, GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x 1/16" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 NYLON

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

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SDD 15D38 - 02b

SDD 15D38 - 02b

ATTACHMENT OF SIGNS TO POSTS

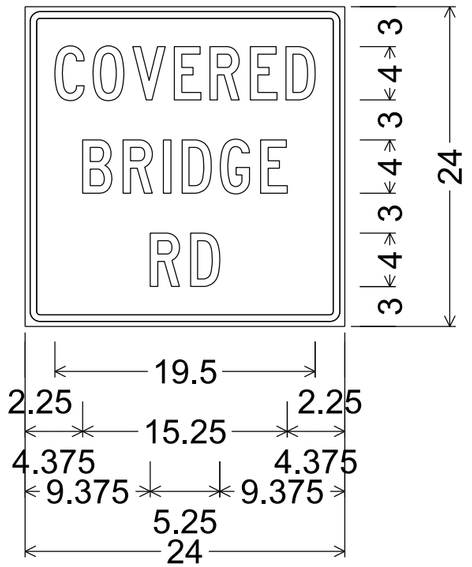
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

NOTES

1. Fixed Message Sign - Type II Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C



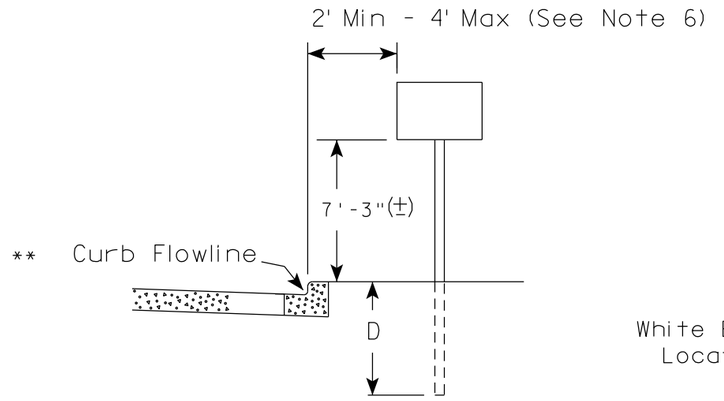
1.125" Radius, 0.500" Border, 0.375" Indent

7

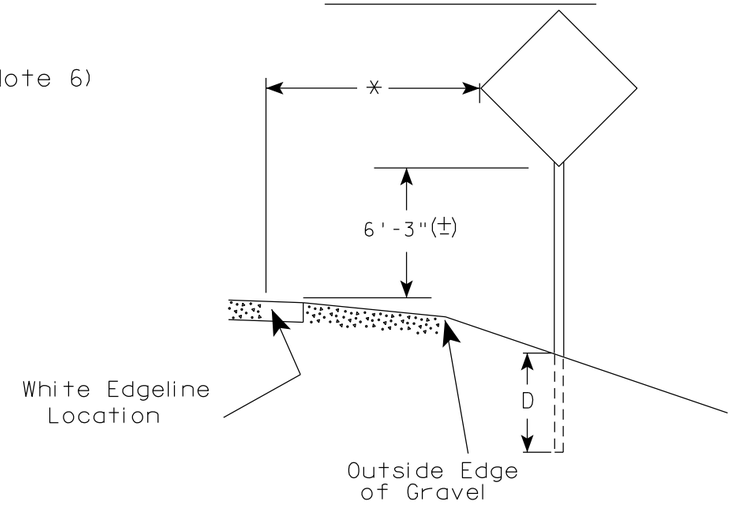
7

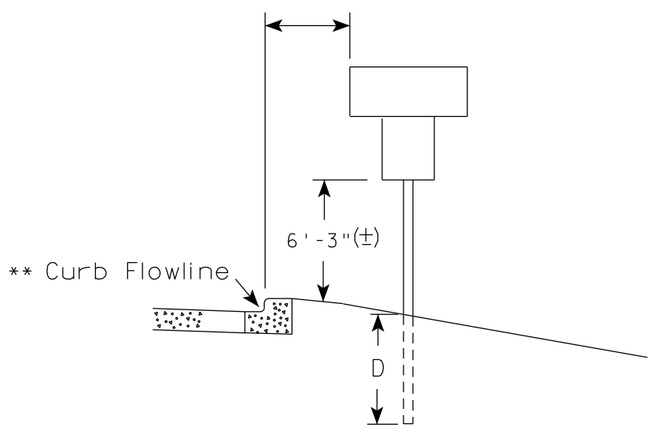
PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	TEMPORARY SIGNING	SHEET NO: 53	E

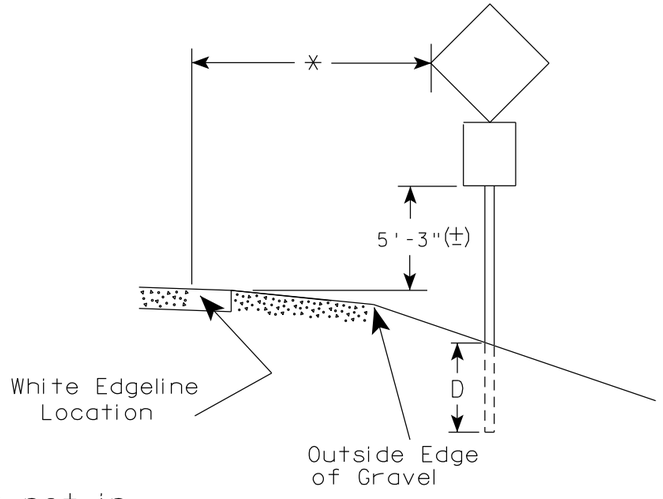
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
   The Double Arrow sign (W12-1D) 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
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 signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.

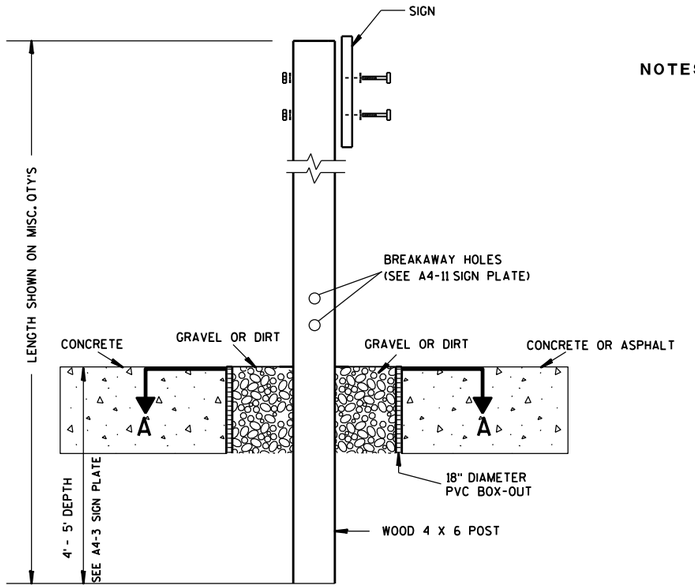
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

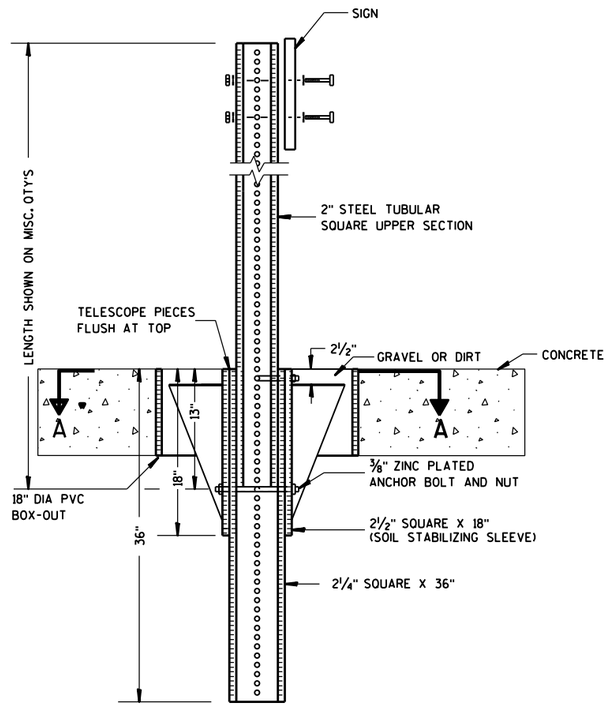
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 54	E



ELEVATION VIEW

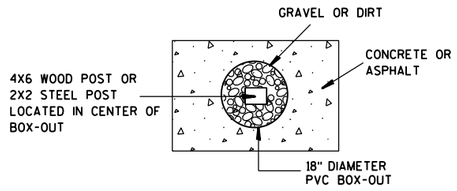
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

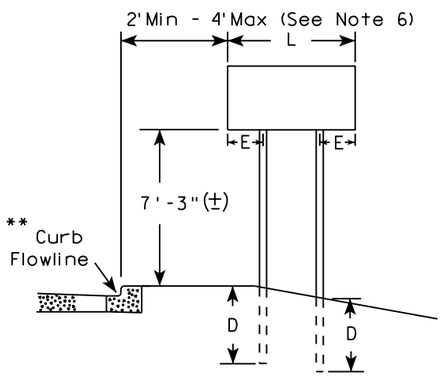
APPROVED Matthew R Rauch
for State Traffic Engineer

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

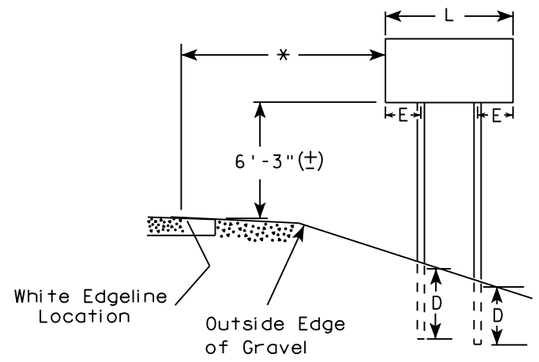
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

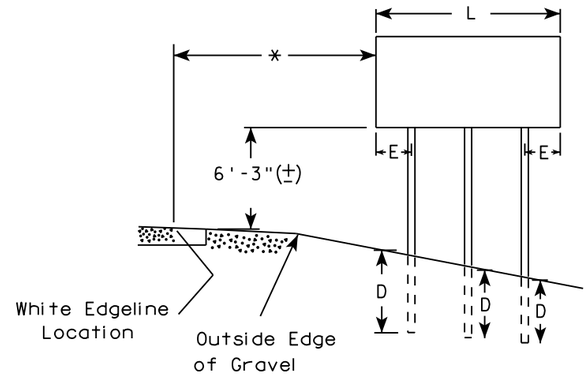
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

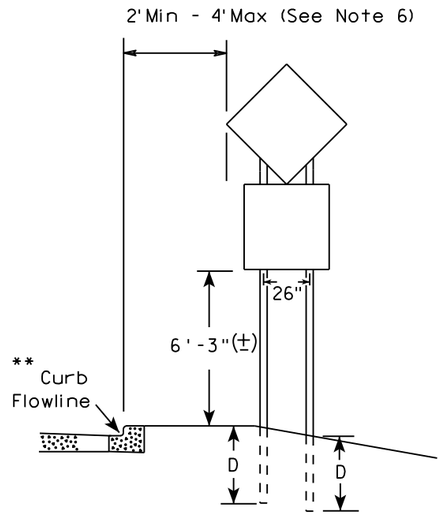
URBAN AREA



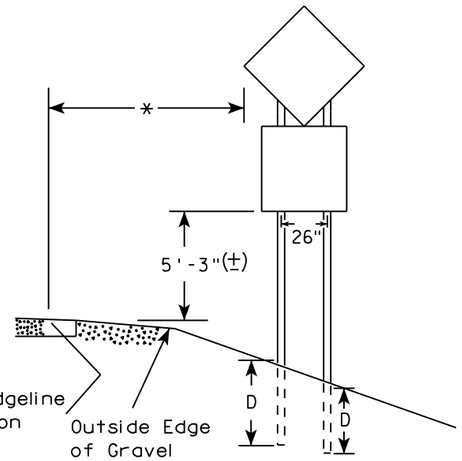
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)		
	L	E
***	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) 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 and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

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

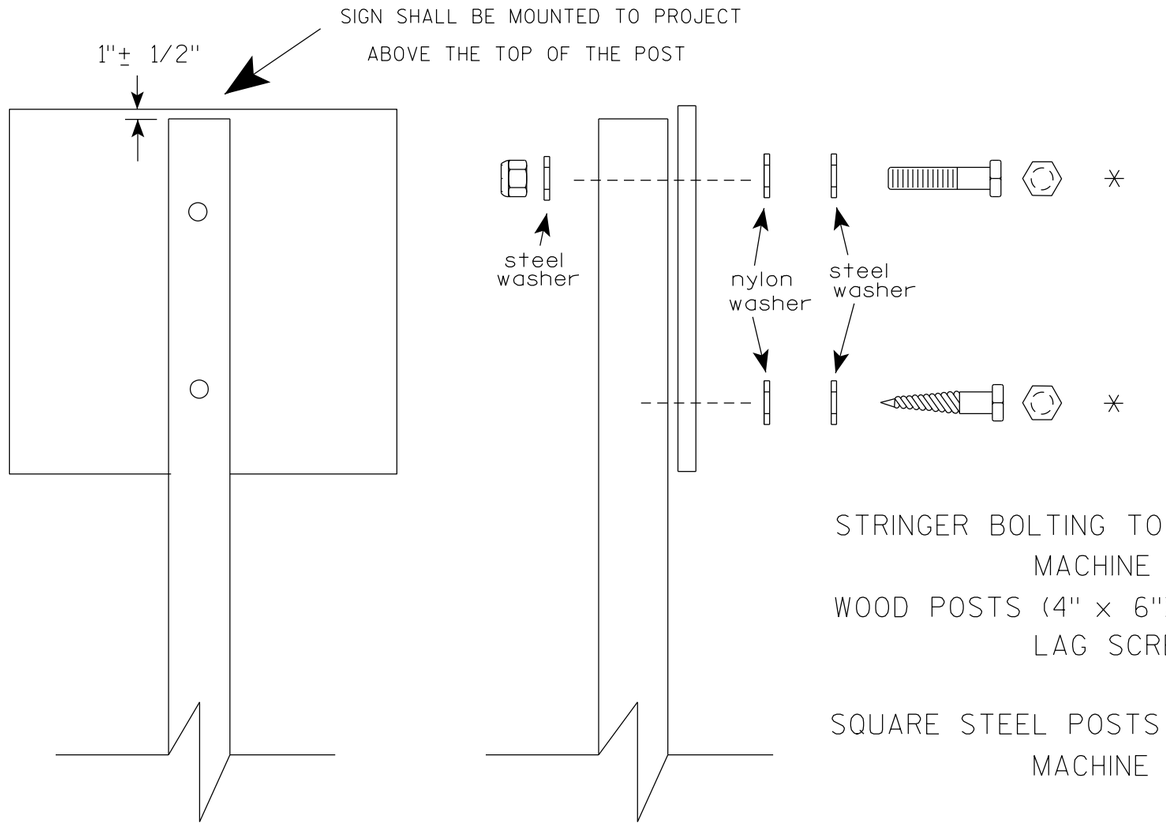
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 56	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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

* 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 4/1/2020 PLATE NO. A4-8.9

PROJECT NO:

SHEET NO: 57 E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 01-APRIL-2020 PLOT BY : dotc4c

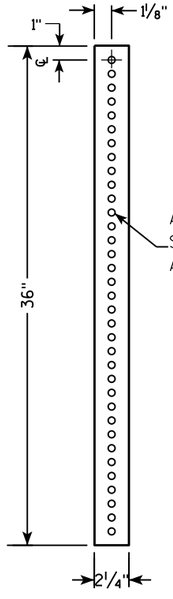
WISDOT/CADDS SHEET 42

7

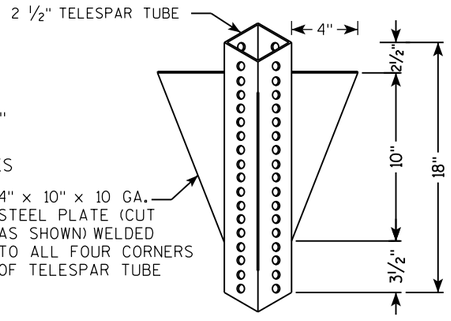
7

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

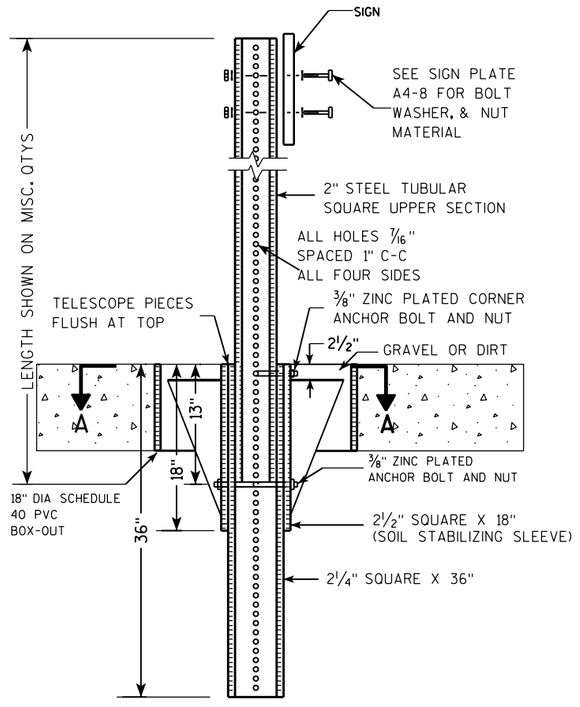
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



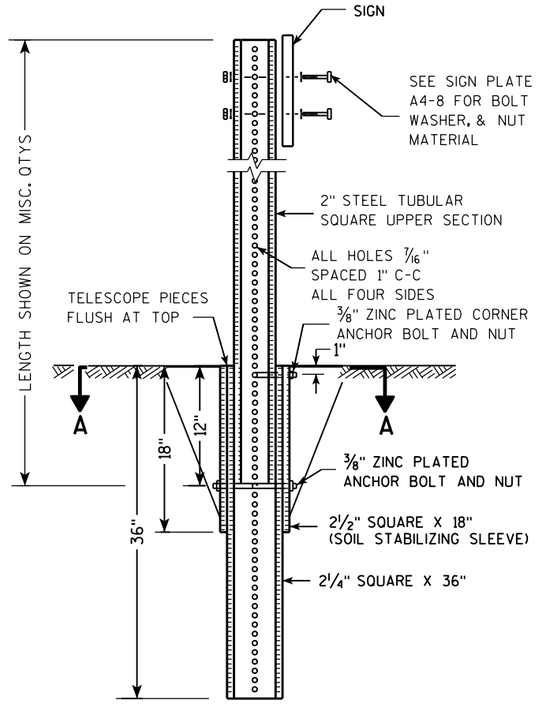
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

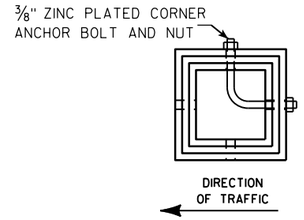


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

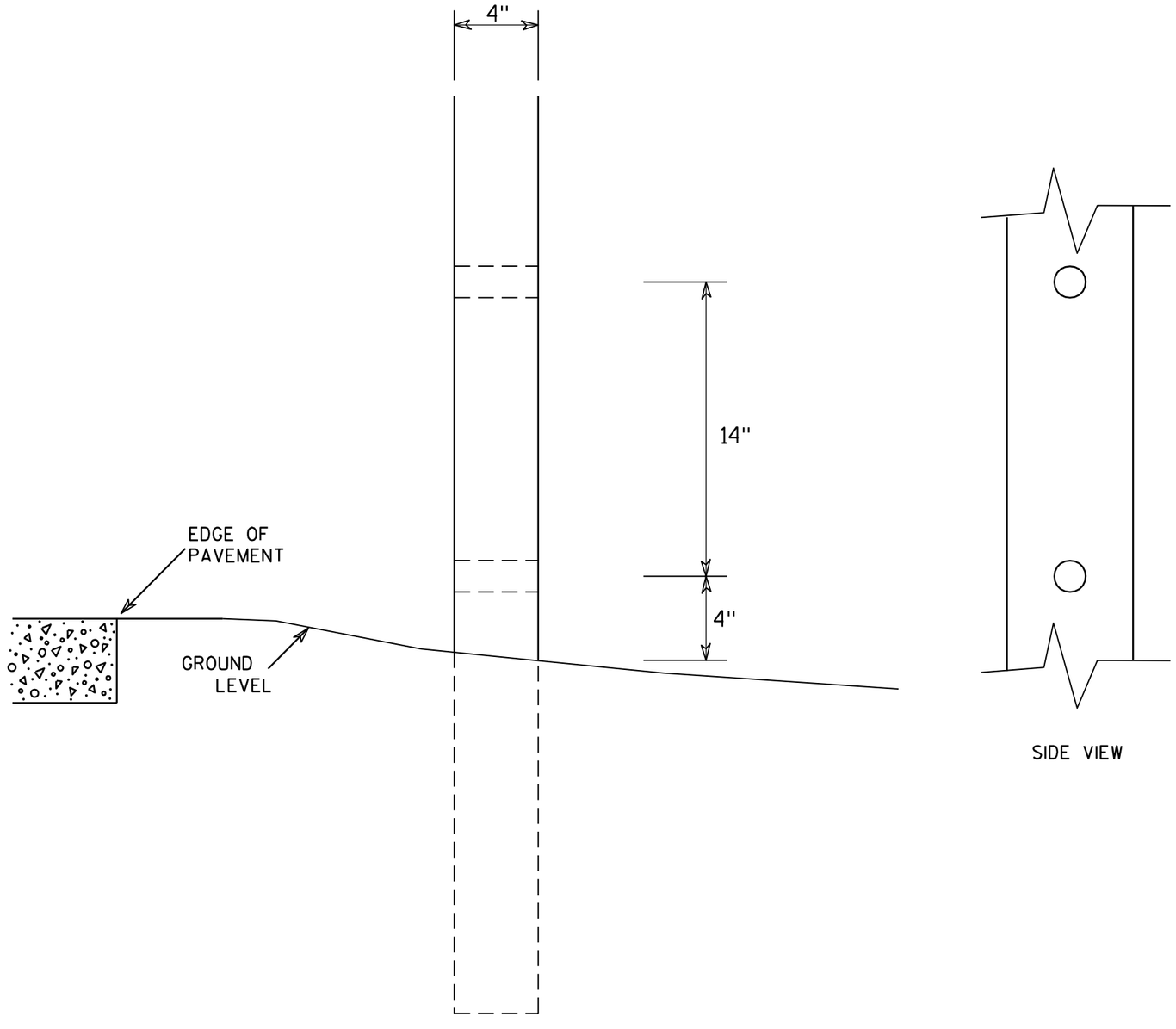
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000
WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

7

7

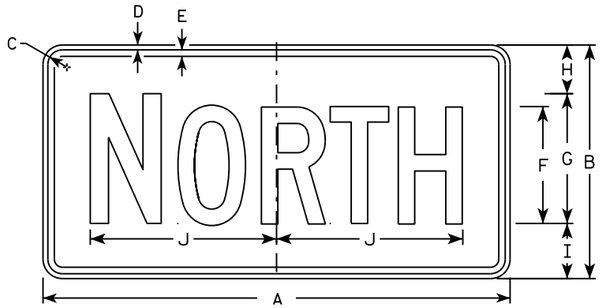
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

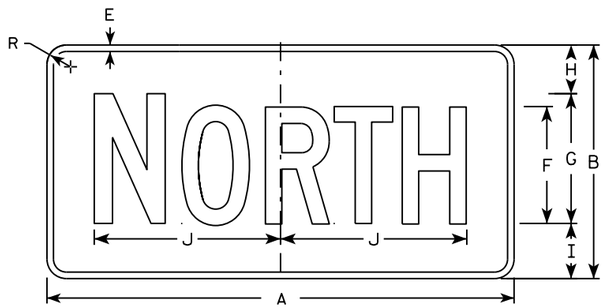
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 59	E



