

WKE

PROJECT ID:
WITH: N/A

2025-18-70

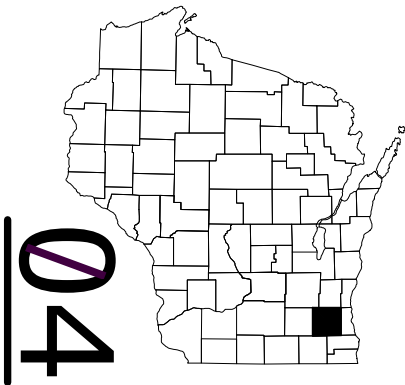
COUNTY:
WAUKESHA COUNTY

SEPT 2018

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 202



DESIGN DESIGNATION COUNTY YY

A.A.D.T. (2018)	= 13,100
A.A.D.T. (2038)	= 15,200
D.H.V.	= 1,733
D.D.	= 59/41
T.	= 4.1%
DESIGN SPEED	= 40 MPH
ESALS	= N/A

STH 190

= 38,300
= 42,700
= 4,841
= 58/42
= 4.1%
= 55 MPH
= 1,649,800 F
= 2,306,800 R

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	---
LOT LINE	---
LIMITED HIGHWAY EASEMENT	---
EXISTING RIGHT OF WAY	---
PROPOSED OR NEW R/W LINE	---
SLOPE INTERCEPT	300EB
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)	---
SPECIAL DITCH	---
GRADE ELEVATION	95.36
CULVERT (Profile View)	---
UTILITIES	
ELECTRIC	E
FIBER OPTIC	FO
GAS	G
SANITARY SEWER	SAN
STORM SEWER	SS
TELEPHONE	T
WATER	W
UTILITY PEDESTAL	---
POWER POLE	---
TELEPHONE POLE	---

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

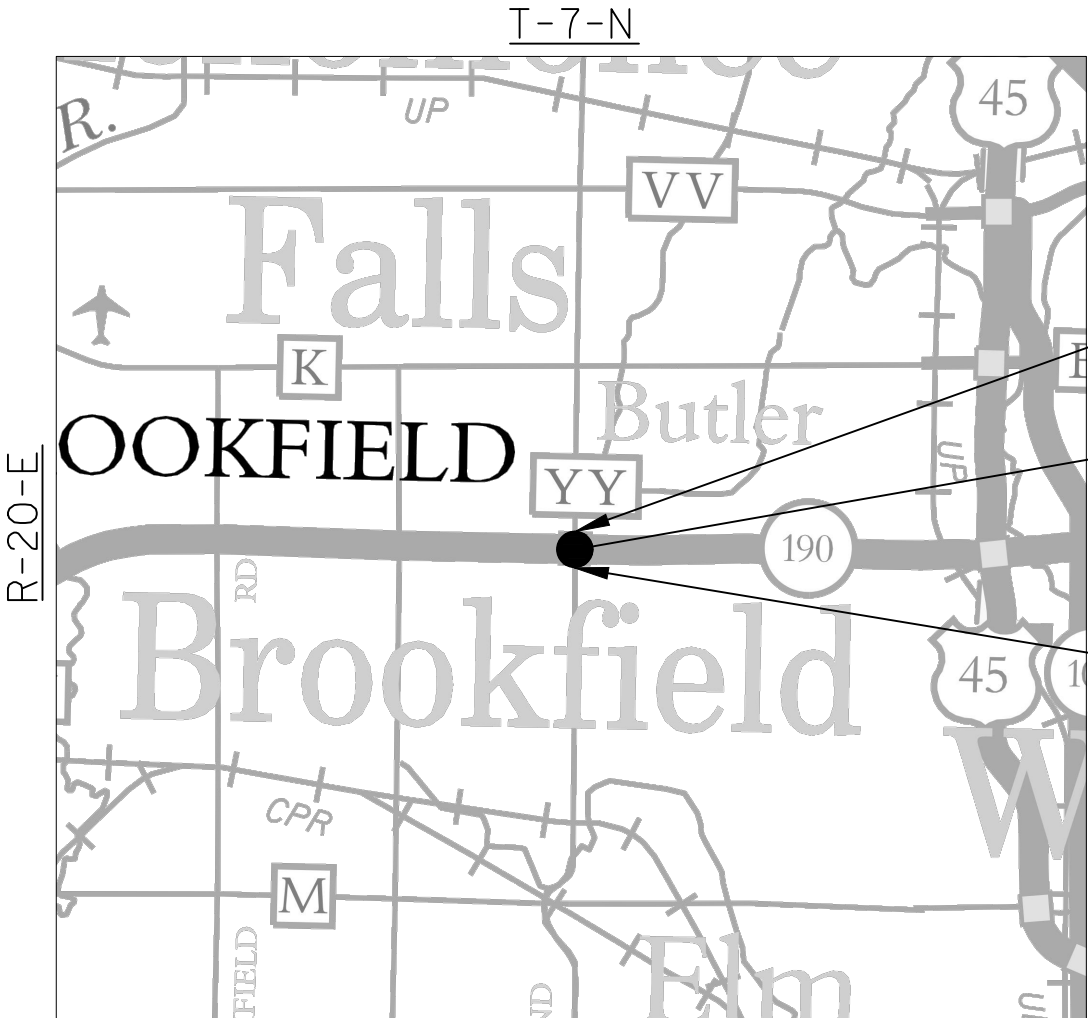
CAPITOL DRIVE, CITY OF BROOKFIELD

PILGRIM ROAD INTERCHANGE

STH 190

WAUKESHA COUNTY

STATE PROJECT NUMBER
2025-18-70



LAYOUT
SCALE 0 1 MILE
TOTAL NET LENGTH OF CENTERLINE = 0.223 mi

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY, NAD 83 (2011).
ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NAVD 88 (2012).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2025-18-70	WISC 2018374	1

END PROJECT: 2025-18-70
STA 25+75.00
Y = 190254.227
X = 716833.529

STRUCTURE B-67-86
STA 18+62.49 to 20+61.49

BEGIN PROJECT: 2025-18-70
STA 14+00.00
Y = 189079.294
X = 716821.298

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	GRAEF
Designer	REID STITELEY
Project Manager	BRIAN PLUEMER, PE
Regional Examiner	
Regional Supervisor	REEM SHAHIN, PE

APPROVED FOR THE DEPARTMENT
DATE: 11/1/2017
(Signature)

E

STANDARD ABBREVIATIONS

AP	ACCESS POINT	NOM	NOMINAL
AC	ACRE	NC	NORMAL CROWN
ADJ	ADJUST	N	NORTH
AECPRC	APRON ENDWALLS FOR CULVERT	Y	NORTH GRID COORDINATE
	PIPE REINFORCED CONCRETE	NB	NORTHBOUND
AH	AHEAD	NO	NUMBER
AC	ASPHALT CEMENT	OPT	OPTIONAL
ASPH	ASPHALTIC	OD	OUTSIDE DIAMETER
ACP	ASPHALTIC CONCRETE PAVEMENT	PAVT	PAVEMENT
AVG	AVERAGE	PLE	PERMANENT LIMITED EASEMENT
ADT	AVERAGE DAILY TRAFFIC	PACS	PIPE ARCH CORRUGATED STEEL
BK	BACK	PT	POINT
BAD	BASE AGGREGATE DENSE	PC	POINT OF CURVATURE
BM	BENCHMARK	PI	POINT OF INTERSECTION
CB	CATCH BASIN	PT	POINT OF TANGENCY
C/L	CENTER LINE	PVC	POINT OF VERTICAL CURVE
C/L CONST	CENTER LINE CONSTRUCTION	PVI	POINT OF VERTICAL INTERSECTION
Δ	CENTRAL ANGLE OR DELTA	PVT	POINT OF VERTICAL TANGENCY
CL	CLASS	PVC	POLYVINYL CHLORIDE
CONC	CONCRETE	PCC	PORTLAND CEMENT CONCRETE
CONST	CONSTRUCTION	LB	POUND
CMCP	CORRUGATED METAL CULVERT PIPE	PSF	POUNDS PER SQUARE FOOT
CTH	COUNTY TRUNK HIGHWAY	PSI	POUNDS PER SQUARE INCH
CABC	CRUSHED AGGREGATE BASE COURSE	PE	PRIVATE ENTRANCE
CFS	CUBIC FEET PER SECOND	PGL	PROFILE GRADE LINE
CY	CUBIC YARD	PL	PROPERTY LINE
CP	CULVERT PIPE	Q100	100-YEAR FLOW RATE
CPCS	CULVERT PIPE CORRUGATED STEEL	R	RADIUS
CPRC	CULVERT PIPE REINFORCED CONCRETE	RR	RAILROAD
CPRCHE	CULVERT PIPE REINFORCED CONCRETE	R	RANGE
	HORIZONTAL ELLIPTICAL	R/L	R/L
C & G	CURB AND GUTTER	REINF	REINFORCING OR REINFORCEMENT
D	DEGREE OF CURVE	REQD	REQUIRED
DHV	DESIGN HOUR VOLUME	RT	RIGHT
DIA	DIAMETER	R/W	RIGHT-OF-WAY
DD	DIRECTIONAL DISTRIBUTION	RD	ROAD
DWY	DRIVEWAY	RDWY	ROADWAY
E	EAST	SEC	SECTION
X	EAST GRID COORDINATE	SHLDR	SHOULDER
EB	EASTBOUND	S	SOUTH
EL	ELEVATION	SB	SOUTHBOUND
ESALS	EQUIVALENT SINGLE AXLE LOADS	SQ	SQUARE
EXC	EXCAVATION	SF	SQUARE FEET
EBS	EXCAVATION BELOW SUBGRADE	SW	SIDEWALK
EXIST	EXISTING	SY	SQUARE YARD
FPS	FEET PER SECOND	SDD	STANDARD DETAIL DRAWINGS
FERT	FERTILIZE	STH	STATE TRUNK HIGHWAYS
FE	FIELD ENTRANCE	STA	STATION
FL	FLOW LINE	SS	STORM SEWER
FT	FOOT	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
GN	GRID NORTH	ST	STREET
HES	HIGH EARLY STRENGTH	STR	STRUCTURE OR STRUCTURAL
HP HW	HIGH POINT	SEC	SUPERELEVATION
HW	HIGH WATER	T	TANGENT
HMA	HOT MIX ASPHALT	TEMP	TEMPORARY
CWT	HUNDREDWEIGHT	TI	TEMPORARY INTEREST
HWD	HYDRANT	TLE	TEMPORARY LIMITED EASEMENT
INL	INLET	t	TON
ID	INSIDE DIAMETER	T	TOWN
I	INTERSECTION ANGLE	T/L	TRANSIT LINE
INV	INVERT	T	TRUCKS (PERCENT OF)
IP	IRON PIPE OR PIN	TYP	TYPICAL
JT	JOINT	USH	UNITED STATES HIGHWAY
LT	LEFT	VAR	VARIABLE
LT	LENGTH OF CURVE	V	VELOCITY OF DESIGN SPEED
LF	LINEAR FOOT	VERT	VERTICAL
LP	LOW POINT	VC	VERTICAL CURVE
LS	LUMP SUM	VOL	VOLUME
MH	MANHOLE	WM	WATERMAIN
MAX	MAXIMUM	WV	WATER VALVE
Mgal	MEGAGALLON	W	WEST
MPH	MILES PER HOUR	WB	WESTBOUND
MIN	MINIMUM	YD	YARD
MON	MONUMENT		

HMA PAVEMENT LOCATION	ASPHALT MIX	LOWER LAYER	UPPER LAYER	GRADATION
CTH YY/PILGRIM ROAD	4 LT 58-28 S	x	2-inch	12.5 mm
	3 LT 58-28 S	3-inch	x	19.0 mm

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 LOCATION THAT ARE NOT SHOWN.

THE CONTRACTOR WILL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A CALL TO THE UTILITIES THAT HAVE INSTALLATIONS WITHIN THE PROJECT AREA.

MAINTAIN ACCESSSS TO ALL DRIVEWAYS AND ALL BUSINESSES AT ALL TIMES.

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT IS TO MEET AN EXISTING PAVED SURFACE.

TRAFFIC CONTROL LOCATIONS AS SHOWN IN THE PLAN ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

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

PROTECT FROM DAMAGE AND AROUND ANY EXISTING SIGNS OR MAILBOXES THAT ARE TO REMAIN IN PLACE.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGSETED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND THE ENGINEER IN THE FIELD.

STATIONS, OFFSETS, AND ELEVATIONS ARE TO THE FLANGE LINE OF CURB & ALL RADII ARE MEASURED TO THE FLANGE LINE OF CURB AND GUTTER UNLESS OTHERWISE NOTED.

CONSTRUCTION LIMITS ON SIDE ROADS AND PRIVATE ENTRANCES SHALL BE DETERMINED BY THE ENGINEER AND SHALL BE RESTORED IN KIND.

ORDER OF SECTION 2 SHEETS

- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- REMOVAL PLANS
- CONTOUR MAP
- PLAN DETAILS
- EROSION CONTROL
- STORM SEWER
- EXISTING/PERMANENT SIGNING
- PAVEMENT MARKING
- TRAFFIC CONTROL
- DETOUR
- TEMPORARY SIGNING
- ALIGNMENT

UTILITY CONTACTS

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LEVEL 3 COMMUNICATIONS
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BROOKFIELD, WI 53045
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saha.demian@level3.com

WE ENERGIES - GAS
DANIELLE FINK
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WE ENERGIES - ALL CORRESPONDENCE
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OTHER CONTACTS

WISDOT REGION CONTACT
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WISDNR CONTACT
CRAIG WEBSTER
141 NW BARSTOW ST, ROOM 180
WAUKESHA, WI 53188
PHONE: (262) 574-2141
craig.webster@wisconsin.gov

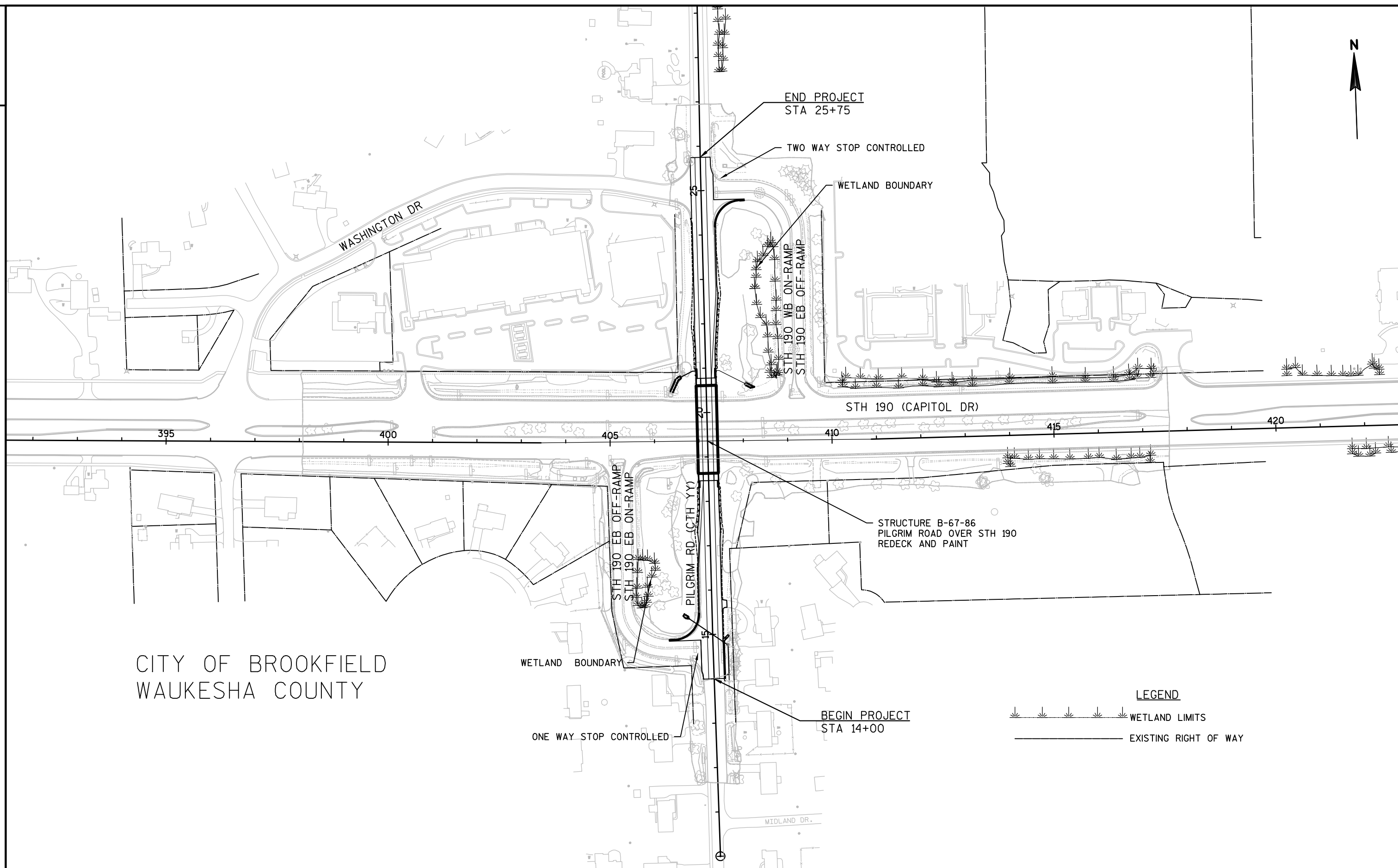
WAUKESHA COUNTY
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cgellings@waukeshacounty.gov

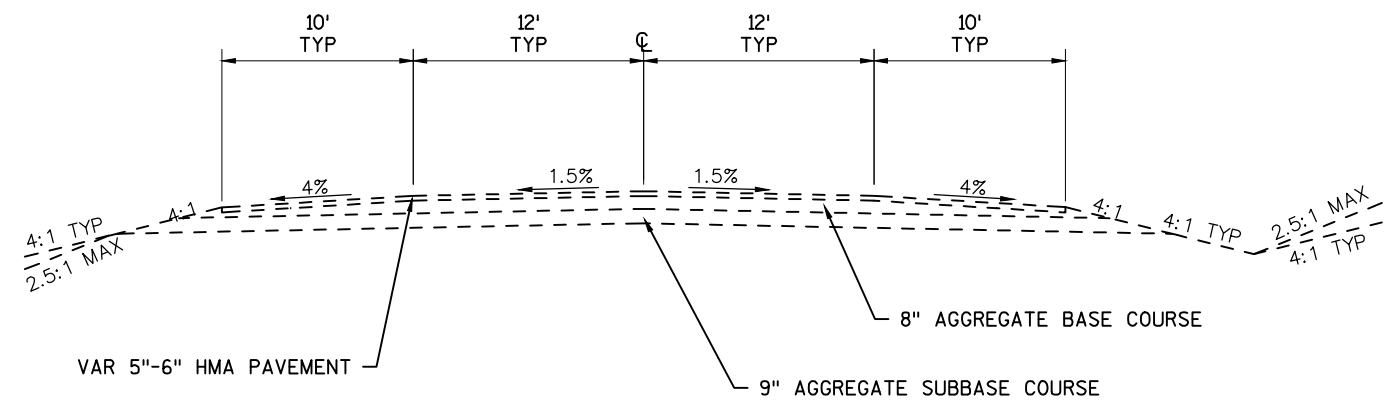
WISDOT SIGNALS
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141 NW BARSTOW ST
WAUKESHA, WI 53188
PHONE: (262) 548-8736
david.brantner@dot.wi.gov

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BROOKFIELD, WI 53005
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grisa@ci.brookfield.wi.us





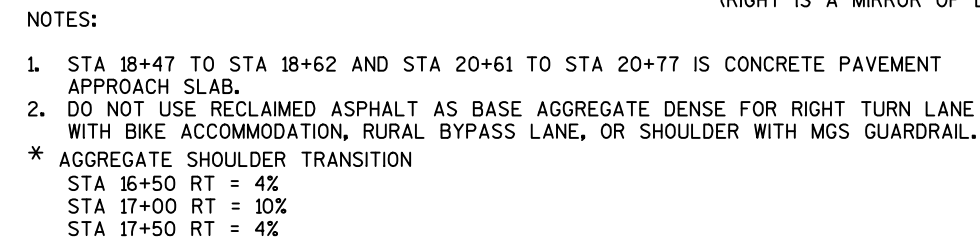


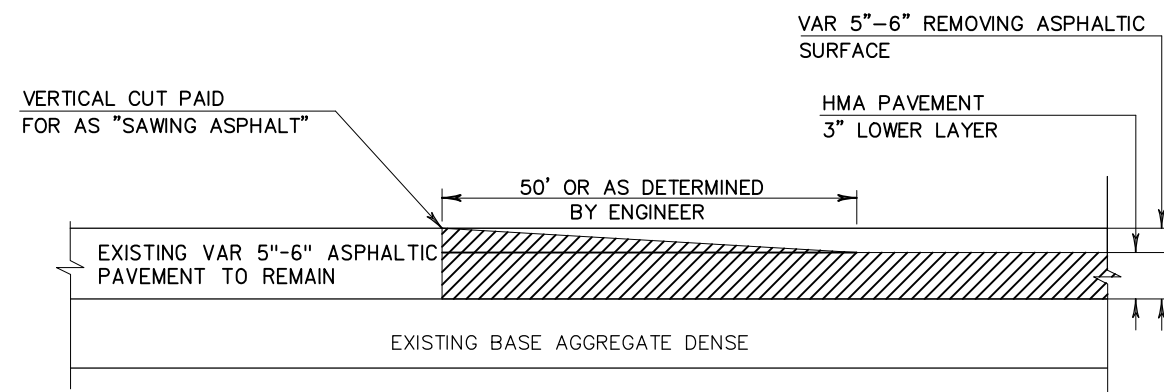
EXISTING TYPICAL SECTION

PILGRIM RD. (CTH YY)

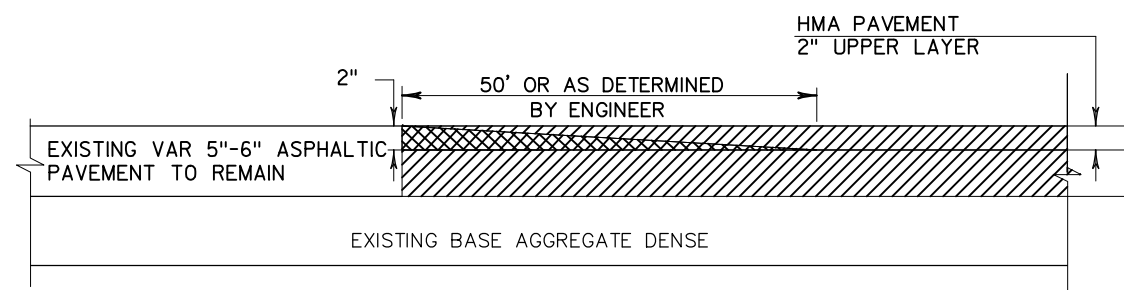
STA 14+00 TO STA 18+62
STA 20+61 TO STA 25+75

2





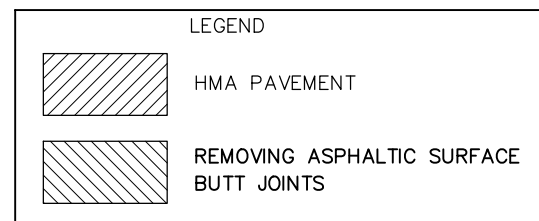
STEP 1



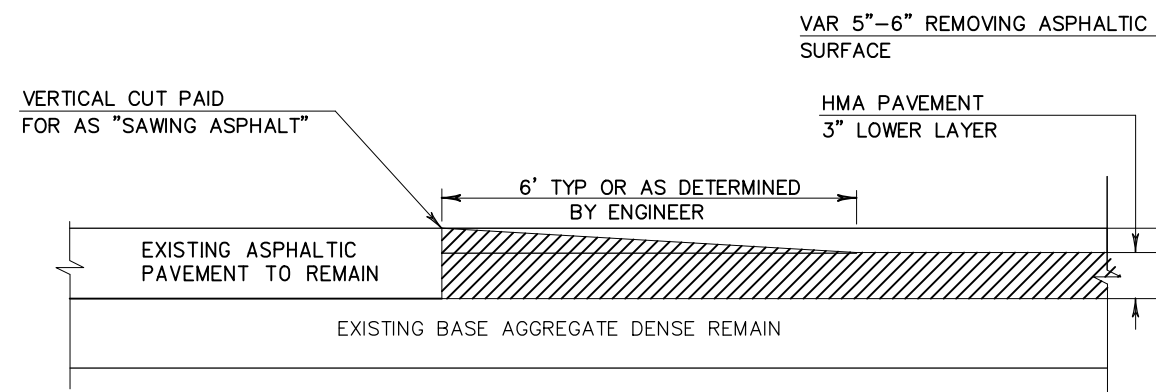
STEP 2

BUTT JOINT DETAIL — PILGRIM RD

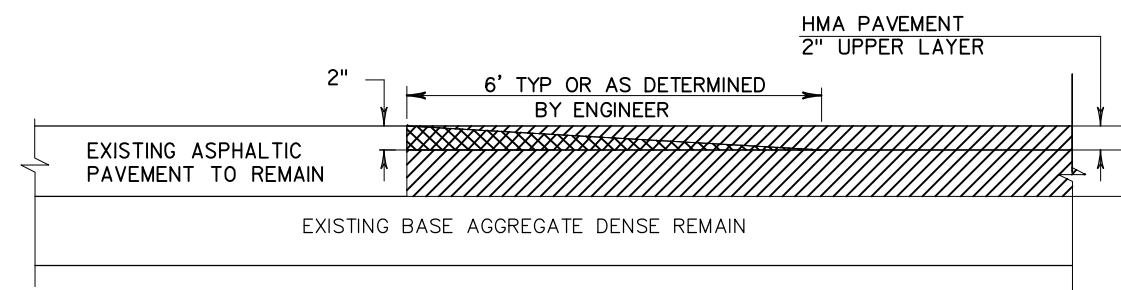
STA 14+00 TO STA 14+50
STA 25+25 TO STA 25+75



BUTT JOINTS DETAILS
SEE PLAN DETAIL FOR LOCATIONS



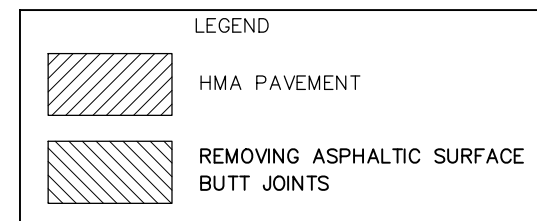
STEP 1

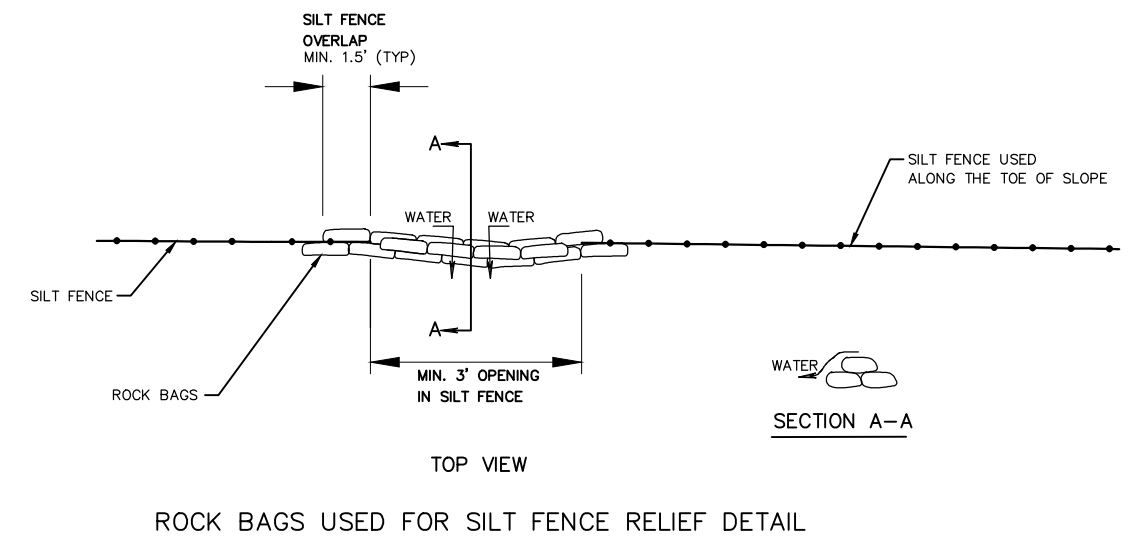
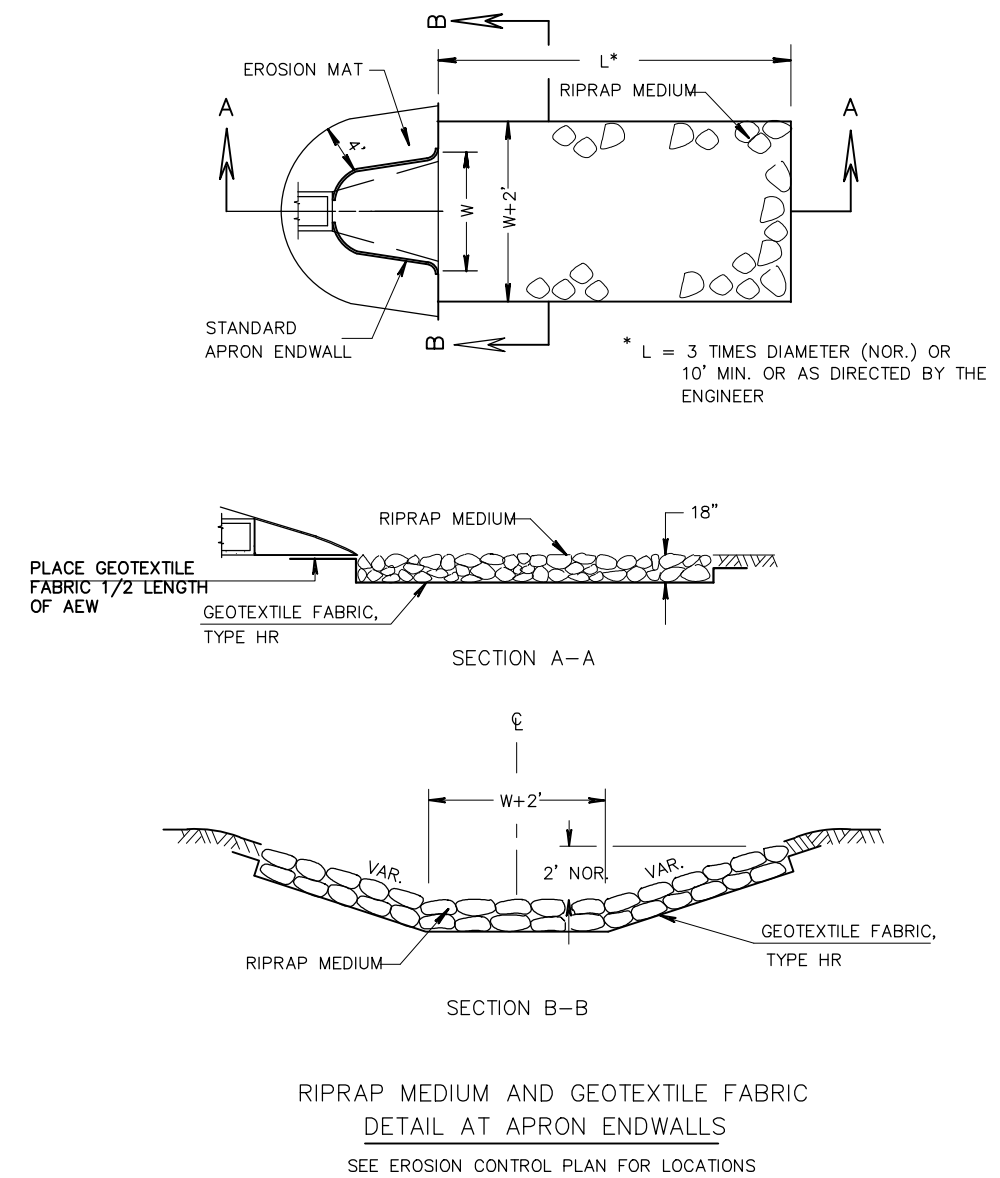
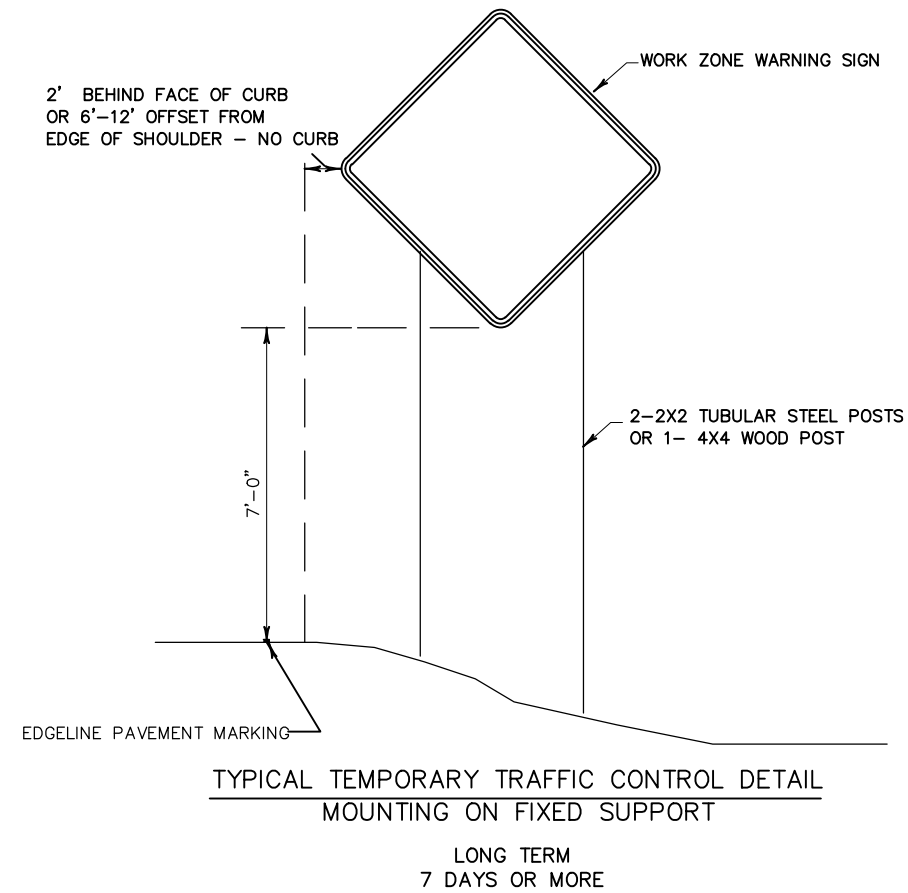


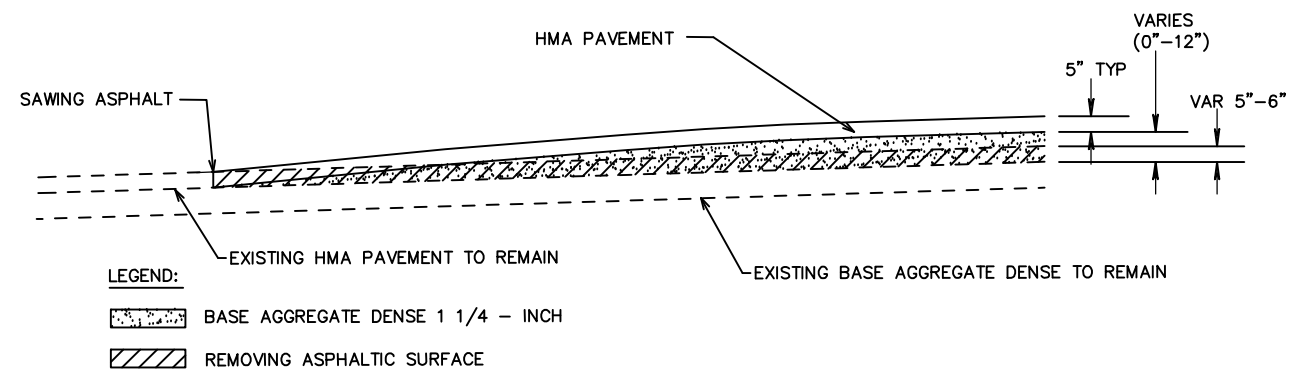
STEP 2

BUTT JOINT DETAIL — SIDEROADS

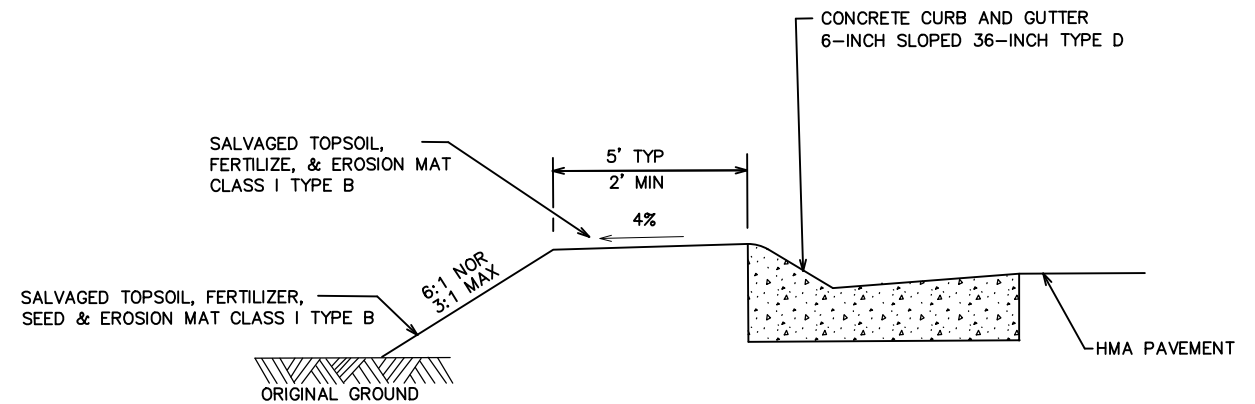
STA 14+50 TO STA 14+88, 16' LT
STA 24+80 TO STA 25+25, 16' LT
STA 24+80 TO STA 25+25, 16' RT





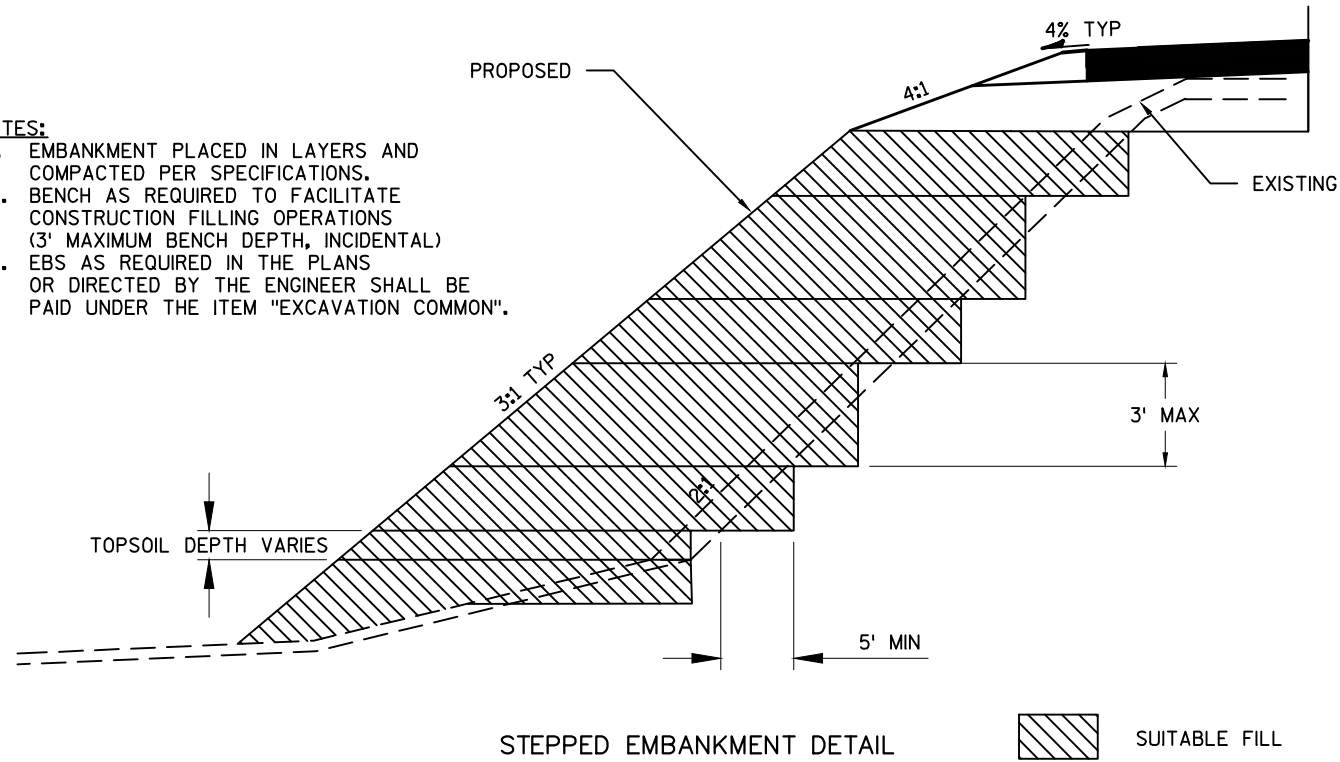


PAVEMENT SUBGRADE DETAIL
STA 14+00 TO STA 18+47
STA 20+77 TO STA 25+75

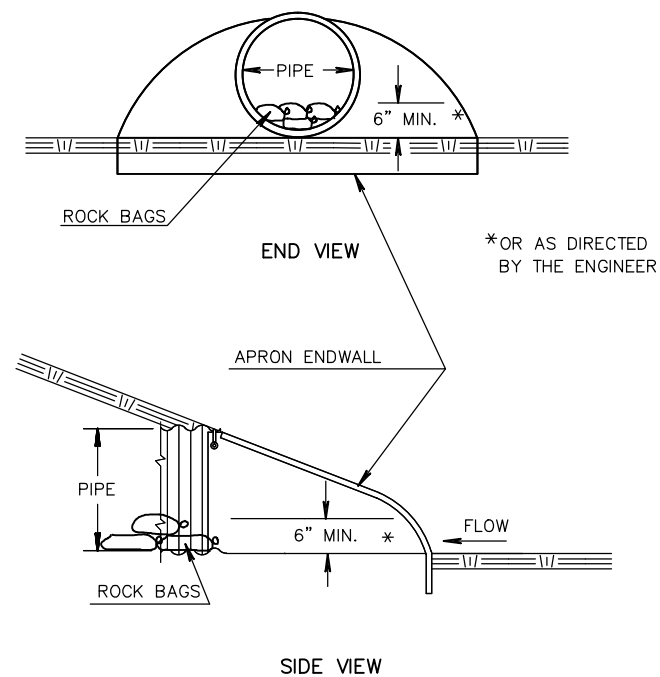


RURAL CONCRETE CURB AND GUTTER DETAIL
SEE PLAN DETAILS FOR LOCATIONS

- NOTES:
1. EMBANKMENT PLACED IN LAYERS AND COMPACTED PER SPECIFICATIONS.
 2. BENCH AS REQUIRED TO FACILITATE CONSTRUCTION FILLING OPERATIONS (3' MAXIMUM BENCH DEPTH, INCIDENTAL)
 3. EBS AS REQUIRED IN THE PLANS OR DIRECTED BY THE ENGINEER SHALL BE PAID UNDER THE ITEM "EXCAVATION COMMON".

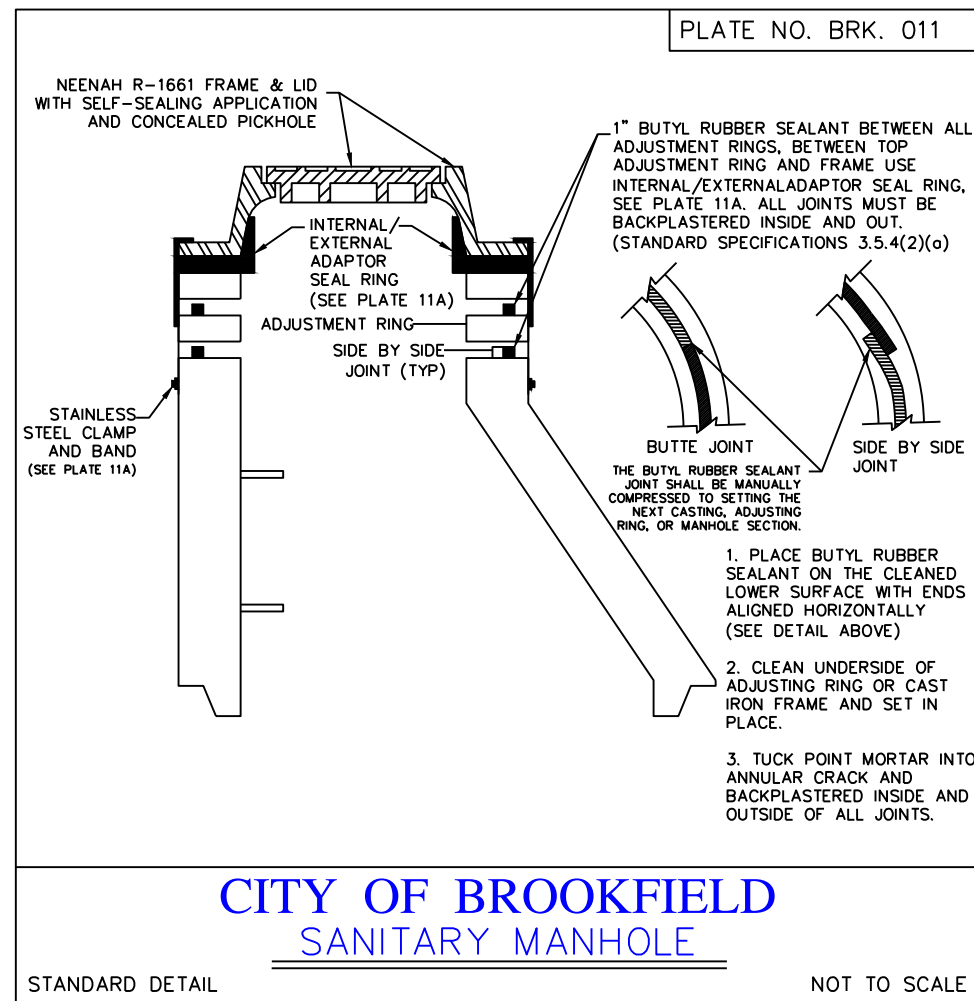


STEPPED EMBANKMENT DETAIL



CULVERT PIPE CHECKS
PLACE AT UPSTREAM
END OF CULVERTS

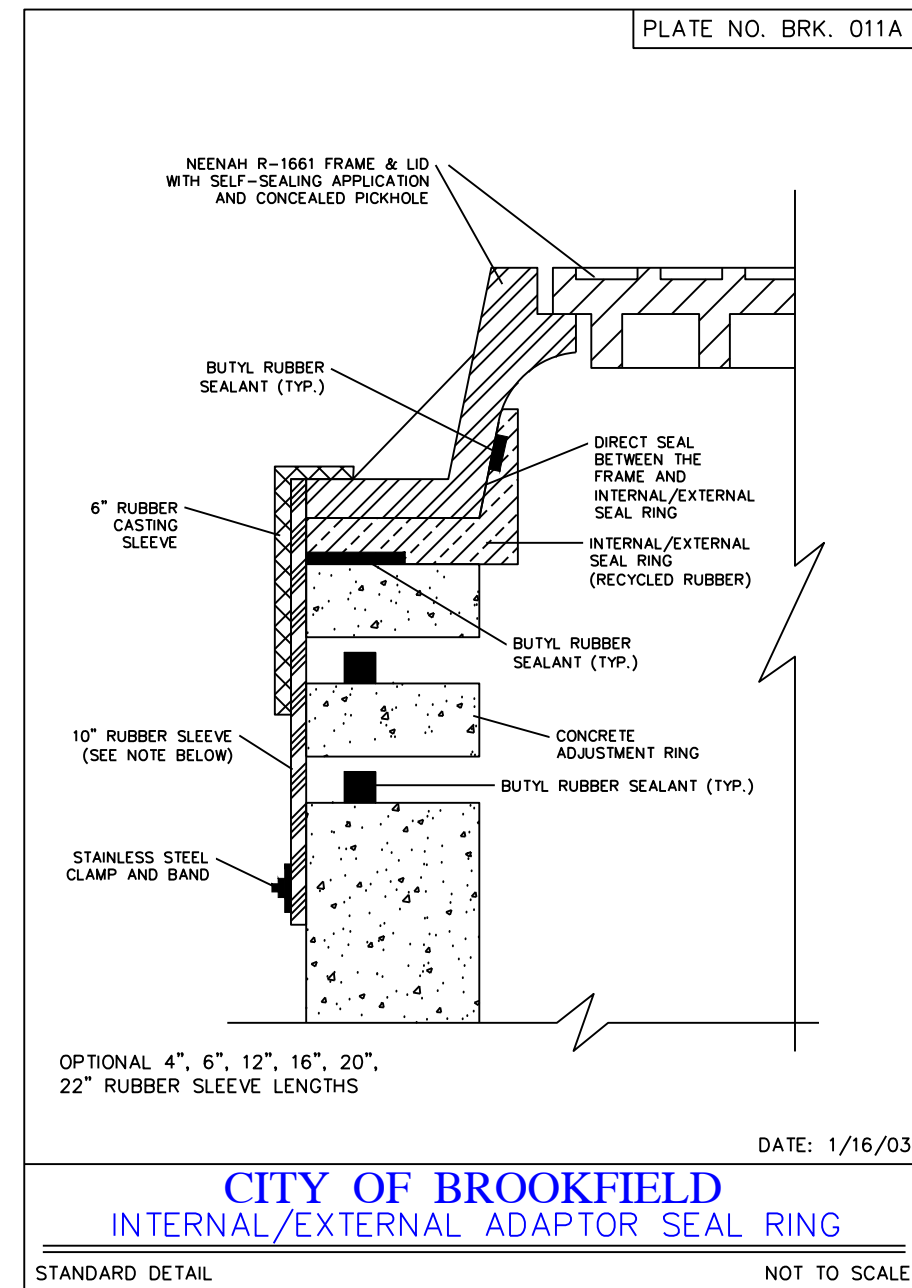
ESTIMATED BAG SIZE = 18" X 12" X 6"	
PIPE SIZE	ESTIMATED NUMBER OF BAGS
12"	1
15"	2
18"	2
24"	3
30"	5
36"	7
42"	7
48"	10
54"	10
60"	13
66"	14
72"	16
17"X13"	2
30"X19"	5
38"X24"	7
45"X29"	10
53"X34"	10
60"X38"	13
76"X48"	18
27' WIDE BOX CULVERT	36



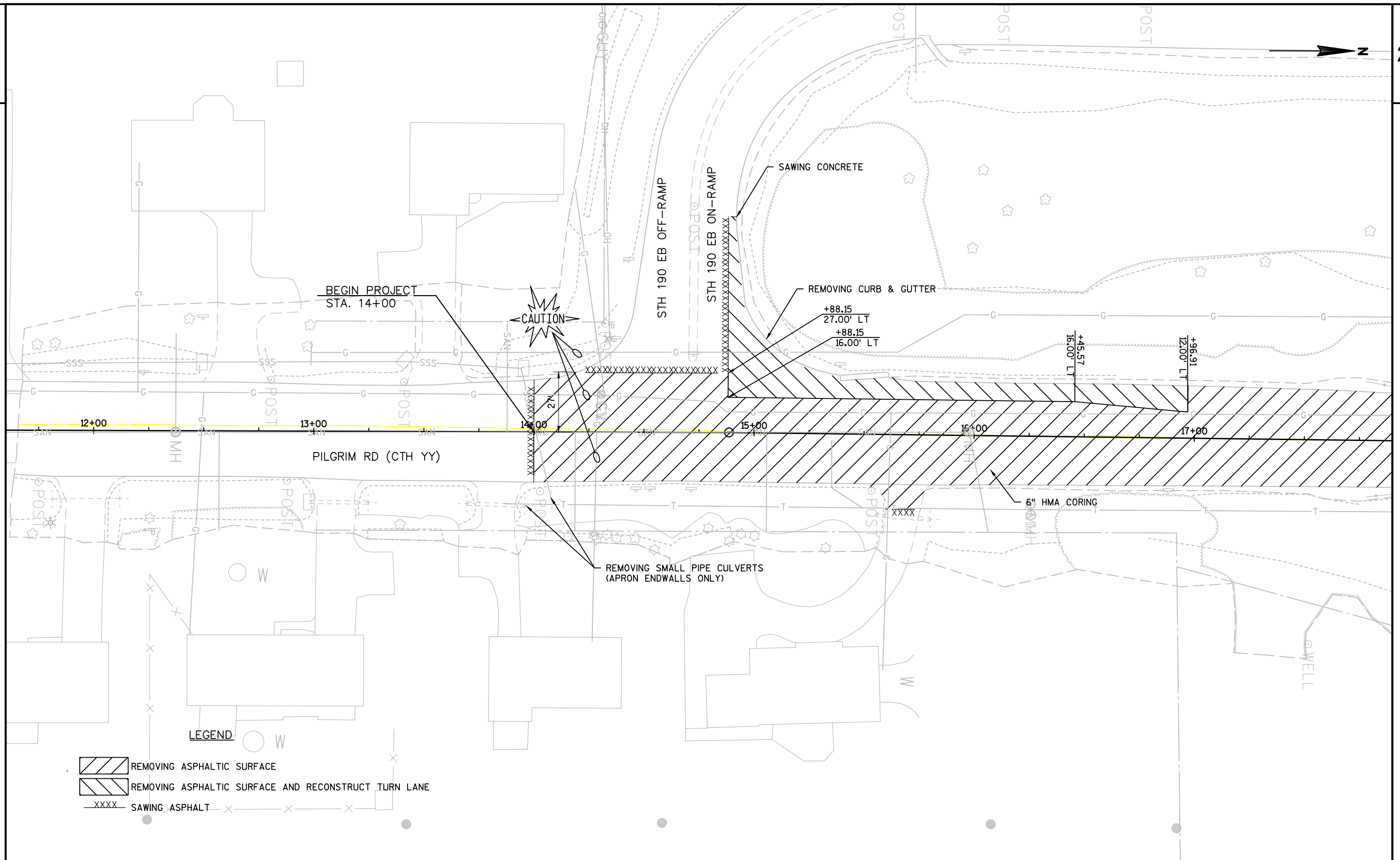
ADJUST SANITARY MANHOLE COVER DETAIL
STA. 16+00, 1.49' LT

NOTES:

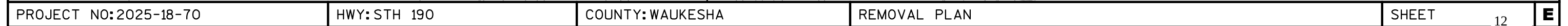
1. ADJUSTING SANITARY MANHOLE COVER IS REQUIRED AT STA 16+00, 1.9' LT.
2. THE COST OF CONCRETE ADJUSTING RINGS ARE INCIDENTAL TO ADJUSTING SANITARY MANHOLES.

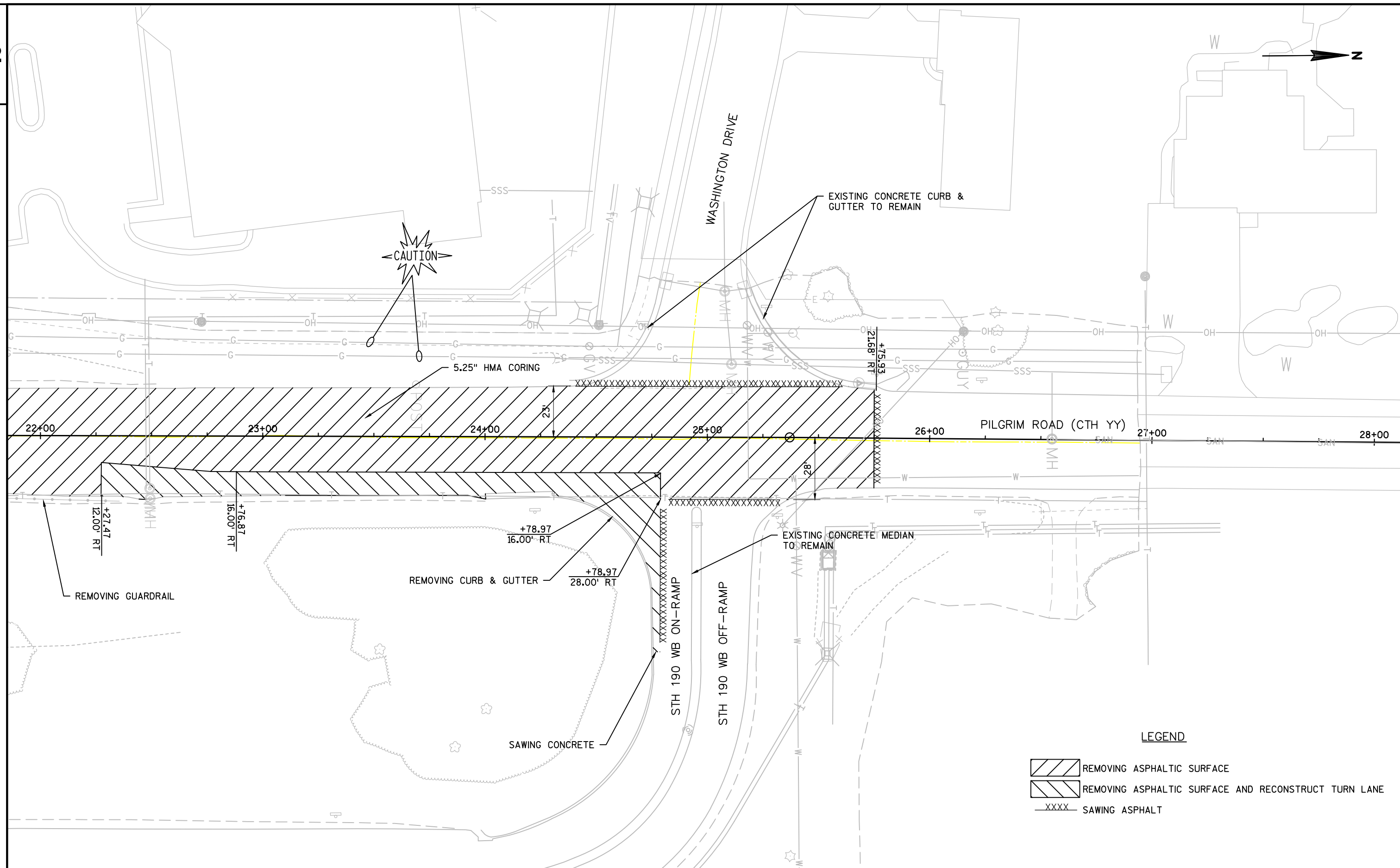


SANITARY MANHOLE INTERNAL/EXTERNAL SEAL RING DETAIL
STA. 16+00, 1.49' LT



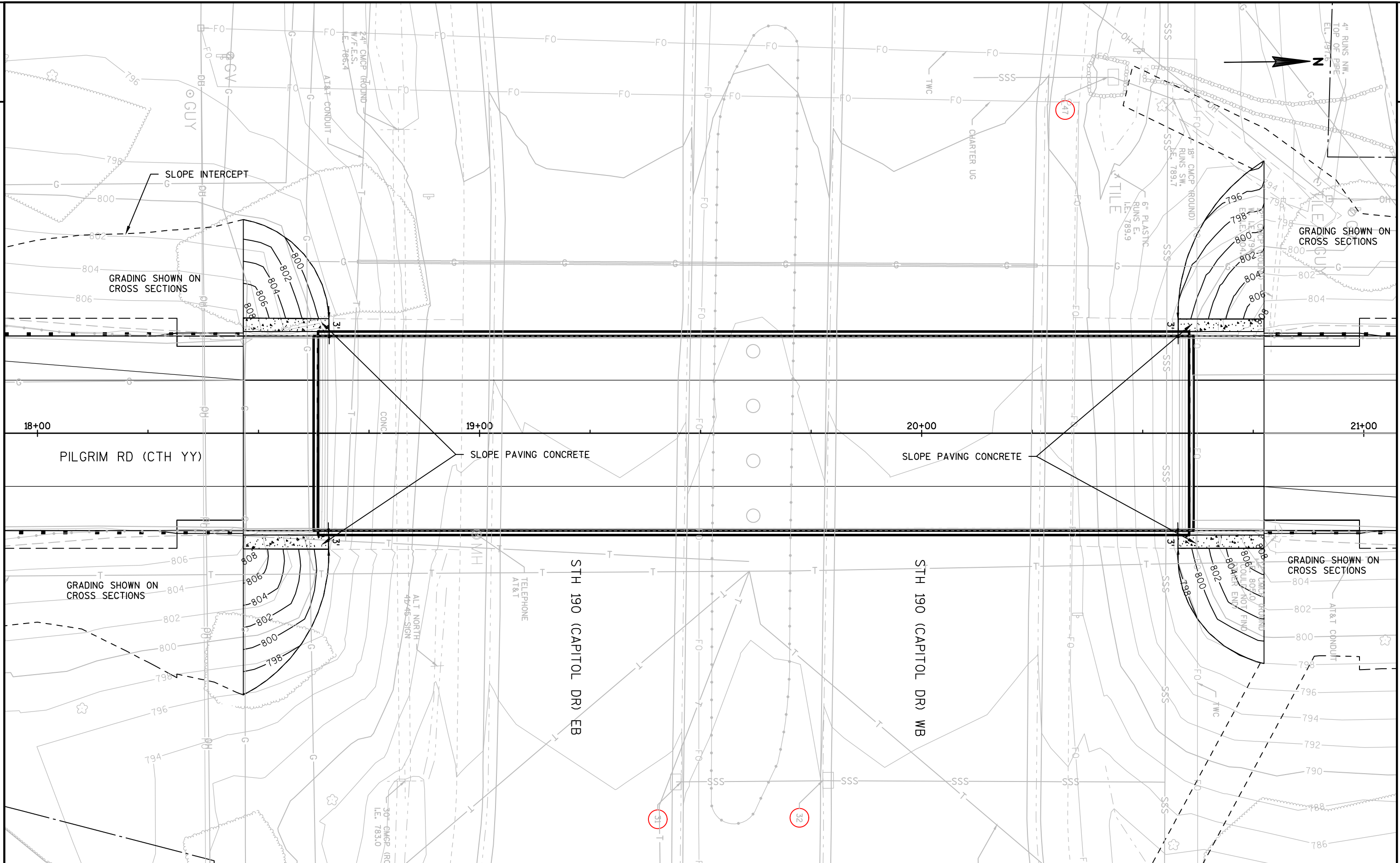
2





2

2



PROJECT NO:2025-18-70

HWY: STH 190

COUNTY: WAUKESHA

CONTOUR MAP - BRIDGE WING WALLS

SHEET	14	E
-------	----	----------

E

FILE NAME : N:\PDS\C3D\20251800\SHEETSPLAN\021601-CM.DWG
LAYOUT NAME - 021601-CM

PLOT DATE : 10/16/2017 4:45 PM

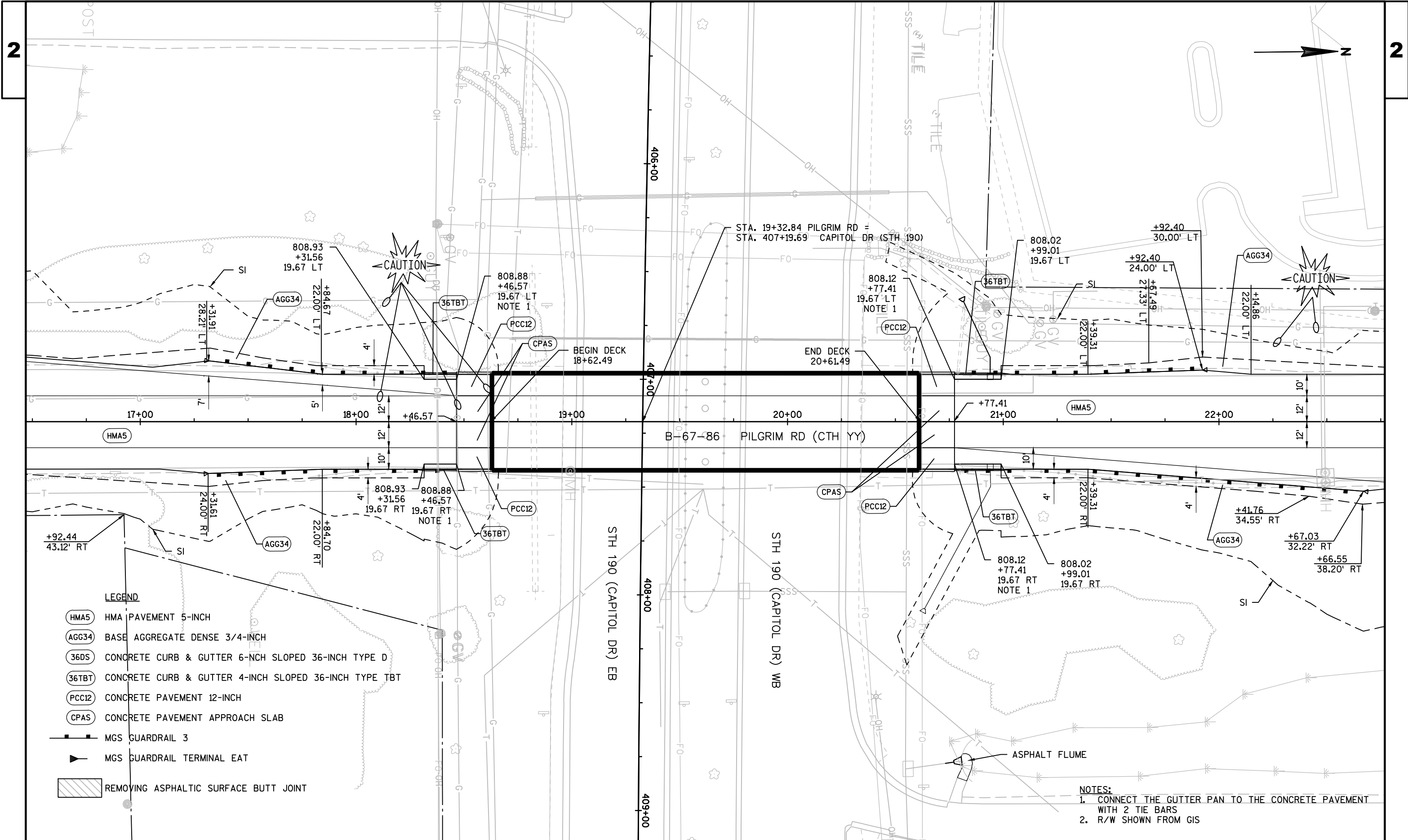
PLOT BY : STITELEY, REID E

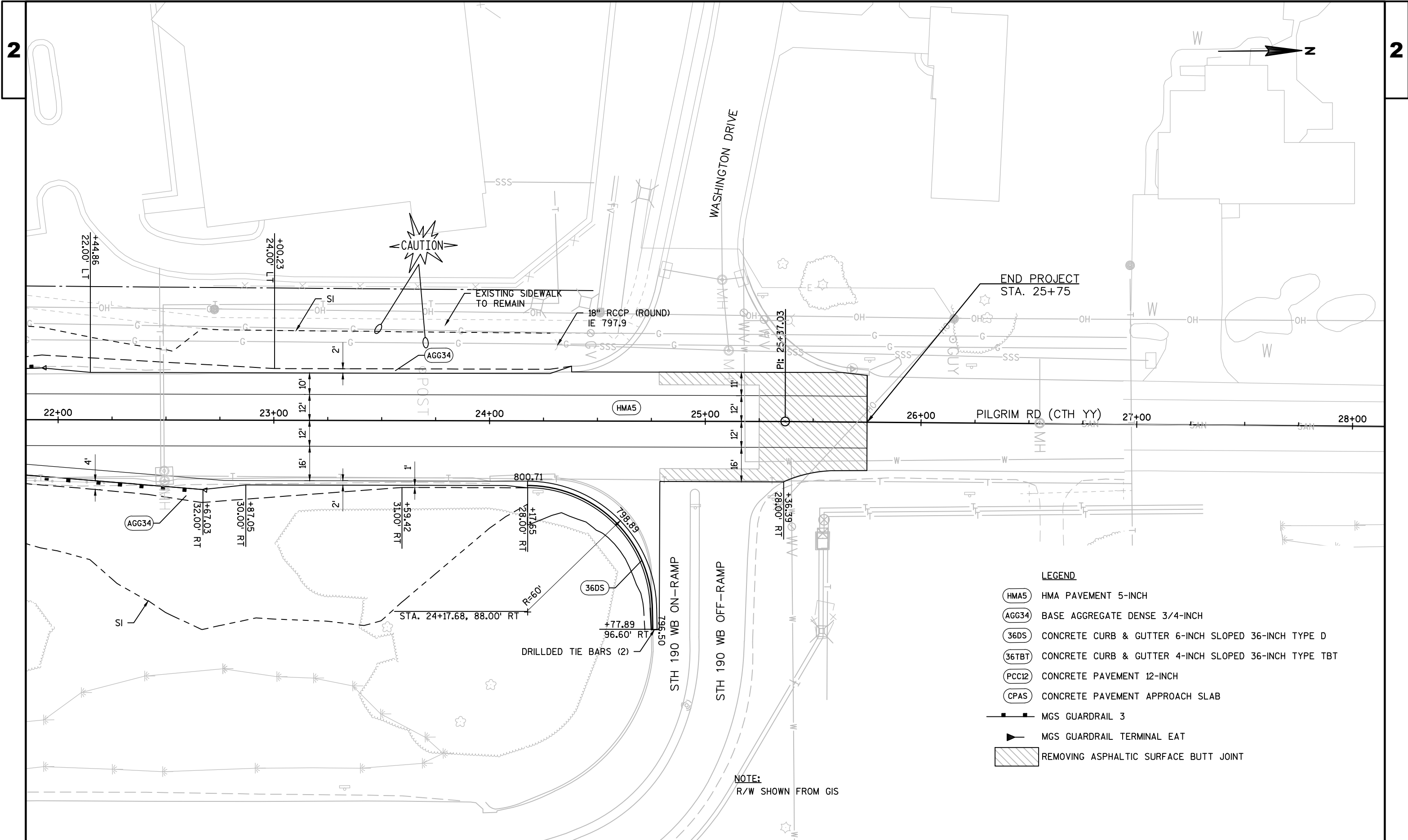
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42







LEGEND

- HMA5 HMA PAVEMENT 5-INCH
- AGG34 BASE AGGREGATE DENSE 3/4-INCH
- 36DS CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D
- 36TBT CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT
- PCC12 CONCRETE PAVEMENT 12-INCH
- CPAS CONCRETE PAVEMENT APPROACH SLAB
- MGS GUARDRAIL 3
- MGS GUARDRAIL TERMINAL EAT
- REMOVING ASPHALTIC SURFACE BUTT JOINT

NOTE:
R/W SHOWN FROM GIS

PROJECT NO:2025-18-70

HWY:STH 190

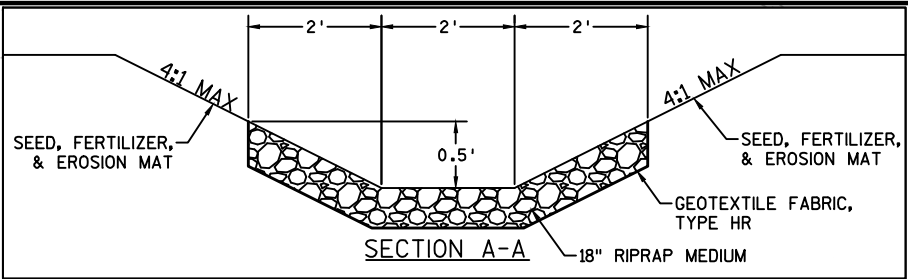
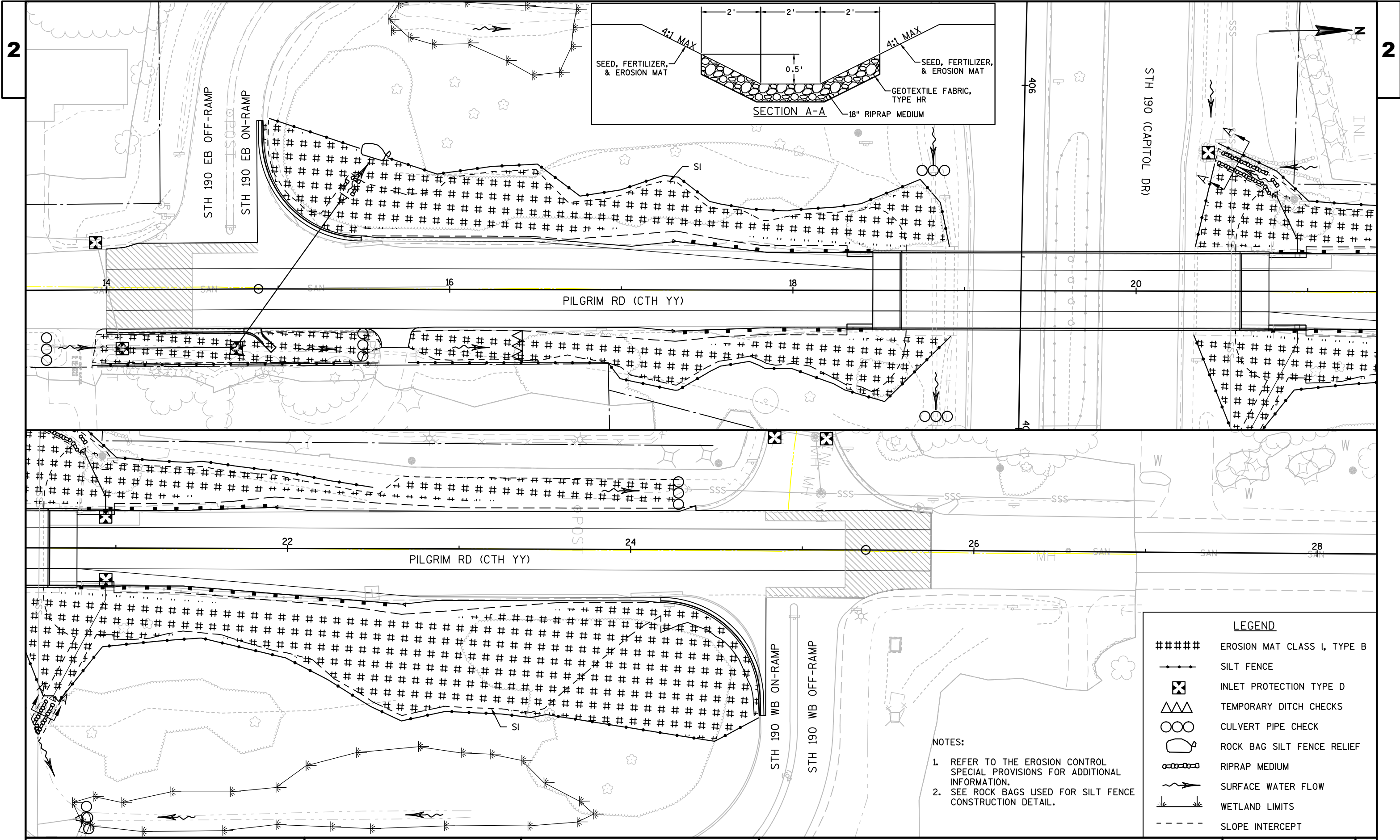
COUNTY:WAUKESHA

PLAN DETAILS

SHEET

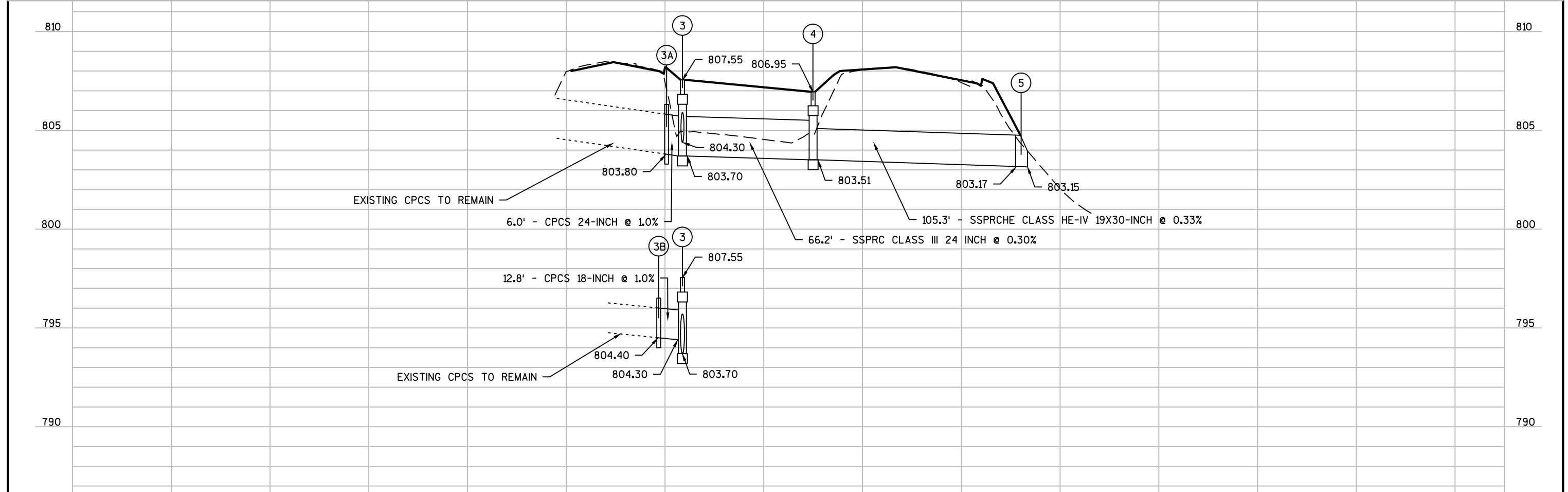
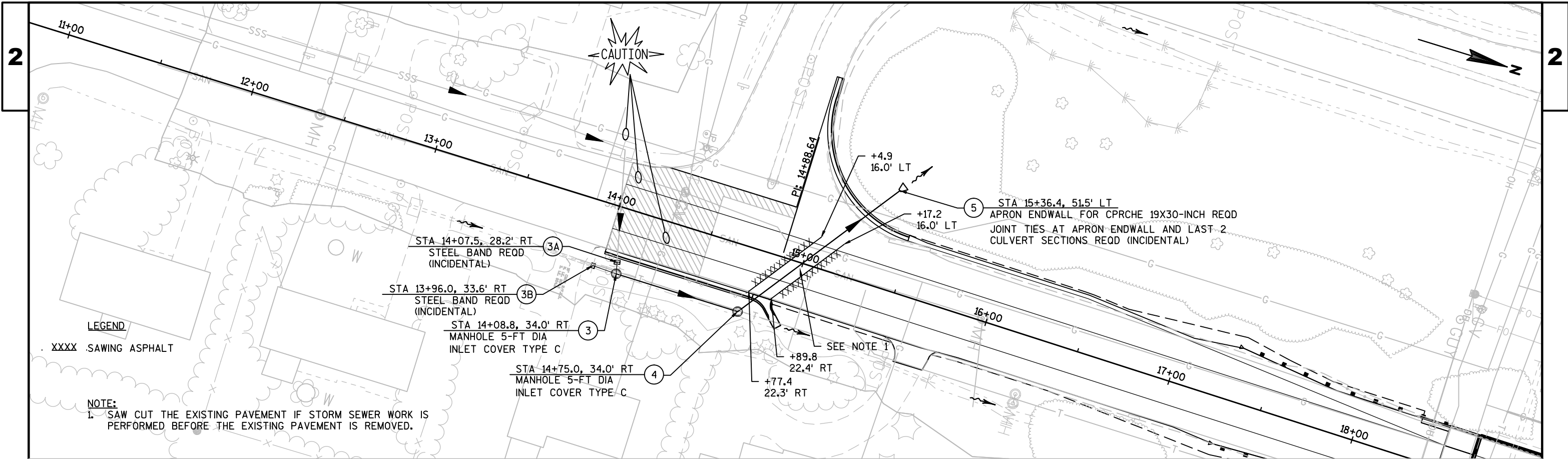
17

E

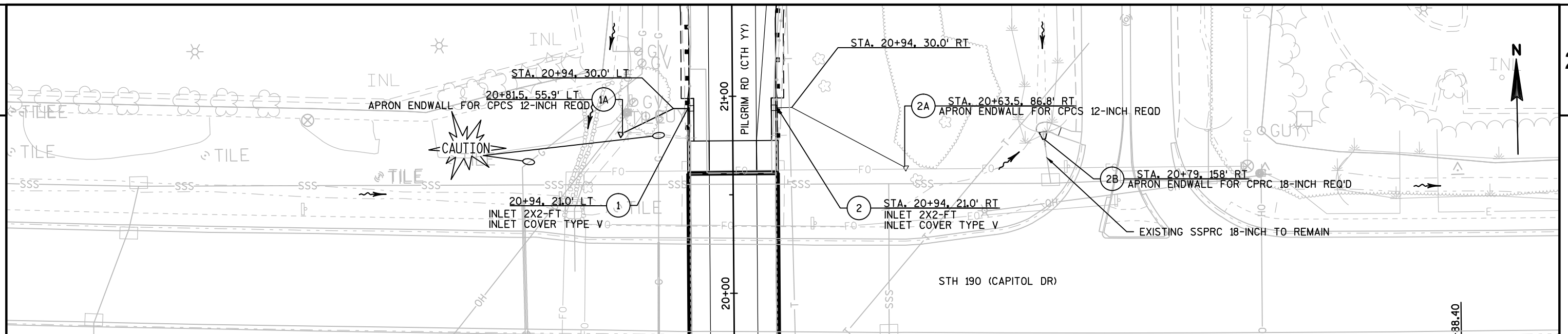


LEGEND	
#####	EROSION MAT CLASS I, TYPE B
—+—+—+—	SILT FENCE
⊗	INLET PROTECTION TYPE D
△	TEMPORARY DITCH CHECKS
○○	CULVERT PIPE CHECK
⬭	ROCK BAG SILTS FENCE RELIEF
⊖	RIPRAP MEDIUM
→	SURFACE WATER FLOW
— — —	WETLAND LIMITS
- - -	SLOPE INTERCEPT

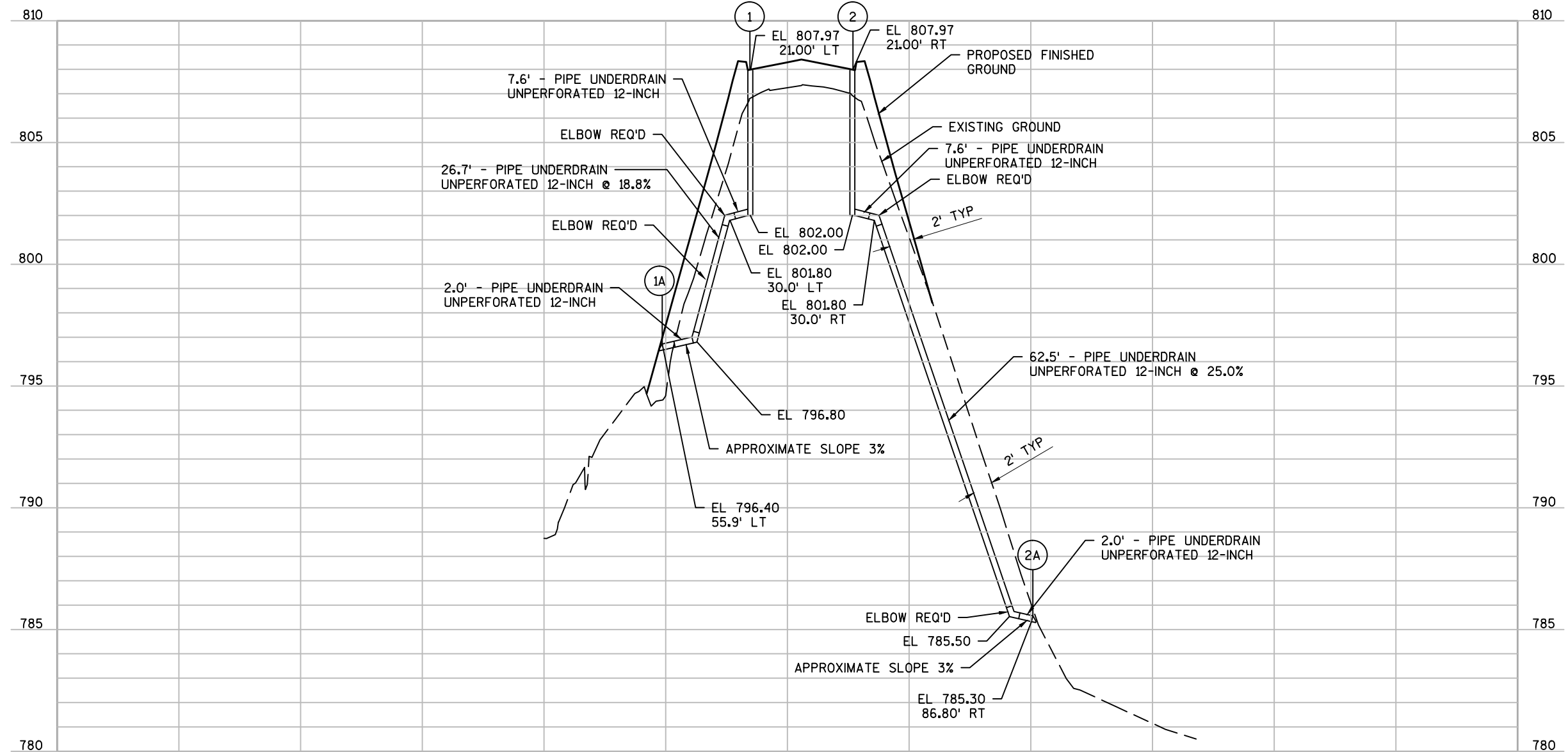
- NOTES:
- REFER TO THE EROSION CONTROL SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
 - SEE ROCK BAGS USED FOR SILT FENCE CONSTRUCTION DETAIL.



2



2



PROJECT NO:2025-18-70

HWY:STH 190

COUNTY:WAUKESHA

STORM SEWER

SHEET

20

E

FILE NAME : N:\PDS\C3D\20251800\SHEETPLAN\022501_SS.DWG
LAYOUT NAME - 022502_SS

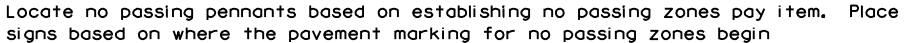
PLOT DATE : 10/9/2017 10:03 AM

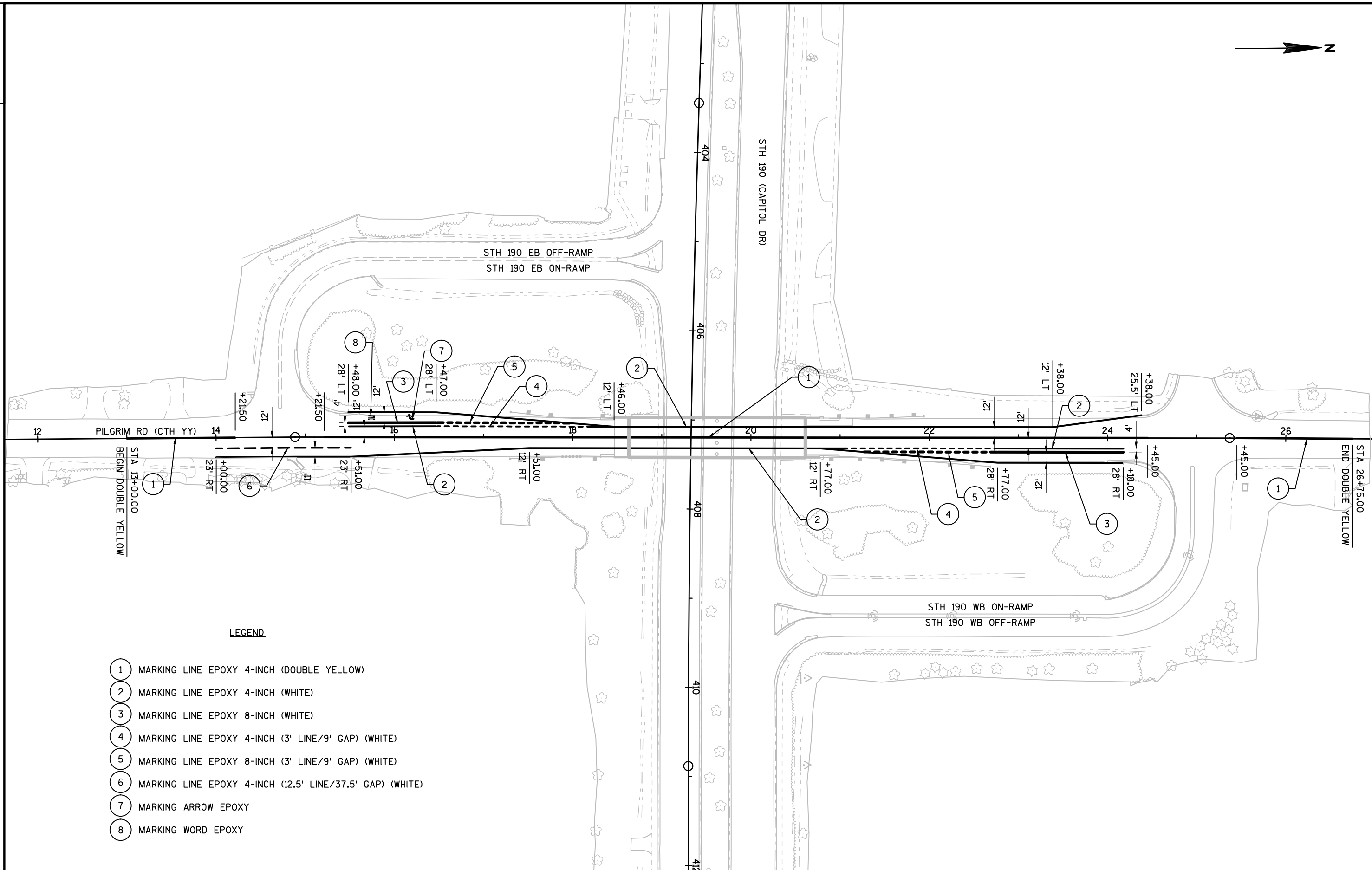
PLOT BY : STITELEY, REID E

PLOT NAME :

PLOT SCALE : 1 IN:50 FT

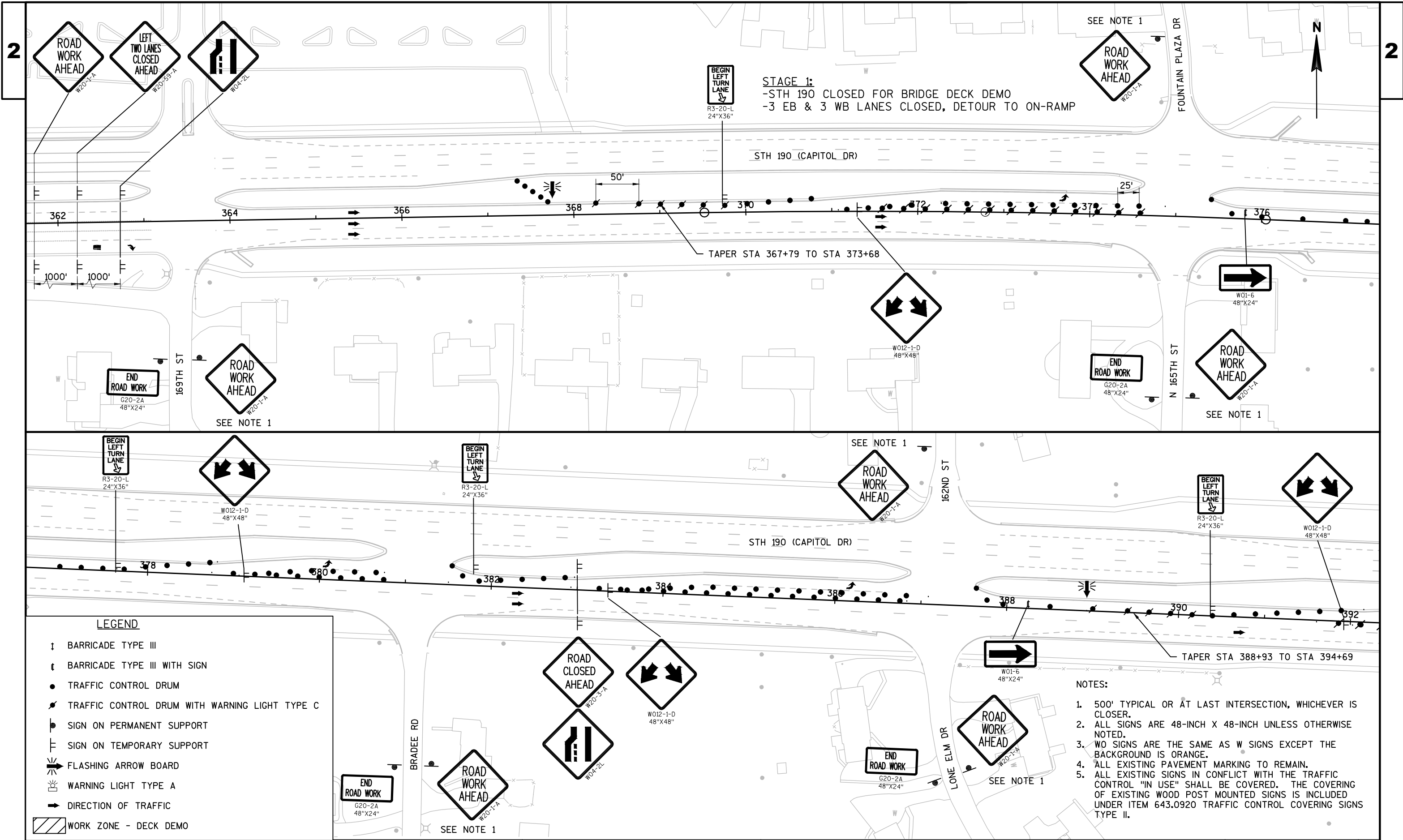
WISDOT/CADDs SHEET 41





LEGEND

- 1 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 2 MARKING LINE EPOXY 4-INCH (WHITE)
- 3 MARKING LINE EPOXY 8-INCH (WHITE)
- 4 MARKING LINE EPOXY 4-INCH (3' LINE/9' GAP) (WHITE)
- 5 MARKING LINE EPOXY 8-INCH (3' LINE/9' GAP) (WHITE)
- 6 MARKING LINE EPOXY 4-INCH (12.5' LINE/37.5' GAP) (WHITE)
- 7 MARKING ARROW EPOXY
- 8 MARKING WORD EPOXY



PROJECT NO:2025-18-70

HWY:STH 190

COUNTY:WAUKESHA

TRAFFIC CONTROL - STAGE 1

SHEET

23

E

FILE NAME : N:\PDS\C3D\20251800\SHEETPLAN\025001_S1.DWG
LAYOUT NAME - 025001_S1

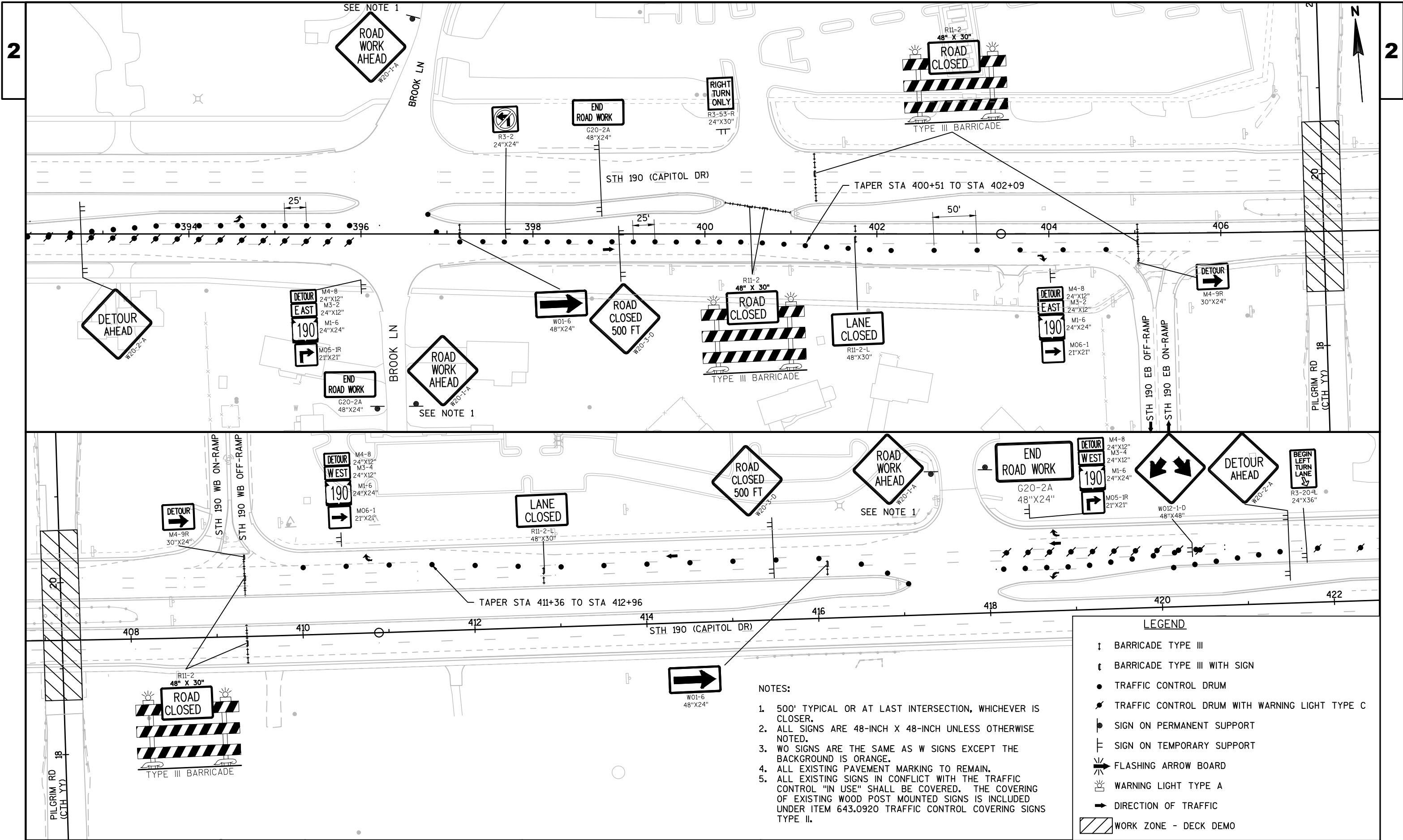
PLOT DATE : 10/9/2017 10:05 AM

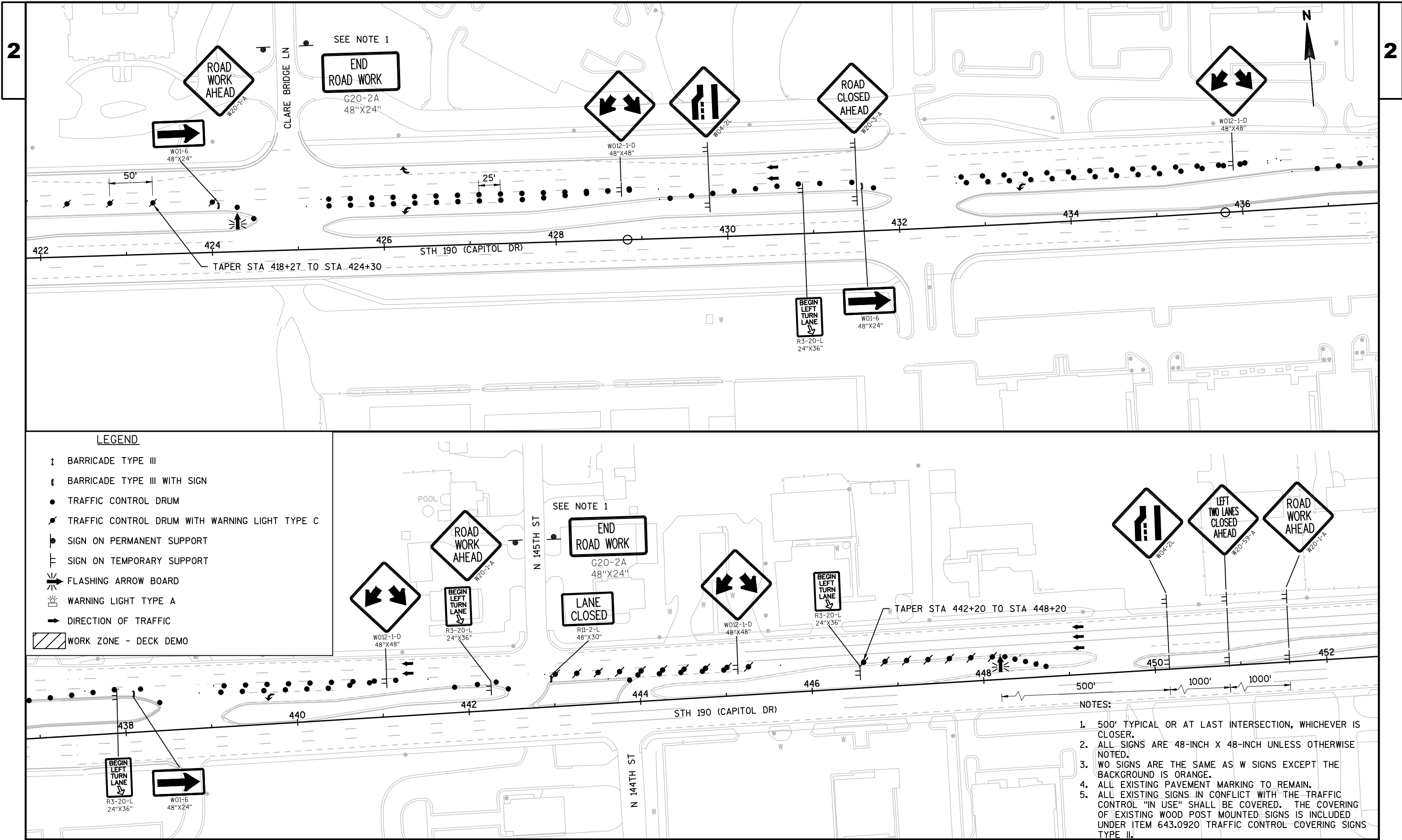
PLOT BY : STITELEY, REID E

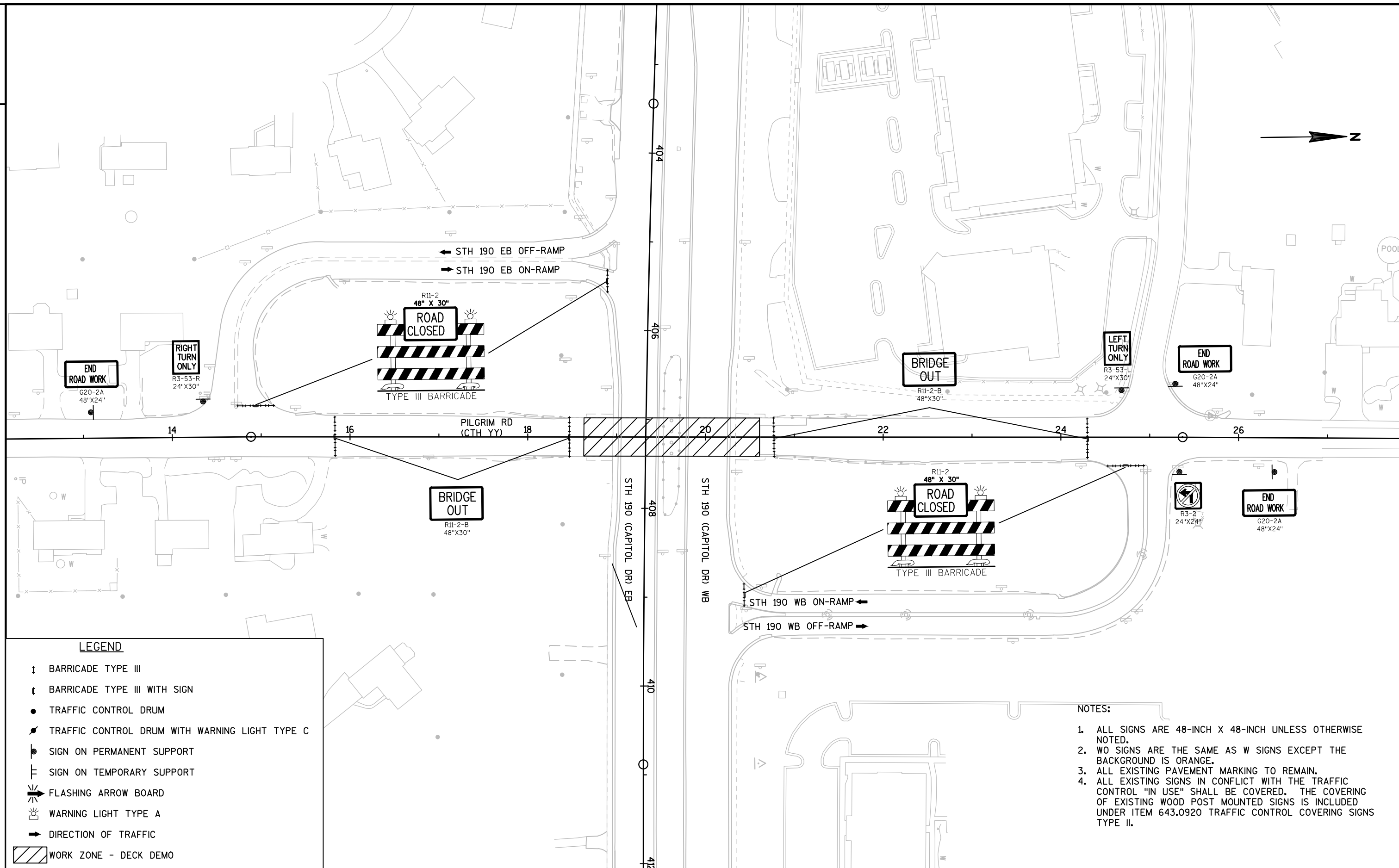
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADS SHEET 44

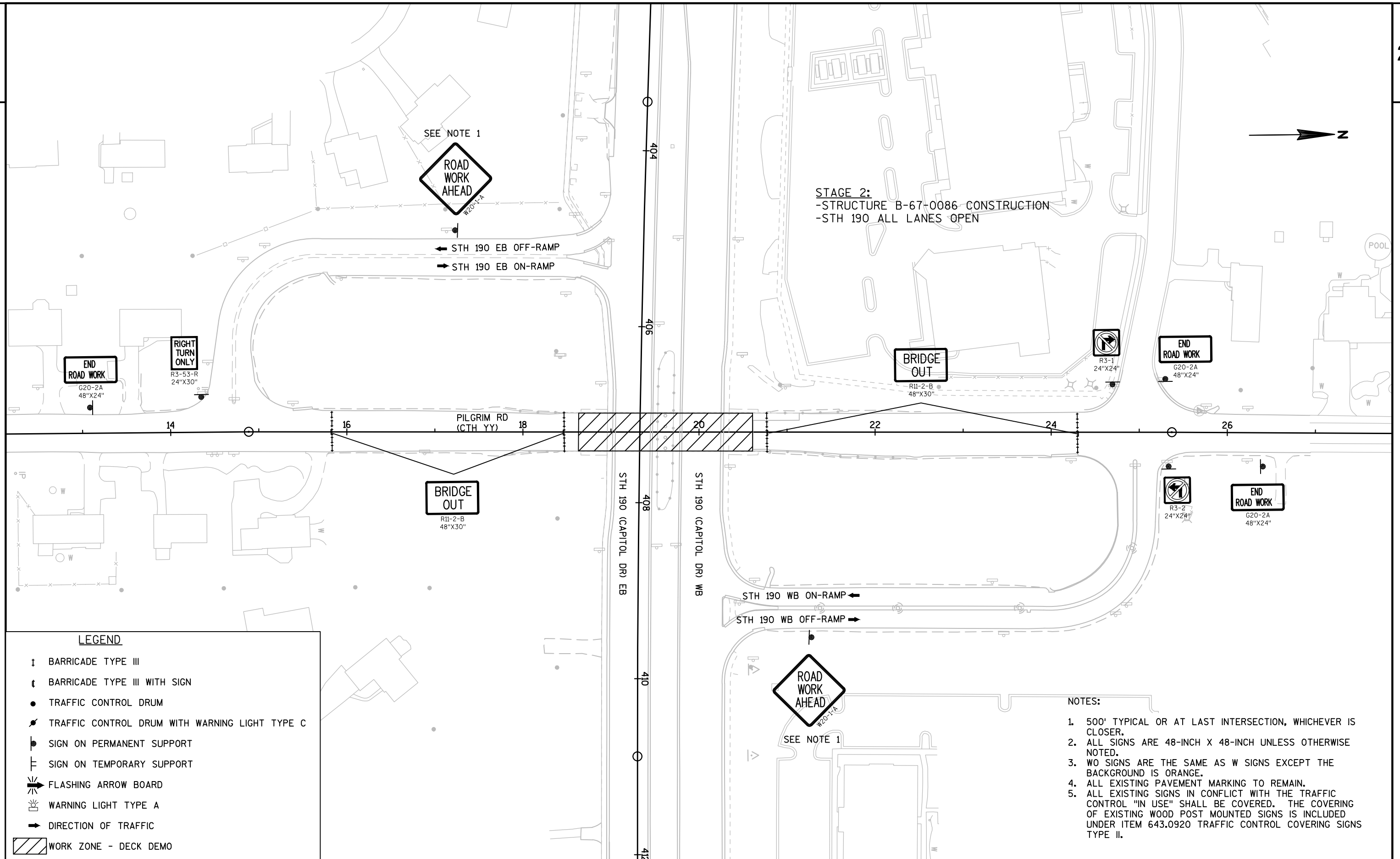






2

2



PROJECT NO:2025-18-70	HWY:STH 190	COUNTY:WAUKESHA	TRAFFIC CONTROL - STAGE 2	SHEET 27	E
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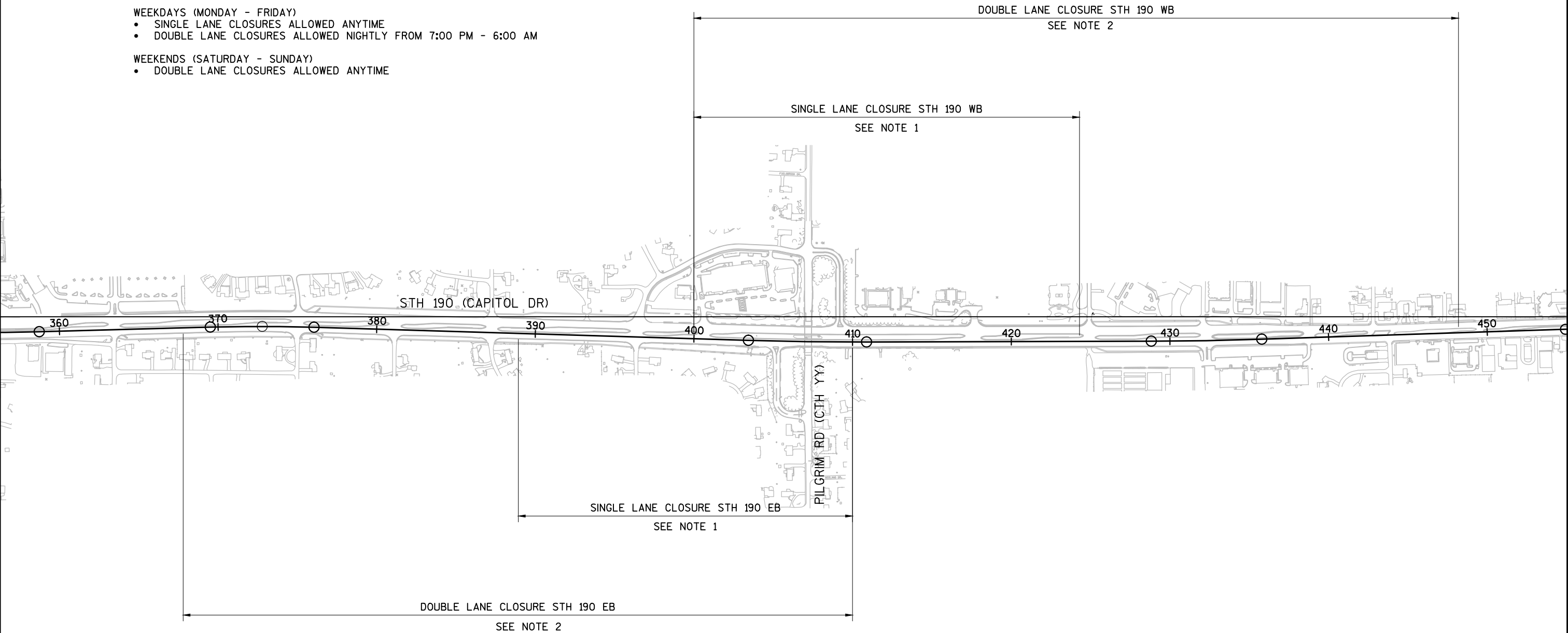
FILE NAME : N:\PDS\3D\20251800\SHEETSP\N025002_S2.DWG	PLOT DATE : 10/9/2017 10:06 AM	PLOT BY : STITELEY, REID E	PLOT NAME :	PLOT SCALE : 1 IN:100 FT	WISDOT/CADDs SHEET 42
LAYOUT NAME - 025001_S2					

BLASTING AND PAINTING GIRDERS - LANE CLOSURES FOR STAGE 3A
OVERVIEW FOR THE SITUATION IF THE CONTRACTOR REPOSITIONS TRAFFIC
CONTROL DEVICES FOR LANE CLOSURES

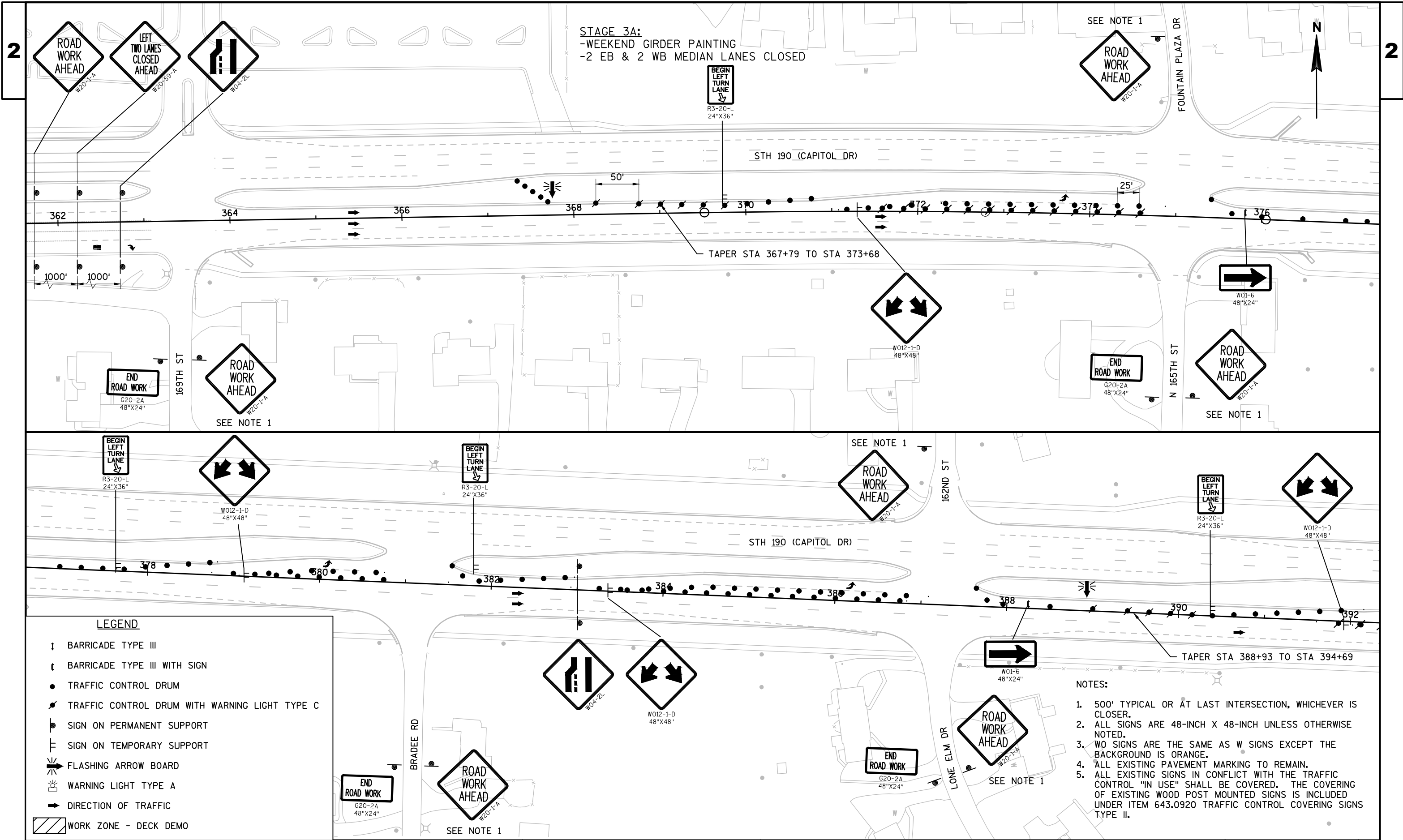


ALLOWABLE LANE CLOSURES ON STH 190 (CAPITOL DRIVE) FOR BLASTING
AND PAINTING BRIDGE GIRDERS

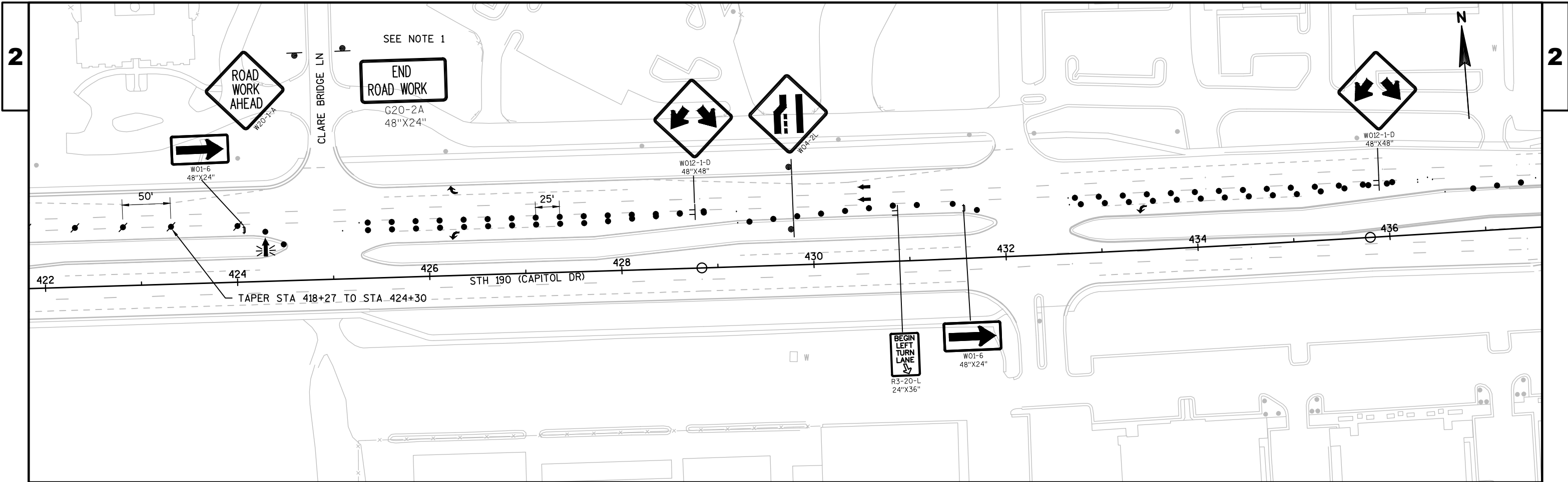
- WEEKDAYS (MONDAY - FRIDAY)
- SINGLE LANE CLOSURES ALLOWED ANYTIME
 - DOUBLE LANE CLOSURES ALLOWED NIGHTLY FROM 7:00 PM - 6:00 AM
- WEEKENDS (SATURDAY - SUNDAY)
- DOUBLE LANE CLOSURES ALLOWED ANYTIME



- NOTES:
1. FOR SINGLE LANE CLOSURES USE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY" AND SDD "TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE".
 2. FOR DOUBLE LANE CLOSURES SEE TRAFFIC CONTROL - STAGE 3A SHEETS.
 3. ALL EXISTING PAVEMENT MARKING TO REMAIN.
 4. THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

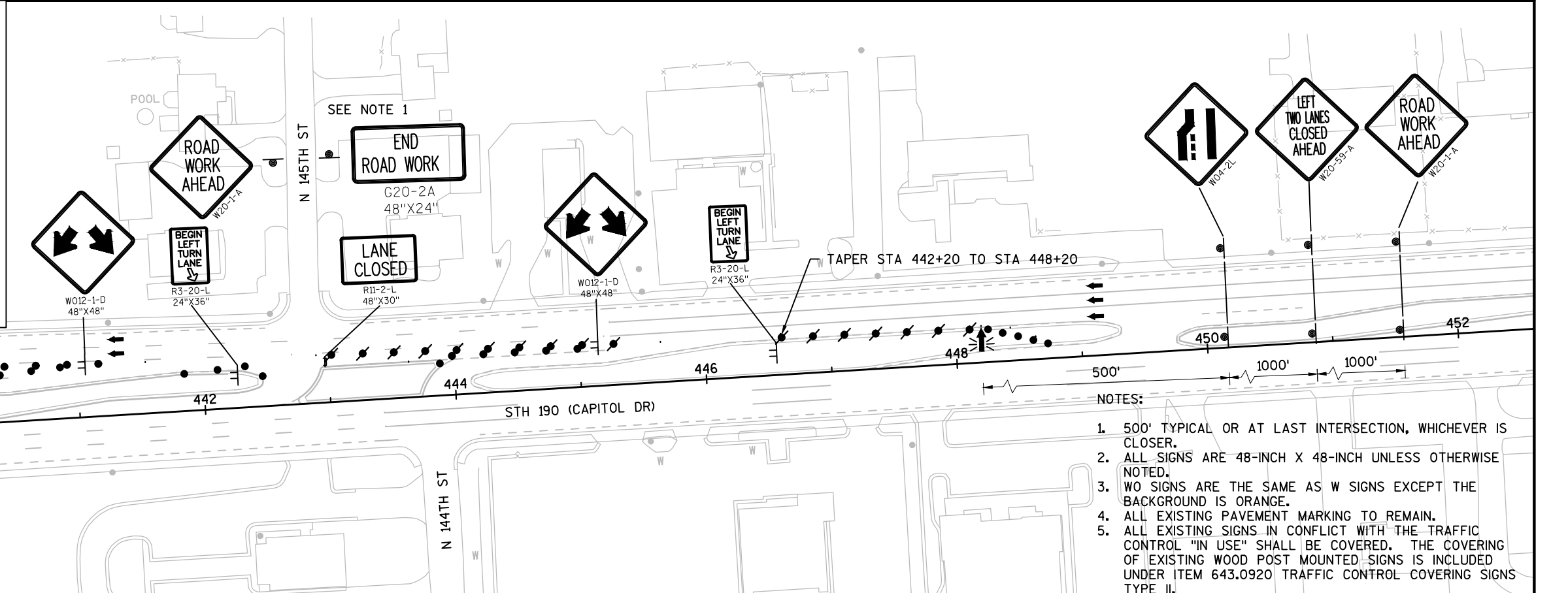




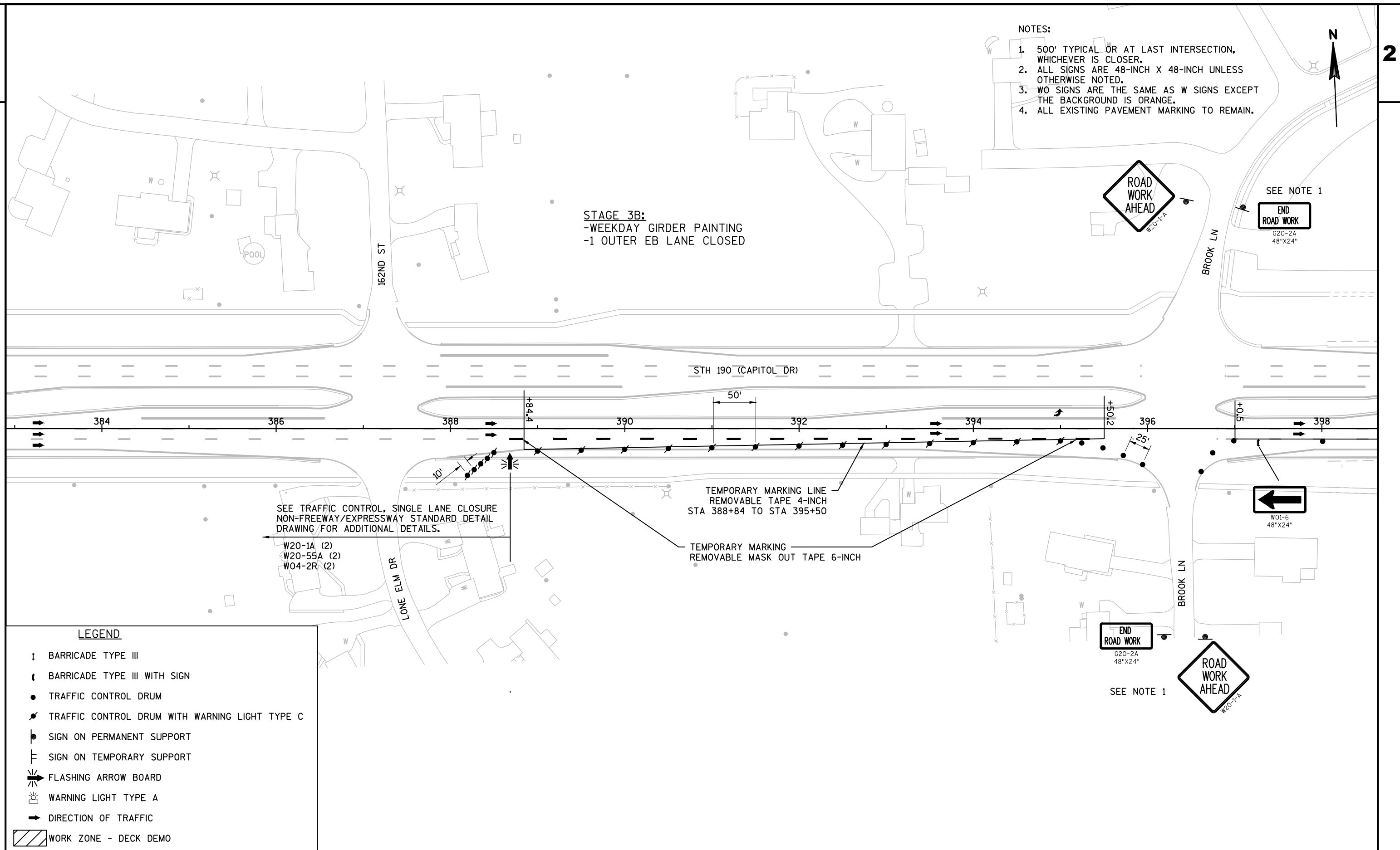


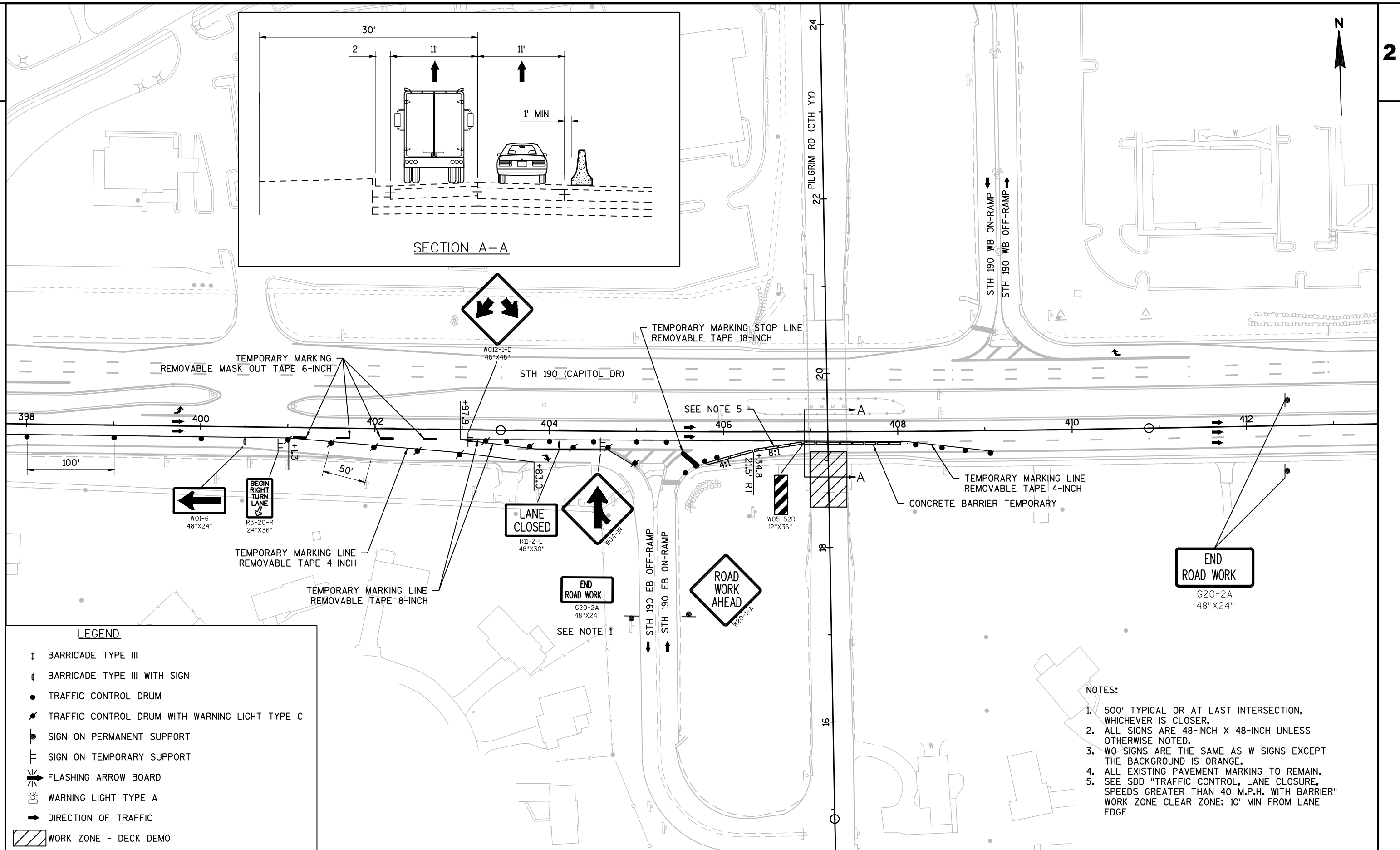
LEGEND

- † BARRICADE TYPE III
- † BARRICADE TYPE III WITH SIGN
- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH WARNING LIGHT TYPE C
- 📍 SIGN ON PERMANENT SUPPORT
- 📍 SIGN ON TEMPORARY SUPPORT
- ⚡ FLASHING ARROW BOARD
- 💡 WARNING LIGHT TYPE A
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK ZONE - DECK DEMO

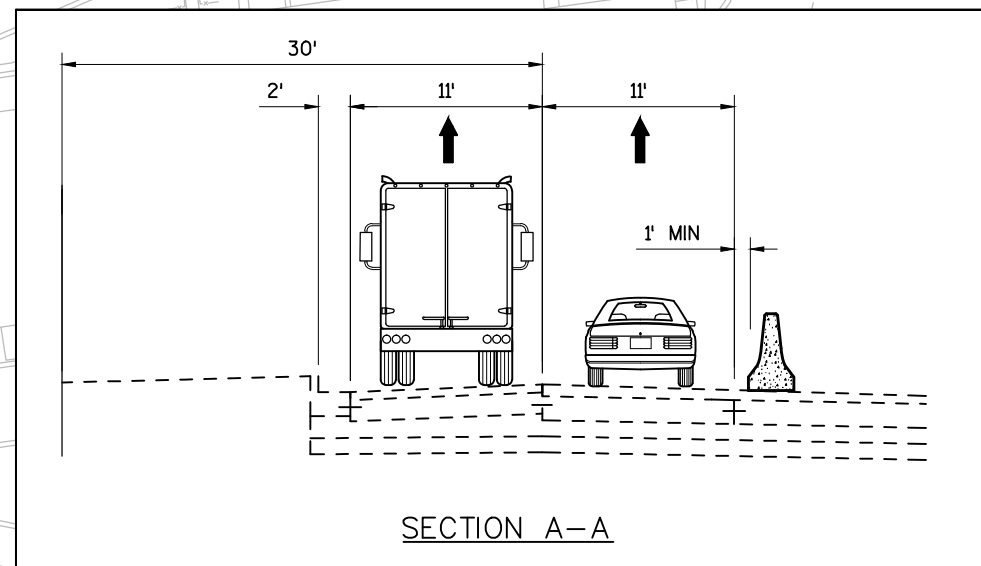


- NOTES:**
1. 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
 2. ALL SIGNS ARE 48-INCH X 48-INCH UNLESS OTHERWISE NOTED.
 3. WO SIGNS ARE THE SAME AS W SIGNS EXCEPT THE BACKGROUND IS ORANGE.
 4. ALL EXISTING PAVEMENT MARKING TO REMAIN.
 5. ALL EXISTING SIGNS IN CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED. THE COVERING OF EXISTING WOOD POST MOUNTED SIGNS IS INCLUDED UNDER ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II.

