

RHI

DECEMBER 2022

PROJECT ID:
WITH: N/A

1590-12-73

COUNTY:
ONEIDA

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 = 210



DESIGN DESIGNATION

A.A.D.T.	2023	=	4,900
A.A.D.T.	2043	=	5,400
D.H.V.		=	670
D.D.		=	61 / 39
T.		=	15.7%
DESIGN SPEED		=	45 MPH (USH 8); 55 MPH (USH 45)
ESALS		=	1,800,000

CONVENTIONAL SYMBOLS

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

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

RHINELANDER - MONICO

USH 8 AND USH 45 SOUTH INTERSECTION

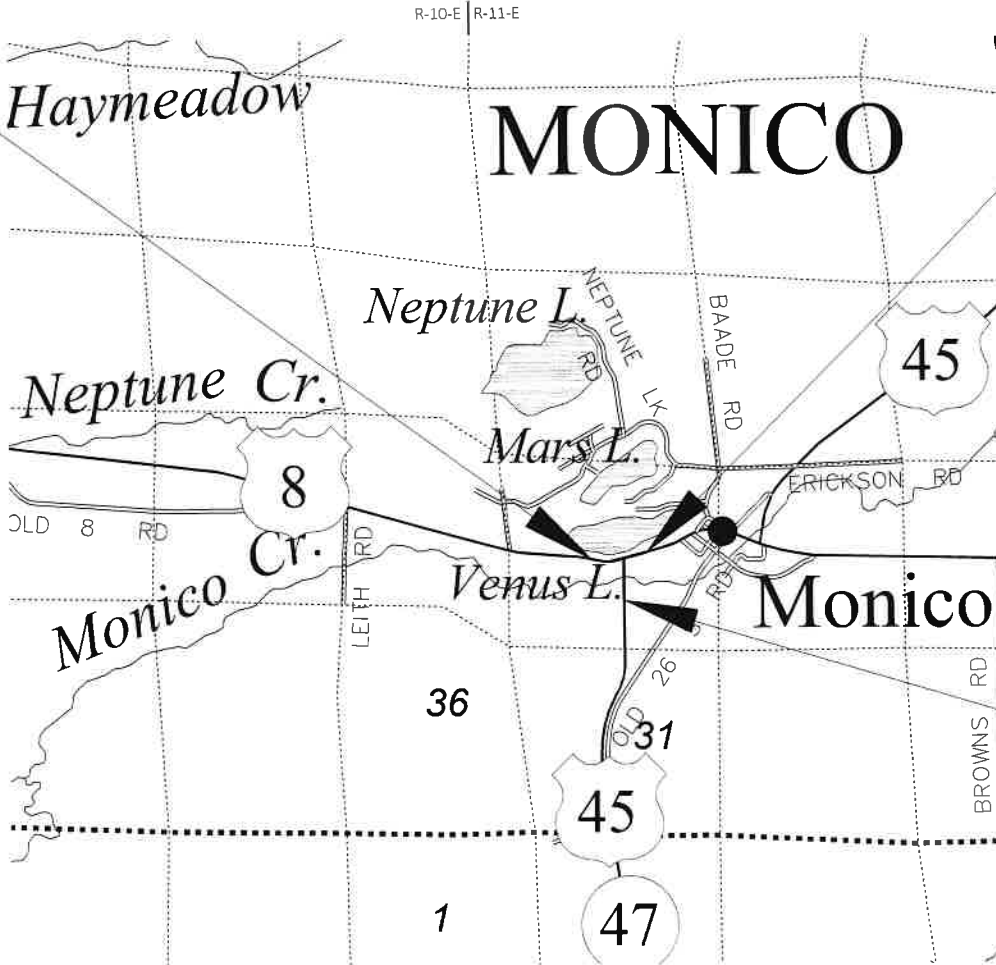
USH 8
ONEIDA COUNTY

STATE PROJECT NUMBER
1590-12-73

BEGIN PROJECT
STA 427+00.00
Y = 142,011.921
X = 326,324.612

END PROJECT
STA 448+13.50

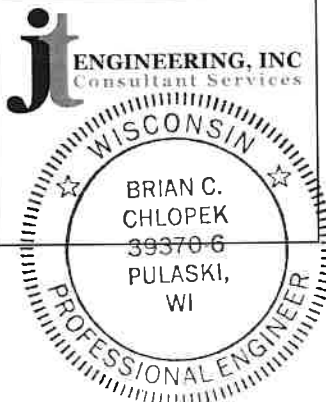
BEGIN CONSTRUCTION
STA 1410+00.00



LAYOUT
SCALE 0 0.5 MI
TOTAL NET LENGTH OF CENTERLINE = 0.400 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), ONEIDA COUNTY, NAD83 ((2011)), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 ((2012)). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1590-12-73	WISC 2023113	1



DATE: 07/26/22
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WISDOT
Designer	JT ENGINEERING, INC.
Project Manager	STACY HAGENBUCHER, P.E.
Regional Examiner	ZACH GRULING, P.E.
Regional Supervisor	KATHLEEN, P.E.

APPROVED FOR THE DEPARTMENT
DATE: 7/26/22
(Signature)

E

GENERAL NOTES

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

TACK COAT APPLICATION RATE CALCULATION IS BASED ON 0.07 GAL/SY.

EROSION CONTROL ITEMS IN THE MISCELLANEOUS QUANTITIES ARE SUGGESTED. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. MAINTAIN EROSION CONTROL ITEMS UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. PROTECT WETLANDS AND OTHER WATERWAYS THAT ARE PRESENT WITHIN THE PROJECT LIMITS.

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

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA.

DO NOT STORE EQUIPMENT OR MATERIAL IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS, OR WATERWAYS.

REMOVAL OF ANY STEEL REINFORCEMENT OR WIRE MESH IN THE EXISTING CONCRETE IS INCIDENTAL TO THE REMOVING PAVEMENT OR APPLICABLE BID ITEM.

CROSS SECTIONS AND PROFILE GRADE LINES ARE DEVELOPED OFF OF THE EXISTING USH 8 REFERENCE LINE AND THE USH 45 REFERENCE LINE. USH 8 EB AND WB ALIGNMENTS FOLLOW THE INSIDE EDGE OF THROUGH TRAVELED LANE FOR THE RESPECTIVE DIRECTION OF TRAVEL.

ENVIRONMENTAL CONTACT

WISCONSIN DNR
WENDY HENNIGES
107 SUTLIFF AVENUE
RHINELANDER, WI 54501
PHONE: 715-365-8916
EMAIL: WENDY.HENNIGES@WISCONSIN.GOV

ORDER OF DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- INTERSECTION DETAILS
- EROSION CONTROL PLAN
- PERMANENT SIGNING AND PAVEMENT MARKING
- LIGHTING PLAN
- TRAFFIC CONTROL PLAN
- DETOUR PLAN
- ALIGNMENT DIAGRAM



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

UTILITY CONTACTS

SPECTRUM - COMMUNICATION LINE
DAVE HOFF
853 MCINTOSH ST
WAUSAU, WI 54403
(715) 301-4085
DAVE.HOFF@CHARTER.COM

FRONTIER COMMUNICATIONS OF WI LLC - COMMUNICATION LINE
CHRIS POLLACK
521 4TH ST
WAUSAU, WI 54403
(715) 847-1240
CHRISTOPHER.POLLACK@FTR.COM

NSIGHT TELESERVICES
RICK VINCENT
450 SECURITY BLVD
P.O. BOX 19079
GREEN BAY, WI 54307-9079
(920) 617-7316
RICK.VINCENT@NSIGHT.COM

WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY
KEVIN TERMAAT
P.O. BOX 1166
WAUSAU, WI 54401-1166
(715) 848-7353
KEVIN.TERMAAT@WISCONSINPUBLICSERVICE.COM

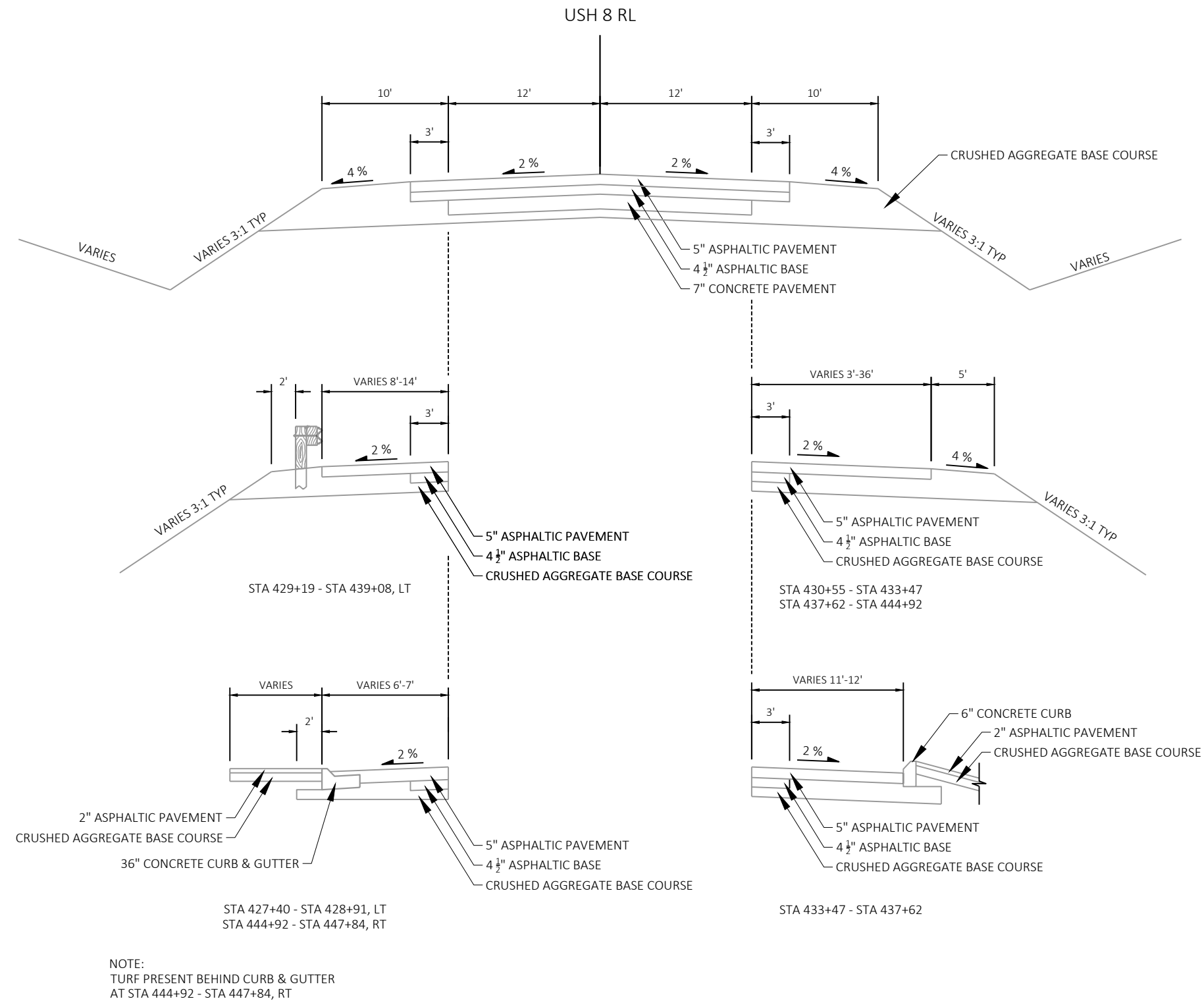
WISCONSIN PUBLIC SERVICE CORPORATION - GAS/PETROLEUM
CHRISS GILLMAN
2027 NAVAJO STREET
P.O. BOX 160
RHINELANDER, WI 54501
(715) 369-7133
MOBILE: (715) 490-4153
CHRIS.GILLMAN@WISCONSINPUBLICSERVICE.COM

RUNOFF COEFFICIENT TABLE

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

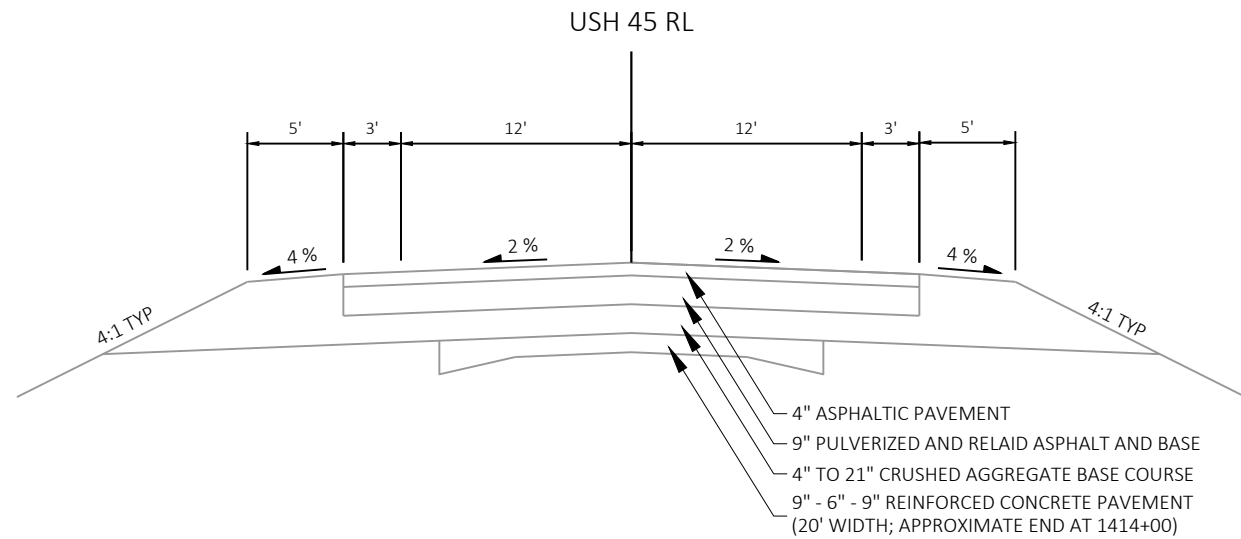
TOTAL PROJECT AREA = 5.95 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.27 ACRES





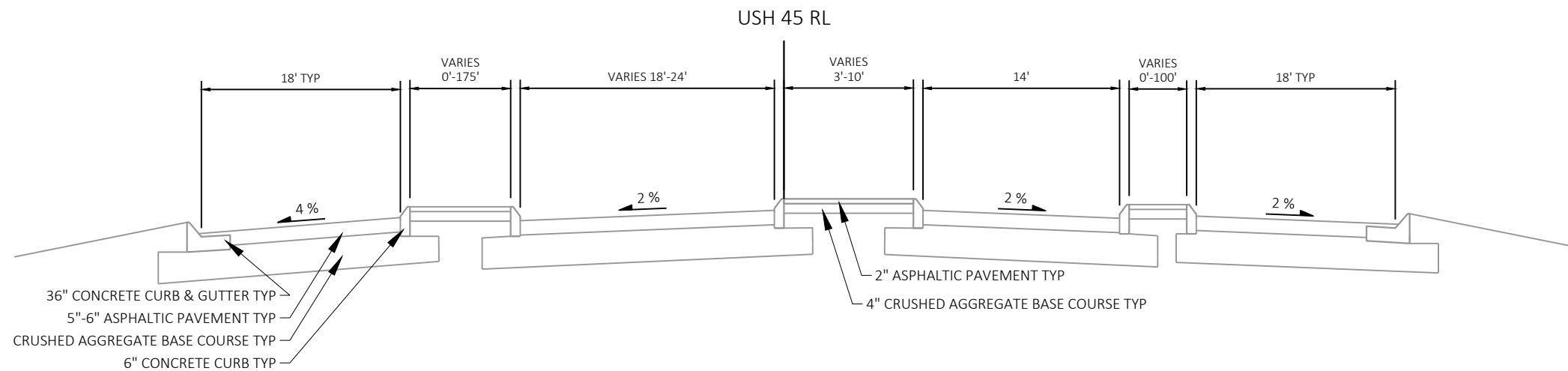
TYPICAL EXISTING SECTION

USH 8
STA 427+00.00 - STA 448+13.50



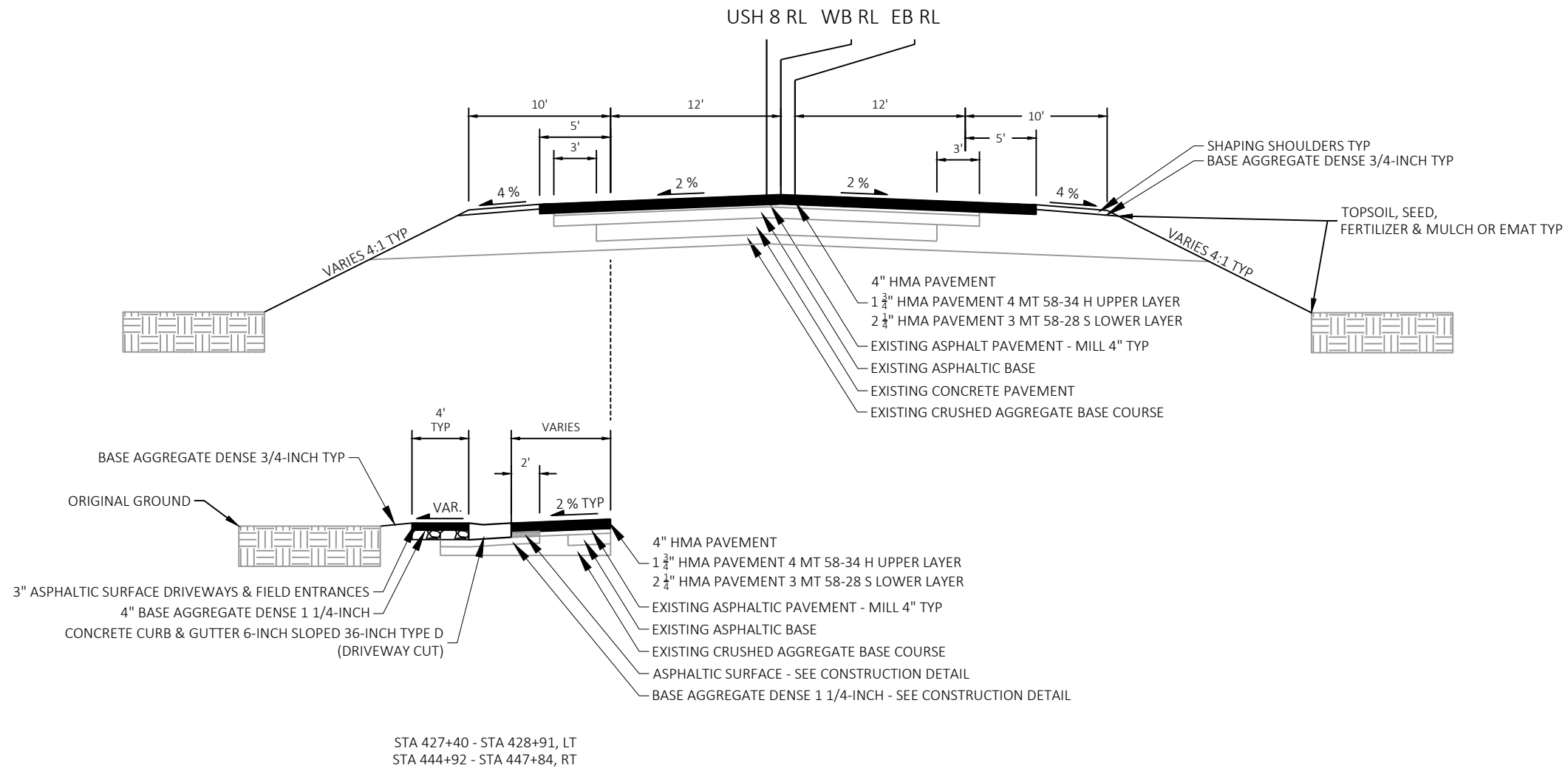
TYPICAL EXISTING SECTION

USH 45
STA 1410+00 - STA 1415+62



TYPICAL EXISTING SECTION

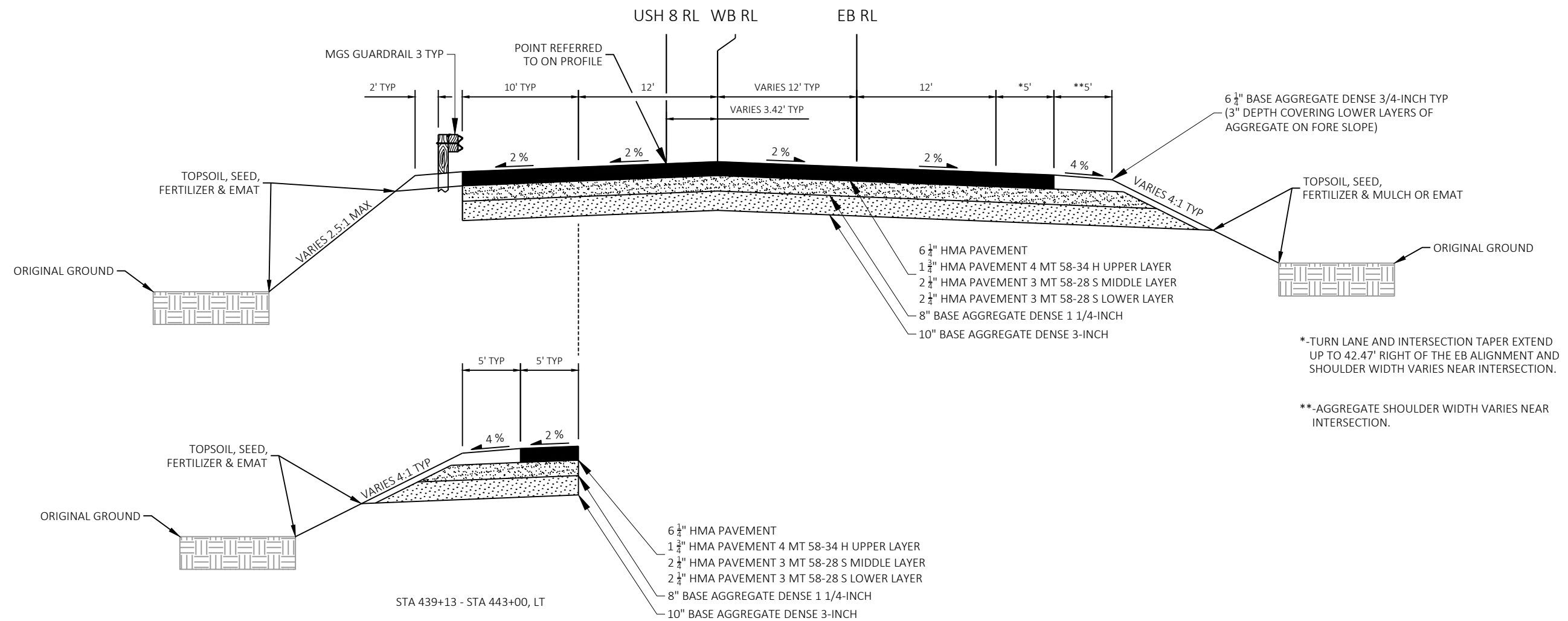
USH 45
STA 1415+62 - STA 1418+43



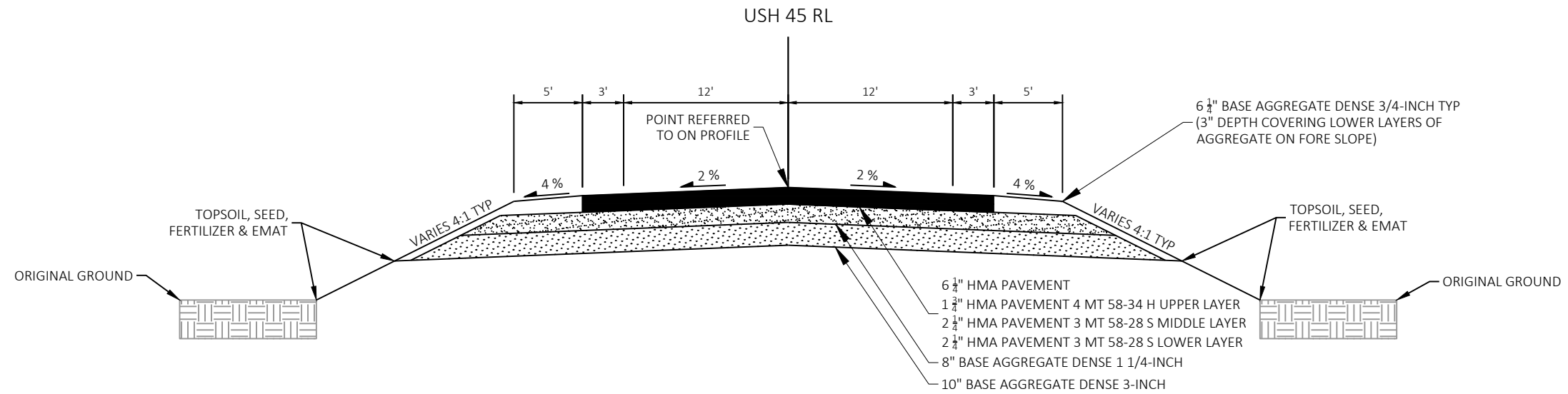
NOTE: STA 444+92 - STA 447+84, RT CURB &
GUTTER TYPICALLY HAS A FULL 6-INCH SLOPED
CURB HEAD WITH TURF RESTORATION REQUIRED
BEHIND THE CURB & GUTTER

TYPICAL FINISHED SECTION

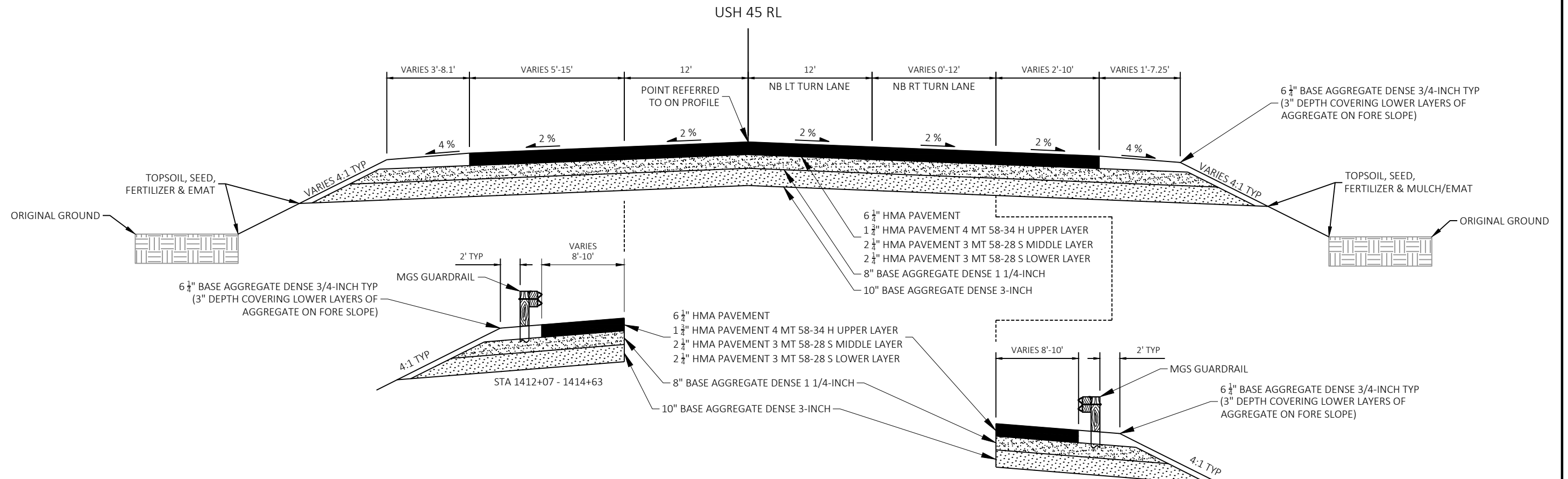
USH 8
STA 427+00.00 - STA 429+50.00
STA 443+00.00 - STA 448+13.50

**TYPICAL FINISHED SECTION**

USH 8
STA 429+50.00 - STA 443+00.00

**TYPICAL FINISHED SECTION**

USH 45
STA 1410+00.00 - STA 1414+18.91

**TYPICAL FINISHED SECTION**

USH 45
STA 1414+18.91 - STA 1418+31

PROJECT NO: 1590-12-73

HWY: USH 8

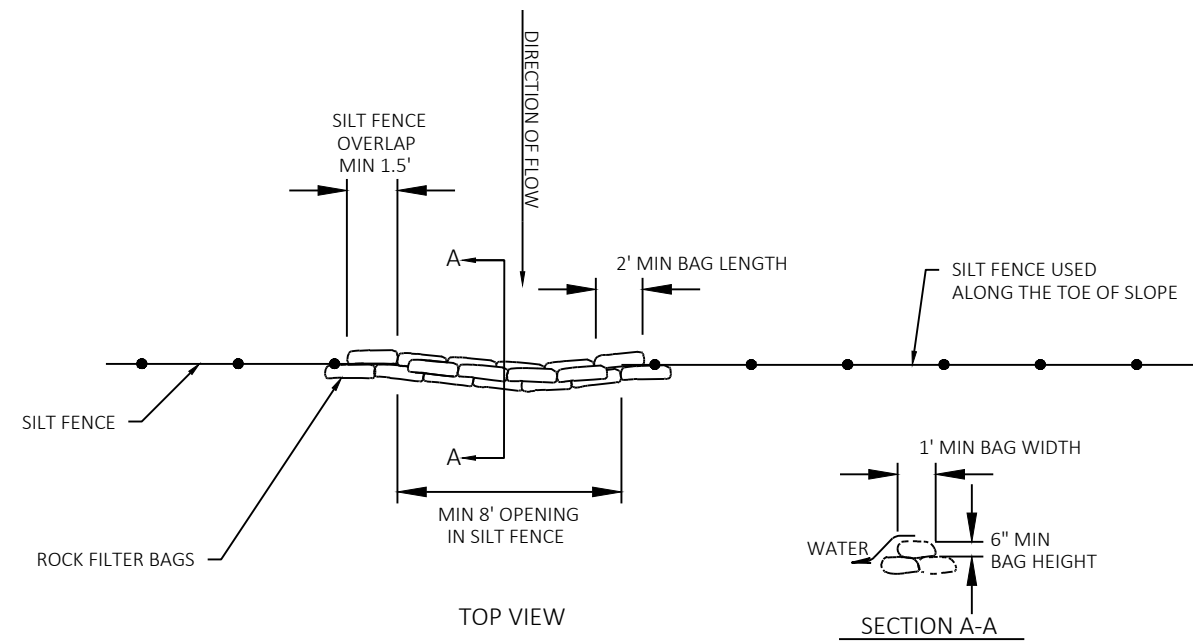
COUNTY: ONEIDA

TYPICAL SECTIONS

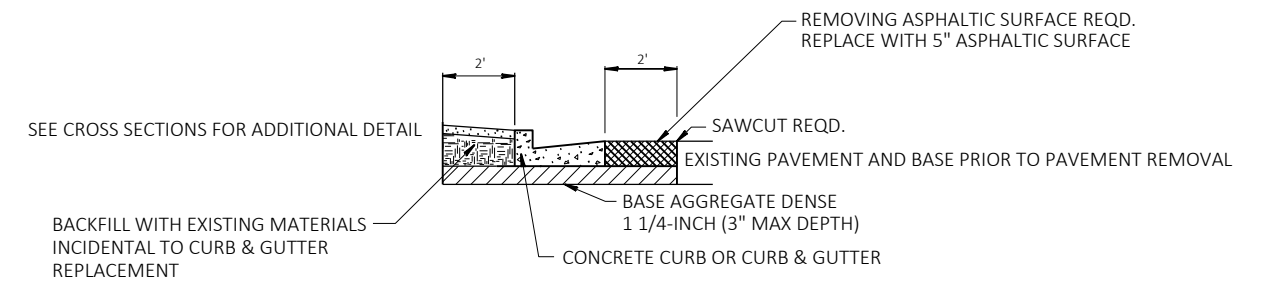
SHEET

8

E

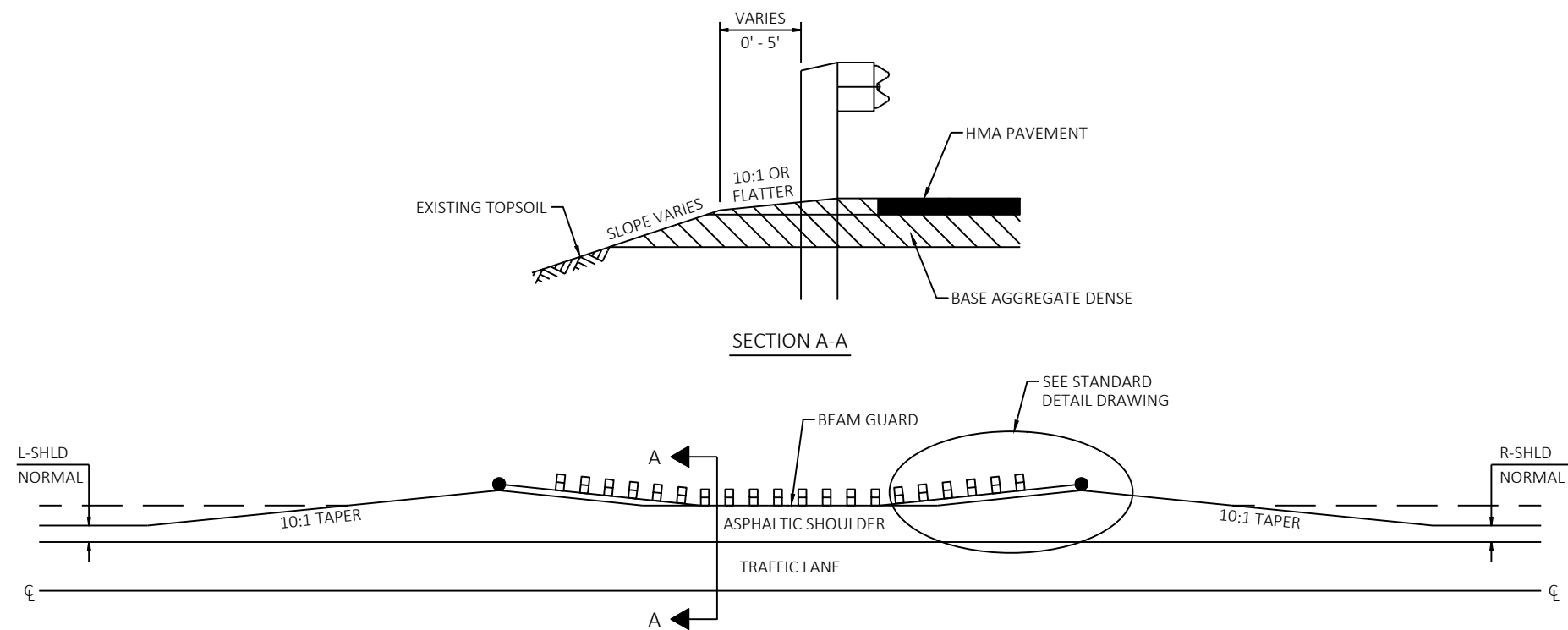


ROCK BAGS USED FOR SILT FENCE RELIEF

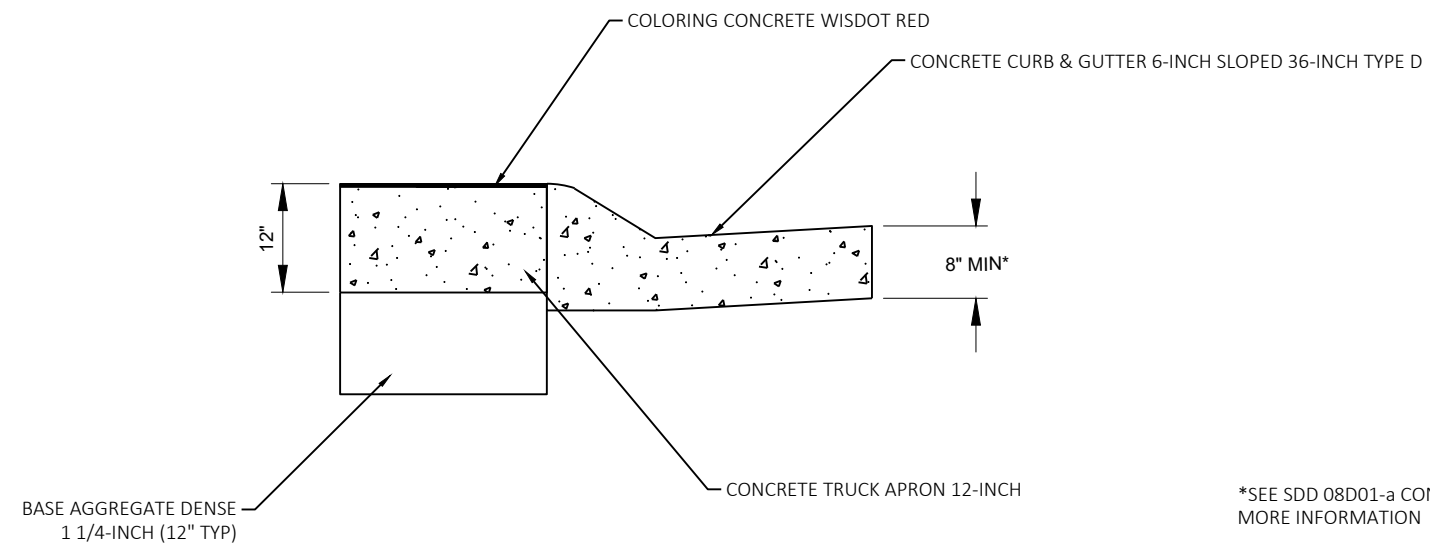


NOTES:
BASE COURSE BELOW PROPOSED CURB OR CURB & GUTTER SHALL BE CONSTRUCTED TO PROVIDE A SUITABLE BASE AS DETERMINED BY THE ENGINEER IN THE FIELD

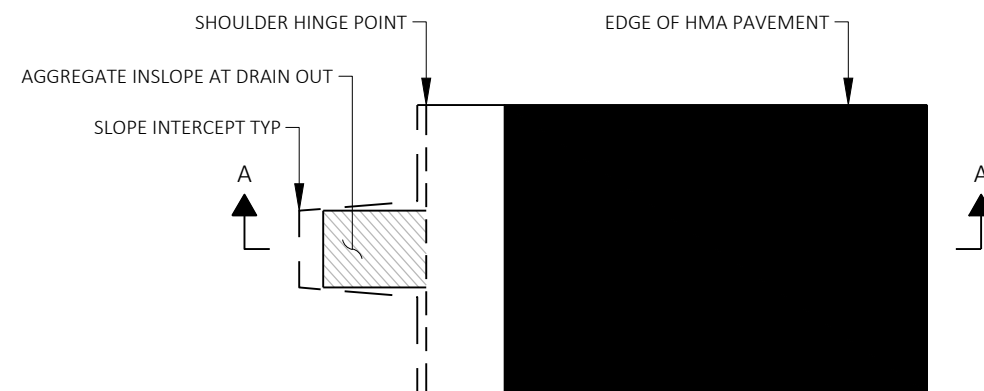
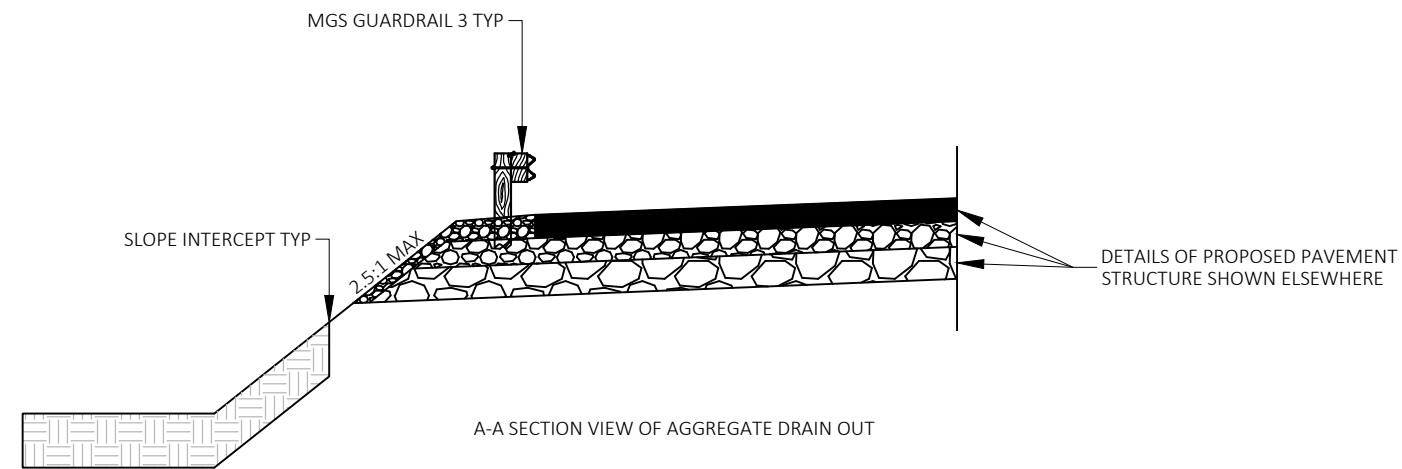
DETAIL FOR CURB & GUTTER REPLACEMENT



ASPHALTIC SHOULDER AT BEAM GUARD



*SEE SDD 08D01-a CONCRETE CURB AND GUTTER FOR MORE INFORMATION



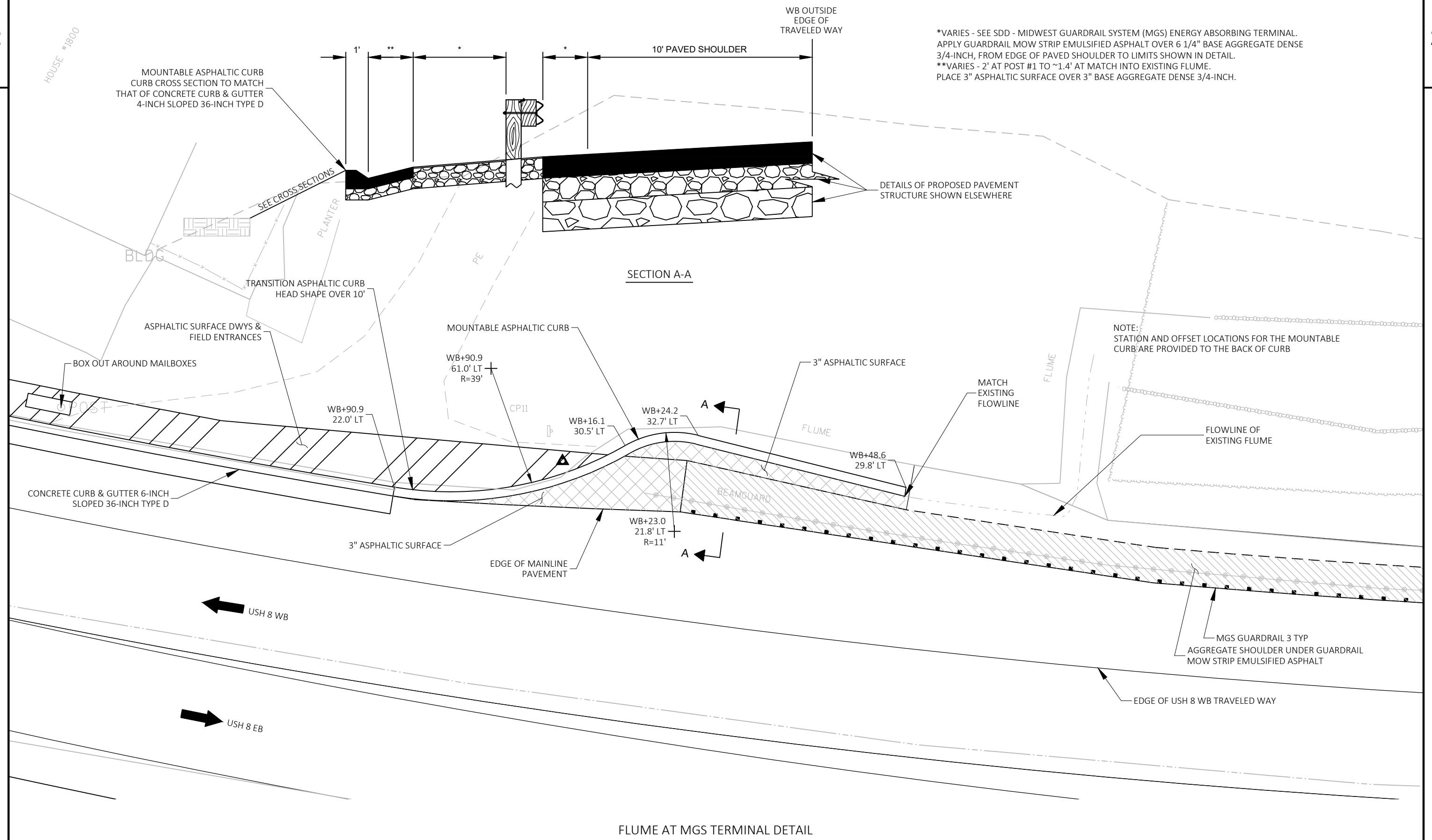
PLAN VIEW OF AGGREGATE DRAIN OUT

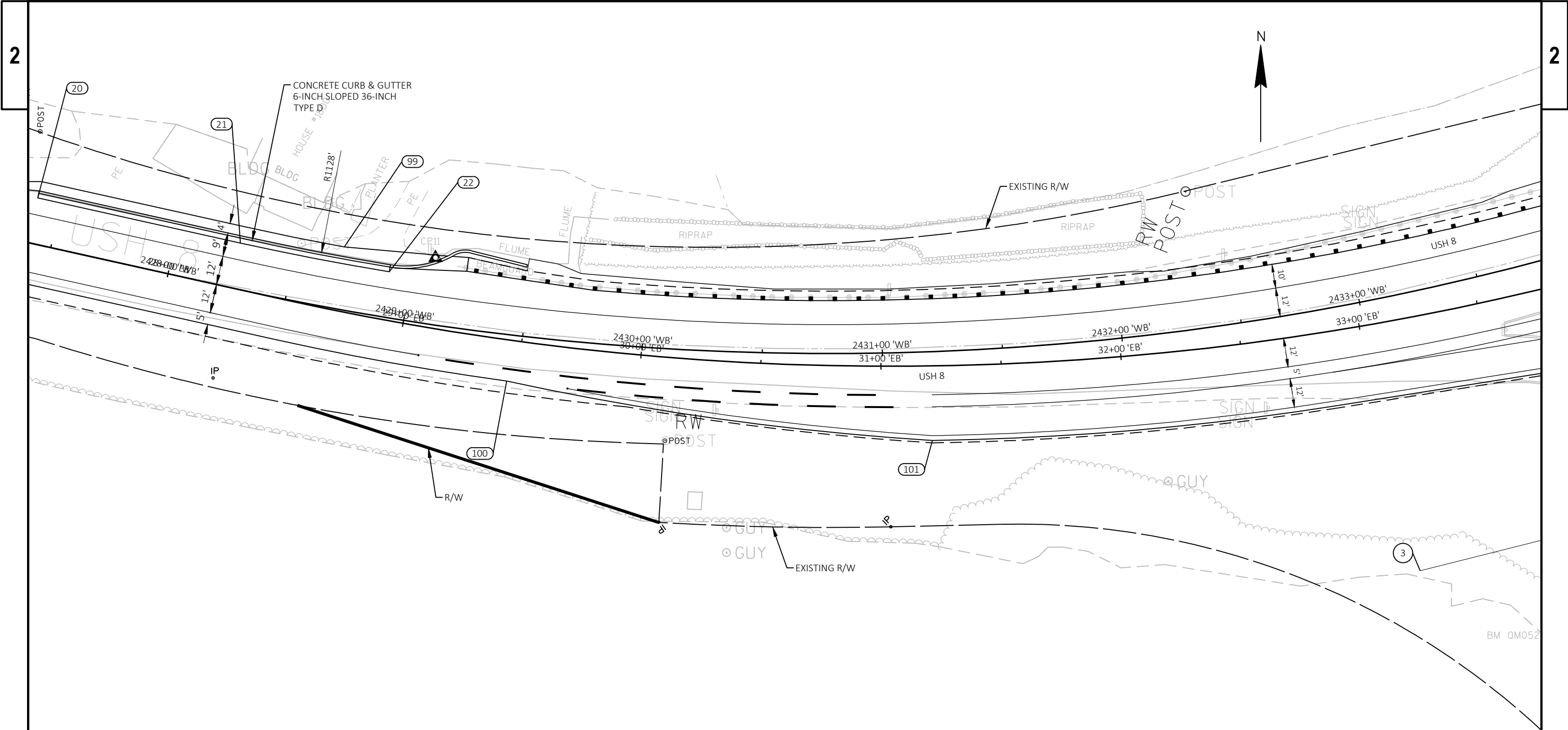
AGGREGATE SHOULDER DRAIN OUT DETAIL

PLACE AGGREGATE DRAIN OUT AT LOW POINTS
AND EVERY 200-FT MAXIMUM OR AS DIRECTED
BY THE ENGINEER

PAYMENT FOR DRAIN OUT SHALL BE UNDER THE
APPLICABLE BASE AGGREGATE DENSE BID ITEMS

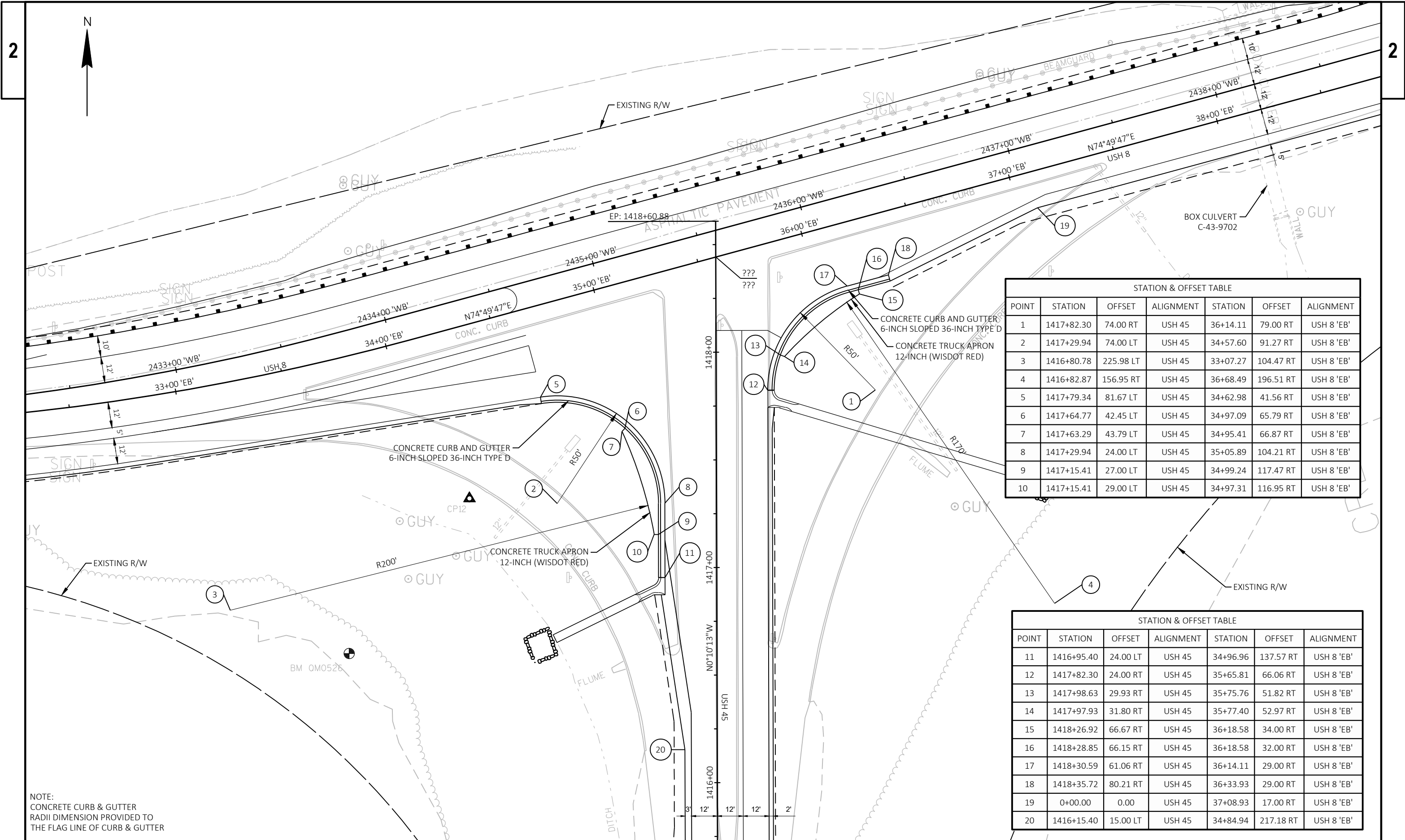
STA 439+13 - STA 443+00, LT





INTERSECTION DETAIL			
POINT NUMBER	STATION	OFFSET	ALIGNMENT
20	27+40.20	19.00' LT	Alignment - USH8_A2 'EB'
21	28+26.61	19.00' LT	Alignment - USH8_A2 'EB'
22	28+90.46	20.07' LT	Alignment - USH8_A2 'EB'

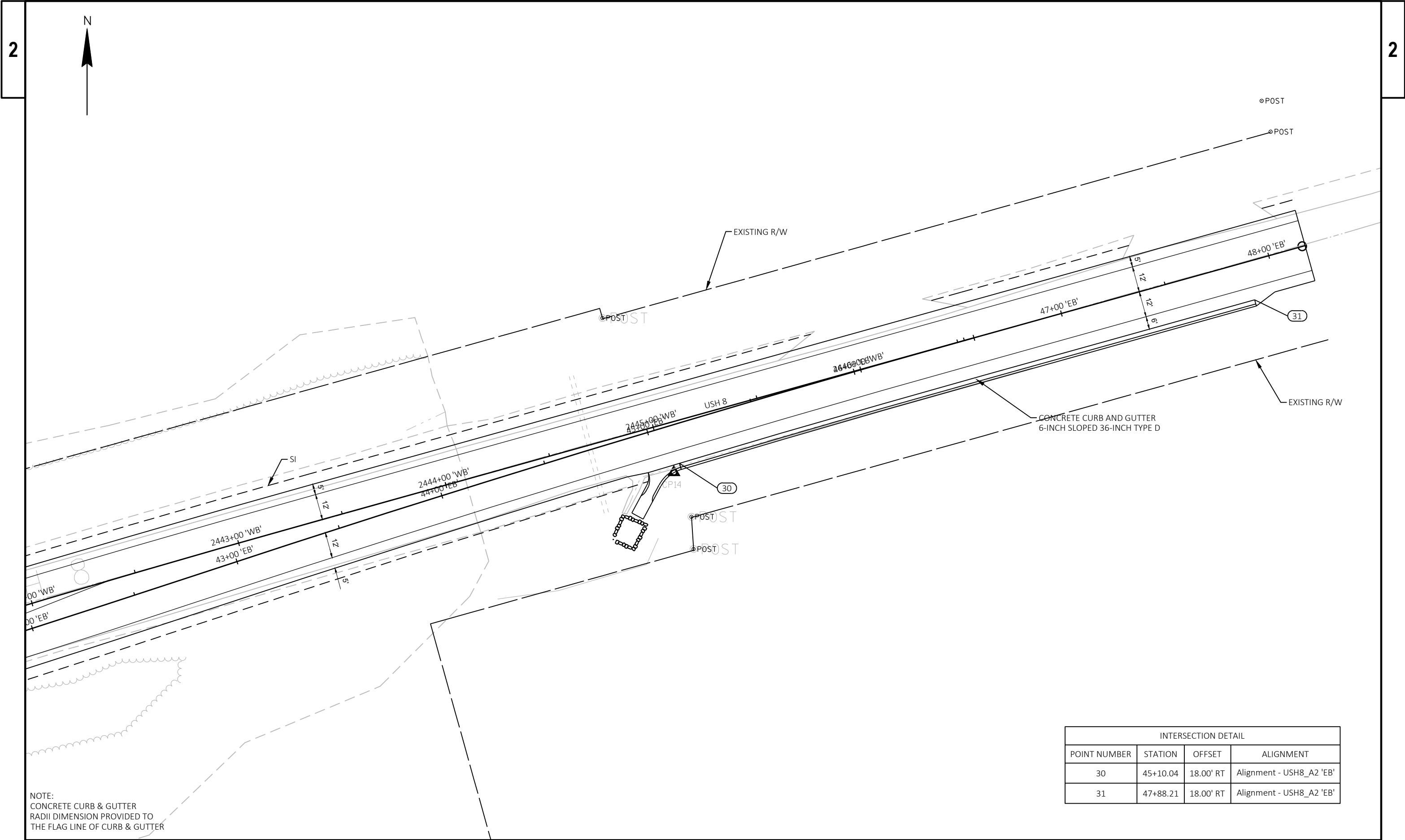
NOTE:
CONCRETE CURB & GUTTER
RADII DIMENSION PROVIDED TO
THE FLAG LINE OF CURB & GUTTER



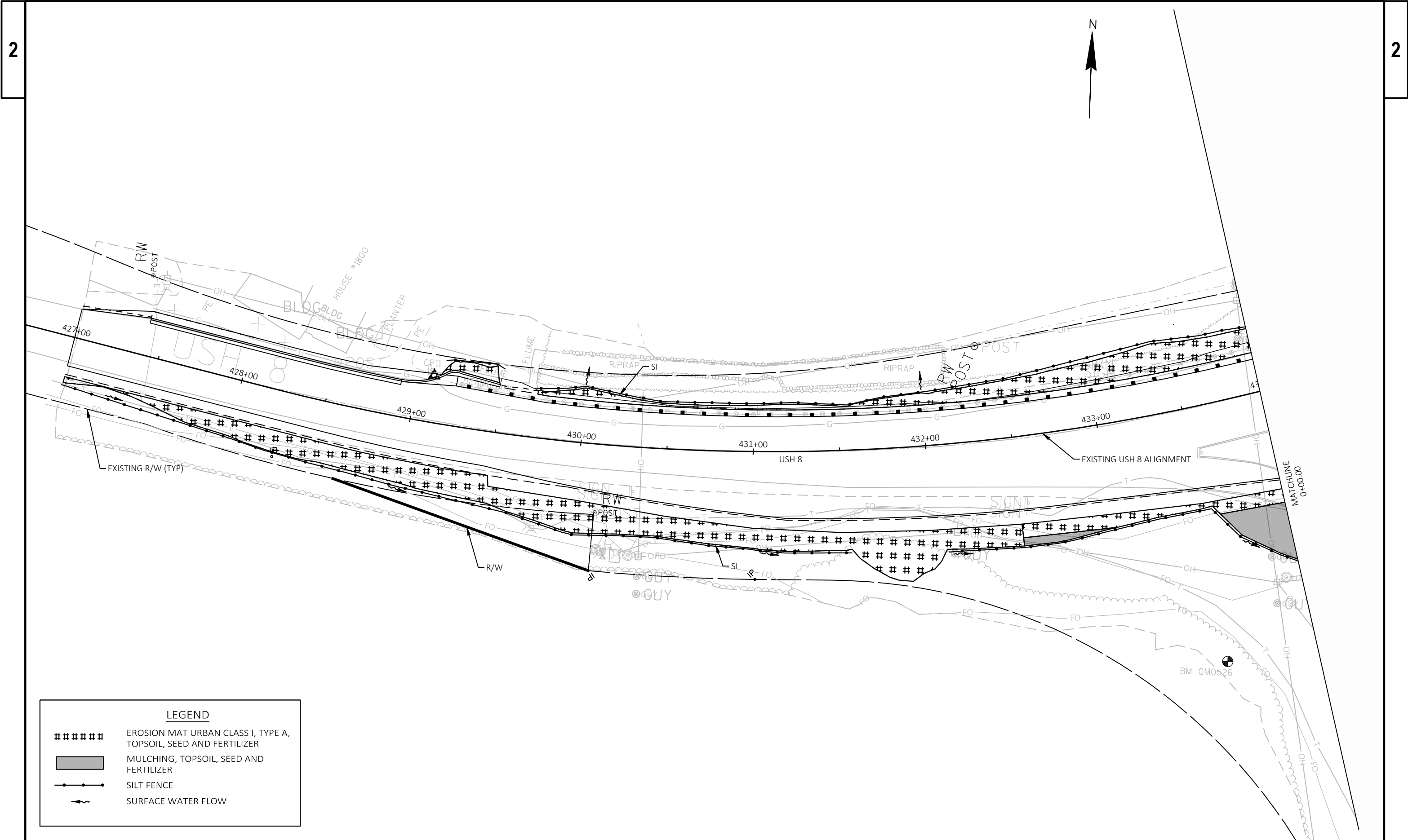
STATION & OFFSET TABLE						
POINT	STATION	OFFSET	ALIGNMENT	STATION	OFFSET	ALIGNMENT
1	1417+82.30	74.00 RT	USH 45	36+14.11	79.00 RT	USH 8 'EB'
2	1417+29.94	74.00 LT	USH 45	34+57.60	91.27 RT	USH 8 'EB'
3	1416+80.78	225.98 LT	USH 45	33+07.27	104.47 RT	USH 8 'EB'
4	1416+82.87	156.95 RT	USH 45	36+68.49	196.51 RT	USH 8 'EB'
5	1417+79.34	81.67 LT	USH 45	34+62.98	41.56 RT	USH 8 'EB'
6	1417+64.77	42.45 LT	USH 45	34+97.09	65.79 RT	USH 8 'EB'
7	1417+63.29	43.79 LT	USH 45	34+95.41	66.87 RT	USH 8 'EB'
8	1417+29.94	24.00 LT	USH 45	35+05.89	104.21 RT	USH 8 'EB'
9	1417+15.41	27.00 LT	USH 45	34+99.24	117.47 RT	USH 8 'EB'
10	1417+15.41	29.00 LT	USH 45	34+97.31	116.95 RT	USH 8 'EB'

STATION & OFFSET TABLE						
POINT	STATION	OFFSET	ALIGNMENT	STATION	OFFSET	ALIGNMENT
11	1416+95.40	24.00 LT	USH 45	34+96.96	137.57 RT	USH 8 'EB'
12	1417+82.30	24.00 RT	USH 45	35+65.81	66.06 RT	USH 8 'EB'
13	1417+98.63	29.93 RT	USH 45	35+75.76	51.82 RT	USH 8 'EB'
14	1417+97.93	31.80 RT	USH 45	35+77.40	52.97 RT	USH 8 'EB'
15	1418+26.92	66.67 RT	USH 45	36+18.58	34.00 RT	USH 8 'EB'
16	1418+28.85	66.15 RT	USH 45	36+18.58	32.00 RT	USH 8 'EB'
17	1418+30.59	61.06 RT	USH 45	36+14.11	29.00 RT	USH 8 'EB'
18	1418+35.72	80.21 RT	USH 45	36+33.93	29.00 RT	USH 8 'EB'
19	0+00.00	0.00	USH 45	37+08.93	17.00 RT	USH 8 'EB'
20	1416+15.40	15.00 LT	USH 45	34+84.94	217.18 RT	USH 8 'EB'

NOTE:
CONCRETE CURB & GUTTER
RADIi DIMENSION PROVIDED TO
THE FLAG LINE OF CURB & GUTTER

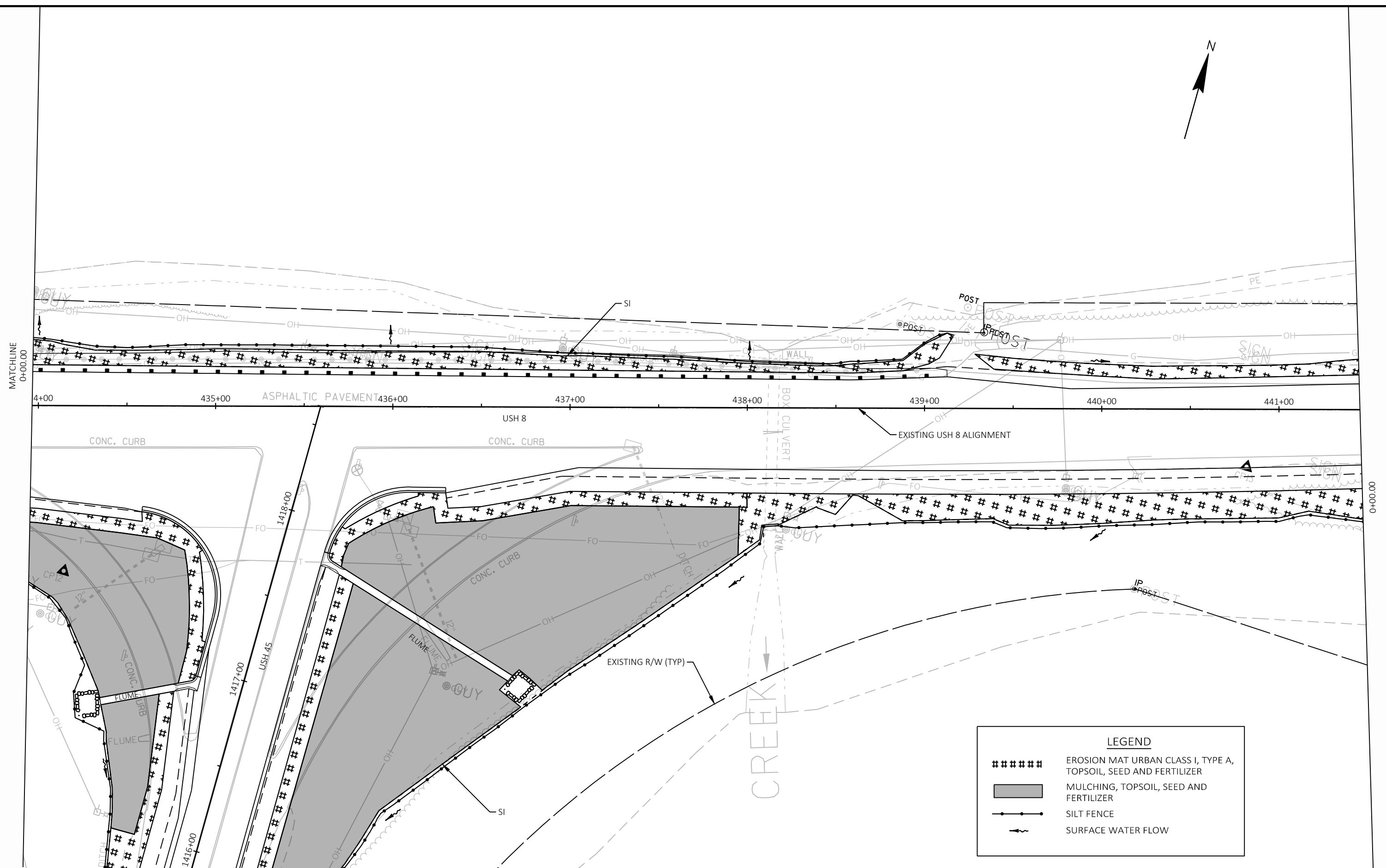


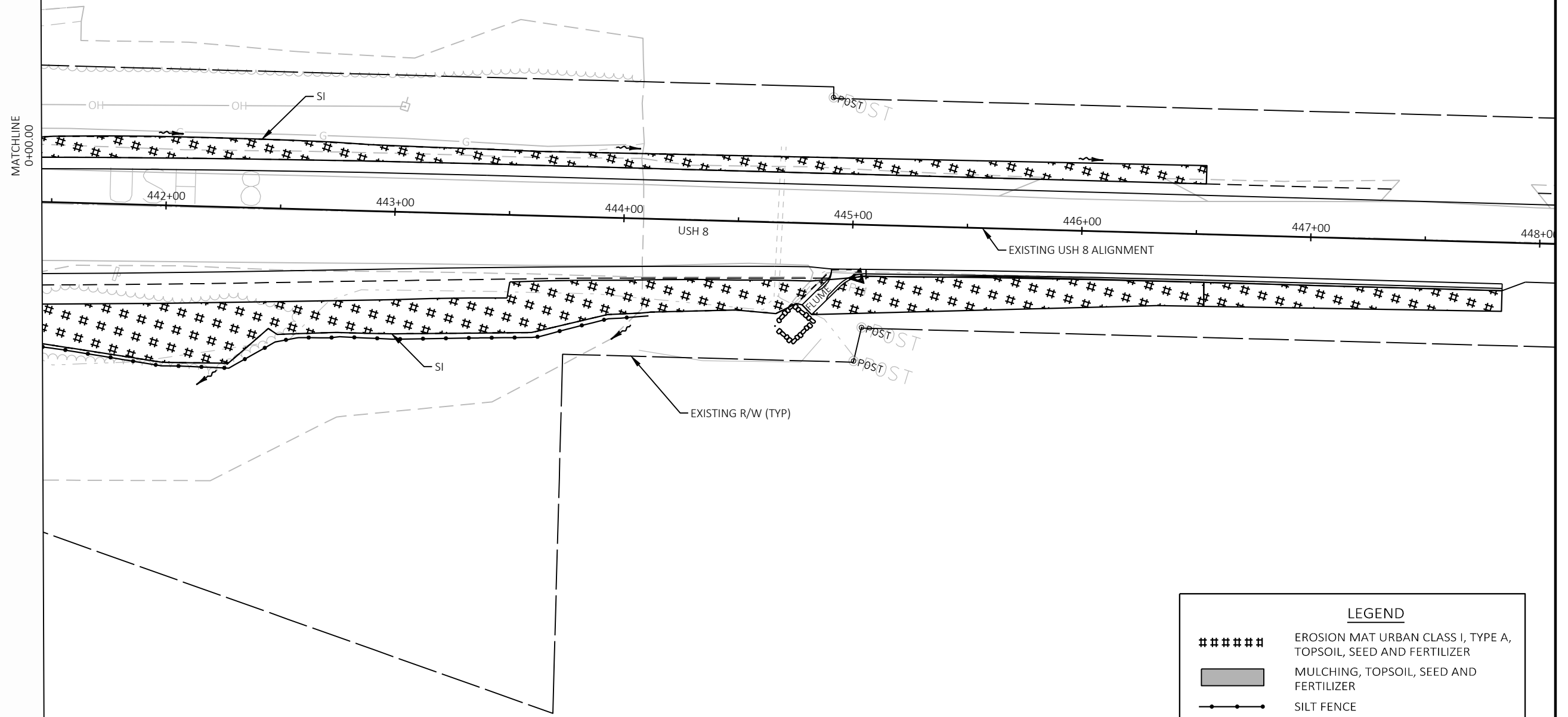
NOTE:
CONCRETE CURB & GUTTER
RADII DIMENSION PROVIDED TO
THE FLAG LINE OF CURB & GUTTER



LEGEND

#####	EROSION MAT URBAN CLASS I, TYPE A, TOPSOIL, SEED AND FERTILIZER
	MULCHING, TOPSOIL, SEED AND FERTILIZER
	SILT FENCE
	SURFACE WATER FLOW





LEGEND

#####

EROSION MAT URBAN CLASS I, TYPE A,
TOPSOIL, SEED AND FERTILIZER

MULCHING, TOPSOIL, SEED AND
FERTILIZER

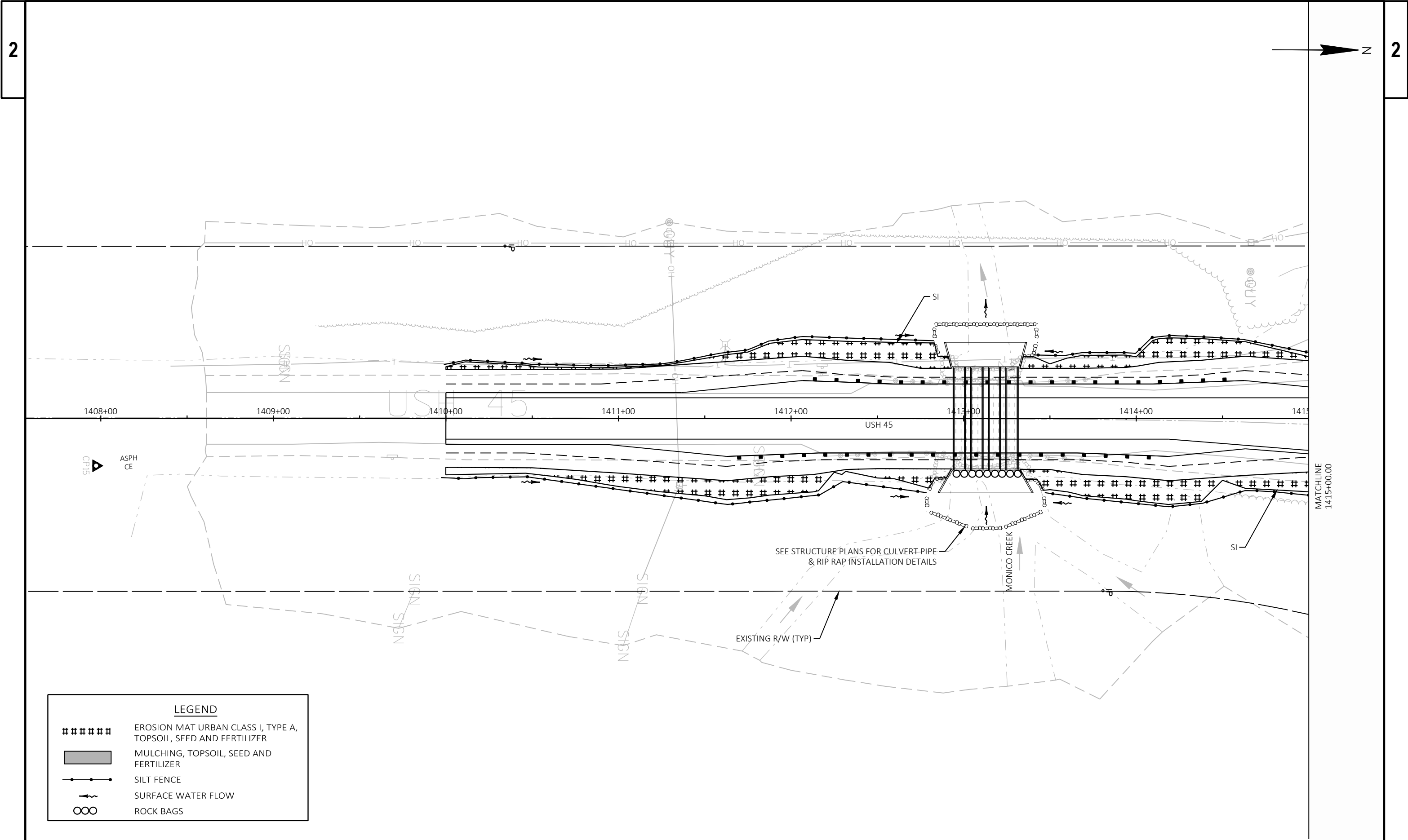
—●—●—●—

SILT FENCE

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SURFACE WATER FLOW





LEGEND

#####

EROSION MAT URBAN CLASS I, TYPE A, TOPSOIL, SEED AND FERTILIZER

MULCHING, TOPSOIL, SEED AND FERTILIZER

—●—●—●—

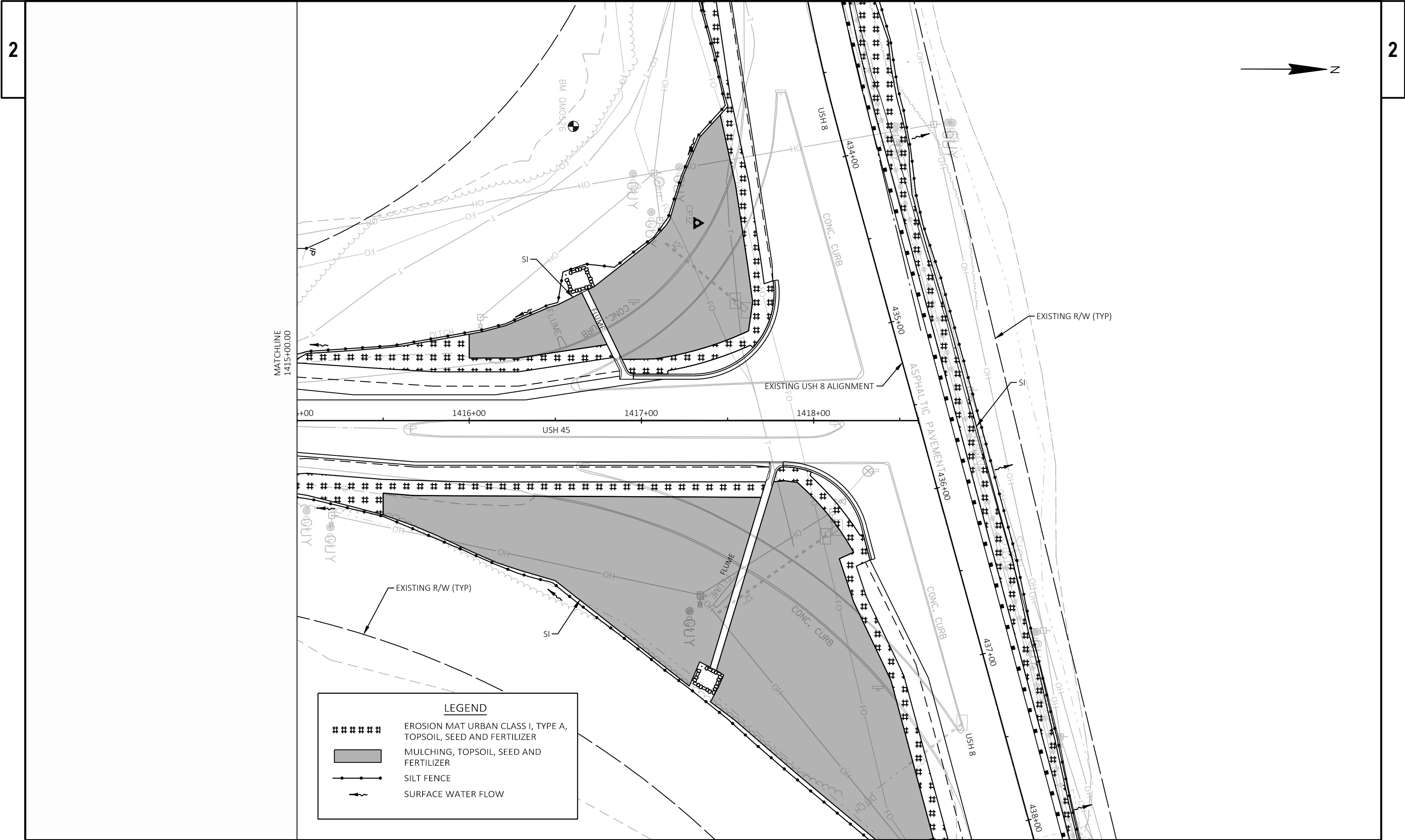
SILT FENCE

—~—~—~

SURFACE WATER FLOW

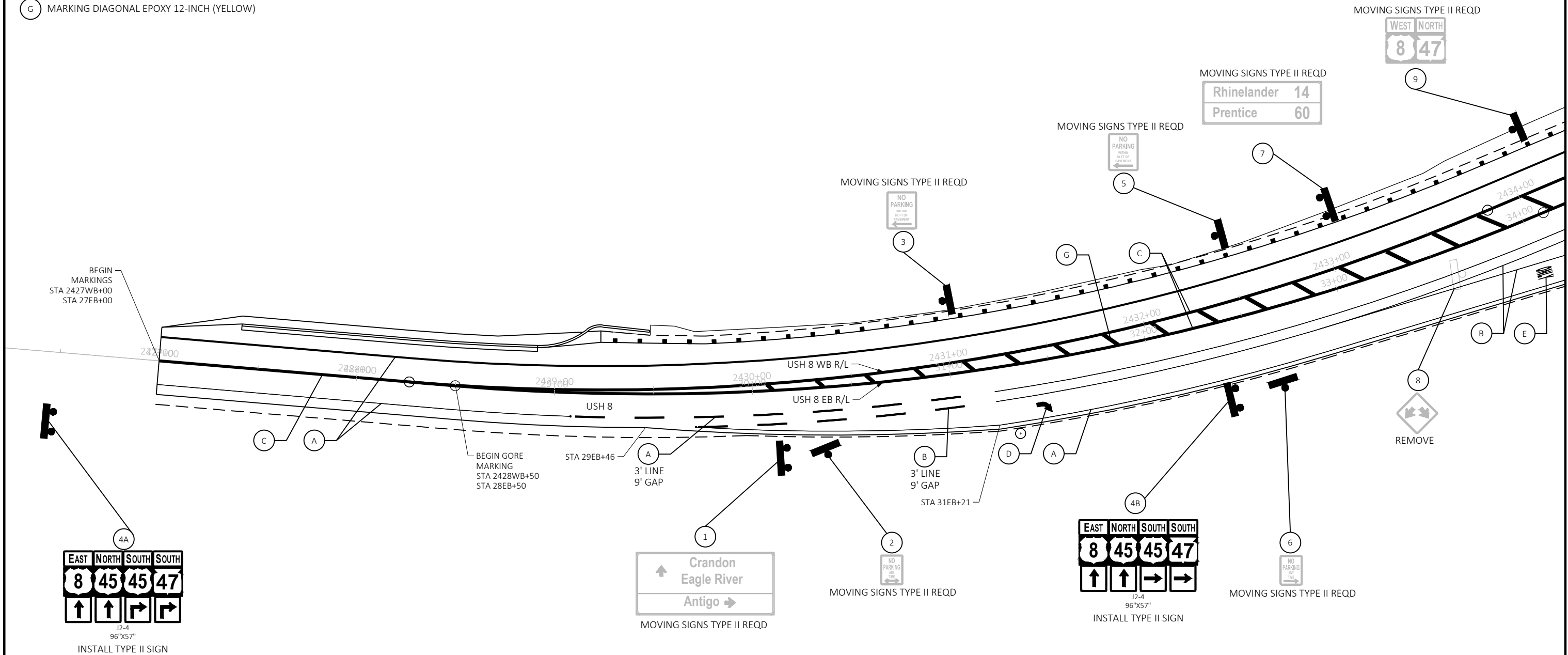
OOO

ROCK BAGS



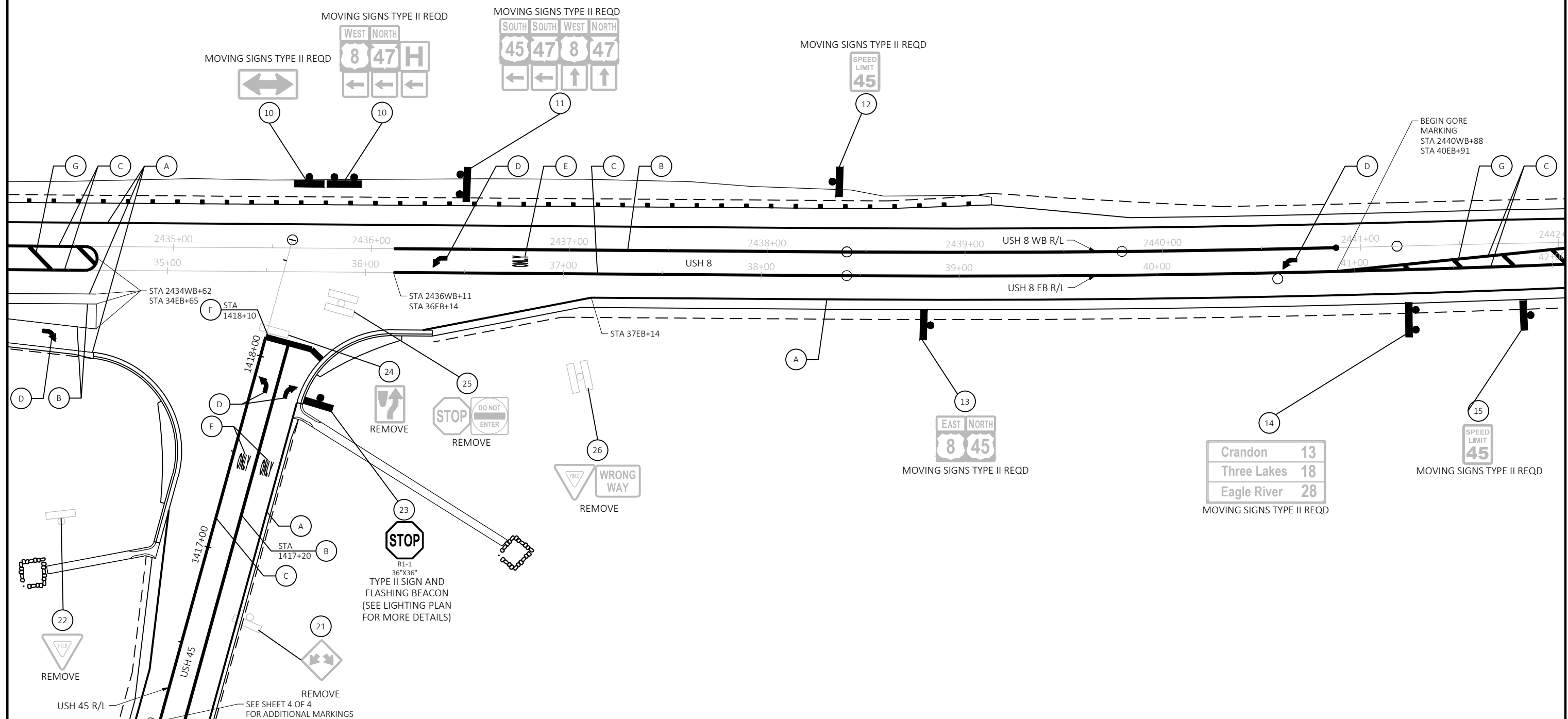
PAVEMENT MARKING LEGEND

- A MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- B MARKING LINE GROOVED WET REF EPOXY 8-INCH (WHITE)
- C MARKING LINE SAME DAY EPOXY 4-INCH (DOUBLE YELLOW)
- D MARKING ARROW EPOXY, TYPE 2 (WHITE)
- E MARKING WORD EPOXY (WHITE)
- F MARKING STOP LINE EPOXY 18-INCH (WHITE)
- G MARKING DIAGONAL EPOXY 12-INCH (YELLOW)



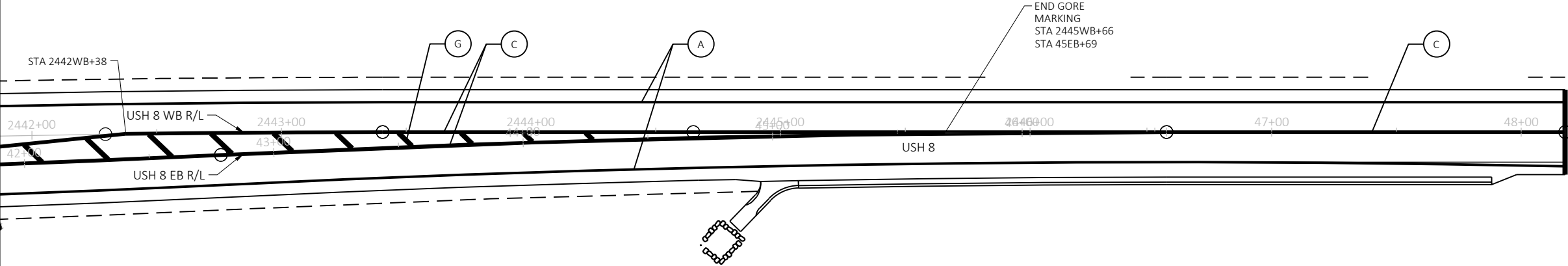
PAVEMENT MARKING LEGEND

- (A) MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- (B) MARKING LINE GROOVED WET REF EPOXY 8-INCH (WHITE)
- (C) MARKING LINE SAME DAY EPOXY 4-INCH (DOUBLE YELLOW)
- (D) MARKING ARROW EPOXY, TYPE 2 (WHITE)
- (E) MARKING WORD EPOXY (WHITE)
- (F) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (G) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)



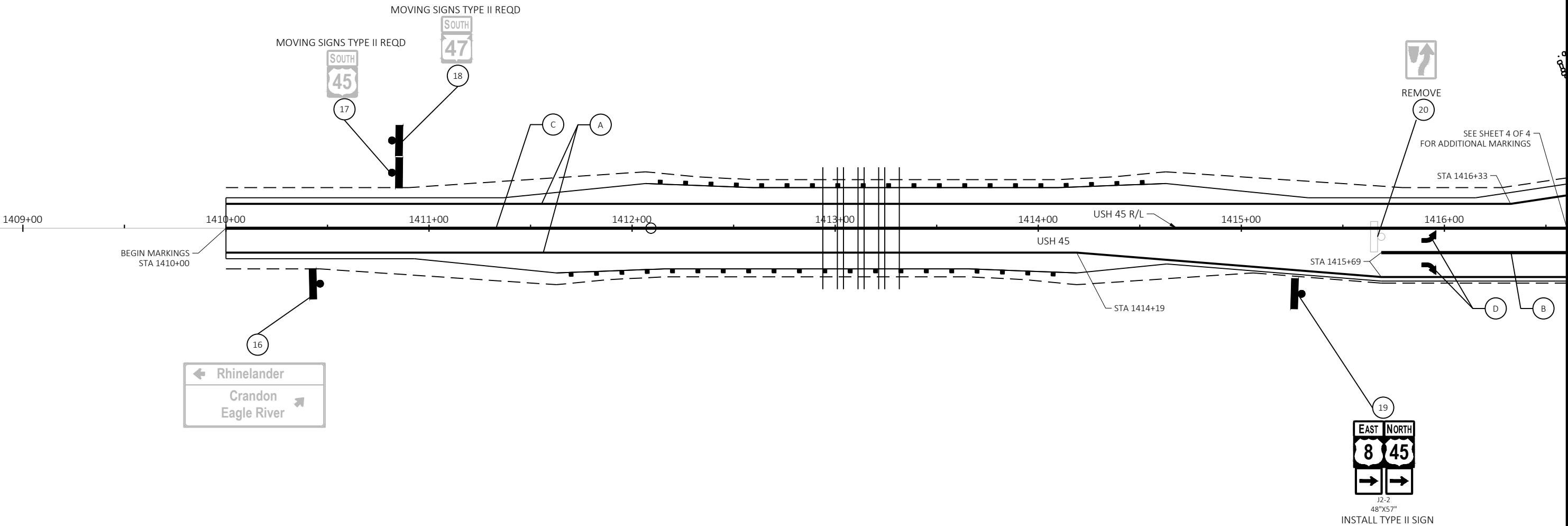
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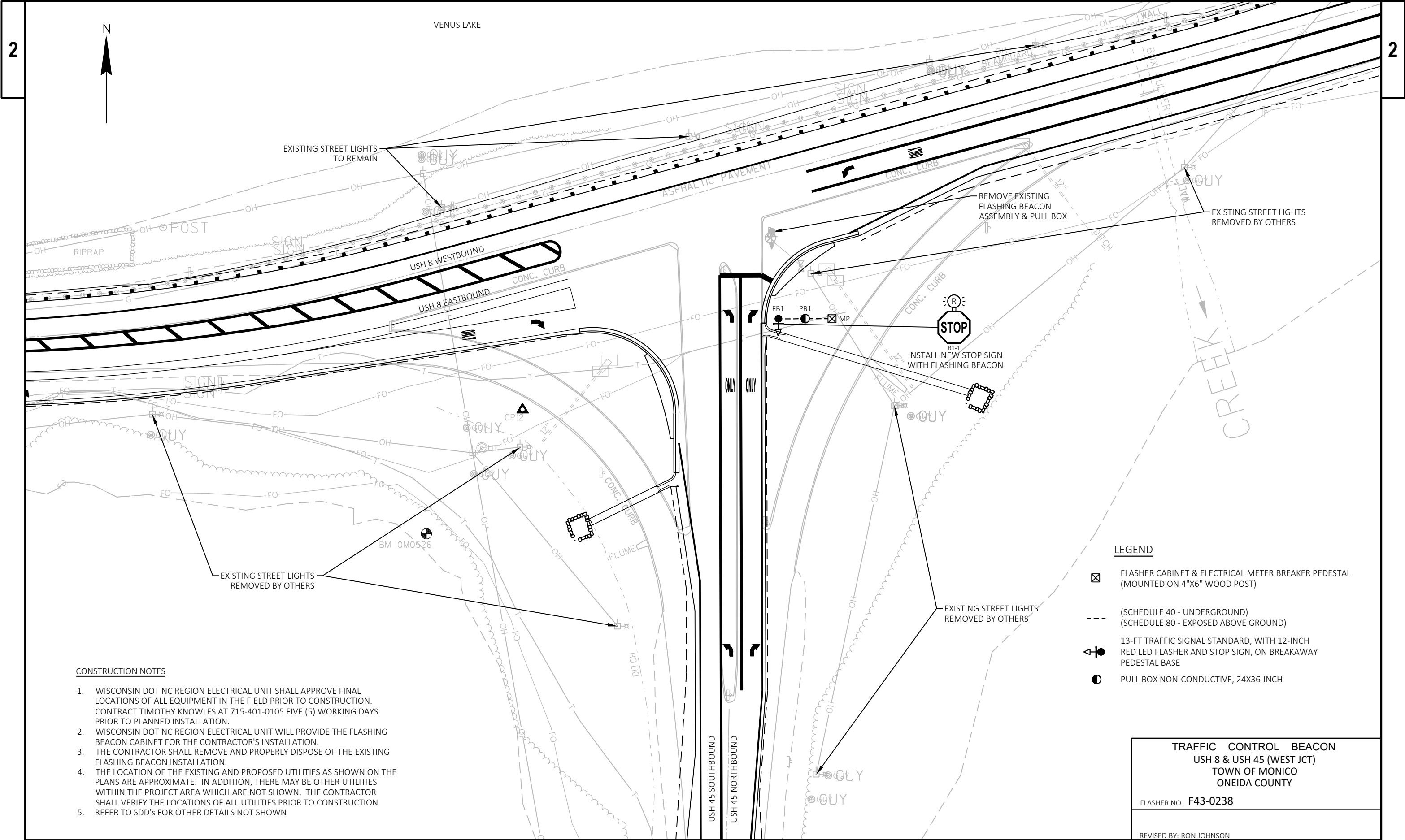


PAVEMENT MARKING LEGEND

- A MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- B MARKING LINE GROOVED WET REF EPOXY 8-INCH (WHITE)
- C MARKING LINE SAME DAY EPOXY 4-INCH (DOUBLE YELLOW)
- D MARKING ARROW EPOXY, TYPE 2 (WHITE)
- E MARKING WORD EPOXY (WHITE)
- F MARKING STOP LINE EPOXY 18-INCH (WHITE)
- G MARKING DIAGONAL EPOXY 12-INCH (YELLOW)







CONSTRUCTION NOTES

1. WISCONSIN DOT NC REGION ELECTRICAL UNIT SHALL APPROVE FINAL LOCATIONS OF ALL EQUIPMENT IN THE FIELD PRIOR TO CONSTRUCTION. CONTRACT TIMOTHY KNOWLES AT 715-401-0105 FIVE (5) WORKING DAYS PRIOR TO PLANNED INSTALLATION.
2. WISCONSIN DOT NC REGION ELECTRICAL UNIT WILL PROVIDE THE FLASHING BEACON CABINET FOR THE CONTRACTOR'S INSTALLATION.
3. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF THE EXISTING FLASHING BEACON INSTALLATION.
4. THE LOCATION OF THE EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.
5. REFER TO SDD's FOR OTHER DETAILS NOT SHOWN

LEGEND

- ☒ FLASHER CABINET & ELECTRICAL METER BREAKER PEDESTAL (MOUNTED ON 4"X6" WOOD POST)
- (SCHEDULE 40 - UNDERGROUND)  
--- (SCHEDULE 80 - EXPOSED ABOVE GROUND)
- 13-FT TRAFFIC SIGNAL STANDARD, WITH 12-INCH RED LED FLASHER AND STOP SIGN, ON BREAKAWAY PEDESTAL BASE
- PULL BOX NON-CONDUCTIVE, 24X36-INCH

TRAFFIC CONTROL BEACON  
USH 8 & USH 45 (WEST JCT)  
TOWN OF MONICO  
ONEIDA COUNTY

FLASHER NO. F43-0238

REVISED BY: RON JOHNSON

PRE-STAGE 1  
PLACE G20-57 NOTIFICATION SIGNAGE ON USH 8 AND USH 45. SEE STAGE 1 TRAFFIC CONTROL PLANS FOR ADDITIONAL INFORMATION.

- STAGE 1
- CONSTRUCTION
- PAVE TEMPORARY PAVEMENT TO ACCOMMODATE TRAFFIC IN FUTURE STAGES
- TRAFFIC
- TRAFFIC REMAINS THE SAME AS THE EXISTING CONDITION WITH SINGLE LANE CLOSURES AND FLAGGING OPERATIONS

- STAGE 2
- CONSTRUCTION
- RECONSTRUCT THE SOUTH SIDE OF USH 8 FROM STA. 429+50 TO STA. 434+61 AND STA. 436+77 TO STA. 443+50 INCLUDING ALL LOWER LAYER PAVING - WORK CONTINUES INTO STAGE 3
  - BEGIN PREPARATION FOR STAGED CULVERT CONSTRUCTION ALONG USH 45

- TRAFFIC
- USH 8
- ALL TRAFFIC UNDER SINGLE LANE CLOSURE
  - WESTBOUND LANE IS 12' WITH 2' MINIMUM SHOULDER ADJACENT TO GUARDRAIL
  - EASTBOUND LANE IS 12' WITH 3' SHOULDER TO THE WORK ZONE (TYPICAL)

- USH 45
- BOTH LANES ARE 12' WITH 5' SHOULDERS

NOTE:  
ALL STATION AND OFFSET REFERENCES IN THE TRAFFIC CONTROL PLANS ARE PROVIDED TO THE EXISTING USH 8 & USH 45 REFERENCE LINES

EXISTING PAVEMENT STRUCTURES SHOWN IN THE PLANS ARE BASED ON AS-BUILT DATA. SAW CUTS AND REMOVALS MAY REQUIRE ADDITIONAL EFFORT.

- STAGE 3
- CONSTRUCTION
- CONTINUE RECONSTRUCTING THE SOUTH SIDE OF USH 8 FROM STATION 429+50 TO STATION 443+50 INCLUDING LOWER LAYER PAVING
  - RECONSTRUCT USH 45 FROM STATION 1415+00 NORTH TO USH 8 INCLUDING LOWER LAYER PAVING
  - REPLACE TWO CULVERTS BELOW USH 45
  - INSTALL PERMANENT STOP SIGN ASSEMBLY ON USH 45 AT USH 8

- TRAFFIC
- USH 8
- ALL TRAFFIC UNDER SINGLE LANE CLOSURE
  - WESTBOUND LANE IS 12' WITH 2' MINIMUM SHOULDER ADJACENT TO GUARDRAIL
  - EASTBOUND LANE IS 12' WITH 3' SHOULDER TO THE WORK ZONE (TYPICAL)

- USH 45
- TRAFFIC IS DETOURED

- STAGE 4
- CONSTRUCTION
- RECONSTRUCT THE MIDDLE PORTION OF USH 8 FROM STA. 429+50 TO STA. 434+61 AND STA. 436+10 TO STA. 443+50 INCLUDING LOWER LAYER PAVING
  - PREPARE FOR THE FINAL TWO CULVERT REPLACEMENTS BELOW USH 45

- TRAFFIC
- USH 8
- WESTBOUND LANE REMAINS THE SAME AS STAGES 2 AND 3 WITH 12' LANE AND 2' MINIMUM SHOULDER ADJACENT TO GUARDRAIL
  - USH 8 EASTBOUND IS SHIFTED DOWN TO THE NEWLY CONSTRUCTED SOUTHERN PORTION OF USH 8

- USH 45
- TRAFFIC IS SIMILAR TO THE FINAL PROPOSED CONDITION
  - BOTH LANES ARE 12' WITH 1' SHOULDER

- STAGE 5
- CONSTRUCTION
- RECONSTRUCT THE NORTH PORTION OF USH 8 FROM STATION 429+50 TO STATION 443+50 INCLUDING LOWER LAYER PAVING
  - PREPARE FOR THE FINAL TWO CULVERT REPLACEMENTS BELOW USH 45

- TRAFFIC
- USH 8
- EASTBOUND AND WESTBOUND LANES ARE SHIFTED ONTO THE RECENTLY CONSTRUCTED SOUTHERN PORTION OF USH 8
  - BOTH LANES ARE 12' WITH 2' SHOULDERS
- USH 45
- TRAFFIC IS SIMILAR TO THE FINAL PROPOSED CONDITION
  - BOTH LANES ARE 12' WITH 1' SHOULDER

- STAGE 6
- CONSTRUCTION
- RECONSTRUCT THE NORTH PORTION OF USH 8 FROM STATION 429+50 TO STATION 443+50 INCLUDING LOWER LAYER PAVING
  - REPLACE LAST TWO CULVERT PIPES BELOW USH 45
  - RECONSTRUCT THE SOUTHERN PORTION OF USH 45 INCLUDING LOWER LAYER PAVING

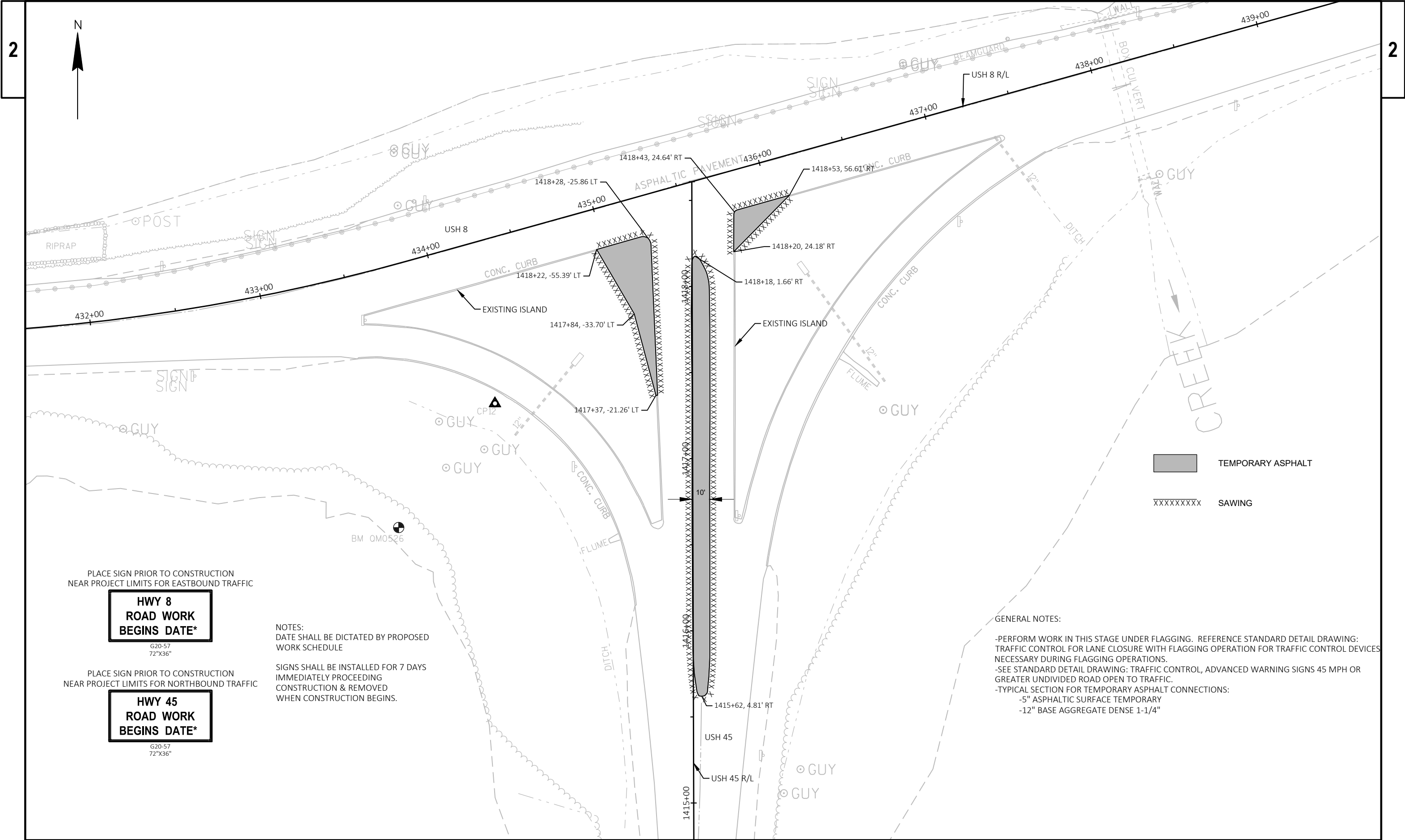
- TRAFFIC
- USH 8
- TRAFFIC REMAINS THE SAME AS STAGE 5.
  - BOTH LANES ARE 12' WITH 2' SHOULDERS

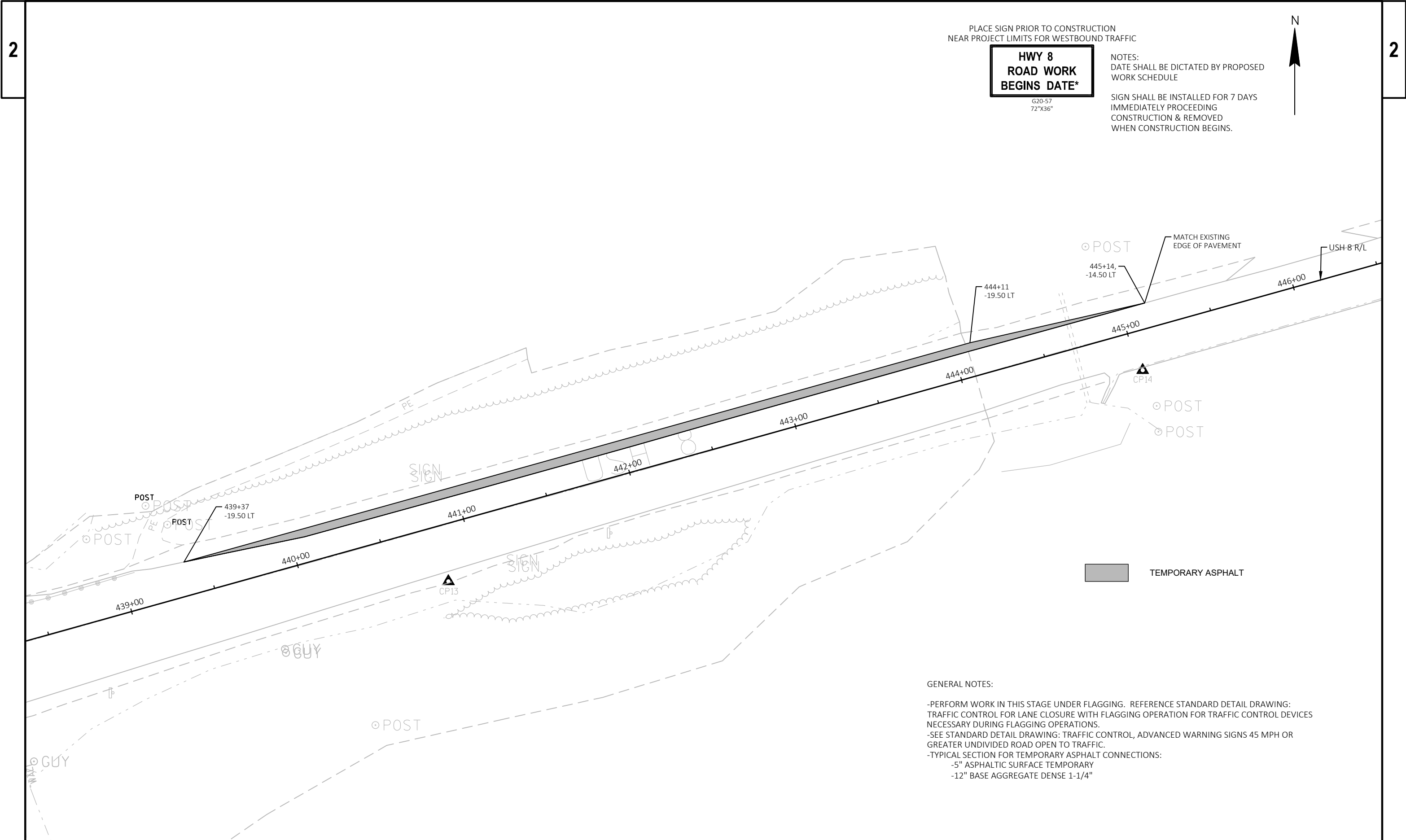
- USH 45
- TRAFFIC IS DETOURED

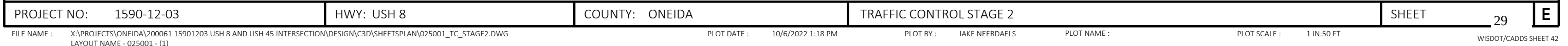
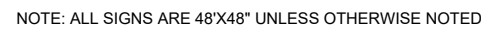
- STAGE 7
- CONSTRUCTION
- USH 45 NB/SB AND USH 8 EB/WB FINAL SURFACE UPPER LAYER PAVING (MAINLINE & SHOULDERS) AND COMPLETION OF ALL INCIDENTAL CONSTRUCTION.

- TRAFFIC
- USH 8
- TO BEGIN STAGE 7, TRAFFIC REMAINS THE SAME AS STAGES 5 AND 6 TO ACCOMMODATE THE COMPLETION OF USH 8 WB CONSTRUCTION.
  - UPON COMPLETION OF USH 8 WB CONSTRUCTION (PAVING AND GUARDRAIL), SHIFT TRAFFIC TO THE PERMANENT CONDITION LOCATION AND COMPLETE WORK WITH SINGLE LANE CLOSURES WITH A FLAGGING OPERATION AND SHOULDER CLOSURES.
- USH 45
- TRAFFIC IS IN THE PERMANENT CONDITION, COMPLETE WORK WITH SINGLE LANE CLOSURES WITH A FLAGGING OPERATION AND SHOULDER CLOSURES.





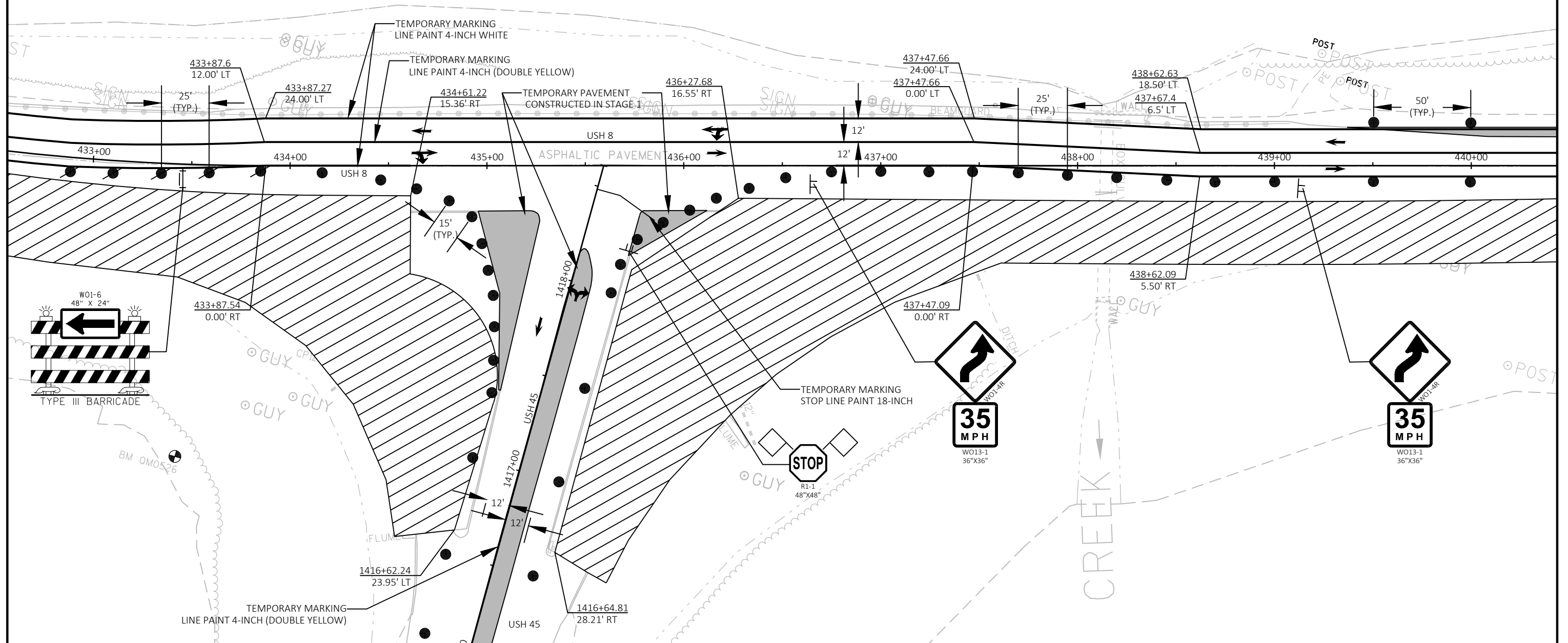




LEGEND

-  TYPE II / III BARRICADE
-  TYPE II / III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  DIRECTION OF TRAFFIC
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA

NOTE: ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED



PROJECT NO: 1590-12-73

HWY: USH 8

COUNTY: ONEIDA

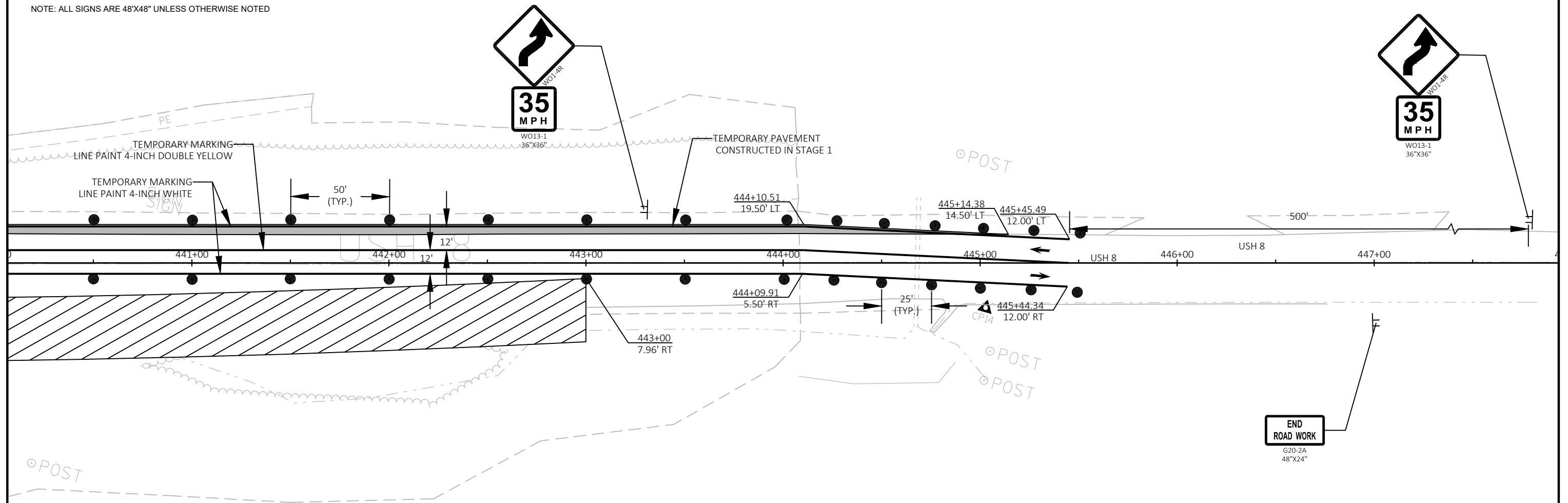
TRAFFIC CONTROL STAGE 2

SHEET

30

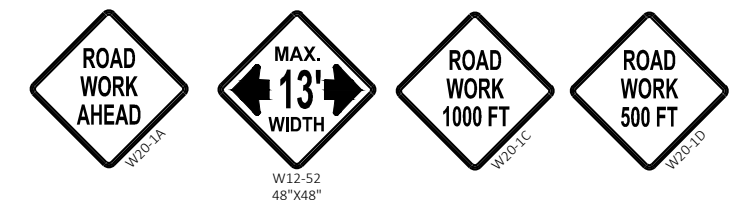
E

|                                                                                   |                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------|
|  | TYPE II / III BARRICADE                            |
|  | TYPE II / III BARRICADE WITH ATTACHED SIGN         |
|  | TRAFFIC CONTROL DRUM                               |
|  | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
|  | DIRECTION OF TRAFFIC                               |
|  | SIGN ON TEMPORARY SUPPORT                          |
|  | WORK AREA                                          |



SEE STANDARD DETAIL DRAWING: TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC

SEE STANDARD DETAIL DRAWING: ADVANCED WIDTH RESTRICTION SIGNING

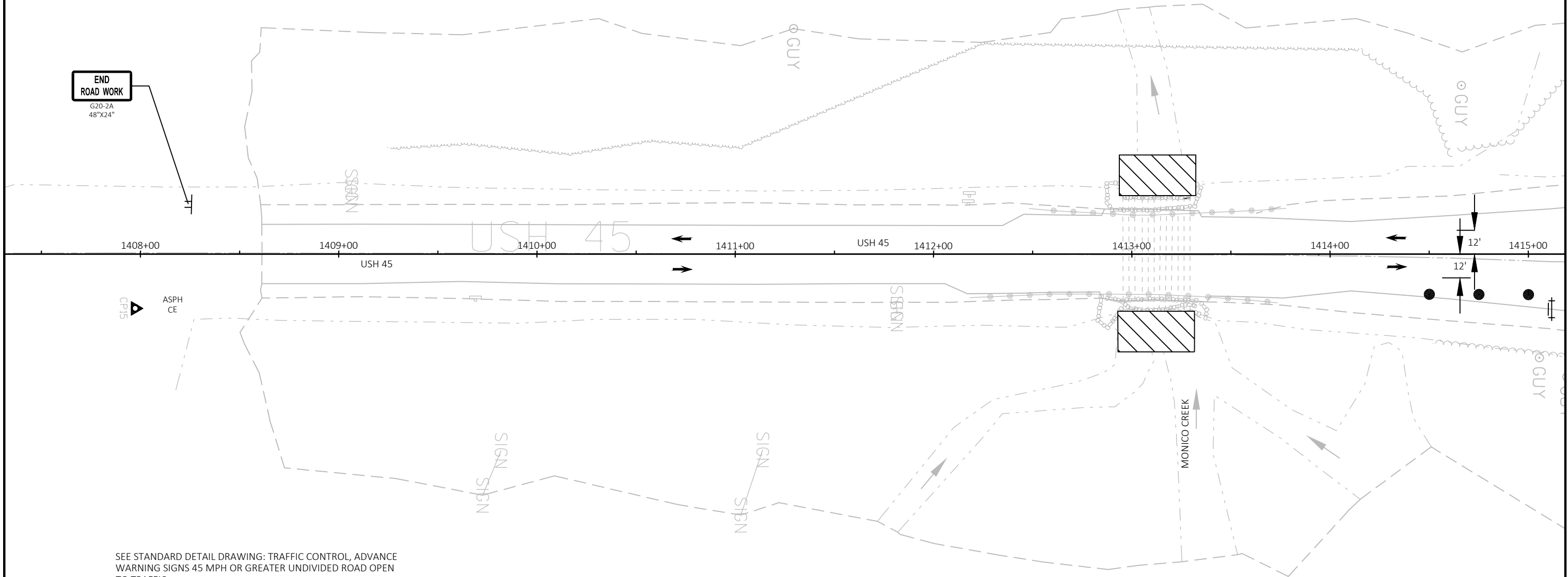


LEGEND

-  TYPE II / III BARRICADE
-  TYPE II / III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  DIRECTION OF TRAFFIC
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA

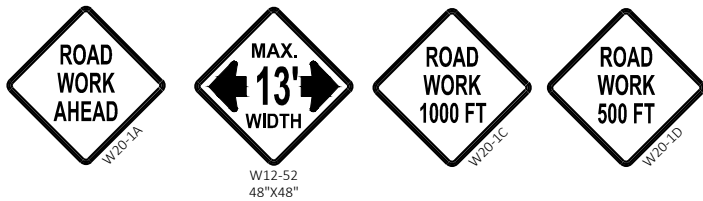


NOTE: ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED

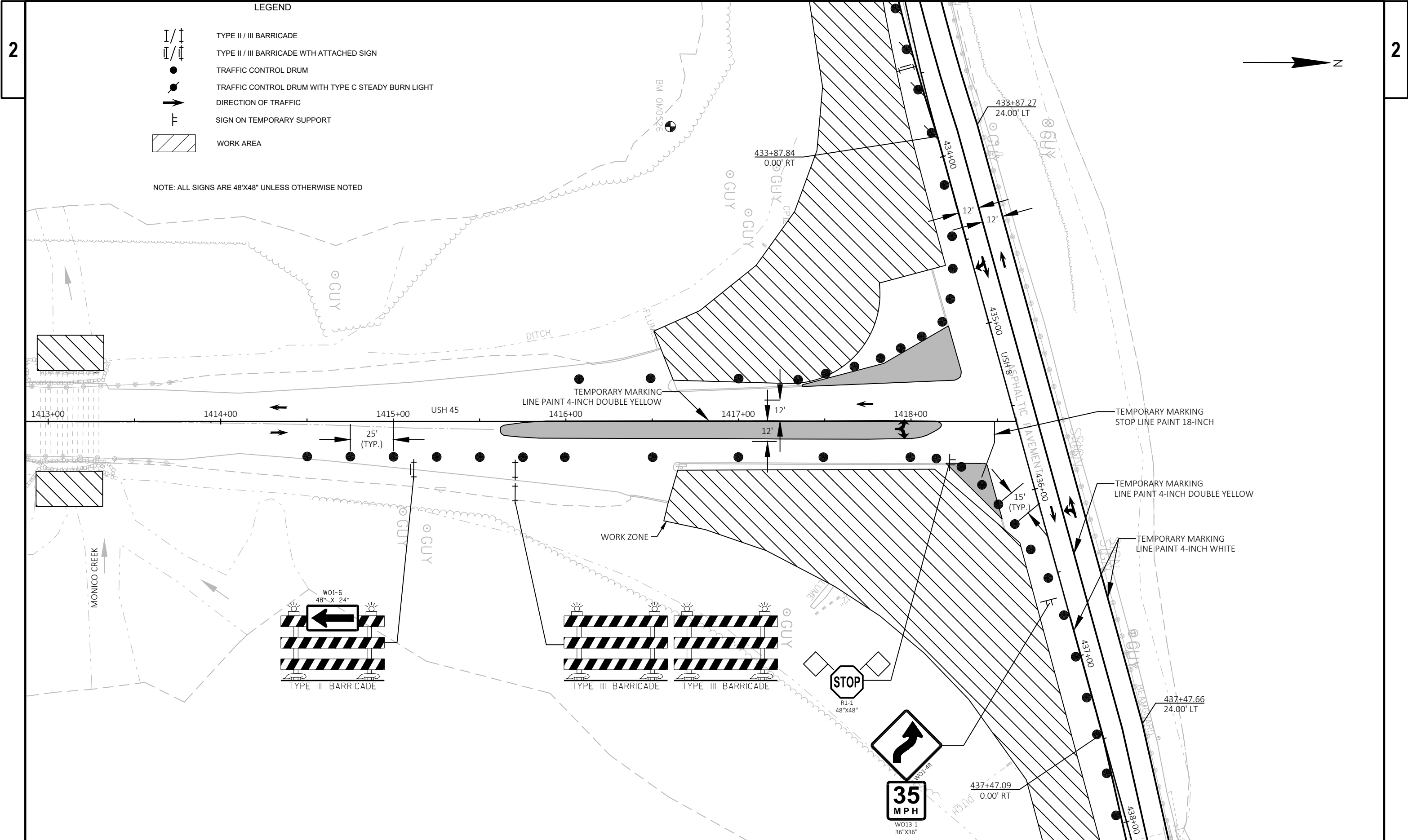


SEE STANDARD DETAIL DRAWING: TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC

SEE STANDARD DETAIL DRAWING: ADVANCED WIDTH RESTRICTION SIGNING

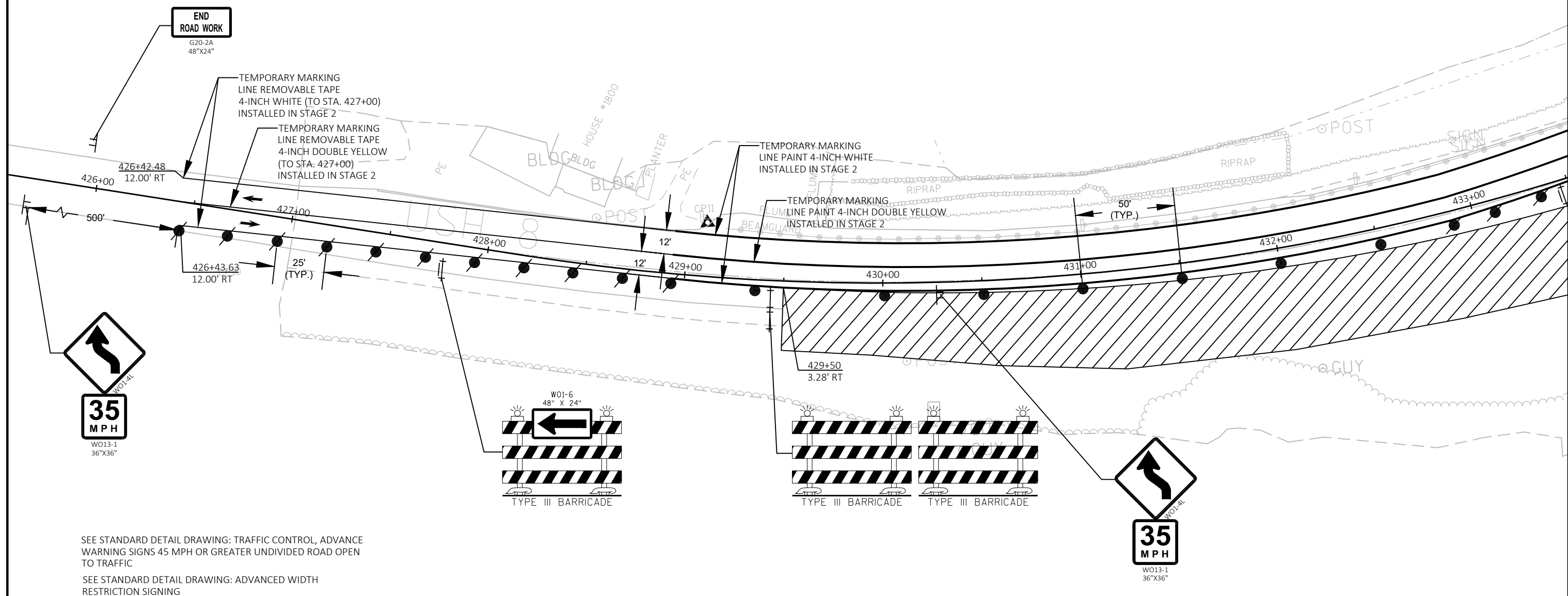






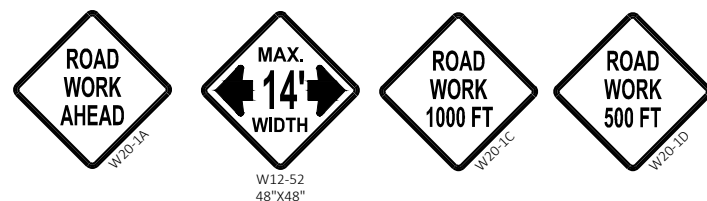
|                                                                                   |                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------|
|  | TYPE II / III BARRICADE                            |
|  | TYPE II / III BARRICADE WTH ATTACHED SIGN          |
|  | TRAFFIC CONTROL DRUM                               |
|  | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
|  | DIRECTION OF TRAFFIC                               |
|  | SIGN ON TEMPORARY SUPPORT                          |
|  | WORK AREA                                          |

NOTE: ALL SIGNS ARE 48'X48" UNLESS OTHERWISE NOTED



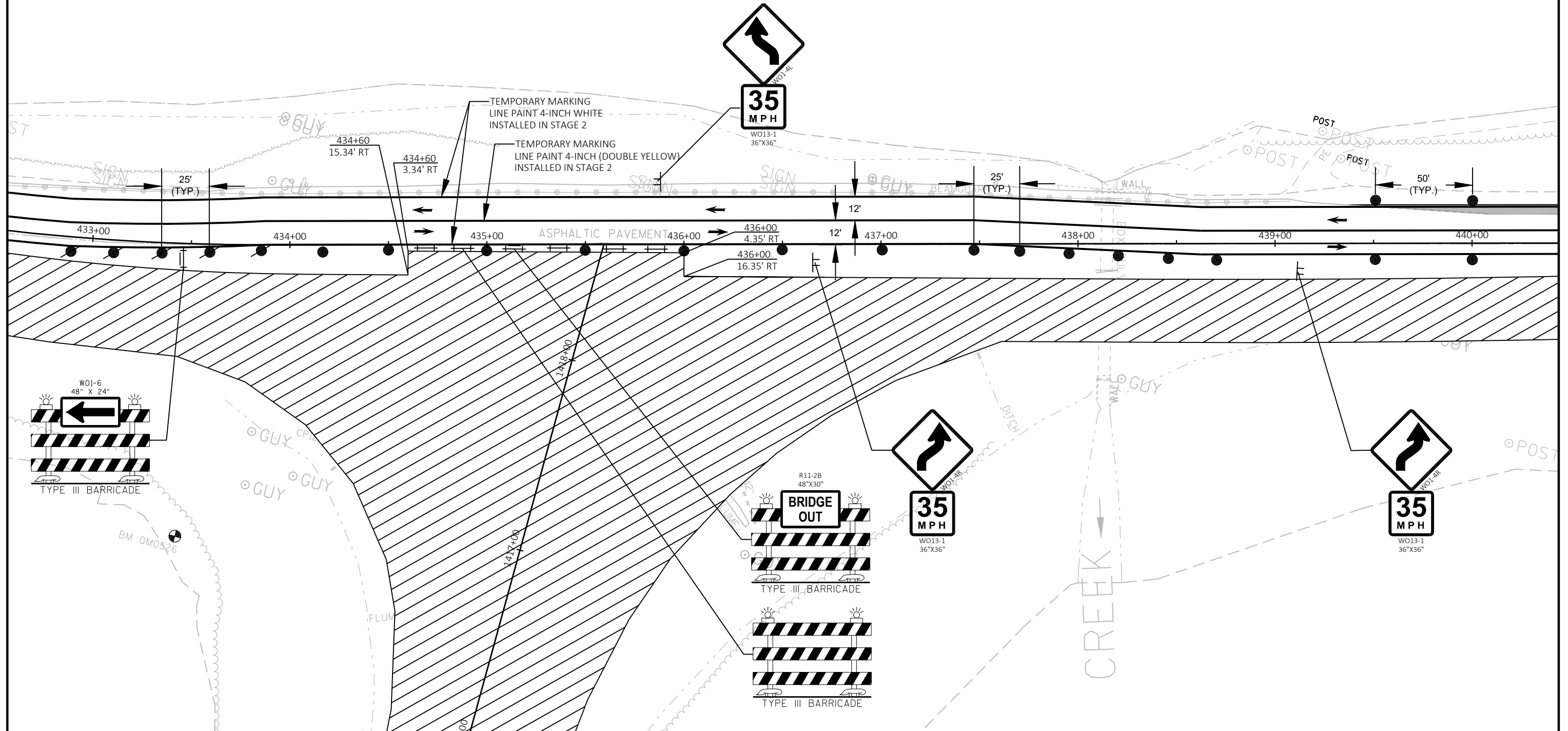
SEE STANDARD DETAIL DRAWING: TRAFFIC CONTROL, ADVANCE  
WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN  
TO TRAFFIC

SEE STANDARD DETAIL DRAWING: ADVANCED WIDTH  
RESTRICTION SIGNING





|                                                                                   |                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------|
|  | TYPE II / III BARRICADE                            |
|  | TYPE II / III BARRICADE WTH ATTACHED SIGN          |
|  | TRAFFIC CONTROL DRUM                               |
|  | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
|  | DIRECTION OF TRAFFIC                               |
|  | SIGN ON TEMPORARY SUPPORT                          |
|  | WORK AREA                                          |



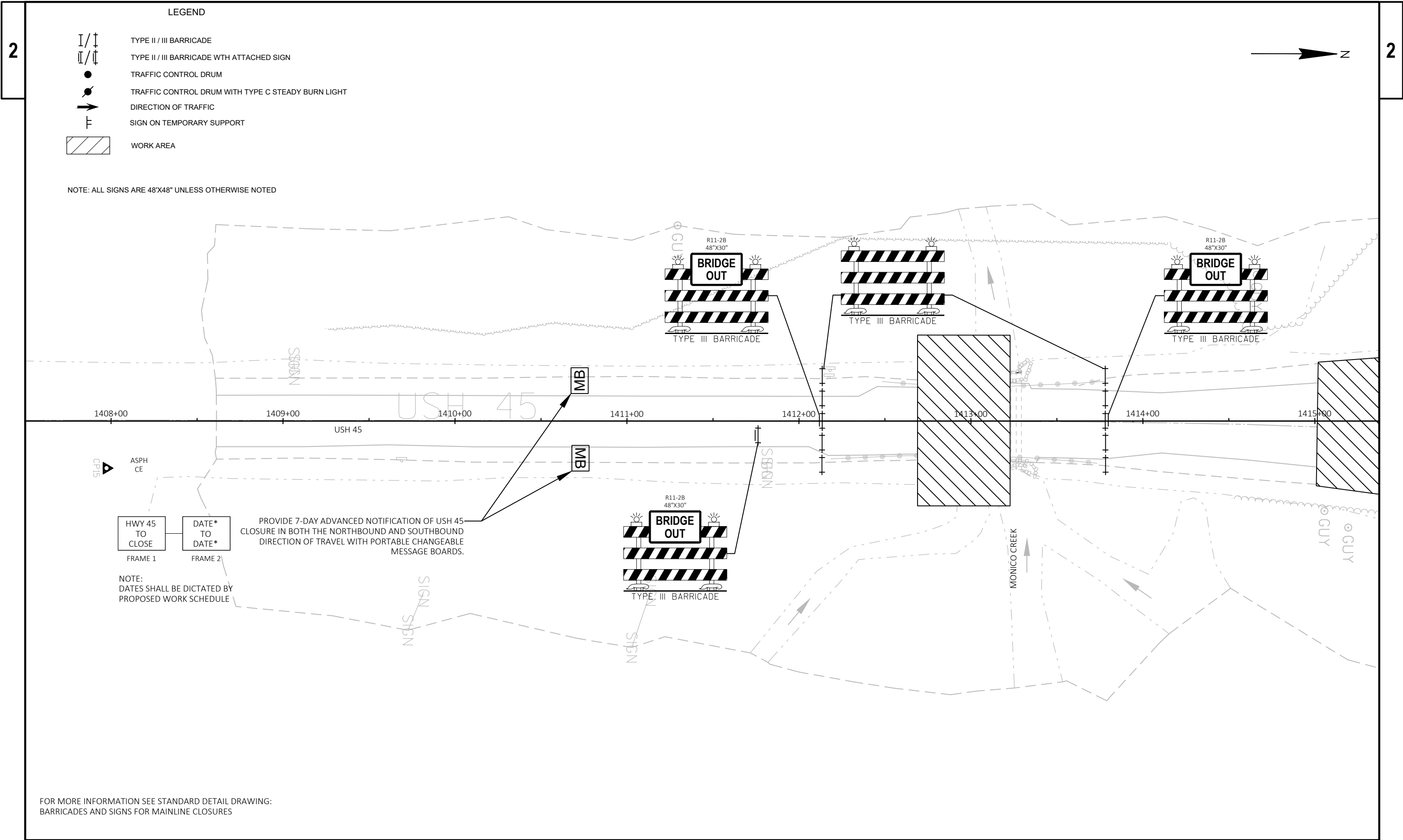
|                                                                                   |                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------|
|  | TYPE II / III BARRICADE                            |
|  | TYPE II / III BARRICADE WITH ATTACHED SIGN         |
|  | TRAFFIC CONTROL DRUM                               |
|  | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
|  | DIRECTION OF TRAFFIC                               |
|  | SIGN ON TEMPORARY SUPPORT                          |
|  | WORK AREA                                          |