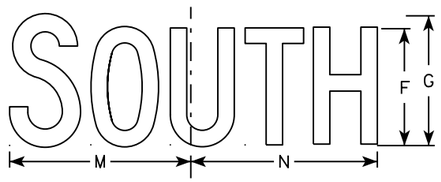
M3-1
MM3-1
MP3-1



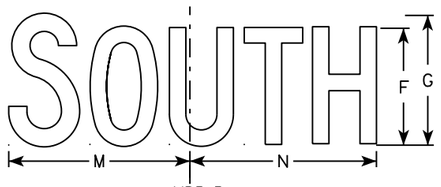
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

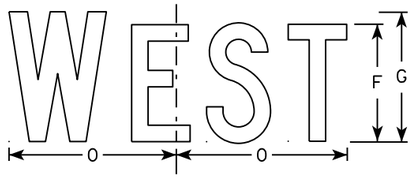
MB3-2
MK3-2
MN3-2



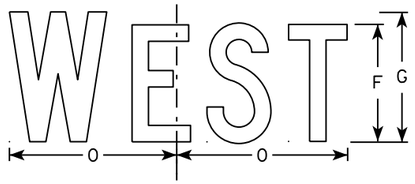
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

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
   MP3-1 thru MP3-4 Background - White
   Message - Blue
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

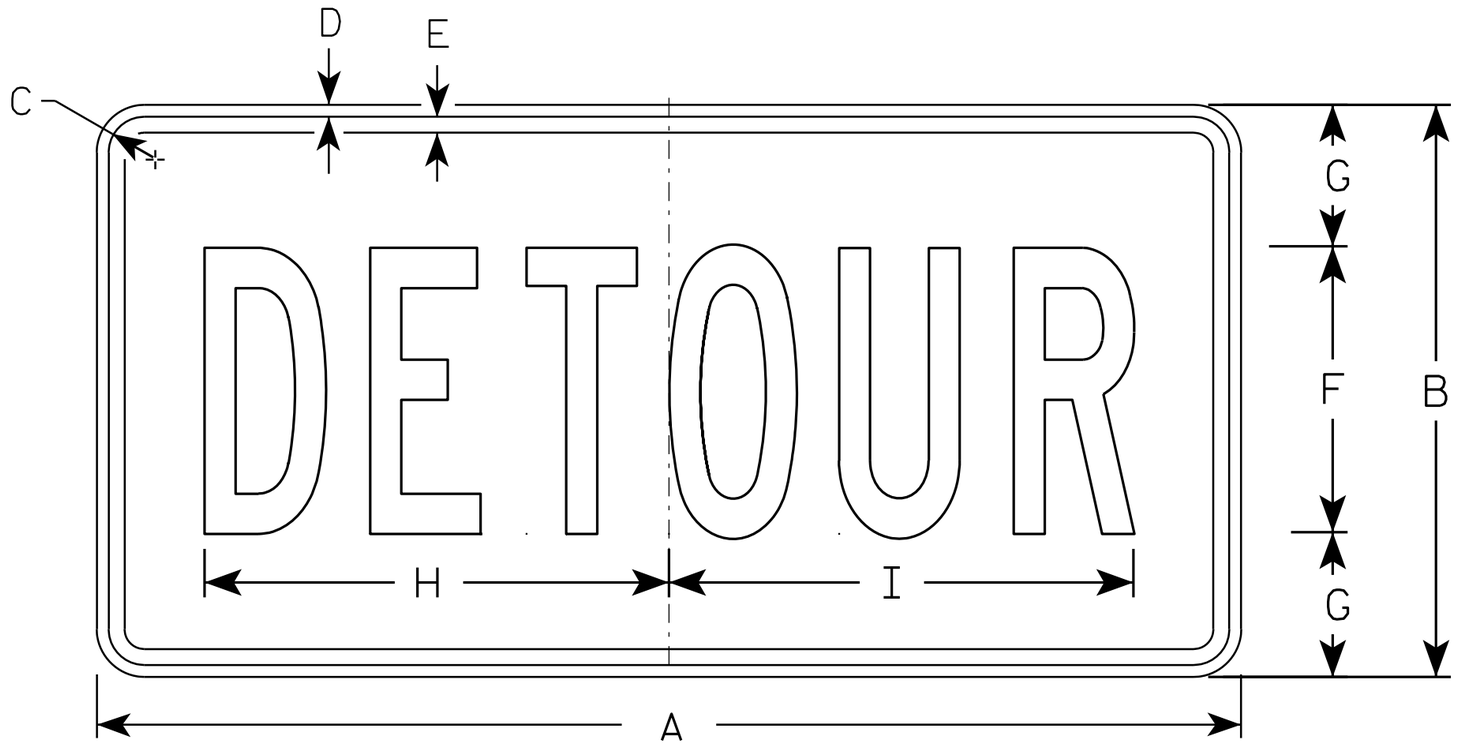
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



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																											

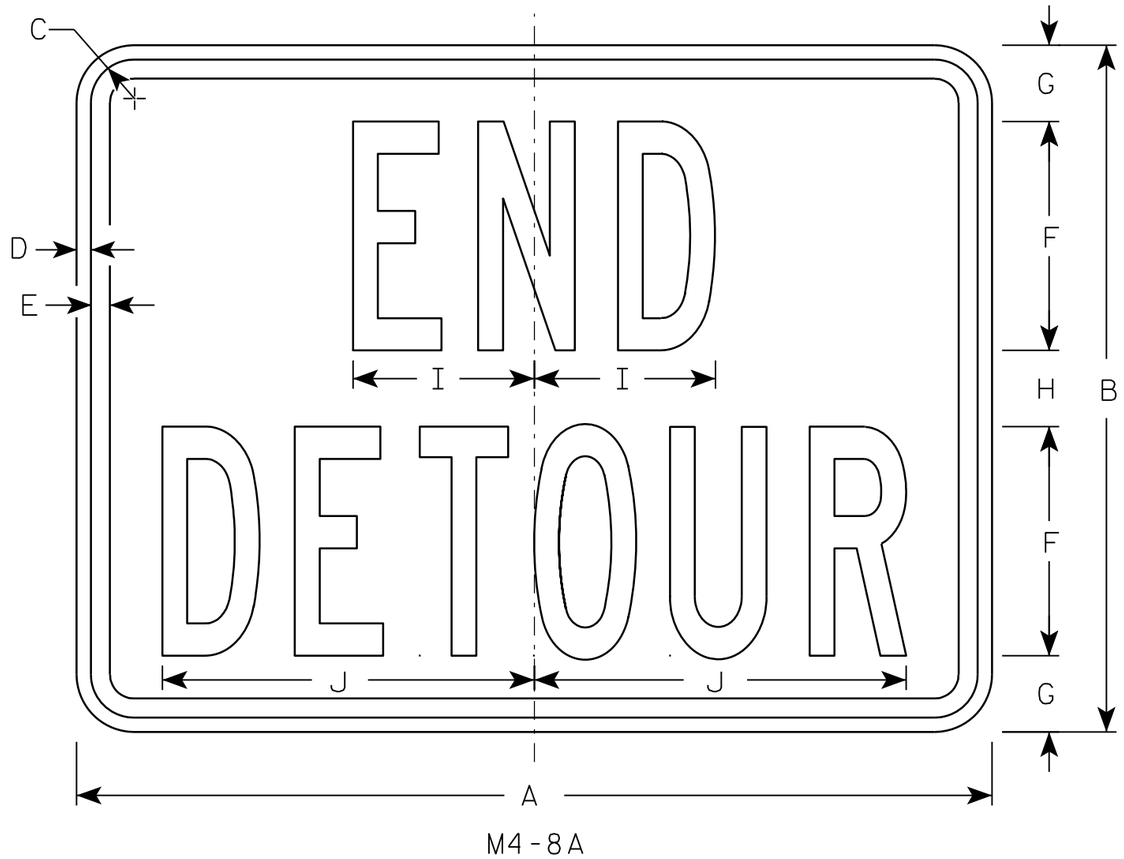
STANDARD SIGN
M4-8

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: 61	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																											

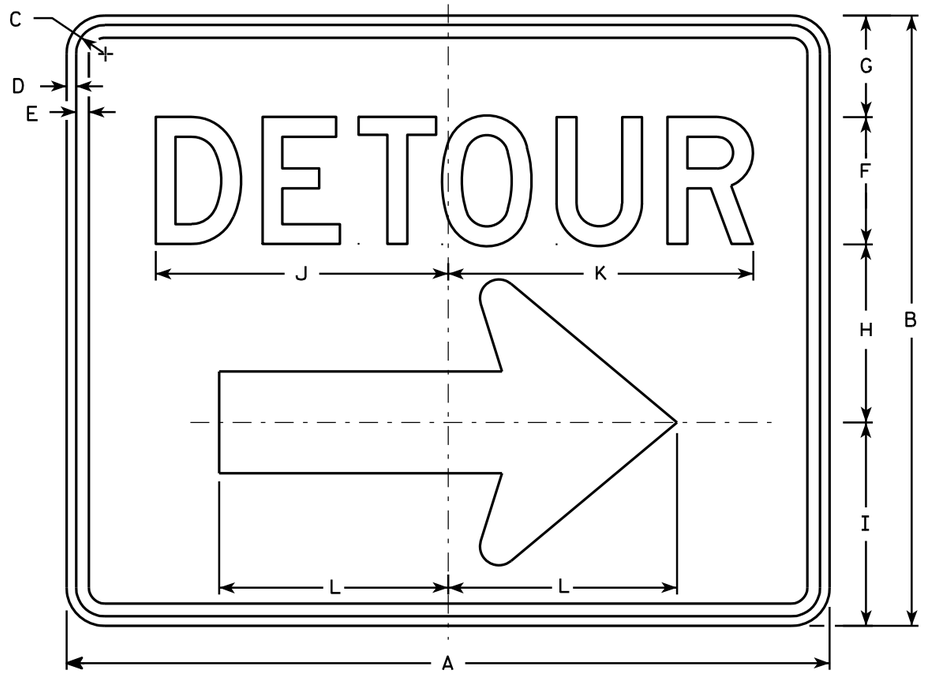
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

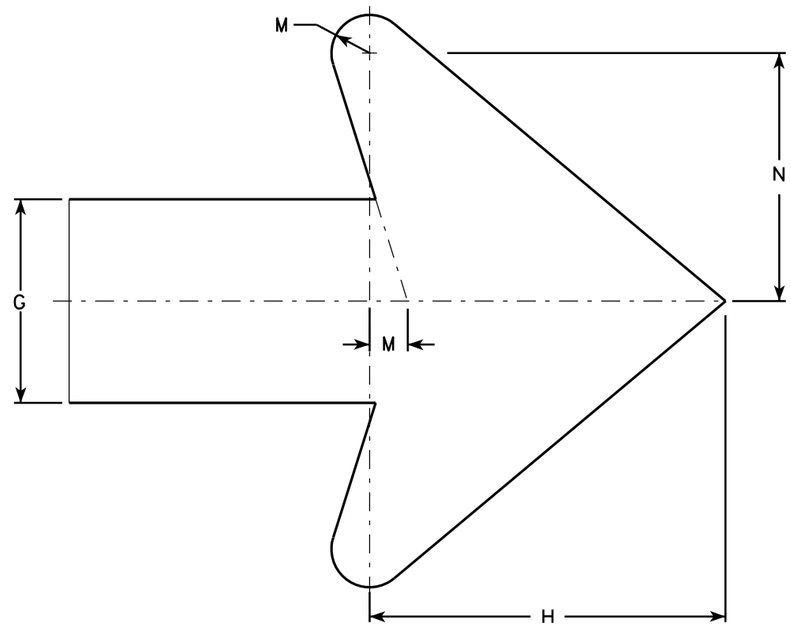
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 62	E



M4-9R

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 - 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. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

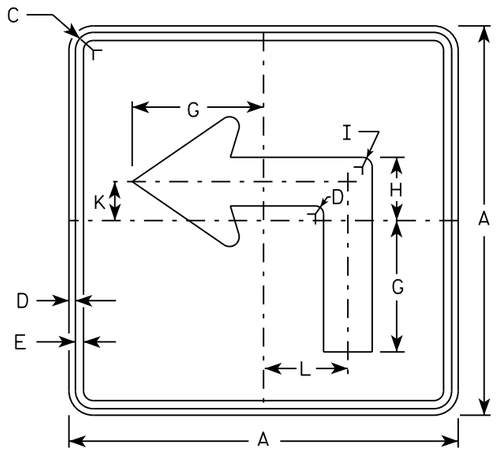
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

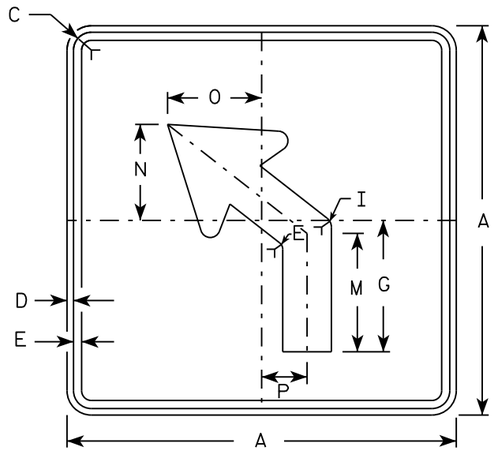
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

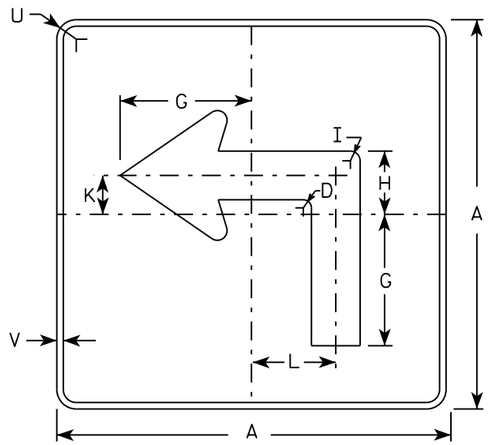
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 63	E



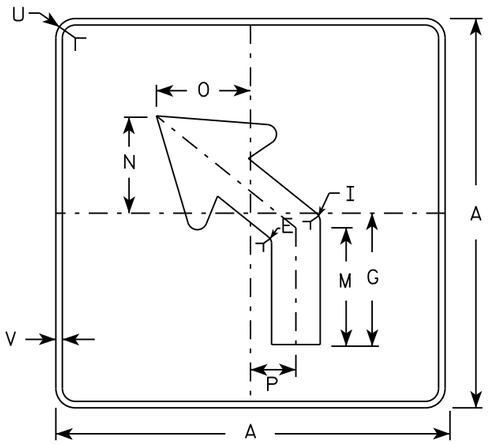
M5-1L
MM5-1L
MO5-1L
MP5-1L



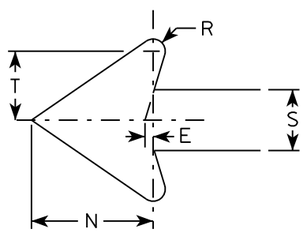
M5-2L
MM5-2L
MO5-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

1. Signs are Type II - Type H reflective 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. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   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
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 7/8	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 7/8	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 7/8	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

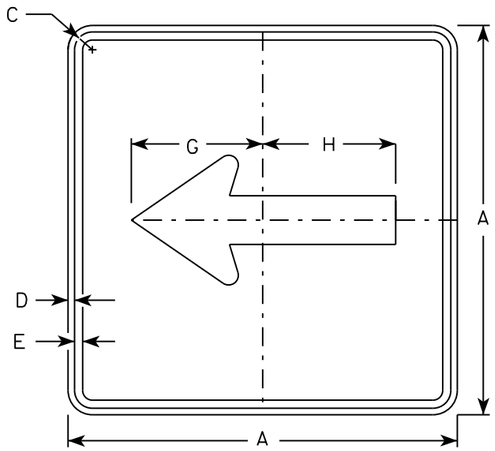
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

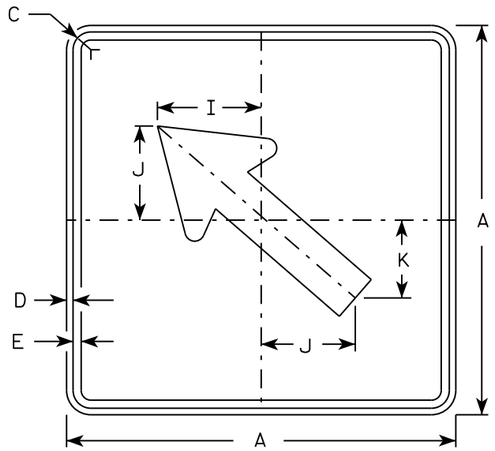
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M5-1.13

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



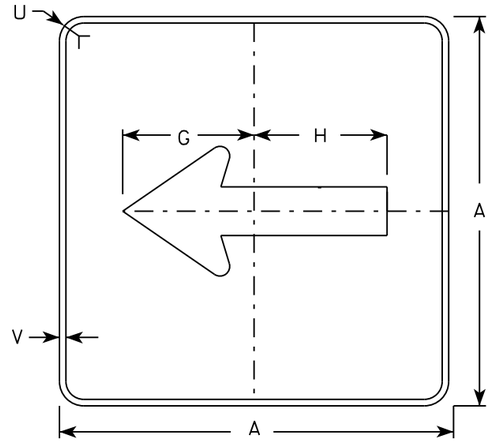
M6-1
MM6-1
MO6-1
MP6-1



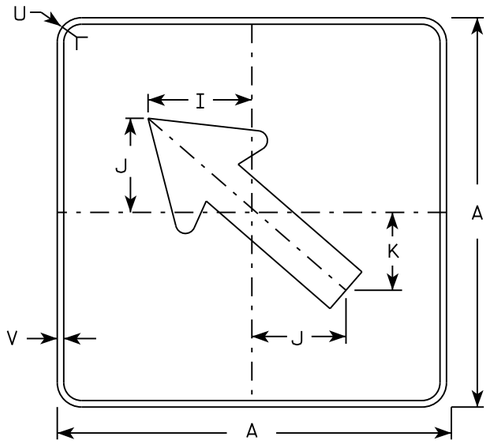
M6-2
MM6-2
MO6-2
MP6-2

NOTES

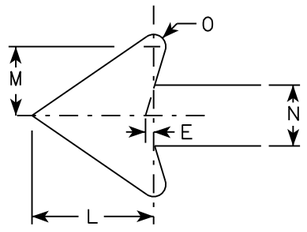
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background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



MB6-2
MK6-2
MN6-2
MR6-2



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

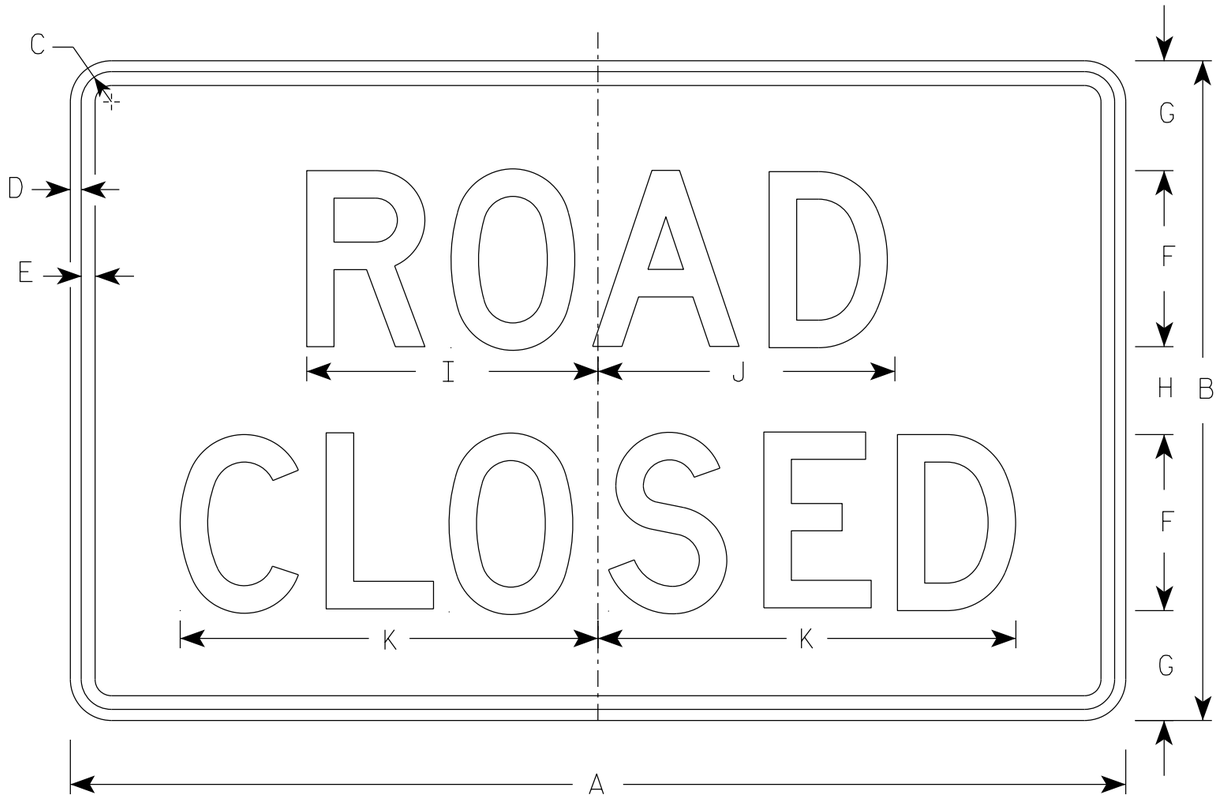
STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 65 M6-1.15

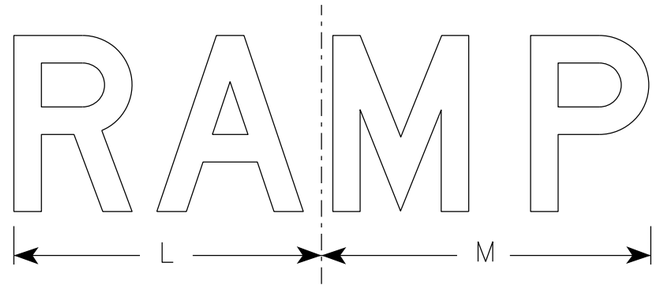
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



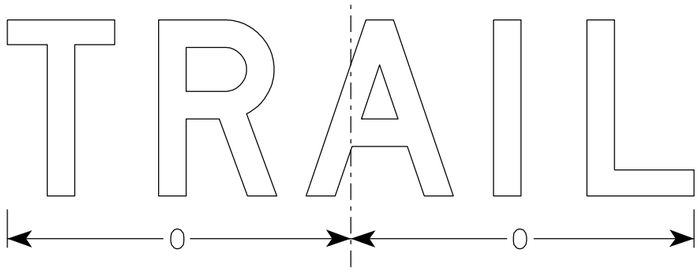
R11-2

NOTES

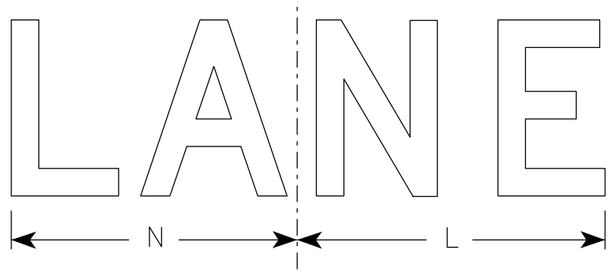
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.