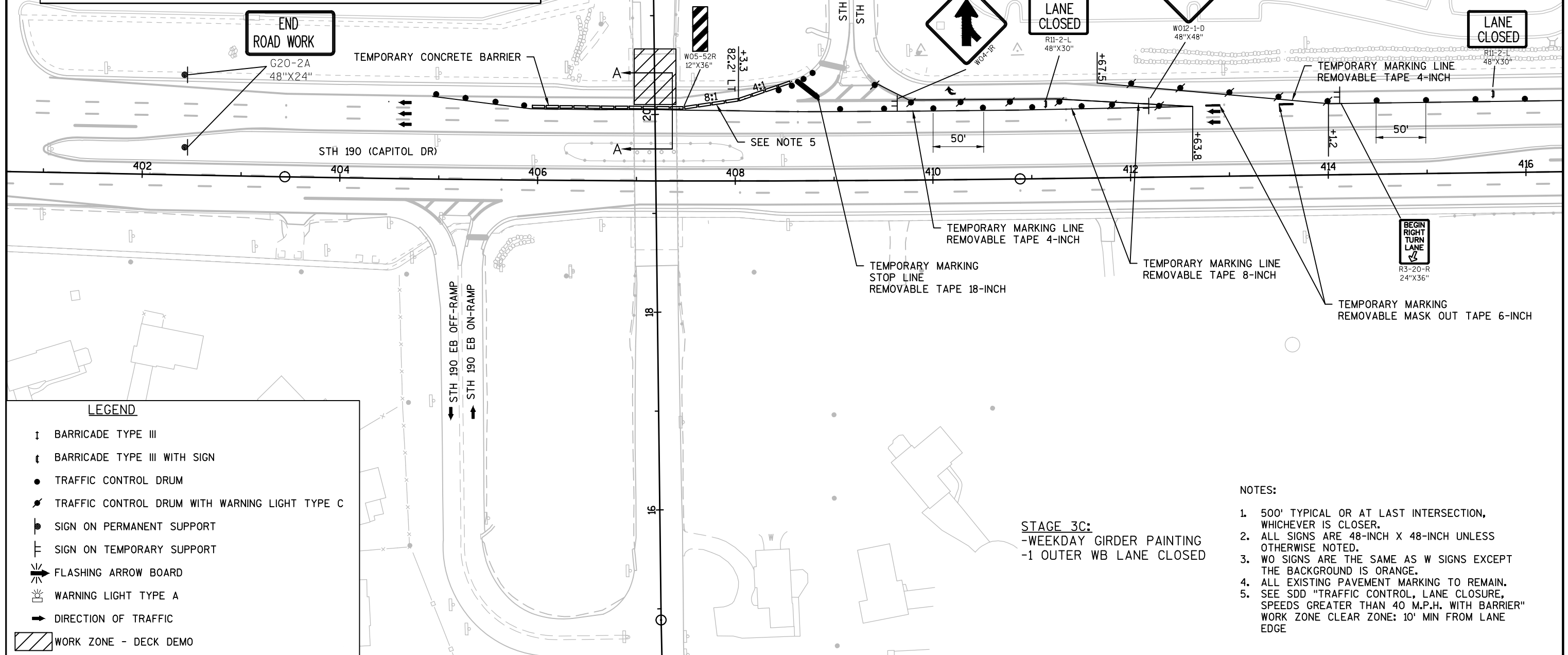




2



SECTION A-A



LEGEND

-  BARRICADE TYPE III
-  BARRICADE TYPE III WITH SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH WARNING LIGHT TYPE C
-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  FLASHING ARROW BOARD
-  WARNING LIGHT TYPE A
-  DIRECTION OF TRAFFIC
-  WORK ZONE - DECK DEMO

NOTES:

1. 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
2. ALL SIGNS ARE 48-INCH X 48-INCH UNLESS OTHERWISE NOTED.
3. WO SIGNS ARE THE SAME AS W SIGNS EXCEPT THE BACKGROUND IS ORANGE.
4. ALL EXISTING PAVEMENT MARKING TO REMAIN.
5. SEE SDD "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER" WORK ZONE CLEAR ZONE: 10' MIN FROM LANE EDGE

STAGE 3C:
-WEEKDAY GIRDER PAINTING
-1 OUTER WB LANE CLOSED

PROJECT NO:2025-18-70

HWY:STH 190

COUNTY: WAUKESHA

TRAFFIC CONTROL - STAGE 3C

SHEET

34

FILE NAME : N:\PDS\C3D\20251800\SHEETPLAN\025005_S3C.DWG
LAYOUT NAME - 026001_S3C

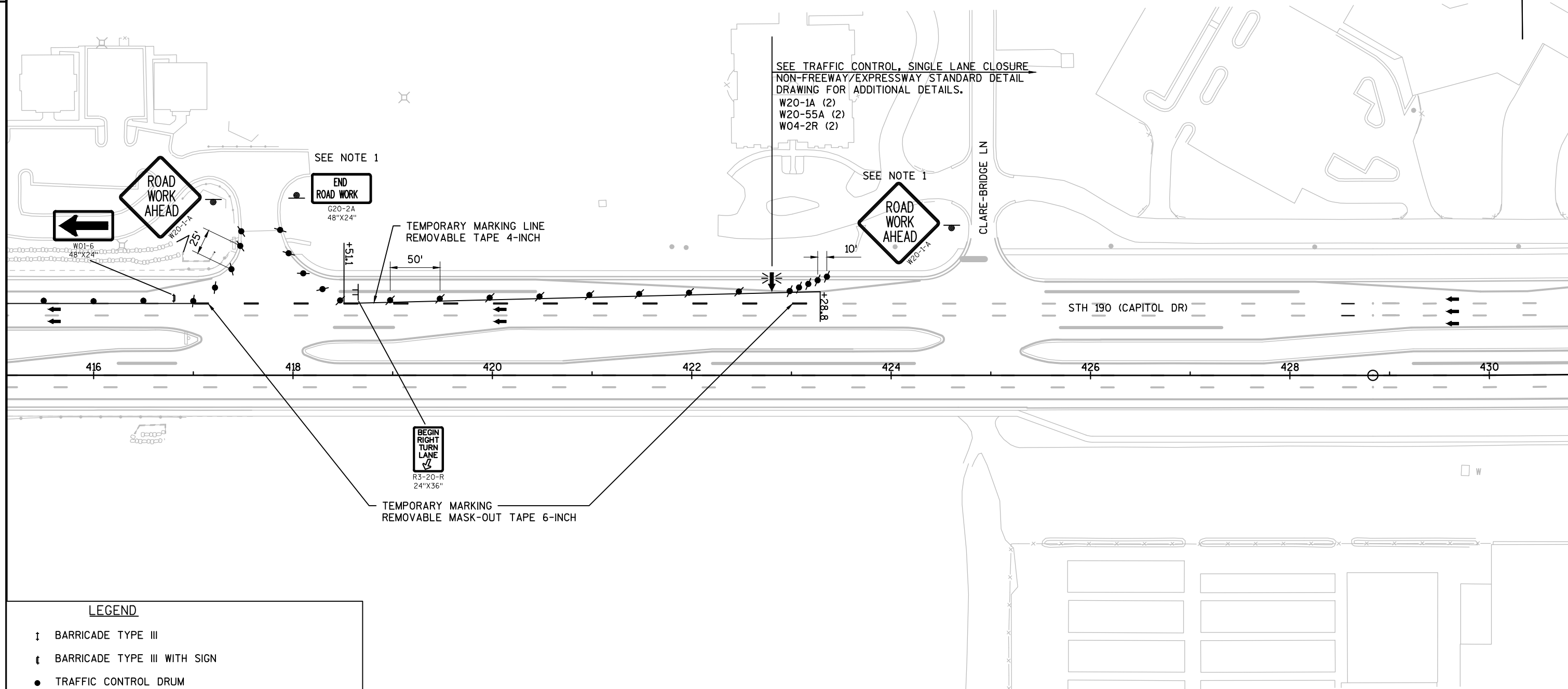
PLOT DATE : 10/16/2017 5:06 PM

PLOT BY : STITELEY, REID E

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

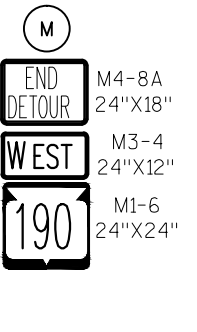
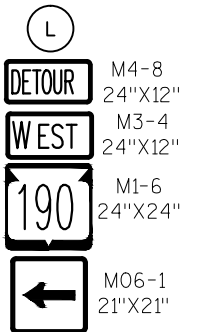
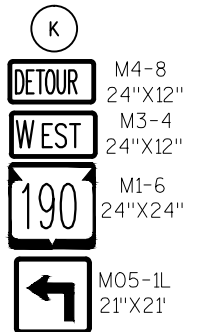
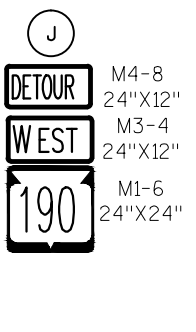
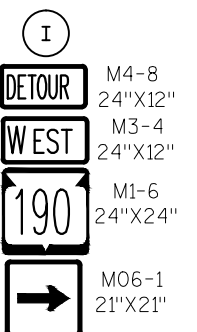
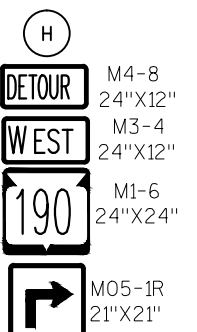
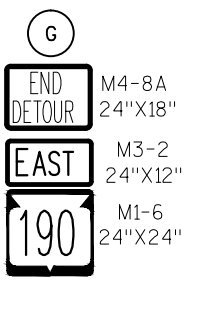
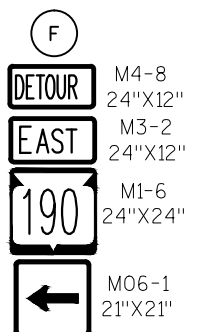
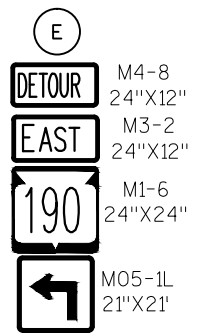
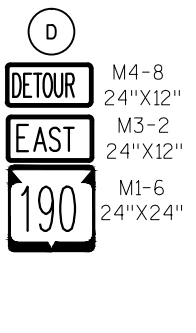
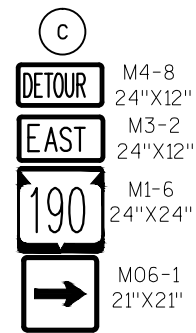
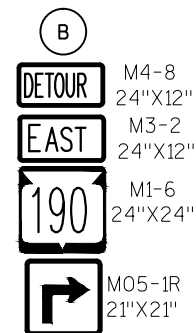
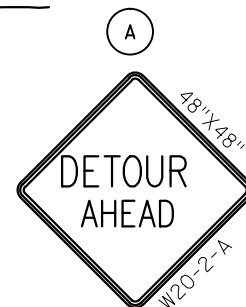
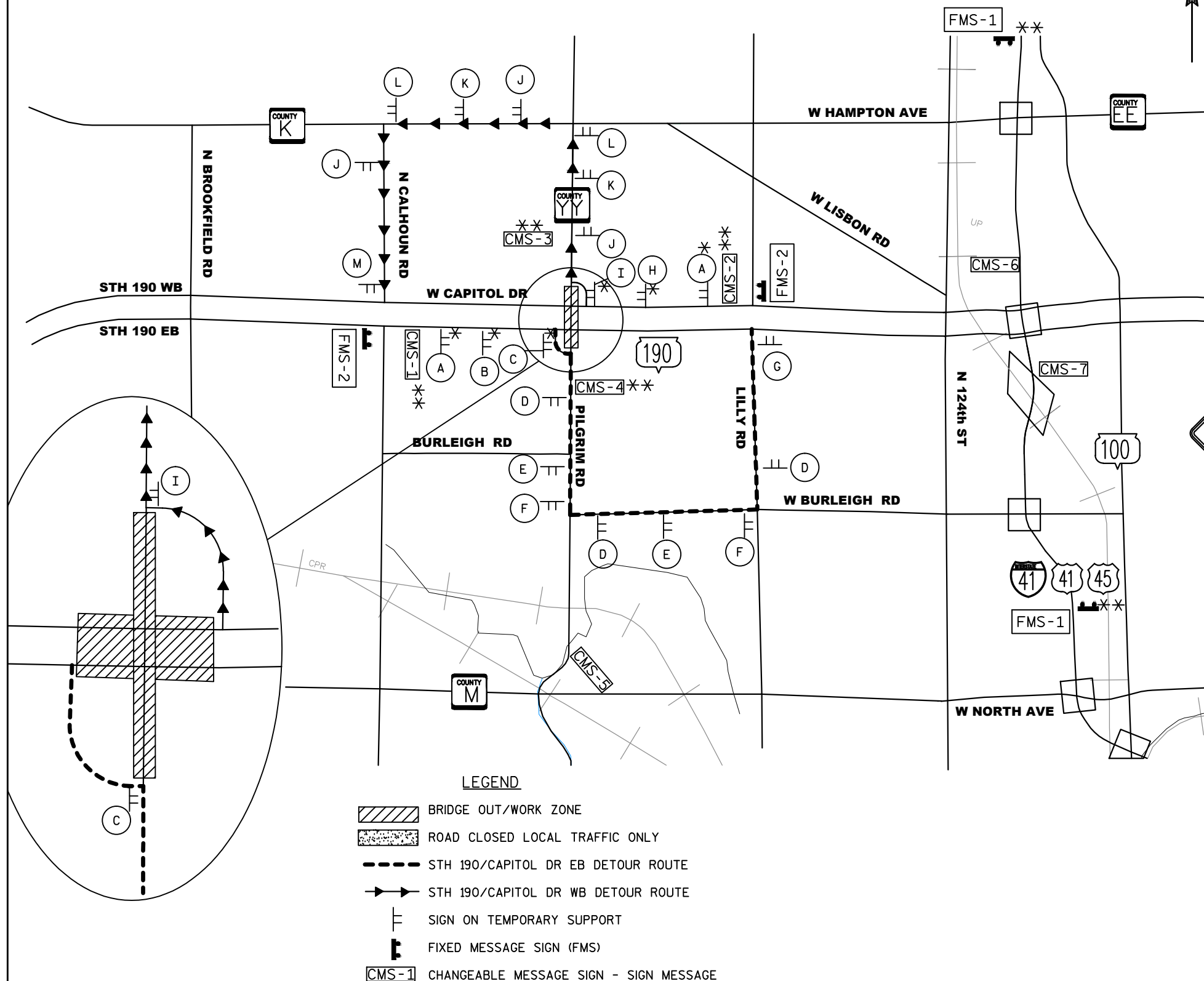


STAGE 1: CAPITOL DR CLOSURE

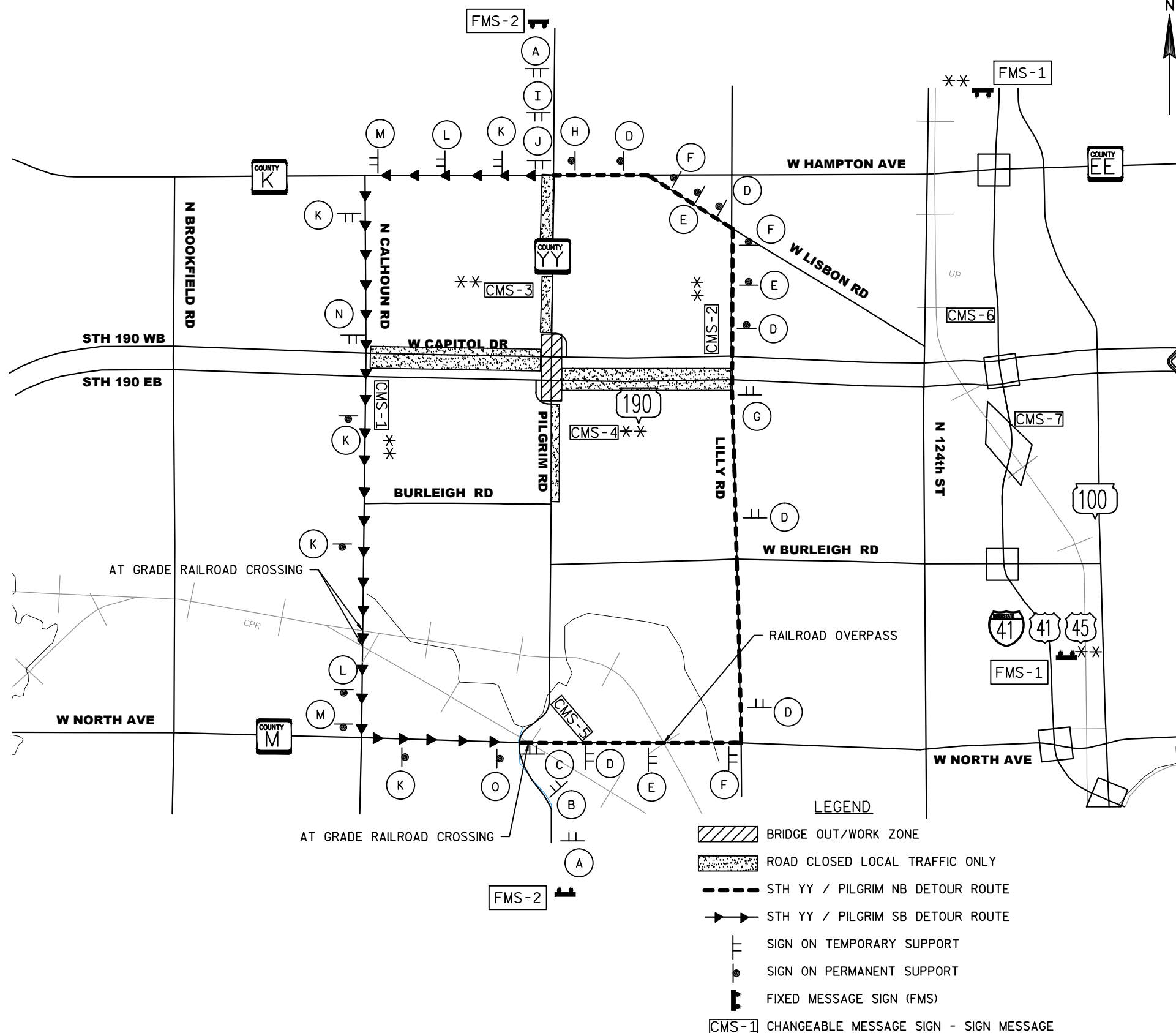
FRIDAY JUNE 8:00 PM - SUNDAY JUNE 8:00 PM
DETOUR DURING DECK DEMO

NOTES:

1. SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
2. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE PROJECT ENGINEER SHALL VERIFY EACH SIGN LOCATION.
3. CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 200' FROM EXISTING TYPE "I" SIGN.
4. SEE TEMPORARY SIGNING SHEETS FOR MORE INFORMATION.
5. THE MONTH AND DAY SHALL BE AS DIRECTED BY THE PROJECT ENGINEER FOR "BEGINS XXX XX" SIGNS.
6. ALL EXISTING SIGNS IN CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED. THE COVERING OF EXISTING WOOD POST MOUNTED SIGNS IS INCLUDED UNDER ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II.
7. ANY "STOP" SIGNS THAT ARE REMOVED FOR A CONSTRUCTION OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED.
8. SEE TRAFFIC CONTROL PLAN FOR ADDITIONAL TRAFFIC CONTROL SIGNS.
9. SIGNS MARKED WITH AN ASTERISK (*) ARE SHOWN ON THE TRAFFIC CONTROL PLAN.
10. SIGNS TO BE PLACED 3 DAYS PRIOR TO CONSTRUCTION.
11. SIGNS MARKED WITH A DOUBLE ASTERISK (**) ARE TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.

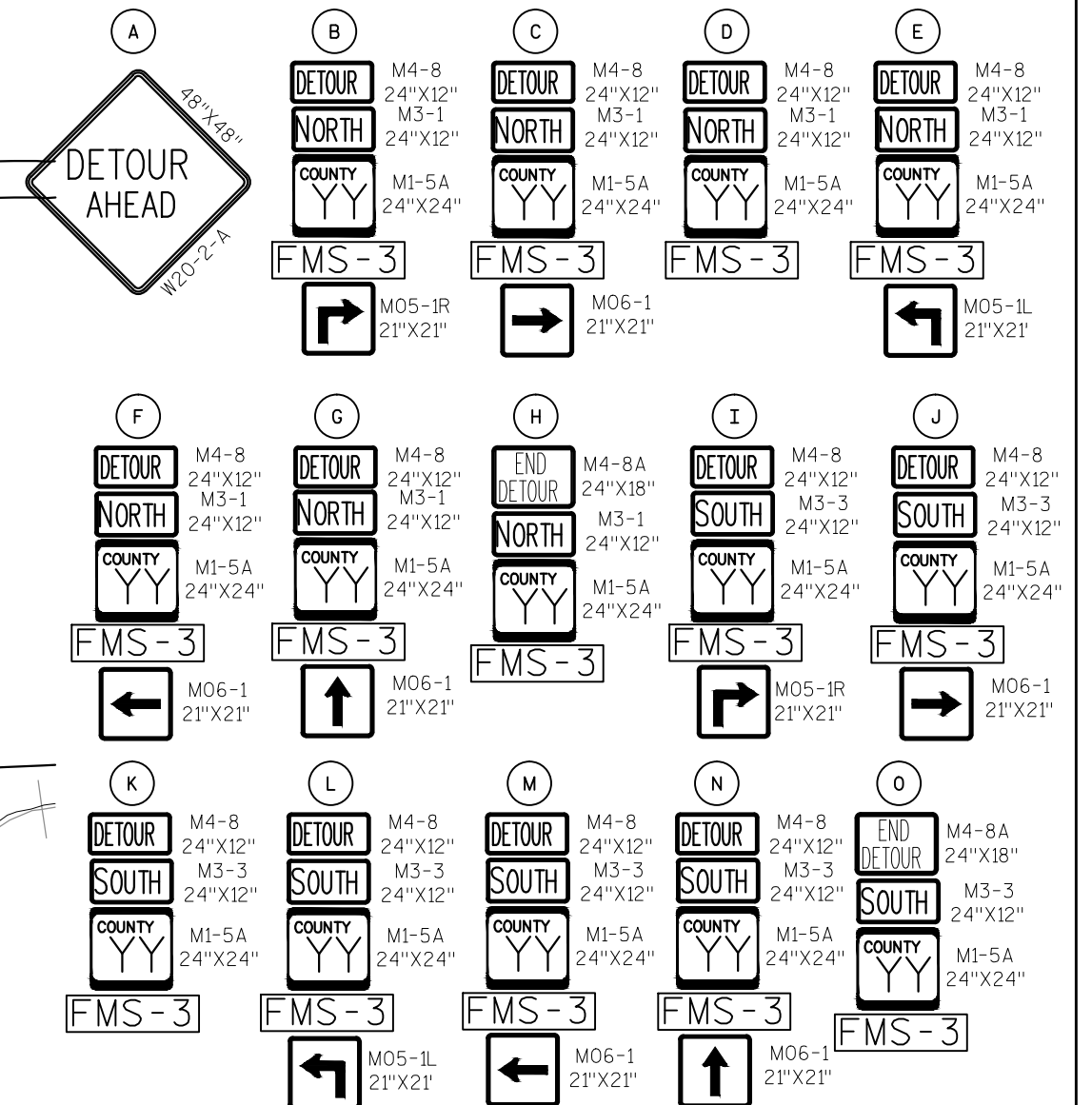


STAGE 1: PILGRIM RD CLOSURE

FRIDAY JUNE 8:00 PM - SUNDAY JUNE 8:00 PM
DETOUR DURING DECK DEMO

NOTES:

- SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
- AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE PROJECT ENGINEER SHALL VERIFY EACH SIGN LOCATION.
- CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 200' FROM EXISTING TYPE "I" SIGN.
- SEE TEMPORARY SIGNING SHEETS FOR MORE INFORMATION.
- THE MONTH AND DAY SHALL BE AS DIRECTED BY THE PROJECT ENGINEER FOR "BEGINS XXX XX" SIGNS.
- ALL EXISTING SIGNS IN CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED. THE COVERING OF EXISTING WOOD POST MOUNTED SIGNS IS INCLUDED UNDER ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II.
- ANY "STOP" SIGNS THAT ARE REMOVED FOR A CONSTRUCTION OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED.
- SEE TRAFFIC CONTROL PLAN FOR ADDITIONAL TRAFFIC CONTROL SIGNS.
- SIGNS MARKED WITH AN ASTERISK (*) ARE SHOWN ON THE TRAFFIC CONTROL PLAN.
- SIGNS TO BE PLACED 3 DAYS PRIOR TO CONSTRUCTION.
- SIGNS MARKED WITH A DOUBLE ASTERISK (**) ARE TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.

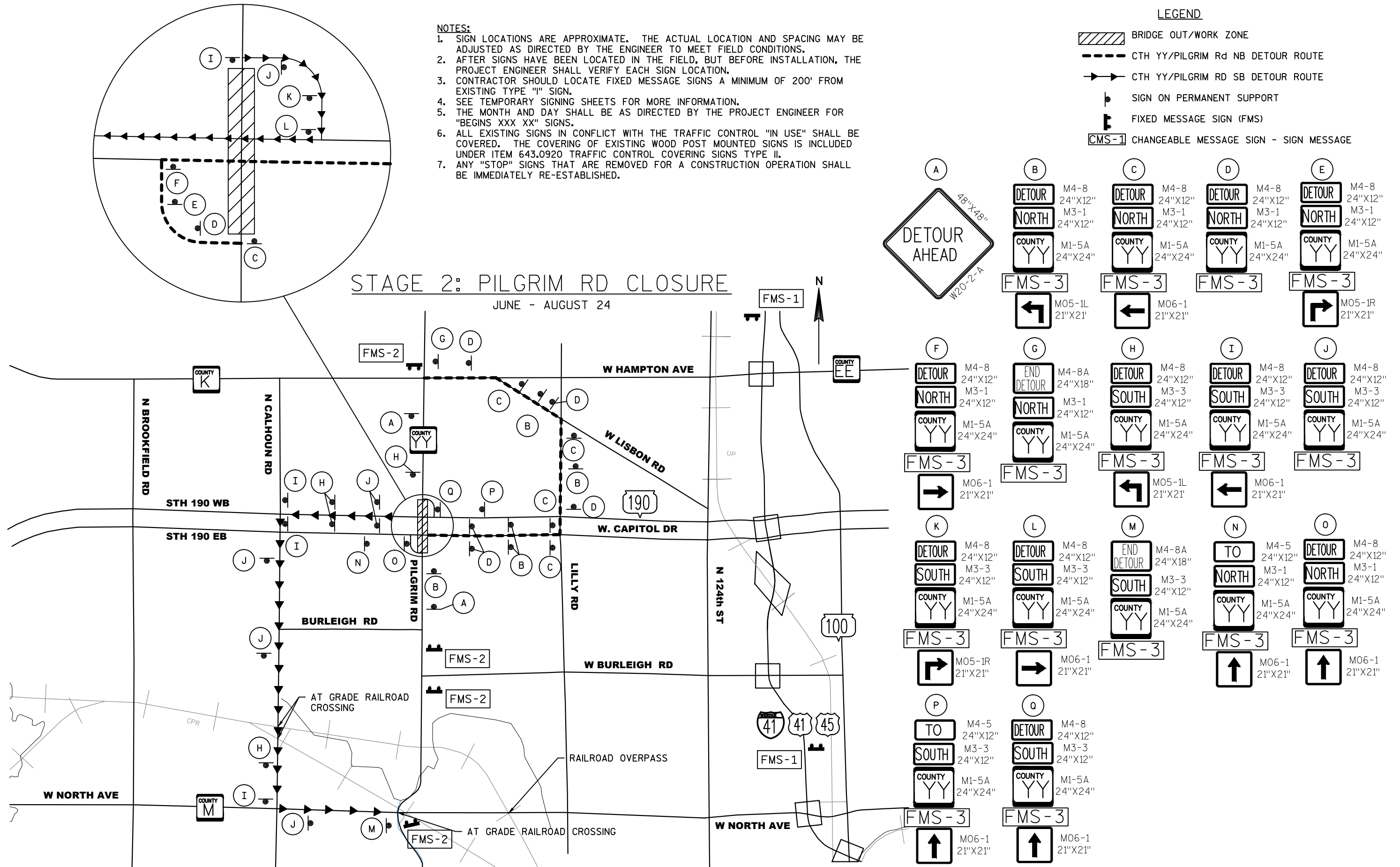


NOTES:

1. SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
2. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE PROJECT ENGINEER SHALL VERIFY EACH SIGN LOCATION.
3. CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 200' FROM EXISTING TYPE "Y" SIGN.
4. SEE TEMPORARY SIGNING SHEETS FOR MORE INFORMATION.
5. THE MONTH AND DAY SHALL BE AS DIRECTED BY THE PROJECT ENGINEER FOR "BEGINS XXX XX" SIGNS.
6. ALL EXISTING SIGNS IN CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED. THE COVERING OF EXISTING WOOD POST MOUNTED SIGNS IS INCLUDED UNDER ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II.
7. ANY "STOP" SIGNS THAT ARE REMOVED FOR A CONSTRUCTION OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED.

LEGEND

- BRIDGE OUT/WORK ZONE
- CTH YY/PILGRIM Rd NB DETOUR ROUTE
- CTH YY/PILGRIM RD SB DETOUR ROUTE
- SIGN ON PERMANENT SUPPORT
- FIXED MESSAGE SIGN (FMS)
- CMS-1 CHANGEABLE MESSAGE SIGN - SIGN MESSAGE



MESSAGE PRIOR TO DECK DEMOLITION

MESSAGE DURING DECK DEMOLITION

MESSAGE DURING DECK DEMOLITION

CMS 1
(10 DAYS PRIOR)

FRAME 1
WIS 190
CLOSED
JUNE 8

FRAME 2
WIS 190
REOPENS
JUNE 11

CMS 1

FRAME 1
WIS 190
CLOSED
AHEAD

FRAME 2
FOLLOW
DETOUR

CMS 5

FRAME 1
BRIDGE
CLOSED
2 MILES

FRAME 2
FOLLOW
DETOUR

CMS 2
(10 DAYS PRIOR)

FRAME 1
WIS 190
CLOSED
JUNE 8

FRAME 2
WIS 190
REOPENS
JUNE 11

CMS 2

FRAME 1
WIS 190
CLOSED
AHEAD

FRAME 2
FOLLOW
DETOUR

CMS 6

FRAME 1
WB 190
CLOSED
2 MILES

FRAME 2
FOLLOW
DETOUR

CMS 3
(10 DAYS PRIOR)

FRAME 1
BRIDGE
CLOSED
JUNE 8

FRAME 2
USE
LILLY
ROAD

CMS 3

FRAME 1
BRIDGE
CLOSED

FRAME 2
USE
DETOUR
ROUTE

CMS 7

FRAME 1
WB 190
CLOSED
2 MILES

FRAME 2
FOLLOW
DETOUR

CMS 4
(10 DAYS PRIOR)

FRAME 1
BRIDGE
CLOSED
JUNE 8

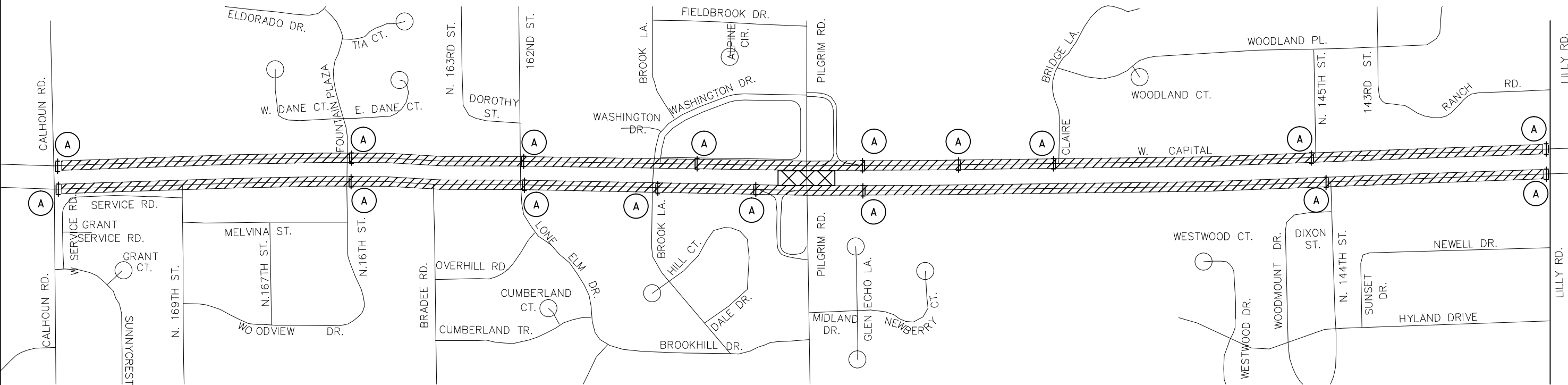
FRAME 2
USE
CALHOUN
ROAD

CMS 4

FRAME 1
BRIDGE
CLOSED

FRAME 2
USE
DETOUR
ROUTE

STAGE 1
SIDEWALK CLOSURE DURING DECK DEMOLITION



- NOTES:**
- 1. SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
 - 2. ALL EXISTING SIGNS IN CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED. THE COVERING OF EXISTING WOOD POST MOUNTED SIGNS IS INCLUDED UNDER ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II.
 - 3. SEE TRAFFIC CONTROL STAGING PLAN FOR ADDITIONAL TRAFFIC CONTROL DETOUR SIGNS AND EQUIPMENT.
 - 4. ALL REQUIRED TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE NOT SHOWN. SEE SDD "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL DETAILS.

LEGEND

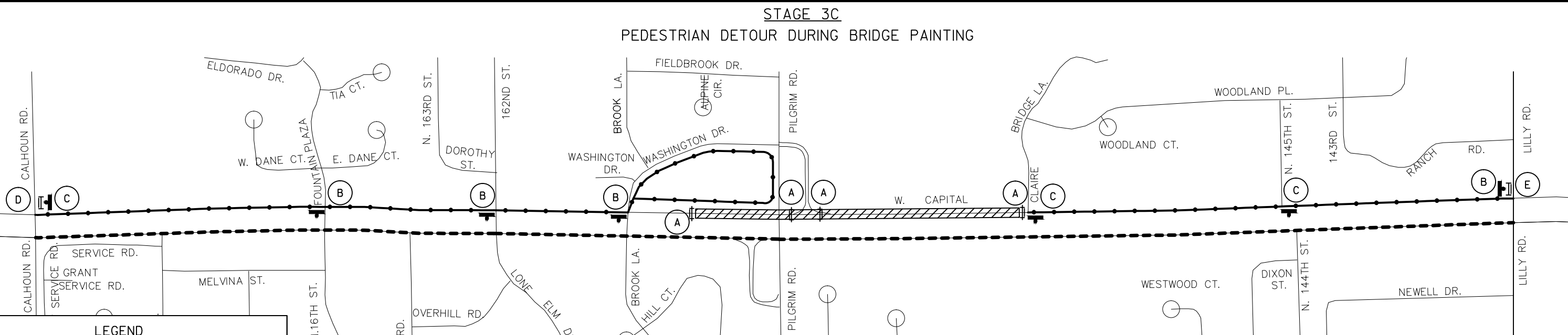
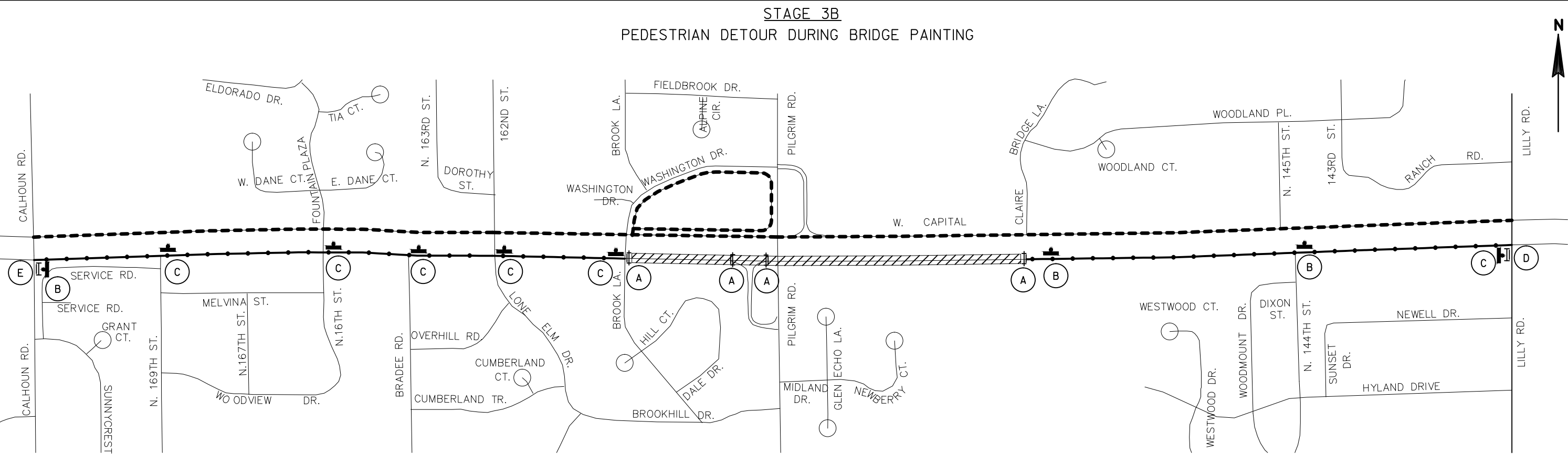
 SIDEWALK CLOSED

 WORK ZONE

 BARRICADE TYPE III WITH SIGN

  SIDEWALK CLOSED

R9-9
24"X12"

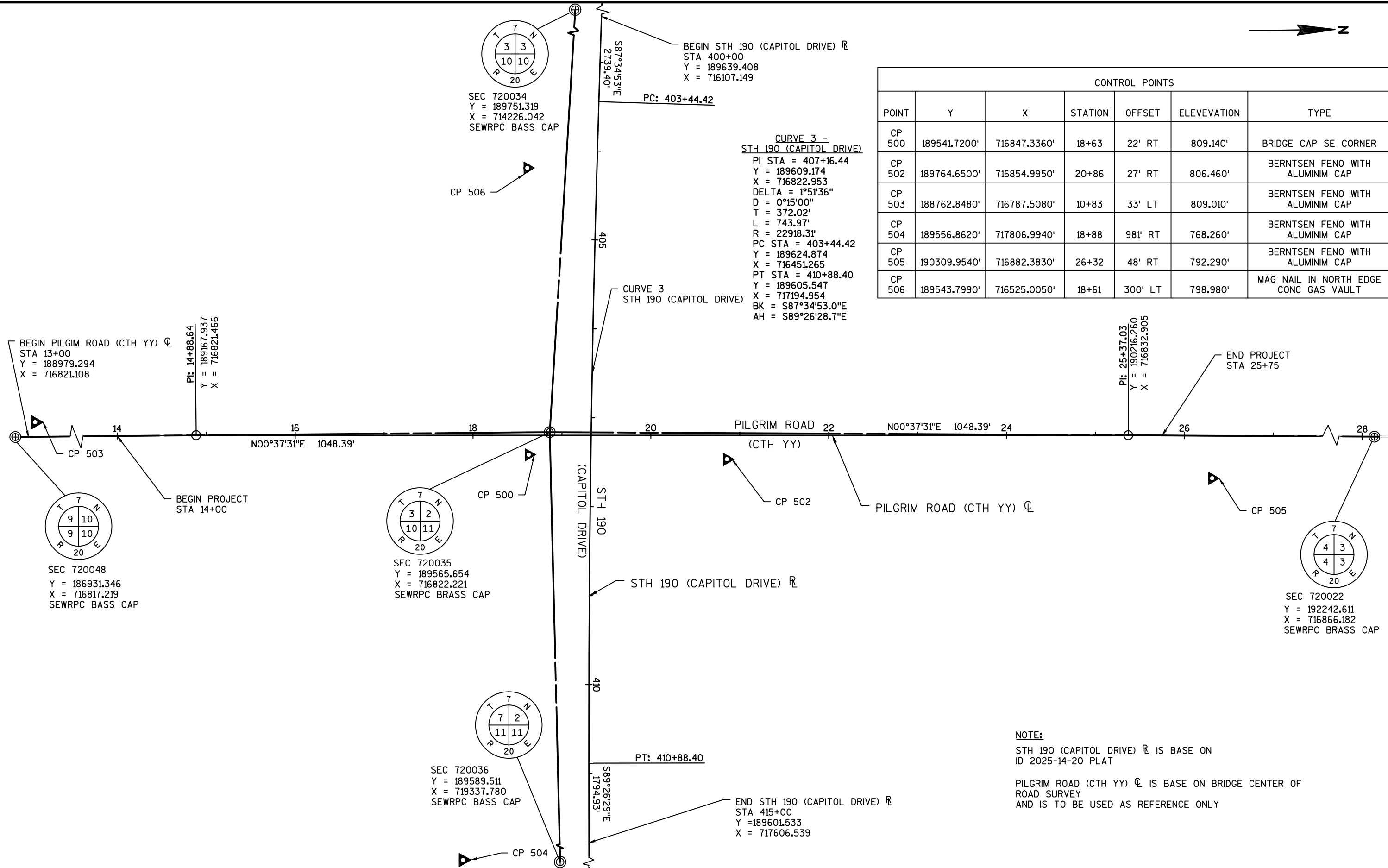


LEGEND

- WORK ZONE/SIDEWALK CLOSED
- SIDEWALK OPEN TO THRU PEDESTRIAN
- SIDEWALK OPEN TO LOCAL PEDESTRIAN
- BARRICADE TYPE III WITH SIGN
- BARRICADE TYPE II WITH SIGN
- SIGN ON PERMANENT SUPPORT

A	B	C	D	E
SIDEWALK CLOSED	DETOUR	DETOUR	SIDEWALK CLOSED AHEAD	SIDEWALK CLOSED AHEAD
R9-9	M4-9BR	M4-9BL	R9-11	R9-11
24"X12"	30"X24"	30"X24"	48"X24"	48"X24"

- NOTES:**
1. SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
 2. ALL EXISTING SIGNS IN CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED. THE COVERING OF EXISTING WOOD POST MOUNTED SIGNS IS INCLUDED UNDER ITEM 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II.
 3. SIGNS TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.
 4. SEE TRAFFIC CONTROL STAGING PLAN FOR ADDITIONAL TRAFFIC CONTROL DETOUR SIGNS AND EQUIPMENT.
 5. ALL REQUIRED TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE NOT SHOWN. SEE SDD "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL DETAILS.



Estimate Of Quantities

2025-18-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	9.000	9.000
0004	201.0205	Grubbing	STA	9.000	9.000
0006	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0008	203.0200	Removing Old Structure (station) 01. 19+61.99	LS	1.000	1.000
0010	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. B-67-86	LS	1.000	1.000
0012	204.0100	Removing Pavement	SY	49.000	49.000
0014	204.0110	Removing Asphaltic Surface	SY	5,240.000	5,240.000
0016	204.0115	Removing Asphaltic Surface Butt Joints	SY	625.000	625.000
0018	204.0150	Removing Curb & Gutter	LF	245.000	245.000
0020	204.0175	Removing Concrete Slope Paving	SY	59.000	59.000
0022	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	120.000	120.000
0024	204.9180.S	Removing (item description) 01. Concrete Channel Lining	SY	27.000	27.000
0026	205.0100	Excavation Common	CY	694.000	694.000
0028	206.1000	Excavation for Structures Bridges (structure) 01. B-67-86	LS	1.000	1.000
0030	208.0100	Borrow	CY	1,956.000	1,956.000
0032	210.1500	Backfill Structure Type A	TON	513.000	513.000
0034	213.0100	Finishing Roadway (project) 01. 2025-18-70	EACH	1.000	1.000
0036	305.0110	Base Aggregate Dense 3/4-Inch	TON	204.000	204.000
0038	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,005.000	3,005.000
0040	305.0410	Aggregate Detours	TON	160.000	160.000
0042	311.0110	Breaker Run	TON	800.000	800.000
0044	415.0120	Concrete Pavement 12-Inch	SY	72.000	72.000
0046	415.0410	Concrete Pavement Approach Slab	SY	86.000	86.000
0048	416.0610	Drilled Tie Bars	EACH	4.000	4.000
0050	455.0605	Tack Coat	GAL	322.000	322.000
0052	460.2000	Incentive Density HMA Pavement	DOL	1,060.000	1,060.000
0054	460.5223	HMA Pavement 3 LT 58-28 S	TON	1,000.000	1,000.000
0056	460.5224	HMA Pavement 4 LT 58-28 S	TON	645.000	645.000
0058	465.0115	Asphaltic Surface Detours	TON	50.000	50.000
0060	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	5.000	5.000
0062	502.0100	Concrete Masonry Bridges	CY	418.000	418.000
0064	502.3100	Expansion Device (structure) 01. B-67-86	LS	1.000	1.000
0066	502.3200	Protective Surface Treatment	SY	990.000	990.000
0068	502.3210	Pigmented Surface Sealer	SY	236.000	236.000
0070	502.4205	Adhesive Anchors No. 5 Bar	EACH	374.000	374.000
0072	502.4208	Adhesive Anchors No. 8 Bar	EACH	51.000	51.000
0074	502.6500	Protective Coating Clear	GAL	6.000	6.000

Estimate Of Quantities

2025-18-70

Line	Item	Item Description	Unit	Total	Qty
0076	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	87,240.000	87,240.000
0078	506.2610	Bearing Pads Elastomeric Laminated	EACH	12.000	12.000
0080	506.3025	Welded Stud Shear Connectors 7/8x8-Inch	EACH	1,512.000	1,512.000
0082	509.1500	Concrete Surface Repair	SF	88.000	88.000
0084	516.0500	Rubberized Membrane Waterproofing	SY	30.000	30.000
0086	517.0900.S	Preparation and Coating of Top Flanges (structure) 01. B-67-86	LS	1.000	1.000
0088	517.1800.S	Structure Repainting Recycled Abrasive (structure) 01. B-67-86	LS	1.000	1.000
0090	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 01. B-67-86	LS	1.000	1.000
0092	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0094	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0096	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	13.000	13.000
0098	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	6.000	6.000
0100	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	1.000	1.000
0102	522.2619	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	EACH	1.000	1.000
0104	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	281.000	281.000
0106	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	74.000	74.000
0108	603.8000	Concrete Barrier Temporary Precast Delivered	LF	492.000	492.000
0110	603.8125	Concrete Barrier Temporary Precast Installed	LF	492.000	492.000
0112	604.0400	Slope Paving Concrete	SY	87.000	87.000
0114	606.0200	Riprap Medium	CY	24.000	24.000
0116	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	66.000	66.000
0118	608.2419	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	LF	105.000	105.000
0120	611.0612	Inlet Covers Type C	EACH	2.000	2.000
0122	611.0654	Inlet Covers Type V	EACH	2.000	2.000
0124	611.2005	Manholes 5-FT Diameter	EACH	2.000	2.000
0126	611.3220	Inlets 2x2-FT	EACH	2.000	2.000
0128	612.0212	Pipe Underdrain Unperforated 12-Inch	LF	109.000	109.000
0130	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	180.000	180.000
0132	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0134	614.0920	Salvaged Rail	LF	394.000	394.000
0136	614.2300	MGS Guardrail 3	LF	175.000	175.000
0138	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0140	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000

Estimate Of Quantities

2025-18-70

Line	Item	Item Description	Unit	Total	Qty
0142	619.1000	Mobilization	EACH	1.000	1.000
0144	624.0100	Water	MGAL	33.000	33.000
0146	625.0500	Salvaged Topsoil	SY	5,500.000	5,500.000
0148	627.0200	Mulching	SY	1,468.000	1,468.000
0150	628.1504	Silt Fence	LF	2,162.000	2,162.000
0152	628.1520	Silt Fence Maintenance	LF	2,162.000	2,162.000
0154	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0156	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0158	628.2004	Erosion Mat Class I Type B	SY	6,250.000	6,250.000
0160	628.7020	Inlet Protection Type D	EACH	8.000	8.000
0162	628.7504	Temporary Ditch Checks	LF	15.000	15.000
0164	628.7555	Culvert Pipe Checks	EACH	23.000	23.000
0166	628.7560	Tracking Pads	EACH	1.000	1.000
0168	628.7570	Rock Bags	EACH	22.000	22.000
0170	629.0210	Fertilizer Type B	CWT	6.000	6.000
0172	630.0130	Seeding Mixture No. 30	LB	115.000	115.000
0174	630.0200	Seeding Temporary	LB	172.000	172.000
0176	630.0300	Seeding Borrow Pit	LB	20.000	20.000
0178	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	18.000	18.000
0180	634.0622	Posts Wood 4x6-Inch X 22-FT	EACH	2.000	2.000
0182	634.0814	Posts Tubular Steel 2x2-Inch X 14-FT	EACH	4.000	4.000
0184	637.2210	Signs Type II Reflective H	SF	150.720	150.720
0186	637.2230	Signs Type II Reflective F	SF	21.000	21.000
0188	638.2102	Moving Signs Type II	EACH	2.000	2.000
0190	638.2602	Removing Signs Type II	EACH	17.000	17.000
0192	638.3000	Removing Small Sign Supports	EACH	19.000	19.000
0194	642.5201	Field Office Type C	EACH	1.000	1.000
0196	643.0300	Traffic Control Drums	DAY	12,698.000	12,698.000
0198	643.0410	Traffic Control Barricades Type II	DAY	56.000	56.000
0200	643.0420	Traffic Control Barricades Type III	DAY	2,730.000	2,730.000
0202	643.0705	Traffic Control Warning Lights Type A	DAY	3,634.000	3,634.000
0204	643.0715	Traffic Control Warning Lights Type C	DAY	4,228.000	4,228.000
0206	643.0800	Traffic Control Arrow Boards	DAY	124.000	124.000
0208	643.0900	Traffic Control Signs	DAY	15,692.000	15,692.000
0210	643.0920	Traffic Control Covering Signs Type II	EACH	6.000	6.000
0212	643.1000	Traffic Control Signs Fixed Message	SF	533.000	533.000
0214	643.1050	Traffic Control Signs PCMS	DAY	71.000	71.000
0216	643.5000	Traffic Control	EACH	1.000	1.000
0218	645.0111	Geotextile Type DF Schedule A	SY	123.000	123.000
0220	645.0120	Geotextile Type HR	SY	82.000	82.000

Estimate Of Quantities

2025-18-70

Line	Item	Item Description	Unit	Total	Qty
0222	646.1020	Marking Line Epoxy 4-Inch	LF	4,640.000	4,640.000
0224	646.3020	Marking Line Epoxy 8-Inch	LF	315.000	315.000
0226	646.5020	Marking Arrow Epoxy	EACH	1.000	1.000
0228	646.5120	Marking Word Epoxy	EACH	1.000	1.000
0230	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	3,300.000	3,300.000
0232	649.0250	Temporary Marking Line Removable Tape 8-Inch	LF	981.000	981.000
0234	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	50.000	50.000
0236	649.0960	Temporary Marking Removable Mask Out Tape 6-Inch	LF	425.000	425.000
0238	649.0970	Temporary Marking Removable Mask Out Tape 10-Inch	LF	200.000	200.000
0240	650.4000	Construction Staking Storm Sewer	EACH	7.000	7.000
0242	650.4500	Construction Staking Subgrade	LF	976.000	976.000
0244	650.5000	Construction Staking Base	LF	945.000	945.000
0246	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	355.000	355.000
0248	650.6500	Construction Staking Structure Layout (structure) 01. B-67-86	LS	1.000	1.000
0250	650.7000	Construction Staking Concrete Pavement	LF	31.000	31.000
0252	650.9910	Construction Staking Supplemental Control (project) 01. 2025-18-70	LS	1.000	1.000
0254	650.9920	Construction Staking Slope Stakes	LF	976.000	976.000
0256	690.0150	Sawing Asphalt	LF	597.000	597.000
0258	690.0250	Sawing Concrete	LF	59.000	59.000
0260	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0262	715.0502	Incentive Strength Concrete Structures	DOL	2,508.000	2,508.000
0264	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	800.000	800.000
0266	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	700.000	700.000
0268	SPV.0035	Special 01. Backfill Slurry	CY	4.000	4.000
0270	SPV.0060	Special 01. Cleaning and Painting Bearings	EACH	6.000	6.000
0272	SPV.0060	Special 02. Adjust Sanitary Manhole Cover	EACH	1.000	1.000
0274	SPV.0060	Special 03. Sanitary Manhole Internal/External Seal Ring	EACH	1.000	1.000
0276	SPV.0060	Special 04. Repositioning Traffic Control Devices for Lane Closures	EACH	10.000	10.000

CLEARING & GRUBBING					
				201.0105 CLEARING	201.0205 GRUBBING
STATION	TO	STATION	LOCATION	STA	STA
15+00	-	19+00	PILGRIM ROAD	4	4
20+00	-	25+00	PILGRIM ROAD	5	5
TOTAL 0010				9	9

REMOVING ASPHALTIC SURFACE					
				204.0110 REMOVING ASPHALTIC SURFACE	
STATION	TO	STATION	LOCATION	SY	REMARKS
		20+80	158' RT	5	SEE NOTE BELOW
14+00	-	18+62	PILGRIM RD	2,490	
20+61	-	25+75	PILGRIM RD	2,745	
TOTAL 0010				5,240	
NOTE: REMOVE PARTIAL OF THE EXISTING ASPHALTIC FLUME DIRECTED BY THE FIELD ENGINEER					

SALVAGED RAIL				
				614.0920 SALVAGED RAIL
STATION	TO	STATION	LOCATION	LF
17+78	-	18+47	22' - 26' LT	69
17+78	-	18+47	22' - 26' RT	69
20+75	-	21+70	22' - 24' LT	95
20+75	-	22+36	22' - 29' RT	161
TOTAL 0010				394

REMOVING SMALL PIPE CULVERTS				
				203.0100 REMOVING SMALL PIPE CULVERTS*
STATION		LOCATION	DESCRIPTION	EACH
13+96	-	34' RT	18" CPCS	1
14+07	-	28' RT	24" CPCS	1
20+79	-	158' RT	18" CPRC	1
TOTAL 0010				3
NOTES: *REMOVE APRON ENDWALL ONLY				

REMOVING ASPHALTIC SURFACE BUTT JOINTS				
				204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS
STATION	TO	STATION	LOCATION	SY
14+00	-	14+88	CTH YY, R/L	299
24+79	-	25+75	CTH YY, R/L	326
TOTAL 0010				625

REMOVING CONCRETE SLOPE PAVING		
		204.0175 REMOVING CONCRETE SLOPE PAVING
STATION	LOCATION	SY
SOUTH ABUTEMENT	UNDISTRIBUTED	59
TOTAL 0010		59
NOTE: EXISTING DAMAGED 10' X 53' CONCRETE SLOPE PAVING TO BE REMOVED AS DETERMINED BY THE FIELD ENGINEER AND REPLACED		

REMOVING PAVEMENT				
				204.0100 REMOVING PAVEMENT
STATION	TO	STATION	LOCATION	SY
20+61	-	21+14	13' LT	49
TOTAL 0010				49

REMOVING CURB & GUTTER				
				204.0150 REMOVING CURB & GUTTER
STATION	TO	STATION	LOCATION	LF
14+90	-	15+61	26' - 98' LT	120
24+00	-	24+75	26' - 97' RT	125
TOTAL 0010				245

REMOVING STORM SEWER 12-INCH		
		204.0245 REMOVING STORM SEWER 12-INCH
STATION	LOCATION	LF
20+80	24' - 74' LT	55
20+80	24' - 84' RT	65
TOTAL 0010		120

REMOVING CONCRETE CHANNEL LINING				
204.9180.S.01 REMOVING CONCRETE CHANNEL LINING SY				
STATION	TO	STATION	LOCATION	SY
20+55	-	20+95	47' - 76' LT	27
TOTAL 0010				27

BASE AGGREGATE DENSE						
				305.0110 BASE AGGREGATE DENSE 3/4- INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0410 AGGREGATE DETOURS TON
STATION	TO	STATION	LOCATION	TON	TON	TON
14+00	-	18+62	LT & RT	96	1,147	--
20+61	-	25+75	LT & RT	108	1,858	--
UNDISTRIBUTED				--	--	160
TOTAL 0010				204	3,005	160

EARTHWORK SUMMARY			A	B	C	D	E	F	G	H	I	J	K
			ITEM #205.0100		*	*	*	*	*	*	*	ITEM #208.0100	ITEM #311.0110
DIVISION	FROM/TO STATION	LOCATION	EXCAVATION COMMON (1)		SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2)	AVAILABLE MATERIAL (4)	EXPANDED EBS BACKFILL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)	WASTE	BORROW	BREAKER RUN
			CUT (2) (CY)	EBS EXCAVATION (3) (CY)									
1	14+00 - 18+62	PILGRIM RD (CTH YY) UNDISTRIBUTED	164	200	410	164	200	639	767	-602	0	602	400
DIVISION 1 SUBTOTAL			164	200	410	164	200	639	767	-602		602	400
2	20+61 - 25+75	PILGRIM RD (CTH YY) UNDISTRIBUTED	130	200	449	130	200	1,236	1,483	-1,353	0	1,353	400
DIVISION 2 SUBTOTAL			130	200	449	130	200	1,236	1,483	-1,353		1,353	400
GRAND TOTAL			294	400	859	294	400	1,875	2,250	-1,956	0	1,956	800
TOTAL EXCAVATION COMMON			694		CY								

1) COMMON EXCAVATION IS THE SUM OF THE CUT (A) AND EBS EXCAVATION (B) COLUMNS. ITEM NUMBER 205.0100

2) SALVAGED/UNSUALE PAVEMENT MATERIAL (C) IS NOT INCLUDED IN CUT AND WILL BE PAID AS REMOVING ASPHALTIC SURFACE. THE EXISTING HMA PAVEMENT IS ASSUMED TO BE SALVAGED OR WASTED BY THE CONTRACTOR. THE EXISTING HMA PAVEMENT IS NOT SHOWN IN THE CROSS SECTIONS.

3) EBS EXCAVATION TO BE BACKFILLED WITH BREAKER RUN (K)

4) AVAILABLE MATERIAL (D) = CUT (A)

5) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH BREAKER RUN (ITEM NUMBER 311.0110). EBS BACKFILL FACTOR = 1.0

6) EXPANDED FILL (G) = (UNEXPANDED FILL (F)) * EXPANDED FILL FACTOR. EXPANDED FILL FACTOR = 1.20

7) THE MASS ORDINATE (H=D-G) + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

*FOR INFORMATION ONLY

CONCRETE PAVEMENT						
		415.0120		415.0410		650.7000
				CONCRETE PAVEMENT APPROACH		CONSTRUCTION STAKING CONCRETE PAVEMENT
		CONCRETE PAVEMENT 12-INCH		SLAB		
STATION	TO	STATION	LOCATION	SY	SY	LF
18+47	-	18+62	LT & RT	36	43	15
20+61	-	20+77	LT & RT	36	43	16
TOTAL 0010				72	86	31

CONCRETE CURB & GUTTER						
		601.0557		601.0588		650.5500
		CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH		CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH		CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER
		TYPE D		TYPE TBT		
STATION	TO	STATION	LOCATION	LF	LF	LF
14+00	-	14+80	23' RT	80	--	80
14+88	-	15+48	28' - 98' LT	101	--	101
24+18	-	24+78	28' - 97' RT	100	--	100
18+32	-	18+47	19.67' LT & 19.67' RT	--	30	30
20+77	-	20+99	19.67' LT & 19.67' RT	--	44	44
TOTAL 0010				281	74	355

DRILLED TIE BARS		
		416.0610
		DRILLED TIE BARS
STATION	LOCATION	EACH
14+91	98' LT	2
24+76	97' RT	2
TOTAL 0010		4

NOTE:
INSTALL ONE TIE BAR IN CURB HEAD AND
ONE TIE BAR IN GUTTER PAN AT EACH
LOCATION

CONCRETE BARRIER TEMPORARY					
		603.8000		603.8125	
		CONCRETE BARRIER TEMPORARY PRECAST			
		DELIVERED		INSTALLED	
STATION	TO	STATION	LOCATION	LF	LF
STAGE 3B:					
405+81	-	408+03	STH 190 EB	228	228
STAGE 3C:					
405+94	-	408+56	STH 190 WB	264	264
TOTAL 0010				492	492

HMA PAVEMENT							
		455.0605		460.5223		460.5224	465.0115
						465.0120	
						ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	
STATION	TO	STATION	LOCATION	TACK COAT GAL	HMA PAVEMENT 3 LT 58-28 S TON	HMA PAVEMENT 4 LT 58-28 S TON	ASPHALTIC SURFACE DETOURS TON
14+00	-	18+47	CTH YY	152	456	305	--
20+77	-	25+75	CTH YY	170	510	340	--
UNDISTRIBUTED				--	34	--	50
TOTAL 0010				322	1,000	645	50

SLOPE PAVING CONCRETE		
		604.0400
		SLOPE PAVING CONCRETE
STATION	LOCATION	SY
SOUTH ABUTEMENT	UNDISTRIBUTED	59
SOUTH ABUTEMENT	WING WALLS	14
NORTH ABUTEMENT	WING WALLS	14
TOTAL 0010		87

NOTE:
EXISTING DAMAGED 10' X 53' CONCRETE SLOPE PAVING TO
BE REMOVED AS DETERMINED BY THE FIELD ENGINEER AND
REPLACED

3

<u>RIPRAP MEDIUM & GEOTEXTILE FABRIC TYPE HR</u>				606.0200	645.0120
				RIPRAP	GEOTEXTILE
STATION	TO	STATION	LOCATION	MEDIUM	TYPE HR
				CY	SY
15+37	-	15+47	54'-62' LT	4	13
20+47	-	20+84	55'-82' LT	13	44
20+60	-	20+65	87'-109' RT	7	25
TOTAL 0010				24	82

DROP INLETS AT STRUCTURE										
			521.1012	611.0654	611.3220	612.0212	650.4000			
				APRON ENDWALLS	INLET	PIPE		CONSTRUCTION		
				FOR CULVERT PIPE	COVERS	UNDERDRAIN	CONSTRUCTION			
				STEEL 12-INCH	TYPE V	UNPERFORATED	STAKING			
STR NO	STATION	LOCATION	RIM ELEV	INVERT FLOWLINE ELEV	DEPTH FEET	EACH	2X2-FT EACH	12-INCH LF	STORM SEWER*	EACH
1	20+94.0	21.0' LT	807.97	802.00	5.97	--	1	1	37	1
1A	20+81.5	55.9' LT	--	796.40	--	1	--	--	--	1
2	20+94.0	21.0' RT	807.97	802.00	5.97	--	1	1	72	1
2A	20+63.5	86.8' RT	--	785.30	--	1	--	--	--	1
TOTAL 0010						2	2	2	109	4

NOTES:

*MISC QUANTITIES SHOWN ELSEWHERE IN PLANS. SEE STORM SEWER MISC QUANTITY SCHEDULE.

1. RIM ELEVATION IS MEASURED AT THE FLOW LINE OF CURB AND GUTTER

2. STATIONS AND OFFSETS ARE TO THE CENTER OF STRUCTURES OR TO THE END OF PIPE WHERE THERE IS AN ENDWALL

3. PIPE LENGTHS ARE MEASURED TO THE CENTER OF STRUCTURES

4. STRUCTURE DEPTH = RIM - INVERT FLOWLINE

*MISC QUANTITIES SHOWN ELSEWHERE IN PLANS. SEE STORM SEWER MISC QUANTITY SCHEDULE.

1. RIM ELEVATION IS MEASURED AT THE FLOW LINE OF CURB AND GUTTER
2. STATIONS AND OFFSETS ARE TO THE CENTER OF STRUCTURES OR TO THE END OF PIPE WHERE THERE IS AN ENDWALL
3. PIPE LENGTHS ARE MEASURED TO THE CENTER OF STRUCTURES
4. STRUCTURE DEPTH = RIM - INVERT FLOWLINE

											STORM SEWER										
											521.3118	521.3124	**	522.1018	522.2619	608.0324	608.2419	611.0612	611.2005	650.4000	
														APRON		APRON ENDWALLS		STORM SEWER			
											CULVERT	CULVERT		ENDWALLS FOR	PIPE	PIPE	REINFORCED				
											PIPE	PIPE		CULVERT PIPE	CONCRETE	CONCRETE	CONCRETE	REINFORCED			
											CORRUGATED	CORRUGATED		REINFORCED	HORIZONTAL	REINFORCED	HORIZONTAL	CONCRETE			
											STEEL 18-	STEEL 24-		CONCRETE 18-	ELLIPTICAL	CONCRETE	ELLIPTICAL	CLASS HE-IV	INLET	MANHOLES	CONSTRUCTION
											INCH	INCH		INCH	19X30-INCH	CLASS III	19X30-INCH	COVERS	5-FT	STAKING	
											LF	LF	THICKNESS	EACH	EACH	24-INCH	LF	TYPE C	DIAMETER	STORM SEWER*	
													INCHES					EACH	EACH	EACH	
STR	INLET INVERT			RIM	INVERT	STRUCTURE	DISCHARGE INVERT														
NO	LOCATION			ELEV	FLOWLINE	DEPTH	TO	LOCATION													
	STATION	OFFSET		ELEV	ELEV	FEET		STATION	OFFSET	ELEV	LF	LF									
2B	--	--	--	--	--	--		20+79.0	158.00	RT 779.10	--	--	--	1	--	--	--	--	--	--	
3A	14+07.5	28.2	RT	--	803.80	--	-	14+08.8	34.0	RT 803.70	--	6	0.064	--	--	--	--	--	--	--	
3B	13+96.0	33.6	RT	--	804.40	--	-	14+08.8	34.0	RT 804.30	13	--	0.064	--	--	--	--	--	--	--	
3	14+08.8	34.0	RT	807.55	803.70	3.85	-	14+75.0	34.0	RT 803.51	--	--	--	--	--	66	--	1	1	1	
4	14+75.0	34.0	RT	806.95	803.51	3.44	-	15+36.4	51.5	LT 803.17	--	--	--	--	--	--	105	1	1	1	
5	--	--	--	--	--	--		15+36.4	51.5	LT 803.17	--	--	--	--	1	--	--	--	--	1	
TOTAL 0010											13	6		1	1	66	105	2	2	3	
NOTES:																					
*MISC QUANTITIES SHOWN ELSEWHERE IN PLANS. SEE <u>DROP INLETS</u> AT STRUCTURE MISC QUANTITY SCHEDULE.																					
**FOR INFORMATION ONLY. NOT A BID ITEM.																					
1. TIE REINFORCED CONCRETE APRON ENDWALLS AND ADJOINING TWO SECTIONS OF CONCRETE PIPE TOGETHER AS SHOWN ON THE STANDARD DETAIL DRAWINGS AND AS LOCATED IN THE MISC QUANTITIES JOINT TIES SHALL BE INCIDENTAL ITEMS INCLUDED IN THE COST OF THE CONCRETE PIPE																					
2. STATIONS AND OFFSETS ARE TO THE CENTER OF STRUCTURES OR TO THE END OF PIPE WHERE THERE IS AN ENDWALL																					
3. PIPE LENGTHS ARE MEASURED TO THE CENTER OF STRUCTURES																					
4. STRUCTURE DEPTH = RIM - INVERT FLOWLINE																					

*MISC QUANTITIES SHOWN ELSEWHERE IN PLANS. SEE DROP INLETS AT STRUCTURE MISC QUANTITY SCHEDULE.

**FOR INFORMATION ONLY. NOT A BID ITEM.

1. TIE REINFORCED CONCRETE APRON ENDWALLS AND ADJOINING TWO SECTIONS OF CONCRETE PIPE TOGETHER AS SHOWN ON THE STANDARD DETAIL DRAWINGS AND AS LOCATED IN THE MISC QUANTITIES. JOINT TIES SHALL BE INCIDENTAL ITEMS INCLUDED IN THE COST OF THE CONCRETE PIPE
2. STATIONS AND OFFSETS ARE TO THE CENTER OF STRUCTURES OR TO THE END OF PIPE WHERE THERE IS AN ENDWALL
3. PIPE LENGTHS ARE MEASURED TO THE CENTER OF STRUCTURES
4. STRUCTURE DEPTH = RIM - INVERT FLOWLINE

MGS GUARDRAIL						
614.2300 614.2500 614.2610						
MGS GUARDRAIL 3 MGS THRIE BEAM TRANSITION MGS GUARDRAIL TERMINAL EAT EACH						
STATION	TO	STATION	LOCATION	LF	LF	EAT EACH
17+32	-	18+49	22' - 28' LT	25	39.4	1
17+32	-	18+49	22' - 24' RT	25	39.4	1
20+75	-	21+92	22' - 24' LT	25	39.4	1
20+75	-	22+67	22' - 32' RT	100	39.4	1
TOTAL 0010				175	157.6	4

SILT FENCE					
628.1504 628.1520					
SILT FENCE SILT FENCE MAINTENANCE					
STATION	TO	STATION	LOCATION	LF	LF
13+92	-	18+92	RT	513	513
14+91	-	18+88	LT	436	436
20+33	-	24+75	RT	516	516
20+34	-	22+50	LT	264	264
UNDISTRIBUTED				433	433
TOTAL 0010				2,162	2,162

WATER					
624.0100					
WATER MGAL REMARKS					
STATION	TO	STATION	LOCATION	MGAL	REMARKS
14+00	-	18+62	CTH YY	13	SEE NOTE BELOW
20+61	-	25+75	CTH YY	20	SEE NOTE BELOW
TOTAL 0010				33	
NOTE: WATER WILL BE USED FOR BOTH COMPACTION AND DUST ABATEMENT ACTIVITIES.					

MOBILIZATION EROSION CONTROL					
628.1905 628.1910					
MOBILIZATIONS MOBILIZATIONS					
EROSION EROSION					
CONTROL CONTROL					
STATION	TO	STATION	LOCATION	EACH	EACH
14+00	-	25+75	CTH YY	3	3
TOTAL 0010				3	3

TEMPORARY DITCH & CULVERT PIPE CHECKS					
628.7504 628.7555 * 628.7570					
TEMPORARY CULVERT PIPE CULVERT PIPE					
DITCH CHECKS CHECKS SIZE ROCK BAGS					
STATION	LOCATION	LF	EACH	INCH	EACH
13+70	CTH YY RT	--	2	18	--
15+55	CTH YY LT	--	--	--	17
15+56	CTH YY RT	--	2	18	--
16+50	CTH YY RT	12	--	--	--
20+80	CTH YY RT	--	2	18	--
24+31	CTH YY LT	--	2	18	--
18+82	CTH YY LT	--	3	24	--
18+83	CTH YY RT	--	7	36	--
UNDISTRIBUTED	--	3	5	--	5
TOTAL 0010		15	23		22
NOTE: * FOR INFORMATION ONLY. NOT A BID ITEM.					

INLET PROTECTION			
628.7020			
INLET PROTECTION			
TYPE D			
STATION	LOCATION	EACH	REMARKS
13+97	CTH YY 30' LT	1	EXISTING INLET TO REMAIN
14+08	CTH YY 34' RT	1	PROPOSED INLET
14+75	CTH YY 34' RT	1	PROPOSED INLET
20+43	CTH YY 80' LT	1	EXISTING INLET TO REMAIN
20+94	CTH YY 21' LT	1	PROPOSED INLET
20+94	CTH YY 21' RT	1	PROPOSED INLET
24+80	CTH YY 70' LT	1	EXISTING INLET TO REMAIN
25+18	CTH YY 67' LT	1	EXISTING INLET TO REMAIN
TOTAL 0010		8	

LANDSCAPING										
625.0500 627.0200 628.2004 629.0210 630.0130 630.0200 630.0300										
SALVAGED EROSION MAT FERTILIZER SEEDING SEEDING										
TOPSOIL CLASS I TYPE B MIXTURE TEMPORARY BORROW										
STATION	TO	STATION	LOCATION	SY	SY	SY	CWT	LB	LB	PIT LB
13+92	-	18+92	CTH YY RT	867	--	867	0.5	16	24	--
14+91	-	18+88	CTH YY LT	1,216	--	1,216	1.0	22	33	--
20+34	-	25+75	CTH YY RT	2,239	--	2,239	1.5	41	61	--
20+34	-	24+28	CTH YY LT	678	--	678	0.5	13	19	--
BORROW PIT				--	1,174	--	1.0	--	--	16
UNDISTRIBUTED				--	294	1,250	1.5	23	35	4
TOTAL 0010				5,500	1,468	6,250	6	115	172	20

TRACKING PADS	
628.7560	
TRACKING PADS	
LOCATION	EACH
UNDISTRIBUTED	1
TOTAL 0010	1

3

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	637.2230 SIGNS TYPE II REFLC F [SF]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	638.2602 REMOVING SIGNS TYPE II EACH	634.0618 POSTS WOOD 4"X6"x18' [EA]	634.0622 POSTS WOOD 4"X6"22' [EA]	634.0814 POSTS TUBULAR STEEL 2"X2"X14' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
1	R1-1(2S)	STH 190	30 X 30	5.180		1	1	1					
2	R1-1(2S)		30 X 30	5.180		1	1	1					
3	J3-2(2S)		48 X 57	19.000		1	1	1					
	M3-2		24 X 12										
	M1-6		24 X 24										
	M6-1		21 X 21										
	M3-4		12 X 24										
	M1-6	STH 190	24 X 24										
	M6-1		21 X 21										
4	JH-1(2S)		24 X 45	7.500		1	1	1					
	D9-2		24 X 24										
	MB6-1		21 X 21										
5	J3-1(2S)	CTH YY	24 X 45	7.500		1	1	1					
	M1-5A		24 X 24										
	M6-4		21 X 21										
6	D11-1(2S)	UNDERWOOD CREEK ARROW	24 X 18	3.000		1	1			1			
7	NONE										1	6	
8	W5-52L(2S)		12 X 36		3.000	1	1	1					
9	W5-52R (2S)		12 X 36		3.000	1	1	1					
10	W5-52L(2S)		12 X 36		3.000	1	1	1					4 FOOT MOUNTING HEIGHT
11	W5-52R (2S)	STH 190	12 X 36	9.500	3.000	1	1	1					4 FOOT MOUNTING HEIGHT
12	J3-1(2S)		24 X 57			1	1	1					
	M3-4		12 X 24										
	M1-6		24 X 24										
	M6-1		21 X 21										
13	R1-1(2S)	STH 190	30 X 30	5.180		1	1	1					
14	R1-1(2S)		30 X 30	5.180		1	1	1					
15	J3-2(2S)		48 X 57	19.000		1	1	1					
	M3-4		12 X 24										
	M1-6		24 X 24										
	M6-1		21 X 21										
	M3-2		12 X 24										
	M1-6	STH 190	24 X 24										
	M6-1		21 X 21										
16	J3-2					2			2		1		

3

3

TYPE II PERMANENT SIGNING -														2025-18-70 STH 190		
SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]			637.2210 SIGNS TYPE II REFLC H [SF]	637.2230 SIGNS TYPE II REFLC F [SF]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	638.2602 REMOVING SIGNS TYPE II EACH	634.0618 POSTS WOOD 4"x6"x18' [EA]	634.0622 POSTS WOOD 4"x6"22' [EA]	634.0814 POSTS TUBULAR STEEL 2"x2"x14' [EA]	638.2102 MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION	
17	J4-1(3) M3-4 M1-6	STH 190	36	X	54	13.500		1	1	1						
			18	X	36											
			36	X	36											
18	J4-1(3) M3-2 M1-6	STH 190	36	X	54	13.500		1	1	1						
			18	X	36											
			36	X	36											
19	J3-1(2S) M3-2 M1-6 M6-1	STH 190	24	X	57	9.500		1	1	1						
			24	X	12											
			24	X	24											
			21	X	21											
20	R5-1(3)	CTH YY	36	X	36	7.500	9.000			1						
21	J3-1(2S) M1-5A M6-4		24	x	45					1						
			24	X	24											
22	J1-1(2S) M2-1 M1-6		24	X	39					1						
			21	X	15											
			24	X	24											
23	J1-1(2S) M2-1 M1-6		STH 190	24	X					39						1
				21	X					15						
				24	X					24						
				24	X					39						
24	JH-1(2S) D9-2 MB6-1	STH 190	24	X	45	7.500				1						
			24	X	24											
			21	X	21											
TOTALS						150.720	21.000	19	17	18	2	4	2			

3

TRAFFIC CONTROL DETOUR											
				**	643.1000	**	**	643.1050	643.0900	**	**
				NUMBER OF SIGNS FIXED MESSAGE	TRAFFIC CONTROL SIGNS FIXED MESSAGE	NUMBER OF SIGNS PCMS	ASSUMED DURATION DAYS	TRAFFIC CONTROL SIGNS PCMS	TRAFFIC CONTROL SIGNS*	NUMBER OF SIGNS	ASSUMED DURATION DAYS
STATION	TO	STATION	LOCATION	EACH	SF	EACH		DAY	DAY	EACH	
STAGE 1 - STH 190 EB DETOUR:											
BROOKFIELD RD	-	PILGRIM RD	STH 190 EB	1	21	1	13	13	30	10	3
STH 190	-	BURLEIGH RD	PILGRIM RD	--	--	--	--	--	45	15	3
PILGRIM RD	-	LILLY RD	BURLEIGH RD	--	--	--	--	--	33	11	3
BURLEIGH RD	-	STH 190	LILLY RD	--	--	--	--	--	18	6	3
STAGE 1 - STH 190 WB DETOUR:											
LILLY RD	-	PILGRIM RD	STH 190 WB	1	21	1	13	13	30	10	3
STH 190	-	HAMPTON AVE	PILGRIM RD	--	--	--	--	--	45	15	3
PILGRIM RD	-	CALHOUND RD	HAMPTON AVE	--	--	--	--	--	33	11	3
HAMPTON AVE	-	STH 190	CALHOUN RD	--	--	--	--	--	18	6	3
BURLEIGH RD	-	HAMPTON AVE	IH-41	2	90	2	3	6	--	--	
STAGE 1 - CTH YY SB DETOUR:											
HONEY SUCKLE LN	-	HAMPTON AVE	PILGRIM RD	3	31	--	--	--	27	9	3
PILGRIM RD	-	CALHOUN RD	HAMPTON AVE	3	15	--	--	--	33	11	3
HAMPTON AVE	-	STH 190	CALHOUN RD	2	10	--	--	--	21	7	3
STH 190	-	NORTH AVE	CALHOUN RD	4	20	--	--	--	42	14	3
CALHOUN RD	-	PILGRIM RD	NORTH AVE	2	10	--	--	--	18	6	3
HAMPTON AVE	-	STH 190	PILGRIM RD	--	--	1	13	13	--	--	
STAGE 1 - CTH YY NB DETOUR:											
FERNWOOD LN	-	NORTH AVE	PILGRIM RD	3	31	--	--	--	27	9	3
PILGRIM RD	-	LILLY RD	NORTH AVE	3	15	--	--	--	33	11	3
NORTH AVE	-	STH 190	LILLY RD	3	15	--	--	--	30	10	3
STH 190	-	LISBON RD	LILLY RD	3	15	--	--	--	33	11	3
LILLY RD	-	HAMPTON AVE	LISBON RD	3	15	--	--	--	33	11	3
HAMPTON AVE	-	PILGRIM RD	LISBON RD	2	10	--	--	--	18	6	3
NORTH AVE	-	STH 190	PILGRIM RD	--	--	2	13	26	--	--	
STAGE 2 - CTH YY SB DETOUR:											
HAMPTON AVE	-	STH 190 WB RAMPS	PILGRIM RD	3	31	--	--	--	675	9	75
PILGRIM RD	-	STH 190 WB	STH 190 WB ON RAMP	3	15	--	--	--	825	11	75
STH 190 WB RAMPS	-	CALHOUN RD	STH 190 WB	6	30	--	--	--	1,650	22	75
STH 190	-	NORTH AVE	CALHOUN RD	4***	--	--	--	--	1,050	14	75
CALHOUN RD	-	PILGRIM RD	NORTH AVE	2***	--	--	--	--	450	6	75
LILY RD	-	PILGRIM RD	STH 190	2	10	--	--	--	600	8	75
STAGE 2 - CTH YY NB DETOUR:											
FERNWOOD LN	-	STH 190 EB RAMPS	PILGRIM RD	5	73	--	--	--	675	9	75
PILGRIM RD	-	STH 190 EB	STH 190 EB ON RAMP	3	15	--	--	--	825	11	75
STH 190 EB RAMPS	-	LILLY RD	STH 190 EB	6	30	--	--	--	1,650	22	75
STH 190	-	LISBON RD	LILLY RD	3***	--	--	--	--	825	11	75
LILLY RD	-	HAMPTON AVE	LISBON RD	3***	--	--	--	--	825	11	75
LISBON RD	-	PILGRIM RD	HAMPTON AVE	2***	--	--	--	--	450	6	75
CALHOUN RD	-	PILGRIM RD	STH 190	2	10	--	--	--	600	8	75
TOTAL 0010					533			71	11,667		

NOTES:
*MISC QUANTITIES SHOWN ELSEWHERE IN PLANS. SEE TRAFFIC CONTROL MISC QUANTITY SCHEDULE.
** FOR INFORMATION ONLY. NOT A BID ITEM.
*** FIXED MESSAGE SIGNS PREVIOUSLY INSTALLED FOR STAGE 1.

				TRAFFIC CONTROL										
				643.0300	643.0410	643.0420	643.0705	643.0715	643.0800	643.0900	SPV.0060.04			
					TRAFFIC CONTROL BARRICADES TYPE II DAY	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	TRAFFIC CONTROL ARROW BOARDS DAY	TRAFFIC CONTROL SIGNS* DAY	REPOSITIONING TRAFFIC CONTROL DEVICES FOR LANE CLOSURES EACH			
STATION	TO	STATION	LOCATION	ESTIMATED DURATION DAY	TRAFFIC CONTROL DRUMS DAY									
STAGE 1														
343+00	-	407+20	STH 190	3	549	--	81	87	126	6	135	--		
407+20	-	470+00	STH 190	3	513	--	54	75	96	6	111	--		
14+00	-	25+75	PILGRIM RD	3	--	--	108	132	--	--	42	--		
CALHOUN RD	-	LILLY RD	STH 190 SIDEWALK	3	--	--	63	126	--	--	51	--		
STAGE 2														
14+00	-	25+75	PILGRIM RD	75	1,500	--	1,500	1,800	1,500	--	900	--		
STAGE 3A:														
343+00	-	407+20	STH 190	21	4,452	--	441	567	882	42	1,008	5		
407+20	-	470+00	STH 190	21	3,906	--	231	273	672	42	798	5		
STAGE 3B:														
363+00	-	412+50	STH 190	14	658	--	42	56	252	14	294	--		
14+00	-	25+75	PILGRIM RD	14	210	--	--	--	--	--	--	--		
CALHOUN RD	-	LILLY RD	STH 190 SIDEWALK	14	--	28	84	224	--	--	210	--		
STAGE 3C:														
402+50	-	448+00	STH 190	14	700	--	42	70	490	14	294	--		
14+00	-	25+75	PILGRIM RD	14	210	--	--	--	210	--	--	--		
CALHOUN RD	-	LILLY RD	STH 190 SIDEWALK	14	--	28	84	224	--	--	182	--		
TOTAL 0010					12,698	56	2,730	3,634	4,228	124	4,025	10		

NOTES:
*MISC QUANTITIES SHOWN ELSEWHERE IN PLANS. SEE TRAFFIC CONTROL DETOUR MISC QUANTITY SCHEDULE.
ALL QUANTITIES IN THIS TABLE ARE FOR INFORMATION ONLY. ACTUAL NUMBER OF TRAFFIC CONTROL DEVICES TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

TRAFFIC CONTROL COVERING SIGNS			
**	**	643.0920	
		TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	
NUMBER OF CYCLES EACH	NUMBER OF SIGNS EACH		
STAGE 1	1	6	6
TOTAL 0010			6
NOTES:			
** FOR INFORMATION ONLY. NOT A BID ITEM.			

				PAVEMENT MARKING						
				646.1020	646.3020	646.5020	646.5120			
				MARKING LINE EPOXY 4-INCH	MARKING LINE EPOXY 8-INCH	MARKING ARROW EPOXY EACH	MARKING WORD EPOXY EACH			
STATION	TO	STATION	LOCATION	(WHITE) LF	(YELLOW) LF	(WHITE) LF				
13+00	-	26+75	CTH YY	1,912	2,350	--	--	--	--	
14+00	-	18+47	CTH YY LT	187	--	136	1	--	1	
20+77	-	24+18	CTH YY RT	191	--	179	--	--	--	
TOTAL 0010				4,640	315	1	1			

TEMPORARY PAVEMENT MARKING								
			649.0150	649.0250	649.0850	649.0960	649.0970	
			TEMPORARY MARKING LINE		TEMPORARY MARKING	TEMPORARY MARKING REMOVABLE		
			REMOVABLE TAPE		STOP LINE	MASK OUT TAPE		
			4-INCH	8-INCH	18-INCH	6-INCH	10-INCH	
STATION	TO	STATION	LOCATION	LF	LF	LF	LF	LF
STAGE 3B:								
388+50	-	395+50	CAPITOL DR, RT	666	--	--	175	--
397+00	-	403+83	CAPITOL DR, RT	684	--	--	50	--
403+00	-	405+00	CAPITOL DR, RT	--	377	--	--	--
404+75	--	409+10	CAPITOL DR, RT	444	--	25	--	100
STAGE 3C:								
405+00	-	411+50	CAPITOL DR, LT	495	--	--	50	--
408+50	-	409+00	CAPITOL DR, LT	--	--	25	--	100
409+25	-	412+75	CAPITOL DR, LT	--	604	--	--	--
411+50	-	417+00	CAPITOL DR, LT	533	--	--	--	--
418+00	-	423+29	CAPITOL DR, LT	478	--	--	150	--
TOTAL 0010				3,300	981	50	425	200

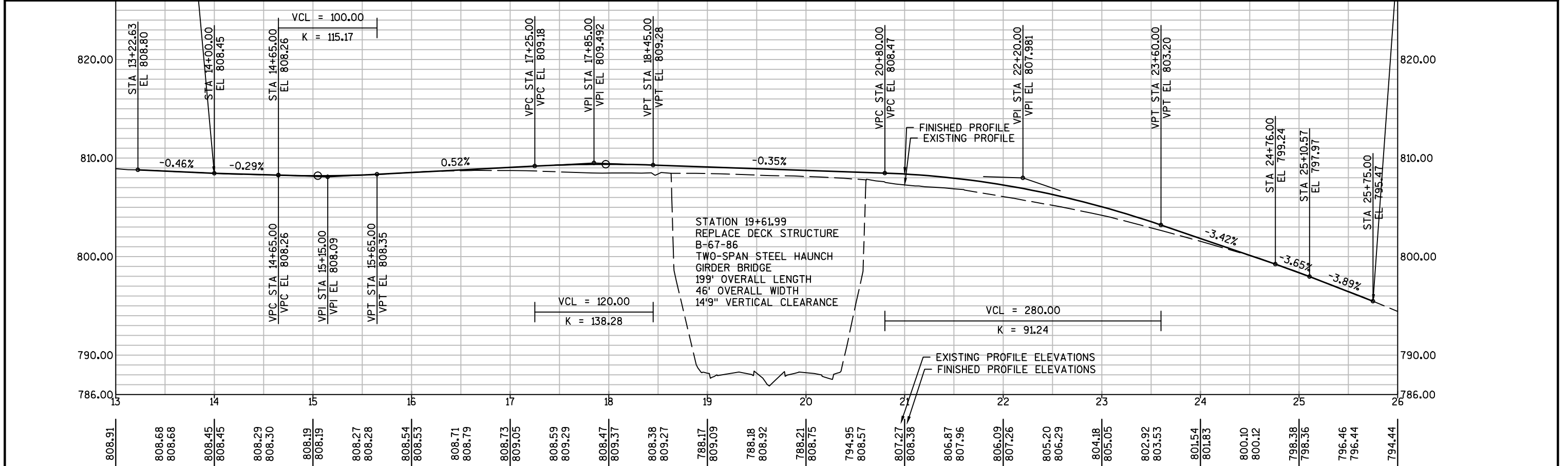
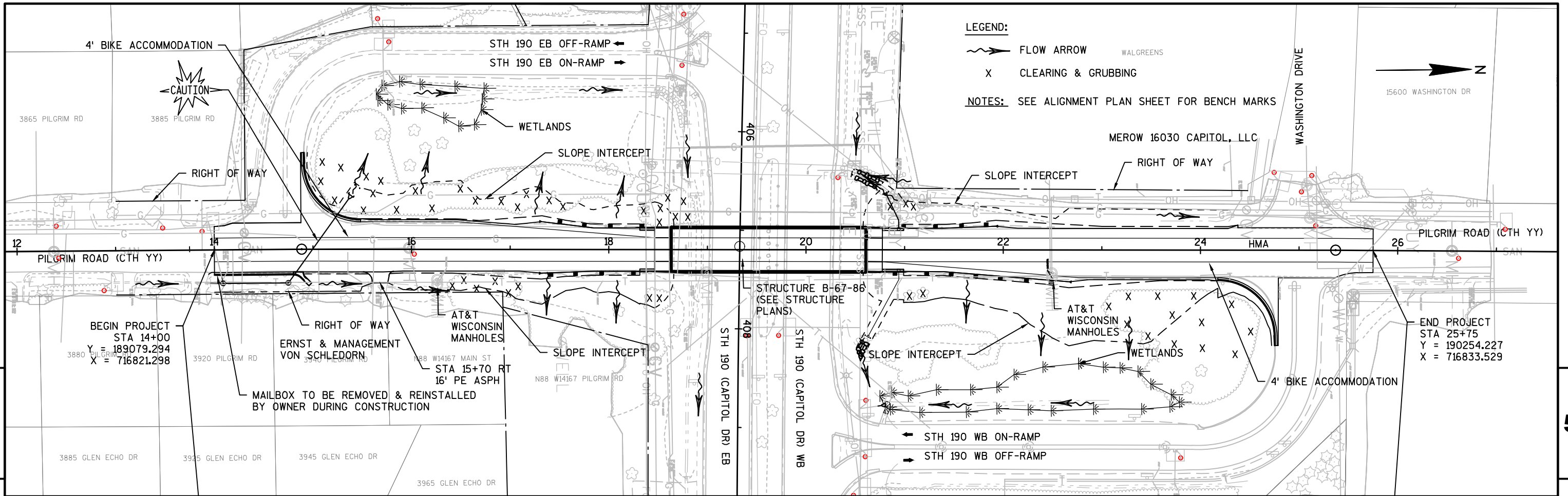
CONSTRUCTION STAKING						
			650.4500	650.5000	650.9920	
			CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	
			STAKING	STAKING	STAKING	
			SUBGRADE	BASE	SLOPE	
STATION	TO	STATION	LOCATION	LF	LF	LF
14+00	-	18+62	CTH YY R/L	462	447	462
20+61	-	25+75	CTH YY R/L	514	498	514
TOTAL 0010				976	945	976

SAWING CONCRETE			
690.0250			
SAWING			
CONCRETE			
STATION	LOCATION	LF	REMARKS
14+90	98' LT	3	SAWING EXISTING CURB & GUTTER
24+79	97' RT	3	SAWING EXISTING CURB & GUTTER
SOUTH ABUTMENT		53	SAWING EXISTING CONCRETE SLOPE PAVING
TOTAL 0010		59	

BACKFILL SLURRY					
SPV.0035.01					
BACKFILL					
SLURRY					
STATION	TO	STATION	LOCATION	CY	REMARKS
17+78	-	18+47	RT	1	BACKFILL FOR REMOVED GUARDRAIL POSTS
17+78	-	18+47	LT	1	BACKFILL FOR REMOVED GUARDRAIL POSTS
20+77	-	22+36	RT	1	BACKFILL FOR REMOVED GUARDRAIL POSTS
20+77	-	21+70	LT	1	BACKFILL FOR REMOVED GUARDRAIL POSTS
TOTAL 0010				4	

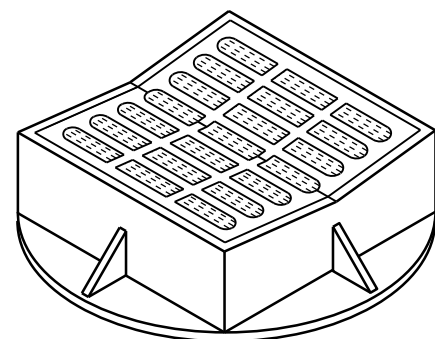
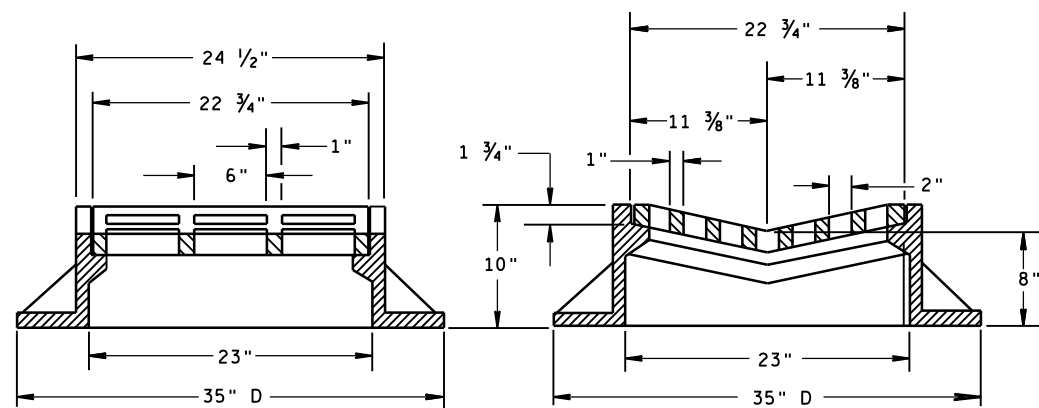
SAWING ASPHALT					
690.0150					
SAWING					
ASPHALT					
STATION	TO	STATION	LOCATION	LF	REMARKS
14+77	-	15+17	CTH YY	94	SEE STORM SEWER PLANS FOR LOCATIONS
14+00	-	15+77	CTH YY	203	SEE REMOVAL PLANS FOR LOCATIONS
20+78	-	25+75	CTH YY	300	SEE REMOVAL PLANS FOR LOCATIONS
TOTAL 0010				597	

SANITARY MANHOLE					
SPV.0060.02 SPV.0060.03					
ADJUST SANITARY MANHOLE					
SANITARY INTERNAL/EXTERNAL					
MANHOLE COVER SEAL RING					
STATION	LOCATION	EACH	EACH	REMARKS	
15+98	1.5' LT	1	1	SEE CONSTRUCTION DETAILS	
TOTAL 0010		1	1		

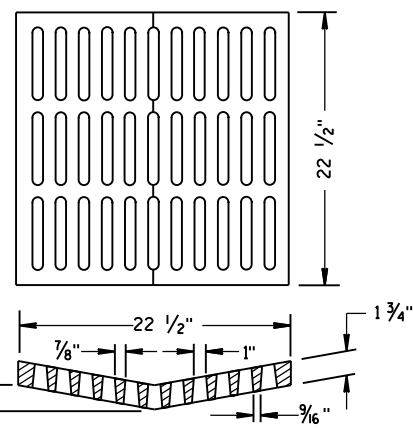


Standard Detail Drawing List

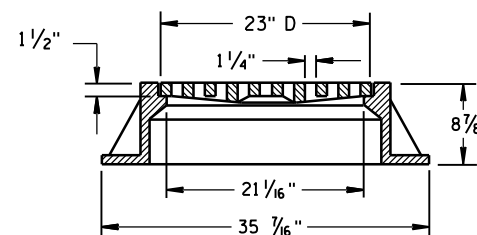
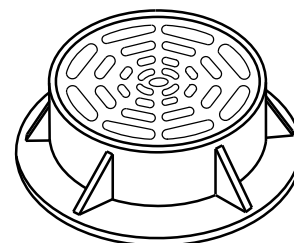
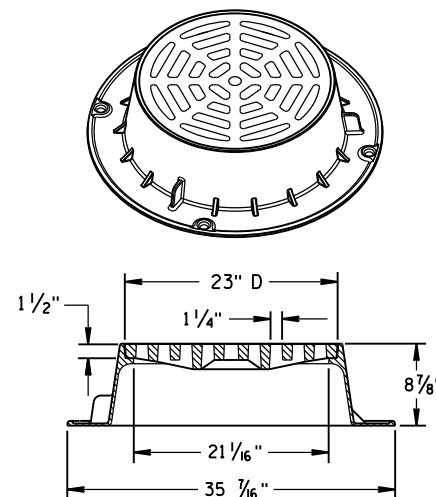
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D03-07	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C08-18B	PAVEMENT MARKING (TURN LANES)
15C35-02A	PAVEMENT MARKING (INTERSECTIONS)
15D03-04	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-05	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D22-03	TRAFFIC CONTROL, TWO LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D23-05	TRAFFIC CONTROL, INTERSECTION WITHIN TWO LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D30-03A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-03B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-03C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



TYPE "B"

ALTERNATIVE GRATE FOR
TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
 NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

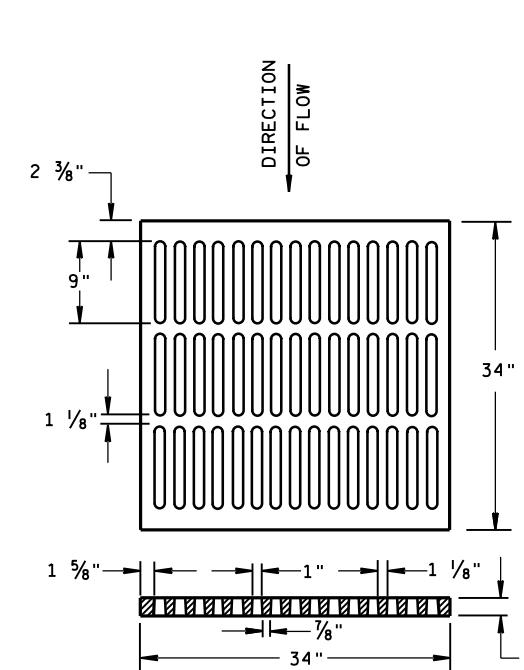
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

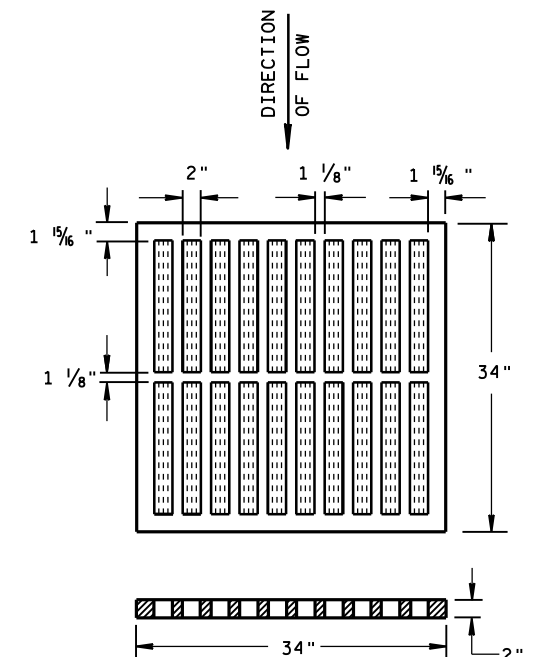
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



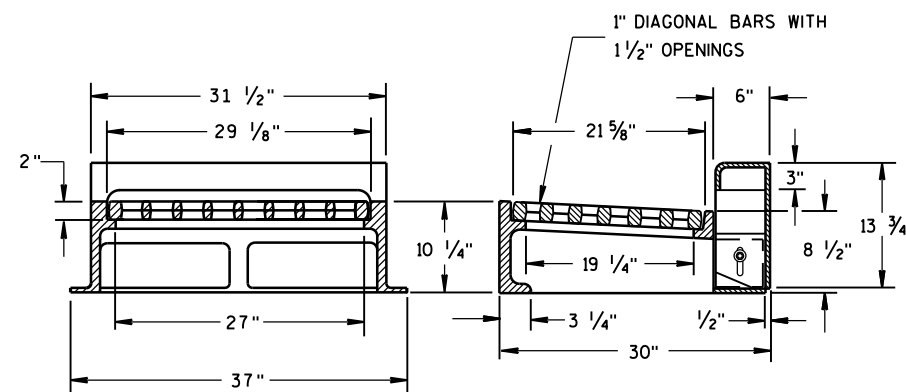
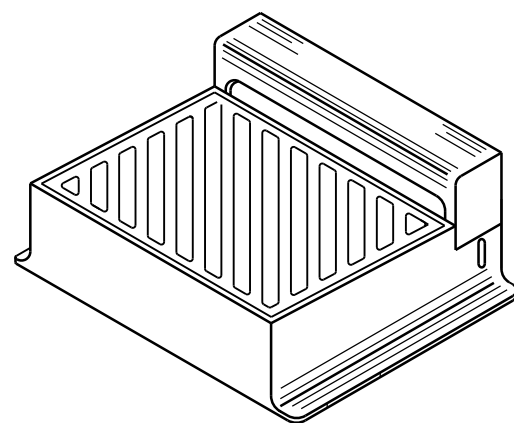
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
 NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
 NOTED AS TYPE MS ON DRAINAGE TABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

DIAGONAL SLOTS, SHALL BE ORIENTED
 TO THE DIRECTION OF FLOW AS ILLUSTRATED.
 GRATES ARE MANUFACTURED TO BE REVERSIBLE.

DIRECTION
OF FLOW

INLET COVERS
 TYPE B, B-A, C,
 MS, MS-A, & WM

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED

DATE 11/27/2013

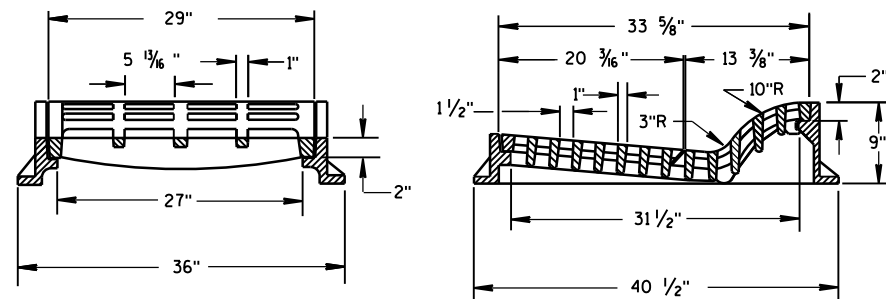
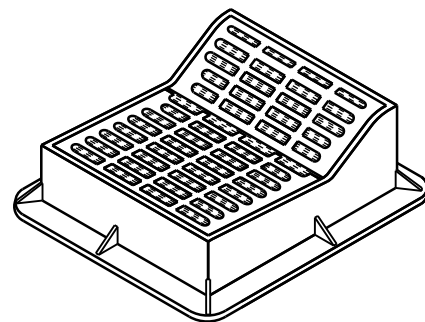
FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

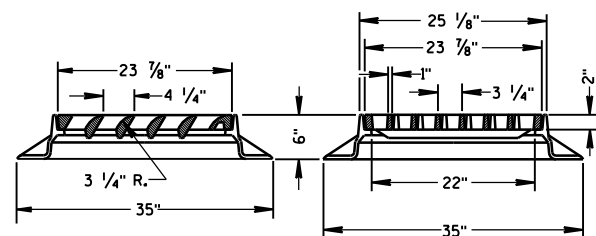
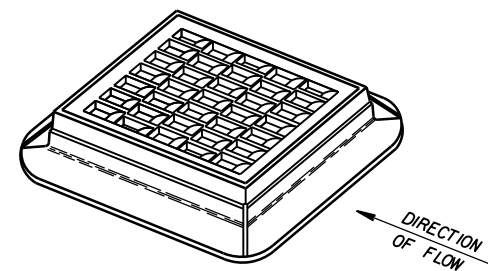
59

NT

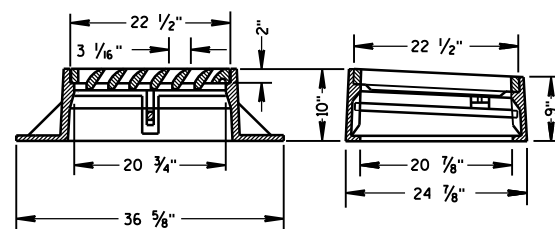
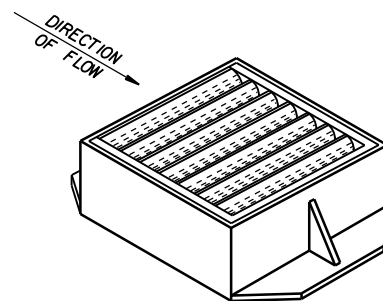


TYPE "F"

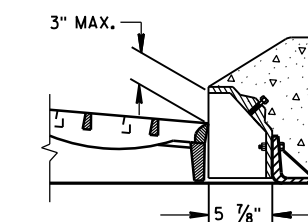
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



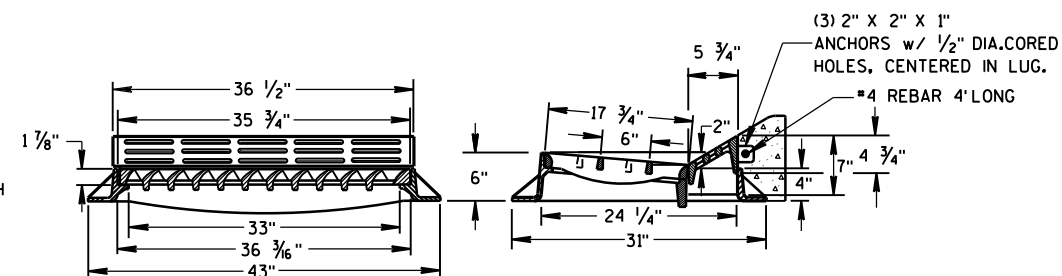
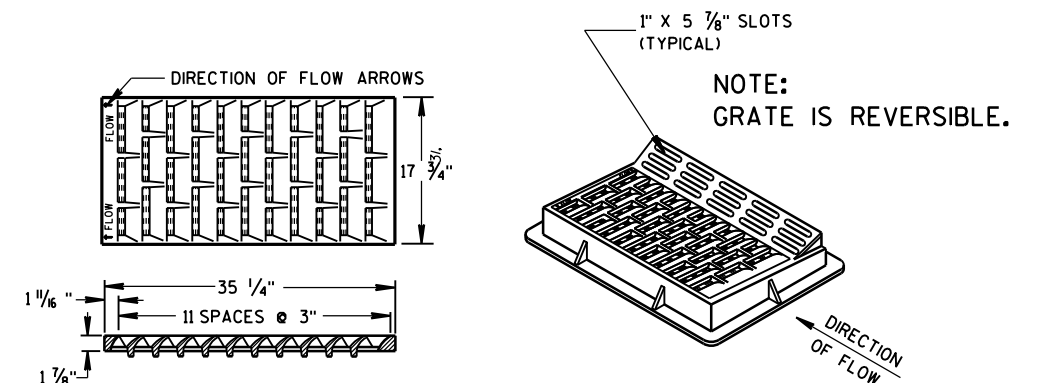
TYPE "S"



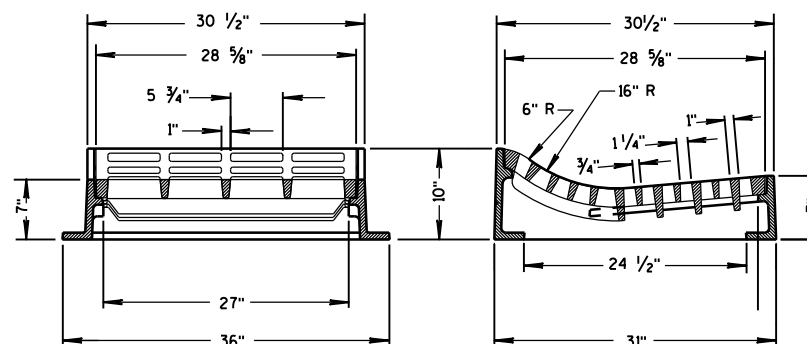
TYPE "V"

ALTERNATIVE CURB BOX
FOR TYPE "HM" COVERUSE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLENOTE:
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

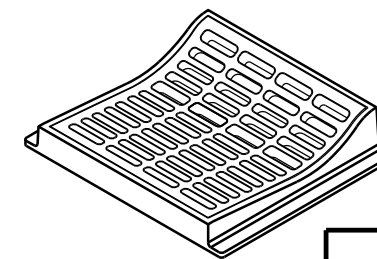
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING
SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND
THE APPLICABLE SPECIAL PROVISIONS.DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED
TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION
FOR EQUIVALENT CAPACITY AND STRENGTH.

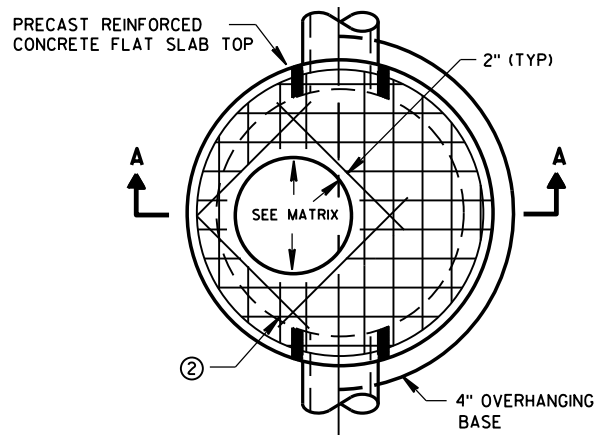
TYPE "HM"

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

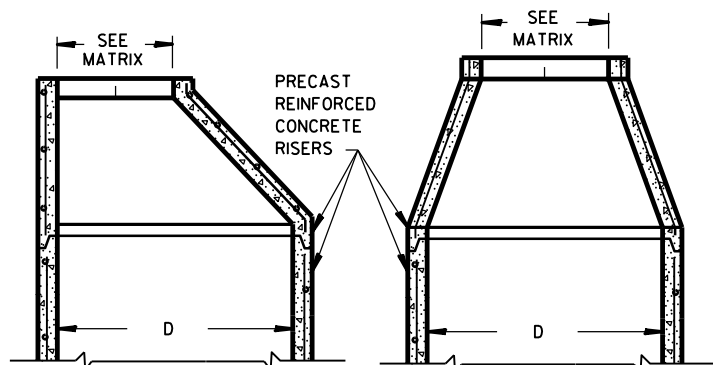
TYPE "T"

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

INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-SSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATIONAPPROVED
11/27/2013
DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA 60 ENT

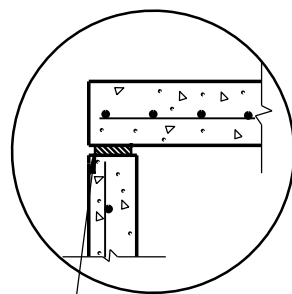


PLAN VIEW CIRCULAR OPENING

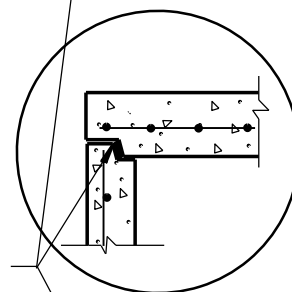


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

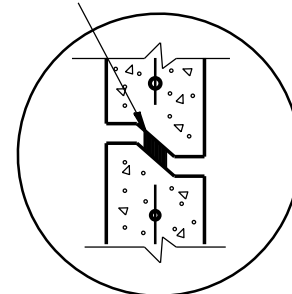
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT

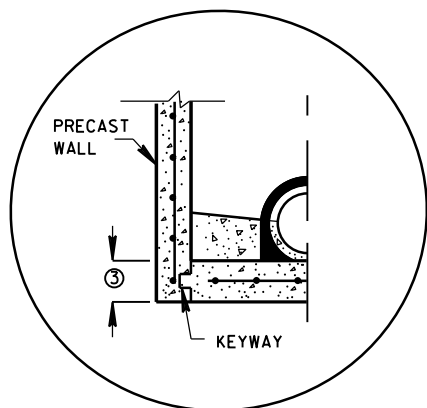


TOP WITH TONGUE AND GROOVE JOINT

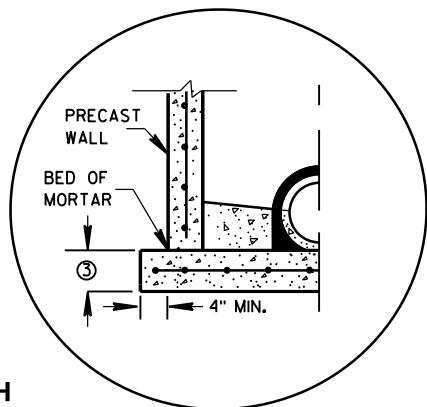


DETAIL "B"

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

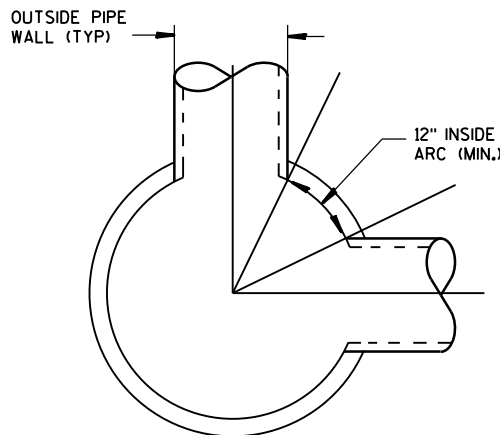


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

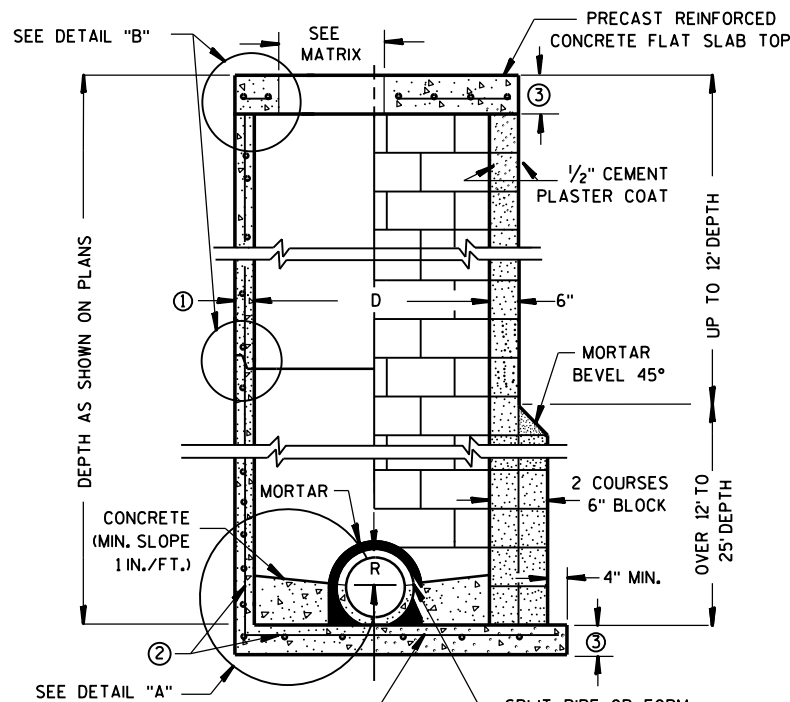


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



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

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

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

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

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

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

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

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

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

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

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

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

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

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

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

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

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

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.
- ② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

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

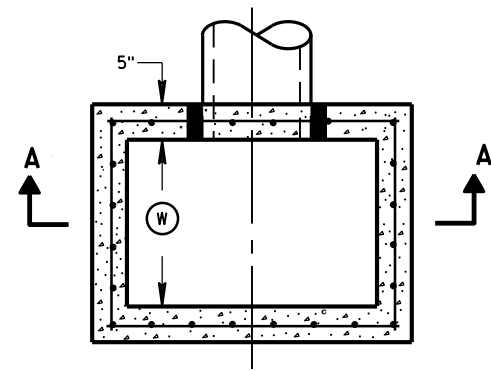
PIPE MATRIX

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

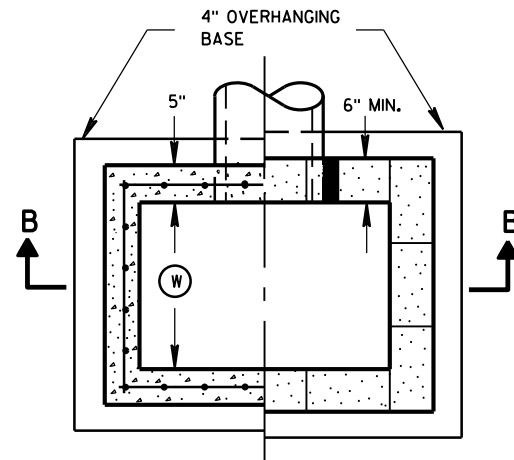
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

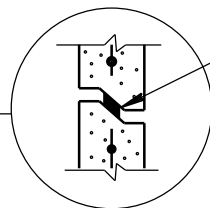
APPROVED
Sep 11, 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERV 61



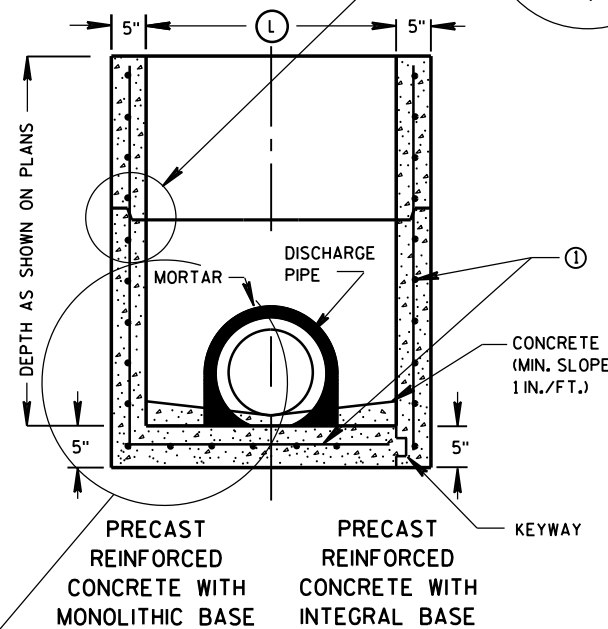
PLAN VIEW



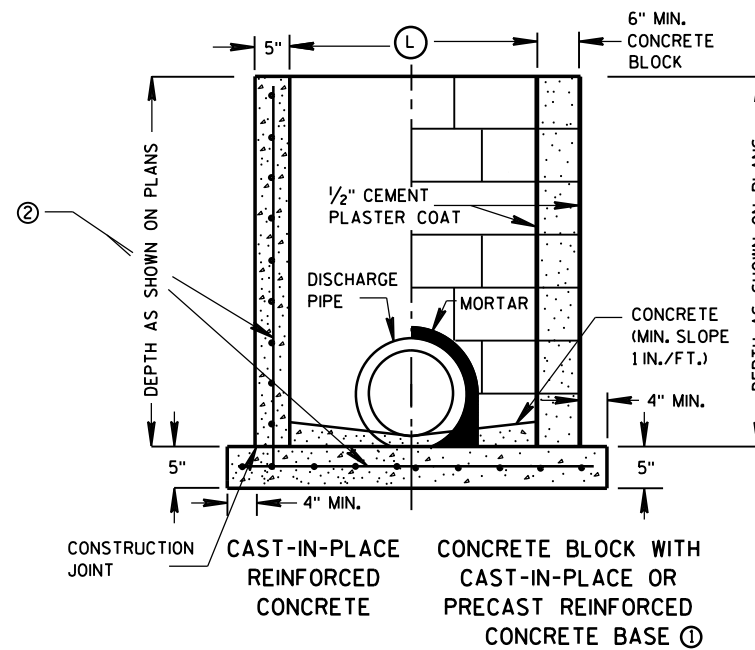
PLAN VIEW



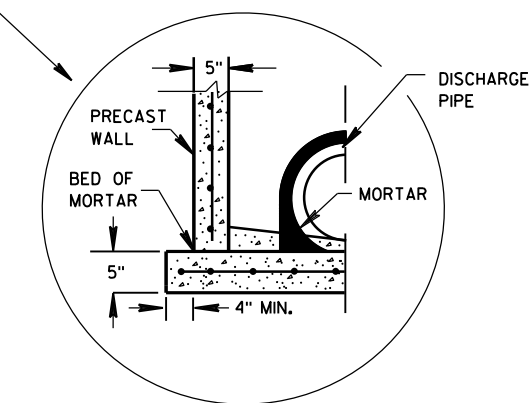
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



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 FOUNDATION 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.

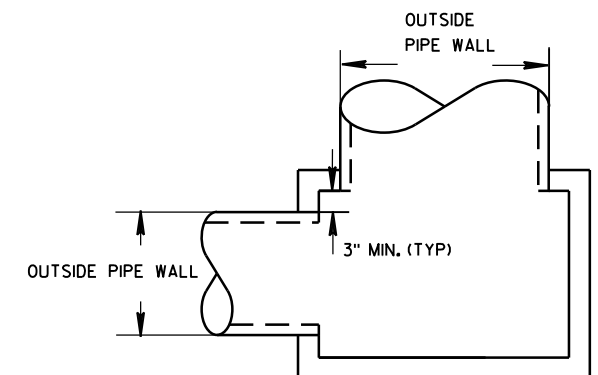
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH ① (FT)	LENGTH ② (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



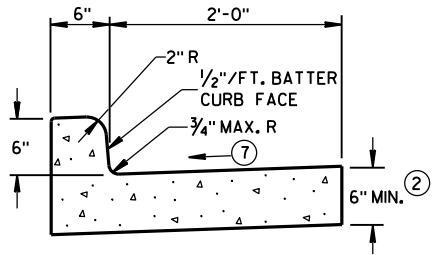
DETAIL "A"

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

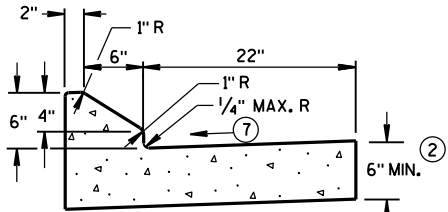
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DIVISION IT
FHWA UNIT SUPERVISOR 62

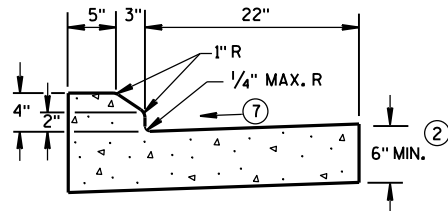
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT



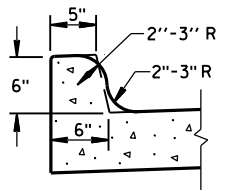
TYPES A^① & D



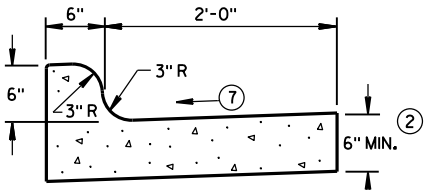
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

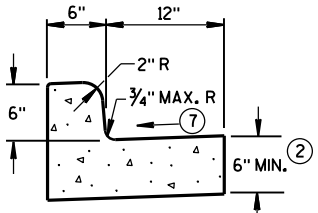


TYPES K^① & L
(OPTIONAL CURB SHAPE)



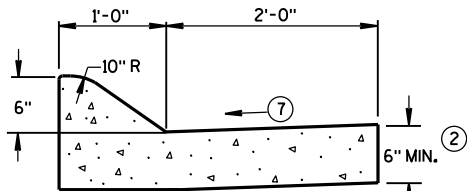
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

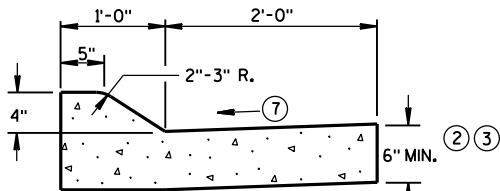


TYPES A^① & D

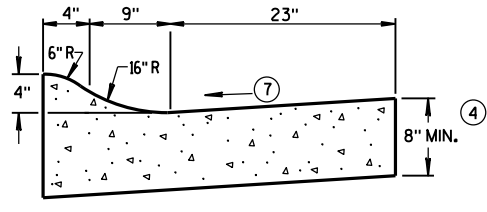
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

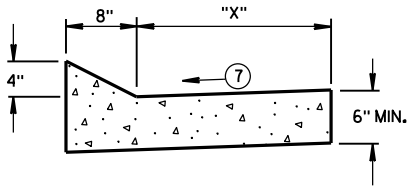


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

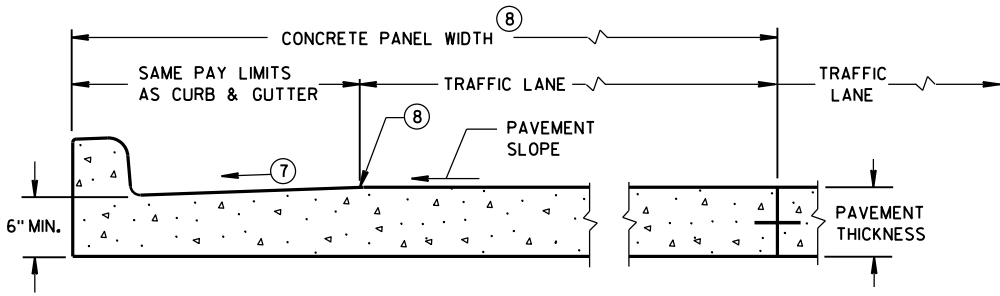
CONCRETE CURB & GUTTER 36"



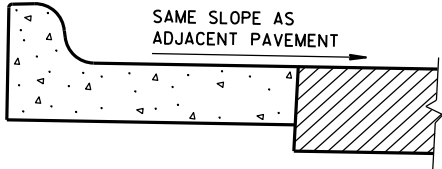
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
- INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.
- WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.
- UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
 - ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
 - ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
 - ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
 - ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
 - ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
 - ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
 - ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

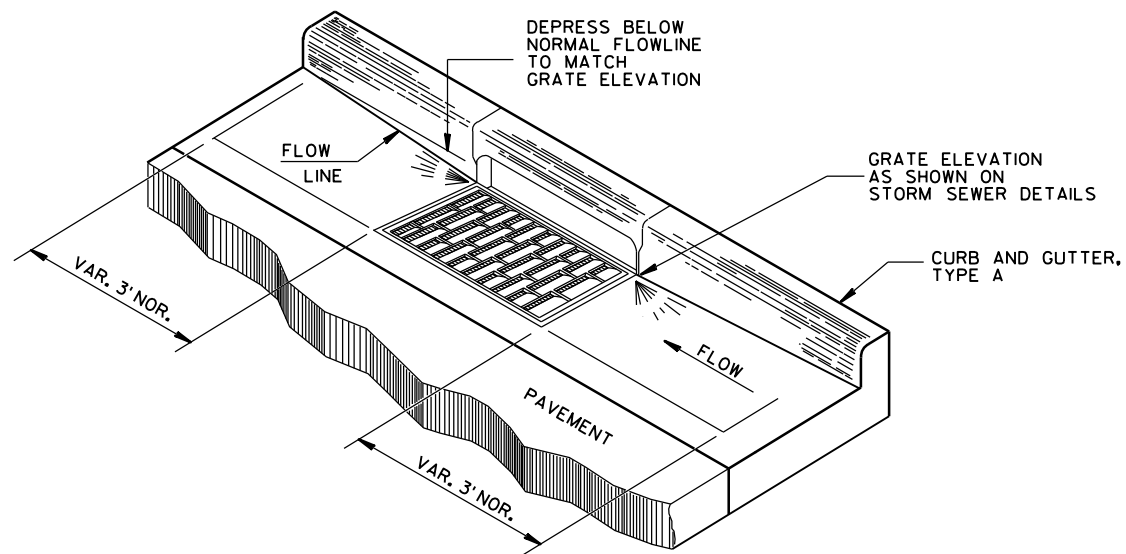
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

* BIKE LANE IS NOT SHOWN.

