MAD DECEMBER 2015

PROJECT ID: 1011-04-65
WITH: N/A

COUNTY: DANE

ORDER OF SHEETS

TOTAL SHEETS = 116

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

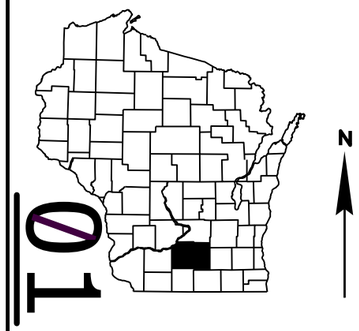
MADISON - PORTAGE

CUBA VALLEY RD BRGS B-13-0087/0088

IH 39
DANE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1011-04-65	WISC 2015630	1

STATE PROJECT NUMBER
1011-04-65

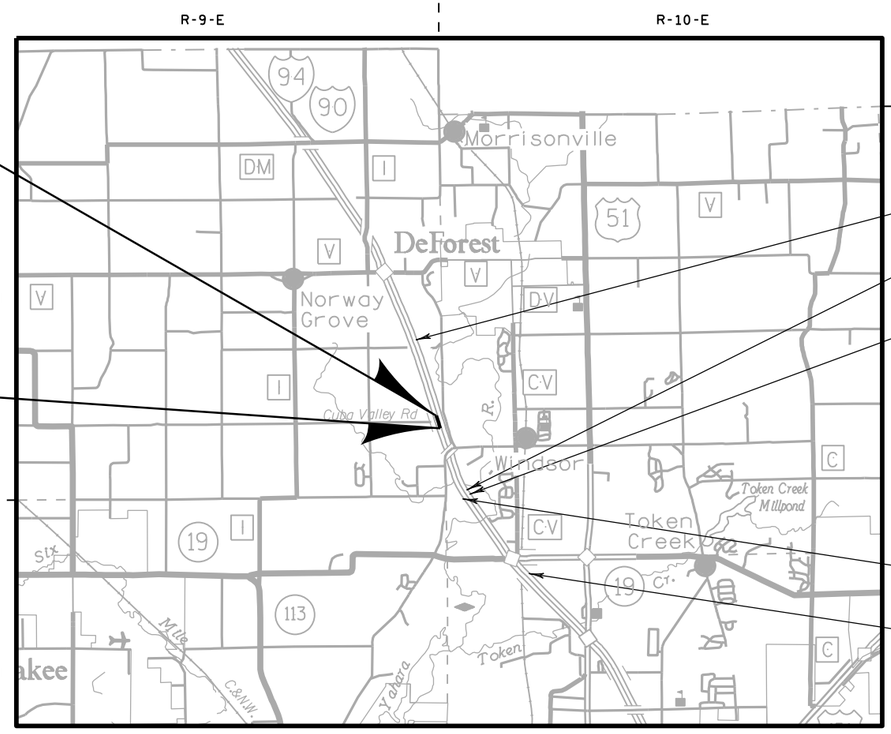


DESIGN DESIGNATION IH 39

A.A.D.T. (2012)	=	51,700
A.A.D.T. (2030)	=	67,200
D.H.V. (2030)	=	9,341
D.D.	=	58/42
T.	=	23.1%
DESIGN SPEED	=	70 MPH
ESALS	=	-----

BEGIN PROJECT 1011-04-65
STA. 712EB+55
X = 826,573.06
Y = 536,373.33

END PROJECT 1011-04-65
STA. 714EB+64
X = 826,628.76
Y = 536,171.76



EQUATION
STA. 655WB+89.63 BK. =
STA A 655WB+82.26 AH.

EQUATION
STA. A 772WB+37.15 BK. =
STA. B 772WB+60.08 AH.

EQUATION
STA. B 775WB+00.00 BK. =
STA. C 100WB+00.00 AH.

STRUCTURES

B-13-0087
B-13-0088

EQUATION
STA. 775EB+00.00 BK. =
STA. A 100EB+00.00 AH.

EQUATION
STA. C 158WB+69.88 BK. =
STA. D 158WB+80.24 AH.

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS
PROPERTY LINE (PL + 58.1)
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE
PROPOSED JOINT 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

COMMUNICATION OVERHEAD — C-OH
COMMUNICATION UNDERGROUND — C-UG
ELECTRIC OVERHEAD — OH
ELECTRIC UNDERGROUND — E
GAS — G
SANITARY SEWER — SAN
STORM SEWER — SS
WATER — W
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE

LAYOUT
SCALE 0 1.0 MI.

TOTAL NET LENGTH OF IH 39 CENTERLINE = 0.039 MI.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD 88 (2011).

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), DANE COUNTY, NAD83 (2011).

ORIGINAL PLANS PREPARED BY
HNTB
NICHOLAS E. BENNETT
E-43352-6
MADISON, WI
PROFESSIONAL ENGINEER
7/31/2015 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	
Designer	HNTB
Project Manager	GREG BRECKA
Regional Examiner	
Regional Supervisor	BRENDA SCHOENFELD
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 07/31/2015 Brenda Schoenfeld (Signature)

E

UTILITY CONTACTS

ALLIANT ENERGY - ELECTRICITY
MR. JASON HOGAN
4902 N. BILTMORE LN.
SUITE 1000
MADISON, WI 53718
(608) 458-4871
JASONHOGAN@ALLIANTENERGY.COM

AT&T LEGACY - COMMUNICATION LINE
MR. BILL KOENIG
128 W. SUNSET AVE.
APPLETON, WI 54911
(608) 628-0575
BKOENIG@JMCEAINC.COM

ATC
MR. DOUG VOSBERG
5303 FEN OAK DR.
MADISON, WI 53718
(608) 877-7650
DVOSBERG@ATCLLC.COM

CENTURY LINK COMMUNICATIONS - COMMUNICATION LINE
MR. STEVE BLADO
333 N. FRONT ST.
PO BOX 4800
LA CROSSE, WI 54602
(608) 796-5543
STEVE.BLADO@CENTURYTEL.COM

CHARTER COMMUNICATIONS - COMMUNICATION LINE
MR. KIRK UPPERMAN
2701 DENNIS ST.
MADISON, WI 53718
(608) 209-3206
KIRK.UPPERMAN@CHARTER.COM

DEFOREST SEWER/STORM SEWER/WATER
MR. DEANE BAKER
205 DEFOREST ST.
DEFOREST, WI 53532
(608) 846-6751
BAKERD@VI.DEFOREST.WI.US

MADISON GAS & ELECTRIC - GAS/PETROLEUM
MR. STEVE BEVERSDORF
133 S. BLAIR ST.
MADISON, WI 53788
(608) 252-1552
SBEVERSDORF@MGE.COM

WISCONSIN DEPT. OF TRANSPORTATION-COMMUNICATION LINE
MR. JOHN MITTELSTADT
433 W. ST. PAUL AVE.
SUITE 300
MILWAUKEE, WI 53203
(414) 227-4665
JOHN.MITTELSTADT@DOT.WI.GOV

DNR AREA LIAISON (Dane County)

ERIC HEGGELUND
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
(608) 275-3301
ERIC.HEGGELUND@WISCONSIN.GOV

REGION CONTACT

GREG BRECKA
2101 WRIGHT STREET
MADISON, WI 53704
(608) 245-2671
GREGORY.BRECKA@DOT.WI.GOV

DESIGN CONTACT

NICK BENNETT
10 W. MIFFLIN ST, SUITE 300
MADISON, WI 53703
(608) 294-5001
NBENNETT@HNTB.COM

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

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

ANY AREAS WHICH ARE DISTURBED BY ANY OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS WILL BE RESTORED AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS, FLOODWAY OR FLOODPLAIN OF ANY WATERWAY.

REMOVING CONCRETE INLUDES ANY MESH OR REINFORCEMENT THAT MAY BE PART OF THE PAVEMENT STRUCTURE. REMOVAL OF EXISTING CRCP APPROACH SLEEPER SLAB IS INCIDENTAL TO THE REMOVING CONCRETE PAVEMENT BID ITEM.

EXISTING PAVEMENT DEPTHS AND LANE WIDTHS ARE BASED ON AS-BUILT DATA AND MAY VARY IN THE FIELD. VERIFY WIDTHS PRIOR TO SETTING TRAFFIC CONTROL TO ENSURE PROPER LANE WIDTHS ARE ACHIEVED.

SHOULDERS MAY BE CLOSED IF REQUIRED BY WORK OPERATIONS, BUT THE RIGHT AND LEFT SHOULDER MAY NOT BE CLOSED IN THE SAME AREA AT THE SAME TIME. ALL SHOULDERS CLOSURES MUST PROVIDE TRAFFIC CONTROL DEVICES PER THE "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H." SDD.

BROKEN CONCRETE CONTAINING RE-BAR SHALL NOT BE USED AS RIPRAP.

THE EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALIGNMENT IDENTIFIERS	
EB	IH 39/90/94 EB
WB	IH 39/90/94 WB

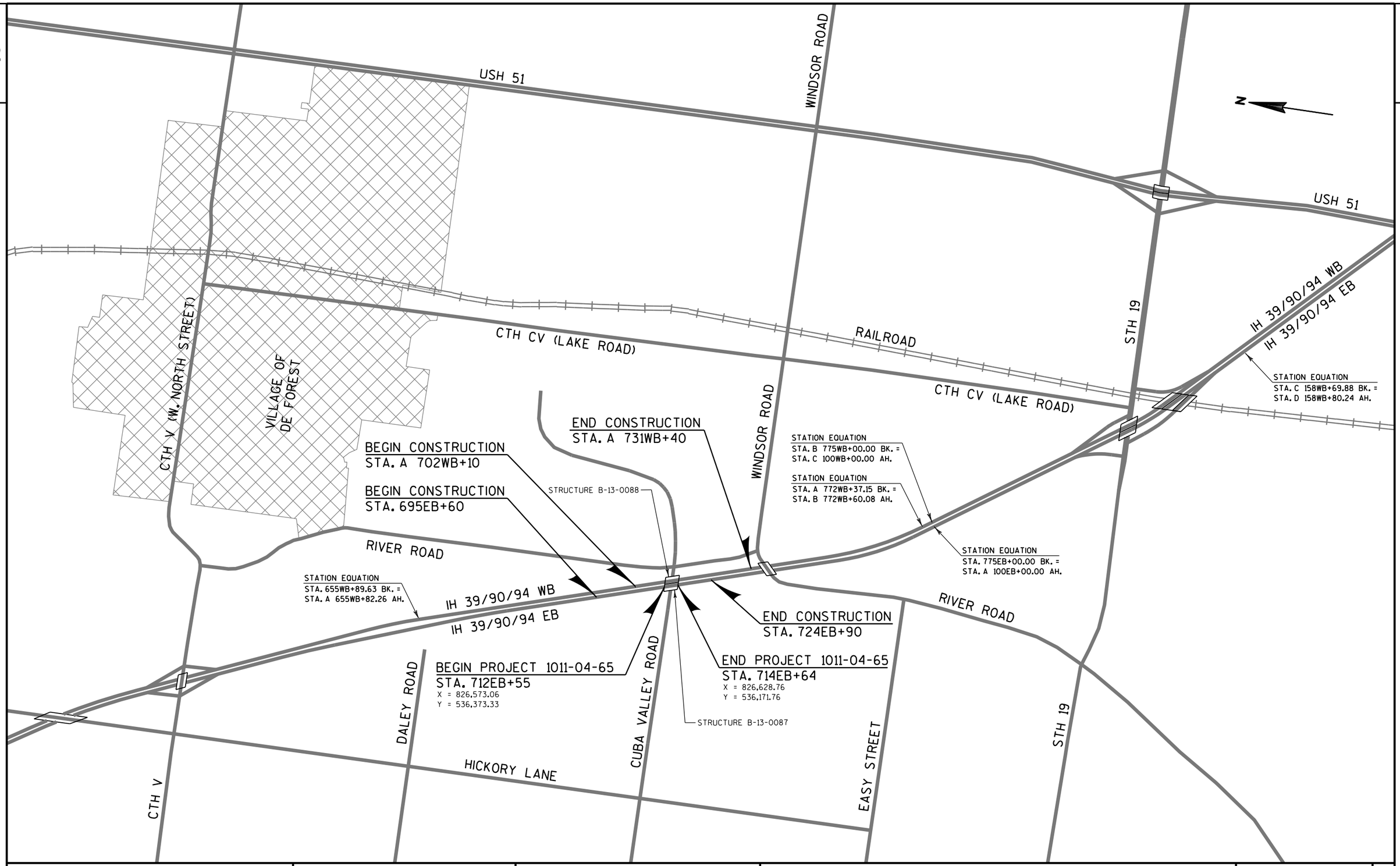
PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS	ASPHALTIC MATERIAL
E-10 (SHOULDER 2' WIDE MILL & FILL)	2"	2" UPPER LAYER	PG64-28P

ABBREVIATIONS

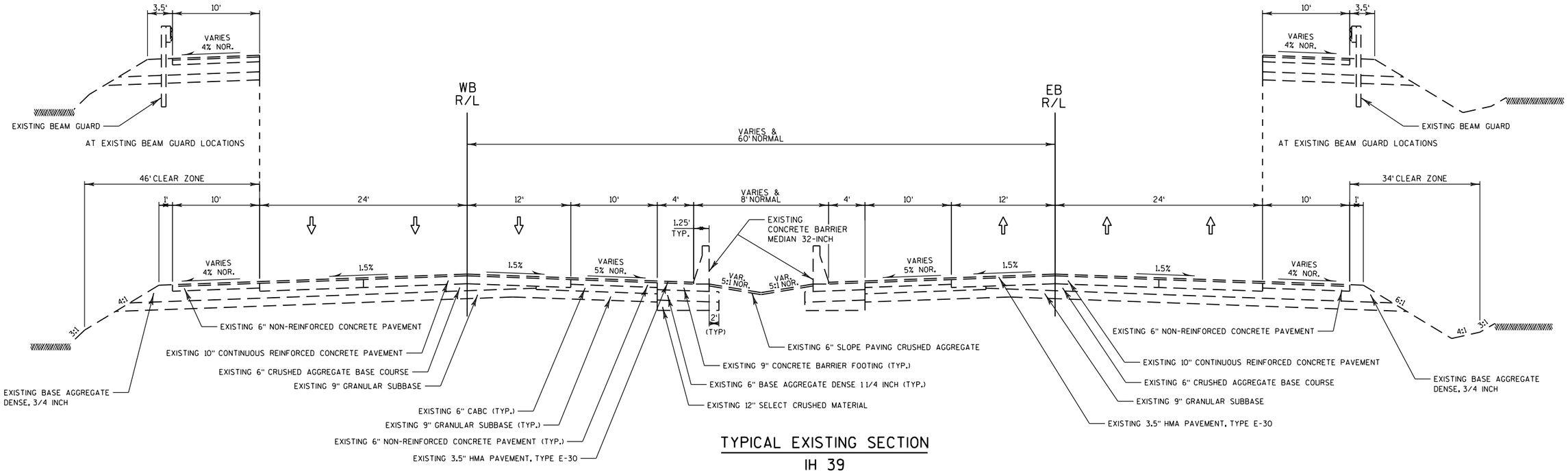
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C/L	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
EAT	ENERGY ABSORBING TERMINAL
HMA	HOT MIX ASPHALT
L	LENGTH OF CURVE
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
REQD	REQUIRED
RO	RUN OFF LENGTH
RT	RIGHT
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWINGS
SE	SUPER ELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH

2

2



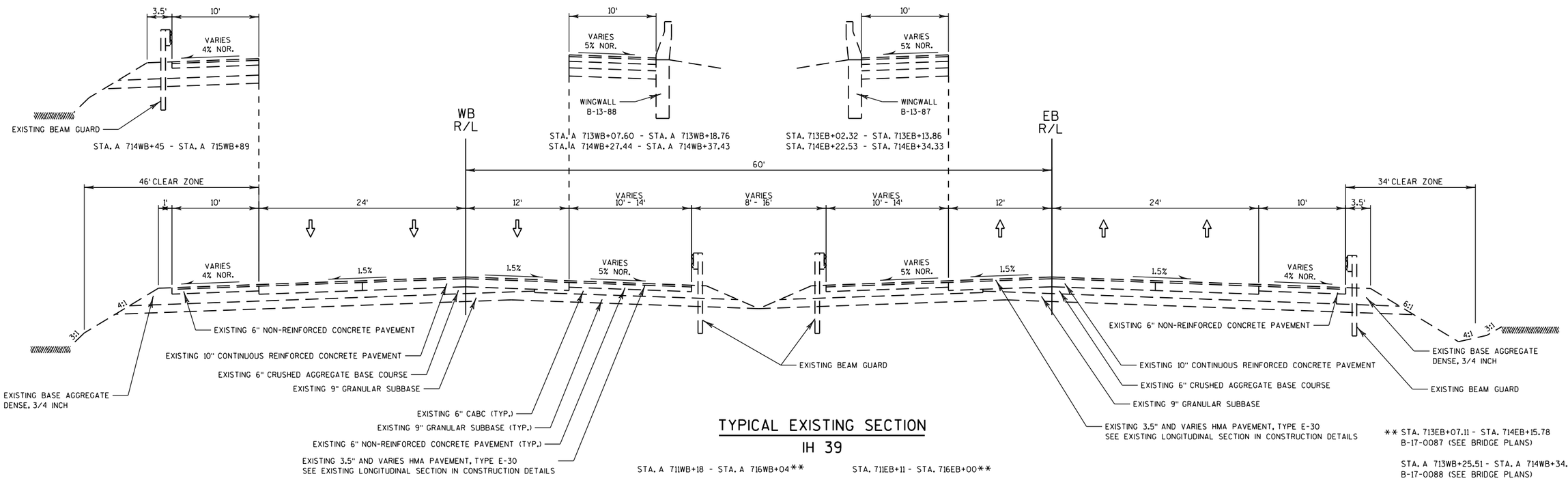
PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	PROJECT OVERVIEW	SHEET 4	E



TYPICAL EXISTING SECTION
IH 39

STA. A 677WB+75 - STA. A 711WB+18
STA. A 716WB+04 - STA. A 749WB+25

STA. 677EB+75 - STA. 711EB+11
STA. 716EB+00 - STA. 749EB+25



TYPICAL EXISTING SECTION
IH 39

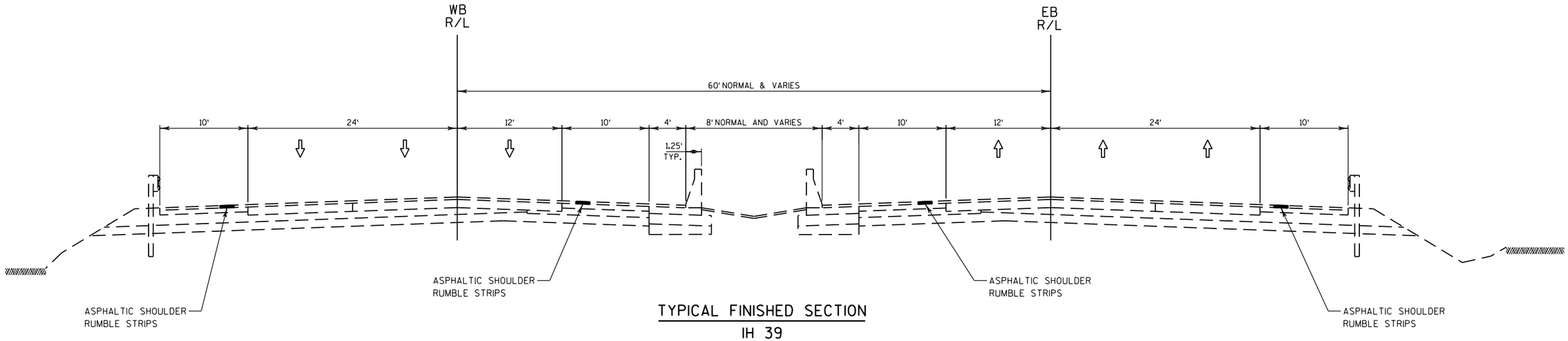
STA. A 711WB+18 - STA. A 716WB+04**

STA. 711EB+11 - STA. 716EB+00**

** STA. 713EB+07.11 - STA. 714EB+15.78
B-17-0087 (SEE BRIDGE PLANS)

STA. A 713WB+25.51 - STA. A 714WB+34.18
B-17-0088 (SEE BRIDGE PLANS)

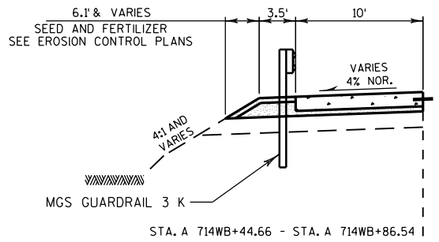
PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TYPICAL SECTIONS: EXISTING	SHEET 5	E

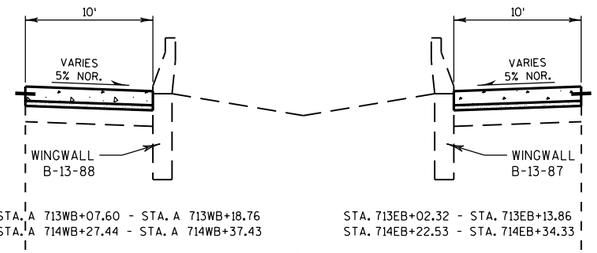


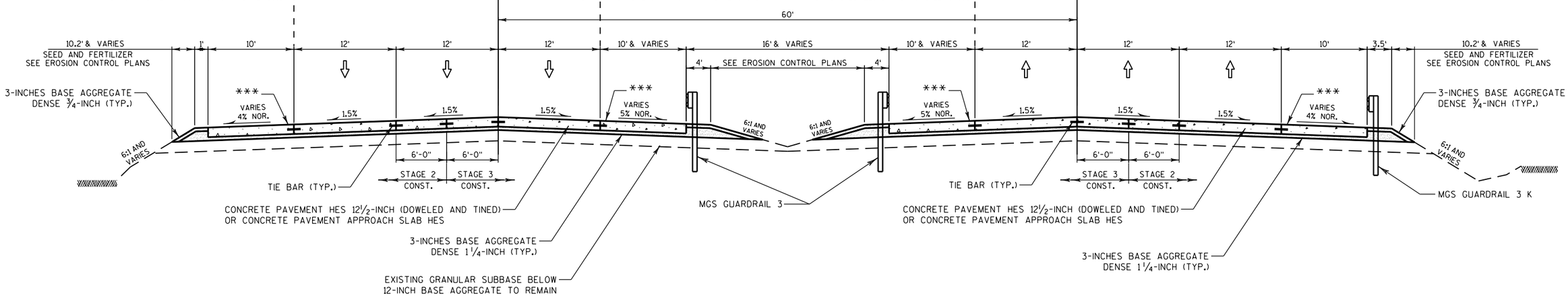
TYPICAL FINISHED SECTION
IH 39

STA. A 702WB+10.00 - STA. A 712WB+76.88
STA. A 714WB+86.54 - STA. A 731WB+40.00

STA. 695EB+60.00 - STA. 712EB+54.75
STA. 714EB+64.41 - STA. 724EB+90.00







TYPICAL FINISHED SECTION
IH 39

STA. A 712WB+76.88 - STA. A 714WB+86.54**

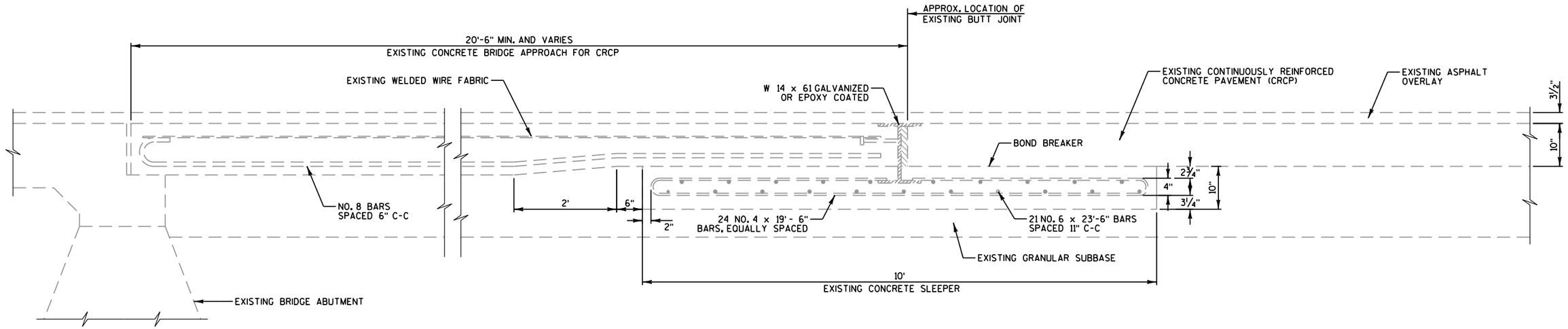
STA. 712EB+54.75 - STA. 714EB+64.41**

*** MILL CONCRETE SHOULDER RUMBLE STRIPS

** STA. 713EB+07.11 - STA. 714EB+15.78
B-17-0087 (SEE BRIDGE PLANS)

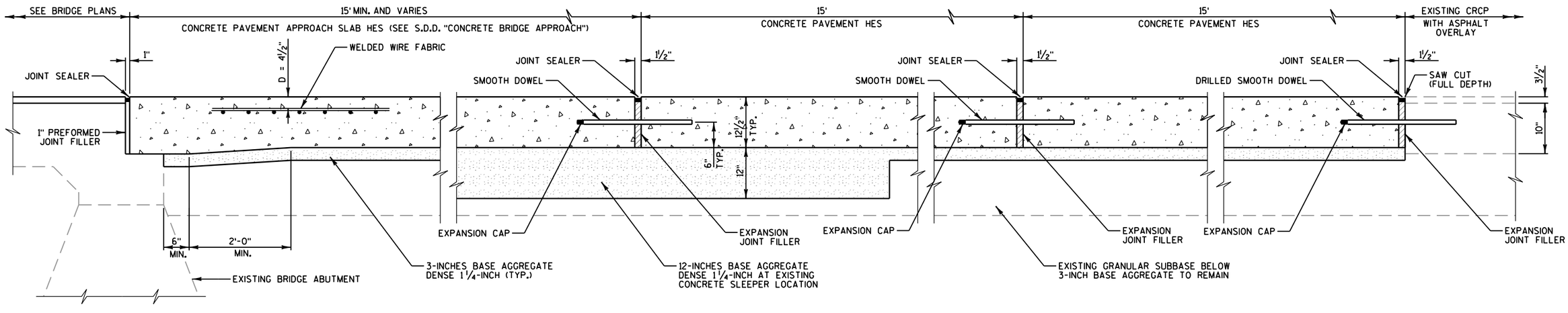
STA. A 713WB+25.51 - STA. A 714WB+34.18
B-17-0088 (SEE BRIDGE PLANS)

2



EXISTING LONGITUDINAL SECTION AT CRCP APPROACH SLAB

FOR INFORMATION ONLY



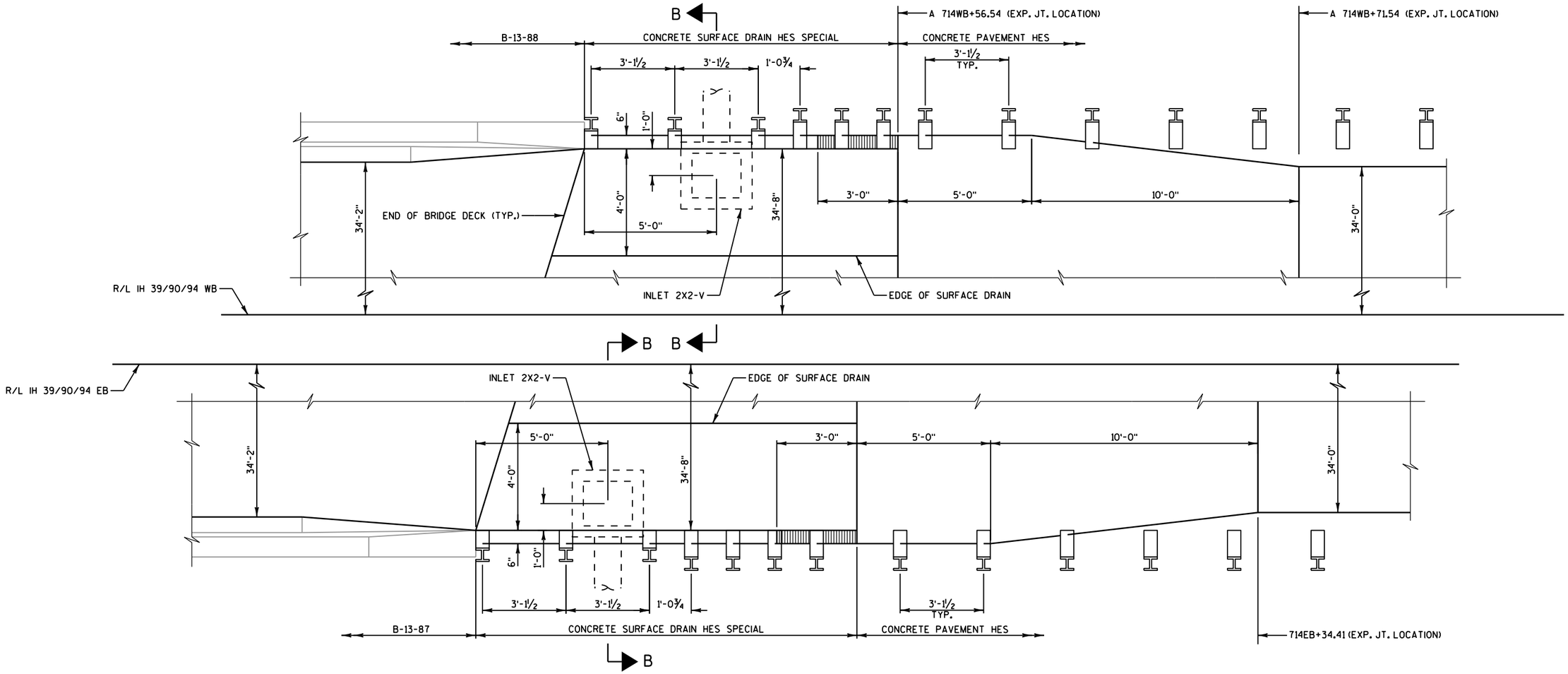
FINISHED LONGITUDINAL SECTION AT CONCRETE BRIDGE APPROACH

GENERAL NOTES

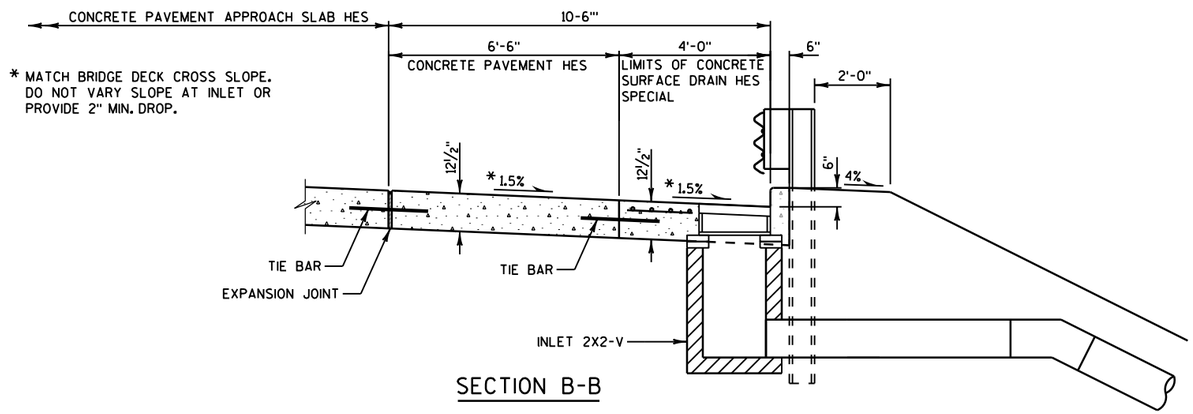
SEE S.D.D. "CONCRETE PAVEMENT REPAIR AND REPLACEMENT" FOR APPLICABLE NOTES AND DRILLED DOWEL BAR DETAILS.

SEE S.D.D. "CONCRETE BRIDGE APPROACH" FOR ADDITIONAL NOTES AND DETAILS NOT SHOWN.

INFORMATION SHOWN ON THIS SHEET SUPERSEDES STANDARD DETAIL DRAWINGS.



PLAN VIEW AT CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES



SECTION B-B

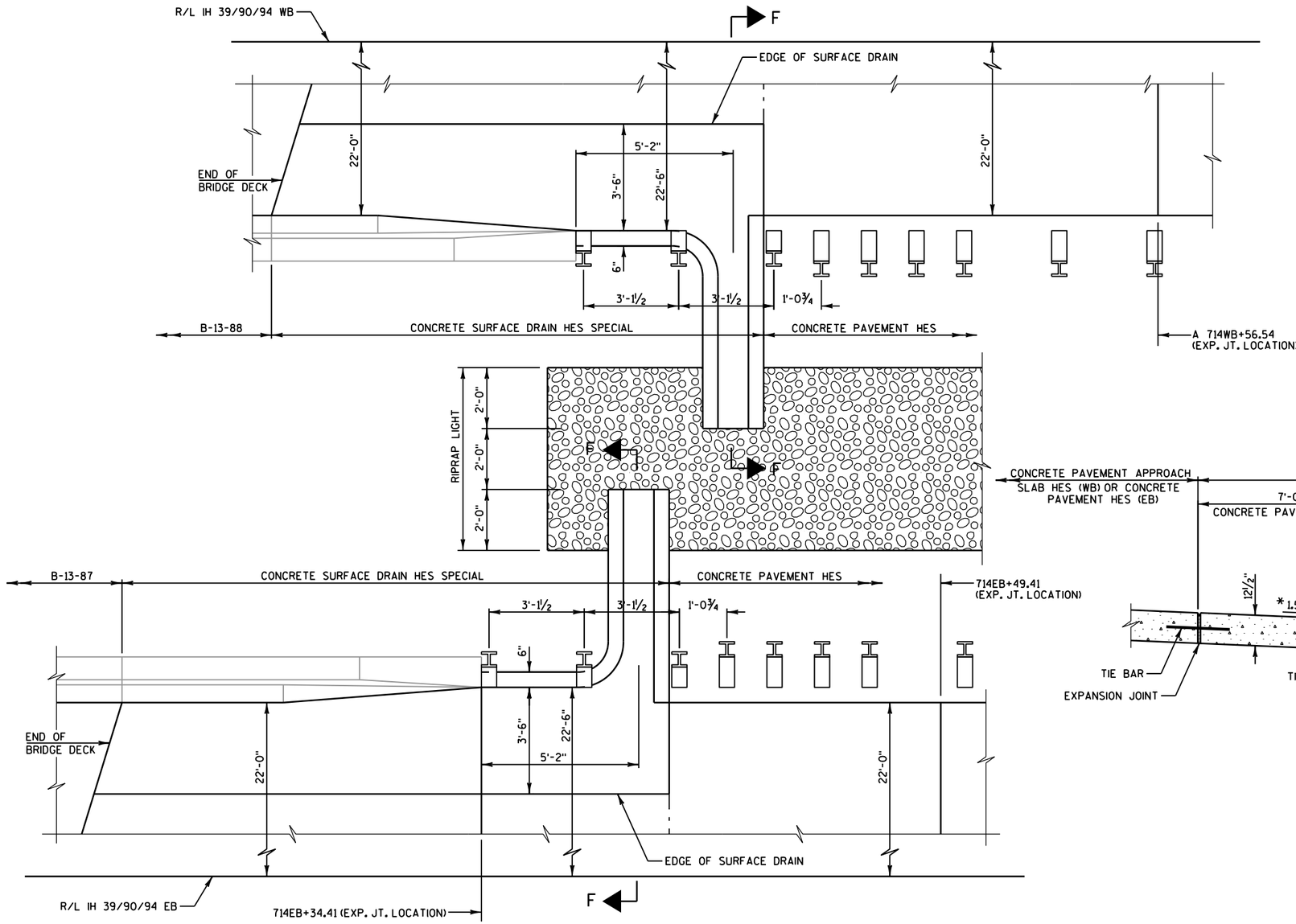
GENERAL NOTES

SEE S.D.D. "CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES" FOR ADDITIONAL NOTES AND DETAILS NOT SHOWN.

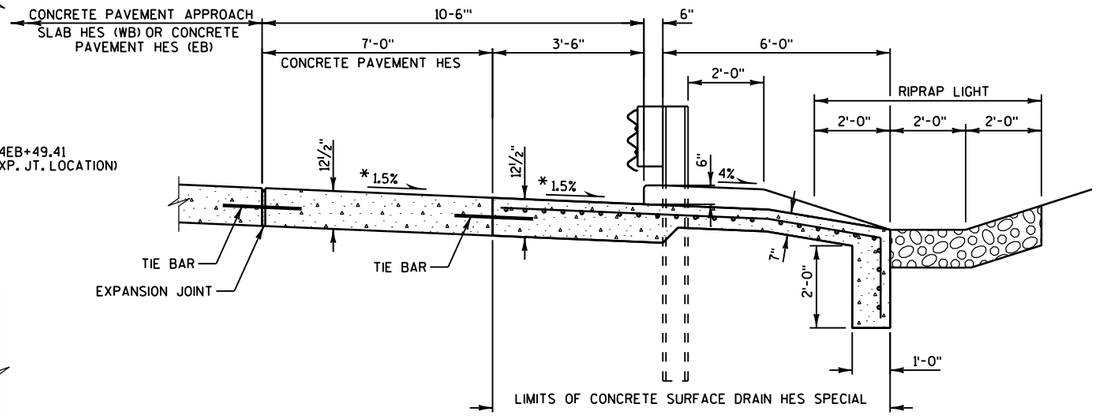
INFORMATION SHOWN ON THIS SHEET SUPERSEDES STANDARD DETAIL DRAWING.

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	CONSTRUCTION DETAILS	SHEET 8	E

2



PLAN VIEW AT CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES



SECTION F-F

* MATCH BRIDGE DECK CROSS SLOPE. DO NOT VARY SLOPE AT FLUME OR PROVIDE 3" DROP.

GENERAL NOTES

SEE S.D.D. "CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES" FOR ADDITIONAL NOTES AND DETAILS NOT SHOWN.

INFORMATION SHOWN ON THIS SHEET SUPERSEDES STANDARD DETAIL DRAWING.

2

CUBA VALLEY ROAD

EXISTING STRUCTURE B-13-0088

R/L IH 39/90/94 WB

IH 39/90/94 WB

STA. A 702WB+10 - STA. A 713WB+20.85, RT.

STA. A 714WB+30.87 - STA. A 731WB+40, RT.

A 711WB | A 712WB | A 713WB | A 714WB | A 715WB | A 716WB

711EB | 712EB | 713EB | 714EB | 715EB | 716EB

R/L IH 39/90/94 EB

IH 39/90/94 EB

STA. 695EB+60 - STA. 713EB+10.42, LT.

STA. 714EB+20.45 - STA. 724EB+90, LT.

EXISTING STRUCTURE B-13-0087

REMOVAL LEGEND

/////// MILL EXISTING RUMBLE STRIP 2-INCH x 2-FT. WIDE

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	REMOVAL PLAN - STAGE 1	SHEET 10	E

FILE NAME : J:\59970\t1\cds\021101_rm_S1.dgn PLOT DATE : 7/24/2015 PLOT BY : Ctomsak PLOT NAME : PLOT SCALE : 39.9999:1

2

2

CUBA VALLEY ROAD

STA. A 702WB+10 - STA. A 712WB+76.88, LT.

EXISTING STRUCTURE B-13-0088
SEE BRIDGE PLANS FOR REMOVALS

STA. A 714WB+86.54 - STA. A 731WB+40, LT.

R/L IH 39/90/94 WB

IH 39/90/94 WB

A 711WB | A 712WB | A 713WB | A 714WB | A 715WB | A 716WB

4'-7" TYP.

WB+76.88

WB+86.54

EB+54.75

711EB | 712EB | 713EB | 714EB | 715EB | 716EB

EB+64.41

R/L IH 39/90/94 EB

IH 39/90/94 EB

STA. 695EB+60 - STA. 712EB+54.75, RT.

EXISTING STRUCTURE B-13-0087
SEE BRIDGE PLANS FOR REMOVALS

STA. 714EB+64.41 - STA. 724EB+90, LT.

REMOVAL LEGEND

/////// MILL EXISTING RUMBLE STRIP 2-INCH x 2-FT. WIDE

XXXXX SAWING CONCRETE

REMOVING PAVEMENT

SALVAGED RAIL

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	REMOVAL PLAN - STAGE 2	SHEET 11	E

FILE NAME : J:\59970\t1\cds\021102_rm_S2.dgn PLOT DATE : 7/24/2015 PLOT BY : Ctomsak PLOT NAME : PLOT SCALE : 39.9999:1

WISDOT/CADDS SHEET 42

2

CUBA VALLEY ROAD

EXISTING STRUCTURE B-13-0088
SEE BRIDGE PLANS FOR REMOVALS

R/L IH 39/90/94 WB

IH 39/90/94 WB

A 711WB | A 712WB | A 713WB | A 714WB | A 715WB | A 716WB

WB+76.88

WB+86.54

711EB | 712EB | 713EB | 714EB | 715EB | 716EB

R/L IH 39/90/94 EB

IH 39/90/94 EB

EB+54.75

EB+64.41

EXISTING STRUCTURE B-13-0087
SEE BRIDGE PLANS FOR REMOVALS

REMOVAL LEGEND

XXXXX SAWING CONCRETE

REMOVING PAVEMENT

REMOVING GUARDRAIL

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	REMOVAL PLAN - STAGE 3	SHEET	E

FILE NAME : J:\59970\t1\cds\021103_rm_S3.dgn PLOT DATE : 7/24/2015 PLOT BY : Ctomsak PLOT NAME : PLOT SCALE : 39.9999:1

RUMBLE STRIP LOCATION TABLE

ASPHALTIC SHOULDER RUMBLE STRIPS	
STA. A 702WB+10.00 - STA. A 712WB+76.88, LT.	STA. 695EB+60.00 - STA. 712EB+54.75, LT.
STA. A 702WB+10.00 - STA. A 712WB+76.88, RT.	STA. 695EB+60.00 - STA. 712EB+54.75, RT.
STA. A 714WB+86.54 - STA. A 731WB+40.00, LT.	STA. 714EB+64.41 - STA. 724EB+90.00, LT.
STA. A 714WB+86.54 - STA. A 731WB+40.00, RT.	STA. 714EB+64.41 - STA. 724EB+90.00, RT.

CONCRETE SHOULDER RUMBLE STRIPS	
STA. A 712WB+76.88 - STA. A 713WB+32.50, LT.	STA. 712EB+54.75 - STA. 713EB+10.42, LT.
STA. A 712WB+76.88 - STA. A 713WB+20.85, RT.	STA. 712EB+54.75 - STA. 712EB+98.77, RT.
STA. A 714WB+42.53 - STA. A 714WB+86.54, LT.	STA. 714EB+20.45 - STA. 714EB+64.41, LT.
STA. A 714WB+30.87 - STA. A 714WB+86.54, RT.	STA. 714EB+08.79 - STA. 714EB+64.41, RT.

CUBA VALLEY ROAD

CHARTER UNDERGROUND FIBER OPTIC

ATT UNDERGROUND FIBER OPTIC

CENTURYLINK UNDERGROUND TELEPHONE

ALLIANT ENERGY/WPL UNDERGROUND ELECTRIC

EXISTING CONTINUOUSLY REINFORCED CONCRETE PAVEMENT WITH ASPHALT OVERLAY

EXISTING STRUCTURE B-13-0088 SEE BRIDGE PLANS

CAUTION

SECURE STRUCTURE COVER

WB+06.88 (EXP. JT. LOCATION)

WB+76.88 (EXP. JT. LOCATION)

WB+91.88 (EXP. JT. LOCATION)

WB+21.88

WB+41.54

WB+56.54 (EXP. JT. LOCATION)

WB+71.54 (EXP. JT. LOCATION)

WB+86.54 (EXP. JT. LOCATION)

EB+19.41

EB+99.75

EB+64.41 (EXP. JT. LOCATION)

EB+54.75 (EXP. JT. LOCATION)

EB+49.41 (EXP. JT. LOCATION)

EB+69.75 (EXP. JT. LOCATION)

EB+34.41 (EXP. JT. LOCATION)

EB+84.75 (EXP. JT. LOCATION)

R/L IH 39/90/94 WB

IH 39/90/94 WB

R/L IH 39/90/94 EB

IH 39/90/94 EB

A 711WB

A 712WB

A 713WB

A 714WB

A 715WB

A 716WB

711EB

712EB

713EB

714EB

715EB

716EB

STAGE 2 CONST.

STAGE 3 CONST.

SLOPE INTERCEPT (TYP.)

30:1 TAPER

4" TYP.

6'-0"

WISDOT UNDERGROUND ITS FIBER OPTIC

EXISTING STRUCTURE S-13-337 TO REMAIN

ATC OVERHEAD HIGH VOLTAGE TRANSMISSION LINE

PLAN DETAILS LEGEND

- AGO1 BASE AGGREGATE DENSE 3/4-INCH
- BG11 MGS THRIE BEAM TRANSITION
- BG12 MGS GUARDRAIL 3
- BG13 MGS GUARDRAIL 3 K
- CD01 CONCRETE SURFACE DRAIN HES SPECIAL
- CP13 CONCRETE PAVEMENT HES 12½-INCH, (DOWELED AND TINED)
- PV01 CONCRETE PAVEMENT APPROACH SLAB HES
- RS01 ASPHALTIC SHOULDER RUMBLE STRIPS SEE "RUMBLE STRIP LOCATION TABLE"
- RS02 CONCRETE RUMBLE STRIPS SHOULDER SEE "RUMBLE STRIP LOCATION TABLE"
- SW02 SAWING CONCRETE

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	PLAN DETAILS	SHEET 13	E

2

SEED AND FERTILIZER (TYP.)

TYPE D

B-13-88

711'WB' 712'WB' IH 39/90/94 WB 713'WB' 714'WB' 715'WB' 716'WB' 717'WB'

TYPE D

711'EB' 712'EB' IH 39/90/94 EB 713'EB' 714'EB' 715'EB' 716'EB' 717'EB'

B-13-87

TYPE D

SLOPE INTERCEPT (TYP.)

SILT FENCE (TYP.)

CUBA VALLEY ROAD

LEGEND

- SILT FENCE
- (TYPE) INLET PROTECTION
- SLOPE INTERCEPTS
- EROSION MAT
- RIPRAP
- DIRECTION OF FLOW

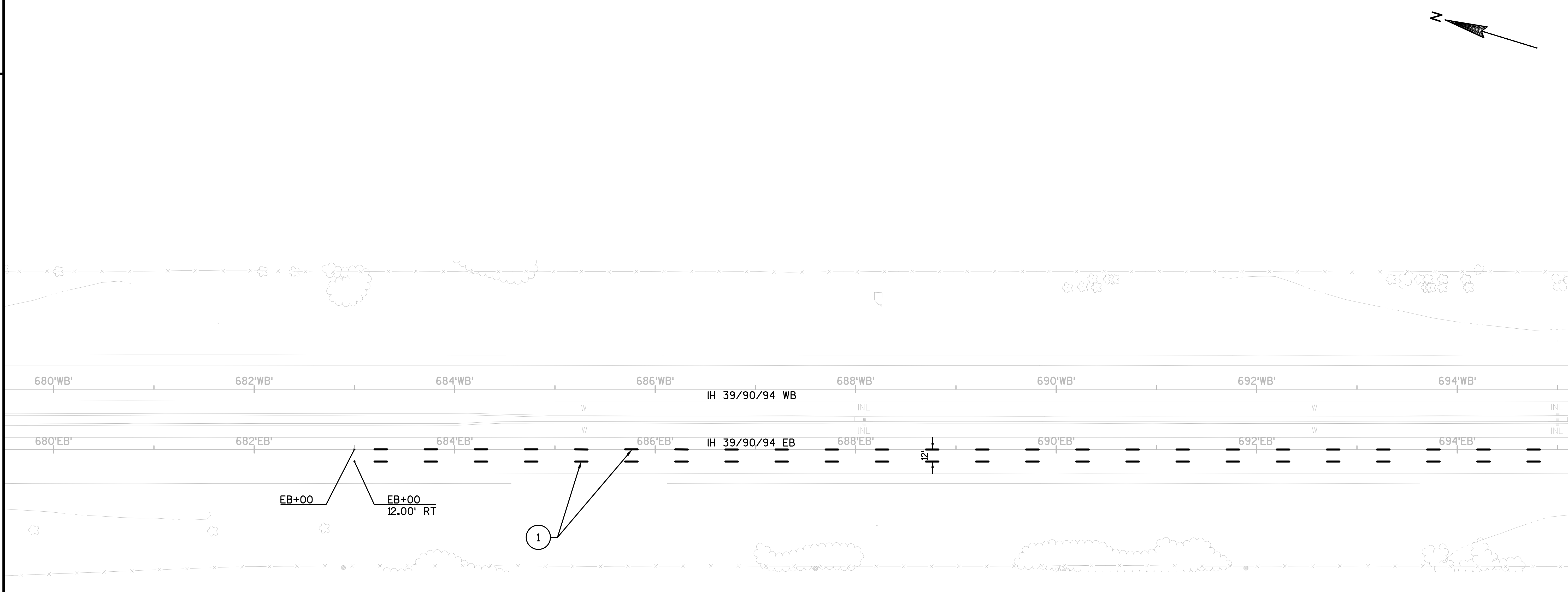
PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	EROSION CONTROL	SHEET 14	E

FILE NAME : Q:\2015 PROJECTS\2015127 - CUBA VALLEY RD BRIDGES\AUTOCAD\PLANSET\022001_EC.DWG
LAYOUT NAME - 022001_EC

PLOT DATE : 5/27/2015 11:00 AM PLOT BY : OTIE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

2



2

LEGEND

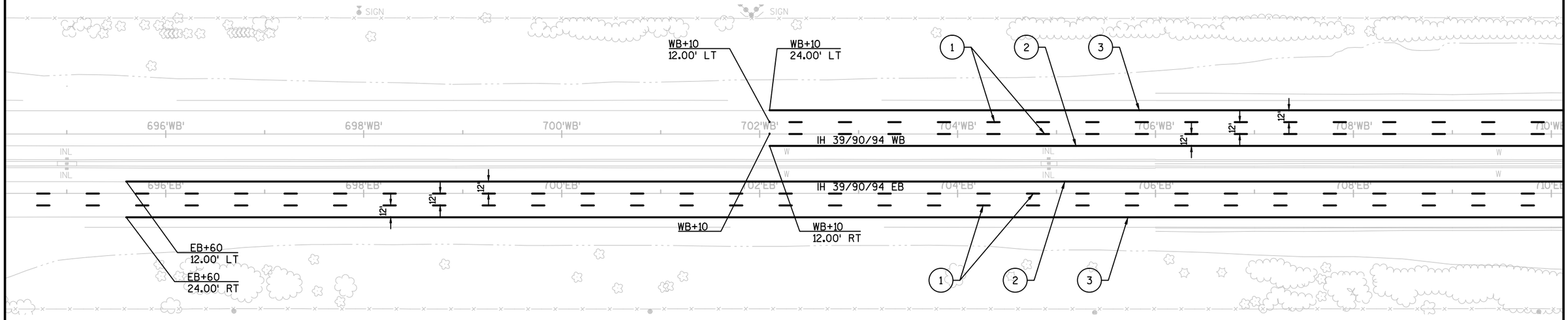
(1) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)

(2) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

(3) PAVEMENT MARKING EPOXY 4-INCH (WHITE)

PROJECT NO:1011-04-65	HWY:IH 39	COUNTY: DANE	PAVEMENT MARKING	SHEET 15	E

2



LEGEND

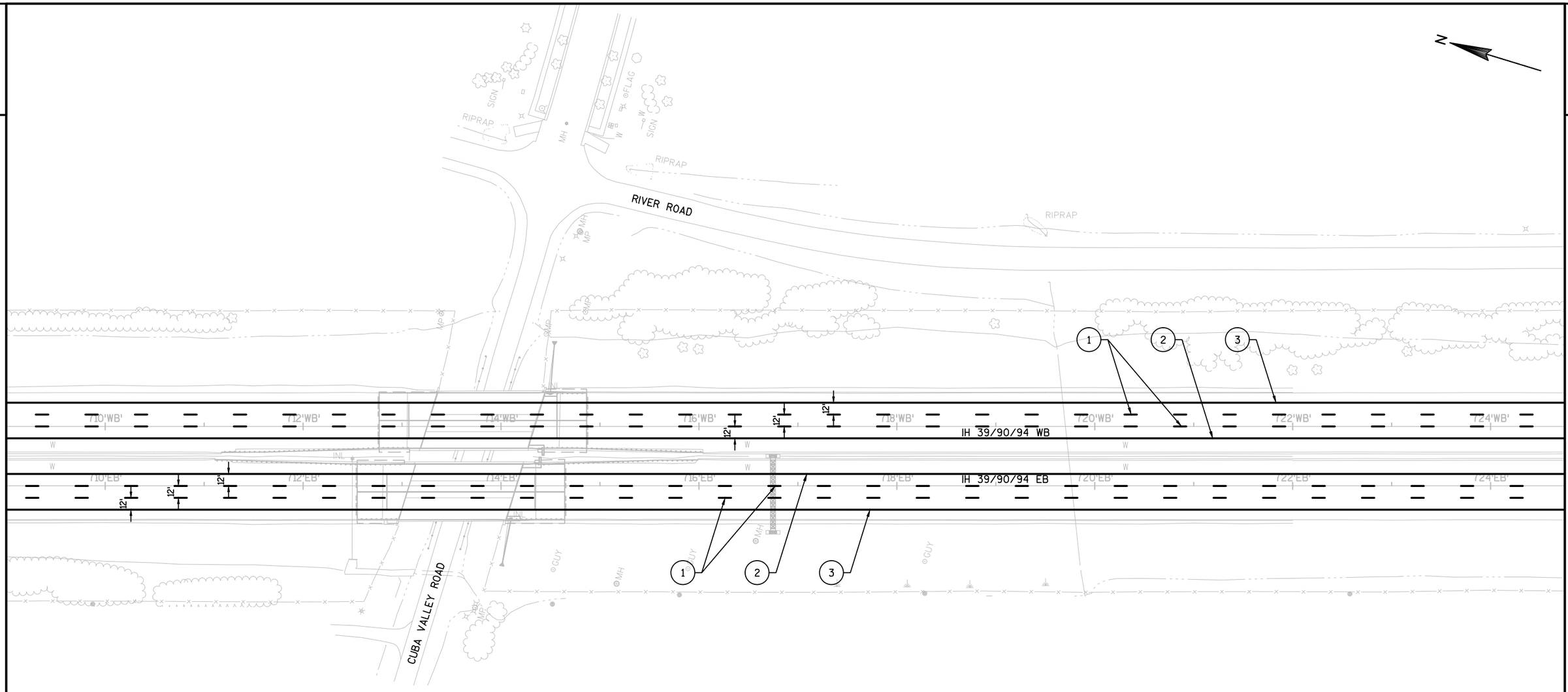
1 PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)

2 PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

3 PAVEMENT MARKING EPOXY 4-INCH (WHITE)

PROJECT NO:1011-04-65	HWY:IH 39	COUNTY: DANE	PAVEMENT MARKING	SHEET 16	E

2



LEGEND

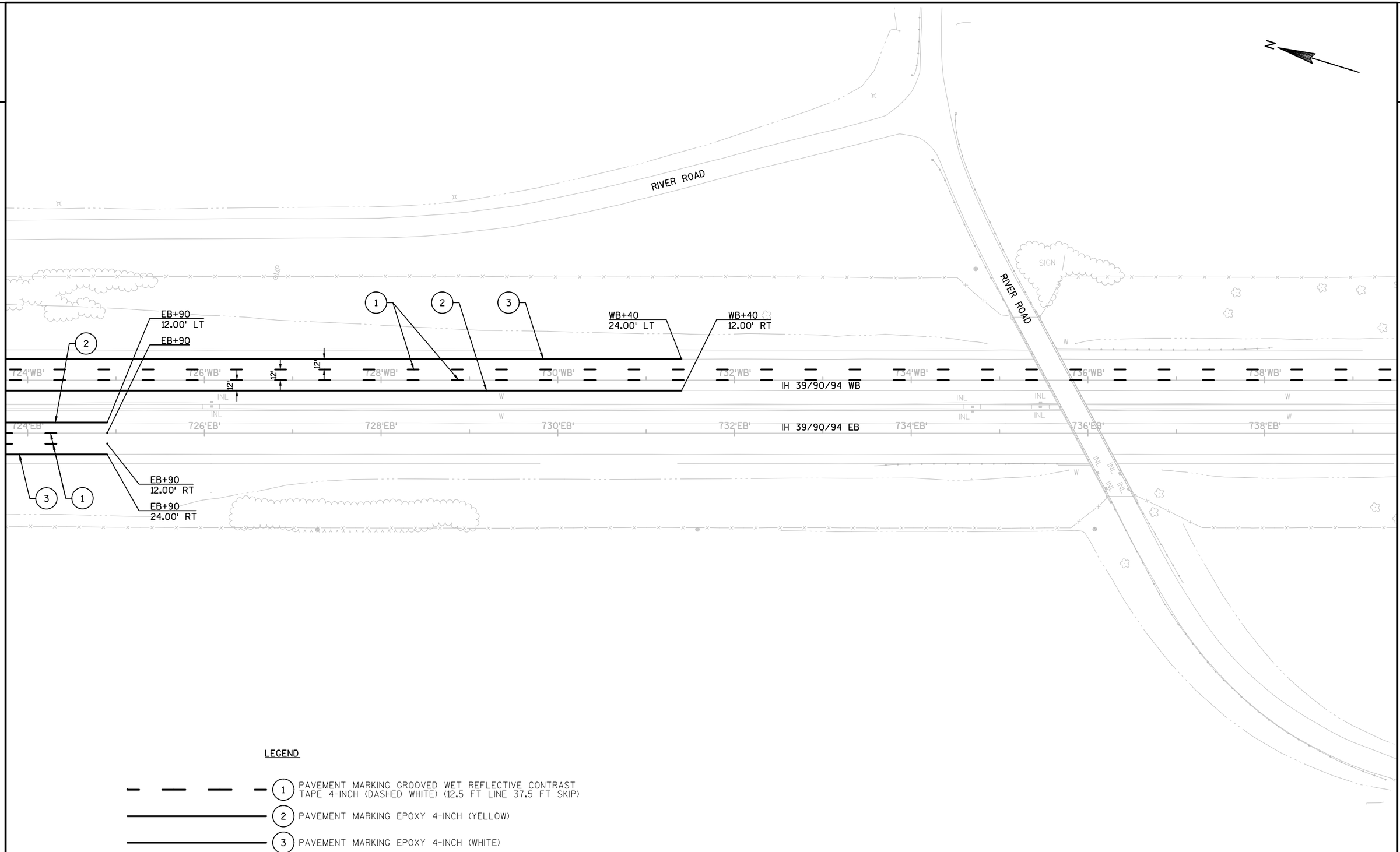
1 PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)

2 PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

3 PAVEMENT MARKING EPOXY 4-INCH (WHITE)

PROJECT NO:1011-04-65	HWY:IH 39	COUNTY: DANE	PAVEMENT MARKING	SHEET 17	E

2



LEGEND

1 PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)

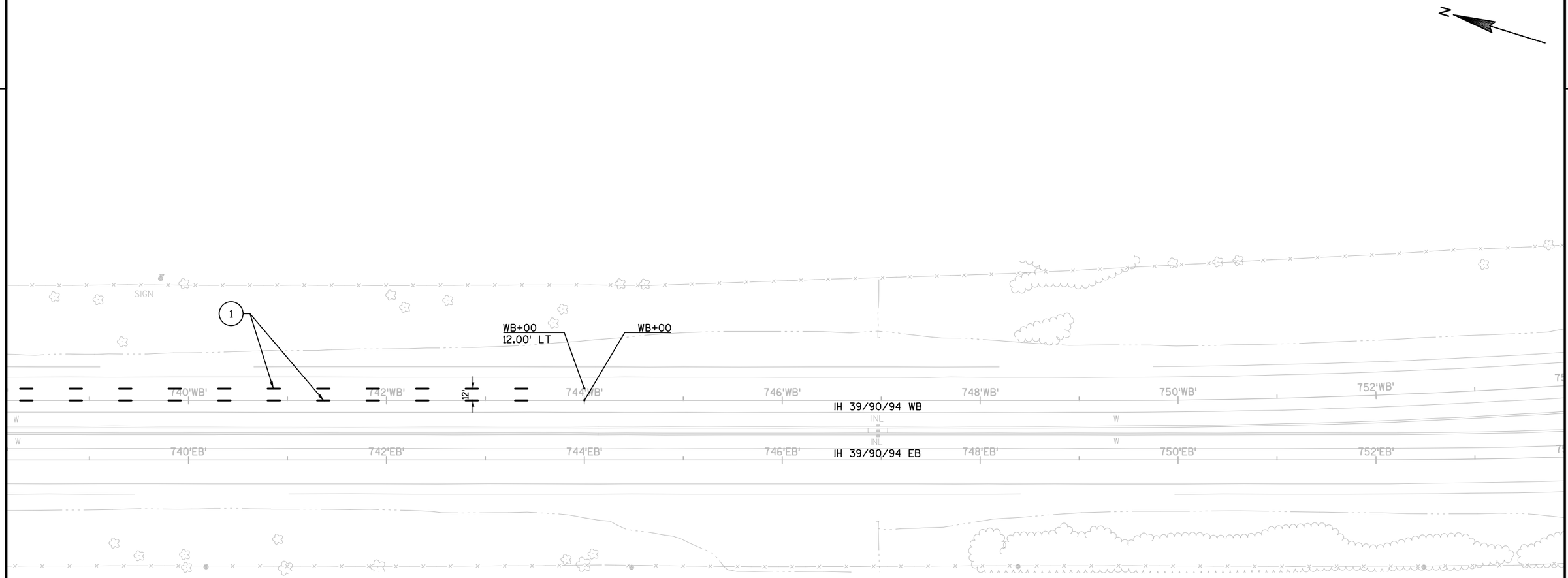
2 PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

3 PAVEMENT MARKING EPOXY 4-INCH (WHITE)

PROJECT NO:1011-04-65	HWY:IH 39	COUNTY: DANE	PAVEMENT MARKING	SHEET 18	E

FILE NAME : Q:\2015 PROJECTS\2015127 - CUBA VALLEY RD BRIDGES\AUTOCAD\PLANSET\024501_PM.DWG
LAYOUT NAME - 024504_PM
PLOT DATE : 7/8/2015 12:55 PM PLOT BY : OTIE PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 44

2



LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
2. PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
3. PAVEMENT MARKING EPOXY 4-INCH (WHITE)

PROJECT NO:1011-04-65	HWY:IH 39	COUNTY: DANE	PAVEMENT MARKING	SHEET 19	E

GENERAL NOTES FOR TRAFFIC CONTROL

1. THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGN DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
2. CONFLICTING TRAFFIC SIGNS SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER. CONFLICTING SIGNS WILL BE COVERED USING THE STANDARD BID ITEM, TRAFFIC CONTROL COVERING SIGNS.
3. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
4. FOR NIGHTTIME OPERATION, ALL DRUMS IN TAPERS SHALL HAVE A TYPE C STEADY BURN WARNING LIGHT.
5. ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE A (LOW INTENSITY FLASHING) LIGHTS.
6. WORK AREAS SHOWN MAY NOT ILLUSTRATE ALL REMOVALS. SEE REMOVAL SHEETS FOR ADDITIONAL INFORMATION.
7. WHEN A SEGMENT OF THE PROJECT IS NOT SHOWN ON THE STAGING PLANS, USE THE SAME TRAFFIC CONTROL AS THE PREVIOUS STAGE FOR THAT SEGMENT.
8. PAVEMENT MARKING THAT IS SHOWN SHADED ON TRAFFIC CONTROL PLANS ARE THERE FOR REFERENCE ONLY. PAVEMENT MARKING SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
9. ALL PAVEMENT MARKING STATIONING IN TRAFFIC CONTROL PLANS HAVE THE PREFIX OF THE ALIGNMENT THAT IT IS MEASURED OFF OF, IN THE STATION CALLOUT.
10. FOR ALL CONCRETE BARRIER TEMPORARY PRECAST, THERE WILL BE DELINEATORS ATTACHED PER STANDARD DETAIL DRAWING CONCRETE BARRIER TEMPORARY PRECAST 12'-6". PLACE REFLECTORS OF THE APPROPRIATE COLOR ON BOTH SIDES OF THE DELINEATOR.
11. SEE S.D.D. 15D12 "TRAFFIC CONTROL, LANE CLOSURE", S.D.D. 15D14 “TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)” AND S.D.D. 15D27 "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H." FOR SHOULDER AND LANE CLOSURE DETAILS FOR STAGE 1 AND STAGE 4 CONSTRUCTION.
12. NUMBER, LOCATION, AND SPACING OF TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
13. SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER THE ITEM "TRAFFIC CONTROL COVERING SIGNS TYPE 1 OR TYPE 2."
14. REMOVAL OF ADHESIVE RESIDUE FROM TEMPORARY PAVEMENT MARKING REMOVABLE TAPE IS INCLUDED UNDER THE ITEM "REMOVING PAVEMENT MARKINGS WATER BLASTING"
15. TURNING TRAFFIC CONTROL DEVICES WHEN NOT IN USE TO OBSCURE THE MESSAGE IS NOT ALLOWED.