W20-1A

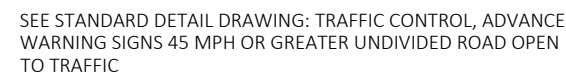
W12-52  
48"X48"

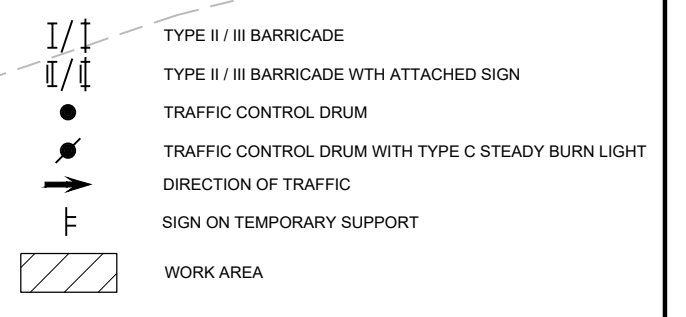
W20-1C

W20-1D



|                                                                                   |                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------|
|  | TYPE II / III BARRICADE                            |
|  | TYPE II / III BARRICADE WITH ATTACHED SIGN         |
|  | TRAFFIC CONTROL DRUM                               |
|  | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
|  | DIRECTION OF TRAFFIC                               |
|  | SIGN ON TEMPORARY SUPPORT                          |
|  | WORK AREA                                          |





|                                                                                   |                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------|
|  | TYPE II / III BARRICADE                            |
|  | TYPE II / III BARRICADE WTH ATTACHED SIGN          |
|  | TRAFFIC CONTROL DRUM                               |
|  | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
|  | DIRECTION OF TRAFFIC                               |
|  | SIGN ON TEMPORARY SUPPORT                          |
|  | WORK AREA                                          |

[illegible]

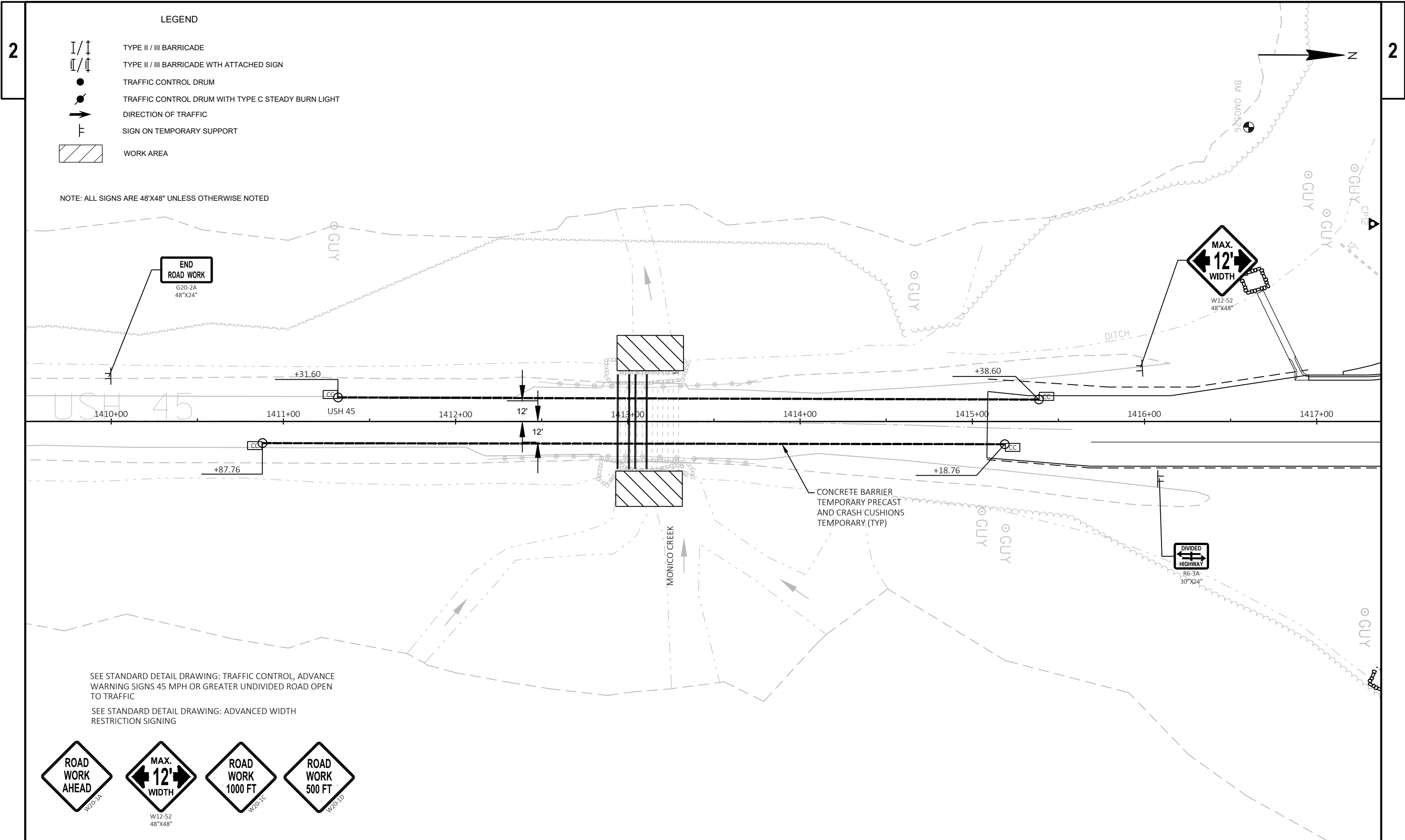
W20-1A

W12-52  
48"X48"

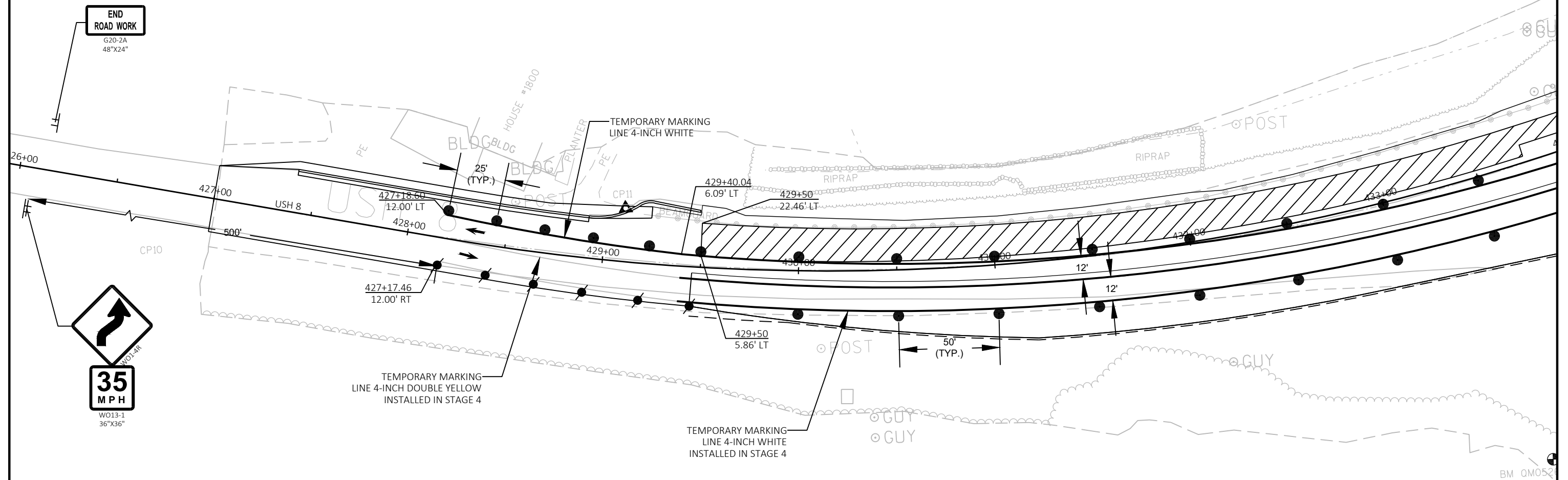
W20-1C

W20-1D

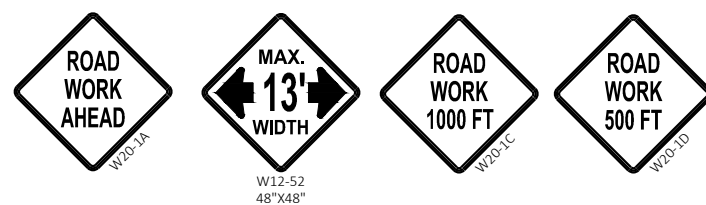




|                                                                                   |                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------|
|  | TYPE II / III BARRICADE                            |
|  | TYPE II / III BARRICADE WITH ATTACHED SIGN         |
|  | TRAFFIC CONTROL DRUM                               |
|  | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
|  | DIRECTION OF TRAFFIC                               |
|  | SIGN ON TEMPORARY SUPPORT                          |
|  | WORK AREA                                          |

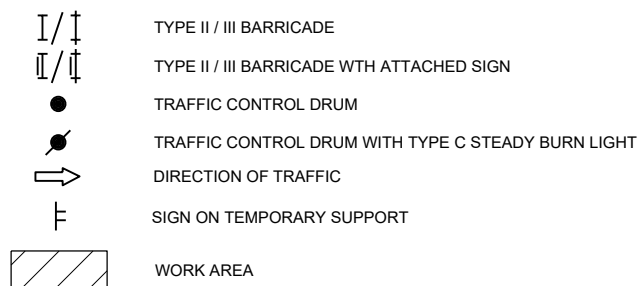


SEE STANDARD DETAIL DRAWING: ADVANCED WIDTH  
RESTRICTION SIGNING





### LEGEND



## TYPE II / III BARRICADE

TYPE II / III BARRICADE WTH ATTACHED SIGN

TRAFFIC CONTROL DRUM

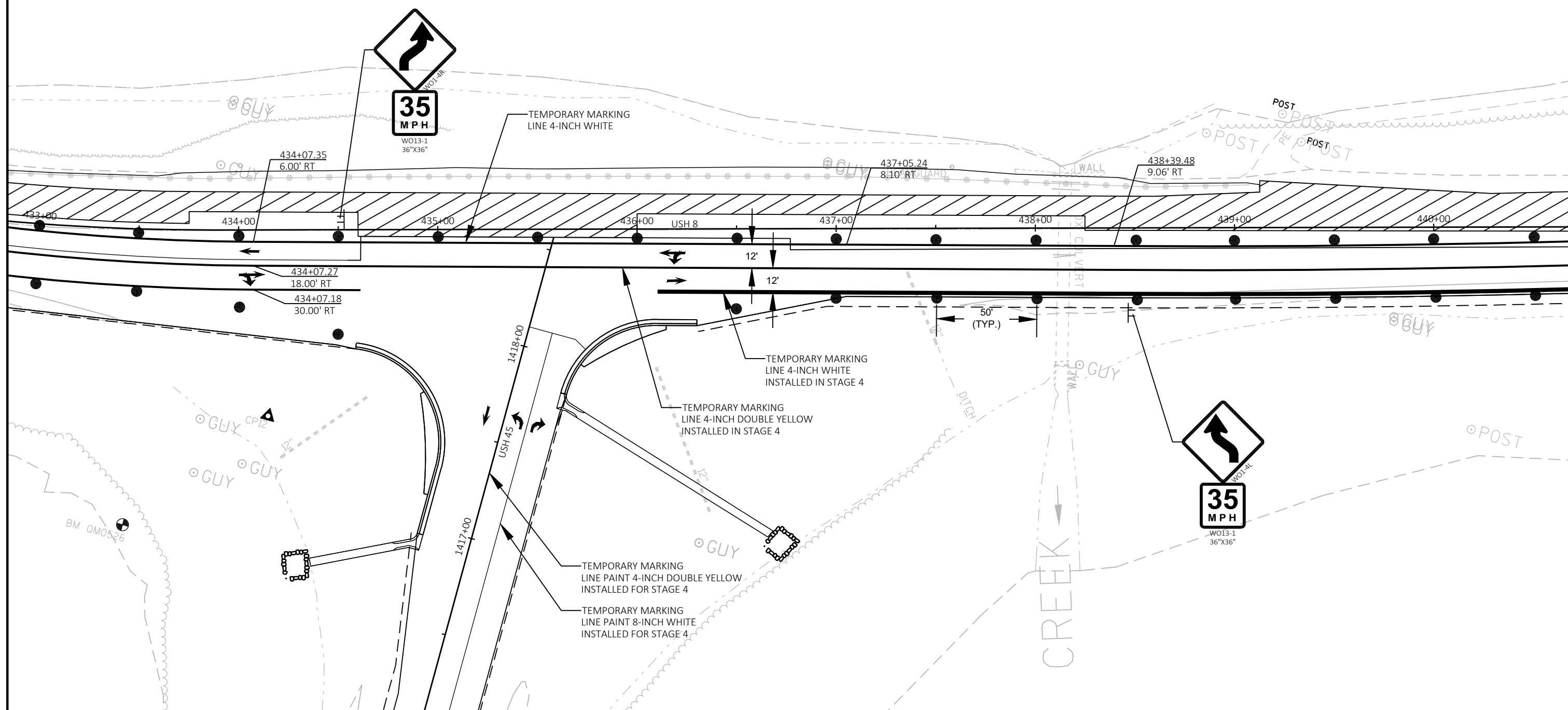
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT

DIRECTION OF TRAFFIC

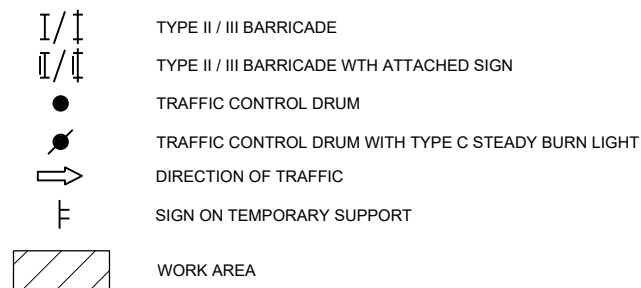
SIGN ON TEMPORARY SUPPORT

WORK AREA

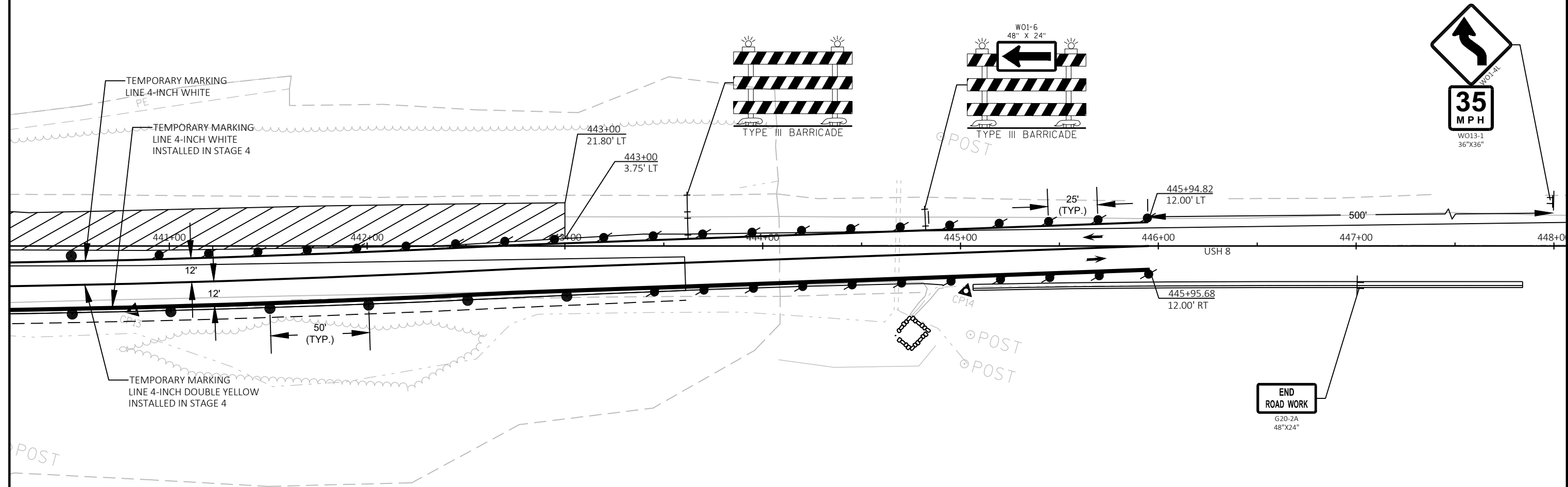
NOTE: ALL SIGNS ARE 48'X48" UNLESS OTHERWISE NOTED



## LEGEND



NOTE: ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED



SEE STANDARD DETAIL DRAWING: TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC

SEE STANDARD DETAIL DRAWING: ADVANCED WIDTH RESTRICTION SIGNING



PROJECT NO: 1590-12-03

HWY: USH 8

COUNTY: ONEIDA

TRAFFIC CONTROL STAGE 5

SHEET

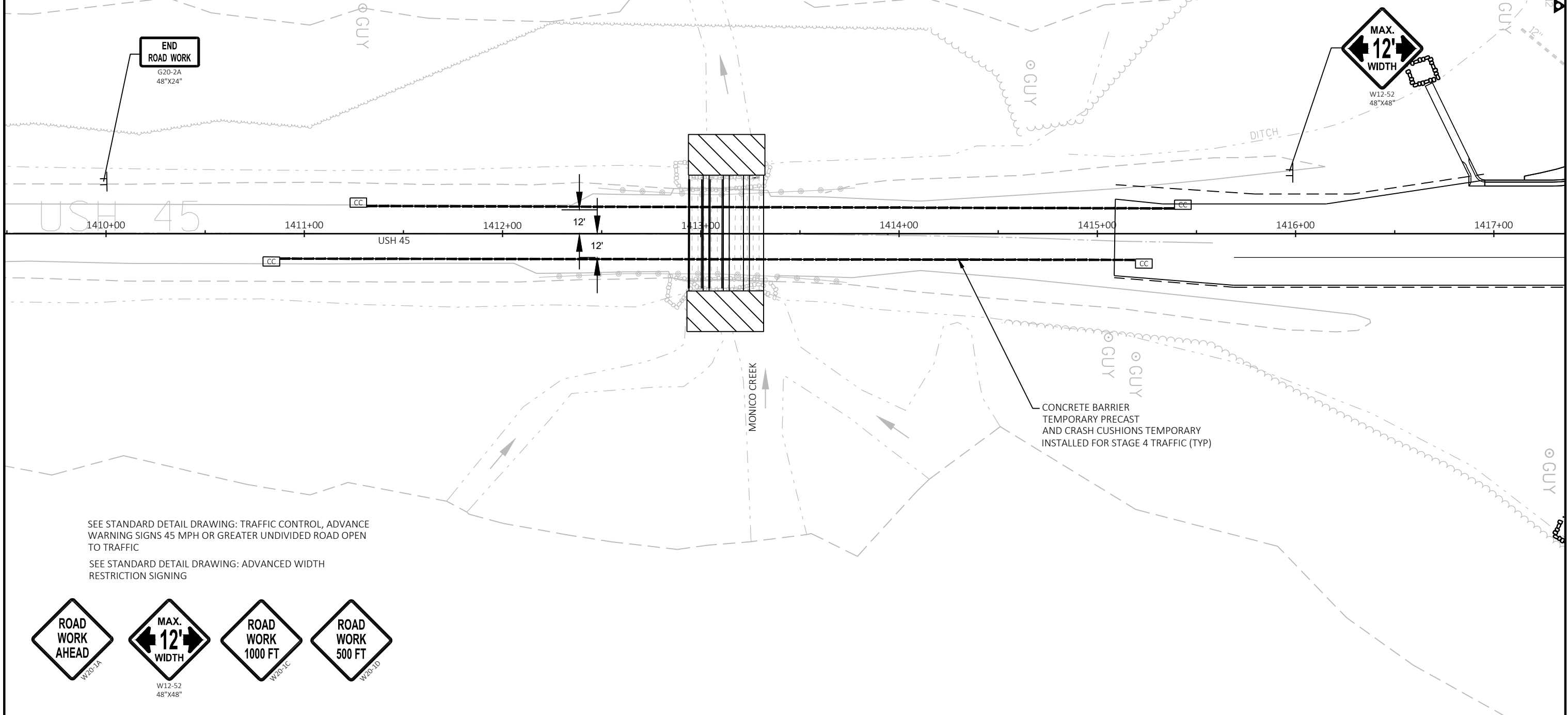
44

E

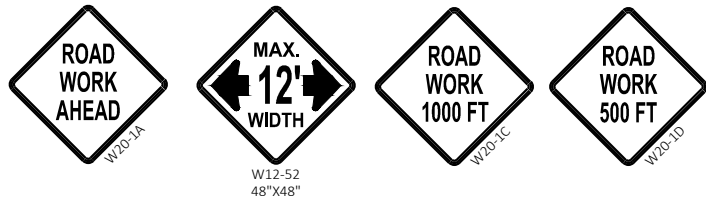
LEGEND

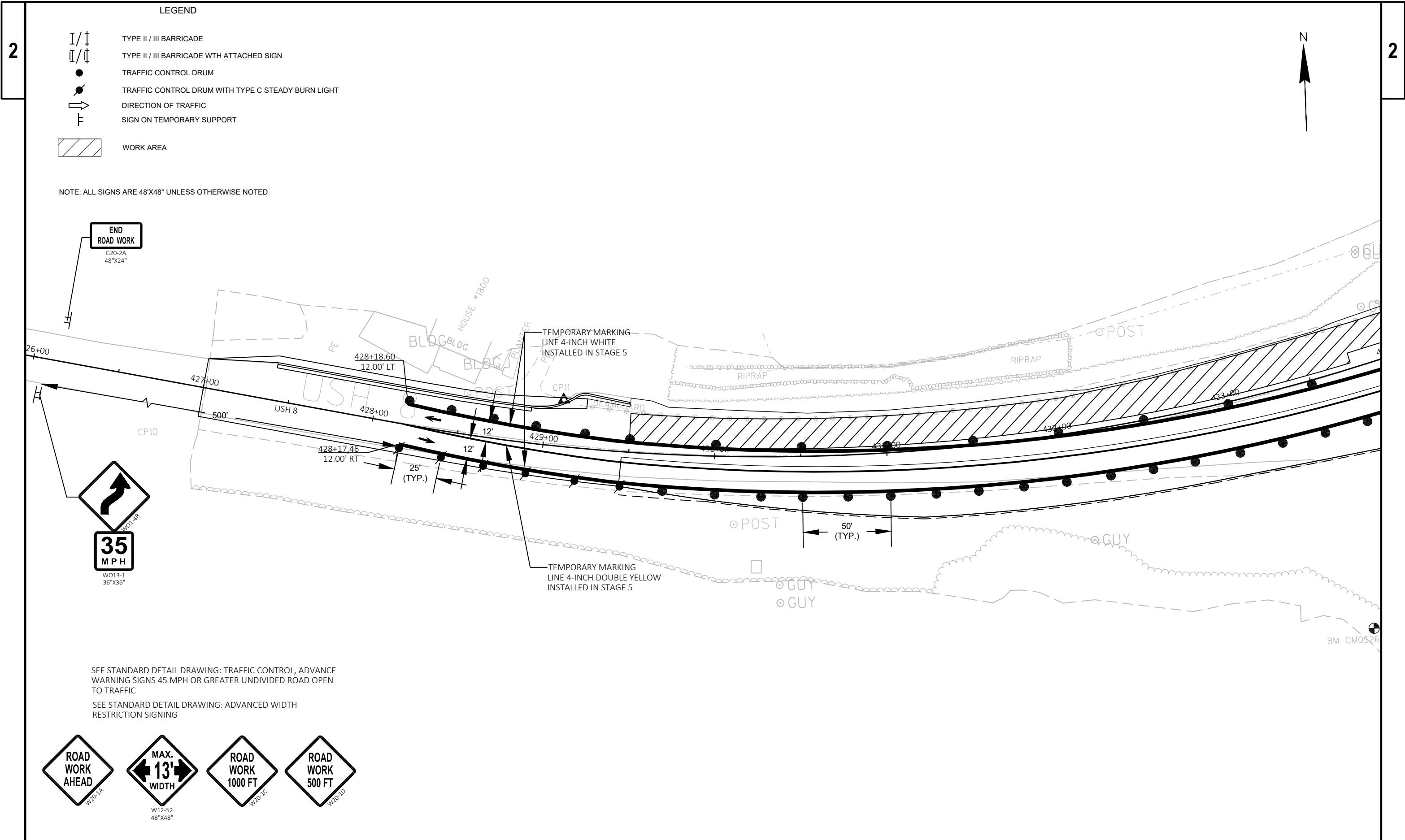
-  TYPE II / III BARRICADE
-  TYPE II / III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  DIRECTION OF TRAFFIC
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA

NOTE: ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED



SEE STANDARD DETAIL DRAWING: TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC  
SEE STANDARD DETAIL DRAWING: ADVANCED WIDTH RESTRICTION SIGNING

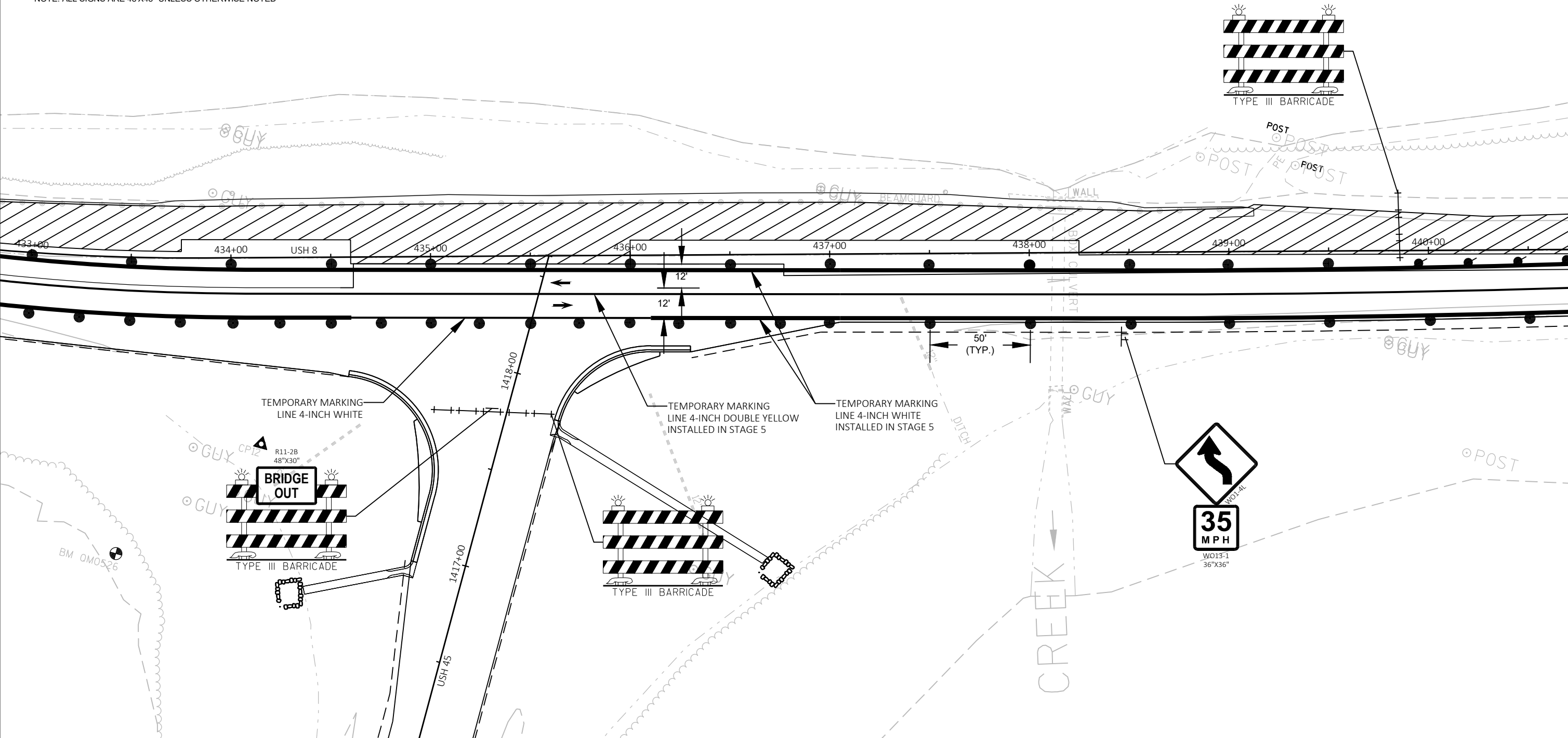




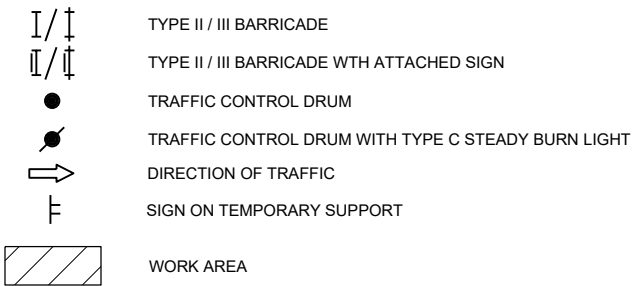
LEGEND

-  TYPE II / III BARRICADE
-  TYPE II / III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  DIRECTION OF TRAFFIC
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA

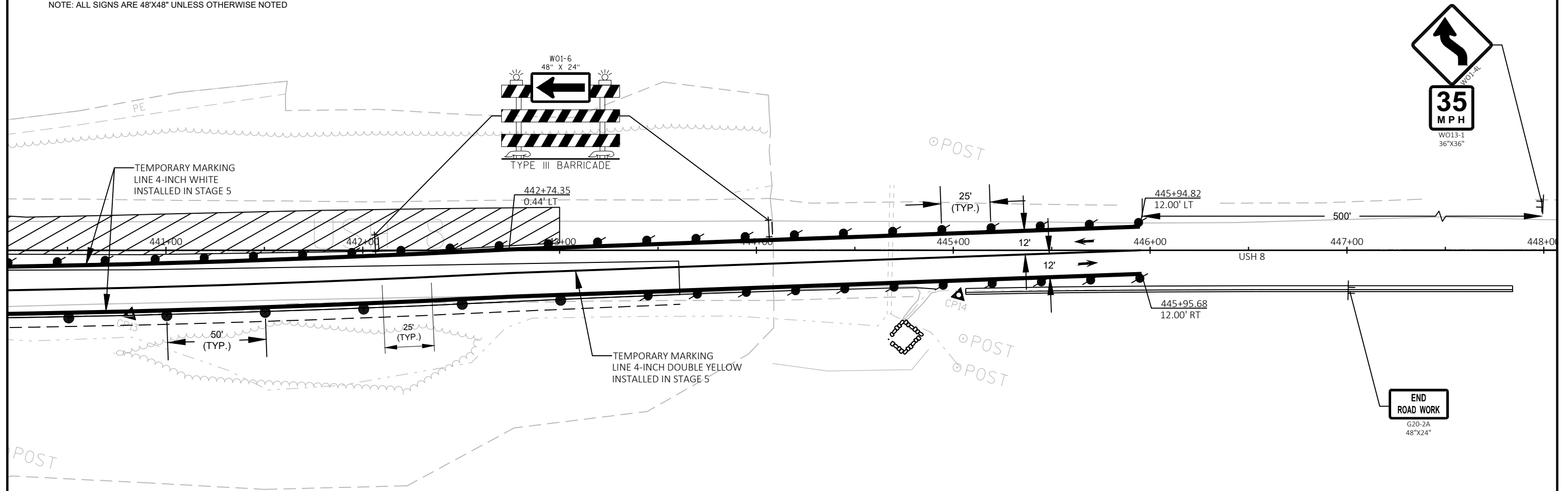
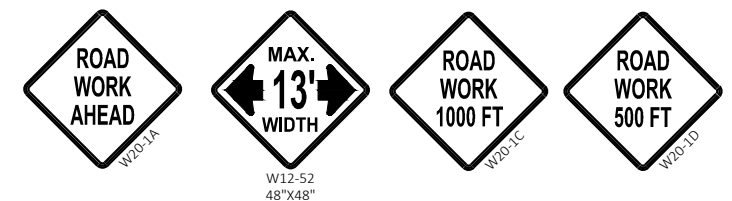
NOTE: ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED



## LEGEND



NOTE: ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED

SEE STANDARD DETAIL DRAWING: TRAFFIC CONTROL, ADVANCE  
WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN  
TO TRAFFICSEE STANDARD DETAIL DRAWING: ADVANCED WIDTH  
RESTRICTION SIGNING

PROJECT NO: 1590-12-73

HWY: USH 8

COUNTY: ONEIDA

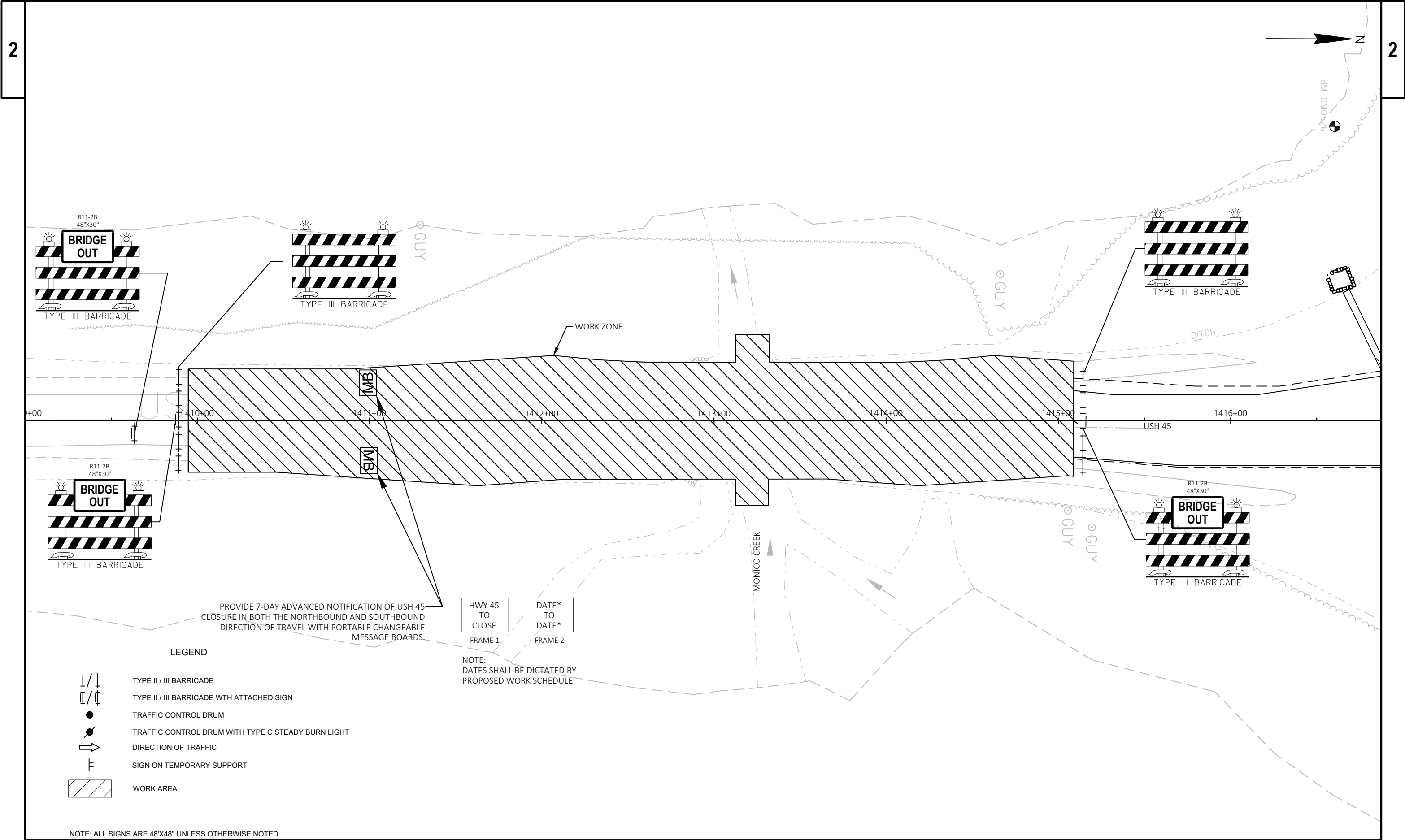
TRAFFIC CONTROL STAGE 6

SHEET

48

E





HWY 45  
TO  
CLOSE  
FRAME 1

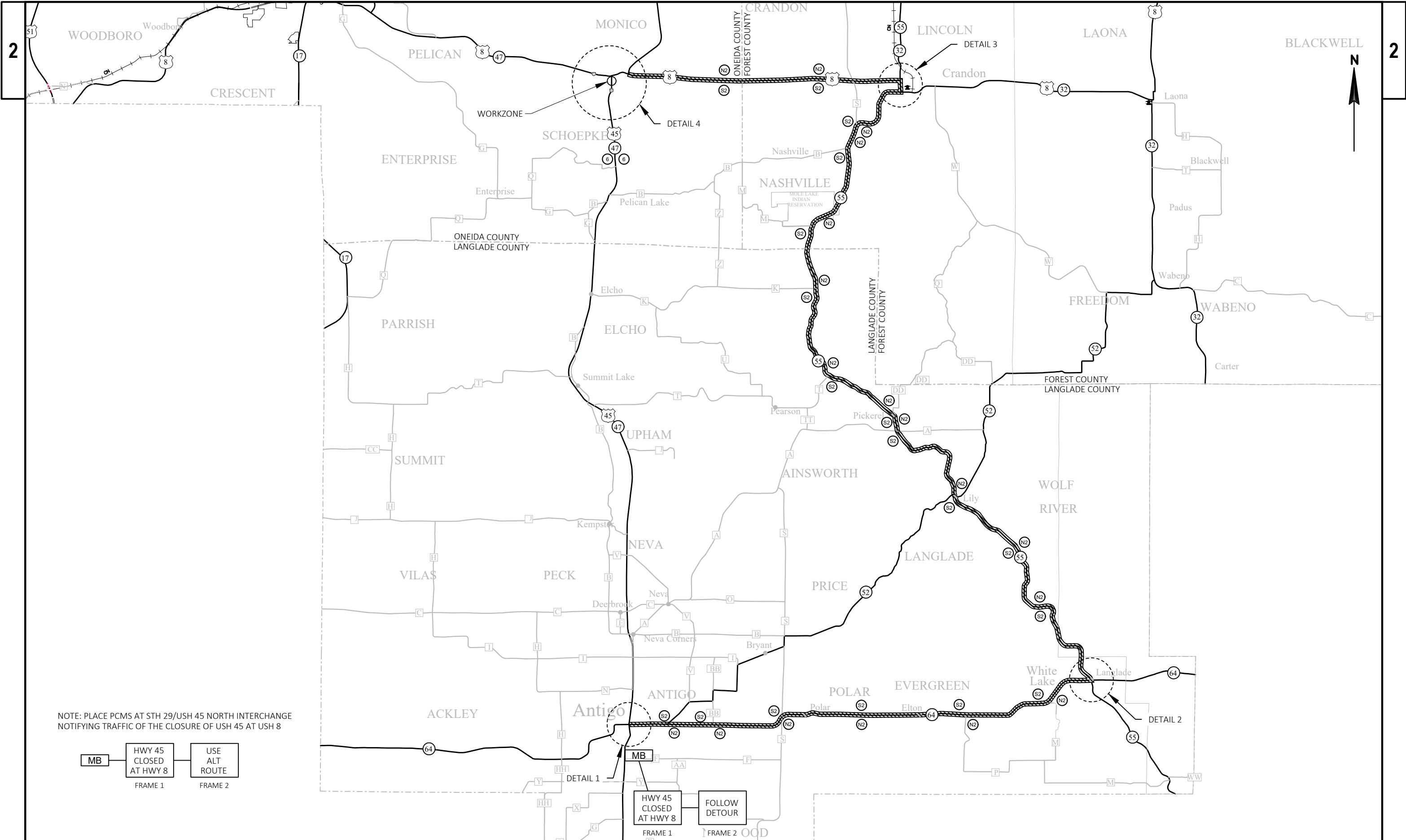
DATE\*  
TO  
DATE\*  
FRAME 2

NOTE:  
DATES SHALL BE DICTATED BY  
PROPOSED WORK SCHEDULE

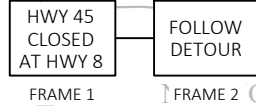
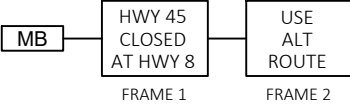
LEGEND

- TYPE II / III BARRICADE
- TYPE II / III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- WORK AREA

NOTE: ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED



NOTE: PLACE PCMS AT STH 29/USH 45 NORTH INTERCHANGE  
NOTIFYING TRAFFIC OF THE CLOSURE OF USH 45 AT USH 8



PROJECT NO: 1590-12-73

HWY: USH 8

COUNTY: ONEIDA

DETOUR PLAN - OVERVIEW

SHEET

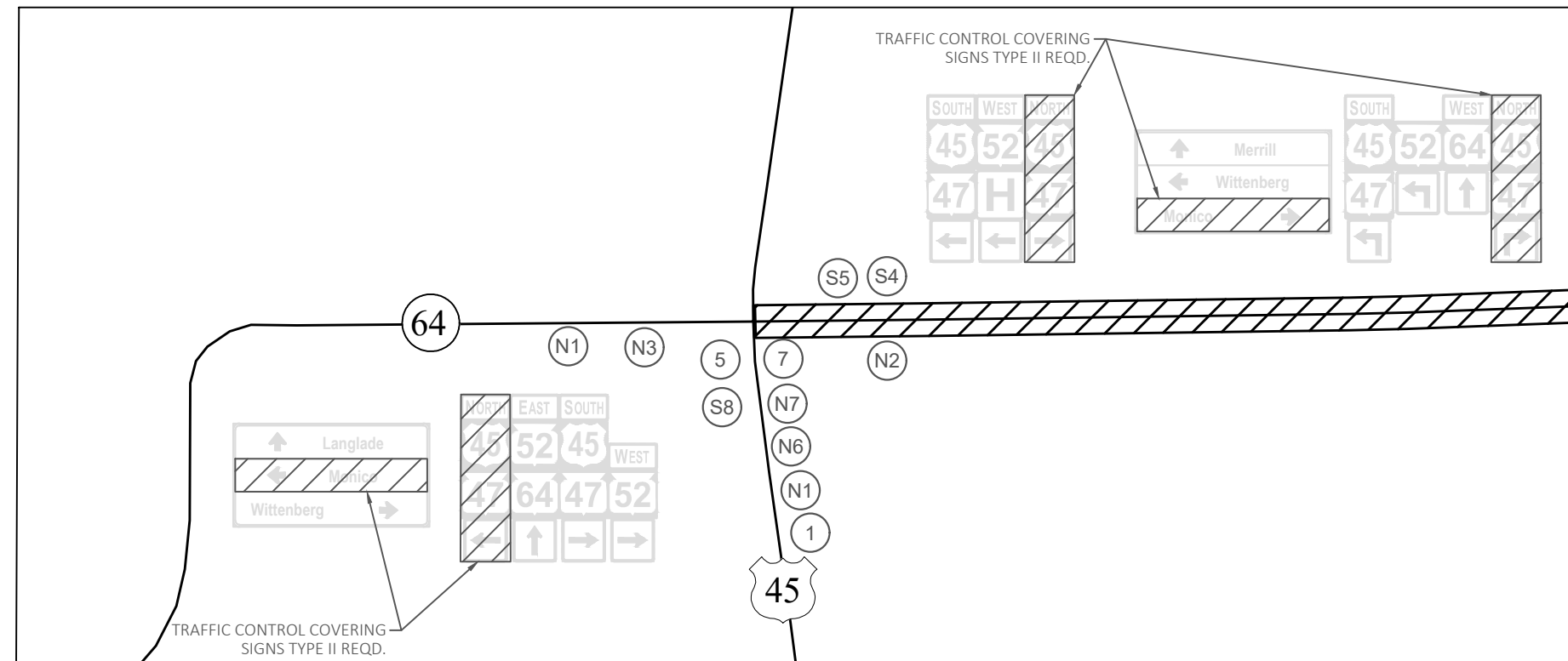
50

E

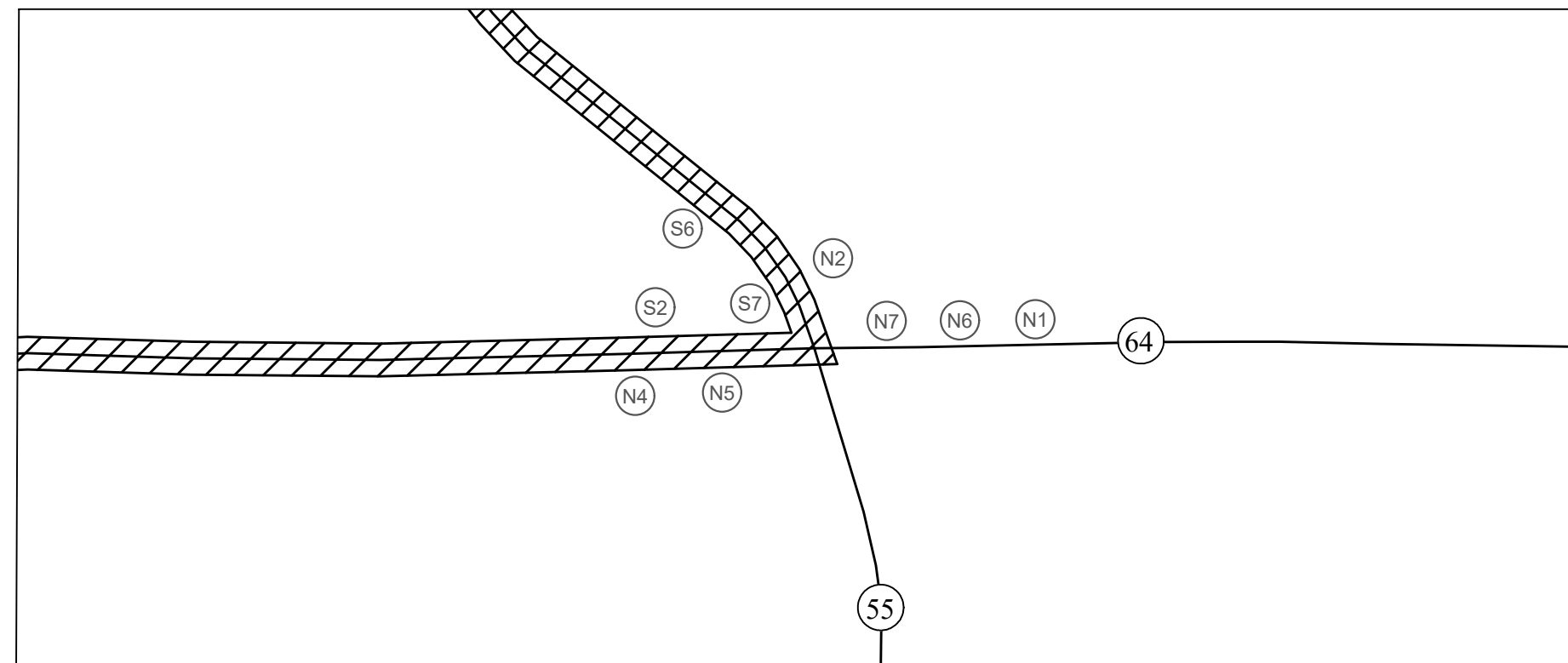


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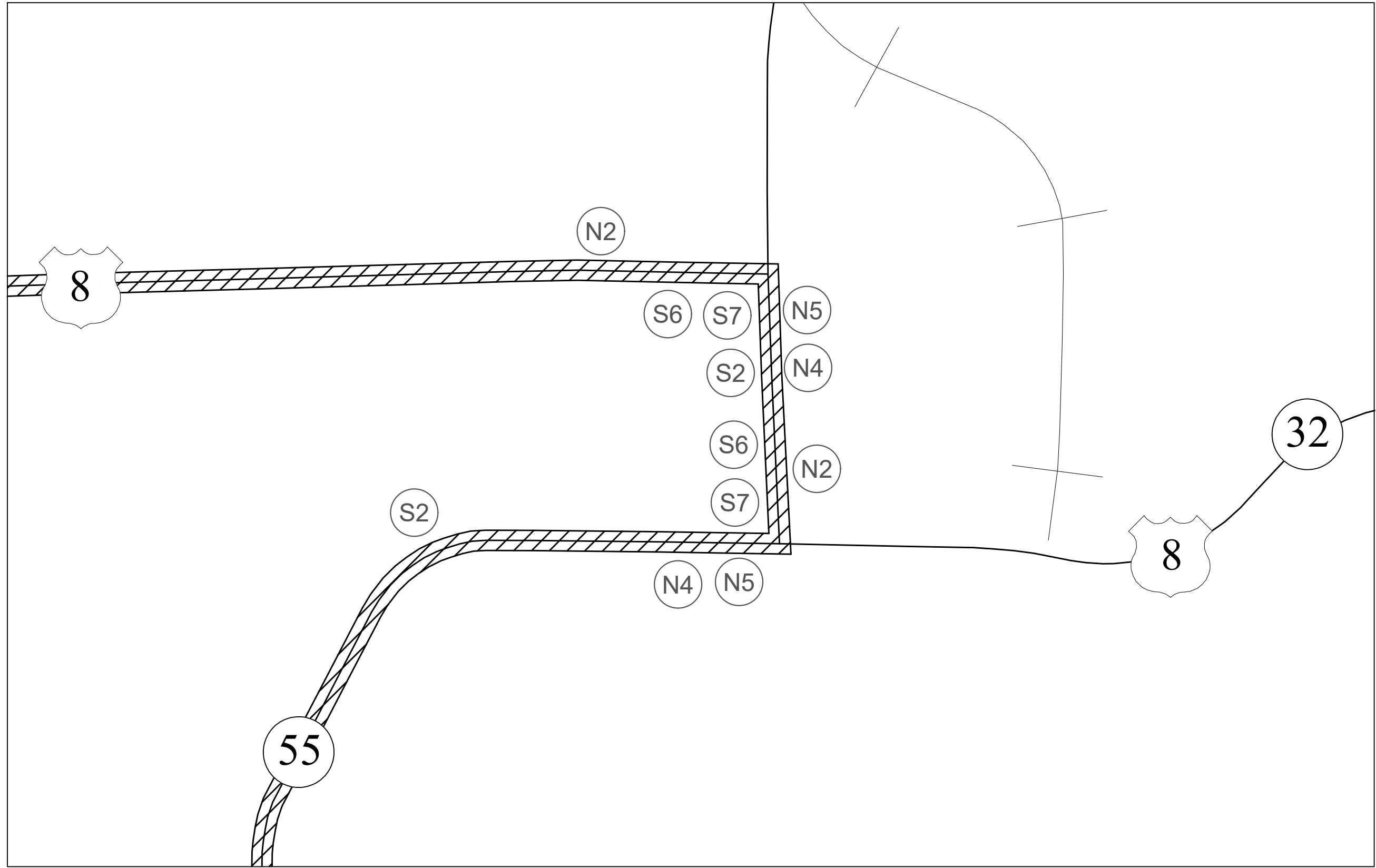
2 |



### DETAIL 1



## DETAIL 2



DETAIL 3



N1

NORTH

45

M3-1  
24"X12"  
M1-4  
24"X24"

DETOUR AHEAD

W20-2-A

N2

DETOUR

NORTH

45

M4-8  
24"X12"  
M3-1  
24"X12"  
M1-4  
24"X24"

N3

DETOUR

NORTH

45

M4-8  
24"X12"  
M3-1  
24"X12"  
M1-4  
24"X24"

↑

MO6-1  
21"X21"

N4

DETOUR

NORTH

45

M4-8  
24"X12"  
M3-1  
24"X12"  
M1-4  
24"X24"

↶

MO5-1L  
21"X21"

N5

DETOUR

NORTH

45

M4-8  
24"X12"  
M3-1  
24"X12"  
M1-4  
24"X24"

←

MO6-1  
21"X21"

N6

DETOUR

NORTH

45

M4-8  
24"X12"  
M3-1  
24"X12"  
M1-4  
24"X24"

↷

MO5-1R  
21"X21"

N7

DETOUR

NORTH

45

M4-8  
24"X12"  
M3-1  
24"X12"  
M1-4  
24"X24"

→

MO6-1  
21"X21"

N8

END  
DETOUR

NORTH

45

M4-8A  
24"X18"  
M3-1  
24"X12"  
M1-4  
24"X24"

S1

SOUTH

45

M3-3  
24"X12"  
M1-4  
24"X24"

DETOUR AHEAD

W20-2-A

S2

DETOUR

SOUTH

45

M4-8  
24"X12"  
M3-3  
24"X12"  
M1-4  
24"X24"

S3

DETOUR

SOUTH

45

M4-8  
24"X12"  
M3-3  
24"X12"  
M1-4  
24"X24"

↑

MO6-1  
21"X21"

S4

DETOUR

SOUTH

45

M4-8  
24"X12"  
M3-3  
24"X12"  
M1-4  
24"X24"

↶

MO5-1L  
21"X21"

S5

DETOUR

SOUTH

45

M4-8  
24"X12"  
M3-3  
24"X12"  
M1-4  
24"X24"

←

MO6-1  
21"X21"

S6

DETOUR

SOUTH

45

M4-8  
24"X12"  
M3-3  
24"X12"  
M1-4  
24"X24"

↷

MO5-1R  
21"X21"

S7

DETOUR

SOUTH

45

M4-8  
24"X12"  
M3-3  
24"X12"  
M1-4  
24"X24"

→

MO6-1  
21"X21"

S8

END  
DETOUR

SOUTH

45

M4-8A  
24"X18"  
M3-3  
24"X12"  
M1-4  
24"X24"

1

DETOUR AHEAD

W20-2-A

2

ROAD  
CLOSED  
1000 FT

W20-3C

3

ROAD  
CLOSED  
1 MILE

W20-3F

4

BRIDGE  
OUT

R11-2B  
48"X30"

TYPE III BARRICADE WITH  
ATTACHED SIGN  
BARRICADE DETAIL

5

BRIDGE OUT  
29 MILES AHEAD  
LOCAL TRAFFIC ONLY

R11-3B  
60"X30"

TYPE III BARRICADE WITH  
ATTACHED SIGN  
BARRICADE DETAIL

6

BRIDGE OUT  
3 MILES AHEAD

R11-3C  
60"X24"

TYPE III BARRICADE WITH  
ATTACHED SIGN  
BARRICADE DETAIL

7

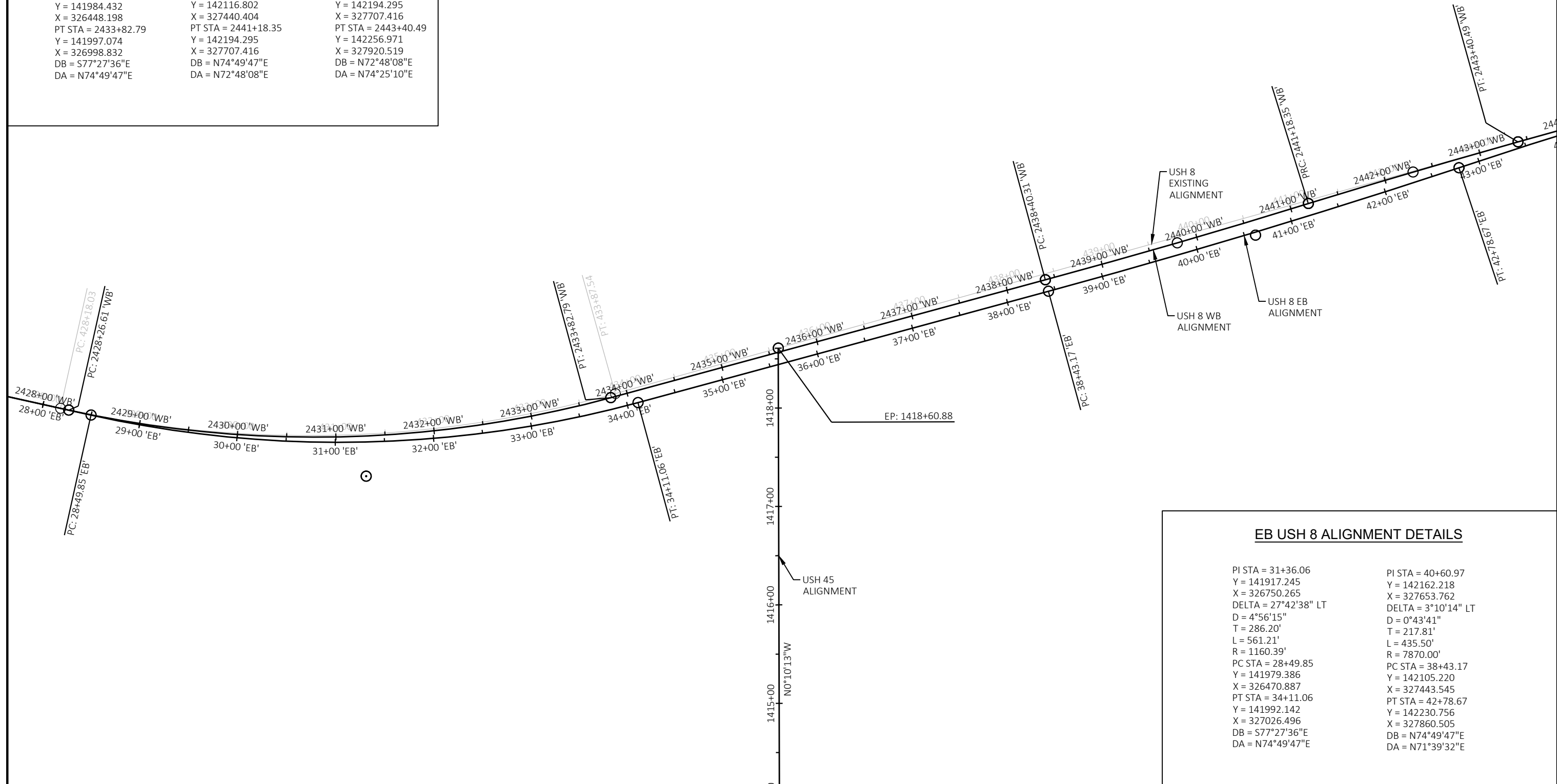
DETOUR  
→

M4-9R  
30"X24"

TYPE III BARRICADE WITH  
ATTACHED SIGN  
BARRICADE DETAIL

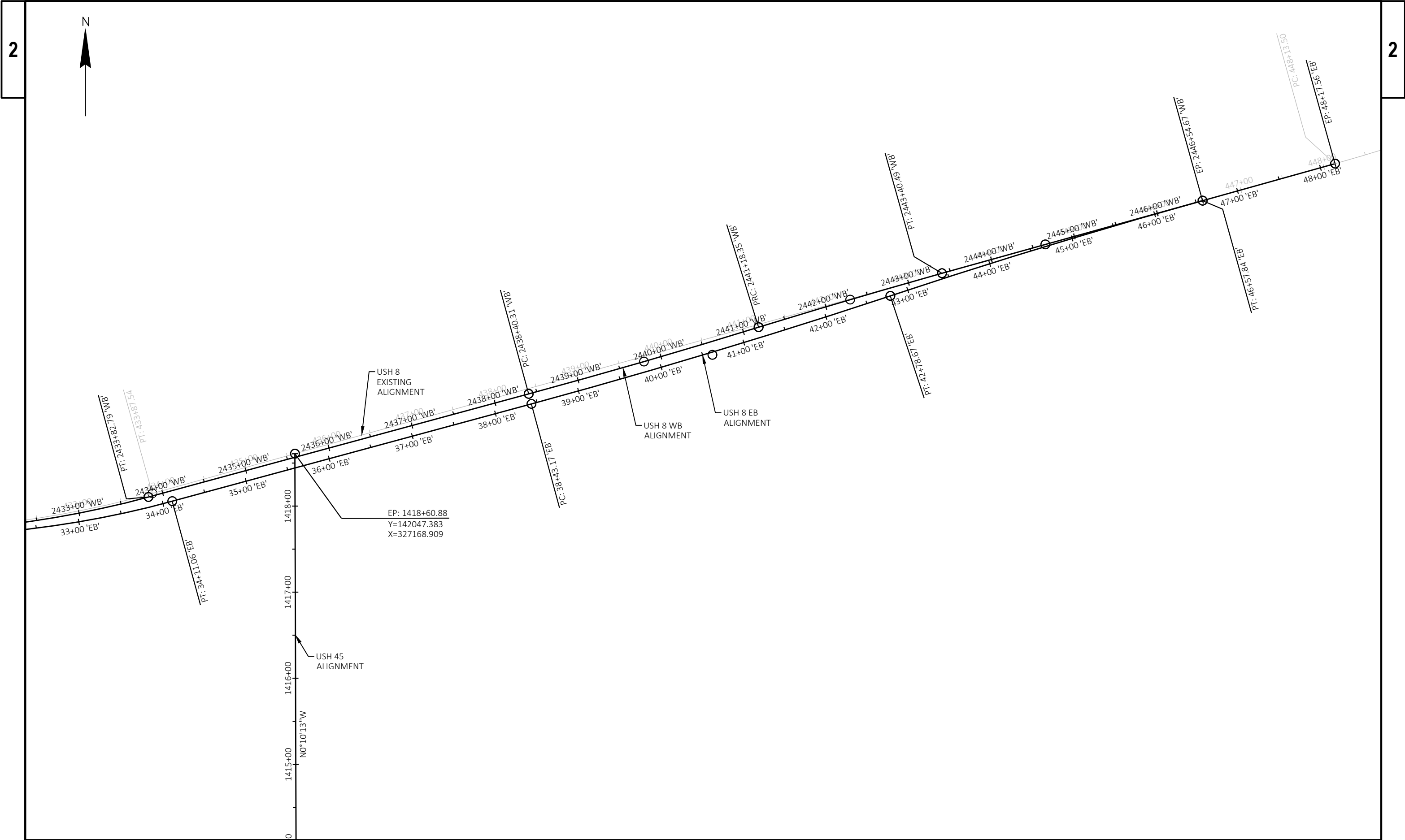
WB USH 8 ALIGNMENT DETAILS

|                      |                     |                     |
|----------------------|---------------------|---------------------|
| PI STA = 2431+10.25  | PI STA = 2439+79.35 | PI STA = 2442+29.43 |
| Y = 141922.848       | Y = 142153.186      | Y = 142227.137      |
| X = 326725.074       | X = 327574.596      | X = 327813.525      |
| DELTA = 27°42'38" LT | DELTA = 2°01'38" LT | DELTA = 1°37'02" RT |
| D = 4°58'56"         | D = 0°43'45"        | D = 0°43'41"        |
| T = 283.64'          | T = 139.04'         | T = 111.08'         |
| L = 556.18'          | L = 278.04'         | L = 222.14'         |
| R = 1150.00'         | R = 7858.00'        | R = 7870.00'        |
| PC STA = 2428+26.61  | PC STA = 2438+40.31 | PC STA = 2441+18.35 |
| Y = 141984.432       | Y = 142116.802      | Y = 142194.295      |
| X = 326448.198       | X = 327440.404      | X = 327707.416      |
| PT STA = 2433+82.79  | PT STA = 2441+18.35 | PT STA = 2443+40.49 |
| Y = 141997.074       | Y = 142194.295      | Y = 142256.971      |
| X = 326998.832       | X = 327707.416      | X = 327920.519      |
| DB = S77°27'36"E     | DB = N74°49'47"E    | DB = N72°48'08"E    |
| DA = N74°49'47"E     | DA = N72°48'08"E    | DA = N74°25'10"E    |

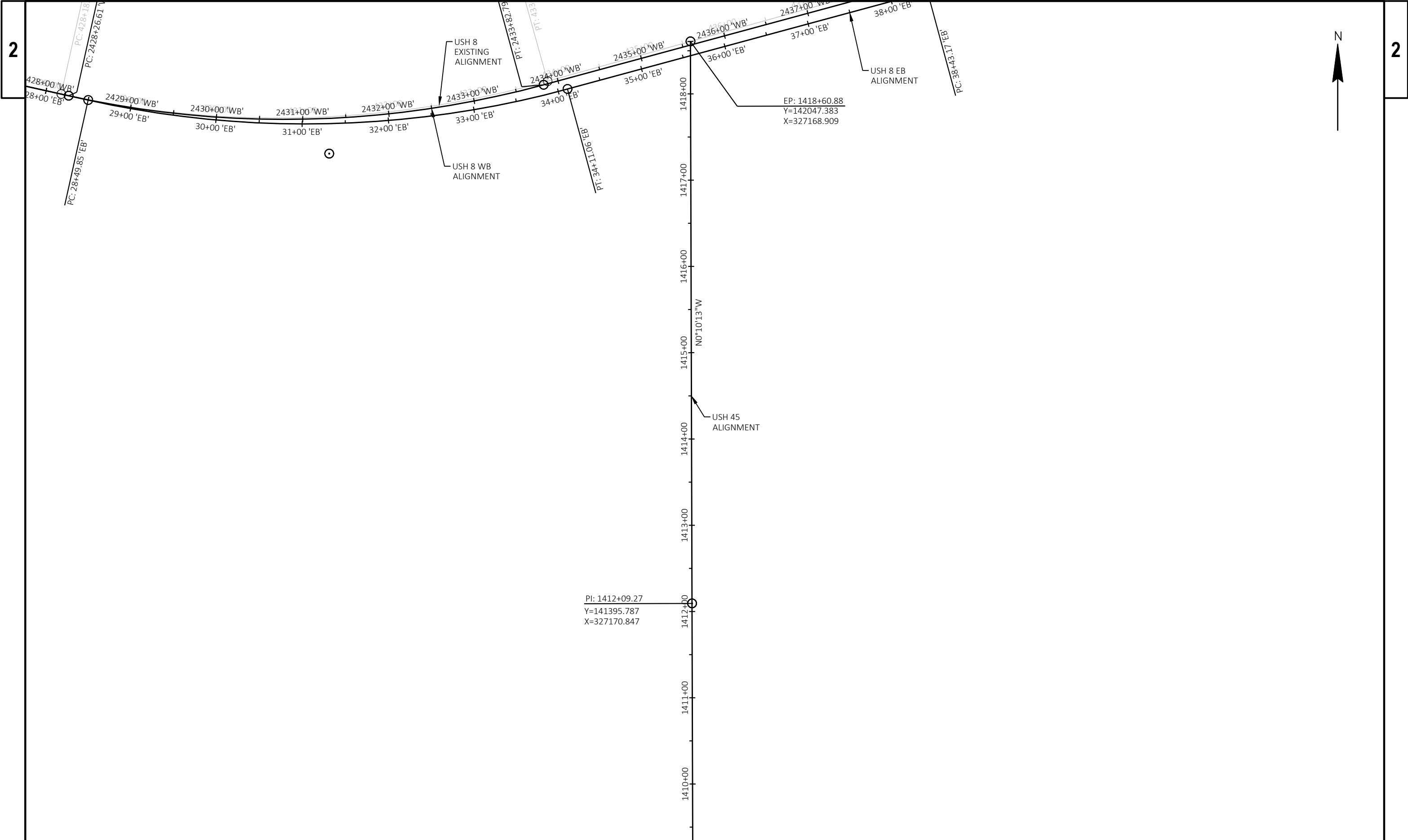


EB USH 8 ALIGNMENT DETAILS

|                      |                     |
|----------------------|---------------------|
| PI STA = 31+36.06    | PI STA = 40+60.97   |
| Y = 141917.245       | Y = 142162.218      |
| X = 326750.265       | X = 327653.762      |
| DELTA = 27°42'38" LT | DELTA = 3°10'14" LT |
| D = 4°56'15"         | D = 0°43'41"        |
| T = 286.20'          | T = 217.81'         |
| L = 561.21'          | L = 435.50'         |
| R = 1160.39'         | R = 7870.00'        |
| PC STA = 28+49.85    | PC STA = 38+43.17   |
| Y = 141979.386       | Y = 142105.220      |
| X = 326470.887       | X = 327443.545      |
| PT STA = 34+11.06    | PT STA = 42+78.67   |
| Y = 141992.142       | Y = 142230.756      |
| X = 327026.496       | X = 327860.505      |
| DB = S77°27'36"E     | DB = N74°49'47"E    |
| DA = N74°49'47"E     | DA = N71°39'32"E    |



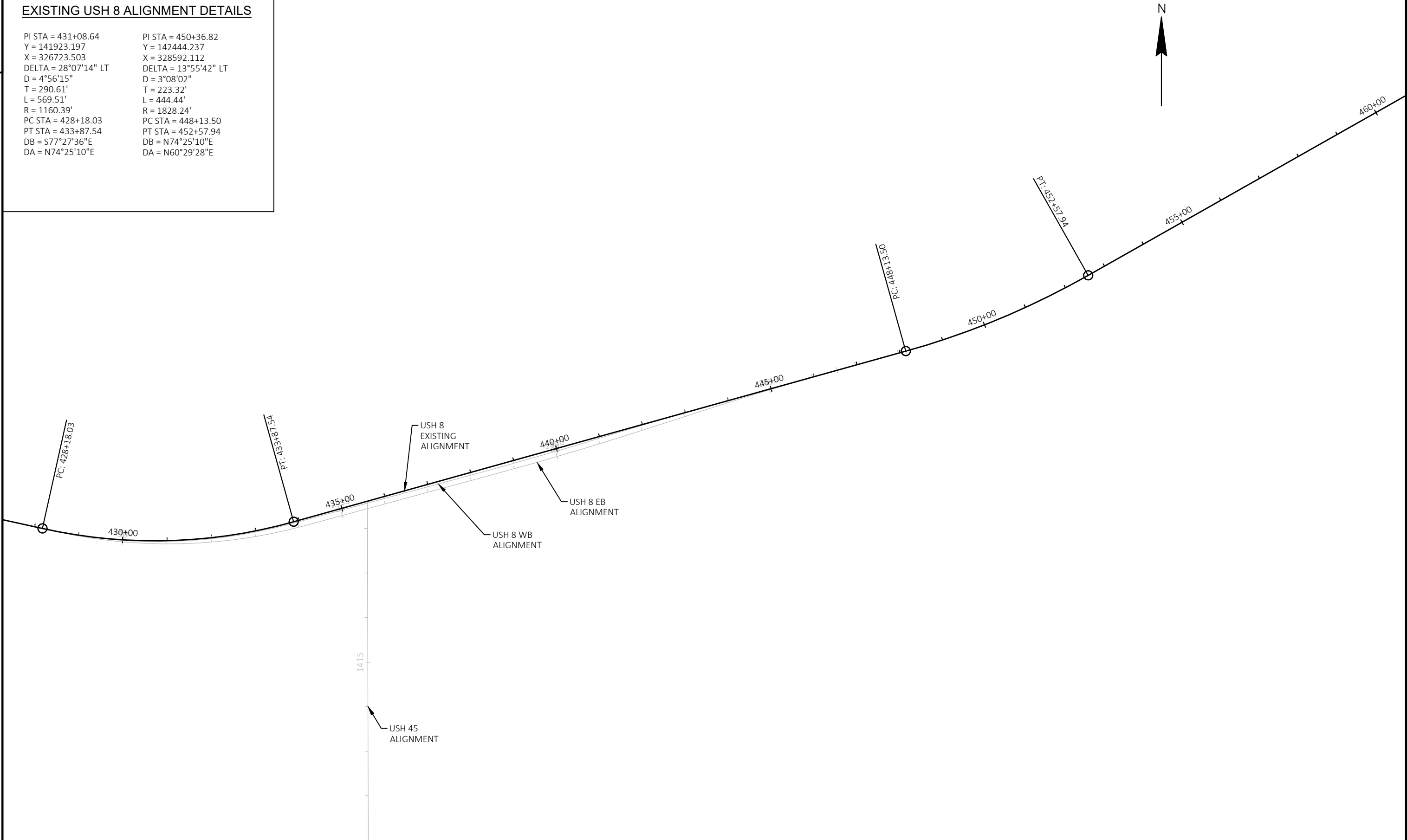




EXISTING USH 8 ALIGNMENT DETAILS

PI STA = 431+08.64  
Y = 141923.197  
X = 326723.503  
DELTA = 28°07'14" LT  
D = 4°56'15"  
T = 290.61'  
L = 569.51'  
R = 1160.39'  
PC STA = 428+18.03  
PT STA = 433+87.54  
DB = S77°27'36"E  
DA = N74°25'10"E

PI STA = 450+36.82  
Y = 142444.237  
X = 328592.112  
DELTA = 13°55'42" LT  
D = 3°08'02"  
T = 223.32'  
L = 444.44'  
R = 1828.24'  
PC STA = 448+13.50  
PT STA = 452+57.94  
DB = N74°25'10"E  
DA = N60°29'28"E





## Estimate Of Quantities

1590-12-73

| Line | Item       | Item Description                                                 | Unit | Total      | Qty        |
|------|------------|------------------------------------------------------------------|------|------------|------------|
| 0002 | 201.0105   | Clearing                                                         | STA  | 5.000      | 5.000      |
| 0004 | 201.0205   | Grubbing                                                         | STA  | 5.000      | 5.000      |
| 0006 | 203.0220   | Removing Structure (structure) 01. Culvert 43045004481           | EACH | 1.000      | 1.000      |
| 0008 | 204.0100   | Removing Concrete Pavement                                       | SY   | 4,995.000  | 4,995.000  |
| 0010 | 204.0110   | Removing Asphaltic Surface                                       | SY   | 1,065.000  | 1,065.000  |
| 0012 | 204.0120   | Removing Asphaltic Surface Milling                               | SY   | 2,985.000  | 2,985.000  |
| 0014 | 204.0150   | Removing Curb & Gutter                                           | LF   | 2,685.000  | 2,685.000  |
| 0016 | 204.0165   | Removing Guardrail                                               | LF   | 1,265.000  | 1,265.000  |
| 0018 | 204.0180   | Removing Delineators and Markers                                 | EACH | 2.000      | 2.000      |
| 0020 | 204.0195   | Removing Concrete Bases                                          | EACH | 1.000      | 1.000      |
| 0022 | 204.0220   | Removing Inlets                                                  | EACH | 3.000      | 3.000      |
| 0024 | 204.0245   | Removing Storm Sewer (size) 01. 12-Inch                          | LF   | 170.000    | 170.000    |
| 0026 | 205.0100   | Excavation Common                                                | CY   | 12,696.000 | 12,696.000 |
| 0028 | 205.0200   | Excavation Rock                                                  | CY   | 271.000    | 271.000    |
| 0030 | 206.2001   | Excavation for Structures Culverts (structure) 01. B-43-64       | EACH | 1.000      | 1.000      |
| 0032 | 206.5001   | Cofferdams (structure) 01. B-43-64                               | EACH | 1.000      | 1.000      |
| 0034 | 209.0200.S | Backfill Controlled Low Strength                                 | CY   | 125.000    | 125.000    |
| 0036 | 210.2500   | Backfill Structure Type B                                        | TON  | 420.000    | 420.000    |
| 0038 | 211.0101   | Prepare Foundation for Asphaltic Paving (project) 01. 1590-12-73 | EACH | 1.000      | 1.000      |
| 0040 | 213.0100   | Finishing Roadway (project) 01. 1590-12-73                       | EACH | 1.000      | 1.000      |
| 0042 | 305.0110   | Base Aggregate Dense 3/4-Inch                                    | TON  | 1,035.000  | 1,035.000  |
| 0044 | 305.0120   | Base Aggregate Dense 1 1/4-Inch                                  | TON  | 7,215.000  | 7,215.000  |
| 0046 | 305.0130   | Base Aggregate Dense 3-Inch                                      | TON  | 9,670.000  | 9,670.000  |
| 0048 | 311.0115   | Breaker Run                                                      | CY   | 65.000     | 65.000     |
| 0050 | 405.0100   | Coloring Concrete WisDOT Red                                     | CY   | 29.000     | 29.000     |
| 0052 | 416.0512   | Concrete Truck Apron 12-Inch                                     | SY   | 55.000     | 55.000     |
| 0054 | 455.0605   | Tack Coat                                                        | GAL  | 1,920.000  | 1,920.000  |
| 0056 | 460.2000   | Incentive Density HMA Pavement                                   | DOL  | 3,180.000  | 3,180.000  |
| 0058 | 460.6223   | HMA Pavement 3 MT 58-28 S                                        | TON  | 3,460.000  | 3,460.000  |
| 0060 | 460.6444   | HMA Pavement 4 MT 58-34 H                                        | TON  | 1,500.000  | 1,500.000  |
| 0062 | 465.0105   | Asphaltic Surface                                                | TON  | 40.000     | 40.000     |
| 0064 | 465.0110   | Asphaltic Surface Patching                                       | TON  | 20.000     | 20.000     |
| 0066 | 465.0120   | Asphaltic Surface Driveways and Field Entrances                  | TON  | 15.000     | 15.000     |
| 0068 | 465.0125   | Asphaltic Surface Temporary                                      | TON  | 265.000    | 265.000    |
| 0070 | 465.0310   | Asphaltic Curb                                                   | LF   | 60.000     | 60.000     |
| 0072 | 465.0315   | Asphaltic Flumes                                                 | SY   | 110.000    | 110.000    |
| 0074 | 504.0100   | Concrete Masonry Culverts                                        | CY   | 89.000     | 89.000     |
| 0076 | 505.0400   | Bar Steel Reinforcement HS Structures                            | LB   | 9,290.000  | 9,290.000  |
| 0078 | 511.1200   | Temporary Shoring (structure) 01. B-43-64                        | SF   | 1,650.000  | 1,650.000  |
| 0080 | 516.0500   | Rubberized Membrane Waterproofing                                | SY   | 17.000     | 17.000     |
| 0082 | 522.0472   | Culvert Pipe Reinforced Concrete Class IV 72-Inch                | LF   | 240.000    | 240.000    |
| 0084 | 601.0557   | Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D              | LF   | 630.000    | 630.000    |
| 0086 | 603.8000   | Concrete Barrier Temporary Precast Delivered                     | LF   | 2,435.000  | 2,435.000  |
| 0088 | 603.8125   | Concrete Barrier Temporary Precast Installed                     | LF   | 2,435.000  | 2,435.000  |
| 0090 | 603.8500   | Anchoring Concrete Barrier Temporary Precast                     | LF   | 420.000    | 420.000    |
| 0092 | 606.0200   | Riprap Medium                                                    | CY   | 6.000      | 6.000      |
| 0094 | 606.0300   | Riprap Heavy                                                     | CY   | 140.000    | 140.000    |
| 0096 | 614.0397   | Guardrail Mow Strip Emulsified Asphalt                           | SY   | 685.000    | 685.000    |
| 0098 | 614.0905   | Crash Cushions Temporary                                         | EACH | 6.000      | 6.000      |

1590-12-73

| Line | Item     | Item Description                                              | Unit | Total      | Qty        |
|------|----------|---------------------------------------------------------------|------|------------|------------|
| 0100 | 614.2300 | MGS Guardrail 3                                               | LF   | 1,175.000  | 1,175.000  |
| 0102 | 614.2610 | MGS Guardrail Terminal EAT                                    | EACH | 6.000      | 6.000      |
| 0104 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 1590-12-73 | EACH | 1.000      | 1.000      |
| 0106 | 619.1000 | Mobilization                                                  | EACH | 1.000      | 1.000      |
| 0108 | 624.0100 | Water                                                         | MGAL | 172.000    | 172.000    |
| 0110 | 625.0100 | Topsoil                                                       | SY   | 10,530.000 | 10,530.000 |
| 0112 | 627.0200 | Mulching                                                      | SY   | 4,370.000  | 4,370.000  |
| 0114 | 628.1504 | Silt Fence                                                    | LF   | 4,870.000  | 4,870.000  |
| 0116 | 628.1520 | Silt Fence Maintenance                                        | LF   | 4,870.000  | 4,870.000  |
| 0118 | 628.1905 | Mobilizations Erosion Control                                 | EACH | 8.000      | 8.000      |
| 0120 | 628.1910 | Mobilizations Emergency Erosion Control                       | EACH | 4.000      | 4.000      |
| 0122 | 628.2006 | Erosion Mat Urban Class I Type A                              | SY   | 6,170.000  | 6,170.000  |
| 0124 | 628.7555 | Culvert Pipe Checks                                           | EACH | 64.000     | 64.000     |
| 0126 | 628.7570 | Rock Bags                                                     | EACH | 250.000    | 250.000    |
| 0128 | 629.0210 | Fertilizer Type B                                             | CWT  | 6.650      | 6.650      |
| 0130 | 630.0120 | Seeding Mixture No. 20                                        | LB   | 300.000    | 300.000    |
| 0132 | 630.0500 | Seed Water                                                    | MGAL | 235.000    | 235.000    |
| 0134 | 633.5200 | Markers Culvert End                                           | EACH | 4.000      | 4.000      |
| 0136 | 634.0612 | Posts Wood 4x6-Inch X 12-FT                                   | EACH | 1.000      | 1.000      |
| 0138 | 634.0616 | Posts Wood 4x6-Inch X 16-FT                                   | EACH | 12.000     | 12.000     |
| 0140 | 634.0618 | Posts Wood 4x6-Inch X 18-FT                                   | EACH | 16.000     | 16.000     |
| 0142 | 637.2210 | Signs Type II Reflective H                                    | SF   | 102.460    | 102.460    |
| 0144 | 638.2102 | Moving Signs Type II                                          | EACH | 17.000     | 17.000     |
| 0146 | 638.2602 | Removing Signs Type II                                        | EACH | 7.000      | 7.000      |
| 0148 | 638.3000 | Removing Small Sign Supports                                  | EACH | 34.000     | 34.000     |
| 0150 | 642.5001 | Field Office Type B                                           | EACH | 1.000      | 1.000      |
| 0152 | 643.0300 | Traffic Control Drums                                         | DAY  | 8,810.000  | 8,810.000  |
| 0154 | 643.0420 | Traffic Control Barricades Type III                           | DAY  | 870.000    | 870.000    |
| 0156 | 643.0705 | Traffic Control Warning Lights Type A                         | DAY  | 1,695.000  | 1,695.000  |
| 0158 | 643.0715 | Traffic Control Warning Lights Type C                         | DAY  | 2,570.000  | 2,570.000  |
| 0160 | 643.0900 | Traffic Control Signs                                         | DAY  | 4,415.000  | 4,415.000  |
| 0162 | 643.0920 | Traffic Control Covering Signs Type II                        | EACH | 32.000     | 32.000     |
| 0164 | 643.1000 | Traffic Control Signs Fixed Message                           | SF   | 54.000     | 54.000     |
| 0166 | 643.1050 | Traffic Control Signs PCMS                                    | DAY  | 48.000     | 48.000     |
| 0168 | 643.3105 | Temporary Marking Line Paint 4-Inch                           | LF   | 18,295.000 | 18,295.000 |
| 0170 | 643.3150 | Temporary Marking Line Removable Tape 4-Inch                  | LF   | 230.000    | 230.000    |
| 0172 | 643.3205 | Temporary Marking Line Paint 8-Inch                           | LF   | 240.000    | 240.000    |
| 0174 | 643.3805 | Temporary Marking Stop Line Paint 18-Inch                     | LF   | 65.000     | 65.000     |
| 0176 | 643.5000 | Traffic Control                                               | EACH | 1.000      | 1.000      |
| 0178 | 645.0105 | Geotextile Type C                                             | SY   | 495.000    | 495.000    |
| 0180 | 645.0120 | Geotextile Type HR                                            | SY   | 302.000    | 302.000    |
| 0182 | 646.1040 | Marking Line Grooved Wet Ref Epoxy 4-Inch                     | LF   | 5,510.000  | 5,510.000  |
| 0184 | 646.3040 | Marking Line Grooved Wet Ref Epoxy 8-Inch                     | LF   | 1,690.000  | 1,690.000  |
| 0186 | 646.4520 | Marking Line Same Day Epoxy 4-Inch                            | LF   | 7,785.000  | 7,785.000  |
| 0188 | 646.5020 | Marking Arrow Epoxy                                           | EACH | 8.000      | 8.000      |
| 0190 | 646.5120 | Marking Word Epoxy                                            | EACH | 4.000      | 4.000      |
| 0192 | 646.6120 | Marking Stop Line Epoxy 18-Inch                               | LF   | 30.000     | 30.000     |
| 0194 | 646.7120 | Marking Diagonal Epoxy 12-Inch                                | LF   | 310.000    | 310.000    |
| 0196 | 646.9000 | Marking Removal Line 4-Inch                                   | LF   | 5,975.000  | 5,975.000  |

## Estimate Of Quantities

1590-12-73

| Line | Item       | Item Description                                                              | Unit | Total     | Qty       |
|------|------------|-------------------------------------------------------------------------------|------|-----------|-----------|
| 0198 | 646.9100   | Marking Removal Line 8-Inch                                                   | LF   | 560.000   | 560.000   |
| 0200 | 646.9200   | Marking Removal Line Wide                                                     | LF   | 25.000    | 25.000    |
| 0202 | 650.4500   | Construction Staking Subgrade                                                 | LF   | 2,880.000 | 2,880.000 |
| 0204 | 650.5000   | Construction Staking Base                                                     | LF   | 2,880.000 | 2,880.000 |
| 0206 | 650.5500   | Construction Staking Curb Gutter and Curb & Gutter                            | LF   | 700.000   | 700.000   |
| 0208 | 650.6501   | Construction Staking Structure Layout (structure) 01. B-43-64                 | EACH | 1.000     | 1.000     |
| 0210 | 650.8000   | Construction Staking Resurfacing Reference                                    | LF   | 765.000   | 765.000   |
| 0212 | 650.9911   | Construction Staking Supplemental Control (project) 01. 1590-12-73            | EACH | 1.000     | 1.000     |
| 0214 | 650.9920   | Construction Staking Slope Stakes                                             | LF   | 2,210.000 | 2,210.000 |
| 0216 | 652.0225   | Conduit Rigid Nonmetallic Schedule 40 2-Inch                                  | LF   | 40.000    | 40.000    |
| 0218 | 652.0325   | Conduit Rigid Nonmetallic Schedule 80 2-Inch                                  | LF   | 10.000    | 10.000    |
| 0220 | 653.0154   | Pull Boxes Non-Conductive 24x36-Inch                                          | EACH | 1.000     | 1.000     |
| 0222 | 653.0905   | Removing Pull Boxes                                                           | EACH | 1.000     | 1.000     |
| 0224 | 654.0101   | Concrete Bases Type 1                                                         | EACH | 1.000     | 1.000     |
| 0226 | 655.0230   | Cable Traffic Signal 5-14 AWG                                                 | LF   | 100.000   | 100.000   |
| 0228 | 655.0515   | Electrical Wire Traffic Signals 10 AWG                                        | LF   | 100.000   | 100.000   |
| 0230 | 656.0201   | Electrical Service Meter Breaker Pedestal (location) 01. USH 8 & USH 45 South | EACH | 1.000     | 1.000     |
| 0232 | 657.0100   | Pedestal Bases                                                                | EACH | 1.000     | 1.000     |
| 0234 | 657.0420   | Traffic Signal Standards Aluminum 13-FT                                       | EACH | 1.000     | 1.000     |
| 0236 | 658.0171   | Traffic Signal Face 1S 12-Inch                                                | EACH | 1.000     | 1.000     |
| 0238 | 658.5070   | Signal Mounting Hardware (location) 01. USH 8 & USH 45 South                  | EACH | 1.000     | 1.000     |
| 0240 | 659.5000.S | Lamp, Ballast, LED, Switch Disposal by Contractor                             | EACH | 1.000     | 1.000     |
| 0242 | 690.0150   | Sawing Asphalt                                                                | LF   | 775.000   | 775.000   |
| 0244 | 690.0250   | Sawing Concrete                                                               | LF   | 3,545.000 | 3,545.000 |
| 0246 | 715.0502   | Incentive Strength Concrete Structures                                        | DOL  | 534.000   | 534.000   |
| 0248 | 740.0440   | Incentive IRI Ride                                                            | DOL  | 1,600.000 | 1,600.000 |
| 0250 | ASP.1T0A   | On-the-Job Training Apprentice at \$5.00/HR                                   | HRS  | 2,000.000 | 2,000.000 |
| 0252 | ASP.1T0G   | On-the-Job Training Graduate at \$5.00/HR                                     | HRS  | 1,260.000 | 1,260.000 |
| 0254 | SPV.0060   | Special 01. Install State Furnished Flasher Cabinet                           | EACH | 1.000     | 1.000     |
| 0256 | SPV.0060   | Special 02. Remove Flashing Beacon Assembly (USH 8 & USH 45 West Jct)         | EACH | 1.000     | 1.000     |

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|               |    |         |           | 201.0105 | 201.0205 |
|---------------|----|---------|-----------|----------|----------|
|               |    |         |           | CLEARING | GRUBBING |
| STATION       | TO | STATION | LOCATION  | STA      | STA      |
| 431+00        | -  | 433+00  | USH 8, RT | 2        | 2        |
| 440+00        | -  | 443+00  | USH 8, RT | 3        | 3        |
| <b>TOTALS</b> |    |         |           | <b>5</b> | <b>5</b> |

|              |         |   |         |                          | 204.0150     | 204.0100     |
|--------------|---------|---|---------|--------------------------|--------------|--------------|
|              |         |   |         |                          | REMOVING     | REMOVING     |
|              |         |   |         |                          | CURB &       | CONCRETE     |
|              |         |   |         |                          | GUTTER       | PAVEMENT     |
| STAGE        | STATION |   | STATION | LOCATION                 | LF           | SY           |
| 1            | 1415+62 | - | 1418+18 | USH 45 MEDIAN ISLAND     | 518          | ---          |
| 1            | 1418+20 | - | 1418+44 | USH 45, RT               | 57           | ---          |
| 1            | 1417+37 | - | 1418+28 | USH 45, LT               | 131          | ---          |
| 2            | 429+50  | - | 437+75  | USH, 8, RT               | ---          | 54           |
| 2            | 1416+52 | - | 1418+60 | USH 45 NB TO USH 8 EB RT | 703          | ---          |
| 2            | 1416+50 | - | 1417+59 | USH 8 EB TO USH 45 SB RT | 595          | ---          |
| 2            | 442+15  | - | 443+00  | USH 8, RT                | ---          | 20           |
| 3            | 1412+69 | - | 1413+23 | USH 45                   | ---          | 144          |
| 3            | 1415+05 | - | 1415+62 | USH 45                   | ---          | 150          |
| 3            | 1416+65 | - | 1417+37 | USH 45, LT               | 79           | ---          |
| 3            | 1416+65 | - | 1418+20 | USH, 45, RT              | 160          | ---          |
| 4            | 429+50  | - | 434+60  | USH 8                    | ---          | 667          |
| 4            | 436+10  | - | 443+00  | USH 8                    | ---          | 1114         |
| 5            | 429+50  | - | 443+00  | USH 8                    | ---          | 1638         |
| 6            | 1410+00 | - | 1412+69 | USH 45                   | ---          | 720          |
| 6            | 1413+23 | - | 1415+05 | USH 45                   | ---          | 488          |
| 7            | 427+40  | - | 428+91  | USH 8, LT                | 150          | ---          |
| 7            | 444+91  | - | 447+83  | USH 8, RT                | 292          | ---          |
| <b>TOTAL</b> |         |   |         |                          | <b>2,685</b> | <b>4,995</b> |

|               |   |         |          | 204.0110     | 204.0120     |
|---------------|---|---------|----------|--------------|--------------|
|               |   |         |          | SURFACE      | MILLING      |
| STATION       |   | STATION | LOCATION | SY           | SY           |
| 427+00        | - | 429+50  | USH 8    | 35           | 985          |
| 429+50        | - | 439+13  | USH 8    | 960          | --           |
| 443+00        | - | 448+14  | USH 8    | 70           | 2,000        |
|               |   |         |          |              |              |
| <b>TOTALS</b> |   |         |          | <b>1,065</b> | <b>2,985</b> |

|       |         |   |         |            | 204.0165  |
|-------|---------|---|---------|------------|-----------|
|       |         |   |         |            | REMOVING  |
|       |         |   |         |            | GUARDRAIL |
| STAGE | STATION |   | STATION | LOCATION   | LF        |
| 3     | 1412+48 | - | 1418+18 | USH 45, LT | 130       |
| 3     | 1412+18 | - | 1413+78 | USH 45, RT | 155       |
| 7     | 429+19  | - | 439+08  | USH 45, LT | 980       |
| TOTAL |         |   |         |            | 1,265     |

|              |         |            | 204.0220        | 204.0245      |
|--------------|---------|------------|-----------------|---------------|
|              |         |            | REMOVING STORM  |               |
|              |         |            | REMOVING INLETS | SEWER 12-INCH |
| STAGE        | STATION | LOCATION   | EACH            | LF            |
| 2            | 1417+57 | USH 45, LT | 1               | 53            |
| 2            | 1418+10 | USH 45, RT | 1               | 77            |
| 2            | 437+35  | USH 8, RT  | 1               | 40            |
| <b>TOTAL</b> |         |            | <b>3</b>        | <b>170</b>    |

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| DIVISION                 | FROM/TO STATION                  | LOCATION | 205.0100<br>COMMON EXCAVATION<br>(1) |                | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>(3) | AVAILABLE<br>MATERIAL<br>(4) | 205.0200<br>ROCK EXCAVATION<br>(5) | EXPANDED ROCK<br>(6) | UNEXPANDED<br>FILL | EXPANDED FILL<br>(7) | MASS<br>ORDINATE +/-<br>(8) | WASTE |
|--------------------------|----------------------------------|----------|--------------------------------------|----------------|-----------------------------------------------|------------------------------|------------------------------------|----------------------|--------------------|----------------------|-----------------------------|-------|
|                          |                                  |          | CUT<br>(2)                           | FBS EXCAVATION |                                               |                              |                                    | FACTOR<br>1.10       |                    | FACTOR<br>1.25       |                             |       |
| DIVISION 1               | 427+00/448+00<br>1410+00/1417+70 |          |                                      |                |                                               |                              |                                    |                      |                    |                      |                             |       |
| USH 8/45 ISLANDS_STAGE 1 |                                  | 445      | 0                                    | 26             | 419                                           | 0                            | 0                                  | 0                    | 419                | 419                  |                             |       |
| USH 8_STAGE 2-3          |                                  | 4,055    | 0                                    | 1,278          | 2,777                                         | 271                          | 298                                | 1,232                | 1,167              | 1,610                | 1,610                       |       |
| USH 45_STAGE 2-3         |                                  | 2,675    | 0                                    | 252            | 2,423                                         | 0                            | 0                                  | 45                   | 56                 | 2,367                | 2,367                       |       |
| DIVISION 1 SUBTOTAL      |                                  |          | 7,175                                | 0              | 1,556                                         | 5,619                        | 271                                | 298                  | 1,277              | 1,224                | 3,976                       | 3,976 |
| DIVISION 2               |                                  |          |                                      |                |                                               |                              |                                    |                      |                    |                      |                             |       |
| USH 8_STAGE 4            | 427+00/448+00                    |          | 1,562                                | 0              | 386                                           | 1,176                        | 0                                  | 0                    | 0                  | 0                    | 1,176                       | 1,176 |
| DIVISION 2 SUBTOTAL      |                                  |          | 1,562                                | 0              | 386                                           | 1,176                        | 0                                  | 0                    | 0                  | 0                    | 1,176                       | 1,176 |
| DIVISION 3               |                                  |          |                                      |                |                                               |                              |                                    |                      |                    |                      |                             |       |
| USH 8_STAGE 5            | 427+00/448+00                    |          | 1,500                                | 0              | 642                                           | 858                          | 0                                  | 0                    | 0                  | 0                    | 858                         | 858   |
| DIVISION 3 SUBTOTAL      |                                  |          | 1,500                                | 0              | 642                                           | 858                          | 0                                  | 0                    | 0                  | 0                    | 858                         | 858   |
| DIVISION 4               |                                  |          |                                      |                |                                               |                              |                                    |                      |                    |                      |                             |       |
| USH 45_STAGE 6           | 1410+00/1417+70                  |          | 1,925                                | 0              | 747                                           | 1,178                        | 0                                  | 0                    | 403                | 504                  | 674                         | 674   |
| DIVISION 4 SUBTOTAL      |                                  |          | 1,925                                | 0              | 747                                           | 1,178                        | 0                                  | 0                    | 403                | 504                  | 674                         | 674   |
| DIVISION 5               |                                  |          |                                      |                |                                               |                              |                                    |                      |                    |                      |                             |       |
| USH 8_STAGE 7            | 427+00/448+00                    |          | 534                                  | 0              | 0                                             | 534                          | 0                                  | 0                    | 361                | 451                  | 83                          | 83    |
| DIVISION 5 SUBTOTAL      |                                  |          | 534                                  | 0              | 0                                             | 534                          | 0                                  | 0                    | 361                | 451                  | 83                          | 83    |
| GRAND TOTAL              |                                  |          | 12,696                               | 0              | 3,331                                         | 9,365                        | 271                                | 298                  | 2,041              | 2,179                | 7,186                       | 7,186 |
| TOTAL COMMON EXC         |                                  |          | 12,696                               |                |                                               |                              |                                    |                      |                    |                      |                             |       |

NOTES:

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

(2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(3) SALVAGED/UNUSABLE PAVEMENT MATERIAL

(4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(5) ROCK EXCAVATION ITEM NUMBER 205.0200

(6) EXPANDED ROCK FACTOR = 1.10

(7) EXPANDED FILL FACTOR = X.6X

DEPENDING ON SELECTIONS:

$$\text{EXPANDED FILL} = (\text{UNEXPANDED FILL} - \text{EXPANDED ROCK} - \text{REDUCED MARSH} - \text{REDUCED EBS}) * \text{FILL FACTOR}$$
$$\text{EXPANDED FILL} = (\text{UNEXPANDED FILL} - \text{EXPANDED ROCK}) * \text{FILL FACTOR}$$

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

PREPARE FOUNDATION FOR ASPHALTIC PAVING 1590-12-73

211.0101  
PREPARE FOUNDATION  
FOR ASPHALTIC PAVING  
1590-12-73

| STAGE  | LOCATION | EACH | REMARKS                                       |
|--------|----------|------|-----------------------------------------------|
| 1      | USH 8    | 1    | STA 427+00 TO 429+50 & STA 443+00 TO 448+13.5 |
| TOTALS |          | 1    |                                               |

AGGREGATE SUMMARY

|           |            |           |          |
|-----------|------------|-----------|----------|
| 305.0110  | 305.0120   | 305.0130  | 624.0100 |
| BASE      | BASE       | BASE      |          |
| AGGREGATE | AGGREGATE  | AGGREGATE |          |
| DENSE     | DENSE      | DENSE     |          |
| 3/4-INCH  | 1 1/4-INCH | 3-INCH    | WATER    |

| STAGE | STATION |   | STATION | LOCATION             | TON   | TON   | TON   | MGAL |
|-------|---------|---|---------|----------------------|-------|-------|-------|------|
| 1     | 1415+62 | - | 1418+18 | USH 45 MEDIAN ISLAND | ---   | 190   | ---   | 5    |
| 1     | 1418+20 | - | 1418+44 | USH 45, RT           | ---   | 30    | ---   | 2    |
| 1     | 1417+37 | - | 1418+28 | USH 45, LT           | ---   | 100   | ---   | 2    |
| 1     | 439+37  | - | 445+14  | USH 8, LT            | ---   | 185   | ---   | 4    |
| 2/3   | 429+50  | - | 443+00  | USH 8, RT & USH 45   | ---   | 3070  | 4550  | 61   |
| 2/3   | 1412+69 | - | 1413+23 | USH 45               | ---   | 125   | ---   | 3    |
| 4     | 429+50  | - | 434+60  | USH 8                | ---   | 380   | 525   | 8    |
| 4     | 436+10  | - | 443+00  | USH 8                | ---   | 640   | 880   | 13   |
| 5     | 429+50  | - | 443+00  | USH 8, LT            | ---   | 1130  | 1635  | 23   |
| 6     | 1410+00 | - | 1415+05 | USH 45               | ---   | 1365  | 2080  | 27   |
| 7     | 427+00  | - | 429+50  | USH 8, LT            | 30    | ---   | ---   | 2    |
| 7     | 427+00  | - | 429+50  | USH 8, RT            | ---   | ---   | ---   | ---  |
| 7     | 429+50  | - | 439+13  | USH 8, LT            | 100   | ---   | ---   | 3    |
| 7     | 439+13  | - | 443+00  | USH 8, LT            | 100   | ---   | ---   | 2    |
| 7     | 429+50  | - | 443+00  | USH 8, RT            | 380   | ---   | ---   | 8    |
| 7     | 443+00  | - | 448+14  | USH 8, LT            | ---   | ---   | ---   | ---  |
| 7     | 443+00  | - | 448+14  | USH 8, RT            | ---   | ---   | ---   | ---  |
| 7     | 1410+00 | - | 1416+95 | USH 45, LT           | 225   | ---   | ---   | 5    |
| 7     | 1410+00 | - | 1417+82 | USH 45, RT           | 200   | ---   | ---   | 4    |
| TOTAL |         |   |         |                      | 1,035 | 7,215 | 9,670 | 172  |



3

ASPHALTIC SURFACE

|               |         |         |         |                      | 465.0105  | 465.0110  | 465.0125  | 465.0120  | 465.0310  |
|---------------|---------|---------|---------|----------------------|-----------|-----------|-----------|-----------|-----------|
|               |         |         |         |                      | ASPHALTIC | ASPHALTIC | ASPHALTIC | ASPHALTIC | ASPHALTIC |
|               |         |         |         |                      | SURFACE   | SURFACE   | SURFACE   | SURFACE   | ASPHALTIC |
|               |         |         |         |                      |           | PATCHING  | TEMPORARY | & FE      | CURB      |
| STAGE         | STATION | STATION | STATION | LOCATION             | TON       | TON       | TON       | TON       | LF        |
| 1             | 1415+62 | -       | 1418+18 | USH 45 MEDIAN ISLAND | ---       | ---       | 80        | ---       | ---       |
| 1             | 1418+20 | -       | 1418+44 | USH 45, RT           | ---       | ---       | 15        | ---       | ---       |
| 1             | 1417+37 | -       | 1418+28 | USH 45, LT           | ---       | ---       | 45        | ---       | ---       |
| 1             | 439+37  | -       | 445+14  | USH 8, LT            | ---       | ---       | 75        | ---       | ---       |
| 3             | 1412+69 | -       | 1413+23 | USH 45               | ---       | ---       | 50        | ---       | ---       |
| 7             | 427+00  | -       | 429+23  | USH 8, LT            | 15        | ---       | ---       | 15        | ---       |
| 7             | 428+91  | -       | 429+49  | USH 8, LT            | 5         | ---       | ---       | ---       | 60        |
|               | 443+00  | -       | 448+14  | USH 8, RT            | 20        | ---       | ---       | ---       | ---       |
| UNDISTRIBUTED |         |         |         |                      | ---       | 20        | ---       | ---       | ---       |
| TOTALS        |         |         |         |                      | 40        | 20        | 265       | 15        | 60        |

HMA PAVEMENT SUMMARY

|       |         |         |         |                    | TOTAL |       |           | 460.6444       | 460.6223       |
|-------|---------|---------|---------|--------------------|-------|-------|-----------|----------------|----------------|
|       |         |         |         |                    | LOWER | UPPER |           | HMA PAVEMENT 4 | HMA PAVEMENT 3 |
|       |         |         |         |                    | LAYER | LAYER | 455.0605  | MT 58-34 H     | MT 58-28 S     |
|       |         |         |         |                    | DEPTH | DEPTH | TACK COAT | (UPPER)        | (LOWER)        |
| STAGE | STATION | STATION | STATION | LOCATION           | IN    | IN    | GAL       | TON            | TON            |
| 3     | 429+50  | -       | 443+00  | USH 8, RT & USH 45 | 4.5   | ---   | 390       | ---            | 1410           |
| 4     | 429+50  | -       | 434+60  | USH 8              | 4.5   | ---   | 60        | ---            | 215            |
| 4     | 436+10  | -       | 443+00  | USH 8              | 4.5   | ---   | 100       | ---            | 360            |
| 5     | 429+50  | -       | 443+00  | USH 8, LT          | 4.5   | ---   | 150       | ---            | 545            |
| 6     | 1410+00 | -       | 1415+05 | USH 45             | 4.5   | ---   | 150       | ---            | 535            |
| 7     | 427+00  | -       | 429+00  | USH 8              | 2.25  | ---   | ---       | ---            | 130            |
| 7     | 443+00  | -       | 448+14  | USH 8              | 2.25  | ---   | ---       | ---            | 265            |
| 7     | 427+00  | -       | 448+14  | USH 8              | ---   | 1.75  | 805       | 1130           | ---            |
| 7     | 1410+00 | -       | 1418+31 | USH 45             | ---   | 1.75  | 265       | 370            | ---            |
| TOTAL |         |         |         |                    |       |       | 1,920     | 1,500          | 3,460          |

CONCRETE SUMMARY

|       |         |    |         |                          | 405.0100   | 416.0502             | 601.0557                     |
|-------|---------|----|---------|--------------------------|------------|----------------------|------------------------------|
|       |         |    |         |                          | COLORING   | CONCRETE             | CONCRETE                     |
|       |         |    |         |                          | CONCRETE   | TRUCK APRON          | CURB & GUTTER                |
|       |         |    |         |                          | WISDOT RED | 12-INCH (WISDOT RED) | 6-INCH SLOPED 36-INCH TYPE D |
| STAGE | STATION | TO | STATION | LOCATION                 | CY         | SY                   | LF                           |
| 3     | 434+64  | -  | 1416+95 | USH 45 NB TO USH 8 EB RT | 10         | 29                   | 83                           |
| 3     | 1417+84 | -  | 436+55  | USH 8 EB TO USH 45 SB RT | 19         | 26                   | 120                          |
| 7     | 427+40  | -  | 428+91  | USH 8, LT                | ---        | ---                  | 150                          |
| 7     | 444+91  | -  | 447+83  | USH 8, RT                | ---        | ---                  | 277                          |
| TOTAL |         |    |         |                          | 29         | 55                   | 630                          |

ASPHALTIC FLUMES, RIPRAP & GEOTEXTILE FABRIC

|        |         |  |            |  | 465.0315  | 606.0200 | 645.0120*      |
|--------|---------|--|------------|--|-----------|----------|----------------|
|        |         |  |            |  | ASPHALTIC | RIPRAP   | GEOTEXTILE     |
|        |         |  |            |  | FLUMES    | MEDIUM   | FABRIC TYPE HR |
| STAGE  | STATION |  | LOCATION   |  | SY        | CY       | SY             |
| 3      | 1416+95 |  | USH 45, LT |  | 27        | 2        | 5              |
| 3      | 1417+84 |  | USH 45, RT |  | 63        | 2        | 5              |
| 7      | 444+88  |  | USH 8, RT  |  | 20        | 2        | 7              |
| TOTALS |         |  |            |  | 110       | 6        | 17             |

\*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

BEAM GUARD

|       |         |   |         |            | 614.2300    | 614.2610      | 614.0397           |
|-------|---------|---|---------|------------|-------------|---------------|--------------------|
|       |         |   |         |            | MGS         | MGS GUARDRAIL | GUARDRAIL          |
|       |         |   |         |            | GUARDRAIL 3 | TERMINAL EAT  | MOW STRIP          |
|       |         |   |         |            |             |               | EMULSIFIED ASPHALT |
| STAGE | STATION |   | STATION | LOCATION   | LF          | EACH          | SY                 |
| 7     | 429+23  | - | 439+17  | USH 8, LT  | 875         | 2             | 445                |
| 7     | 1411+63 | - | 1414+19 | USH 45, RT | 150         | 2             | 120                |
| 7     | 1412+07 | - | 1414+63 | USH 45, LT | 150         | 2             | 120                |
| TOTAL |         |   |         |            | 1,175       | 6             | 685                |

CONCRETE BARRIER TEMPORARY PRECAST

|       |         |   |         |            |       | 603.8000          | 603.8125          | 603.8500           | 614.0905      |                  |                           |                     |                   |                     |                        |  |  |
|-------|---------|---|---------|------------|-------|-------------------|-------------------|--------------------|---------------|------------------|---------------------------|---------------------|-------------------|---------------------|------------------------|--|--|
|       |         |   |         |            |       | CONCRETE          | CONCRETE          | ANCHORING CONCRETE | CRASH         |                  |                           |                     |                   |                     |                        |  |  |
|       |         |   |         |            |       | BARRIER TEMPORARY | BARRIER TEMPORARY | BARRIER TEMPORARY  | CUSHIONS      |                  |                           |                     |                   |                     |                        |  |  |
|       |         |   |         |            |       | PRECAST DELIVERED | PRECAST INSTALLED | PRECAST            | TEMPORARY     |                  |                           |                     |                   |                     |                        |  |  |
| STAGE | STATION |   | STATION | LOCATION   | LF    | LF                | LF                | EACH               | LOCATION**    | BACK WIDTH<br>FT | OBJECT MARKING<br>PATTERN | CRASH<br>TEST LEVEL | TRAFFIC DIRECTION | TRAFFIC<br>LOCATION | CRASH CUSHION SHIELDS  |  |  |
| 4     | 1411+32 | - | 1415+39 | USH 45, LT | 405   | 405               | 105               | 1*                 | 1411+31.60 LT | 2                | OM-3L (WO5-58L)           | TL-3                | UNIDIRECTIONAL    | R                   | TEMPORARY BARRIER WALL |  |  |
|       |         |   |         |            |       |                   |                   | 1*                 | 1415+38.60 LT | 2                | OM-3R (WO5-58R)           | TL-3                | UNIDIRECTIONAL    | R                   | TEMPORARY BARRIER WALL |  |  |
| 4     | 1410+88 | - | 1415+19 | USH 45, RT | 430   | 430               | 105               | 1*                 | 1410+87.76 RT | 2                | OM-3R (WO5-58R)           | TL-3                | UNIDIRECTIONAL    | L                   | TEMPORARY BARRIER WALL |  |  |
|       |         |   |         |            |       |                   |                   | 1*                 | 1415+18.76 RT | 2                | OM-3L (WO5-58L)           | TL-3                | UNIDIRECTIONAL    | L                   | TEMPORARY BARRIER WALL |  |  |
| 6     | 1411+32 | - | 1415+39 | USH 45, LT | 380   | 380               | ---               | ---                | ---           | ---              | ---                       | ---                 | ---               | ---                 | ---                    |  |  |
| 6     | 1410+88 | - | 1415+19 | USH 45, RT | 380   | 380               | ---               | ---                | ---           | ---              | ---                       | ---                 | ---               | ---                 | ---                    |  |  |
| 7     | 1411+32 | - | 1415+39 | USH 45, LT | 420   | 420               | 105               | 1*                 | 1411+31.60 LT | 2                | OM-3L (WO5-58L)           | TL-3                | UNIDIRECTIONAL    | R                   | TEMPORARY BARRIER WALL |  |  |
| 7     | 1410+88 | - | 1415+19 | USH 45, RT | 420   | 420               | 105               | 1*                 | 1410+87.76 RT | 2                | OM-3R (WO5-58R)           | TL-3                | UNIDIRECTIONAL    | L                   | TEMPORARY BARRIER WALL |  |  |
| TOTAL |         |   |         |            | 2,435 | 2,435             | 420               | 6                  |               |                  |                           |                     |                   |                     |                        |  |  |

\* ANCHORING REQ'D AT CRASH CUSHION - SEE SDD CRASH CUSHIONS/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

\*\* LOCATION OF CRASH CUSHION IS CALLED OUT TO END OF CONCRETE BARRIER TEMPORARY PRECAST

LANDSCAPING SUMMARY

|         |   |         |    |               |  | 625.0100 | 627.0200 | 628.2006          | 629.0210   | 630.0120       | 630.0500 |
|---------|---|---------|----|---------------|--|----------|----------|-------------------|------------|----------------|----------|
|         |   |         |    |               |  | TOPSOIL  | MULCHING | EROSION MAT URBAN | FERTILIZER | SEEDING        | SEED     |
|         |   |         |    |               |  | SY       | SY       | CLASS I, TYPE A   | TYPE B     | MIXTURE NO. 20 | WATER    |
| STATION |   | STATION |    | LOCATION      |  | SY       | SY       | SY                | CWT        | LB             | MGAL     |
| 429+00  | - | 446+58  | LT | USH 8         |  | 1,460    | --       | 1,460             | 0.95       | 40             | 35       |
| 427+00  | - | 435+32  | RT | USH 8         |  | 1,890    | 820      | 1,070             | 1.20       | 55             | 45       |
| 435+82  | - | 446+58  | RT | USH 8         |  | 3,590    | 1,750    | 1,840             | 2.25       | 100            | 80       |
| 1410+00 | - | 1418+00 | LT | USH 45        |  | 735      | 200      | 535               | 0.45       | 20             | 10       |
| 1410+00 | - | 1418+00 | RT | USH 45        |  | 1,900    | 1,200    | 700               | 1.20       | 55             | 45       |
|         |   |         |    | UNDISTRIBUTED |  | 955      | 400      | 565               | 0.60       | 30             | 20       |
| TOTAL   |   |         |    |               |  | 10,530   | 4,370    | 6,170             | 6.65       | 300            | 235      |



PERMANENT SIGNING SUMMARY

| SIGN NO. | STA     | LOCATION  | SIGN CODE   | SIZE      | SIGN WORDING & PICTORIALS                                    | 634.0616              | 634.0618              | 638.2102           | 638.2602           | 638.3000                 | 637.2210        | REMARKS                               |
|----------|---------|-----------|-------------|-----------|--------------------------------------------------------------|-----------------------|-----------------------|--------------------|--------------------|--------------------------|-----------------|---------------------------------------|
|          |         |           |             |           |                                                              | POSTS WOOD            | POSTS WOOD            | MOVING             | REMOVING           | REMOVING                 | SIGNS TYPE II   |                                       |
|          |         |           |             |           |                                                              | 4X6 INCH X 16-FT EACH | 4X6 INCH X 18-FT EACH | SIGNS TYPE II EACH | SIGNS TYPE II EACH | SMALL SIGN SUPPORTS EACH | REFLECTIVE H SF |                                       |
| 1        | 430+11  | USH 8 RT  | D1-2        | --        | CRANDON EAGLE RIVER AHEAD, ANTIGO RIGHT                      | --                    | 2                     | 1                  | --                 | 2                        |                 |                                       |
| 2        | 430+33  | USH 8 RT  | R7-1D       | --        | NO PARKING                                                   | 1                     | --                    | 1                  | --                 | 1                        |                 |                                       |
| 3        | 431+05  | USH 8 LT  | R8-51L      | --        | NO PARKING                                                   | 1                     | --                    | 1                  | --                 | 1                        |                 |                                       |
| 4A       | 425+00  | USH 8 RT  | J2-4        | 96" X 57" | EAST USH 8, NORTH USH 45, SOUTH USH 45, SOUTH STH 47         | --                    | 2                     | --                 | --                 | 2                        | 38              |                                       |
| 4B       | 432+35  | USH 8 RT  | J2-4        | 96" X 57" | EAST USH 8, NORTH USH 45, SOUTH USH 45, SOUTH STH 47         | --                    | 2                     | --                 | --                 | 2                        | 38              |                                       |
| 5        | 432+48  | USH 8 LT  | R8-51L      | --        | NO PARKING                                                   | 1                     | --                    | 1                  | --                 | 1                        |                 |                                       |
| 6        | 432+58  | USH 8 RT  | R7-1R       | --        | NO PARKING                                                   | 1                     | --                    | 1                  | --                 | 1                        |                 |                                       |
| 7        | 433+08  | USH 8 LT  | D1-2        | --        | RHINELANDER 14 MILES, PRENTICE 60 MILES                      | 2                     | --                    | 1                  | --                 | 2                        |                 |                                       |
| 8        | 433+59  | USH 8 RT  | W12-1D      | --        | DOUBLE DOWN ARROWS                                           | --                    | --                    | --                 | 1                  | 1                        |                 |                                       |
| 9        | 434+12  | USH 8 LT  | M50-2       | --        | WEST USH 8, NORTH STH 47                                     | 1                     | --                    | 1                  | --                 | 1                        |                 |                                       |
| 10       | 435+86  | USH 8 LT  | M50-3, W1-7 | --        | WEST USH 8, NORTH STH 47, NORTH HWY H, TWO DIRECTION ARROW   | 1                     | 2                     | 2                  | --                 | 2                        |                 | Install Night Arrow on Separate posts |
| 11       | 436+51  | USH 8 LT  | M50-4       | --        | SOUTH USH 45, SOUTH STH 47, WEST USH 8, NORTH STH 47         | --                    | 2                     | 1                  | --                 | 2                        |                 |                                       |
| 12       | 438+36  | USH 8 LT  | R2-1        | --        | SPEED LIMIT 45 MPH                                           | --                    | 1                     | 1                  | --                 | 1                        |                 |                                       |
| 13       | 438+81  | USH 8 RT  | M50-2       | --        | EAST USH 8, NORTH USH 45                                     | 1                     | --                    | 1                  | --                 | 1                        |                 |                                       |
| 14       | 441+30  | USH 8 RT  | D1-2        | --        | CRANDON 13 MILES, THREE LAKES 18 MILES, EAGLE RIVER 28 MILES | --                    | 2                     | 1                  | --                 | 2                        |                 |                                       |
| 15       | 441+83  | USH 8 RT  | R2-1        | --        | SPEED LIMIT 45 MPH                                           | 1                     | --                    | 1                  | --                 | 1                        |                 |                                       |
| 16       | 1411+81 | USH 45 RT | D1-2        | --        | RHINELANDER LEFT, CRANDON EAGLE RIVER RIGHT                  | --                    | 2                     | 1                  | --                 | 2                        |                 |                                       |
| 17       | 1412+17 | USH 45 LT | M3-3        | --        | SOUTH USH 45                                                 | 1                     | --                    | 1                  | --                 | 1                        |                 |                                       |
| 18       | 1412+17 | USH 45 LT | M3-3        | ---       | SOUTH STH 47                                                 | --                    | 1                     | 1                  | --                 | 1                        |                 |                                       |
| 19       | 1415+27 | USH 45 RT | J2-2        | 48" X 57" | EAST USH 8, NORTH USH 45                                     | 1                     | --                    | --                 | --                 | 1                        | 19              |                                       |
| 20       | 1415+66 | USH 45 RT | R4-7        | --        | KEEP RIGHT                                                   | --                    | --                    | --                 | 1                  | 1                        |                 |                                       |
| 21       | 1416+67 | USH 45 RT | W12-1D      | --        | DOUBLE DOWN ARROWS                                           | --                    | --                    | --                 | 1                  | 1                        |                 |                                       |
| 22       | 1416+95 | USH 45 LT | R1-2        | --        | YIELD                                                        | --                    | --                    | --                 | 1                  | 1                        |                 |                                       |
| 23       | 1418+35 | USH 45 RT | R1-1        | 36" X 36" | STOP                                                         | ---                   | --                    |                    | --                 | ---                      | 7.46            |                                       |
| 24       | 1418+12 | USH 45 RT | R4-7        | --        | KEEP RIGHT                                                   | --                    | --                    | --                 | 1                  | 1                        |                 |                                       |
| 25       | 1418+35 | USH 45 RT | R1-2, R5-1  | --        | STOP, DO NOT ENTER                                           | --                    | --                    | --                 | 1                  | 1                        |                 |                                       |
| 26       | 1418+37 | USH 45 RT | R1-2, R5-1A | --        | YIELD, WRONGWAY                                              | --                    | --                    | --                 | 1                  | 1                        |                 |                                       |
| TOTAL    |         |           |             |           |                                                              | 12                    | 16                    | 17                 | 7                  | 34                       | 102.46          |                                       |

FLASHING BEACON ASSEMBLY

|         |           |          |            |               |               |            |          |          |               |                |
|---------|-----------|----------|------------|---------------|---------------|------------|----------|----------|---------------|----------------|
|         |           | 204.0195 | 634.0612   | 652.0225      | 652.0325      | 653.0154   | 653.0905 | 654.0101 | 655.0230      | 655.0515       |
|         |           | REMOVING | POSTS WOOD | CONDUIT RIGID | CONDUIT RIGID | PULL BOXES | REMOVING | CONCRETE | CABLE TRAFFIC | ELECTRCAL      |
|         |           | CONCRETE | 4X6-INCH X | NONMETALLIC   | NONMETALLIC   | NON        | PULL     | BASES    | SIGNAL        | WIRE           |
|         |           | BASES    | 12-FT      | SCH 40        | SCH 80        | CONDUCTIVE | BOXES    | TYPE 1   | 5-14 AWG      | TRAFFIC        |
|         |           |          |            | 2-INCH        | 2-INCH        | 24X36-INCH |          |          |               | SIGNALS 10 AWG |
| STA     | LOCATION  | EACH     | EACH       | LF            | LF            | EACH       | EACH     | EACH     | LF            | LF             |
| 1418+35 | USH 45 RT | 1        | ---        | ---           | ---           | ---        | 1        | ---      | ---           | ---            |
| 1417+85 | USH 45 RT | ---      | 1          | 40            | 10            | 1          | ---      | 1        | 100           | 100            |
| TOTALS  |           | 1        | 1          | 40            | 10            | 1          | 1        | 1        | 100           | 100            |

FLASHING BEACON ASSEMBLY, CONT.

|         |           |                |          |                |          |             |               |             |             |
|---------|-----------|----------------|----------|----------------|----------|-------------|---------------|-------------|-------------|
|         |           | 656.0201       | 657.0100 | 657.0420       | 658.0171 | 658.5070    | 659.5000.S    | SPV.0060.01 | SPV.0060.02 |
|         |           | ELECTRICAL     |          |                |          | SIGNAL      |               |             |             |
|         |           | SERVICE METER  | PEDESTAL | TRAFFIC SIGNAL | TRAFFIC  | MOUNTING    | LAMP, BALLAST | INSTALL     | REMOVE      |
|         |           | BREAKER        | BASES    | STD5           | SIGNAL   | HARDWARE    | LED, SWITCH   | STATE FURN  | FLASHING    |
|         |           | PEDESTAL 01.   |          | ALUMINUM       | FACE 1S  | 01. USH 8 & | DISPOSAL BY   | FLASHER     | BEACON      |
|         |           | USH 8 & USH 45 |          | 13-FT          | 12-INCH  | USH 45      | VENDOR        | CABINET     | ASSEMBLY    |
|         |           | WEST JCT       |          |                |          | WEST JCT    |               |             |             |
| STA     | LOCATION  | EACH           | EACH     | EACH           | EACH     | EACH        | EACH          | EACH        | EACH        |
| 1418+35 | USH 45 RT | ---            | ---      | ---            | ---      | ---         | ---           | ---         | 1           |
| 1417+85 | USH 45 RT | 1              | 1        | 1              | 1        | 1           | 1             | 1           | ---         |
| TOTALS  |           | 1              | 1        | 1              | 1        | 1           | 1             | 1           | 1           |

EROSION CONTROL SUMMARY

|         |   |         |                      | 628.1504   |            | 628.1520                     |     | 628.1905                     |      | 628.1910                  |      | 628.7555            |      | 628.7570  |  |
|---------|---|---------|----------------------|------------|------------|------------------------------|-----|------------------------------|------|---------------------------|------|---------------------|------|-----------|--|
|         |   |         |                      | SILT FENCE | SILT FENCE | MOBILIZATION EROSION CONTROL |     | MOBILIZATION EROSION CONTROL |      | EMERGENCY EROSION CONTROL |      | CULVERT PIPE CHECKS |      | ROCK BAGS |  |
| STATION |   | STATION |                      | LOCATION   |            | LF                           | LF  | EACH                         | EACH | EACH                      | EACH | EACH                | EACH |           |  |
| 427+00  | - | 446+58  | USH 8 LT             | 980        | 980        | ---                          | --- | ---                          | ---  | ---                       | ---  | ---                 | ---  |           |  |
| 427+00  | - | 1413+37 | USH 8 RT - USH 45 LT | 1,100      | 1,100      | ---                          | --- | ---                          | ---  | ---                       | ---  | ---                 | ---  |           |  |
| 1413+40 | - | 446+58  | USH 45 RT - USH 8 RT | 1,200      | 1,200      | ---                          | --- | ---                          | ---  | 64                        | ---  | ---                 | ---  |           |  |
| 1410+00 | - | 1412+90 | USH 45 LT            | 300        | 300        | ---                          | --- | ---                          | ---  | ---                       | ---  | ---                 | ---  |           |  |
| 1410+00 | - | 1412+85 | USH 45 RT            | 300        | 300        | --                           | --  | --                           | --   | ---                       | ---  | ---                 | ---  |           |  |
|         |   |         | UNDISTRIBUTED        | 990        | 990        | 8                            | 4   | 4                            | 4    | ---                       | ---  | ---                 | 250  |           |  |
| TOTAL   |   |         |                      | 4,870      | 4,870      | 8                            | 4   | 4                            | 4    | 64                        | ---  | ---                 | 250  |           |  |

TRAFFIC CONTROL SUMMARY

|               |      | 643.0300    | 643.0420   | 643.0705       | 643.0715       | 643.0900 | 643.1050   |         |      |
|---------------|------|-------------|------------|----------------|----------------|----------|------------|---------|------|
|               |      | DRUMS       | BARRICADES | WARNING LIGHTS | WARNING LIGHTS | SIGNS    | SIGNS PCMS |         |      |
|               |      | APPROXIMATE |            |                |                |          |            |         |      |
|               |      | SERVICE     | NO. IN     | NO. IN         | NO. IN         | NO. IN   | NO. IN     |         |      |
| LOCATION      | DAYS | SERVICE     | DAYS       | SERVICE        | DAYS           | SERVICE  | DAYS       | SERVICE | DAYS |
| STAGE 1       | 5    | 95          | 475        | ---            | ---            | ---      | ---        | 8       | 40   |
| STAGE 2       | 16   | 100         | 1,600      | 11             | 152            | 22       | 304        | 12      | 192  |
| STAGE 3       | 5    | 70          | 350        | 18             | 90             | 30       | 150        | 12      | 60   |
| STAGE 4       | 15   | 160         | 2,400      | 11             | 165            | 22       | 330        | 52      | 780  |
| STAGE 5       | 15   | 90          | 1,350      | 3              | 45             | 6        | 90         | 38      | 570  |
| STAGE 6       | 5    | 115         | 575        | 20             | 100            | 40       | 200        | 42      | 210  |
| STAGE 7       | 10   | 96          | 960        | 20             | 200            | 40       | 400        | 42      | 420  |
| UNDISTRIBUTED | ---  | ---         | 1,100      | ---            | 118            | ---      | 221        | ---     | 338  |
| TOTALS        |      | 8,810       |            | 870            |                | 1,695    |            | 2,570   |      |
|               |      |             |            |                |                | 4,415    |            | 48      |      |

CULVERT MARKERS

|          |         |          |                                      |                        |
|----------|---------|----------|--------------------------------------|------------------------|
|          |         |          | 204.0180                             | 633.5200               |
|          |         |          | REMOVING<br>DELINEATORS &<br>MARKERS | MARKERS<br>CULVERT END |
| CATEGORY | STA     | LOCATION | EACH                                 | EACH                   |
| 0010     | 438+15  | USH 8    | 2                                    | 2                      |
| 0010     | 1413+13 | USH 45   | ---                                  | 2                      |
| TOTAL    |         |          | 2                                    | 4                      |

COVERING SIGNS

|                              |      |                  |                 |                      | 643.0920                               |
|------------------------------|------|------------------|-----------------|----------------------|----------------------------------------|
|                              |      |                  |                 |                      | TRAFFIC CONTROL COVERING SIGNS TYPE II |
| LOCATION                     | EACH | NUMBER OF CYCLES | NUMBER OF SIGNS | REMARKS              |                                        |
| USH 45 & STH 64 Intersection | 10   | 2                | 5               | DETOUR PLAN DETAIL 1 |                                        |
| USH 8 & USH 45               | 22   | 2                | 11              | DETOUR PLAN DETAIL 4 |                                        |
| TOTAL                        |      |                  |                 |                      | 32                                     |

TRAFFIC CONTROL FIXED MESSAGE SIGNS

|           |           |         |                               | 643.1000 |
|-----------|-----------|---------|-------------------------------|----------|
| LOCATION  | SIGN CODE | SIZE    | SIGN WORDING & PICTORIALS     | SF       |
| USH 8 EB  | G20-57    | 72"x36" | USH 8/USH 45 ROAD WORK BEGINS | 18.0     |
| USH 8 WB  | G20-57    | 72"x36" | "                             | 18.0     |
| USH 45 NB | G20-57    | 72"x36" | "                             | 18.0     |
| TOTAL     |           |         |                               | 54.0     |



TEMPORARY PAVEMENT MARKING

|       |         | 643.3105          |         | 643.3205          |        | 643.3150          |     | 643.3805          |     | 646.9000        |       | 646.9100        |     | 646.9200        |     | REMARKS       |
|-------|---------|-------------------|---------|-------------------|--------|-------------------|-----|-------------------|-----|-----------------|-------|-----------------|-----|-----------------|-----|---------------|
|       |         | TEMPORARY MARKING |         | TEMPORARY MARKING |        | TEMPORARY MARKING |     | TEMPORARY MARKING |     | MARKING REMOVAL |       | MARKING REMOVAL |     | MARKING REMOVAL |     |               |
|       |         | LINE PAINT 4-INCH |         | LINE PAINT 8-INCH |        | LINE REMOVABLE    |     | STOP LINE         |     | LINE 4-INCH     |       | LINE 8-INCH     |     | LINE WIDE       |     |               |
| STAGE | STATION |                   | STATION |                   | LF     |                   | LF  |                   | LF  |                 | LF    |                 | LF  |                 | LF  |               |
| 2     | 426+42  | -                 | 427+00  | USH 8             | ---    |                   | --- |                   | 115 |                 | ---   |                 | --- |                 | --- | White         |
| 2     | 426+42  | -                 | 427+00  | USH 8             | ---    |                   | --- |                   | 115 |                 | ---   |                 | --- |                 | --- | Double Yellow |
| 2     | 427+00  | -                 | 445+45  | USH 8             | 3467   |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | White         |
| 2     | 427+00  | -                 | 445+45  | USH 8             | 3488   |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | Double Yellow |
| 2     | 426+42  | -                 | 445+45  | USH 8             | ---    |                   | --- |                   | --- |                 | 5615  |                 | 540 |                 | --- |               |
| 2     |         |                   | 1418+68 | USH 45            | ---    |                   | --- |                   | 35  |                 | ---   |                 | --- |                 | --- | White         |
| 2     | 1414+65 | -                 | 1418+38 | USH 45            | 746    |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | Double Yellow |
| 2     | 1414+65 | -                 | 1418+68 | USH 45            | ---    |                   | --- |                   | --- |                 | 360   |                 | 20  |                 | 25  |               |
| 4     | 426+42  | -                 | 445+45  | USH 8             | 1720   |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | White         |
| 4     | 426+42  | -                 | 445+45  | USH 8             | 3714   |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | Double Yellow |
| 4     |         |                   | 1418+10 | USH 45            | 568    |                   | 240 |                   | 30  |                 | ---   |                 | --- |                 | --- | White         |
| 4     | 1415+05 | -                 | 1418+10 | USH 45            | 616    |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | Double Yellow |
| 5     | 426+42  | -                 | 445+45  | USH 8             | 1952   |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | White         |
| 7     | 1410+00 | -                 | 1415+05 | USH 45            | 1012   |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | White         |
| 7     | 1410+00 | -                 | 1415+05 | USH 45            | 1012   |                   | --- |                   | --- |                 | ---   |                 | --- |                 | --- | Double Yellow |
| TOTAL |         |                   |         |                   | 18,295 |                   | 240 |                   | 230 |                 | 5,975 |                 | 560 |                 | 25  |               |

PAVEMENT MARKING SUMMARY

|         |         | 646.4520              |                | 646.1040        |       | 646.3040        |       | 646.5020 |       | 646.5120 |      | 646.6120           |    | 646.7020         |     |
|---------|---------|-----------------------|----------------|-----------------|-------|-----------------|-------|----------|-------|----------|------|--------------------|----|------------------|-----|
|         |         | MARKING LINE          |                | MARKING LINE    |       | MARKING LINE    |       | MARKING  |       | MARKING  |      | MARKING STOP       |    | MARKING DIAGONAL |     |
|         |         | SAME DAY EPOXY 4-INCH |                | GROOVED WET REF |       | GROOVED WET REF |       | MARKING  |       | MARKING  |      | LINE EPOXY 18-INCH |    | EPOXY 12-INCH    |     |
|         |         | (YELLOW)              |                | (WHITE)         |       | (WHITE)         |       | ARROW    |       | WORD     |      | (WHITE)            |    | (YELLOW)         |     |
| STATION | STATION |                       | LF             |                 | LF    |                 | LF    |          | EACH  |          | EACH |                    | LF |                  | LF  |
| 428+01  | -       | 446+58                | USH 8 - USH 45 |                 | 6165  |                 | 4010  |          | 1445  |          | 4    |                    | 2  |                  | --  |
| 1410+00 | -       | 1418+37               | USH 45         |                 | 1620  |                 | 1500  |          | 245   |          | 4    |                    | 2  |                  | 30  |
| TOTAL   |         |                       |                |                 | 7,785 |                 | 5,510 |          | 1,690 |          | 8    |                    | 4  |                  | 30  |
|         |         |                       |                |                 |       |                 |       |          |       |          |      |                    |    |                  | 310 |

CONSTRUCTION STAKING SUMMARY

|             |          |         |   |         |                | 650.5500 | 650.6501 | 650.8000 |           |             |              |                       |
|-------------|----------|---------|---|---------|----------------|----------|----------|----------|-----------|-------------|--------------|-----------------------|
|             |          |         |   |         |                | 650.4500 | 650.5000 | CURB &   | STRUCTURE | RESURFACING | 650.9920     |                       |
|             |          |         |   |         |                | SUBGRADE | BASE     | GUTTER   | B-43-64   | REFERENCE   | SLOPE STAKES |                       |
| STAGE       | CATEGORY | STATION |   | STATION | LOCATION       | LF       | LF       | LF       | EACH      | LF          | LF           | Remarks               |
| 1           | 0010     | 439+37  | - | 445+14  | USH 8, LT      | 577      | 577      | ---      | ---       | ---         | ---          | TEMP WIDENING         |
| 1           | 0010     | 1417+37 | - | 1418+30 | USH 45 LT & RT | 93       | 93       | ---      | ---       | ---         | ---          | TEMP WIDENING         |
| 2/3, 4, & 5 | 0010     | 429+50  | - | 443+00  | USH 8          | 1350     | 1350     | ---      | ---       | ---         | 1350         | MULTIPLE STAGES       |
| 3           | 0010     | 1415+05 | - | 1418+61 | USH 45         | 355      | 355      | 201      | ---       | ---         | 355          |                       |
| 6           | 0010     | 1410+00 | - | 1415+05 | USH 45         | 505      | 505      | ---      | ---       | ---         | 505          |                       |
| 2-6         | 0020     | 1412+50 | - | 1413+50 | USH 45         | ---      | ---      | ---      | 1         | ---         | ---          | MULTIPLE STAGES       |
| 7           | 0010     | 427+00  | - | 429+50  | USH 8          | ---      | ---      | 209      | ---       | 250         | ---          | INCLUDES ASPHALT CURB |
| 7           | 0010     | 443+00  | - | 448+14  | USH 8          | ---      | ---      | 290      | ---       | 515         | ---          |                       |
| TOTALS      |          |         |   |         |                | 2880     | 2880     | 700      | 1         | 765         | 2210         |                       |

SAWING SUMMARY

|            |       |         |   |         |                | 690.0150       | 690.0250        |
|------------|-------|---------|---|---------|----------------|----------------|-----------------|
|            |       |         |   |         |                | SAWING ASPHALT | SAWING CONCRETE |
| CATEGORY   | STAGE | STATION | - | STATION | LOCATION       | LF             | LF              |
| 0010       | 1     | 1415+61 | - | 1418+18 | USH, 45 Median | 522            | ---             |
| 0010       | 1     | 1418+20 | - | 1418+43 | USH 45, RT     | 57             | 2               |
| 0010       | 1     | 1418+37 | - | 1418+28 | USH 45, LT     | 132            | 2               |
| 0010       | 1     | 439+37  | - | 445+14  | USH 8, LT      | ---            | 582             |
| 0010       | 2     | 429+50  | - | 443+00  | USH 8, RT      | ---            | 1380            |
| 0010       | 2     |         |   | 1416+65 | USH, 45 LT     | ---            | 20              |
| 0010       | 2     |         |   | 1416+65 | USH 45, RT     | ---            | 20              |
| 0010       | 3     |         |   | 1415+05 | USH 45         | ---            | 50              |
| 0010       | 3     |         |   | 1412+69 | USH 45         | ---            | 42              |
| 0010       | 3     |         |   | 1413+23 | USH 45         | ---            | 41              |
| 0010       | 4     | 429+50  | - | 434+60  | USH 8          | ---            | 562             |
| 0010       | 4     | 436+10  | - | 443+00  | USH 8          | ---            | 746             |
| 0010       | 5     |         |   | 429+50  | USH 8          | ---            | 15              |
| 0010       | 5     |         |   | 443+00  | USH 8          | ---            | 13              |
| 0010       | 6     |         |   | 1410+00 | USH 45         | ---            | 30              |
| 0010       | 6     |         |   | 1415+05 | USH 45         | ---            | 40              |
| 0010       | 7     |         |   | 427+00  | USH 8          | 32             | ---             |
| 0010       | 7     |         |   | 448+14  | USH 8          | 32             | ---             |
| TOTAL 0010 |       |         |   |         |                | 775            | 3545            |

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PROJECT PLAT TITLE SHEET

1590-12-23

RHINELANDER - MONICO

USH 8 & USH 45 SOUTH INTERSECTION

USH 8

ONIEDA COUNTY



CONVENTIONAL SYMBOLS

|                                                             |     |                                                    |  |                                      |    |
|-------------------------------------------------------------|-----|----------------------------------------------------|--|--------------------------------------|----|
| SECTION LINE                                                | --- | SECTION CORNER SYMBOL                              |  | R/W MONUMENT (TO BE SET)             | ●  |
| QUARTER LINE                                                | --- | SECTION CORNER MONUMENT                            |  | NON-MONUMENTED R/W POINT             | ○  |
| SIXTEENTH LINE                                              | --- | GEODETIC SURVEY MONUMENT                           |  | FOUND IRON PIN (1-INCH UNLESS NOTED) | IP |
| NEW REFERENCE LINE                                          | --- | SIXTEENTH CORNER MONUMENT                          |  | OFF-PREMISE SIGN                     |    |
| NEW R/W LINE                                                | --- | SIGN                                               |  | COMPENSABLE                          |    |
| EXISTING R/W OR HE LINE                                     | --- | ELECTRIC POLE                                      |  | NON-COMPENSABLE                      |    |
| PROPERTY LINE                                               | --- | TELEPHONE POLE                                     |  |                                      |    |
| LOT, TIE & OTHER MINOR LINES                                | --- | PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)        |  |                                      |    |
| SLOPE INTERCEPT                                             | --- | ACCESS RESTRICTED BY ACQUISITION                   |  |                                      |    |
| CORPORATE LIMITS                                            | --- | NO ACCESS (BY STATUTORY AUTHORITY)                 |  |                                      |    |
| UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)       | --- | ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL) |  |                                      |    |
| NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)              | --- | NO ACCESS (NEW HIGHWAY)                            |  |                                      |    |
| TEMPORARY LIMITED EASEMENT AREA                             | --- | PARCEL NUMBER                                      |  | UTILITY NUMBER                       |    |
| EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT) | --- | PARALLEL OFFSETS                                   |  |                                      |    |
| TRANSMISSION STRUCTURES                                     | --- |                                                    |  |                                      |    |
| BUILDING                                                    |     |                                                    |  |                                      |    |
| TO BE REMOVED                                               |     |                                                    |  |                                      |    |
| BRIDGE                                                      |     |                                                    |  |                                      |    |
| CULVERT                                                     |     |                                                    |  |                                      |    |

CONVENTIONAL ABBREVIATIONS

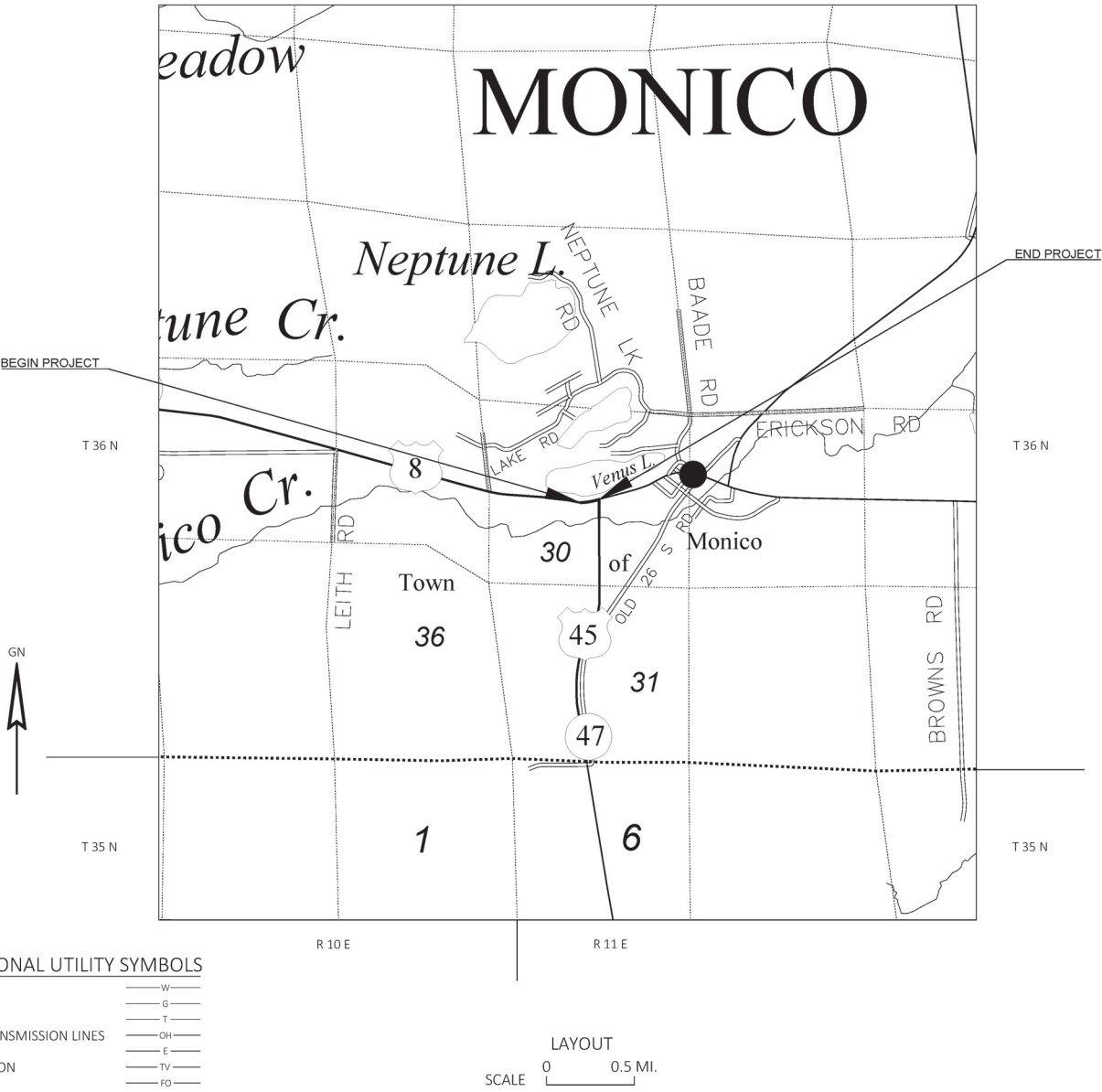
|                            |       |                             |        |
|----------------------------|-------|-----------------------------|--------|
| ACCESS RIGHTS              | AR    | POINT OF COMPOUND CURVE     | PCC    |
| ACRES                      | AC    | POINT OF INTERSECTION       | PI     |
| AHEAD                      | AH    | PROPERTY LINE               | PL     |
| ALUMINUM                   | ALUM  | RECORDED AS                 | (100') |
| AND OTHERS                 | ET AL | REEL / IMAGE                | R/I    |
| BACK                       | BK    | REFERENCE LINE              | R/L    |
| BLOCK                      | BLK   | REMAINING                   | REM    |
| CENTERLINE                 | C/L   | RESTRICTIVE DEVELOPMENT     | RDE    |
| CERTIFIED SURVEY MAP       | CSM   | EASEMENT                    |        |
| CONCRETE                   | CONC  | RIGHT                       | RT     |
| COUNTY                     | CO    | RIGHT OF WAY                | R/W    |
| COUNTY TRUNK HIGHWAY       | CTH   | SECTION                     | SEC    |
| DISTANCE                   | DIST  | SEPTIC VENT                 | SEPV   |
| CORNER                     | COR   | SQUARE FEET                 | SF     |
| DOCUMENT NUMBER            | DOC   | STATE TRUNK HIGHWAY         | STH    |
| EASEMENT                   | EASE  | STATION                     | STA    |
| EXISTING                   | EX    | TELEPHONE PEDESTAL          | TP     |
| GAS VALVE                  | GV    | TEMPORARY LIMITED           | TLE    |
| GRID NORTH                 | GN    | EASEMENT                    |        |
| HIGHWAY EASEMENT           | HE    | TRANSPORTATION PROJECT PLAT | TPP    |
| IDENTIFICATION             | ID    | UNITED STATES HIGHWAY       | USH    |
| LAND CONTRACT              | LC    | VOLUME                      | V      |
| LEFT                       | LT    |                             |        |
| MONUMENT                   | MON   |                             |        |
| NATIONAL GEODETIC SURVEY   | NGS   |                             |        |
| NUMBER                     | NO    |                             |        |
| OUTLOT                     | OL    |                             |        |
| PAGE                       | P     |                             |        |
| POINT OF TANGENCY          | PT    |                             |        |
| PERMANENT LIMITED EASEMENT | PLE   |                             |        |
| POINT OF BEGINNING         | POB   |                             |        |
| POINT OF CURVATURE         | PC    |                             |        |

CURVE DATA ABBREVIATIONS

|                    |         |
|--------------------|---------|
| LONG CHORD         | LCH     |
| LONG CHORD BEARING | LCB     |
| RADIUS             | R       |
| DEGREE OF CURVE    | D       |
| CENTRAL ANGLE      | Δ/DELTA |
| LENGTH OF CURVE    | L       |
| TANGENT            | T       |
| DIRECTION AHEAD    | DA      |
| DIRECTION BACK     | DB      |

CONVENTIONAL UTILITY SYMBOLS

|                             |     |
|-----------------------------|-----|
| WATER                       | --- |
| GAS                         | --- |
| TELEPHONE                   | --- |
| OVERHEAD TRANSMISSION LINES | --- |
| ELECTRIC                    | --- |
| CABLE TELEVISION            | --- |
| FIBER OPTIC                 | --- |
| SANITARY SEWER              | --- |
| STORM SEWER                 | --- |
| ELECTRIC TOWER              | --- |



THE NOTES, CONVENTIONAL SIGNS, AND ABBREVIATIONS ARE ASSOCIATED WITH EACH TRANSPORTATION PROJECT PLAT FOR PROJECT 1590-12-23

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), ONEIDA COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

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

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

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

A PERMANENT LIMITED EASEMENT (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHTS TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

AN EASEMENT FOR HIGHWAY PURPOSES (HE), AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE.