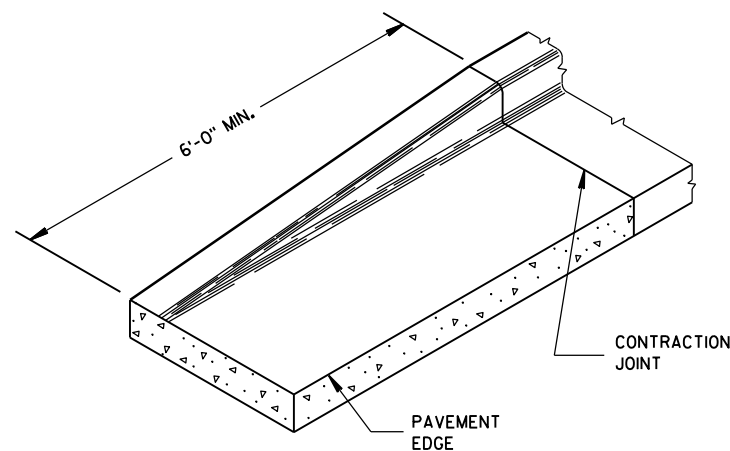
CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

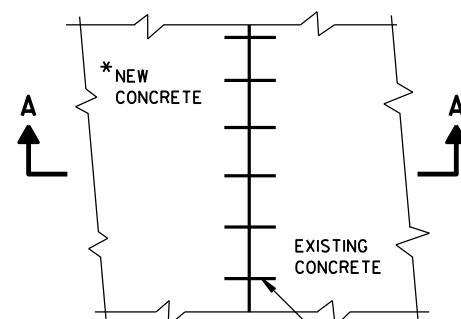


DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

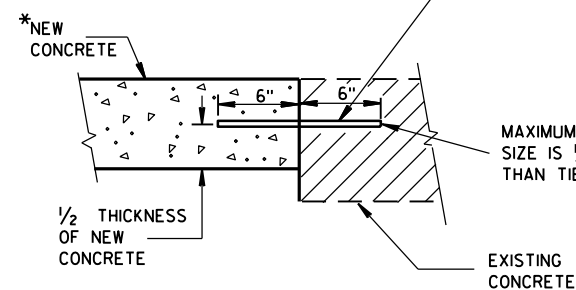


END SECTION CURB & GUTTER



PLAN VIEW

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

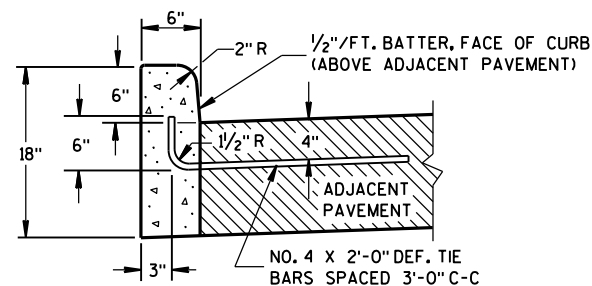


**SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT**

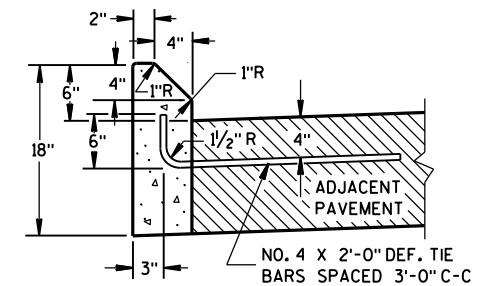
NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE SIZE IS 1/8" GREATER THAN TIE BAR DIAMETER

EXISTING CONCRETE



TYPES A^① & D



TYPES G^① & J

GENERAL NOTES

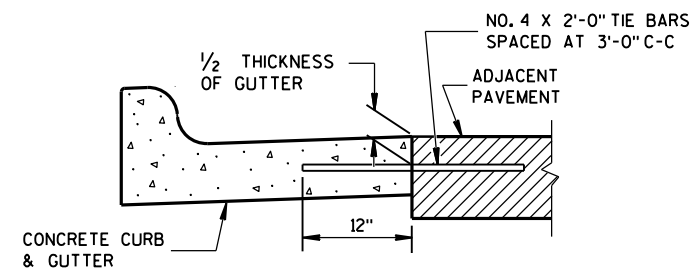
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

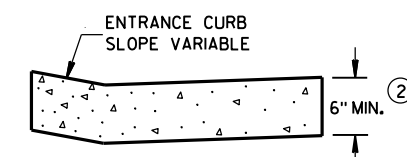
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

CONCRETE CURB



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2017

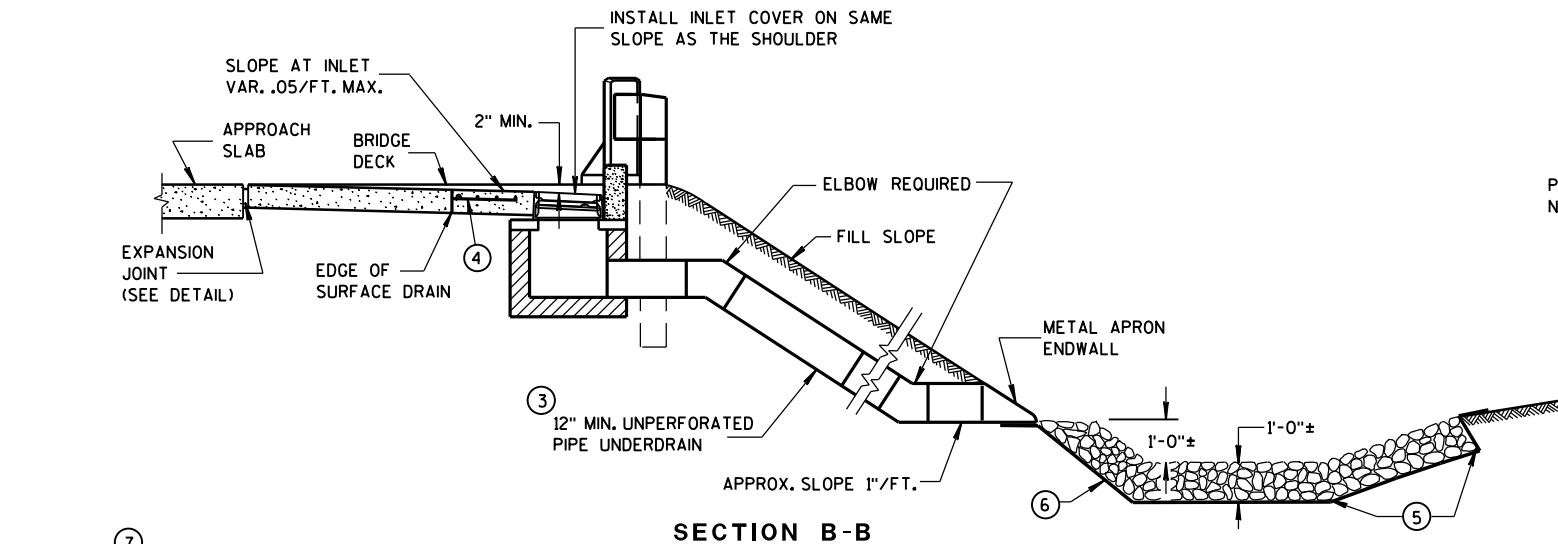
DATE

FHWA

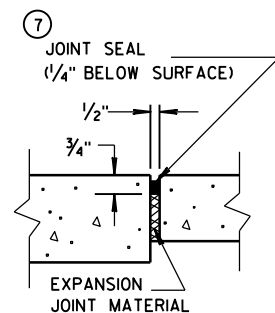
/S/ Rodney Taylor

ROADWAY STANDARDS 64 ENT

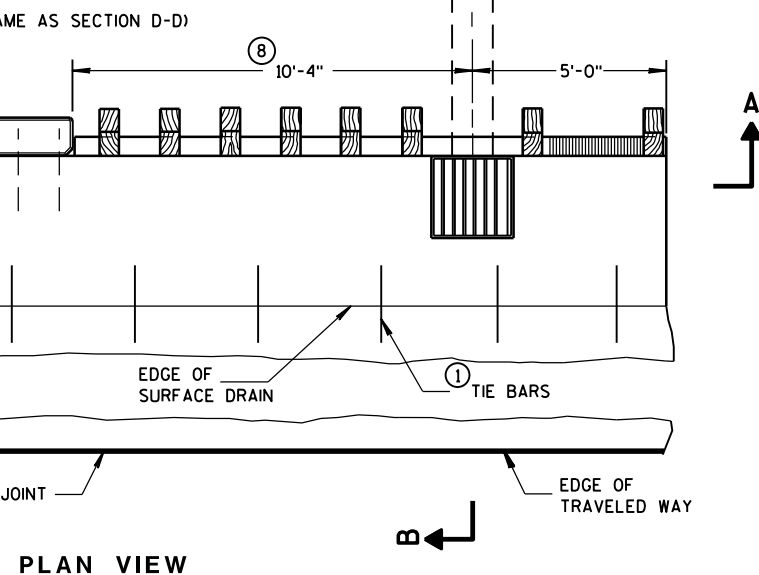
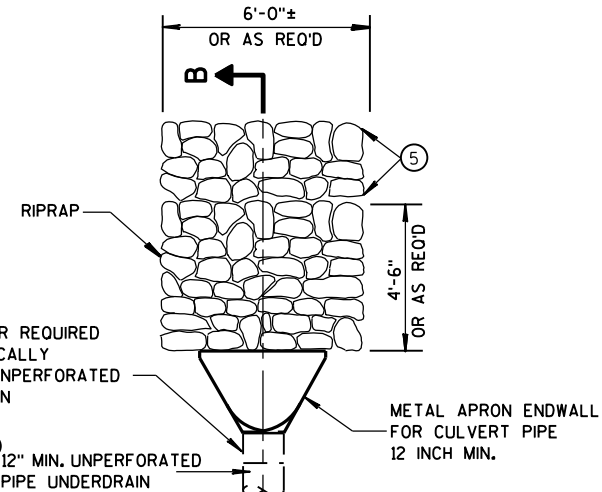
UNIT SUPERVISOR



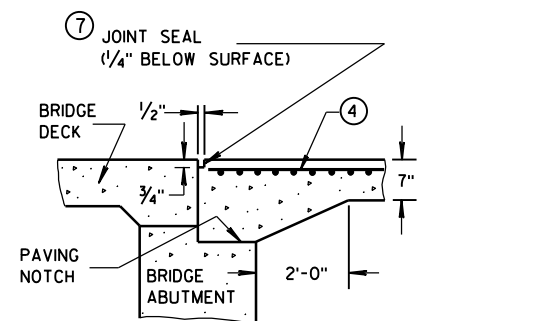
SECTION B-B



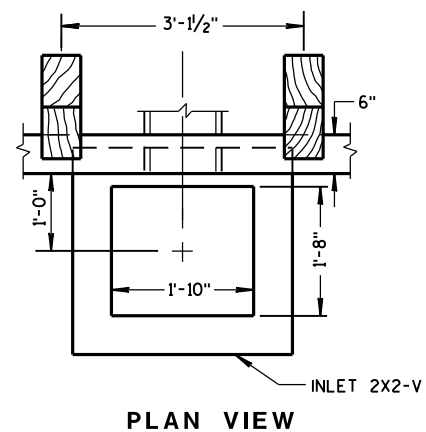
EXPANSION JOINT DETAIL



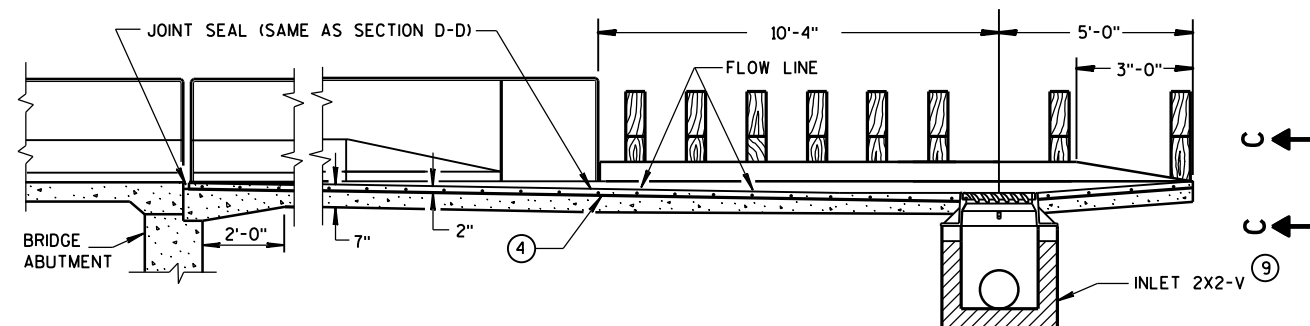
PLAN VIEW



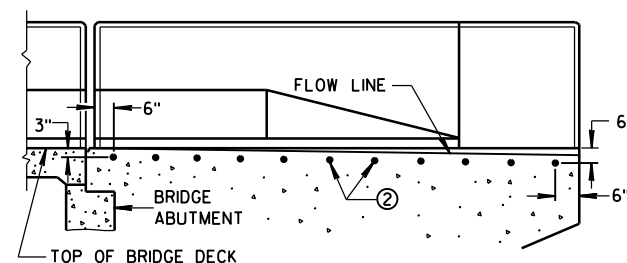
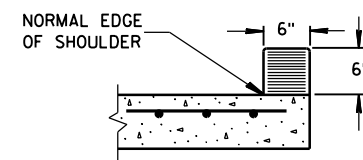
SECTION D-D



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.
- 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'-1/2".
- 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

June 2017

DATE

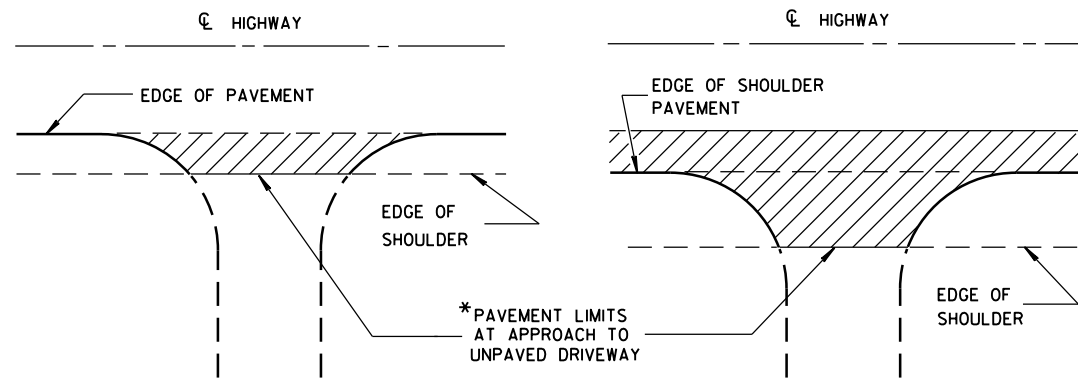
FHWA

/S/ Rodney Taylor

ROADWAY STANDARDS 65

UNIT SUPERVISOR

VENT

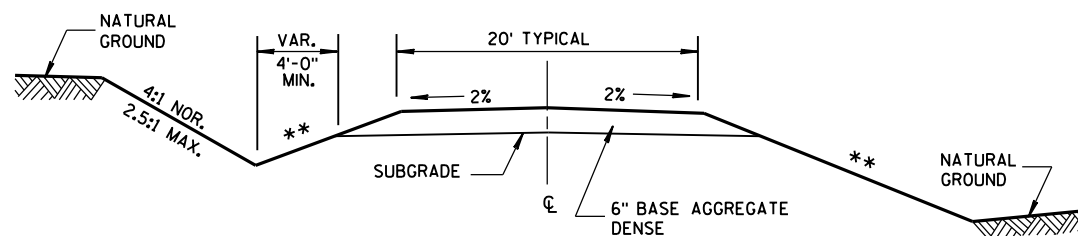


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB & GUTTER OR SIDEWALK)



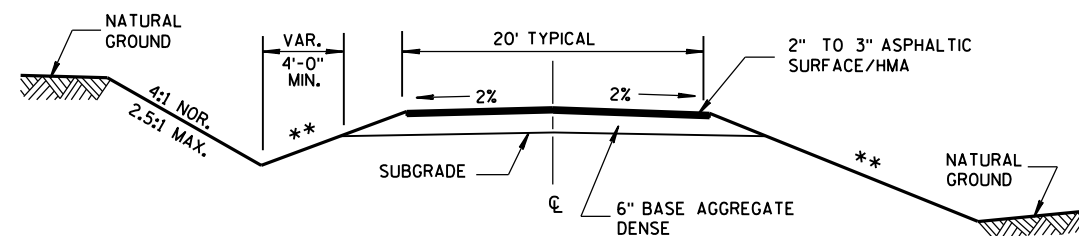
IN CUT

IN FILL

**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

** SLOPE CAN VARY WITH SPEED. SEE 11-45-2.6.2.

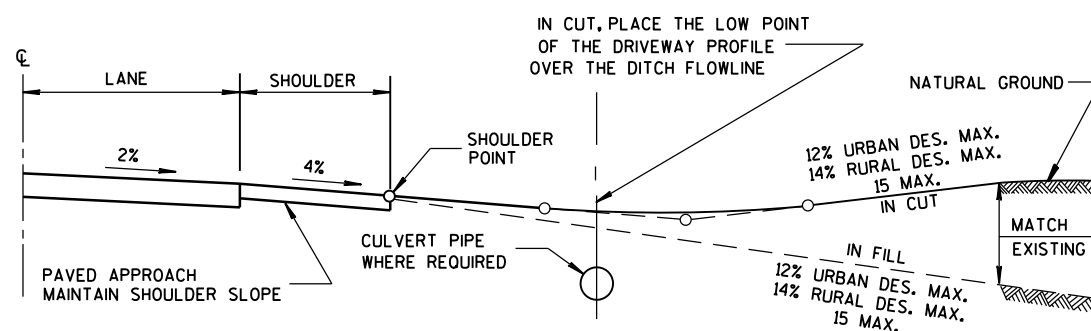
POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥35 TO <60	6:1
≥60	10:1



IN CUT

IN FILL

**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**



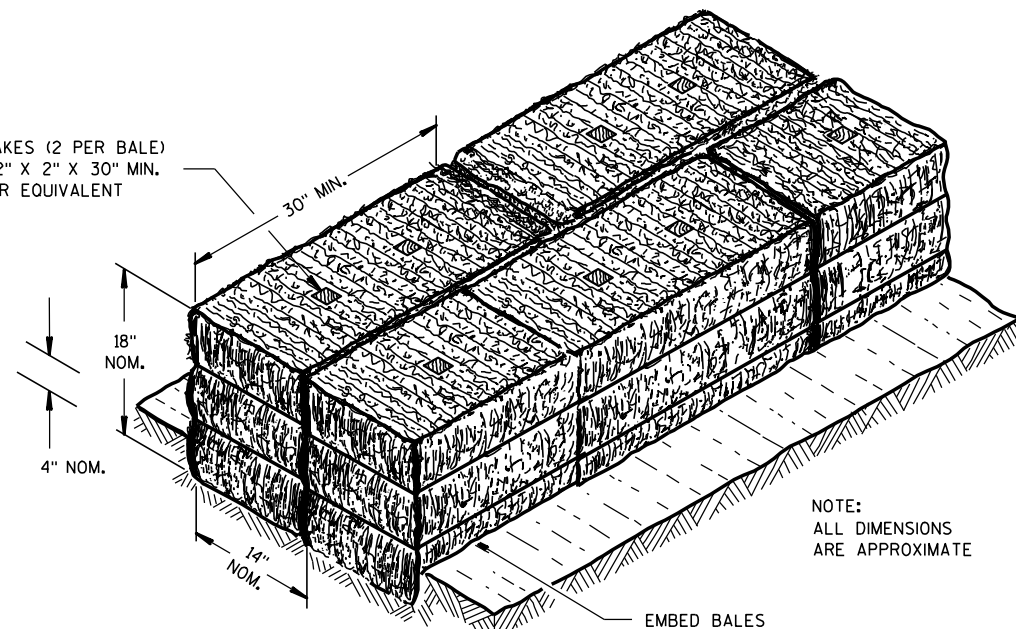
TYPICAL DRIVEWAY PROFILES

**DRIVEWAYS
WITHOUT CURB & GUTTER**

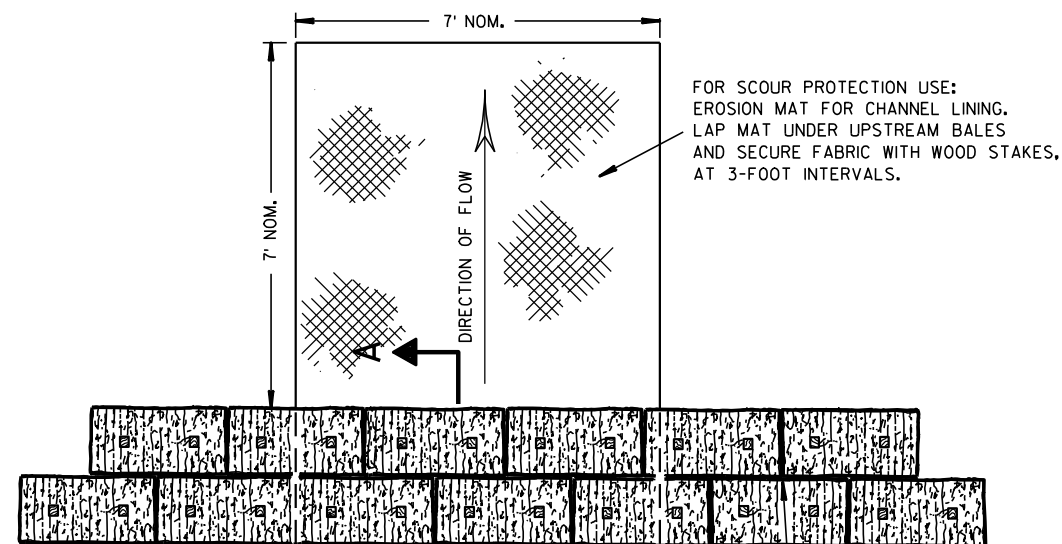
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERV
FHWA

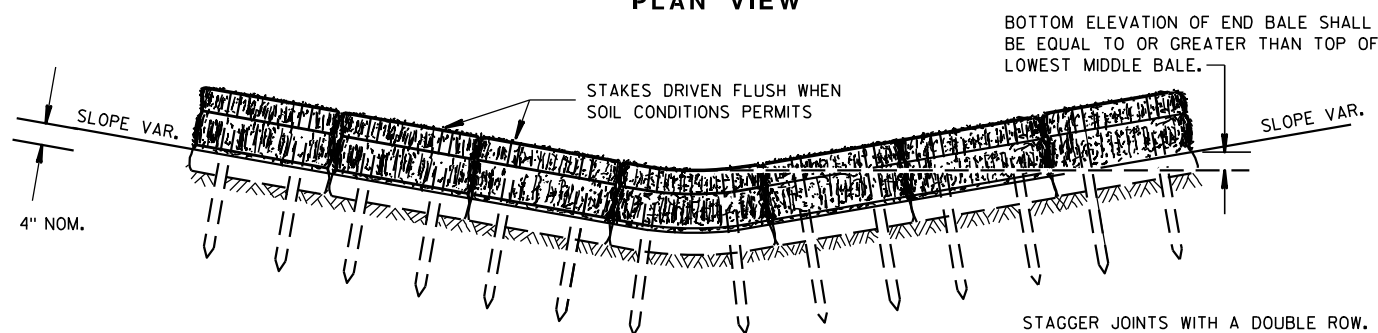
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



SECTION A-A



PLAN VIEW



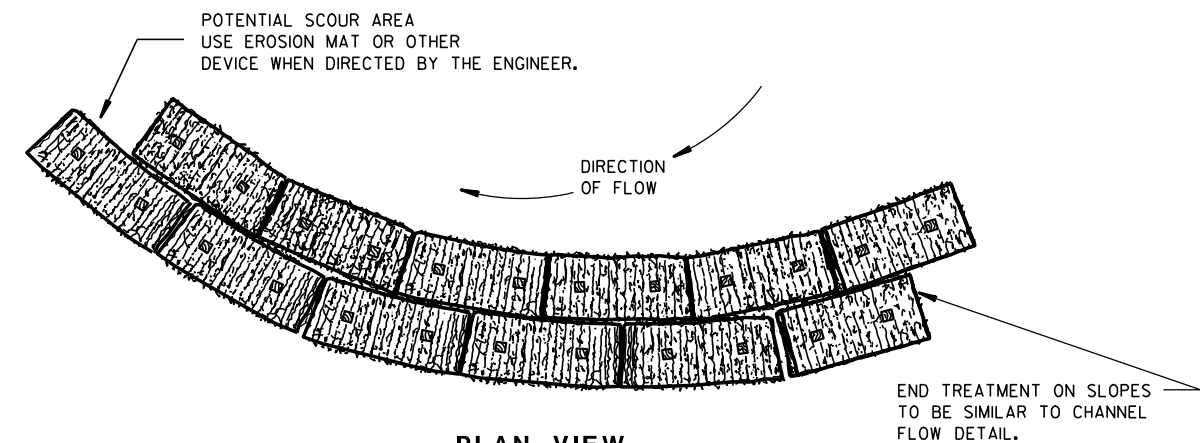
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

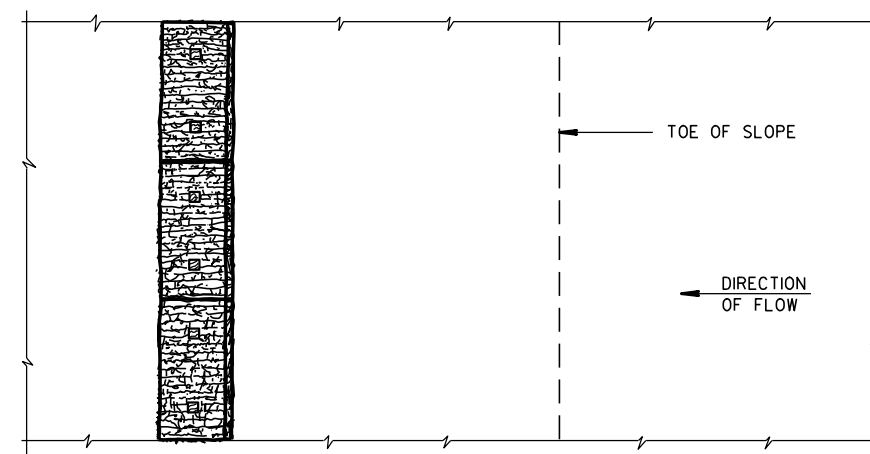
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

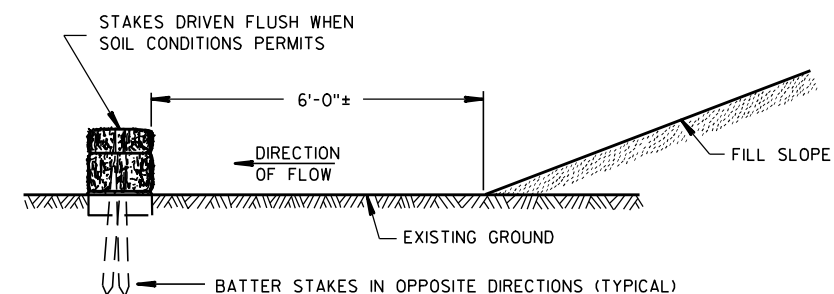


PLAN VIEW

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

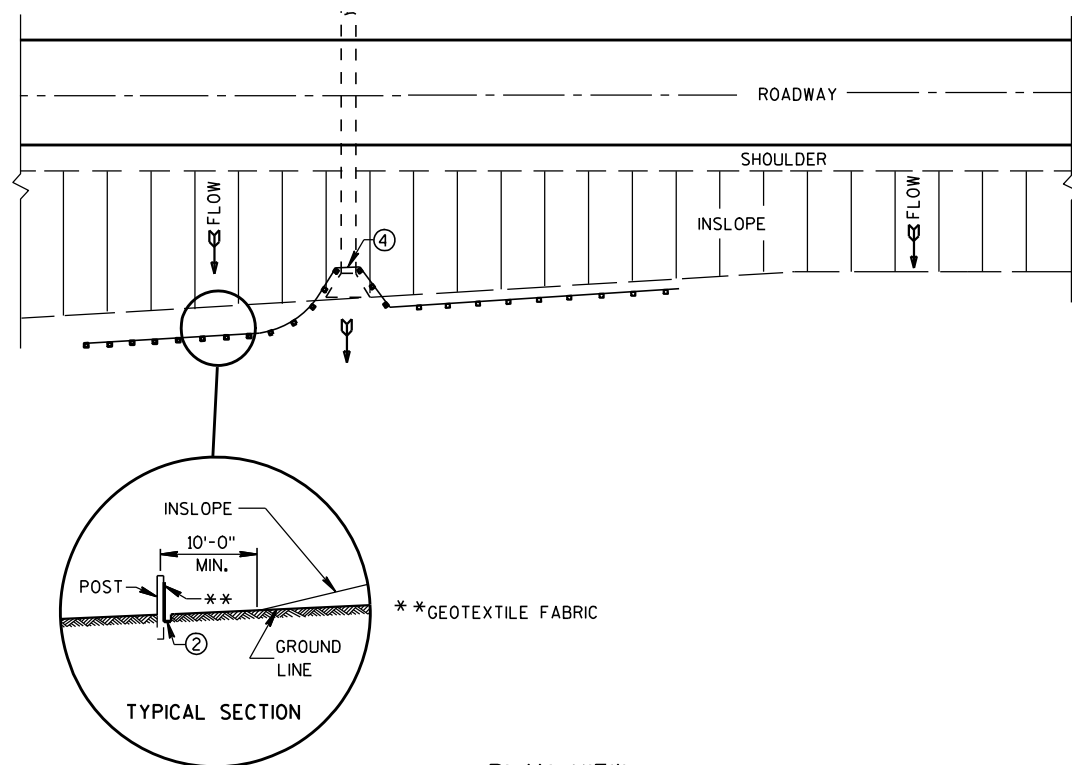
APPROVED

6/04/02
DATE

/S/ Beth Connors
CHIEF ROADWAY DEVELOPER

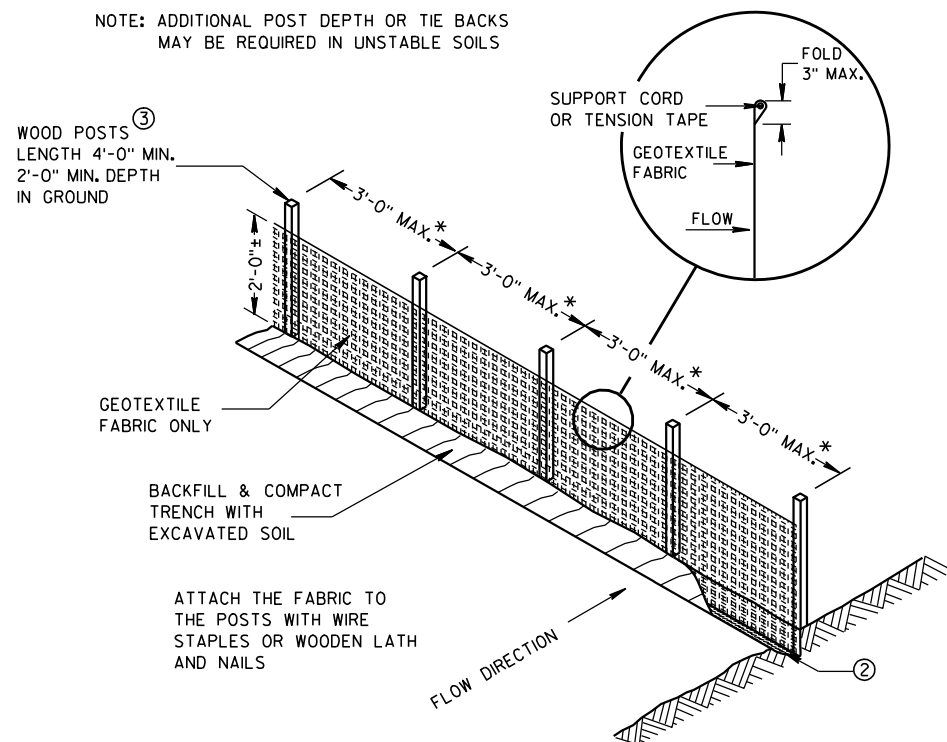
ENGINEER

FHWA



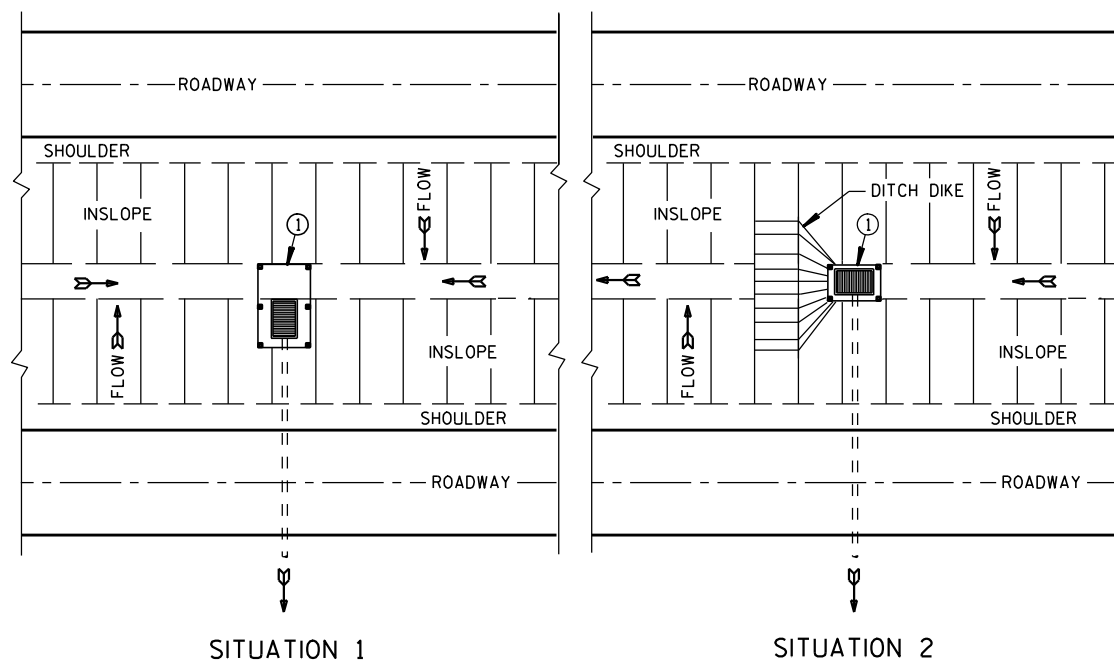
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

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

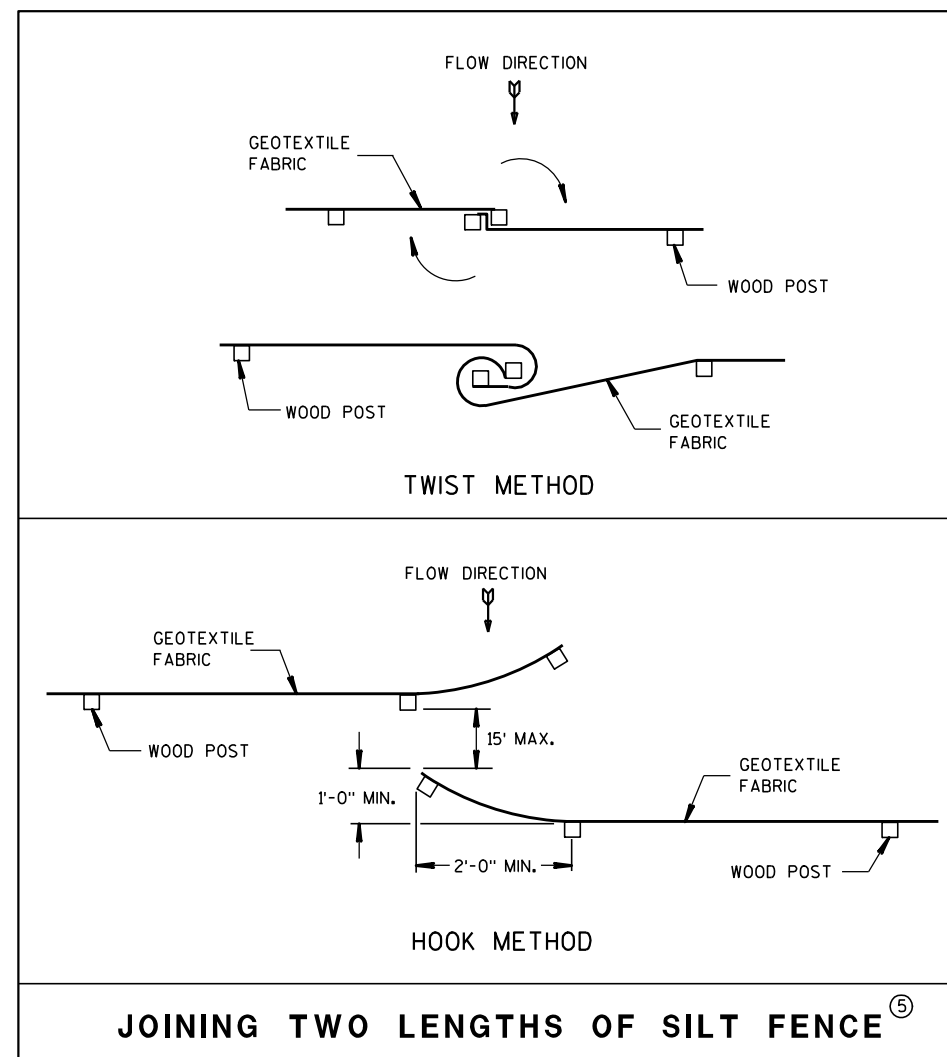


SILT FENCE

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



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

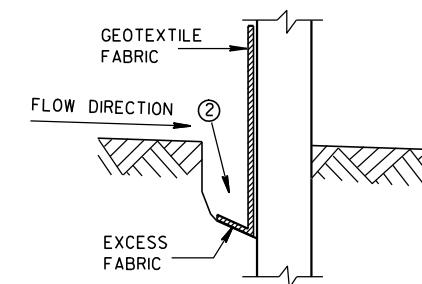


JOINING TWO LENGTHS OF SILT FENCE^⑤

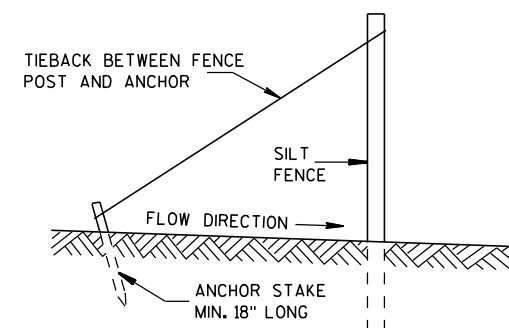
GENERAL NOTES

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 1 1/8" X 1 1/8" 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 TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05

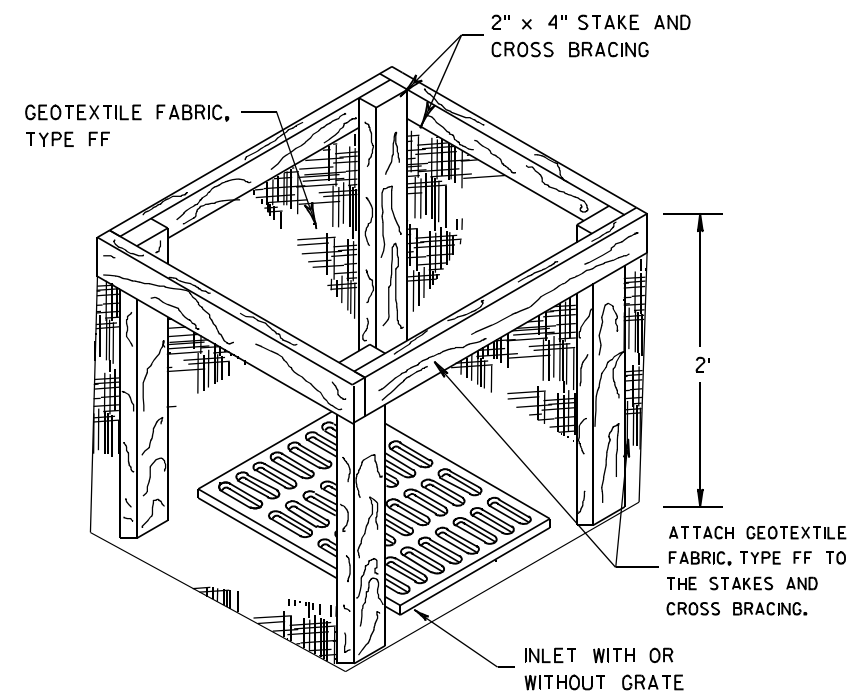
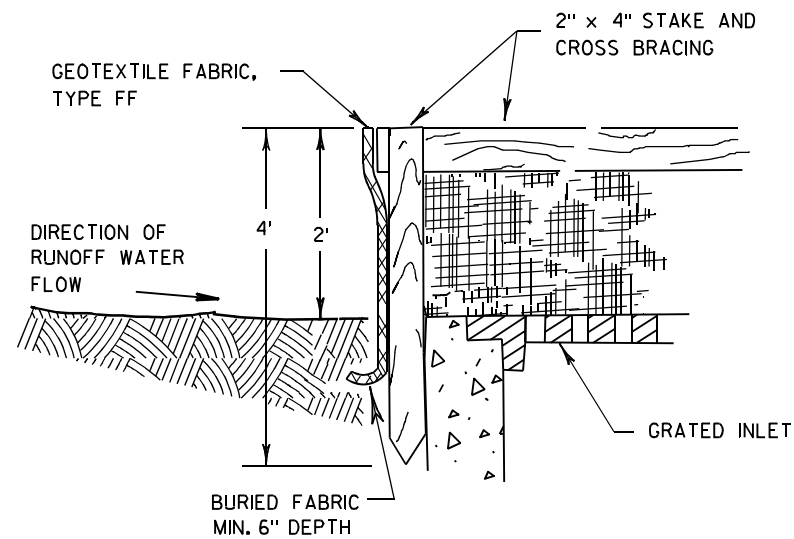
DATE

/S/ Beth Conn

CHIEF ROADWAY DEVELOPER

FHWA

ENGINEER



INLET PROTECTION, TYPE A

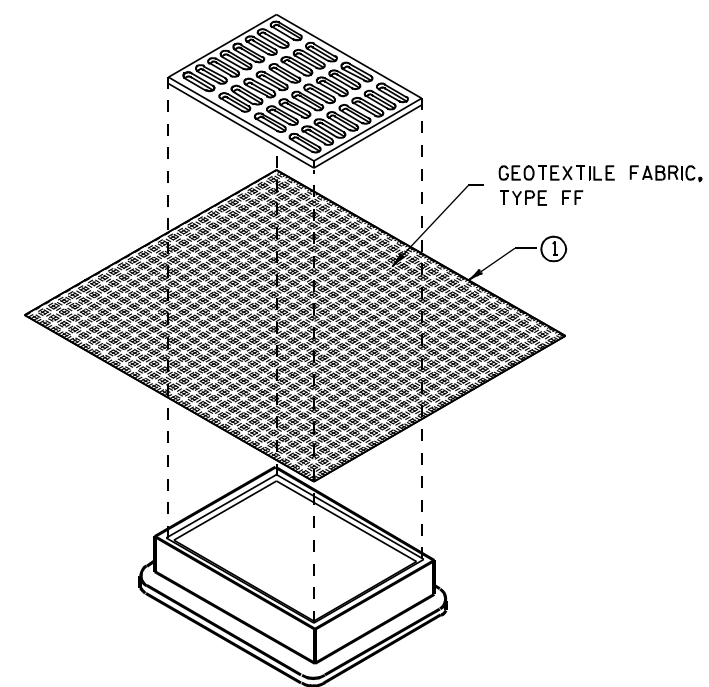
GENERAL NOTES

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.

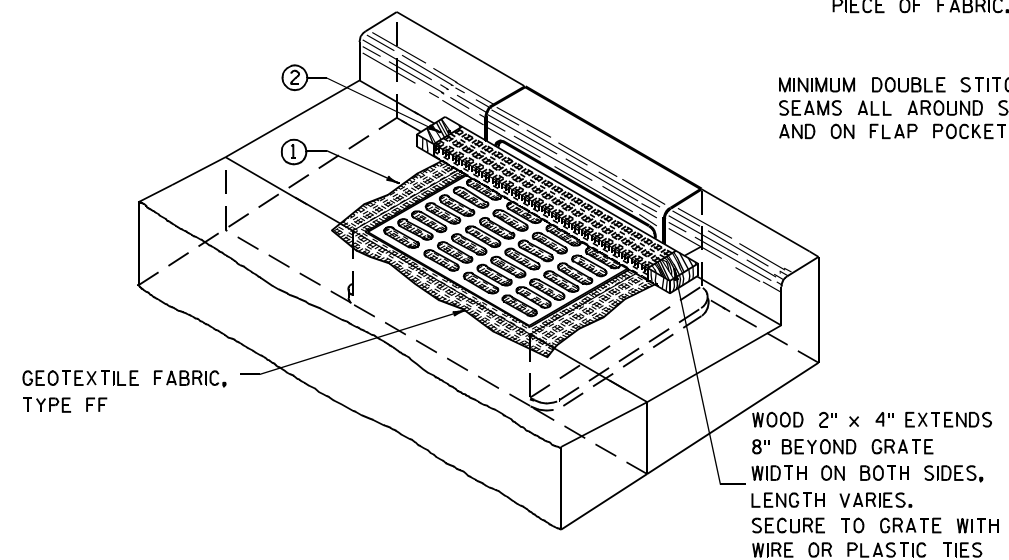
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.



INLET PROTECTION, TYPE B (WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

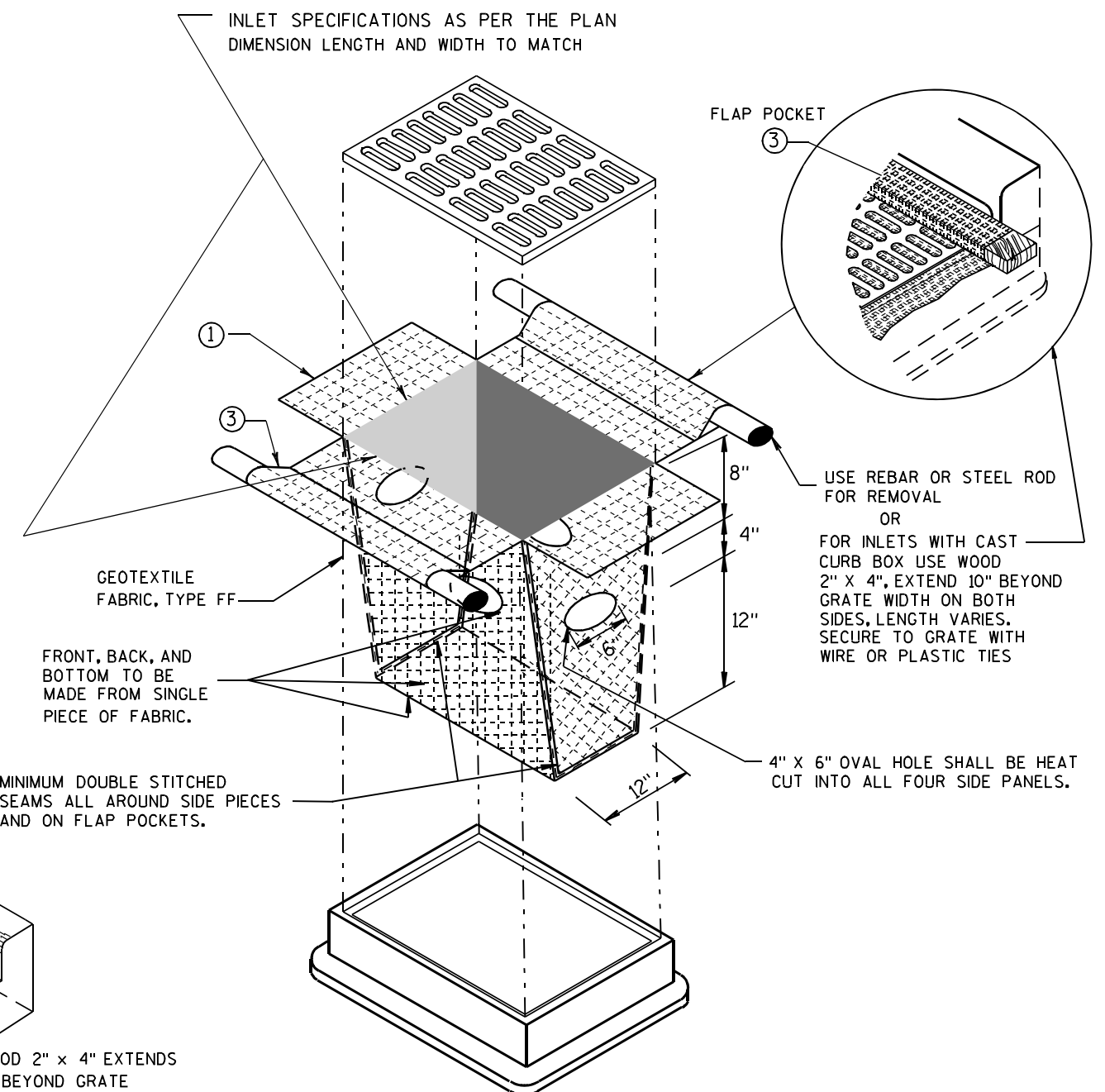
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.

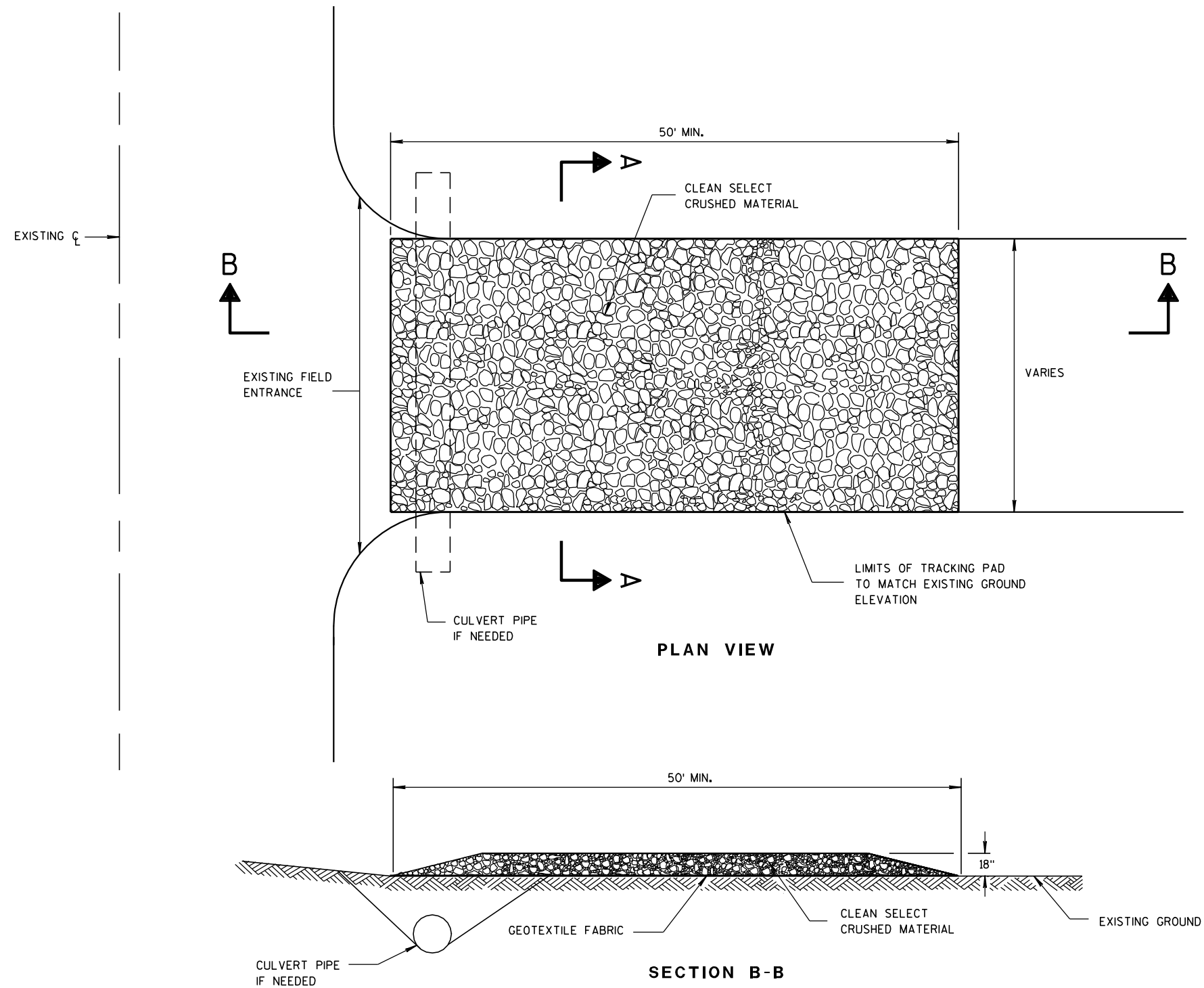
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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



INLET PROTECTION, TYPE D

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

INLET PROTECTION TYPE A, B, C, AND D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>10/16/02</u> DATE	<u>/S/ Beth Connolly</u> 69 CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



TRACKING PAD

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

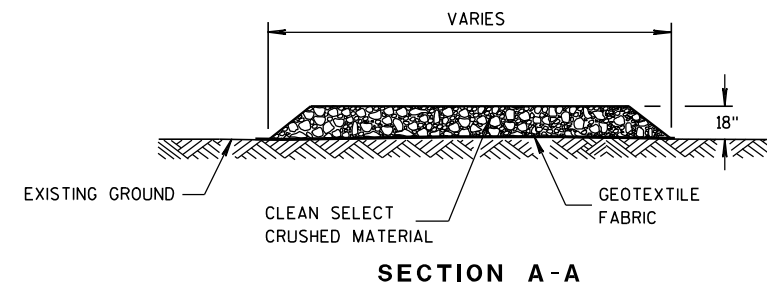
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011

DATE

FHWA

/S/ Jerry H. Zonn

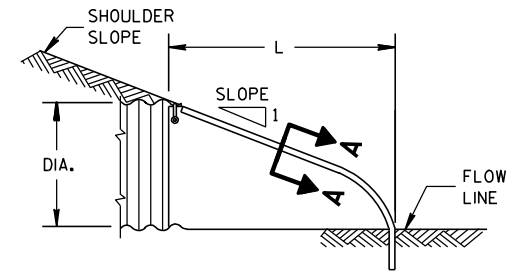
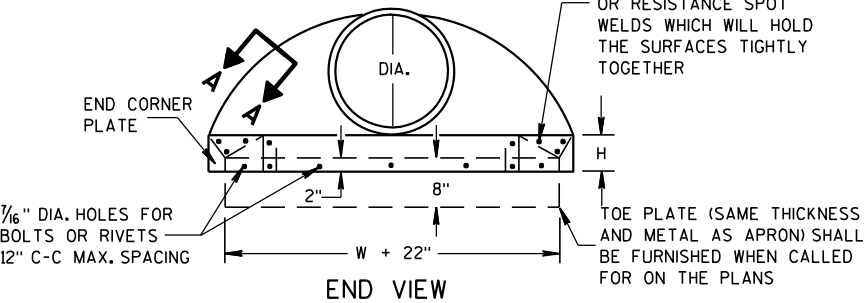
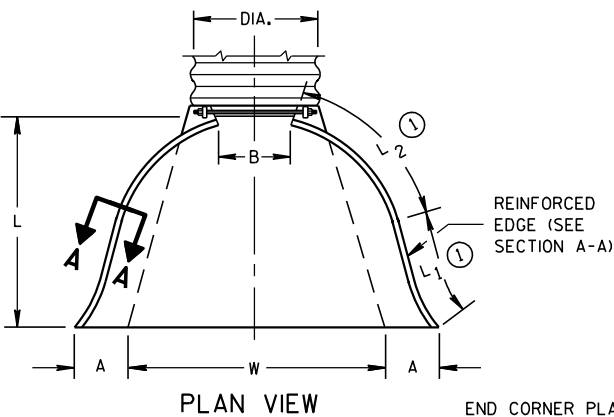
ROADWAY STANDARDS 70

ENGINEER

ENT

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

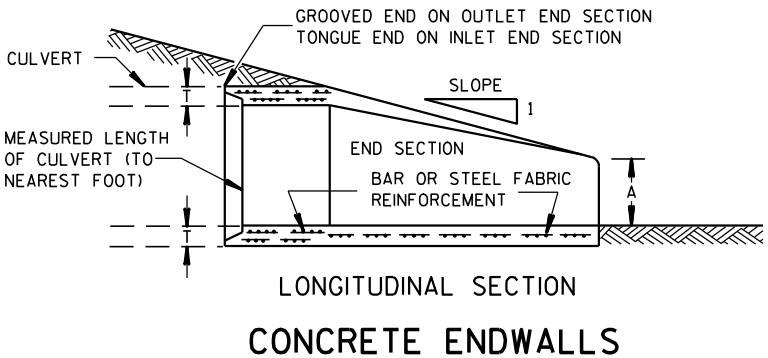
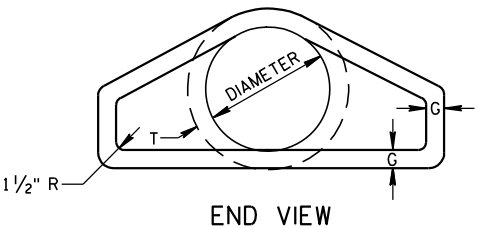
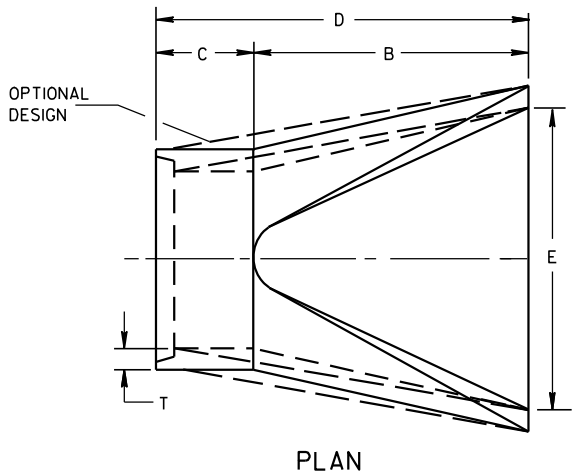
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



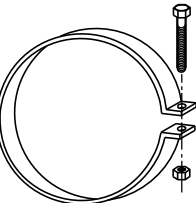
METAL ENDWALLS

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

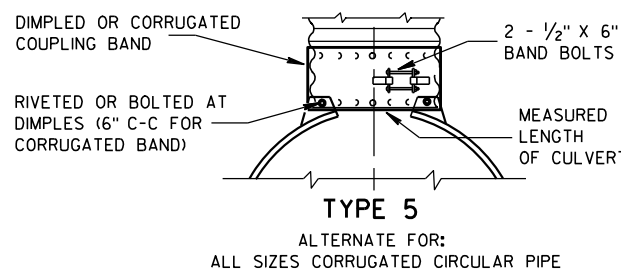
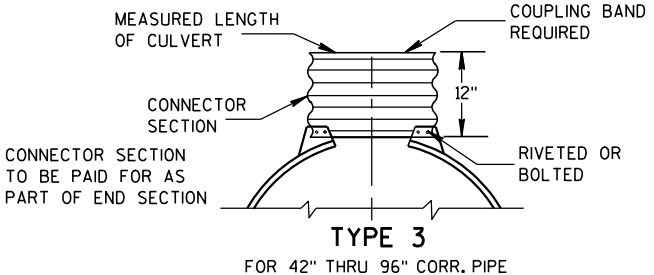
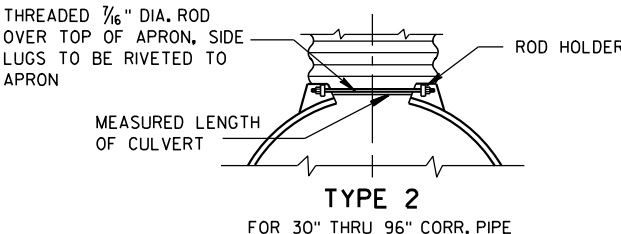
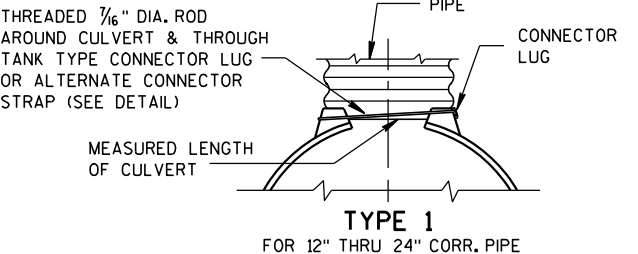
* MINIMUM
** MAXIMUM



1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



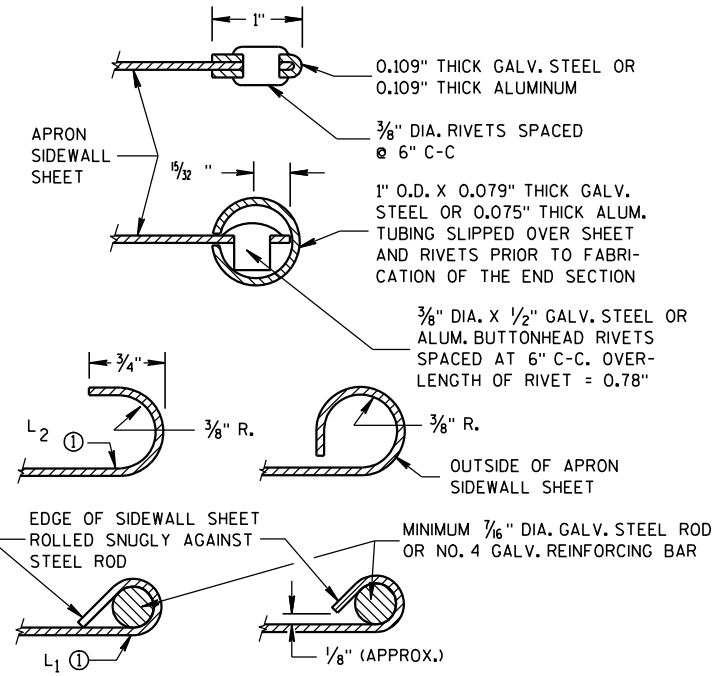
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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



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.

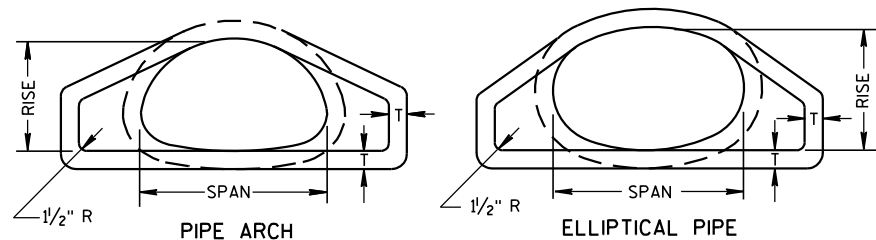
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

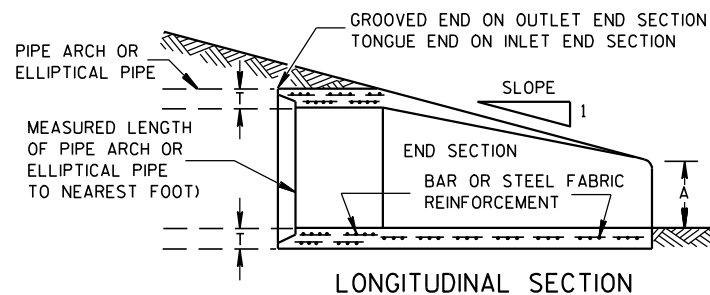
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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. Rhinehart CHIEF ROADWAY DEVELOP	71	NEER
FHWA			

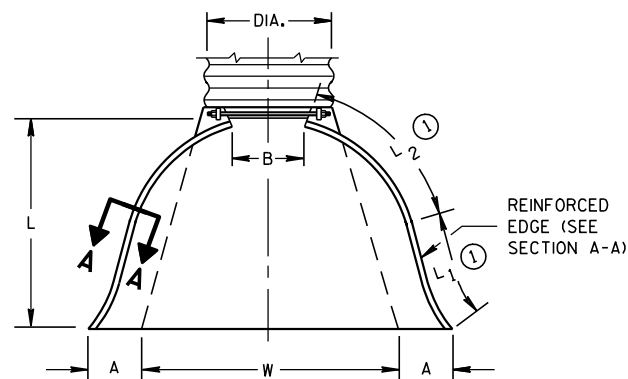


END VIEW



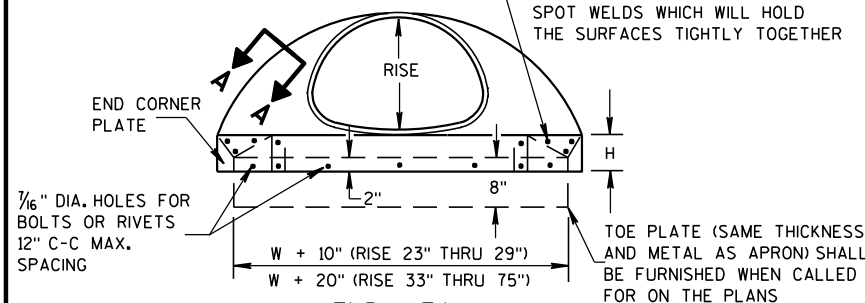
LONGITUDINAL SECTION

CONCRETE ENDWALLS

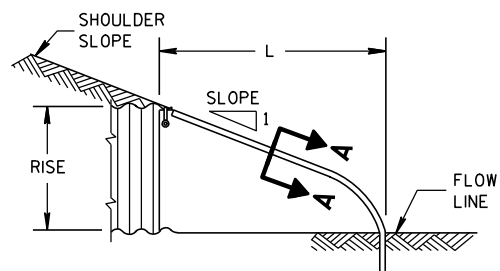
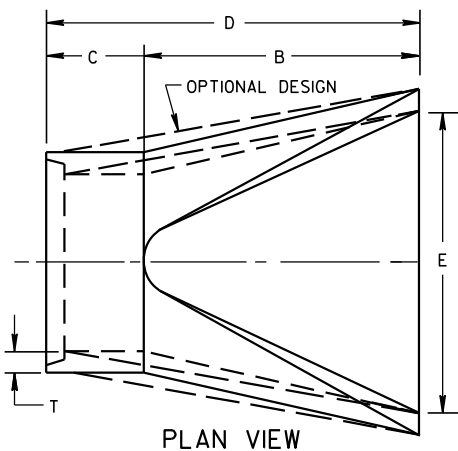


PLAN VIEW

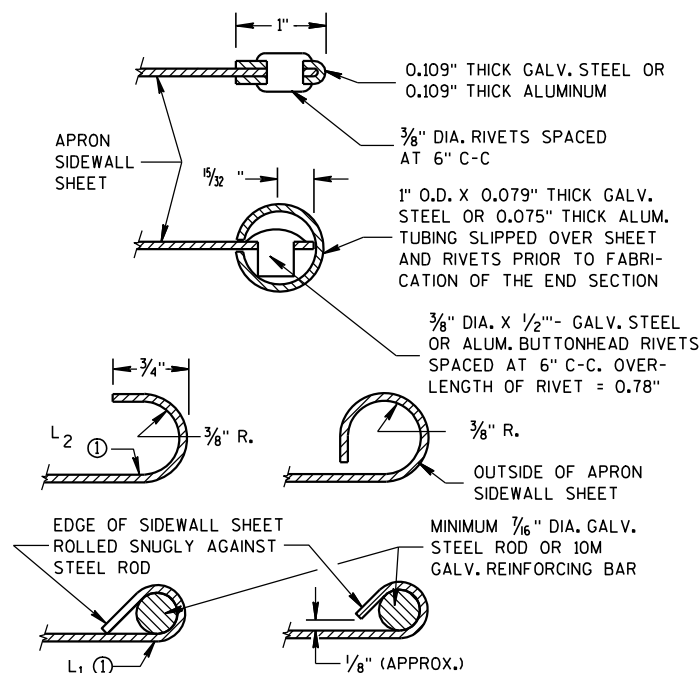
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW



SECTION A-A

2- 2 ³ / ₈ " x 1 ¹ / ₂ " CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 ¹ / ₂ ")	L ₁ ①	L ₂ ①	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 ¹ / ₂ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 ³ / ₈	36	2 ¹ / ₂ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 ³ / ₄	42	2 ¹ / ₂ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 ¹ / ₂	48	2 ¹ / ₂ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 ⁵ / ₈	60	2 ¹ / ₂ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 ³ / ₈	75	2 ¹ / ₂ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 ³ / ₄	85	2 ¹ / ₂ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 ¹ / ₂ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 ³ / ₄	102	2 ¹ / ₄ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 ¹ / ₄	114	2 ¹ / ₄ to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

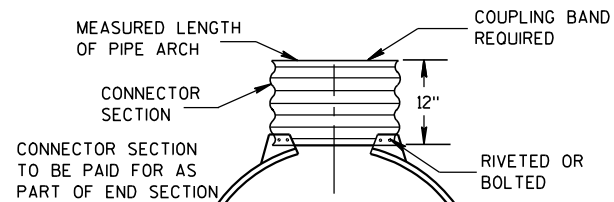
3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ⓪	L ₂ ⓪	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

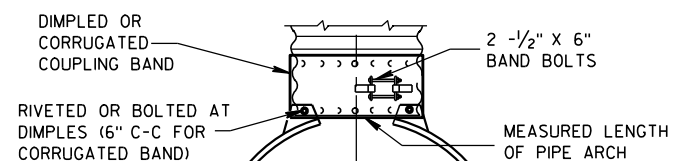
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/8	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

**NOMINAL SIZE

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH 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 77" X 52" THROUGH 112" X 75" 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 ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94

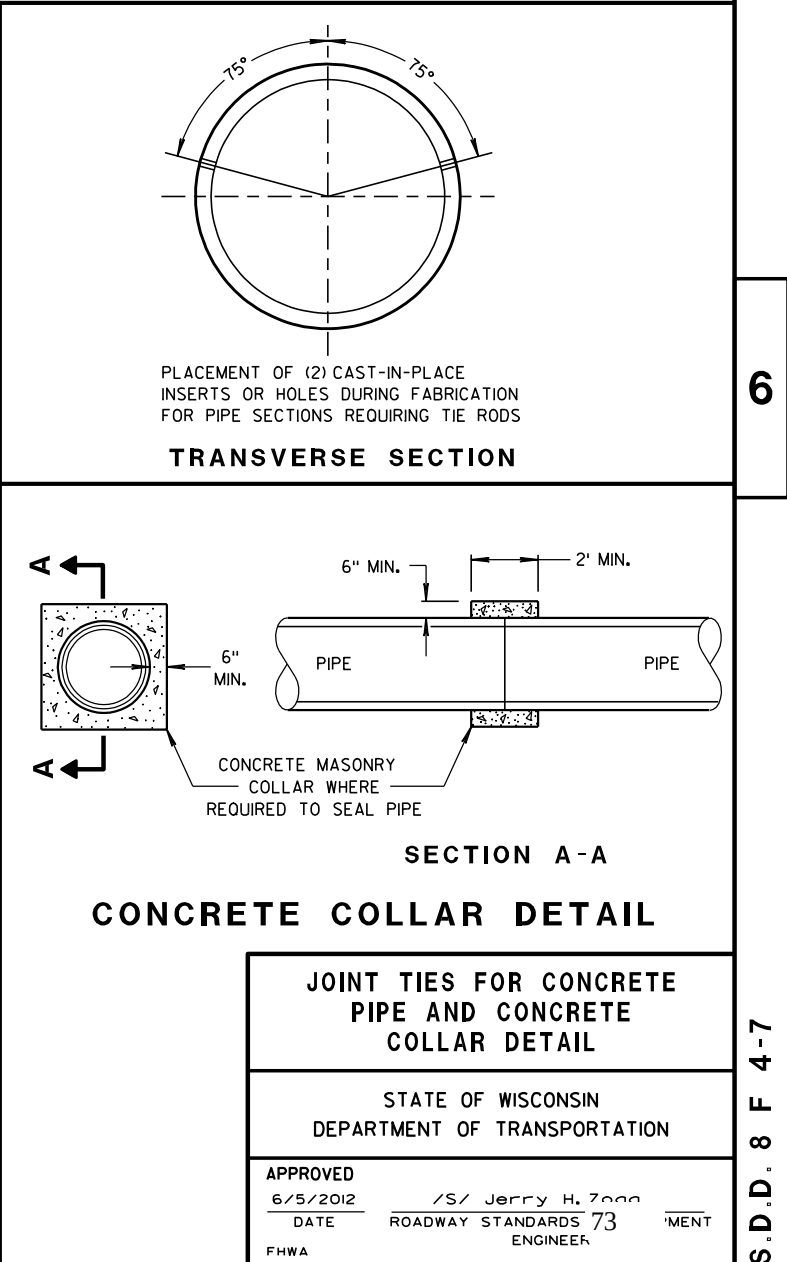
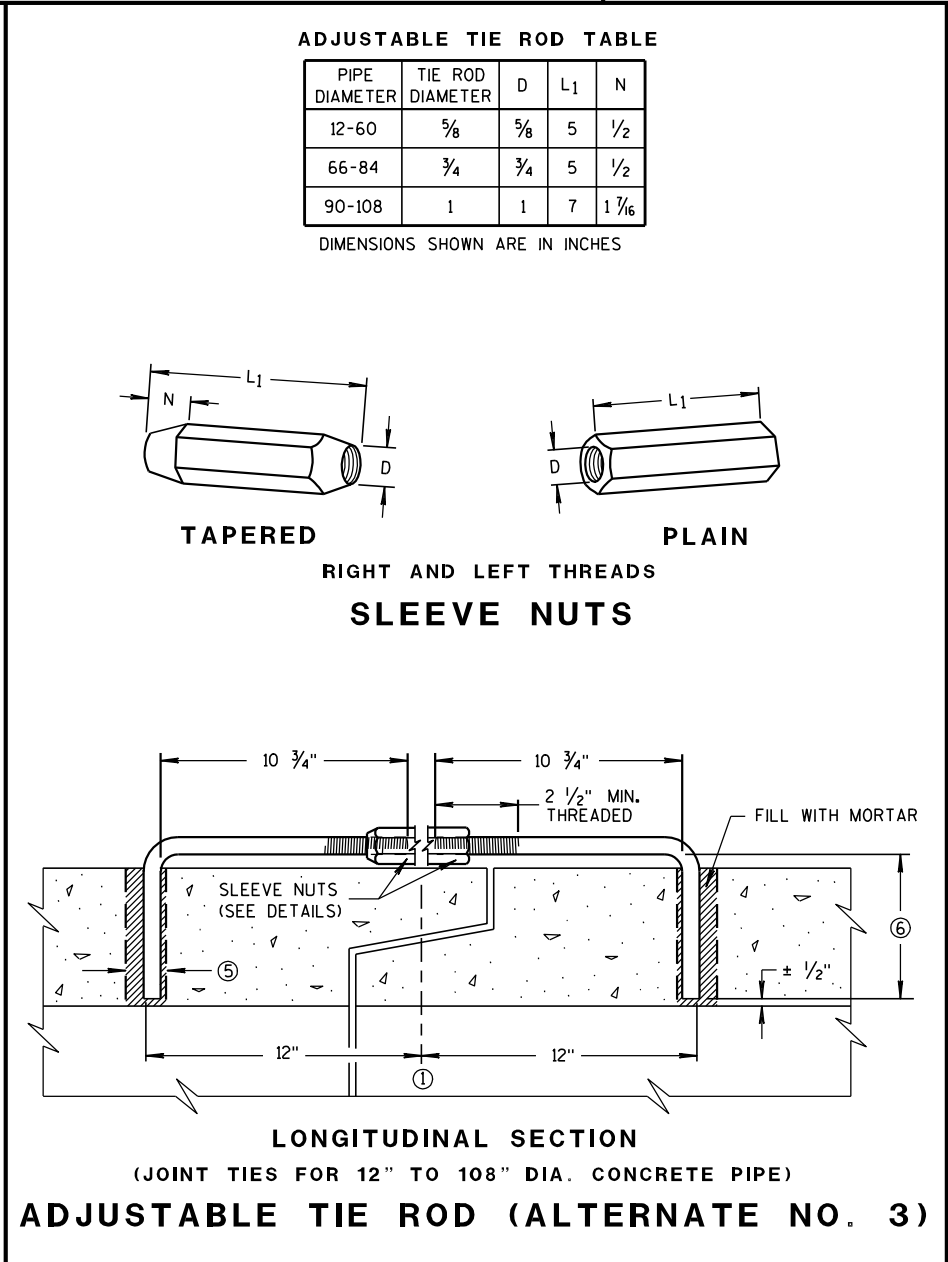
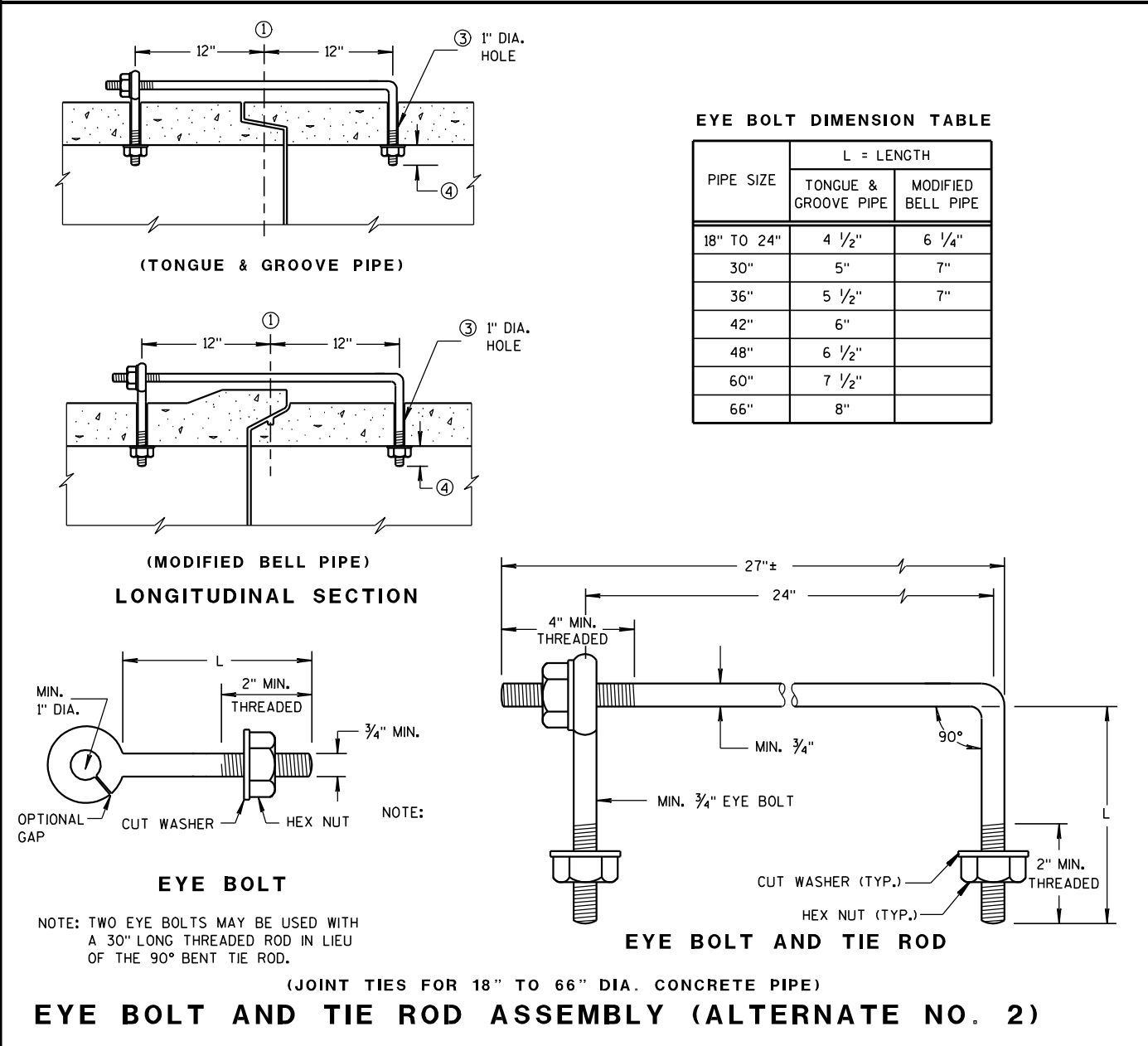
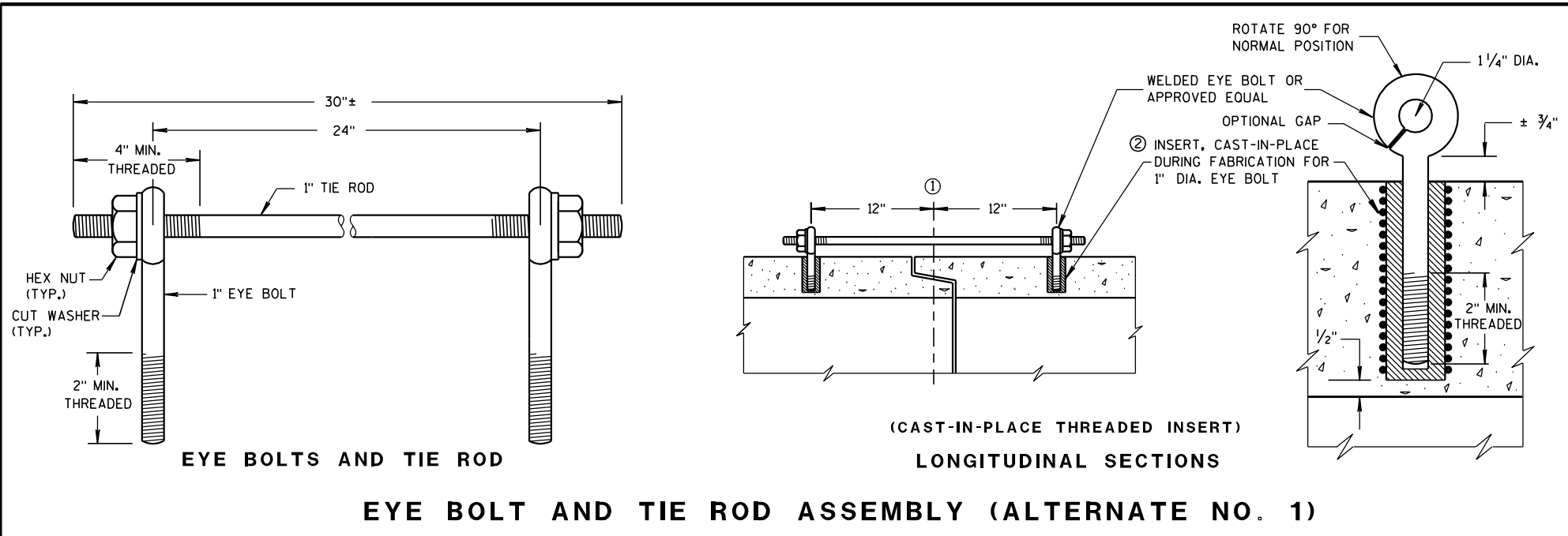
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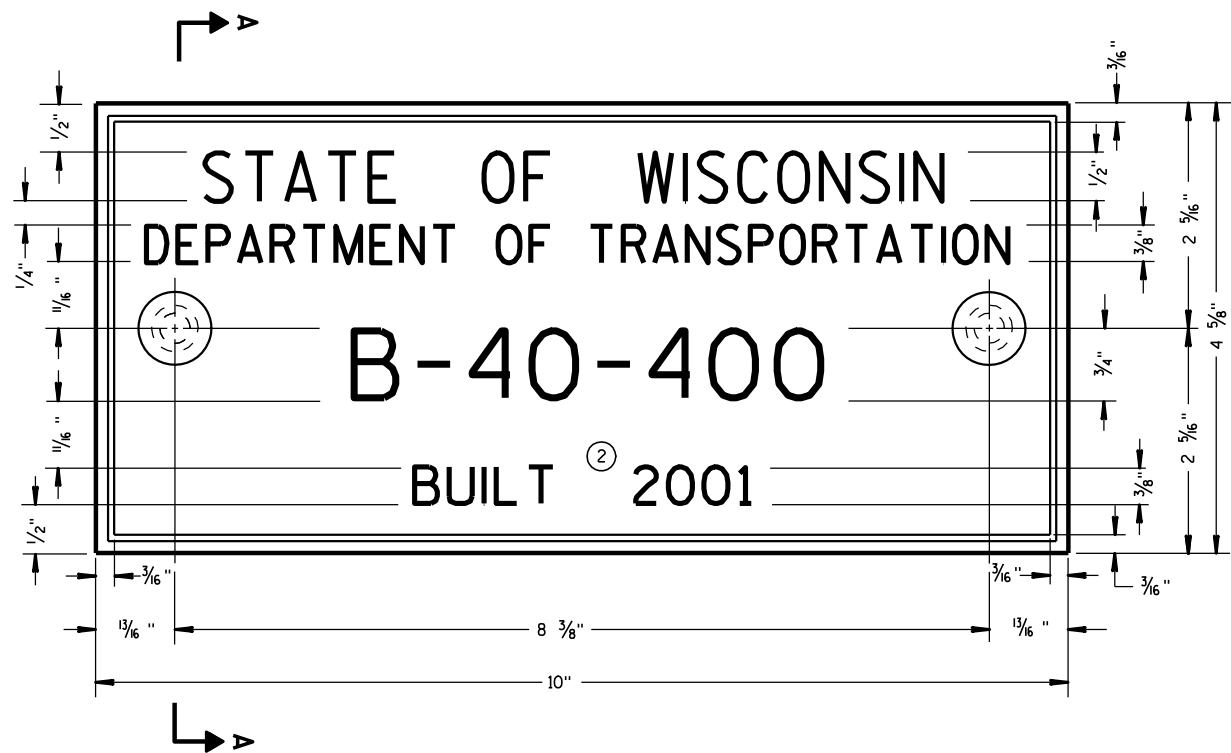
/S/ Rory L. Rhinehart

CHIEF ROADWAY DEVELOPER

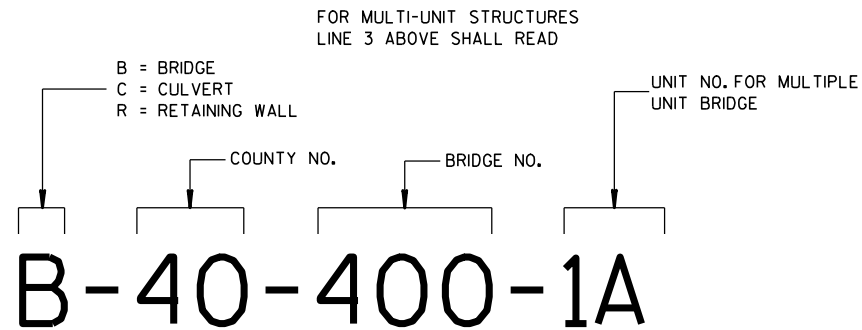
FHWA

ENGINEER





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



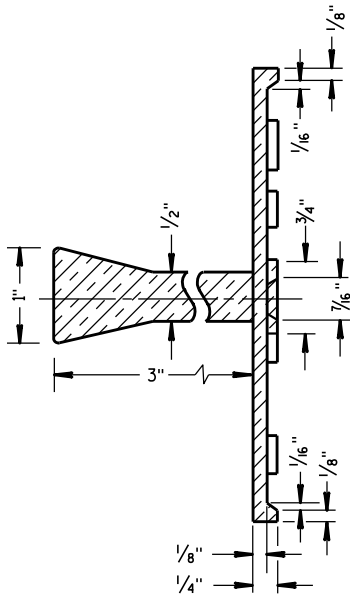
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

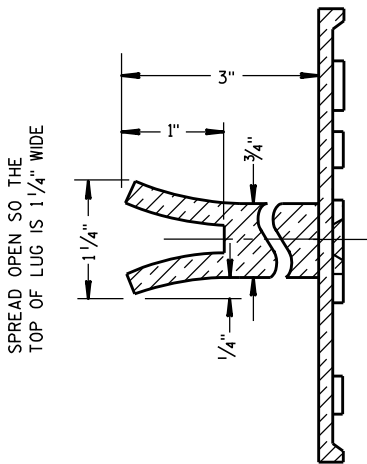
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

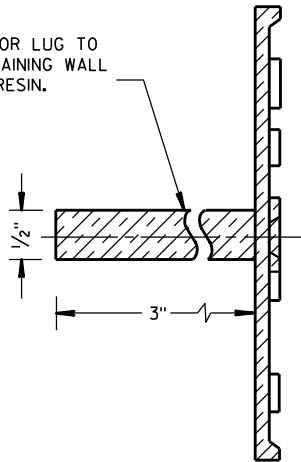


SECTION A-A



ALTERNATE LUG

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

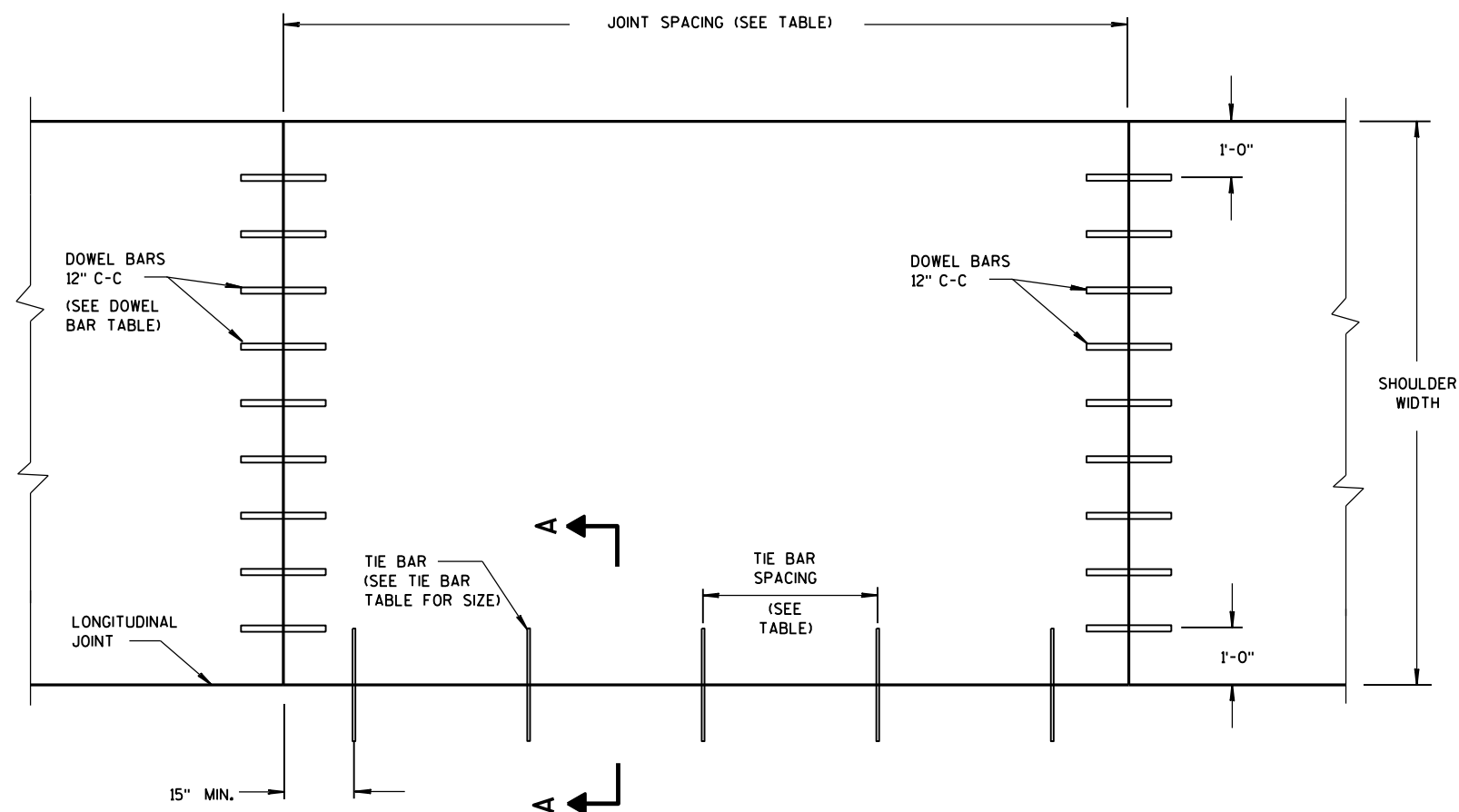


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE
(STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 3/26/10
/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER
75
JEER
FHWA



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g., AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

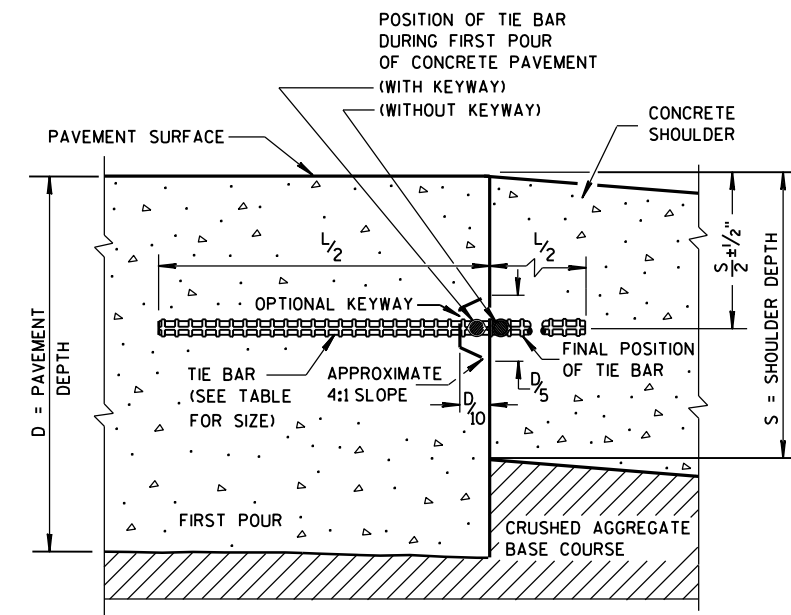
GENERAL NOTES

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

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'

*** 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

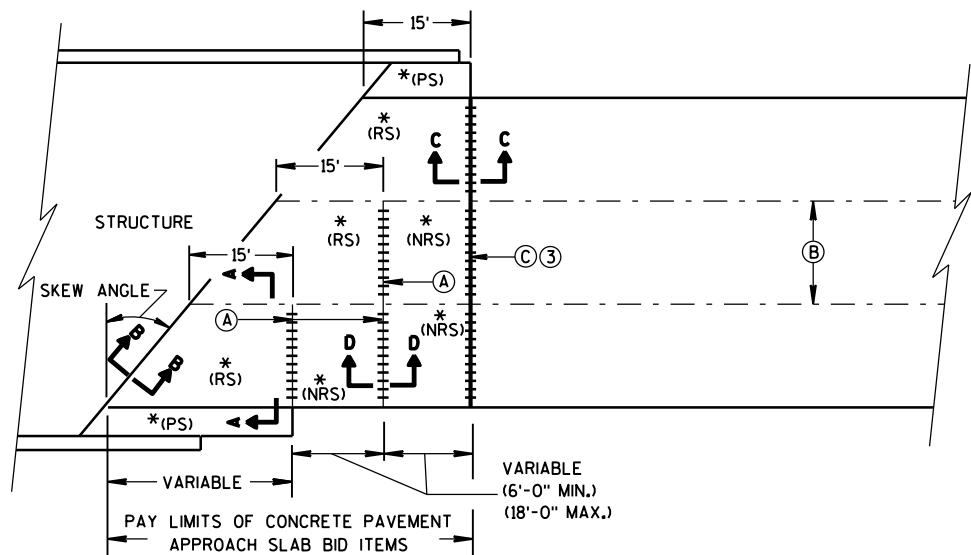
June, 2015

DATE

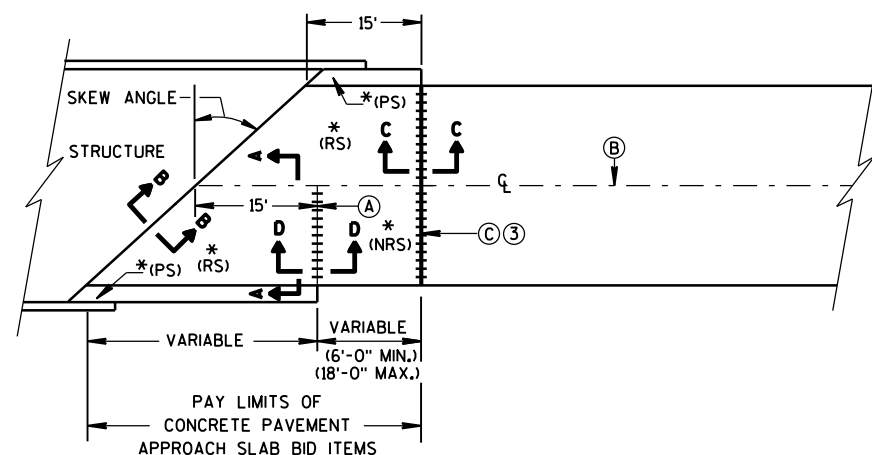
FHWA

/S/ Peter Kemp, P.E.

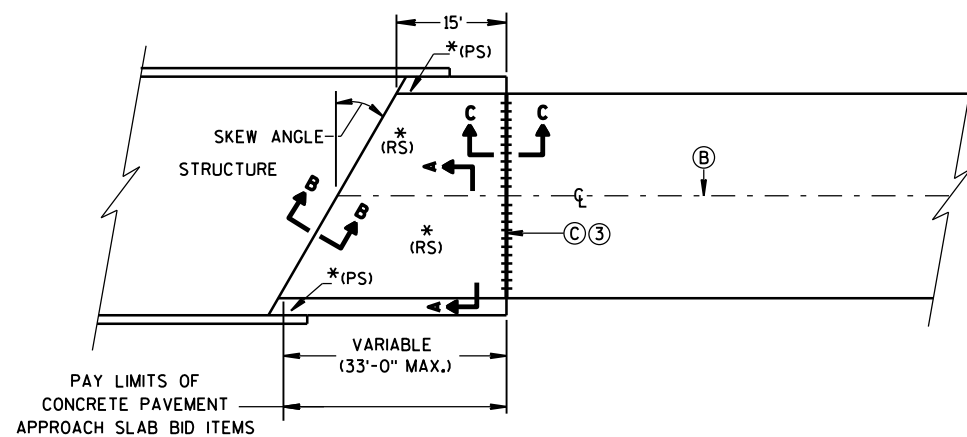
PAVEMENT SUPEF 76



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

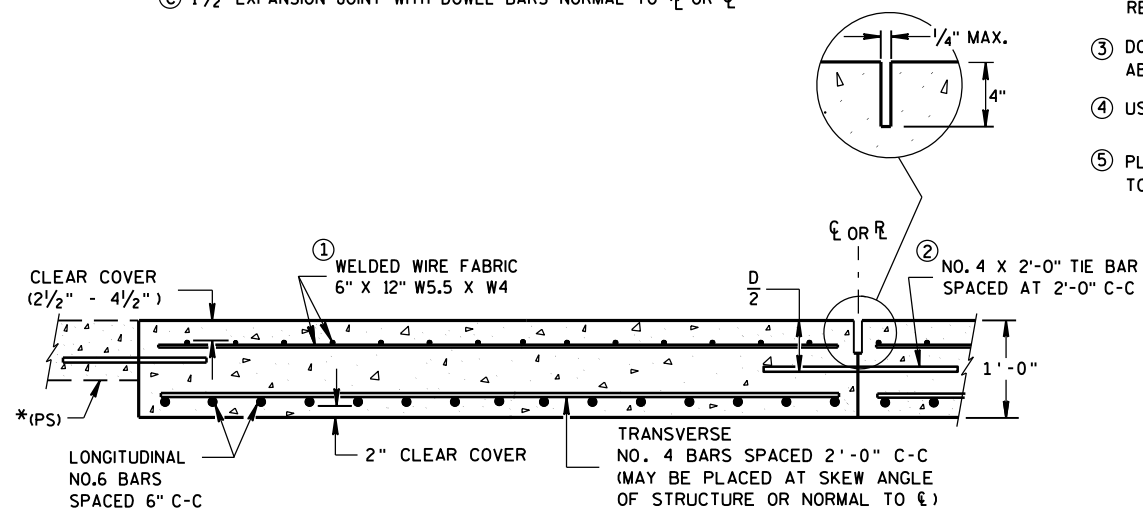


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

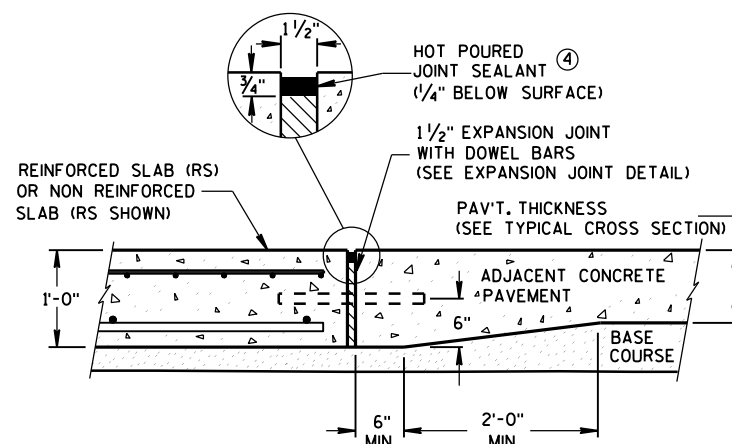
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

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

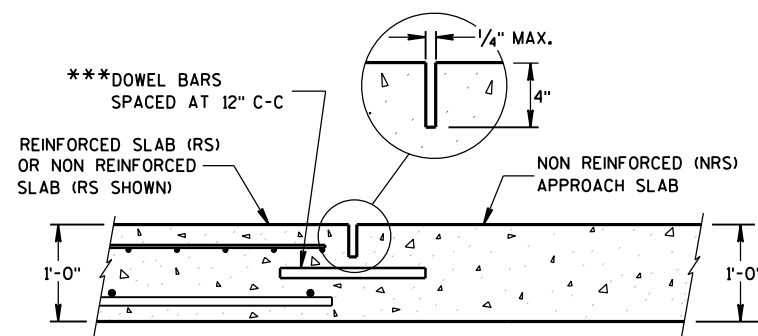
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



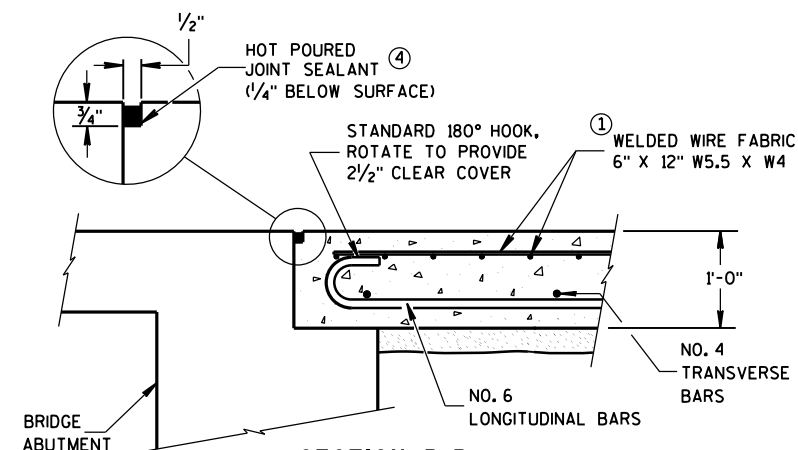
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

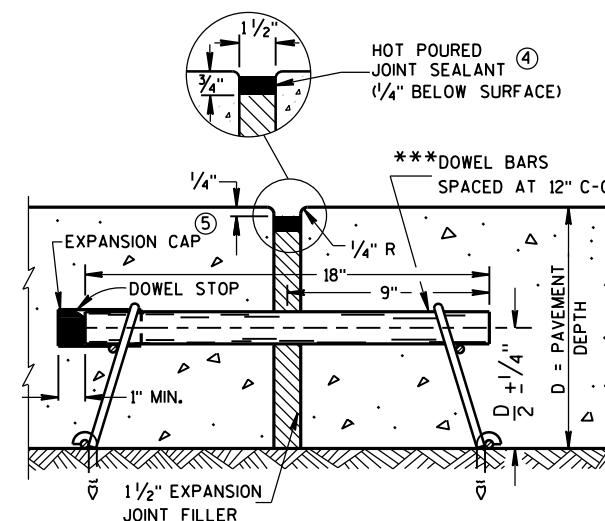
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- 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.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- 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**

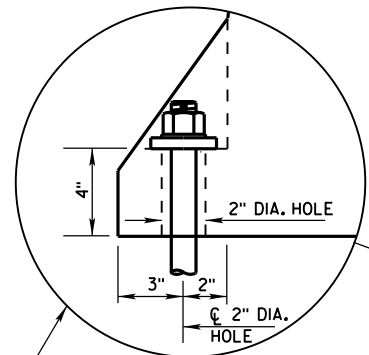


EXPANSION JOINT DETAIL

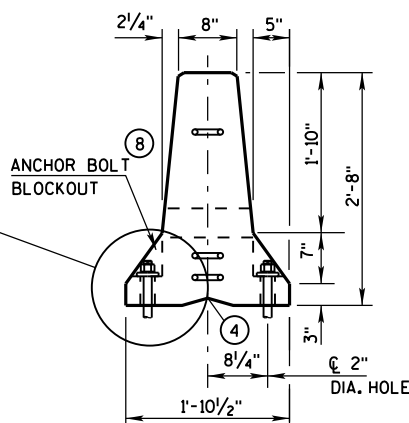
**CONCRETE PAVEMENT
APPROACH SLAB**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

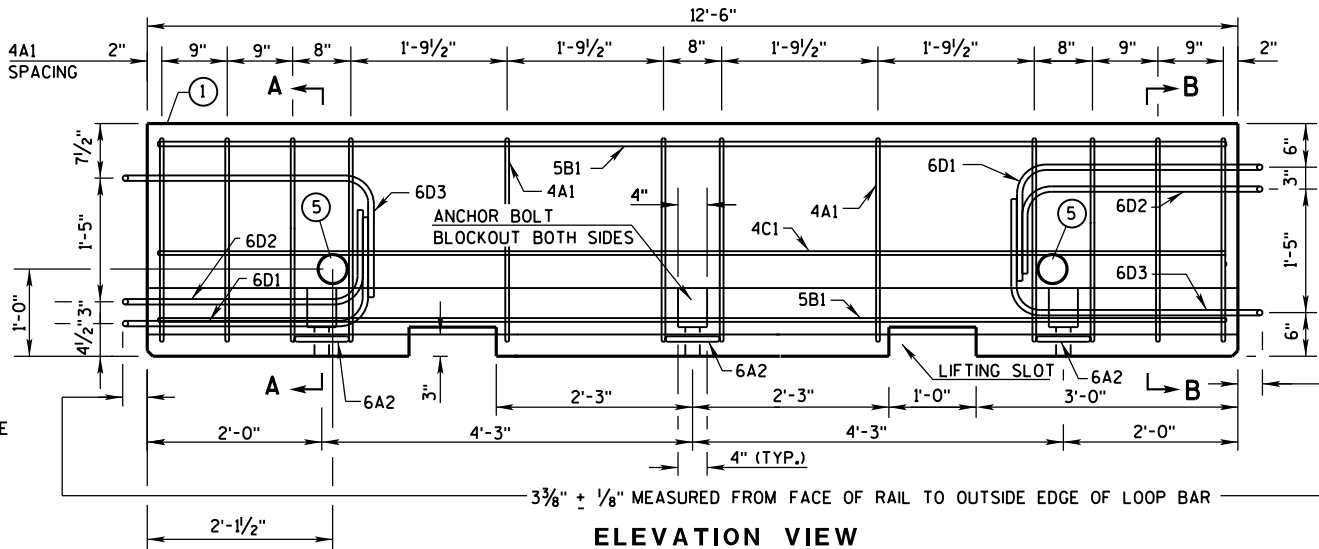
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE
PAVEMENT SUPER 77
FHWA



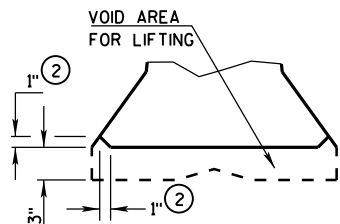
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



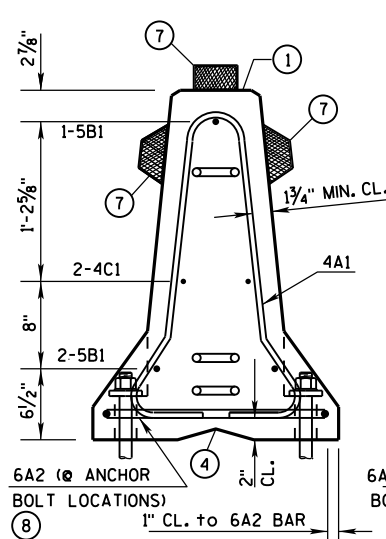
END VIEW



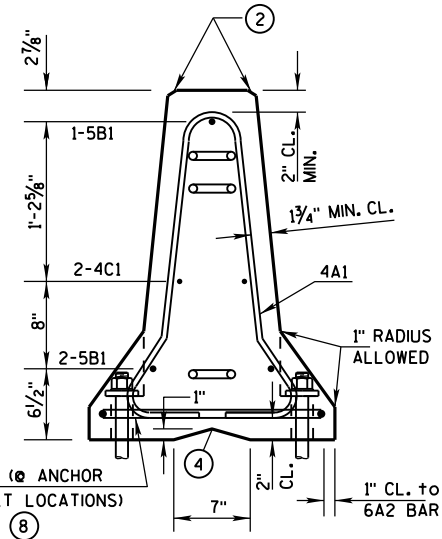
ELEVATION VIEW



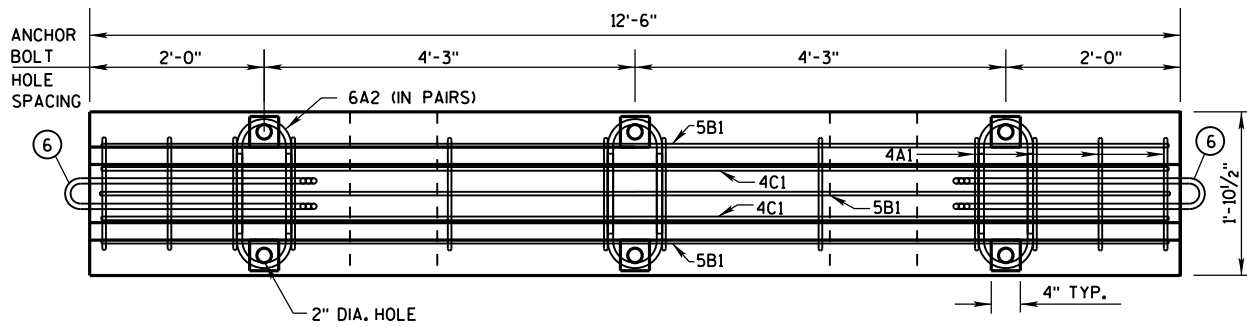
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

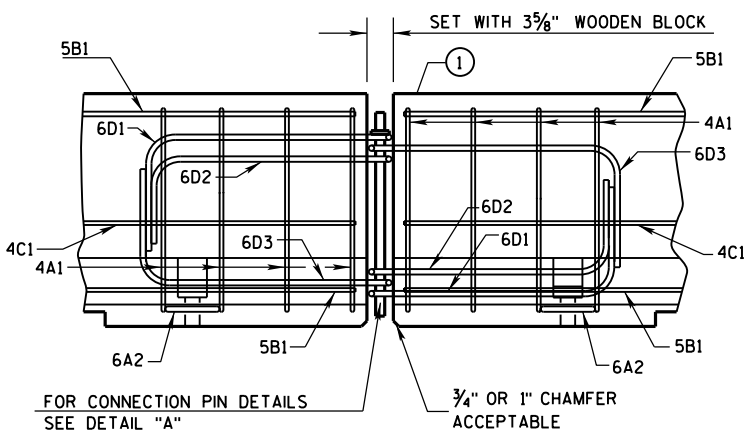


SECTION B-B
(STIRRUP PLACEMENT)

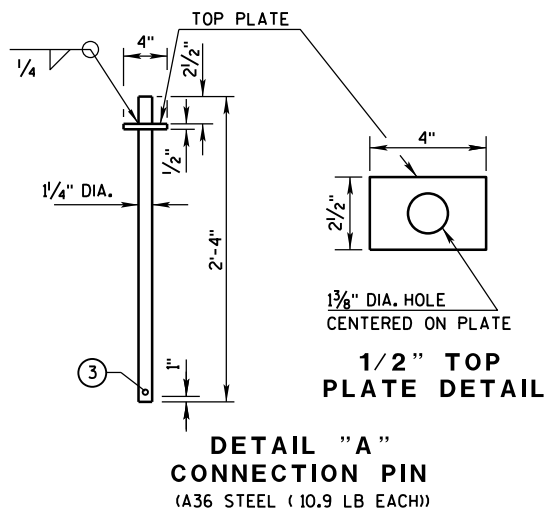


PLAN VIEW

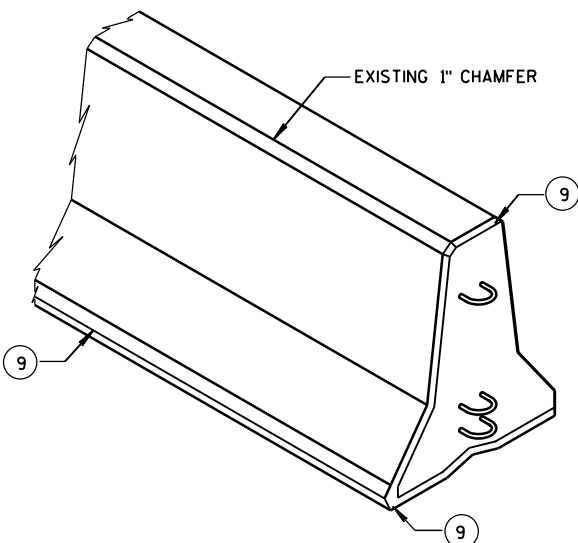
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(a) THRU 14B7-15(i).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 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 3/4" 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 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" 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.

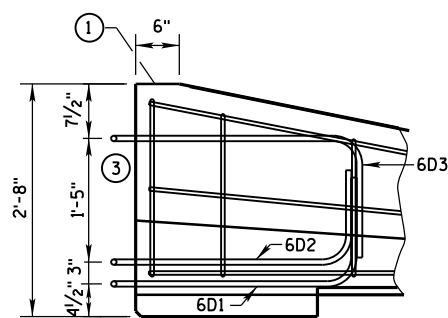
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- 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.
- SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

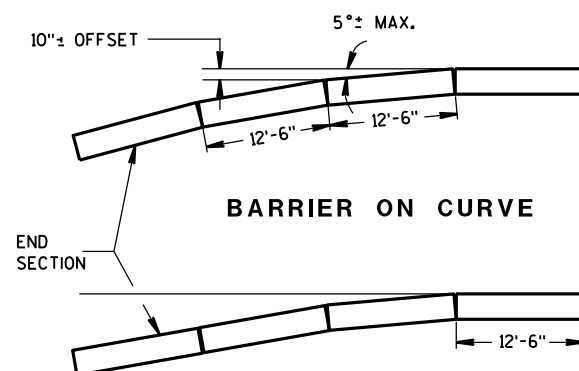
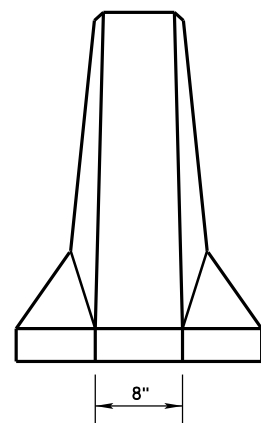
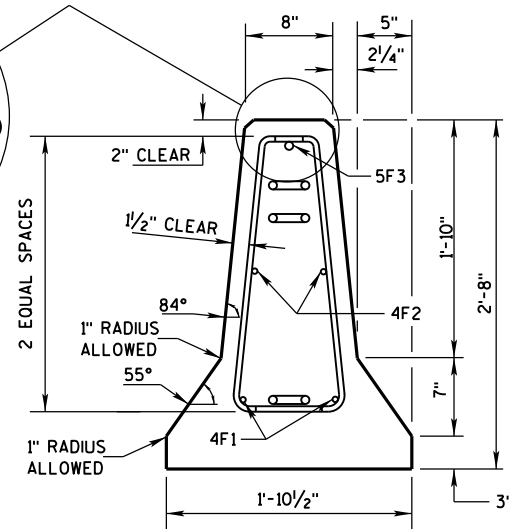
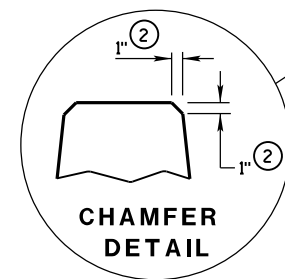
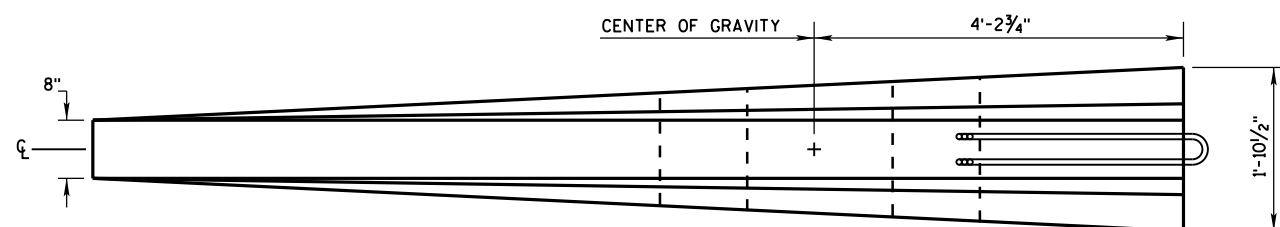
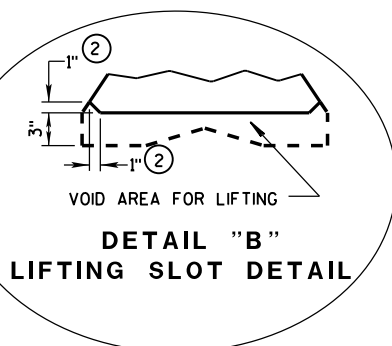
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



- 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.

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



FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

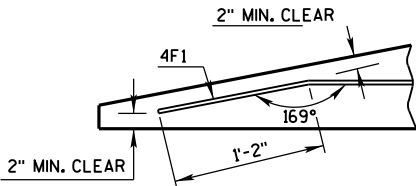
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁷⁹

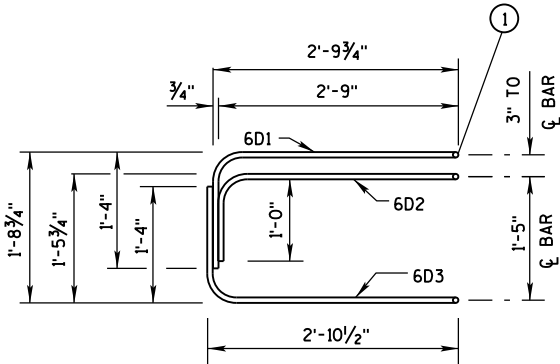
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

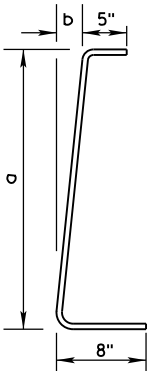
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

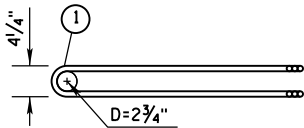
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

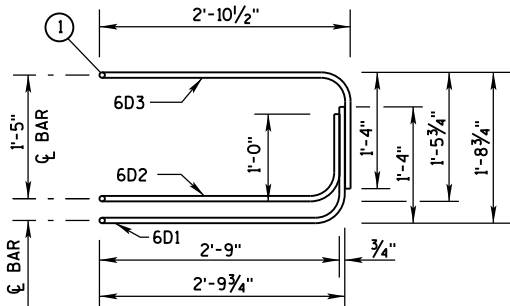
(PER 12'-6" BARRIER SECTION)

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"

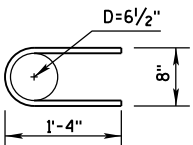


PLAN VIEW
LOOP BAR ASSEMBLY

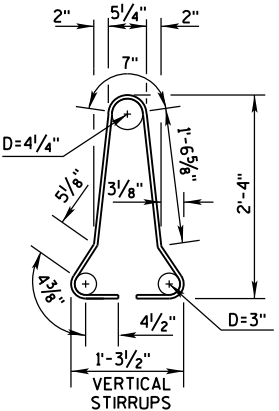
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

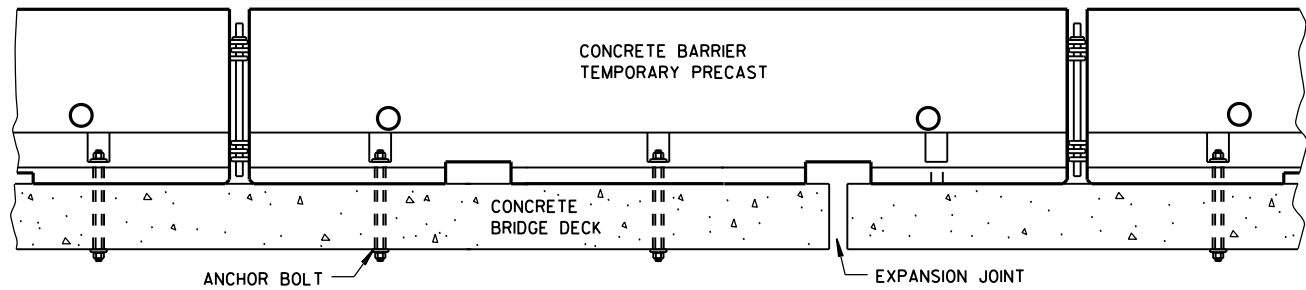
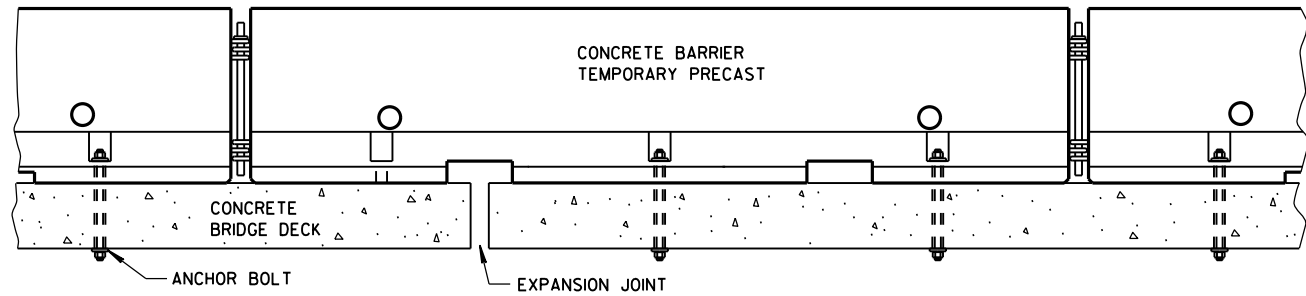


4A1

BARRIER SECTION

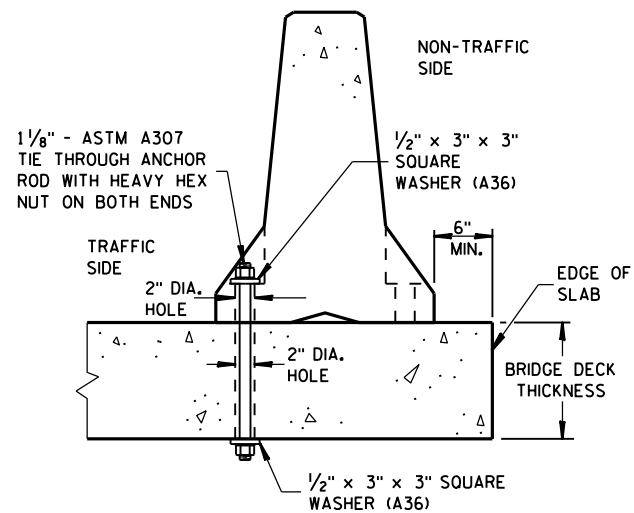
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



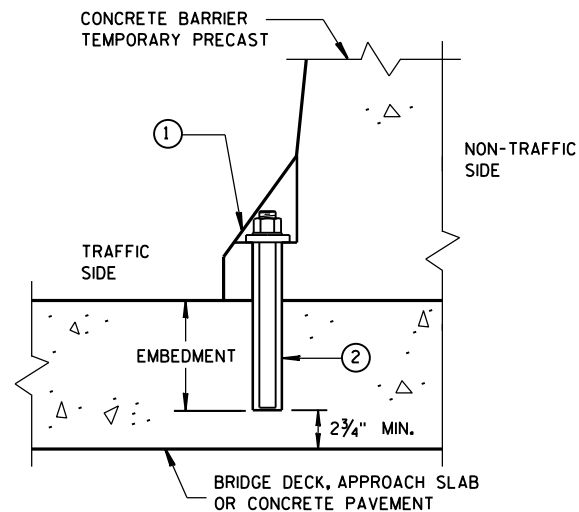
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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.)



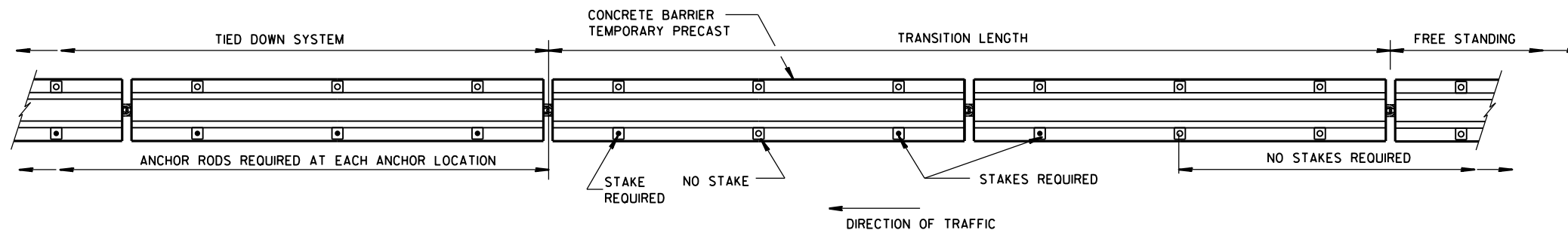
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



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

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

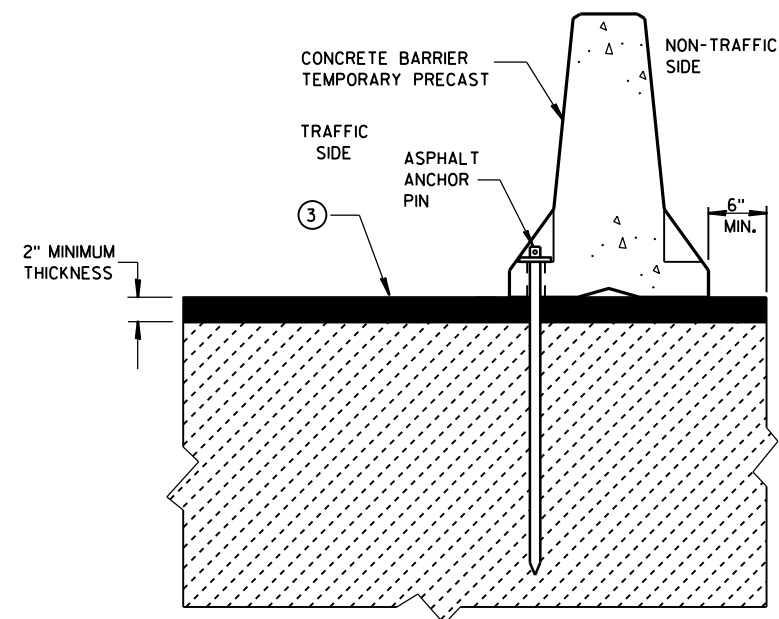
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

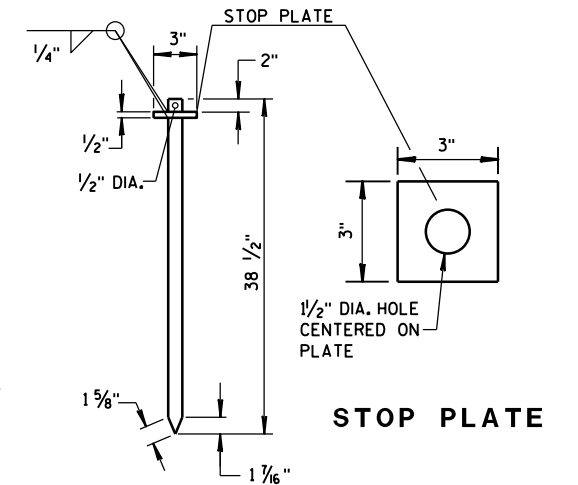
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.12 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE

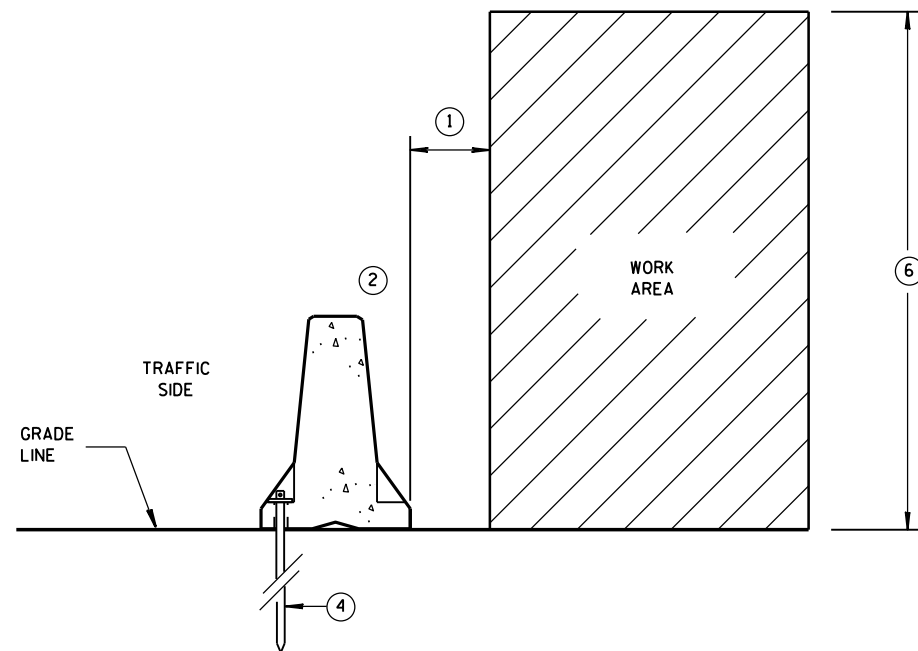


ASPHALT ANCHOR PIN

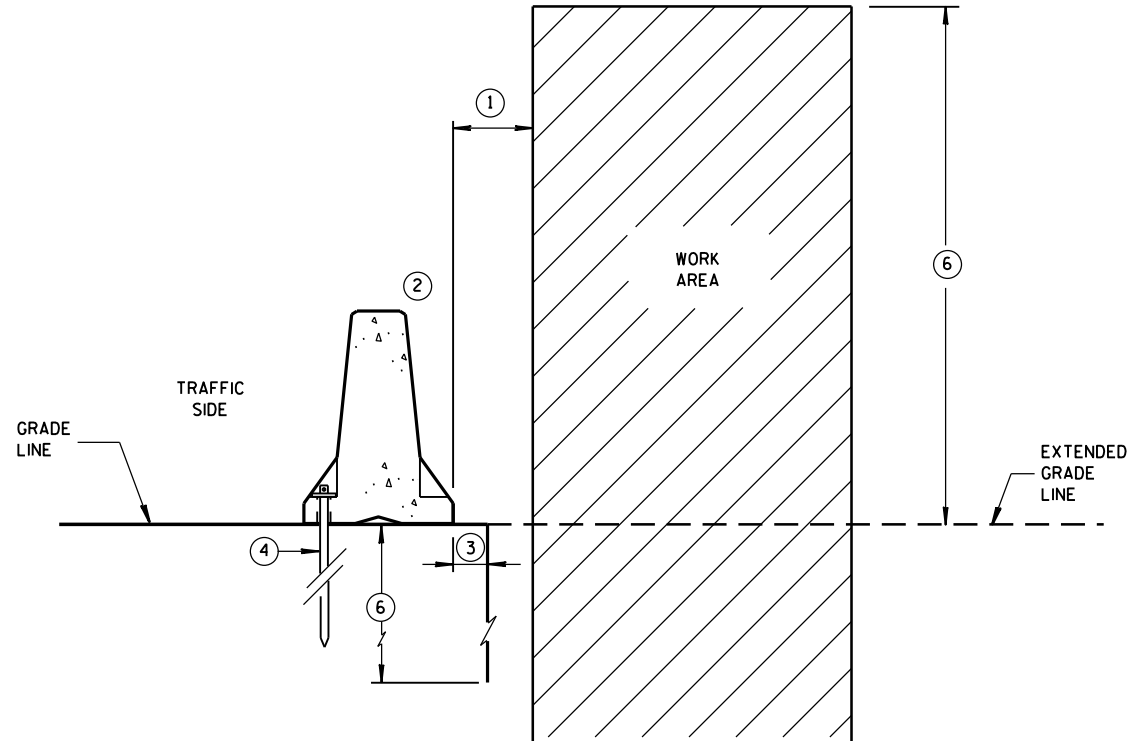
(ASTM A36 STEEL)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**ANCHORED BARRIER SPACE REQUIREMENTS
FOR HAZARDS EXTENDED
ABOVE THE GRADE LINE**

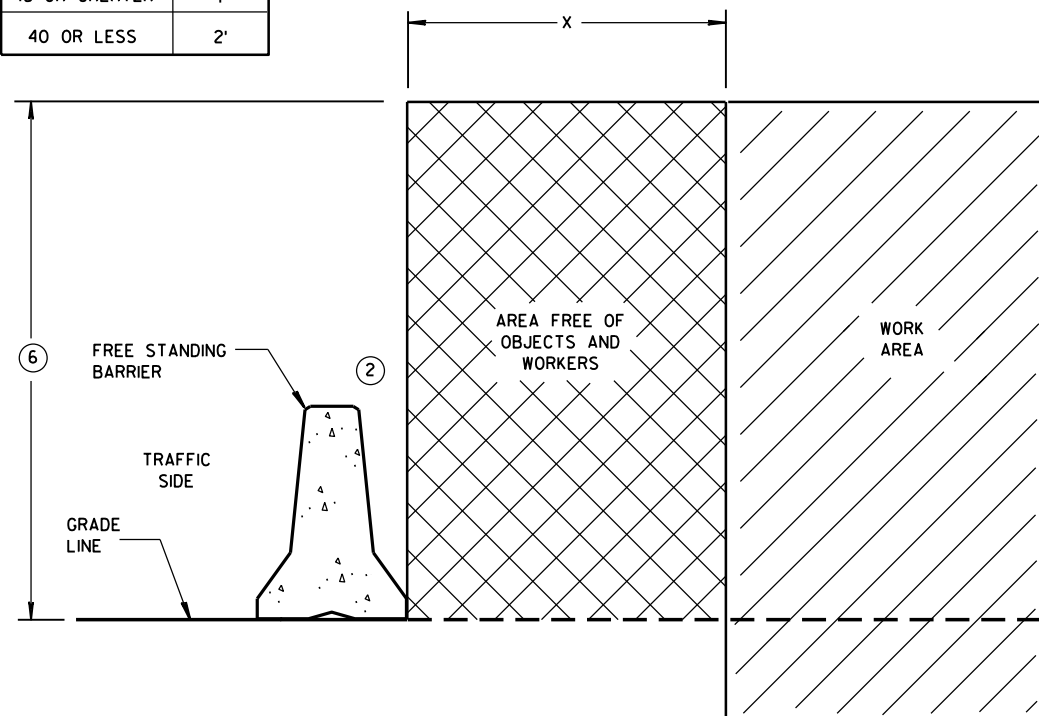


**ANCHORED BARRIER SPACE REQUIREMENTS
ON VERTICAL DROP OFFS**

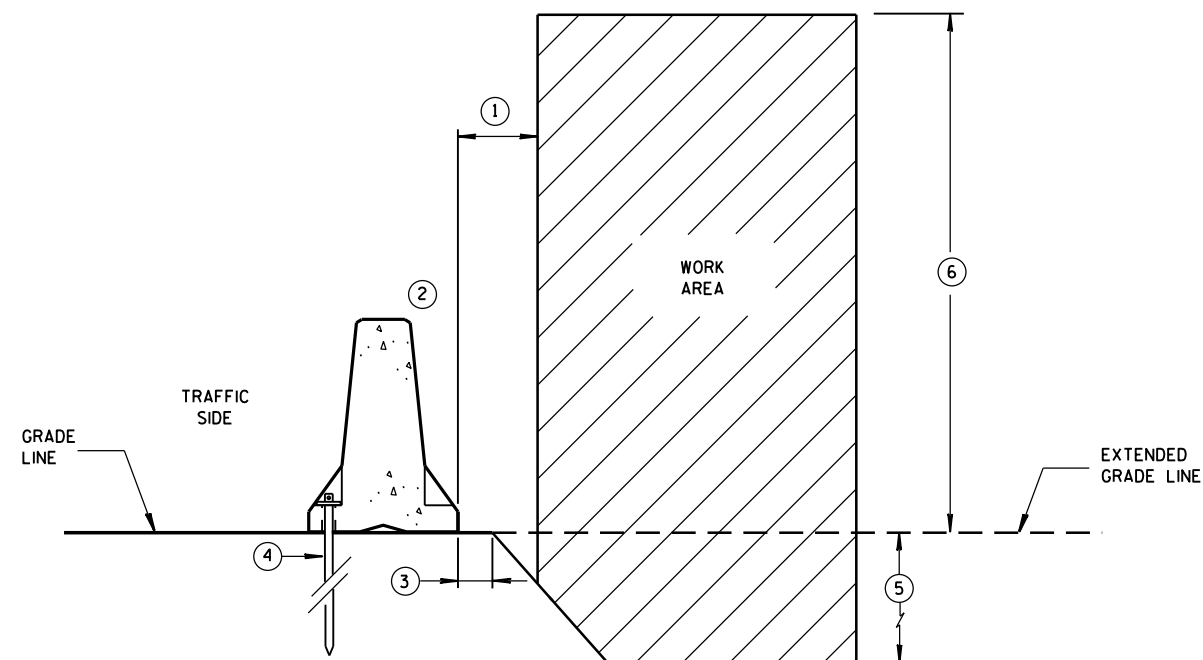
GENERAL NOTES

- ① WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
- ② OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
- ③ SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
- ④ SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
- ⑤ DEPTH OF 3 FEET OR MORE.
- ⑥ Y = 6'-6".

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



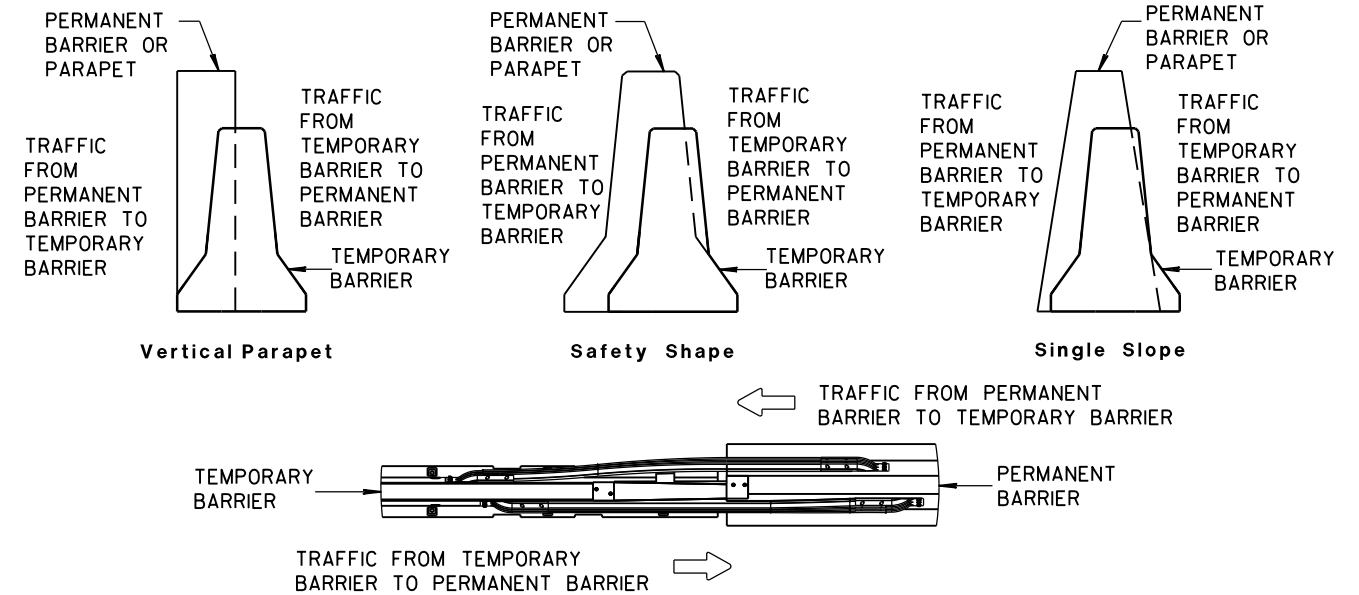
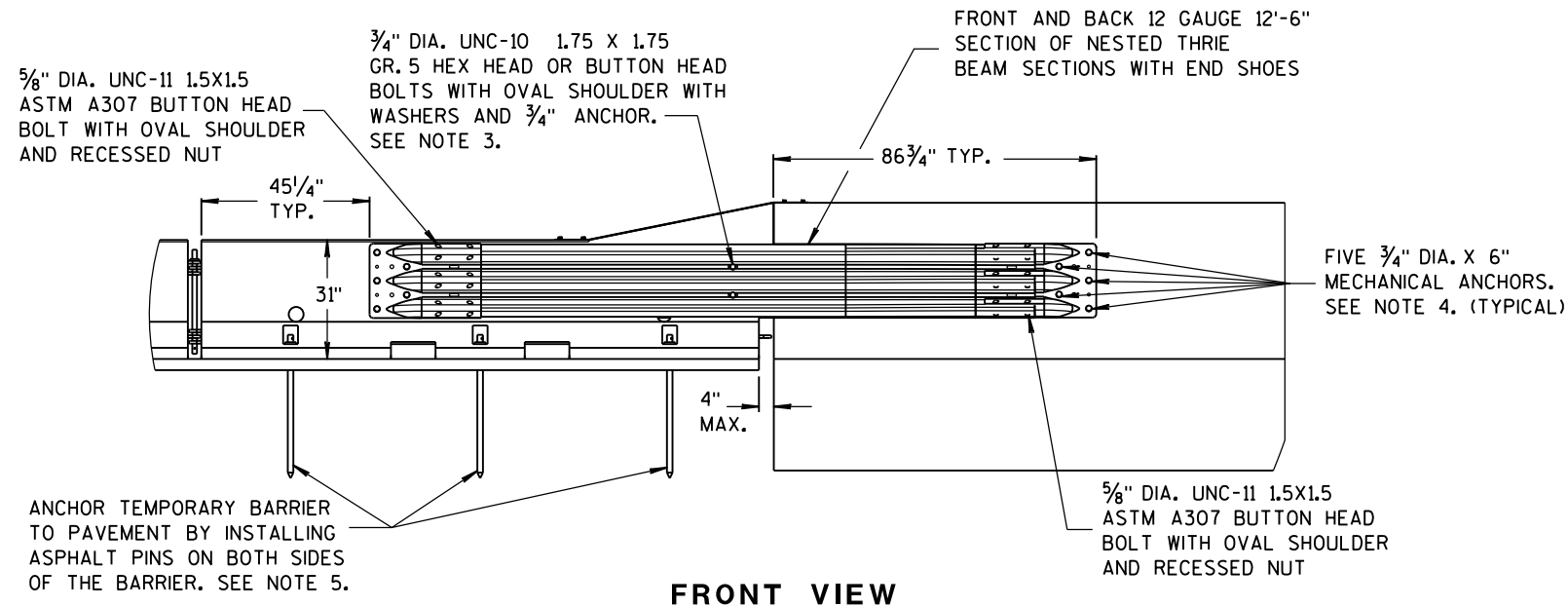
FREE STANDING BARRIER SPACE REQUIREMENTS



**ANCHORED BARRIER SPACE REQUIREMENTS
ON SLOPES**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



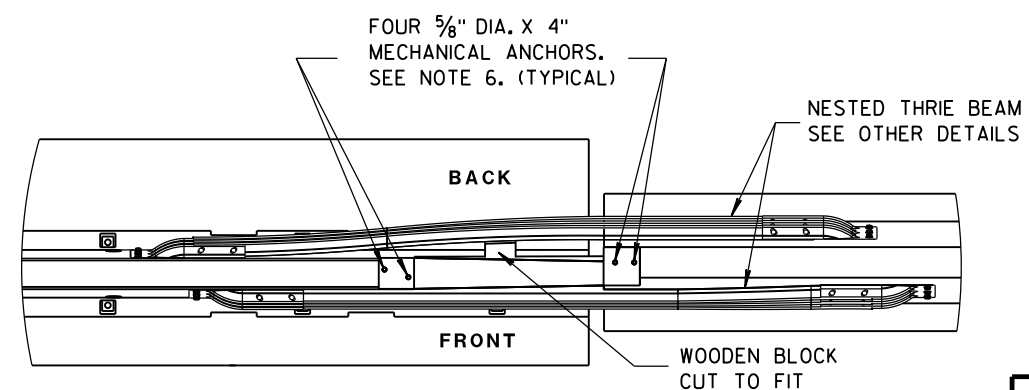
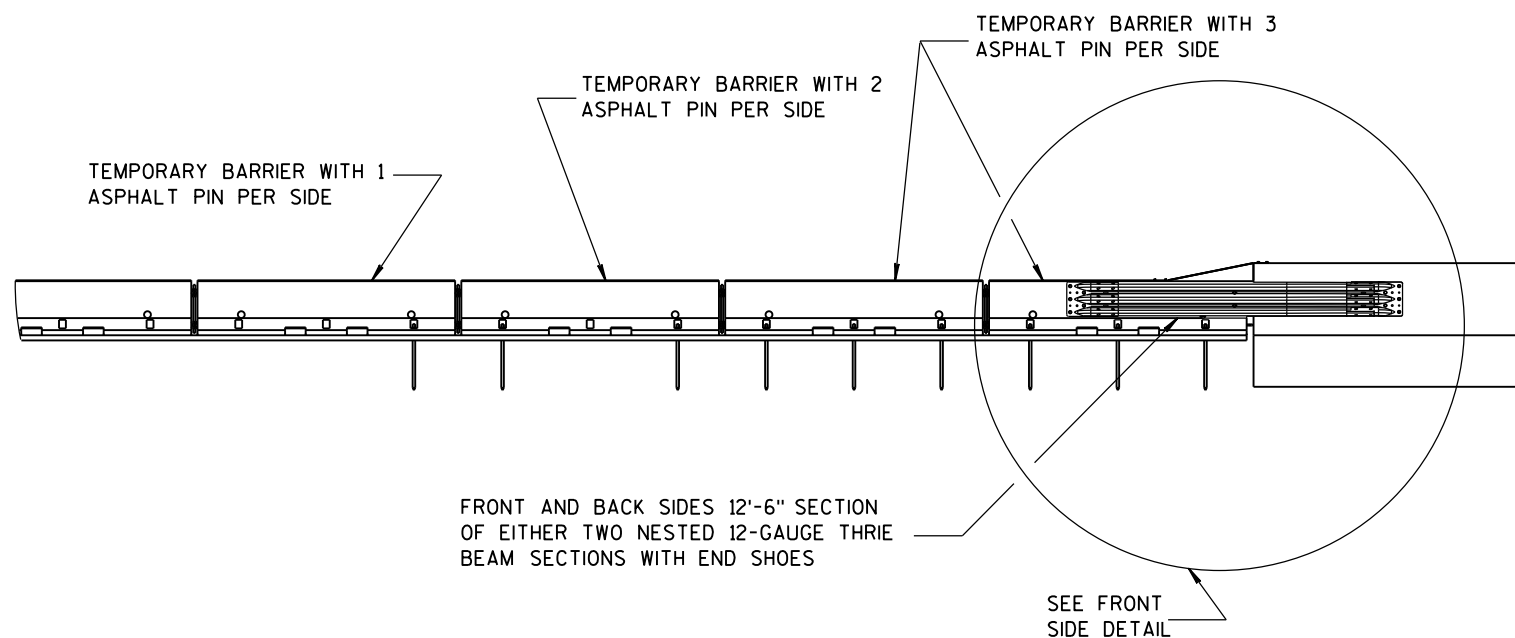
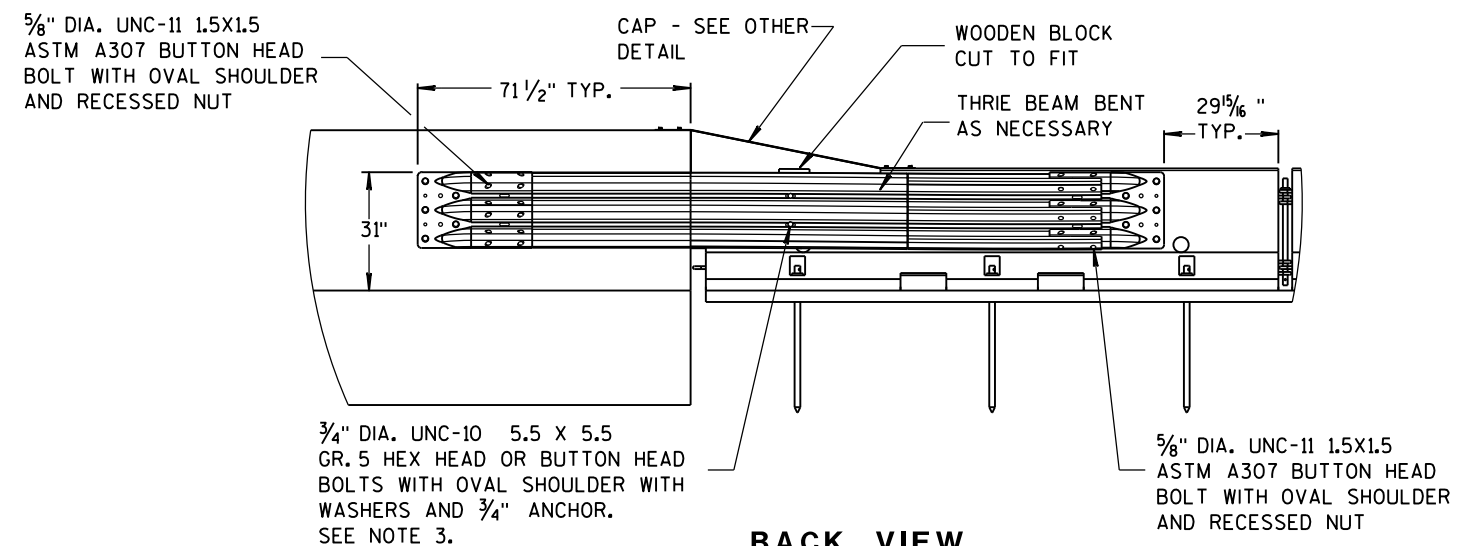
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

NOTES

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

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.