R11-2R



R11-2T



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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

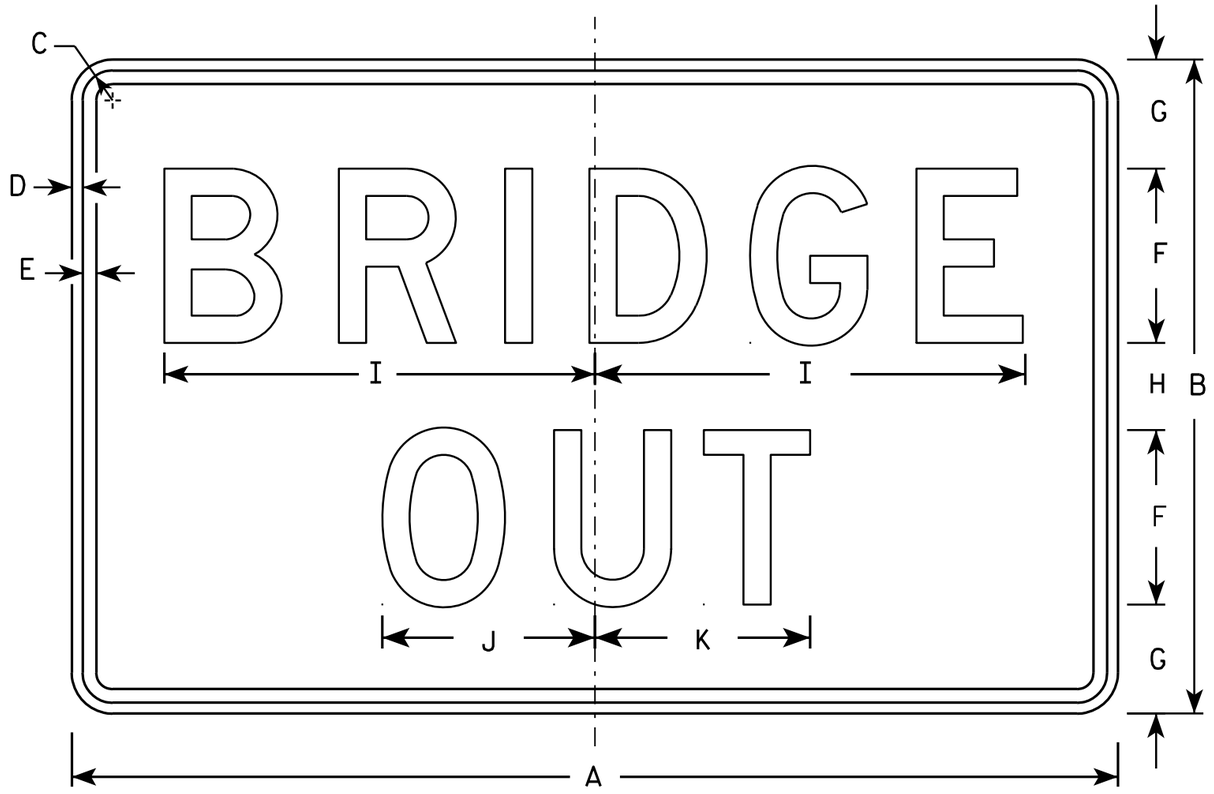
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R112.dgn PLOT DATE : 29-MAR 2021 8:15 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7



R11-2B

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	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

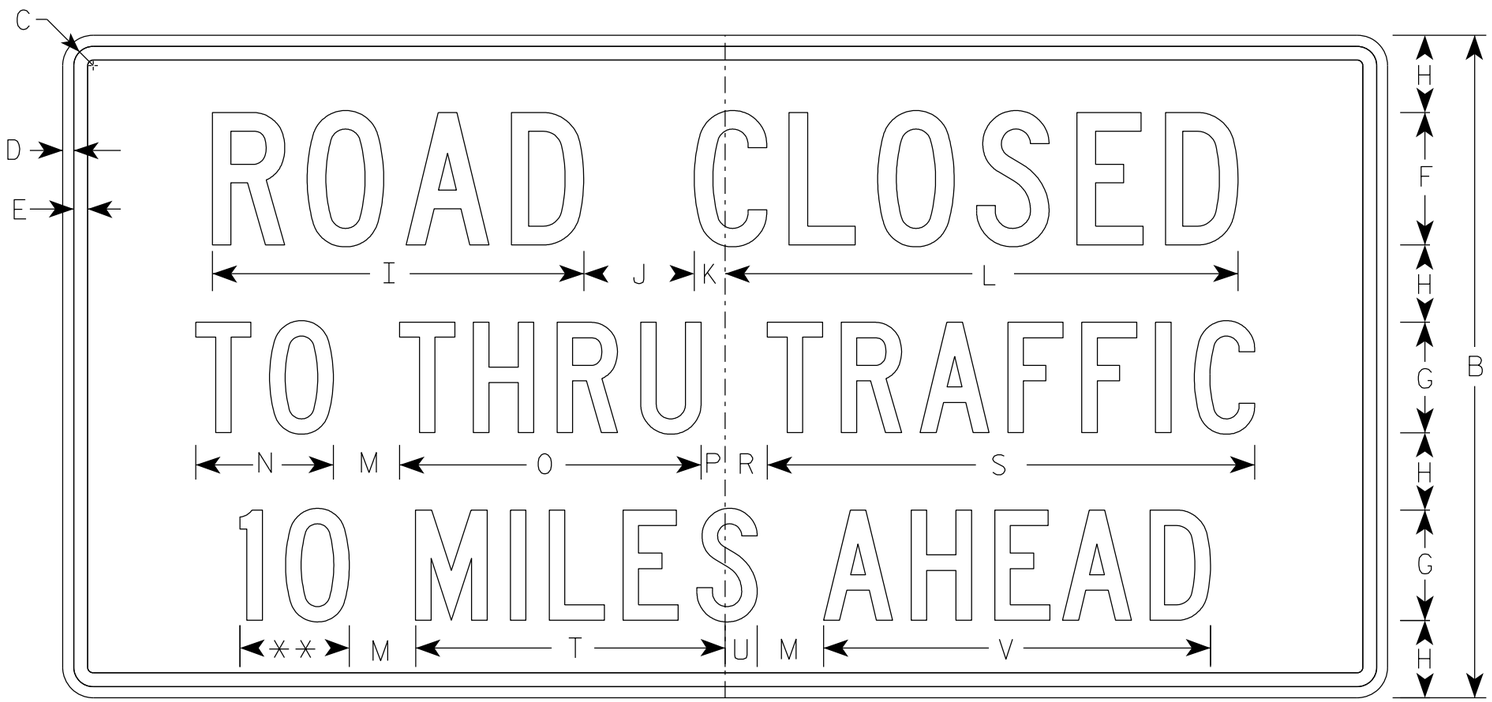
DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO:

SHEET NO: 67 E

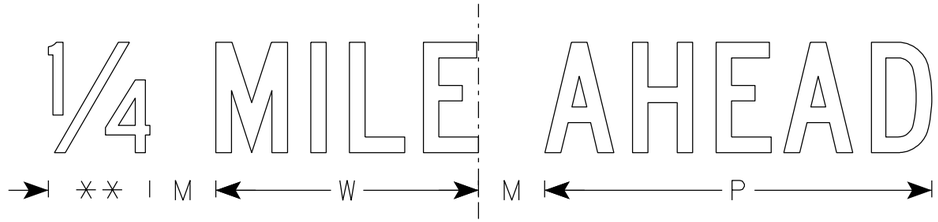
NOTES

1. Sign is Type II - Type H Reflective
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 to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3

** See Note 5



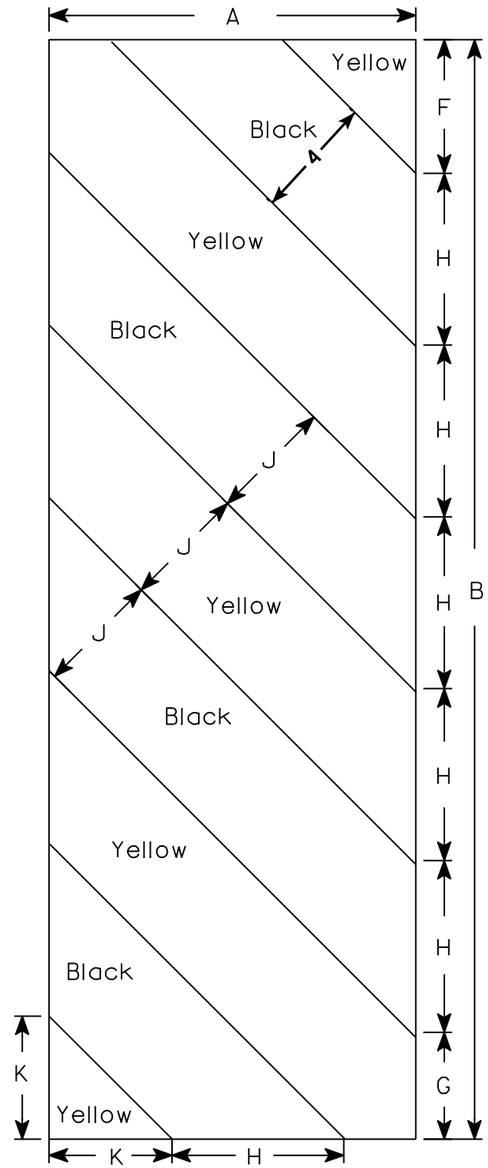
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/4	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8				4.5
2S	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5
2M	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5
3																											
4																											
5																											

STANDARD SIGN
R11-3

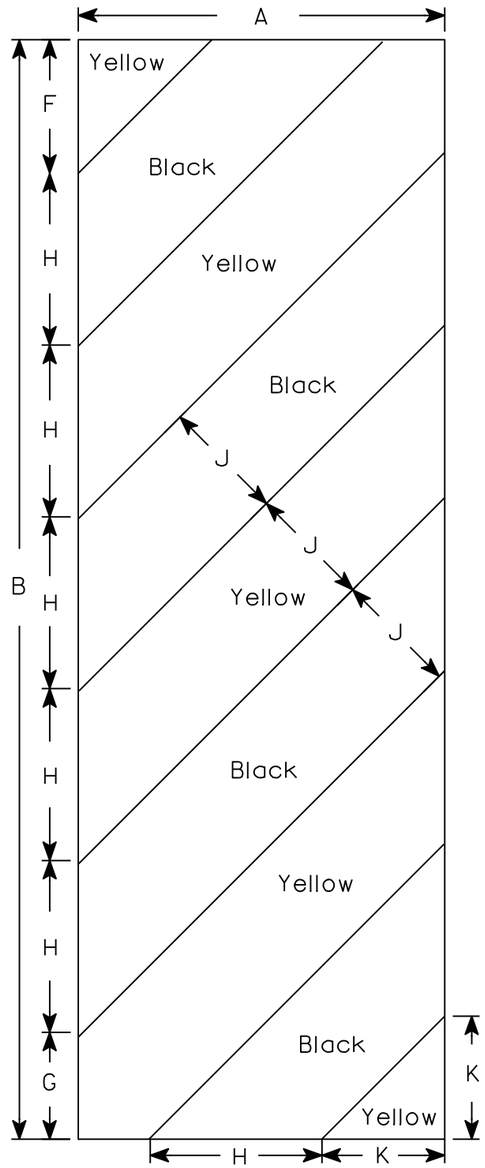
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 6/14/2021 PLATE NO. R11-3.9

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



W5-52L



W5-52R

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. 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. Alternate colors of stripes as shown.

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	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

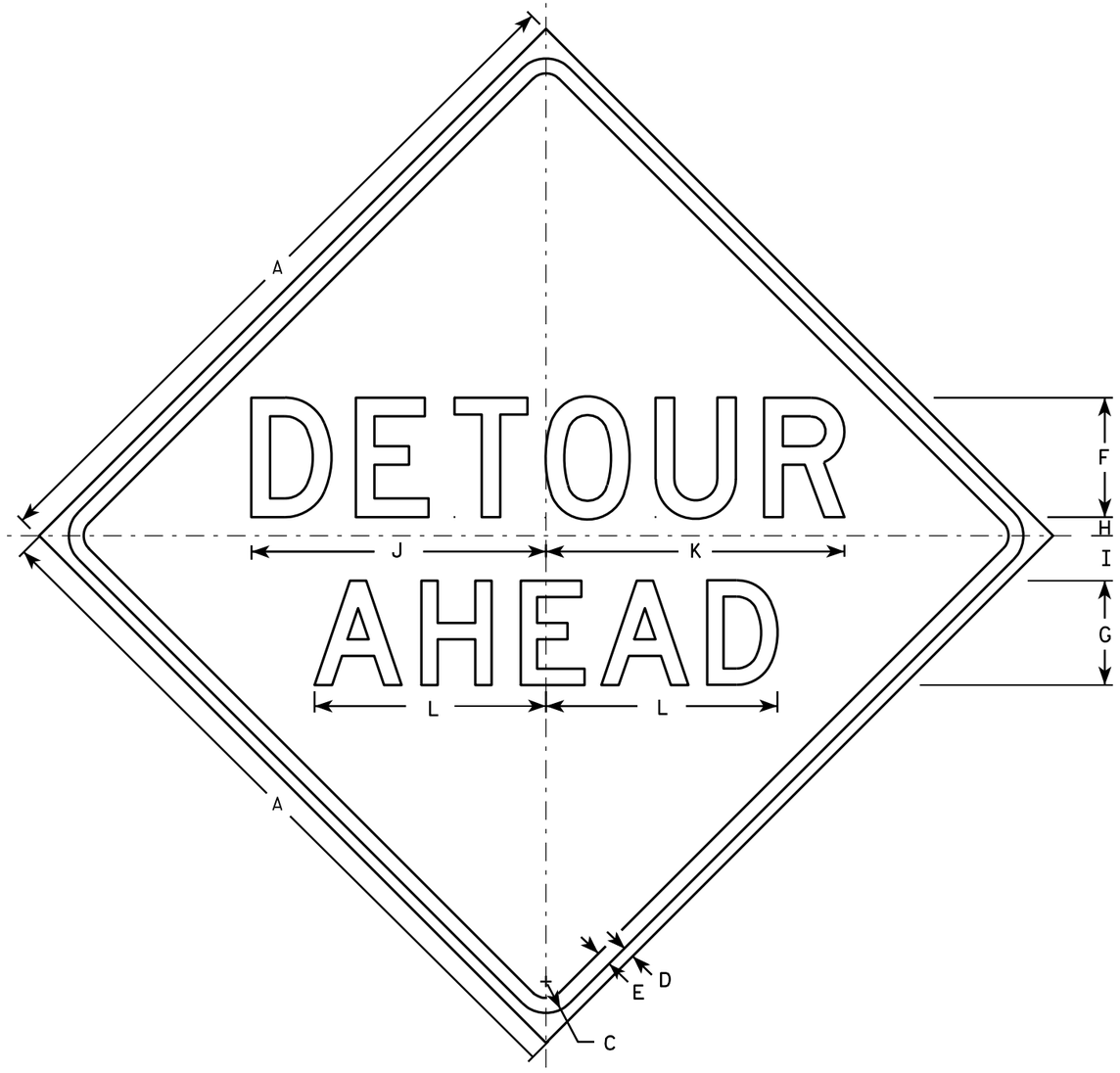
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

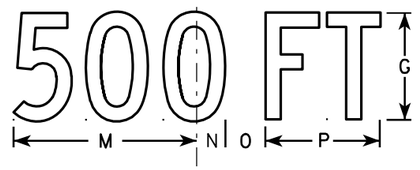
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

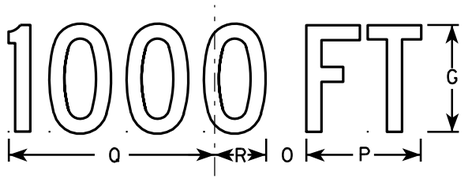
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 69	E



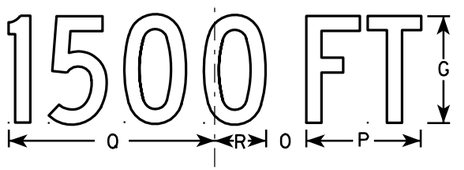
W20-2A



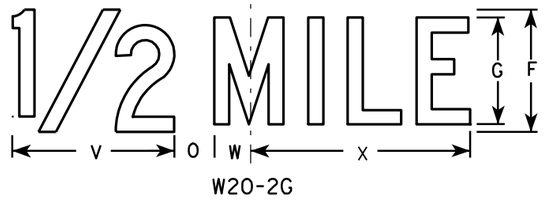
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	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

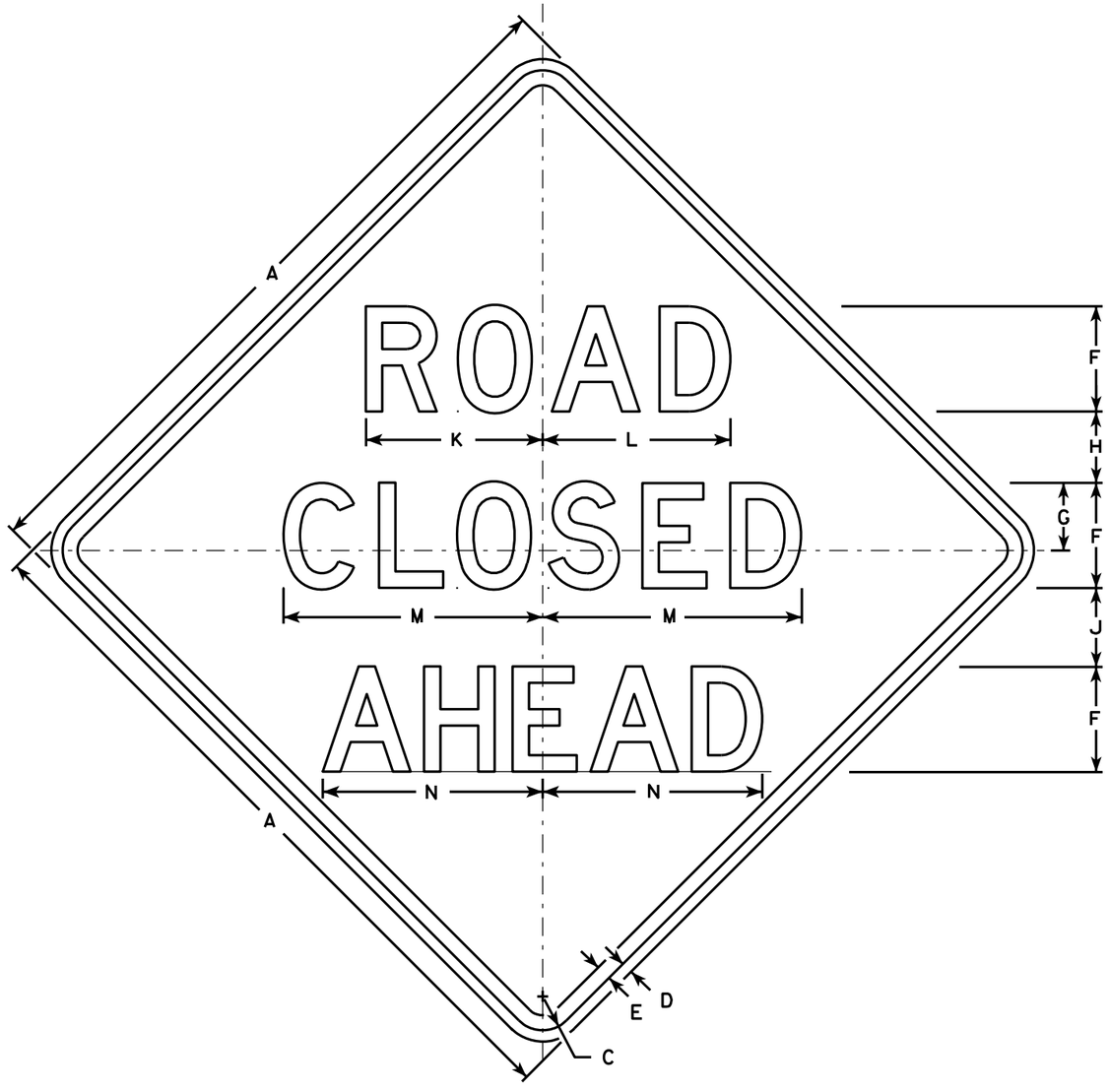
APPROVED Matthew R Rauch
for State Traffic Engineer

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

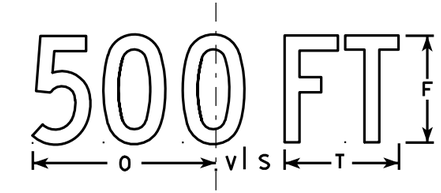
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 70 | E

7

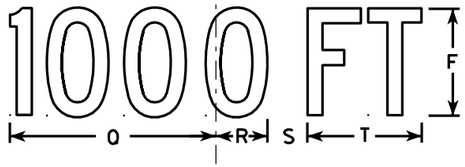
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W202.DGN PLOT DATE : 18-MAR-2011 10:00 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



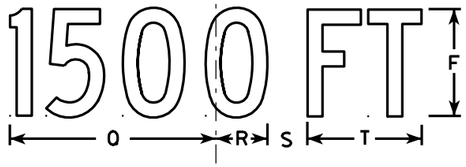
W20-3A



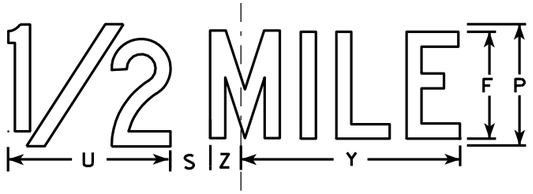
W20-3D



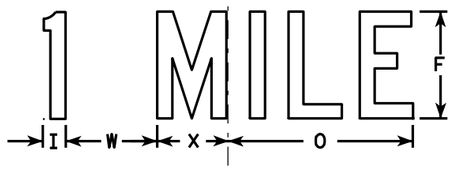
W20-3C



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:
   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. 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

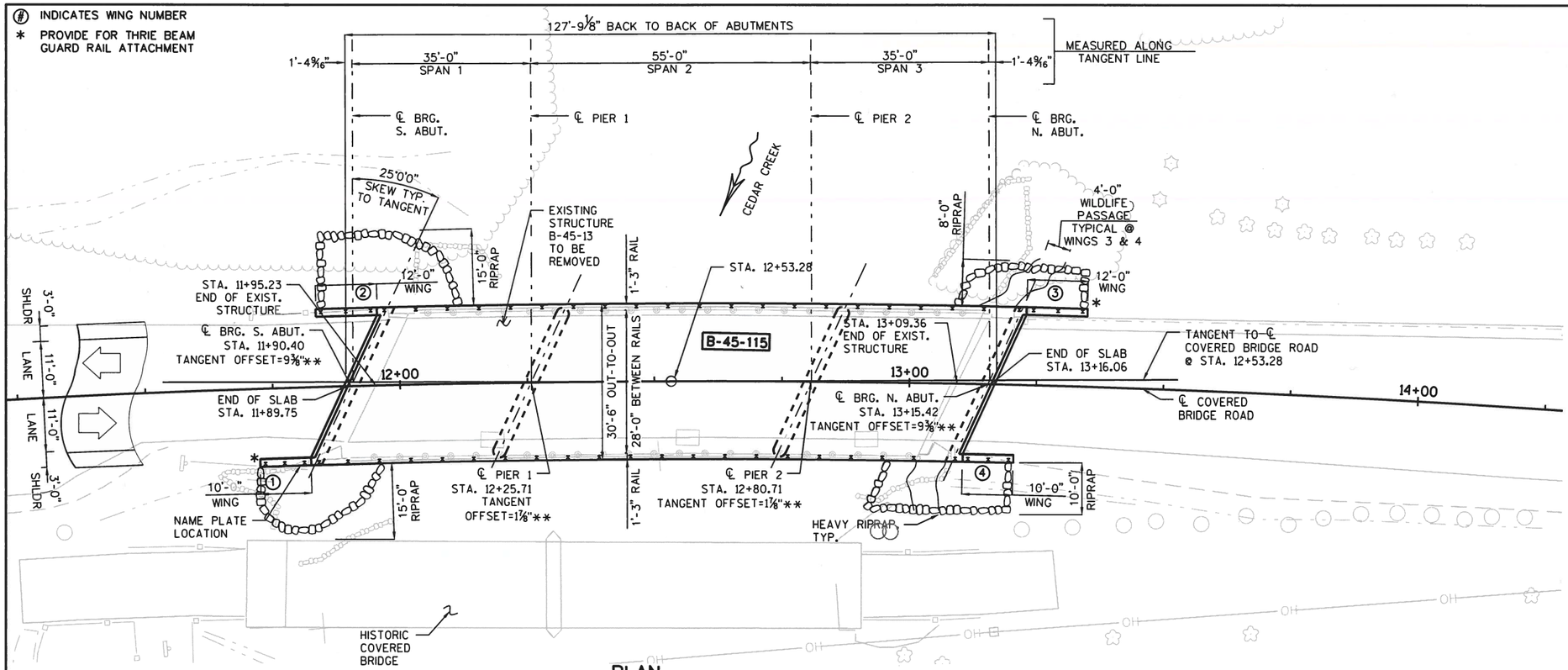
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 71 | E