STAGE 1

TRAFFIC
2-LANES OF TRAFFIC (EACH DIRECTION) IN EXISTING MIDDLE AND OUTSIDE LANES.
TWO LANE CLOSURE ONLY ALLOWED DURING NIGHT TIME WORK HOURS (8PM – 5AM ALL NIGHTS, EXCEPT FRIDAY WB 11PM – 5AM AND SUNDAY EB 10 PM – 5AM) FOR REMOVING EXISTING PAVEMENT MARKINGS, INSTALLING TEMPORARY PAVEMENT MARKINGS AND INSTALLING TRAFFIC CONTROL DEVICES FOR THE FOLLOWING STAGE, AS DIRECTED BY THE ENGINEER.

- USE S.D.D. 15D14 “TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT TERM (LESS THAN 24 HOURS)”
- USE S.D.D. 15D12 “TRAFFIC CONTROL, LANE CLOSURE”
- USE S.D.D. 15D27 “TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED HIGHWAY, SPEEDS GREATER THAN 40 M.P.H.”

CONSTRUCTION AND WORK

1. MILL EXISTING MEDIAN SHOULDER ASPHALT RUMBLE STRIP 2-INCH AND REPLACE WITH 2-INCH HMA PAVEMENT TYPE E-10 (2-FT. WIDE).
2. REMOVE EXISTING PAVEMENT MARKING AS DIRECTED BY THE ENGINEER.
3. INSTALL TEMPORARY PAVEMENT MARKING AS DIRECTED BY THE ENGINEER.
4. INSTALL TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.

STAGE 2

TRAFFIC
2-LANES OF TRAFFIC (EACH DIRECTION) ON EXISTING MEDIAN SHOULDER AND MEDIAN LANE.
CUBA VALLEY ROAD IS UNDER A FULL CLOSURE.

- SEE “TRAFFIC CONTROL PLAN: STAGE 2”.
- USE S.D.D. 15C2 “BARRICADES AND SIGNS FOR MAINLINE CLOSURES” DETAIL C: MAINLINE CLOSURE, NO POSTED DETOUR FOR FULL CLOSURE OF CUBA VALLEY RD.

CONSTRUCTION AND WORK

1. MILL EXISTING OUTSIDE SHOULDER ASPHALT RUMBLE STRIP 2-INCH AND REPLACE WITH 2-INCH HMA PAVEMENT TYPE E-10 (2-FT. WIDE).
2. SALVAGE EXISTING MGS GUARDRAIL.
3. SAW CUT AND REMOVE EXISTING CONCRETE BRIDGE APPROACH, EXISTING CONCRETE SLEEPER, AND EXISTING CONTINUOUS REINFORCED CONCRETE PAVEMENT.
4. REMOVE EXISTING DROP INLETS.
5. PERFORM BRIDGE WORK.
6. EXCAVATE AND PLACE 3-INCH BASE AGGREGATE.
7. PLACE CONCRETE PAVEMENT APPROACH SLAB HES AND CONCRETE PAVEMENT HES.
8. CONSTRUCT CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES. SECURE STRUCTURE COVERS WITH FASTENING DEVICE.
9. INSTALL MGS GUARDRAIL 3 K.
10. REMOVE EXISTING PAVEMENT MARKING AS DIRECTED BY THE ENGINEER.
11. INSTALL TEMPORARY PAVEMENT MARKING AS DIRECTED BY THE ENGINEER.
12. INSTALL TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.

STAGE 3

TRAFFIC
2-LANES OF TRAFFIC (EACH DIRECTION) ON EXISTING OUTSIDE SHOULDER AND OUTSIDE LANE.
CUBA VALLEY ROAD IS UNDER A FULL CLOSURE.

- SEE “TRAFFIC CONTROL PLAN: STAGE 3”.
- USE S.D.D. 15C2 “BARRICADES AND SIGNS FOR MAINLINE CLOSURES” DETAIL C: MAINLINE CLOSURE, NO POSTED DETOUR FOR FULL CLOSURE OF CUBA VALLEY RD.

CONSTRUCTION AND WORK

1. REMOVE EXISTING BEAM GUARD.
2. SAW CUT AND REMOVE EXISTING CONCRETE BRIDGE APPROACH, EXISTING CONCRETE SLEEPER, AND EXISTING CONTINUOUS REINFORCED CONCRETE PAVEMENT.
3. PERFORM BRIDGE WORK.
4. EXCAVATE AND PLACE 3-INCH BASE AGGREGATE.
5. PLACE CONCRETE PAVEMENT APPROACH SLAB HES AND CONCRETE PAVEMENT HES.
6. CONSTRUCT CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES.
7. INSTALL MGS GUARDRAIL 3.
8. REMOVE TEMPORARY PAVEMENT MARKING AS DIRECTED BY THE ENGINEER.
9. MILL MEDIAN ASPHALT AND CONCRETE SHOULDER RUMBLE STRIPS.
10. INSTALL PERMANENT PAVEMENT MARKING AS DIRECTED BY THE ENGINEER.
11. REMOVE TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.

STAGE 4

TRAFFIC
2-LANES OF TRAFFIC (EACH DIRECTION) IN EXISTING MIDDLE AND OUTSIDE LANES.
TWO LANE CLOSURE ONLY ALLOWED DURING NIGHT TIME WORK HOURS (8PM – 5AM ALL NIGHTS, EXCEPT FRIDAY WB 11PM – 5AM AND SUNDAY EB 10 PM – 5AM) FOR INSTALLING PERMANENT PAVEMENT MARKINGS, AS DIRECTED BY THE ENGINEER.

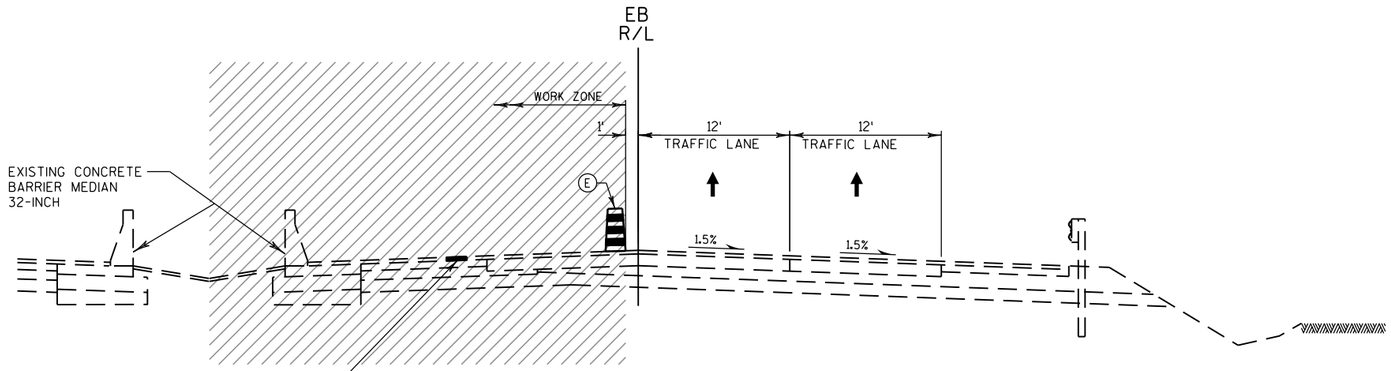
- USE S.D.D. 15D14 “TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT TERM (LESS THAN 24 HOURS)”
- USE S.D.D. 15D12 “TRAFFIC CONTROL, LANE CLOSURE”
- USE S.D.D. 15D27 “TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED HIGHWAY, SPEEDS GREATER THAN 40 M.P.H.”

CONSTRUCTION AND WORK

1. MILL OUTSIDE ASPHALT AND CONCRETE SHOULDER RUMBLE STRIPS.
2. REMOVE TEMPORARY PAVEMENT MARKING AS DIRECTED BY THE ENGINEER.
3. INSTALL PERMANENT PAVEMENT MARKING AS DIRECTED BY THE ENGINEER.
4. REMOVE TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.
5. REMOVE FASTENING DEVICE FROM SECURED DROP INLET STRUCTURE COVERS.
6. APPLY PROTECTIVE SURFACE TREATMENT UNDER NIGHTTIME TWO-LANE CLOSURES AFTER CONCLUSION OF STAGE 4. DATES FOR CONSTRUCTION TO BE APPROVED BY THE ENGINEER.

2

2

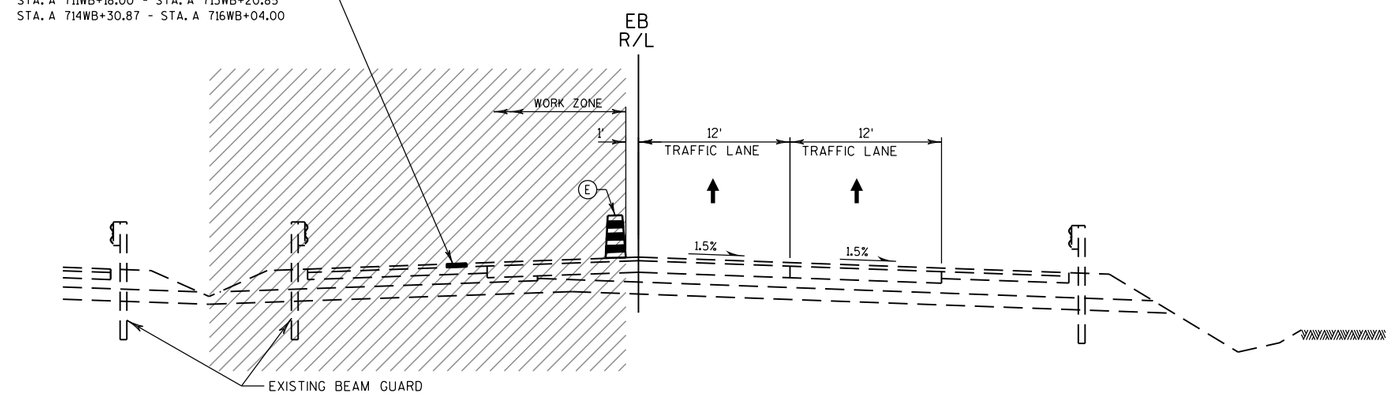


MILL EXISTING ASPHALT RUMBLE STRIP
2-INCH AND REPLACE WITH 2-INCH HMA
PAVEMENT TYPE E-10 (2-FT. WIDE)
STA. 695EB+60.00 - STA. 711EB+11.00
STA. 716EB+00.00 - STA. 724EB+90.00
STA. A 702WB+10.00 - STA. A 711WB+18.00
STA. A 716WB+04.00 - STA. A 731WB+40.00

STAGING TYPICAL SECTION - STAGE 1

IH 39

STA. 688EB+00 - STA. 711EB+11
STA. 716EB+00 - STA. 727EB+00
STA. A 700WB+00 - STA. A 711WB+18
STA. A 716WB+04 - STA. A 739WB+50
(EB SHOWN, WB SIMILAR)



LEGEND

- (A) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW EDGELINE)
- (B) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE EDGELINE)
- (C) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE DASHES)
- (D) CONCRETE BARRIER TEMPORARY PRECAST
- (E) DRUMS AT 100' SPACING

↑ TRAFFIC FLOW

STAGING TYPICAL SECTION - STAGE 1

IH 39

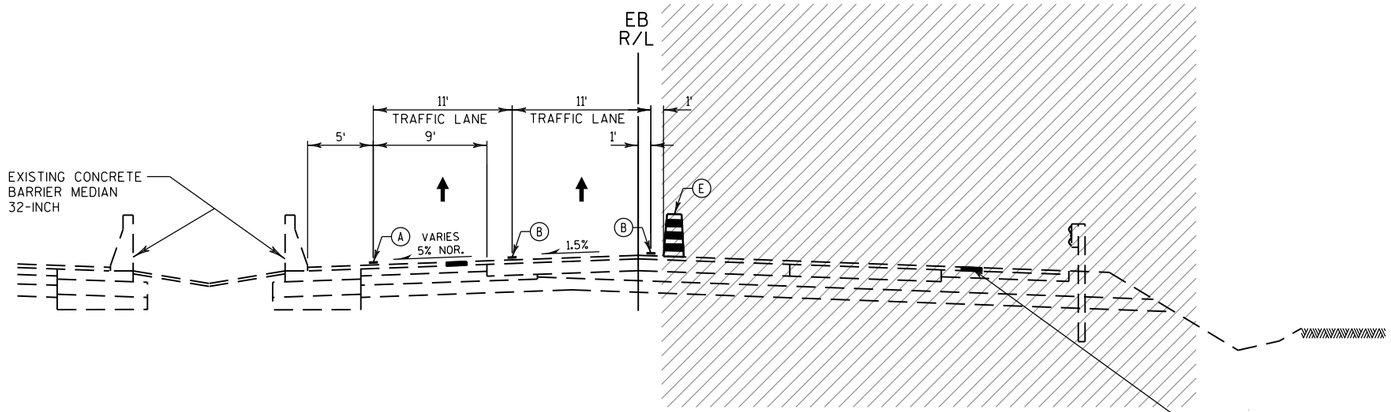
STA. 711EB+11 - STA. 716EB+00**
STA. A 711WB+18 - STA. A 716WB+04**
(EB SHOWN, WB SIMILAR)

** STA. 713EB+07.11 - STA. 714EB+15.78
B-17-0087 (SEE BRIDGE PLANS)

STA. A 713WB+25.51 - STA. A 714WB+34.18
B-17-0088 (SEE BRIDGE PLANS)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	STAGING TYPICAL SECTION - TRAFFIC CONTROL, STAGE 1	SHEET 21	E

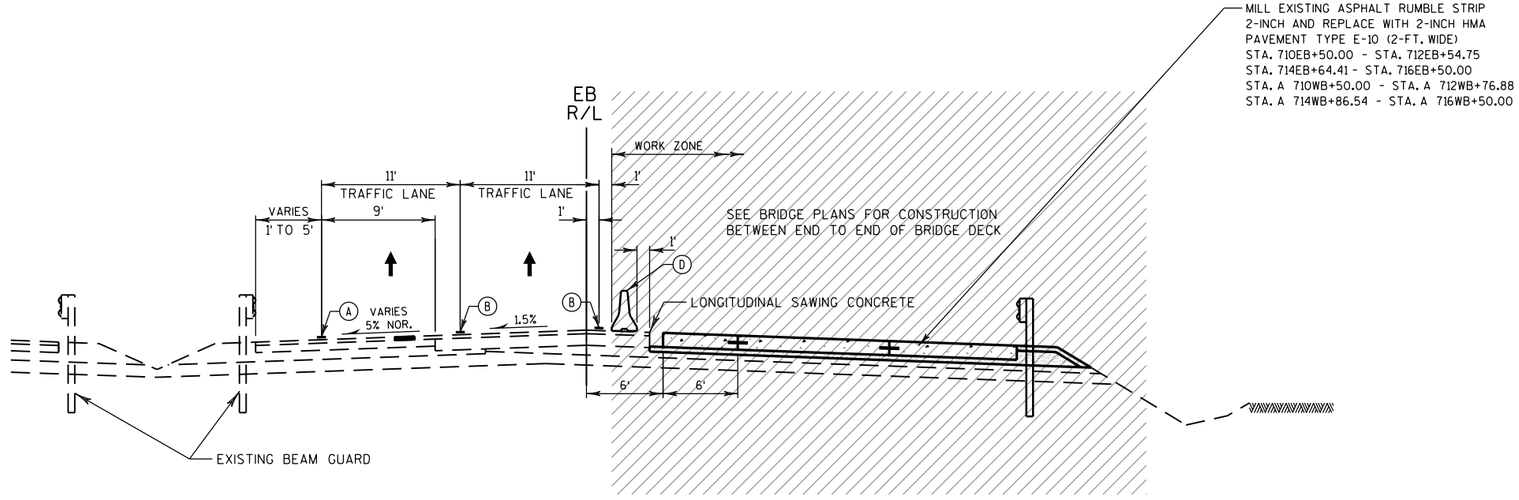
2



STAGING TYPICAL SECTION - STAGE 2

IH 39

STA. 704EB+00 - STA. 710EB+50
STA. A 716WB+50 - A STA. 723WB+00
(EB SHOWN, WB SIMILAR)



LEGEND

- (A) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW EDGELINE)
- (B) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE EDGELINE)
- (C) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE DASHES)
- (D) CONCRETE BARRIER TEMPORARY PRECAST
- (E) DRUMS AT 100' SPACING

↑ TRAFFIC FLOW

STAGING TYPICAL SECTION - STAGE 2

IH 39

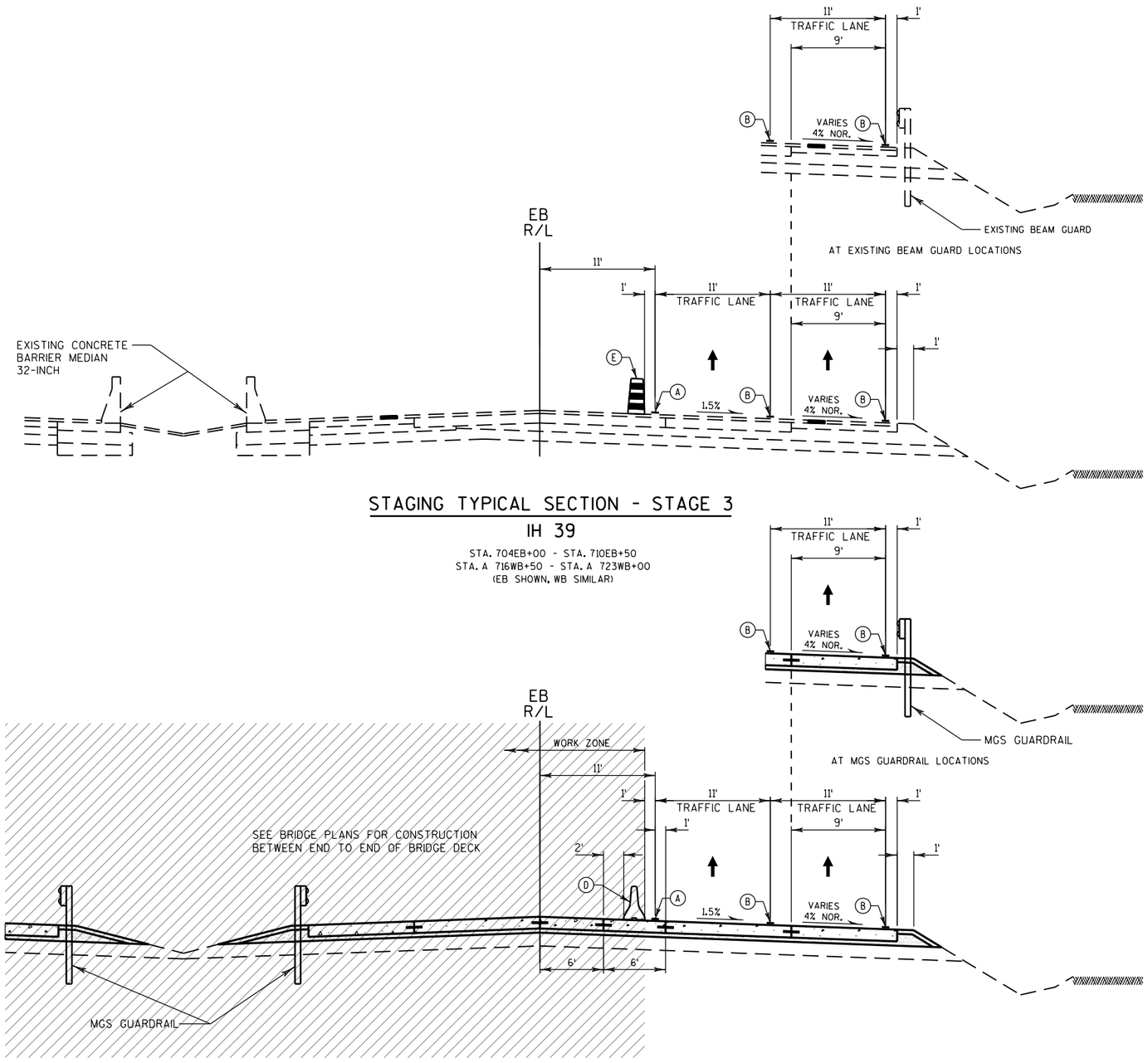
STA. 710EB+50 - STA. 716EB+50 **
STA. A 710WB+50 - STA. A 716WB+50 **
(EB SHOWN, WB SIMILAR)

** STA. 713EB+07.11 - STA. 714EB+15.78
B-17-0087 (SEE BRIDGE PLANS)

STA. A 713WB+25.51 - STA. A 714WB+34.18
B-17-0088 (SEE BRIDGE PLANS)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	STAGING TYPICAL SECTION - TRAFFIC CONTROL, STAGE 2	SHEET 22	E

2



STAGING TYPICAL SECTION - STAGE 3

IH 39

STA. 704EB+00 - STA. 710EB+50
STA. A 716WB+50 - STA. A 723WB+00
(EB SHOWN, WB SIMILAR)

STAGING TYPICAL SECTION - STAGE 3

IH 39

STA. 710EB+50 - STA. 716EB+50 **
STA. A 710WB+50 - STA. A 716WB+50 **
(EB SHOWN, WB SIMILAR)

LEGEND

- (A) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW EDGELINE)
- (B) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE EDGELINE)
- (C) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE DASHES)
- (D) CONCRETE BARRIER TEMPORARY PRECAST
- (E) DRUMS AT 100' SPACING

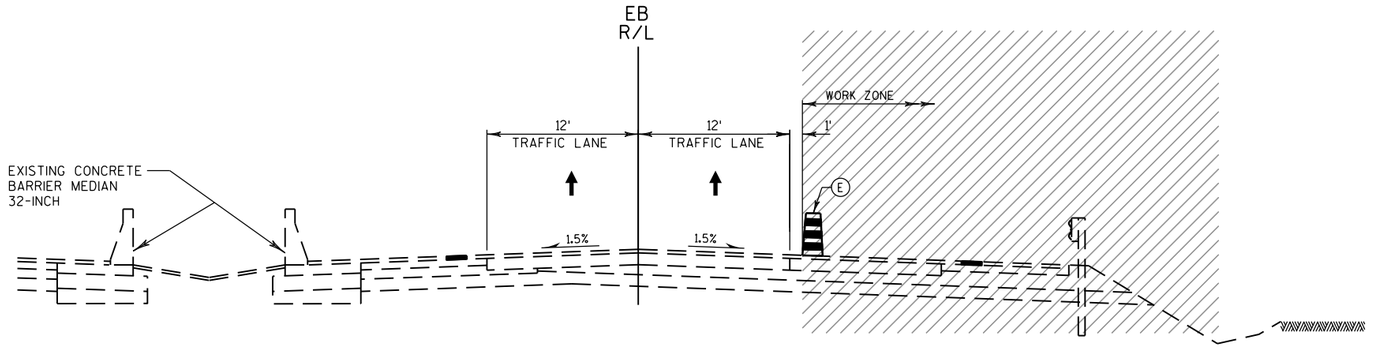
TRAFFIC FLOW

** STA. 713EB+07.11 - STA. 714EB+15.78
B-17-0087 (SEE BRIDGE PLANS)

STA. A 713WB+25.51 - STA. A 714WB+34.18
B-17-0088 (SEE BRIDGE PLANS)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	STAGING TYPICAL SECTION - TRAFFIC CONTROL, STAGE 3	SHEET 23	E

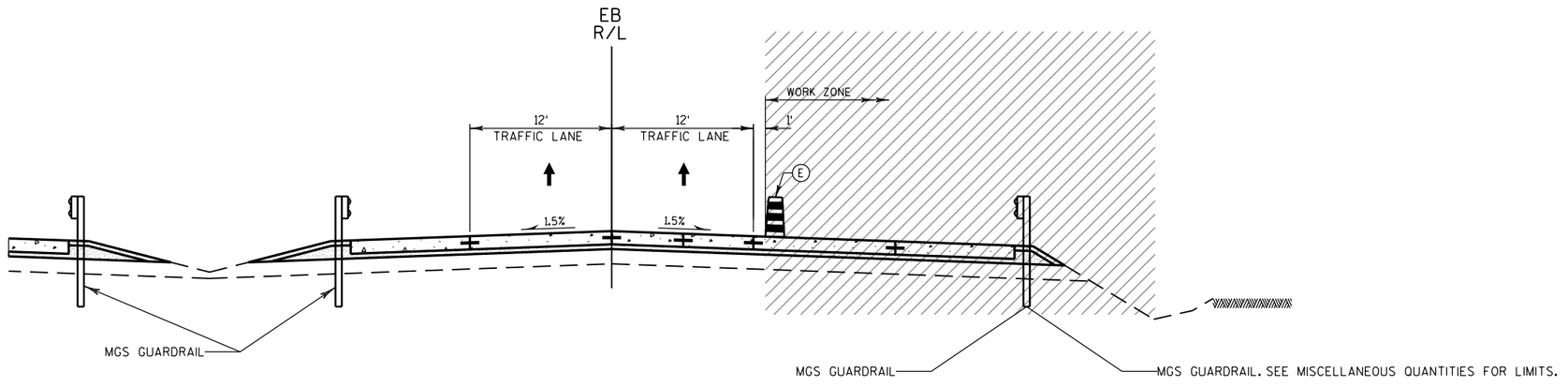
2



STAGING TYPICAL SECTION - STAGE 4

IH 39

STA. 688EB+00 - STA. 711EB+11
STA. 716EB+00 - STA. 727EB+00
STA. A 700WB+00 - STA. A 711WB+18
STA. A 716WB+04 - STA. A 739WB+50
(EB SHOWN, WB SIMILAR)



LEGEND

- (A) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW EDGELINE)
- (B) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE EDGELINE)
- (C) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE DASHES)
- (D) CONCRETE BARRIER TEMPORARY PRECAST
- (E) DRUMS AT 100' SPACING

TRAFFIC FLOW

STAGING TYPICAL SECTION - STAGE 4

IH 39

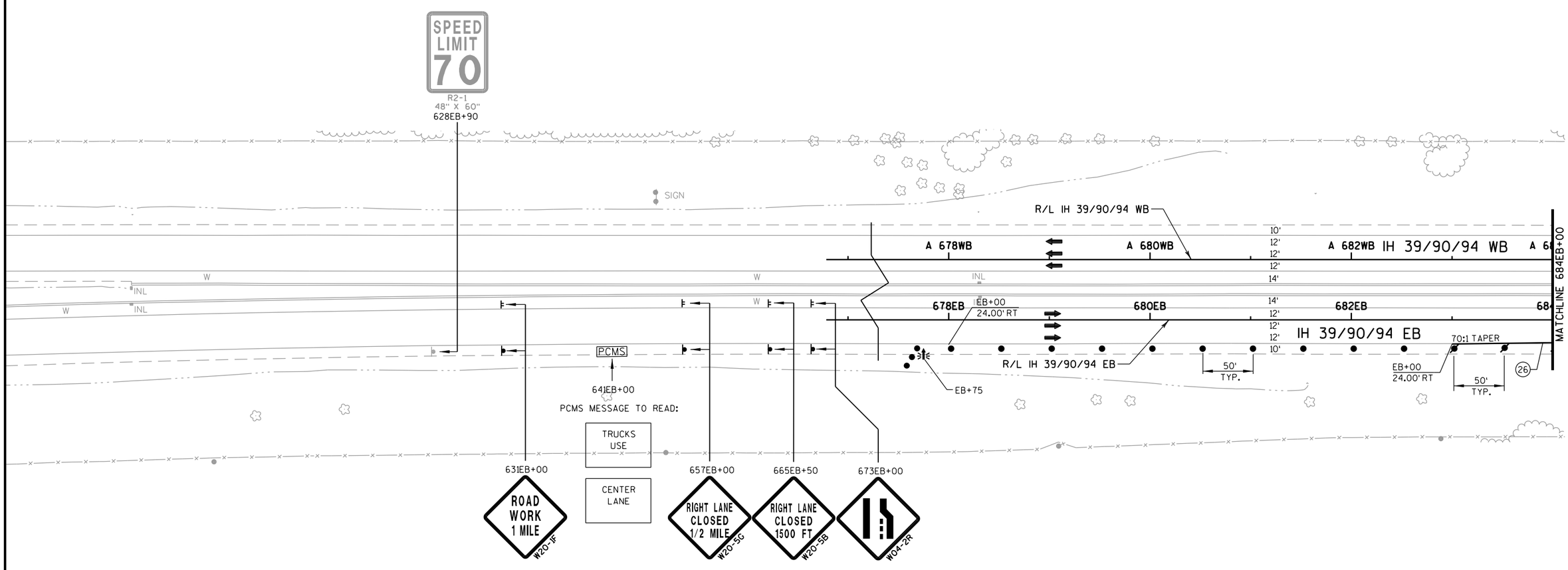
STA. 711EB+11 - STA. 716EB+00**
STA. A 711WB+18 - STA. A 716WB+04**
(EB SHOWN, WB SIMILAR)

** STA. 713EB+07.11 - STA. 714EB+15.78
B-17-0087 (SEE BRIDGE PLANS)

STA. A 713WB+25.51 - STA. A 714WB+34.18
B-17-0088 (SEE BRIDGE PLANS)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	STAGING TYPICAL SECTION - TRAFFIC CONTROL, STAGE 4	SHEET 24	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

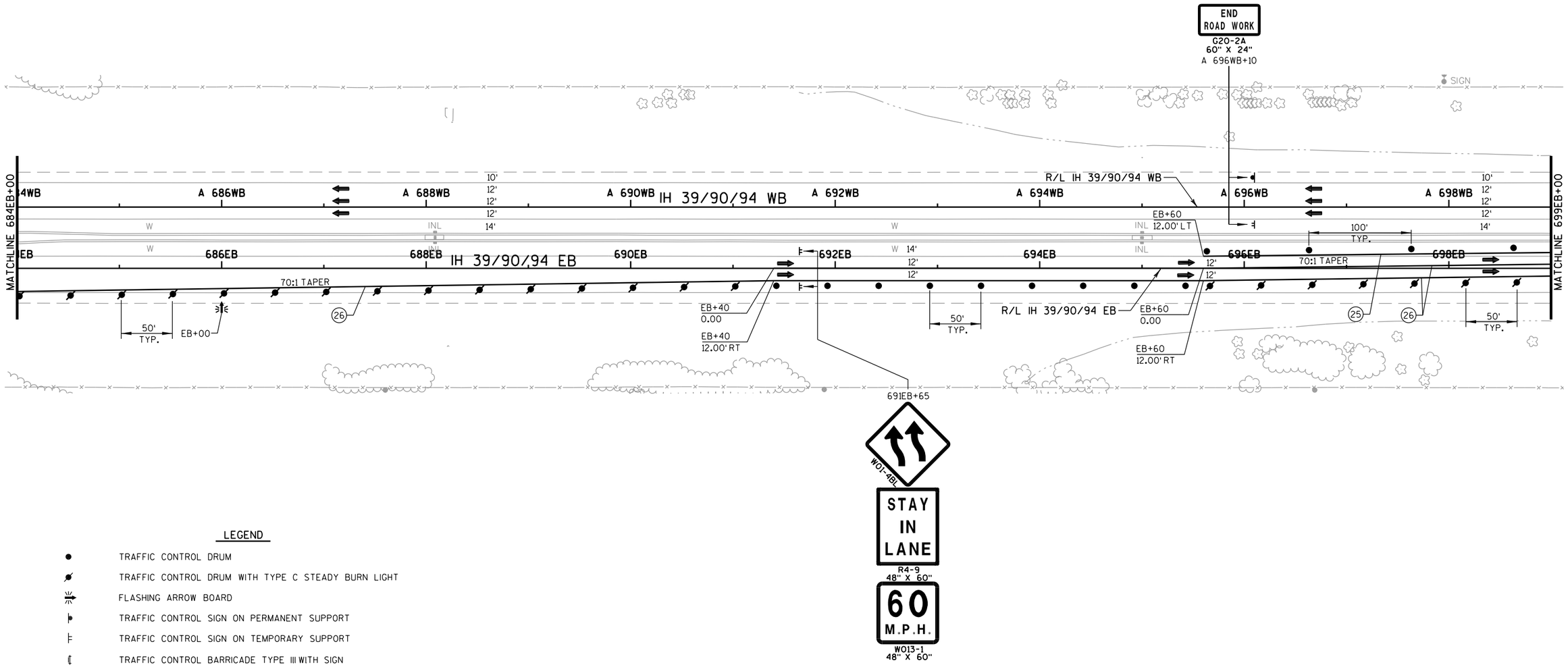
TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 2	SHEET 25	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

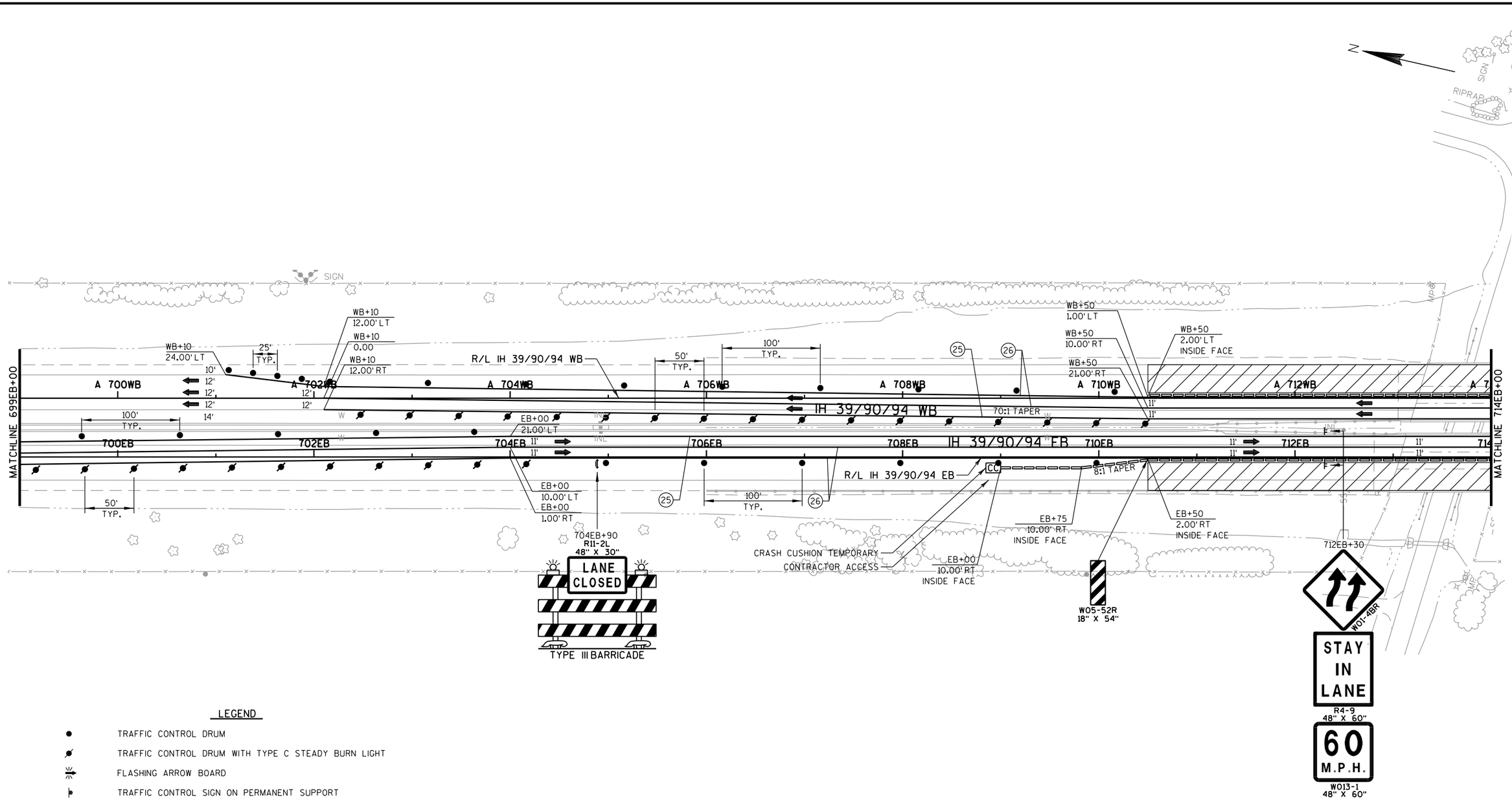
TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 2	SHEET 26	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

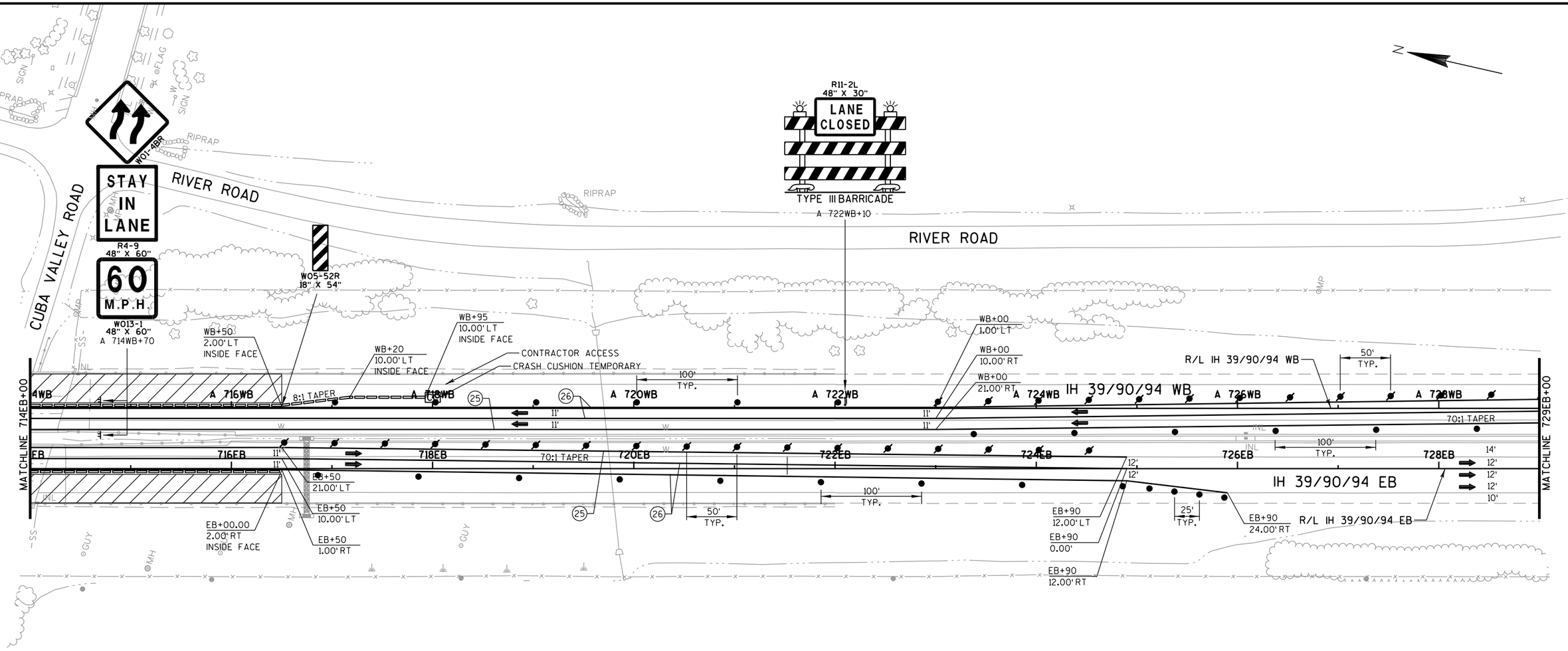
TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 2	SHEET 27	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

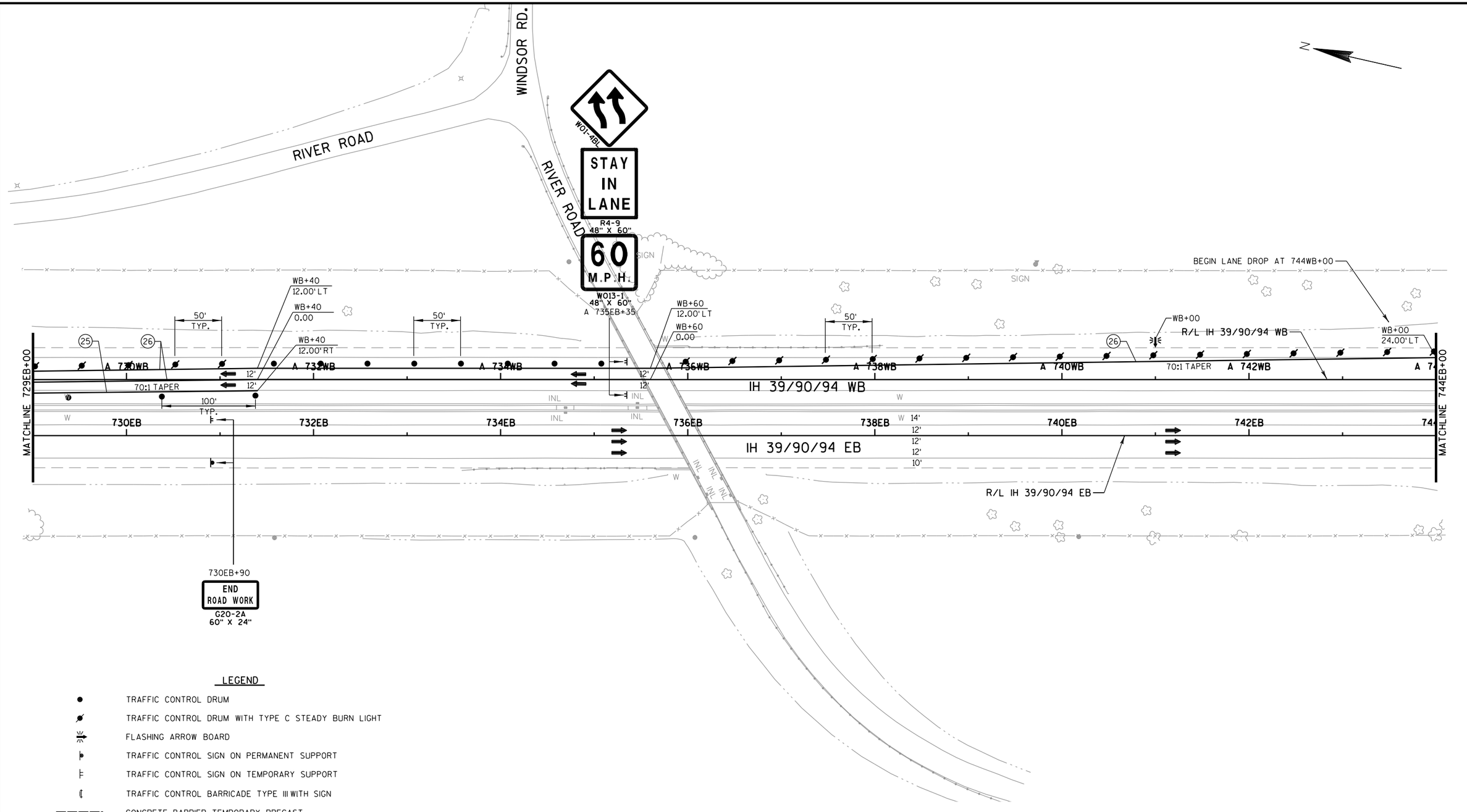
TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 2	SHEET 28	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

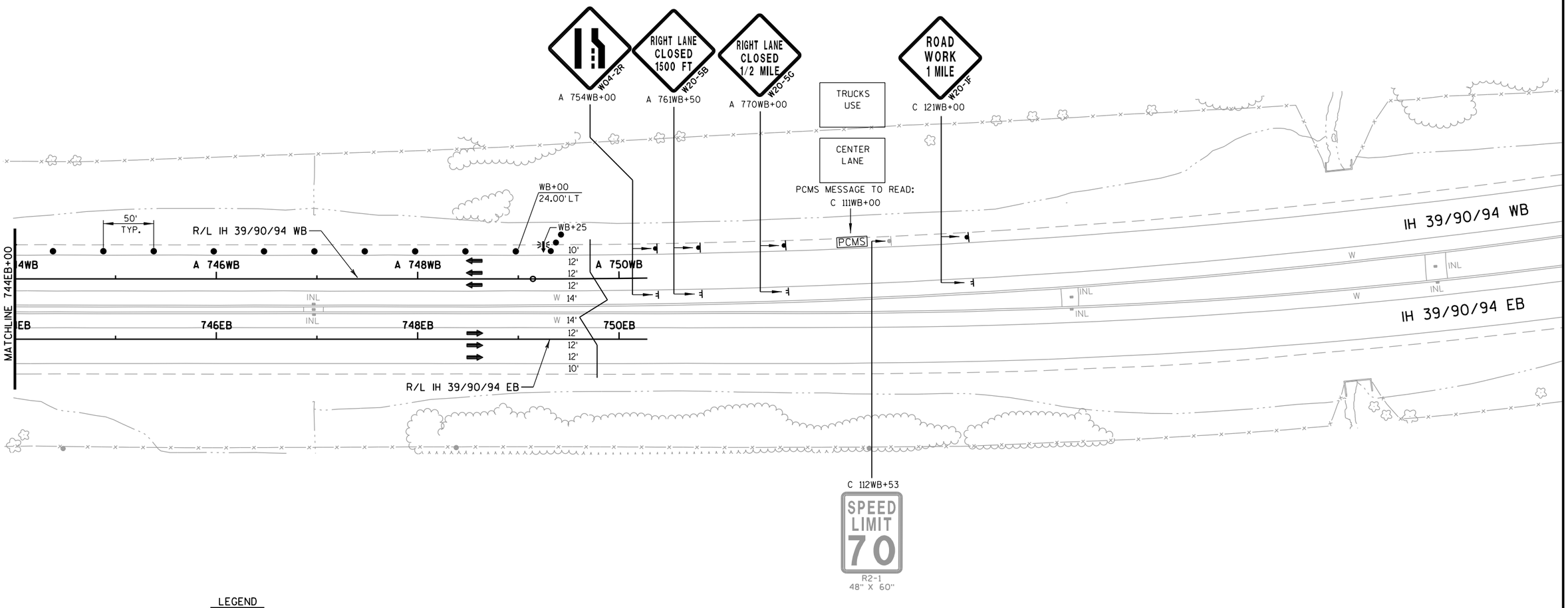
TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 2	SHEET 29	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

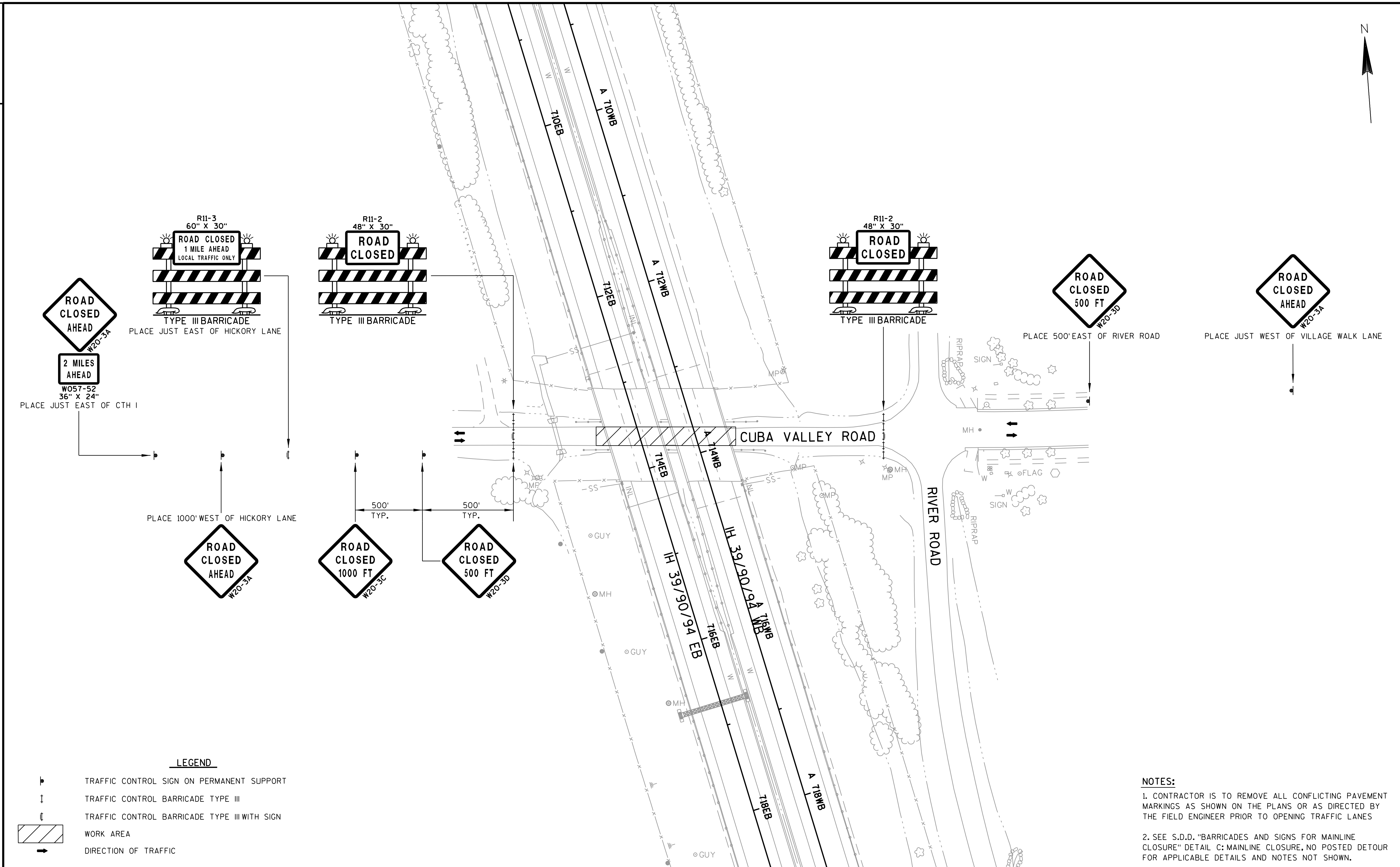
2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 2	SHEET 30	E

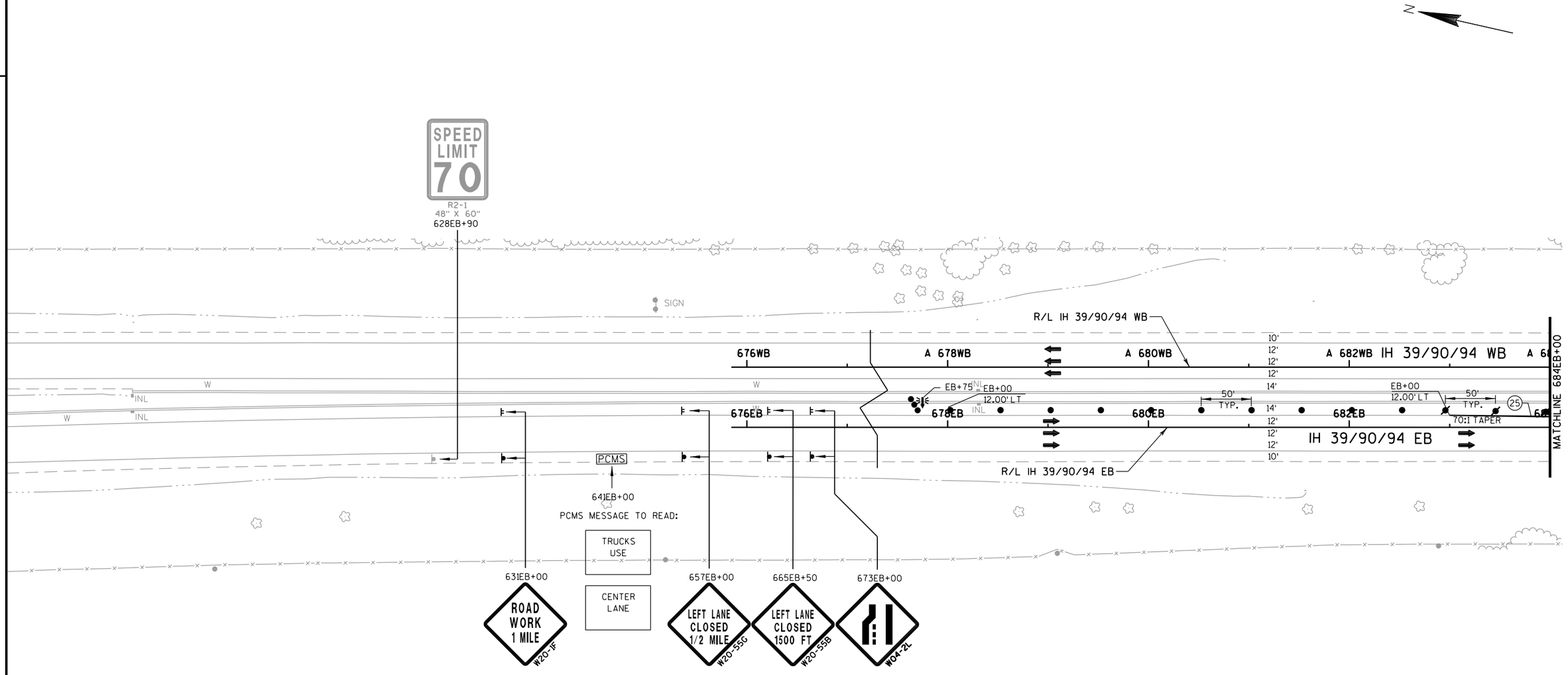

N
ROAD CLOSED AHEAD
W20-3A
2 MILES AHEAD
W057-52
36" X 24"
PLACE JUST EAST OF CTH I
R11-3
60" X 30"
ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY
TYPE III BARRICADE
PLACE JUST EAST OF HICKORY LANE
R11-2
48" X 30"
ROAD CLOSED
TYPE III BARRICADE
PLACE 1000' WEST OF HICKORY LANE
ROAD CLOSED AHEAD
W20-3A
500' TYP.
500' TYP.
ROAD CLOSED 1000 FT
W20-3C
ROAD CLOSED 500 FT
W20-3D
CUBA VALLEY ROAD
IH 39/90/94 EB
IH 39/90/94 WB
RIVER ROAD
R11-2
48" X 30"
ROAD CLOSED
TYPE III BARRICADE
ROAD CLOSED 500 FT
W20-3D
PLACE 500' EAST OF RIVER ROAD
ROAD CLOSED AHEAD
W20-3A
PLACE JUST WEST OF VILLAGE WALK LANE
LEGEND
TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
TRAFFIC CONTROL BARRICADE TYPE III
TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
WORK AREA
DIRECTION OF TRAFFIC

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES
2. SEE S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURE" DETAIL C: MAINLINE CLOSURE, NO POSTED DETOUR FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 2 AND 3	SHEET 31	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

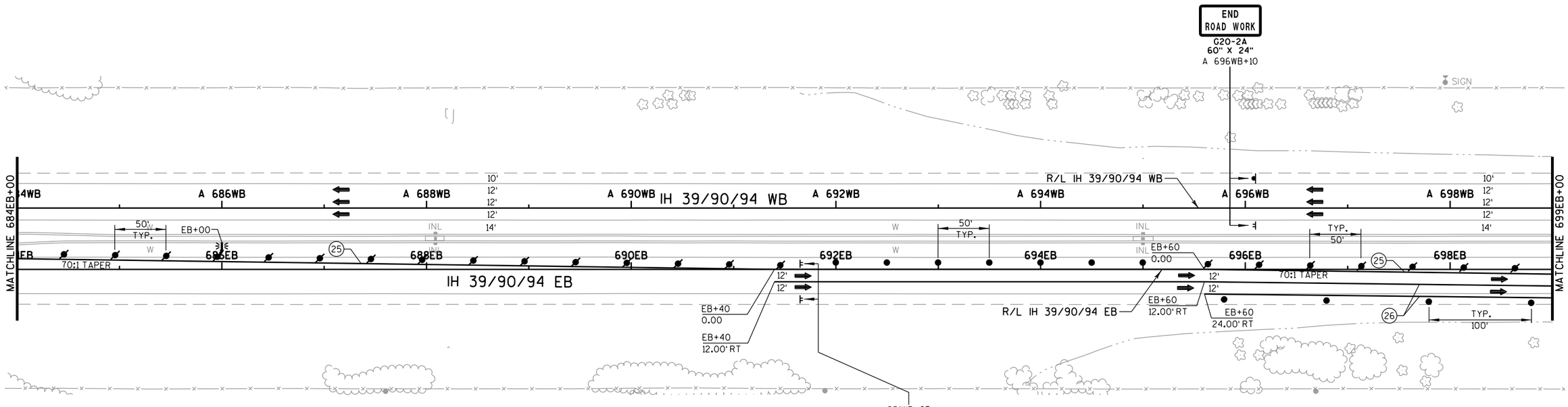
TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 3	SHEET 32	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

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1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

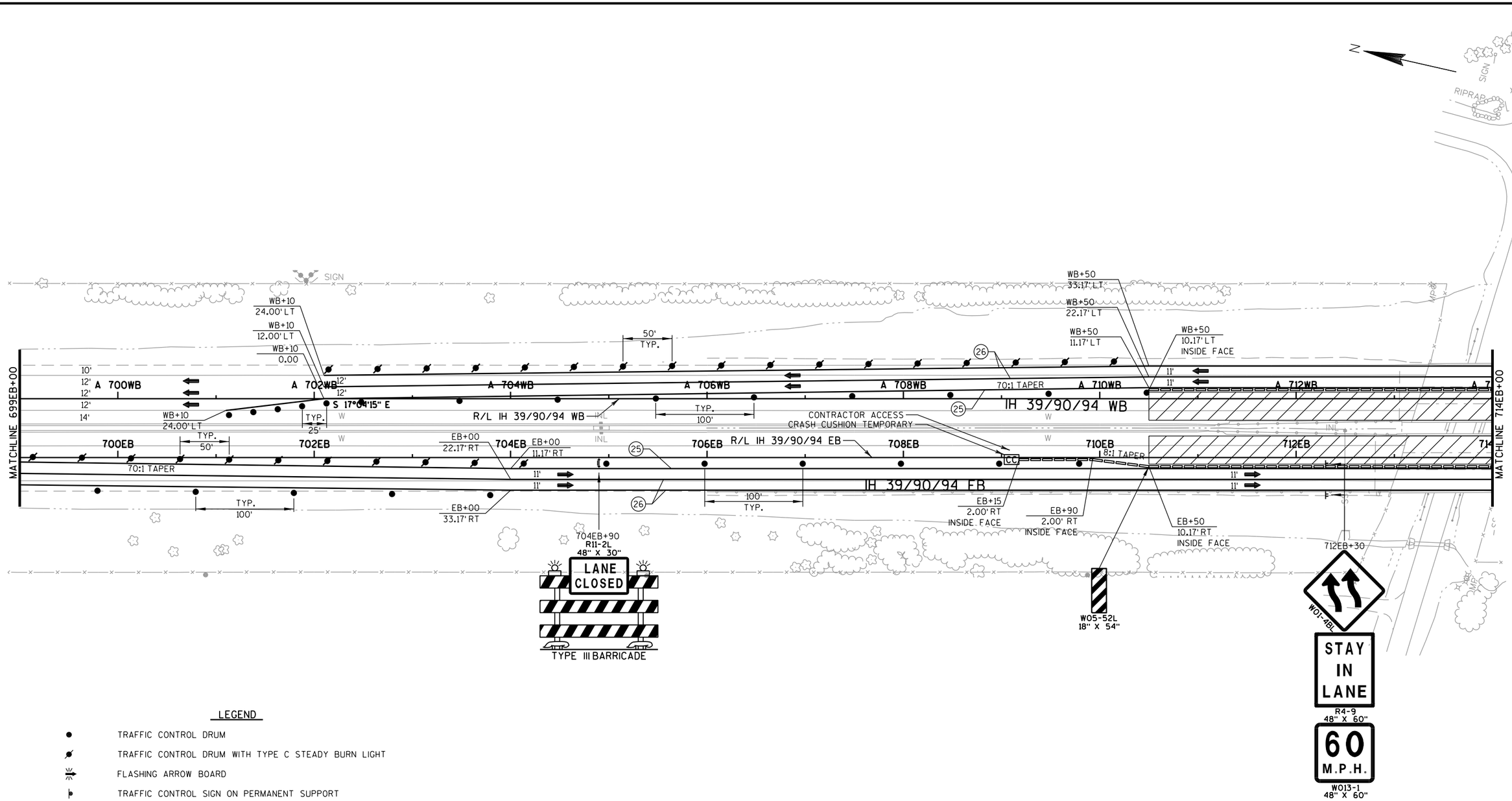
TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 3	SHEET 33	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

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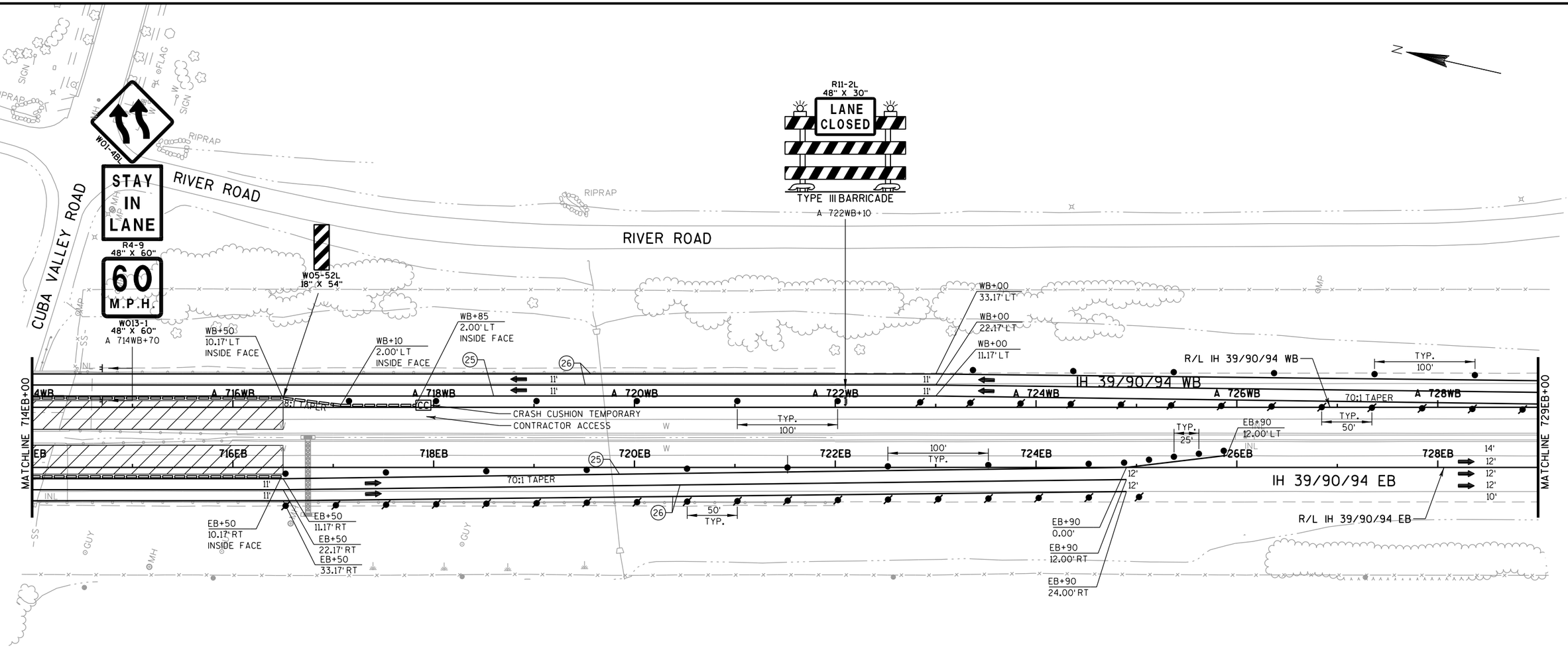
(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 3	SHEET 34	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

