

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN SHALL BE IN ACCORDANCE WITH THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY OR PUBLIC AGENCY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

SEE SUBSURFACE EXPLORATION REPORTS FOR SOIL BORING INFORMATION. REPORTS ARE AVAILABLE FROM THE WISDOT SW REGION PROJECTS SECTION.

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE IMMEDIATELY AFTER FINISHED GRADING IS COMPLETE.

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

EROSION CONTROL ITEMS ARE SHOWN AT SUGGESTED LOCATIONS IN THE PLANS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND APPROVED BY THE ENGINEER IN CONSULTATION WITH THE DNR.

DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.

EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER.

ASPHALTIC SURFACE TEMPORARY FOR THE CROSSEOVERS SHALL BE PLACED IN 2 LAYERS, LOWER LAYER OF 3 INCHES AND UPPER LAYER OF 2 INCHES. ASPHALTIC SURFACE FOR PAVED SHOULDER MAY BE PLACED IN A SINGLE LAYER, PG 58-28, 12.5MM NOMINAL SIZE AGGREGATE GRADATION

CROSSOVER PAVEMENT IN THE MEDIAN OF WI35 SHALL BE 5 INCHES OF ASPHALTIC SURFACE TEMPORARY OVER 10 INCHES OF 1-1/4" BASE AGGREGATE DENSE.

UTILITIES

UTILITY OR MUNICIPALITY	ADDRESS	CONTACT	UTILITY TYPE
ALLIANT ENERGY ELECTRICITY	4902 N BILTMORE LANE SUITE 1000 MADISON, WI 53718	MR. JASON HOGAN 608-458-4871 JASONHOGAN@ALLIANTENERGY.COM	ELECTRIC
SCENIC RIVERS ENERGY COOPERATIVE ELECTRICITY	231 N SHERIDAN STREET LANCASTER, WI 53813-1342	MR. DANIEL STELPFLUG 608-732-2688 DSTEPFLUG@SREC.NET	ELECTRIC
JAMESTOWN SANITARY DISTRICT #3 SEWER	2049 LOUISBURG ROAD CUBA CITY, WI 53807	MR. BILL HAVERLAND 608-744-8700	SEWER
WE ENERGIES GAS/PETROLEUM	333 W EVERETT ST ROOM A299 MILWAUKEE, WI 53203	MR. DAN SANDE 414-221-4578 DAN.SANDE@WE-ENERGIES.COM	GAS/PETROLEUM

ABBREVIATIONS

ABUT	ABUTMENT	FE	FIELD ENTRANCE	RAD.	RADIUS
A.D.T.	AVERAGE DAILY TRAFFIC	FL	FLOW LINE	R/L	REFERENCE LINE
AP	ACCESS POINT	HT	HEIGHT	REQ'D	REQUIRED
B.F.	BACK FACE	CWT	HUNDREDWEIGHT	RT	RIGHT
B&B	BALLED AND BURLAPPED	IN DIA	INCH DIAMETER	RHF	RIGHT HAND FORWARD
B.M.	BENCH MARK	INL	INLET	R/W	RIGHT OF WAY
B.O.P.	BEGIN OF PROJECT	IEP	INSIDE EDGE OF PAVEMENT	STA.	STATION
CL	CENTER LINE	INV	INVERT	SSPRC	STORM SEWER PIPE
CTR.	CENTER	IP	IRON PIPE		REINFORCED CONCRETE
CE	COMMERCIAL ENTRANCE	LT	LEFT	SSPRCHE	STORM SEWER PIPE REINFORCED
CY	CUBIC YARD	LHF	LEFT HAND FORWARD		CONCRETE HORIZONTAL ELLIPTICAL
CPRCHE	CULVERT PIPE REINFORCED CONCRETE	MH	MANHOLE	SE	SUPERELEVATION
	HORIZONTAL ELLIPTICAL	ML	MATCH LINE	STR.	STRUCTURE
CPRC	CULVERT PIPE REINFORCED CONCRETE	MAX.	MAXIMUM	TLE	TEMPORARY LIMITED EASEMENT
CP	CULVERT PIPE	MIN.	MINIMUM	TYP.	TYPICAL
C&G	CURB AND GUTTER	NORM.	NORMAL	V.	DESIGN SPEED
D.H.V.	DESIGN HOURLY VOLUME	O.H.	OVER HEAD POWER LINE		
DIA.	DIAMETER	PLE	PERMANENT LIMITED EASEMENT		
DIM.	DIMENSION	PACS	PIPE ARCH CORRUGATED STEEL		
EL	ELEVATION	PT	POINT		
EW	END WALL	PC	POINT OF CURVAURE		
EBS	EXCAVATION BELOW SUBGRADE	PI	POINT OF INTERSECTION		
EOP	EDGE OF PAVEMENT	PT	POINT OF TANGENCY		
EOS	EDGE OF SHOULDER	PE	PRIVATE ENTRANCE		
EXC.	EXCAVATION	PL	PROPERTY LINE		
EXIST	EXISTING	PB	PULL BOX		
F.F.	FRONT FACE				

BORING LOG

BORING NO.	STATION	OFFSET	TOPSOIL DEPTH IN INCHES	UNDERLAYING MATERIAL
B-1	1047+00 SB	24' RT	4	SANDY SILT W/ GRAVEL & BOULDERS
B-2	1047+05 SB	24' RT	4	SANDY SILT W/ GRAVEL, FINE SILTY SAND
B-3	1052+05 SB	26' RT	5	SILT, SOME SAND & GRAVEL
B-4	1143+00 SB	29' RT	3	BR. SILT, SOME SAND, BOULDER OR COBBLE
B-5	1143+05 SB	29' RT	2	BR. SILT
B-6	1148+00 SB	30' RT	3	BR. SILT



Dial 811 or (800) 242-8511
www.DiggersHotline.com

REGION CONTACT

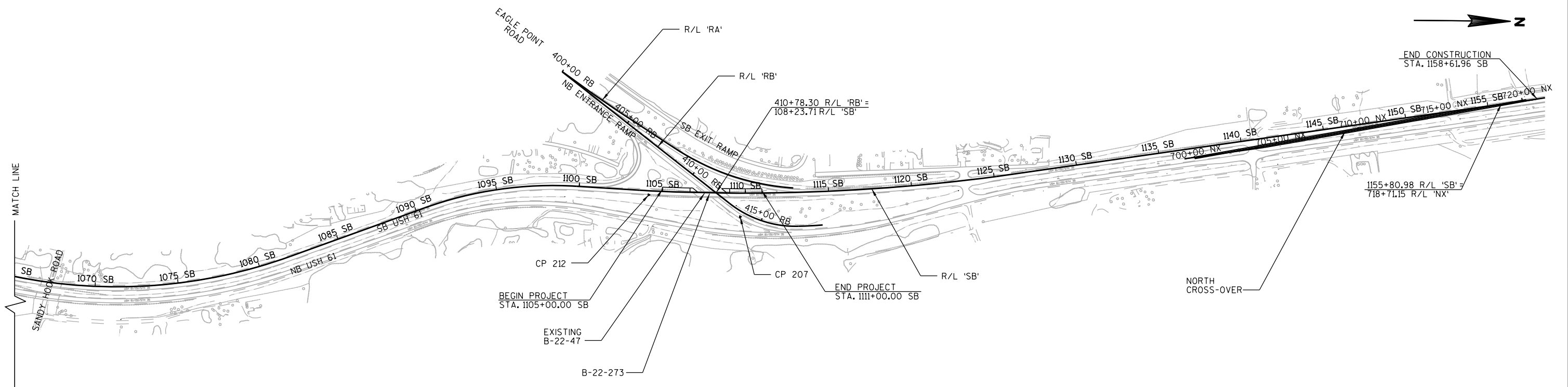
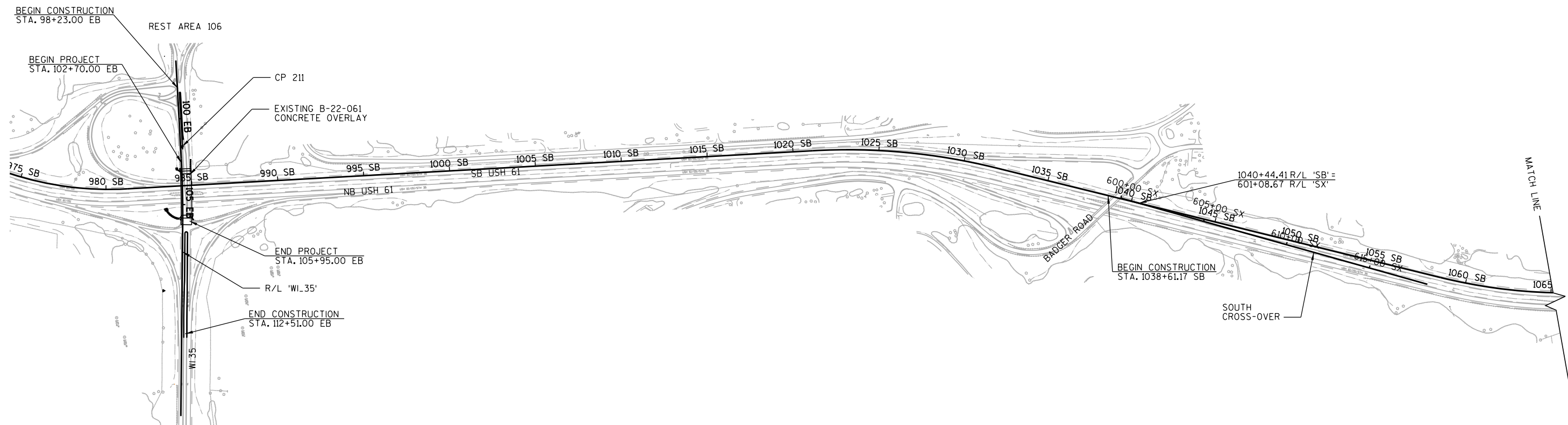
MAHESH SHRESTHA
2101 WRIGHT STREET
MADISON, WI 53704
PH: (608) 245-2674
MAHESH.SHRESTHA@DOT.WI.GOV

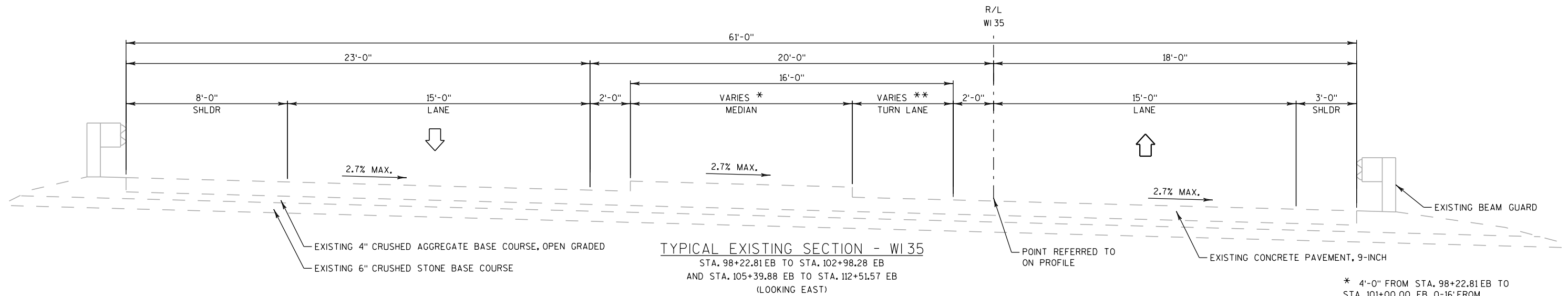
DNR CONTACT

CATHY BLESER
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
PH: (608) 275-3308
CATHERINE.BLESER@WISCONSIN.GOV

DESIGN CONSULTANT

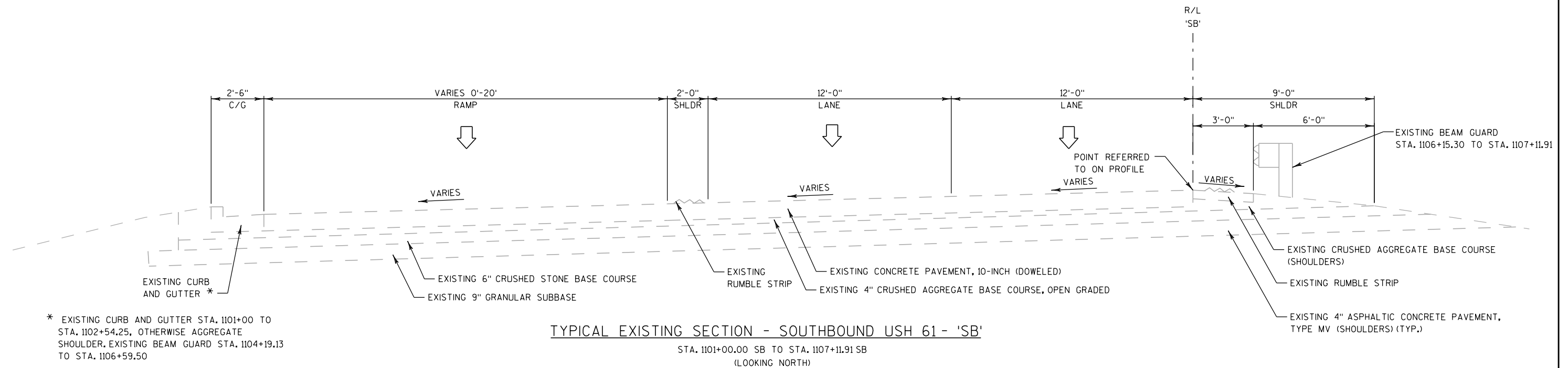
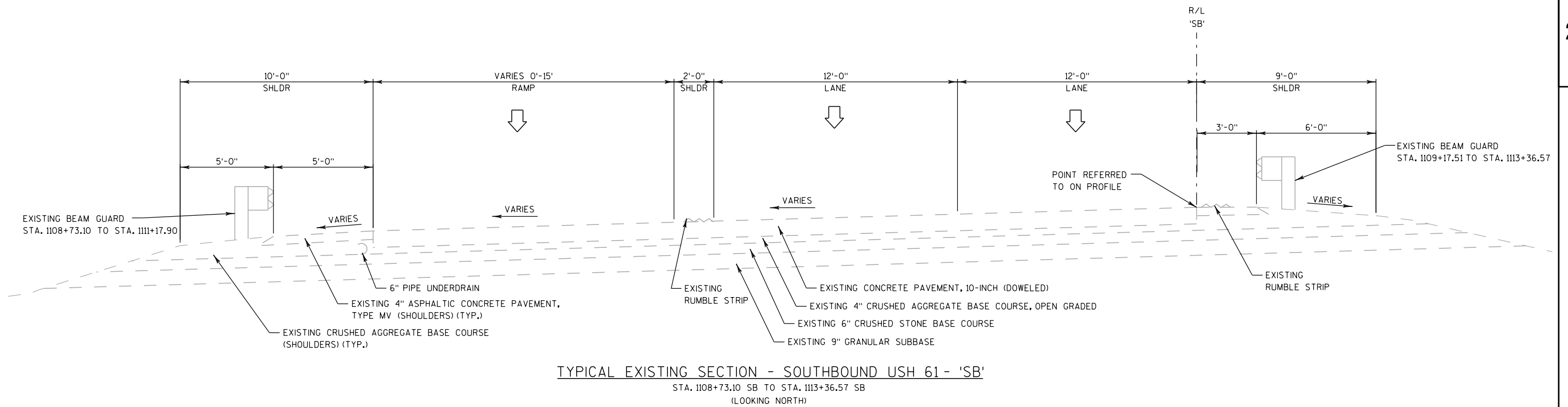
Baker MICHAEL BAKER JR., INC.
7633 GANSER WAY, SUITE 206,
MADISON, WI 53719
SUE BARKER
PH: (608) 821-8712



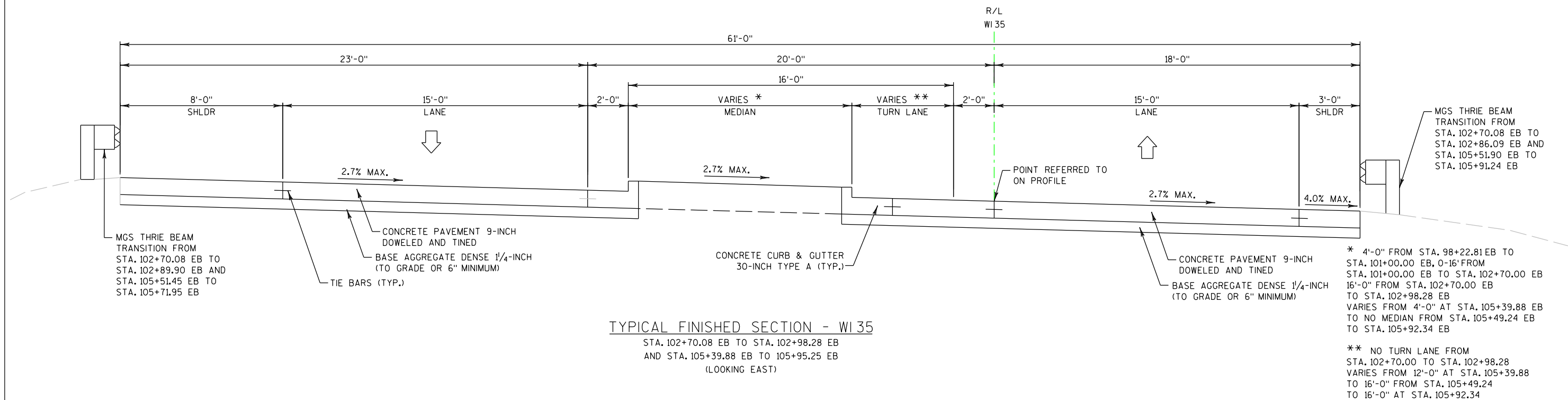
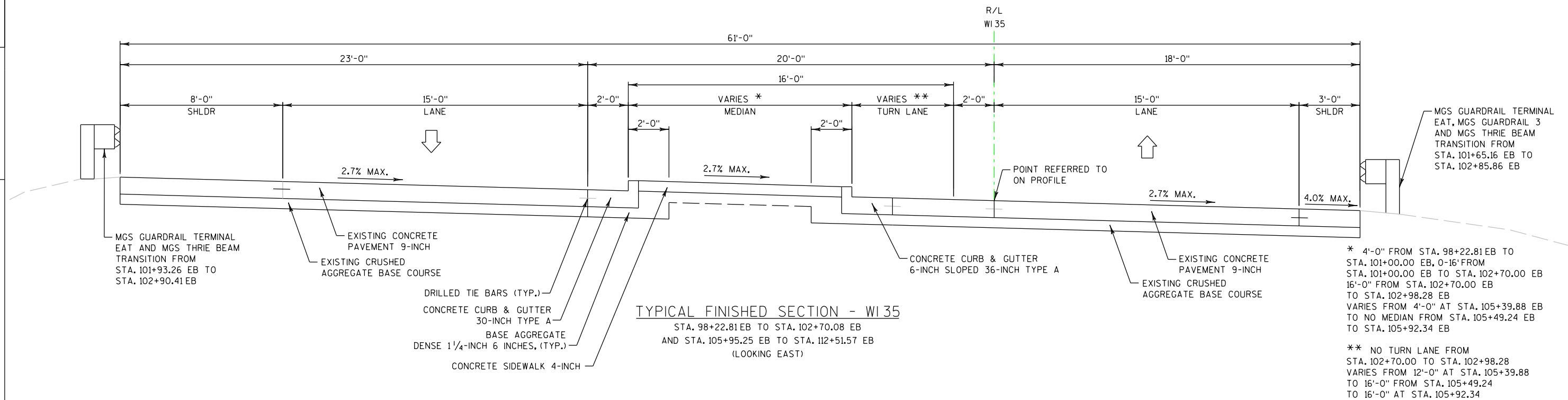


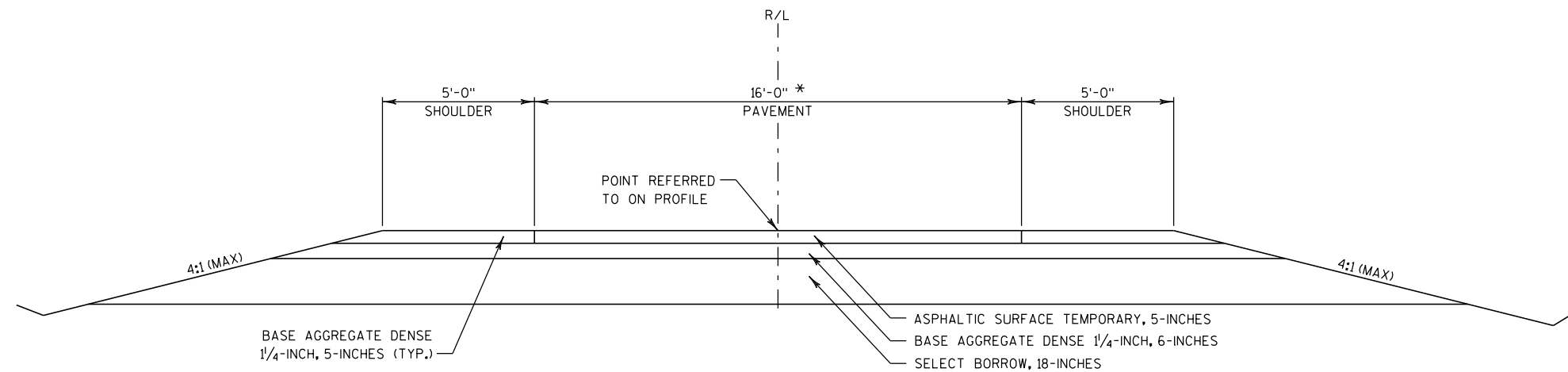
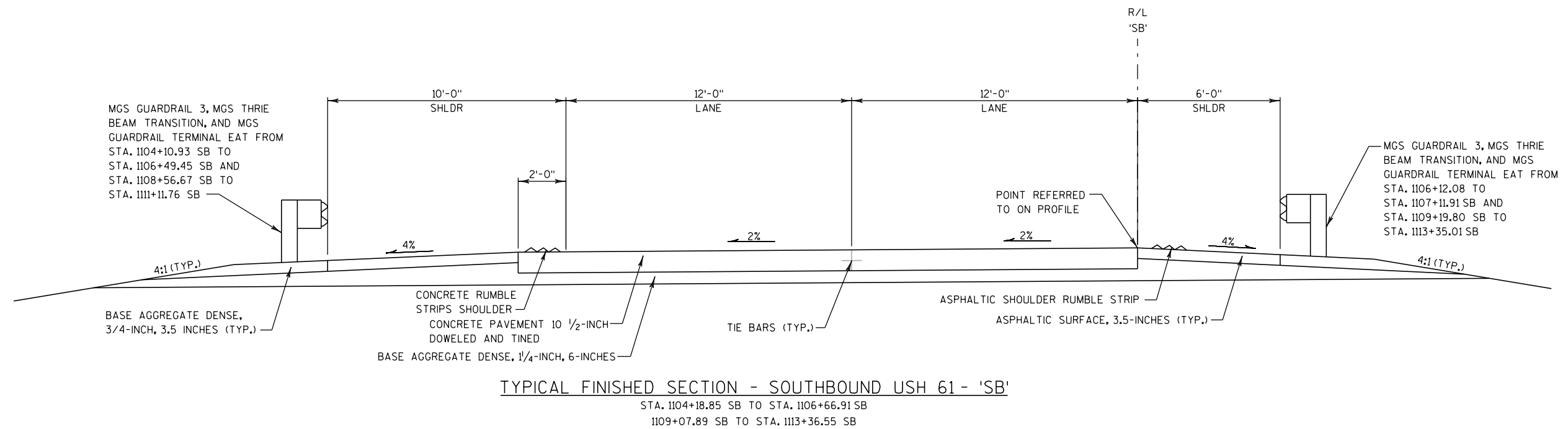
* 4'-0" FROM STA. 98+22.81 EB TO STA. 101+00.00 EB, 0'-16' FROM STA. 101+00.00 EB TO STA. 102+70.00 EB 16'-0" FROM STA. 102+70.00 EB TO STA. 102+98.28 EB VARIES FROM 4'-0" AT STA. 105+39.88 EB TO NO MEDIAN FROM STA. 105+49.24 EB TO STA. 105+92.34 EB

** NO TURN LANE FROM STA. 102+70.00 TO STA. 102+98.28 VARIES FROM 12'-0" AT STA. 105+39.88 TO 16'-0" FROM STA. 105+49.24 TO 16'-0" AT STA. 105+92.34



* EXISTING CURB AND GUTTER STA. 1101+00 TO STA. 1102+54.25, OTHERWISE AGGREGATE SHOULDER. EXISTING BEAM GUARD STA. 1104+19.13 TO STA. 1106+59.50





TYPICAL FINISHED SECTION - CROSSOVERS 'NX' AND 'SX'

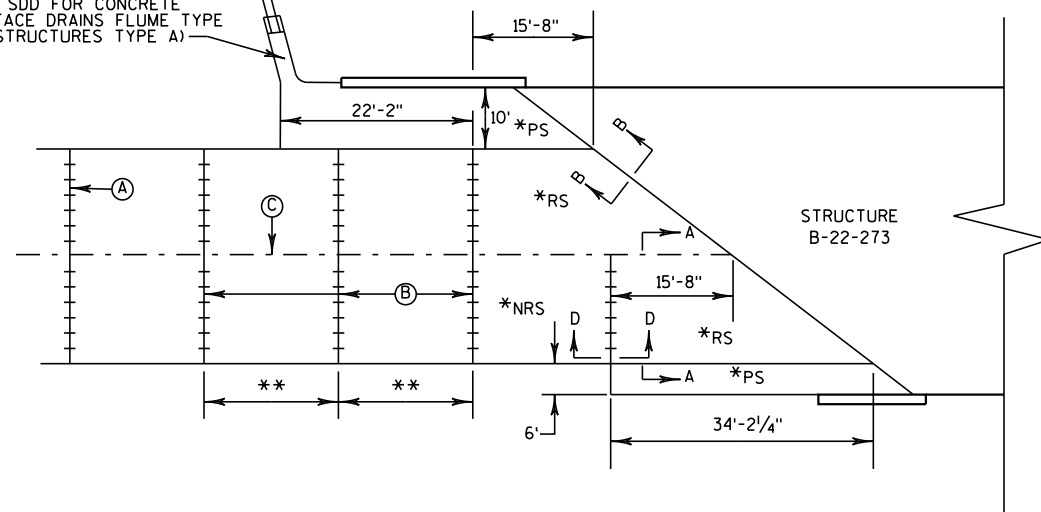
STA. 704+21.46 'NX' TO STA. 716+03.75 'NX'
STA. 604+23.22 'SX' TO STA. 614+35.17 'SX'

* WIDTH VARIES 0'-0" TO 16'-0"
STA. 700+00.00 NX TO STA. 704+21.46 NX
STA. 716+03.75 NX TO STA. 720+24.12 NX

* WIDTH VARIES 0'-0" TO 16'-0"
STA. 600+00.00 SX TO STA. 604+23.22 SX
STA. 614+35.17 SX TO STA. 618+51.25 SX

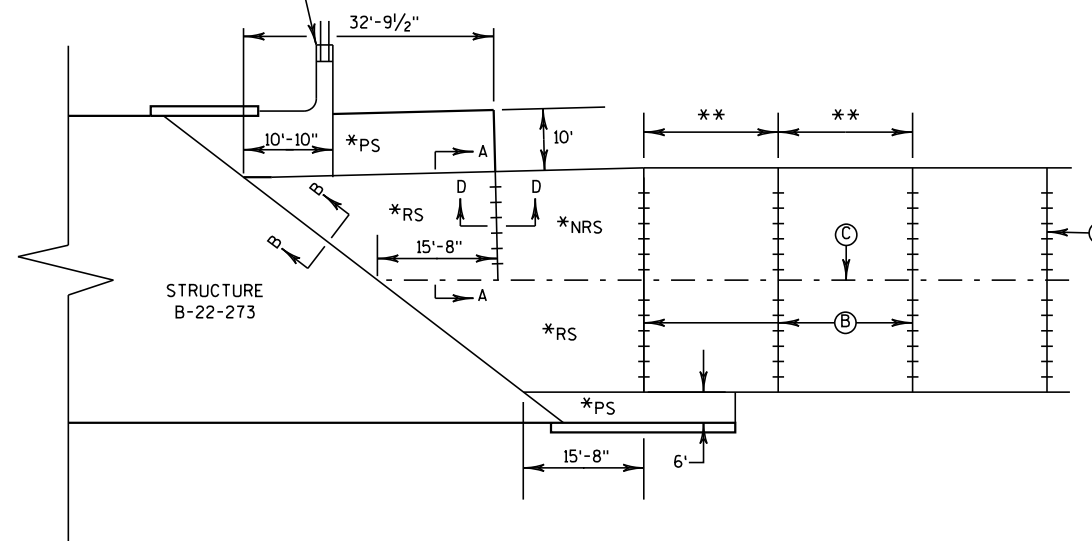
REMOVE CROSSOVERS UPON
COMPLETION OF STRUCTURE B-22-273

CONCRETE SURFACE DRAINS
(SEE SDD FOR CONCRETE
SURFACE DRAINS FLUME TYPE
AT STRUCTURES TYPE A)

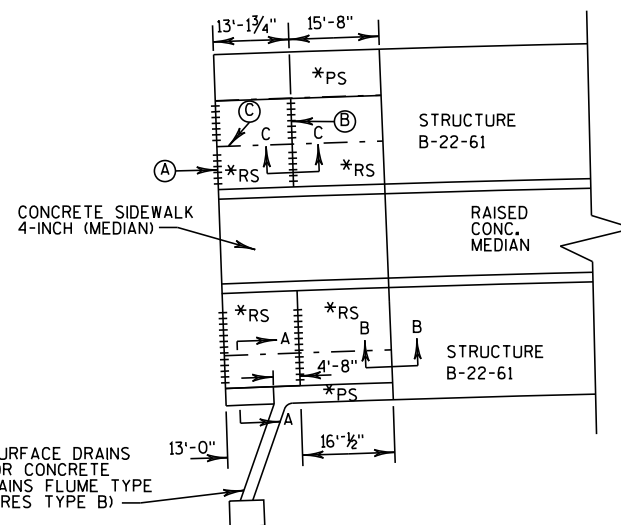


BRIDGE APPROACH SLAB
SOUTH OF STRUCTURE B-22-273

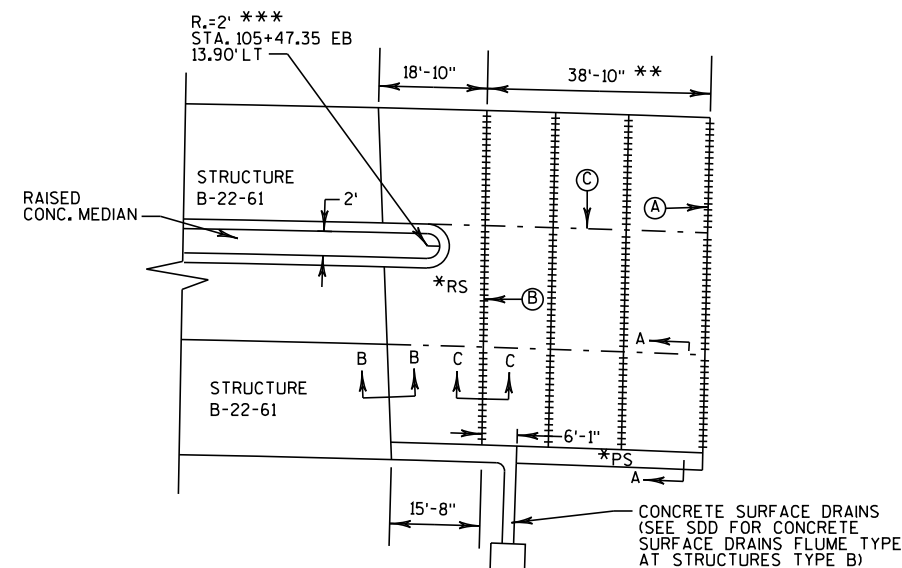
CONCRETE SURFACE DRAINS
(SEE SDD FOR CONCRETE
SURFACE DRAINS FLUME TYPE
AT STRUCTURES TYPE A)



BRIDGE APPROACH SLAB
NORTH OF STRUCTURE B-22-273



BRIDGE APPROACH SLAB
WEST OF STRUCTURE B-22-061



BRIDGE APPROACH SLAB
EAST OF STRUCTURE B-22-061

LEGEND

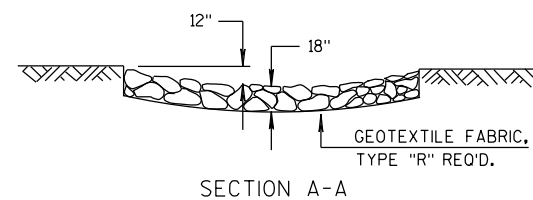
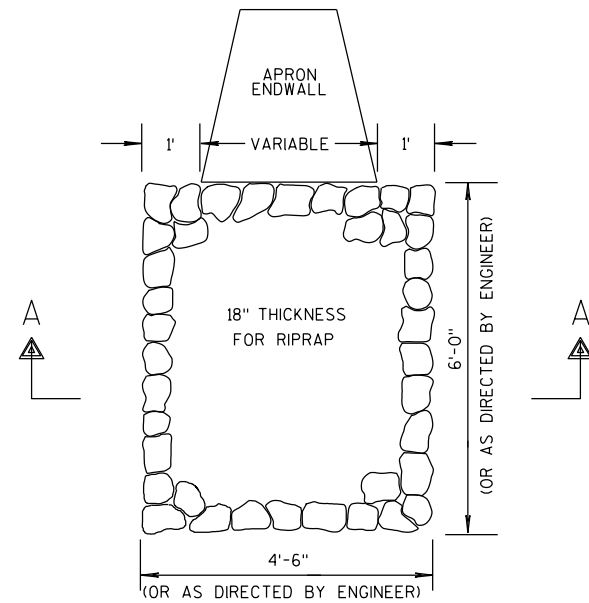
*RS = REINFORCED CONCRETE SLAB
*PS = PAVED CONCRETE SHOULDER
*NRS = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD FOR URBAN NO-DOWELED CONCRETE PAVEMENT,
SDD FOR RURAL DOWELED CONCRETE PAVEMENT, &
SDD URBAN DOWELED CONCRETE PAVEMENT)

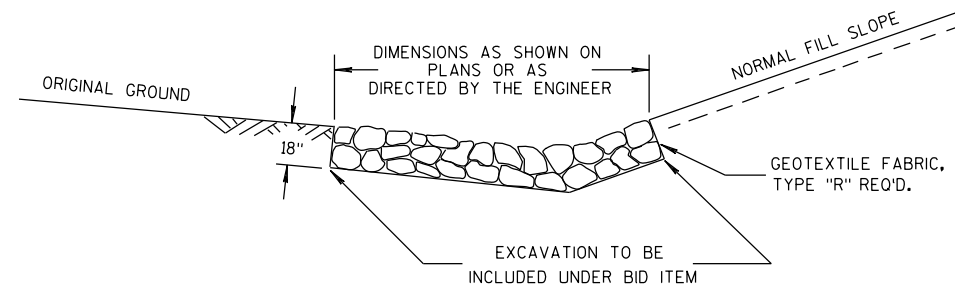
***SEE SDD CONCRETE MEDIAN NOSE

SECTION A-A = REINFORCEMENT POSITIONING
SECTION B-B = BEND - BOTTOM REINFORCEMENT
SECTION C-C = TRANSITION - APPROACH SLAB TO
ADJACENT PAVEMENT
SECTION D-D = CONTRACTION JOINT
SEE SDD FOR CONCRETE PAVEMENT APPROACH SLAB

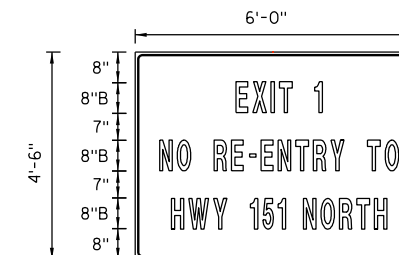
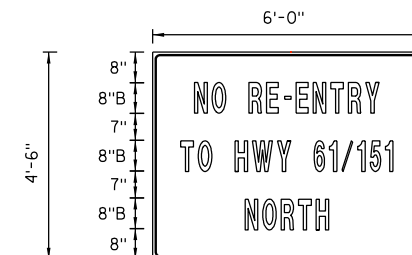
- (A) STANDARD CONSTRUCTION JOINT NORMAL TO R/L
- (B) 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R/L
- (C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



RIPRAP TREATMENT AT CULVERTS

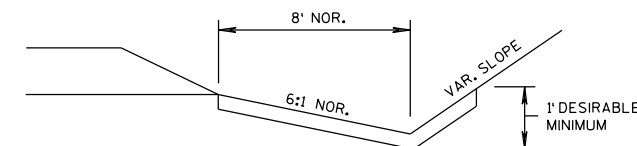


DETAIL FOR MEDIUM RIPRAP IN DITCHES

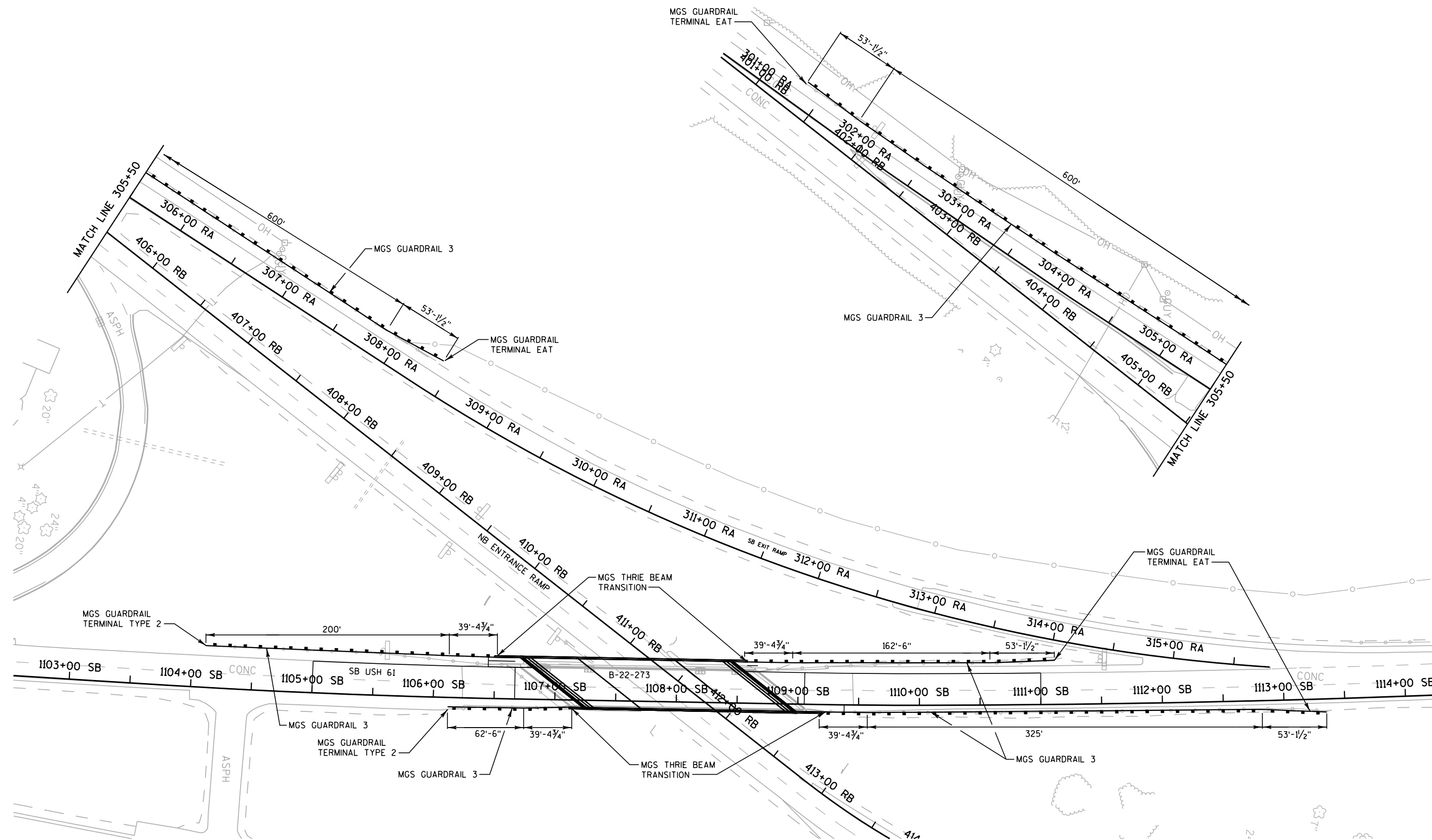


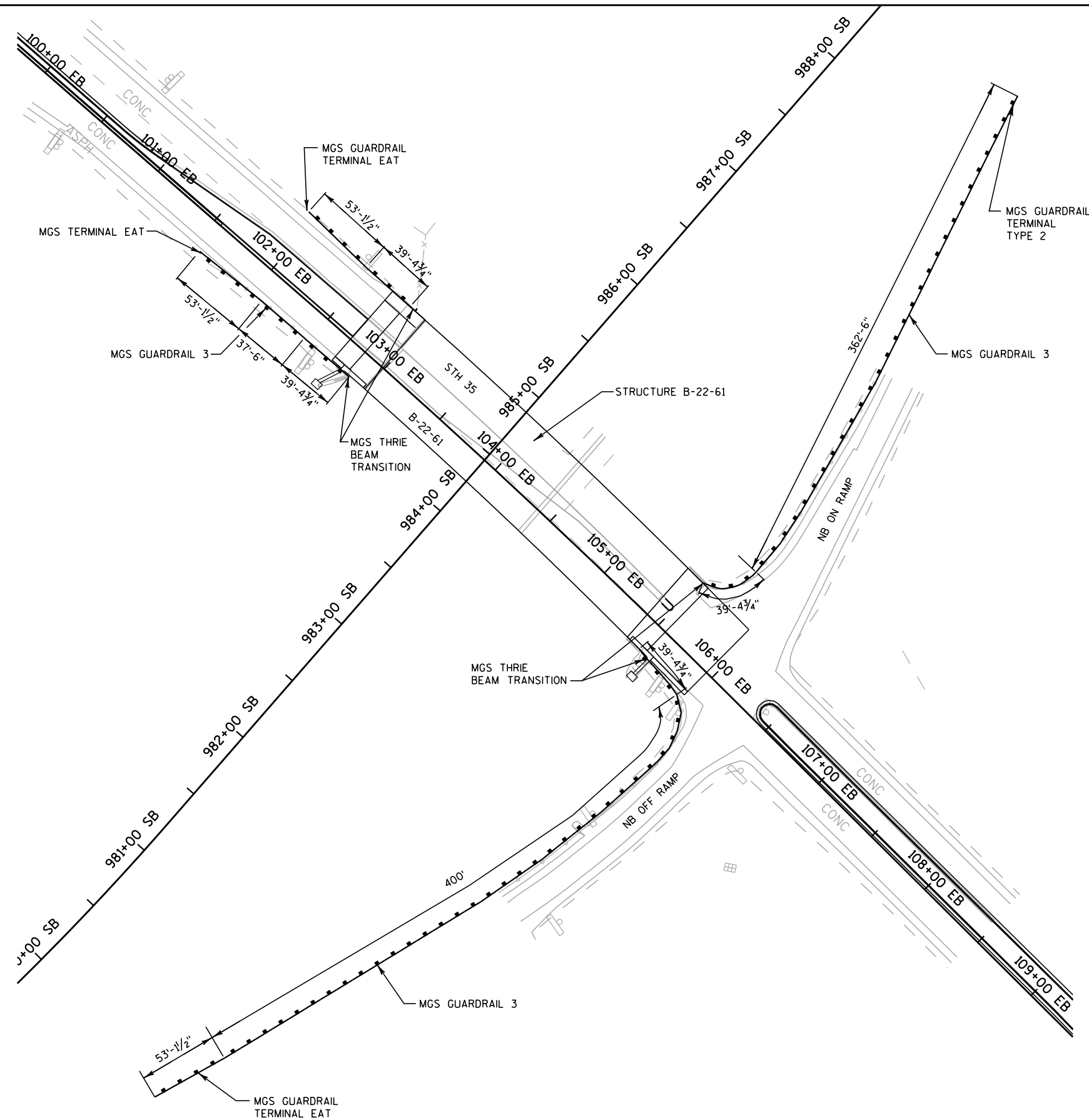
1. 1.25" BORDER WITH 6" RADIUS ON CORNERS
2. COLOR:
ORANGE REFLECTORIZED BACKGROUND
BLACK REFLECTORIZED LEGEND AND BORDERS
3. MESSAGE SERIES - B

TRAFFIC CONTROL SIGN FIXED MESSAGE



EROSION MAT DETAIL FOR DITCHES



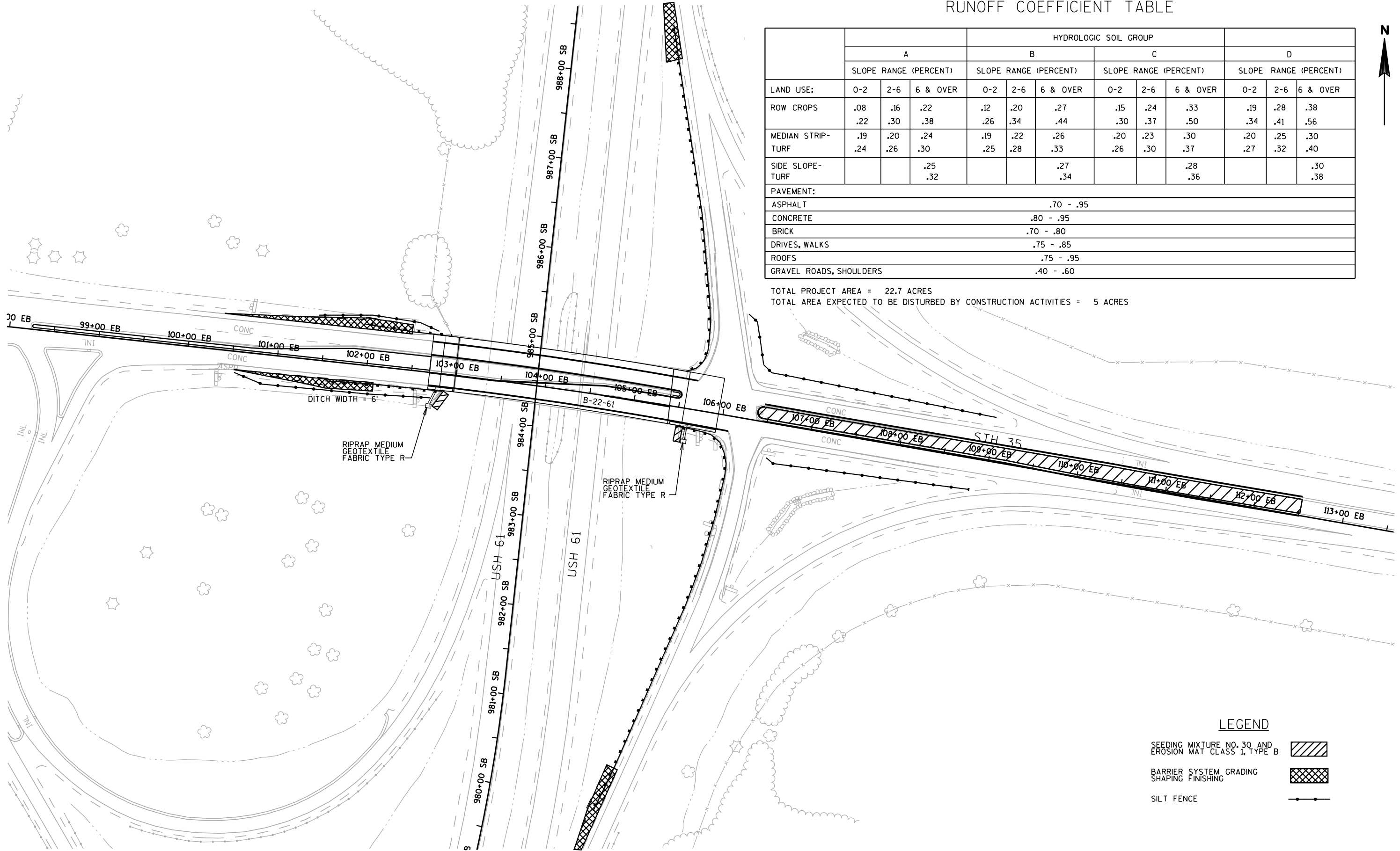




RUNOFF COEFFICIENT TABLE

	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											

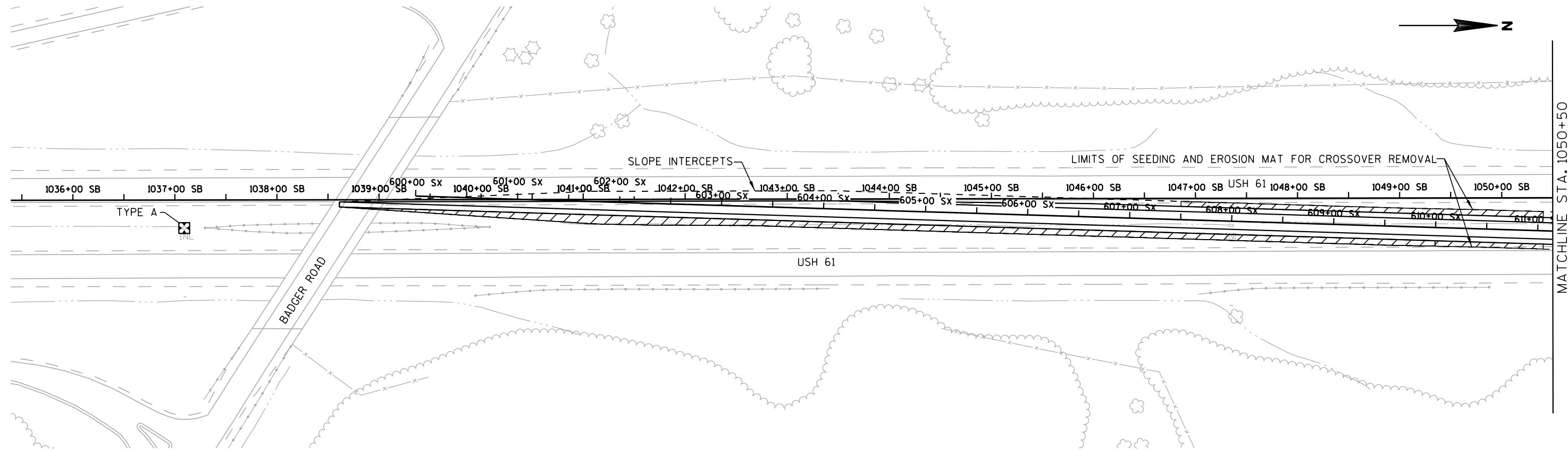
TOTAL PROJECT AREA = 22.7 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 5 ACRES



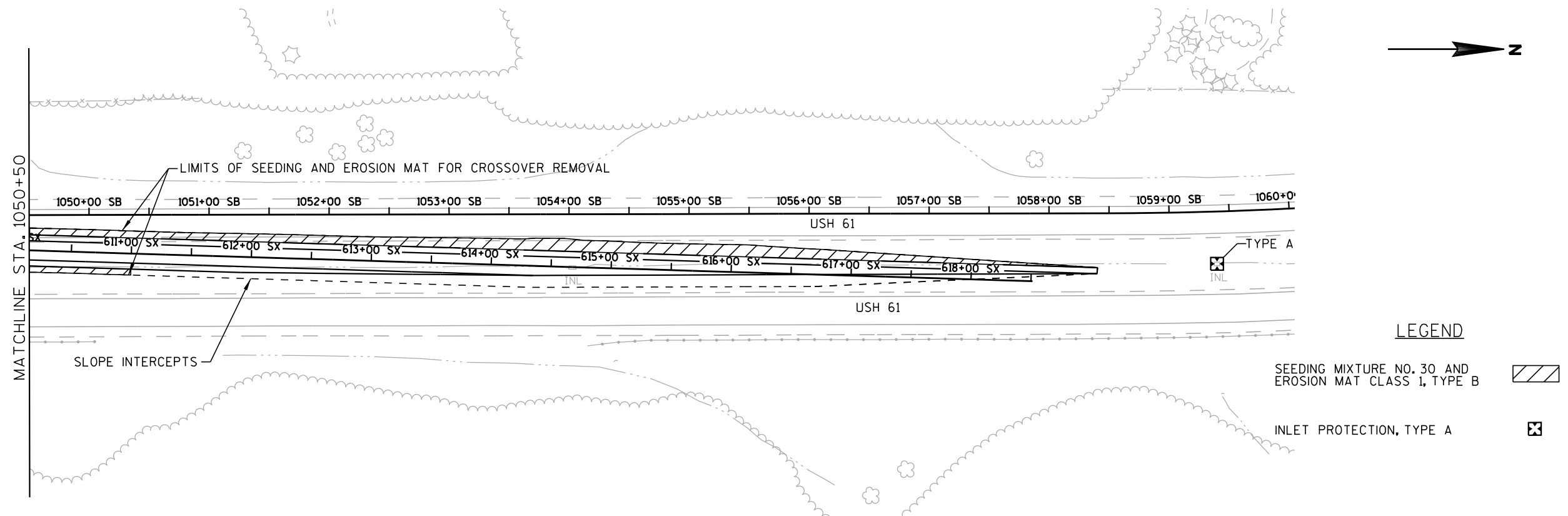
LEGEND

- SEEDING MIXTURE NO. 30 AND EROSION MAT CLASS 1, TYPE B
- BARRIER SYSTEM GRADING SHAPING FINISHING
- SILT FENCE

2



2



PROJECT NO: 1200-01-74

HWY: USH 61

COUNTY: GRANT

EROSION CONTROL PLAN

SHEET

E

FILE NAME : 022002_ec.dgn

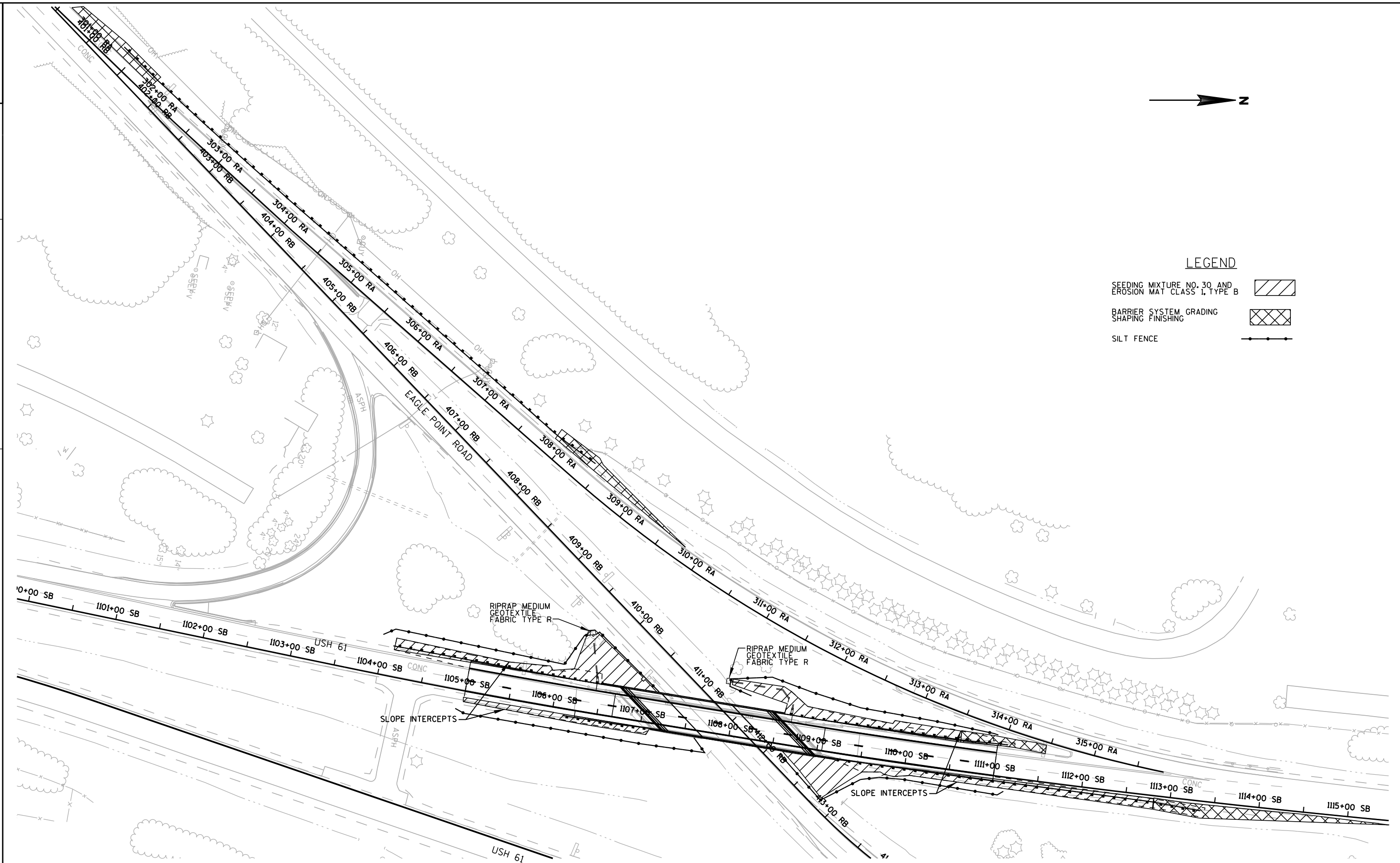
PLOT DATE : 2/1/2013

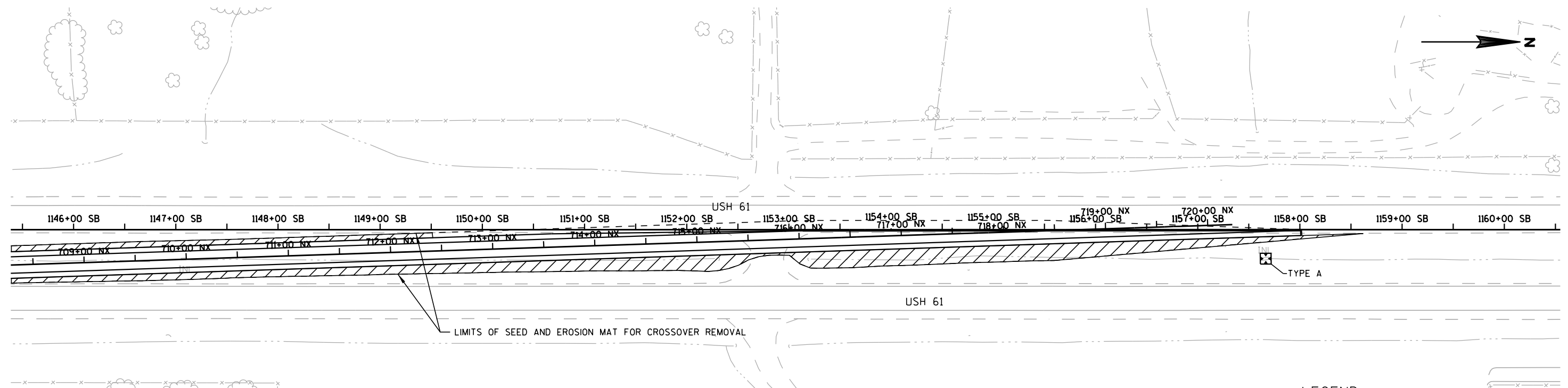
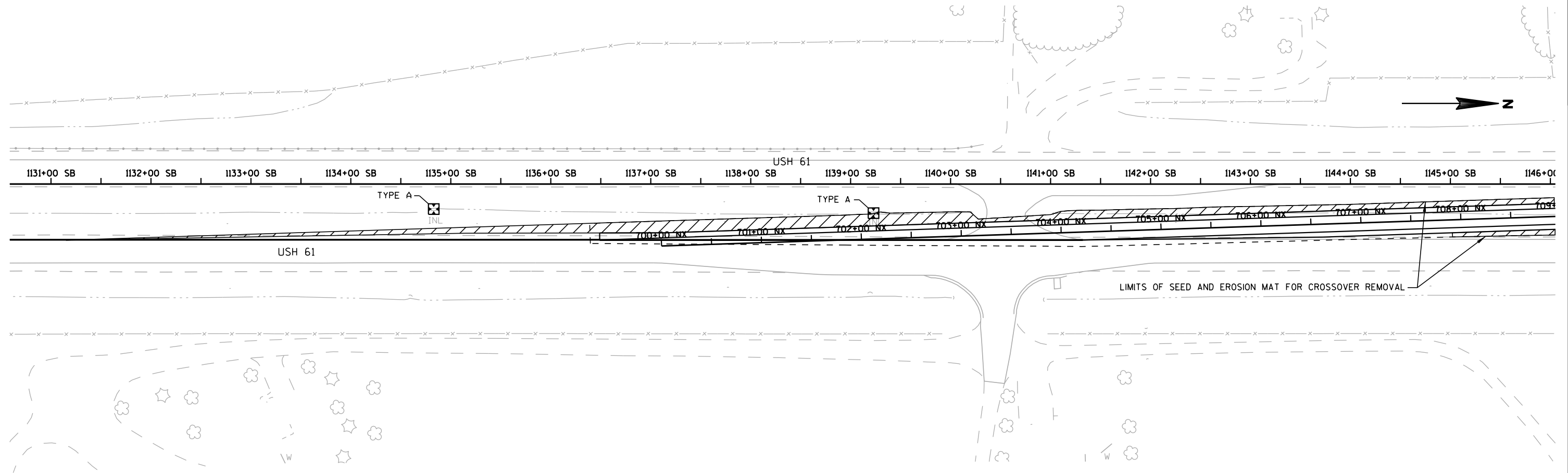
PLOT BY : Alicia.DeShasier

PLOT NAME :

PLOT SCALE : 1:99.9998

WISDOT/CADDs SHEET 42



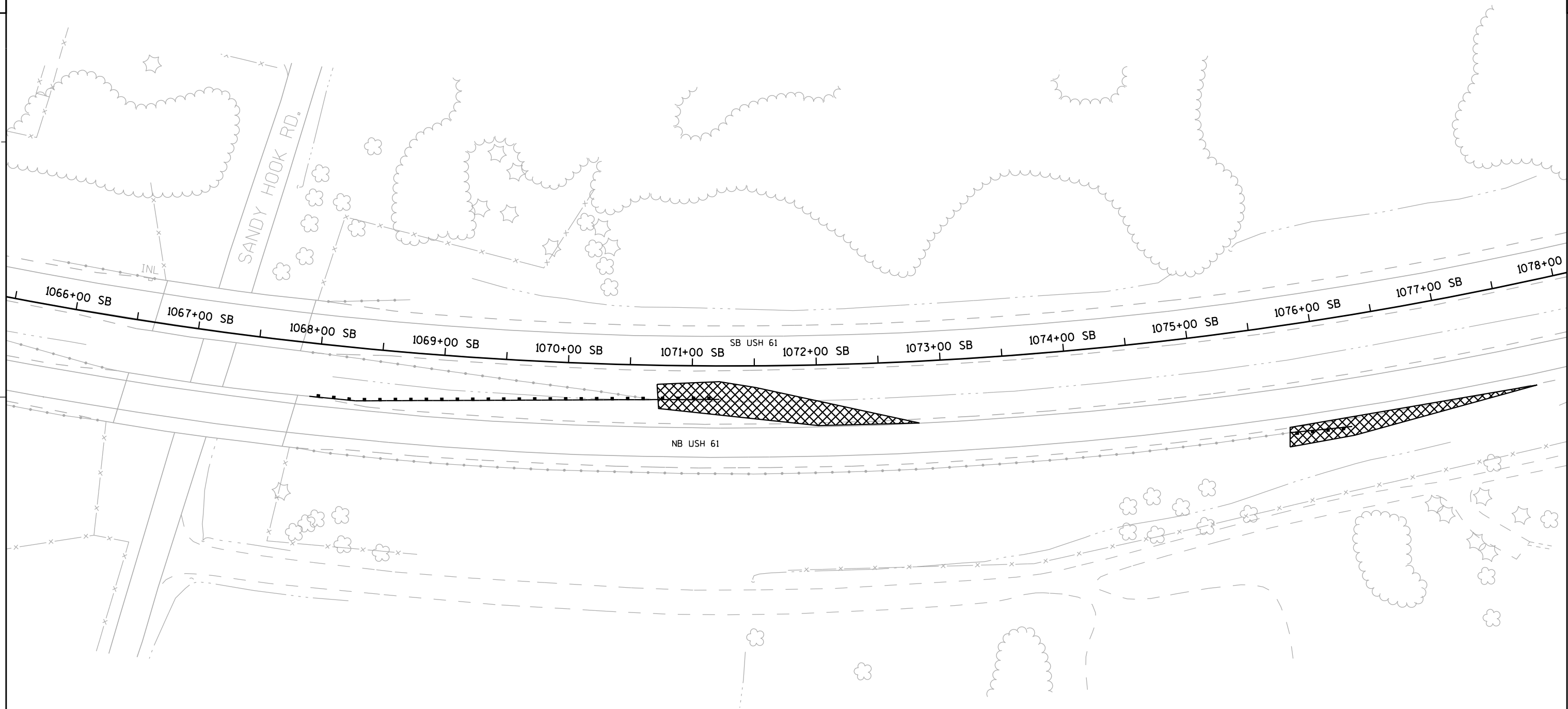


LEGEND

SEEDING MIXTURE NO. 30 AND
EROSION MAT CLASS I, TYPE B

INLET PROTECTION, TYPE A





LEGEND

BARRIER SYSTEM GRADING
SHAPING FINISHING



LEGEND

- PORTABLE TRAFFIC SIGNAL POLE
- ←

SIGNAL HEAD
- SIGNAL HEAD NUMBER
- Ⓡ

RED CIRCULAR INDICATOR
- Ⓨ

YELLOW CIRCULAR INDICATOR
- ⓐ

GREEN CIRCULAR INDICATOR
- 

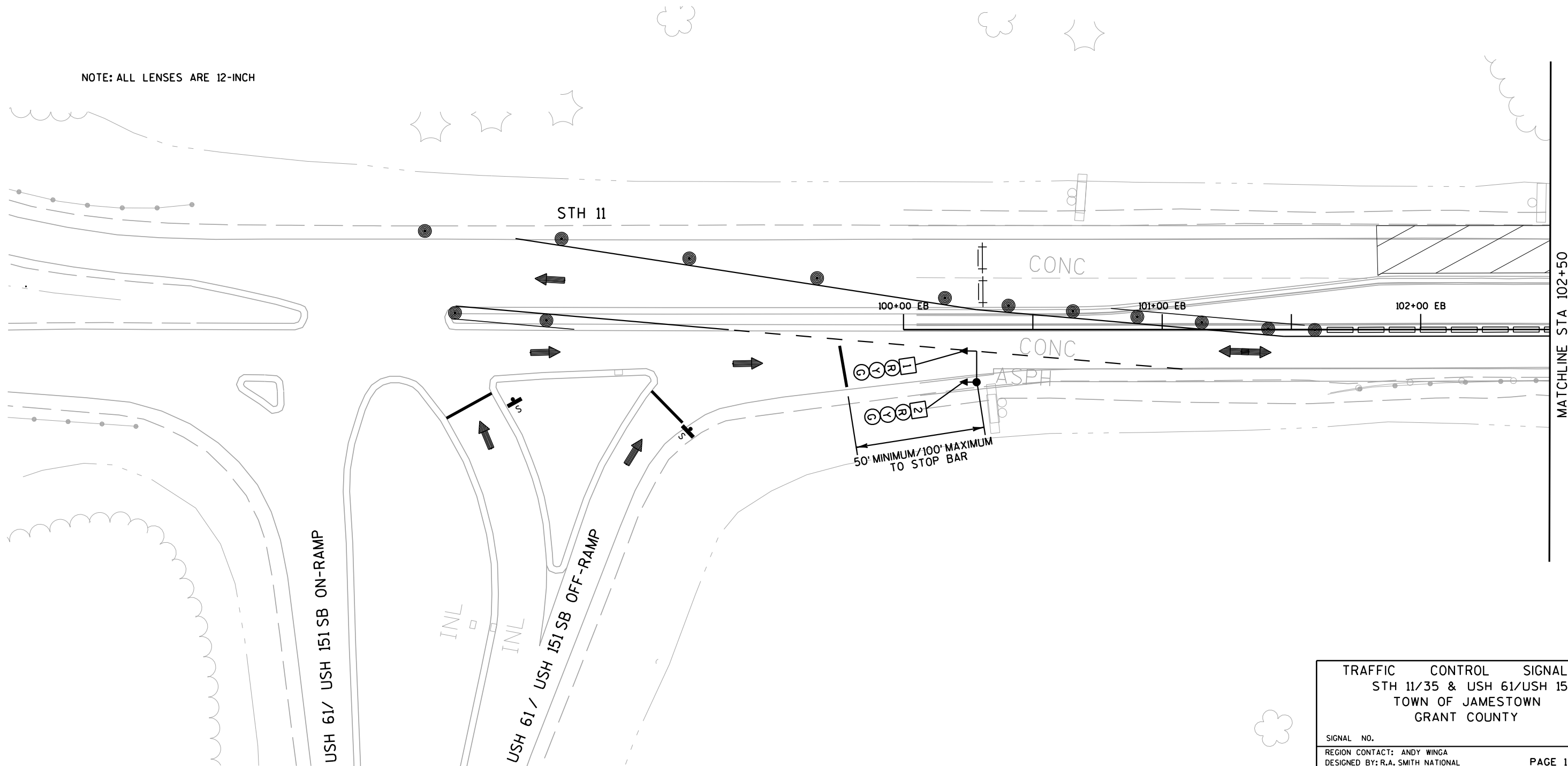
WORK AREA
- DIRECTION OF TRAFFIC
- ↓

BARRICADE
- TRAFFIC CONTROL DRUM

CONSTRUCTION NOTES:

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINETS, AND SIGNAL HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
2. POLES AND POSTS INSTALLED BEHIND CURBS SHALL BE OFFSET A MINIMUM OF 2 FEET FROM THE FACE OF CURB TO THE SIDE OF THE POST OR POLE.
3. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.

NOTE: ALL LENSES ARE 12-INCH



TRAFFIC CONTROL SIGNAL
STH 11/35 & USH 61/USH 151
TOWN OF JAMESTOWN
GRANT COUNTY

SIGNAL NO.

REGION CONTACT: ANDY WINGA
DESIGNED BY: R.A. SMITH NATIONAL
REVISED BY:

PAGE 1 OF 5

LEGEND

- PORTABLE TRAFFIC SIGNAL POLE
- ← SIGNAL HEAD
- SIGNAL HEAD NUMBER
- Ⓡ RED CIRCULAR INDICATOR
- Ⓨ YELLOW CIRCULAR INDICATOR
- ⓐ GREEN CIRCULAR INDICATOR
- ▨ WORK AREA
- DIRECTION OF TRAFFIC
- ↑ BARRICADE
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STH 11 / STH 35

103+00 EB

104+00 EB

105+00 EB

106+00 EB

107+00 EB

108+00 EB

SB USH 61 / USH 151

NB USH 61 / USH 151

NB USH 61 / USH 151 OFF-RAMP

NB USH 61 / USH 151 OFF-RAMP

CONC

CONC

50' MINIMUM / 100' MAXIMUM
TO STOP BAR

TRAFFIC CONTROL SIGNAL
STH 11/35 & USH 61 / USH 151
TOWN OF JAMESTOWN
GRANT COUNTY

SIGNAL NO.

REGION CONTACT: ANDY WINGA
DESIGNED BY: R.A. SMITH NATIONAL
REVISED BY:

PAGE 2 OF 5

PROJECT NO: 1200-01-74

HWY: USH 61

COUNTY: GRANT

TEMPORARY SIGNAL PLAN - STAGE 1

SHEET

E

LEGEND

●	PORTABLE TRAFFIC SIGNAL POLE		WORK AREA
←	SIGNAL HEAD	→	DIRECTION OF TRAFFIC
□	SIGNAL HEAD NUMBER	↓	BARRICADE
Ⓡ	RED CIRCULAR INDICATOR	●	TRAFFIC CONTROL DRUM
Ⓨ	YELLOW CIRCULAR INDICATOR		
Ⓒ	GREEN CIRCULAR INDICATOR		

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N

NOTE: ALL LENSES ARE 12-INCH

STH 11

CONC

CONC

SPH

50' MINIMUM / 100' MAXIMUM
TO STOP BAR

100+00

101+00 EB

102+00 EB

MATCHLINE STA 102+50

USH 61 / USH 151 SB ON-RAMP

USH 61 / USH 151 SB OFF-RAMP

TRAFFIC CONTROL SIGNAL
STH 11/35 & USH 61/USH 151
TOWN OF JAMESTOWN
GRANT COUNTY

SIGNAL NO.

REGION CONTACT: ANDY WINGA
DESIGNED BY: R.A. SMITH NATIONAL
REVISED BY:

PAGE 3 OF 5

PROJECT NO:1200-01-74

HWY:USH 61

COUNTY:GRANT

TEMPORARY SIGNAL PLAN - STAGE 2

SHEET

E

LEGEND

- PORTABLE TRAFFIC SIGNAL POLE
- ← SIGNAL HEAD
- SIGNAL HEAD NUMBER
- Ⓡ RED CIRCULAR INDICATOR
- Ⓨ YELLOW CIRCULAR INDICATOR
- ⓐ GREEN CIRCULAR INDICATOR
- ▨ WORK AREA
- DIRECTION OF TRAFFIC
- ↑ BARRICADE
- TRAFFIC CONTROL DRUM

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NOTE: ALL LENSES ARE 12-INCH

STH 11 / STH 35

103+00 EB

104+00 EB

105+00 EB

106+00 EB

107+00 EB

108+00 EB

SB USH 61 / USH 151

NB USH 61 / USH 151

NB USH 61 / USH 151 OFF-RAMP

NB USH 61 / USH 151 OFF-RAMP

NB USH 61 / USH 151 ON-RAMP

50' MINIMUM / 100' MAXIMUM
TO STOP BAR

4 R Y G

3 R Y G

CONC

CONC

TRAFFIC CONTROL SIGNAL
STH 11/35 & USH 61 / USH 151
TOWN OF JAMESTOWN
GRANT COUNTY

SIGNAL NO.