7

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

(#) INDICATES WING NUMBER

* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT

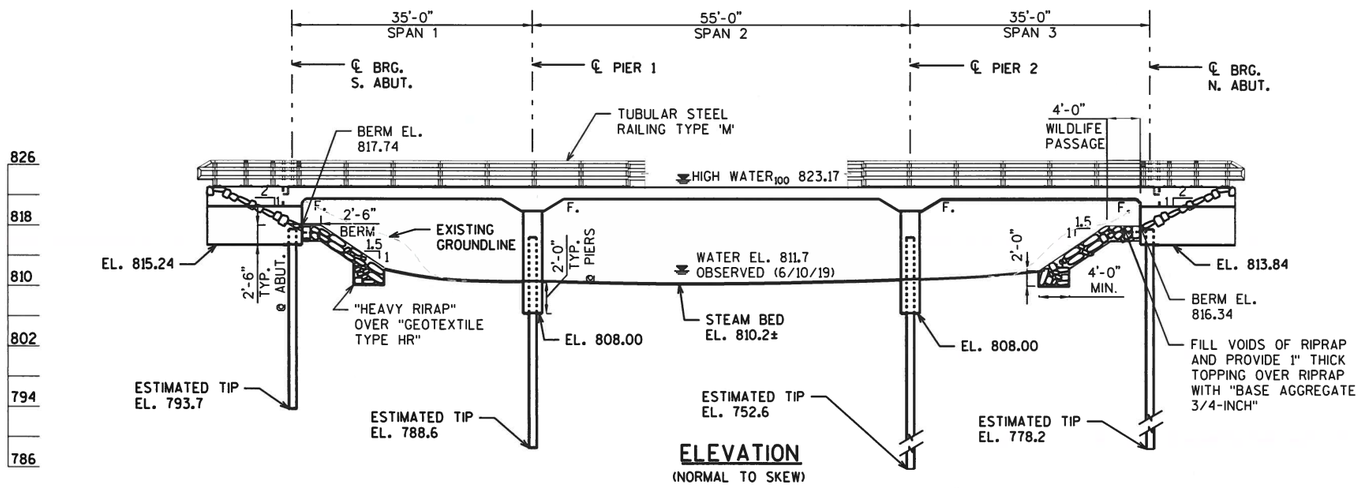


PLAN

3-SPAN CONCRETE HAUNCHED SLAB

LEGEND

**TANGENT OFFSET IS DISTANCE FROM ℄ OF SUBSTRUCTURE UNIT (ON ℄ COVERED BRIDGE ROAD) MEASURED PERPENDICULAR TO TANGENT LINE.



ELEVATION

(NORMAL TO SKEW)

STATE PROJECT NUMBER
2695-11-70

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING: RF=1.21
OPERATING RATING: RF=1.57
WISCONSIN STANDARD. PERMIT VEHICLE (Wis-SPV): 250 KIPS

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

MATERIAL PROPERTIES
CONCRETE MASONRY:
SUPERSTRUCTURE _____ f'c = 4,000 PSI
ALL OTHERS _____ f'c = 3,500 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT GRADE 60 _____ fy = 60,000 PSI

HYDRAULIC DATA

100 YEAR FREQUENCY
Q_{100} = 5,819 C.F.S.
DRAINAGE AREA = 117.0 SQ. MI.
HW_{100} = 823.17
VELOCITY = 4.97 F.P.S.
WATERWAY AREA = 883.40 SQ. FT
OVERTOPPING FREQUENCY = 50 YEARS
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY
Q_2= 1,500 C.F.S.
HW_2 = 817.06
VELOCITY = 2.79 F.P.S.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 25' LONG AT THE SOUTH ABUTMENT AND 40' LONG AT THE NORTH ABUTMENT.

PIERS TO BE SUPPORTED ON HP10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 30' LONG AT PIER 1 AND 65' LONG AT PIER 2.

*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

LIST OF DRAWINGS

CURVE DATA

COVERED BRIDGE ROAD
P.I. STA. 12+05.31
PC STA. 9+72.83
PT STA. 14+36.45
Δ = 10°40'05"
D = 2°18'04"
T = 232.48'
L = 463.62'
R = 2,490.00'

TRAFFIC DATA

COVERED BRIDGE ROAD
A.A.D.T. = 965 (2022)
A.A.D.T. = 1,330 (2042)
RDS = 40 MPH

WISCONSIN KEVIN G. WOOD E-32070 MILWAUKEE, WI PROFESSIONAL ENGINEER
August 3, 2021

BUREAU OF STRUCTURES CONTACT:
AARON BONK (608) 261-0261

CONSULTANT CONTACT
KEVIN WOOD (414) 259-1500

NO.	DATE	REVISION	BY

GRÄEF
275 West Wisconsin Avenue
Suite 300
Milwaukee, WI 53203
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

ACCEPTED SDR 12/21/21
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-45-115

COVERED BRIDGE ROAD OVER CEDAR CREEK

COUNTY OZAUKEE
TOWN/~~CITY/VILLAGE~~ CEDARBURG
DESIGN SPEC. AASHTO LRFD 8

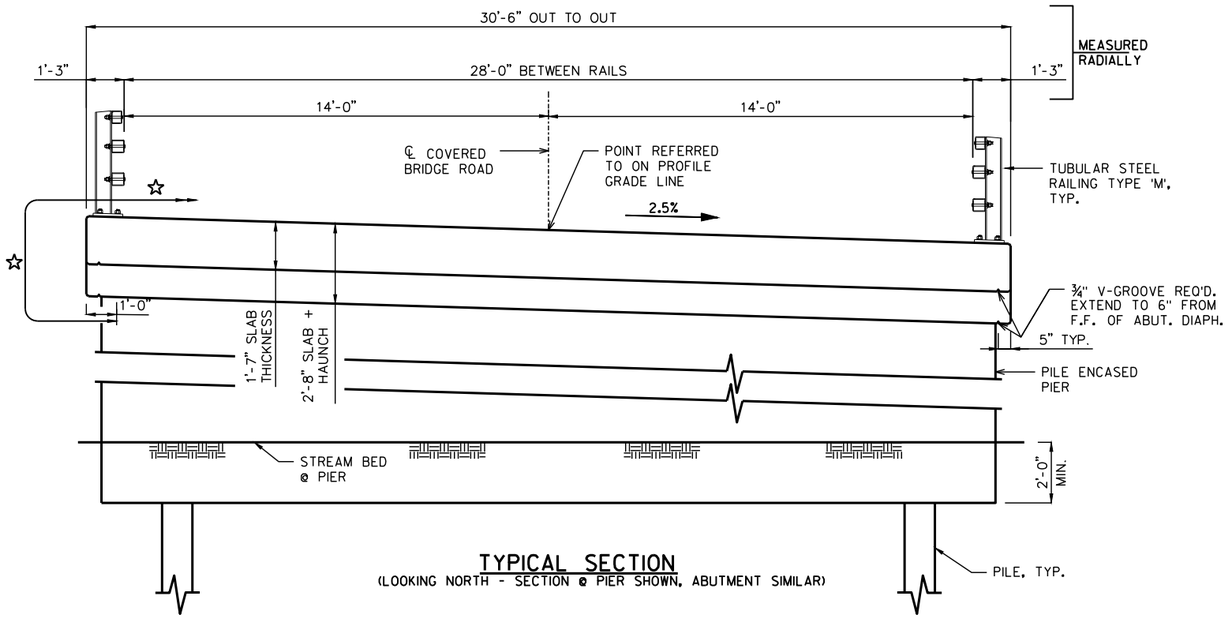
DESIGNED BY	WAR	DESIGN CK'D.	KGW	DRAWN BY.	TMM	PLANS CK'D.	KGW

GENERAL PLAN & ELEVATION

SHEET 1 OF 13
72

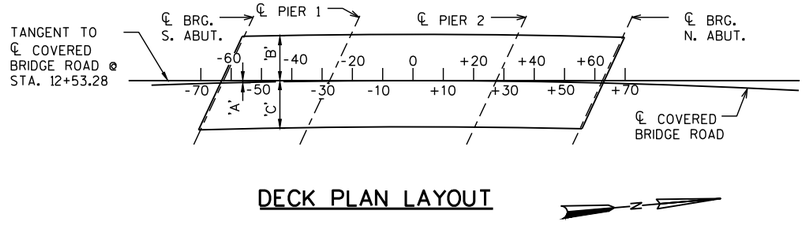
I.D. 2695-11-70 DATE: SEPTEMBER 2021

SCALE = 1:25



TYPICAL SECTION

(LOOKING NORTH - SECTION @ PIER SHOWN, ABUTMENT SIMILAR)



DECK PLAN LAYOUT

TANGENT OFFSET TABLE

DISTANCE FROM STA. 12+53.28	REF. LINE DIM. 'A'	LEFT EDGE DIM. 'B'	RIGHT EDGE DIM. 'C'
0	0'-0"	15'-3"	15'-3"
±10	0'-0¼"	15'-2¾"	15'-3¼"
±20	0'-1"	15'-2"	15'-4"
±30	0'-2⅛"	15'-0⅞"	15'-5⅛"
±40	0'-3⅜"	14'-11⅝"	15'-6⅜"
±50	0'-6"	14'-9"	15'-9"
±60	0'-8⅝"	14'-6⅜"	15'-11¾"
±70	0'-11¾"	14'-3½"	16'-2⅞"

NOTE: DIM 'A', DIM 'B' & DIM 'C' ARE MEASURED PERPENDICULAR TO TANGENT LINE

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNITS	S. ABUT.	PIER 1	PIER 2	N. ABUT.	SUPER.	TOTALS
203.0270	REMOVING STRUCTURE OVER WATERWAY DEBRIS CAPTURE B-45-13	EACH	-	-	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-45-115	LS	-	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	134	-	-	131	-	265
305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	-	-	-	17	-	17
502.0100	CONCRETE MASONRY BRIDGES	CY	33.8	34.3	32.5	33.3	256.8	391
502.3200	PROTECTIVE SURFACE TREATMENT	SY	4	-	-	4	505	513
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,100	1,650	1,550	2,080	-	7,380
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,610	70	70	1,590	61,420	64,760
513.4061	RAILING TUBULAR TYPE M B-45-115	LF	27	-	-	27	256	310
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	-	-	10	-	21
550.1100	PILE STEEL HP 10-INCH X 42 LB	LF	125	210	455	200	-	990
606.0300	RIPRAP HEAVY	CY	109	-	-	90	-	199
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	74	-	-	73	-	147
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	54	-	-	53	-	107
645.0120	GEOTEXTILE TYPE HR	SY	166	-	-	139	-	305
999.1001.S	SEISMOGRAPH ID 2695-11-70	EACH	-	-	-	-	-	1
999.1501.S	CRACK AND DAMAGE SURVEY	EACH	-	-	-	-	-	1
	NON BID ITEMS							
	NAME PLATE	EACH						1
	PREFORMED JOINT FILLER	SIZE						1/2" & 3/4"

STATE PROJECT NUMBER
2695-11-70

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.

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

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

THE STREAM BED IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP AS SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

THE UPPER LIMIT OF "EXCAVATION FOR STRUCTURES BRIDGES B-45-115" SHALL BE THE EXISTING GROUNDLINE.

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

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS OF 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF THE EXCAVATION AND SET 2'-0" ABOVE BOTTOM OF ABUTMENT.

ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN 2012 VERTICAL DATUM OF 1988 NAVD88 (2012).

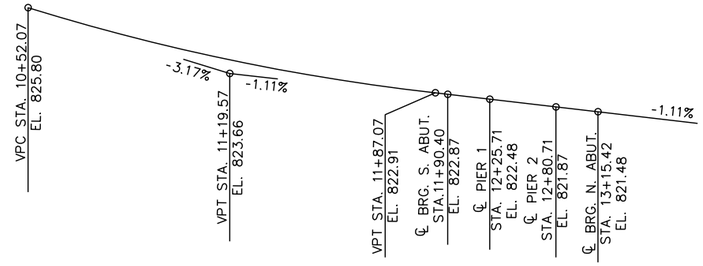
EXISTING STRUCTURE B-45-13 IS A 3-SPAN CONTINUOUS REINFORCED CONCRETE HAUNCHED SLAB WITH A WIDTH OF 29"-2" (EXCLUDING TIMBER RAILING) AND A BACK-TO-BACK OF ABUTMENT LENGTH OF 115'-8½". THE ENTIRE STRUCTURE IS TO BE REMOVED.

☆ "PROTECTIVE SURFACE TREATMENT" SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE DECK INCLUDING THE TOP OF WINGWALLS AT ABUTMENTS. LIMITS SHOWN ARE TYPICAL FOR EACH EDGE OF SLAB.

BEVEL ALL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS.

VARIATIONS IN THE GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.



PROFILE GRADE LINE

COVERED BRIDGE ROAD

BENCHMARKS

NO.	DESCRIPTION	ELEVATION
B.M. #1	NAIL 0.3' ABG. W. FACE P.P. 00-1927 AT SE CORNER COVERED BRIDGE RD & CEDAR CREEK RD	826.78
B.M. #2	R.R. SPIKE 1.0' ABG. E. FACE P.P. E61-14871 W. SIDE COVERED BRIDGE RD AT HOUSE #1735	820.12

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

CROSS SECTION & QUANTITIES

SHEET 2 OF 13

73

SCALE = ###

STATE PROJECT NUMBER

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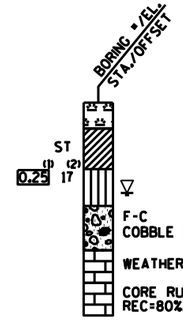
MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

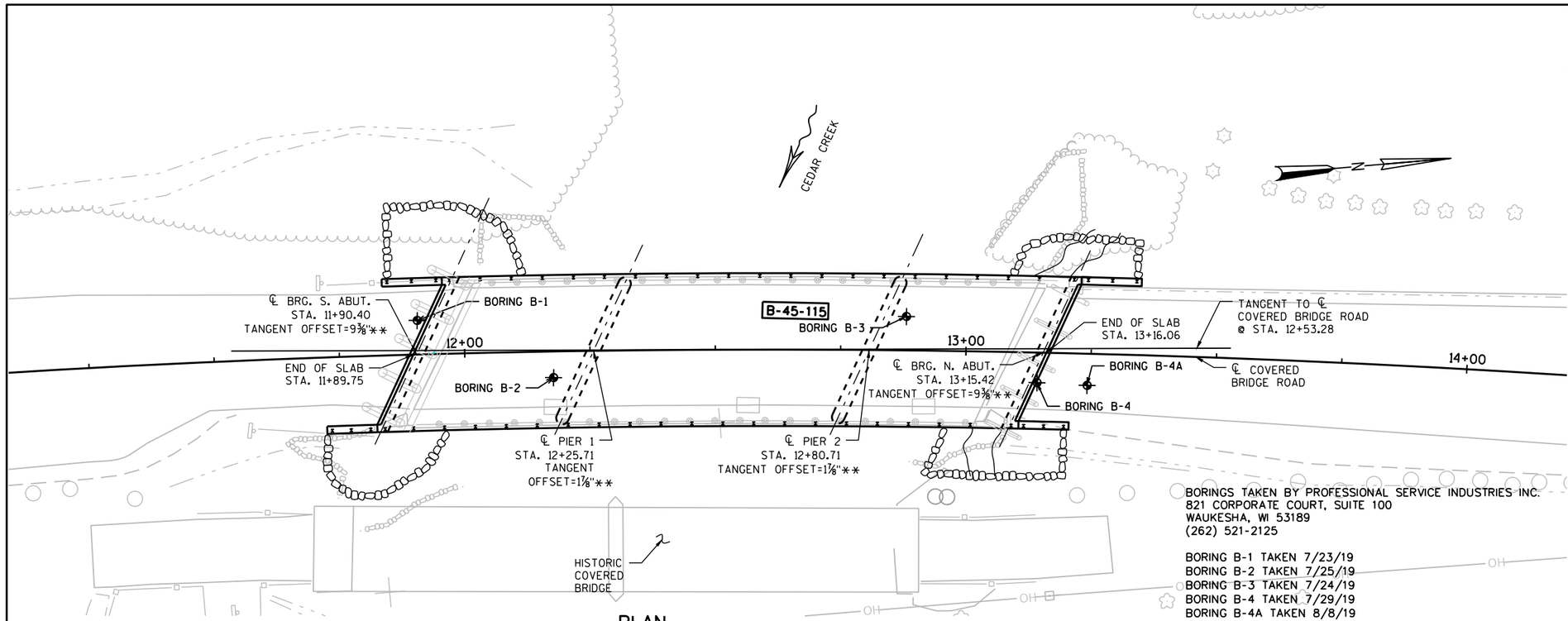
(2) UNLESS OTHERWISE SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

ground water elevation

- at time of drilling
- end of drilling
- after drilling

ABBREVIATIONS

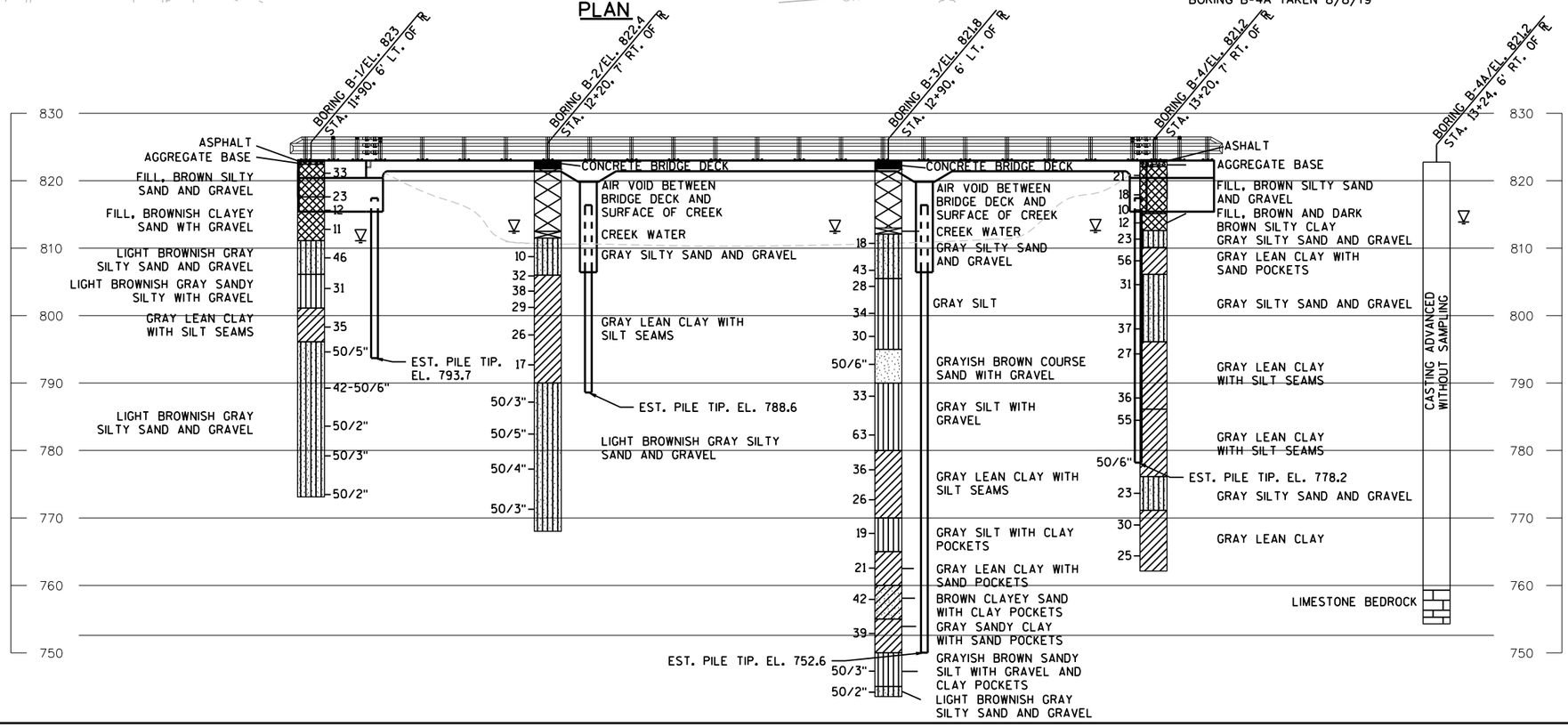
F-Fine M-Medium C-Coarse st-shelby tube



BORINGS TAKEN BY PROFESSIONAL SERVICE INDUSTRIES INC.
821 CORPORATE COURT, SUITE 100
WAUKESHA, WI 53189
(262) 521-2125

BORING B-1 TAKEN 7/23/19
BORING B-2 TAKEN 7/25/19
BORING B-3 TAKEN 7/24/19
BORING B-4 TAKEN 7/29/19
BORING B-4A TAKEN 8/8/19