TEMPORARY PAVEMENT MARKING LEGEND

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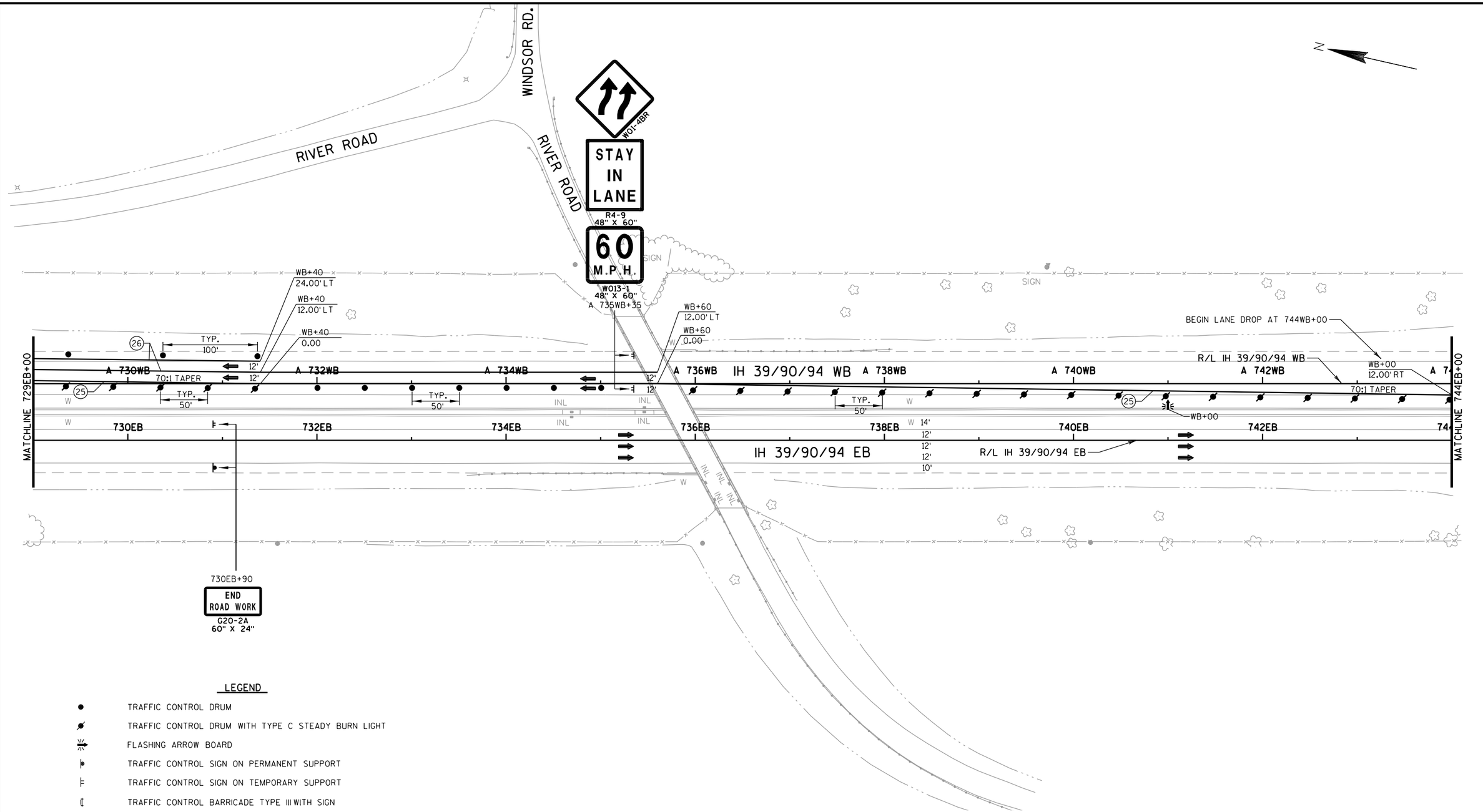
(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 3	SHEET 35	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

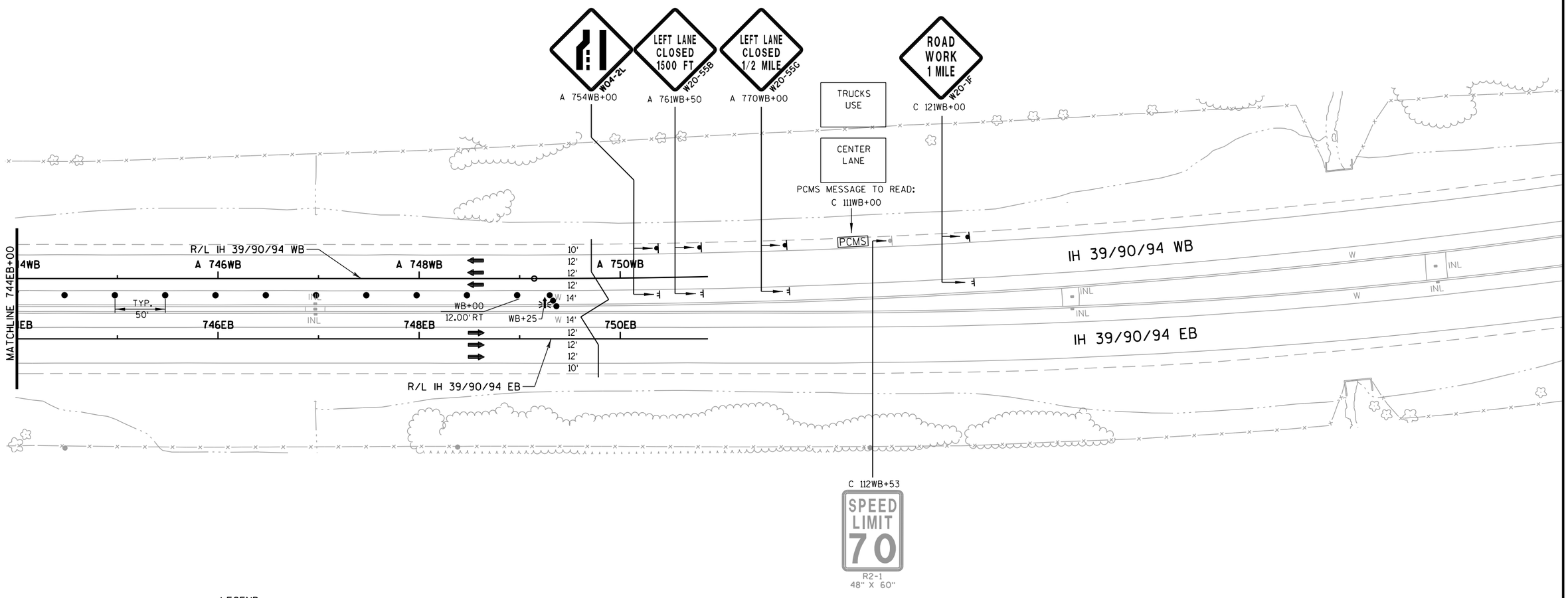
TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 3	SHEET 36	E

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- TRAFFIC CONTROL SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA THIS STAGE
- DIRECTION OF TRAFFIC
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- CC — CRASH CUSHIONS TEMPORARY

NOTES:

1. CONTRACTOR IS TO REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE FIELD ENGINEER PRIOR TO OPENING TRAFFIC LANES

2. SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" FOR APPLICABLE DETAILS AND NOTES NOT SHOWN.

TEMPORARY PAVEMENT MARKING LEGEND

(25) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (YELLOW)

(26) TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH (WHITE)

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL PLAN: STAGE 3	SHEET 37	E

2

N

60

INTERSTATE 39

INTERSTATE 90

INTERSTATE 94

COUNTY V

51

CUBA VALLEY ROAD

19

A

2 MILES AHEAD

W057-52
48"X36"

1,000 FT

A

3 MILES AHEAD

W057-52
48"X36"

A

4 MILES AHEAD

W057-52
48"X36"

PCMS

(1 MILE)

EXPECT TRAFFIC DELAYS

FOLLOW ALTERNTE ROUTE

PCMS

(3 MILE)

39/90/94 ROAD WORK

EXPECT LANE CLOSURES

LEGEND

WORK ZONE

DIRECTION OF TRAVEL

PCMS PORTABLE CHANGEABLE MESSAGE SIGN

ALTERNATE ROUTE

MAX. 11' WIDTH

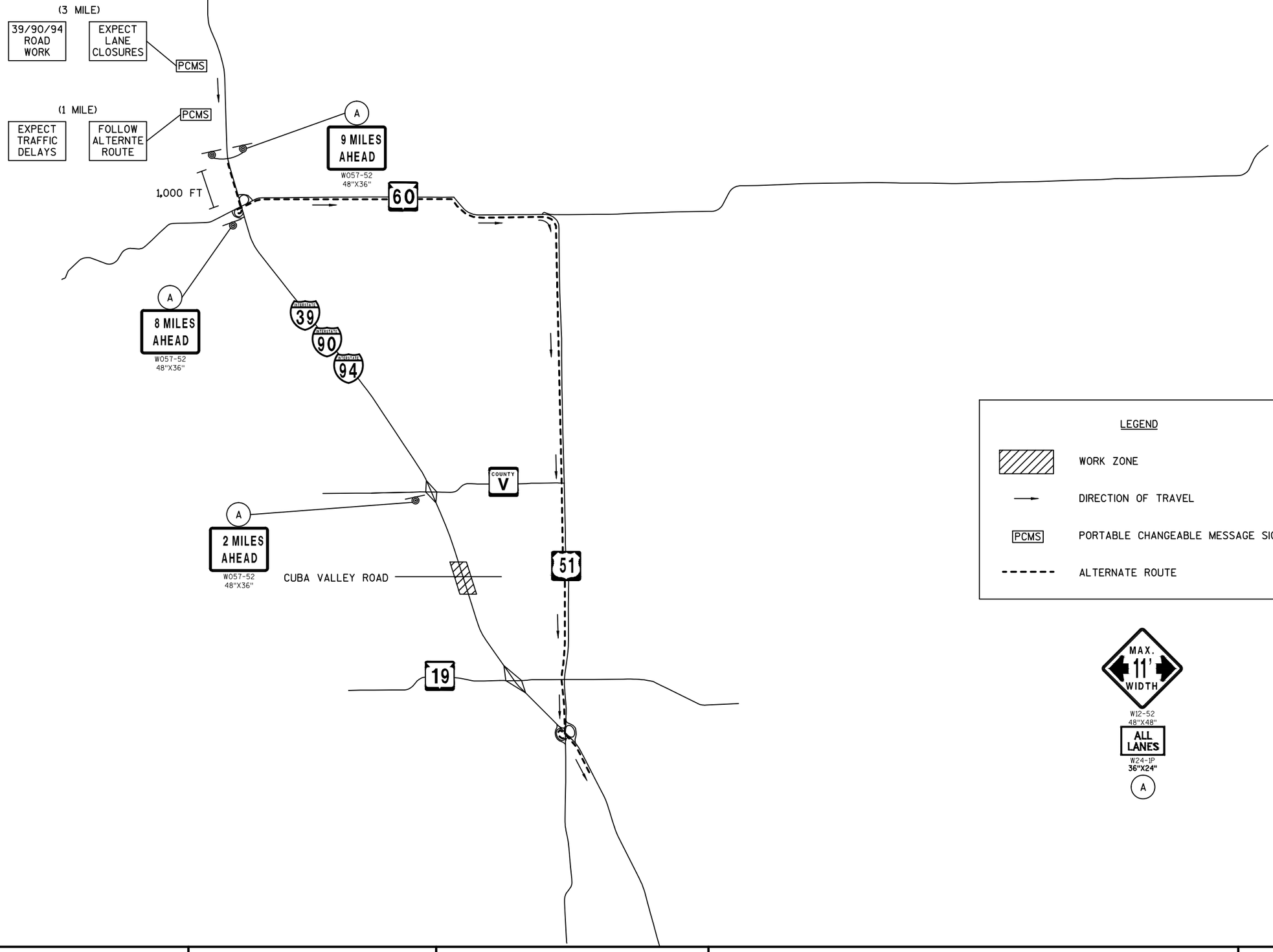
W12-52
48"X48"

ALL LANES

W24-1P
36"X24"

A

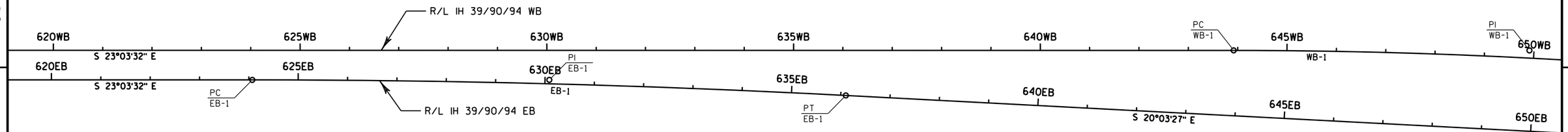
PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL: ALTERNATE ROUTE SIGNING NORTHBOUND	SHEET 38	E



2

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	TRAFFIC CONTROL: ALTERNATE ROUTE SIGNING SOUTHBOUND	SHEET 39	E

FILE NAME : Q:\2015 PROJECTS\2015127 - CUBA VALLEY RD BRIDGES\AUTOCAD\PLANSET\025901_TC.DWG
LAYOUT NAME - ****
PLOT DATE : 7/10/2015 10:35 AM PLOT BY : OTIE PLOT NAME : PLOT SCALE : 1 IN:2 MI
WISDOT/CADDS SHEET 42

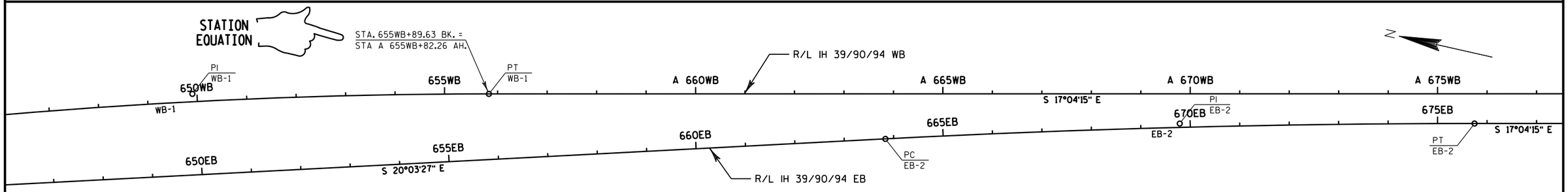


POINT OF BEGINNING : WB
PI = 589WB+97.94
X = 822441.78
Y = 547901.05
AH = S 23°03'32.09" E

POINT OF BEGINNING : EB
PI = 590EB+01.72
X = 822386.57
Y = 547877.55
AH = S 23°03'32.09" E

CURVE : EB-1
PC = 624EB+06.90
X = 823720.31
Y = 544744.44
PI = 630EB+08.75
X = 823956.03
Y = 544190.68
PT = 636EB+10.32
X = 824162.45
Y = 543625.34

R = 22973.67
DELTA = 3°00'04.64"
D = 0°14'57.83"
L = 1203.42
T = 601.85
E = 7.88
BK = S 23°03'32.09" E
AH = S 20°03'27.45" E



CURVE : EB-2
PC = 663EB+83.22
X = 825113.46
Y = 541020.61
PI = 669EB+79.09
X = 825317.82
Y = 540460.89
PT = 675EB+74.68
X = 825492.73
Y = 539891.28

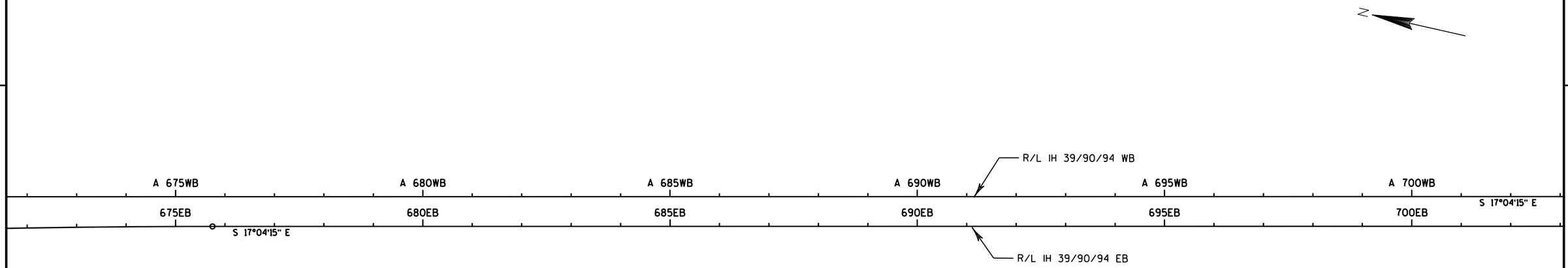
R = 22855.50
DELTA = 2°59'12.56"
D = 0°15'02.47"
L = 1191.45
T = 595.86
E = 7.77
BK = S 20°03'27.45" E
AH = S 17°04'14.89" E

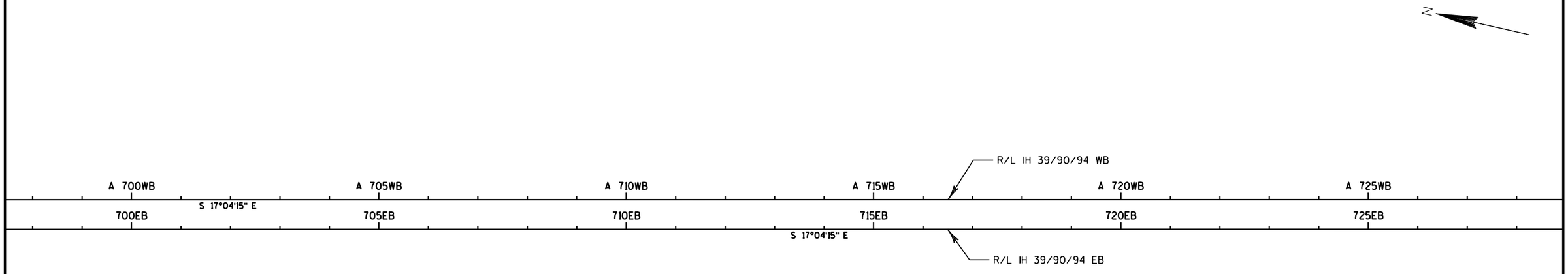
CURVE : WB-1
PC = 643WB+91.92
X = 824554.48
Y = 542938.03
PI = 649WB+91.32
X = 824789.25
Y = 542386.52
PT = 655WB+89.63
X = 824965.21
Y = 541813.53

R = 11460.00
DELTA = 5°59'17.20"
D = 0°29'59.87"
L = 1197.71
T = 599.40
E = 15.66
BK = S 23°03'32.09" E
AH = S 17°04'14.89" E

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	ALIGNMENT PLAN	SHEET 40	E

2

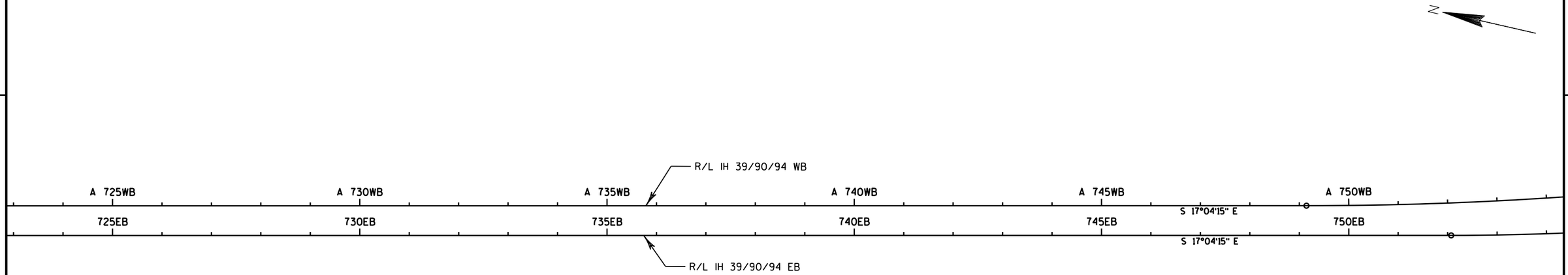




PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	ALIGNMENT PLAN	SHEET 41	E

FILE NAME : J:\59970\t1\cds\027202_ad.dgn PLOT DATE : 7/24/2015 PLOT BY : Ctomsak PLOT NAME : PLOT SCALE : 200:1

2



CURVE : EB-3

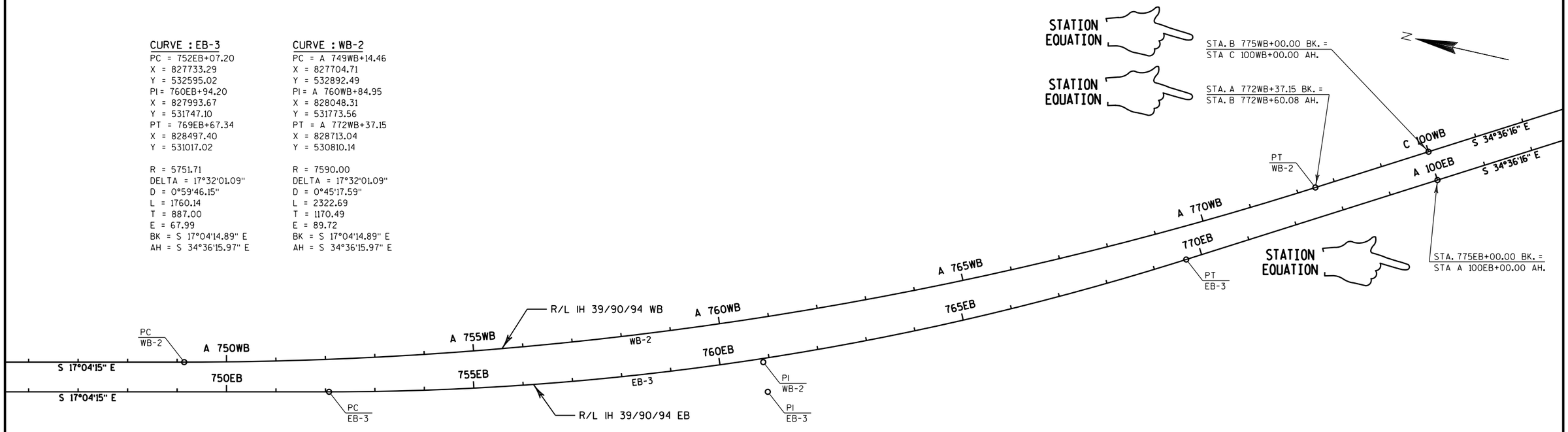
PC = 752EB+07.20
X = 827733.29
Y = 532595.02
PI = 760EB+94.20
X = 827993.67
Y = 531747.10
PT = 769EB+67.34
X = 828497.40
Y = 531017.02

R = 5751.71
DELTA = 17°32'01.09"
D = 0°59'46.15"
L = 1760.14
T = 887.00
E = 67.99
BK = S 17°04'14.89" E
AH = S 34°36'15.97" E

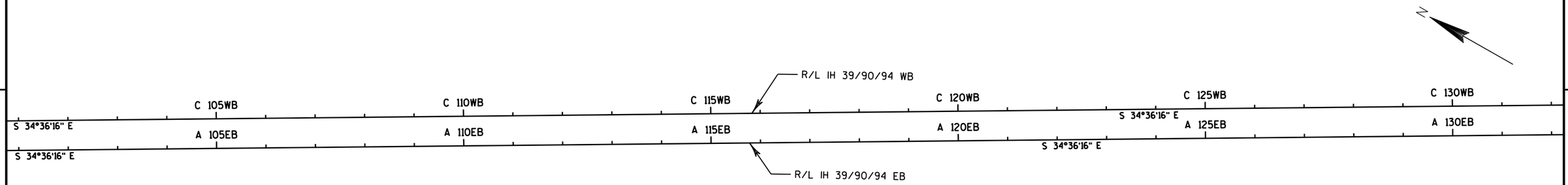
CURVE : WB-2

PC = A 749WB+14.46
X = 827704.71
Y = 532892.49
PI = A 760WB+84.95
X = 828048.31
Y = 531773.56
PT = A 772WB+37.15
X = 828713.04
Y = 530810.14

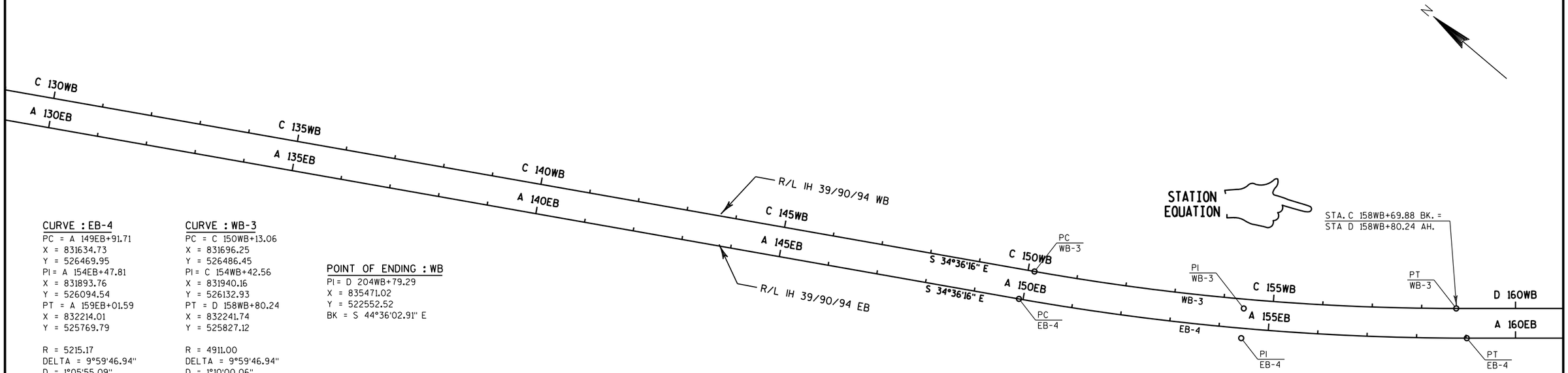
R = 7590.00
DELTA = 17°32'01.09"
D = 0°45'17.59"
L = 2322.69
T = 1170.49
E = 89.72
BK = S 17°04'14.89" E
AH = S 34°36'15.97" E



PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	ALIGNMENT PLAN	SHEET 42	E



2



CURVE : EB-4
PC = A 149EB+91.71
X = 831634.73
Y = 526469.95
PI = A 154EB+47.81
X = 831893.76
Y = 526094.54
PT = A 159EB+01.59
X = 832214.01
Y = 525769.79

R = 5215.17
DELTA = 9°59'46.94"
D = 1°05'55.09"
L = 909.89
T = 456.10
E = 19.91
BK = S 34°36'15.97" E
AH = S 44°36'02.91" E

CURVE : WB-3
PC = C 150WB+13.06
X = 831696.25
Y = 526486.45
PI = C 154WB+42.56
X = 831940.16
Y = 526132.93
PT = D 158WB+80.24
X = 832241.74
Y = 525827.12

R = 4911.00
DELTA = 9°59'46.94"
D = 1°10'00.06"
L = 856.82
T = 429.50
E = 18.75
BK = S 34°36'15.97" E
AH = S 44°36'02.91" E

POINT OF ENDING : WB
PI = D 204WB+79.29
X = 835471.02
Y = 522552.52
BK = S 44°36'02.91" E

POINT OF ENDING : EB
PI = A 235EB+06.77
X = 837554.09
Y = 520354.78
BK = S 44°36'02.91" E

PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	ALIGNMENT PLAN	SHEET 43	E

DATE 21OCT15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1011-04-65 QUANTITY
0010	108.3100.S	Incentive/Disincentive for Interim Completion of Work	CD	5.000	5.000
0020	203.0200	Removing Old Structure (station) 001. Sta. 713EB+63	LS	1.000	1.000
0030	203.0225.S	Debris Containment (structure) 001. B-13-0087	LS	1.000	1.000
0040	203.0225.S	Debris Containment (structure) 002. B-13-0088	LS	1.000	1.000
0050	204.0100	Removing Pavement	SY	1,257.000	1,257.000
0060	204.0120	Removing Asphaltic Surface Milling	SY	2,513.000	2,513.000
0070	204.0165	Removing Guardrail	LF	714.000	714.000
0080	204.0220	Removing Inlets	EACH	2.000	2.000
0090	204.0245	Removing Storm Sewer (size) 001. 12-Inch	LF	100.000	100.000
0100	205.0100	Excavation Common	CY	475.000	475.000
0110	211.0200	Prepare Foundation for Concrete Pavement (project) 001. 1011-04-65	LS	1.000	1.000
0120	213.0100	Finishing Roadway (project) 001. 1011-04-65	EACH	1.000	1.000
0130	305.0110	Base Aggregate Dense 3/4-Inch	TON	111.000	111.000
0140	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,399.000	1,399.000
0150	415.1125	Concrete Pavement HES 12 1/2-Inch	SY	907.000	907.000
0160	415.1410	Concrete Pavement Approach Slab HES	SY	328.000	328.000
0170	416.0610	Drilled Tie Bars	EACH	123.000	123.000
0180	416.0620	Drilled Dowel Bars	EACH	164.000	164.000
0190	416.1110	Concrete Shoulder Rumble Strips	LF	400.000	400.000
0200	455.0140	Asphaltic Material PG64-28P	TON	15.000	15.000
0210	455.0605	Tack Coat	GAL	151.000	151.000
0220	460.1110	HMA Pavement Type E-10	TON	275.000	275.000
0230	460.2000	Incentive Density HMA Pavement	DOL	180.000	180.000
0240	460.4000	HMA Cold Weather Paving	TON	275.000	275.000
0250	465.0400	Asphaltic Shoulder Rumble Strips	LF	11,100.000	11,100.000
0260	502.0200	Concrete Masonry Bridges HES	CY	53.000	53.000
0270	502.3200	Protective Surface Treatment	SY	1,356.000	1,356.000
0280	502.3210	Pigmented Surface Sealer	SY	4.000	4.000
0290	502.3215.S	Protective Surface Treatment Reseal	SY	208.000	208.000
0300	502.5010	Masonry Anchors Type L No. 6 Bars	EACH	13.000	13.000
0310	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	19,490.000	19,490.000
0320	509.0301	Preparation Decks Type 1	SY	238.000	238.000
0330	509.0302	Preparation Decks Type 2	SY	96.000	96.000
0340	509.0500	Cleaning Decks	SY	348.000	348.000
0350	509.1500	Concrete Surface Repair	SF	80.000	80.000
0360	509.2000	Full-Depth Deck Repair	SY	164.000	164.000
0370	509.2500	Concrete Masonry Overlay Decks	CY	165.000	165.000
0380	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 001. B-13-0087	SY	678.000	678.000
0390	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 002. B-13-0088	SY	678.000	678.000
0400	509.9010.S	Removing Asphaltic Concrete Deck Overlay (structure) 001. B-13-0087	SY	678.000	678.000
0410	509.9010.S	Removing Asphaltic Concrete Deck Overlay (structure) 002. B-13-0088	SY	678.000	678.000
0420	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0430	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,575.000	1,575.000

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DATE 21OCT15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1011-04-65 QUANTITY
0440	603.8125	Concrete Barrier Temporary Precast Installed	LF	3,125.000	3,125.000
0450	606.0100	Riprap Light	CY	14.000	14.000
0460	611.0654	Inlet Covers Type V	EACH	2.000	2.000
0470	611.3220	Inlets 2x2-FT	EACH	2.000	2.000
0480	612.0212	Pipe Underdrain Unperforated 12-Inch	LF	100.000	100.000
0490	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	1.000	1.000
0500	614.0905	Crash Cushions Temporary	EACH	4.000	4.000
0510	614.0920	Salvaged Rail	LF	143.000	143.000
0520	614.2300	MGS Guardrail 3	LF	398.000	398.000
0530	614.2330	MGS Guardrail 3 K	LF	26.000	26.000
0540	614.2500	MGS Thrie Beam Transition	LF	433.000	433.000
0550	619.1000	Mobilization	EACH	1.000	1.000
0560	624.0100	Water	MGAL	18.000	18.000
0570	625.0500	Salvaged Topsoil	SY	190.000	190.000
0580	628.1504	Silt Fence	LF	490.000	490.000
0590	628.1520	Silt Fence Maintenance	LF	490.000	490.000
0600	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0610	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0620	628.2004	Erosion Mat Class I Type B	SY	182.000	182.000
0630	628.7020	Inlet Protection Type D	EACH	4.000	4.000
0640	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0650	628.7570	Rock Bags	EACH	20.000	20.000
0660	629.0210	Fertilizer Type B	CWT	1.100	1.100
0670	630.0130	Seeding Mixture No. 30	LB	6.000	6.000
0680	643.0200	Traffic Control Surveillance and Maintenance (project) 001. 1011-04-65	DAY	58.000	58.000
0690	643.0300	Traffic Control Drums	DAY	12,665.000	12,665.000
0700	643.0420	Traffic Control Barricades Type III	DAY	802.000	802.000
0710	643.0705	Traffic Control Warning Lights Type A	DAY	1,604.000	1,604.000
0720	643.0715	Traffic Control Warning Lights Type C	DAY	6,134.000	6,134.000
0730	643.0800	Traffic Control Arrow Boards	DAY	264.000	264.000
0740	643.0900	Traffic Control Signs	DAY	5,088.000	5,088.000
0750	643.1050	Traffic Control Signs PCMS	DAY	345.000	345.000
0760	645.0130	Geotextile Fabric Type R	SY	61.000	61.000
0770	646.0106	Pavement Marking Epoxy 4-Inch	LF	11,720.000	11,720.000
0780	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	4,192.000	4,192.000
0790	690.0250	Sawing Concrete	LF	435.000	435.000
0800	ASP.1T0A	On-the-Job Training Apprentice at $5. 00/HR	HRS	350.000	350.000
0810	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	200.000	200.000
0820	SPV.0035	Special 001. Concrete Surface Drain HES Special	CY	8.900	8.900
0830	SPV.0045	Special 001. Traffic Control Signs PCMS with Cellular Communication	DAY	224.000	224.000
0840	SPV.0060	Special 001. Securing Structure Covers	EACH	2.000	2.000
0850	SPV.0090	Special 001. Removing Pavement Markings Water Blasting	LF	16,389.000	16,389.000
0860	SPV.0090	Special 002. Temp Pvt Marking Wet Reflective Contrast Removable Tape 4-Inch	LF	42,687.000	42,687.000
0870	SPV.0105	Special 001. Survey Project 1011-04-65	LS	1.000	1.000
0880	SPV.0165	Special 001. Removing Loose Concrete	SF	62.000	62.000

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PREPARE FOUNDATION FOR CONCRETE PAVEMENT (PROJECT 1011-04-65)

ROADWAY	211.0200 PREPARE FOUNDATION FOR CONCRETE PAVEMENT 1011-04-65 LS
PROJECT 1011-04-65	1
PROJECT 1011-04-65 TOTAL	1

FINISHING ROADWAY (PROJECT 1011-04-65)

ROADWAY	213.0100 FINISHING ROADWAY 1011-04-65 EACH
PROJECT 1011-04-65	1
PROJECT 1011-04-65 TOTAL	1

CONCRETE BARRIER TEMPORARY PRECAST ITEMS

ROADWAY	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	614.0905 CRASH CUSHIONS TEMPORARY EACH
STAGE 2			
EB/SB	750	750	1
WB/NB	750	750	1
STAGE 2 SUBTOTAL	1,500	1,500	2
STAGE 3			
EB/SB	--	738	1
WB/NB	--	738	1
STAGE 3 SUBTOTAL	--	1,475	2
UNDISTRIBUTED	75	150	--
PROJECT 1011-04-65 TOTAL	1,575	3,125	4

BASE AGGREGATE DENSE

ROADWAY	STATION			OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
STAGE 2							
EB/SB - NORTH OF BRIDGE, PAVED ROAD	712EB + 55	-	713EB + 05	RT	--	26	--
EB/SB - NORTH OF BRIDGE, PAVED SHOULDER	712EB + 55	-	713EB + 00	RT	--	24	--
EB/SB - NORTH OF BRIDGE, SHOULDER	712EB + 55	-	712EB + 97	RT	4	15	--
EB/SB - NORTH OF BRIDGE, SLOPED SHOULDER	712EB + 55	-	712EB + 96	RT	10	19	--
EB/SB - SOUTH OF BRIDGE, PAVED ROAD	714EB + 08	-	714EB + 64	RT	--	28	--
EB/SB - SOUTH OF BRIDGE, PAVED SHOULDER	714EB + 54	-	714EB + 64	RT	--	32	--
EB/SB - SOUTH OF BRIDGE, SHOULDER	714EB + 04	-	714EB + 64	RT	6	22	--
EB/SB - SOUTH OF BRIDGE, SLOPED SHOULDER	714EB + 04	-	714EB + 64	RT	14	28	--
WB/NB - NORTH OF BRIDGE, PAVED ROAD	712WB + 77	-	713WB + 33	LT	--	28	--
WB/NB - NORTH OF BRIDGE, PAVED SHOULDER	712WB + 77	-	713WB + 36	LT	--	32	--
WB/NB - NORTH OF BRIDGE, SHOULDER	712WB + 77	-	713WB + 36	LT	1	5	--
WB/NB - NORTH OF BRIDGE, SLOPED SHOULDER	712WB + 77	-	713WB + 36	LT	14	27	--
WB/NB - SOUTH OF BRIDGE, PAVED ROAD	714WB + 36	-	714WB + 87	LT	--	26	--
WB/NB - SOUTH OF BRIDGE, PAVED SHOULDER	714WB + 42	-	714WB + 87	LT	--	24	--
WB/NB - SOUTH OF BRIDGE, SHOULDER	714WB + 45	-	714WB + 87	LT	4	15	--
WB/NB - SOUTH OF BRIDGE, SLOPED SHOULDER	714WB + 46	-	714WB + 87	LT	10	18	--
STAGE 2 SUBTOTALS					63	369	5
STAGE 3							
EB/SB - NORTH OF BRIDGE, PAVED ROAD	712EB + 55	-	713EB + 11	RT/LT	--	28	--
EB/SB - NORTH OF BRIDGE, PAVED SHOULDER	712EB + 55	-	713EB + 14	RT/LT	--	32	--
EB/SB - NORTH OF BRIDGE, SHOULDER	712EB + 55	-	713EB + 14	RT/LT	5	22	--
EB/SB - NORTH OF BRIDGE, SLOPED SHOULDER	712EB + 55	-	713EB + 14	RT/LT	6	10	--
EB/SB - SOUTH OF BRIDGE, PAVED ROAD	714EB + 14	-	714EB + 64	RT/LT	--	26	--
EB/SB - SOUTH OF BRIDGE, PAVED SHOULDER	714EB + 19	-	714EB + 64	RT/LT	--	24	--
EB/SB - SOUTH OF BRIDGE, SHOULDER	714EB + 23	-	714EB + 64	RT/LT	4	16	--
EB/SB - SOUTH OF BRIDGE, SLOPED SHOULDER	714EB + 23	-	714EB + 64	RT/LT	4	7	--
WB/NB - NORTH OF BRIDGE, PAVED ROAD	712WB + 77	-	713WB + 27	RT/LT	--	26	--
WB/NB - NORTH OF BRIDGE, PAVED SHOULDER	712WB + 77	-	713WB + 22	RT/LT	--	24	--
WB/NB - NORTH OF BRIDGE, SHOULDER	712WB + 77	-	713WB + 19	RT/LT	4	16	--
WB/NB - NORTH OF BRIDGE, SLOPED SHOULDER	712WB + 77	-	713WB + 19	RT/LT	4	7	--
WB/NB - SOUTH OF BRIDGE, PAVED ROAD	714WB + 31	-	714WB + 87	RT/LT	--	28	--
WB/NB - SOUTH OF BRIDGE, PAVED SHOULDER	714WB + 27	-	714WB + 87	RT/LT	--	32	--
WB/NB - SOUTH OF BRIDGE, SHOULDER	714WB + 27	-	714WB + 87	RT/LT	5	22	--
WB/NB - SOUTH OF BRIDGE, SLOPED SHOULDER	714WB + 27	-	714WB + 87	RT/LT	6	10	--
STAGE 3 SUBTOTALS					38	330	4
UNDISTRIBUTED					10	700	9
PROJECT 1011-04-65 TOTALS					111	1,399	18

CONCRETE ITEMS

ROADWAY	STATION	OFFSET	204.0100 REMOVING PAVEMENT** SY	415.1125 CONCRETE PAVEMENT HES 12 1/2-INCH SY	415.1410 CONCRETE PAVEMENT APPROACH SLAB HES SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	416.1110 CONCRETE SHOULDER RUMBLE STRIPS* LF	690.0250 SAWING CONCRETE LF	SPV.0035.001 CONCRETE SURFACE DRAIN HES SPECIAL CY	COMMENTS
STAGE 2											
EB/SB	712EB + 55 - 713EB + 05	RT	143	108	35	--	20	--	78	--	CRCP APPROACH SLEEPER SLAB HAS AN AREA OF 20 SY AND 10" DEPTH. REMOVAL INCIDENTAL TO REMOVING PAVEMENT.
EB/SB	714EB + 05 - 714EB + 64	RT	170	119	46	--	20	--	78	--	CRCP APPROACH SLEEPER SLAB HAS AN AREA OF 20 SY AND 10" DEPTH. REMOVAL INCIDENTAL TO REMOVING PAVEMENT.
EB/SB	714EB + 05 - 714EB + 19	RT	--	--	--	--	--	--	--	1.7	
WB/NB	712WB + 77 - 713WB + 36	LT	170	124	46	--	20	--	78	--	CRCP APPROACH SLEEPER SLAB HAS AN AREA OF 20 SY AND 10" DEPTH. REMOVAL INCIDENTAL TO REMOVING PAVEMENT.
WB/NB	714WB + 36 - 714WB + 87	LT	144	103	35	--	20	--	78	--	CRCP APPROACH SLEEPER SLAB HAS AN AREA OF 20 SY AND 10" DEPTH. REMOVAL INCIDENTAL TO REMOVING PAVEMENT.
WB/NB	714WB + 44 - 714WB + 57	LT	--	--	--	--	--	--	--	1.7	
STAGE 2 SUBTOTAL			627	454	162	--	80	--	312	3.4	
STAGE 3											
EB/SB	712EB + 55 - 713EB + 14	RT/LT	171	124	47	30	20	56	28	--	CRCP APPROACH SLEEPER SLAB HAS AN AREA OF 20 SY AND 10" DEPTH. REMOVAL INCIDENTAL TO REMOVING PAVEMENT.
EB/SB	714EB + 14 - 714EB + 64	RT/LT	144	101	36	30	20	44	28	--	CRCP APPROACH SLEEPER SLAB HAS AN AREA OF 20 SY AND 10" DEPTH. REMOVAL INCIDENTAL TO REMOVING PAVEMENT.
EB/SB	714EB + 22 - 714EB + 41	LT	--	--	--	--	--	--	--	3.1	
WB/NB	712WB + 77 - 713WB + 27	RT/LT	144	109	36	30	20	44	28	--	CRCP APPROACH SLEEPER SLAB HAS AN AREA OF 20 SY AND 10" DEPTH. REMOVAL INCIDENTAL TO REMOVING PAVEMENT.
WB/NB	714WB + 27 - 714WB + 87	RT/LT	171	119	47	30	20	56	28	--	CRCP APPROACH SLEEPER SLAB HAS AN AREA OF 20 SY AND 10" DEPTH. REMOVAL INCIDENTAL TO REMOVING PAVEMENT.
WB/NB	714WB + 28 - 714WB + 44	RT	--	--	--	--	--	--	--	2.4	
STAGE 3 SUBTOTAL			630	453	166	120	80	200	112	5.5	
STAGE 4											
EB/SB	712EB + 55 - 713EB + 05	RT	--	--	--	--	--	44	--	--	
EB/SB	714EB + 05 - 714EB + 64	RT	--	--	--	--	--	56	--	--	
WB/NB	712WB + 77 - 713WB + 36	LT	--	--	--	--	--	56	--	--	
WB/NB	714WB + 36 - 714WB + 87	LT	--	--	--	--	--	44	--	--	
STAGE 4 SUBTOTAL			--	--	--	--	--	200	--	--	
UNDISTRIBUTED			--	--	--	3	4	--	11	--	
PROJECT 1011-04-65 TOTAL			1,257	907	328	123	164	400	435	8.9	

*SEE PLAN DETAILS FOR EXACT LIMITS OF CONCRETE SHOULDER RUMBLE STRIPS

**INCLUDES REMOVAL OF REINFORCING STEEL

INLETS AND STORM SEWER

ROADWAY	STATION	OFFSET	204.0220 REMOVING INLETS EACH	204.0245 REMOVING STORM SEWER 12-INCH LF	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH	611.3220 INLETS 2X2 - FT EACH	611.0654 INLET COVERS TYPE V EACH	612.0212 PIPE UNDERDRAIN UNPERFORATED 12-INCH LF	SPV.0060.001 SECURING STRUCTURE COVERS EACH
STAGE 2									
EB/SB	714EB + 13	RT	1	48	1	1	1	48	1
WB/NB	714WB + 54	LT	1	52	1	1	1	52	1
STAGE 2 SUBTOTAL			2	100	2	2	2	100	2
PROJECT 1011-04-65 TOTAL			2	100	2	2	2	100	2

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ASPHALT ITEMS

ROADWAY	STATION	OFFSET	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	455.0140 ASPHALTIC MATERIAL PG 64-28P TON	455.0605 TACK COAT GAL	460.1110 HMA PAVEMENT TYPE E-10 TON	460.4000 HMA COLD WEATHER PAVING TON	465.0400 ASPHALTIC SHOULDER RUMBLE STRIP LF
STAGE 1								
EB/SB	695EB + 60 - 713EB +10	LT	389	2	23	43	43	--
EB/SB	714EB + 20 - 724EB + 90	LT	238	1	14	26	26	--
WB/NB	702WB + 10 - 713WB + 21	RT	247	1	15	27	27	--
WB/NB	714WB + 31 - 731WB + 40	RT	380	2	23	42	42	--
STAGE 1 SUBTOTAL			1,254	6	75	138	138	--
STAGE 2								
EB/SB	695EB + 60 - 712EB + 55	RT	377	2	23	41	41	--
EB/SB	714EB + 64 - 724EB + 90	RT	228	1	14	25	25	--
WB/NB	702WB + 10 - 712WB + 77	LT	237	1	14	26	26	--
WB/NB	714WB + 87 - 731WB + 40	LT	368	2	22	40	40	--
STAGE 2 SUBTOTAL			1,210	6	73	132	132	--
STAGE 3								
EB/SB	695EB + 60 - 712EB + 55	LT	--	--	--	--	--	1,695
EB/SB	714EB + 64 - 722EB + 55	LT	--	--	--	--	--	1,025
WB/NB	704WB + 45 - 712WB + 77	RT	--	--	--	--	--	1,067
WB/NB	714WB + 87 - 731WB + 40	RT	--	--	--	--	--	1,654
STAGE 3 SUBTOTAL			--	--	--	--	--	5,441
STAGE 4								
EB/SB	695EB + 60 - 712EB + 55	RT	--	--	--	--	--	1,695
EB/SB	714EB + 64 - 724EB + 90	RT	--	--	--	--	--	1,025
WB/NB	702WB + 10 - 712WB + 77	LT	--	--	--	--	--	1,067
WB/NB	714WB + 87 - 731WB + 40	LT	--	--	--	--	--	1,654
STAGE 4 SUBTOTAL			--	--	--	--	--	5,441
UNDISTRIBUTED			49	3	3	5	5	218
PROJECT 1011-04-65 TOTAL			2,513	15	151	275	275	11,100

FILE NAME: \\MADW00\INGRPROJ\60002\t1\cds\030201_mq.ppt PLOT DATE : 7/27/2015 11:23:11 AM PLOT BY : HNTB Corp PLOT NAME : 030201_mq3 PLOT SCALE : 1:1

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MOBILIZATION

ROADWAY	619.1000 MOBILIZATION EACH
PROJECT 1011-04-65	1
PROJECT 1011-04-65 TOTAL	1

SURVEY PROJECT

ROADWAY	SPV.0105.001 SURVEY PROJECT 1011-04-65 LS
PROJECT 1011-04-65	1
PROJECT 1011-04-65 TOTAL	1

EXCAVATION COMMON

ROADWAY		STATION			OFFSET	205.0100 EXCAVATION COMMON CY
STAGE 2						
	EB/SB	712EB + 55	-	713EB + 05	RT	46
	EB/SB	714EB + 08	-	714EB + 64	RT	60
	WB/NB	712WB + 77	-	713WB + 33	LT	50
	WB/NB	714WB + 36	-	714WB + 87	LT	46
STAGE 2 SUBTOTALS						202
STAGE 3						
	EB/SB	712EB + 55	-	713EB + 11	RT/LT	50
	EB/SB	714EB + 14	-	714EB + 64	RT/LT	39
	WB/NB	712WB + 77	-	713WB + 27	RT/LT	39
	WB/NB	714WB + 31	-	714WB + 87	RT/LT	50
STAGE 3 SUBTOTALS						178
UNDISTRIBUTED						95
PROJECT 1011-04-65 TOTALS						475

LANDSCAPING

ROADWAY		STATION		TO	STATION	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB
STAGE 1								
	EB/SB OUTSIDE SHOULDER	712EB + 43	-		712EB + 99	28	0.25	1
	WB/NB OUTSIDE SHOULDER	712WB + 65	-		713WB + 38	41	0.25	1
	EB/SB OUTSIDE SHOULDER	713EB + 90	-		714EB + 76	58	0.25	2
	WB/NB OUTSIDE SHOULDER	714WB + 43	-		714WB + 97	46	0.25	1
STAGE 1 SUBTOTAL						173	1.00	5
UNDISTRIBUTED						17	0.10	1
PROJECT 1011-04-65 TOTAL						190	1.10	6

SALVAGED RAIL

ROADWAY		STATION			OFFSET	614.0920 SALVAGED RAIL LF	REMARKS
STAGE 2							
	EB/SB	712EB + 55	-	712EB + 97	RT	42	SALVAGE EXISTING MGS GUARDRAIL
	EB/SB	714EB + 05	-	714EB + 64	RT	59	SALVAGE EXISTING MGS GUARDRAIL
	WB/NB	714WB + 45	-	714WB + 87	LT	42	SALVAGE EXISTING MGS GUARDRAIL
STAGE 2 SUBTOTAL						143	
PROJECT 1011-04-65 TOTAL						143	

BEAMGUARD

ROADWAY		STATION			OFFSET	204.0165 REMOVING GUARDRAIL LF	614.2300 MGS GUARDRAIL 3 LF	614.2330 MGS GUARDRAIL 3 K LF	614.2500 MGS THRIE BEAM TRANSITION LF
STAGE 2									
	EB/SB	712EB + 55	-	712EB + 97	RT	--	--	3	39
	EB/SB	714EB + 05	-	714EB + 64	RT	--	--	20	39
	WB/NB	714WB + 45	-	714WB + 87	LT	--	--	3	39
STAGE 2 SUBTOTAL						--	--	26	117
STAGE 3									
	EB/SB	711EB + 11	-	713EB + 03	LT	192	113	--	79
	EB/SB	714EB + 33	-	715EB + 99	LT	166	87	--	79
	WB/NB	711WB + 18	-	713WB + 07	RT	189	110	--	79
	WB/NB	714WB + 37	-	716WB + 04	RT	167	88	--	79
STAGE 3 SUBTOTAL						714	398	--	316
PROJECT 1011-04-65 TOTAL						714	398	26	433

EROSION CONTROL ITEMS

ROADWAY	STATION	TO	STATION	606.0100 RIPRAP LIGHT CY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTOL EACH	628.2004 EROSION MAT CLASS I TYPE B SY	628.7020 INLET PROTECTION TYPE D EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7570 ROCK BAGS EACH	645.0130 GEOTEXTILE TYPE R SY
STAGE 1												-	
EB/SB OUTSIDE SHOULDER	712EB + 43	-	712EB + 99	--	68	68	--	--	28	--	--	--	--
WB/NB OUTSIDE SHOULDER	712WB + 65	-	713WB + 38	--	81	81	--	--	41	--	--	--	--
MEDIAN	713EB + 11	-	--	--	12	12	--	--	--	--	--	--	--
EB/SB OUTSIDE SHOULDER	713EB + 90	-	714EB + 76	--	153	153	--	--	58	--	--	--	--
MEDIAN	714EB + 29	-	--	--	12	12	--	--	--	--	--	--	--
WB/SB OUTSIDE SHOULDER	714WB + 43	-	714WB + 97	--	129	129	--	--	46	--	--	--	--
MEDIAN	714EB + 95	-	--	--	12	12	--	--	--	--	--	--	--
MEDIAN	712EB + 50	-	--	--	--	--	--	--	--	1	--	--	--
EB/SB OUTSIDE SHOUDLER	714EB + 10	-	--	--	--	--	--	--	--	1	--	--	--
WB/NB OUTSIDE SHOULDER	714WB + 50	-	--	--	--	--	--	--	--	1	--	--	--
EB/SB OUTSIDE CULVERT DISCHARGE	714EB + 01	-	--	1	--	--	--	--	--	--	--	--	6
MEDIAN FLUME	714EB + 37	-	714EB + 86	11	--	--	--	--	--	--	--	--	46
WB/NB OUTSIDE CULVERT DISCHARGE	714WB + 54	-	--	1	--	--	--	--	--	--	--	--	6
PROJECT 1011-04-65				-	--	-	1	1	--	--	--	--	-
STAGE 1 SUBTOTAL				13	467	467	1	1	173	3			58
UNDISTRIBUTED				1	23	23	--	--	9	1	50	20	3
PROJECT 1011-04-65 TOTAL				14	490	490	1	1	182	4	50	20	61

PAVEMENT MARKING ITEMS

LOCATION	STATION	TO	STATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF	646.0841.S PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH LF
STAGE 3						
EB/SB	681WB + 85	-	722WB + 55	2,930	-	1,048
WB/NB	704WB + 45	-	745WB + 15	2,930	-	1,048
STAGE 3 SUBTOTAL					5,860	2,096
STAGE 4						
EB/SB	681WB + 85	-	722WB + 55	-	2,930	1,048
WB/NB	704WB + 45	-	745WB + 15	-	2,930	1,048
STAGE 4 SUBTOTAL					5,860	2,096
PROJECT 1011-04-65					11,720	4,192

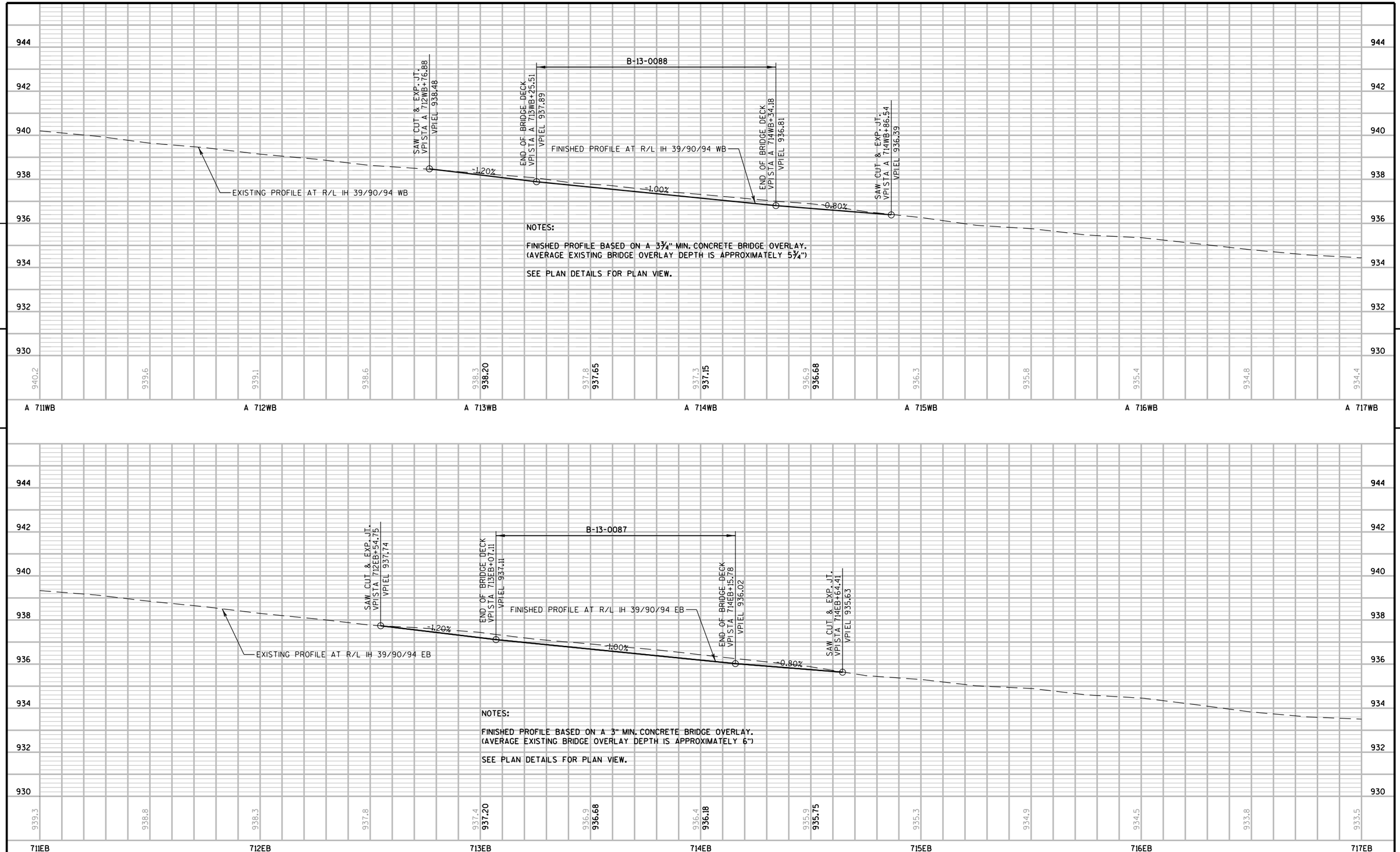
TEMPORARY PAVEMENT MARKINGS AND REMOVALS

CATEGORY	STAGE	ROADWAY	SPV.0090.002 TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH YELLOW LF	SPV.0090.002 TEMPORARY PAVEMENT MARKING WET REFLECTIVE CONTRAST REMOVABLE TAPE 4-INCH WHITE LF	SPV.0090.001 REMOVING PAVEMENT MARKINGS WATER BLASTING LF
1000	2	EB/SB	2,930	7,641	4,083
		WB/NB	2,930	7,641	4,083
STAGE 2 SUBTOTAL				21,142	8,166
1000	3	EB/SB	4,291	5,860	3,873
		WB/NB	4,291	5,860	3,873
STAGE 3 SUBTOTAL				20,302	7,746
1000	4	EB/SB	--	--	--
		WB/NB	--	--	--
STAGE 4 SUBTOTAL				--	--
UNDISTRIBUTED				1243	477
PROJECT 1011-04-65 TOTAL				42,687	16,389

TRAFFIC CONTROL ITEMS

ROADWAY	DURATION DAYS	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (1011-04-65) DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH*	643.0300 DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH*	643.0420 DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH*	643.0705 DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH*	643.0715 DAYS	643.0800 TRAFFIC CONTROL ARROW BOARDS EACH*	643.0800 DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH*	643.0900 DAYS	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH*	643.1050 DAYS	SPV.0045.001 TRAFFIC CONTROL SIGNS PCMS WITH CELLULAR COMMUNICATION DAYS	REMARKS
STAGE 1		--																
EB/SB	2	--	78	156	3	6	6	12	17	34	2	4	19	38	1	2	--	1 LANE CLOSURE FOR 2 NIGHTS
EB/SB	1	--	125	125	6	6	12	12	34	34	3	3	22	22	1	1	--	2 LANE CLOSURE FOR 1 NIGHT
WB/NB	2	--	78	156	3	6	6	12	17	34	2	4	19	38	1	2	--	1 LANE CLOSURE FOR 2 NIGHTS
WB/NB	1	--	125	125	6	6	12	12	34	34	3	3	22	22	1	1	--	2 LANE CLOSURE FOR 1 NIGHT
STAGE 1 SUBTOTAL		3		562		24		48		136		14		120		6	--	
STAGE 2		--																
EB/SB	25	--	99	2,475	1	25	2	50	51	1,275	2	50	36	900	3	75	--	RIGHT LANE CLOSURE
WB/NB	25	--	99	2,475	1	25	2	50	51	1,275	2	50	39	975	3	75	--	RIGHT LANE CLOSURE
CUBA VALLEY ROAD CLOSURE	25	--	--	--	11	275	22	550	--	--	--	--	10	250	--	--	--	FULL ROAD CLOSURE
STAGE 2 SUBTOTAL		25		4,950		325		650		2,550		100		2,125		150	100	
STAGE 3		--																
EB/SB	26	--	98	2,548	1	26	2	52	51	1,326	2	52	36	936	3	78	--	LEFT LANE CLOSURE
WB/NB	26	--	98	2,548	1	26	2	52	51	1,326	2	52	39	1,014	3	78	--	LEFT LANE CLOSURE
CUBA VALLEY ROAD CLOSURE	26	--	--	--	11	286	22	572	--	--	--	--	10	260	--	--	--	FULL ROAD CLOSURE
STAGE 3 SUBTOTAL		26		5,096		338		676		2,652		104		2,210		156	104	
STAGE 4 - 1 LANE		--																
EB/SB	1	--	78	78	3	3	6	6	17	17	2	2	19	19	1	1	--	1 LANE CLOSURE FOR 1 NIGHT
EB/SB	1	--	125	125	6	6	12	12	34	34	3	3	22	22	1	1	--	2 LANE CLOSURE FOR 1 NIGHT
WB/NB	1	--	78	78	3	3	6	6	17	17	2	2	19	19	1	1	--	1 LANE CLOSURE FOR 1 NIGHT
WB/NB	1	--	125	125	6	6	12	12	34	34	3	3	22	22	1	1	--	2 LANE CLOSURE FOR 1 NIGHT
STAGE 4 SUBTOTAL		2		406		18		36		102		10		82		4	--	
POST STAGE 4 NIGHT CLOSURES																		
EB/SB	2	--	125	250	6	12	12	24	34	68	3	6	22	44	1	2	--	DUAL LANE NIGHT CLOSURES FOR PROTECTIVE SURFACE TREATMENT
WB/NB	2	--	125	250	6	12	12	24	34	68	3	6	22	44	1	2	--	DUAL LANE NIGHT CLOSURES FOR PROTECTIVE SURFACE TREATMENT
POST STAGE 4 NIGHT CLOSURES SUBTOTAL		2		500		24		48		136		12		88		4	--	
UNDISTRIBUTED		--		1,151		73		146		558		24		463		25	20	
PROJECT 1011-04-65 TOTAL		58	--	12,665	--	802	--	1,604	--	6,134	--	264	--	5,088	--	345	224	

* PROVIDED FOR INFORMATION ONLY



PROJECT NO: 1011-04-65	HWY: IH 39	COUNTY: DANE	PROFILE: IH 39/90/94 EB & WB	SHEET E

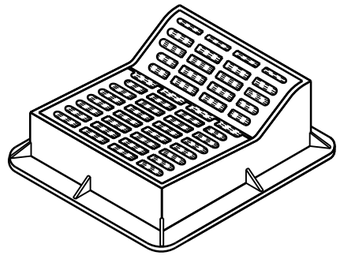
FILE NAME : J:\59970\t1\cds\050301_pr.dgn PLOT DATE : 7/24/2015 PLOT BY : Ctomsak PLOT NAME : PLOT SCALE : 40:1

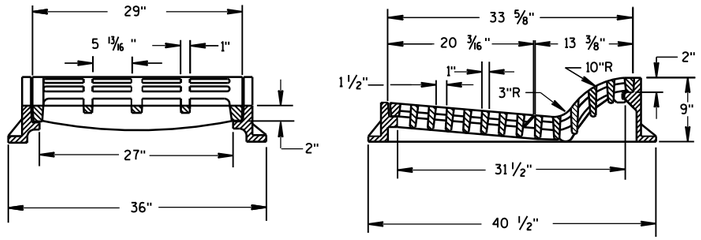
WISDOT/CADDS SHEET 40

Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D03-06	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
13A03-05	CONCRETE PAVEMENT SHOULDERS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-07A	CONCRETE BRIDGE APPROACH
13B02-07B	STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH
13C01-17	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-11A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C18-02A	CONCRETE PAVEMENT JOINTING
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15D03-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-05A	TRAFFIC CONTROL, LANE CLOSURE
15D12-05B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D14-02	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

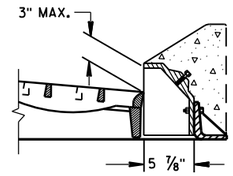
6





TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

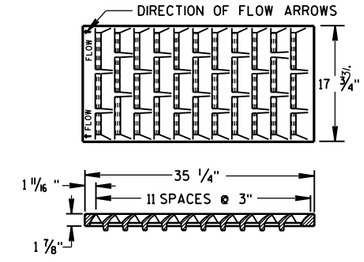
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

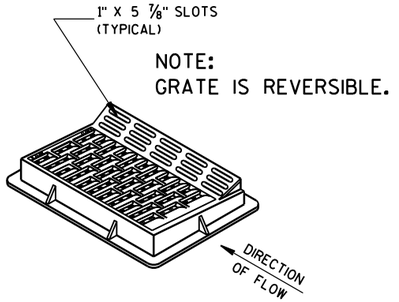
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

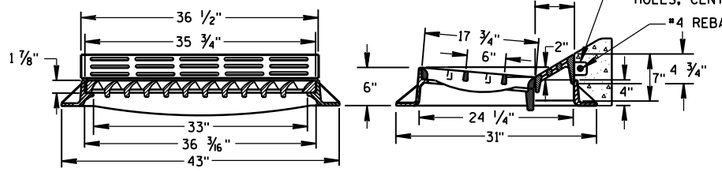
GENERAL NOTES

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

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



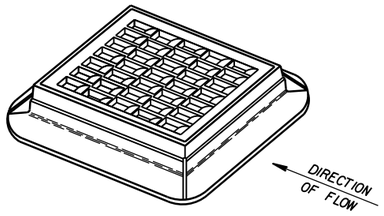


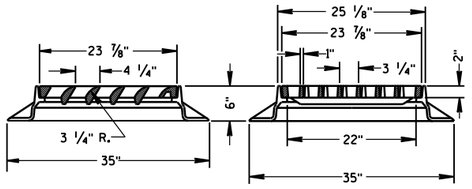


TYPE "HM"

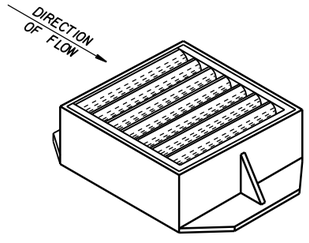
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

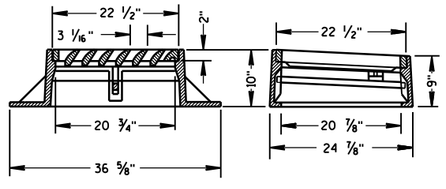
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



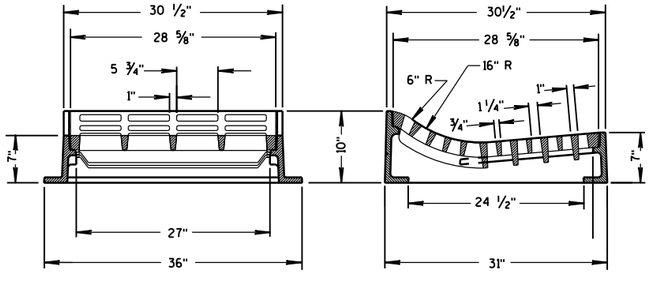


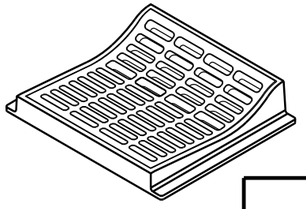
TYPE "S"





TYPE "V"





TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.

INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

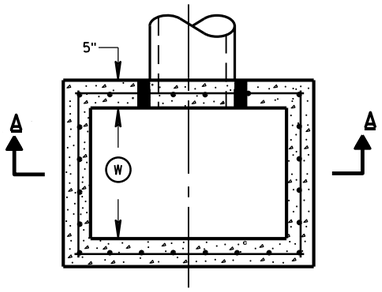
FHWA

6

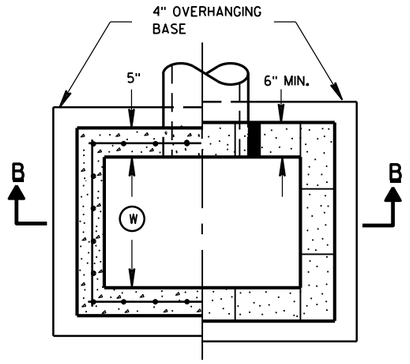
S.D.D. 8 A 5-19c

6

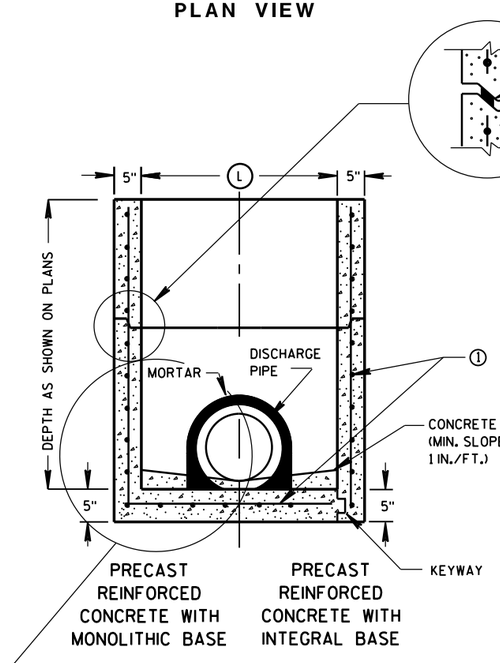
S.D.D. 8 A 5-19c



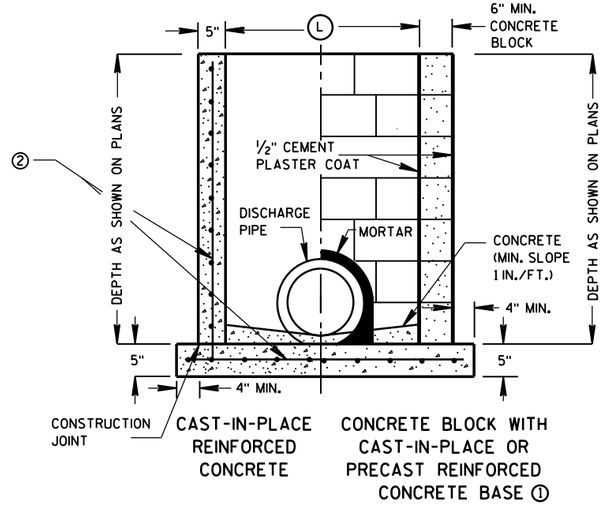
PLAN VIEW



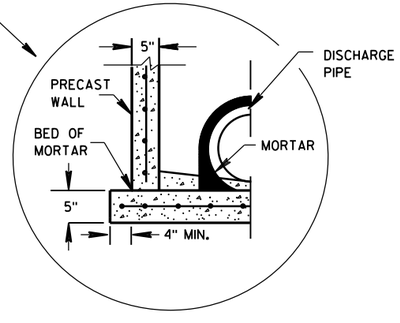
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

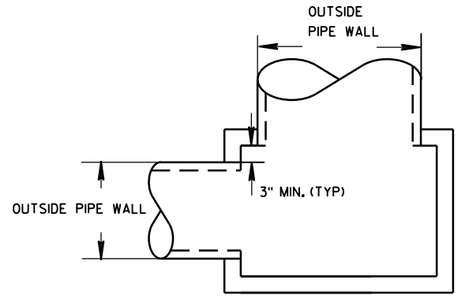
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



DETAIL "A"

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

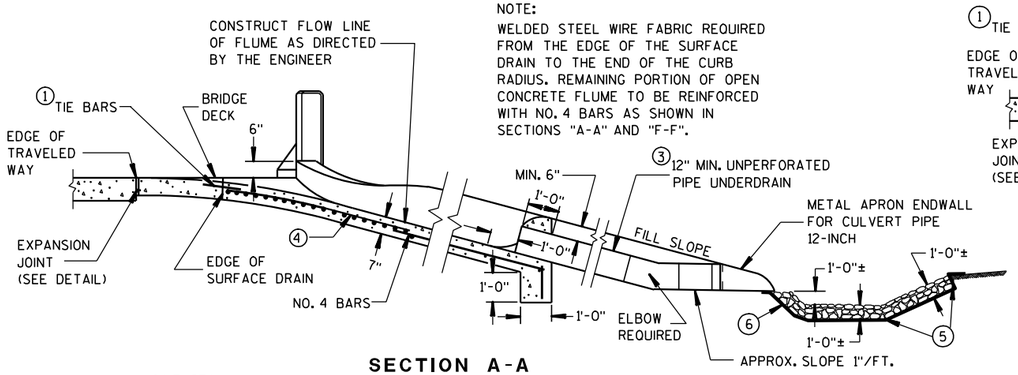
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012
DATE
FHWA

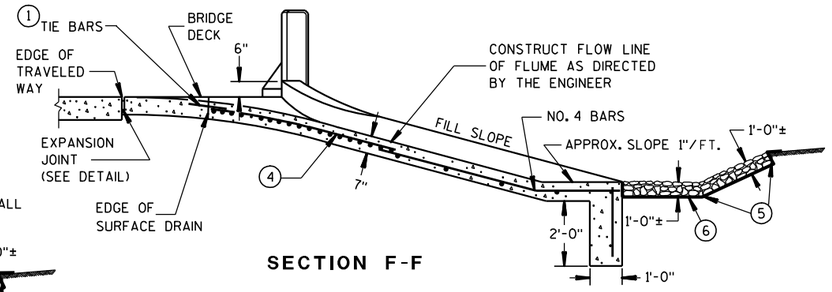
/S/ Jerry H. Zogg
ROADWAY STANDARDS DE
ENGINEER

6

S.D.D. 8 C 7-1



SECTION A-A



SECTION F-F

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.

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.

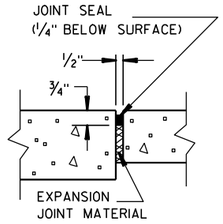
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

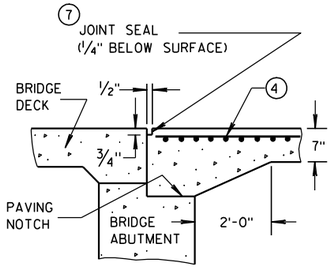
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

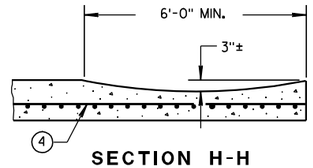
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



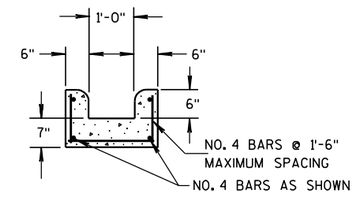
EXPANSION JOINT DETAIL



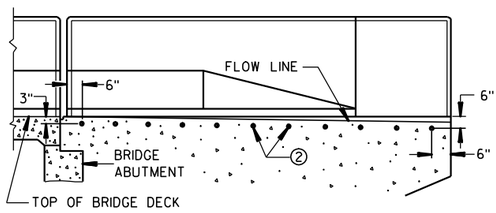
SECTION D-D



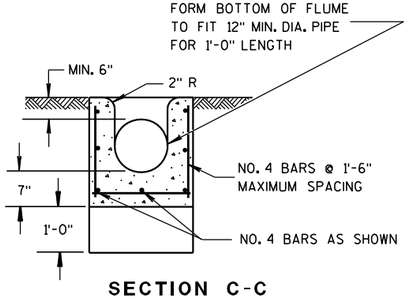
SECTION H-H



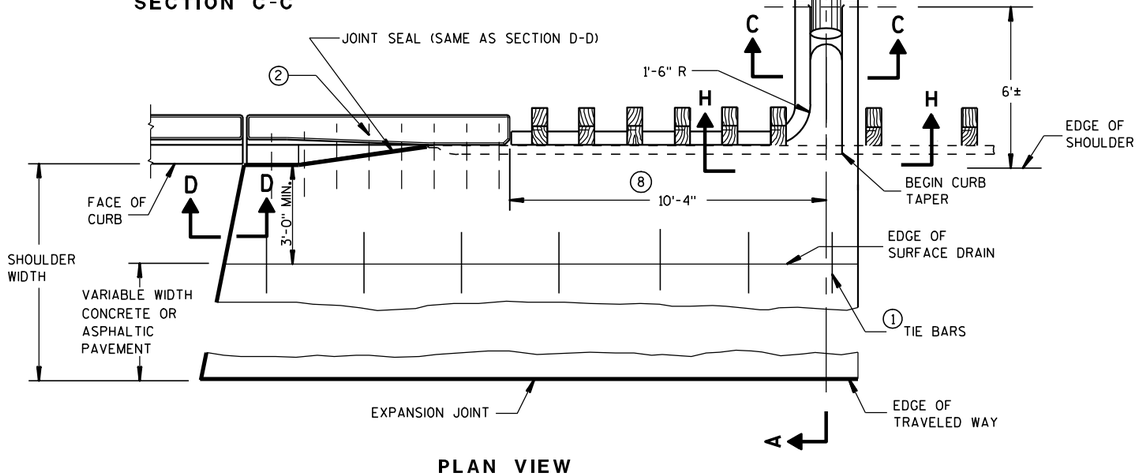
SECTION E-E



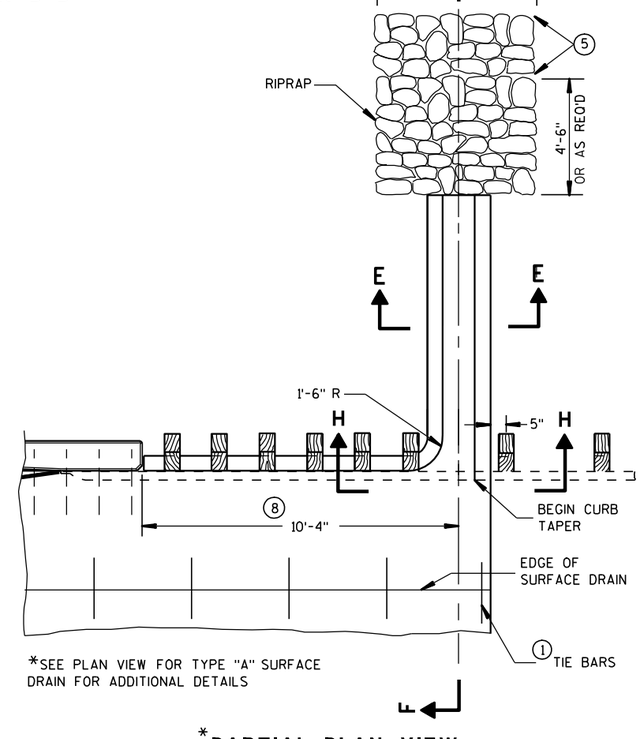
LOCATION OF TIE BARS IN WINGWALL



SECTION C-C



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

***PARTIAL PLAN VIEW**
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 D 2-6

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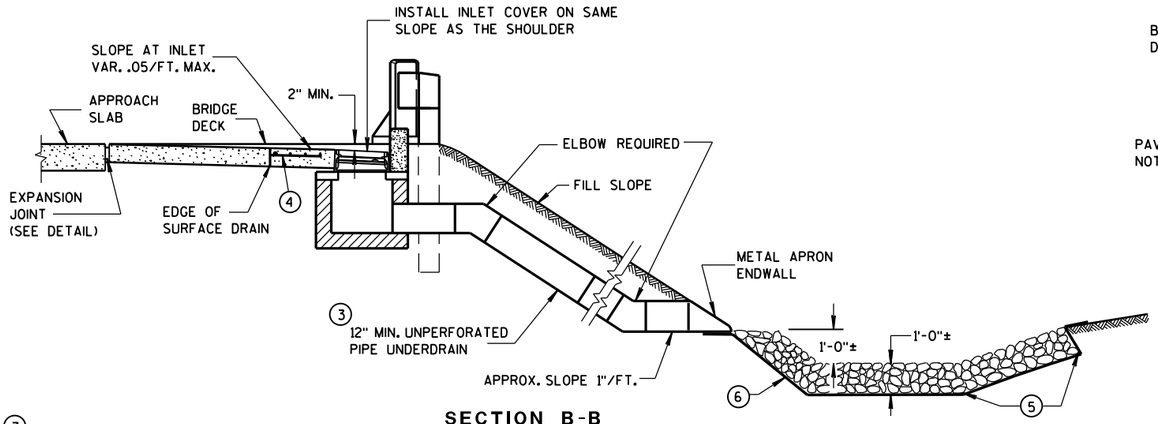
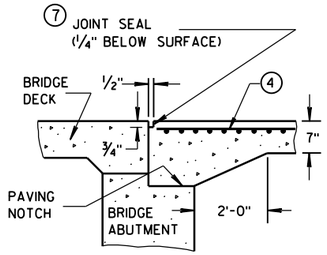
S.D.D. 8 D 2-6



SECTION B-B



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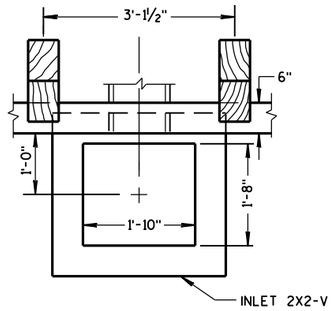
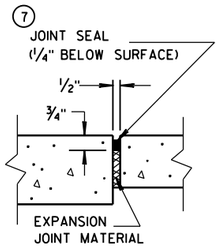
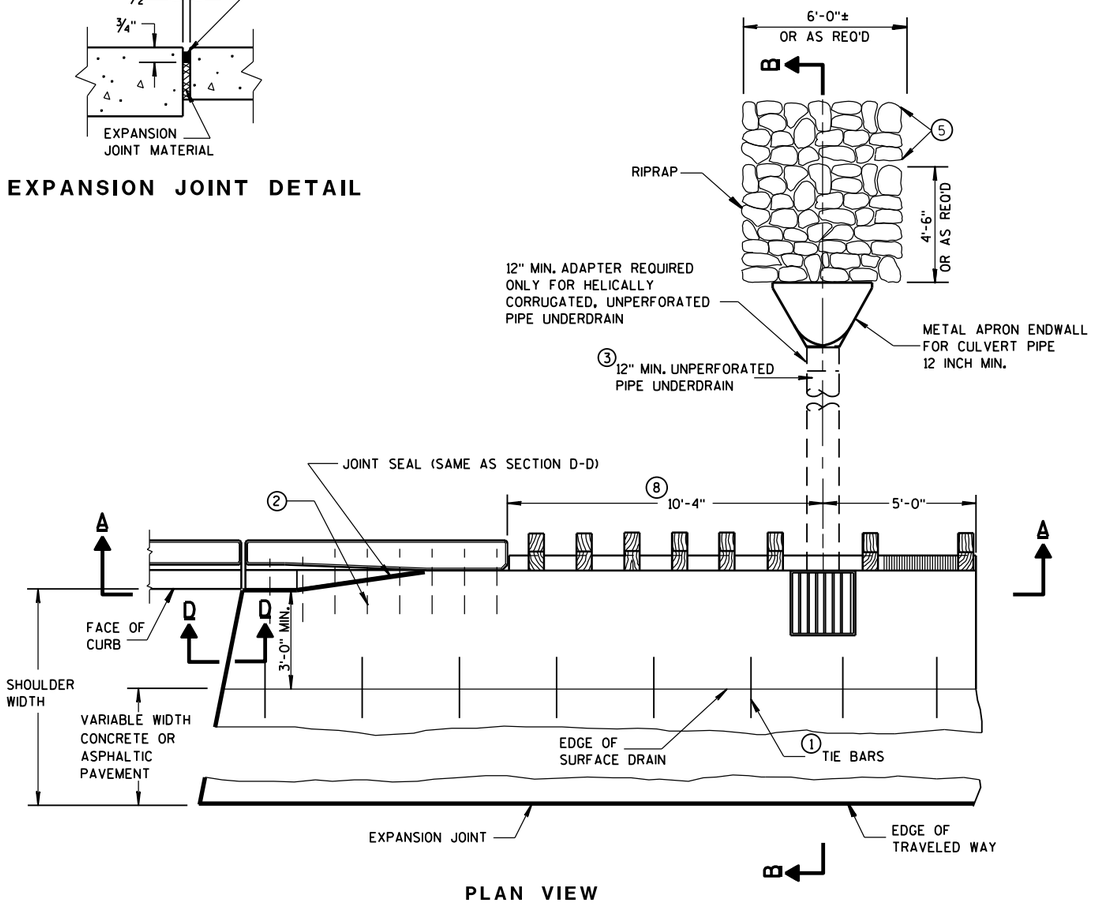


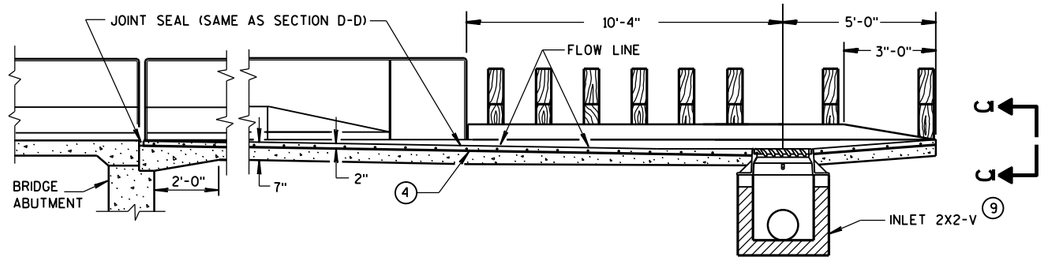
PLAN VIEW



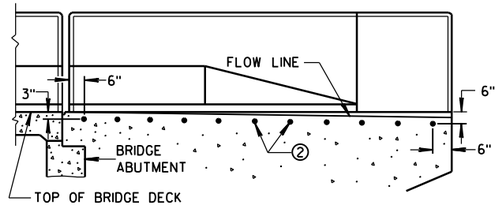
EXPANSION JOINT DETAIL



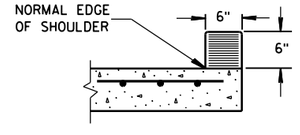
PLAN VIEW



SECTION A-A



LOCATION OF TIE BARS IN WINGWALL



SECTION C-C

GENERAL NOTES

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

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.

(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

(6) GEOTEXTILE FABRIC, TYPE 'R'

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".

(9) SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

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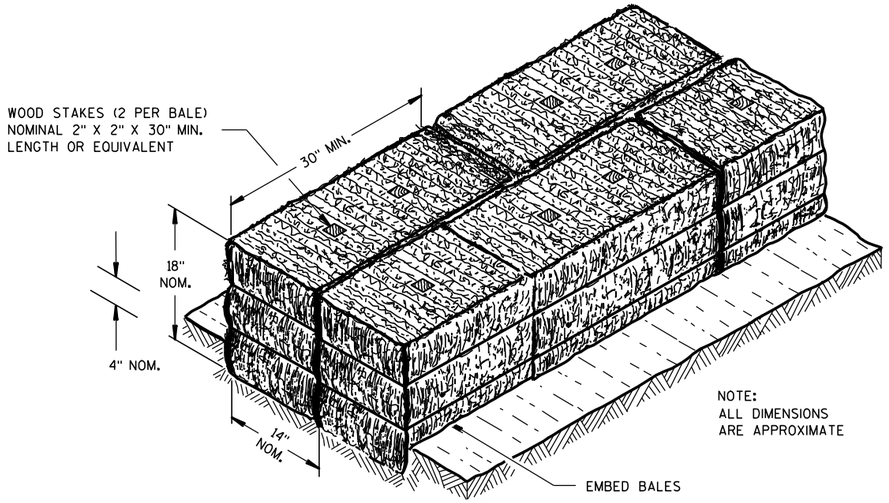
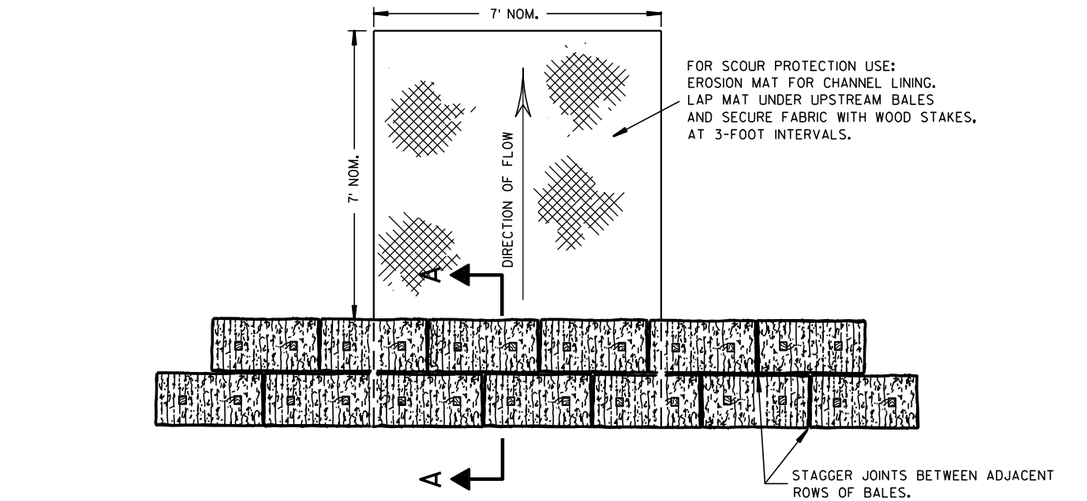
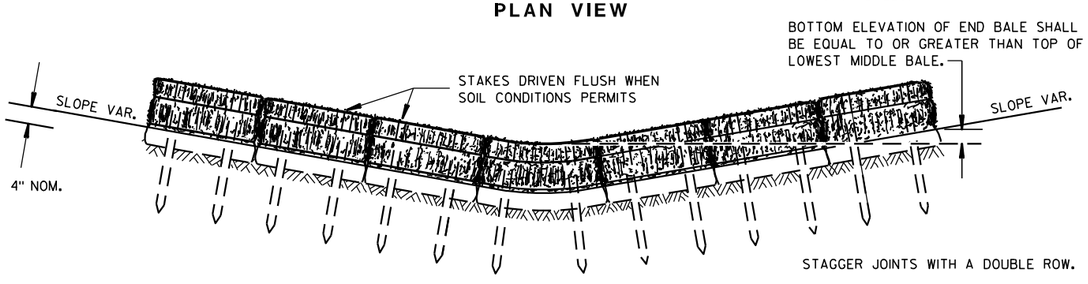
S.D.D. 8 D 3-6



SECTION A-A



PLAN VIEW



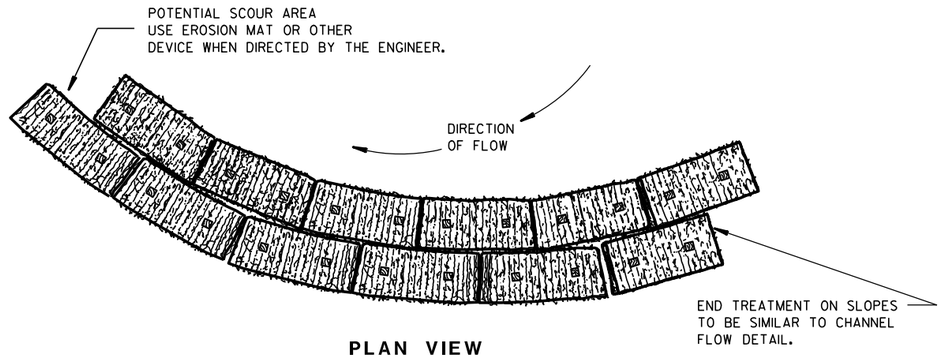
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

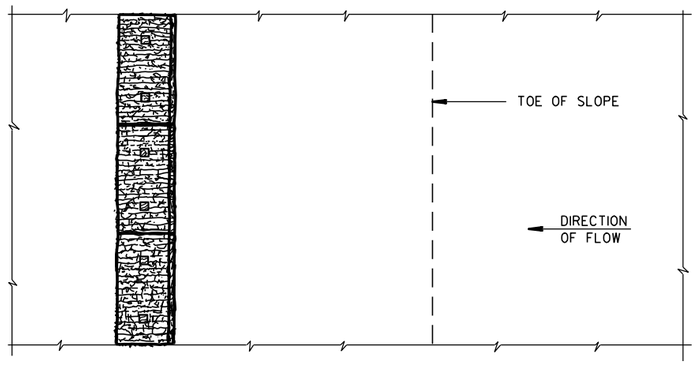
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

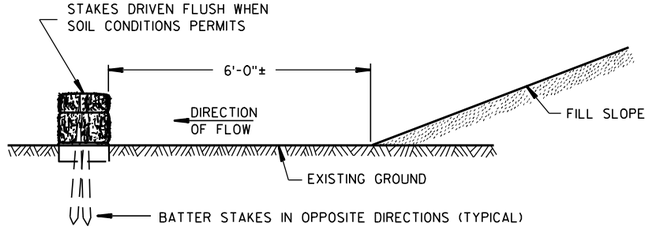


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

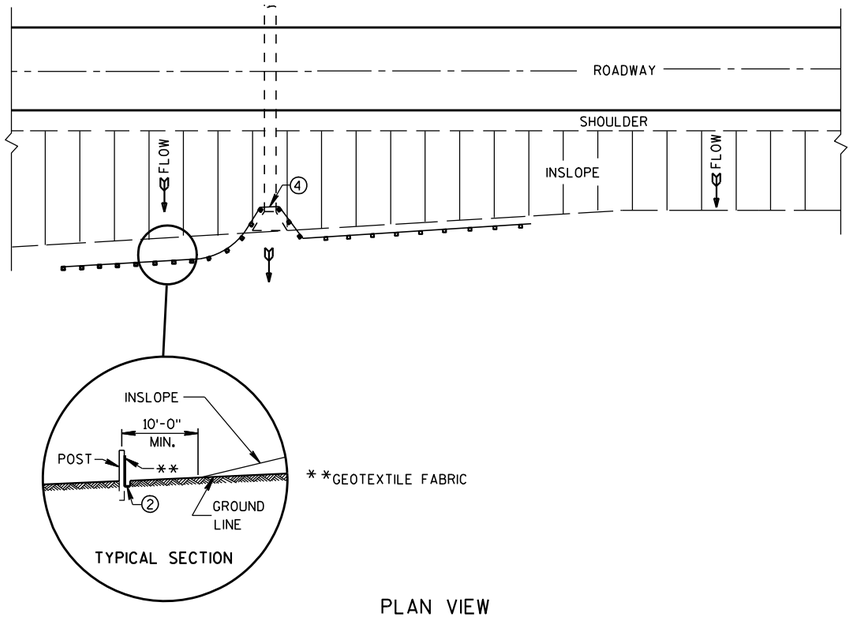
APPROVED

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

FHWA

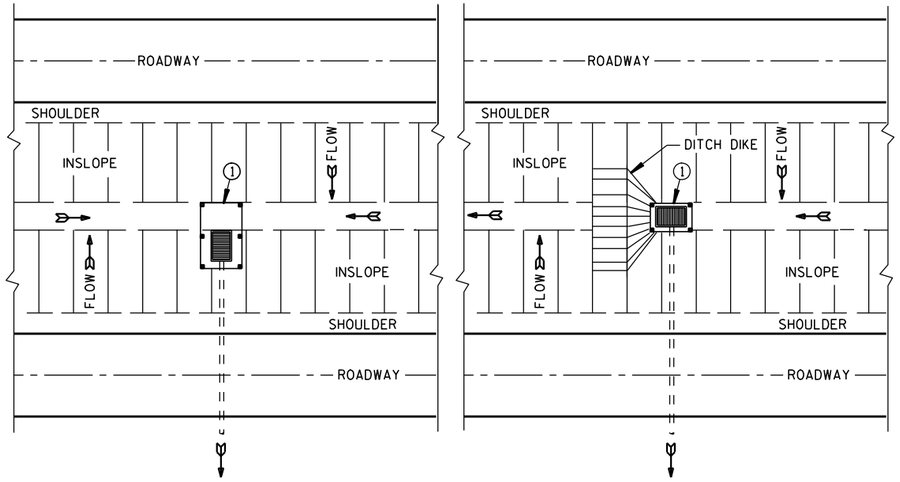
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

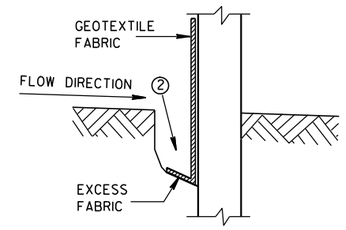
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

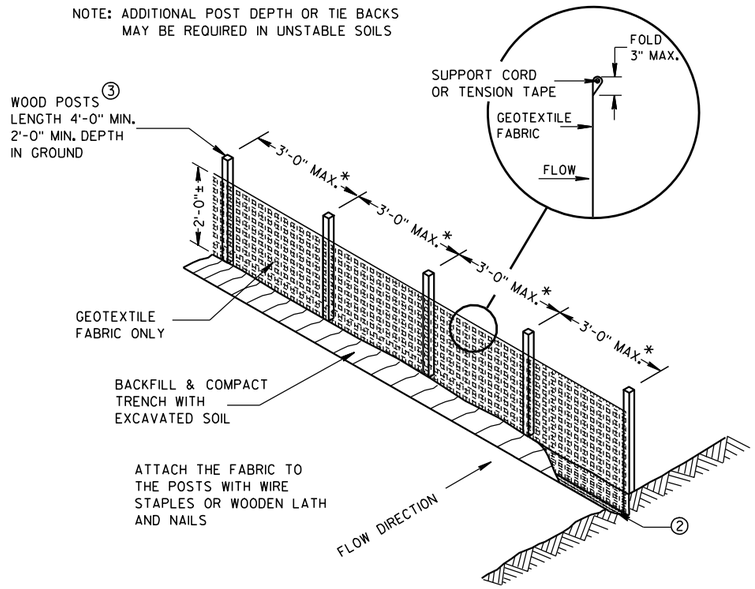
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

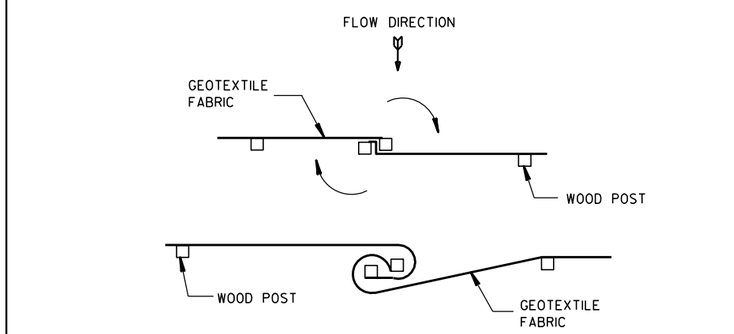
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



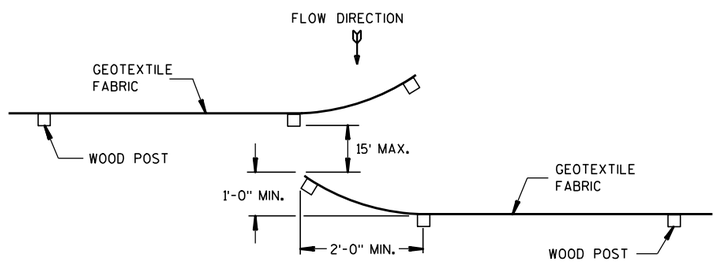
TRENCH DETAIL



SILT FENCE

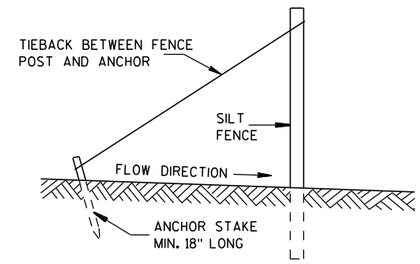


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 9-6

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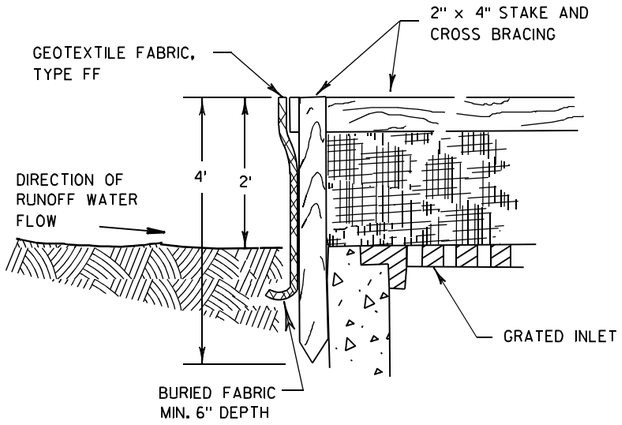
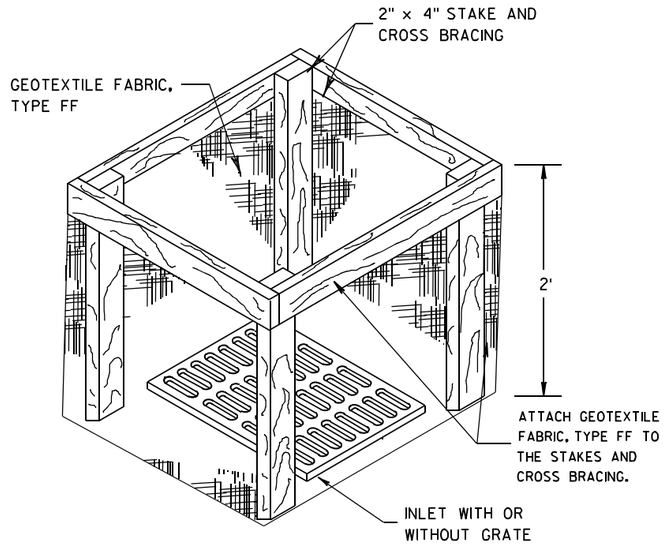
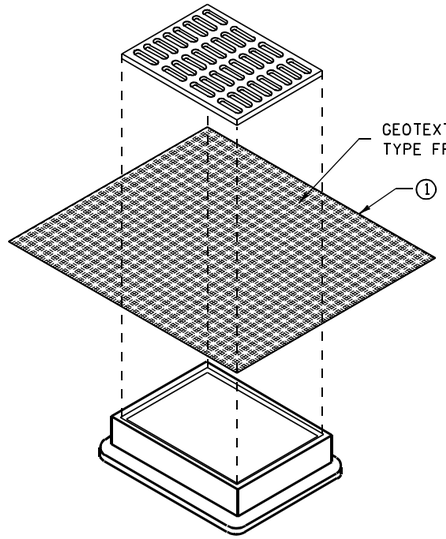
S.D.D. 8 E 9-6



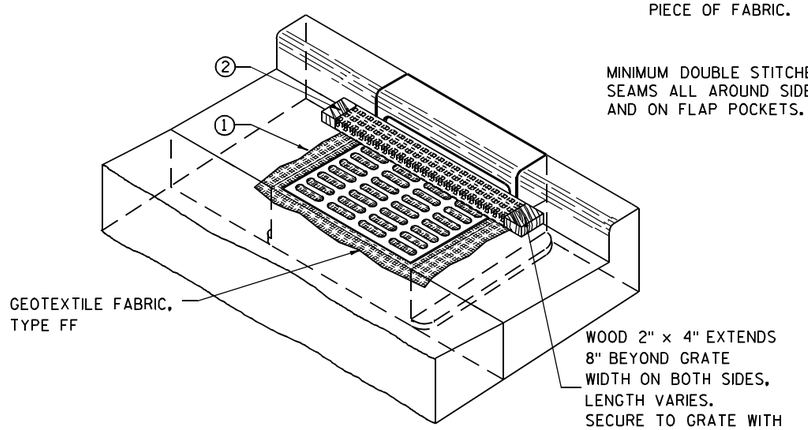


INLET PROTECTION, TYPE A

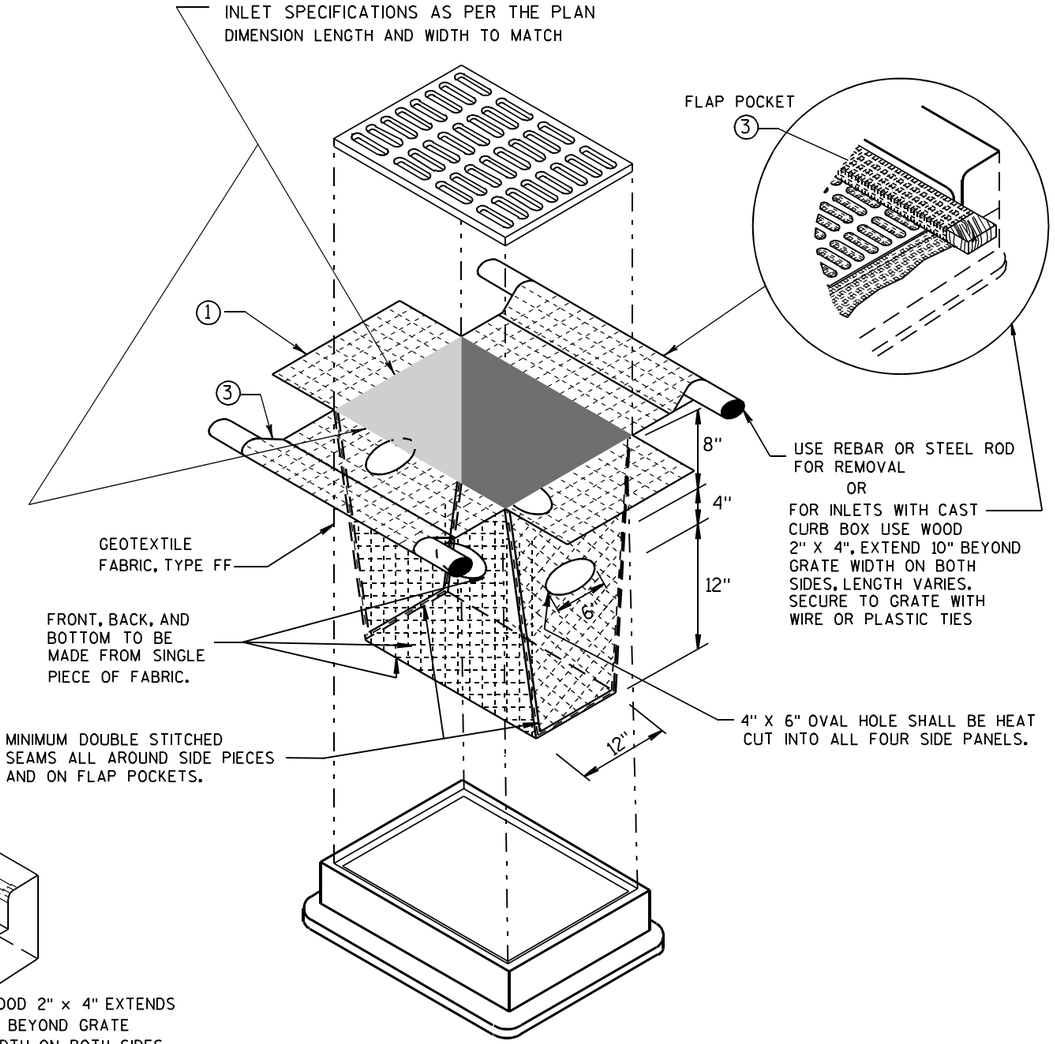


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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

METAL APRON ENDWALLS

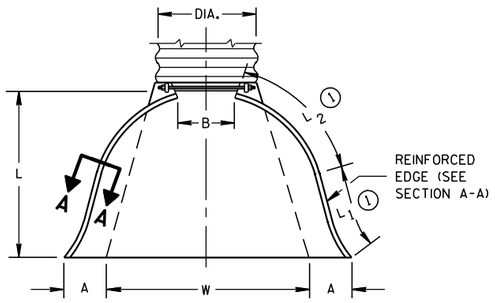
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

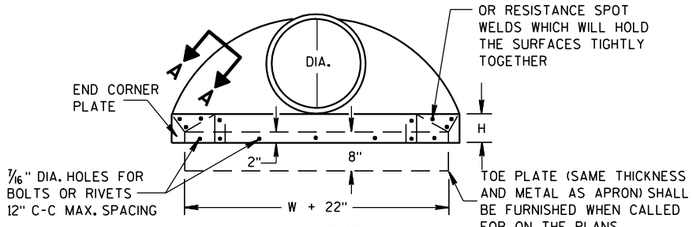
REINFORCED CONCRETE APRON ENDWALLS

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

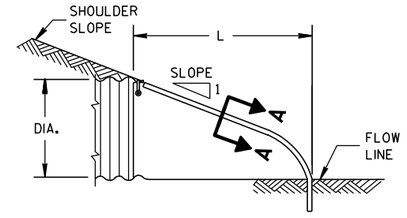
* MINIMUM
** MAXIMUM



PLAN VIEW

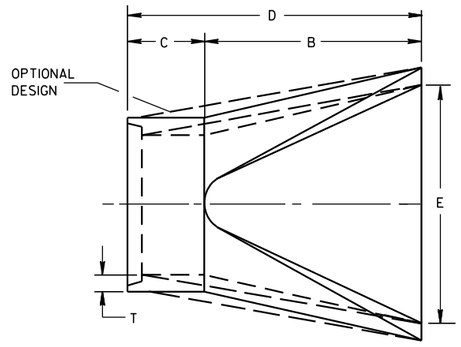


END VIEW

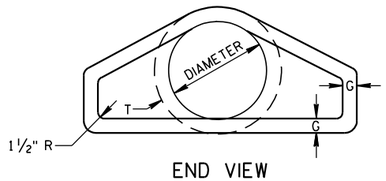


SIDE ELEVATION

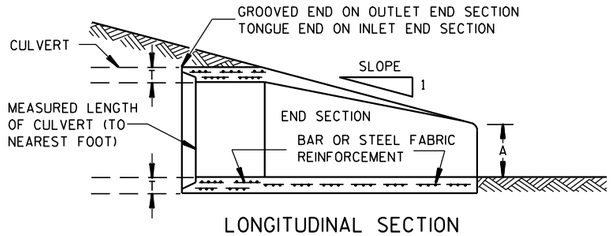
METAL ENDWALLS



PLAN

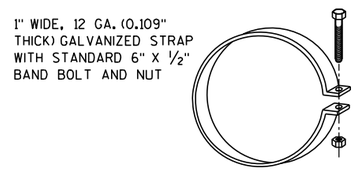


END VIEW



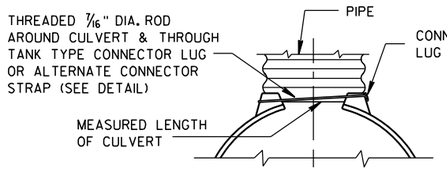
LONGITUDINAL SECTION

CONCRETE ENDWALLS

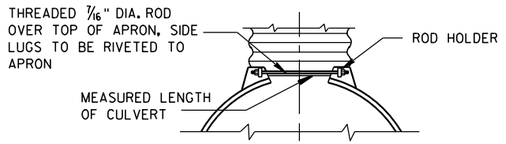


ALTERNATE FOR TYPE 1 CONNECTION

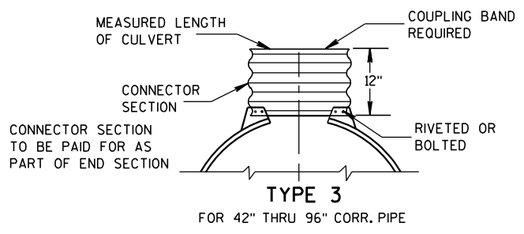
END SECTION CONNECTOR STRAP



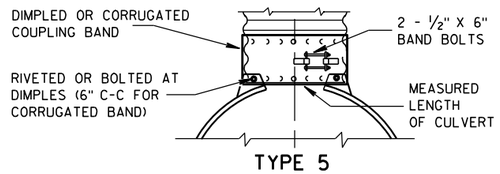
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

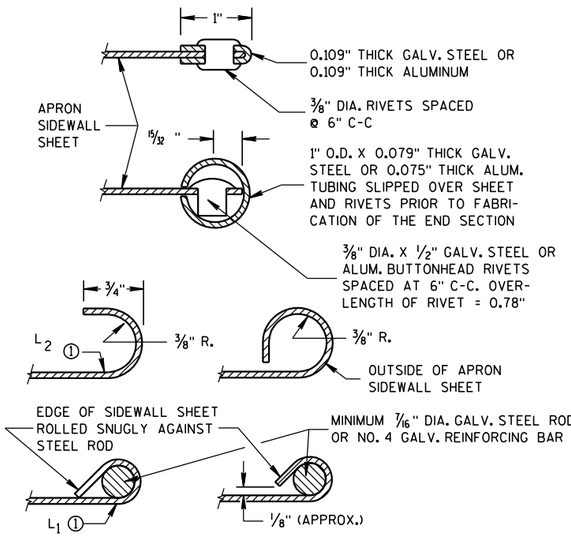
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

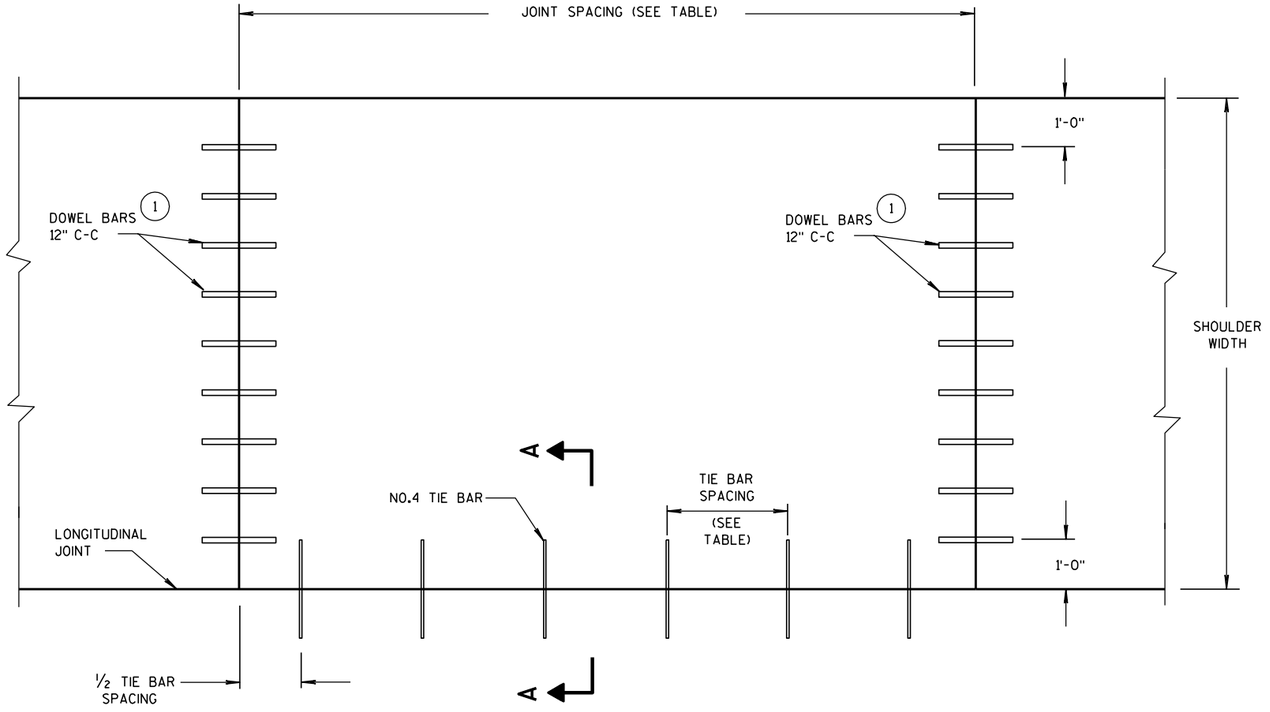
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 F 1-11



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

PAVEMENT TYPE OF TRAFFIC LANES	TIE BAR SPACING	SHOULDER JOINT SPACING
NON-REINFORCED	30"	MATCH JOINT SPACING OF ADJACENT TRAFFIC LANE
CONTINUOUSLY REINFORCED	30"	15' FOR 6' TO 10' WIDE SHOULDERS
CONTINUOUSLY REINFORCED	36"	12' FOR 3' WIDE SHOULDERS

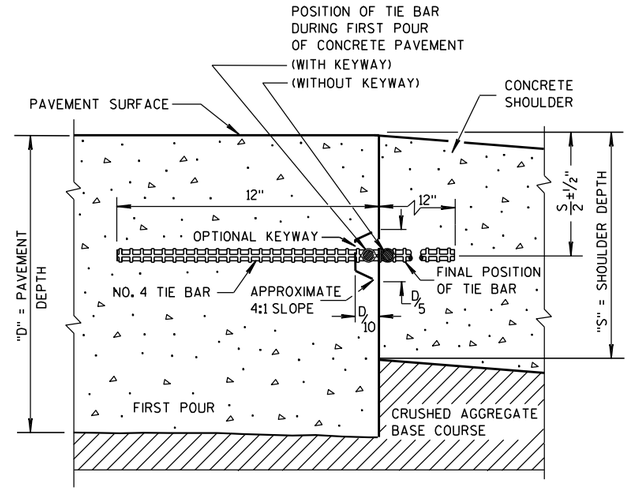
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

(1) **PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE**

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

FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

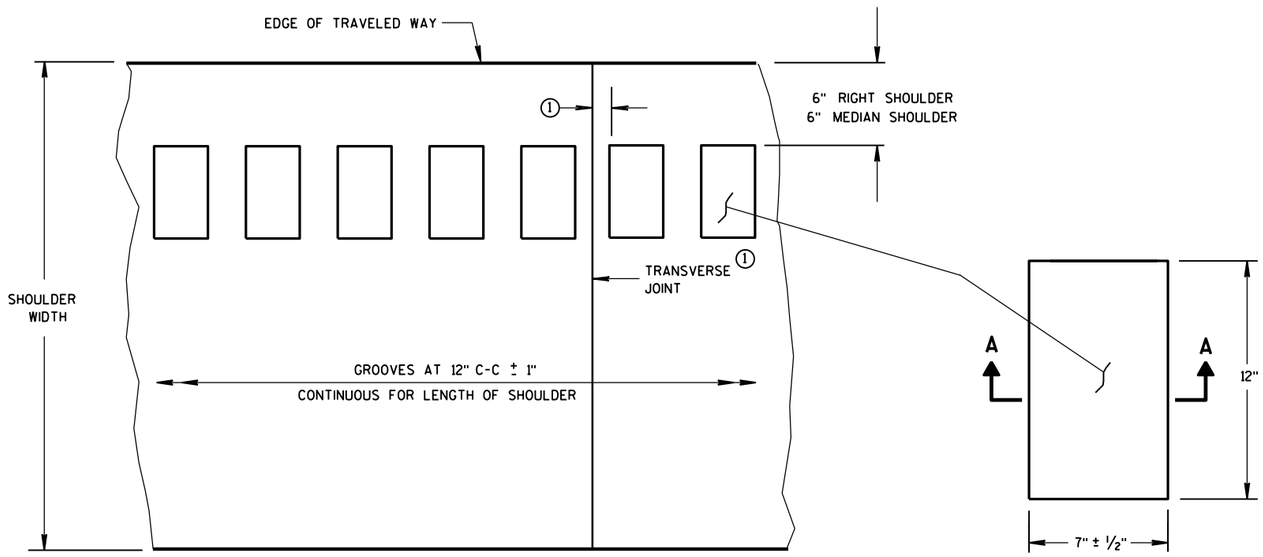
CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/15/2011 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & D — ENGINEER
FHWA

6

S.D.D. 13 A 3-5



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

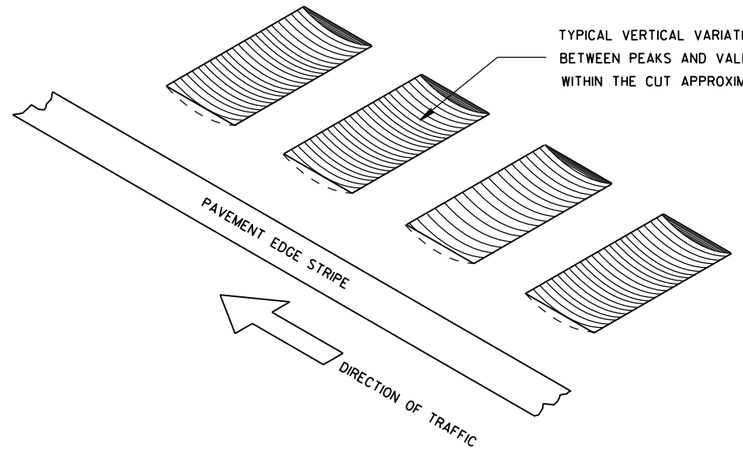
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

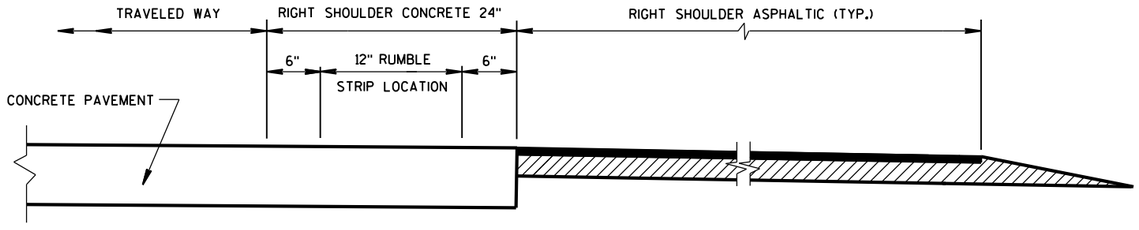
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

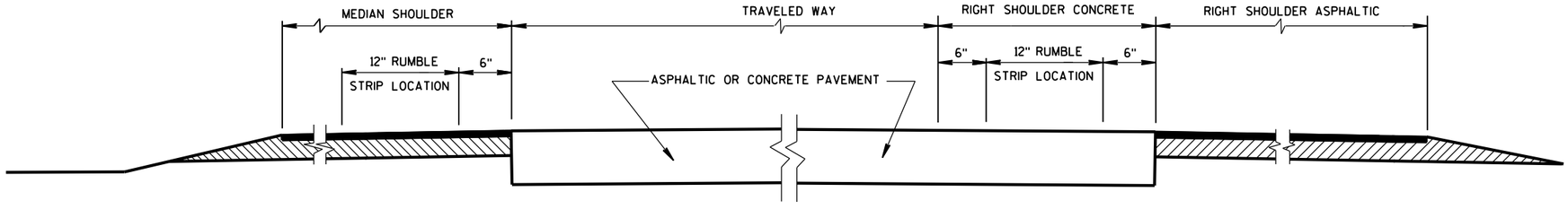
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



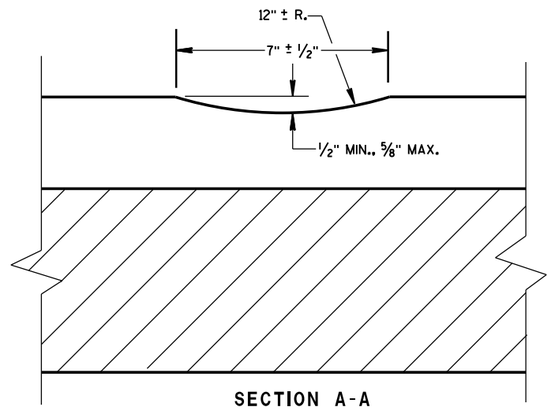
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

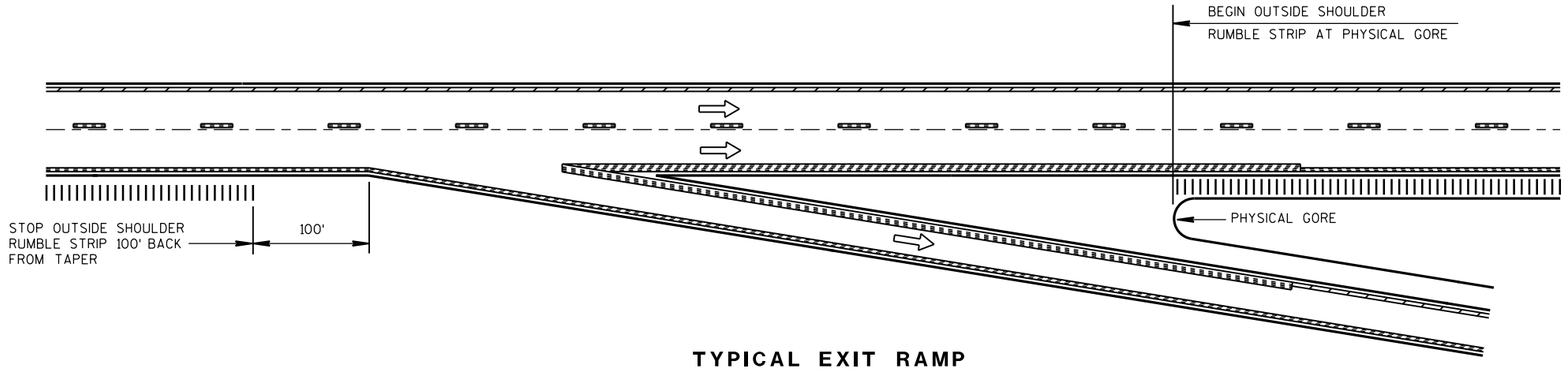
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 A 5-5a

6

S.D.D. 13 A 5-5a



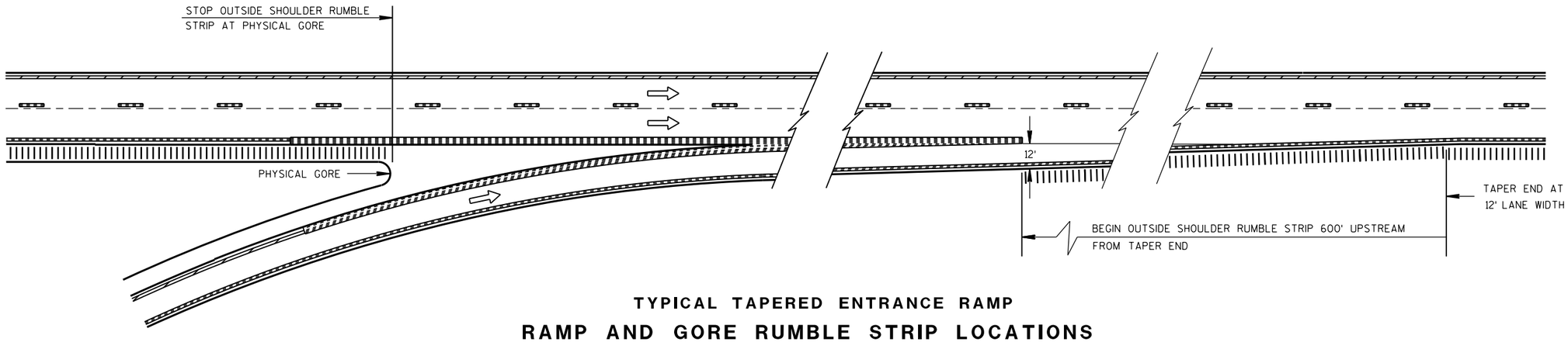
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

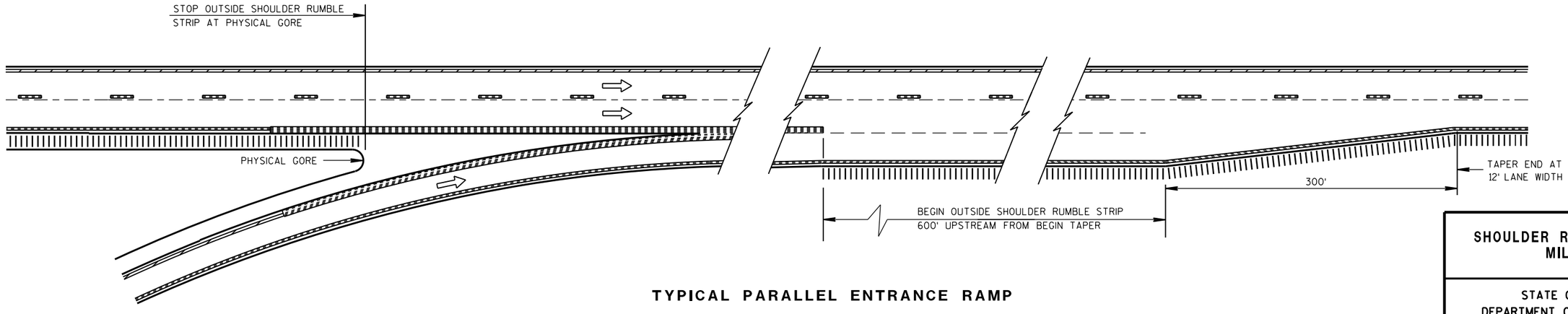
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

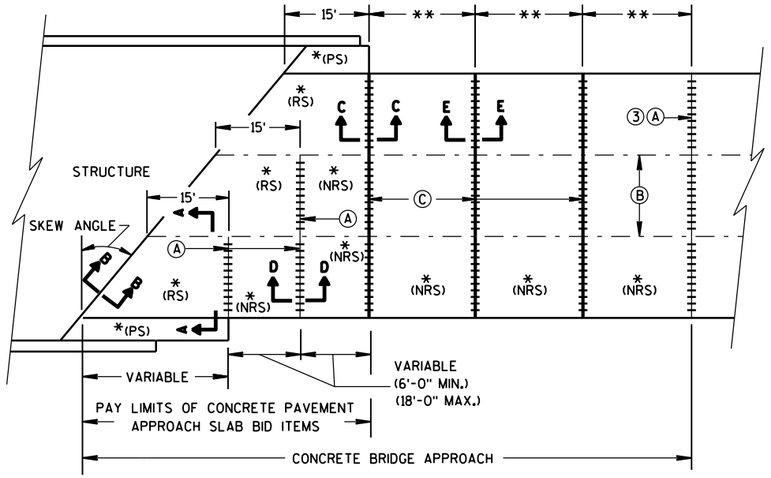
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

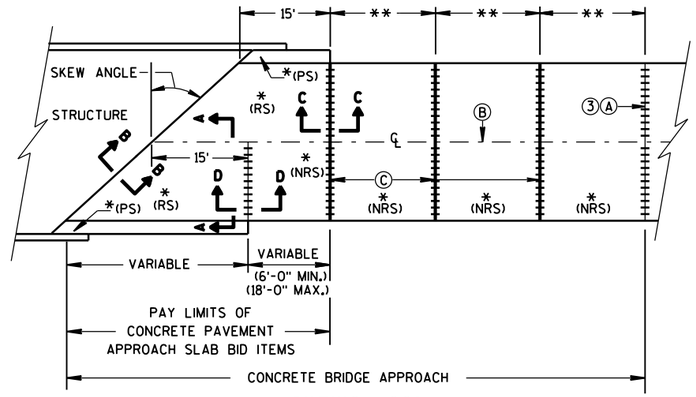
APPROVED
12/17/2012 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS ENGINEER
FHWA

6

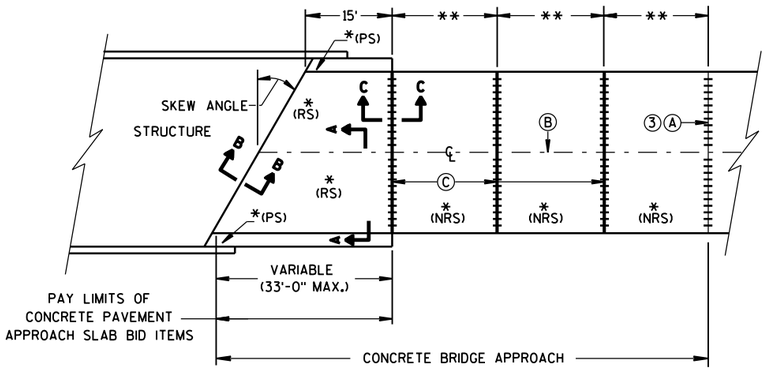
S.D.D. 13 A 5-5b



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



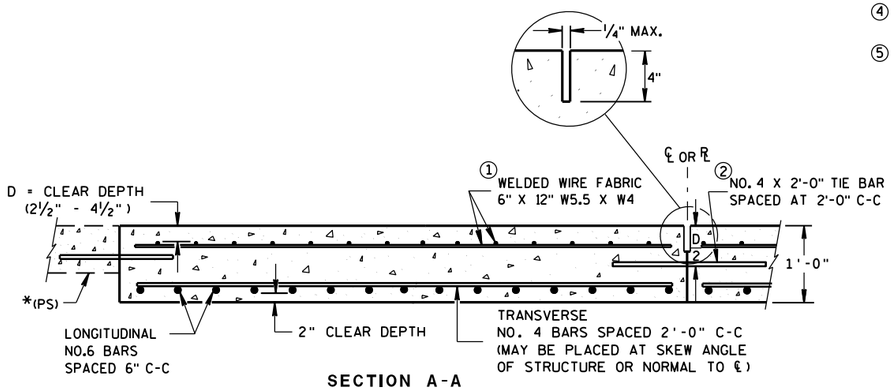
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

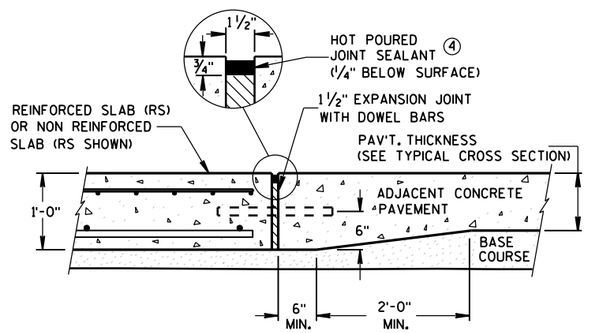
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

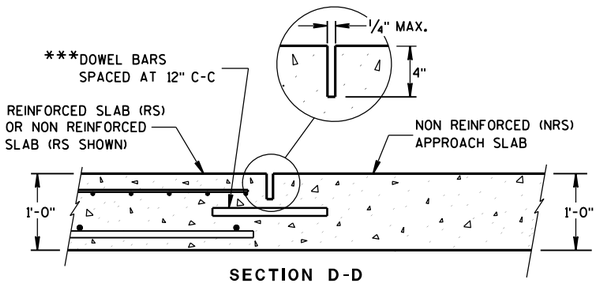
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) STANDARD LONGITUDINAL JOINT AND TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

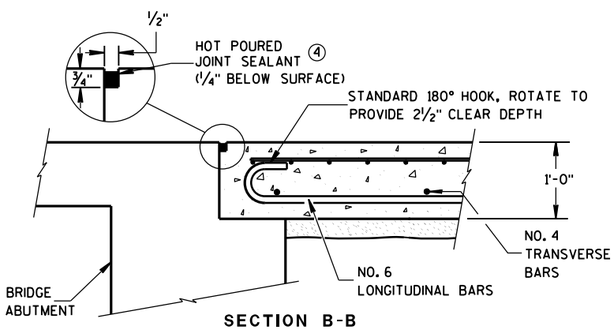
(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

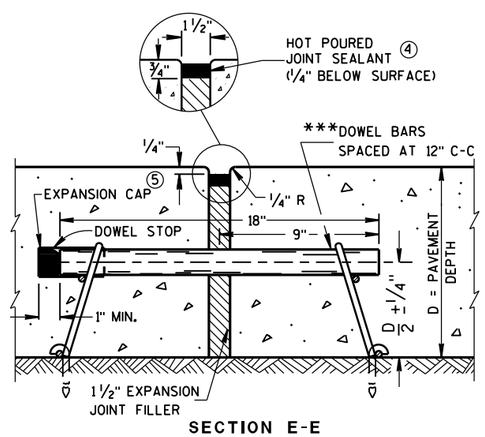
(3) DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.