REGION CONTACT: ANDY WINGA
DESIGNED BY: R.A. SMITH NATIONAL
REVISED BY:

PAGE 4 OF 5

PROJECT NO: 1200-01-74

HWY: USH 61

COUNTY: GRANT

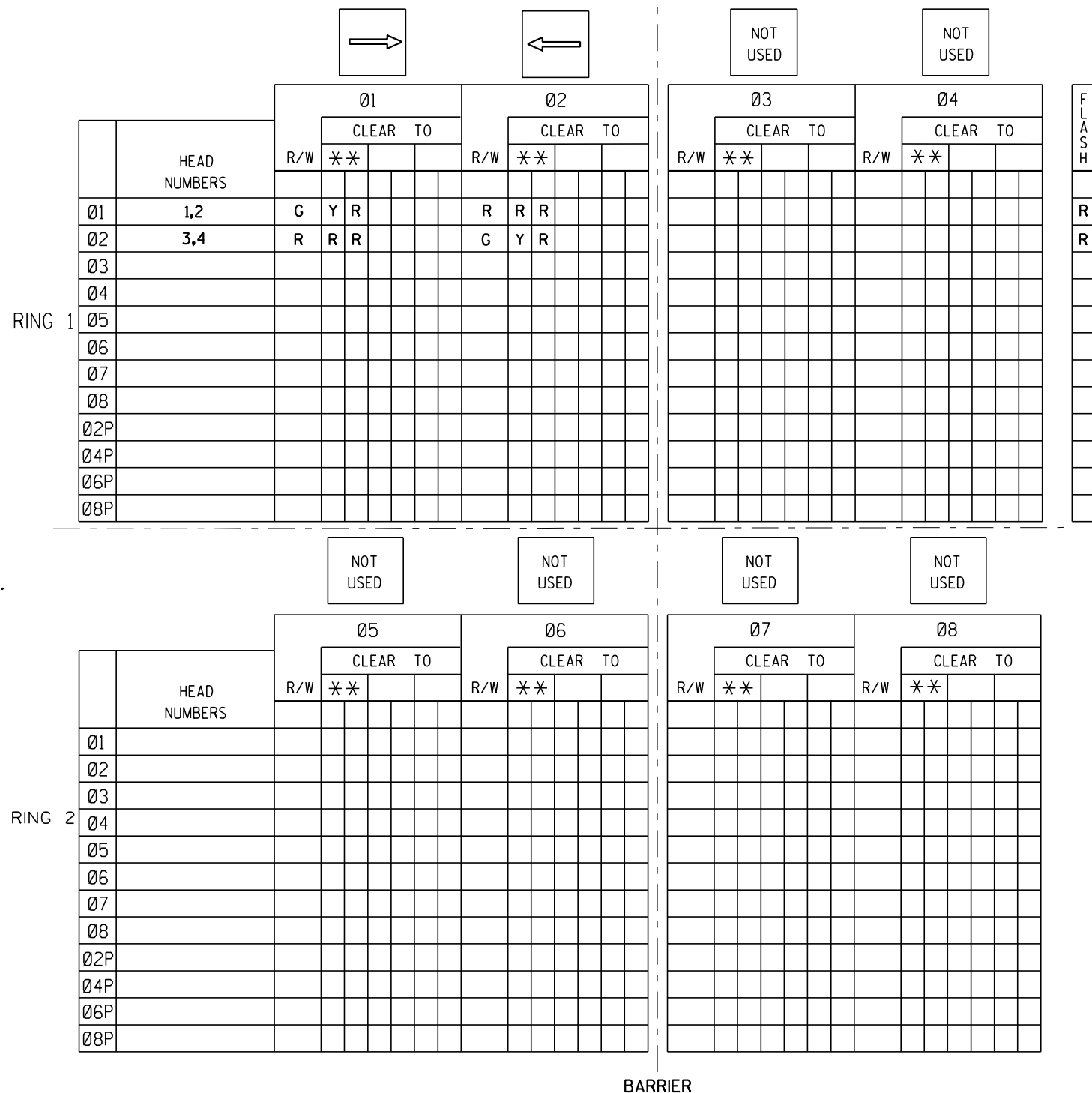
TEMPORARY SIGNAL PLAN - STAGE 2

SHEET

E

SEQUENCE OF OPERATION

N



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1			MAX	X
2			MAX	X
3				
4				
5				
6				
7				
8				

OVERLAPS

O.L. "A" =
O.L. "B" =
O.L. "C" =
O.L. "D" =

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	NONE	2
2	NONE	1
3		
4		
5		
6		
7		
8		

TRAFFIC SIGNAL TIMING PLAN

TIME	PHASE	DURATION (SEC)			
		G	Y	R	CYCLE
DAILY 12AM-12AM	1	17	5.5	15.8	76.6
	2	17	5.5	15.8	

* NOTE : TIMING PLAN TO BE IMPLEMENTED FOR ALL STAGES

TYPE OF INTERCONNECT	
NONE	X
TBC	
CLOSED LOOP	
HARWARE	
TONE (FREQ)	
FIBER OPTIC	
RADIO	
MASTER SIGNAL NO:	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
3M	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	X

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

STH 11/35 & USH 61/USH 151
TOWN OF JAMESTOWN
GRANT COUNTY

SIGNAL NO. N/A

CONTROLLER TYPE: TEMP

DATE JANUARY 2013

PAGE NO. 5 OF 5

PROJECT NO:1200-01-74

HWY: USH 61

COUNTY: GRANT

TEMPORARY SEQUENCE OF OPERATIONS - ALL STAGES

SHEET

E

N

NOT TO SCALE

REST AREA 106

RAMP CLOSED

RAMP CLOSED

R11-2(MOD)
48" X 30"RAMP
CLOSED

TYPE III BARRICADE

RAMP
CLOSED
1000 FT

WEST

M3-4
24" X 12"

11

M1-6
24" X 24"REST AREA
EXIT 1COVERING SIGNS
TYPE 1NO RE-ENTRY
TO HWY 61/151
NORTHTRAFFIC CONTROL SIGNS FIXED MESSAGE
54" X 72"
(SEE DETAIL)RAMP
CLOSED
AHEAD

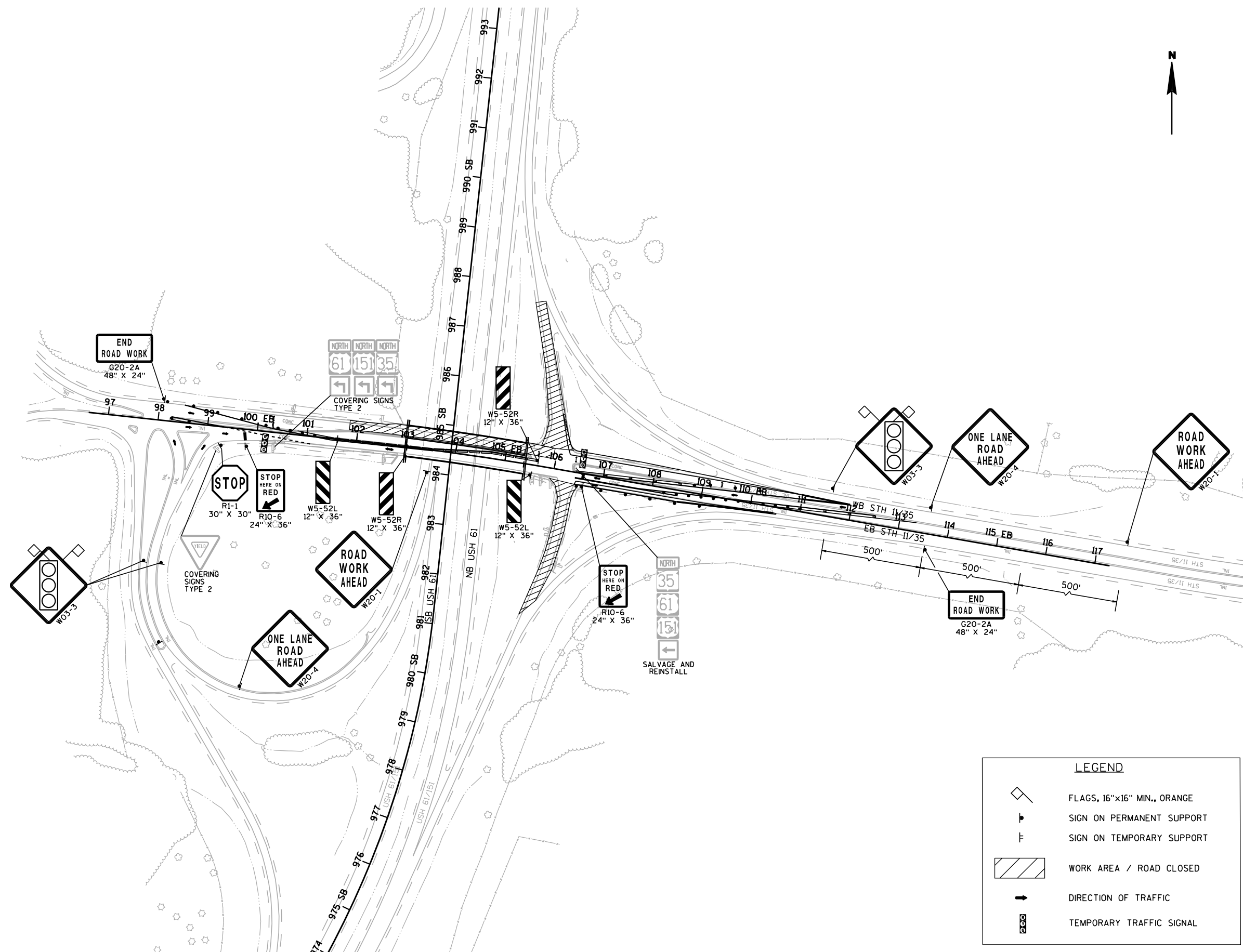
WEST

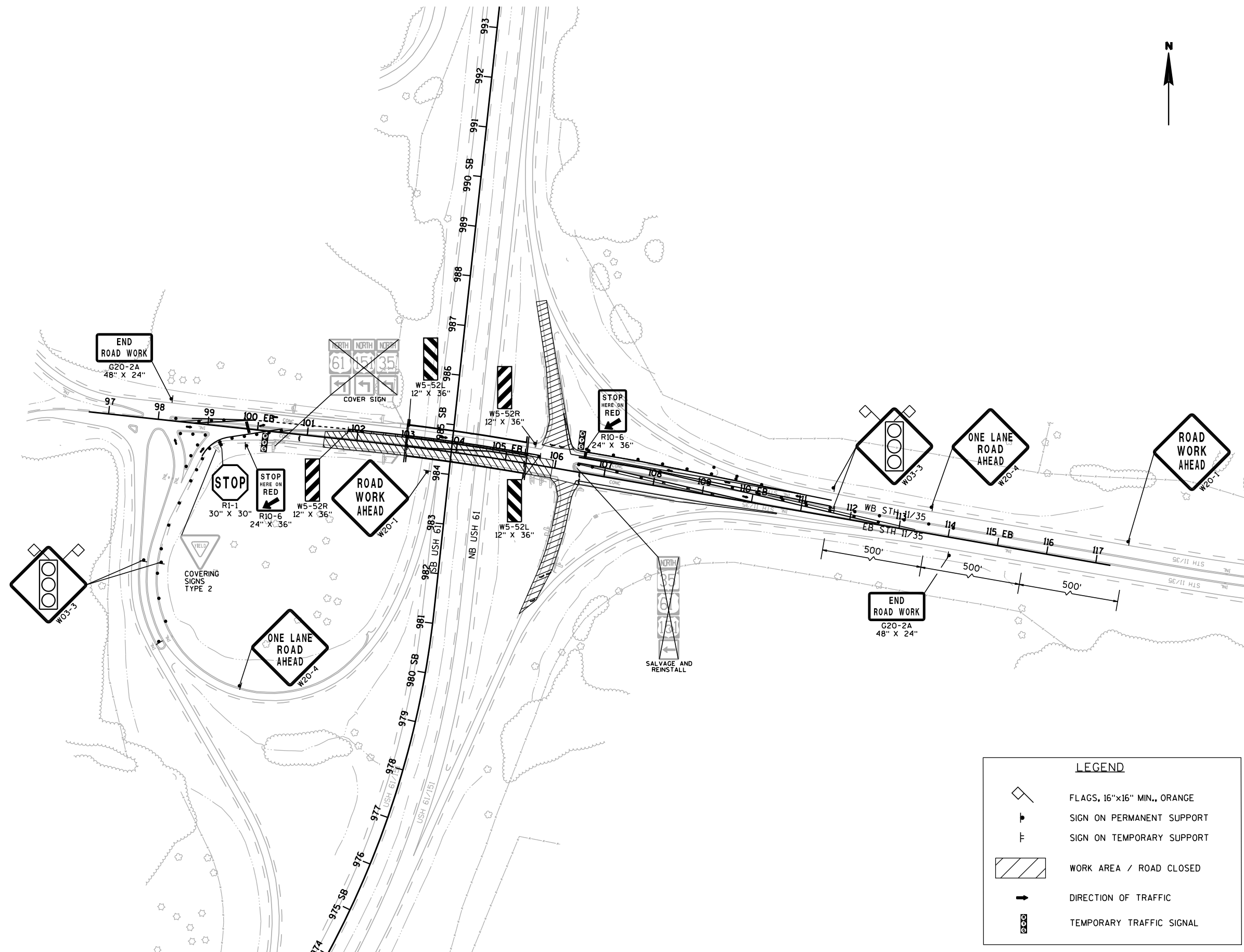
M3-4
24" X 12"

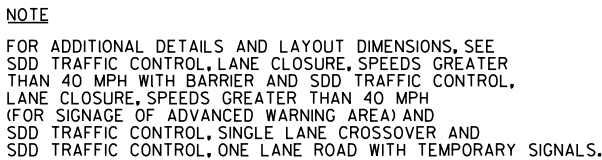
11

M1-6
24" X 24"WISCONSIN
TRAVEL INFO
REST AREA
3/4 MILECOVERING SIGNS
TYPE 1EXIT 1
NO RE-ENTRY TO
HWY 151 NORTHTRAFFIC CONTROL SIGNS FIXED MESSAGE
54" X 72"
(SEE DETAIL)ROAD
WORK
AHEAD

W20-1

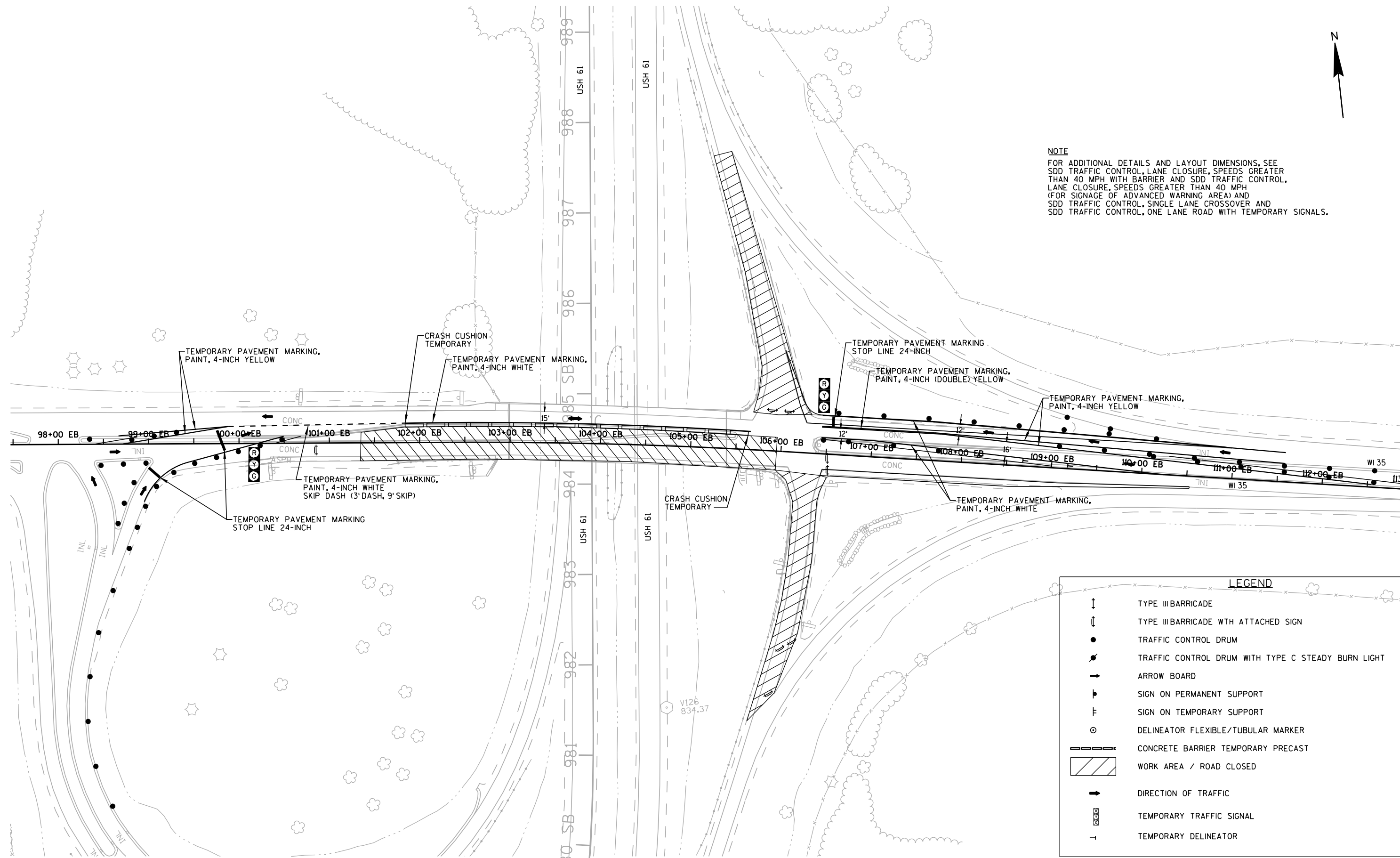






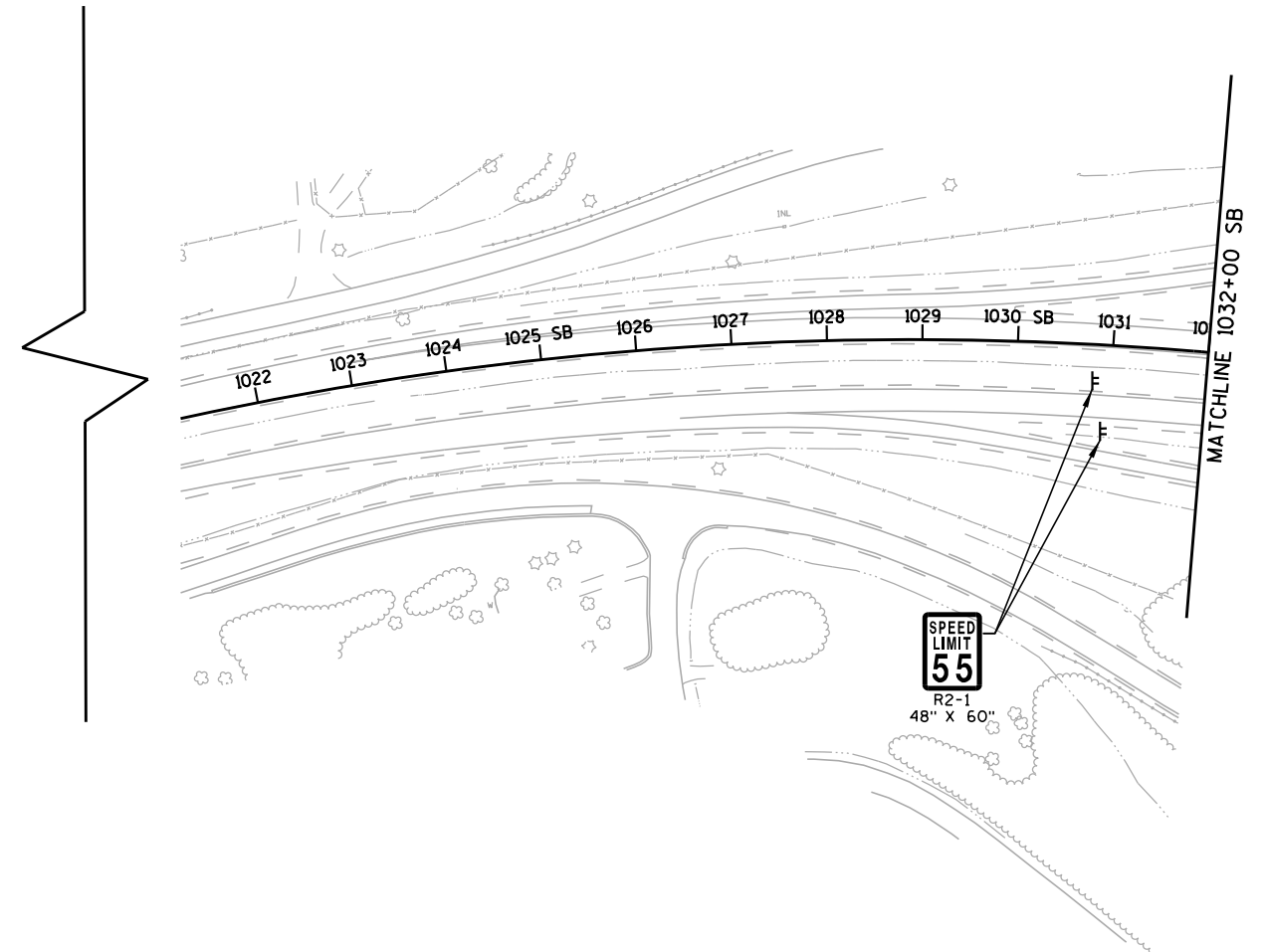
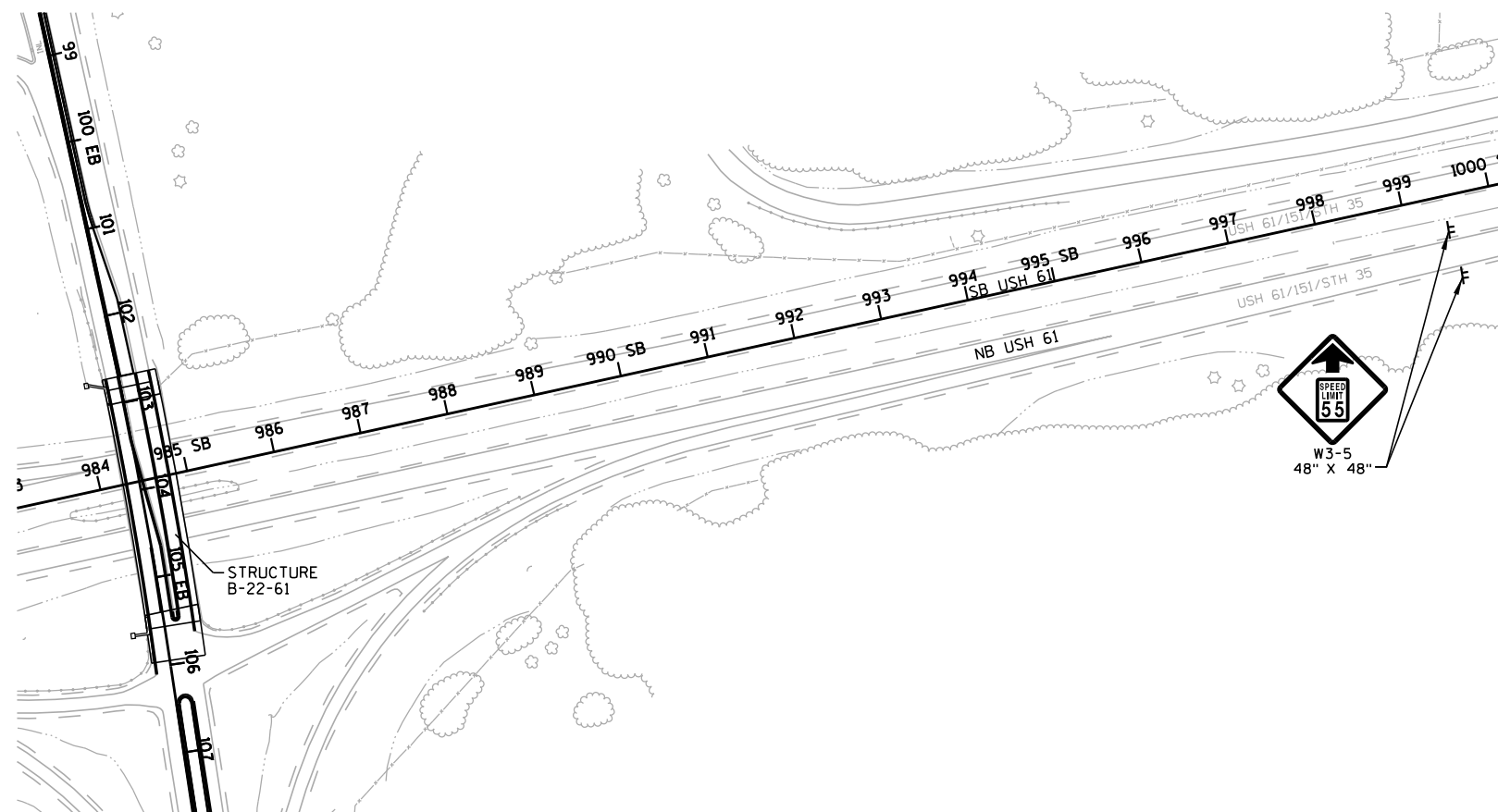
LEGEND

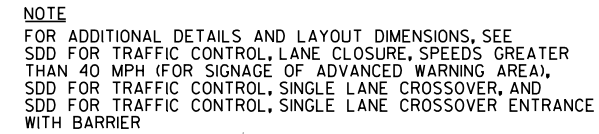
	TYPE III BARRICADE
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA / ROAD CLOSED
	DIRECTION OF TRAFFIC
	TEMPORARY TRAFFIC SIGNAL
	TEMPORARY DELINEATOR





NOTE
FOR ADDITIONAL DETAILS AND LAYOUT DIMENSIONS, SEE
SDD TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER
THAN 40 MPH (FOR SIGNAGE OF ADVANCED WARNING AREA)





TEMPORARY PAVEMENT MARKING,
PAINT, 4-INCH WHITE WITH
TEMPORARY PAVEMENT MARKING,
RAISED MARKERS SPACED AT 25

TEMPORARY PAVEMENT MARKING,
PAINT, 4-INCH WHITE

TEMPORARY PAVEMENT MARKING,
PAINT, 4-INCH (DOUBLE) YELLOW —

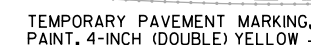
CRASH CUSHION
TEMPORARY

TEMPORARY PAVEMENT MARKING,
PAINT, 4-INCH YELLOW

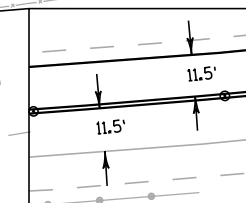
CONCRETE BARRIER TEMPORARY PRECAST
STA. 610+50 SX TO STA. 616+00 SX —

CRASH CUSHION TEMPORARY

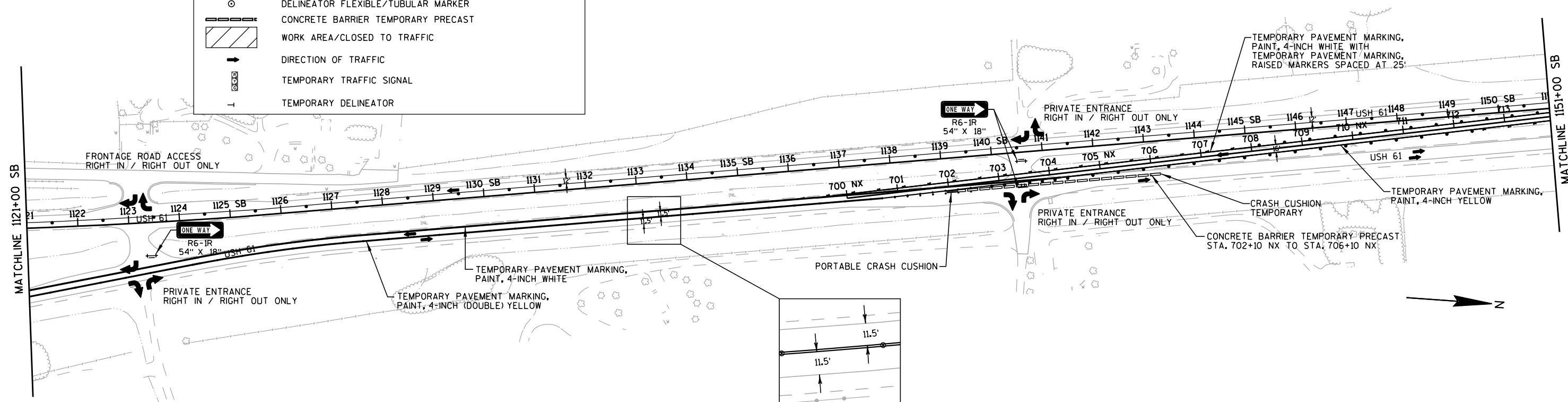
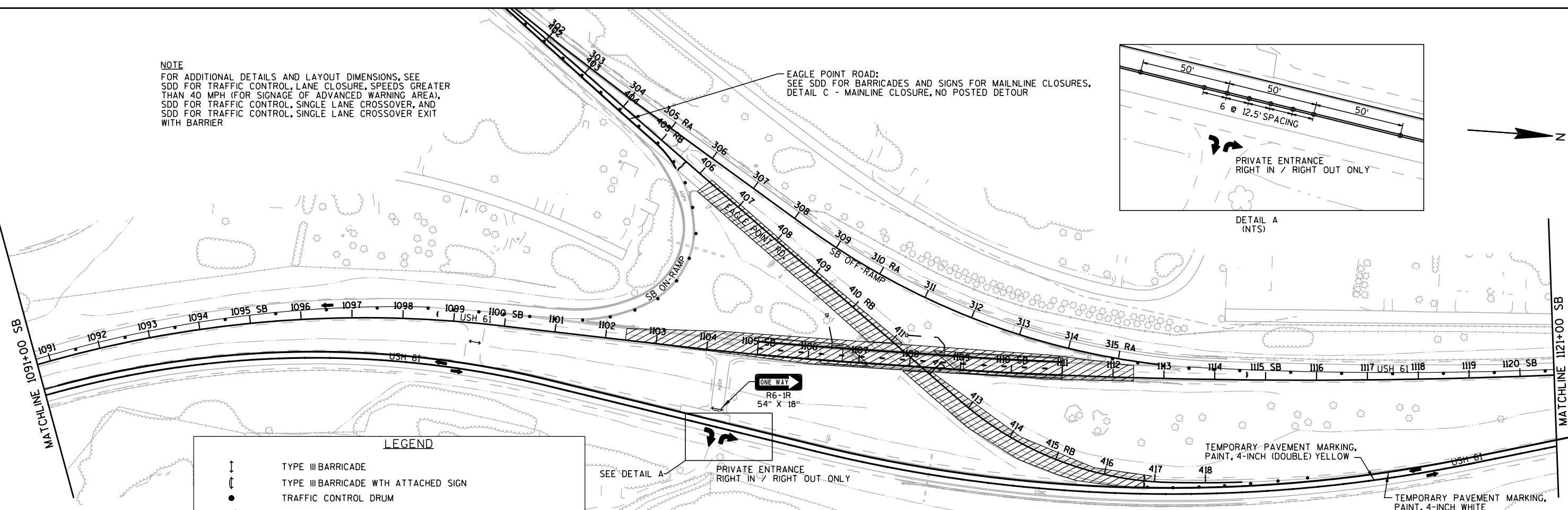
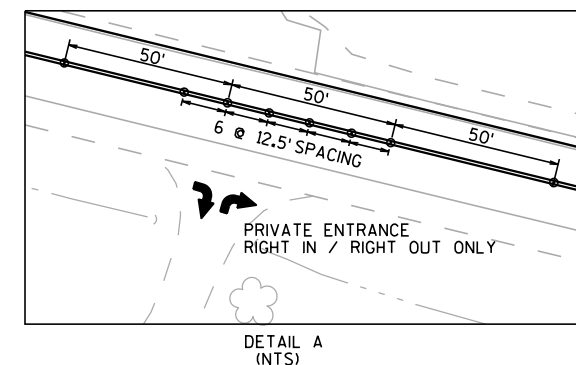
	TYPE III BARRICADE
	TYPE III BARRICADE WITH ATTACHED SIGN
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	DIRECTION OF TRAFFIC
	TRAFFIC CONTROL DRUM WITHOUT / WITH TYPE C STEADY BURN LIGHT
	TEMPORARY DELINEATOR
	TEMPORARY PRECAST CONCRETE BARRIER

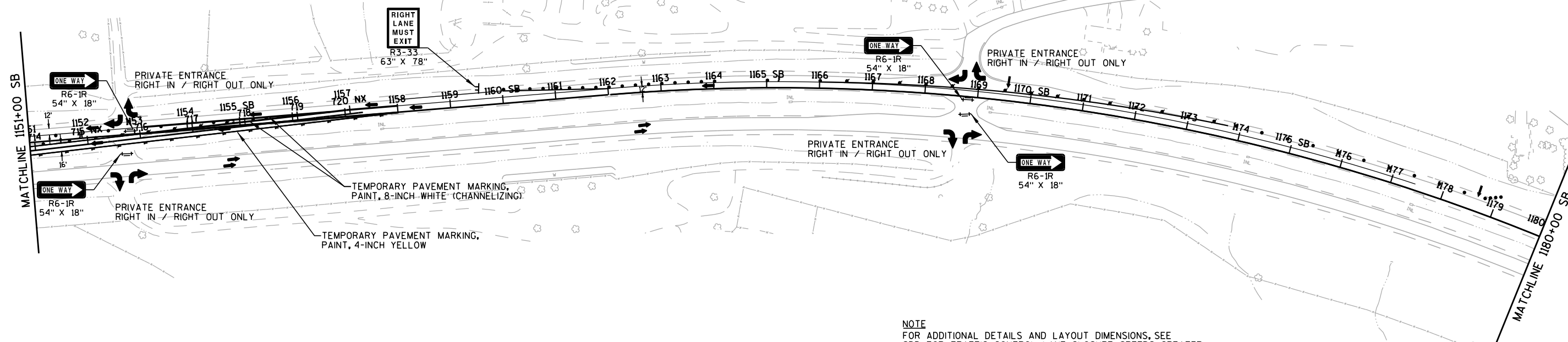


TEMPORARY PAVEMENT MARKING,
PAINT, 4-INCH WHITE

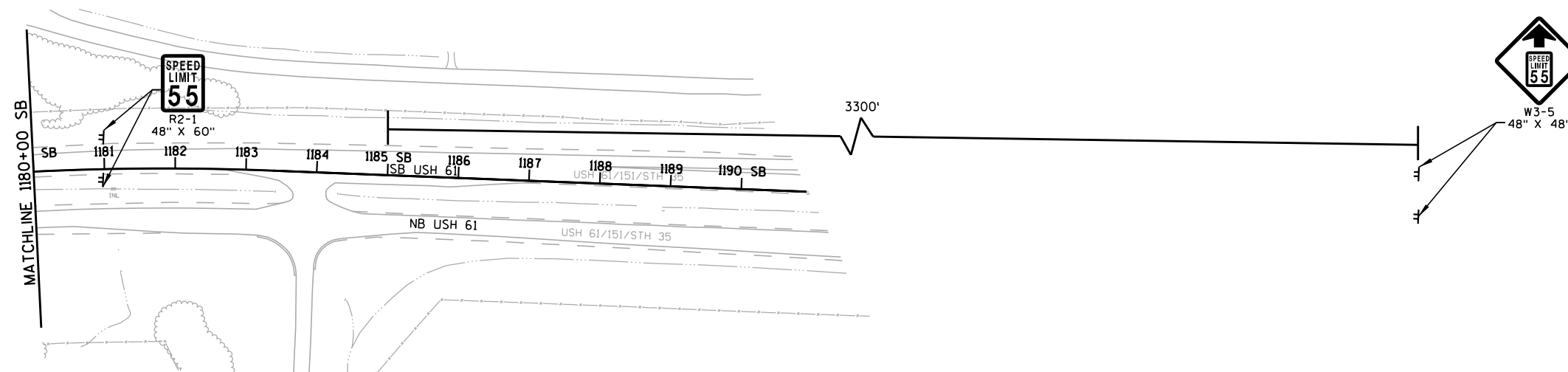


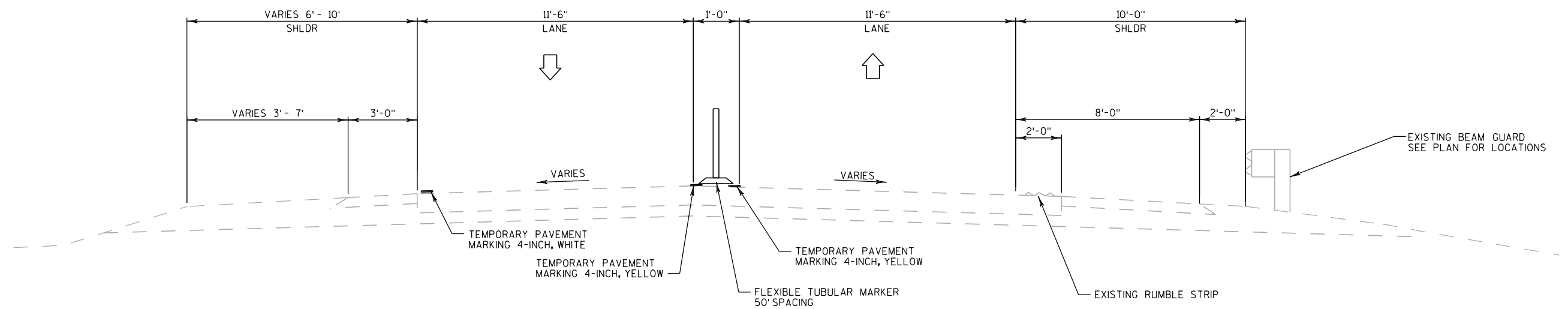
— EAGLE POINT ROAD:
SEE SDD FOR BARRICADES AND SIGNS FOR MAINLINE CLOSURES,
DETAIL C - MAINLINE CLOSURE, NO POSTED DETOUR





NOTE
FOR ADDITIONAL DETAILS AND LAYOUT DIMENSIONS, SEE
SDD FOR TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER
THAN 40 MPH (FOR SIGNAGE OF ADVANCED WARNING AREA),
SDD FOR TRAFFIC CONTROL, SINGLE LANE CROSSOVER, AND
SDD FOR TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
SDD FOR TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT
WITH BARRIER

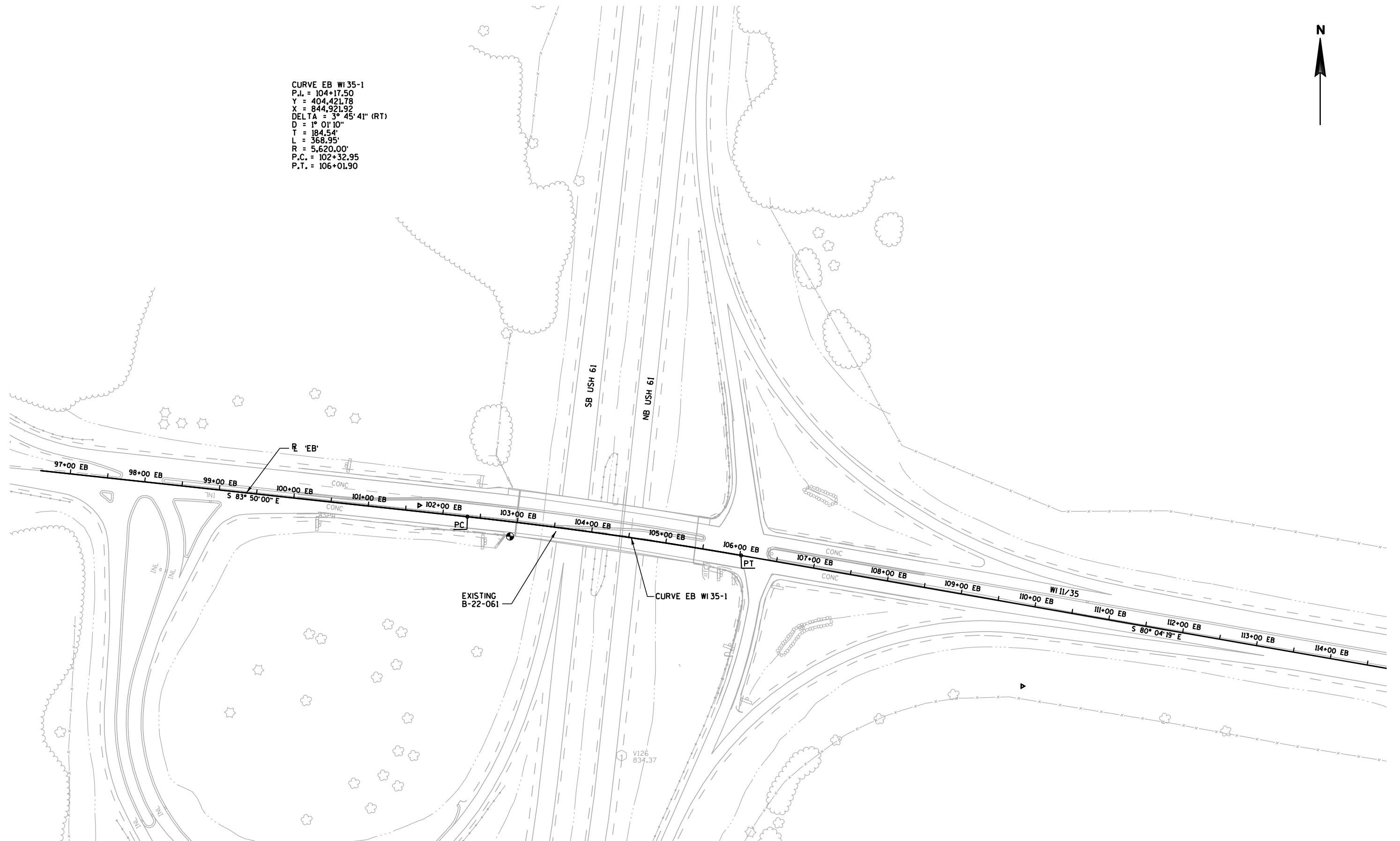


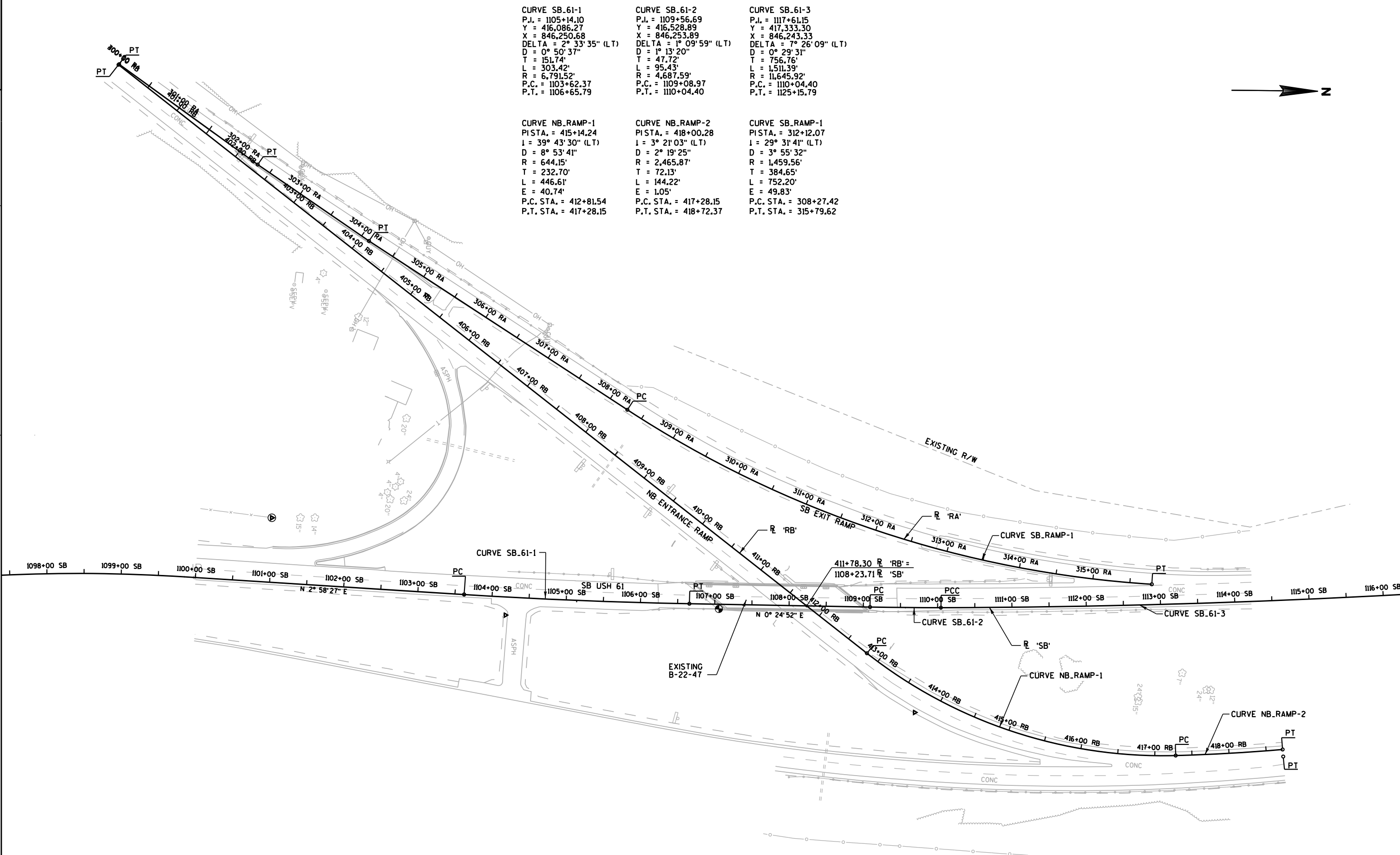


CONSTRUCTION STAGING TYPICAL SECTION - NORTHBOUND USH 61

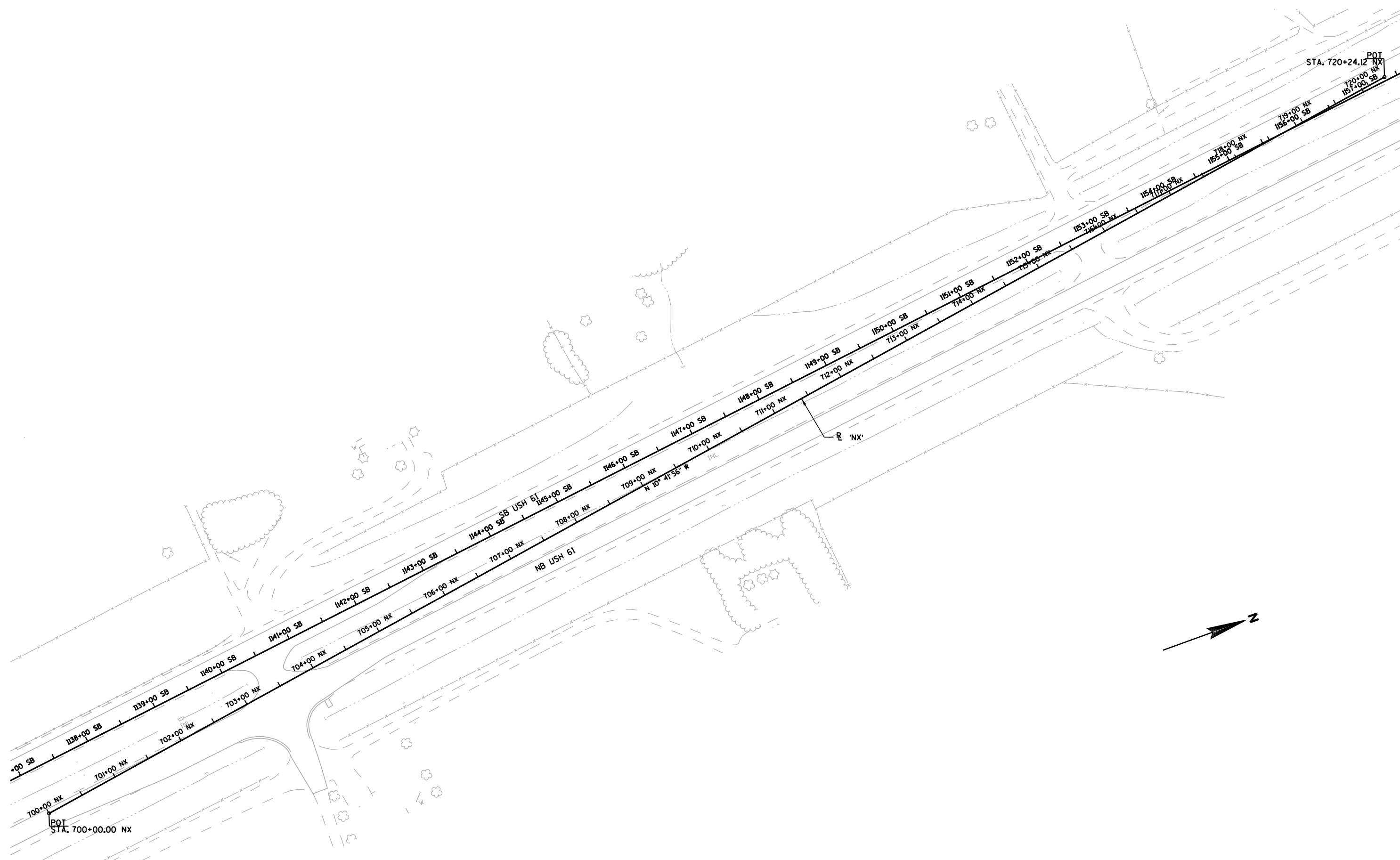
(LOOKING NORTH)

CURVE EB WI 35-1
P.I. = 104+17.50
Y = 404.42178
X = 844.92192
DELTA = 3° 45' 41" (RT)
D = 1° 01' 10"
T = 184.54'
L = 368.95'
R = 5,620.00'
P.C. = 102+32.95
P.T. = 106+01.90









DATE 29APR14		E S T I M A T E O F Q U A N T I T I E S			
LINE					1200-01-74
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0200	REMOVING OLD STRUCTURE (STATION) 01. 1108+03.17 SB	LS	1.000	1.000
0020	204.0100	REMOVING PAVEMENT	SY	1,645.000	1,645.000
0030	204.0150	REMOVING CURB & GUTTER	LF	1,842.000	1,842.000
0040	204.0165	REMOVING GUARDRAIL	LF	1,969.000	1,969.000
0050	204.0190	REMOVING SURFACE DRAINS	EACH	2.000	2.000
0060	205.0100	EXCAVATION COMMON	CY	18,244.000	18,244.000
0070	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-22-273	LS	1.000	1.000
0080	208.1100	SELECT BORROW	CY	5,939.000	5,939.000
0090	210.0100	BACKFILL STRUCTURE	CY	777.000	777.000
0100	213.0100	FINISHING ROADWAY (PROJECT) 01. 1200-01-74	EACH	1.000	1.000
0110	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	105.000	105.000
0120	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	5,588.000	5,588.000
0130	415.0090	CONCRETE PAVEMENT 9-INCH	SY	321.000	321.000
0140	415.0105	CONCRETE PAVEMENT 10 1/2-INCH	SY	1,113.000	1,113.000
0150	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	368.000	368.000
0160	416.0610	DRILLED TIE BARS	EACH	10.000	10.000
0170	416.0620	DRILLED DOWEL BARS	EACH	128.000	128.000
0180	416.1010	CONCRETE SURFACE DRAINS	CY	13.000	13.000
0190	416.1110	CONCRETE RUMBLE STRIPS SHOULDER	LF	481.000	481.000
0200	455.0605	TACK COAT	GAL	98.000	98.000
0210	465.0105	ASPHALTIC SURFACE	TON	190.000	190.000
0220	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	3,346.000	3,346.000
0230	465.0400	ASPHALTIC SHOULDER RUMBLE STRIP	LF	239.000	239.000
0240	502.0100	CONCRETE MASONRY BRIDGES	CY	989.000	989.000
0250	502.3100	EXPANSION DEVICE (STRUCTURE) 01. B-22-273	LS	1.000	1.000
0260	502.3100	EXPANSION DEVICE (STRUCTURE) 02. B-22-61	LS	1.000	1.000
0270	502.3200	PROTECTIVE SURFACE TREATMENT	SY	2,837.000	2,837.000
0280	502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	160.000	160.000
0290	503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	823.000	823.000
0300	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	28,890.000	28,890.000
0310	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	119,990.000	119,990.000
0320	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	20.000	20.000
0330	506.2610	BEARING PADS ELASTOMERIC LAMINATED	EACH	10.000	10.000
0340	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-22-273	EACH	12.000	12.000
0350	509.0301	PREPARATION DECKS TYPE 1	SY	136.000	136.000
0360	509.0302	PREPARATION DECKS TYPE 2	SY	70.000	70.000
0370	509.0500	CLEANING DECKS	SY	1,360.000	1,360.000
0380	509.1000	JOINT REPAIR	SY	58.000	58.000
0390	509.1500	CONCRETE SURFACE REPAIR	SF	222.000	222.000
0400	509.2000	FULL-DEPTH DECK REPAIR	SY	5.000	5.000
0410	509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	105.000	105.000
0420	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	62.000	62.000
0430	517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING (STRUCTURE) 01. B-22-61	LS	1.000	1.000
0440	517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS (STRUCTURE) 01. B-22-61	LS	1.000	1.000
0450	517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1.000	1.000
0460	520.1015	APRON ENDWALLS FOR CULVERT PIPE 15-INCH	EACH	2.000	2.000
0470	520.4015	CULVERT PIPE TEMPORARY 15-INCH	LF	84.000	84.000

DATE 29APR14		E S T I M A T E O F Q U A N T I T I E S			
LINE					1200-01-74
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0480	521.1012	APRON ENDWALLS FOR CULVERT PIPE STEEL	EACH	2.000	2.000
		12-INCH			
0490	601.0409	CONCRETE CURB & GUTTER 30-INCH TYPE A	LF	1,227.000	1,227.000
0500	601.0555	CONCRETE CURB AND GUTTER 6-INCH SLOPED	LF	620.000	620.000
		36-INCH TYPE A			
0510	602.0405	CONCRETE SIDEWALK 4-INCH	SF	11,857.000	11,857.000
0520	603.8000	CONCRETE BARRIER TEMPORARY PRECAST	LF	1,350.000	1,350.000
		DELIVERED			
0530	603.8125	CONCRETE BARRIER TEMPORARY PRECAST	LF	1,730.000	1,730.000
		INSTALLED			
0540	604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	422.000	422.000
0550	604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGRATE	CY	7.000	7.000
0560	606.0200	RIPRAP MEDIUM	CY	6.000	6.000
0570	608.0315	STORM SEWER PIPE REINFORCED CONCRETE	LF	513.000	513.000
		CLASS III 15-INCH			
0580	611.0430	RECONSTRUCTING INLETS	EACH	3.000	3.000
0590	611.0606	INLET COVERS TYPE B	EACH	4.000	4.000
0600	611.3230	INLETS 2X3-FT	EACH	4.000	4.000
0610	611.8115	ADJUSTING INLET COVERS	EACH	5.000	5.000
0620	612.0212	PIPE UNDERDRAIN UNPERFORATED 12-INCH	LF	128.000	128.000
0630	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	220.000	220.000
0640	614.0010	BARRIER SYSTEM GRADING SHAPING FINISHING	EACH	9.000	9.000
0650	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM	EACH	4.000	4.000
		GUARD			
0660	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING	EACH	1.000	1.000
		TERMINAL			
0670	614.0905	CRASH CUSHIONS TEMPORARY	EACH	4.000	4.000
0680	614.1000	MGS GUARDRAIL TEMPORARY	LF	237.500	237.500
0690	614.1100	MGS GUARDRAIL TEMPORARY THRIE BEAM	LF	39.500	39.500
		TRANSITION			
0700	614.1200	MGS GUARDRAIL TEMPORARY TRANSITION EAT	EACH	1.000	1.000
0710	614.2300	MGS GUARDRAIL 3	LF	2,150.000	2,150.000
0720	614.2500	MGS THRIE BEAM TRANSITION	LF	355.500	355.500
0730	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	7.000	7.000
0740	614.2620	MGS GUARDRAIL TERMINAL TYPE 2	EACH	3.000	3.000
0750	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS	EACH	1.000	1.000
		(PROJECT) 01. 1200-01-74			
0760	619.1000	MOBILIZATION	EACH	1.000	1.000
0770	620.0300	CONCRETE MEDIAN SLOPED NOSE	SF	56.000	56.000
0780	624.0100	WATER	MGAL	246.000	246.000
0790	625.0500	SALVAGED TOPSOIL	SY	21,998.000	21,998.000
0800	628.1504	SILT FENCE	LF	2,205.000	2,205.000
0810	628.1520	SILT FENCE MAINTENANCE	LF	2,205.000	2,205.000
0820	628.2004	EROSION MAT CLASS I TYPE B	SY	21,861.000	21,861.000
0830	628.7005	INLET PROTECTION TYPE A	EACH	4.000	4.000
0840	629.0210	FERTILIZER TYPE B	CWT	14.000	14.000
0850	630.0130	SEEDING MIXTURE NO. 30	LB	297.000	297.000
0860	630.0200	SEEDING TEMPORARY	LB	594.000	594.000
0870	633.1100	DELINEATORS TEMPORARY	EACH	84.000	84.000
0880	642.5401	FIELD OFFICE TYPE D	EACH	1.000	1.000
0890	643.0100	TRAFFIC CONTROL (PROJECT) 01.1200-01-74	EACH	1.000	1.000
0900	643.0300	TRAFFIC CONTROL DRUMS	DAY	55,523.000	55,523.000
0910	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	2,993.000	2,993.000
0920	643.0500	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER	EACH	296.000	296.000
		POSTS			

DATE 29APR14		E S T I M A T E O F Q U A N T I T I E S			
LINE					1200-01-74
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0930	643.0600	TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES	EACH	296.000	296.000
0940	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	8,850.000	8,850.000
0950	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	885.000	885.000
0960	643.0900	TRAFFIC CONTROL SIGNS	DAY	5,264.000	5,264.000
0970	643.0910	TRAFFIC CONTROL COVERING SIGNS TYPE I	EACH	2.000	2.000
0980	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	6.000	6.000
0990	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	54.000	54.000
1000	645.0130	GEOTEXTILE FABRIC TYPE R	SY	12.000	12.000
1010	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	20,700.000	20,700.000
1020	646.0600	REMOVING PAVEMENT MARKINGS	LF	1,829.000	1,829.000
1030	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE 2	EACH	2.000	2.000
1040	647.0606	PAVEMENT MARKING ISLAND NOSE EPOXY	EACH	1.000	1.000
1050	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	39,300.000	39,300.000
1060	649.0701	TEMPORARY PAVEMENT MARKING 8-INCH	LF	1,333.000	1,333.000
1070	649.1300	TEMPORARY PAVEMENT MARKING STOP LINE 24-INCH	LF	92.000	92.000
1080	649.2100	TEMPORARY RAISED PAVEMENT MARKERS	EACH	144.000	144.000
1090	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	5,587.000	5,587.000
1100	650.5000	CONSTRUCTION STAKING BASE	LF	5,225.000	5,225.000
1110	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	1,842.000	1,842.000
1120	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-22-61	LS	1.000	1.000
1130	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	465.000	465.000
1140	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1200-01-74	LS	1.000	1.000
1150	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	5,088.000	5,088.000
1160	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. B-22-61	LS	1.000	1.000
1170	690.0250	SAWING CONCRETE	LF	1,948.000	1,948.000
1180	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	500.000	500.000
1190	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	5,934.000	5,934.000
1200	SPV.0060	SPECIAL 01. CLEANING AND PAINTING BEARINGS	EACH	14.000	14.000
1210	SPV.0060	SPECIAL 02. SALVAGE AND REINSTALL SIGN	EACH	6.000	6.000
1220	SPV.0105	SPECIAL 01. CONCRETE PAVEMENT JOINT LAYOUT	LS	1.000	1.000
1230	SPV.0180	SPECIAL 01. CLEANING PARAPETS AND MEDIAN	SY	497.000	497.000

3

ALL ITEMS CATEGORY 010 UNLESS OTHERWISE NOTED				MGS GUARDRAIL TEMPORARY ITEMS											
REMOVING CURB & GUTTER				614.1000				614.1100				614.1200			
				MGS GUARDRAIL TEMPORARY				MGS GUARDRAIL TEMPORARY THRIE BEAM TRANSITION				MGS GUARDRAIL TEMPORARY TRANSITION EAT			
LOCATION				LF				LF				EA			
STA. 98+23 EB - STA. 101+51 EB, LT				204.0150				237.5				39.5			
STA. 106+38 EB - STA. 112+51 EB, LT				607											
				1235											
PROJECT TOTAL				1842								1			
				PROJECT TOTAL				237.5				39.5			
												1			

ALL ITEMS CATEGORY 010 UNLESS OTHERWISE NOTED

3

STORM SEWER														
608.0315 REINF. CONC. PIPE, CL. III, STORM SEWER														
611.3230 INLETS 2X3-FT														
611.0606 INLET COVERS TYPE B														
611.0430 RECONSTRUCTING INLETS														
611.8115 ADJUSTING INLET COVERS														
STRUCTURE NUMBER	STATION	LOCATION	COVER ELEV	15-INCH (LF)	% SLOPE	(EACH)	(EACH)	(EACH)	(EACH)	DEPTH (FT)	FROM STRUCTURE	TO STRUCTURE	INLET ELEV	DISCHARGE ELEV
1	605+00.0 SX	18.8' RT	844.40	275	3.10%	1	1			1.97	1	2	841.18	835.65
2	607+75.4 SX	18.6' RT	836.60	28	10.00%	1	1			2.80	2	3	832.55	829.75
3	608+00.0 SX	18.6' RT	833.00					1	1					
4	614+50.6 SX	16.6' RT	826.40	7	10.00%	1	1			3.54	4	5	821.95	821.25
5	614+50.6 SX	23.6' LT	824.50					1	1					
6	712+00.6 NX	21.1' RT	918.00	203	1.58%	1	1			2.34	6	7	914.75	911.54
	710+00.0 NX	0.0'	914.80					1	1					
	110+50.0 EB	0.0'							1					
	110+50.0 EB	18' LT							1					
PROJECT TOTAL				513		4	4	3	5					

3

CONCRETE SURFACE DRAINS ITEMS								CULVERT ITEMS			
STREET	STATION	AT STRUCTURE	Type	REMOVING	CONCRETE	APRON ENDWALLS	PIPE UNDERDRAIN				
				SURFACE	SURFACE DRAINS	FOR CULVERT PIPE	UNPERFOATED				
				DRAINS		STEEL 12-INCH	12-INCH				
				204.0190	416.1010	521.1012	612.0212				
				EACH	CY	EACH	LF	520.4015	520.1015		
								15-INCH	15-INCH		
								(LF)	(EACH)		
STH 35	102+80	EB	B-22-061	B	1	2.1	0				
STH 35	105+61	EB	B-22-061	B	1	2.2	0				
USH 61	1106+45	SB	B-22-273	A	0	5.8	1	45			
USH 61	1108+65	SB	B-22-273	A	0	2.9	1	83			
PROJECT TOTAL					2	13.0	2	128			

STATION	LOCATION	520.4015	520.1015
716+07.0 NX	28.9' RT	84	2
PROJECT TOTAL		84	2

EARTHWORK SUMMARY														
CATEGORY	STATION	TO	STATION	LOCATION	Common Excavation (1)		Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	208.1100 Select Borrow	Comment:
					Cut (2)	EBS Excavation (3)				Factor 1.20			CY	
1000	602+00 SX	-	616+50 SX	S X0 - Stage 1	2411	0	0	2411	273	327	2084		2813	
	700+00 NX	-	720+00 NX	N X0 - Stage 1	2267	0	0	2267	2179	2615	-348		3126	
	1105+00 SB	-	1111+00 SB	USH 61	764	0	764	0	574	689	-689			
	106+38 EB	-	112+51 EB	WI 35	428	0	428	0	0	0	0			
	602+00 SX	-	616+50 SX	SX0 - Final	6028	0	0	0	0	0	0	6028		
	700+00 NX	-	720+00 NX	NX0 - Final	6346	0	0	0	0	0	0	6346		
CATEGORY 0010 SUBTOTAL					18244	0								
					Total Common Exc	18244	1192	4678	3026	3631	1047	12374	5939	

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 13) Expanded Fill. Factor = 1.20

3

ALL ITEMS CATEGORY 010 UNLESS OTHERWISE NOTED

														CONSTRUCTION STAKING ITEMS						
														650.4500	650.5000	650.5500	650.6500	650.7000	650.9910	650.9920
STREET	STATION	TO STATION				OFFSET			CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	CONSTRUCTION STAKING STRUCTURES	CONSTRUCTION STAKING CONCRETE PAVEMENT	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL	CONSTRUCTION STAKING SLOPE STAKES					
														<u>LF</u>	<u>LF</u>	<u>LF</u>	<u>LS</u>	<u>LF</u>	<u>LS</u>	<u>LF</u>
WI 35	98+23	EB	-	101+51	EB	LT	328				607									
WI 35	106+38	EB	-	112+51	EB	LT	613				1235									
WI 35	102+70	EB	-	102+83	EB	LT & RT	13						26							
WI 35	105+57	EB	-	105+95	EB	LT * RT	39						77							
WI 35	105+99	EB	-	110+98	EB		499			499					0					
							0													
USH 61	1038+61	SB	-	1058+40	SB		1979			1979					1979					
USH 61	1105+00	SB	-	1106+67	SB		167						167		167					
USH 61	1109+05	SB	-	1111+00	SB		195						195		195					
USH 61	1131+15	SB	-	1158+62	SB		2747			2747					2747					
USH 61	B-22-273										1									
PROJECT 1200-01-74																			1	
PROJECT TOTAL														5587	5225	1842	1	465	1	5088

3

PAVEMENT MARKING										
			646.0106		646.0600	647.0606	647.0166			
STREET			PAVEMENT		REMOVING	MARKING	MARKING			
STATION (O/S) - STATION (O/S)			MARKING	TYPE OF LINE	PAVEMENT	ISLAND	ARROWS			
			EPOXY		MARKINGS	NOSE	EPOXY			
			4-INCH			EPOXY	TYPE 2			
			LF		LF	EA	EA			
102+70 EB - 112+52 EB			LANE LINE	1755	YELLOW - SOLID					
				712	WHITE - SOLID					
105+47 EB			MEDIAN				1		2	
1038+61 SB - 1043+50 SB			LANE LINE	489	WHITE - SOLID	489				
1053+70 SB - 1058+40 SB			LANE LINE	370	WHITE - SOLID	370				
1105+00 SB - 1111+00 SB			LANE LINE	1200	WHITE - SOLID					
1105+00 SB - 1111+00 SB			CENTERLINE	116	WHITE - SKIPS					
1136+49 SB - 1141+32 SB			LANE LINE	483	WHITE - SOLID	483				
1153+13 SB - 1158+00 SB			LANE LINE	487	WHITE - SOLID	487				
1038+00 SB - 1158+00 SB			LANE LINE	12000	YELLOW - SOLID					
1038+00 SB - 1158+00 SB			CENTERLINE	3088	WHITE - DASHED					
PROJECT TOTAL				20700		1829	1		2	

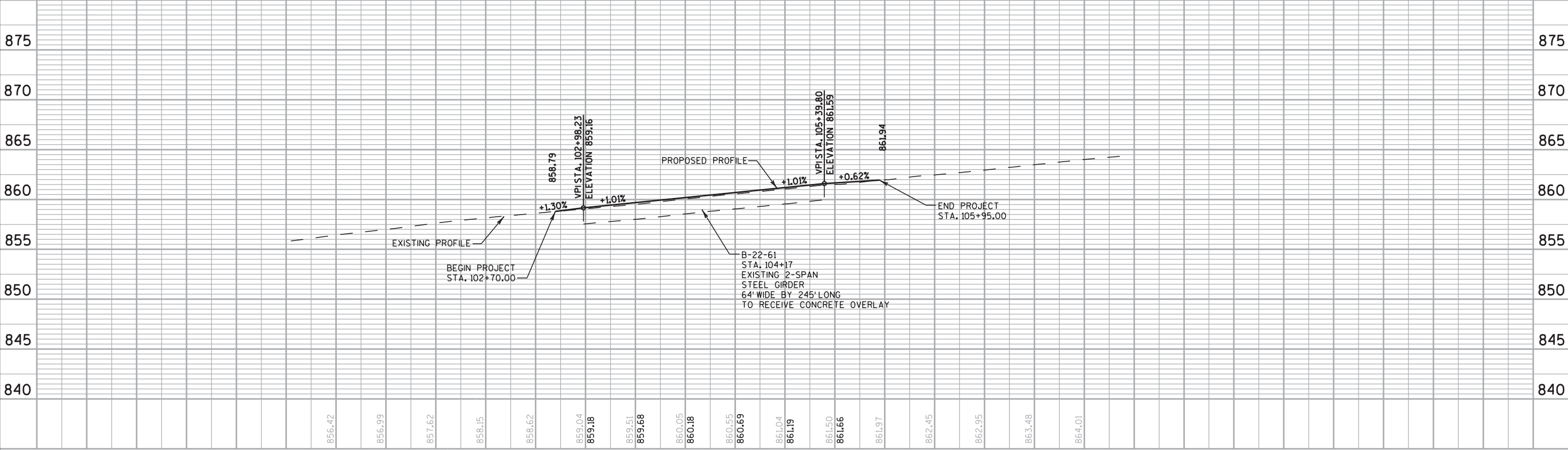
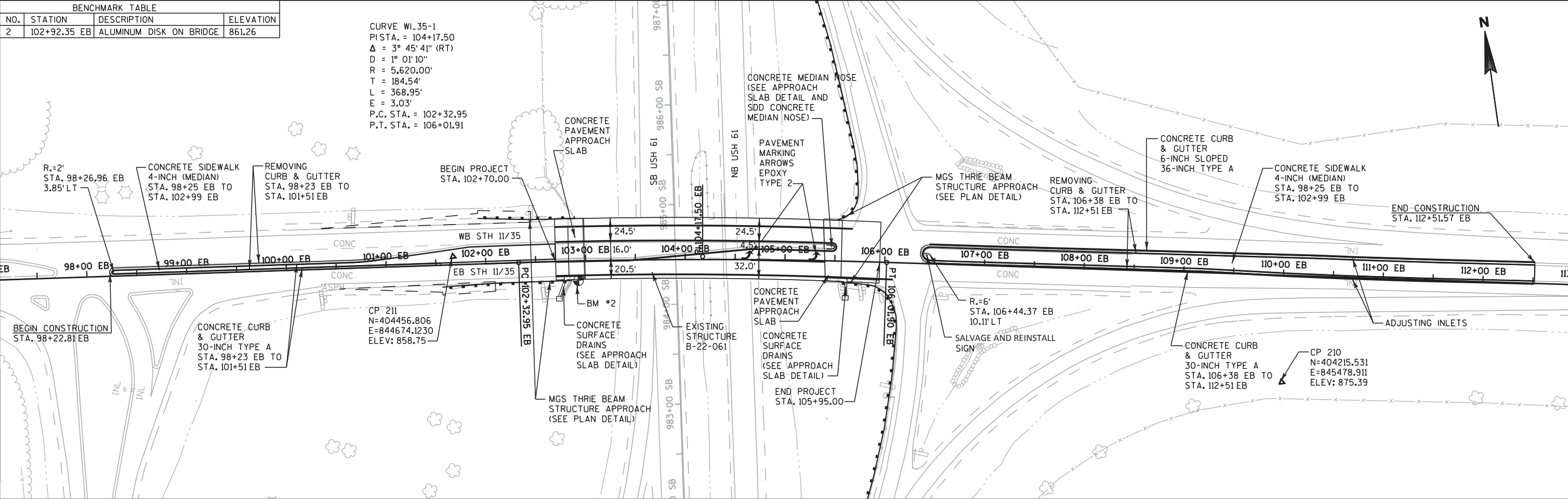
SALVAGE AND REINSTALL SIGN			
STAGE	STATION	DESCRIPTION	SPV.0060.02 EACH
1	106+42 EB	USH 61/35 ROUTE MARKERS	6
PROJECT TOTAL			6

EACH ITEMS			
213.0100 FINISHING ROADWAY EACH	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS (1200-01-74) EACH	642.5401 FIELD OFFICE TYPE D EACH	
PROJECT 1200-01-74	1	1	1
PROJECT TOTAL	1	1	1

PAVEMENT MARKING TEMPORARY					
		649.0100	649.0701	649.1300	
STREET		TEMPORARY		TEMPORARY	
STATION (O/S) - STATION (O/S)	DESCRIPTION OF MARKING	PAVEMENT MARKING	TYPE OF LINE	PAVEMENT MARKING	PAVEMENT MARKING STOP
		4-INCH		8-INCH	LINE 24-INCH
		LF		LF	LF
98+26 EB - 112+50 EB STAGE 1	LANE LINE	1270	WHITE - SOLID		
		45	WHITE - DASHED		
		923	YELLOW - SOLID		
98+66 EB - 112+55 EB STAGE 2	LANE LINE	1578	WHITE - SOLID	100	28
		49	WHITE - DASHED		
		1244	YELLOW - SOLID		
1037+00 SB - 1173+52 SB	LANE LINE	21176	YELLOW - SOLID	842	
		8000	WHITE - SOLID		
UNDISTRIBUTED		5015			
PROJECT TOTAL		39300		1333	92