PLAN



SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

SUBSURFACE EXPLORATION

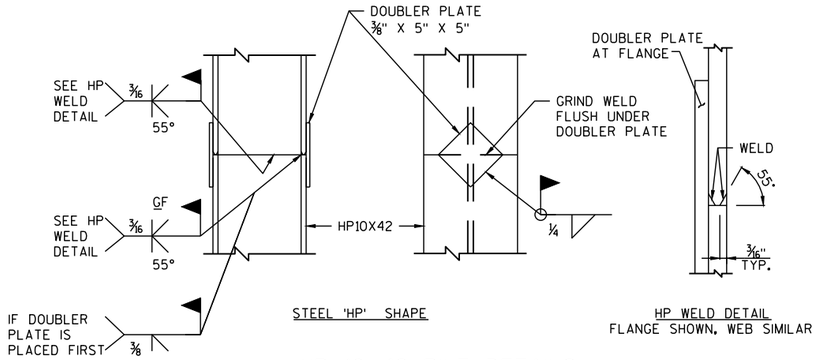
SHEET 3 OF 13

74

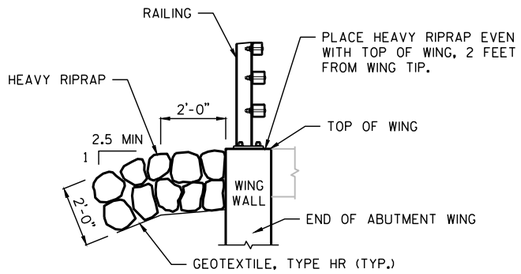
SCALE = ###

STATE PROJECT NUMBER

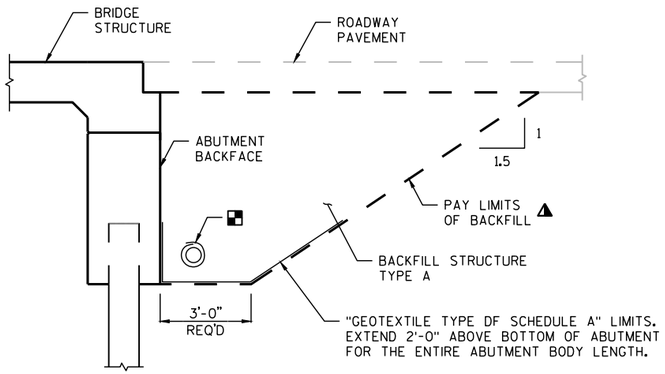
2695-11-70



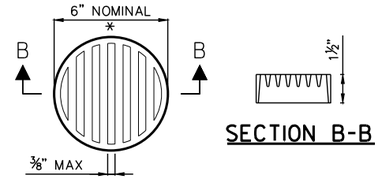
HP 10x42 PILE DETAILS



TYPICAL FILL SECTION AT WING TIPS



TYPICAL SECTION THRU ABUTMENT



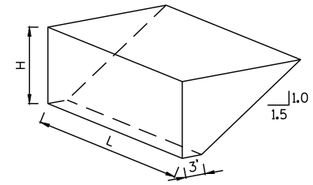
SECTION B-B

RODENT SHIELD DETAIL

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

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

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



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

LEGEND

▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

■ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

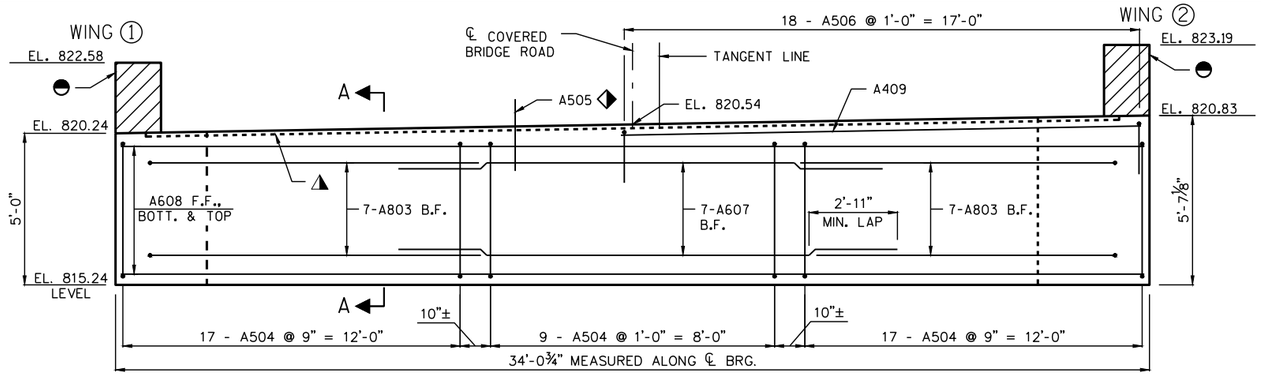
MISC DETAILS

SHEET 4 OF 13

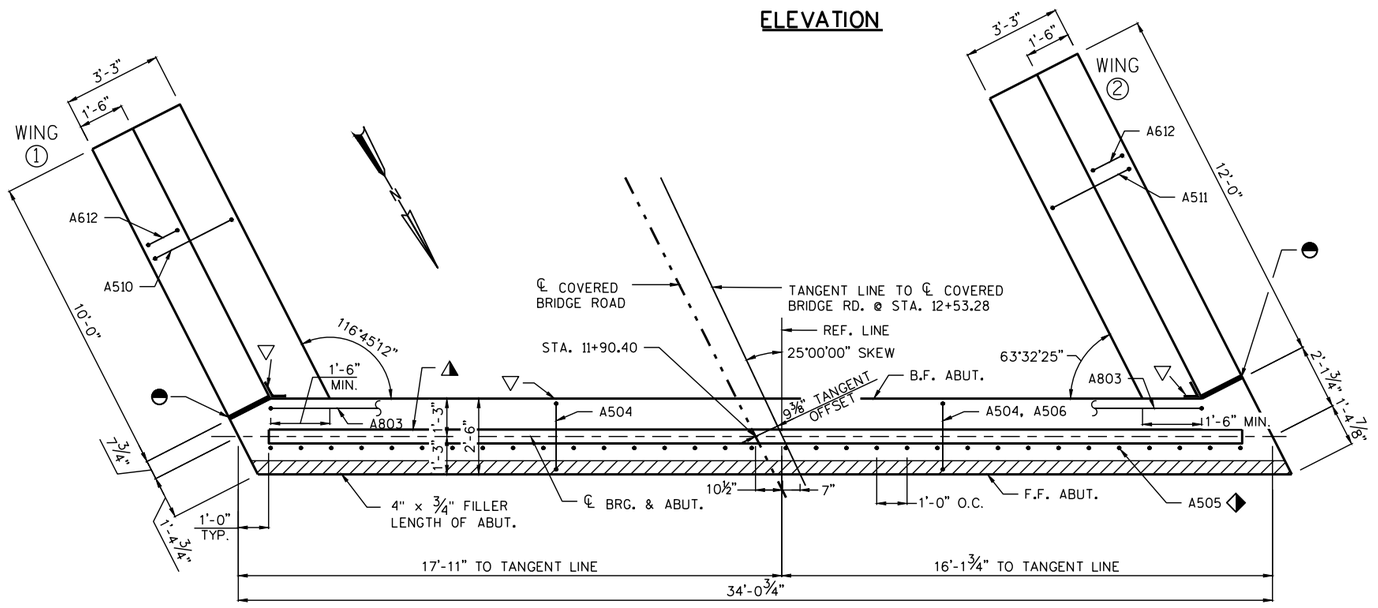
75

SCALE = ###

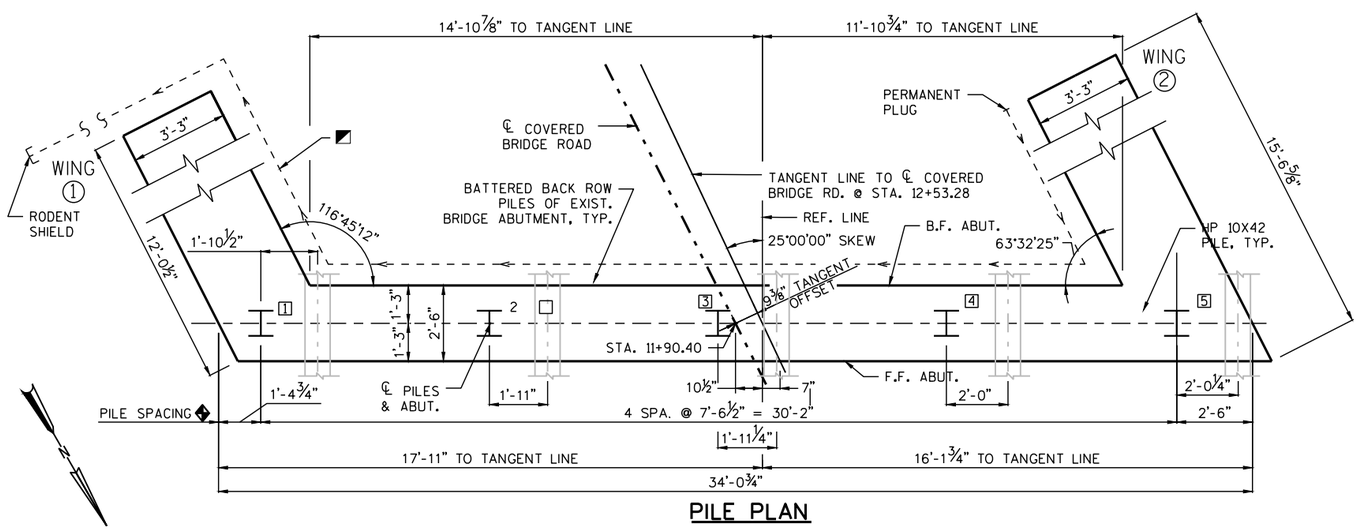
STATE PROJECT NUMBER
2695-11-70



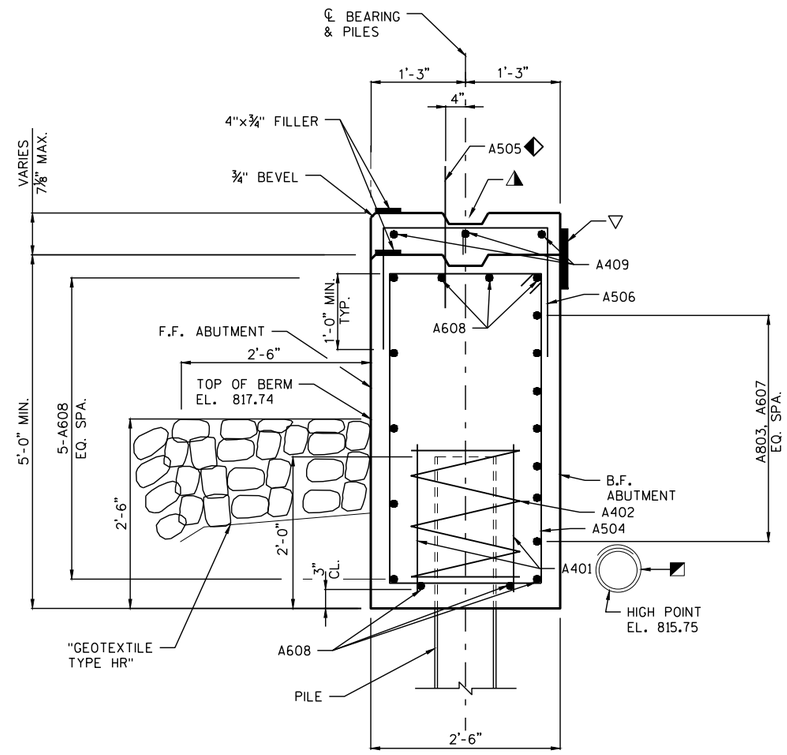
ELEVATION



PLAN



PILE PLAN



SECTION A-A
THROUGH SOUTH ABUTMENT

ABUTMENT NOTES

ABUTMENTS TO BE SUPPORTED ON HP10X42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 25' LONG.

SEE SHEET 4 FOR PILE SPLICE DETAILS.

LEGEND

- ▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- ◭ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".
- ◩ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 4.
- [X] = PILE NUMBER
- ◆ A505 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- ◓ ½" FILLER (INCLUDED IN WING LENGTH) TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- ◆ PILE SPACING MAY BE ADJUSTED TO AVOID INTERFERENCE WITH EXISTING BRIDGE BATTERED PILES. MAX PILE SPACING = 8'-0". MAX DISTANCE TO END OF ABUTMENT = 2'-6", MIN. DISTANCE = 1'-4½"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

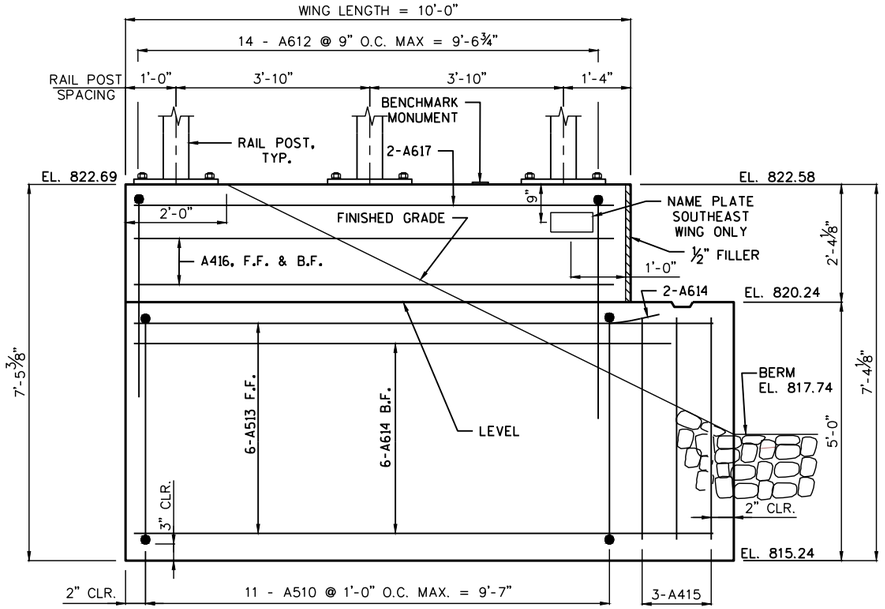
SOUTH ABUTMENT

SHEET 5 OF 13

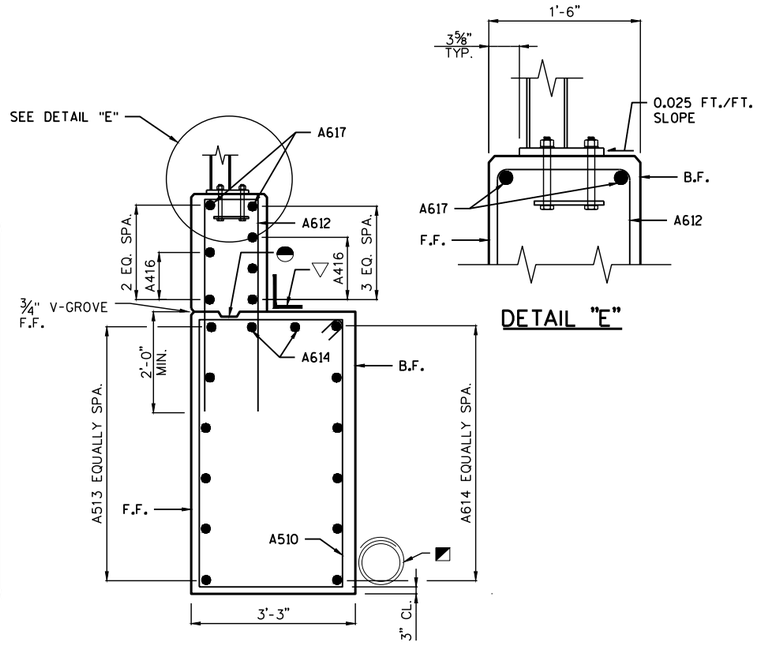
76

SCALE = ###

STATE PROJECT NUMBER
2695-11-70



WING 1 ELEVATION



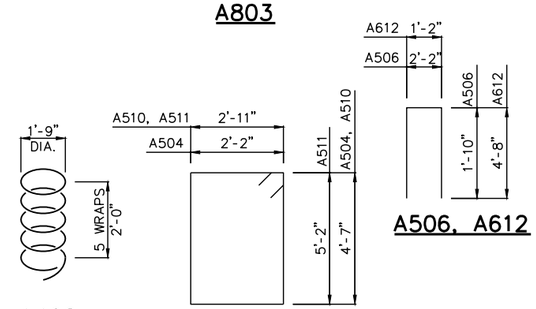
WING 1 SECTION

DETAIL "E"

BILL OF BARS

MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
A401		10	2'-3"			PILE VERTICAL
A402		5	28'-0"		X	PILE HOOPS
A803		14	13'-2"		X	ABUTMENT HORIZ. B.F. @ WINGS
A504		43	14'-2"		X	ABUTMENT VERT.
A505	X	33	2'-0"			ABUTMENT DOWELS
A506		18	5'-7"		X	ABUTMENT VERT. BEARING SEAT
A607		7	16'-0"			ABUTMENT HORIZ. B.F. MIDDLE
A608		11	33'-8"			ABUTMENT HORIZ. F.F, TOP & BOTT.
A409		3	17'-0"			ABUTMENT HORIZ. BEARING SEAT
A510	X	11	15'-8"		X	WINGWALL 1 VERT. LOWER
A511	X	13	16'-10"		X	WINGWALL 2 VERT. LOWER
A612	X	31	10'-2"		X	WINGWALLS VERT. UPPER
A513	X	6	11'-8"			WINGWALL 1 HORIZ. F.F. LOWER
A614	X	8	13'-0"			WINGWALL 1 HORIZ. B.F. & TOP LOWER
A415	X	3	4'-7"			ABUTMENT END VERT. @ WINGWALL 1
A416	X	5	9'-7"			WINGWALL 1 HORIZ. F.F. & B.F. UPPER
A617	X	2	9'-7"			WINGWALL 1 HORIZ. TOP UPPER
A518	X	7	15'-2"			WINGWALL 2 HORIZ. F.F. LOWER
A619	X	8	13'-6"			WINGWALL 2 HORIZ. B.F. & TOP LOWER
A420	X	3	5'-2"			ABUTMENT END VERT. @ WINGWALL 2
A421	X	5	11'-7"			WINGWALL 2 HORIZ. F.F. & B.F. UPPER
A622	X	2	11'-7"			WINGWALL 2 HORIZ. TOP UPPER

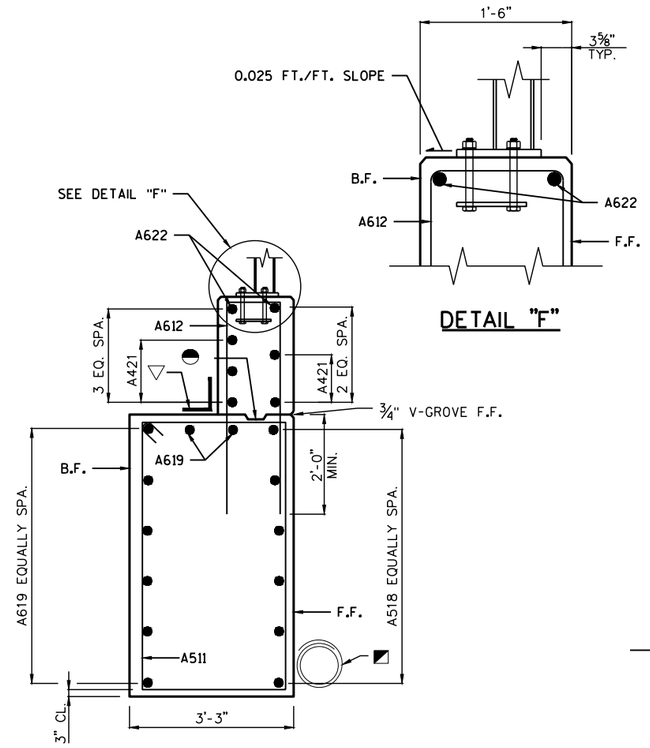
A803



A402

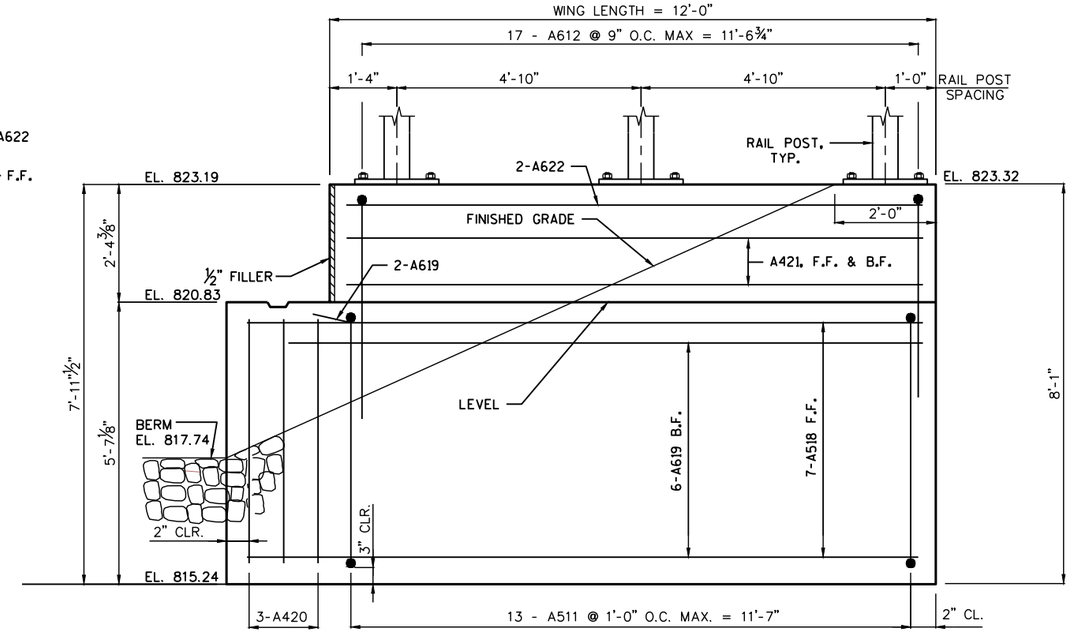
A506, A612

A504, A510, A511



DETAIL "F"

WING 2 SECTION



WING 2 ELEVATION

LEGEND

- OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2"x6" KEYWAY WITH MEMBRANE ON BACKFACE.
- ▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- ◪ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 4.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