(4) USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

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



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION E-E
EXPANSION JOINT

CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
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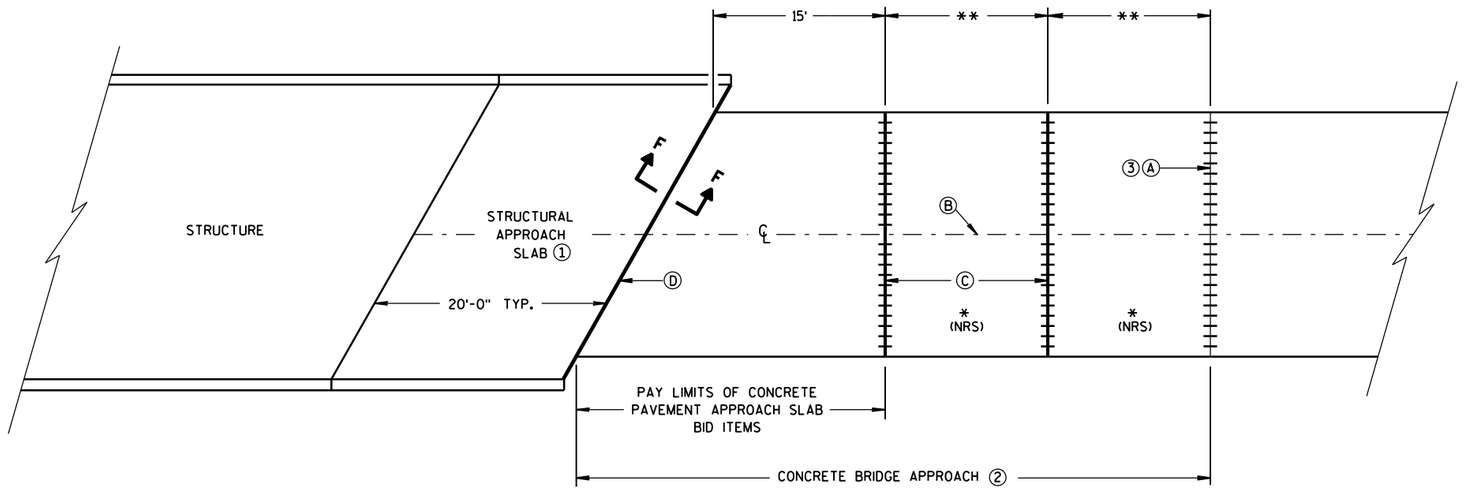


BRIDGE APPROACHES

GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE BRIDGE APPROACH.

① CONFORM TO APPLICABLE BRIDGE MANUAL STANDARD DRAWINGS FOR *STRUCTURAL APPROACH SLABS* (SEE CHAPTER 12 - ABUTMENTS).

② CONFORM TO SHEET (a) OF THIS SET FOR *CONCRETE BRIDGE APPROACH* DETAILS, WITH ONE EXCEPTION — WHEN CONSTRUCTING A *CONCRETE BRIDGE APPROACH* NEXT TO A *STRUCTURAL APPROACH SLAB*, AS SHOWN IN THE DETAIL DRAWING, THE *CONCRETE BRIDGE APPROACH* WILL ONLY HAVE TWO EXPANSION JOINTS; THE THIRD EXPANSION JOINT IS AT THE END OF THE *STRUCTURAL APPROACH SLAB*.

③ DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.

*(NRS) = NON-REINFORCED CONCRETE SLAB

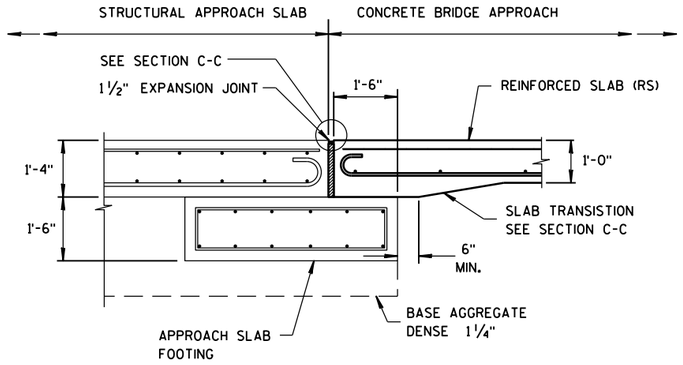
**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)

Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT AND TIE BARS.

Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)



SECTION F-F

FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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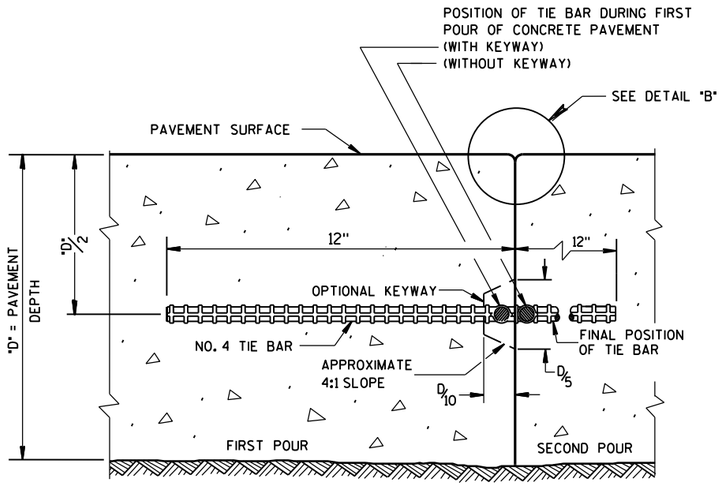
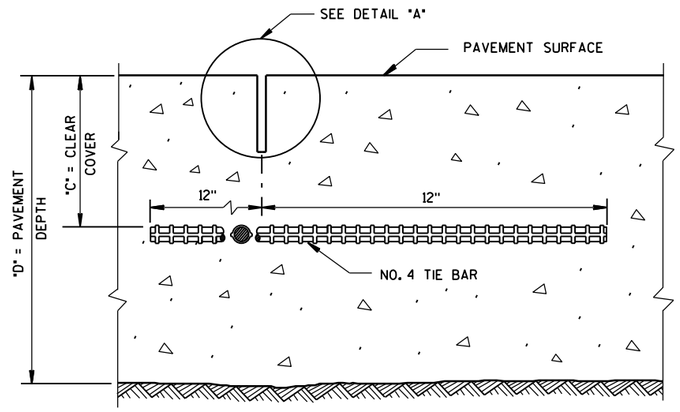


CONSTRUCTION JOINT



SAWED JOINT

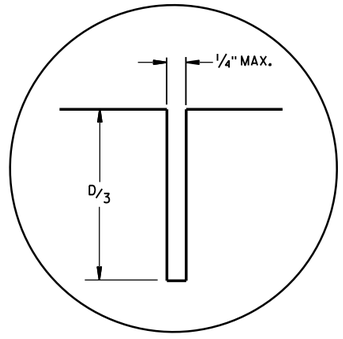
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

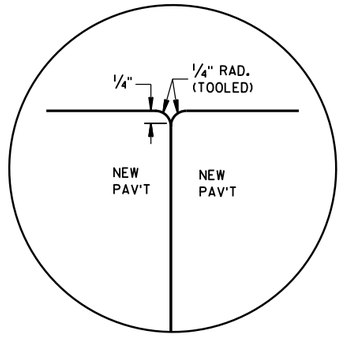
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

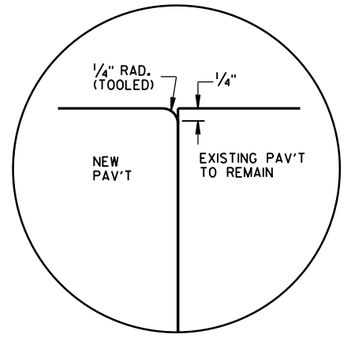
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



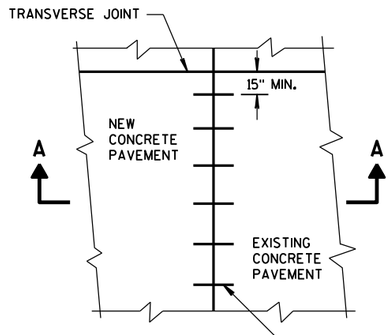
DETAIL "A"



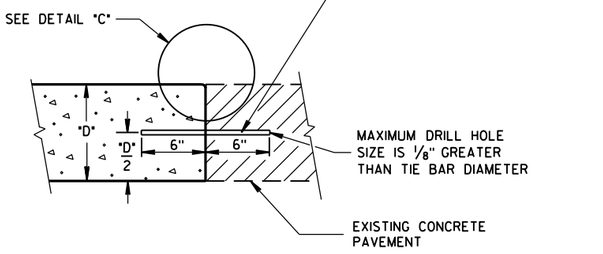
DETAIL "B"



DETAIL "C"



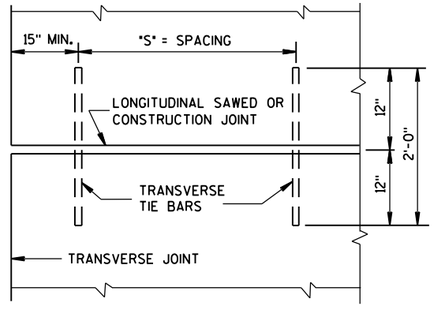
PLAN VIEW



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

TIE BAR TABLE

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/2014 DATE

/S/ Deb Bischoff
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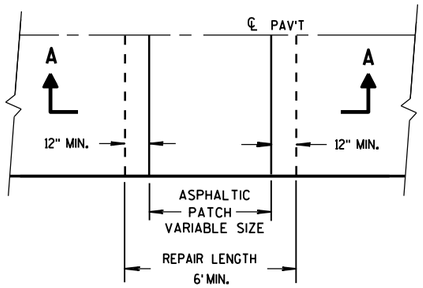
GENERAL NOTES

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

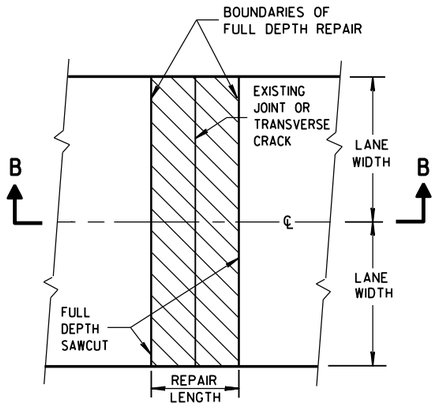
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

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

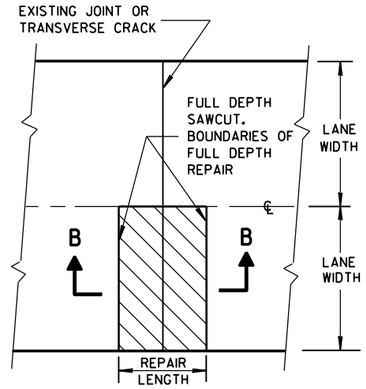
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



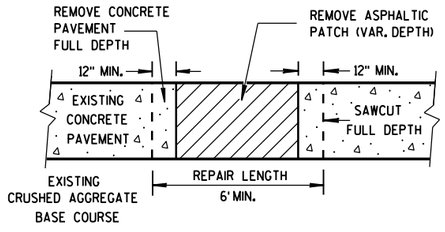
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

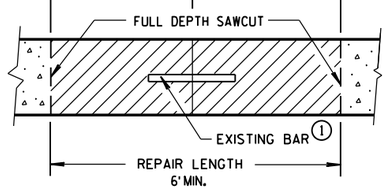
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL



SECTION B-B

CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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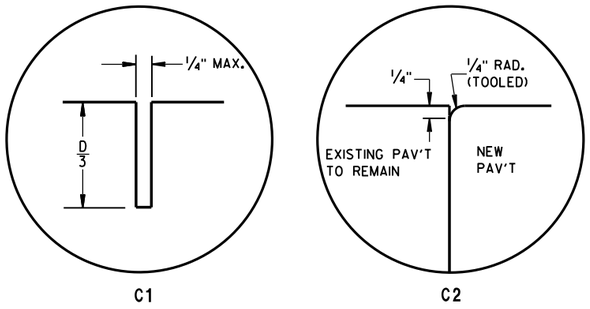
S.D.D. 13 C 9-11a



TRANSVERSE JOINTS

TIE BAR TABLE

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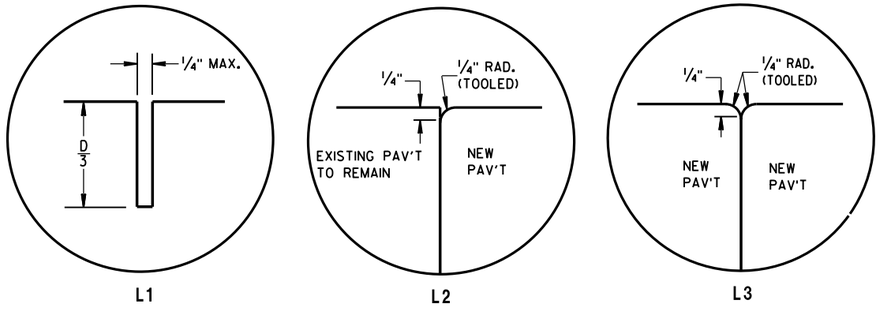
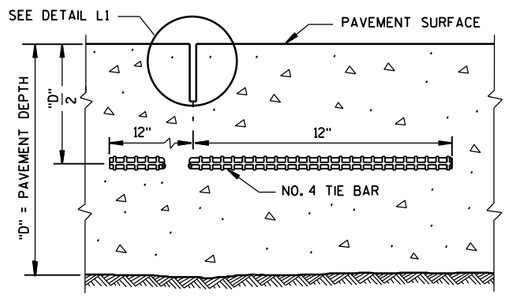


LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT

GENERAL NOTES

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

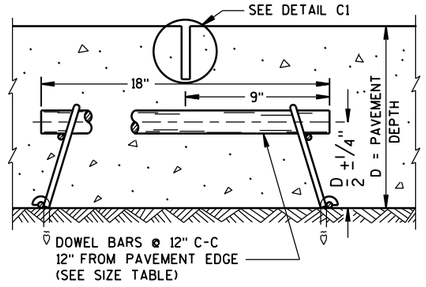
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

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

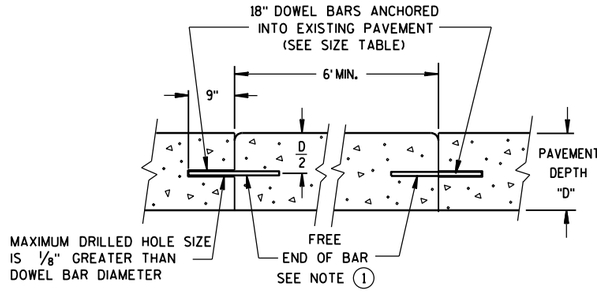
FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

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

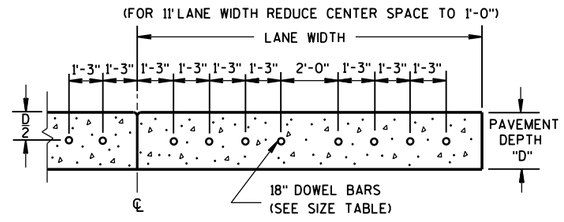


SECTION F-F

CONTRACTION JOINT



SECTION D-D

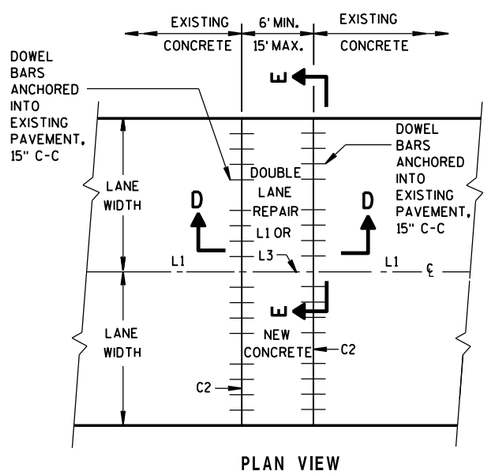


SECTION E-E

DRILLED DOWEL BAR CONSTRUCTION JOINT

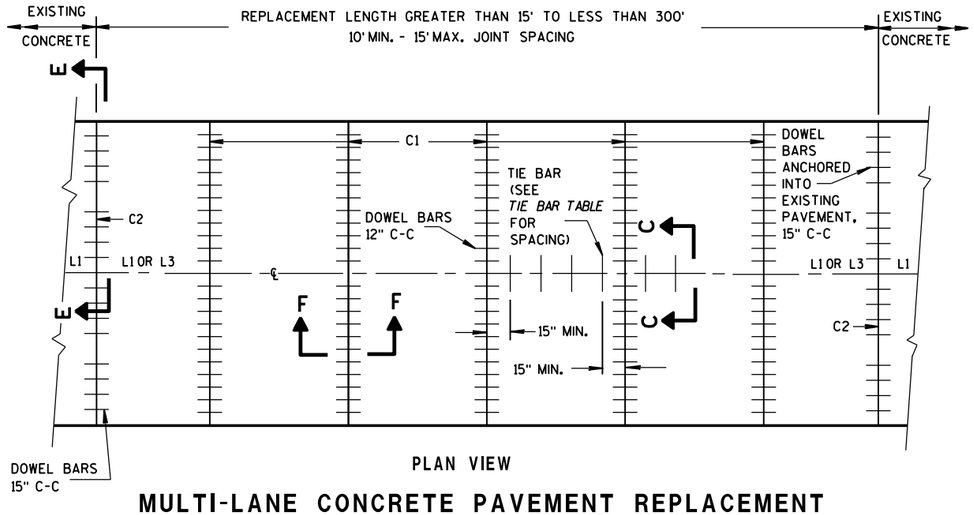
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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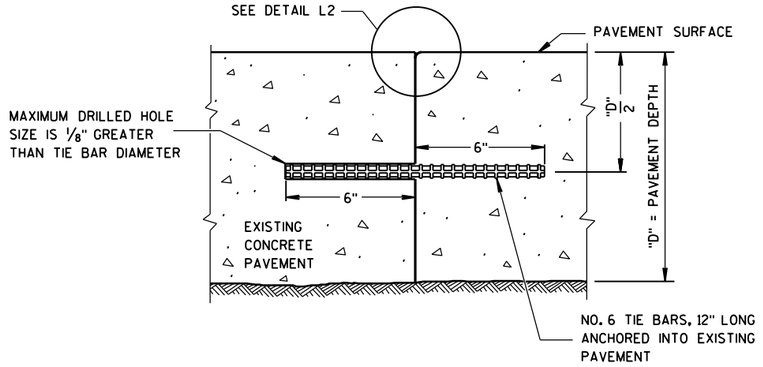


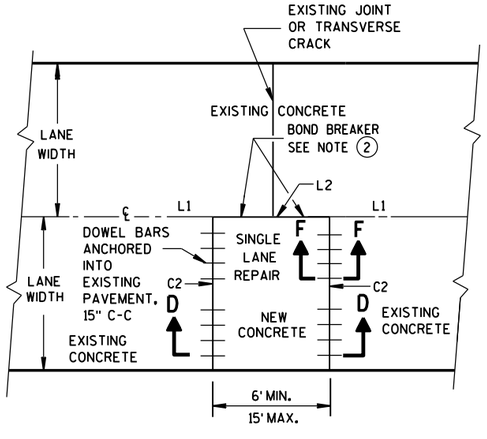
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

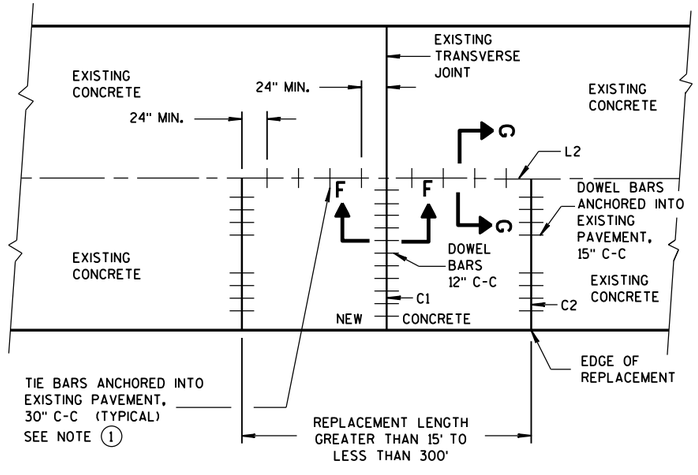
(1) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS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

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



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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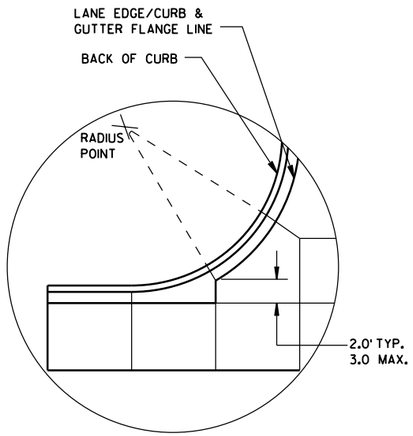
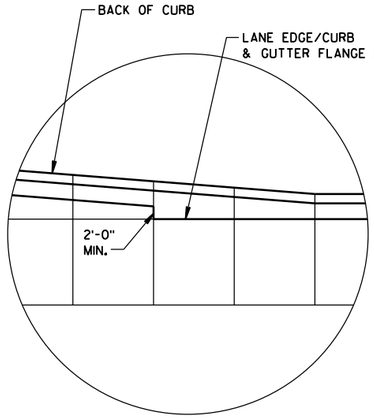
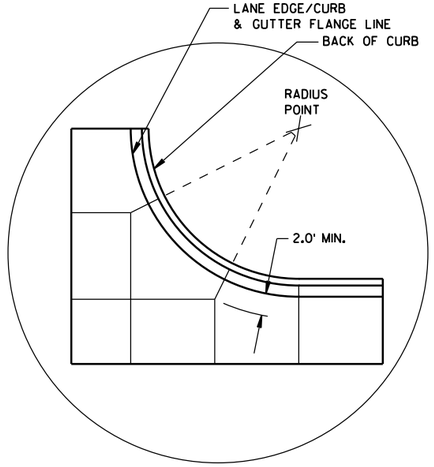


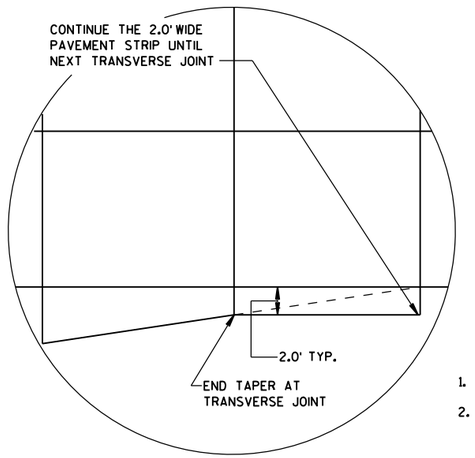
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

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

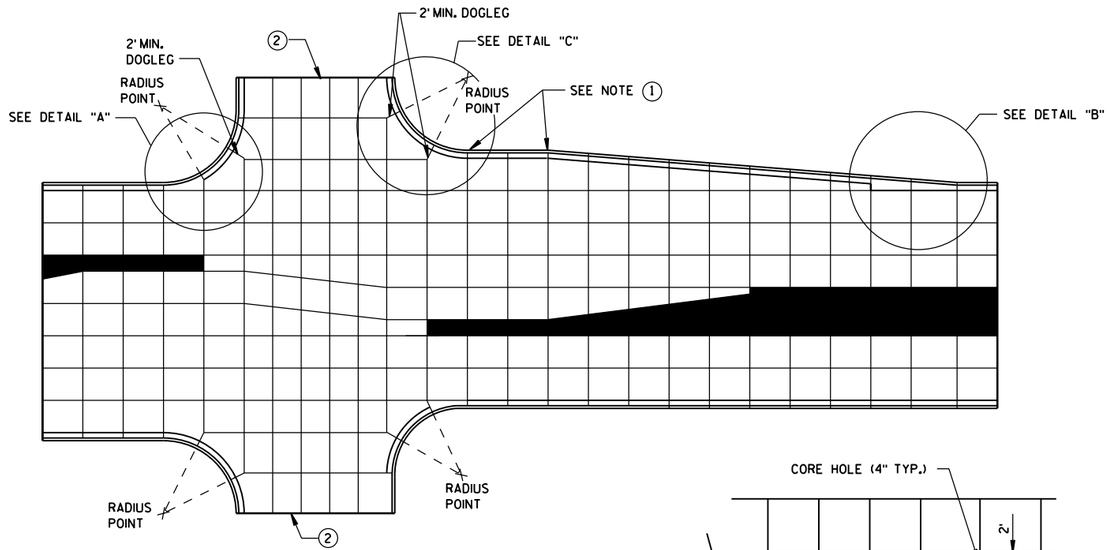
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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

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

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

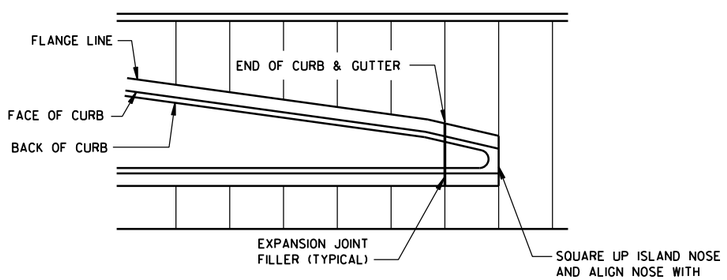


STANDARD INTERSECTION

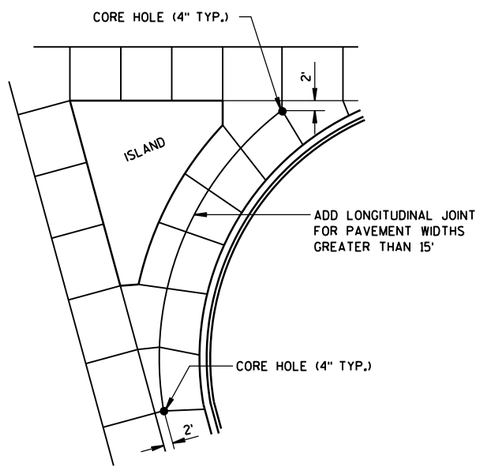
PAVEMENT DEPTH AND JOINT SPACING TABLE

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

SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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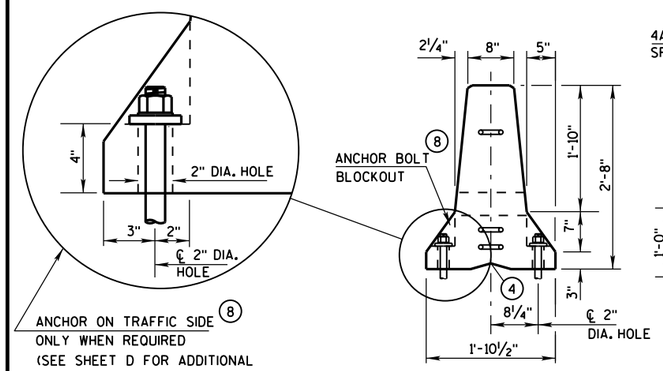
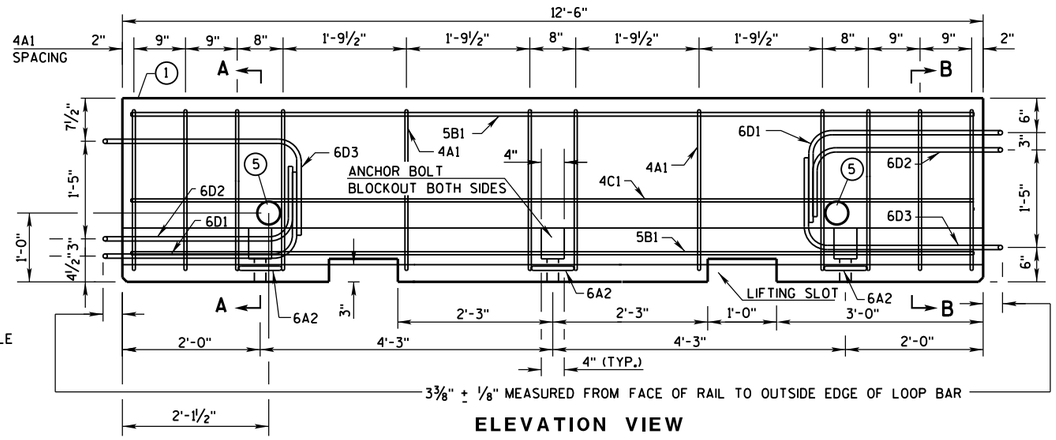
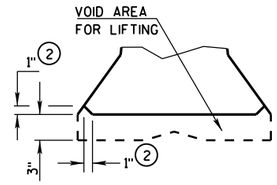


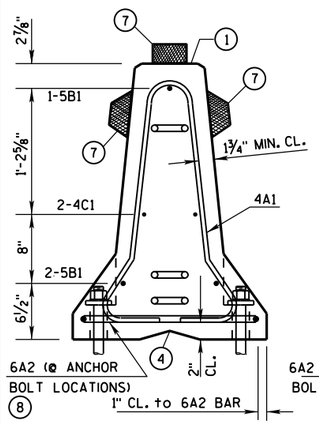
END VIEW



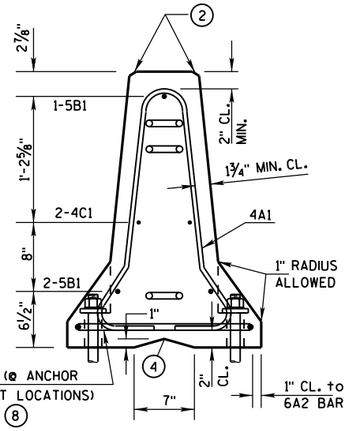
ELEVATION VIEW



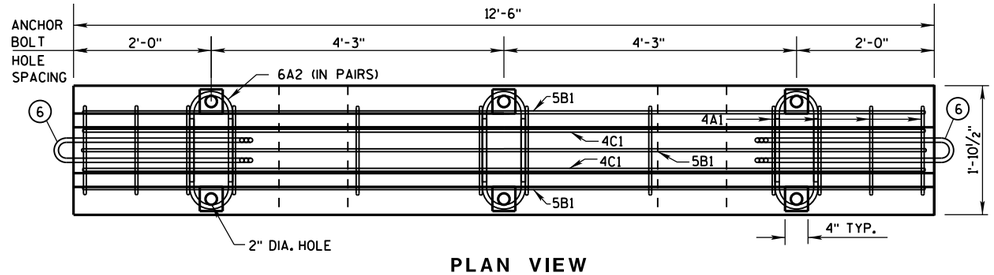
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)



PLAN VIEW

DETAILS OF BARRIER SECTION

GENERAL NOTES

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

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

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

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

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

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

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

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

(2) 1" CHAMFER TO PREVENT SPALLING.

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

(4) "V" NOTCH IS OPTIONAL.

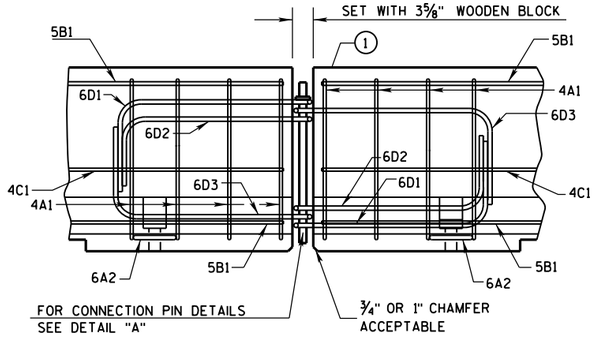
(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

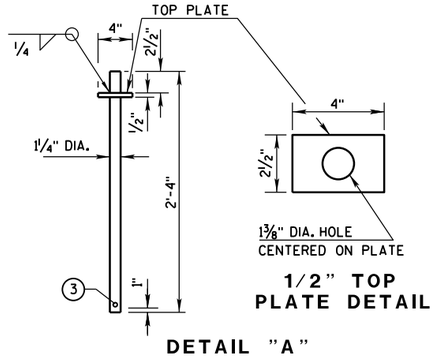
(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED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

(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

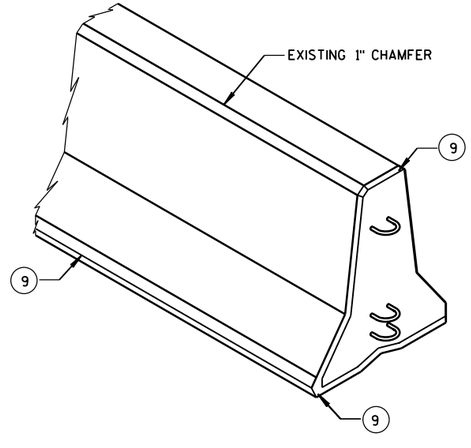


DETAILS OF BARRIER CONNECTION



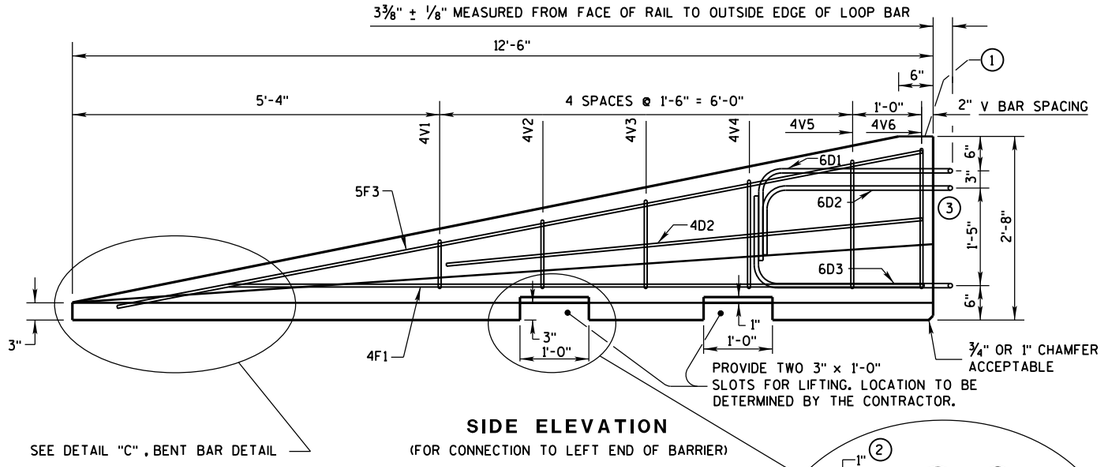
1/2" TOP
PLATE DETAIL

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

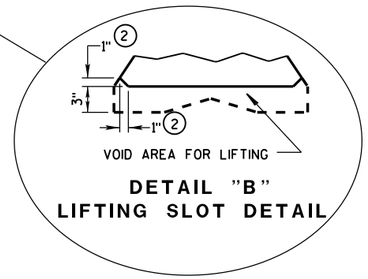


CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

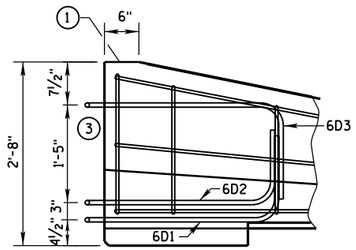
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



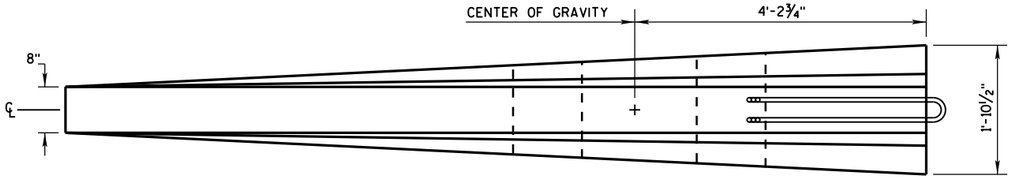
DETAIL "B"
LIFTING SLOT DETAIL



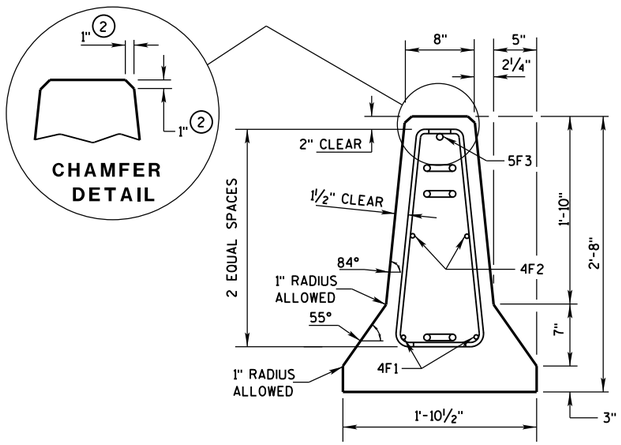
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

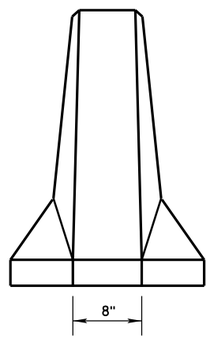
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



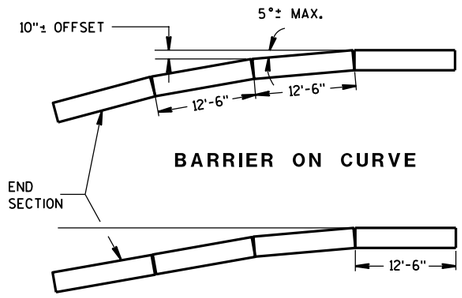
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

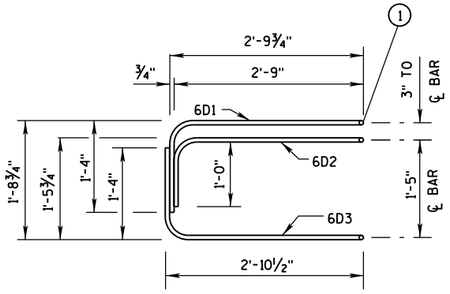
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

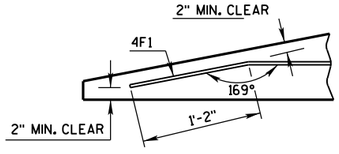
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

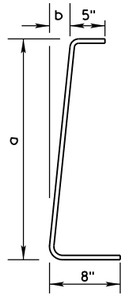
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

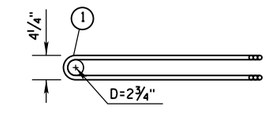
GENERAL NOTES

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

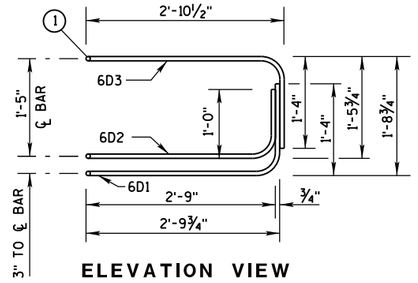
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

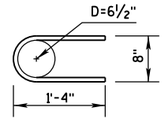
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



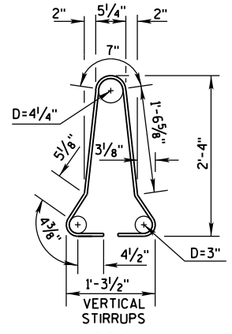
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2



4A1

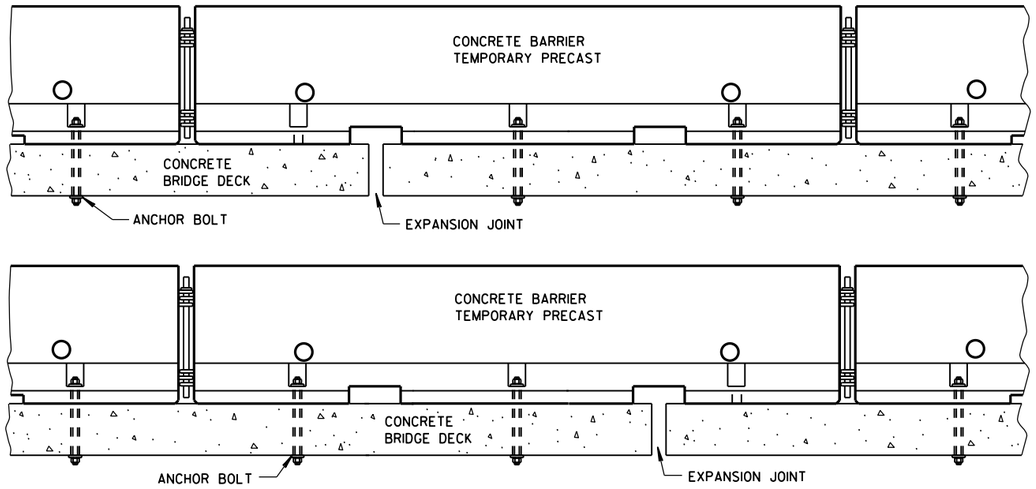
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

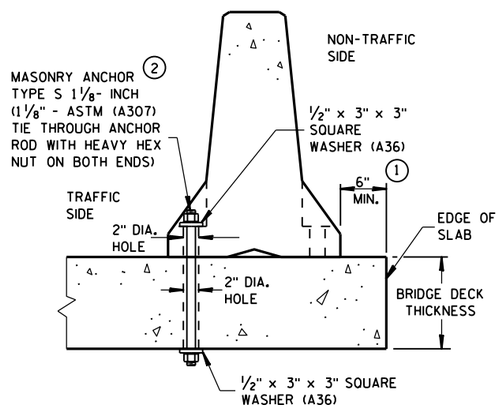
6

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



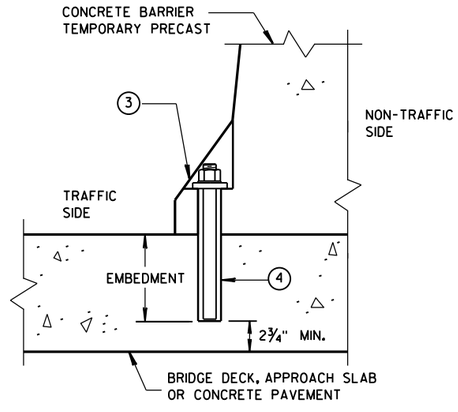
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT ②

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

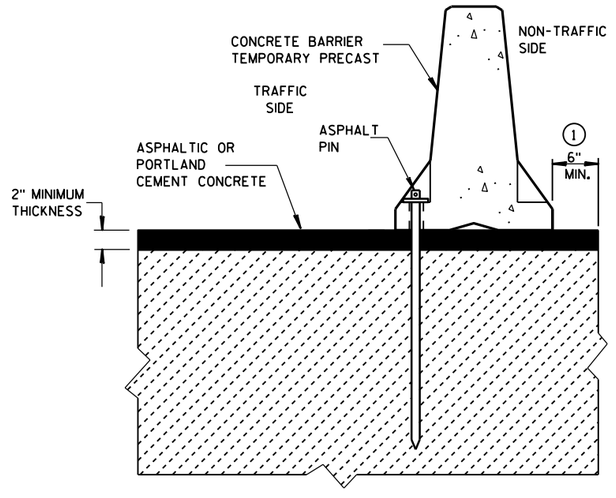
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

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

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

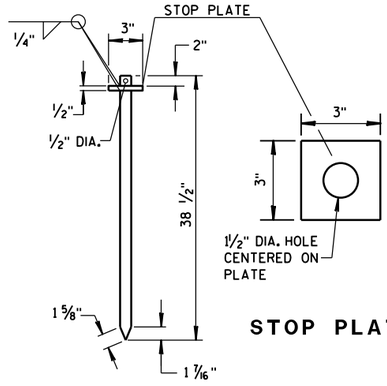
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

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



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

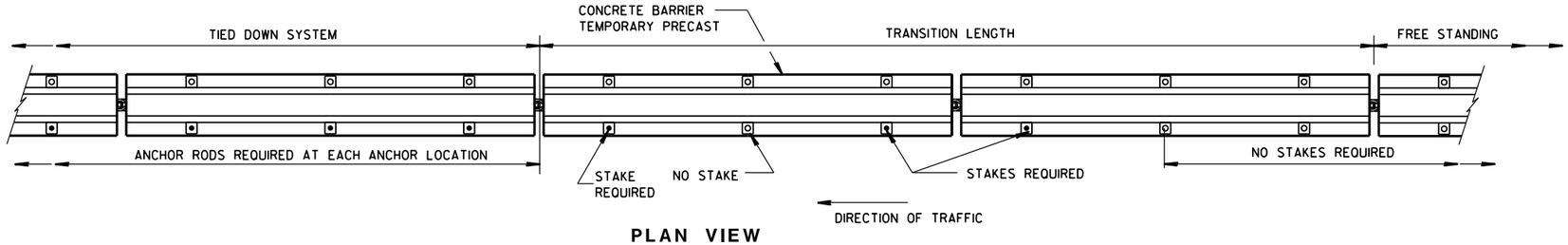
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

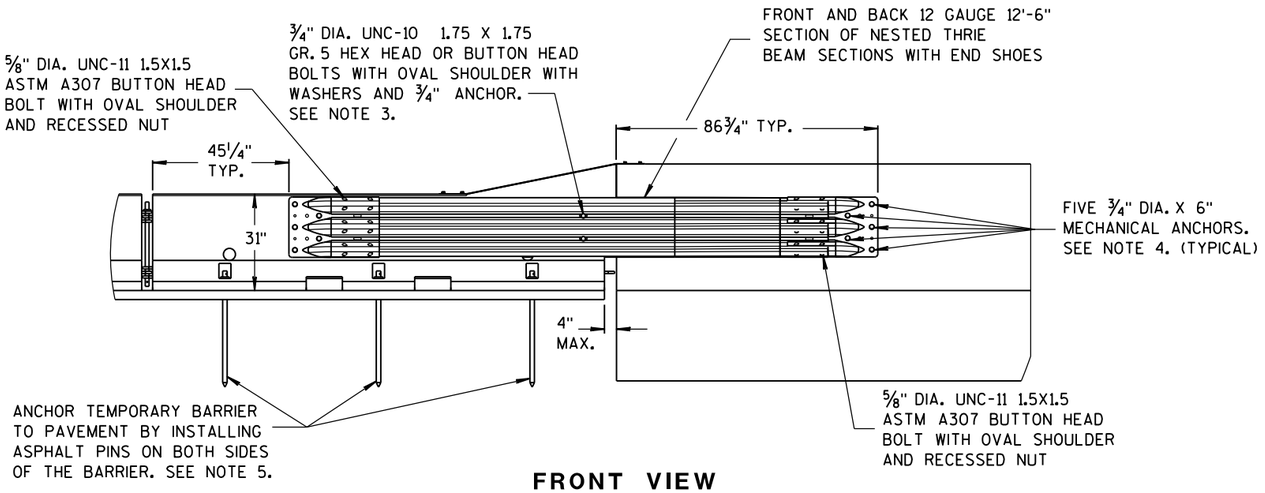
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

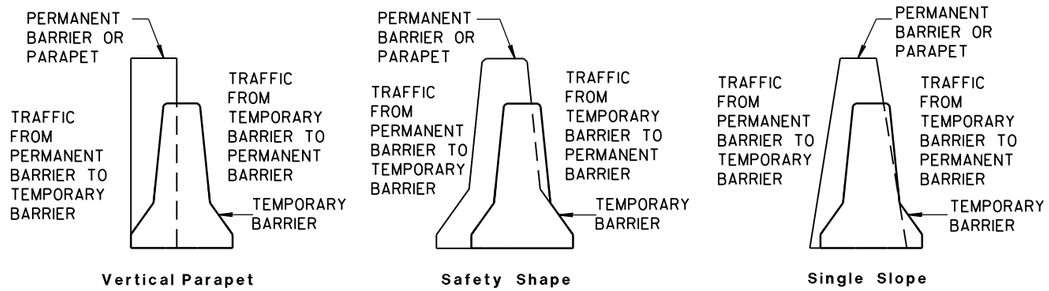
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



FRONT VIEW



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

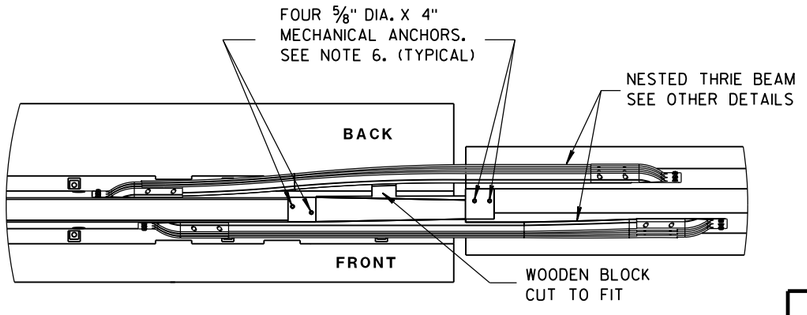
NOTES

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

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

BACK VIEW

FRONT VIEW



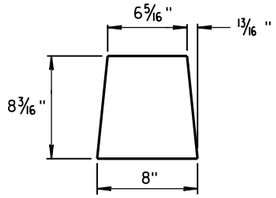
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

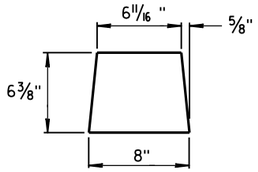
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

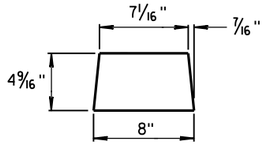
6
S.D.D. 14 B 7-14e



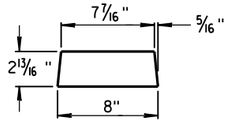
GUSSET 1



GUSSET 2

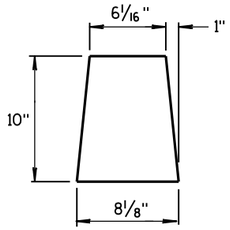


GUSSET 3

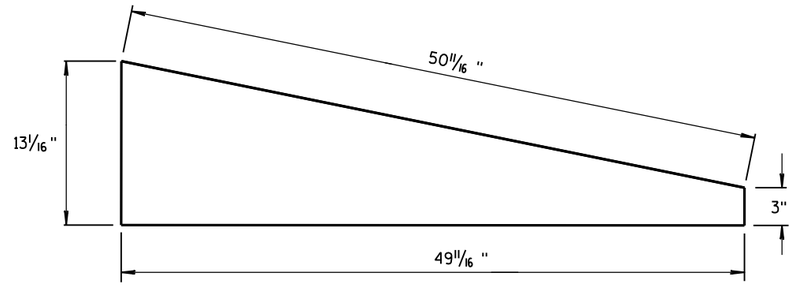


GUSSET 4

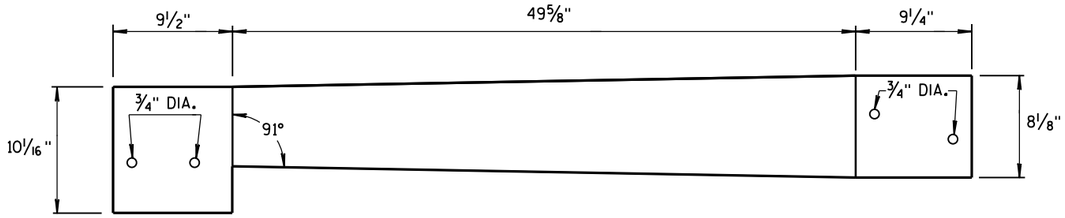
GUSSETS

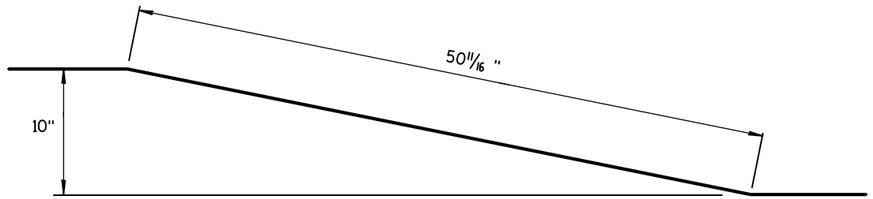


END PLATE



SIDE PLATE

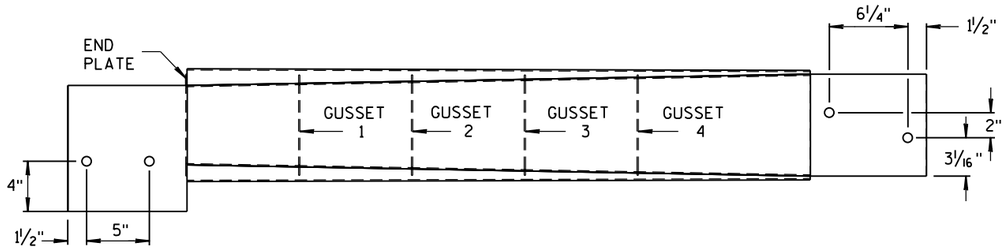


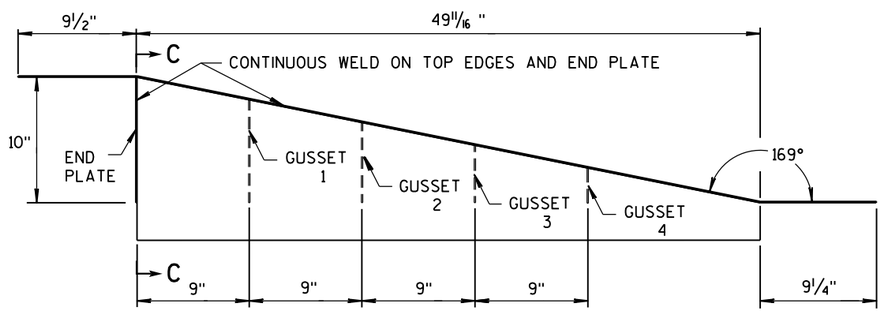


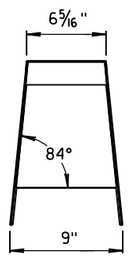
TOP PLATE

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

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







SECTION C-C

NOTES

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

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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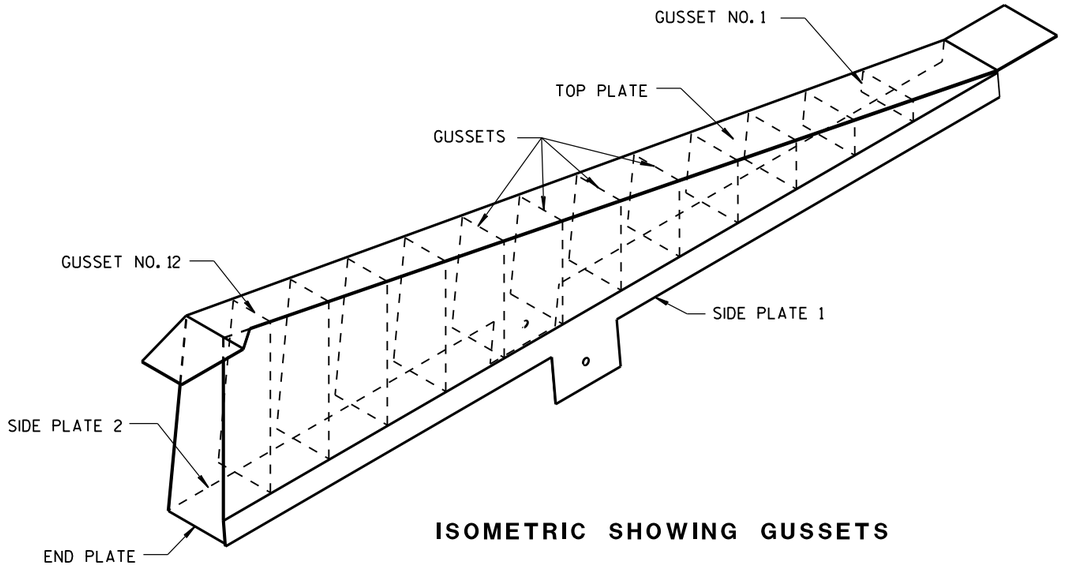
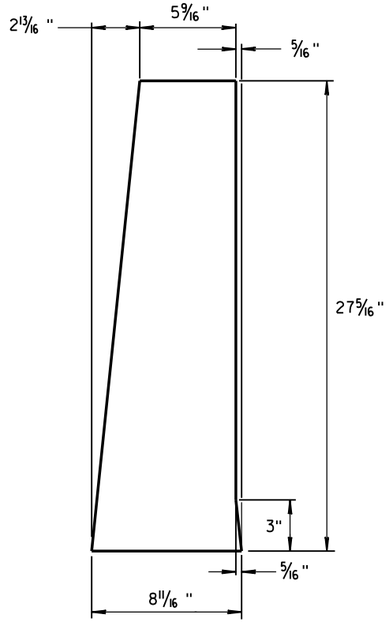
S.D.D. 14 B 7-14f