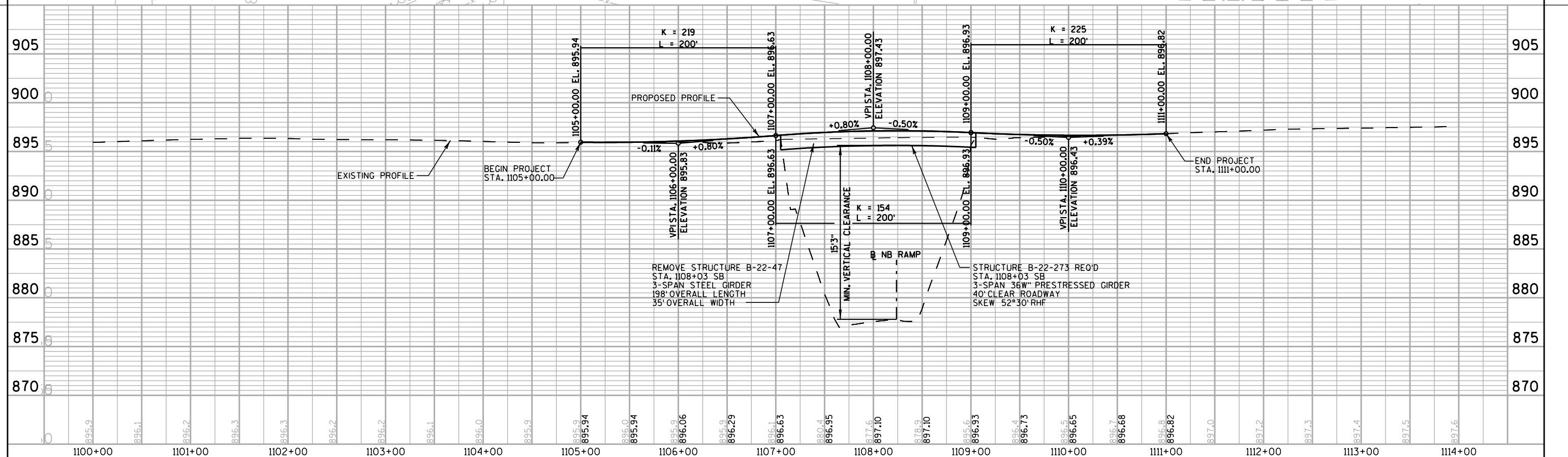
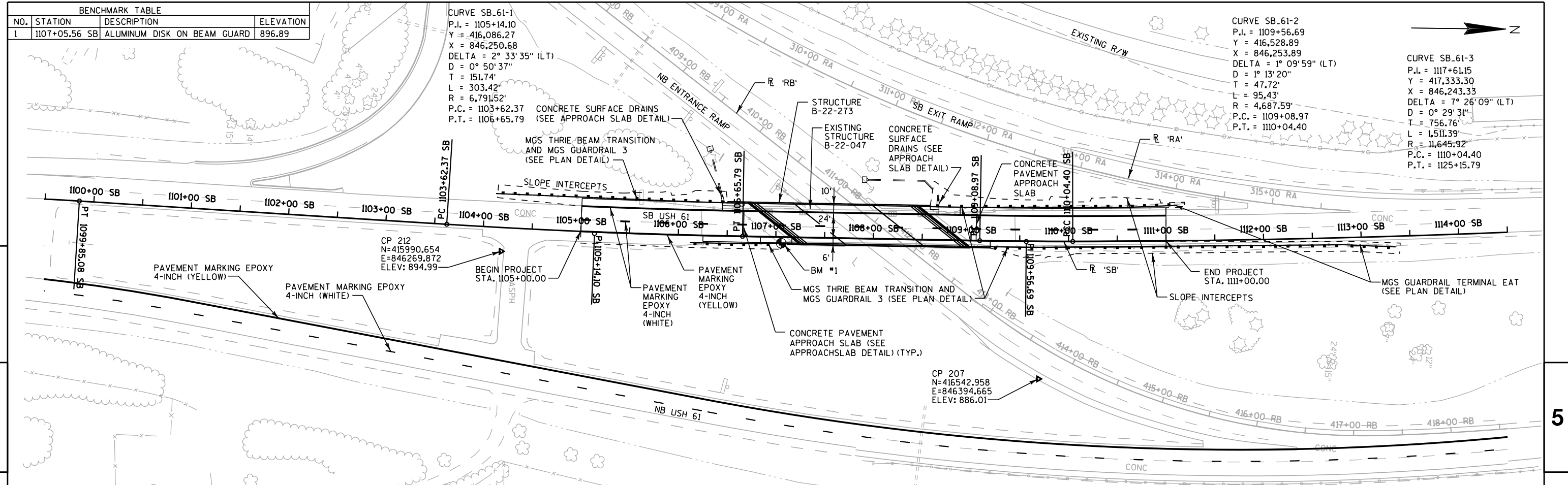
BENCHMARK TABLE			
NO.	STATION	DESCRIPTION	ELEVATION
2	102+92.35 EB	ALUMINUM DISK ON BRIDGE	861.26

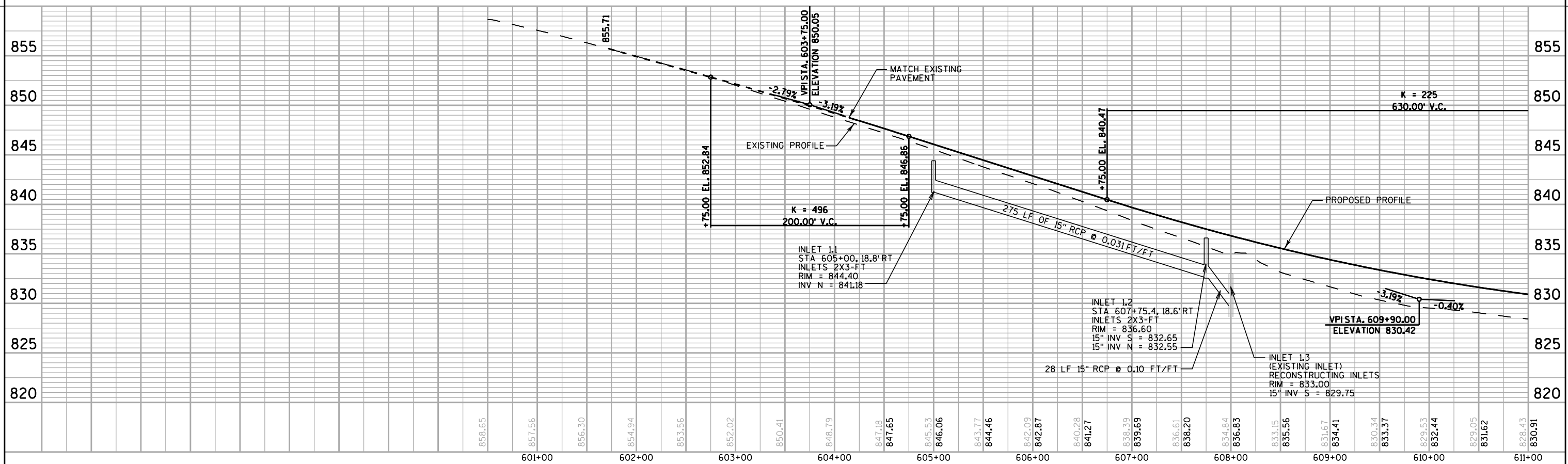
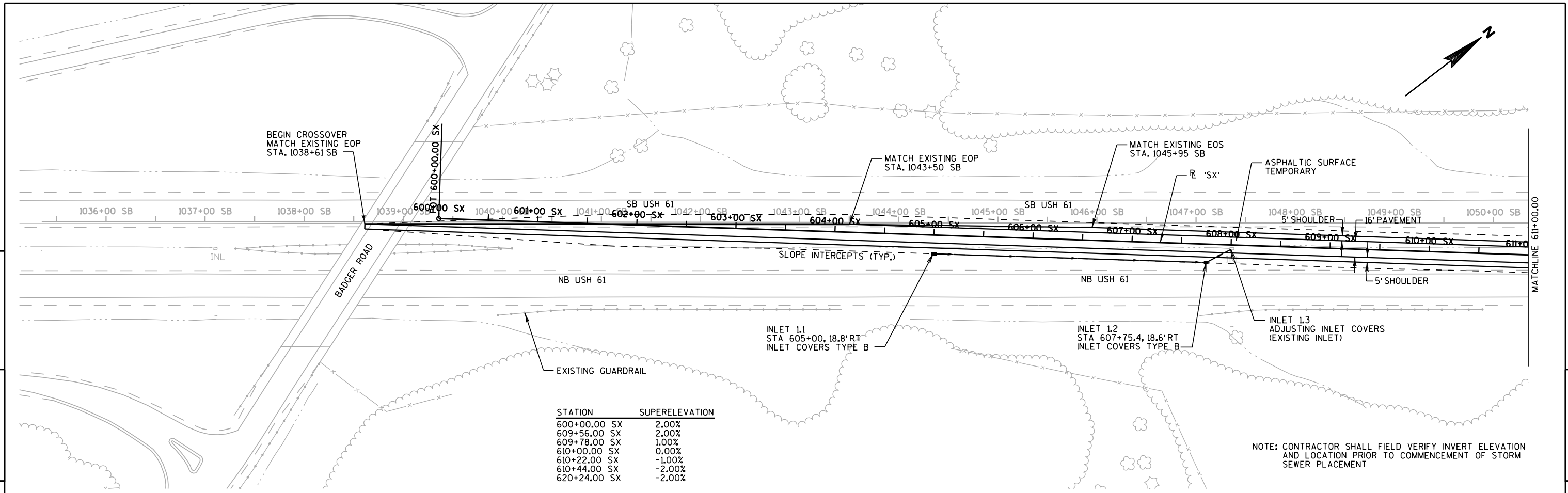
CURVE WL35-1
PISTA. = 104+17.50
 Δ = 3° 45' 41" (RT)
D = 1° 01' 10"
R = 5,620.00'
T = 184.54'
L = 368.95'
E = 3.03'
P.C. STA. = 102+32.95
P.T. STA. = 106+01.91



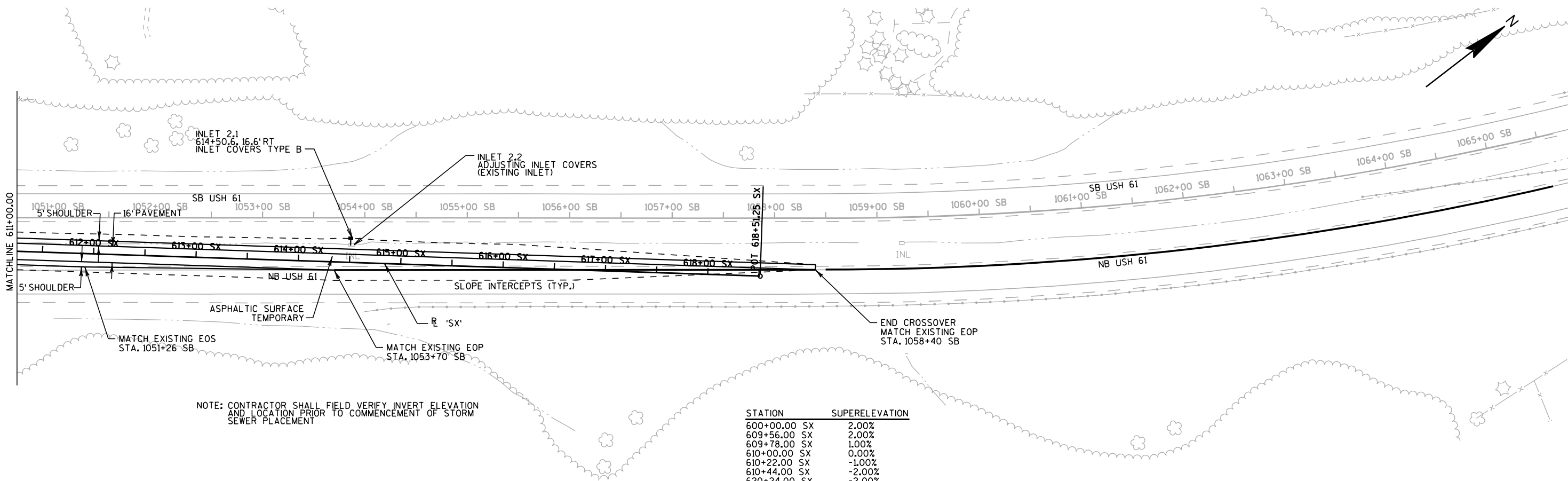
PROJECT NO: 1200-01-04	HWY: WI 35	COUNTY: GRANT	PLAN AND PROFILE WI 35	SHEET	E
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BENCHMARK TABLE			
NO.	STATION	DESCRIPTION	ELEVATION
1	1107+05.56 SB	ALUMINUM DISK ON BEAM GUARD	896.89

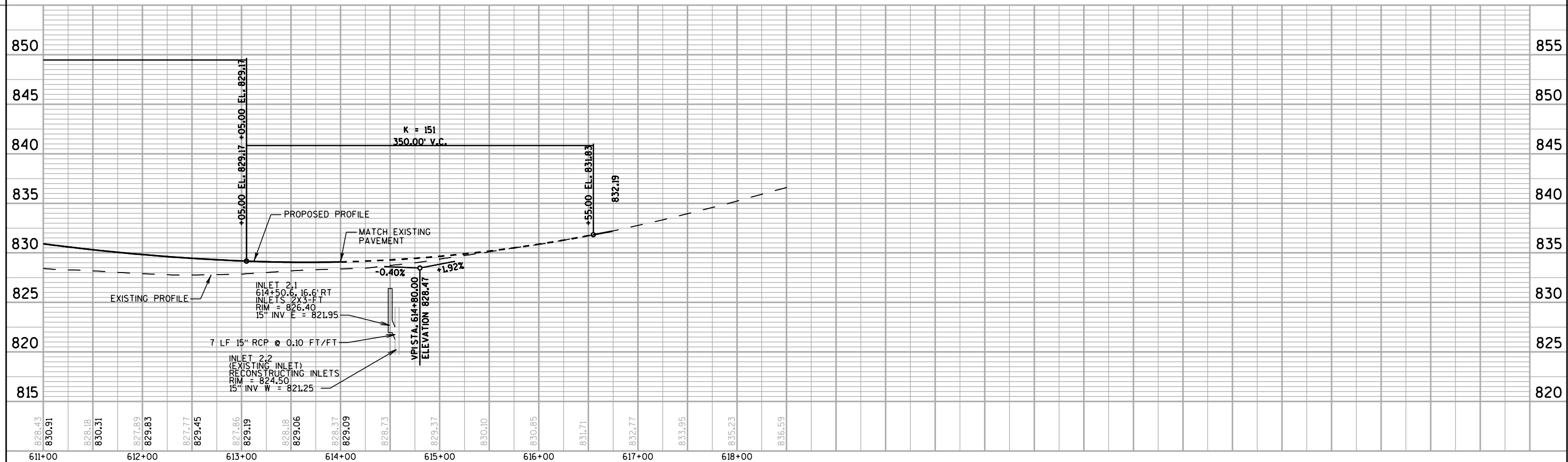




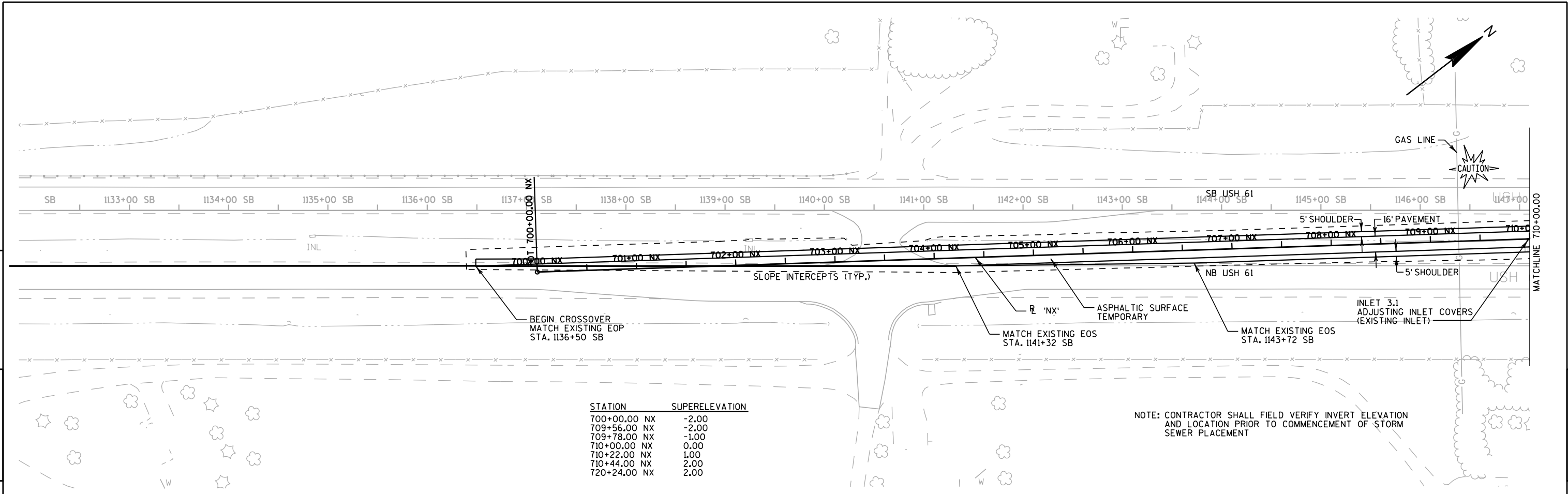
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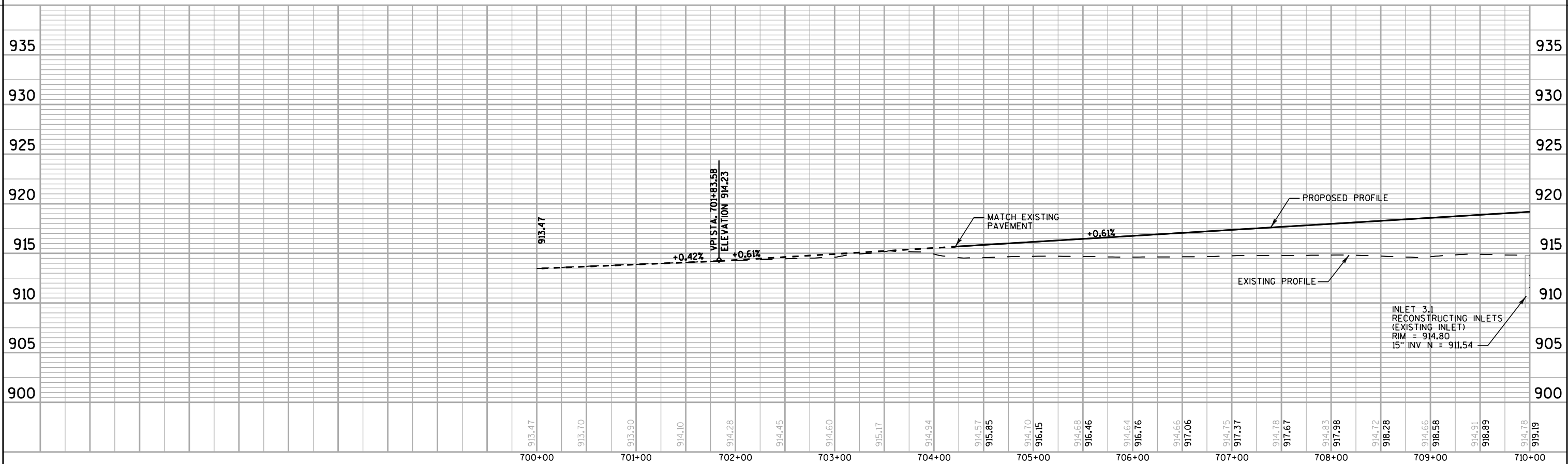
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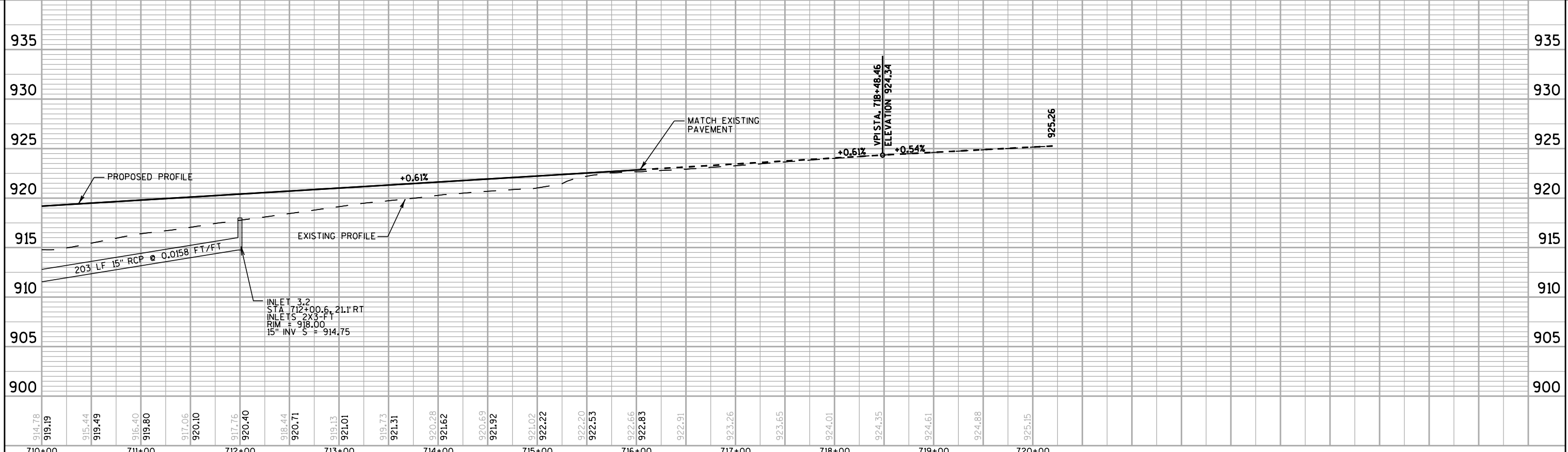
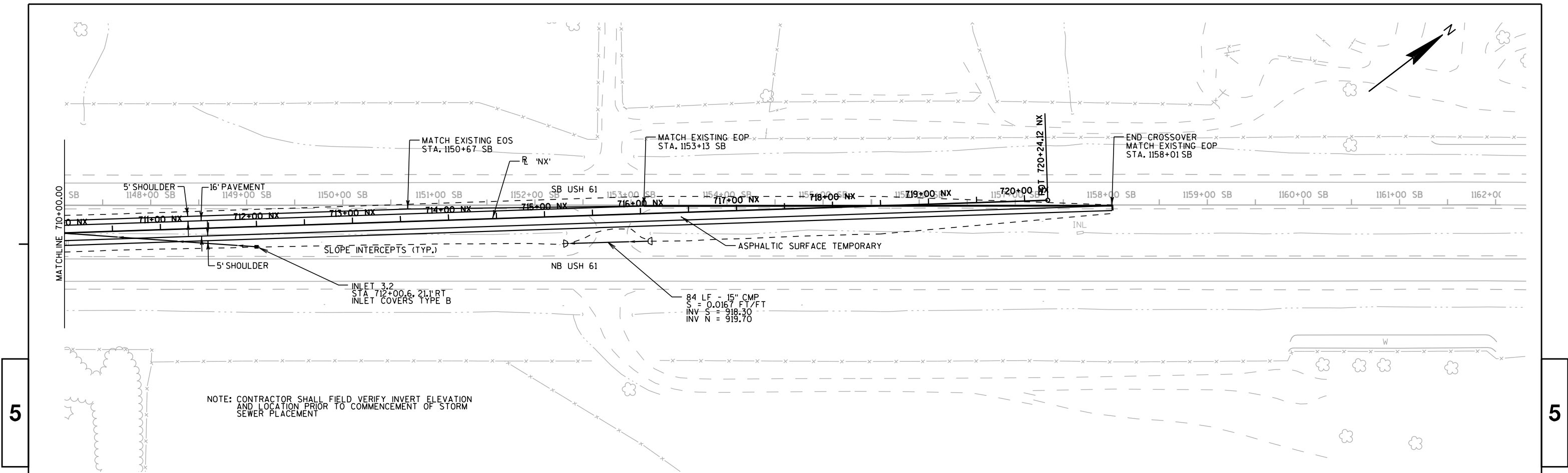


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5



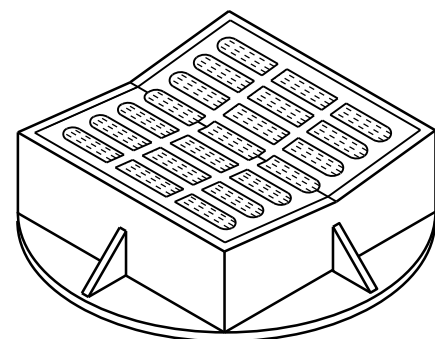
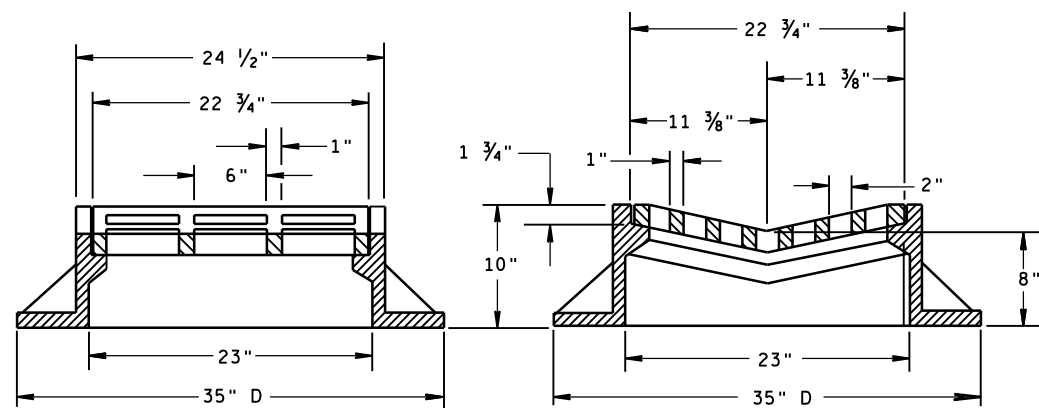


Standard Detail Drawing List

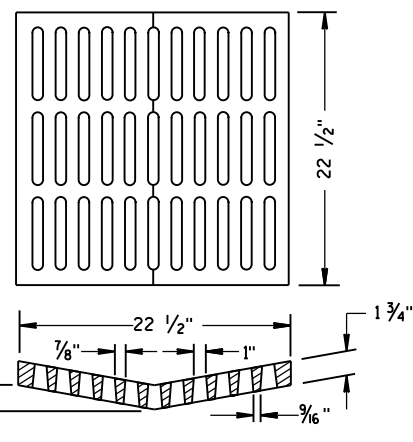
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
11B02-02	CONCRETE MEDIAN NOSE
12A03-10	NAME PLATE (STRUCTURES)
13A03-05	CONCRETE PAVEMENT SHOULDERS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C04-16	URBAN NON-DOWELED CONCRETE PAVEMENT
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-01A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-01B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-01C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15A02-08	DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C11-05	FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES

Standard Detail Drawing List

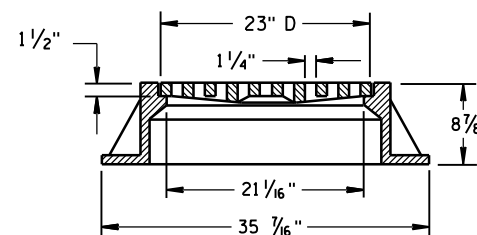
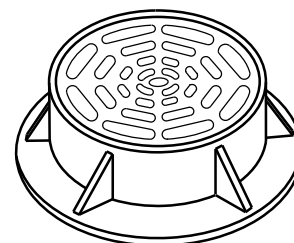
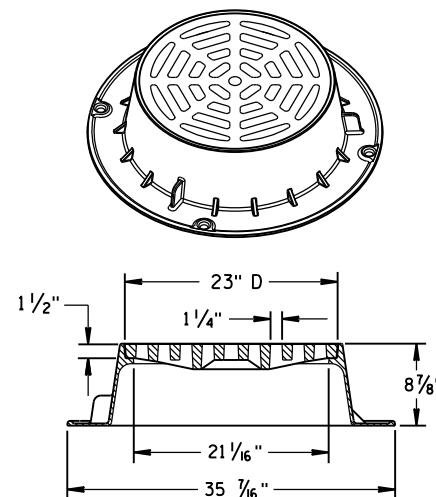
15C19-02C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15D03-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D05-03	TRAFFIC CONTROL, SINGLE LANE CROSSOVER ENTRANCE WITH BARRIER
15D06-03	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D10-03	TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT WITH BARRIER
15D11-04	TRAFFIC CONTROL, SINGLE LANE CROSSOVER
15D12-03	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D33-03	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



TYPE "B"

ALTERNATIVE GRATE FOR
TYPE "B" COVER

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



TYPE "C"

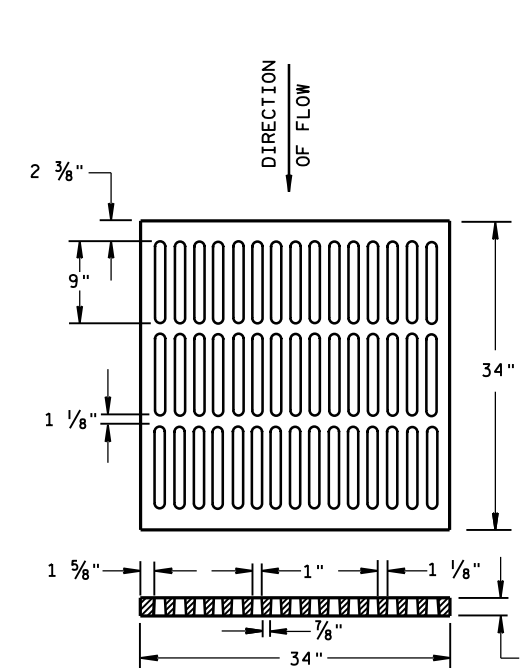
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

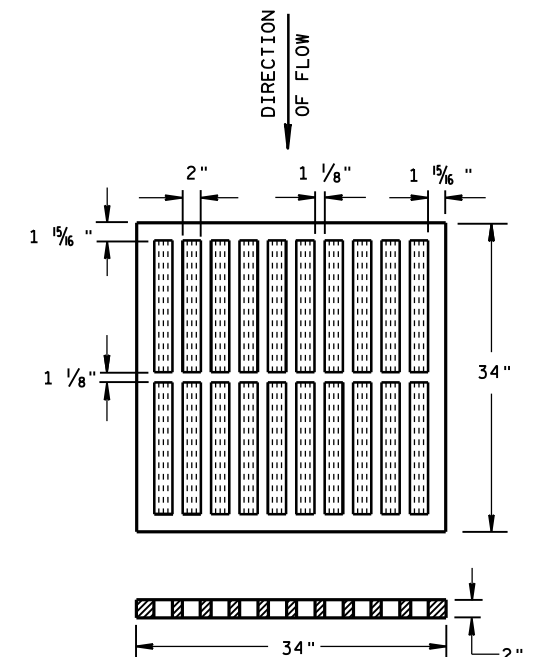
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



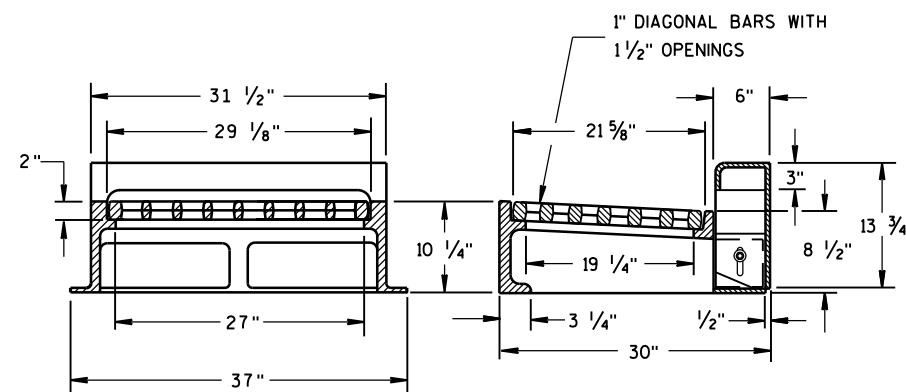
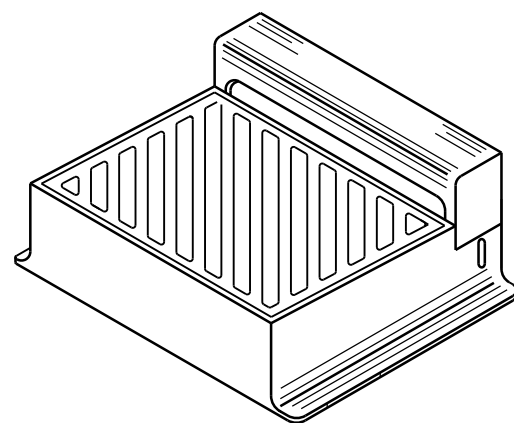
ALTERNATIVE TYPE "MS"

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



TYPE "MS"

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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

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

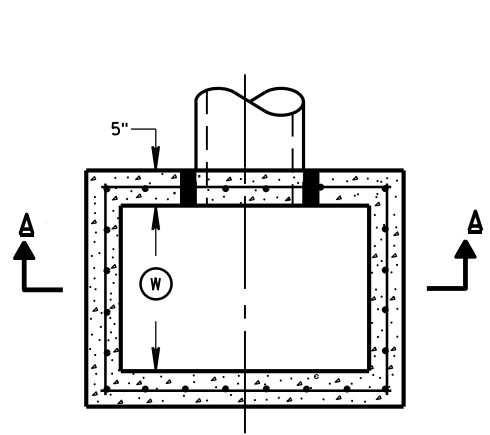
DIRECTION
OF FLOW

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

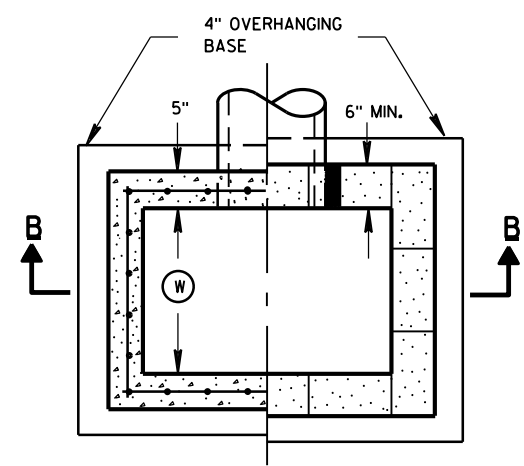
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 11/27/2013
 DATE
 FHWA

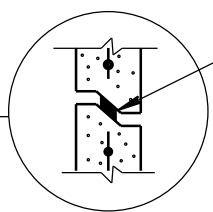
/S/ Jerry H. Zogg
 ROADWAY STANDARDS DEVELOPMENT
 ENGINEER



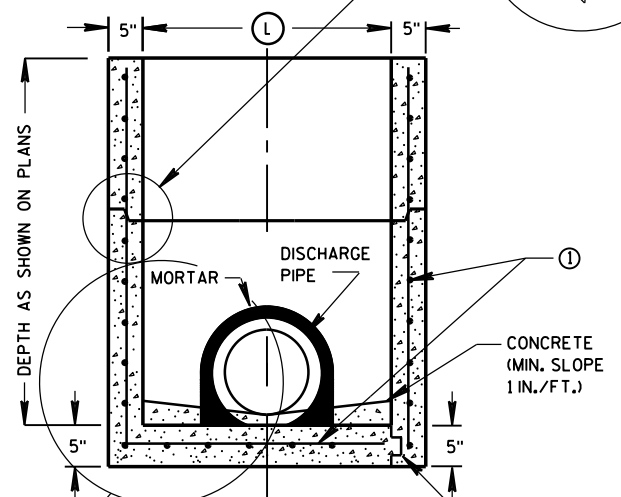
PLAN VIEW



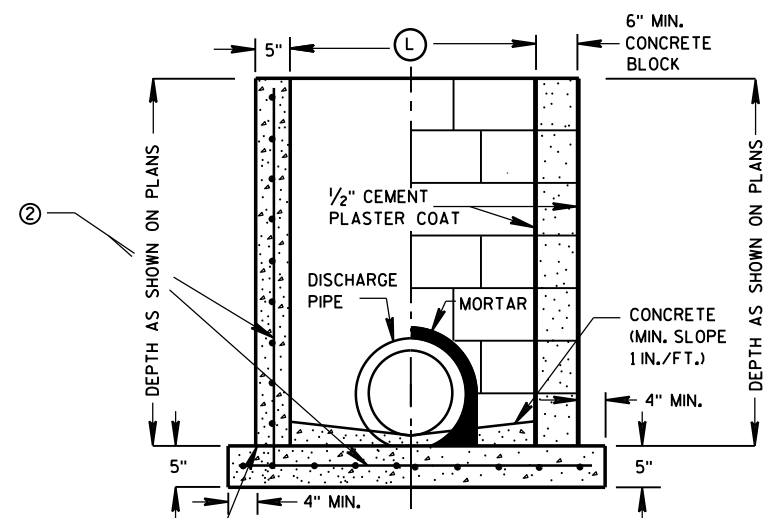
PLAN VIEW



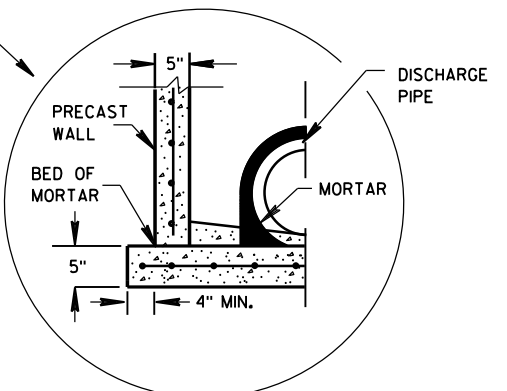
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

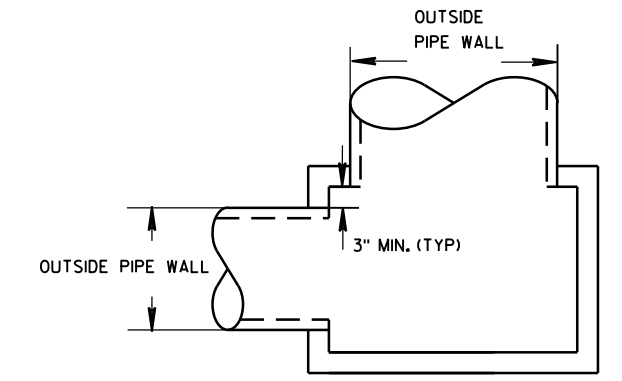
- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH ① (FT)	LENGTH ② (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

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

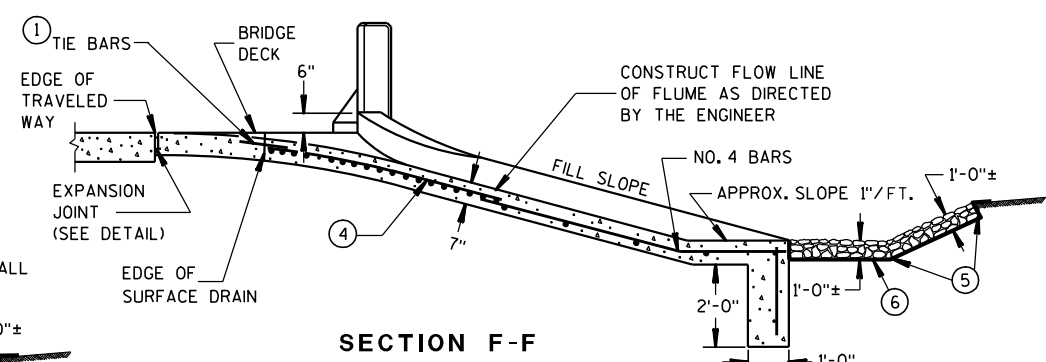


DETAIL "A"

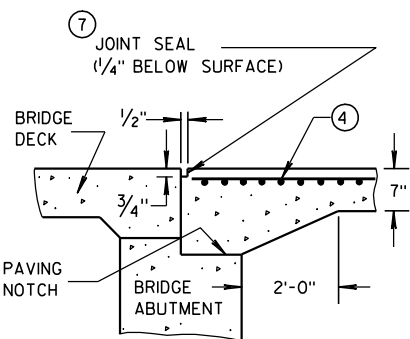
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

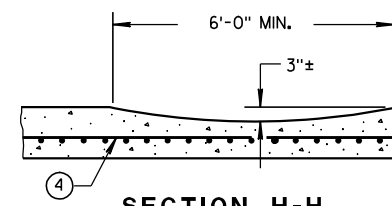


SECTION F-F

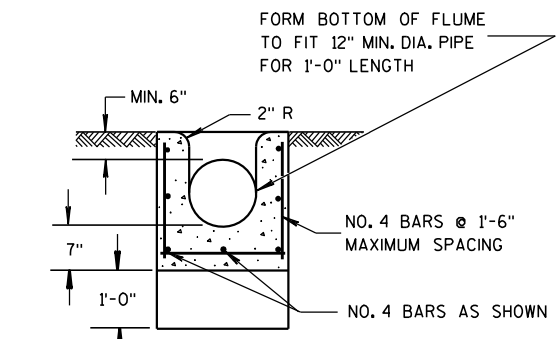


EXPANSION JOINT DETAIL

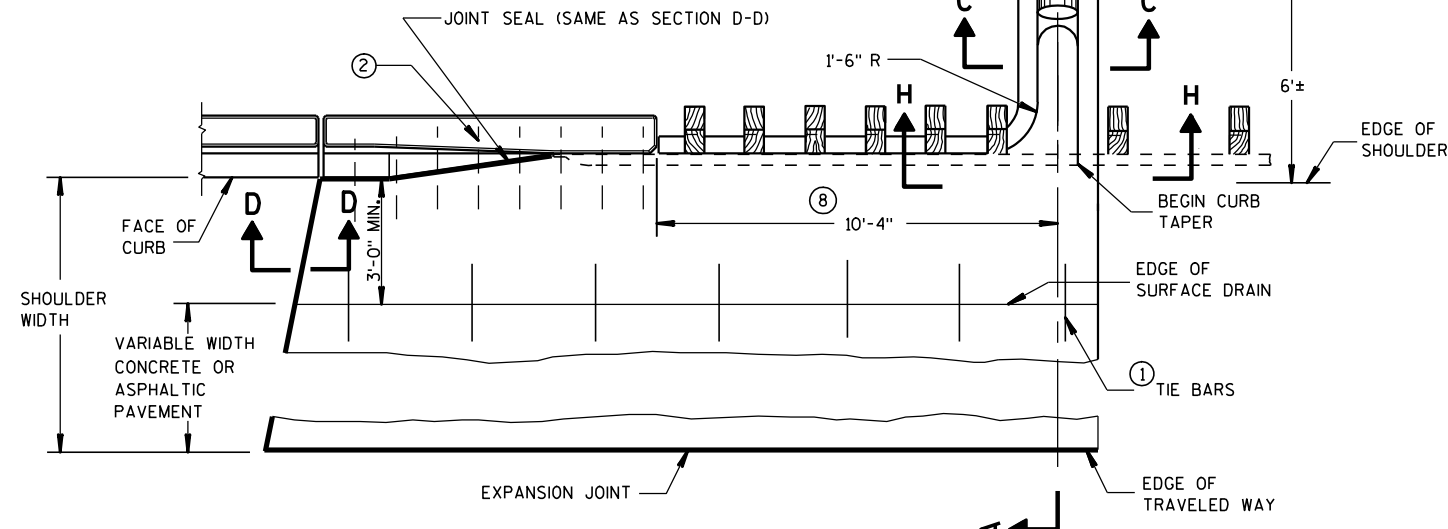
SECTION H-H



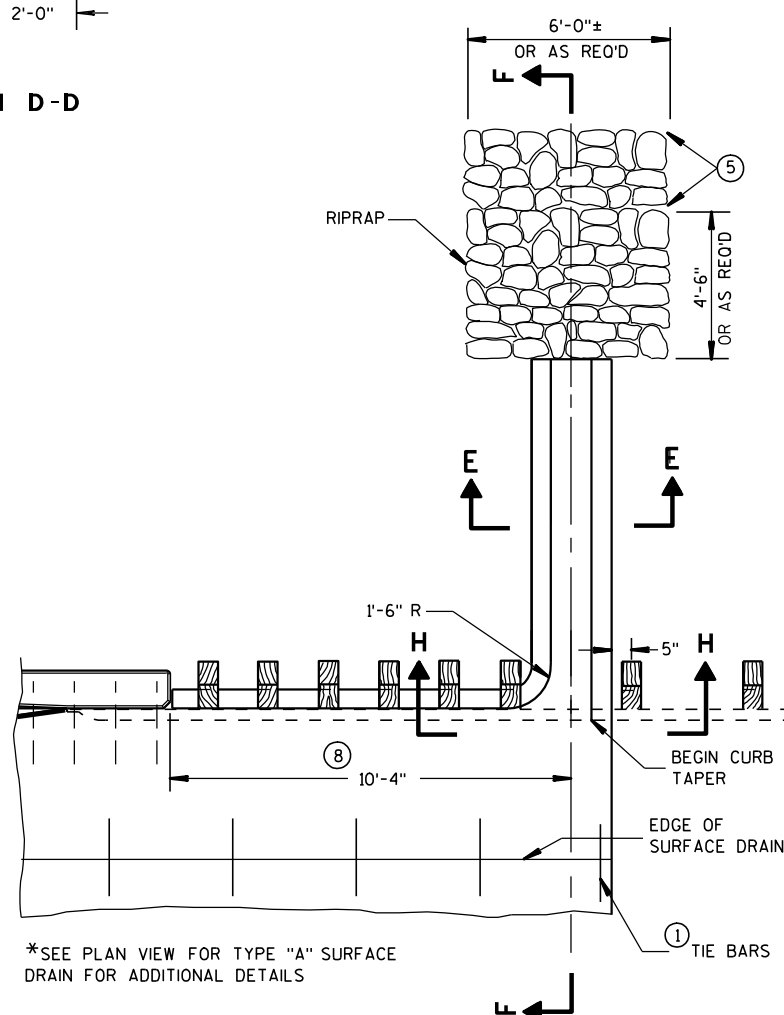
SECTION D-D



SECTION C-C



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



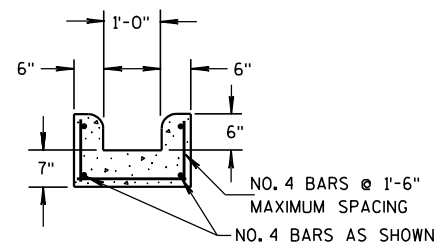
* PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

GENERAL NOTES

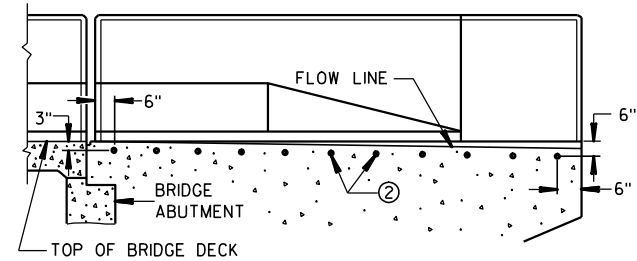
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE FABRIC, TYPE 'R'
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



SECTION E-E



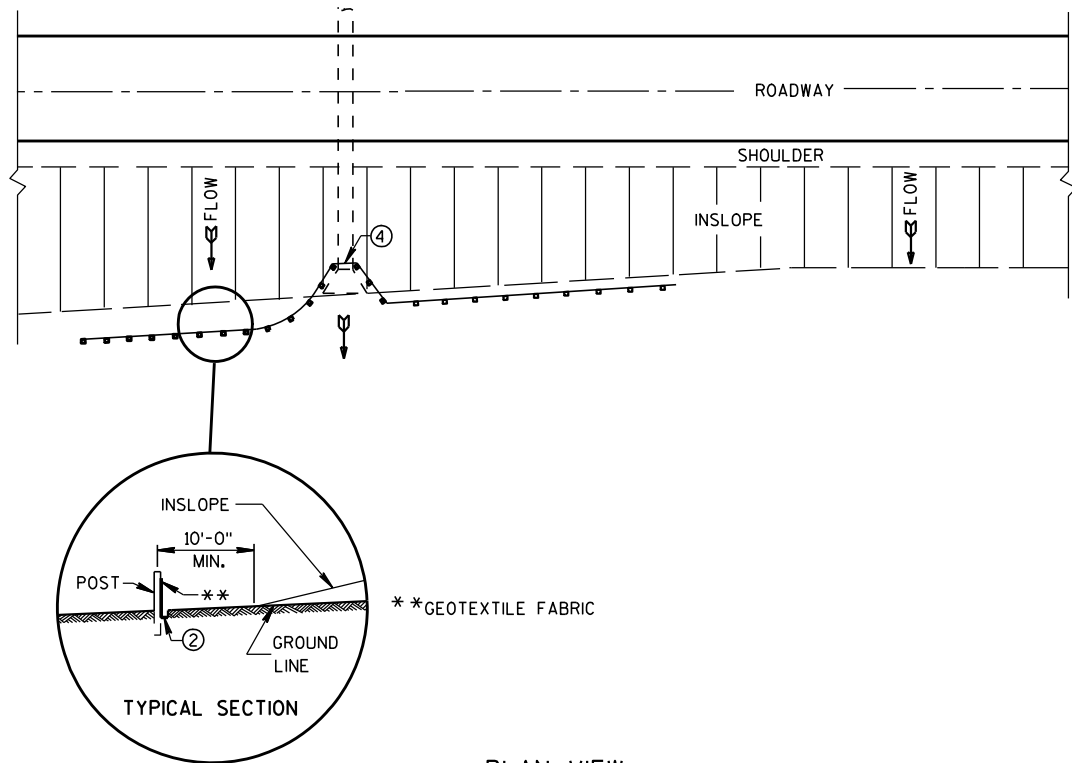
LOCATION OF TIE BARS IN WINGWALL

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

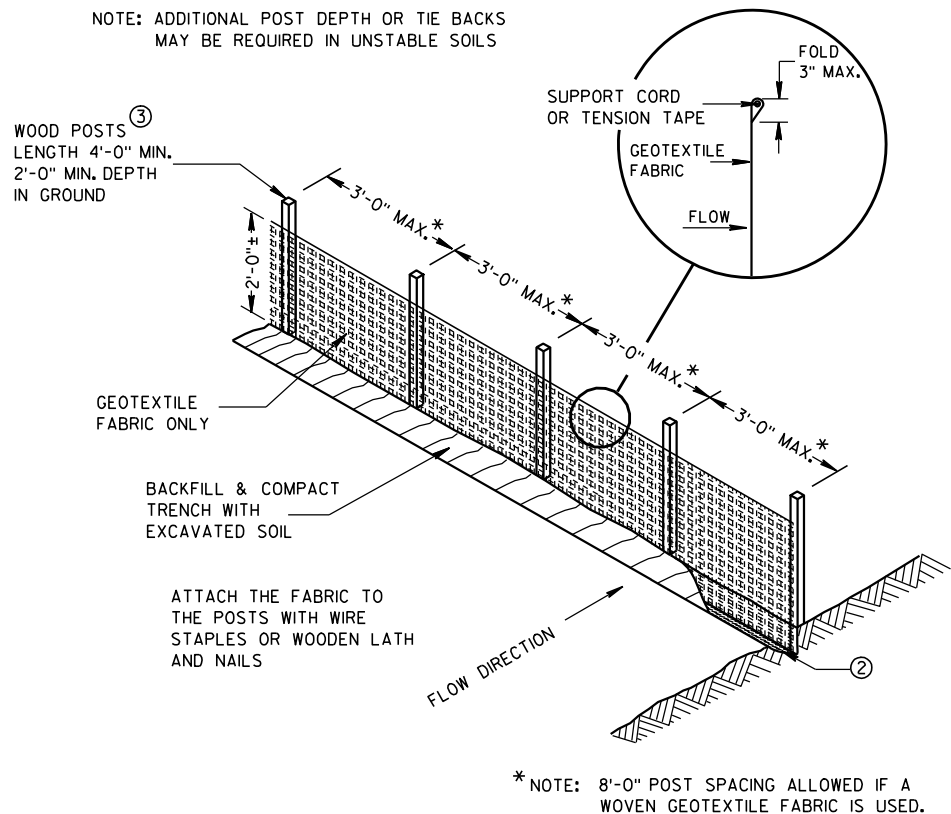
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

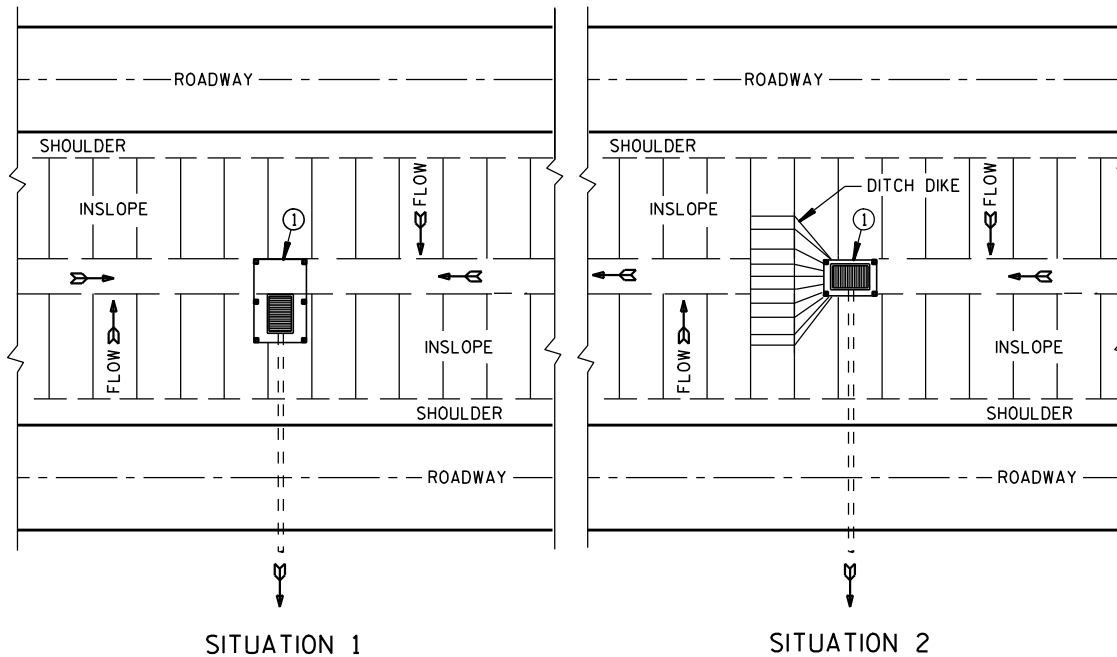
9/4/08	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT
FHWA	ENGINEER



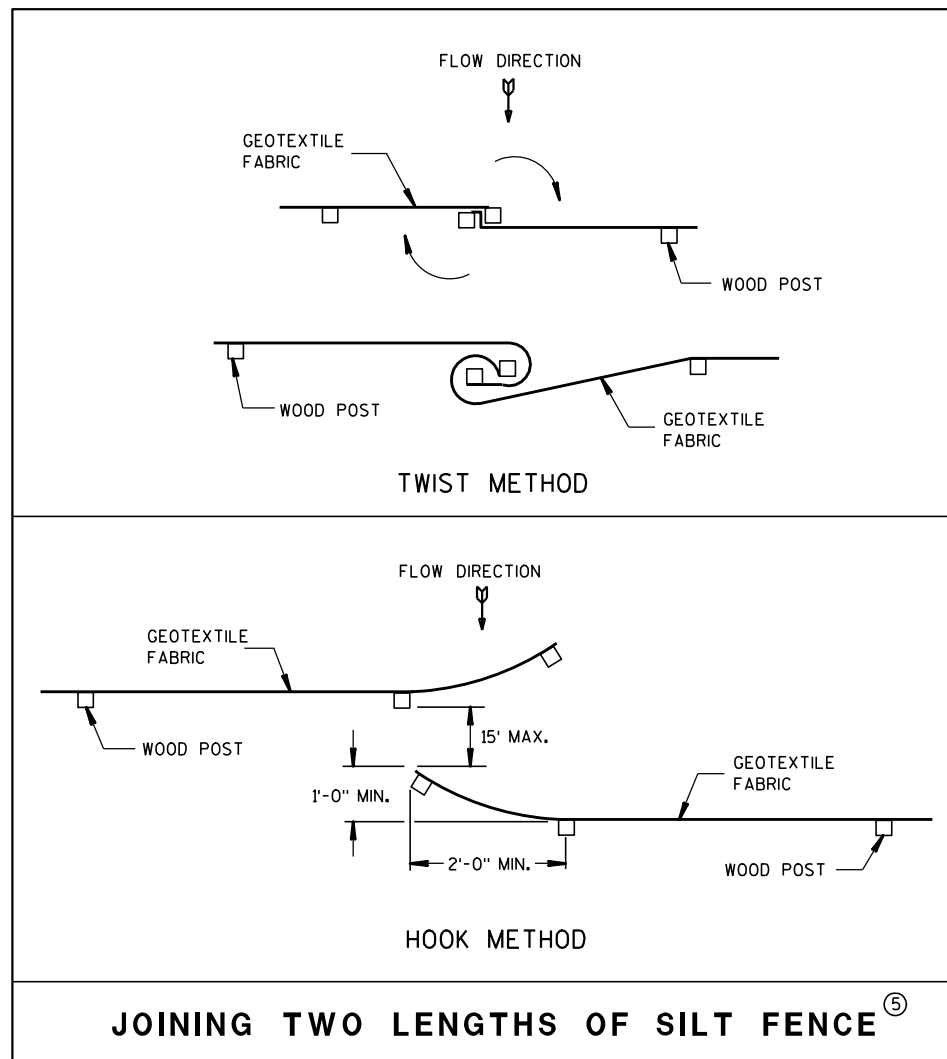
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

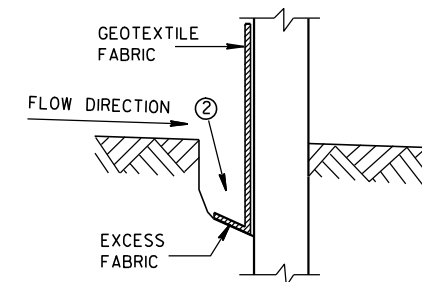


JOINING TWO LENGTHS OF SILT FENCE (5)

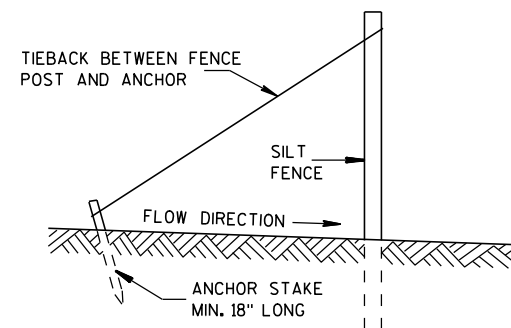
GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

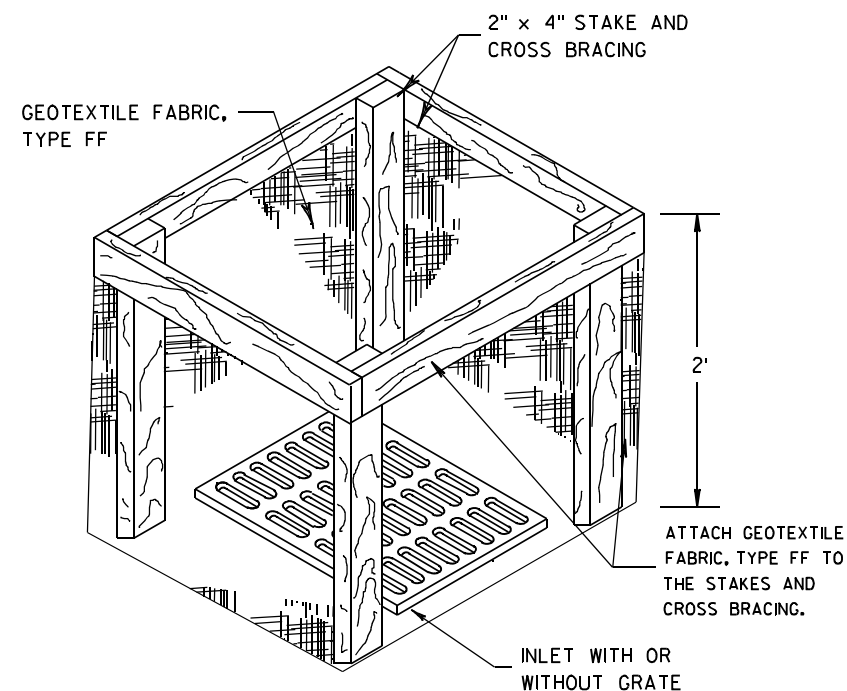
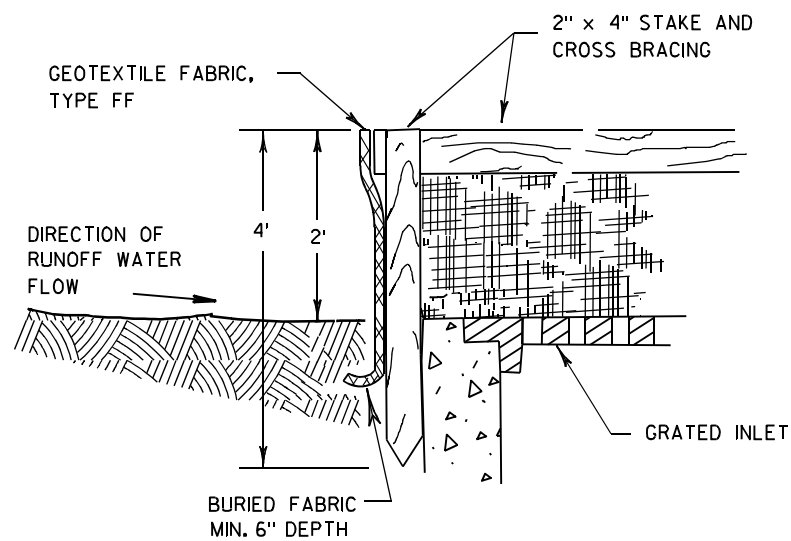


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



INLET PROTECTION, TYPE A

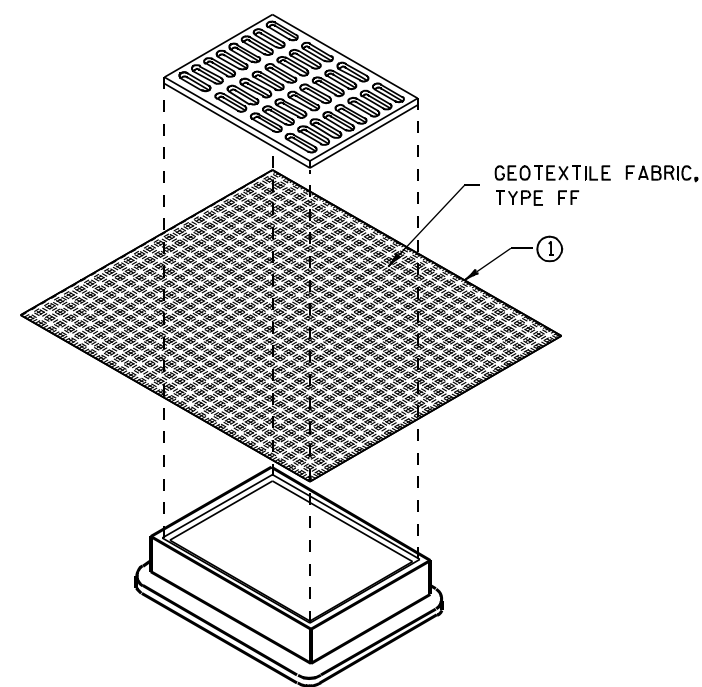
GENERAL NOTES

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

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

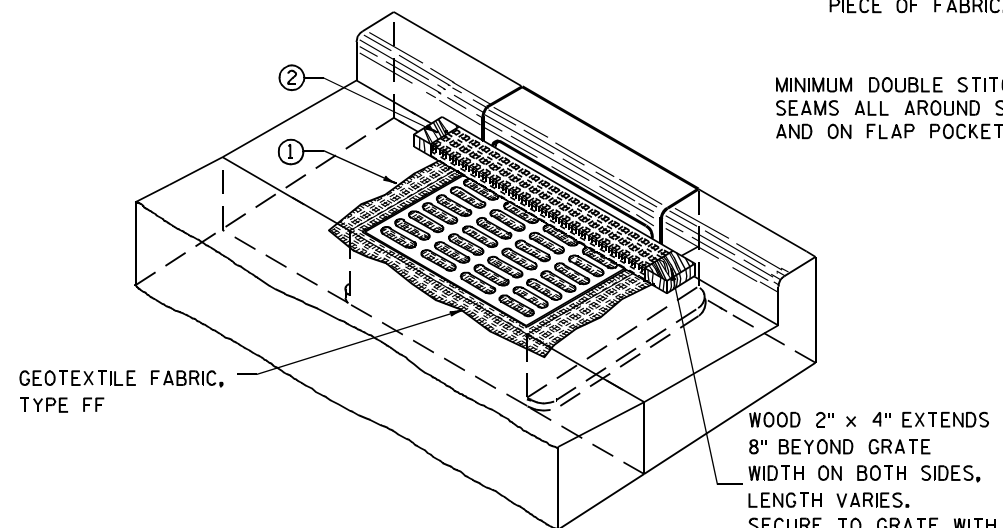
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

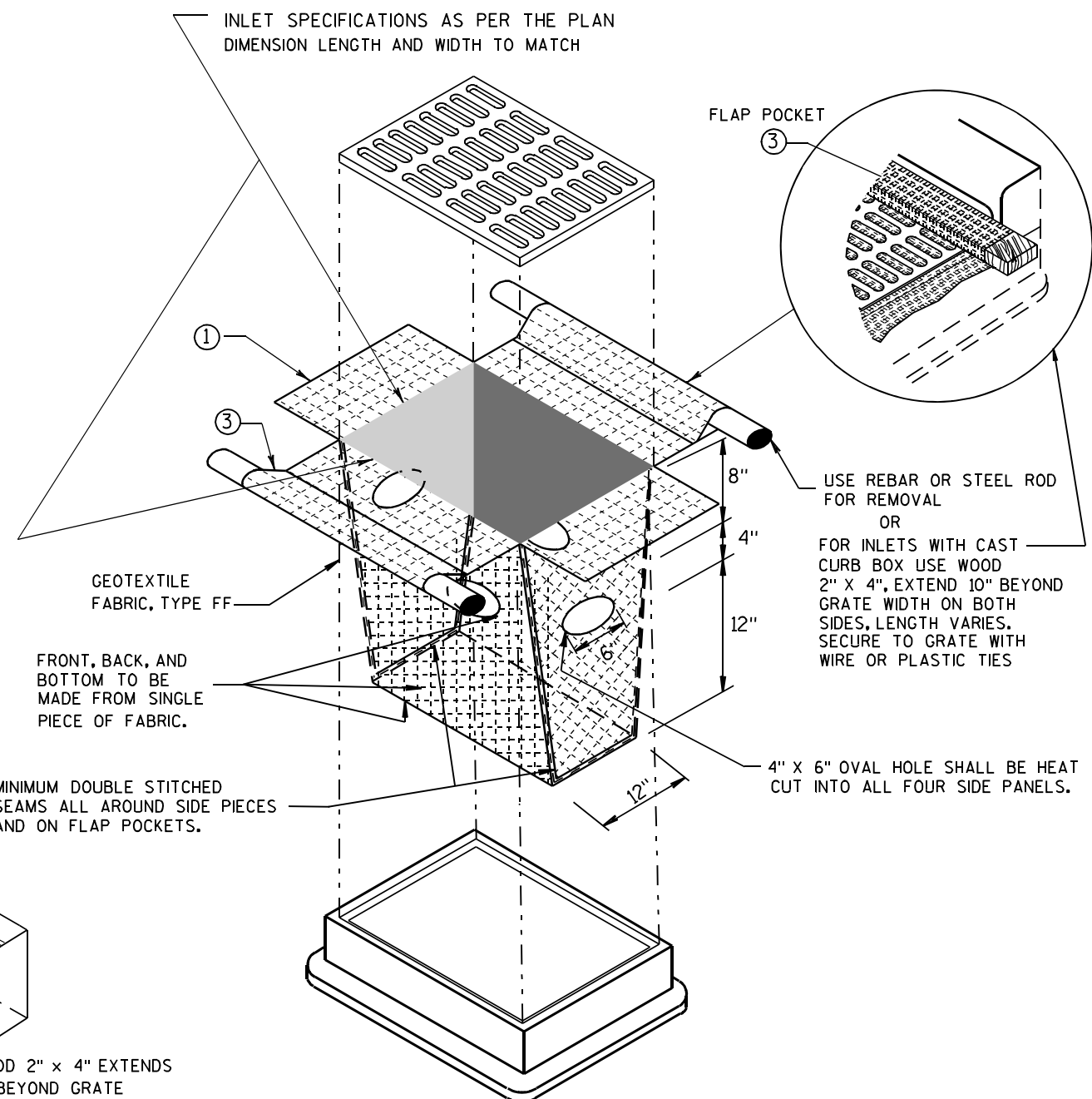
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



INLET PROTECTION, TYPE D

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

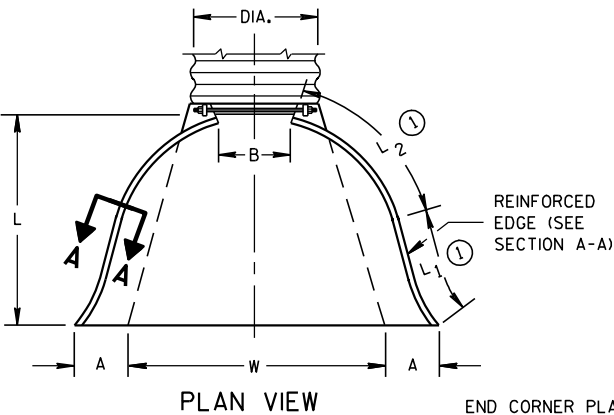
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

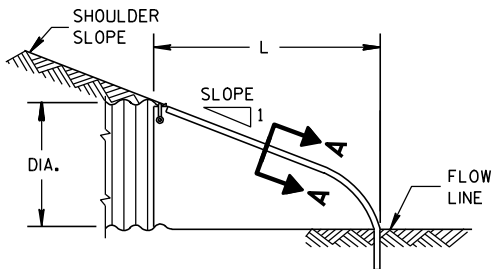
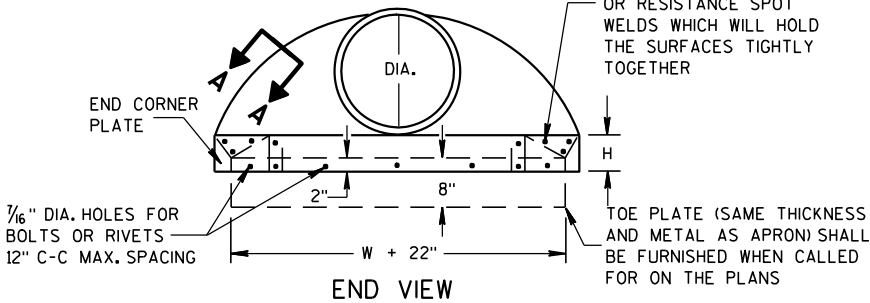
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1		1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1		1 Pc.
18	.064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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



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

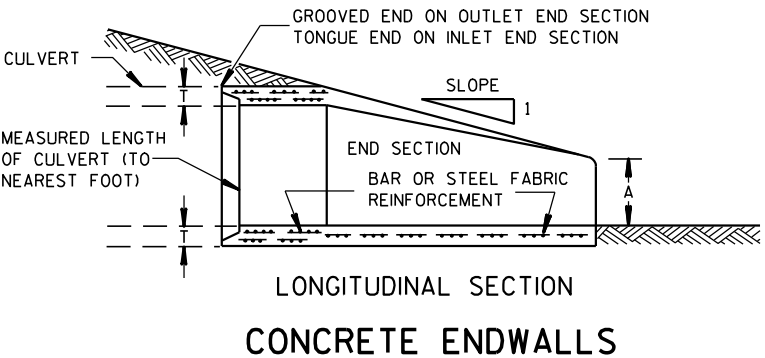
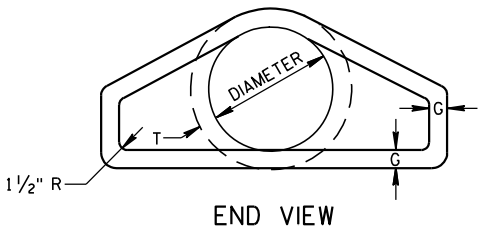
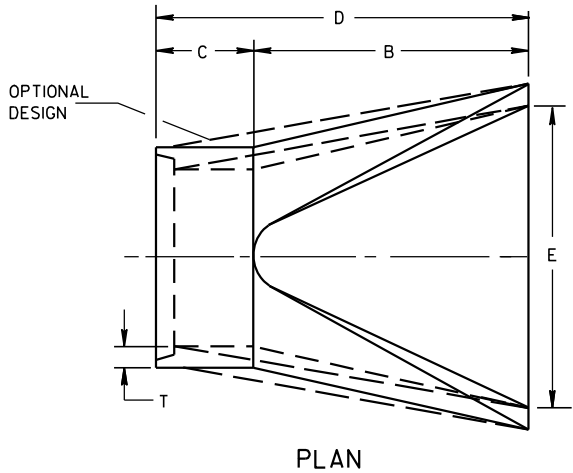
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

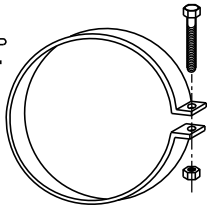
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9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

* MINIMUM
** MAXIMUM

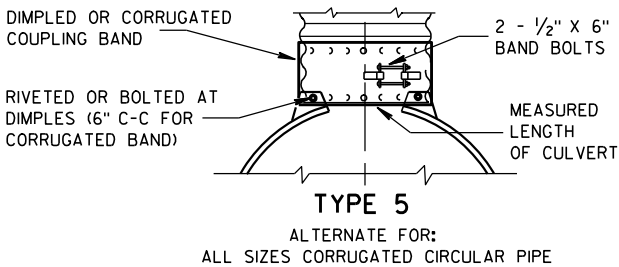
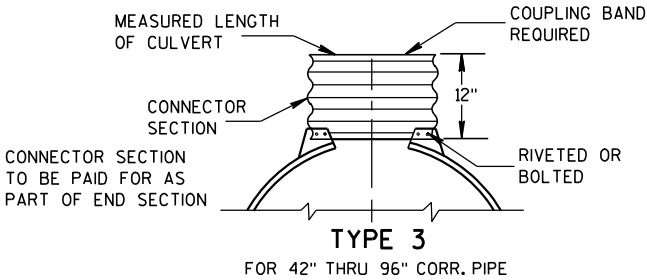
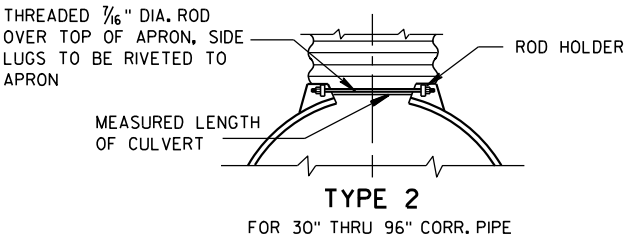
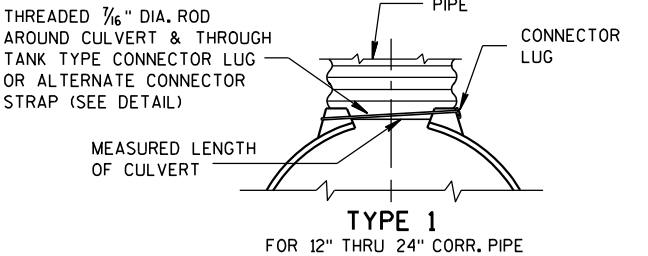