SOUTH ABUTMENT DETAILS

SHEET 6 OF 13

77

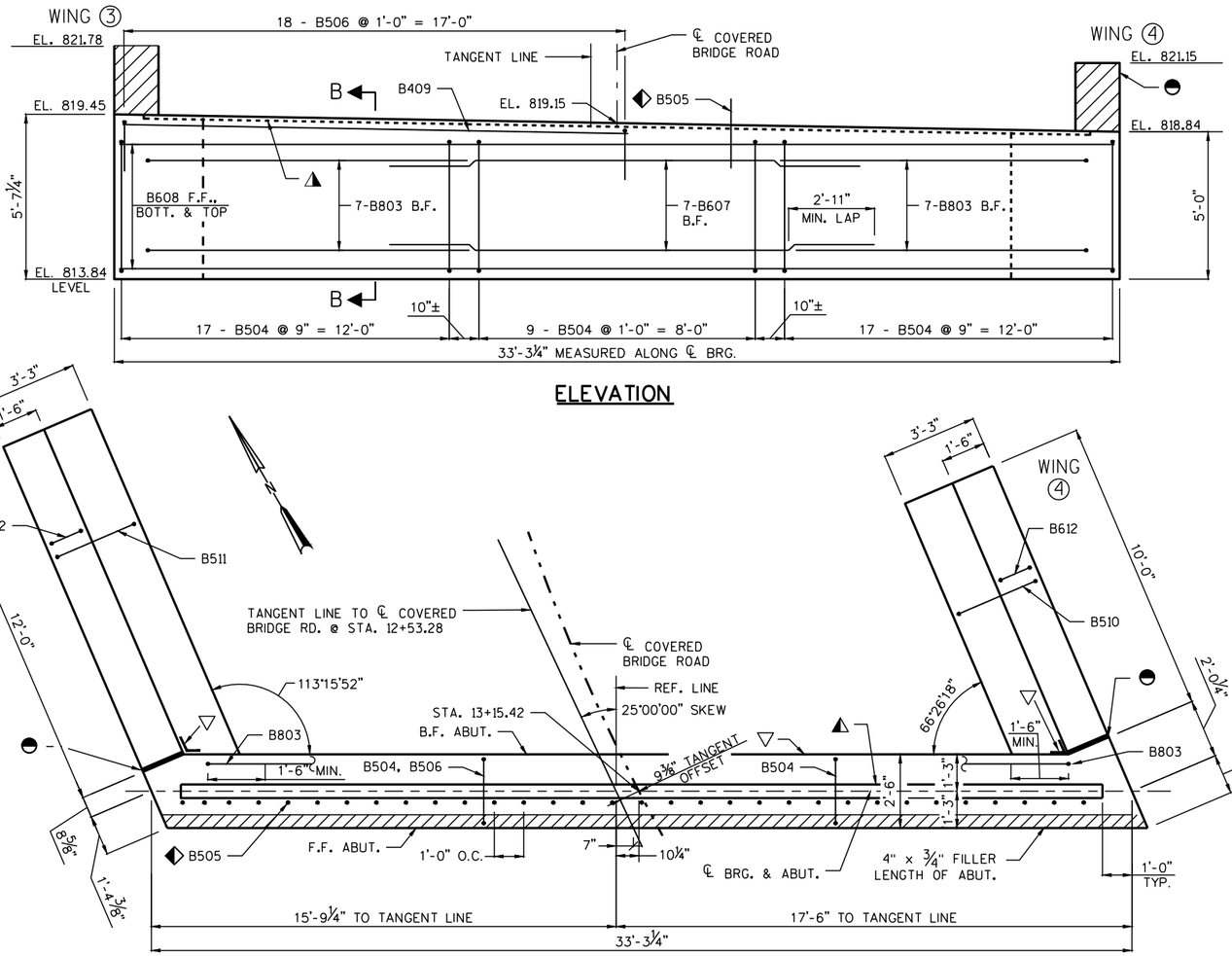
SCALE = ###

8

8

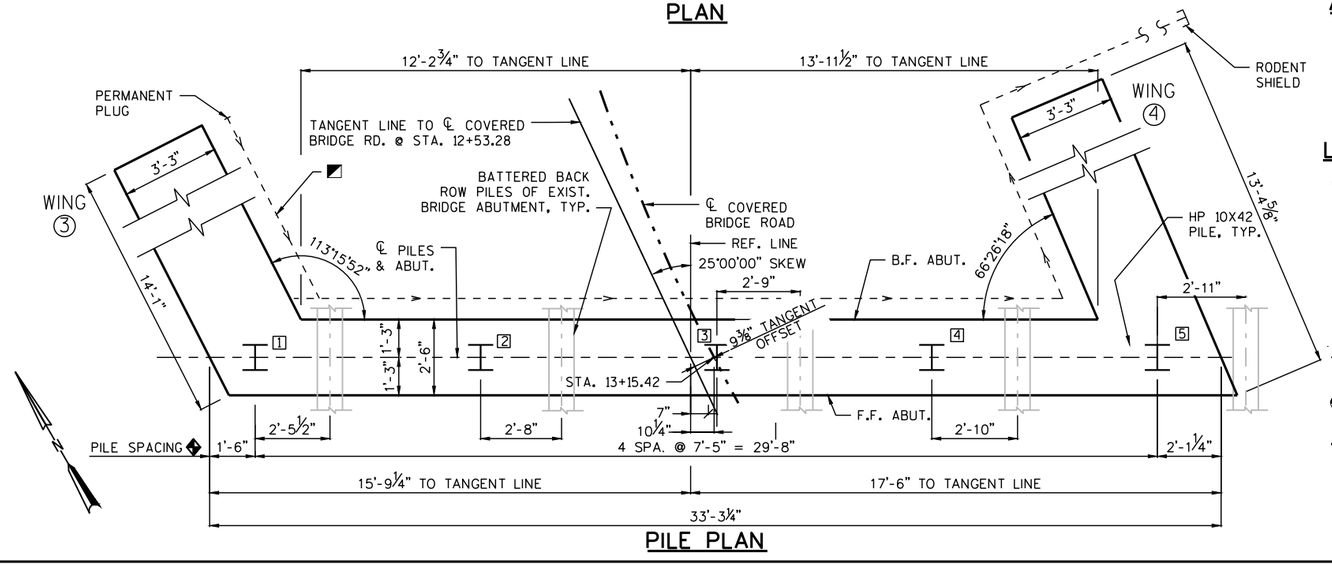
STATE PROJECT NUMBER

2695-11-70

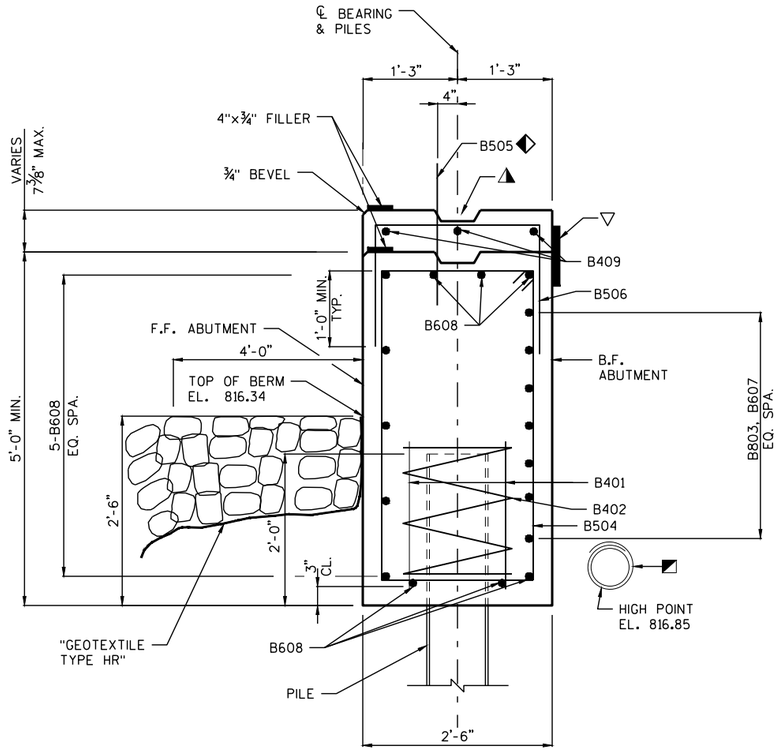


ELEVATION

PLAN



PILE PLAN



SECTION B-B THROUGH NORTH ABUTMENT

ABUTMENT NOTES

ABUTMENTS TO BE SUPPORTED ON HP10X42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 40' LONG.

SEE SHEET 4 FOR PILE SPLICE DETAILS.

LEGEND

- ▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- ◭ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".
- ◩ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 4.
- [X] = PILE NUMBER
- ◆ B505 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- ◒ ½" FILLER (INCLUDED IN WING LENGTH) TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- ◆ PILE SPACING MAY BE ADJUSTED TO AVOID INTERFERENCE WITH EXISTING BRIDGE BATTERED PILES. MAX PILE SPACING = 8'-0". MAX DISTANCE TO END OF ABUTMENT = 2'-6", MIN. DISTANCE = 1'-4½"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

NORTH ABUTMENT

SHEET 7 OF 13

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SCALE = ###

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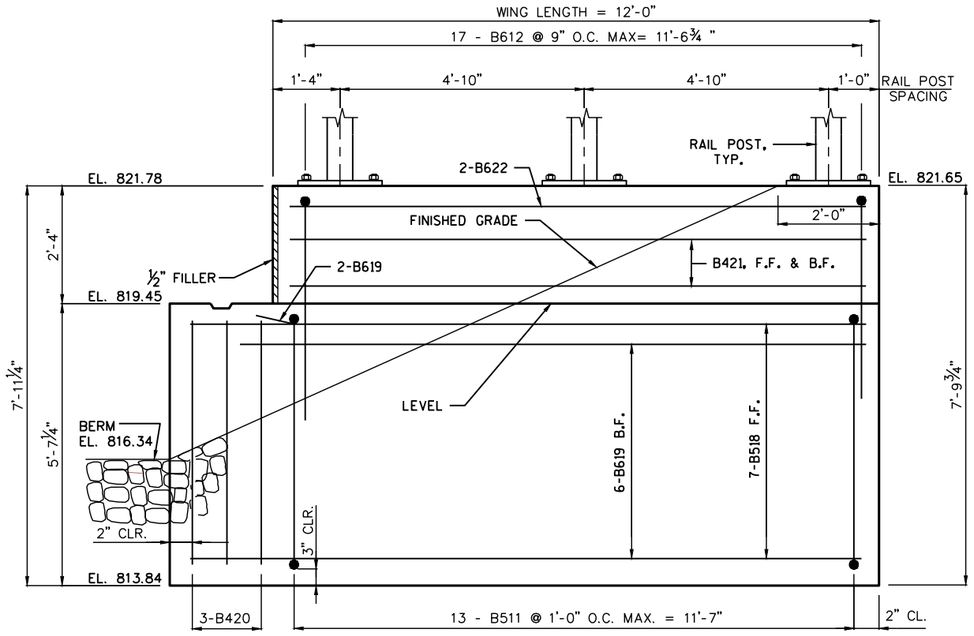
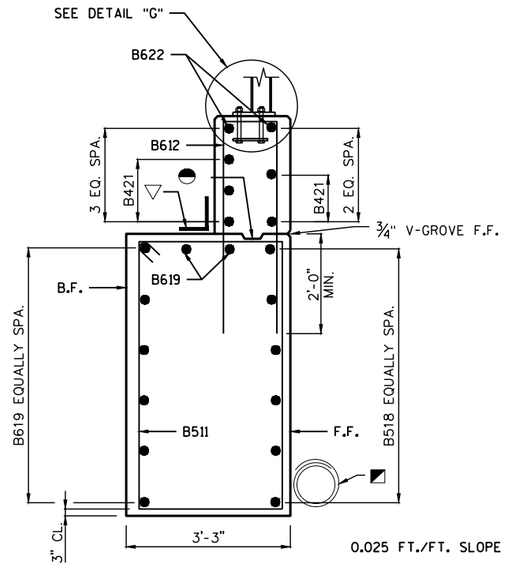


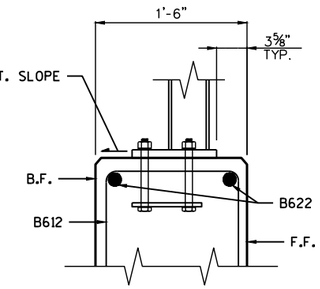
WING 3 ELEVATION



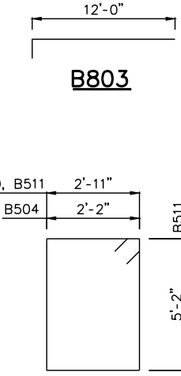
WING 3 SECTION

BILL OF BARS

MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
B401		10	2'-3"			PILE VERTICAL
B402		5	28'-0"		X	PILE HOOPS
B803		14	13'-2"		X	ABUTMENT HORIZ. B.F. @ WINGS
B504		43	14'-2"		X	ABUTMENT VERT.
B505	X	33	2'-0"			ABUTMENT DOWELS
B506		18	5'-7"		X	ABUTMENT VERT. BEARING SEAT
B607		7	15'-3"			ABUTMENT HORIZ. B.F. MIDDLE
B608		11	32'-11"			ABUTMENT HORIZ. F.F, TOP & BOTT.
B409		3	17'-0"			ABUTMENT HORIZ. BEARING SEAT
B510	X	11	15'-8"		X	WINGWALL 4 VERT. LOWER
B511	X	13	16'-10"		X	WINGWALL 3 VERT. LOWER
B612	X	31	9'-10"		X	WINGWALLS VERT. UPPER
B513	X	6	12'-11"			WINGWALL 4 HORIZ. F.F. LOWER
B614	X	8	11'-7"			WINGWALL 4 HORIZ. B.F. & TOP LOWER
B415	X	3	4'-7"			ABUTMENT END VERT. @ WINGWALL 4
B416	X	5	9'-7"			WINGWALL 4 HORIZ. F.F. & B.F. UPPER
B617	X	2	9'-7"			WINGWALL 4 HORIZ. TOP UPPER
B518	X	7	13'-9"			WINGWALL 3 HORIZ. F.F. LOWER
B619	X	8	14'-11"			WINGWALL 3 HORIZ. B.F. & TOP LOWER
B420	X	3	5'-2"			ABUTMENT END VERT. @ WINGWALL 3
B421	X	5	11'-7"			WINGWALL 3 HORIZ. F.F. & B.F. UPPER
B622	X	2	11'-7"			WINGWALL 3 HORIZ. TOP UPPER



DETAIL "G"



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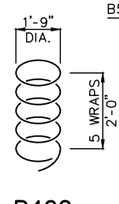
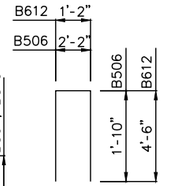
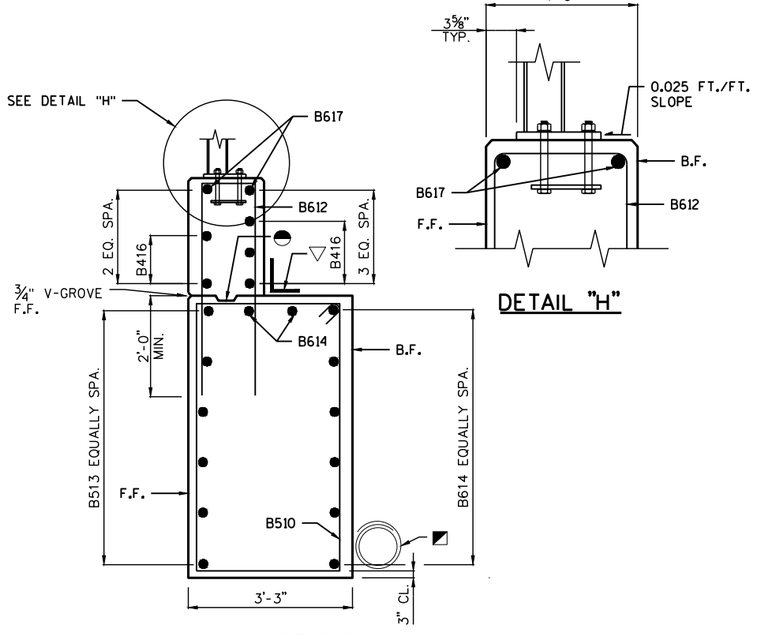


B402

B504, B510, B511

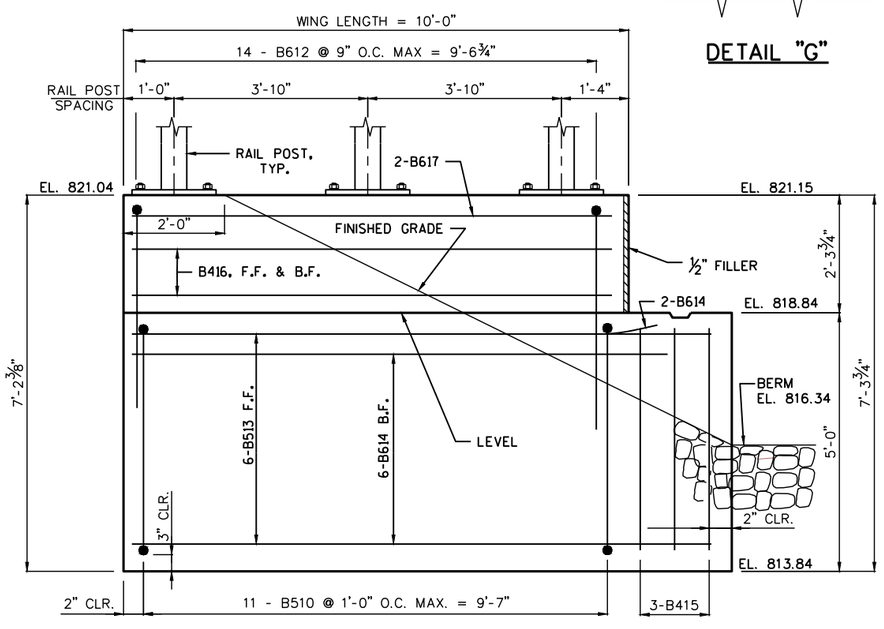


B506, B612



DETAIL "H"

WING 4 SECTION



WING 4 ELEVATION

LEGEND

◓ OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2"x6" KEYWAY WITH MEMBRANE ON BACKFACE.

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

◩ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 4.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

NORTH ABUTMENT DETAILS

SHEET 8 OF 13

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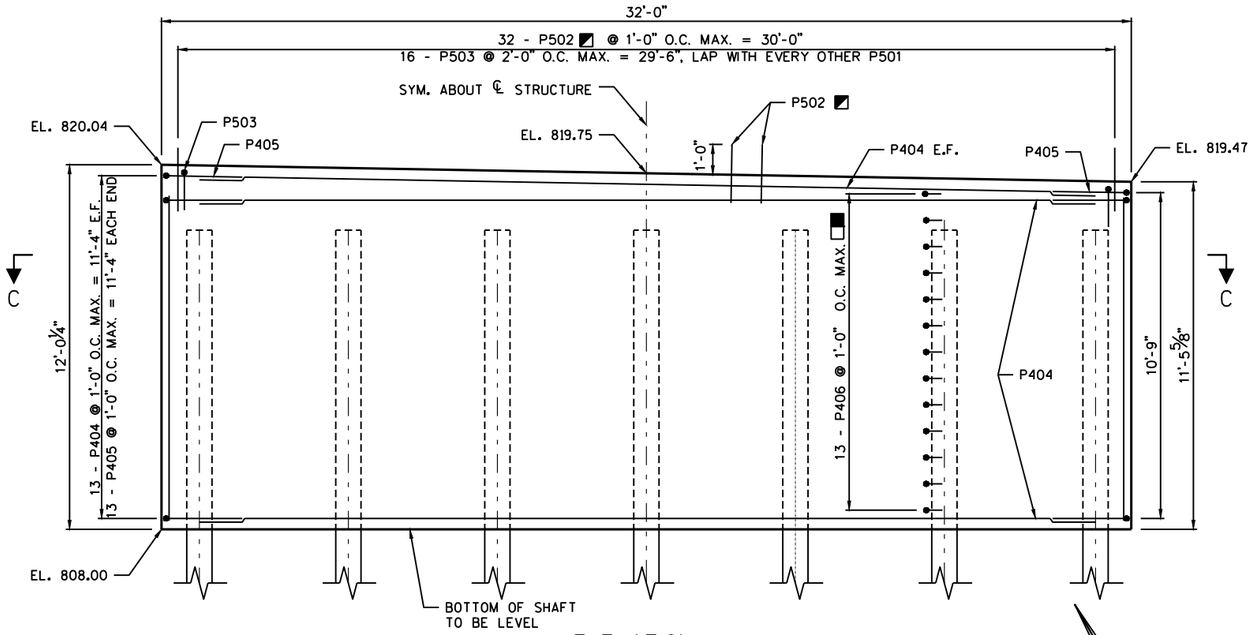
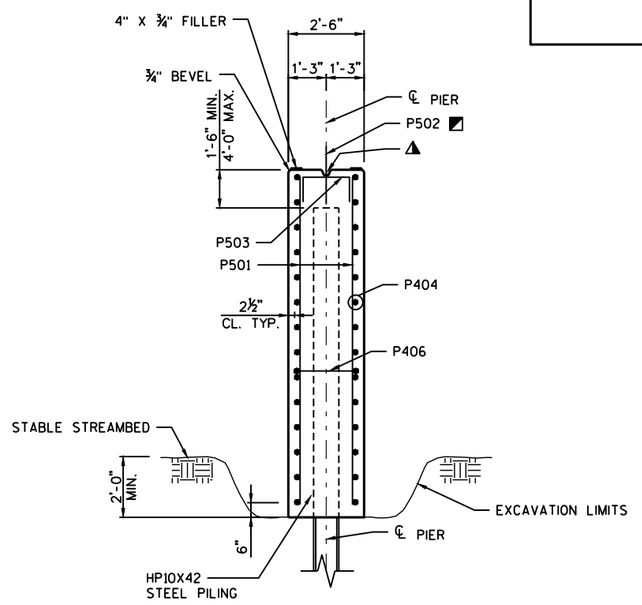
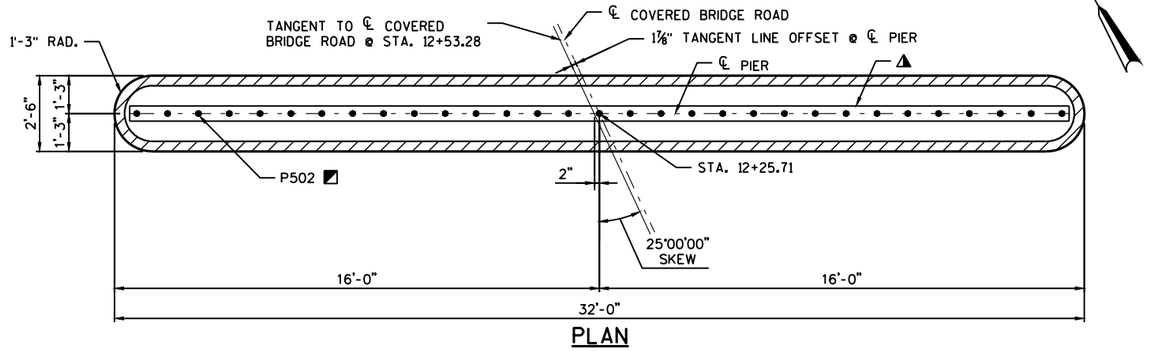


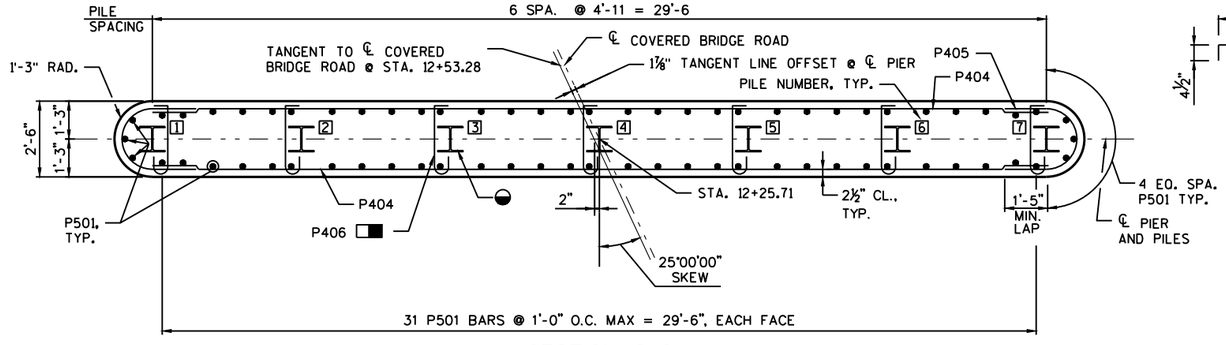
ELEVATION
LOOKING NORTH



END VIEW



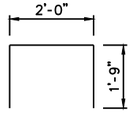
PLAN



SECTION C-C

BILL OF BARS

MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
P501		68	10'-9"			VERTICAL
P502	X	32	2'-0"			DOWELS
P503		16	5'-3"		X	STIRRUP TOP
P404		26	29'-6"			HORIZONTAL
P405		26	6'-4"		X	HORIZONTAL ENDS
P406		91	2'-11"		X	HORIZONTAL TIES



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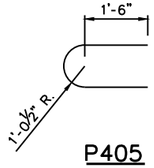
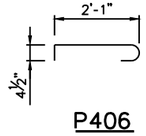


P405



P406

NOTES

SEE SHEET 4 FOR PILE SPLICE DETAILS.

LEGEND

▲ CONST. JOINT KEYWAY FORMED BY BEVELED 2" x 6".

◒ PIER TO BE SUPPORTED ON HP10X42 STEEL PILING, ESTIMATED 30' LONG DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.