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

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN RHINELANDER

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE TPP DETAIL PAGES.

INFORMATION FOR THE BASIS OF EXISTING HIGHWAY RIGHT-OF-WAY POINTS OF REFERENCE AND ACCESS CONTROL ARE LISTED ON THE TPP DETAIL PAGES.

PROJECT NUMBER 1590-12-23 -4. 01  
SHEET 2 OF 2  
AMENDMENT NO:



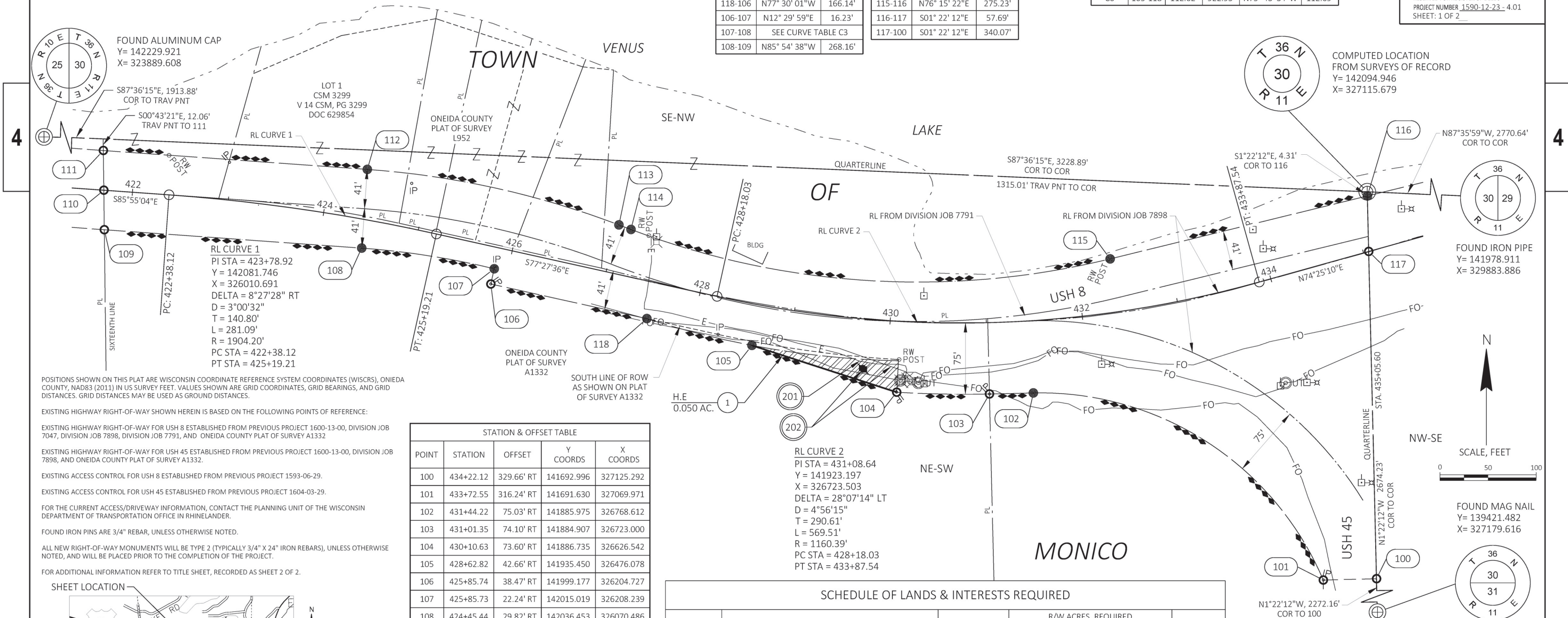
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.

2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

| CURVE TABLE |         |                    |                        |                                  |                    |
|-------------|---------|--------------------|------------------------|----------------------------------|--------------------|
| CURVE NO.   | COURSE  | CHORD LENGTH       | RADIUS                 | CHORD BEARING                    | ARC LENGTH         |
| C1          | 101-102 | 358.59'            | 319.24'                | N57° 10' 56"W                    | 380.76'            |
| C2          | 103-104 | 96.48'<br>(96.48') | 1220.92'<br>(1220.92') | N88° 54' 36"W<br>(N88° 25' 25"E) | 96.51'<br>(96.51') |
| C3          | 107-108 | 139.41'            | 840.95'                | N81° 09' 21"W                    | 139.57'            |
| C4          | 112-113 | 267.79'            | 922.95'                | S77° 34' 08"E                    | 268.74'            |
| C5          | 114-115 | 498.98'            | 840.95'                | S86° 29' 08"E                    | 506.61'            |
| C6          | 105-118 | 112.62'            | 922.95'                | N75° 43' 34"W                    | 112.69'            |

This document has been electronically  
recorded

RESERVED FOR REGISTER OF DEEDS  
PROJECT NUMBER 1590-12-23 - 4.01  
SHEET: 1 OF 2



| STATION & OFFSET TABLE |           |            |             |             |
|------------------------|-----------|------------|-------------|-------------|
| POINT                  | STATION   | OFFSET     | Y<br>COORDS | X<br>COORDS |
| 100                    | 434+22.12 | 329.66' RT | 141692.996  | 327125.292  |
| 101                    | 433+72.55 | 316.24' RT | 141691.630  | 327069.97   |
| 102                    | 431+44.22 | 75.03' RT  | 141885.975  | 326768.612  |
| 103                    | 431+01.35 | 74.10' RT  | 141884.907  | 326723.000  |
| 104                    | 430+10.63 | 73.60' RT  | 141886.735  | 326626.542  |
| 105                    | 428+62.82 | 42.66' RT  | 141935.450  | 326476.078  |
| 106                    | 425+85.74 | 38.47' RT  | 141999.177  | 326204.727  |
| 107                    | 425+85.73 | 22.24' RT  | 142015.019  | 326208.239  |
| 108                    | 424+45.44 | 29.82' RT  | 142036.453  | 326070.486  |
| 109                    | 421+73.62 | 40.89' RT  | 142055.577  | 325803.005  |
| 110                    | 421+70.19 | 0.00'      | 142096.606  | 325802.487  |
| 111                    | 421+66.73 | 41.11' LT  | 142137.861  | 325801.967  |
| 112                    | 424+36.77 | 51.71' LT  | 142118.244  | 326076.334  |
| 113                    | 427+02.35 | 50.39' LT  | 142060.596  | 326337.850  |
| 114                    | 427+15.62 | 48.47' LT  | 142055.841  | 326350.386  |
| 115                    | 432+37.08 | 55.48' LT  | 142025.252  | 326848.433  |
| 116                    | 435+19.76 | 55.93' LT  | 142090.642  | 327115.782  |
| 117                    | 435+05.60 | 0.00'      | 142032.964  | 327117.161  |
| 118                    | 427+51.89 | 38.35' RT  | 141963.217  | 326366.933  |

| SCHEDULE OF LANDS & INTERESTS REQUIRED |               |                       |                     |          |       |          |
|----------------------------------------|---------------|-----------------------|---------------------|----------|-------|----------|
| PARCEL<br>NUMBER                       | OWNER (S)     | INTERESTS<br>REQUIRED | R/W ACRES, REQUIRED |          |       | HE ACRES |
|                                        |               |                       | NEW                 | EXISTING | TOTAL |          |
| 1                                      | ROBERT BRIGGS | H.E.                  | ---                 | ---      | ---   | 0.050    |

NOTE: OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION

| UTILITY INTERESTS REQUIRED |                               |                   |
|----------------------------|-------------------------------|-------------------|
| UTILITY NUMBER             | OWNER (S)                     | INTEREST REQUIRED |
| 201                        | WISCONSIN PUBLIC SERVICE CORP | RELEASE OF RIGHTS |
| 202                        | FRONTIER COMMUNICATIONS       | RELEASE OF RIGHTS |

201 WISCONSIN PUBLIC SERVICE CORP.  
V 106 DEEDS, P 666 DOC 89854 (BLANKET) - PARCEL 1  
NO RECORDED EASEMENT - PARCEL 1

202 FRONTIER COMMUNICATIONS  
NO RECORDED EASEMENT - PARCEL 1

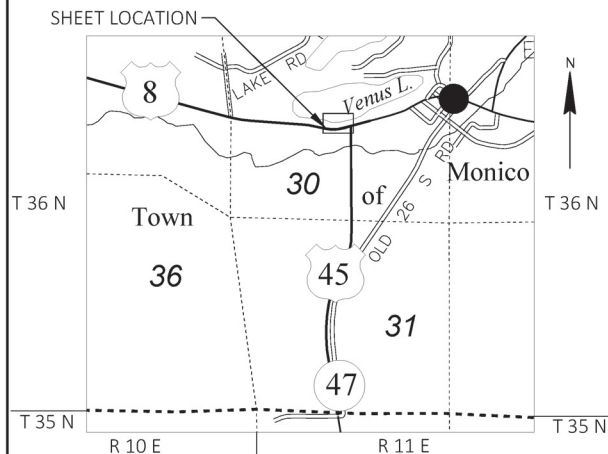
I, JAMES R. CAPPEART, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT OF TRANSPORTATION, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

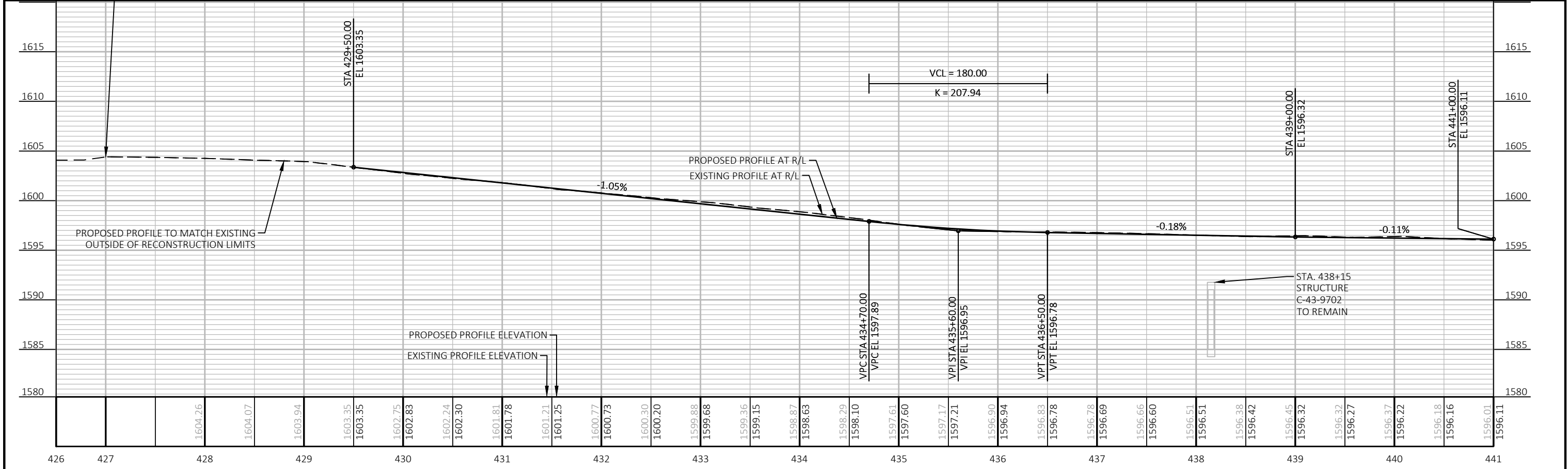
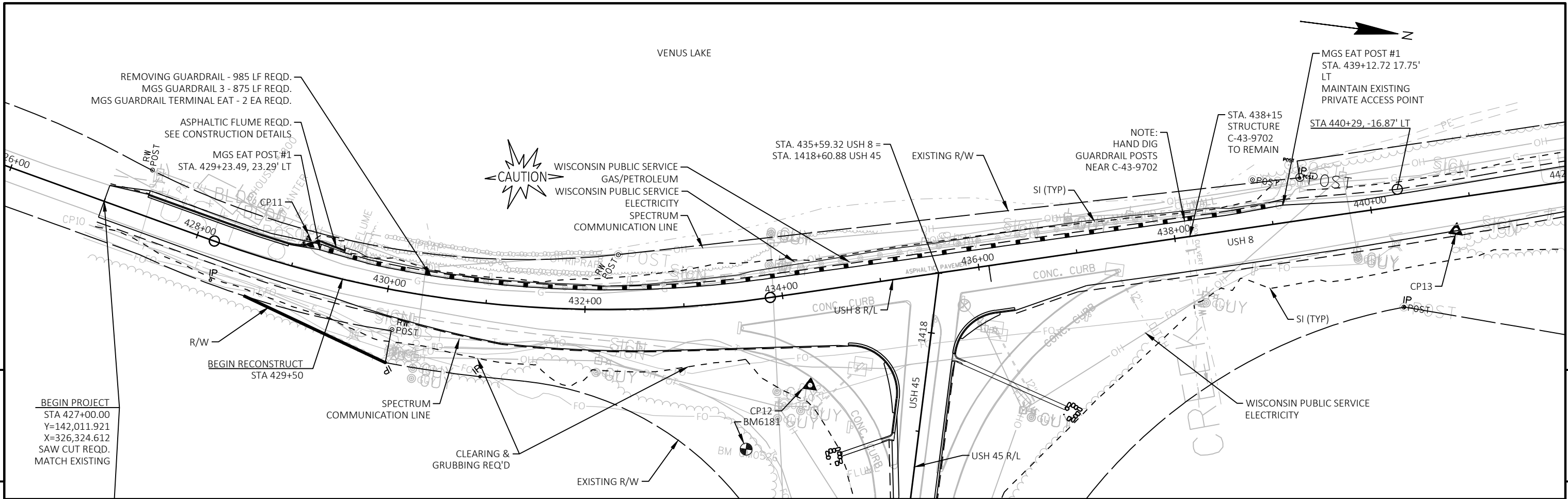


SIGNATURE: James Cappeart DATE: 12/13/2021  
PRINT NAME: JAMES R. CAPPEART  
REGISTRATION NUMBER: S-3044

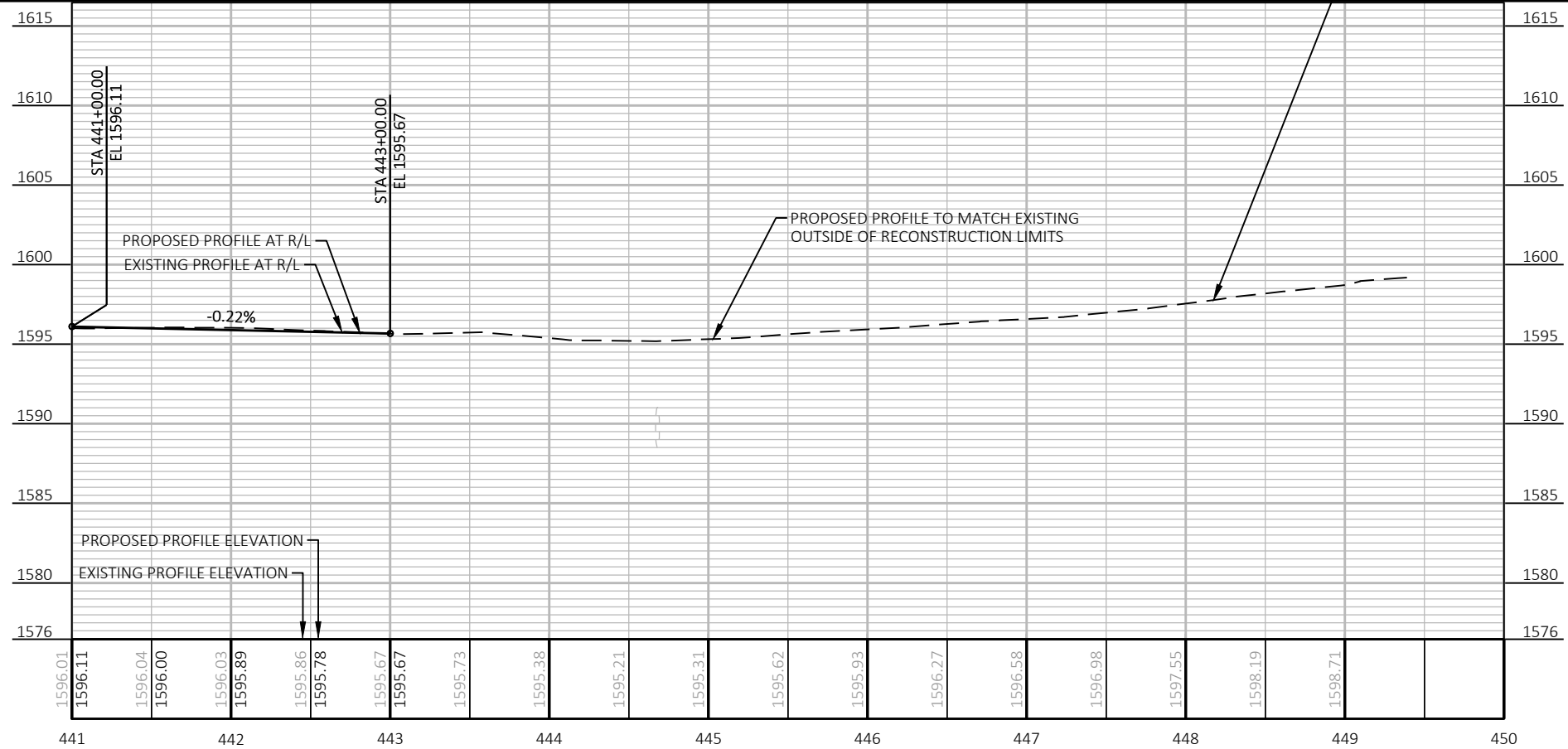
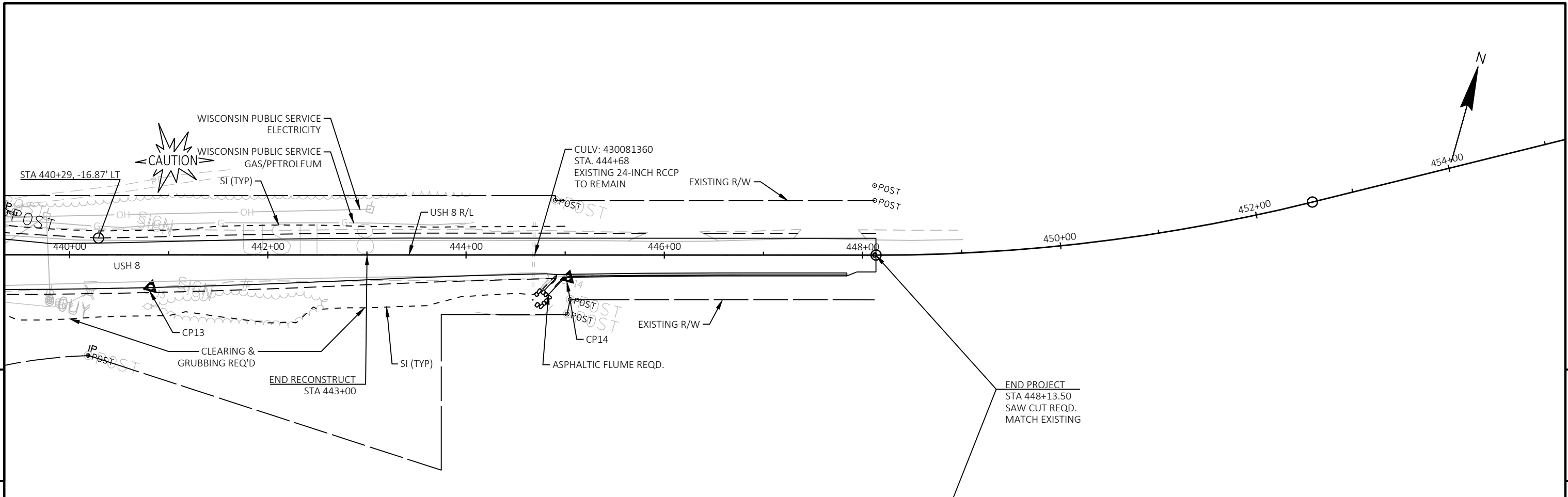
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION NC REGION - RHINELANDER

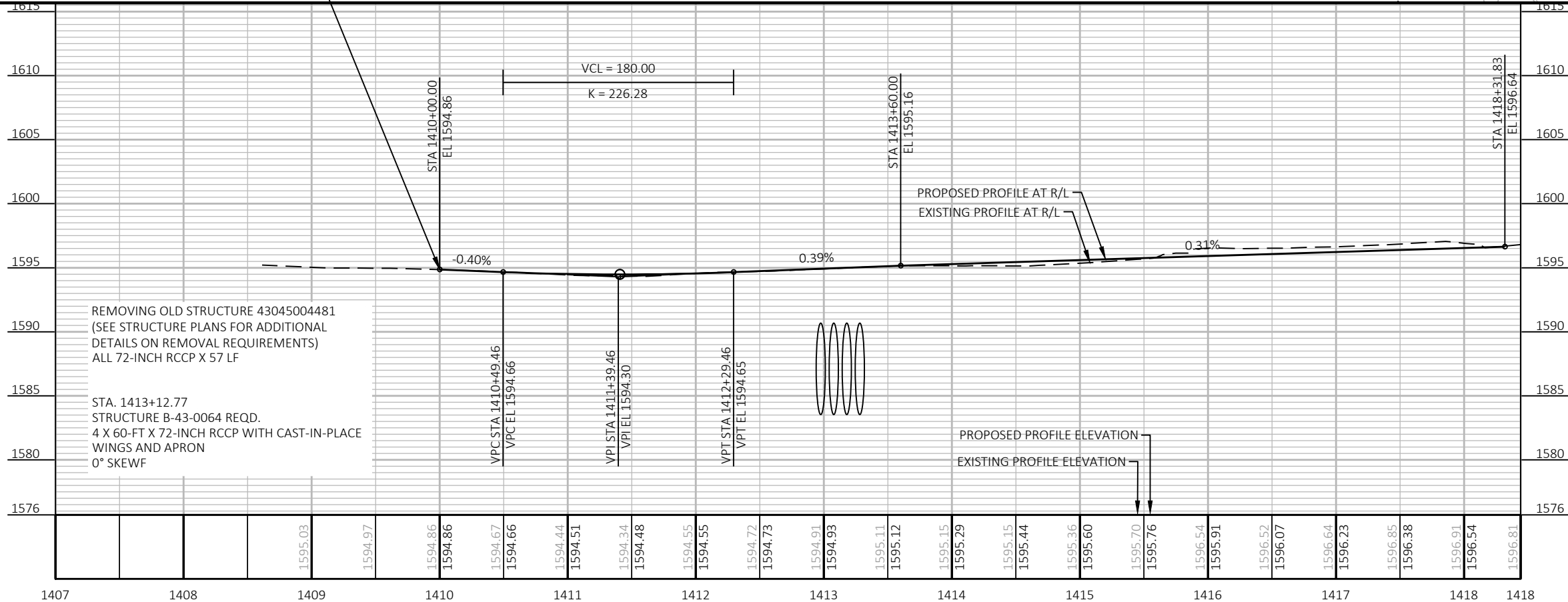
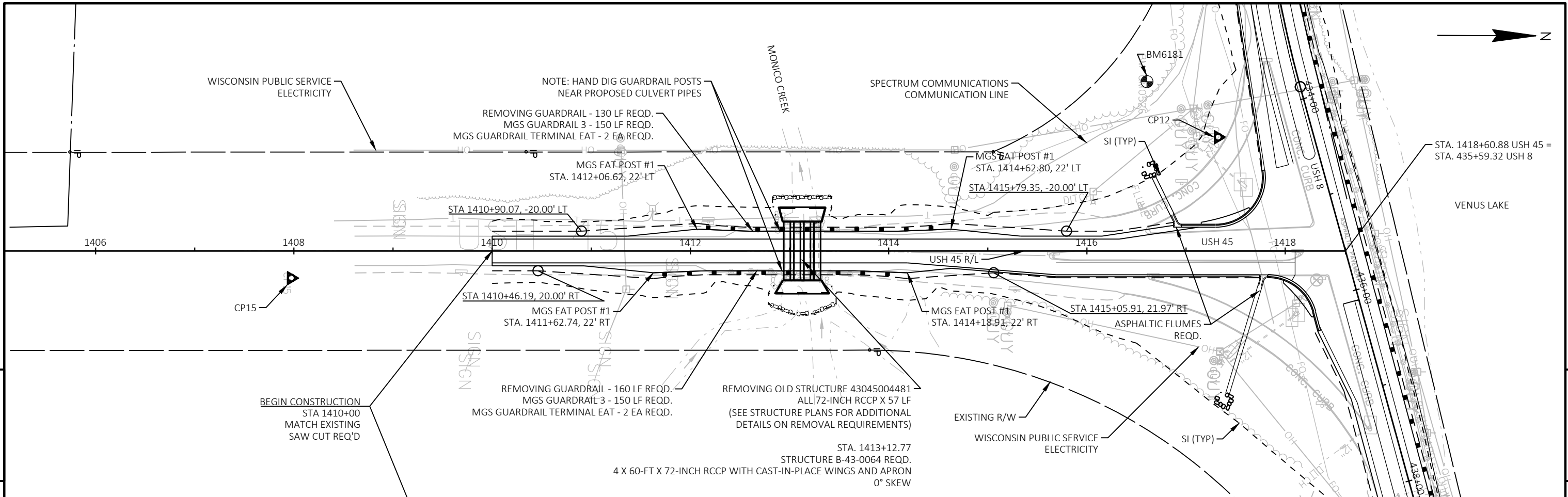
SIGNATURE: Brent L Stella DATE: 12/13/2021  
PRINT NAME: BRENT L. STELLA







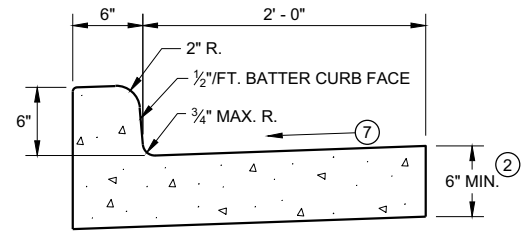




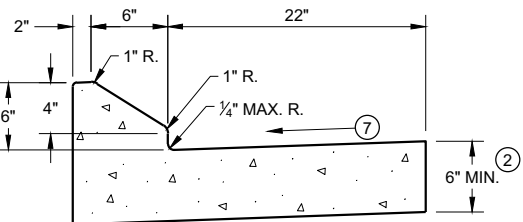
|                        |            |                |                                           |          |   |
|------------------------|------------|----------------|-------------------------------------------|----------|---|
| PROJECT NO: 1590-12-73 | HWY: USH 8 | COUNTY: ONEIDA | PLAN AND PROFILE: PLAN & PROFILE - USH 45 | SHEET 76 | E |
|------------------------|------------|----------------|-------------------------------------------|----------|---|

Standard Detail Drawing List

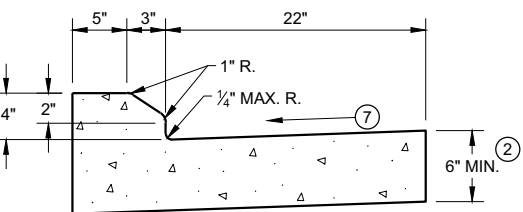
|           |                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------|
| 08D01-22A | CONCRETE CURB & GUTTER                                                                             |
| 08D01-22B | CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS                                               |
| 08D04-06  | CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES                                                         |
| 08E09-06  | SILT FENCE                                                                                         |
| 08E15-01  | CULVERT PIPE CHECK                                                                                 |
| 08F04-08  | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL                                            |
| 09A01-13B | AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"                                                  |
| 09B02-10  | CONDUIT                                                                                            |
| 09B16-02  | PULL BOX NON-CONDUCTIVE                                                                            |
| 09C02-09  | CONCRETE BASES, TYPES 1, 2, 5, & 6                                                                 |
| 09C03-04  | TRANSFORMER/PEDESTAL BASES                                                                         |
| 09D01-05  | CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)                                              |
| 09E01-15G | HARDWARE DETAILS FOR POLE MOUNTINGS                                                                |
| 09E07-06  | TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS                            |
| 12A03-10  | NAME PLATE (STRUCTURES)                                                                            |
| 13C19-03  | HMA LONGITUDINAL JOINTS                                                                            |
| 14B07-16A | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16B | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16C | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16D | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16E | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16F | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16G | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16H | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16I | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16J | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16K | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16L | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16M | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-16N | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B08-02A | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS                         |
| 14B08-02B | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS                         |
| 14B08-02C | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS                         |
| 14B08-02D | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS                         |
| 14B08-02E | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS                         |
| 14B28-04A | GUARDRAIL MOW STRIP                                                                                |
| 14B28-04B | GUARDRAIL MOW STRIP                                                                                |
| 14B42-07A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-07B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-07C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-07D | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B44-04A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                                           |
| 14B44-04B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                                           |
| 14B44-04C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                                           |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END                                                               |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END                                                               |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES                                                         |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES                                                          |
| 15C02-08C | DETOUR SIGNING FOR MAINLINE CLOSURES                                                               |
| 15C02-08F | ADVANCED WIDTH RESTRICTION SIGNING                                                                 |
| 15C04-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C07-15B | PAVEMENT MARKING WORDS                                                                             |
| 15C07-15C | PAVEMENT MARKING ARROWS                                                                            |
| 15C08-21A | LONGITUDINAL MARKING (MAINLINE)                                                                    |
| 15C08-21C | PAVEMENT MARKING (TURN LANES)                                                                      |
| 15C11-09B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS                                  |
| 15C12-09A | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION                                           |
| 15C33-04  | STOP LINE AND CROSSWALK PAVEMENT MARKING                                                           |
| 15C35-05A | PAVEMENT MARKING (INTERSECTIONS)                                                                   |
| 15D06-05  | TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION                                                        |
| 15D28-04  | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY                               |
| 15D39-02  | TRAFFIC CONTROL, DROP-OFF SIGNING                                                                  |
| 15D40-04C | TRAFFIC CONTROL, PARTIAL LANE SHIFT NON-FREEWAY OR MULTILANE DIVIDED 45 MPH AND UNDER              |
| 15D43-02  | TRAFFIC CONTROL, SHORT DURATION MOBILE OPERATIONS                                                  |
| 15D51-01  | TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY                                         |



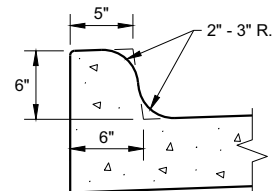
TYPES A<sup>(1)</sup> & D



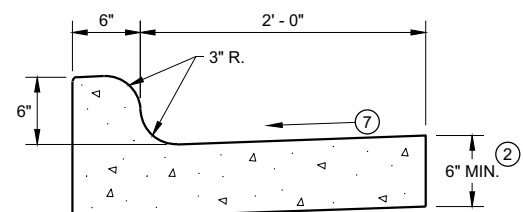
6" SLOPED CURB TYPES G<sup>(1)</sup> & J



4" SLOPED CURB TYPES G<sup>(1)</sup> & J

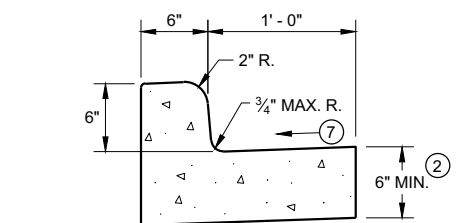


TYPES K<sup>(1)</sup> & L  
(OPTIONAL CURB SHAPE)



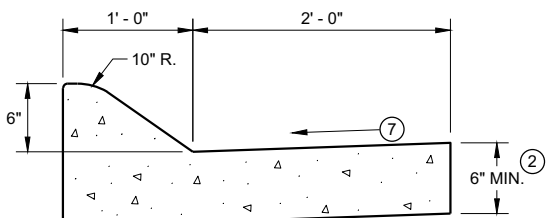
TYPES K<sup>(1)</sup> & L

CONCRETE CURB AND GUTTER 30"

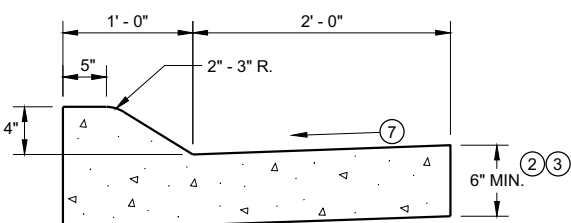


TYPES A<sup>(1)</sup> & D

CONCRETE CURB AND GUTTER 18"

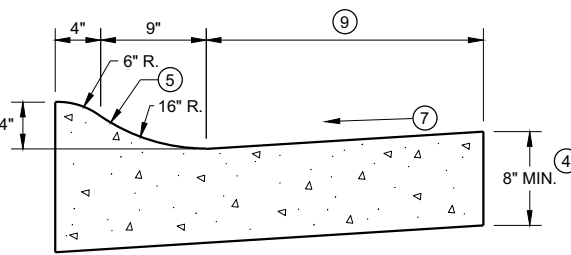


6" SLOPED CURB TYPES A<sup>(1)</sup> & D



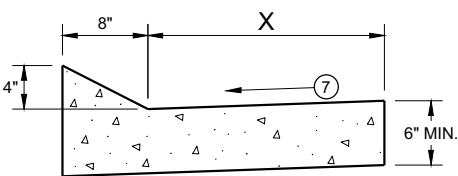
4" SLOPED CURB TYPES A<sup>(1)</sup> & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R<sup>(1)</sup> & T

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

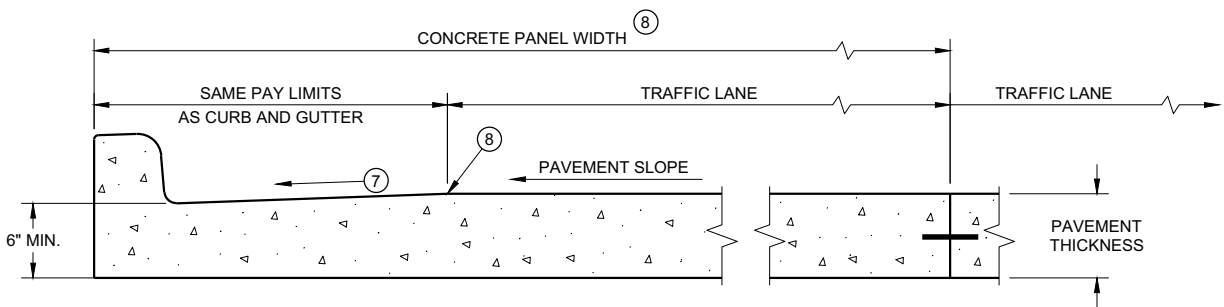


TYPES TBT & TBTT<sup>(1)</sup>

CONCRETE CURB AND GUTTER

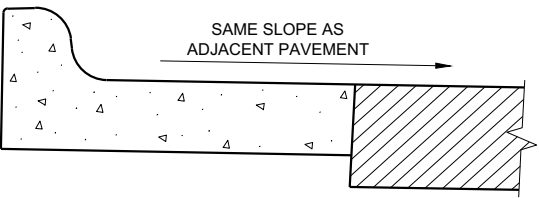
PAVEMENT THICKNESS  
AND MAXIMUM CONCRETE  
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT \*  
WITH INTEGRAL CURB AND GUTTER

\* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER<sup>(6)</sup>  
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

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

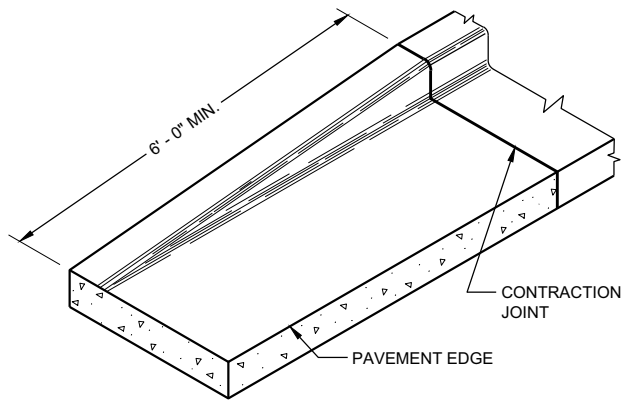
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

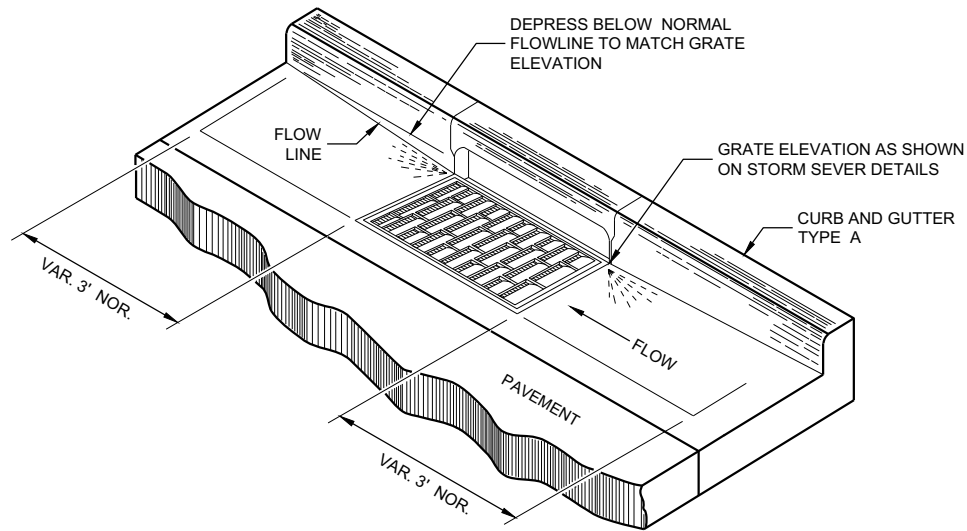
- (1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- (2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- (3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- (4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- (5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- (6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- (7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- (8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- (9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES  
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

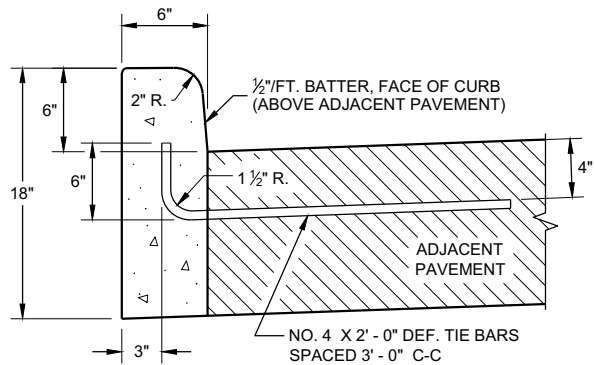
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 78



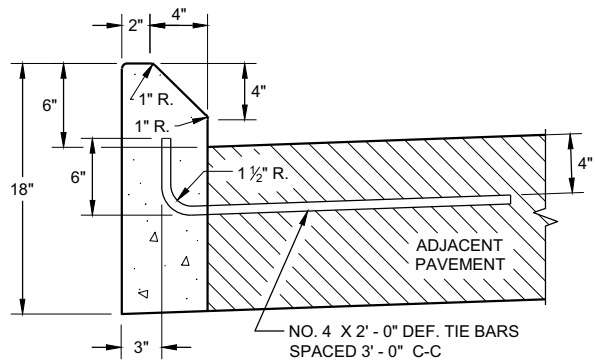
END SECTION CURB AND GUTTER



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

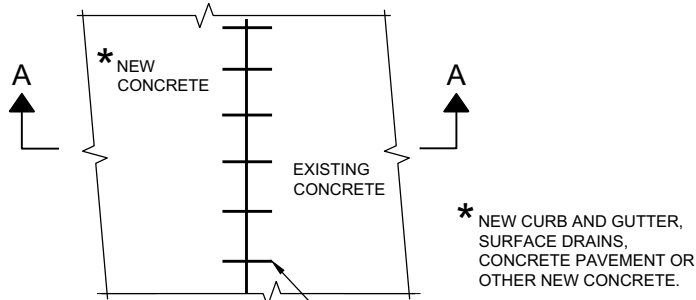


TYPES A<sup>①</sup> & D

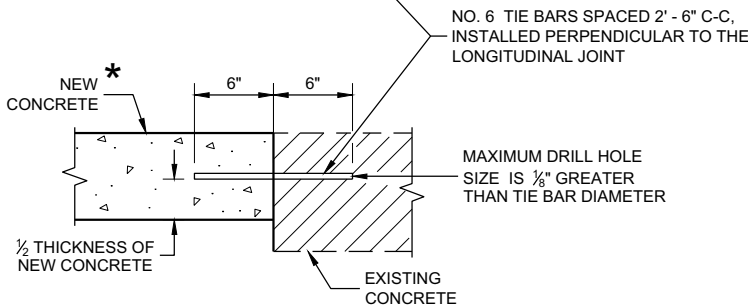


TYPES G<sup>①</sup> & J

CONCRETE CURB



PLAN VIEW



SECTION A - A

TIE BARS DRILLED  
INTO EXISTING PAVEMENT

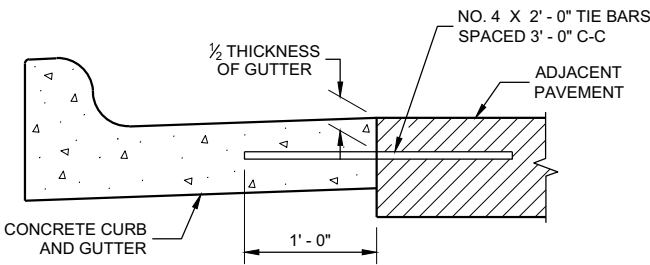
## GENERAL NOTES

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

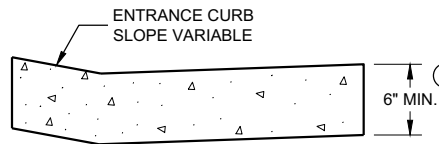
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION<sup>①</sup>



DRIVEWAY ENTRANCE CURB<sup>⑨</sup>  
(WHEN DIRECTED BY THE ENGINEER)

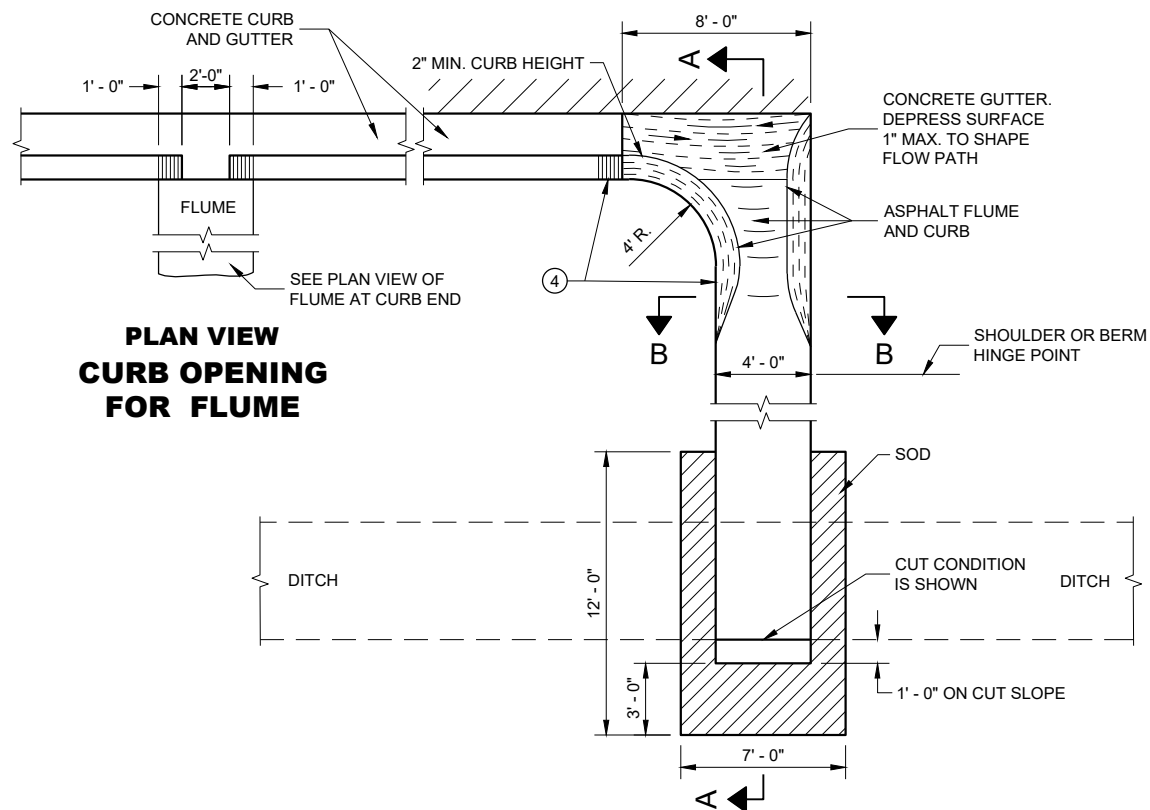
## CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021  
DATE /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT ENGINEER 79  
FHWA

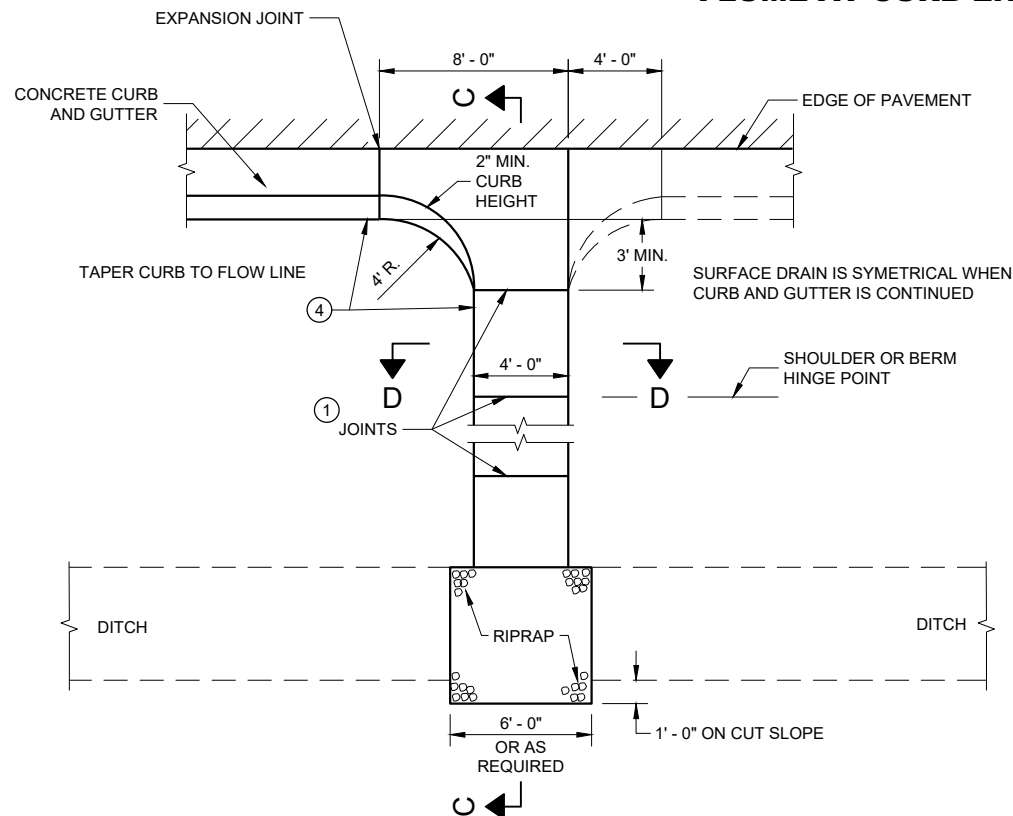
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

### ASPHALTIC FLUME



PLAN VIEW  
CURB OPENING  
FOR FLUME

PLAN VIEW  
FLUME AT CURB END



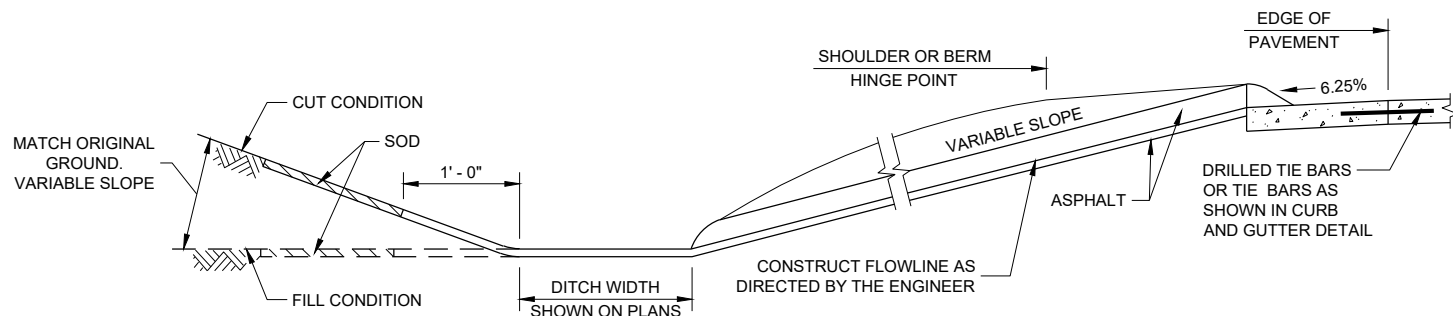
PLAN VIEW  
CONCRETE SURFACE DRAIN

### GENERAL NOTES

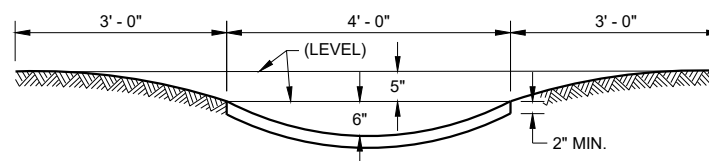
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

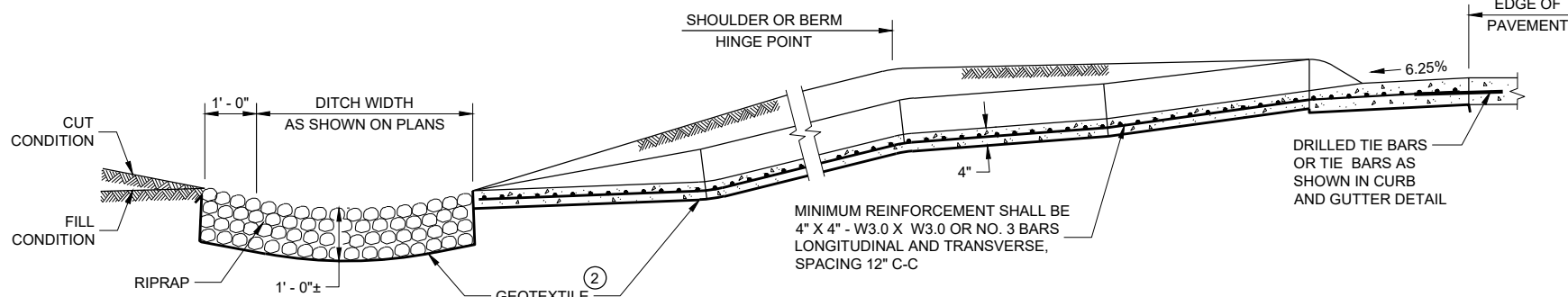
- JOINTS SHALL BE  $\frac{1}{8}$ " TO  $\frac{1}{4}$ " WIDE BY  $\frac{1}{2}$ " DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



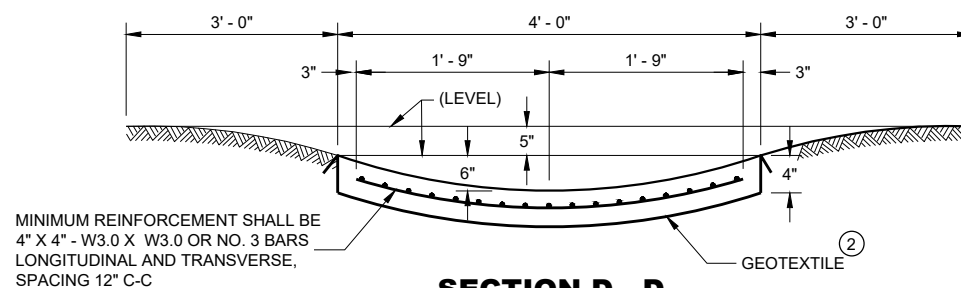
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

### CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2021 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 80  
FHWA





- 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.

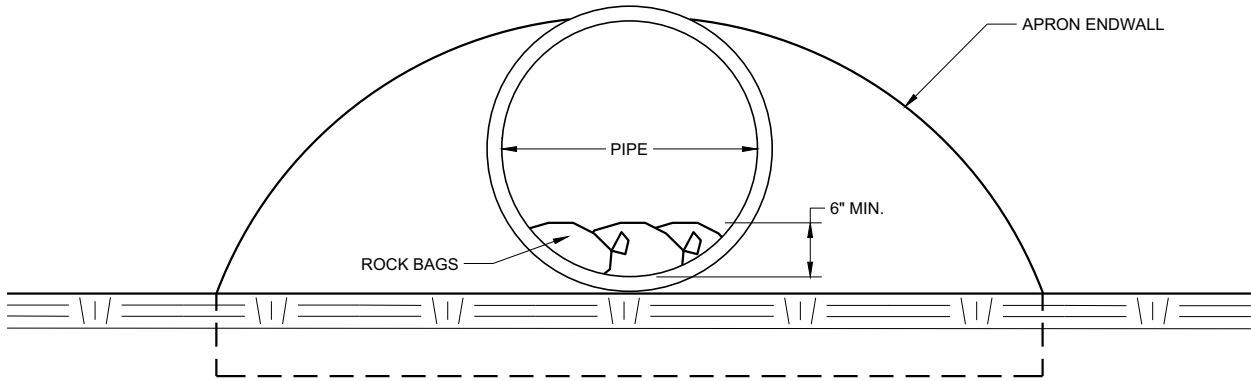


**SILT FENCE**

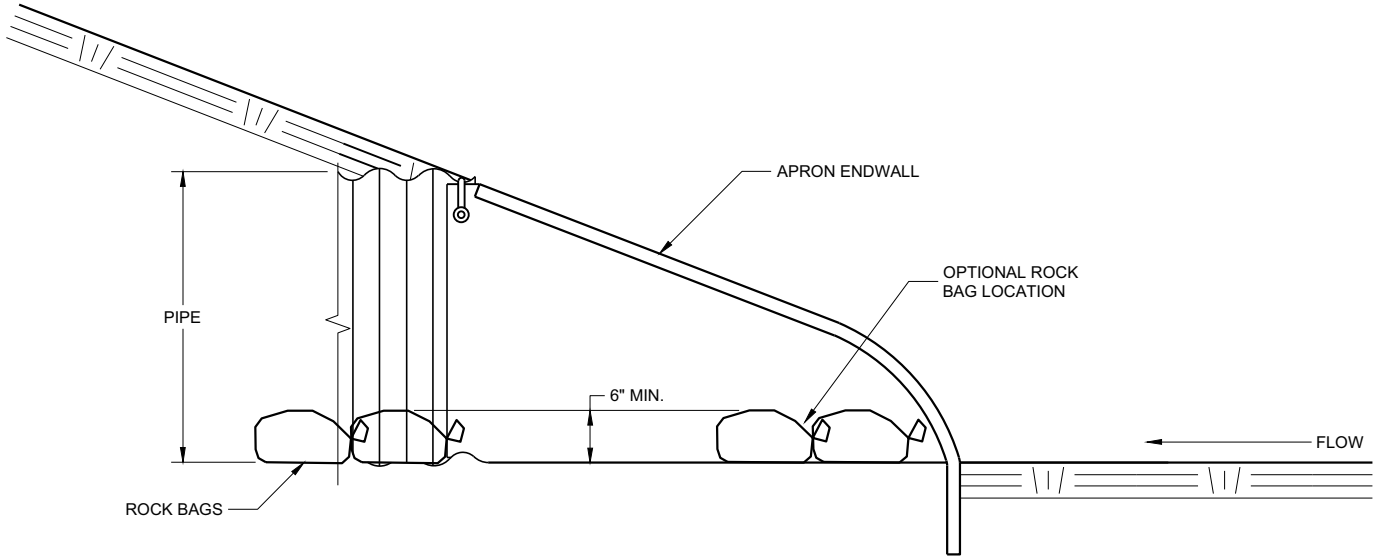
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



END VIEW



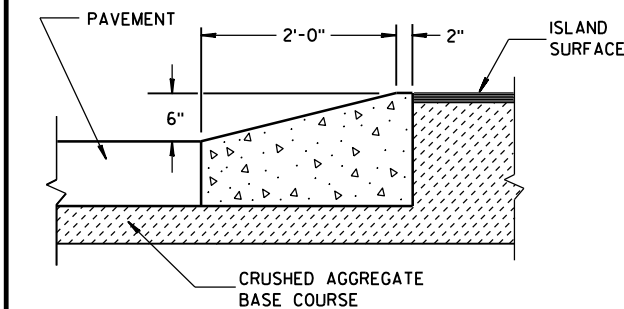
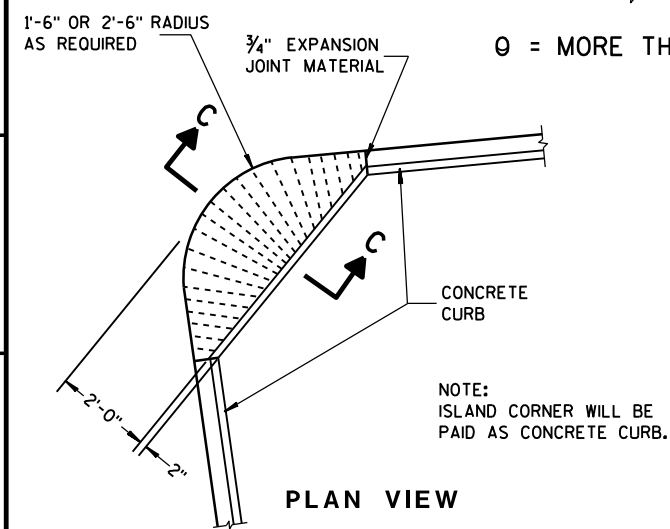
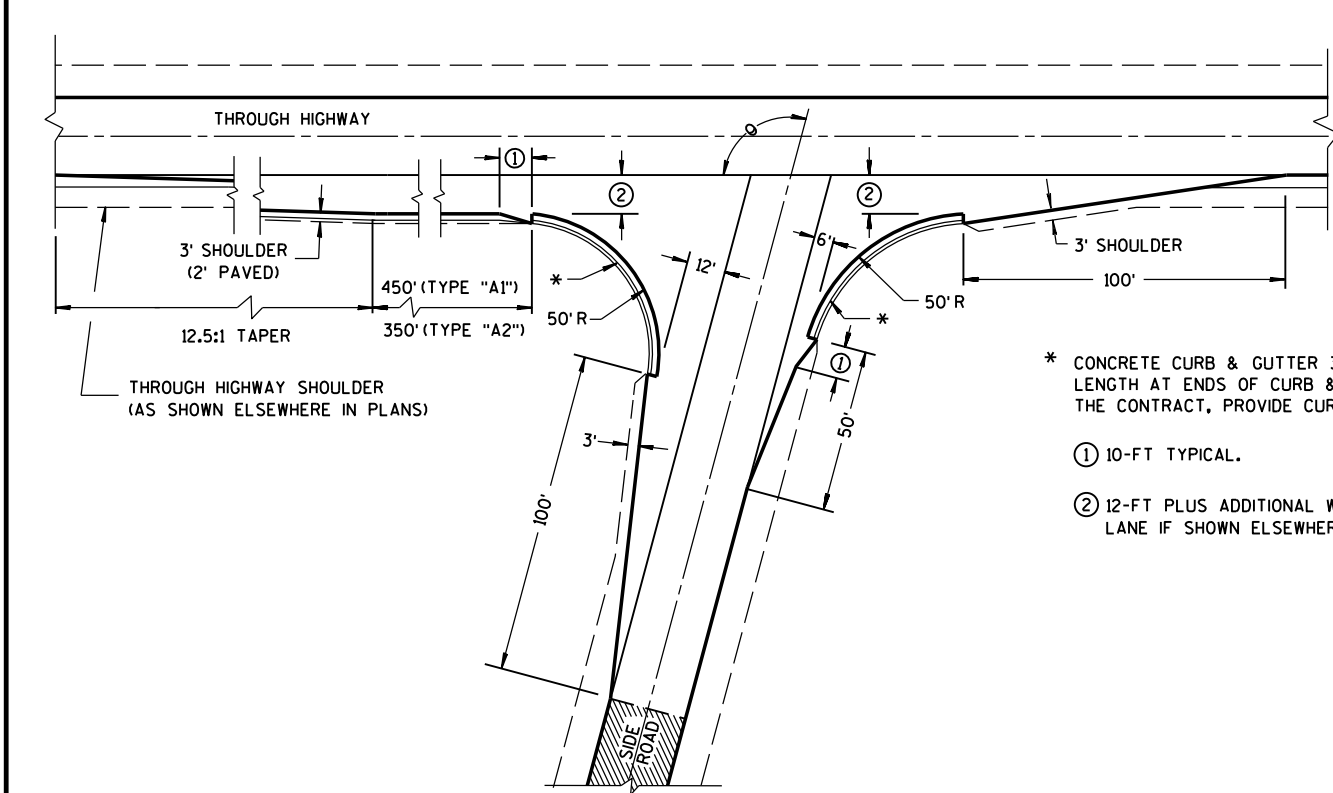
SIDE VIEW

**CULVERT PIPE CHECK**  
(INSTALL ON INLET END ONLY)

| CULVERT PIPE CHECK                                 |                                              |  |
|----------------------------------------------------|----------------------------------------------|--|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                              |  |
| APPROVED<br>May 2019<br>DATE                       | /S/ Daniel Schave<br>EROSION CONTROL ENGI 82 |  |
| FHWA                                               |                                              |  |



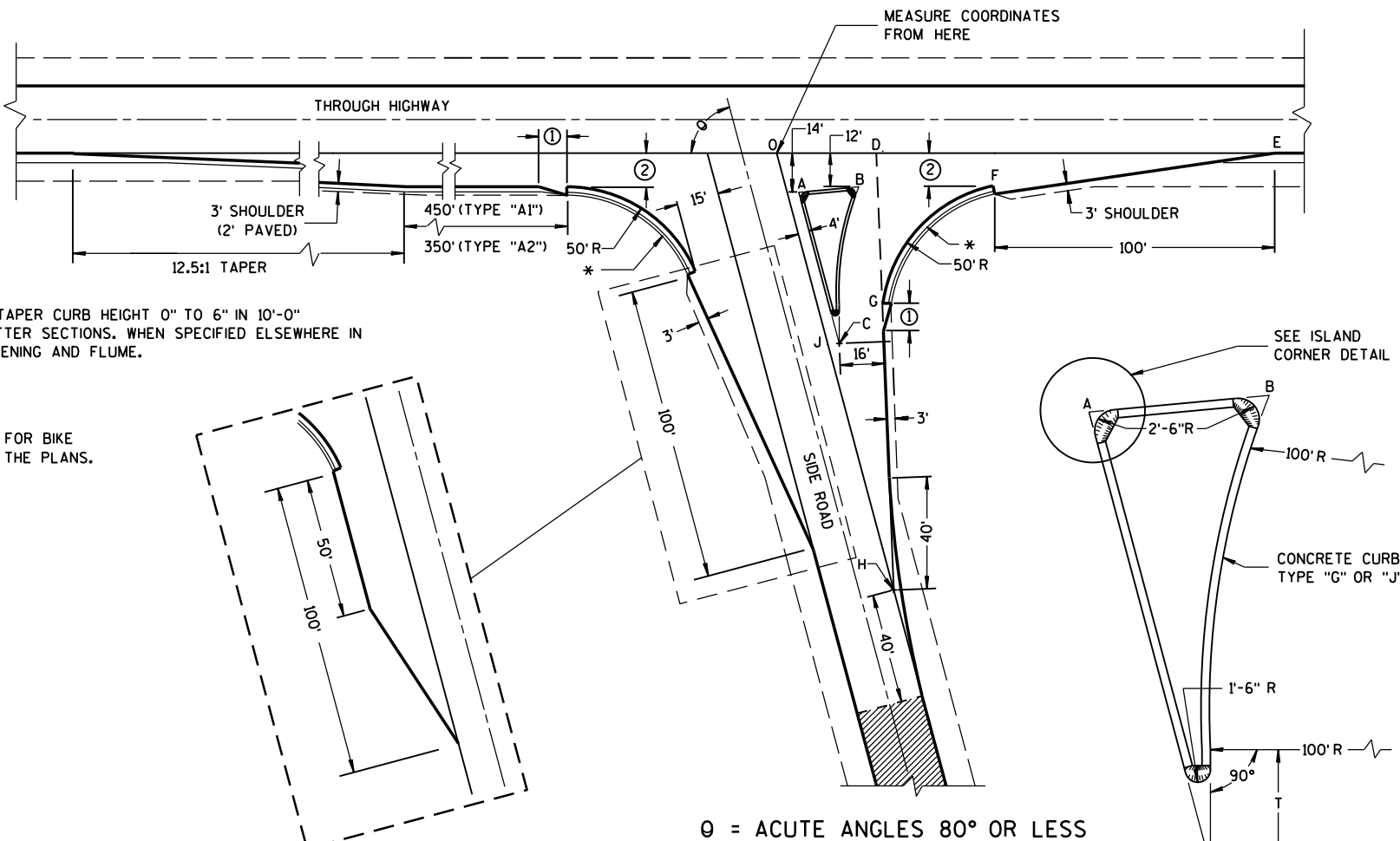




SECTION C-C

ISLAND CORNER DETAIL  
(TO BE CONSTRUCTED AT ALL ISLAND CORNERS)

- \* CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.
- ① 10-FT TYPICAL.
- ② 12-FT PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLANS.



SIDE ROAD WIDENING AND TAPER REQUIRED WHERE THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC  
 $\theta$  = ACUTE ANGLES 70° OR LESS

TABLE OF DIMENSIONS FOR  
VARIABLE SIDE ROAD INTERSECTION ANGLES  
(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

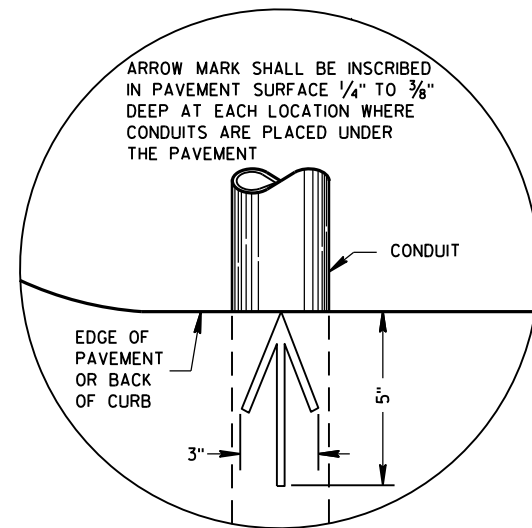
| ANGLE<br>$\theta$<br>DEGREES | COORDINATES IN FEET<br>(MEASURED FROM POINT "O") |               |               |             |              |                |               |                | LENGTH IN FEET |      |      |      |       |
|------------------------------|--------------------------------------------------|---------------|---------------|-------------|--------------|----------------|---------------|----------------|----------------|------|------|------|-------|
|                              | A                                                | B             | C             | D           | E            | F              | G             | H              | AB             | AC   | T    | OJ   | OH    |
| 60                           | 12.7<br>-14.0                                    | 44.9<br>-12.0 | 46.4<br>-72.4 | 41.9<br>0.0 | 205.0<br>0.0 | 104.6<br>-12.0 | 64.0<br>-75.5 | 85.0<br>-147.1 | 32.3           | 67.4 | 4.9  | 85.9 | 169.9 |
| 65                           | 10.9<br>-14.0                                    | 39.0<br>-12.0 | 37.8<br>-71.6 | 39.4<br>0.0 | 196.1<br>0.0 | 95.7<br>-12.0  | 54.1<br>-71.5 | 70.5<br>-151.3 | 28.2           | 63.6 | 8.5  | 80.9 | 166.9 |
| 70                           | 9.4<br>-14.0                                     | 33.9<br>-12.0 | 29.8<br>-70.1 | 37.4<br>0.0 | 188.3<br>0.0 | 87.8<br>-12.0  | 45.6<br>-67.5 | 56.1<br>-154.2 | 24.6           | 59.7 | 11.5 | 76.1 | 164.1 |
| 75                           | 7.9<br>-14.0                                     | 29.3<br>-12.0 | 22.3<br>-67.9 | 35.7<br>0.0 | 181.2<br>0.0 | 80.7<br>-12.0  | 38.2<br>-63.4 | 41.8<br>-155.9 | 21.5           | 55.8 | 13.8 | 71.4 | 161.4 |
| 80                           | 6.5<br>-14.0                                     | 25.4<br>-12.0 | 15.6<br>-65.2 | 34.4<br>0.0 | 174.8<br>0.0 | 74.4<br>-12.0  | 31.8<br>-59.3 | 27.6<br>-156.5 | 18.9           | 52.0 | 15.6 | 66.9 | 158.9 |

TYPE "A1" & "A2" SIDE ROAD INTERSECTION DETAILS

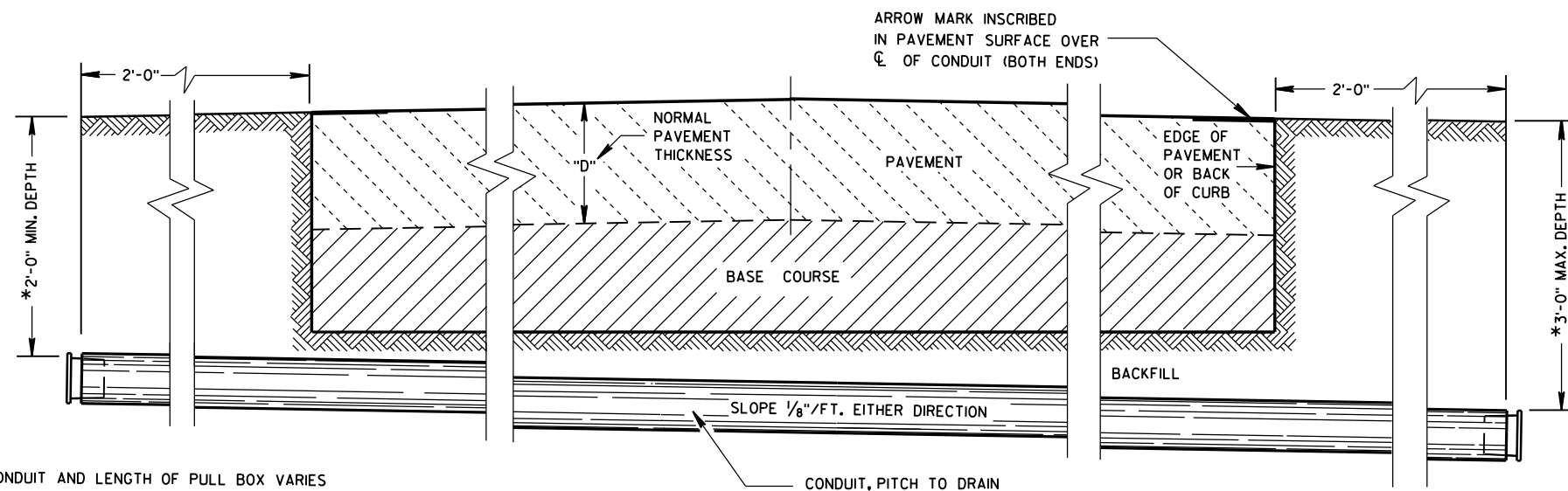
AT-GRADE SIDE ROAD  
INTERSECTION, TYPE "A1" & "A2"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
12/18/12 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS D 84 IT  
FHWA ENGINEER



PLAN VIEW  
ARROW MARK



SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

## GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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

## CONDUIT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

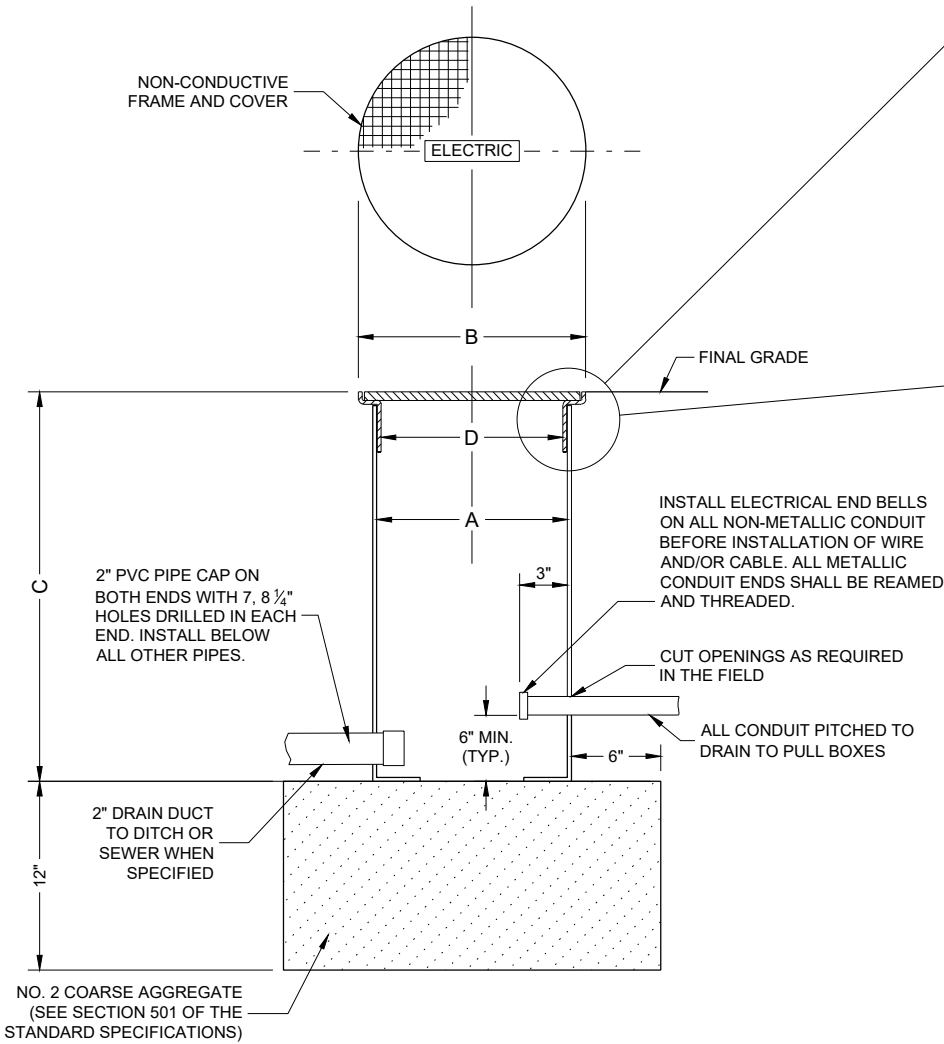
APPROVED  
March, 2017 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL 85  
FHWA

TABLE OF NOMINAL DIMENSIONS  
AND WEIGHTS

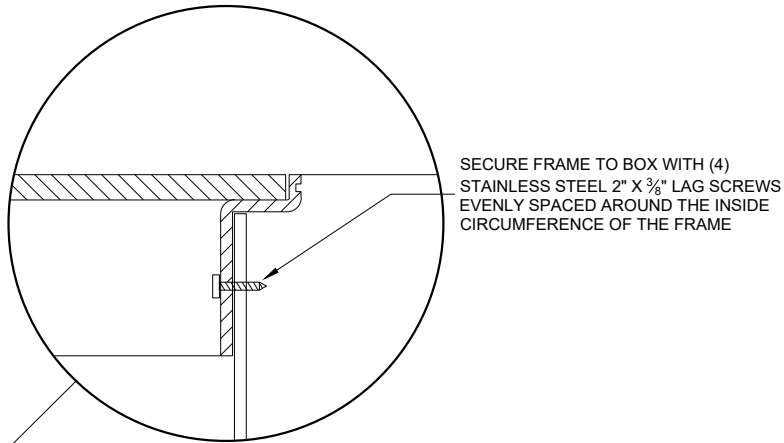
| DIMENSION<br>IN INCHES          |   | NON- CONDUCTIVE<br>PULL BOX |      |
|---------------------------------|---|-----------------------------|------|
| BOX DIAMETER **<br>(INSIDE)     | A | 24                          | 24   |
| BOX OVERALL<br>OUTSIDE DIAMETER | B | 27                          | 27   |
| BOX LENGTH                      | C | 36                          | 42   |
| FRAME OPENING                   | D | 22 ½                        | 22 ½ |
| WEIGHT IN POUNDS*               |   |                             |      |
| COVER                           |   | 50                          | 50   |
| BOX ONLY                        |   | 75                          | 85   |

\* THE ACTUAL WEIGHT OF THE COVER OR BOX ONLY MAY VARY NOT TO EXCEED 100 LBS INDIVIDUALLY.

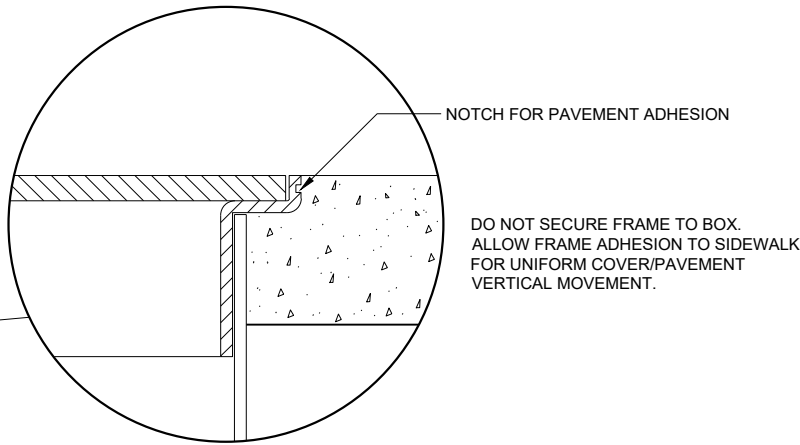
\*\* DIAMETER VARIES FROM TOP TO BOTTOM WITH THE DIAMETER LARGER AT THE BOTTOM TO PREVENT FROST HEAVE.



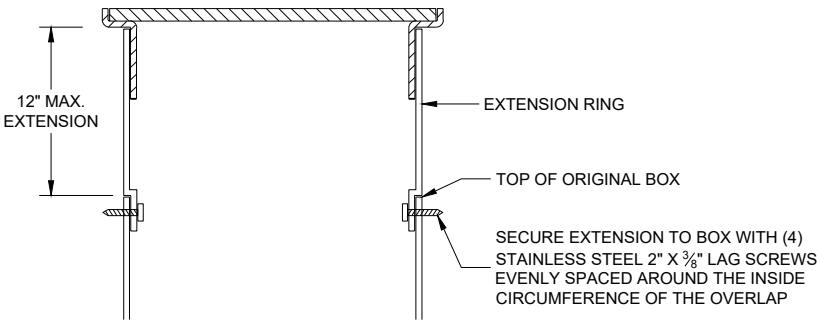
NON-CONDUCTIVE PULL BOX



INSTALLED IN SOD  
OR CRUSHED AGGREGATE



INSTALLED IN SIDEWALK



BOX EXTENSION

GENERAL NOTES

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

ALL BOXES, FRAMES AND COVERS SHALL BE SUITABLE FOR TIER 15 LOADING AS SPECIFIED IN ANSI/SCTE 77.

PROVIDE AN OPENING FOR TOOL ASSISTED COVER REMOVAL NOT LARGE ENOUGH TO PERMIT PASSAGE OF A SPHERE MORE THAN ½" DIAMETER

ENSURE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5 AND VERTICAL SURFACE DISCONTINUITIES LESS THAN ¼".

COVER SHALL BE MAGNETICALLY LOCATABLE.

BOXES AND EXTENSIONS ARE TRIMMABLE FOR CUSTOM LENGTHS. TRIMMED PIECES SHALL MAINTAIN A UNIFORM LENGTH.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN ¼".

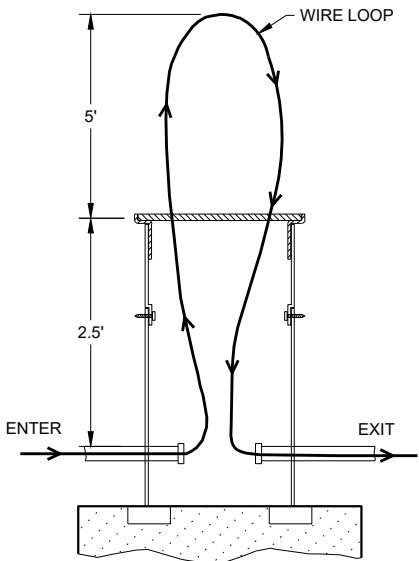
THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

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

ENTIRE BOX MUST BE CONSTRUCTED OF NON-CONDUCTIVE MATERIALS WITH THE EXCEPTION OF STAINLESS STEEL FASTENERS AND MAGNETIC LOCATABLE DEVICE.

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

LABEL ON COVER SHALL READ "ELECTRIC" FOR SIGNAL AND LIGHTING SYSTEMS, "WISDOT ITS" FOR COMMUNICATIONS AND ITS EQUIPMENT SYSTEMS.



MEASUREMENT DETAIL FOR  
WIRE/CABLE IN THE PULL BOX

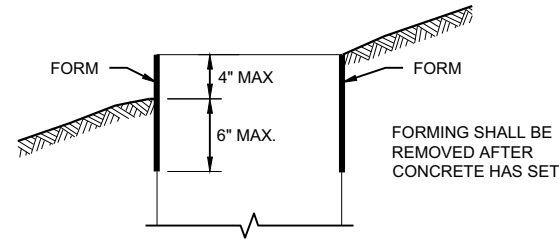
PULL BOXES  
NON-CONDUCTIVE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2022 /S/ Ahmet Demirebilek  
DATE STATE ELECTRICAL ENGR 86

FHWA

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

| QUANTITY REQUIREMENTS           | CONCRETE BASE TYPE |      |       |
|---------------------------------|--------------------|------|-------|
|                                 | 1                  | 2    | 5 & 6 |
| APPROX. CUBIC YARDS OF CONCRETE | 0.40               | 0.57 | 0.40  |
| LBS. OF HOOP BAR STEEL          | NONE               | 23   | 16    |
| LBS. OF VERTICAL BAR STEEL      | NONE               | 60   | 18    |

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2, TYPE 5 AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER ALL BASE TYPES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

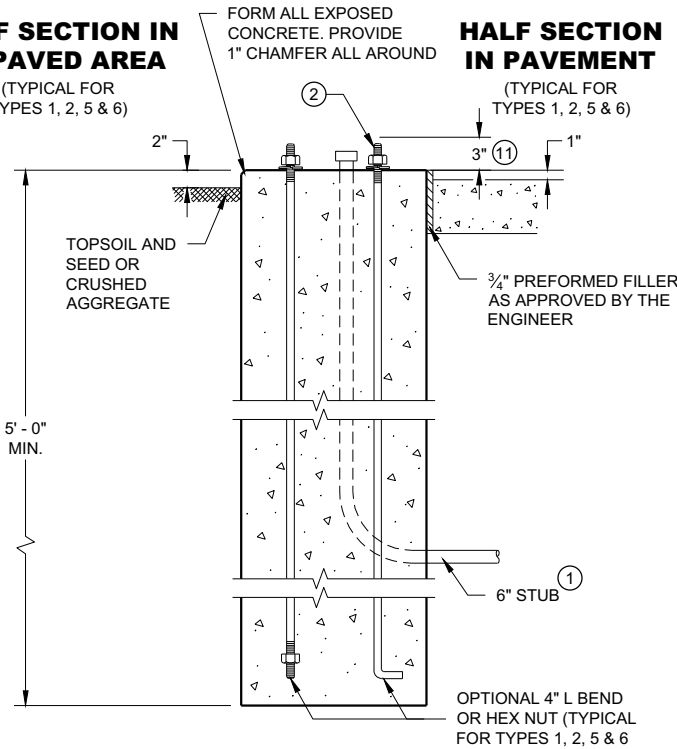
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

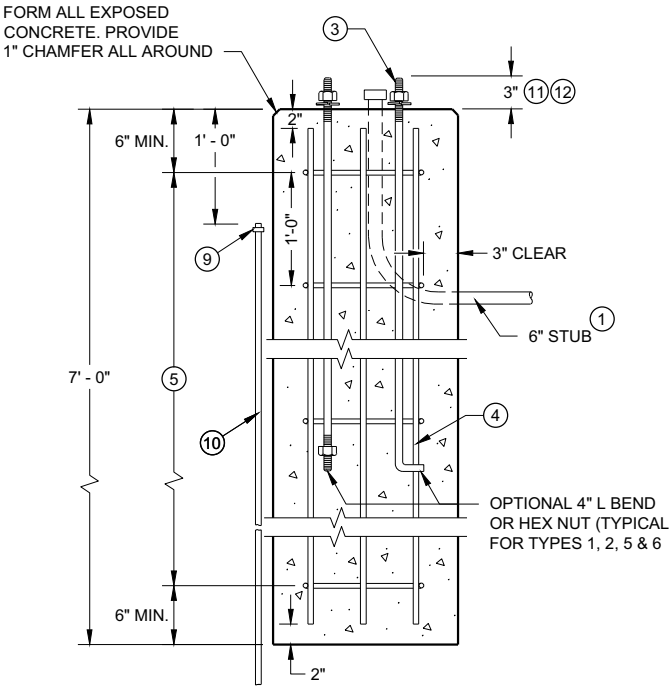
- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.
- 2 (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- 3 (4) 1" DIA. X 5' - 0" ANCHOR RODS.
- 4 (6) NO. 6 X 6' - 8" BAR STEEL REINFORCEMENT.
- 5 (7) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- 6 (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- 7 (6) NO. 4 X 4' - 8" BAR STEEL REINFORCEMENT.
- 8 (5) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- 9 EXOTHERMIC CONNECTION TO EQUIPMENT GROUNDING CONDUCTOR
- 10 5/8" DIA. X 8' - 0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED
- 11 ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/2" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- 12 FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

HALF SECTION IN UNPAVED AREA



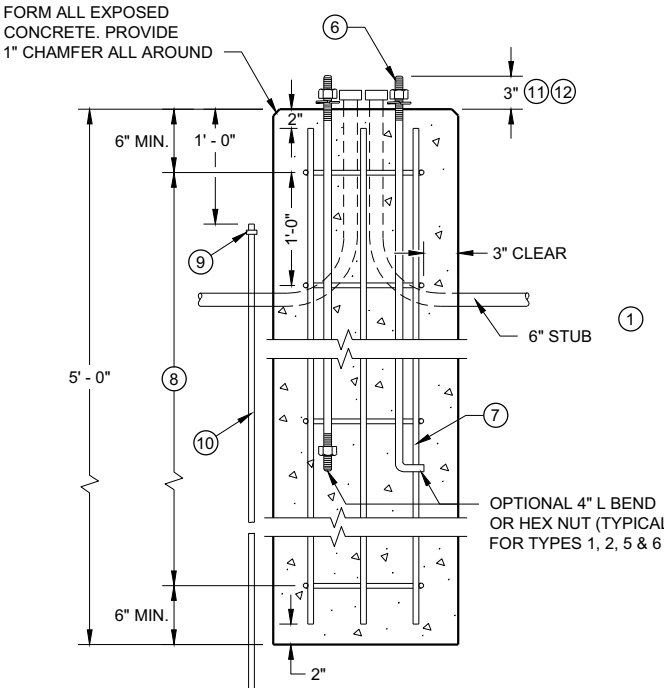
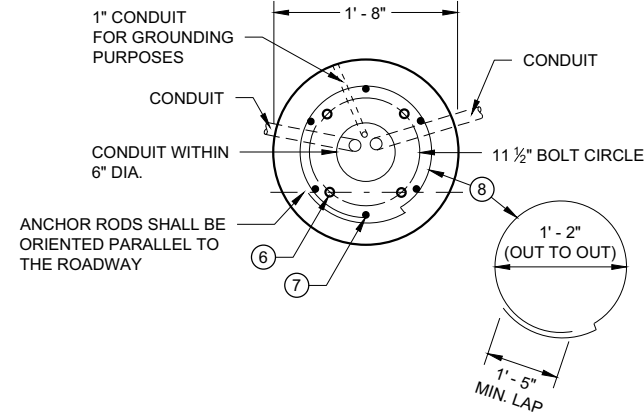
TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2

CONCRETE BASES



TYPE 5 & 6

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

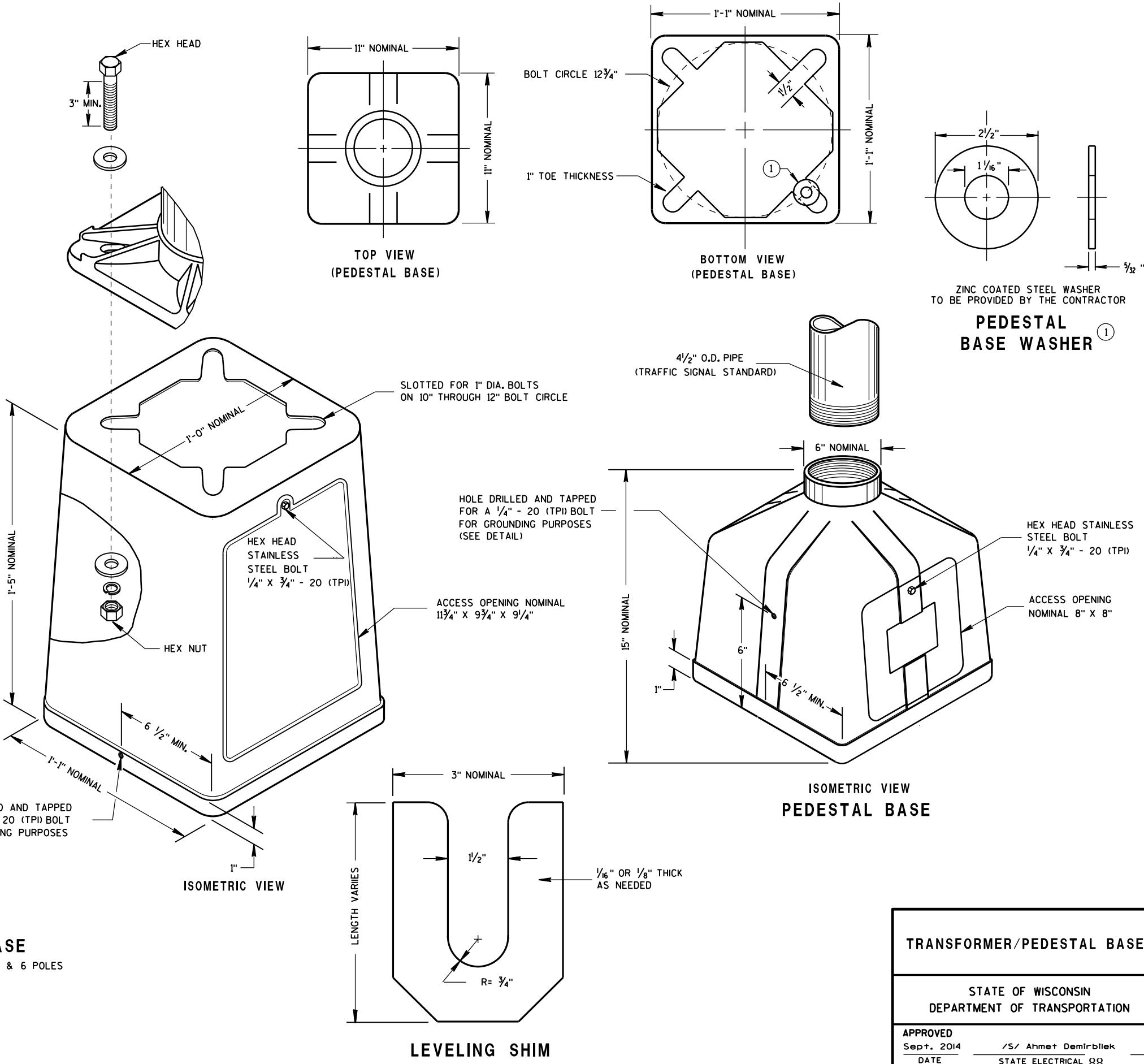
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



6

6

S.D.D. 9 C 3-4

S.D.D. 9 C 3-4

TYPICAL MECHANICAL CONNECTOR LUG TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES

TRANSFORMER/PEDESTAL BASES

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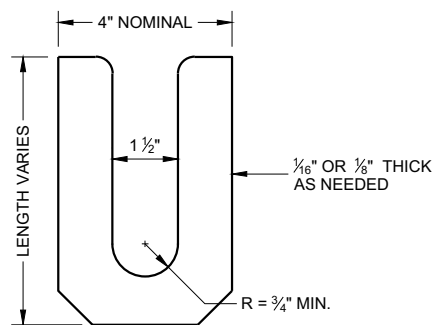
APPROVED Sept. 2014 DATE /S/ Ahmet Demirbilek STATE ELECTRICAL 88 FHWA



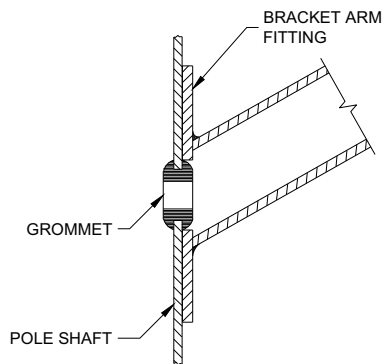


\* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

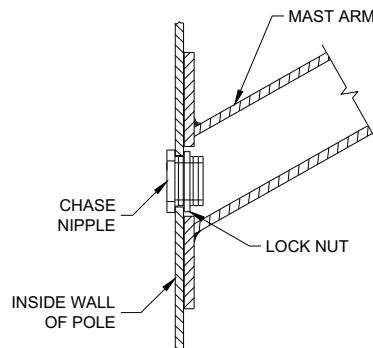
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DATE STATE ELECTRICAL 89  
FHWA



**LEVELING SHIM**  
SHALL BE ALUMINUM



**TYPICAL APPLICATION OF GROMMET IN POLE SHAFT**



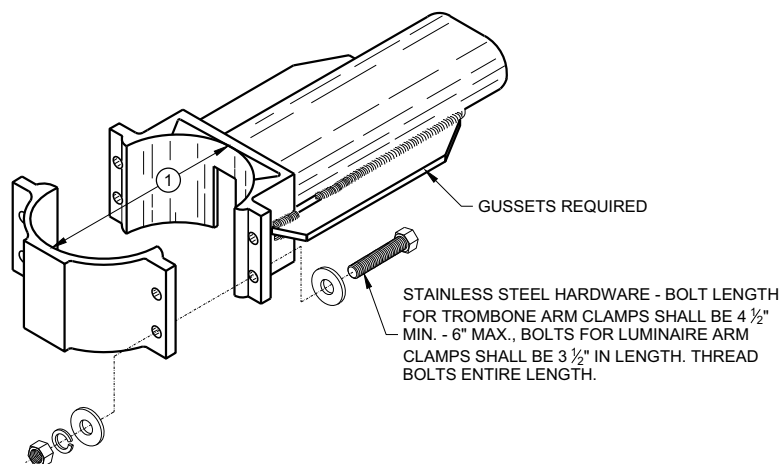
**TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT**

## GENERAL NOTES

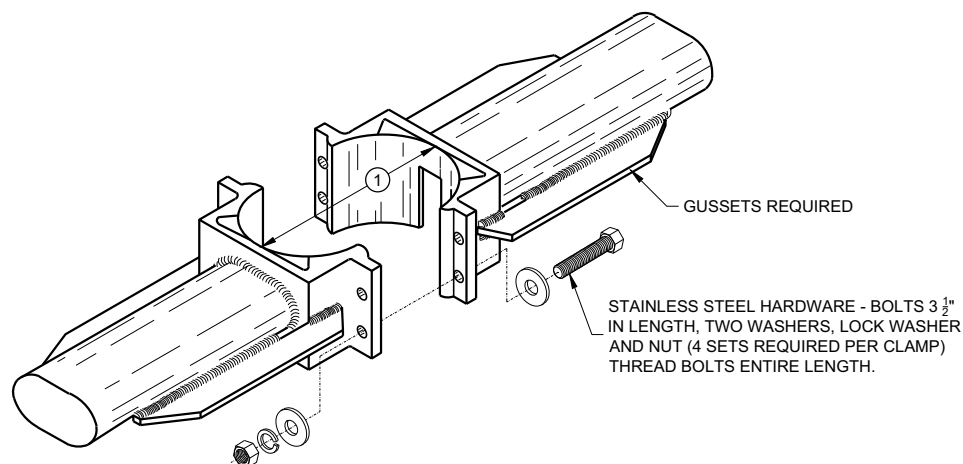
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- ① 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ② INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ③ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ④ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

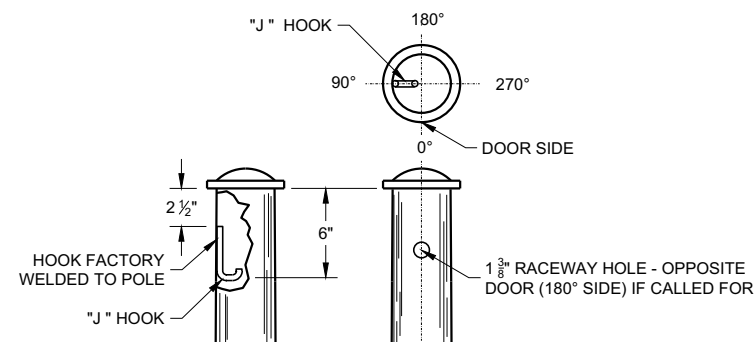
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



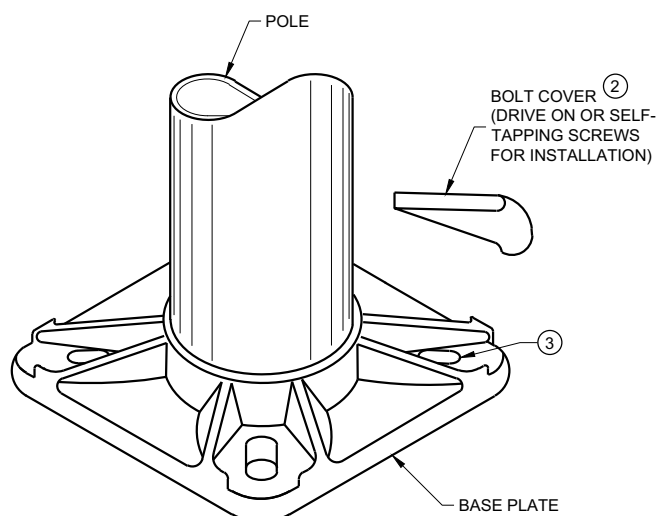
**TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP**



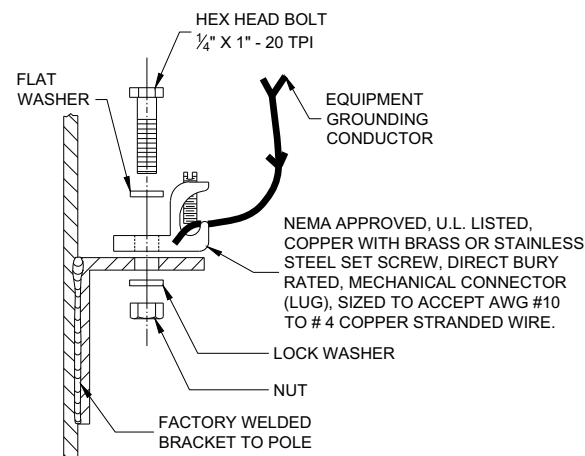
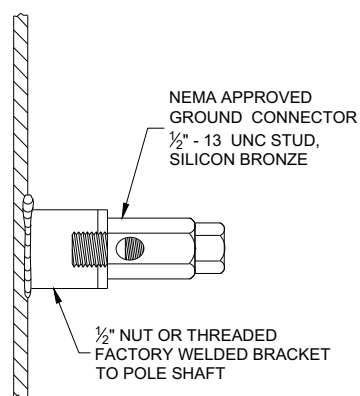
**TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS**



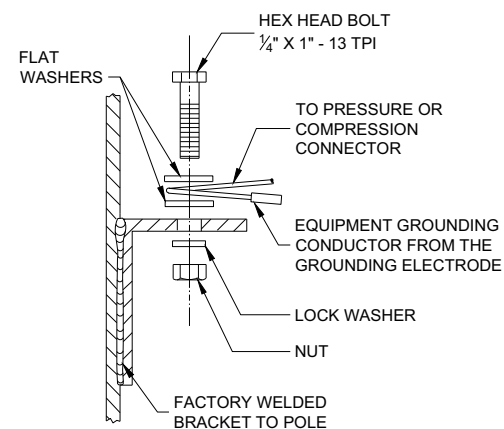
**TYPICAL "J" HOOK LOCATION**



**BASE PLATE**



**TYPICAL GROUNDING CONNECTIONS**  
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

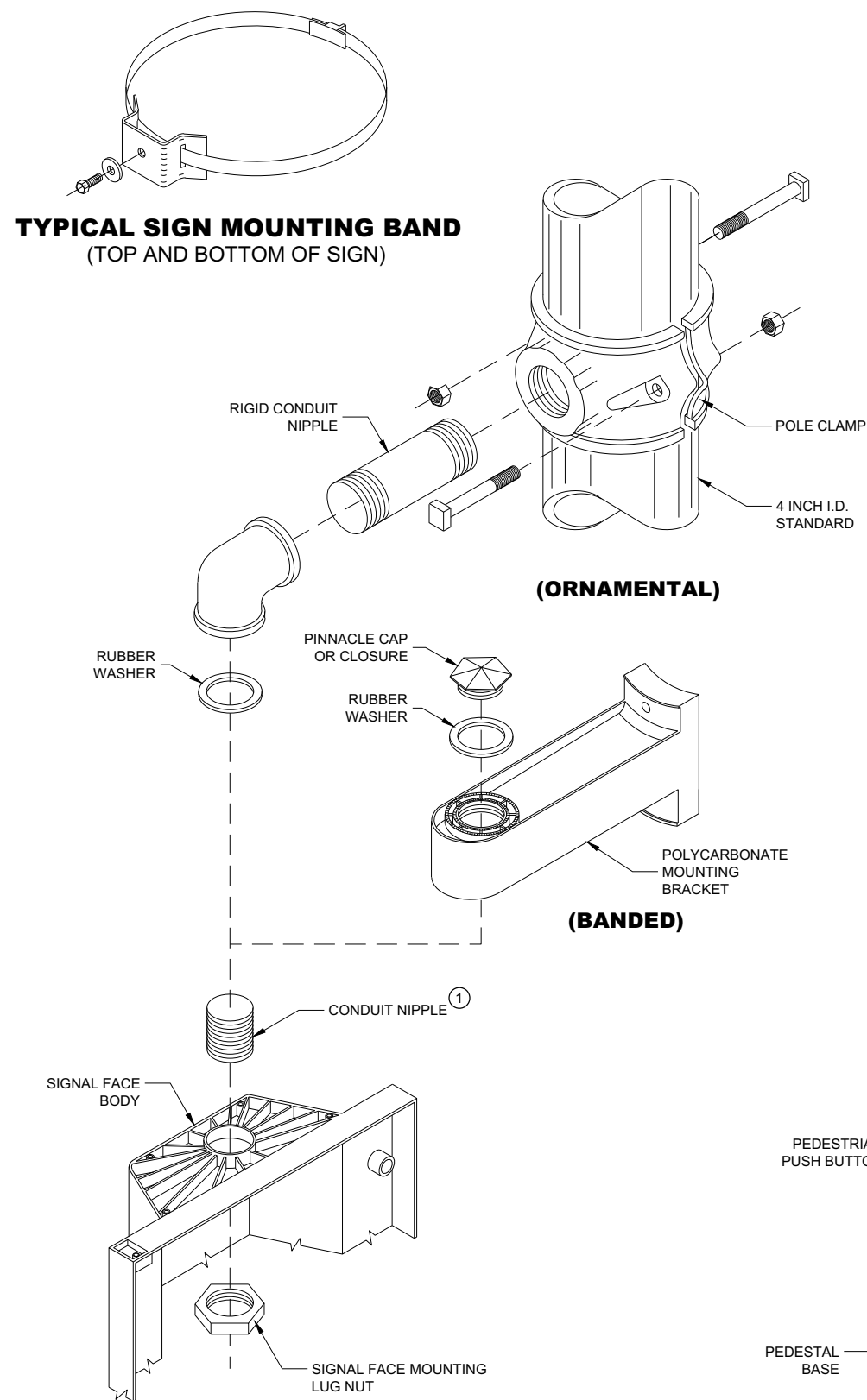
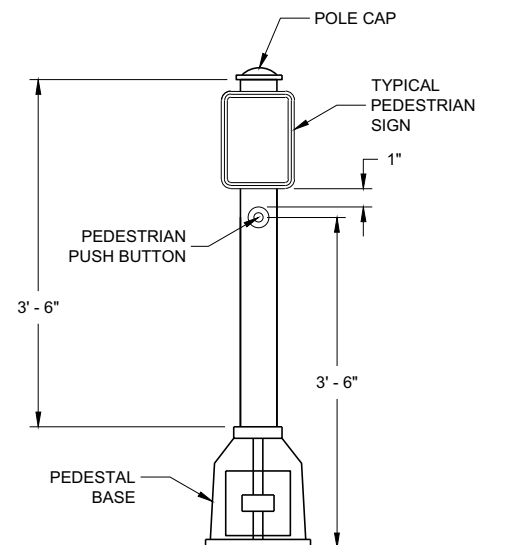
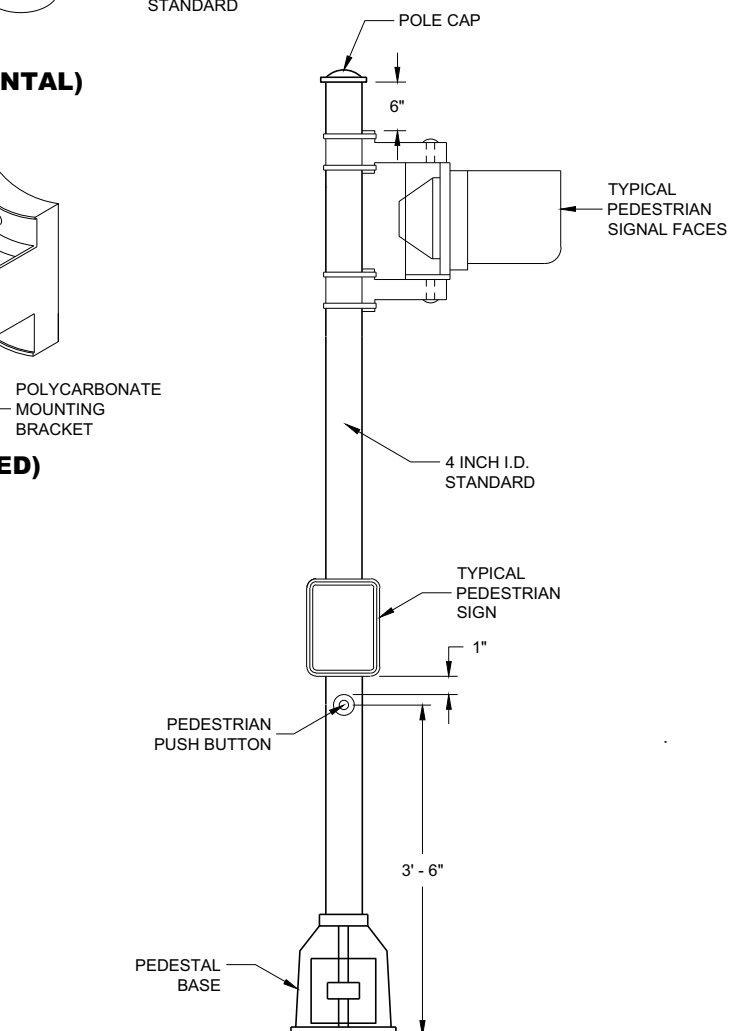
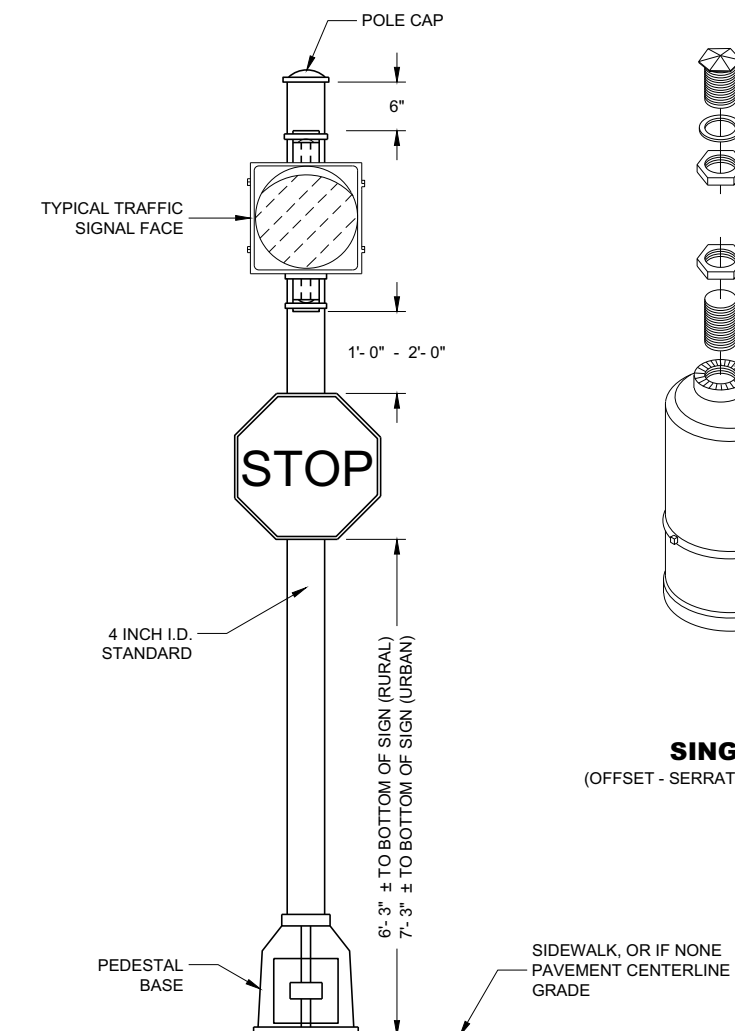


## HARDWARE DETAILS FOR POLE MOUNTING

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November 2018 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL ENGI 90  
FHWA



**SIGNAL FACE MOUNTING DETAILS****PEDESTRIAN PUSH BUTTON  
TYPICAL MOUNTING****PEDESTRIAN FACE STANDARD - 10 FT.**  
(WALK - DON'T WALK)**STANDARD FLASHER**  
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED**GENERAL NOTES**

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS, UNLESS APPROVED BY THE ENGINEER IN THE FIELD.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

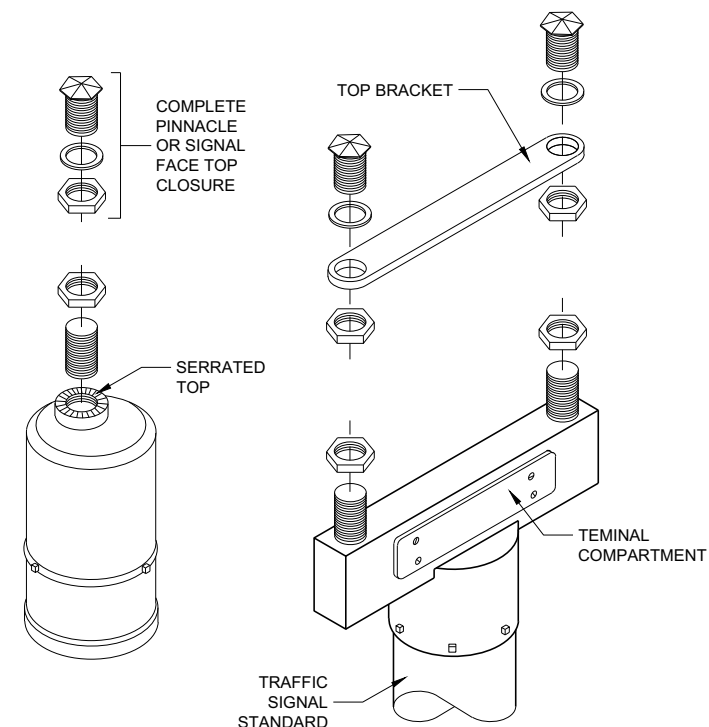
LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE REGION TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

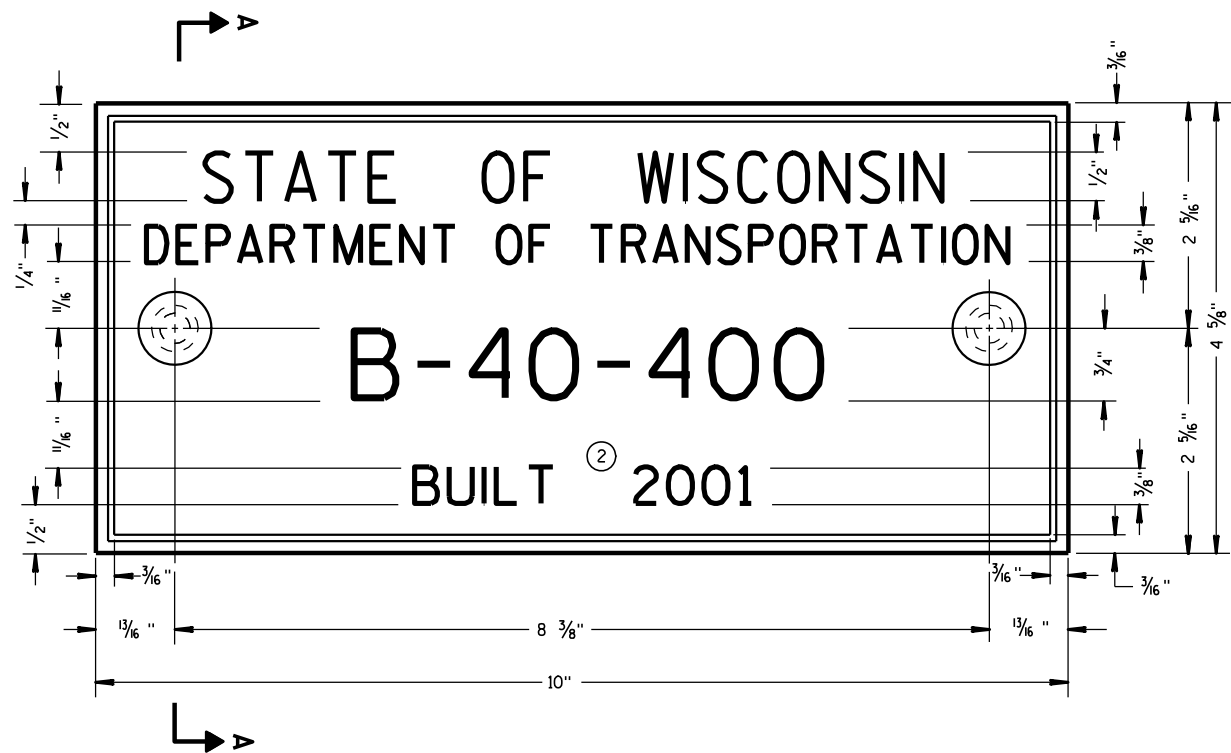
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

- ① USE 1 1/2" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 1/2" OPENING IN SIGNAL FACES AND BRACKET ENDS.

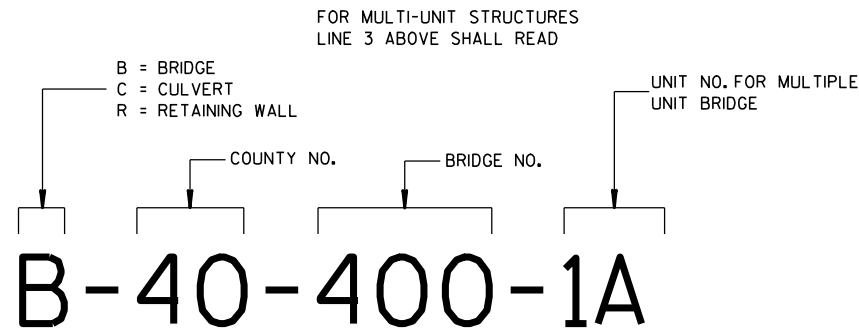
**SINGLE**  
(OFFSET - SERRATED MOUNTING)**DOUBLE**  
(SERRATED MOUNTING)  
**SLIPFITTERS****TRAFFIC SIGNAL STANDARD  
PEDESTRIAN AND FLASHER  
TYPICAL MOUNTING DETAILS**

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DATE STATE ELECTRICAL ENGI 91  
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TYPICAL NAME PLATE  
(BRIDGES, CULVERTS, AND RETAINING WALLS)



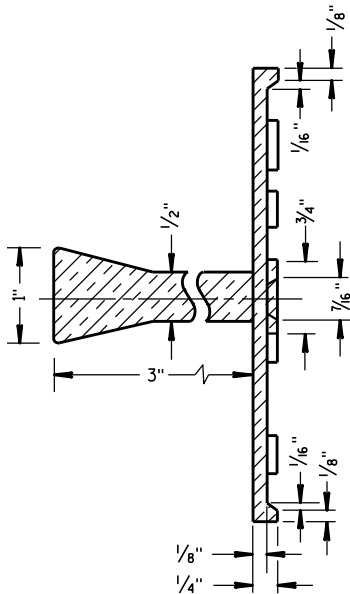
NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES

GENERAL NOTES

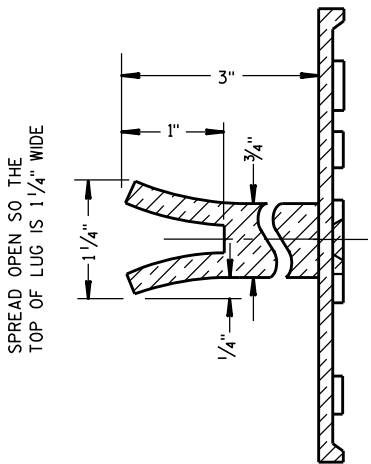
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

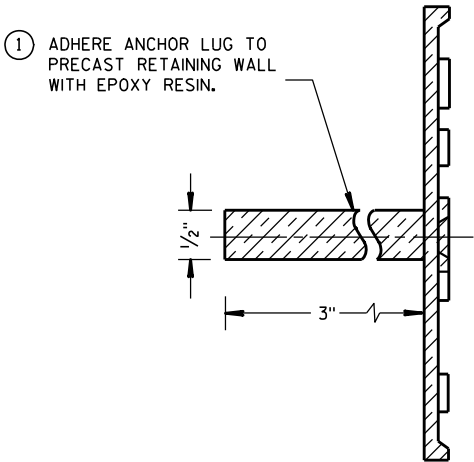
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A

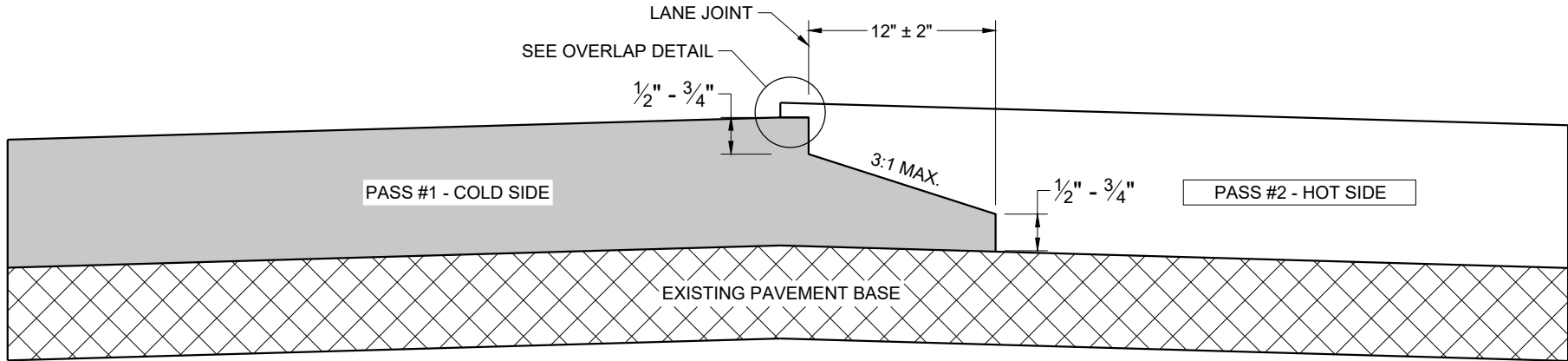


ALTERNATE LUG

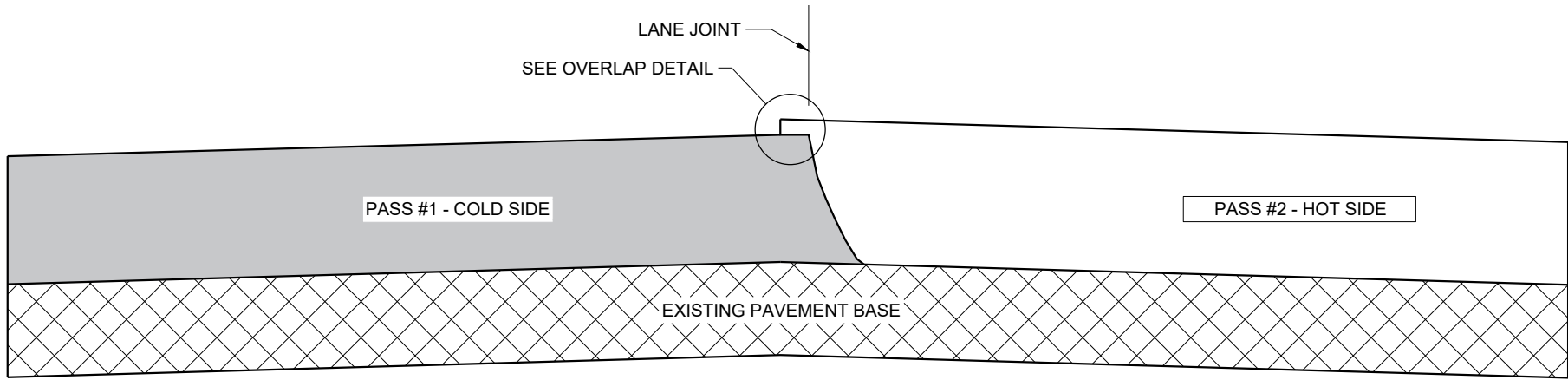


ALTERNATE LUG  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

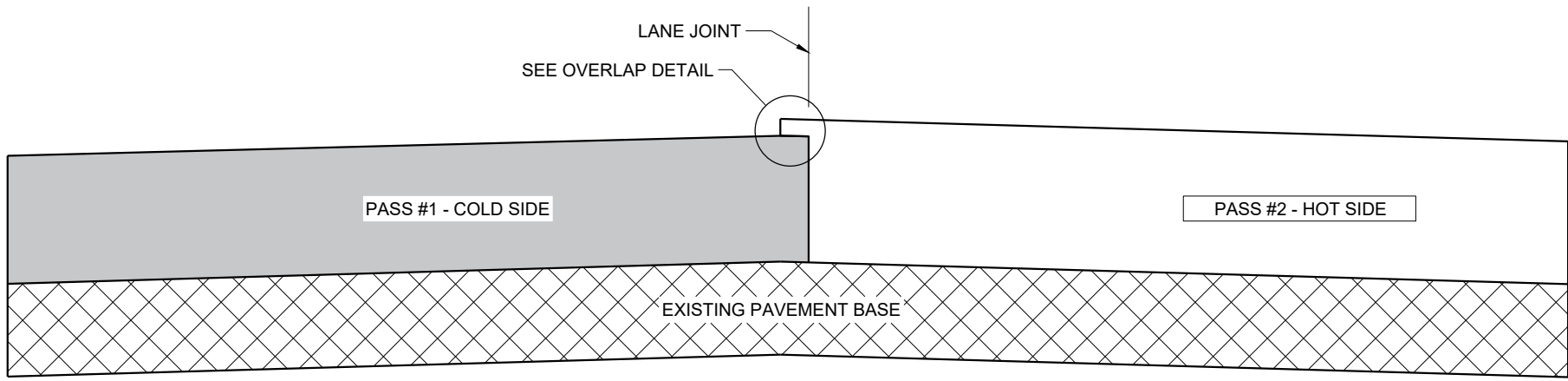
| NAME PLATE<br>(STRUCTURES)                         |                                                   |      |
|----------------------------------------------------|---------------------------------------------------|------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                   |      |
| APPROVED<br>DATE<br>3/26/10                        | CHIEF STRUCTURAL DEVELOPER<br>/S/ Scot Beck<br>92 | JEER |
| FHWA                                               |                                                   |      |



TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)

GENERAL NOTES

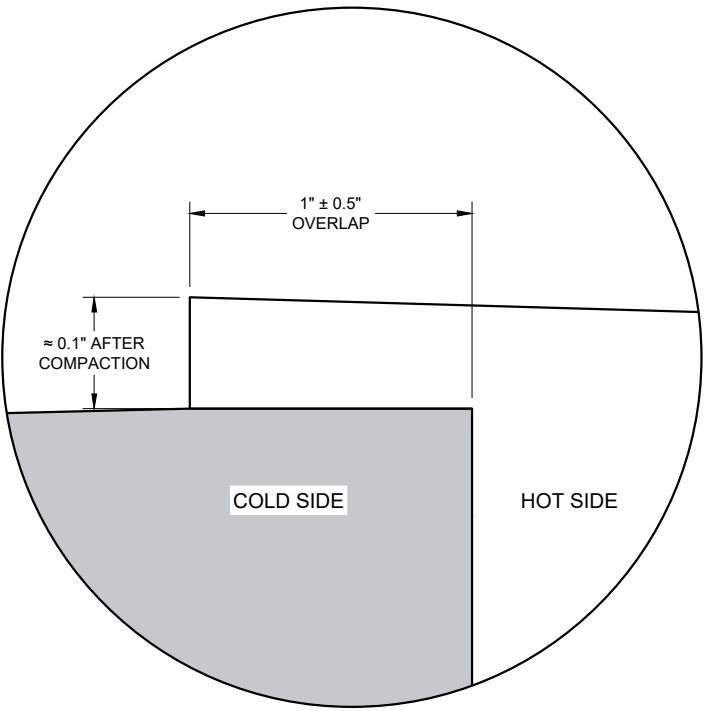
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

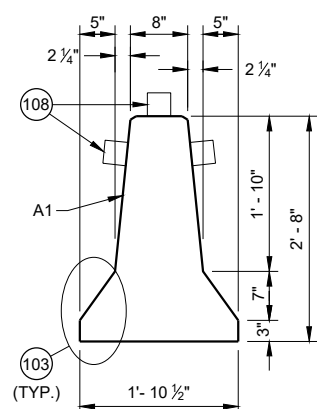


OVERLAP DETAIL (TYPICAL)

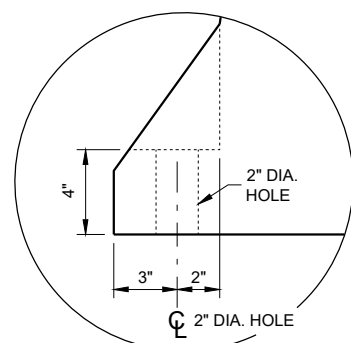
HMA LONGITUDINAL JOINTS

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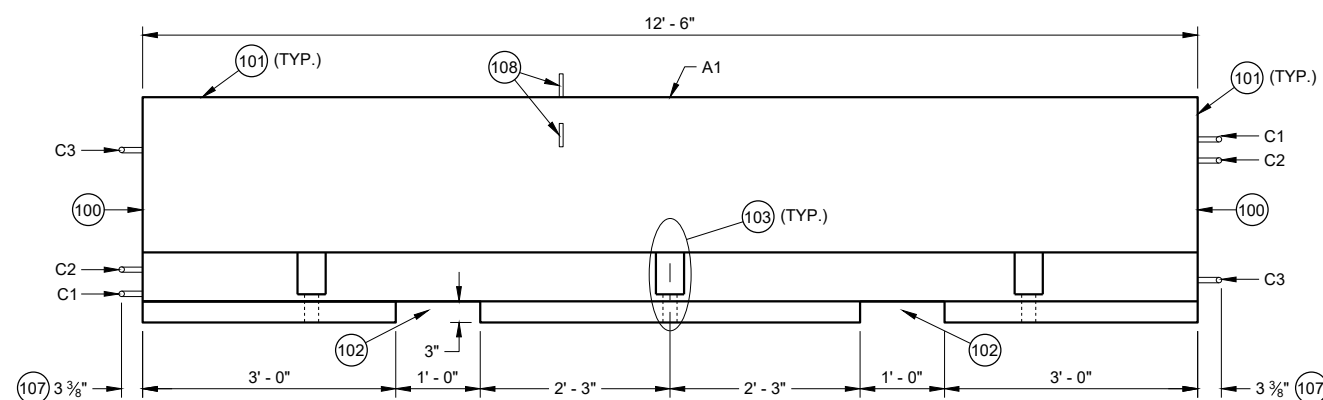
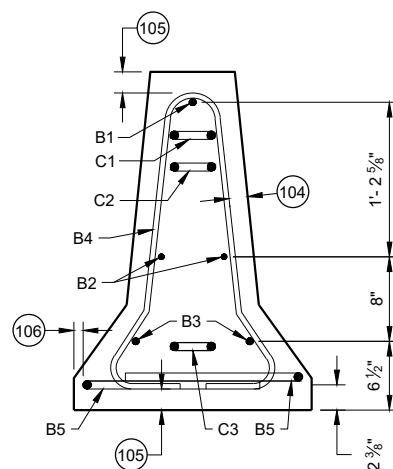
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November 2020 /S/ Steven Hefel  
DATE HMA PAVEMENT ENGIN 93  
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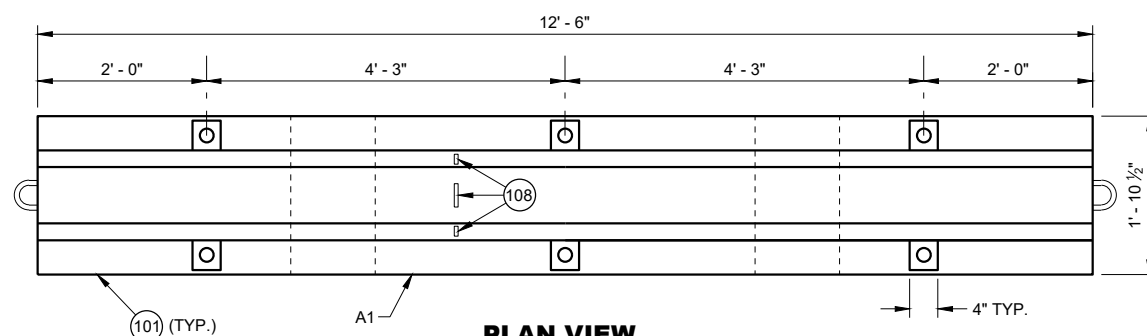
### CROSS SECTION



## ANCHOR BLOCK DETAIL

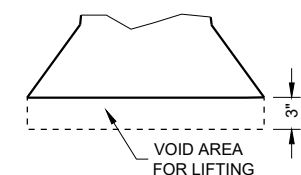


## PROFILE VIEW

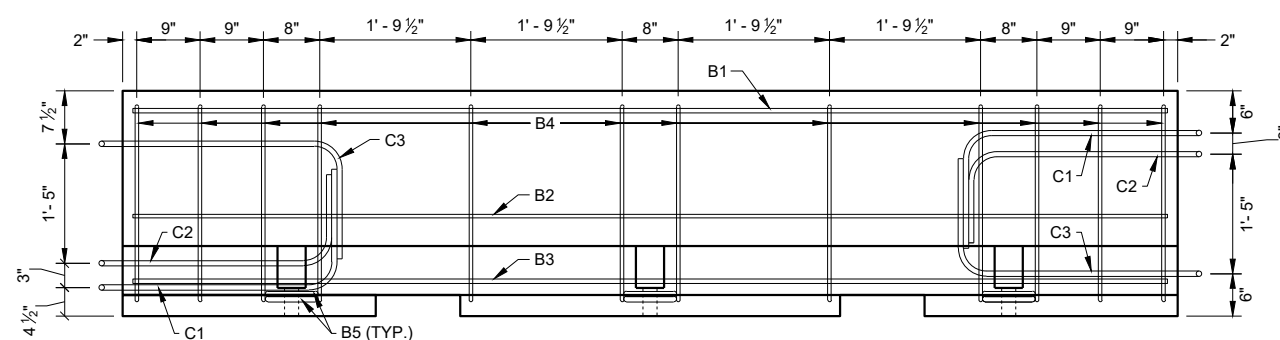
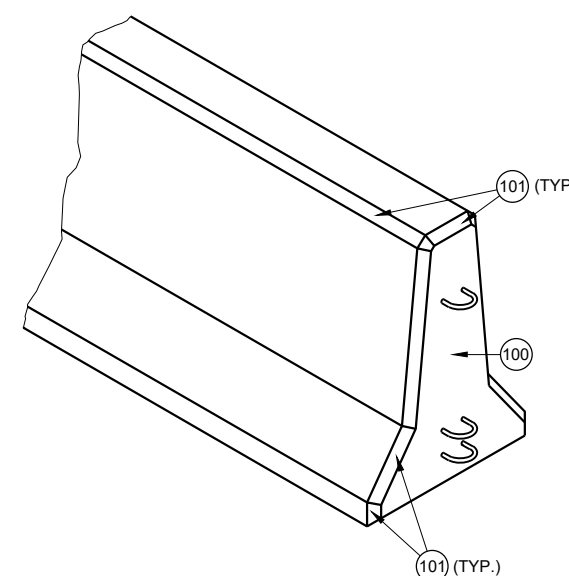


**PLAN VIEW**

**TEMPORARY BARRIER**



**LIFTING SLOT DETAIL  
(TYP.)**



## PROFILE VIEW

### TEMPORARY BARRIER REINFORCEMENT

## GENERAL NOTES

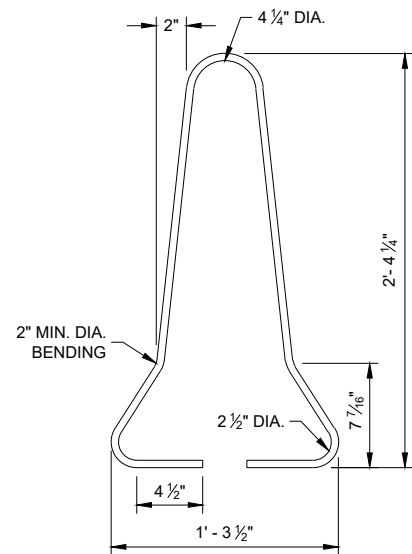
PLACE BARRIER ON PAVED SURFACE. BEFORE PLACEMENT OF TEMPORARY BARRIER, REMOVE ALL LOOSE MATERIAL FROM PAVED SURFACE.