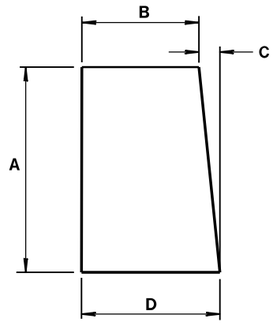


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



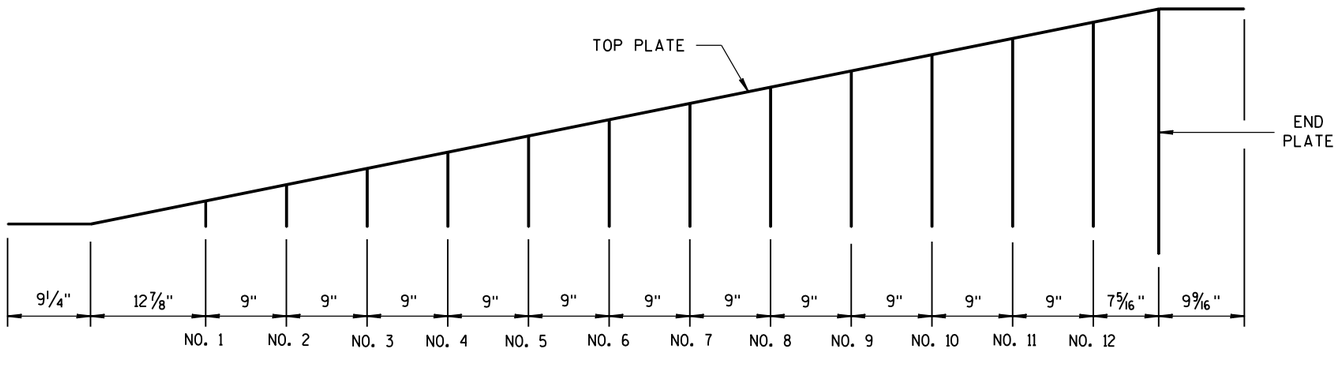
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

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

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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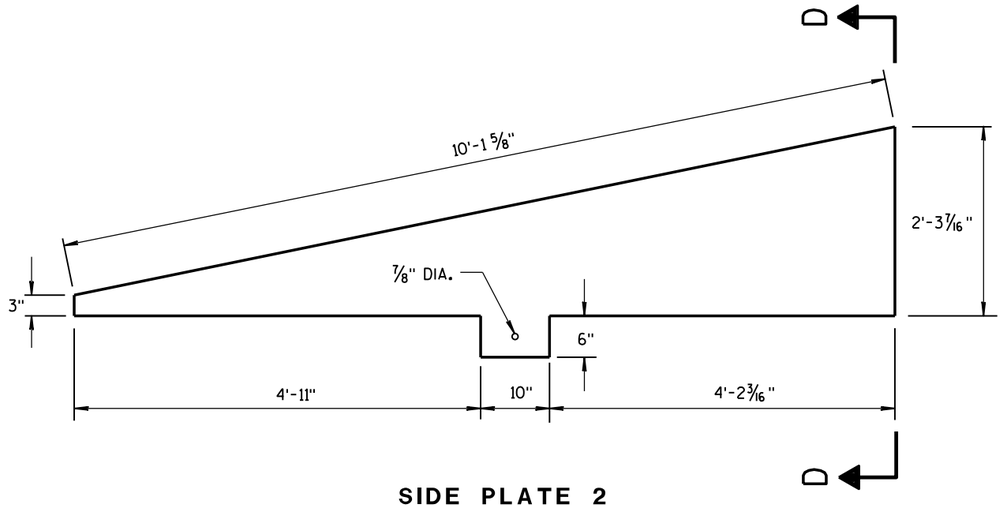
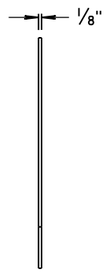
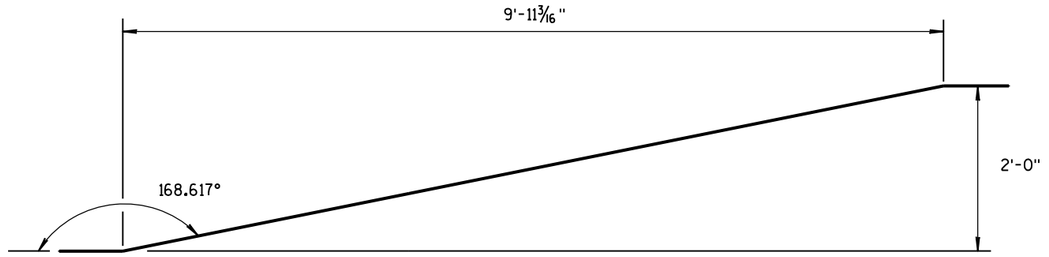


SIDE PLATE 2

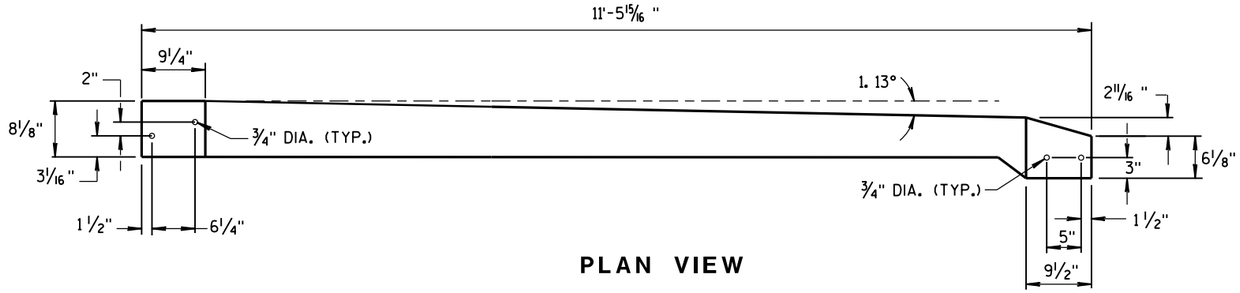


END VIEW



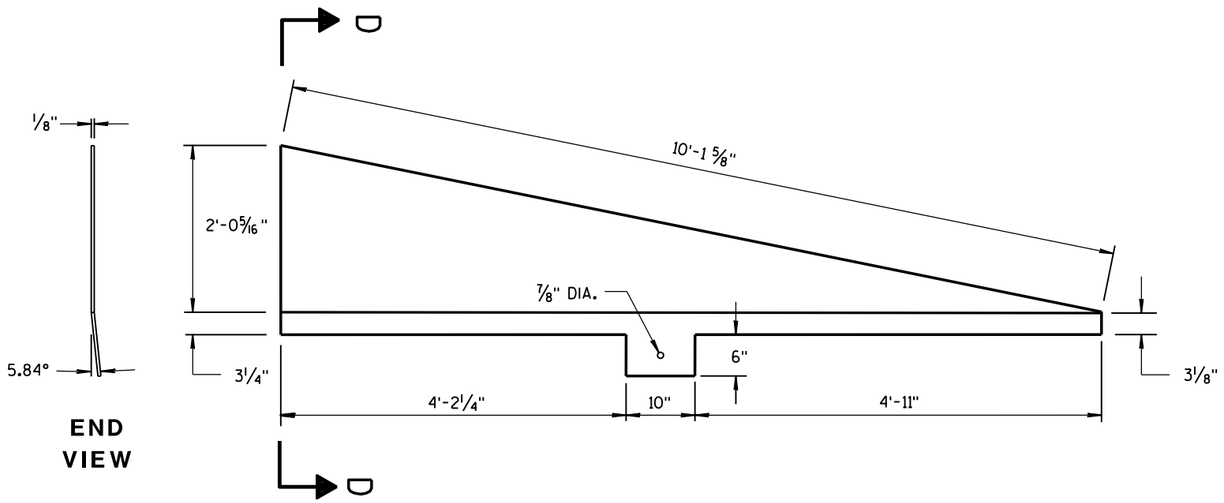
SIDE VIEW

TOP PLATE



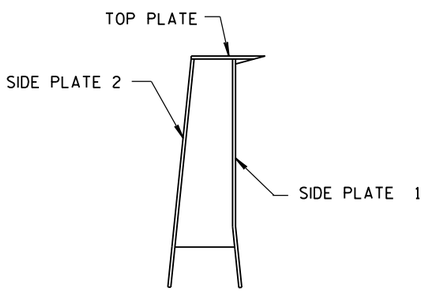
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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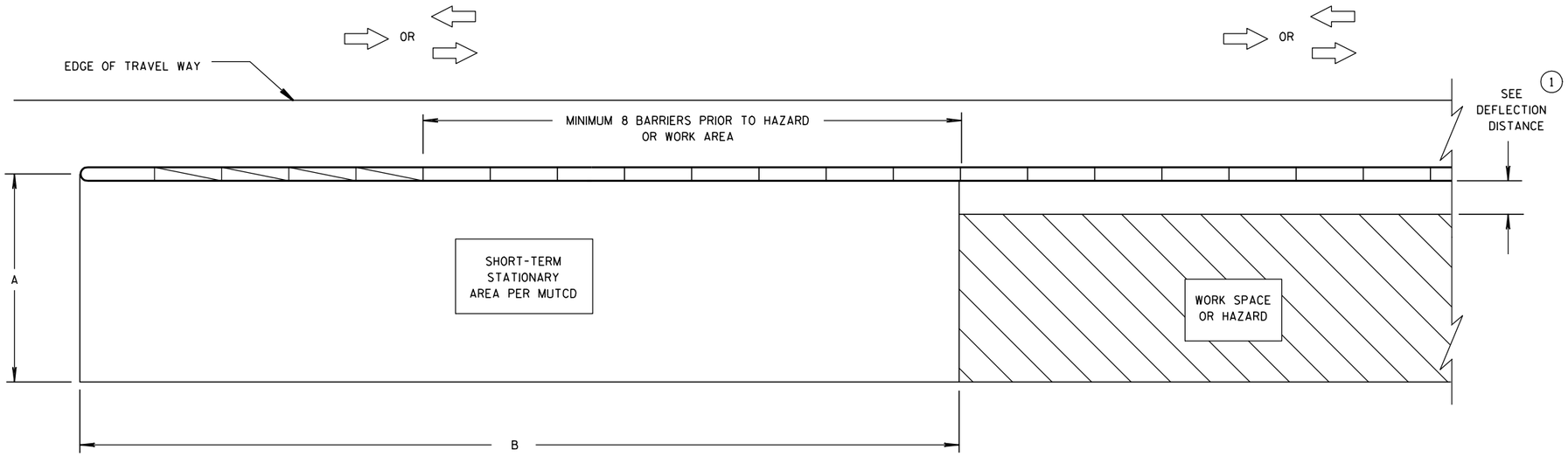
S.D.D. 14 B 7-14h



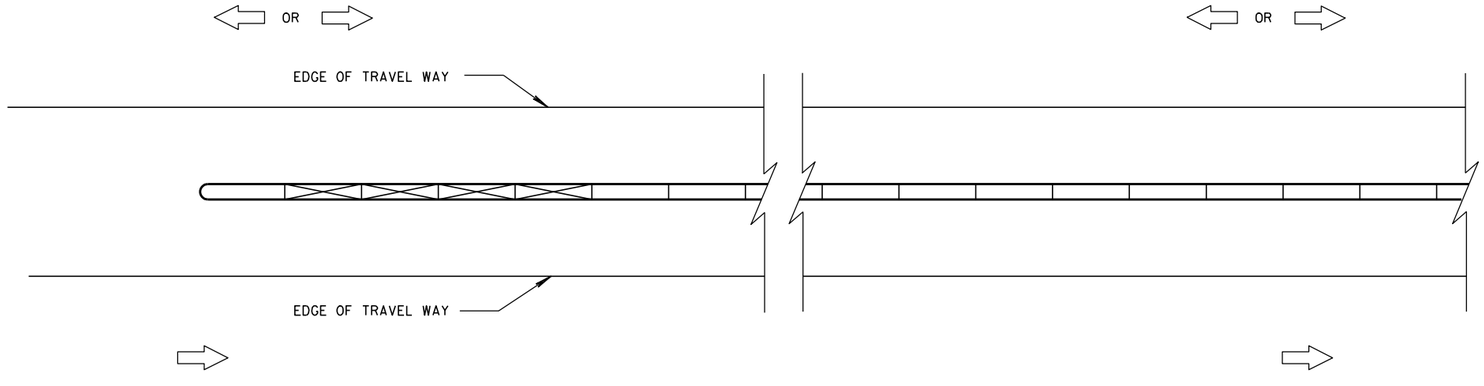
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

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

DIMENSION B TABLE (2)

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



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

LEGEND

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

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

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

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

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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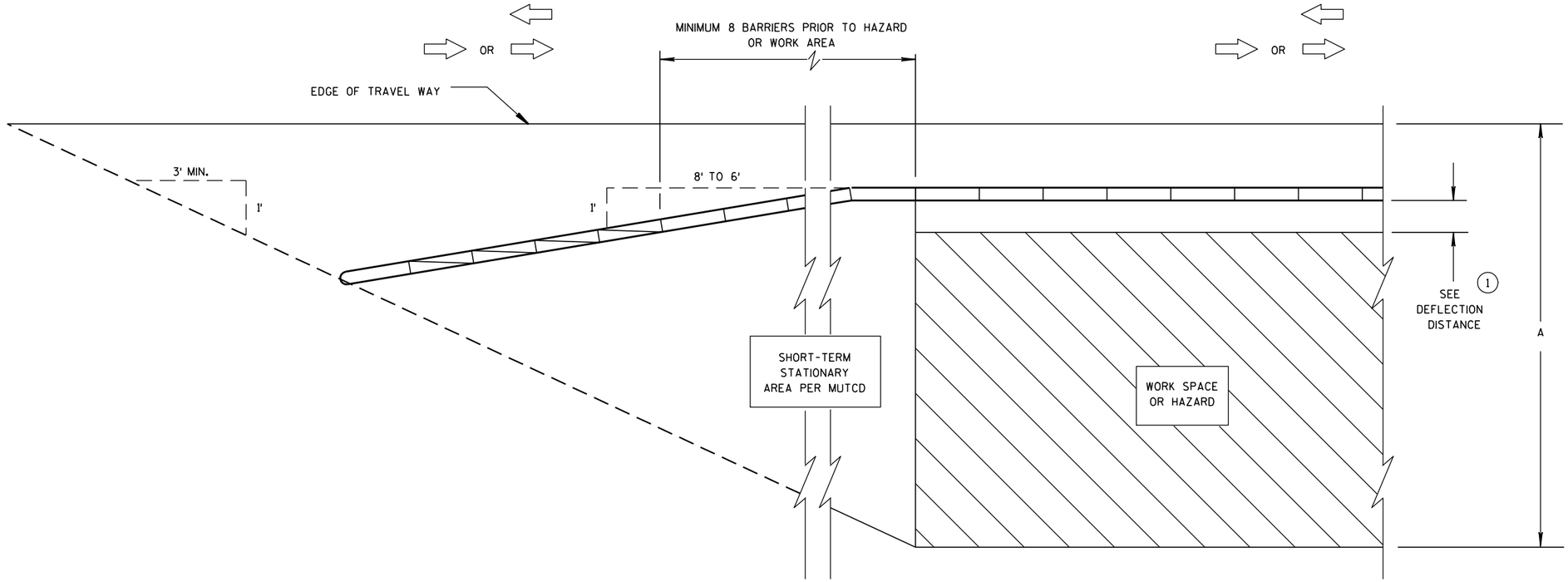
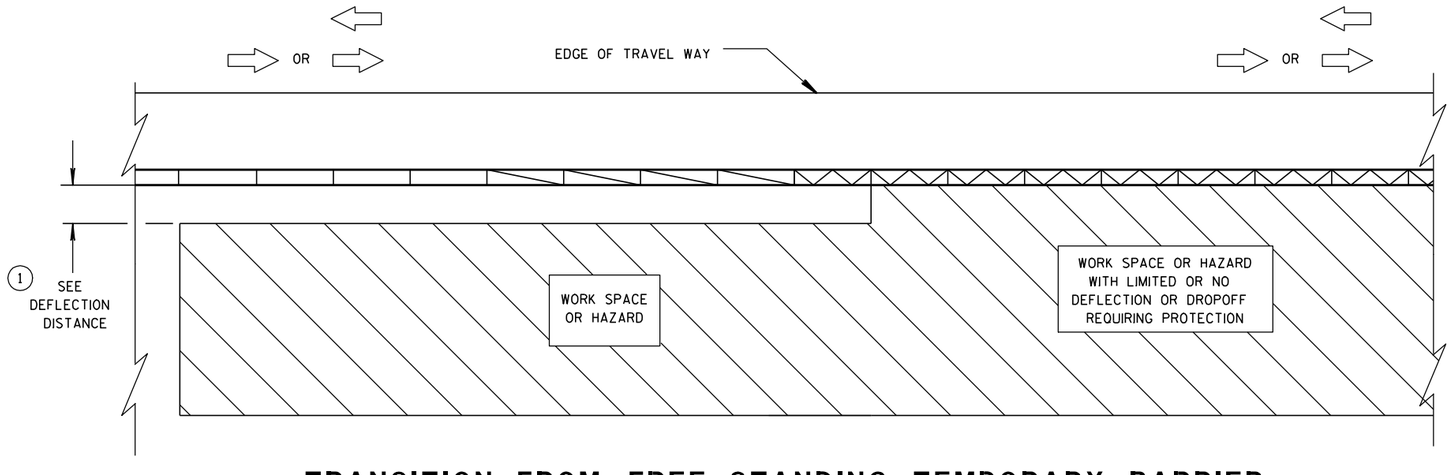


CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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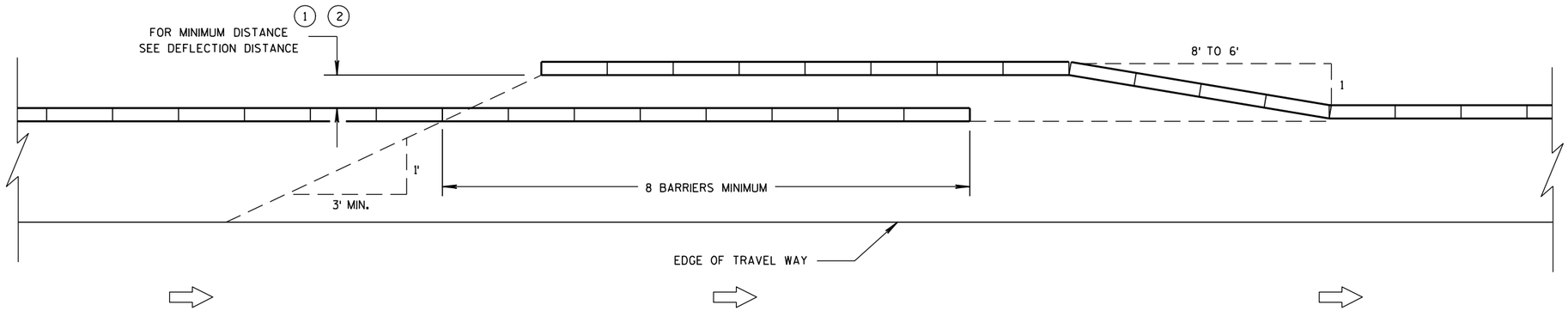
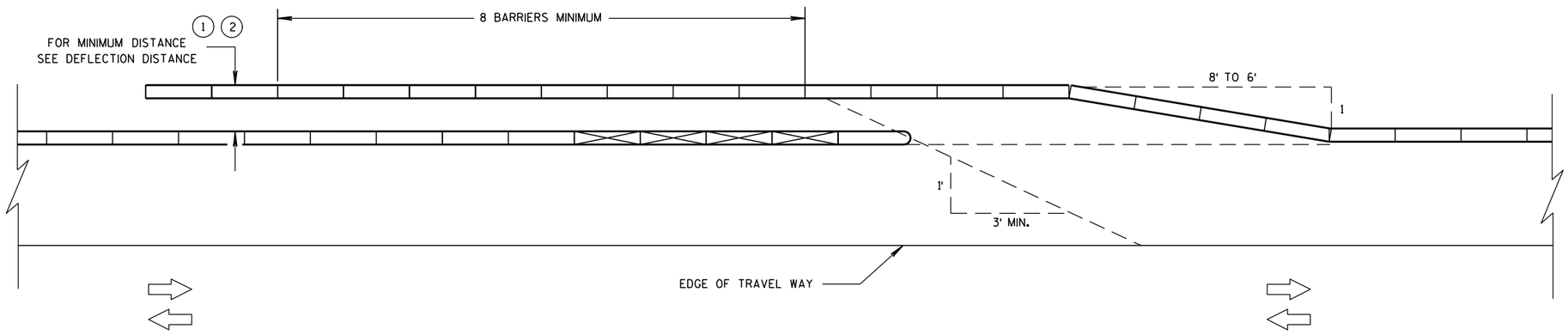
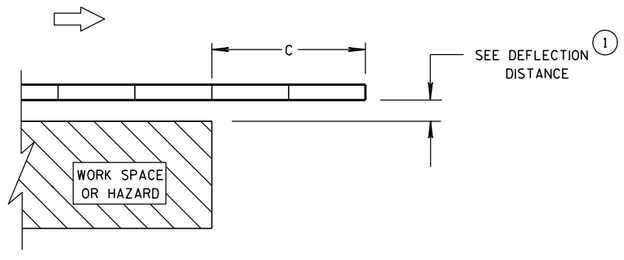
S.D.D. 14 B 8-1b



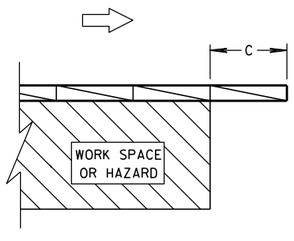
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

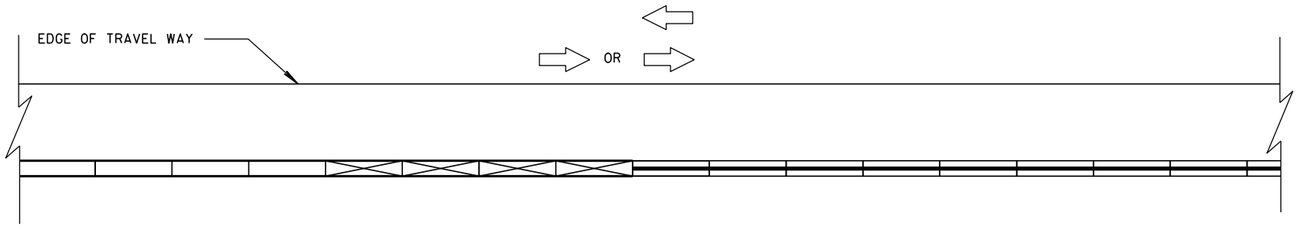
LEGEND

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

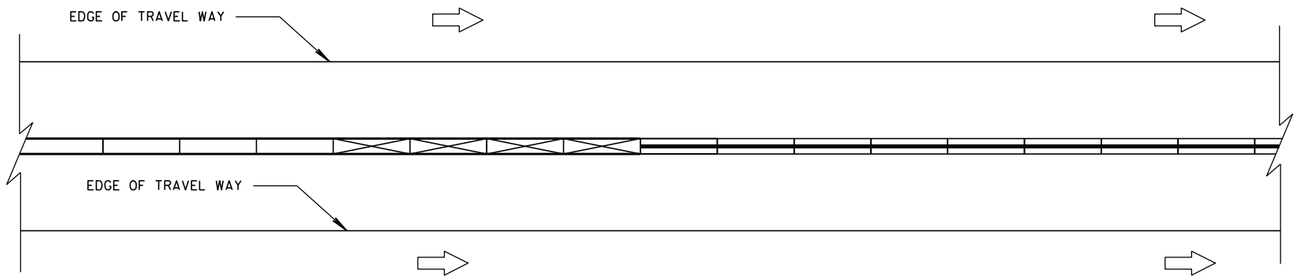
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

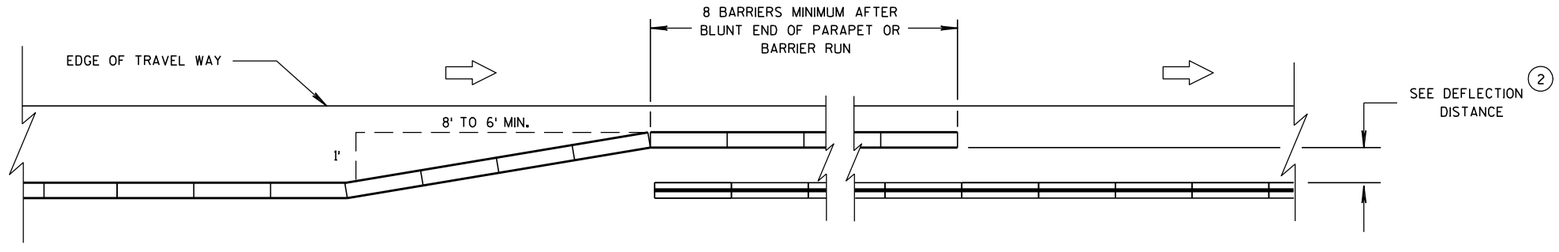
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

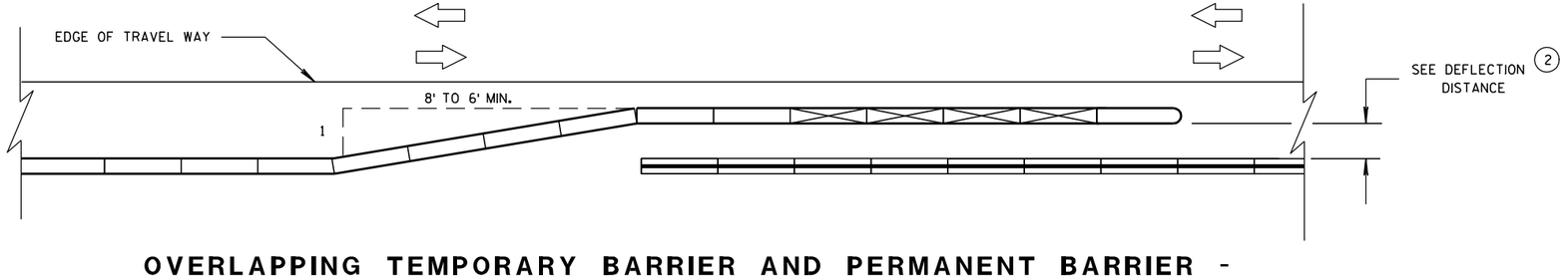
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

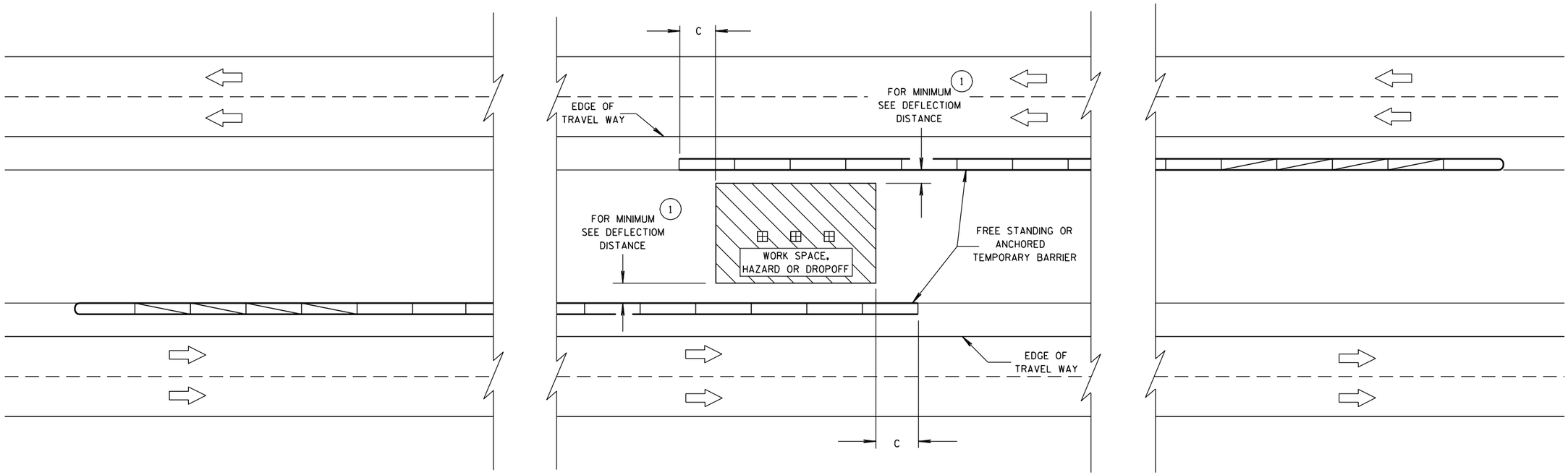
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

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



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER

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FHWA

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

GENERAL NOTES

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

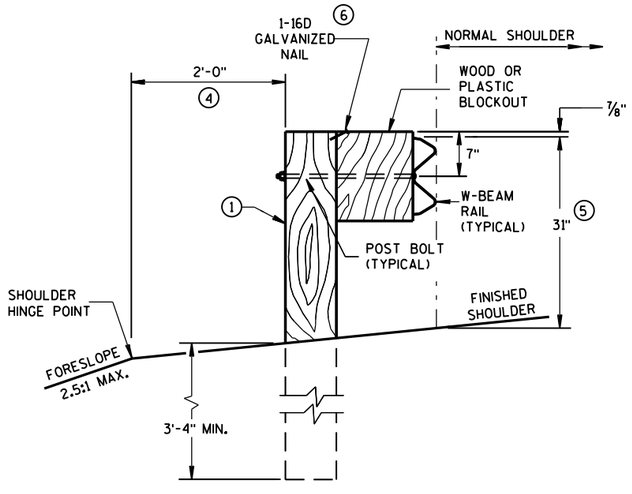
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

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

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

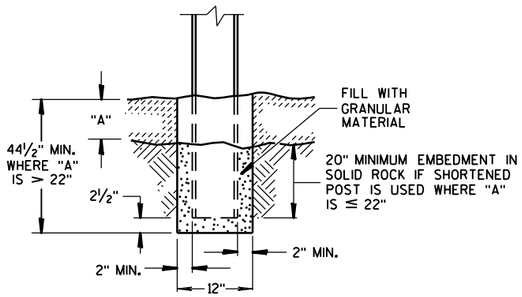
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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



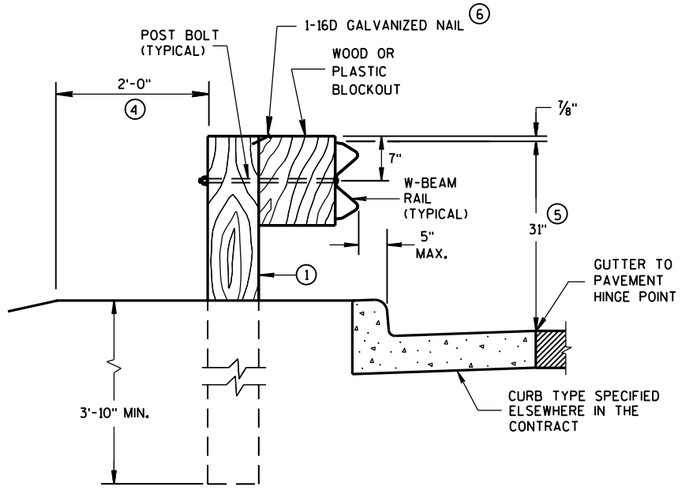
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



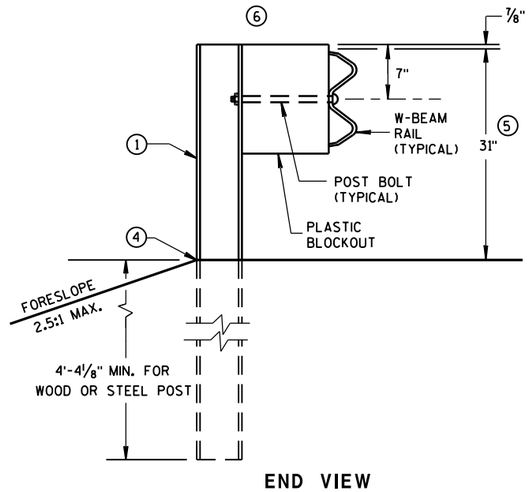
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



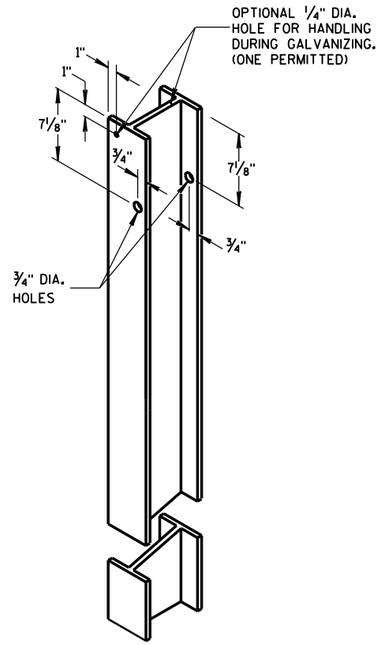
END VIEW

LOCATED ALONG A CURBED ROADWAY

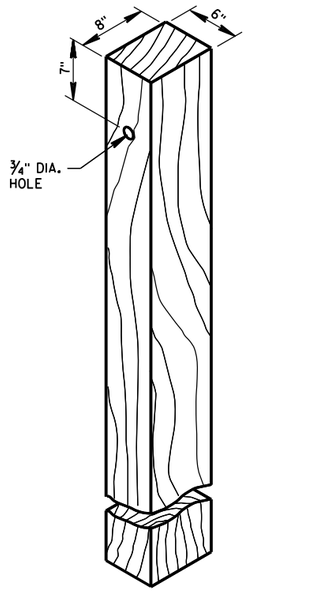


END VIEW

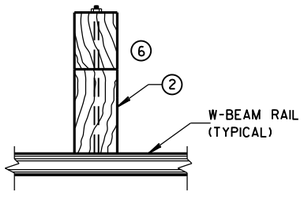
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



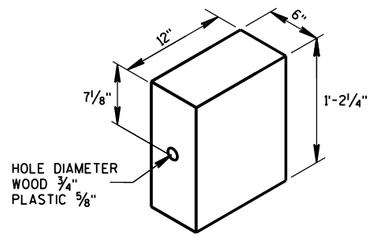
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



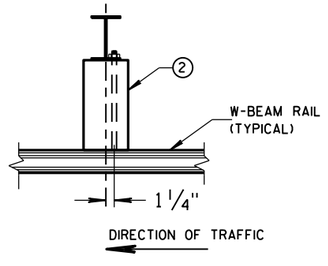
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)

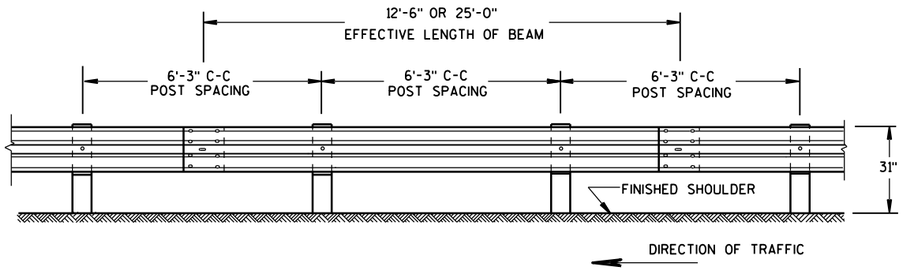


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

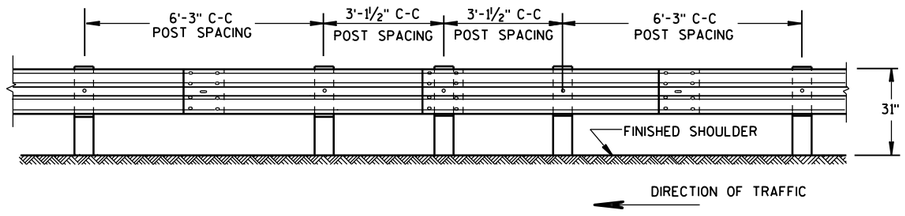
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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



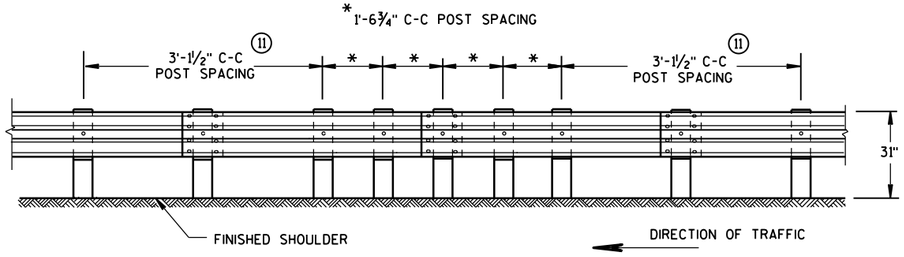
FRONT VIEW

POST SPACING STANDARD INSTALLATION



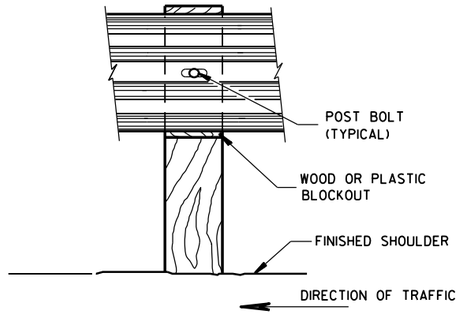
FRONT VIEW

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

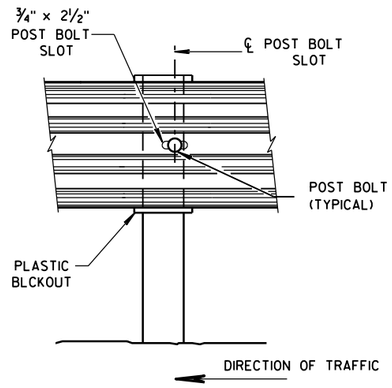


FRONT VIEW

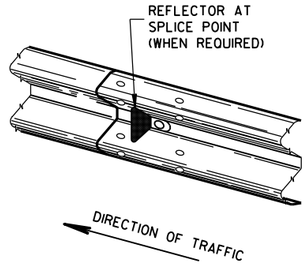
QUARTER POST SPACING (QS)

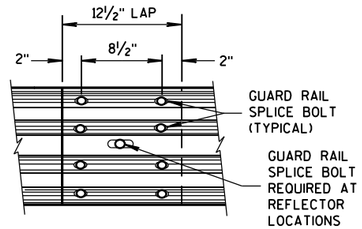


FRONT VIEW AT WOOD POST



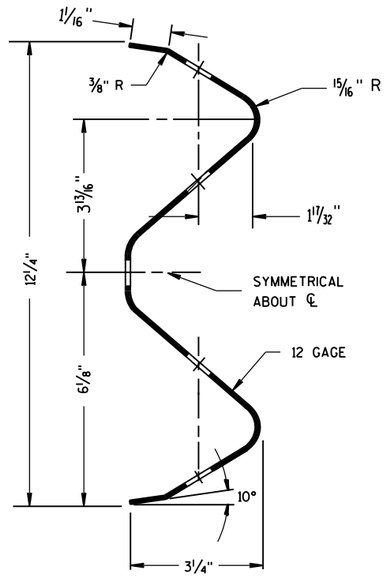
FRONT VIEW AT STEEL POST



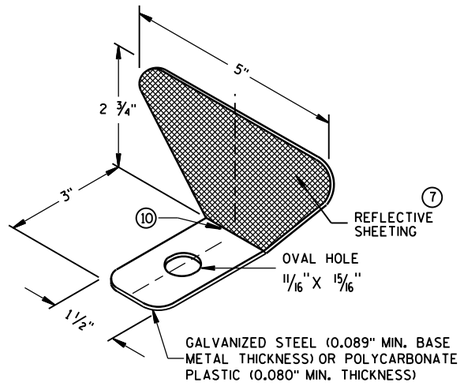


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



GENERAL NOTES

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

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

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

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

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

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

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

REFLECTOR SPACING ⑧

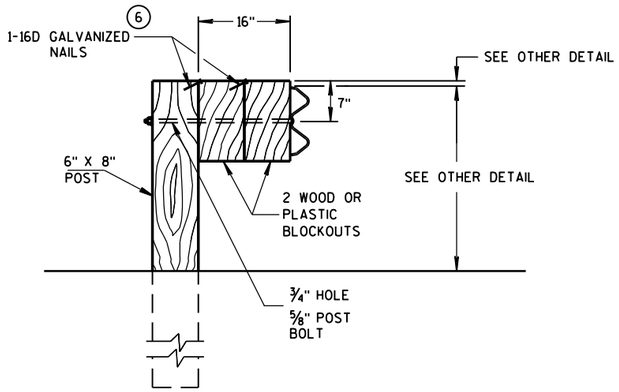
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 ⑩	

ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

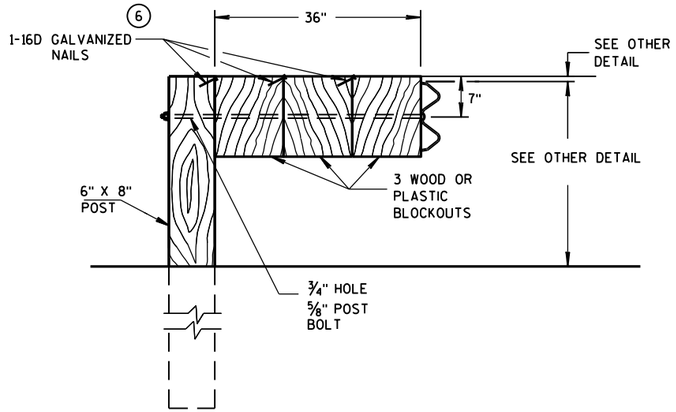
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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



DETAIL FOR 16" BLOCKOUT DEPTH

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

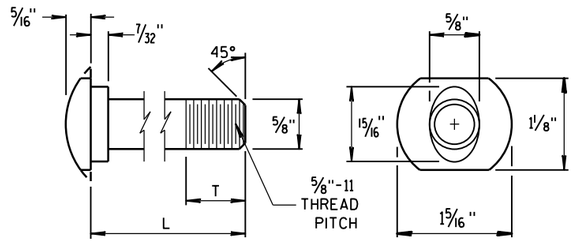


DETAIL FOR 36" BLOCKOUT DEPTH

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

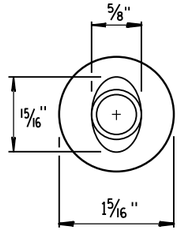
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

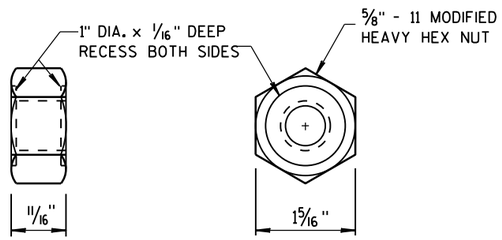


POST BOLT TABLE

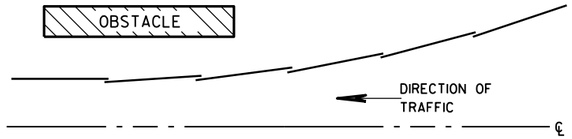
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

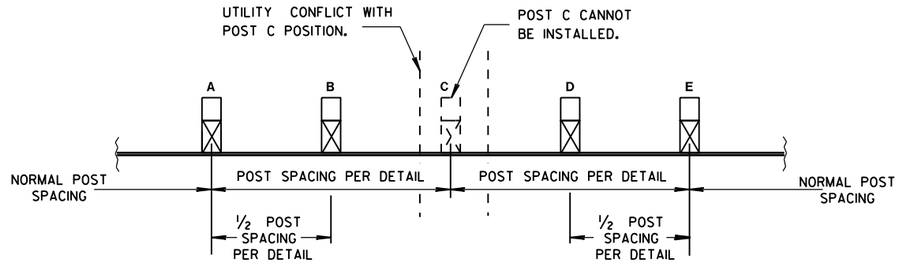


POST BOLT AND RECESS NUT

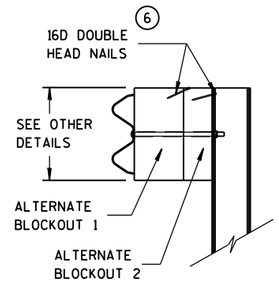


PLAN VIEW

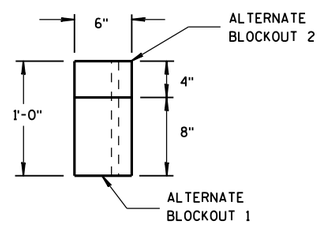
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

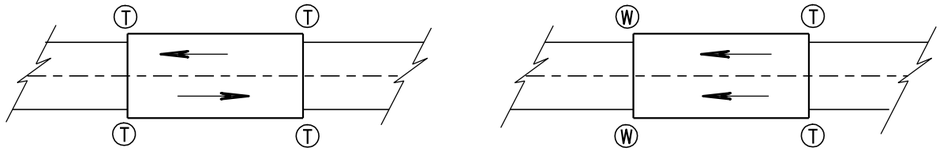
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

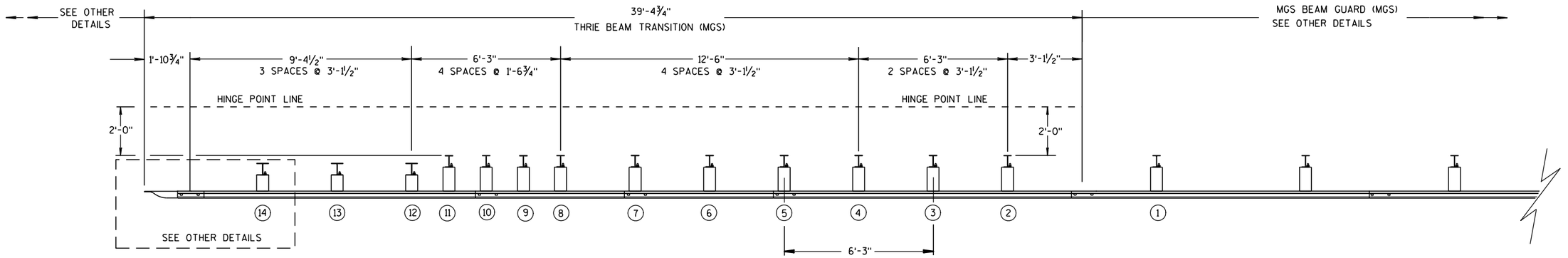
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

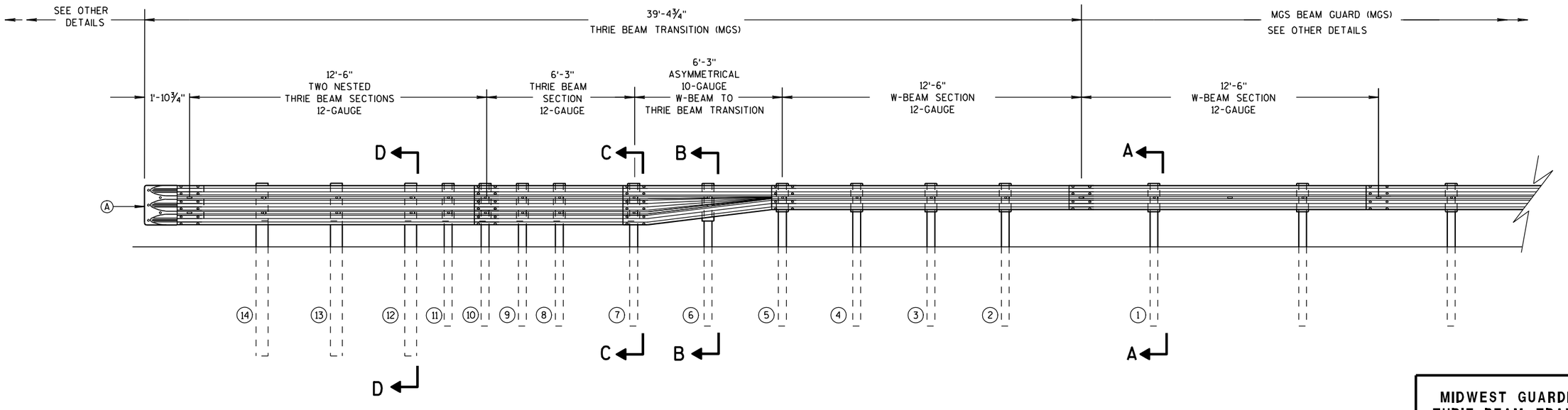
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	88

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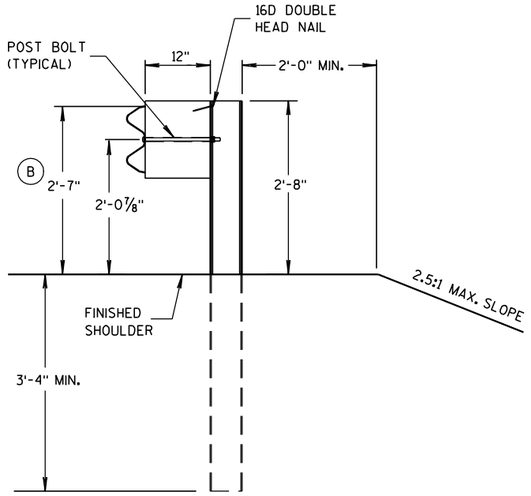
S.D.D. 14 B 45-3a

6

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

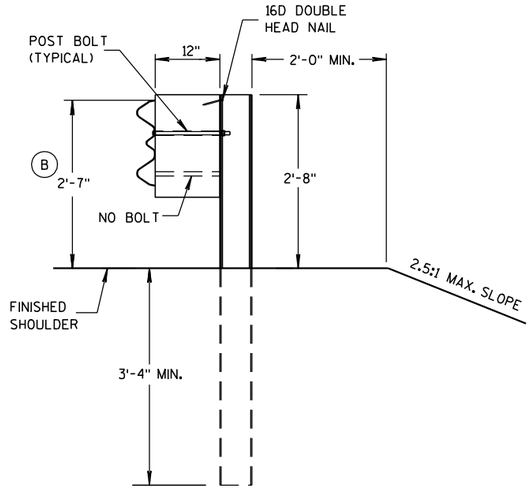
GENERAL NOTES

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



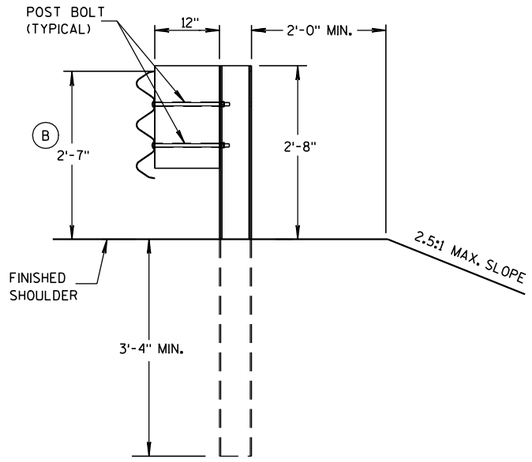
SECTION A-A

POSTS 1-5



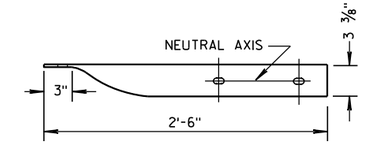
SECTION B-B

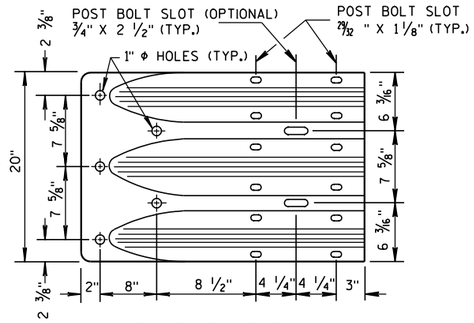
POST 6



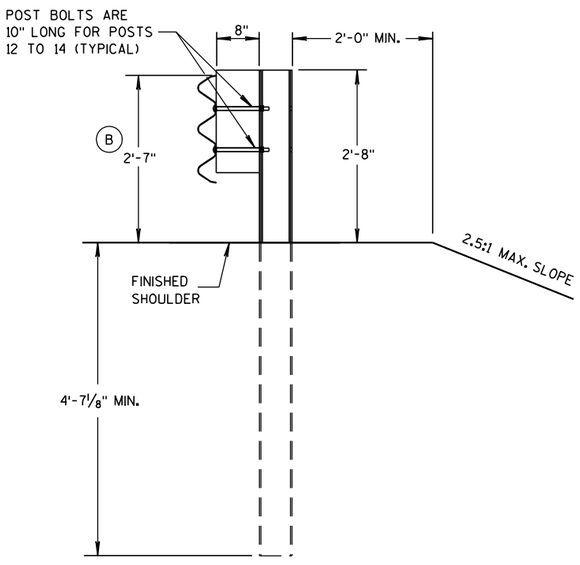
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

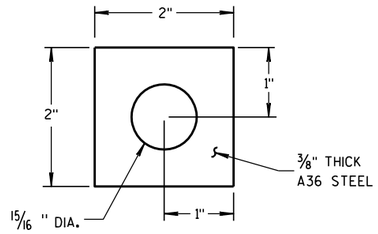
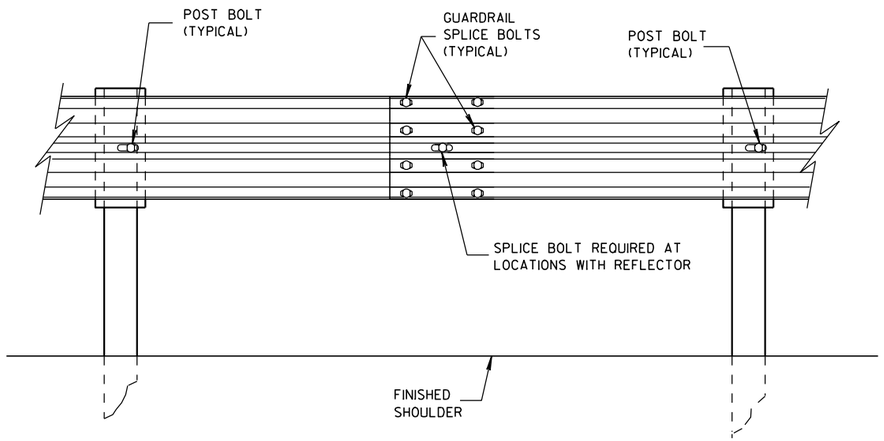
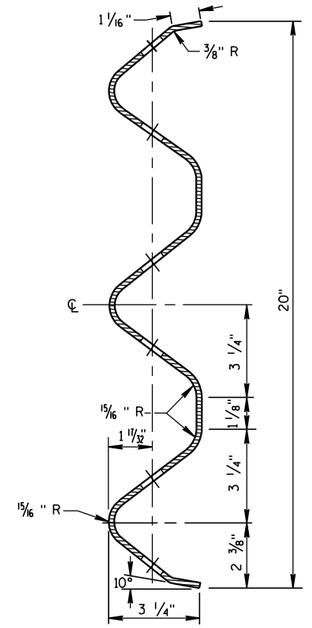


PLATE WASHER DETAIL



SPLICE DETAIL



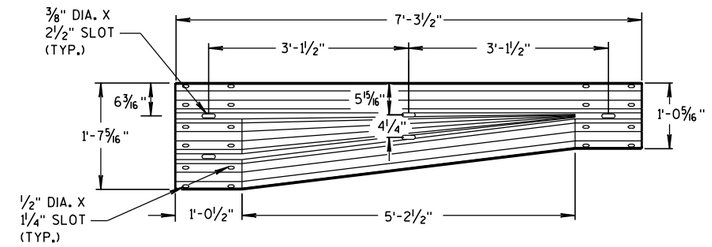
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

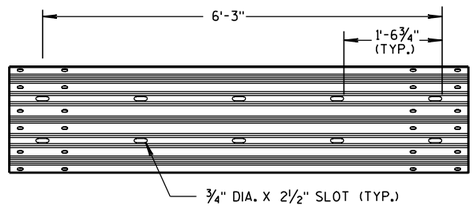
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

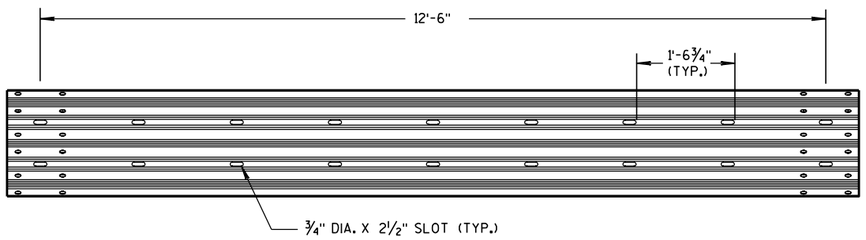
S.D.D. 14 B 45-3b



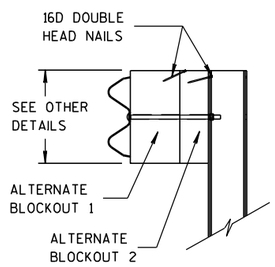
W-BEAM TO THRIE BEAM TRANSITION SECTION



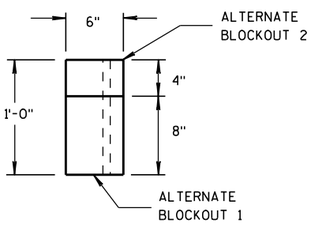
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

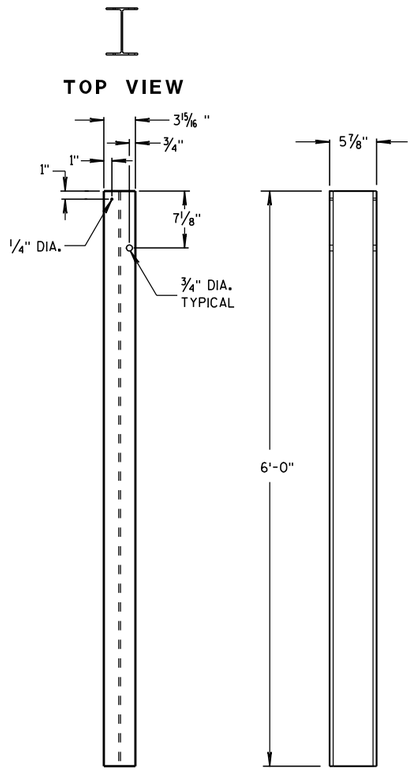


SIDE VIEW



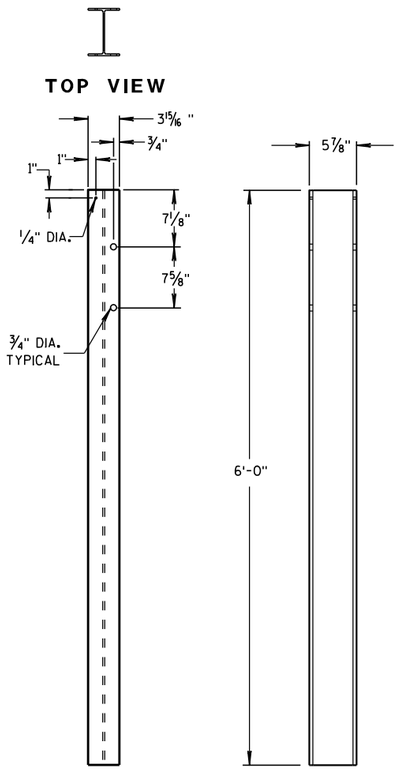
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



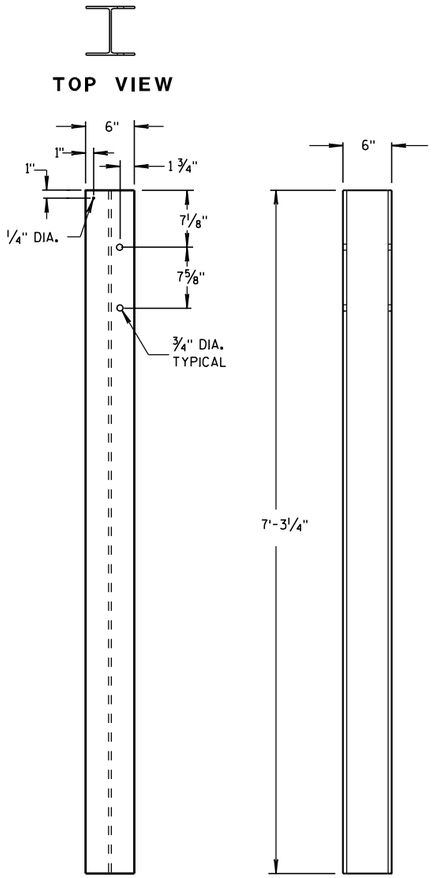
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

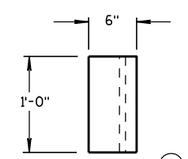
STEEL POSTS 6-11



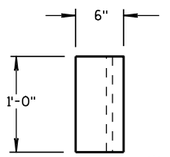
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

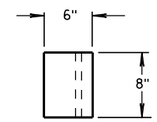
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



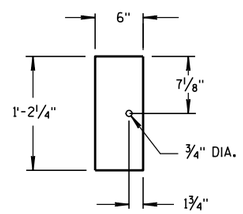
TOP VIEW (1)



TOP VIEW (1)

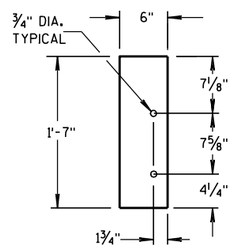


TOP VIEW



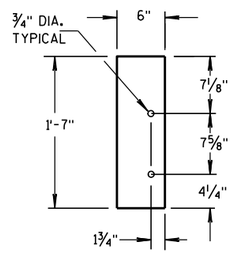
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

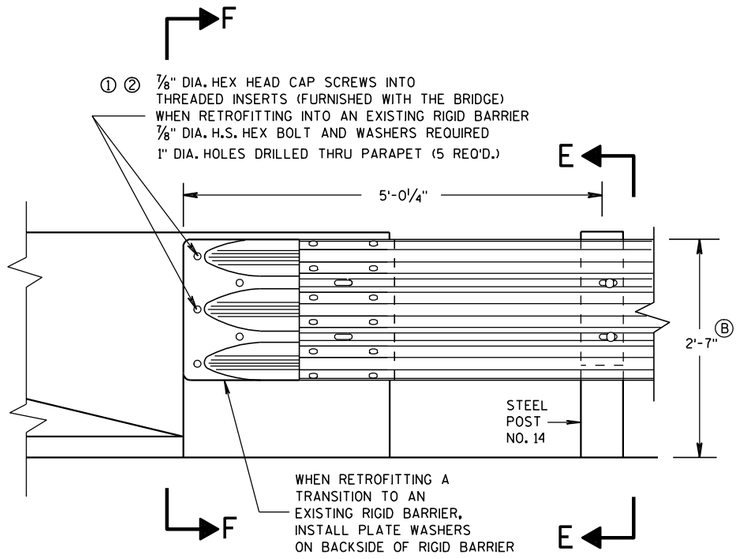
BLOCKOUT POSTS 12-14

STEEL POST SIZES

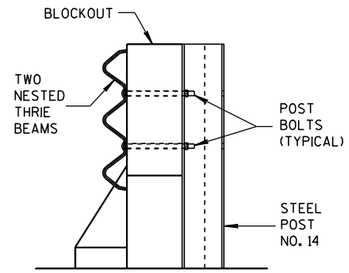
POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FRONT VIEW