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



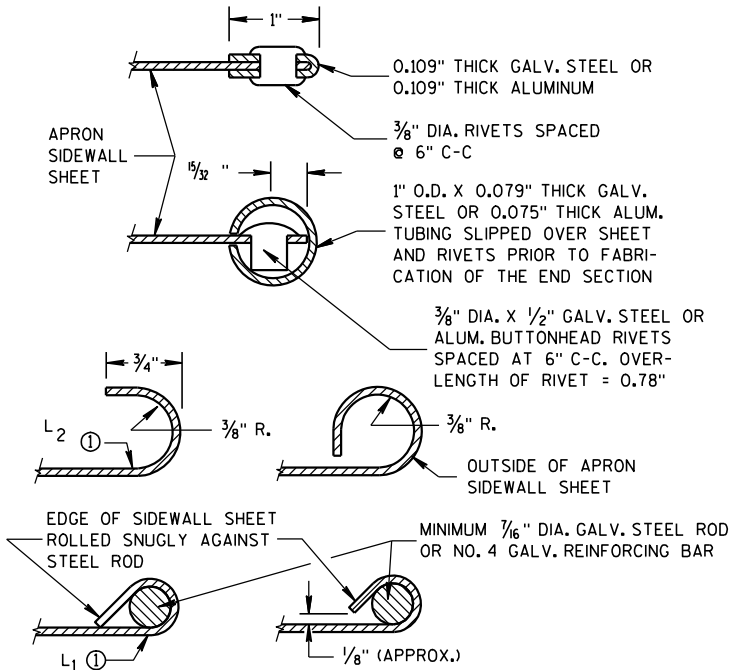
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

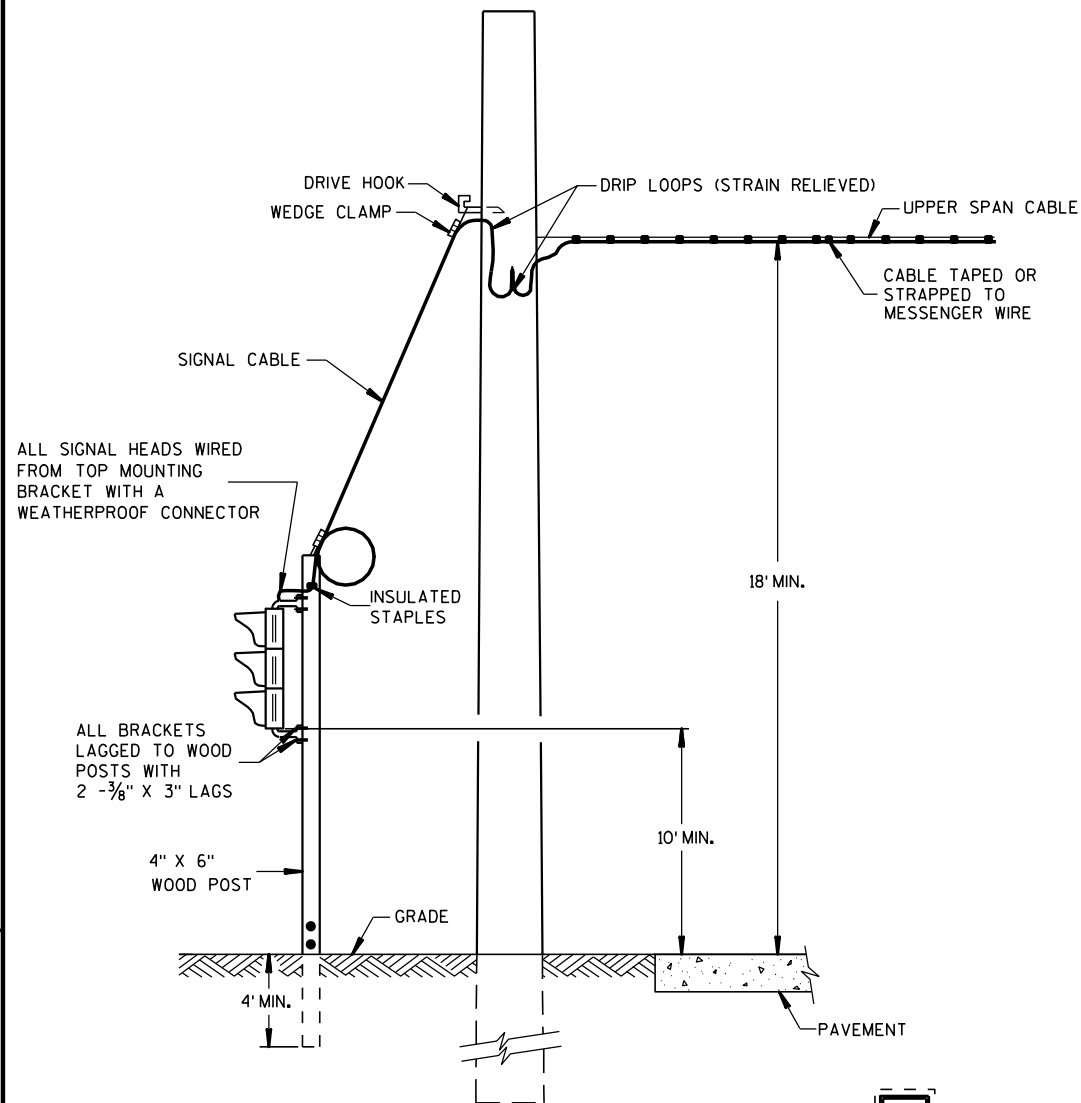
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

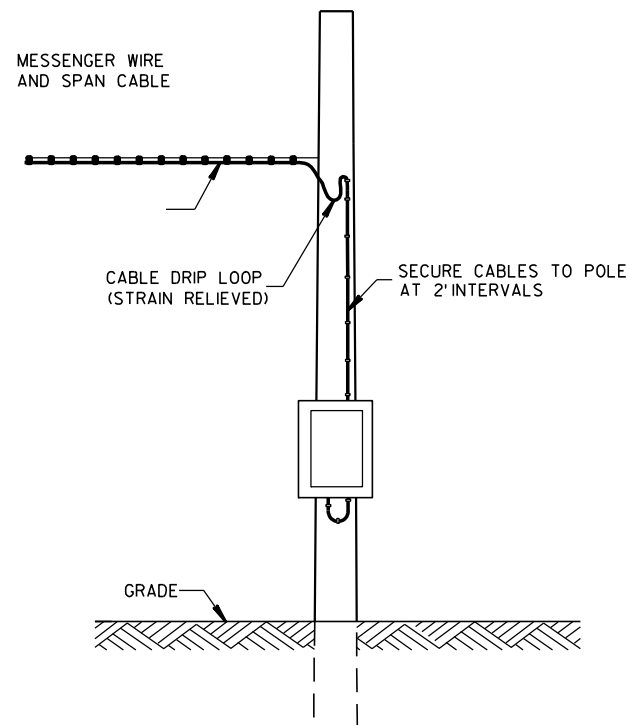


**TYPICAL DROP
TO TRAFFIC SIGNAL FACE**

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT

**NOTE: OFFSET MEASURED FROM OUTER EDGE OF
OUTSIDE THRU LANE.

MINIMUM POLE LENGTHS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	Ⅴ	5 FEET
30 FEET	Ⅴ	6 FEET
35 FEET	Ⅳ	7 FEET
40 FEET	Ⅳ	8 FEET
45 FEET	Ⅳ	9 FEET



**POLE MOUNT
CABINET INSTALLATION**

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY POLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

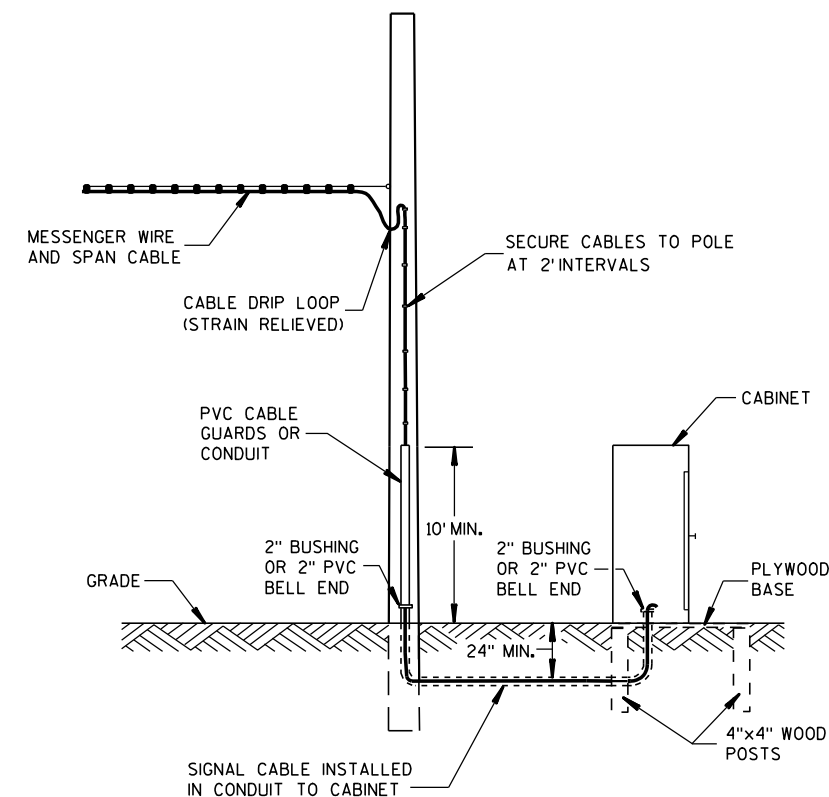
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

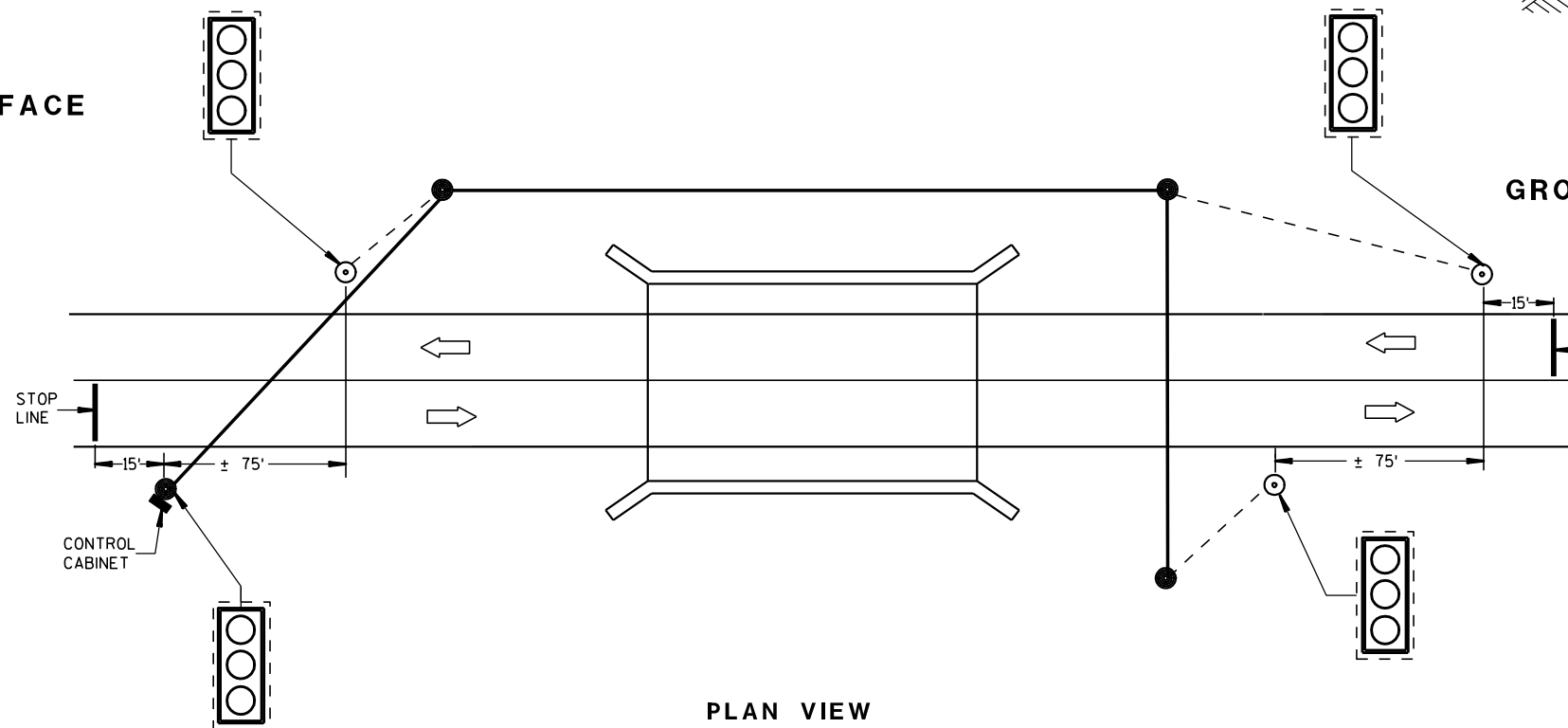
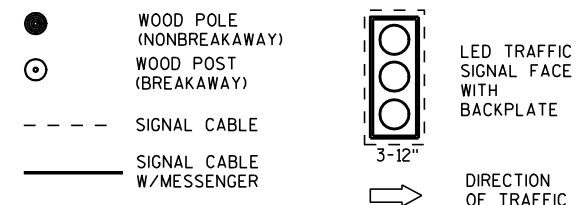
TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

LEGEND



**PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION**

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

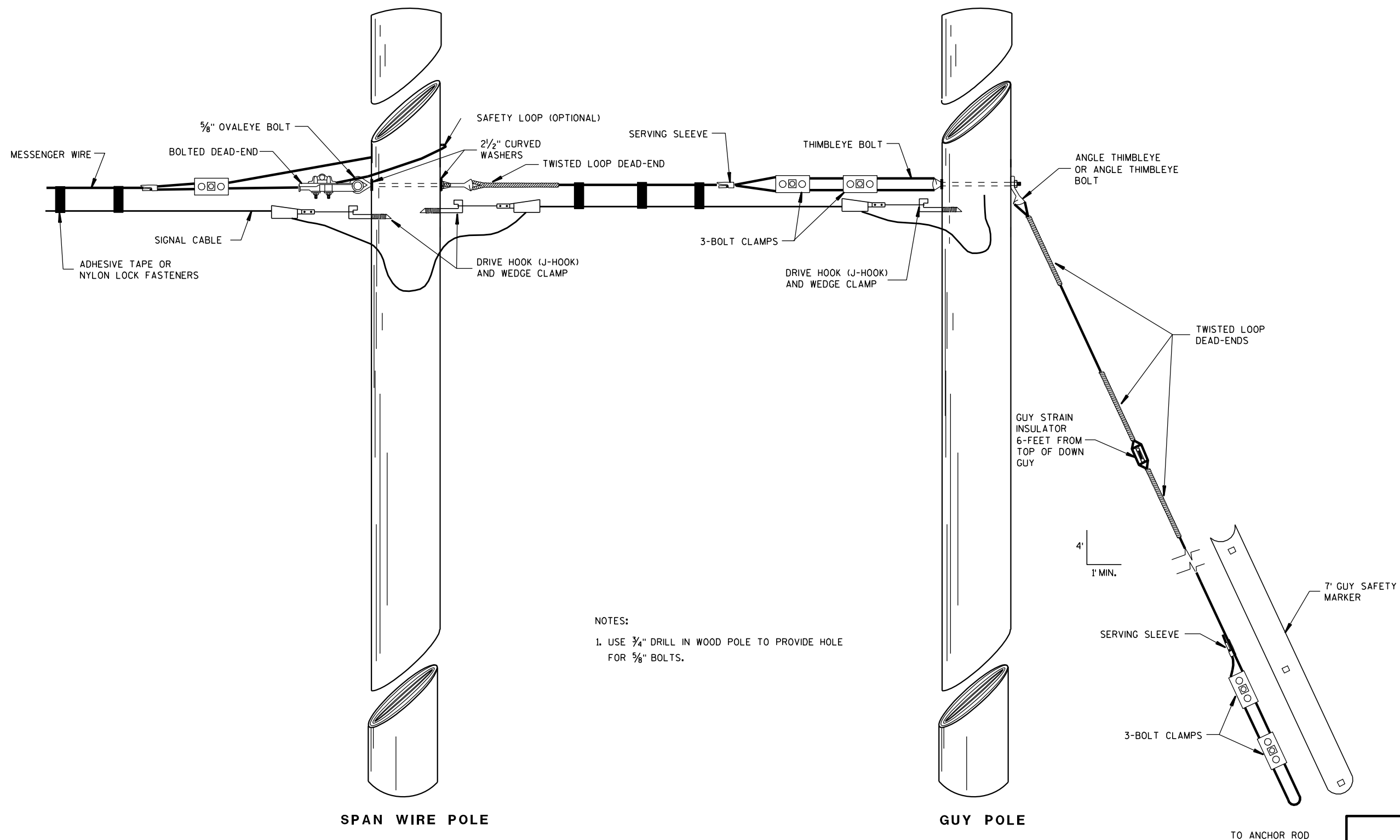
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE

/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS

FHWA



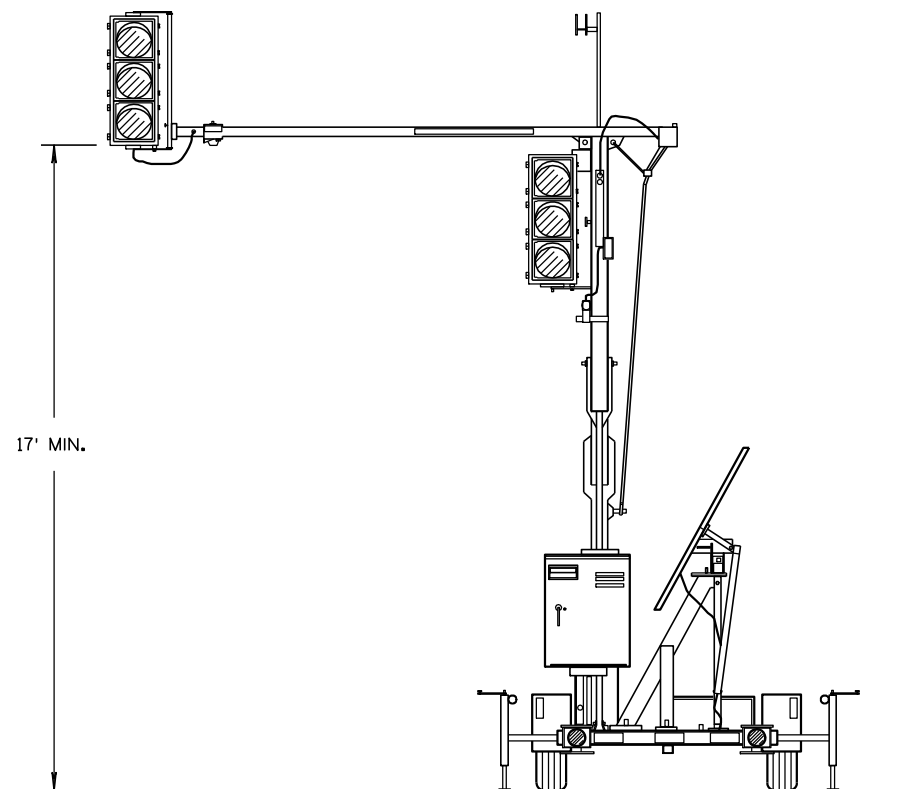
TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY
TRAFFIC SIGNAL INSTALLATIONSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS

FHWA

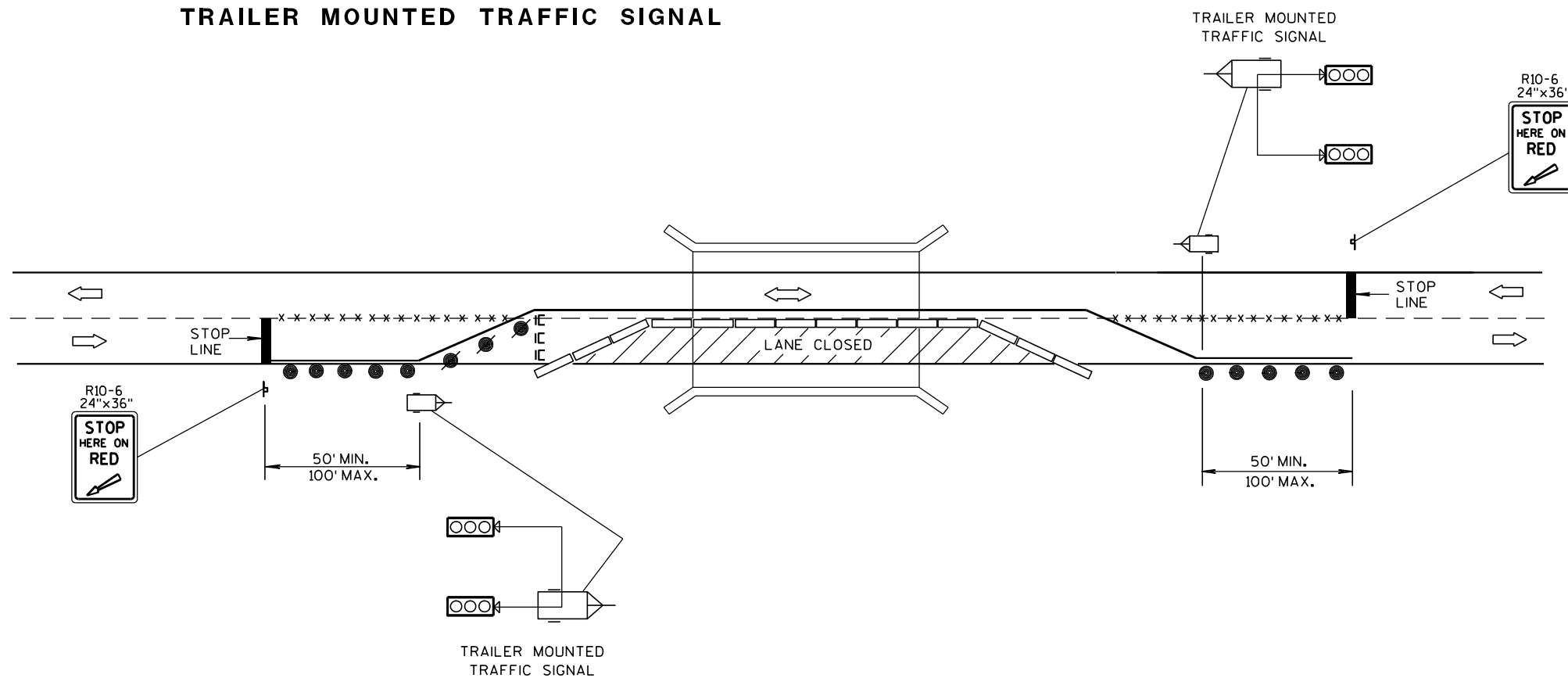


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- ⌵ POST MOUNTED SIGN
- *-x-* REMOVING PAVEMENT MARKING
- IC TYPE III BARRICADE WITH SIGN
- /● DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- ▬ TEMPORARY PRECAST CONCRETE BARRIER
- ⌵ TRAILER MOUNTED TRAFFIC SIGNAL
- ➡ DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

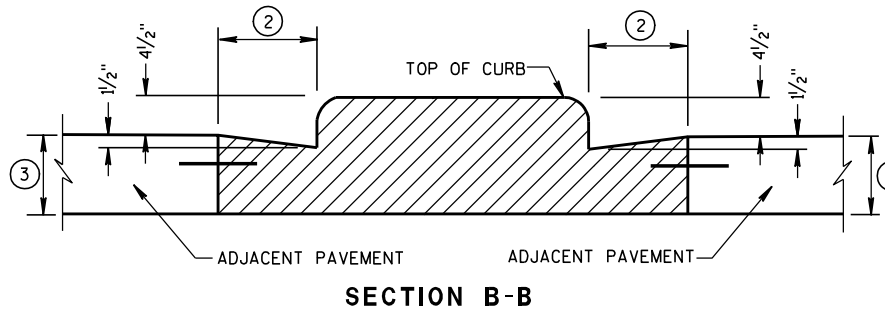
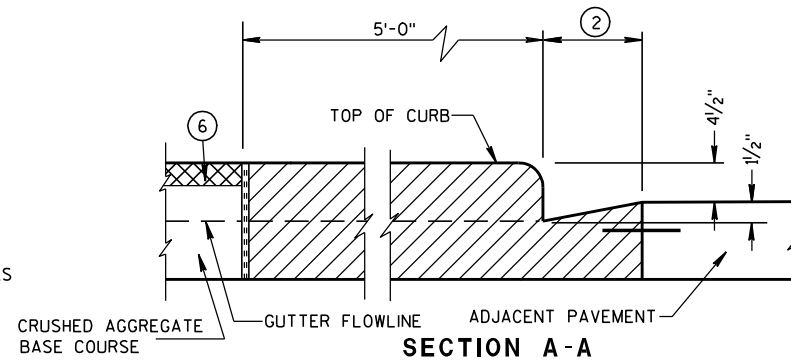
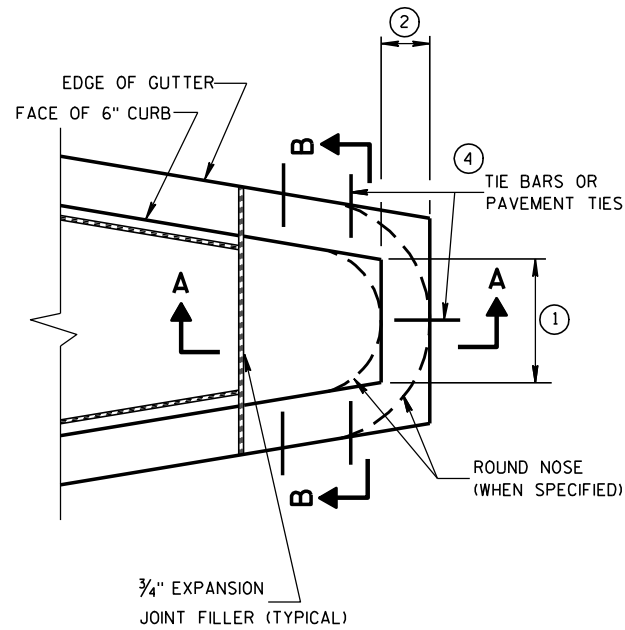
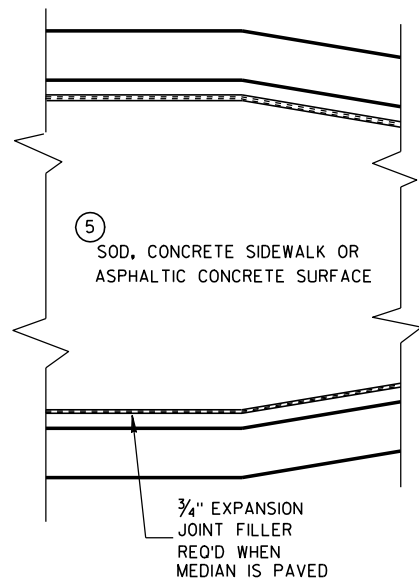
APPROVED

3/2/2011

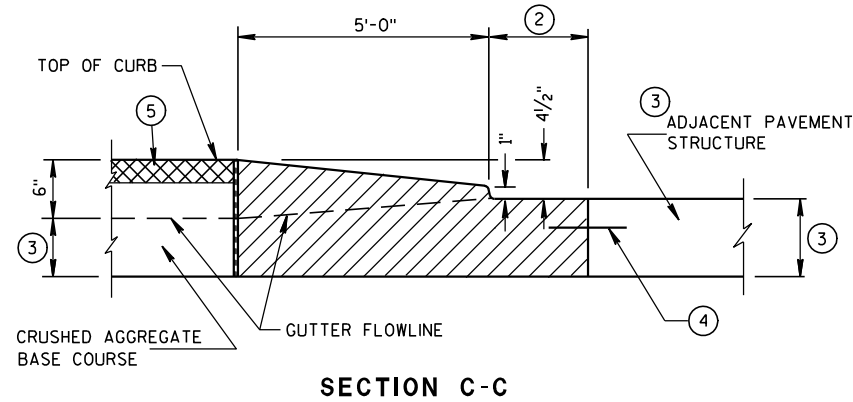
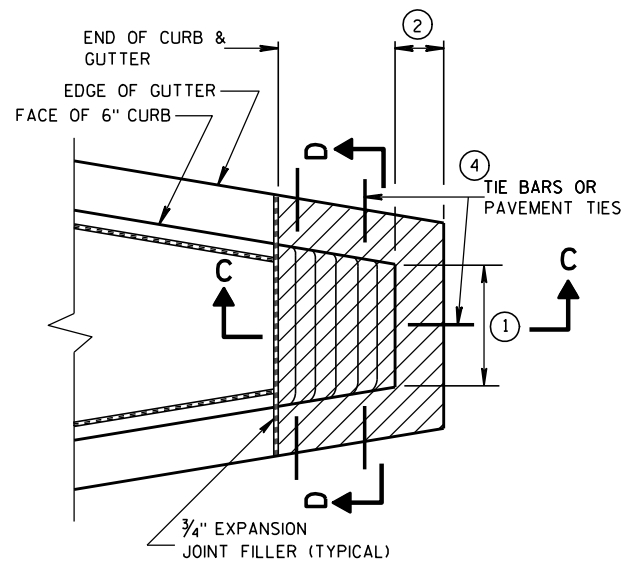
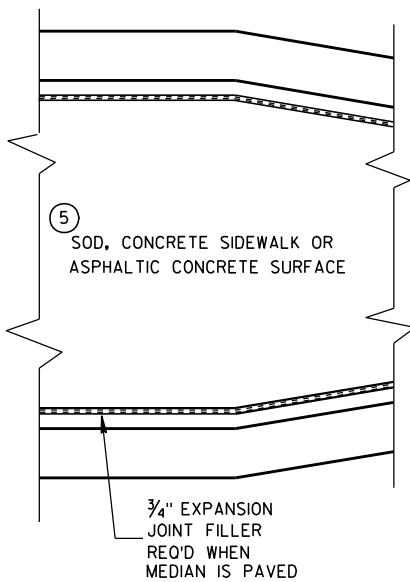
DATE

FHWA

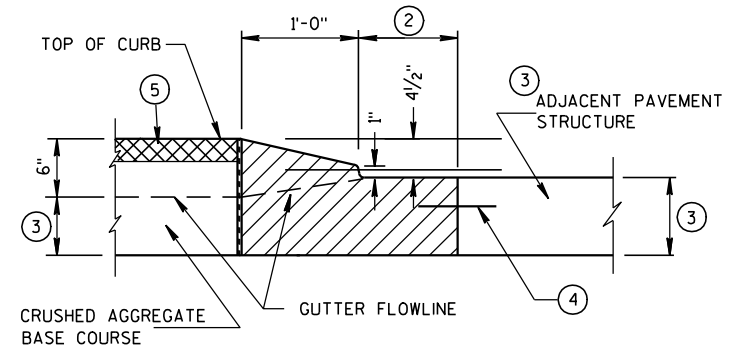
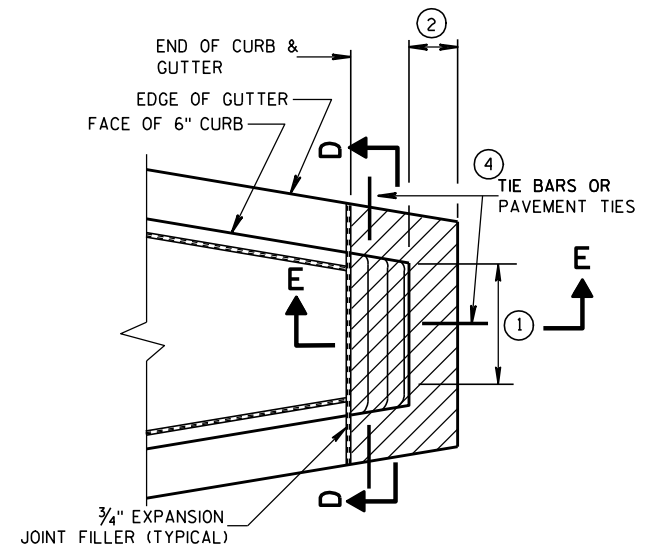
/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS



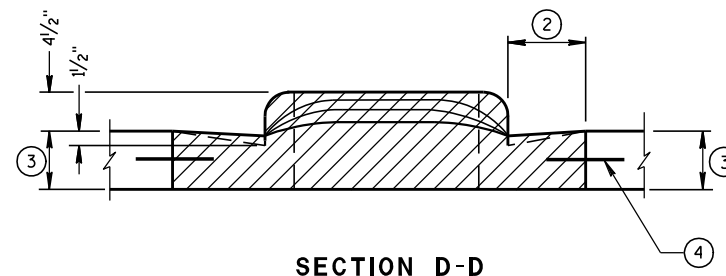
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



GENERAL NOTES

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

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
 - (1) NEW OR EXISTING CONCRETE PAVEMENT.
 - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
 - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

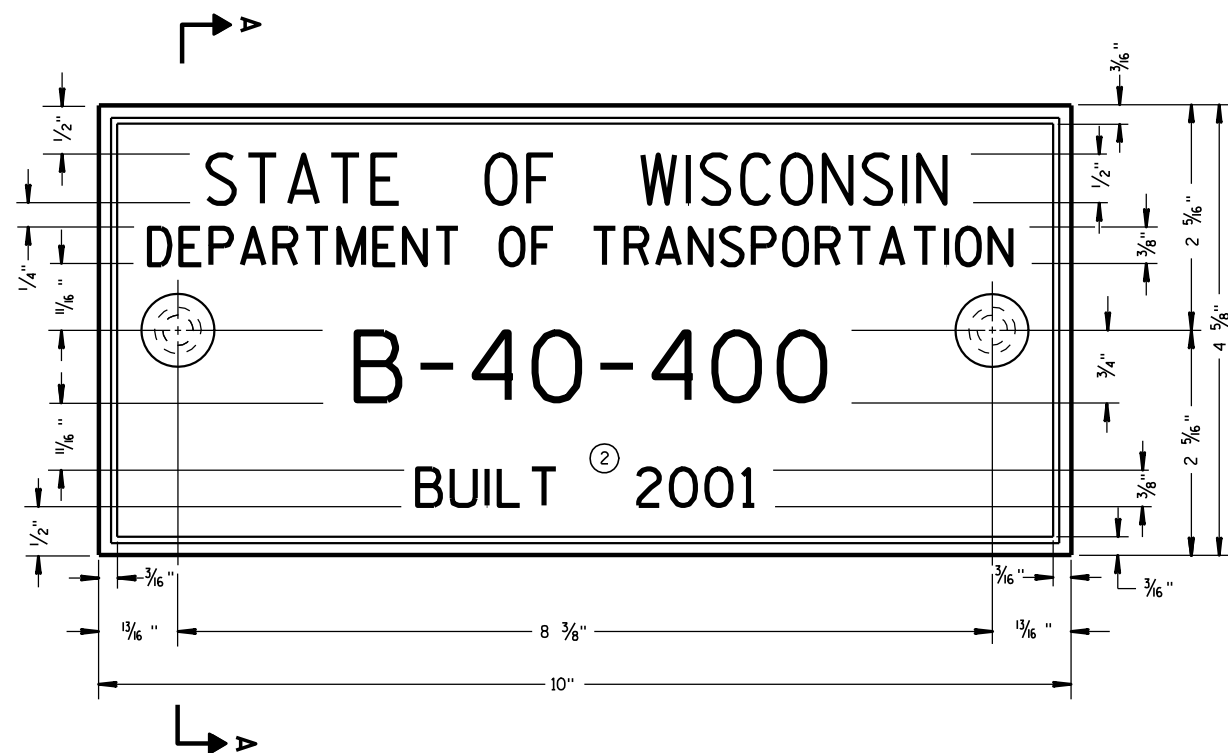
APPROVED

6/8/2006

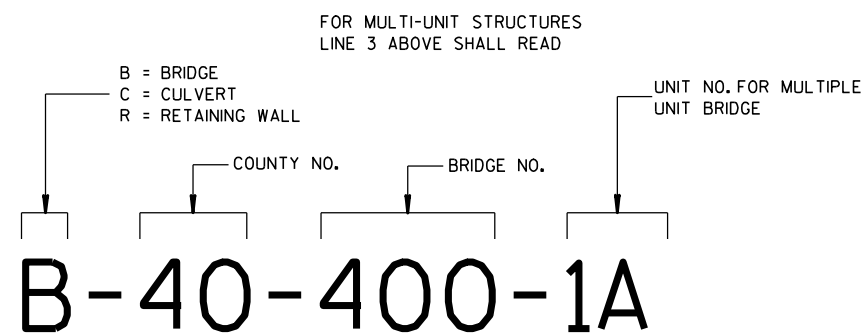
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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



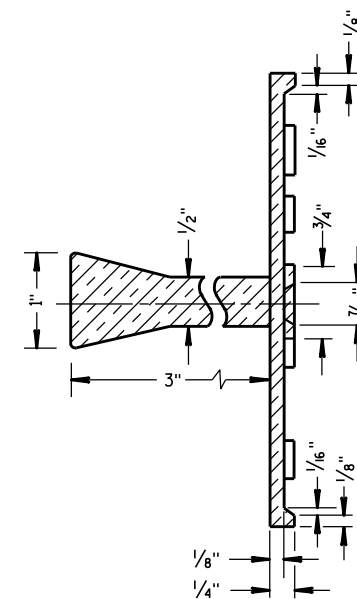
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

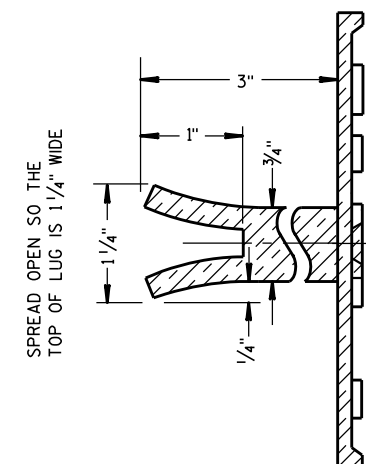
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

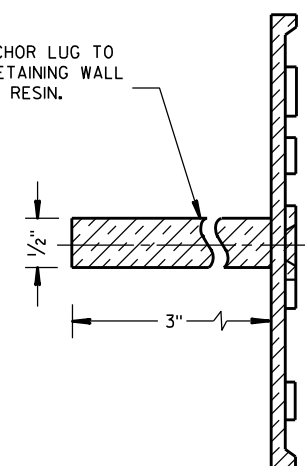


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

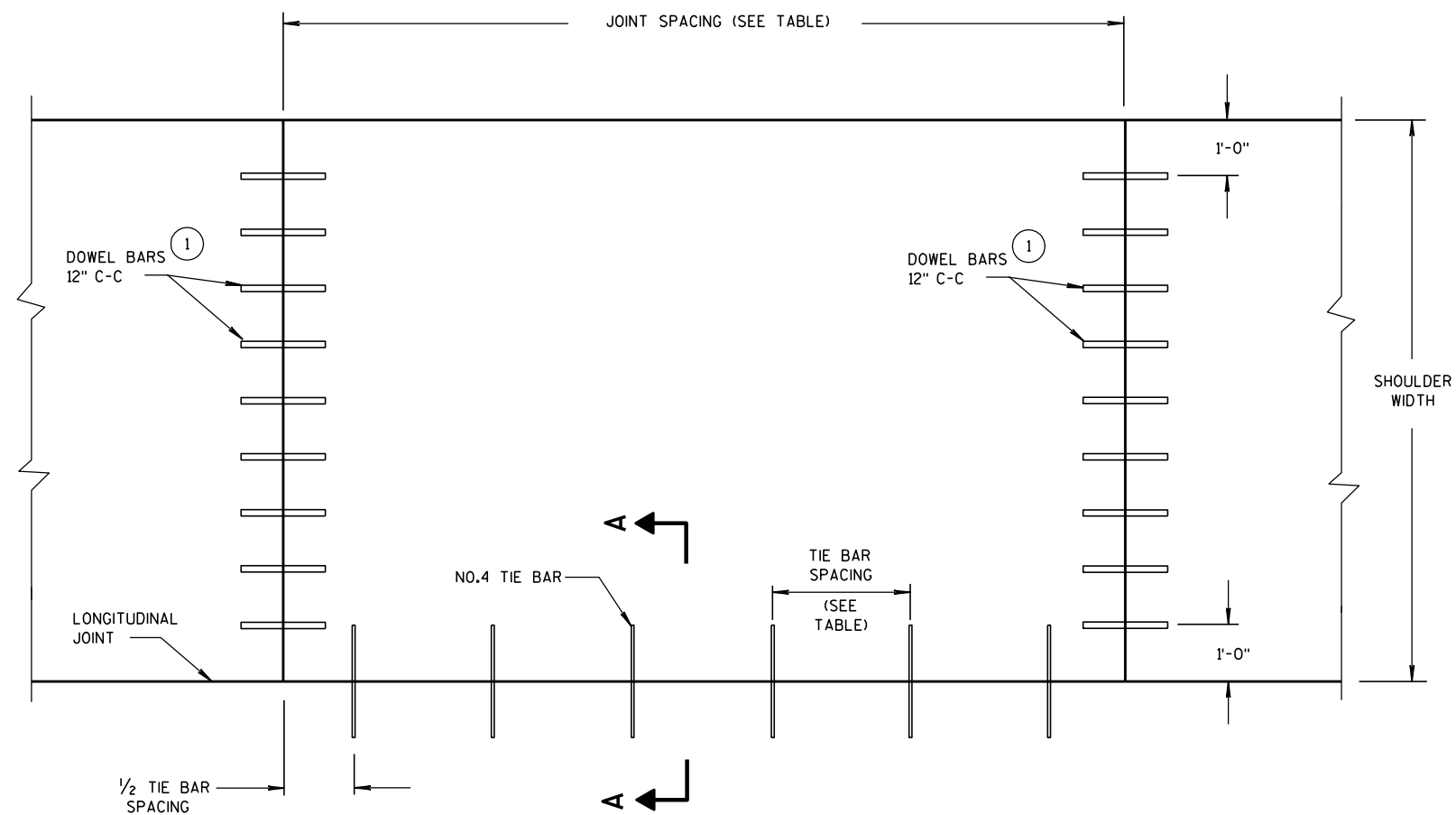
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



**PLAN VIEW
CONCRETE PAVEMENT SHOULDER**

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

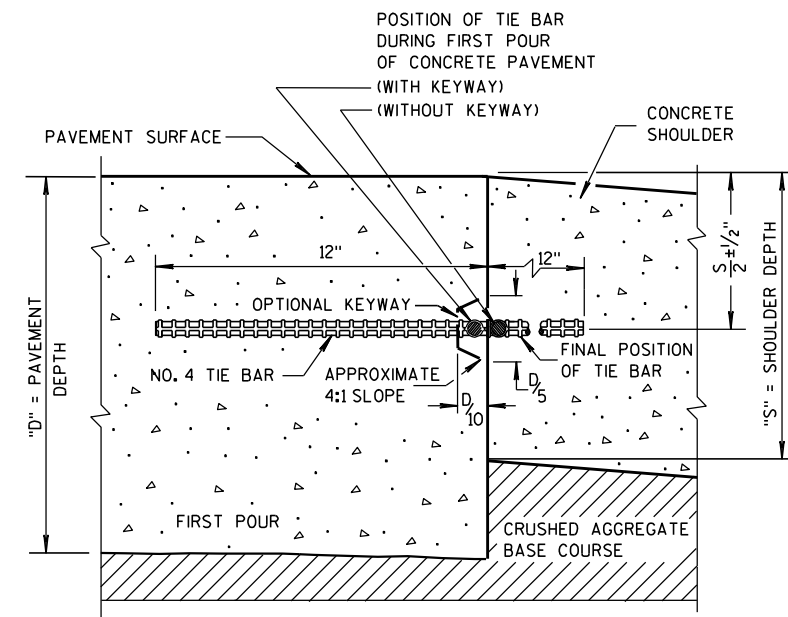
GENERAL NOTES

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

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

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



**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT**

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

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

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

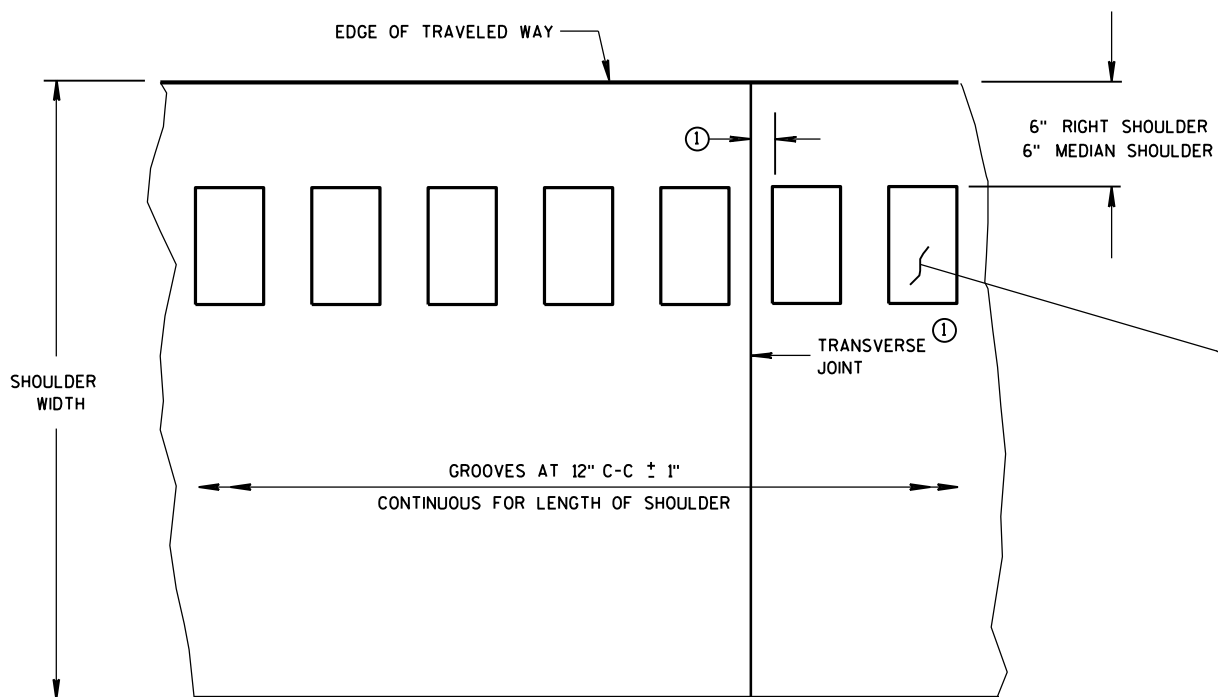
CONCRETE PAVEMENT SHOULDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

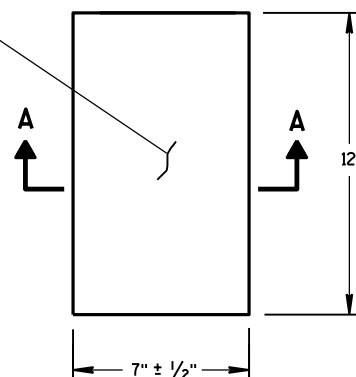
APPROVED
8/15/2011
DATE

FWHA

/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER



PLAN VIEW
SHOULDER WITH GROOVES



PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

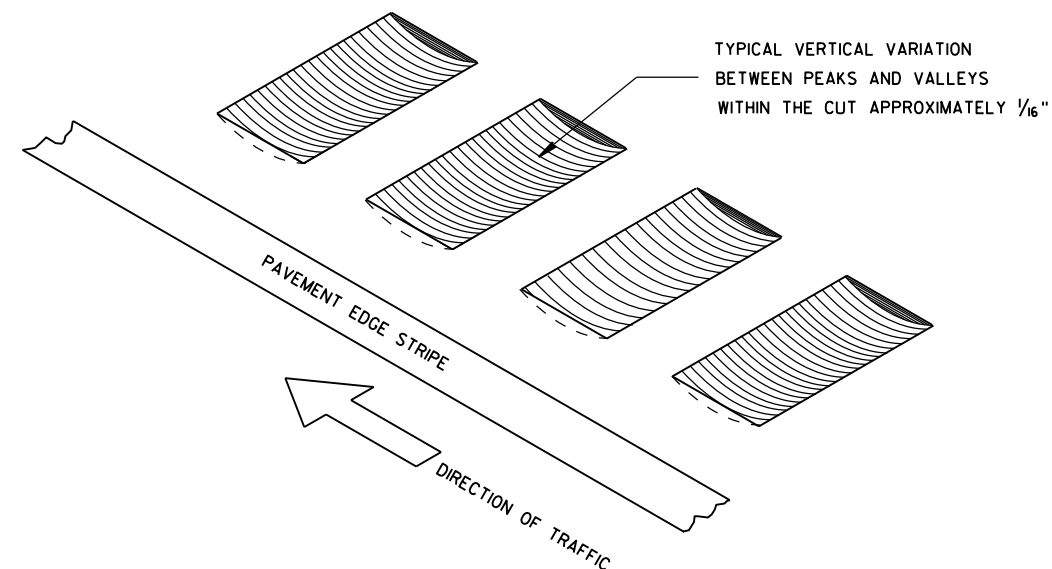
GENERAL NOTES

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

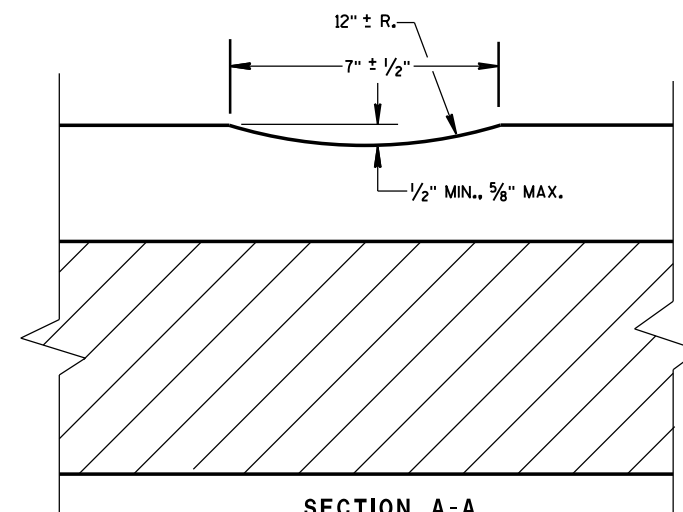
RUMBLE STRIPS ON EXPRESSWAYS

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

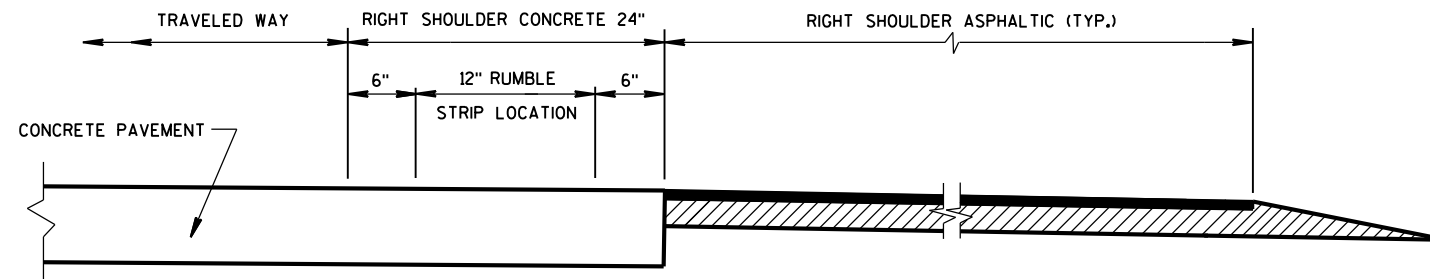
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



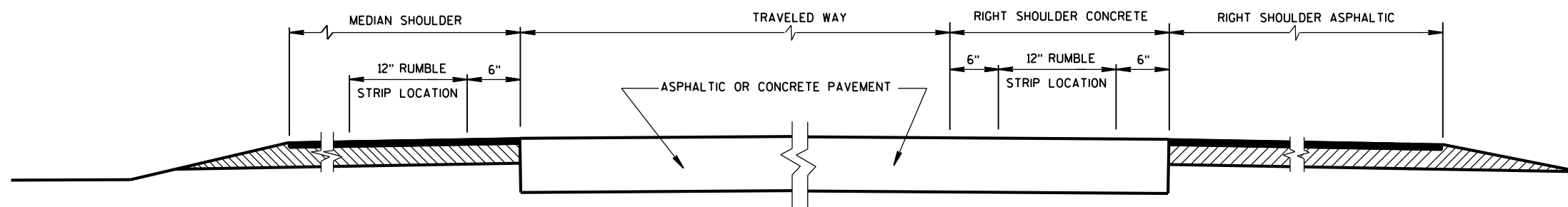
ISOMETRIC



SECTION A-A



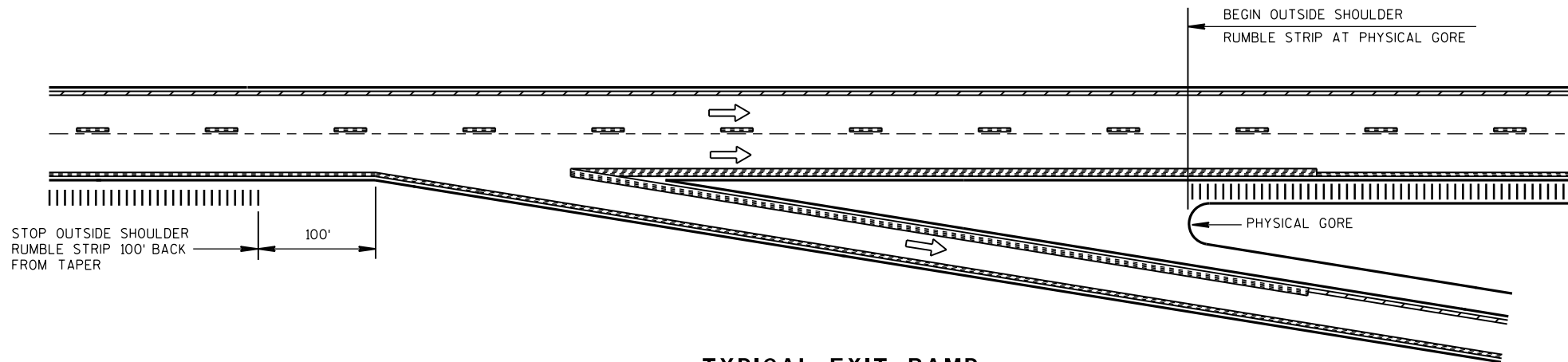
SECTION VIEW
(CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



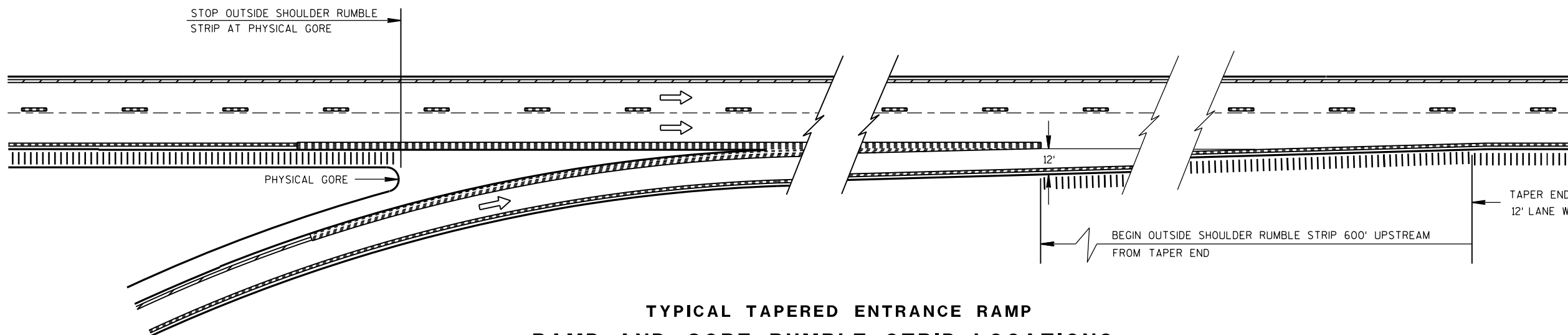
TYPICAL EXIT RAMP

NOTES:

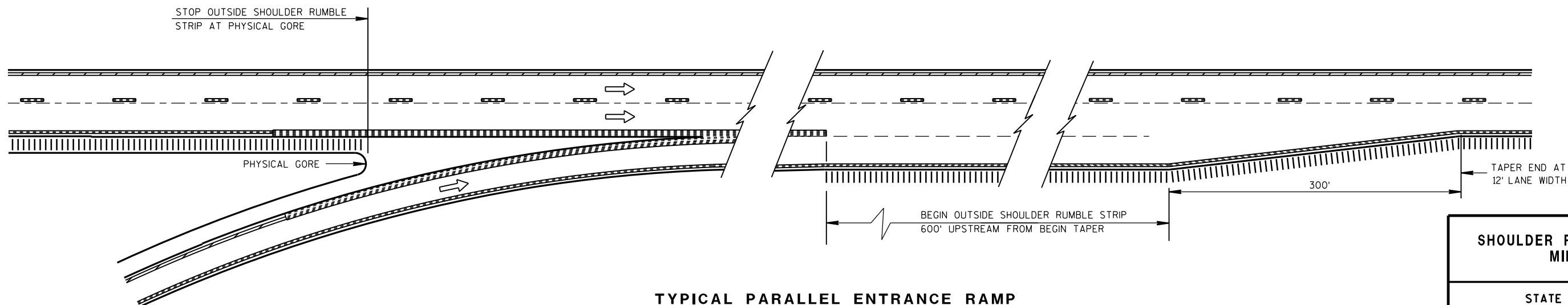
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

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

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



**TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**



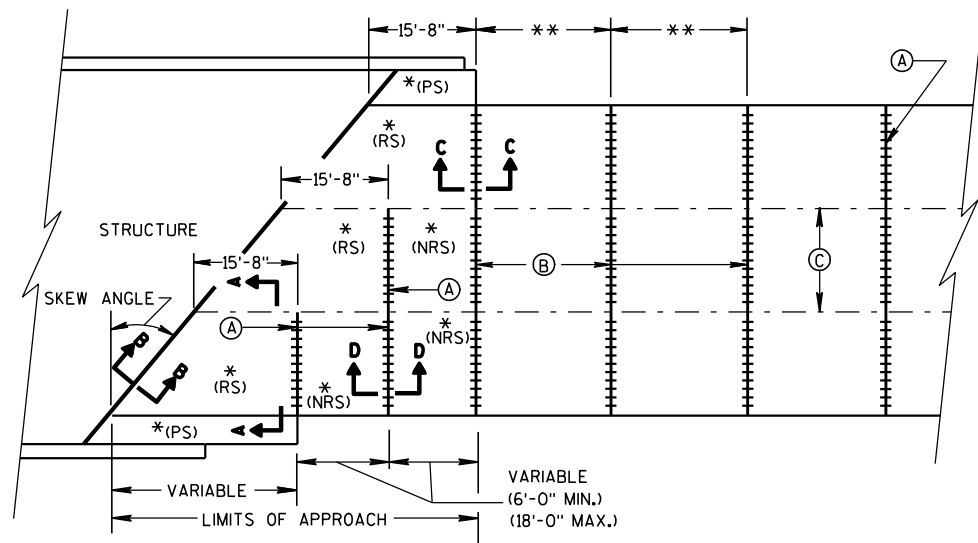
**TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**

**SHOULDER RUMBLE STRIP,
MILLING**

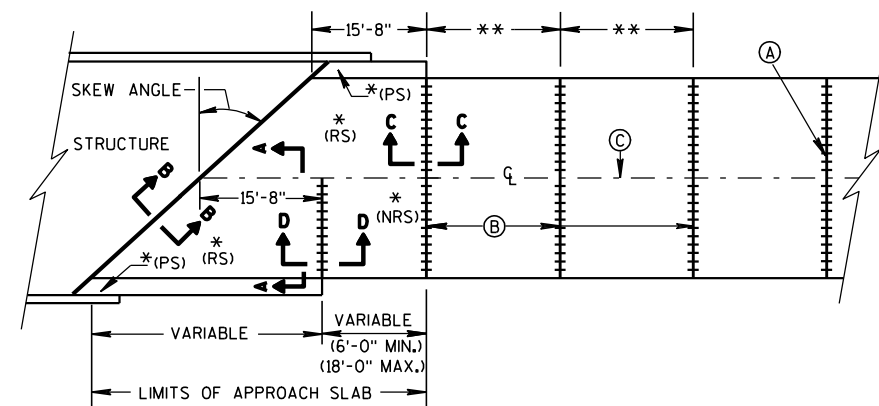
**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
12/17/2012
DATE
FHWA

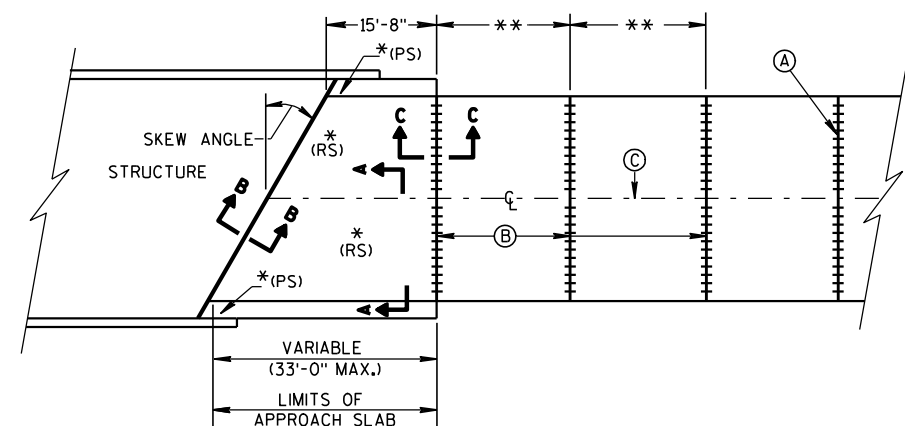
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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

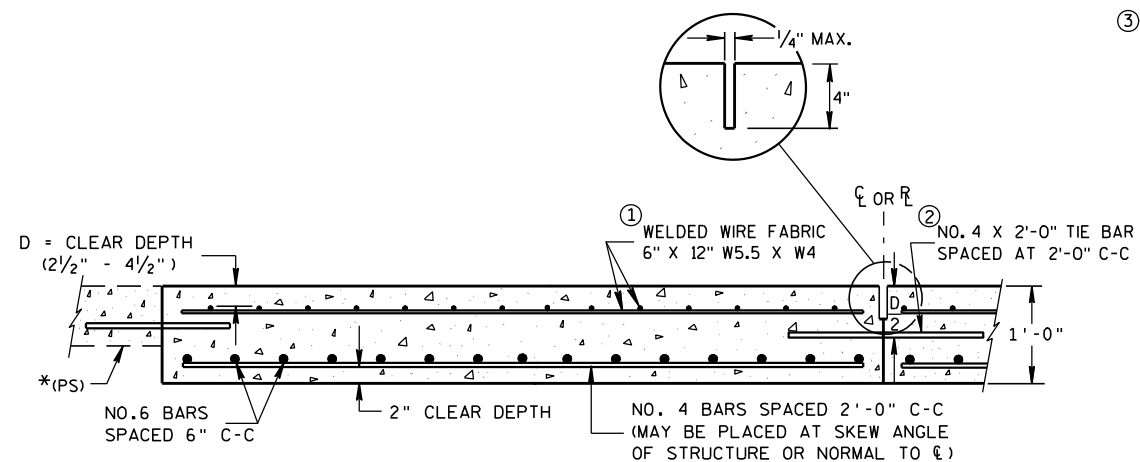


**SKEWS > 30°
(PAVEMENT WIDTH ≤ 30')**

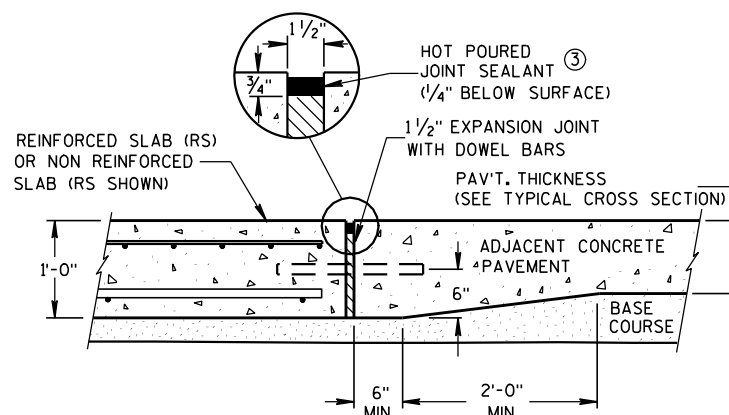


**SKEWS ≤ 30°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

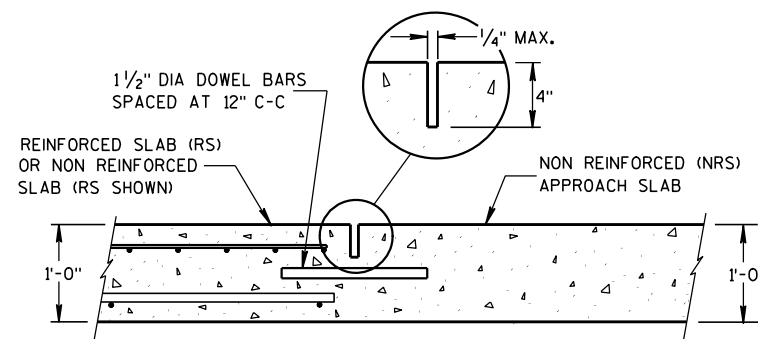
- * (RS) = REINFORCED CONCRETE SLAB
 * (PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
 (SEE DETAILS ELSEWHERE IN THE PLAN)
 * (NRS) = NON-REINFORCED CONCRETE SLAB
 ** STANDARD TRANSVERSE JOINT SPACING
 (SEE SDD 13C4, SDD 13C11, & SDD 13C13)
 (A) STANDARD CONTRACTION JOINT NORMAL TO R_L OR R_C
 (B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR R_C
 (C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



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



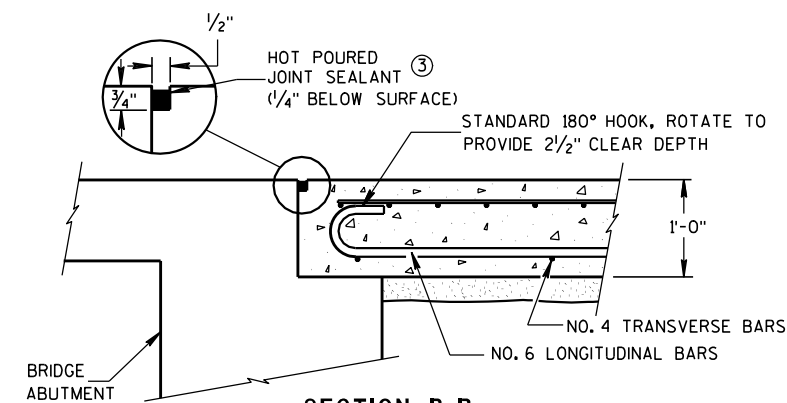
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

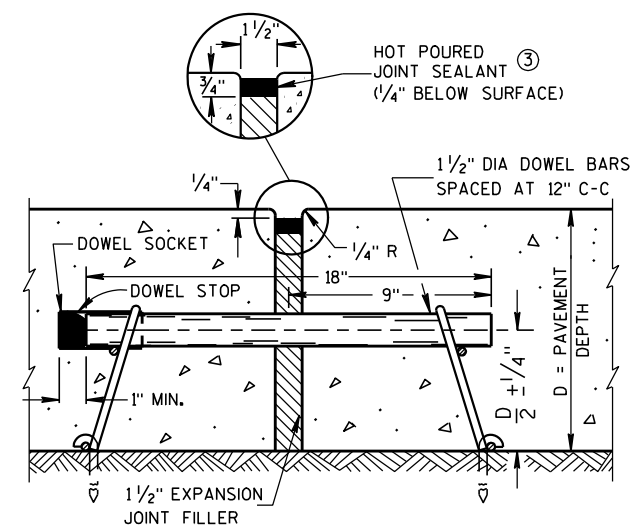
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**



EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

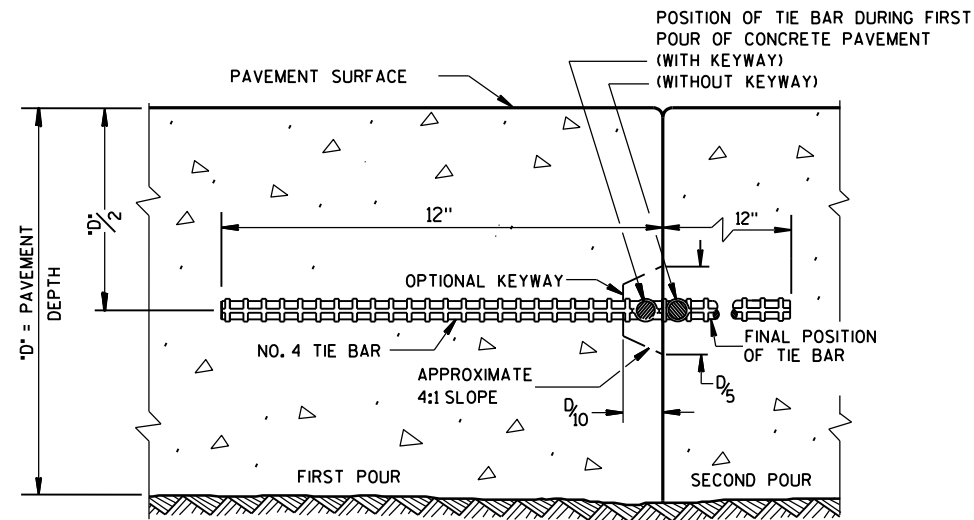
APPROVED

12/11/2009

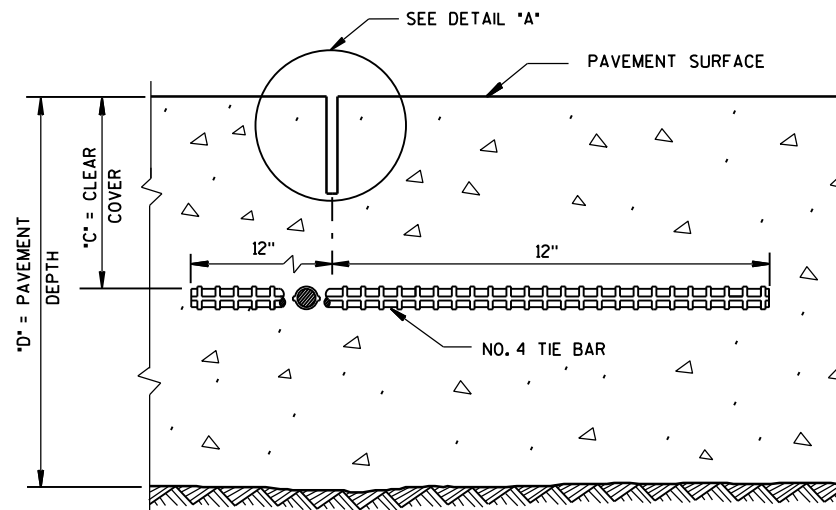
DATE

FHWA

/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER



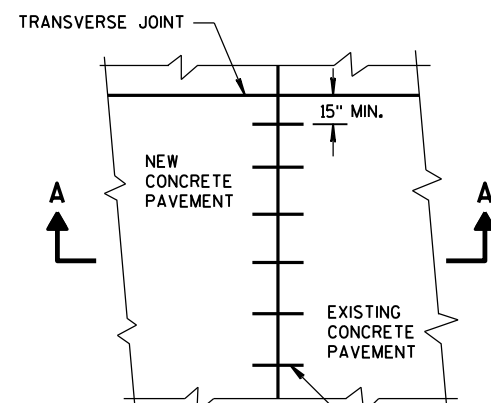
CONSTRUCTION JOINT



SAWED JOINT

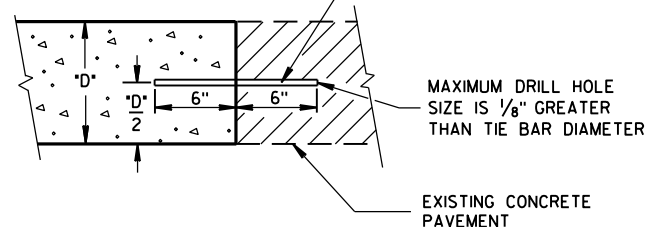
GENERAL NOTES

- DO NOT SEAL OR FILL LONGITUDINAL JOINTS.
- CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

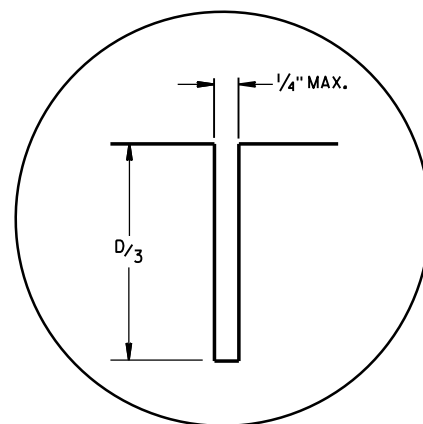


PLAN VIEW

NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



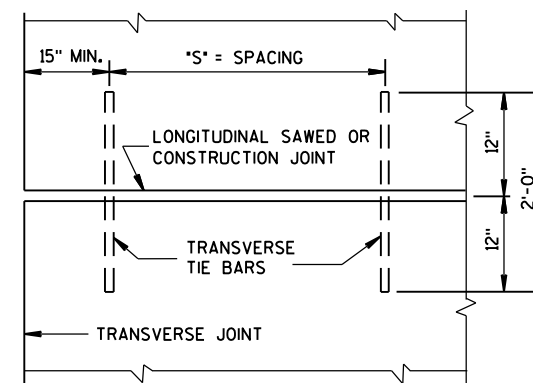
**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT**



DETAIL "A"

TIE BAR TABLE

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

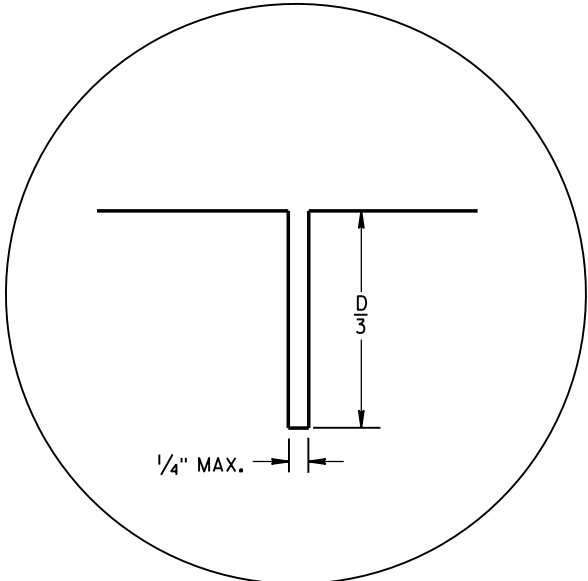


**PLAN VIEW
SHOWING LOCATION OF TIE BARS**

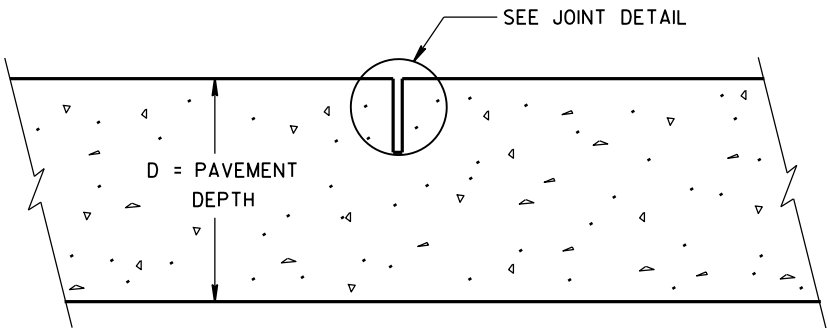
**CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-3-2013 /S/ Deb Bischoff
DATE PAVEMENT POLICY & DESIGN ENGINEER
FHWA



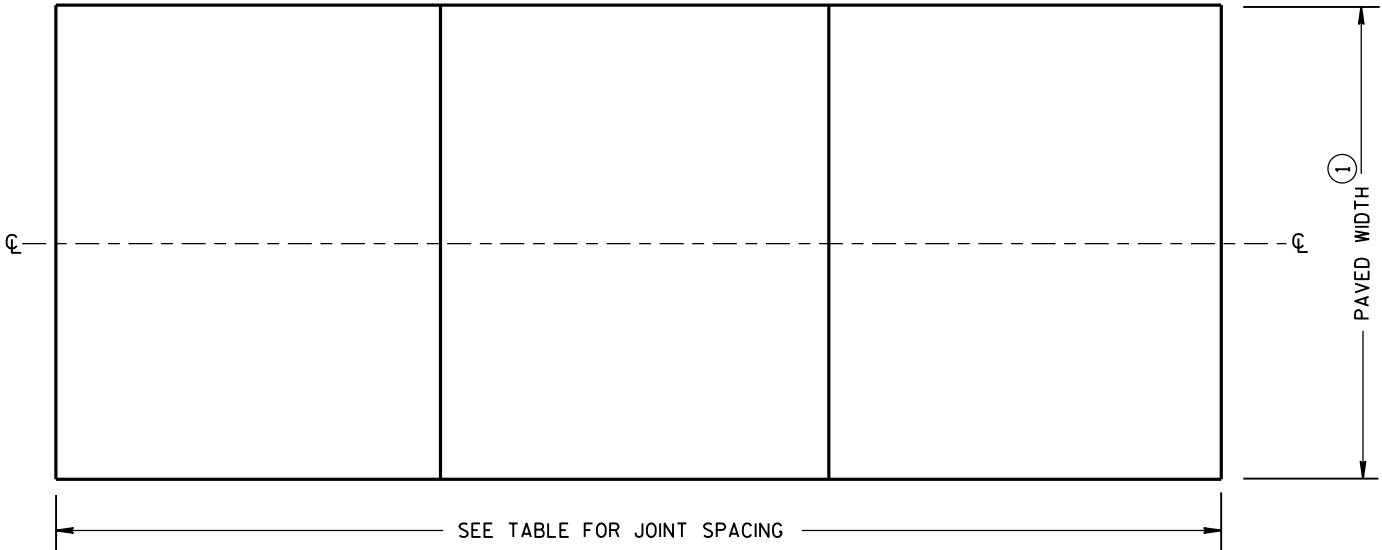
JOINT DETAIL



CONTRACTION JOINT

PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'

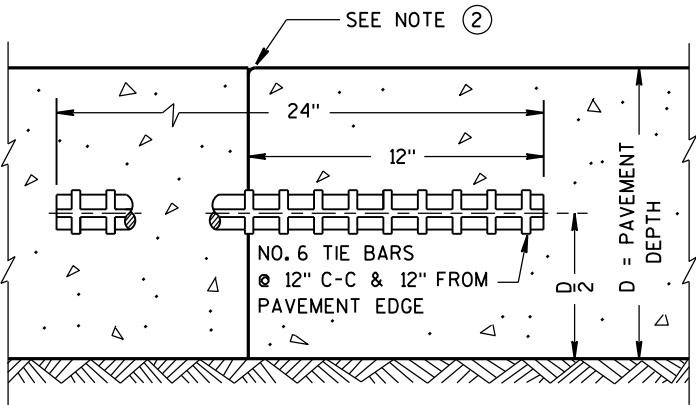


CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS
CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE.
LOCATE AND ORIENT CONTRACTION JOINTS THROUGH INTERSECTIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
DO NOT SEAL OR FILL CONTRACTION JOINTS.