LOOP BARS C1, C2 AND C3 ARE NOT FOR PLACEMENT OR MOVEMENT OF BARRIER.

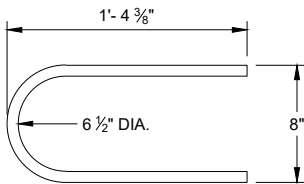
- 100 PERMANENTLY FORM INTO ONE END OF BARRIER THE FOLLOWING INFORMATION:
  - A. TYPE OF BARRIER: WI-CBTP
  - B. MANUFACTURER
  - C. DATE OF MANUFACTURE (MONTH AND YEAR)
- 101 1" OPTIONAL CHAMFER
- 102 SEE LIFTING SLOT DETAIL
- 103 SEE ANCHOR BLOCK DETAIL
- 104 1 3/4" MIN. CLEAR COVER
- 105 2" MIN. CLEAR COVER
- 106 1" MIN. CLEAR COVER
- 107 ± 1/8" MEASURED FROM FACE OF CONCRETE BARRIER TO OUTSIDE OF LOOP BAR (TYP.)
- 108 USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURERS INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED LEFT OF TRAFFIC AND WHITE WHEN BARRIER IS LOCATED RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART, PROVIDE TO MOUNTED DELINEATORS IN ADDITION TO SIDE MOUNTED DELINEATORS ON BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

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

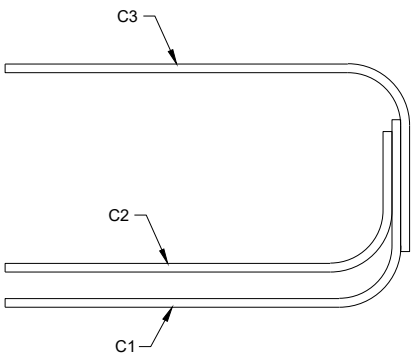
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 94



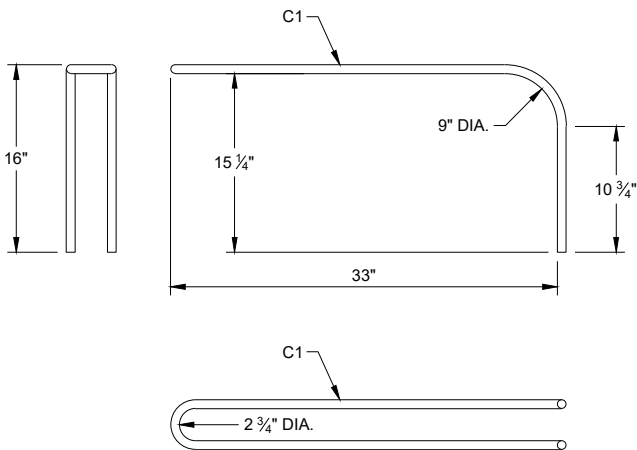
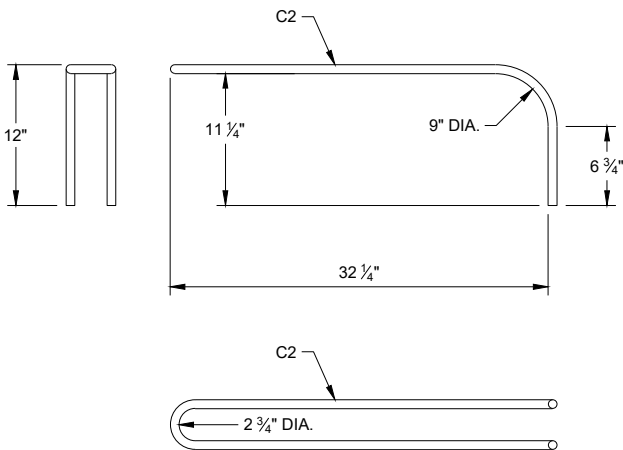
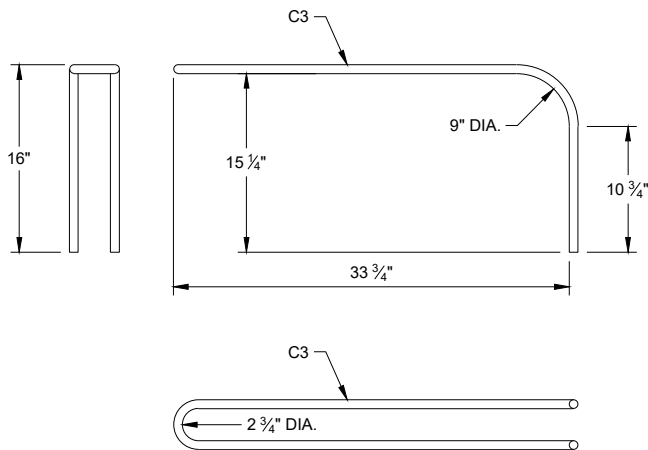
B4 BAR DETAIL



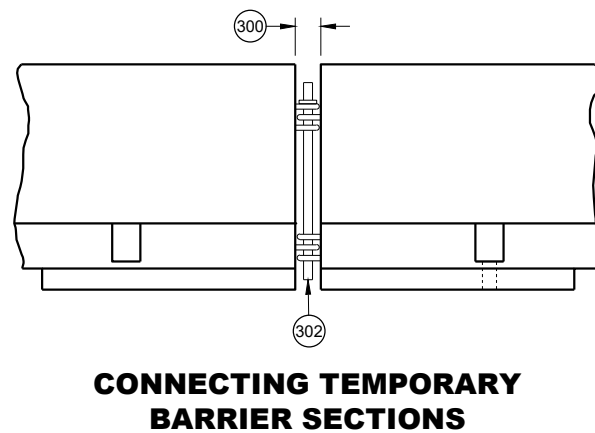
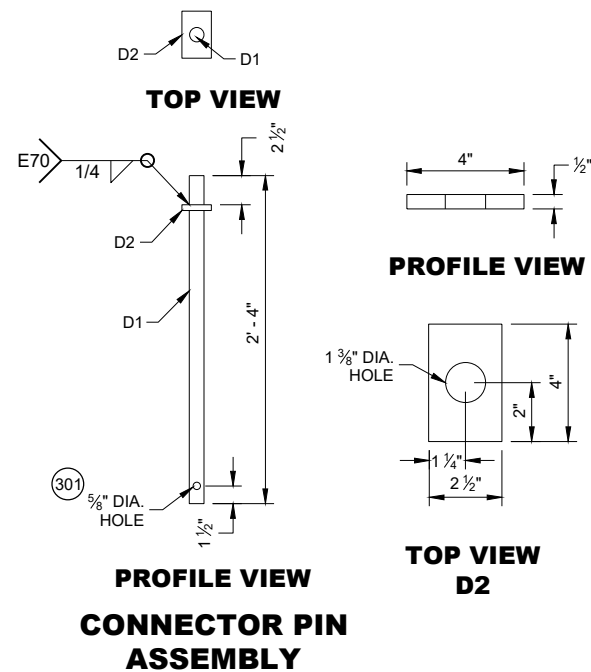
B5 BAR DETAIL



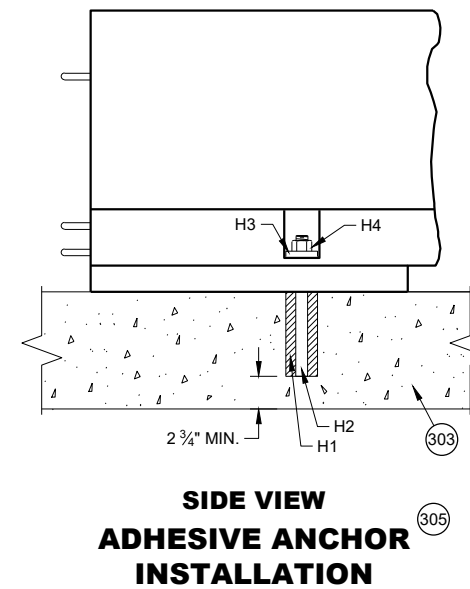
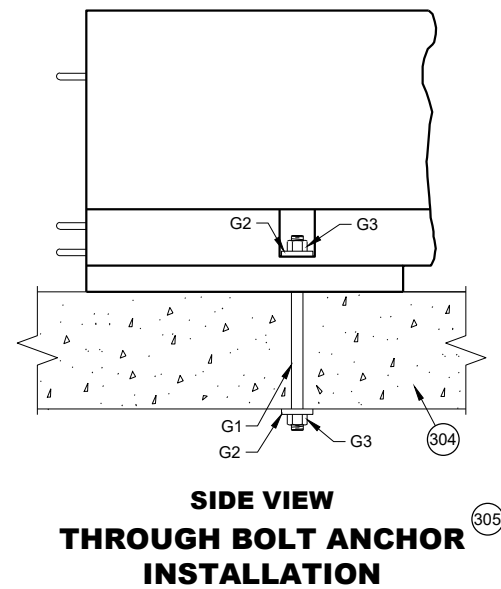
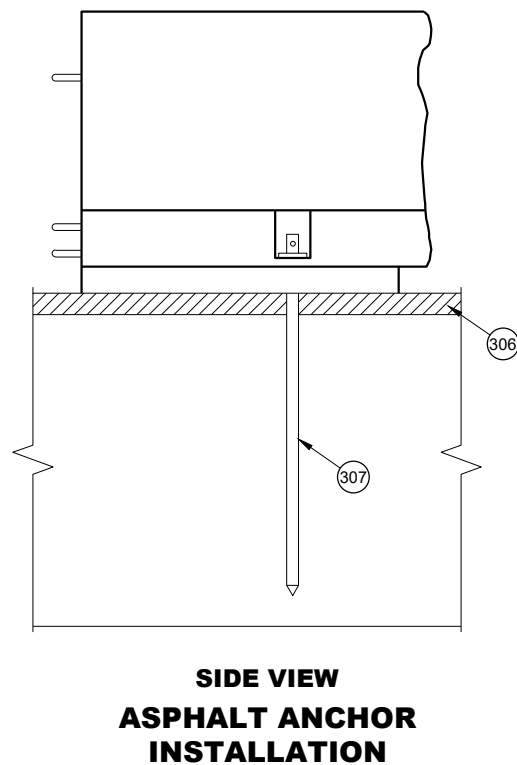
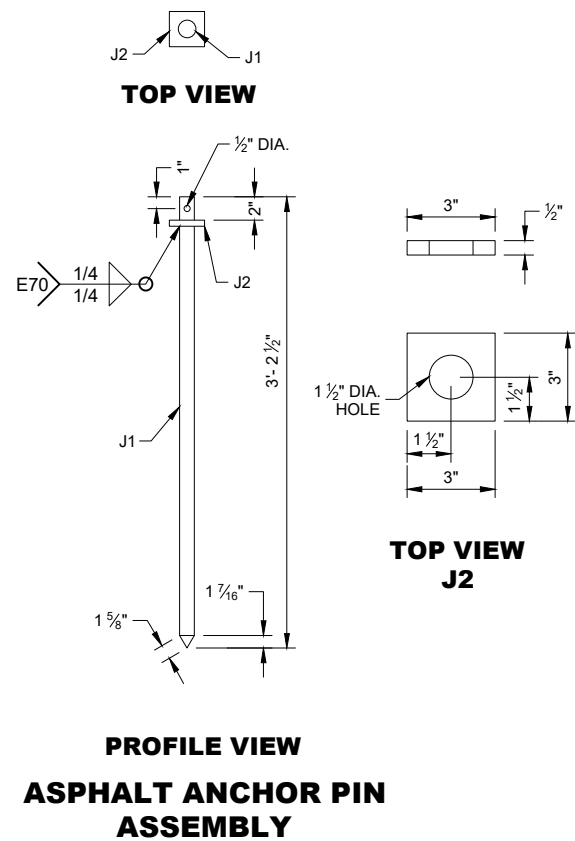
PROFILE VIEW  
LOOP BAR ASSEMBLY



C BAR DETAILS

**GENERAL NOTES**

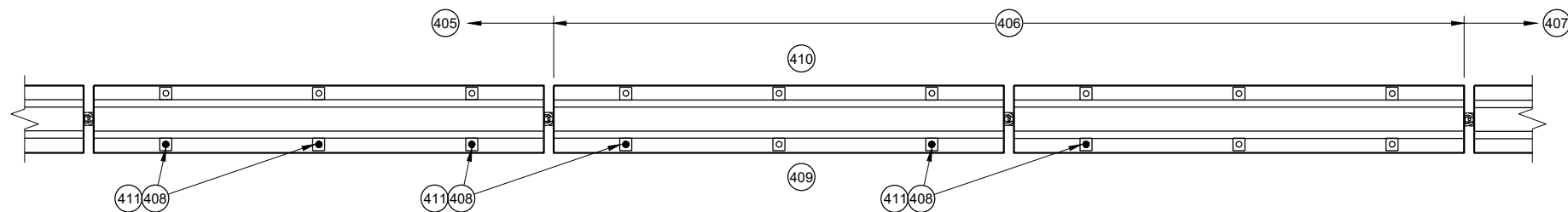
- (300) SET WITH 3 5/8" WOOD BLOCK.
- (301) HOLE IS OPTIONAL.
- (302) CONNECTOR PIN ASSEMBLY.
- (303) CONCRETE PAVEMENT, APPROACH SLAB, OR DECK.
- (304) CONCRETE DECK.
- (305) DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY OR CONCRETE PAVEMENT WITH ASPHALT OVERLAY.
- (306) MINIMUM OF 2" OF ASPHALT.
- (307) ASPHALT ANCHOR PIN ASSEMBLY



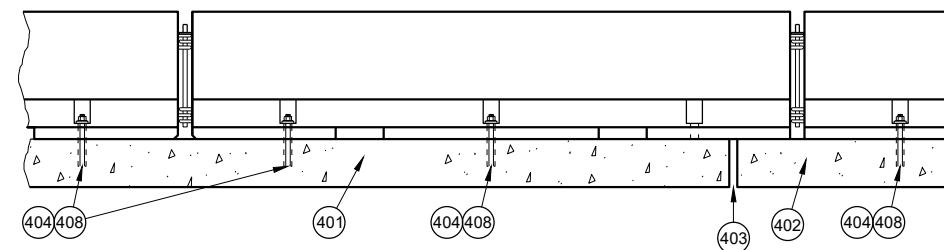
**CONCRETE BARRIER  
TEMPORARY PRECAST,  
12' - 6"**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

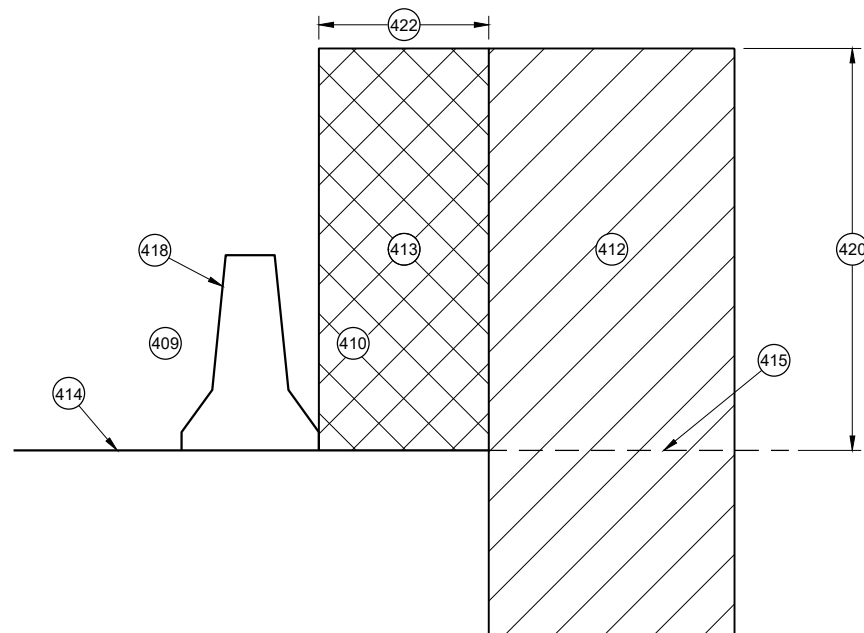




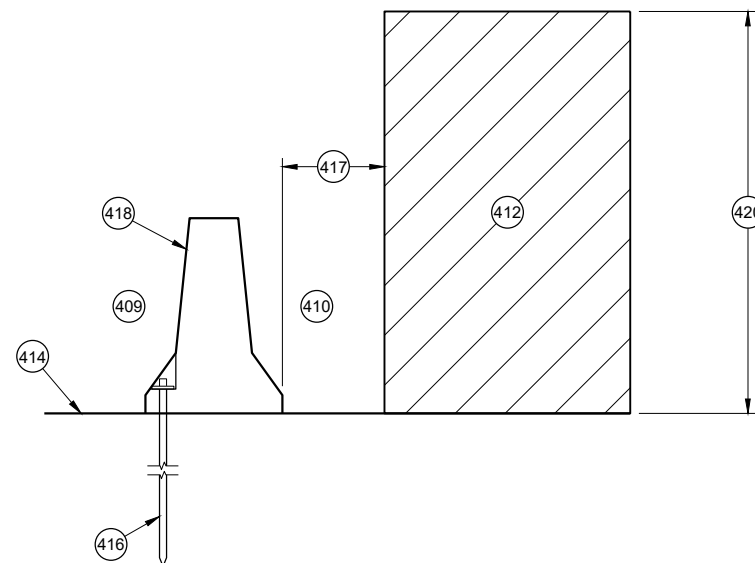
**PLAN VIEW**  
**TRANSITION FROM FREE STANDING TO ANCHORED BARRIER**



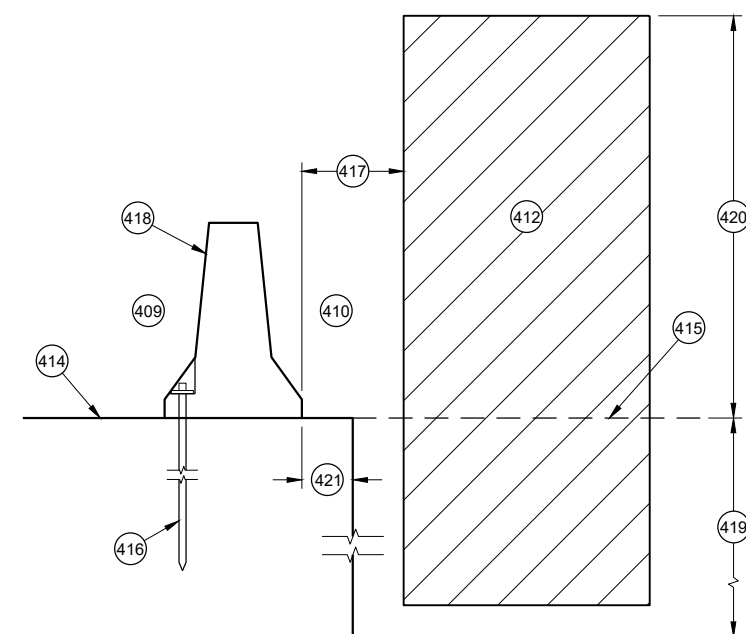
**PROFILE VIEW**  
**ANCHORED BARRIER NEAR EXPANSION JOINT**



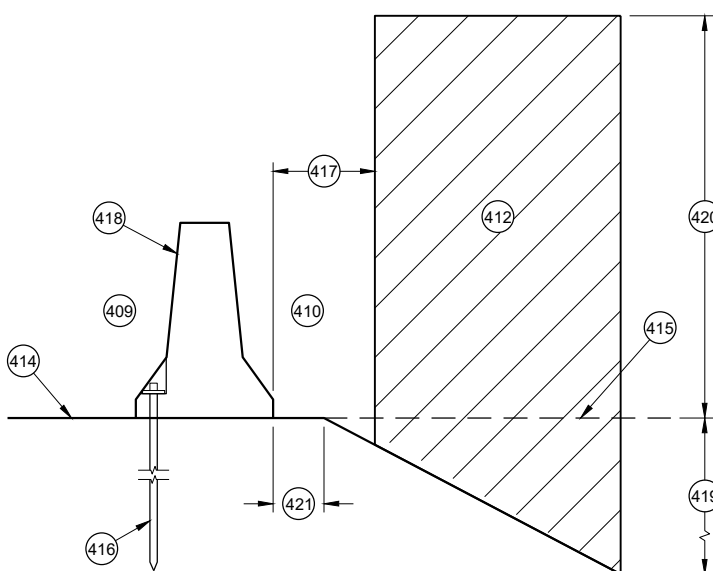
**CROSS SECTION**  
**FREE STANDING BARRIER**



**CROSS SECTION**  
**ANCHORED BARRIER FOR OBJECTS ABOVE  
THE GRADE LINE AND NEAR THE BARRIER**



**CROSS SECTION**  
**ANCHORED BARRIER NEAR VERTICAL DROP OFF**



**CROSS SECTION**  
**ANCHORED BARRIER NEAR A SLOPE**

### GENERAL NOTES

- (400) 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.
- (401) CONCRETE DECK
- (402) CONCRETE DECK OR APPROACH SLAB.
- (403) EXPANSION JOINT
- (404) ADHESIVE ANCHOR SHOWN. SEE ANCHOR DETAILS.
- (405) ANCHORED TEMPORARY BARRIER
- (406) TRANSITION FROM ANCHORED TEMPORARY BARRIER TO FREE STANDING
- (407) FREE STANDING BARRIER
- (408) 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.
- (409) TRAFFIC SIDE
- (410) NON-TRAFFIC SIDE
- (411) ANCHOR LOCATION. SEE ANCHORING DETAILS.
- (412) WORK AREA
- (413) AREA FREE OF OBJECTS AND WORKERS
- (414) GRADE LINE
- (415) EXTENDED GRADE LINE
- (416) ANCHORED TEMPORARY BARRIER. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR AN ASPHALT ANCHOR ROD DETAILS FOR MORE INFORMATION. ASPHALT ANCHOR ROD SHOWN.
- (417) WHEN OBJECTS EXTEND ABOVE THE GRADE. A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT.
- (418) OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR ALLOWED TO LEAN AGAINST THE BARRIER WITHOUT WRITTEN PERMISSION OF THE PROJECT ENGINEER.
- (419) DEPTHS OF 3 FEET OR MORE.
- (420)  $Y = 6.5'$
- (421) OFFSET FROM BACK OF BARRIER EDGE:
- |                   |      |
|-------------------|------|
| CONCRETE PAVEMENT | 0.5' |
| ASPHALT           | 0.5' |
- (422) POSTED SPEED (MPH):
- |               |      |
|---------------|------|
| 45 OR GREATER | 4.0' |
| 40 OR LOWER   | 2.0' |

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

- 500 EXISTING RIGID BARRIERS (VARIES)

501 TEMPORARY BARRIER

502 SEE OTHER DETAIL ON HOW TO ANCHOR TEMPORARY BARRIER (BARRIER ASPHALT ANCHOR SHOWN).

503 ANCHORS ARE REQUIRED ON BOTH SIDE OF THE TEMPORARY BARRIER.

504 NESTED RAILS ARE REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

505 TRAFFIC TRAVELS FROM PERMANENT BARRIER TO TEMPORARY BARRIER.
- 506 TRAFFIC TRAVELS FROM TEMPORARY BARRIER TO PERMANENT BARRIER.

507 VERTICAL BARRIER

508 SAFETY SHAPE BARRIER

509 SINGLE SLOPE BARRIER

510 CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF RIGID BARRIER.

511 BENT THRIE BEAM TO FIT.

512 THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
- 513 TWO (2) P1, P2 AND P3 ARE REQUIRED

514 FIVE (5) N1, N2 AND N3 ARE REQUIRED

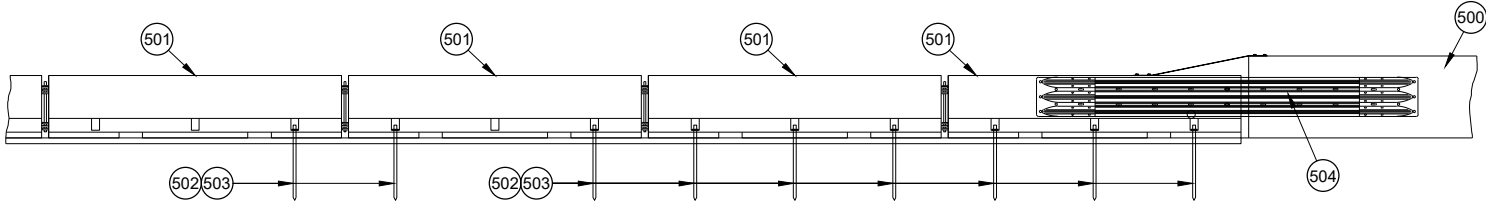
515 TWO (2) R1, R2 AND R3 ARE REQUIRED

516 CUT WOOD BLOCK TO FIT.

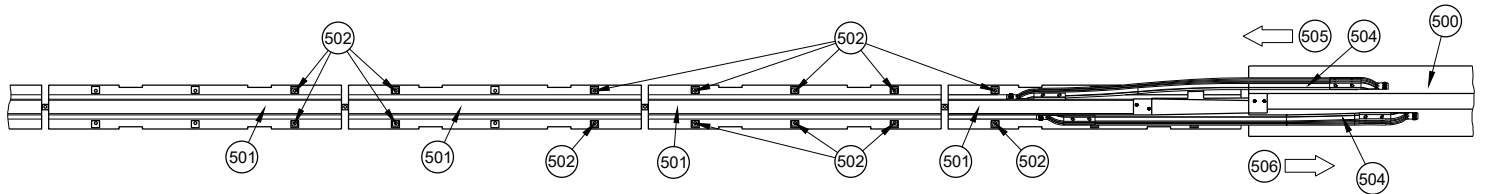
517 SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL ASSEMBLY.

518 CAP ASSEMBLY

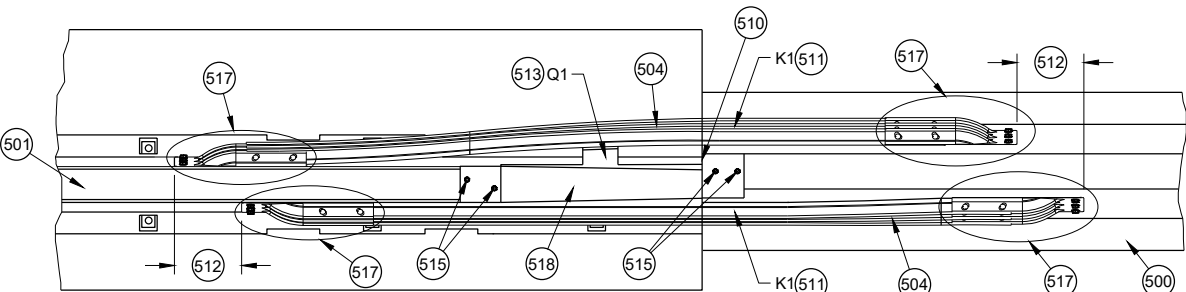
519 4" MAX. GAP BETWEEN TEMPORARY BARRIER AND RIGID BARRIER.
- 520 ALL TWELVE SPLICE HOLES REQUIRE M1 AND M2



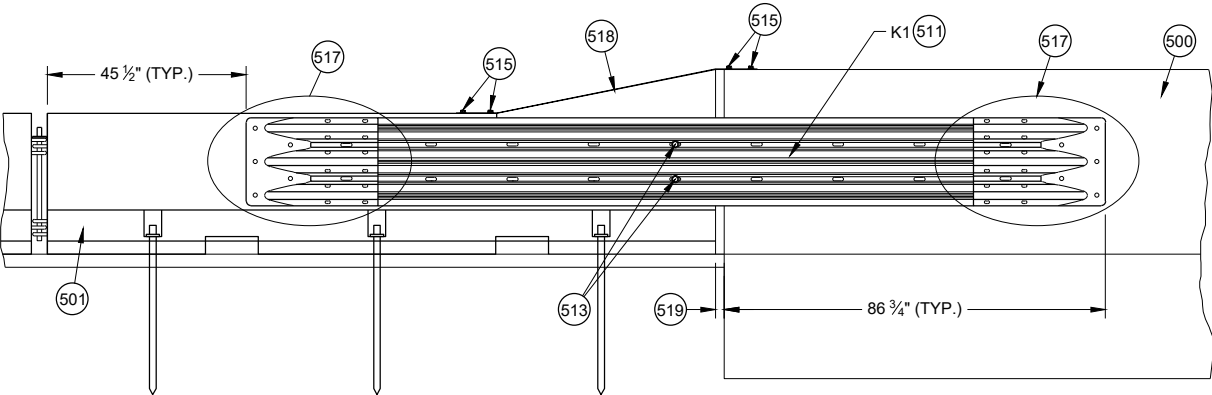
PROFILE VIEW



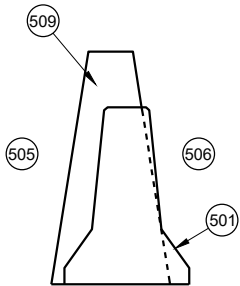
PLAN VIEW  
TRANSITION TO RIGID BARRIER



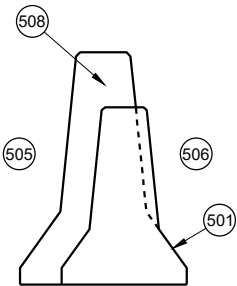
PLAN DETAIL VIEW  
TRANSITION TO RIGID BARRIER



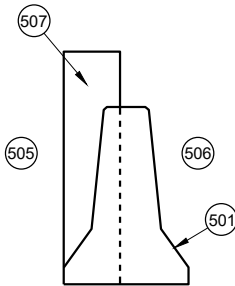
FRONT DETAIL VIEW  
TRANSITION TO RIGID BARRIER



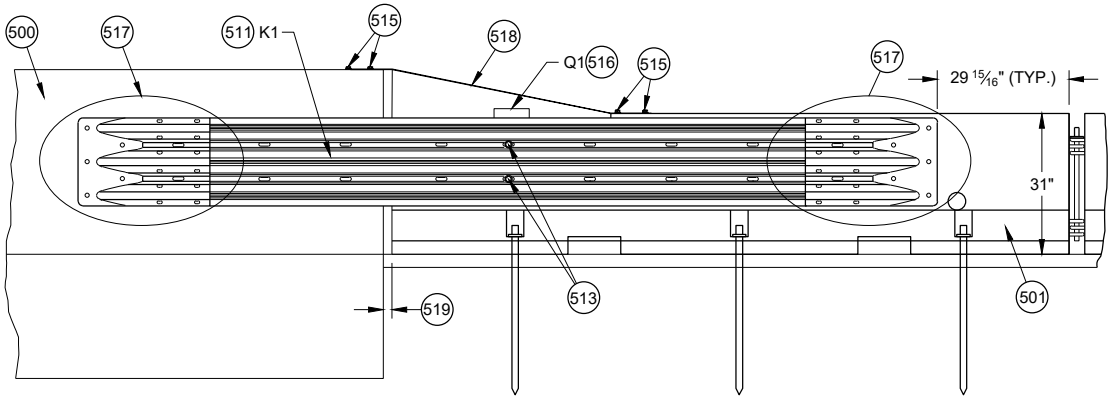
CROSS SECTION  
TEMPORARY BARRIER  
PLACEMENT SINGLE SLOPE



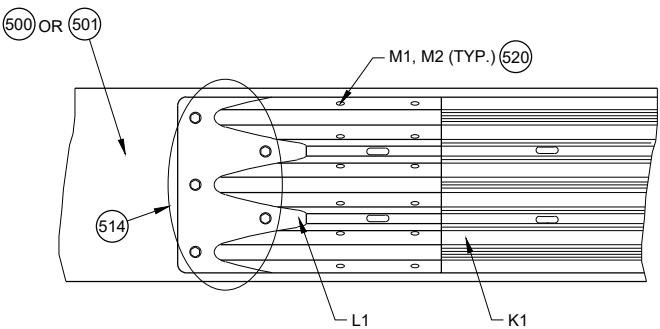
CROSS SECTION  
TEMPORARY BARRIER  
PLACEMENT SAFETY SHAPE



CROSS SECTION  
TEMPORARY BARRIER  
PLACEMENT VERTICAL



BACK DETAIL VIEW  
TRANSITION TO RIGID BARRIER

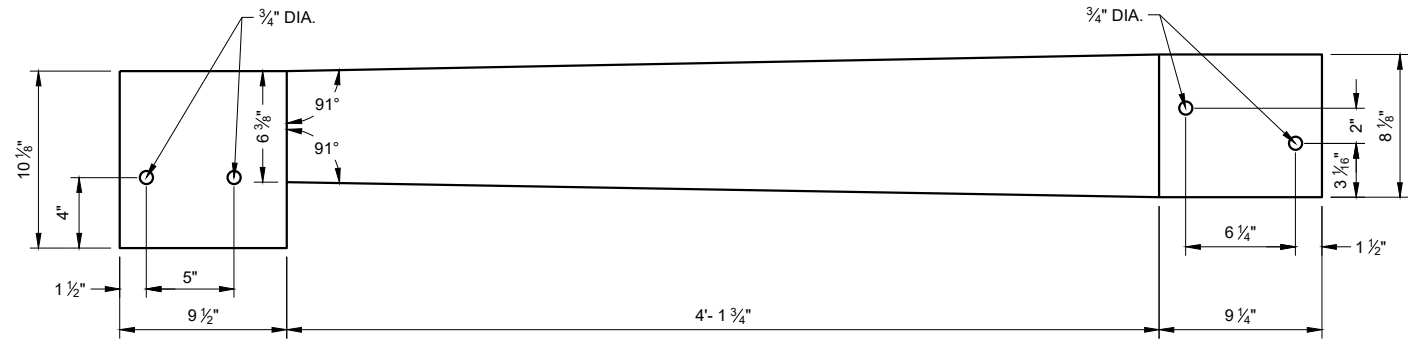


517 DETAIL PLAN VIEW  
THRIE BEAM RAIL TERMINAL CONNECTOR ASSEMBLY

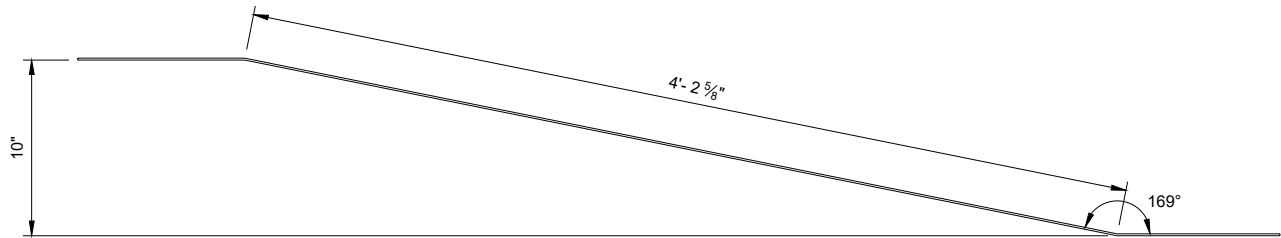
CONCRETE BARRIER  
TEMPORARY PRECAST,  
12' - 6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

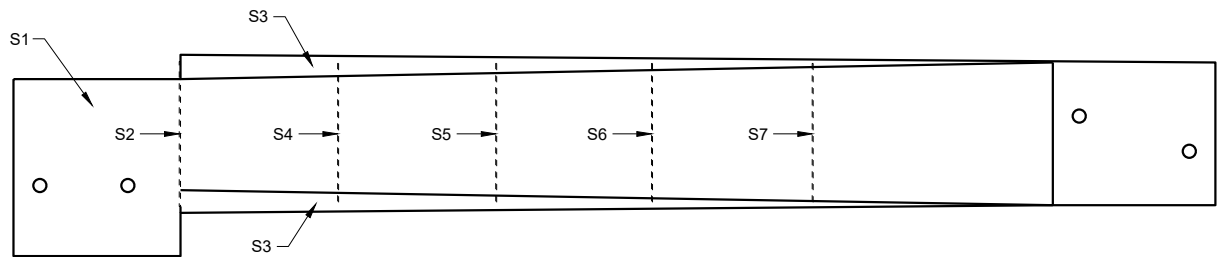




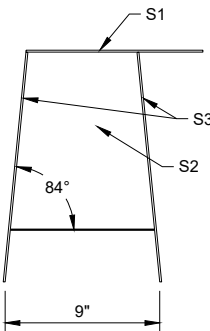
TOP VIEW  
S1



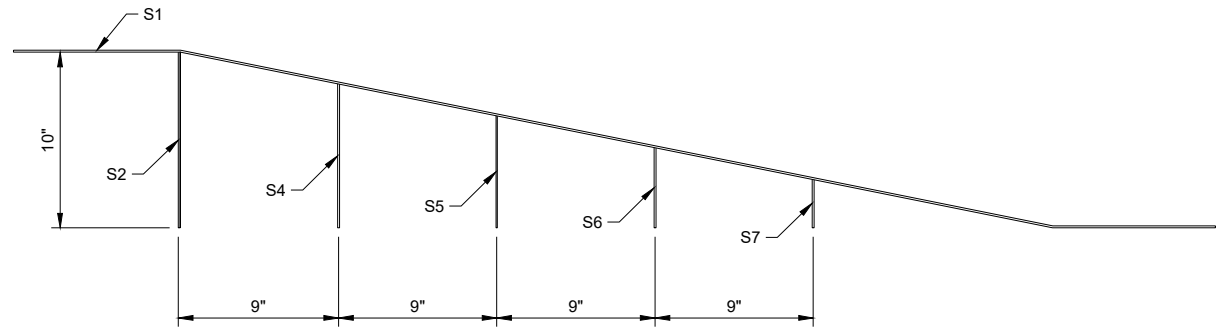
ELEVATION VIEW  
S1



PLAN VIEW

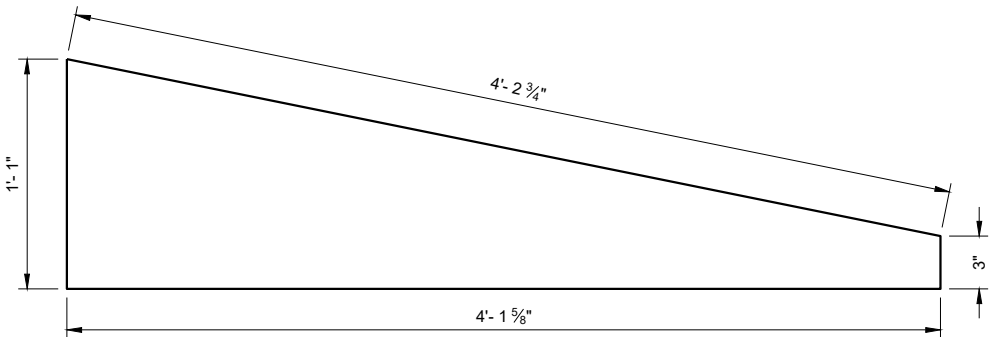


BACK VIEW

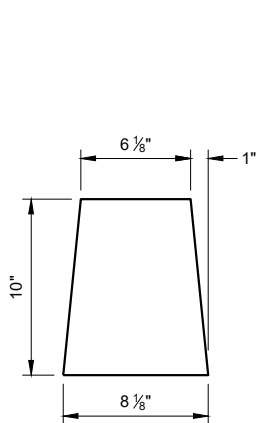


SIDE VIEW (600)

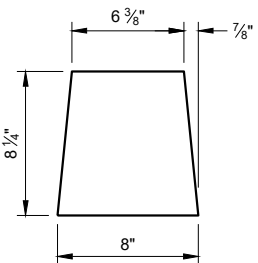
42" TOP CAP ASSEMBLY



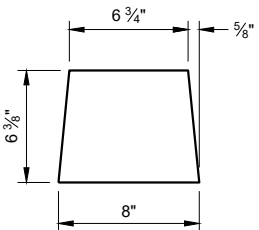
SIDE VIEW  
S3



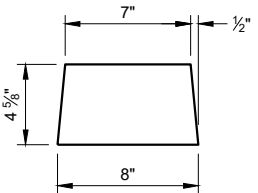
S2



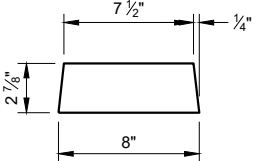
S4



S5



S6



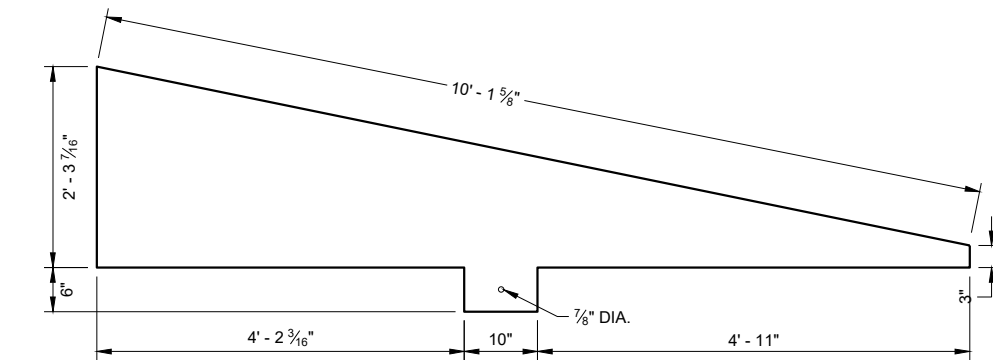
S7

GENERAL NOTES

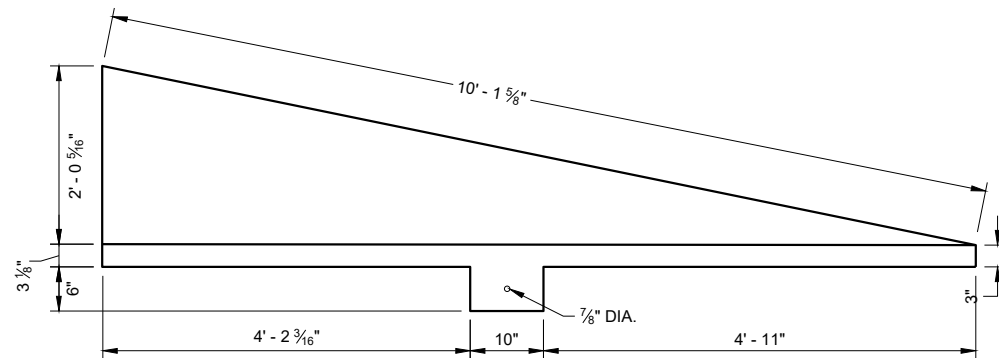
- STITCH WELD GUSSET PLATES AND END PLATES ON THREE SIDES
- STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.
- (600) SIDE PLATES (S3) NOT SHOWN FOR CLARITY.

CONCRETE BARRIER  
TEMPORARY PRECAST,  
12' - 6"

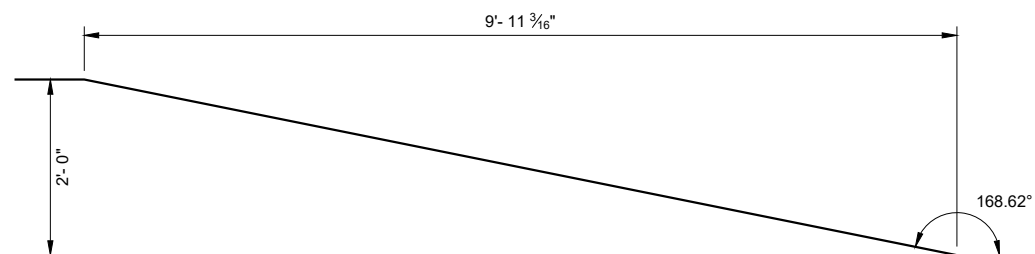
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



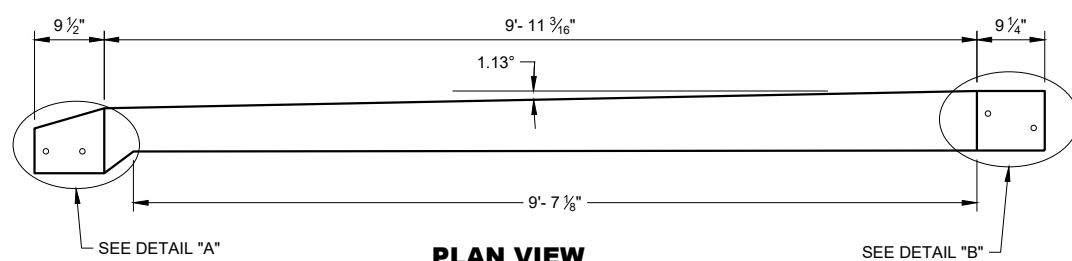
**SIDE VIEW**  
**T4**



**SIDE VIEW**  
**T3**



**SIDE VIEW**  
**TOP PLATE T1**



**PLAN VIEW**  
**TOP PLATE T1**

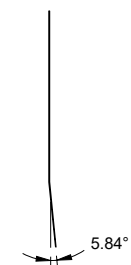
## GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THRIE SIDES

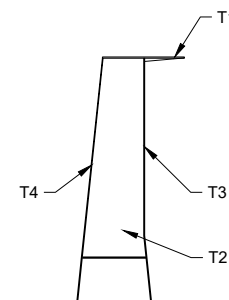
STITCH WELD TWO SIDE PLATES TO TOP PLATE, END PLATE AND GUSSETS.

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

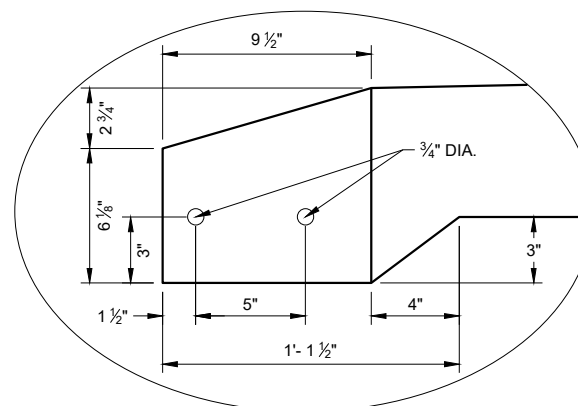
(700) SIDE PLATES (T3 AND T4) NOT SHOWN FOR CLARITY.



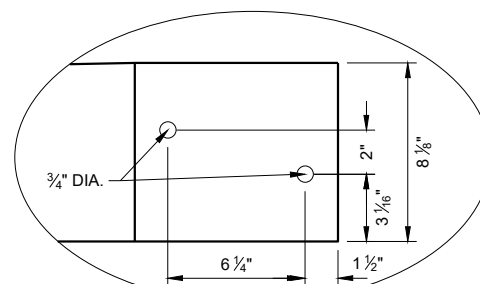
**END  
VIEW**



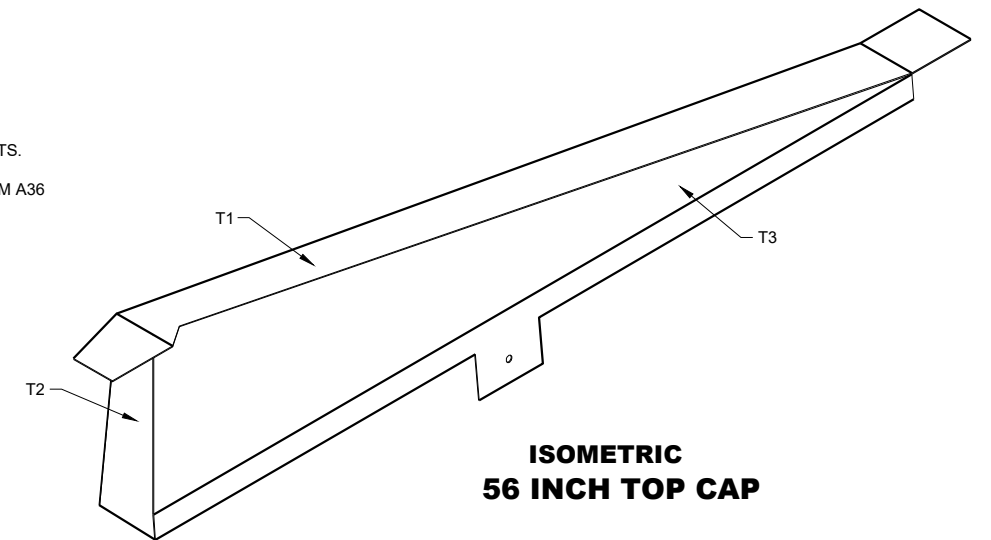
**END VIEW**  
**56 INCH TOP CAP**



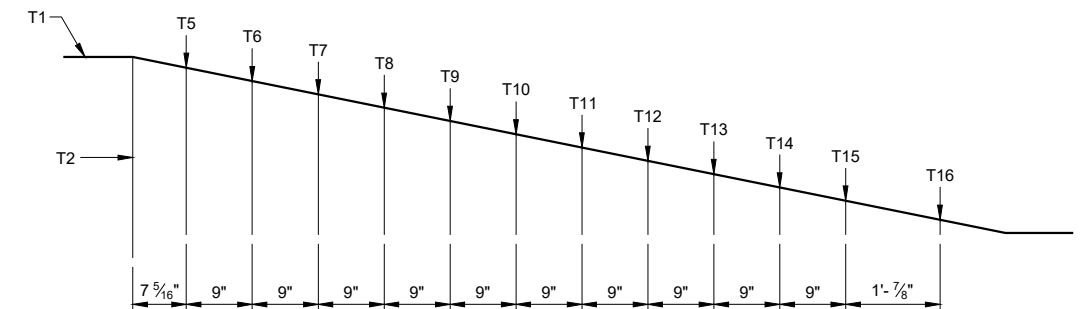
### DETAIL "A"



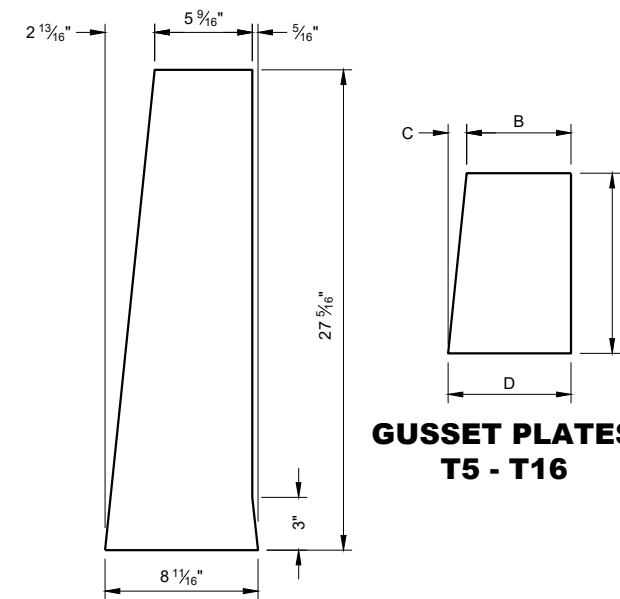
### DETAIL "B"



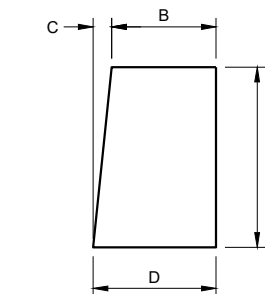
**ISOMETRIC  
56 INCH TOP CAP**



**SIDE VIEW**   
**56 INCH TOP CAP**



**END PLATE T2**

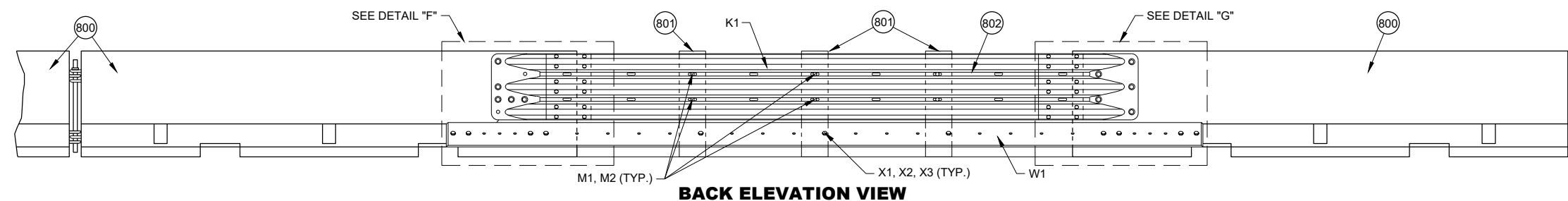
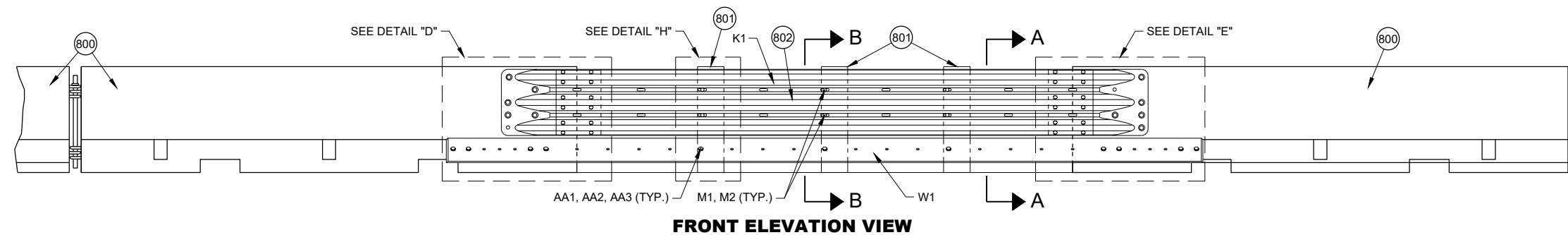
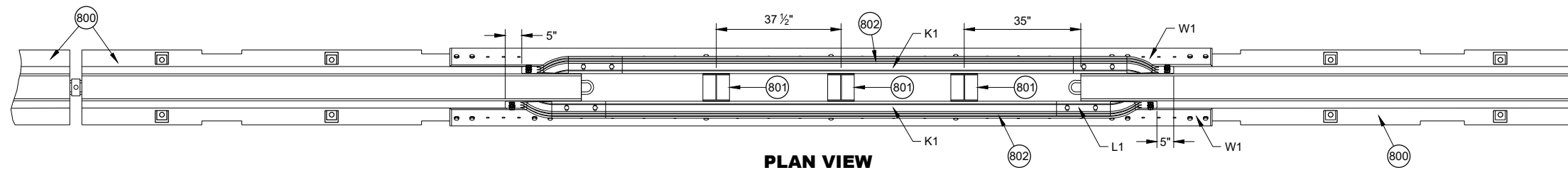
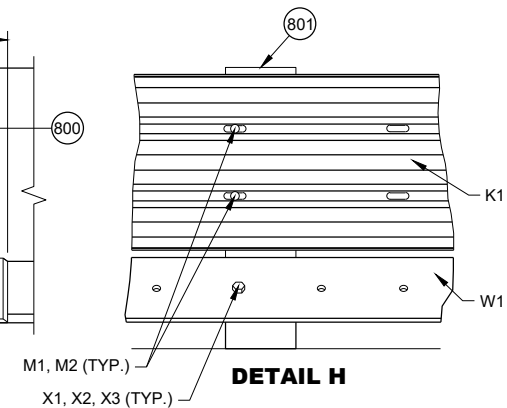
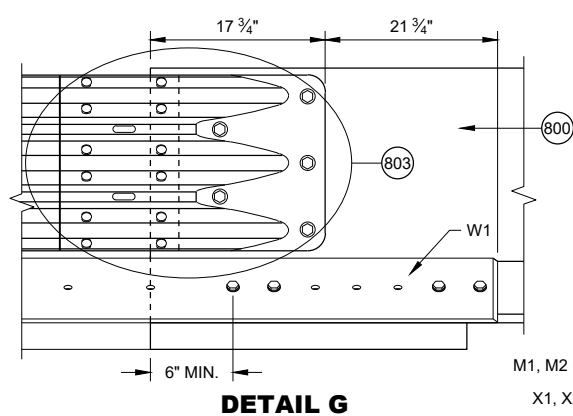
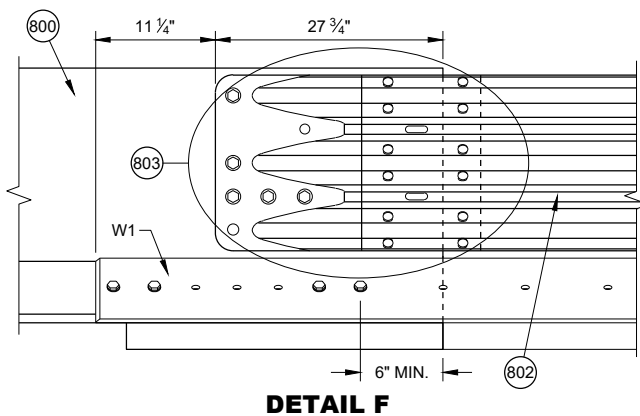
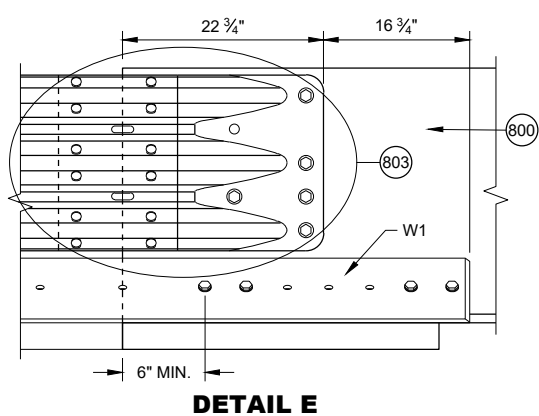
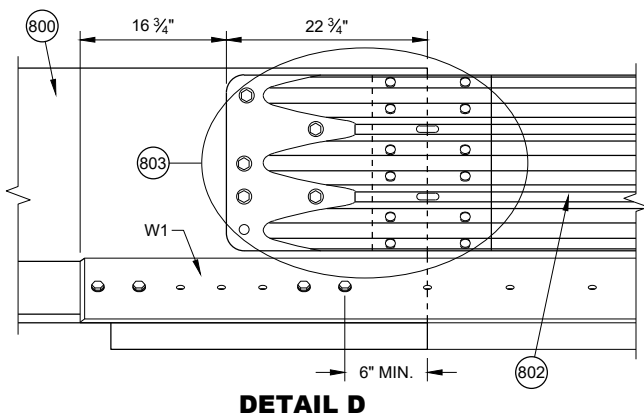


## GUSSET PLATES T5 - T16

| GUSSET DIMENSIONS |                      |                     |                     |                    |
|-------------------|----------------------|---------------------|---------------------|--------------------|
| GUSSET NO.        | A                    | B                   | C                   | D                  |
| T5                | 22 $\frac{13}{16}$ " | 5 $\frac{1}{4}$ "   | 2 $\frac{5}{16}$ "  | 8 $\frac{1}{16}$ " |
| T6                | 21"                  | 5 $\frac{7}{8}$ "   | 2 $\frac{3}{16}$ "  | 8 $\frac{1}{16}$ " |
| T7                | 19 $\frac{3}{16}$ "  | 6 $\frac{1}{16}$ "  | 1 $\frac{15}{16}$ " | 8 $\frac{1}{16}$ " |
| T8                | 17 $\frac{3}{8}$ "   | 6 $\frac{1}{4}$ "   | 1 $\frac{13}{16}$ " | 8 $\frac{1}{16}$ " |
| T9                | 15 $\frac{9}{16}$ "  | 6 $\frac{1}{16}$ "  | 1 $\frac{9}{16}$ "  | 8 $\frac{1}{16}$ " |
| T10               | 13 $\frac{3}{4}$ "   | 6 $\frac{5}{8}$ "   | 1 $\frac{7}{16}$ "  | 8 $\frac{1}{16}$ " |
| T11               | 11 $\frac{15}{16}$ " | 6 $\frac{13}{16}$ " | 1 $\frac{1}{4}$ "   | 8 $\frac{1}{16}$ " |
| T12               | 10 $\frac{7}{8}$ "   | 7"                  | 1 $\frac{1}{16}$ "  | 8 $\frac{1}{16}$ " |
| T13               | 8 $\frac{5}{16}$ "   | 7 $\frac{3}{16}$ "  | $\frac{7}{8}$ "     | 8 $\frac{1}{16}$ " |
| T14               | 6 $\frac{1}{2}$ "    | 7 $\frac{7}{8}$ "   | $\frac{1}{16}$ "    | 8 $\frac{1}{16}$ " |
| T15               | 4 $\frac{1}{16}$ "   | 7 $\frac{1}{16}$ "  | $\frac{1}{2}$ "     | 8"                 |
| T16               | 2 $\frac{7}{8}$ "    | 7 $\frac{3}{4}$ "   | $\frac{1}{4}$ "     | 8"                 |

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 100

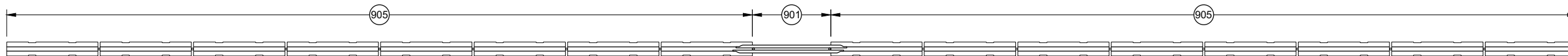


# PORTABLE CONCRETE BARRIER GAP THRIE BEAM COVER

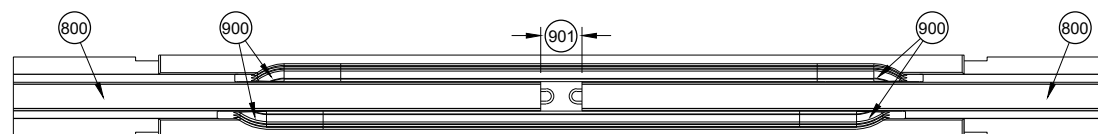
- GENERAL NOTES**
- 800 FREE STANDING TEMPORARY BARRIER
  - 801 GAP STIFFENER ASSEMBLY
  - 802 THRIE BEAMS ARE NESTED ON BOTH SIDES OF THE TEMPORARY BARRIER.
  - 803 SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL

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

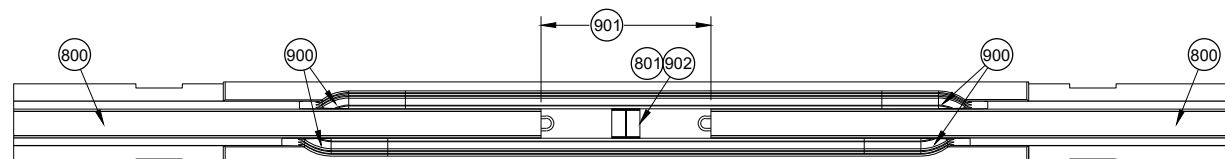
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 101



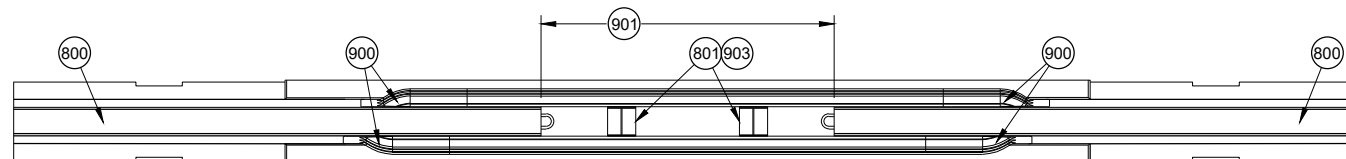
**PLAN VIEW  
GAP WITHIN SPACING**



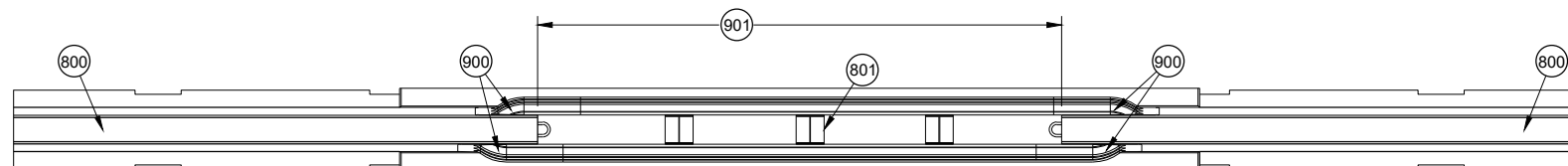
**PLAN VIEW  
TEMPORARY BARRIER GAP OVER 4" TO 1' MAX.**



**PLAN VIEW  
TEMPORARY BARRIER GAP OVER 1' TO 4' MAX.**



**PLAN VIEW  
TEMPORARY BARRIER GAP OVER 4' TO 7' MAX.**



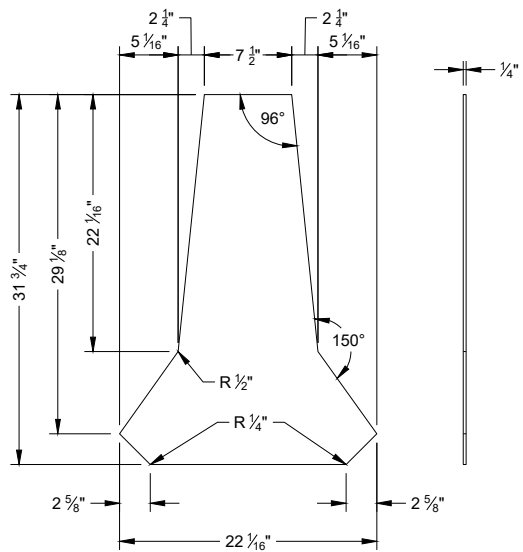
**PLAN VIEW  
TEMPORARY BARRIER GAP OVER 7' TO 12.5' MAX.**

**GENERAL NOTES**

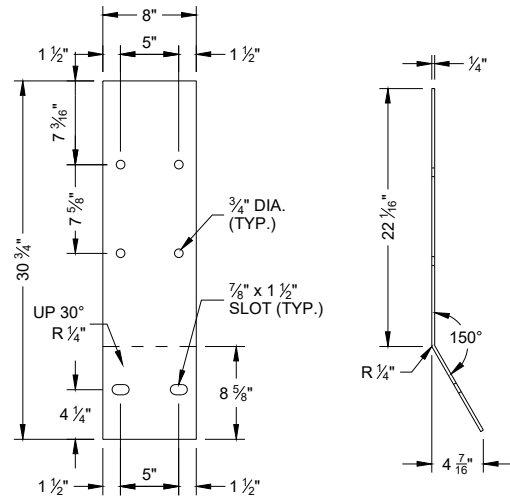
- (900) SEE OTHER DETAILS FOR TEMPORARY GAP HARDWARE (TYP.)
- (901) TEMPORARY BARRIER GAP
- (902) GAP STIFFENER ASSEMBLY CENTERED IN THE GAP.
- (903) GAP STIFFENER ASSEMBLY IS OFFSET 18 3/4" FROM CENTER
- (904) MINIMUM NUMBER OF GAP STIFFENERS SHOWN FOR THE GAP RANGE SHOWN.
- (905) MINIMUM OF 8 CONTINUOUS FREE STANDING TEMPORARY BARRIERS

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

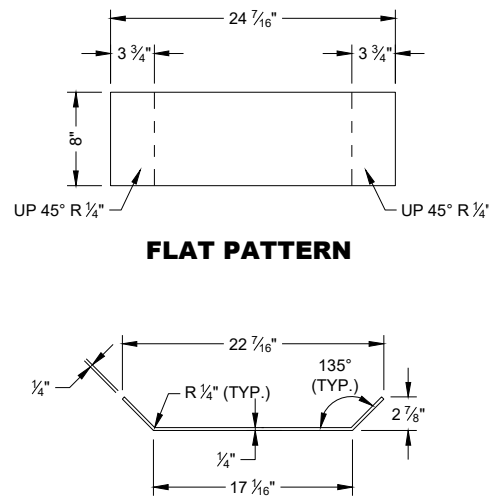
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 102



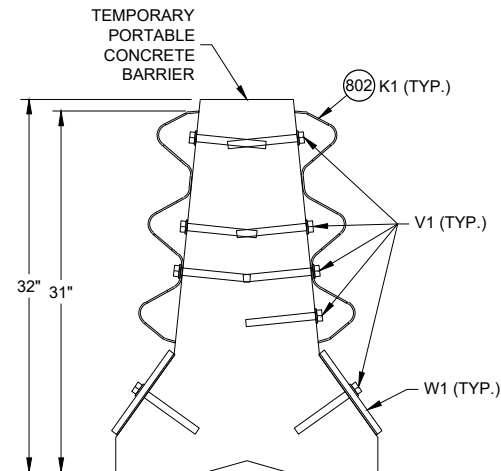
**PROFILE VIEW**  
**STIFFENER ASSEMBLY**  
**CENTER PANEL U1**



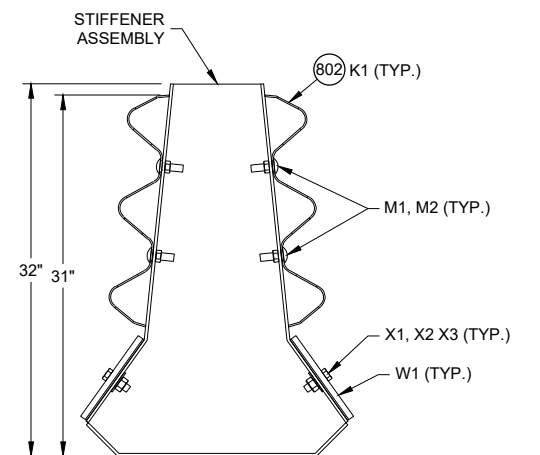
**FLAT PATTERN**  
**STIFFENER ASSEMBLY**  
**SIDE PANEL U2**



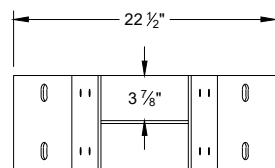
**PROFILE VIEW**  
**STIFFENER ASSEMBLY**  
**BOTTOM PANEL U3**



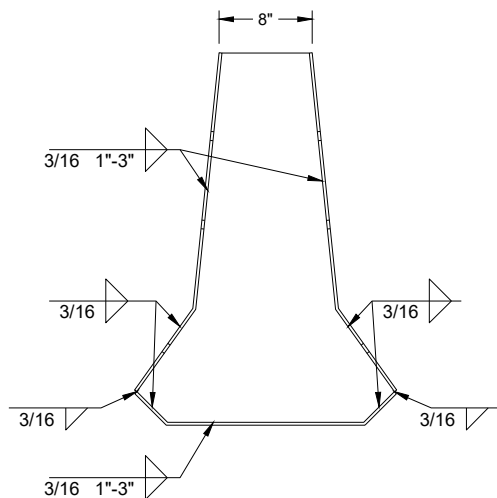
**SECTION A - A**



**SECTION B - B**

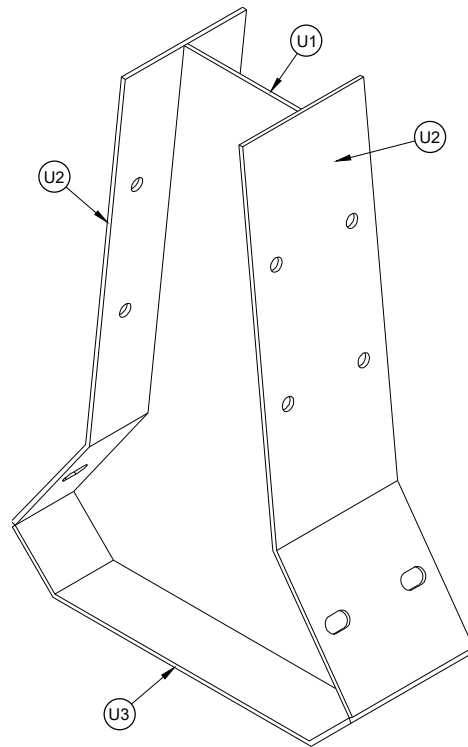


**PLAN VIEW**

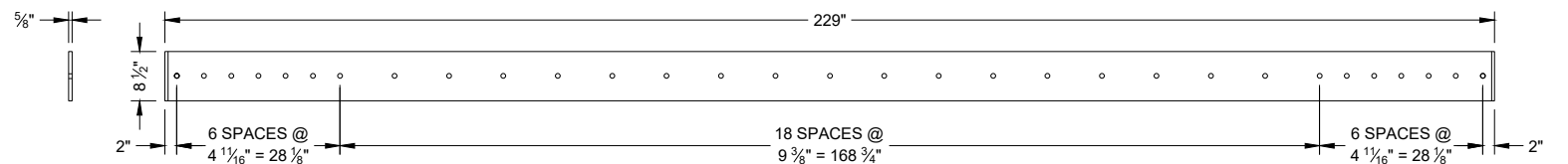


**PROFILE VIEW**  
**SIDE VIEW**

**GAP STIFFENER ASSEMBLY**

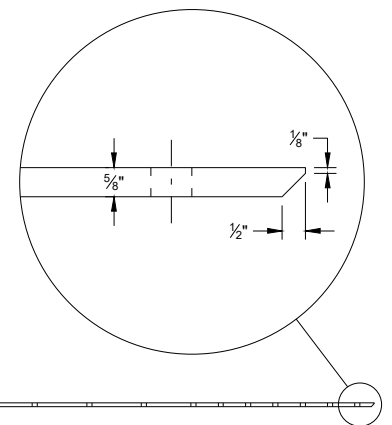


**ISOMETRIC**



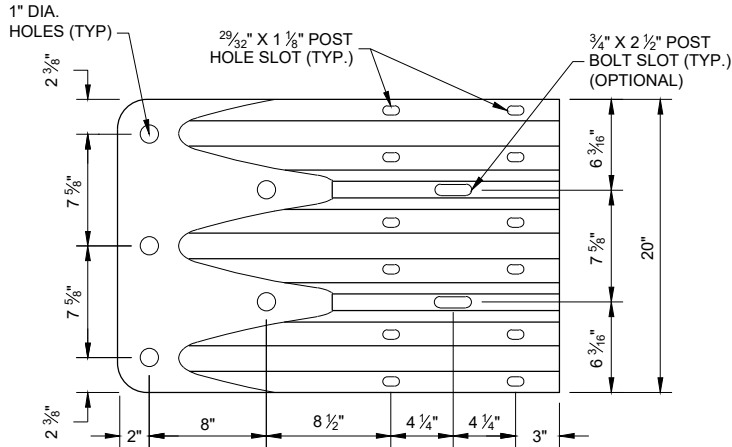
**SIDE VIEW**

**ELEVATION VIEW**  
**W1 TOE PLATE**



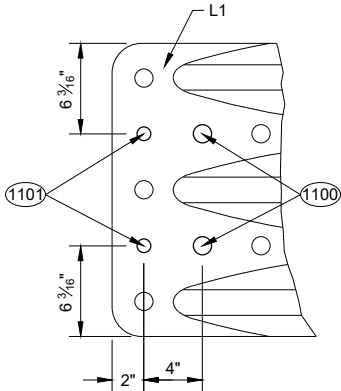
**CONCRETE BARRIER**  
**TEMPORARY PRECAST,**  
**12' - 6"**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 103



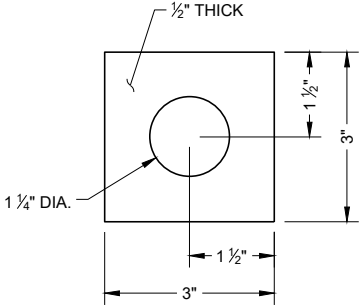
ELEVATION VIEW

**THRIE BEAM  
TERMINAL CONNECTOR**



ELEVATION VIEW

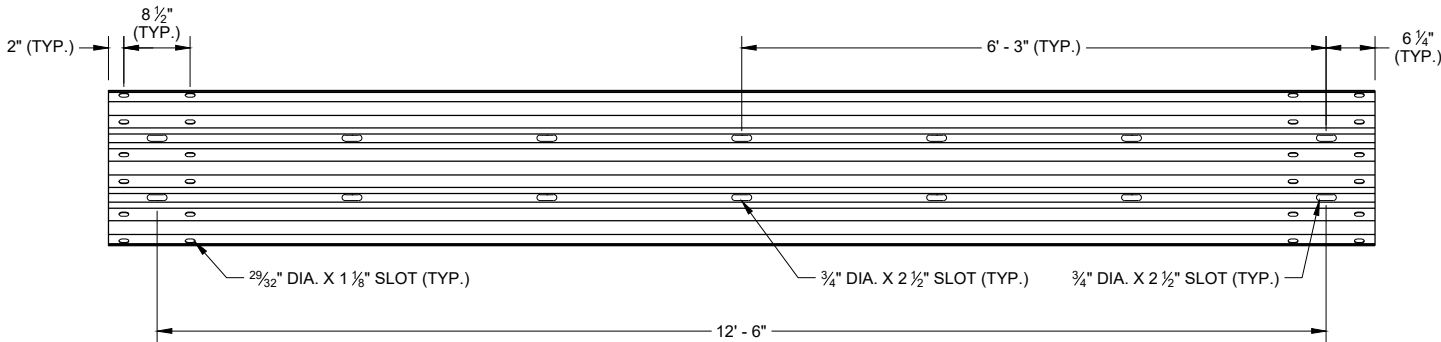
**ADDITIONAL THRIE BEAM  
TERMINAL CONNECTOR HOLE DETAIL**



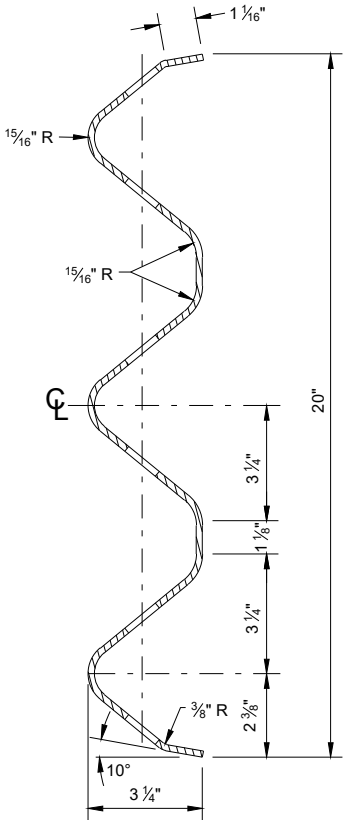
**PLATE WASHER DETAIL  
G2, H3**

**GENERAL NOTES**

- 1100 1" DIA. HOLE
- 1101 3/4" DIA. HOLE
- 1102 PROVIDE HOLES IN THRIE BEAM TERMINAL CONNECTOR TO LIMIT STEEL REINFORCEMENT OR LOOP BAR CONFLICT. CONTRACTOR MAY FIELD DRILL ADDITIONAL HOLE OR PROVIDE THRIE BEAM TERMINAL CONNECTOR WITH ADDITIONAL HOLES FROM SUPPLIER.



**SLOTTED THRIE BEAM RAIL K1**

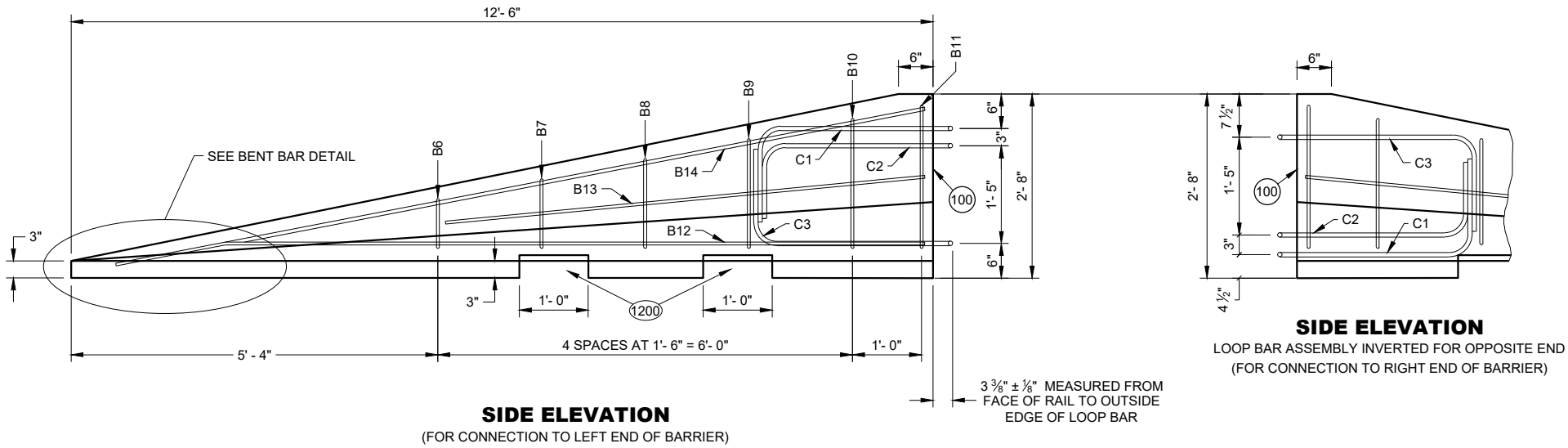


**SECTION THROUGH  
BEAM K1**

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

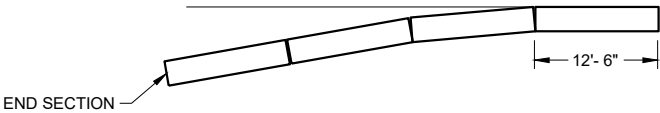
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 104





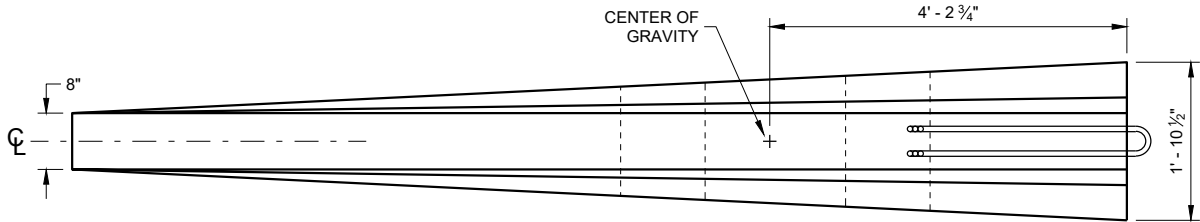
GENERAL NOTES

(1200) SEE LIFTING SLOT DETAIL. LOCATION OF LIFTING SLOTS DETERMINED BY CONTRACTOR.

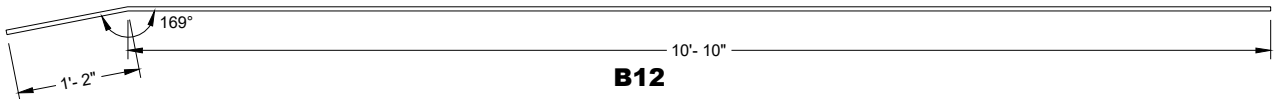


FLARE AT BARRIER END

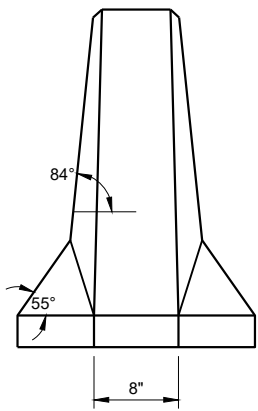
| POSTED SPEED, (MPH) | FLARE RATE |
|---------------------|------------|
| 40 OR LESS          | 6:1        |
| 45 OR GREATER       | 8:1        |



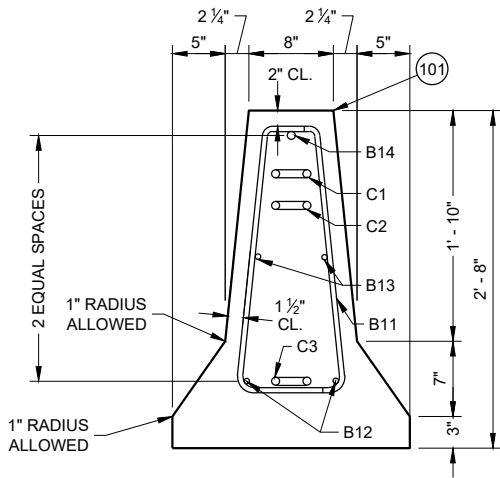
PLAN VIEW



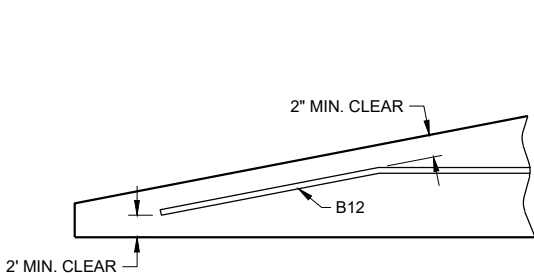
B12



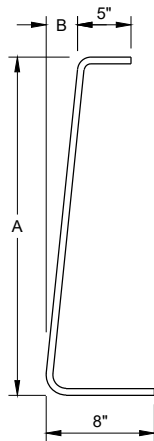
FRONT ELEVATION



END SECTION



BENT BAR DETAIL



| BAR | A          | B      |
|-----|------------|--------|
| B6  | 10"        | 1"     |
| B7  | 1'- 1"     | 1 1/4" |
| B8  | 1'- 5"     | 1 5/8" |
| B9  | 1'- 8"     | 1 7/8" |
| B10 | 2'- 0 1/2" | 2 3/8" |
| B11 | 2'- 3"     | 2 3/4" |

B BARS

2 OF EACH SIZE REQUIRED FOR STIRRUP ASSEMBLY

CONCRETE BARRIER  
TEMPORARY PRECAST,  
12' - 6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 105

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

| PART | DESCRIPTION                          | MATERIALS SPECIFICATIONS                                                                                                                                                                                                                          | NOTES                   |
|------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| A1   | PRECAST TEMPORARY BARRIER - CONCRETE | MIN. = f'c 5000 PSI                                                                                                                                                                                                                               |                         |
| B1   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #5 REBAR, LENGTH 12'-2" |
| B2   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 12'-2" |
| B3   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #5 REBAR, LENGTH 12'-2" |
| B4   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 6'-0"  |
| B5   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #6 REBAR, LENGTH 2'-11" |
| B6   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 1'-11" |
| B7   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 2'-2"  |
| B8   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 2'-6"  |
| B9   | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 2'-9"  |
| B10  | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 3'-2"  |
| B11  | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 3'-4"  |
| B12  | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 12'-0" |
| B13  | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #4 REBAR, LENGTH 7'-9"  |
| B14  | REBAR                                | STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR                                                                                                                                                                                                      | #5 REBAR, LENGTH 11'-9" |
| C1   | LOOP BAR                             | ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED                                                                                                                                                                                | ¾" DIA.                 |
| C2   | LOOP BAR                             | ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED                                                                                                                                                                                | ¾" DIA.                 |
| C3   | LOOP BAR                             | ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED                                                                                                                                                                                | ¾" DIA.                 |
| D1   | CONNECTION PIN - ROD                 | ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI                                                                                    | 1 ¼" DIA.               |
| D2   | CONNECTION PIN - TOP PLATE           | ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI                                                                                    |                         |
| G1   | BOLT THROUGH ANCHOR - THREADED ROD   | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A OR SAE J429 GRADE 2 UNC                                                              | 1 ⅝" DIA.               |
| G2   | BOLT THROUGH ANCHOR - WASHER, SQUARE | ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI                                                                                    |                         |
| G3   | BOLT THROUGH ANCHOR - NUT            | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 |                         |
| H1   | ADHESIVE ANCHOR - ADHESIVE           | ICC-ES-AC308 5 ¼" EMBEDMENT WITH A MIN. STRENGTH OF 1,800 PSI. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.                                                                         |                         |
| H2   | ADHESIVE ANCHOR - THREADED ROD       | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A / SAE J429 GRADE 2 UNC                                                               | 1 ⅝" DIA.               |
| H3   | ADHESIVE ANCHOR - WASHER, SQUARE     | ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI                                                                                    |                         |
| H4   | ADHESIVE ANCHOR - NUT                | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 |                         |
| J1   | ASPHALT ANCHOR PIN - ROD             | ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI                                                                                    | 1 ½" DIA.               |
| J2   | ASPHALT ANCHOR PIN - STOP PLATE      | ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI                                                                                    |                         |
| K1   | THRIE BEAM RAIL                      | AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER                                                                                                                                                                                                      | 12 GAUGE                |
| L1   | THRIE BEAM RAIL - TERMINAL           | AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER                                                                                                                                                                                                      | 12 GAUGE                |

| PART | DESCRIPTION                                                | MATERIALS SPECIFICATIONS                                                                                                                                                                                                                                               | NOTES             |
|------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| M1   | SPLICE BOLT                                                | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36                                           | ⅝" DIA.           |
| M2   | SPLICE BOLT - NUT                                          | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 |                   |
| N1   | THRIE BEAM RAIL TERMINAL - MECHANICAL ANCHOR               | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | ¾" DIA. LENGTH 6" |
| N2   | THRIE BEAM RAIL TERMINAL - WASHER                          | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1                                                                                                            |                   |
| N3   | THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR     | MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.                            |                   |
| P1   | THRIE BEAM RAIL CONNECTION 1-BOLT                          | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | ¾" DIA.           |
| P2   | THRIE BEAM RAIL CONNECTION 1-WASHER                        | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1                                                                                                                 |                   |
| P3   | THRIE BEAM RAIL CONNETION 1- MECHANICAL OR ADHESIVE ANCHOR | MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.                            |                   |
| Q1   | BLOCK WOOD                                                 | SEE STANDARD SPEC. 614                                                                                                                                                                                                                                                 |                   |
| R1   | CAP - BOLT                                                 | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | ⅝" DIA.           |
| R2   | CAP- BOLT - WASHER                                         | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1                                                                                                                 |                   |
| R3   | CAP - BOLT - MECHANICAL ANCHOR                             | MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.                              | 12 GAUGE          |
| S1   | CAP 42-INCH TOP PLATE                                      | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI                                                                      | 12 GAUGE          |
| S2   | CAP 42-INCH END PLATE                                      | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI                                                                      | 12 GAUGE          |
| S3   | CAP 42-INCH SIDE PLATE                                     | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI                                                                      | 12 GAUGE          |
| S4   | CAP 42-INCH GUSSET 1                                       | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI                                                                      | 12 GAUGE          |
| S5   | CAP 42-INCH GUSSET 2                                       | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI                                                                      | 12 GAUGE          |
| S6   | CAP 42-INCH GUSSET 3                                       | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI                                                                      | 12 GAUGE          |
| S7   | CAP 42-INCH GUSSET 4                                       | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI                                                                      | 12 GAUGE          |

MIDWEST GUARDRAIL  
SYSTEM (MGS)  
TYPE 2 TERMINAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTA106



BILL OF MATERIALS - CONCRETE BARRIER PRECAST

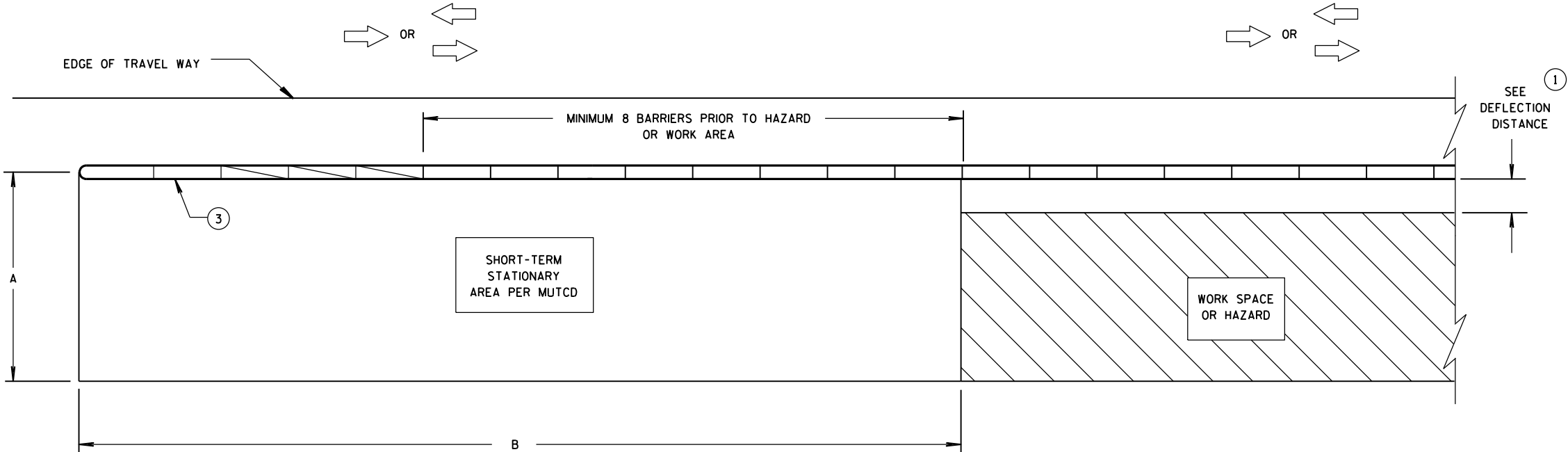
| PART | DESCRIPTION                          | MATERIALS SPECIFICATIONS                                                                                                                                                                          | NOTES    |
|------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| T1   | CAP 56-INCH TOP PLATE                | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T2   | CAP 56-INCH END PLATE                | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T3   | CAP 56-INCH SIDE PLATE 1             | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T4   | CAP 56-INCH SIDE PLATE 2             | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T5   | CAP 56-INCH GUSSET 1                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T6   | CAP 56-INCH GUSSET 2                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T7   | CAP 56-INCH GUSSET 3                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T8   | CAP 42-INCH GUSSET 4                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T9   | CAP 42-INCH GUSSET 5                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T10  | CAP 42-INCH GUSSET 6                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T11  | CAP 42-INCH GUSSET 7                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T12  | CAP 42-INCH GUSSET 8                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T13  | CAP 42-INCH GUSSET 9                 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T14  | CAP 42-INCH GUSSET 10                | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T15  | CAP 42-INCH GUSSET 11                | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| T16  | CAP 42-INCH GUSSET 12                | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI | 12 GAUGE |
| U1   | GAP STIFFENER                        | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI |          |
| U2   | GAP STIFFENER<br>- CONNECTOR PLATE 1 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI |          |
| U3   | GAP STIFFENER<br>- CONNECTOR PLATE 2 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI |          |

| PART | DESCRIPTION                                                  | MATERIALS SPECIFICATIONS                                                                                                                                                                                                                                                                                                                                                                       | NOTES   |
|------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| V1   | THRIE BEAM RAIL TERMINAL<br>MECHANICAL OR ADHESIVE<br>ANCHOR | MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 24.0 KIPS AND ULTIMATE SHEAR LOAD 21.5 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.                                                                                                                                                      | ¾" DIA. |
| V2   | GAP STIFFENER - BOLT - NUT                                   | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C O R MECHANICAL GALVANIZE TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5                                                                                                                                        |         |
| W1   | TOE PLATE                                                    | AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI                                                                                                                                                                                                 |         |
| X1   | TOE PLATE<br>- CONNECTION BOLT                               | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC HEAVY HEX HEAD OR AASTHO M180 HEAD, ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED. PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT. | ¾" DIA. |
| X2   | TOE PLATE<br>- CONNECTION BOLT - WASHER                      | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1 (HARDEN WASHER ONLY)                                                                                                                                                                                                               |         |
| X3   | TOE PLATE -<br>CONNECTION BOLT - NUT                         | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5                                                                                                                                              |         |

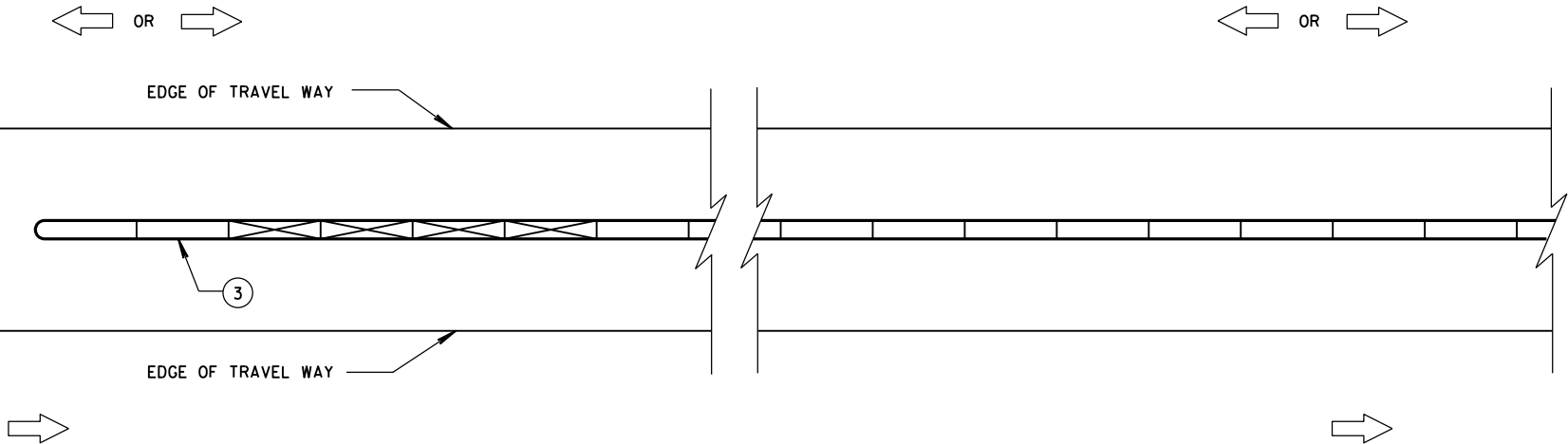
CONCRETE BARRIER  
TEMPORARY PRECAST,  
12' - 6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2022  
DATE /S/ Rodney Taylor  
ROADWAY STANDARDS DEVE ENGINEER 107  
FHWA



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



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

**GENERAL NOTES**

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

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

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

① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

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

③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

**DIMENSION A TABLE** ②

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

**DIMENSION B TABLE** ②

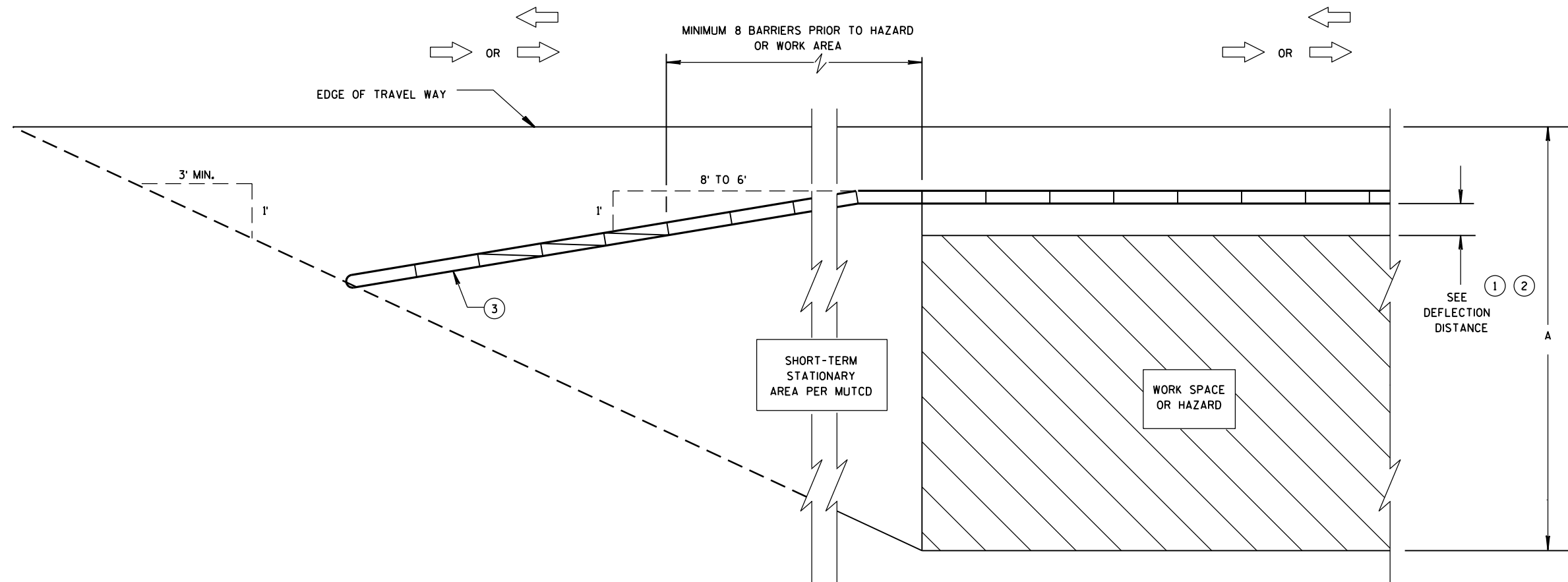
| POSTED SPEEDS<br>MPH | DIMENSION B<br>FT |
|----------------------|-------------------|
| 20                   | 115               |
| 25                   | 155               |
| 30                   | 200               |
| 35                   | 250               |
| 40                   | 305  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

**LEGEND**

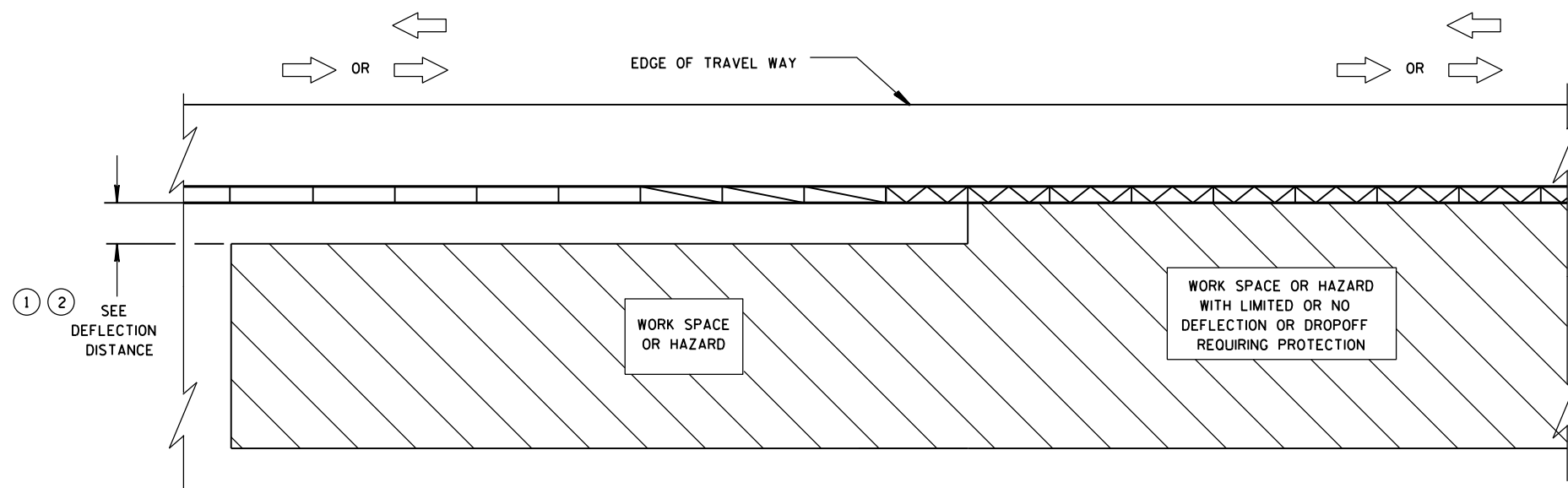
- DIRECTION OF TRAVEL →
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 108



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



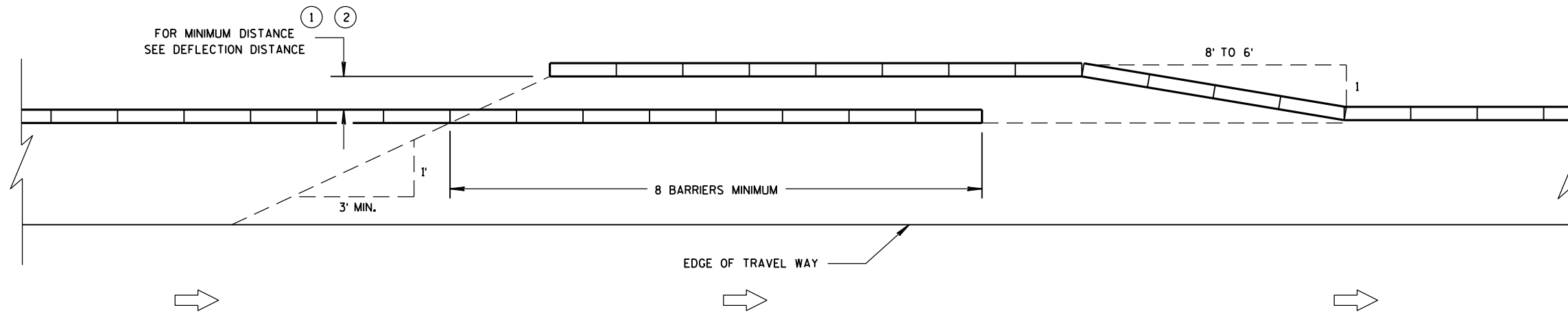
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER  
TO ANCHORED BARRIER**

**LEGEND**

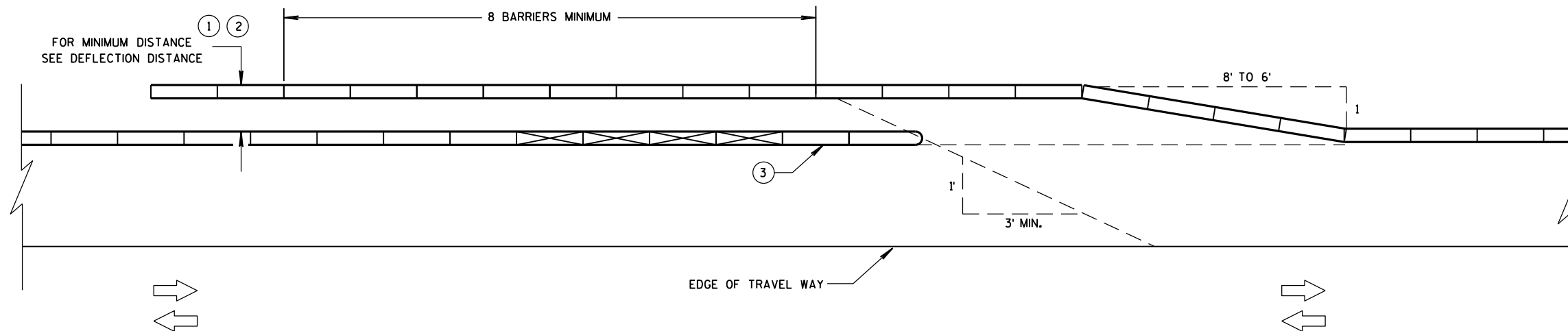
|                                                           |  |
|-----------------------------------------------------------|--|
| DIRECTION OF TRAVEL                                       |  |
| CRASH CUSHION OR SAND BARREL ARRAY                        |  |
| SEE FREE STANDING TRANSITION TO TIED-DOWN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

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

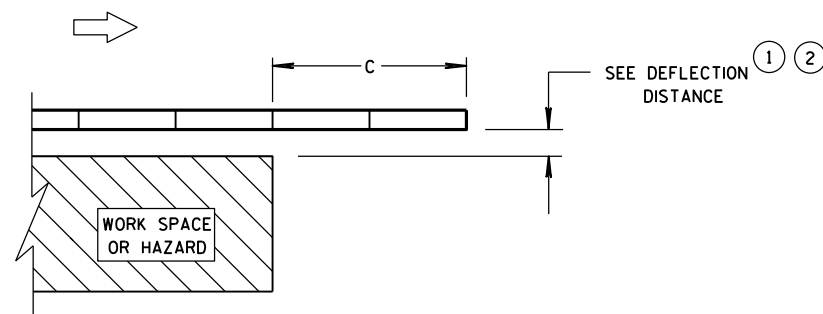
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 109



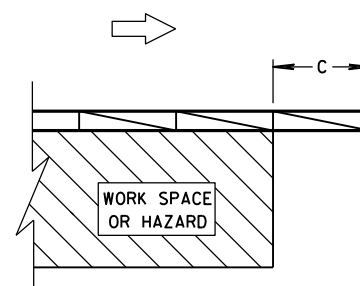
**TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC**



**TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC**



**ENDING TEMPORARY BARRIER  
DOWNSTREAM - UNANCHORED**



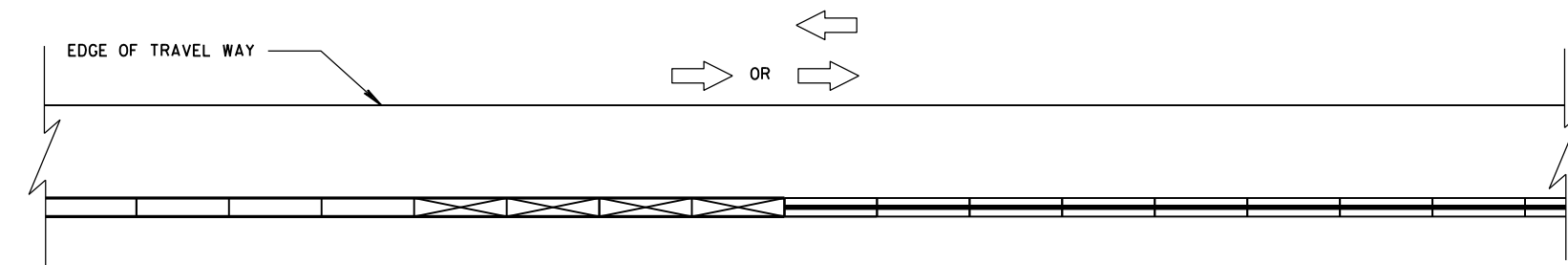
**ENDING TEMPORARY BARRIER  
DOWNSTREAM - ANCHORED**

**LEGEND**

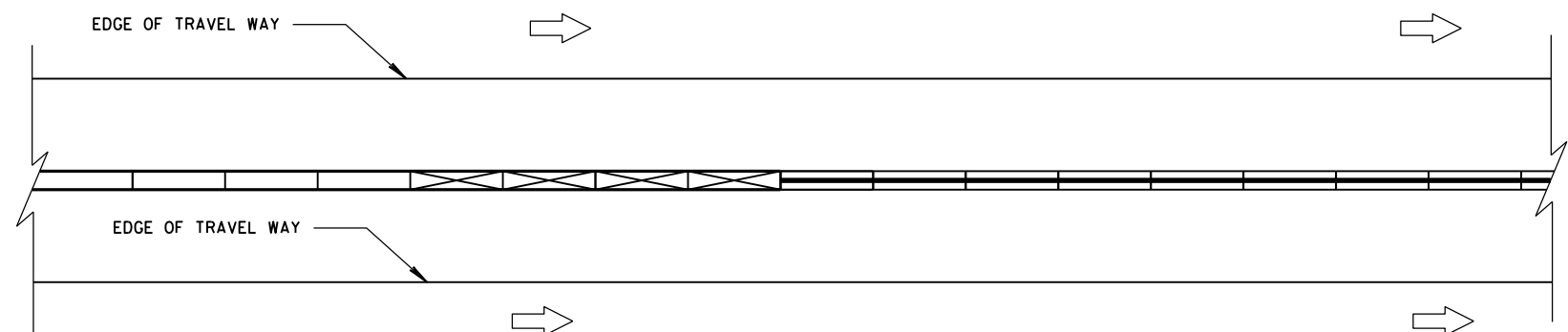
|                                                              |  |
|--------------------------------------------------------------|--|
| DIRECTION OF TRAVEL                                          |  |
| CRASH CUSHION OR<br>SAND BARREL ARRAY                        |  |
| SEE FREE STANDING TRANSITION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

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 110



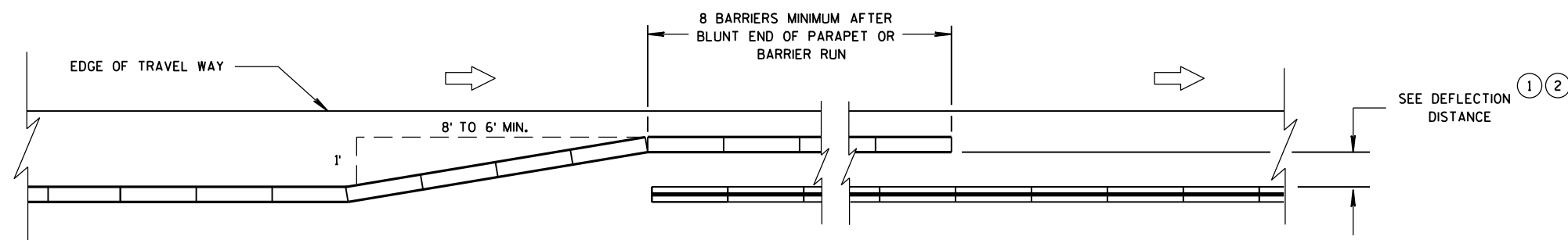
**CONNECTING TEMPORARY BARRIER TO PERMANENT  
CONCRETE BARRIER-TRAFFIC ON ONE SIDE**



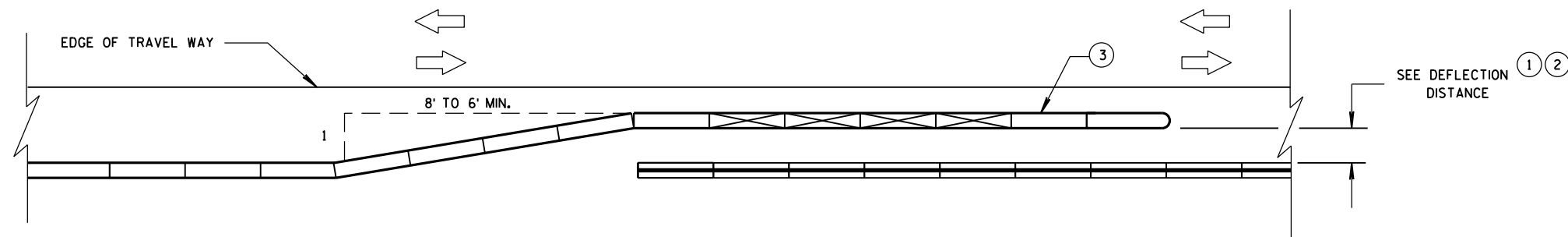
**CONNECTING TEMPORARY BARRIER TO PERMANENT  
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES**

### LEGEND

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



**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -  
ONE WAY TRAFFIC**



**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -  
TWO WAY TRAFFIC**

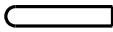
**CRASH CUSHION/SAND BARREL  
ARRAY AND OTHER TEMPORARY  
BARRIER LAYOUT DETAILS**

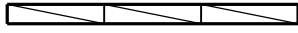
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 111

LEGEND

- DIRECTION OF TRAVEL

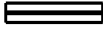

- CRASH CUSHION OR SAND BARREL ARRAY

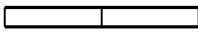

- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS


- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS


- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER


- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET


- FREE STANDING TEMPORARY BARRIER



DIMENSION C TABLE

2

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

6

6

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

112

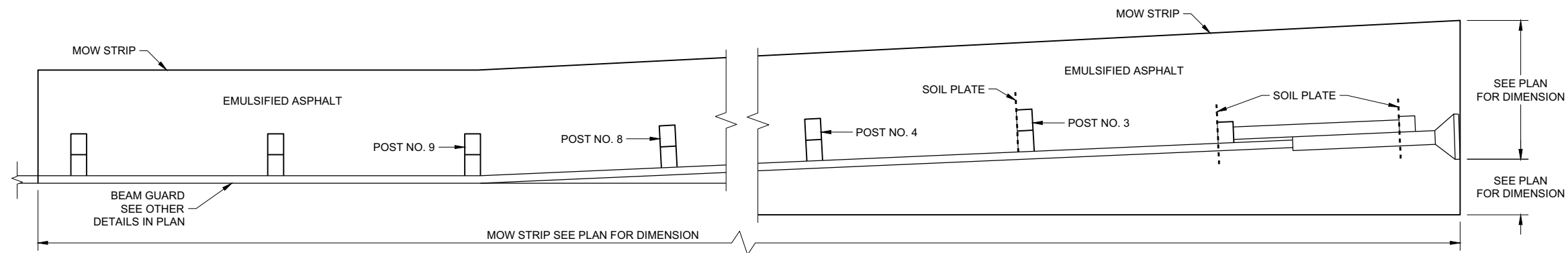
ENT

FHWA

S.D.D. 14 B 8-2e

S.D.D. 14 B 8-2e



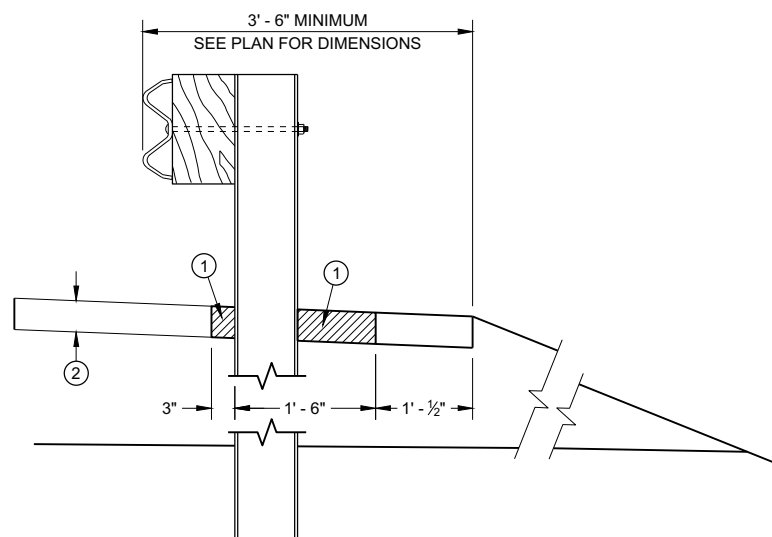


**PLAN VIEW**  
**MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL**

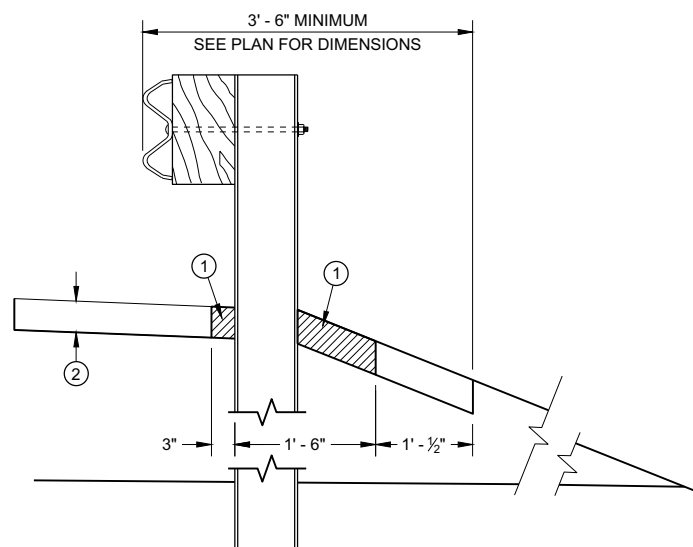
**GENERAL NOTES**

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

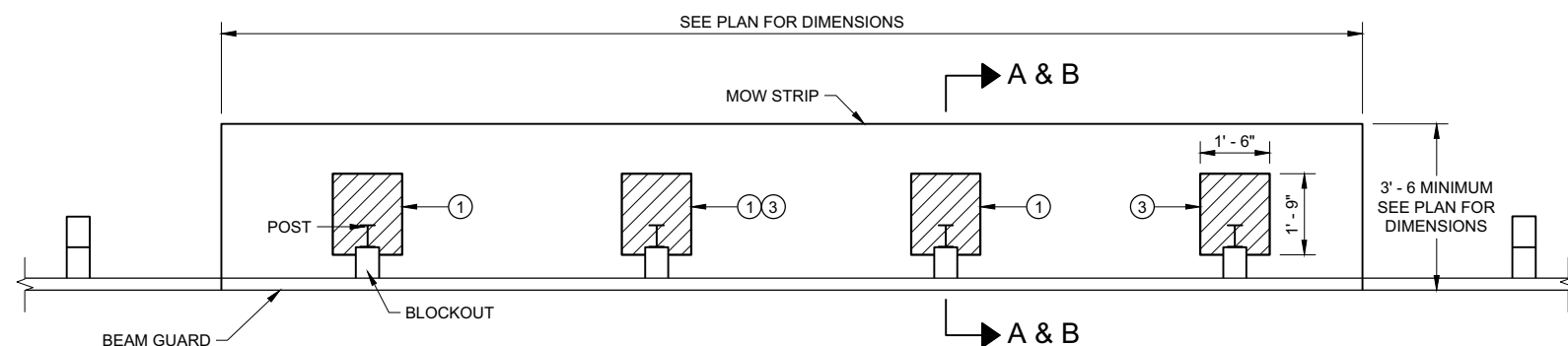
- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:  
ASPHALT - 4"  
CONCRETE - 4"  
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)



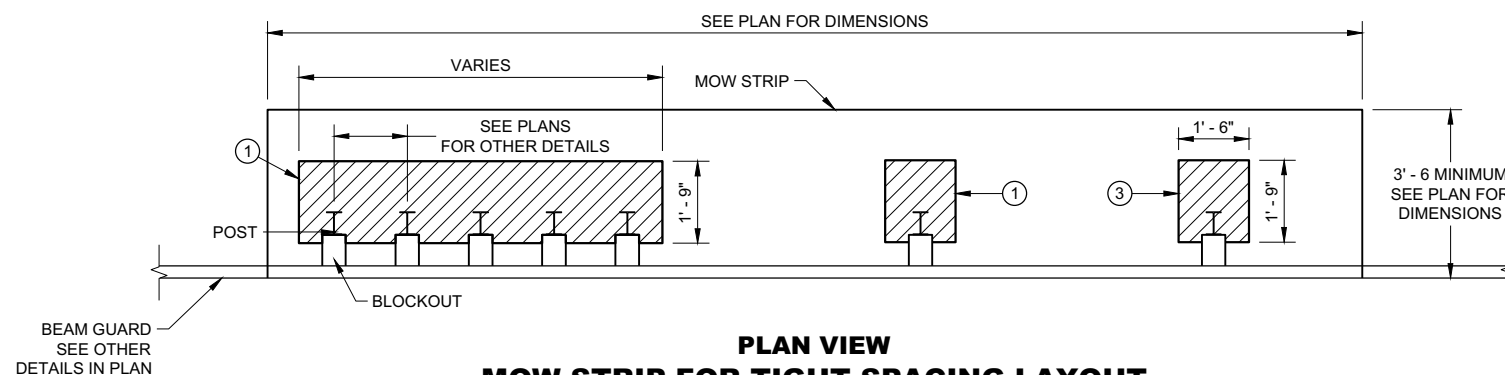
**SECTION A - A**



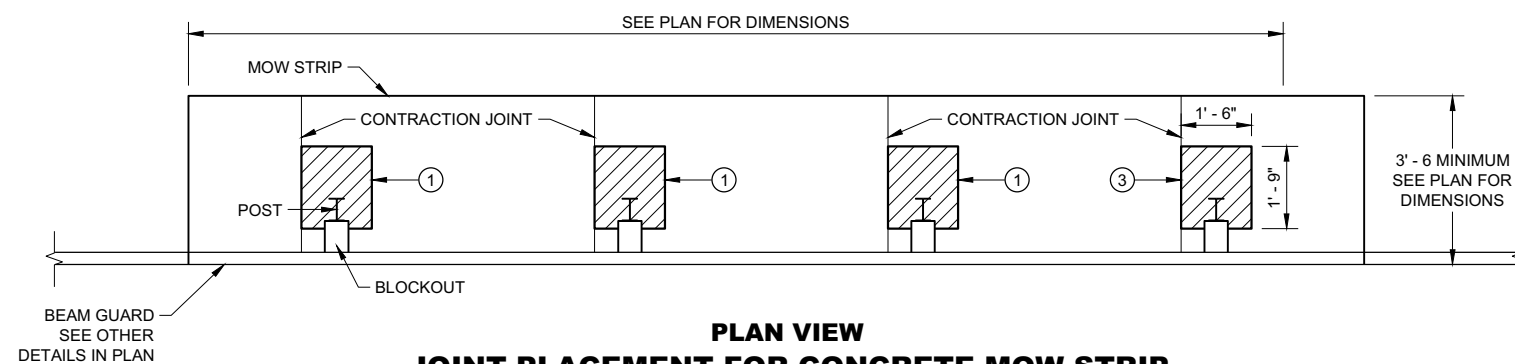
**SECTION B - B**



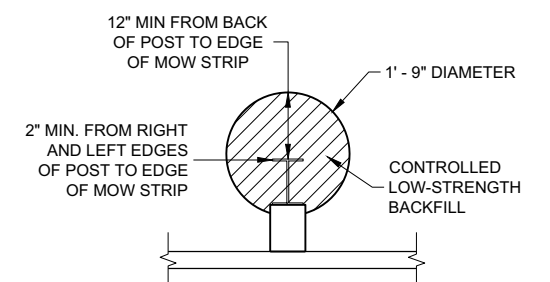
**PLAN VIEW**  
**MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT**



**PLAN VIEW**  
**MOW STRIP FOR TIGHT SPACING LAYOUT**



**PLAN VIEW**  
**JOINT PLACEMENT FOR CONCRETE MOW STRIP**



**ALTERNATIVE HMA**  
**MOW STRIP DESIGN**

**GUARDRAIL MOW STRIP**

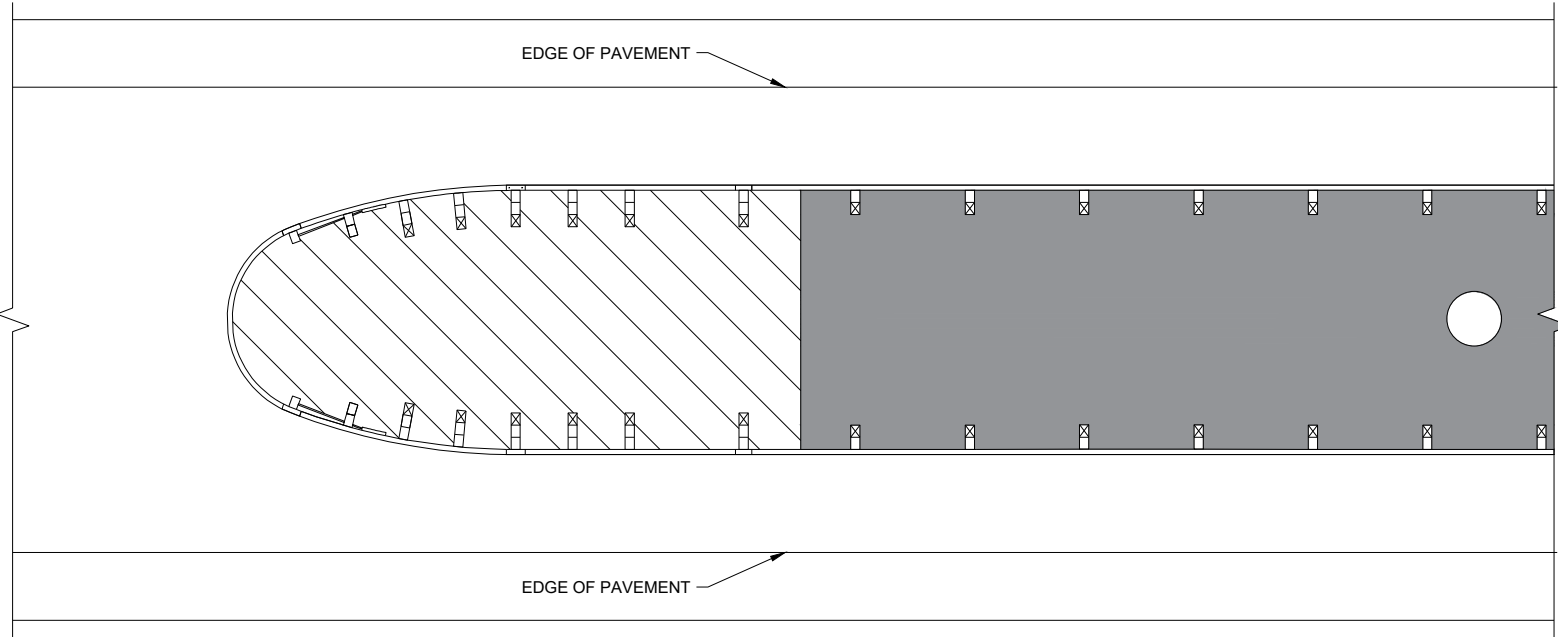
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 113

LEGEND

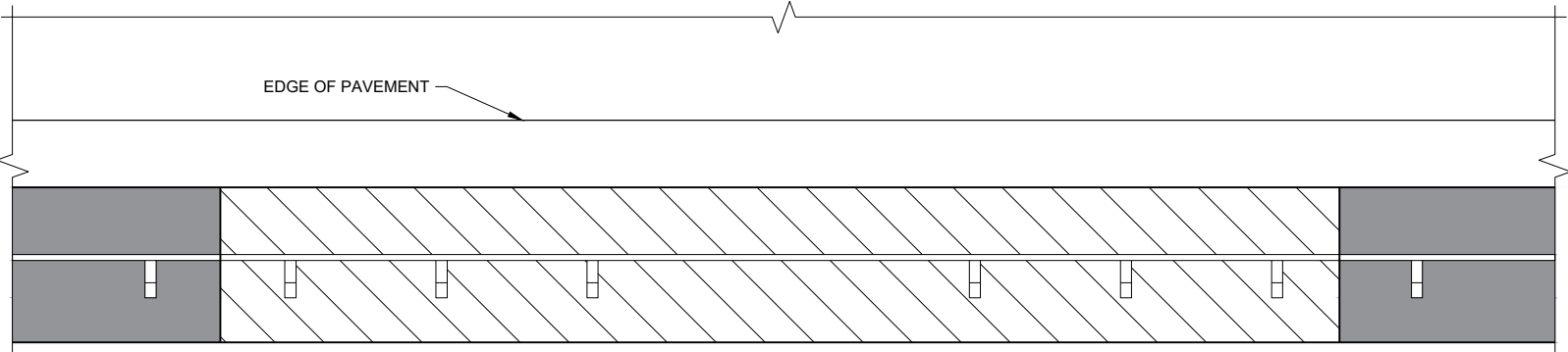
- CONCRETE, ASPHALT, OR EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)
- EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

GENERAL NOTES

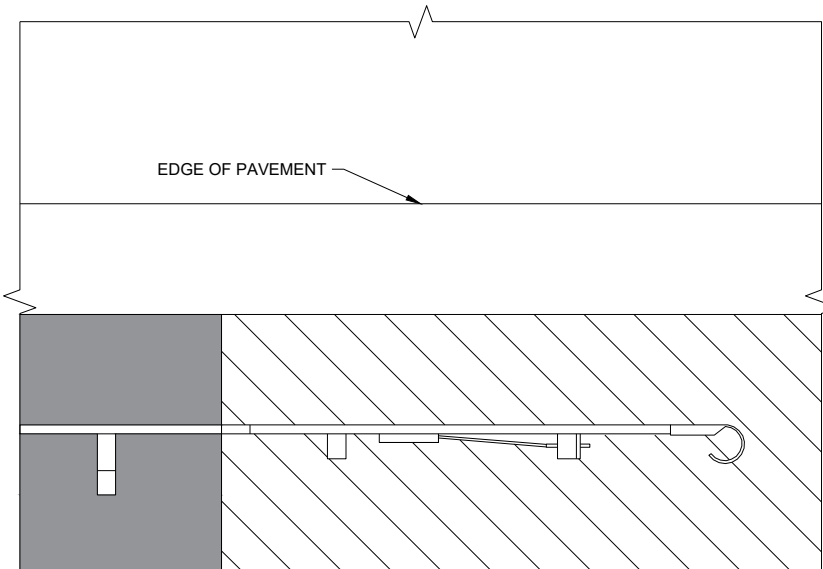
EXISTING THRIE BEAM BULLNOSES MAY HAVE WOOD POSTS. NEW THRIE BEAM BULLNOSE WILL HAVE STEEL POSTS.