◩ P502 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

◨ PLACE ADJ. TO EACH PILE (ONE SIDE ONLY) TIE TO NEAREST P501 BAR. VERTICAL SPA. TO MATCH P404 BARS. ALTERNATE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

PIER 1

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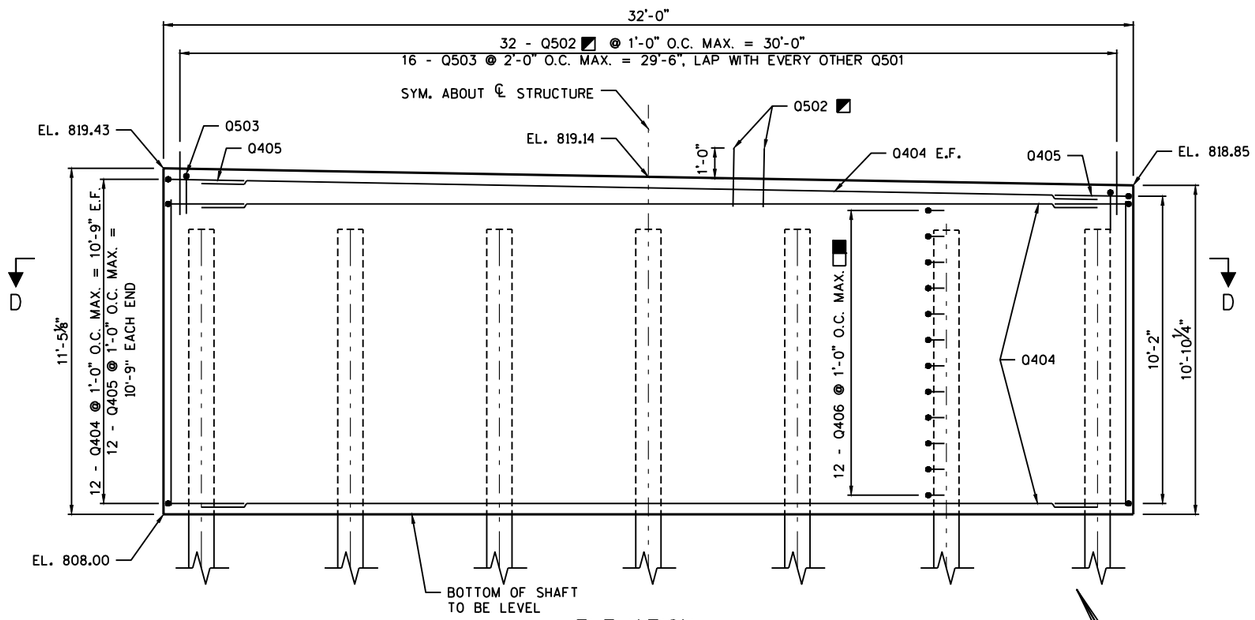
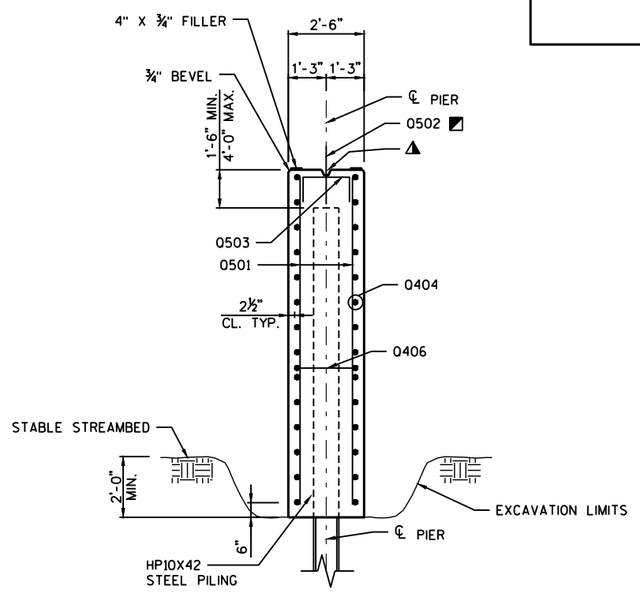
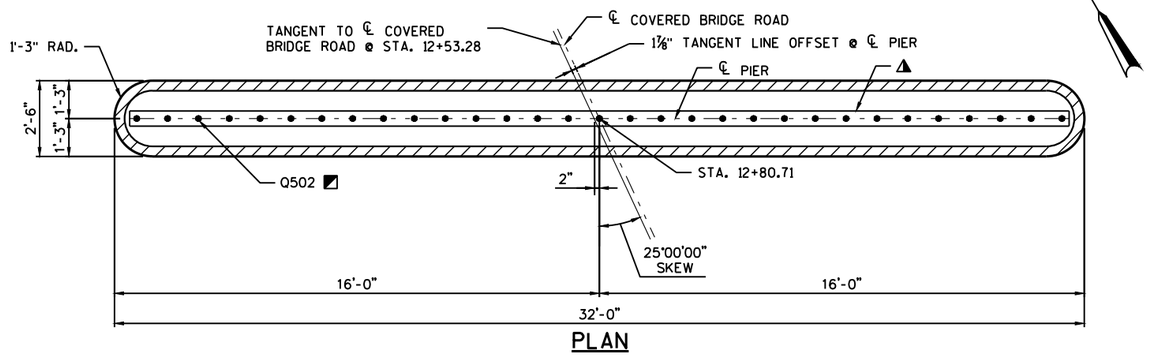


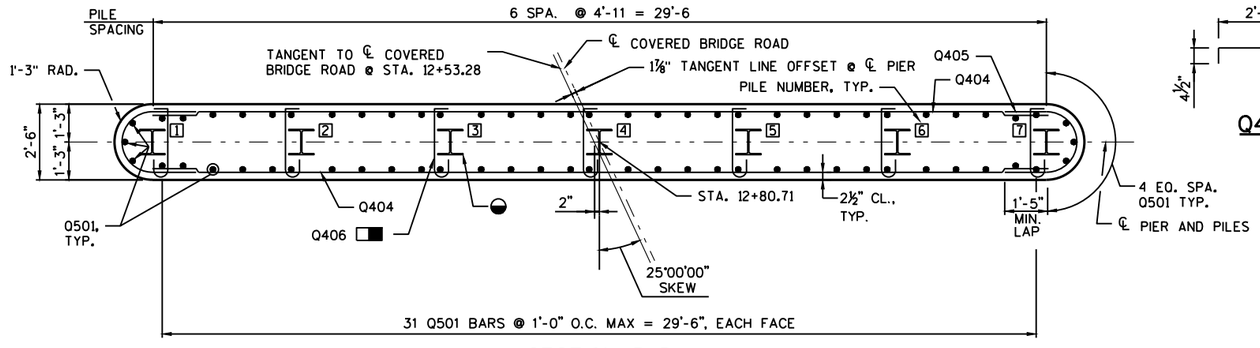
ELEVATION
LOOKING NORTH



END VIEW



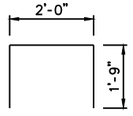
PLAN



SECTION D-D

BILL OF BARS

MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
Q501		68	10'-2"			VERTICAL
Q502	X	32	2'-0"			DOWELS
Q503		16	5'-3"		X	STIRRUP TOP
Q404		24	29'-6"			HORIZONTAL
Q405		24	6'-4"		X	HORIZONTAL ENDS
Q406		84	2'-11"		X	HORIZONTAL TIES



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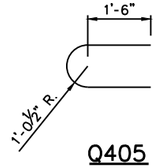

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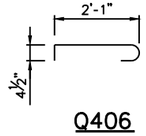

Q406

NOTES
SEE SHEET 4 FOR PILE SPLICE DETAILS.

LEGEND
- ▲ CONST. JOINT KEYWAY FORMED BY BEVELED 2" x 6".
- ◒ PIER TO BE SUPPORTED ON HP10X42 STEEL PILING, ESTIMATED 65' LONG DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
- ◩ Q502 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ◨ PLACE ADJ. TO EACH PILE (ONE SIDE ONLY) TIE TO NEAREST Q501 BAR. VERTICAL SPA. TO MATCH Q404 BARS. ALTERNATE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

PIER 2

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SCALE = ###

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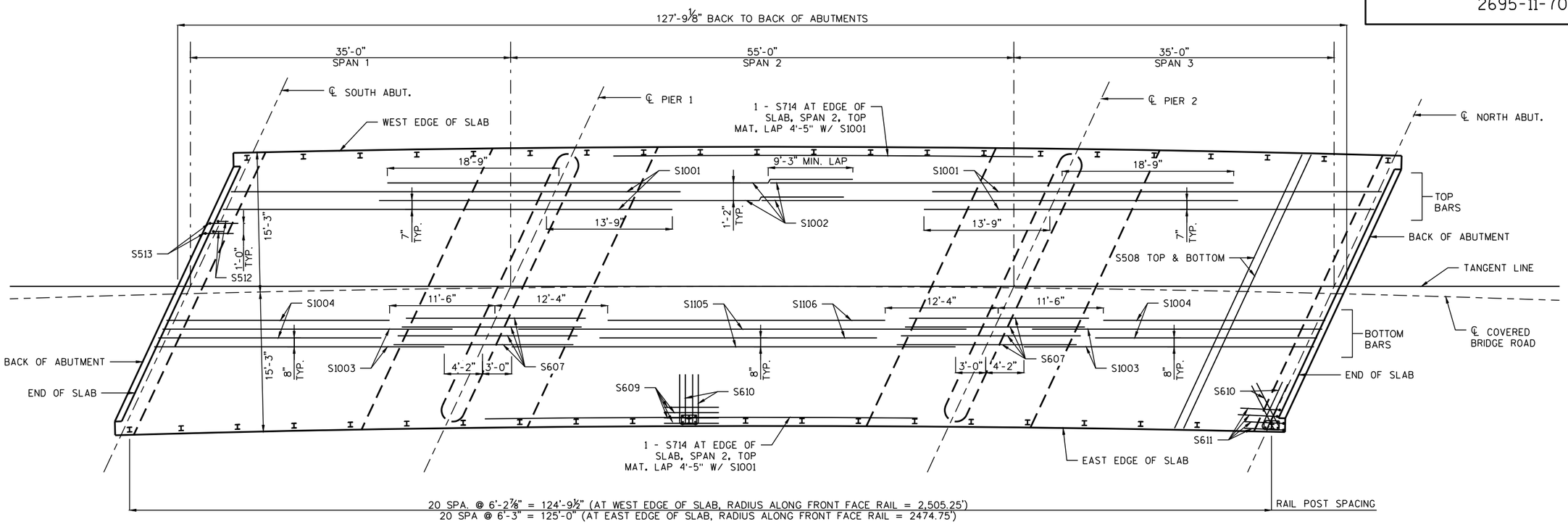
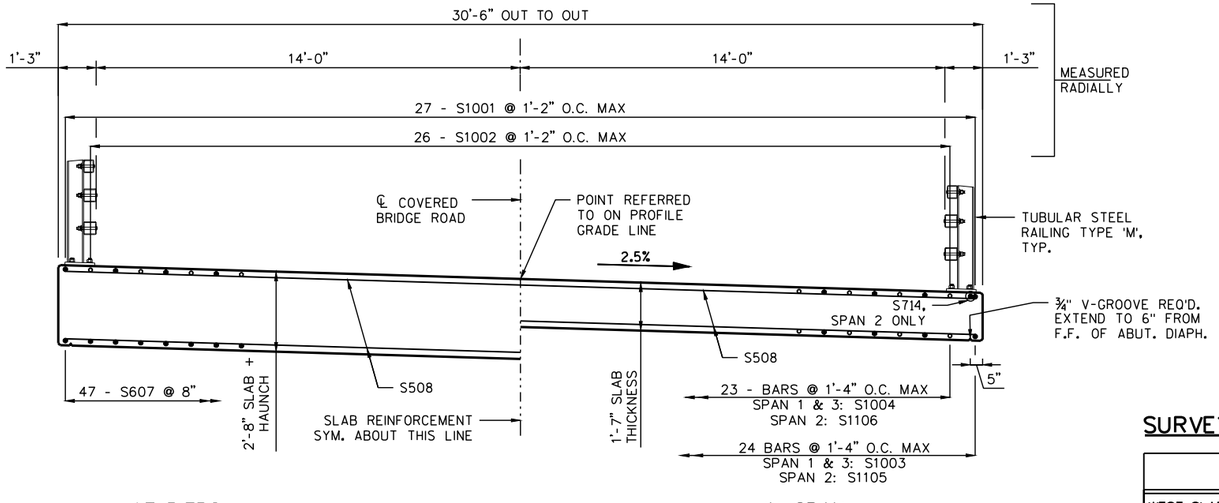


PLAN



AT PIERS

IN SPAN

CROSS SECTION

TOP OF DECK ELEVATIONS

		C/L BRG	SPAN 1									C/L BRG
LOCATION		SOUTH ABUT.	0.1 SPAN	0.2 SPAN	0.3 SPAN	0.4 SPAN	0.5 SPAN	0.6 SPAN	0.7 SPAN	0.8 SPAN	0.9 SPAN	PIER 1
WEST SLAB EDGE	T.D.	822.41	822.37	822.33	822.29	822.25	822.21	822.17	822.14	822.10	822.06	822.02
C/L	T.D.	822.87	822.83	822.79	822.76	822.72	822.68	822.64	822.60	822.56	822.52	822.48
EAST SLAB EDGE	T.D.	822.58	822.54	822.50	822.46	822.42	822.38	822.34	822.30	822.26	822.22	822.18

		C/L BRG	SPAN 2									C/L BRG
LOCATION		PIER 1	0.1 SPAN	0.2 SPAN	0.3 SPAN	0.4 SPAN	0.5 SPAN	0.6 SPAN	0.7 SPAN	0.8 SPAN	0.9 SPAN	PIER 2
WEST SLAB EDGE	T.D.	822.02	821.96	821.90	821.84	821.78	821.72	821.65	821.59	821.53	821.47	821.41
C/L	T.D.	822.48	822.42	822.36	822.30	822.24	822.18	822.11	822.05	821.99	821.93	821.87
EAST SLAB EDGE	T.D.	822.18	822.12	822.06	822.00	821.94	821.87	821.81	821.75	821.69	821.63	821.57

		C/L BRG	SPAN 3									C/L BRG
LOCATION		PIER 2	0.1 SPAN	0.2 SPAN	0.3 SPAN	0.4 SPAN	0.5 SPAN	0.6 SPAN	0.7 SPAN	0.8 SPAN	0.9 SPAN	NORTH ABUT.
WEST SLAB EDGE	T.D.	821.41	821.37	821.34	821.30	821.26	821.22	821.18	821.14	821.11	821.07	821.03
C/L	T.D.	821.87	821.83	821.79	821.75	821.72	821.68	821.64	821.60	821.56	821.52	821.48
EAST SLAB EDGE	T.D.	821.57	821.53	821.49	821.45	821.41	821.37	821.33	821.29	821.25	821.22	821.18

NOTES

FILL IN THE TABLE OF "SURVEY TOP OF SLAB ELEVATIONS" FOR EACH SPAN ON AS BUILT PLANS.

SURVEY TOP OF SLAB ELEVATIONS

	℄ BRG. S. ABUT	5/10 PT.	℄ BRG. PIER 1	5/10 PT.	℄ BRG. PIER 2	5/10 PT.	℄ BRG. N. ABUT
WEST SLAB EDGE							
℄							
EAST SLAB EDGE							

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

SUPERSTRUCTURE

SHEET 11 OF 13

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SCALE = ###

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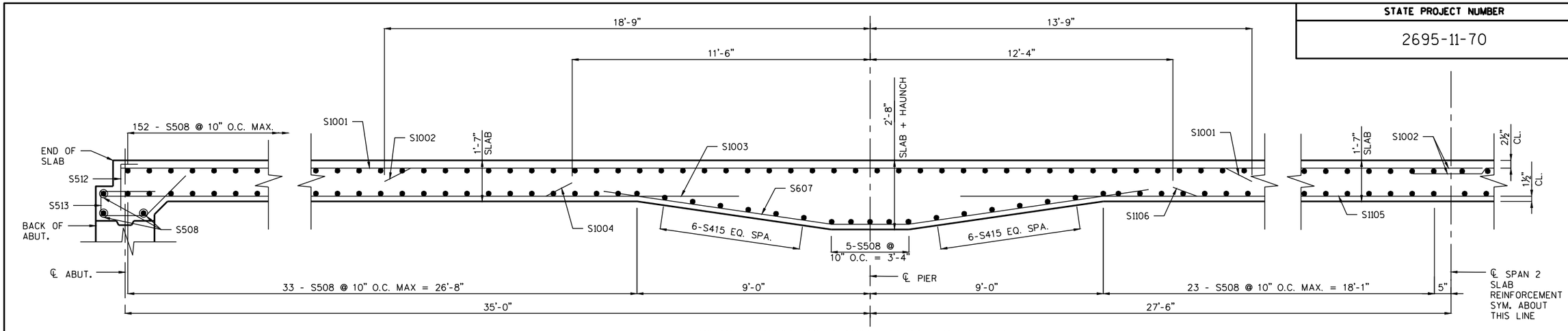
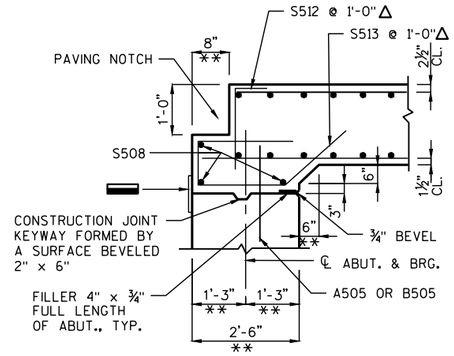
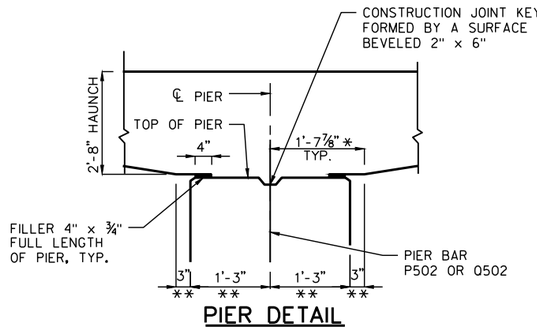


LONGITUDINAL SECTION THRU ROADWAY

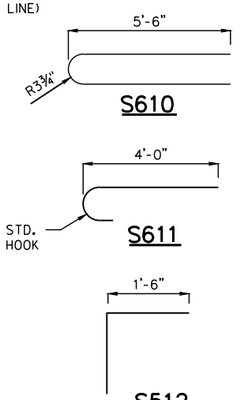
(LOOKING NORMAL TO TANGENT LINE)

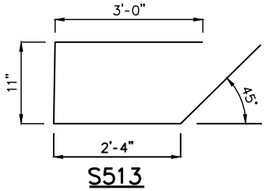


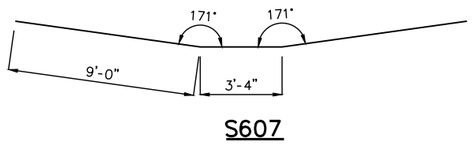
ABUTMENT DETAIL



PIER DETAIL

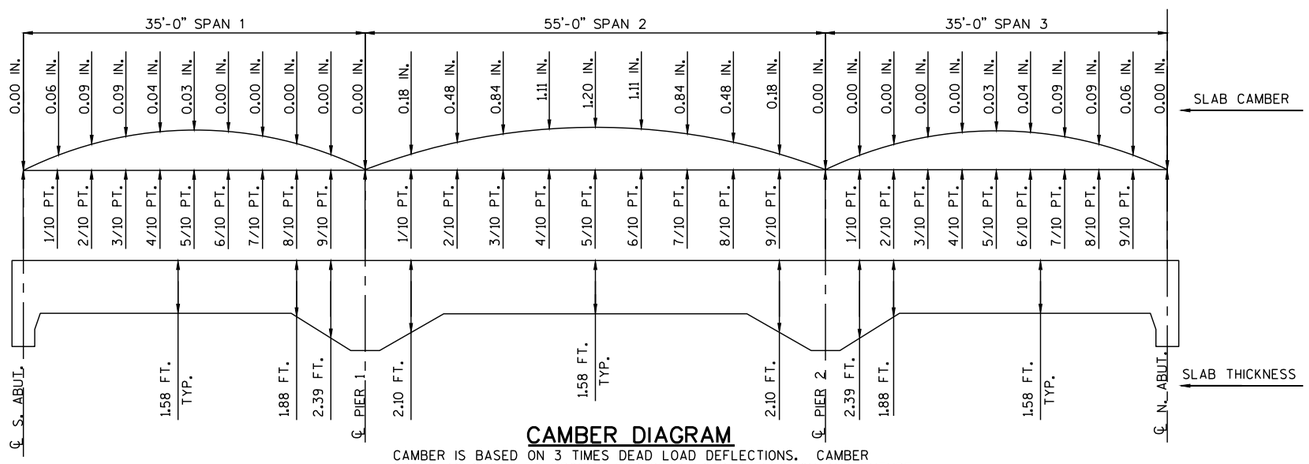






BILL OF BARS

MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
S1001	X	54	49'-3"			LONGITUDINAL TOP
S1002	X	52	51'-0"			LONGITUDINAL TOP
S1003	X	48	32'-1"			LONGITUDINAL BOTTOM - SPAN 1 & 3
S1004	X	46	24'-9"			LONGITUDINAL BOTTOM - SPAN 1 & 3
S1105	X	24	49'-0"			LONGITUDINAL BOTTOM - SPAN 2
S1106	X	23	30'-6"			LONGITUDINAL BOTTOM - SPAN 2
S607	X	94	21'-3"		X	LONGITUDINAL BOTTOM OVER PIER
S508	X	280	33'-3"			TRANSVERSE TOP & BOTTOM
S609	X	152	6'-0"			LONGITUDINAL TOP AT RAIL POSTS
S610	X	84	11'-5"		X	TRANSVERSE TOP AT RAIL POSTS
S611	X	16	4'-8"		X	LONGITUDINAL TOP AT END RAIL POSTS
S512	X	64	3'-3"		X	END OF SLAB
S513	X	64	8'-0"		X	END OF SLAB
S714	X	2	36'-6"			LONGITUDINAL TOP CORNERS SPAN 2
S415	X	24	33'-3"			TRANSVERSE AT HAUNCHES



CAMBER DIAGRAM

CAMBER IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE THIS PROCEDURE:

TOP OF SLAB ELEVATION AT FINAL GRADE
LESS (-) SLAB THICKNESS
PLUS (+) CAMBER
PLUS (+) FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY CONTRACTOR)
EQUALS = TOP OF SLAB FALSEWORK ELEVATION.

LEGEND

* DIMENSION TAKEN ALONG TANGENT LINE.

** DIMENSION TAKEN NORMAL TO ℄ SUBSTRUCTURE.

△ PLACE BARS PARALLEL TO "℄ COVERED BRIDGE ROAD" AND SPACE PERPENDICULAR TO "℄ COVERED BRIDGE ROAD"

18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BRIDGE.