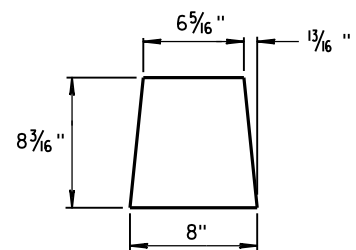
4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



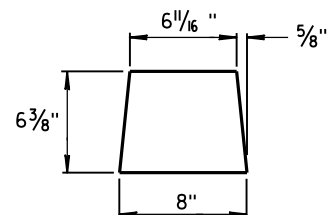
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

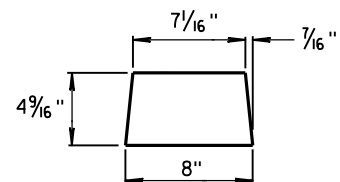
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



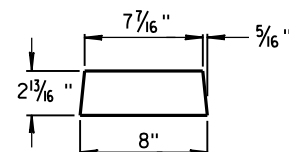
GUSSET 1



GUSSET 2

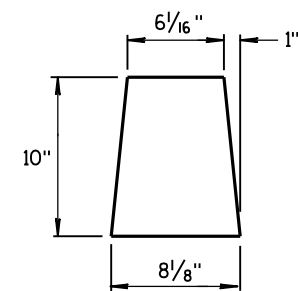


GUSSET 3

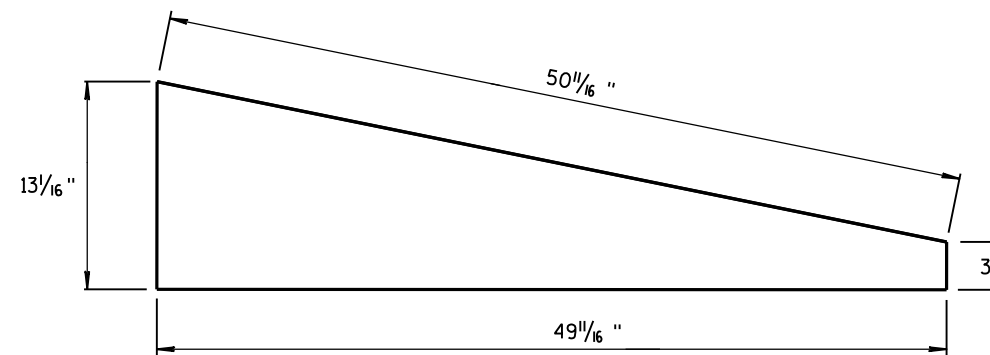


GUSSET 4

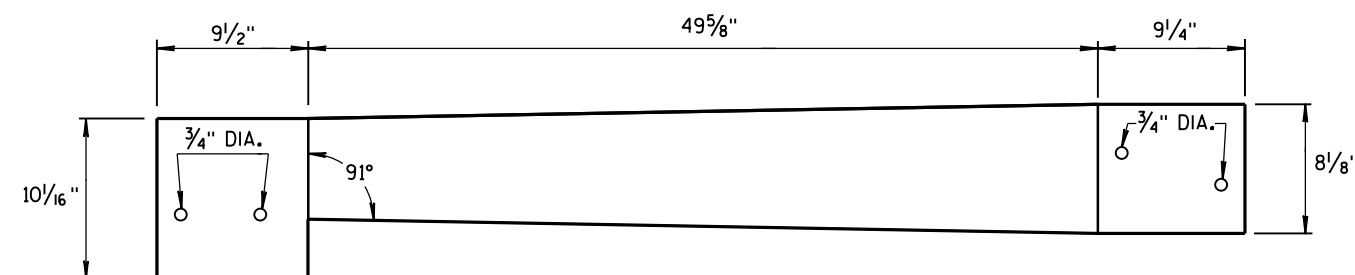
GUSSETS



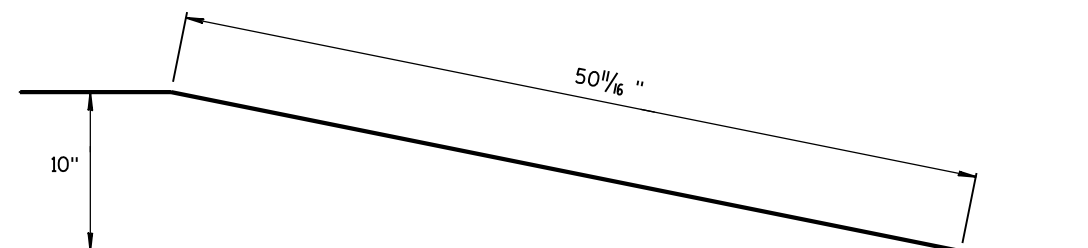
END PLATE



SIDE PLATE

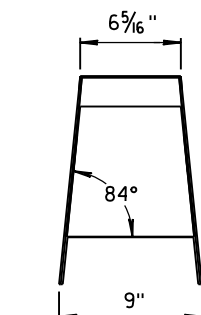
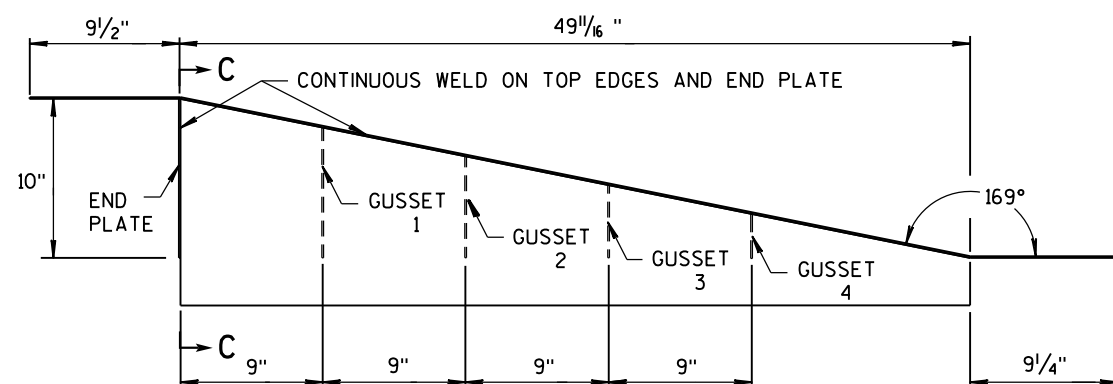
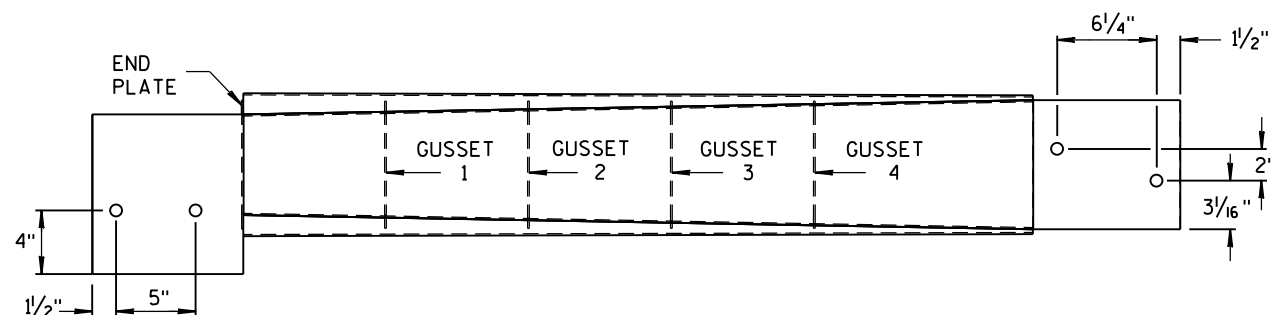


TOP PLATE



**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

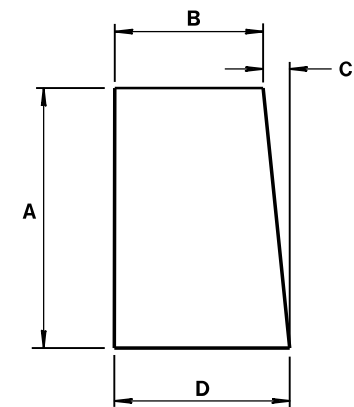
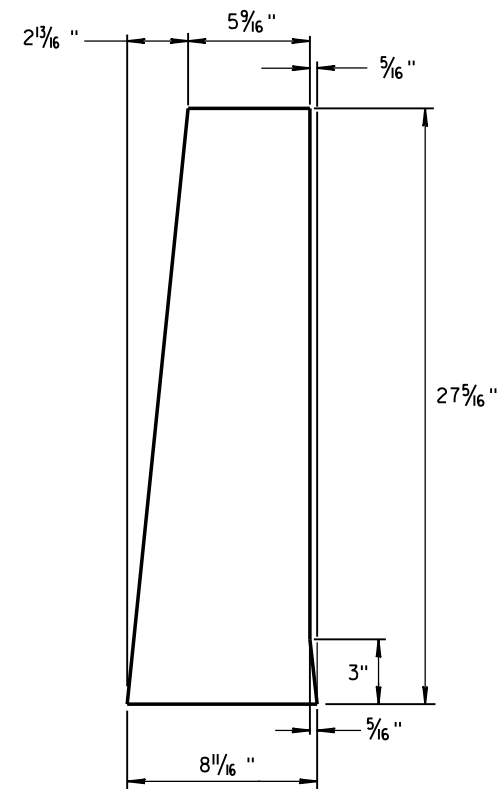
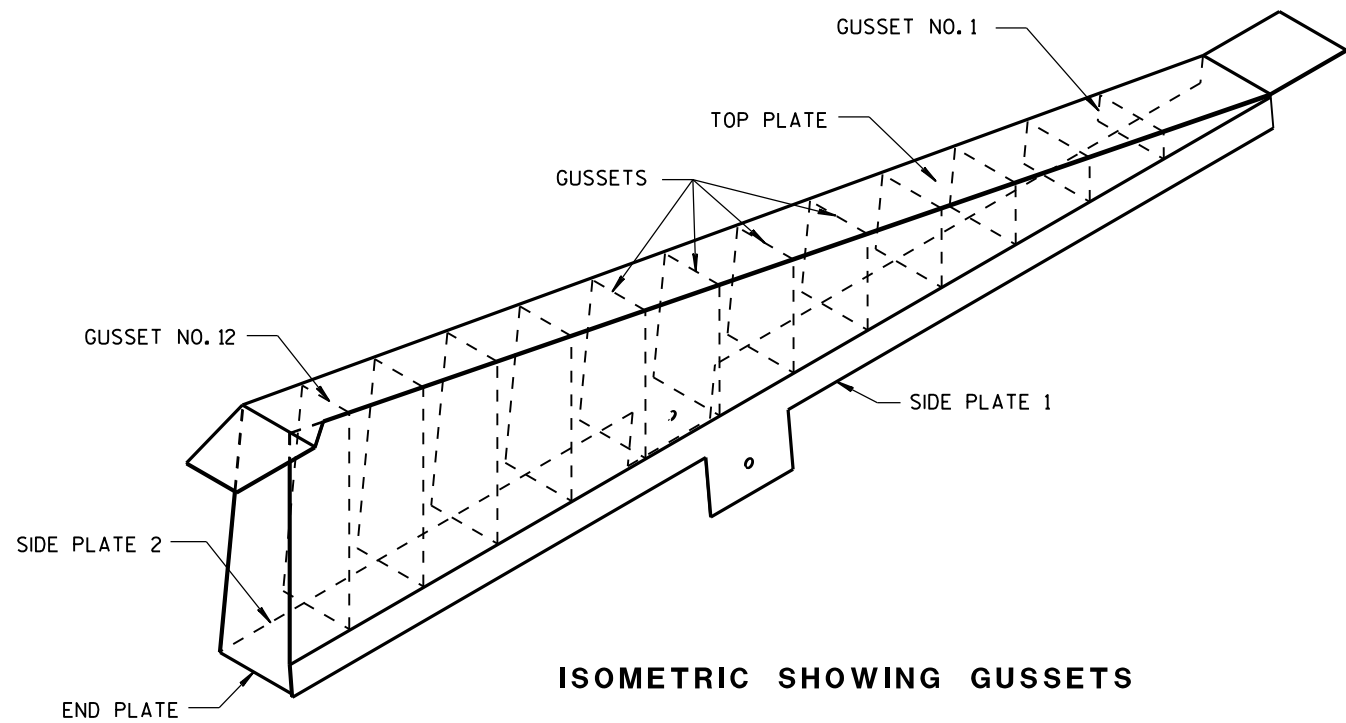
NOTES

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 TRANSPORTATION

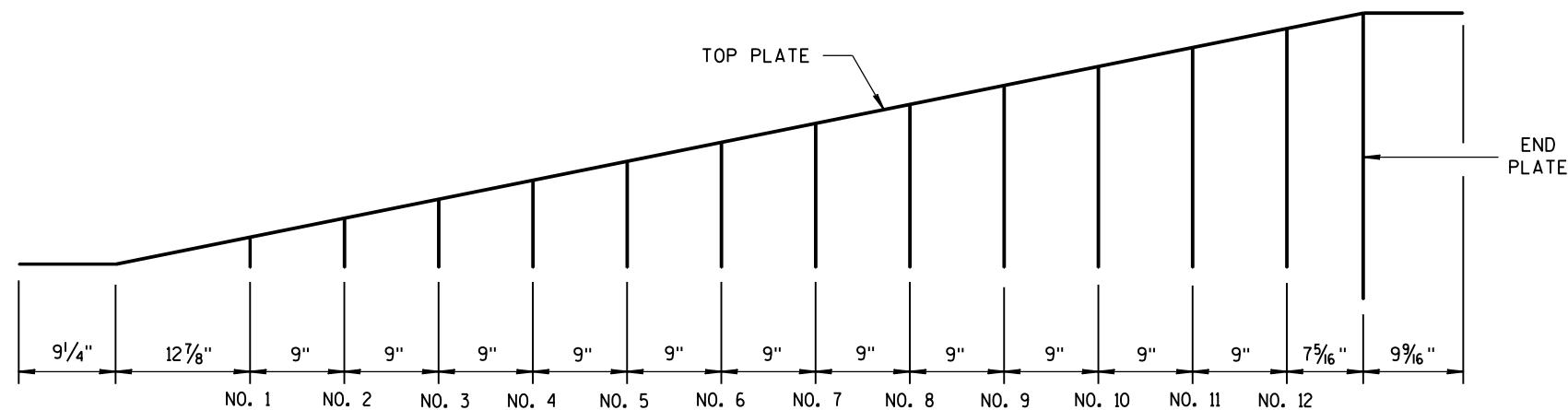


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

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

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

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

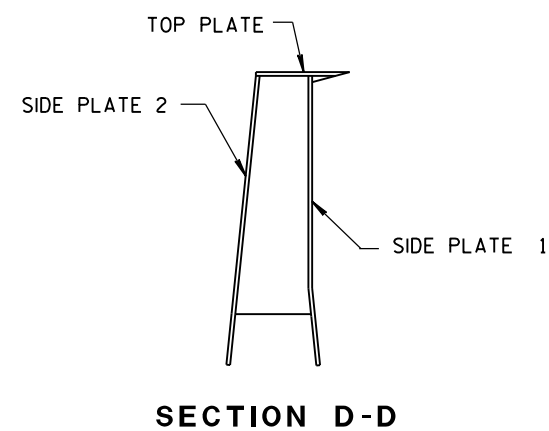
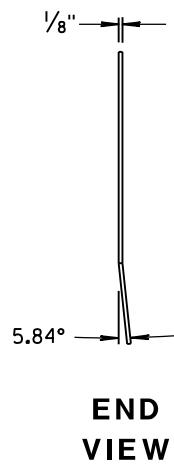
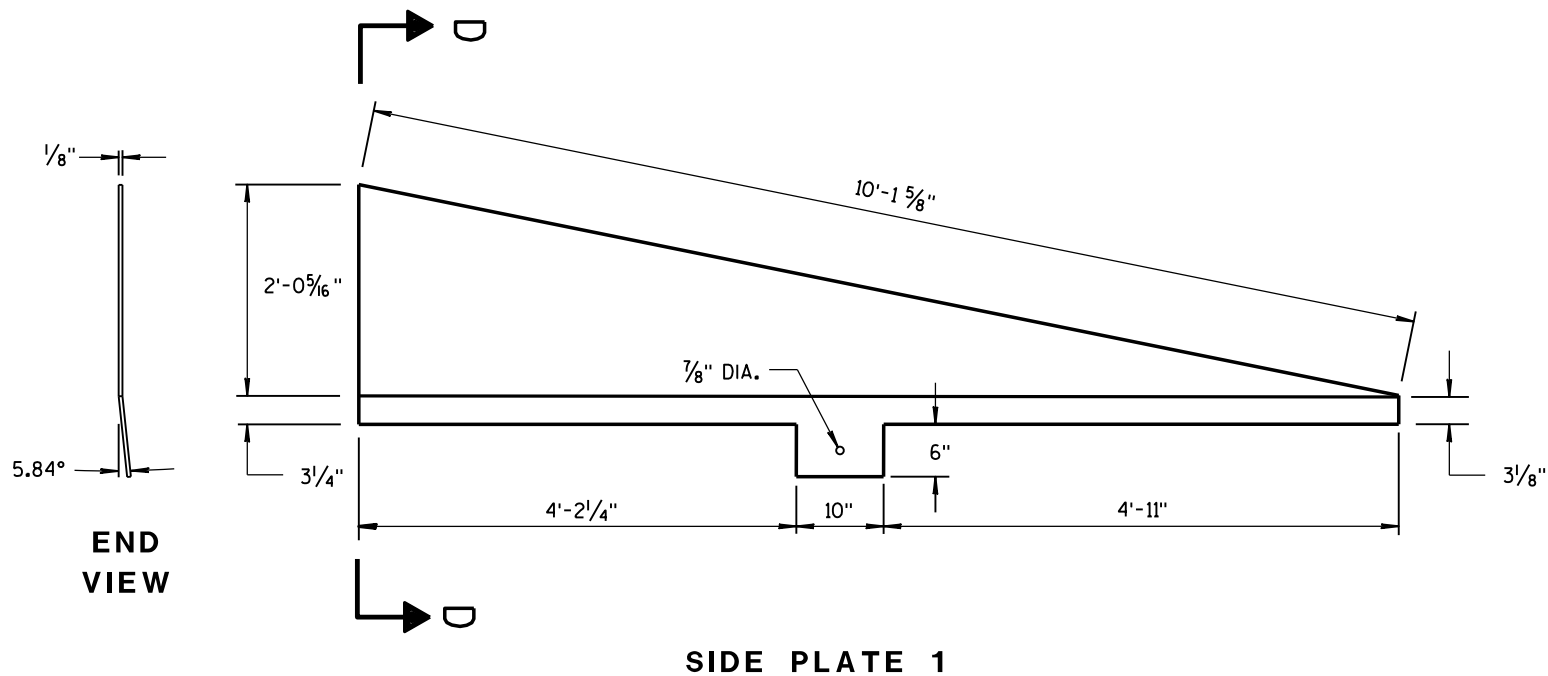
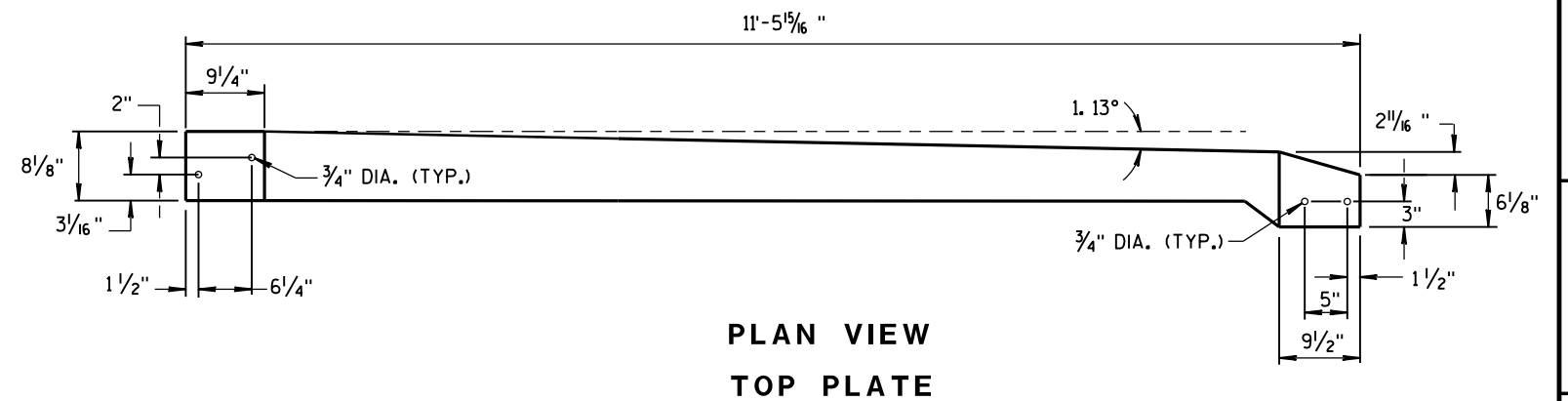
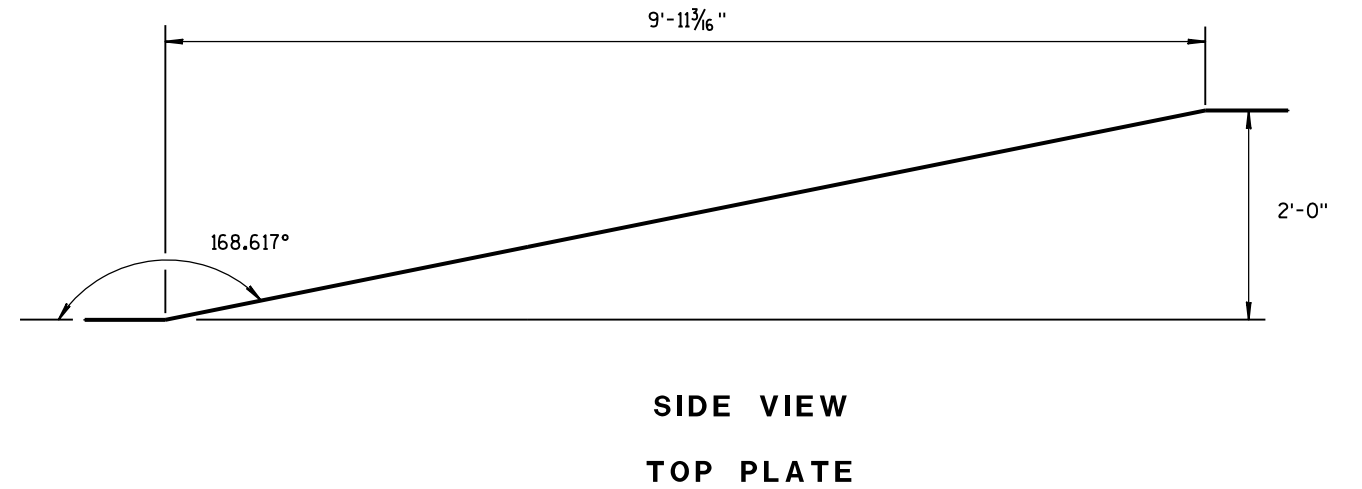
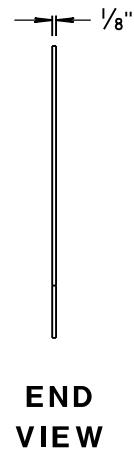
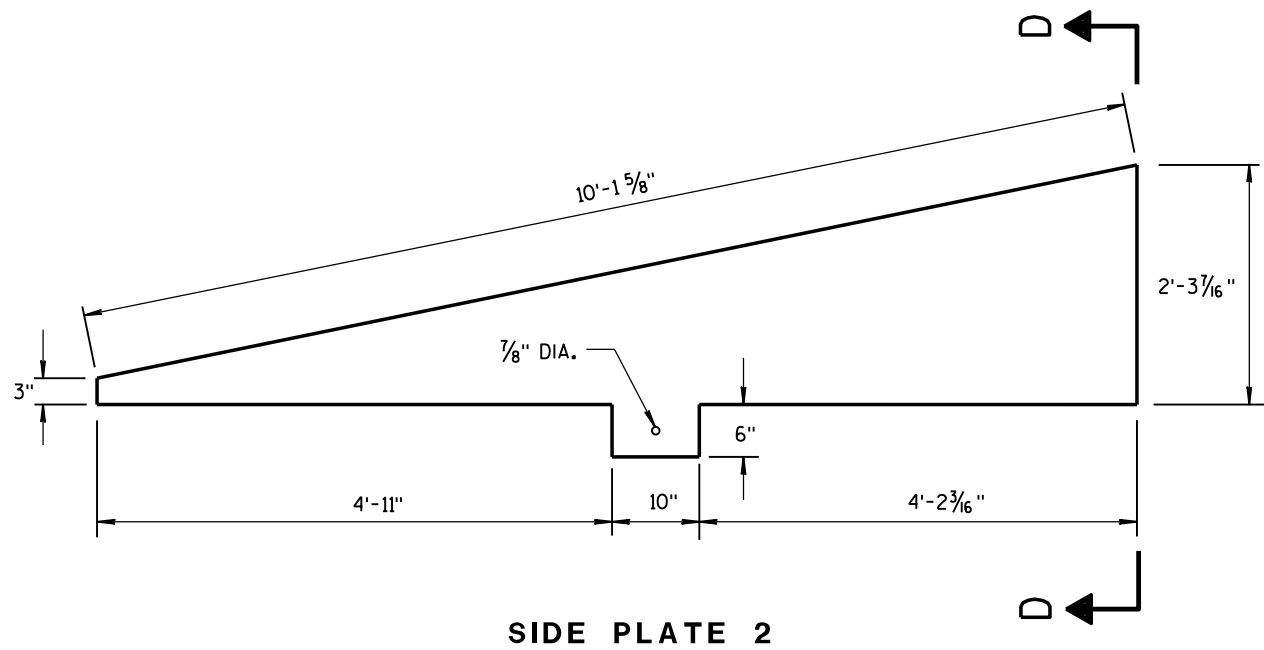


GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

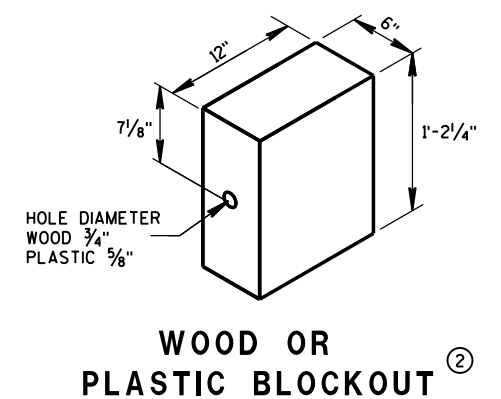
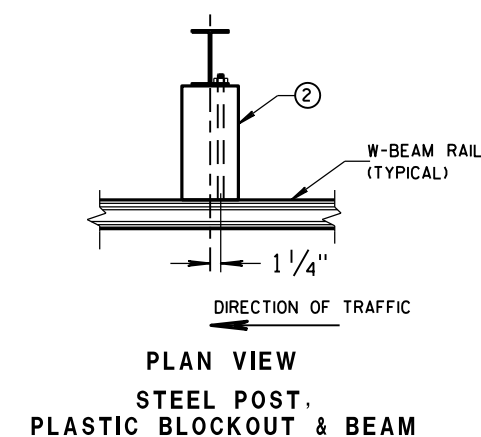
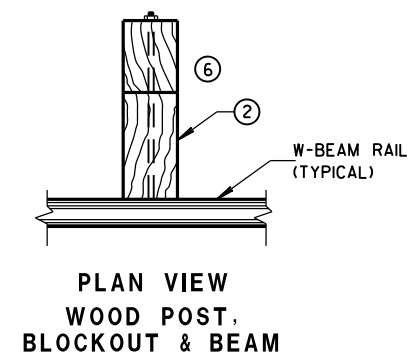
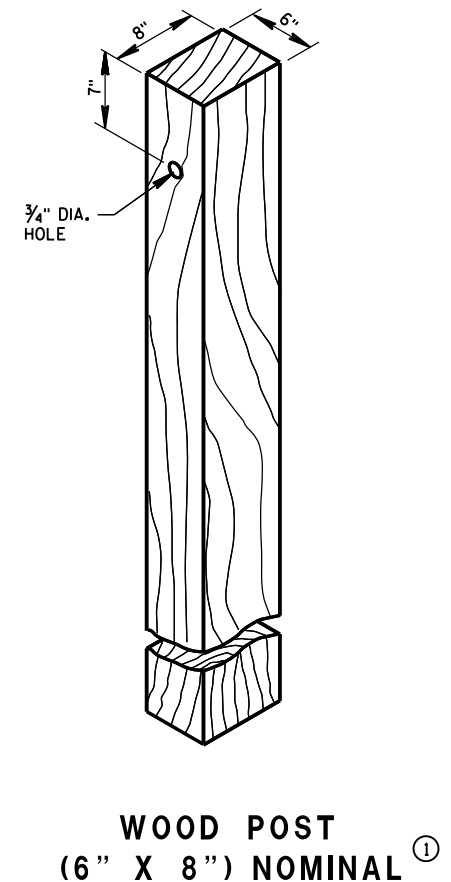
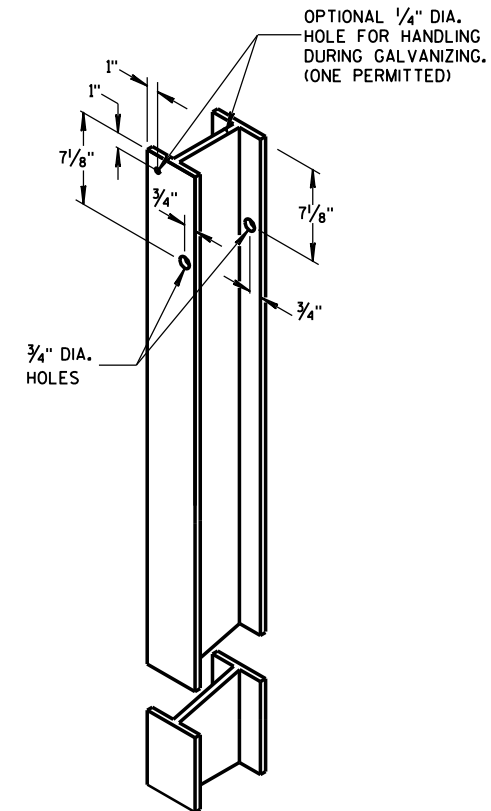
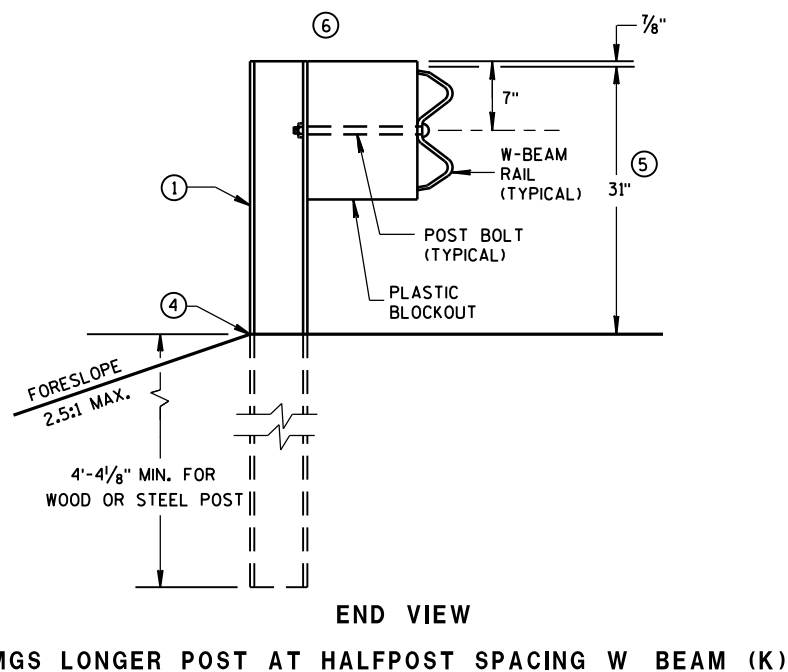
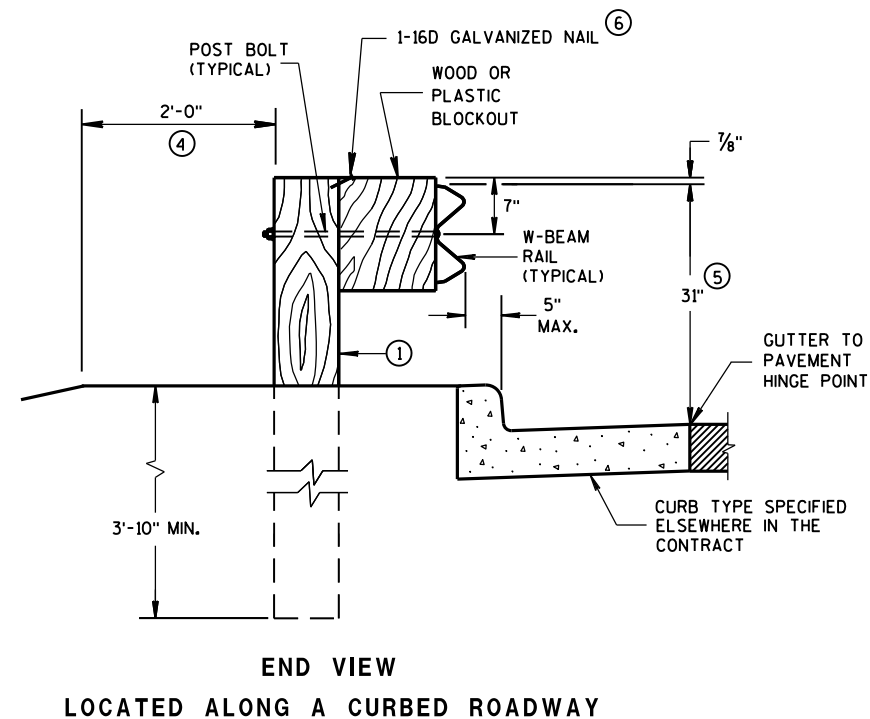
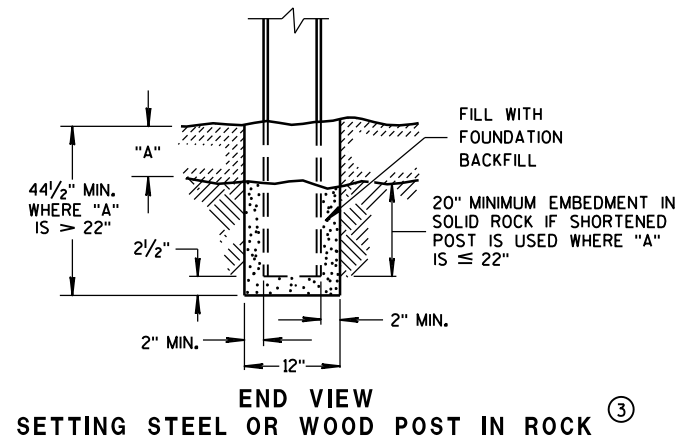
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

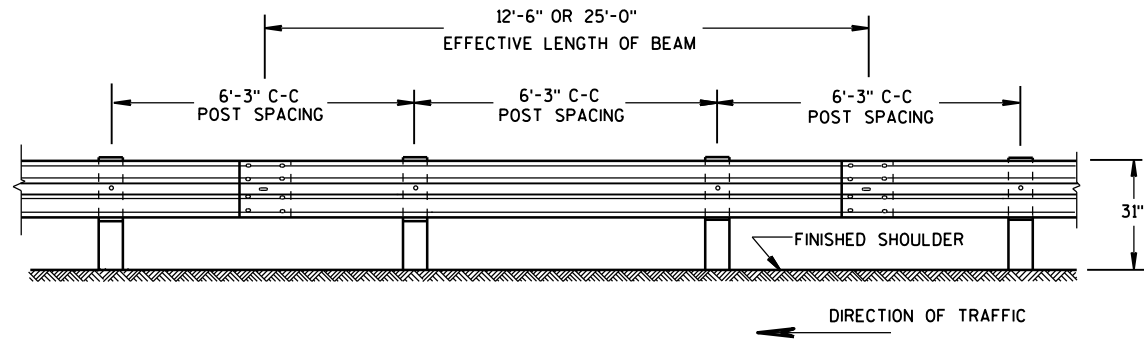


**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER**

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARD	86	ENT
FHWA	UNIT SUPERV		

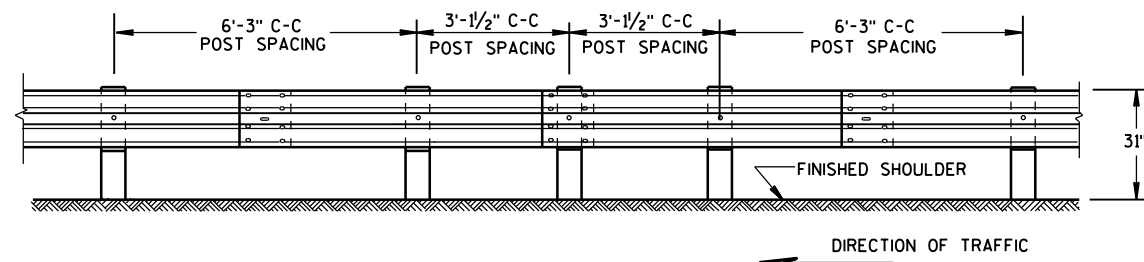
- ① WOOD OR STEEL POSTS (W6X9 OR W6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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 TO LENGTH AND 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.





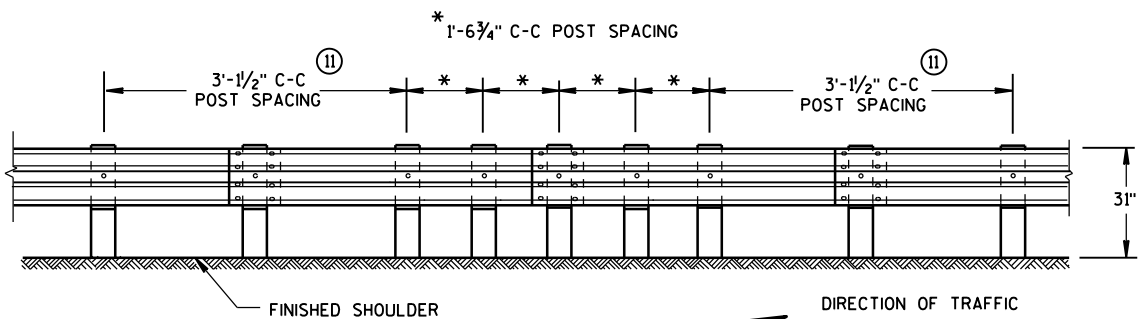
FRONT VIEW

POST SPACING STANDARD INSTALLATION



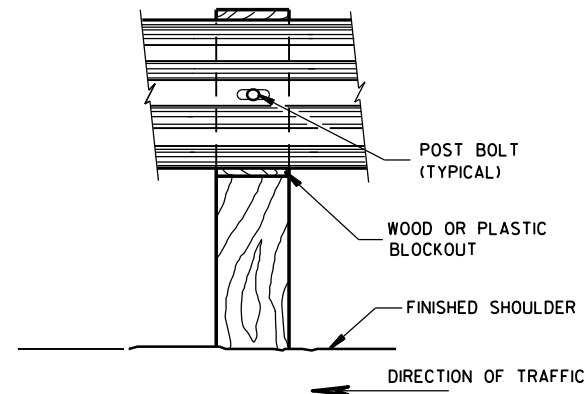
FRONT VIEW

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

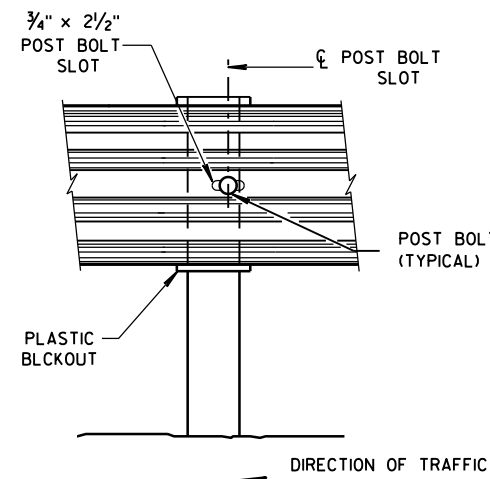


FRONT VIEW

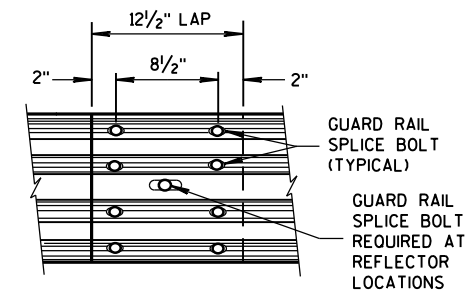
QUARTER POST SPACING (QS)



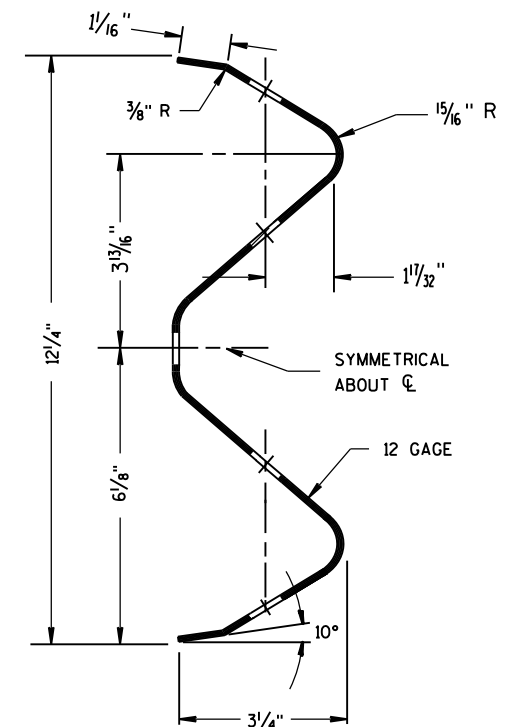
FRONT VIEW AT WOOD POST



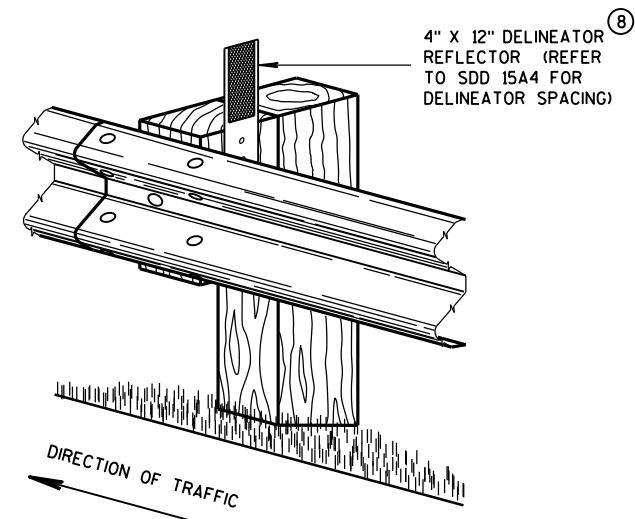
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



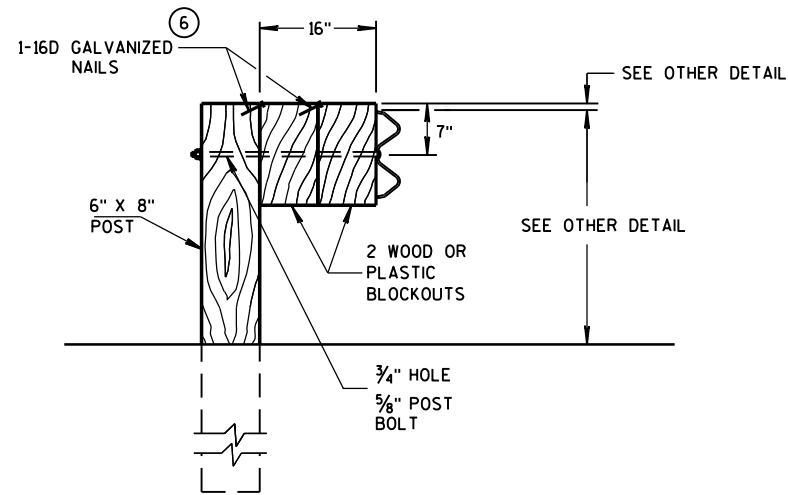
SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

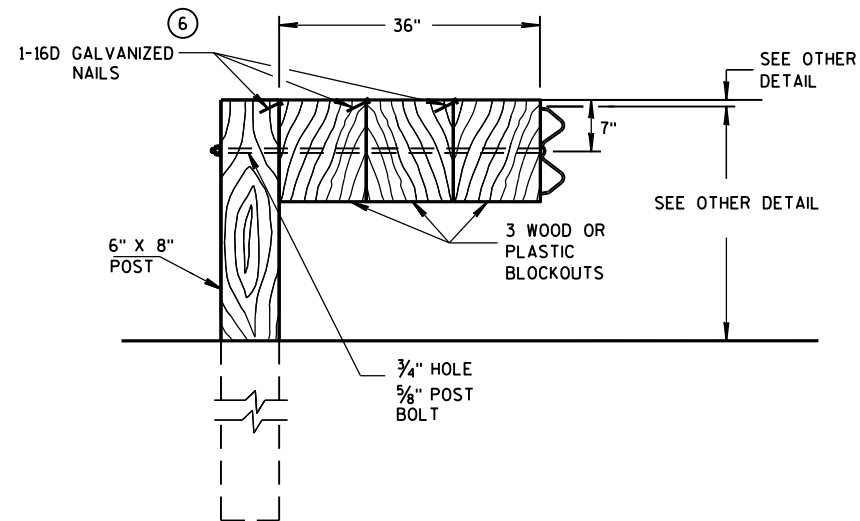
GENERAL NOTES

- 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.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



DETAIL FOR 16" BLOCKOUT DEPTH

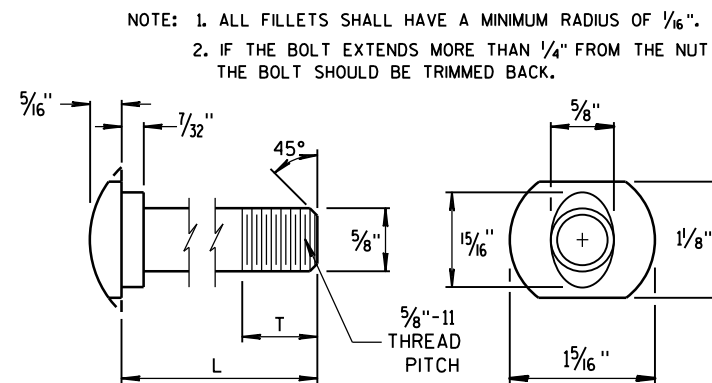
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



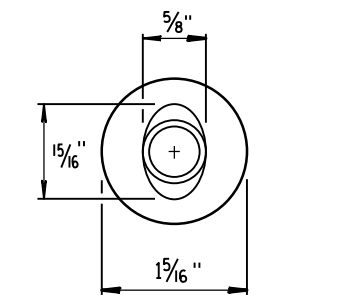
DETAIL FOR 36" BLOCKOUT DEPTH

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.

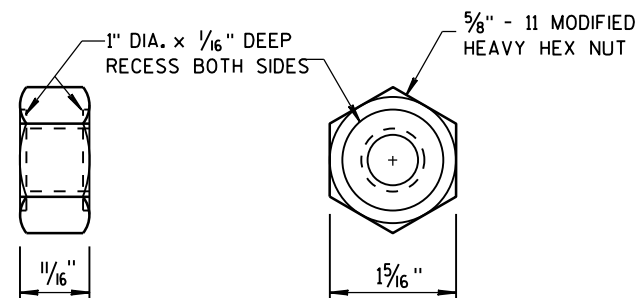
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



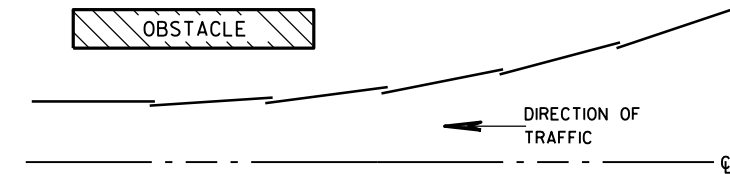
POST BOLT TABLE



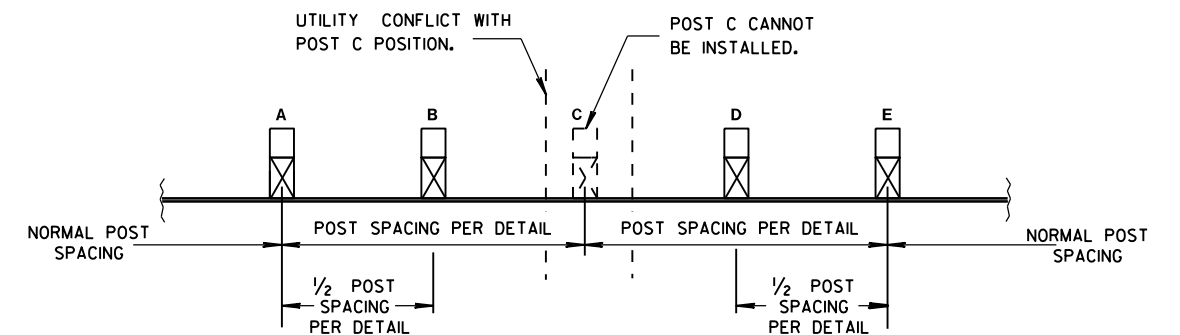
ALTERNATE BOLT HEAD



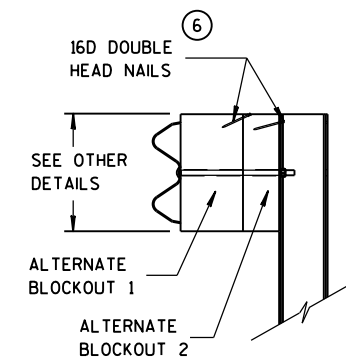
POST BOLT, SPLICE BOLT AND RECESS NUT



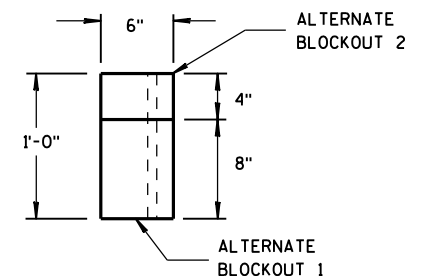
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

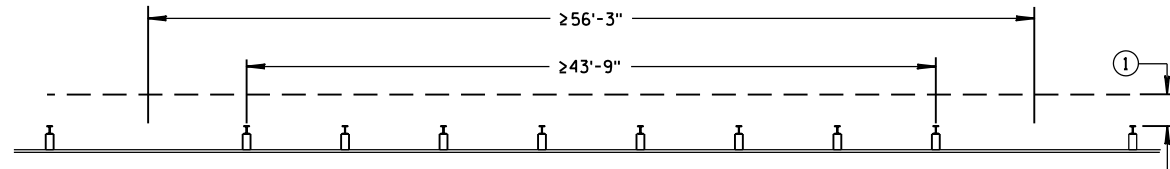


TOP VIEW

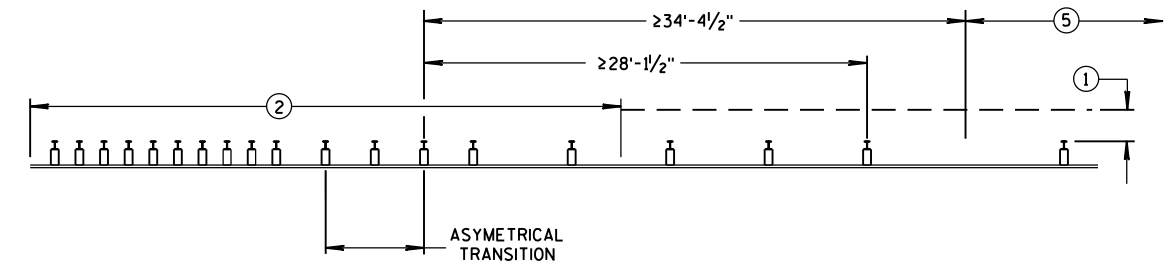
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

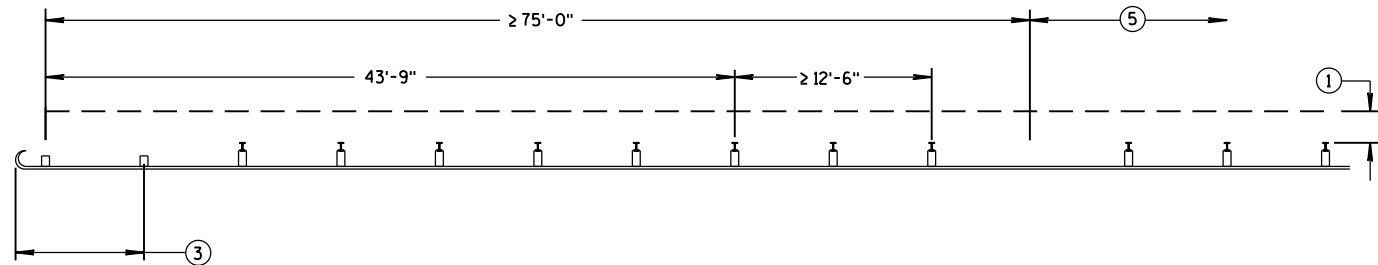
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MISSING POST IN NORMAL BEAM GUARD RUN

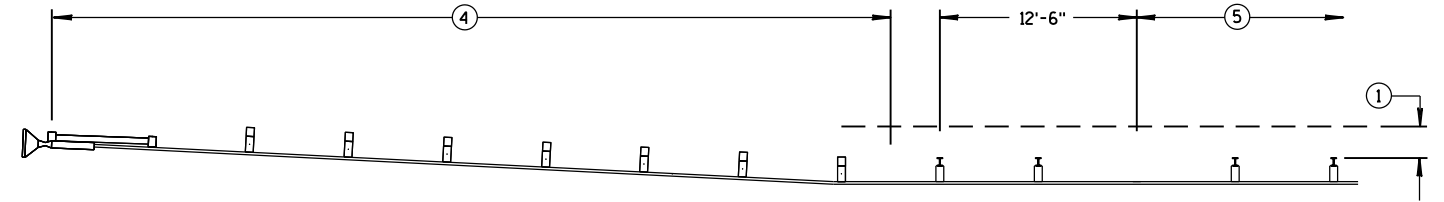


MISSING POST NEAR APPROACH THRIE BEAM TRANSITION

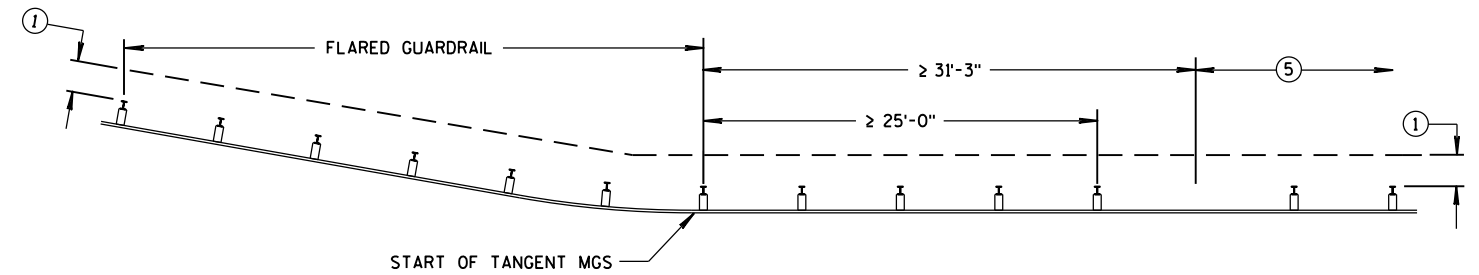


MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL

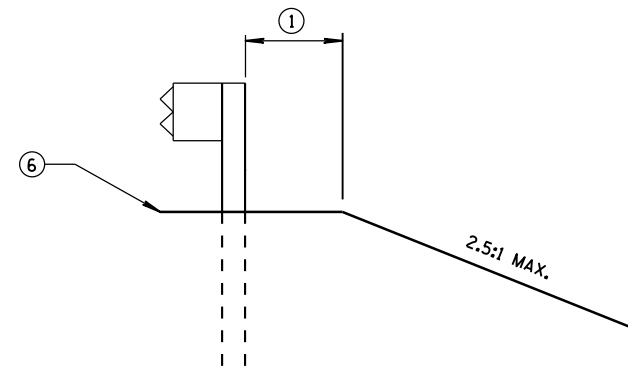
- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD

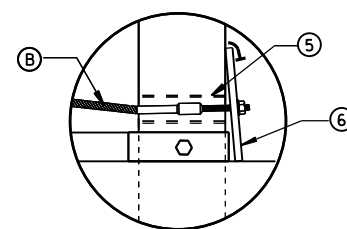


CROSS SECTION VIEW

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS	90	ENT
FHWA	UNIT SUPERVISOR		

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



Technical drawing of a bridge pier cross-section. The drawing shows a rectangular pier with a sloped top surface. Key dimensions and components are labeled:

- Top Slope:** SLOPE 10:1 OR FLATTER
- Top Surface:** 31" (width)
- Top Thickness:** 7/8" (top edge), 7" (top flange)
- Post Bolt:** POST BOLT (TYP.)
- Dimensions:** 2'-0" TO 3'-0" VAR. (overall width), 1'-4" (height from base to top flange)
- Base:** 3 1/2" HOLES (at base), HINGE POINT (at base)
- Transition:** TRANSITION TO 4:1 TAPER LINE (at base)
- Labels:** (10) OR (11), (4), (3)

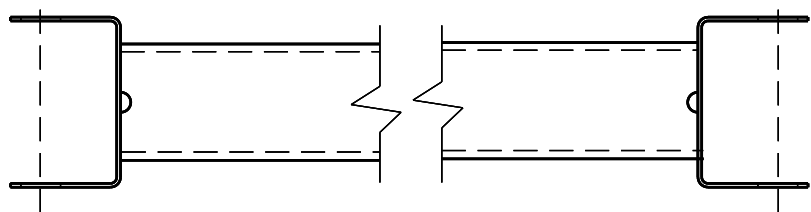
Diagram illustrating a vertical post (10) mounted on a sloped shoulder (16). The post is secured by a POST BOLT (TYP.) (15). The shoulder has a SLOPE 10:1 OR FLATTER. The distance from the top of the post to the shoulder hinge point is 31". The distance from the top of the post to the center of the post bolt is 4".

Diagram illustrating the assembly of a W5-59 EAT marker post and soil plate:

- W5-59 EAT MARKER POST:** The main vertical post, labeled (13).
- POST NO. 1:** The post is labeled as POST NO. 1.
- EDGE OF SHOULDER:** The horizontal distance from the edge of the shoulder to the post is 2'-0" OFFSET TO FACE OF RAIL.
- TO HINGE POINT:** The horizontal distance from the post to the hinge point is 5'-0" MIN.
- SHOULDER HINGE POINT:** The vertical distance from the top of the post to the hinge point is 4'-0".
- SLOPE 10:1 OR FLATTER:** The slope of the shoulder is indicated as 10:1 or flatter.
- SLOPE 4:1 OR FLATTER:** The slope of the embankment is indicated as 4:1 or flatter.
- NORMAL SLOPE:** The slope of the embankment is indicated as NORMAL SLOPE.
- SOIL PLATE:** The horizontal plate at the base of the post is labeled (14).
- 1'-6" MIN. BELOW GRADE:** The vertical distance from the top of the soil plate to the hinge point is 1'-6" MIN. BELOW GRADE.
- Other labels:** (1), (2), (F), (12), (13), (14).

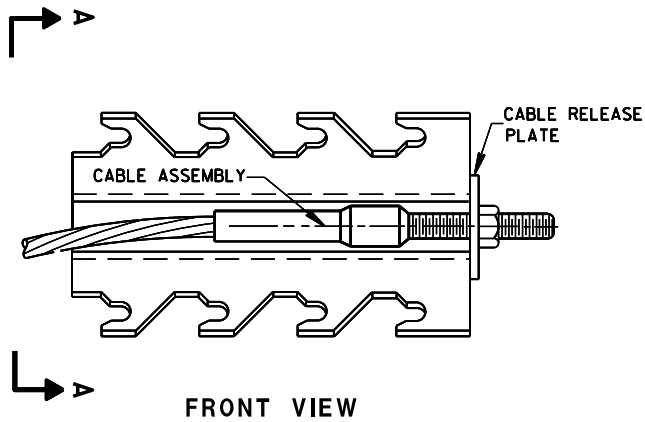
Technical drawing of Detail "B" showing a cross-section of a structure. The drawing includes a horizontal line representing the "FINISHED GROUND ELEVATION". A vertical line represents the "BOTTOM OF STRUT IS PLACED FLUSH WITH AND PARALLEL TO THE FINISHED SURFACE". The structure is supported by two vertical posts, labeled "POST NO. 2*" on the left and "POST NO. 1*" on the right. The drawing is annotated with various numbered callouts (1 through 16) and letters (C) pointing to specific components and features.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁹¹



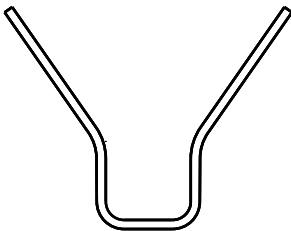
GENERIC GROUND STRUT

9 H

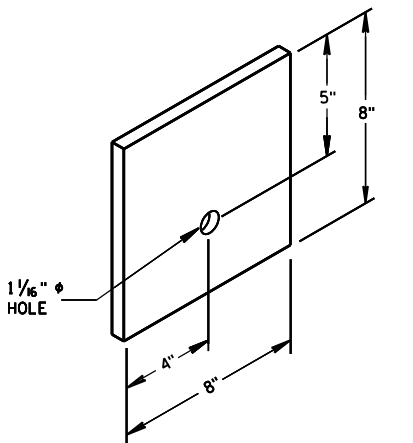


GENERIC ANCHOR CABLE BOX

8 H



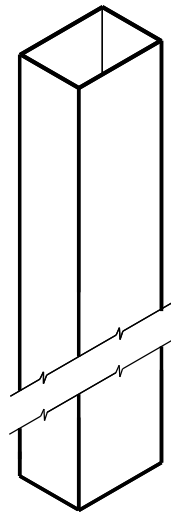
SECTION A-A



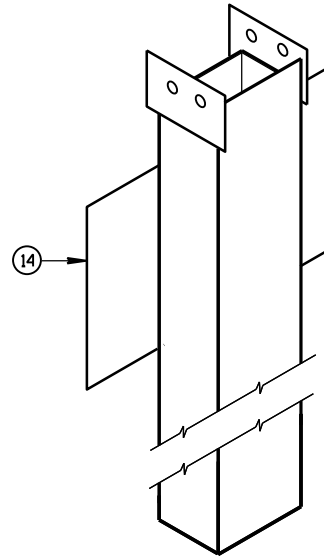
BEARING PLATE

6

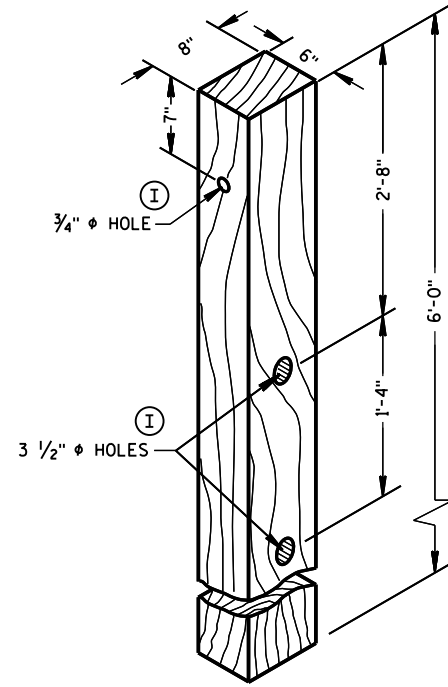
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	UPPER POST NO.1 6" X 6" TUBE
②	LOWER POST NO.1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



UPPER POST NO. 1⁽¹⁾

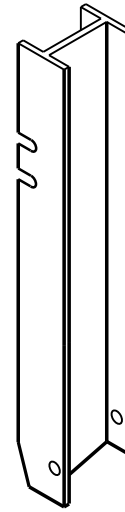


LOWER POST NO. 1⁽²⁾

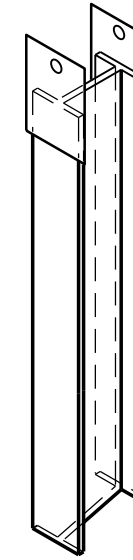


POSTS NUMBER 3-9

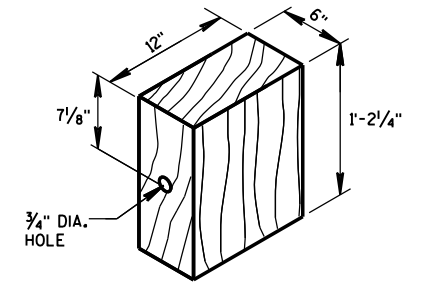
WOOD CRT POST⁽³⁾



UPPER POST NO. 2⁽¹⁵⁾

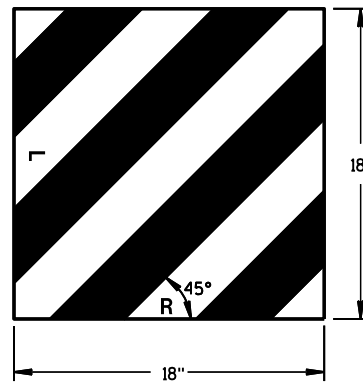


LOWER POST NO. 2⁽¹⁶⁾



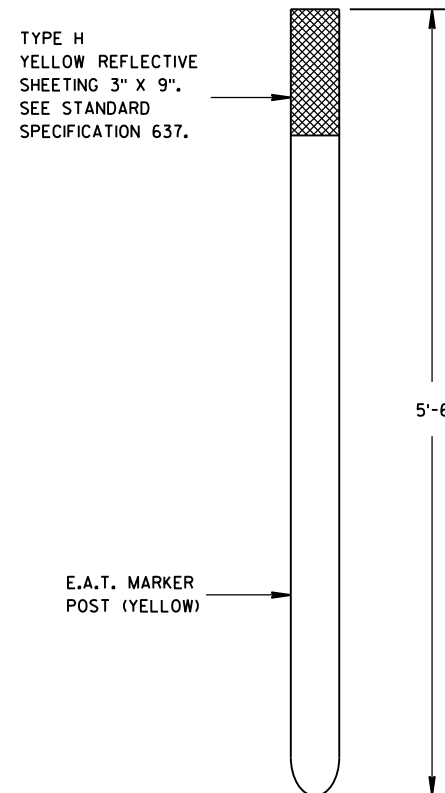
WOOD BLOCKOUT⁽⁴⁾

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



W5-59

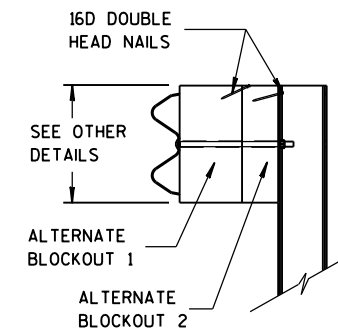
REFLECTIVE SHEETING DETAIL^(H)



FRONT VIEW

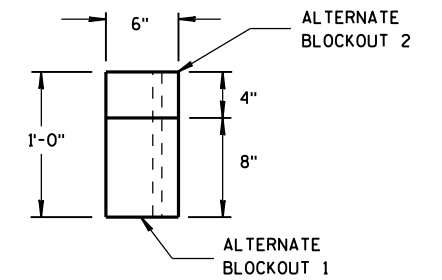
SIDE VIEW

E.A.T. MARKER POST⁽¹³⁾



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



TOP VIEW

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017

DATE

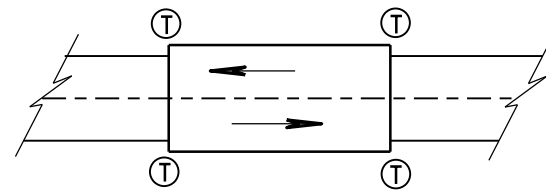
FHWA

/S/ Rodney Taylor

ROADWAY STANDARDS 93

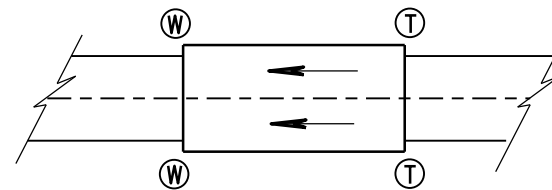
UNIT SUPERVISOR

S.D.D. 14 B 44-3C



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

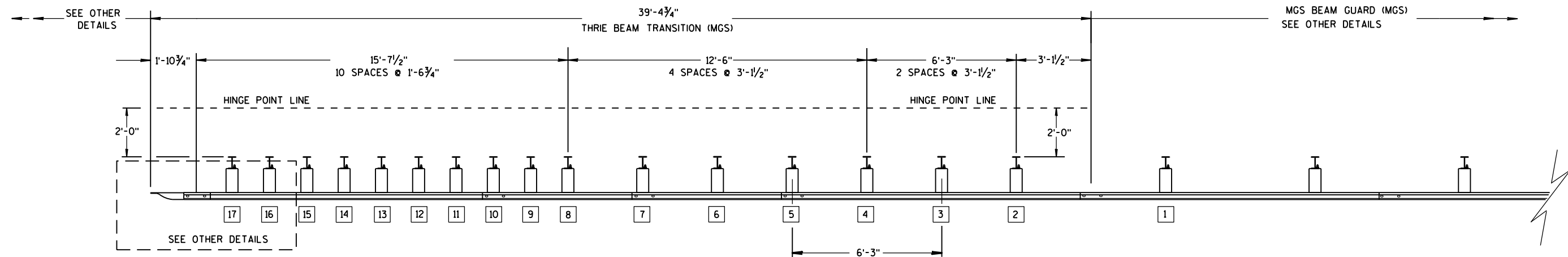
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

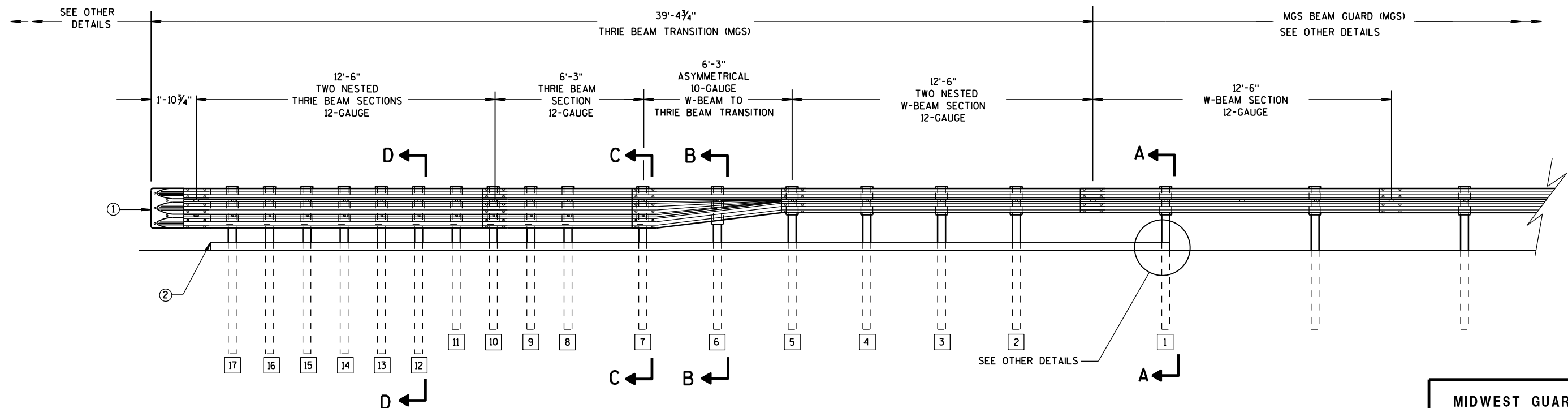
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

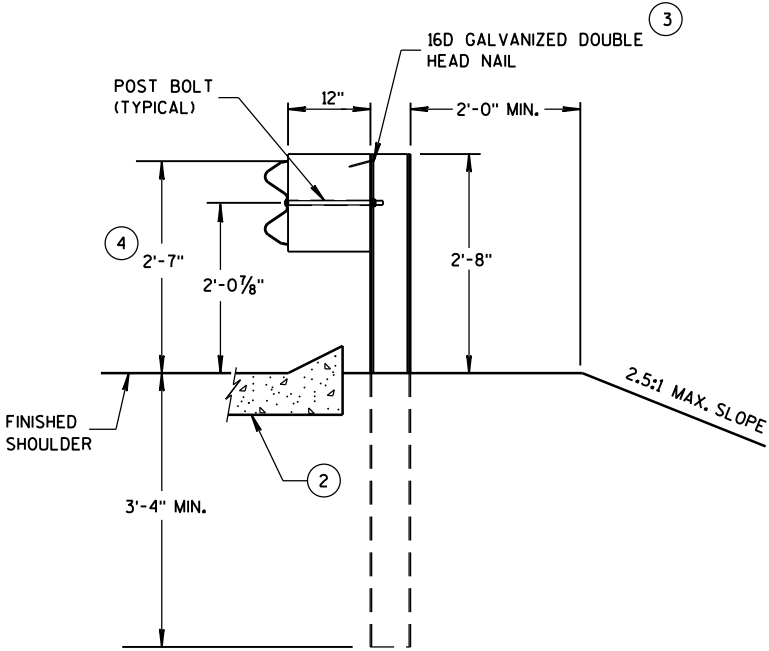
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

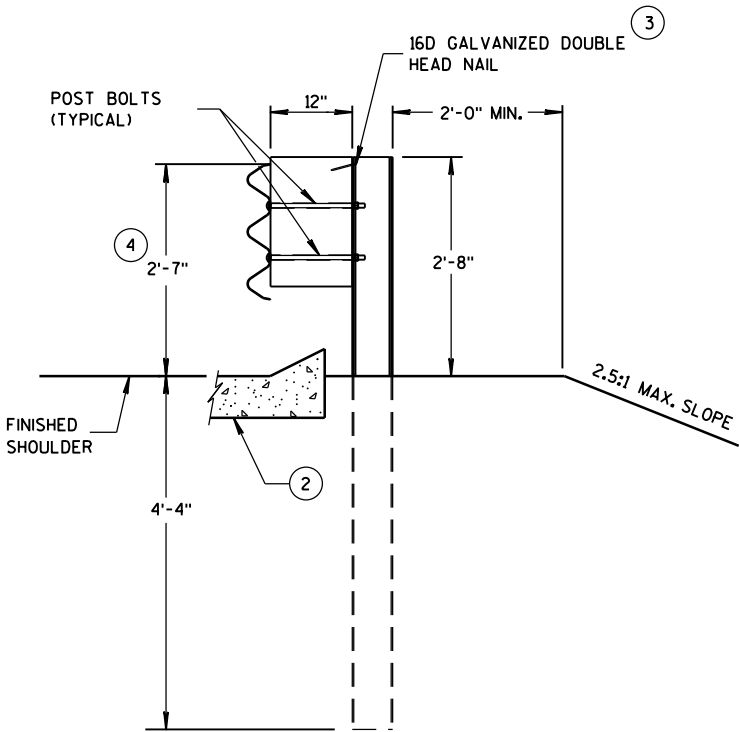
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

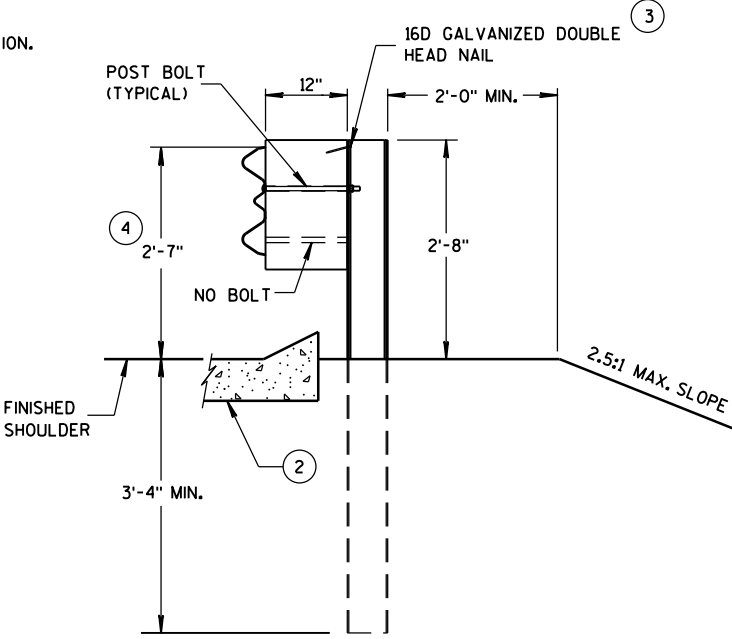
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



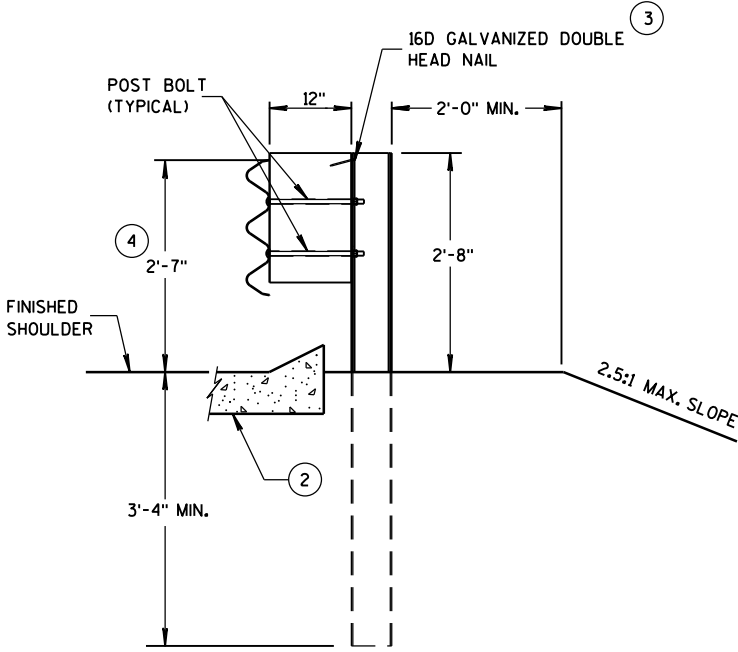
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

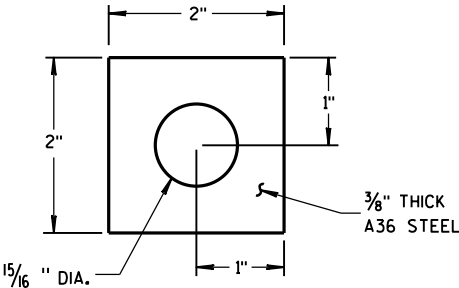
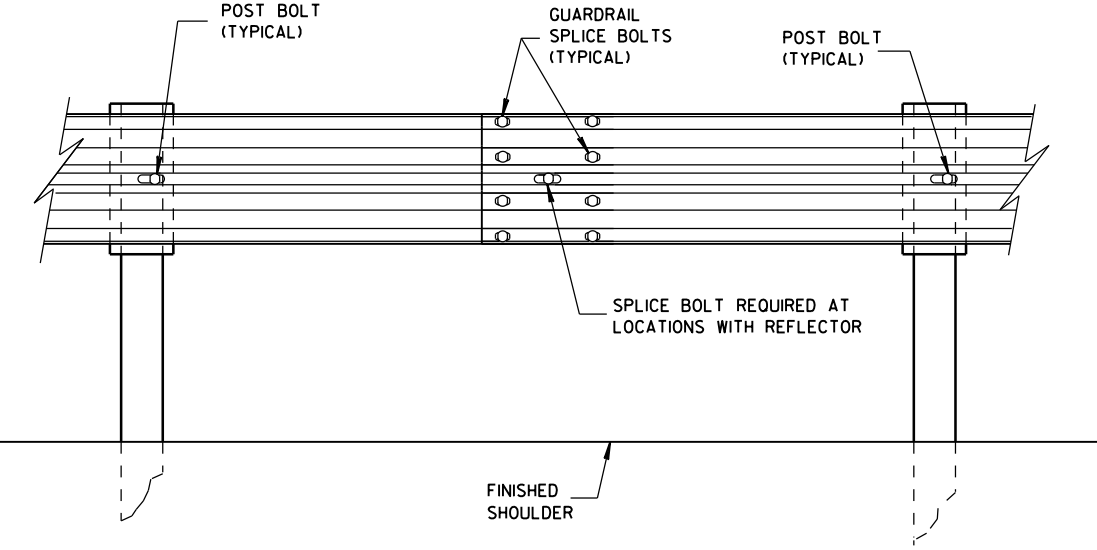
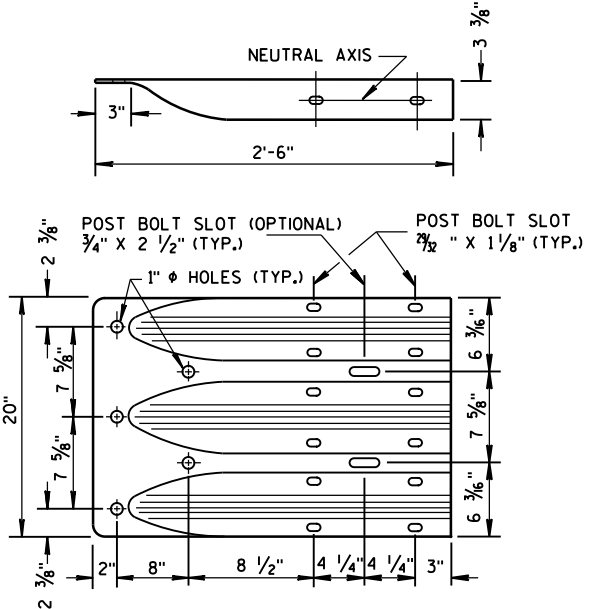


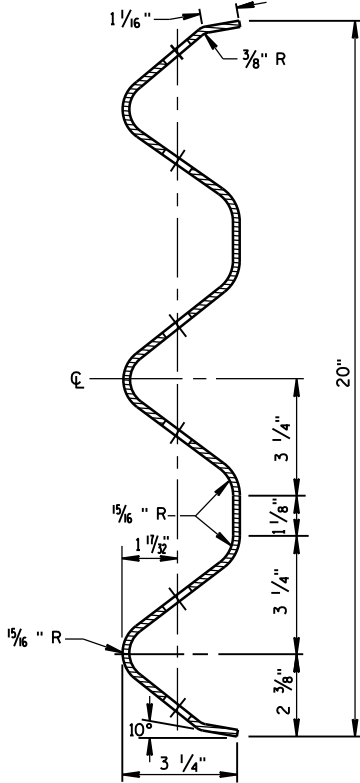
PLATE WASHER DETAIL



SPLICE DETAIL



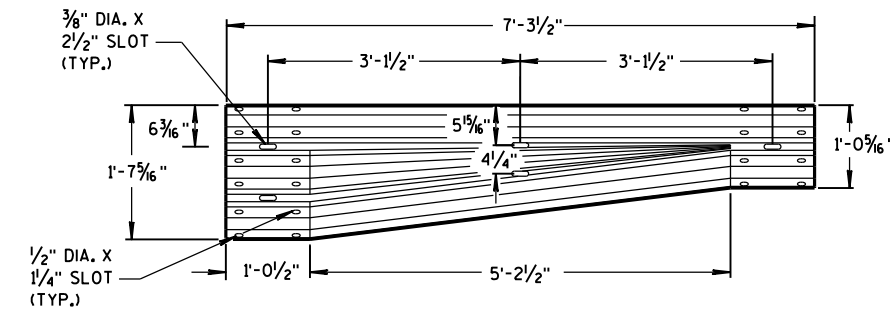
THRIE BEAM
TERMINAL CONNECTOR



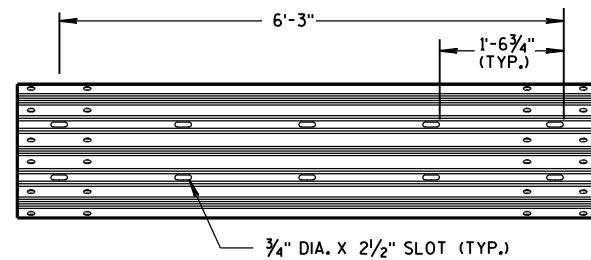
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

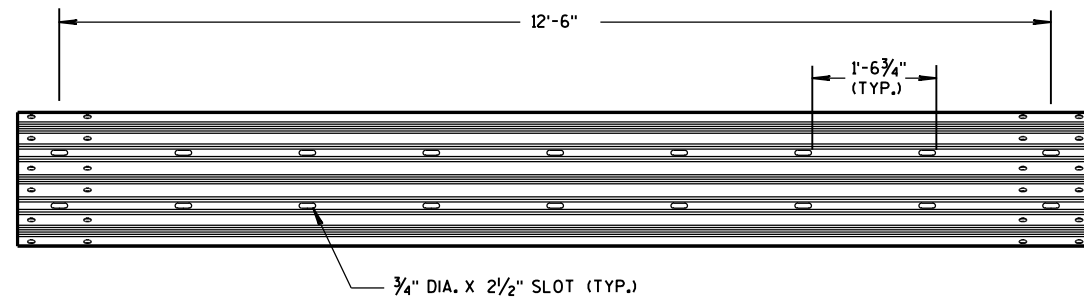
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



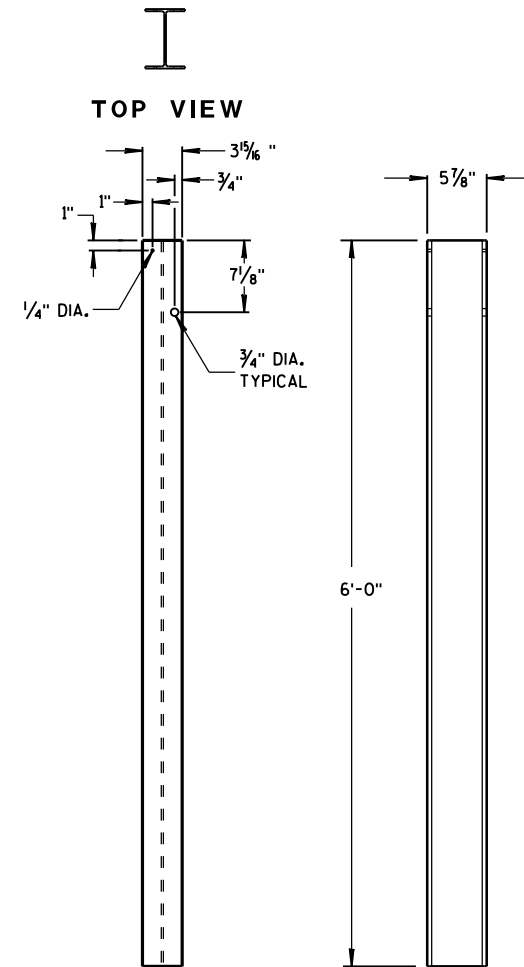
W-BEAM TO THRIE BEAM TRANSITION SECTION



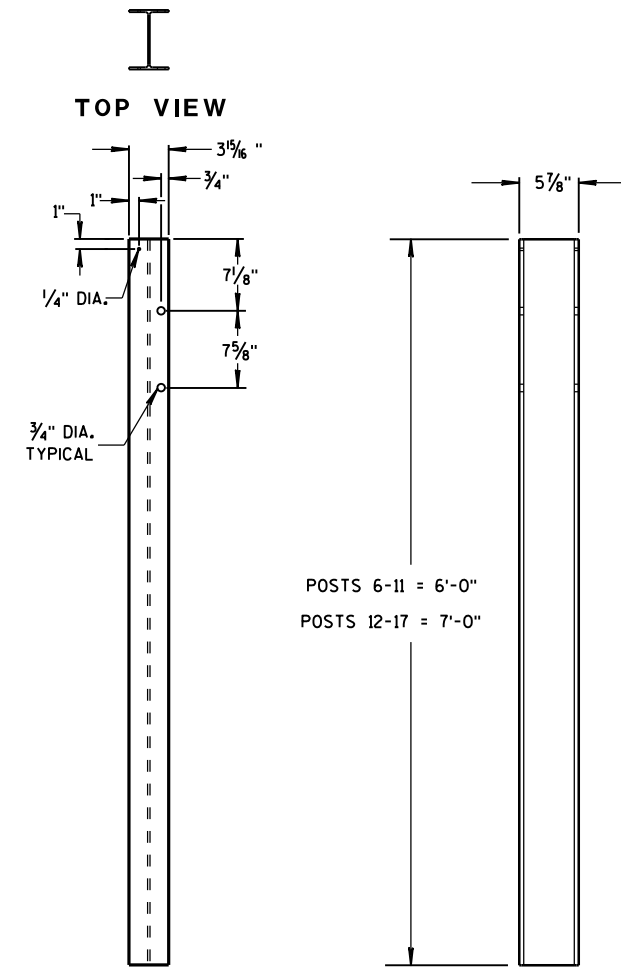
6'-3" THRIE BEAM SECTION



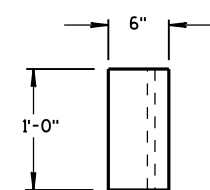
12'-6" THRIE BEAM SECTION



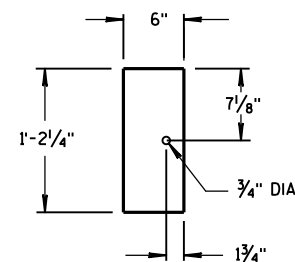
STEEL POSTS 1-5



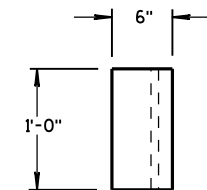
STEEL POSTS 6-17



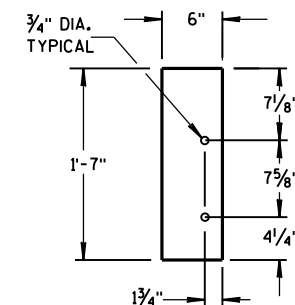
TOP VIEW



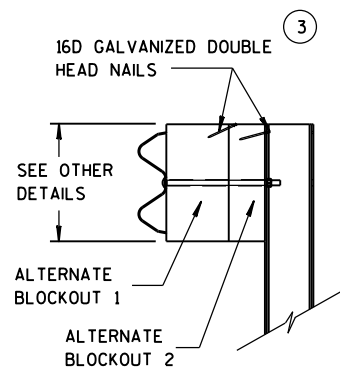
FRONT VIEW
BLOCKOUT
POSTS 1-5



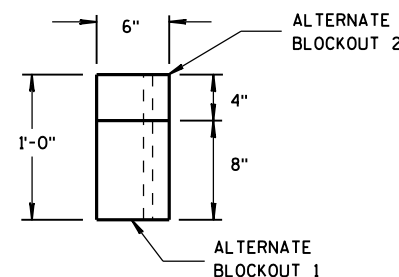
TOP VIEW



FRONT VIEW
BLOCKOUT
POSTS 6-17



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

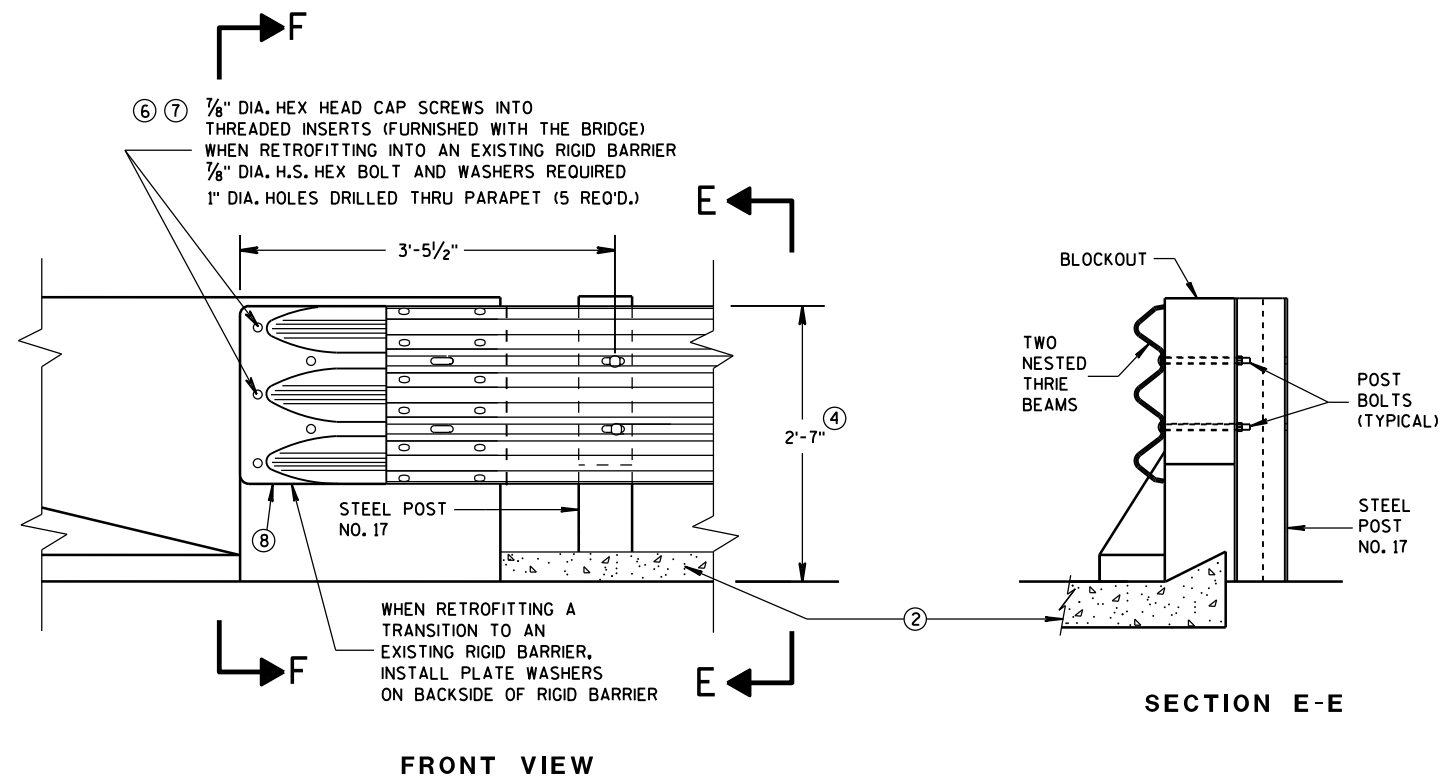
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

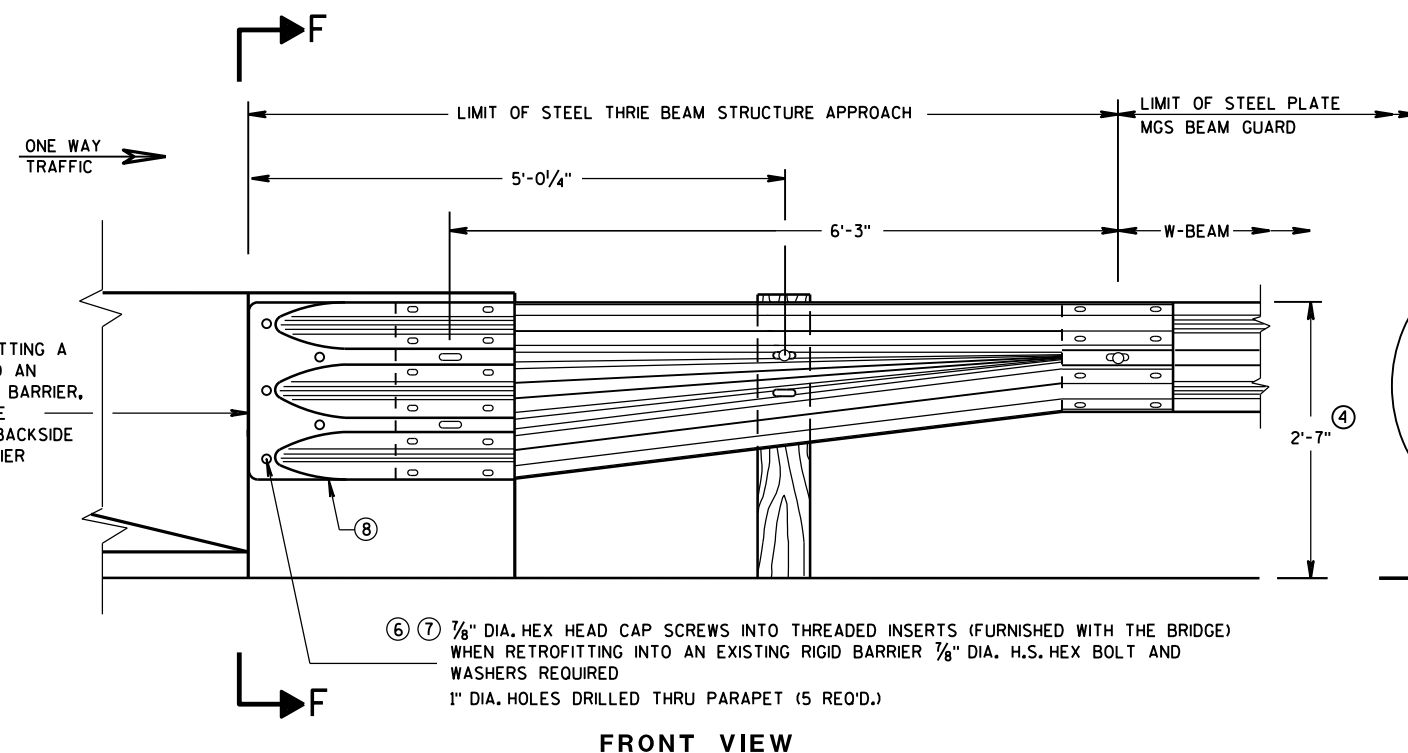
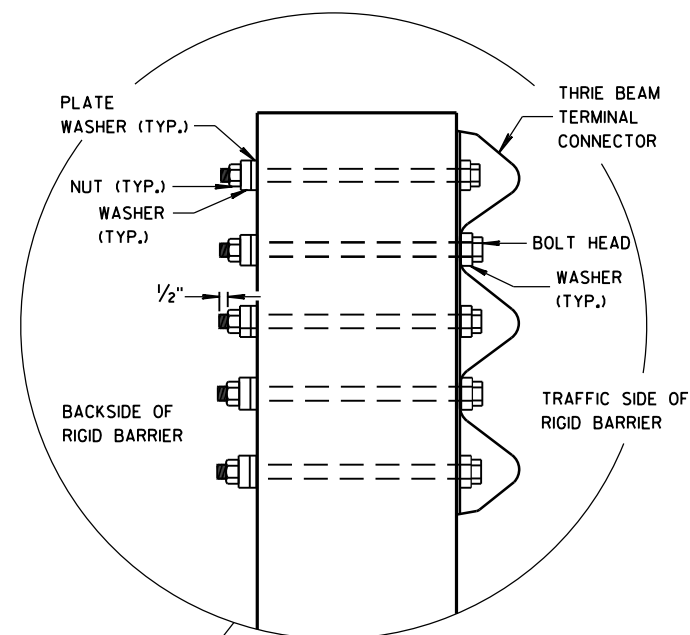
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



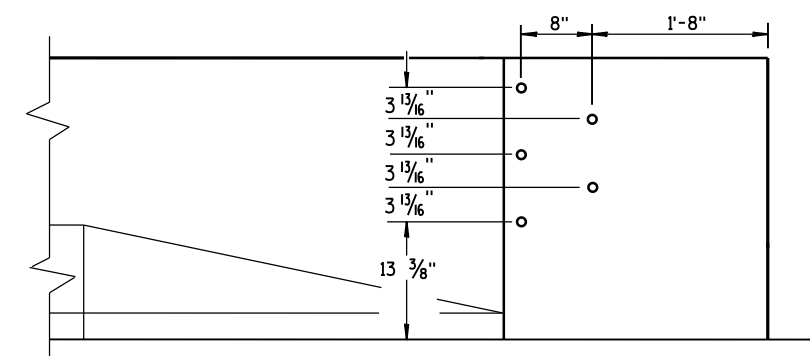
GENERAL NOTES

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

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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.
- ⑧ 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".



SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS 097

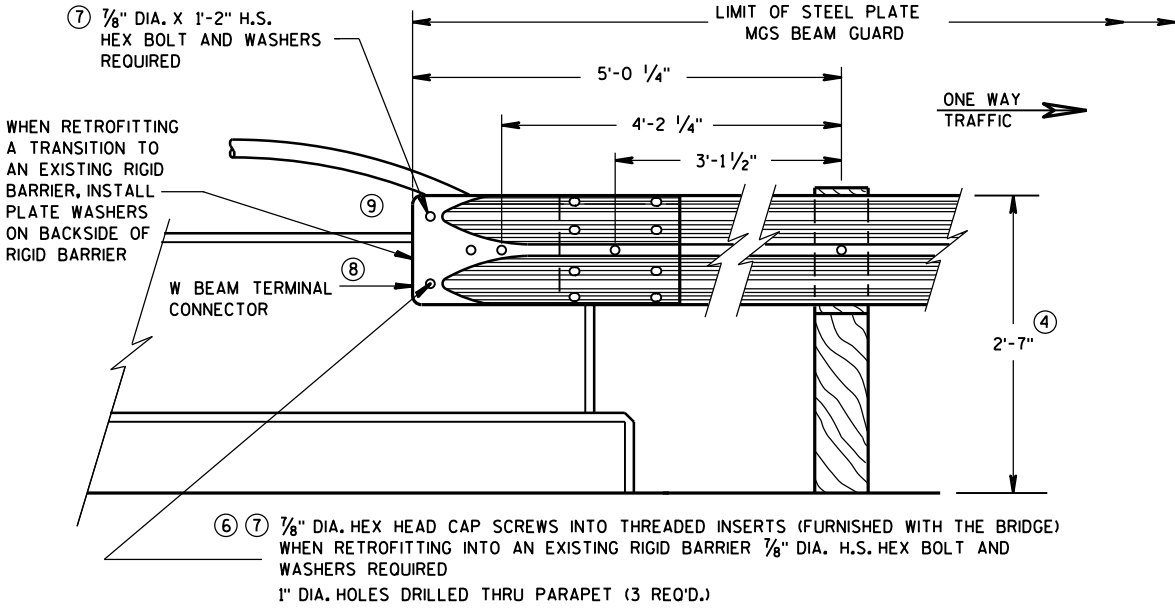
ENGINEER

NT

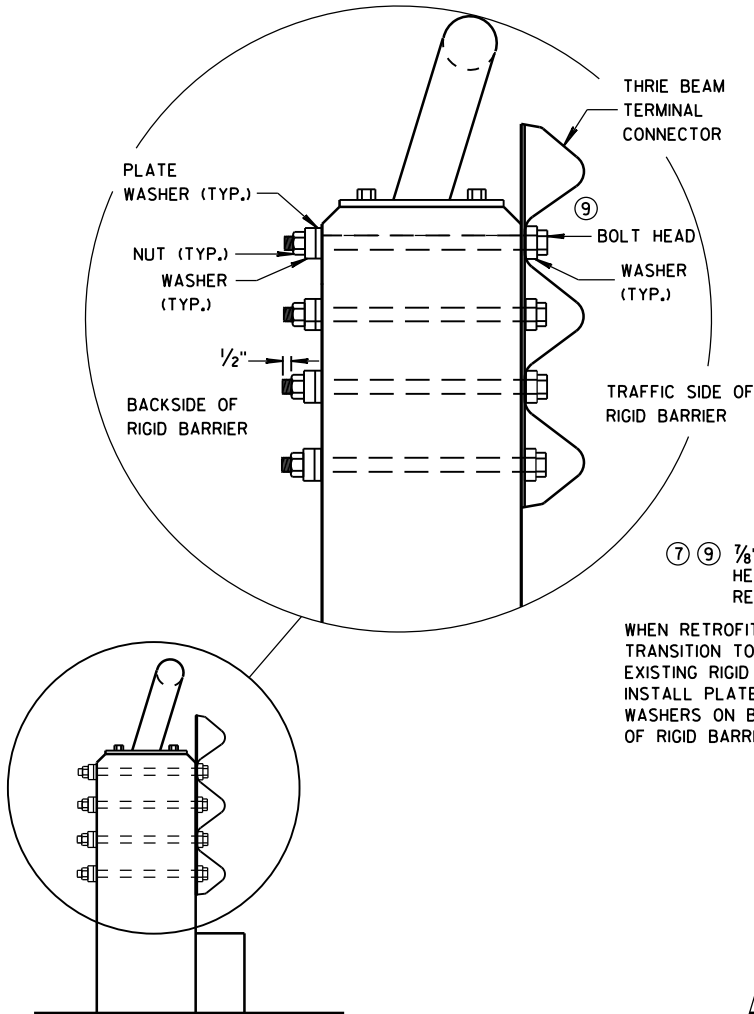
GENERAL NOTES

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

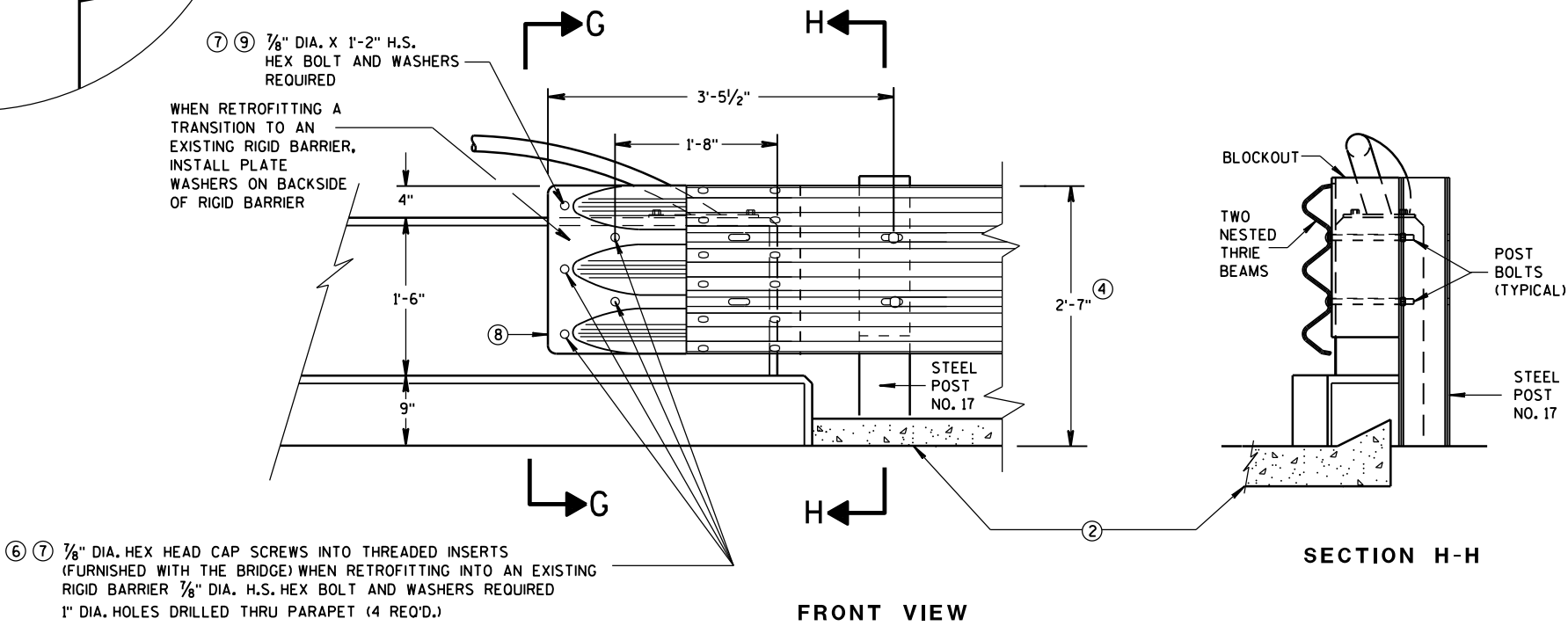
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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 $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ 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 $\frac{1}{2}"$.
- ⑨ 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.



FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION G-G



FRONT VIEW

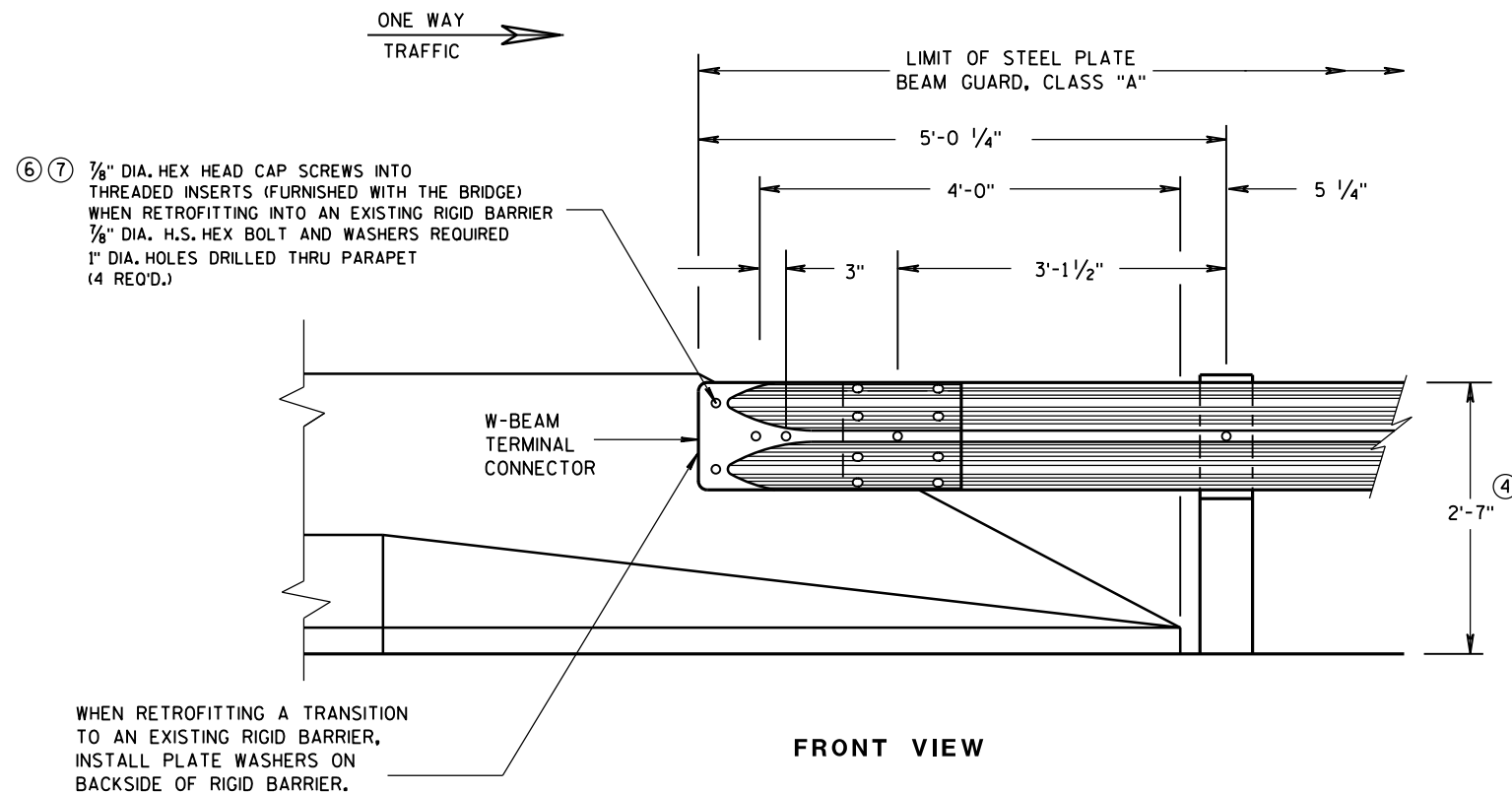
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

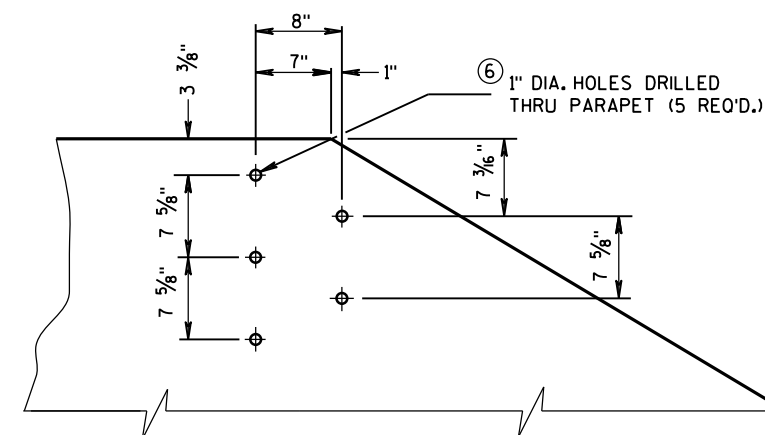
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER NT
FHWA

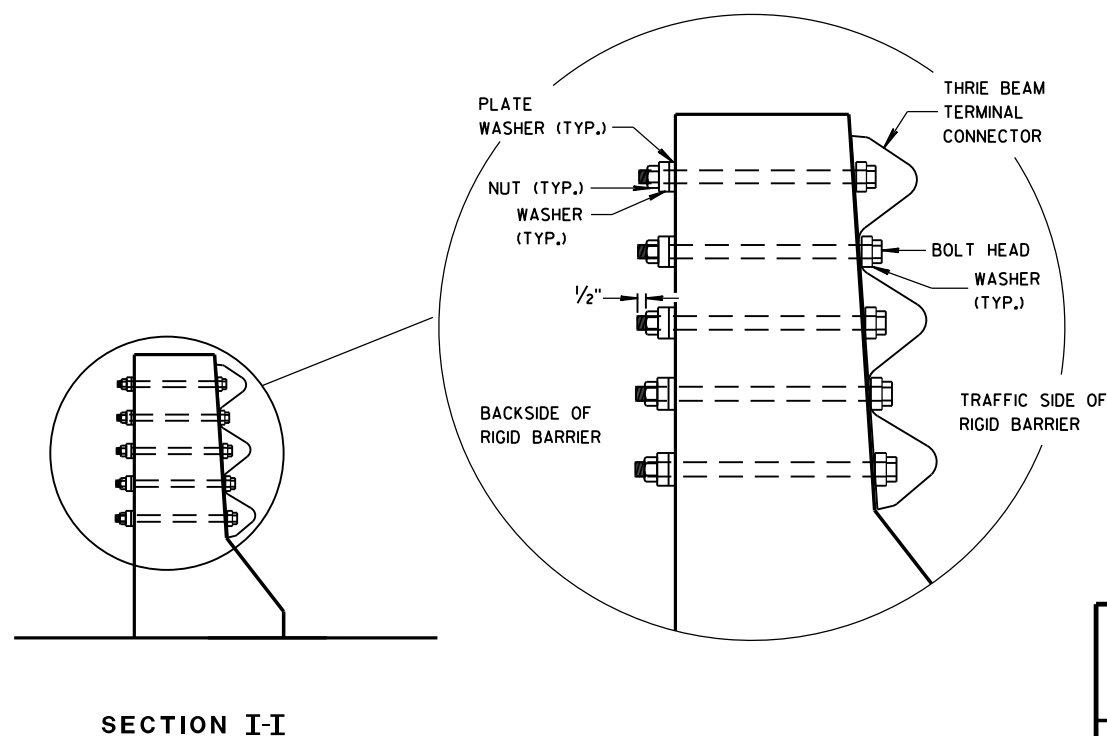
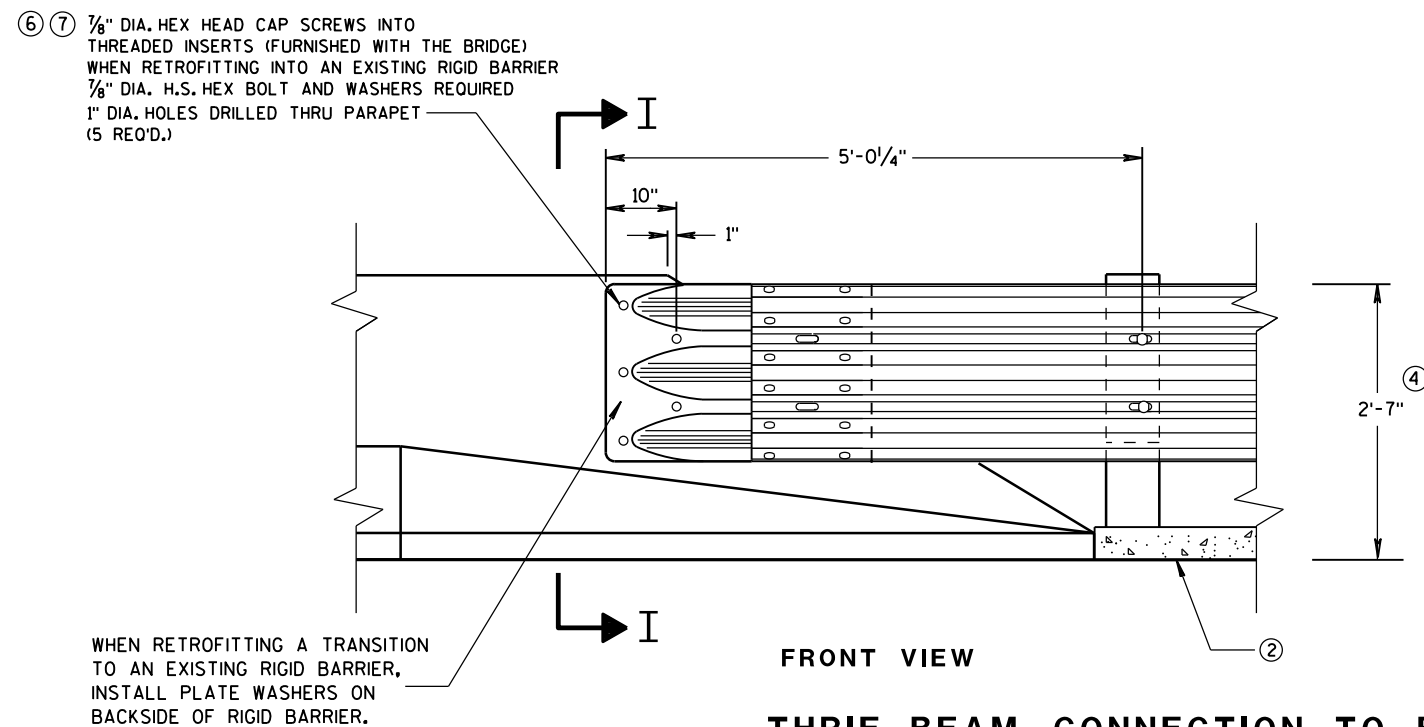


GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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.



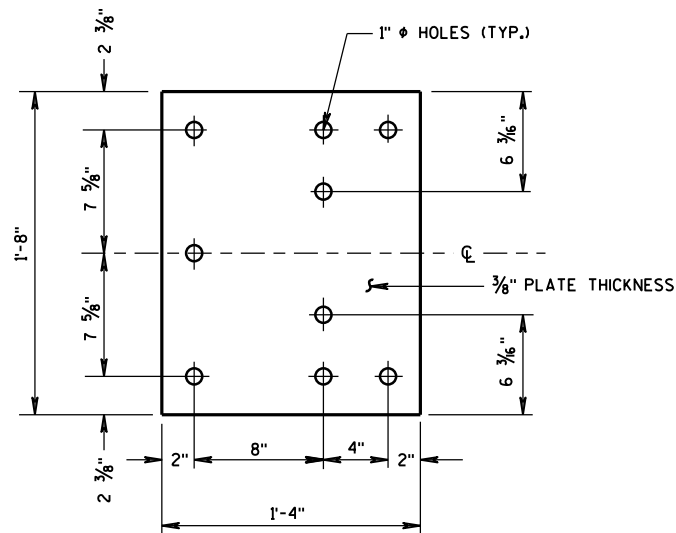
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



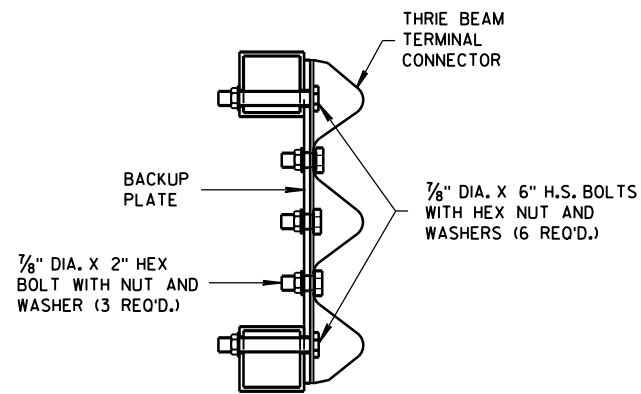
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

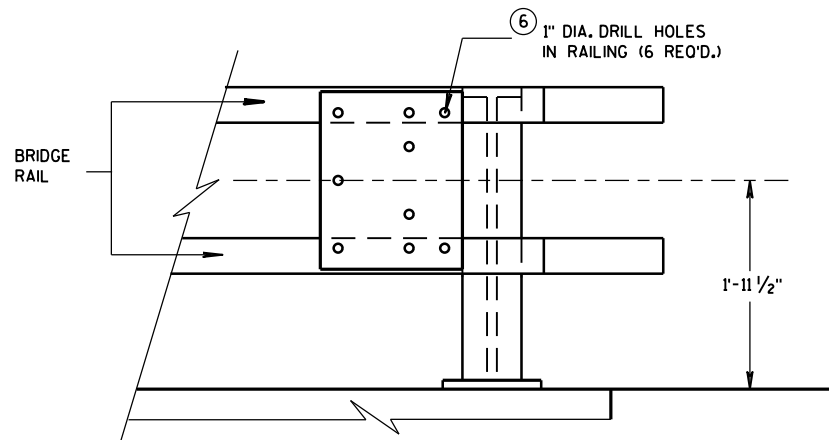
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER
FHWA



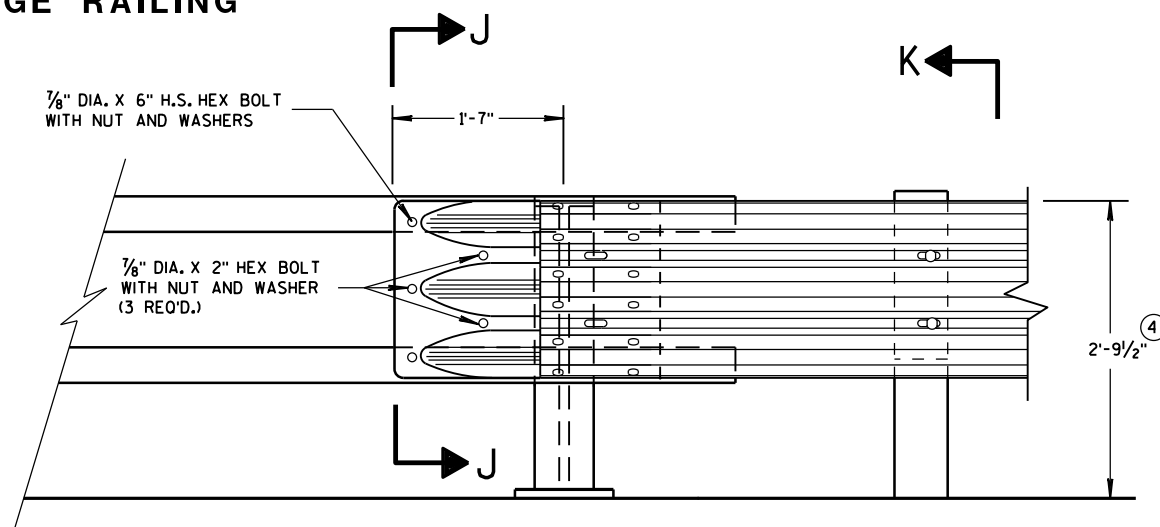
BACK-UP PLATE DETAIL



SECTION J-J

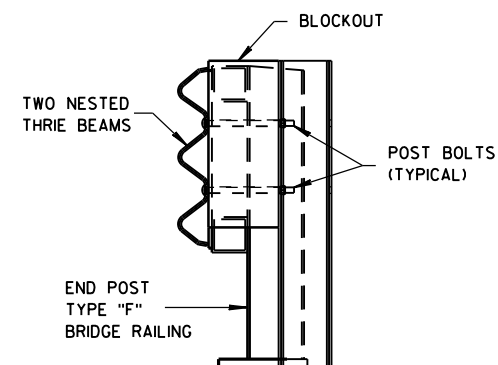


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

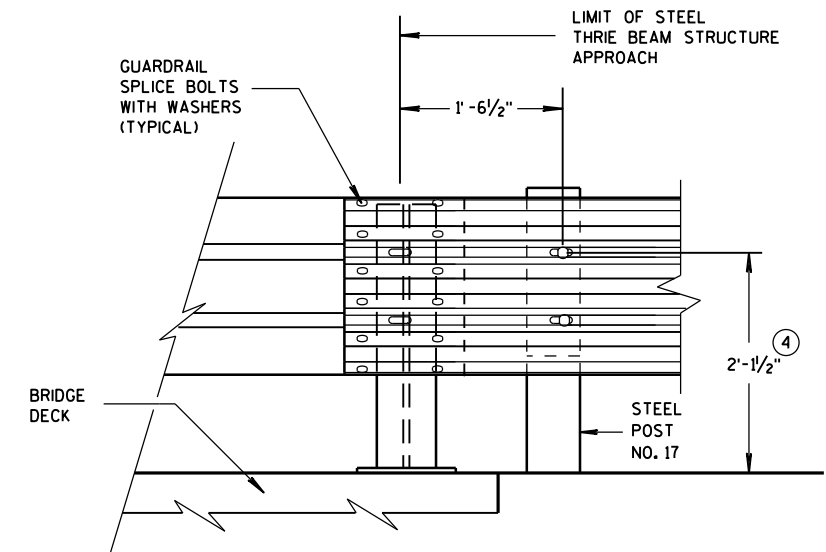
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

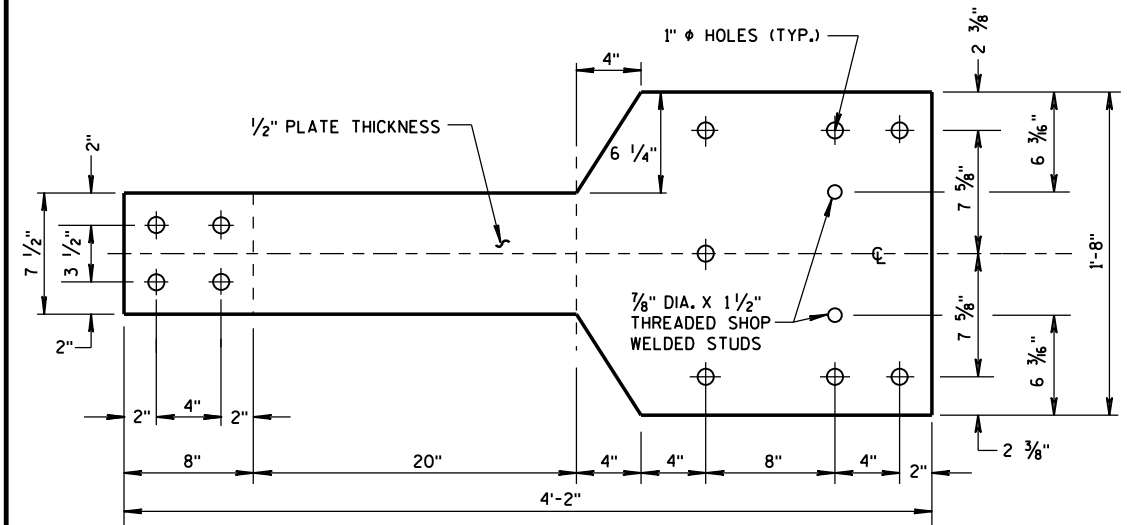
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

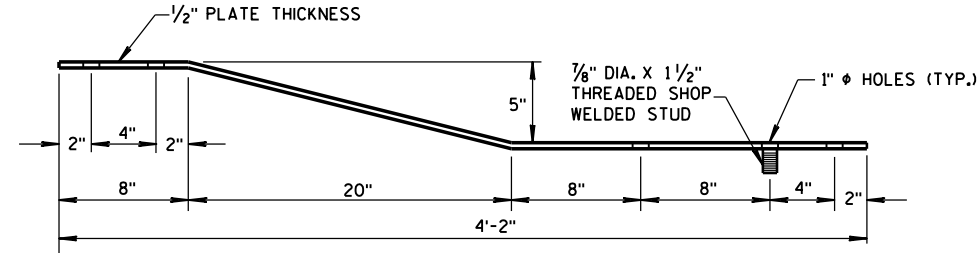
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GENERAL NOTES

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

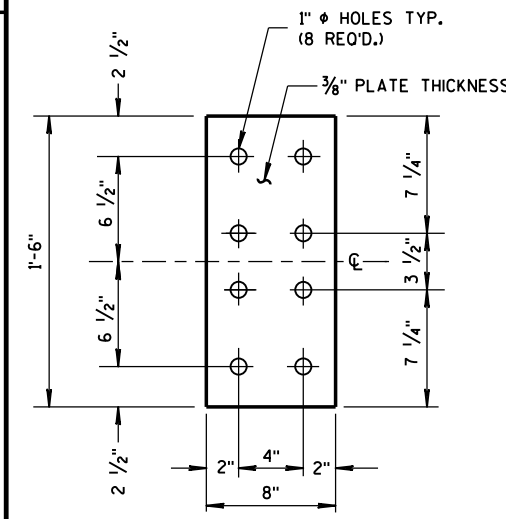


FRONT VIEW



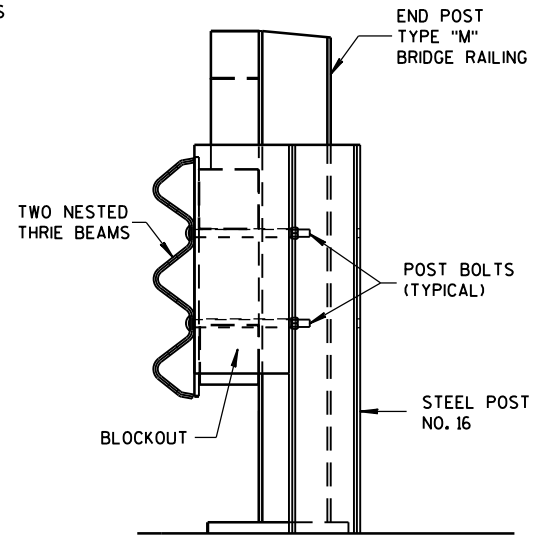
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

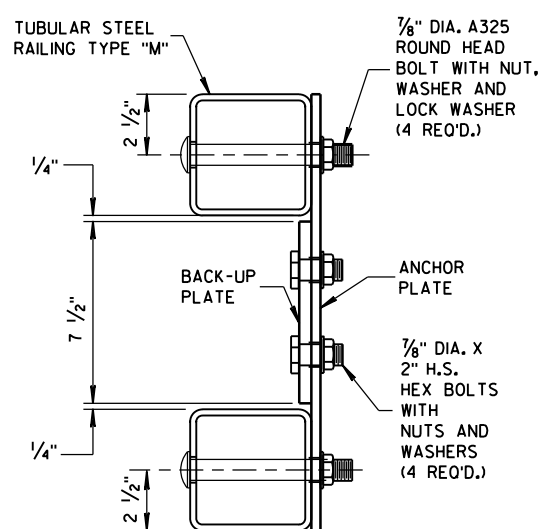


FRONT VIEW

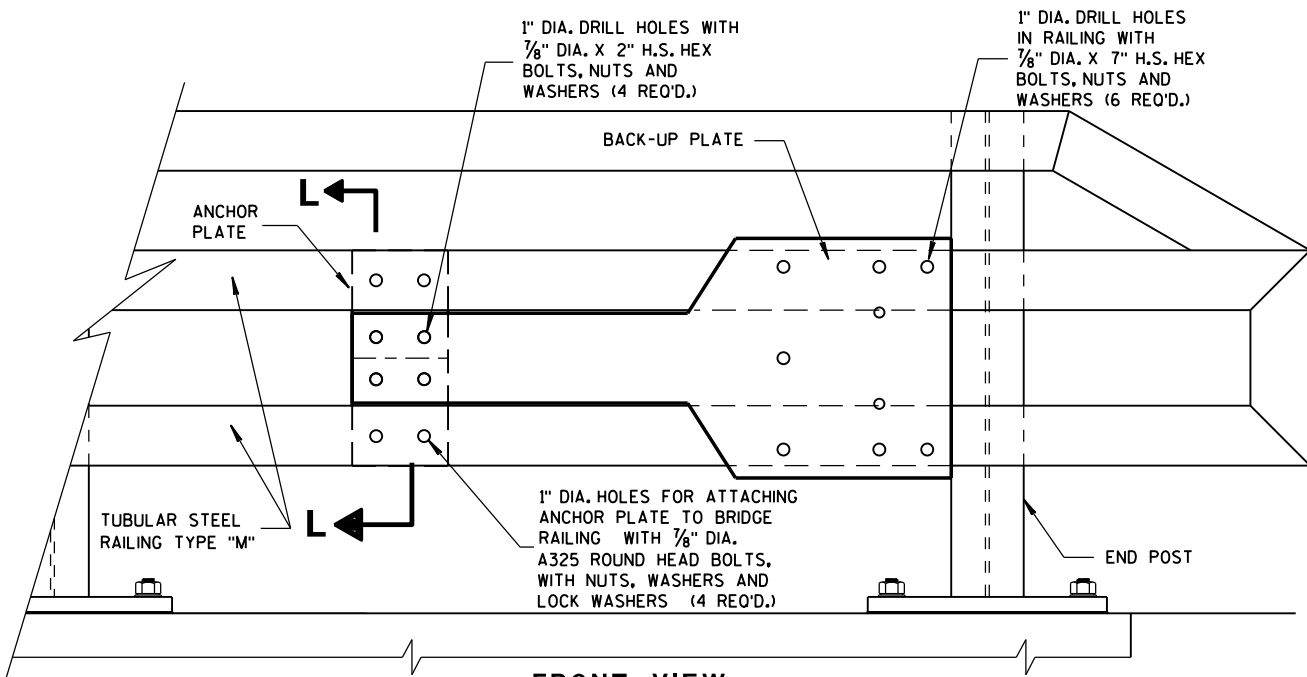
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

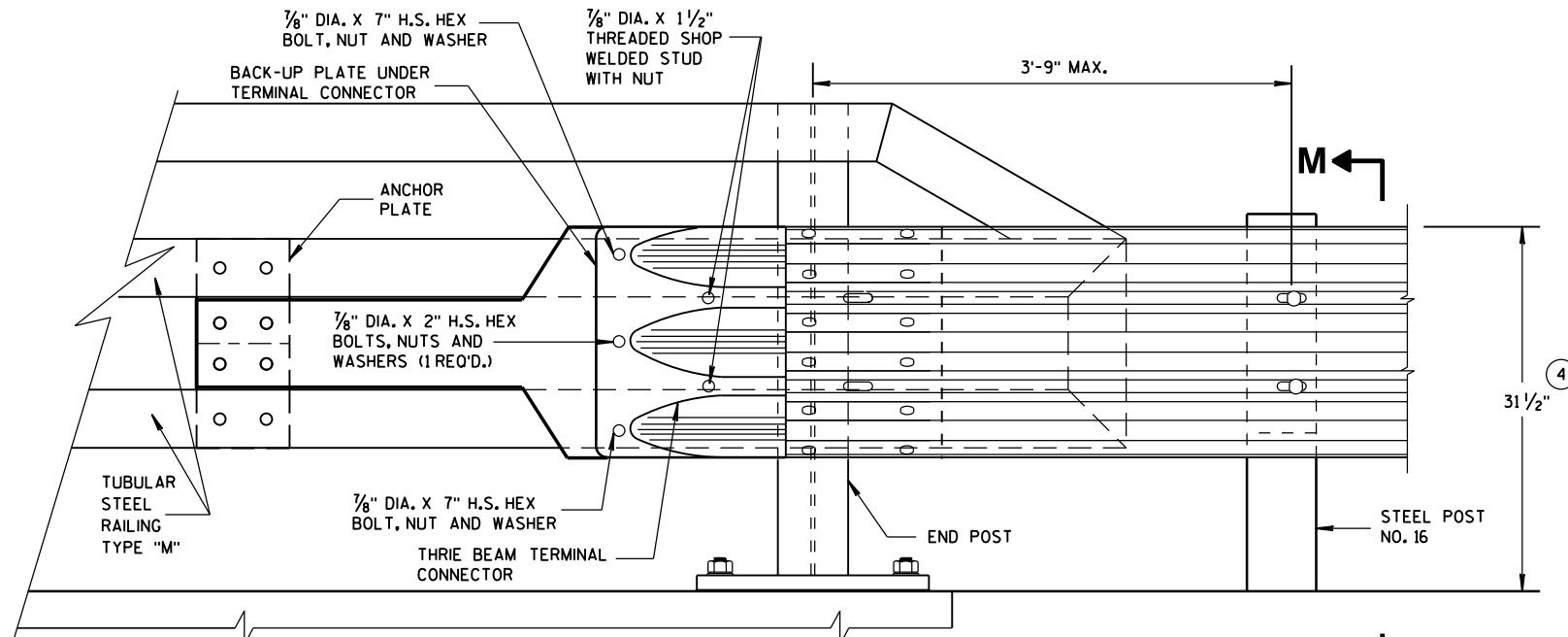


SECTION L-L

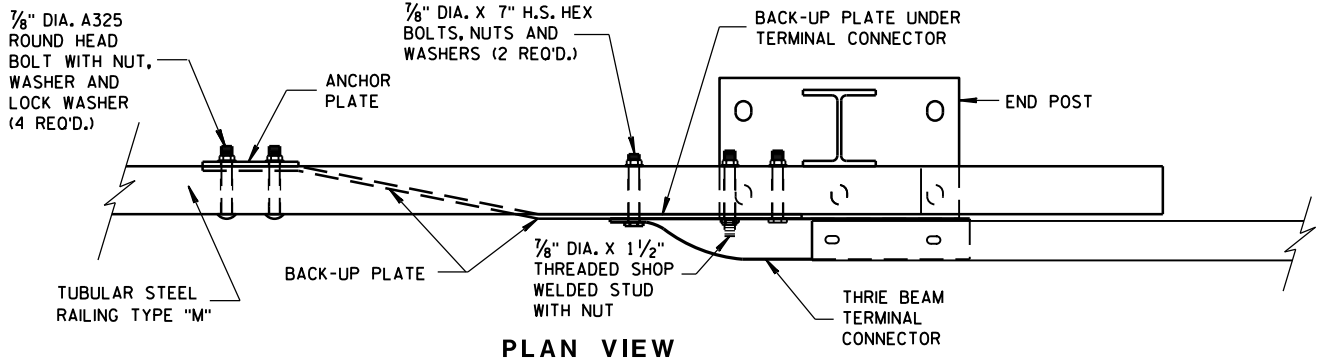


FRONT VIEW

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



FRONT VIEW



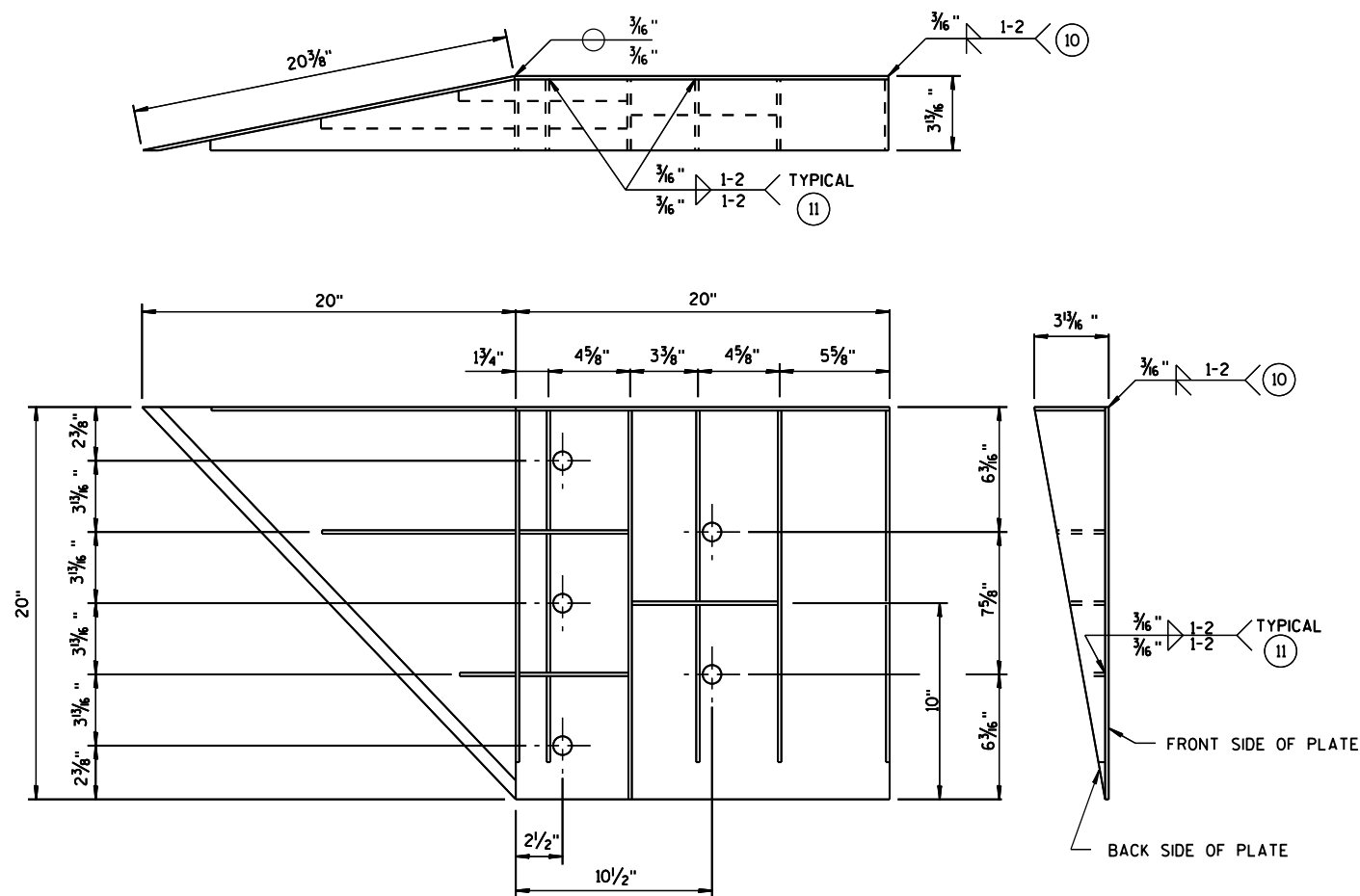
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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FHWA 101 INT



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

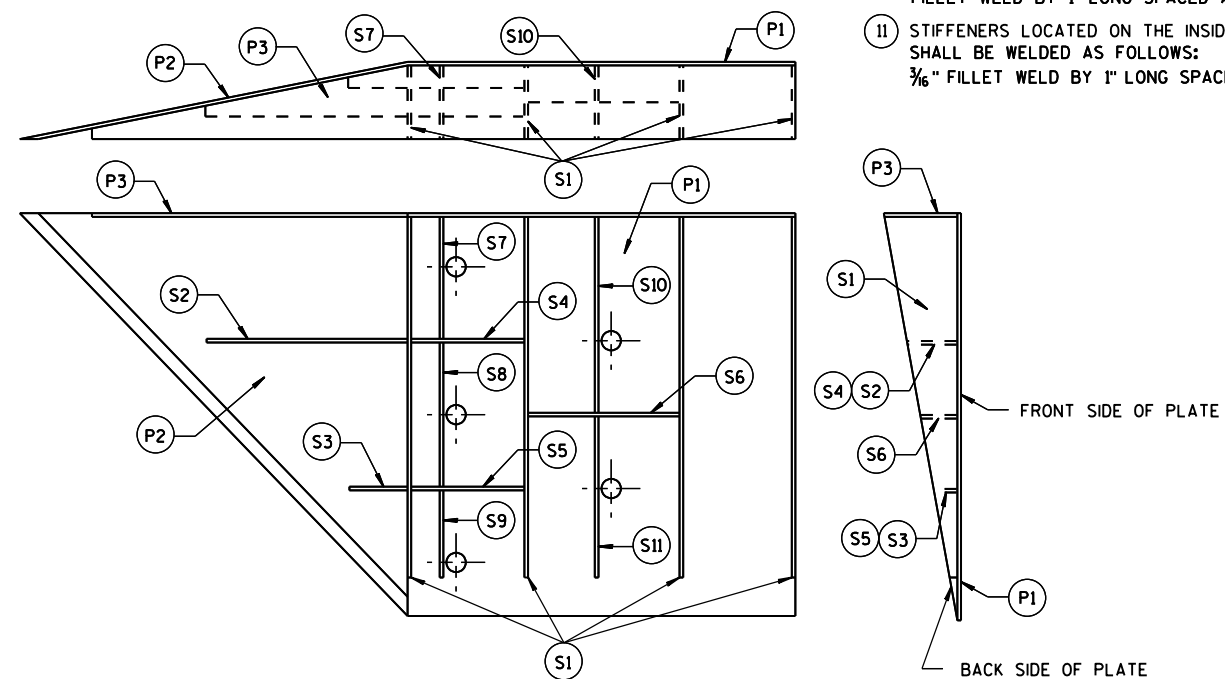


PLATE AND STIFFENER IDENTIFICATION

(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 7/16"	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 7/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 7/32" 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 7/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

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.