- CONSTRUCTION JOINTS
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.
FORM OR SAW CONSTRUCTION JOINTS.
THE CONTRACTOR MAY INSERT TIE BARS THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN PLACED.
- ① REFER TO TYPICAL CROSS SECTIONS FOR PAVED WIDTH AND LOCATION OF LONGITUDINAL JOINTS.
 - ② PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.



TIED TRANSVERSE CONSTRUCTION JOINT

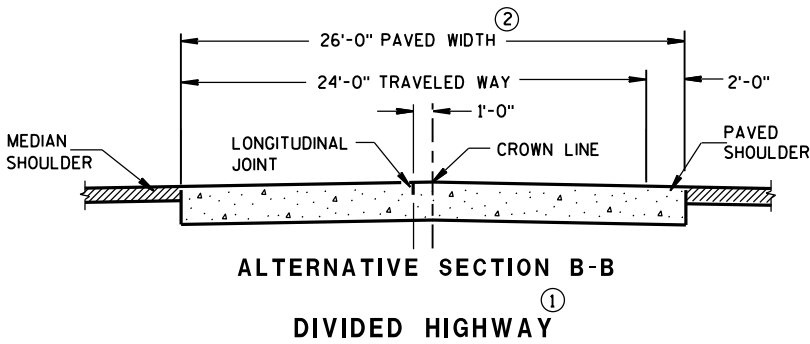
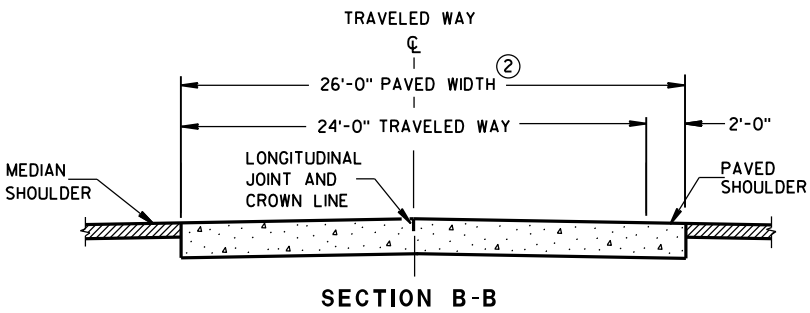
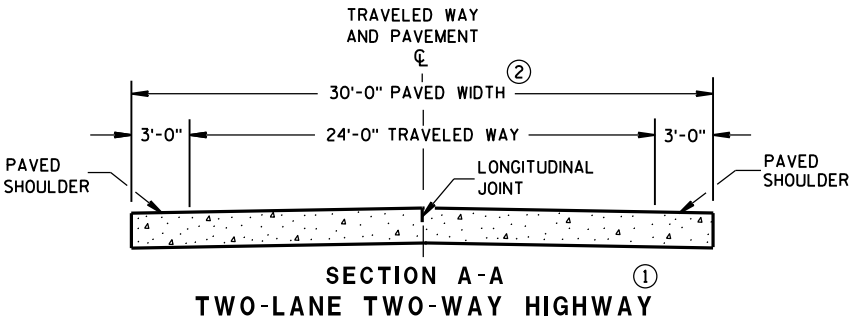
URBAN
NON-DOWELED CONCRETE
PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER

FHWA



GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

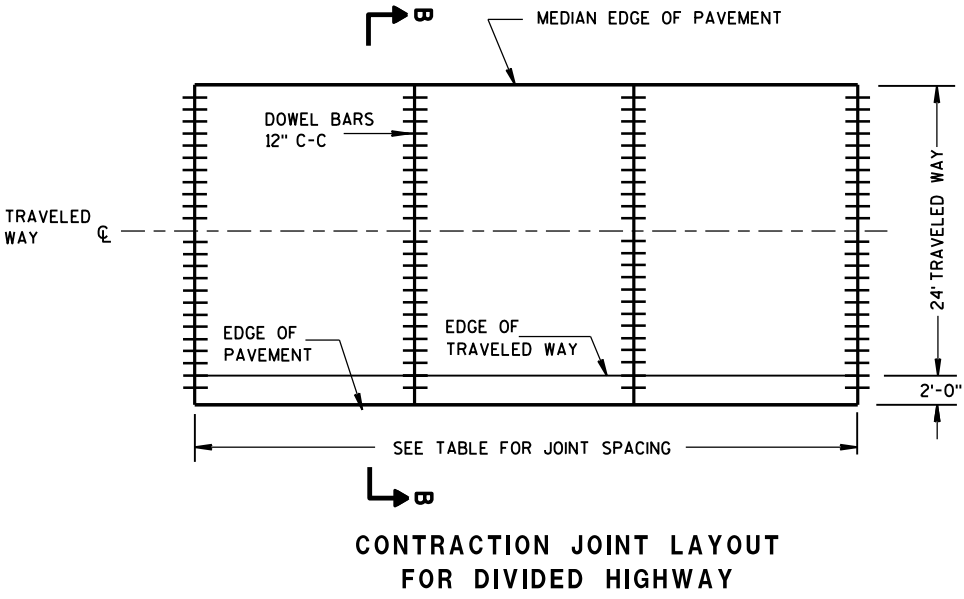
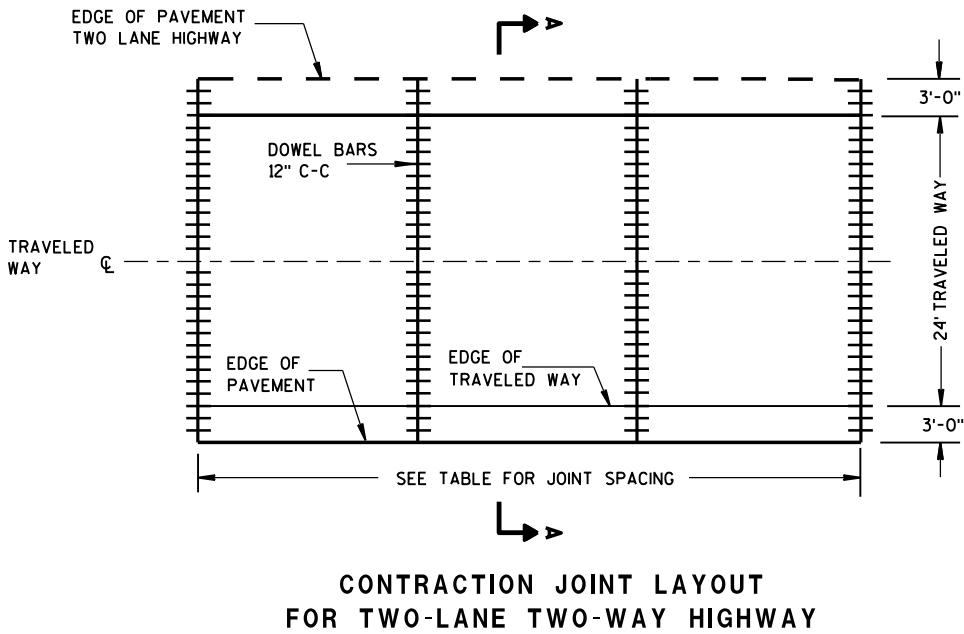
CONSTRUCTION JOINTS

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

- ① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.
- ② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

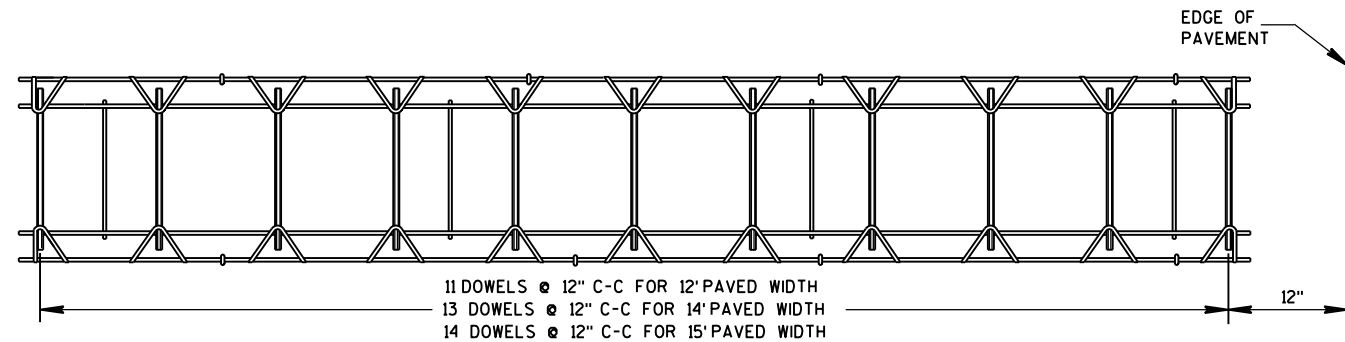
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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

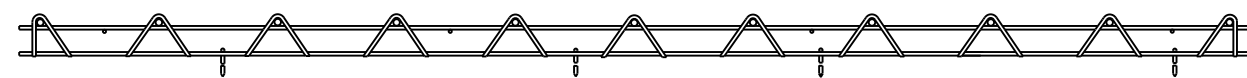
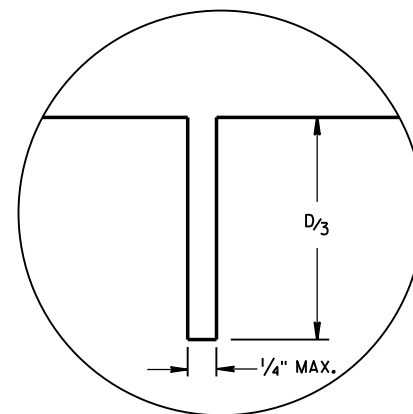


RURAL DOWELED
CONCRETE PAVEMENT

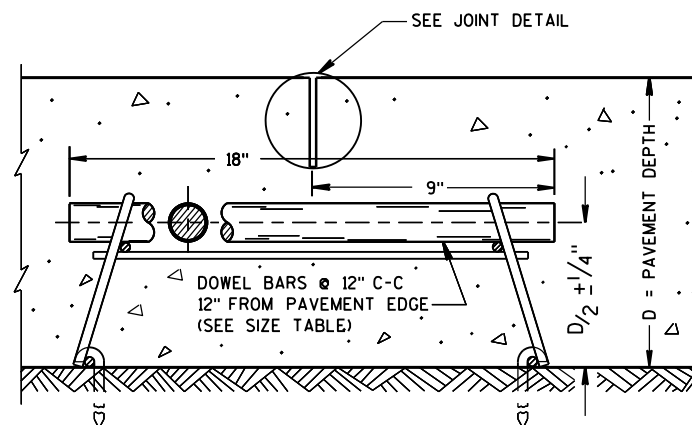
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



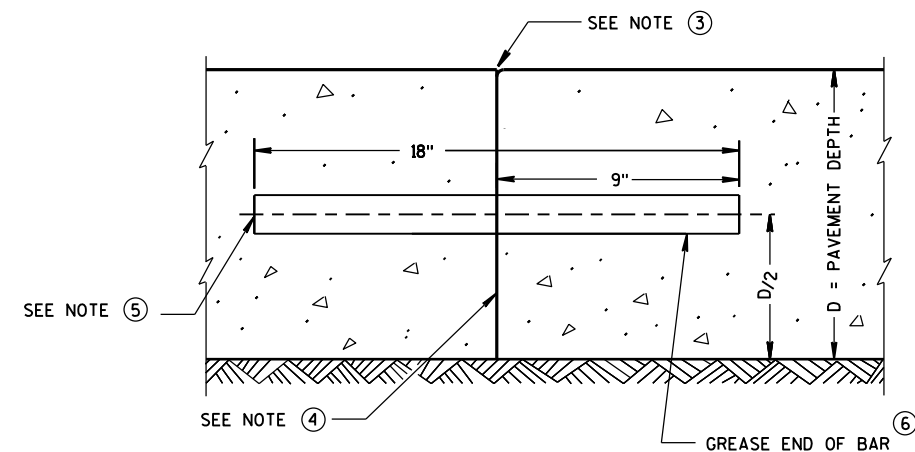
PLAN VIEW

SIDE VIEW
(NORMAL TO CENTERLINE)CONTRACTION JOINT DOWEL ASSEMBLY^①

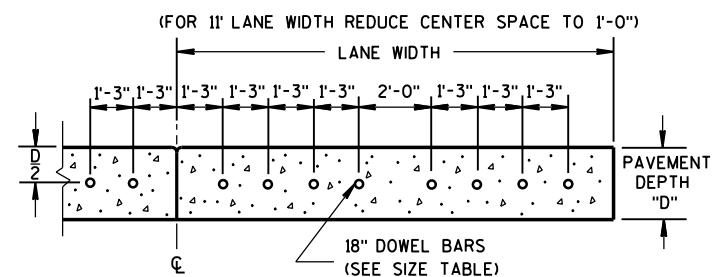
JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT

DRILLED DOWEL BAR CONSTRUCTION JOINT^⑦

GENERAL NOTES

- ① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- ② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- ③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.
- ④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- ⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.
- ⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.

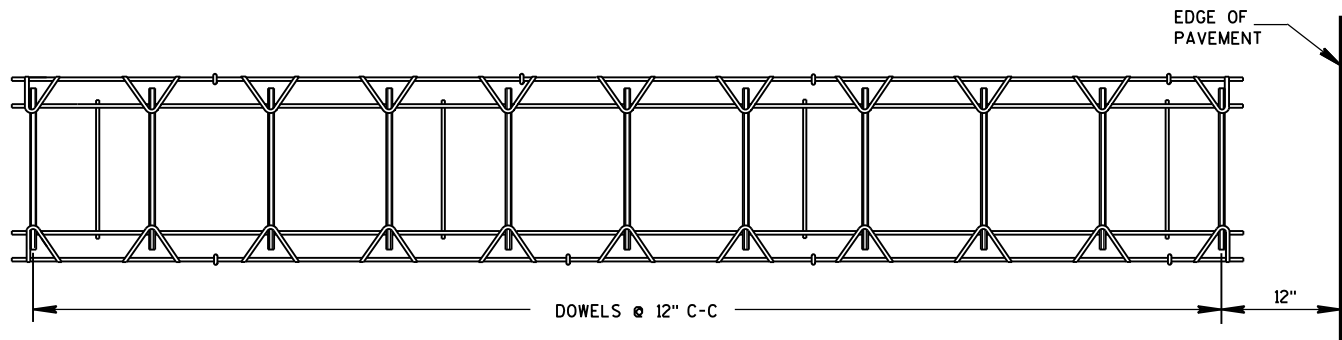
RURAL DOWELED
CONCRETE PAVEMENTSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

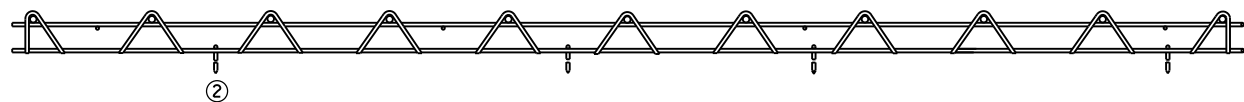
5/3/2013
DATE

FHWA

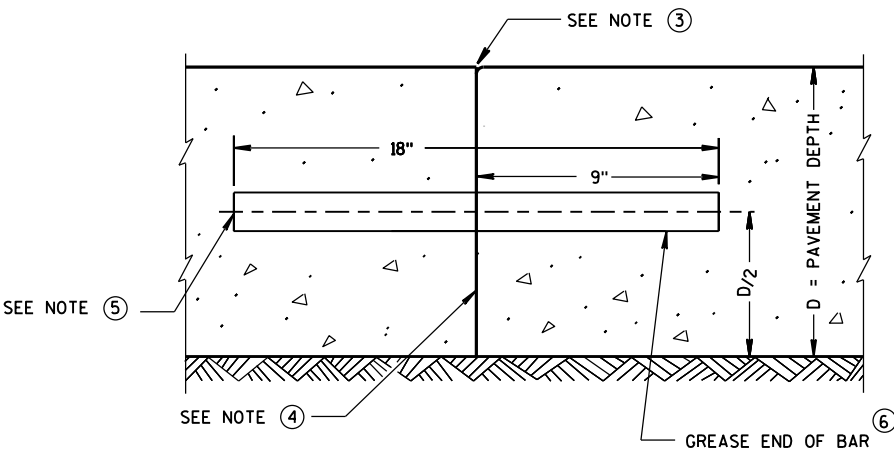
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER



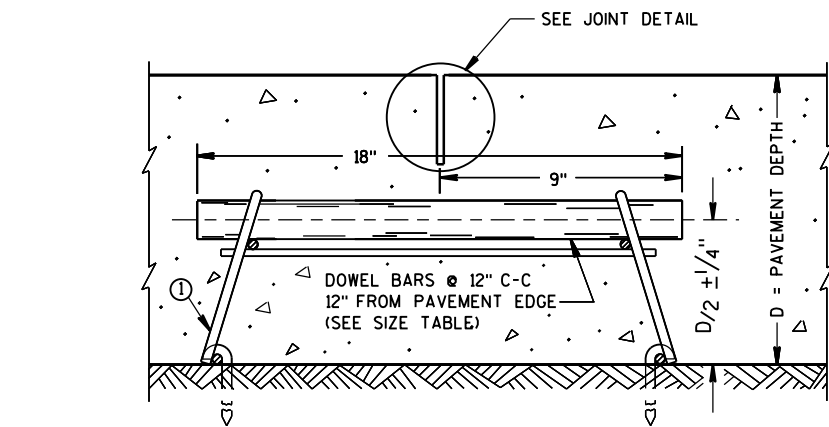
PLAN VIEW



SIDE VIEW
CONTRACTION JOINT DOWEL ASSEMBLY



TRANSVERSE CONSTRUCTION JOINT



DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

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

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

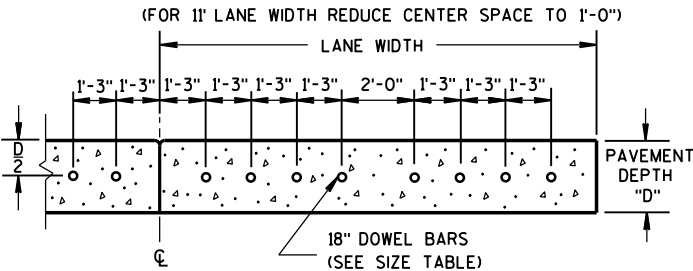
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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

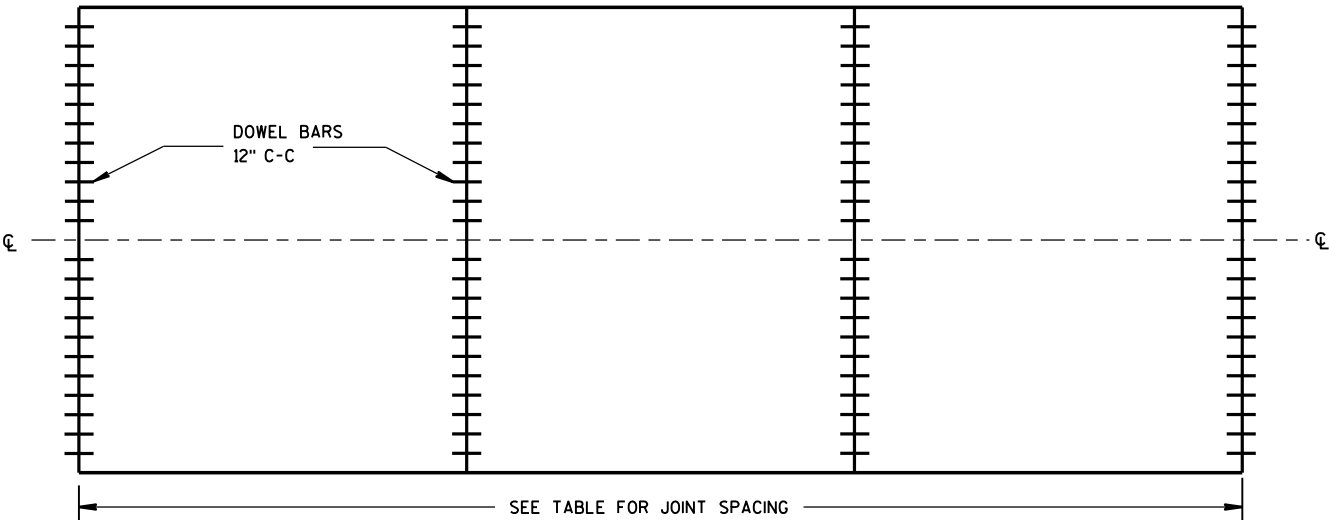
CONSTRUCTION JOINTS

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

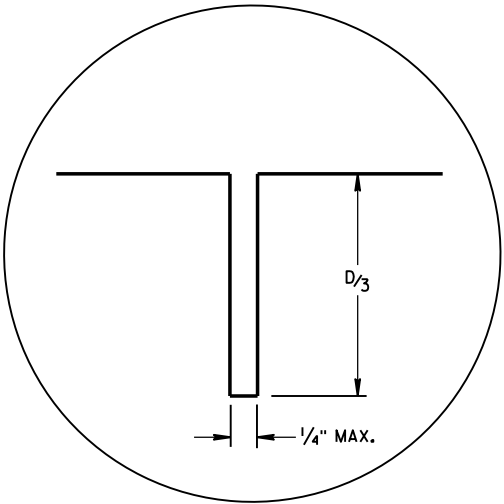
- OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.
- PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.
- APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DRILLED DOWEL BAR CONSTRUCTION JOINT



CONTRACTION JOINT LOCATIONS

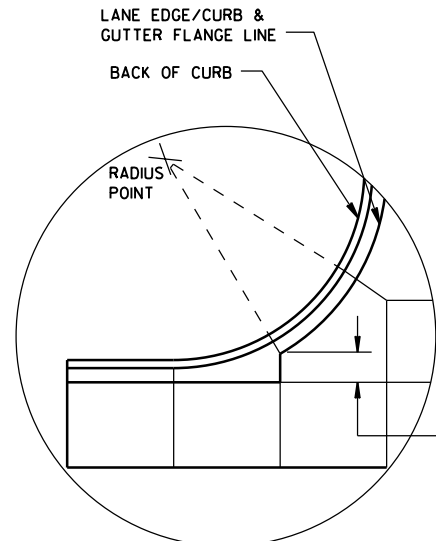


JOINT DETAIL

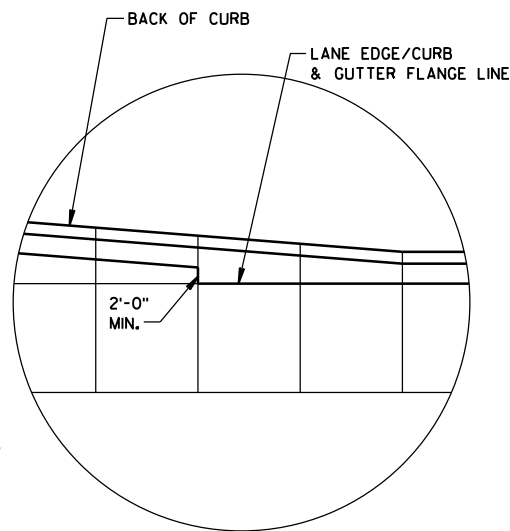
URBAN DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

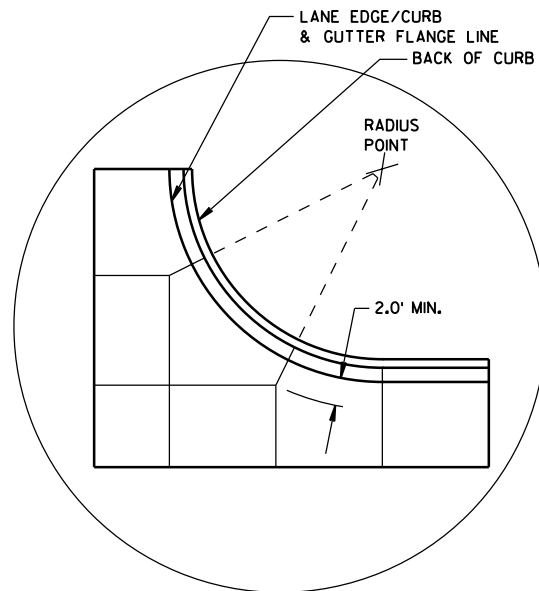
APPROVED
5/3/2013 /S/ Deb Bischoff
DATE PAVEMENT POLICY & DESIGN ENGINEER
FHWA



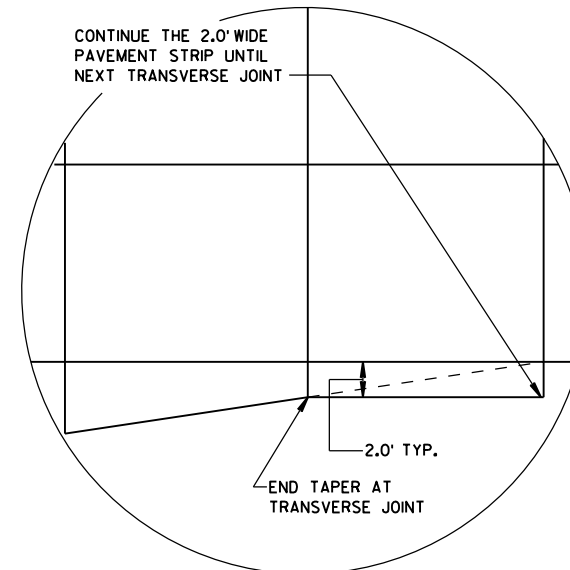
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

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

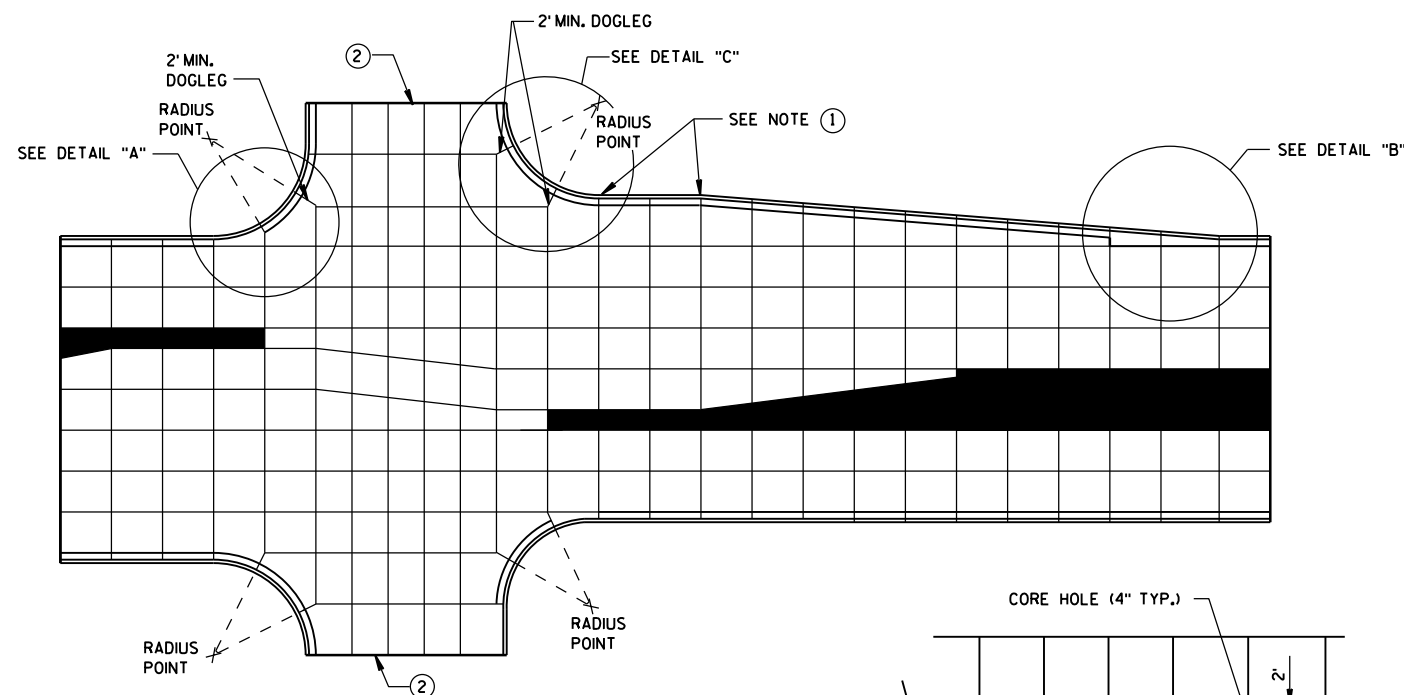
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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

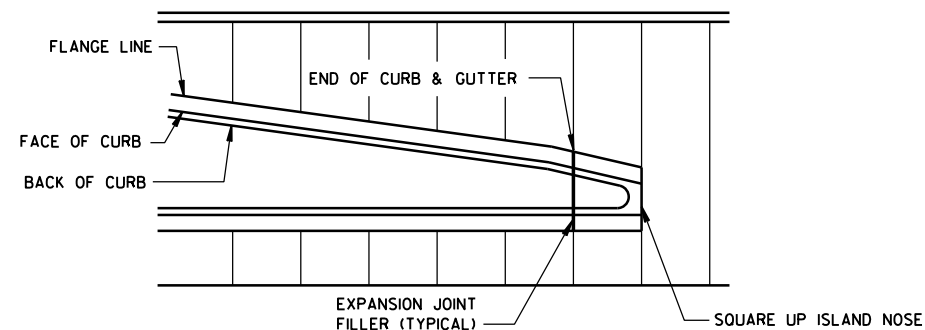
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

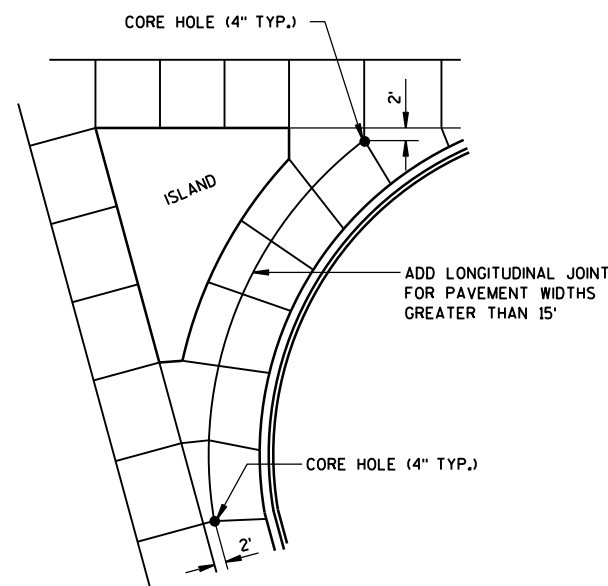
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



STANDARD INTERSECTION



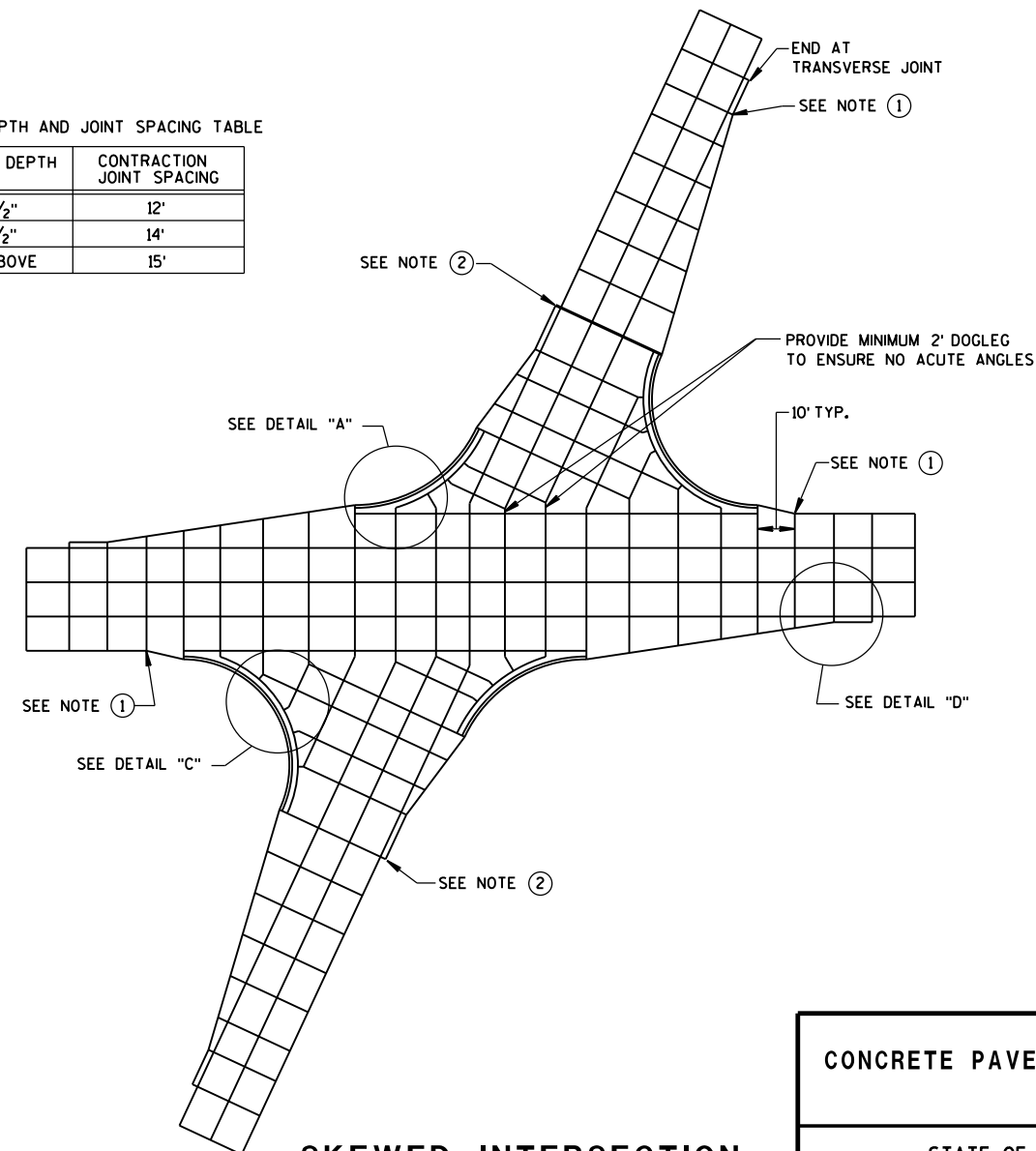
APPROACH TO MEDIAN



LARGE RIGHT TURN

PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



SKewed INTERSECTION

CONCRETE PAVEMENT JOINTING

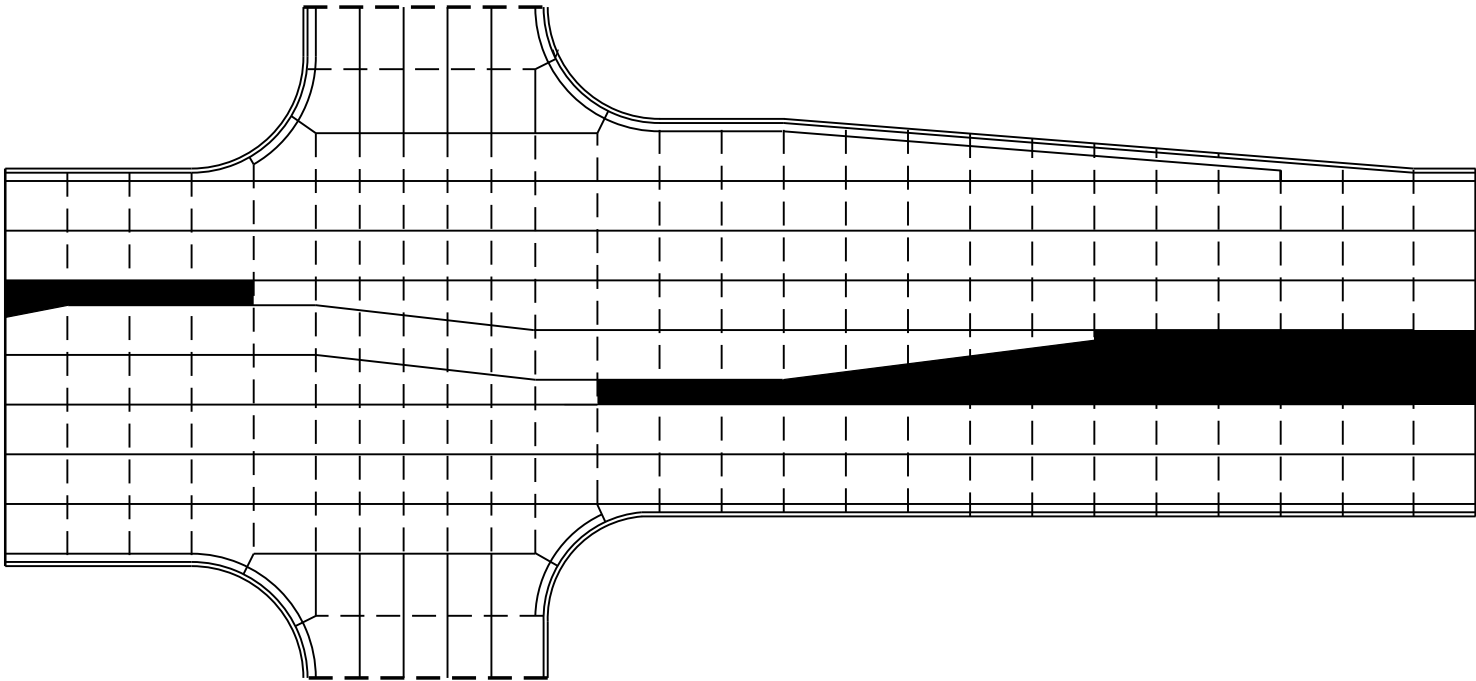
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

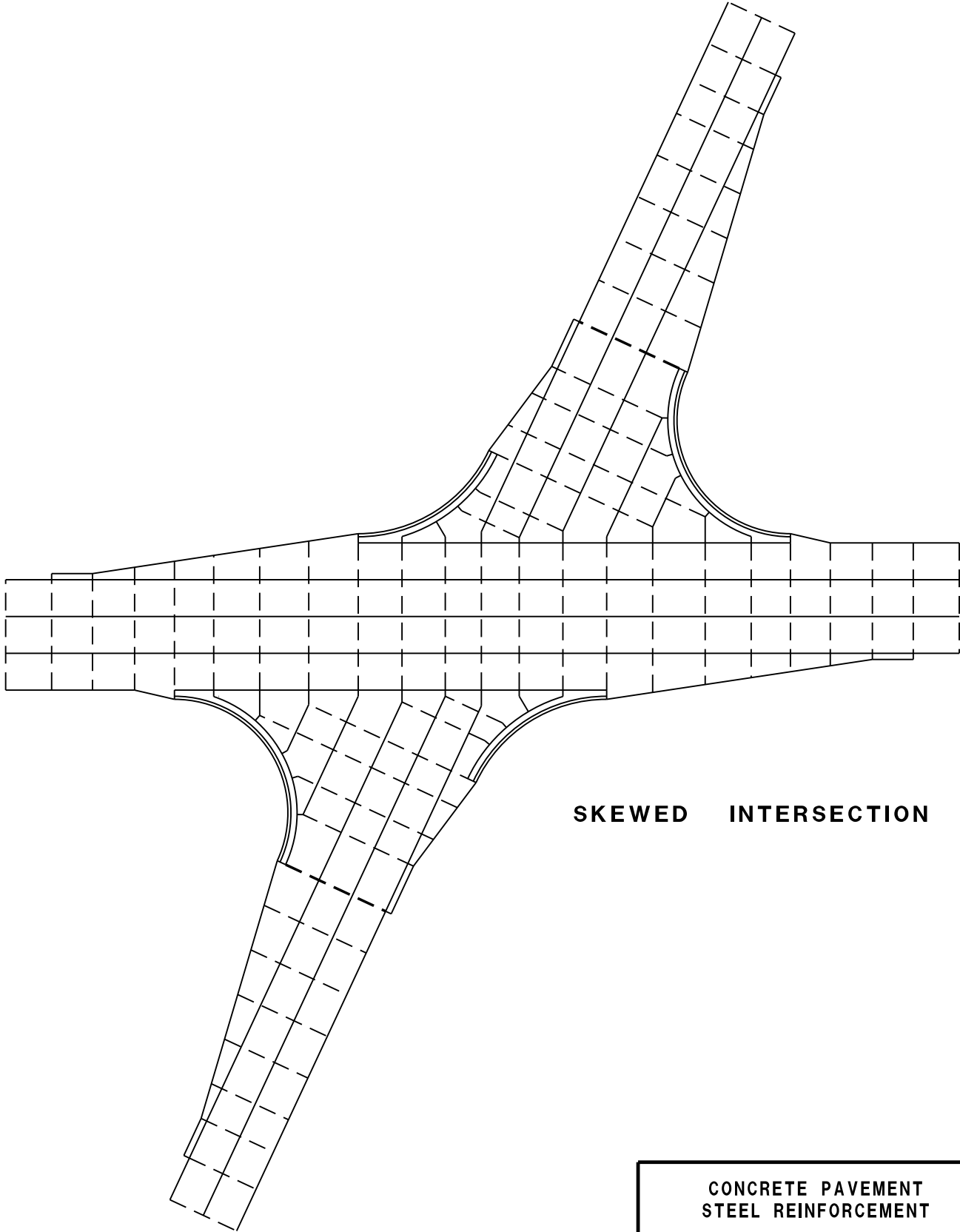
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT

GENERAL NOTES

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



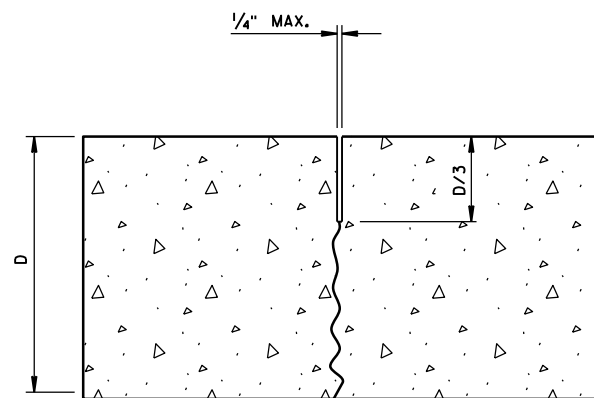
STANDARD INTERSECTION



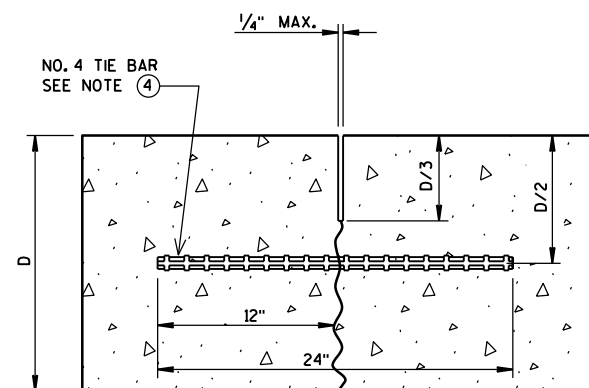
SKewed INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

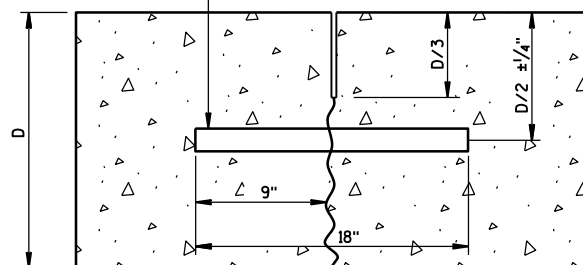


UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

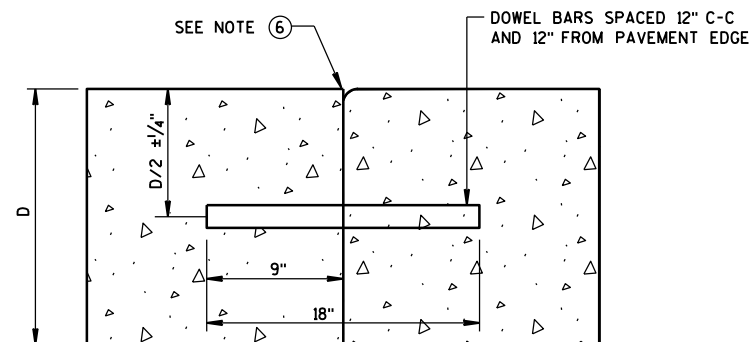
DOWEL BARS AT 12" C-C
12" FROM PAVEMENT EDGE



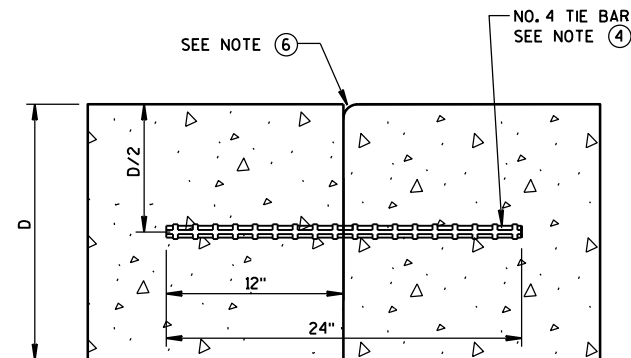
DOWELED-TRANSVERSE

CONTRACTION JOINTS

SEE NOTE ②

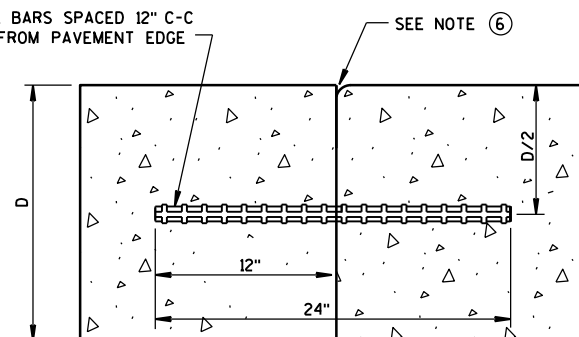
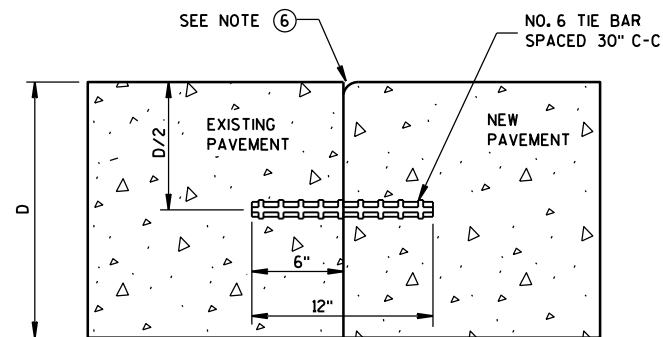


DOWELED TRANSVERSE



TIED LONGITUDINAL

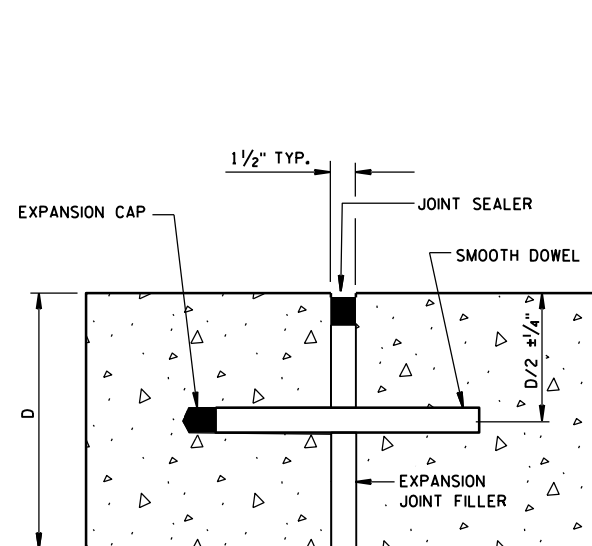
NO. 6 TIE BARS SPACED 12" C-C
AND 12" FROM PAVEMENT EDGE

TIED TRANSVERSE
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)

TIED LONGITUDINAL TO EXISTING

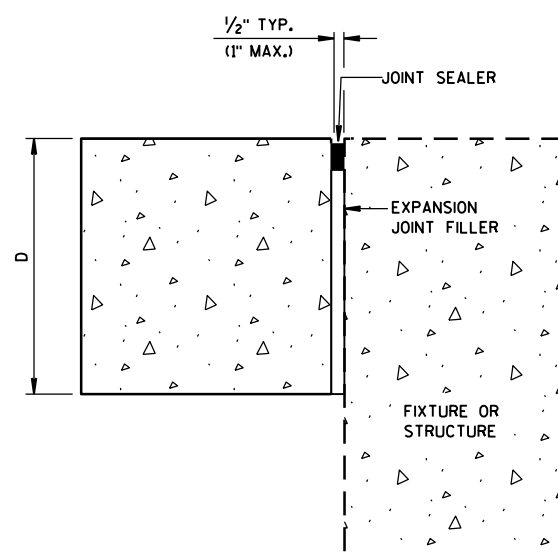
CONSTRUCTION JOINTS

SEE NOTE ⑤



DOWELED-TRANSVERSE

SEE NOTE ①



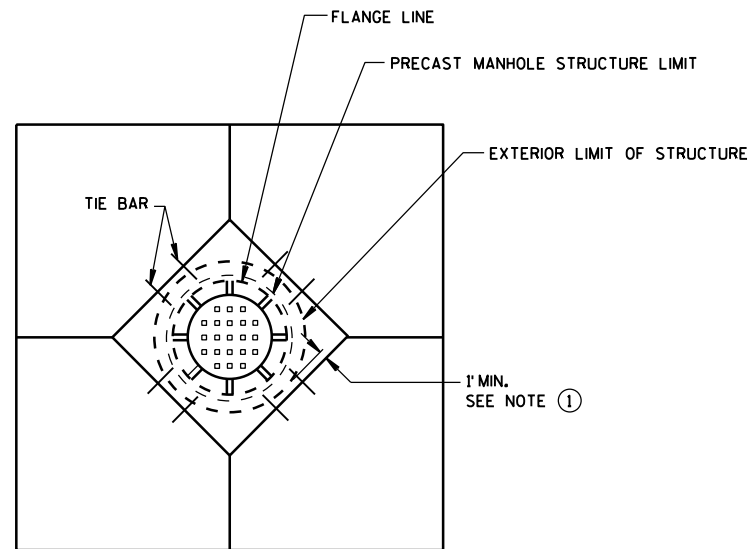
UNTIED-LONGITUDINAL

EXPANSION JOINTS

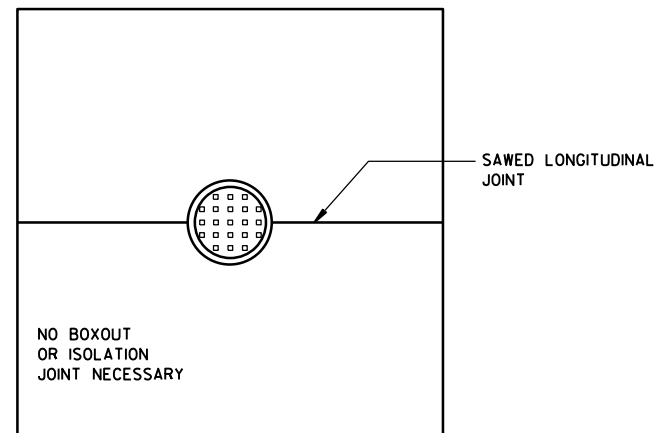
GENERAL NOTES

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

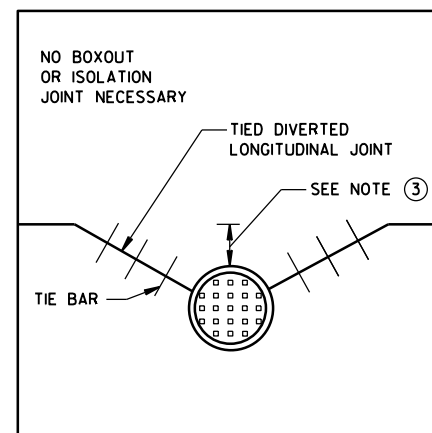
CONCRETE PAVEMENT
JOINT TYPESSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



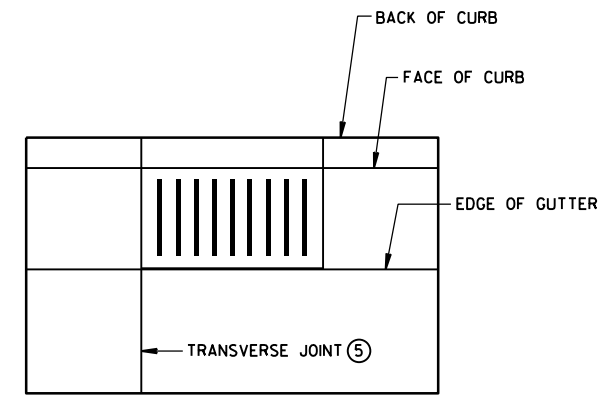
**DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS**



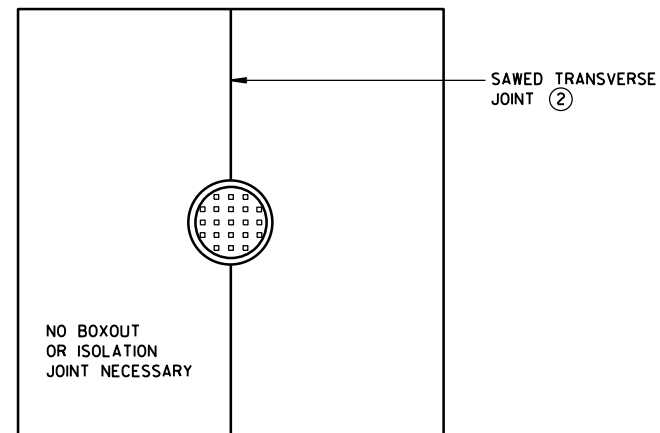
**MANHOLE WITH
LONGITUDINAL JOINT**



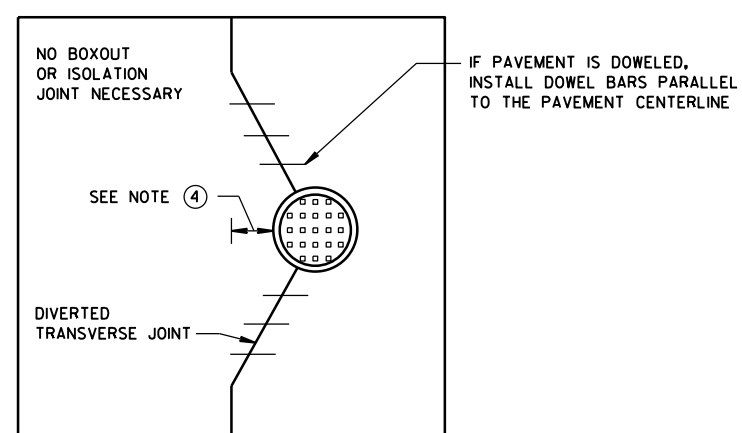
**MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT**



**INLET WITH
TRANSVERSE JOINT**



**MANHOLE WITH
TRANSVERSE JOINT**



**MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT**

GENERAL NOTES

- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ④ IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

**CONCRETE PAVEMENT
JOINTING AT UTILITY FIXTURES**

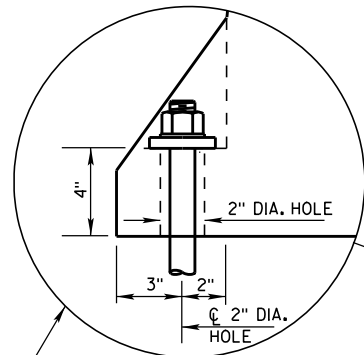
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

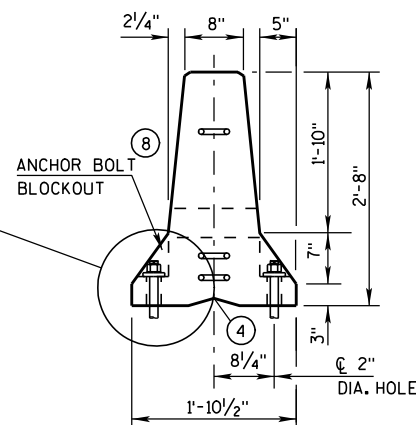
5-3-2013
DATE

FHWA

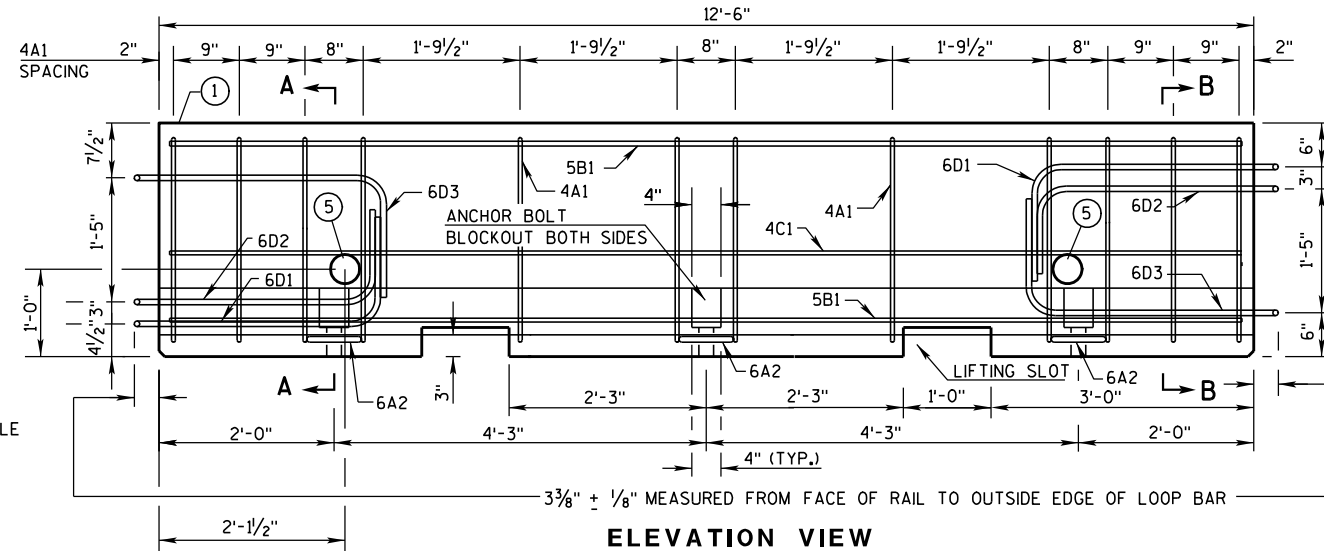
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER



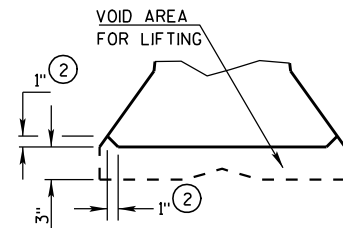
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



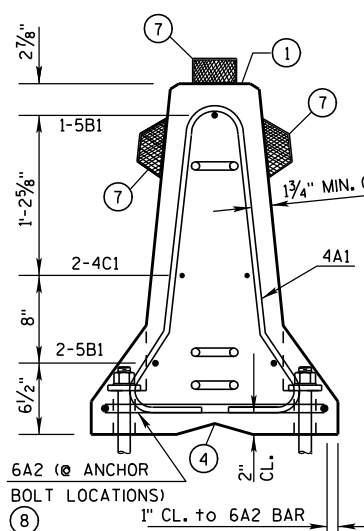
END VIEW



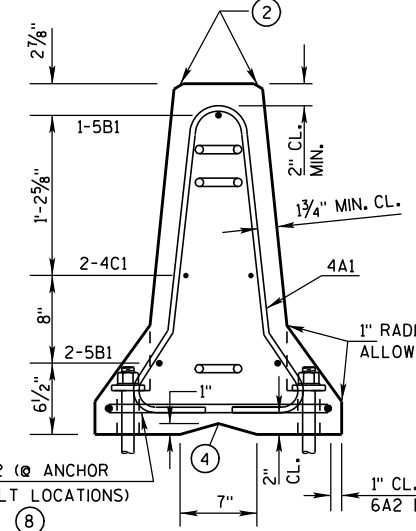
ELEVATION VIEW



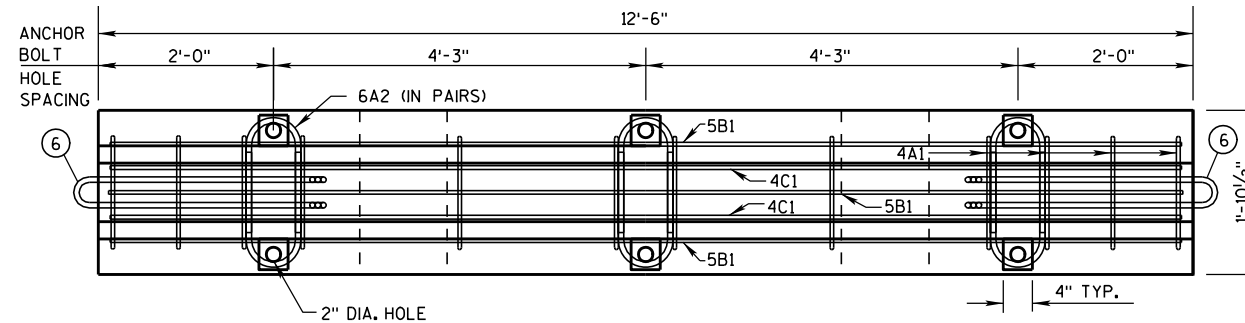
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

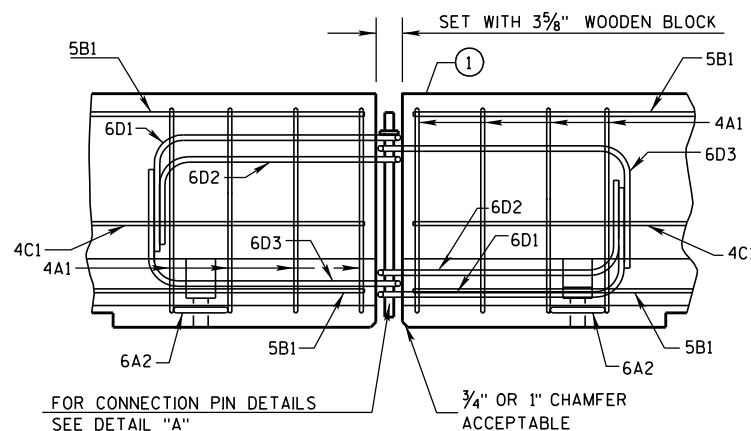


SECTION B-B
(STIRRUP PLACEMENT)

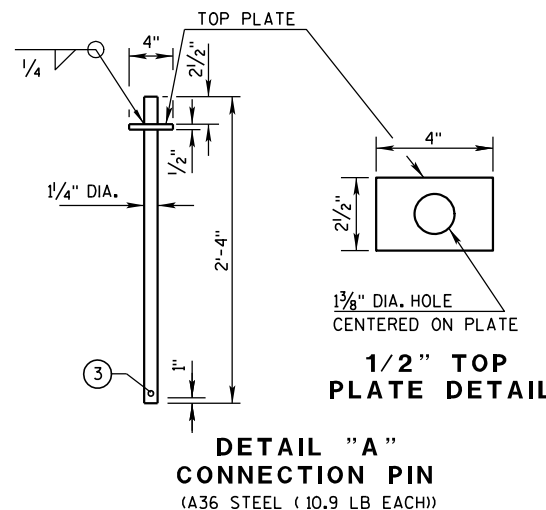


PLAN VIEW

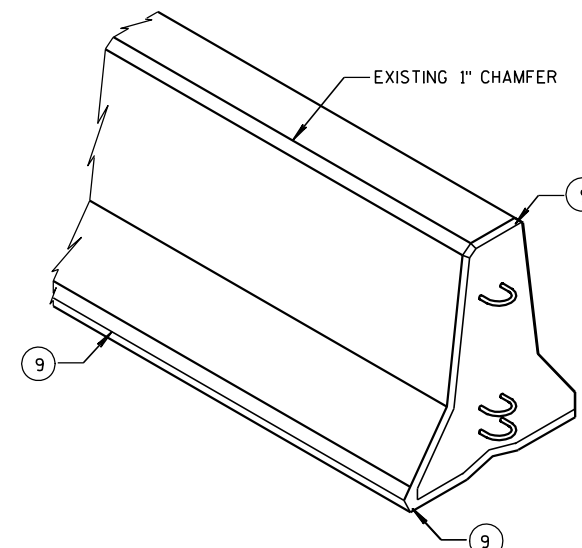
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



1/2" TOP
PLATE DETAIL

GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(g) THRU 14B7-13(h).