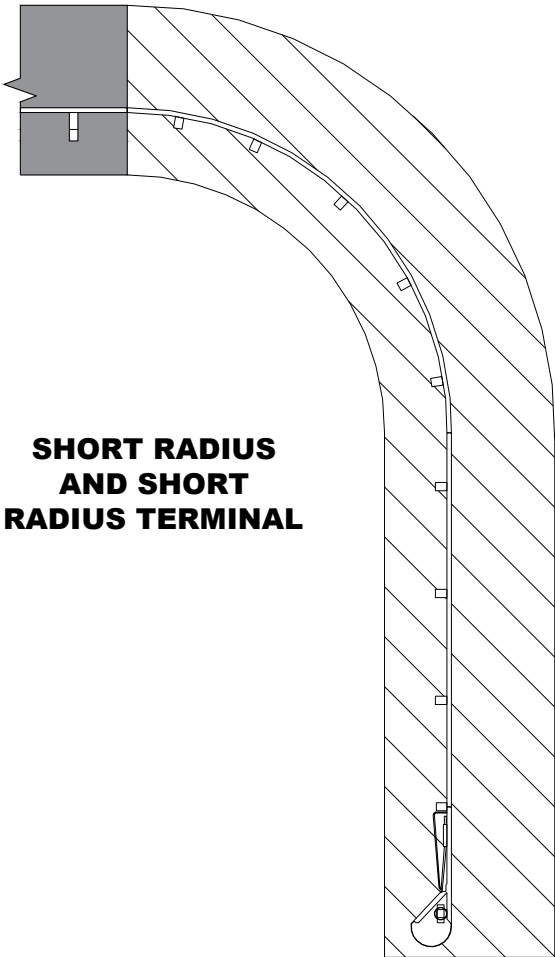
THRIE BEAM BULLNOSE



LONG - SPAN



TYPE 2 TERMINAL



**GUARDRAIL MOW STRIP**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

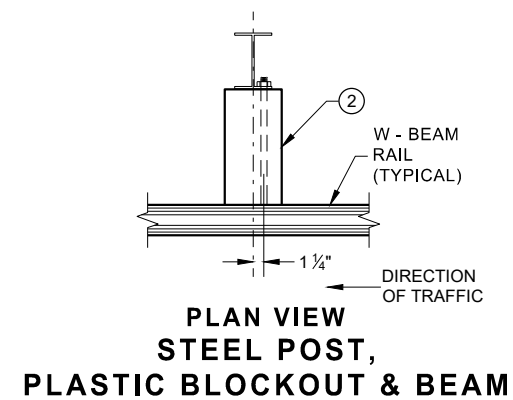
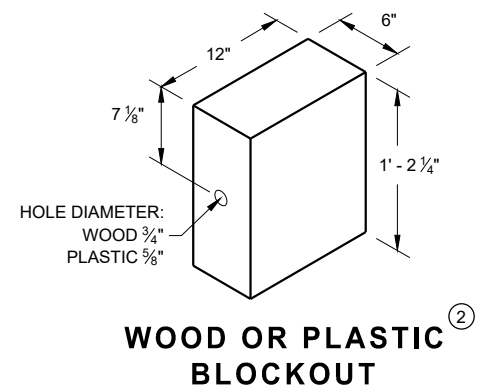
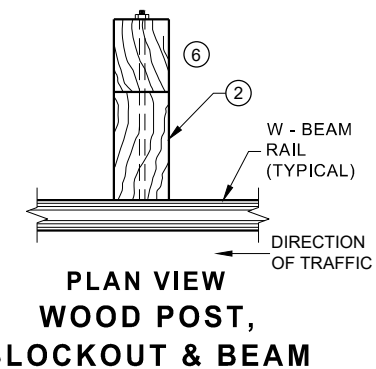
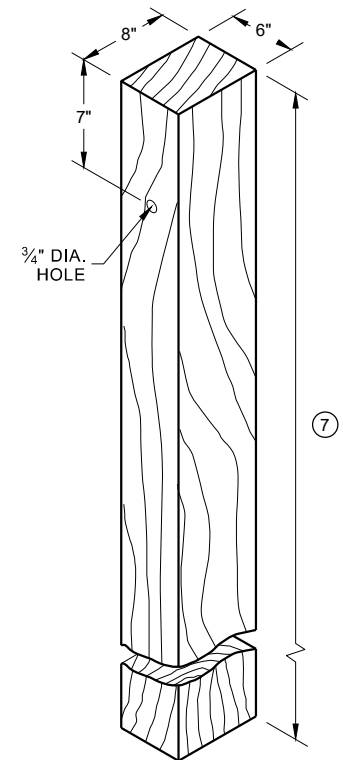
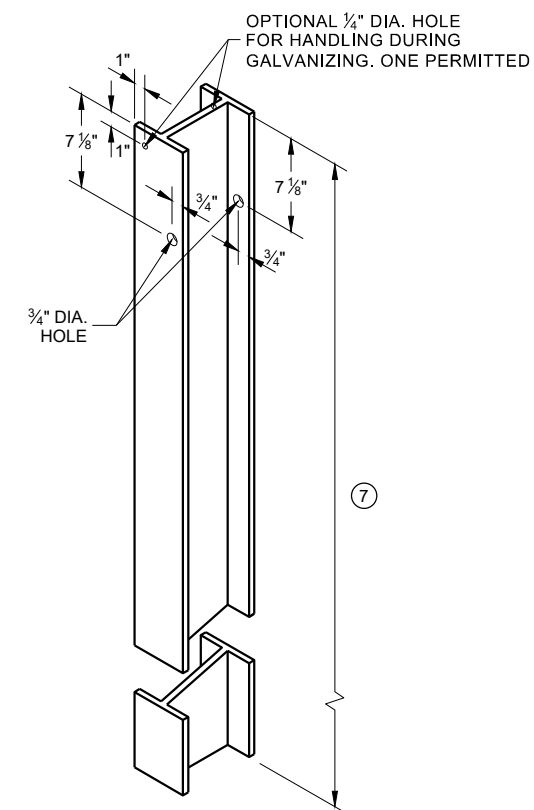
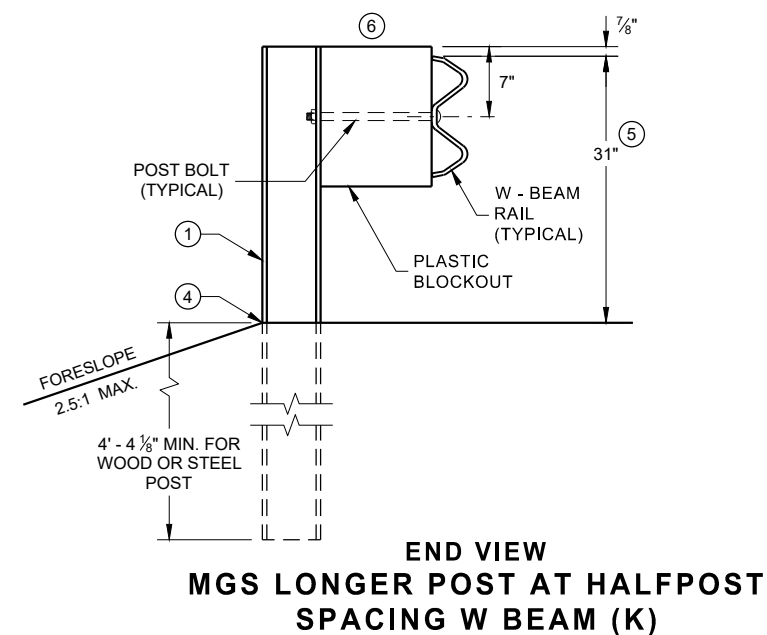
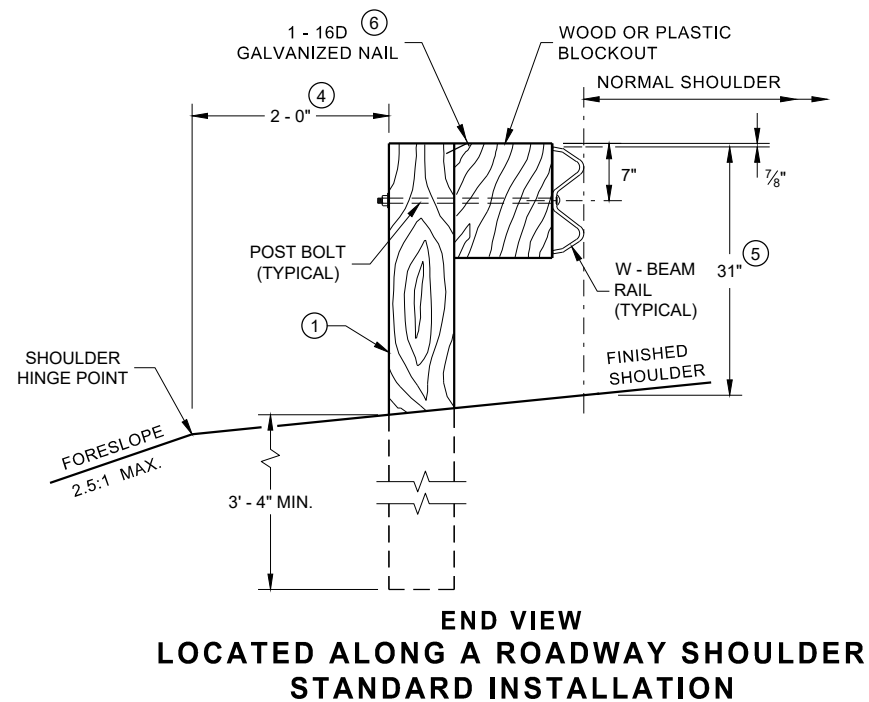
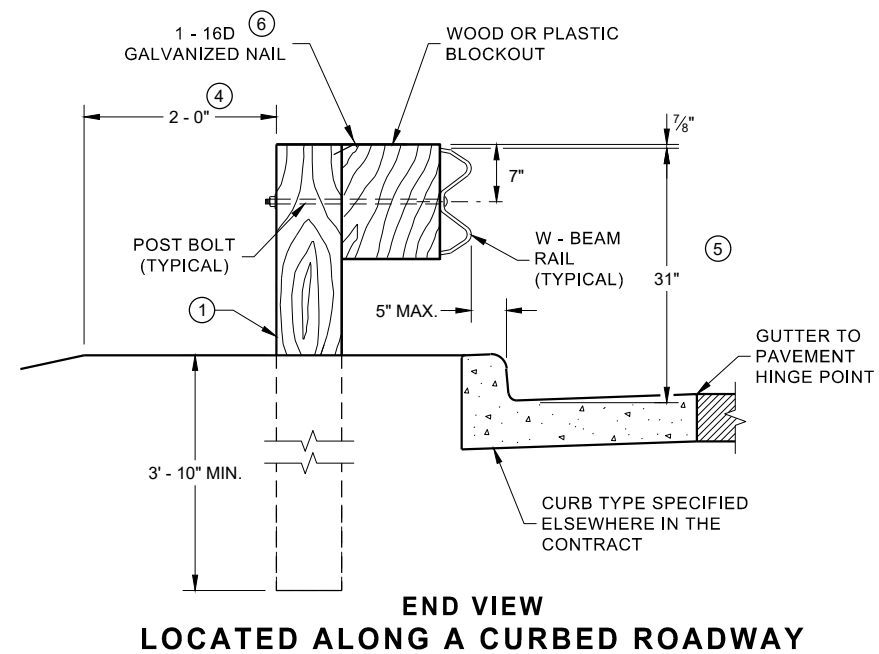
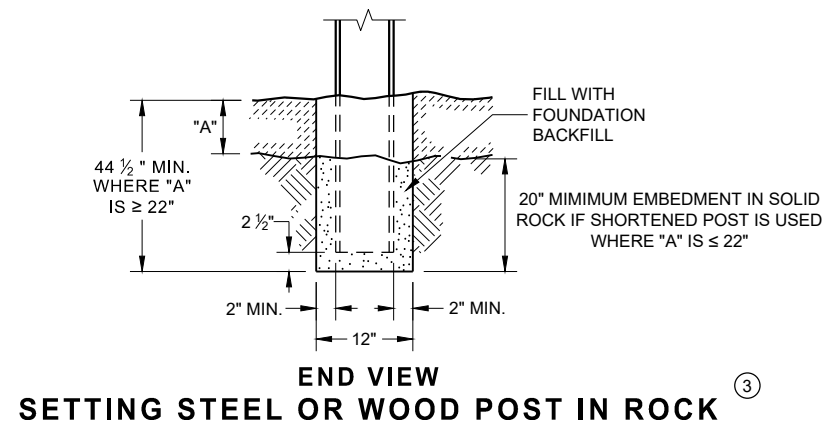
APPROVED  
August 2020  
DATE

/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

FHWA 114 -

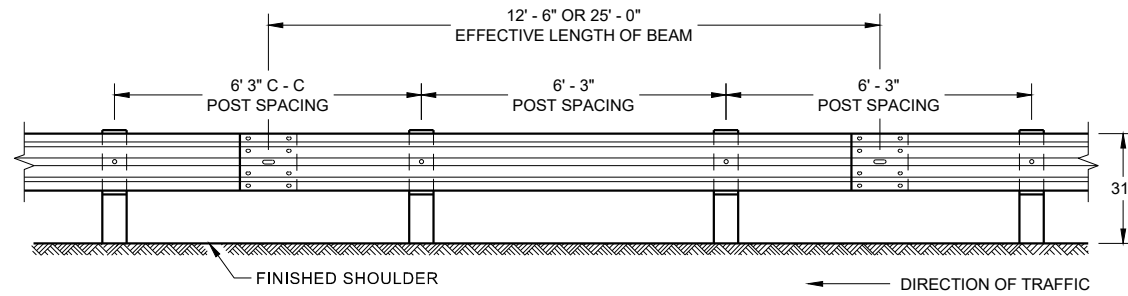


- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS 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  $\pm 1"$ . FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN  $27 \frac{3}{4}"$  TO  $32"$ .
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS  $7' - 0"$ .  
TOTAL POST LENGTH FOR OTHER MGS TYPES IS  $6' - 0"$ .

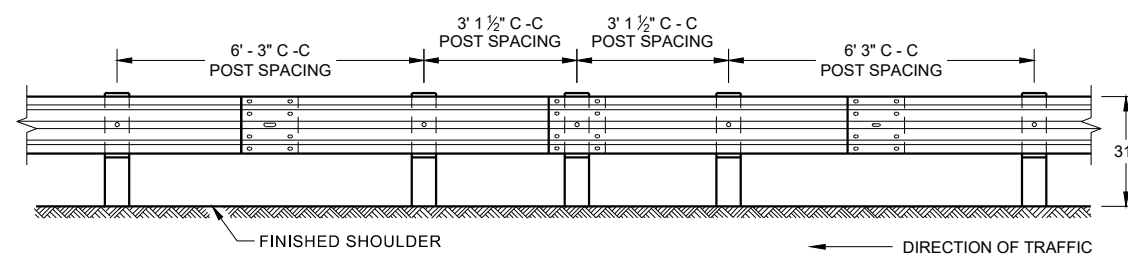


## MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

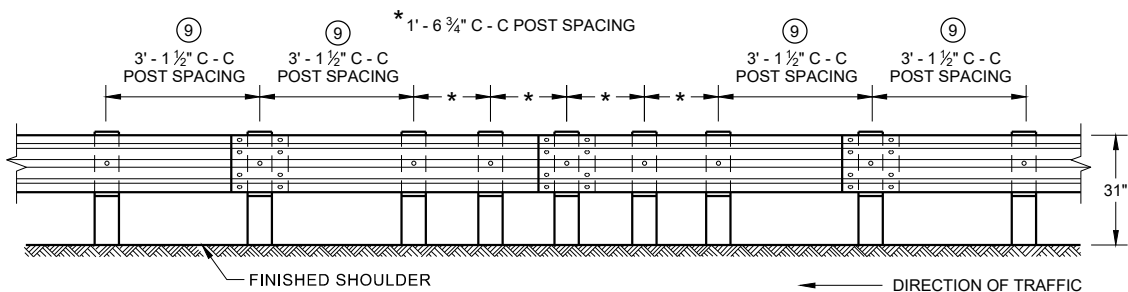
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 115



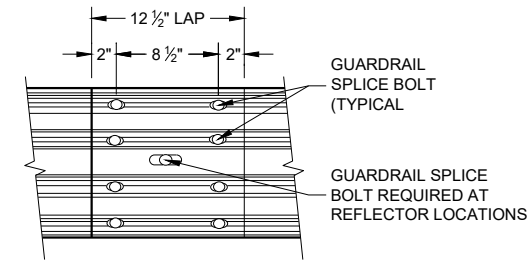
**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



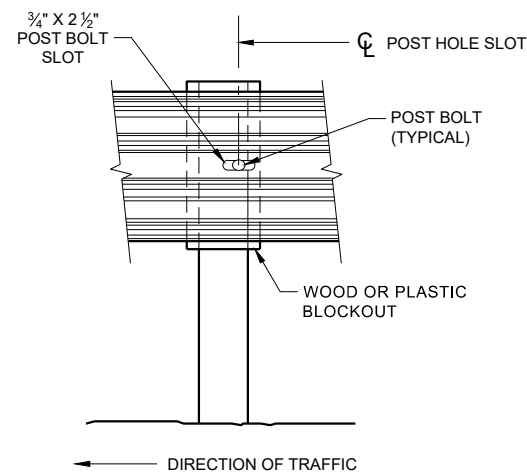
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



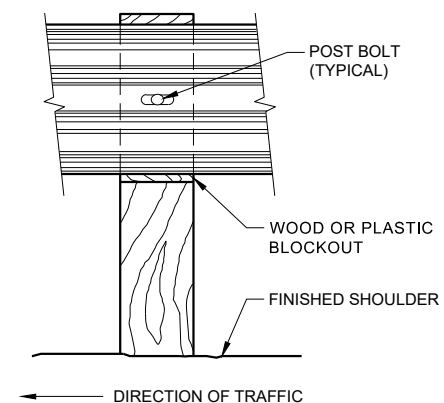
**FRONT VIEW  
QUARTER POST SPACING (QS)**



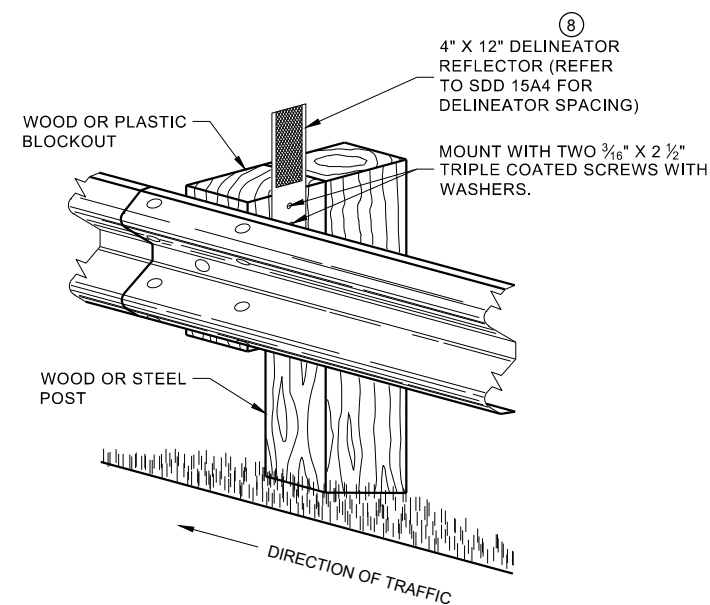
**FRONT VIEW  
MID-SPAN BEAM SPLICE**



**FRONT VIEW AT STEEL POST**



**FRONT VIEW AT WOOD POST**



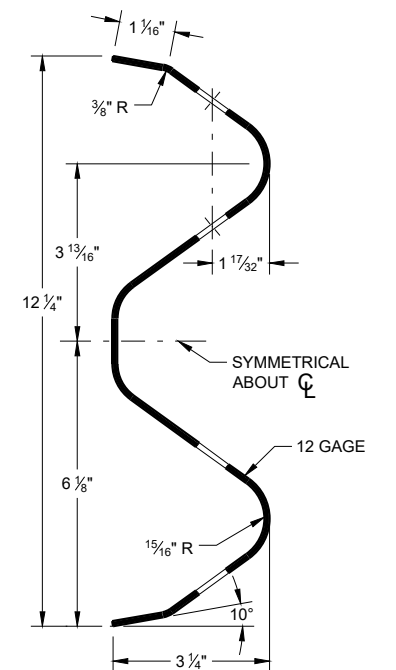
**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

## GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

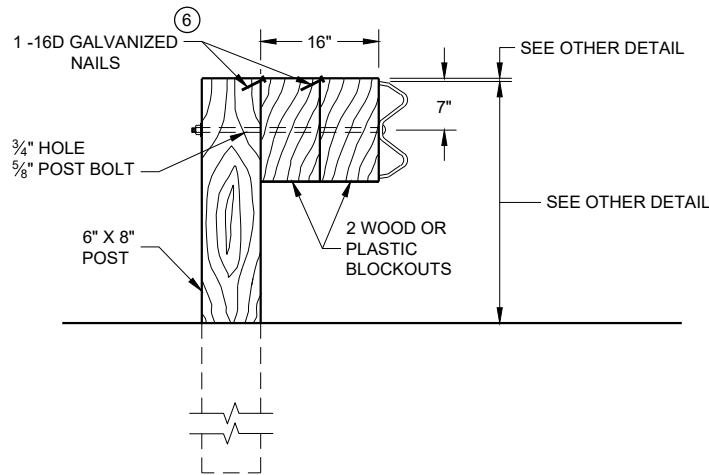
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



**SECTION THRU W-BEAM RAIL**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

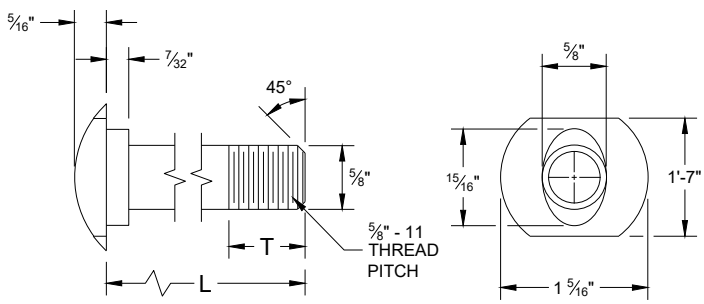
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 116



DETAIL FOR 16" BLOCKOUT DEPTH

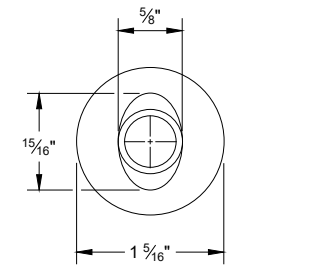
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
  - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

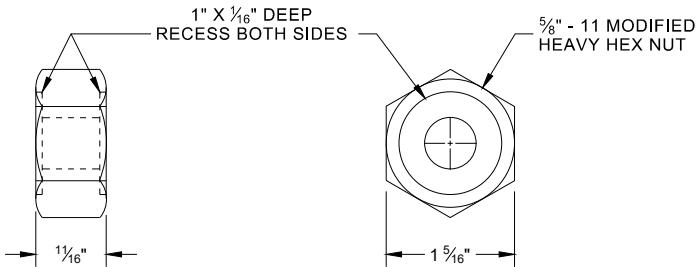


POST BOLT TABLE

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

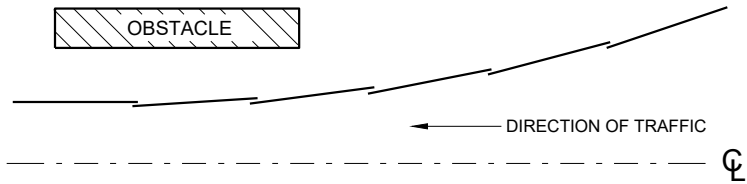


ALTERNATE BOLT HEAD

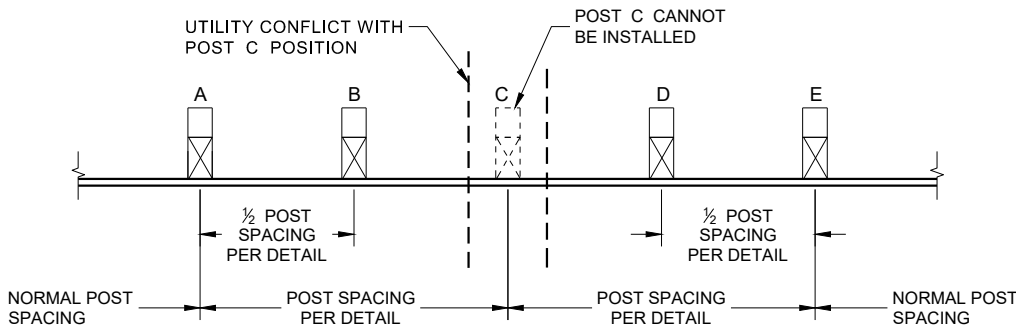


POST BOLT, SPLICE BOLT AND RECESS NUT

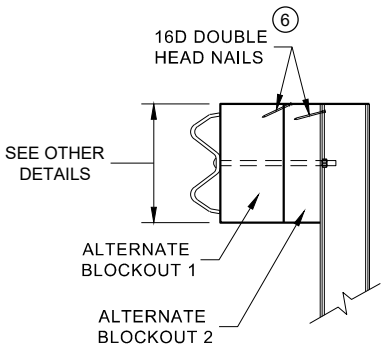
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



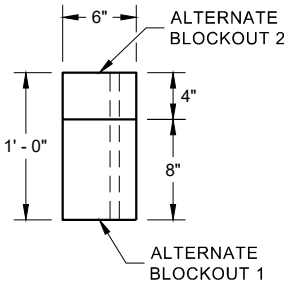
PLAN VIEW  
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION



SIDE VIEW

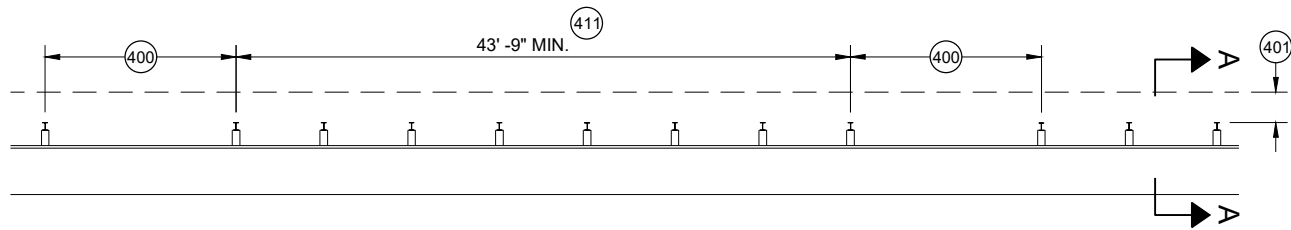


PLAN VIEW

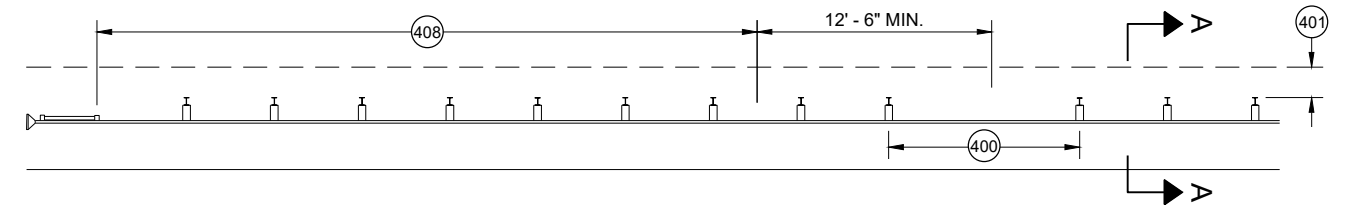
ALTERNATE WOOD  
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL

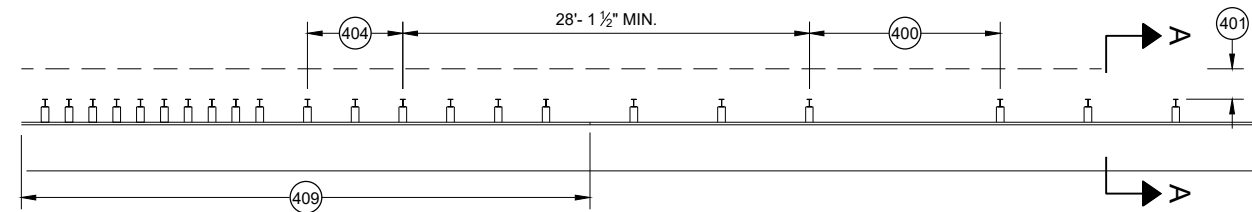
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



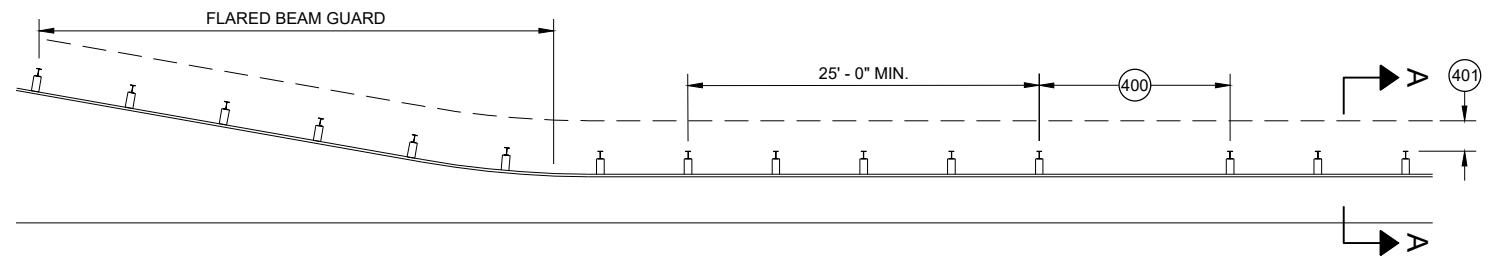
**MISSING POST IN MGS GUARDRAIL**



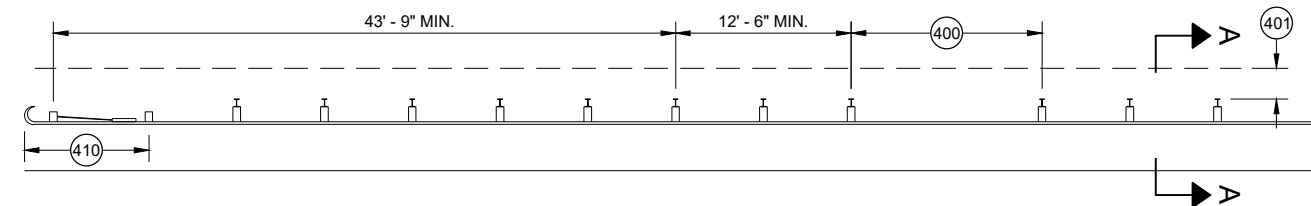
**MISSING POST IN MGS GUARDRAIL NEAR EAT**



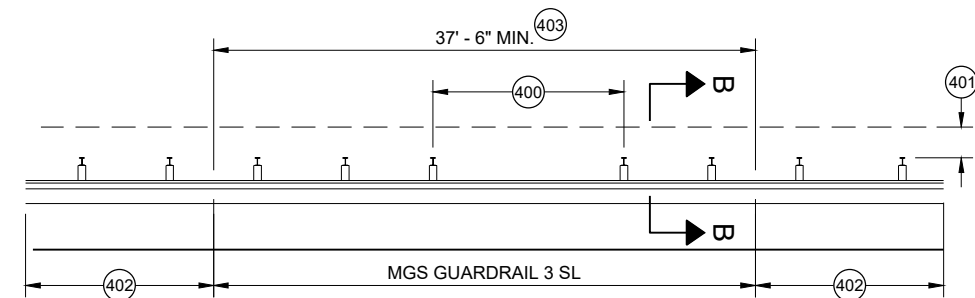
**MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION**



**MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD**

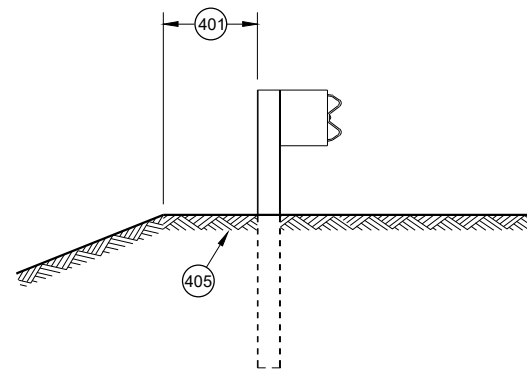


**MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL**

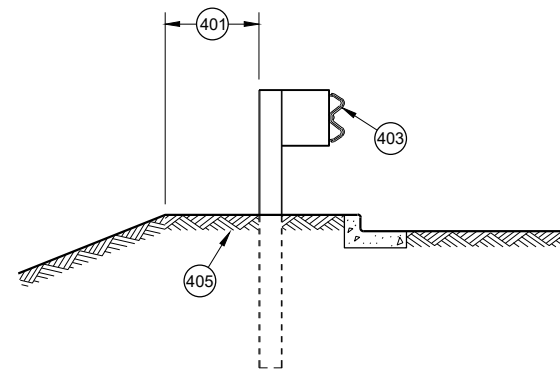


**MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)**

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



**SECTION A - A**



**SECTION B - B**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

118

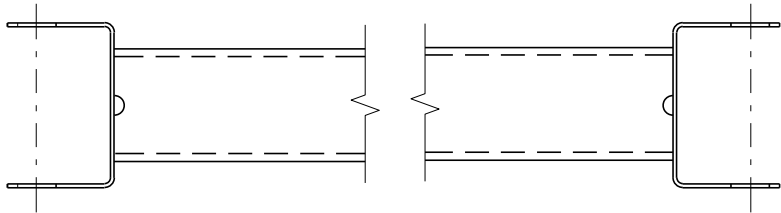
- A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

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. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

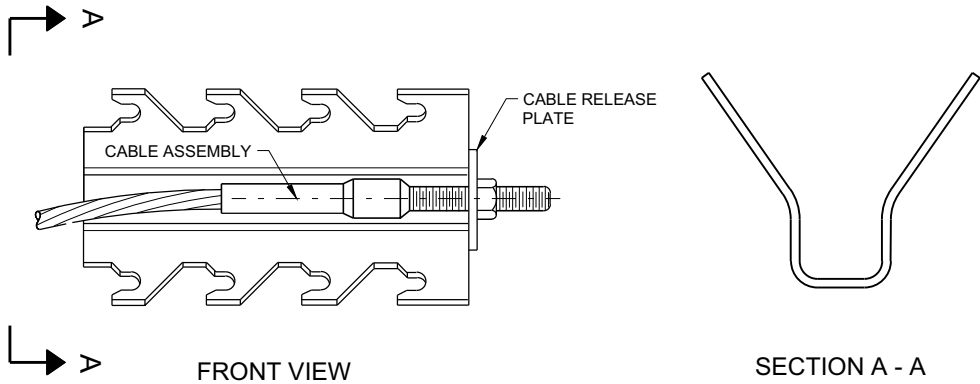


STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 119

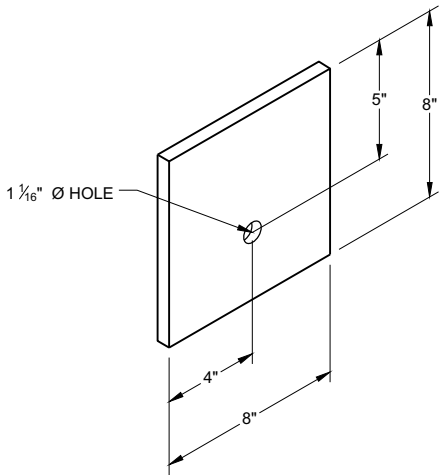


GENERIC GROUND STRUT<sup>9</sup> <sup>E</sup>

| BILL OF MATERIALS |                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------|
| PART NO.          | DESCRIPTION<br>MATERIALS PROVIDED BY MGS EAT MANUFACTURER.<br>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.<br>SECTIONS VARY IN LENGTH.                                  |
| ⑫                 | IMPACT HEAD                                                                                                    |
| ⑬                 | EAT MARKER POST - YELLOW<br>(SEE APPROVED PRODUCTS LIST)                                                       |
| ⑭                 | SOIL PLATE                                                                                                     |
| ⑮                 | UPPER POST NO. 2                                                                                               |
| ⑯                 | LOWER POST NO. 2                                                                                               |



GENERIC ANCHOR CABLE BOX<sup>9</sup> <sup>E</sup>

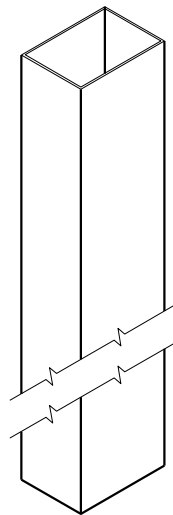


BEARING PLATE<sup>6</sup> <sup>E</sup>

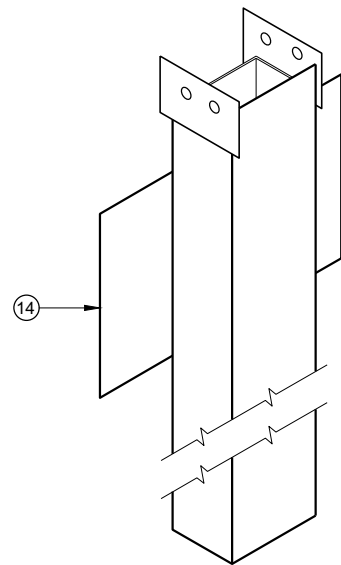
MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 120

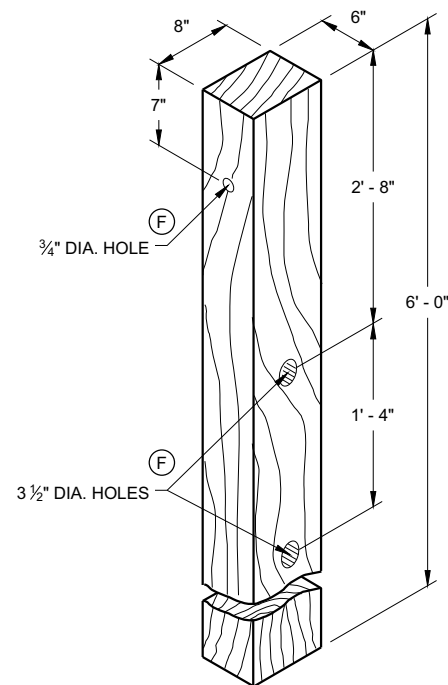




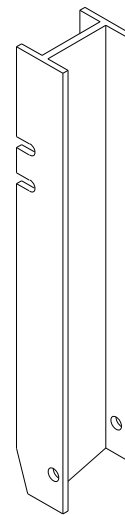
UPPER POST NO. 1 <sup>(1)</sup> (E)



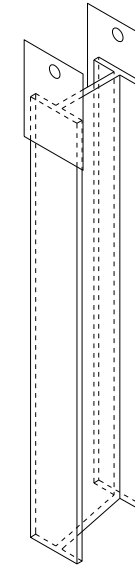
LOWER POST NO. 1 <sup>(2)</sup> (E)



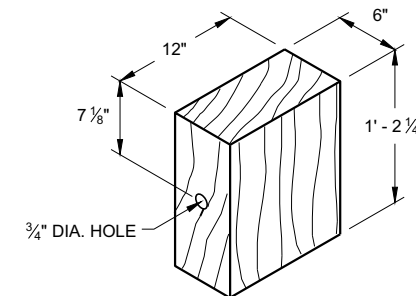
WOOD CRT POST <sup>(3)</sup> (E)  
POSTS NUMBER 3-9



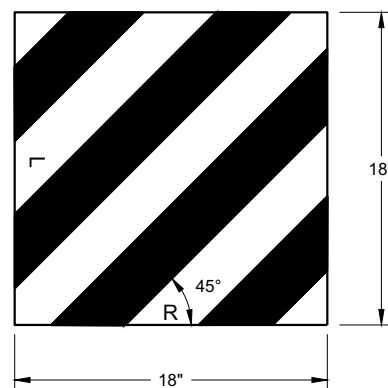
UPPER POST NO. 2 <sup>(15)</sup> (E)



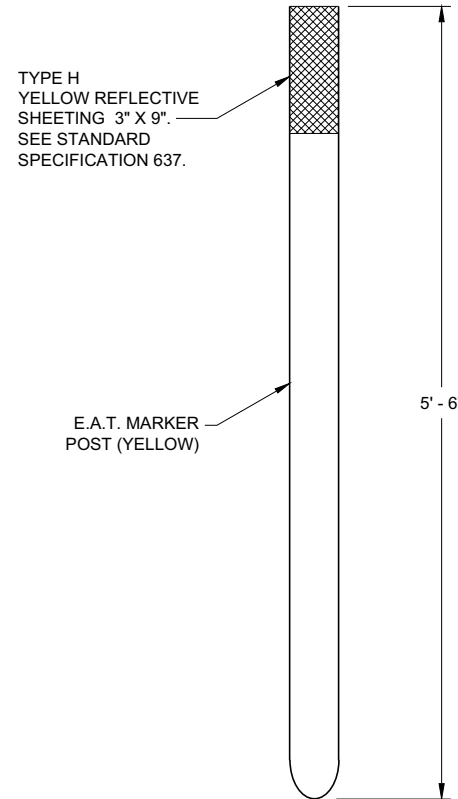
LOWER POST NO. 2 <sup>(16)</sup> (E)



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



REFLECTIVE SHEETING DETAIL <sup>(E)</sup>

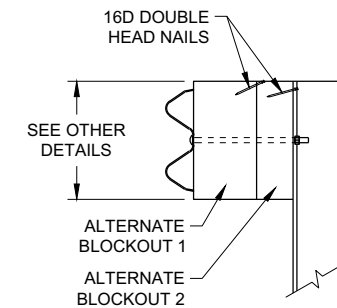


FRONT VIEW

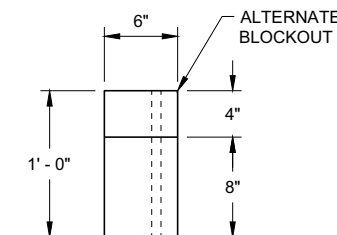


SIDE VIEW

E.A.T. MARKER POST <sup>(13)</sup>



SIDE VIEW



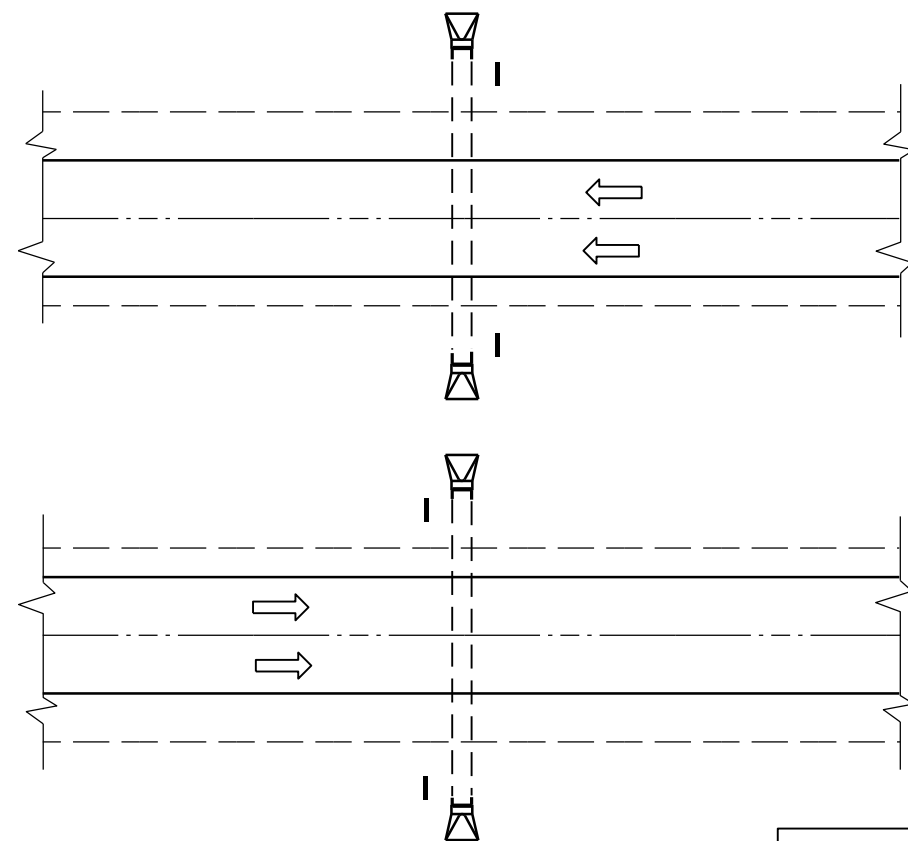
TOP VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

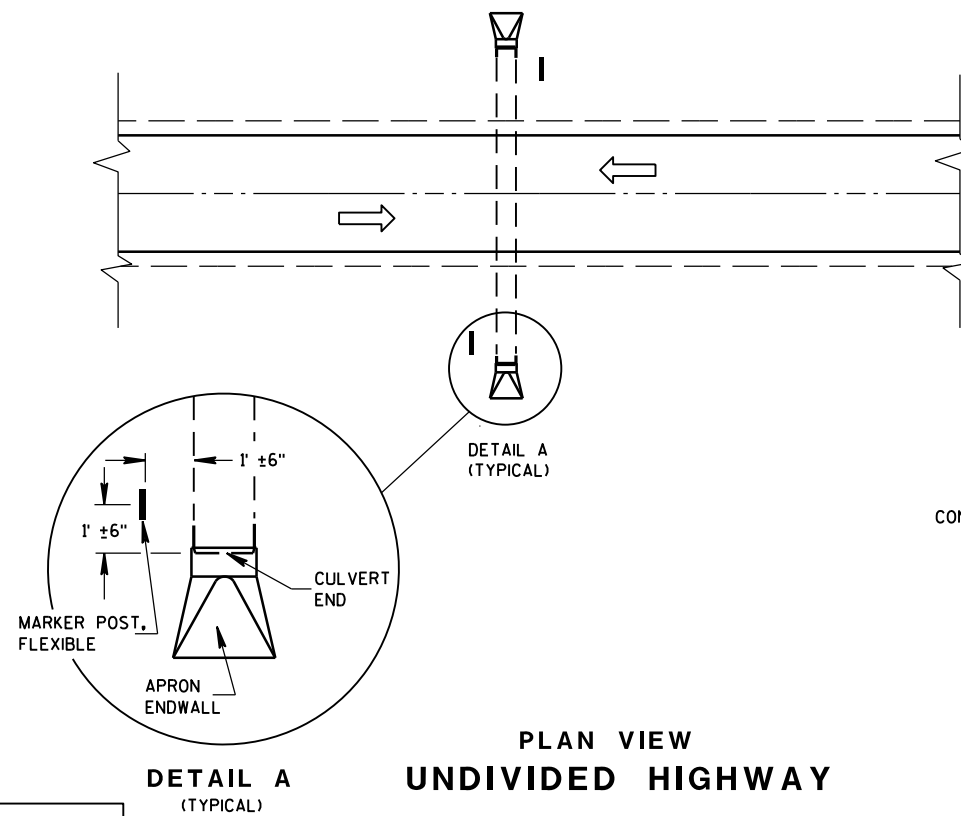
**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

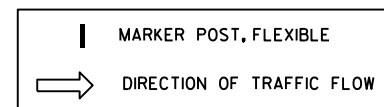
APPROVED  
7/2018 DATE /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR 121  
FHWA



PLAN VIEW  
DIVIDED HIGHWAY



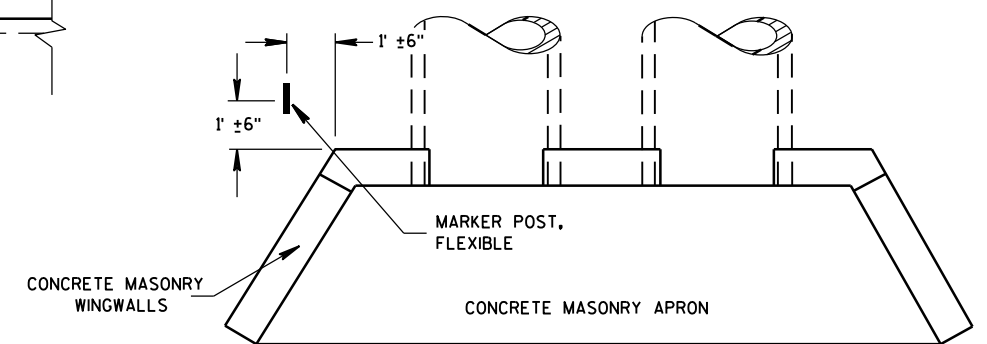
PLAN VIEW  
UNDIVIDED HIGHWAY



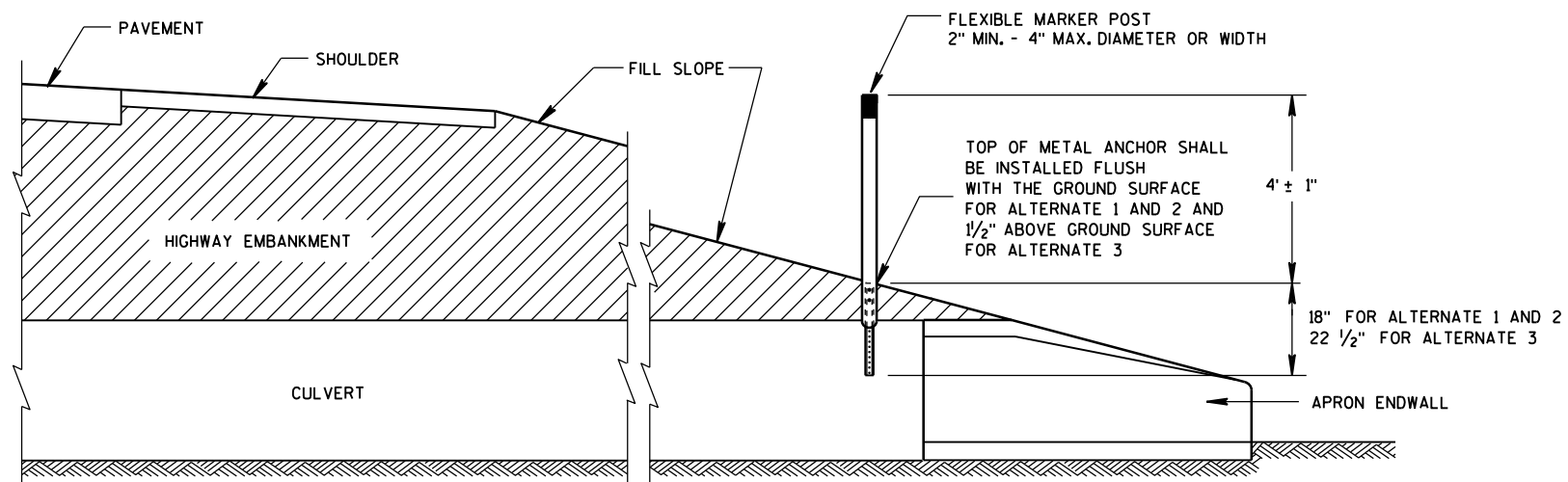
### FLEXIBLE MARKER POST LOCATION

### 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.



PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH

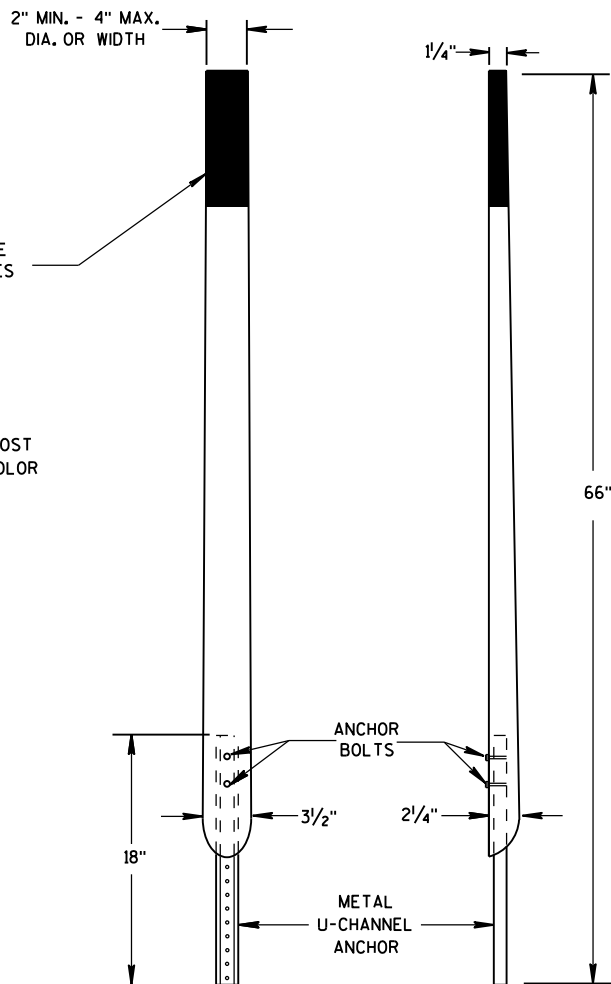
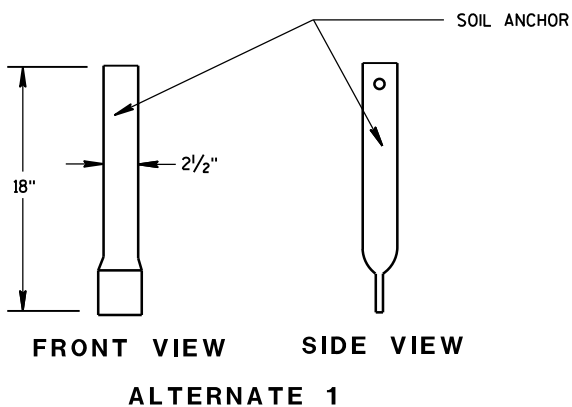
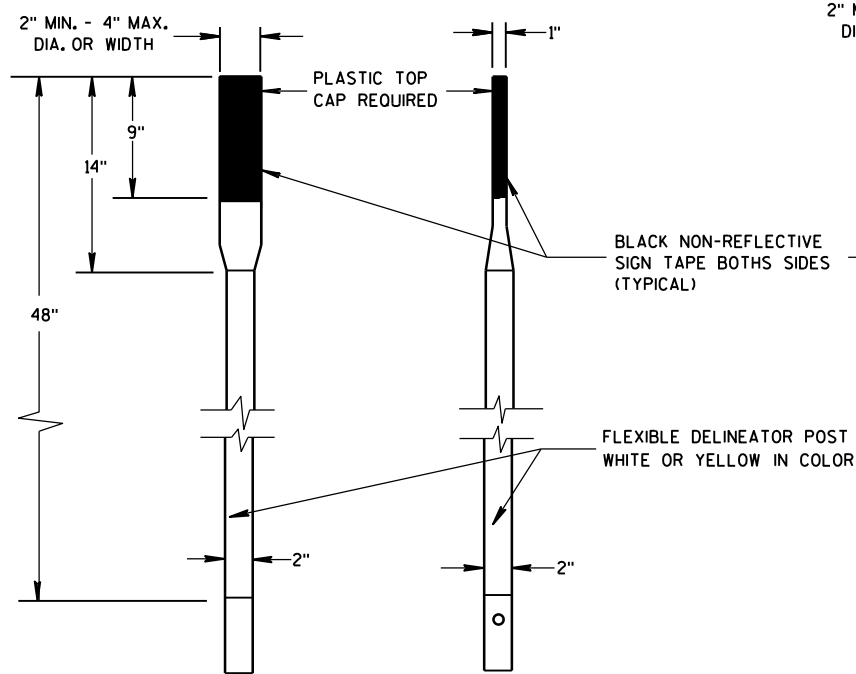


CROSS SECTION  
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST  
FOR CULVERT END

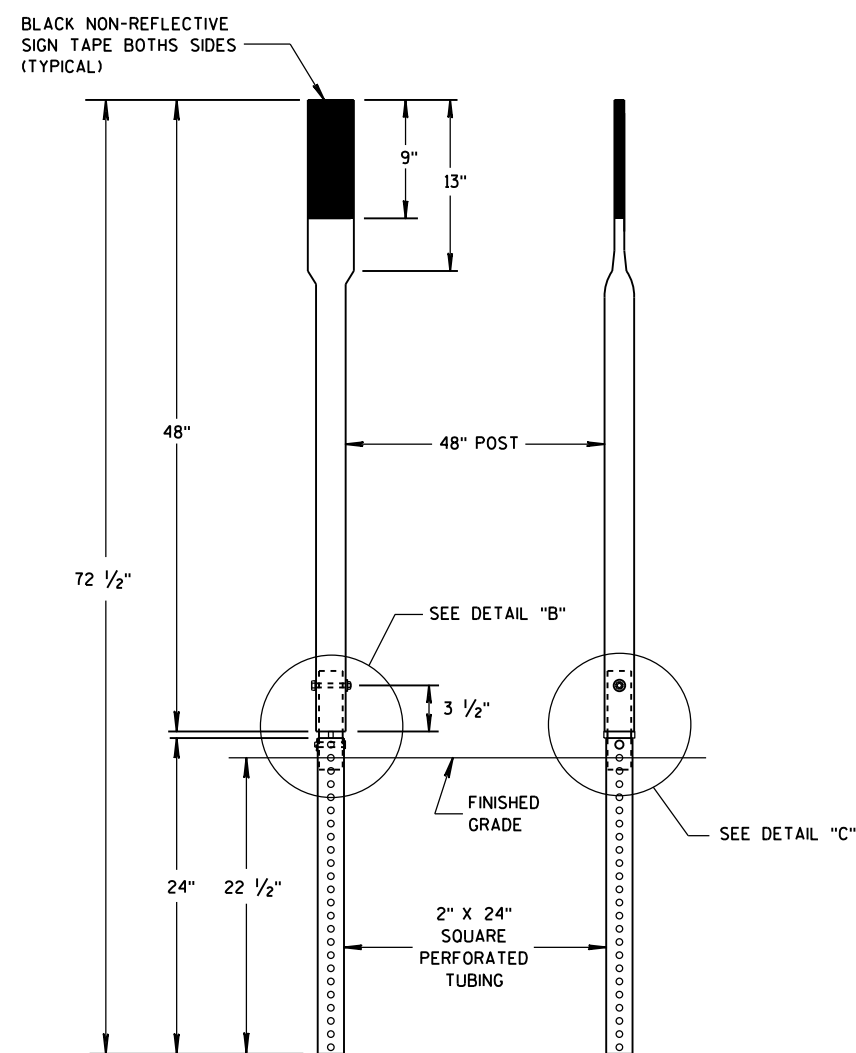
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 122



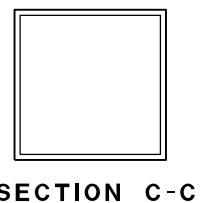


FRONT VIEW SIDE VIEW  
ALTERNATE 2

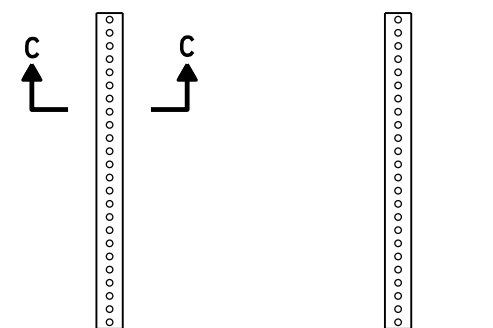
FLEXIBLE MARKER POSTS



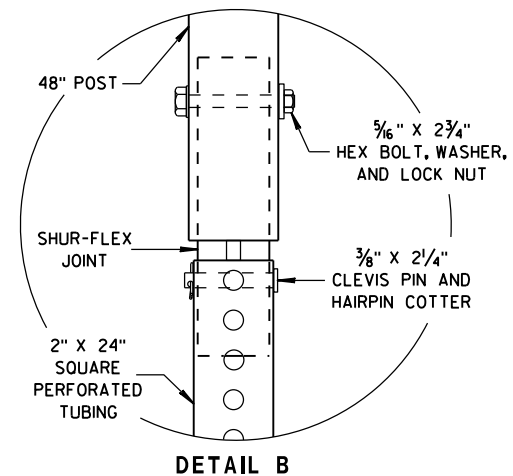
FRONT VIEW SIDE VIEW  
ALTERNATE 3



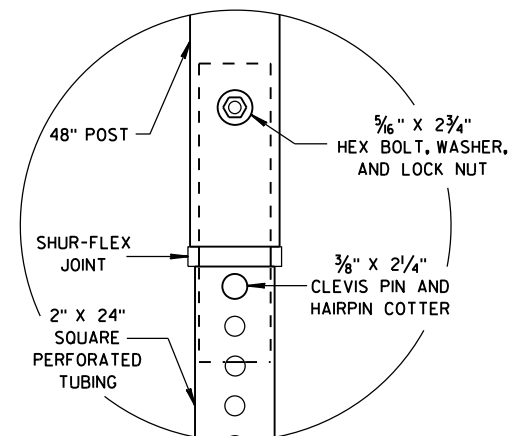
SECTION C-C



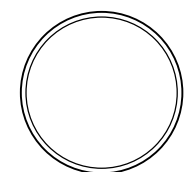
FRONT VIEW SIDE VIEW  
ALTERNATE 3



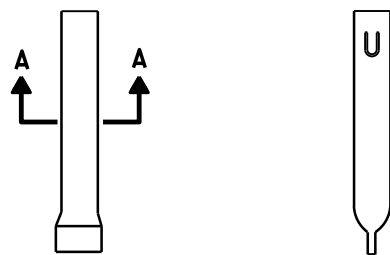
DETAIL B



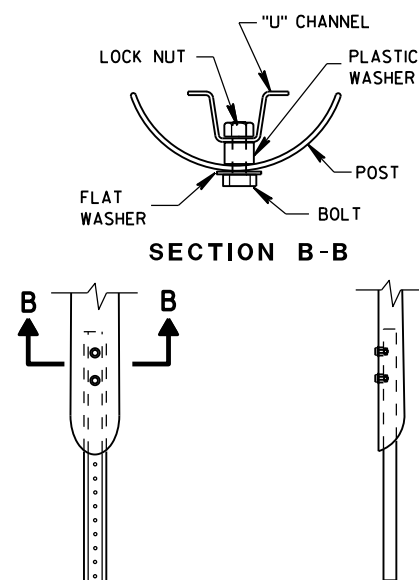
DETAIL C



SECTION A-A



FRONT VIEW SIDE VIEW  
ALTERNATE 1



FRONT VIEW SIDE VIEW  
ALTERNATE 2

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST  
FOR CULVERT END

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

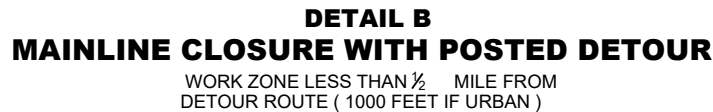
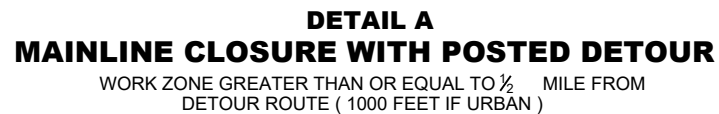
10/1/2012

DATE

FHWA

/S/ Travis Feltes  
STATE TRAFFIC ENGINEER 123

IGN

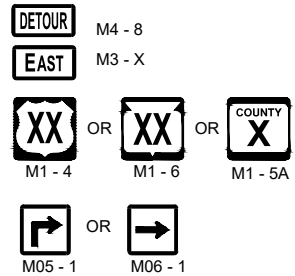


| SPEED LIMIT<br>(MPH) | "STOP AHEAD"<br>ADVANCE WARNING<br>DISTANCE (FT) |
|----------------------|--------------------------------------------------|
| 25                   | 200                                              |
| 30                   | 200                                            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

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



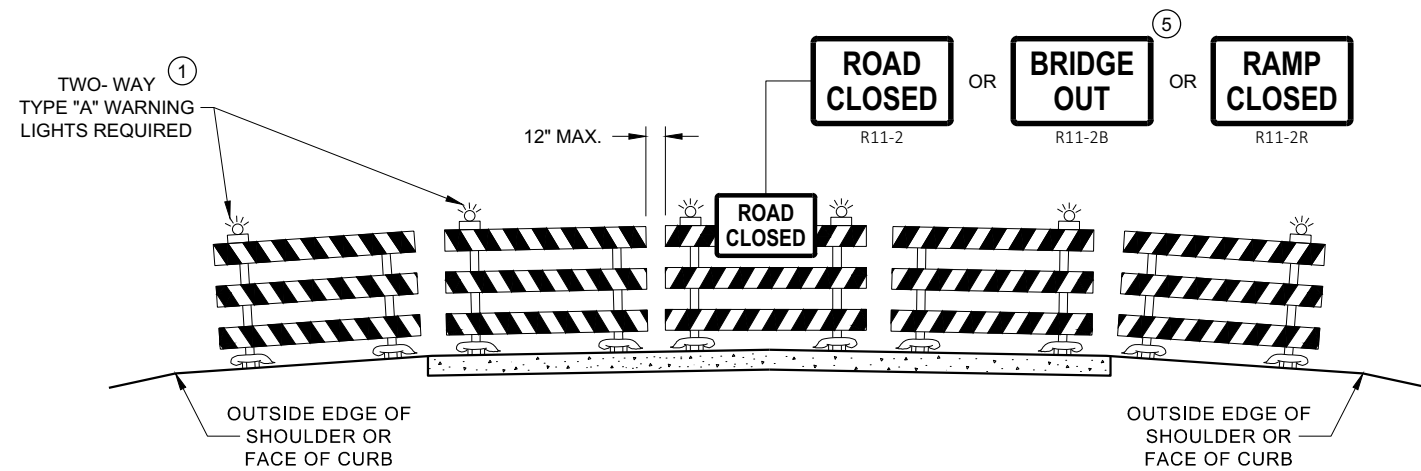
|                                                                                       |                                       |
|---------------------------------------------------------------------------------------|---------------------------------------|
|    | SIGN ON PERMANENT SUPPORT             |
|  | TYPE III BARRICADE                    |
|  | TYPE III BARRICADE WITH ATTACHED SIGN |
|  | TYPE "A" WARNING LIGHT (FLASHING)     |
|  | WORK AREA                             |
|  | FLAGS, 16" X 16" MIN. (ORANGE)        |



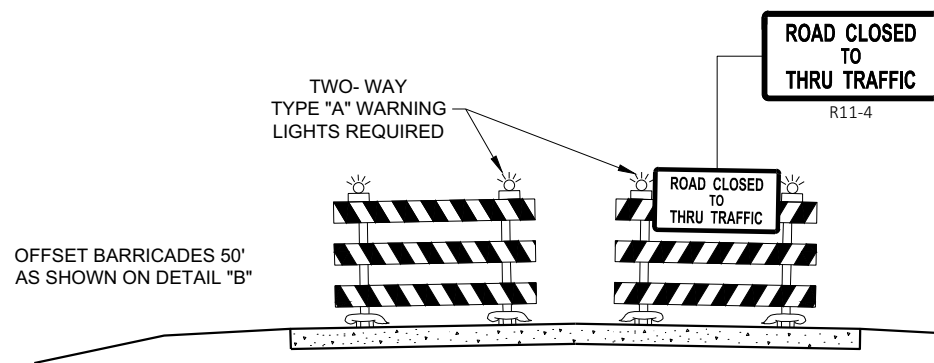
## BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020      /S/ Andrew Heidtke  
DATE      WORK ZONE ENGINEER 124



**DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW**



**DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

## GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

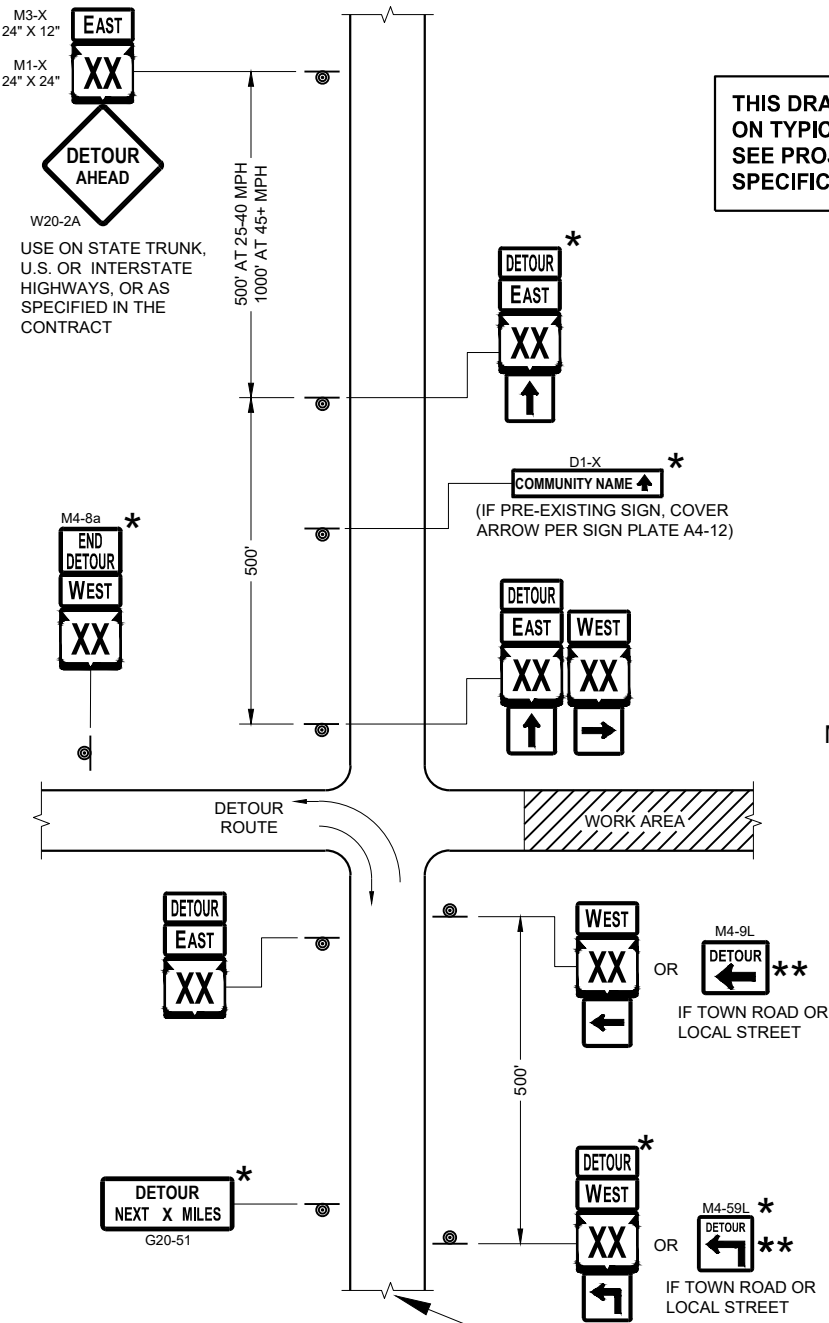
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

## BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

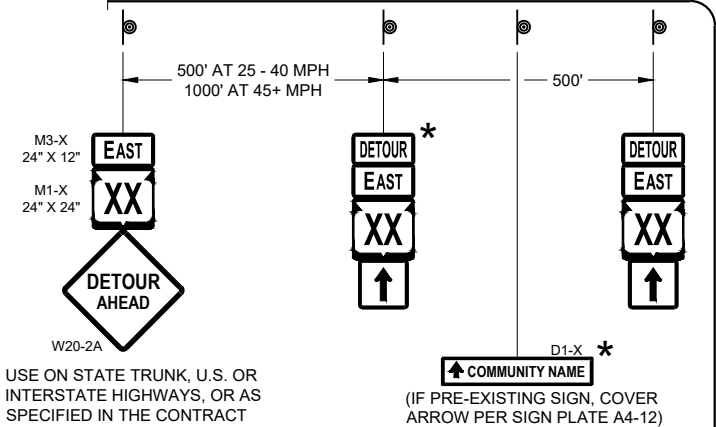
APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 125  
FHWA



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

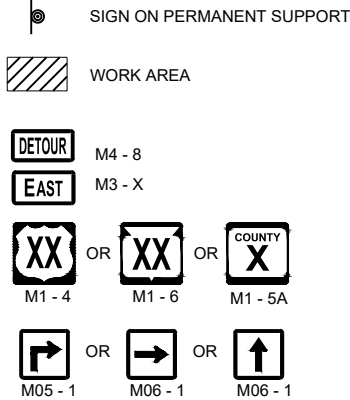
THIS DRAWING PROVIDES GENERAL GUIDANCE  
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.  
SEE PROJECT DETOUR SIGNING SHEETS FOR  
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F  
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

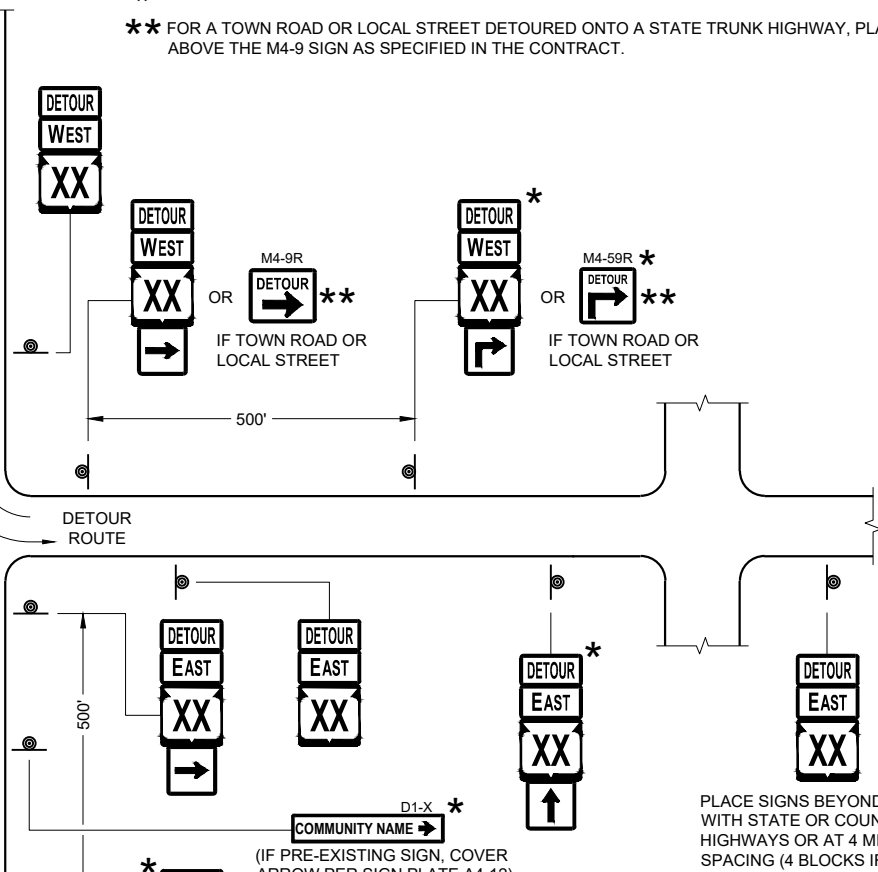
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- \* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- \*\* FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

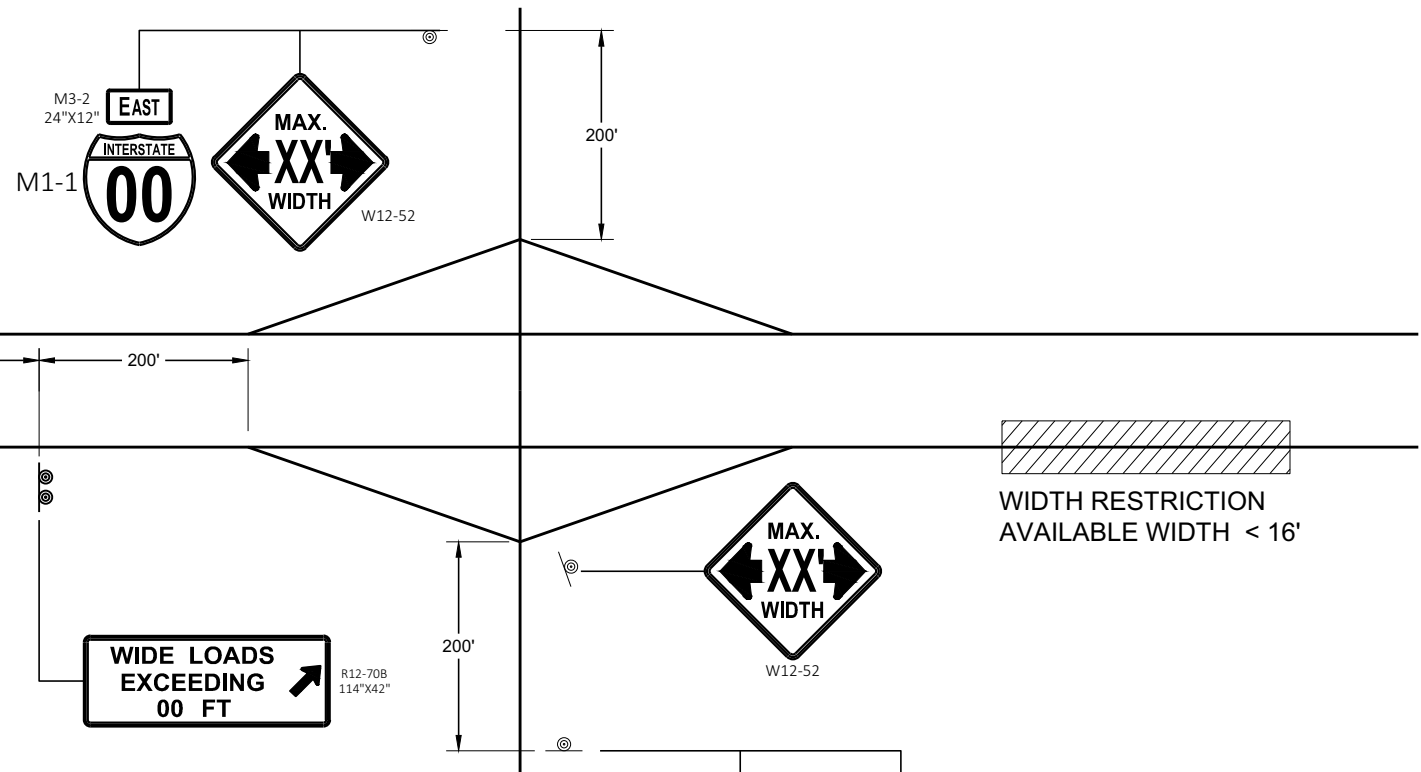


PLACE SIGNS BEYOND INTERSECTIONS  
WITH STATE OR COUNTY TRUNK  
HIGHWAYS OR AT 4 MILE MAXIMUM  
SPACING (4 BLOCKS IF URBAN AREA)

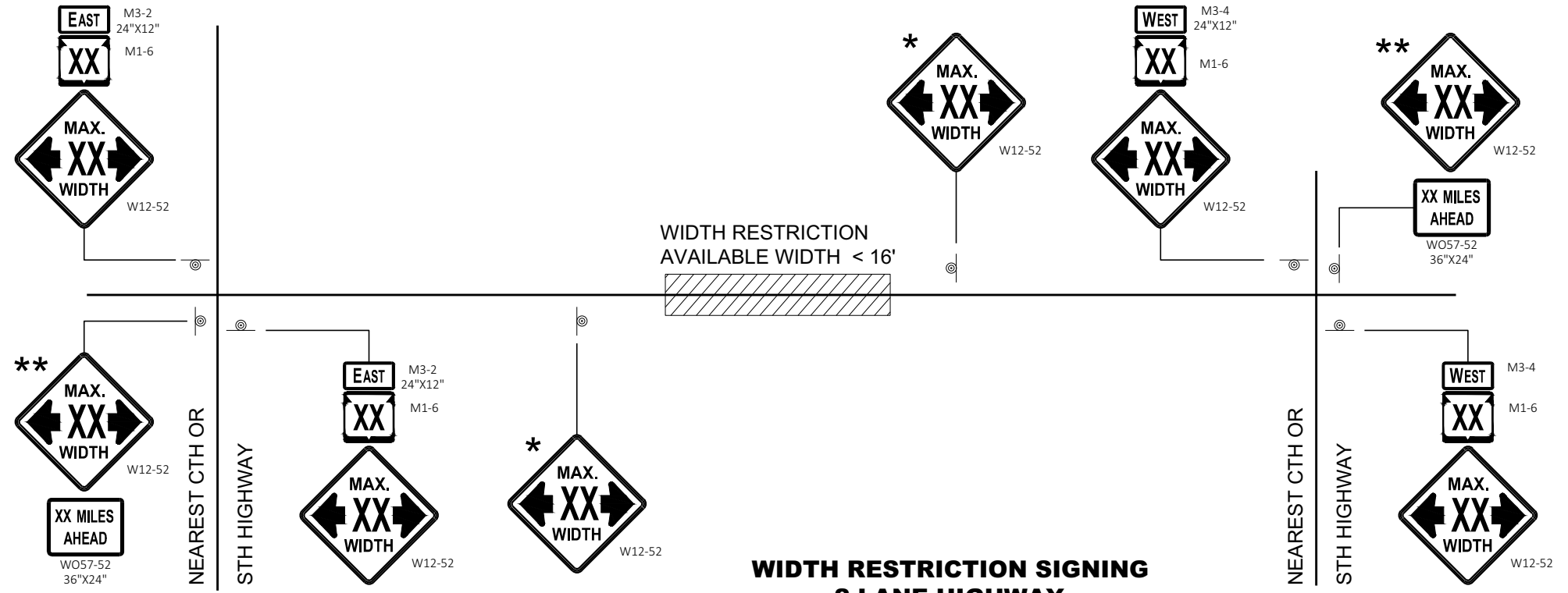
DETOUR SIGNING  
FOR MAINLINE CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 126  
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WIDTH RESTRICTION SIGNING



WIDTH RESTRICTION SIGNING  
2 LANE HIGHWAY

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS 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 DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.
- \* PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.
- \*\* SIGN SHALL BE VISIBLE FROM ROADWAY.
- \*\*\* ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.



|                                                    |                                              |
|----------------------------------------------------|----------------------------------------------|
| ADVANCED WIDTH<br>RESTRICTION SIGNING              |                                              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                              |
| APPROVED<br>February 2020<br>DATE                  | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER 127 |
| FHWA                                               |                                              |

GENERAL NOTES

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

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

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

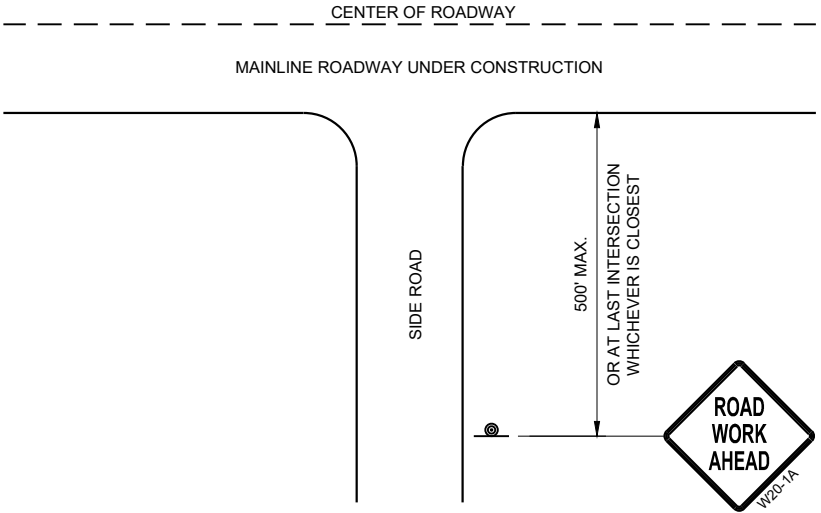
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

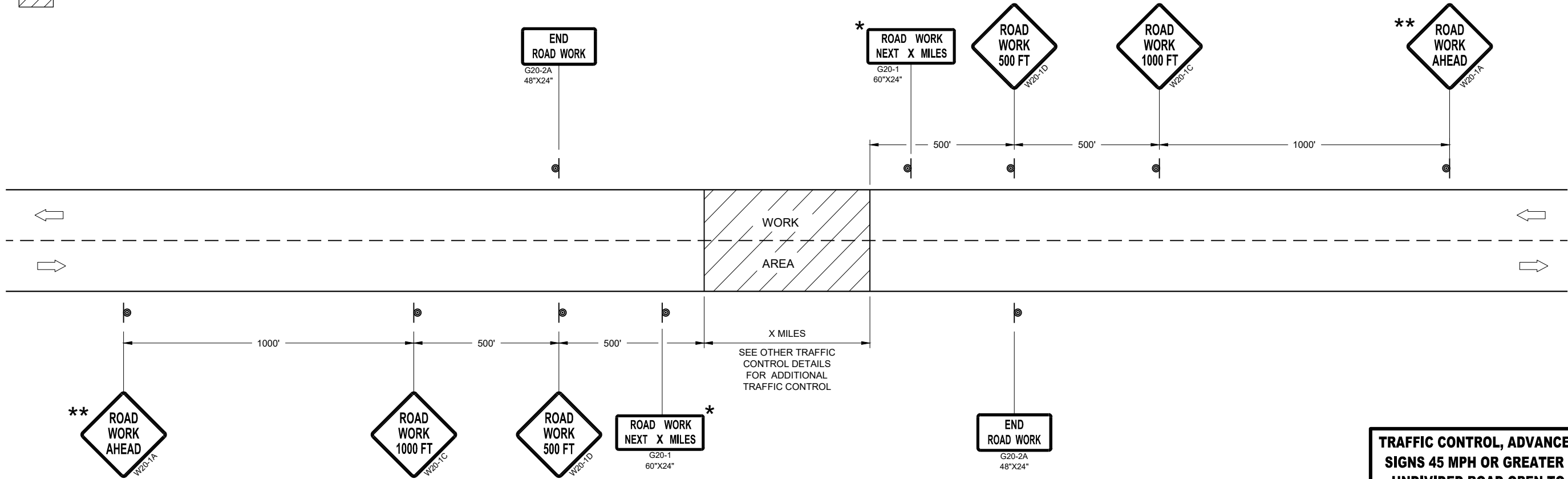
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL



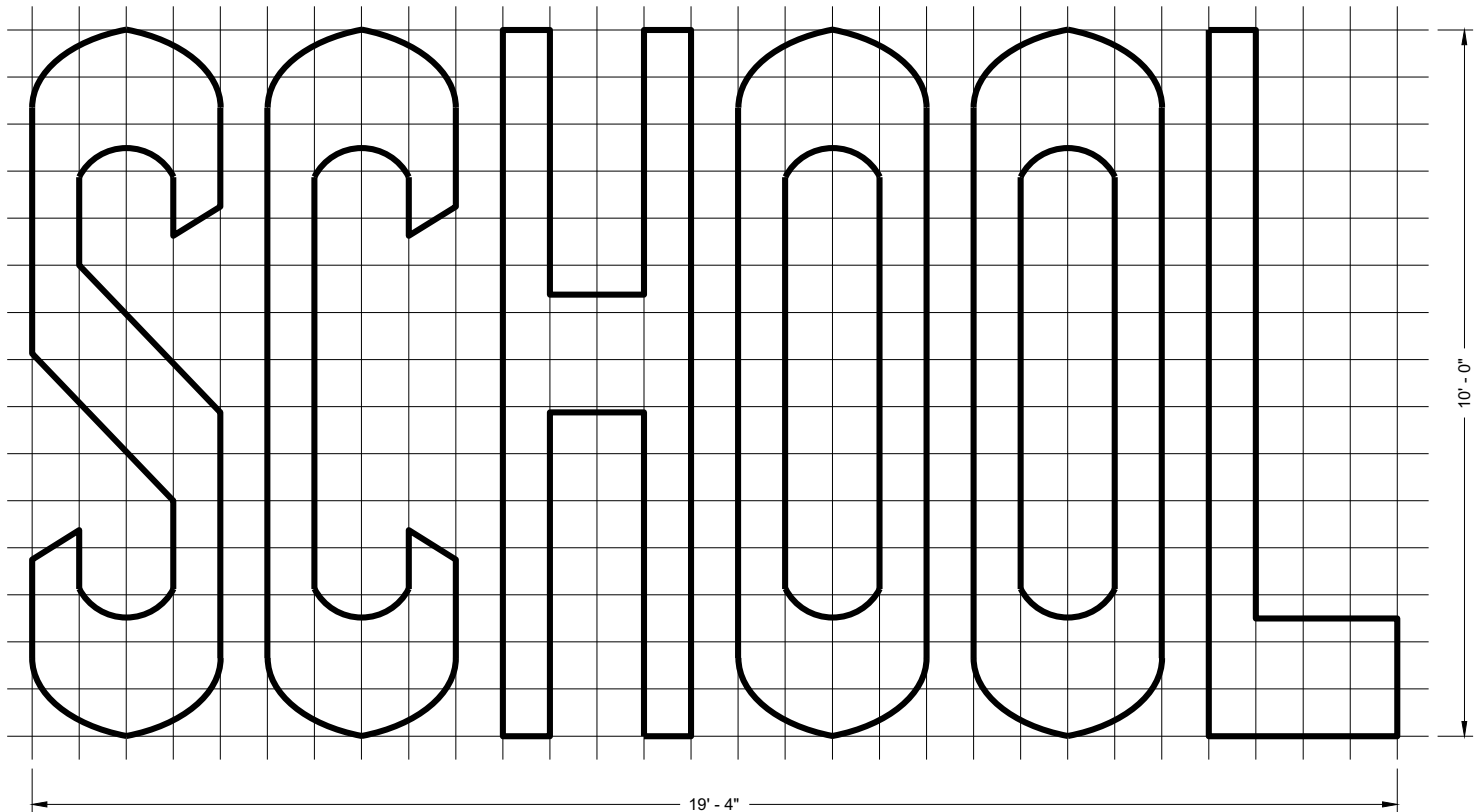
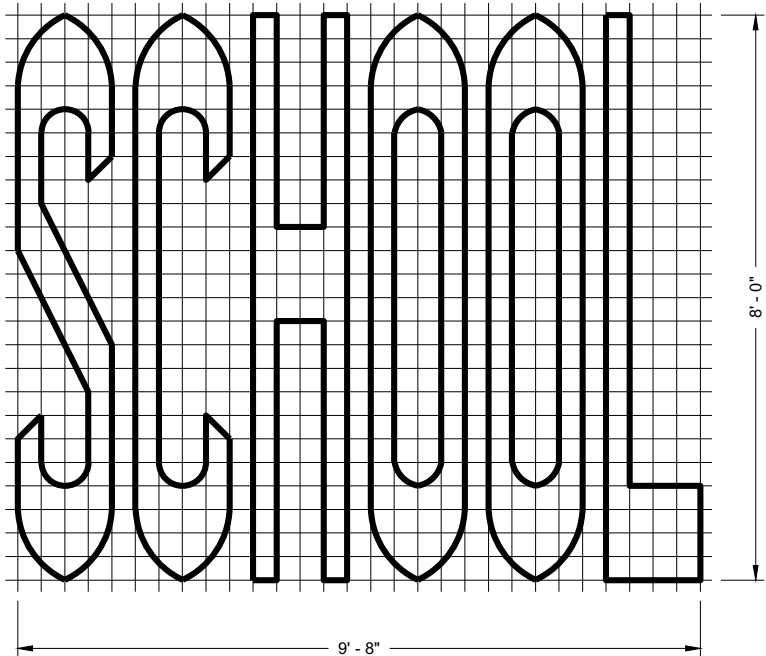
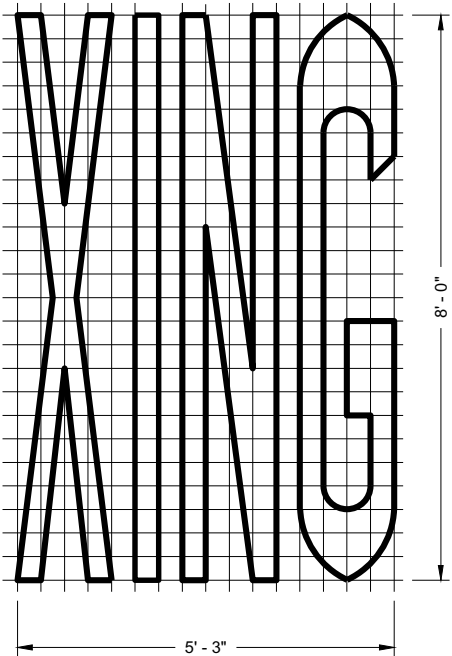
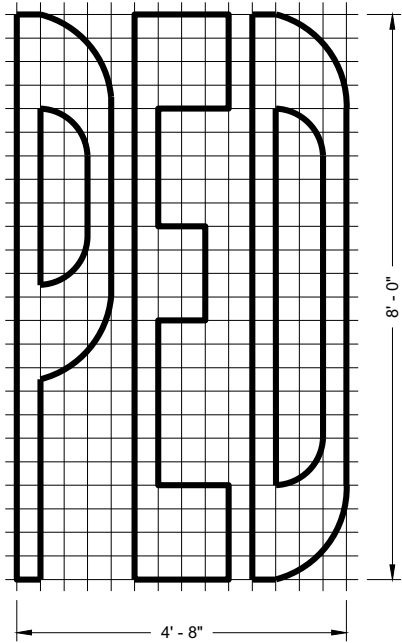
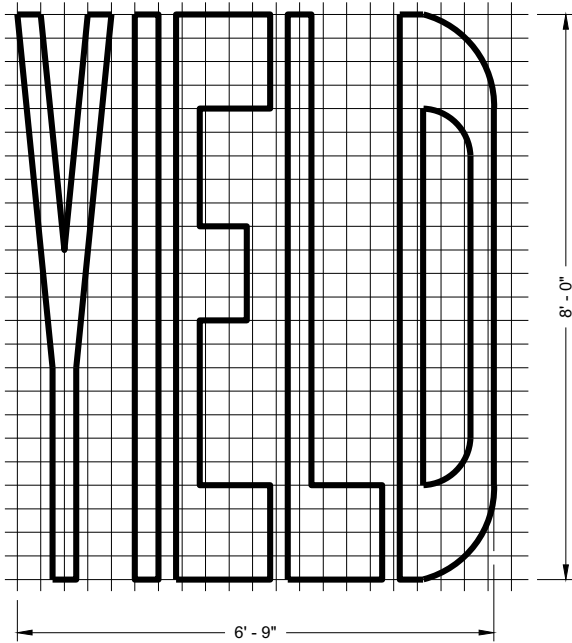
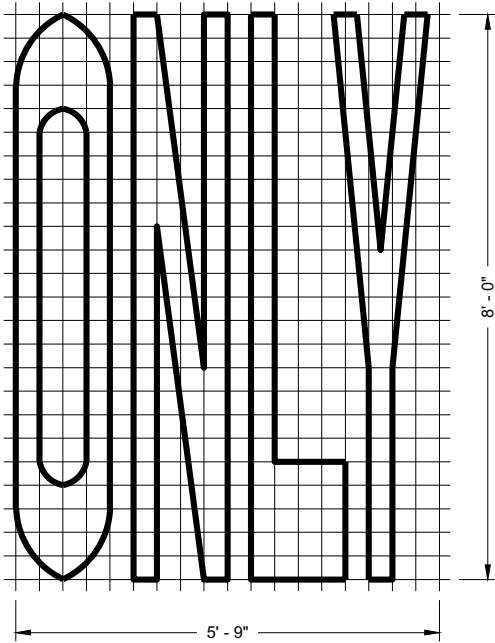
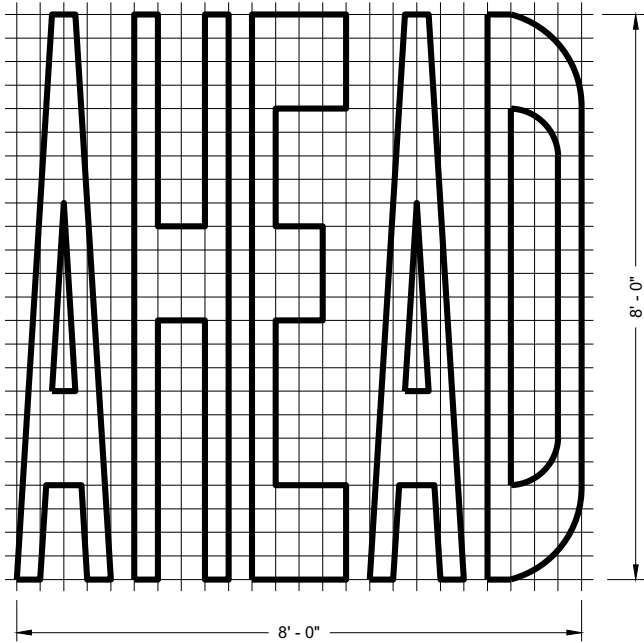
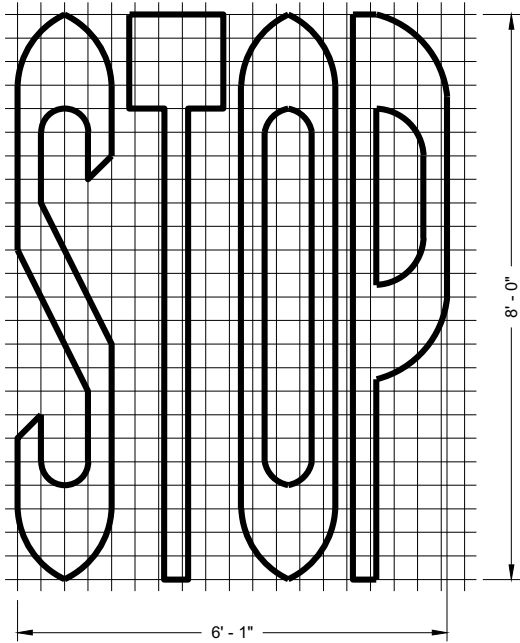
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING  
SIGNS 45 MPH OR GREATER TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
July 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 128  
FHWA





SINGLE LANE

TWO - LANE

#### GENERAL NOTES

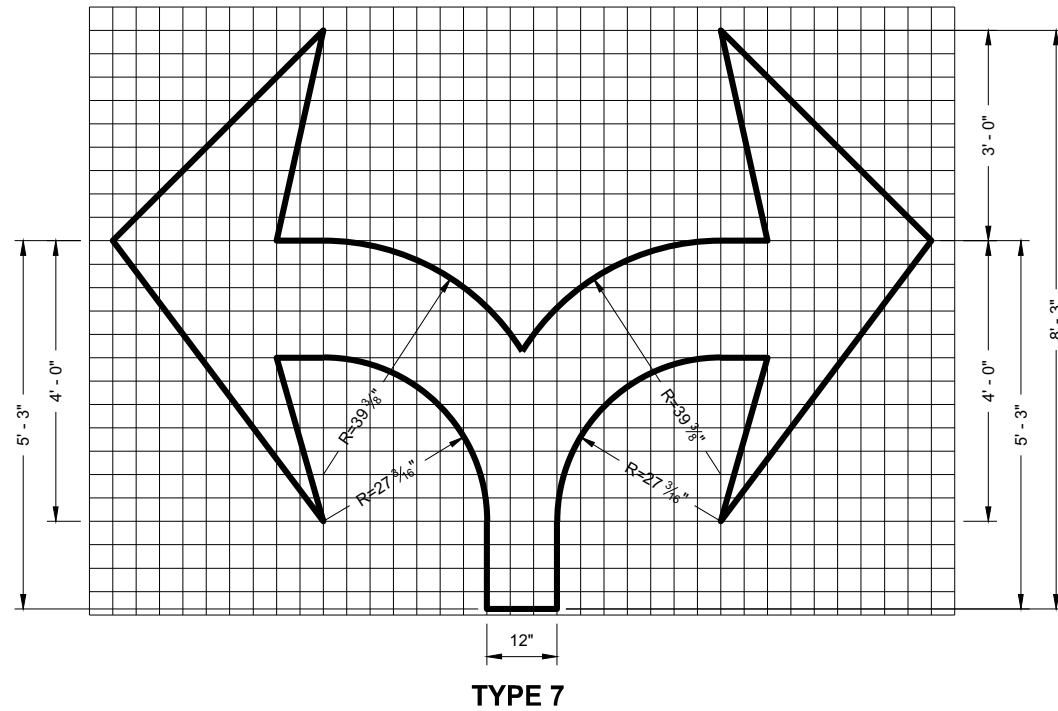
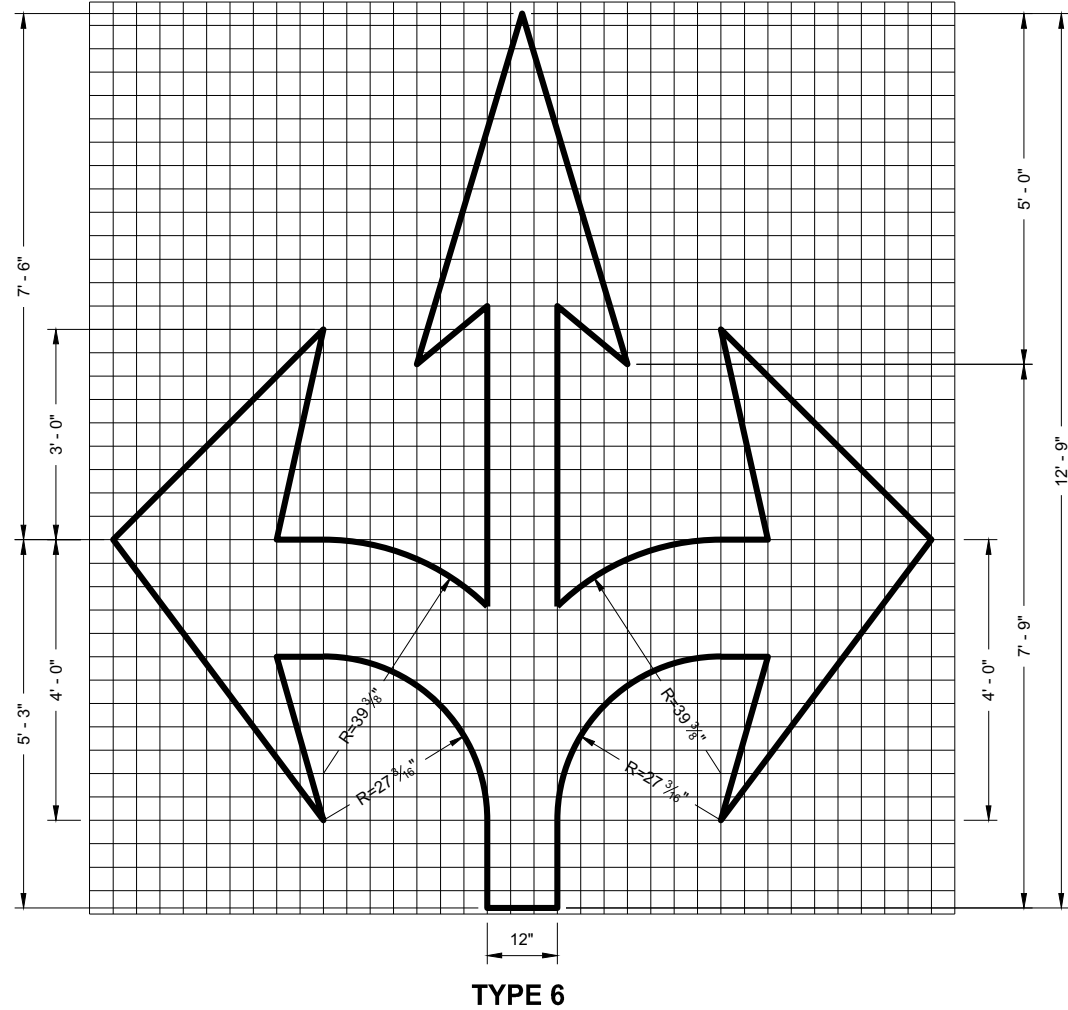
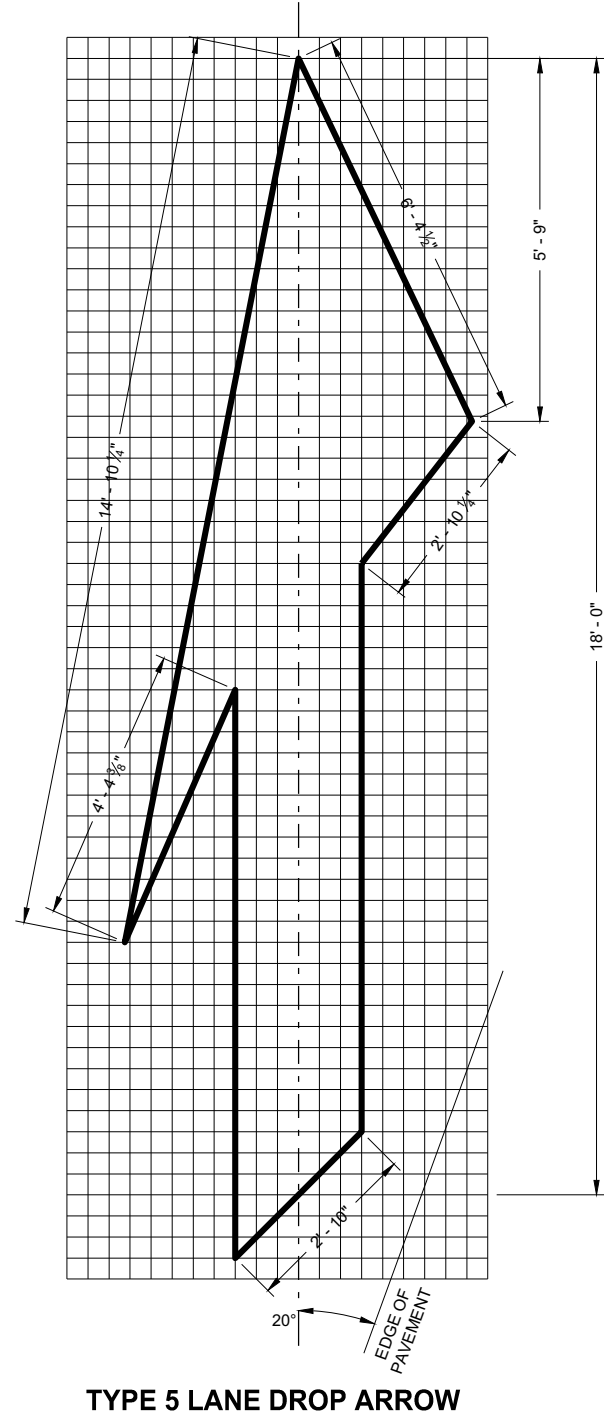
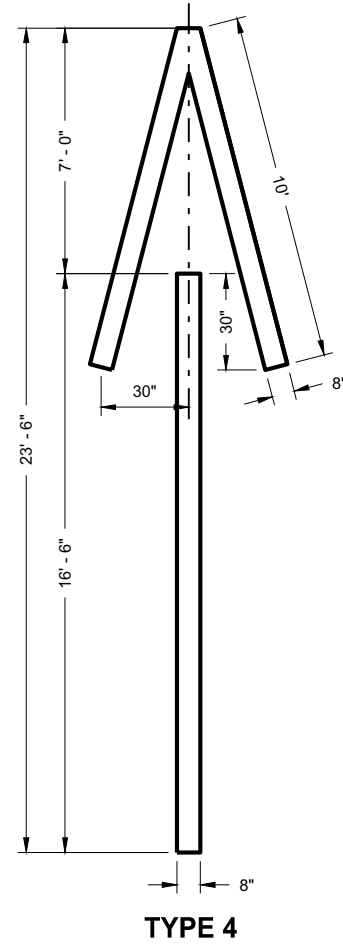
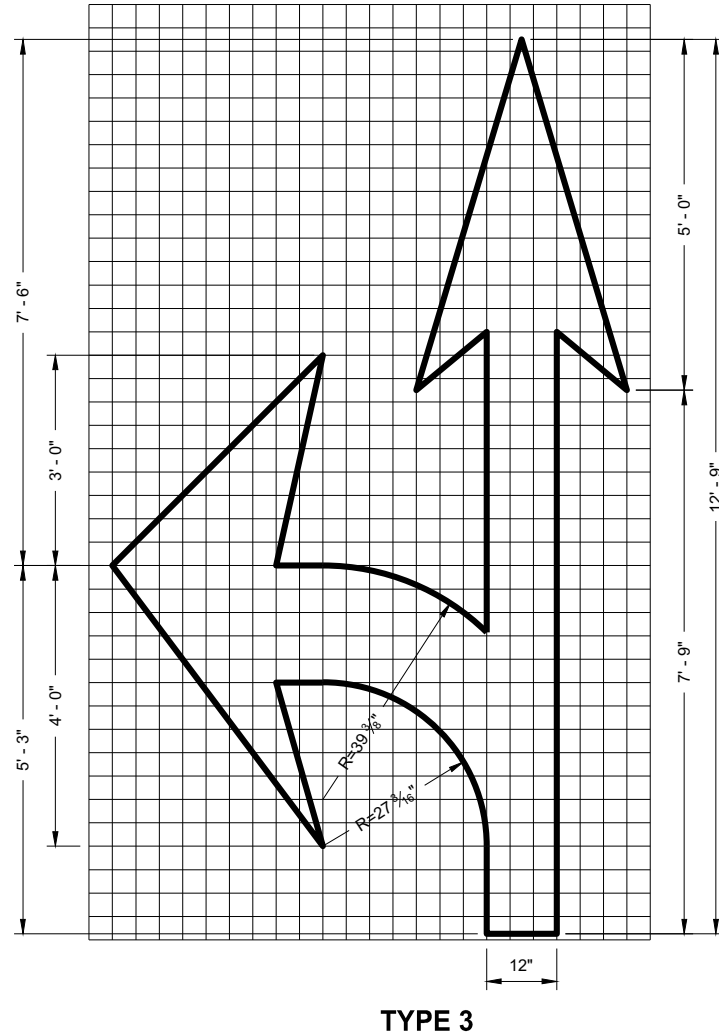
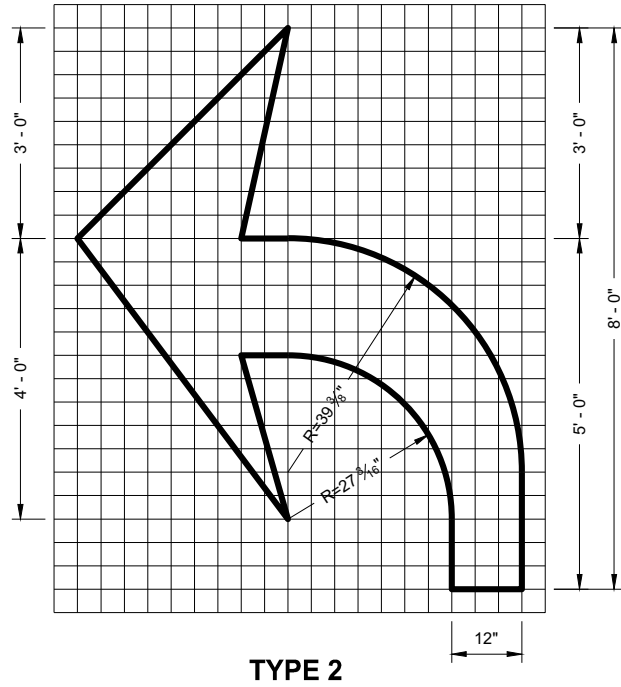
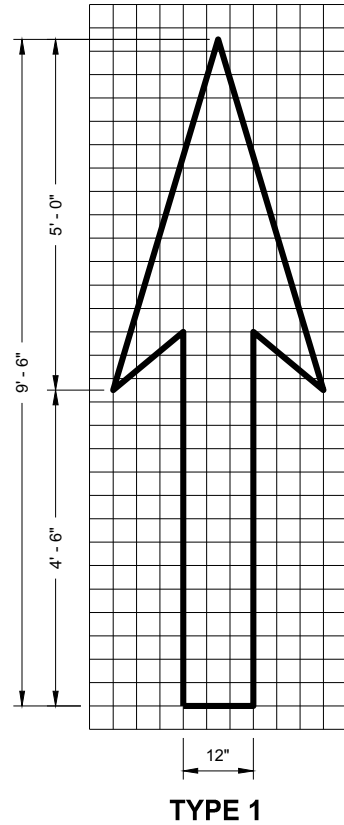
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

#### PAVEMENT MARKING WORDS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MAP ENGINEER 129

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GENERAL NOTES

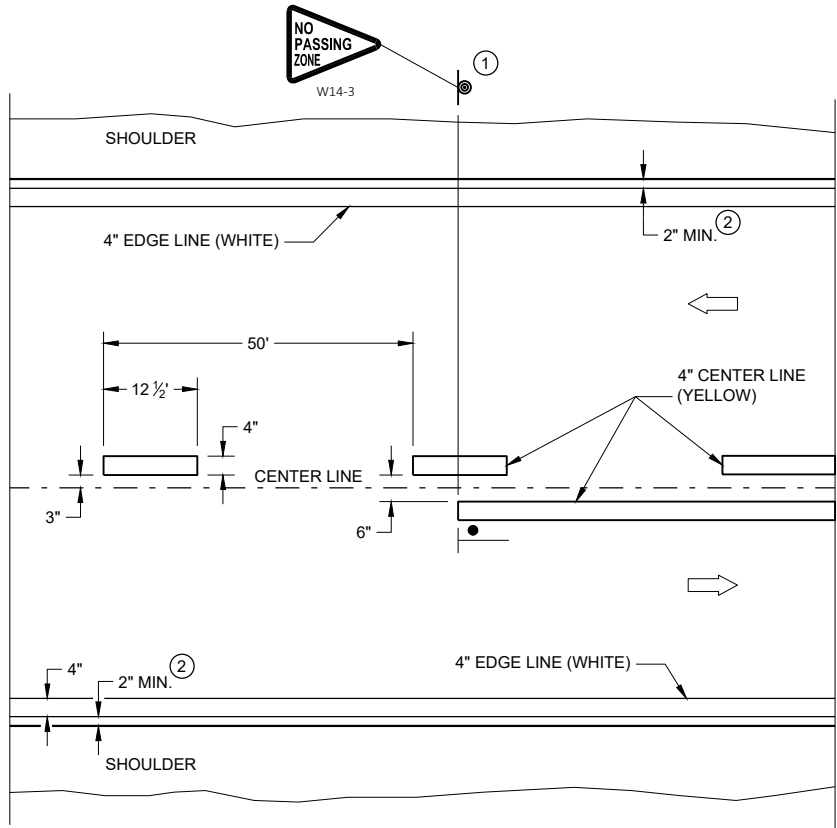
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING ARROWS

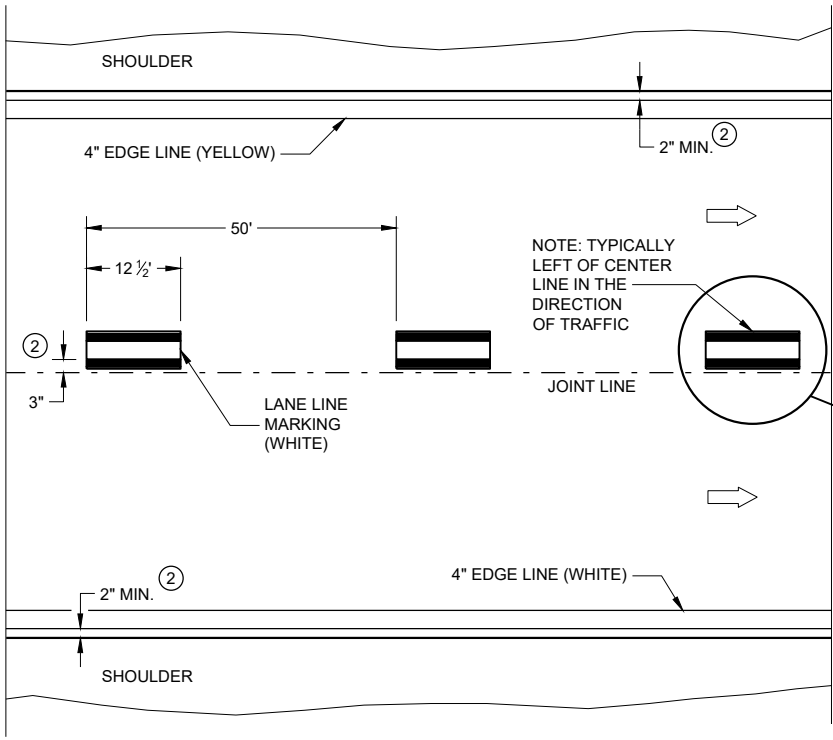
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019  
DATE  
/S/ Matthew Rauch  
STATE SIGNING AND MAP ENGINEER 130  
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TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

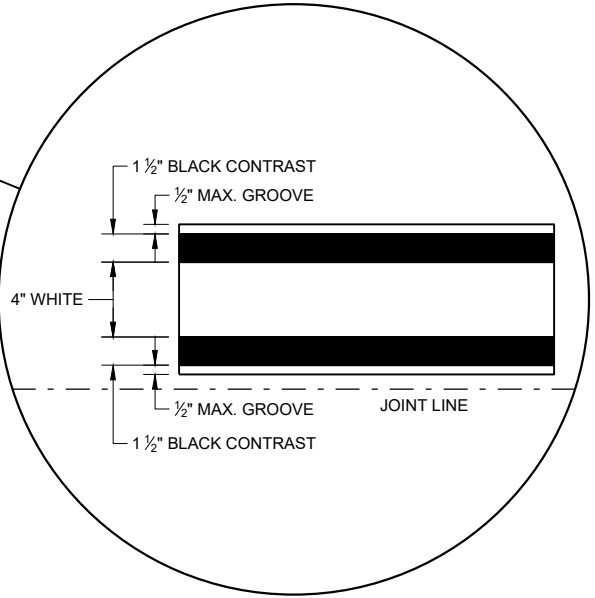
GENERAL NOTES

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

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

LEGEND

- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

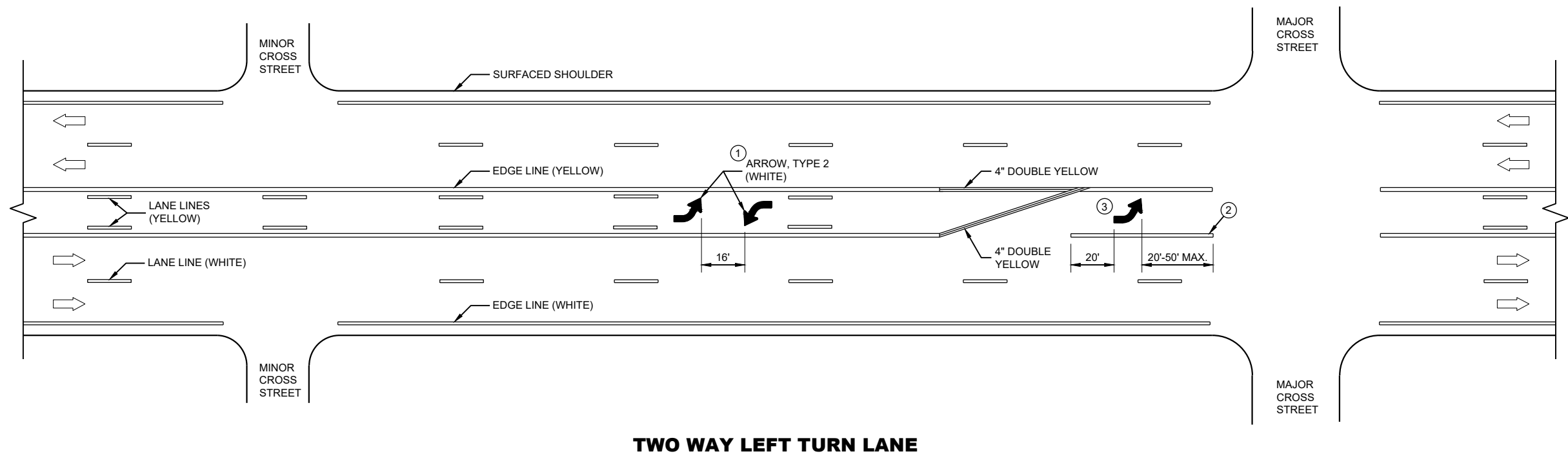


PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2022  
DATE  
/S/ Jeannie Silver  
STATEWIDE SIGNING AND MARKING ENGINEER

FHWA



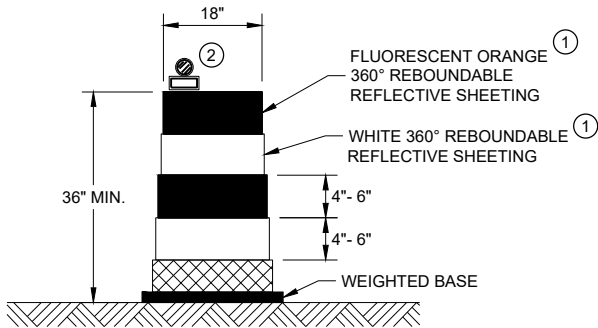
**GENERAL NOTES**

- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 8" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

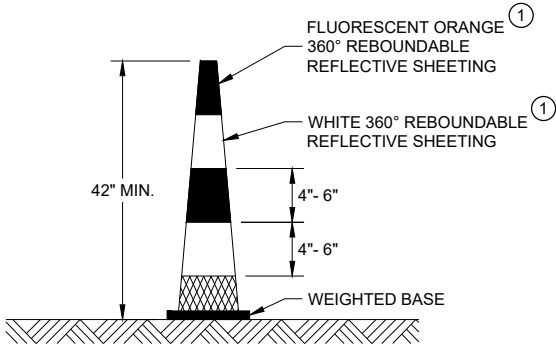
➡ DIRECTION OF TRAFFIC

**PAVEMENT MARKING  
(TURN LANES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 132

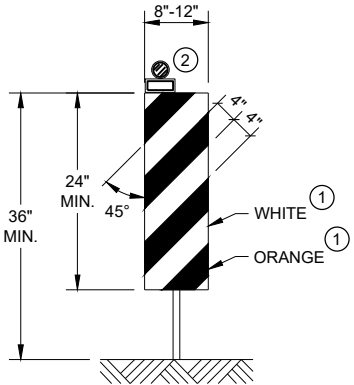


DRUM



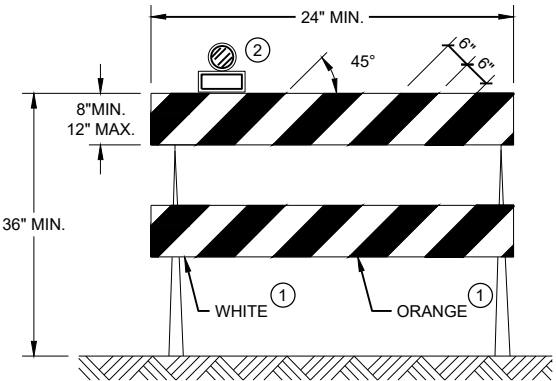
42" CONE

DO NOT USE IN TAPERS  
½ SPACING OF DRUMS



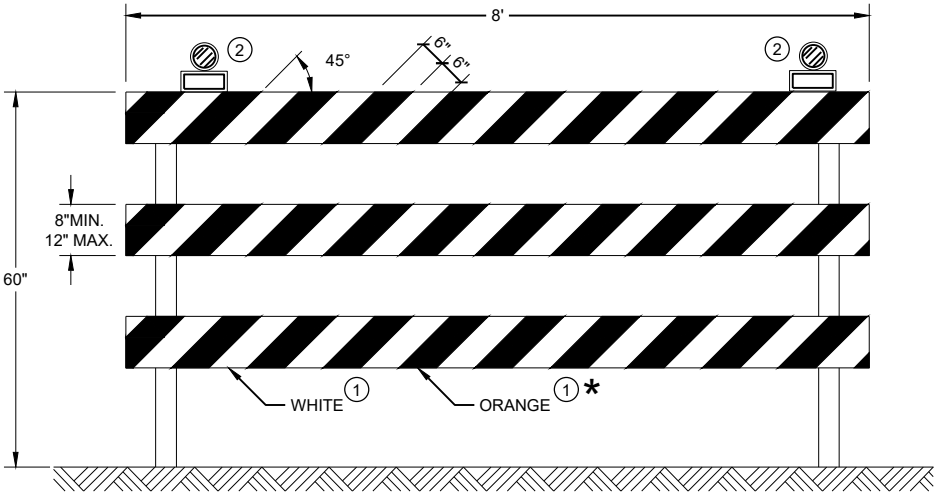
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

CHANNELIZING DEVICES  
DRUMS, CONES, BARRICADES  
AND VERTICAL PANELS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2021 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 133

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LEGEND

-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

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

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

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

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

FLAGGING

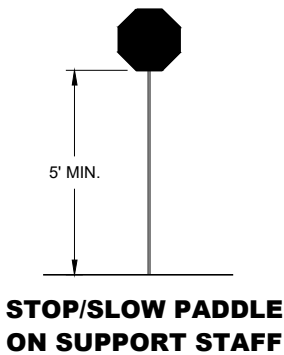
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

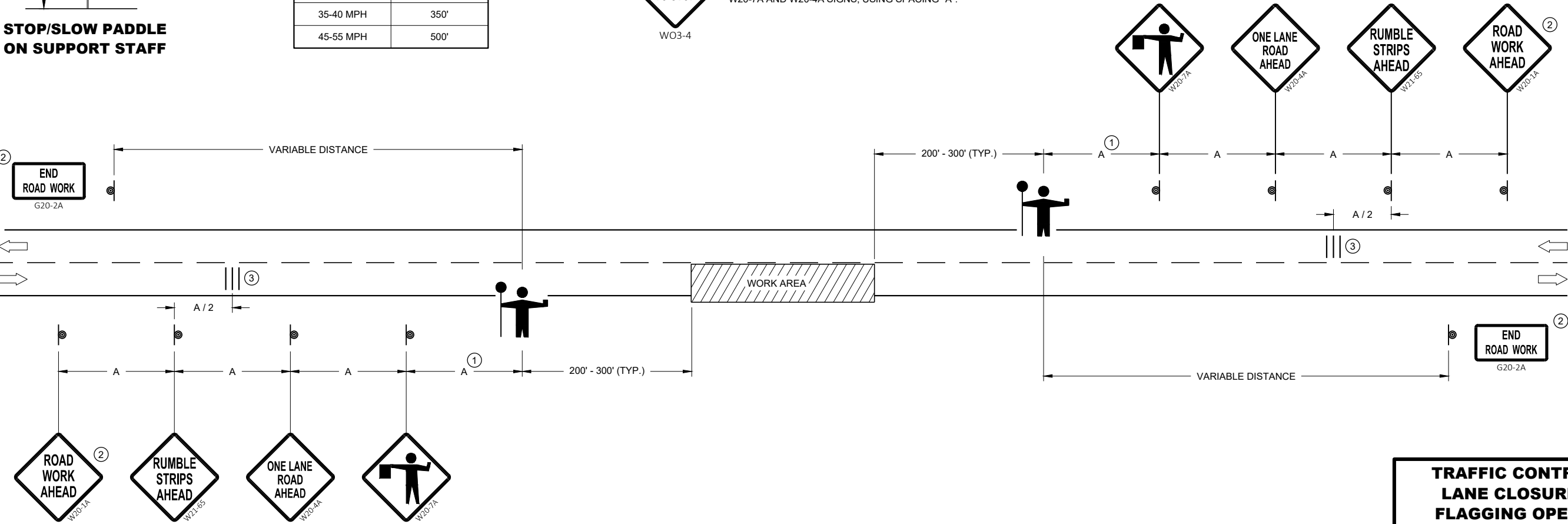


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

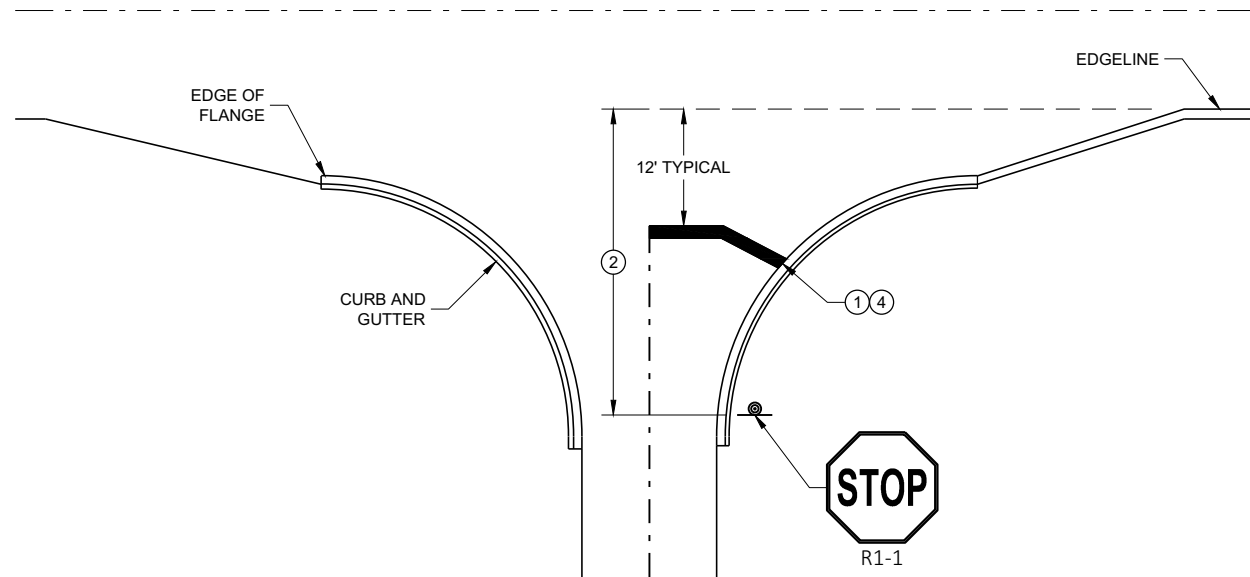
| SPEED LIMIT | SPACING "A" |
|-------------|-------------|
| 25-30 MPH   | 200'        |
| 35-40 MPH   | 350'        |
| 45-55 MPH   | 500'        |



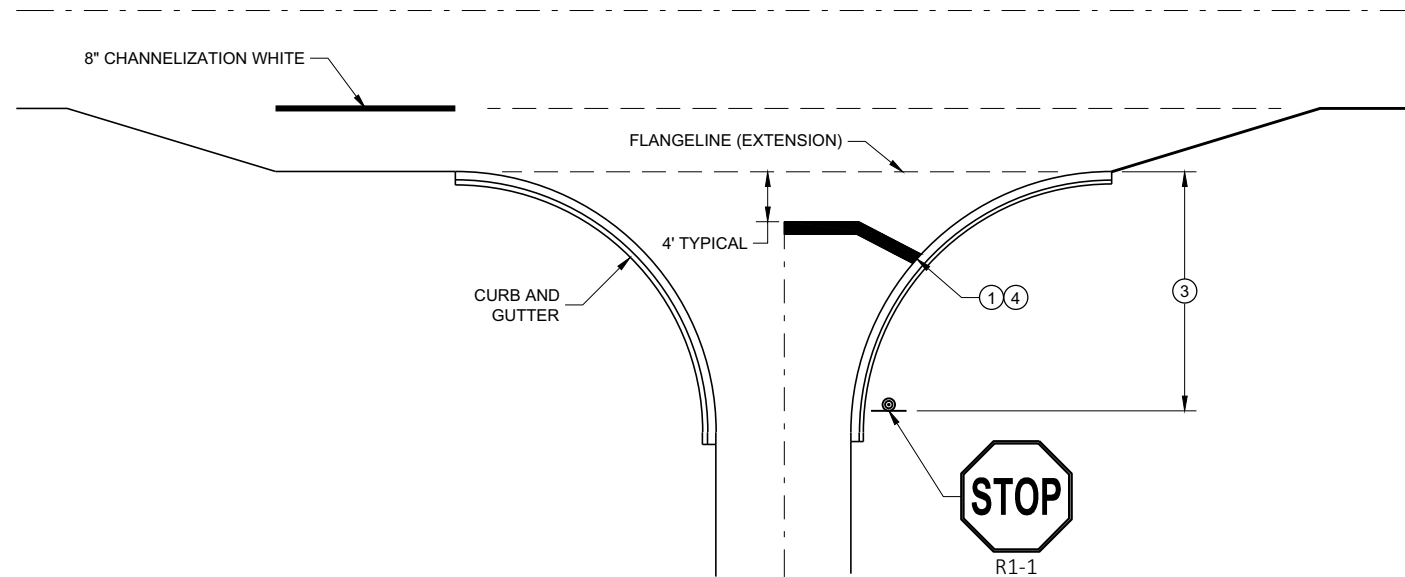
USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



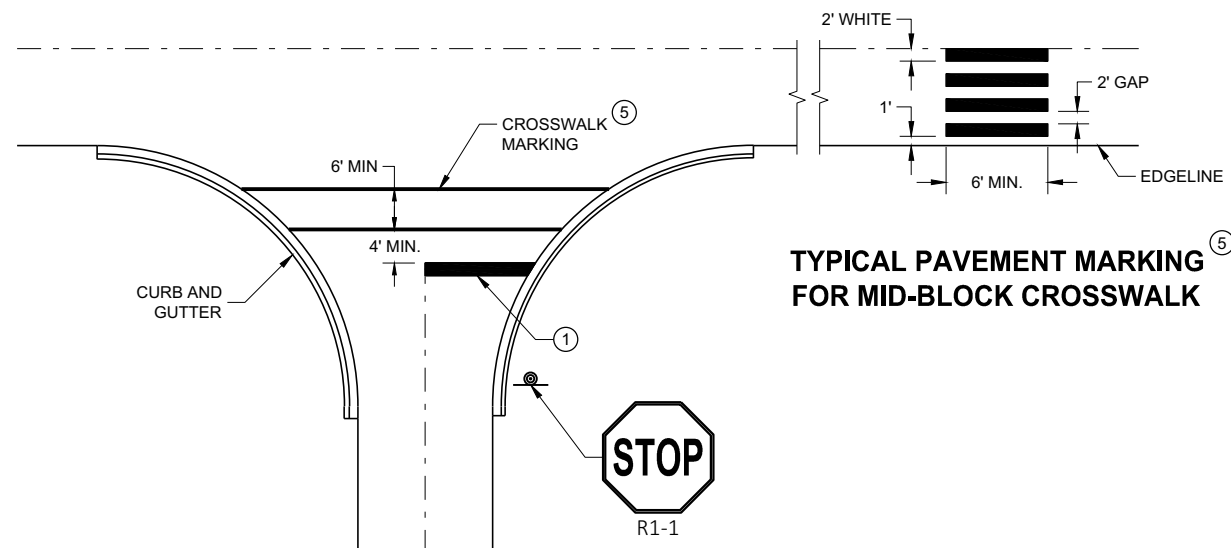
|                                                                         |                                              |
|-------------------------------------------------------------------------|----------------------------------------------|
| <b>TRAFFIC CONTROL FOR<br/>LANE CLOSURE WITH<br/>FLAGGING OPERATION</b> |                                              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                      |                                              |
| APPROVED<br>May 2022<br>DATE                                            | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER 134 |
| FHWA                                                                    |                                              |



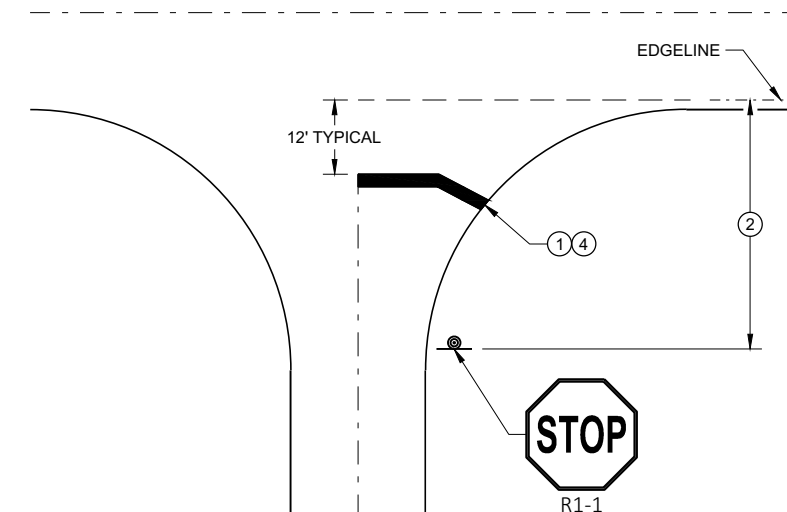
TYPICAL STOP LINE PAVEMENT MARKING  
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR  
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING  
WITHOUT CURB AND GUTTER

### GENERAL NOTES

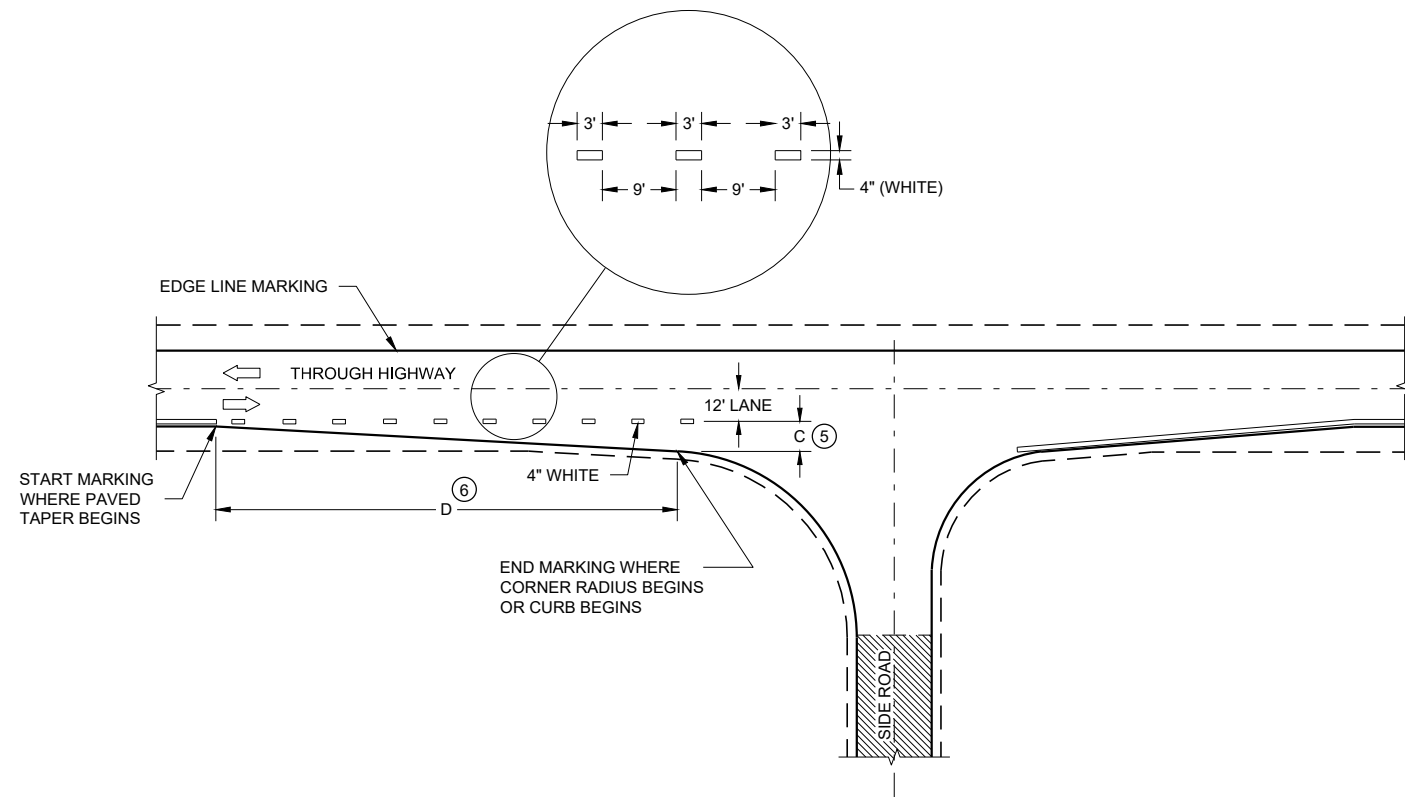
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.