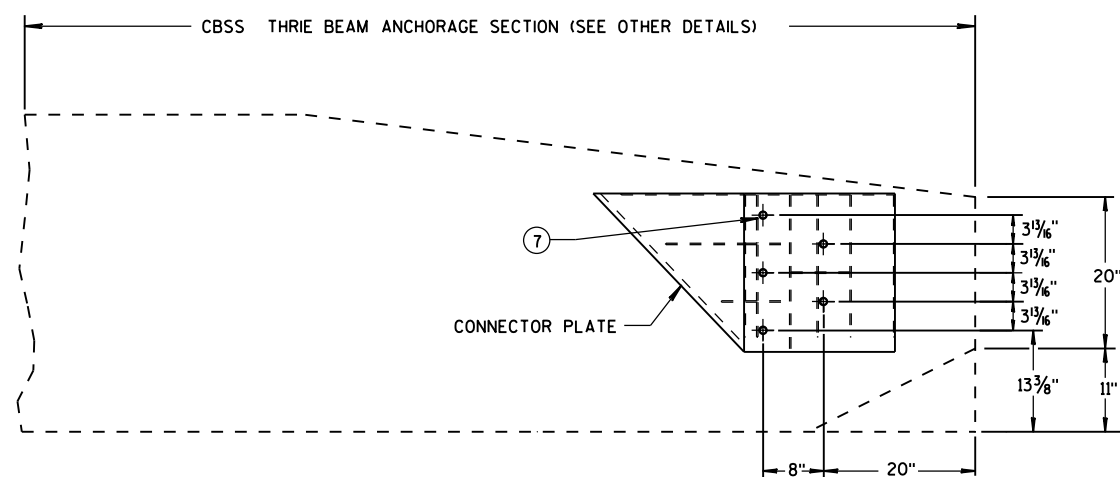
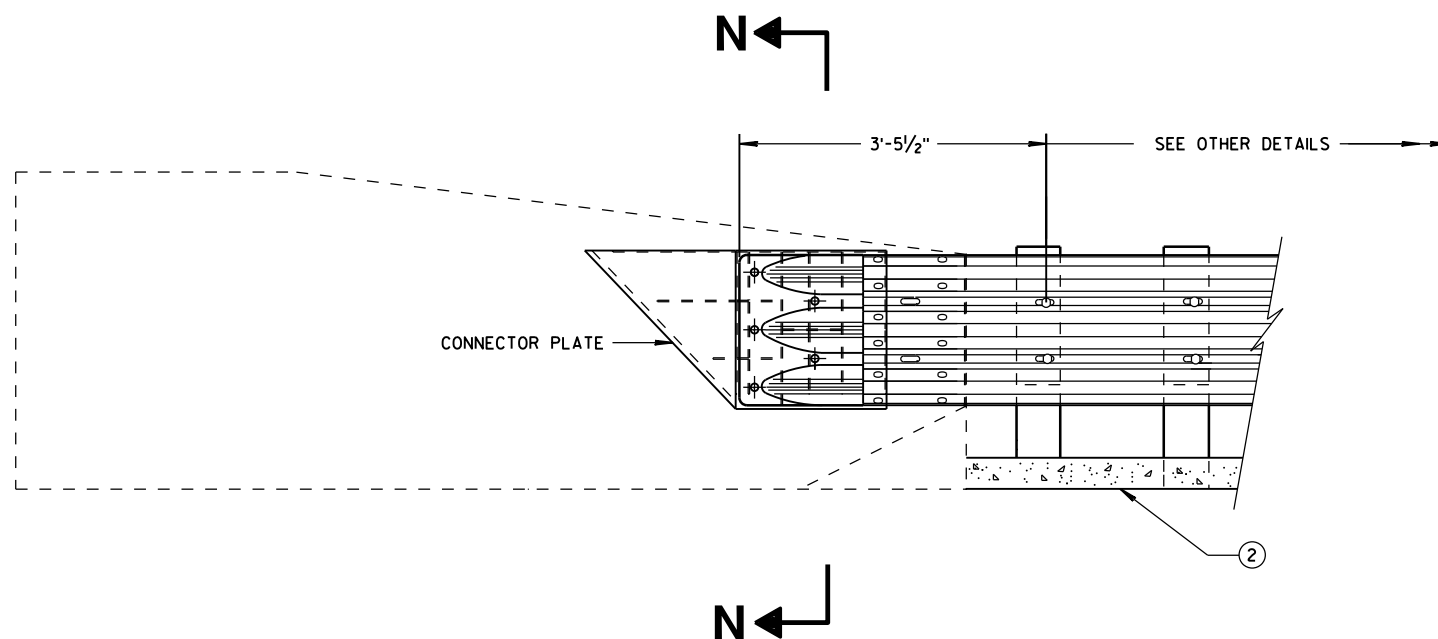
- (10) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- (11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



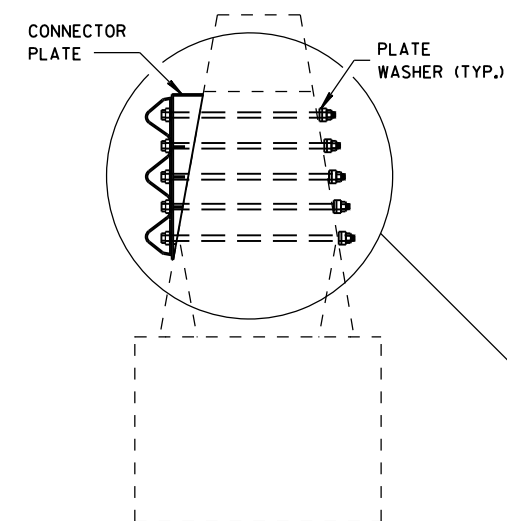
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

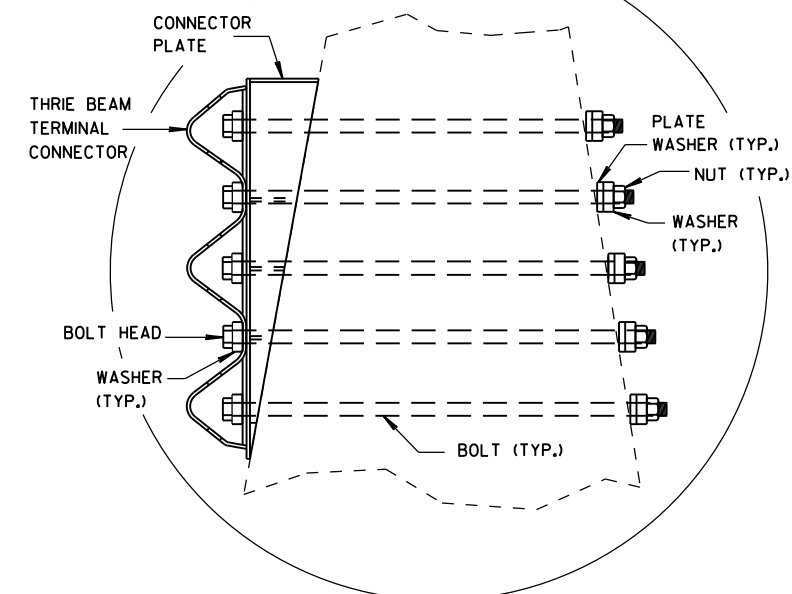
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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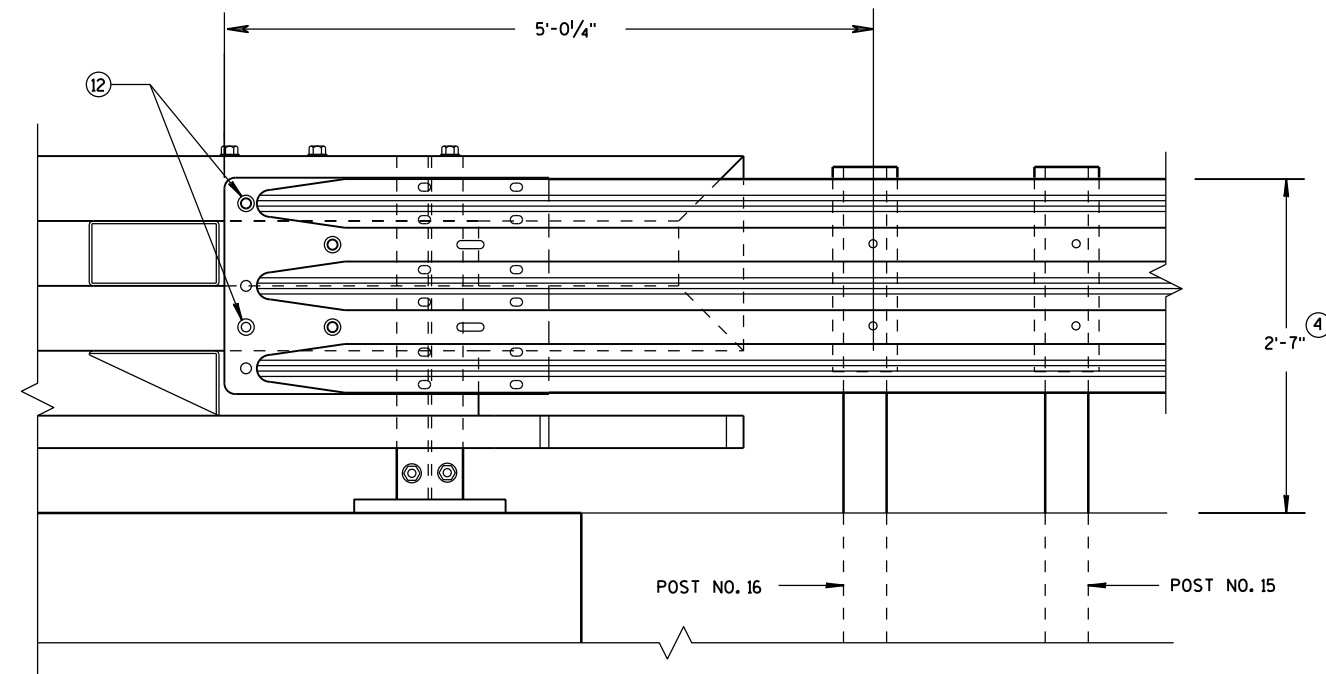
/s/ Jerry H. Zoog
ROADWAY STANDARDS D 103
ENGINEER

NT

GENERAL NOTES

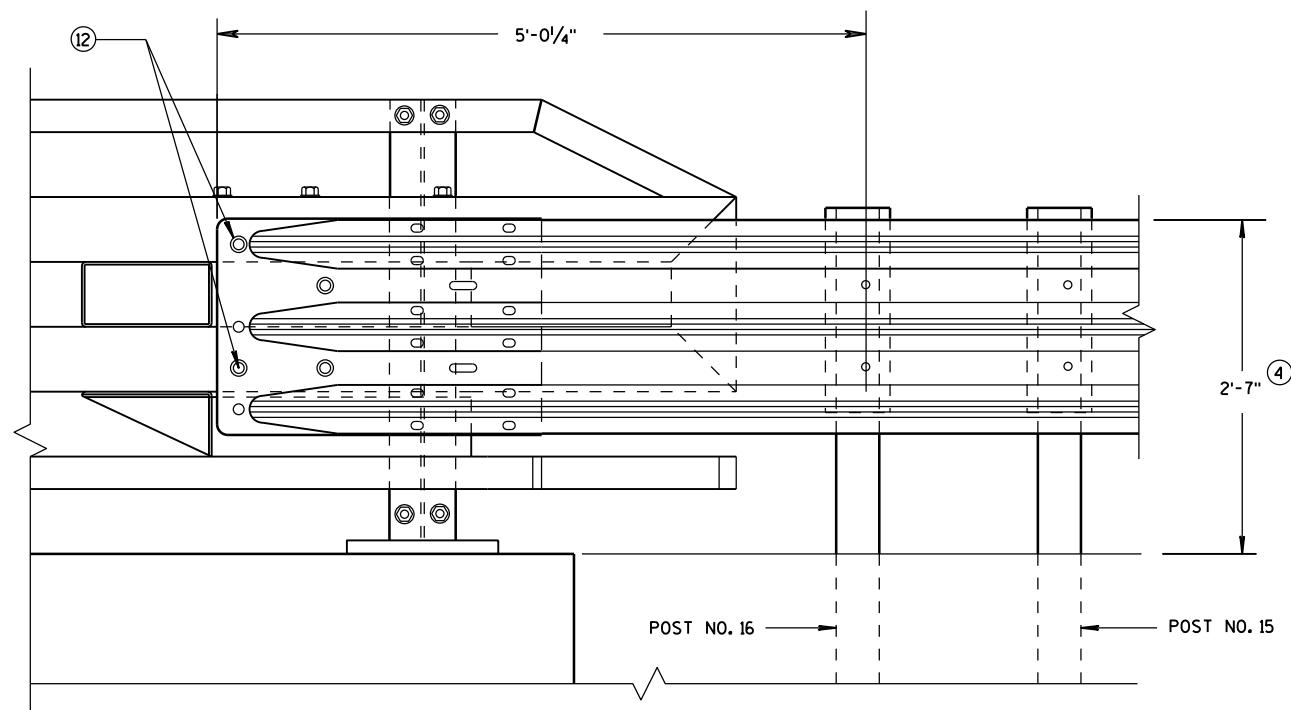
④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

⑫ 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. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

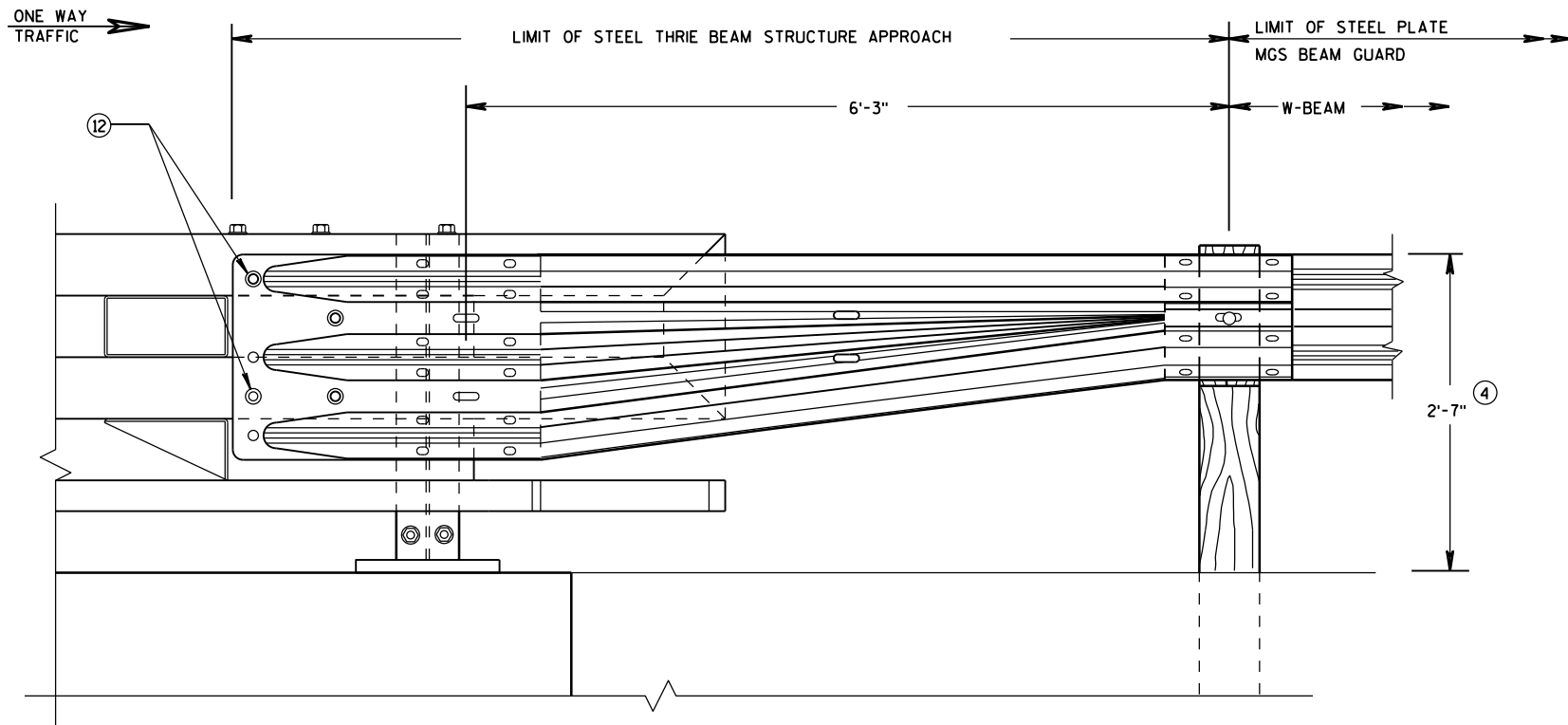
FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS D 104

ENGINEER

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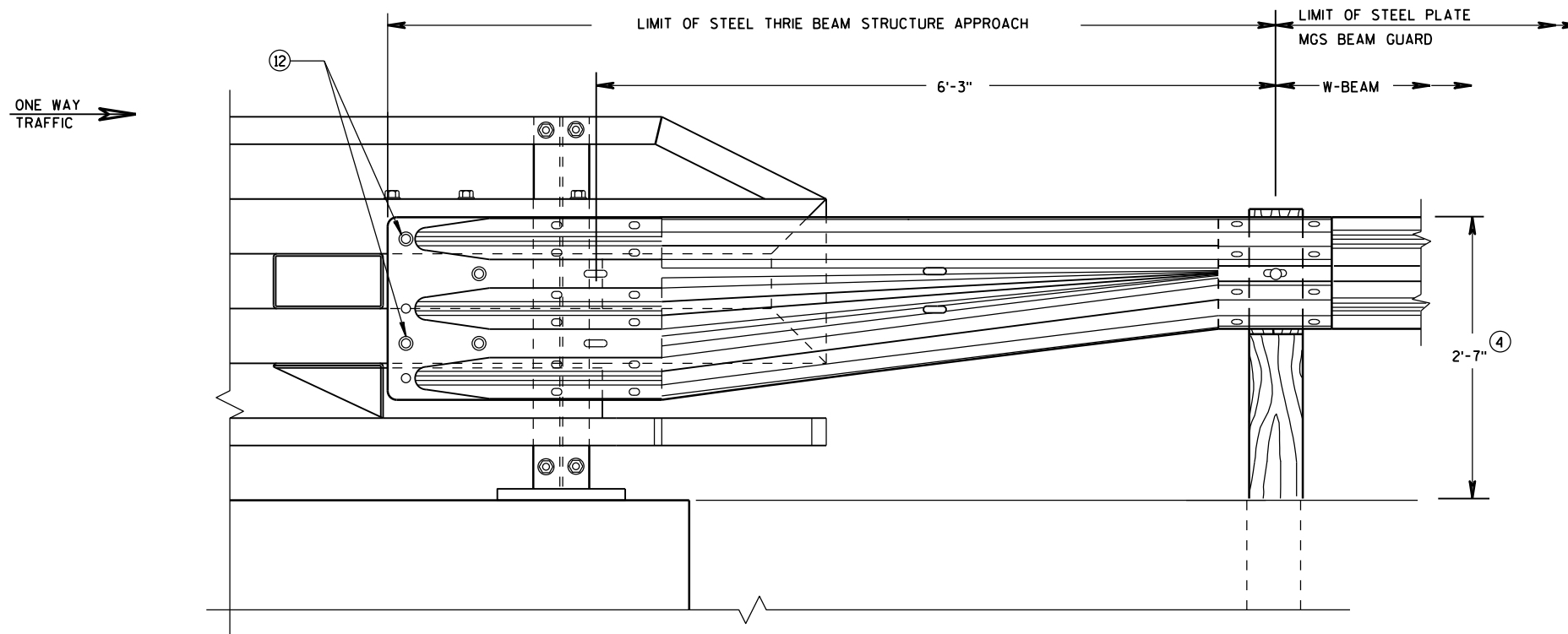


FRONT VIEW

**W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY3"**
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ 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. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



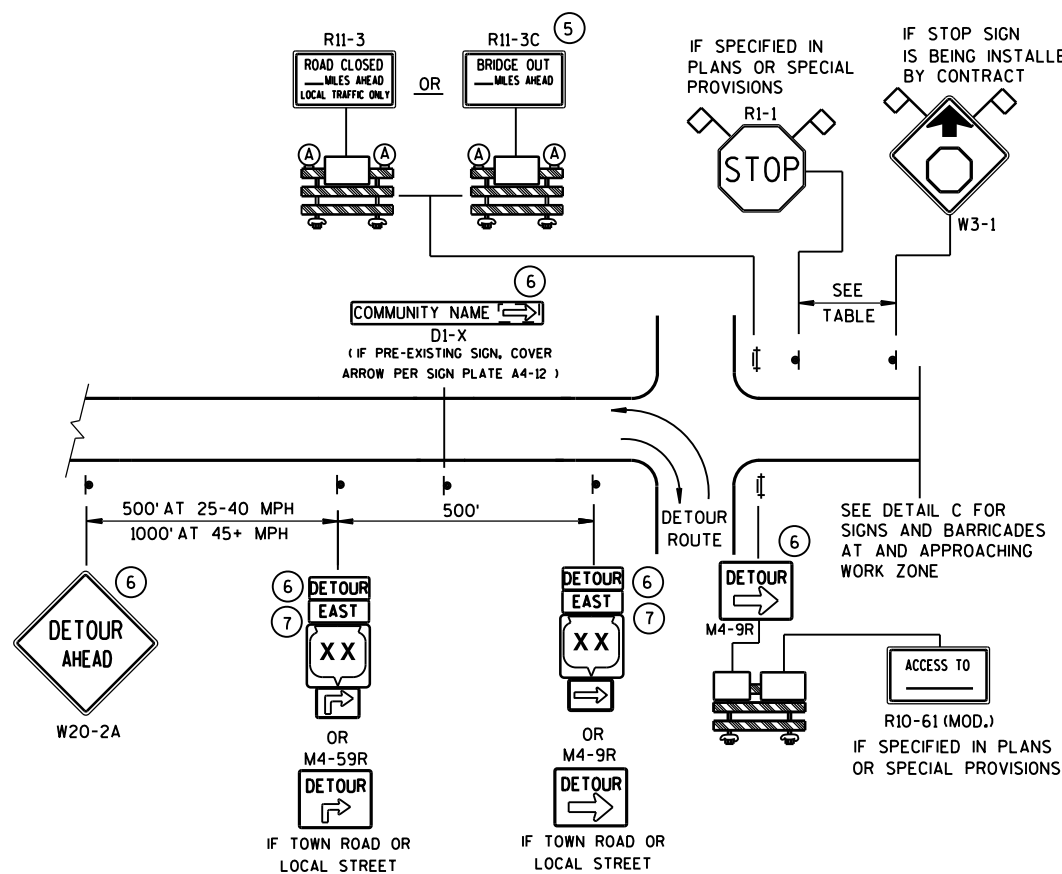
FRONT VIEW

**W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"**
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

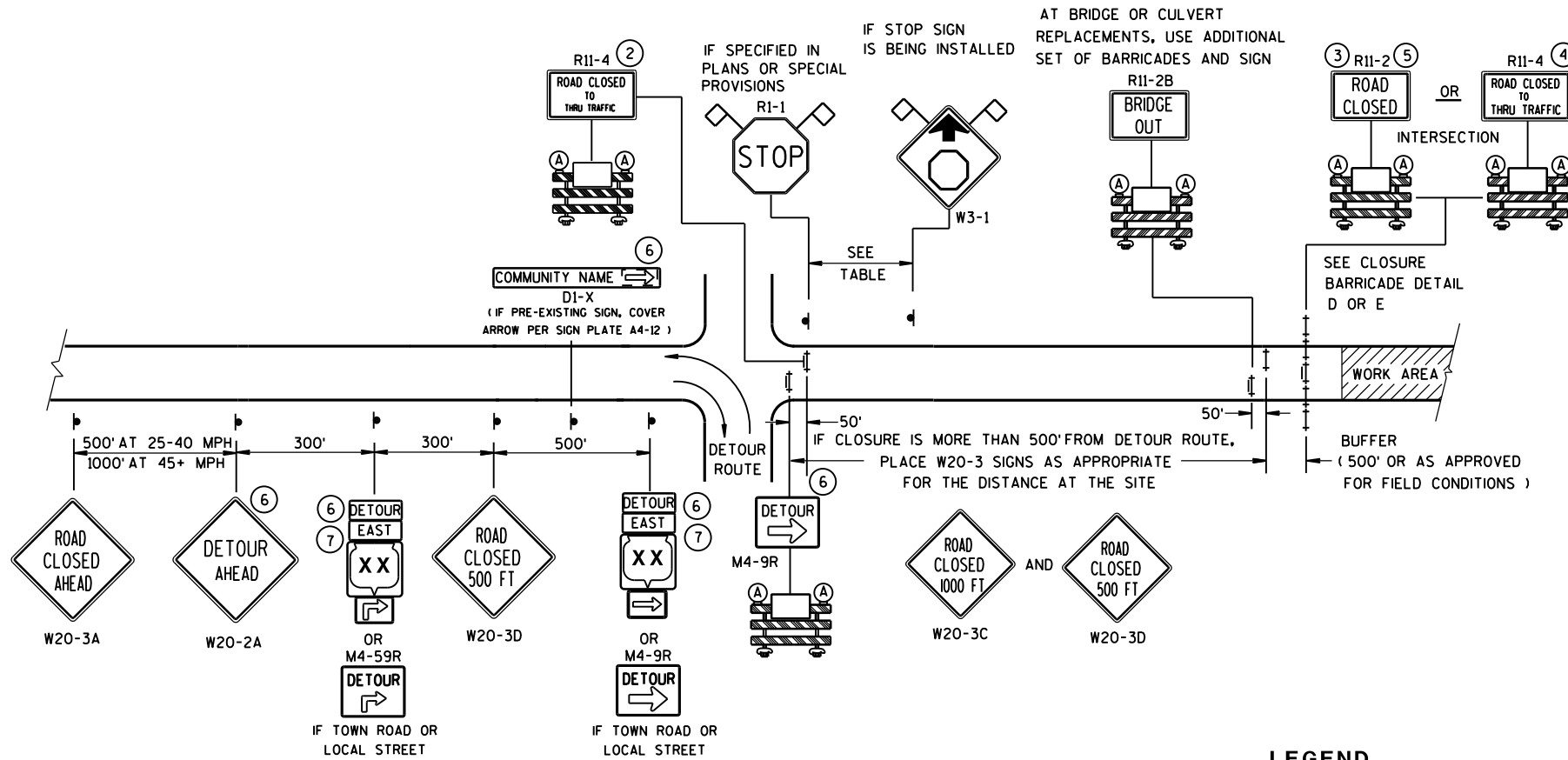
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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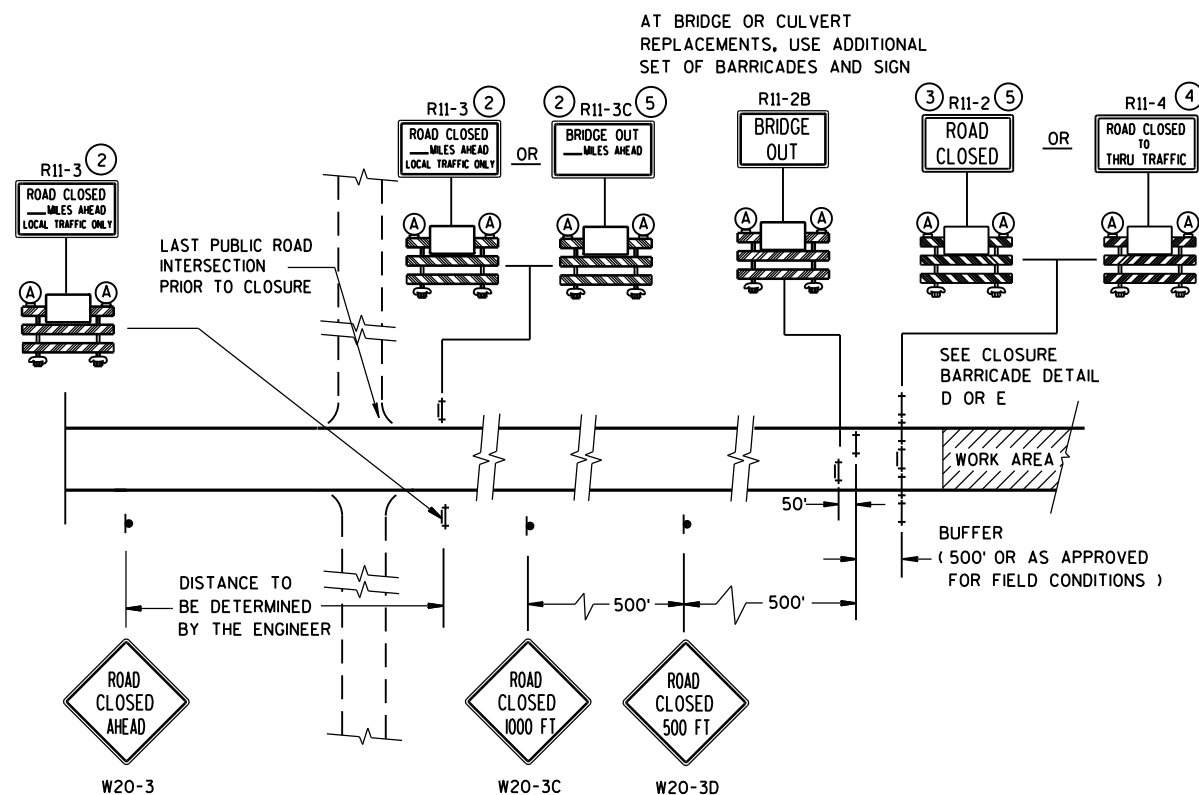
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DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

LEGEND

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

WORK AREA

DETOUR EAST
M4-8
M3-X
XX OR XX OR XX
M1-4 M1-5A M1-6

M05-1 OR M06-1

FLAGS, 16" X 16" MIN., (ORANGE)

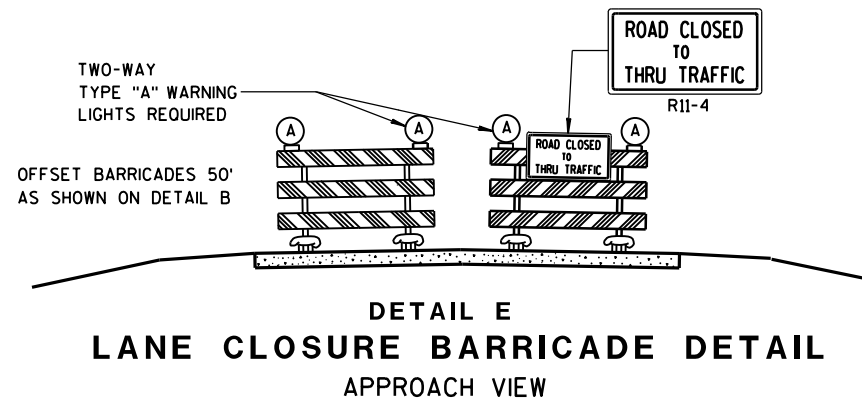
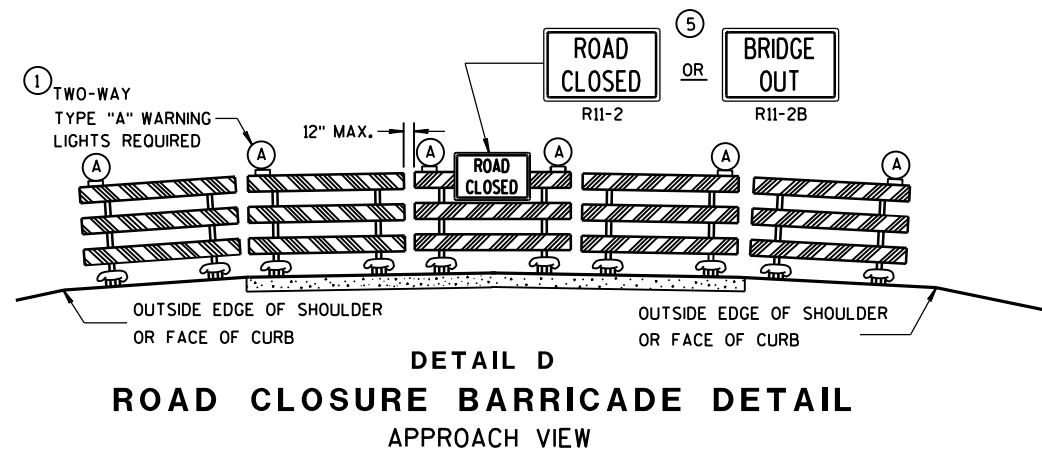
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA



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.

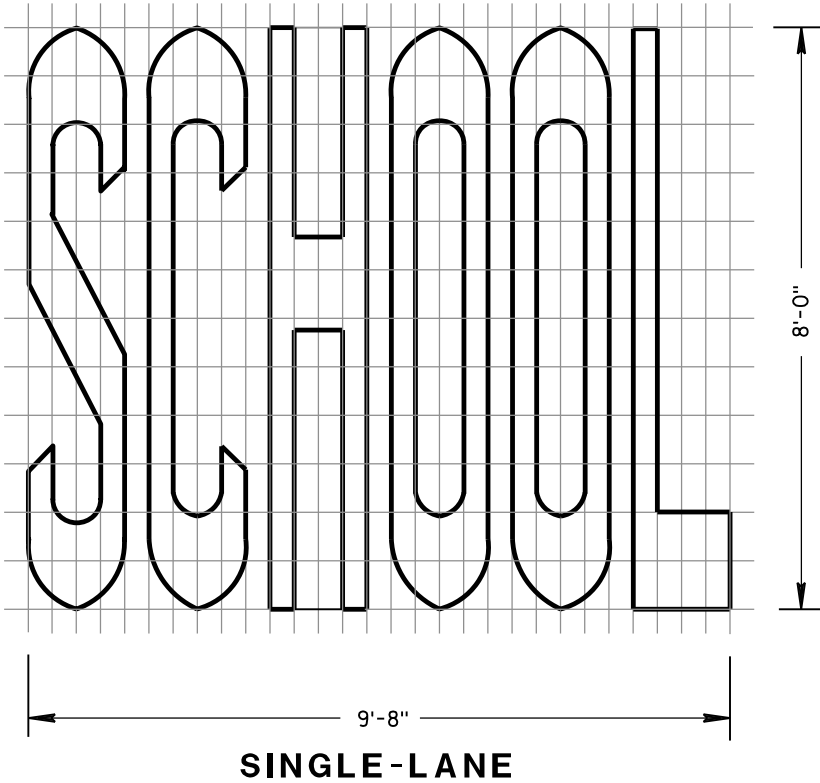
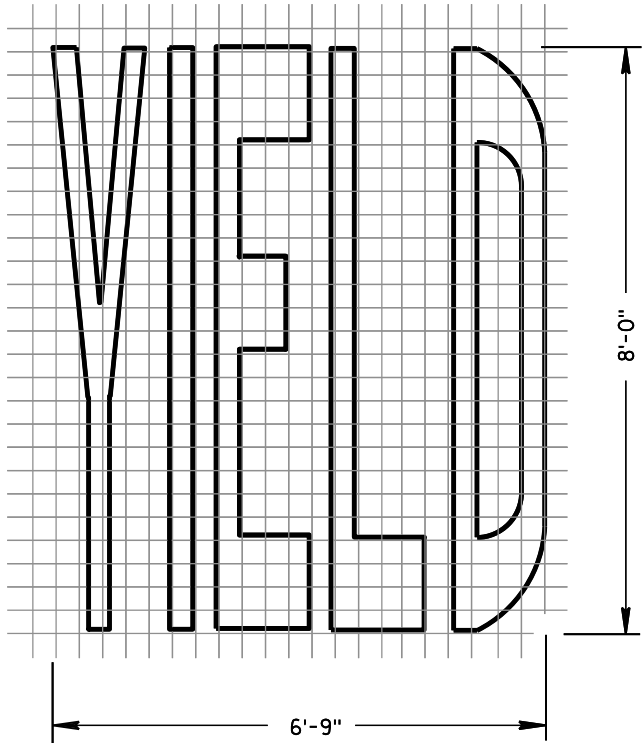
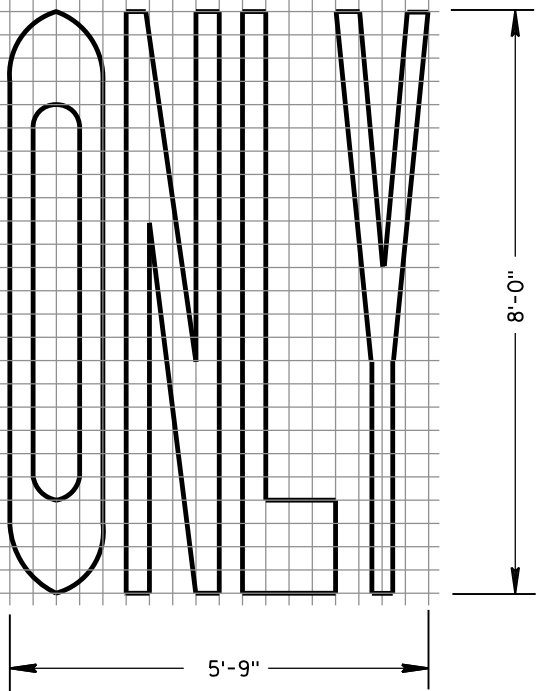
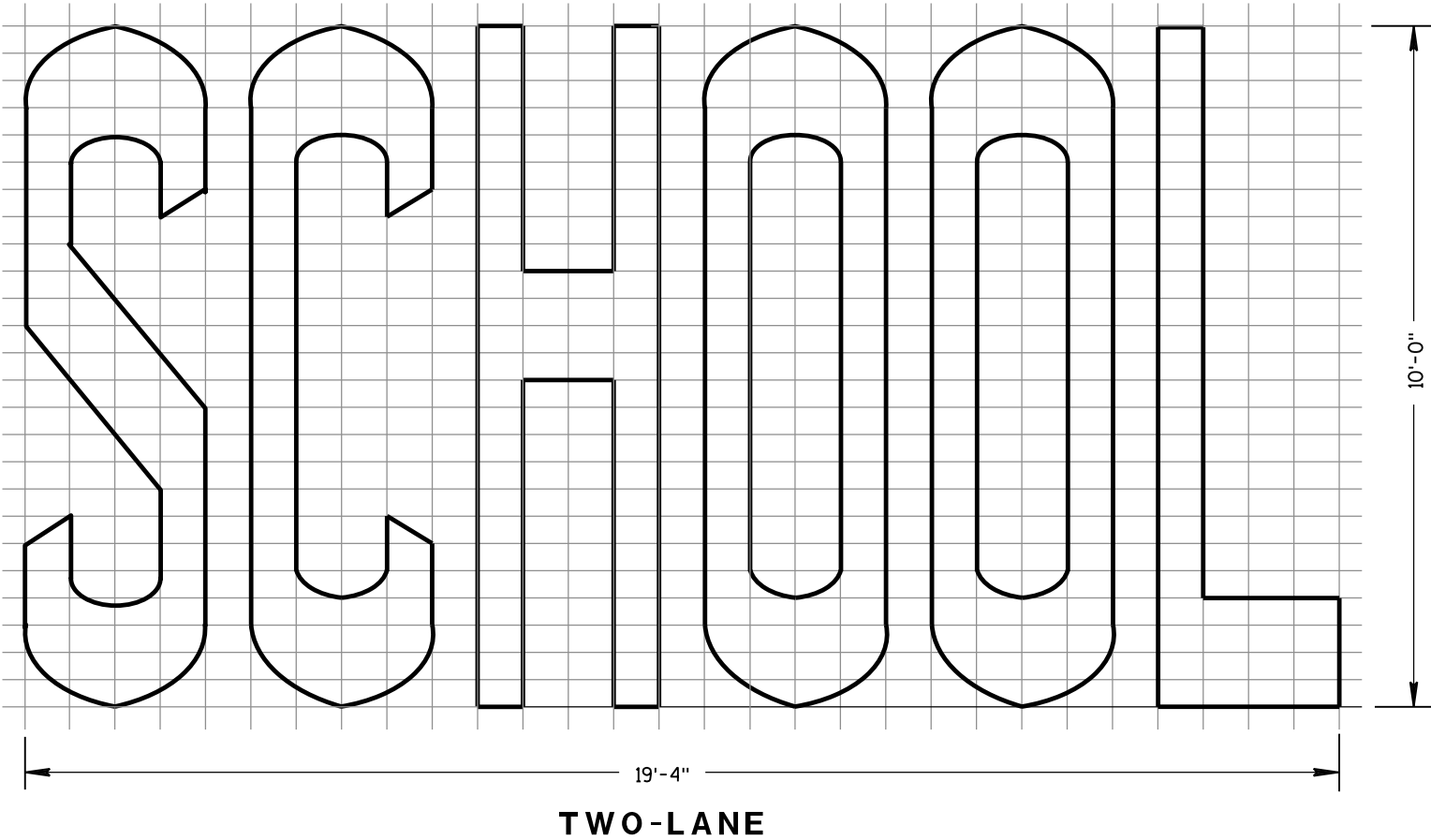
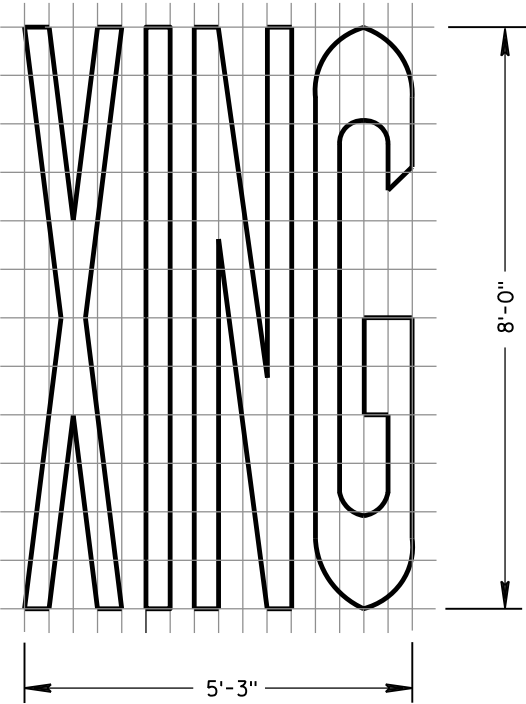
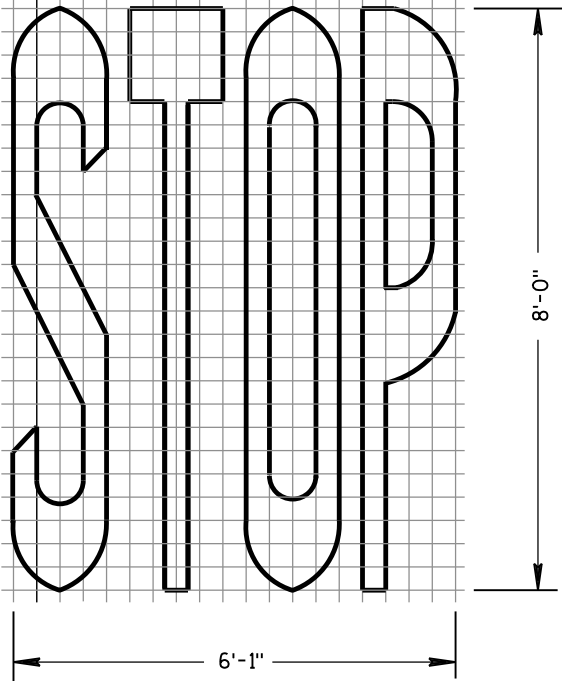
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
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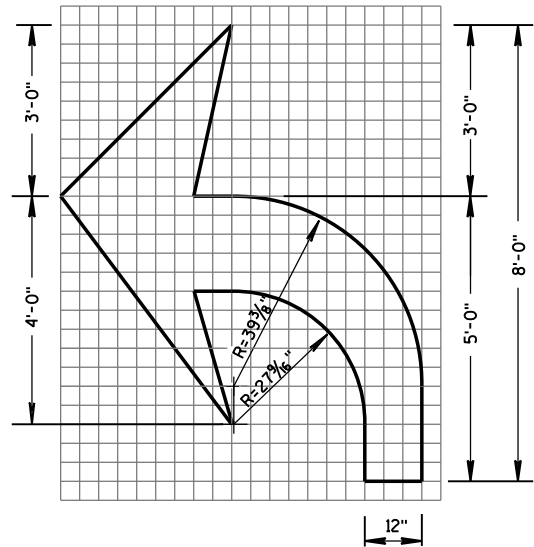
Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZO 107 FIC
FHWA SAFETY ENGI

GENERAL NOTES

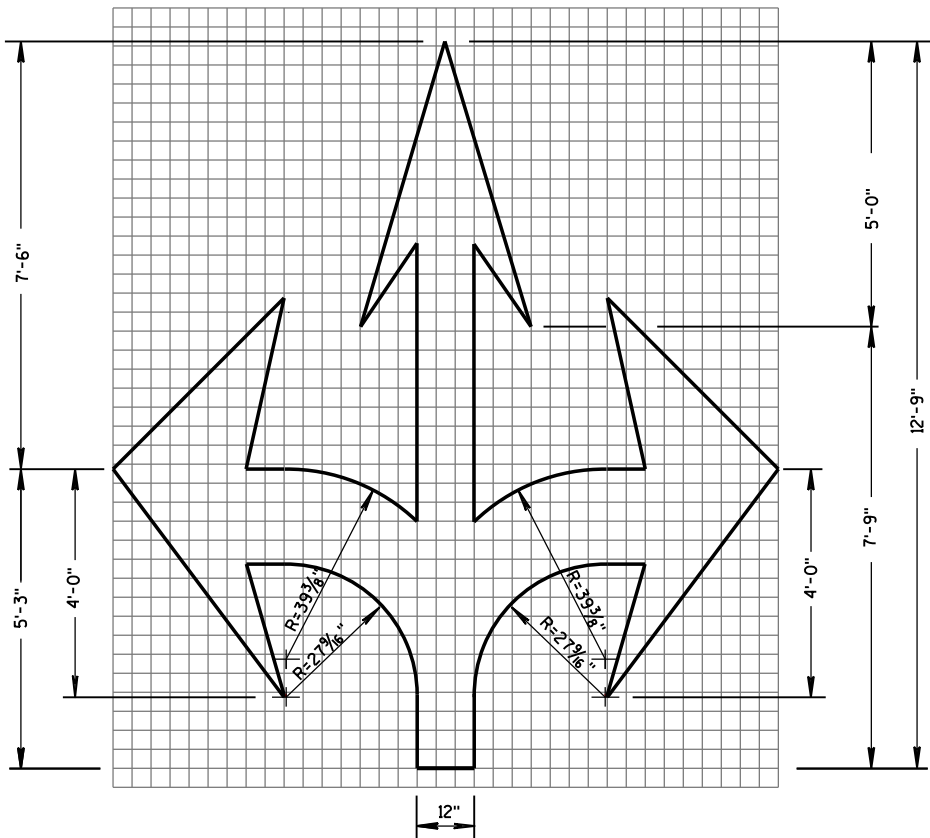
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



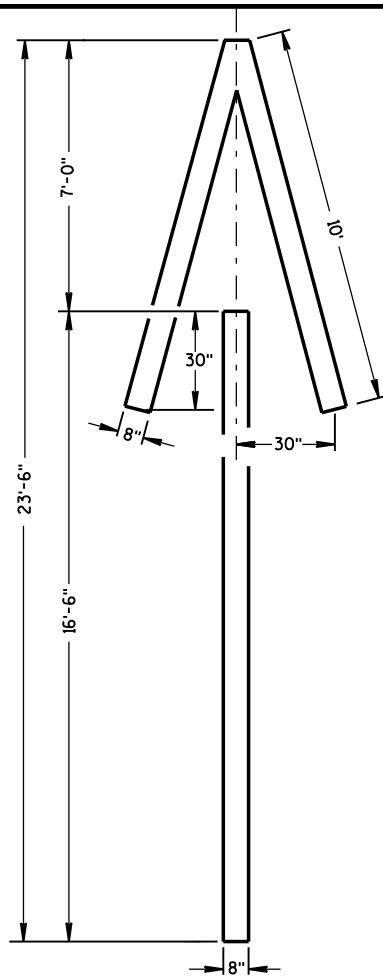
PAVEMENT MARKING WORDS			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2017	/S/ Matthew R. Rauch		
DATE	STATE SIGNING AND MARK	108	EER
FHWA			



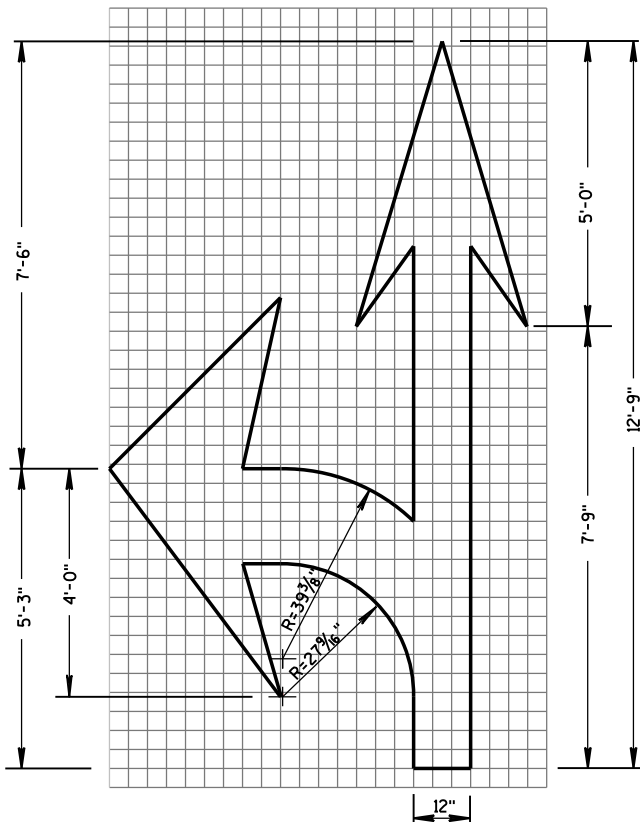
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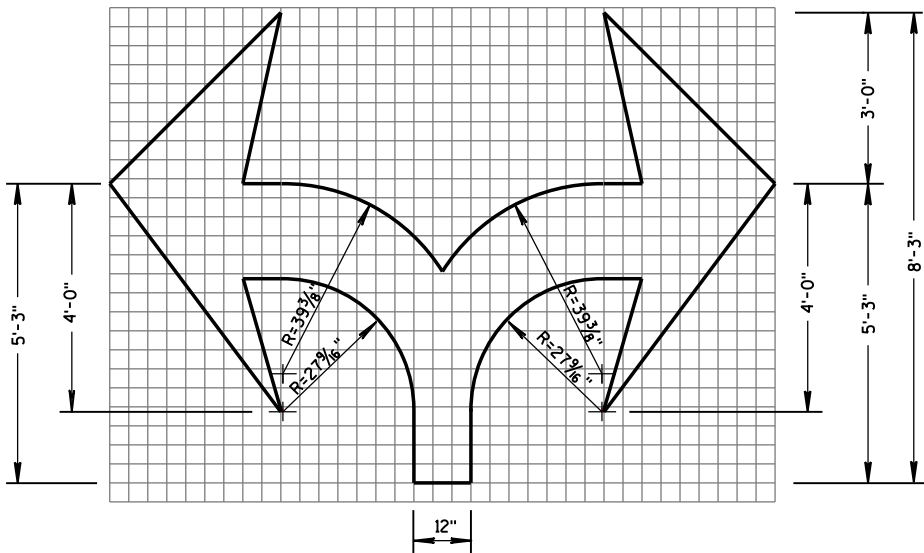
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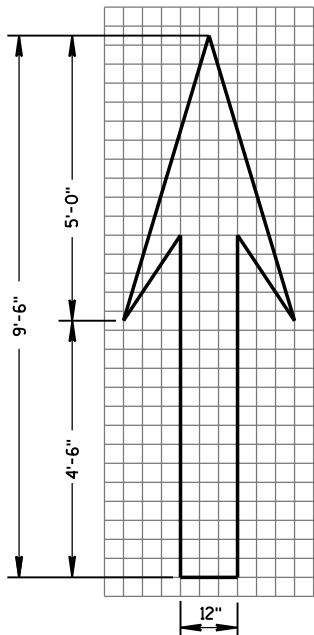
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TYPE 3



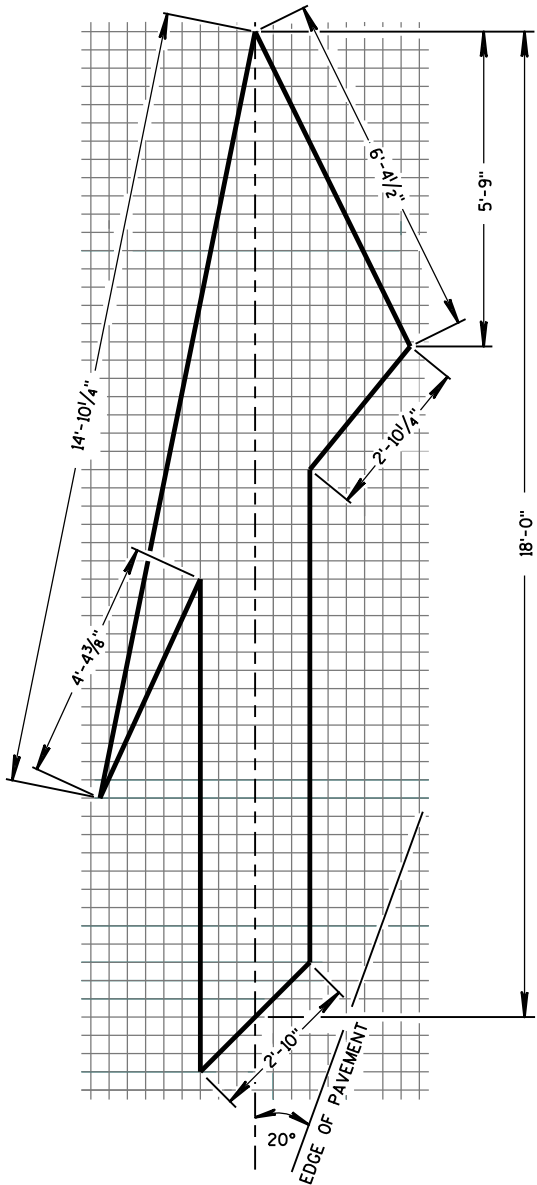
TYPE 7



TYPE 1

GENERAL NOTES

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

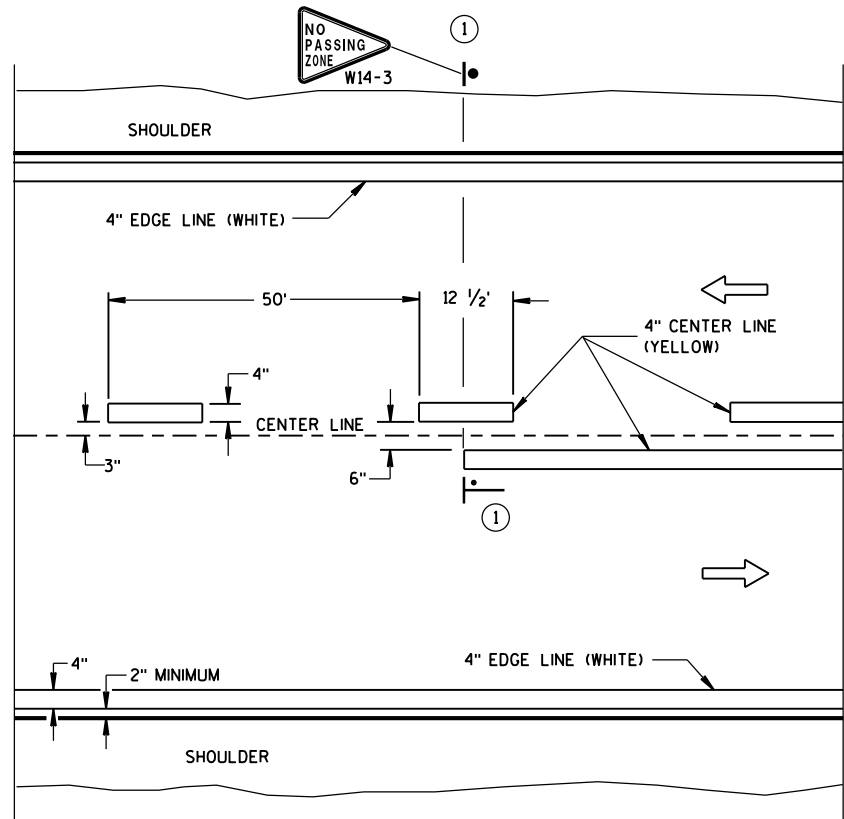


TYPE 5 LANE DROP ARROW

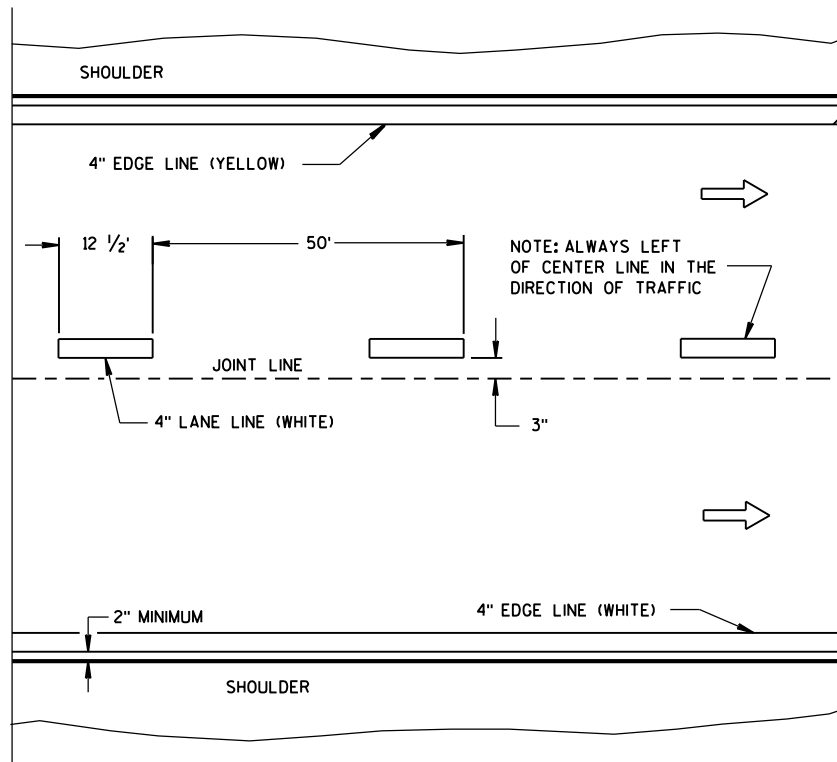
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 109
FHWA

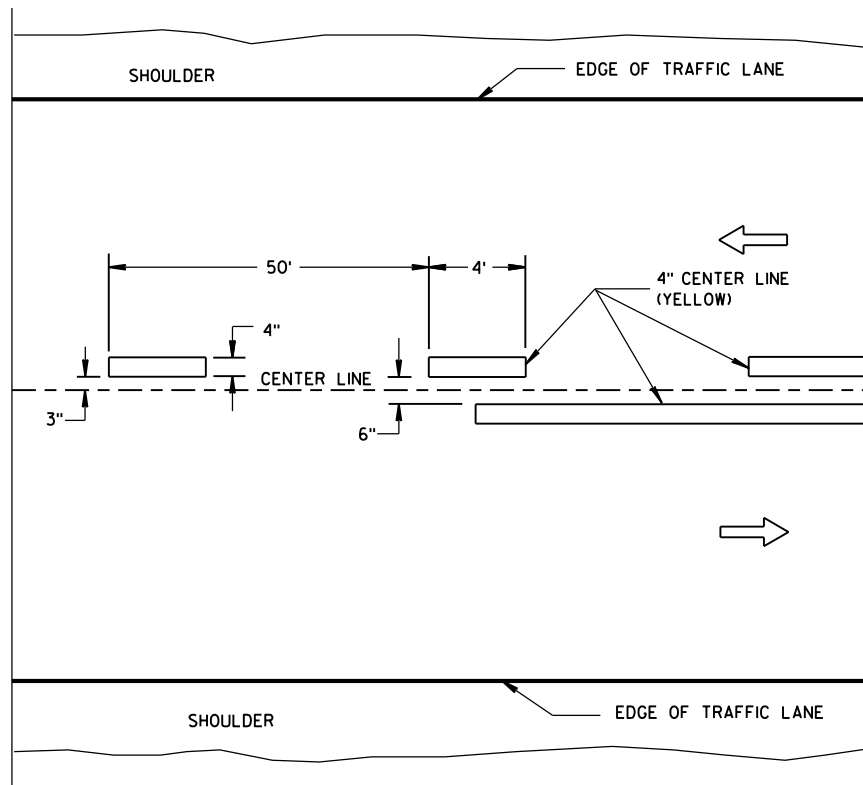


TWO WAY TRAFFIC

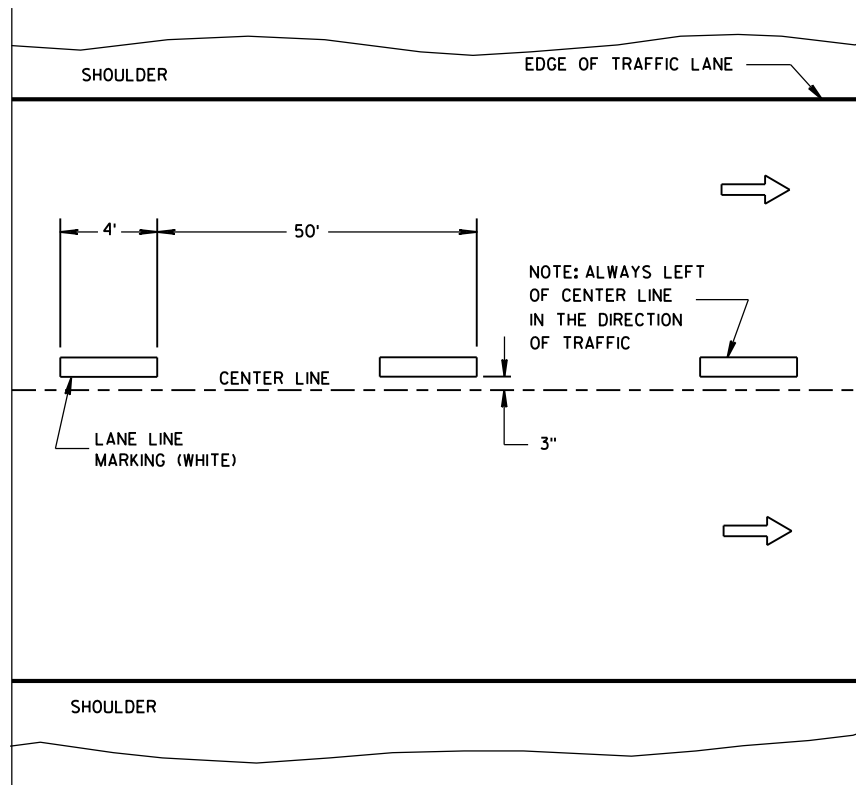


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

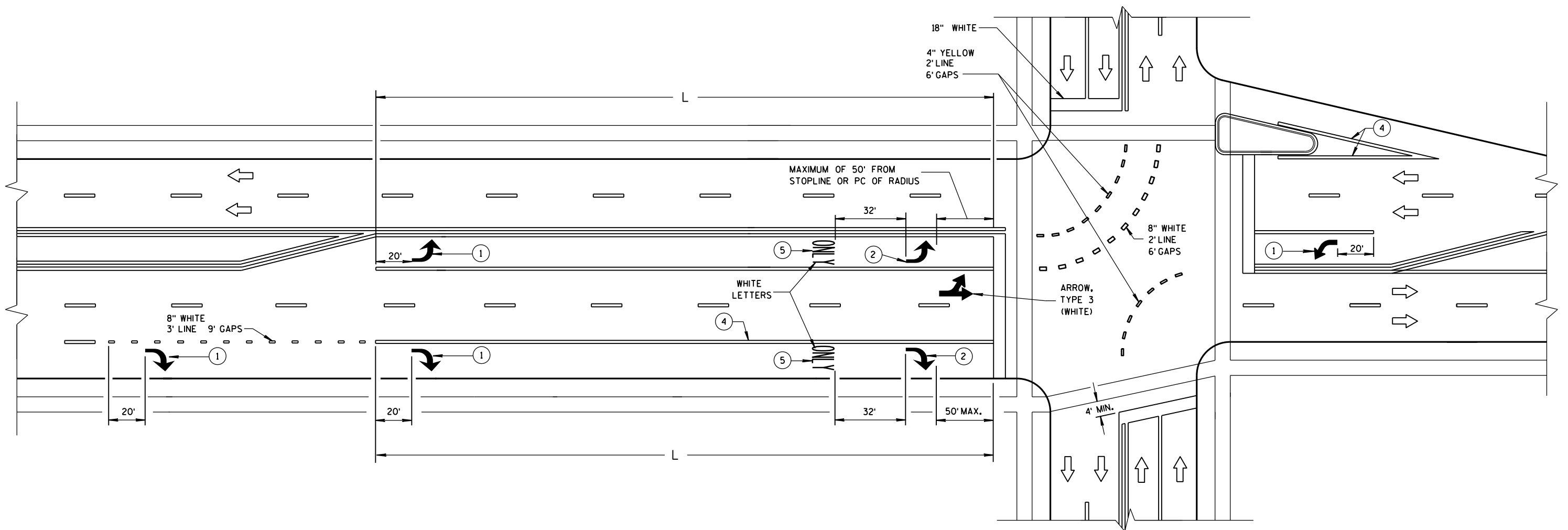
—•— "T" MARKING

● POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAP 110 ENGINEER
FHWA



GENERAL NOTES

- ① REQUIRED ARROW, TYPE 2 (WHITE).
- ② REQUIRED ARROW, TYPE 2 (WHITE) WHEN L IS GREATER THAN 78 FEET AND LESS THAN OR EQUAL TO 166 FEET.
- ③ A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ④ 8" WHITE
- ⑤ REQUIRED WORD ONLY WHEN L IS GREATER THAN 166 FEET.

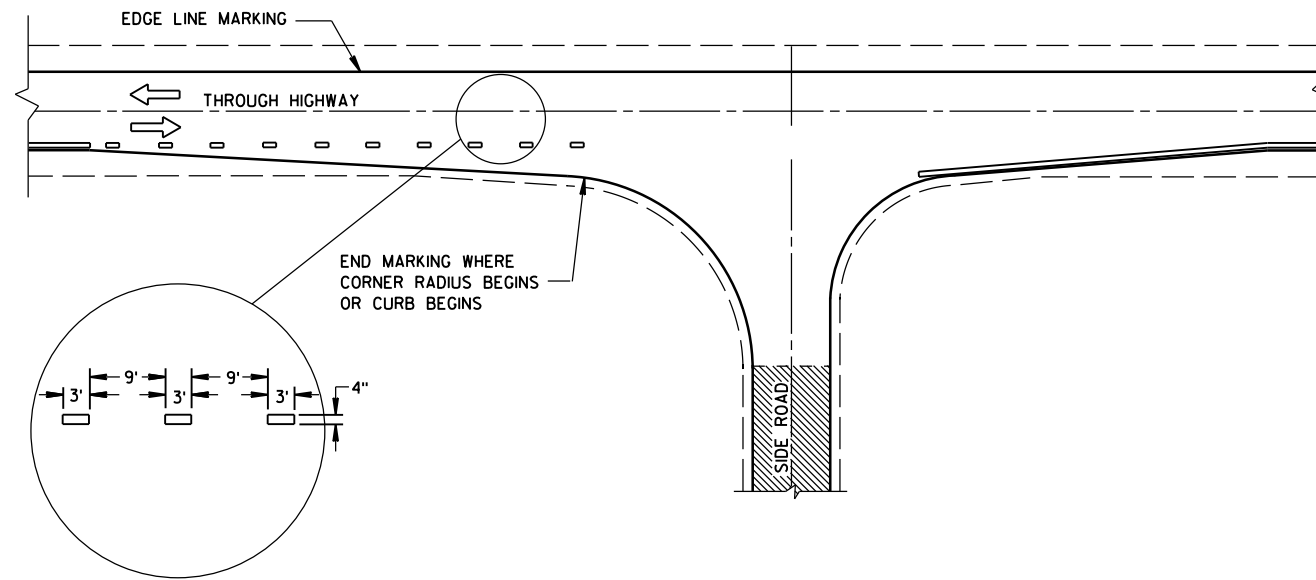
TWO WAY LEFT TURN LANE

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL

L = LENGTH OF TURN BAY

PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 111

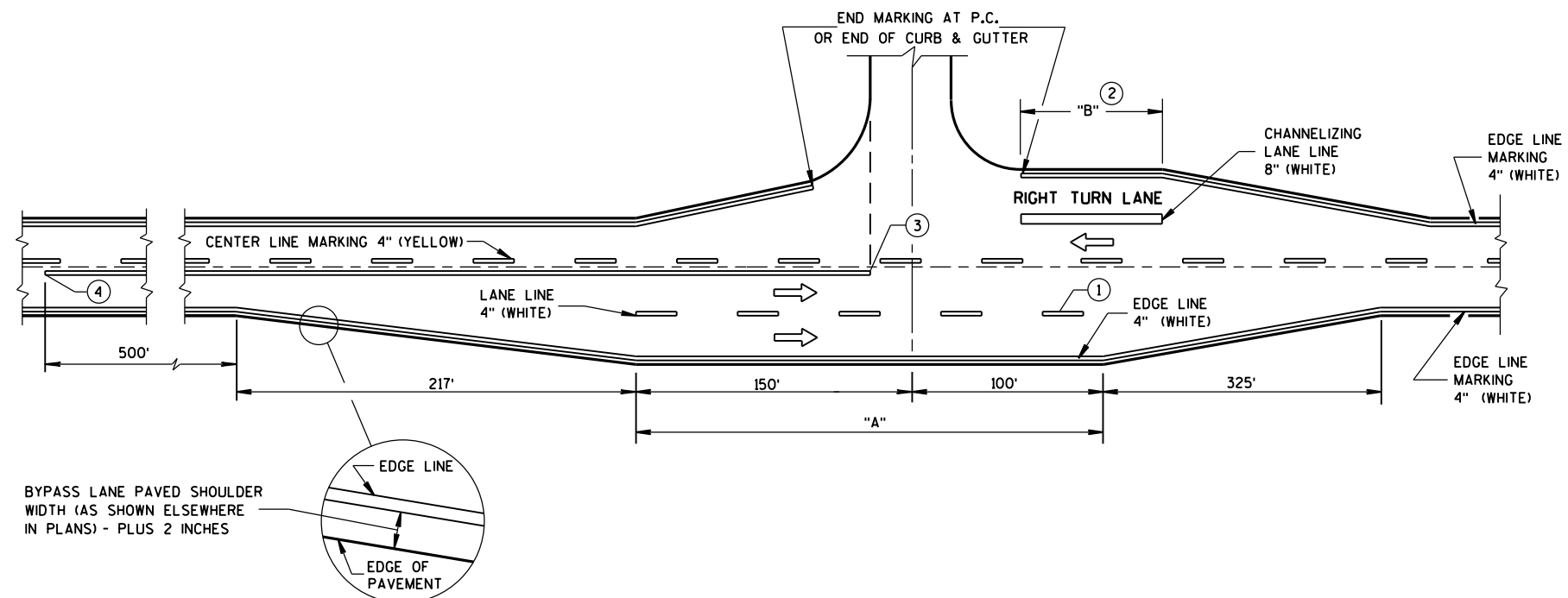


MINOR INTERSECTION

GENERAL NOTES

- OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
 - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
 - ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 112

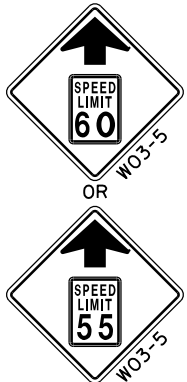
LEGEND

- 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

L, TAPER LENGTH (MPH)						
SPEED (MPH)	W, LATERAL OFFSET (FT)					
	10	11	12	13	14	15
45	450	495	540	585	630	675
50	500	550	600	650	700	750
55	550	605	660	715	770	825
60	600	660	720	780	840	900
65	650	715	780	845	910	975
70	700	770	840	910	980	1050



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 2600 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.



R2-1 48"x60" (BLACK AND WHITE) LOCATED 500 FEET BEYOND W20-5G SIGN.

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.

"W0" 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.

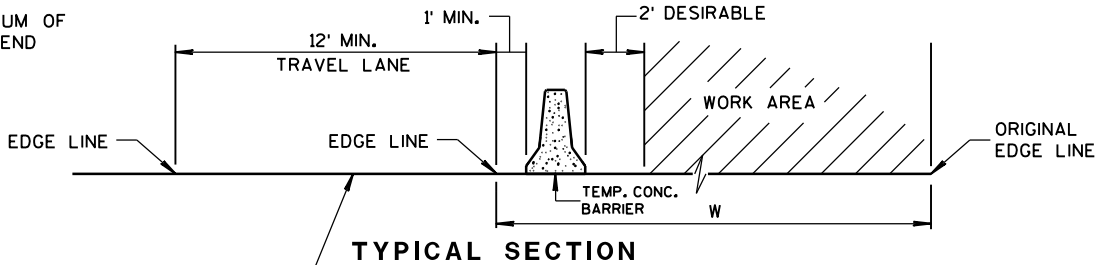
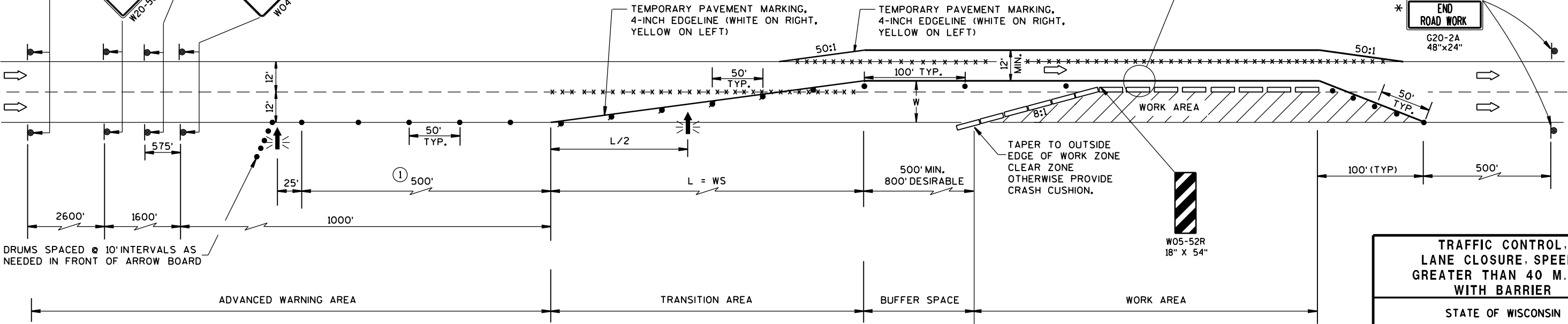
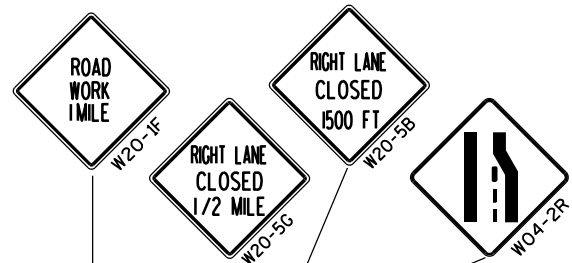
1 CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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.

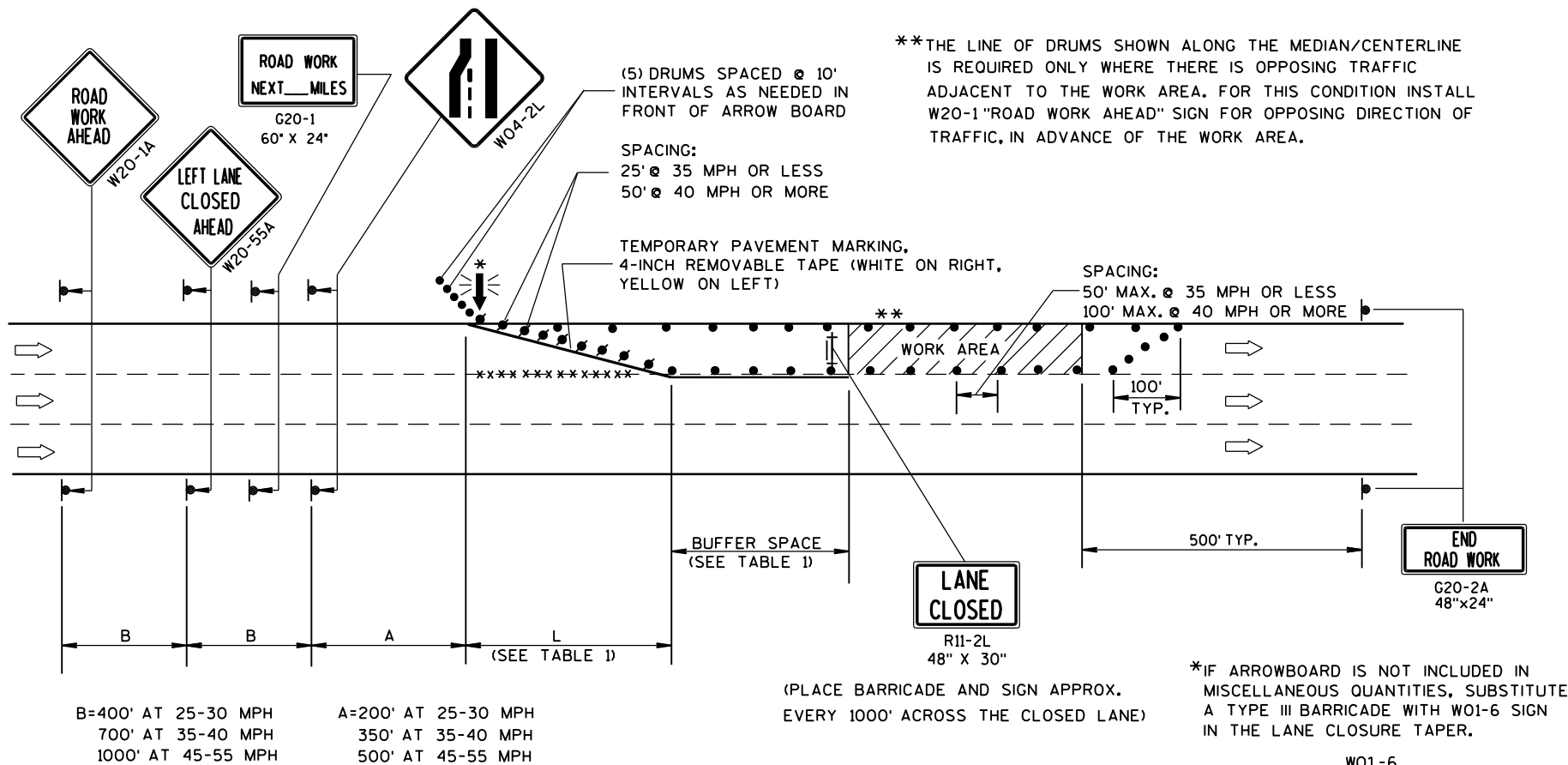
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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.



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept., 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 113 IC
FHWA	



GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

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

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

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

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

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.

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

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER
L = $\frac{WS^2}{60}$ AT 40 MPH OR LESS
L = TAPER LENGTH IN FEET
S = NON-CONSTRUCTION SPEED LIMIT (MPH)
W = WIDTH OF LANE CLOSURE

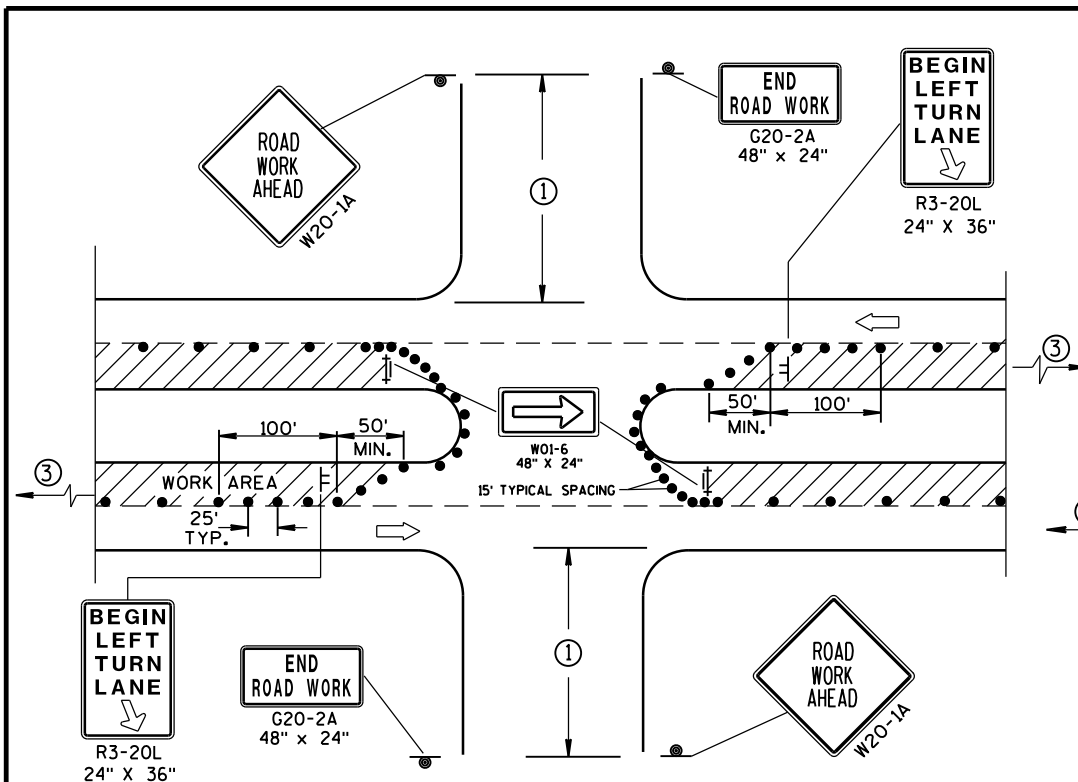
LEGEND

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

TRAFFIC CONTROL,
SINGLE LANE CLOSURE,
NON-FREEWAY/EXPRESSWAY

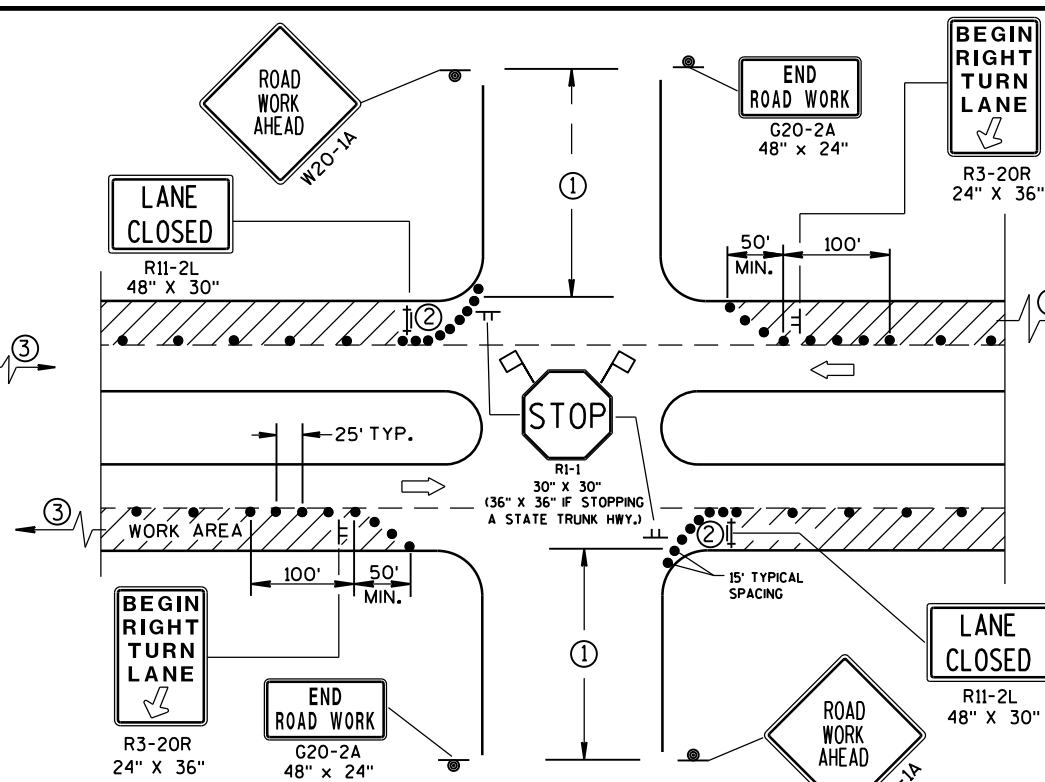
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER 114 IC
FHWA



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT
INTERSECTIONS WHENEVER
STAGING OF WORK ALLOWS.
TAPER AND TURN LANE
LENGTHS BASED ON FIELD
CONDITIONS AS APPROVED
BY THE ENGINEER.



DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

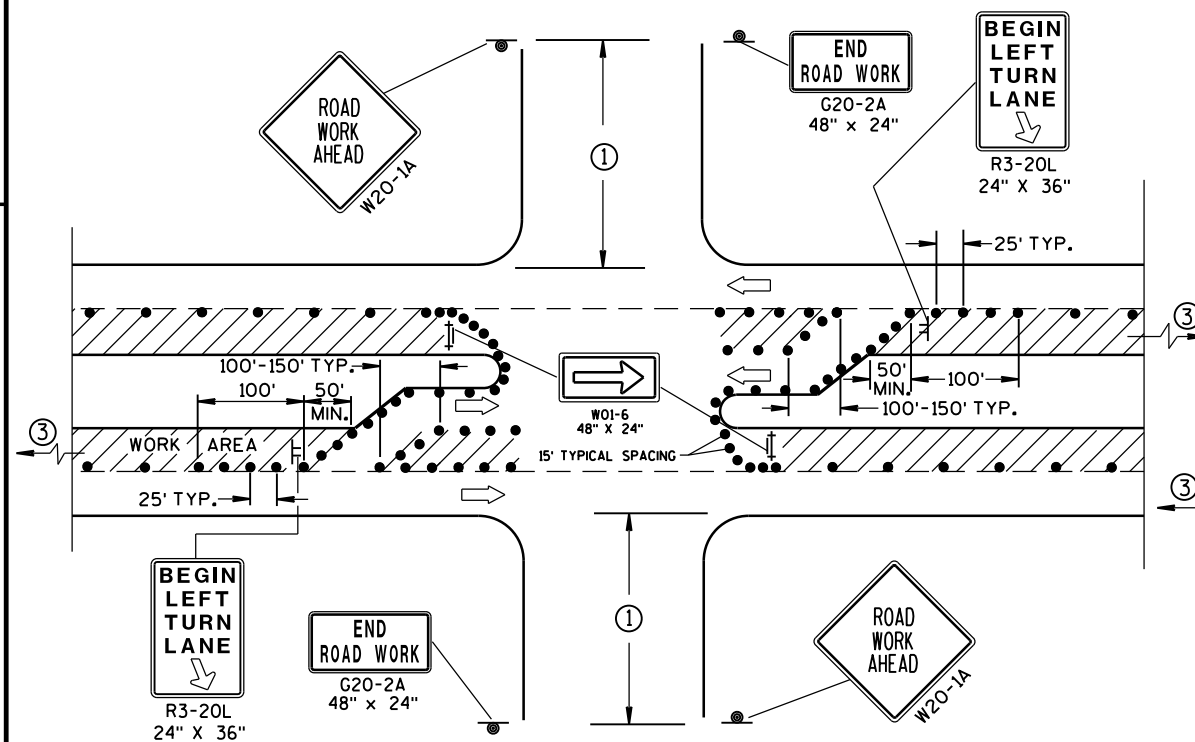
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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 WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

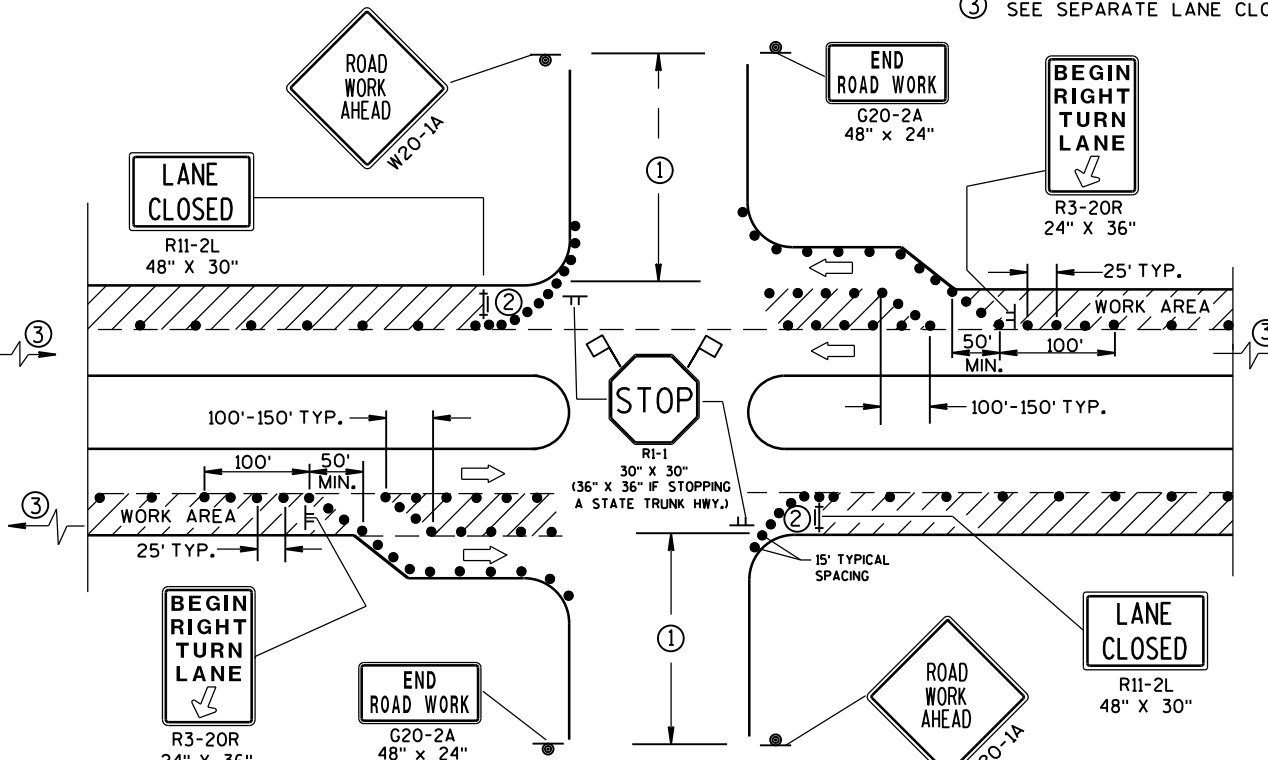
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



DETAIL C

FOR LEFT LANE CLOSURE AT INTERSECTION OR
MEDIAN OPENING (WITH LEFT TURN BAY OPEN)



**FOR RIGHT LANE CLOSURE AT INTERSECTION
(WITH RIGHT TURN BAY OPEN)**

LEGEND

- | | |
|---|--|
|  | TRAFFIC CONTROL DRUM |
|  | SIGN ON PERMANENT SUPPORT |
|  | SIGN ON TEMPORARY SUPPORT (5' MIN.
MOUNTING HEIGHT) |
|  | TYPE III BARRICADE WITH ATTACHED SIGN
AND TYPE "A" WARNING LIGHT (FLASHING) |
|  | DIRECTION OF TRAFFIC |
|  | FLAGS, 16" X 16" MIN., (ORANGE) |
|  | WORK AREA |

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017
DATE

/s/ Andrew Heidtke
WORK ZONE ENC 115

FHWA

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

$L = WS$ AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TRAFFIC CONTROL DRUM
-  FLASHING ARROW BOARD
-  DIRECTION OF TRAFFIC
-  REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
-  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 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

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

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

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

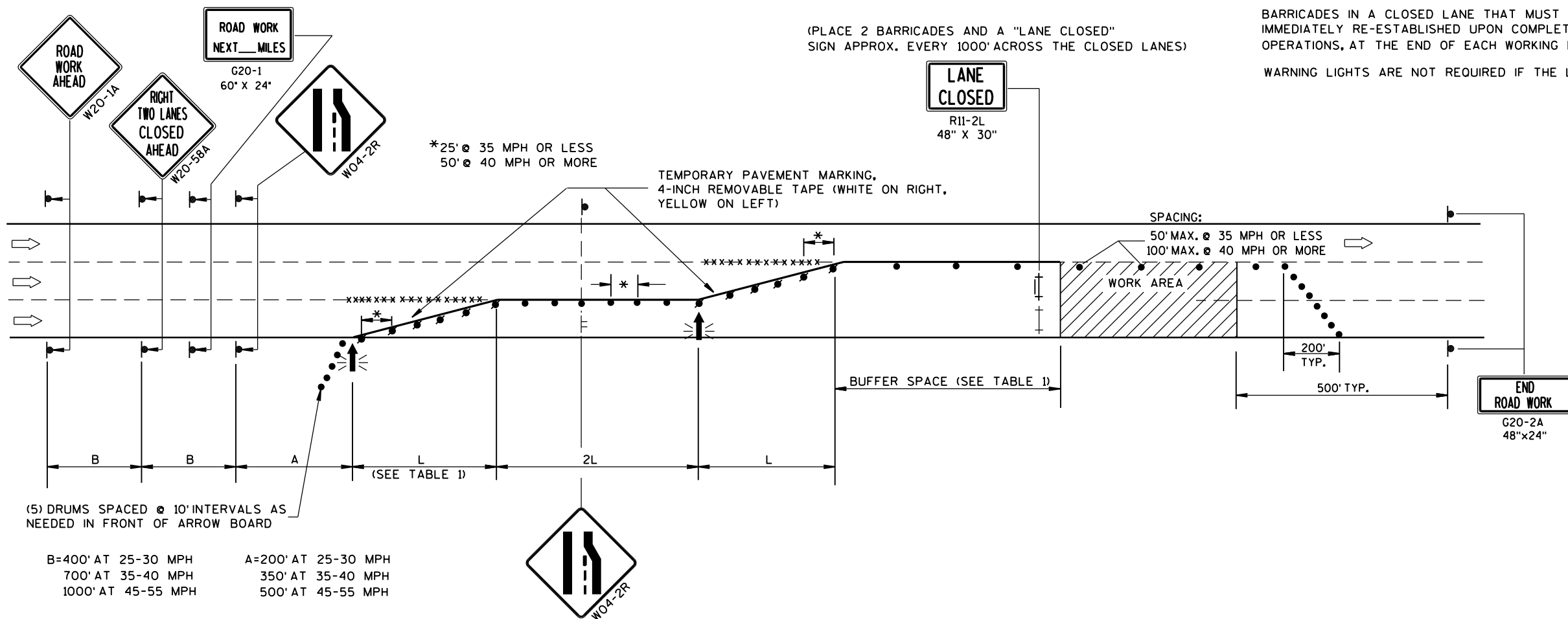
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO LOCATE THE ARROWBOARD AS SHOWN, PLACE THE ARROWBOARD IN THE LANE CLOSURE TAPER AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE TAPER.

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

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.

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



TRAFFIC CONTROL,
TWO LANE CLOSURE,
NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016

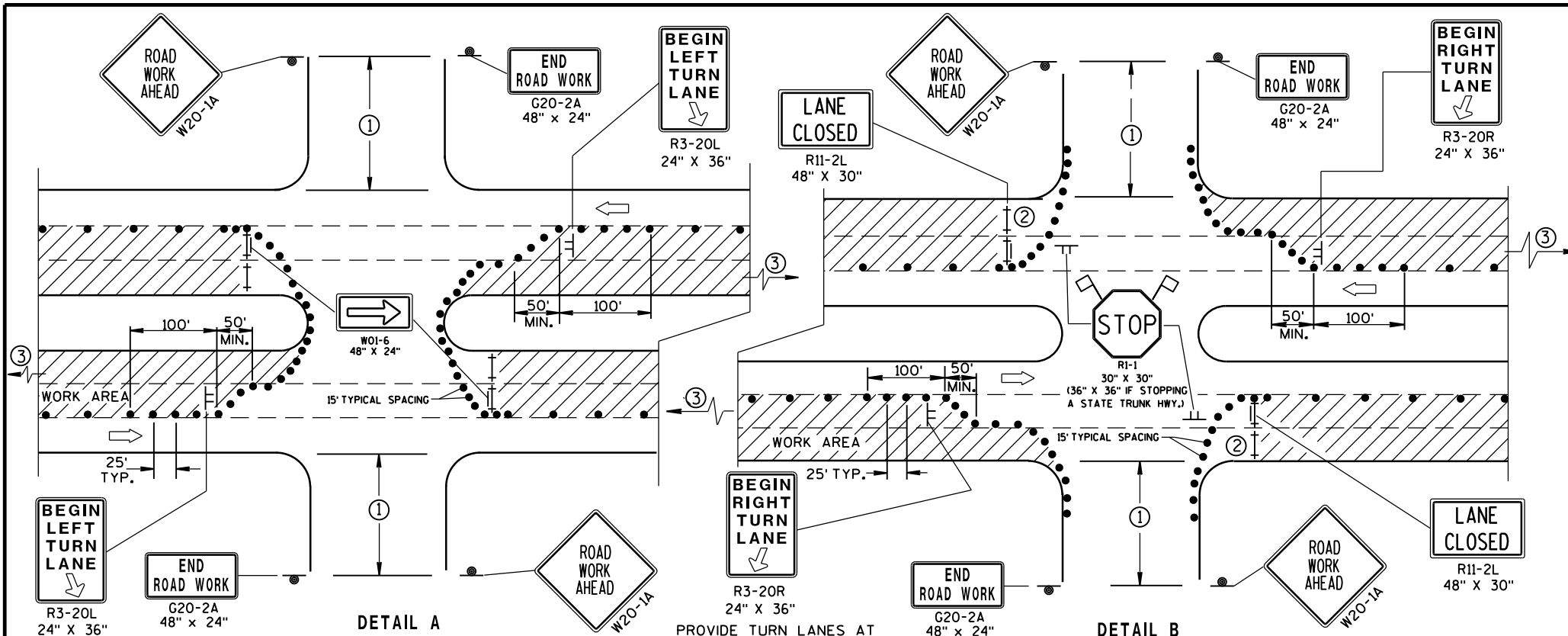
DATE

FHWA

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE SAFETY ENGINEER

116



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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

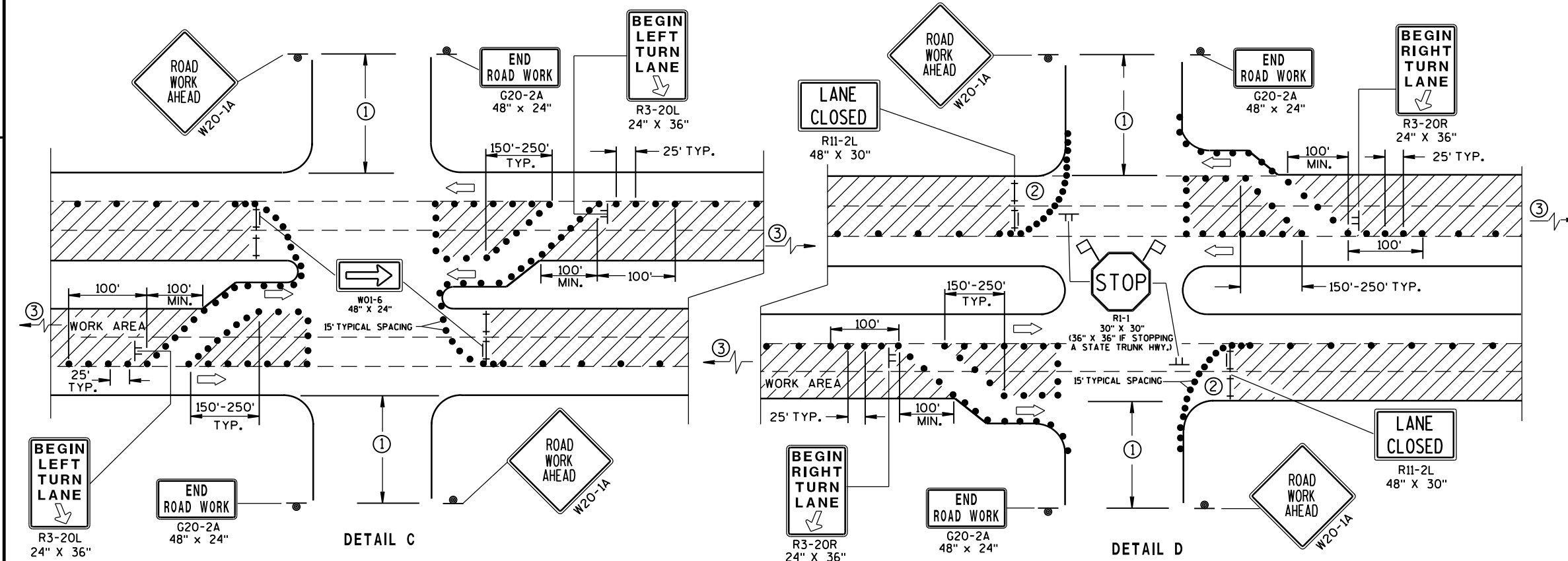
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

- ① 500 FEET TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350 FEET IF 35-40 MPH.
200 FEET IF 25-30 MPH.
- ② ALSO USE BARRICADES AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⊢ TYPE III BARRICADE
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- ⚑ FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA



FOR LEFT TWO LANES CLOSED AT INTERSECTION OR MEDIAN BREAK (WITH LEFT TURN BAY OPEN)

FOR RIGHT TWO LANES CLOSED AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

TRAFFIC CONTROL,
INTERSECTION WITHIN
TWO LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sep., 2017 /S/ Andrew Heidtke
DATE
FWHA WORK ZONE ENC 117

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.

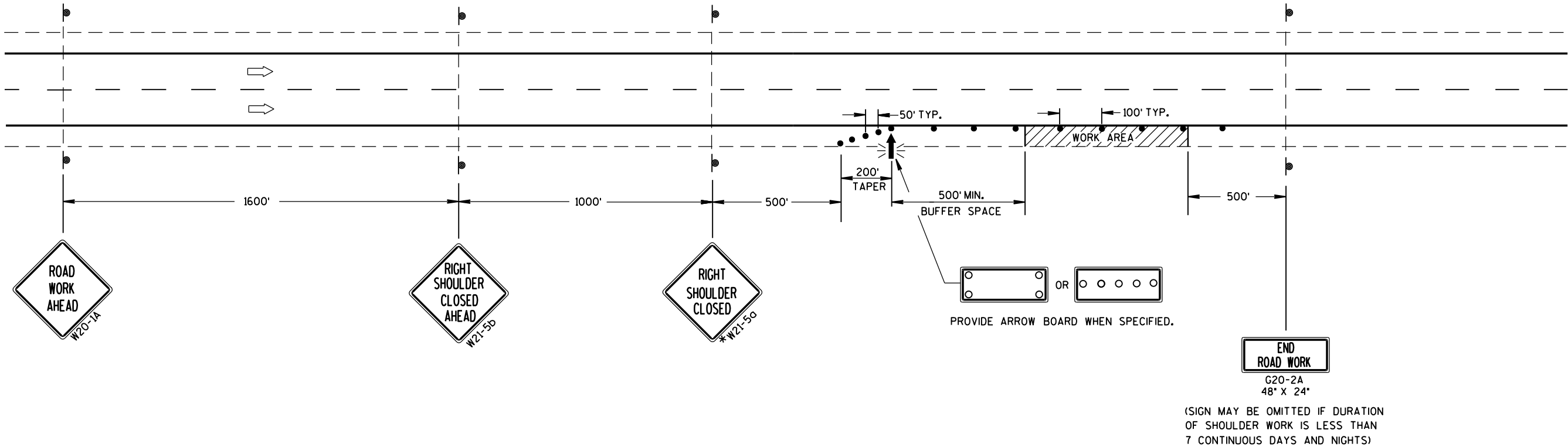
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

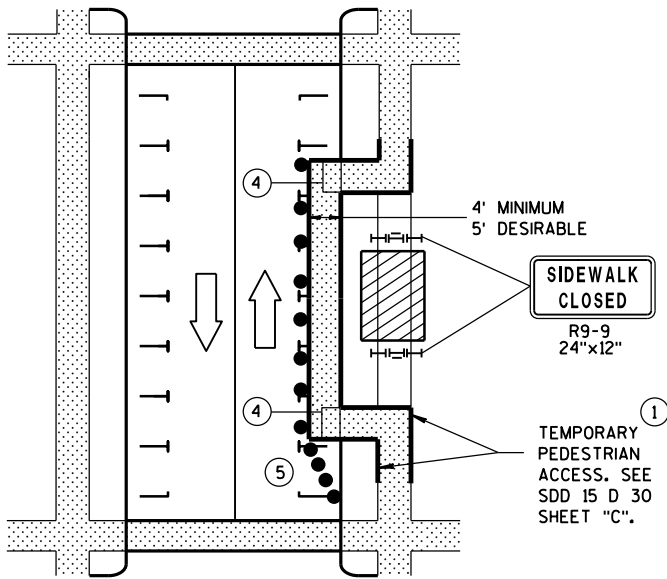


TRAFFIC CONTROL
SHOULDER CLOSURE ON DIVIDED
ROADWAY, SPEEDS GREATER
THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

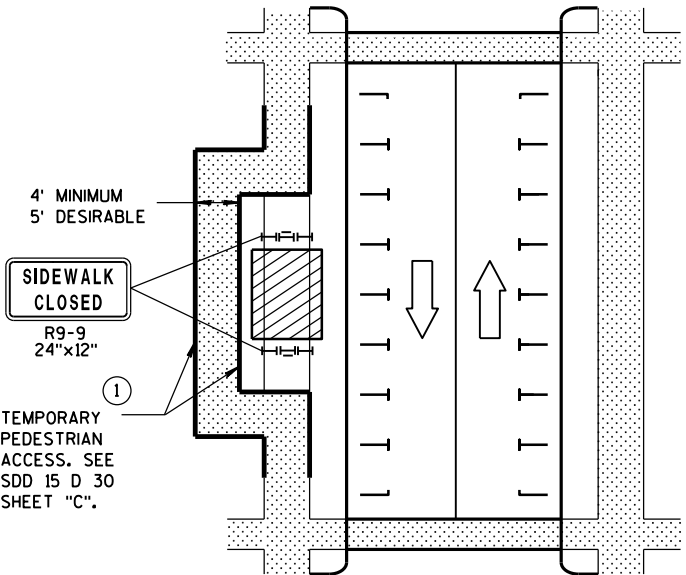
APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE 118
FHWA SAFETY ENGINEER

NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.

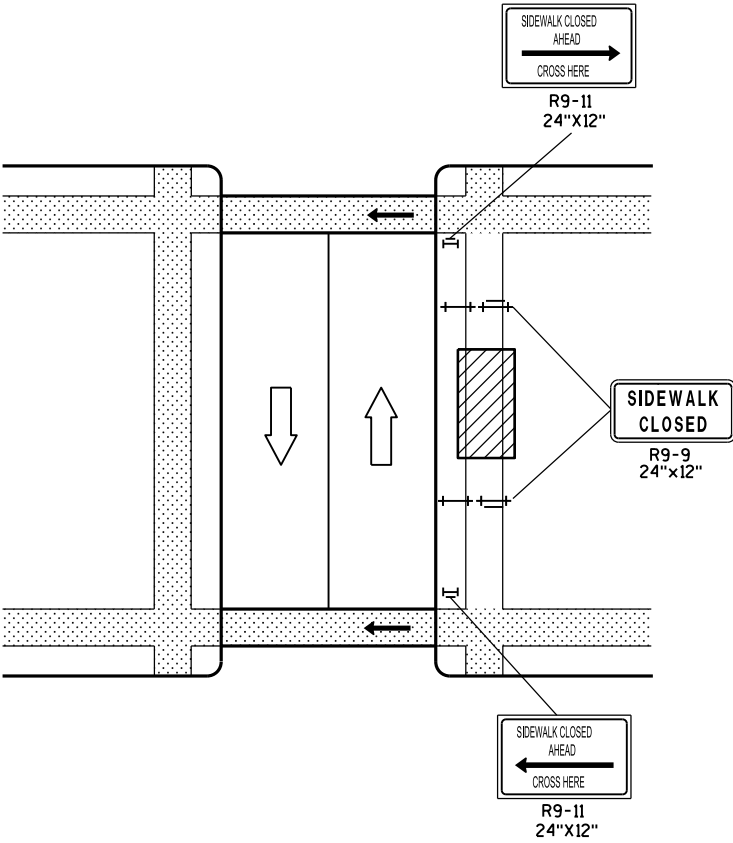


MID-BLOCK SIDEWALK CLOSURE
IN PARKING LANE

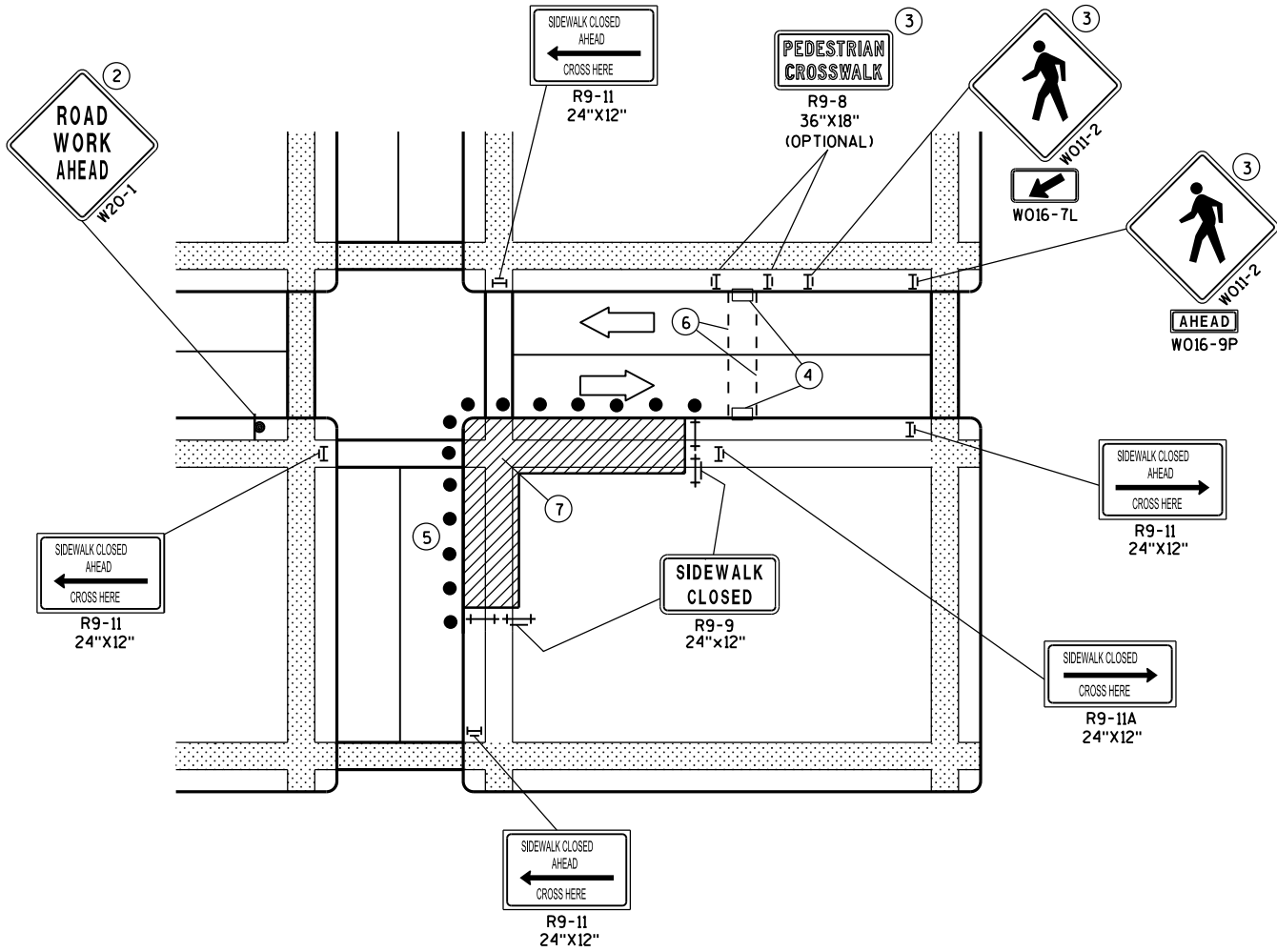
NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION



MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

"W0" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

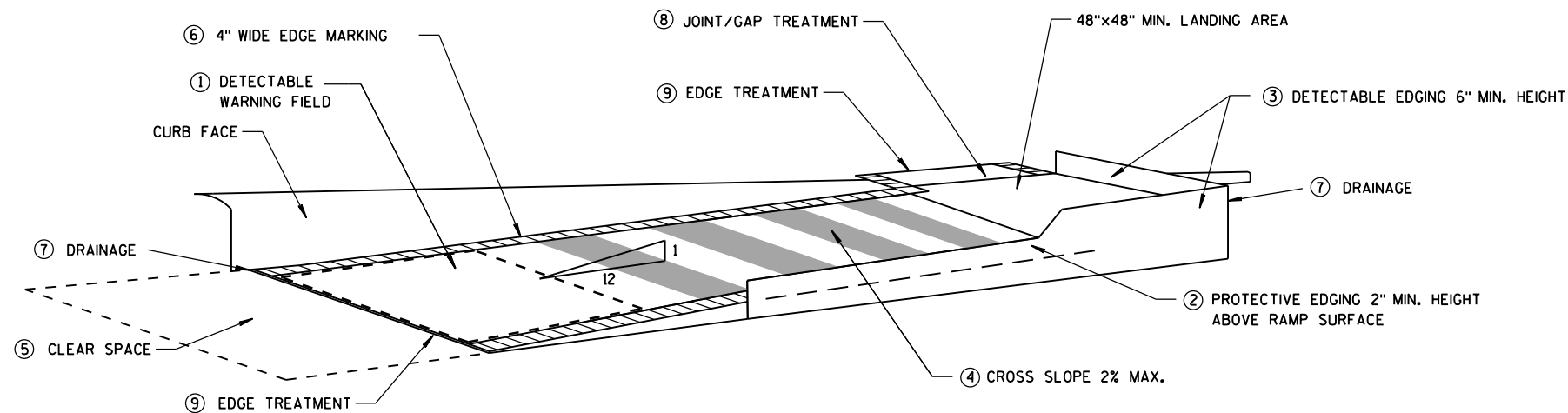
- IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.
- "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
- IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND W011-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
- TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".
- DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
- LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

- SIGN ON PERMANENT SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM

TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION

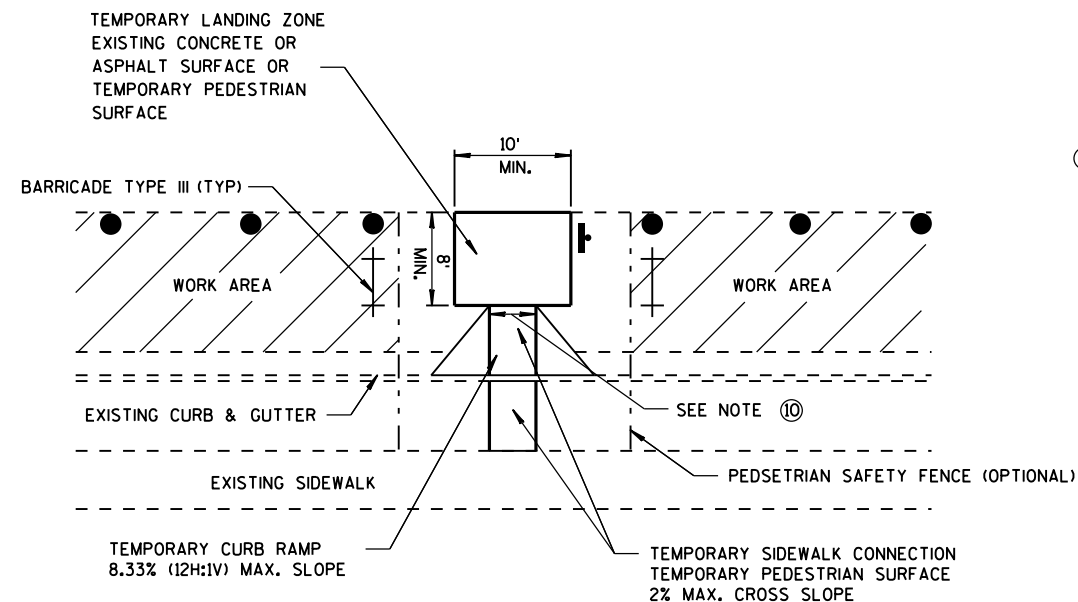
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



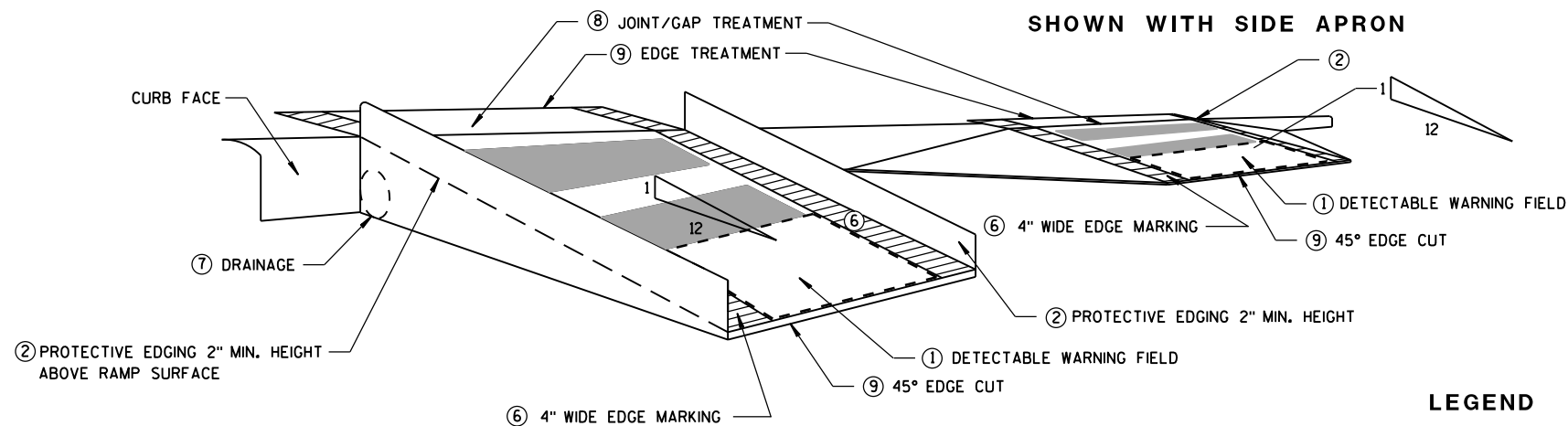
TEMPORARY CURB RAMP
PARALLEL TO CURB

GENERAL NOTES

- NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.
ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY
TO MAINTAIN PEDESTRIAN ACCESS.
- 1 CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 8D5 SHEET "E".
 - 2 PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
 - 3 DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
 - 4 CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
 - 5 CLEAR SPACE OF 48"x48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
 - 6 THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.
 - 7 DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
 - 8 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
 - 9 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".
 - 10 5' WIDE MIN. WITH PEDESTRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.