SECTION E-E

GENERAL NOTES

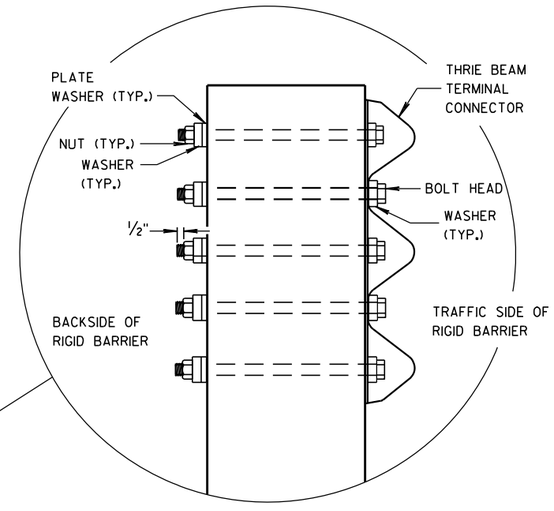
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

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

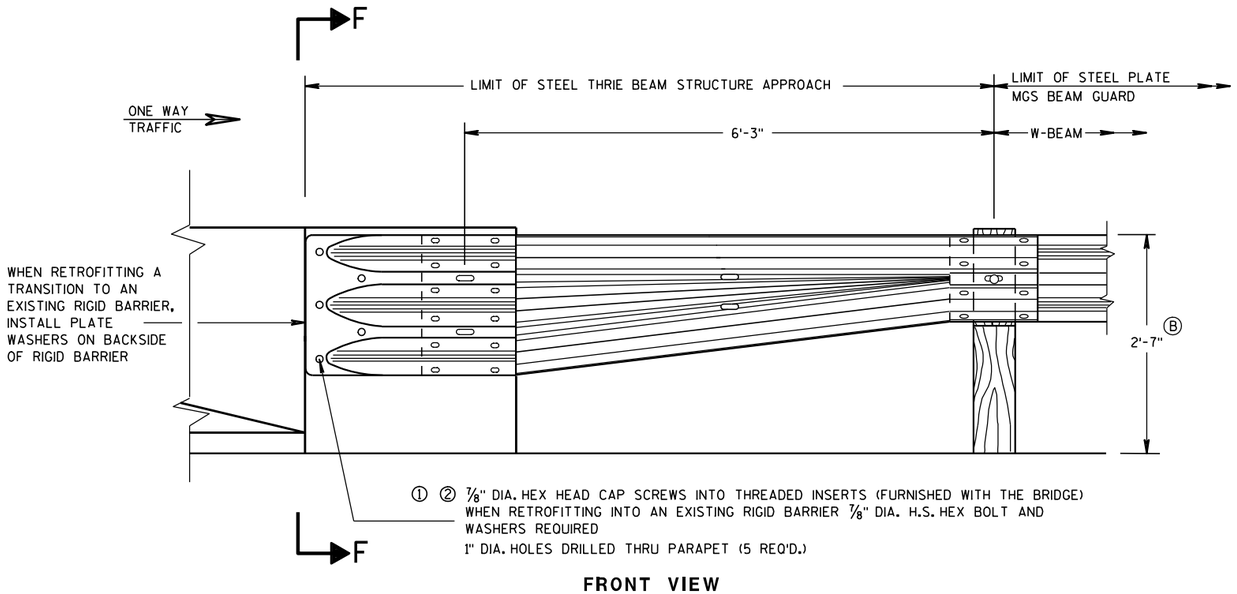
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

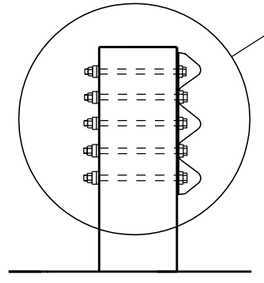
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW



SECTION F-F

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

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

FHWA

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

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GENERAL NOTES

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

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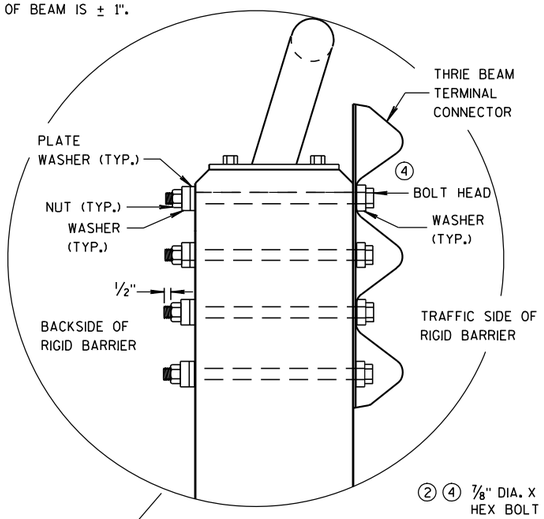
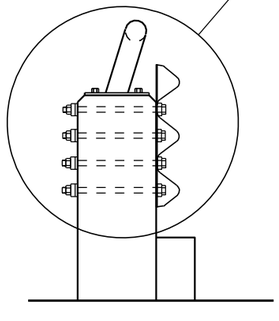
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

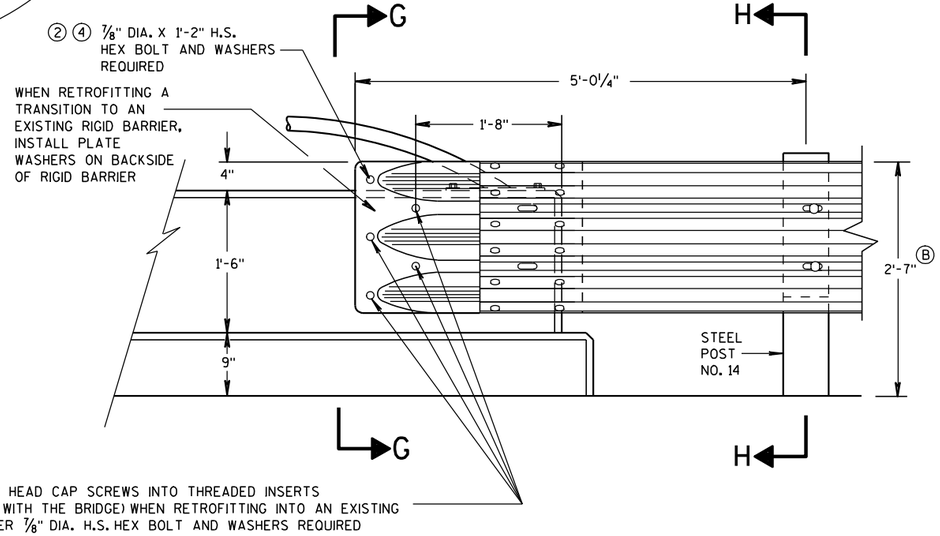
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

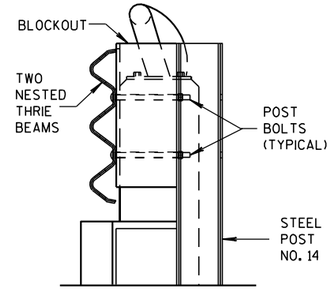




SECTION G-G

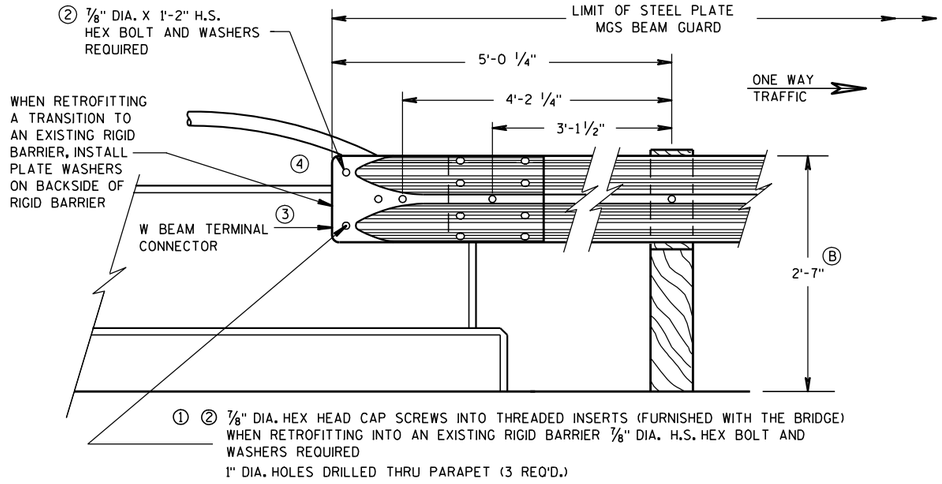


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

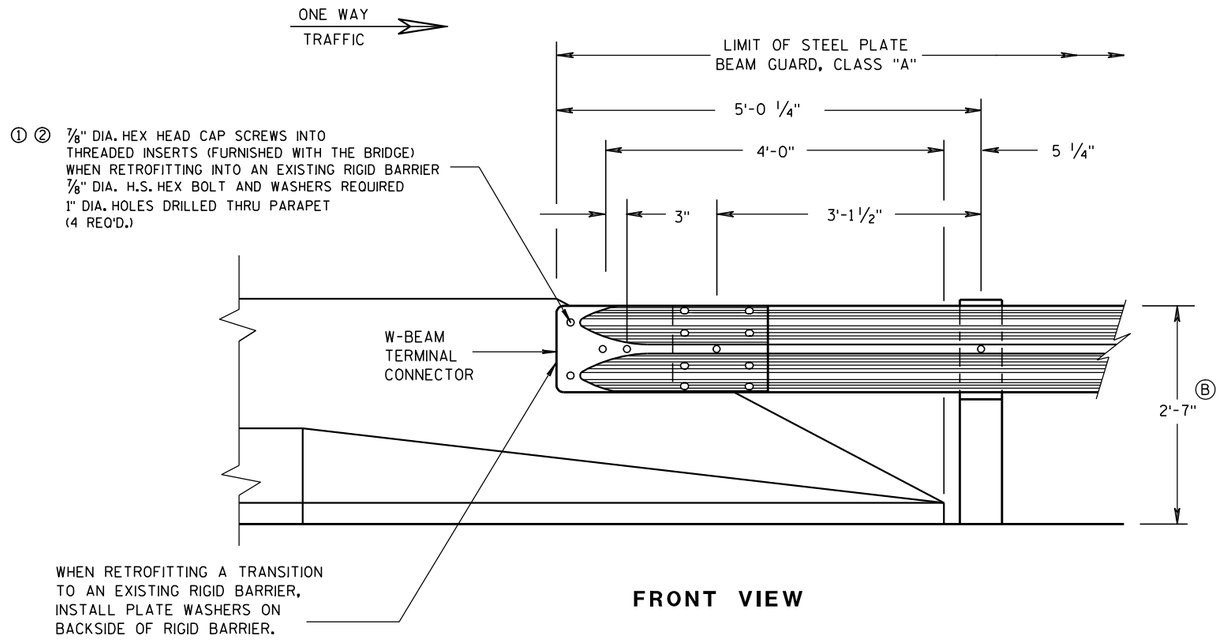
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

GENERAL NOTES

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

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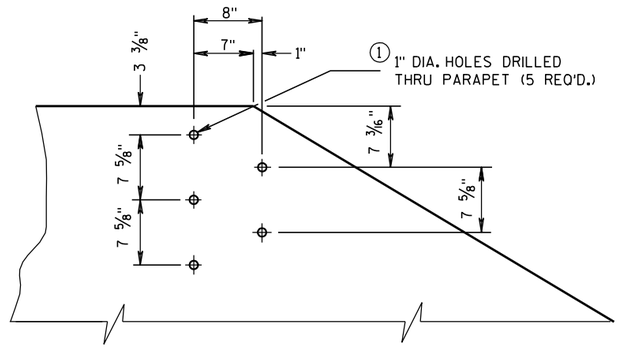
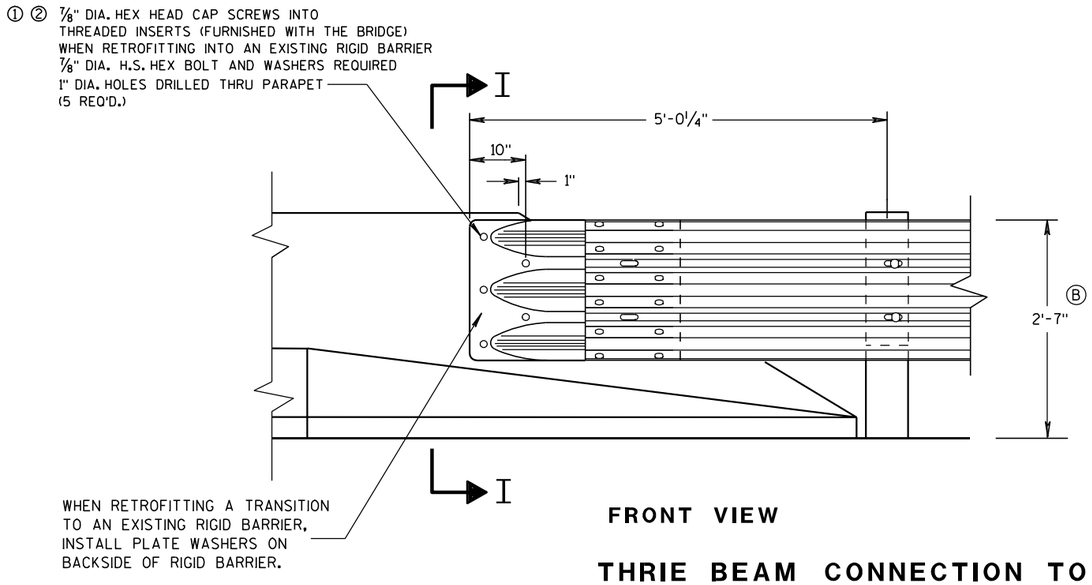
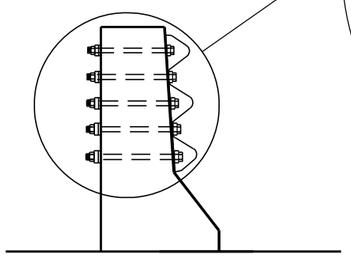
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



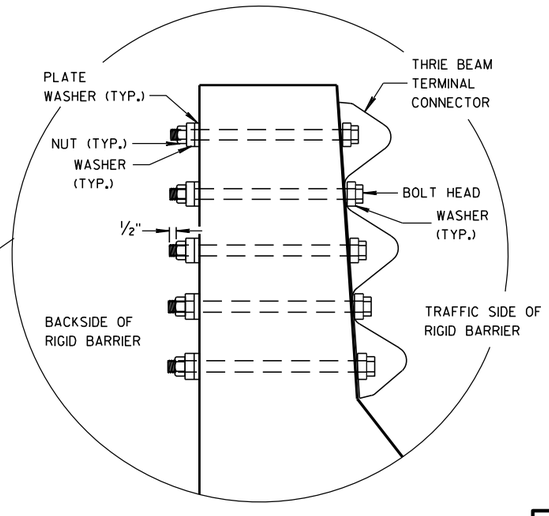
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

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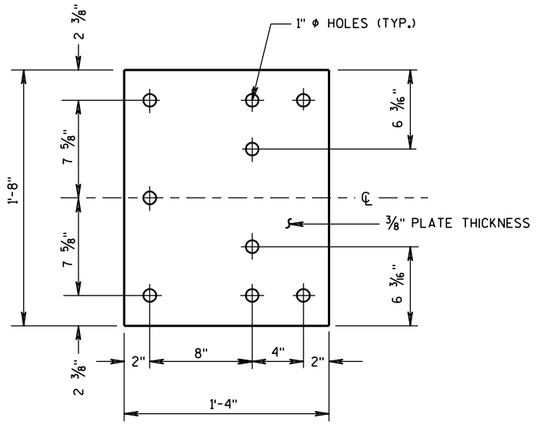
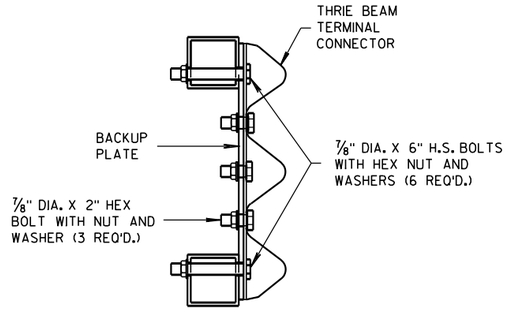


BACK-UP PLATE DETAIL

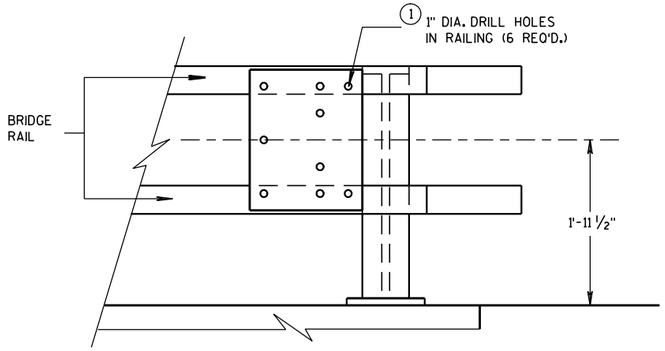


SECTION J-J

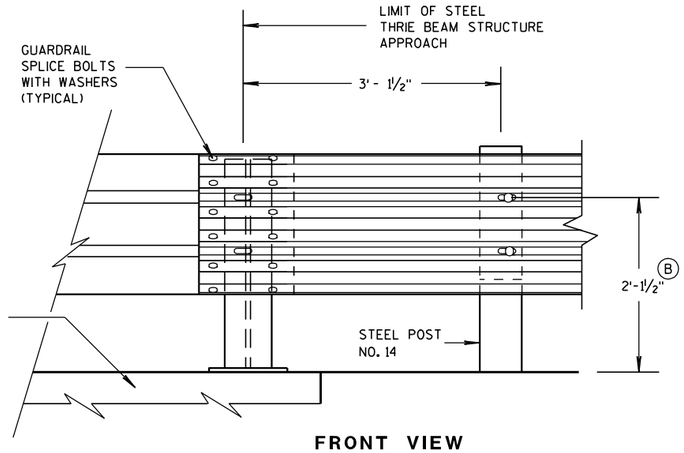
GENERAL NOTES

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

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

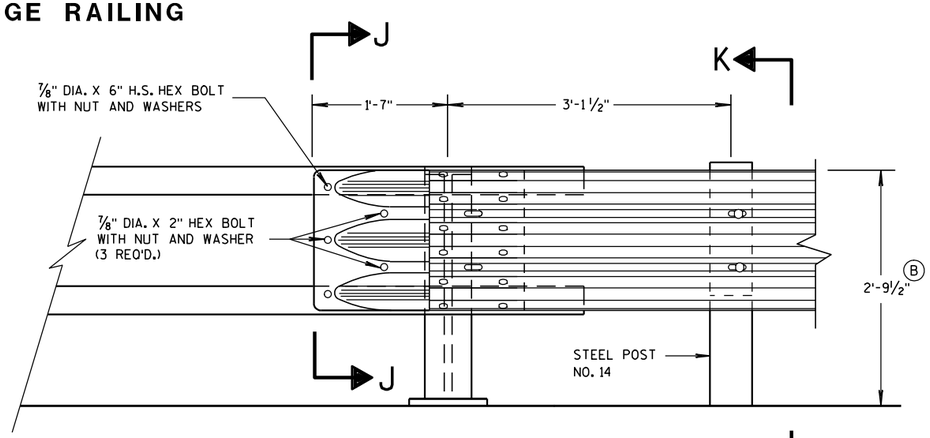


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

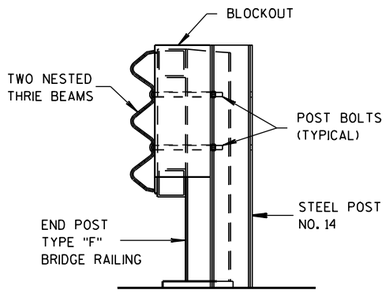


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

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

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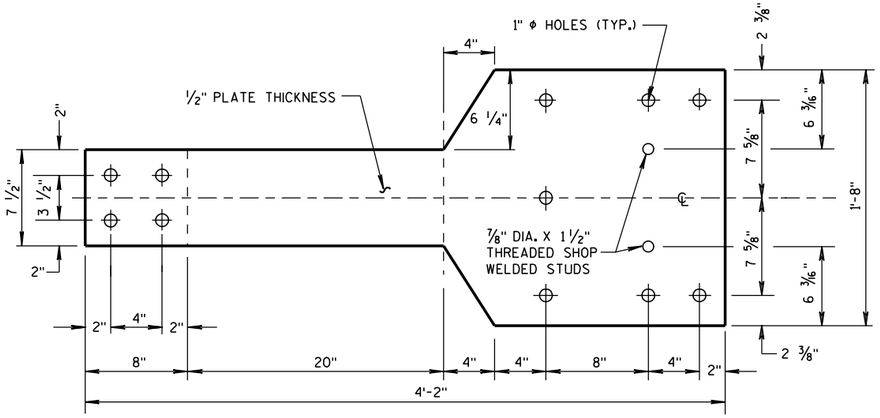
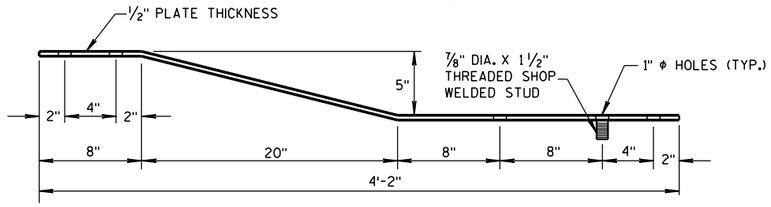
S.D.D. 14 B 45-3g

GENERAL NOTES

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

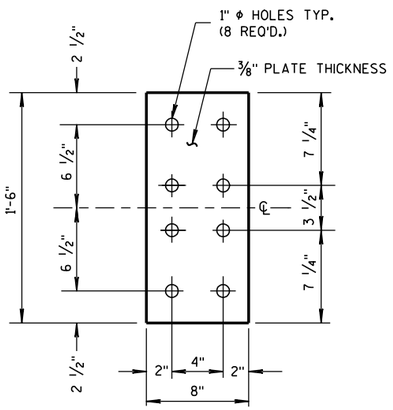


FRONT VIEW



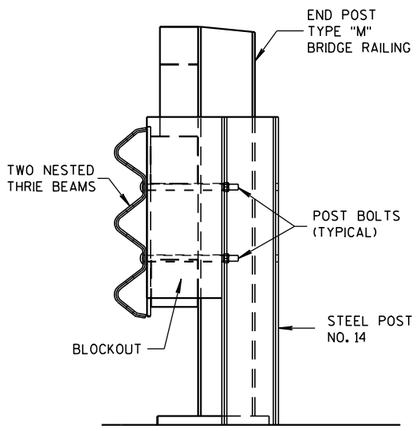
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

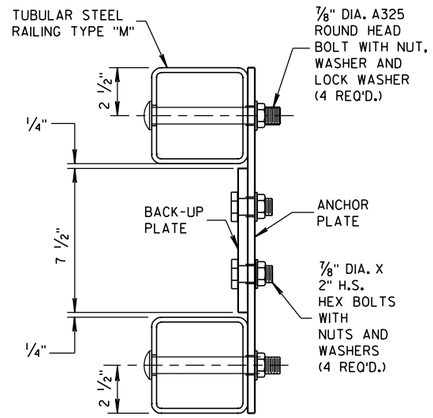


FRONT VIEW

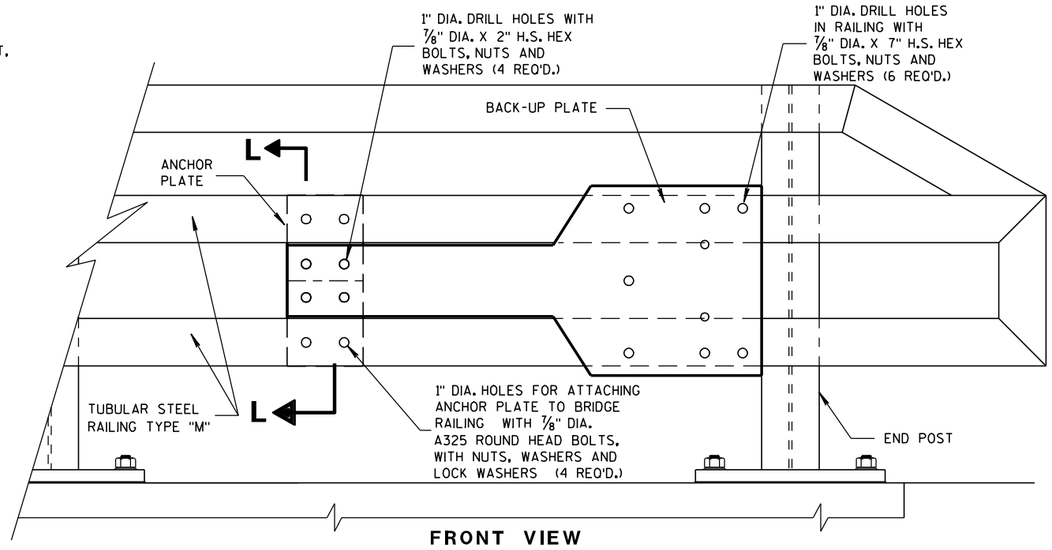
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

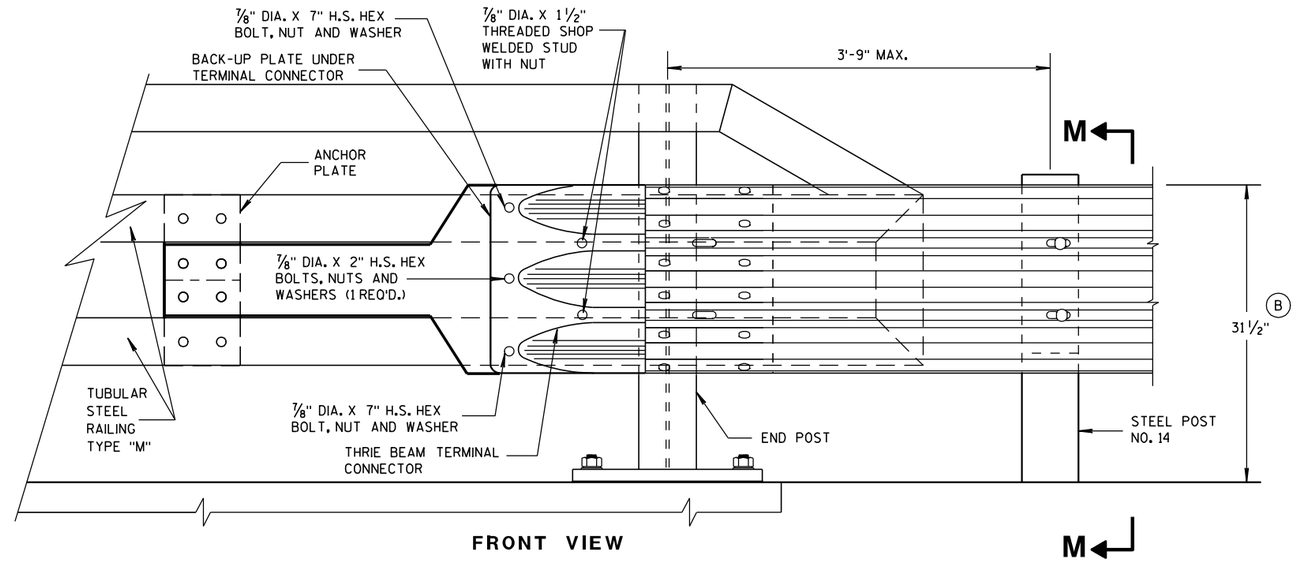


SECTION L-L

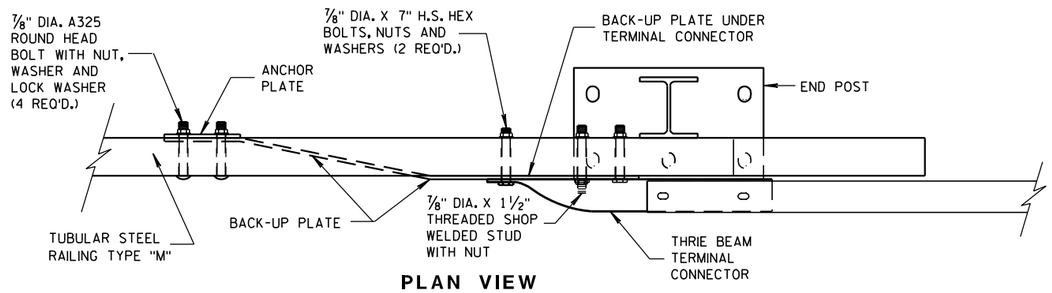


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
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GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

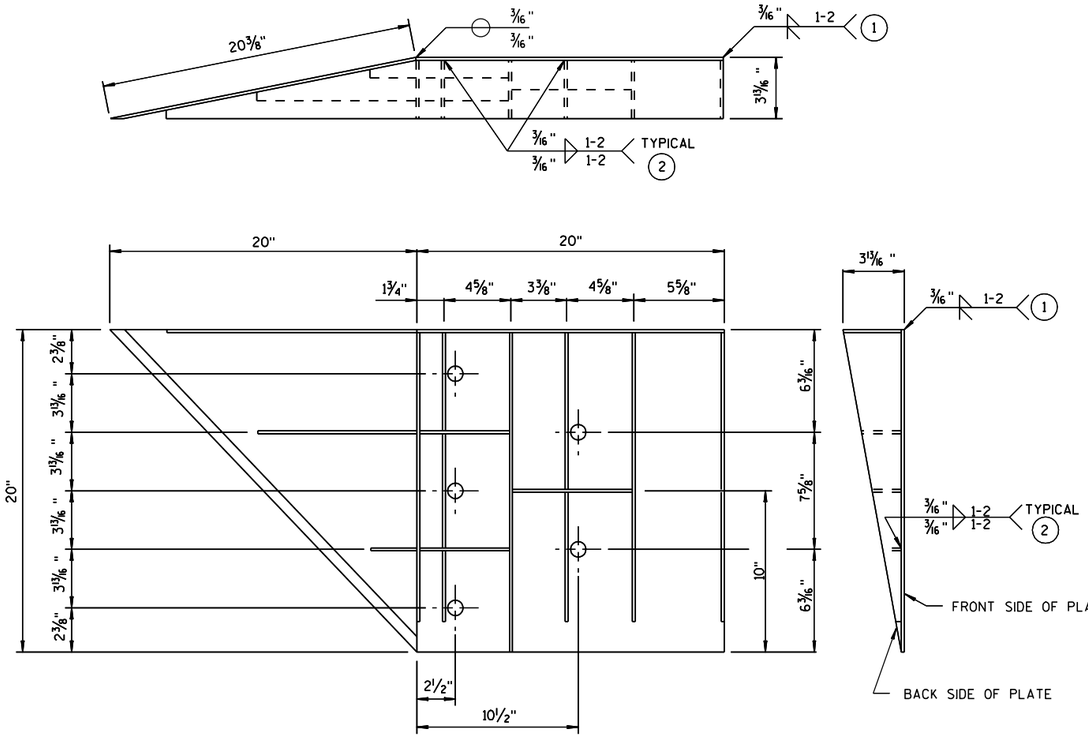
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

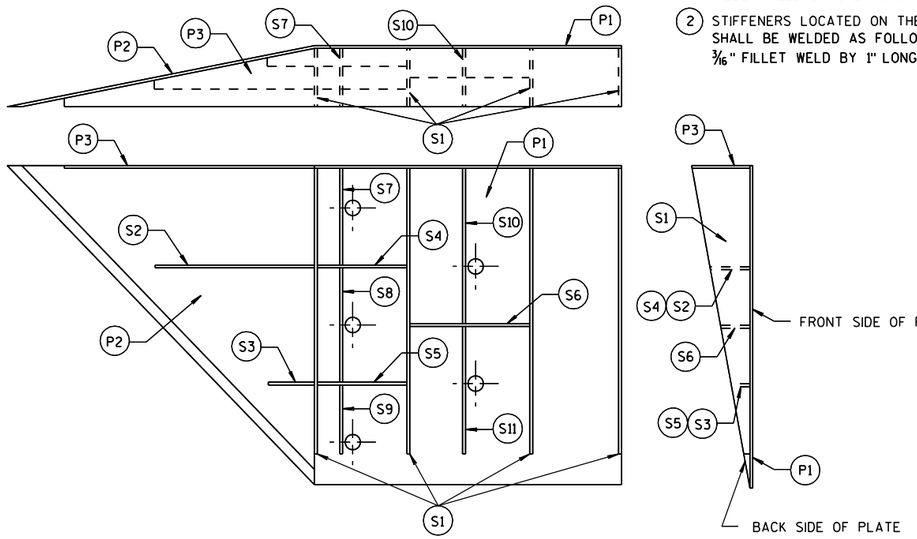


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
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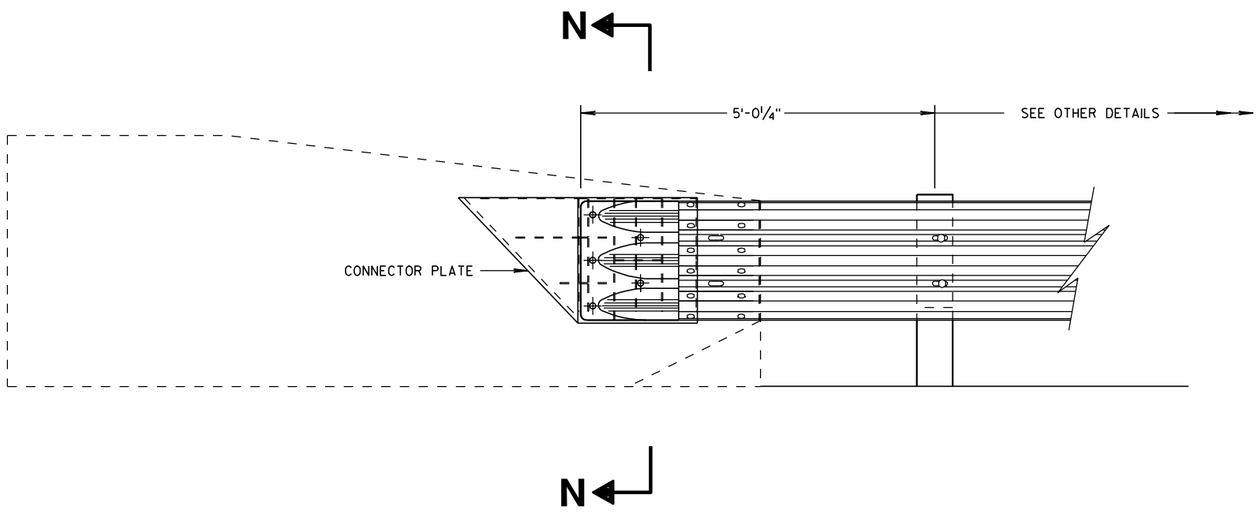
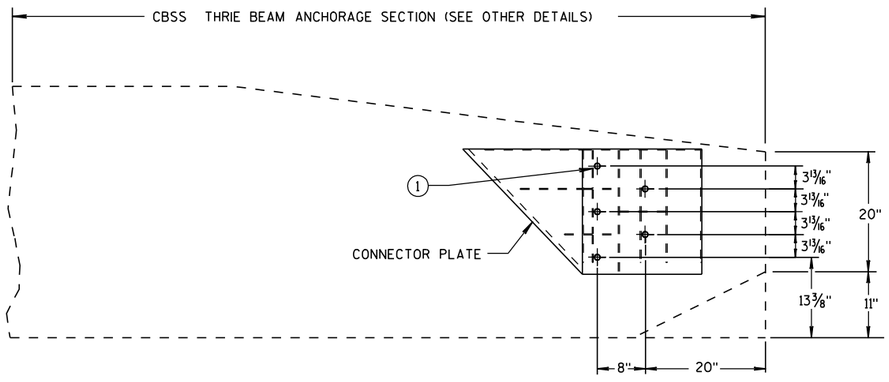


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

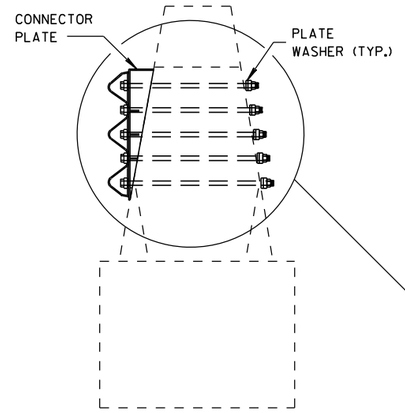


SINGLE SLOPE CONNECTION PLATE PLACEMENT

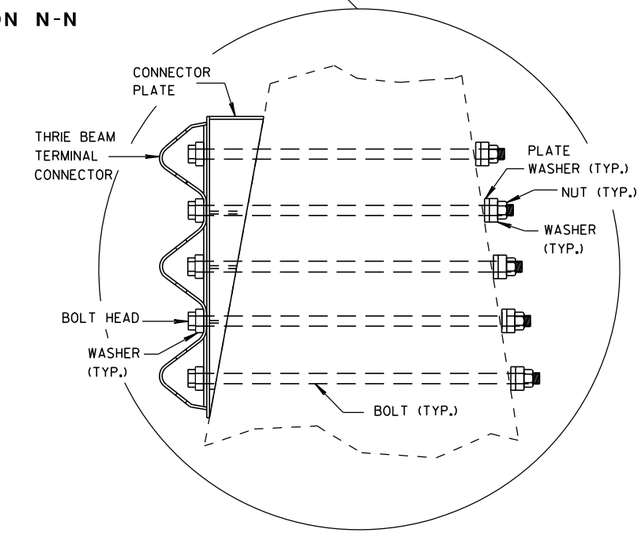
GENERAL NOTES

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

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

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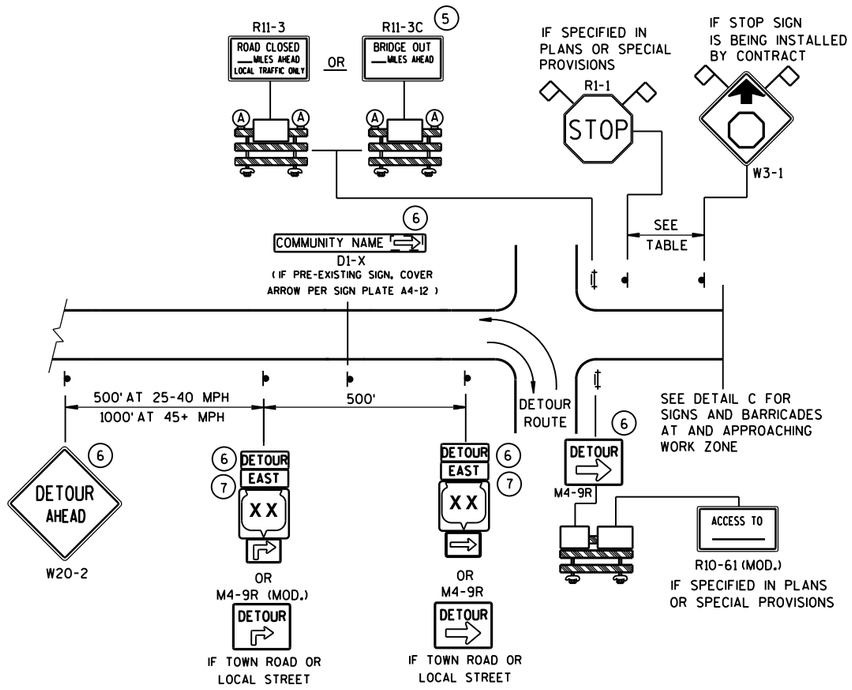
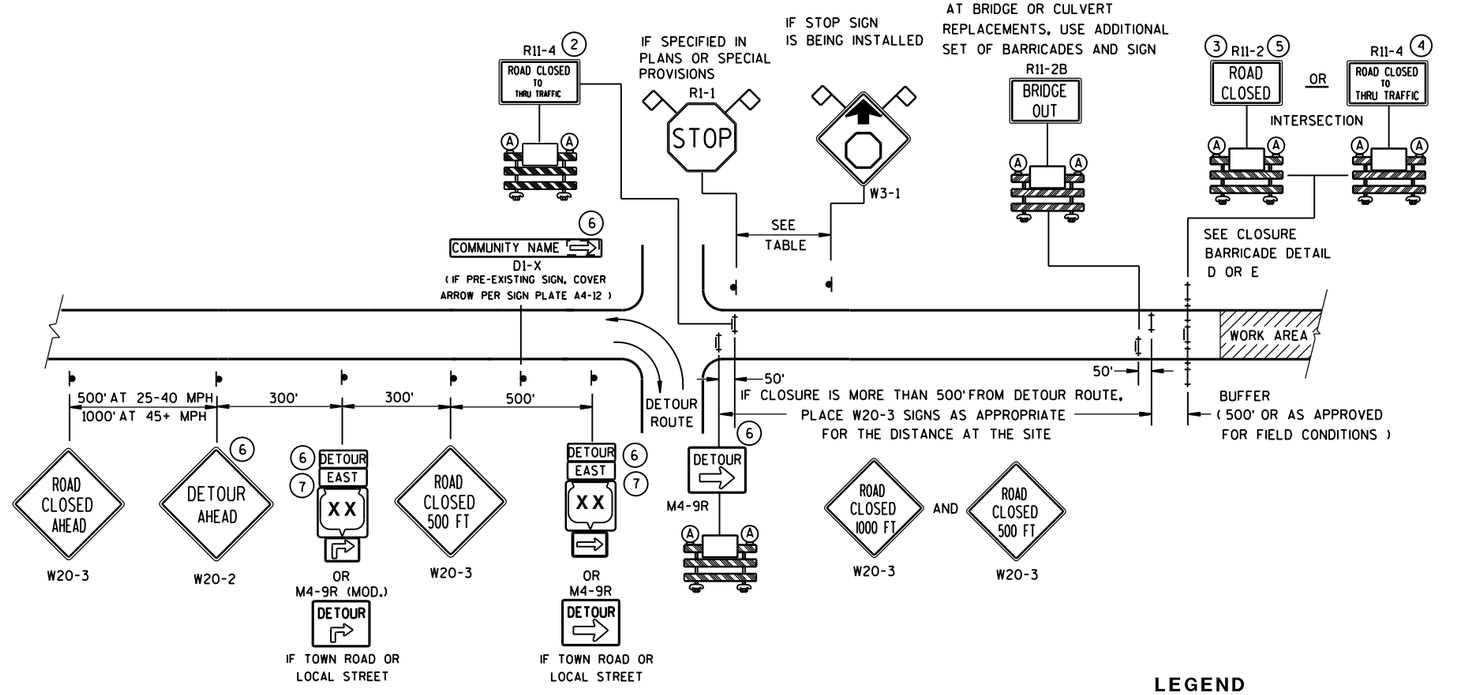


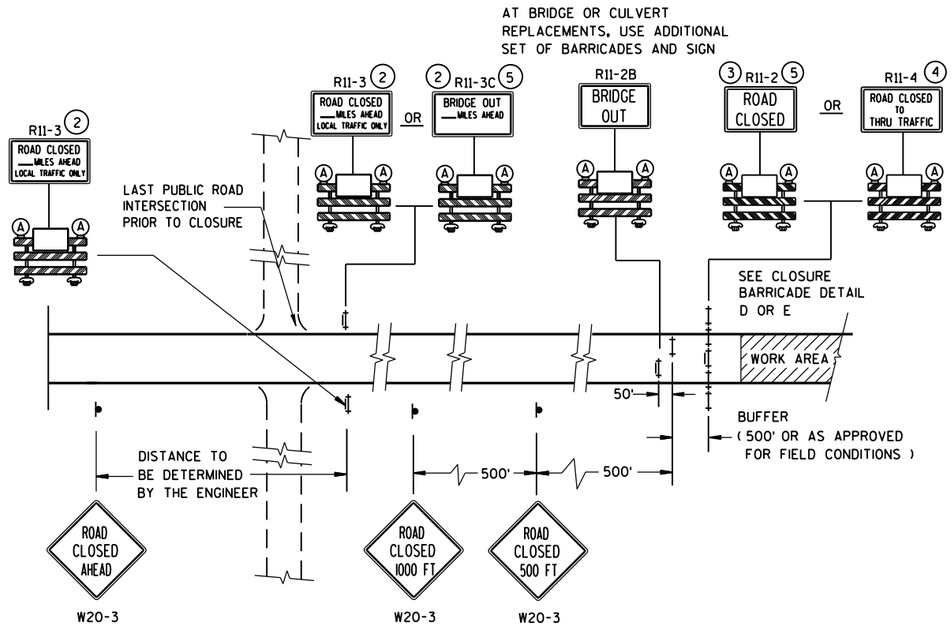
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

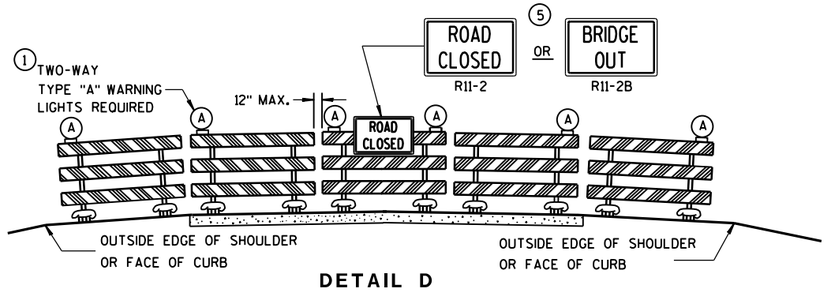
FHWA

6

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

6

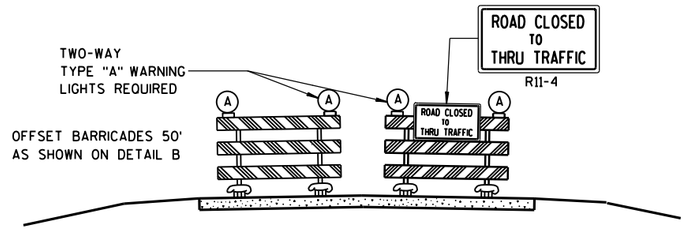
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

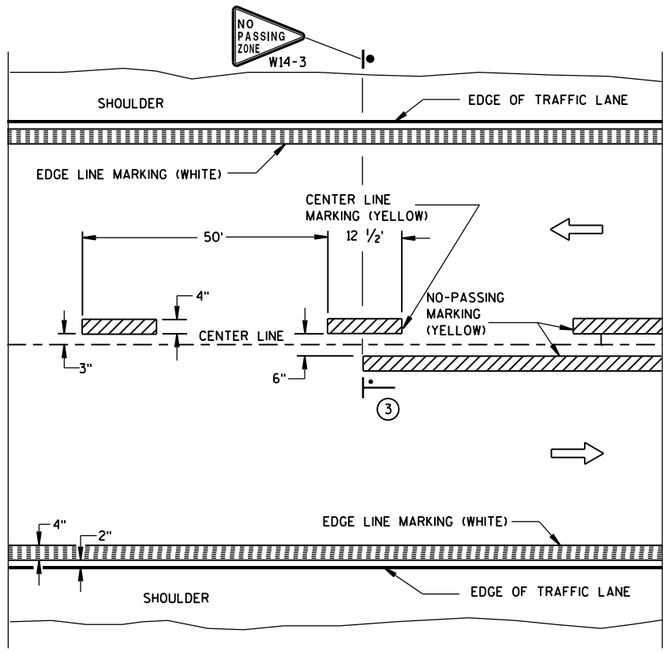
8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

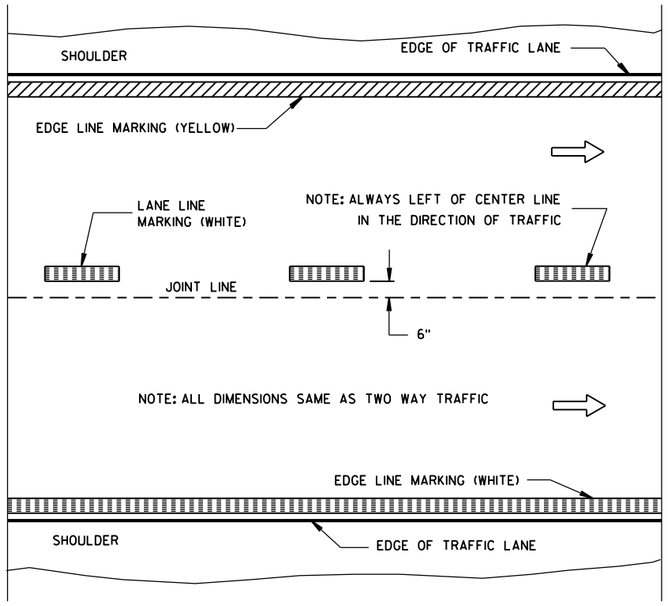
FHWA

6

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

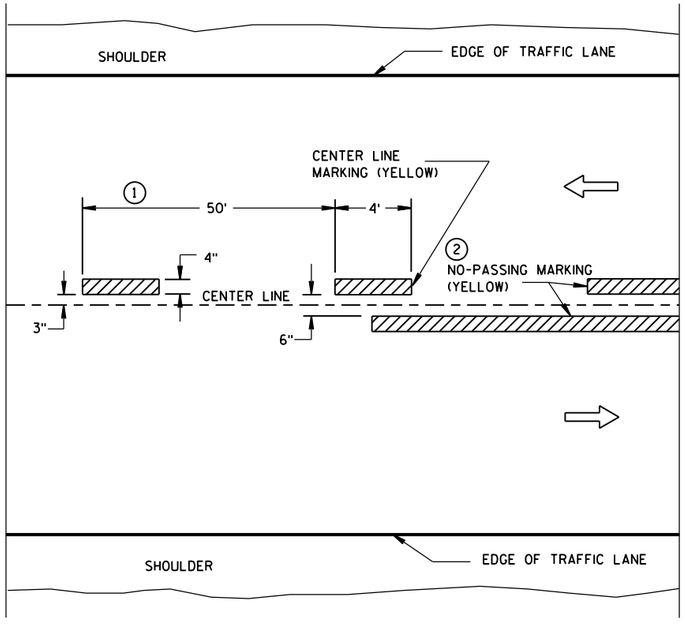


TWO WAY TRAFFIC

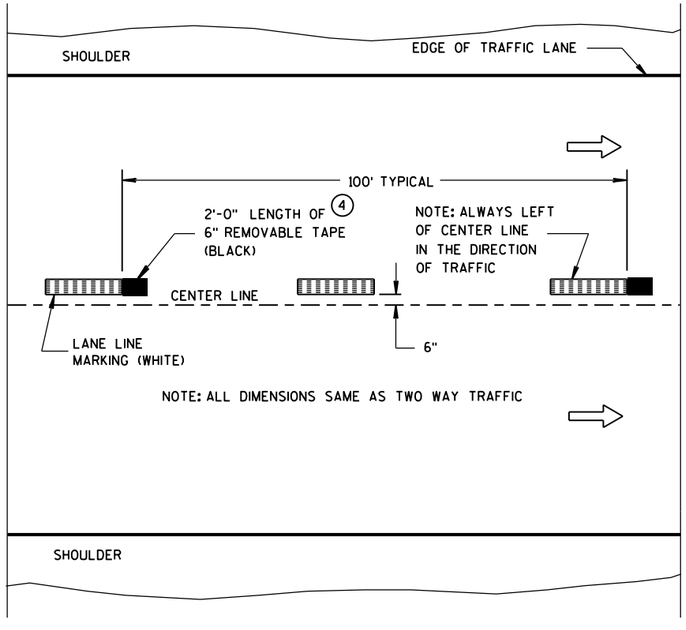


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

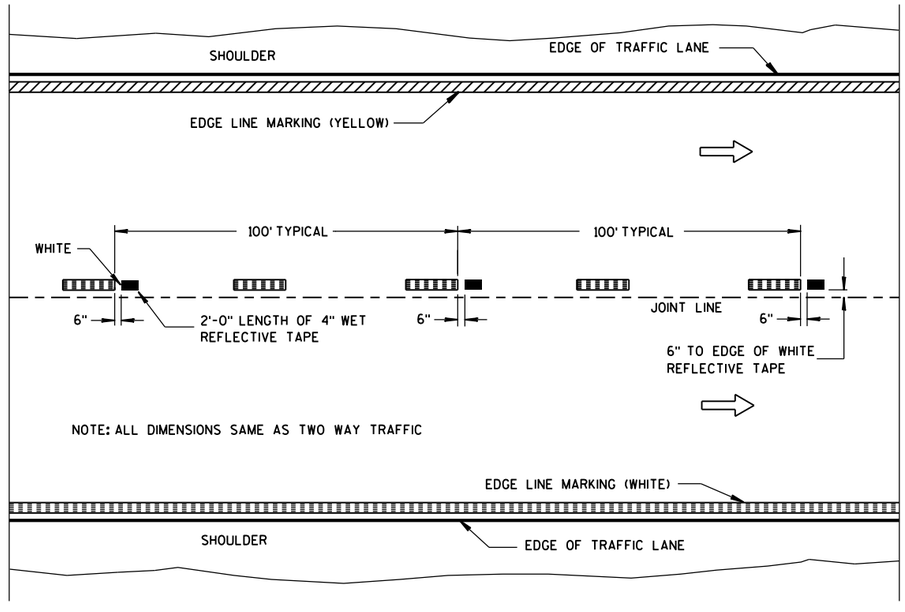
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013 DATE

/S/ Travis Feltes STATE TRAFFIC E

FHWA

6

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

6

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA

W057-52
36"x24"

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET).

LOCATED 500 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.

R2-1
48"x60"
(BLACK AND WHITE)

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

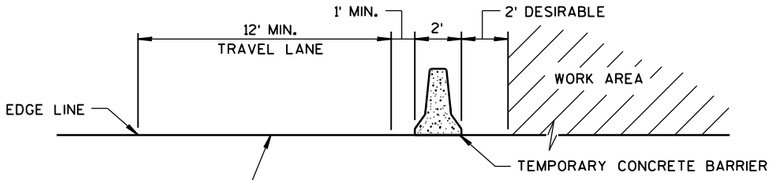
(1) CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

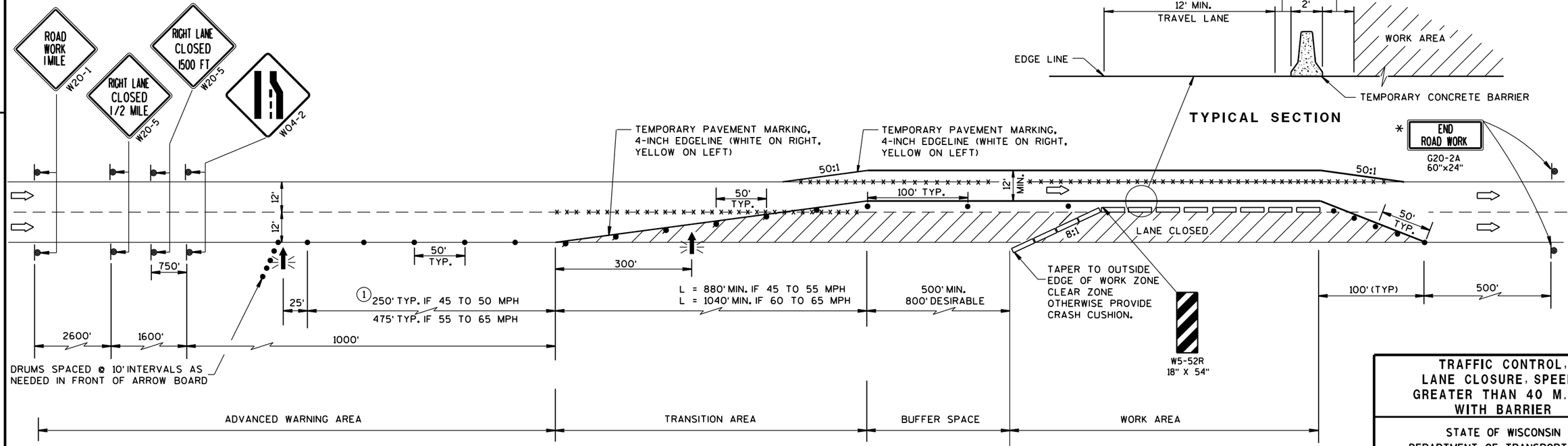
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.



TYPICAL SECTION



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 D 3-2

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

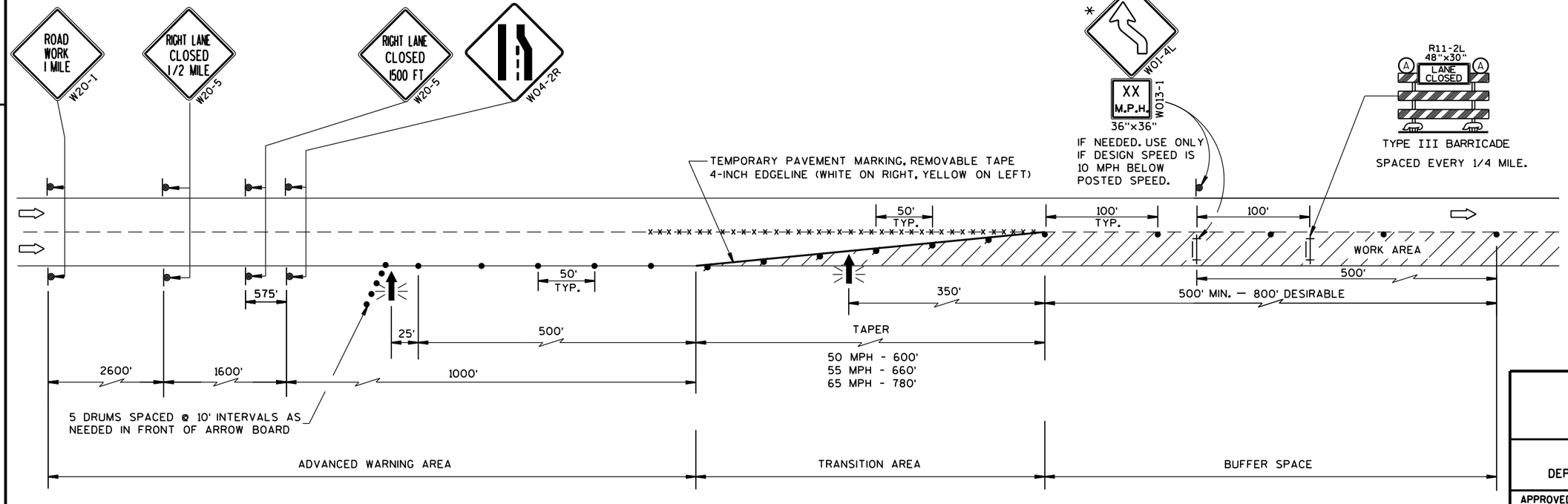
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 D 12-5a

6

S.D.D. 15 D 12-5a

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

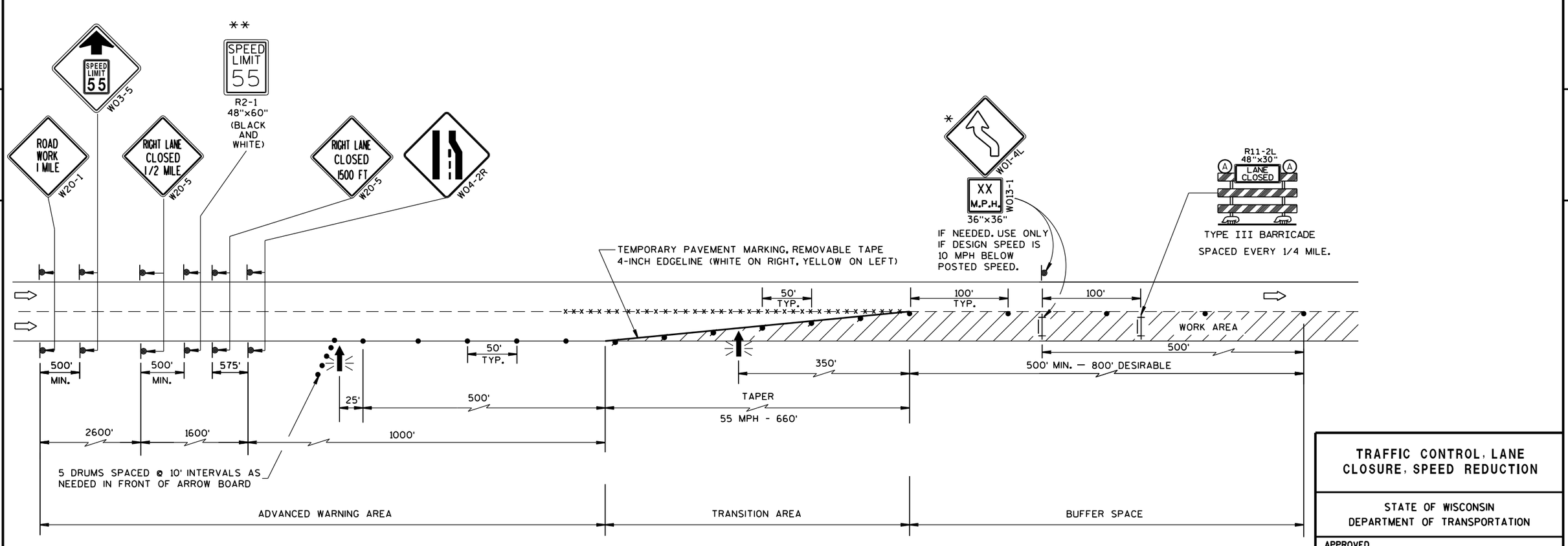
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A 65 MPH RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

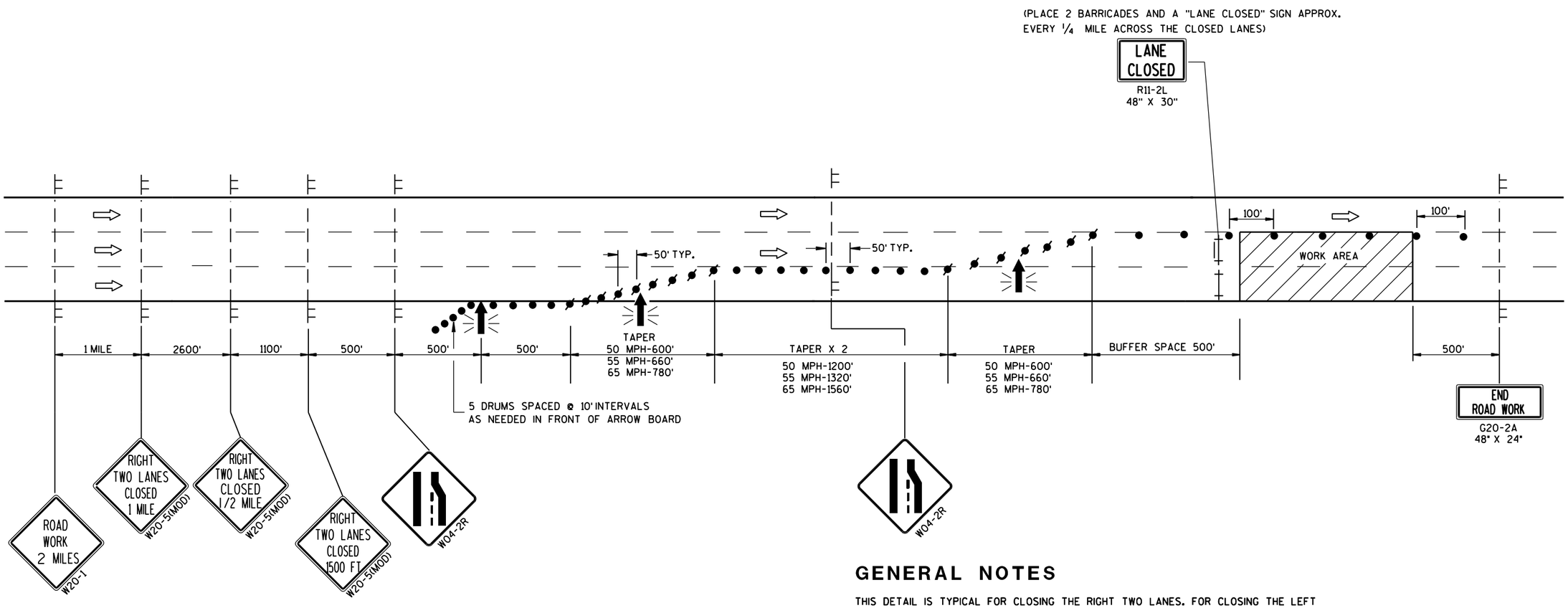
Feb. 2015 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

S.D.D. 15 D 12-5b

S.D.D. 15 D 12-5b



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT TWO LANES. FOR CLOSING THE LEFT TWO LANES, REVERSE THE TRAFFIC CONTROL.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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

BARRICADES IN A CLOSED LANE 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.