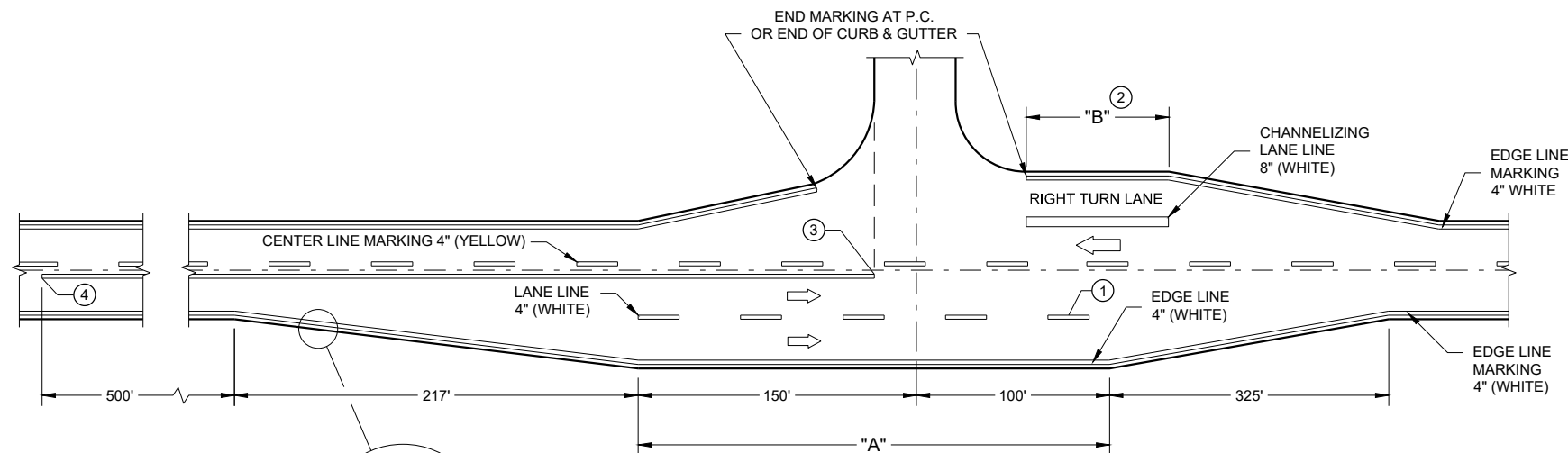
### STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MAP ENGINEER 135  
FHWA



MINOR INTERSECTION



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

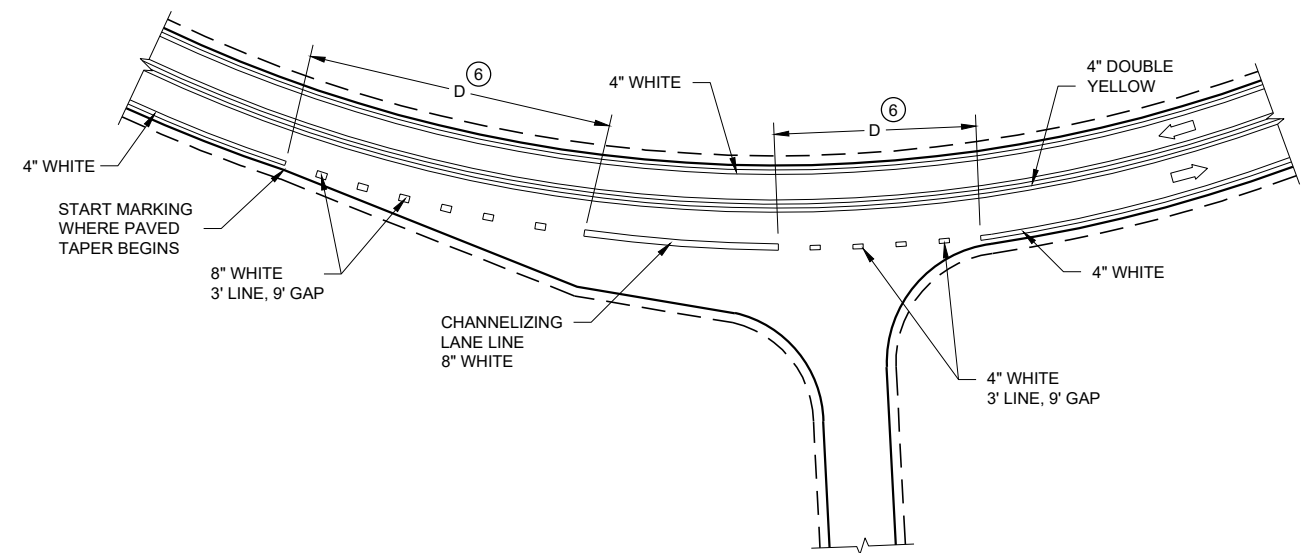
GENERAL NOTES

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.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING  
(INTERSECTIONS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 136



LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DELINEATOR, FLEXIBLE/TUBULAR MARKER
-  DIRECTION OF TRAFFIC

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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' DESIRABLE) DISTANCE TO EXISTING SIGNS.

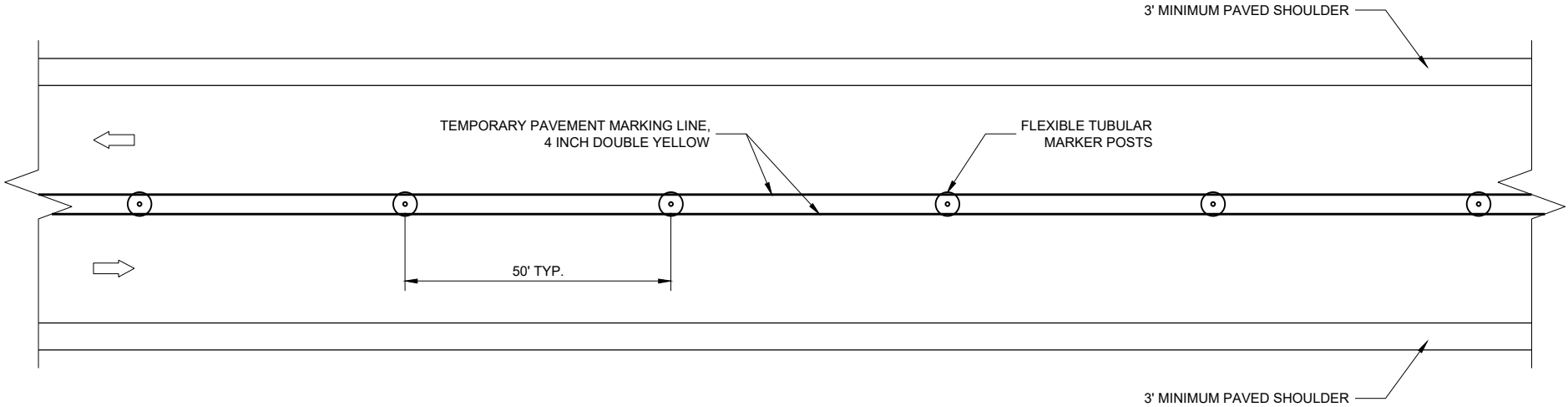
A SINGLE ROW OF FLEXIBLE TUBULAR MARKERS ON CENTERLINE EXTEND FOR THE ENTIRE LENGTH OF TWO-WAY TRAFFIC AT 50 FOOT SPACING.

COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING LINE, 4 INCH DOUBLE YELLOW.



① THE W06-3 AND W057-51 SHALL BE LOCATED 200 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND / OR 500 FEET BEYOND ANY SIDE ROAD. THE R4-1 SHALL BE LOCATED 1000 FEET BEYOND THE W06-3 AND THE W057-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN THE SIGNS.

② CONVENTIONAL: 24" X 30"  
FREEWAY AND EXPRESSWAY: 36" X 48"



TWO LANE, TWO WAY OPERATION

TRAFFIC CONTROL  
TWO LANE TWO WAY  
OPERATION

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 137

FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

GENERAL NOTES

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 REGIONAL TRAFFIC UNIT.

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

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

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

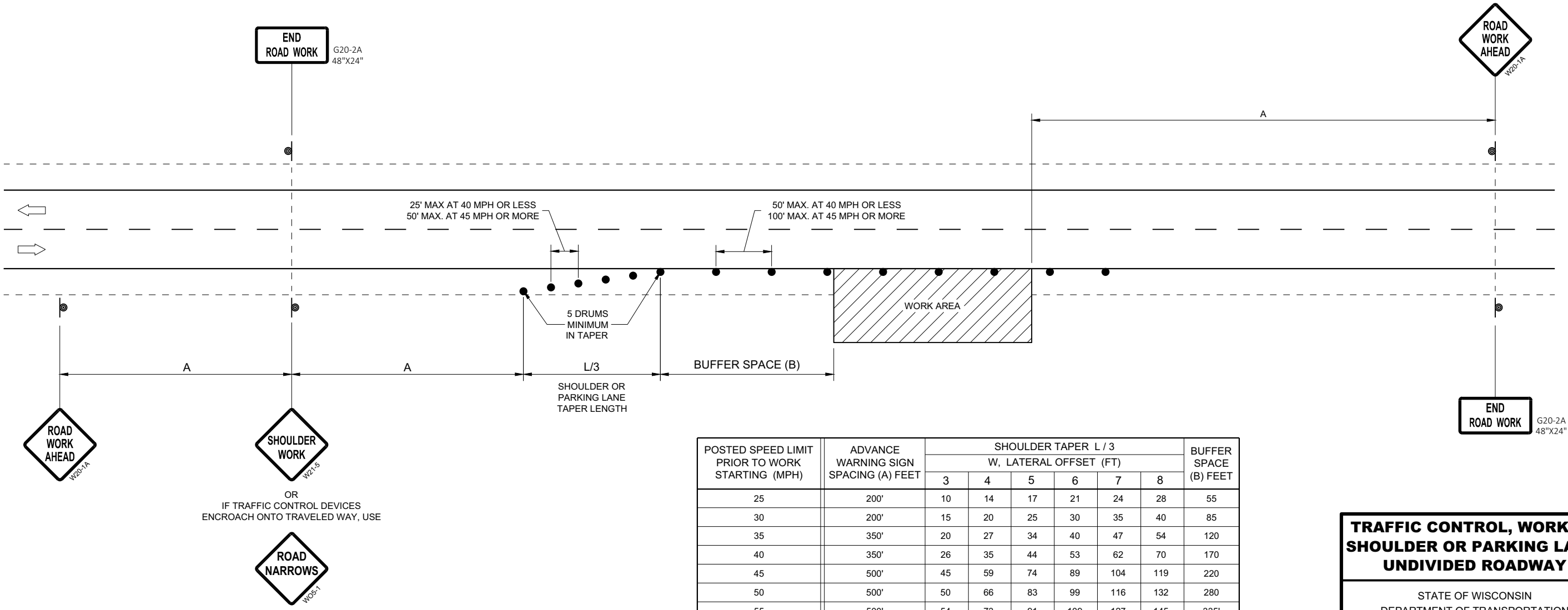
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

SDD 15D28 - 04



6

SDD 15D28 - 04

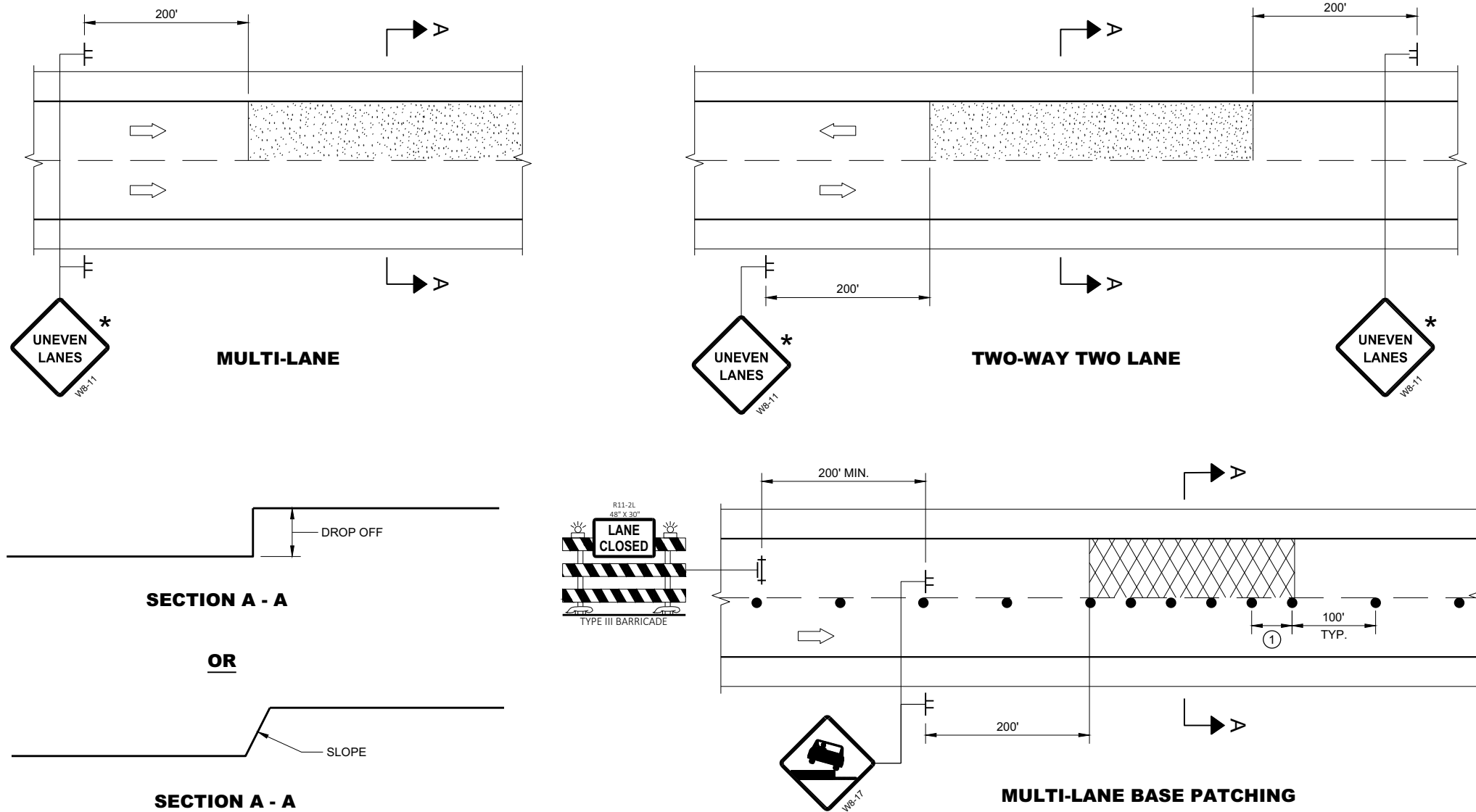
| POSTED SPEED LIMIT<br>PRIOR TO WORK<br>STARTING (MPH) | ADVANCE<br>WARNING SIGN<br>SPACING (A) FEET | SHOULDER TAPER L / 3   |    |    |     |     |     | BUFFER<br>SPACE<br>(B) FEET |
|-------------------------------------------------------|---------------------------------------------|------------------------|----|----|-----|-----|-----|-----------------------------|
|                                                       |                                             | W, LATERAL OFFSET (FT) |    |    |     |     |     |                             |
|                                                       |                                             | 3                      | 4  | 5  | 6   | 7   | 8   |                             |
| 25                                                    | 200'                                        | 10                     | 14 | 17 | 21  | 24  | 28  | 55                          |
| 30                                                    | 200'                                        | 15                     | 20 | 25 | 30  | 35  | 40  | 85                          |
| 35                                                    | 350'                                        | 20                     | 27 | 34 | 40  | 47  | 54  | 120                         |
| 40                                                    | 350'                                        | 26                     | 35 | 44 | 53  | 62  | 70  | 170                         |
| 45                                                    | 500'                                        | 45                     | 59 | 74 | 89  | 104 | 119 | 220                         |
| 50                                                    | 500'                                        | 50                     | 66 | 83 | 99  | 116 | 132 | 280                         |
| 55                                                    | 500'                                        | 54                     | 73 | 91 | 109 | 127 | 145 | 335'                        |

TRAFFIC CONTROL, WORK ON  
SHOULDER OR PARKING LANE,  
UNDIVIDED ROADWAY

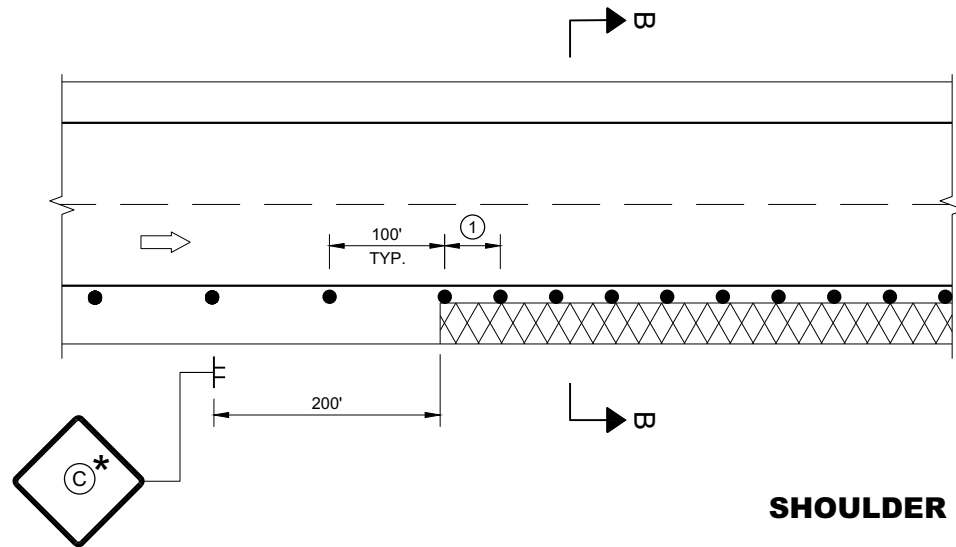
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2020 /S/ Andrew Heidtke  
DATE STATEWIDE WORK ZONE T  
SAFETY ENGINEER 138  
FHWA

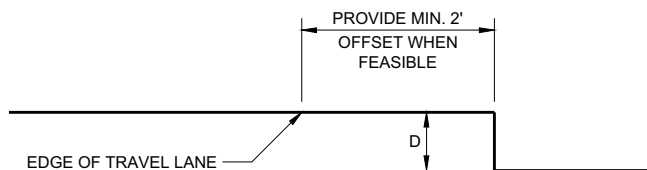




ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B - B

| D                                     | SIGN (C)                                                                                                                                                              |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| < 2" WITH A SLOPE STEEPER THAN 3:1    | <br>WO8-9                                                                        |
| 2" < 6" WITH A SLOPE STEEPER THAN 3:1 | <br>W8-9A<br>PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT |

## GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

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

\* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

## LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  WORK AREA WITH DROP-OFF
-  MILLED SURFACE

## TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 139  
FHWA

LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
-  CONCRETE BARRIER TEMPORARY PRECAST

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON ANY "COVERED" OR "DOWNED" SIGNS.

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

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

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

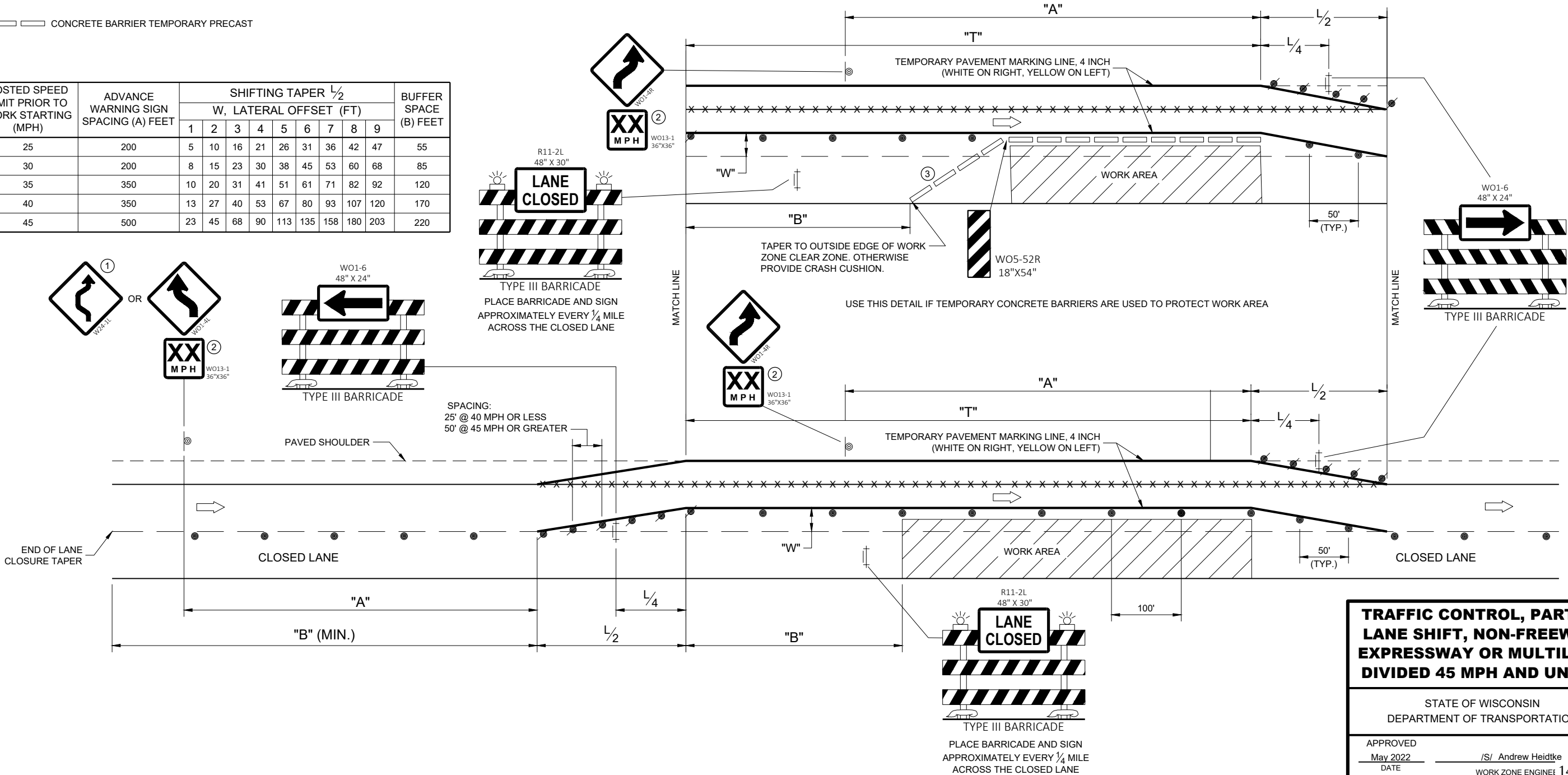
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT 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.

- ① USE ONLY WHEN T<600', OMIT WO1-4R.
- ② IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.
- ③ BARRIER FLARE RATE: 6:1 @ 40 MPH OR LESS  
8:1 @ 45 MPH OR GREATER

| POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH) | ADVANCE WARNING SIGN SPACING (A) FEET | SHIFTING TAPER $\frac{L}{2}$<br>W, LATERAL OFFSET (FT) |    |    |    |     |     |     |     |     | BUFFER SPACE (B) FEET |
|-------------------------------------------------|---------------------------------------|--------------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----------------------|
|                                                 |                                       | 1                                                      | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   |                       |
| 25                                              | 200                                   | 5                                                      | 10 | 16 | 21 | 26  | 31  | 36  | 42  | 47  | 55                    |
| 30                                              | 200                                   | 8                                                      | 15 | 23 | 30 | 38  | 45  | 53  | 60  | 68  | 85                    |
| 35                                              | 350                                   | 10                                                     | 20 | 31 | 41 | 51  | 61  | 71  | 82  | 92  | 120                   |
| 40                                              | 350                                   | 13                                                     | 27 | 40 | 53 | 67  | 80  | 93  | 107 | 120 | 170                   |
| 45                                              | 500                                   | 23                                                     | 45 | 68 | 90 | 113 | 135 | 158 | 180 | 203 | 220                   |



**TRAFFIC CONTROL, PARTIAL LANE SHIFT, NON-FREEWAY/ EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER**

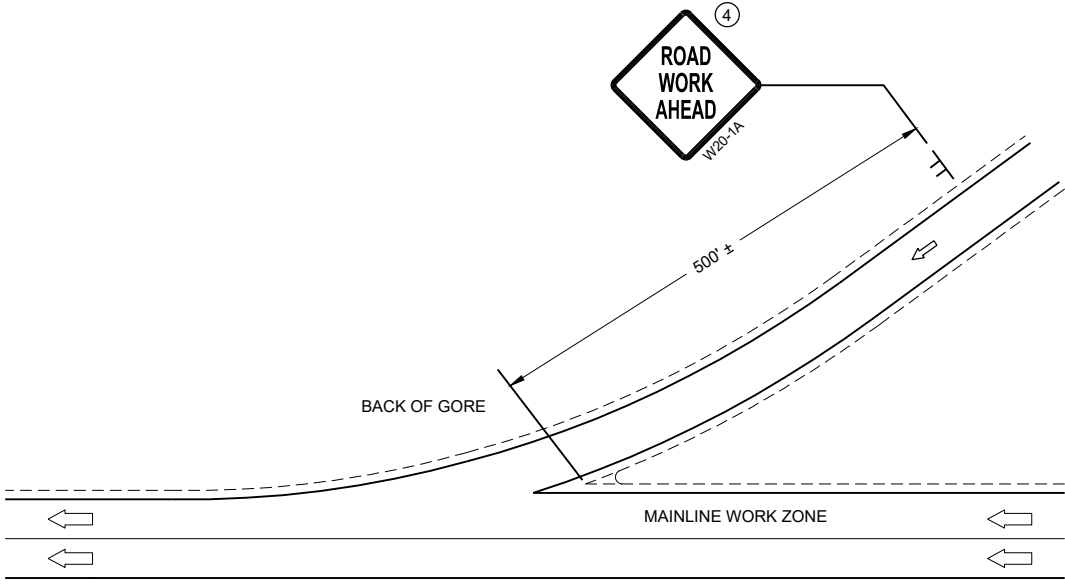
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 140

FHWA

LEGEND

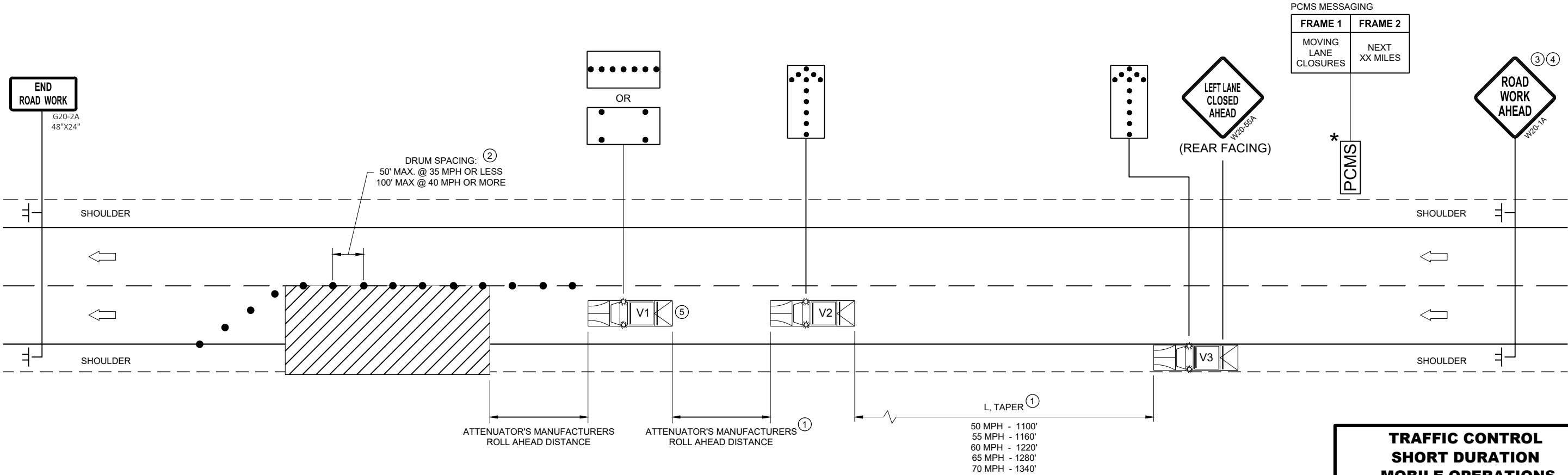
- V1 SHADOW VEHICLE 1
- V2 SHADOW VEHICLE 2
- V3 ADVANCE WARNING TRUCK
- TRAFFIC CONTROL DRUM
- ☐ TRUCK MOUNTED ATTENUATOR (TMA)
- ⊥ SIGN ON TEMPORARY SUPPORT
- ➡ DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL (MERGE)
- FLASHING ARROW PANEL (CAUTION)
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
- ▨ WORK AREA



GENERAL NOTES

- SHORT DURATION IS WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
- MOBILE IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- WHEN WORK ACTIVITY BLOCKS THE RIGHT LANE, REVERSE TRAFFIC CONTROL.
- WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.
- USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC
- ① DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
  - ② DRUMS ARE TO BE USED FOR BRIDGE DECK SEALING AND OTHER PROJECTS THAT REQUIRE DELINEATION.
  - ③ WITHIN 5 MILES, RELOCATE SIGNS AS WORK PROGRESSES AND NECESSARY OR AS DIRECTED BY THE ENGINEER.
  - ④ SIGN NOT REQUIRED IF MOVING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
  - ⑤ SHADOW VEHICLE 1 (V1) IS OPTIONAL

\* PCMS OPTIONAL



**TRAFFIC CONTROL  
SHORT DURATION  
MOBILE OPERATIONS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2021 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 141

FHWA

LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

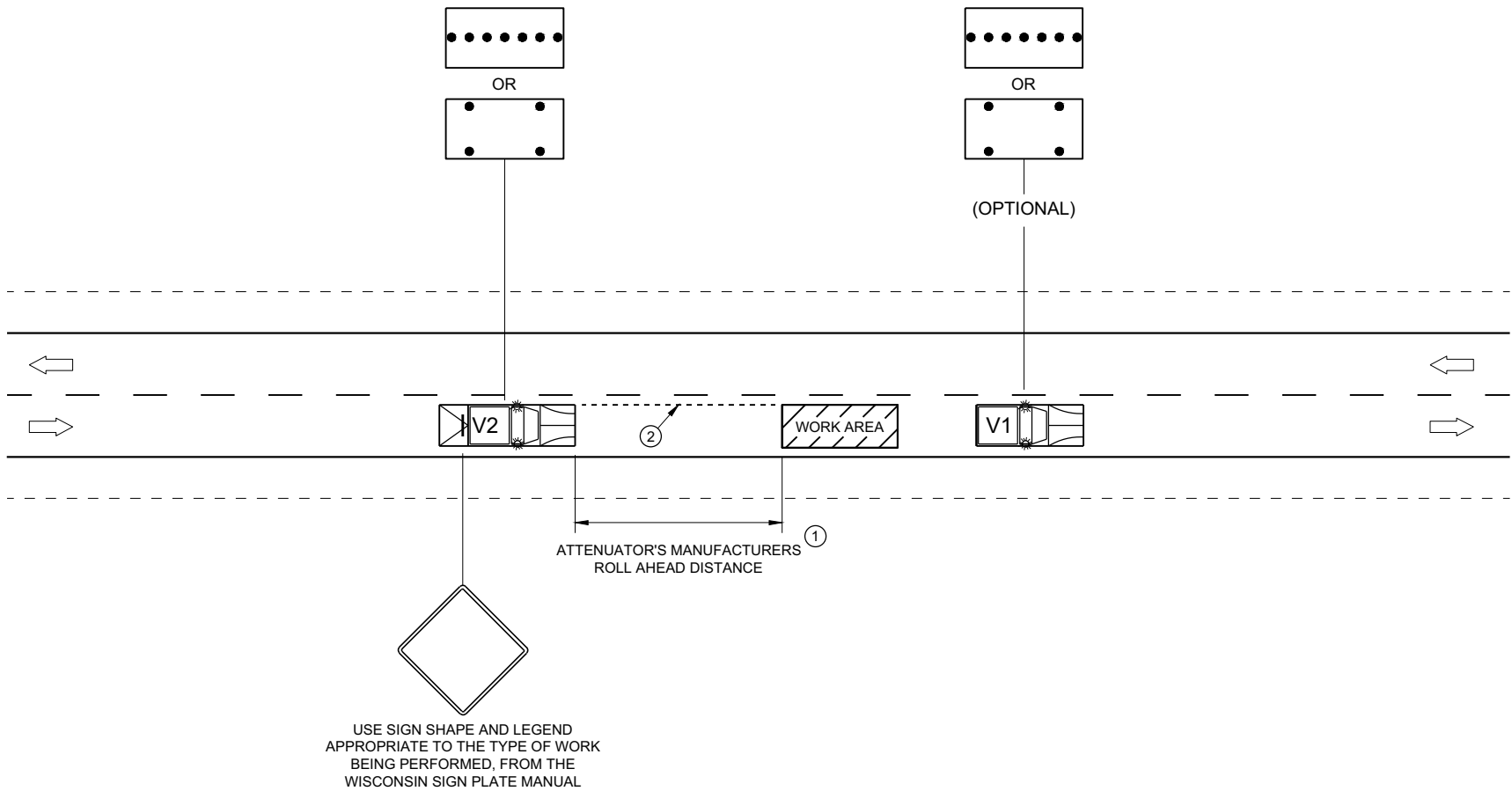
| POSTED SPEED PRIOR TO<br>WORK STARTING (MPH) | DECISION SIGHT<br>DISTANCE (D) |
|----------------------------------------------|--------------------------------|
| 0 - 25                                       | 550'                           |
| 30                                           | 550'                           |
| 35                                           | 700'                           |
| 40                                           | 700'                           |
| 45                                           | 900'                           |
| 50                                           | 900'                           |
| 55                                           | 1200'                          |

GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- ①

DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ②

ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



TRAFFIC CONTROL,  
MOBILE OPERATIONS ON  
AN UNDIVIDED ROADWAY

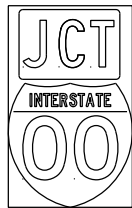
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021  
DATE

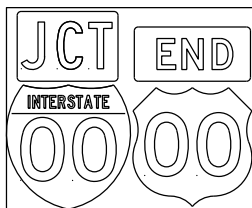
/S/ Andrew Heidtke  
STATEWIDE WORK ZONE T  
SAFETY ENGINEER 142

FHWA

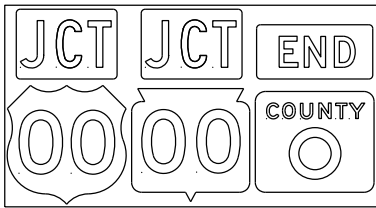
TYPICAL ASSEMBLIES



J1-1



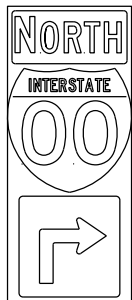
J1-2



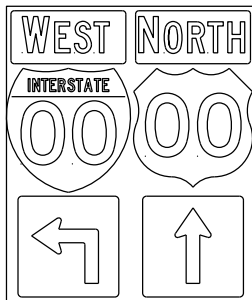
J1-3



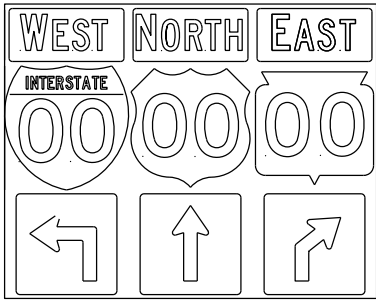
JR1-1



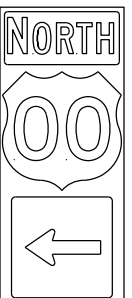
J2-1



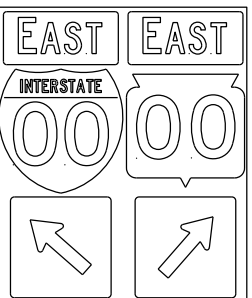
J2-2



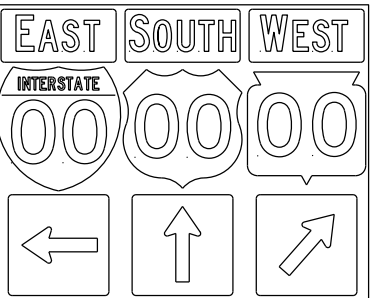
J2-3



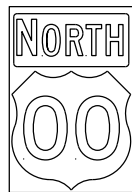
J3-1



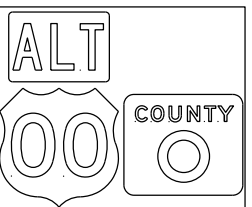
J3-2



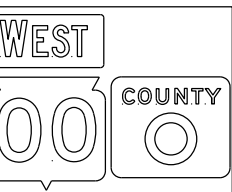
J3-3



J4-1



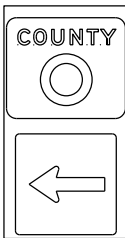
J4-2



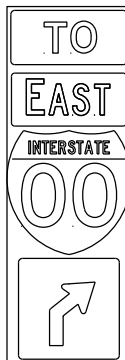
J4-2



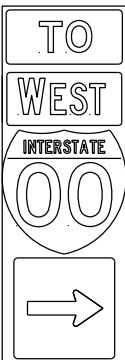
J12-1



J13-1



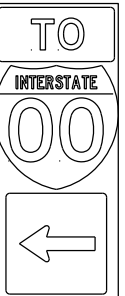
J32-1



J33-1



J22-1



J23-1



JR13-1



JR23-1

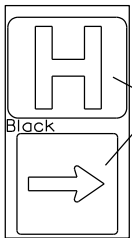


JR99-1



JV

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

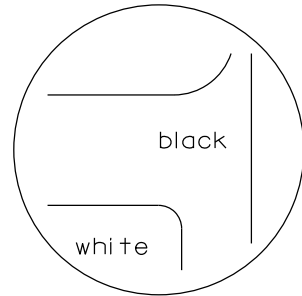
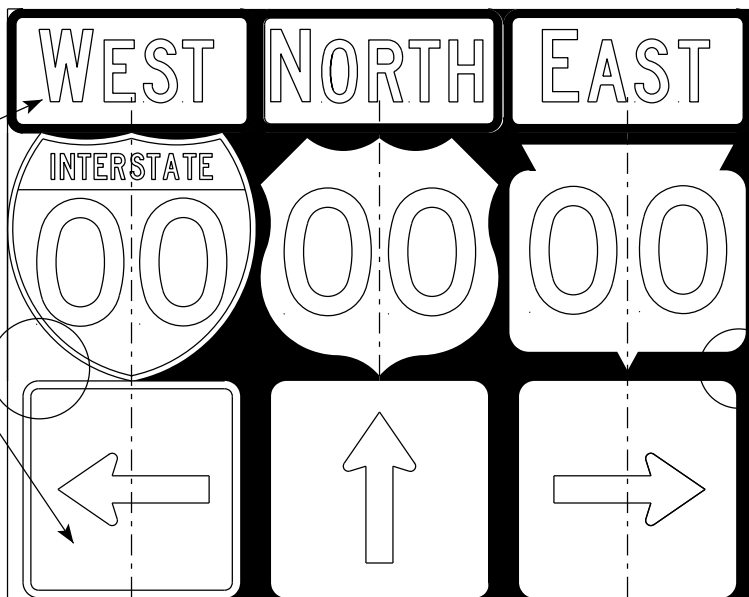
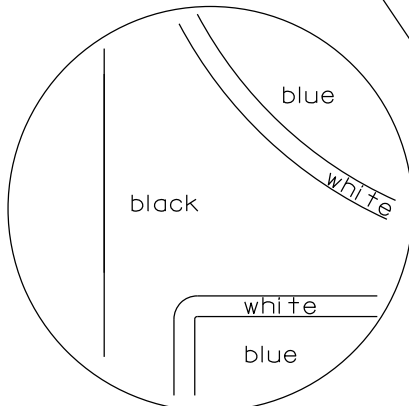


JH-1

Blue Background

Black

blue background  
with interstate



black background

ROUTE MARKERS & COMPONENTS  
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

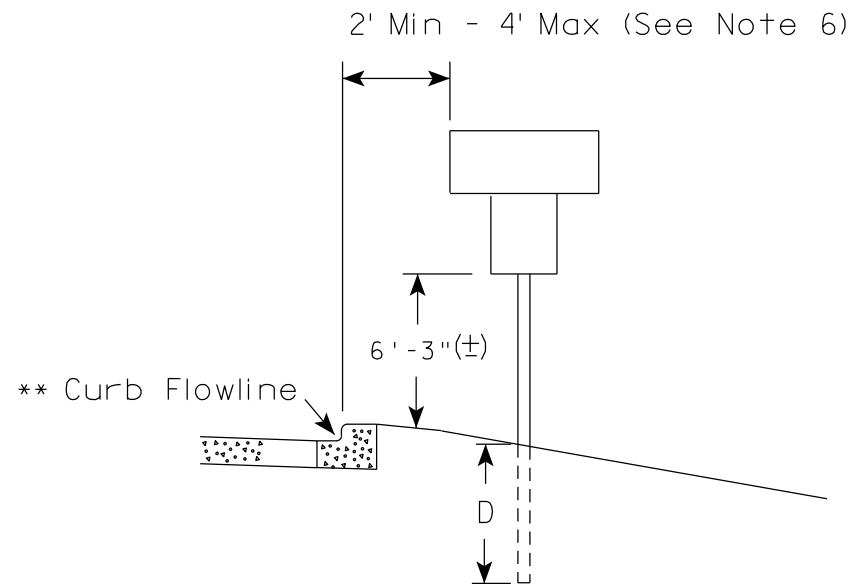
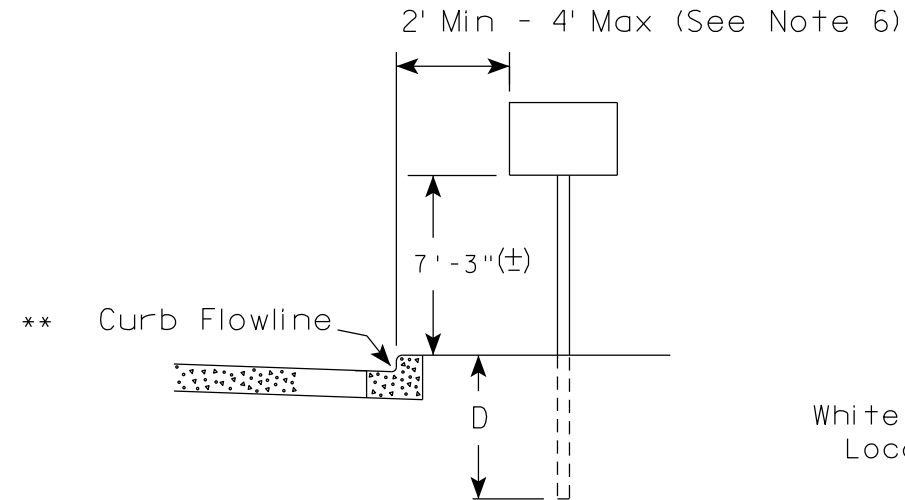
DATE 3/18/21 PLATE NO. A2-1S.9

PROJECT NO:

SHEET NO: 143

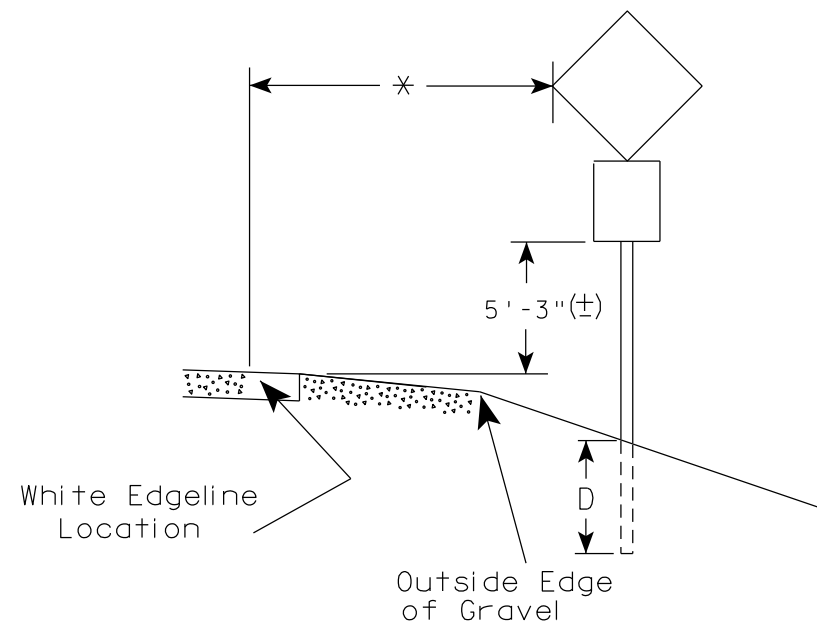
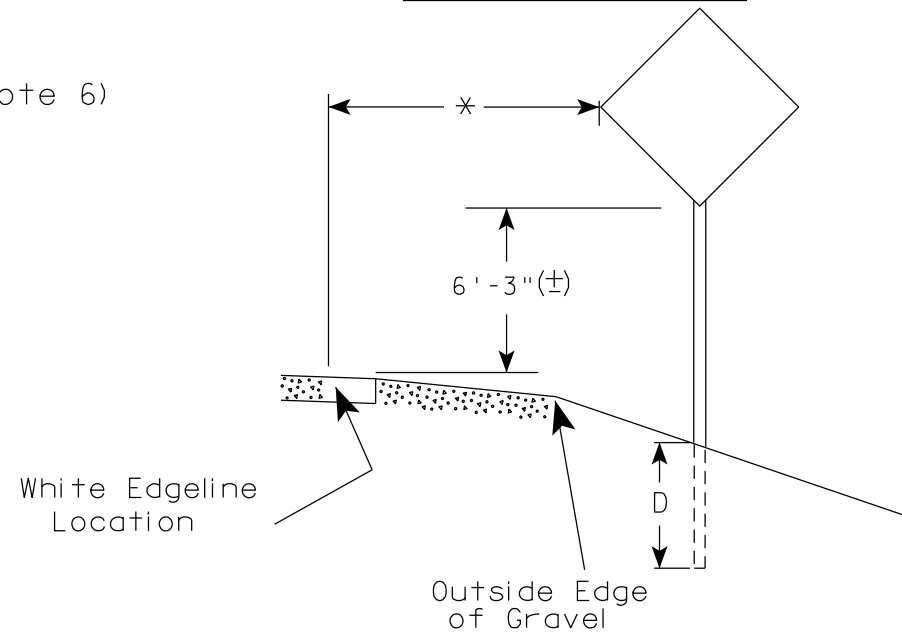
E

## URBAN AREA



\*\* 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.

## RURAL AREA (See Note 2)



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

### POST EMBEDMENT DEPTH

| Area of Sign Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|------------------------------------------|--------------|
| 20 or Less                               | 4'           |
| Greater than 20                          | 5'           |

### GENERAL NOTES

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

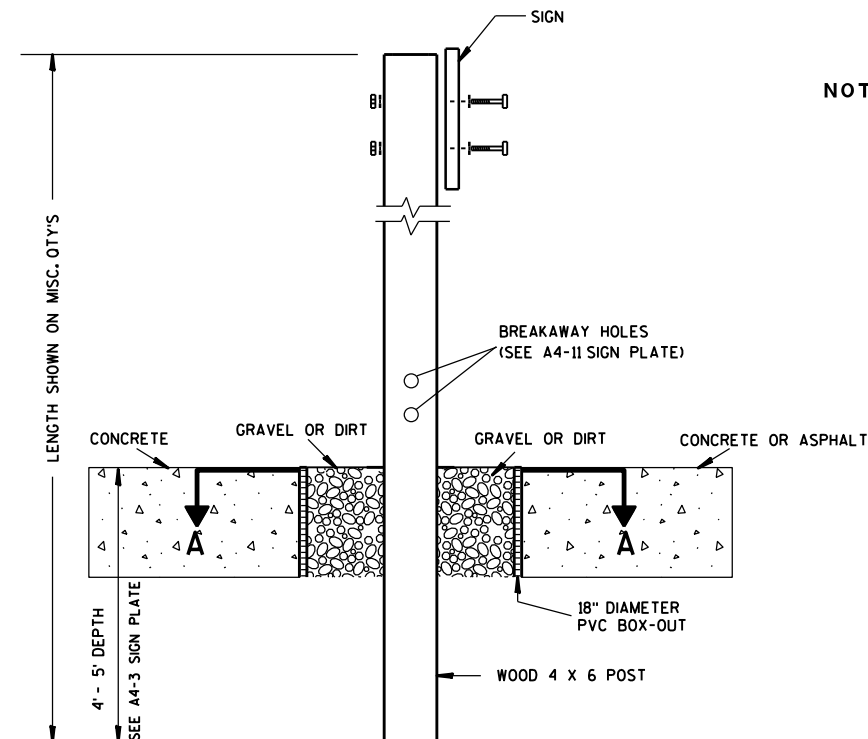
TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

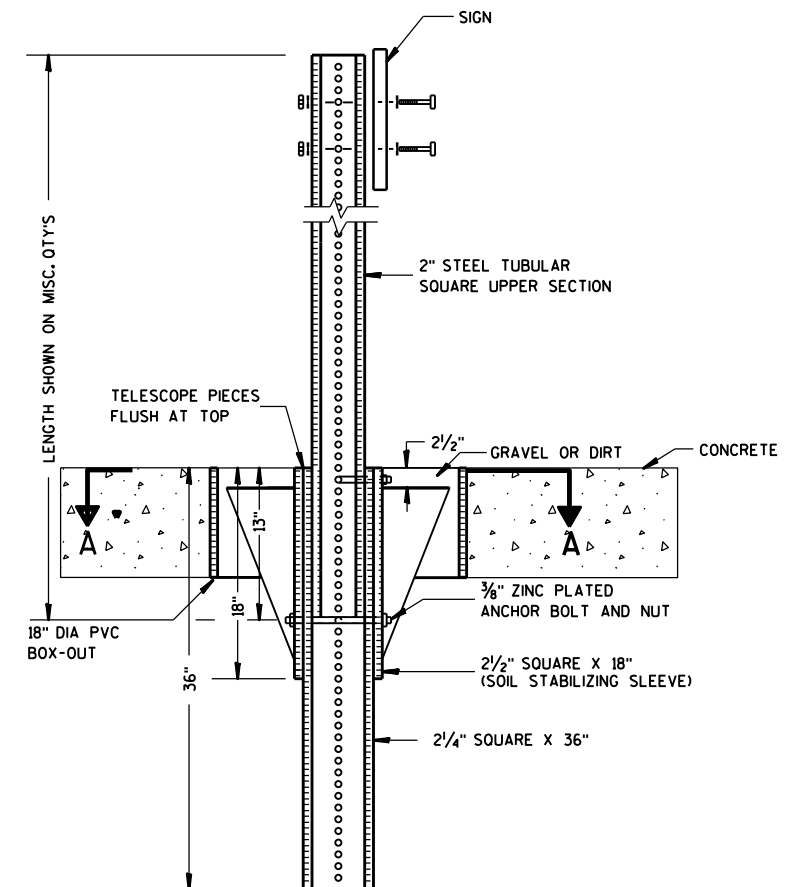




**ELEVATION VIEW**

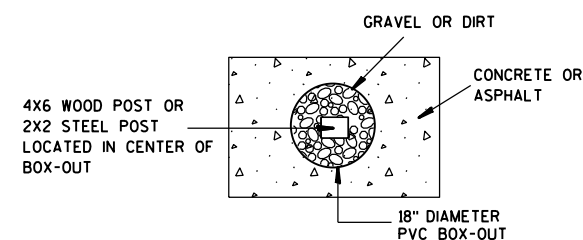
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

- 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 145 A4-3B.1

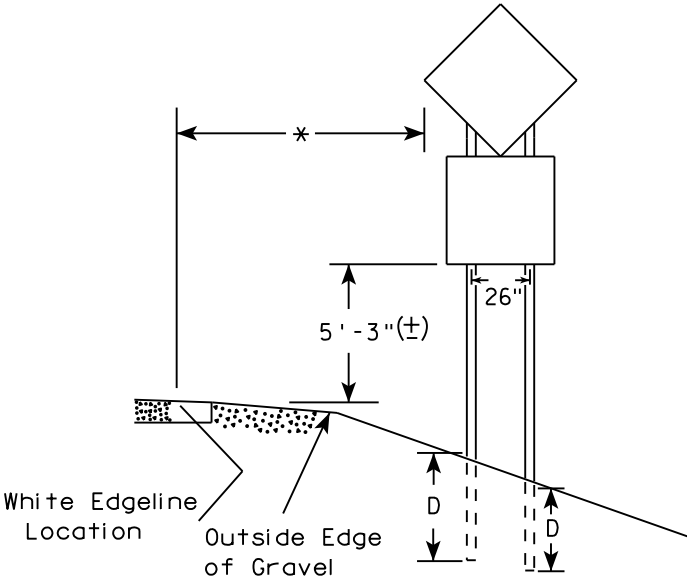
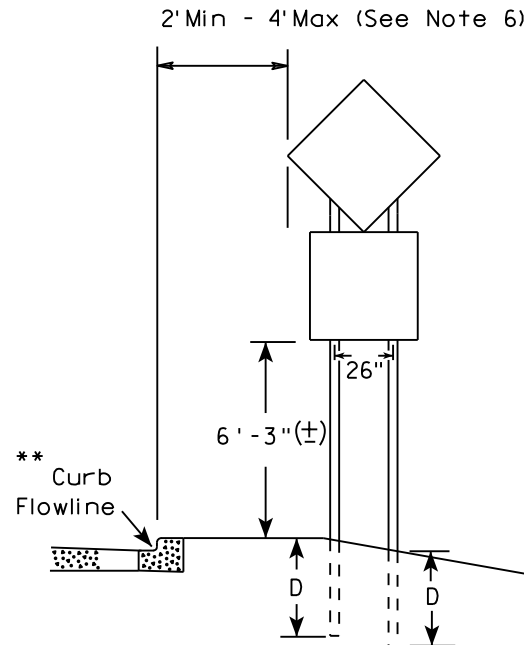
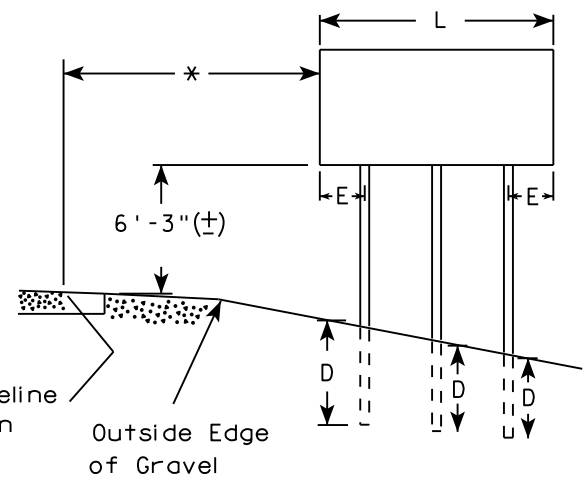
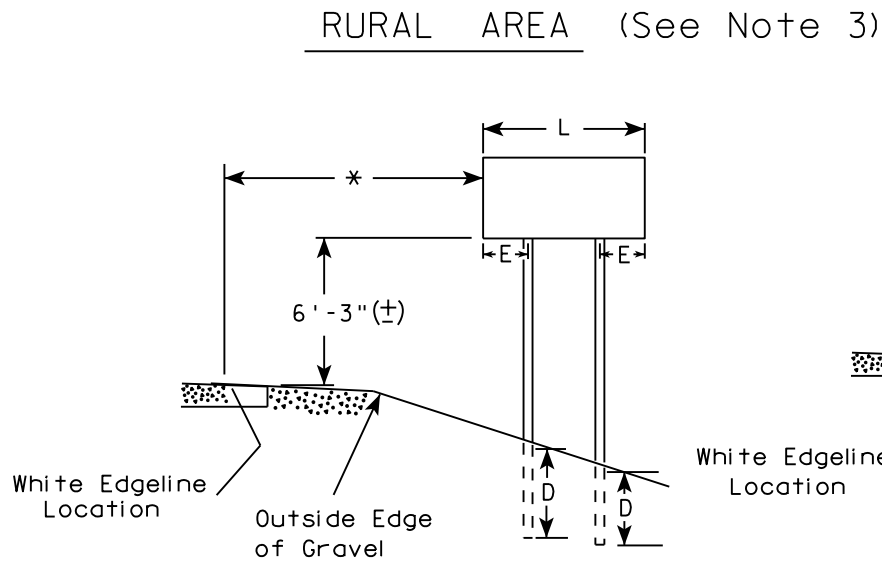
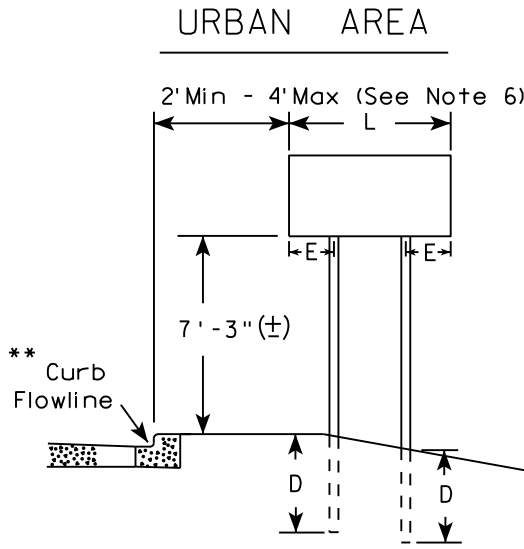
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

\*\*\*

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

| SIGN SHAPE OTHER THAN DIAMOND<br>(THREE POSTS REQUIRED) |     |
|---------------------------------------------------------|-----|
| L                                                       | E   |
| Greater than 108"<br>to 144"                            | 12" |

POST EMBEDMENT DEPTH

| Area of Sign<br>Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|---------------------------------------------|--------------|
| 20 or Less                                  | 4'           |
| Greater than 20                             | 5'           |

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

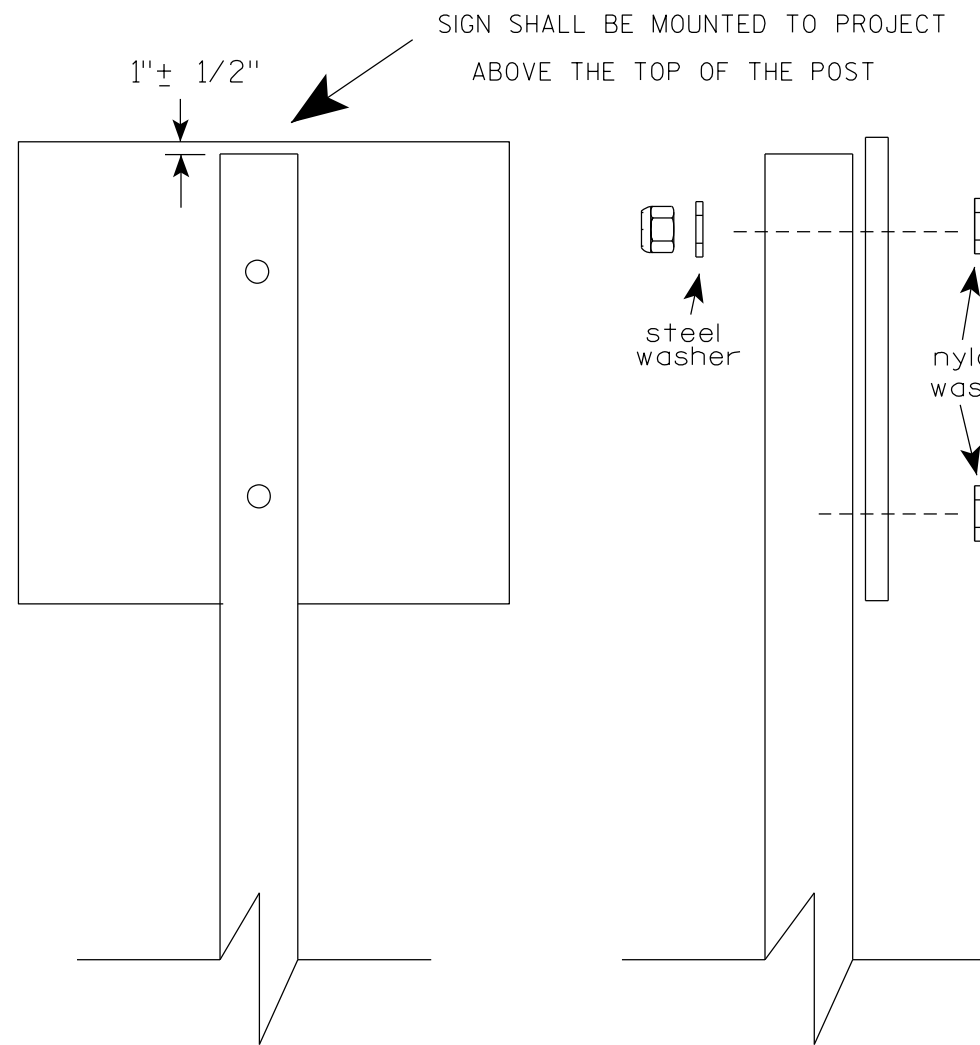
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

- GENERAL NOTES
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
  - See tables below for required number of posts.
  - For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
  - The (±) tolerance for mounting height is 3 inches.
  - J-Assemblies are considered to be one sign for mounting height.
  - Offset distance shall be consistent with existing signs or consistent throughout length of project.
  - Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
  - 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.





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.

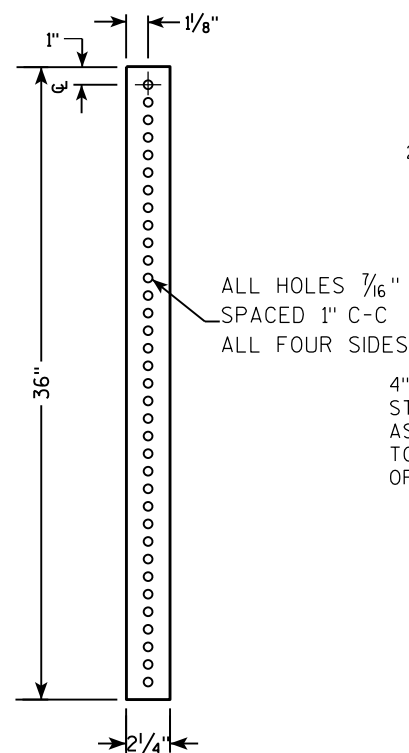
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS -  $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS -  $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS -  $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS -  $\frac{9}{32}$ " (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  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ " STEEL
  - 1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X .080 NYLON

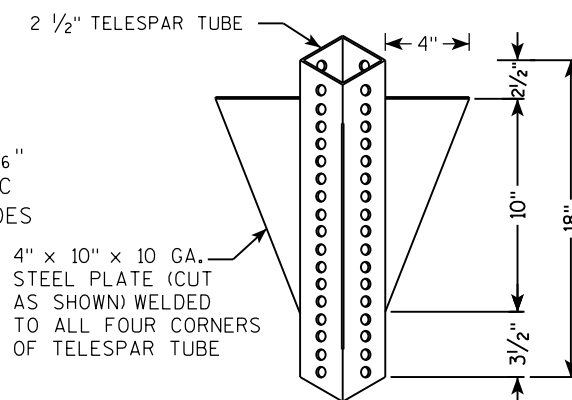
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| ATTACHMENT OF SIGNS<br>TO POSTS  |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>For State Traffic Engineer |
| DATE 4/1/2020                    | PLATE NO. A4-8.9                                      |

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



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

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

**Side View Dimensions:**

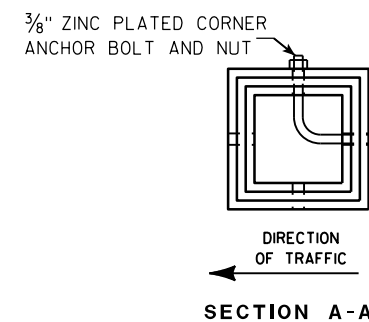
- Overall height: 36"
- Section A-A: 18" (top section), 12" (bottom section)
- Section B-B: 18" (top section), 12" (bottom section)

**End View Dimensions:**

- Overall width: 2 1/4" SQUARE X 36"
- Section A-A: 18" (top section), 12" (bottom section)
- Section B-B: 18" (top section), 12" (bottom section)

**Material and Assembly Specifications:**

- 2" STEEL TUBULAR SQUARE UPPER SECTION
- ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES
- 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
- 3/8" ZINC PLATED ANCHOR BOLT AND NUT
- 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- TELESCOPE PIECES FLUSH AT TOP
- SIGN



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

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

TUBULAR STEEL  
SIGN POST  
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 148 14-9.9

SHEET NO:

PROJECT NO:

HWY:

COUNTY:

FILE NAME : C:\CAEFiles\Projects\tr\_stdplate\A49.DGN

PLOT DATE : 05-FEB-2015 17:09

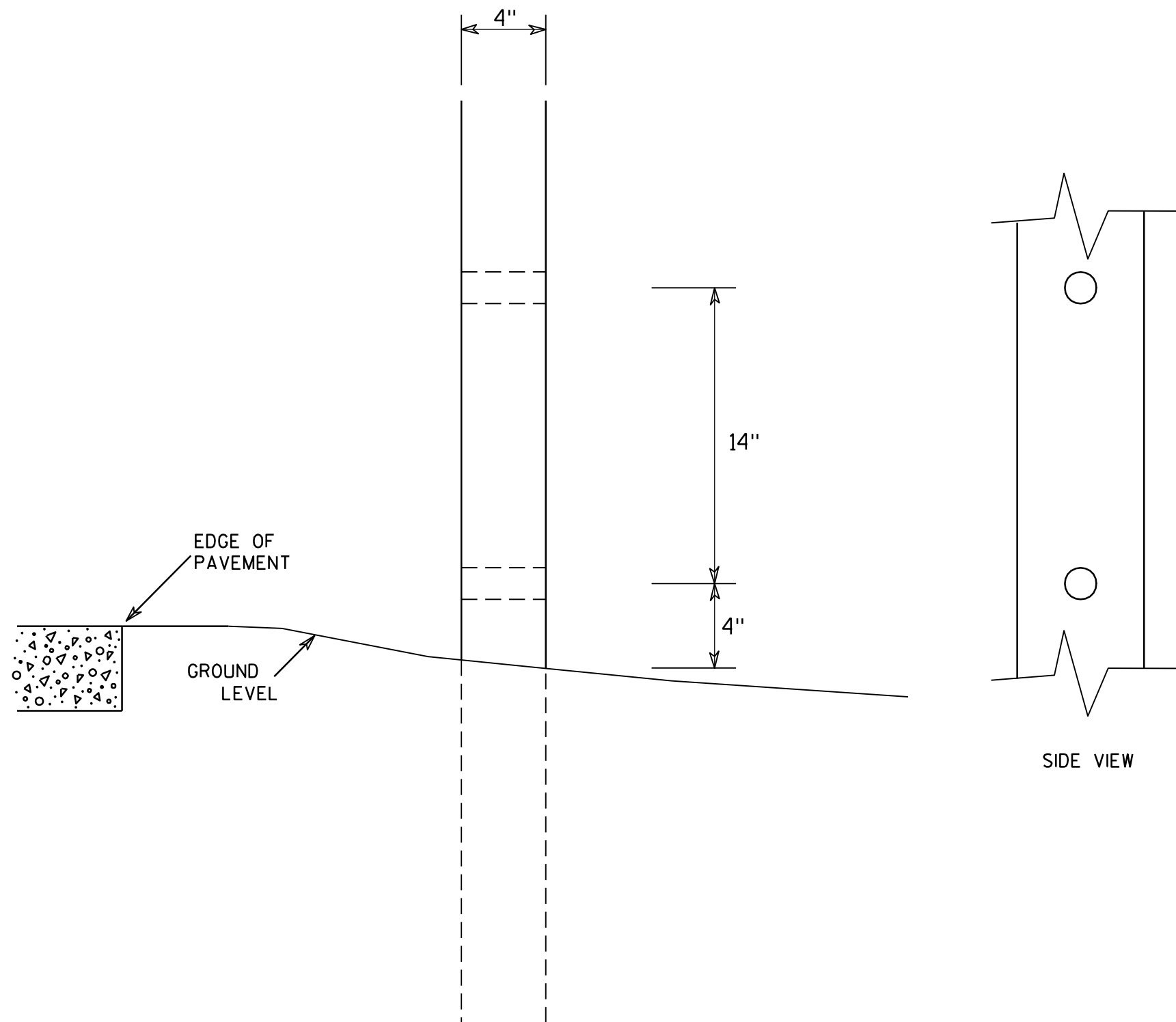
PLOT BY : mscs\_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42

7



### GENERAL NOTES

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

7

### 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:

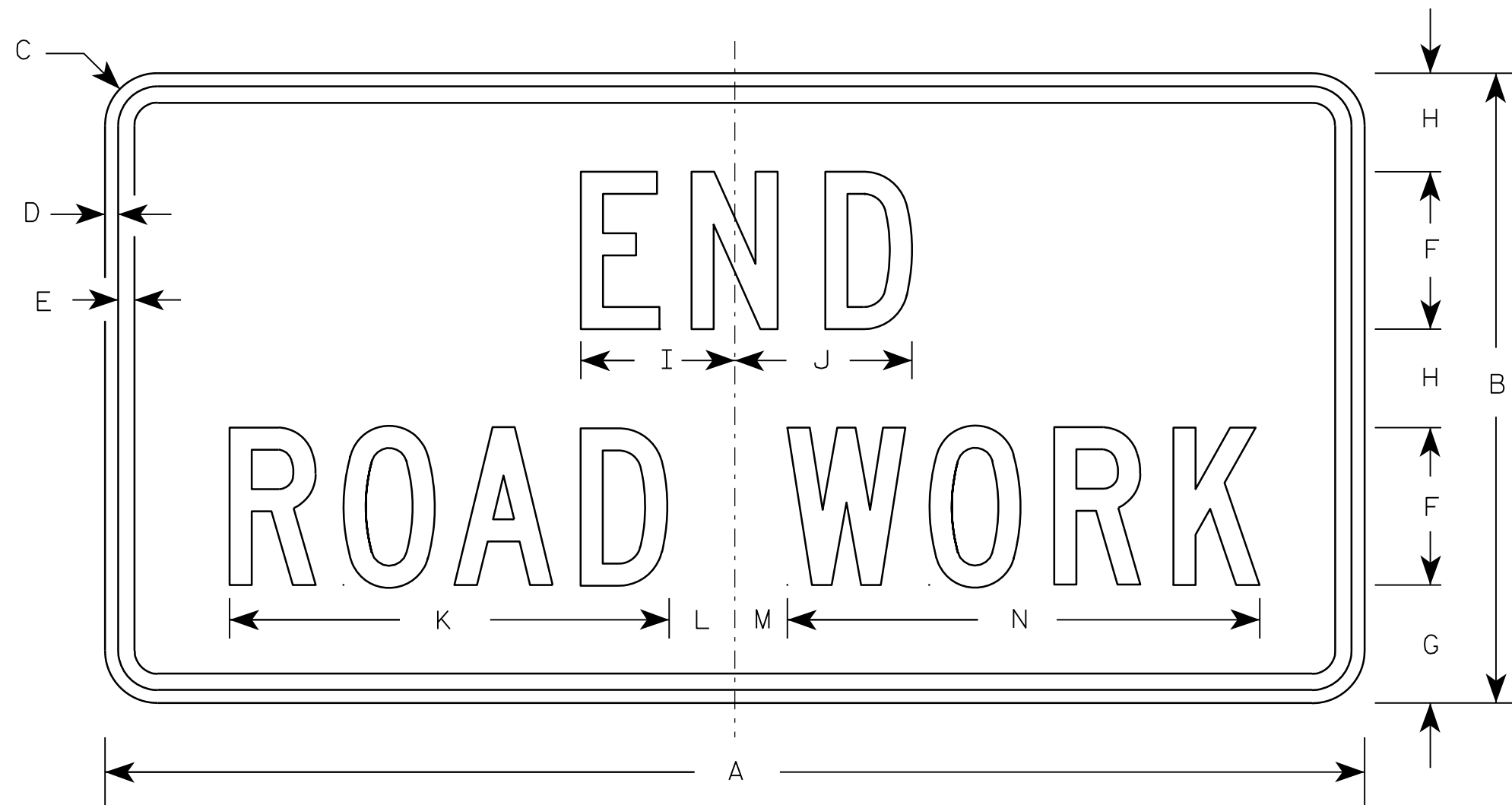
HWY:

COUNTY:

SHEET NO: 149

E

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<br>sq. ft. | Area<br>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: 150

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
  - Background - Orange
  - Message - Black
- 3. Message Series - D
- 4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I      | J     | K | L      | M      | N     | O     | P      | Q | R      | S     | T     | U      | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|-------|---|--------|--------|-------|-------|--------|---|--------|-------|-------|--------|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |        |       |   |        |        |       |       |        |   |        |       |       |        |   |   |   |   |   |                 |
| 2    |    |    |       |     |     |   |       |       |        |       |   |        |        |       |       |        |   |        |       |       |        |   |   |   |   |   |                 |
| 3    | 72 | 36 | 1 1/8 | 1/2 | 5/8 | 6 | 5     | 4     | 15 5/8 | 1 5/8 | 5 | 9 1/4  | 21 1/4 | 3 1/2 | 1 1/2 | 23 1/4 |   | 29 7/8 | 1 3/4 | 3 1/4 | 28 1/2 |   |   |   |   |   | 18.0            |
| 4    | 96 | 48 | 2 1/4 | 3/4 | 1   | 8 | 6 1/2 | 5 1/2 | 20 5/8 | 2 1/4 | 6 | 12 1/4 | 28 1/4 | 4 3/8 | 1 5/8 | 31     |   | 39 1/4 | 2     | 4     | 37 7/8 |   |   |   |   |   | 32.0            |
| 5    |    |    |       |     |     |   |       |       |        |       |   |        |        |       |       |        |   |        |       |       |        |   |   |   |   |   |                 |

STANDARD SIGN  
G20-57

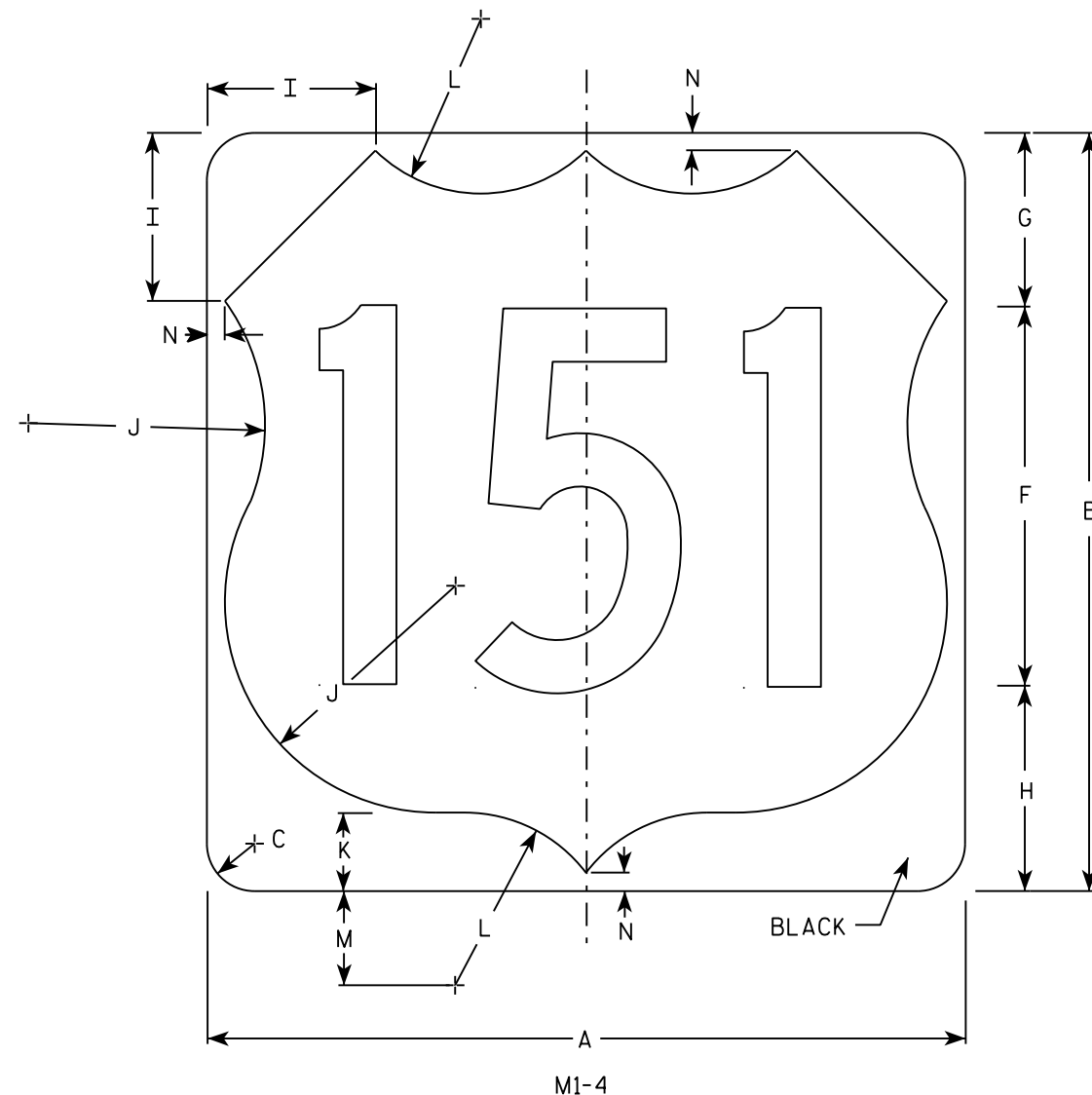
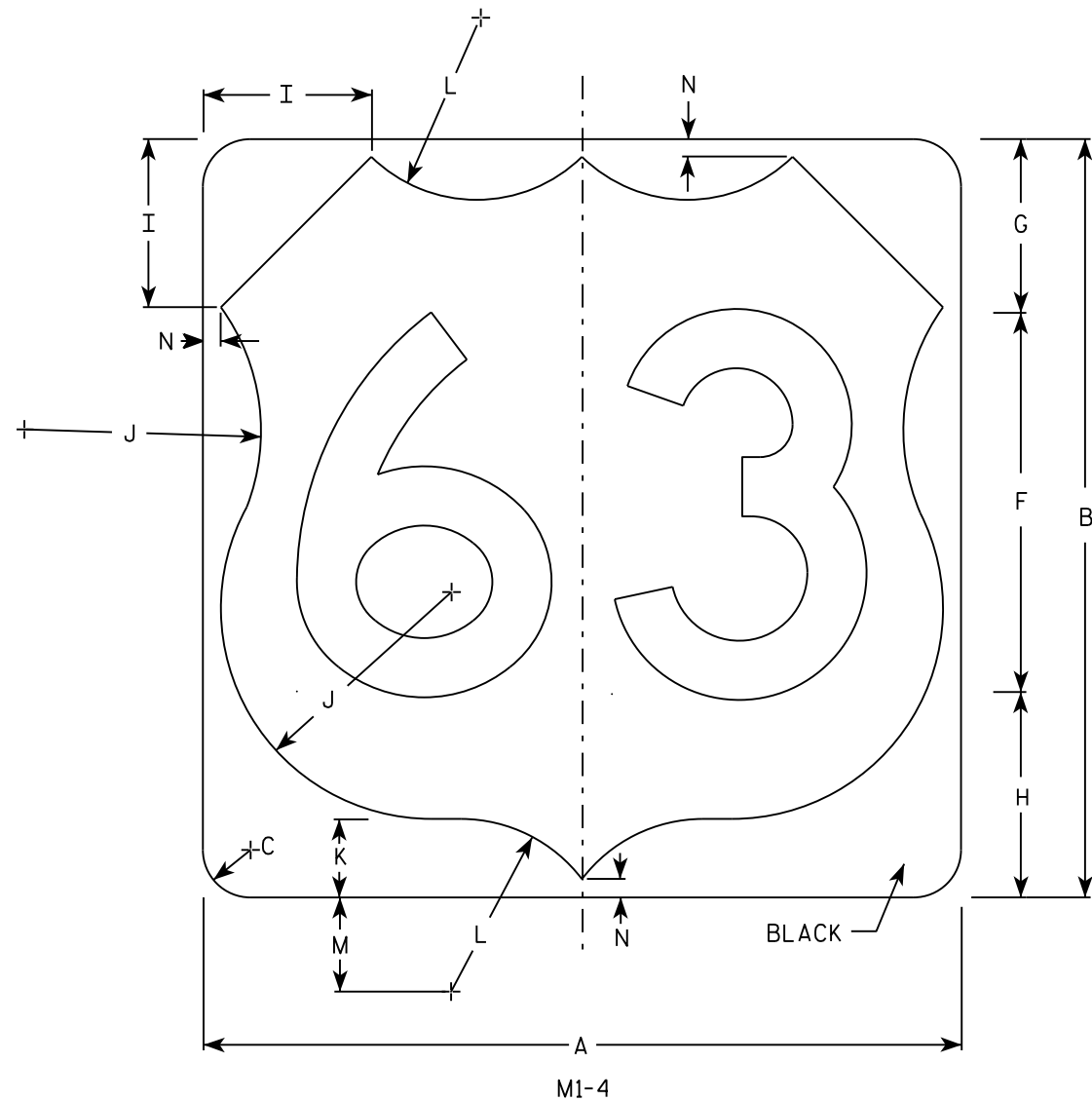
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57.3

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.



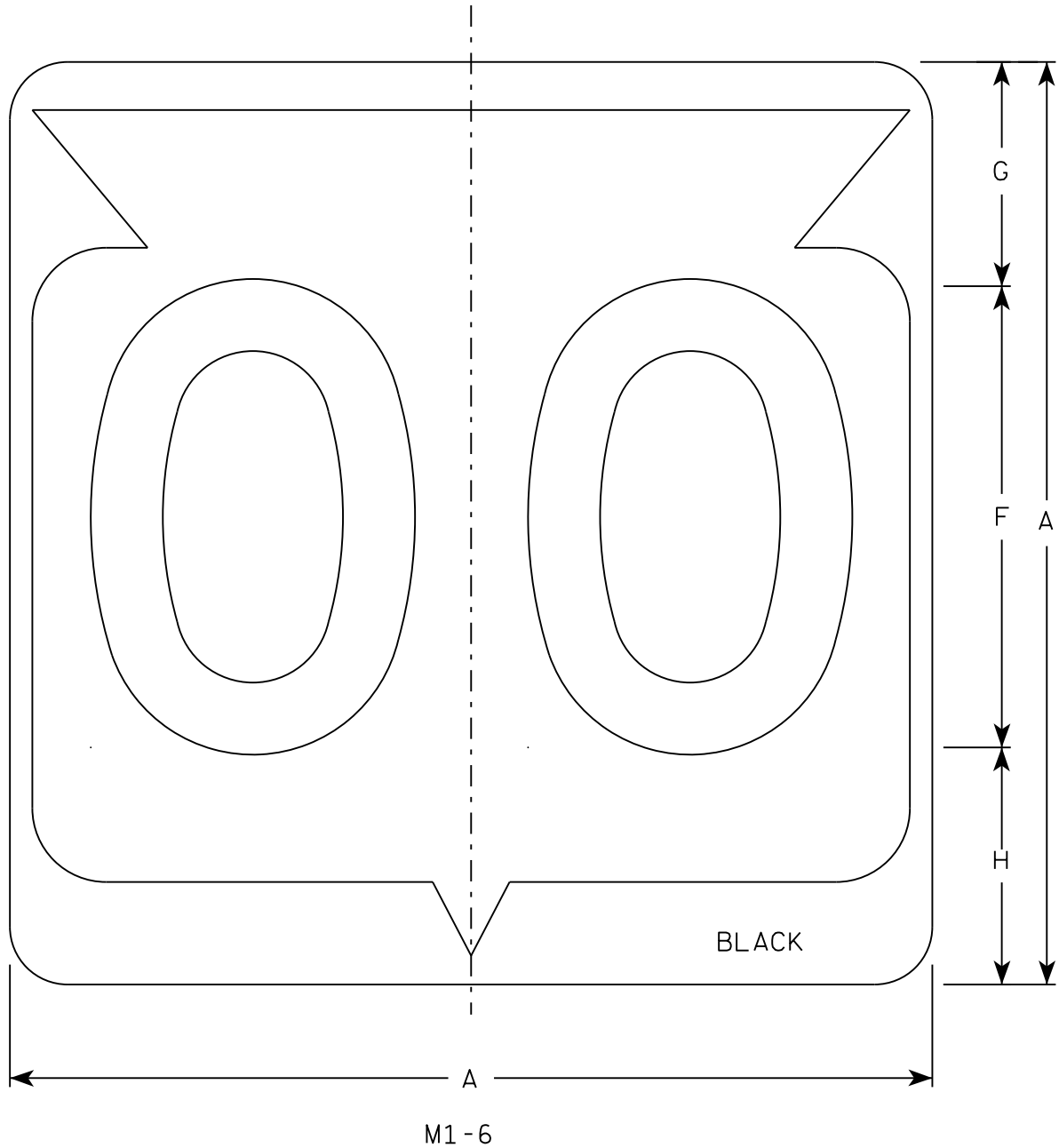
| SIZE | A  | B  | C     | D | E | F  | G     | H     | I     | J      | K     | L     | M     | N   | O | P | Q | R | S | T | U | V | W | X | Y | Z | Areq.<br>sq. ft. |
|------|----|----|-------|---|---|----|-------|-------|-------|--------|-------|-------|-------|-----|---|---|---|---|---|---|---|---|---|---|---|---|------------------|
| 1    |    |    |       |   |   |    |       |       |       |        |       |       |       |     |   |   |   |   |   |   |   |   |   |   |   |   |                  |
| 2    | 24 | 24 | 1 1/2 |   |   | 12 | 5 1/2 | 6 1/2 | 5     | 7 1/2  | 2 1/2 | 5 1/2 | 3     | 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 4.0              |
| 3    | 36 | 36 | 2 1/4 |   |   | 18 | 8 1/4 | 9 1/4 | 7 1/4 | 11 1/4 | 3 3/4 | 8 1/4 | 4 1/2 | 3/4 |   |   |   |   |   |   |   |   |   |   |   |   | 9.0              |
| 4    | 36 | 36 | 2 1/4 |   |   | 18 | 8 1/4 | 9 1/4 | 7 1/4 | 11 1/4 | 3 3/4 | 8 1/4 | 4 1/2 | 3/4 |   |   |   |   |   |   |   |   |   |   |   |   | 9.0              |
| 5    | 36 | 36 | 2 1/4 |   |   | 18 | 8 1/4 | 9 1/4 | 7 1/4 | 11 1/4 | 3 3/4 | 8 1/4 | 4 1/2 | 3/4 |   |   |   |   |   |   |   |   |   |   |   |   | 9.0              |

|                                                       |  |      |  |         |  |  |  |               |  |   |  |                               |  |  |  |  |  |  |  |  |  |  |  |                                          |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------|--|------|--|---------|--|--|--|---------------|--|---|--|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|-----------------------|--|--|--|--|--|--|--|--|--|--|--|
| PROJECT NO:                                           |  | HWY: |  | COUNTY: |  |  |  | SHEET NO: 152 |  | E |  |                               |  |  |  |  |  |  |  |  |  |  |  |                                          |  |  |  |  |  |  |  |  |  |  |  |                                |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |
| FILE NAME : C:\CAEfiles\Projects\tr_std\plate\M14.DGN |  |      |  |         |  |  |  |               |  |   |  | PLOT DATE : 16-MAR-2018 14:06 |  |  |  |  |  |  |  |  |  |  |  | PLOT BY : **...plotuser...** PLOT NAME : |  |  |  |  |  |  |  |  |  |  |  | PLOT SCALE : 5.918903:1.000000 |  |  |  |  |  |  |  |  |  |  |  | WISDOT/CADDs SHEET 42 |  |  |  |  |  |  |  |  |  |  |  |

|                                   |                                                       |
|-----------------------------------|-------------------------------------------------------|
| USH MARKER<br>M1-4 FOR ASSEMBLIES |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION  |                                                       |
| APPROVED                          | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 3/16/18                      | PLATE NO. M1-4.10                                     |

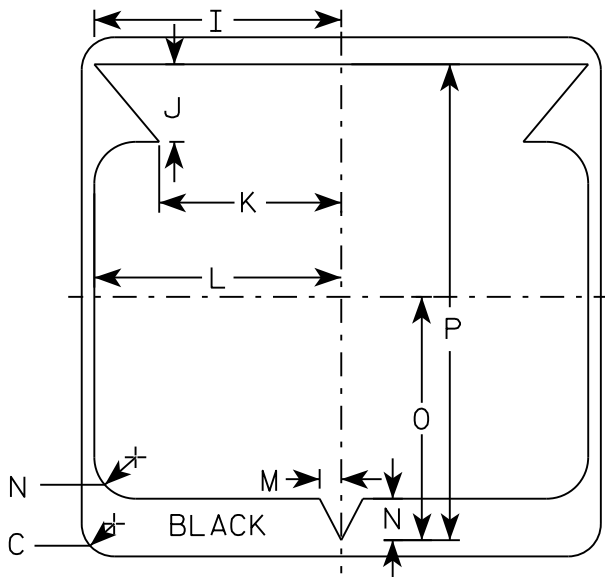


7



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<br>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             |

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 153

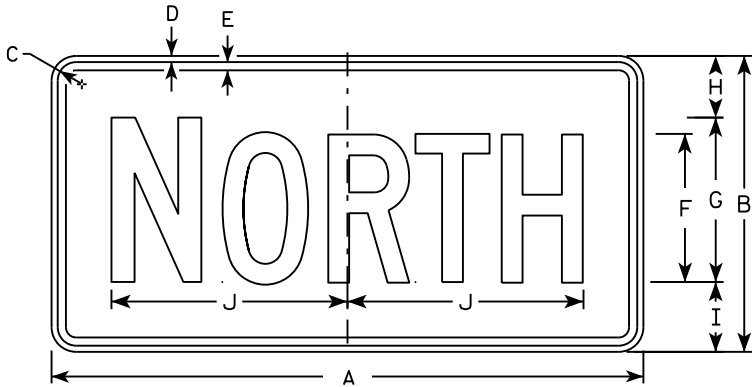
E

STATE ROUTE MARKER  
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

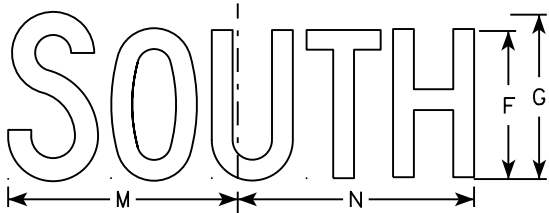
DATE 3/16/18 PLATE NO. M1-6.10



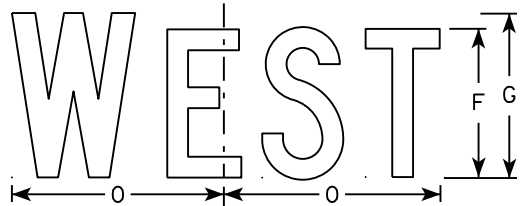
M3-1  
MM3-1  
MP3-1



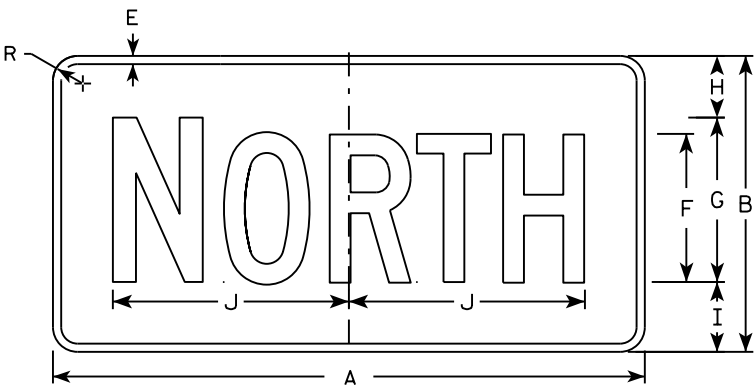
M3-2  
MM3-2  
MP3-2



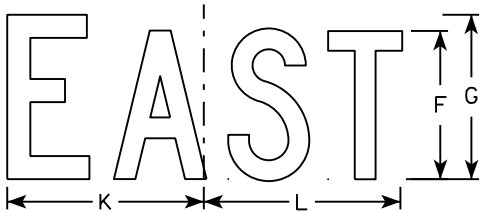
M3-3  
MM3-3  
MP3-3



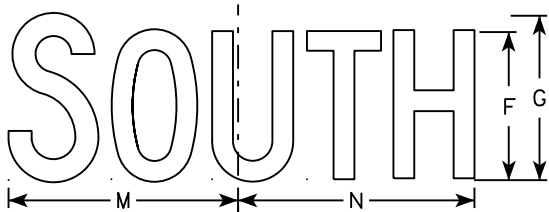
M3-4  
MM3-4  
MP3-4



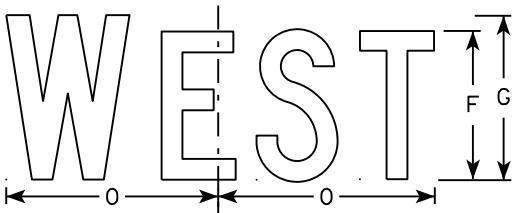
MB3-1  
MK3-1  
MN3-1



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<br>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

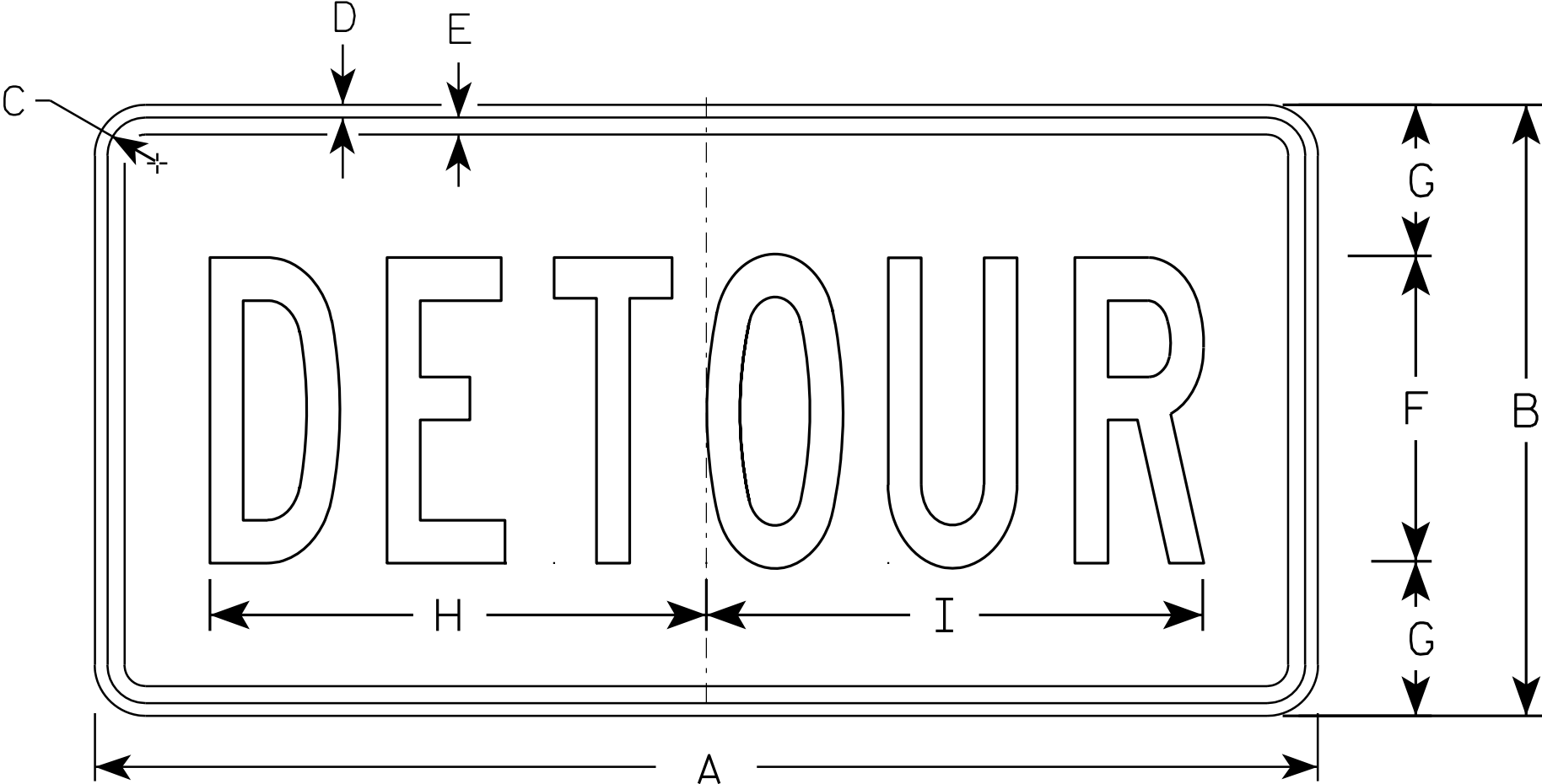
APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 154 M3-1.14



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 | Area<br>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    |    |    |       |     |     |   |       |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

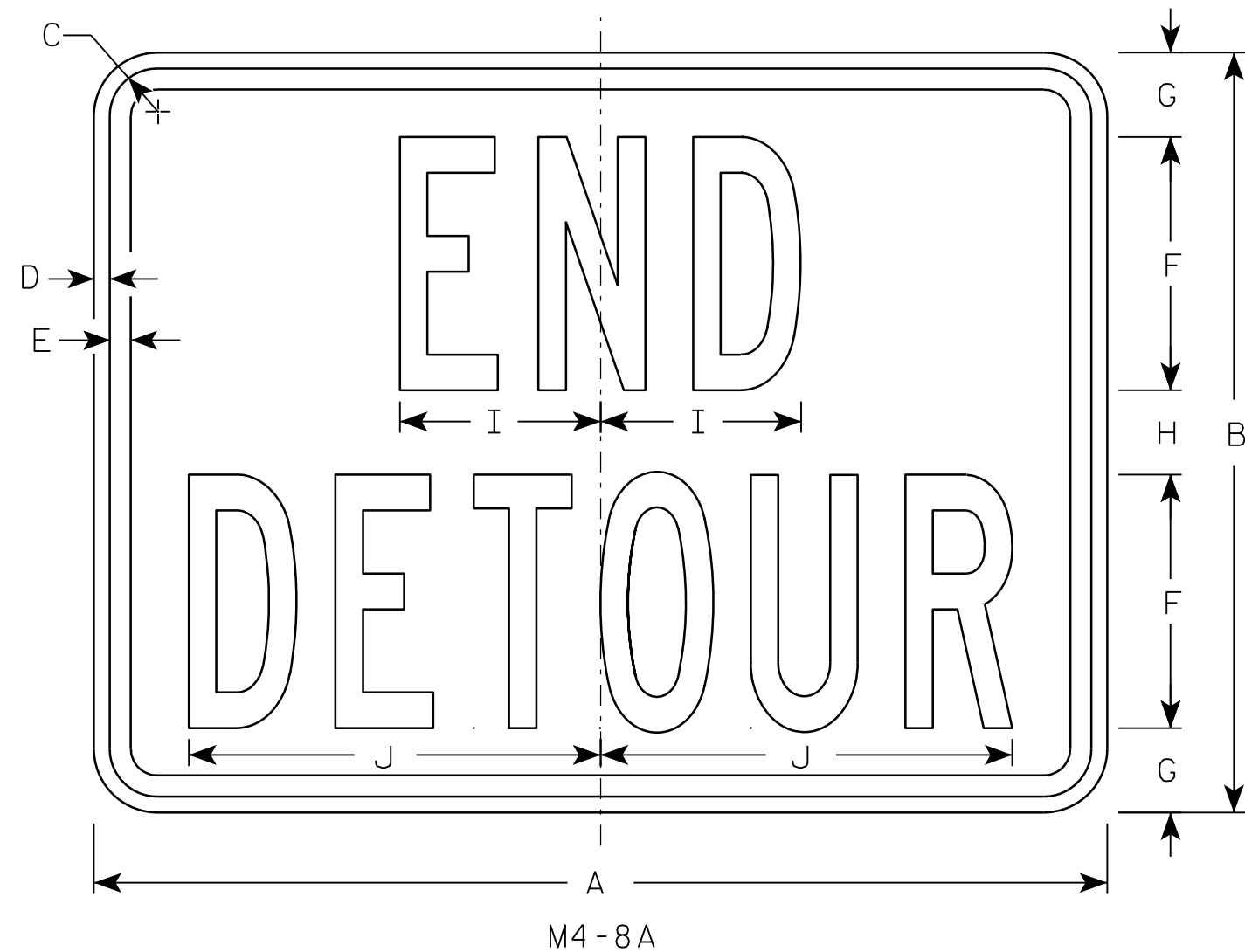
STANDARD SIGN  
M4 - 8

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<br>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    |    |    |       |     |     |   |       |   |       |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

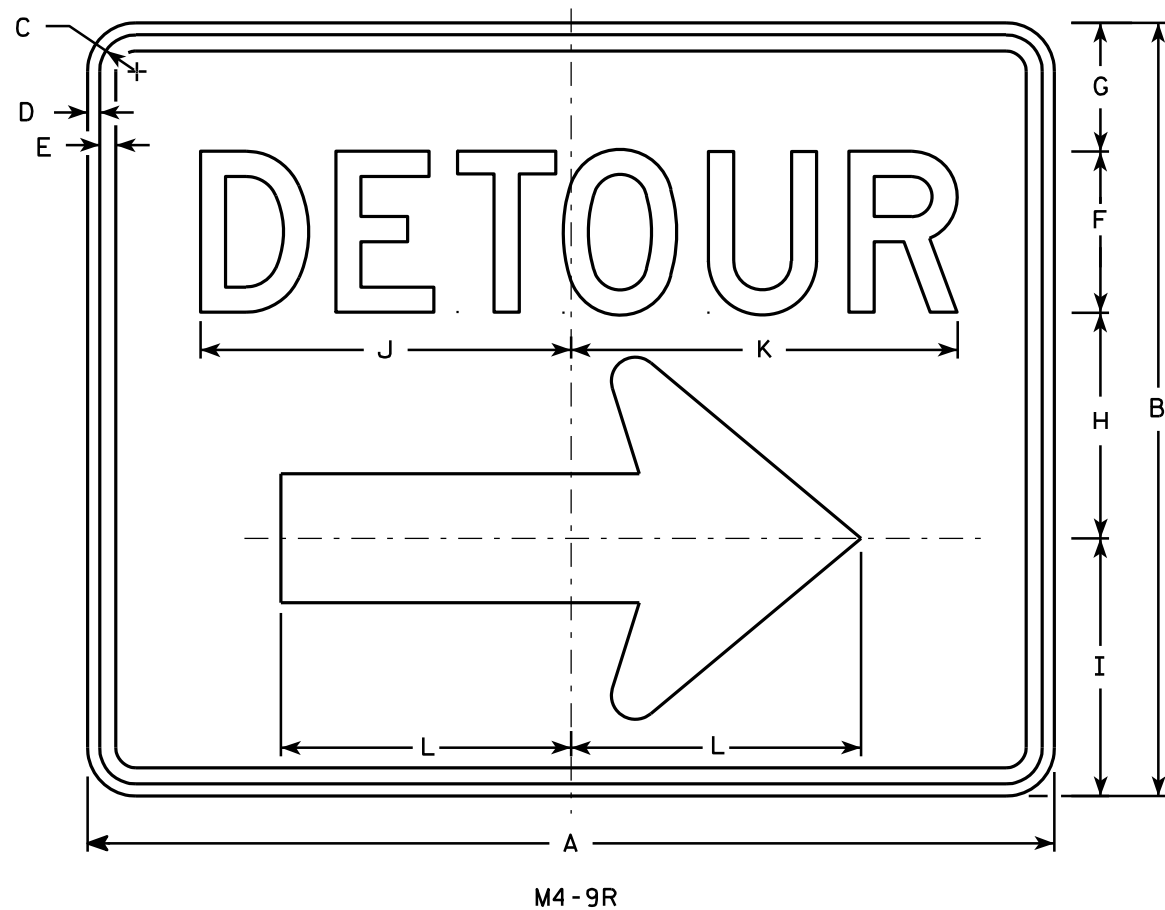
|             |      |         |               |   |
|-------------|------|---------|---------------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: 156 | E |
|-------------|------|---------|---------------|---|

STANDARD SIGN  
M4-8A

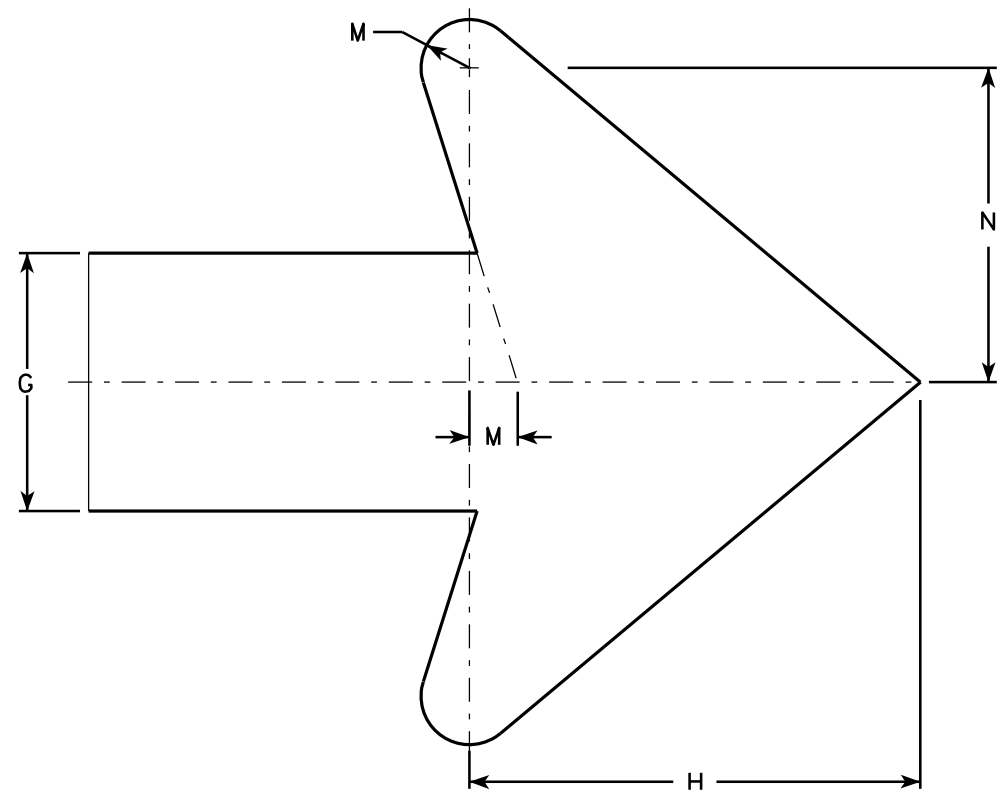
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



- NOTES**
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.



| 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<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|--------|--------|--------|--------|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |        |        |        |        |        |       |       |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2    | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 5 | 4 | 7      | 8      | 11 1/2 | 12     | 9      | 3/4   | 4 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 5.00            |
| 3    | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 5 | 4 | 7      | 8      | 11 1/2 | 12     | 9      | 3/4   | 4 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 5.00            |
| 4    | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |
| 5    | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |

STANDARD SIGN  
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

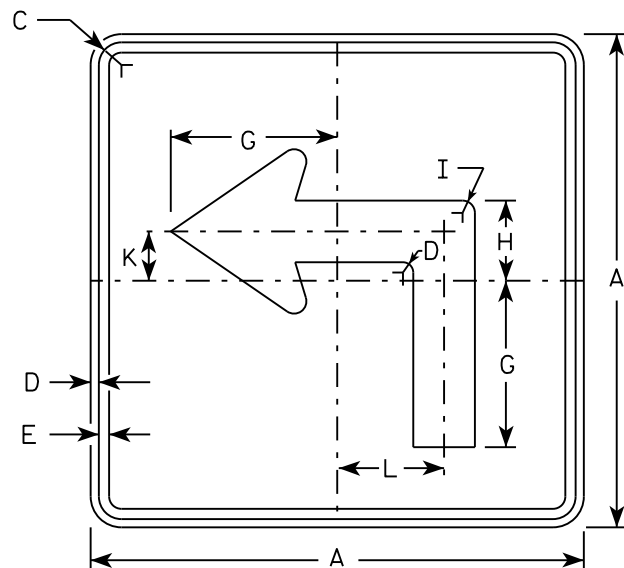
PROJECT NO:

HWY:

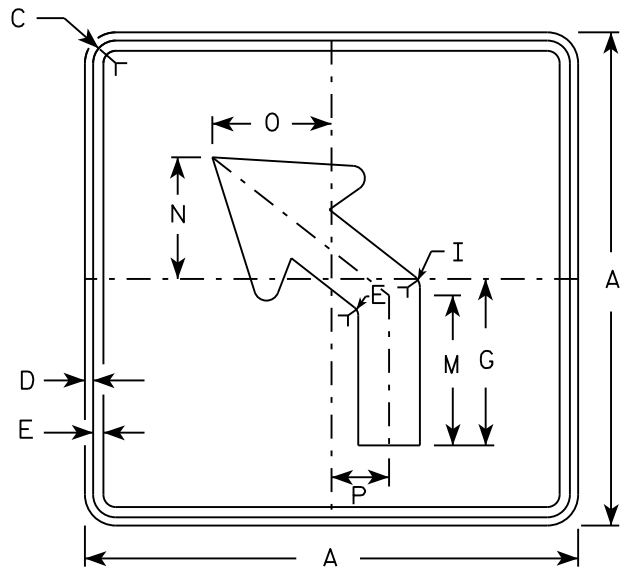
COUNTY:

SHEET NO: 157

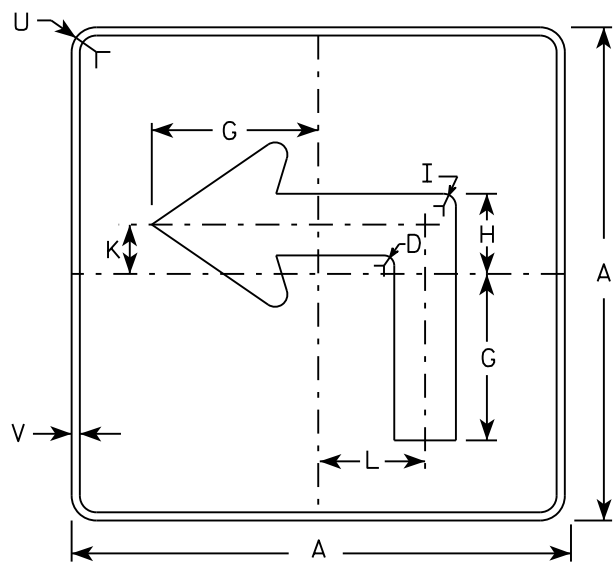
E



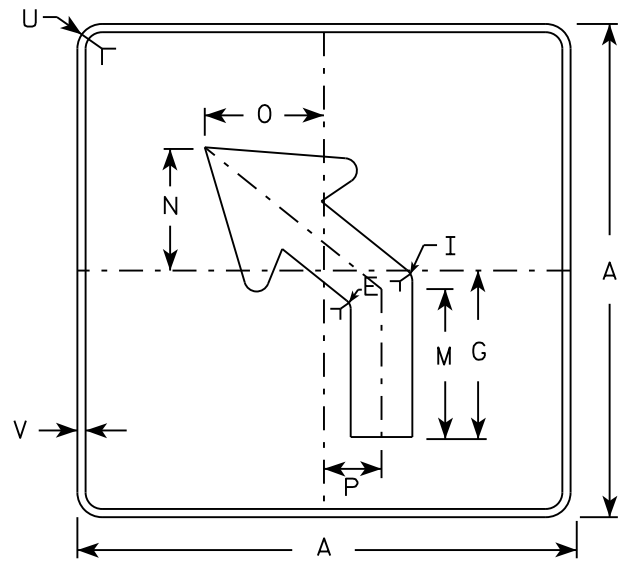
M5-1L  
MM5-1L  
M05-1L  
MP5-1L



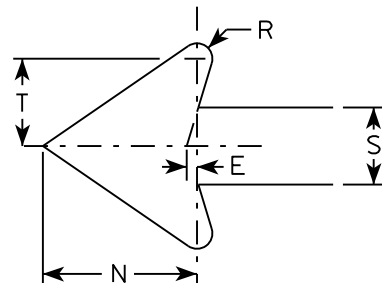
M5-2L  
MM5-2L  
M05-2L  
MP5-2L



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<br>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:

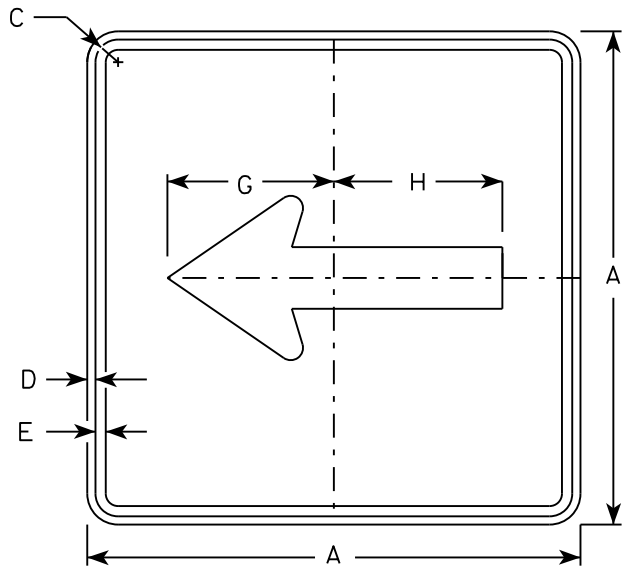
E

STANDARD SIGN  
M5-1 & M5-2

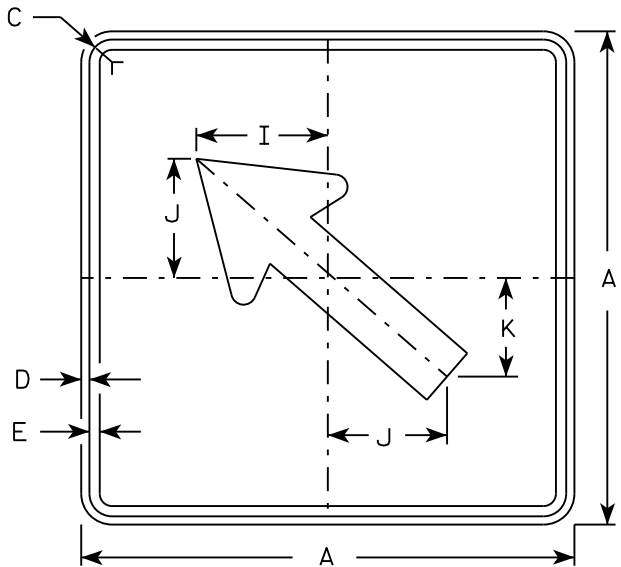
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

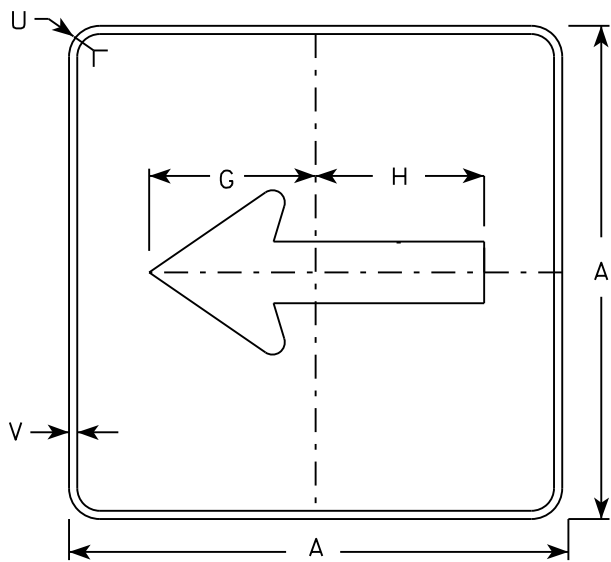
DATE 10/15/15 PLATF 158 M5-1.13



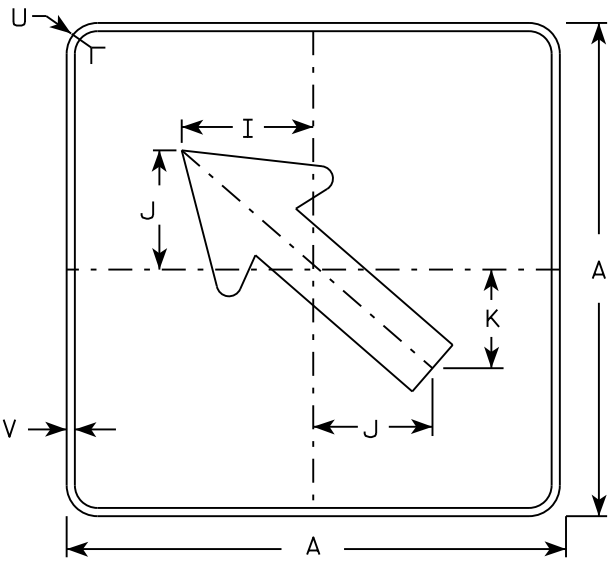
M6 - 1  
MM6 - 1  
M06 - 1  
MP6 - 1



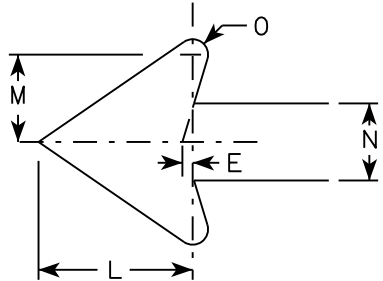
M6 - 2  
MM6 - 2  
M06 - 2  
MP6 - 2



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<br>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 159

SHEET NO:

E

STANDARD SIGN  
M6 - 1 & M6 - 2  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

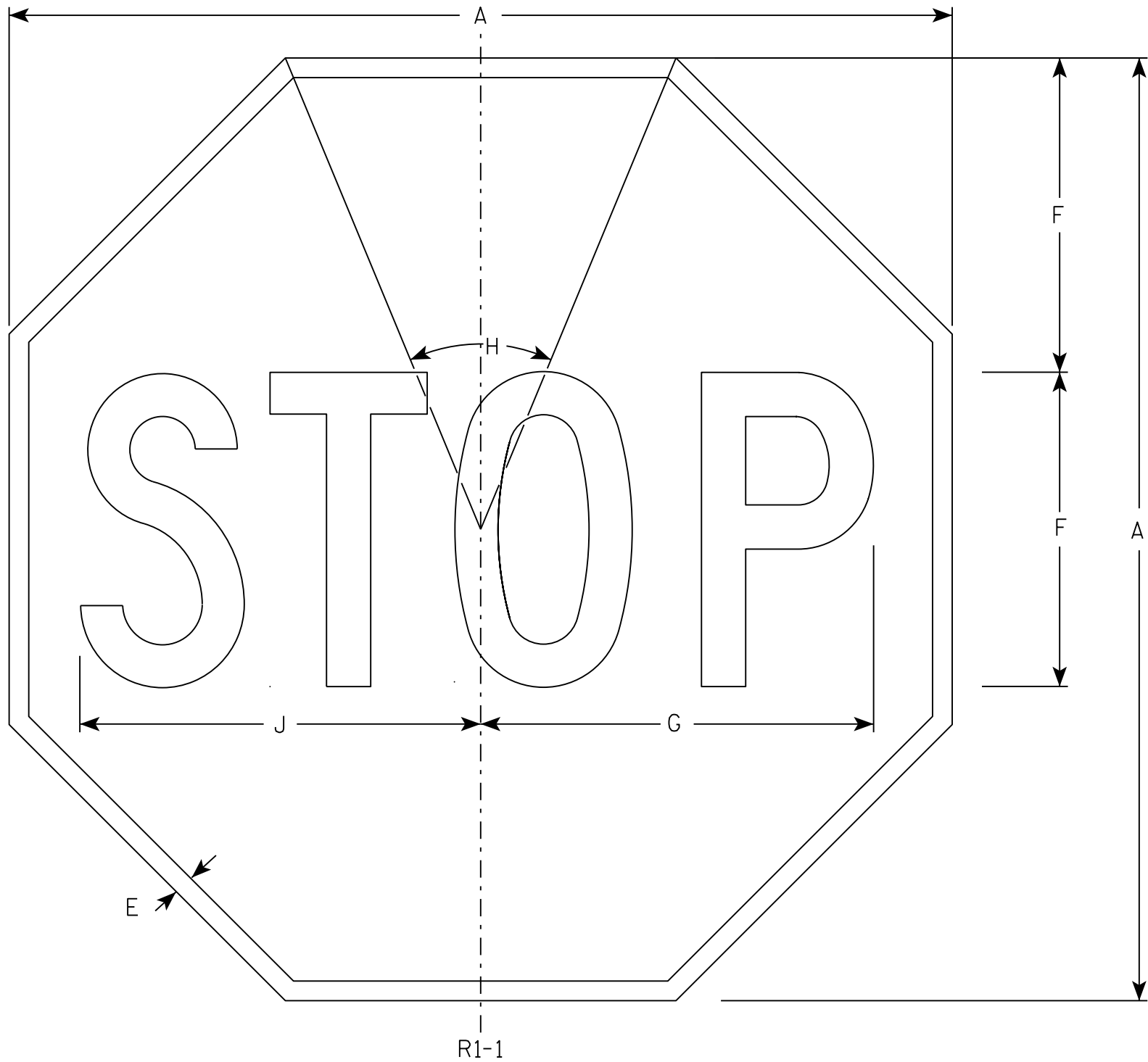
APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/15/15

PLAT 159

M6-1.15

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

| 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<br>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

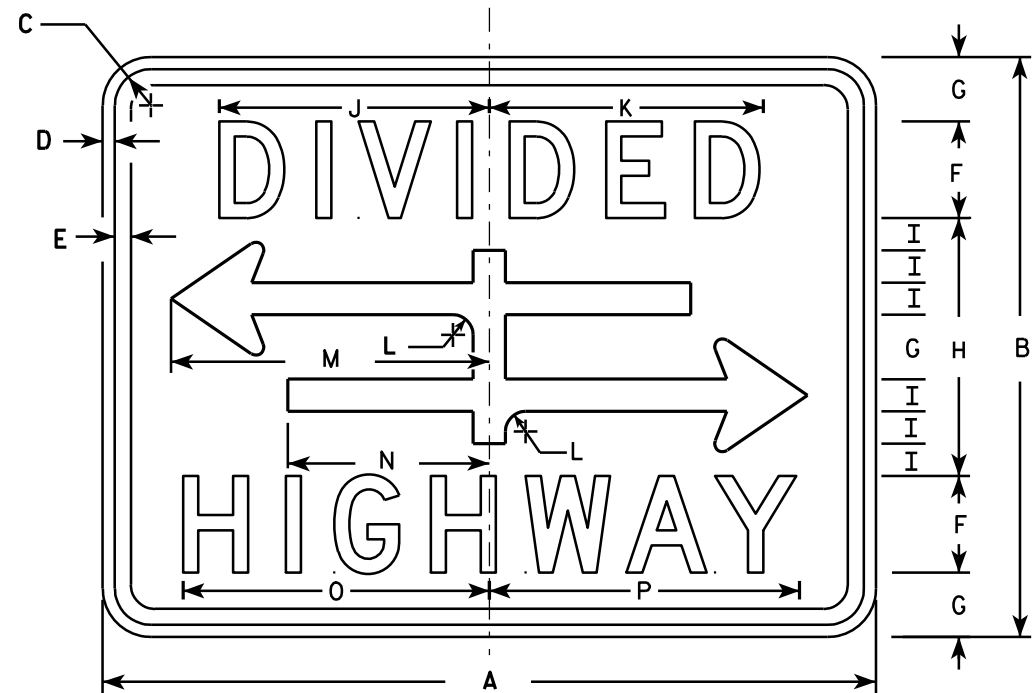
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

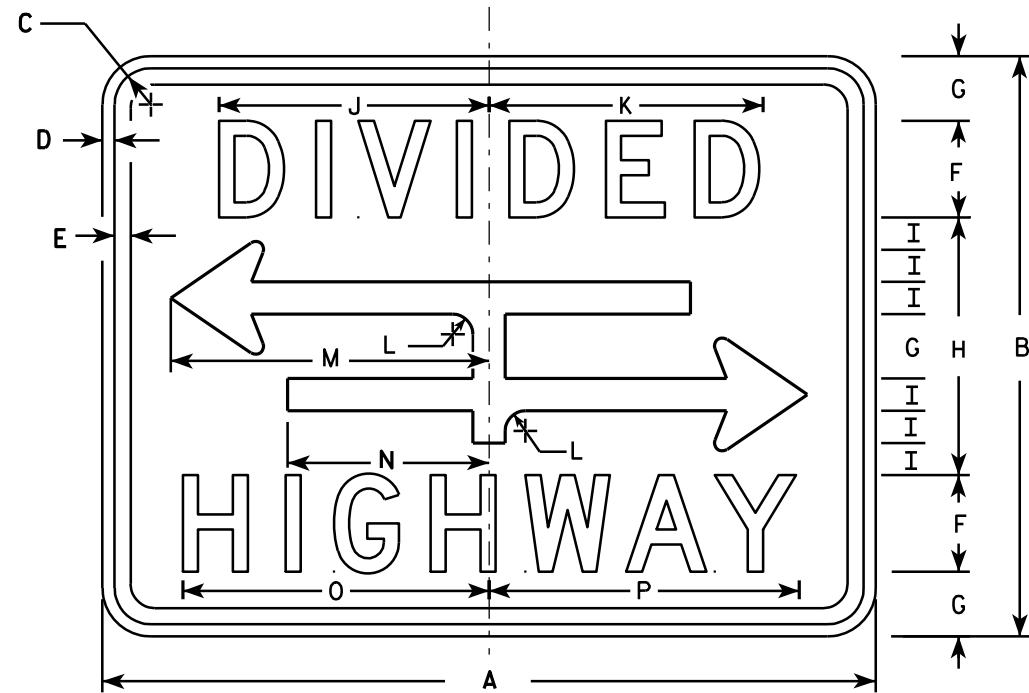
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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





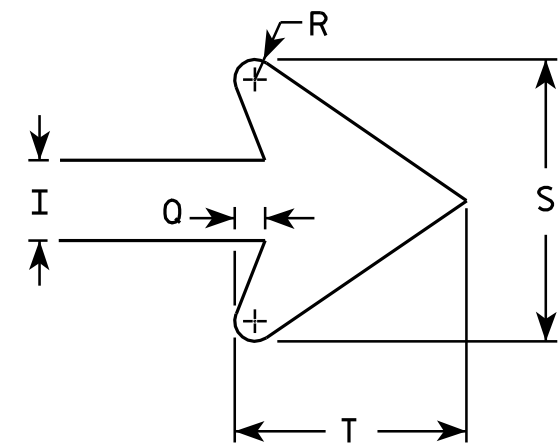
R6-3



R6-3A

## 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.



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<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|--------|-------|--------|--------|-----|--------|-------|--------|--------|-----|-----|-------|-------|---|---|---|---|---|---|-----------------|
| 1    | 24 | 18 | 1 1/8 | 3/8 | 3/8 | 3 | 2     | 8      | 1     | 8 3/8  | 8 1/2  | 5/8 | 9 7/8  | 6 1/4 | 9 1/2  | 9 5/8  | 3/8 | 1/4 | 3 1/2 | 2 3/4 |   |   |   |   |   |   | 3.0             |
| 2S   | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 4 | 2 5/8 | 10 3/4 | 1 3/8 | 10 1/2 | 10 5/8 | 7/8 | 12 1/2 | 7 7/8 | 12 1/4 | 12 3/8 | 1/2 | 3/8 | 4 5/8 | 3 5/8 |   |   |   |   |   |   | 5.0             |
| 2M   | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 4 | 2 5/8 | 10 3/4 | 1 3/8 | 10 1/2 | 10 5/8 | 7/8 | 12 1/2 | 7 7/8 | 12 1/4 | 12 3/8 | 1/2 | 3/8 | 4 5/8 | 3 5/8 |   |   |   |   |   |   | 5.0             |
| 3    |    |    |       |     |     |   |       |        |       |        |        |     |        |       |        |        |     |     |       |       |   |   |   |   |   |   |                 |
| 4    |    |    |       |     |     |   |       |        |       |        |        |     |        |       |        |        |     |     |       |       |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |       |        |       |        |        |     |        |       |        |        |     |     |       |       |   |   |   |   |   |   |                 |

PROJECT NO:

STANDARD SIGN  
R6-3 & R6-3A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

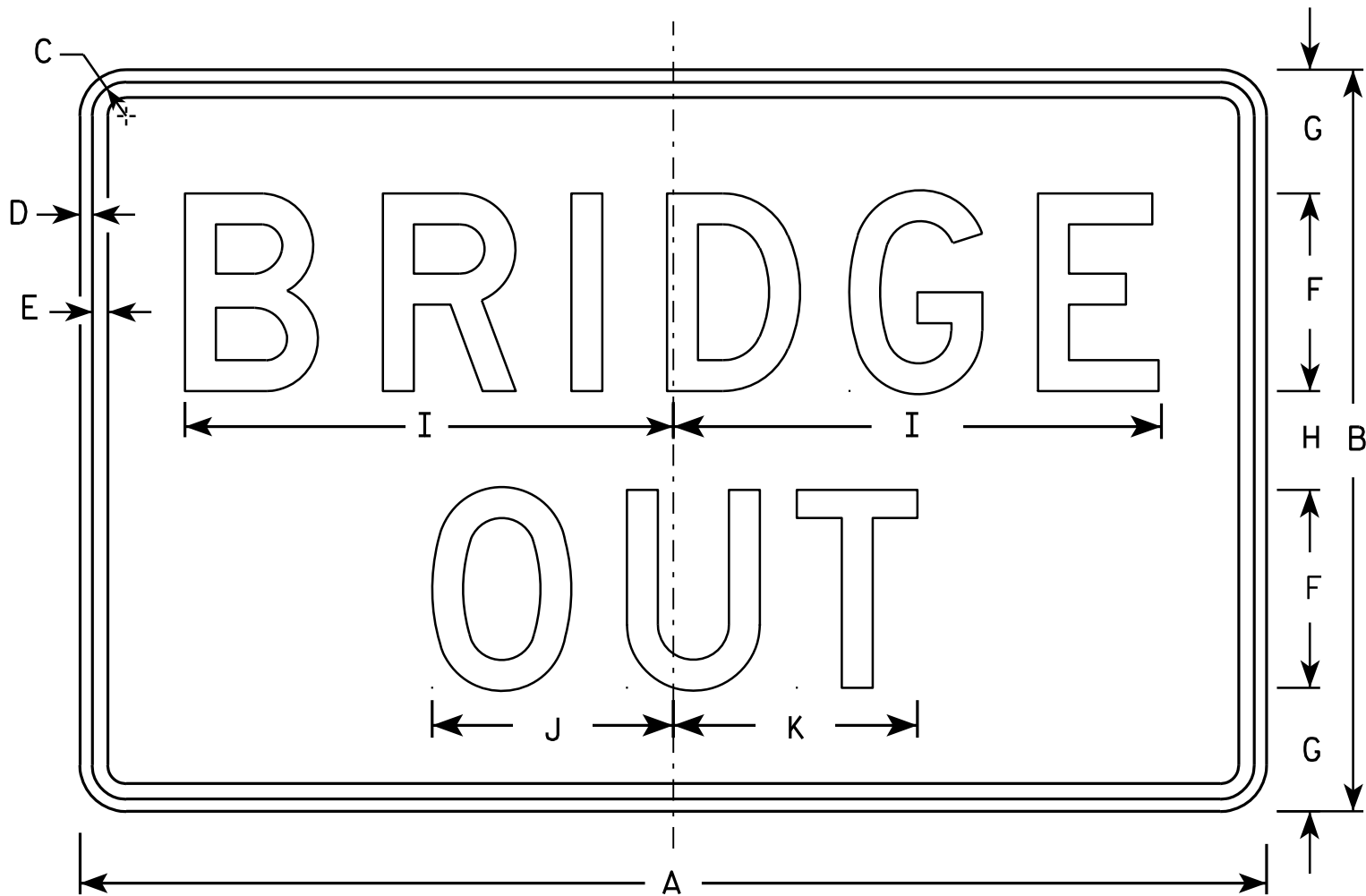
DATE 3/31/2011 PLATE NO. R6-3.5

SHEET NO: 161

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

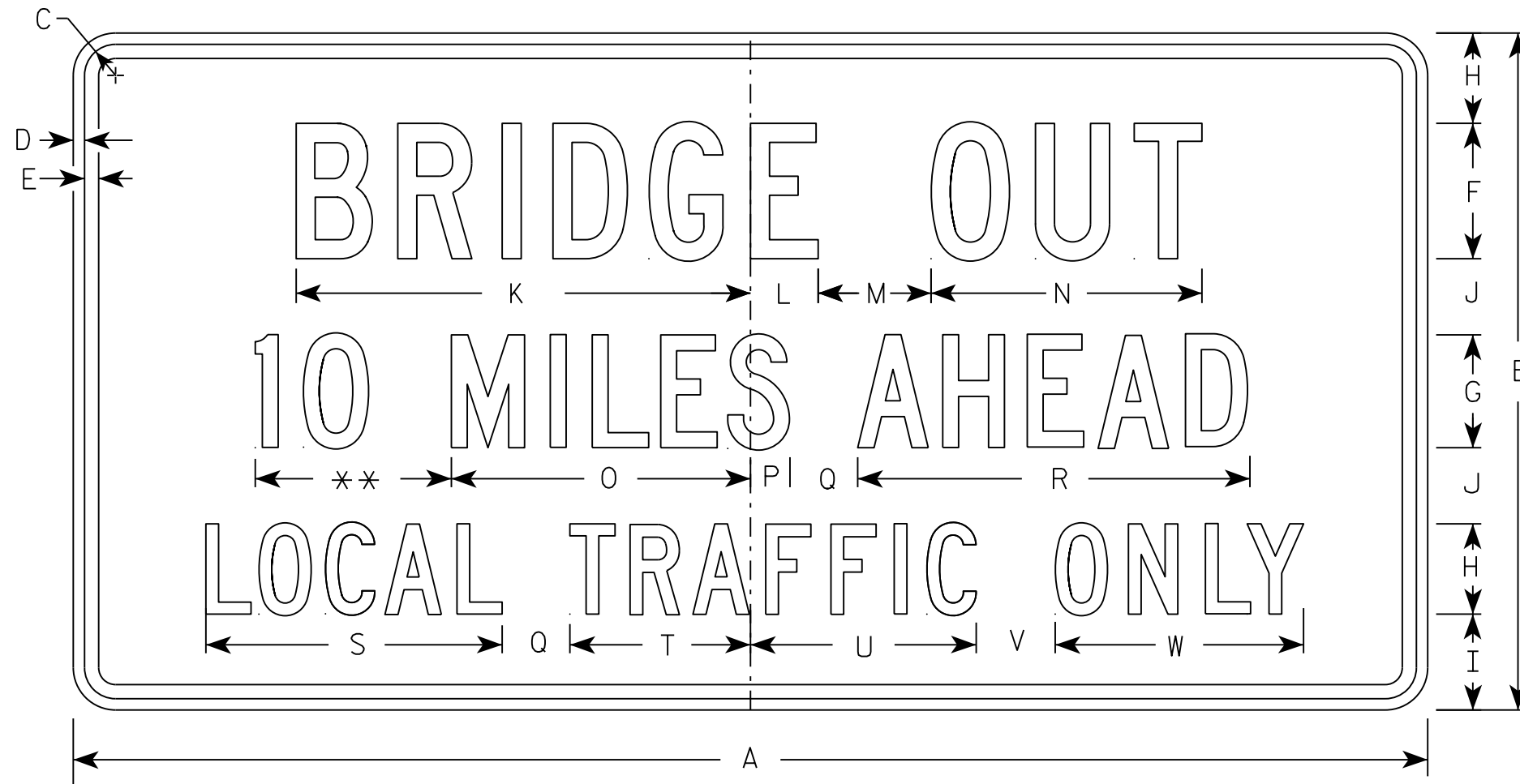
| SIZE | A  | B  | C     | D   | E   | F | G | H | I      | J     | K     | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 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><br>For State Traffic Engineer |
| DATE 4/1/11                      | PLATE NO. R11-2B.2                                    |



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
  - Background - White
  - Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



\*\* See Note 5

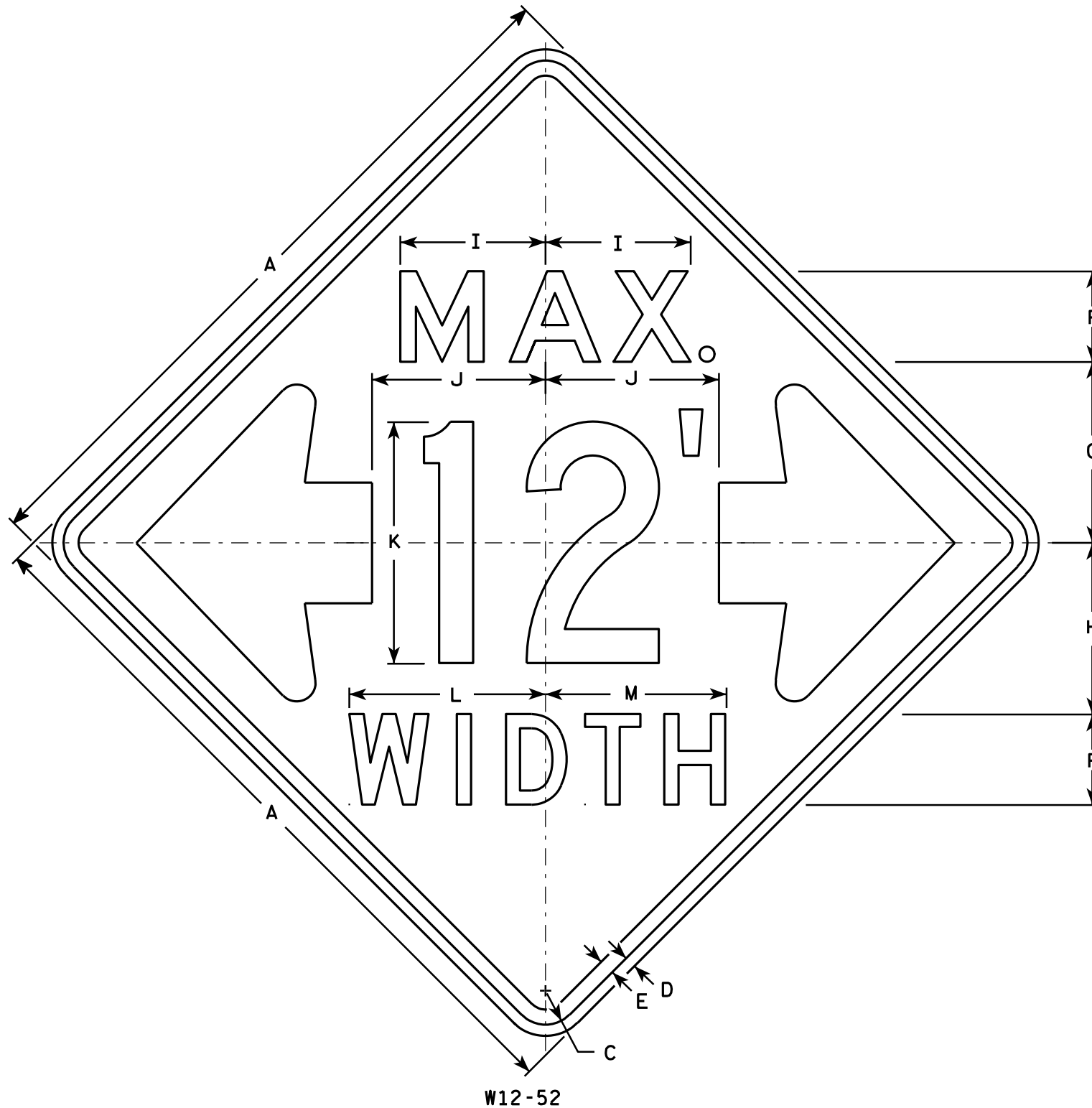
R11-3B

The diagram shows a 1/4 mile race track layout. The track is represented by a horizontal line with arrows at both ends. The line is divided into four segments by three vertical dashed lines. The segments are labeled P, Q, R, and X from left to right. Segment P is the first segment, Q is the second, R is the third, and X is the fourth. The text "1/4 MILE" is written above the first segment (P), and "AHEAD" is written above the second segment (Q).