TEMPORARY BUS STOP PAD

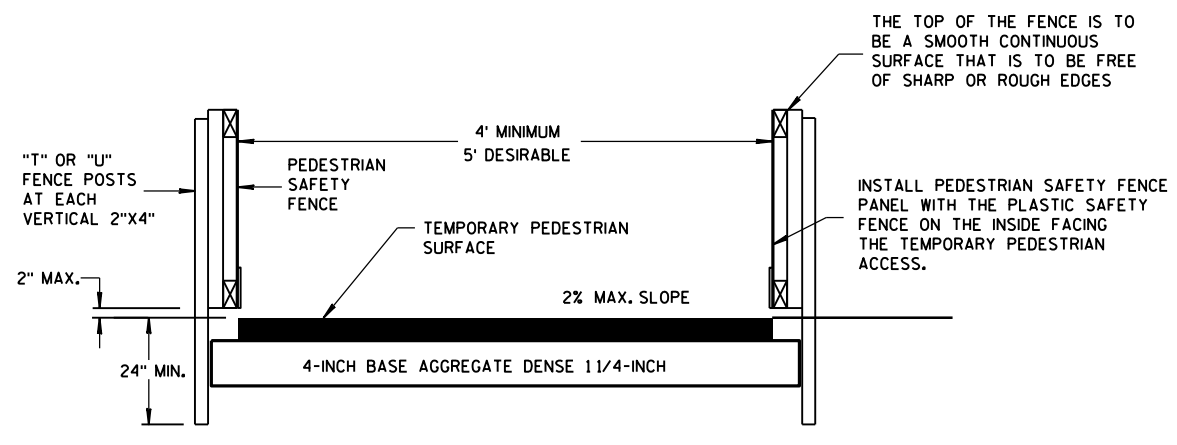


SHOWN WITH PROTECTIVE EDGE

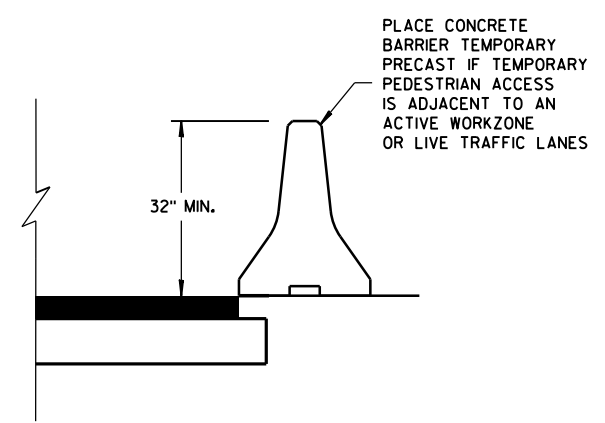
TEMPORARY CURB RAMP
PERPENDICULAR TO CURB

- LEGEND
- WORK AREA
 - TYPE III BARRICADE
 - TRAFFIC CONTROL DRUM

TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 120
FHWA	

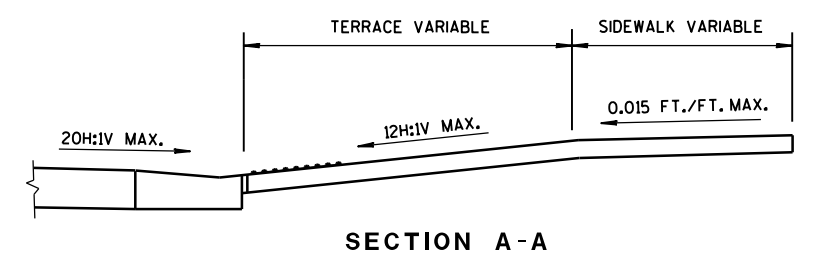


TEMPORARY PEDESTRIAN ACCESS

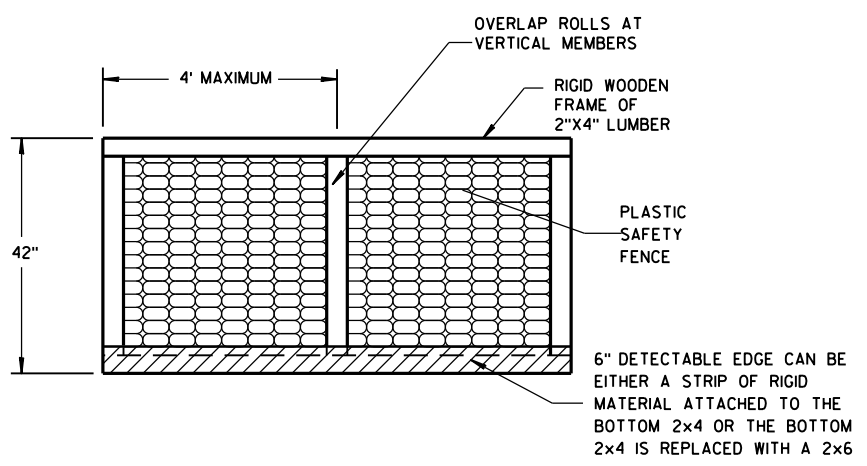


GENERAL NOTES

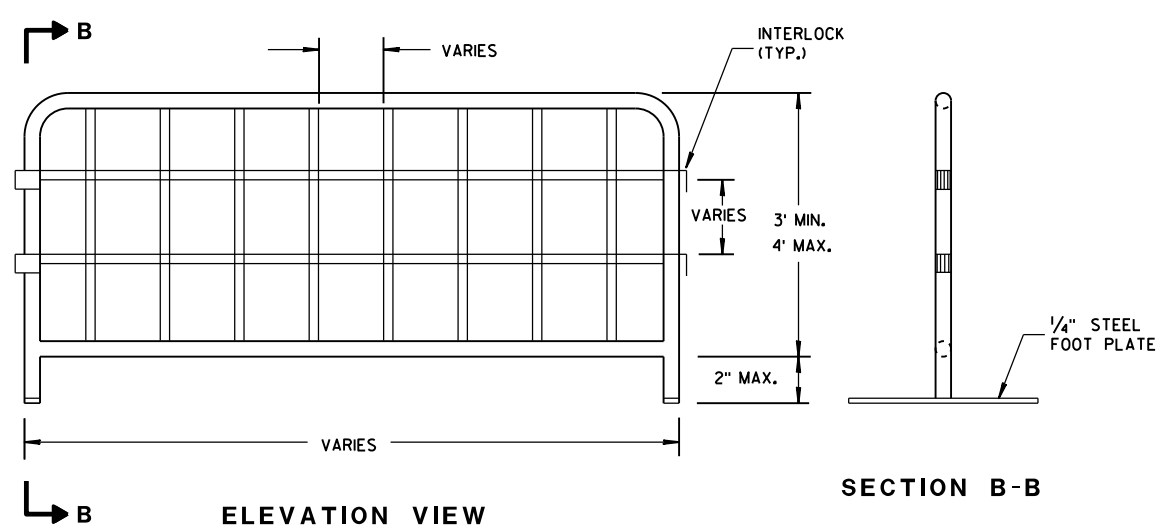
- ① INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



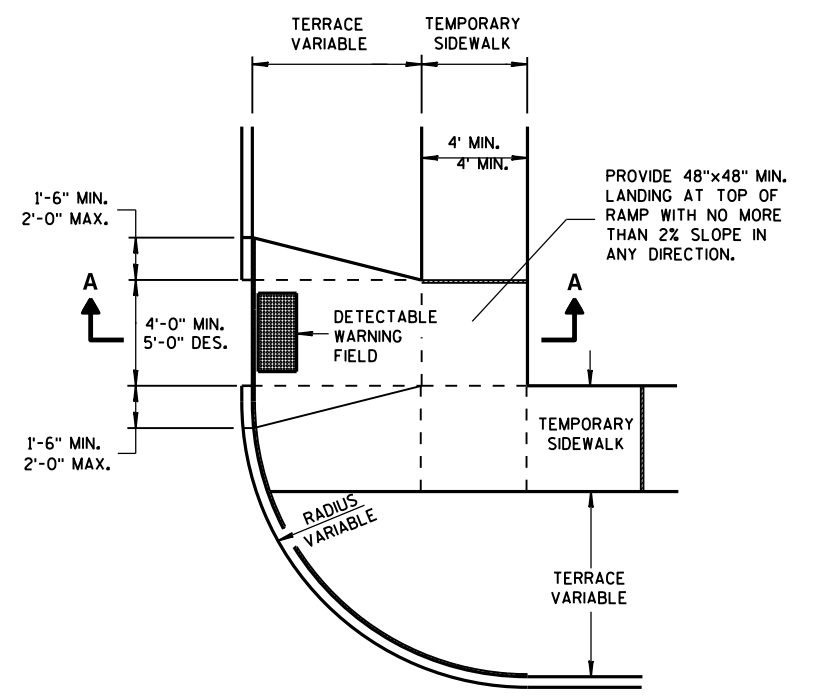
PEDESTRIAN SAFETY FENCE



ELEVATION VIEW

SECTION B-B

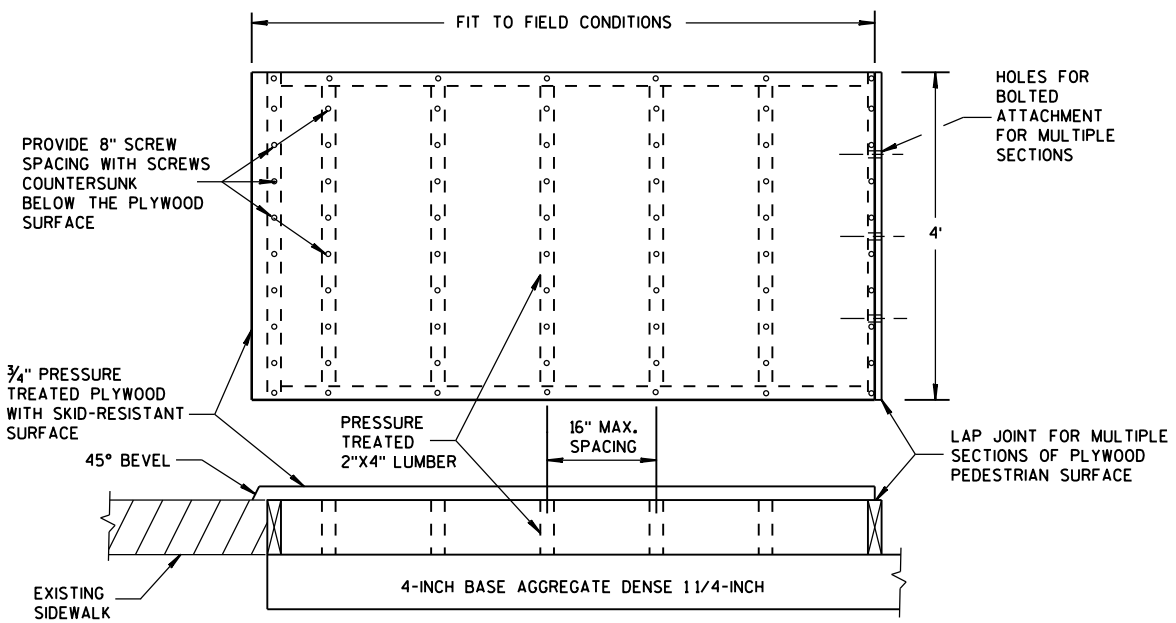
TEMPORARY PEDESTRIAN STEEL BARRICADE



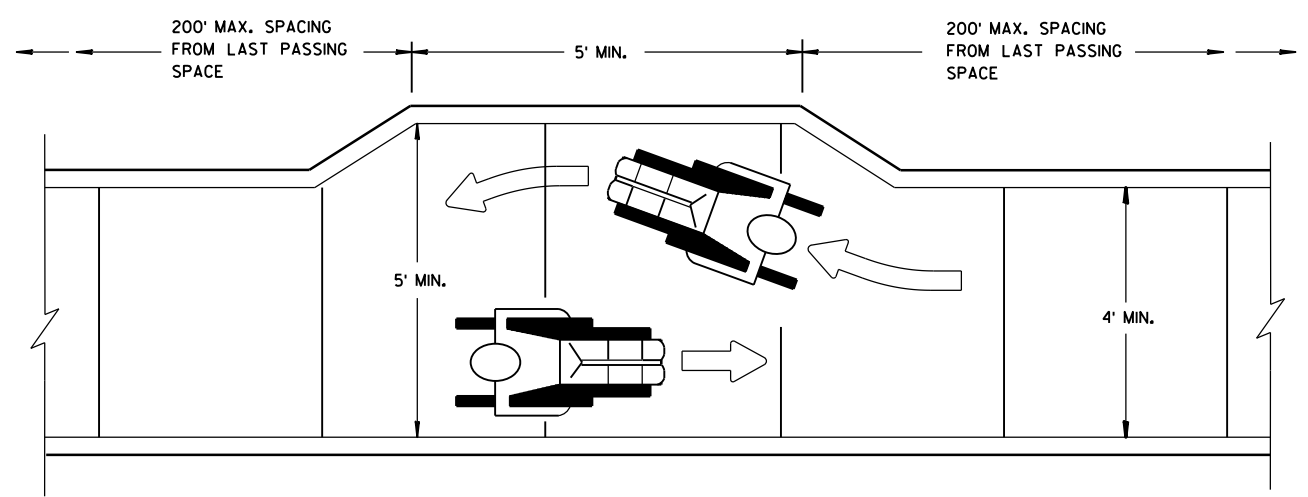
PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)

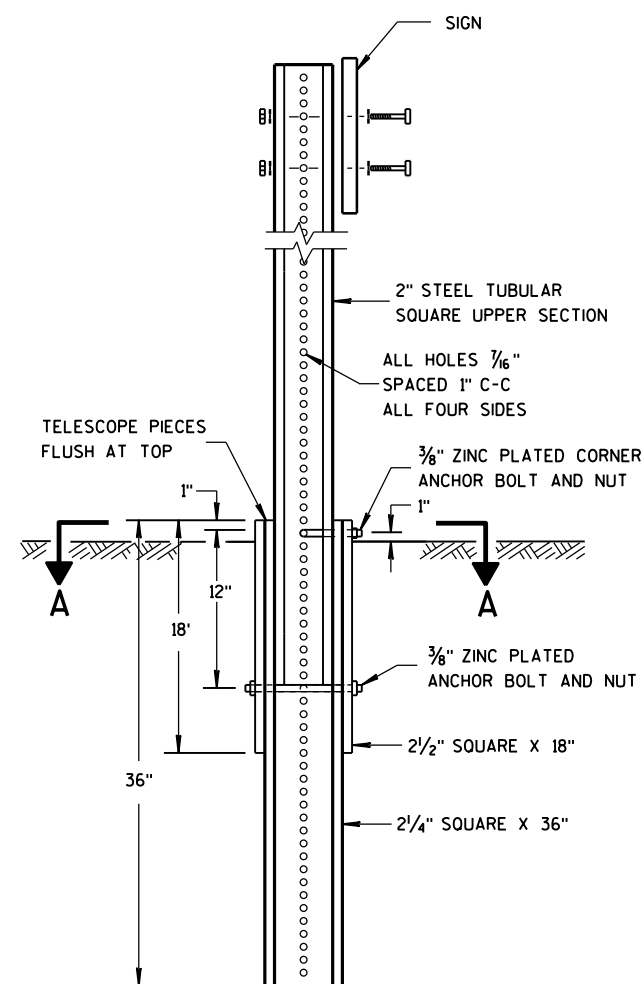


TEMPORARY PEDESTRIAN SURFACE PLYWOOD



NARROW SIDEWALK PASSING DETAIL

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZON SAFETY ENGINEER 121 ic
FHWA	



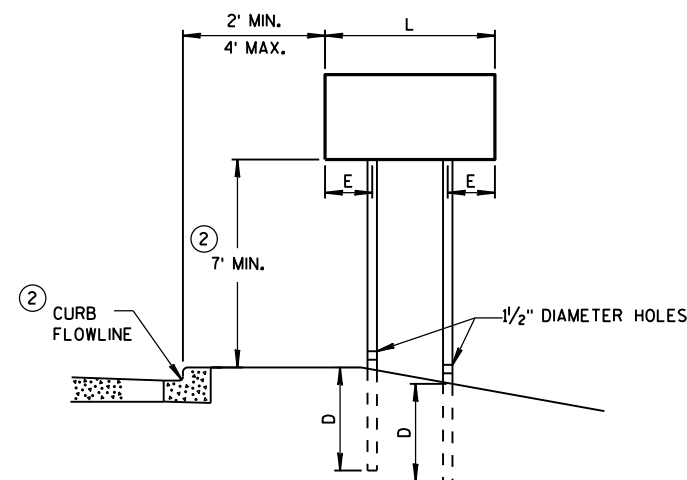
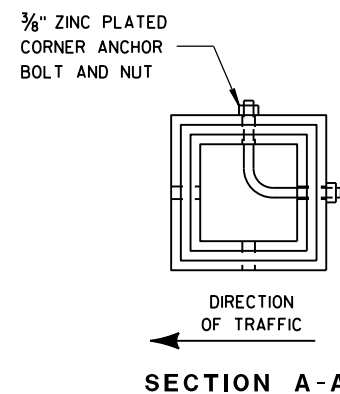
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

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

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

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

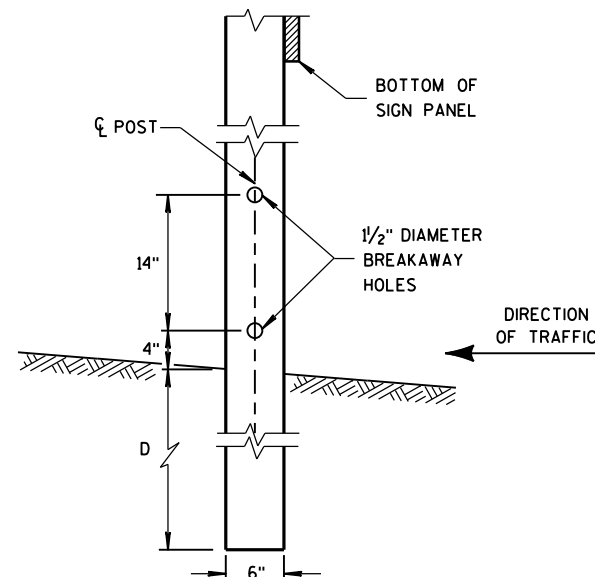


URBAN AREA

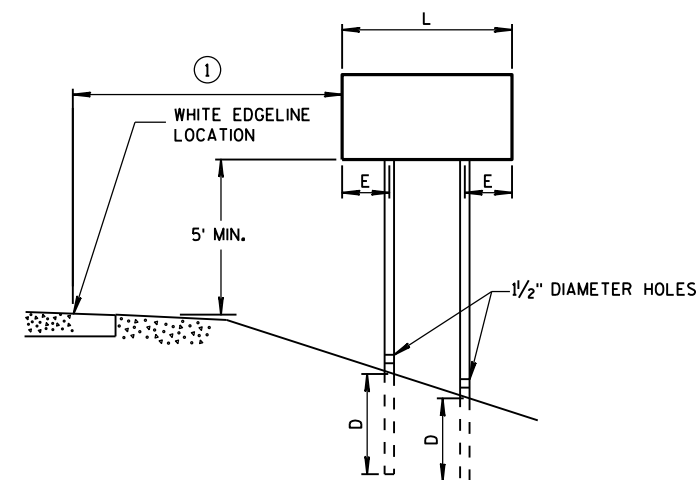
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

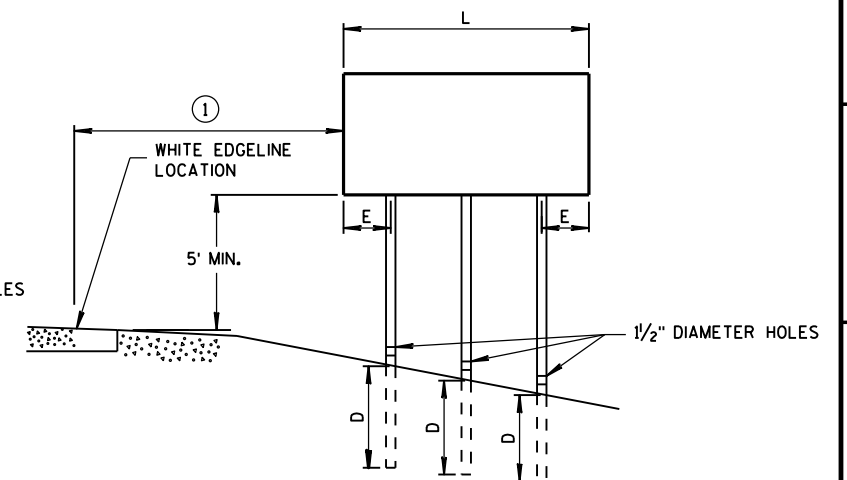
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4"x6" WOOD POST MODIFICATION



RURAL AREA



4" X 6" WOOD POST

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

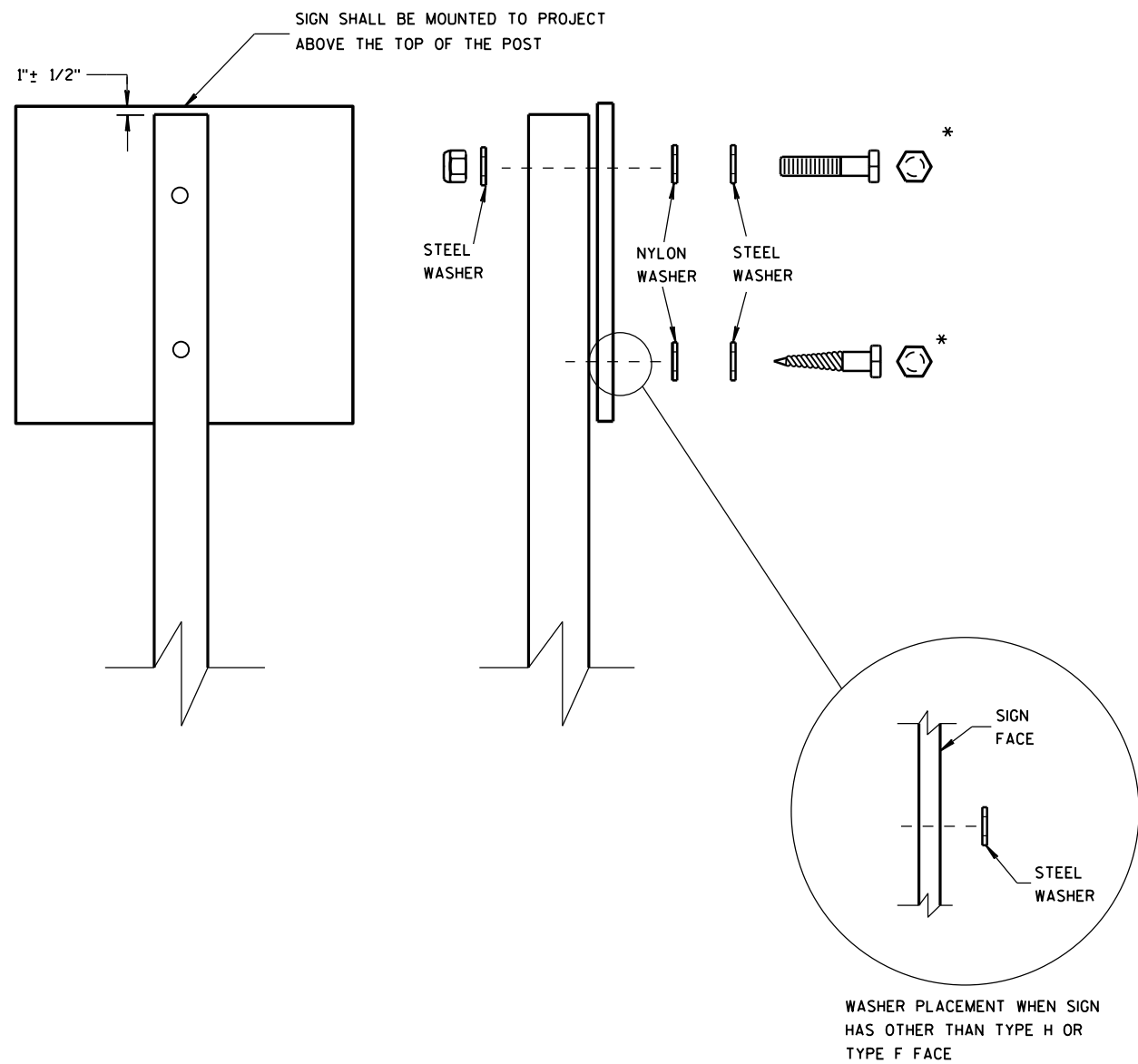
SEE NOTE (3)

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB, IF NO SIDEWALK AND NO PARKING. VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 122



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

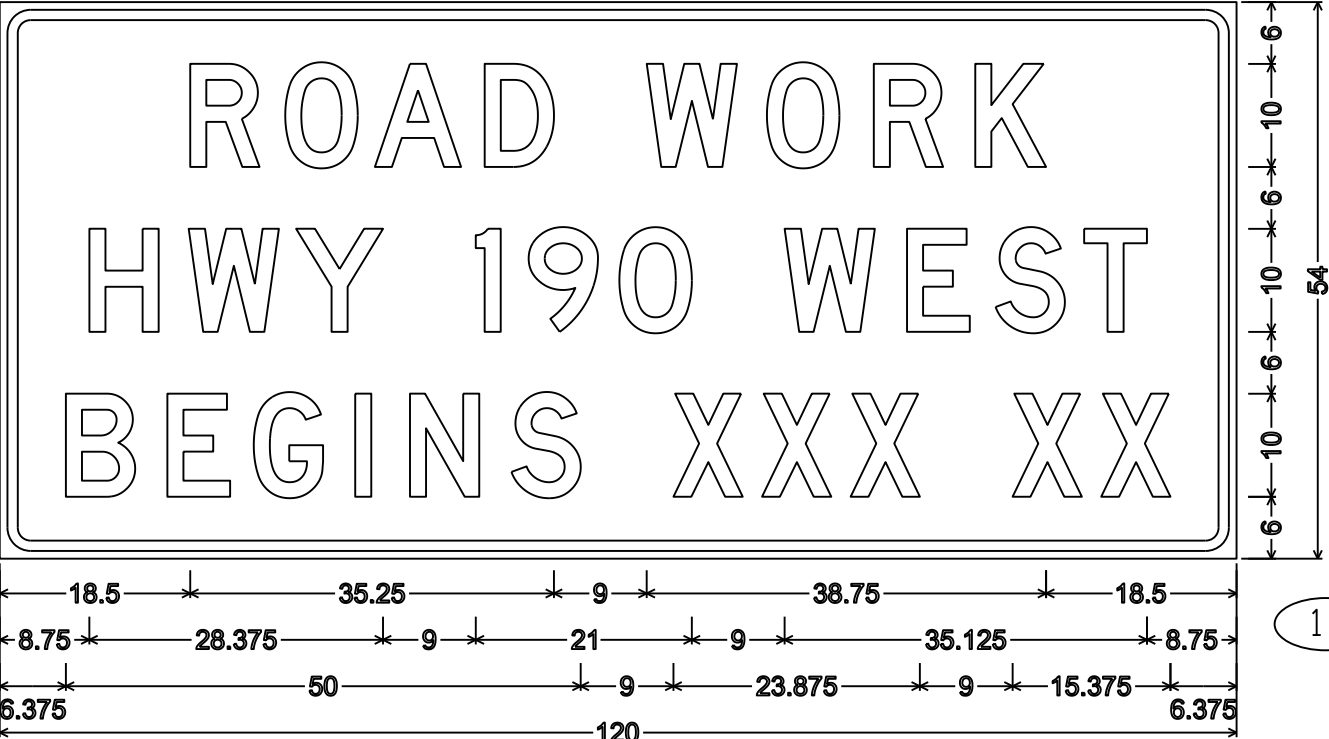
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

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

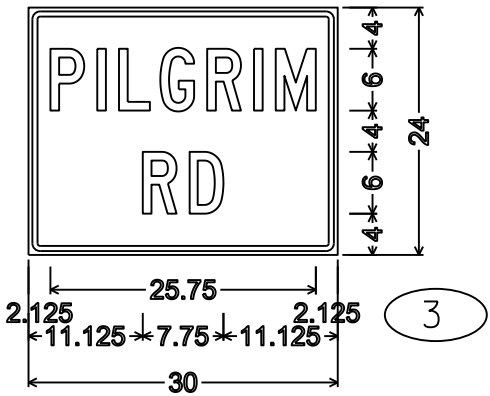
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE EN 123
FHWA	



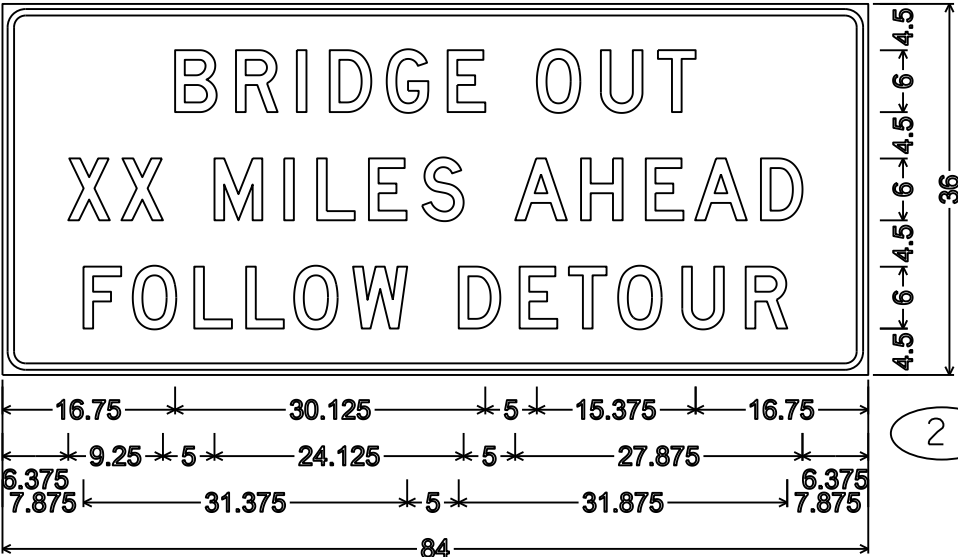
3.000" Radius, 1.000" Border, 0.750" Indent



1.125" Radius, 0.500" Border, 0.375" Indent
"PILGRIM" C; "RD" C

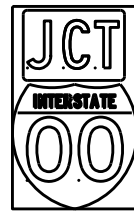
NOTES

- 1. Fixed Message Type II Signs - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D except as noted

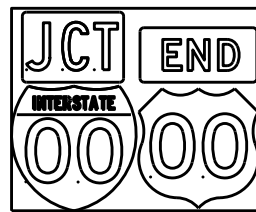


2.250" Radius, 0.625" Border, 0.500" Indent

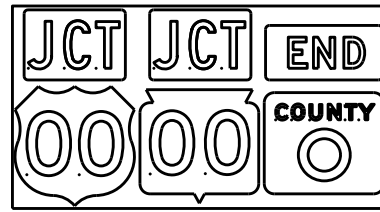
TYPICAL ASSEMBLIES



J1-1



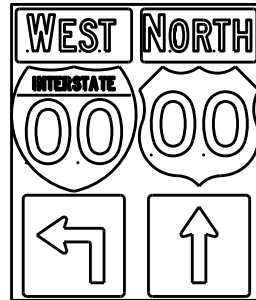
J1-2



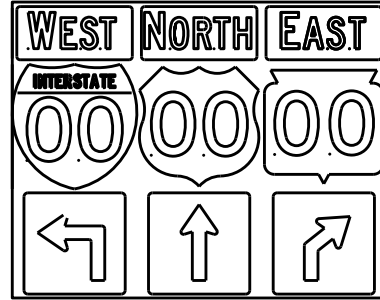
J1-3



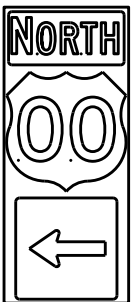
J2-1



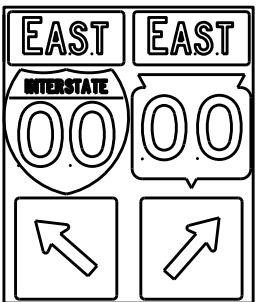
J2-2



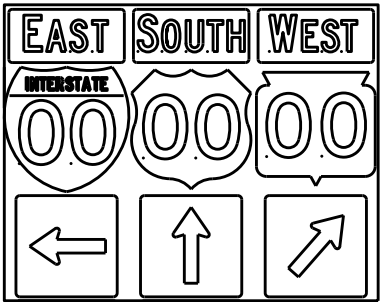
J2-3



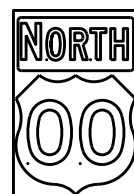
J3-1



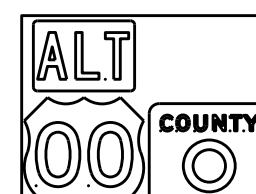
J3-2



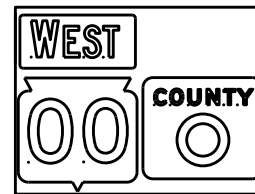
J3-3



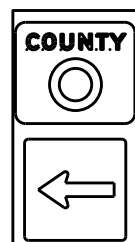
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

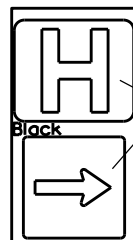


J22-1



JV

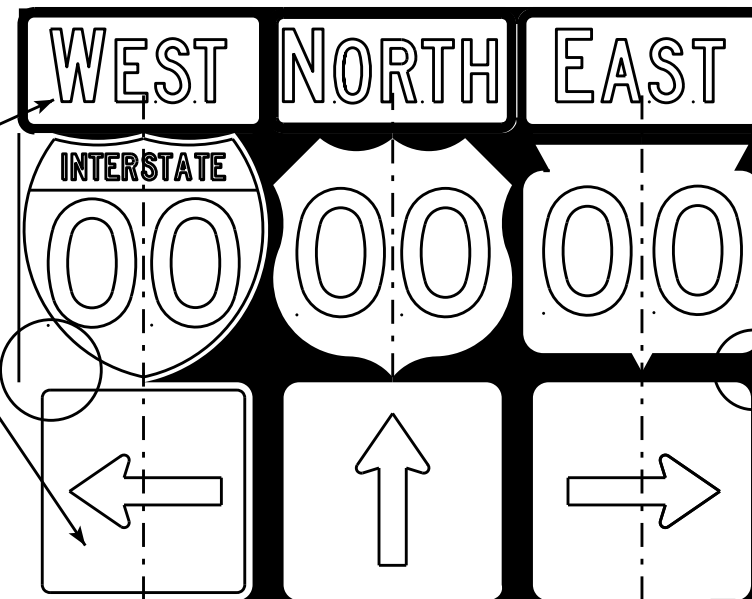
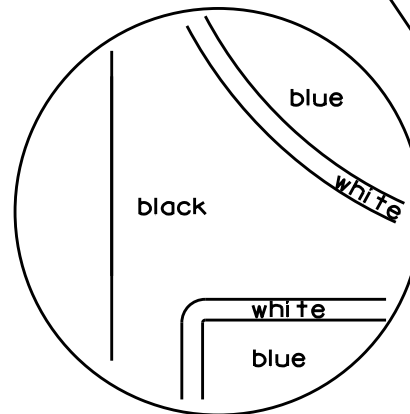
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PL 125 A2-1S.8

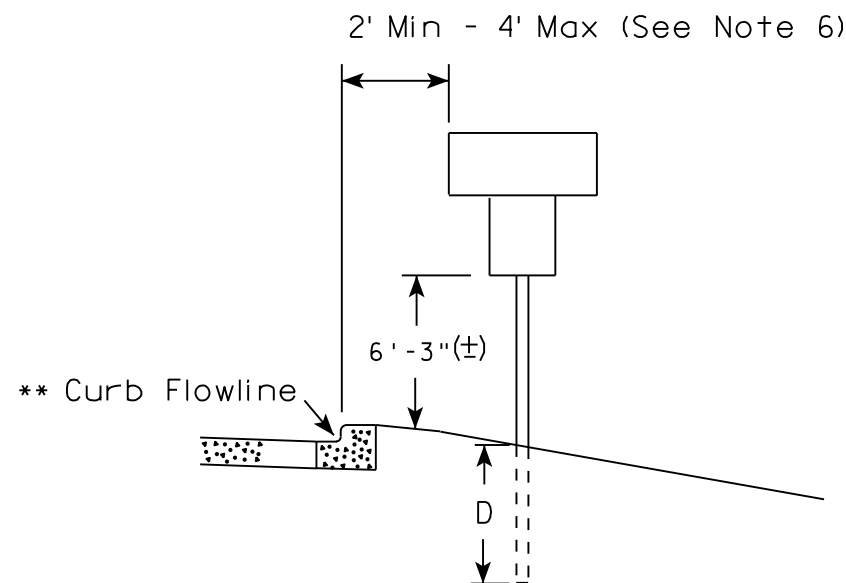
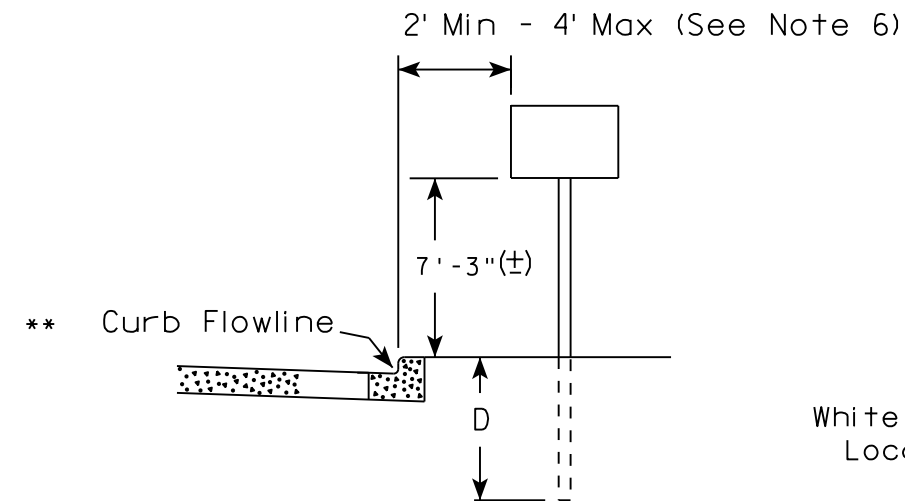
SHEET NO: E

NOTES

- Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Black Non-reflective
Message - see Note 5
- Message Series - See Note 5
- Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
- Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
- Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- All Vertical J Assemblies are given a Sign Code of JV
- For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

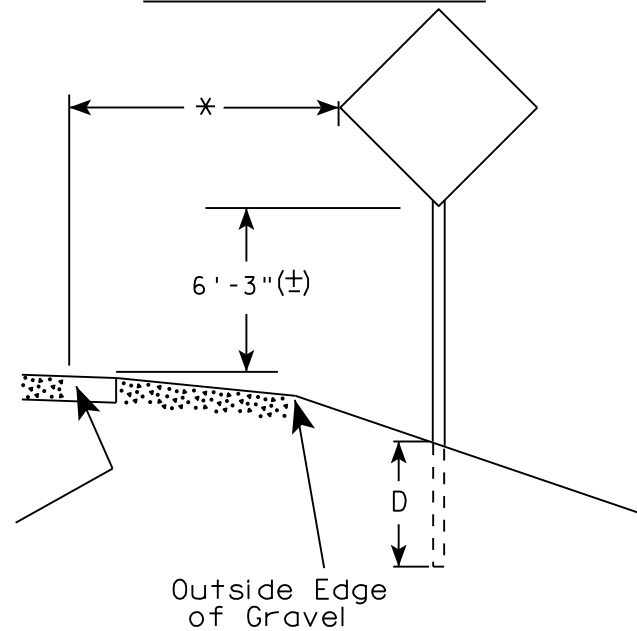
PROJECT NO:

URBAN AREA

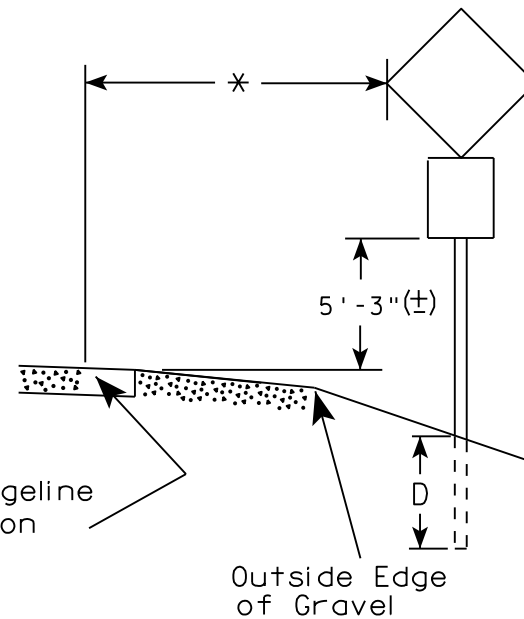


White Edgeline
Location

RURAL AREA (See Note 2)



White Edgeline
Location



Outside Edge
of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 8/21/17

PLATE NO. A4-3.21

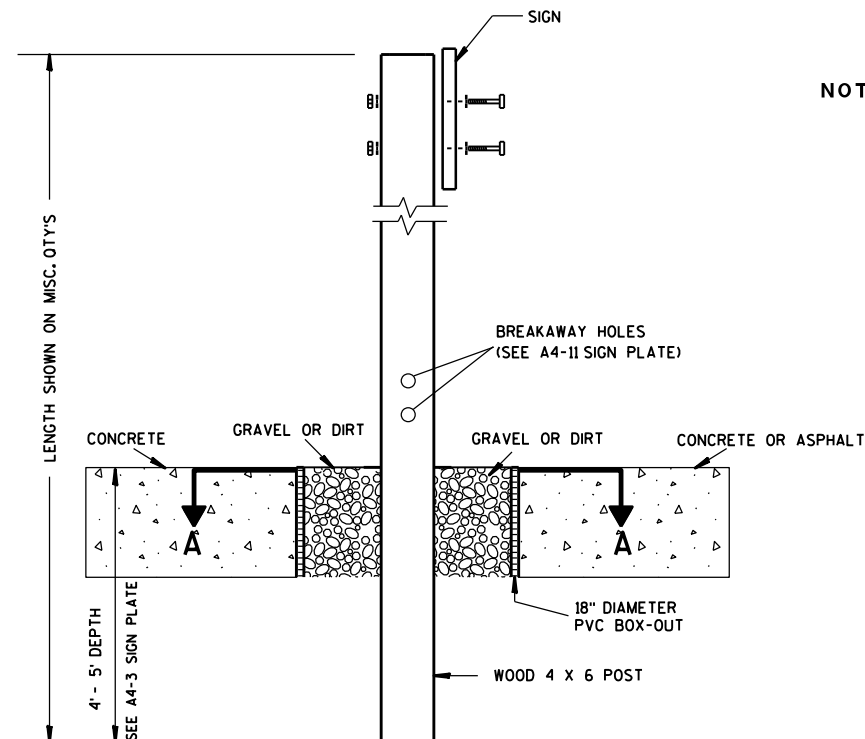
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 126

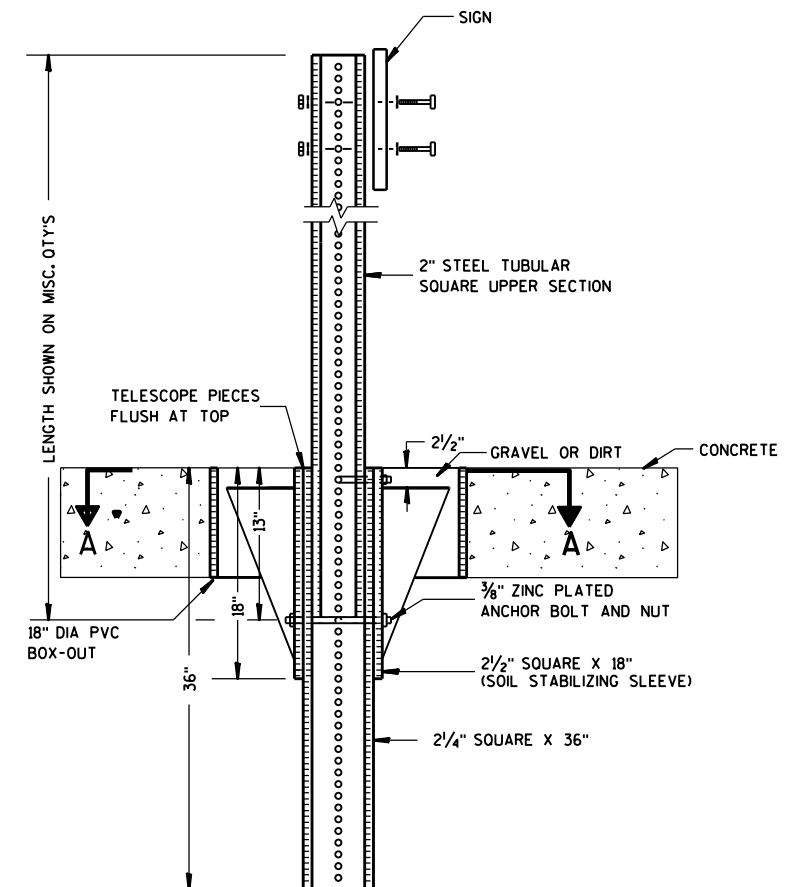
E



ELEVATION VIEW

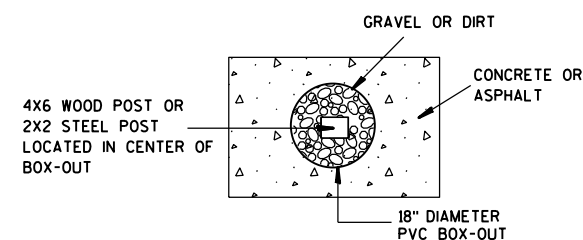
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 127 A4-3B.1

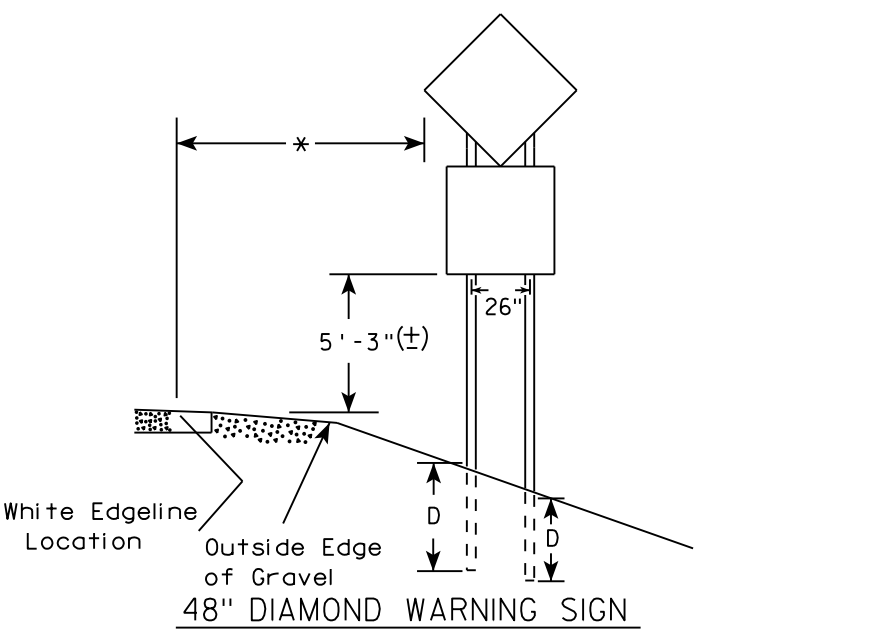
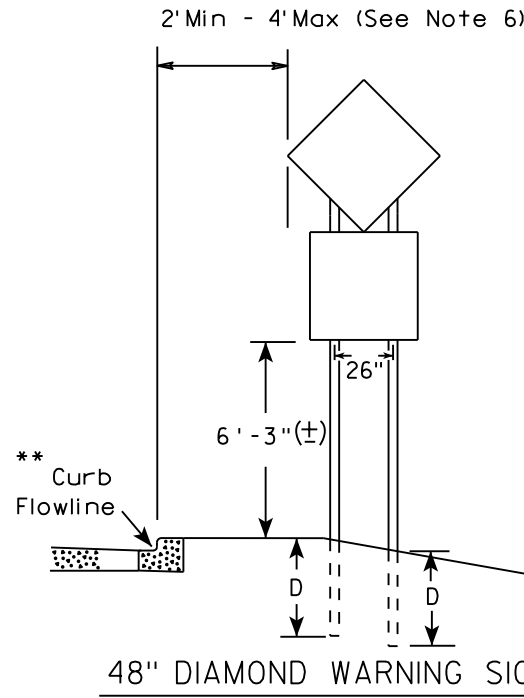
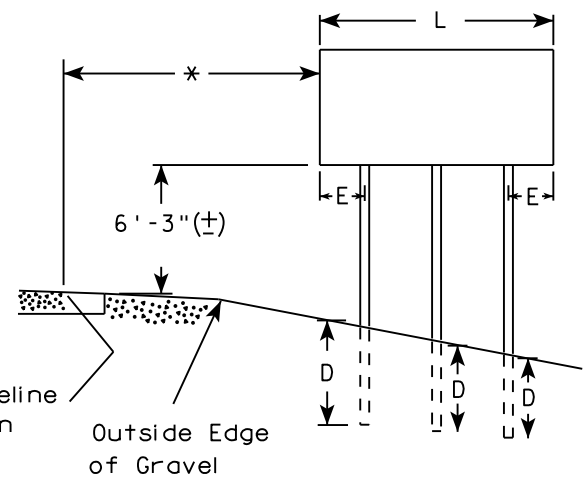
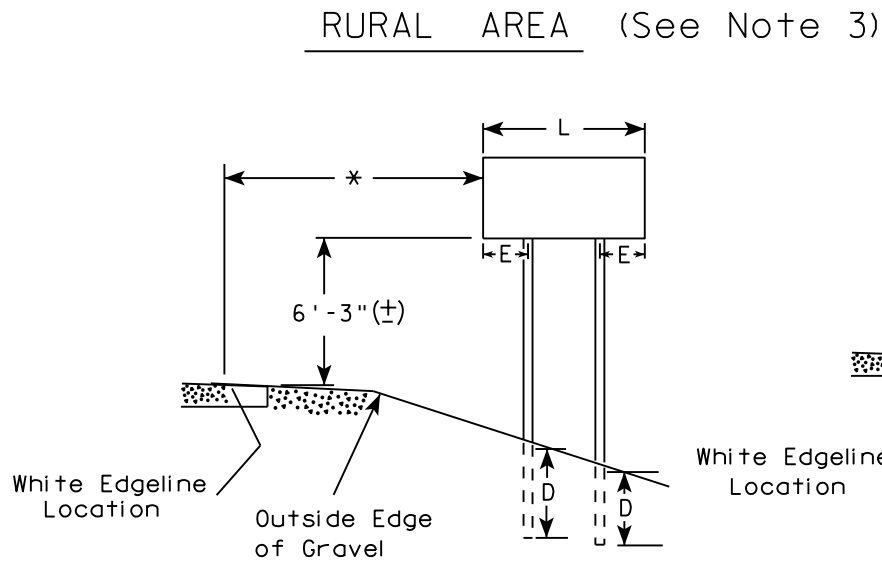
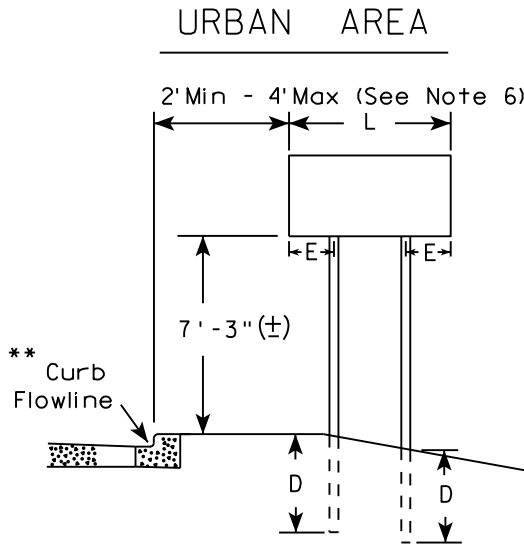
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

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

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

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

POST EMBEDMENT DEPTH

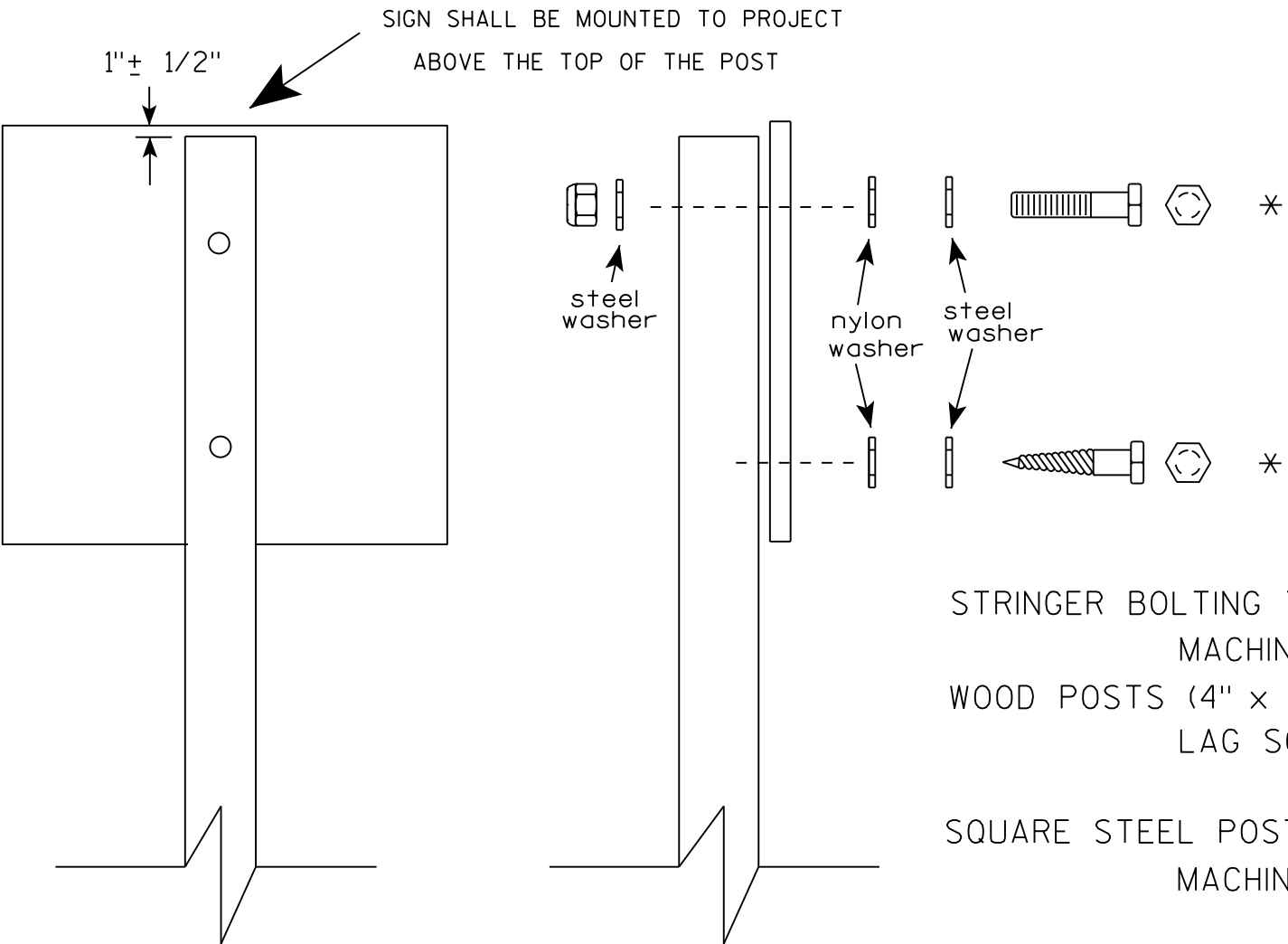
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

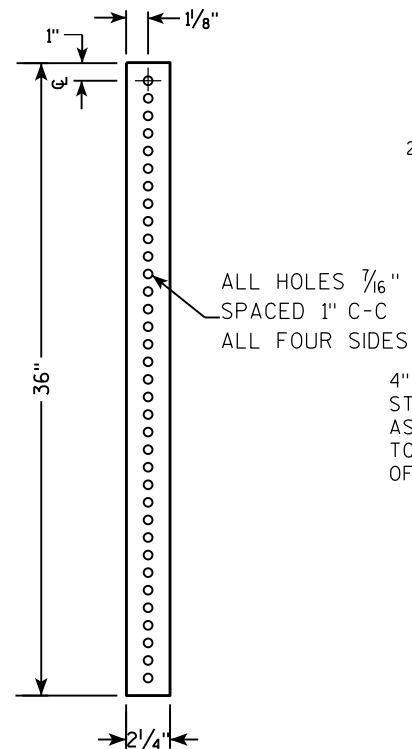
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

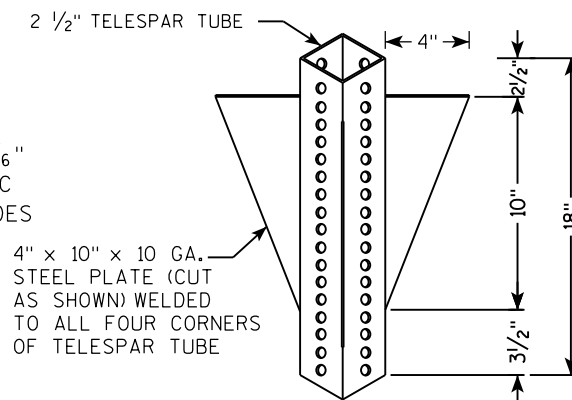
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8 129

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



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



LENGTH SHOWN ON MISC. Q'TYS

SEE SIGN PLATE
A4-8 FOR BOLT
WASHER, & NUT
MATERIAL

2" STEEL TUBULAR
SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ "
SPACED 1" C-C
ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER
ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

TELESCOPE PIECES
FLUSH AT TOP

18" DIA SCHEDULE
40 PVC
BOX-OUT

36"

18"

13"

$\frac{3}{8}$ " ZINC PLATED
ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18"
(SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

LENGTH SHOWN ON MISC. QTY'S

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

TELESCOPE PIECES FLUSH AT TOP

18"

12"

36"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

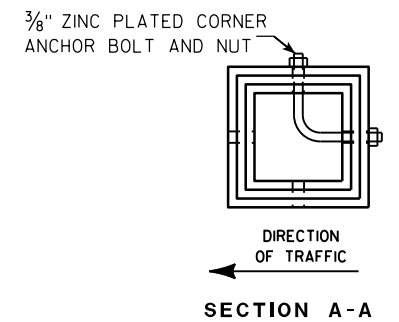
2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

A

B

C



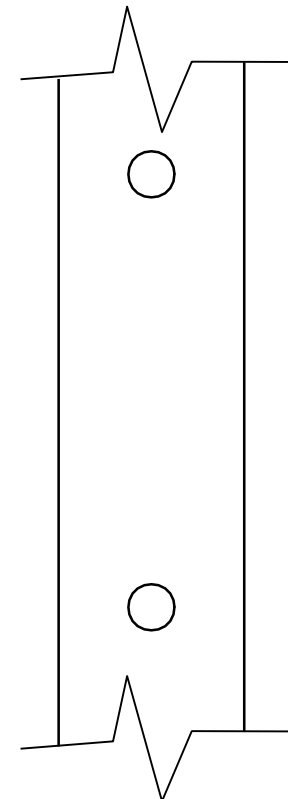
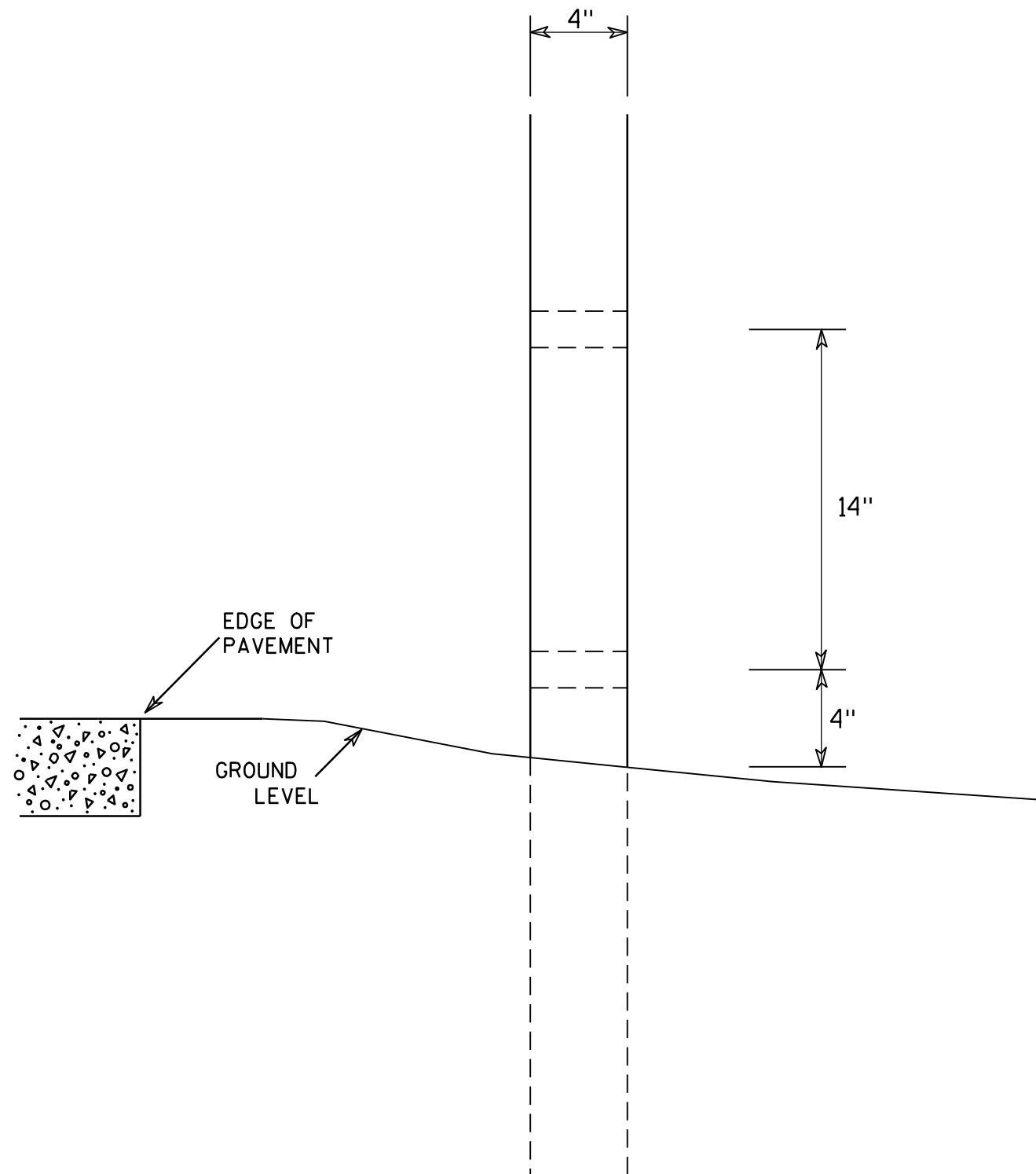
Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 2/05/15 PLAT 130 14-9.9



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

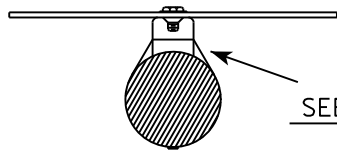
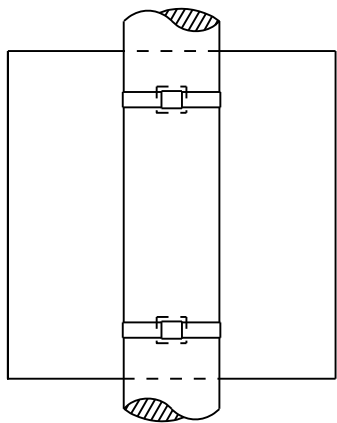
COUNTY:

SHEET NO: 131

E

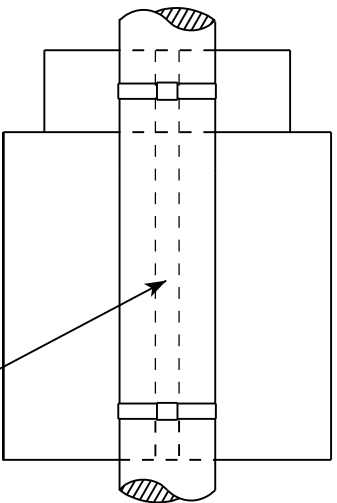
BANDING

SINGLE SIGN

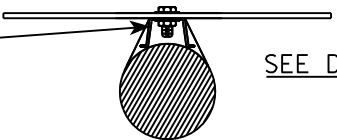


SEE DETAIL A

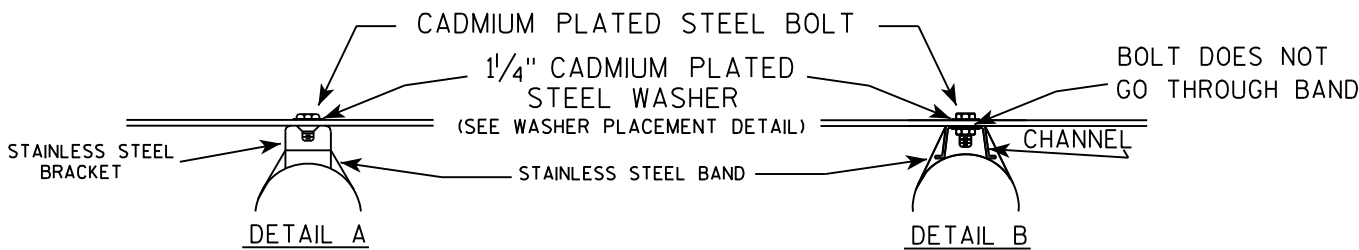
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



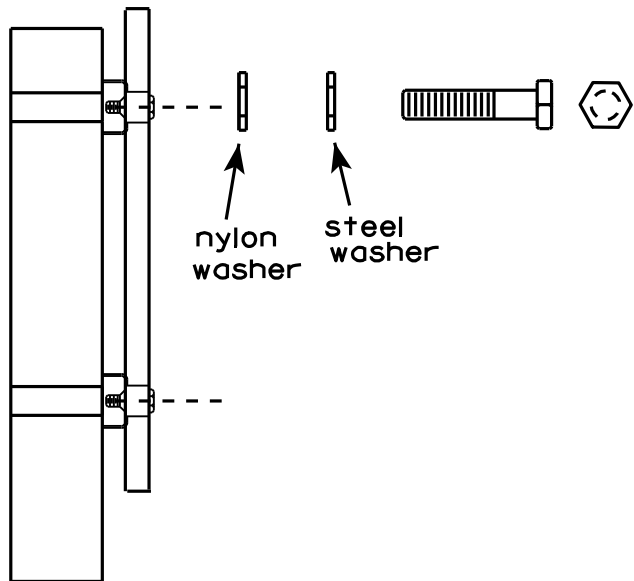
SEE DETAIL B



GENERAL NOTES

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

WASHER PLACEMENT



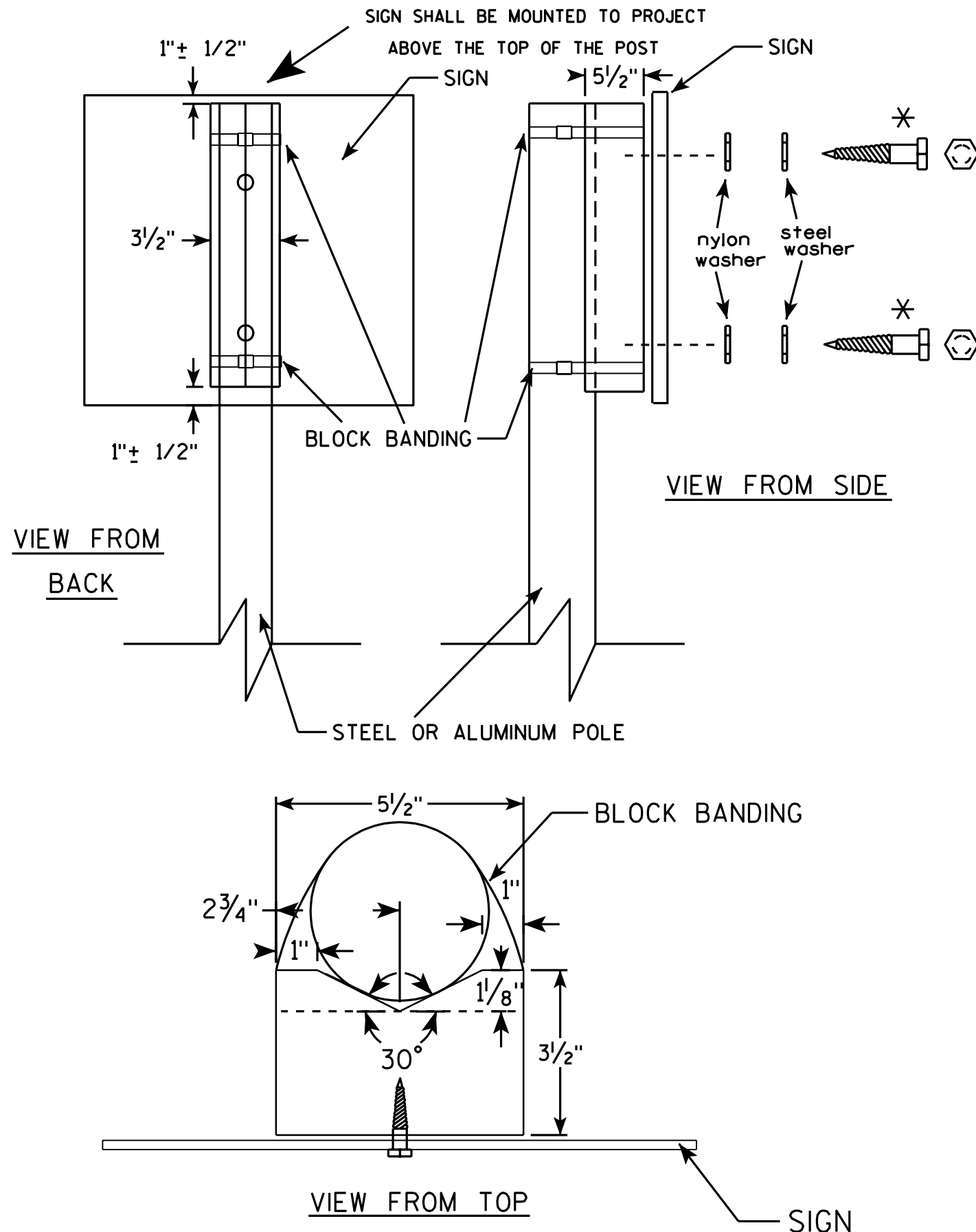
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 133

E

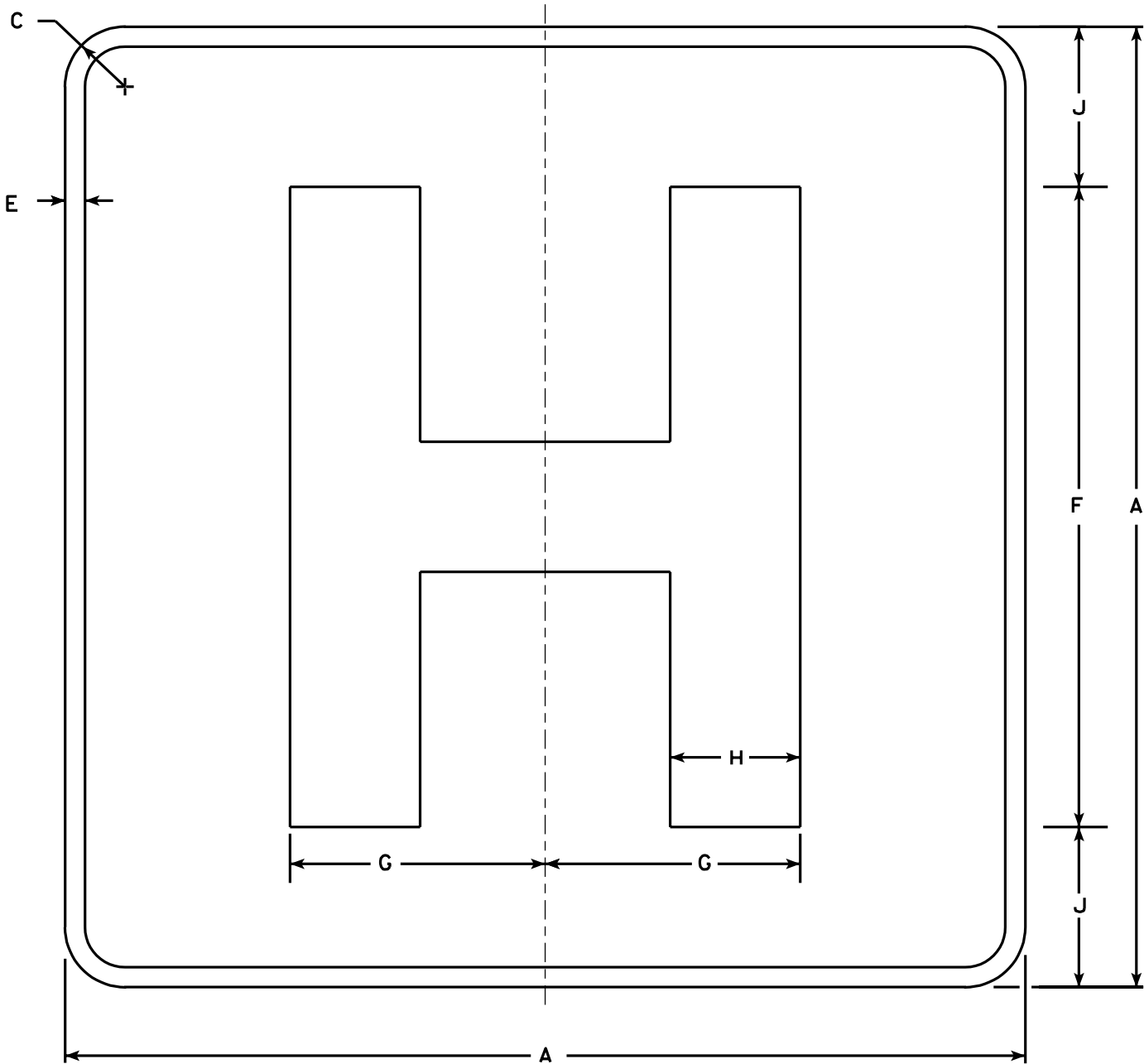
7

Metric equivalent
for this sign is:

SIZE	
1	450 mmX 450 mm
2	600 mmX 600 mm
3	900 mmX 900 mm
4	X
5	X

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

PROJECT NO:				SHEET NO: 134	E
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D9-2

NOTES

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

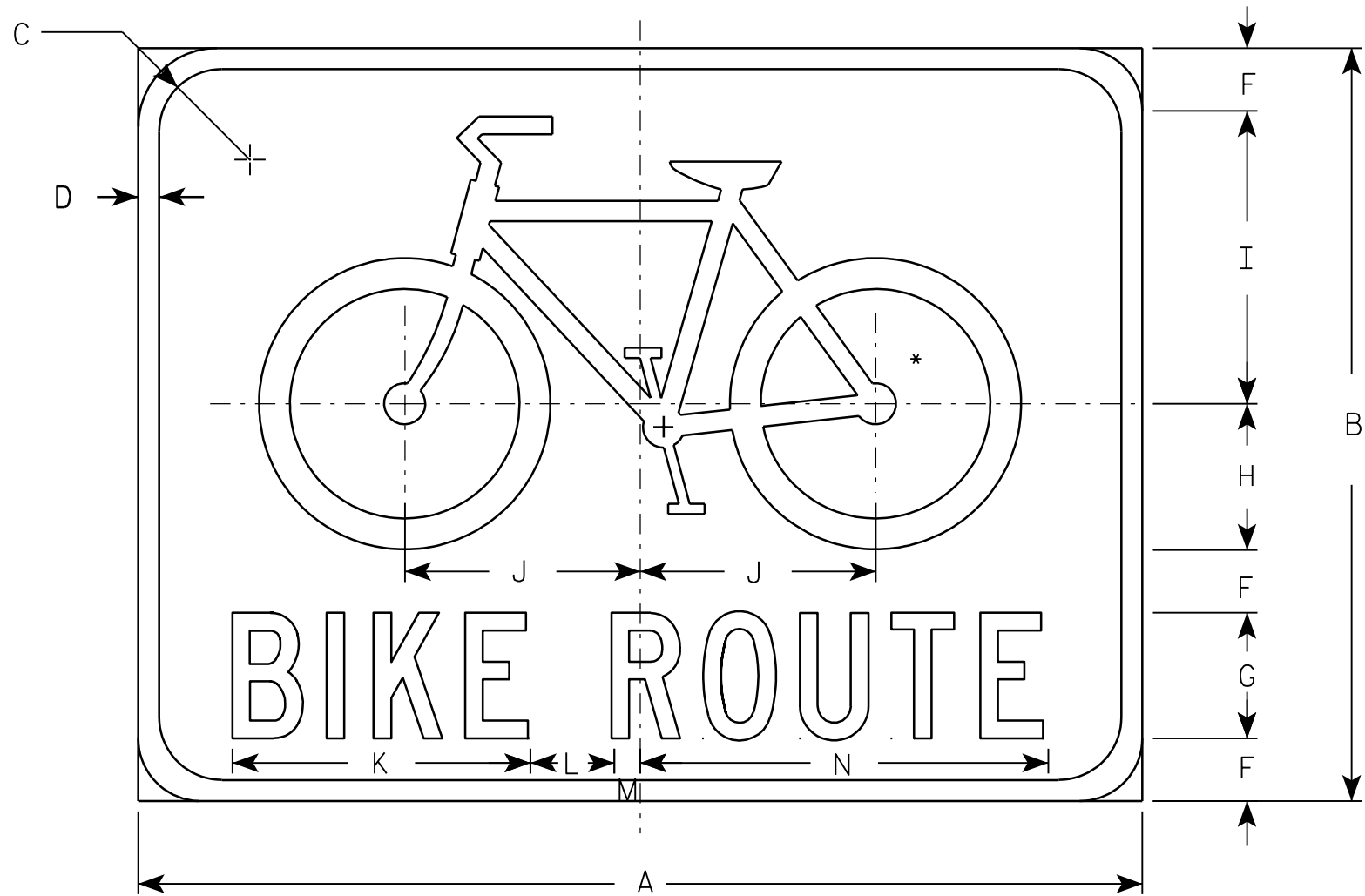
STANDARD SIGN
D9-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Chester J. Spang
for State Traffic Engineer

DATE 1/15/02 PLATE NO. D9-2.4

7



D11-1

Metric equivalent
for this sign is:

SIZE	
1	
2	600 mm X 450 mm
3	750 mm X 600 mm
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	24	18	1 1/2	1/2		1 1/2	3	3 1/2	7	5 5/8	7 1/8	2	5/8	9 3/4													3.0	0.27
3	30	24	1 1/4	5/8		2	4	4 3/4	9 1/4	7 1/2	9 1/2	2 5/8	7/8	13													5.0	0.45
4																												
5																												

NOTES

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

* See W11-1 for symbol design

STANDARD SIGN
D11-1

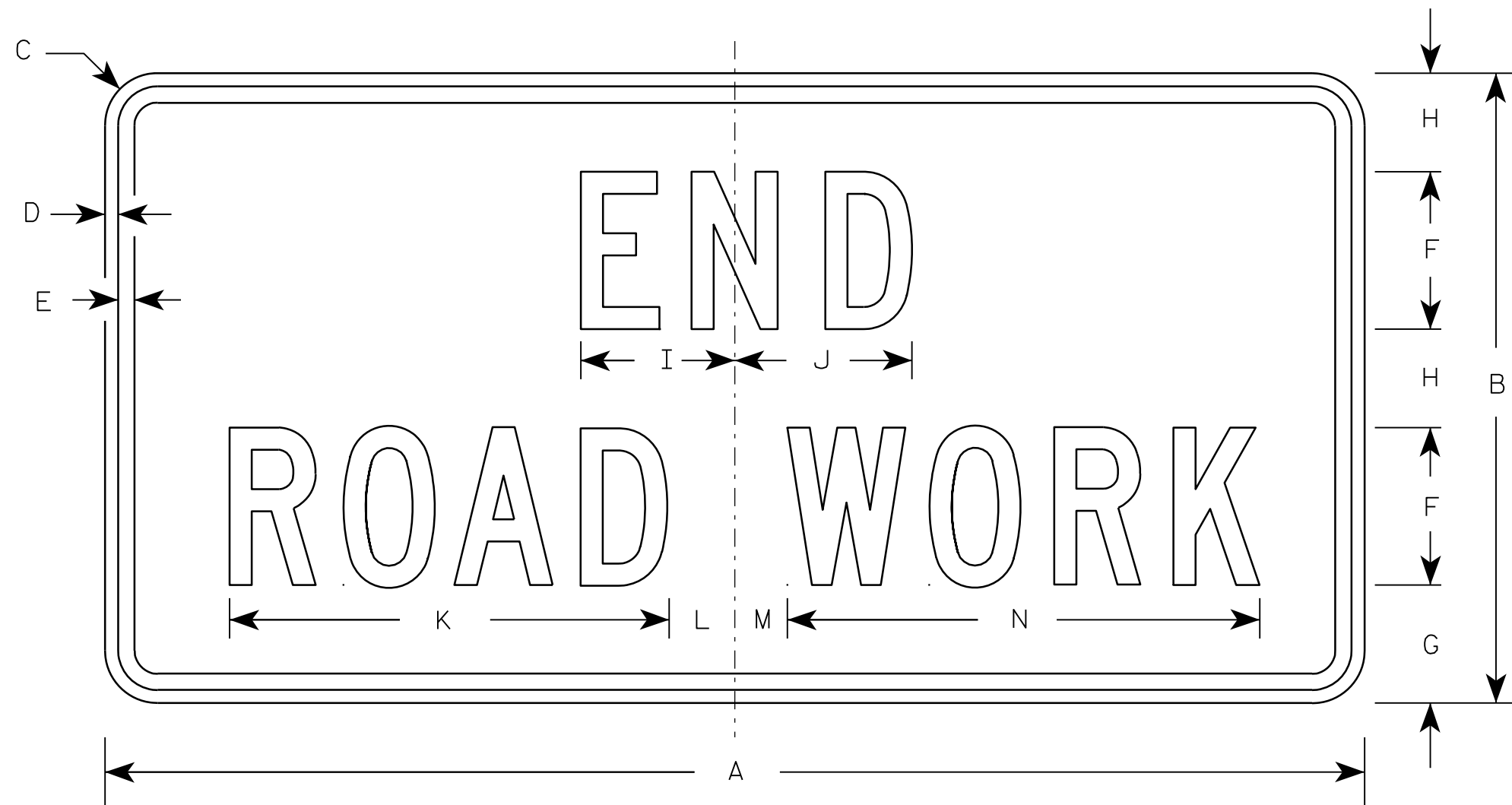
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7

7



G20-2A

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

NOTES

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

7

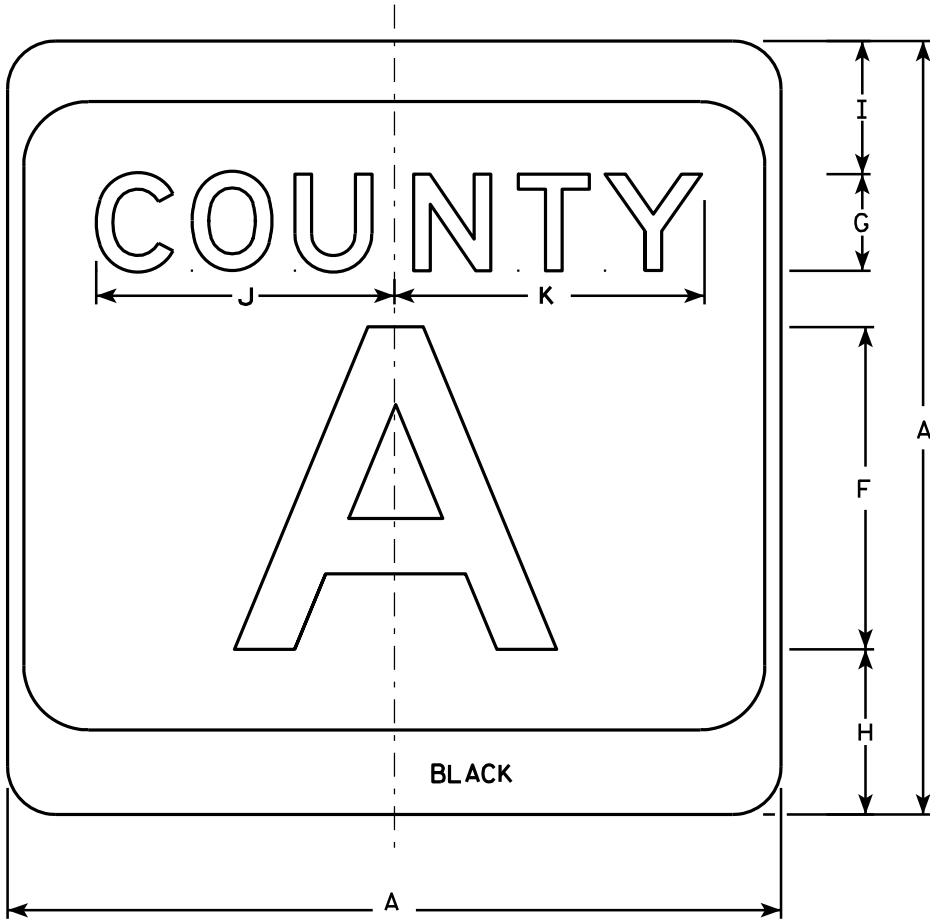
PROJECT NO:

HWY:

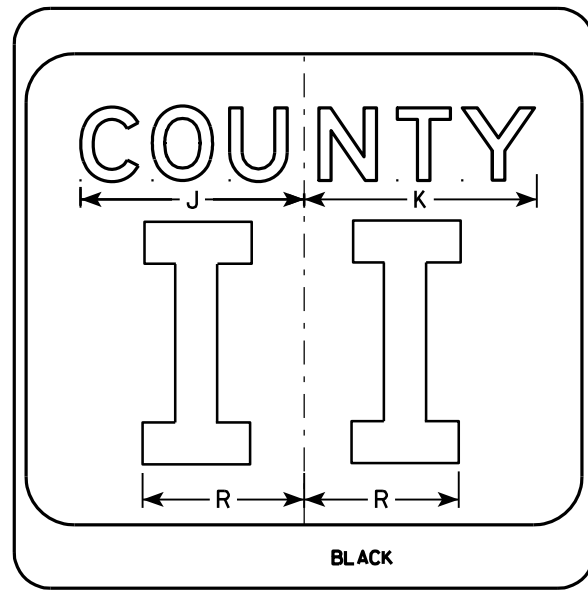
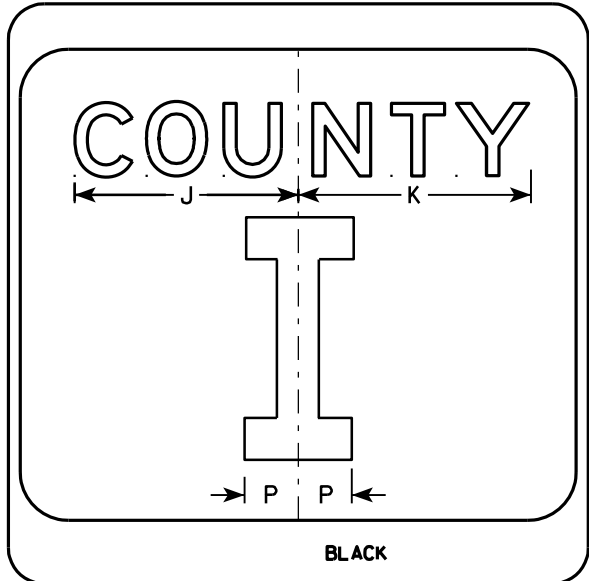
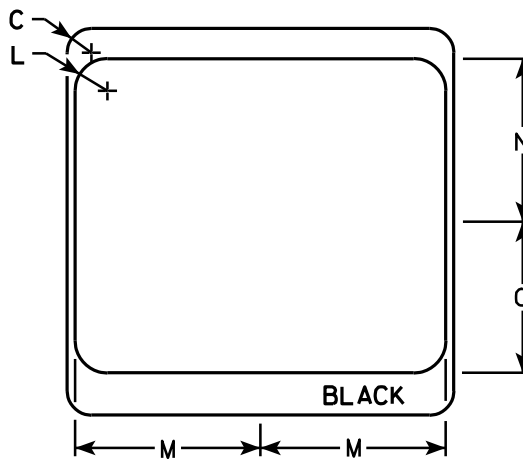
COUNTY:

SHEET NO: 136

E



M1-5A



NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER

M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO:

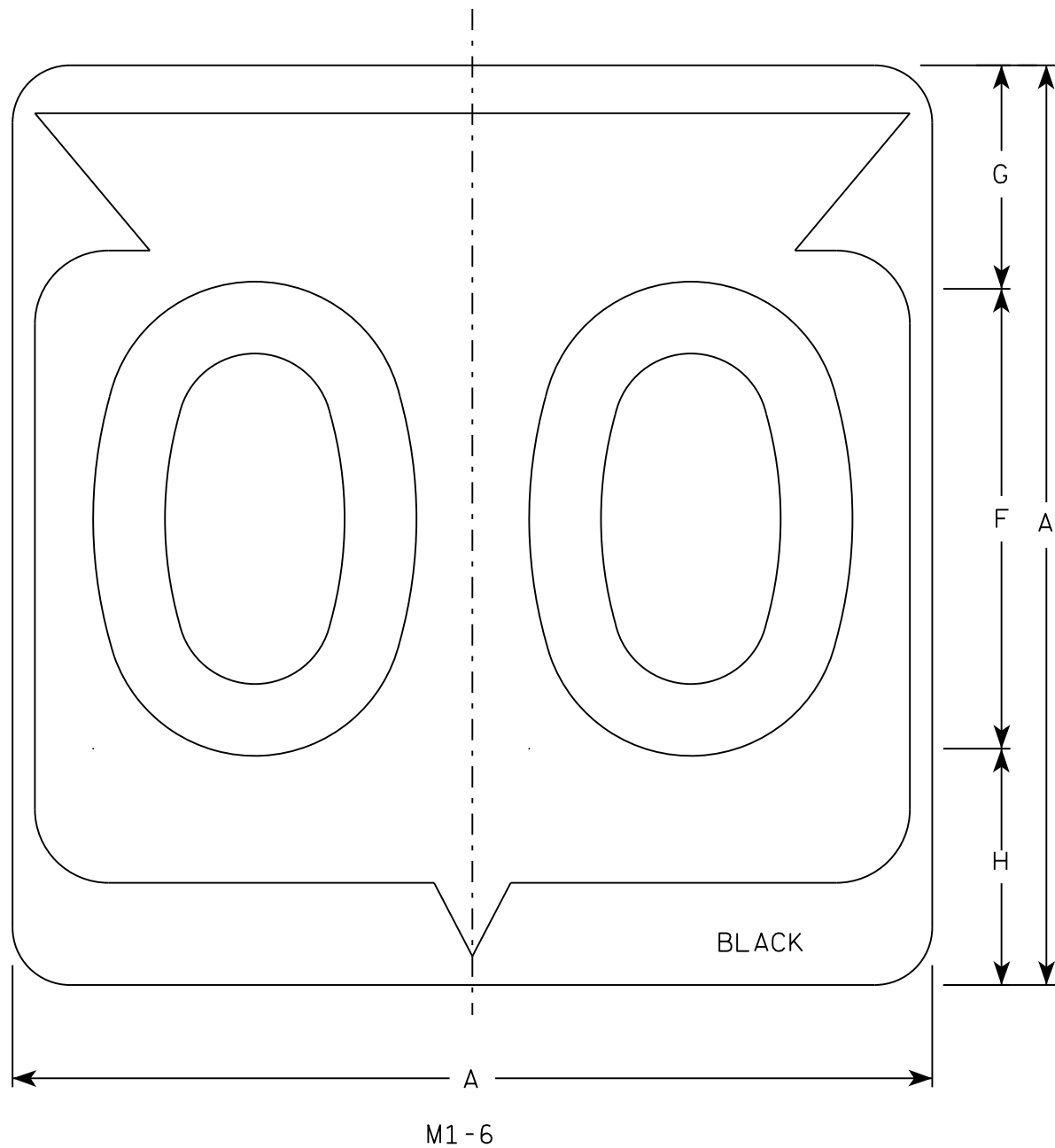
HWY:

COUNTY:

SHEET NO: 137

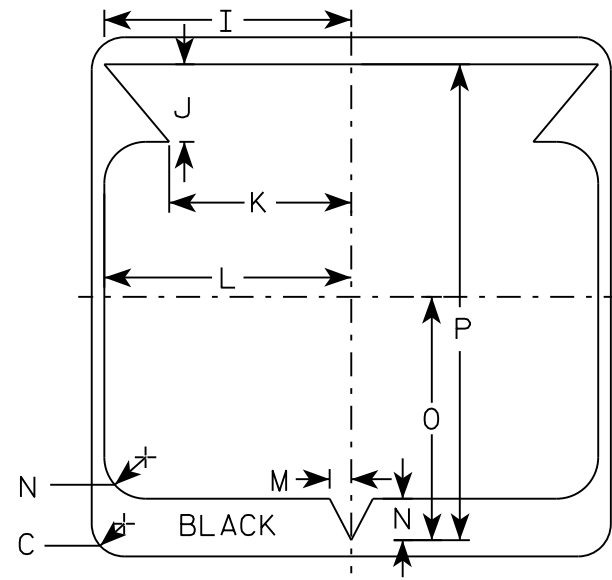
E

7



NOTES

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



7

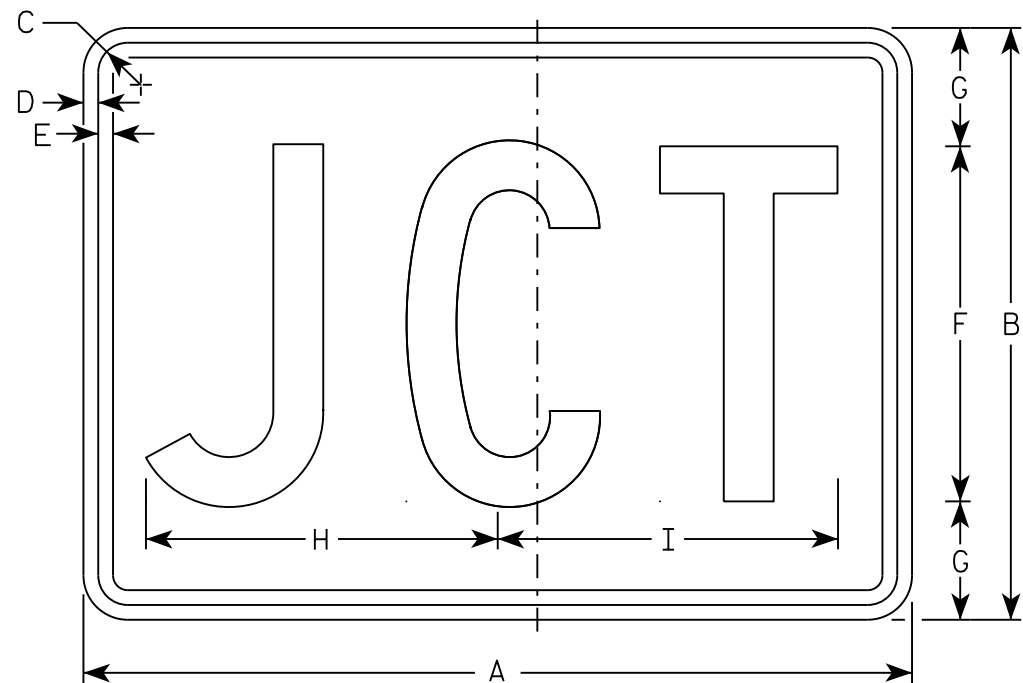
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8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

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

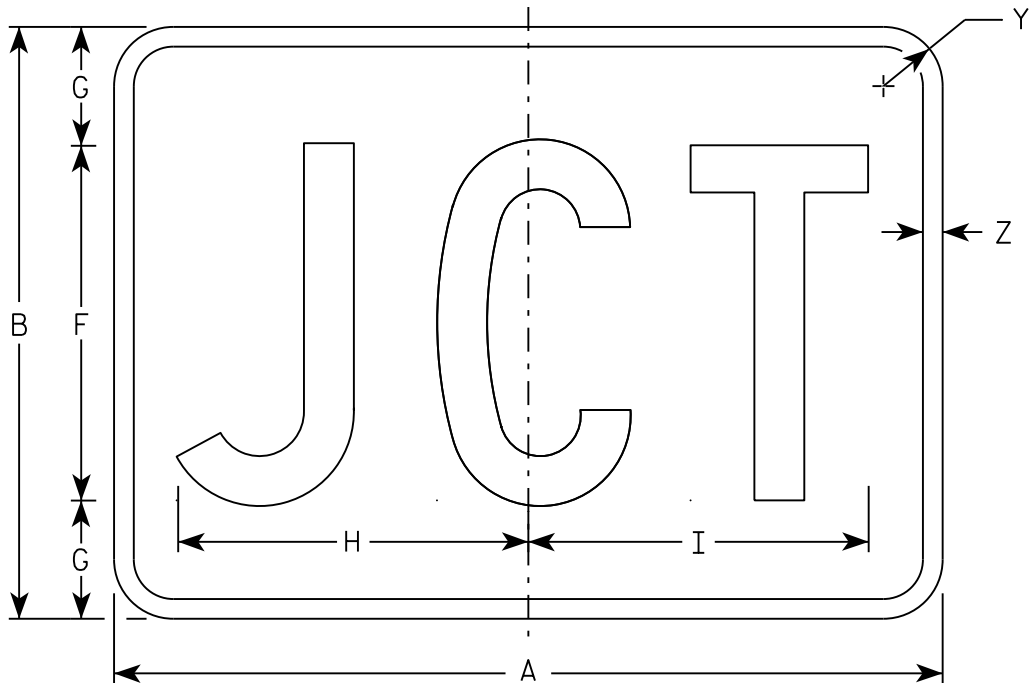
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

- 1. Sign is Type II - Type H
- 2. Color:
 - Background - See note 5
 - Message - See note 5
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. M2-1 Background - White
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MP2-1 Background - White
 Message - Blue
 MR2-1 Background - Brown
 Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

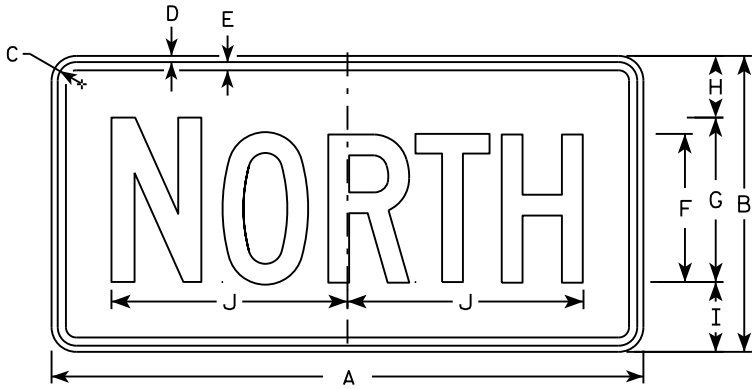
Matthew R. Rauch

For State Traffic Engineer

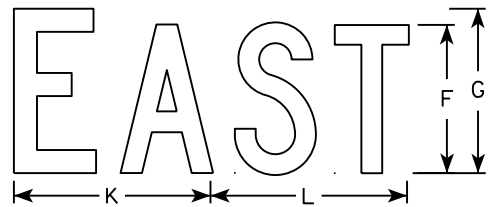
DATE 10/15/15

PLATE 139

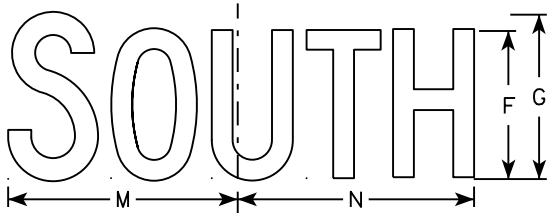
'2-1.12



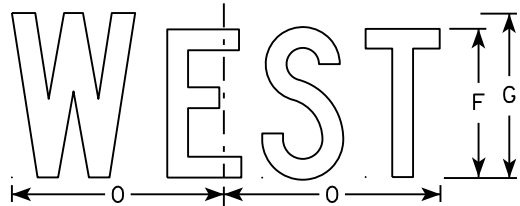
M3-1
MM3-1
MP3-1



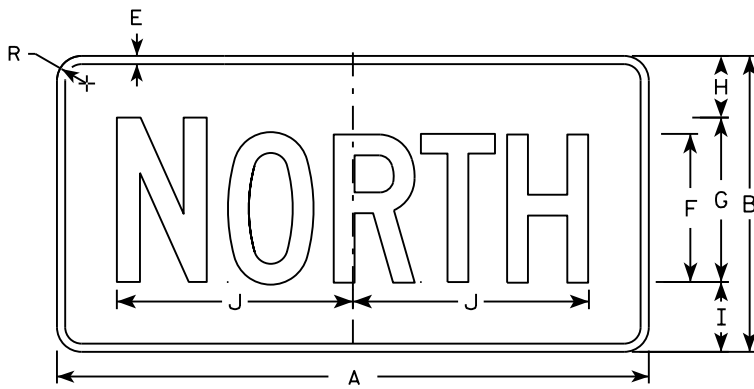
M3-2
MM3-2
MP3-2



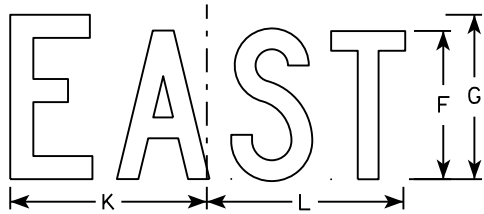
M3-3
MM3-3
MP3-3



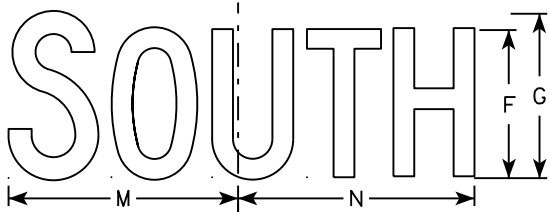
M3-4
MM3-4
MP3-4



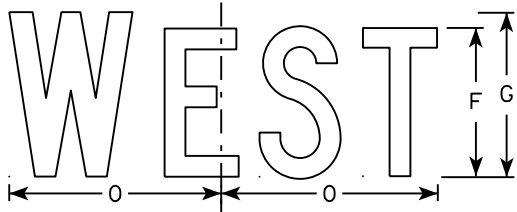
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

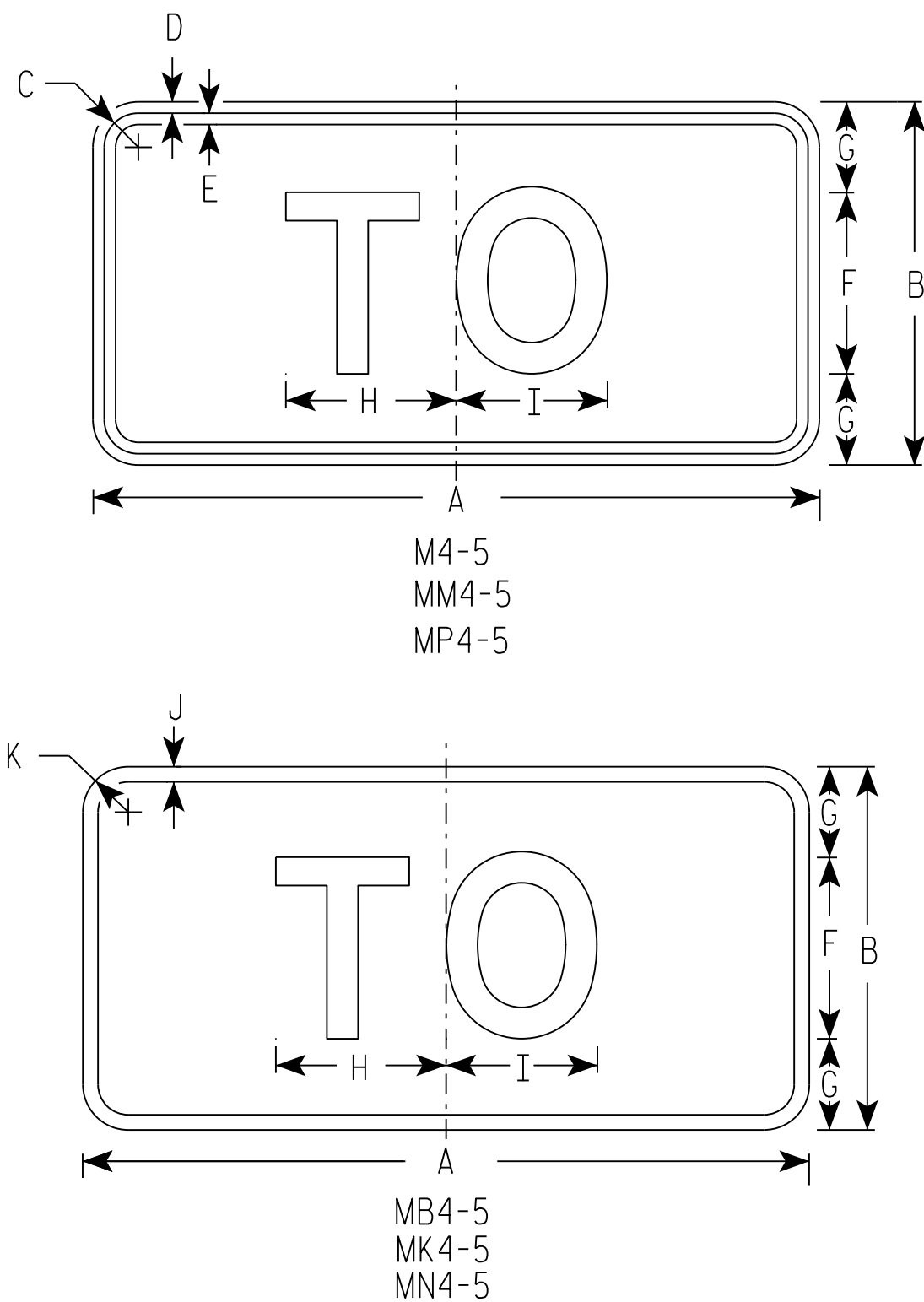
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

STANDARD SIGNS
M3-1 thru M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 140 M3-1.14



NOTES

1. Sign is Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
Message - Black
MB4-5 Background - Blue
Message - White
MK4-5 Background - Green
Message - White
MM4-5 Background - White
Message - Green
MN4-5 Background - Brown
Message - White
MP4-5 Background - White
Message - Blue

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M4 - 5

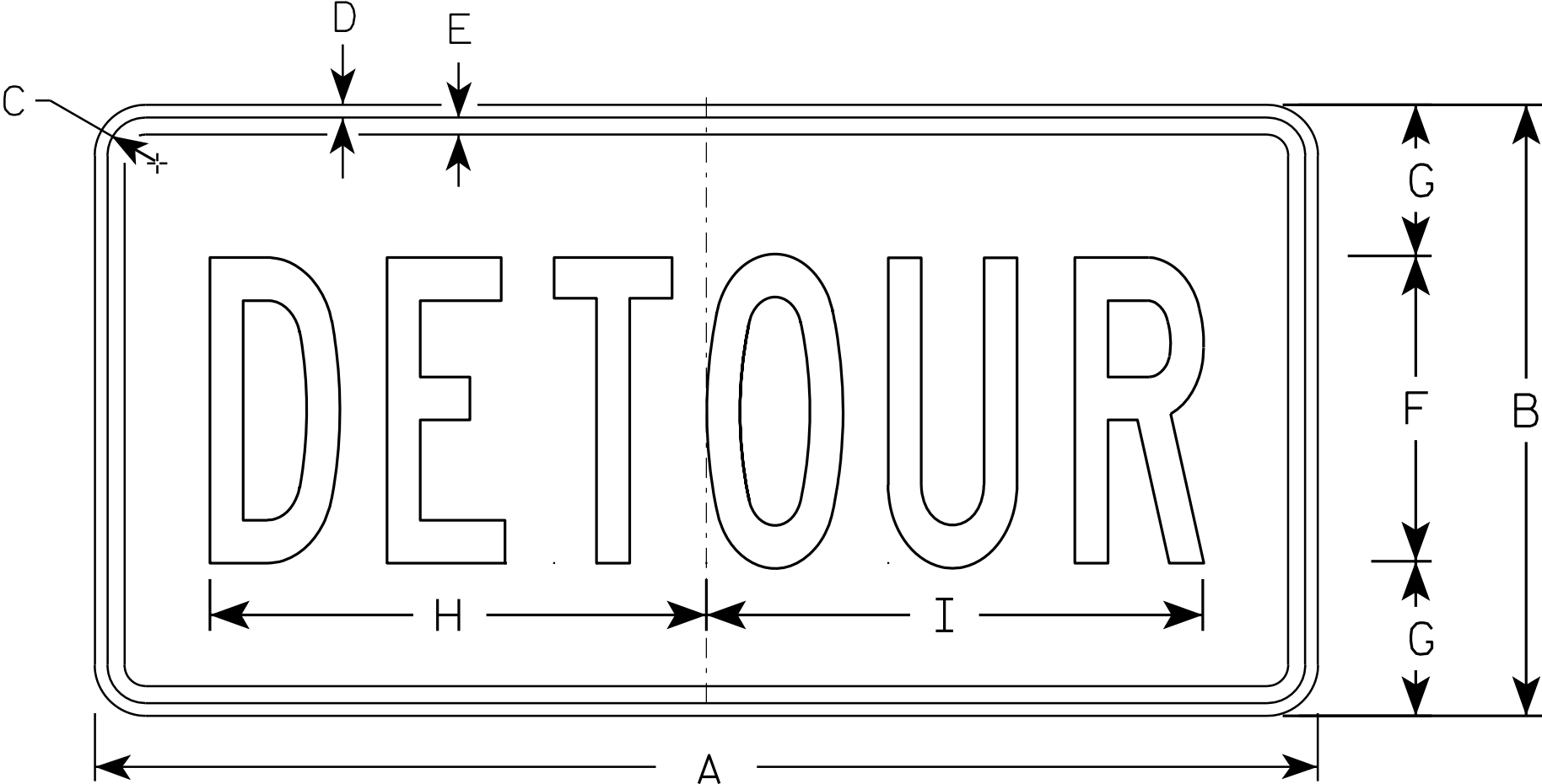
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 141 '14-5.8

NOTES

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



M4 - 8

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

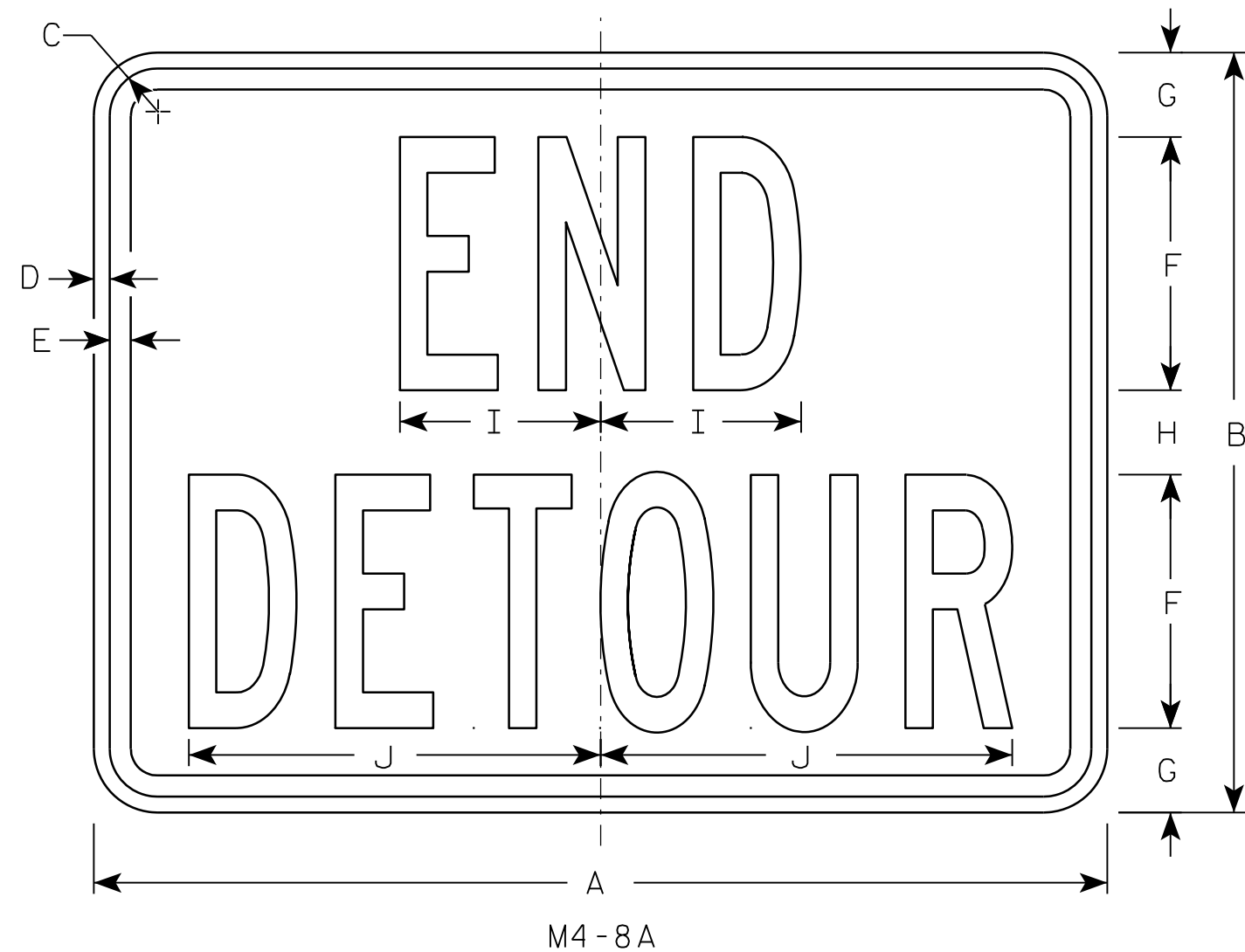
STANDARD SIGN
M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

7



NOTES

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

7

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

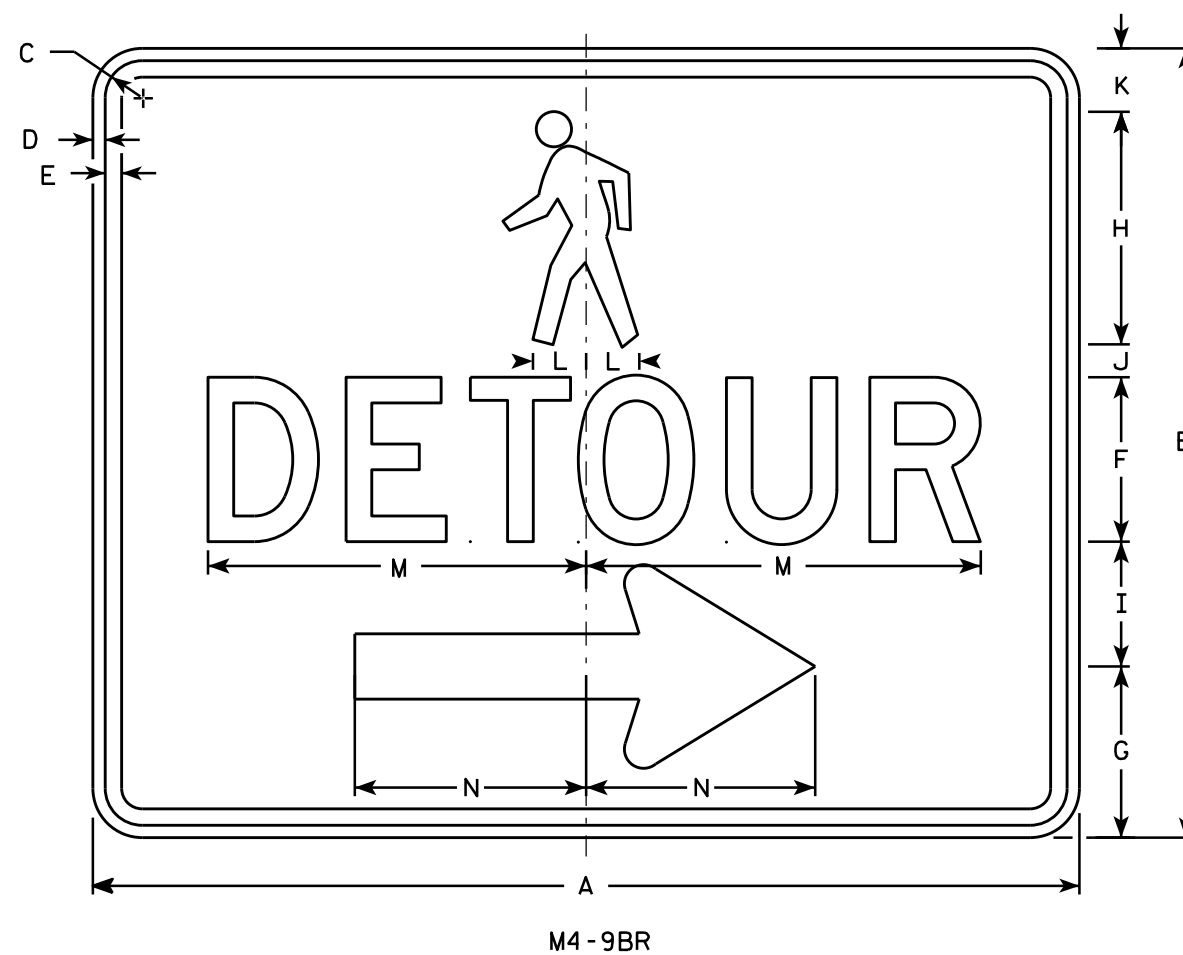
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 143	E
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STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

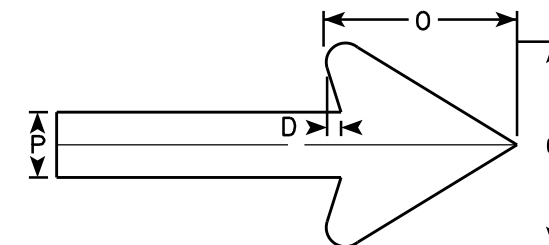
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - D
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M4-9BL is the same as M4-9BR except the arrow is reversed.



Arrow Detail

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN

M4-9B L&R

WISCONSIN DEPT OF TRANSPORTATION

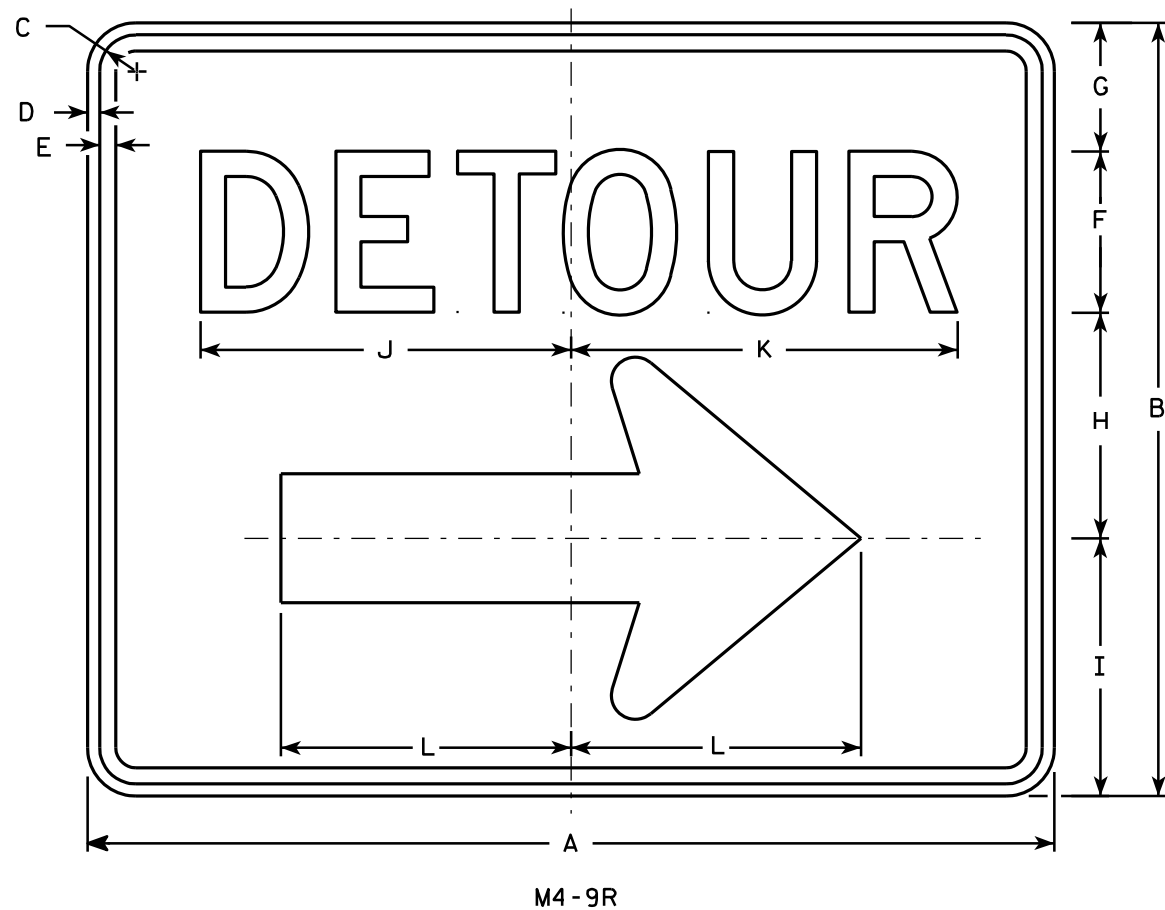
APPROVED *Matthew R. Rauch*

for State Traffic Engineer

DATE 9/30/13

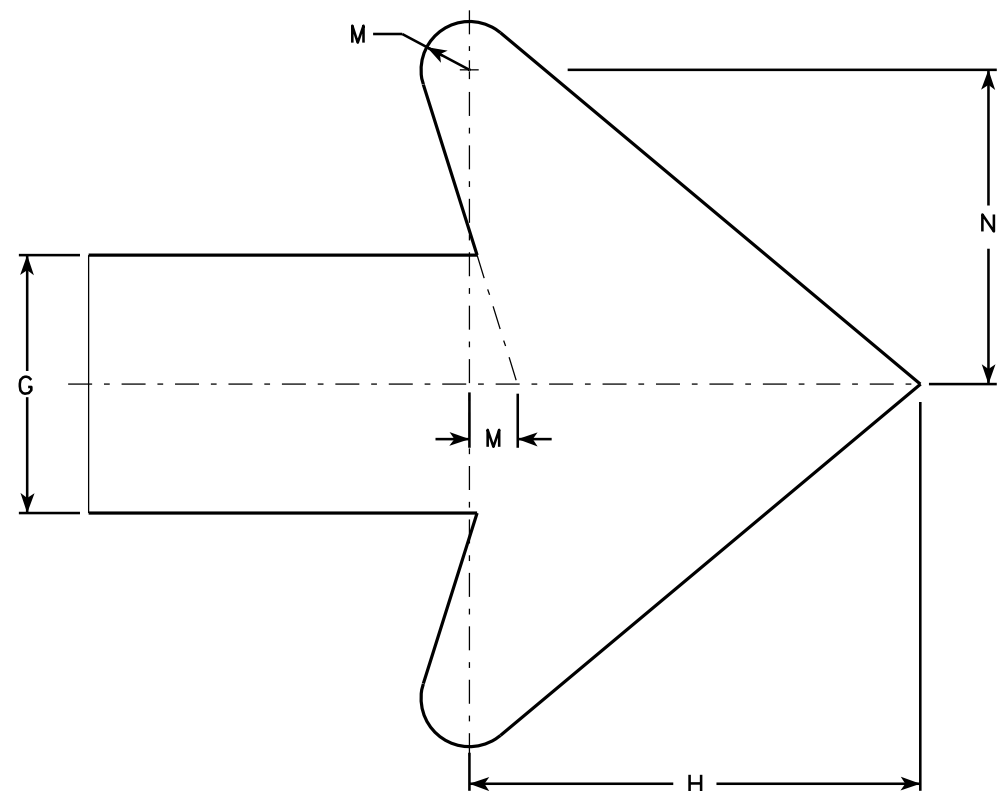
PLA 144

M4-9B.1



NOTES

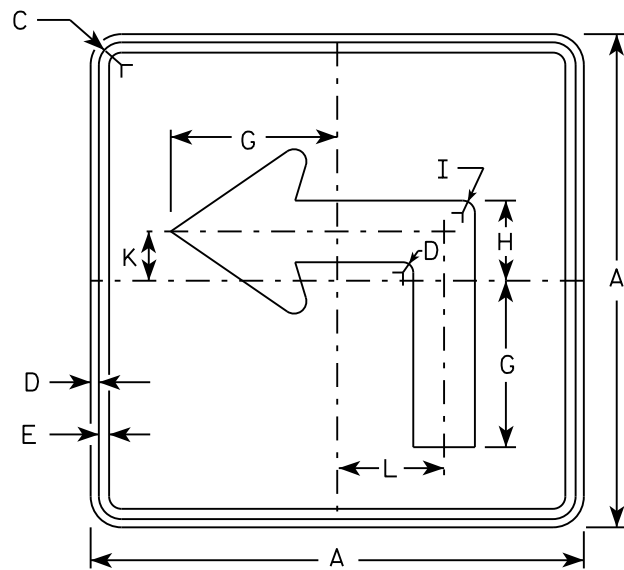
1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.



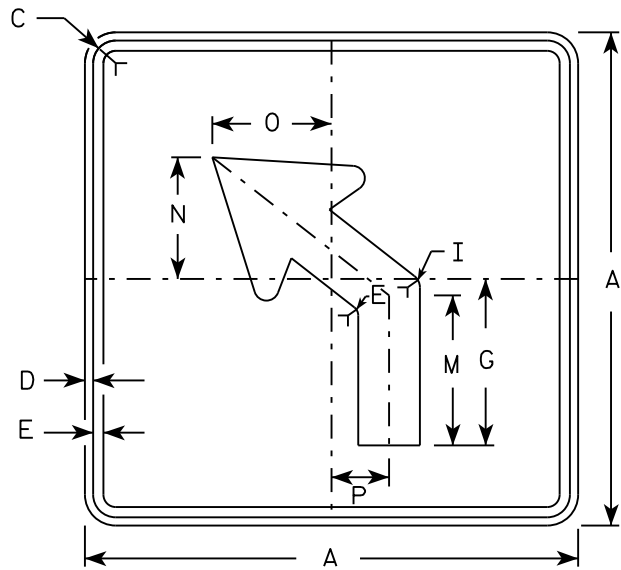
Arrow Detail

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

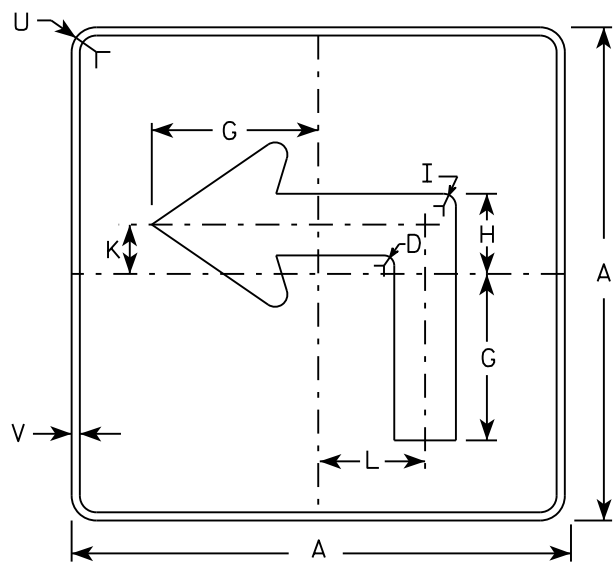
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 145	E
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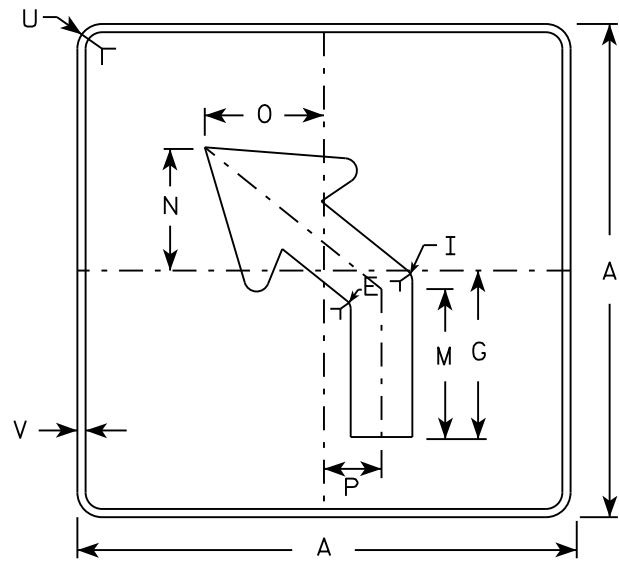
M5-1L
MM5-1L
M05-1L
MP5-1L



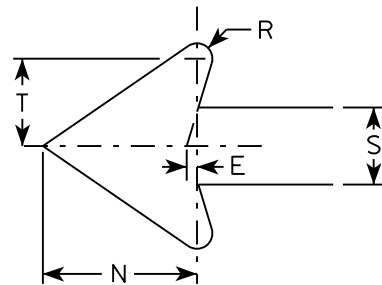
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

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

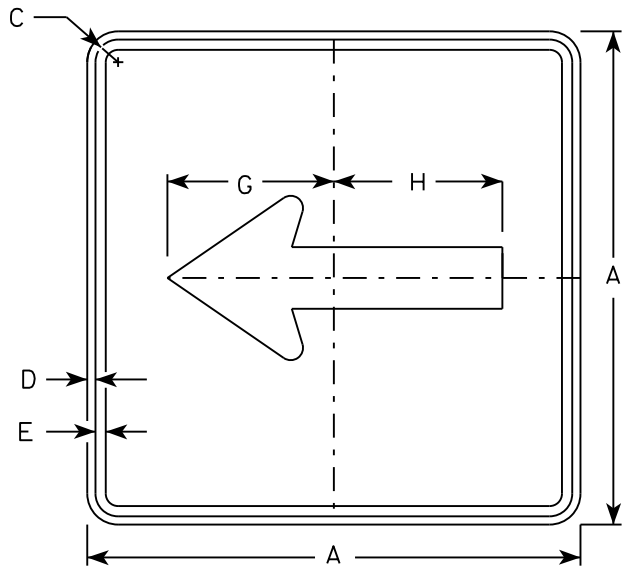
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

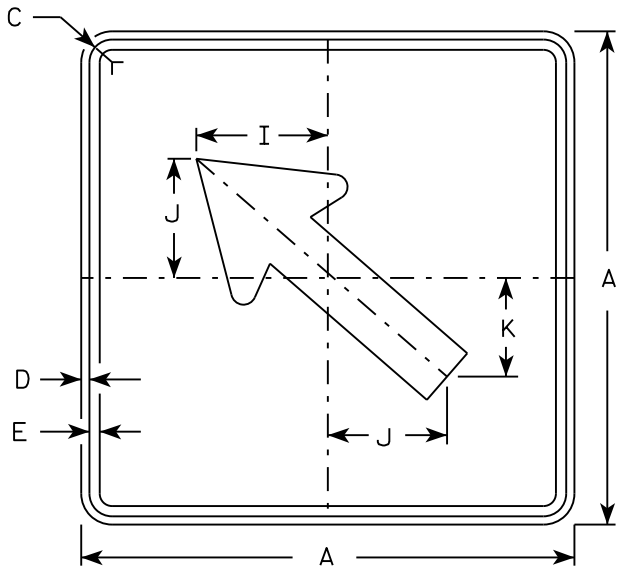
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

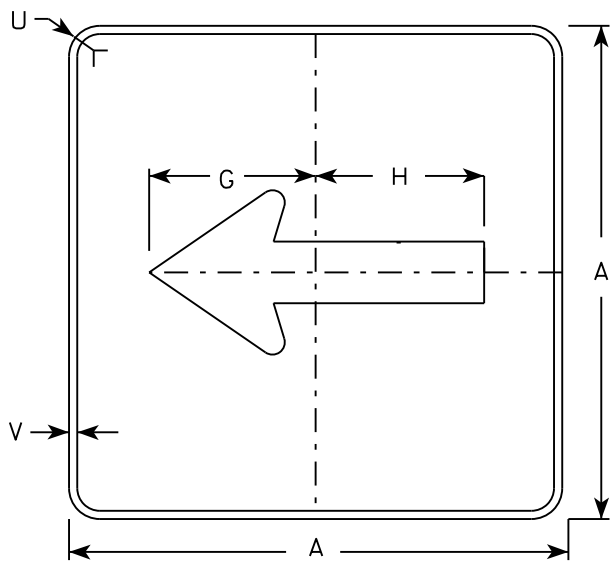
DATE 10/15/15 PLATE 146 M5-1.13



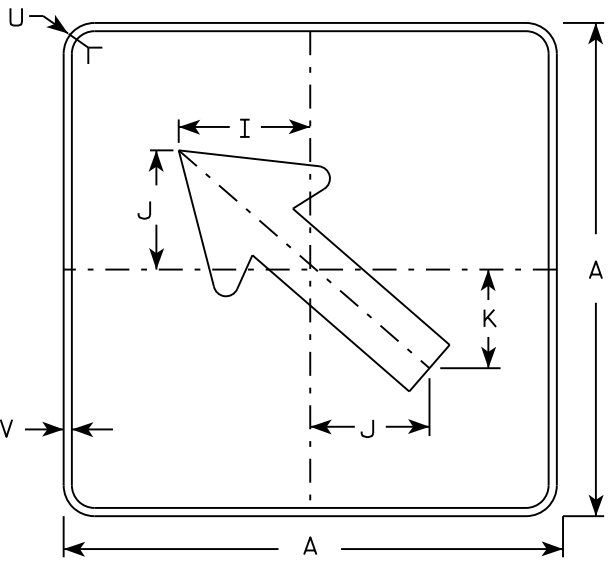
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



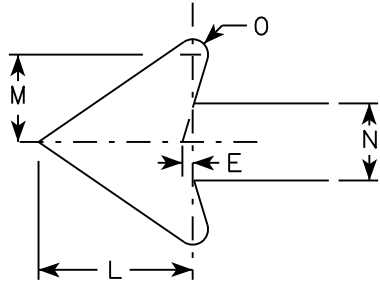
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



MB6 - 1
MK6 - 1
MN6 - 1
MR6 - 1



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



NOTES

- 1. Signs are Type II - Type H except as Shown
- 2. Color:
Background - See note 4
Message - See note 4
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

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

PROJECT NO:

HWY:

COUNTY:

DATE 10/15/15

PLAT 147

SHEET NO:

E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

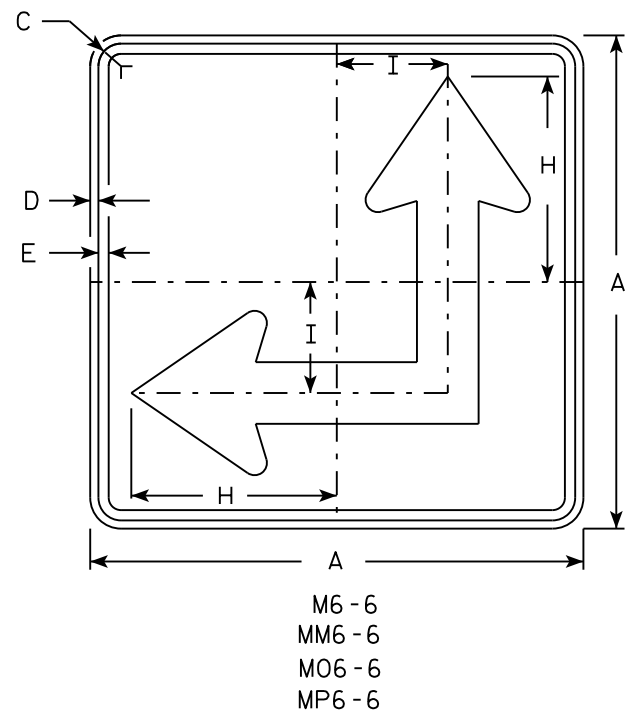
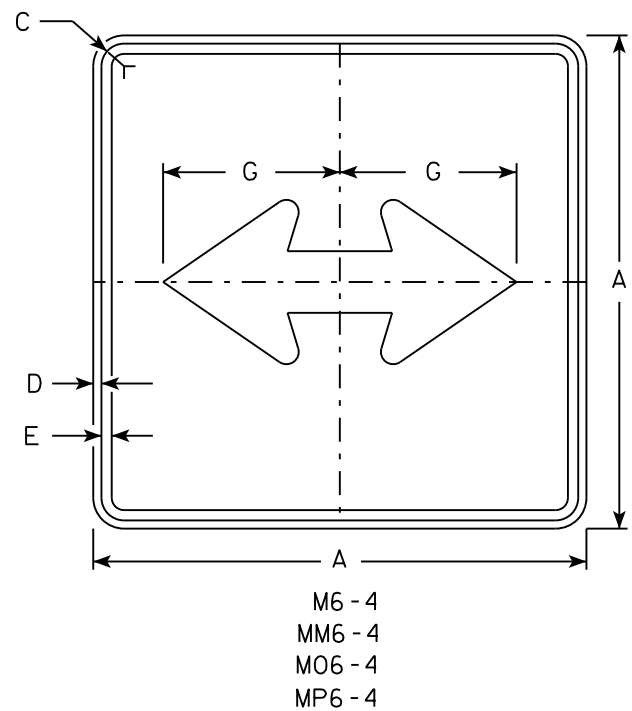
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

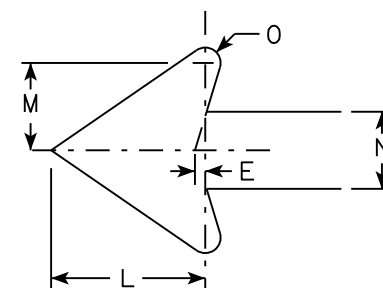
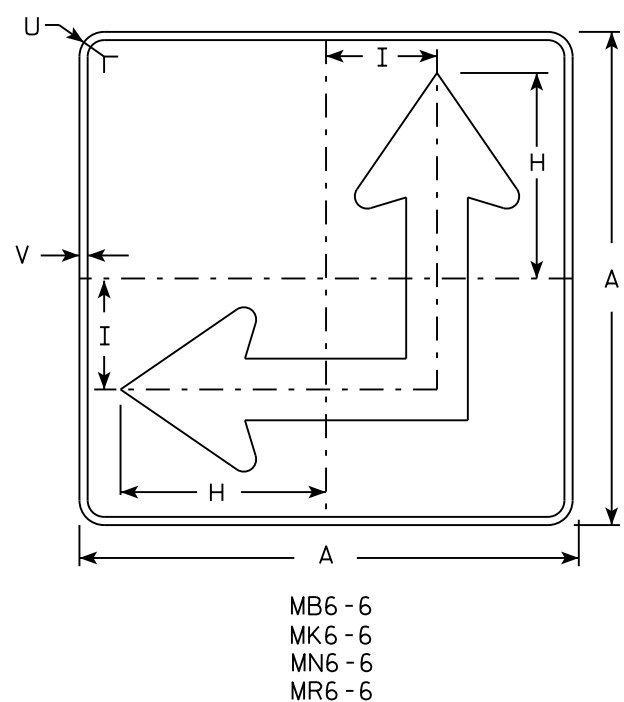
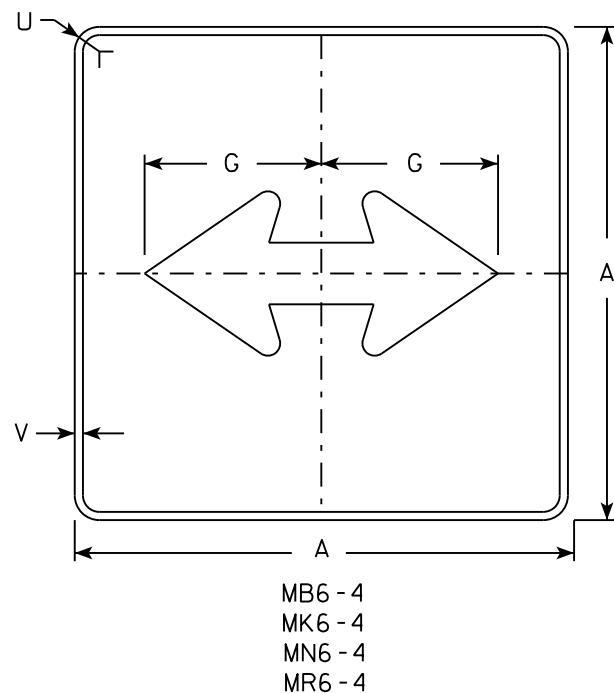
DATE 10/15/15

PLAT 147

M6-1.15



- NOTES
- Signs are Type II - Type H except as Shown
 - Color:
Background - See Note 4
Message - See Note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-4 and M6-6 Background - White
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White
MK6-4 and MK6-6 Background - Green
Message - White
MM6-4 and MM6-6 Background - White
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White
M06-4 and M06-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow
 - M6-6R same as M6-6L except arrow points ahead and right.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

PROJECT NO:	HWY:	COUNTY:	SHEET NO: E	
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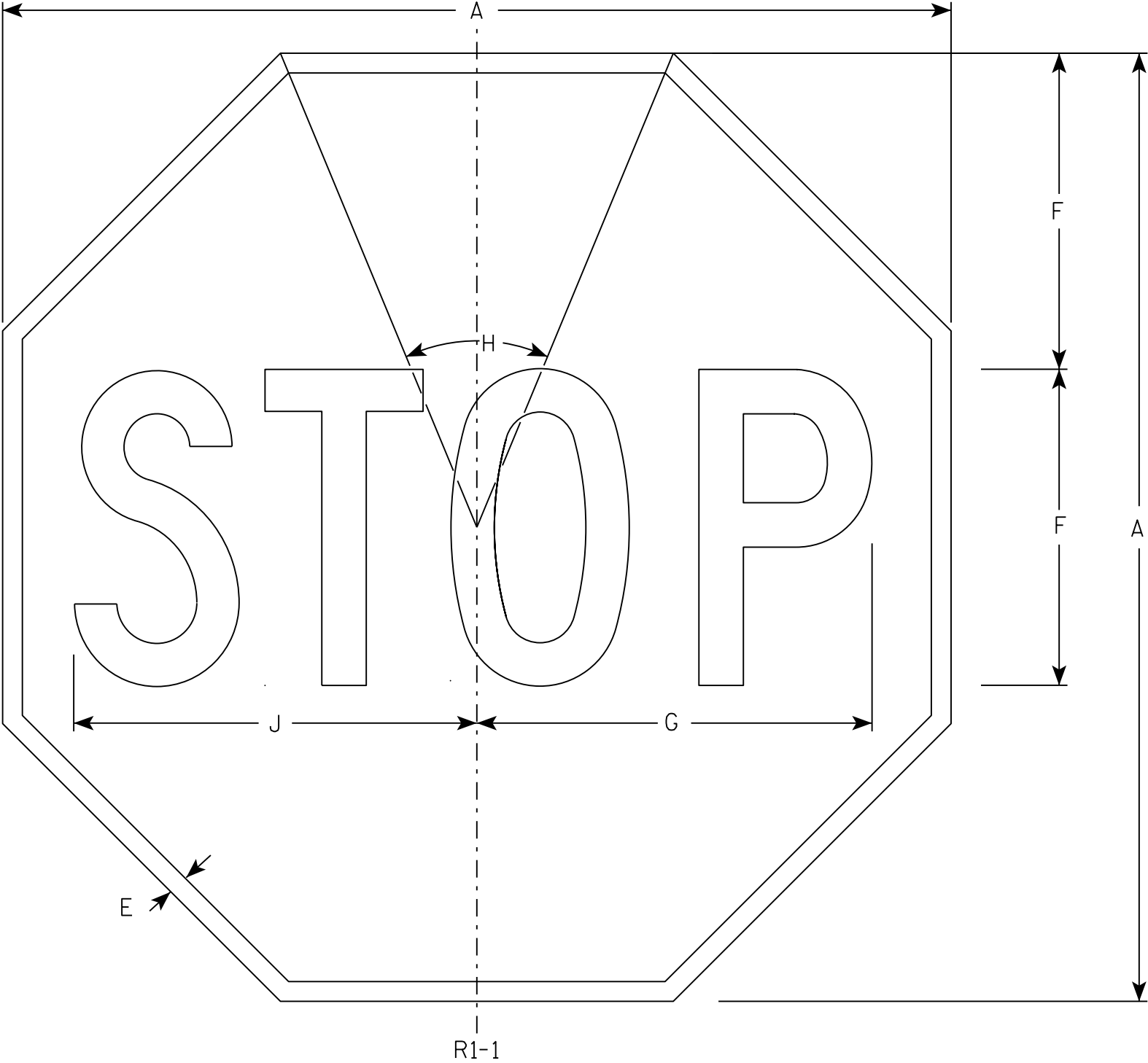
STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLAT 148 116-4.10

7



NOTES

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

7

R1-1

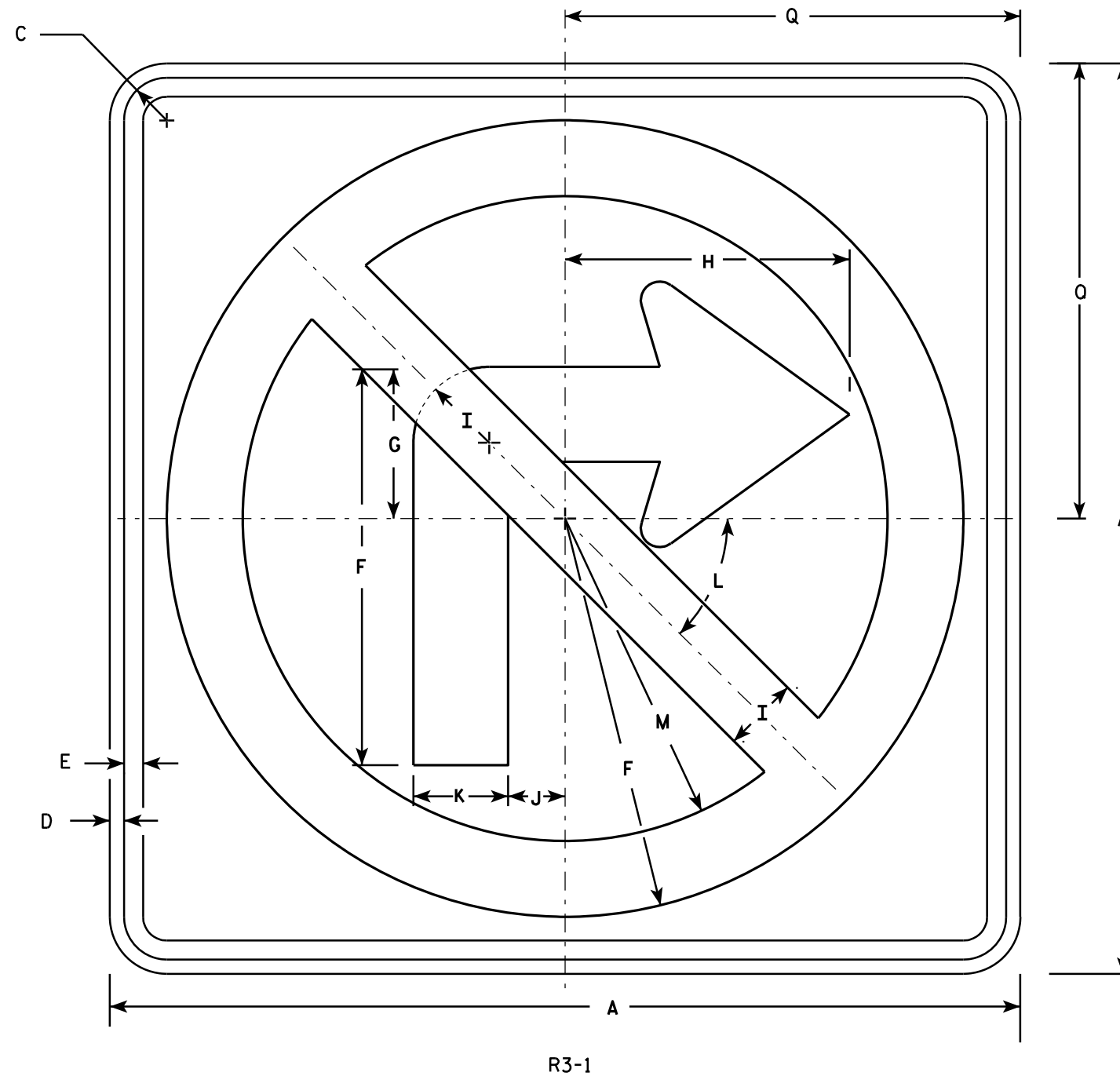
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°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

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

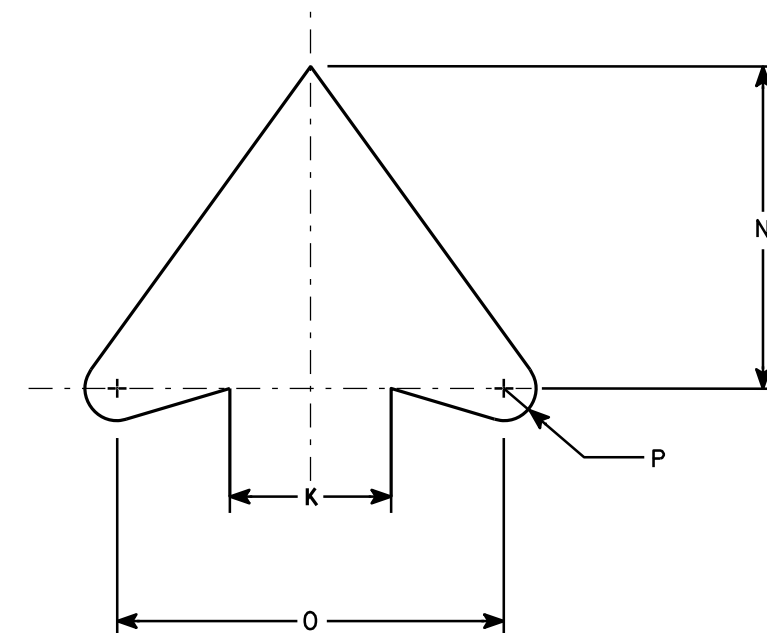
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

STANDARD SIGN

R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

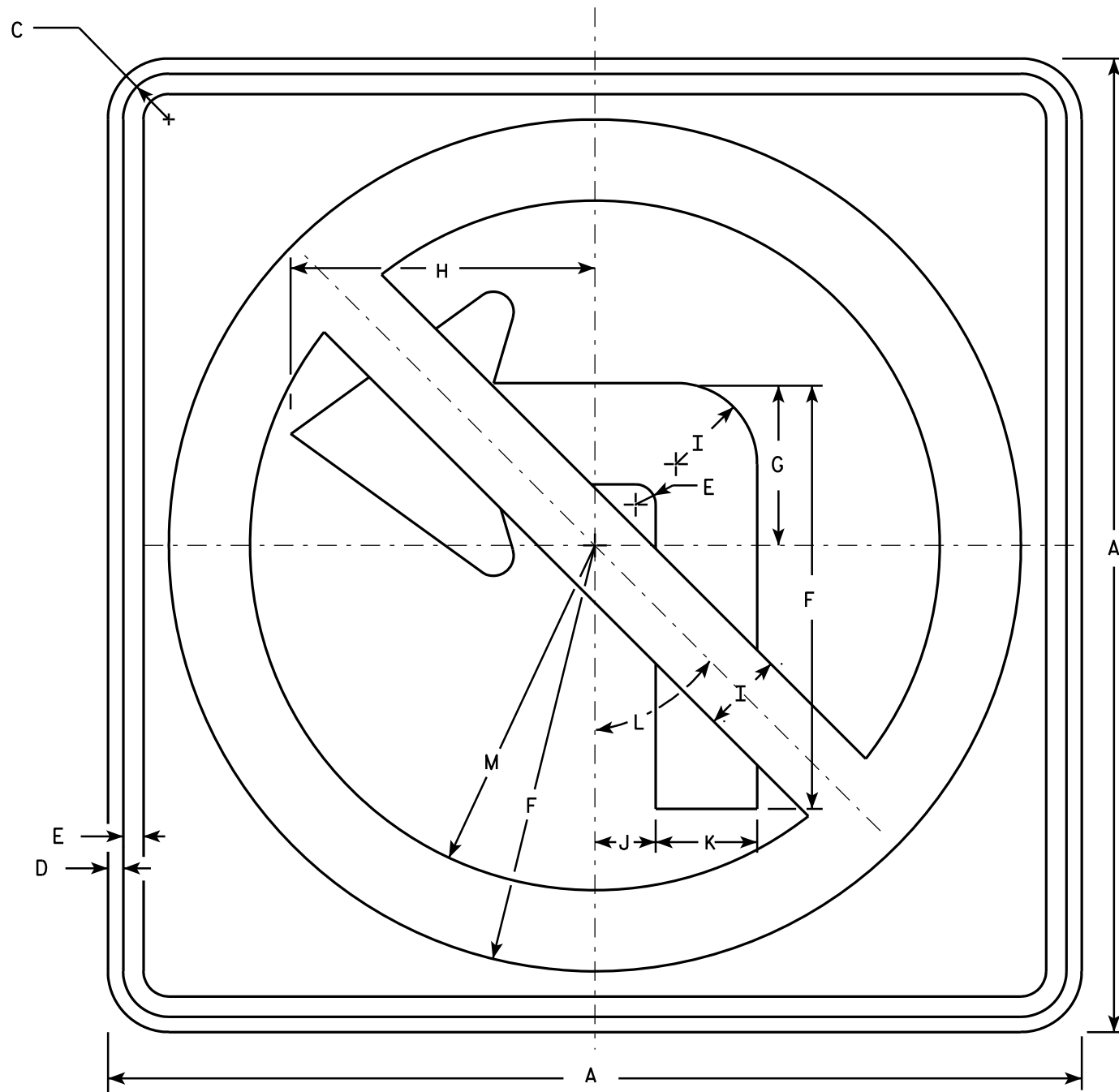
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 150