NOTES

SLAB THICKNESS DIMENSION IS MINIMUM. ANY TOLERANCES TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

TOP TRANSVERSE BARS IN THE SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0"

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE ℄ OF SUBSTRUCTURE UNITS.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS. THE ℄ OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND ℄ OF ROADWAY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

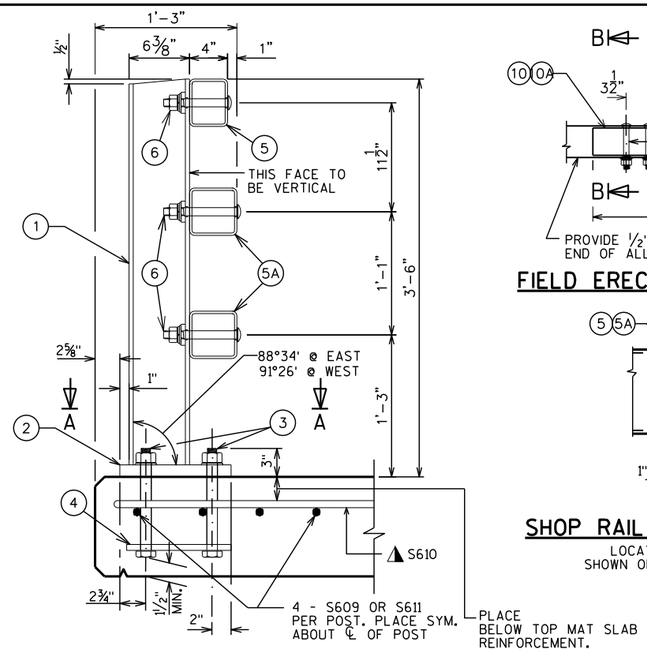
DRAWN BY WAR | PLANS CK'D. KGW

SUBSTRUCTURE DETAILS

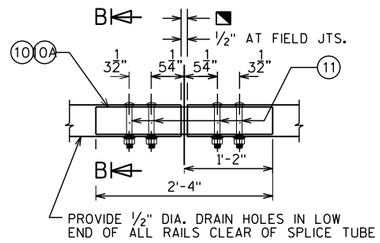
SHEET 12 OF 13

83

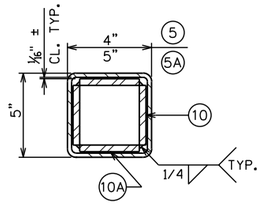
SCALE = ###



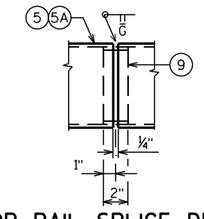
SECTION THRU RAILING ON DECK



FIELD ERECTION JOINT DETAIL

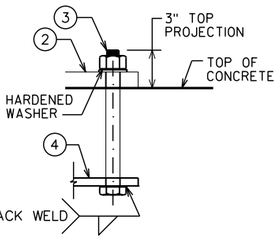


SECTION B-B

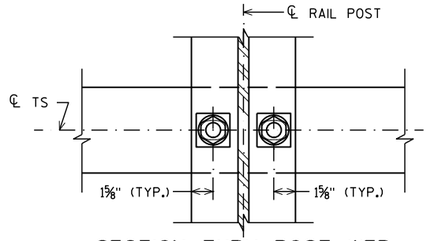


SHOP RAIL SPLICE DETAIL

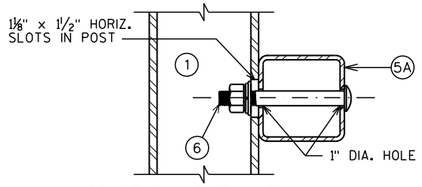
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



ANCHOR BOLTS



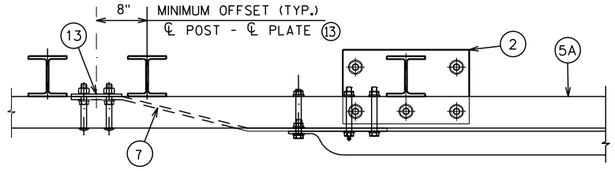
SECTION THRU POST WEB



SECTION THRU RAIL

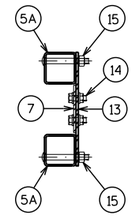
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

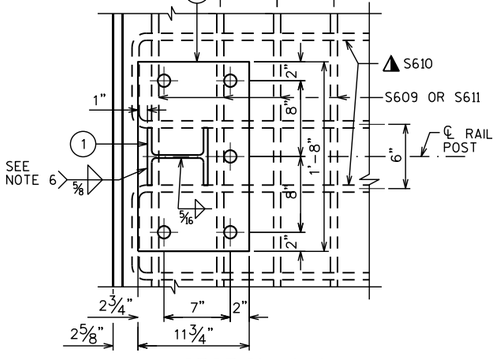


TOP VIEW AT END POST

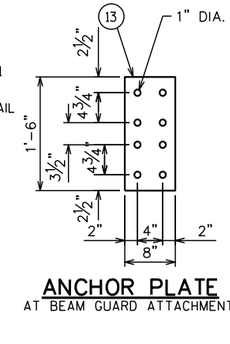
THRIE BEAM RAIL ATTACHMENT



SECTION C-C

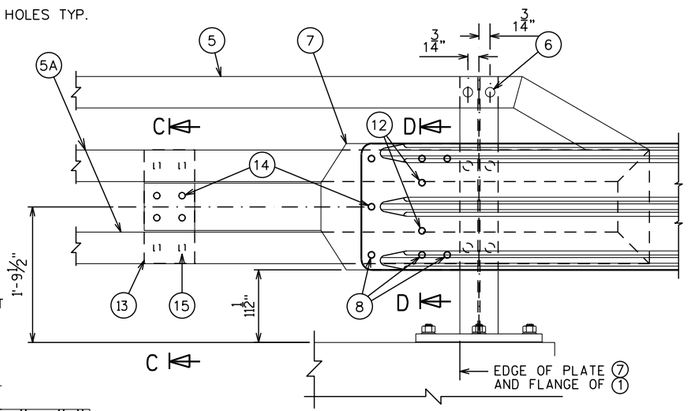


SECTION A-A



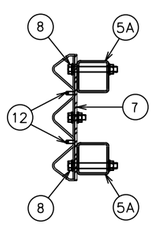
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

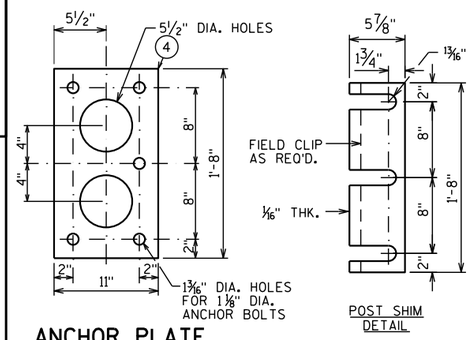


DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

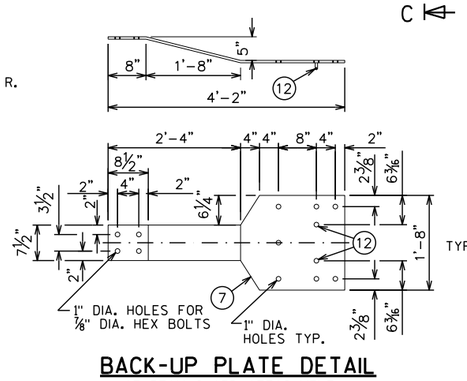


SECTION D-D



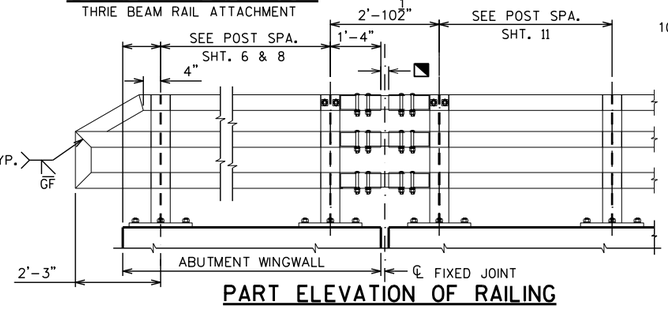
ANCHOR PLATE

AT RAIL TO DECK CONNECTION



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

1. W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" x 11¾" x 1'-8" WITH 1⅞6" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
3. ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
4. ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1¾6" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, ⅜" X 1⅝" X 1⅝" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
7. ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
9. SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".
10. ⅜" X 3 5⅛" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
10A. ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅛" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
11. ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15⁄16" X 1 ¼" LONGIT. SLOTTED HOLES IN PLATE NO. 10A AT FIELD JOINTS AND 15⁄16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A. PROVIDE 15⁄16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
12. ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
13. ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & NO. 4) SHALL BE PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED AMS STD. COLOR NO. 10075, BROWN.

LEGEND

▲ TIE TO TOP MAT OF STEEL.

* ANCHOR BOLT ASSEMBLY MAY BE TACK WELD, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

◥ ½" OPENING FOR A1 ABUTMENT.

STATE PROJECT NUMBER
2695-11-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-115

DRAWN BY WAR | PLANS CK'D. KGW

TUBULAR STEEL RAILING TYPE 'M'

SHEET 13 OF 13

84

SCALE = ###

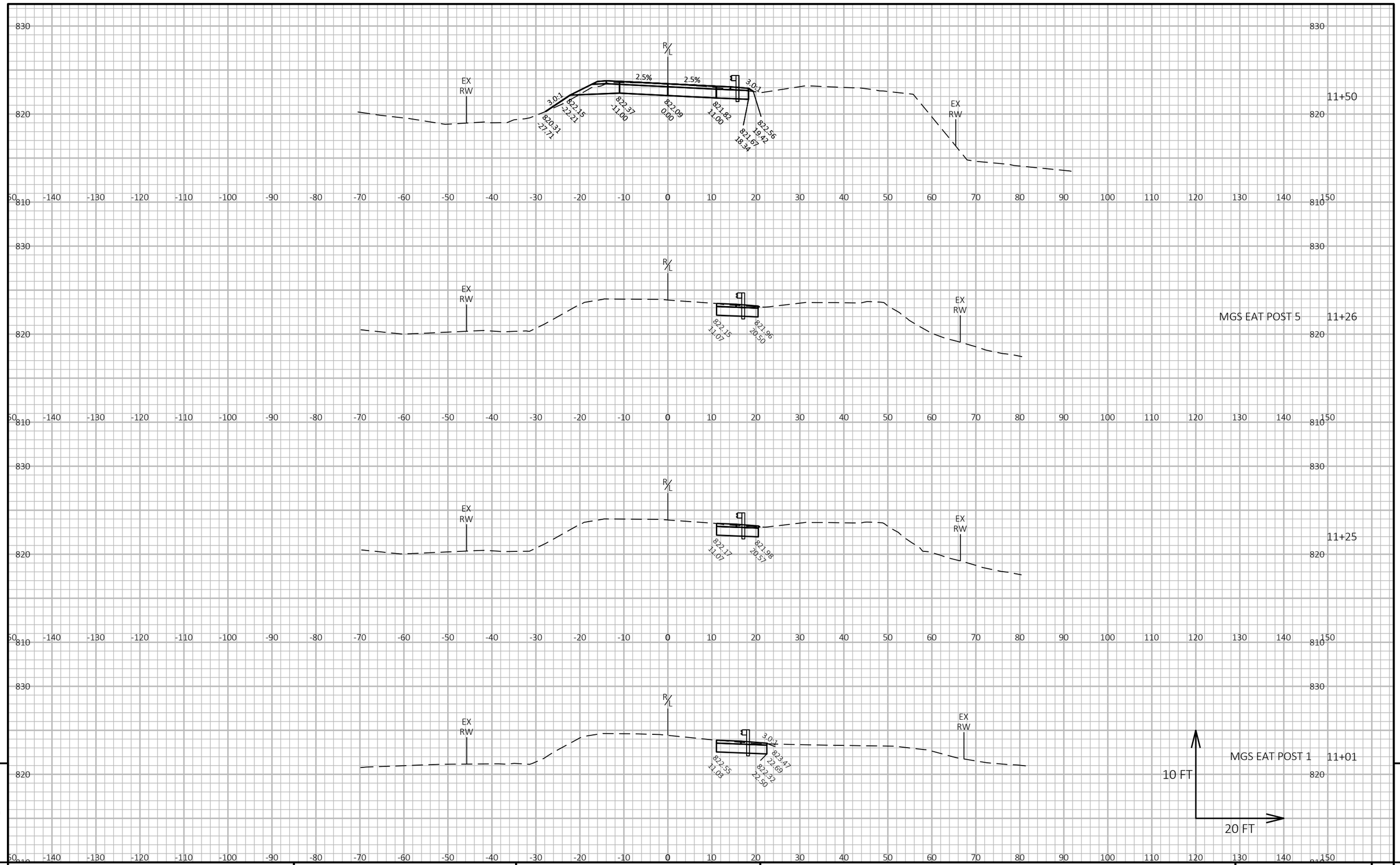
8

8

COVERED BRIDGE ROAD

STATION	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.3	
11+08		13	0	0	0	0	0	0	0	0
11+25	17	12	0	0	8	0	0	8	0	8
11+33	8	11	0	0	3	0	0	11	0	11
11+50	17	46	9	2	18	3	1	29	1	25
11+75	25	32	9	13	29	9	12	59	17	30
13+25		43	9	2	0	0	0	59	17	30
13+45	20	45	9	7	33	7	3	91	21	52
13+50	5	46	9	6	8	2	1	100	23	57
13+70	20	12	0	1	21	3	3	121	26	72
13+75	5	13	0	2	2	0	0	124	27	74
13+95	20	15	0	0	10	0	1	134	28	83
14+00	5	15	0	0	3	0	0	137	28	85
14+20	20	16	0	0	12	0	0	148	28	97
14+25	5	15	0	0	3	0	0	151	28	100
14+50	25	12	0	0	12	0	0	163	28	112
14+75	25	7	0	0	9	0	0	172	28	121
			Column totals		172	23	21			

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

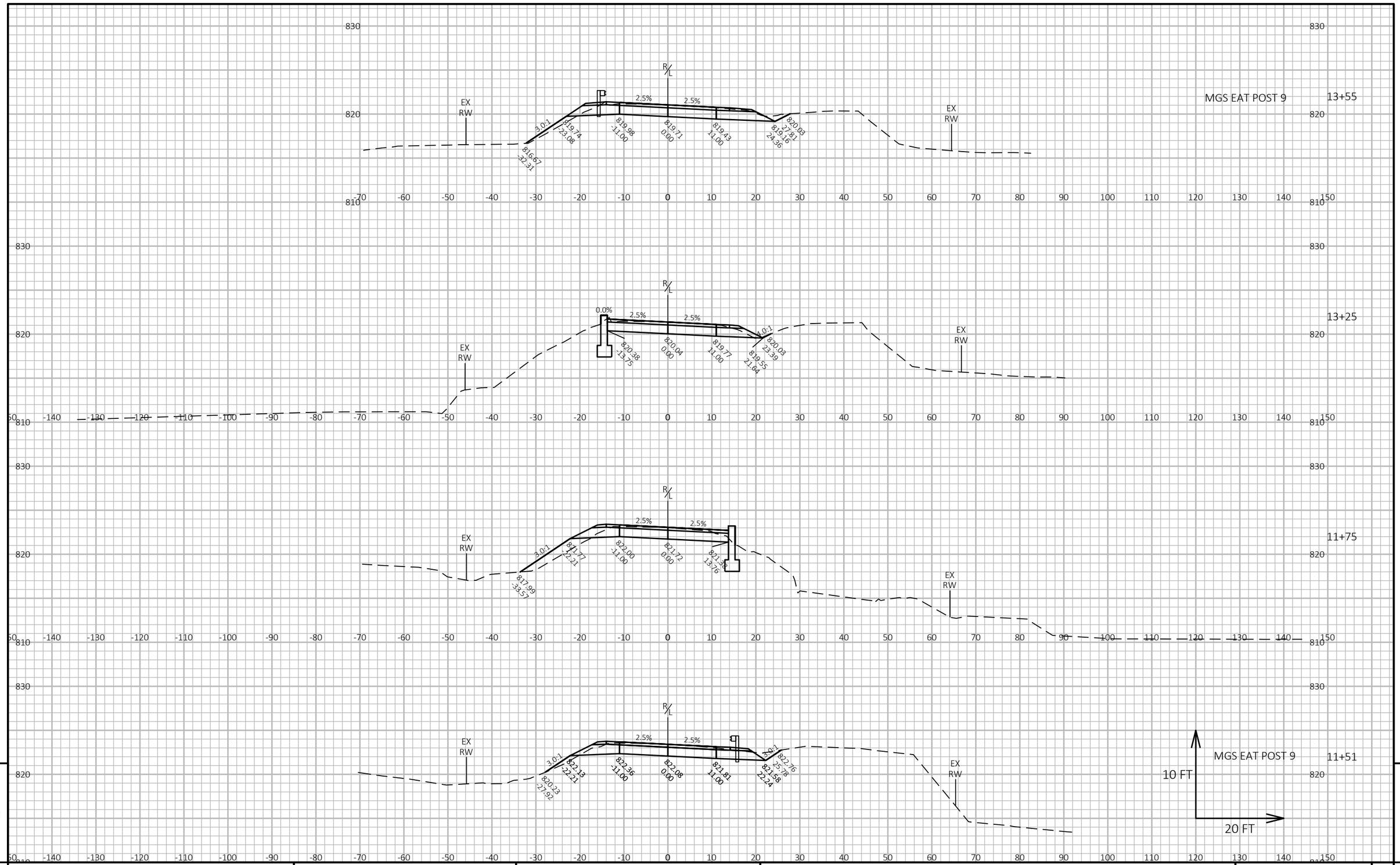


PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	CROSS SECTIONS: COVERED BRIDGE ROAD	SHEET 86	E

FILE NAME : X:\ML\2019\20190126\DESIGN\TRANSPORTATION\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_xs

PLOT DATE : 10/5/2021 6:09 AM PLOT BY : SCHOWALTER, STEVEN PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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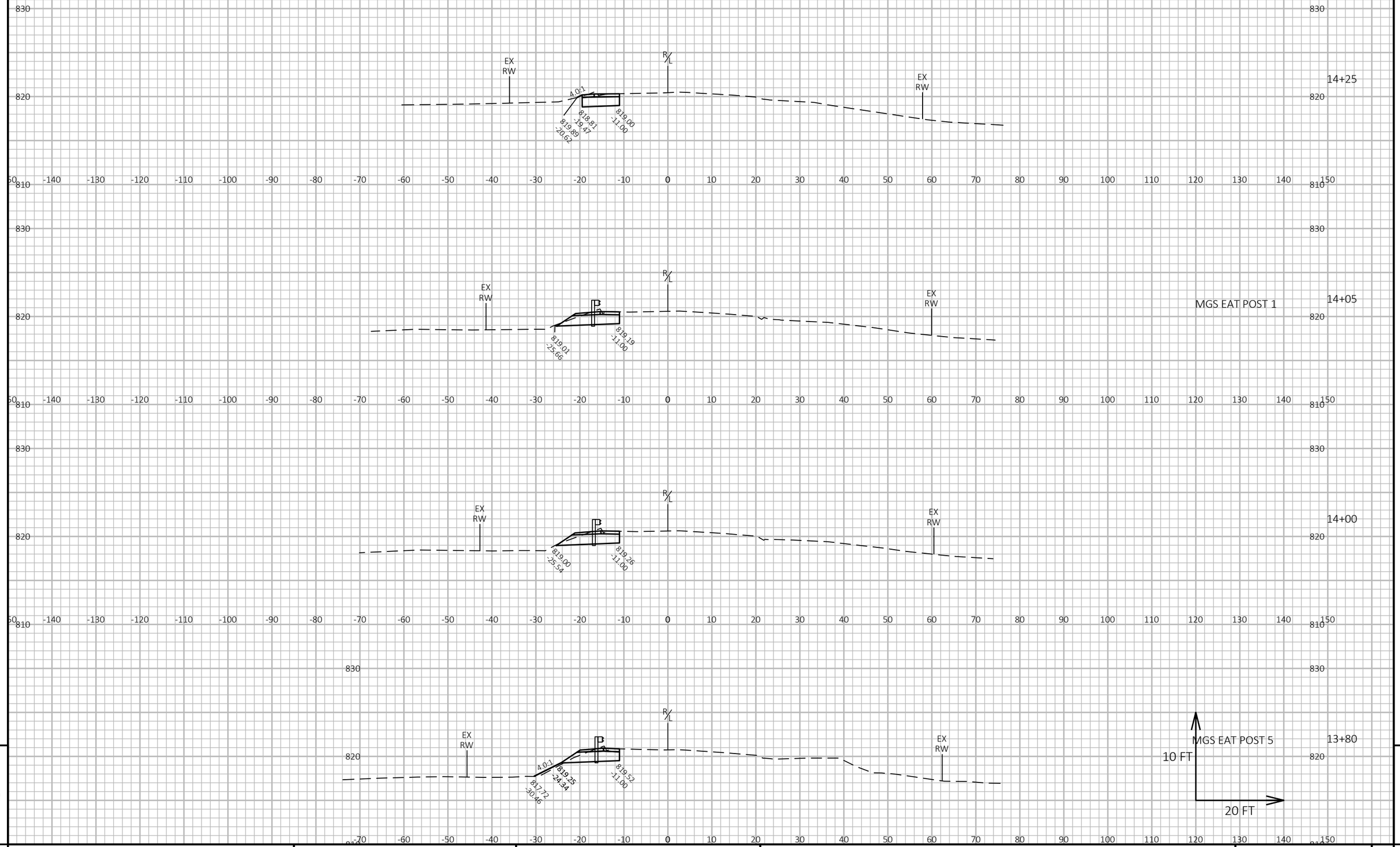
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 2695-11-70	HWY: COVERED BRIDGE ROAD	COUNTY: OZAUKEE	CROSS SECTIONS: COVERED BRIDGE ROAD	SHEET 88	E

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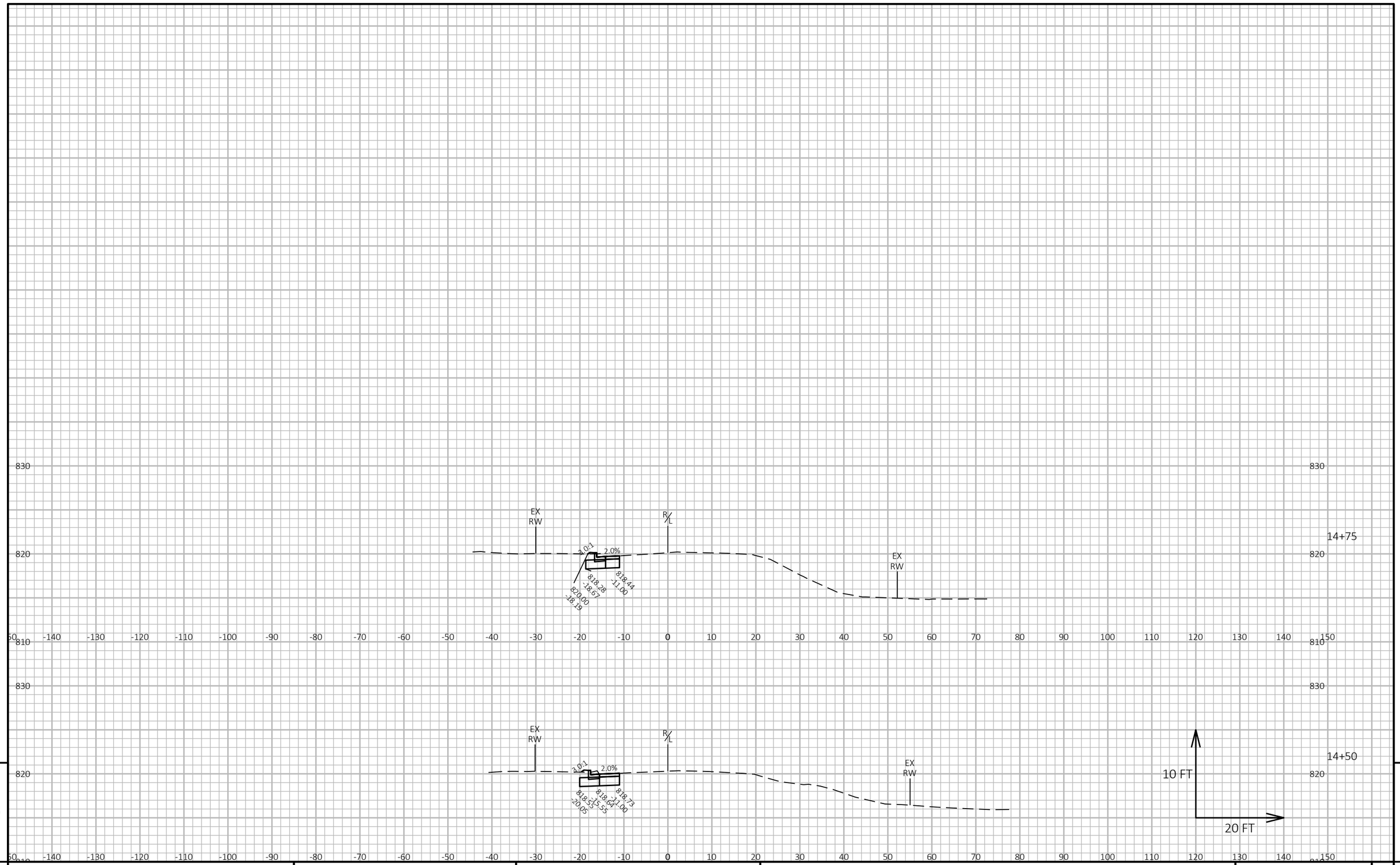
WISDOT/CADDS SHEET 49



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WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

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