[illegible]

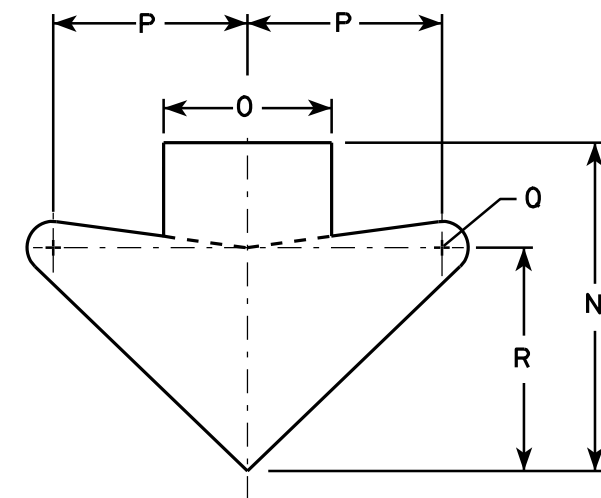
|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN                    |                                                       |
| R11-3B                           |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <u>Matthew R. Rauch</u><br>for State Traffic Engineer |
| DATE 3/21/17                     | PLATE NO. R11-3B.3                                    |

|             |      |         |  |               |          |
|-------------|------|---------|--|---------------|----------|
| PROJECT NO: | HWY: | COUNTY: |  | SHEET NO: 163 | <b>E</b> |
|-------------|------|---------|--|---------------|----------|



# 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. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



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<br>sq. ft. |
|------|----|---|-------|-----|---|---|----|--------|-------|--------|----|----|----|--------|---|-------|-------|--------|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |   |       |     |   |   |    |        |       |        |    |    |    |        |   |       |       |        |   |   |   |   |   |   |   |   |                 |
| 2S   | 48 |   | 2 1/4 | 3/4 | 1 | 6 | 12 | 11 3/8 | 9 5/8 | 11 1/2 | 16 | 13 | 12 | 15 5/8 | 8 | 9 1/4 | 1 1/4 | 10 5/8 |   |   |   |   |   |   |   |   | 16.0            |
| 2M   | 48 |   | 2 1/4 | 3/4 | 1 | 6 | 12 | 11 3/8 | 9 5/8 | 11 1/2 | 16 | 13 | 12 | 15 5/8 | 8 | 9 1/4 | 1 1/4 | 10 5/8 |   |   |   |   |   |   |   |   | 16.0            |
| 3    |    |   |       |     |   |   |    |        |       |        |    |    |    |        |   |       |       |        |   |   |   |   |   |   |   |   |                 |
| 4    |    |   |       |     |   |   |    |        |       |        |    |    |    |        |   |       |       |        |   |   |   |   |   |   |   |   |                 |
| 5    |    |   |       |     |   |   |    |        |       |        |    |    |    |        |   |       |       |        |   |   |   |   |   |   |   |   |                 |

## STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

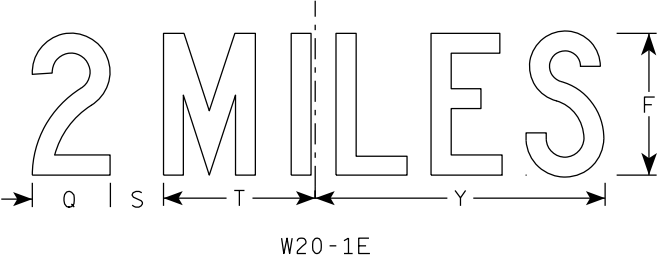
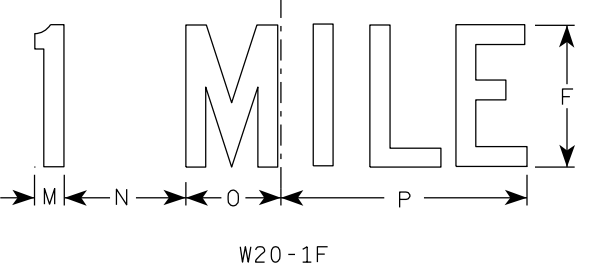
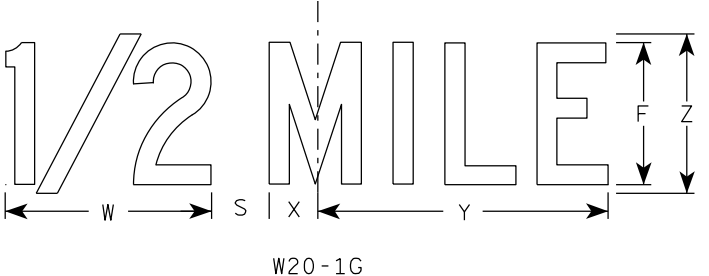
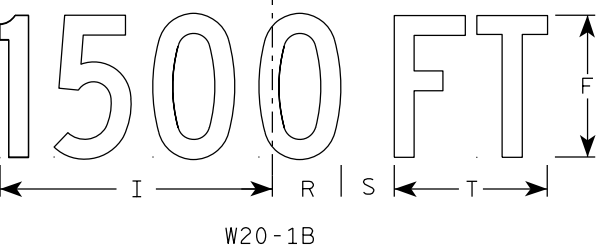
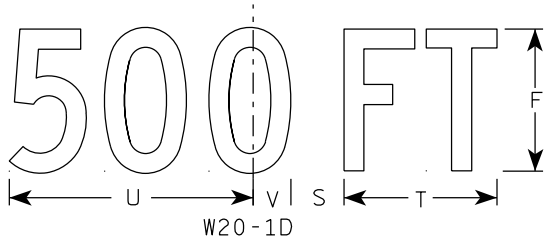
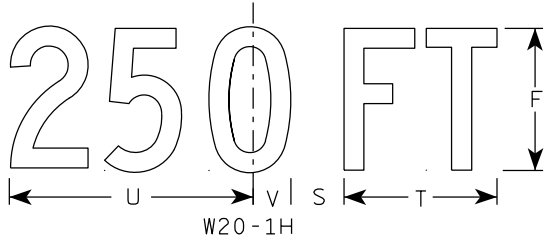
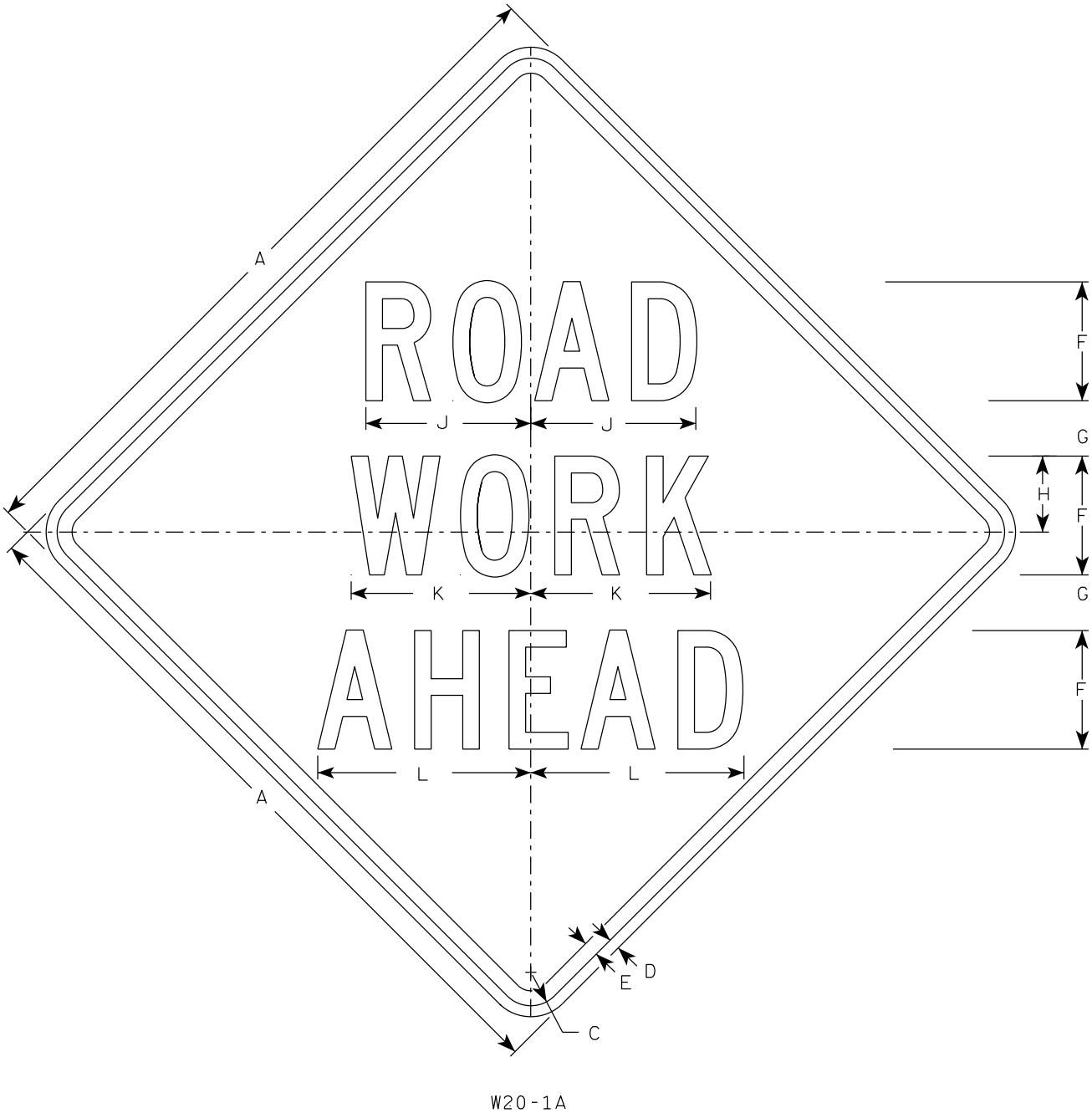
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

PROJECT NO: HWY: COUNTY: SHEET NO: 164 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.



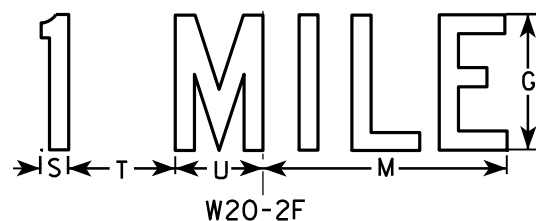
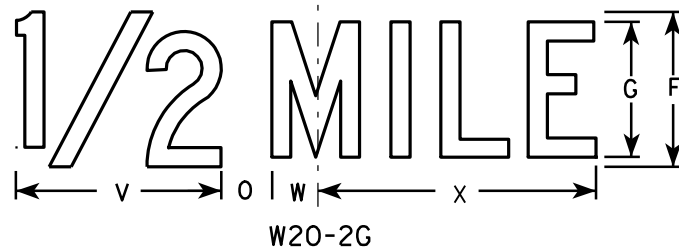
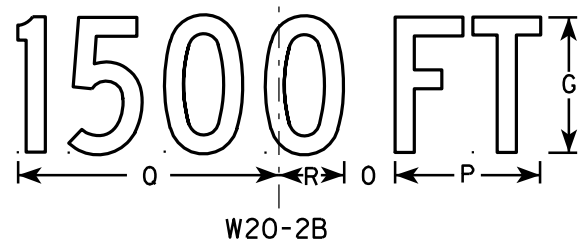
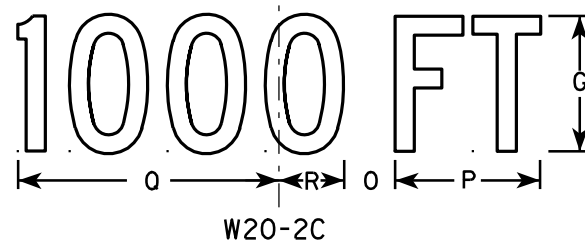
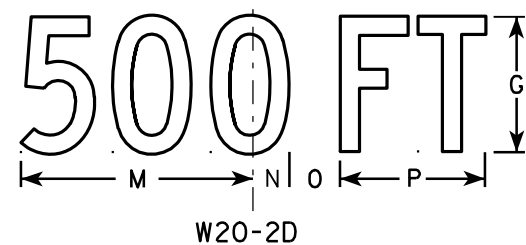
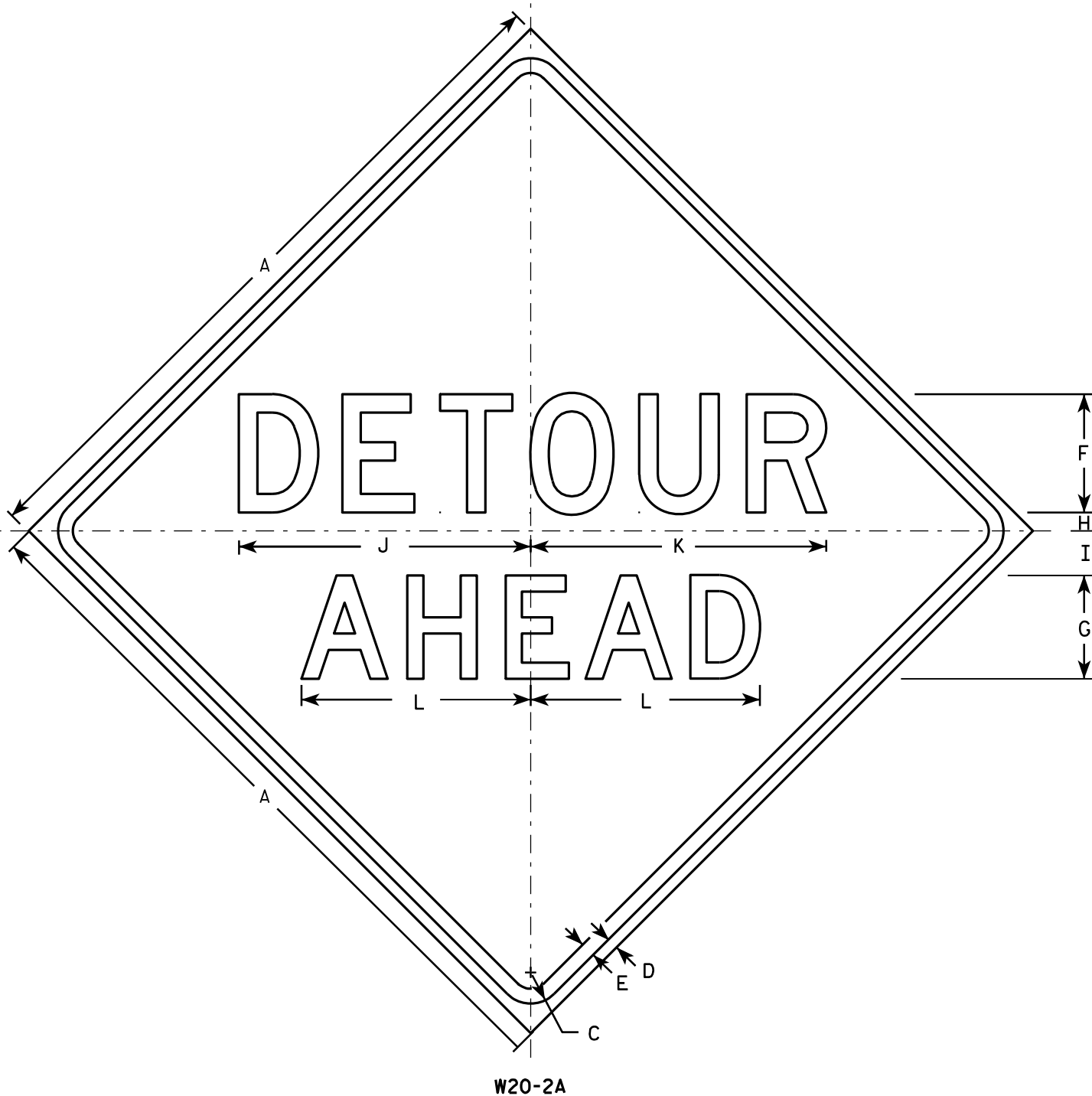
| SIZE | A  | B | C     | D   | E   | F | G     | H     | I      | J      | K      | L      | M     | N     | O     | P      | Q     | R     | S     | T     | U      | V     | W      | X     | Y      | Z | A <sub>req</sub><br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|--------|--------|--------|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|--------|-------|--------|---|-----------------------------|
| 1    | 36 |   | 1 5/8 | 5/8 | 3/4 | 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      | 3 1/4 | 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, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11

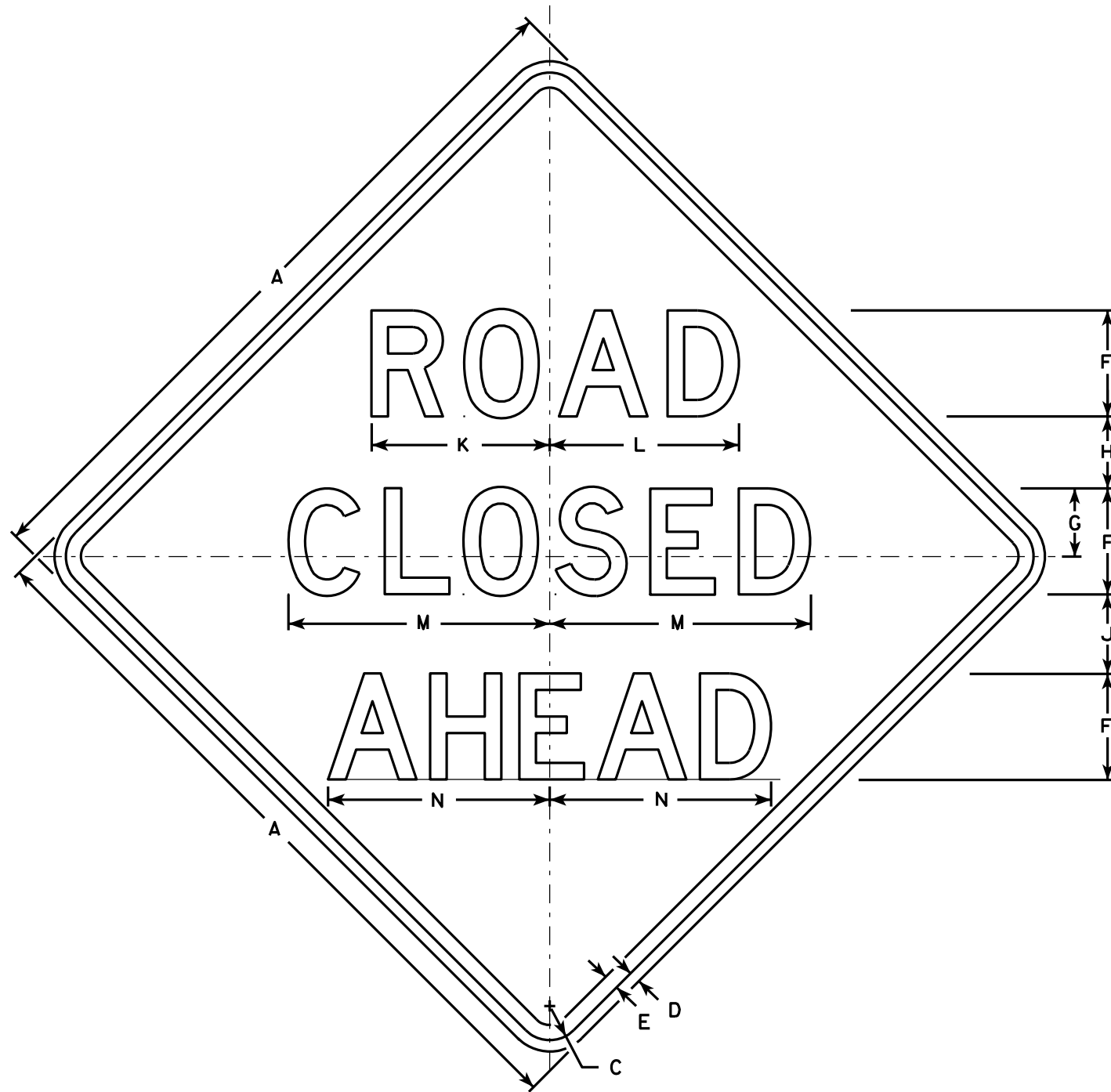


#### NOTES

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<br>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                         | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 3/18/11                     | PLATE NO. W20-2.6                                     |



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<br>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

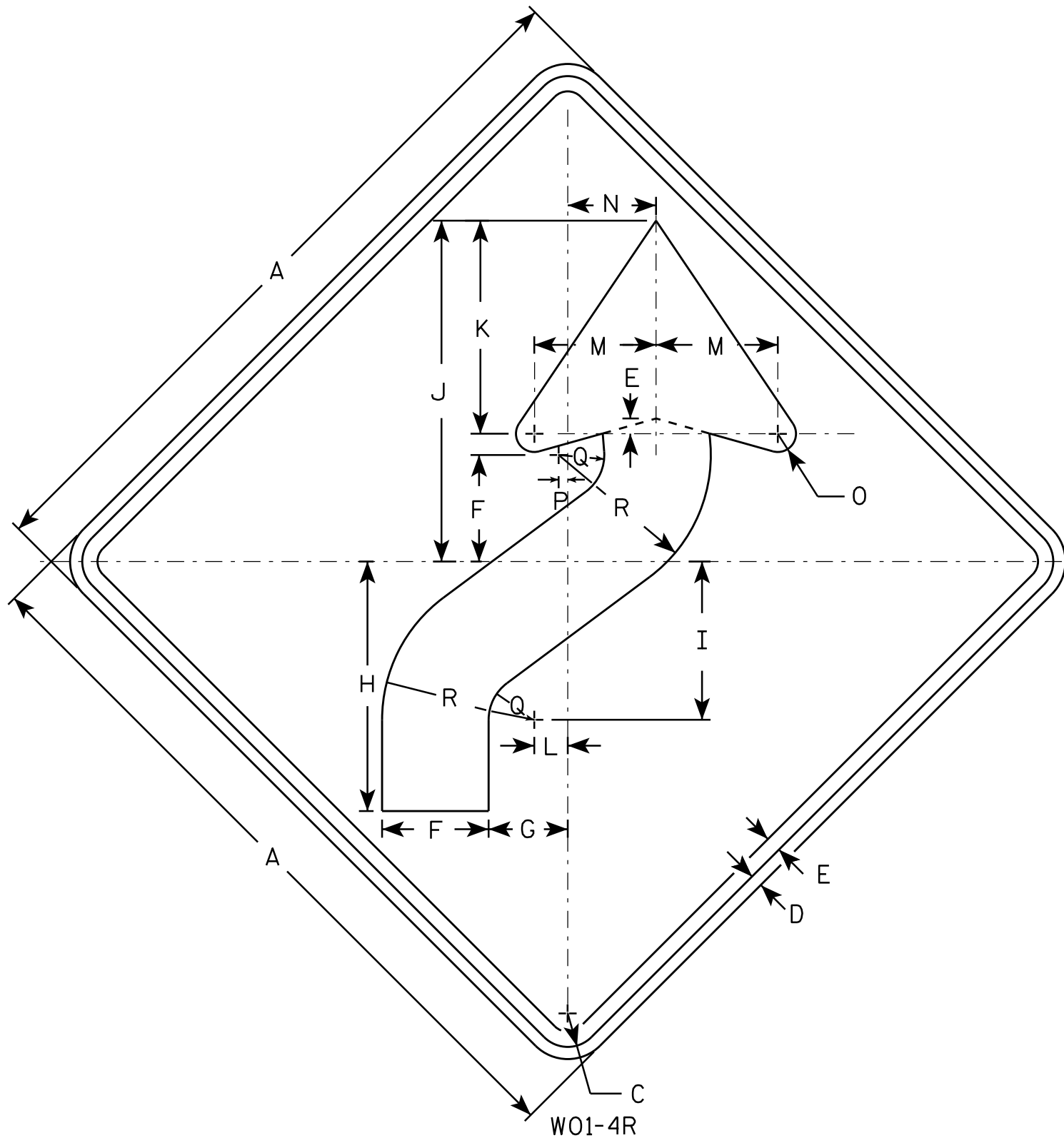
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 167

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.
4. W01-4L is the same as W01-4R 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<br>sq. ft. |
|------|----|---|-------|-----|-----|-------|-------|--------|--------|--------|--------|-------|---|-------|-------|-----|-------|-------|---|---|---|---|---|---|---|---|-----------------|
| 1    | 36 |   | 1 5/8 | 5/8 | 3/4 | 5 1/4 | 4     | 12 3/8 | 7 7/8  | 16 7/8 | 10 1/2 | 1 5/8 | 6 | 4 1/2 | 1     | 1/2 | 2 1/4 | 7 1/2 |   |   |   |   |   |   |   |   | 9.0             |
| 2S   | 48 |   | 2 1/4 | 3/4 | 1   | 7     | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14     | 2 1/4 | 8 | 6     | 1 1/4 | 5/8 | 3     | 10    |   |   |   |   |   |   |   |   | 16.0            |
| 2M   | 48 |   | 2 1/4 | 3/4 | 1   | 7     | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14     | 2 1/4 | 8 | 6     | 1 1/4 | 5/8 | 3     | 10    |   |   |   |   |   |   |   |   | 16.0            |
| 3    | 48 |   | 2 1/4 | 3/4 | 1   | 7     | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14     | 2 1/4 | 8 | 6     | 1 1/4 | 5/8 | 3     | 10    |   |   |   |   |   |   |   |   | 16.0            |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 7     | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14     | 2 1/4 | 8 | 6     | 1 1/4 | 5/8 | 3     | 10    |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 7     | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14     | 2 1/4 | 8 | 6     | 1 1/4 | 5/8 | 3     | 10    |   |   |   |   |   |   |   |   | 16.0            |

## STANDARD SIGN W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1  
168

PROJECT NO:

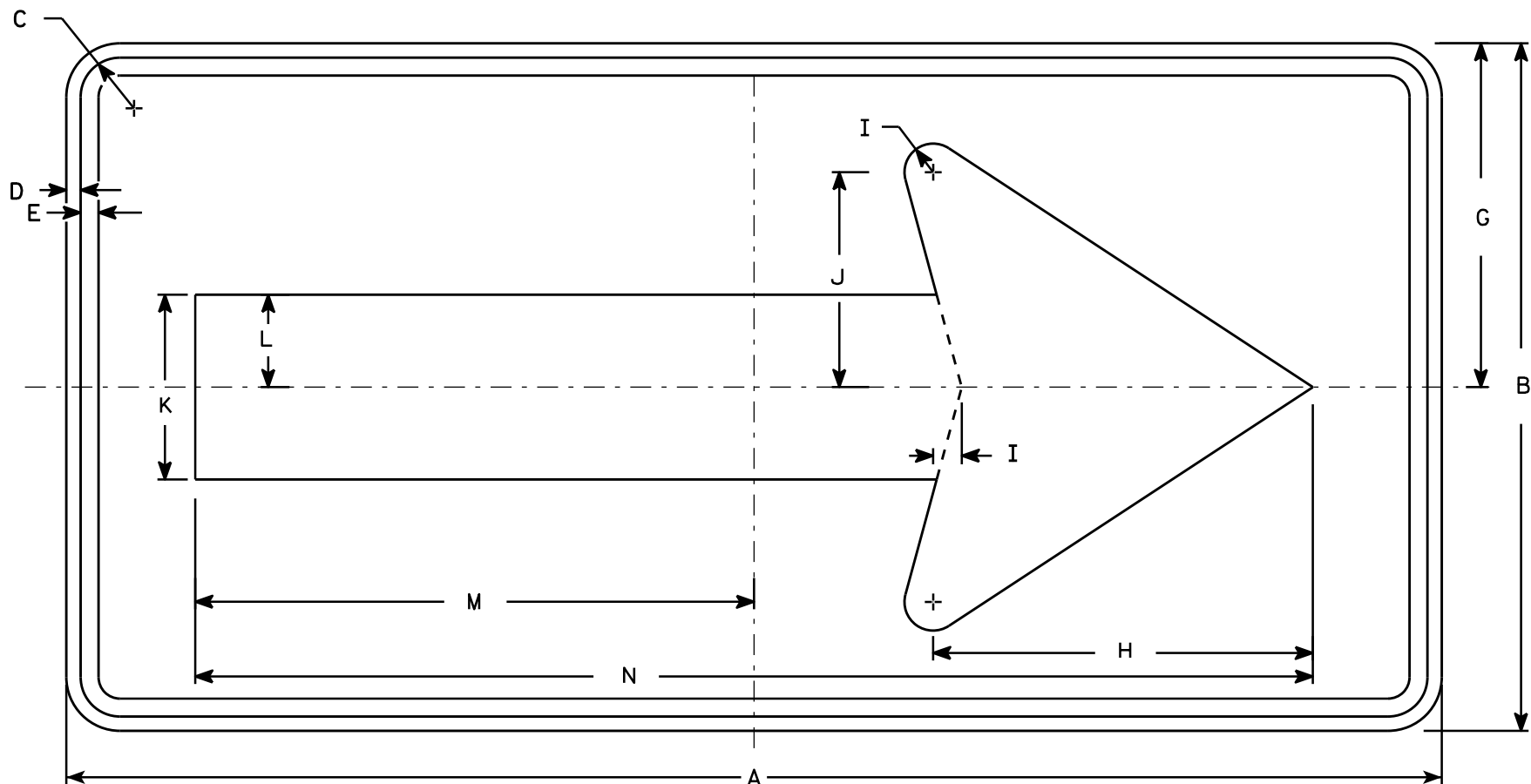
HWY:

COUNTY:

SHEET NO:

E





W01-6

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.

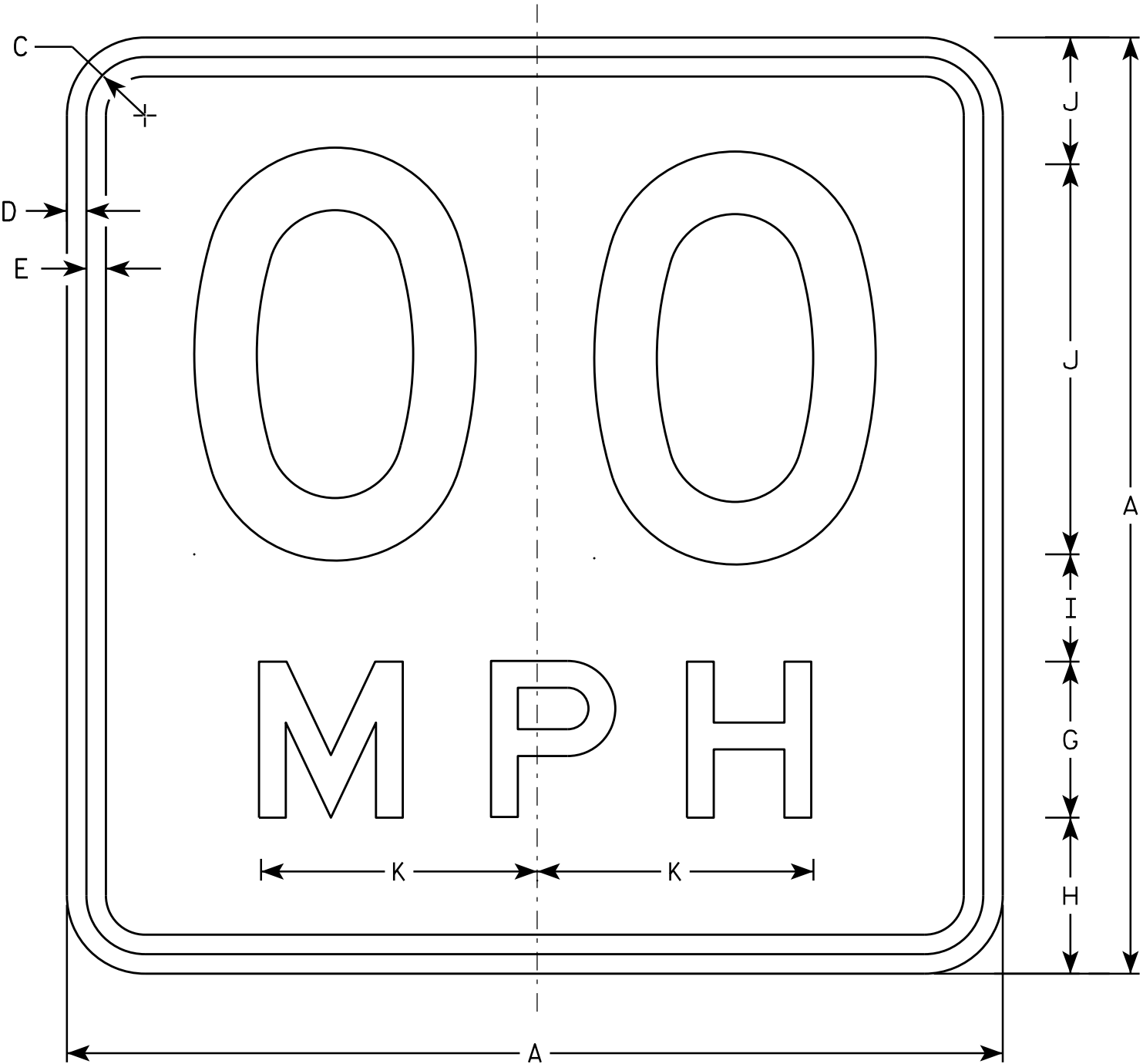
| SIZE | A  | B  | C     | D   | E   | F | G  | H      | I     | J     | K     | L     | M      | N      | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|----|--------|-------|-------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 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. 169 W01-6.1



W013-1

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 - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D  
Line 2 is Series E

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|----|---|-------|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 24 |   | 1 1/8 | 3/8 | 1/2 | 10 | 4 | 4     | 2 3/4 | 3 1/4 | 7 1/8  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.00            |
| 2S   | 36 |   | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4     | 4 1/2 | 10 5/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.00            |
| 2M   | 36 |   | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4     | 4 1/2 | 10 5/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.00            |
| 3    | 36 |   | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4     | 4 1/2 | 10 5/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.00            |
| 4    | 36 |   | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4     | 4 1/2 | 10 5/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.00            |
| 5    | 36 |   | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4     | 4 1/2 | 10 5/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.00            |

STANDARD SIGN  
W013-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
For State Traffic Engineer

DATE 11/21/13 PLATE 170 W013-1.1

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON FIELD MEASUREMENTS.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS B-43-64" SHALL BE THE EXISTING GROUNDLINE.

THE BID ITEM "REMOVING STRUCTURE 43045004481" INCLUDES REMOVAL OF ALL FOUR EXISTING PIPES (43045004481, 43045004482, 43045004483, 43045003271) AND INLET AND OUTLET HEADWALLS AND APRON SLABS. EACH OF THE EXISTING REINFORCED CONCRETE PIPES ARE 6'-0" DIA. WITH AN APPROXIMATE LENGTH OF 57'-0".

ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE B" REQUIRED BEHIND HEADWALLS AND BEHIND APRON WINGS AS SHOWN ON SHEET 2. "BACKFILL CONTROLLED LOW STRENGTH" REQUIRED FROM BOTTOM OF CULVERT PIPE TO THE SPRING LINE. GRANULAR BACKFILL REQUIRED FROM SPRING LINE TO THE BOTTOM OF SUBGRADE. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

SEE SHEET 2 FOR LIMITS OF UNDERCUT. UNDER CUT 1'-0". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

IN LIEU OF USING BREAKER RUN FOR APRON CONSTRUCTION PLATFORM, CONTRACTOR MAY ELECT TO SUBSTITUTE "1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL. THE REGION GEOTECHNICAL ENGINEER MAY BE CONTACTED TO DETERMINE IF "OTHER GRANULAR MATERIAL" IS ACCEPTABLE.

STRUCTURE STAGING PLANS ARE SHOWN ON SHEET 10. SEE ROADWAY PLANS FOR ADDITIONAL STAGING DETAILS AND TRAFFIC CONTROL.

THE CONTRACTOR MAY FURNISH A COMBINATION OF STANDARD PIPE LENGTHS TO ACHIEVE THE PLAN BARREL LENGTH. IF PIPES HAVE FLANGED BELL ENDS, DO NOT LOCATE BELL IN THE INLET HEADWALL AND PROVIDE A CUT PIPE. BELL MAY BE LOCATED WITHIN THE HEADWALL IF NOT FLANGED. CUT ENDS AND SPIGOT ENDS WILL BE ALLOWED IN THE OUTLET HEADWALL. NO ADDITIONAL PAYMENT SHALL BE MADE FOR CUTTING OF PIPE.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

THE ALTERNATE CUT OFF WALL ON DETAIL SHOWN ON SHEET 3 MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUT OFF WALLS. PAYMENT SHALL BE BASED ON CONCRETE CUT OFF WALLS.

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 UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

BENCH MARK

| NO.  | STATION                       | DESCRIPTION                 | ELEVATION |
|------|-------------------------------|-----------------------------|-----------|
| 6181 | STA. 1416+60.48, 170.85' L.T. | BRONZE DISK IN ROCK OUTCROP | 1599.28   |

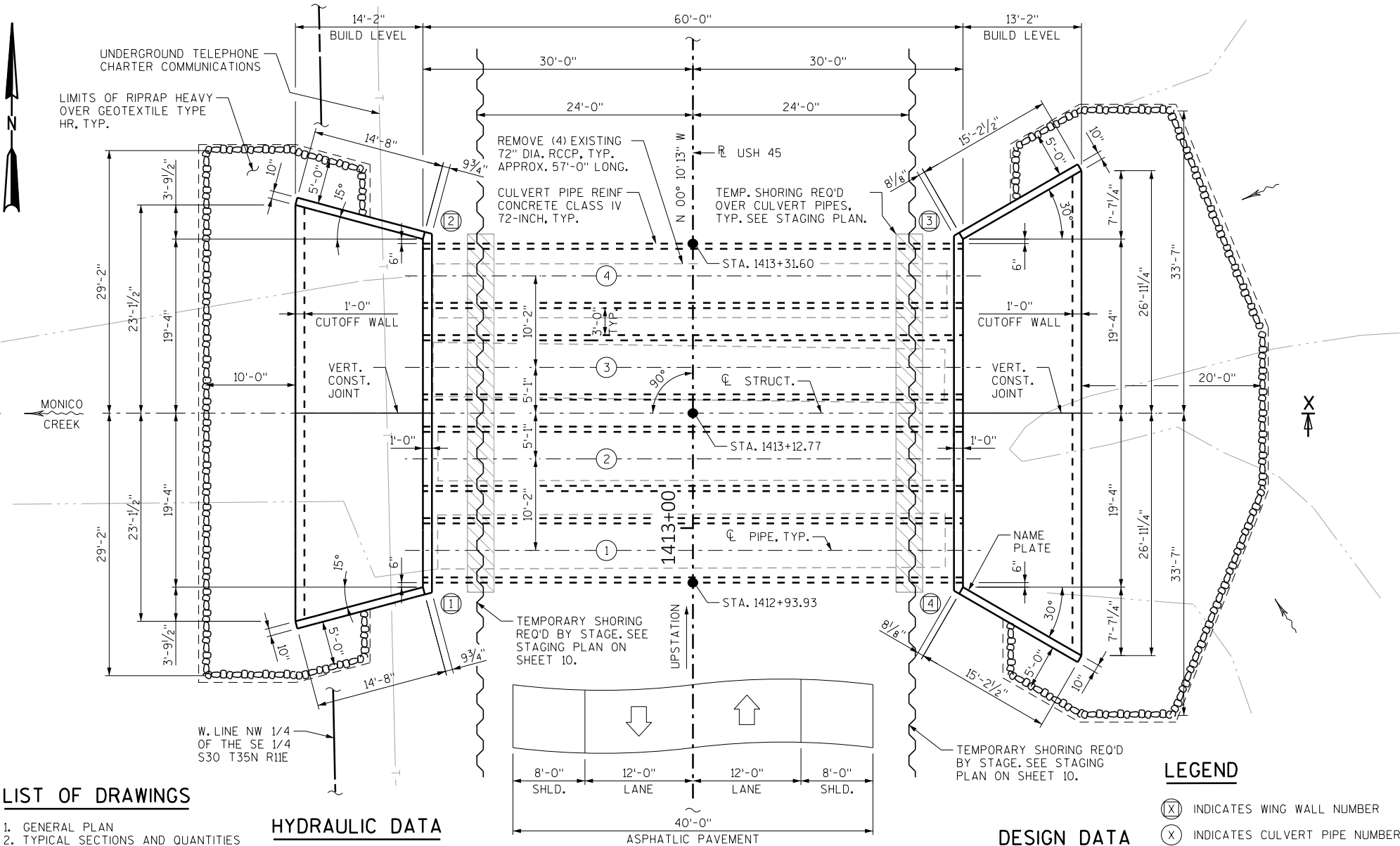


STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:  
AARON BONK, P.E. (608) 261-0261

CONSULTANT:  
VINCENT DIFRANCES, P.E. (920) 468-4771

| NO.                                                                                                                                               | DATE                                                                                  | REVISION     | BY                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|----------------------|
| <div><b>J ENGINEERING, INC</b><br/>Consultant Services</div> |                                                                                       |              |                      |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                                                                                                |                                                                                       |              |                      |
| ACCEPTED                                                                                                                                          |  | SDR 08/19/22 | DATE                 |
| CHIEF STRUCTURES DESIGN ENGINEER                                                                                                                  |                                                                                       |              |                      |
| STRUCTURE B-43-64                                                                                                                                 |                                                                                       |              |                      |
| USH 45 OVER MONICO CREEK                                                                                                                          |                                                                                       |              |                      |
| COUNTY                                                                                                                                            | ONEIDA                                                                                | TOWN         | MONICO               |
| DESIGN SPEC.<br>AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS                                                                                          |                                                                                       |              |                      |
| DESIGNED BY                                                                                                                                       | VJD                                                                                   | DESIGN CK'D. | FKH                  |
| DRAWN BY                                                                                                                                          | VJD                                                                                   | PLANS CK'D.  | FKH                  |
| GENERAL PLAN                                                                                                                                      |                                                                                       |              | SHEET 1 OF 10<br>171 |



LIST OF DRAWINGS

1. GENERAL PLAN
2. TYPICAL SECTIONS AND QUANTITIES
3. APRON REINFORCEMENT
4. WING WALL REINFORCEMENT
5. WING WALL SECTIONS
6. EAST HEADWALL REINFORCEMENT
7. WEST HEADWALL REINFORCEMENT
8. HEADWALL SECTIONS
9. BILL OF BARS
10. STAGING PLAN

TRAFFIC DATA

USH 45  
A.D.T. = 3,100 (2023)  
A.D.T. = 3,500 (2043)  
R.D.S. = 55 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY

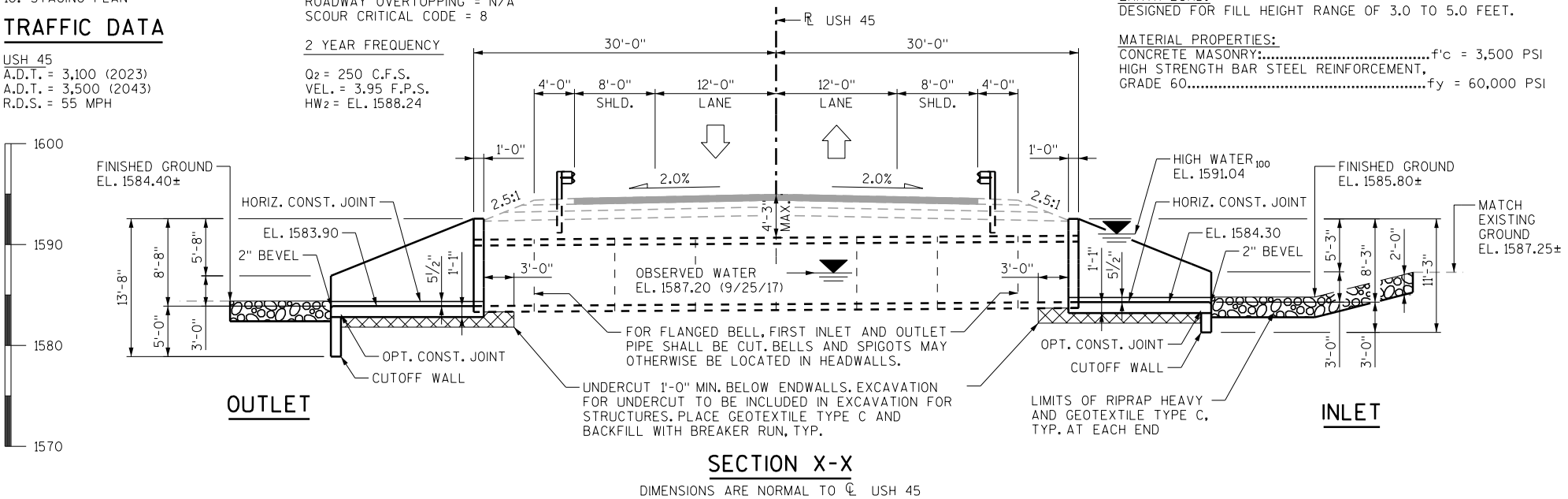
$Q_{100} = 770$  C.F.S  
VEL. = 8.87 F.P.S.  
 $HW_{100} = EL. 1591.04$   
WATERWAY AREA = 87 SQ. FT.  
DRAINAGE AREA = 23.0 SQ. MI.  
ROADWAY OVERTOPPING = N/A  
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

$Q_2 = 250$  C.F.S.  
VEL. = 3.95 F.P.S.  
 $HW_2 = EL. 1588.24$

PLAN

FOUR (4) CULVERT PIPE REINFORCED CONCRETE CLASS IV 72-INCH



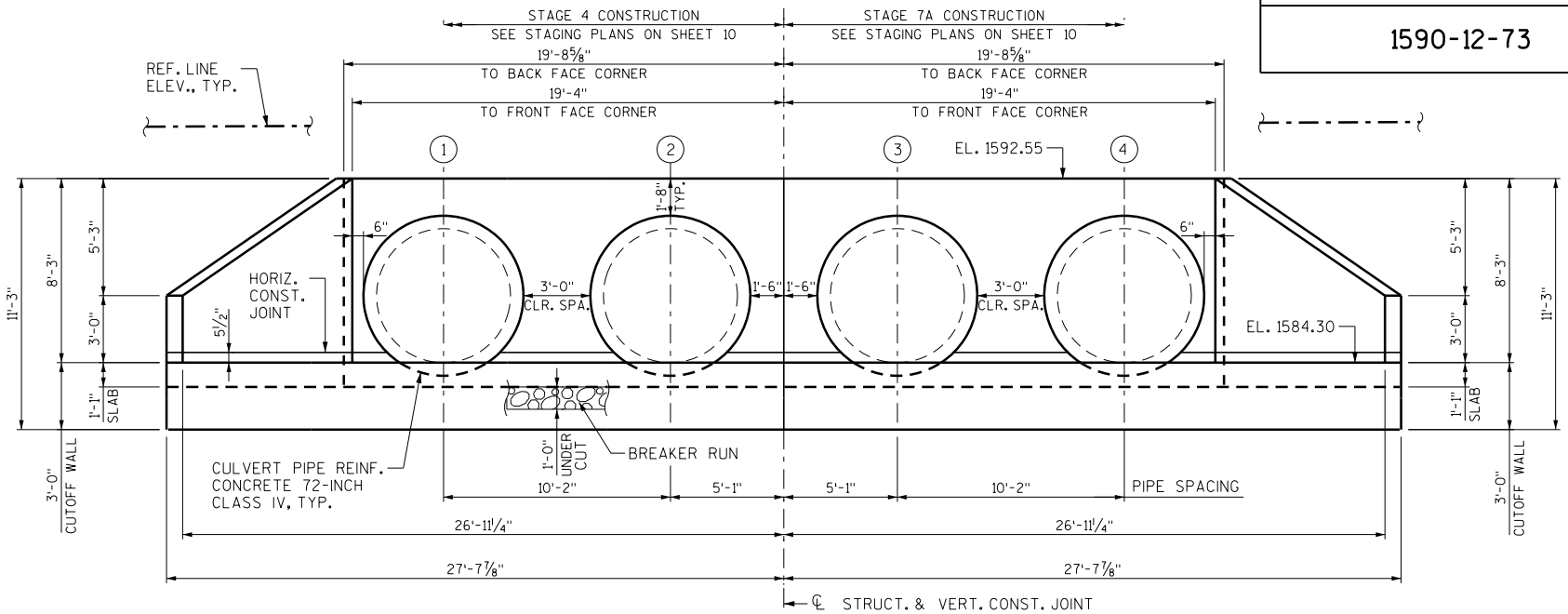
SECTION X-X

DIMENSIONS ARE NORMAL TO  $\phi$  USH 45

TOTAL ESTIMATED QUANTITIES

| BID ITEM NO. | BID ITEM                                          | UNIT | TOTAL |
|--------------|---------------------------------------------------|------|-------|
| 203.0220     | REMOVING STRUCTURE 43045004481                    | EACH | 1     |
| 206.2001     | EXCAVATION FOR STRUCTURES CULVERTS B-43-64        | EACH | 1     |
| 206.5001     | COFFERDAMS B-43-64                                | EACH | 1     |
| 209.0200.S   | BACKFILL CONTROLLED LOW STRENGTH                  | CY   | 125   |
| 210.2500     | BACKFILL STRUCTURE TYPE B                         | TON  | 420   |
| 311.0115     | BREAKER RUN                                       | CY   | 65    |
| 504.0100     | CONCRETE MASONRY CULVERTS                         | CY   | 89    |
| 505.0400     | BAR STEEL REINFORCEMENT HS STRUCTURES             | LB   | 9,290 |
| 511.1200     | TEMPORARY SHORING B-43-64                         | SF   | 1,650 |
| 516.0500     | RUBBERIZED MEMBRANE WATERPROOFING                 | SY   | 17    |
| 522.0472     | CULVERT PIPE REINFORCED CONCRETE CLASS IV 72-INCH | LF   | 240   |
| 606.0300     | RIPRAP HEAVY                                      | CY   | 140   |
| 645.0105     | GEOTEXTILE TYPE C                                 | SY   | 495   |
| 645.0120     | GEOTEXTILE TYPE HR                                | SY   | 285   |
|              | NON-BID ITEMS                                     |      |       |
|              | NAME PLATE                                        | EACH | 1     |

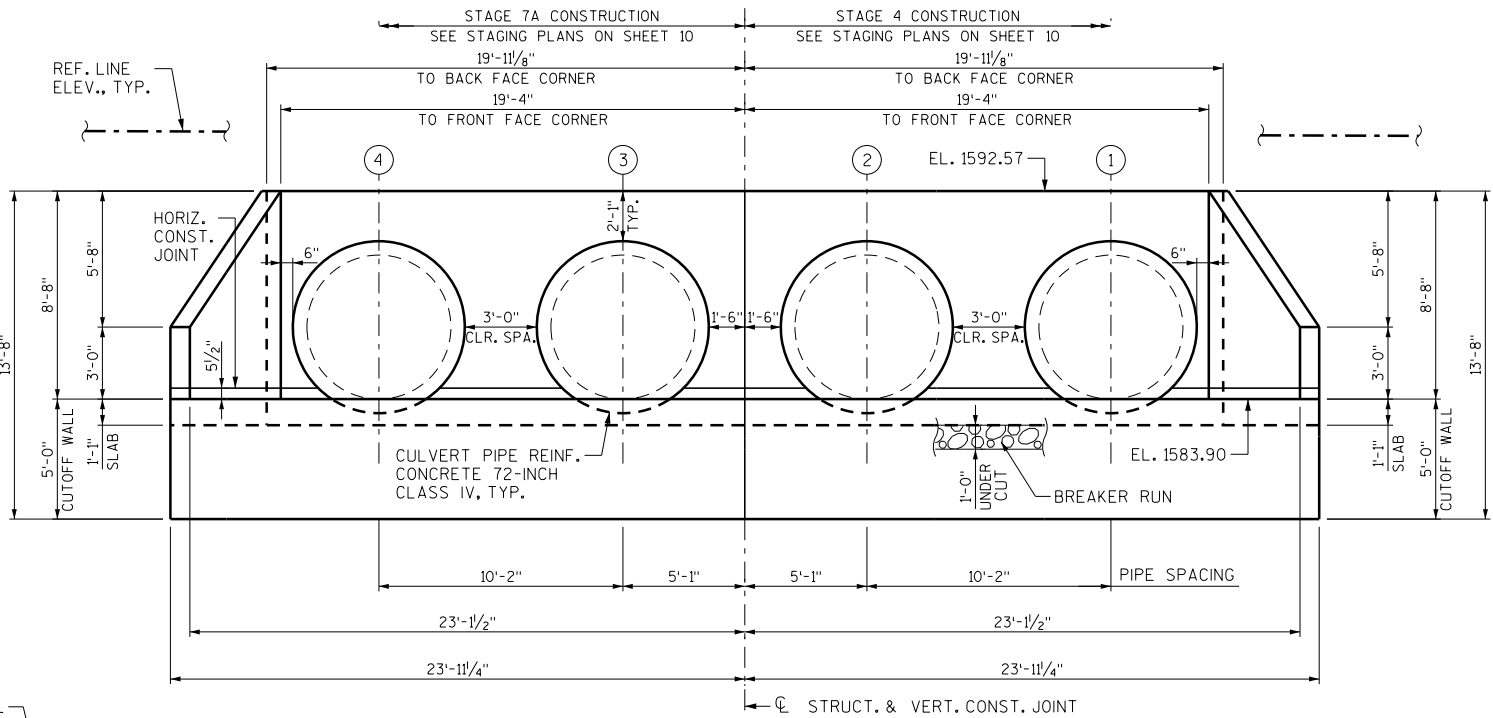
ALL B-43-64 BID ITEMS ARE CATEGORY 0020



UPSTREAM (EAST) ENDWALL ELEVATION

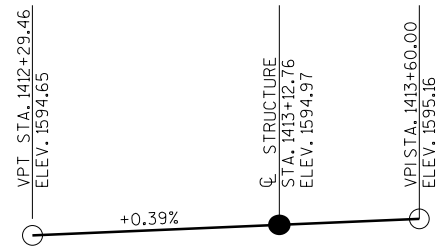
LOOKING WEST AT FRONT FACE

(X) INDICATES CULVERT PIPE NUMBER

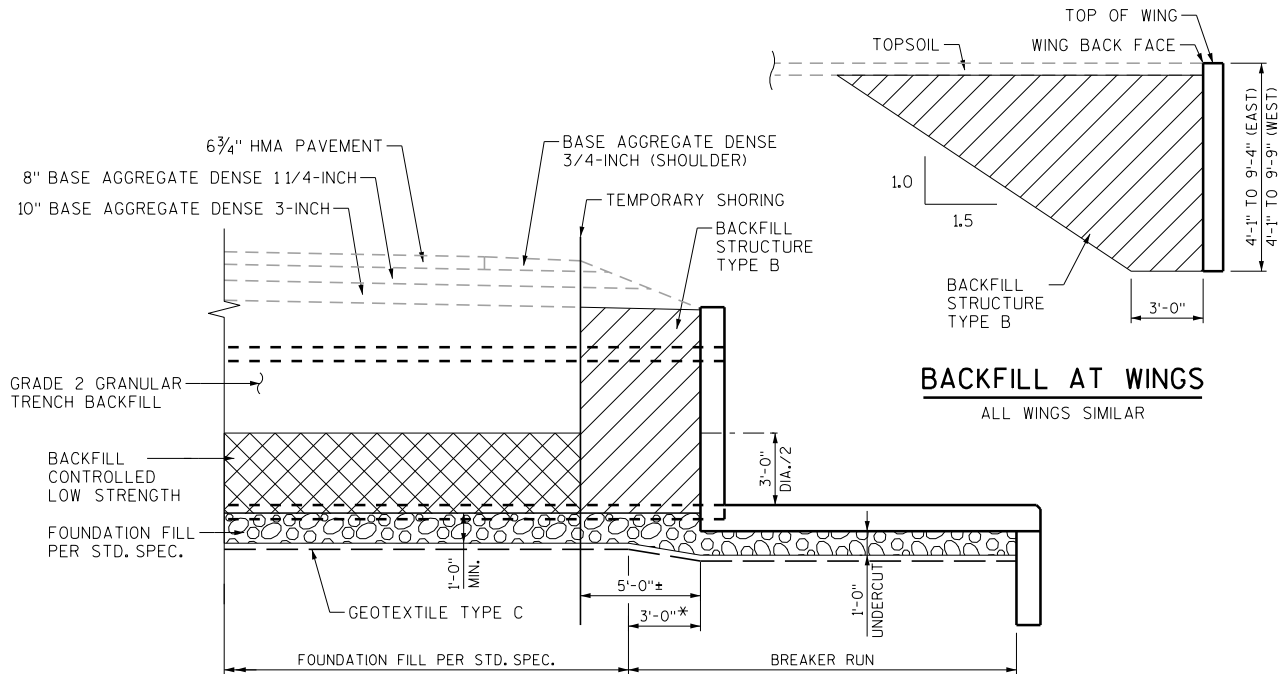


DOWNSTREAM (WEST) ENDWALL ELEVATION

LOOKING EAST AT FRONT FACE

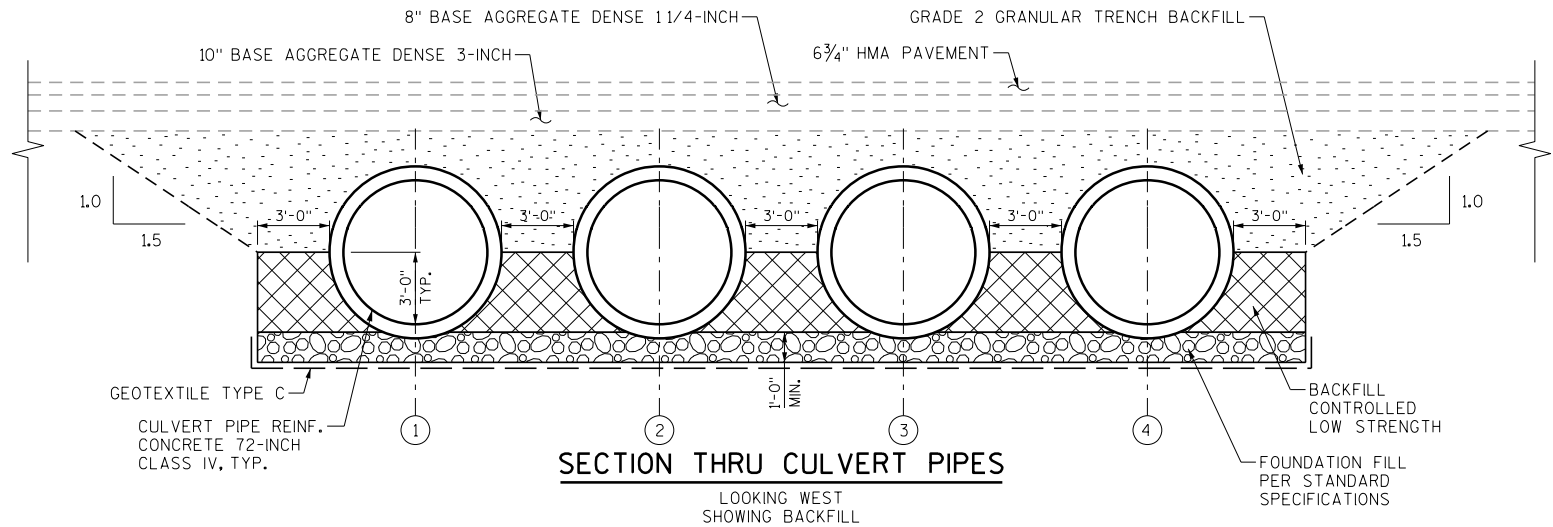


PROFILE GRADE LINE - USH 45



LONGIT. SECTION THRU CULVERT

SHOWING BACKFILL AT HEADWALL  
\*TYPICAL LIMIT OF BREAKER RUN AT ENDWALL APRONS



SECTION THRU CULVERT PIPES

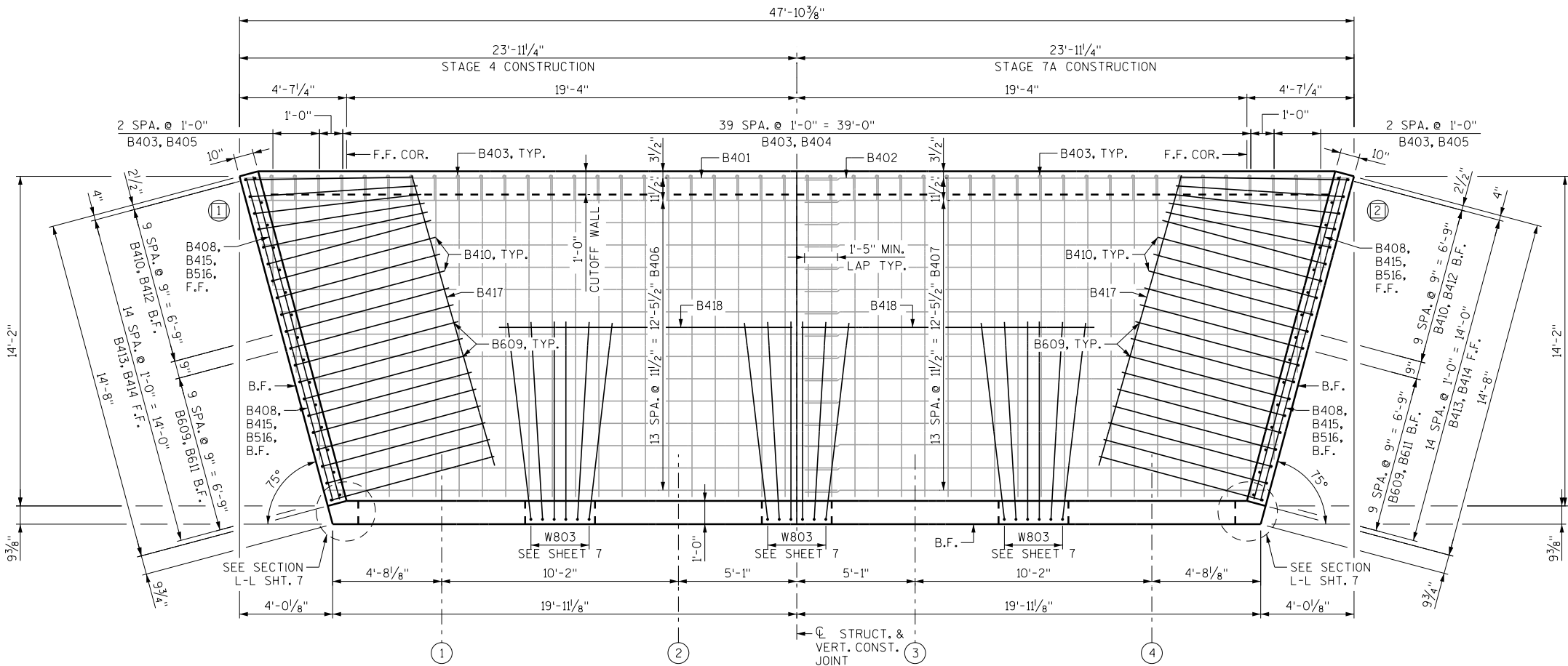
LOOKING WEST  
SHOWING BACKFILL

STATE PROJECT NUMBER

1590-12-73

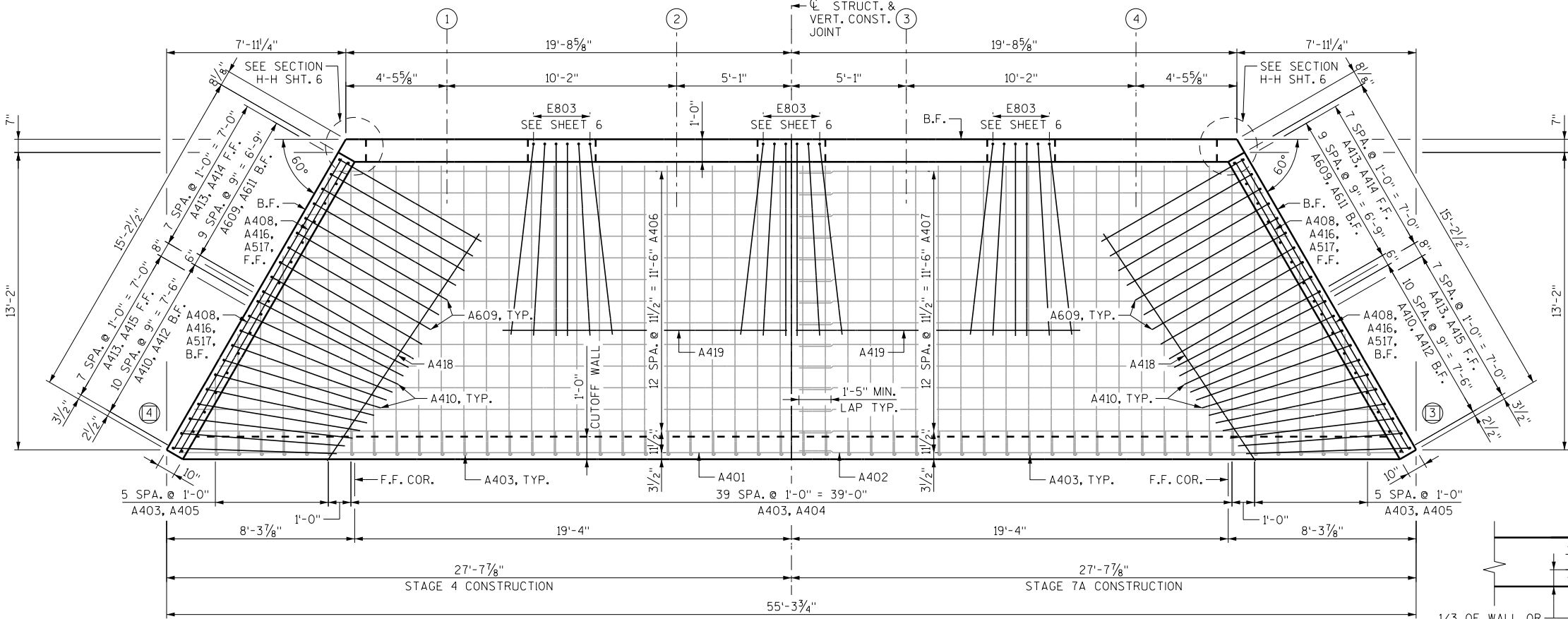
8

8



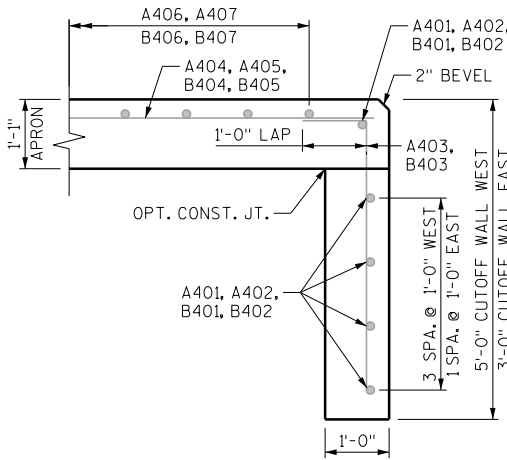
WEST APRON PLAN

SHADED REINFORCEMENT IS AT TOP OF APRON SLAB

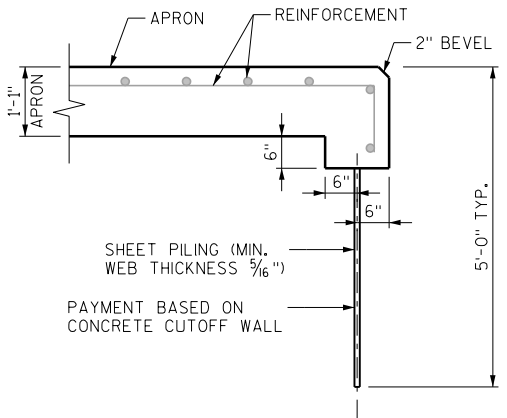


EAST APRON PLAN

SHADED REINFORCEMENT IS AT TOP OF APRON SLAB



SECTION THRU CUTOFF WALL



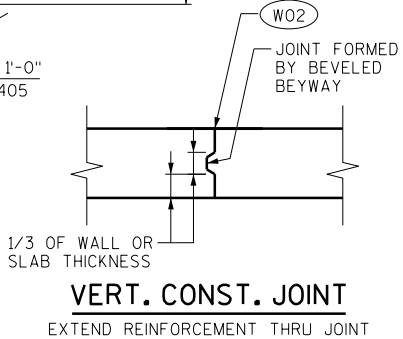
ALTERNATE CUTOFF WALL

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY.  
FOR BILL OF BARS, SEE SHEET 9.  
FOR SECTIONS THRU WING WALLS, SEE SHEET 5.

LEGEND

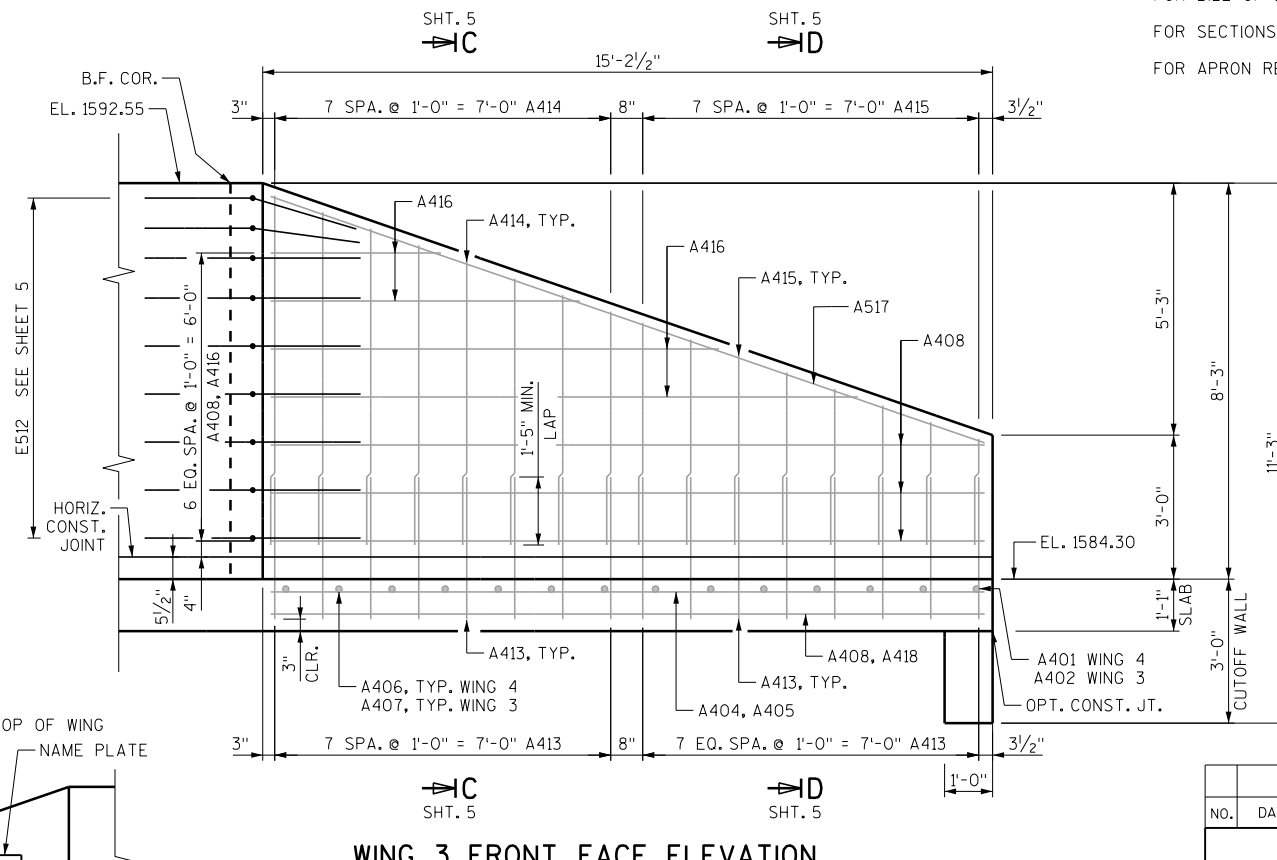
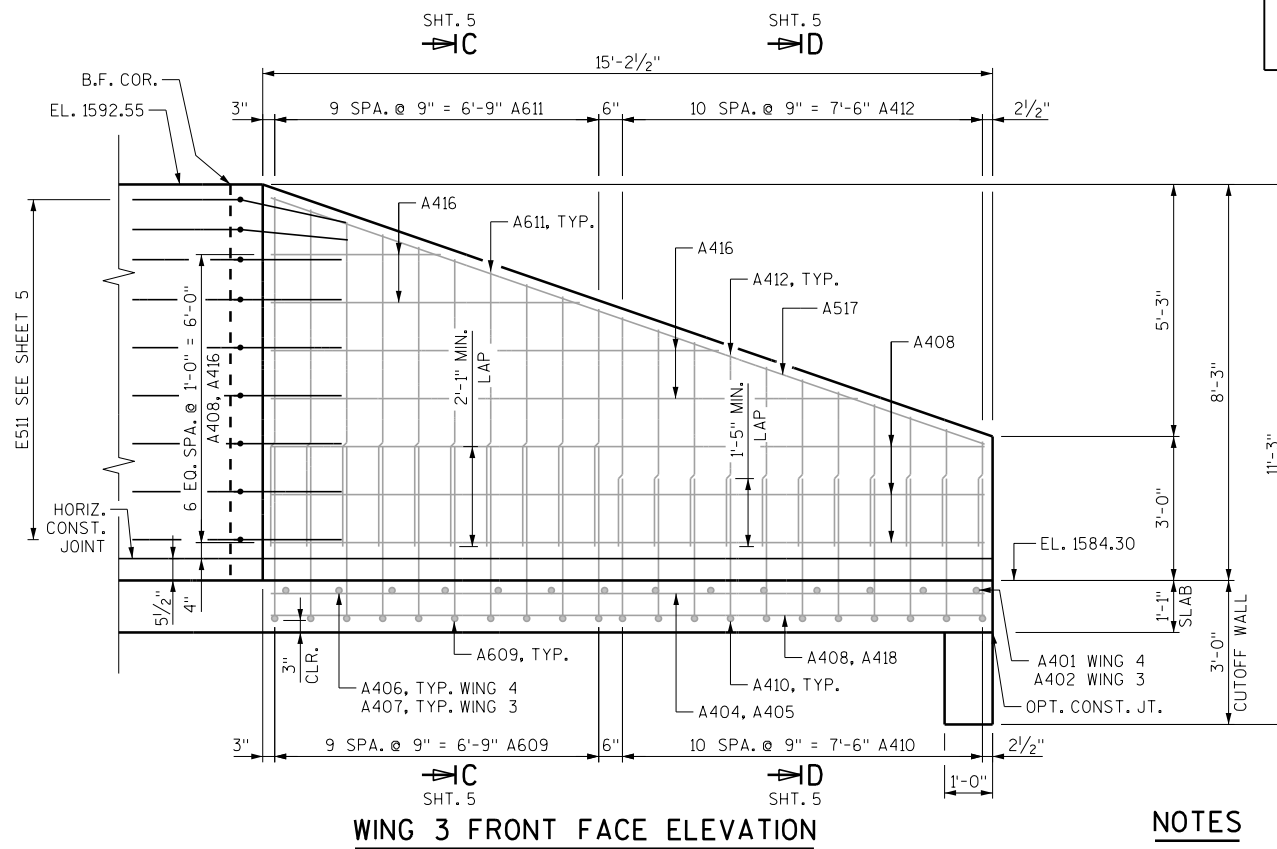
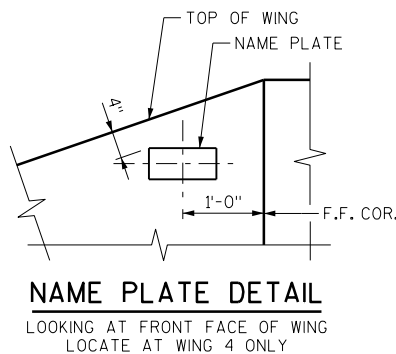
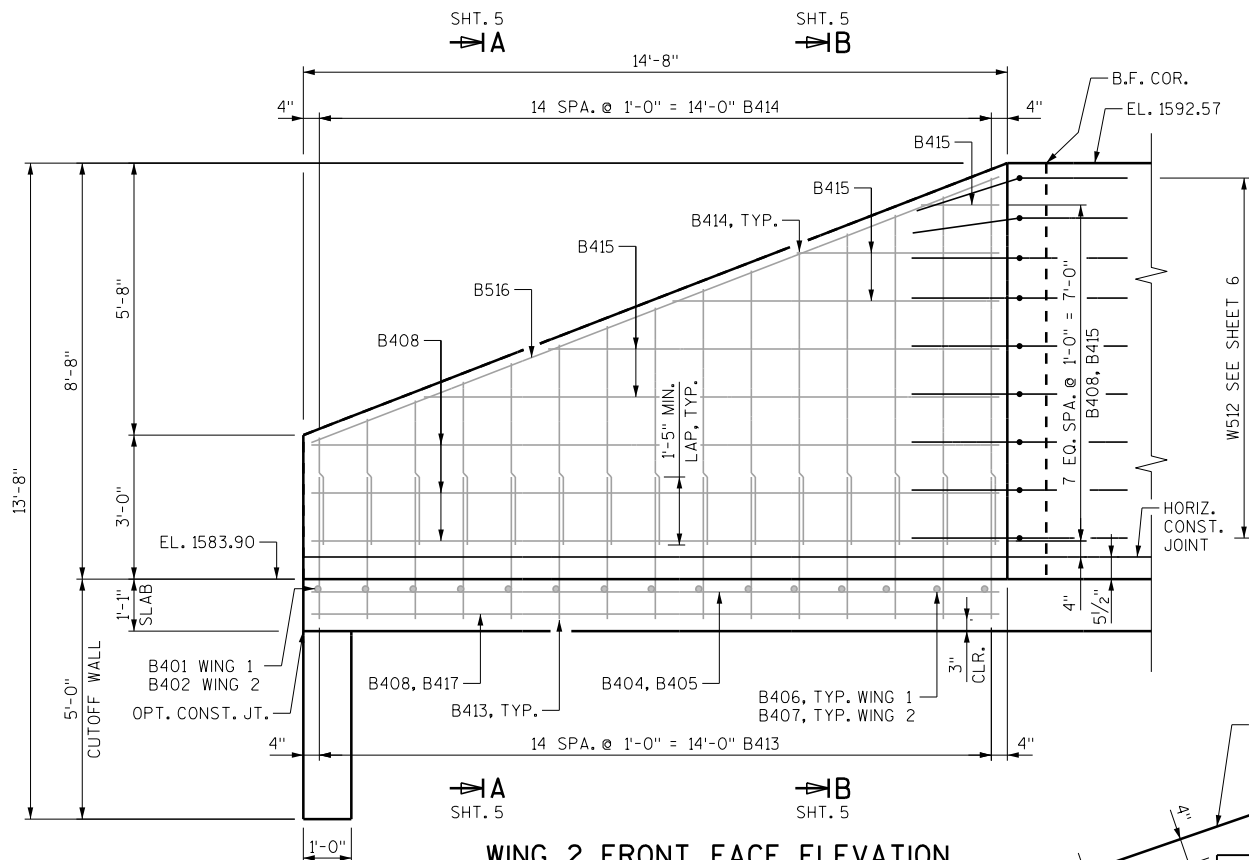
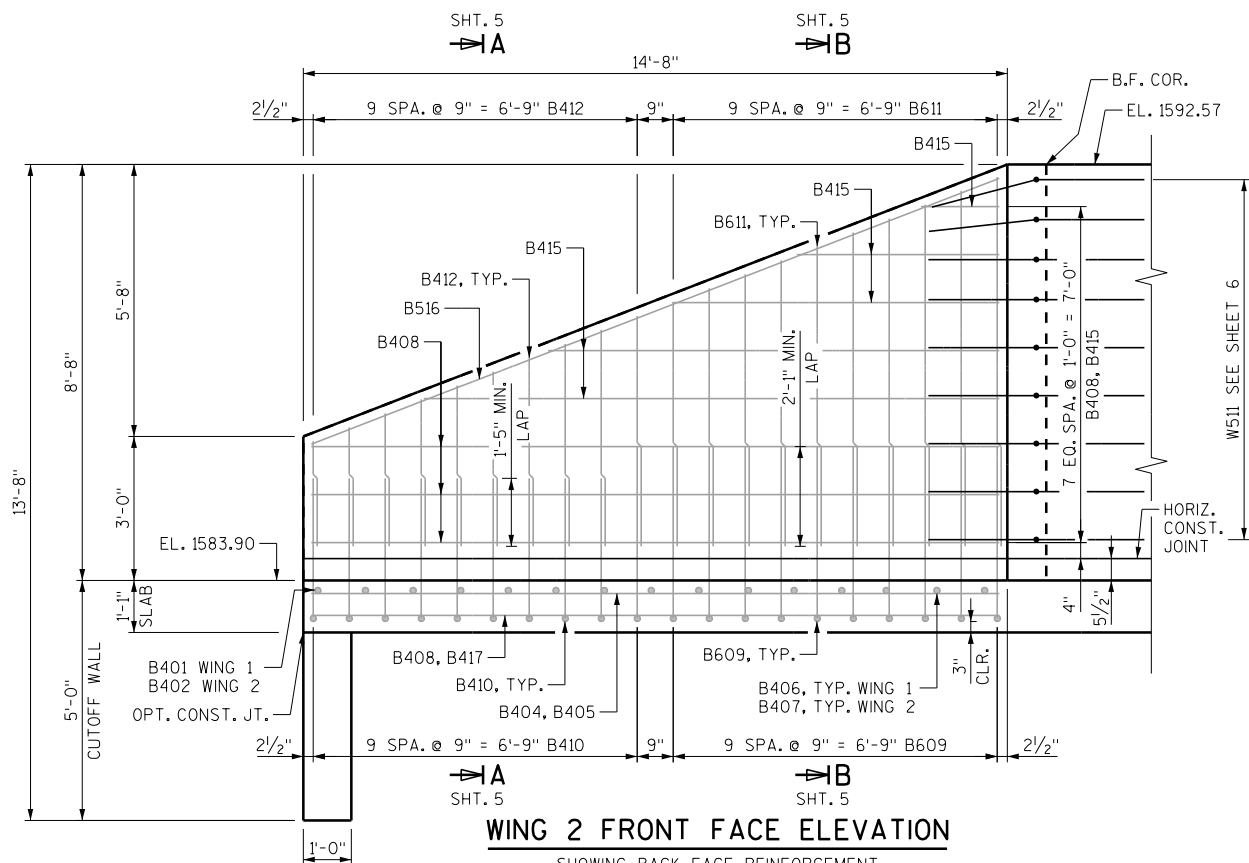
- (W02) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING, SEAL HORIZ. AND VERT. JOINTS AT BACK FACE.
- (X) INDICATES WING WALL NUMBER
- (X) INDICATES RCCP PIPE NUMBER
- F.F. = FRONT FACE
- B.F. = BACK FACE



VERT. CONST. JOINT

EXTEND REINFORCEMENT THRU JOINT

| NO.                                                | DATE | REVISION             | BY |
|----------------------------------------------------|------|----------------------|----|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                      |    |
| STRUCTURE B-43-64                                  |      |                      |    |
| DRAWN BY VJD                                       |      | PLANS CK'D, FKH      |    |
| APRON REINFORCEMENT                                |      | SHEET 3 OF 10<br>173 |    |



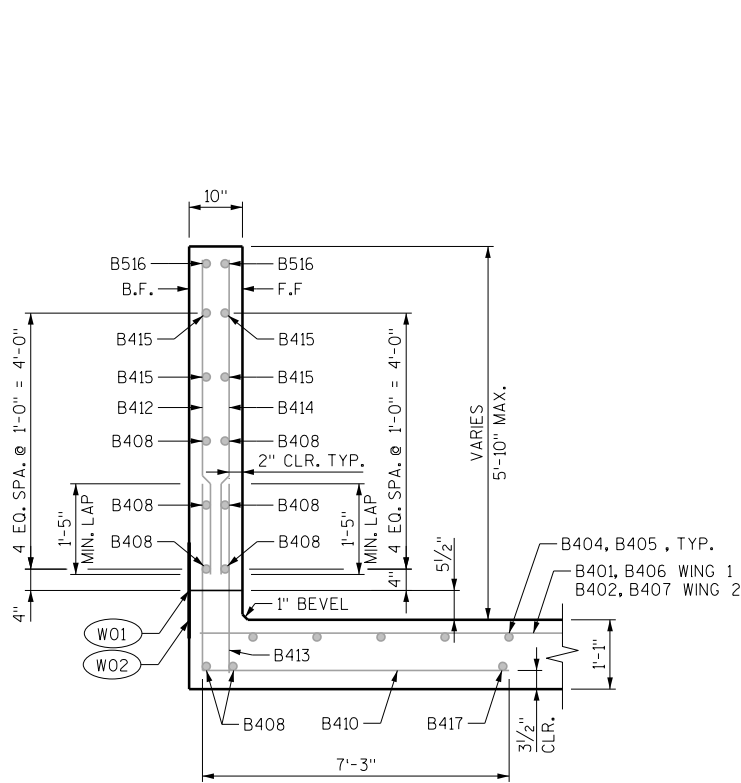
## NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY.  
FOR BILL OF BARS, SEE SHEET 9.

FOR SECTIONS THRU WING WALLS, SEE SHEET 5.

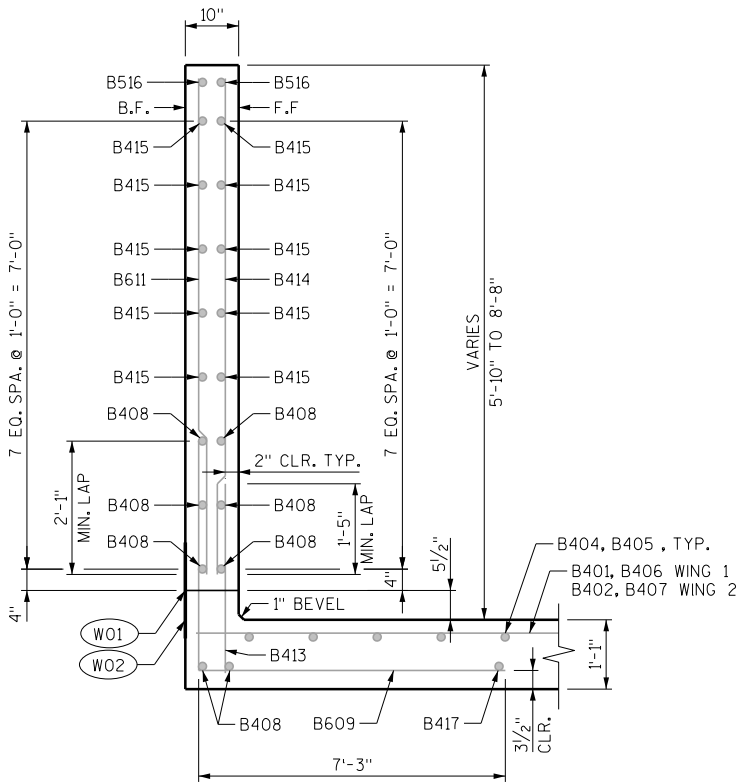
FOR APRON REINFORCEMENT, SEE SHEET 3.

| NO.                                                | DATE | REVISION           | BY                   |
|----------------------------------------------------|------|--------------------|----------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                    |                      |
| STRUCTURE B-43-64                                  |      |                    |                      |
| DRAWN<br>BY VJD                                    |      | PLANS<br>CK'D. FKH |                      |
| WING WALL<br>REINFORCEMENT                         |      |                    | SHEET 4 OF 10<br>174 |



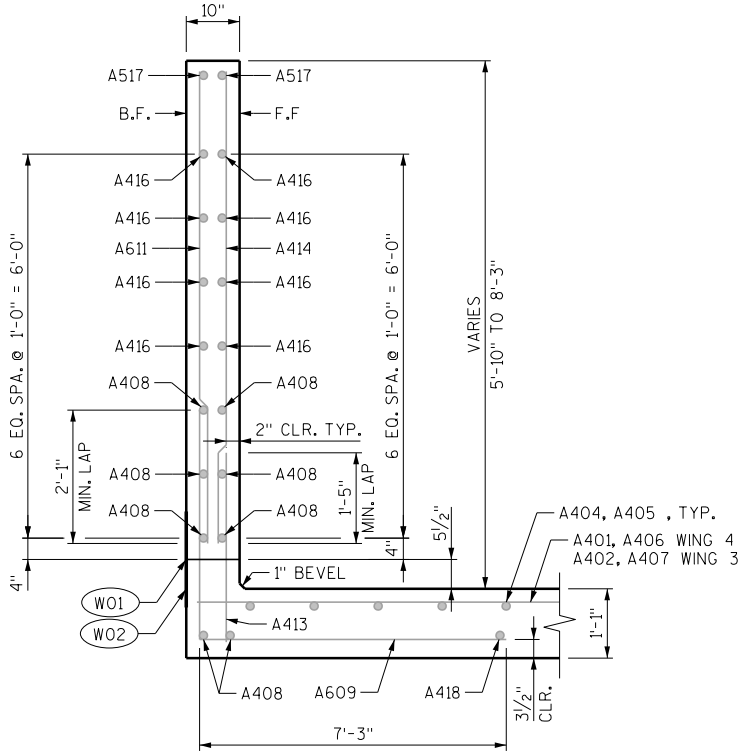
SECTION A-A

WING 1 AND 2 SIMILAR EXCEPT AS NOTED  
SEE SHEET 4 FOR LOCATION



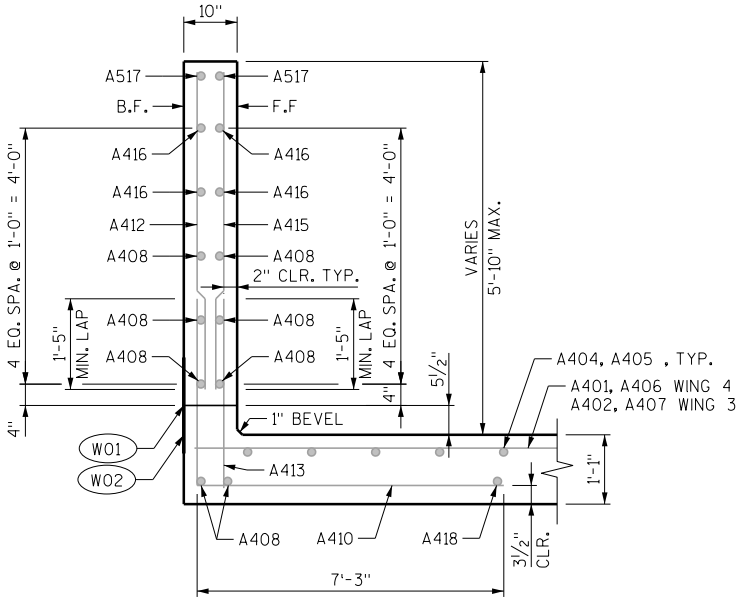
SECTION B-B

WING 1 AND 2 SIMILAR EXCEPT AS NOTED  
SEE SHEET 4 FOR LOCATION



SECTION C-C

WING 3 AND 4 SIMILAR EXCEPT AS NOTED  
SEE SHEET 4 FOR LOCATION



SECTION D-D

WING 3 AND 4 SIMILAR EXCEPT AS NOTED  
SEE SHEET 4 FOR LOCATION

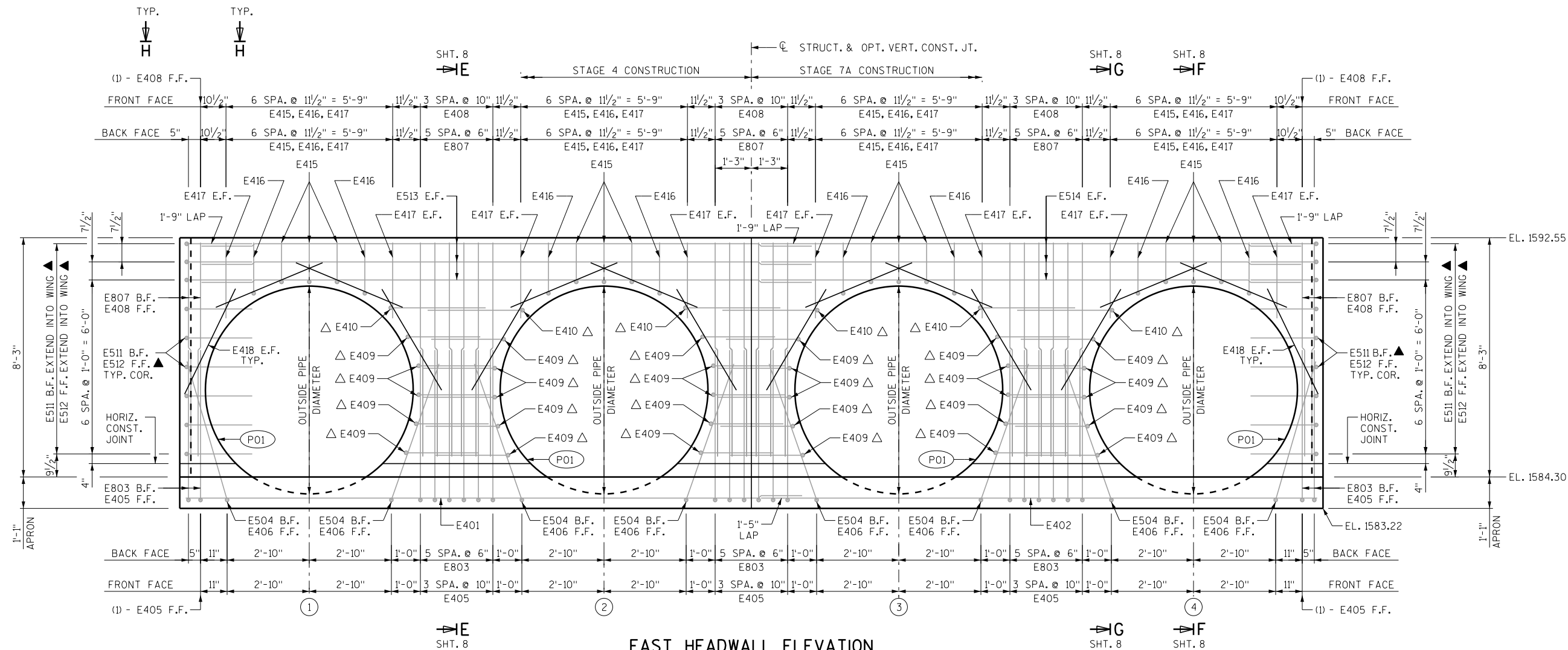
NOTES

FOR BILL OF BARS, SEE SHEET 9.  
FOR APRON REINFORCEMENT, SEE SHEET 3.

LEGEND

- (W01) HORIZONTAL CONSTRUCTION JOINT.  
(W02) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING.  
SEAL ALL HORIZONTAL JOINTS ON BACK FACE.
- F.F. = FRONT FACE  
B.F. = BACK FACE

|                                                    |  |                    |  |
|----------------------------------------------------|--|--------------------|--|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |  |                    |  |
| STRUCTURE B-43-64                                  |  |                    |  |
| DRAWN<br>BY VJD                                    |  | PLANS<br>CK'D. FKH |  |
| WING WALL<br>SECTIONS                              |  | SHEET 5 OF 10      |  |
|                                                    |  | 175                |  |



NOTES

- FOR BILL OF BARS, SEE SHEET 9.
- FOR SECTIONS THRU HEADWALL, SEE SHEET 8.
- FOR APRON REINFORCEMENT, SEE SHEET 3.
- SEE VERTICAL CONST. JOINT DETAIL ON SHEET 3.

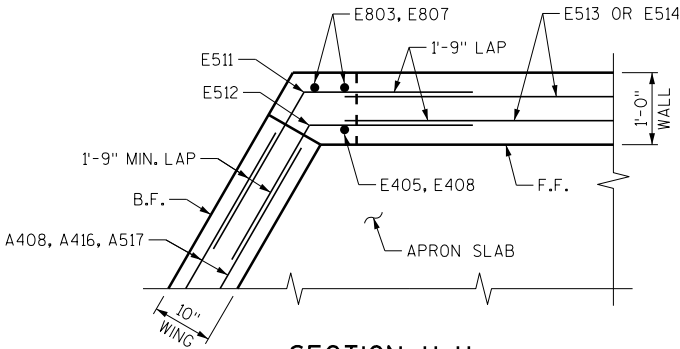
THE VERTICAL CONSTRUCTION JOINT IN THE HEADWALL MAY BE OMITTED IF PERMITTED BY TRAFFIC STAGING AND TEMPORARY FLOW DIVERSION.

LEGEND

- (P01) IF PIPES HAVE A FLANGED BELL, DO NOT LOCATE BELL IN THE UPSTREAM HEADWALL. THE FIRST DOWNSTREAM PIPE SECTION IN THE HEADWALL SHALL BE A CUT SECTION. BELL END MAY BE LOCATED IN HEADWALL IF NOT FLANGED
- ▲ TRIM BARS TO FIT AROUND PIPE OPENING.
- △ HORIZ. U-BARS PLACED IN PAIRS.
- F.F. = FRONT FACE
- B.F. = BACK FACE
- E.F. = EACH FACE

EAST HEADWALL ELEVATION

LOOKING WEST AT FRONT FACE  
SHOWING BACK FACE REINFORCEMENT ONLY FOR CLARITY



SECTION H-H

TYPICAL CORNER PLAN  
WING 2 SHOWN, WING 1 SIMILAR

| NO.                                                | DATE | REVISION             | BY |
|----------------------------------------------------|------|----------------------|----|
|                                                    |      |                      |    |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                      |    |
| STRUCTURE B-43-64                                  |      |                      |    |
| DRAWN<br>BY VJD                                    |      | PLANS<br>CK'D, FKH   |    |
| EAST<br>HEADWALL<br>REINFORCEMENT                  |      | SHEET 6 OF 10<br>176 |    |





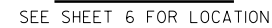
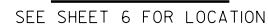
## NOTES

### LEGEND

- 
- SECTION L-L
- TYPICAL CORNER PLAN
- WING 4 SHOWN, WING 3 SIMILAR

|                                                    |      |                 |                    |
|----------------------------------------------------|------|-----------------|--------------------|
|                                                    |      |                 |                    |
| NO.                                                | DATE | REVISION        | BY                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                 |                    |
| STRUCTURE B-43-64                                  |      |                 |                    |
|                                                    |      | DRAWN<br>BY VJD | PLANS<br>CK'D. FKH |
| WEST<br>HEADWALL<br>REINFORCEMENT                  |      | SHEET 7 OF 10   |                    |
|                                                    |      | — 177 —         |                    |





FOR BILL OF BARS, SEE SHEET 9.

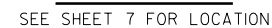
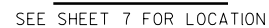
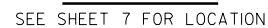
W01 HORIZONTAL CONSTRUCTION JOINT.

(P01) IF PIPES HAVE A FLANGED BELL, DO NOT LOCATE BELL IN THE UPSTREAM HEADWALL. THE FIRST UPSTREAM AND DOWNSTREAM PIPE SECTION IN THE HEADWALLS SHALL BE CUT SECTIONS. BELLS AND SPOIGOTS MAY BE LOCATED IN HEADWALL IF NOT FLANGED.

△ HORIZ. U-BARS PLACED IN PAIRS.

F.F. = FRONT FACE

B.F. = BACK FACE



|                                                    |      |                 |                    |
|----------------------------------------------------|------|-----------------|--------------------|
|                                                    |      |                 |                    |
| NO.                                                | DATE | REVISION        | BY                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                 |                    |
| STRUCTURE B-43-64                                  |      |                 |                    |
|                                                    |      | DRAWN<br>BY VJD | PLANS<br>CK'D. FKH |
| HEAD WALL<br>SECTIONS                              |      | SHEET 8 OF 10   |                    |
|                                                    |      | 178             |                    |



| BILL OF BARS - EAST APRON & WINGS |      |          |         |      |            | COATED: 0 LBS                         |
|-----------------------------------|------|----------|---------|------|------------|---------------------------------------|
|                                   |      |          |         |      |            | UNCOATED: 2,290 LBS                   |
| BAR MARK                          | COAT | NO REQ'D | LENGTH  | BENT | BAR SERIES | LOCATION                              |
| A401                              |      | 3        | 28'-11" |      |            | CUTOFF WALL - HORIZ. - STAGE 4        |
| A402                              |      | 3        | 26'-9"  |      |            | CUTOFF WALL - HORIZ. - STAGE 7A       |
| A403                              |      | 52       | 3'-8"   | X    |            | CUTOFF WALL - VERT.                   |
| A404                              |      | 40       | 12'-9"  |      |            | APRON - HORIZ. - TOP                  |
| A405                              |      | 12       | 7'-11"  |      | X          | APRON - HORIZ. - TOP - AT WINGS       |
| A406                              |      | 13       | 25'-6"  |      | X          | APRON - HORIZ. - TOP - STAGE 4        |
| A407                              |      | 13       | 23'-3"  |      | X          | APRON - HORIZ. - TOP - STAGE 7A       |
| A408                              |      | 16       | 14'-10" |      |            | WING - HORIZ. - EACH FACE             |
| A609                              |      | 20       | 10'-9"  | X    |            | WING - VERT. - BACK FACE - DOWEL      |
| A410                              |      | 22       | 10'-2"  | X    |            | WING - VERT. - BACK FACE - DOWEL      |
| A611                              |      | 20       | 6'-1"   |      | X          | WING - VERT. - BACK FACE              |
| A412                              |      | 22       | 3'-6"   |      | X          | WING - VERT. - BACK FACE              |
| A413                              |      | 32       | 3'-0"   |      |            | WING - VERT. - FRONT FACE - DOWEL     |
| A414                              |      | 16       | 6'-0"   |      | X          | WING - VERT. - FRONT FACE             |
| A415                              |      | 16       | 3'-5"   |      | X          | WING - VERT. - FRONT FACE             |
| A416                              |      | 16       | 7'-10"  |      | X          | WING - HORIZ. - EACH FACE             |
| A517                              |      | 4        | 15'-8"  |      |            | WING - HORIZ. - EACH FACE - TOP       |
| A418                              |      | 2        | 12'-2"  |      |            | APRON - HORIZ. - BOTTOM - WING DOWELS |
| A419                              |      | 2        | 13'-0"  |      |            | APRON - HORIZ. - BOTTOM - WALL DOWELS |

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

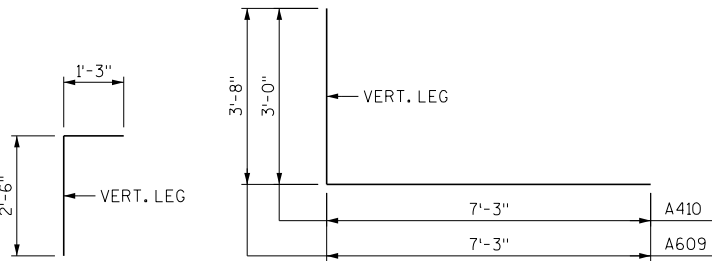
| BILL OF BARS - WEST APRON & WINGS |      |          |        |      |            | COATED: 0 LBS                         |
|-----------------------------------|------|----------|--------|------|------------|---------------------------------------|
|                                   |      |          |        |      |            | UNCOATED: 2,370 LBS                   |
| BAR MARK                          | COAT | NO REQ'D | LENGTH | BENT | BAR SERIES | LOCATION                              |
| B401                              |      | 5        | 25'-7" |      |            | CUTOFF WALL - HORIZ. - STAGE 4        |
| B402                              |      | 5        | 23'-4" |      |            | CUTOFF WALL - HORIZ. - STAGE 7A       |
| B403                              |      | 46       | 5'-8"  | X    |            | CUTOFF WALL - VERT.                   |
| B404                              |      | 40       | 13'-8" |      |            | APRON - HORIZ. - TOP                  |
| B405                              |      | 6        | 8'-5"  |      | X          | APRON - HORIZ. - TOP - AT WINGS       |
| B406                              |      | 14       | 23'-7" |      | X          | APRON - HORIZ. - TOP - STAGE 4        |
| B407                              |      | 14       | 21'-6" |      | X          | APRON - HORIZ. - TOP - STAGE 7A       |
| B408                              |      | 16       | 14'-4" |      |            | WING - HORIZ. - EACH FACE             |
| B609                              |      | 20       | 10'-9" | X    |            | WING - VERT. - BACK FACE - DOWEL      |
| B410                              |      | 20       | 10'-2" | X    |            | WING - VERT. - BACK FACE - DOWEL      |
| B611                              |      | 20       | 6'-5"  |      | X          | WING - VERT. - BACK FACE              |
| B412                              |      | 20       | 3'-6"  |      | X          | WING - VERT. - BACK FACE              |
| B413                              |      | 30       | 3'-0"  |      |            | WING - VERT. - FRONT FACE - DOWEL     |
| B414                              |      | 30       | 4'-11" |      | X          | WING - VERT. - FRONT FACE             |
| B415                              |      | 20       | 6'-9"  |      | X          | WING - HORIZ. - EACH FACE             |
| B516                              |      | 4        | 15'-4" |      |            | WING - HORIZ. - EACH FACE - TOP       |
| B417                              |      | 2        | 13'-0" |      |            | APRON - HORIZ. - BOTTOM - WING DOWELS |
| B418                              |      | 2        | 13'-0" |      |            | APRON - HORIZ. - BOTTOM - WALL DOWELS |

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

| BILL OF BARS - EAST HEADWALL |      |          |        |      |            | COATED: 0 LBS                         |
|------------------------------|------|----------|--------|------|------------|---------------------------------------|
|                              |      |          |        |      |            | UNCOATED: 2,280 LBS                   |
| BAR MARK                     | COAT | NO REQ'D | LENGTH | BENT | BAR SERIES | LOCATION                              |
| E401                         |      | 2        | 21'-4" |      |            | APRON - HORIZ. - AT WALL - STAGE 4    |
| E402                         |      | 2        | 19'-2" |      |            | APRON - HORIZ. - AT WALL - STAGE 7A   |
| E803                         |      | 22       | 14'-3" | X    |            | WALL - VERT. - DOWEL - BACK FACE      |
| E504                         |      | 8        | 12'-2" | X    |            | WALL - VERT. - DOWEL - BACK FACE      |
| E405                         |      | 14       | 3'-0"  |      |            | WALL - VERT. - DOWEL - FRONT FACE     |
| E406                         |      | 8        | 5'-0"  |      |            | WALL - VERT. - DOWEL - FRONT FACE     |
| E807                         |      | 22       | 7'-4"  |      |            | WALL - VERT. - BACK FACE              |
| E408                         |      | 14       | 7'-4"  |      |            | WALL - VERT. - FRONT FACE             |
| E409                         |      | 30       | 5'-5"  | X    |            | WALL - HORIZ. - BETWEEN PIPES         |
| E410                         |      | 6        | 6'-5"  | X    |            | WALL - HORIZ. - BETWEEN PIPES         |
| E511                         |      | 18       | 4'-11" | X    |            | WALL - CORNER - BACK FACE             |
| E512                         |      | 18       | 4'-6"  | X    |            | WALL - CORNER - FRONT FACE            |
| E513                         |      | 6        | 21'-1" |      |            | WALL - HORIZ. - EACH FACE - STAGE 4   |
| E514                         |      | 6        | 18'-8" |      |            | WALL - HORIZ. - EACH FACE - STAGE 7A  |
| E415                         |      | 12       | 3'-1"  | X    |            | WALL - VERT. - OVER PIPES             |
| E416                         |      | 8        | 3'-11" | X    |            | WALL - VERT. - OVER PIPES             |
| E417                         |      | 16       | 2'-6"  |      |            | WALL - VERT. - OVER PIPES - EACH FACE |
| E418                         |      | 32       | 4'-2"  |      |            | WALL - EACH FACE - PIPE PERIMETER     |

| BAR SERIES TABLE |                |                   |
|------------------|----------------|-------------------|
| BAR MARK         | NO. REQ'D      | LENGTH            |
| A405             | 2 SERIES OF 6  | 3'-7" TO 12'-3"   |
| A406             | 1 SERIES OF 13 | 22'-2" TO 28'-9"  |
| A407             | 1 SERIES OF 13 | 19'-11" TO 26'-7" |
| A611             | 2 SERIES OF 10 | 4'-11" TO 7'-3"   |
| A412             | 2 SERIES OF 11 | 2'-2" TO 4'-9"    |
| A414             | 2 SERIES OF 8  | 4'-10" TO 7'-3"   |
| A415             | 2 SERIES OF 8  | 2'-2" TO 4'-7"    |
| A416             | 4 SERIES OF 4  | 3'-6" TO 12'-2"   |

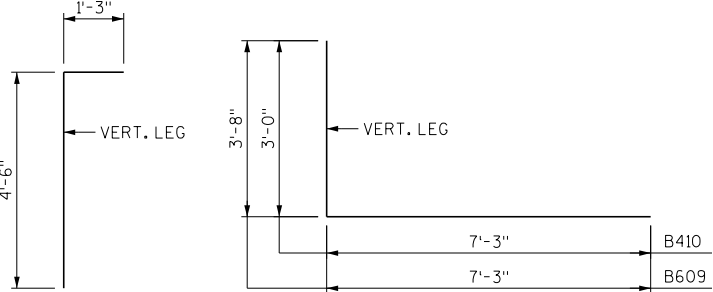
BUNDLE AND TAG BARS SEPARATELY



A403 A609, A410

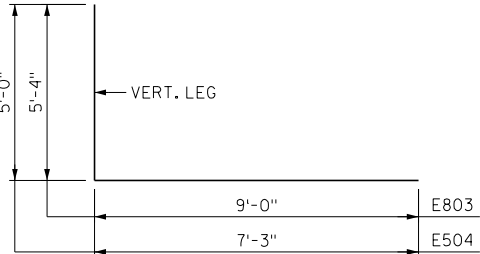
| BAR SERIES TABLE |                |                   |
|------------------|----------------|-------------------|
| BAR MARK         | NO. REQ'D      | LENGTH            |
| B405             | 2 SERIES OF 3  | 4'-8" TO 12'-2"   |
| B406             | 1 SERIES OF 14 | 21'-11" TO 25'-3" |
| B407             | 1 SERIES OF 14 | 19'-10" TO 23'-2" |
| B611             | 2 SERIES OF 10 | 5'-1" TO 7'-9"    |
| B412             | 2 SERIES OF 10 | 2'-2" TO 4'-9"    |
| B414             | 2 SERIES OF 15 | 2'-2" TO 7'-8"    |
| B415             | 4 SERIES OF 5  | 1'-7" TO 11'-11"  |

BUNDLE AND TAG BARS SEPARATELY

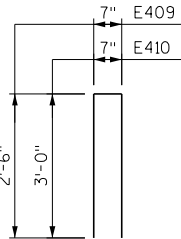


B403 B609, B410

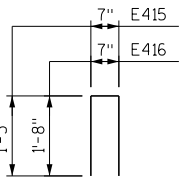
| BILL OF BARS - WEST HEADWALL |      |          |         |      |            | COATED: 0 LBS                         |
|------------------------------|------|----------|---------|------|------------|---------------------------------------|
|                              |      |          |         |      |            | UNCOATED: 2,350 LBS                   |
| BAR MARK                     | COAT | NO REQ'D | LENGTH  | BENT | BAR SERIES | LOCATION                              |
| W401                         |      | 2        | 21'-7"  |      |            | APRON - HORIZ. - AT WALL - STAGE 4    |
| W402                         |      | 2        | 19'-5"  |      |            | APRON - HORIZ. - AT WALL - STAGE 7A   |
| W803                         |      | 22       | 14'-3"  | X    |            | WALL - VERT. - DOWEL - BACK FACE      |
| W504                         |      | 8        | 12'-2"  | X    |            | WALL - VERT. - DOWEL - BACK FACE      |
| W405                         |      | 16       | 3'-0"   |      |            | WALL - VERT. - DOWEL - FRONT FACE     |
| W406                         |      | 8        | 5'-0"   |      |            | WALL - VERT. - DOWEL - FRONT FACE     |
| W807                         |      | 22       | 7'-10"  |      |            | WALL - VERT. - BACK FACE              |
| W408                         |      | 16       | 7'-10"  |      |            | WALL - VERT. - FRONT FACE             |
| W409                         |      | 30       | 5'-5"   | X    |            | WALL - HORIZ. - BETWEEN PIPES         |
| W410                         |      | 6        | 6'-5"   | X    |            | WALL - HORIZ. - BETWEEN PIPES         |
| W511                         |      | 18       | 4'-11"  | X    |            | WALL - CORNER - BACK FACE             |
| W512                         |      | 18       | 4'-4"   | X    |            | WALL - CORNER - FRONT FACE            |
| W513                         |      | 6        | 21'-4"  |      |            | WALL - HORIZ. - EACH FACE - STAGE 4   |
| W514                         |      | 6        | 18'-11" |      |            | WALL - HORIZ. - EACH FACE - STAGE 7A  |
| W415                         |      | 12       | 3'-9"   | X    |            | WALL - VERT. - OVER PIPES             |
| W416                         |      | 8        | 4'-7"   | X    |            | WALL - VERT. - OVER PIPES             |
| W417                         |      | 16       | 2'-11"  |      |            | WALL - VERT. - OVER PIPES - EACH FACE |
| W418                         |      | 32       | 4'-2"   |      |            | WALL - EACH FACE - PIPE PERIMETER     |



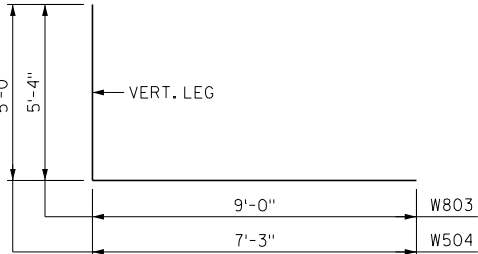
E803, E504



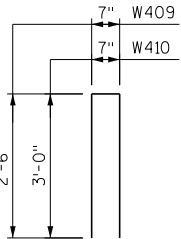
E409, E410



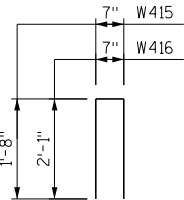
E415, E416



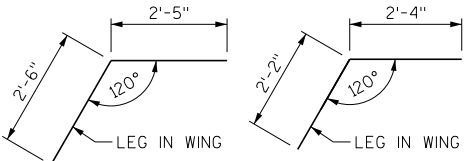
W803, W504



W409, W410

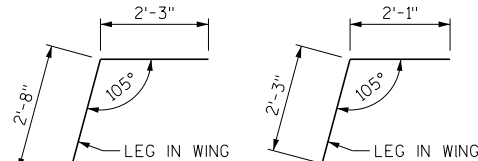


W415, W416



E511

E512



W511

W512

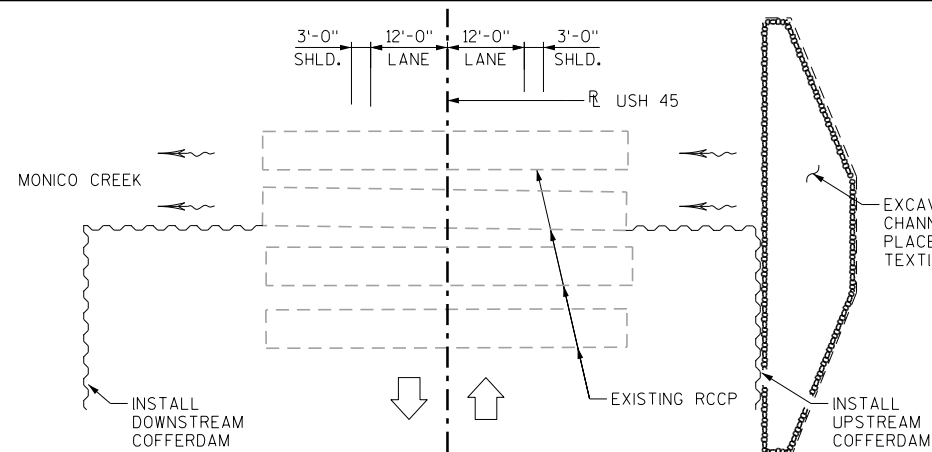
|                                                    |      |                      |                 |
|----------------------------------------------------|------|----------------------|-----------------|
|                                                    |      |                      |                 |
| NO.                                                | DATE | REVISION             | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                      |                 |
| STRUCTURE B-43-64                                  |      |                      |                 |
|                                                    |      | DRAWN BY VJD         | PLANS CK'D, FKH |
| BILL OF BARS                                       |      | SHEET 9 OF 10<br>179 |                 |

**NOTES**

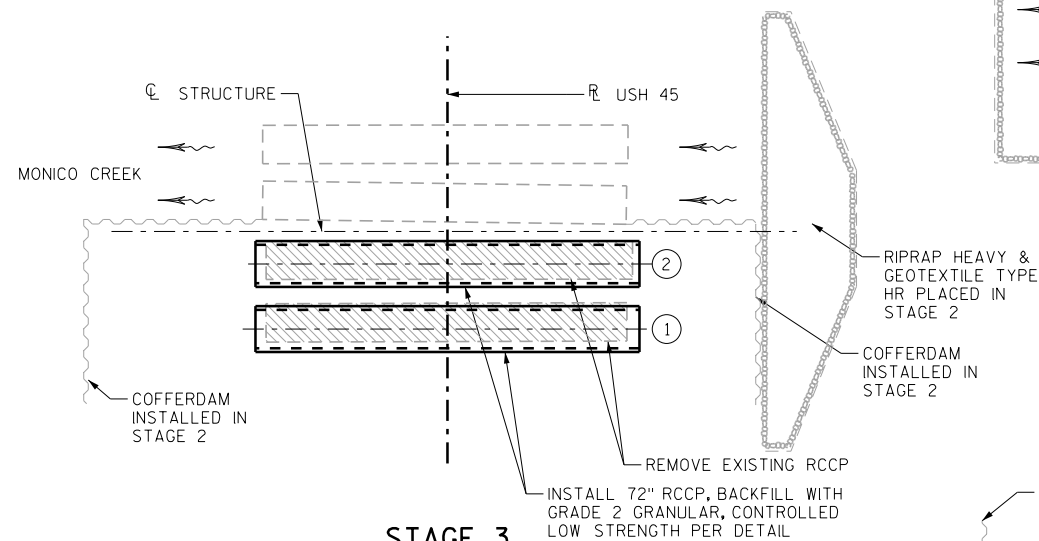
SEE ROADWAY PLANS FOR ADDITIONAL STAGING AND TRAFFIC CONTROL DETAILS.

INSTALL FILTER BAGS AT THE UPSTREAM END OF ACTIVE PIPES PRIOR TO ANY EXCAVATION OUTSIDE OF COFFERDAMS. SEE EROSION CONTROL PLAN FOR DETAILS.

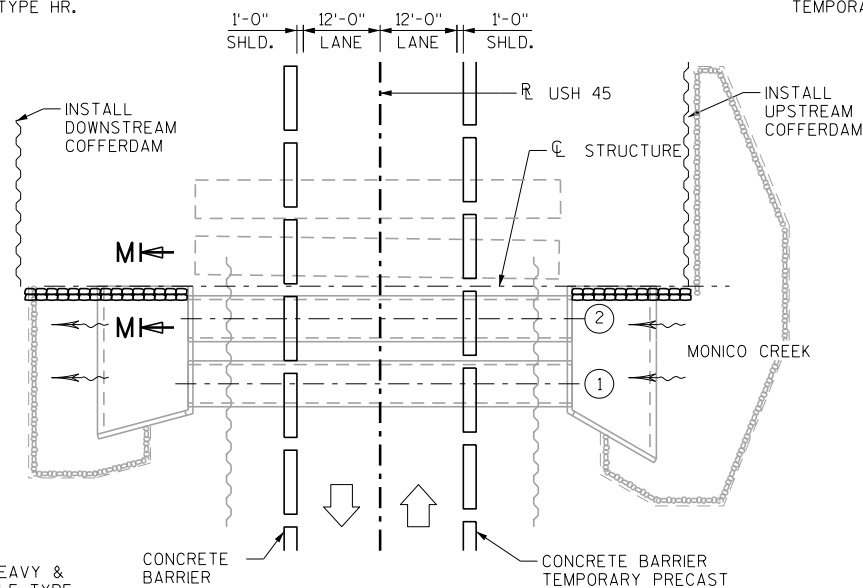
TEMPORARY HW2 = 1589.39 WHILE DIVERTED.