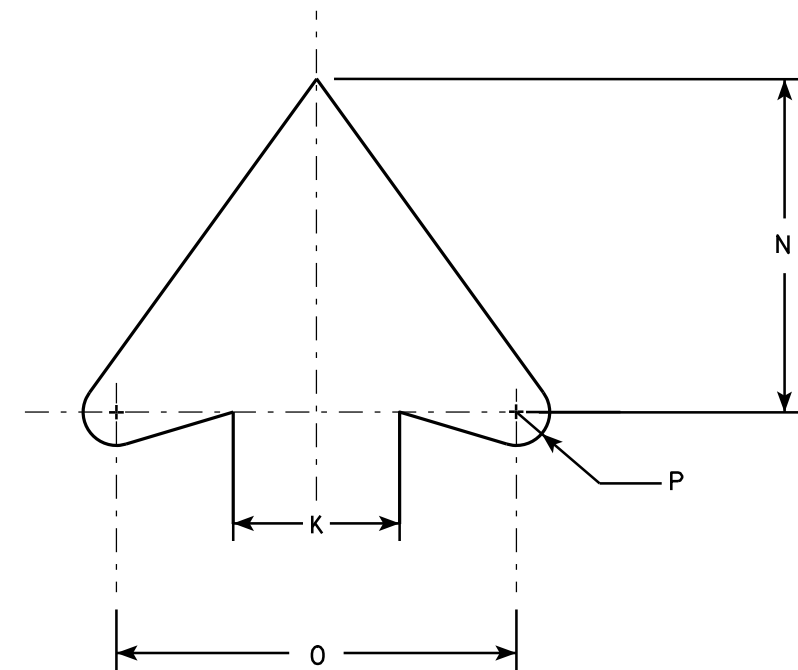
E



R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

STANDARD SIGN R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

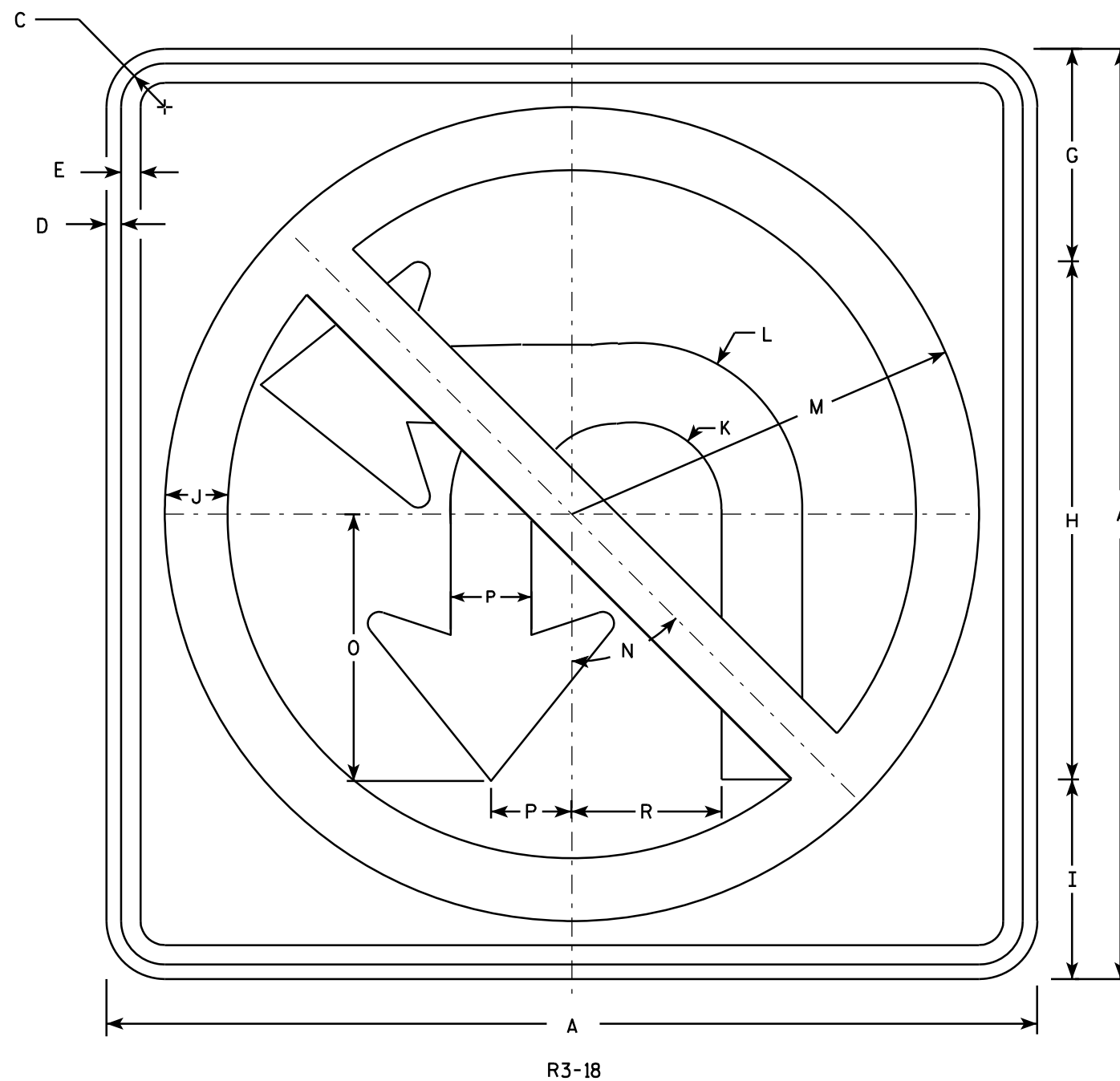
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 151

E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2		5 1/2	13 3/8	5 1/8	1 5/8	2 1/4	4 1/4	10 1/2	45°	6 7/8	2 1/8		3 7/8									4.0
2M	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45°	10 3/8	3 1/8		5 3/4									9.0
3	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
4	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
5	48		2 1/4	3/4	1		11	26 3/4	10 1/4	3 1/4	4 5/8	8 5/8	21	45°	13 3/4	4 1/8		7 3/4									16.0

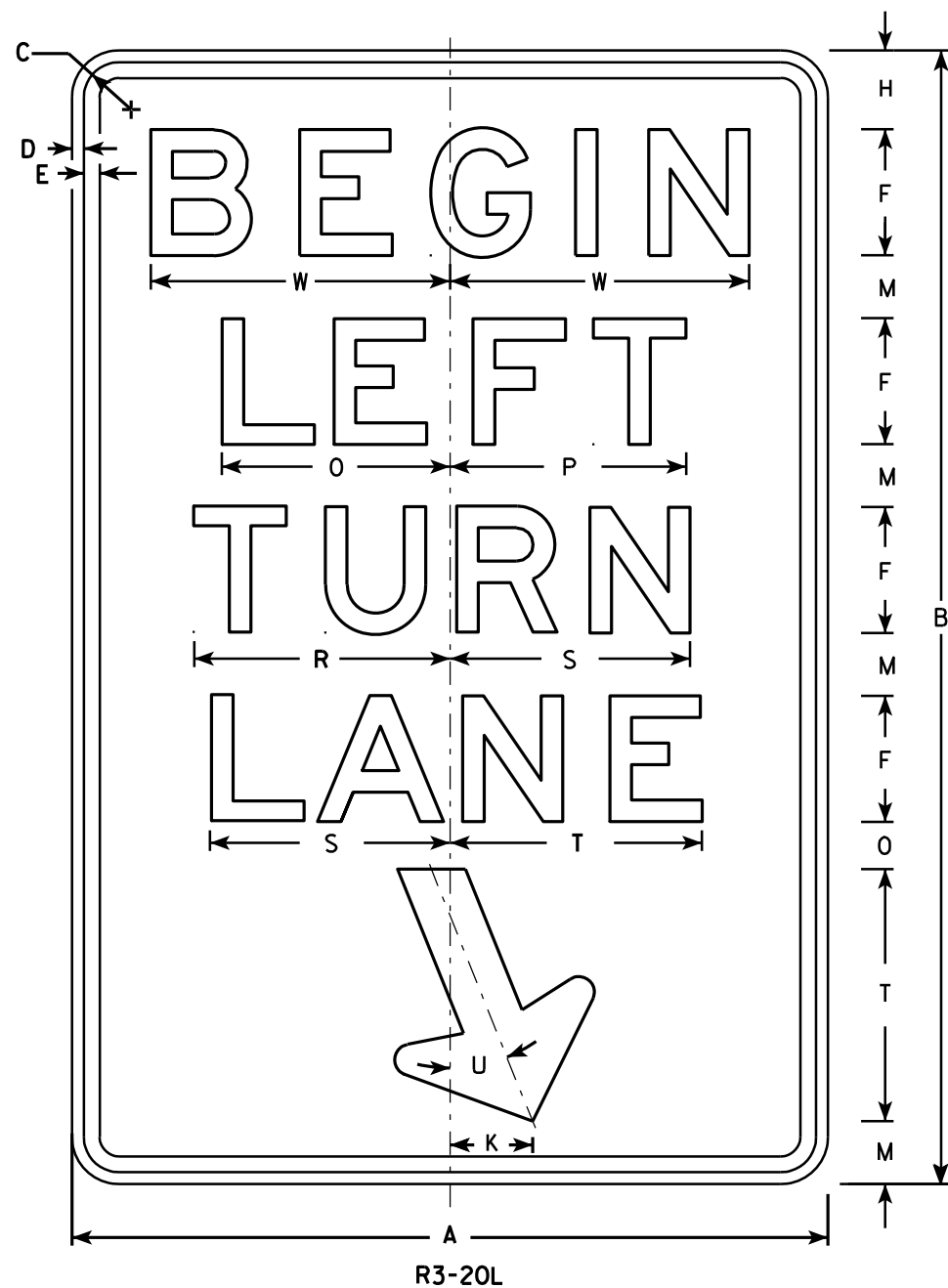
STANDARD SIGN R3-18

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

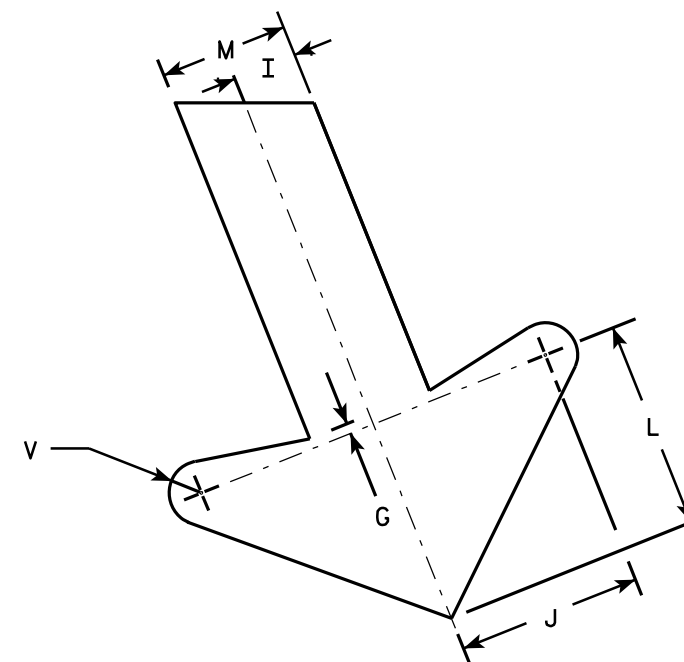
DATE 11/21/10 PLATE NO. R3-18.2

PROJECT NO: HWY: COUNTY: SHEET NO: 152 E



NOTES

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

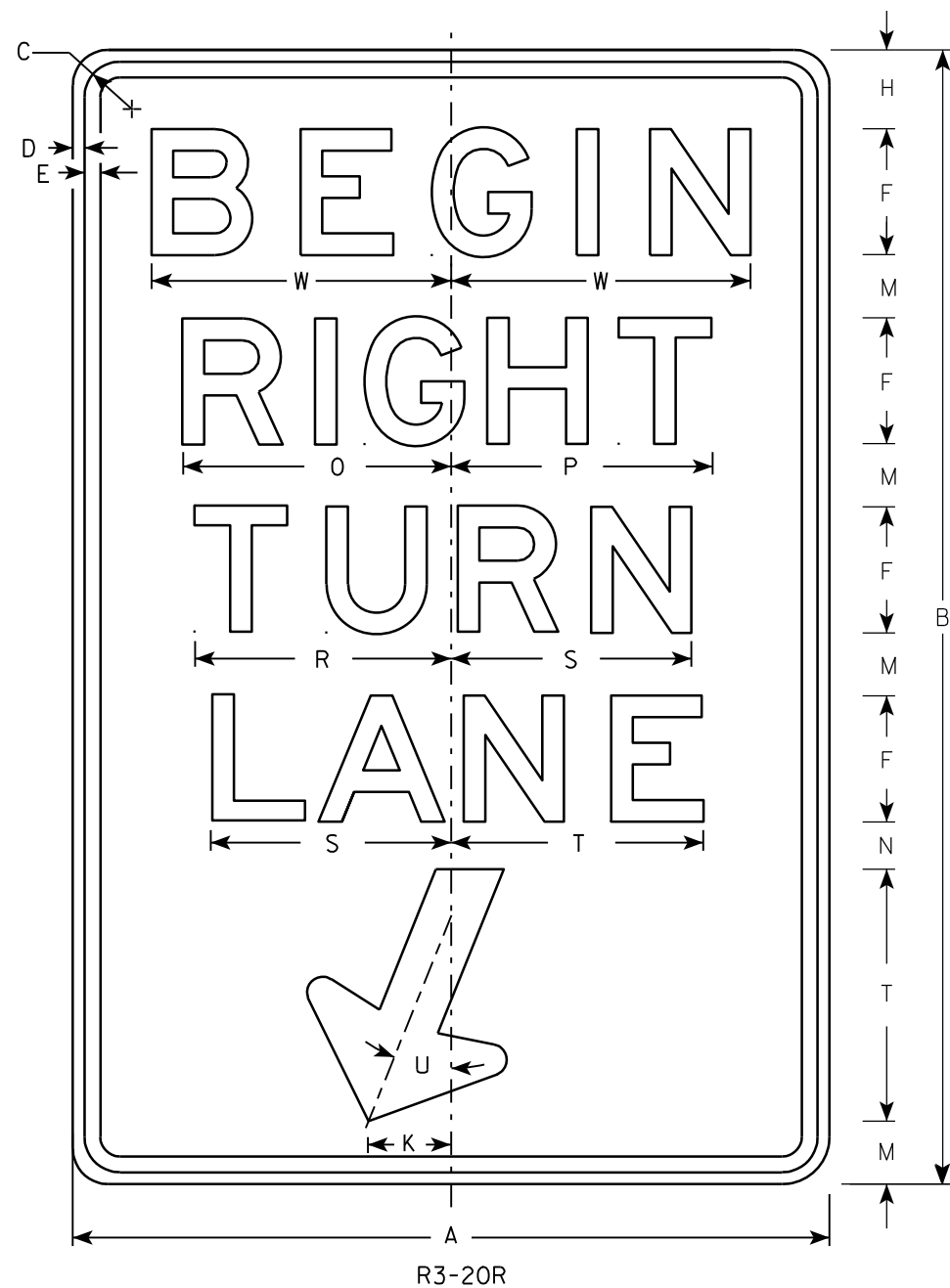


ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

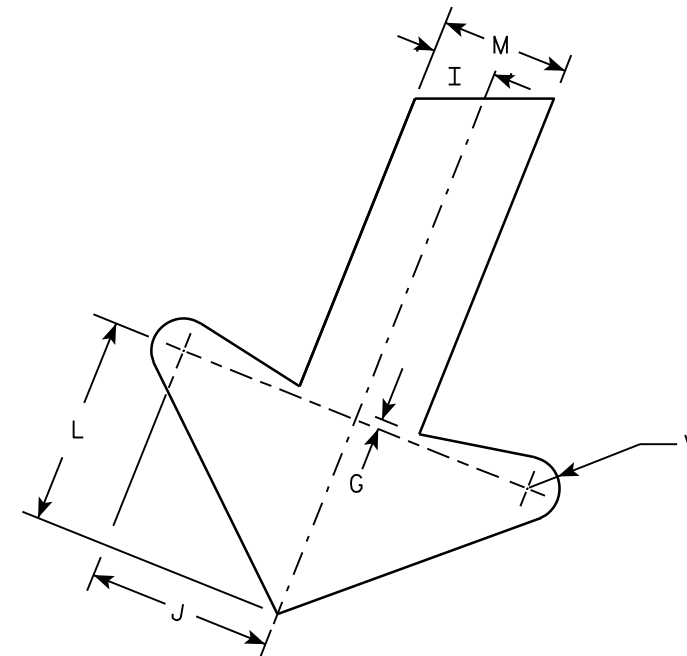
STANDARD SIGN R3-20L	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 10/18/10	PLATE NO. R3-20L.7

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 153		E
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NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 154	E
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STANDARD SIGN
R3-20R

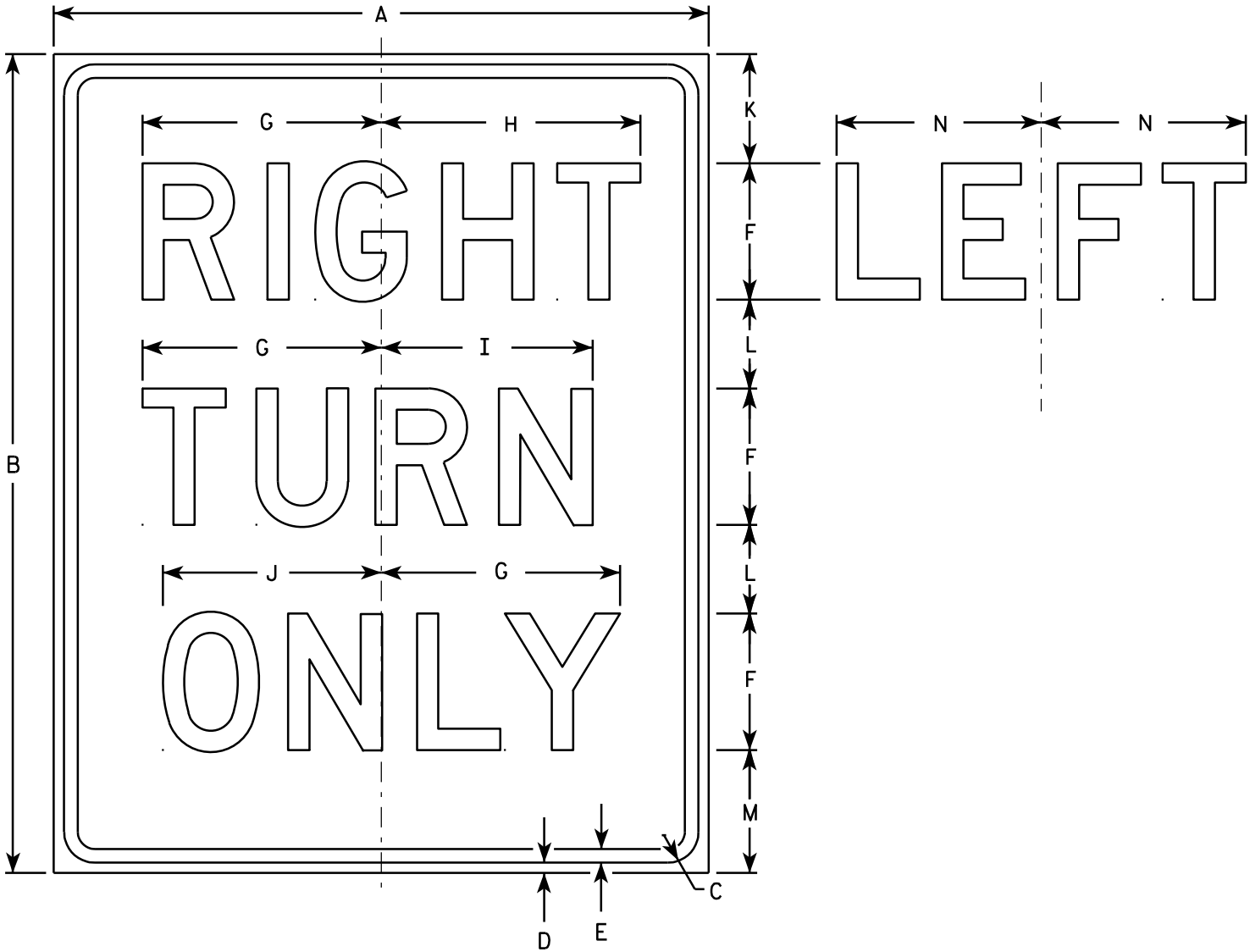
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. R3-53L same as R3-53R except LEFT is substituted for RIGHT.



R3-53R

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	5	8 3/4	9 1/2	7 3/4	8	4	3 1/4	4 1/2	7 1/2													5.0
2M	24	30	1 1/8	3/8	1/2	5	8 3/4	9 1/2	7 3/4	8	4	3 1/4	4 1/2	7 1/2													5.0
3	24	30	1 1/8	3/8	1/2	5	8 3/4	9 1/2	7 3/4	8	4	3 1/4	4 1/2	7 1/2													5.0
4																											
5																											

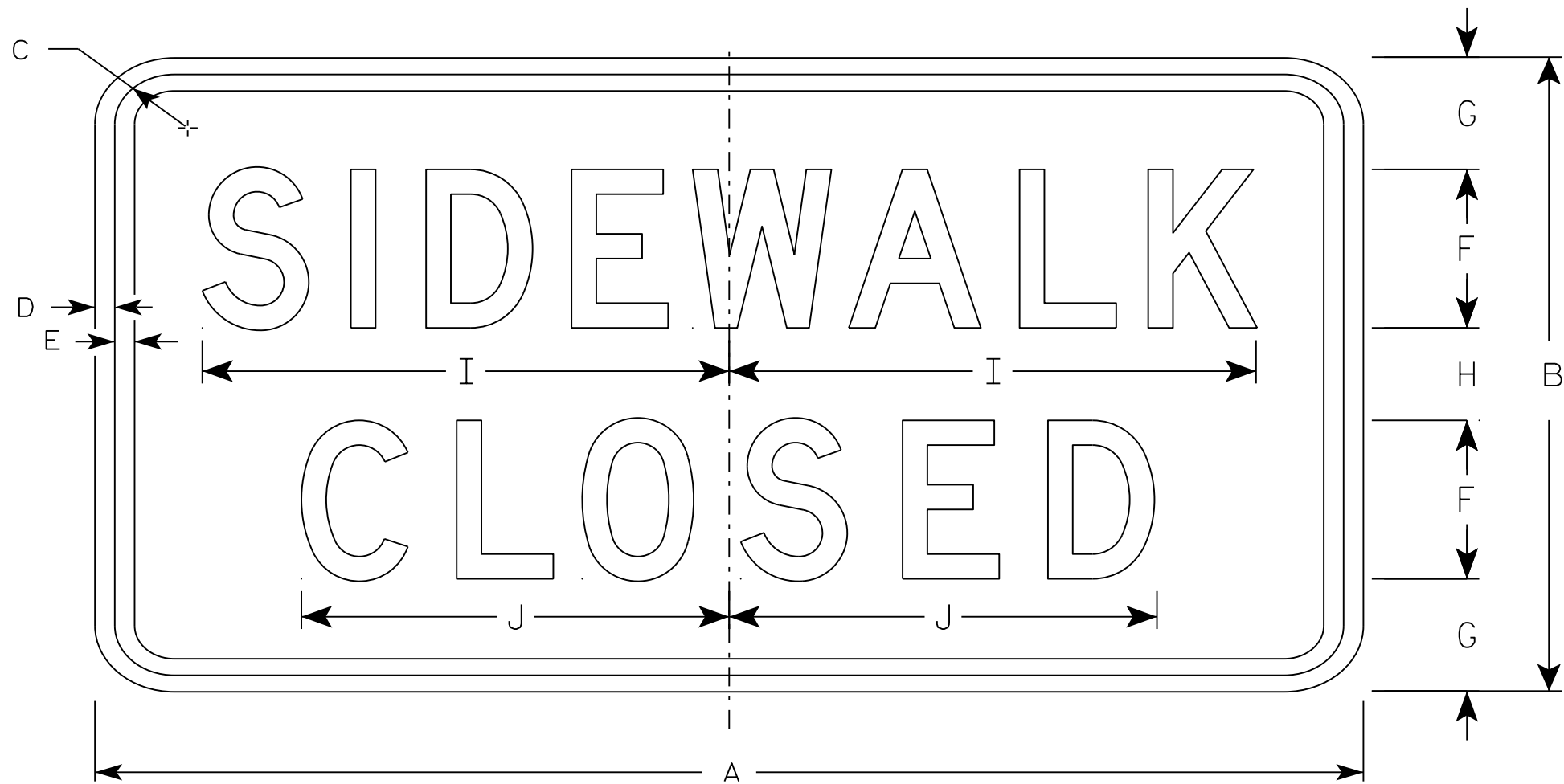
STANDARD SIGN
R3-53

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-53.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 155	E
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R9-9

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

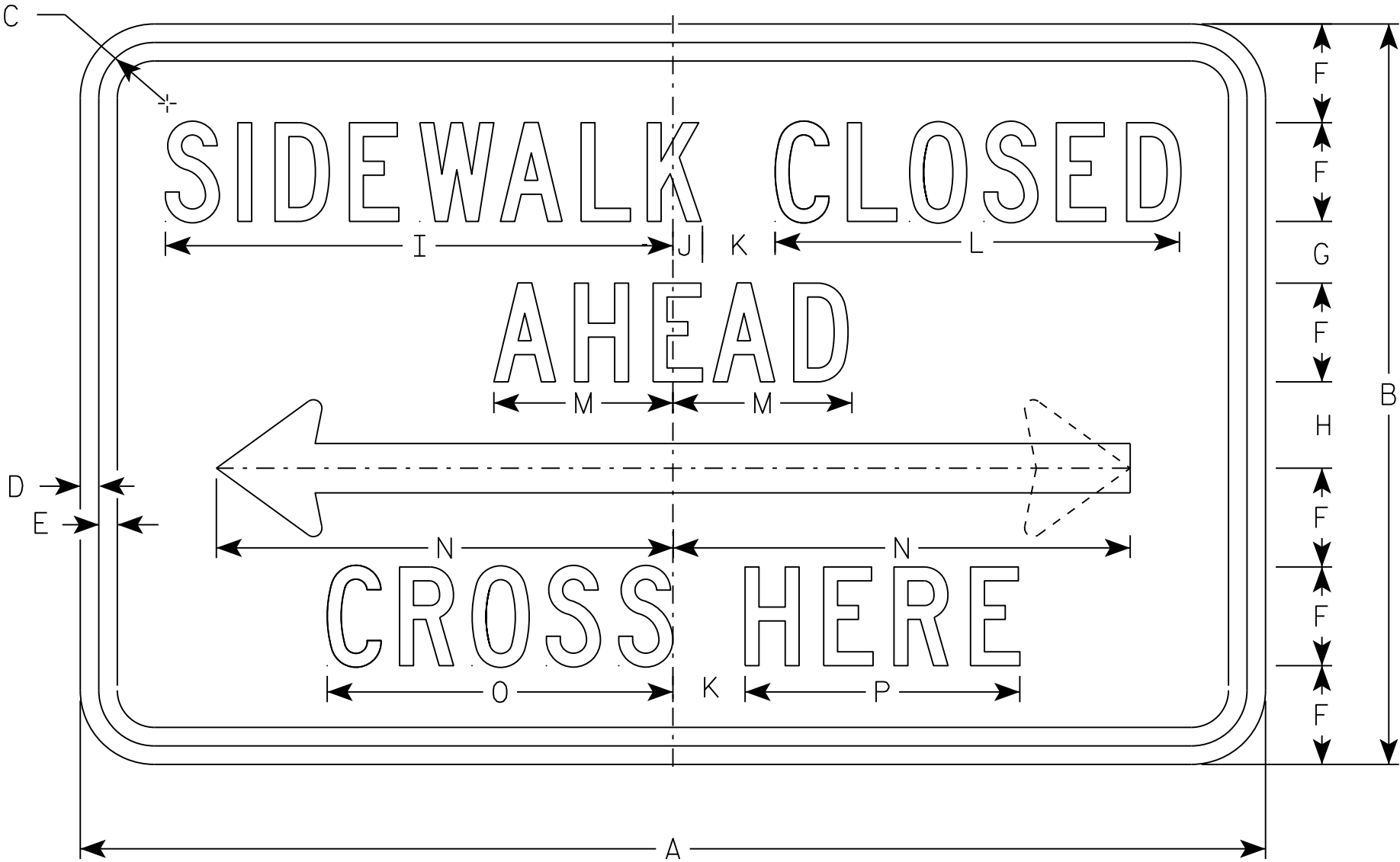
E

STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

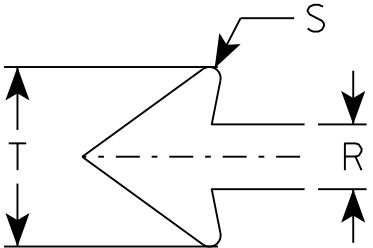
DATE 8/11/16 PLATE 156 R9-9.6



R9-11

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C except Size 1 is Series D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
2M	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
3	30	15	1 1/8	3/8	1/2	2	1 1/2	1 1/2	13	3/4	2	10 1/4	4 5/8	12 3/8	8 7/8	6 7/8		1 1/4	1/4	3 5/8							3.125
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 157

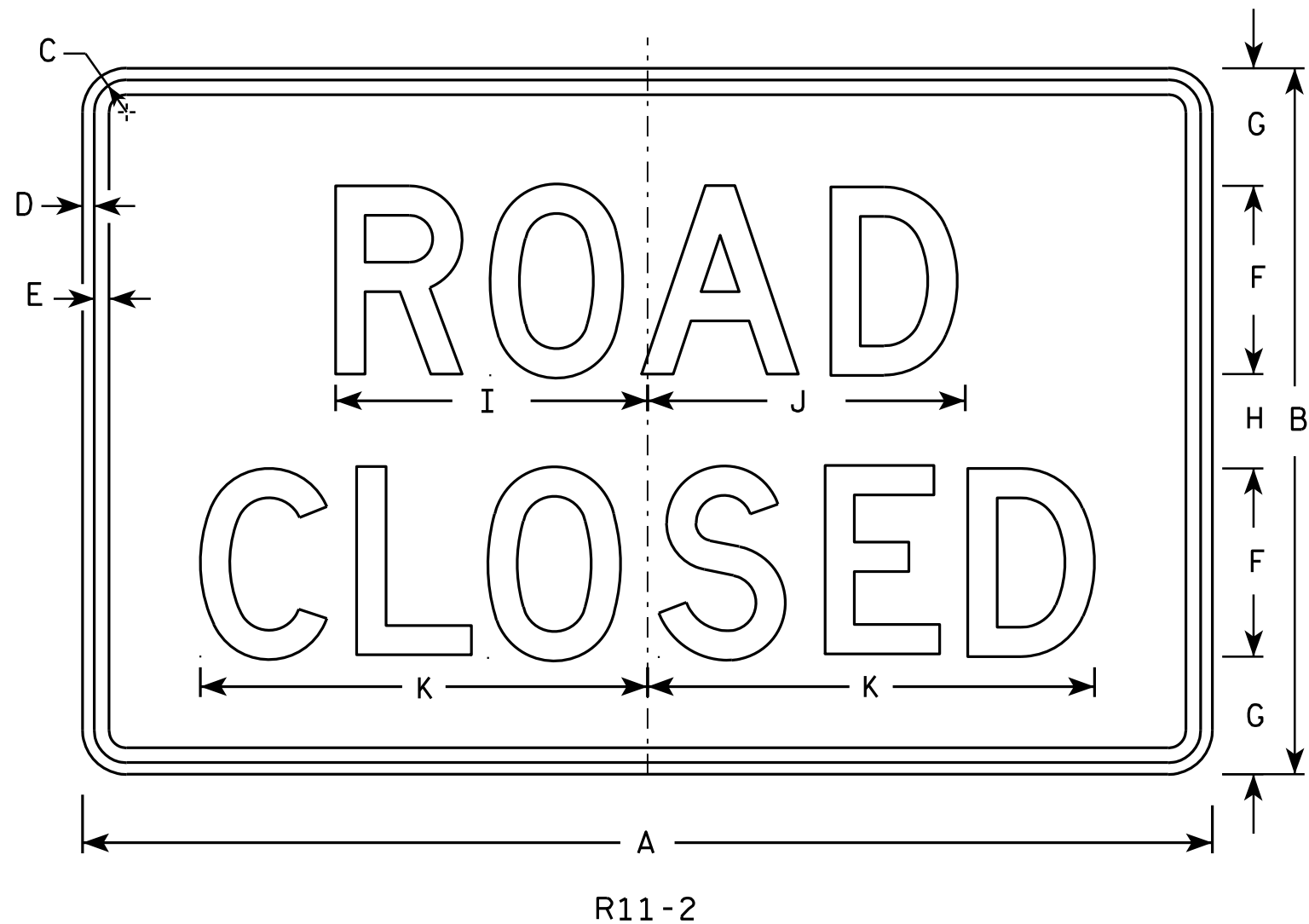
E

STANDARD SIGN
R9-11

WISCONSIN DEPT OF TRANSPORTATION

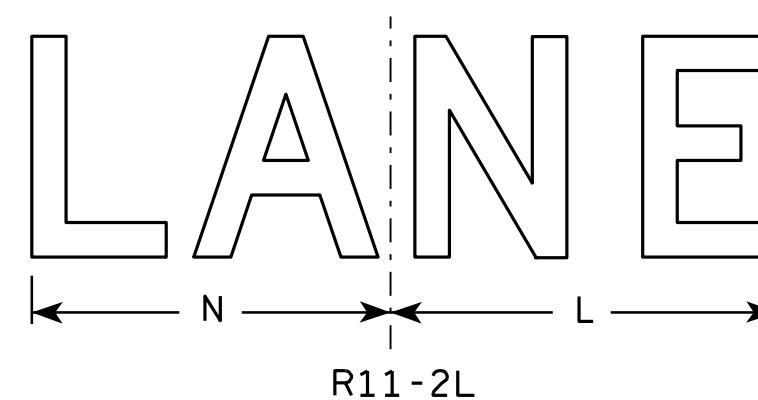
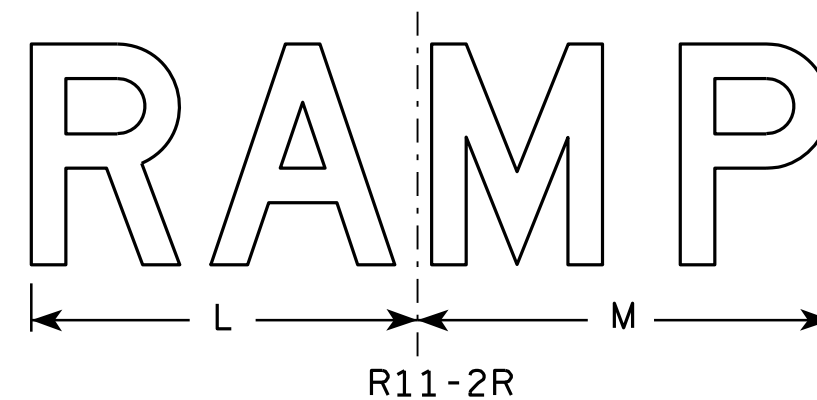
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/29/16 PLATE NO. R9-11.3



NOTES

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



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

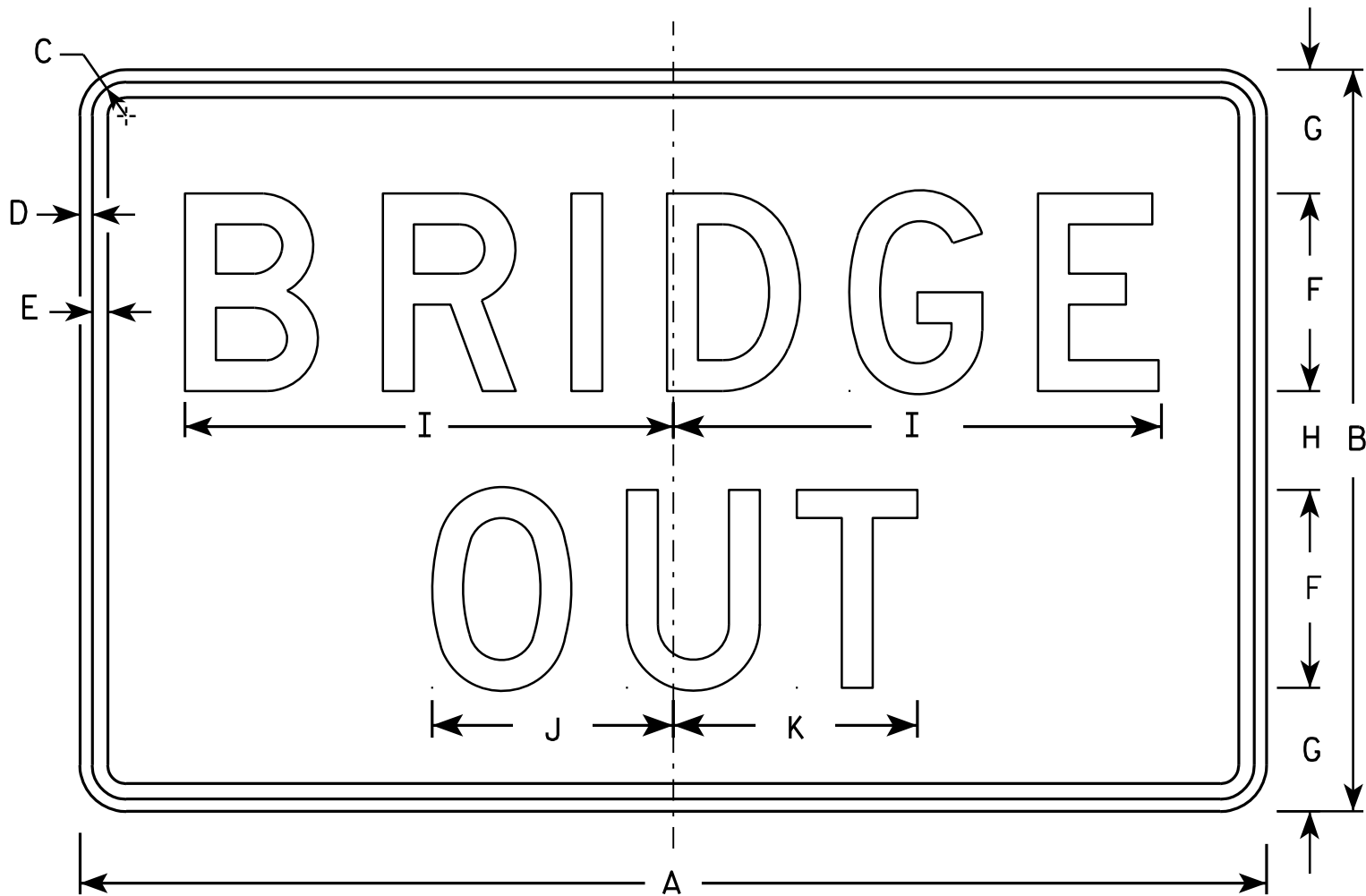
STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 158 **E**

NOTES

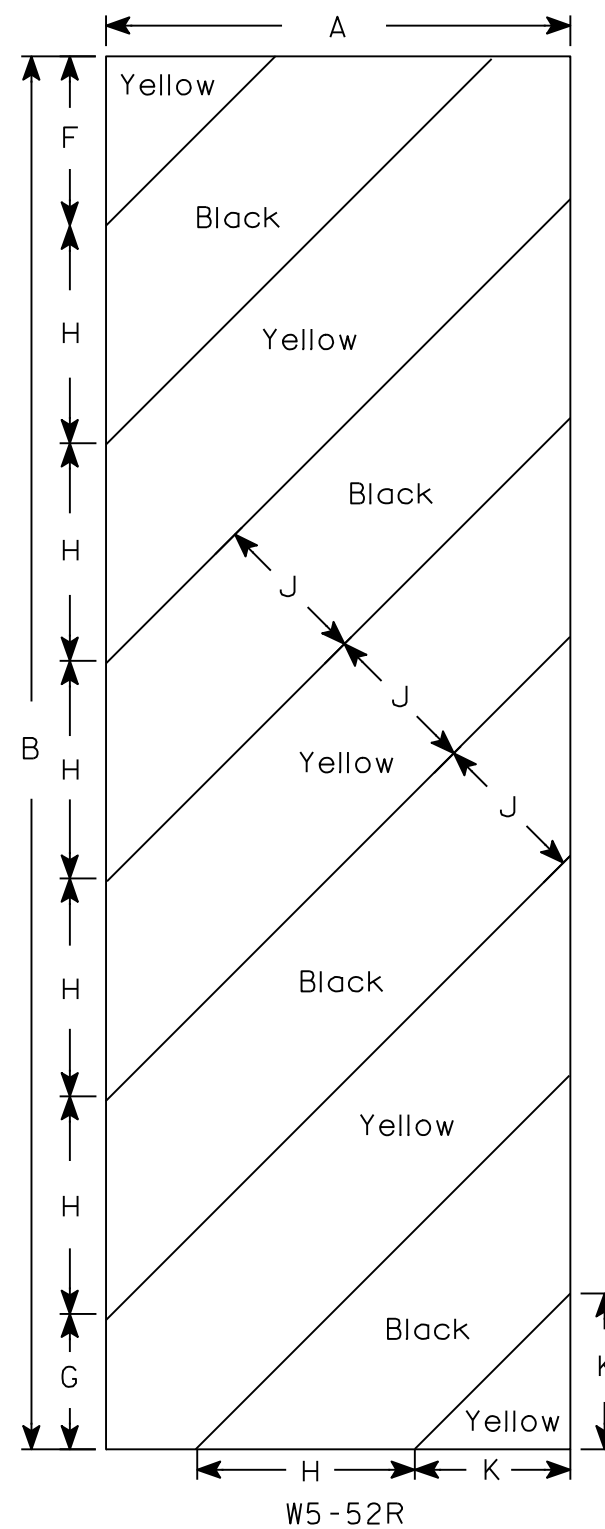
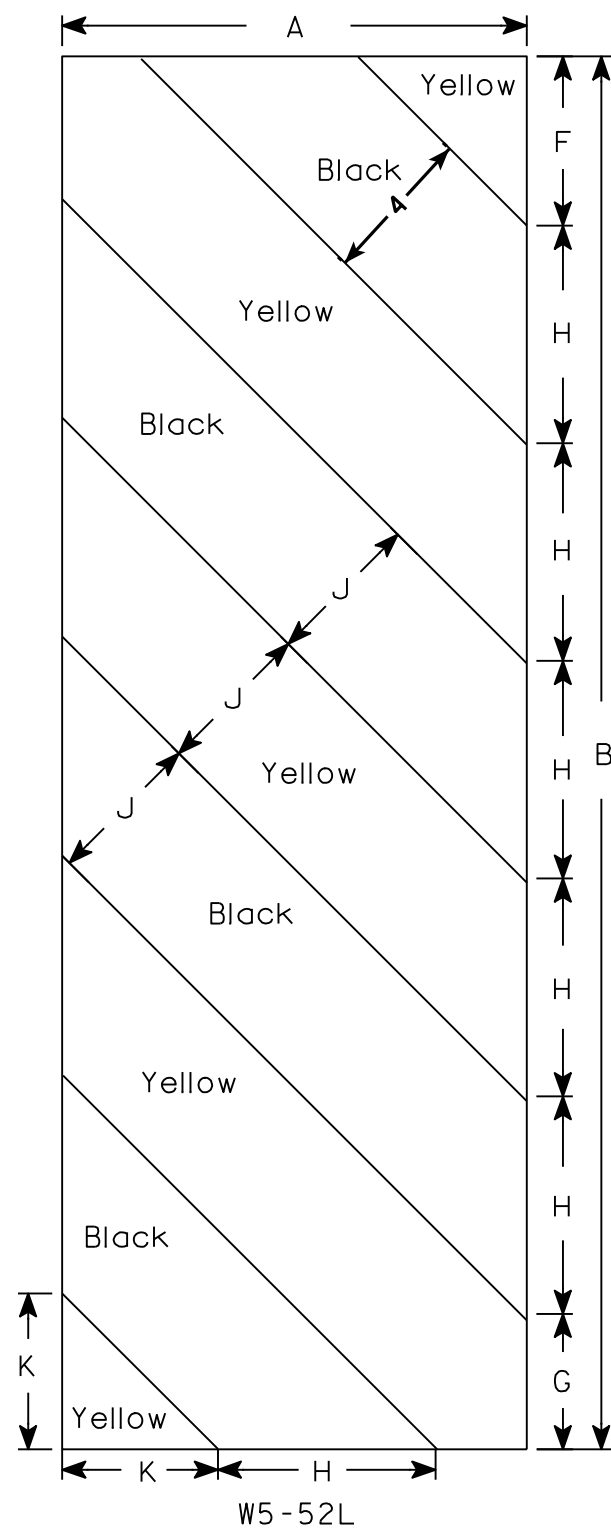
- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall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



R11-2B

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN	
R11-2B	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/11	PLATE NO. R11-2B.2



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

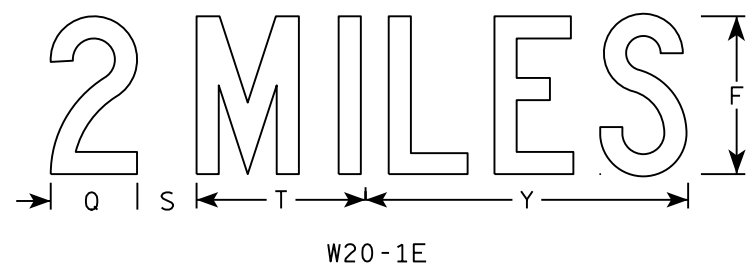
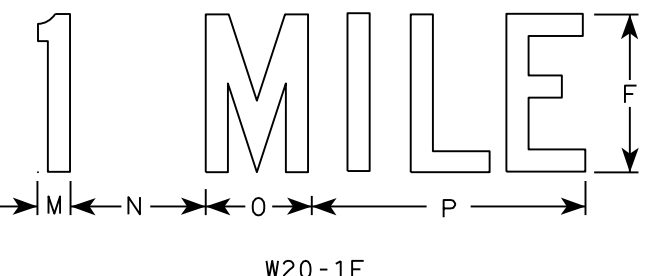
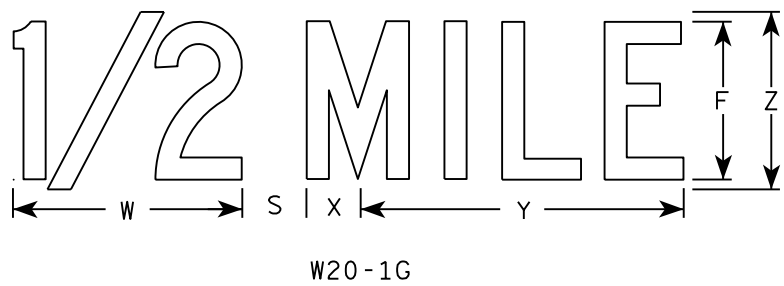
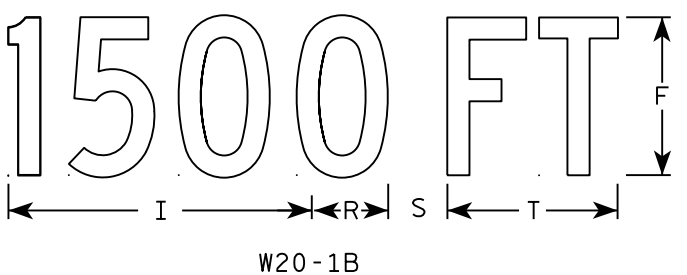
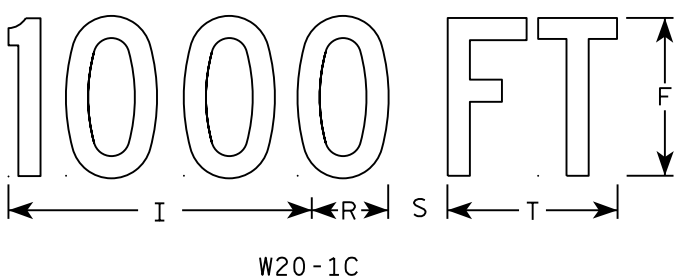
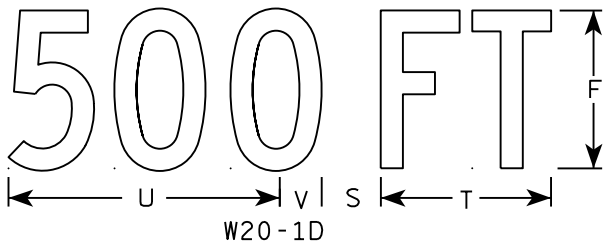
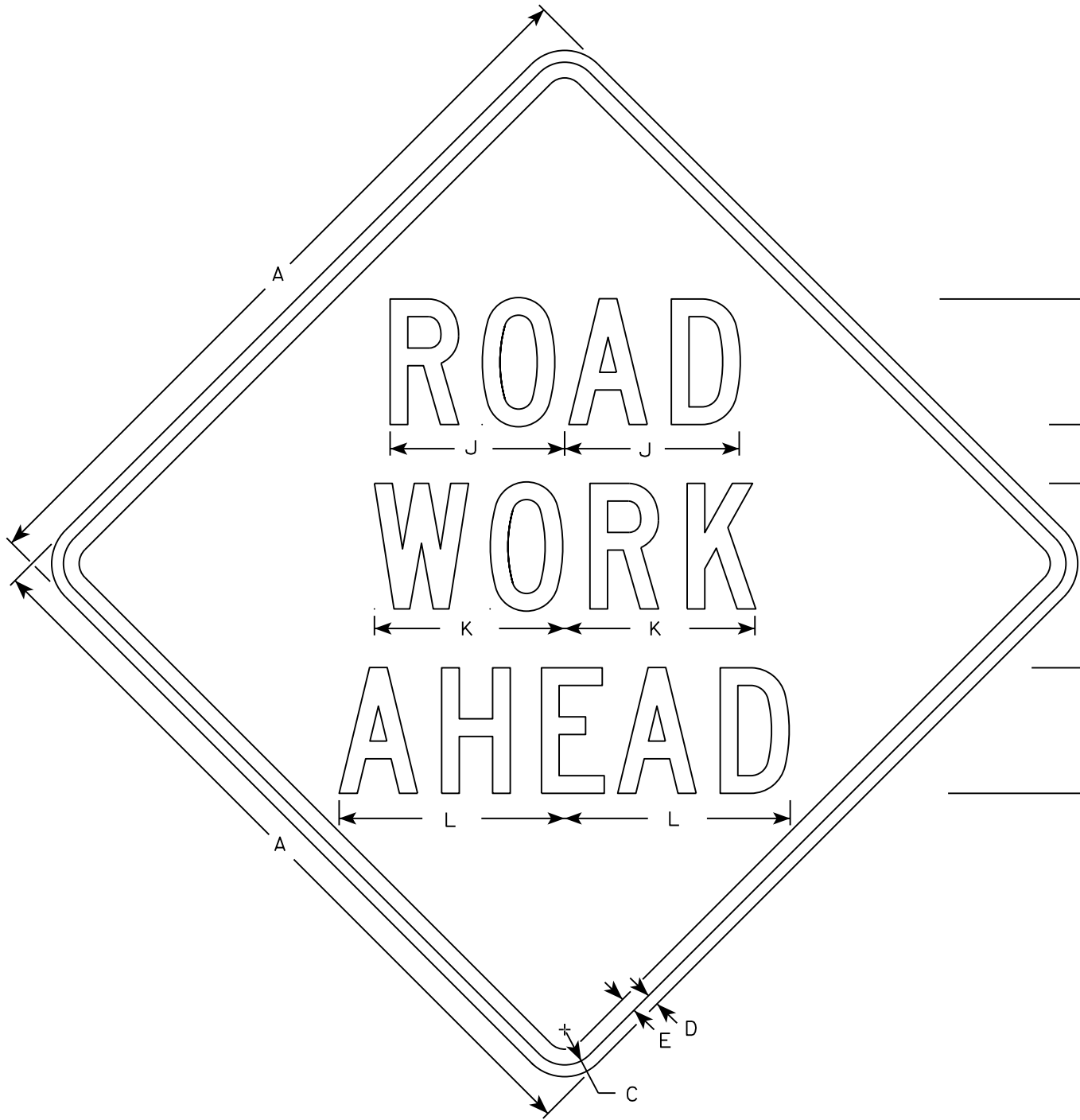
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 160

E



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

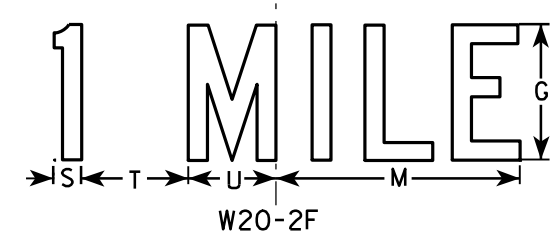
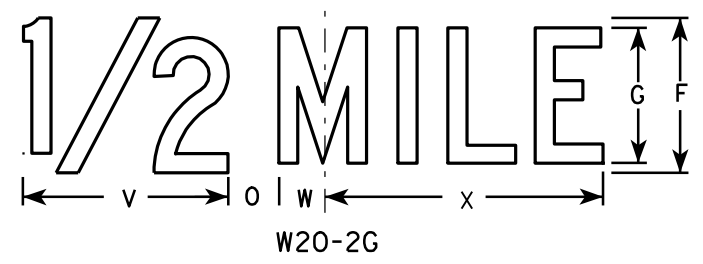
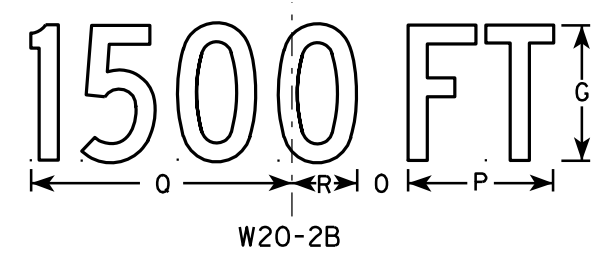
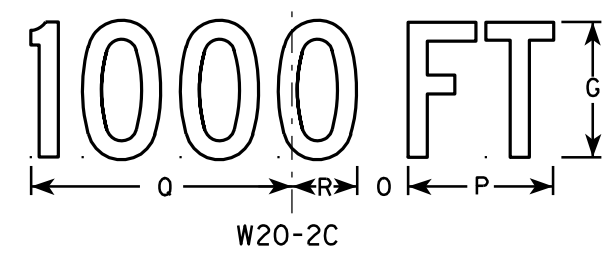
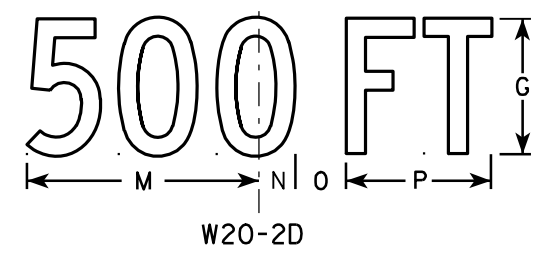
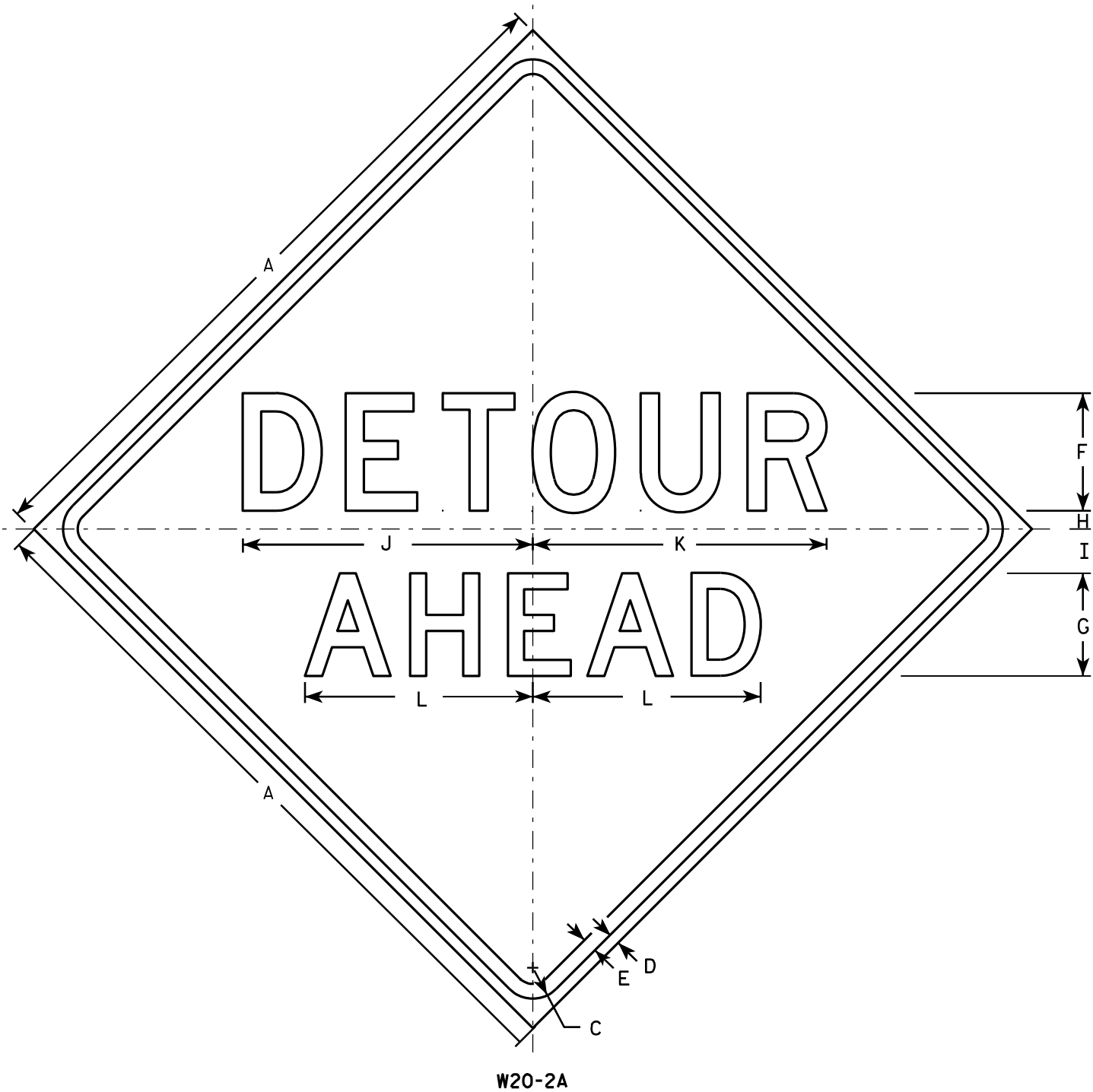
STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

161



NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

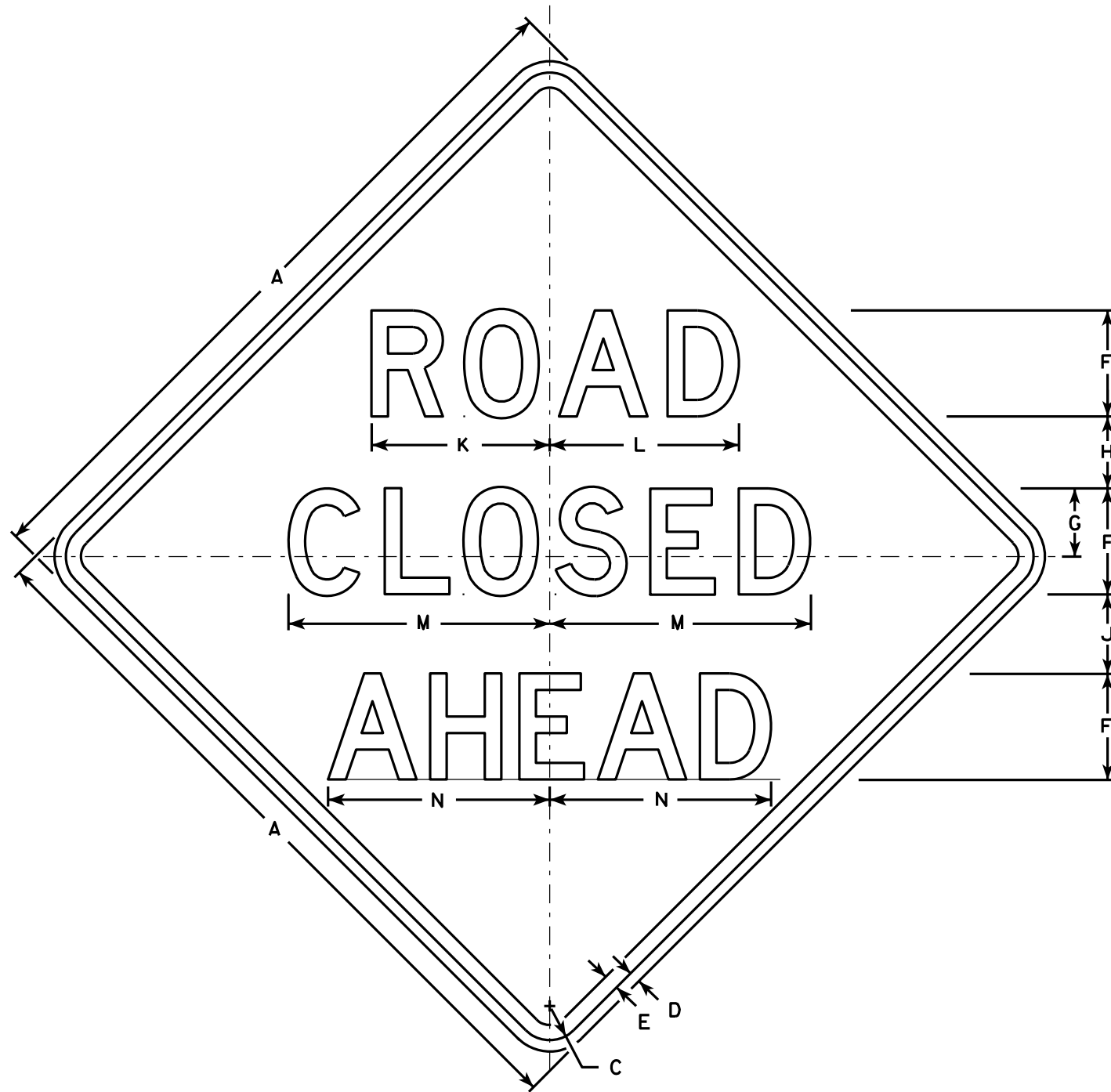
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 162

E



W20-3A

500 FT

W20-3D

1000 FT

W20-3C

1500 FT

W20-3B

1/2 MILE

W20-3G

1 MILE

W20-3F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 163

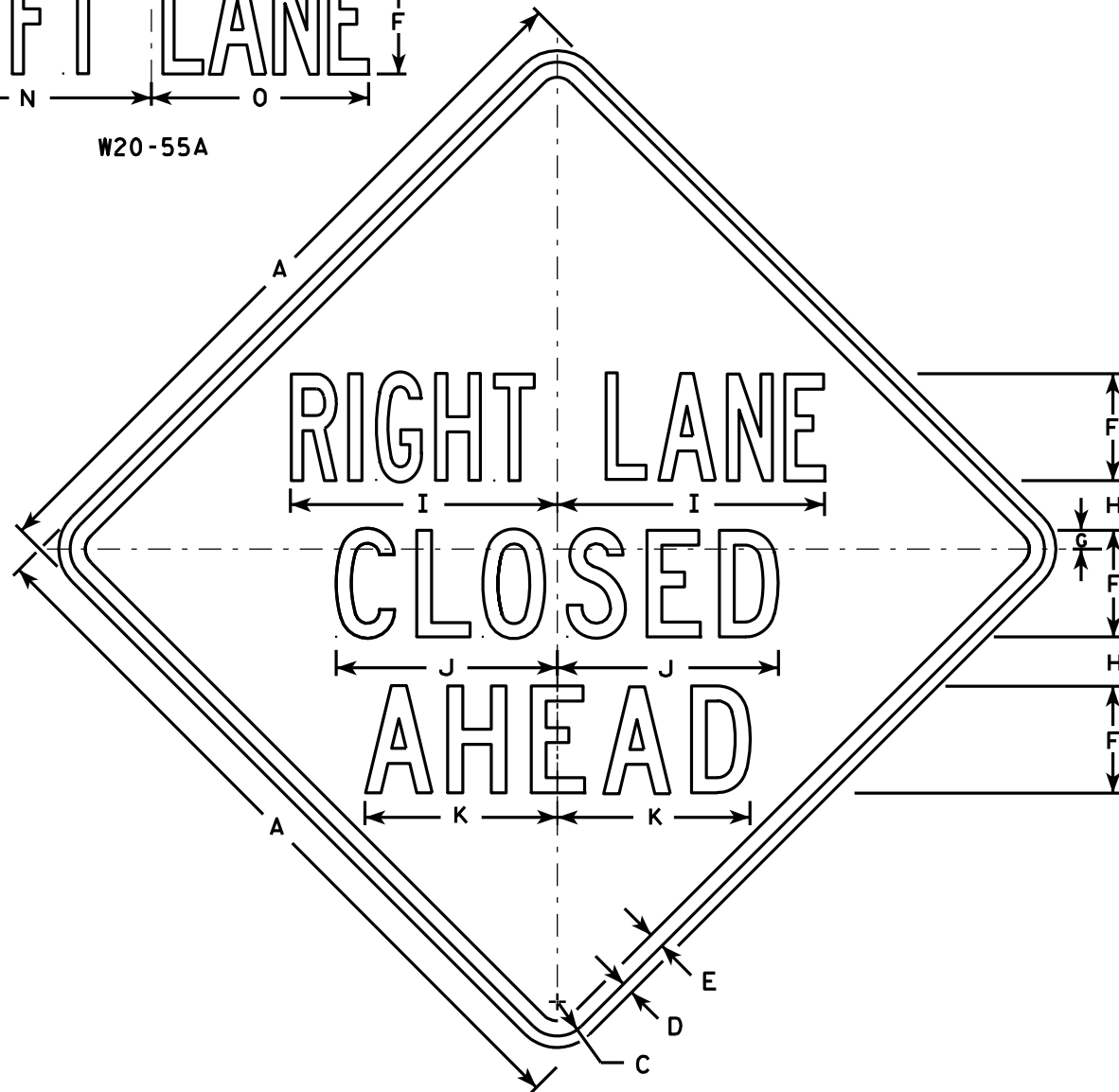
E

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

PROJECT NO:

HWY:

COUNTY:

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

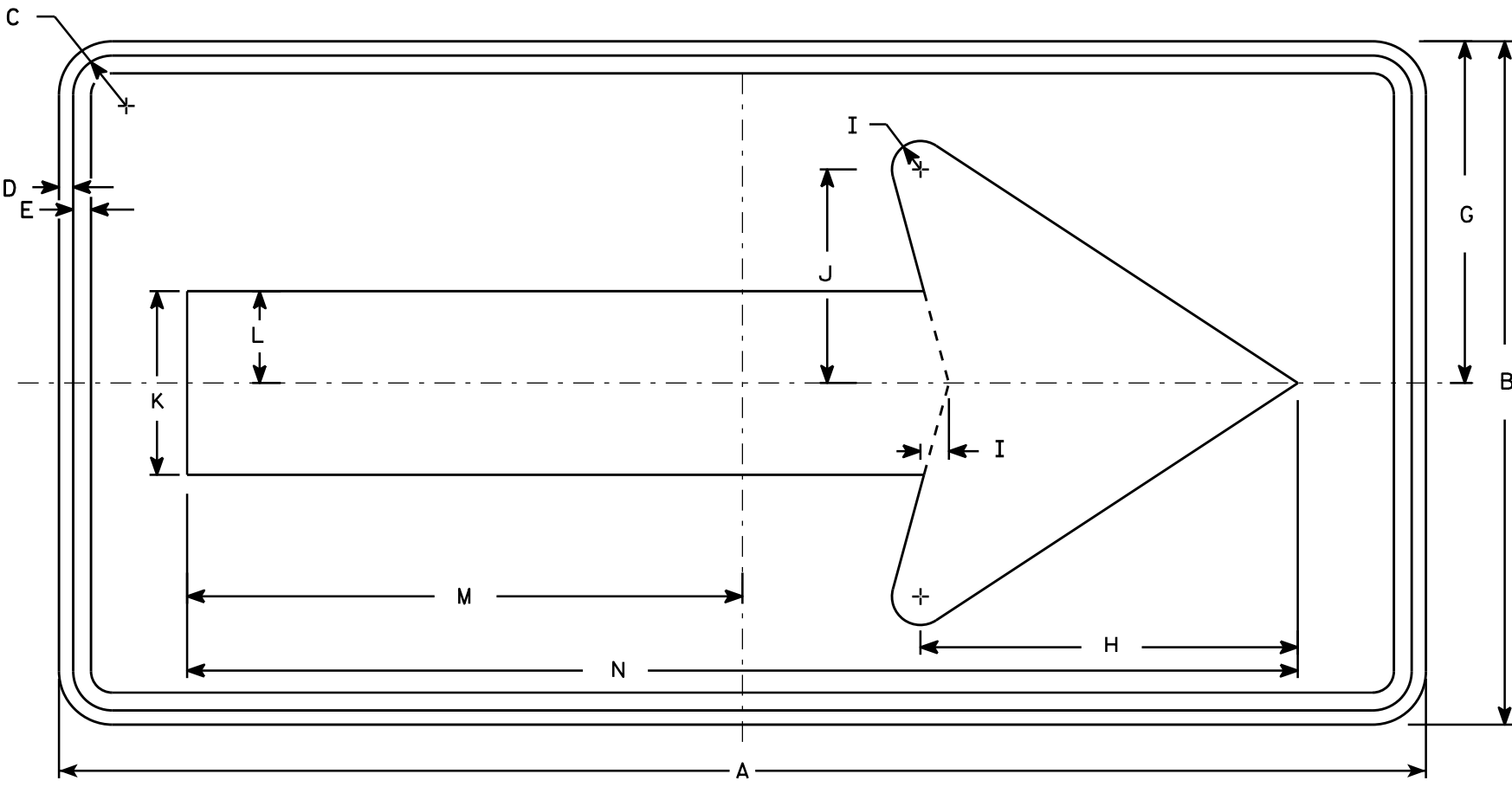
DATE 3/18/11 PLATE NO. W20-5.11

SHEET NO: 164

E

NOTES

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



W01-6

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. 165 W01-6.1

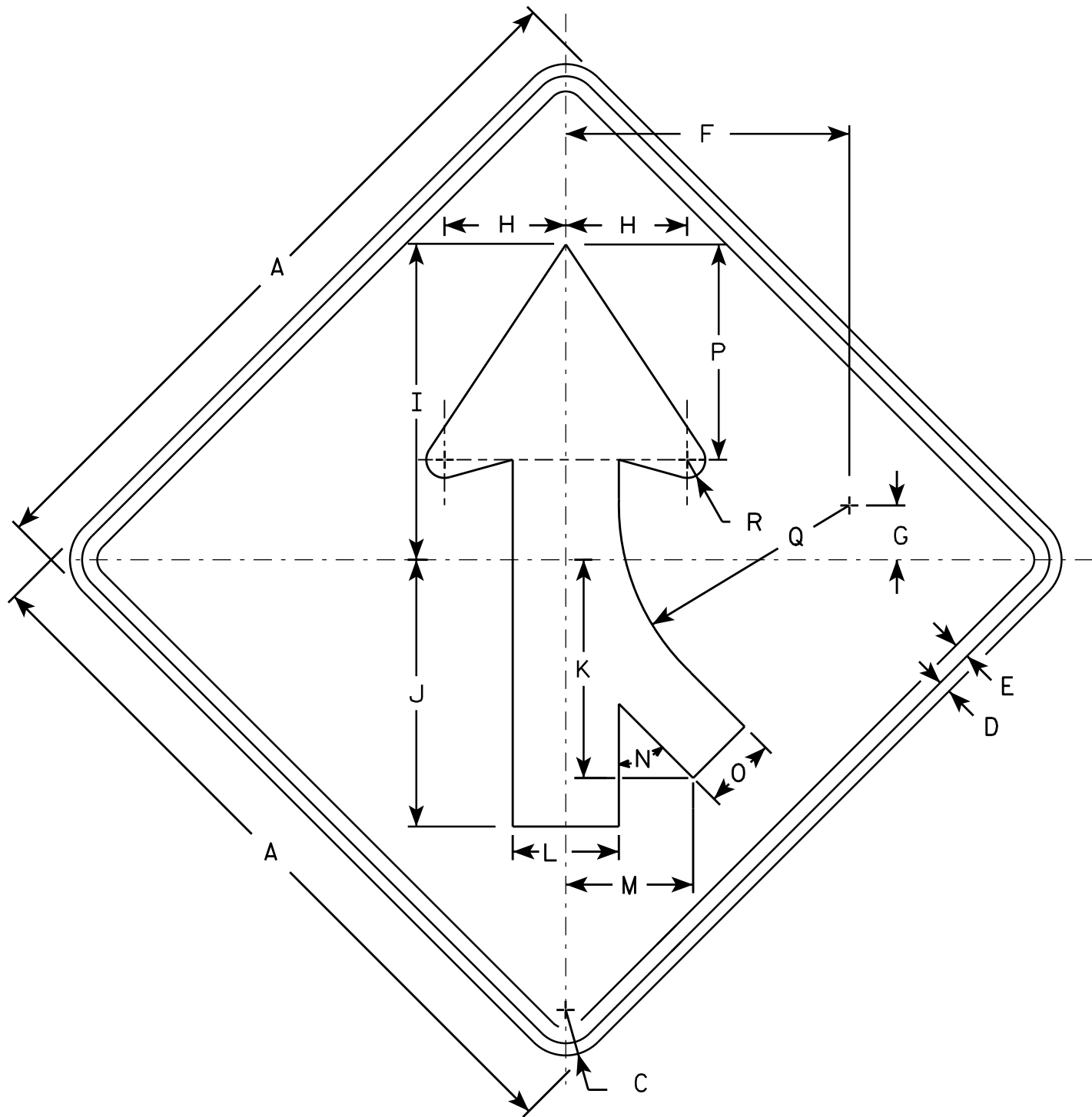
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W04-1 R

NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Orange
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. W4-1L is the same as W4-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2S	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
2M	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
3	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

STANDARD SIGN

W04-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

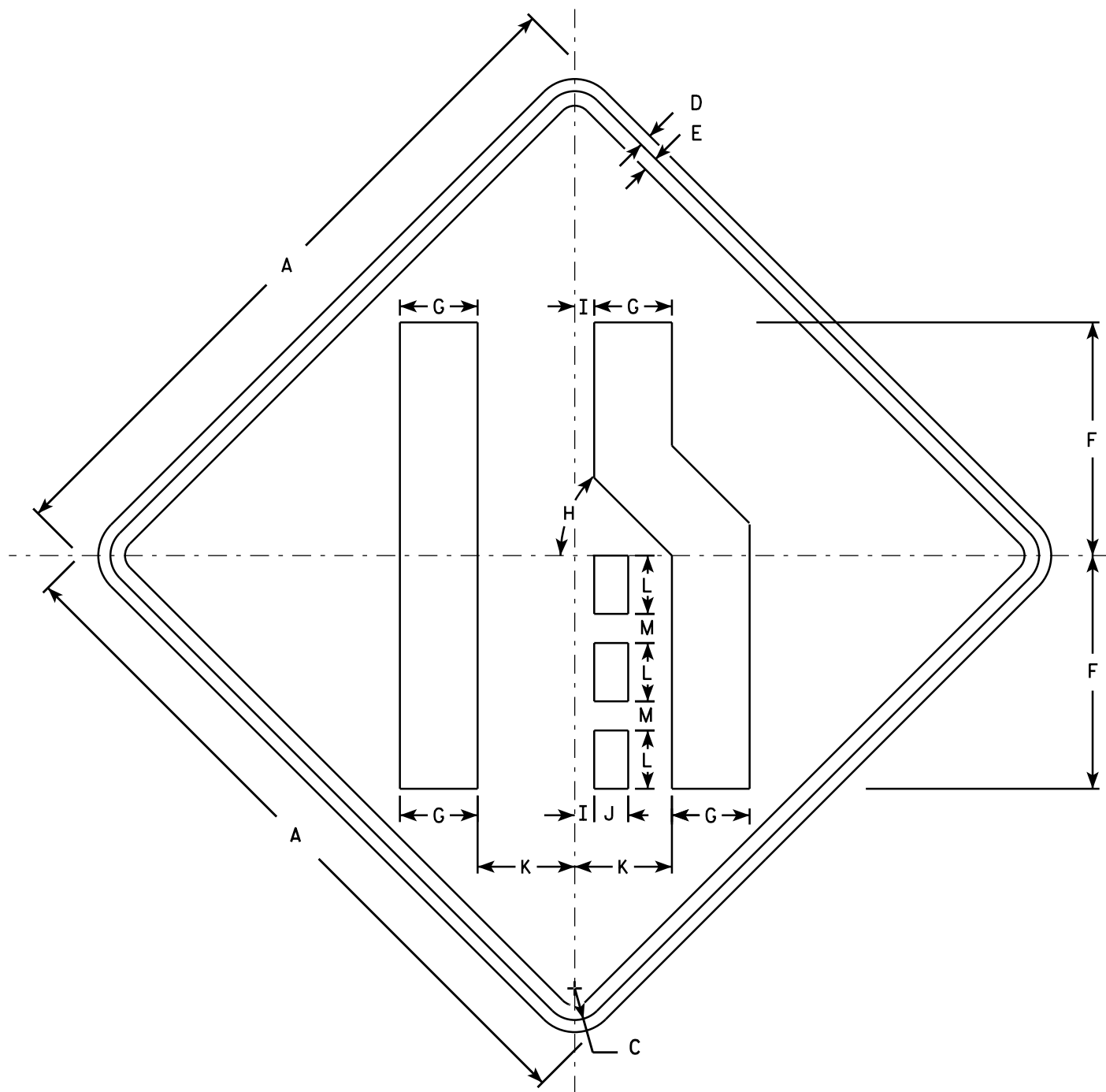
DATE 11/20/13

PLATE NO. 166

W04-1.1

SHEET NO:

E



W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
For State Traffic Engineer

DATE 11/20/13

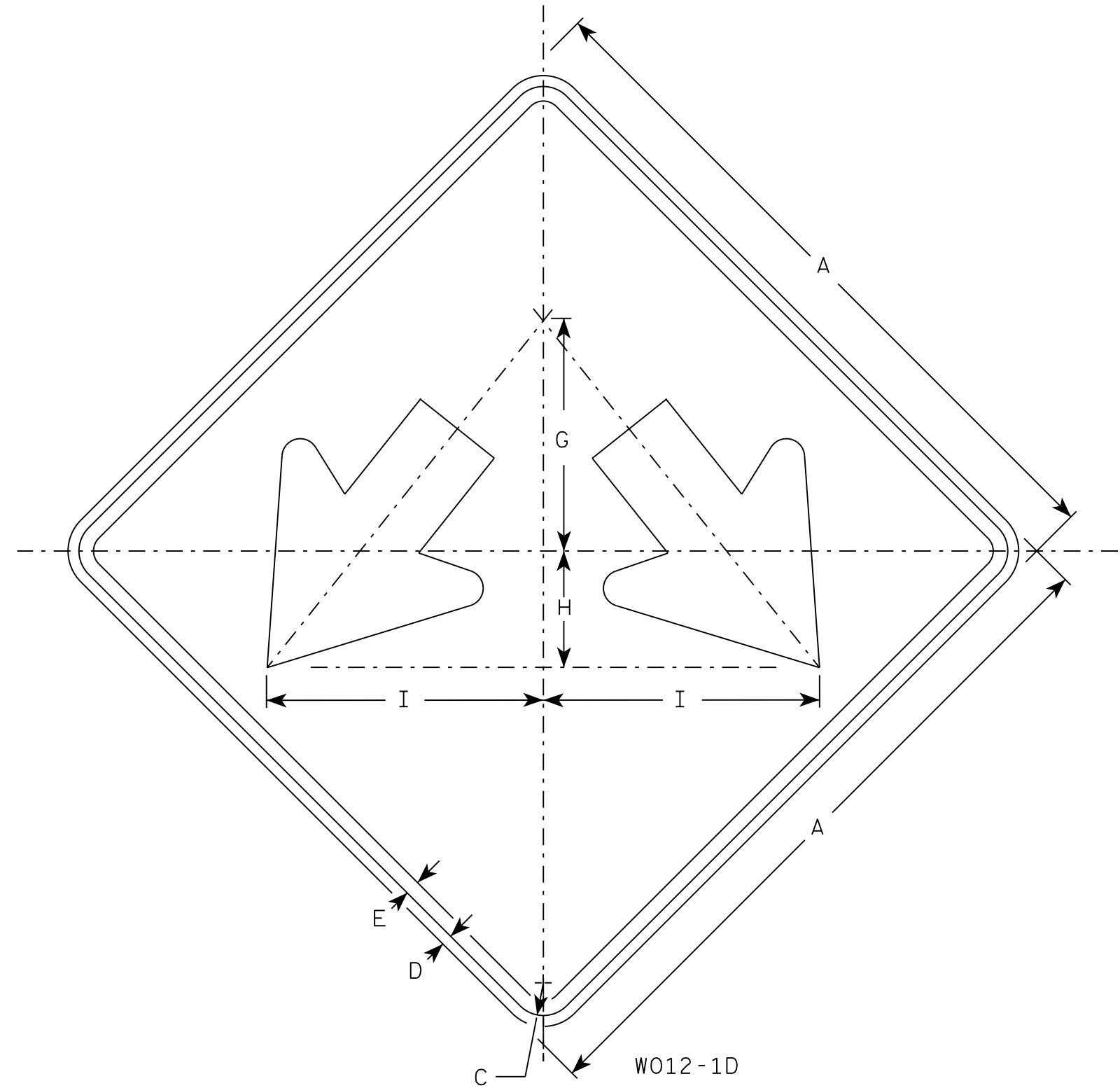
PLATE 167

W04-2.1

PROJECT NO:

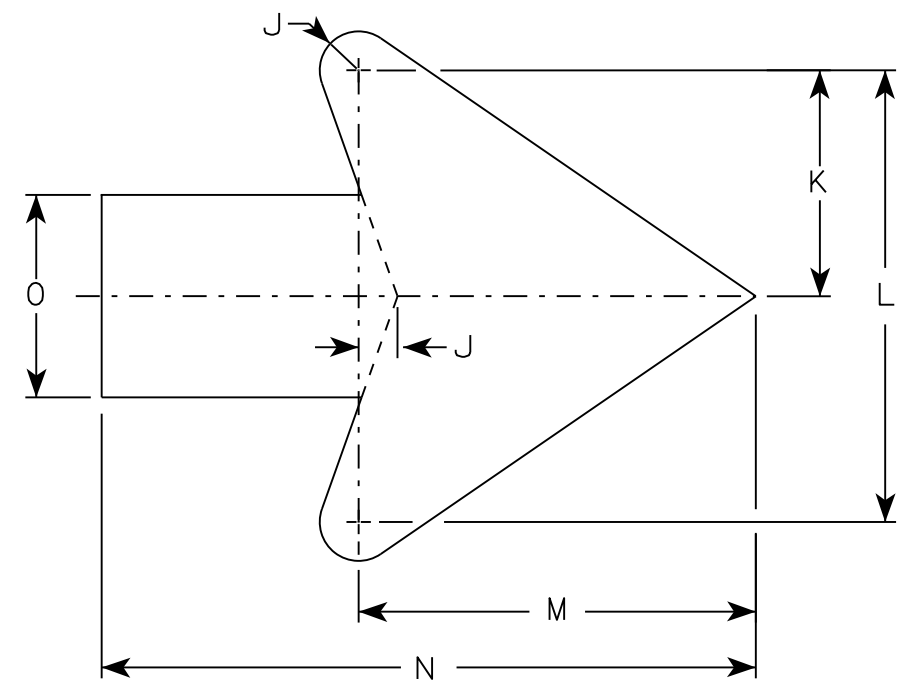
SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 1/2	9	7 7/8	13	4												6.25
4	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0
5	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0

STANDARD SIGN
W012-1D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/28/16 PLATE NO. W012-1D.2
168

SHEET NO: E

DESIGN DATA

LIVE LOAD:
DESIGN RATING: HS-20
INVENTORY RATING: HS-18
OPERATIONAL RATING: HS-30
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 210 (KIPS)

MATERIAL PROPERTIES:
CONCRETE MASONRY: $f'_c = 4,000$ P.S.I.
SUPERSTRUCTURE & STRUCTURAL APPROACH SLAB $f'_c = 3,500$ P.S.I.
ALL OTHER $f'_c = 3,500$ P.S.I.
BAR STEEL REINFORCEMENT: $f_y = 60,000$ P.S.I.
GRADE 60

TRAFFIC VOLUME

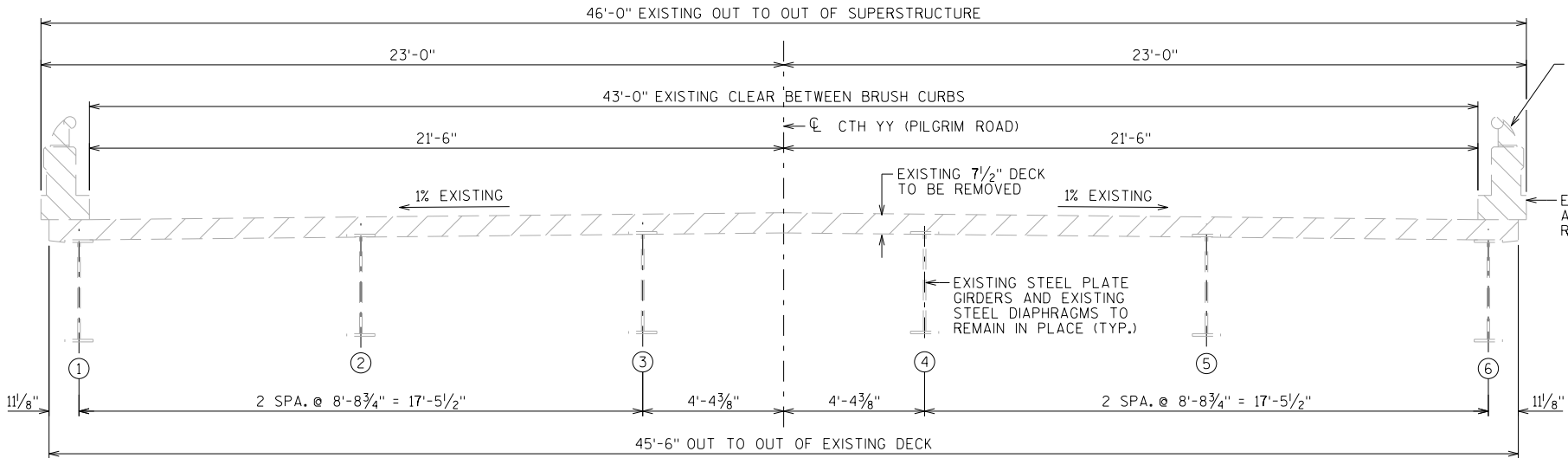
CTH YY (PILGRIM ROAD)
ADT = 12,900 (2022)
R.D.S. = 40 M.P.H.
STH 190 (CAPITOL DRIVE)
ADT = 39,200 (2022)
R.D.S. = 55 M.P.H.

LIST OF DRAWINGS

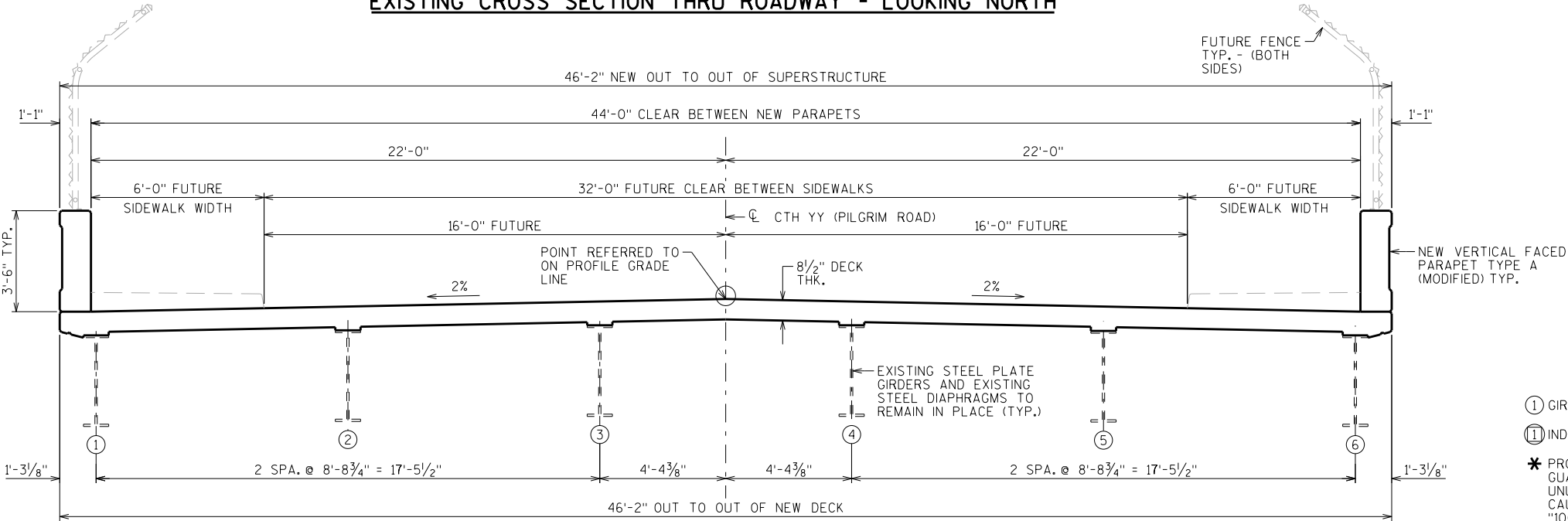
1. NEW DECK
2. QUANTITIES & NOTES
3. SOUTH ABUTMENT REMOVAL
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT REMOVAL
7. NORTH ABUTMENT
8. NORTH ABUTMENT DETAILS
9. EXPANSION BEARINGS REPLACEMENT DETAILS
10. SUPERSTRUCTURE 1
11. SUPERSTRUCTURE 2
12. SUPERSTRUCTURE DETAILS
13. EXPANSION DEVICE
14. COVER PLATE DETAILS
15. VERTICAL FACE PARAPET TYPE 'A' (MODIFIED)
16. CONCRETE SURFACE REPAIR

STRUCTURE DESIGN CONTACTS:
VU THAO (608) 267-2869
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY
8			
BUREAU OF STRUCTURES			
ACCEPTED <i>William C. Dehner</i> 4/27/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-67-86			
CTH YY (PILGRIM RD) OVER STH 190 (CAPITOL DRIVE)			
COUNTY	WAUKESHA	CITY	BROOKFIELD
DESIGN SPEC.	REHABILITATION N/A		
DESIGNED BY	VT	DESIGNED CK'D.	ABS
DRAWN BY	DDS	PLANS CK'D.	VT
NEW DECK			SHEET 1 OF 16
			169

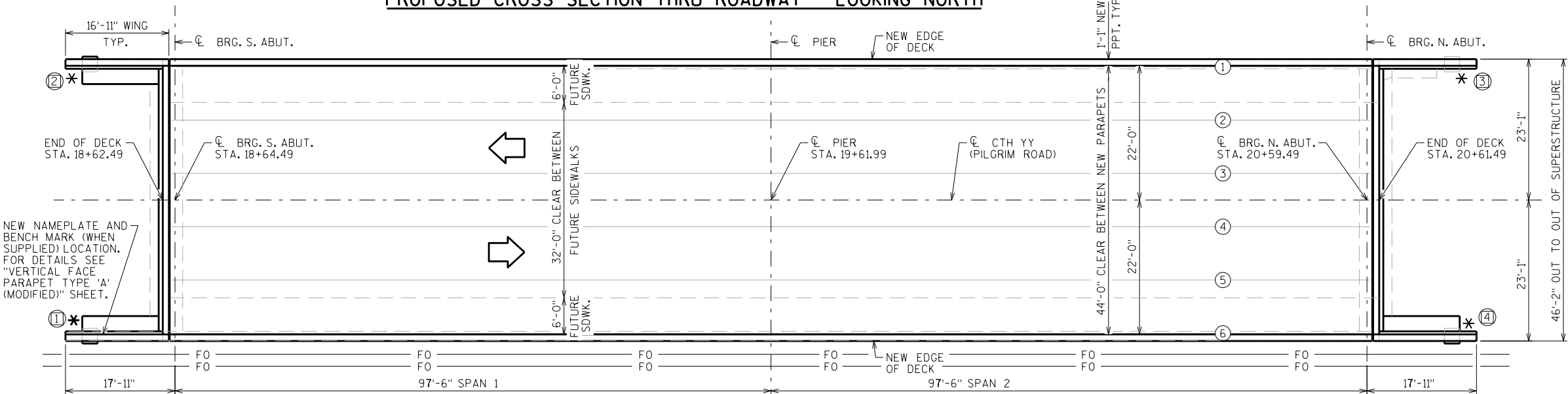


EXISTING CROSS SECTION THRU ROADWAY - LOOKING NORTH



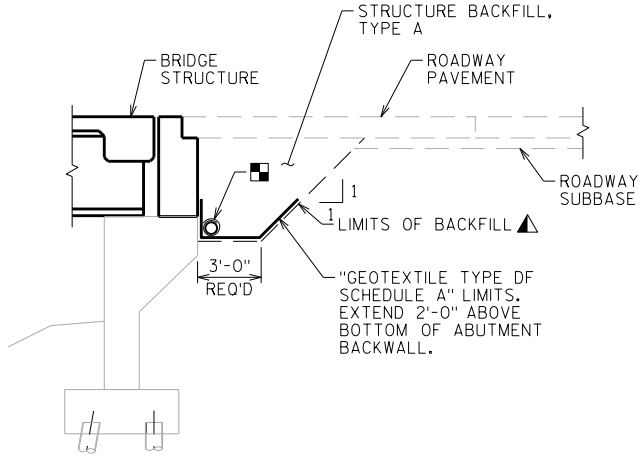
PROPOSED CROSS SECTION THRU ROADWAY - LOOKING NORTH

- ① GIRDER NUMBER
- ① INDICATES WING NUMBER
- * PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".



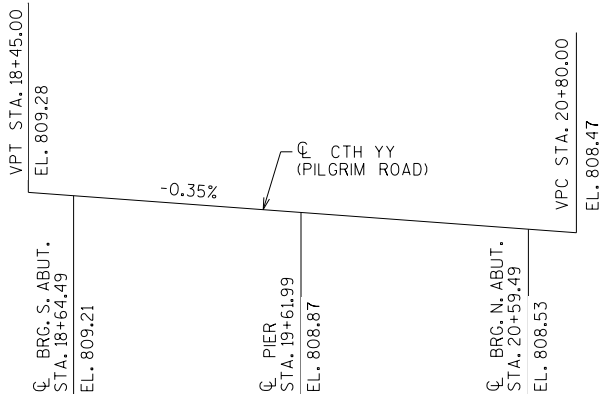
PROPOSED PLAN





TYPICAL SECTION
THRU ABUTMENT

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED (6 INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



CTH YY (PILGRIM ROAD) - PROFILE GRADE LINE

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	PIER	NORTH ABUT.	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 19+61.99	LS	—	—	—	—	1
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-67-86	LS	—	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-67-86	LS	—	—	—	—	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	—	302	—	211	513
502.0100	CONCRETE MASONRY BRIDGES	CY	320	56	—	42	418
502.3100	EXPANSION DEVICE B-67-86	LS	—	—	—	—	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	990	—	—	—	990
502.3210	PIGMENTED SURFACE SEALER	SY	236	—	—	—	236
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	—	206	—	168	374
502.4208	ADHESIVE ANCHORS NO. 8 BAR	EACH	—	34	—	17	51
502.6500	PROTECTIVE COATING CLEAR	GAL	—	3	—	3	6
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	74,380	7,285	—	5,575	87,240
506.2610	BEARING PADS ELASTOMERIC LAMINATED	EACH	12	—	—	—	12
506.3025	WELDED STUD SHEAR CONNECTORS 7/8X8-INCH	EACH	1,512	—	—	—	1,512
509.1500	CONCRETE SURFACE REPAIR	SF	—	34	1	53	88
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	16	—	14	30
517.0900.S	PREPARATION AND COATING OF TOP FLANGES B-67-86	LS	—	—	—	—	1
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-67-86	LS	—	—	—	—	1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-67-86	LS	—	—	—	—	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1	—	—	—	1
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	90	—	90	180
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	—	—	—	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	—	63	—	60	123
SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	6	—	—	—	6
	NON-BID ITEMS						
	BRIDGE SEAT PROTECTION	L.S.	—	—	—	—	1
	FILLER	SIZE	—	—	—	—	1/2", 1", 1 1/2"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE ASBESTOS TO BE REMOVED IS LOCATED IN THE GASKETS AND CAULKS UNDER THE RAILINGS.

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

EXCEPT NEAR THE WING WALLS, EXCAVATION IN EXCESS OF 1'-0" BELOW THE ABUTMENT BACKWALL REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT BACKWALL.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-67-86" SHALL BE THE EXISTING GROUND LINE.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT.

PIGMENTED PROTECTIVE SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE NEW PARAPETS, INCLUDING NEW PARAPETS ON WINGS.

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF THE ABUTMENTS BELOW EXPANSION DEVICES.

COAT ALL EXPOSED SURFACES (F.F. OF ABUTMENT, F.F. OF BACKWALL AND ENDS OF BODY WALL) WITH A "PROTECTIVE COATING CLEAR" AS DIRECTED BY THE ENGINEER. APPLY AT A RATE OF ONE GALLON PER 200 SF PER STANDARD SPEC. 502.3.15 PARAGRAPH 4.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE COLOR OF THE FINISH EPOXY TOP COAT FOR GIRDERS SHALL BE LIGHT GRAY, (FEDERAL STANDARD COLOR NO. 26293) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

CLEAN AND PAINT ALL PIER BEARINGS. COLOR TO BE LIGHT GRAY, (FEDERAL STANDARD COLOR NUMBER 26293) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1965.

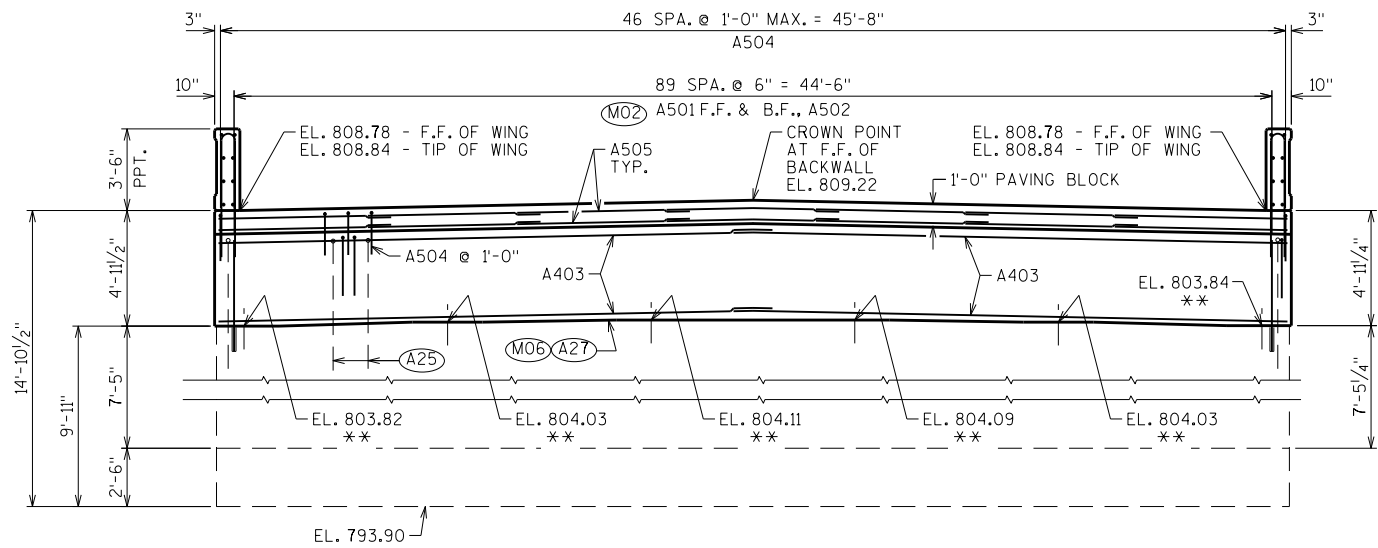
REMOVE AND SALVAGE THE EXISTING RAILINGS (INCLUDES RAILS, POSTS AND ALL ASSOCIATED HARDWARE). AFTER REMOVAL, THE RAILINGS ARE TO BE SET ASIDE AND SHALL REMAIN THE PROPERTY OF THE STATE OF WISCONSIN. THE CONTRACTOR WILL COORDINATE WITH WAUKESHA COUNTY HIGHWAY DEPARTMENT, AS TO WHEN THE RAILINGS ARE READY TO BE PICKED UP. THIS SHALL BE INCIDENTAL TO "REMOVING OLD STRUCTURE STA. 19+61.99".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
		DRAWN BY	PLANS CK'D. VT
QUANTITIES & NOTES		SHEET 2	
		170	

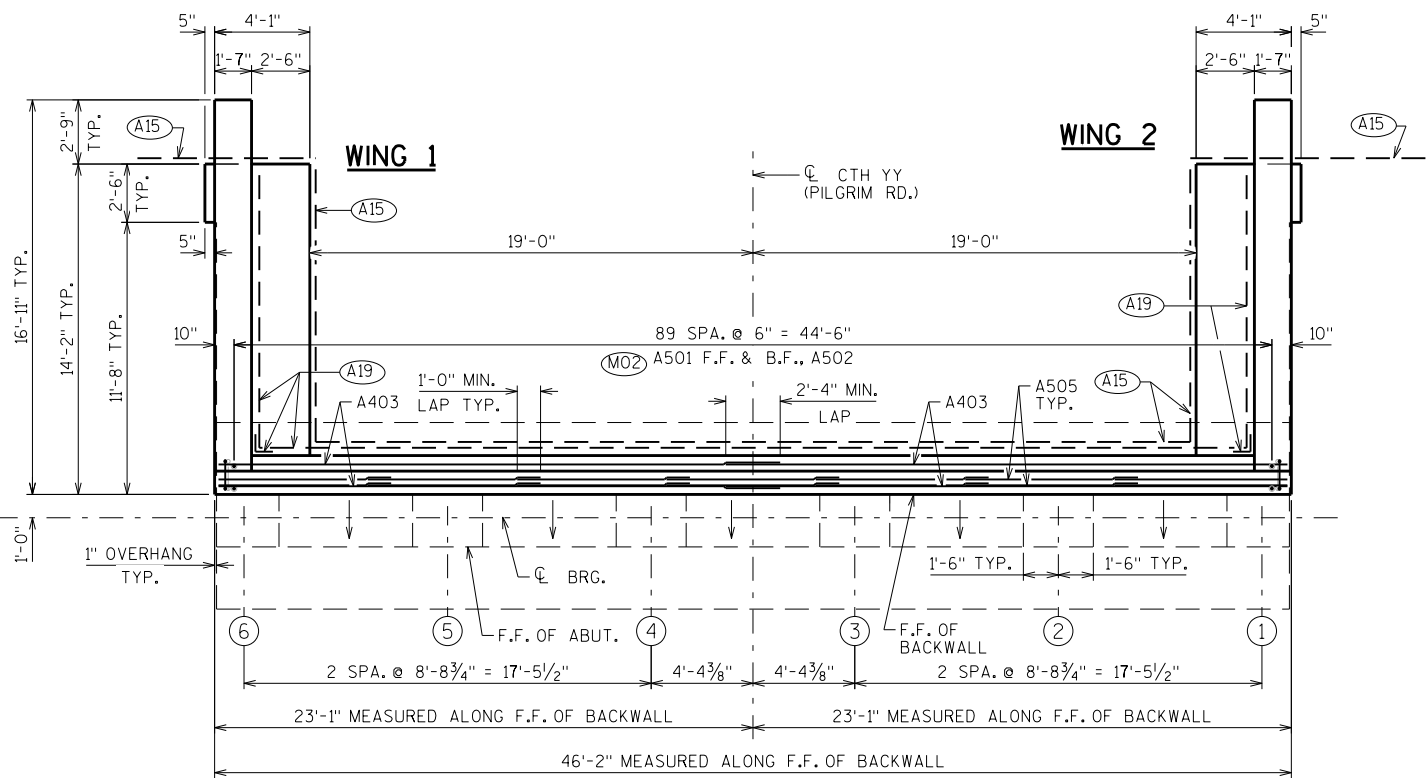
** = ELEVATION TAKEN AT THE INTERSECTION OF C/L OF GIRDER AND THE C/L OF BRG.

STATE PROJECT NUMBER

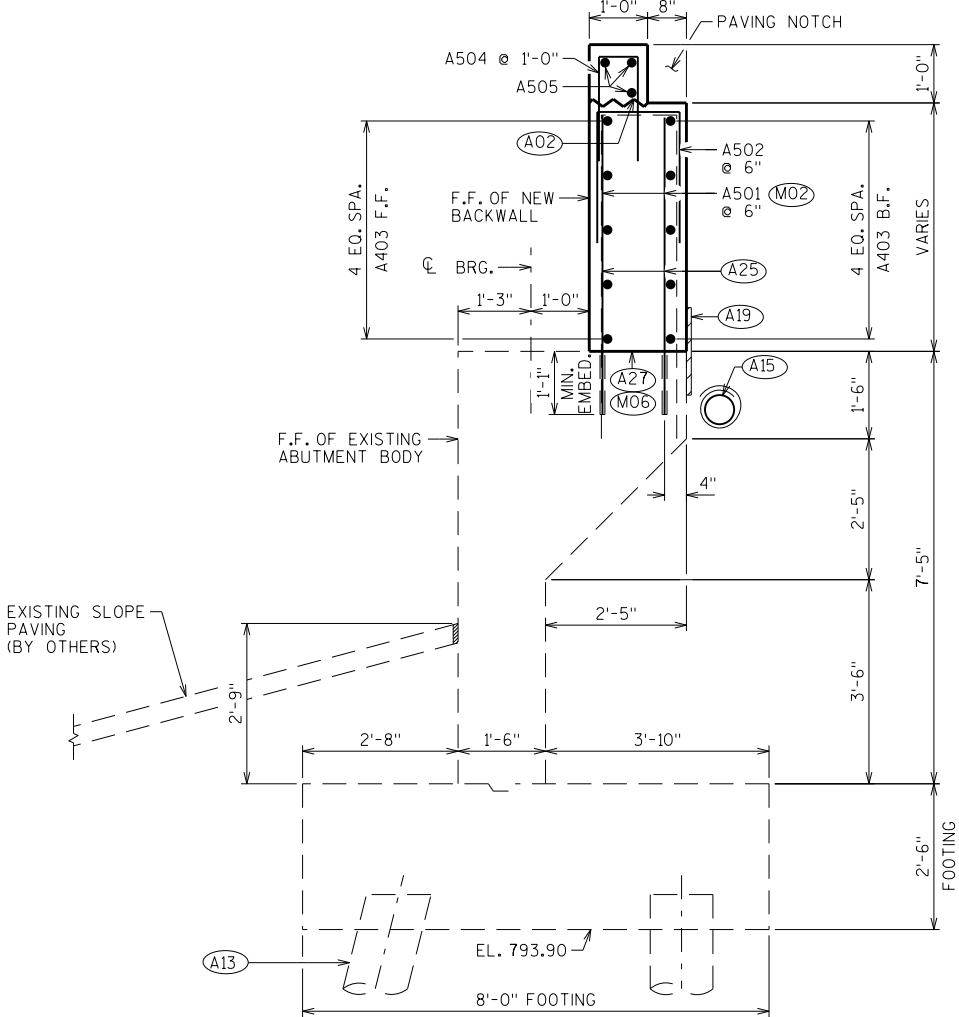
2025-18-70



PROPOSED ELEVATION - LOOKING SOUTH

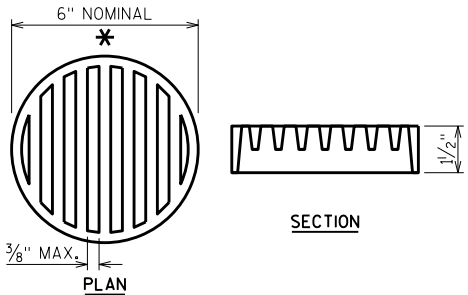


EXISTING/PROPOSED PLAN



SECTION THRU BODY

- (A02) CONST. JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (A13) INDICATES PILE BATTERED 3" PER FT. IN DIRECTION OF ARROW.



RODENT SHIELD DETAIL

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

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

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

- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK. IF EXISTING BARS ARE SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL. REPLACE WITH ADHESIVE ANCHORS NO. 5 BARS, (WITH A MIN. EMBEDMENT OF 1'-1" AND A MIN. EDGE DISTANCE OF 4") TO BE PAID FOR UNDER THE BID ITEM "REMOVING OLD STRUCTURE B-67-86.
- (A27) LINE OF BACKWALL REMOVAL.
- (M02) ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-1" IN CONCRETE. CENTER ANCHOR 3" MIN. FROM EXISTING REINFORCEMENT.
- (M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

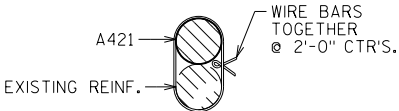
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
SOUTH ABUTMENT		SHEET 4	
		172	

SCALE = 4,00

BILL OF BARS

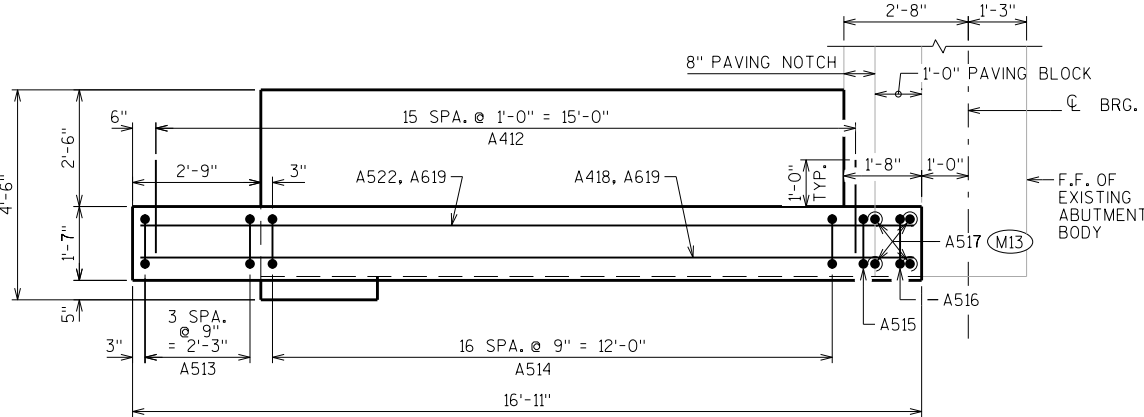
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501	X	180	4'-11"			BODY/BACKWALL - VERT.
A502	X	90	7'-1"	X		BACKWALL - VERT.
A403	X	20	24'-1"			BACKWALL - HORIZ.
A504	X	47	4'-5"	X		PAVING BLOCK - VERT.
A505	X	21	7'-5"			PAVING BLOCK - HORIZ.
A506	X	28	21'-9"	X		WINGS 1&2 - STIRRUP
A507	X	8	23'-0"	X		WINGS 1&2 - STIRRUP
A808	X	26	14'-0"			WINGS 1&2 - BOTTOM POUR - HORIZ. - B.F.
A809	X	8	14'-0"			WINGS 1&2 - BOTTOM POUR - HORIZ.
A510	X	18	13'-5"			WINGS 1&2 - BOTTOM POUR - HORIZ. - F.F.
A411	X	20	2'-2"			WINGS 1&2 - BOTTOM POUR - HORIZ. - F.F.
A412	X	32	2'-0"			WINGS 1&2 - TOP POUR - HORIZ. - TIE BARS
A513	X	8	10'-2"	X		WINGS 1&2 - TOP POUR - VERT.
A514	X	34	14'-8"	X		WINGS 1&2 - TOP POUR - VERT.
A515	X	2	10'-2"	X		WINGS 1&2 - TOP POUR - VERT.
A516	X	2	5'-4"	X		WINGS 1&2 - TOP POUR - VERT.
A517	X	8	5'-10"			WINGS 1&2 - TOP POUR - VERT. - F.F. (M13)
A418	X	10	16'-7"			WINGS 1&2 - TOP POUR - HORIZ. - F.F.
A619	X	4	16'-7"			WINGS 1&2 - TOP POUR - HORIZ. - F.F. & B.F.
A420	X	32	10'-2"	X		WINGS 1&2 - BOTTOM POUR - VERT. - B.F.
A421	X	30	12'-2"			WINGS 1&2 - BOTTOM POUR - HORIZ. - F.F. & B.F.
A522	X	18	16'-7"			WINGS 1&2 - TOP POUR - HORIZ. - B.F.



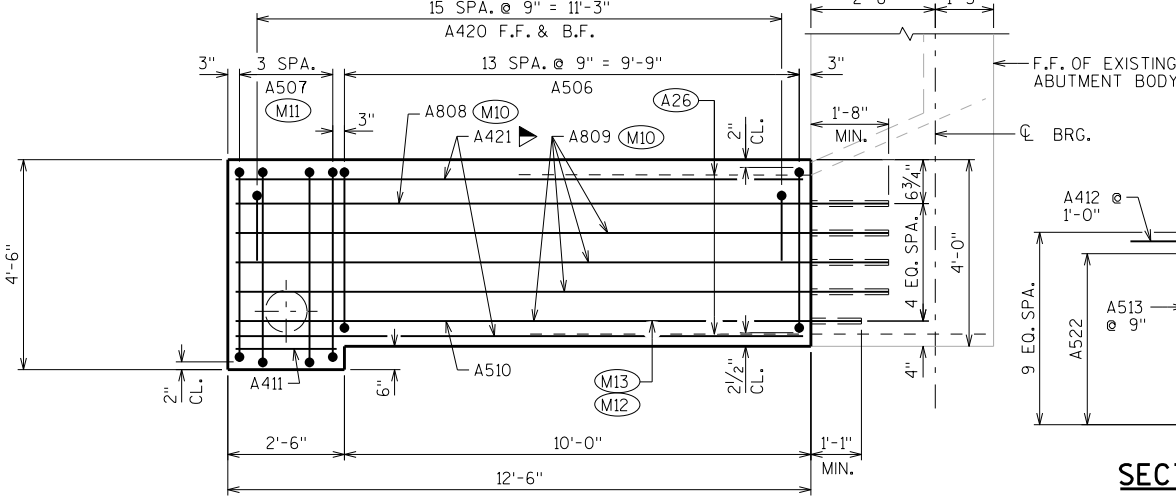
BUNDLING DETAIL

- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- (A21) FOR PPT. BARS & DIMENSIONS SEE "VERTICAL FACED PARAPET TYPE A (MODIFIED)" SHEET.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK. IF EXISTING BARS ARE SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH ADHESIVE ANCHORS NO. 5 BARS, (WITH A MIN. EMBEDMENT OF 1'-1" AND A MIN. EDGE DISTANCE OF 4") TO BE PAID FOR UNDER THE BID ITEM "REMOVING OLD STRUCTURE B-67-86.
- (A26) SALVAGE EXIST. HORIZ. REINF. FIELD BEND B.F. BAR STEEL TO LAP WITH A421 AS SHOWN ON THE PLAN VIEW.
- (M02) ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-1" IN CONCRETE. CENTER ANCHORS 3" FROM EXISTING REINFORCEMENT.
- (M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONC. CONTACTS EXISTING CONCRETE.
- (M10) ADHESIVE ANCHORS NO. 8 BAR, EMBED 1'-8" IN CONCRETE.
- (M11) MOVE STIRRUPS TO MISS EXISTING WING PILE.
- (M12) CUT HORIZONTAL REINFORCEMENT (2" MINIMUM CLEAR) TO MISS EXISTING WING PILE.
- (M13) ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-1" IN CONCRETE.

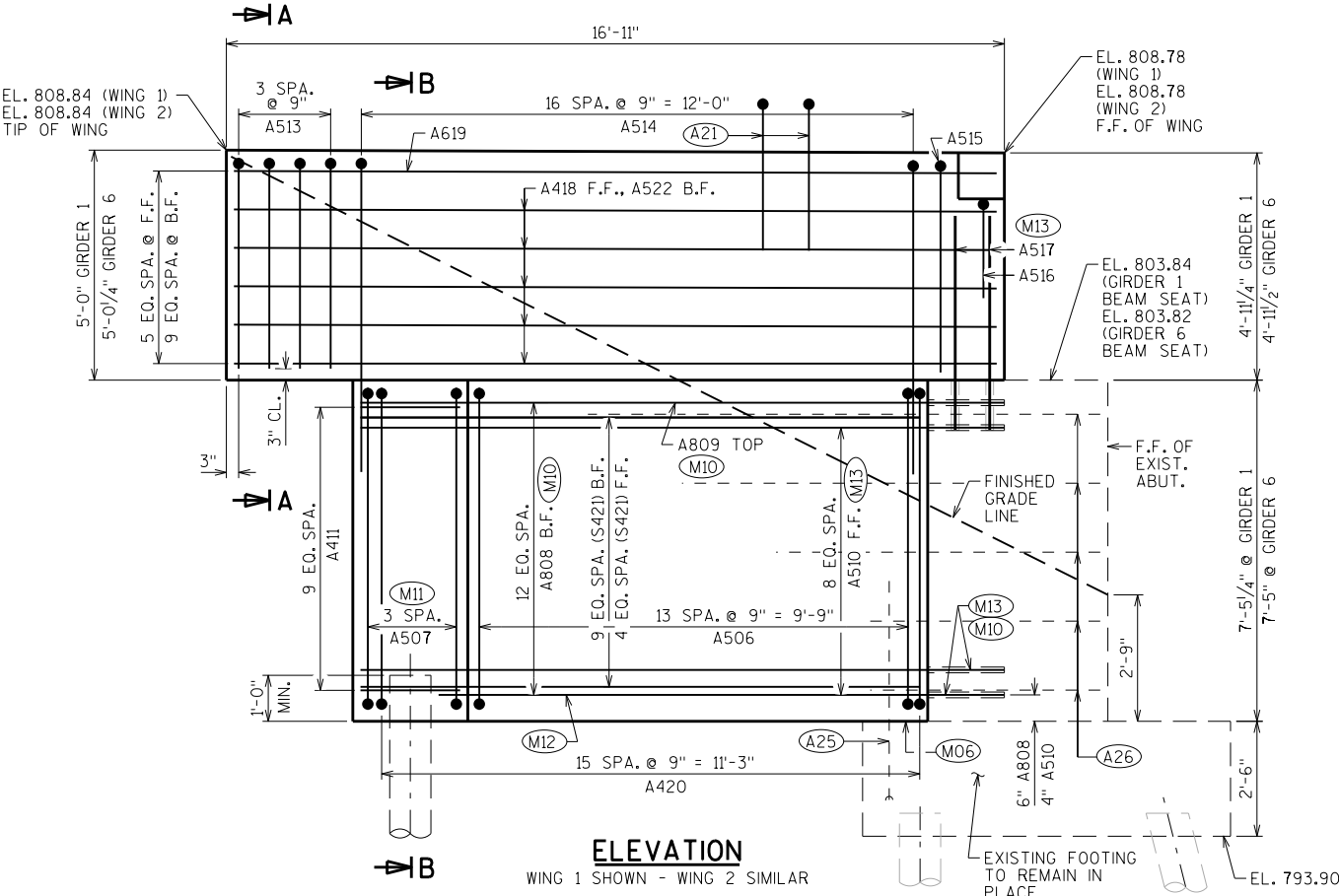


PLAN - TOP POUR STEEL

= LAP WITH EXISTING HORIZ. BAR REINF.



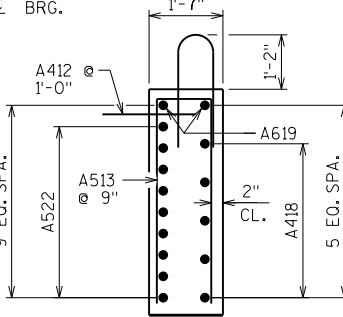
PLAN - BOTTOM POUR STEEL

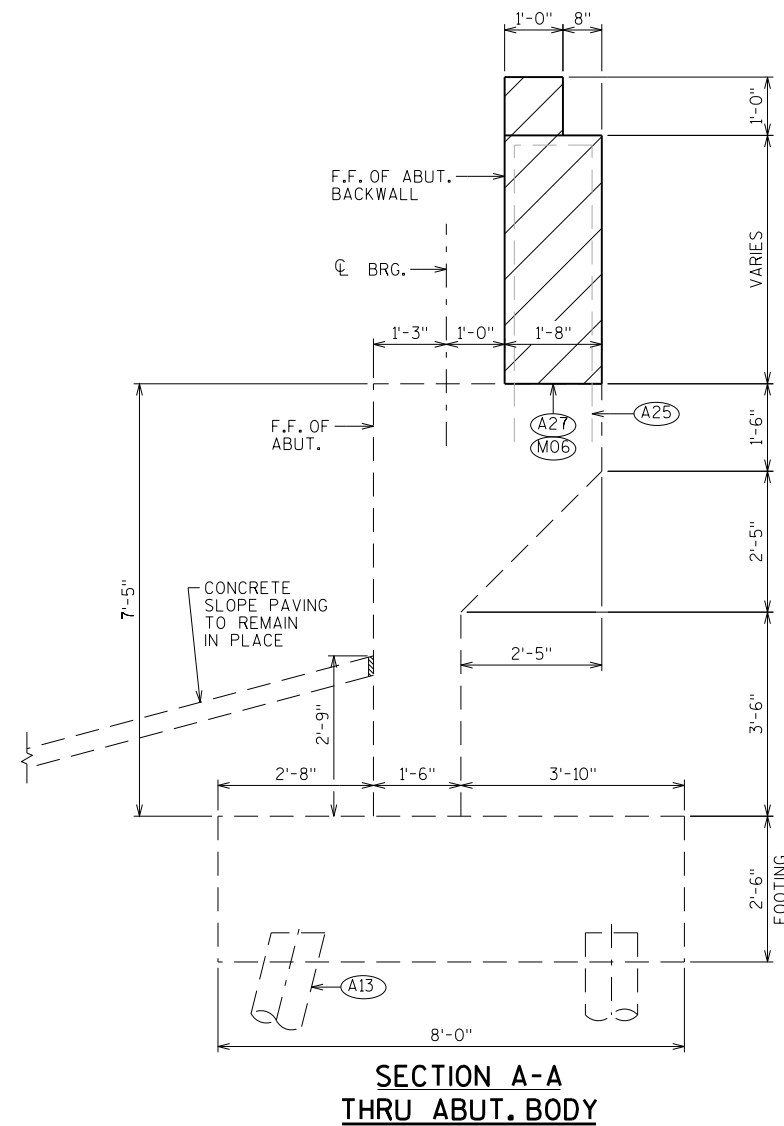
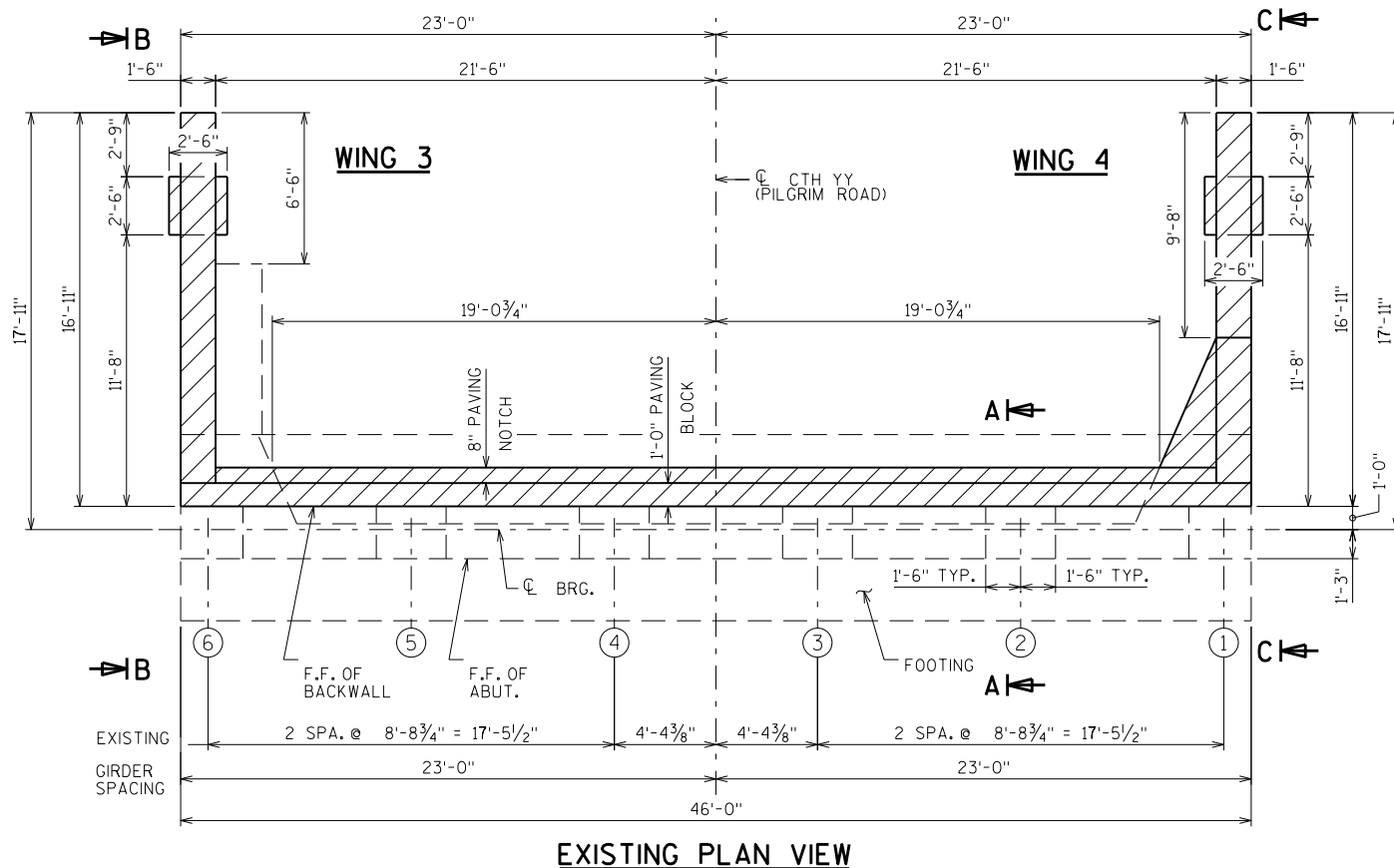
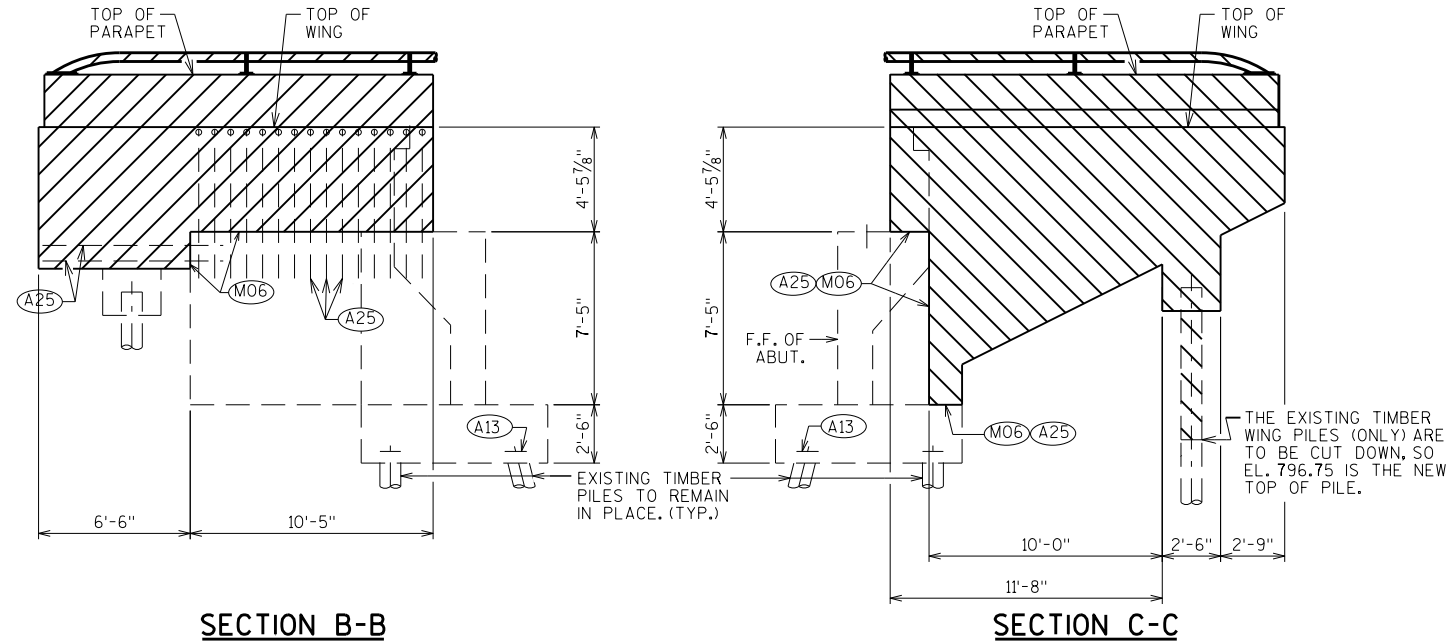
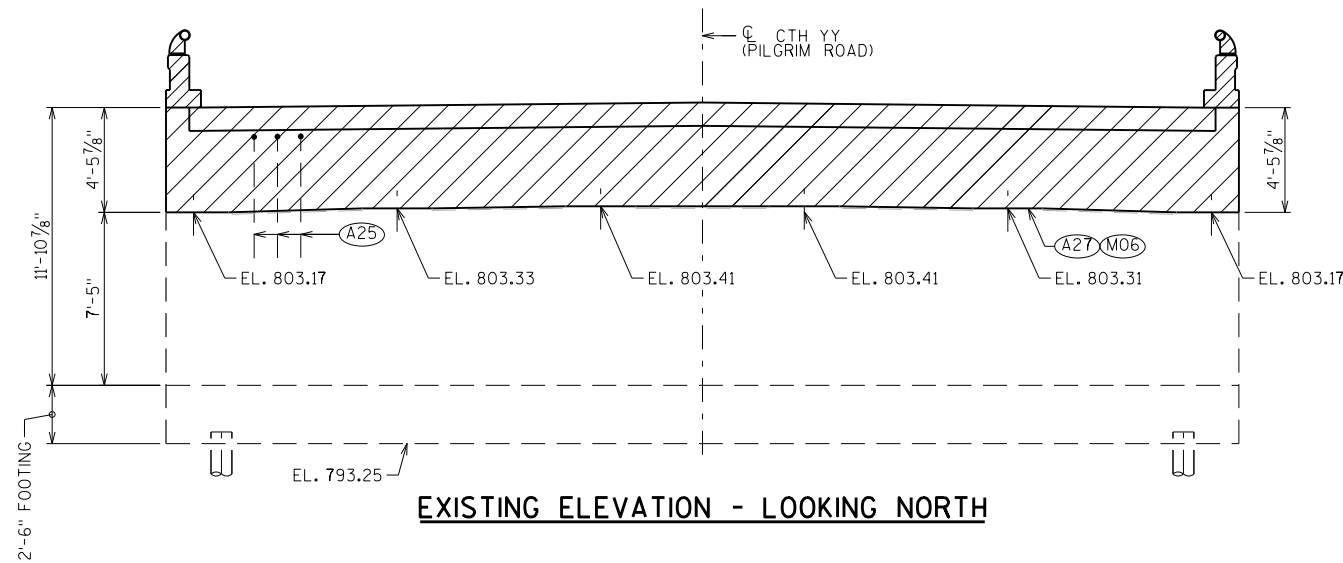


ELEVATION

WING 1 SHOWN - WING 2 SIMILAR

SECTION A-A

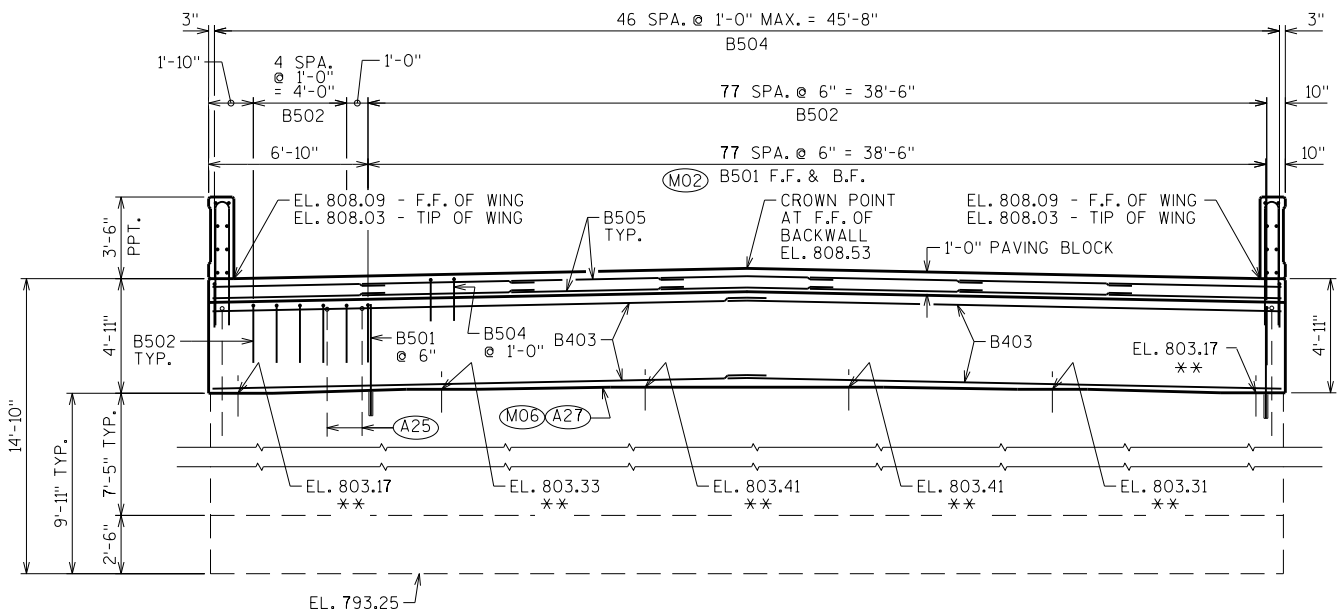




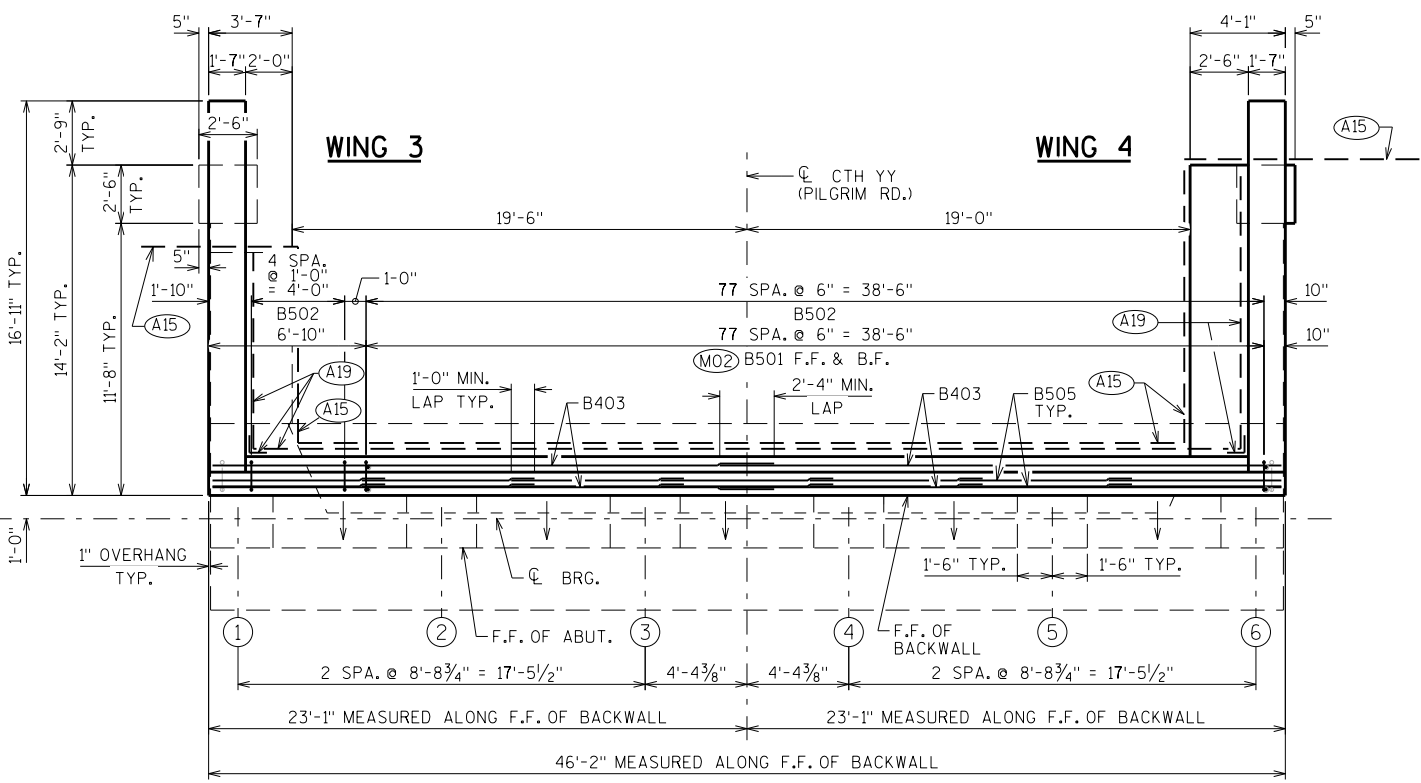
- (A13) INDICATES PILE BATTERED 3" PER FT.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK. IF EXISTING BARS ARE SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH ADHESIVE ANCHORS NO. 5 BARS, (WITH A MIN. EMBEDMENT OF 1'-1" AND A MIN. EDGE DISTANCE OF 4") TO BE PAID FOR UNDER THE BID ITEM "REMOVING OLD STRUCTURE B-67-86.
- (A27) LINE OF BACKWALL REMOVAL.
- (A30) LINE OF WING REMOVAL.
- (M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
NORTH ABUTMENT REMOVAL		SHEET 6	
		174	

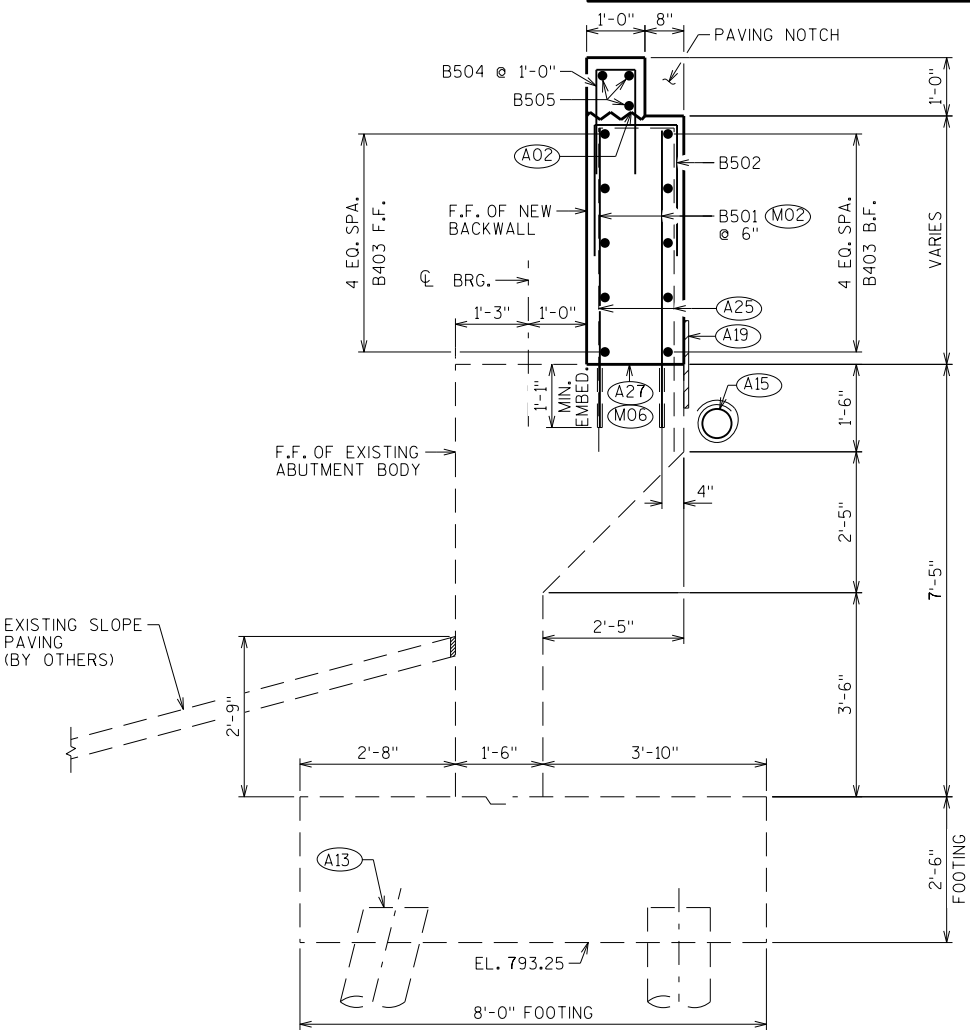
** = ELEVATION TAKEN AT THE INTERSECTION OF CL OF GIRDER AND THE CL OF BRG.