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

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT TERM (LESS THAN 24 HOURS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 D 14-2

LEGEND

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

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

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

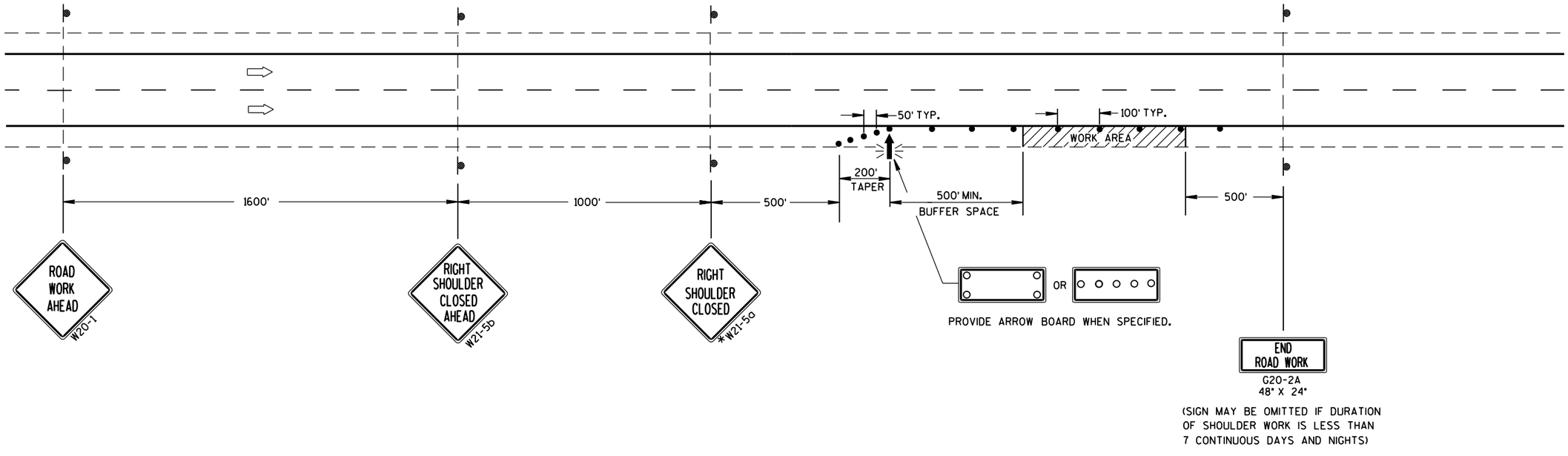
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

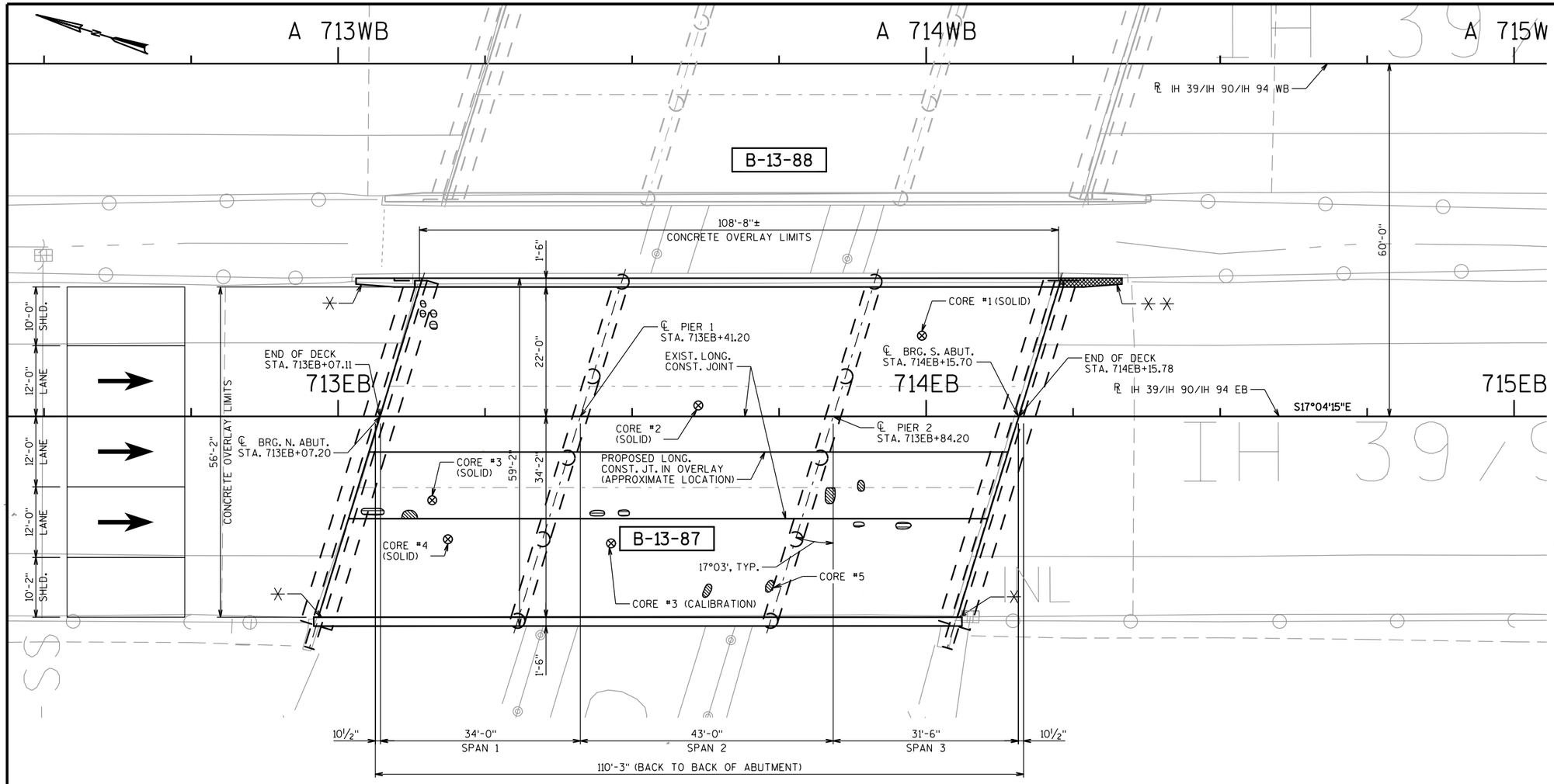
FHWA

6

S.D.D. 15 D 27-2

STATE PROJECT NUMBER
1011-04-65

LIST OF DRAWINGS



PLAN

(3 SPAN - CAST-IN-PLACE HAUNCHED CONCRETE SLAB BRIDGE)
(CONCRETE OVERLAY)

LEGEND

- TRAFFIC DIRECTION
- EXISTING BEAM GUARD ATTACHMENT
- EXISTING BEAM GUARD ATTACHMENT TO BE REPLACED (REPLACE PARAPET ON WINGWALL)
- WINGWALL PARAPET TO BE REMOVED AND REPLACED

TRAFFIC DATA

CUBA VALLEY ROAD

A.D.T. = 566 (2012)
R.D.S. = 45 M.P.H.

IH 39/IH 90/IH 94 EB

A.D.T. = 25,850 (2012)
R.D.S. = 70 M.P.H.

DESIGN DATA

LIVE LOAD

DESIGN LOADING: HS20
INVENTORY RATING: HS13
OPERATING RATING: HS34
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY:
SUPERSTRUCTURE ..... f'c = 4,000 psi
BAR STEEL REINFORCEMENT ..... fy = 60,000 psi

DECK INSPECTION RESULTS

(INFRARED INSPECTION DATE: 4/14/15)
FOR INFORMATION ONLY

FIELD OBSERVATIONS SUMMARY		STRUCTURE NO. B-13-87	
ITEM	UNIT	QUANT.	%
TOTAL AREA	ft^2	6109	
SHADE/DEBRIS	ft^2	0	
DELAMINATION	ft^2	24	0.4
SPALL	ft^2	0	0
DEBOND	ft^2	33	0.5
ASPHALT PATCH	ft^2	0	0
CONCRETE PATCH	ft^2	0	0

LEGEND: DELAMINATION, SPALL, DEBOND, ASPHALT PATCH, CONCRETE PATCH, SHADE/DEBRIS

WISCONSIN ELIZABETH A. JELINEK E-40123 MILWAUKEE WI 7-23-15 PROFESSIONAL ENGINEER

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
HEATHER ANDERS (414) 359-2300

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

HNTB
11414 W. PARK PLACE
MILWAUKEE, WI 53224
(414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/04/15
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-13-87

IH 39/IH 90/IH 94 EB OVER CUBA VALLEY ROAD

COUNTY	TOWN ~~CITY/VILLAGE~~
DANE	VIENNA

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EAJ	HDA	EAJ	HDA

GENERAL PLAN

SHEET 1 OF 5

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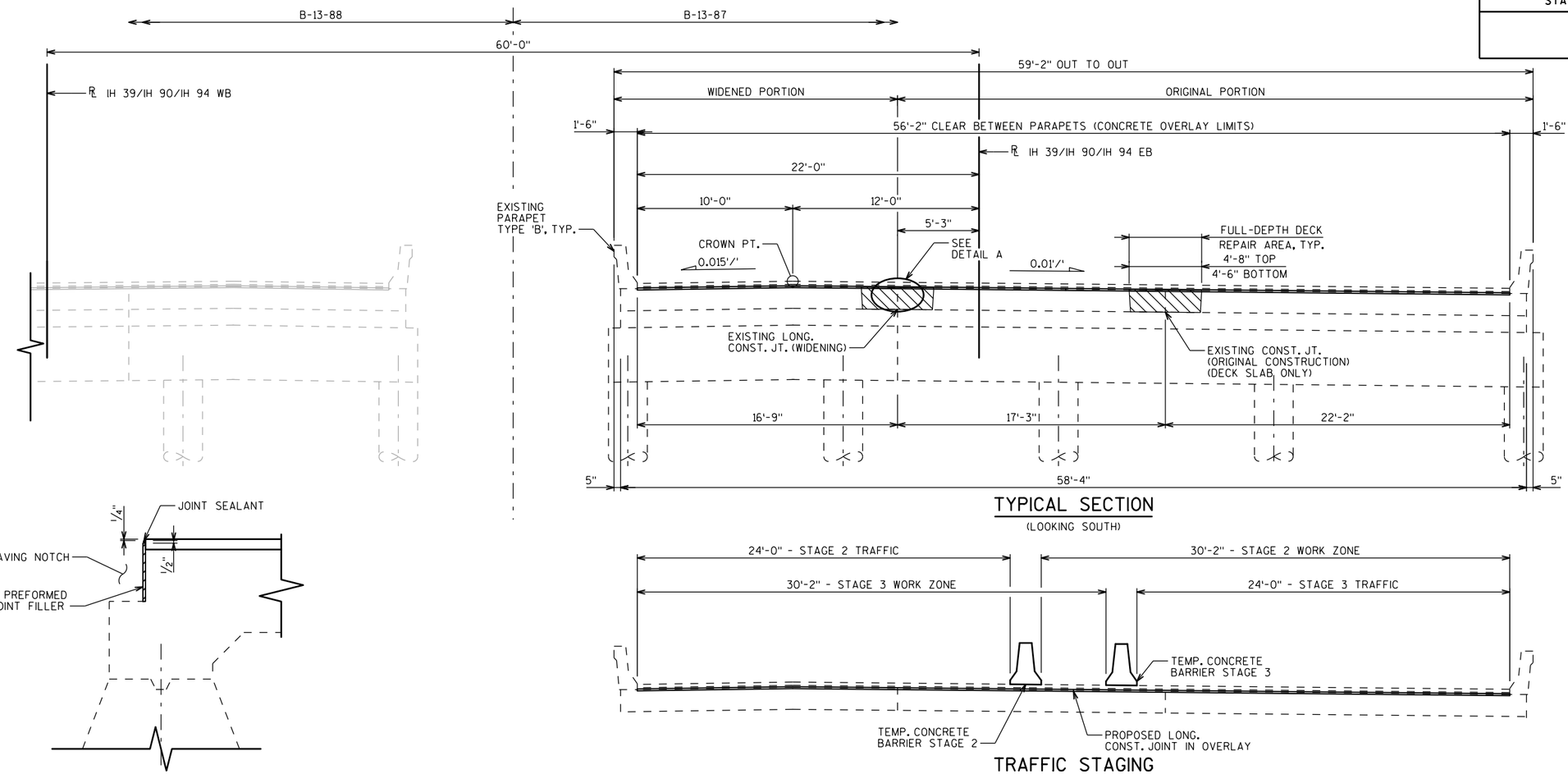
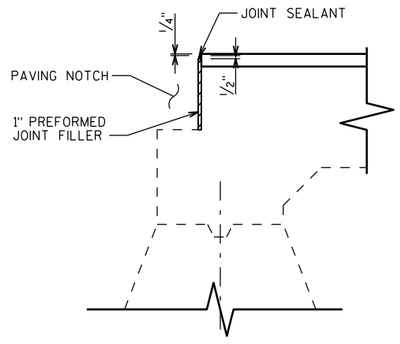
PLOT SCALE : 20:1

STATE PROJECT NUMBER
1011-04-65



TYPICAL SECTION

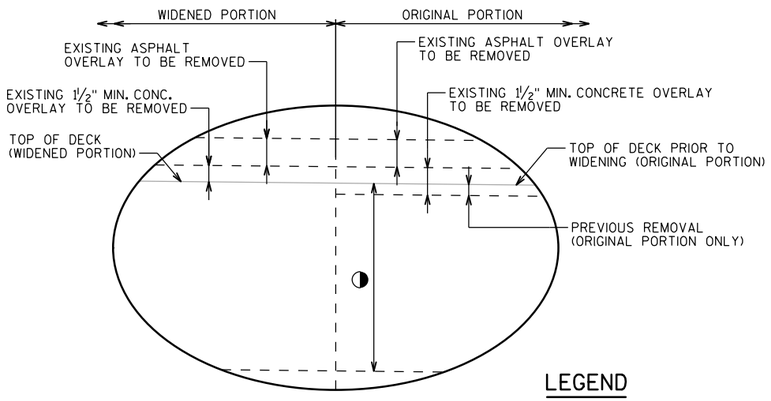
(LOOKING SOUTH)



PROPOSED FILLER DETAIL AT ABUTMENTS

TRAFFIC STAGING

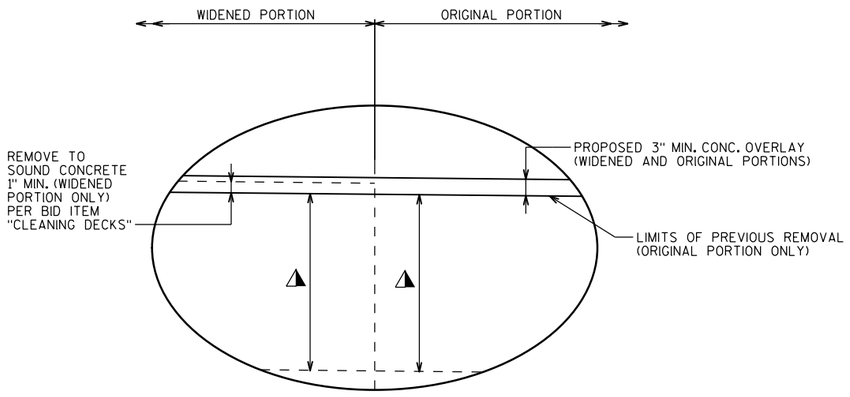
(LOOKING SOUTH)



DETAIL A - EXISTING

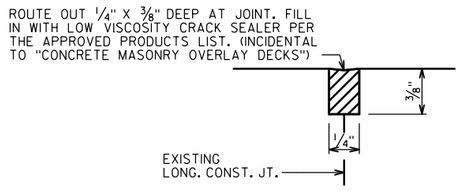
LEGEND

◑ DEPTH SPAN 1 = 1'-4½"
DEPTH SPAN 2 = 1'-5"
DEPTH SPAN 3 = 1'-4"
DEPTH AT HAUNCH = 2'-6"



DETAIL A - PROPOSED

◭ ORIGINAL DECK THICKNESS TO REMAIN



LONG. CONST. JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-87

DRAWN BY EAJ | PLANS CK'D. HDA

TYPICAL SECTION

SHEET 2 OF 5

STATE PROJECT NUMBER
1011-04-65

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING STRUCTURE PLANS.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL STATIONS AND ELEVATIONS ARE IN FEET.

LOCATIONS OF THE FOLLOWING BID ITEMS SHALL BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER:
- PREPARATION DECKS
- CONCRETE SURFACE REPAIR
- REMOVING LOOSE CONCRETE

QUANTITIES SHOWN FOR THE ABOVE BID ITEMS ARE APPROXIMATE.

GROUND PENETRATING RADAR INSPECTION PERFORMED IN ADDITION TO INFRARED INSPECTION INDICATES POTENTIAL FOR GREATER DETERIORATION THAN SHOWN ON "GENERAL PLAN" SHEET, DECK INSPECTION RESULTS. REFER TO AECOM "INFRARED THERMOGRAPHIC AND GROUND PENETRATING RADAR SURVEYS OF IH 39 SOUTHBOUND - IH 90/94 EASTBOUND OVER CUBA VALLEY ROAD (S.N. B-13-87) IN DANE COUNTY WISCONSIN" REPORT DATED MAY 2015.

APPLY CORROSION INHIBITOR PER SPECIAL PROVISION "REMOVING LOOSE CONCRETE" TO ANY AREAS OF REINFORCING STEEL STILL EXPOSED FOLLOWING ALL OTHER REPAIRS. PAID FOR UNDER BID ITEM "REMOVING LOOSE CONCRETE".

DECK PREPARATION REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

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

ALL REINFORCING BARS ARE ENGLISH. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE WIDENED PORTION OF THE SLAB UNDER THE BID ITEM "CLEANING DECKS" AFTER REMOVAL OF ASPHALT OVERLAY AND EXISTING 1½" MIN. CONCRETE OVERLAY IS COMPLETED.

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 3" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 3½". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION

"PROTECTIVE SURFACE TREATMENT" SHALL BE APPLIED TO THE FOLLOWING COMPLETED SURFACES:
- TOP SURFACE OF NEW CONCRETE OVERLAY

"PIGMENTED SURFACE SEALER" SHALL BE APPLIED TO THE FOLLOWING COMPLETED SURFACES:
- TOP AND INSIDE FACE OF NEW WINGWALL PARAPET.

PROTECTIVE SURFACE TREATMENT PAID FOR UNDER "PROTECTIVE SURFACE TREATMENT RESEAL" SHALL BE APPLIED TO THE FOLLOWING SURFACES:
- TOP AND INSIDE FACES OF EXISTING PARAPETS

INSTALL AT PAVING NOTCH A NEW 1" PREFORMED JOINT FILLER WHICH SHALL BE CONSIDERED INCIDENTAL TO "CONCRETE MASONRY OVERLAY DECKS". HOT POURED JOINT SEALANT AT FILLER INCIDENTAL TO "CONCRETE MASONRY OVERLAY DECKS".

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M153 TYPE 1, 2, OR 3, OR AASHTO M213.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1" JOINT FILLER WITH HOT POURED JOINT SEALANT (½" DEEP AND HOLD ¼" BELOW SURFACE OF CONCRETE).

ANY EXCAVATION REQUIRED TO COMPLETE THE CONCRETE OVERLAY AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

BEVEL EDGES OF EXPOSED CONCRETE TO MATCH EXISTING BEVELS UNLESS NOTED OTHERWISE.

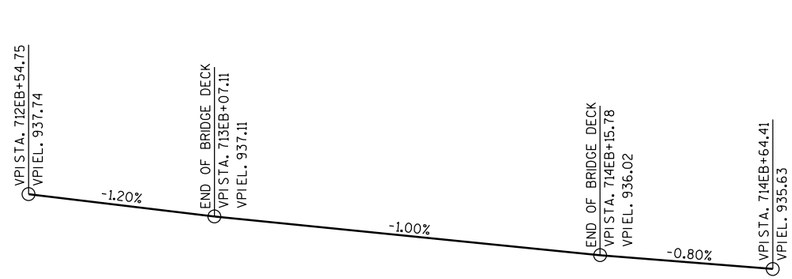
"REMOVING OLD STRUCTURE STA. 713EB+63" INCLUDES REMOVAL OF SE WINGWALL PARAPET AND PRESERVING AND REUSING REINFORCEMENT TO REMAIN.

CONCRETE AT FULL DEPTH DECK REPAIR AREAS AND PARAPET REPLACEMENT TO BE HIGH EARLY STRENGTH CONCRETE, PAID FOR AS "CONCRETE MASONRY BRIDGES HES".

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNIT	TOTAL
203.0200	REMOVING OLD STRUCTURE STA. 713EB+63	LS	1
203.0225.S.001	DEBRIS CONTAINMENT B-13-0087	LS	1
502.0200	CONCRETE MASONRY BRIDGES HES	CY	27
502.3200	PROTECTIVE SURFACE TREATMENT	SY	678
502.3210	PIGMENTED SURFACE SEALER	SY	4
502.3215.S	PROTECTIVE SURFACE TREATMENT RESEAL	SY	103
502.5010	MASONRY ANCHORS TYPE L NO. 6 BARS	EACH	13
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	9,860
509.0301	PREPARATION DECKS TYPE 1	SY	89
509.0302	PREPARATION DECKS TYPE 2	SY	36
509.0500	CLEANING DECKS	SY	174
509.1500	CONCRETE SURFACE REPAIR	SF	40
509.2000	FULL-DEPTH DECK REPAIR	SY	82
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	73
509.9005.S.001	REMOVING CONCRETE MASONRY DECK OVERLAY B-13-0087	SY	678
509.9010.S.001	REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-0087	SY	678
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	1
SPV.0165.001	REMOVING LOOSE CONCRETE	SF	31
	NON-BID ITEMS		
	PREFORMED JOINT FILLER		1/2", 1"

ALL ITEMS ARE CATEGORY 0020



FINISHED PROFILE GRADE LINE AT ℄ IH 39/90/94 EB

(FINISHED PROFILE BASED ON 3" MIN. CONCRETE BRIDGE OVERLAY)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-87

DRAWN BY EAJ | PLANS CK'D. HDA

PROFILE GRADE LINE, GENERAL NOTES & QUANTITIES

SHEET 3 OF 5

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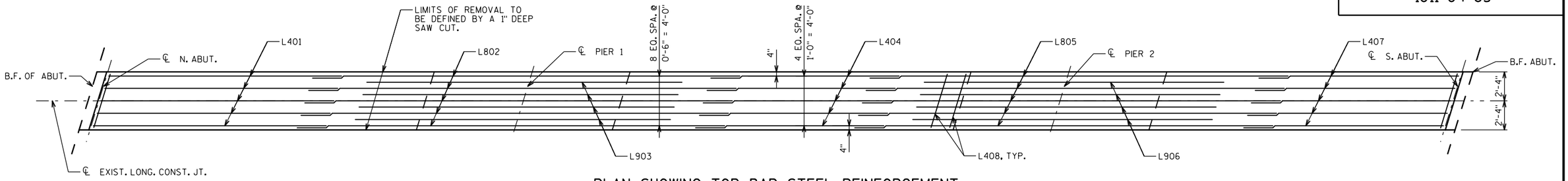
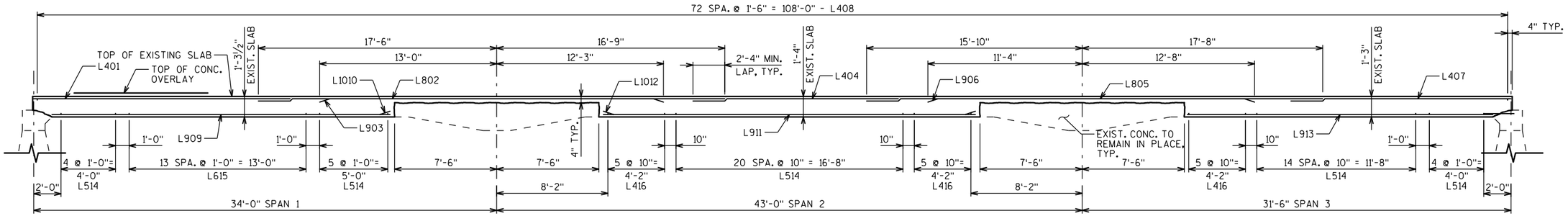
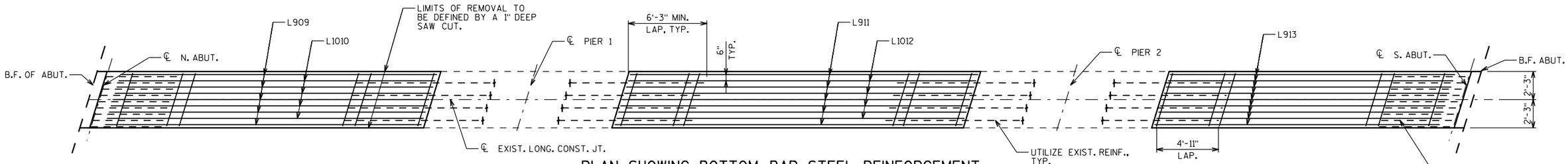


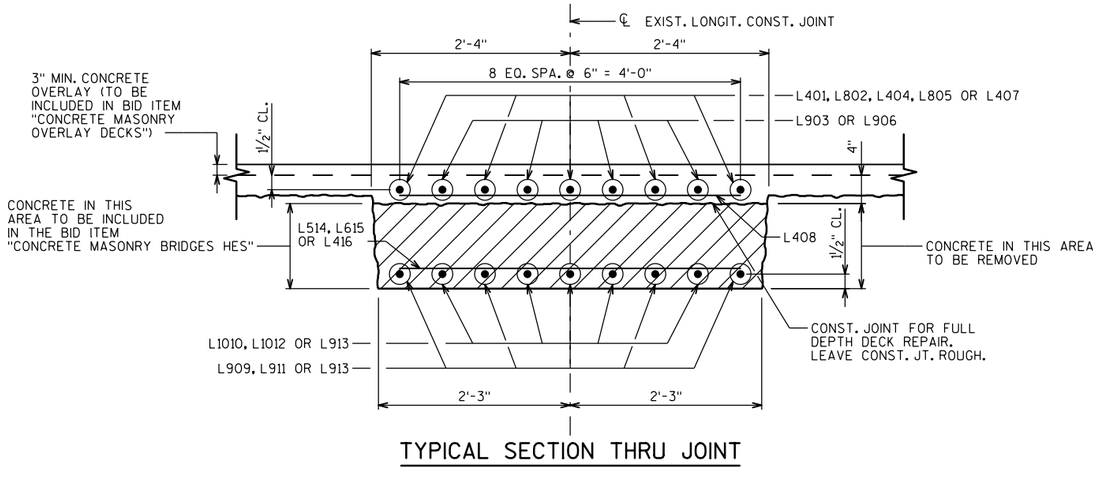
PLAN SHOWING TOP BAR STEEL REINFORCEMENT



LONGITUDINAL SECTION



PLAN SHOWING BOTTOM BAR STEEL REINFORCEMENT



TYPICAL SECTION THRU JOINT

BILL OF BARS

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	LOCATION
L401	X	10	18'-10"		SLAB - TOP LONG. - SPAN 1
L802	X	10	34'-3"		SLAB - TOP LONG. - PIER 1
L903	X	8	25'-3"		SLAB - TOP LONG. - PIER 1
L404	X	10	15'-1"		SLAB - TOP LONG. - SPAN 2
L805	X	10	33'-6"		SLAB - TOP LONG. - PIER 2
L906	X	8	24'-0"		SLAB - TOP LONG. - PIER 2
L407	X	10	16'-0"		SLAB - TOP LONG. - SPAN 3
L408	X	146	4'-4"		SLAB - TOP TRANS.
L909	X	10	25'-2"		SLAB - BOT. LONG. - SPAN 1
L1010	X	8	25'-2"		SLAB - BOT. LONG. - SPAN 1
L911	X	10	27'-8"		SLAB - BOT. LONG. - SPAN 2
L1012	X	8	27'-8"		SLAB - BOT. LONG. - SPAN 2
L913	X	18	22'-8"		SLAB - BOT. LONG. - SPAN 3
L514	X	104	4'-2"		SLAB - BOT. TRANS.
L615	X	28	4'-2"		SLAB - BOT. TRANS.
L416	X	36	4'-2"		SLAB - BOT. TRANS.

NOTES:

BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

BILL OF BARS IS TOTAL FOR TWO LONG. CONST. JOINT REPAIRS.

NOTES

PRESERVE AND UTILIZE EXISTING TRANSVERSE REINFORCEMENT BARS (NOT SHOWN IN DETAILS FOR CLARITY).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-87

DRAWN BY EAJ | PLANS CK'D. HDA

LONG. CONST. JOINT REPAIRS

SHEET 4 OF 5

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STATE PROJECT NUMBER
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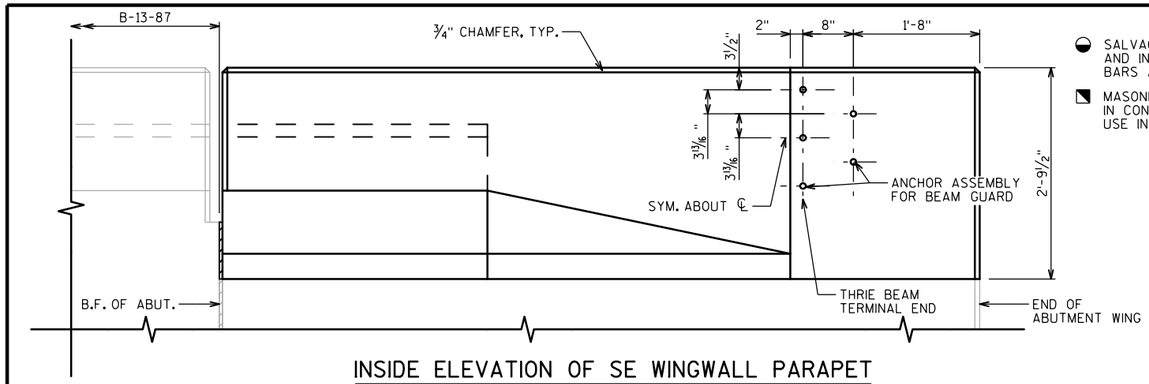
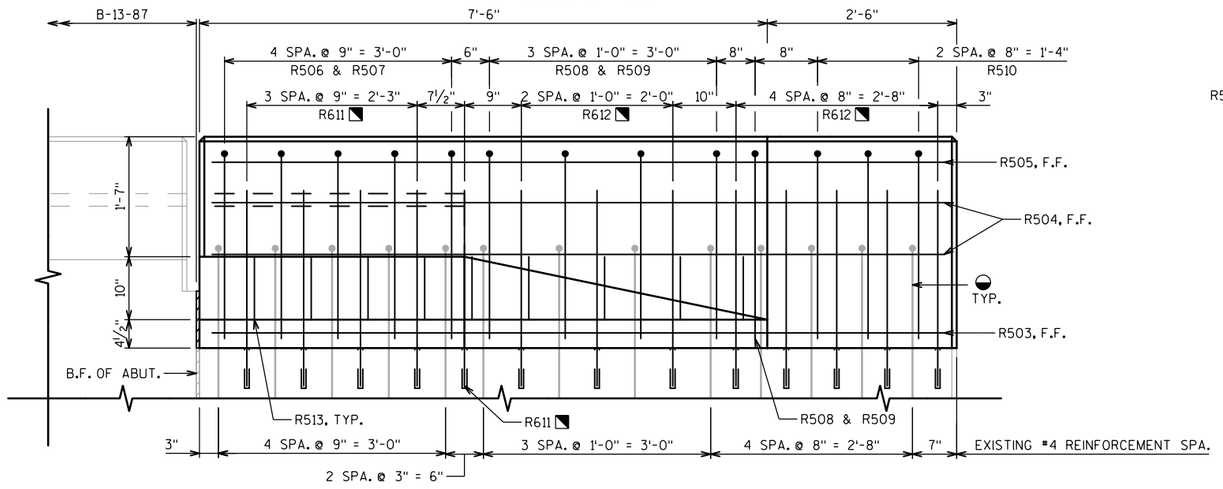


◒ SALVAGE EXISTING VERTICAL REINFORCEMENT BARS AND INCORPORATE INTO NEW WORK. BEND EXISITNG BARS AS NECESSARY TO FIT NEW PARAPET SHAPE.

◥ MASONRY ANCHORS, TYPE L NO. 6 BARS. EMBED 6" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

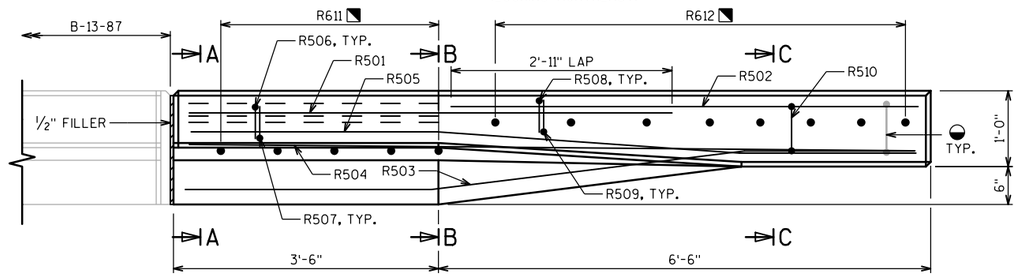
INSIDE ELEVATION OF SE WINGWALL PARAPET

(LOOKING NORTHEAST)

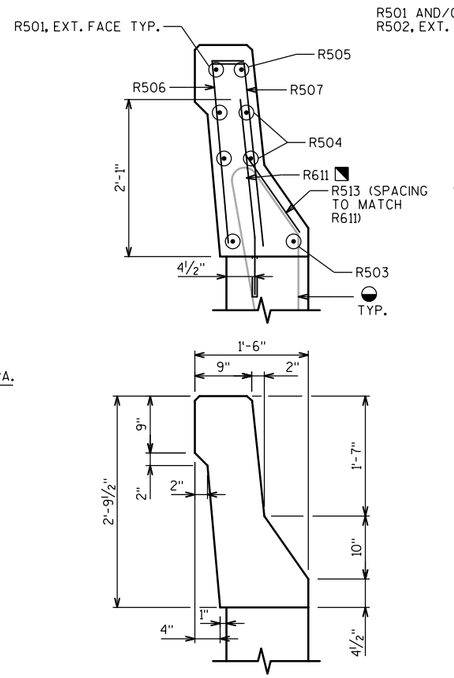


INSIDE ELEVATION OF SE WINGWALL PARAPET

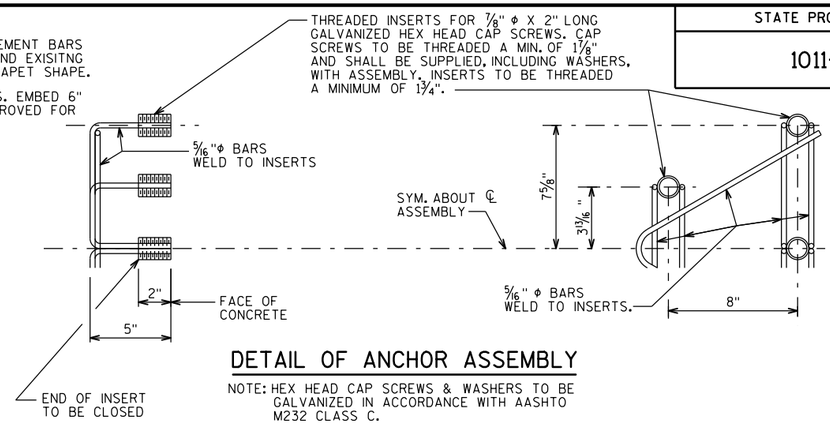
SHOWING VERTICAL AND INTERIOR FACE HORIZ. REINF. ONLY
(LOOKING NORTHEAST)



PLAN OF SE WINGWALL PARAPET



DETAIL OF ANCHOR ASSEMBLY



NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY BID ITEM SHALL BE "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

SECTION A-A

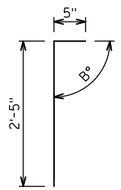
SECTION B-B

SECTION C-C

BILL OF BARS

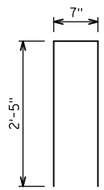
BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	LOCATION
R501	X	4	6'-5"		HORIZONTAL BACK FACE
R502	X	4	6'-2"		HORIZONTAL BACK FACE
R503	X	1	9'-7"	X	HORIZONTAL FRONT FACE
R504	X	2	9'-7"		HORIZONTAL FRONT FACE
R505	X	1	9'-7"	X	HORIZONTAL FRONT FACE
R506	X	5	2'-9"	X	VERTICAL BACK FACE
R507	X	5	2'-9"	X	VERTICAL FRONT FACE
R508	X	5	2'-9"	X	VERTICAL BACK FACE
R509	X	5	2'-9"	X	VERTICAL FRONT FACE
R510	X	3	5'-2"	X	VERTICAL STIRRUP
R611	X	5	2'-8"	X	VERTICAL DOWEL
R612	X	8	2'-7"		VERTICAL DOWEL
R513	X	9	1'-3"		VERTICAL FRONT FACE

◥ NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR.
THE FIRST OR FIRST TWO DIGITS
OF A BAR MARK SIGNIFIES THE BAR SIZE

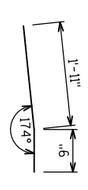


BAR MARK	B
R506	85
R507	96
R508	90
R509	FIELD BEND

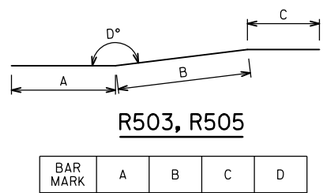
R506, R507, R508, R509



R510



R611



R503, R505

BAR MARK	A	B	C	D
R503	3'-2"	4'-2"	2'-3"	173
R505	3'-3"	4'-0"	2'-4"	176

◥

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-87

DRAWN BY EAJ | PLANS CK'D. HDA

SE WINGWALL PARAPET REPLACEMENT

SHEET 5 OF 5

8

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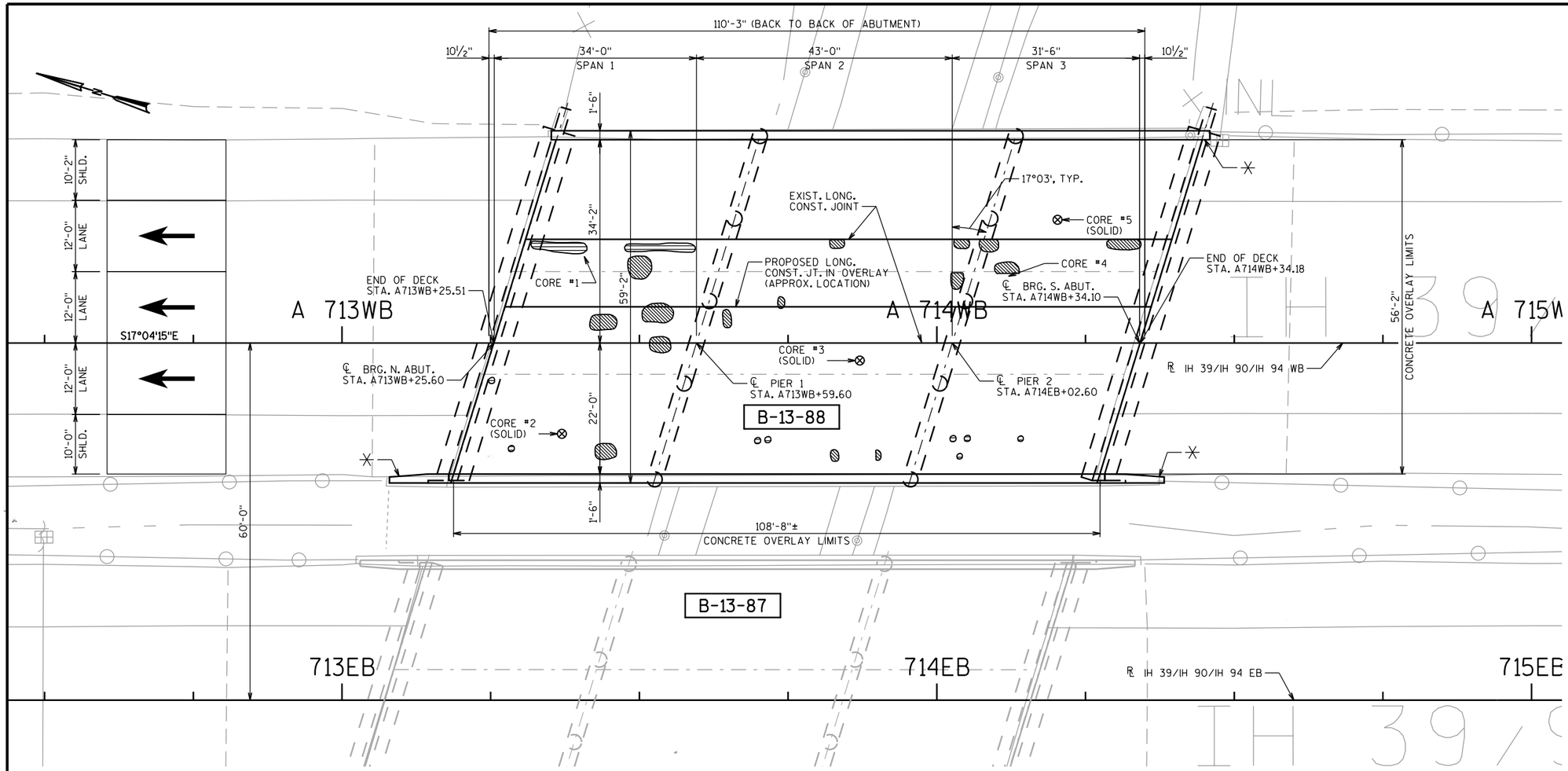

PLAN

(3 SPAN - CAST-IN-PLACE HAUNCHED CONCRETE SLAB BRIDGE)
(CONCRETE OVERLAY)

DECK INSPECTION RESULTS

(INFRARED INSPECTION DATE: 4/14/15)
FOR INFORMATION ONLY

FIELD OBSERVATIONS SUMMARY		STRUCTURE NO. B-13-88	
ITEM	UNIT	QUANT.	%
TOTAL AREA	ft^2	6109	
SHADE/DEBRIS	ft^2	0	
DELAMINATION	ft^2	98	1.6
SPALL	ft^2	0	0
DEBOND	ft^2	36	0.6
ASPHALT PATCH	ft^2	0	0
CONCRETE PATCH	ft^2	0	0

LEGEND: DELAMINATION, SPALL, DEBOND, ASPHALT PATCH, CONCRETE PATCH, SHADE/DEBRIS

TRAFFIC DATA

CUBA VALLEY ROAD

A.D.T. = 566 (2012)
R.D.S. = 45 M.P.H.

IH 39/IH 90/IH 94 WB

A.D.T. = 25,850 (2012)
R.D.S. = 70 M.P.H.

DESIGN DATA

LIVE LOAD

DESIGN LOADING: HS20
INVENTORY RATING: HS13
OPERATING RATING: HS34
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY:
SUPERSTRUCTURE ..... f'c = 4,000 psi
BAR STEEL REINFORCEMENT ..... fy = 60,000 psi

STATE PROJECT NUMBER
1011-04-65

LIST OF DRAWINGS

LEGEND

→ TRAFFIC DIRECTION

⊗ EXISTING BEAM GUARD ATTACHMENT

STRUCTURES DESIGN CONTACTS
BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
HEATHER ANDERS (414) 359-2300

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
HNTB
11414 W. PARK PLACE
MILWAUKEE, WI 53224
(414) 359-2300

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Ducker SDR 08/04/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

WISCONSIN ELIZABETH A. JELINEK E-40123 MILWAUKEE WI 7-23-15 PROFESSIONAL ENGINEER

STRUCTURE B-13-88

IH 39/IH 90/IH 94 WB OVER CUBA VALLEY ROAD

COUNTY	TOWN ~~CITY/VILLAGE~~
DANE	VIENNA

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EAJ	HDA	EAJ	HDA

GENERAL PLAN

SHEET 1 OF 4

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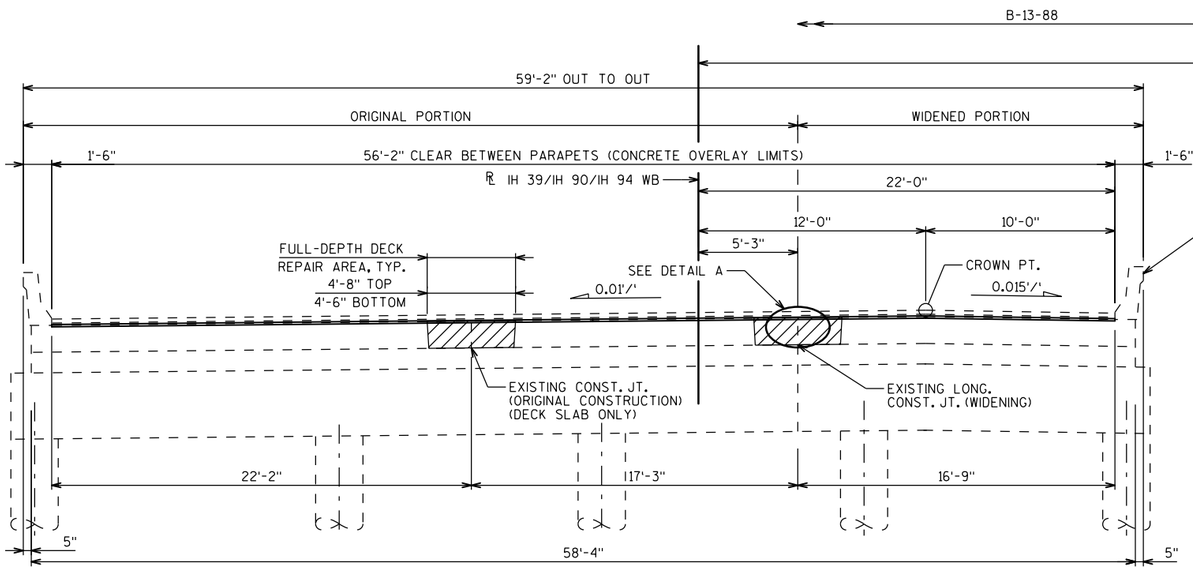
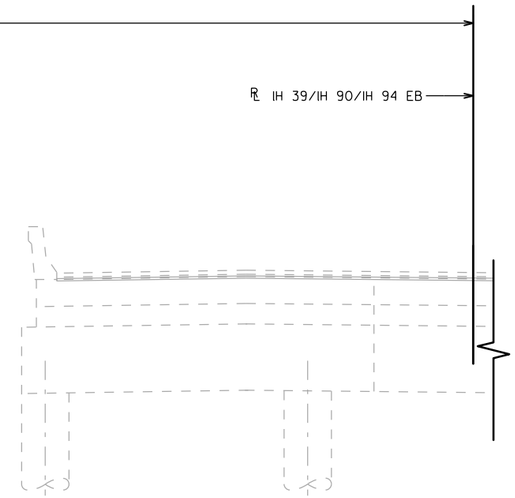
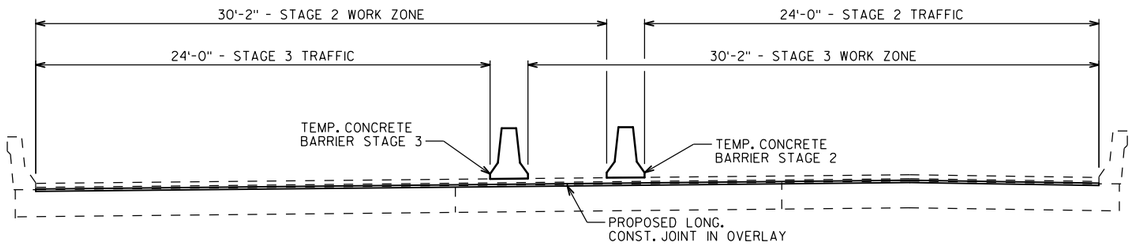
STATE PROJECT NUMBER
1011-04-65



TYPICAL SECTION

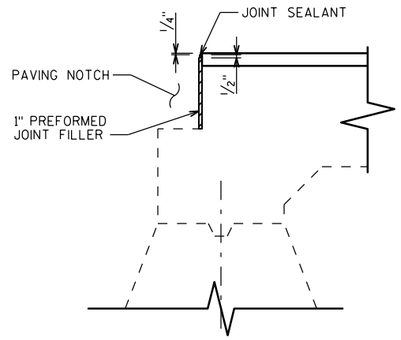
(LOOKING SOUTH)



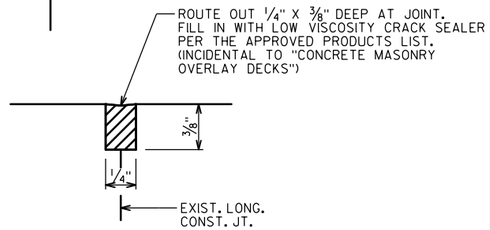


TRAFFIC STAGING

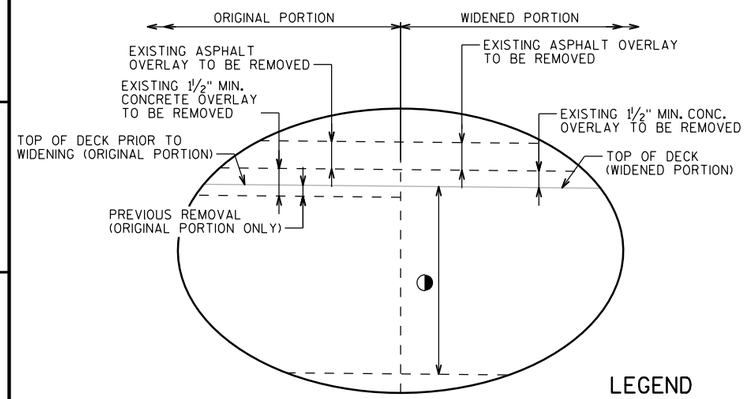
(LOOKING SOUTH)



PROPOSED FILLER DETAIL AT ABUTMENTS



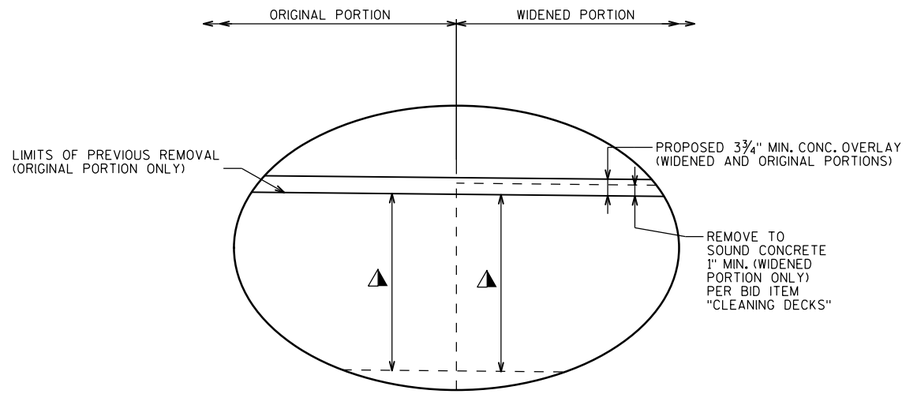
LONGITUDINAL CONSTRUCTION JOINT DETAIL



DETAIL A - EXISTING

LEGEND

◑ DEPTH SPAN 1 = 1'-4 1/2"
DEPTH SPAN 2 = 1'-5"
DEPTH SPAN 3 = 1'-4"
DEPTH AT HAUNCH = 2'-6"



DETAIL A - PROPOSED

◭ ORIGINAL DECK THICKNESS TO REMAIN

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-88

DRAWN BY EAJ | PLANS CK'D. HDA

TYPICAL SECTION

SHEET 2 OF 4

FILE NAME : \\madw00\ingrproj\59970\b1\B-13-88\final\cds\080102_ts.dgn
PLOT DATE : 7/23/2015 10:33:40 AM
PLOT BY : ejelinek
PLOT NAME : $FILE$
PLOT SCALE : 8:1

STATE PROJECT NUMBER
1011-04-65

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING STRUCTURE PLANS.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL STATIONS AND ELEVATIONS ARE IN FEET.

LOCATIONS OF THE FOLLOWING BID ITEMS SHALL BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER:
- PREPARATION DECKS
- CONCRETE SURFACE REPAIR
- REMOVING LOOSE CONCRETE

QUANTITIES SHOWN FOR THE ABOVE BID ITEMS ARE APPROXIMATE.

GROUND PENETRATING RADAR INSPECTION PERFORMED IN ADDITION TO INFRARED INSPECTION INDICATES POTENTIAL FOR GREATER DETERIORATION THAN SHOWN ON "GENERAL PLAN" SHEET. DECK INSPECTION RESULTS. REFER TO AECOM "INFRARED THERMOGRAPHIC AND GROUND PENETRATING RADAR SURVEYS OF IH 39 NORTHBOUND - IH 90/94 WESTBOUND OVER CUBA VALLEY ROAD (S.N. B-13-88) IN DANE COUNTY WISCONSIN" REPORT DATED MAY 2015.

APPLY CORROSION INHIBITOR PER SPECIAL PROVISION "REMOVING LOOSE CONCRETE" TO ANY AREAS OF REINFORCING STEEL STILL EXPOSED FOLLOWING ALL OTHER REPAIRS. PAID FOR UNDER BID ITEM "REMOVING LOOSE CONCRETE".

DECK PREPARATION REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

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

ALL REINFORCING BARS ARE ENGLISH. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE WIDENED PORTION OF THE SLAB UNDER THE BID ITEM "CLEANING DECKS" AFTER REMOVAL OF ASPHALT OVERLAY AND EXISTING 1½" MIN. CONCRETE OVERLAY IS COMPLETED.

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 3¾" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 4¼". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION

"PROTECTIVE SURFACE TREATMENT" SHALL BE APPLIED TO THE FOLLOWING COMPLETED SURFACES:
- TOP SURFACE OF NEW CONCRETE OVERLAY

PROTECTIVE SURFACE TREATMENT PAID FOR UNDER "PROTECTIVE SURFACE TREATMENT RESEAL" SHALL BE APPLIED TO THE FOLLOWING SURFACES:
- TOP AND INSIDE FACES OF EXISTING PARAPETS

INSTALL AT PAVING NOTCH A NEW 1" PREFORMED JOINT FILLER WHICH SHALL BE CONSIDERED INCIDENTAL TO "CONCRETE MASONRY OVERLAY DECKS". HOT POURED JOINT SEALANT AT FILLER INCIDENTAL TO "CONCRETE MASONRY OVERLAY DECKS".

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M153 TYPE 1, 2, OR 3, OR AASHTO M213.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1" JOINT FILLER WITH HOT POURED JOINT SEALANT (½" DEEP AND HOLD ¼" BELOW SURFACE OF CONCRETE).

ANY EXCAVATION REQUIRED TO COMPLETE THE CONCRETE OVERLAY AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

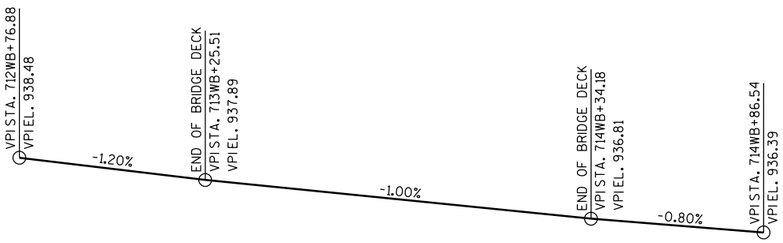
BEVEL EDGES OF EXPOSED CONCRETE TO MATCH EXISTING BEVELS UNLESS NOTED OTHERWISE.

CONCRETE AT FULL-DEPTH DECK REPAIR AREAS TO BE HIGH EARLY STRENGTH CONCRETE, PAID FOR AS "CONCRETE MASONRY BRIDGES HES".

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEM	UNIT	TOTAL
203.0225.S.002	DEBRIS CONTAINMENT B-13-0088	LS	1
502.0200	CONCRETE MASONRY BRIDGES HES	CY	26
502.3200	PROTECTIVE SURFACE TREATMENT	SY	678
502.3215.S	PROTECTIVE SURFACE TREATMENT RESEAL	SY	105
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	9,630
509.0301	PREPARATION DECKS TYPE 1	SY	149
509.0302	PREPARATION DECKS TYPE 2	SY	60
509.0500	CLEANING DECKS	SY	174
509.1500	CONCRETE SURFACE REPAIR	SF	40
509.2000	FULL-DEPTH DECK REPAIR	SY	82
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	92
509.9005.S.002	REMOVING CONCRETE MASONRY DECK OVERLAY B-13-0088	SY	678
509.9010.S.002	REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-0088	SY	678
SPV.0165.001	REMOVING LOOSE CONCRETE	SF	31
	NON-BID ITEMS		
	PREFORMED JOINT FILLER	SIZE	1"

ALL ITEMS ARE CATEGORY 0030



FINISHED PROFILE GRADE LINE AT ℄ IH 39/90/94 WB

(FINISHED PROFILE BASED ON 3¾" MIN. CONCRETE BRIDGE OVERLAY)

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-88

DRAWN BY EAJ | PLANS CK'D. HDA

PROFILE GRADE LINE, GENERAL NOTES & QUANTITES

SHEET 3 OF 4

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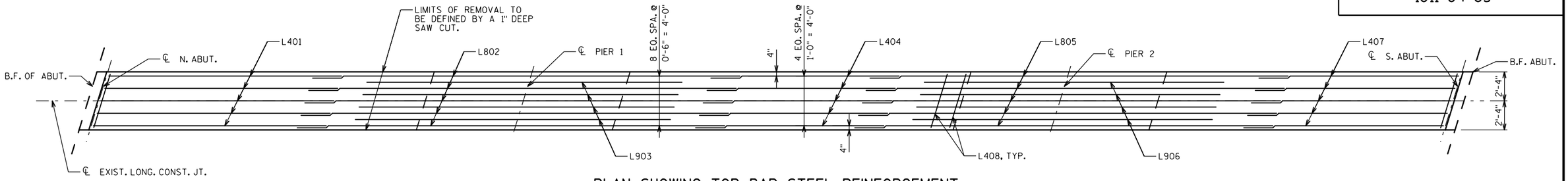
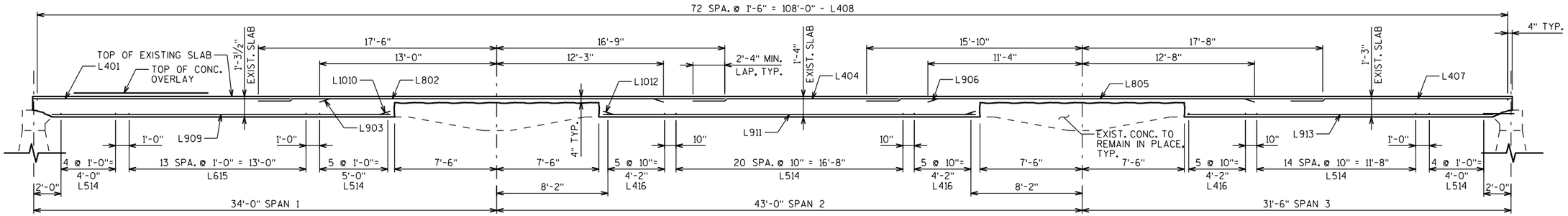
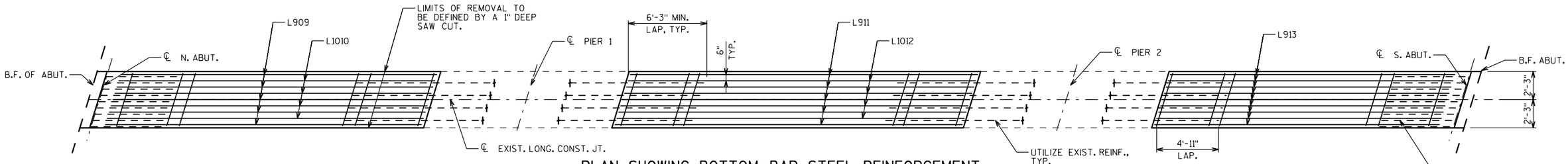
STATE PROJECT NUMBER
1011-04-65



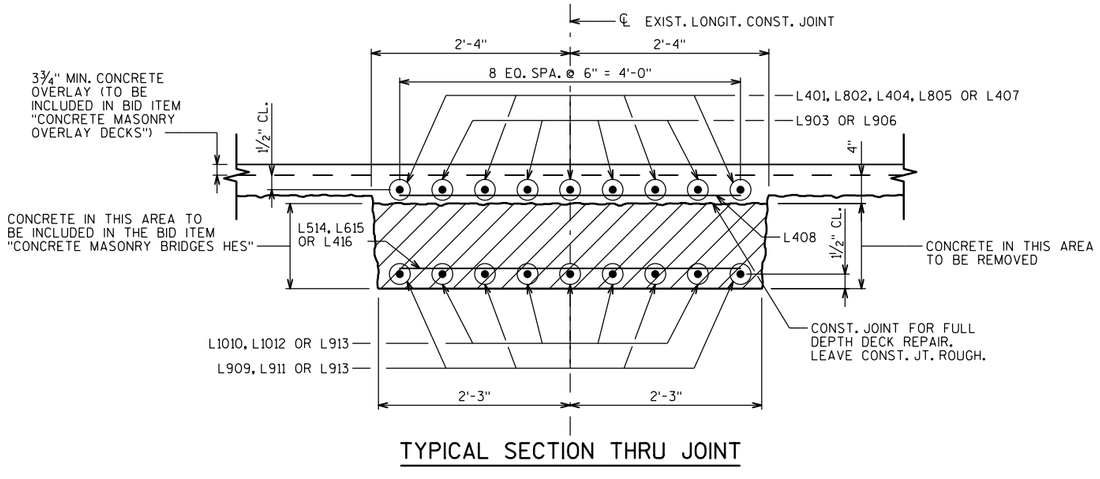
PLAN SHOWING TOP BAR STEEL REINFORCEMENT



LONGITUDINAL SECTION



PLAN SHOWING BOTTOM BAR STEEL REINFORCEMENT



TYPICAL SECTION THRU JOINT

NOTES

PRESERVE AND UTILIZE EXISTING TRANSVERSE REINFORCEMENT BARS (NOT SHOWN IN DETAILS FOR CLARITY).

BILL OF BARS

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	LOCATION
L401	X	10	18'-10"		SLAB - TOP LONG. - SPAN 1
L802	X	10	34'-3"		SLAB - TOP LONG. - PIER 1
L903	X	8	25'-3"		SLAB - TOP LONG. - PIER 1
L404	X	10	15'-1"		SLAB - TOP LONG. - SPAN 2
L805	X	10	33'-6"		SLAB - TOP LONG. - PIER 2
L906	X	8	24'-0"		SLAB - TOP LONG. - PIER 2
L407	X	10	16'-0"		SLAB - TOP LONG. - SPAN 3
L408	X	146	4'-4"		SLAB - TOP TRANS.
L909	X	10	25'-2"		SLAB - BOT. LONG. - SPAN 1
L1010	X	8	25'-2"		SLAB - BOT. LONG. - SPAN 1
L911	X	10	27'-8"		SLAB - BOT. LONG. - SPAN 2
L1012	X	8	27'-8"		SLAB - BOT. LONG. - SPAN 2
L913	X	18	22'-8"		SLAB - BOT. LONG. - SPAN 3
L514	X	104	4'-2"		SLAB - BOT. TRANS.
L615	X	28	4'-2"		SLAB - BOT. TRANS.
L416	X	36	4'-2"		SLAB - BOT. TRANS.

NOTES:

BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

BILL OF BARS IS TOTAL FOR TWO LONG. CONST. JOINT REPAIRS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-88

DRAWN BY EAJ | PLANS CK'D. HDA

LONG. CONST. JOINT REPAIRS

SHEET 4 OF 4

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Notes

Wisconsin Department of Transportation

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through innovation and exceptional service.

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