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

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

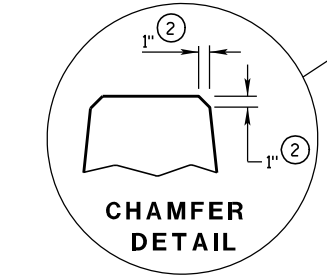
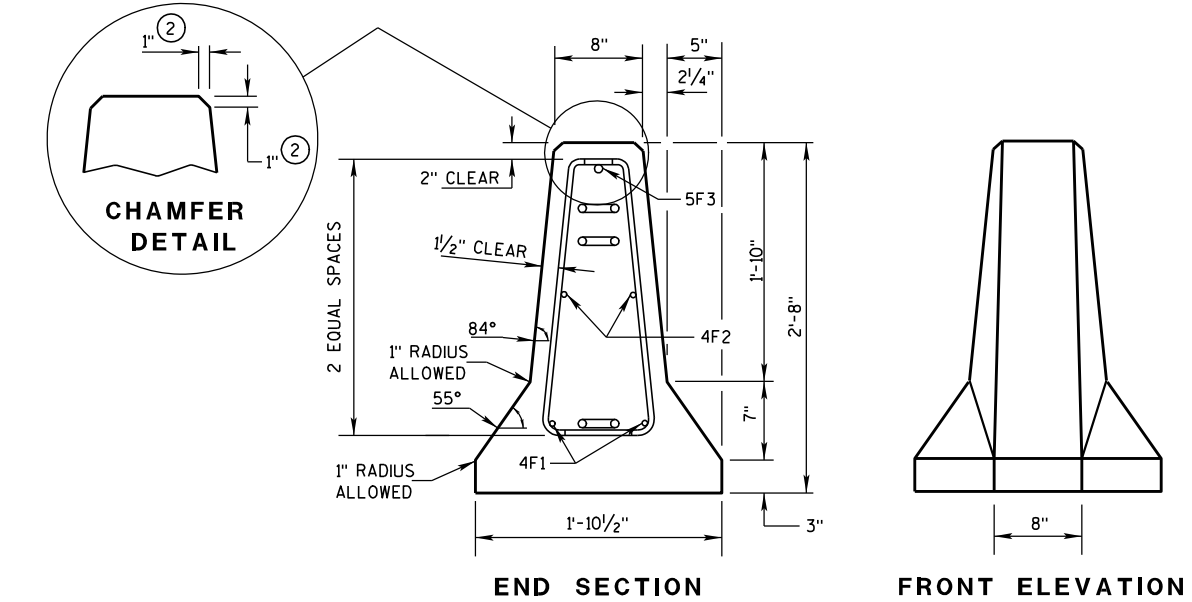
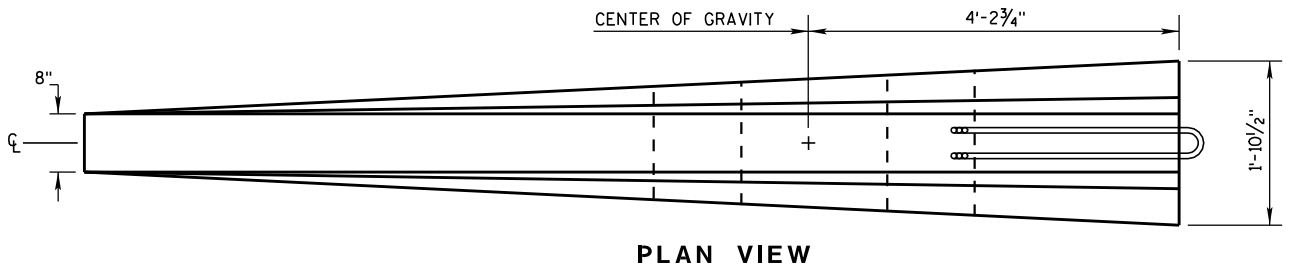
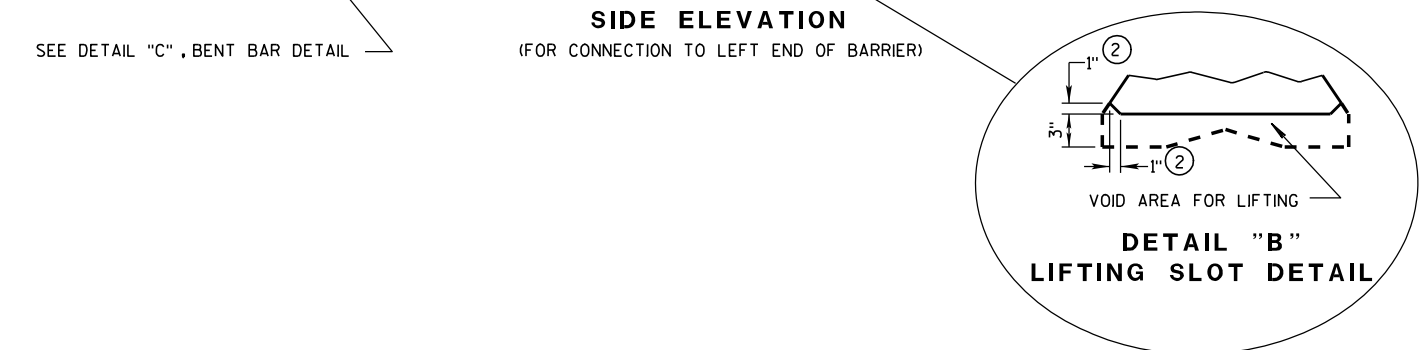
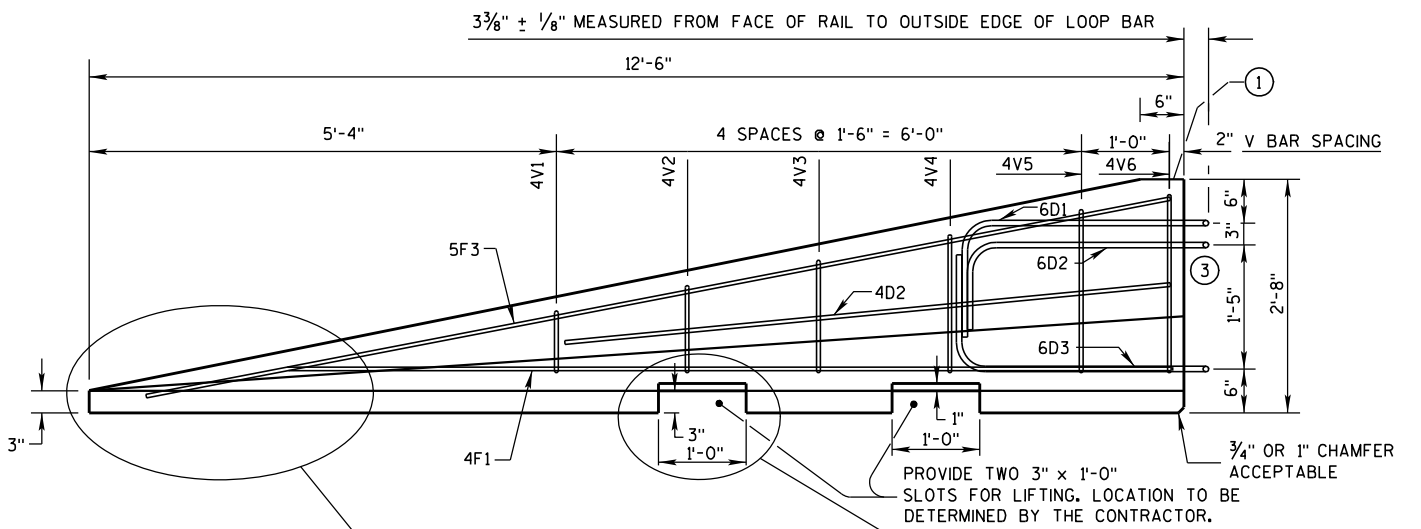
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

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

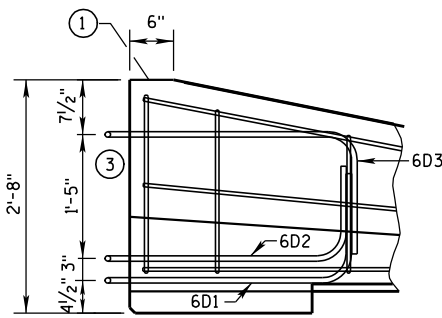
- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR ANCHORING CRITERIA.
- 1" CHAMFER OPTIONAL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



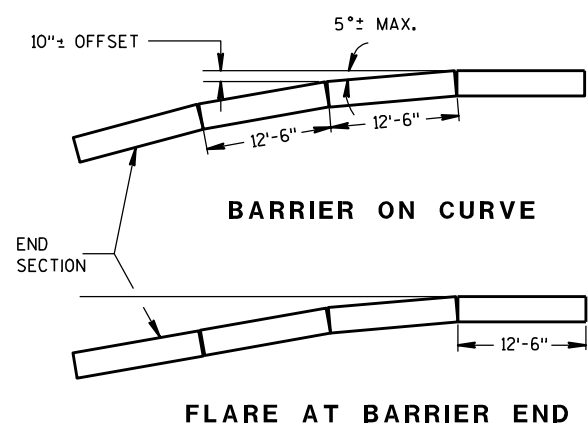
DETAILS OF BARRIER TAPER SECTION



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

GENERAL NOTES

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



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

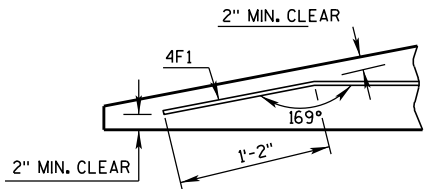
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

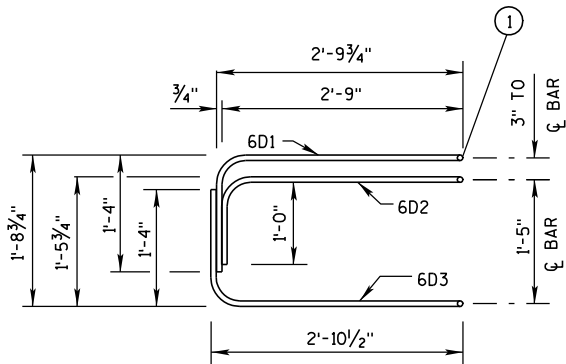
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

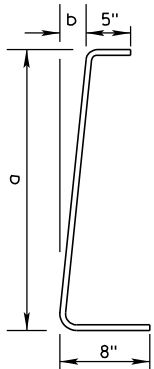
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS

2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

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

TAPER BARRIER SECTION

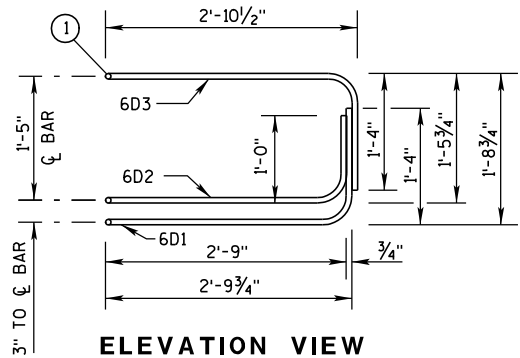
GENERAL NOTES

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

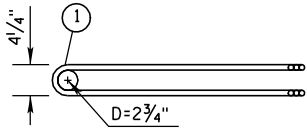
BARRIER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

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

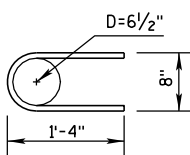


ELEVATION VIEW

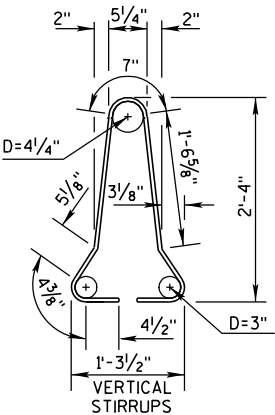


PLAN VIEW
LOOP BAR ASSEMBLY

(MARKED END SHOWN, INVERT FOR OTHER END)



6A2

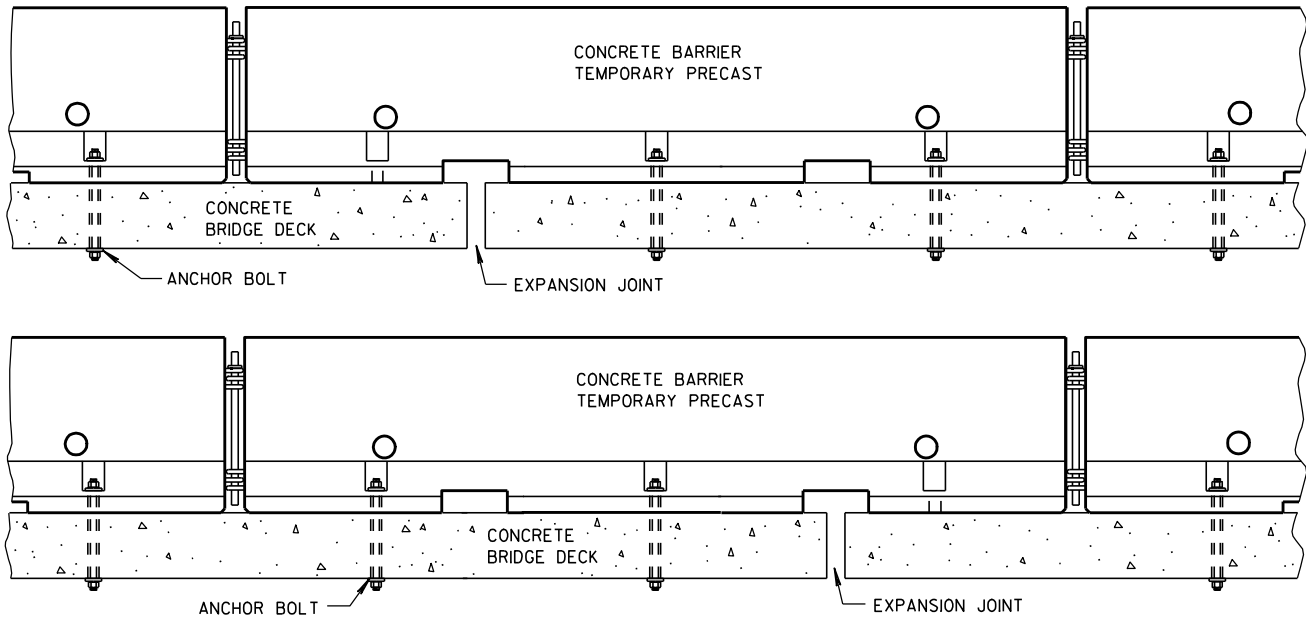


4A1

BARRIER SECTION

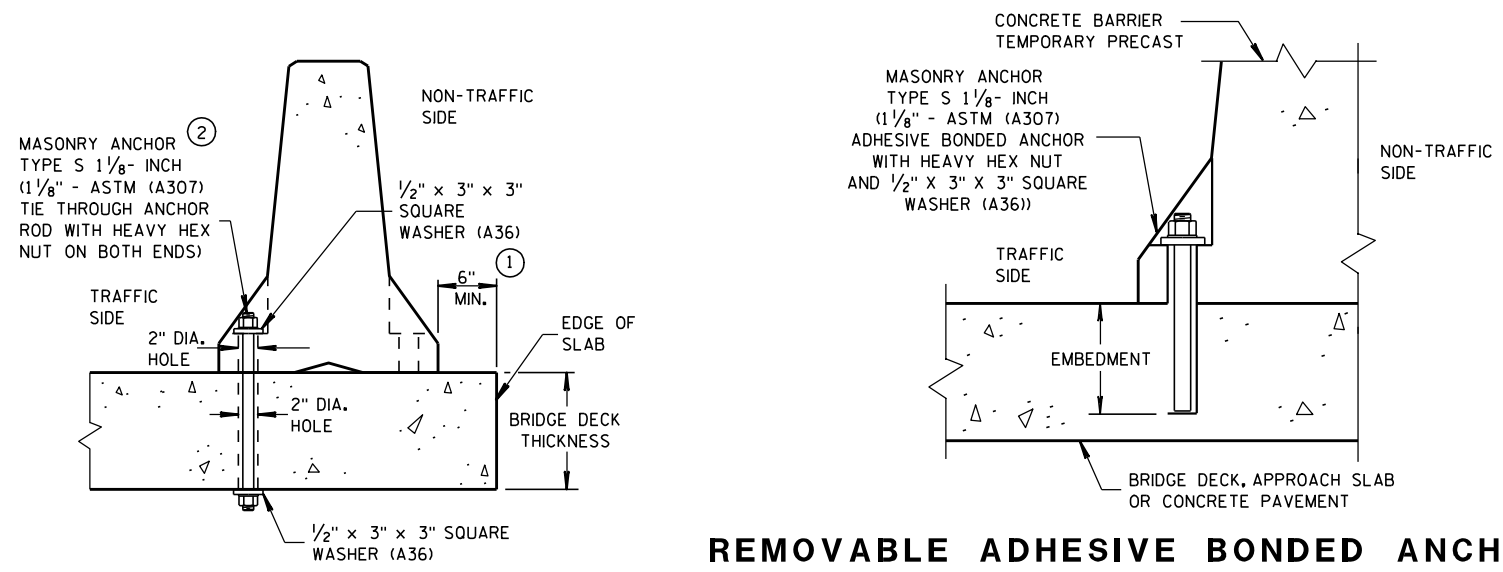
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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

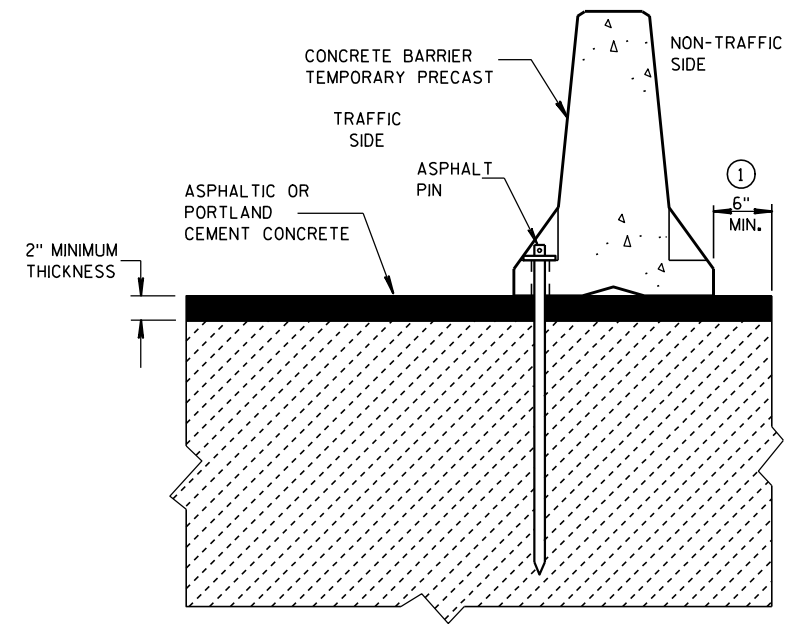


THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

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

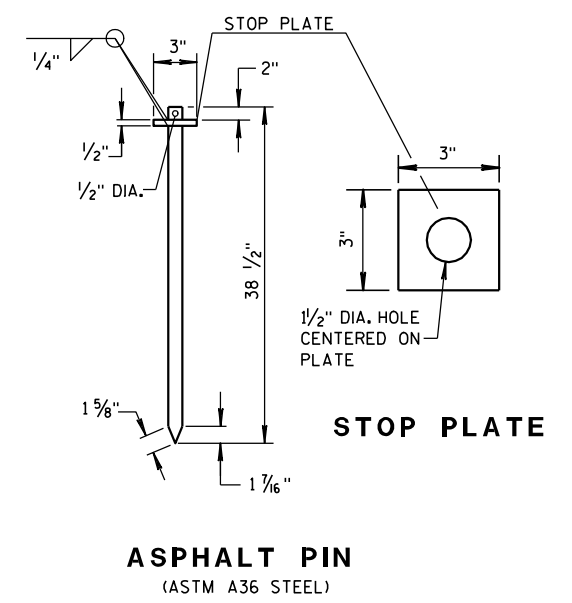
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

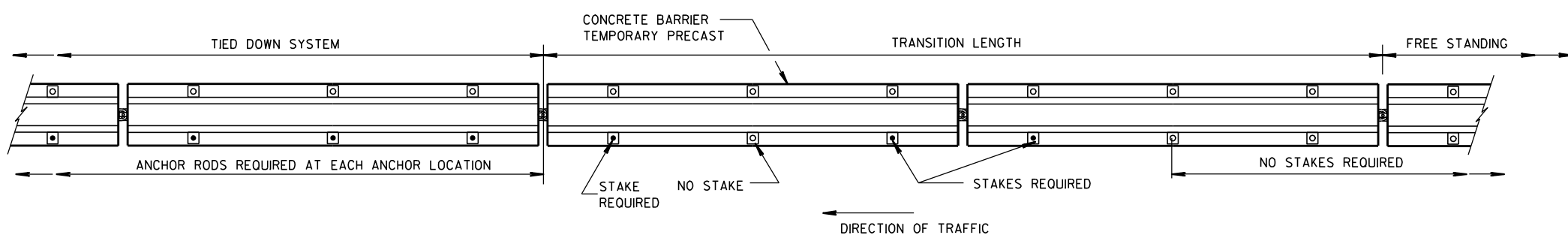


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN
(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

GENERAL NOTES

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

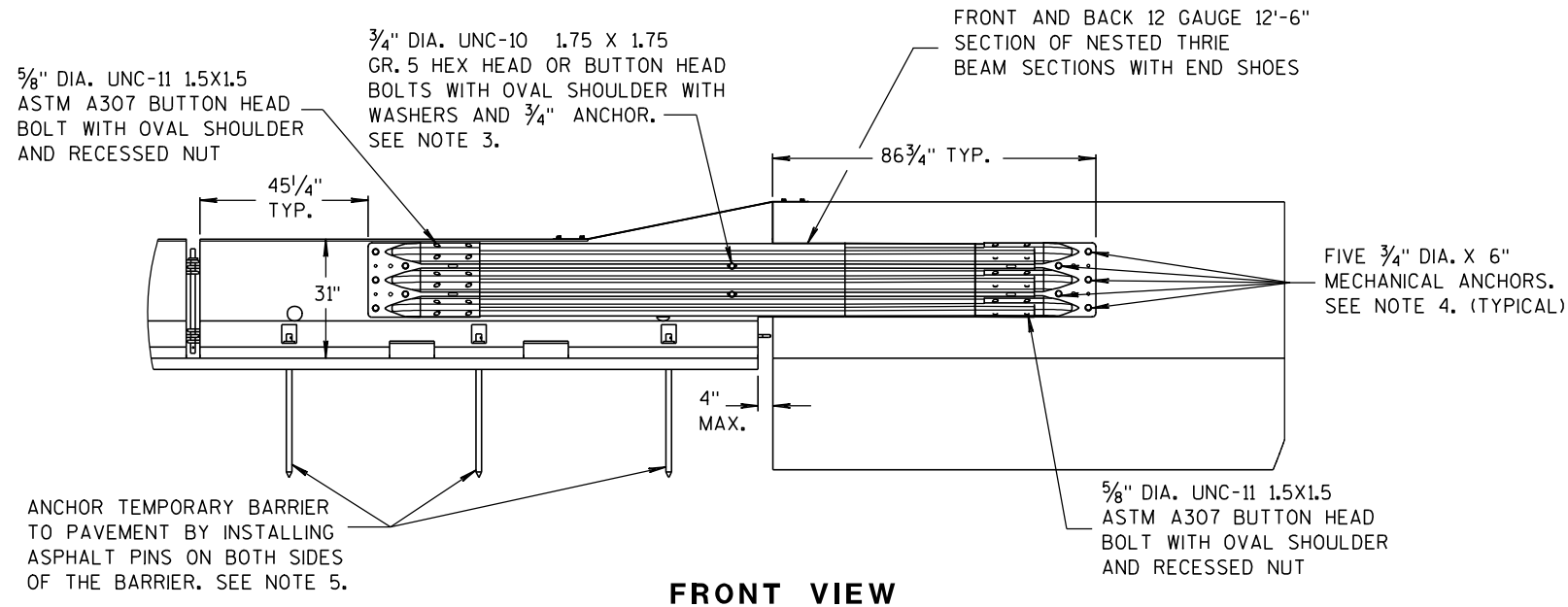
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.
- ② ANCHORING IS INCIDENTAL TO CONCRETE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

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1 1/8-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

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

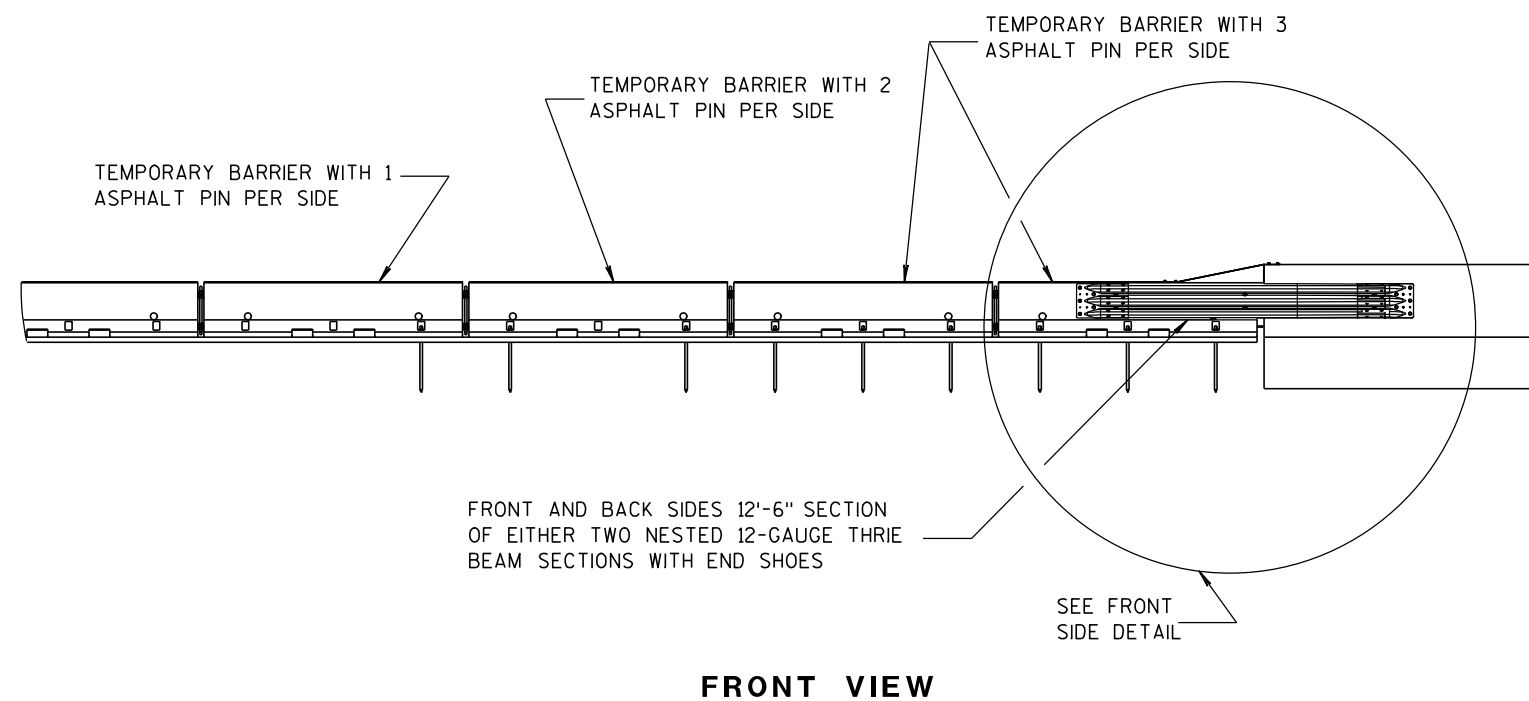
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

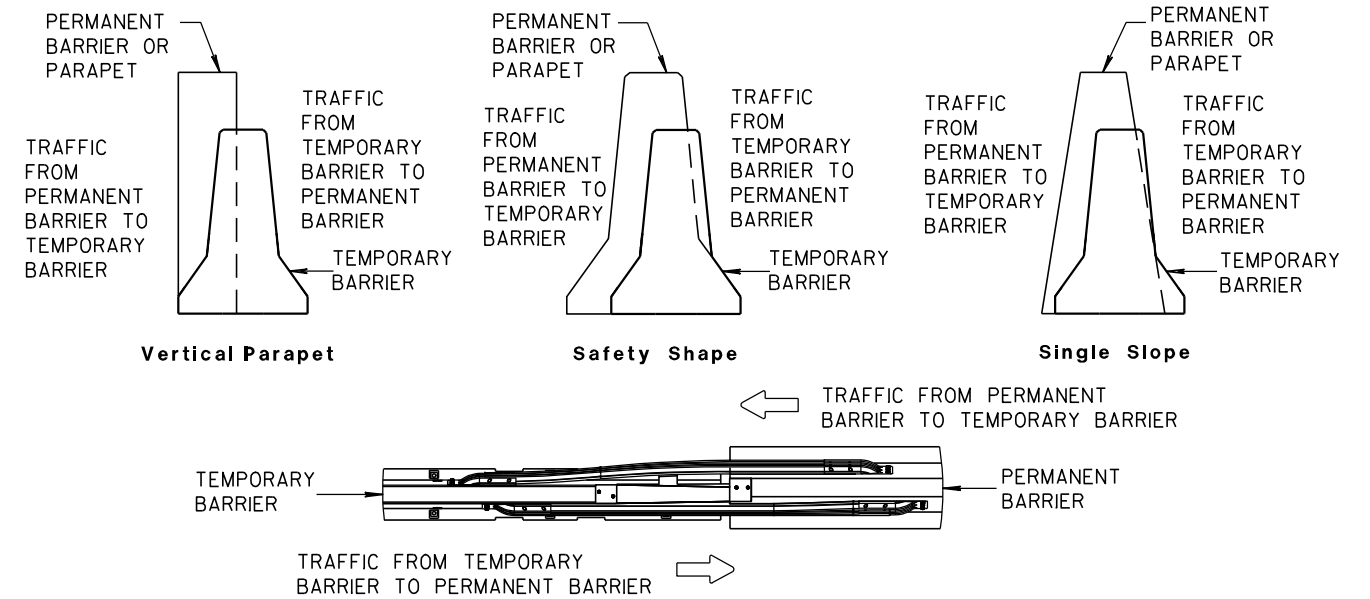


NOTES

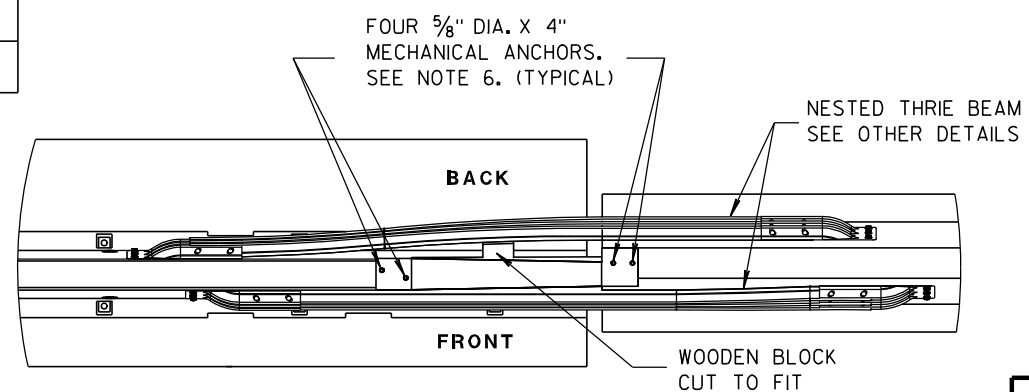
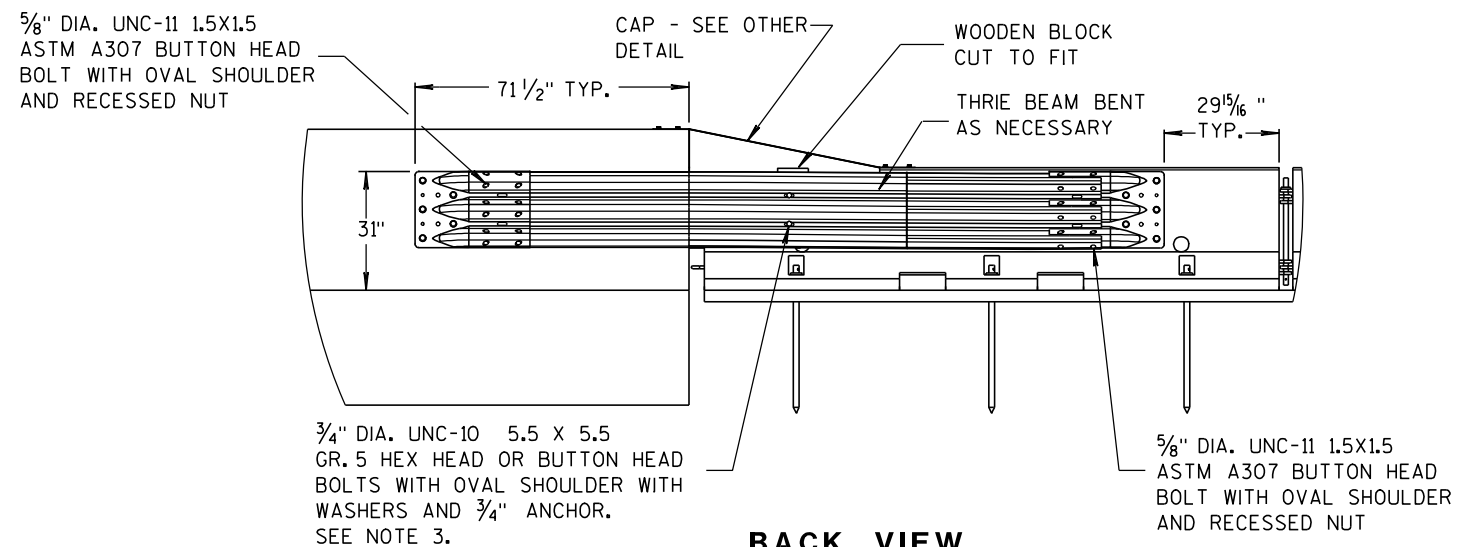
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48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



BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

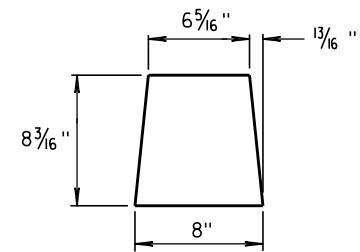


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

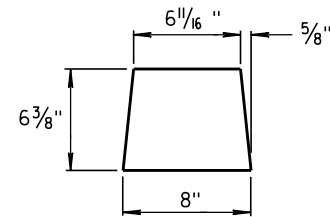


CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

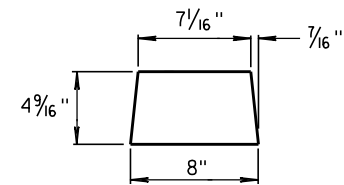
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



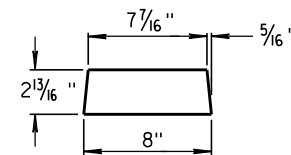
GUSSET 1



GUSSET 2

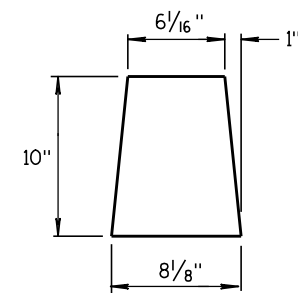


GUSSET 3

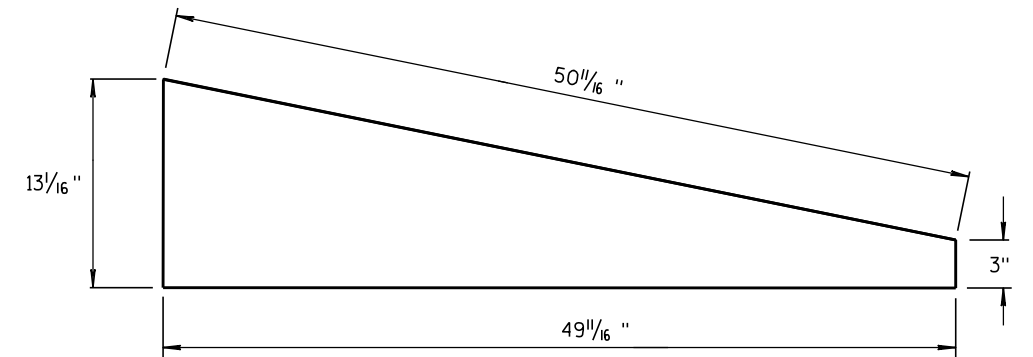


GUSSET 4

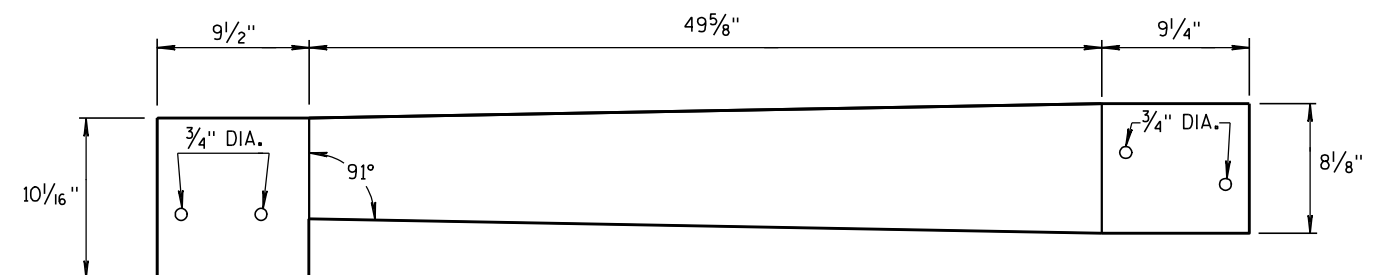
GUSSETS



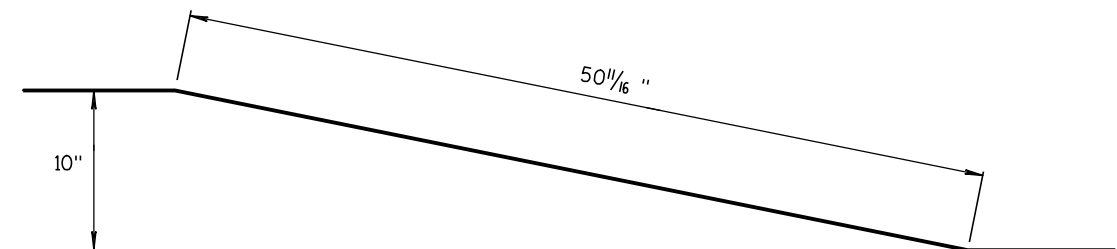
END PLATE



SIDE PLATE

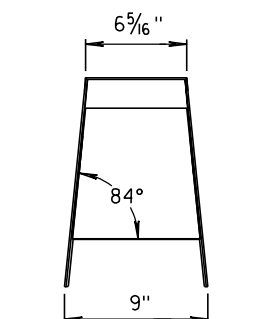


TOP PLATE

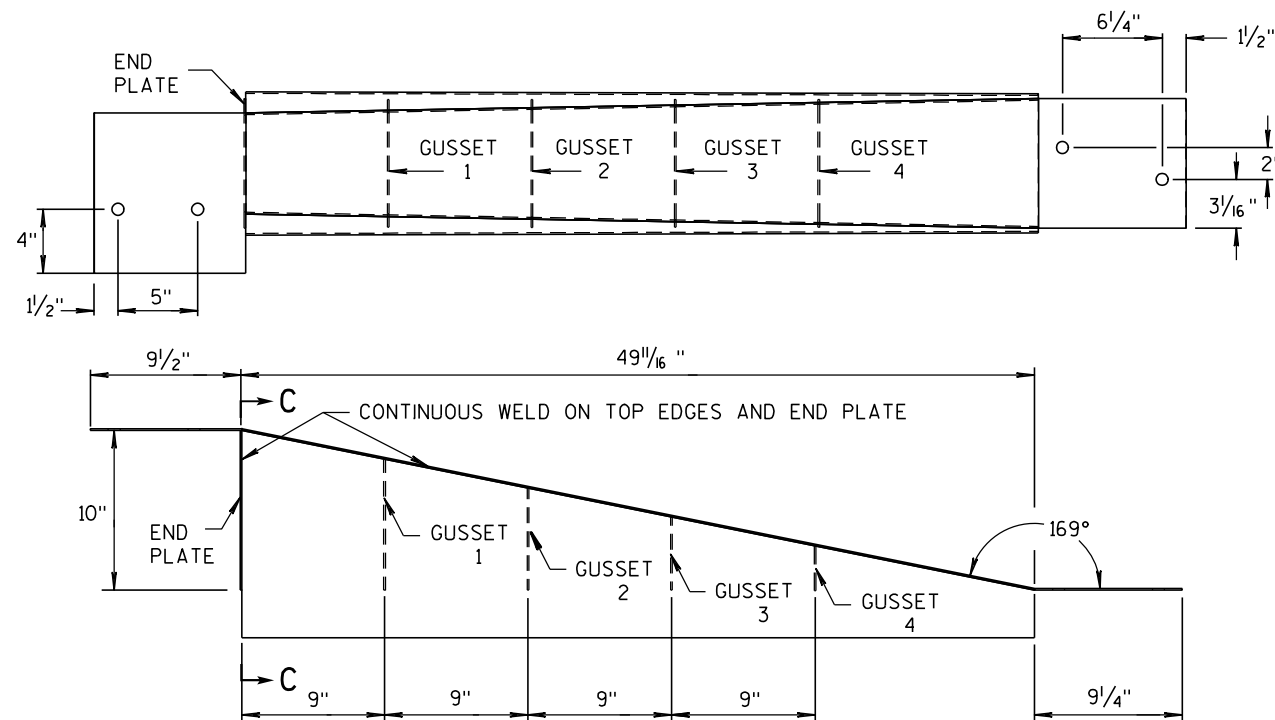


**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

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



SECTION C-C



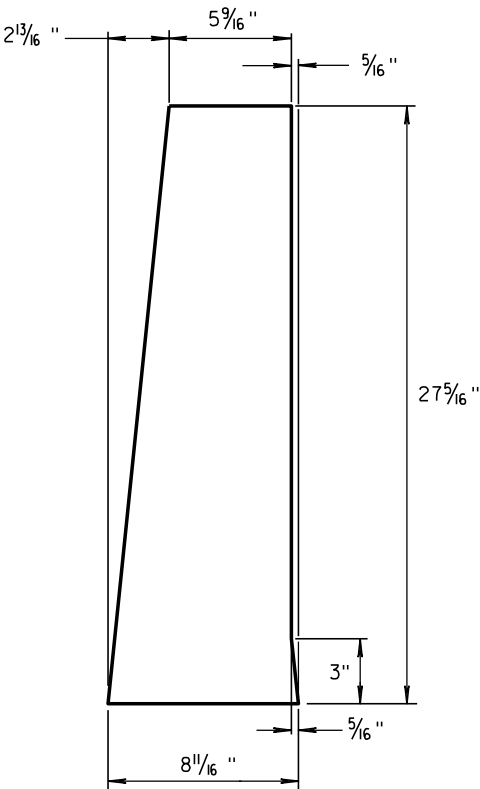
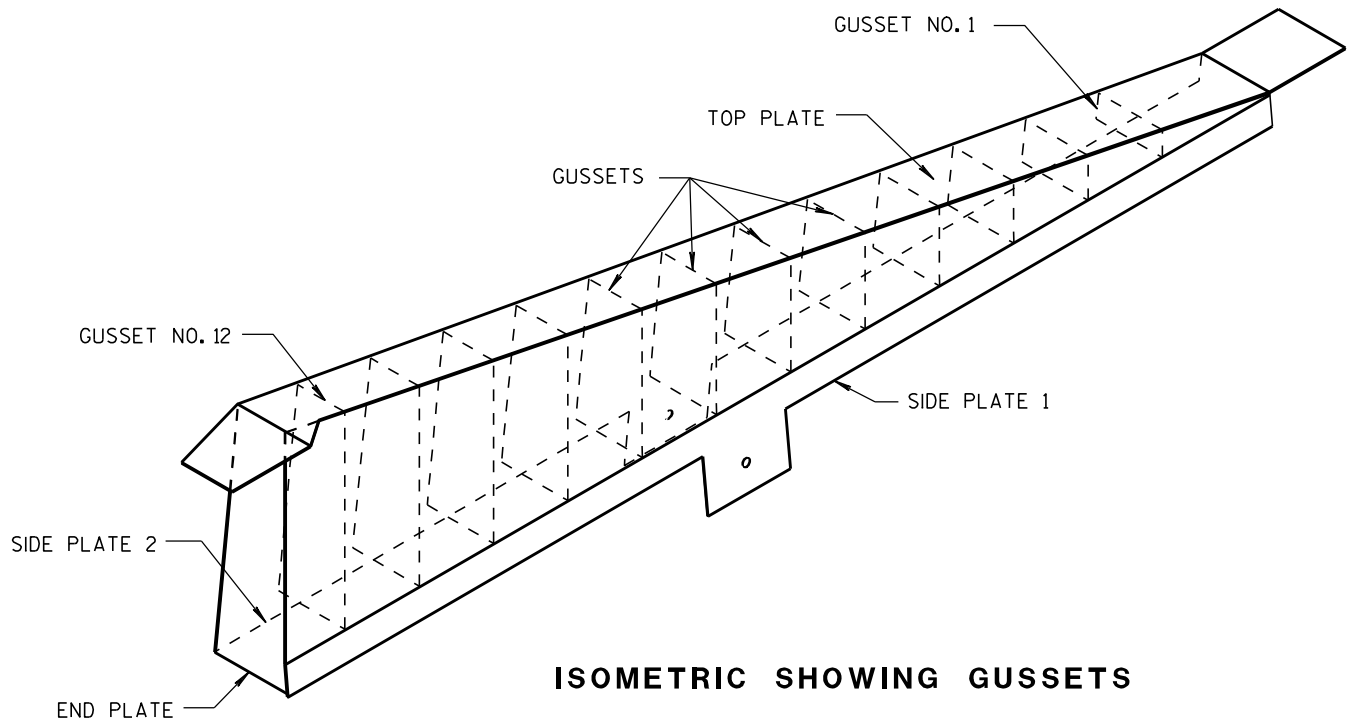
NOTES

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

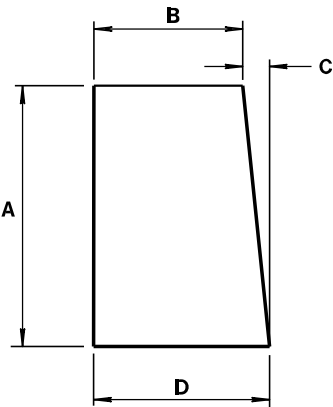
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



1/8" STEEL PLATE

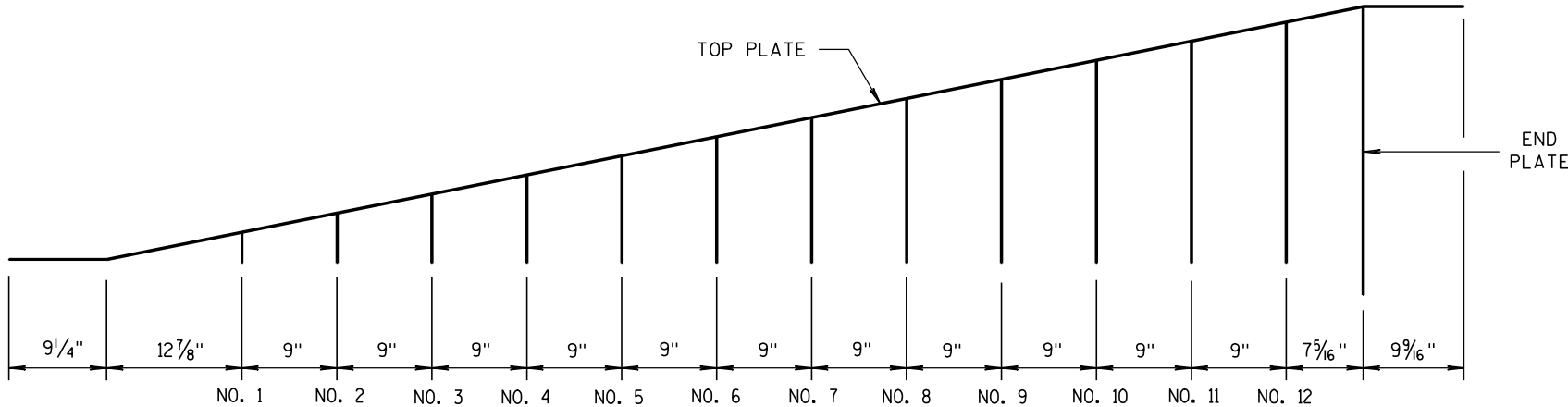


ALL GUSSETS 1/8" STEEL PLATE

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

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

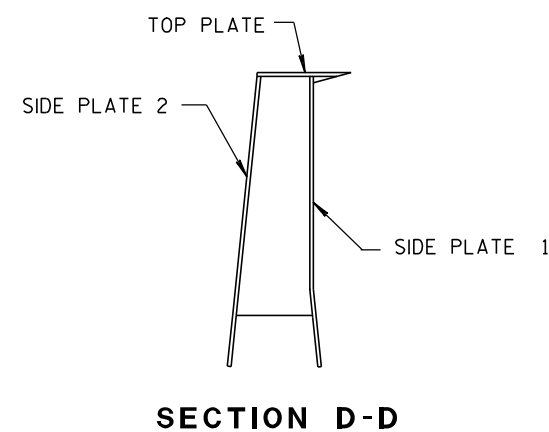
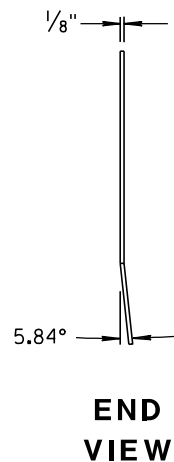
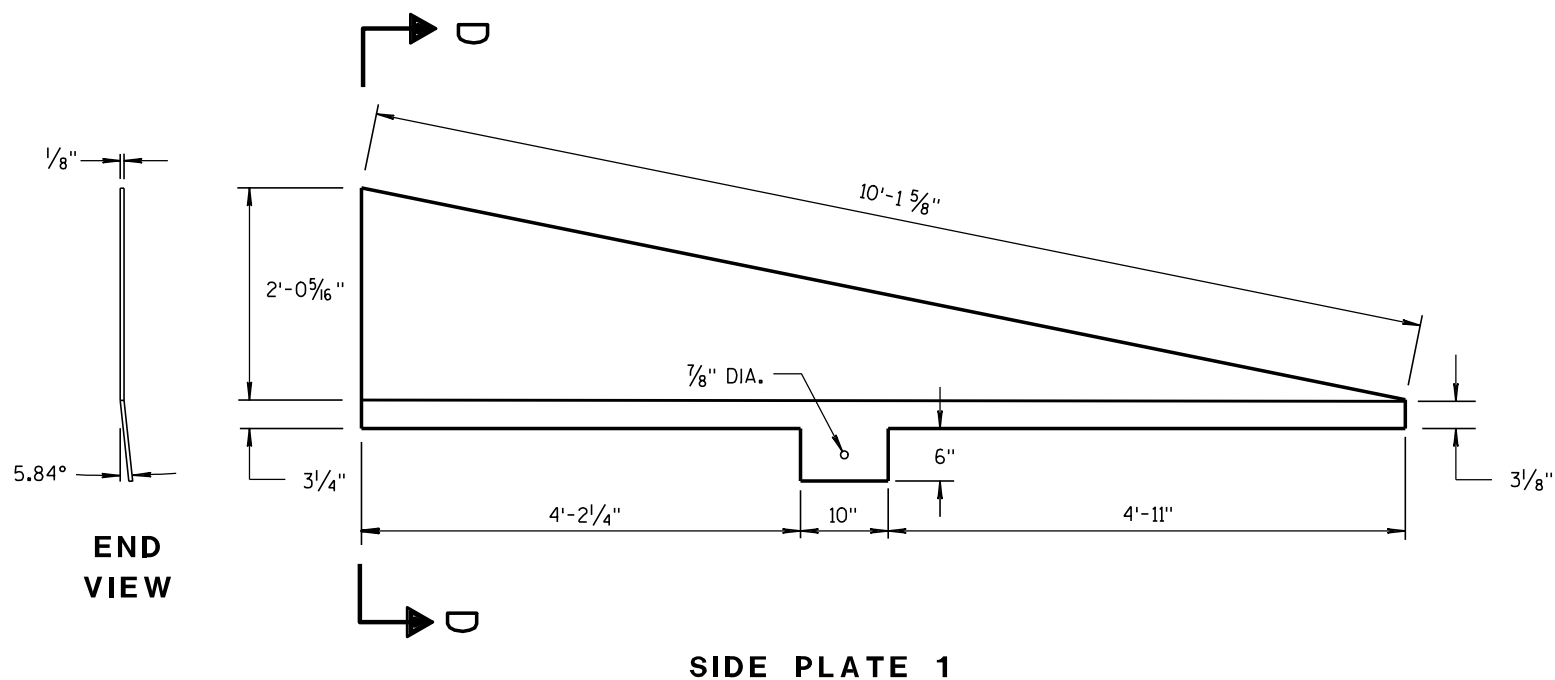
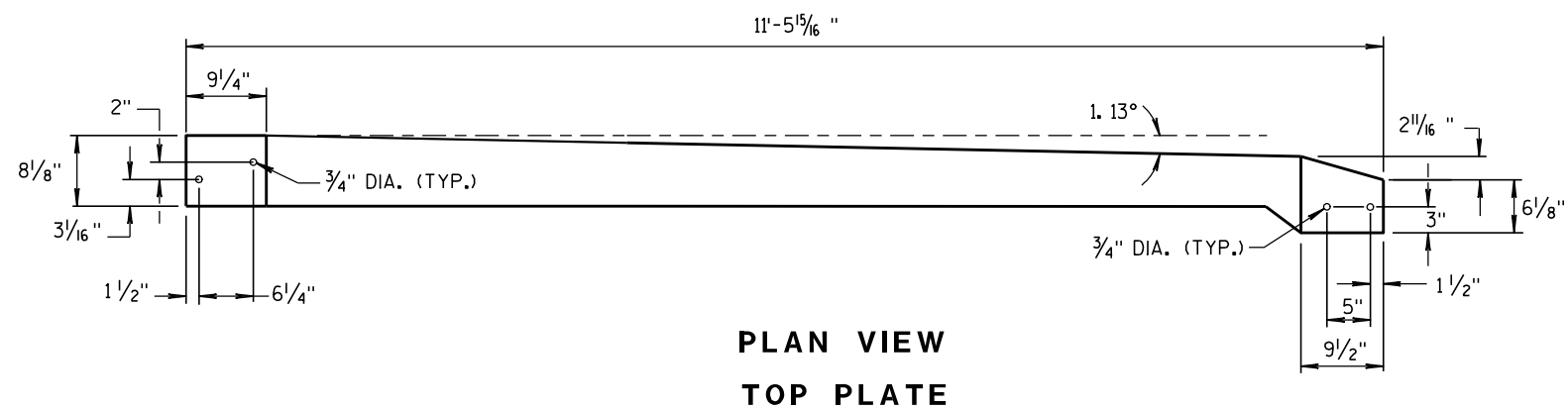
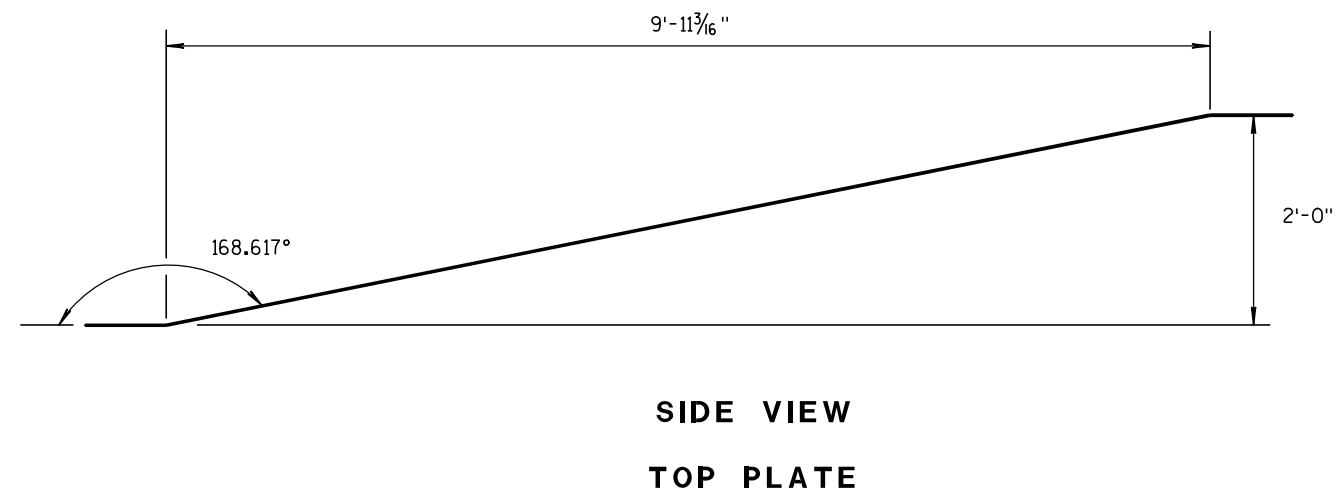
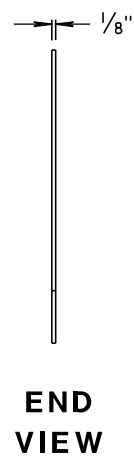
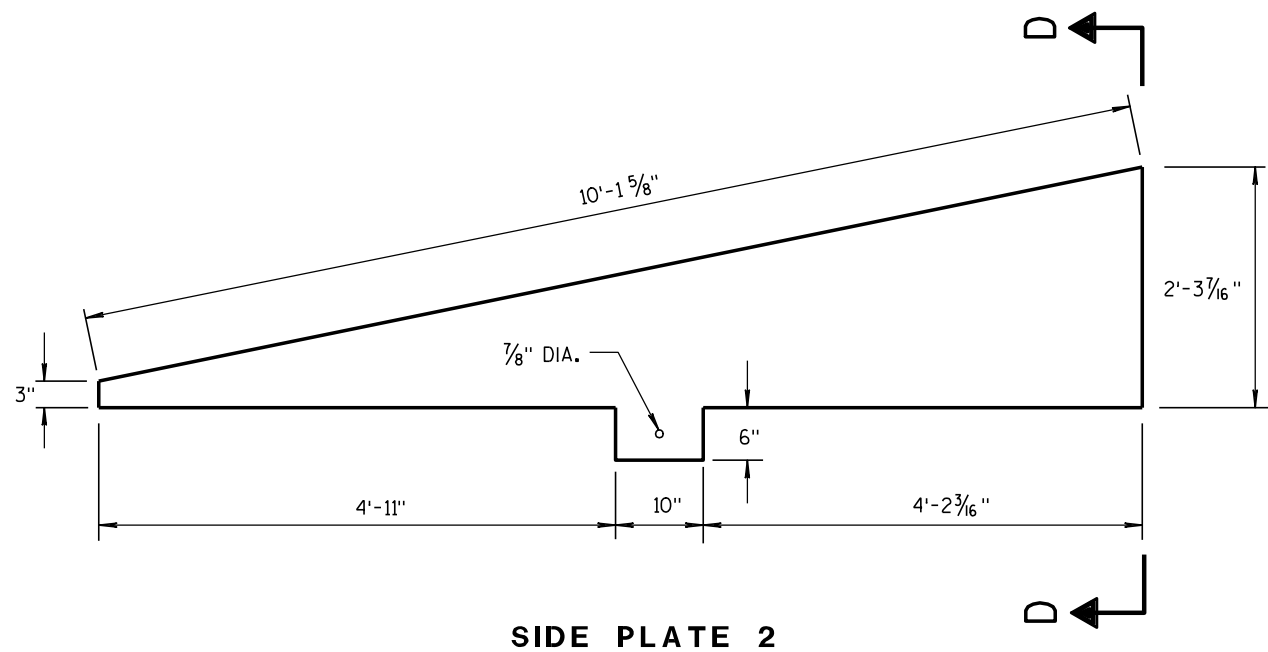
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

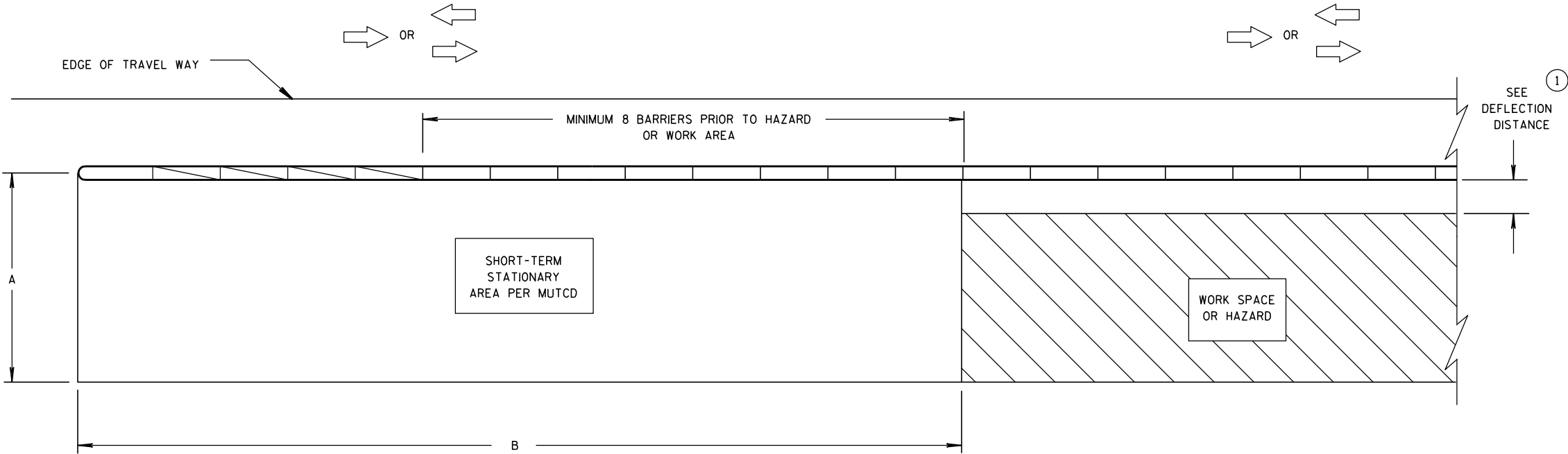
APPROVED

8/31/2012

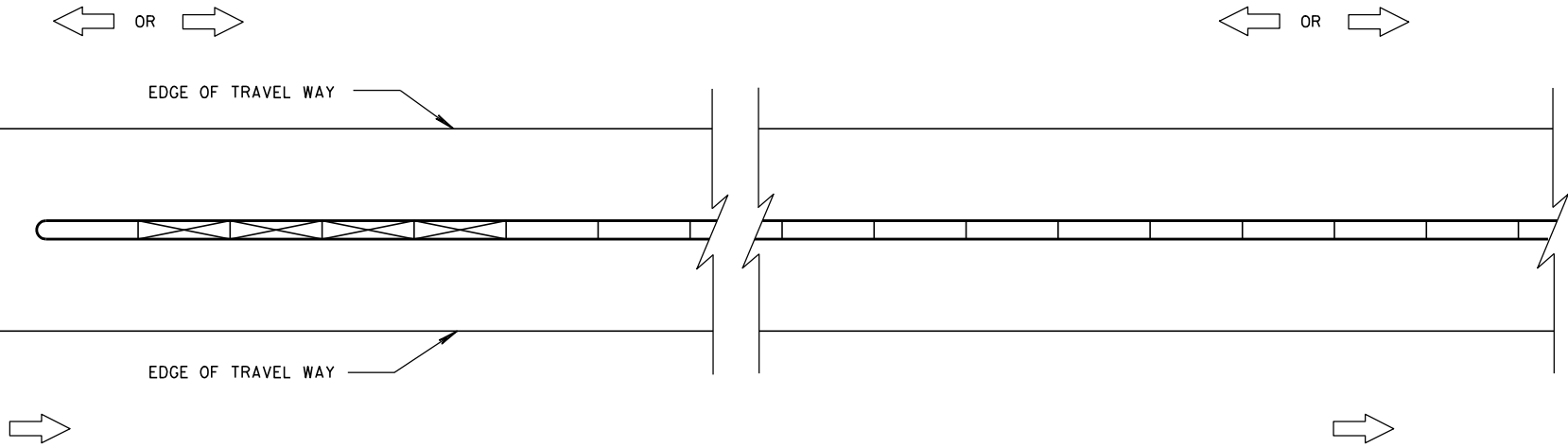
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARD DEVELOPMENT
ENGINEER



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.

DIMENSION A TABLE ②

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

DIMENSION B TABLE ②

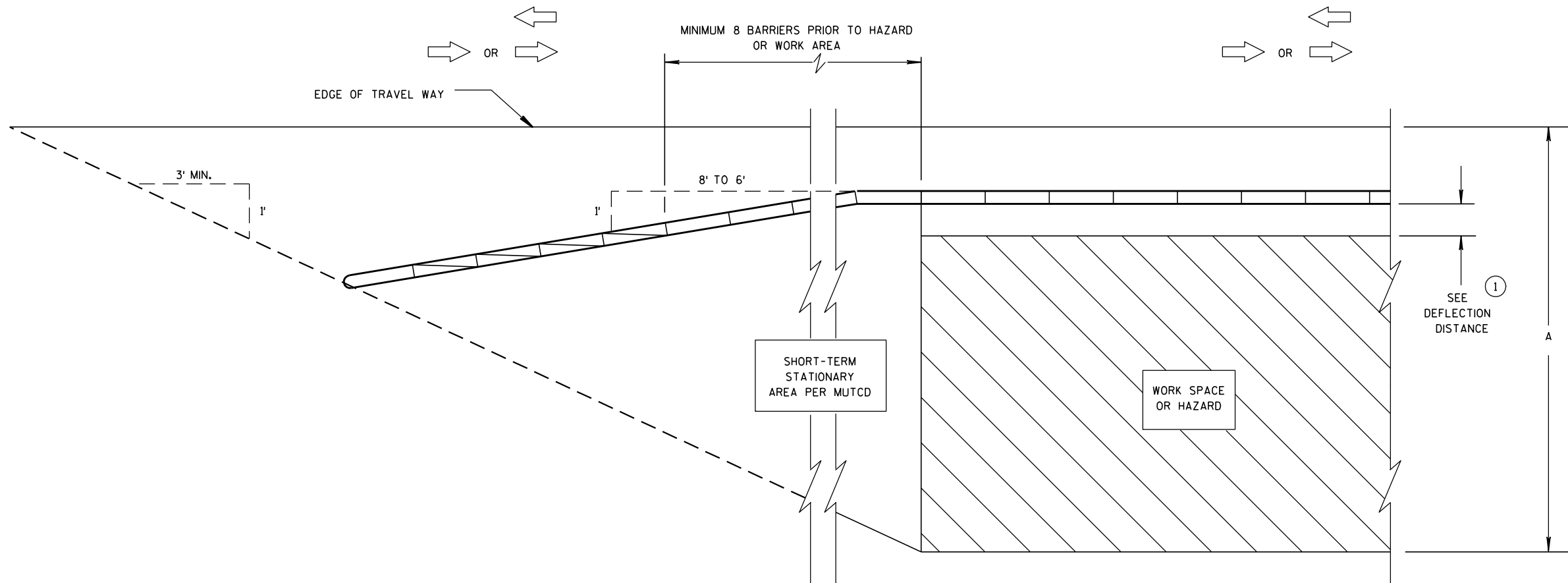
POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

LEGEND

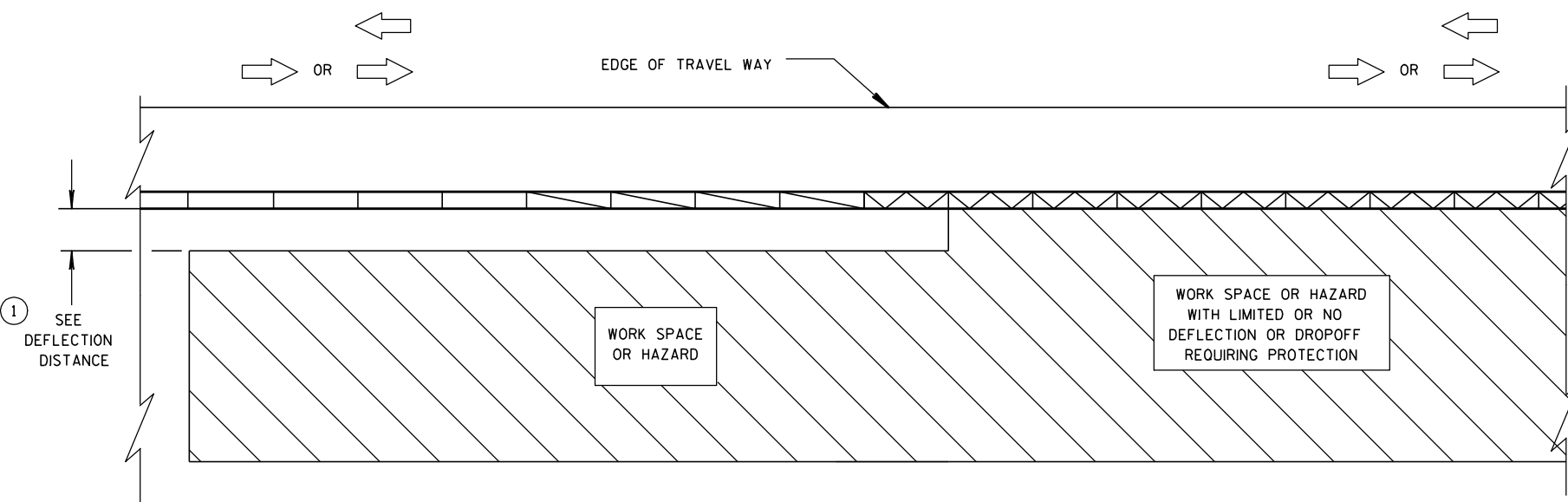
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**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**

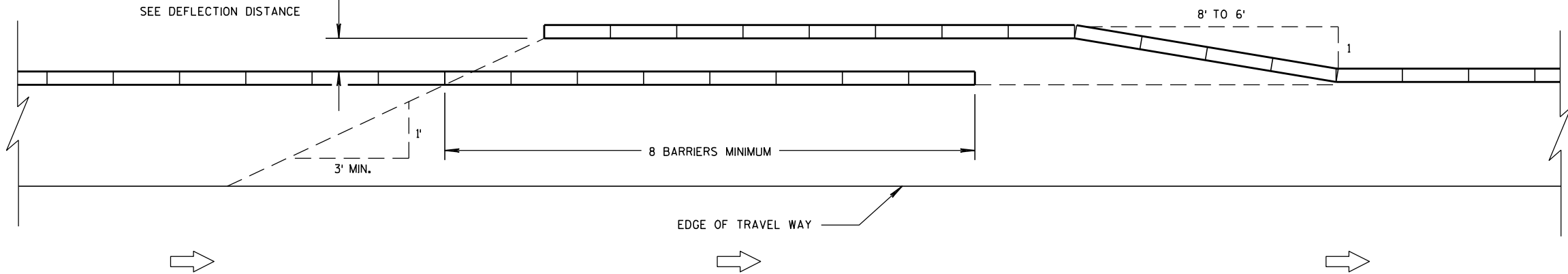
LEGEND

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**

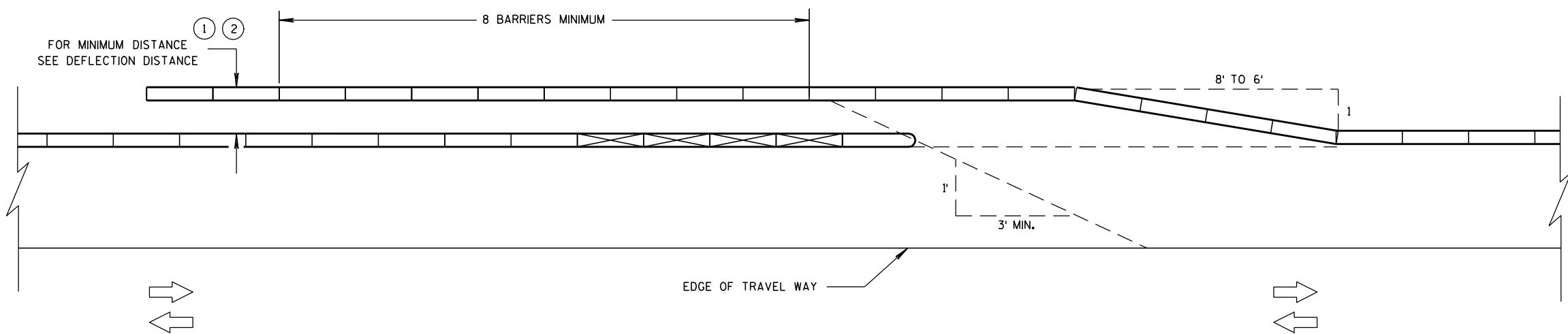
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

FOR MINIMUM DISTANCE
SEE DEFLECTION DISTANCE

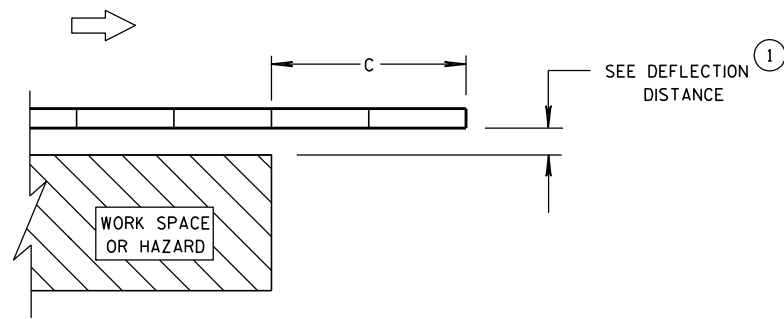


TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC

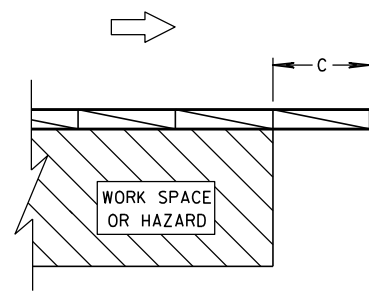
FOR MINIMUM DISTANCE
SEE DEFLECTION DISTANCE



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED



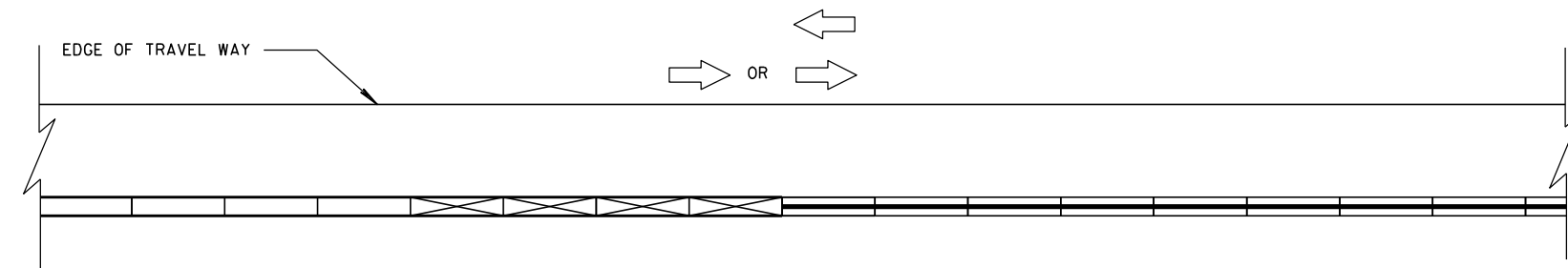
ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED

LEGEND

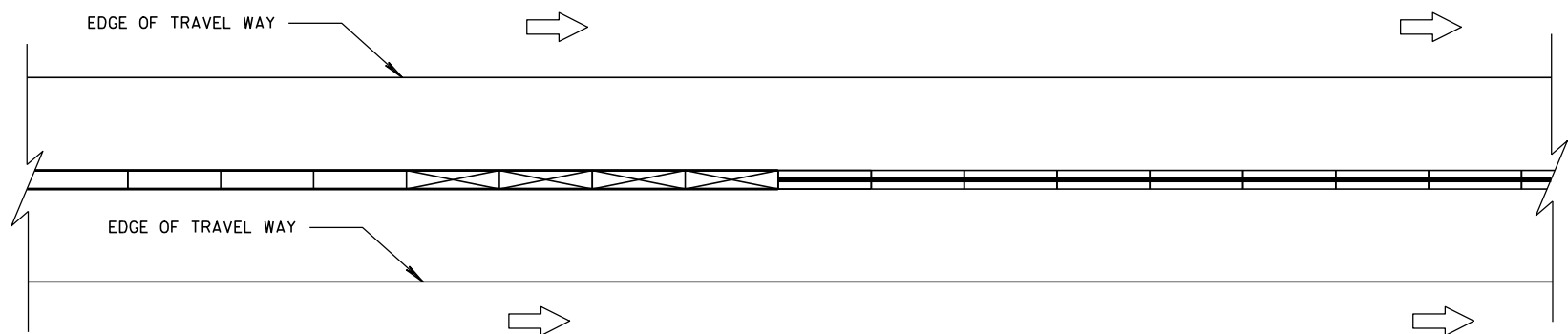
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



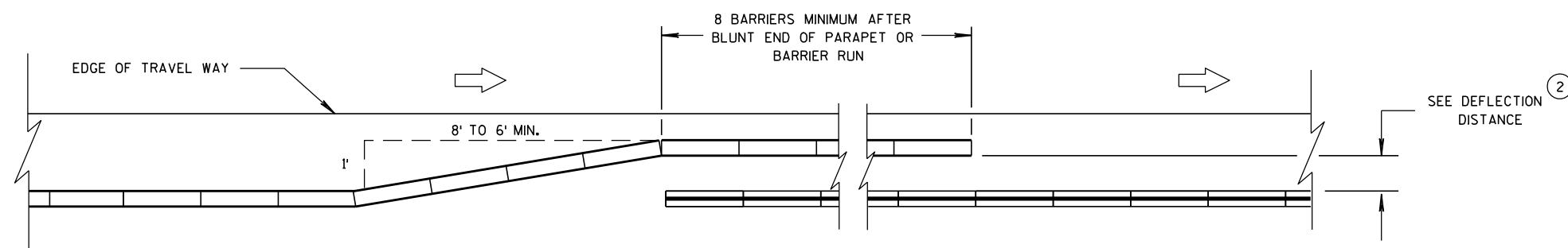
**CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE**