**STAGE 2**

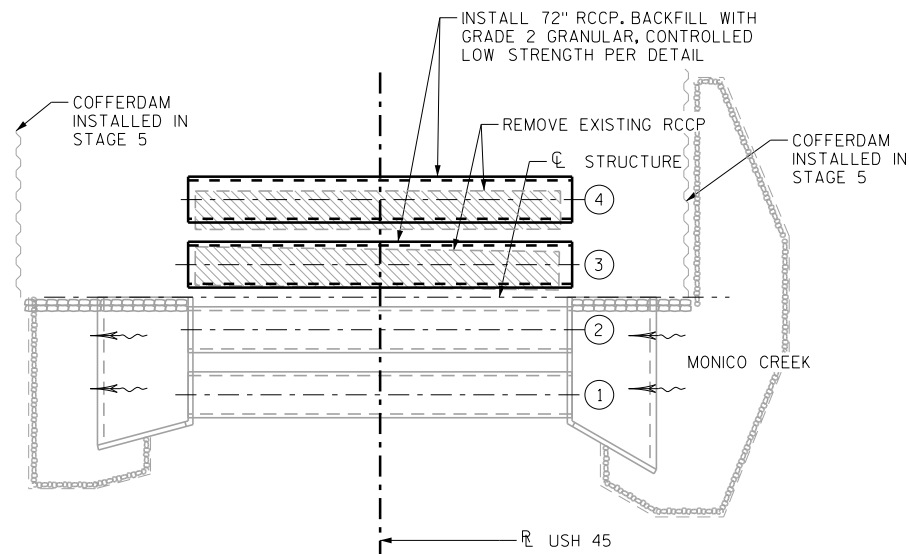
USH 45 OPEN ON EXISTING LANES  
DIVERT MONICO CREEK TO (2) EXISTING EAST PIPES

**STAGE 3**

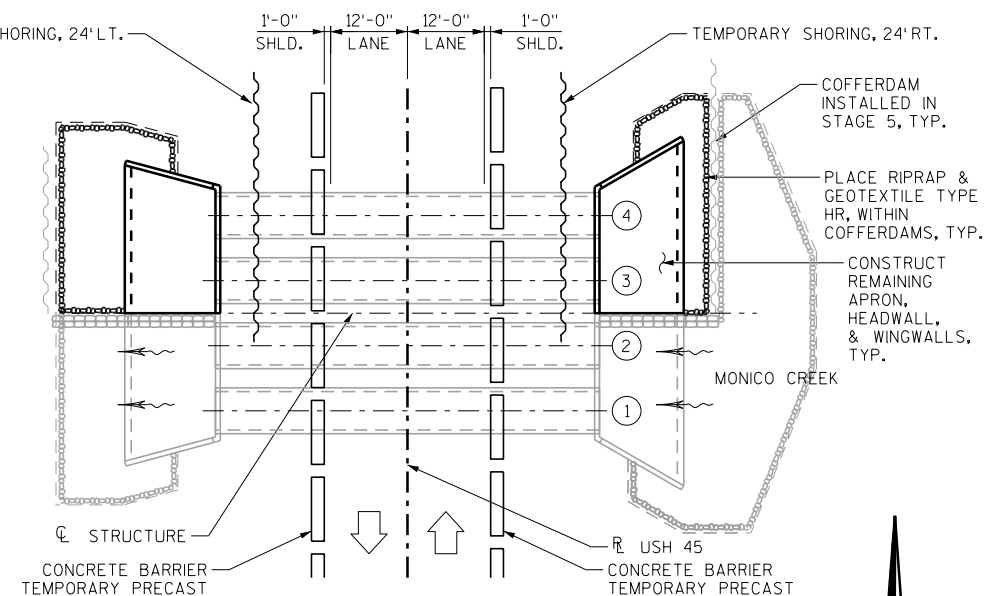
USH 45 CLOSED TO TRAFFIC  
MAINTAIN MONICO CREEK IN (2) EXISTING EAST PIPES

**STAGE 5**

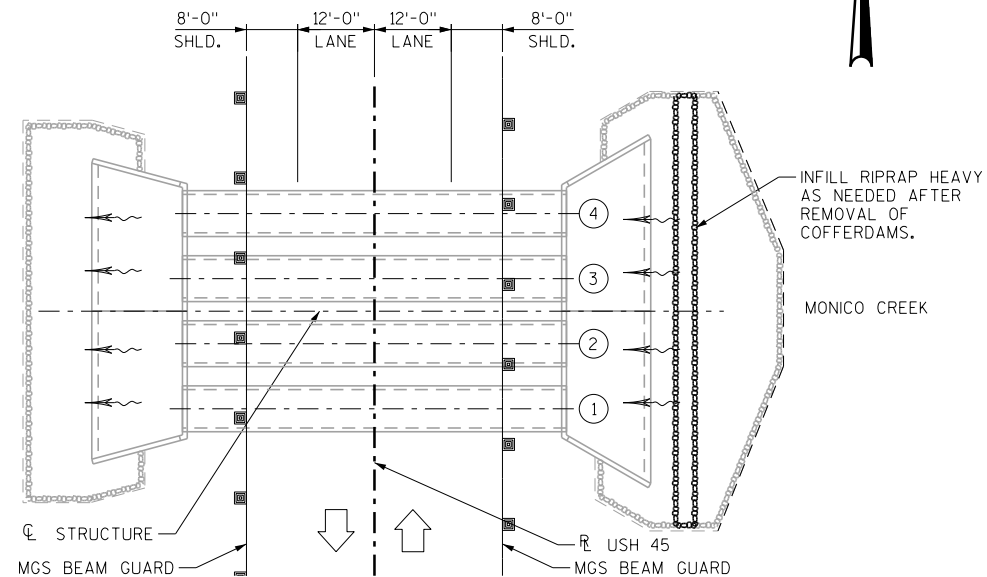
USH 45 OPEN ON TEMPORARY PAVEMENT  
DIVERT MONICO CREEK TO PIPES 1 & 2

**STAGE 6**

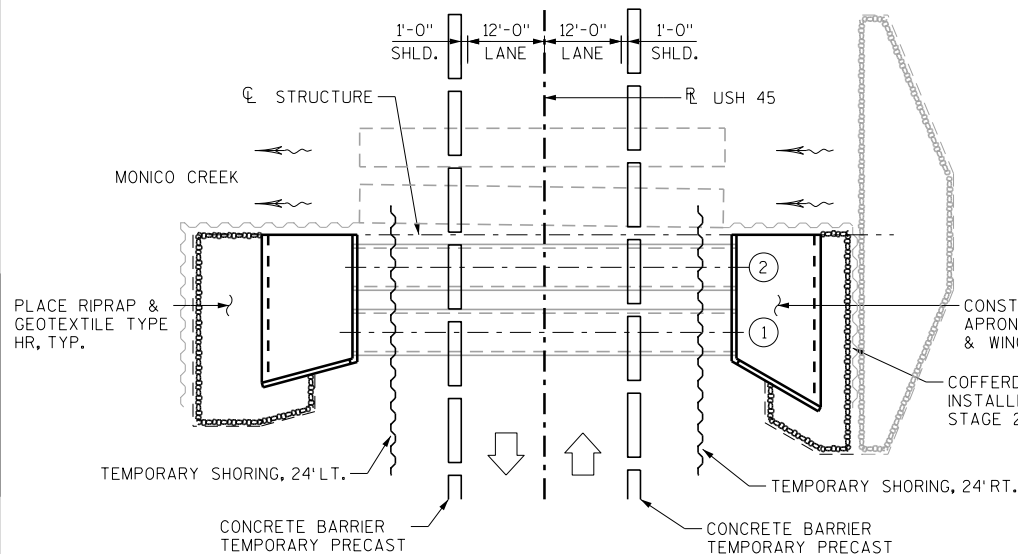
USH 45 CLOSED TO TRAFFIC  
MAINTAIN MONICO CREEK IN PIPES 1 & 2

**STAGE 7A**

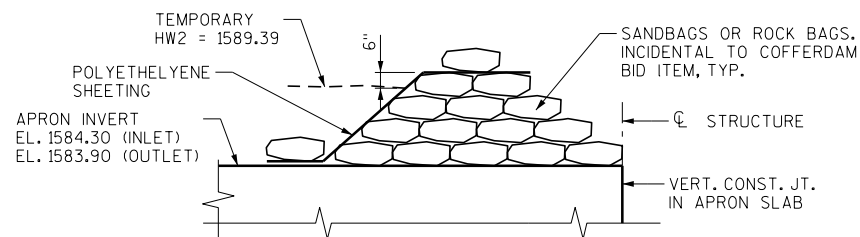
USH 45 OPEN ON LOWER LIFT OF PERMANENT PAVEMENT  
MAINTAIN MONICO CREEK IN PIPES 1 & 2

**STAGE 7B**

USH 45 OPEN ON PERMANENT PAVEMENT  
MONICO CREEK FLOWING IN PIPES 1 THRU 4  
INCLUDE PIPE CHECKS UPSTREAM

**STAGE 4**

USH 45 OPEN ON TEMPORARY ASPHALT  
MAINTAIN MONICO CREEK IN (2) EXISTING EAST PIPES

**SECTION M-M**

INSTALL IN STAGE 4. REMOVE IN STAGE 7A.

| NO.                                                | DATE | REVISION              | BY |
|----------------------------------------------------|------|-----------------------|----|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                       |    |
| STRUCTURE B-43-64                                  |      |                       |    |
| DRAWN BY VJD                                       |      | PLANS CK'D. FKH       |    |
| STAGING PLAN                                       |      | SHEET 10 OF 10<br>180 |    |

DIVISION 1 - USH 8 (STAGE 2/3)

| STATION    | REAL STATION | DISTANCE | AREA (SF) |                                        |       |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        |          |     | CUMULATIVE VOL (CY) |               |               |                       |                     |               |
|------------|--------------|----------|-----------|----------------------------------------|-------|----------|------|-----------------------------------|----------------------------------------|--------|----------|-----|---------------------|---------------|---------------|-----------------------|---------------------|---------------|
|            |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL  | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS | CUT                 | EXPANDED FILL | EXPANDED ROCK | EXPANDED EBS BACKFILL | REDUCED EBS IN FILL | MASS ORDINATE |
|            |              |          |           |                                        |       |          |      |                                   |                                        |        |          |     |                     |               |               |                       |                     |               |
|            |              |          |           |                                        |       |          |      | NOTE 1                            | NOTE 2                                 | NOTE 3 |          |     | NOTE 1              | 1.25          | 1.10          | 1.00<br>NOTE 5        | 1.00<br>NOTE 7      | NOTE 8        |
| 427+00     | 42700.00     | 0.00     | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 427+50     | 42750.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 428+00     | 42800.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 428+50     | 42850.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 429+00     | 42900.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 429+23.529 | 42923.53     | 23.53    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 429+49.016 | 42949.02     | 25.49    | 30.37     | 0.00                                   | 0.00  | 0.00     | 0.00 | 14                                | 0                                      | 0      | 0        | 0   | 14                  | 0             | 0             | 0                     | 0                   | 14            |
| 429+50     | 42950.00     | 0.98     | 30.58     | 22.71                                  | 16.09 | 0.00     | 0.00 | 1                                 | 0                                      | 0      | 0        | 0   | 15                  | 0             | 0             | 0                     | 0                   | 15            |
| 429+74.423 | 42974.42     | 24.42    | 40.29     | 22.71                                  | 40.43 | 0.00     | 0.00 | 32                                | 21                                     | 26     | 0        | 0   | 47                  | 33            | 0             | 0                     | 0                   | -7            |
| 430+00     | 43000.00     | 25.58    | 38.30     | 22.71                                  | 60.46 | 0.00     | 0.00 | 37                                | 22                                     | 48     | 0        | 0   | 84                  | 93            | 0             | 0                     | 0                   | -52           |
| 430+50     | 43050.00     | 50.00    | 37.87     | 22.71                                  | 47.35 | 0.00     | 0.00 | 71                                | 42                                     | 100    | 0        | 0   | 155                 | 218           | 0             | 0                     | 0                   | -148          |
| 431+00     | 43100.00     | 50.00    | 37.27     | 22.71                                  | 65.35 | 0.00     | 0.00 | 70                                | 42                                     | 104    | 0        | 0   | 225                 | 348           | 0             | 0                     | 0                   | -250          |
| 431+50     | 43150.00     | 50.00    | 38.36     | 22.71                                  | 62.46 | 0.00     | 0.00 | 70                                | 42                                     | 118    | 0        | 0   | 295                 | 495           | 0             | 0                     | 0                   | -369          |
| 431+55.254 | 43155.25     | 5.25     | 38.32     | 22.71                                  | 46.51 | 0.00     | 0.00 | 7                                 | 4                                      | 11     | 0        | 0   | 302                 | 509           | 0             | 0                     | 0                   | -380          |
| 431+64.878 | 43164.88     | 9.62     | 44.84     | 22.71                                  | 10.15 | 43.59    | 0.00 | 15                                | 8                                      | 10     | 8        | 0   | 317                 | 510           | 9             | 0                     | 0                   | -374          |
| 431+77.011 | 43177.01     | 12.13    | 79.59     | 22.71                                  | 4.82  | 107.21   | 0.00 | 28                                | 10                                     | 3      | 34       | 0   | 345                 | 467           | 46            | 0                     | 0                   | -313          |
| 431+89.085 | 43189.09     | 12.07    | 65.03     | 22.71                                  | 7.28  | 85.06    | 0.00 | 32                                | 10                                     | 3      | 43       | 0   | 377                 | 412           | 94            | 0                     | 0                   | -236          |
| 432+00     | 43200.00     | 10.91    | 49.96     | 22.71                                  | 35.20 | 17.96    | 0.00 | 23                                | 9                                      | 9      | 21       | 0   | 400                 | 394           | 117           | 0                     | 0                   | -204          |
| 432+50     | 43250.00     | 50.00    | 42.98     | 22.71                                  | 44.12 | 0.00     | 0.00 | 86                                | 42                                     | 73     | 17       | 0   | 486                 | 462           | 135           | 0                     | 0                   | -228          |
| 433+00     | 43300.00     | 50.00    | 41.95     | 22.71                                  | 10.48 | 0.00     | 0.00 | 79                                | 42                                     | 51     | 0        | 0   | 565                 | 526           | 135           | 0                     | 0                   | -255          |
| 433+50     | 43350.00     | 50.00    | 29.23     | 22.71                                  | 2.00  | 0.00     | 0.00 | 66                                | 42                                     | 12     | 0        | 0   | 631                 | 541           | 135           | 0                     | 0                   | -246          |
| 434+00     | 43400.00     | 50.00    | 82.41     | 22.71                                  | 0.73  | 0.00     | 0.00 | 103                               | 42                                     | 3      | 0        | 0   | 734                 | 545           | 135           | 0                     | 0                   | -189          |
| 434+50     | 43450.00     | 50.00    | 109.94    | 22.71                                  | 0.00  | 0.00     | 0.00 | 178                               | 42                                     | 1      | 0        | 0   | 912                 | 546           | 135           | 0                     | 0                   | -54           |
| 434+60     | 43460.00     | 10.00    | 60.37     | 22.71                                  | 22.92 | 0.00     | 0.00 | 32                                | 8                                      | 4      | 0        | 0   | 944                 | 551           | 135           | 0                     | 0                   | -35           |
| 434+70     | 43470.00     | 10.00    | 83.61     | 22.71                                  | 71.25 | 0.00     | 0.00 | 27                                | 8                                      | 17     | 0        | 0   | 971                 | 572           | 135           | 0                     | 0                   | -37           |
| 434+80     | 43480.00     | 10.00    | 85.15     | 22.71                                  | 45.74 | 0.00     | 0.00 | 31                                | 8                                      | 22     | 0        | 0   | 1,002               | 600           | 135           | 0                     | 0                   | -42           |
| 434+90     | 43490.00     | 10.00    | 96.68     | 22.71                                  | 2.58  | 0.00     | 0.00 | 34                                | 8                                      | 9      | 0        | 0   | 1,036               | 611           | 135           | 0                     | 0                   | -27           |
| 435+00     | 43500.00     | 10.00    | 115.30    | 22.71                                  | 0.00  | 0.00     | 0.00 | 39                                | 8                                      | 0      | 0        | 0   | 1,075               | 611           | 135           | 0                     | 0                   | 4             |
| 435+10     | 43510.00     | 10.00    | 137.43    | 22.71                                  | 0.00  | 0.00     | 0.00 | 47                                | 8                                      | 0      | 0        | 0   | 1,122               | 611           | 135           | 0                     | 0                   | 43            |
| 435+20     | 43520.00     | 10.00    | 153.54    | 22.71                                  | 0.00  | 0.00     | 0.00 | 54                                | 8                                      | 0      | 0        | 0   | 1,176               | 611           | 135           | 0                     | 0                   | 89            |
| 435+30     | 43530.00     | 10.00    | 161.52    | 22.71                                  | 0.00  | 0.00     | 0.00 | 58                                | 8                                      | 0      | 0        | 0   | 1,234               | 611           | 135           | 0                     | 0                   | 139           |

|                                         |                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                               |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                              |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                       |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                 |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                 |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                               |
| 8 - MASS ORDINATE                       | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: ((CUT - SALVAGED PAVT - EXPANDED EBS) - ((FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)) |

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DIVISION 1 - USH 8 (STAGE 2/3 CONT.)

| STATION    | REAL STATION | DISTANCE | AREA (SF) |                                        |        |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |      |          |     | CUMULATIVE VOL (CY) |               |               |                       |                     |               |
|------------|--------------|----------|-----------|----------------------------------------|--------|----------|------|-----------------------------------|----------------------------------------|------|----------|-----|---------------------|---------------|---------------|-----------------------|---------------------|---------------|
|            |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | ROCK EXC | EBS | CUT                 | EXPANDED FILL | EXPANDED ROCK | EXPANDED EBS BACKFILL | REDUCED EBS IN FILL | MASS ORDINATE |
|            |              |          |           |                                        |        |          |      |                                   |                                        |      |          |     |                     |               |               |                       |                     |               |
|            |              |          | NOTE 1    | NOTE 2                                 | NOTE 3 |          |      |                                   |                                        |      |          |     | 1.00<br>NOTE 1      | 1.25          | 1.10          | 1.00<br>NOTE 5        | 1.00<br>NOTE 7      | NOTE 8        |
| 435+40     | 43540.00     | 10.00    | 185.10    | 27.10                                  | 0.00   | 0.00     | 0.00 | 64                                | 9                                      | 0    | 0        | 0   | 1,298               | 611           | 135           | 0                     | 0                   | 194           |
| 435+50     | 43550.00     | 10.00    | 193.19    | 27.10                                  | 0.00   | 0.00     | 0.00 | 70                                | 10                                     | 0    | 0        | 0   | 1,368               | 611           | 135           | 0                     | 0                   | 254           |
| 435+60     | 43560.00     | 10.00    | 192.30    | 27.10                                  | 0.00   | 0.00     | 0.00 | 71                                | 10                                     | 0    | 0        | 0   | 1,439               | 611           | 135           | 0                     | 0                   | 315           |
| 435+70     | 43570.00     | 10.00    | 173.39    | 27.10                                  | 0.07   | 0.00     | 0.00 | 68                                | 10                                     | 0    | 0        | 0   | 1,507               | 611           | 135           | 0                     | 0                   | 373           |
| 435+80     | 43580.00     | 10.00    | 160.08    | 27.10                                  | 3.52   | 0.00     | 0.00 | 62                                | 10                                     | 1    | 0        | 0   | 1,569               | 612           | 135           | 0                     | 0                   | 424           |
| 435+90     | 43590.00     | 10.00    | 141.98    | 27.10                                  | 10.01  | 0.00     | 0.00 | 56                                | 10                                     | 3    | 0        | 0   | 1,625               | 616           | 135           | 0                     | 0                   | 466           |
| 436+00     | 43600.00     | 10.00    | 151.19    | 27.10                                  | 17.44  | 0.00     | 0.00 | 54                                | 10                                     | 5    | 0        | 0   | 1,679               | 622           | 135           | 0                     | 0                   | 504           |
| 436+10     | 43610.00     | 10.00    | 147.85    | 27.10                                  | 17.92  | 0.00     | 0.00 | 55                                | 10                                     | 7    | 0        | 0   | 1,734               | 631           | 135           | 0                     | 0                   | 540           |
| 436+20     | 43620.00     | 10.00    | 166.09    | 27.10                                  | 11.17  | 0.00     | 0.00 | 58                                | 10                                     | 5    | 0        | 0   | 1,792               | 637           | 135           | 0                     | 0                   | 582           |
| 436+30     | 43630.00     | 10.00    | 211.79    | 27.10                                  | 4.23   | 0.00     | 0.00 | 70                                | 10                                     | 3    | 0        | 0   | 1,862               | 641           | 135           | 0                     | 0                   | 638           |
| 436+40     | 43640.00     | 10.00    | 282.38    | 27.10                                  | 0.00   | 0.00     | 0.00 | 92                                | 10                                     | 1    | 0        | 0   | 1,954               | 642           | 135           | 0                     | 0                   | 719           |
| 436+50     | 43650.00     | 10.00    | 337.38    | 27.10                                  | 0.00   | 0.00     | 0.00 | 115                               | 10                                     | 0    | 0        | 0   | 2,069               | 642           | 135           | 0                     | 0                   | 824           |
| 437+00     | 43700.00     | 50.00    | 291.74    | 27.10                                  | 0.00   | 0.00     | 0.00 | 583                               | 50                                     | 0    | 0        | 0   | 2,652               | 642           | 135           | 0                     | 0                   | 1,357         |
| 437+50     | 43750.00     | 50.00    | 103.29    | 27.10                                  | 1.13   | 0.00     | 0.00 | 366                               | 50                                     | 1    | 0        | 0   | 3,018               | 643           | 135           | 0                     | 0                   | 1,672         |
| 438+00     | 43800.00     | 50.00    | 90.30     | 27.10                                  | 0.00   | 0.00     | 0.00 | 179                               | 50                                     | 1    | 0        | 0   | 3,197               | 645           | 135           | 0                     | 0                   | 1,799         |
| 438+14     | 43814.00     | 14.00    | 69.87     | 27.10                                  | 0.37   | 0.00     | 0.00 | 42                                | 14                                     | 0    | 0        | 0   | 3,239               | 645           | 135           | 0                     | 0                   | 1,827         |
| 438+50     | 43850.00     | 36.00    | 47.48     | 27.10                                  | 0.00   | 0.00     | 0.00 | 78                                | 36                                     | 0    | 0        | 0   | 3,317               | 645           | 135           | 0                     | 0                   | 1,869         |
| 438+62.921 | 43862.92     | 12.92    | 40.62     | 27.10                                  | 0.23   | 0.00     | 0.00 | 21                                | 13                                     | 0    | 0        | 0   | 3,338               | 645           | 135           | 0                     | 0                   | 1,877         |
| 438+87.773 | 43887.77     | 24.85    | 36.65     | 27.10                                  | 30.18  | 0.00     | 0.00 | 36                                | 25                                     | 14   | 0        | 0   | 3,374               | 662           | 135           | 0                     | 0                   | 1,871         |
| 439+00     | 43900.00     | 12.23    | 35.40     | 27.10                                  | 41.27  | 0.00     | 0.00 | 16                                | 12                                     | 16   | 0        | 0   | 3,390               | 682           | 135           | 0                     | 0                   | 1,855         |
| 439+12.693 | 43912.69     | 12.69    | 33.77     | 27.10                                  | 48.75  | 0.00     | 0.00 | 16                                | 13                                     | 21   | 0        | 0   | 3,406               | 708           | 135           | 0                     | 0                   | 1,832         |
| 439+50     | 43950.00     | 37.31    | 29.08     | 27.10                                  | 79.44  | 0.00     | 0.00 | 43                                | 37                                     | 89   | 0        | 0   | 3,449               | 820           | 135           | 0                     | 0                   | 1,726         |
| 440+00     | 44000.00     | 50.00    | 28.85     | 27.10                                  | 81.54  | 0.00     | 0.00 | 54                                | 50                                     | 149  | 0        | 0   | 3,503               | 1,006         | 135           | 0                     | 0                   | 1,544         |
| 440+50     | 44050.00     | 50.00    | 30.04     | 27.10                                  | 60.75  | 0.00     | 0.00 | 55                                | 50                                     | 132  | 0        | 0   | 3,558               | 1,171         | 135           | 0                     | 0                   | 1,384         |
| 441+00     | 44100.00     | 50.00    | 39.57     | 27.10                                  | 0.68   | 0.00     | 0.00 | 64                                | 50                                     | 57   | 0        | 0   | 3,622               | 1,242         | 135           | 0                     | 0                   | 1,327         |
| 441+50     | 44150.00     | 50.00    | 50.62     | 27.10                                  | 0.00   | 30.98    | 0.00 | 84                                | 50                                     | 1    | 29       | 0   | 3,706               | 1,204         | 167           | 0                     | 0                   | 1,400         |
| 442+00     | 44200.00     | 50.00    | 80.82     | 27.10                                  | 0.00   | 48.71    | 0.00 | 122                               | 50                                     | 0    | 74       | 0   | 3,828               | 1,102         | 249           | 0                     | 0                   | 1,573         |
| 442+50     | 44250.00     | 50.00    | 45.16     | 27.10                                  | 1.94   | 0.00     | 0.00 | 117                               | 50                                     | 2    | 45       | 0   | 3,945               | 1,042         | 298           | 0                     | 0                   | 1,700         |
| 443+00     | 44300.00     | 50.00    | 36.89     | 27.10                                  | 53.10  | 0.00     | 0.00 | 76                                | 50                                     | 51   | 0        | 0   | 4,021               | 1,106         | 298           | 0                     | 0                   | 1,662         |
| 443+50     | 44350.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 34                                | 25                                     | 49   | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 444+00     | 44400.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 444+50     | 44450.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 445+00     | 44500.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 445+50     | 44550.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 446+00     | 44600.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 446+50     | 44650.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 447+00     | 44700.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 447+50     | 44750.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |
| 448+00     | 44800.00     | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 4,055               | 1,167         | 298           | 0                     | 0                   | 1,610         |

|                                         |                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                               |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                              |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                       |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                 |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                 |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                               |
| 8 - MASS ORDINATE                       | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: ((CUT - SALVAGED PAVT - EXPANDED EBS) - ((FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)) |

DIVISION 2 - USH 8 (STAGE 4)

| STATION    | REAL STATION | DISTANCE | AREA (SF) |                                        |      |          |        | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |      |          |     | CUMULATIVE VOL (CY) |               |               |                       |                     |              |  |
|------------|--------------|----------|-----------|----------------------------------------|------|----------|--------|-----------------------------------|----------------------------------------|------|----------|-----|---------------------|---------------|---------------|-----------------------|---------------------|--------------|--|
|            |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | ROCK EXC | EBS    | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | ROCK EXC | EBS | CUT                 | EXPANDED FILL | EXPANDED ROCK | EXPANDED EBS BACKFILL | REDUCED EBS IN FILL | MASS ORDNATE |  |
|            |              |          |           |                                        |      |          |        |                                   |                                        |      |          |     |                     |               |               |                       |                     |              |  |
|            |              |          |           |                                        |      |          |        |                                   |                                        |      |          |     |                     |               |               |                       |                     |              |  |
| NOTE 1     | NOTE 2       | NOTE 3   | NOTE 1    | 1.25                                   | 1.10 | 1.00     | NOTE 5 | NOTE 7                            | NOTE 8                                 |      |          |     |                     |               |               |                       |                     |              |  |
| 427+00     | 42700.00     | 0.00     | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00   | 0                                 | 0                                      | 0    | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |  |
| 427+50     | 42750.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00   | 0                                 | 0                                      | 0    | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |  |
| 428+00     | 42800.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00   | 0                                 | 0                                      | 0    | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |  |
| 428+50     | 42850.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00   | 0                                 | 0                                      | 0    | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |  |
| 429+00     | 42900.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00   | 0                                 | 0                                      | 0    | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |  |
| 429+23.529 | 42923.53     | 23.53    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00   | 0                                 | 0                                      | 0    | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |  |
| 429+49.016 | 42949.02     | 25.49    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00   | 0                                 | 0                                      | 0    | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |  |
| 429+50     | 42950.00     | 0.98     | 13.27     | 7.29                                   | 0.00 | 0.00     | 0.00   | 0                                 | 0                                      | 0    | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |  |
| 429+74.423 | 42974.42     | 24.42    | 23.05     | 7.29                                   | 0.00 | 0.00     | 0.00   | 16                                | 7                                      | 0    | 0        | 0   | 16                  | 0             | 0             | 0                     | 0                   | 9            |  |
| 430+00     | 43000.00     | 25.58    | 23.28     | 7.29                                   | 0.00 | 0.00     | 0.00   | 22                                | 7                                      | 0    | 0        | 0   | 38                  | 0             | 0             | 0                     | 0                   | 24           |  |
| 430+50     | 43050.00     | 50.00    | 21.16     | 7.29                                   | 0.00 | 0.00     | 0.00   | 41                                | 14                                     | 0    | 0        | 0   | 79                  | 0             | 0             | 0                     | 0                   | 51           |  |
| 431+00     | 43100.00     | 50.00    | 22.51     | 7.29                                   | 0.00 | 0.00     | 0.00   | 40                                | 14                                     | 0    | 0        | 0   | 119                 | 0             | 0             | 0                     | 0                   | 77           |  |
| 431+50     | 43150.00     | 50.00    | 26.16     | 7.29                                   | 0.00 | 0.00     | 0.00   | 45                                | 14                                     | 0    | 0        | 0   | 164                 | 0             | 0             | 0                     | 0                   | 108          |  |
| 431+55.254 | 43155.25     | 5.25     | 25.68     | 7.29                                   | 0.00 | 0.00     | 0.00   | 5                                 | 1                                      | 0    | 0        | 0   | 169                 | 0             | 0             | 0                     | 0                   | 112          |  |
| 431+64.878 | 43164.88     | 9.62     | 25.54     | 7.29                                   | 0.00 | 0.00     | 0.00   | 9                                 | 3                                      | 0    | 0        | 0   | 178                 | 0             | 0             | 0                     | 0                   | 118          |  |
| 431+77.011 | 43177.01     | 12.13    | 25.32     | 7.29                                   | 0.00 | 0.00     | 0.00   | 11                                | 3                                      | 0    | 0        | 0   | 189                 | 0             | 0             | 0                     | 0                   | 126          |  |
| 431+89.085 | 43189.09     | 12.07    | 26.03     | 7.29                                   | 0.00 | 0.00     | 0.00   | 11                                | 3                                      | 0    | 0        | 0   | 200                 | 0             | 0             | 0                     | 0                   | 134          |  |
| 432+00     | 43200.00     | 10.91    | 27.55     | 7.29                                   | 0.00 | 0.00     | 0.00   | 11                                | 3                                      | 0    | 0        | 0   | 211                 | 0             | 0             | 0                     | 0                   | 142          |  |
| 432+50     | 43250.00     | 50.00    | 31.86     | 7.29                                   | 0.00 | 0.00     | 0.00   | 55                                | 14                                     | 0    | 0        | 0   | 266                 | 0             | 0             | 0                     | 0                   | 183          |  |
| 433+00     | 43300.00     | 50.00    | 34.82     | 7.29                                   | 0.00 | 0.00     | 0.00   | 62                                | 14                                     | 0    | 0        | 0   | 328                 | 0             | 0             | 0                     | 0                   | 231          |  |
| 433+50     | 43350.00     | 50.00    | 37.35     | 7.29                                   | 0.00 | 0.00     | 0.00   | 67                                | 14                                     | 0    | 0        | 0   | 395                 | 0             | 0             | 0                     | 0                   | 284          |  |
| 434+00     | 43400.00     | 50.00    | 52.40     | 7.29                                   | 0.00 | 0.00     | 0.00   | 83                                | 14                                     | 0    | 0        | 0   | 478                 | 0             | 0             | 0                     | 0                   | 353          |  |
| 434+50     | 43450.00     | 50.00    | 51.04     | 7.29                                   | 0.00 | 0.00     | 0.00   | 96                                | 14                                     | 0    | 0        | 0   | 574                 | 0             | 0             | 0                     | 0                   | 435          |  |
| 434+60     | 43460.00     | 10.00    | 50.74     | 7.29                                   | 0.00 | 0.00     | 0.00   | 19                                | 3                                      | 0    | 0        | 0   | 593                 | 0             | 0             | 0                     | 0                   | 451          |  |
| 434+70     | 43470.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00   | 9                                 | 3                                      | 0    | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 457          |  |
| 434+80     | 43480.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00   | 0                                 | 3                                      | 0    | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 454          |  |
| 434+90     | 43490.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00   | 0                                 | 3                                      | 0    | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 451          |  |
| 435+00     | 43500.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00   | 0                                 | 3                                      | 0    | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 448          |  |
| 435+10     | 43510.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00   | 0                                 | 3                                      | 0    | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 445          |  |
| 435+20     | 43520.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00   | 0                                 | 3                                      | 0    | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 442          |  |
| 435+30     | 43530.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00   | 0                                 | 3                                      | 0    | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 439          |  |

|                                         |                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                               |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                              |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                       |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                 |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                 |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                               |
| 8 - MASS ORDNATE                        | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED EBS) - ((FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)] |



DIVISION 2 - USH 8 (STAGE 4 CONT.)

| STATION    | REAL STATION | DISTANCE | AREA (SF) |                                        |      |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        |          |     | CUMULATIVE VOL (CY) |               |               |                       |                     |               |
|------------|--------------|----------|-----------|----------------------------------------|------|----------|------|-----------------------------------|----------------------------------------|--------|----------|-----|---------------------|---------------|---------------|-----------------------|---------------------|---------------|
|            |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS | CUT                 | EXPANDED FILL | EXPANDED ROCK | EXPANDED EBS BACKFILL | REDUCED EBS IN FILL | MASS ORDINATE |
|            |              |          |           |                                        |      |          |      |                                   |                                        |        |          |     |                     |               |               |                       |                     |               |
|            |              |          |           |                                        |      |          |      | NOTE 1                            | NOTE 2                                 | NOTE 3 |          |     | NOTE 1              | 1.25          | 1.10          | 1.00<br>NOTE 5        | 1.00<br>NOTE 7      | NOTE 8        |
| 435+40     | 43540.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00 | 0                                 | 3                                      | 0      | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 436           |
| 435+50     | 43550.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00 | 0                                 | 3                                      | 0      | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 433           |
| 435+60     | 43560.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00 | 0                                 | 3                                      | 0      | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 430           |
| 435+70     | 43570.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00 | 0                                 | 3                                      | 0      | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 427           |
| 435+80     | 43580.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00 | 0                                 | 3                                      | 0      | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 424           |
| 435+90     | 43590.00     | 10.00    | 0.00      | 7.29                                   | 0.00 | 0.00     | 0.00 | 0                                 | 3                                      | 0      | 0        | 0   | 602                 | 0             | 0             | 0                     | 0                   | 421           |
| 436+00     | 43600.00     | 10.00    | 46.03     | 7.29                                   | 0.00 | 0.00     | 0.00 | 9                                 | 3                                      | 0      | 0        | 0   | 611                 | 0             | 0             | 0                     | 0                   | 427           |
| 436+10     | 43610.00     | 10.00    | 45.89     | 7.29                                   | 0.00 | 0.00     | 0.00 | 17                                | 3                                      | 0      | 0        | 0   | 628                 | 0             | 0             | 0                     | 0                   | 441           |
| 436+20     | 43620.00     | 10.00    | 46.51     | 7.29                                   | 0.00 | 0.00     | 0.00 | 17                                | 3                                      | 0      | 0        | 0   | 645                 | 0             | 0             | 0                     | 0                   | 455           |
| 436+30     | 43630.00     | 10.00    | 47.06     | 7.29                                   | 0.00 | 0.00     | 0.00 | 17                                | 3                                      | 0      | 0        | 0   | 662                 | 0             | 0             | 0                     | 0                   | 469           |
| 436+40     | 43640.00     | 10.00    | 47.41     | 7.29                                   | 0.00 | 0.00     | 0.00 | 17                                | 3                                      | 0      | 0        | 0   | 679                 | 0             | 0             | 0                     | 0                   | 483           |
| 436+50     | 43650.00     | 10.00    | 47.76     | 7.29                                   | 0.00 | 0.00     | 0.00 | 18                                | 3                                      | 0      | 0        | 0   | 697                 | 0             | 0             | 0                     | 0                   | 498           |
| 437+00     | 43700.00     | 50.00    | 48.30     | 7.29                                   | 0.00 | 0.00     | 0.00 | 89                                | 14                                     | 0      | 0        | 0   | 786                 | 0             | 0             | 0                     | 0                   | 573           |
| 437+50     | 43750.00     | 50.00    | 47.01     | 7.29                                   | 0.00 | 0.00     | 0.00 | 88                                | 14                                     | 0      | 0        | 0   | 874                 | 0             | 0             | 0                     | 0                   | 647           |
| 438+00     | 43800.00     | 50.00    | 45.88     | 7.29                                   | 0.00 | 0.00     | 0.00 | 86                                | 14                                     | 0      | 0        | 0   | 960                 | 0             | 0             | 0                     | 0                   | 719           |
| 438+14     | 43814.00     | 14.00    | 45.80     | 7.29                                   | 0.00 | 0.00     | 0.00 | 24                                | 4                                      | 0      | 0        | 0   | 984                 | 0             | 0             | 0                     | 0                   | 739           |
| 438+50     | 43850.00     | 36.00    | 33.15     | 7.29                                   | 0.00 | 0.00     | 0.00 | 53                                | 10                                     | 0      | 0        | 0   | 1,037               | 0             | 0             | 0                     | 0                   | 782           |
| 438+62.921 | 43862.92     | 12.92    | 33.04     | 7.29                                   | 0.00 | 0.00     | 0.00 | 16                                | 3                                      | 0      | 0        | 0   | 1,053               | 0             | 0             | 0                     | 0                   | 795           |
| 438+87.773 | 43887.77     | 24.85    | 34.04     | 7.29                                   | 0.00 | 0.00     | 0.00 | 31                                | 7                                      | 0      | 0        | 0   | 1,084               | 0             | 0             | 0                     | 0                   | 819           |
| 439+00     | 43900.00     | 12.23    | 34.46     | 7.29                                   | 0.00 | 0.00     | 0.00 | 16                                | 3                                      | 0      | 0        | 0   | 1,100               | 0             | 0             | 0                     | 0                   | 832           |
| 439+12.693 | 43912.69     | 12.69    | 34.38     | 7.29                                   | 0.00 | 0.00     | 0.00 | 16                                | 3                                      | 0      | 0        | 0   | 1,116               | 0             | 0             | 0                     | 0                   | 845           |
| 439+50     | 43950.00     | 37.31    | 33.10     | 7.29                                   | 0.00 | 0.00     | 0.00 | 47                                | 10                                     | 0      | 0        | 0   | 1,163               | 0             | 0             | 0                     | 0                   | 882           |
| 440+00     | 44000.00     | 50.00    | 33.51     | 7.29                                   | 0.00 | 0.00     | 0.00 | 62                                | 14                                     | 0      | 0        | 0   | 1,225               | 0             | 0             | 0                     | 0                   | 930           |
| 440+50     | 44050.00     | 50.00    | 31.56     | 7.29                                   | 0.00 | 0.00     | 0.00 | 60                                | 14                                     | 0      | 0        | 0   | 1,285               | 0             | 0             | 0                     | 0                   | 976           |
| 441+00     | 44100.00     | 50.00    | 28.40     | 7.29                                   | 0.00 | 0.00     | 0.00 | 56                                | 14                                     | 0      | 0        | 0   | 1,341               | 0             | 0             | 0                     | 0                   | 1,018         |
| 441+50     | 44150.00     | 50.00    | 27.32     | 7.29                                   | 0.00 | 0.00     | 0.00 | 52                                | 14                                     | 0      | 0        | 0   | 1,393               | 0             | 0             | 0                     | 0                   | 1,056         |
| 442+00     | 44200.00     | 50.00    | 25.04     | 7.29                                   | 0.00 | 0.00     | 0.00 | 48                                | 14                                     | 0      | 0        | 0   | 1,441               | 0             | 0             | 0                     | 0                   | 1,090         |
| 442+50     | 44250.00     | 50.00    | 29.16     | 7.29                                   | 0.00 | 0.00     | 0.00 | 50                                | 14                                     | 0      | 0        | 0   | 1,491               | 0             | 0             | 0                     | 0                   | 1,126         |
| 443+00     | 44300.00     | 50.00    | 23.92     | 7.29                                   | 0.00 | 0.00     | 0.00 | 49                                | 14                                     | 0      | 0        | 0   | 1,540               | 0             | 0             | 0                     | 0                   | 1,161         |
| 443+50     | 44350.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 22                                | 7                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 444+00     | 44400.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 444+50     | 44450.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 445+00     | 44500.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 445+50     | 44550.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 446+00     | 44600.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 446+50     | 44650.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 447+00     | 44700.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 447+50     | 44750.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |
| 448+00     | 44800.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,562               | 0             | 0             | 0                     | 0                   | 1,176         |

|                                         |                                                                                                                                                                                                                  |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                                                                                  |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                                                                                 |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                                                                          |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                                                                    |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                                                                    |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                                                                                  |
| 8 - MASS ORDINATE                       | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: $[(\text{CUT} - \text{SALVAGED PAVT} - \text{EXPANDED EBS}) - ((\text{FILL} - \text{REDUCED EBS IN FILL} - \text{EXPANDED ROCK}) * \text{FILL FACTOR})]$ |

DIVISION 3 - USH 8 (STAGE 5)

| STATION    | REAL STATION | DISTANCE | AREA (SF) |                                        |      |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        |          |     | CUMULATIVE VOL (CY) |               |               |                       |                     |               |
|------------|--------------|----------|-----------|----------------------------------------|------|----------|------|-----------------------------------|----------------------------------------|--------|----------|-----|---------------------|---------------|---------------|-----------------------|---------------------|---------------|
|            |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS | CUT                 | EXPANDED FILL | EXPANDED ROCK | EXPANDED EBS BACKFILL | REDUCED EBS IN FILL | MASS ORDINATE |
|            |              |          |           |                                        |      |          |      |                                   |                                        |        |          |     | 1.00                | 1.25          | 1.10          | 1.00                  | 1.00                |               |
|            |              |          |           |                                        |      |          |      | NOTE 1                            | NOTE 2                                 | NOTE 3 |          |     | NOTE 1              |               |               | NOTE 5                | NOTE 7              | NOTE 8        |
| 427+00     | 42700.00     | 0.00     | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 427+50     | 42750.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 428+00     | 42800.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 428+50     | 42850.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 429+00     | 42900.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 429+23.529 | 42923.53     | 23.53    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 429+49.016 | 42949.02     | 25.49    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0             |
| 429+50     | 42950.00     | 0.98     | 27.67     | 12.52                                  | 0.00 | 0.00     | 0.00 | 1                                 | 0                                      | 0      | 0        | 0   | 1                   | 0             | 0             | 0                     | 0                   | 1             |
| 429+74.423 | 42974.42     | 24.42    | 25.12     | 12.52                                  | 0.00 | 0.00     | 0.00 | 24                                | 11                                     | 0      | 0        | 0   | 25                  | 0             | 0             | 0                     | 0                   | 14            |
| 430+00     | 43000.00     | 25.58    | 22.92     | 12.52                                  | 0.00 | 0.00     | 0.00 | 23                                | 12                                     | 0      | 0        | 0   | 48                  | 0             | 0             | 0                     | 0                   | 25            |
| 430+50     | 43050.00     | 50.00    | 29.00     | 12.52                                  | 0.00 | 0.00     | 0.00 | 48                                | 23                                     | 0      | 0        | 0   | 96                  | 0             | 0             | 0                     | 0                   | 50            |
| 431+00     | 43100.00     | 50.00    | 30.61     | 12.52                                  | 0.00 | 0.00     | 0.00 | 55                                | 23                                     | 0      | 0        | 0   | 151                 | 0             | 0             | 0                     | 0                   | 82            |
| 431+50     | 43150.00     | 50.00    | 29.80     | 12.52                                  | 0.00 | 0.00     | 0.00 | 56                                | 23                                     | 0      | 0        | 0   | 207                 | 0             | 0             | 0                     | 0                   | 115           |
| 431+55.254 | 43155.25     | 5.25     | 29.39     | 12.52                                  | 0.00 | 0.00     | 0.00 | 6                                 | 2                                      | 0      | 0        | 0   | 213                 | 0             | 0             | 0                     | 0                   | 119           |
| 431+64.878 | 43164.88     | 9.62     | 30.11     | 12.52                                  | 0.00 | 0.00     | 0.00 | 11                                | 4                                      | 0      | 0        | 0   | 224                 | 0             | 0             | 0                     | 0                   | 126           |
| 431+77.011 | 43177.01     | 12.13    | 30.73     | 12.52                                  | 0.00 | 0.00     | 0.00 | 14                                | 6                                      | 0      | 0        | 0   | 238                 | 0             | 0             | 0                     | 0                   | 134           |
| 431+89.085 | 43189.09     | 12.07    | 31.04     | 12.52                                  | 0.00 | 0.00     | 0.00 | 14                                | 6                                      | 0      | 0        | 0   | 252                 | 0             | 0             | 0                     | 0                   | 142           |
| 432+00     | 43200.00     | 10.91    | 32.98     | 12.52                                  | 0.00 | 0.00     | 0.00 | 13                                | 5                                      | 0      | 0        | 0   | 265                 | 0             | 0             | 0                     | 0                   | 150           |
| 432+50     | 43250.00     | 50.00    | 32.61     | 12.52                                  | 0.00 | 0.00     | 0.00 | 61                                | 23                                     | 0      | 0        | 0   | 326                 | 0             | 0             | 0                     | 0                   | 188           |
| 433+00     | 43300.00     | 50.00    | 36.32     | 12.52                                  | 0.00 | 0.00     | 0.00 | 64                                | 23                                     | 0      | 0        | 0   | 390                 | 0             | 0             | 0                     | 0                   | 229           |
| 433+50     | 43350.00     | 50.00    | 38.21     | 12.52                                  | 0.00 | 0.00     | 0.00 | 69                                | 23                                     | 0      | 0        | 0   | 459                 | 0             | 0             | 0                     | 0                   | 275           |
| 434+00     | 43400.00     | 50.00    | 22.91     | 12.52                                  | 0.00 | 0.00     | 0.00 | 57                                | 23                                     | 0      | 0        | 0   | 516                 | 0             | 0             | 0                     | 0                   | 309           |
| 434+50     | 43450.00     | 50.00    | 21.21     | 12.52                                  | 0.00 | 0.00     | 0.00 | 41                                | 23                                     | 0      | 0        | 0   | 557                 | 0             | 0             | 0                     | 0                   | 327           |
| 434+60     | 43460.00     | 10.00    | 47.01     | 12.52                                  | 0.00 | 0.00     | 0.00 | 13                                | 5                                      | 0      | 0        | 0   | 570                 | 0             | 0             | 0                     | 0                   | 335           |
| 434+70     | 43470.00     | 10.00    | 46.63     | 12.52                                  | 0.00 | 0.00     | 0.00 | 17                                | 5                                      | 0      | 0        | 0   | 587                 | 0             | 0             | 0                     | 0                   | 347           |
| 434+80     | 43480.00     | 10.00    | 46.13     | 12.52                                  | 0.00 | 0.00     | 0.00 | 17                                | 5                                      | 0      | 0        | 0   | 604                 | 0             | 0             | 0                     | 0                   | 359           |
| 434+90     | 43490.00     | 10.00    | 45.45     | 12.52                                  | 0.00 | 0.00     | 0.00 | 17                                | 5                                      | 0      | 0        | 0   | 621                 | 0             | 0             | 0                     | 0                   | 371           |
| 435+00     | 43500.00     | 10.00    | 44.64     | 12.52                                  | 0.00 | 0.00     | 0.00 | 17                                | 5                                      | 0      | 0        | 0   | 638                 | 0             | 0             | 0                     | 0                   | 383           |
| 435+10     | 43510.00     | 10.00    | 43.65     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0      | 0        | 0   | 654                 | 0             | 0             | 0                     | 0                   | 394           |
| 435+20     | 43520.00     | 10.00    | 43.80     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0      | 0        | 0   | 670                 | 0             | 0             | 0                     | 0                   | 405           |
| 435+30     | 43530.00     | 10.00    | 44.03     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0      | 0        | 0   | 686                 | 0             | 0             | 0                     | 0                   | 416           |

|                                         |                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                               |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                              |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                       |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                 |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                 |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                               |
| 8 - MASS ORDINATE                       | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED EBS) - ((FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)] |



DIVISION 3 - USH 8 (STAGE 5 CONT.)

| STATION    | REAL STATION | DISTANCE | AREA (SF) |                                        |      |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |      |          |     | CUMULATIVE VOL (CY) |                       |                       |                                         |                                       |                         |
|------------|--------------|----------|-----------|----------------------------------------|------|----------|------|-----------------------------------|----------------------------------------|------|----------|-----|---------------------|-----------------------|-----------------------|-----------------------------------------|---------------------------------------|-------------------------|
|            |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | ROCK EXC | EBS | 1.00<br>NOTE 1      | EXPANDED FILL<br>1.25 | EXPANDED ROCK<br>1.10 | EXPANDED EBS BACKFILL<br>1.00<br>NOTE 5 | REDUCED EBS IN FILL<br>1.00<br>NOTE 7 | MASS ORDINATE<br>NOTE 8 |
|            |              |          |           |                                        |      |          |      |                                   |                                        |      |          |     |                     |                       |                       |                                         |                                       |                         |
|            |              |          |           |                                        |      |          |      |                                   |                                        |      |          |     |                     |                       |                       |                                         |                                       |                         |
| 435+40     | 43540.00     | 10.00    | 44.14     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0    | 0        | 0   | 702                 | 0                     | 0                     | 0                                       | 0                                     | 427                     |
| 435+50     | 43550.00     | 10.00    | 44.22     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0    | 0        | 0   | 718                 | 0                     | 0                     | 0                                       | 0                                     | 438                     |
| 435+60     | 43560.00     | 10.00    | 44.17     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0    | 0        | 0   | 734                 | 0                     | 0                     | 0                                       | 0                                     | 449                     |
| 435+70     | 43570.00     | 10.00    | 44.30     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0    | 0        | 0   | 750                 | 0                     | 0                     | 0                                       | 0                                     | 460                     |
| 435+80     | 43580.00     | 10.00    | 44.31     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0    | 0        | 0   | 766                 | 0                     | 0                     | 0                                       | 0                                     | 471                     |
| 435+90     | 43590.00     | 10.00    | 44.18     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0    | 0        | 0   | 782                 | 0                     | 0                     | 0                                       | 0                                     | 482                     |
| 436+00     | 43600.00     | 10.00    | 43.99     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 5                                      | 0    | 0        | 0   | 798                 | 0                     | 0                     | 0                                       | 0                                     | 493                     |
| 436+10     | 43610.00     | 10.00    | 20.08     | 12.52                                  | 0.00 | 0.00     | 0.00 | 12                                | 5                                      | 0    | 0        | 0   | 810                 | 0                     | 0                     | 0                                       | 0                                     | 500                     |
| 436+20     | 43620.00     | 10.00    | 20.32     | 12.52                                  | 0.00 | 0.00     | 0.00 | 7                                 | 5                                      | 0    | 0        | 0   | 817                 | 0                     | 0                     | 0                                       | 0                                     | 502                     |
| 436+30     | 43630.00     | 10.00    | 20.52     | 12.52                                  | 0.00 | 0.00     | 0.00 | 8                                 | 5                                      | 0    | 0        | 0   | 825                 | 0                     | 0                     | 0                                       | 0                                     | 505                     |
| 436+40     | 43640.00     | 10.00    | 20.63     | 12.52                                  | 0.00 | 0.00     | 0.00 | 8                                 | 5                                      | 0    | 0        | 0   | 833                 | 0                     | 0                     | 0                                       | 0                                     | 508                     |
| 436+50     | 43650.00     | 10.00    | 20.77     | 12.52                                  | 0.00 | 0.00     | 0.00 | 8                                 | 5                                      | 0    | 0        | 0   | 841                 | 0                     | 0                     | 0                                       | 0                                     | 511                     |
| 437+00     | 43700.00     | 50.00    | 19.64     | 12.52                                  | 0.00 | 0.00     | 0.00 | 37                                | 23                                     | 0    | 0        | 0   | 878                 | 0                     | 0                     | 0                                       | 0                                     | 525                     |
| 437+50     | 43750.00     | 50.00    | 19.85     | 12.52                                  | 0.00 | 0.00     | 0.00 | 37                                | 23                                     | 0    | 0        | 0   | 915                 | 0                     | 0                     | 0                                       | 0                                     | 539                     |
| 438+00     | 43800.00     | 50.00    | 19.56     | 12.52                                  | 0.00 | 0.00     | 0.00 | 36                                | 23                                     | 0    | 0        | 0   | 951                 | 0                     | 0                     | 0                                       | 0                                     | 552                     |
| 438+14     | 43814.00     | 14.00    | 19.67     | 12.52                                  | 0.00 | 0.00     | 0.00 | 10                                | 6                                      | 0    | 0        | 0   | 961                 | 0                     | 0                     | 0                                       | 0                                     | 556                     |
| 438+50     | 43850.00     | 36.00    | 31.83     | 12.52                                  | 0.00 | 0.00     | 0.00 | 34                                | 17                                     | 0    | 0        | 0   | 995                 | 0                     | 0                     | 0                                       | 0                                     | 573                     |
| 438+62.921 | 43862.92     | 12.92    | 32.45     | 12.52                                  | 0.00 | 0.00     | 0.00 | 15                                | 6                                      | 0    | 0        | 0   | 1,010               | 0                     | 0                     | 0                                       | 0                                     | 582                     |
| 438+87.773 | 43887.77     | 24.85    | 35.22     | 12.52                                  | 0.00 | 0.00     | 0.00 | 31                                | 12                                     | 0    | 0        | 0   | 1,041               | 0                     | 0                     | 0                                       | 0                                     | 601                     |
| 439+00     | 43900.00     | 12.23    | 36.95     | 12.52                                  | 0.00 | 0.00     | 0.00 | 16                                | 6                                      | 0    | 0        | 0   | 1,057               | 0                     | 0                     | 0                                       | 0                                     | 611                     |
| 439+12.693 | 43912.69     | 12.69    | 38.16     | 12.52                                  | 0.00 | 0.00     | 0.00 | 18                                | 6                                      | 0    | 0        | 0   | 1,075               | 0                     | 0                     | 0                                       | 0                                     | 623                     |
| 439+50     | 43950.00     | 37.31    | 29.54     | 12.52                                  | 0.00 | 0.00     | 0.00 | 47                                | 17                                     | 0    | 0        | 0   | 1,122               | 0                     | 0                     | 0                                       | 0                                     | 653                     |
| 440+00     | 44000.00     | 50.00    | 24.47     | 12.52                                  | 0.00 | 0.00     | 0.00 | 50                                | 23                                     | 0    | 0        | 0   | 1,172               | 0                     | 0                     | 0                                       | 0                                     | 680                     |
| 440+50     | 44050.00     | 50.00    | 25.40     | 12.52                                  | 0.00 | 0.00     | 0.00 | 46                                | 23                                     | 0    | 0        | 0   | 1,218               | 0                     | 0                     | 0                                       | 0                                     | 703                     |
| 441+00     | 44100.00     | 50.00    | 26.45     | 12.52                                  | 0.00 | 0.00     | 0.00 | 48                                | 23                                     | 0    | 0        | 0   | 1,266               | 0                     | 0                     | 0                                       | 0                                     | 728                     |
| 441+50     | 44150.00     | 50.00    | 29.37     | 12.52                                  | 0.00 | 0.00     | 0.00 | 52                                | 23                                     | 0    | 0        | 0   | 1,318               | 0                     | 0                     | 0                                       | 0                                     | 757                     |
| 442+00     | 44200.00     | 50.00    | 33.07     | 12.52                                  | 0.00 | 0.00     | 0.00 | 58                                | 23                                     | 0    | 0        | 0   | 1,376               | 0                     | 0                     | 0                                       | 0                                     | 792                     |
| 442+50     | 44250.00     | 50.00    | 24.98     | 12.52                                  | 0.00 | 0.00     | 0.00 | 54                                | 23                                     | 0    | 0        | 0   | 1,430               | 0                     | 0                     | 0                                       | 0                                     | 823                     |
| 443+00     | 44300.00     | 50.00    | 25.31     | 12.52                                  | 0.00 | 0.00     | 0.00 | 47                                | 23                                     | 0    | 0        | 0   | 1,477               | 0                     | 0                     | 0                                       | 0                                     | 847                     |
| 443+50     | 44350.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 23                                | 12                                     | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 444+00     | 44400.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 444+50     | 44450.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 445+00     | 44500.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 445+50     | 44550.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 446+00     | 44600.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 446+50     | 44650.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 447+00     | 44700.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 447+50     | 44750.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |
| 448+00     | 44800.00     | 50.00    | 0.00      | 0.00                                   | 0.00 | 0.00     | 0.00 | 0                                 | 0                                      | 0    | 0        | 0   | 1,500               | 0                     | 0                     | 0                                       | 0                                     | 858                     |

|                                         |                                                                                                                                                                                                                  |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                                                                                  |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                                                                                 |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                                                                          |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                                                                    |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                                                                    |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                                                                                  |
| 8 - MASS ORDINATE                       | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: $[(\text{CUT} - \text{SALVAGED PAVT} - \text{EXPANDED EBS}) - ((\text{FILL} - \text{REDUCED EBS IN FILL} - \text{EXPANDED ROCK}) * \text{FILL FACTOR})]$ |



DIVISION 5 - USH 8 (STAGE 7)

| STATION    | REAL STATION | DISTANCE | AREA (SF) |                                        |        |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        |          |     | CUMULATIVE VOL (CY) |               |               |                       |                     |              |
|------------|--------------|----------|-----------|----------------------------------------|--------|----------|------|-----------------------------------|----------------------------------------|--------|----------|-----|---------------------|---------------|---------------|-----------------------|---------------------|--------------|
|            |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS | CUT                 | EXPANDED FILL | EXPANDED ROCK | EXPANDED EBS BACKFILL | REDUCED EBS IN FILL | MASS ORDNATE |
|            |              |          | NOTE 1    | NOTE 2                                 | NOTE 3 |          |      | NOTE 1                            | NOTE 2                                 | NOTE 3 |          |     | NOTE 1              | 1.25          | 1.10          | 1.00<br>NOTE 5        | 1.00<br>NOTE 7      | NOTE 8       |
| 427+00     | 42700.00     | 0.00     | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 427+50     | 42750.00     | 50.00    | 0.52      | 0.00                                   | 0.79   | 0.00     | 0.00 | 0                                 | 0                                      | 1      | 0        | 0   | 0                   | 1             | 0             | 0                     | 0                   | -1           |
| 428+00     | 42800.00     | 50.00    | 0.22      | 0.00                                   | 10.80  | 0.00     | 0.00 | 1                                 | 0                                      | 11     | 0        | 0   | 1                   | 15            | 0             | 0                     | 0                   | -14          |
| 428+50     | 42850.00     | 50.00    | 0.68      | 0.00                                   | 14.66  | 0.00     | 0.00 | 1                                 | 0                                      | 24     | 0        | 0   | 2                   | 45            | 0             | 0                     | 0                   | -43          |
| 429+00     | 42900.00     | 50.00    | 0.54      | 0.00                                   | 23.29  | 0.00     | 0.00 | 1                                 | 0                                      | 35     | 0        | 0   | 3                   | 89            | 0             | 0                     | 0                   | -86          |
| 429+23.529 | 42923.53     | 23.53    | 2.02      | 0.00                                   | 29.37  | 0.00     | 0.00 | 1                                 | 0                                      | 23     | 0        | 0   | 4                   | 118           | 0             | 0                     | 0                   | -114         |
| 429+49.016 | 42949.02     | 25.49    | 7.13      | 0.00                                   | 25.85  | 0.00     | 0.00 | 4                                 | 0                                      | 26     | 0        | 0   | 8                   | 150           | 0             | 0                     | 0                   | -142         |
| 429+50     | 42950.00     | 0.98     | 4.30      | 0.00                                   | 24.48  | 0.00     | 0.00 | 0                                 | 0                                      | 1      | 0        | 0   | 8                   | 151           | 0             | 0                     | 0                   | -143         |
| 429+74.423 | 42974.42     | 24.42    | 4.99      | 0.00                                   | 0.15   | 0.00     | 0.00 | 4                                 | 0                                      | 11     | 0        | 0   | 12                  | 165           | 0             | 0                     | 0                   | -153         |
| 430+00     | 43000.00     | 25.58    | 2.12      | 0.00                                   | 1.95   | 0.00     | 0.00 | 3                                 | 0                                      | 1      | 0        | 0   | 15                  | 166           | 0             | 0                     | 0                   | -151         |
| 430+50     | 43050.00     | 50.00    | 2.79      | 0.00                                   | 0.02   | 0.00     | 0.00 | 5                                 | 0                                      | 2      | 0        | 0   | 20                  | 169           | 0             | 0                     | 0                   | -149         |
| 431+00     | 43100.00     | 50.00    | 4.58      | 0.00                                   | 0.00   | 0.00     | 0.00 | 7                                 | 0                                      | 0      | 0        | 0   | 27                  | 169           | 0             | 0                     | 0                   | -142         |
| 431+50     | 43150.00     | 50.00    | 2.86      | 0.00                                   | 0.00   | 0.00     | 0.00 | 7                                 | 0                                      | 0      | 0        | 0   | 34                  | 169           | 0             | 0                     | 0                   | -135         |
| 431+55.254 | 43155.25     | 5.25     | 2.84      | 0.00                                   | 0.00   | 0.00     | 0.00 | 1                                 | 0                                      | 0      | 0        | 0   | 35                  | 169           | 0             | 0                     | 0                   | -134         |
| 431+64.878 | 43164.88     | 9.62     | 3.92      | 0.00                                   | 0.00   | 0.00     | 0.00 | 1                                 | 0                                      | 0      | 0        | 0   | 36                  | 169           | 0             | 0                     | 0                   | -133         |
| 431+77.011 | 43177.01     | 12.13    | 5.80      | 0.00                                   | 0.00   | 0.00     | 0.00 | 2                                 | 0                                      | 0      | 0        | 0   | 38                  | 169           | 0             | 0                     | 0                   | -131         |
| 431+89.085 | 43189.09     | 12.07    | 8.01      | 0.00                                   | 0.00   | 0.00     | 0.00 | 3                                 | 0                                      | 0      | 0        | 0   | 41                  | 169           | 0             | 0                     | 0                   | -128         |
| 432+00     | 43200.00     | 10.91    | 8.21      | 0.00                                   | 0.00   | 0.00     | 0.00 | 3                                 | 0                                      | 0      | 0        | 0   | 44                  | 169           | 0             | 0                     | 0                   | -125         |
| 432+50     | 43250.00     | 50.00    | 8.23      | 0.00                                   | 0.00   | 0.00     | 0.00 | 15                                | 0                                      | 0      | 0        | 0   | 59                  | 169           | 0             | 0                     | 0                   | -110         |
| 433+00     | 43300.00     | 50.00    | 13.66     | 0.00                                   | 0.00   | 0.00     | 0.00 | 20                                | 0                                      | 0      | 0        | 0   | 79                  | 169           | 0             | 0                     | 0                   | -90          |
| 433+50     | 43350.00     | 50.00    | 16.89     | 0.00                                   | 0.00   | 0.00     | 0.00 | 28                                | 0                                      | 0      | 0        | 0   | 107                 | 169           | 0             | 0                     | 0                   | -62          |
| 434+00     | 43400.00     | 50.00    | 15.90     | 0.00                                   | 0.00   | 0.00     | 0.00 | 30                                | 0                                      | 0      | 0        | 0   | 137                 | 169           | 0             | 0                     | 0                   | -32          |
| 434+50     | 43450.00     | 50.00    | 11.04     | 0.00                                   | 0.00   | 0.00     | 0.00 | 25                                | 0                                      | 0      | 0        | 0   | 162                 | 169           | 0             | 0                     | 0                   | -7           |
| 434+60     | 43460.00     | 10.00    | 10.96     | 0.00                                   | 0.00   | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 166                 | 169           | 0             | 0                     | 0                   | -3           |
| 434+70     | 43470.00     | 10.00    | 10.96     | 0.00                                   | 0.00   | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 170                 | 169           | 0             | 0                     | 0                   | 1            |
| 434+80     | 43480.00     | 10.00    | 10.89     | 0.00                                   | 0.00   | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 174                 | 169           | 0             | 0                     | 0                   | 5            |
| 434+90     | 43490.00     | 10.00    | 10.72     | 0.00                                   | 0.00   | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 178                 | 169           | 0             | 0                     | 0                   | 9            |
| 435+00     | 43500.00     | 10.00    | 10.51     | 0.00                                   | 0.00   | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 182                 | 169           | 0             | 0                     | 0                   | 13           |
| 435+10     | 43510.00     | 10.00    | 10.29     | 0.00                                   | 0.00   | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 186                 | 169           | 0             | 0                     | 0                   | 17           |
| 435+20     | 43520.00     | 10.00    | 10.37     | 0.00                                   | 0.00   | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 190                 | 169           | 0             | 0                     | 0                   | 21           |

|                                         |                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                               |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                              |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                       |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                 |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                 |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                               |
| 8 - MASS ORDNATE                        | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED EBS) - ((FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)] |

DIVISION 5 - USH 8 (STAGE 7 CONT.)

| STATION    | REAL STATION | DISTANCE | AREA (SF) |                                        |       |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        |          |     | CUMULATIVE VOL (CY) |               |               |                       |                     |               |
|------------|--------------|----------|-----------|----------------------------------------|-------|----------|------|-----------------------------------|----------------------------------------|--------|----------|-----|---------------------|---------------|---------------|-----------------------|---------------------|---------------|
|            |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL  | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS | CUT                 | EXPANDED FILL | EXPANDED ROCK | EXPANDED EBS BACKFILL | REDUCED EBS IN FILL | MASS ORDINATE |
|            |              |          |           |                                        |       |          |      |                                   |                                        |        |          |     |                     |               |               |                       |                     |               |
|            |              |          |           |                                        |       |          |      | NOTE 1                            | NOTE 2                                 | NOTE 3 |          |     | NOTE 1              | 1.25          | 1.10          | 1.00<br>NOTE 5        | 1.00<br>NOTE 7      | NOTE 8        |
| 435+30     | 43530.00     | 10.00    | 10.44     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 194                 | 169           | 0             | 0                     | 0                   | 25            |
| 435+40     | 43540.00     | 10.00    | 10.43     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 198                 | 169           | 0             | 0                     | 0                   | 29            |
| 435+50     | 43550.00     | 10.00    | 10.44     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 202                 | 169           | 0             | 0                     | 0                   | 33            |
| 435+60     | 43560.00     | 10.00    | 10.36     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 206                 | 169           | 0             | 0                     | 0                   | 37            |
| 435+70     | 43570.00     | 10.00    | 10.31     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 210                 | 169           | 0             | 0                     | 0                   | 41            |
| 435+80     | 43580.00     | 10.00    | 10.22     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 214                 | 169           | 0             | 0                     | 0                   | 45            |
| 435+90     | 43590.00     | 10.00    | 10.03     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 218                 | 169           | 0             | 0                     | 0                   | 49            |
| 436+00     | 43600.00     | 10.00    | 9.78      | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 222                 | 169           | 0             | 0                     | 0                   | 53            |
| 436+10     | 43610.00     | 10.00    | 9.48      | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 226                 | 169           | 0             | 0                     | 0                   | 57            |
| 436+20     | 43620.00     | 10.00    | 9.84      | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 230                 | 169           | 0             | 0                     | 0                   | 61            |
| 436+30     | 43630.00     | 10.00    | 10.22     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 234                 | 169           | 0             | 0                     | 0                   | 65            |
| 436+40     | 43640.00     | 10.00    | 10.53     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 238                 | 169           | 0             | 0                     | 0                   | 69            |
| 436+50     | 43650.00     | 10.00    | 10.87     | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 242                 | 169           | 0             | 0                     | 0                   | 73            |
| 437+00     | 43700.00     | 50.00    | 8.96      | 0.00                                   | 0.00  | 0.00     | 0.00 | 18                                | 0                                      | 0      | 0        | 0   | 260                 | 169           | 0             | 0                     | 0                   | 91            |
| 437+50     | 43750.00     | 50.00    | 8.59      | 0.00                                   | 0.00  | 0.00     | 0.00 | 16                                | 0                                      | 0      | 0        | 0   | 276                 | 169           | 0             | 0                     | 0                   | 107           |
| 438+00     | 43800.00     | 50.00    | 7.57      | 0.00                                   | 0.02  | 0.00     | 0.00 | 15                                | 0                                      | 0      | 0        | 0   | 291                 | 169           | 0             | 0                     | 0                   | 122           |
| 438+14     | 43814.00     | 14.00    | 7.37      | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 295                 | 169           | 0             | 0                     | 0                   | 126           |
| 438+50     | 43850.00     | 36.00    | 7.95      | 0.00                                   | 0.00  | 0.00     | 0.00 | 10                                | 0                                      | 0      | 0        | 0   | 305                 | 169           | 0             | 0                     | 0                   | 136           |
| 438+62.921 | 43862.92     | 12.92    | 8.79      | 0.00                                   | 0.00  | 0.00     | 0.00 | 4                                 | 0                                      | 0      | 0        | 0   | 309                 | 169           | 0             | 0                     | 0                   | 140           |
| 438+87.773 | 43887.77     | 24.85    | 9.70      | 0.00                                   | 0.00  | 0.00     | 0.00 | 9                                 | 0                                      | 0      | 0        | 0   | 318                 | 169           | 0             | 0                     | 0                   | 149           |
| 439+00     | 43900.00     | 12.23    | 14.96     | 0.00                                   | 0.00  | 0.00     | 0.00 | 6                                 | 0                                      | 0      | 0        | 0   | 324                 | 169           | 0             | 0                     | 0                   | 155           |
| 439+12.693 | 43912.69     | 12.69    | 21.52     | 0.00                                   | 0.00  | 0.00     | 0.00 | 9                                 | 0                                      | 0      | 0        | 0   | 333                 | 169           | 0             | 0                     | 0                   | 164           |
| 439+50     | 43950.00     | 37.31    | 11.97     | 0.00                                   | 0.00  | 0.00     | 0.00 | 23                                | 0                                      | 0      | 0        | 0   | 356                 | 169           | 0             | 0                     | 0                   | 187           |
| 440+00     | 44000.00     | 50.00    | 12.40     | 0.00                                   | 0.00  | 0.00     | 0.00 | 23                                | 0                                      | 0      | 0        | 0   | 379                 | 169           | 0             | 0                     | 0                   | 210           |
| 440+50     | 44050.00     | 50.00    | 9.28      | 0.00                                   | 0.00  | 0.00     | 0.00 | 20                                | 0                                      | 0      | 0        | 0   | 399                 | 169           | 0             | 0                     | 0                   | 230           |
| 441+00     | 44100.00     | 50.00    | 8.37      | 0.00                                   | 0.00  | 0.00     | 0.00 | 16                                | 0                                      | 0      | 0        | 0   | 415                 | 169           | 0             | 0                     | 0                   | 246           |
| 441+50     | 44150.00     | 50.00    | 11.12     | 0.00                                   | 0.00  | 0.00     | 0.00 | 18                                | 0                                      | 0      | 0        | 0   | 433                 | 169           | 0             | 0                     | 0                   | 264           |
| 442+00     | 44200.00     | 50.00    | 12.10     | 0.00                                   | 0.00  | 0.00     | 0.00 | 21                                | 0                                      | 0      | 0        | 0   | 454                 | 169           | 0             | 0                     | 0                   | 285           |
| 442+50     | 44250.00     | 50.00    | 10.29     | 0.00                                   | 0.00  | 0.00     | 0.00 | 21                                | 0                                      | 0      | 0        | 0   | 475                 | 169           | 0             | 0                     | 0                   | 306           |
| 443+00     | 44300.00     | 50.00    | 12.00     | 0.00                                   | 53.10 | 0.00     | 0.00 | 21                                | 0                                      | 49     | 0        | 0   | 496                 | 230           | 0             | 0                     | 0                   | 266           |
| 443+50     | 44350.00     | 50.00    | 11.41     | 0.00                                   | 56.02 | 0.00     | 0.00 | 22                                | 0                                      | 101    | 0        | 0   | 518                 | 356           | 0             | 0                     | 0                   | 162           |
| 444+00     | 44400.00     | 50.00    | 2.74      | 0.00                                   | 13.27 | 0.00     | 0.00 | 13                                | 0                                      | 64     | 0        | 0   | 531                 | 436           | 0             | 0                     | 0                   | 95            |
| 444+50     | 44450.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 3                                 | 0                                      | 12     | 0        | 0   | 534                 | 451           | 0             | 0                     | 0                   | 83            |
| 445+00     | 44500.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 534                 | 451           | 0             | 0                     | 0                   | 83            |
| 445+50     | 44550.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 534                 | 451           | 0             | 0                     | 0                   | 83            |
| 446+00     | 44600.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 534                 | 451           | 0             | 0                     | 0                   | 83            |
| 446+50     | 44650.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 534                 | 451           | 0             | 0                     | 0                   | 83            |
| 447+00     | 44700.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 534                 | 451           | 0             | 0                     | 0                   | 83            |
| 447+50     | 44750.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 534                 | 451           | 0             | 0                     | 0                   | 83            |
| 448+00     | 44800.00     | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 534                 | 451           | 0             | 0                     | 0                   | 83            |

|                                         |                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                               |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                              |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                       |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                 |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                 |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                               |
| 8 - MASS ORDINATE                       | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED EBS) - ((FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)] |



DIVISION 1 - ALIGNMENT - USH45 (STAGE 2/3)

| STATION     | REAL STATION | DISTANCE | AREA (SF) |                                        |       |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        |          |     | CUMULATIVE VOL (CY) |               |               |                       |                     |              |
|-------------|--------------|----------|-----------|----------------------------------------|-------|----------|------|-----------------------------------|----------------------------------------|--------|----------|-----|---------------------|---------------|---------------|-----------------------|---------------------|--------------|
|             |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL  | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS | CUT                 | EXPANDED FILL | EXPANDED ROCK | EXPANDED EBS BACKFILL | REDUCED EBS IN FILL | MASS ORDNATE |
|             |              |          |           |                                        |       |          |      |                                   |                                        |        |          |     |                     |               |               |                       |                     |              |
|             |              |          |           |                                        |       |          |      | NOTE 1                            | NOTE 2                                 | NOTE 3 |          |     | NOTE 1              | 1.25          | 1.10          | NOTE 5                | NOTE 7              | NOTE 8       |
| 1410+00     | 141000.00    | 0.00     | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1410+50     | 141050.00    | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1411+00     | 141100.00    | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1411+50     | 141150.00    | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1411+62.738 | 141162.74    | 12.74    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1411+87.72  | 141187.72    | 24.98    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1412+00     | 141200.00    | 12.28    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1412+06.62  | 141206.62    | 6.62     | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1412+12.7   | 141212.70    | 6.08     | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1412+31.605 | 141231.61    | 18.91    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1412+50     | 141250.00    | 18.39    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1412+56.588 | 141256.59    | 6.59     | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1413+00     | 141300.00    | 43.41    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1413+50     | 141350.00    | 50.00    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1413+68.946 | 141368.95    | 18.95    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1413+93.928 | 141393.93    | 24.98    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1414+00     | 141400.00    | 6.07     | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1414+12.832 | 141412.83    | 12.83    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1414+18.91  | 141418.91    | 6.08     | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1414+37.815 | 141437.82    | 18.91    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1414+50     | 141450.00    | 12.18    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1414+62.798 | 141462.80    | 12.80    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1415+00     | 141500.00    | 37.20    | 0.00      | 0.00                                   | 0.00  | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0             | 0             | 0                     | 0                   | 0            |
| 1415+50     | 141550.00    | 50.00    | 176.83    | 27.96                                  | 0.00  | 0.00     | 0.00 | 164                               | 26                                     | 0      | 0        | 0   | 164                 | 0             | 0             | 0                     | 0                   | 138          |
| 1416+00     | 141600.00    | 50.00    | 239.02    | 27.96                                  | 0.00  | 0.00     | 0.00 | 385                               | 52                                     | 0      | 0        | 0   | 549                 | 0             | 0             | 0                     | 0                   | 471          |
| 1416+50     | 141650.00    | 50.00    | 303.92    | 27.96                                  | 0.00  | 0.00     | 0.00 | 503                               | 52                                     | 0      | 0        | 0   | 1,052               | 0             | 0             | 0                     | 0                   | 922          |
| 1417+00     | 141700.00    | 50.00    | 416.58    | 27.96                                  | 1.01  | 0.00     | 0.00 | 667                               | 52                                     | 1      | 0        | 0   | 1,719               | 1             | 0             | 0                     | 0                   | 1,536        |
| 1417+10     | 141710.00    | 10.00    | 412.74    | 27.96                                  | 4.80  | 0.00     | 0.00 | 154                               | 10                                     | 1      | 0        | 0   | 1,873               | 3             | 0             | 0                     | 0                   | 1,679        |
| 1417+20     | 141720.00    | 10.00    | 391.51    | 27.96                                  | 12.03 | 0.00     | 0.00 | 149                               | 10                                     | 3      | 0        | 0   | 2,022               | 6             | 0             | 0                     | 0                   | 1,814        |
| 1417+30     | 141730.00    | 10.00    | 395.82    | 27.96                                  | 23.48 | 0.00     | 0.00 | 146                               | 10                                     | 7      | 0        | 0   | 2,168               | 15            | 0             | 0                     | 0                   | 1,941        |
| 1417+40     | 141740.00    | 10.00    | 370.61    | 27.96                                  | 33.01 | 0.00     | 0.00 | 142                               | 10                                     | 10     | 0        | 0   | 2,310               | 28            | 0             | 0                     | 0                   | 2,061        |
| 1417+50     | 141750.00    | 10.00    | 349.16    | 27.96                                  | 35.08 | 0.00     | 0.00 | 133                               | 10                                     | 13     | 0        | 0   | 2,443               | 44            | 0             | 0                     | 0                   | 2,167        |
| 1417+60     | 141760.00    | 10.00    | 312.38    | 27.96                                  | 10.54 | 0.00     | 0.00 | 123                               | 10                                     | 8      | 0        | 0   | 2,566               | 54            | 0             | 0                     | 0                   | 2,270        |
| 1417+70     | 141770.00    | 10.00    | 275.96    | 27.96                                  | 0.00  | 0.00     | 0.00 | 109                               | 10                                     | 2      | 0        | 0   | 2,675               | 56            | 0             | 0                     | 0                   | 2,367        |

|                                         |                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                               |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                              |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                       |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                 |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                 |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                               |
| 8 - MASS ORDNATE                        | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED EBS) - ((FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)] |

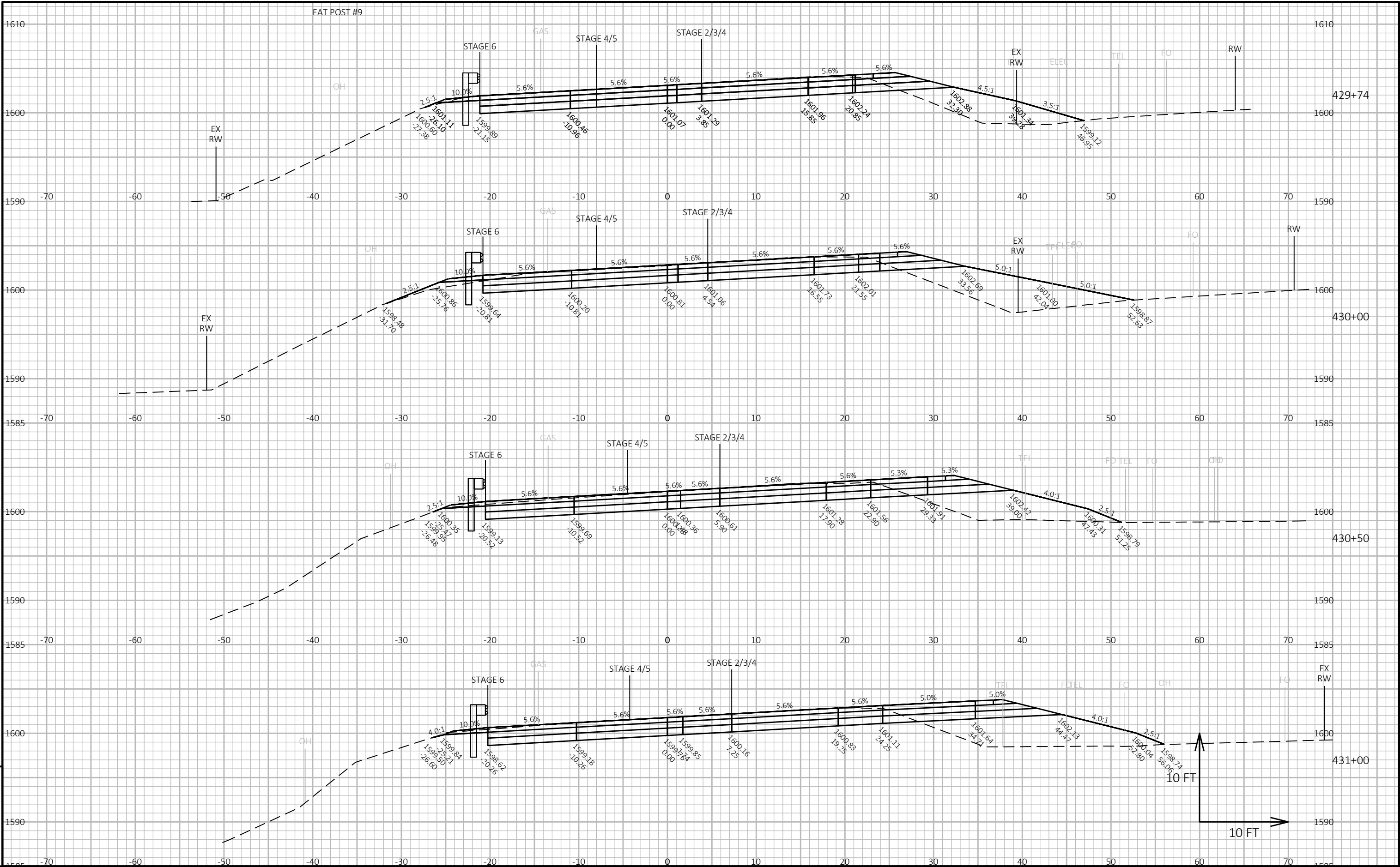
DIVISION 4 - ALIGNMENT - USH45 (STAGE 6)

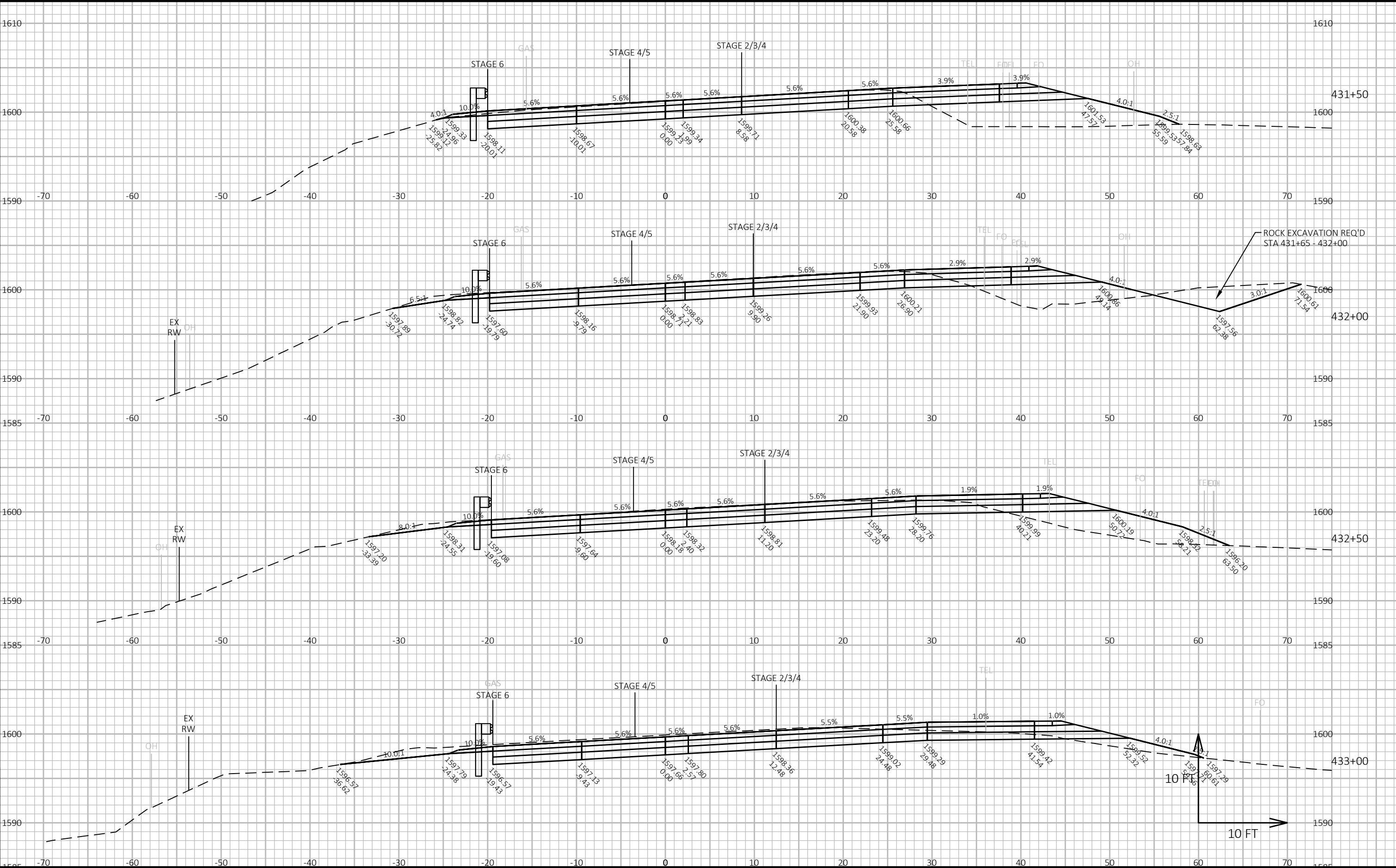
| STATION     | REAL STATION | DISTANCE | AREA (SF) |                                        |        |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        |          |     | CUMULATIVE VOL (CY) |                       |                       |                               |                             |               |
|-------------|--------------|----------|-----------|----------------------------------------|--------|----------|------|-----------------------------------|----------------------------------------|--------|----------|-----|---------------------|-----------------------|-----------------------|-------------------------------|-----------------------------|---------------|
|             |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS  | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | ROCK EXC | EBS | CUT<br>1.00         | EXPANDED FILL<br>1.25 | EXPANDED ROCK<br>1.10 | EXPANDED EBS BACKFILL<br>1.00 | REDUCED EBS IN FILL<br>1.00 | MASS ORDINATE |
|             |              |          |           |                                        |        |          |      |                                   |                                        |        |          |     |                     |                       |                       |                               |                             |               |
|             |              |          |           |                                        |        |          |      | NOTE 1                            | NOTE 2                                 | NOTE 3 |          |     | NOTE 1              |                       |                       | NOTE 5                        | NOTE 7                      | NOTE 8        |
| 1410+00     | 141000.00    | 0.00     | 95.36     | 38.38                                  | 1.07   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 0                   | 0                     | 0                     | 0                             | 0                           | 0             |
| 1410+50     | 141050.00    | 50.00    | 96.08     | 38.38                                  | 0.52   | 0.00     | 0.00 | 177                               | 71                                     | 1      | 0        | 0   | 177                 | 1                     | 0                     | 0                             | 0                           | 105           |
| 1411+00     | 141100.00    | 50.00    | 94.65     | 38.38                                  | 5.71   | 0.00     | 0.00 | 177                               | 71                                     | 6      | 0        | 0   | 354                 | 9                     | 0                     | 0                             | 0                           | 203           |
| 1411+50     | 141150.00    | 50.00    | 92.35     | 38.38                                  | 21.15  | 0.00     | 0.00 | 173                               | 71                                     | 25     | 0        | 0   | 527                 | 40                    | 0                     | 0                             | 0                           | 274           |
| 1411+62.738 | 141162.74    | 12.74    | 91.27     | 38.38                                  | 31.94  | 0.00     | 0.00 | 43                                | 18                                     | 13     | 0        | 0   | 570                 | 56                    | 0                     | 0                             | 0                           | 283           |
| 1411+87.72  | 141187.72    | 24.98    | 96.55     | 38.38                                  | 24.61  | 0.00     | 0.00 | 87                                | 36                                     | 26     | 0        | 0   | 657                 | 89                    | 0                     | 0                             | 0                           | 301           |
| 1412+00     | 141200.00    | 12.28    | 99.60     | 38.38                                  | 27.01  | 0.00     | 0.00 | 45                                | 17                                     | 12     | 0        | 0   | 702                 | 104                   | 0                     | 0                             | 0                           | 314           |
| 1412+06.62  | 141206.62    | 6.62     | 103.11    | 38.38                                  | 27.84  | 0.00     | 0.00 | 25                                | 9                                      | 7      | 0        | 0   | 727                 | 113                   | 0                     | 0                             | 0                           | 322           |
| 1412+12.7   | 141212.70    | 6.08     | 106.21    | 38.38                                  | 24.32  | 0.00     | 0.00 | 24                                | 9                                      | 6      | 0        | 0   | 751                 | 120                   | 0                     | 0                             | 0                           | 329           |
| 1412+31.605 | 141231.61    | 18.91    | 105.71    | 38.38                                  | 10.61  | 0.00     | 0.00 | 74                                | 27                                     | 12     | 0        | 0   | 825                 | 135                   | 0                     | 0                             | 0                           | 361           |
| 1412+50     | 141250.00    | 18.39    | 98.63     | 38.38                                  | 10.37  | 0.00     | 0.00 | 70                                | 26                                     | 7      | 0        | 0   | 895                 | 144                   | 0                     | 0                             | 0                           | 396           |
| 1412+56.588 | 141256.59    | 6.59     | 95.01     | 38.38                                  | 10.36  | 0.00     | 0.00 | 24                                | 9                                      | 3      | 0        | 0   | 919                 | 148                   | 0                     | 0                             | 0                           | 408           |
| 1413+00     | 141300.00    | 43.41    | 74.64     | 38.38                                  | 105.73 | 0.00     | 0.00 | 136                               | 62                                     | 93     | 0        | 0   | 1,055               | 264                   | 0                     | 0                             | 0                           | 365           |
| 1413+50     | 141350.00    | 50.00    | 94.50     | 38.38                                  | 16.63  | 0.00     | 0.00 | 157                               | 71                                     | 113    | 0        | 0   | 1,212               | 405                   | 0                     | 0                             | 0                           | 310           |
| 1413+68.946 | 141368.95    | 18.95    | 105.84    | 38.38                                  | 19.60  | 0.00     | 0.00 | 70                                | 27                                     | 13     | 0        | 0   | 1,282               | 421                   | 0                     | 0                             | 0                           | 337           |
| 1413+93.928 | 141393.93    | 24.98    | 106.56    | 38.38                                  | 13.53  | 0.00     | 0.00 | 98                                | 36                                     | 15     | 0        | 0   | 1,380               | 440                   | 0                     | 0                             | 0                           | 380           |
| 1414+00     | 141400.00    | 6.07     | 104.36    | 38.38                                  | 16.11  | 0.00     | 0.00 | 24                                | 9                                      | 3      | 0        | 0   | 1,404               | 444                   | 0                     | 0                             | 0                           | 391           |
| 1414+12.832 | 141412.83    | 12.83    | 100.90    | 38.38                                  | 25.58  | 0.00     | 0.00 | 49                                | 18                                     | 10     | 0        | 0   | 1,453               | 456                   | 0                     | 0                             | 0                           | 410           |
| 1414+18.91  | 141418.91    | 6.08     | 101.17    | 38.38                                  | 28.78  | 0.00     | 0.00 | 23                                | 9                                      | 6      | 0        | 0   | 1,476               | 464                   | 0                     | 0                             | 0                           | 416           |
| 1414+37.815 | 141437.82    | 18.91    | 101.98    | 38.38                                  | 18.31  | 0.00     | 0.00 | 71                                | 27                                     | 16     | 0        | 0   | 1,547               | 484                   | 0                     | 0                             | 0                           | 440           |
| 1414+50     | 141450.00    | 12.18    | 102.35    | 38.38                                  | 8.81   | 0.00     | 0.00 | 46                                | 17                                     | 6      | 0        | 0   | 1,593               | 491                   | 0                     | 0                             | 0                           | 462           |
| 1414+62.798 | 141462.80    | 12.80    | 106.37    | 38.38                                  | 8.04   | 0.00     | 0.00 | 49                                | 18                                     | 4      | 0        | 0   | 1,642               | 496                   | 0                     | 0                             | 0                           | 488           |
| 1415+00     | 141500.00    | 37.20    | 129.99    | 38.38                                  | 0.01   | 0.00     | 0.00 | 163                               | 53                                     | 6      | 0        | 0   | 1,805               | 504                   | 0                     | 0                             | 0                           | 590           |
| 1415+50     | 141550.00    | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 120                               | 36                                     | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1416+00     | 141600.00    | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1416+50     | 141650.00    | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1417+00     | 141700.00    | 50.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1417+10     | 141710.00    | 10.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1417+20     | 141720.00    | 10.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1417+30     | 141730.00    | 10.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1417+40     | 141740.00    | 10.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1417+50     | 141750.00    | 10.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1417+60     | 141760.00    | 10.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |
| 1417+70     | 141770.00    | 10.00    | 0.00      | 0.00                                   | 0.00   | 0.00     | 0.00 | 0                                 | 0                                      | 0      | 0        | 0   | 1,925               | 504                   | 0                     | 0                             | 0                           | 674           |

|                                         |                                                                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                               |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                              |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                       |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                 |
| 5 - EXPANDED EBS                        | WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)                                                                                                 |
| 7 - REDUCED EBS IN FILL                 | REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL                                                                                                               |
| 8 - MASS ORDINATE                       | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED EBS) - ((FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)] |

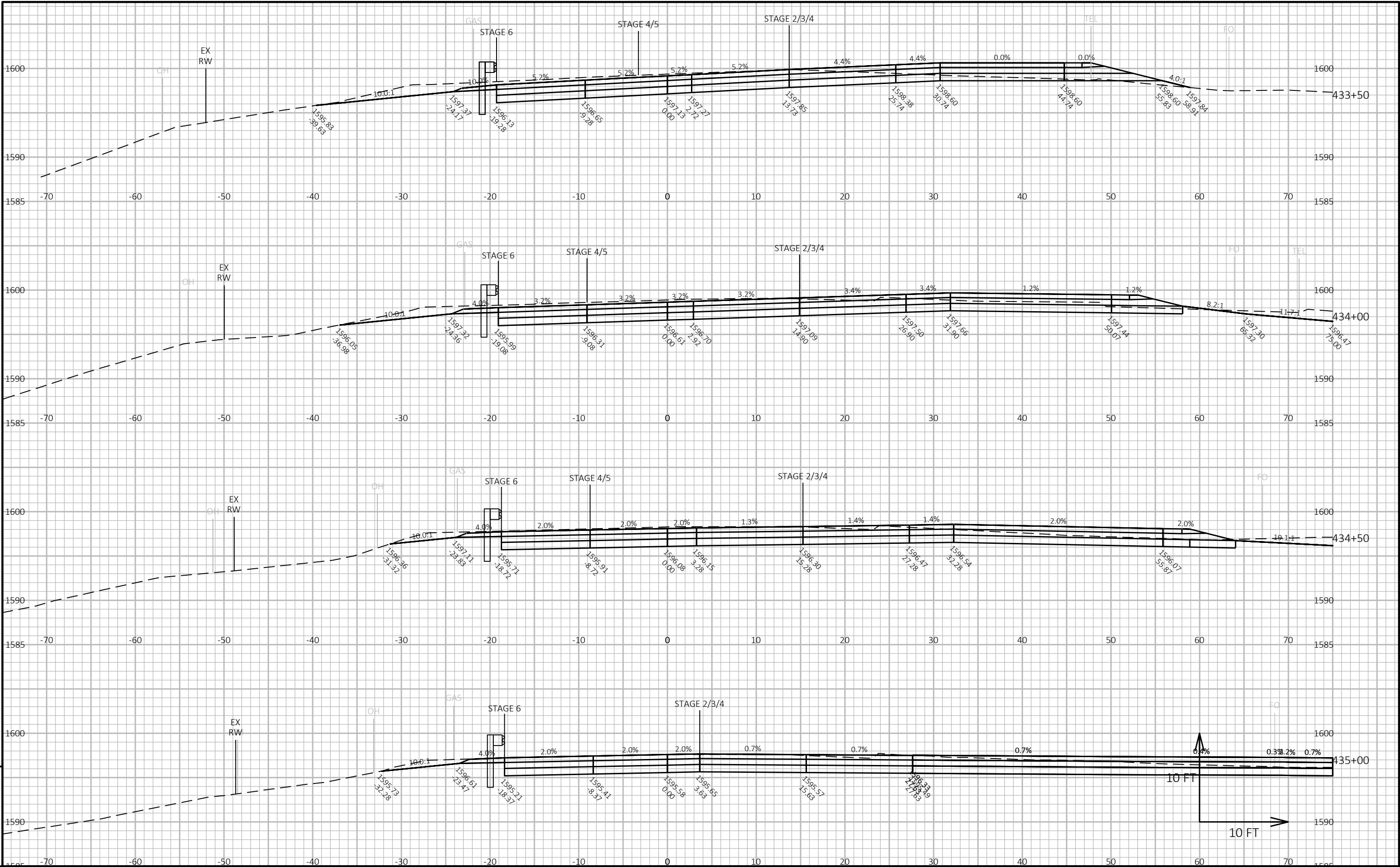




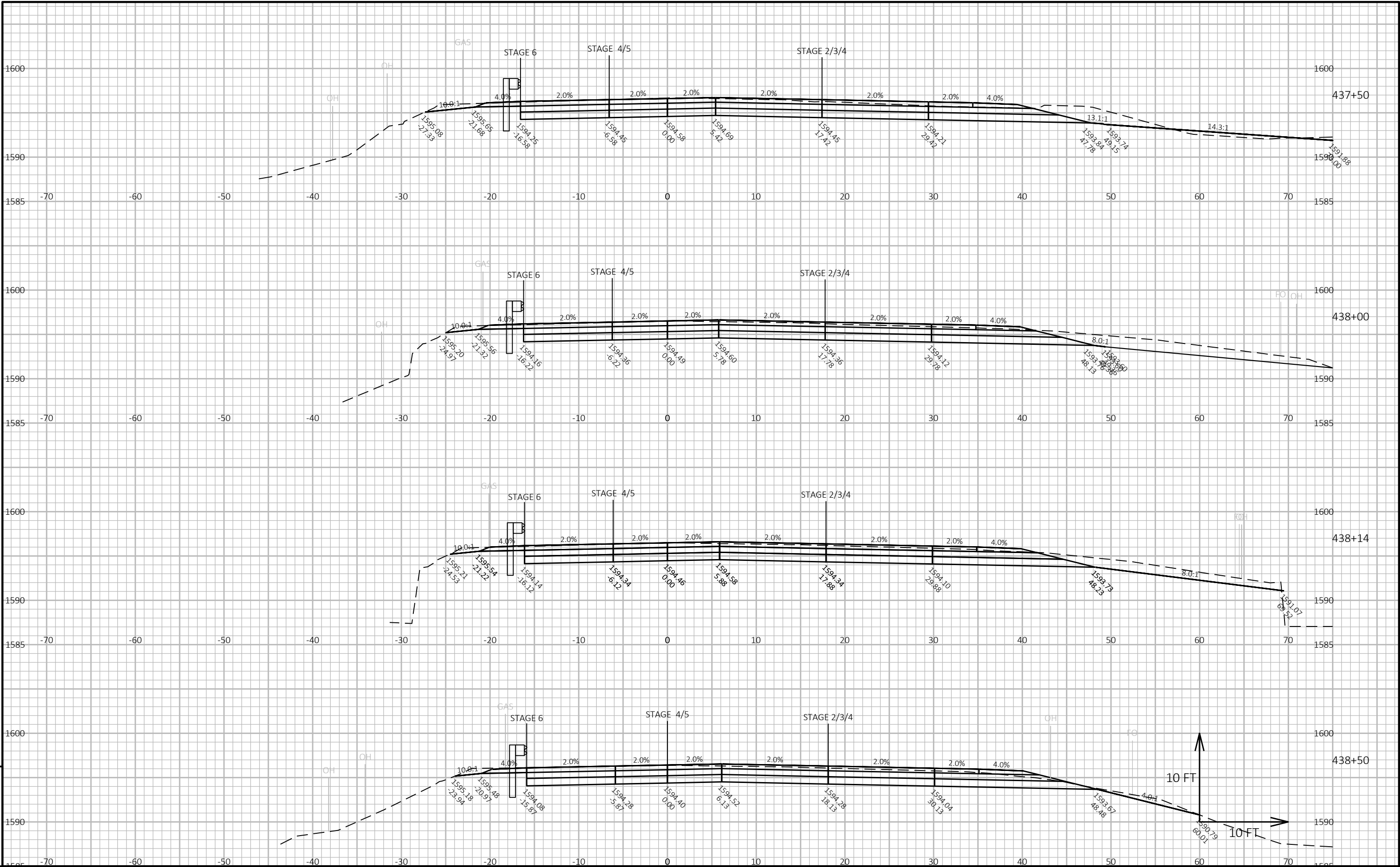


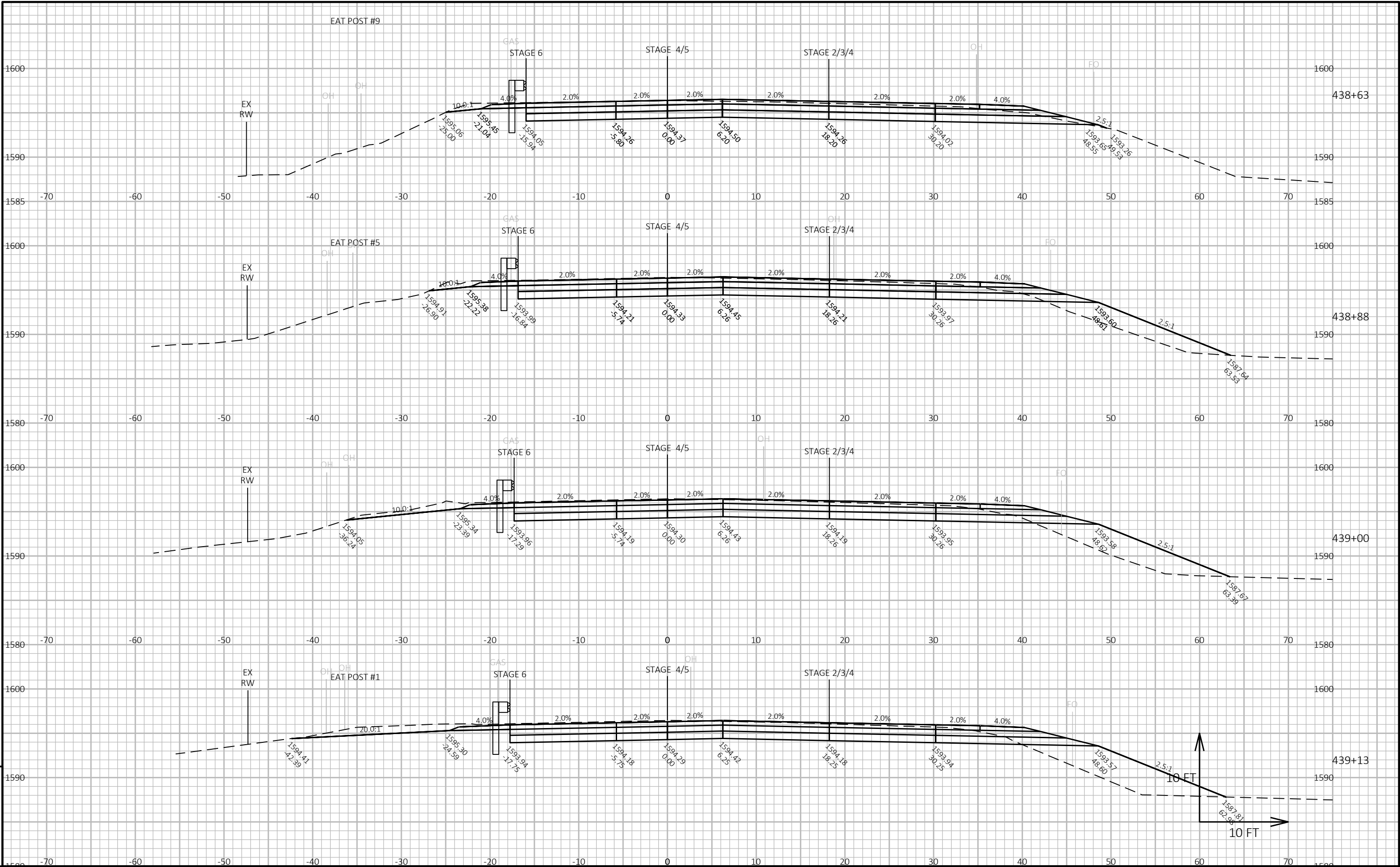


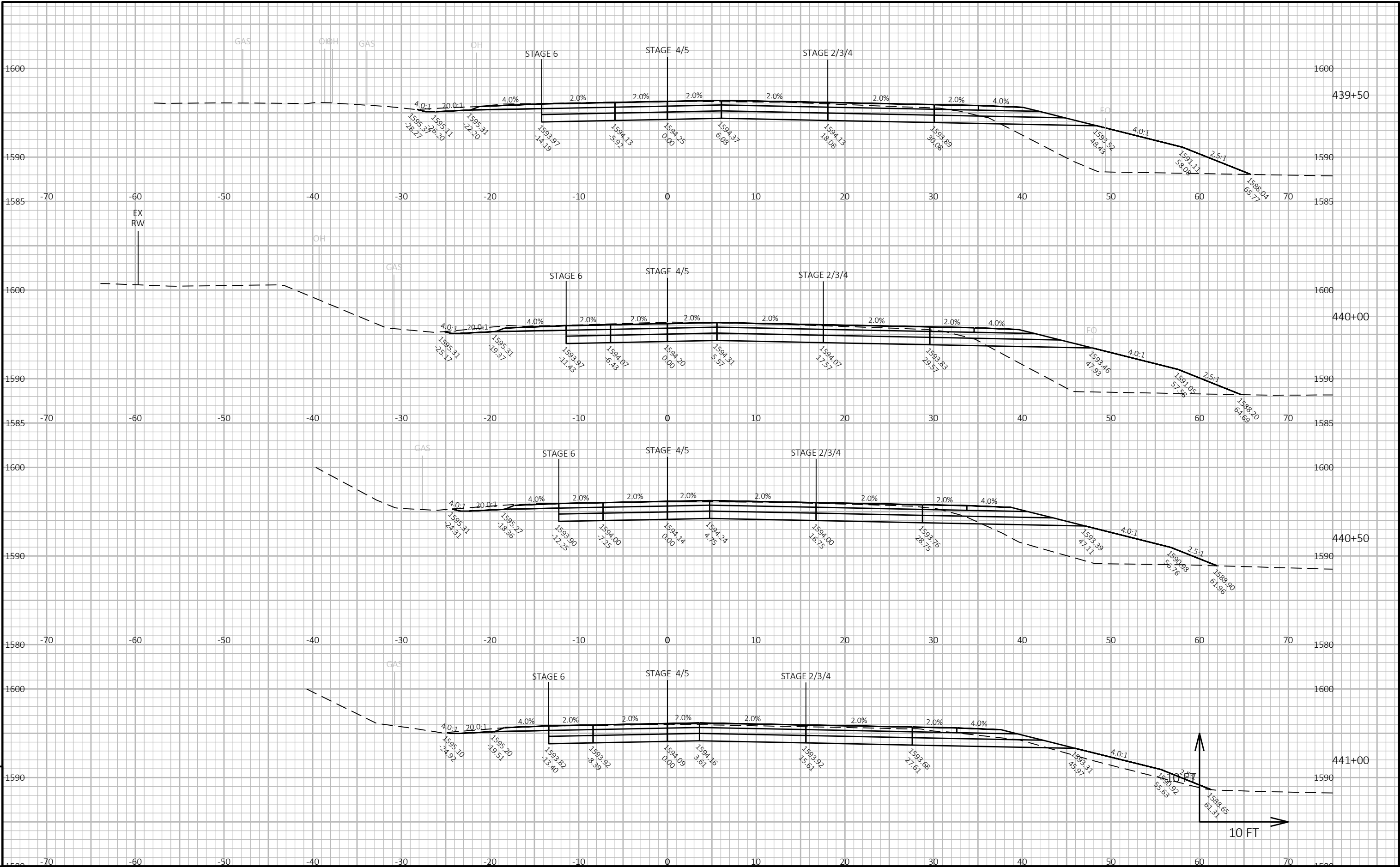






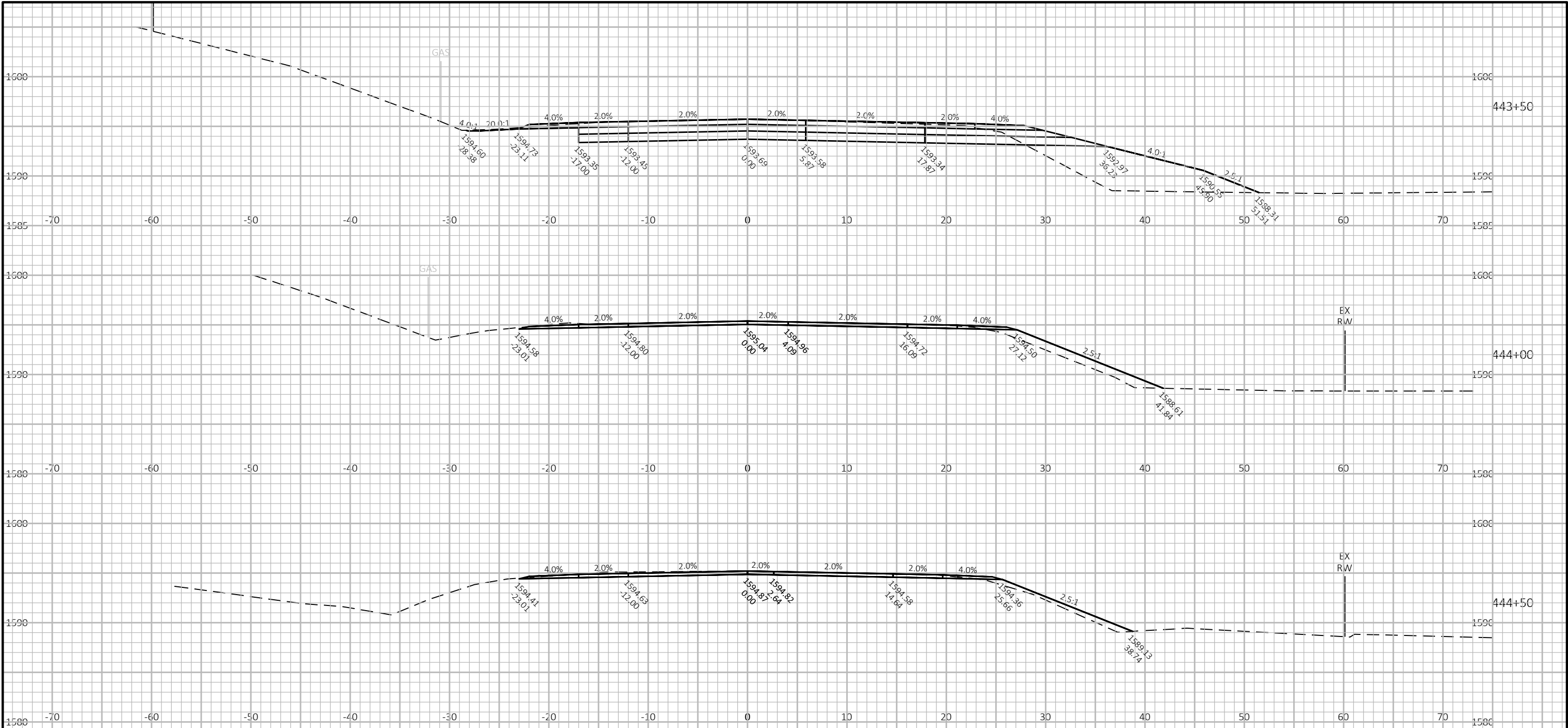




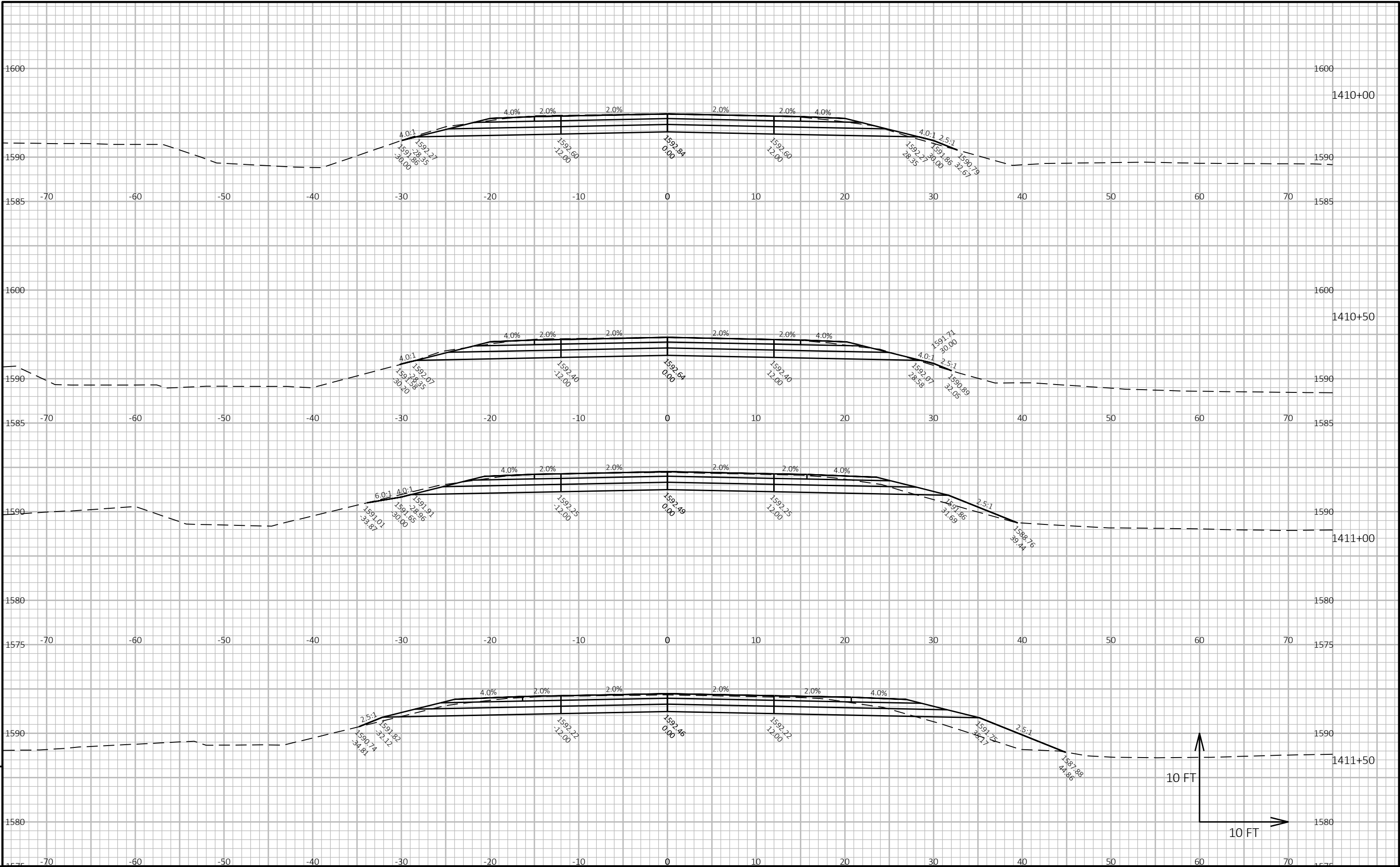








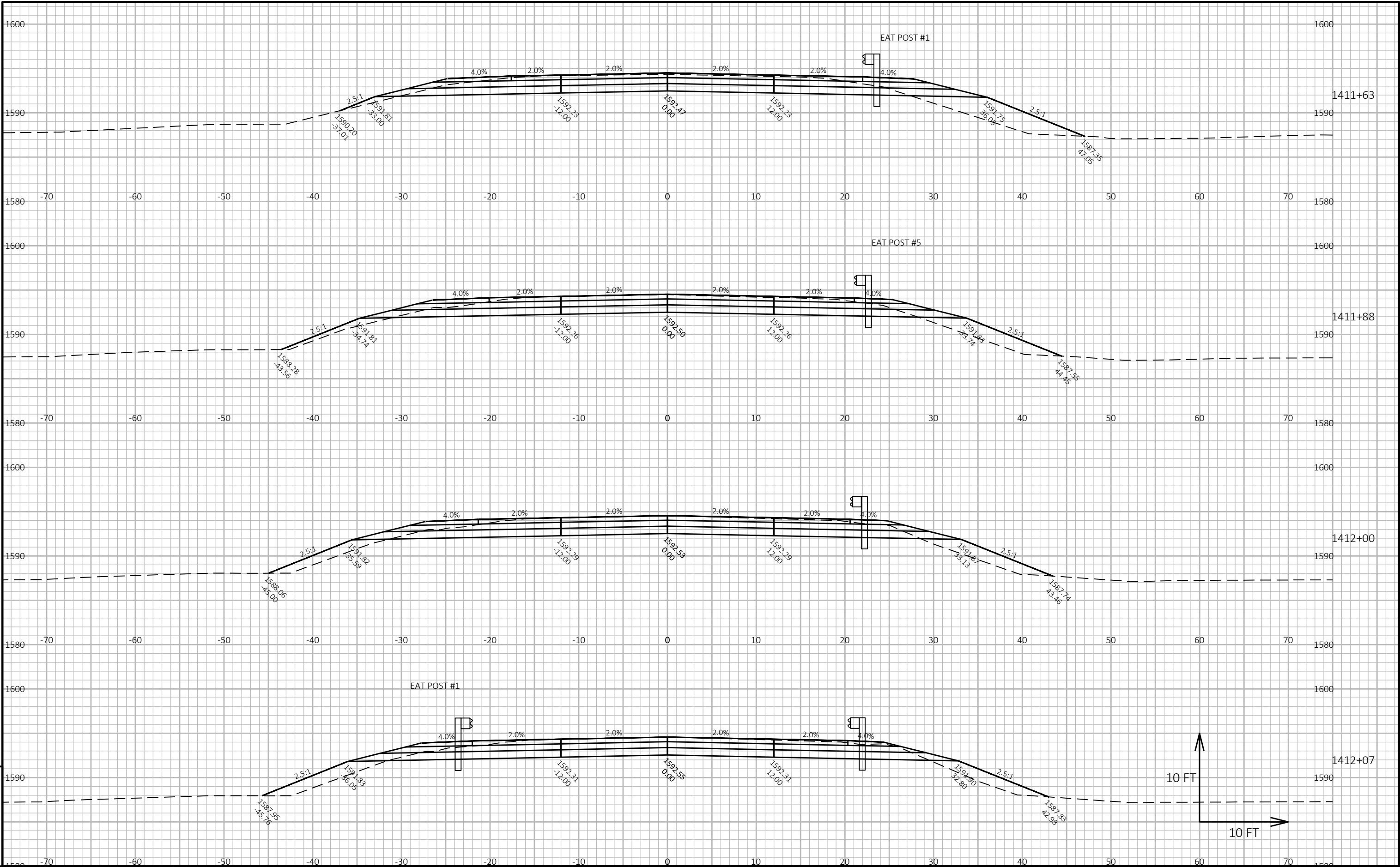
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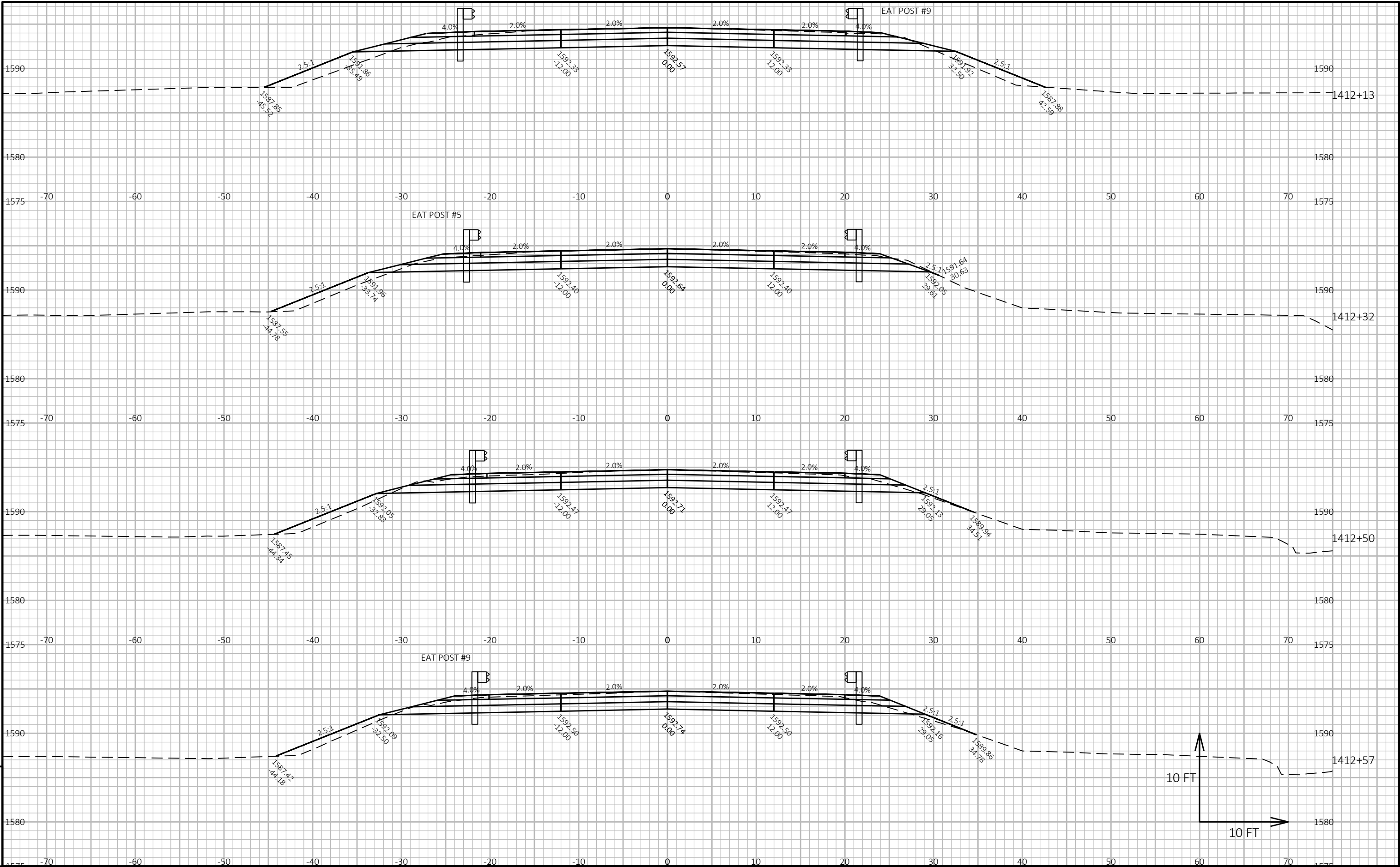


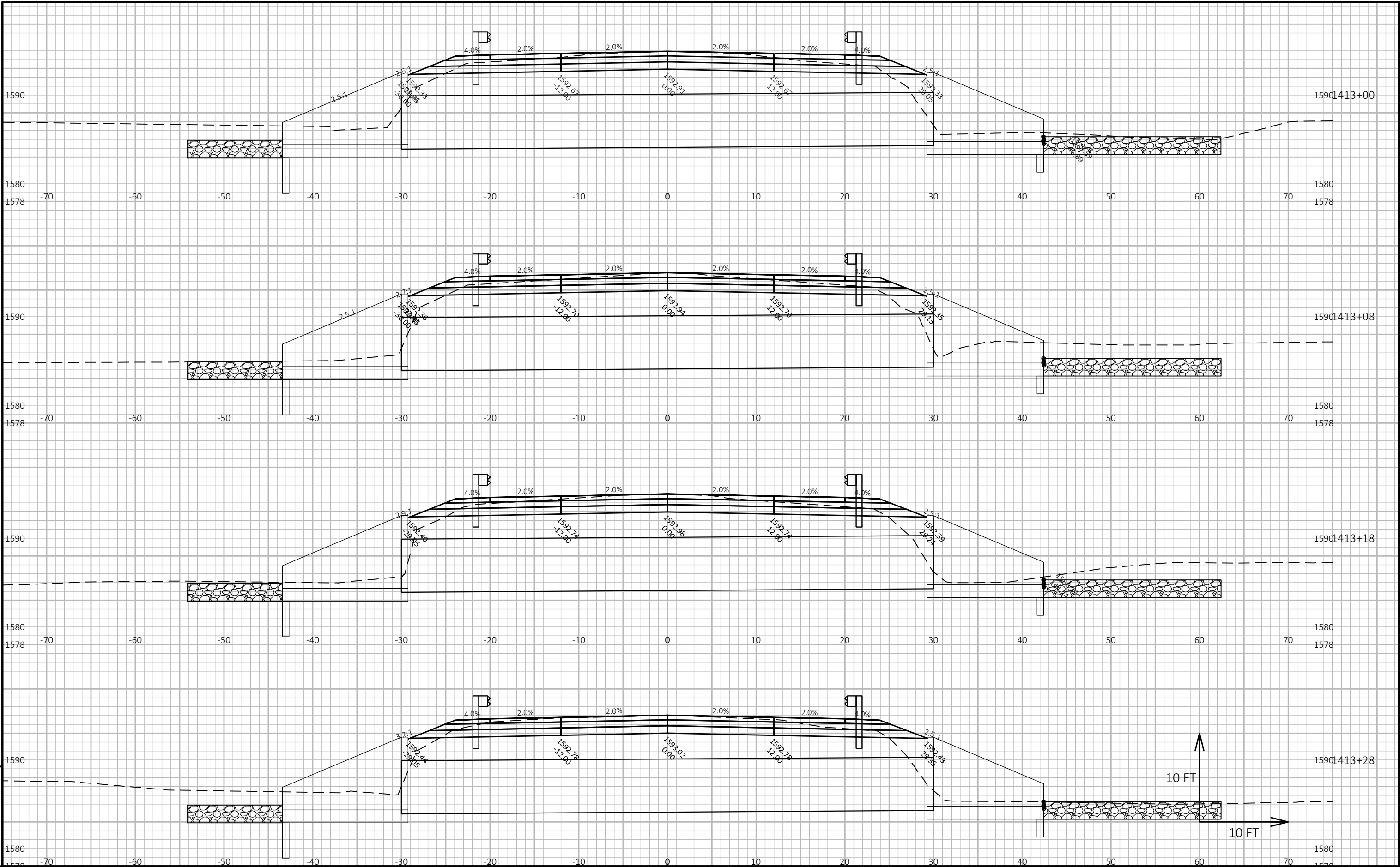
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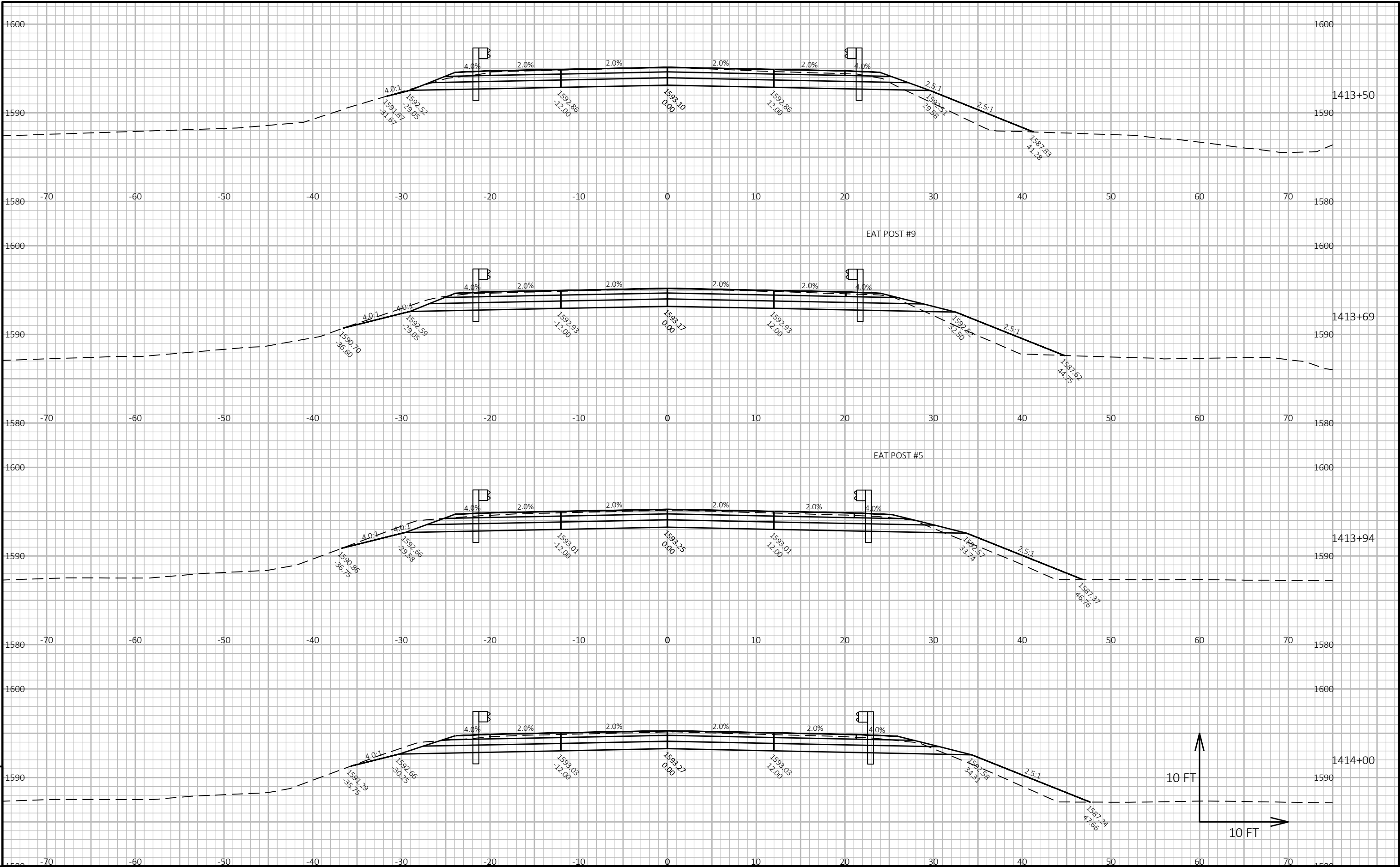
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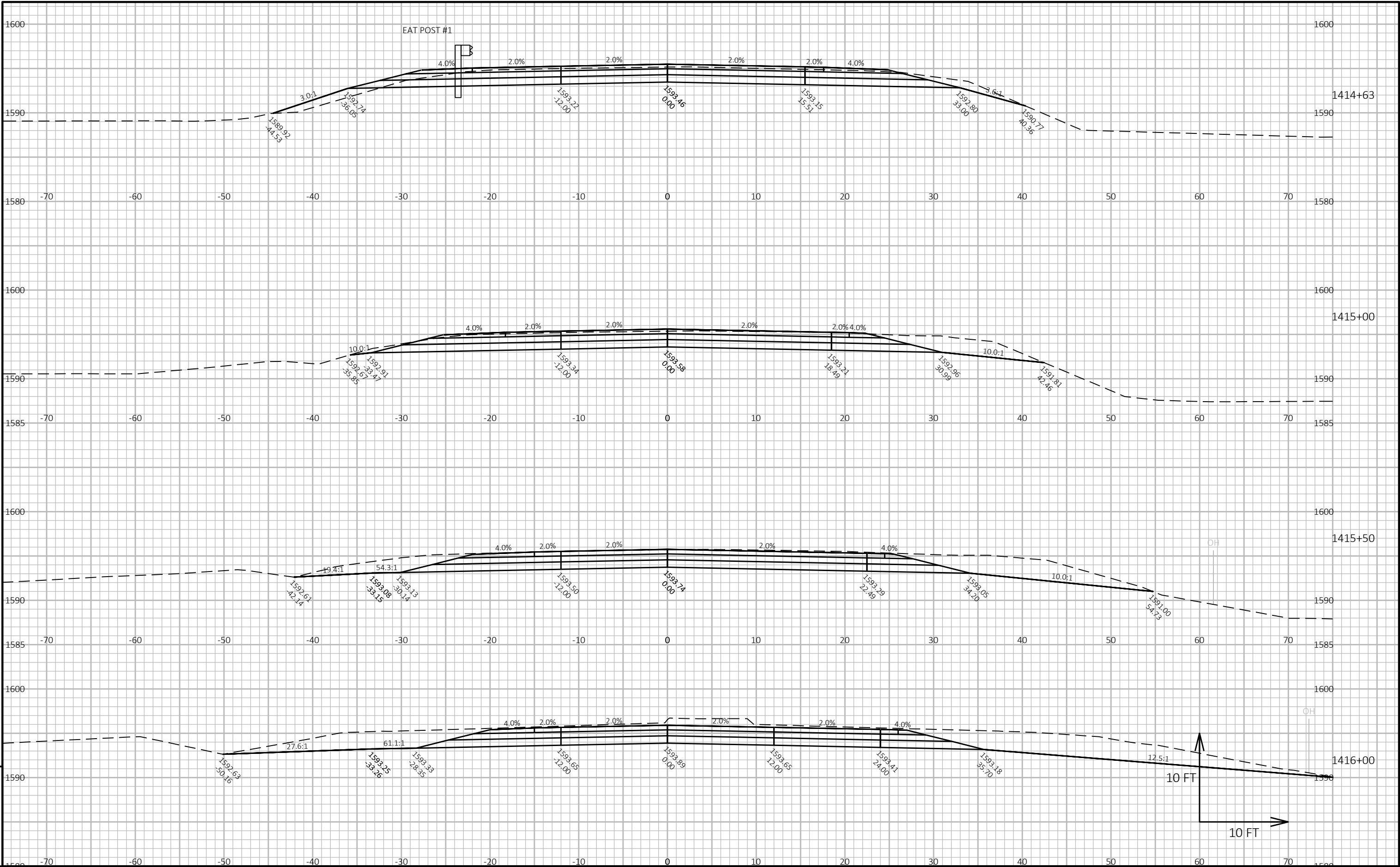




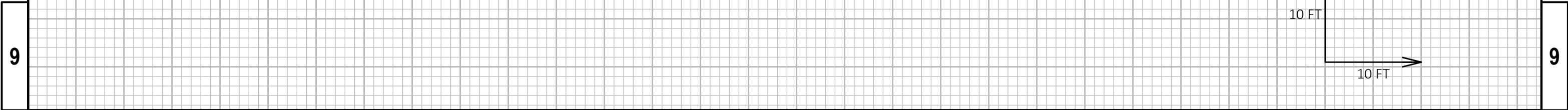
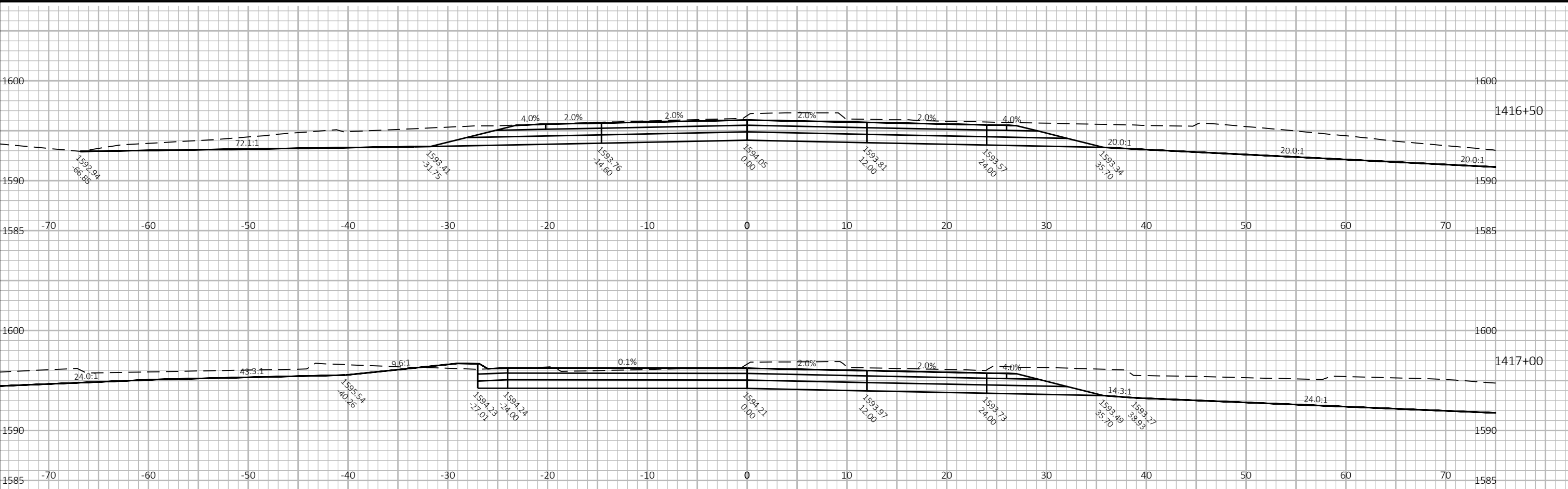


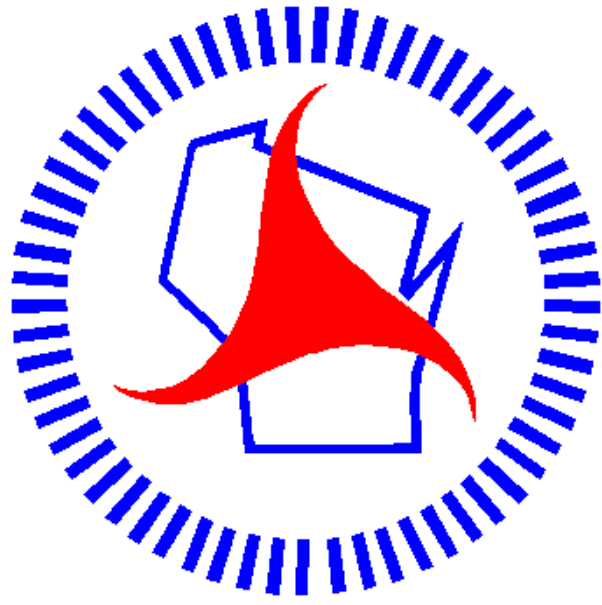












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