PROPOSED ELEVATION - LOOKING NORTH

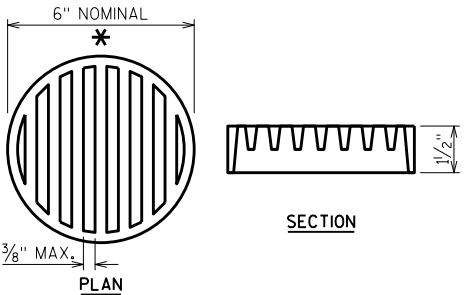


EXISTING/PROPOSED PLAN



SECTION THRU BODY

- (A02) CONST. JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (A13) INDICATES PILE BATTERED 3" PER FT. IN DIRECTION OF ARROW.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK. IF EXISTING BARS ARE SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL. REPLACE WITH ADHESIVE ANCHORS NO. 5 BARS, (WITH A MIN. EMBEDMENT OF 1'-1" AND A MIN. EDGE DISTANCE OF 4") TO BE PAID FOR UNDER THE BID ITEM "REMOVING OLD STRUCTURE B-67-86.
- (A27) LINE OF BACKWALL REMOVAL.
- (M02) ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-1" IN CONCRETE. CENTER ANCHORS 3" FROM EXISTING REINFORCEMENT.
- (M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.



RODENT SHIELD DETAIL

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

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

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

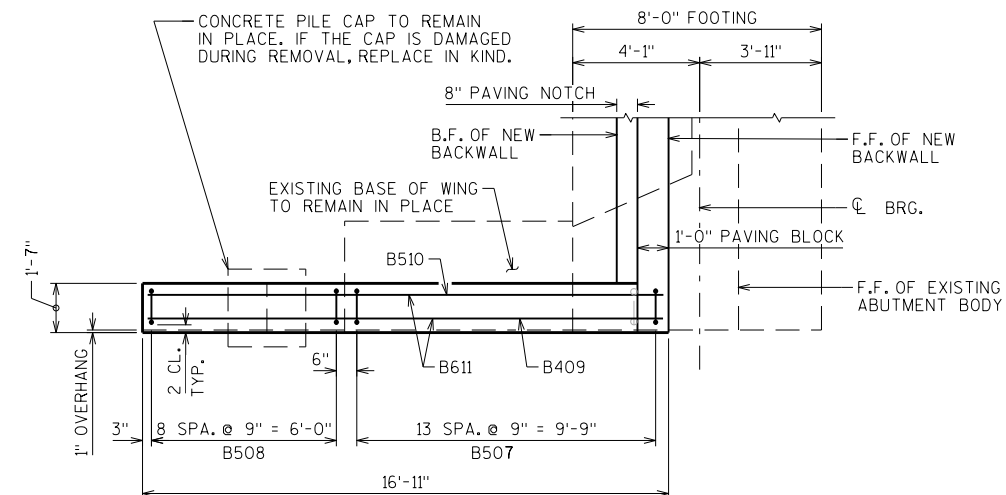
STATE PROJECT NUMBER		
2025-18-70		
NO.	DATE	REVISION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION		
STRUCTURE B-67-86		
DRAWN BY		PLANS CK'D. VT
NORTH ABUTMENT		SHEET 7
		175

SCALE = 4,00

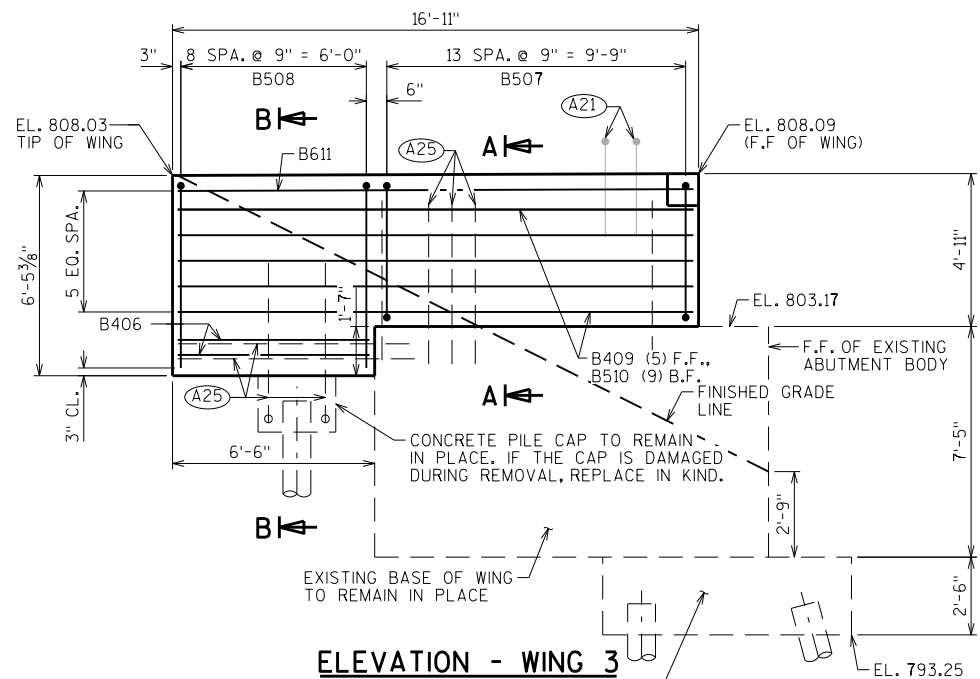
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

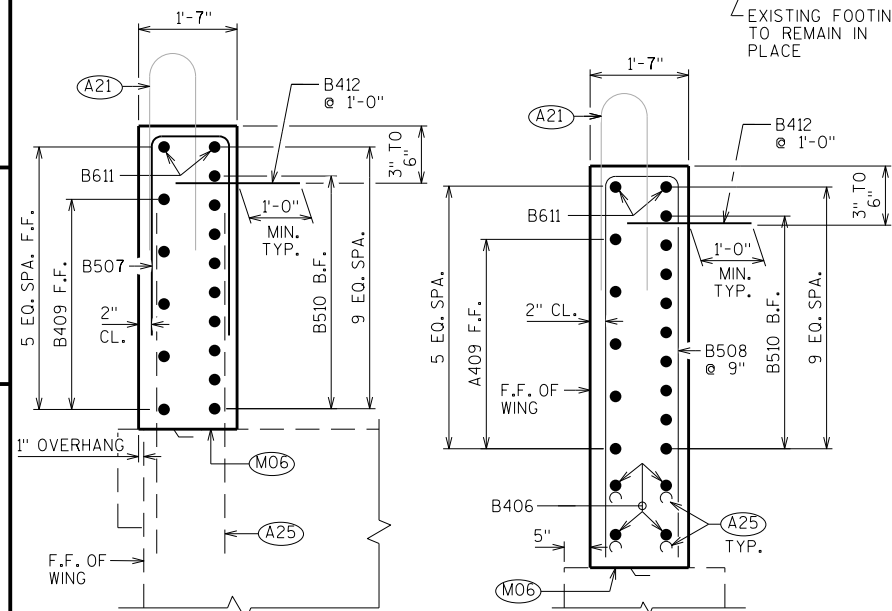
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
(M02)						BODY/BACKWALL - VERT.
B501	X	156	4'-10"			BACKWALL - VERT.
B502	X	83	7'-1"	X		BACKWALL - HORIZ.
B403	X	20	24'-1"			PAVING BLOCK - VERT.
B504	X	47	4'-5"	X		PAVING BLOCK - HORIZ.
B505	X	21	7'-5"			WING 3 - HORIZ.
B406	X	4	6'-2"			WING 3 - VERT.
B507	X	14	7'-0"	X		WING 3 - VERT.
B508	X	9	13'-0"	X		WING 3 - HORIZ. - F.F.
B409	X	5	16'-7"			WING 3 - HORIZ. - B.F.
B510	X	9	16'-7"			WING 3 - HORIZ. - TOP - B.F.
B611	X	2	16'-7"	X		WINGS 3&4 - HORIZ. - TIE BARS
B412	X	34	2'-0"			WING 4 - HORIZ. - B.F.
B813	X	13	14'-0"			WING 4 - HORIZ. - TOP
B814	X	4	14'-0"			WING 4 - HORIZ. - F.F.
B515	X	10	13'-5"			WING 4 - VERT.
B416	X	16	10'-2"	X		WING 4 - VERT.
B517	X	14	21'-9"	X		WING 4 - STIRRUP
B518	X	4	23'-0"	X		WING 4 - STIRRUP
B519	X	17	14'-6"	X		WING 4 - VERT.
B520	X	4	9'-10"	X		WING 4 - VERT.
B421	X	5	16'-7"			WING 4 - HORIZ. - F.F.
B622	X	2	16'-7"			WING 4 - HORIZ. - TOP
B523	X	1	10'-2"	X		WING 4 - VERT.
B524	X	1	8'-6"	X		WING 4 - VERT.
B525	X	2	4'-10"			WING 4 - VERT.
B426	X	15	12'-2"			WING 4 - HORIZ. - F.F. & B.F.
B427	X	10	2'-2"			WING 4 - HORIZ. - F.F.
B528	X	9	16'-7"			WING 4 - VERT. - B.F.



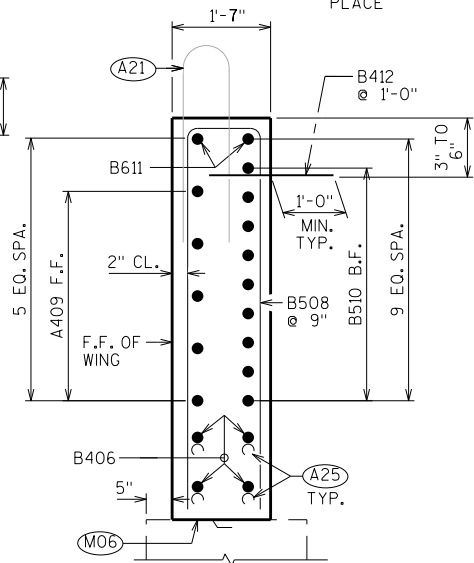
PLAN - WING 3



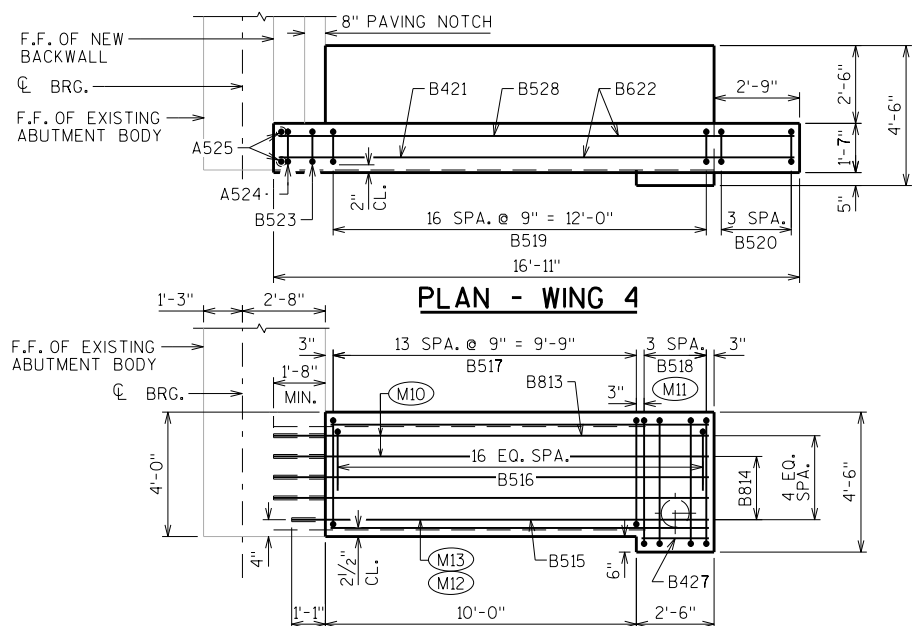
ELEVATION - WING 3



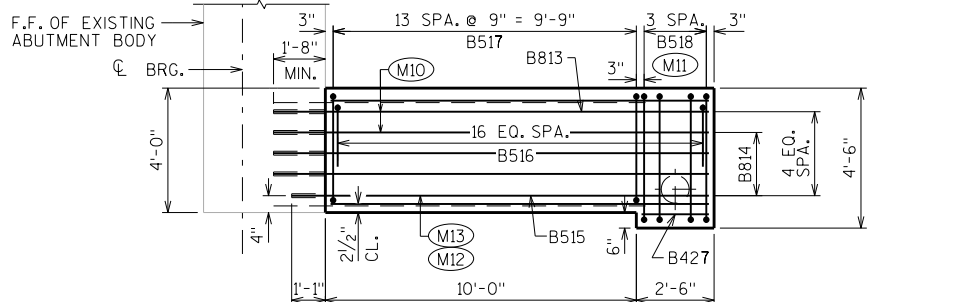
SECTION A-A



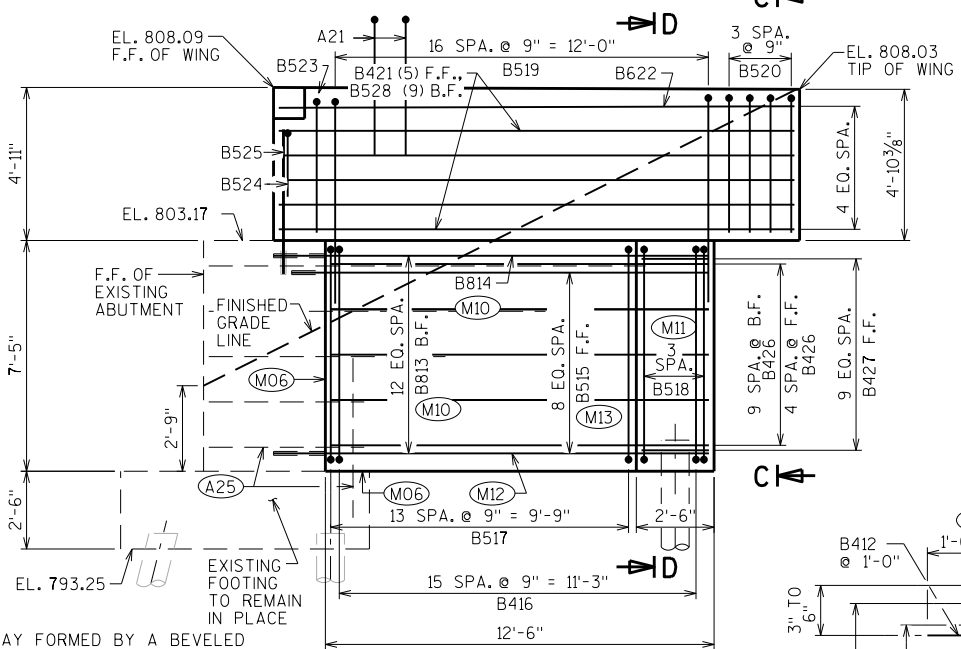
SECTION B-B



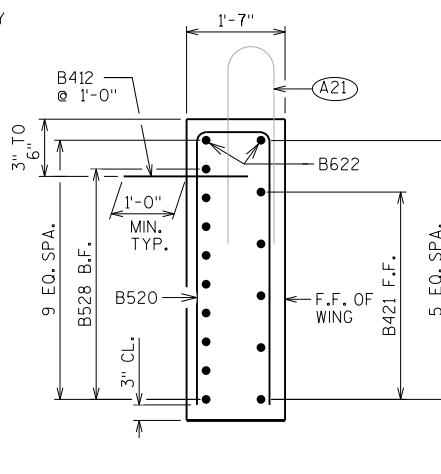
PLAN - WING 4



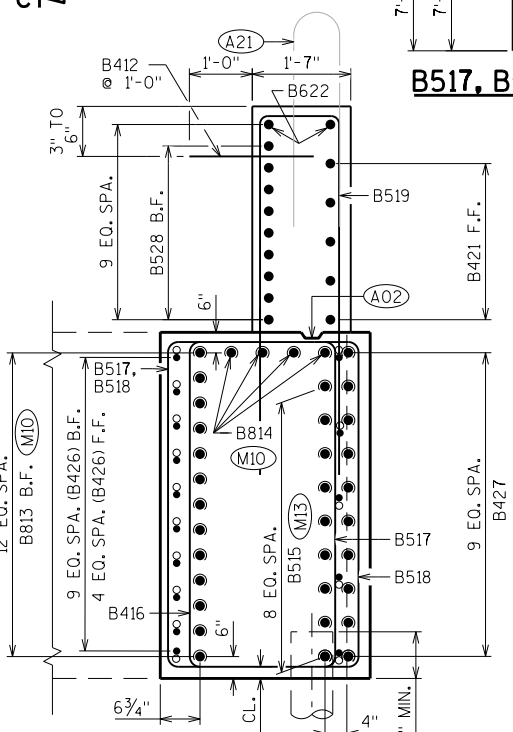
PLAN - WING 4



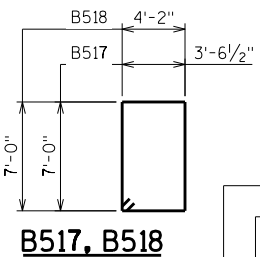
ELEVATION - WING 4



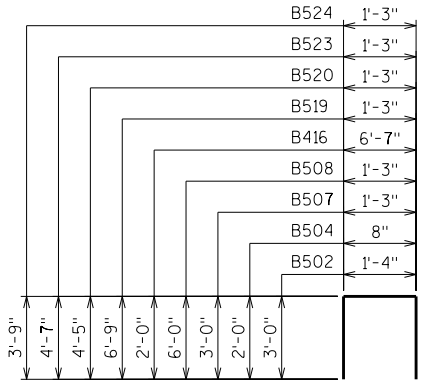
SECTION C-C



SECTION D-D

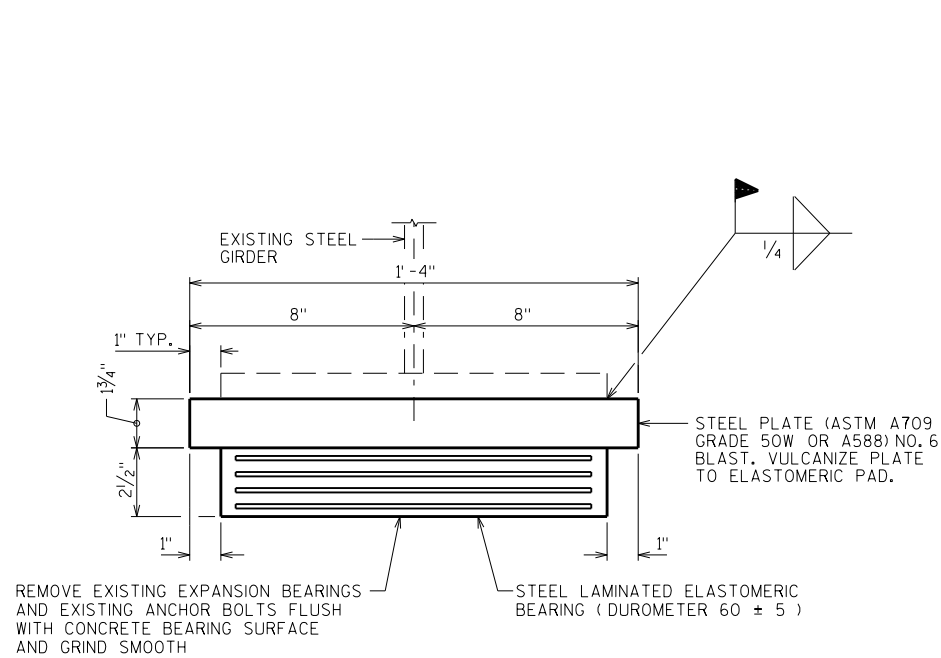


B517, B518

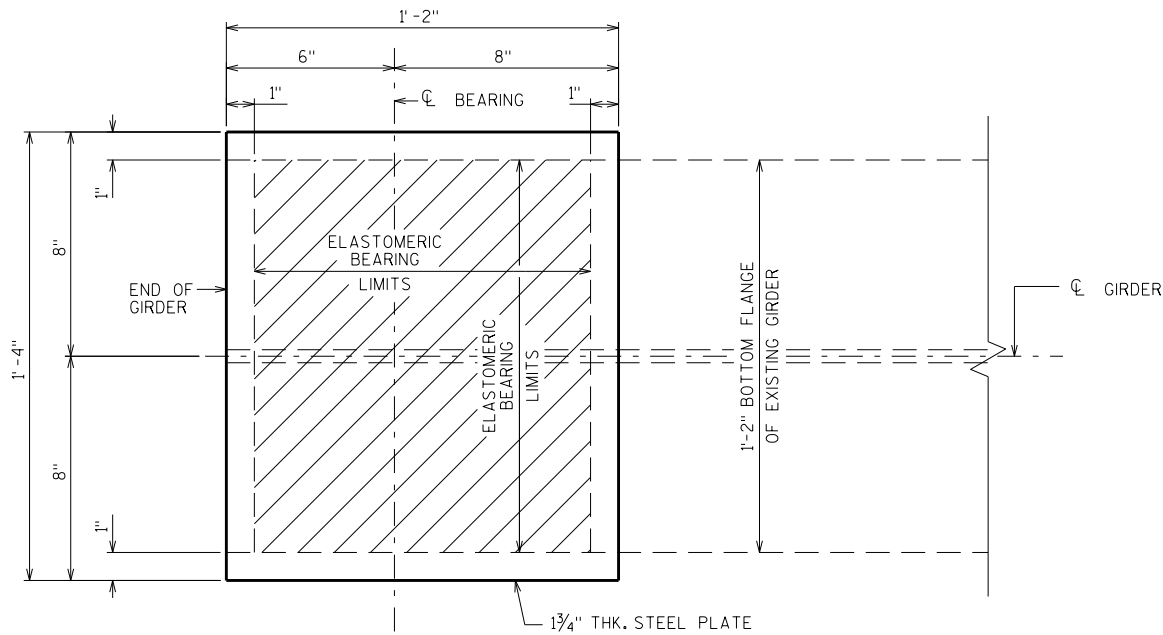
B502, B504, B507, B508, B416
B519, B520, B523, B524

- (A02) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- (A21) FOR PPT. BARS & DIMENSIONS SEE "VERTICAL FACED PARAPET TYPE A (MODIFIED)" SHEET.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK. IF EXISTING BARS ARE SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH ADHESIVE ANCHORS NO. 5 BARS, (WITH A MIN. EMBEDMENT OF 1'-1" AND A MIN. EDGE DISTANCE OF 4") TO BE PAID FOR UNDER THE BID ITEM "REMOVING OLD STRUCTURE B-67-86.
- (A26) SALVAGE EXISTING HORIZ. REINF. FIELD BEND B.F. BAR STEEL TO LAP WITH B426 AS SHOWN ON THE PLAN VIEW.
- (M02) ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-1" IN CONCRETE. CENTER ANCHORS 3" FROM EXISTING REINFORCEMENT.
- (M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONC. CONTACTS EXISTING CONCRETE.
- (M10) ADHESIVE ANCHORS NO. 8 BAR, EMBED 1'-8" IN CONCRETE.
- (M11) MOVE STIRRUPS TO MISS EXISTING WING PILE.
- (M12) CUT HORIZONTAL REINFORCEMENT (2" MINIMUM CLEAR) TO MISS EXISTING WING PILE.
- (M13) ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-1" IN CONCRETE.

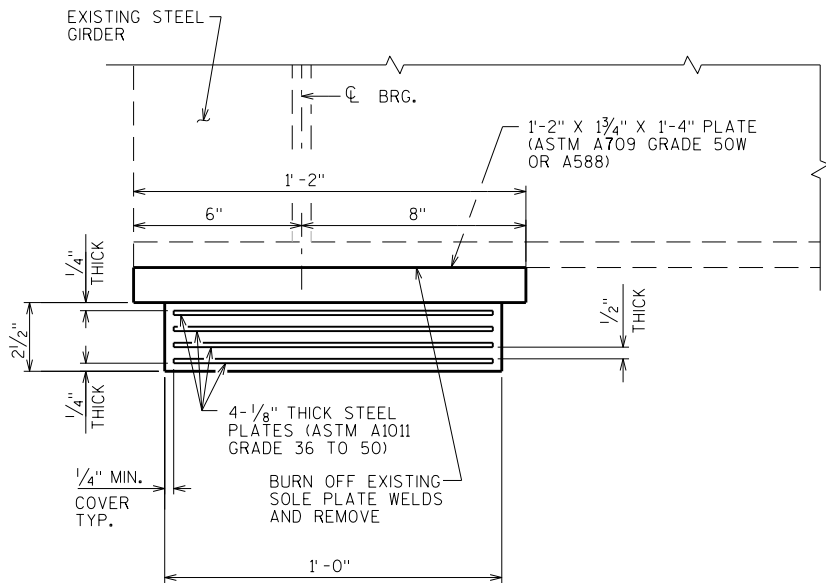
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
NORTH ABUTMENT DETAILS		SHEET 8	
		176	



END ELEVATION



PLAN VIEW



SECTION THRU ELASTOMERIC BEARING

NOTES

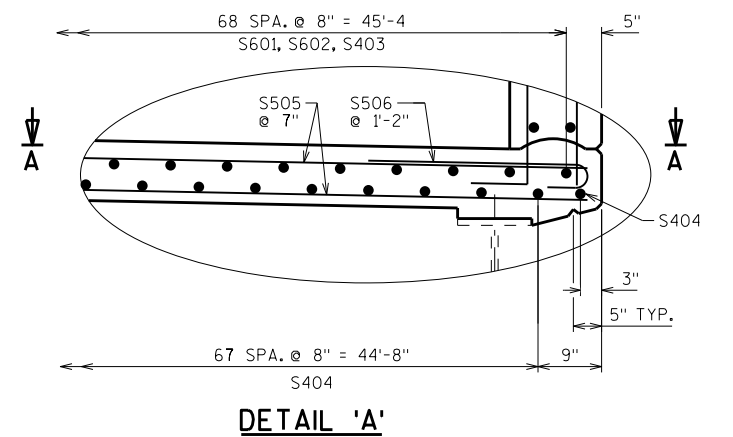
BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 120° F.

ALL MATERIAL USED FOR BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC LAMINATED", EACH.

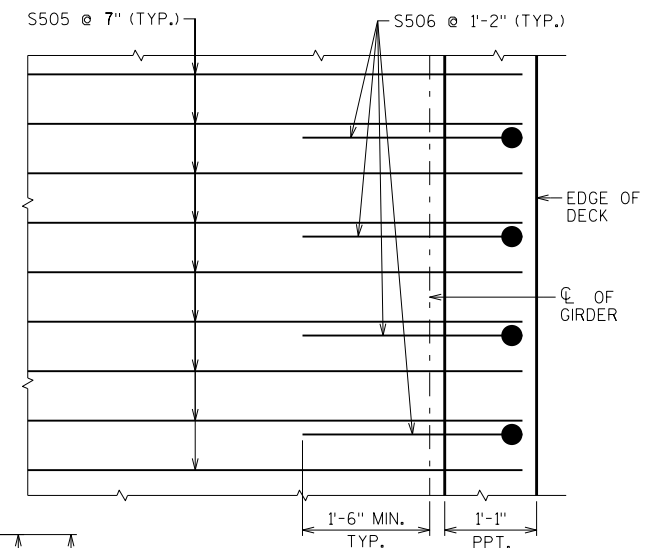
ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
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EXPANSION BEARING REPLACEMENT DETAILS			SHEET 9
			177



DETAIL 'A'

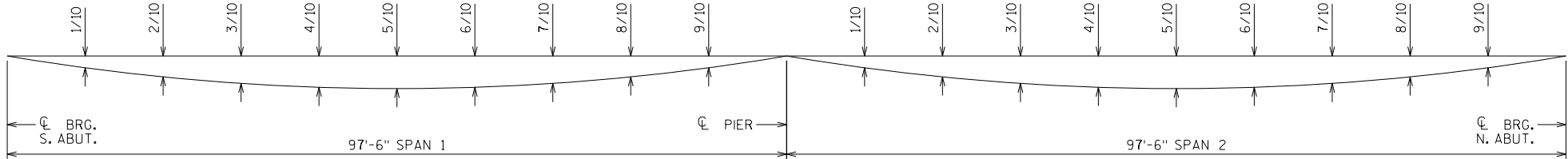


LONGITUDINAL STEEL IS NOT
SHOWN FOR CLARITY.

Diagram illustrating the cross-section of a deck assembly. The diagram shows a deck structure with a 2 1/2" CL. (Center Line) dimension. The deck is supported by a 7" TYP. (Typical) dimension. The deck is composed of S601, S602, S403, S505, and S506 components. The deck is supported by a 1/2" CL. (Center Line) dimension. The deck is supported by a 8 1/2" DECK dimension. The deck is supported by S505 and S404 components.

PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
SUPERSTRUCTURE 1		SHEET 10	
		178	



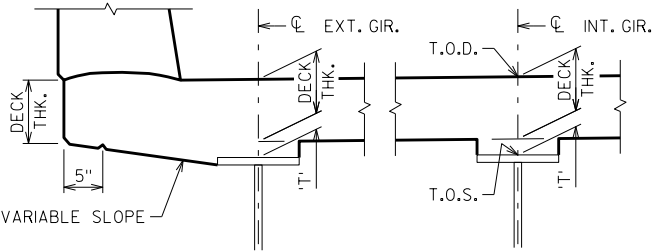
DEAD LOAD DEFLECTION DIAGRAM

	CL BRG. S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL BRG. N. ABUT.
CONC. ONLY	0.00	0.57	1.03	1.31	1.39	1.27	0.99	0.64	0.31	0.09	0.00	0.09	0.31	0.64	0.99	1.27	1.39	1.31	1.03	0.57	0.00

SHOWING DEAD LOAD DEFLECTION ONLY.
DEFLECTIONS ARE GIVEN TO NEAREST 0.01 INCHES.
NEGATIVE VALUE INDICATES UPWARD DEFLECTION.
1/10 POINTS ARE ALONG CL OF THE GIRDER.

TOP OF DECK (T.O.D.) ELEVATIONS

	CL S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL PIER	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL N. ABUT.
WEST EDGE OF DECK	808.77	808.74	808.70	808.67	808.64	808.60	808.57	808.53	808.50	808.47	808.43	808.40	808.36	808.33	808.29	808.26	808.23	808.19	808.16	808.12	808.09
GIRDER 1	808.78	808.74	808.71	808.67	808.64	808.61	808.57	808.54	808.50	808.47	808.43	808.40	808.37	808.33	808.30	808.26	808.23	808.20	808.16	808.13	808.09
GIRDER 2	808.95	808.92	808.88	808.85	808.81	808.78	808.75	808.71	808.68	808.64	808.61	808.58	808.54	808.51	808.47	808.44	808.40	808.37	808.34	808.30	808.27
GIRDER 3	809.13	809.09	809.06	809.02	808.99	808.95	808.92	808.89	808.85	808.82	808.78	808.75	808.72	808.68	808.65	808.61	808.58	808.54	808.51	808.48	808.44
CL BRIDGE	809.21	809.18	809.14	809.11	809.08	809.04	809.01	808.97	808.94	808.91	808.87	808.84	808.80	808.77	808.73	808.70	808.67	808.63	808.60	808.56	808.53
GIRDER 4	809.13	809.09	809.06	809.02	808.99	808.95	808.92	808.89	808.85	808.82	808.78	808.75	808.72	808.68	808.65	808.61	808.58	808.54	808.51	808.48	808.44
GIRDER 5	808.95	808.92	808.88	808.85	808.81	808.78	808.75	808.71	808.68	808.64	808.61	808.58	808.54	808.51	808.47	808.44	808.40	808.37	808.34	808.30	808.27
GIRDER 6	808.78	808.74	808.71	808.67	808.64	808.61	808.57	808.54	808.50	808.47	808.43	808.40	808.37	808.33	808.30	808.26	808.23	808.20	808.16	808.13	808.09
EAST EDGE OF DECK	808.77	808.74	808.70	808.67	808.64	808.60	808.57	808.53	808.50	808.47	808.43	808.40	808.36	808.33	808.29	808.26	808.23	808.19	808.16	808.12	808.09



CONCRETE HAUNCH DETAILS

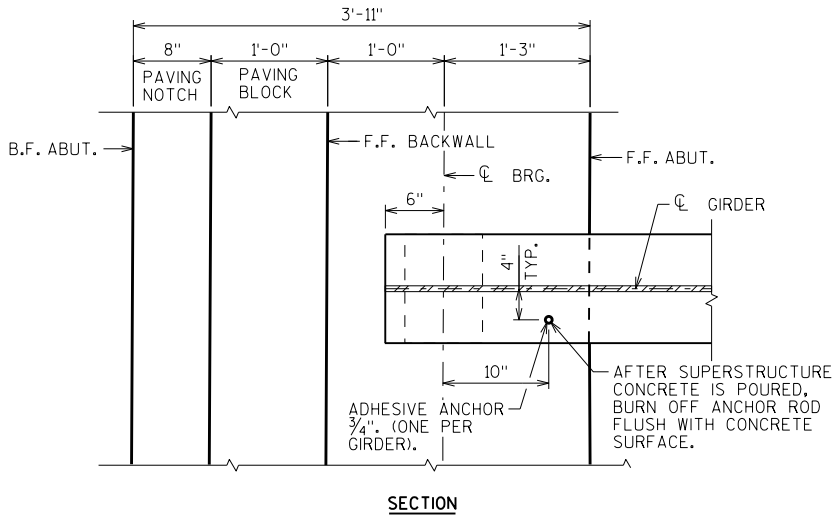
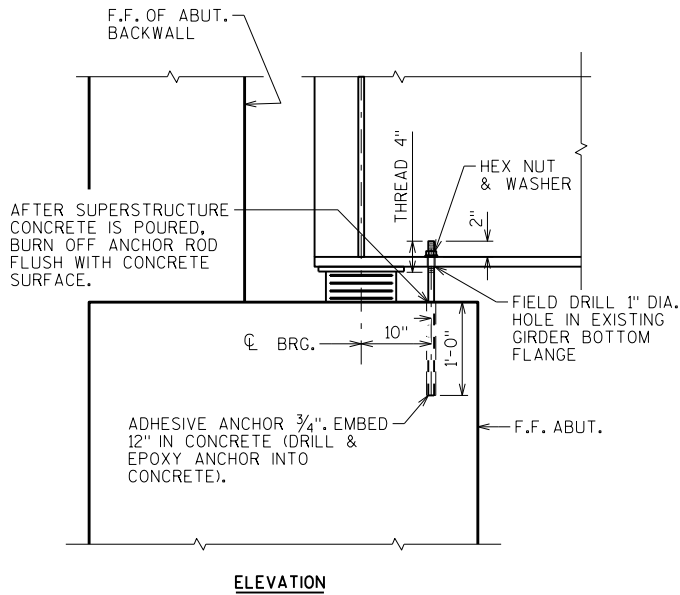
TO DETERMINE 'T': AFTER THE EXISTING DECK HAS BEEN REMOVED AND NEW BEARINGS INSTALLED, ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT CENTERLINE OF BEARINGS, CENTERLINE OF FIELD SPLICES, AND AT 0.1 POINTS.

- TOP OF DECK ELEVATION AT FINAL GRADE
- TOP OF STEEL ELEVATION AFTER DECK REMOVAL
- + CONC. ONLY DEFLECTION; DOWNWARD DEFLECTION IS ADDED, UPWARD DEFLECTION IS SUBTRACTED

- DECK THICKNESS (8 1/2")

= 'T' VALUE FOR SETTING HAUNCH

NOTE: AN AVERAGE HAUNCH ('T') OF 5.1" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



TEMPORARY HOLD DOWN DEVICE

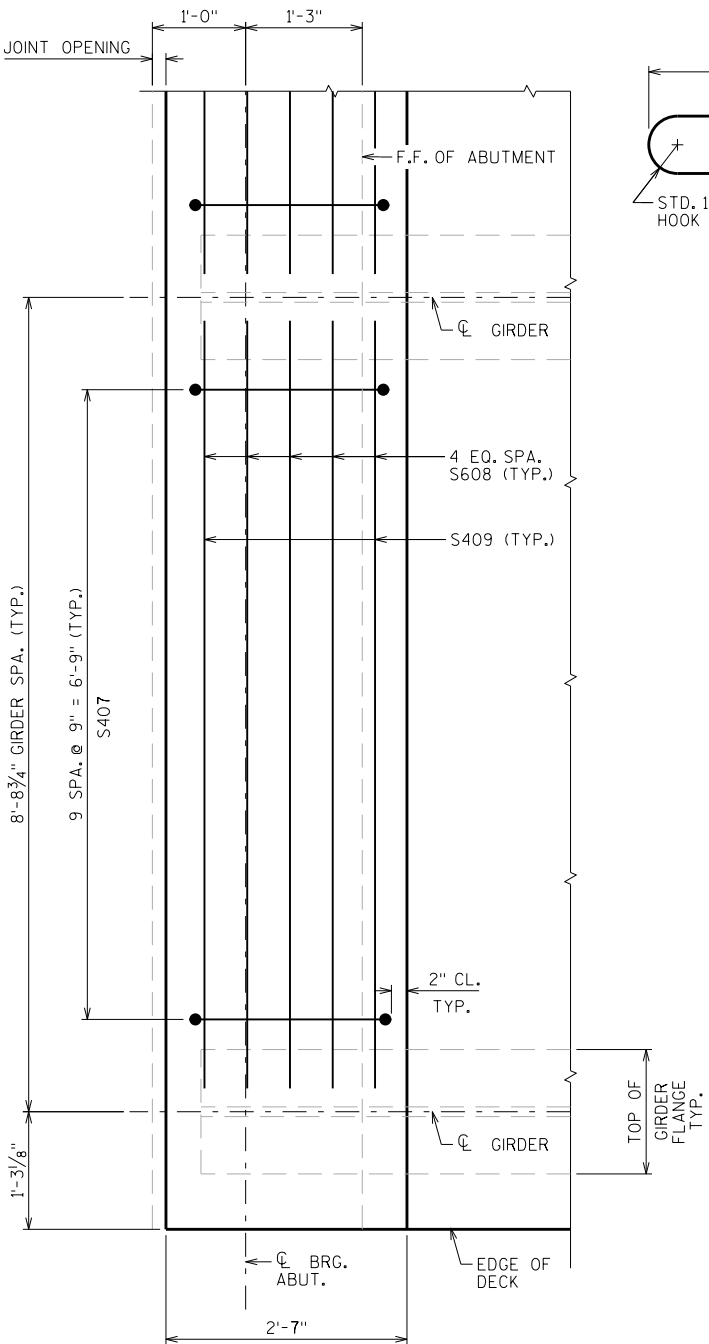
THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES B-67-86".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
SUPERSTRUCTURE 2		SHEET II	
		179	

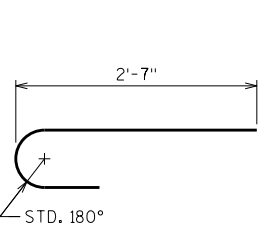
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

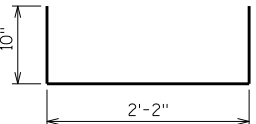
BAR MARK	QTY	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S601	X	69	60'-0"			DECK - CONTINUITY REINF. - TOP
S602	X	69	15'-1"			DECK - LONGITUDINAL - TOP
S403	X	276	32'-9"			DECK - LONGITUDINAL - TOP
S404	X	350	40'-8"			DECK - LONGITUDINAL - BOTTOM
S505	X	673	45'-10"			DECK - TRANSVERSE - TOP & BOTTOM
S506	X	338	3'-2"	X		DECK - TRANSVERSE - TOP - EDGES OF DECK
S407	X	200	3'-8"	X		ABUT. DIAPH. - VERT.
S608	X	50	8'-3"			ABUT. DIAPH. - HORIZ.
S409	X	20	8'-3"			ABUT. DIAPH. - HORIZ.
S510	X	786	4'-4"	X		PARAPET - VERT.
S511	X	80	40'-8"			PARAPET - HORIZ.
S412	X	768	3'-0"	X		HAUNCH OVER GIRDERS - VERT. - HAT BARS
S413	X	60	40'-7"			HAUNCH OVER GIRDERS - HORIZ.
S414	X	20	8'-3"			EXPANSION DEVICE - HORIZ. - BTWN. GIRDERS
S515	X	786	6'-7"	X		PARAPET - VERT.
S416	X	414	3'-4"	X		HAUNCH OVER GIRDERS - VERT. - HAT BARS



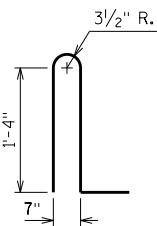
PARTIAL PLAN VIEW OF DIAPHRAGM
TYP.



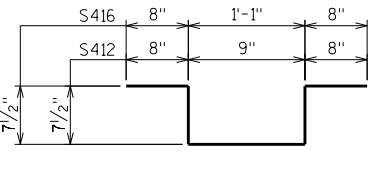
S506



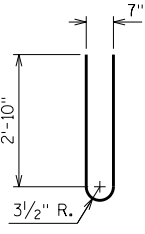
S407



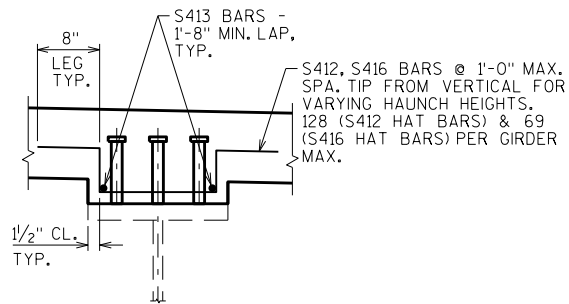
S510



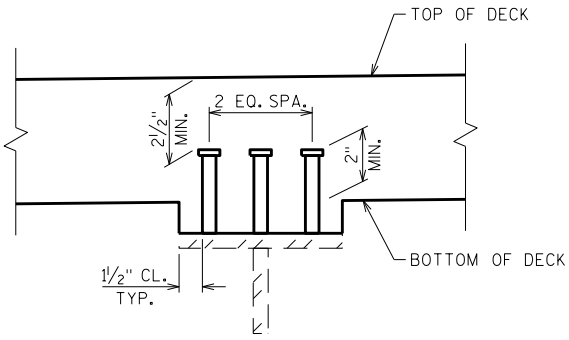
S412, S416



S515



GIRDER HAUNCH DETAIL

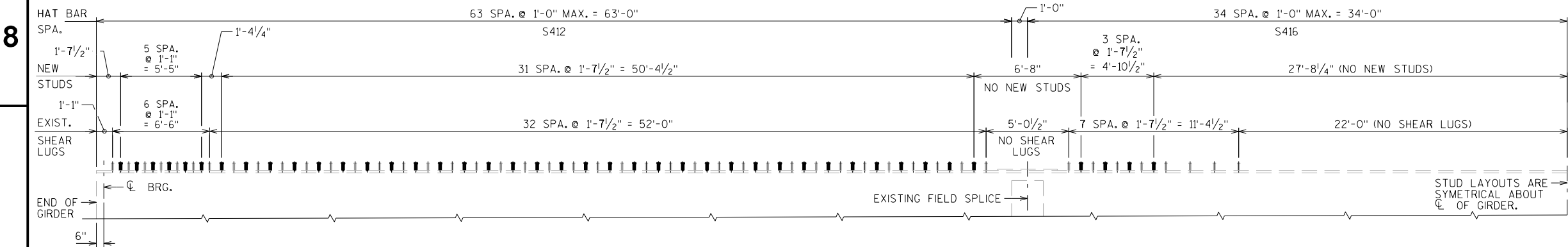


SHEAR CONN. DETAILS

NOTE: USE THREE FIELD WELDED 7/8" DIA. X 8" LONG STUDS EQUALLY SPACED WITH A MIN. OF 1/2" CL. FROM THE FLANGE EDGE. STUDS SHALL NOT BE PLACED OVER FIELD SPLICE PLATES.

USE DIFFERENT LENGTH STUDS IF 2 1/2" MIN. CLEARANCE OR 2" EXTENSION CRITERIA IS VIOLATED.

EXISTING SHEAR LUGS, IF DAMAGED SHALL BE REMOVED AND REPLACED WITH FIELD WELDED 7/8" DIAMETER X 8" LONG STUDS. REPLACEMENT OF DAMAGED SHEAR LUGS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "REMOVING OLD STRUCTURE STA. 19+61.99".

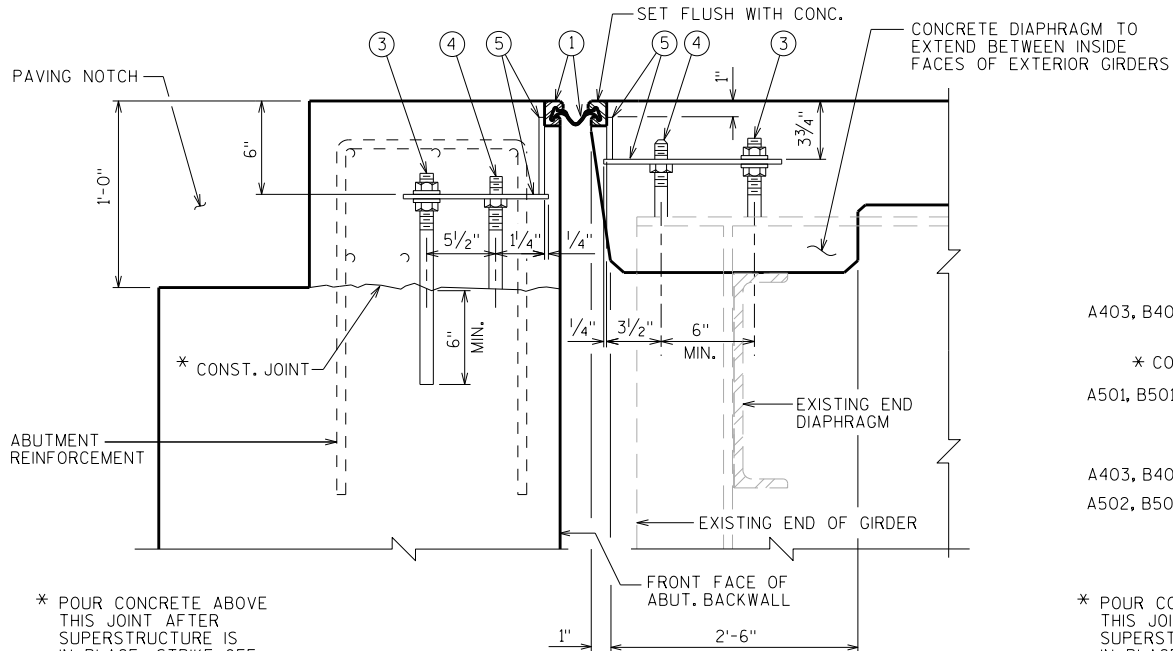


NEW SHEAR STUD LAYOUT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
SUPERSTRUCTURE DETAILS		SHEET 12	
		180	

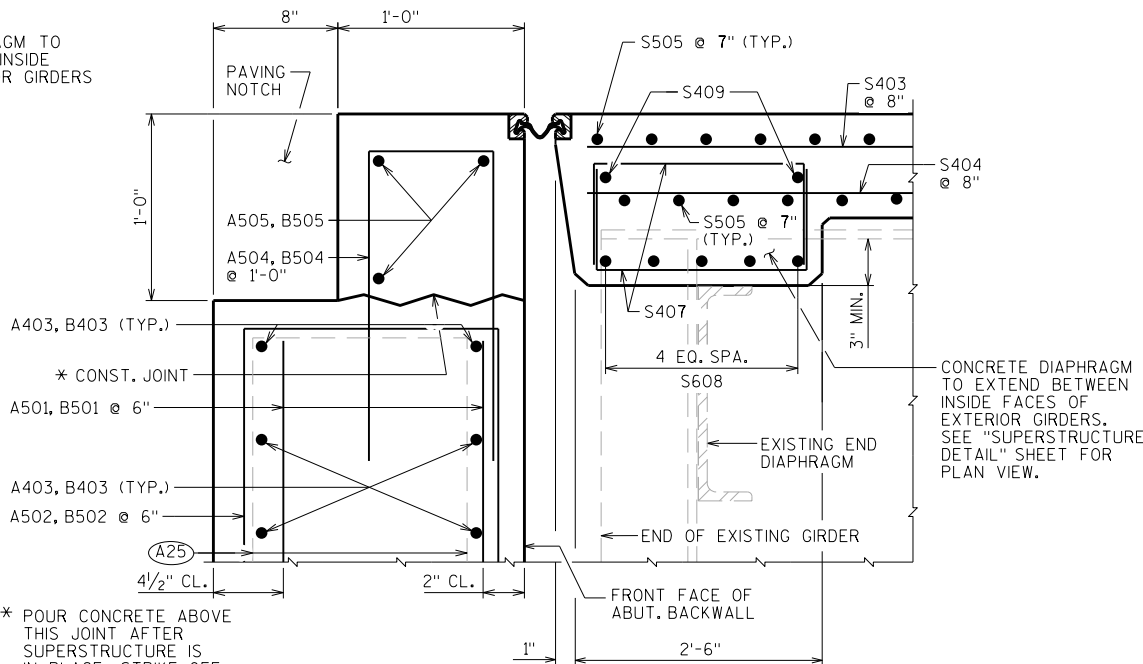
LEGEND

- ① NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.
- ② STUDS $\frac{5}{8}$ " DIA. X $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO.1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ③ $\frac{3}{4}$ " DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- ④ $\frac{3}{4}$ " DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- ⑤ FABRICATE SUPPORT FROM 3" X $\frac{1}{2}$ " BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO.1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $1\frac{1}{2}$ " DIA. HOLE FOR NO. 3 AND 1" DIA. HOLE FOR NO. 4.
- ⑥ GALVANIZED PLATE $\frac{3}{8}$ " X 10" X 2'-2" LONG WITH HOLES FOR NO. 7.
- ⑦ $\frac{3}{4}$ " DIA. X $1\frac{1}{2}$ " STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
- ⑧ $\frac{3}{4}$ " DIA. X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- ⑨ $\frac{3}{4}$ " DIA. X $2\frac{1}{4}$ " GALVANIZED THREADED COUPLING.
- ⑩ 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.



* POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.

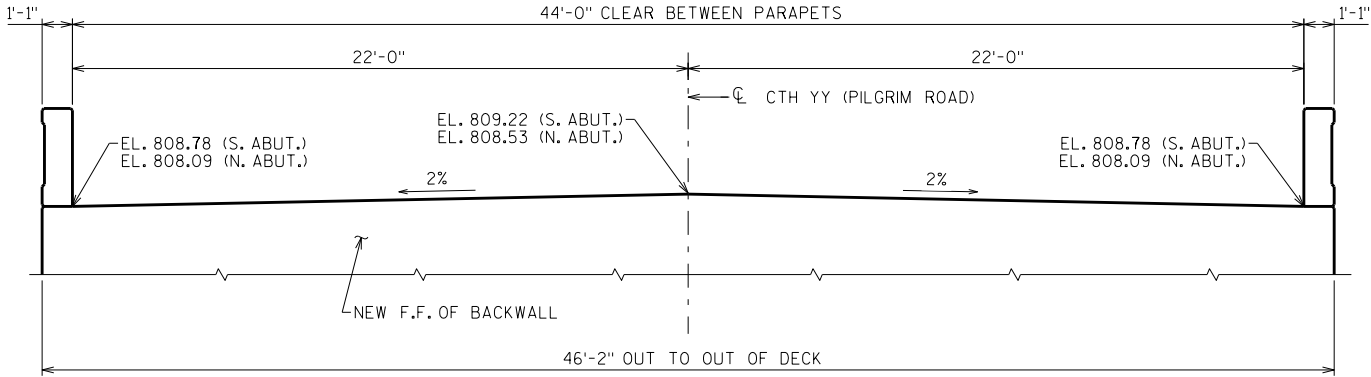
SECTION THRU JOINT AT ABUTMENT
NORMAL TO CL SUBSTRUCTURE



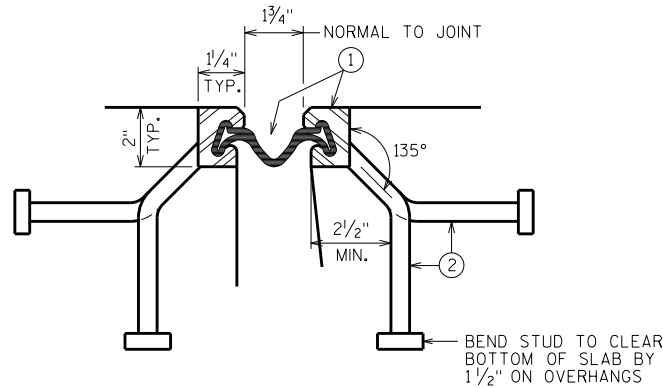
* POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.

SECTION THRU JOINT AT ABUTMENT
NORMAL TO CL SUBSTRUCTURE

(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

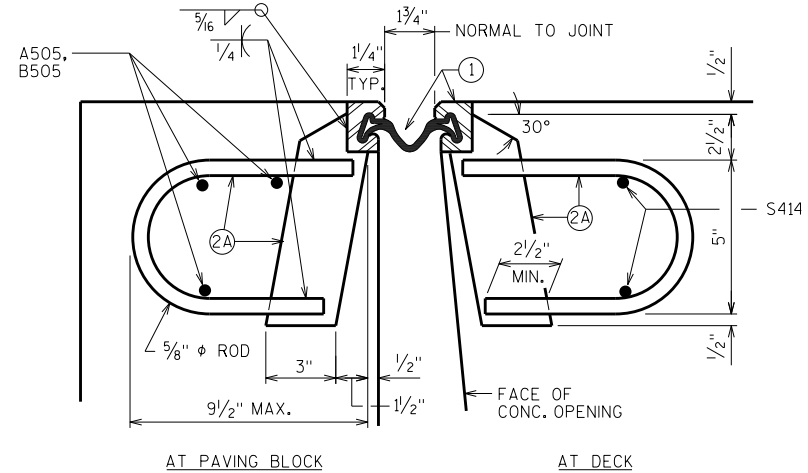


TYPICAL SECTION AT F.F. BACKWALL



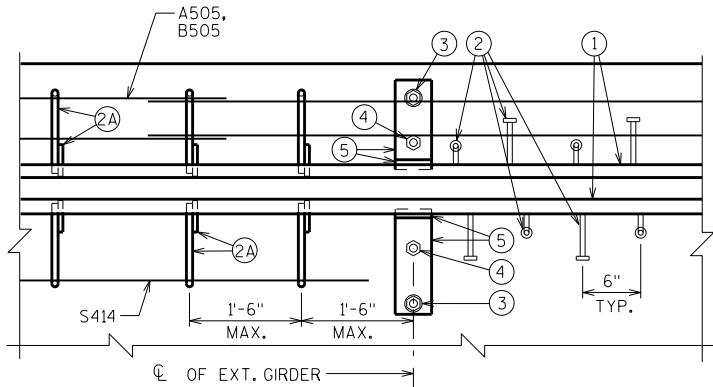
SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

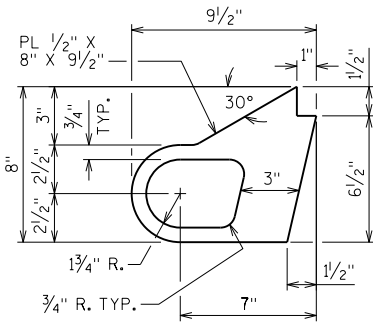
FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

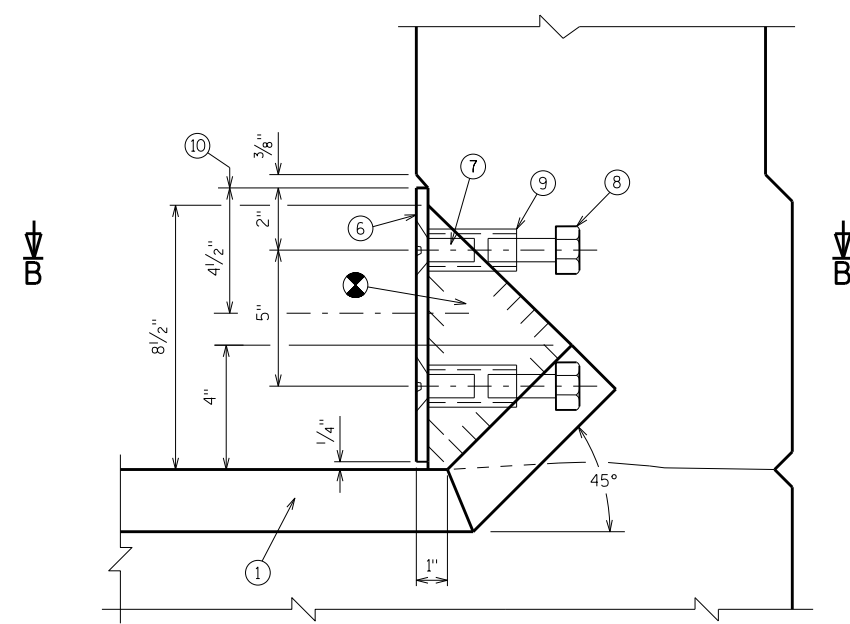
ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE, WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-67-86".

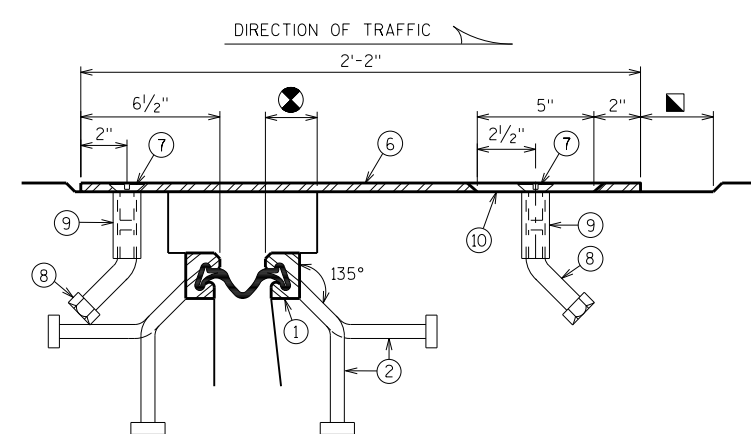
ALTERNATE STRIP SEAL ANCHOR



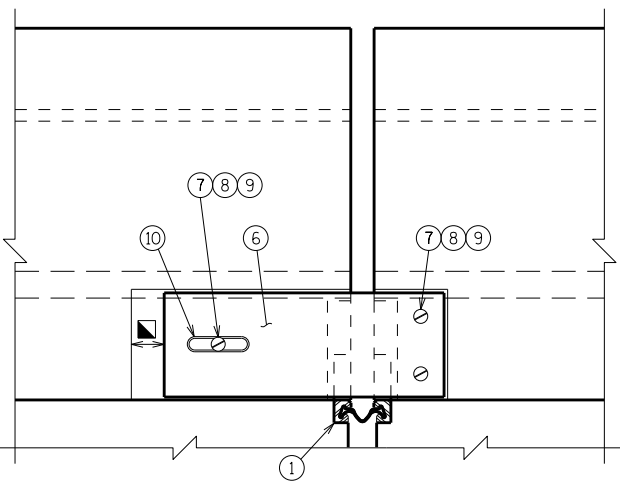
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
EXPANSION DEVICE		SHEET 13	
		181	



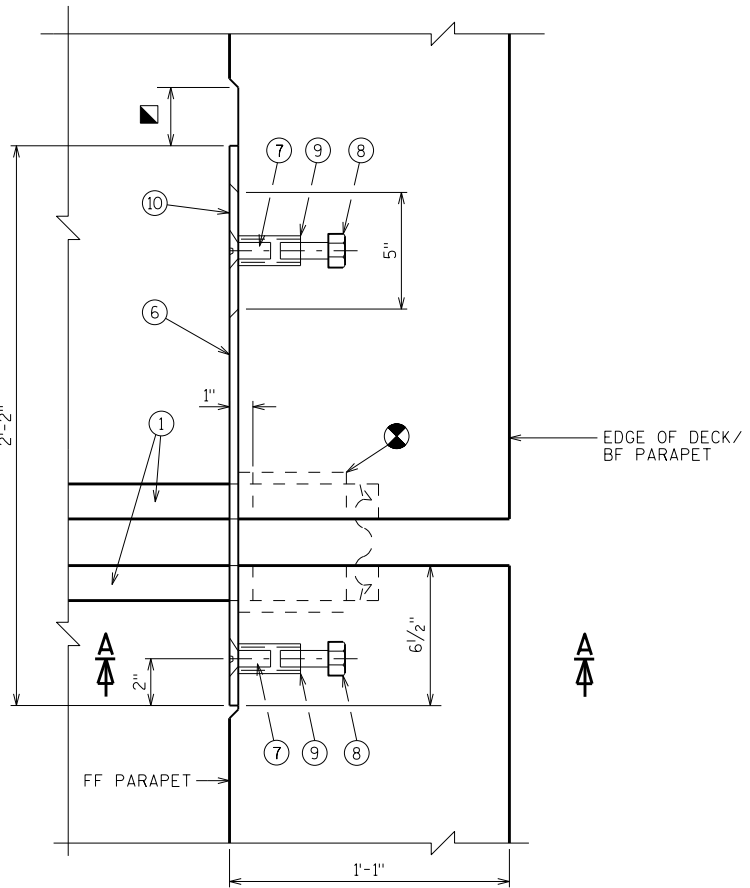
SECTION A-A



SECTION B-B



VIEW OF PARAPET PLATE
FROM ROADWAY



PLAN

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
■ JOINT OPENING DIMENSION PLUS 1/2".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
COVER PLATE DETAILS		SHEET 14	
		182	

SCALE = 1:100

BAR SERIES TABLE

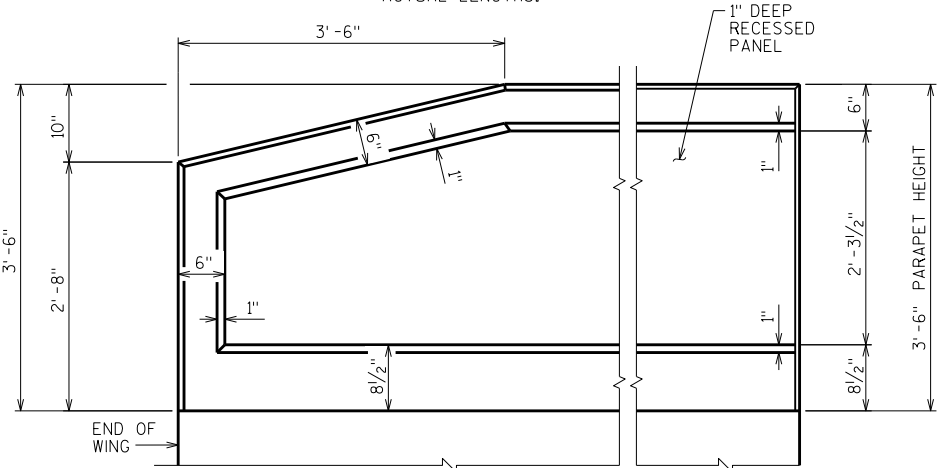
BAR MARK	NO. REQ'D.	LENGTH
R502	4 SERIES OF 7	5-1 TO 6-1

BUNDLE AND TAG EACH SERIES SEPARATELY.

BILL OF BARS

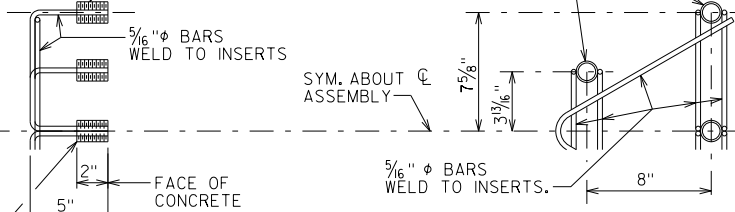
BAR MARK	COAT	SOUTH ABUT.	NORTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	68	68	5-9	X		PARAPET VERT.
R502	X	14	14	5-7	X	▲	PARAPET VERT.
R403	X	54	54	6-7	X		PARAPET VERT.
R404	X	4	4	16-7	X		PARAPET HORIZ.
R405	X	12	12	16-7			PARAPET HORIZ.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



OUTSIDE FACE OF PARAPET

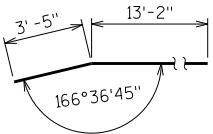
THREADED INSERTS FOR 7/8" ϕ X 2" LONG GALVANIZED HEX HEAD CAP SCREWS. CAP SCREWS TO BE THREADED A MIN. OF 1/8" AND SHALL BE SUPPLIED, INCLUDING WASHERS, WITH ASSEMBLY. INSERTS TO BE THREADED A MINIMUM OF 1 3/4".



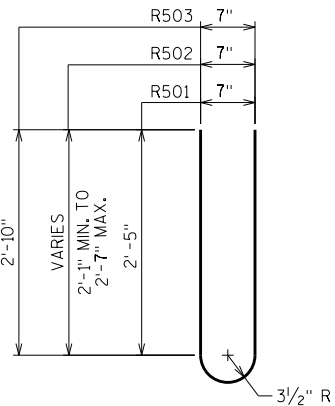
DETAIL OF ANCHOR ASSEMBLY

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

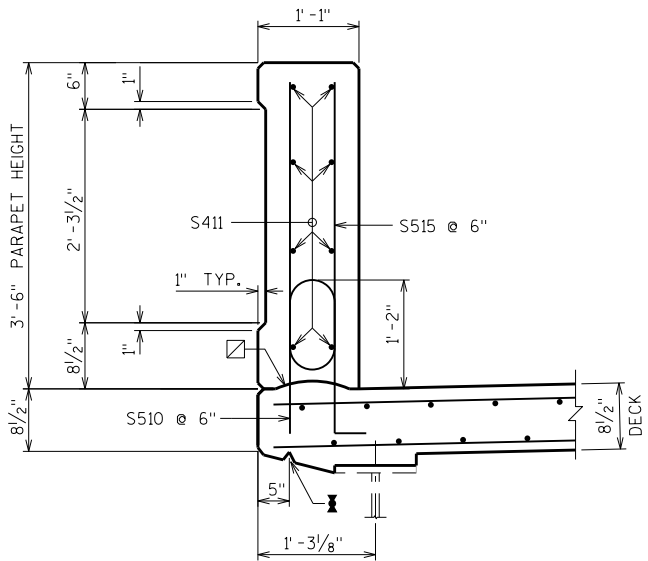
ASSEMBLY BID ITEM SHALL BE "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



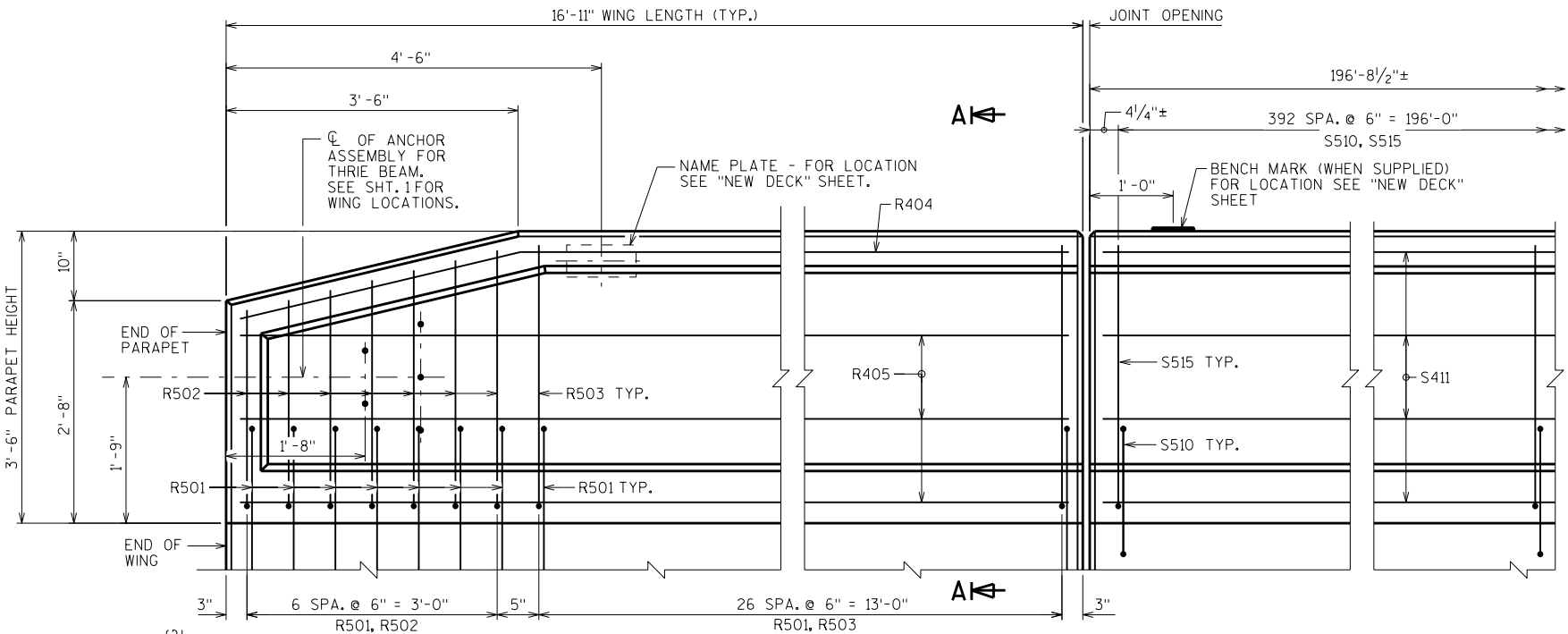
R404



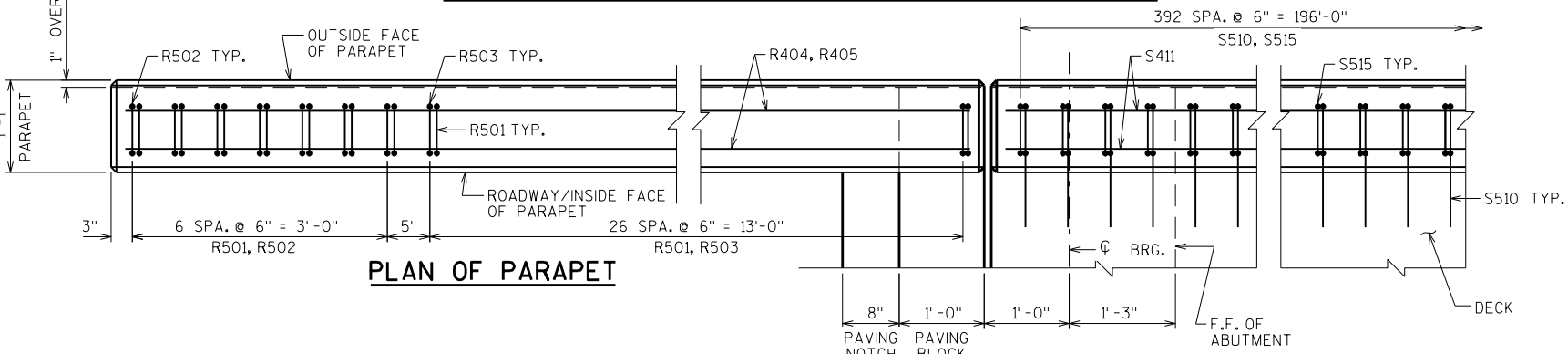
R501, R502, R503



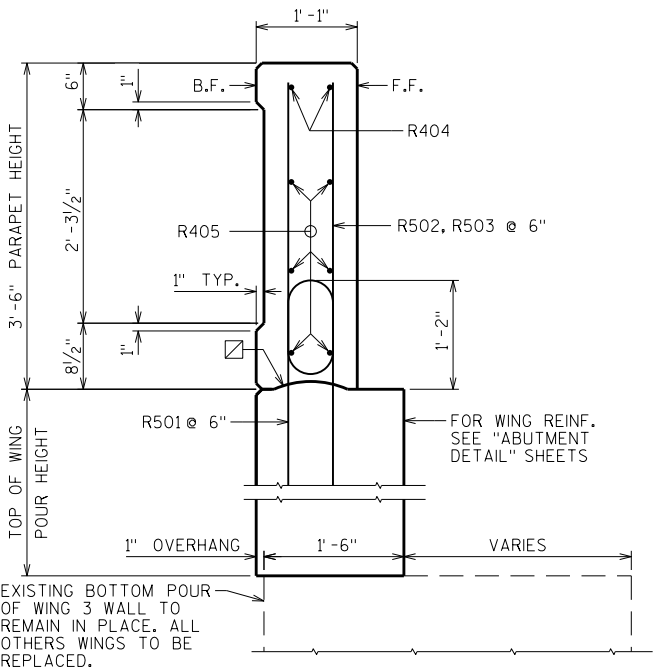
PARAPET ON BRIDGE



ELEVATION OF PARAPET - LOOKING AT B.F. PARAPET



PLAN OF PARAPET



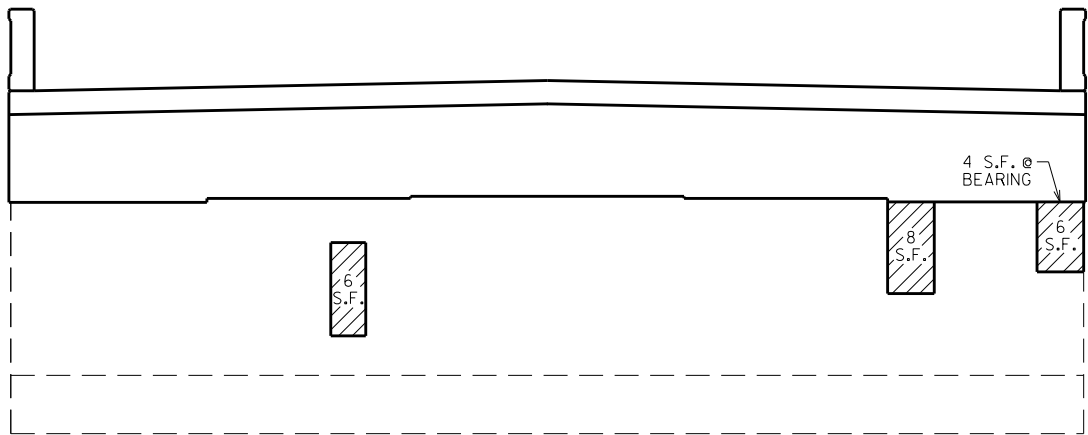
SECTION A-A - WING 1 SHOWN

ALL OTHER WINGS SIMILAR

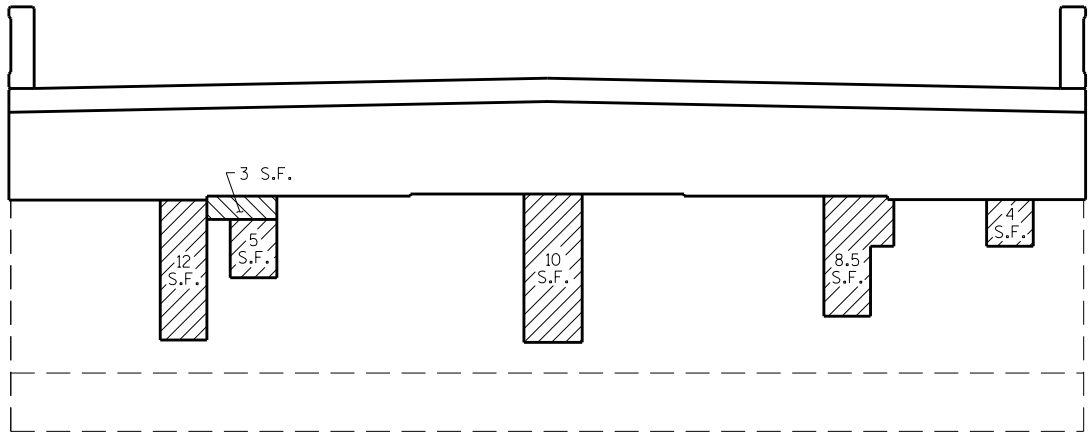
☐ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

■ 3/4" GROOVE REQUIRED EXTEND TO 2'-0" FROM FRONT FACE OF ABUTMENTS.

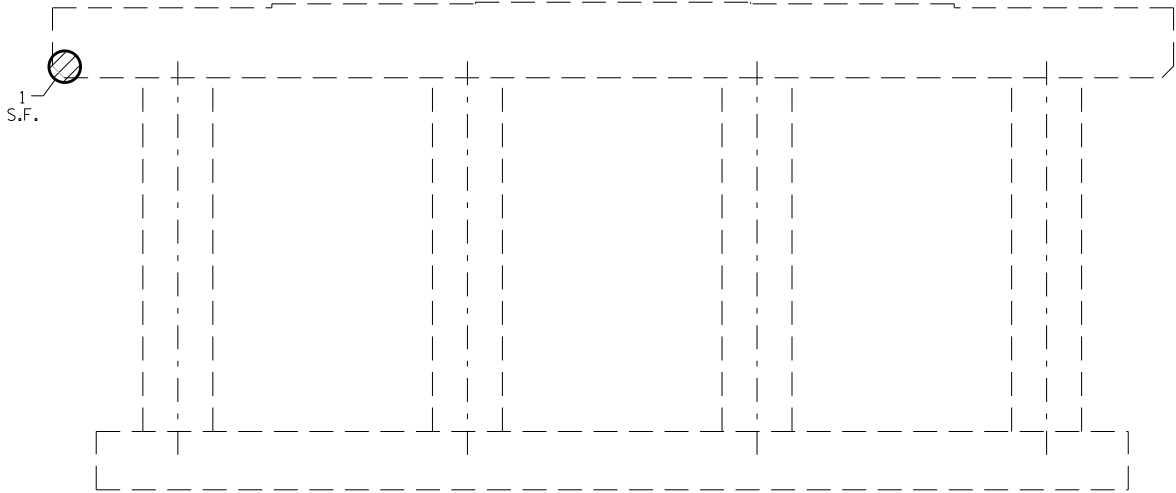
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
VERTICAL FACE PARAPET TYPE 'A' (MODIFIED)			SHEET 15
			183



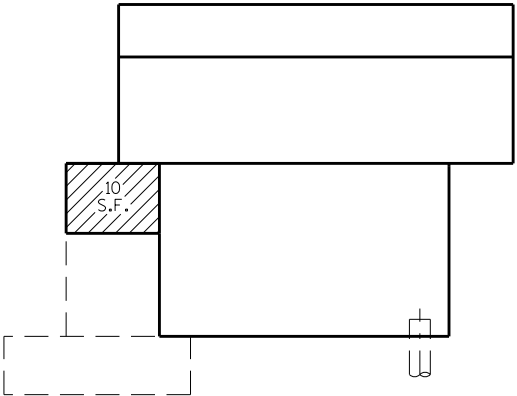
SOUTH ABUTMENT ELEVATION - LOOKING SOUTH



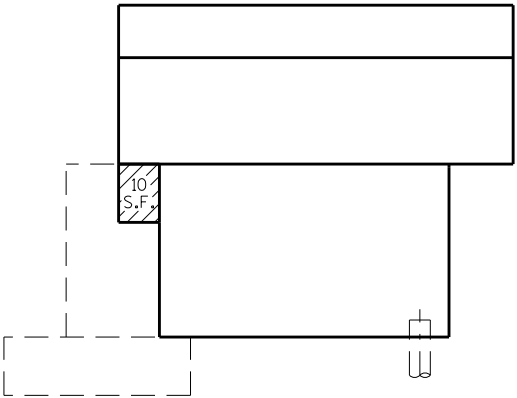
NORTH ABUTMENT ELEVATION - LOOKING NORTH



ELEVATION - LOOKING SOUTH



SOUTH WEST WING ELEVATION



NORTH EAST WING ELEVATION

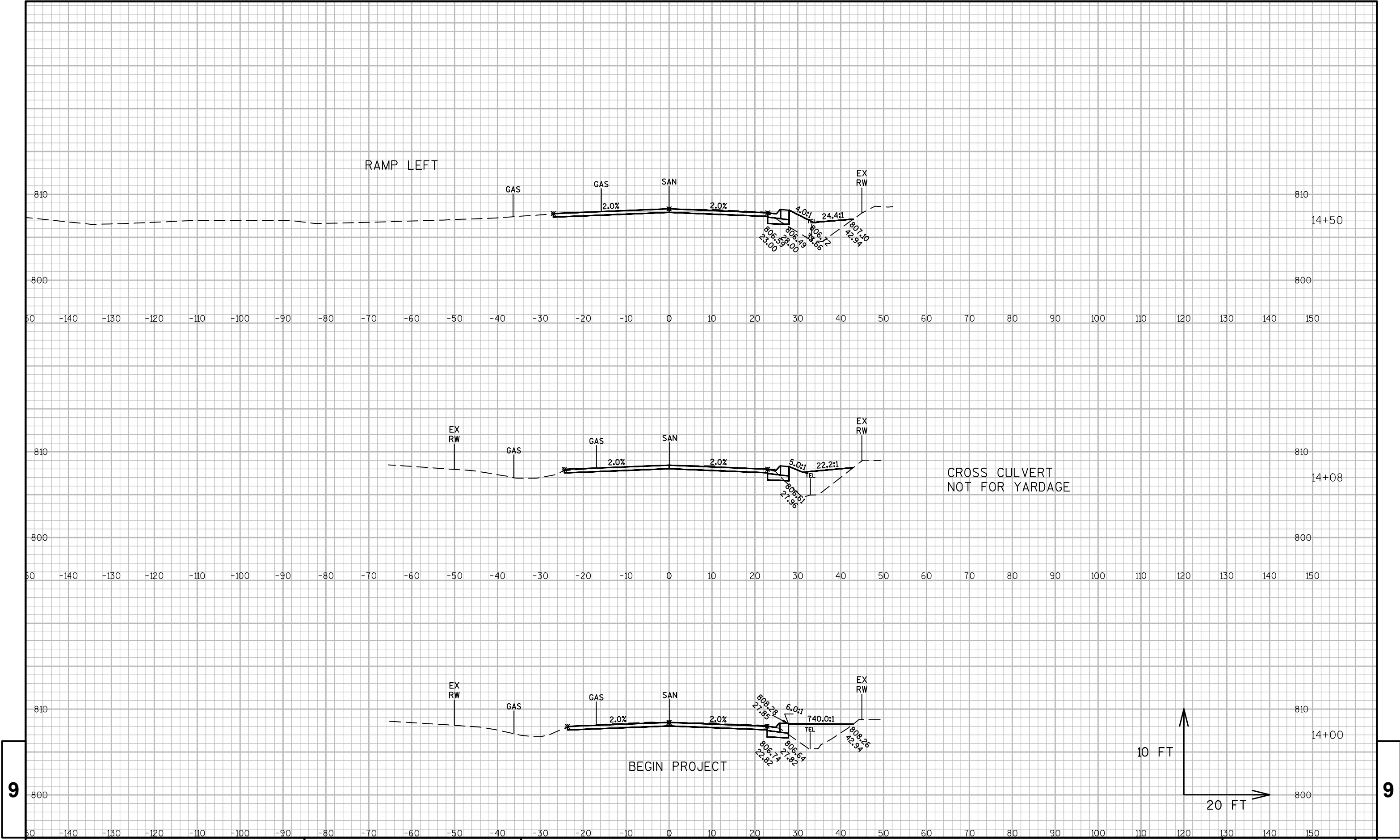
 = INDICATES AREAS IN NEED OF SURFACE REPAIR

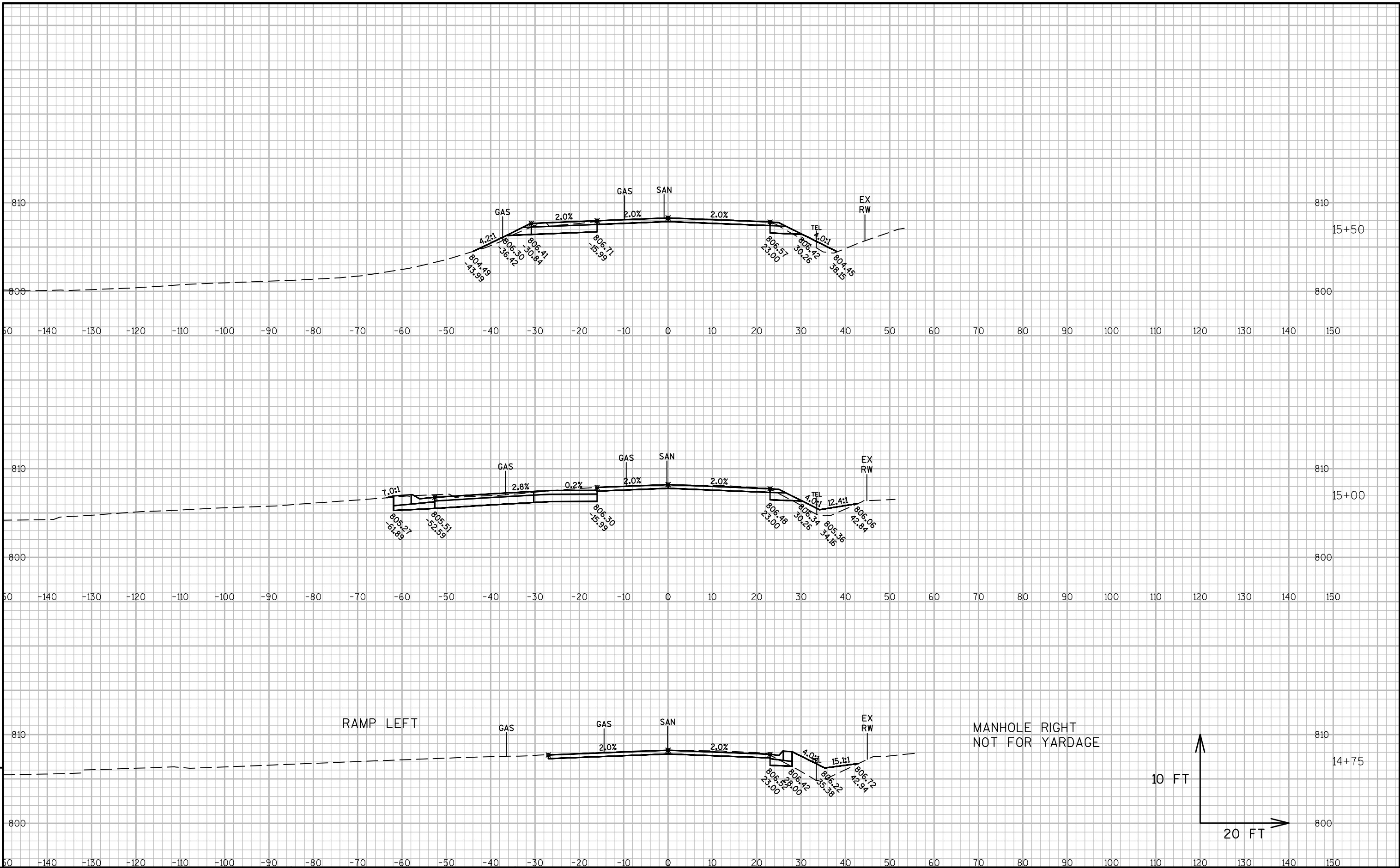
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-67-86			
DRAWN BY		DDS	PLANS CK'D. VT
CONCRETE SURFACE REPAIR			SHEET 16
			184

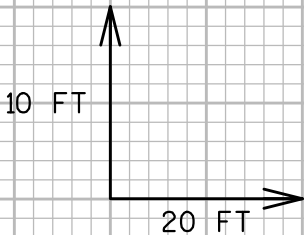
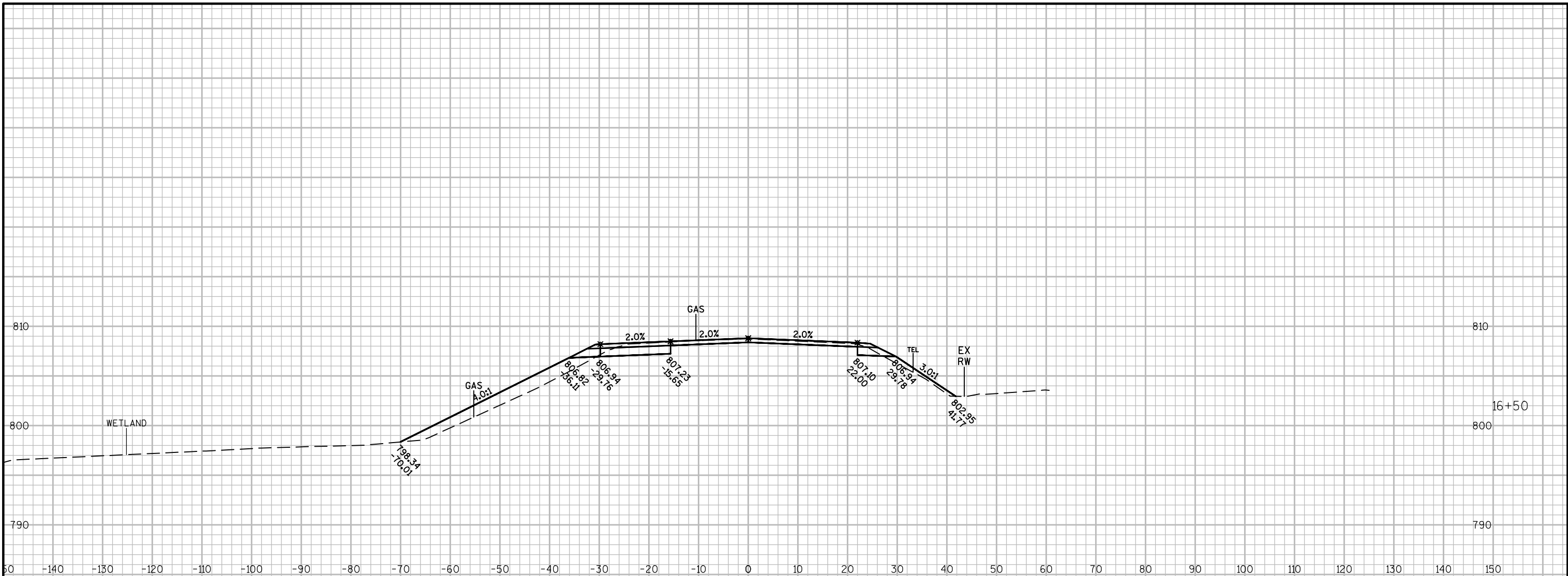
DIVISION 1			AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
			Salvaged/ Unusable Pavement			Salvaged/Unusable Pavement Material			Cut 1.00	Expanded Fill 1.20	Mass Ordnate
STATION	Real Station	Distance	Cut	Material	Fill	Cut Note 1	Note 2	Fill Note 3	Note 1	Note 3	Note 4
14+00	1400	0	5	23	30	0	0	0	0	0	0
14+50	1450	50	2	25	27	7	44	53	7	63	-56
15+00	1500	50	43	36	12	42	56	36	49	107	-58
15+50	1550	50	14	24	7	52	56	18	101	128	-27
16+00	1600	50	14	23	26	25	44	31	126	165	-39
16+50	1650	50	7	23	48	19	43	69	146	248	-103
17+00	1700	50	3	23	45	9	42	86	155	352	-196
17+32	1732	32	0	22	91	2	27	80	157	448	-291
17+57	1757	25	1	22	33	1	20	57	158	517	-359
17+82	1782	25	3	22	16	2	20	22	160	543	-384
18+00	1800	18	2	21	29	1	15	15	161	561	-401
18+47	1847	47	2	22	101	3	37	111	164	695	-531
18+62	1862	16	0	0	0	1	6	30	164	731	-566
SE Wingwall	See Note 5		0	0	57	0	0	10	164	743	-578
SW Wingwall	See Note 5		0	0	321	0	0	20	164	767	-602
Column Totals						164	410	639			

DIVISION 2			AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
			Salvaged/ Unusable Pavement			Salvaged/Unusable Pavement Material			Cut 1.00	Expanded Fill 1.20	Mass Ordnate
STATION	Real Station	Distance	Cut	Material	Fill	Cut Note 1	Note 2	Fill Note 3	Note 1	Note 3	Note 4
20+61	2061	0	0	0	0	0	0	0	0	0	0
20+77	2077	16	1	21	119	0	6	35	0	42	-42
21+00	2100	23	0	21	70	0	18	79	1	137	-136
21+42	2142	42	0	23	33	0	34	80	1	233	-232
21+50	2150	8	1	23	34	0	7	10	1	245	-244
21+67	2167	17	0	23	34	0	14	21	2	271	-269
21+92	2192	25	0	24	49	0	22	38	2	316	-315
22+17	2217	25	0	24	62	0	22	51	2	378	-376
22+42	2242	25	0	24	101	0	22	75	2	468	-466
22+67	2267	25	11	24	229	5	22	153	7	651	-644
23+00	2300	33	18	24	179	17	30	249	24	950	-926
23+50	2350	50	27	24	113	41	45	270	65	1,274	-1,209
24+00	2400	50	6	24	7	30	45	111	96	1,408	-1,312
24+50	2450	50	15	28	6	19	48	12	115	1,423	-1,307
25+00	2500	50	0	25	0	14	49	6	129	1,429	-1,301
25+50	2550	50	1	23	0	1	44	0	130	1,429	-1,300
25+75	2575	25	0	22	0	0	21	0	130	1,429	-1,299
NE Wingwall	See Note 5		0	0	387	0	0	15	130	1,447	-1,317
NW Wingwall	See Note 5		0	0	495	0	0	30	130	1,483	-1,353
Column Totals						130	449	1,236			

- Notes:
- 1) Cut does not include Salvaged/Unusable Pavement material
 - 2) This does not show up in cross sections
 - 3) Expanded Fill = Unexpanded Fill & Expanded Fill Factor. Does not include Unusable Pavement Excavation volume
 - 4) Mass Ordinate [Cut - (Fill * Fill Factor)]. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
 - 5) See Contour Map - Bridge Wing Walls

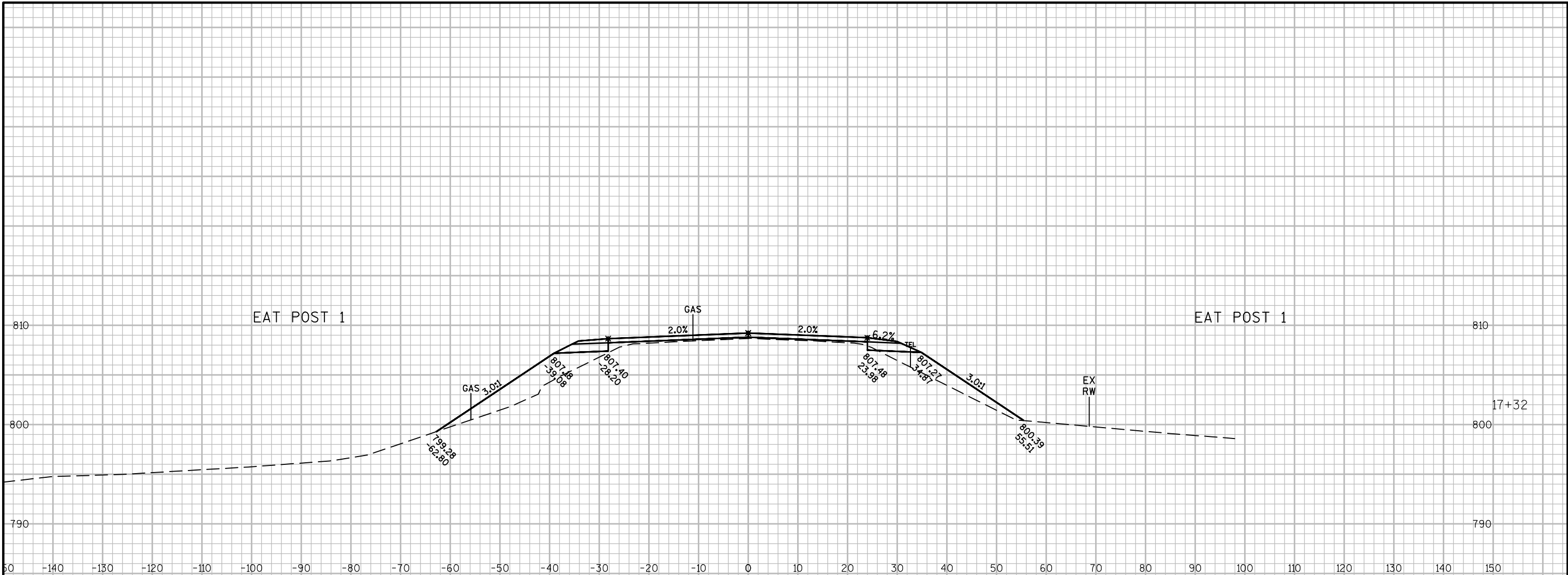




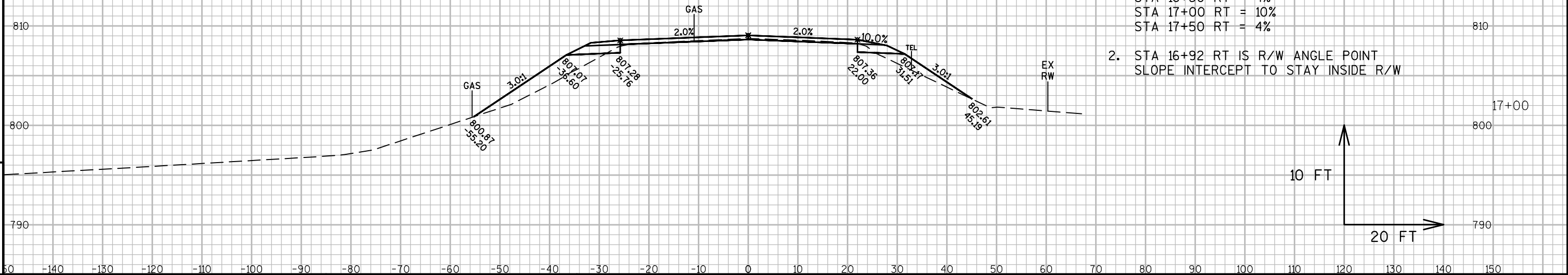


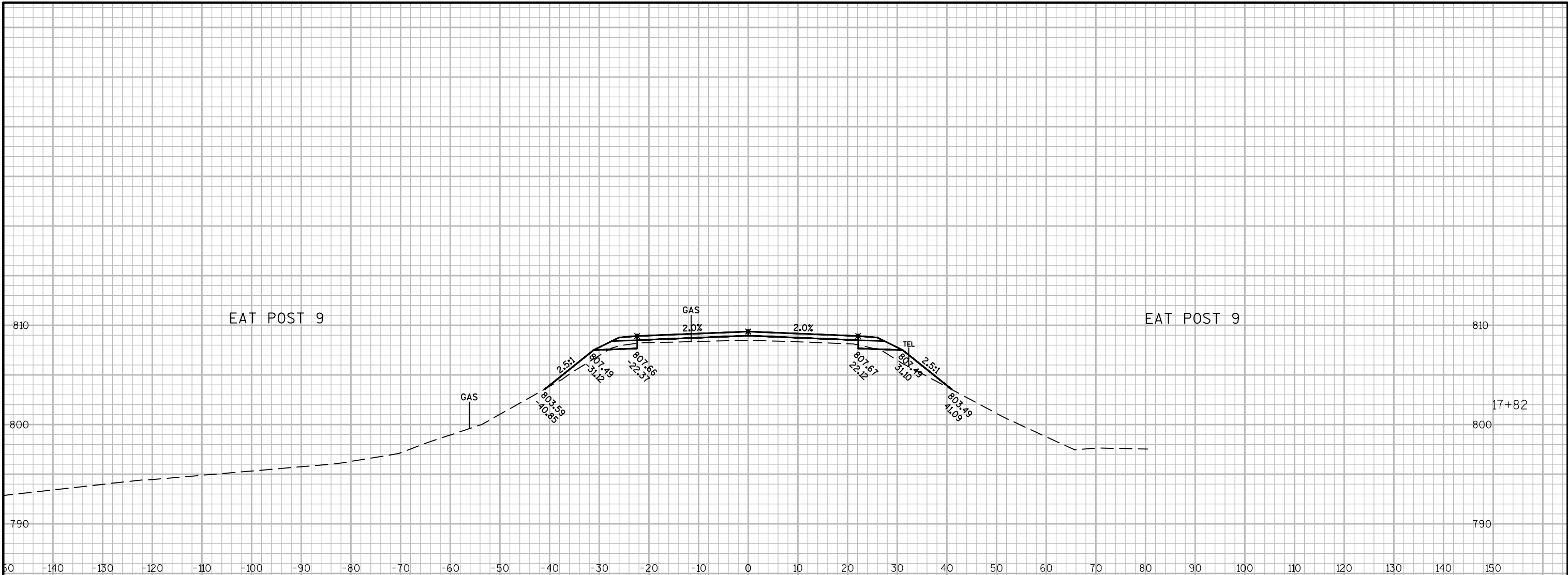
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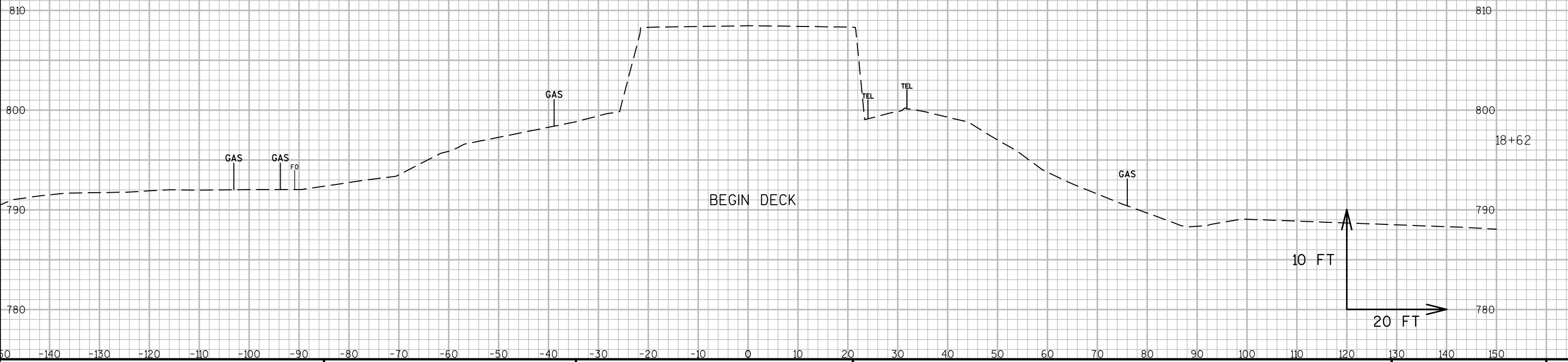
9



- NOTES:
- 1. AGGREGATE SHOULDER TRANSITION
STA 16+50 RT = 4%
STA 17+00 RT = 10%
STA 17+50 RT = 4%
 - 2. STA 16+92 RT IS R/W ANGLE POINT
SLOPE INTERCEPT TO STAY INSIDE R/W

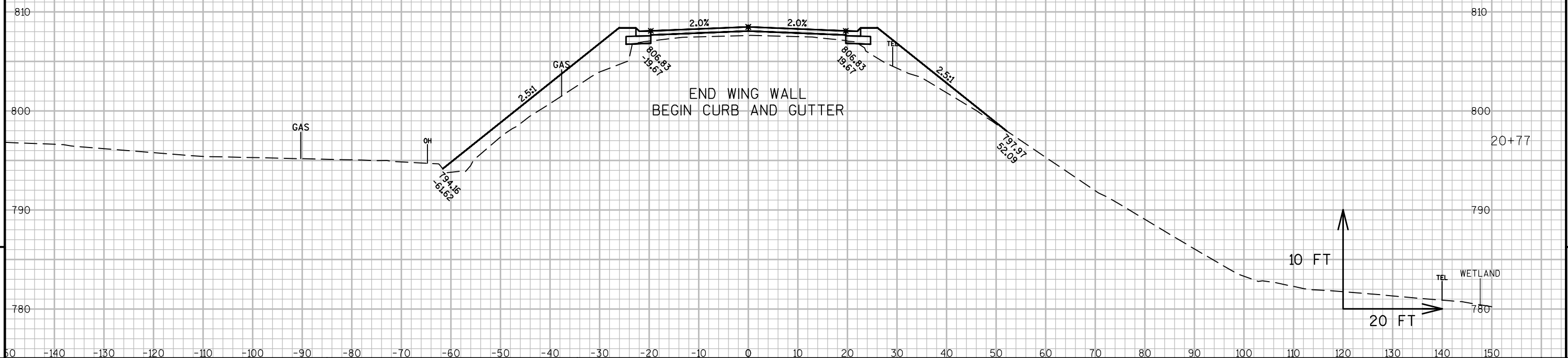
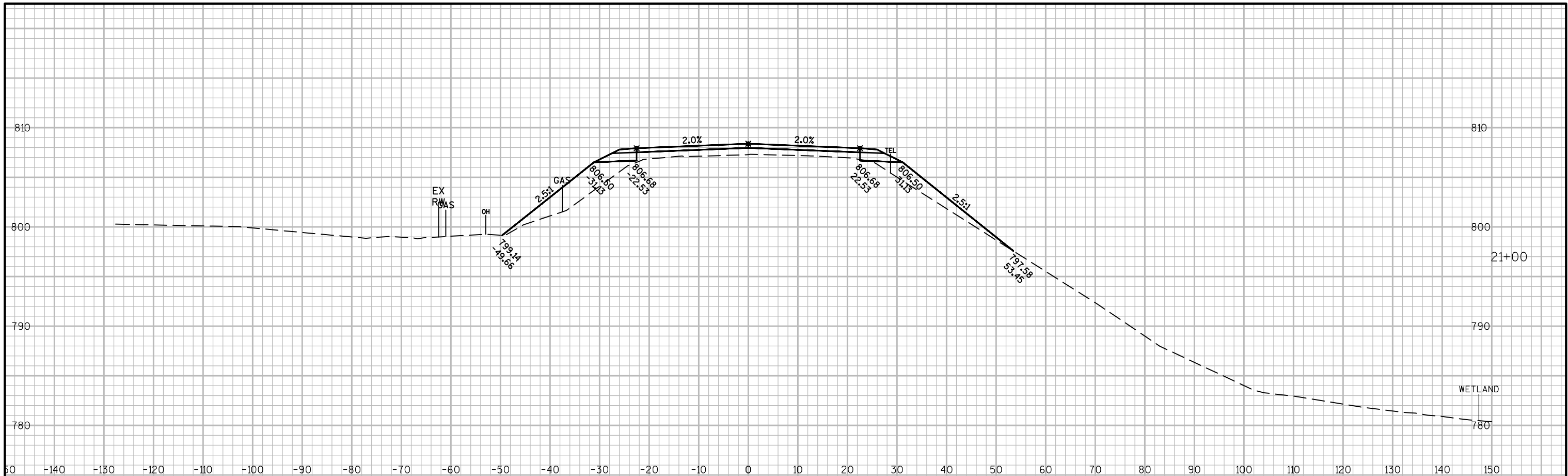


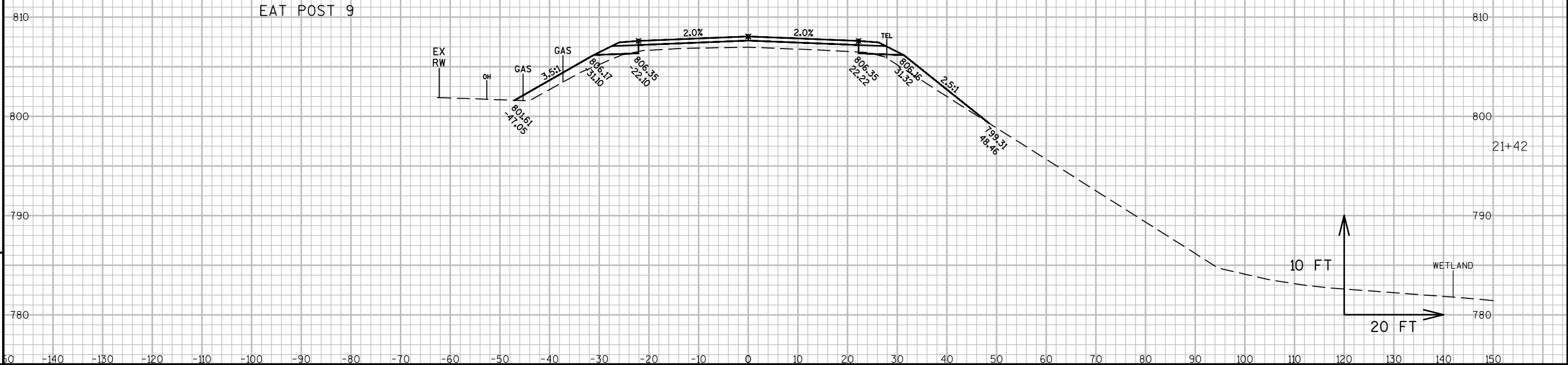
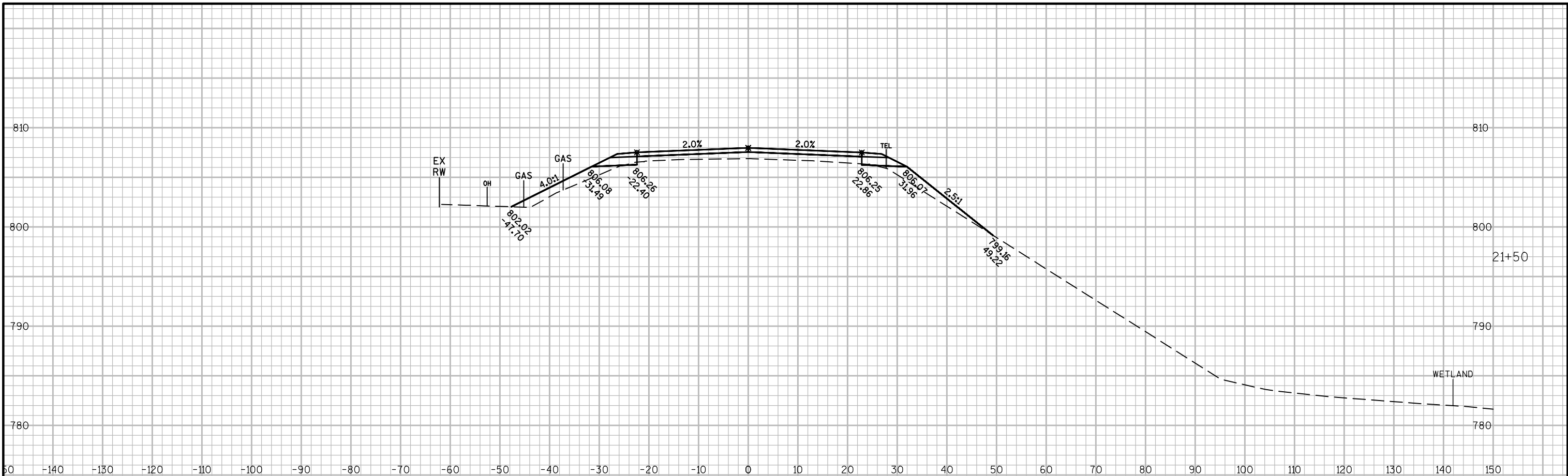


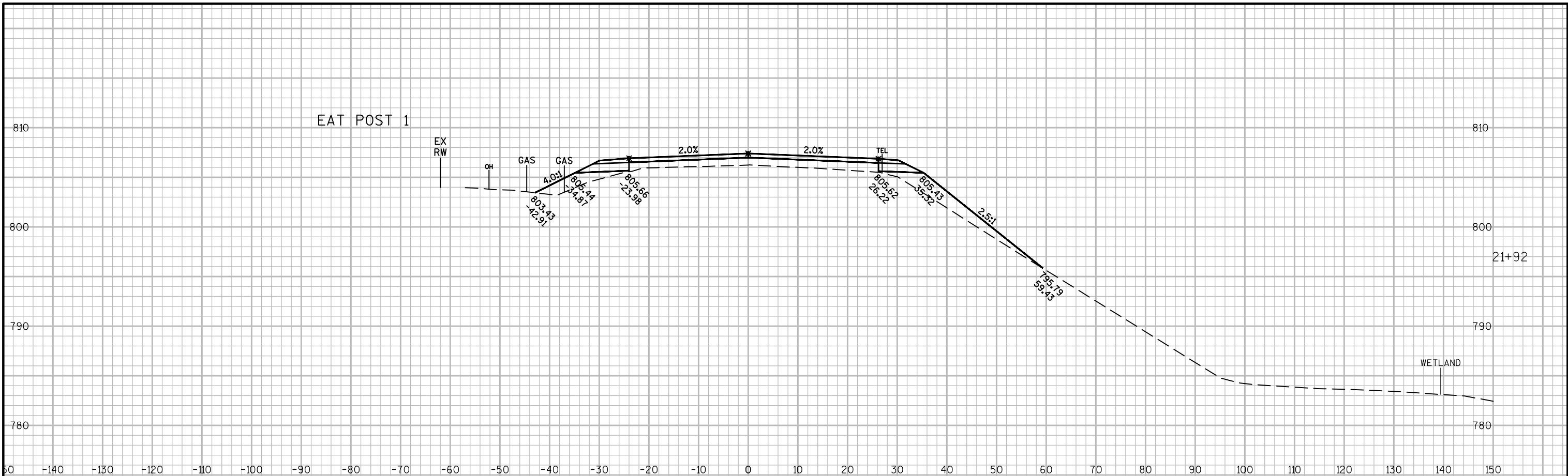


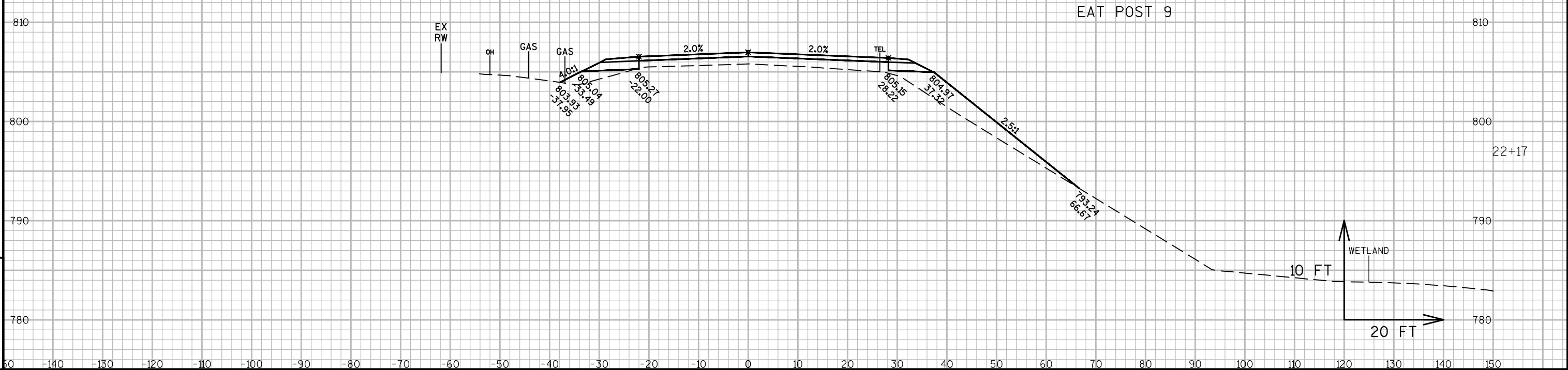
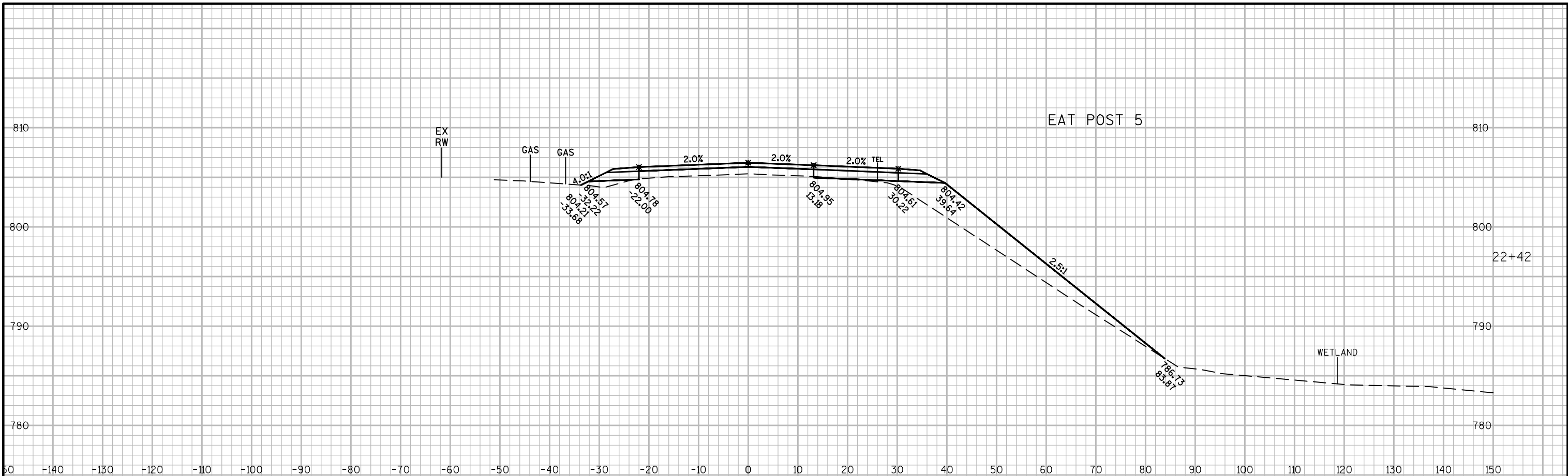
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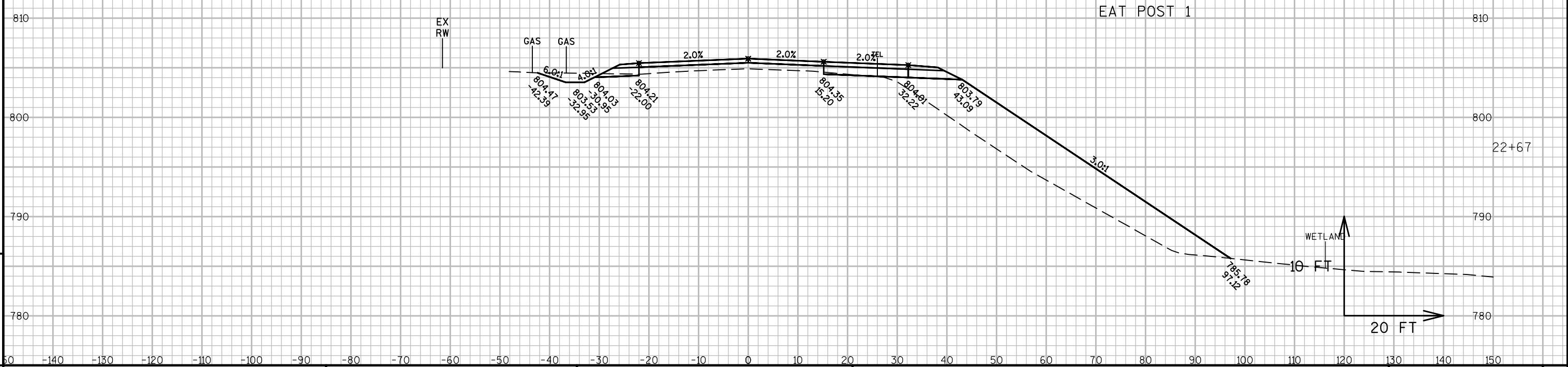
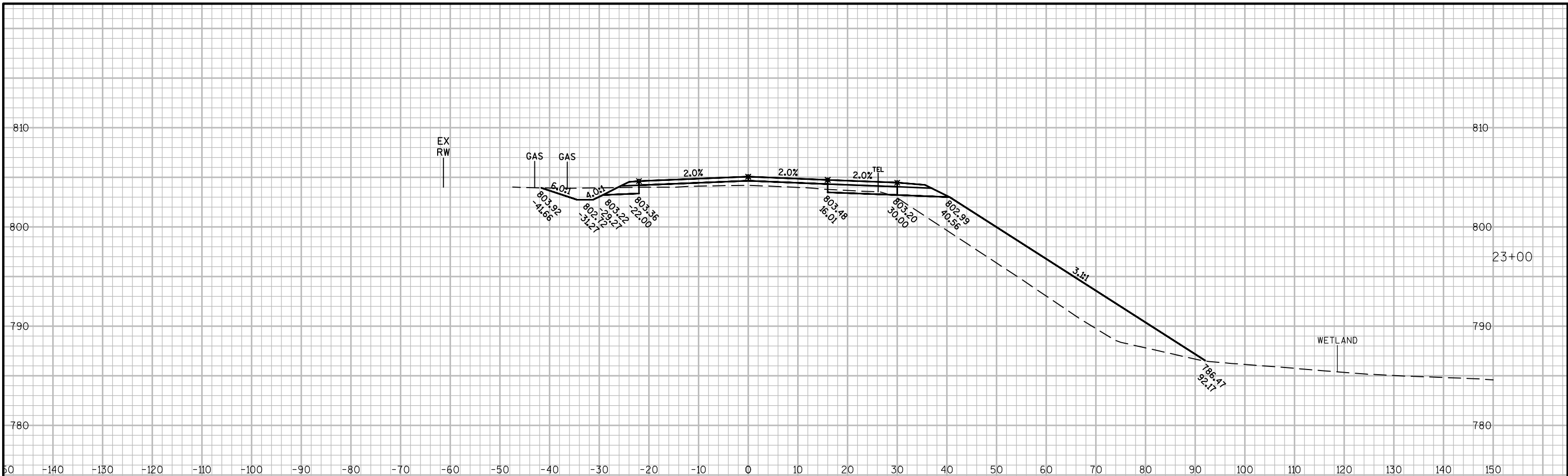
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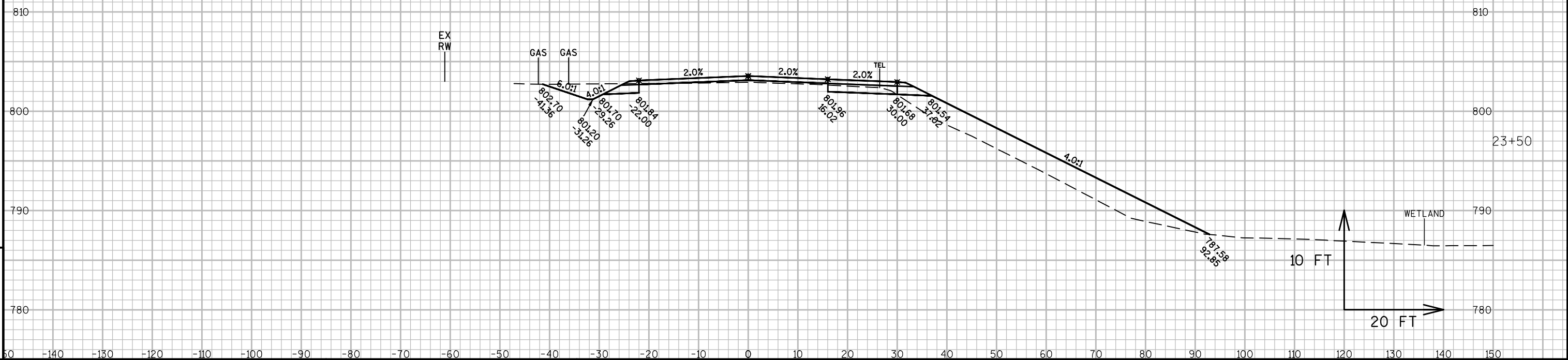
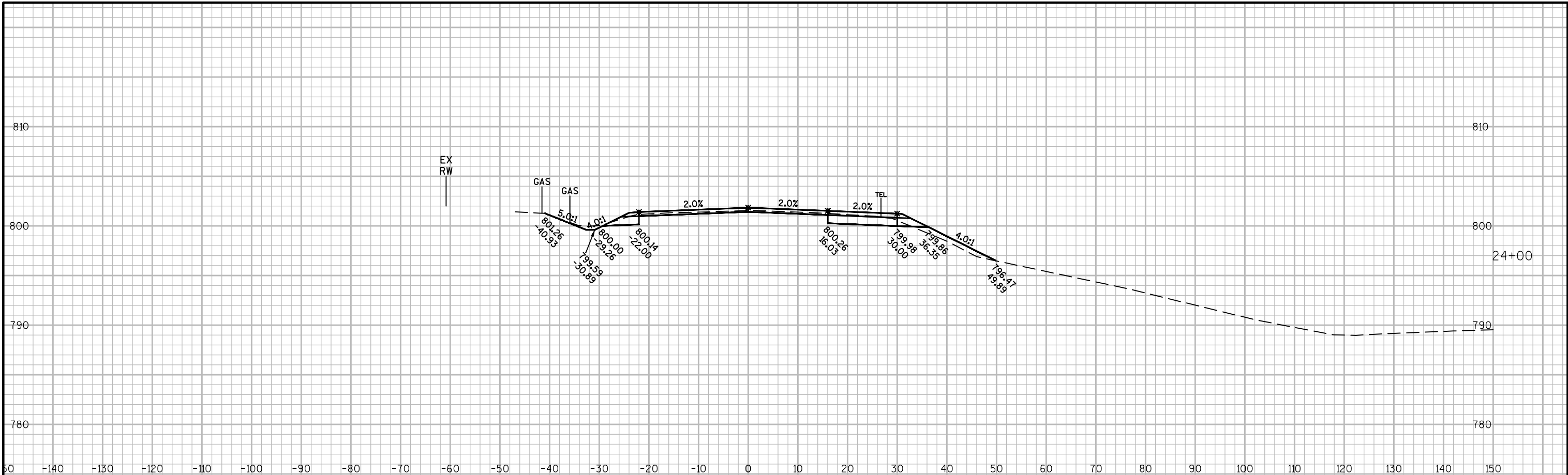


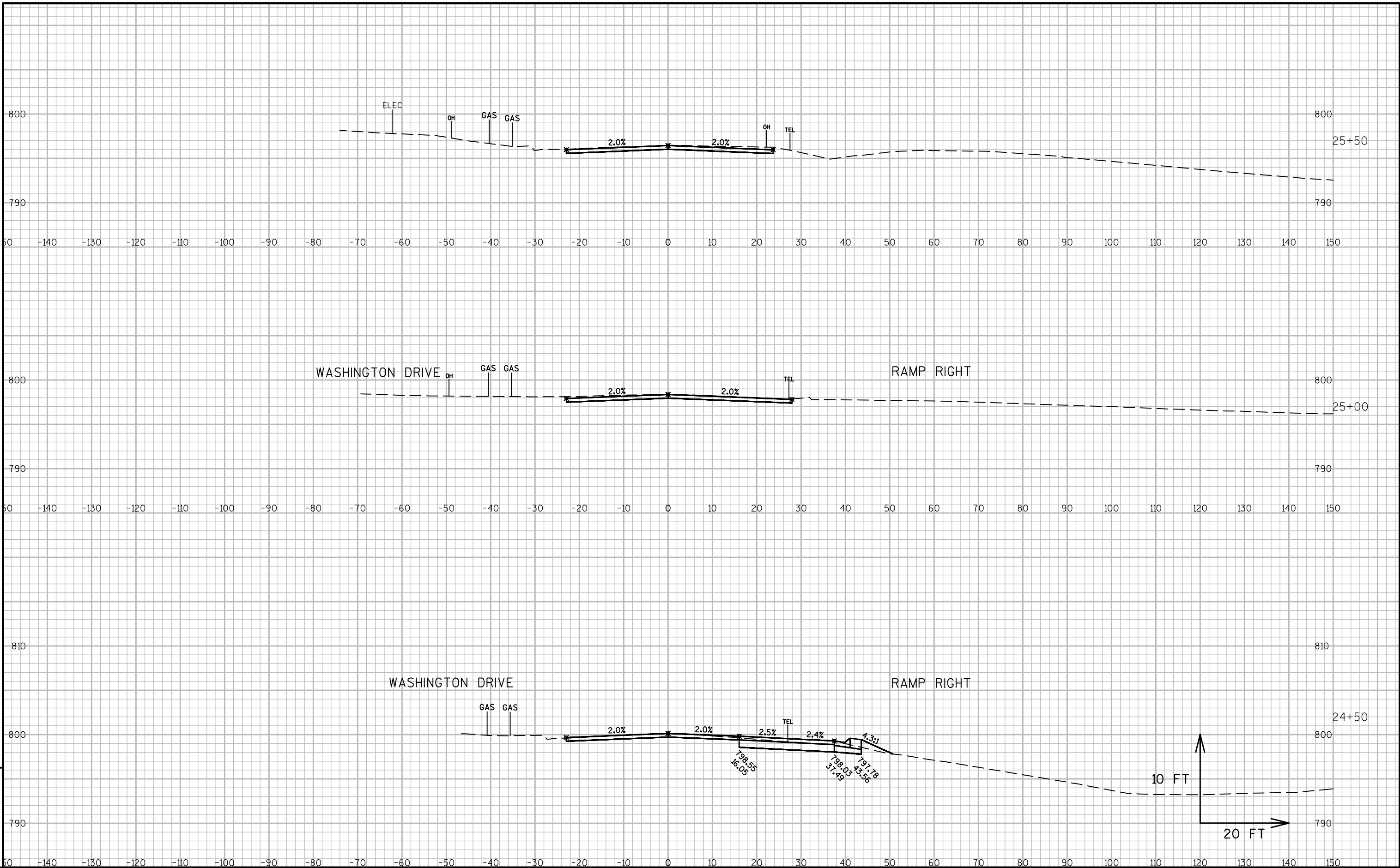


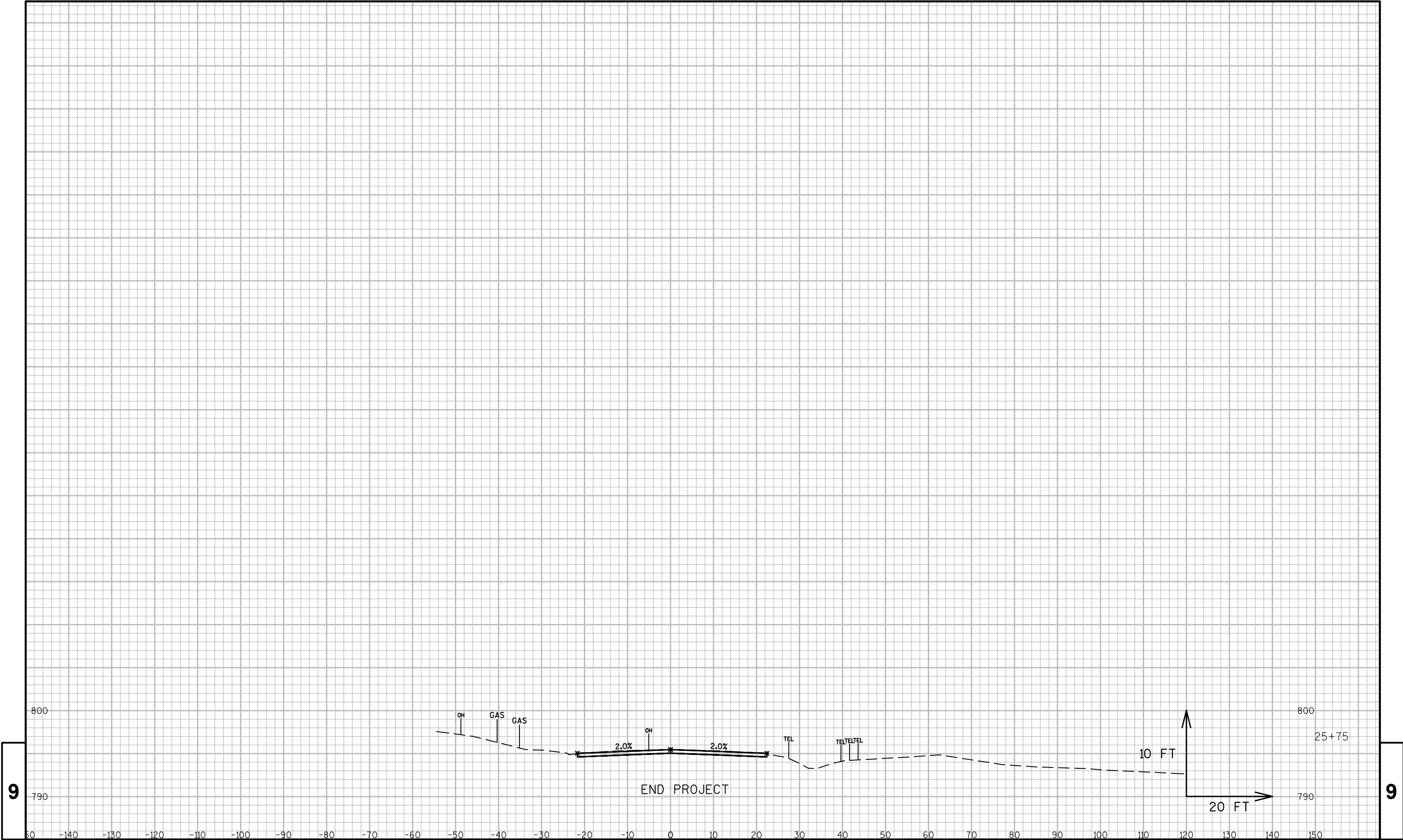








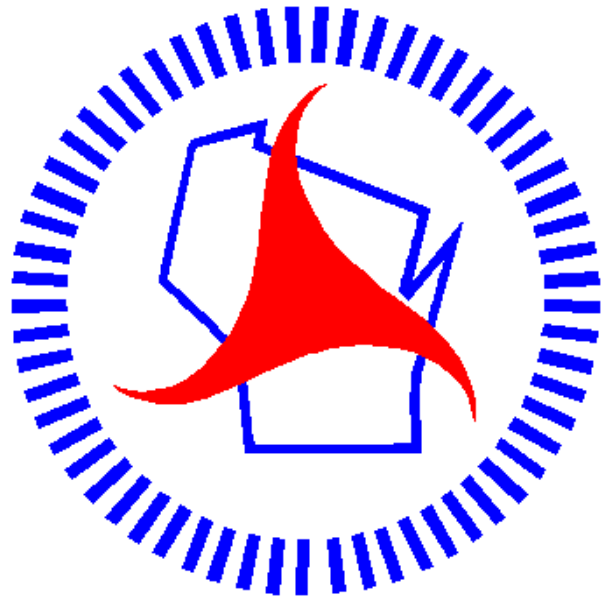




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Notes



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