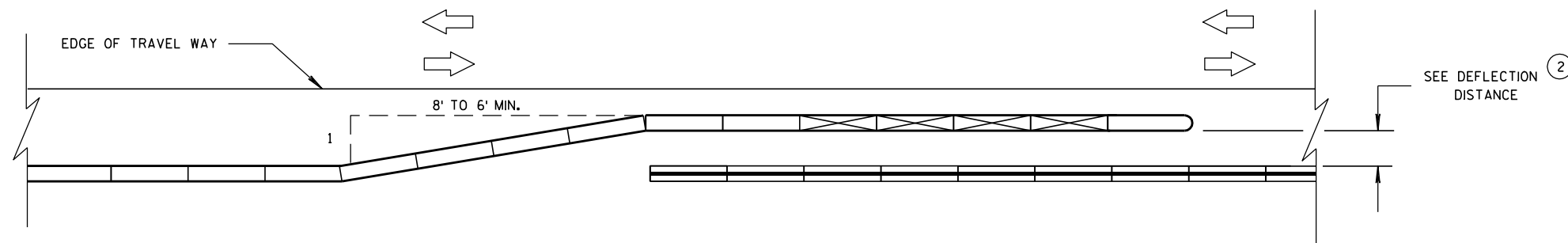
**CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES**

LEGEND

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



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

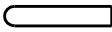
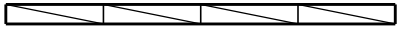
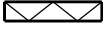
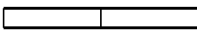


**OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

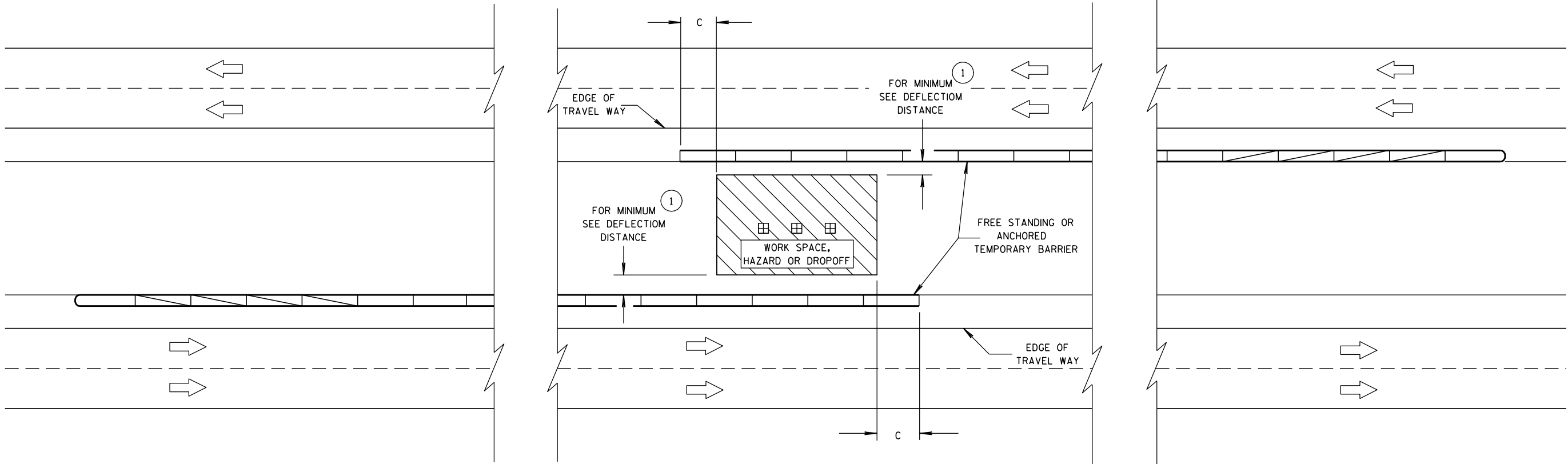
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
③	2	SOIL PLATE: 2'-0" X 1'-6" X 1/4" **
④	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	1	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	1	BEARING PLATE
⑧	1	BCT CABLE ASSEMBLY
⑨	1	CABLE ANCHOR BOX
⑩	1	STRUT & YOKE
⑪	1	STEEL PLATE BEAM, END PANEL 12 GA, 13'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA, 13'-6 1/2"
⑬	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
⑭	1	REFLECTIVE SHEETING TYPE H: 18" X 18"
⑮	1	E.A.T. MARKER POST

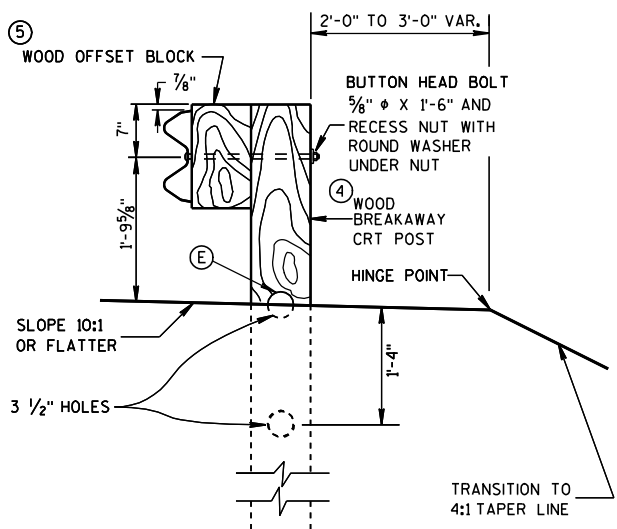
GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL 5/8" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

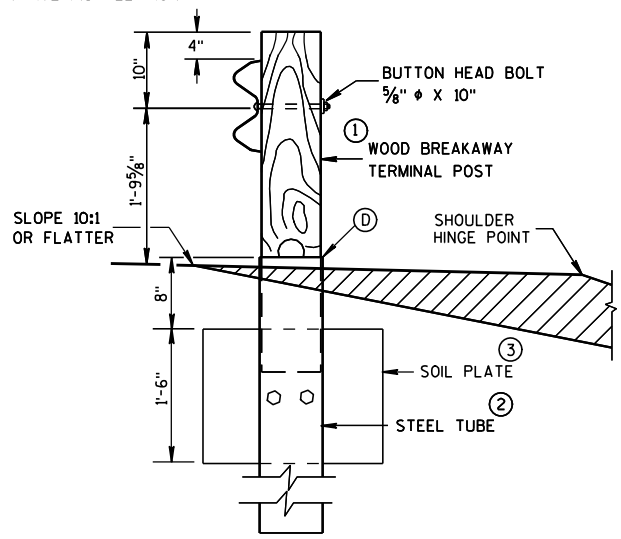
- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER OF E.A.T. STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.
- DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

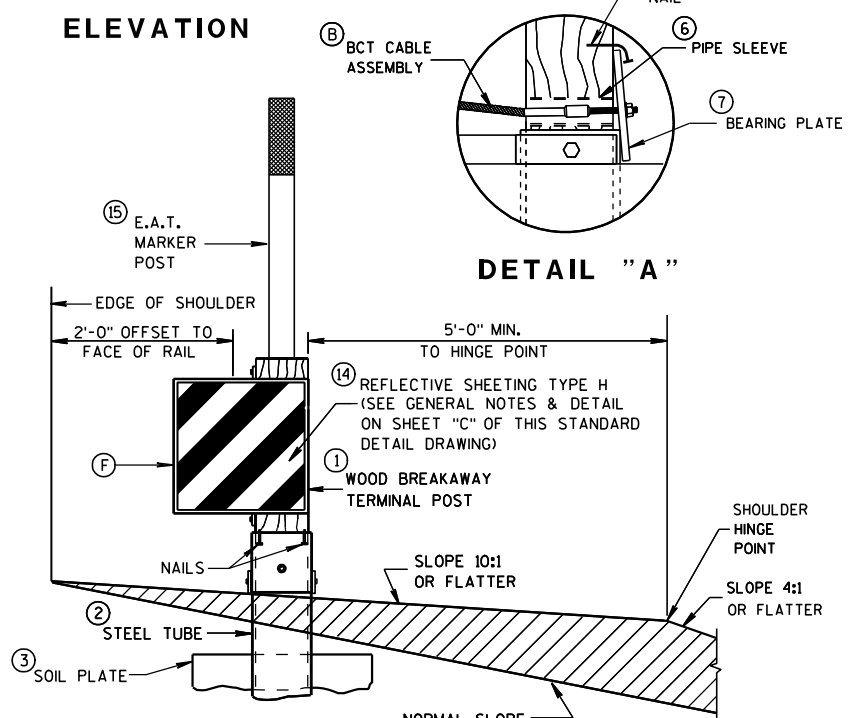
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL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



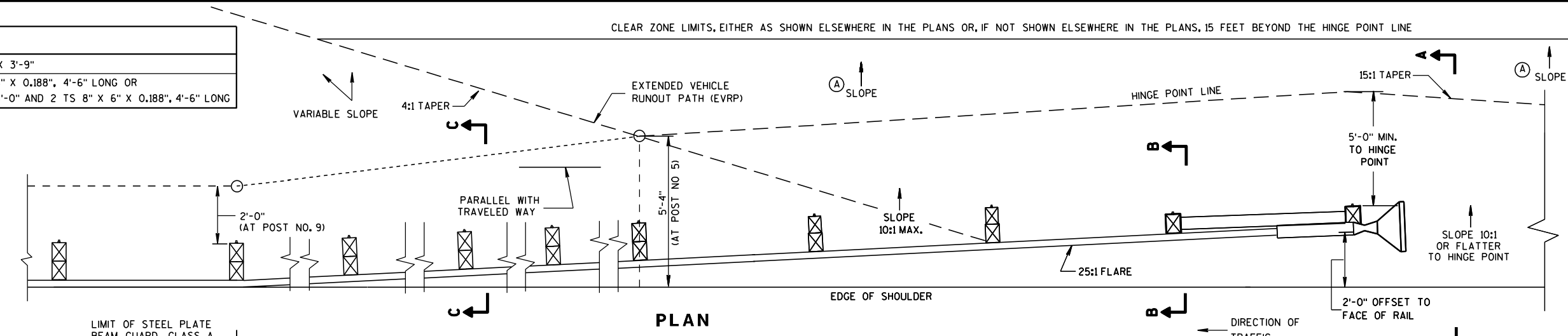
SECTION C-C
TYPICAL AT POST NOS. 6, 8



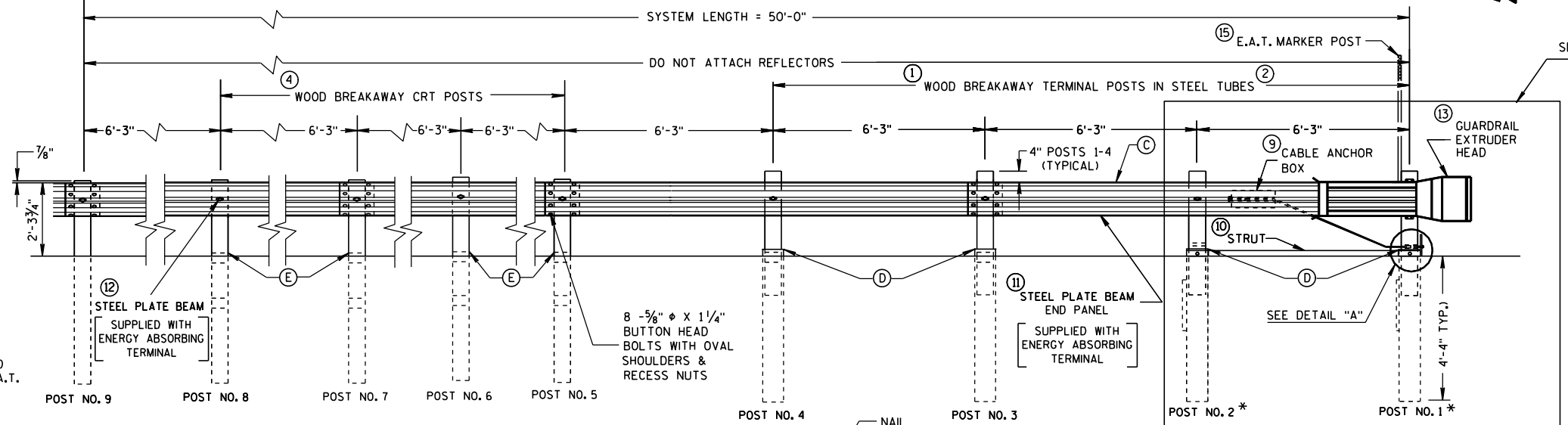
SECTION B-B
TYPICAL AT POST NO. 2*



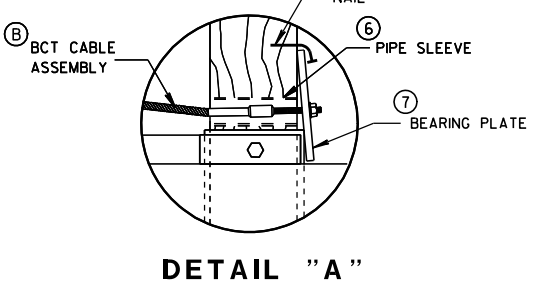
SECTION A-A
TYPICAL AT POST NO. 1*



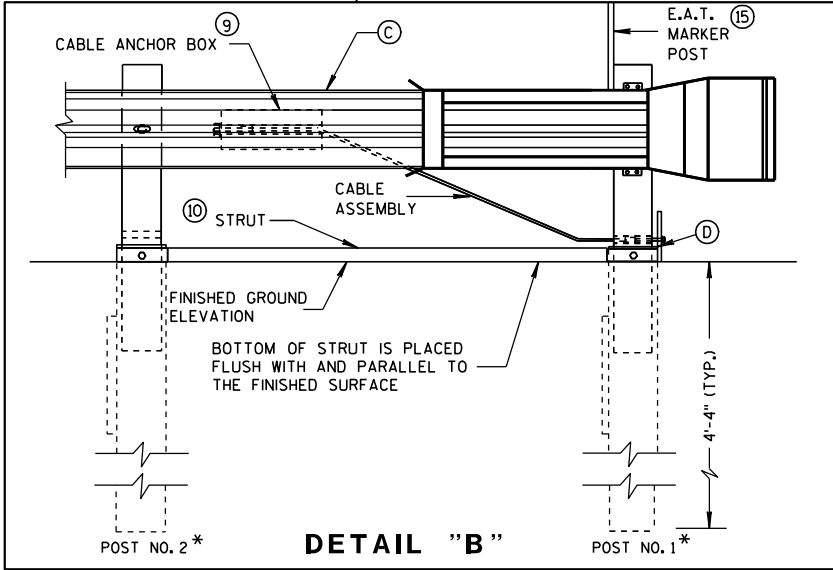
PLAN



ELEVATION



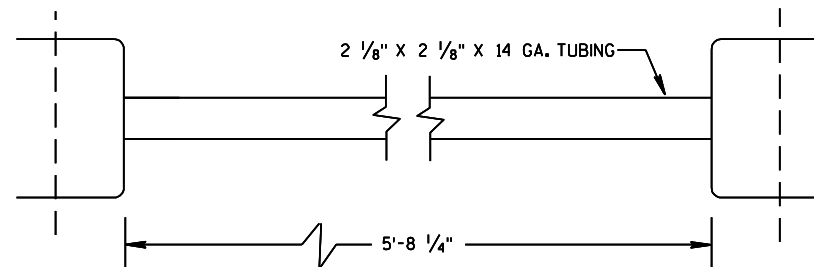
DETAIL "A"



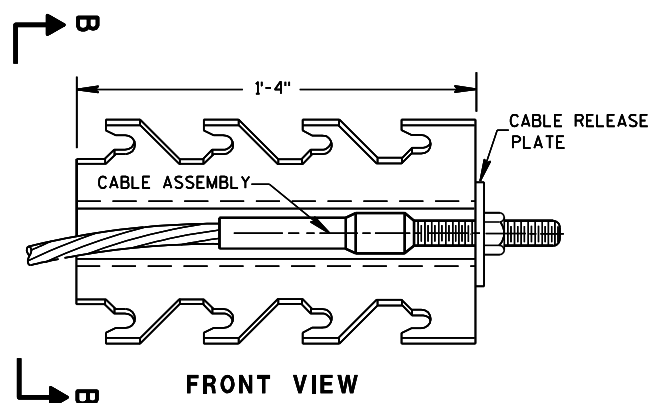
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

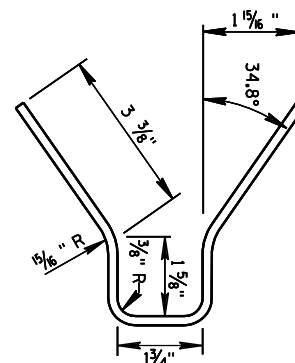


⑩ STRUT DETAIL (SKT-350)

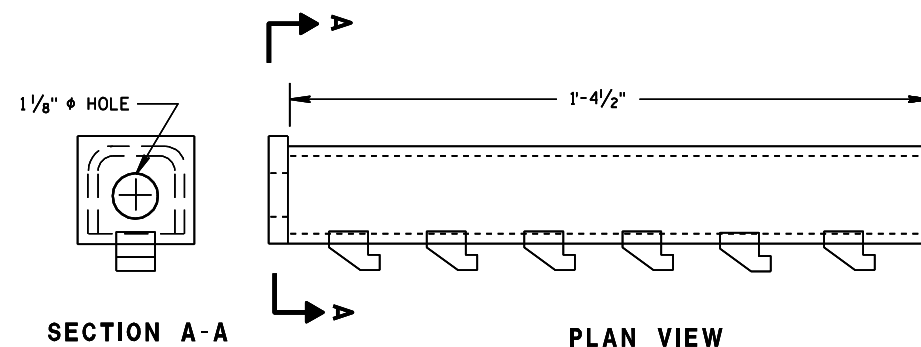


⑨ CABLE ANCHOR BOX (SKT-350)

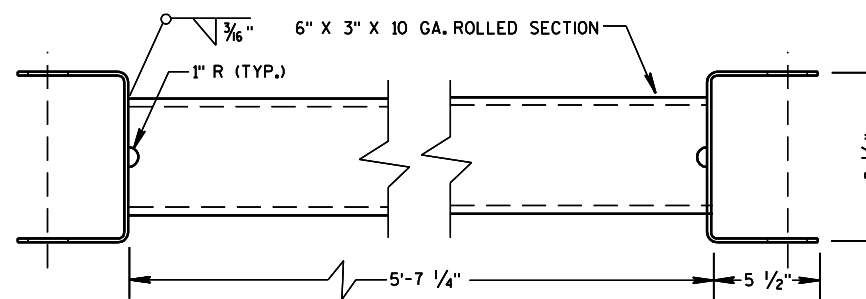
(SKT-350)



SECTION B-B

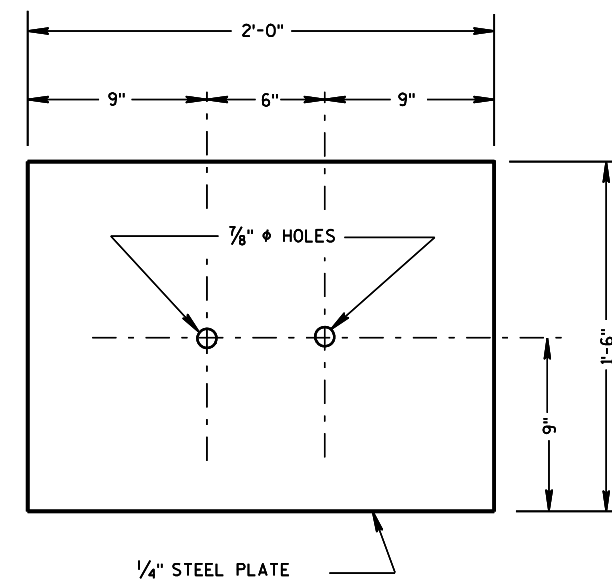


⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)

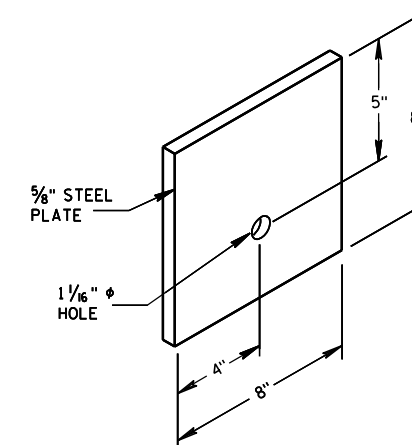


⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



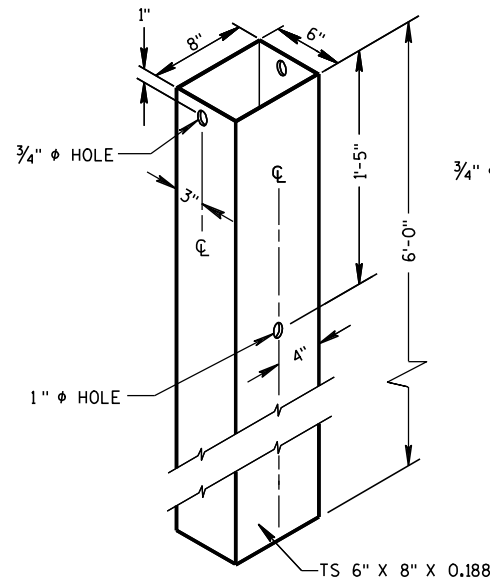
③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



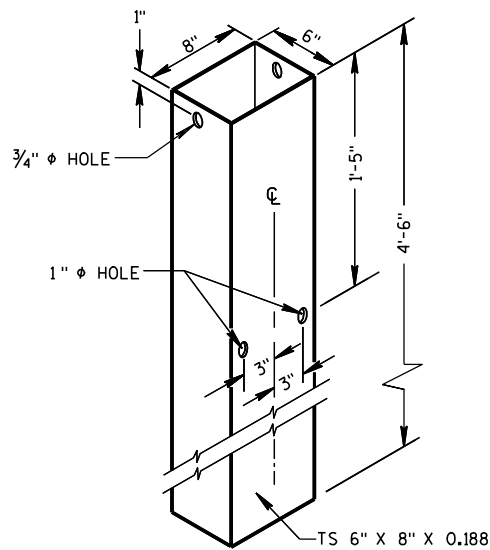
⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

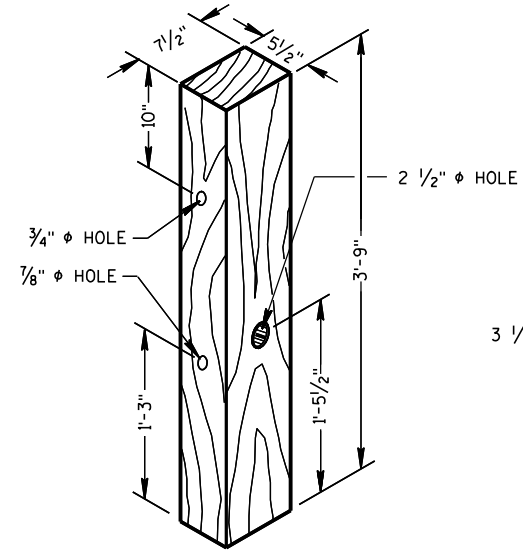
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



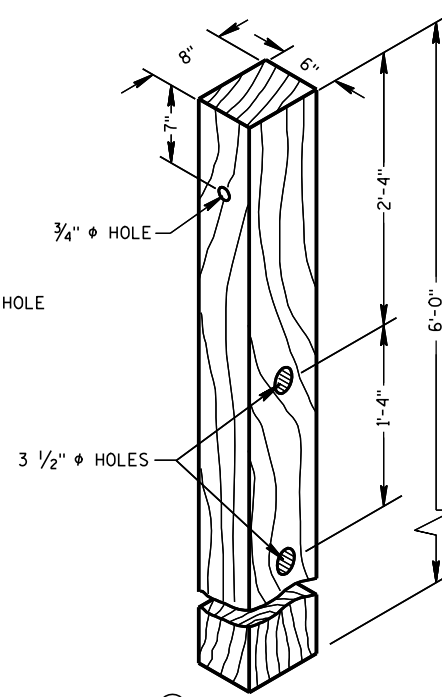
② **72" STEEL TUBE**
(POSTS NO. 1-4)



② **54" STEEL TUBE**
(POSTS NO. 1-4)

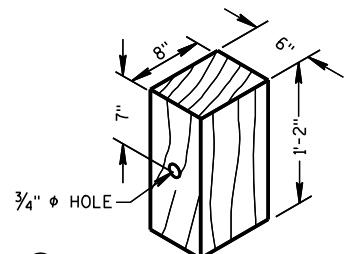


① **TERMINAL POST**
(POSTS NO. 1-4)



④ **CRT POST**
(POSTS NO'S 5-8)

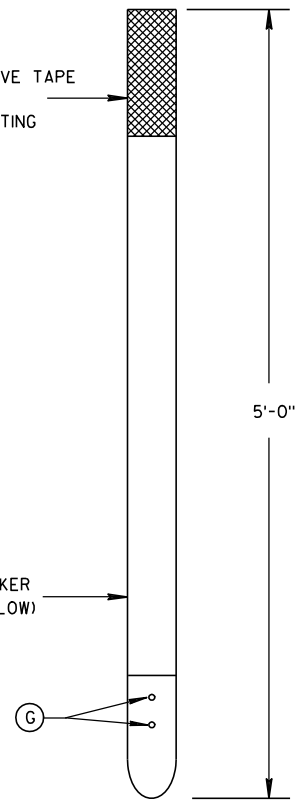
WOOD BREAKAWAY POSTS



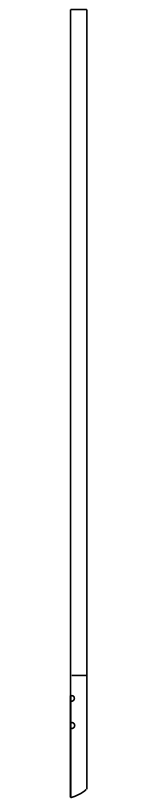
⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

YELLOW REFLECTIVE TAPE
3" X 9" TYPE H
REFLECTIVE SHEETING

E.A.T. MARKER
POST (YELLOW)



FRONT VIEW



SIDE VIEW

⑮ **E.A.T. MARKER POST**

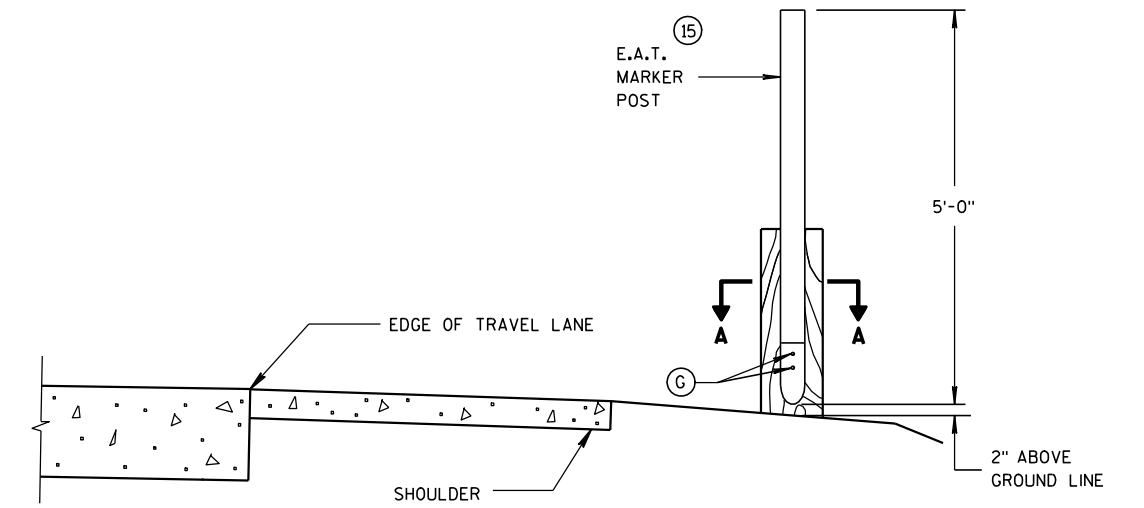
GENERAL NOTES

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

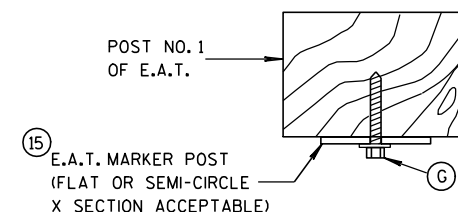
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

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

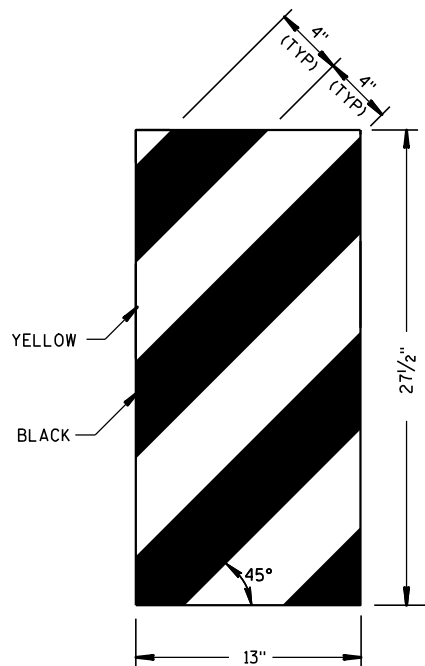
⑥ 1/2" DIA. X 3" LAG BOLT WITH WASHER.



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)

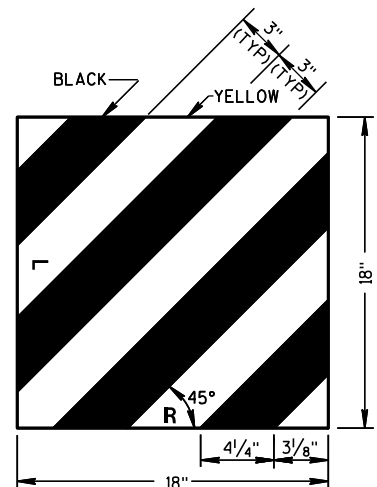


SECTION A-A



ET-2000 PLUS ONLY

⑭ **REFLECTIVE SHEETING DETAILS**



ET-2000 AND SKT-350

**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

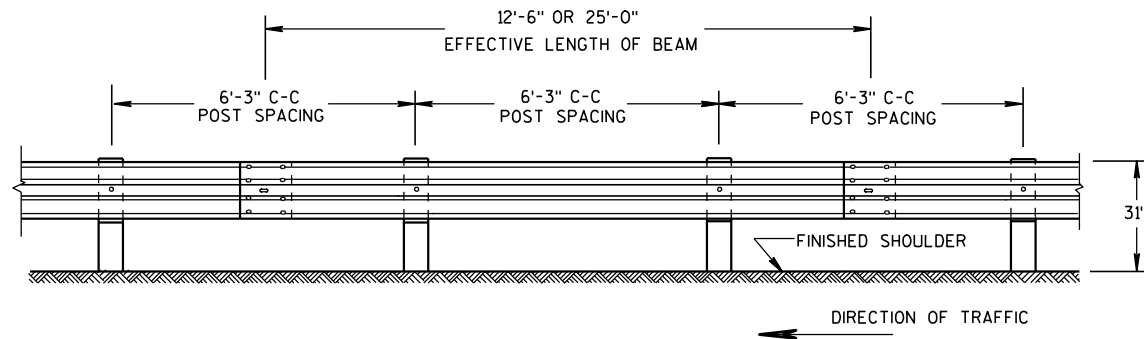
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-12-10 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

6

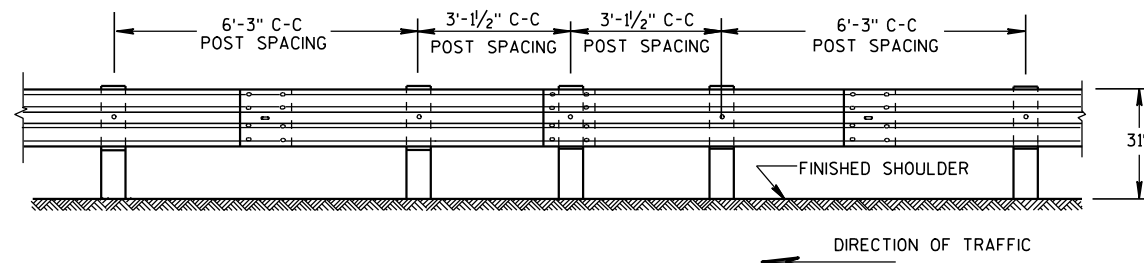
- S.D.D. 14 B 42-2a**





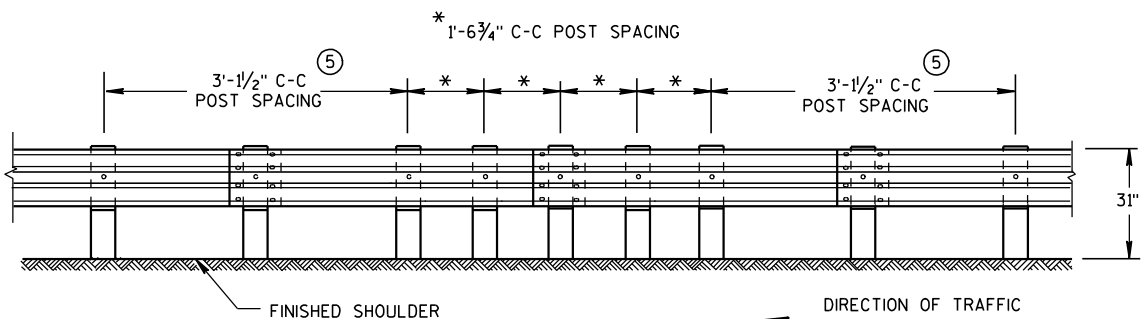
FRONT VIEW

POST SPACING STANDARD INSTALLATION



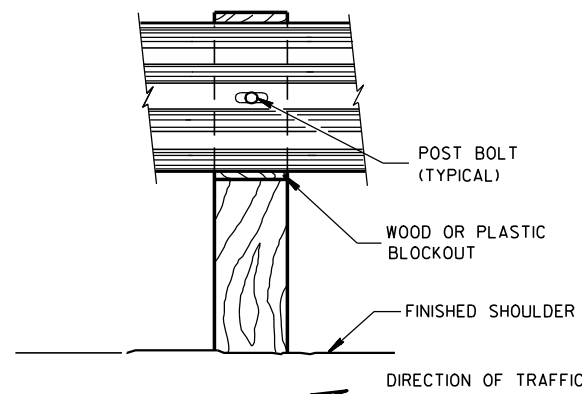
FRONT VIEW

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

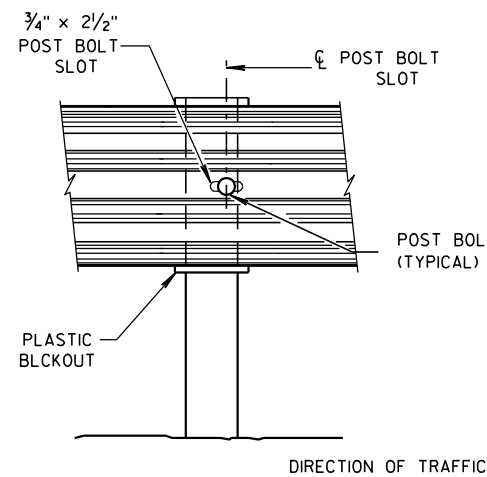


FRONT VIEW

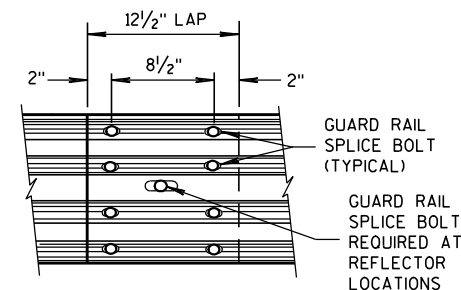
QUARTER POST SPACING (QS)



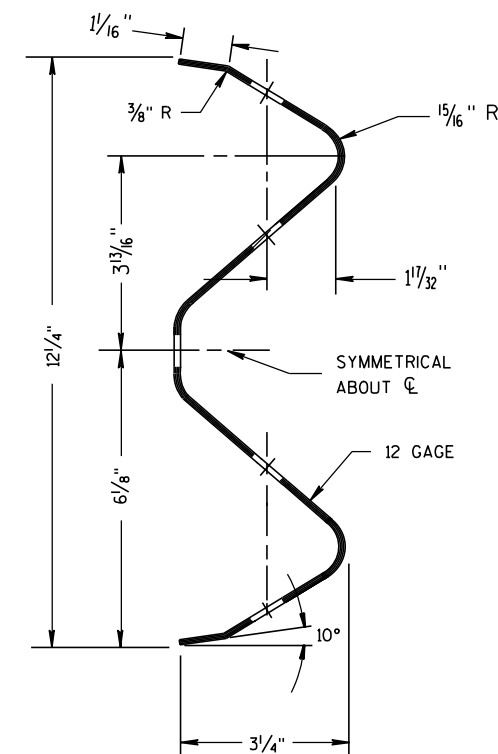
FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



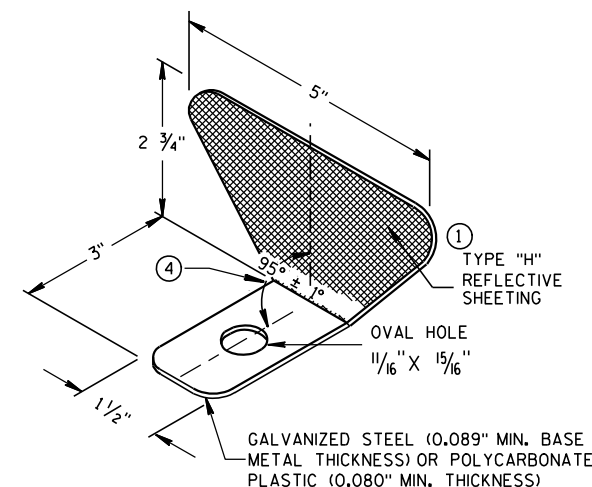
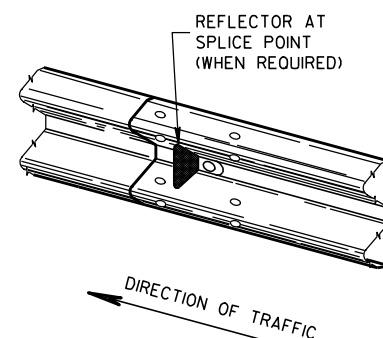
SECTION THRU W-BEAM RAIL

REFLECTOR SPACING^②

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ^③	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ^④	3
	> 200'	100' C-C	2	

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



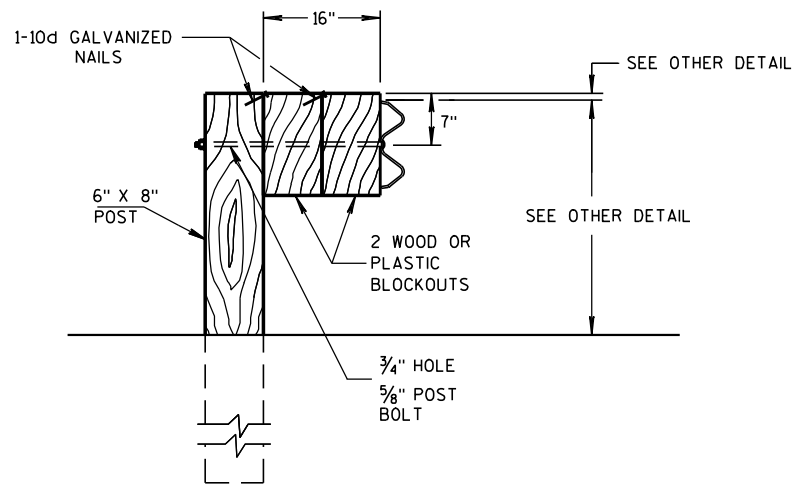
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION^①

GENERAL NOTES

- ① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
- ② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ④ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑤ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

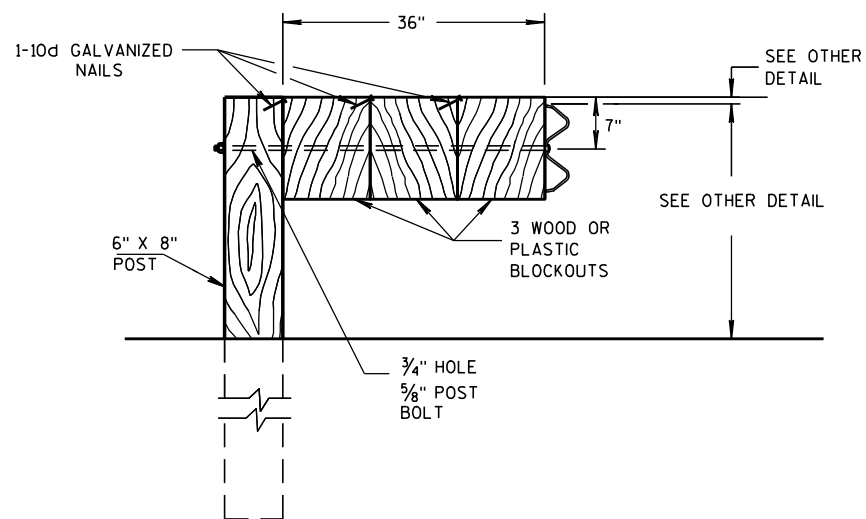
POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



DETAIL FOR 16" BLOCKOUT DEPTH

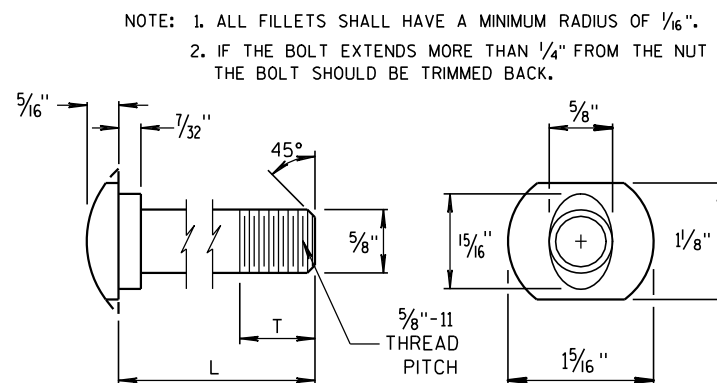
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



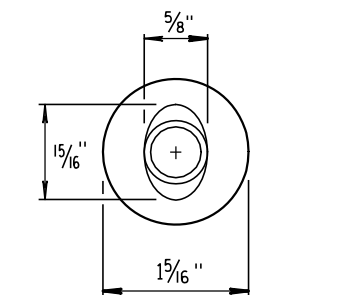
DETAIL FOR 36" BLOCKOUT DEPTH

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

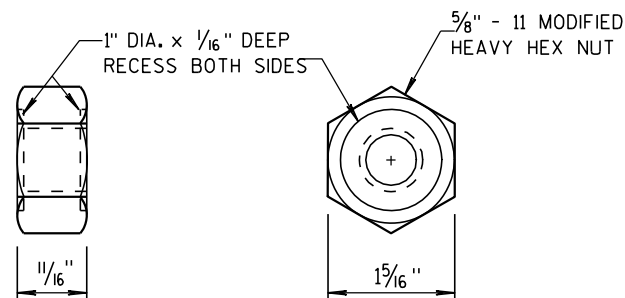
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



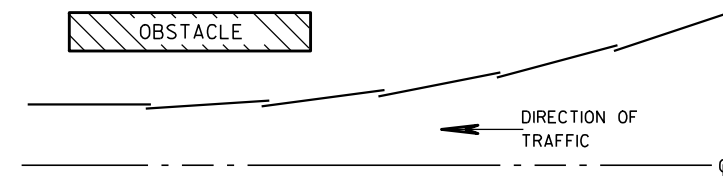
POST BOLT TABLE



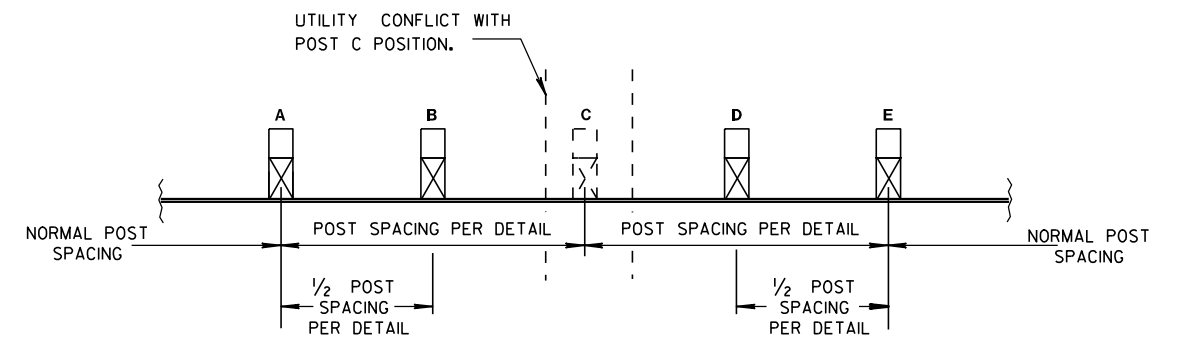
ALTERNATE BOLT HEAD



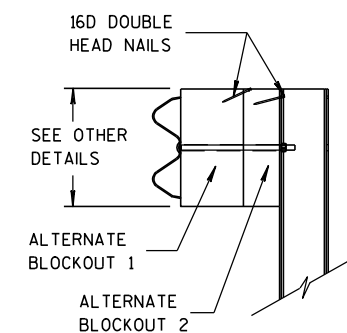
POST BOLT AND RECESS NUT



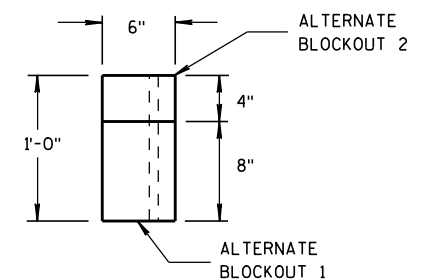
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.
- (F) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (G) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (H) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

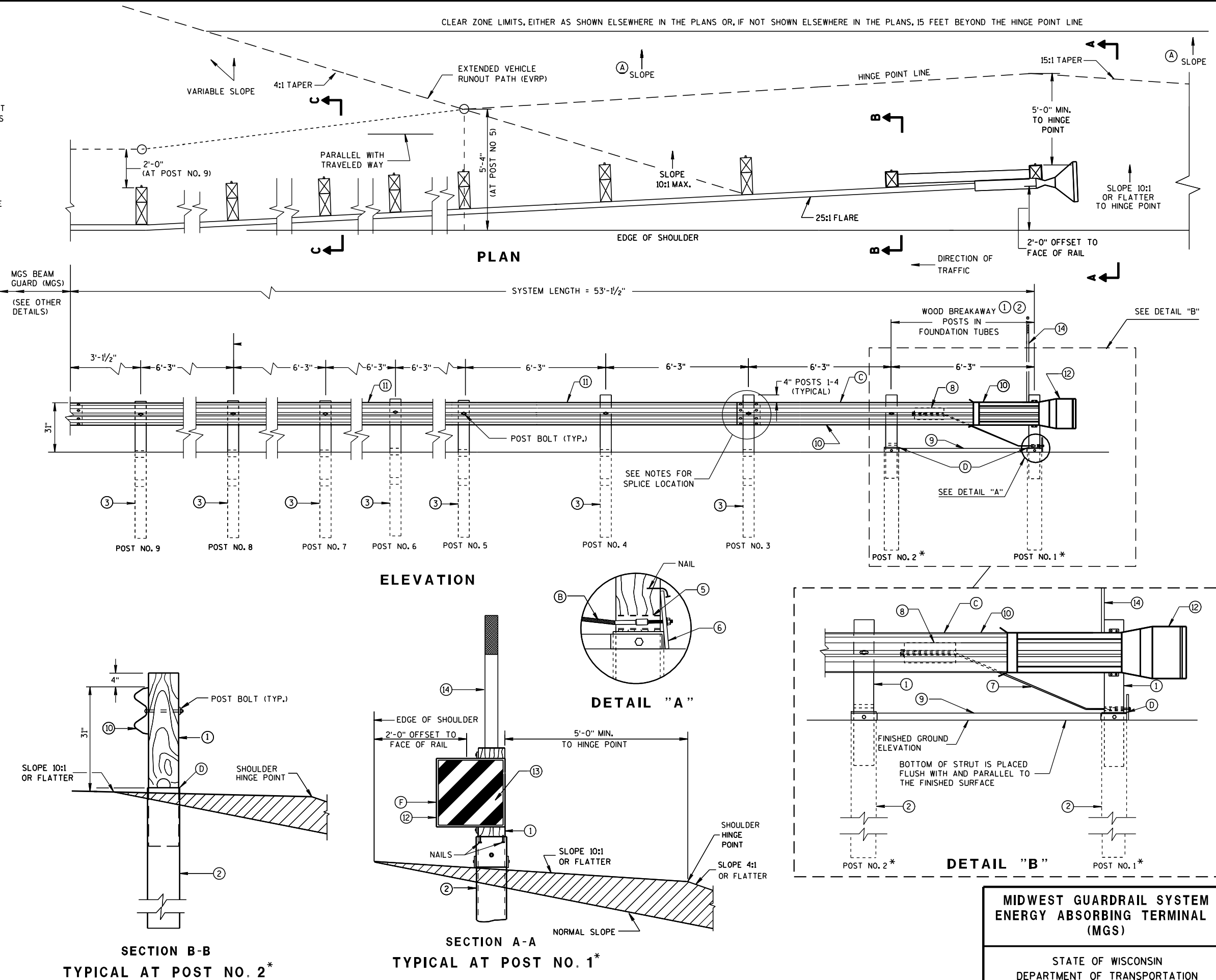
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

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

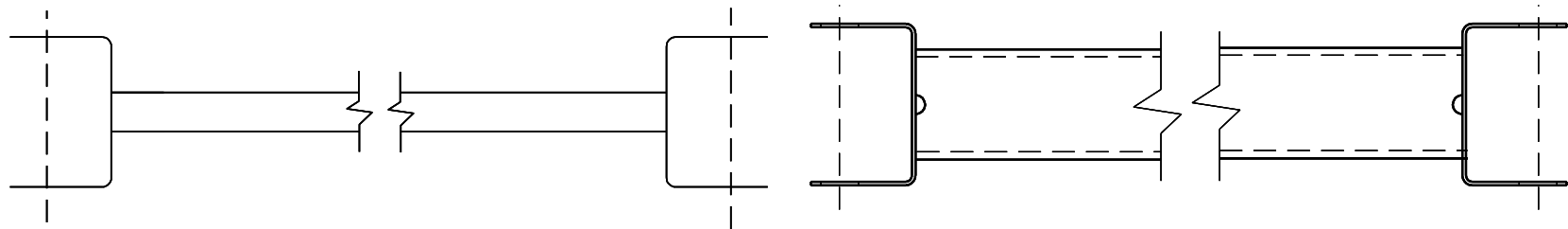
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE ($\pm \frac{3}{4}$ ")

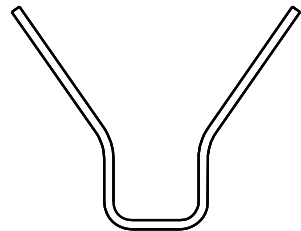
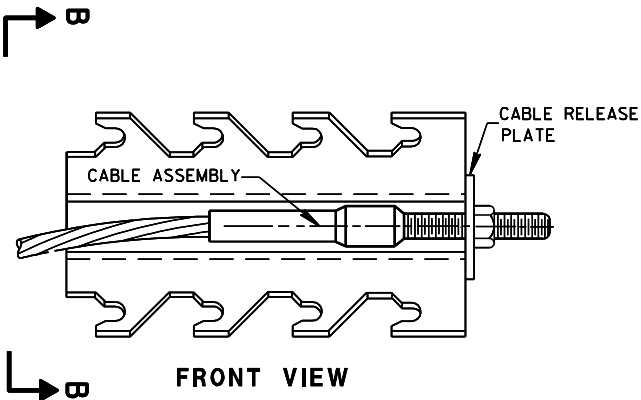


MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

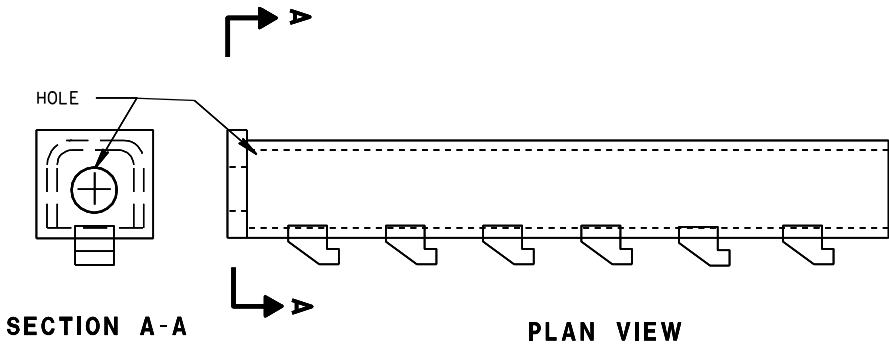
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



9 H
GENERIC GROUND STRUT



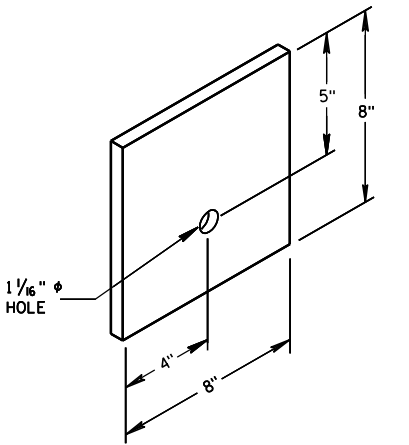
SECTION B-B



8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

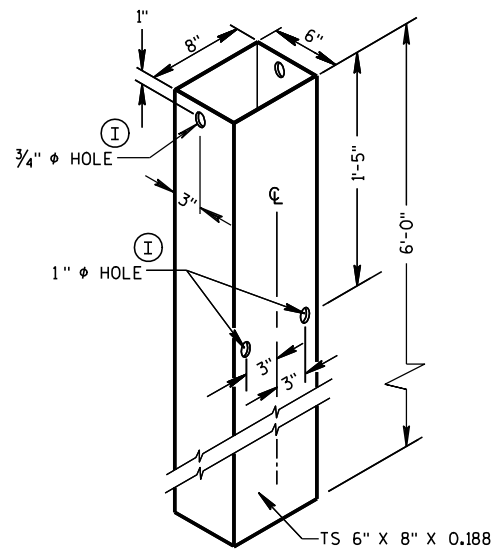
PART NO.	DESCRIPTION
	MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND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



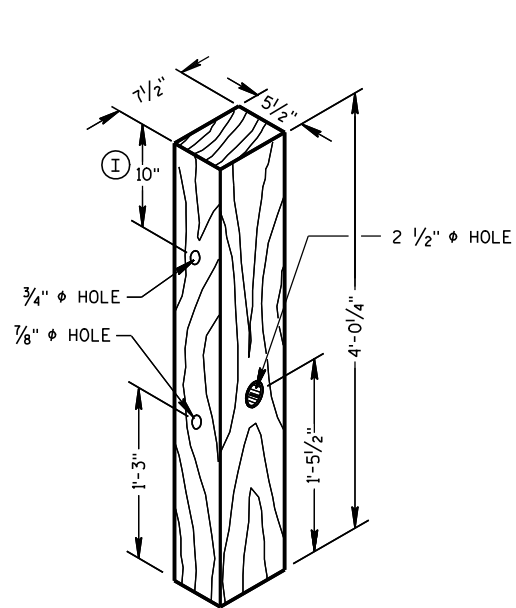
6
BEARING PLATE

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

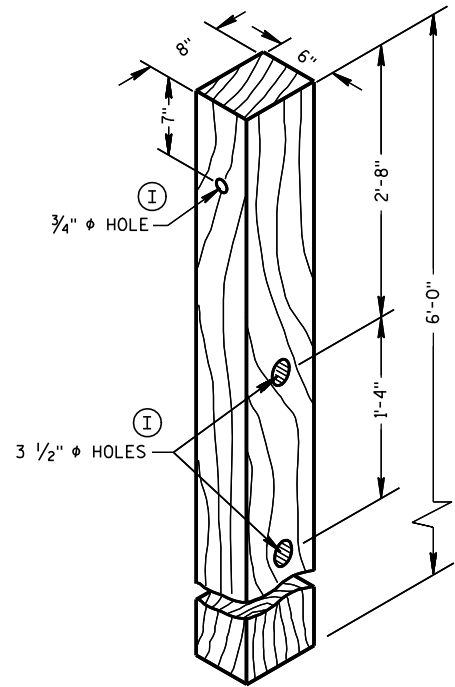
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



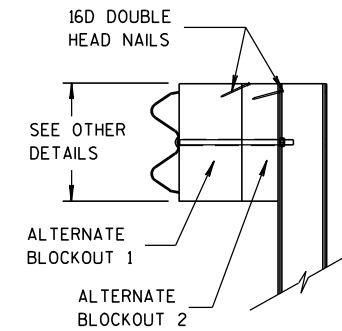
FOUNDATION TUBE ②



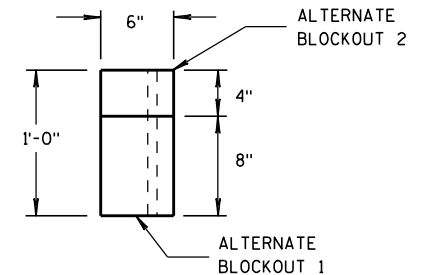
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

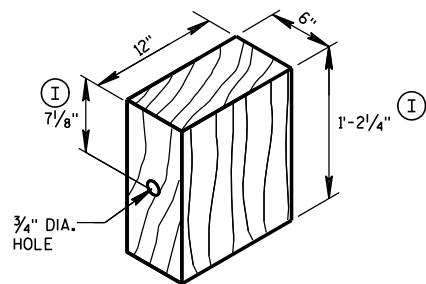


SIDE VIEW



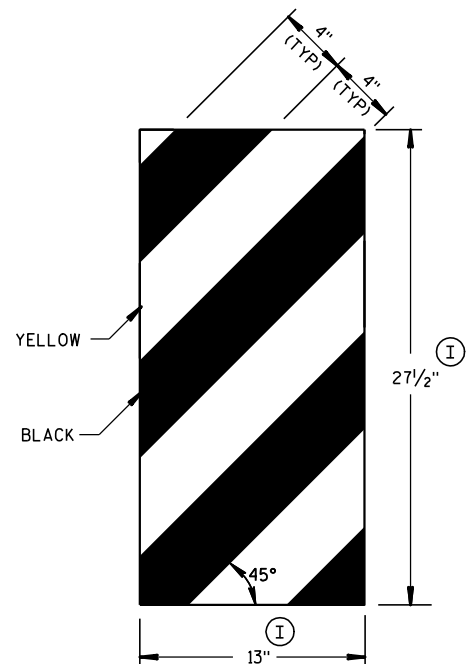
TOP VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

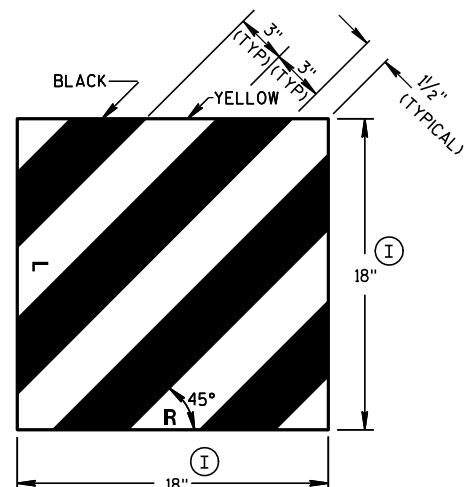


WOOD BLOCKOUT ④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

YELLOW REFLECTIVE TAPE
3" X 9" TYPE H
REFLECTIVE SHEETING



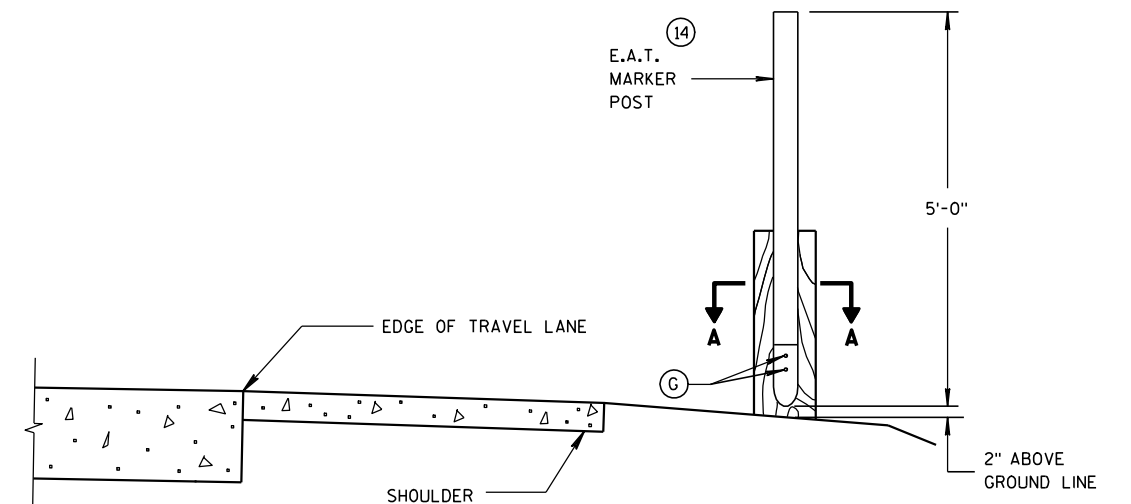
GENERIC REFLECTIVE SHEETING ⑬ ④



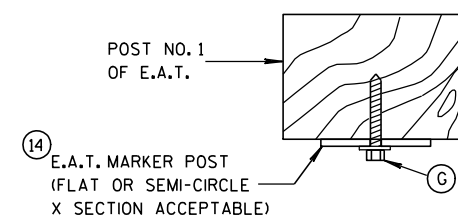
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⑭



**TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1**
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

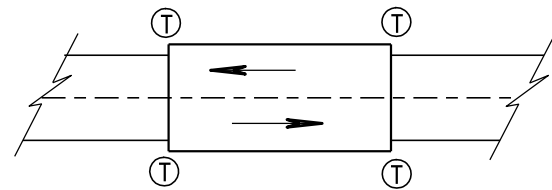
APPROVED

5/23/2011

DATE

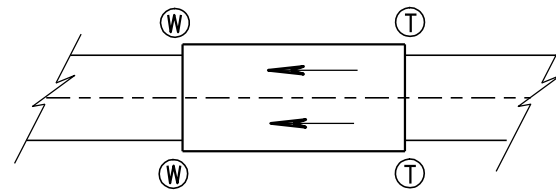
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

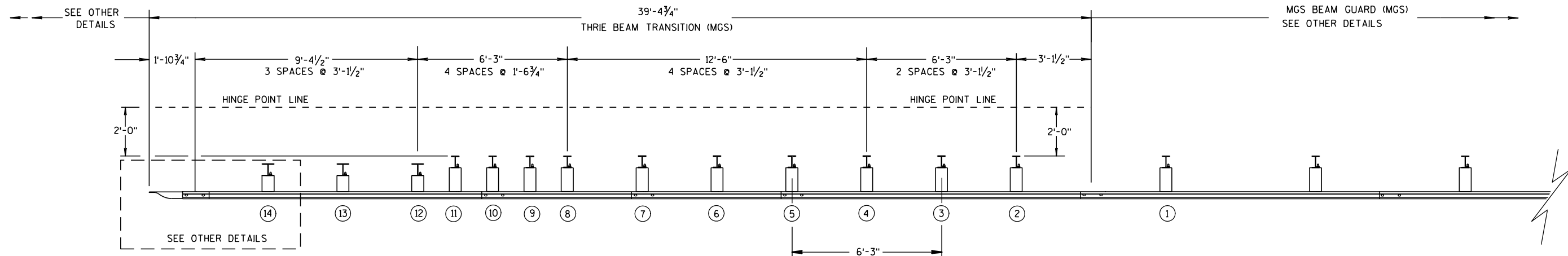
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

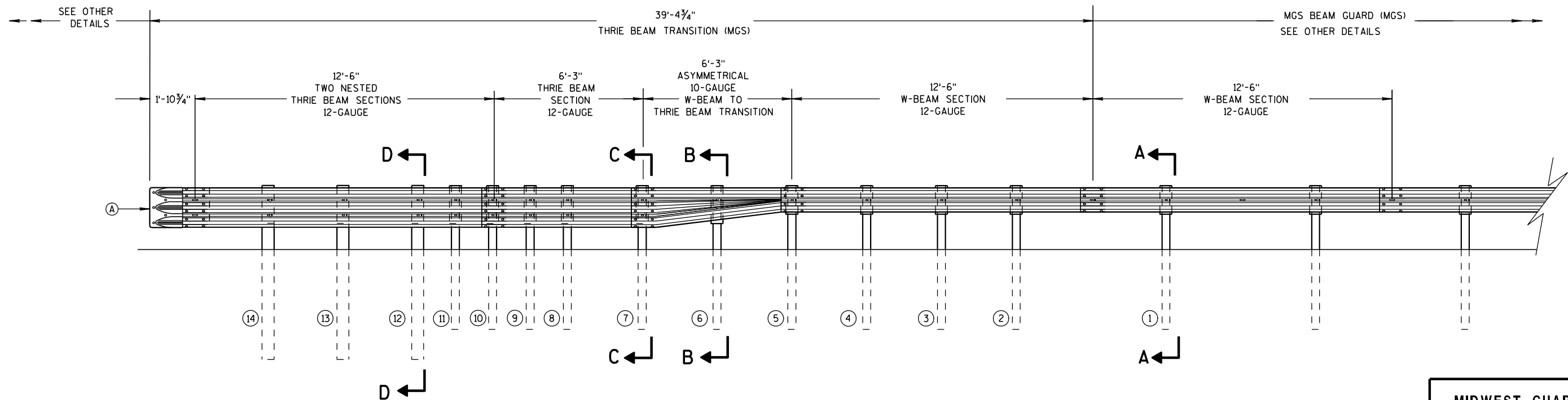
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

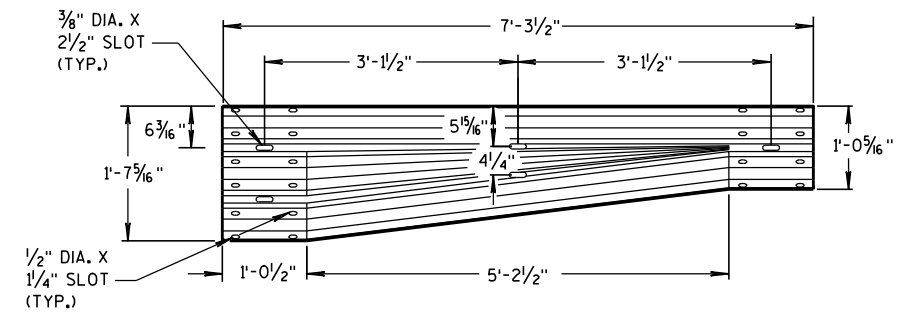
6

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

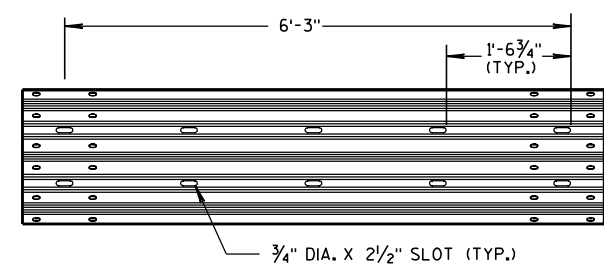


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

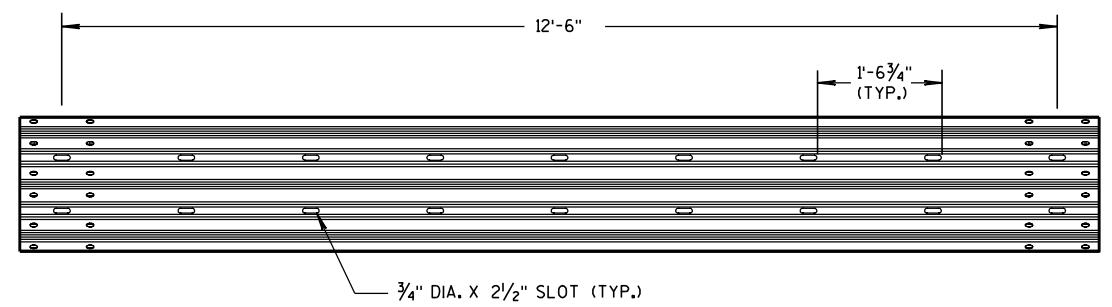
S.D.D. 14 B 45-3b



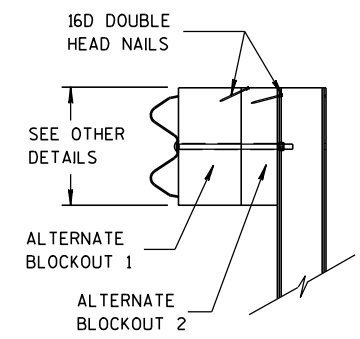
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

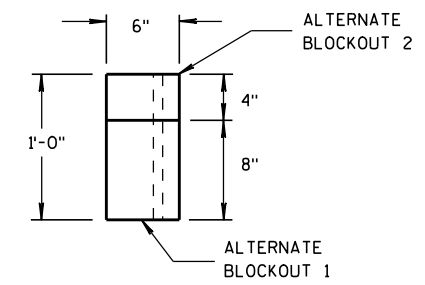


12'-6" THRIE BEAM SECTION

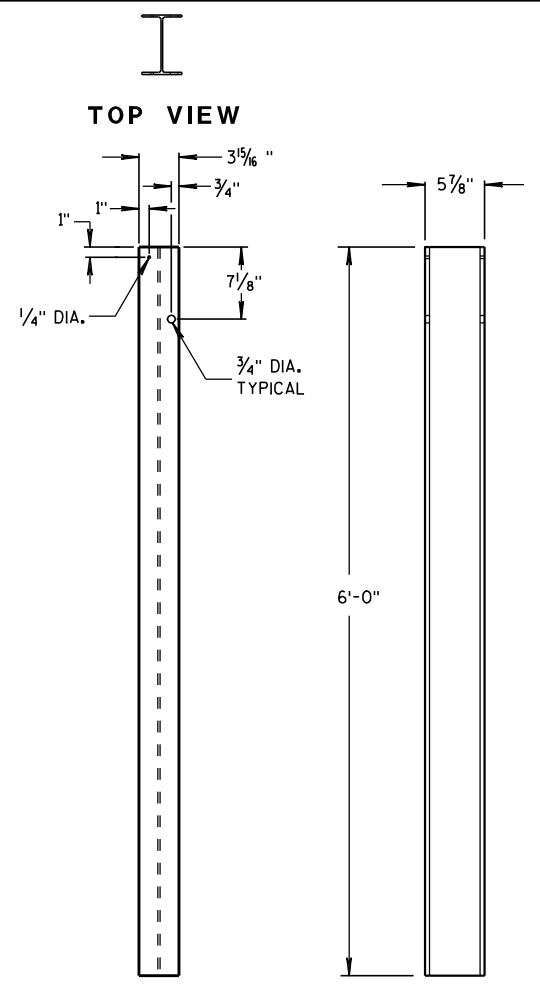


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

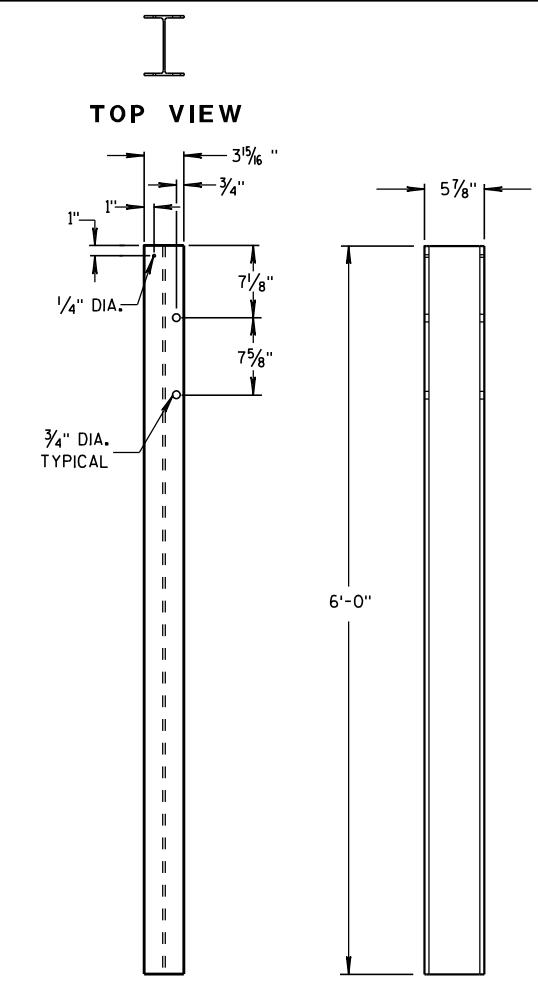


TOP VIEW



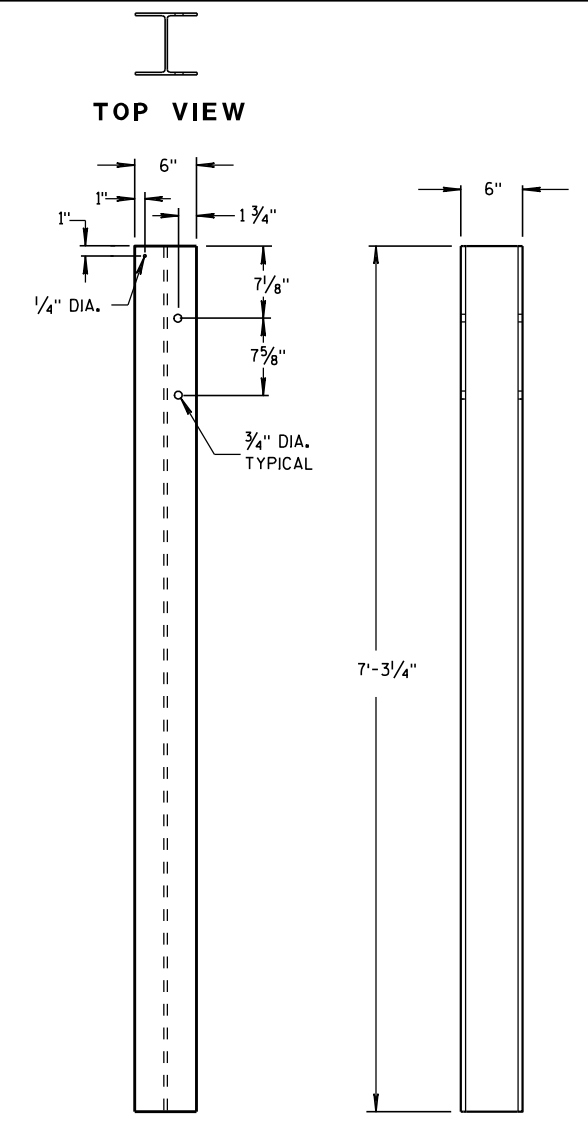
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

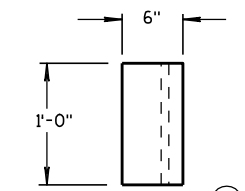
STEEL POSTS 6-11



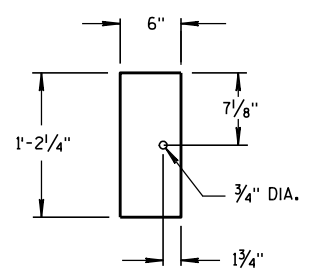
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

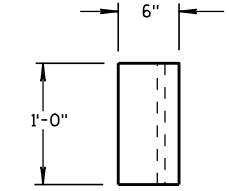
① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



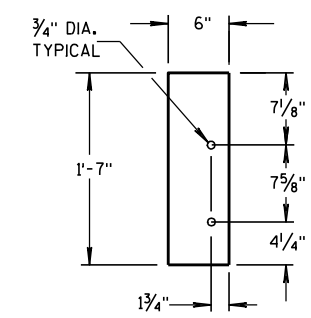
TOP VIEW



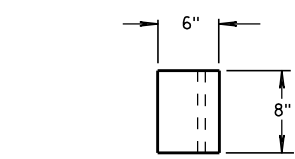
FRONT VIEW BLOCKOUT POSTS 1-5



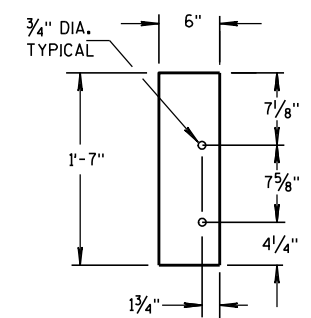
TOP VIEW



FRONT VIEW BLOCKOUT POSTS 6-11



TOP VIEW



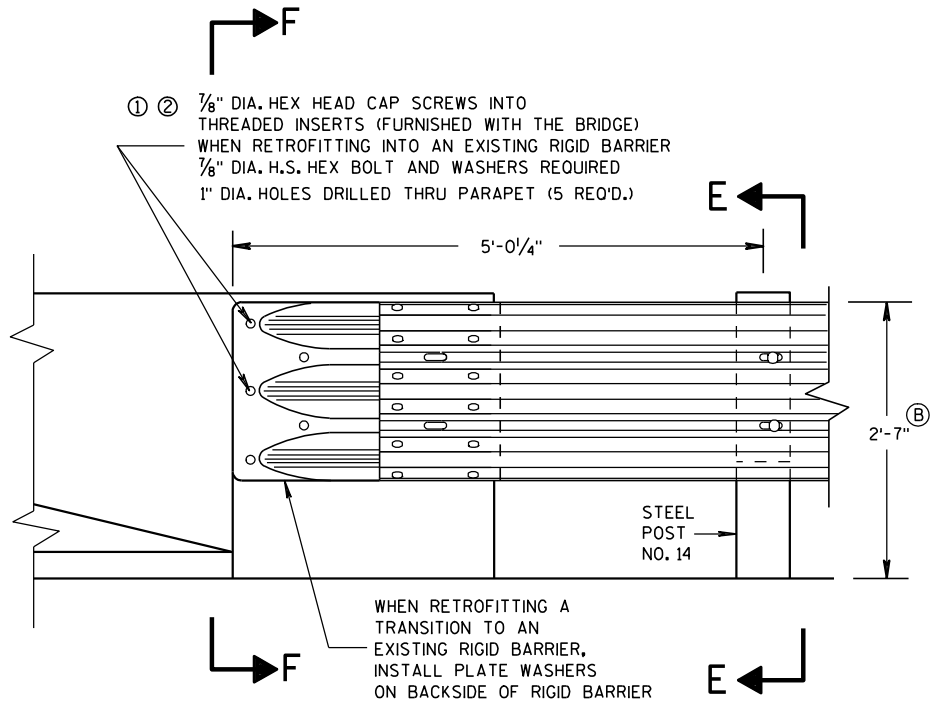
FRONT VIEW BLOCKOUT POSTS 12-14

STEEL POST SIZES

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

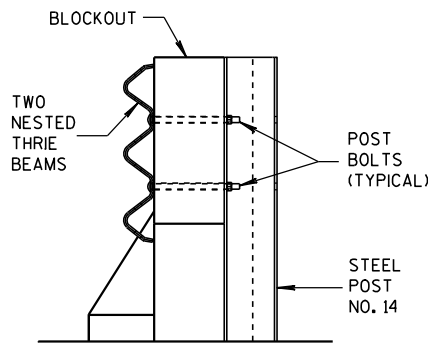
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FRONT VIEW

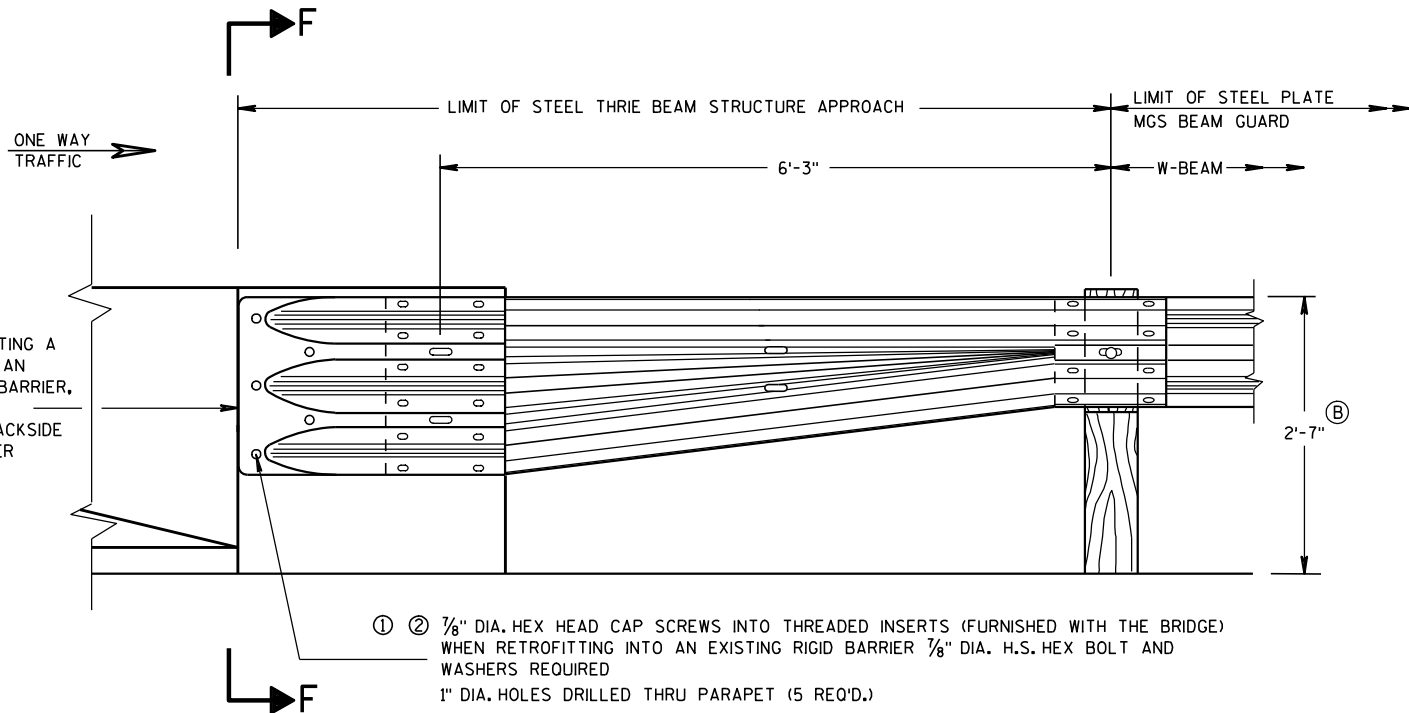
THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



SECTION E-E

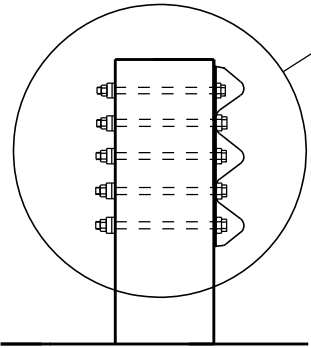
GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
 - ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS, BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
 - ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

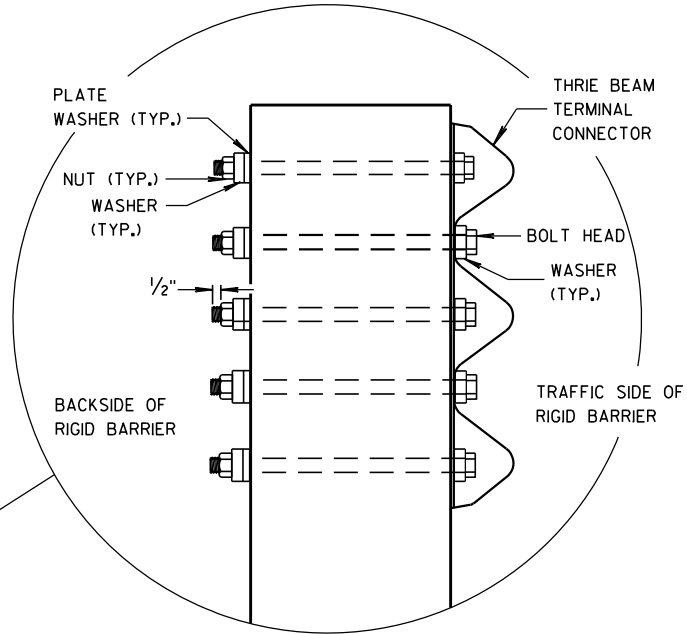


FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION F-F

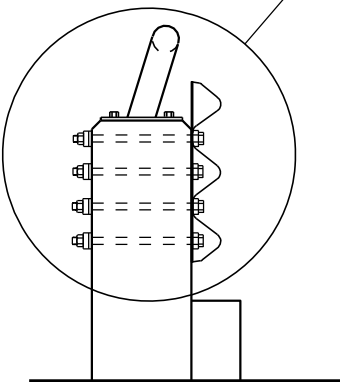
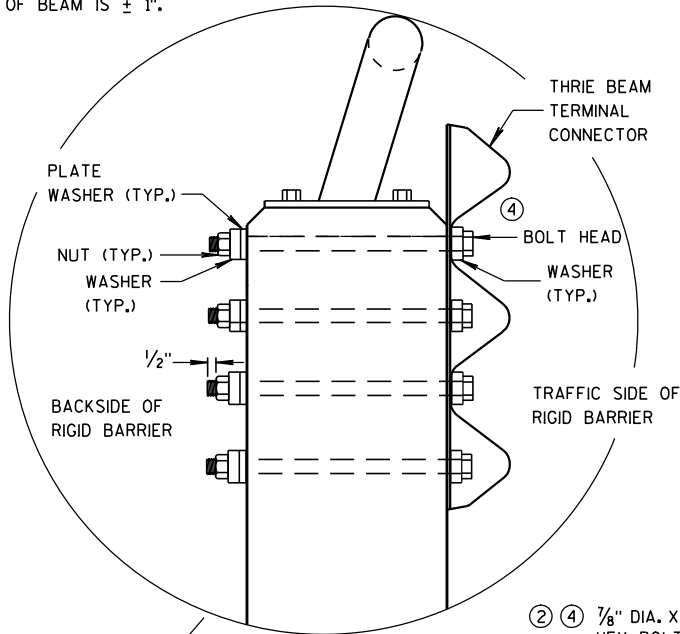


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/31/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

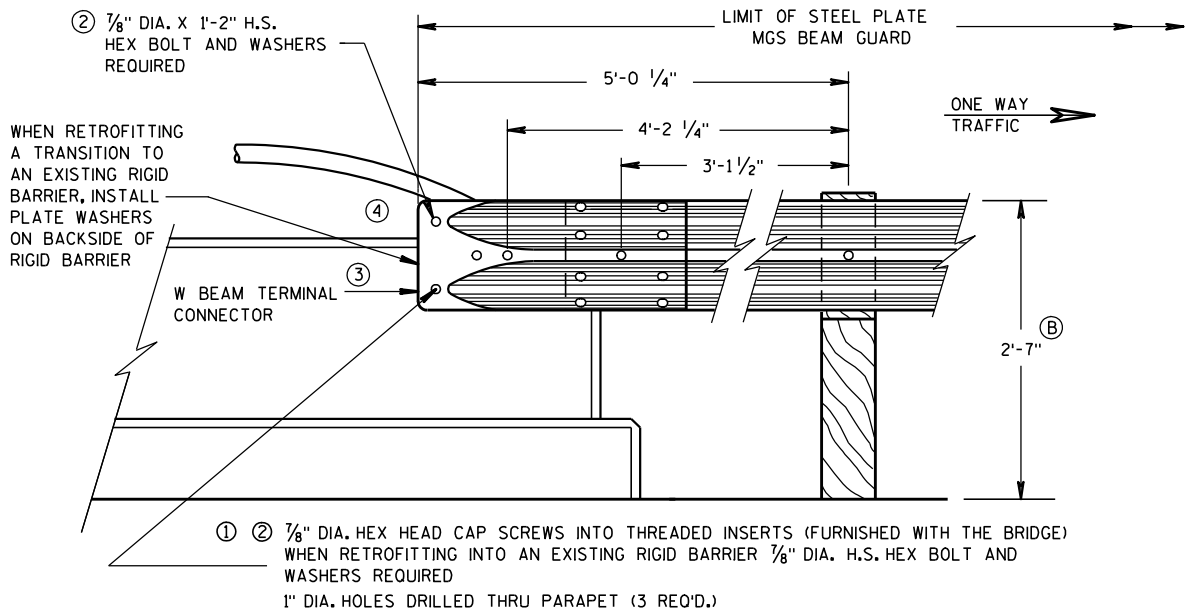
GENERAL NOTES

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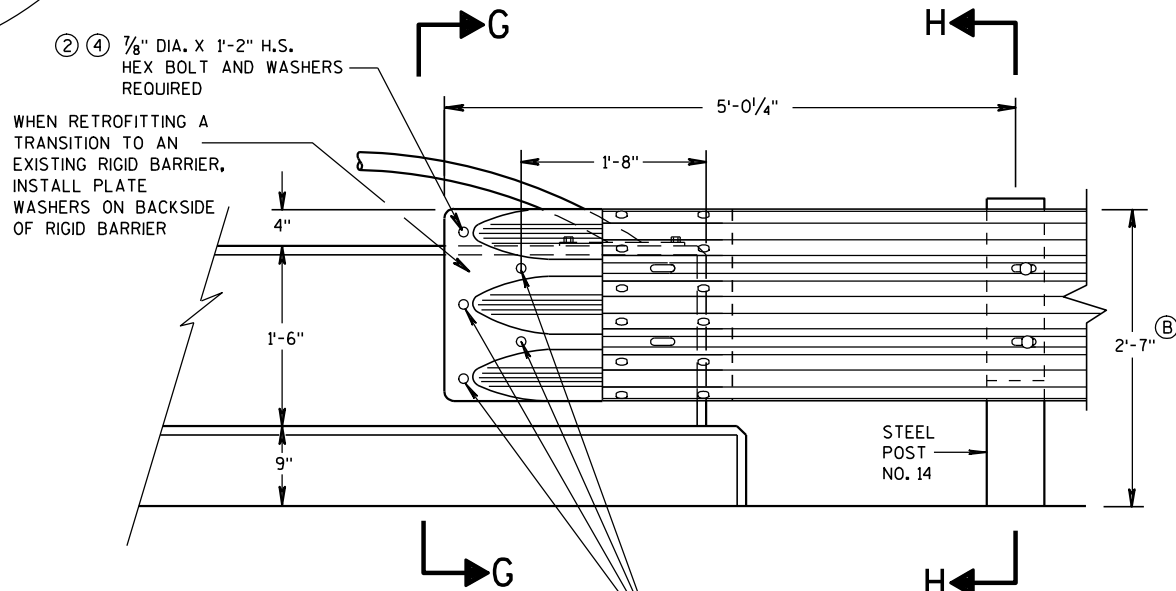
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- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}$ " THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}$ ". BLOCK IS INCIDENTAL TO THE CONTRACT.
- ④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.
- ⓑ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.



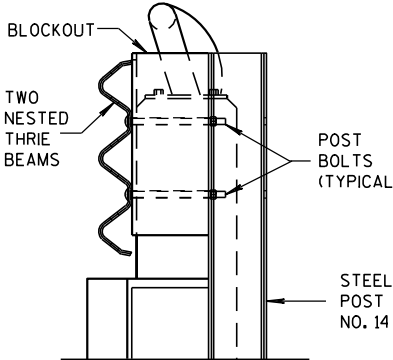
SECTION G-G



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



FRONT VIEW



SECTION H-H

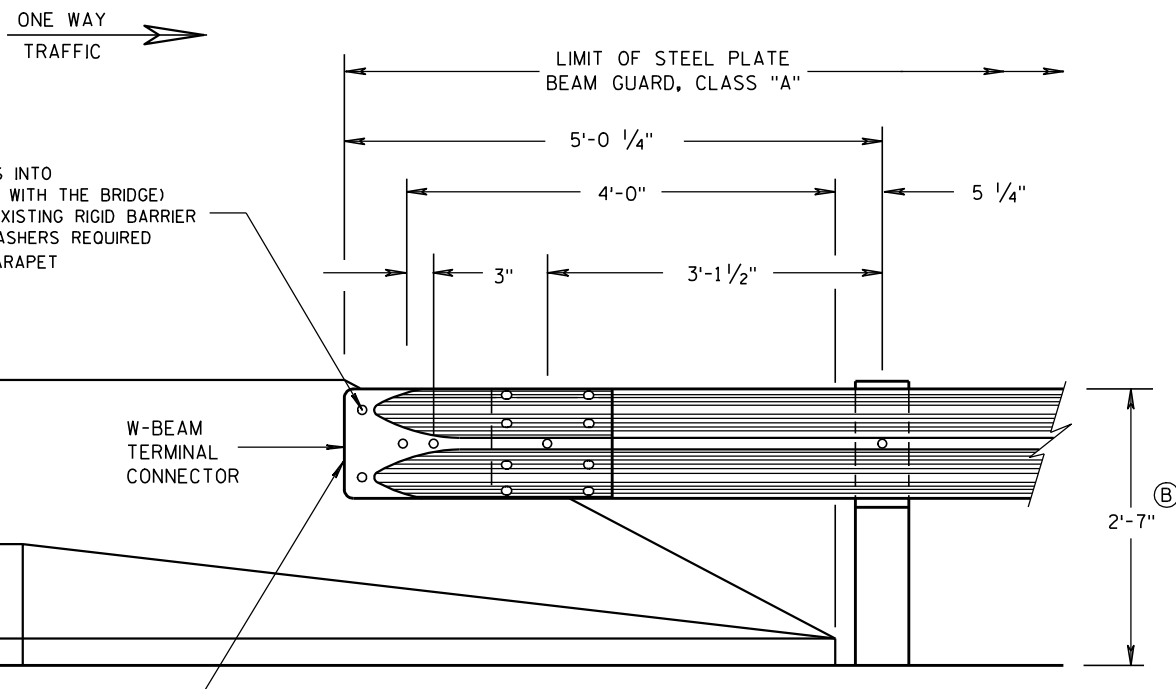
- ① ② $\frac{7}{8}$ " DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER $\frac{7}{8}$ " DIA. H.S. HEX BOLT AND WASHERS REQUIRED 1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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8-31-2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



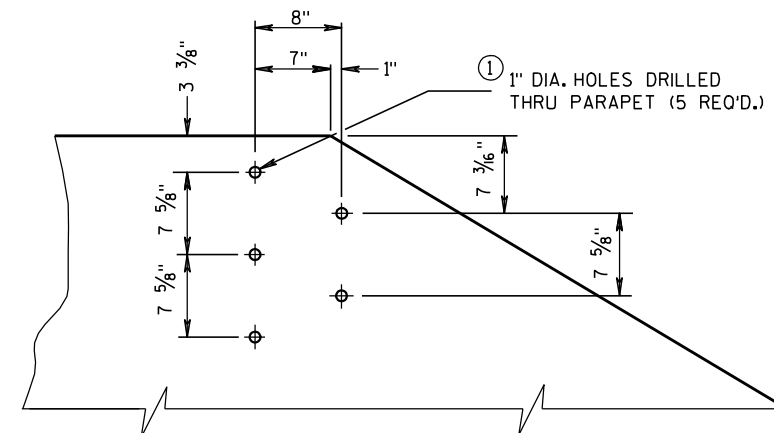
FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

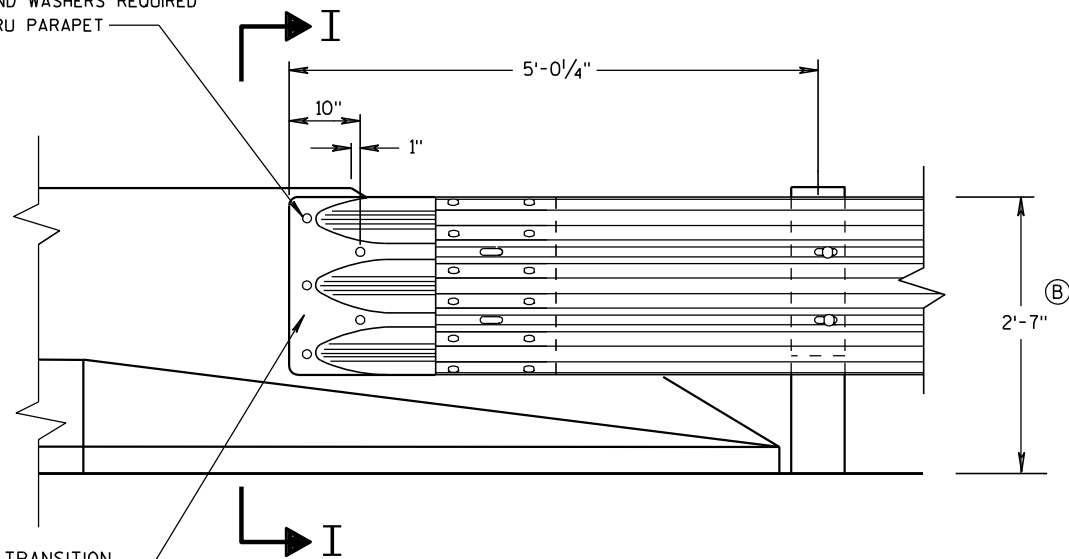
GENERAL NOTES

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
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- ③ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.



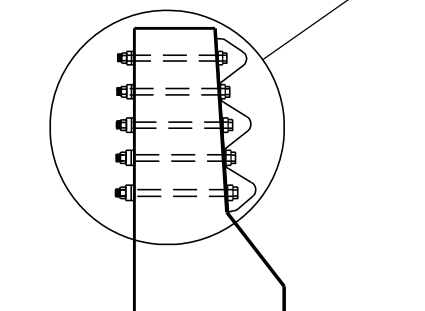
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

- ① ② 1/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER. 7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED. 1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.).

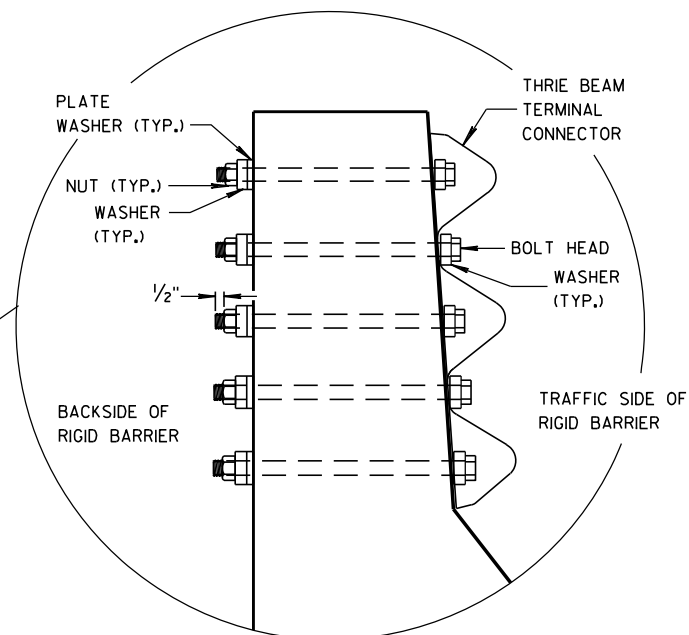


FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



SECTION I-I

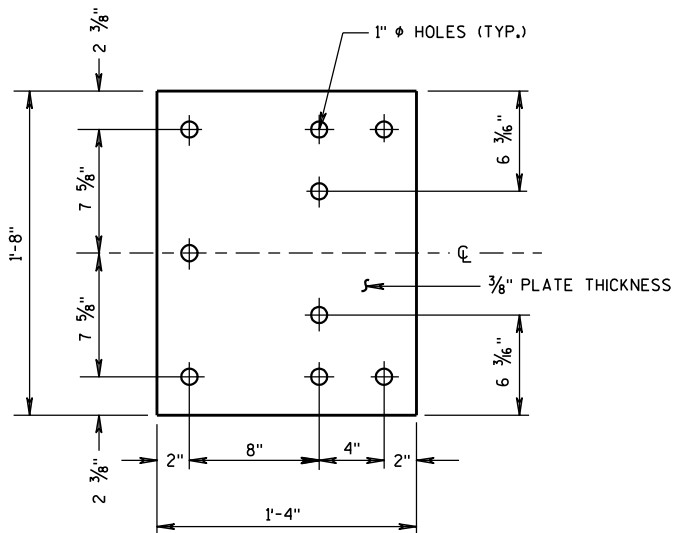


MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

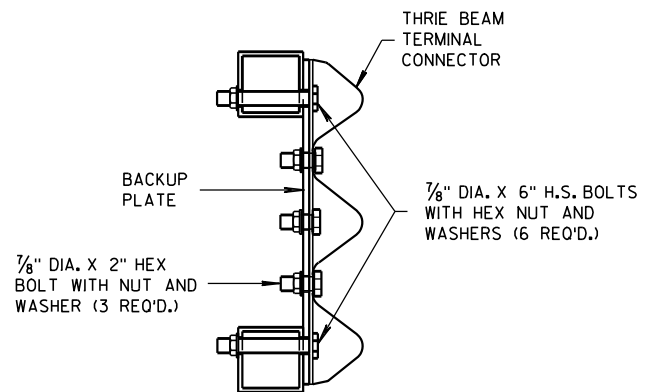
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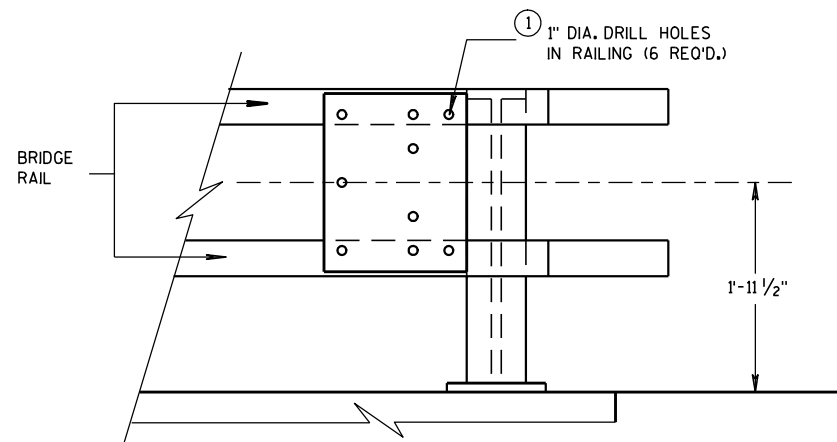
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



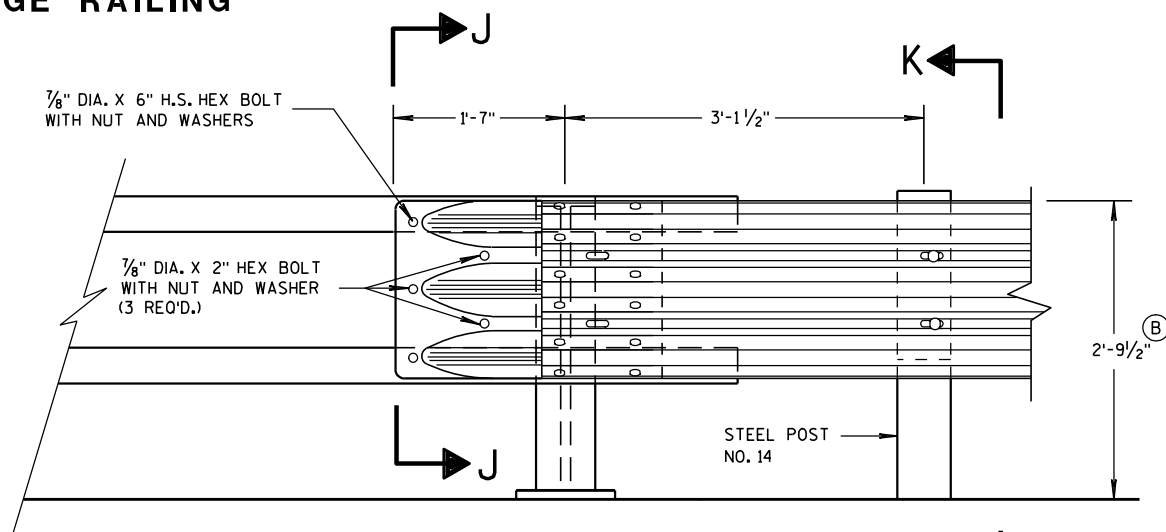
BACK-UP PLATE DETAIL



SECTION J-J

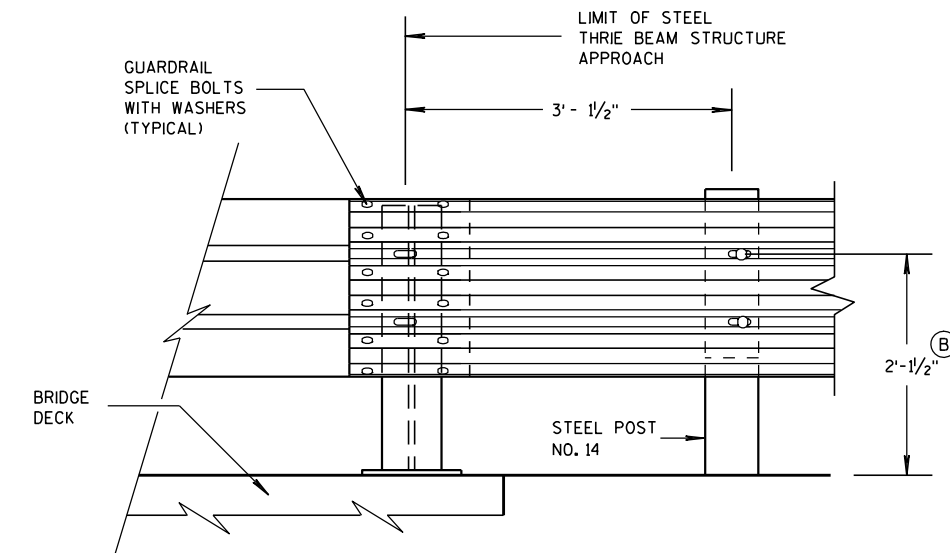


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



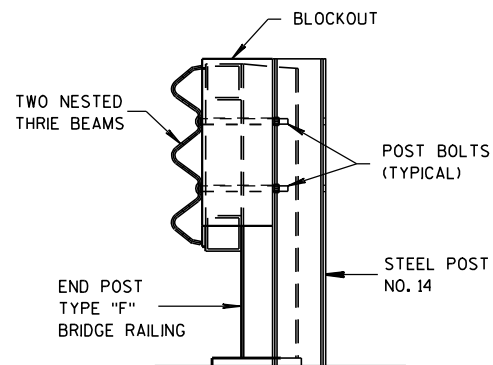
FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



SECTION K-K

GENERAL NOTES

- ① DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

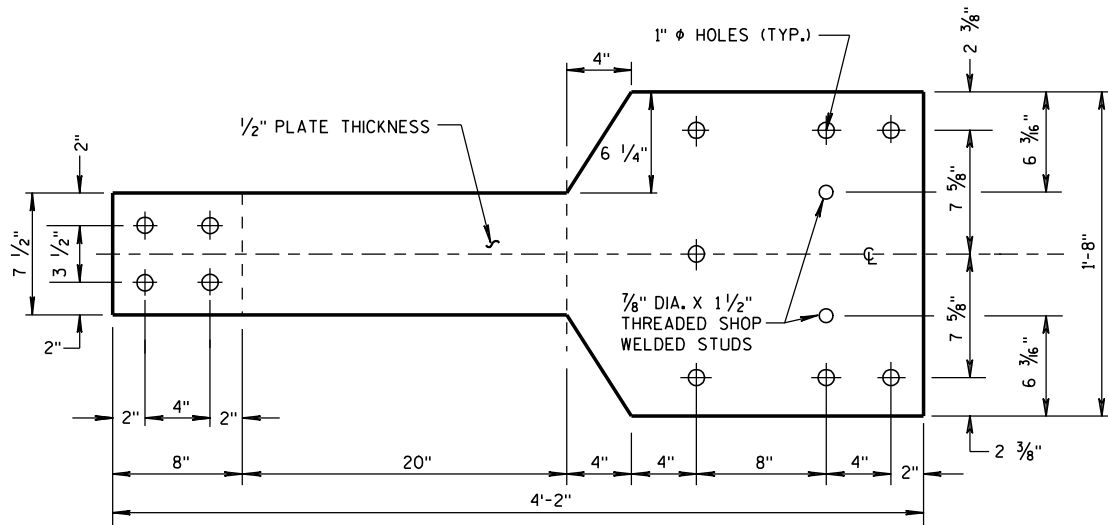
STATE OF WISCONSIN
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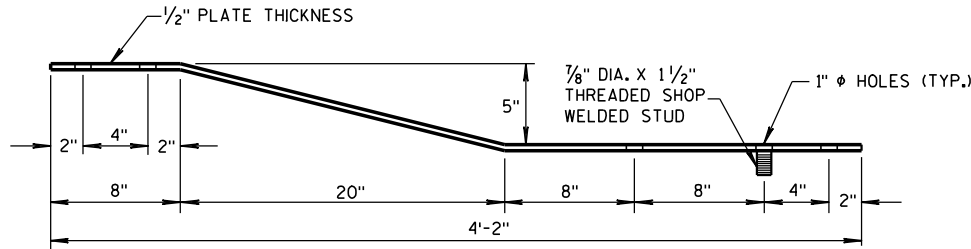
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

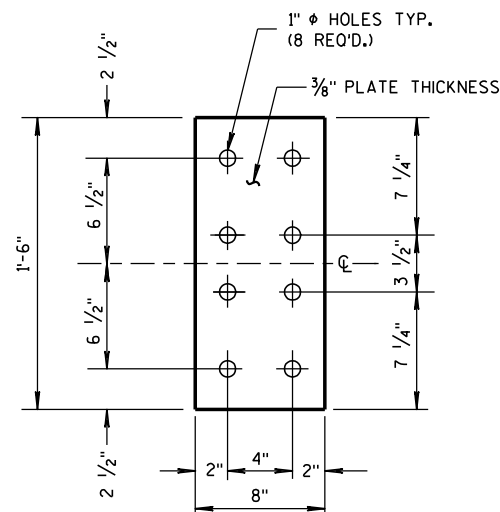
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

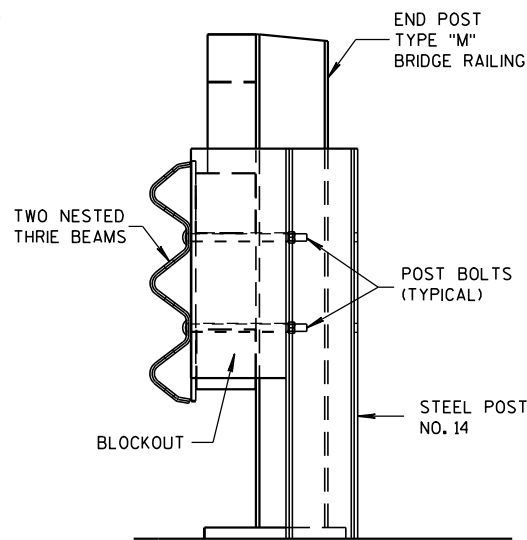


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

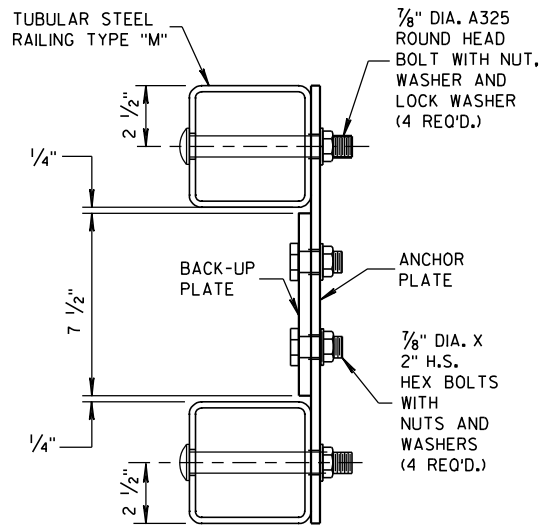


FRONT VIEW

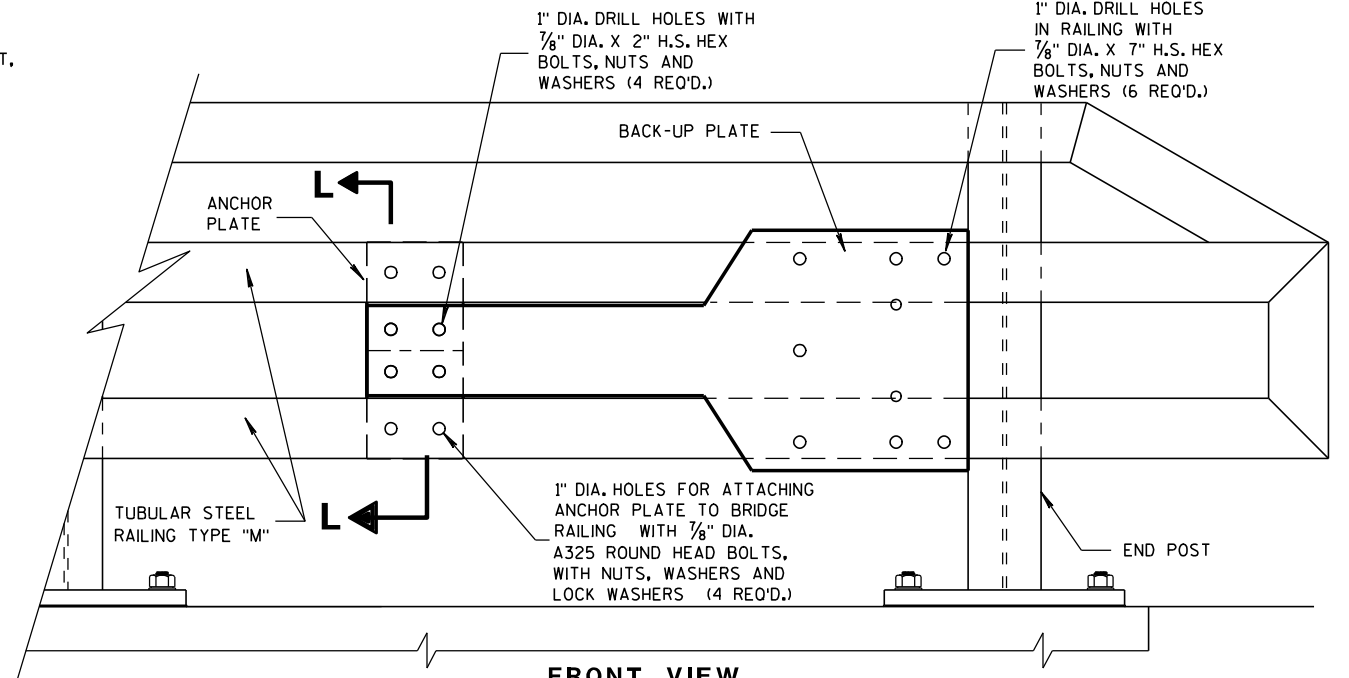
ANCHOR
PLATE DETAIL,
TYPE "M"



SECTION M-M

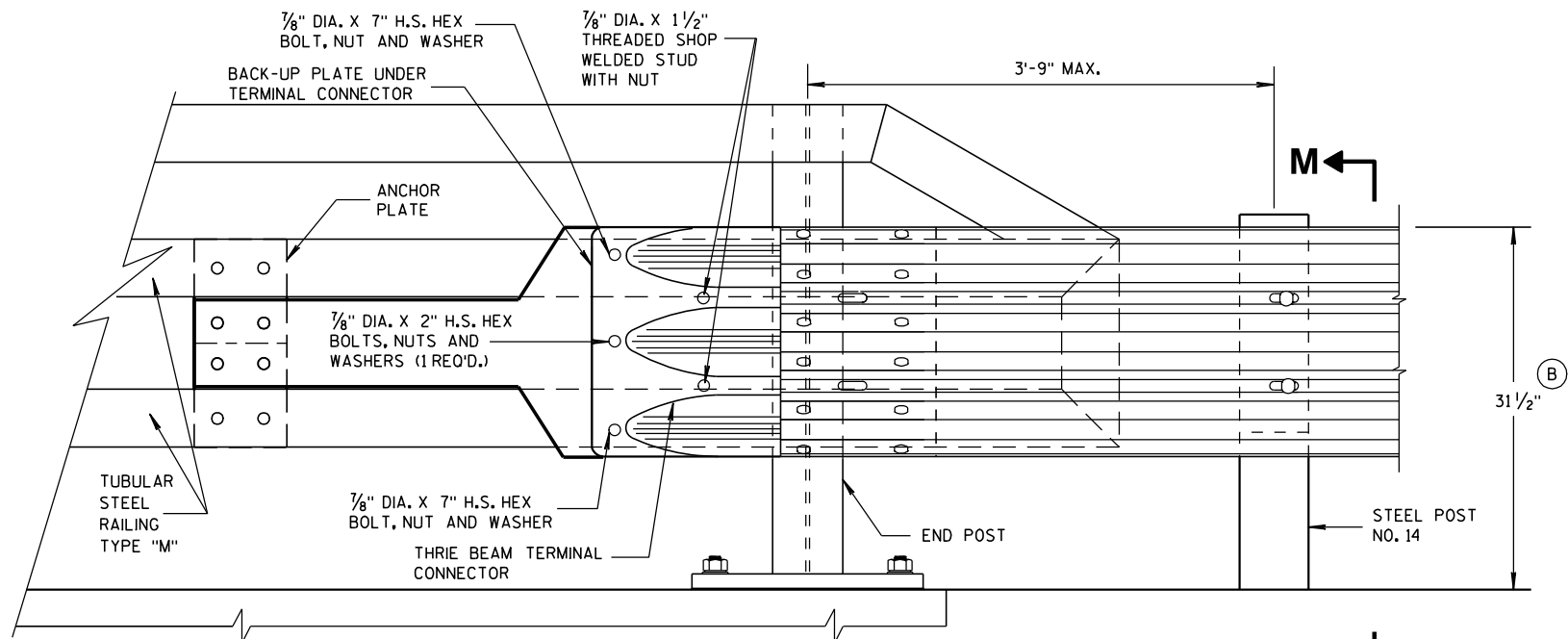


SECTION L-L

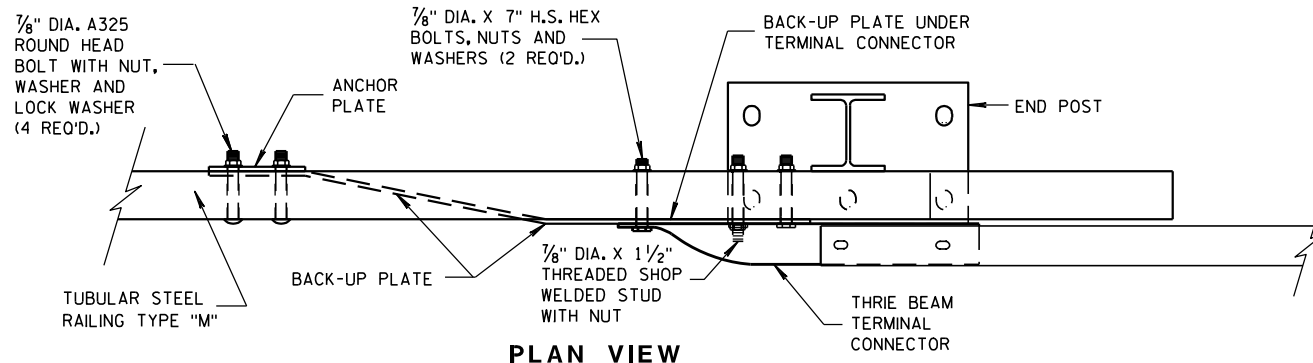


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

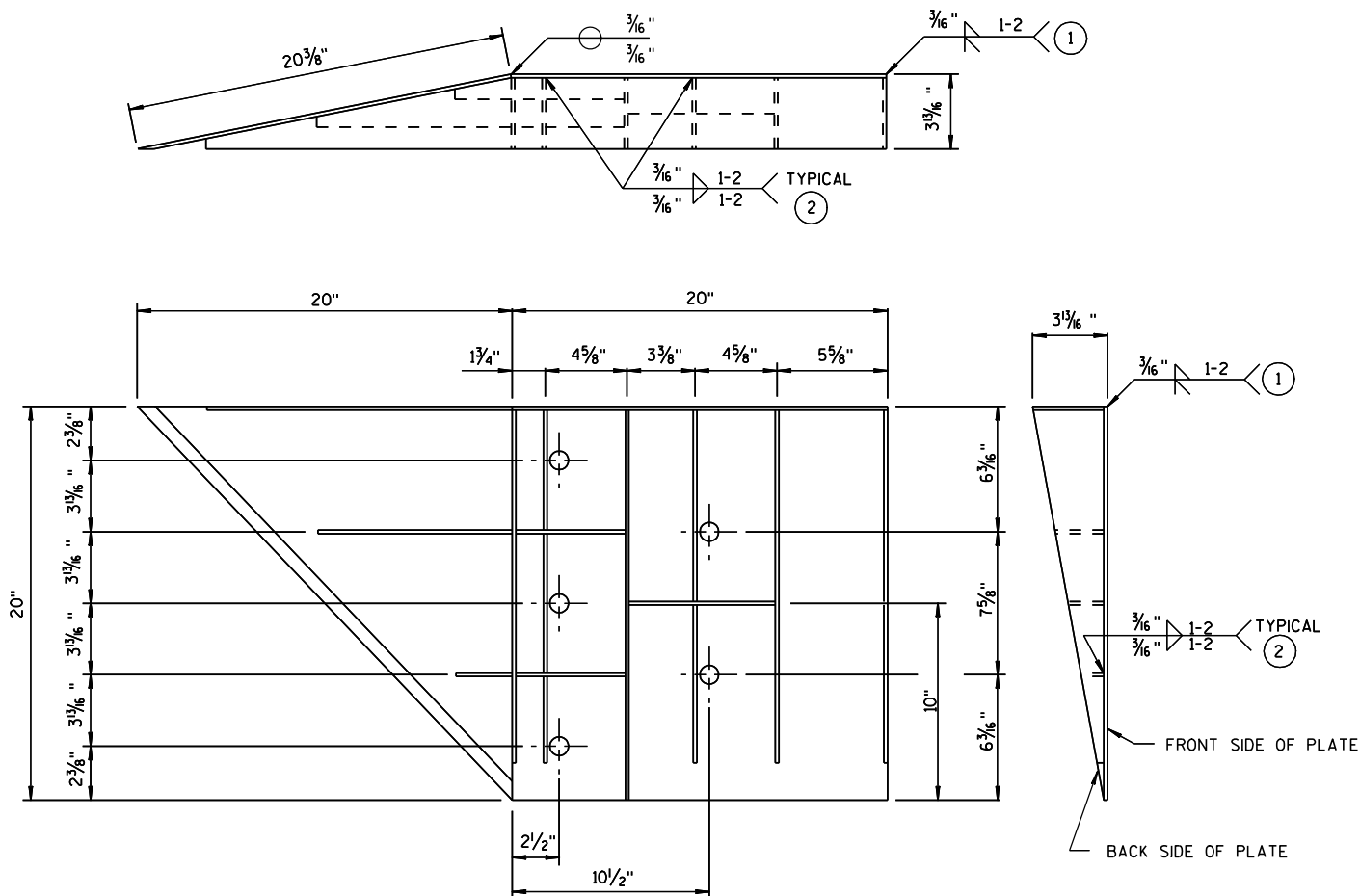
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ROADWAY STANDARDS DEVELOPMENT
ENGINEER

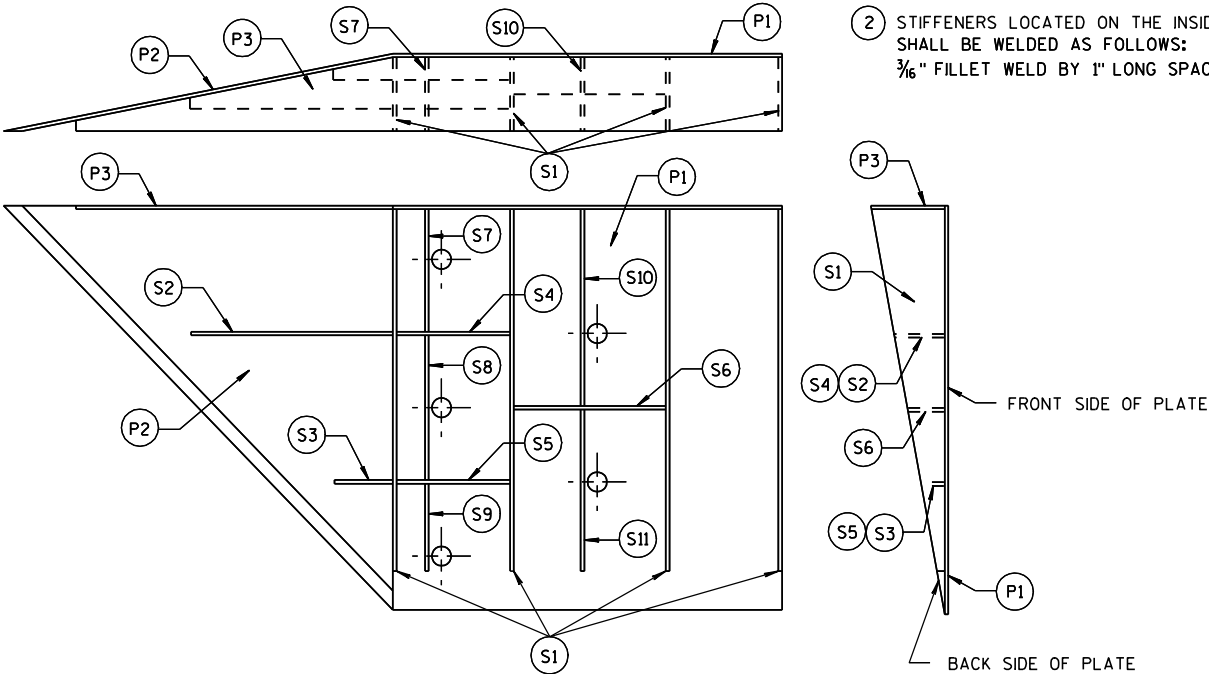


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

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

PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)



GENERAL NOTES

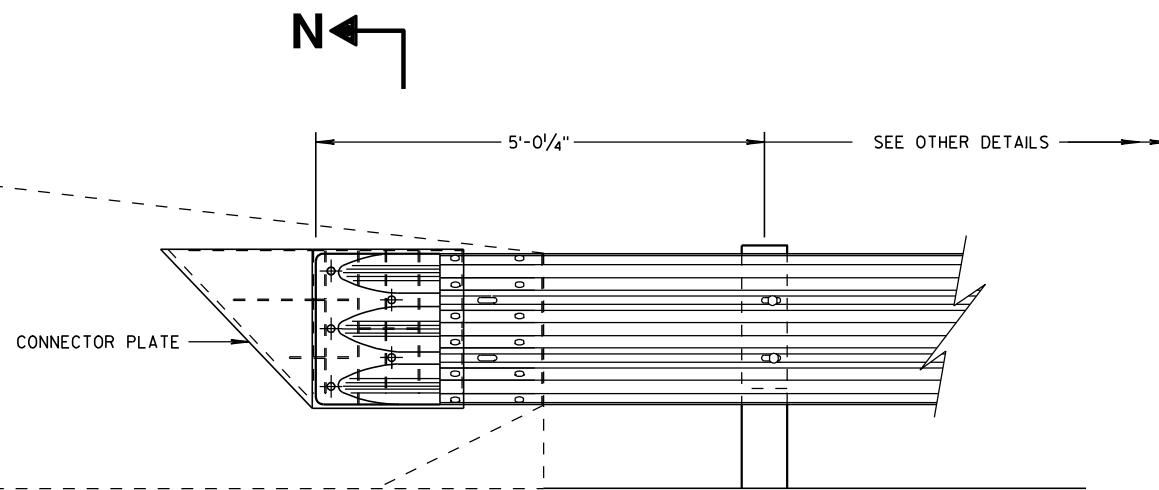
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

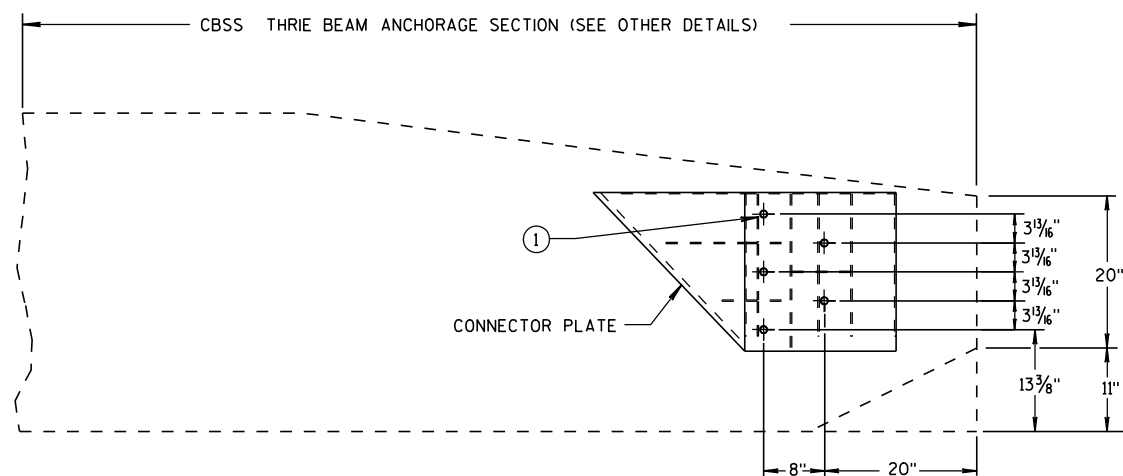
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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FHWA ROADWAY STANDARDS DEVELOPMENT
ENGINEER



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

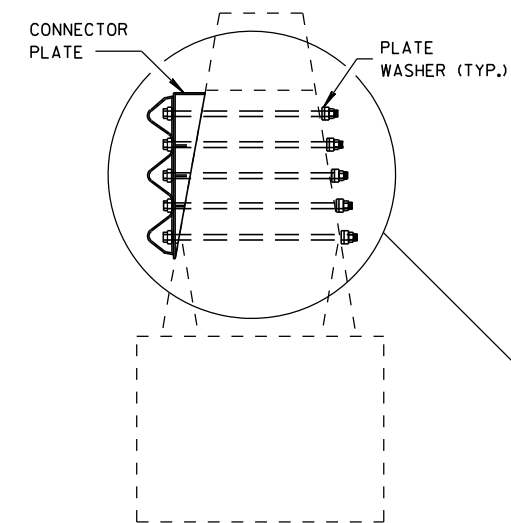


SINGLE SLOPE CONNECTION PLATE PLACEMENT

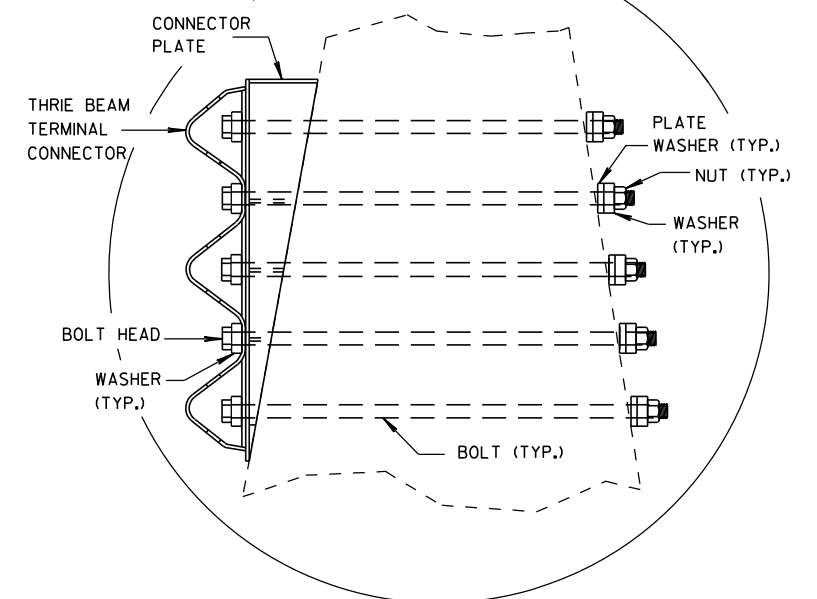
GENERAL NOTES

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

- ① BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

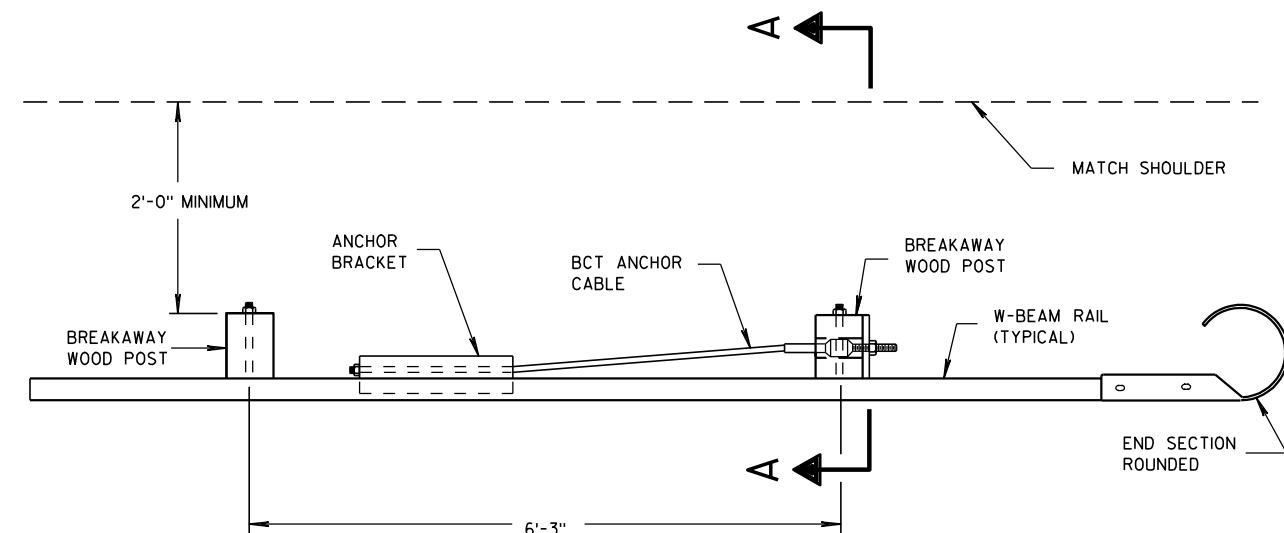
APPROVED

8/31/2012

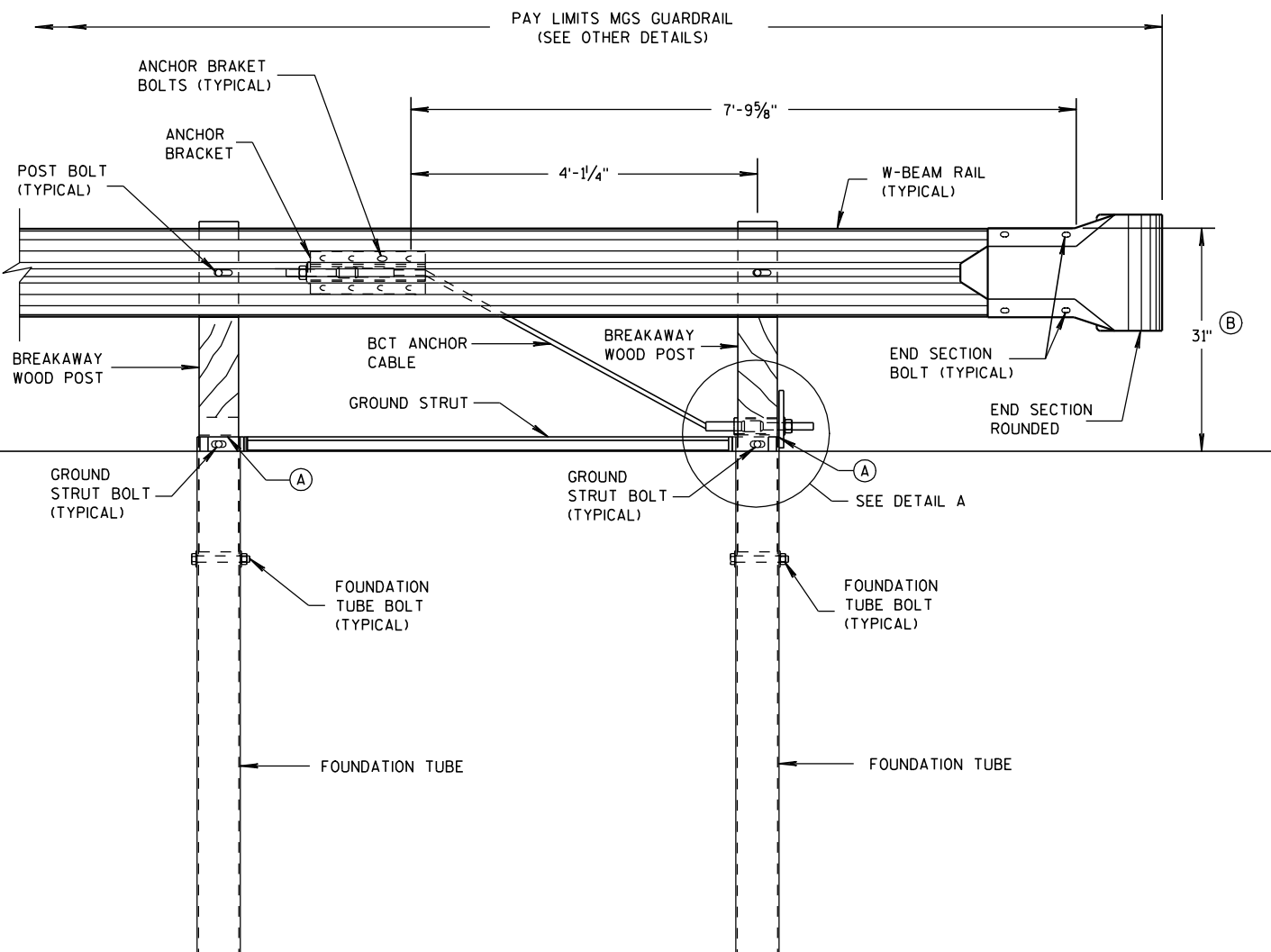
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

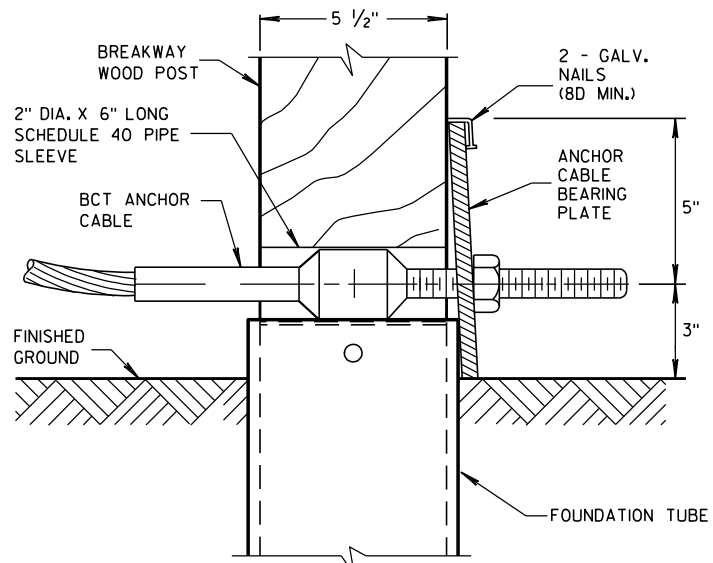


PLAN VIEW



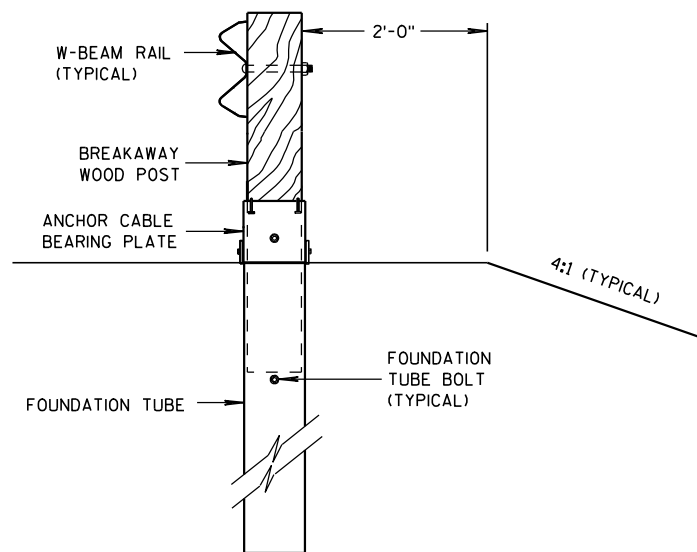
FRONT VIEW

END RAIL DETAIL



DETAIL A

POST NO. 1
GROUND STRUT NOT SHOWN FOR CLARITY.



SECTION A-A

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER X 10" LONG GUARDRAIL BOLT. A POST BOLT REQUIRES A $\frac{5}{8}$ " DIAMETER DH MODIFIED (RECESSED) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER FLAT WASHER.

FOUNDATION TUBE BOLTS ARE A $\frac{7}{8}$ " DIAMETER X $7\frac{1}{2}$ " LONG HEAVY HEX HEAD BOLT. A FOUNDATION TUBE BOLT REQUIRES A $\frac{7}{8}$ " DIAMETER DH HEAVY HEX NUT AND A $\frac{5}{8}$ " DIAMETER FLAT WASHER.

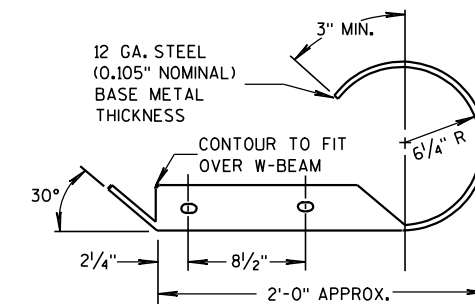
GROUND STRUT BOLTS ARE A $\frac{5}{8}$ " DIAMETER X 10" LONG HEAVY HEX HEAD BOLT. A GROUND STRUT BOLT REQUIRES A $\frac{5}{8}$ " DIAMETER DH HEAVY HEX NUT AND A $\frac{5}{8}$ " DIAMETER FLAT WASHER.

ANCHOR BRACKET BOLTS ARE A $\frac{5}{8}$ " DIAMETER X $1\frac{1}{2}$ " LONG HEAVY HEX HEAD BOLT. AN ANCHOR BRACKET BOLT REQUIRES A $\frac{5}{8}$ " DIAMETER DH HEAVY HEX NUT AND A FLAT WASHER.

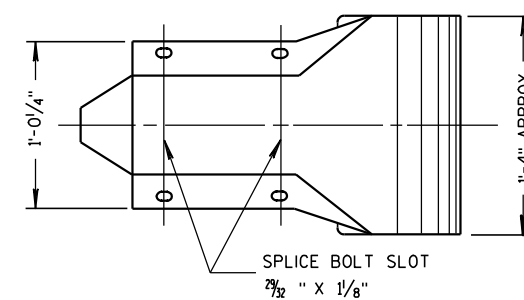
END SECTION BOLTS ARE A $\frac{5}{8}$ " DIAMETER X $1\frac{1}{2}$ " HEAVY HEX HEAD BOLT. AN END SECTION BOLT REQUIRES $\frac{5}{8}$ " DIAMETER DH HEAVY HEX NUT AND A $\frac{5}{8}$ " DIAMETER FLAT WASHER.

W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

- (A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.
- (B) FOR NEW CONSTRUCTION TOP OF RAIL IS $31" \pm 1"$.
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN $27\frac{3}{4}"$ TO $32" \pm 1"$.



PLAN VIEW

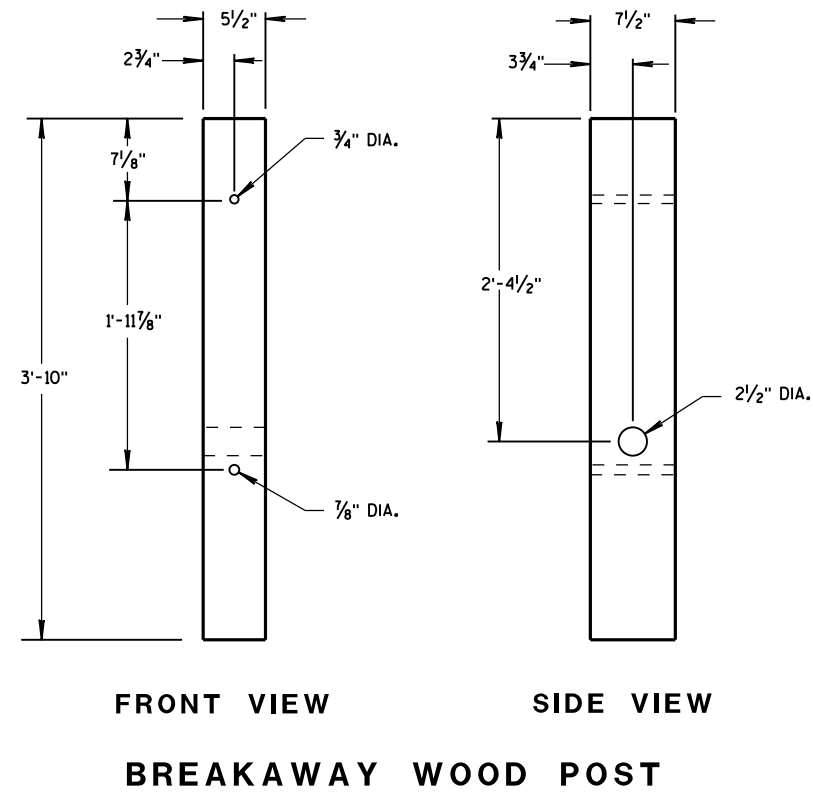
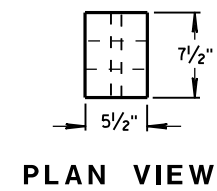
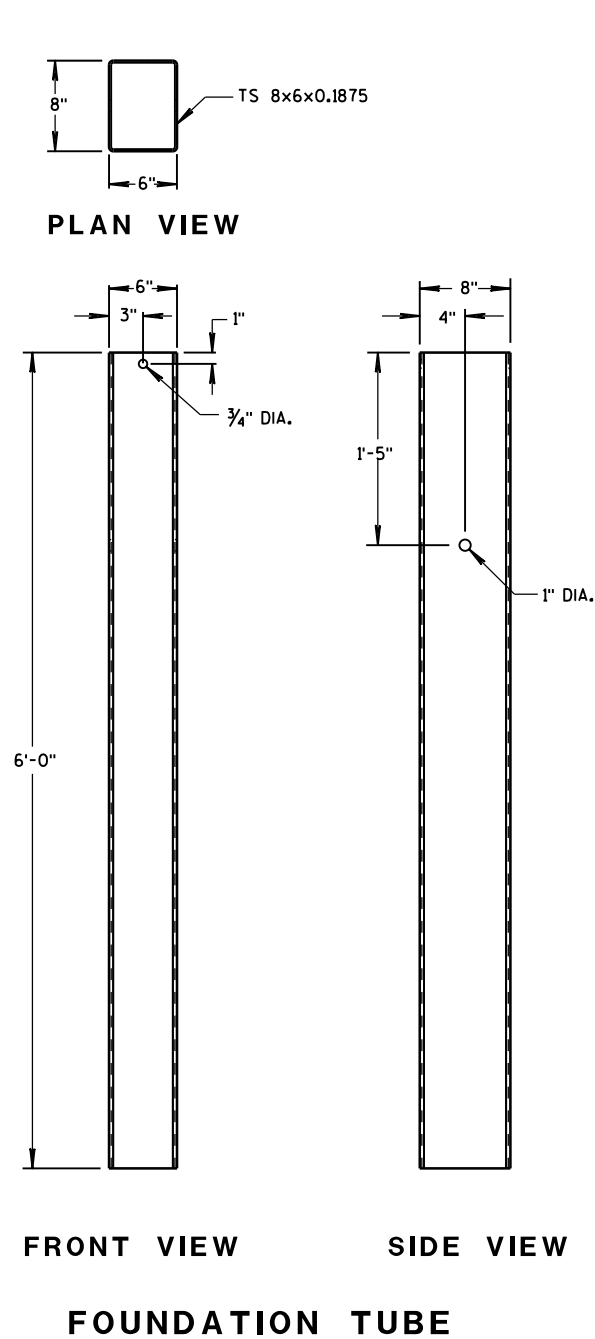


FRONT VIEW

W BEAM END
SECTION ROUNDED

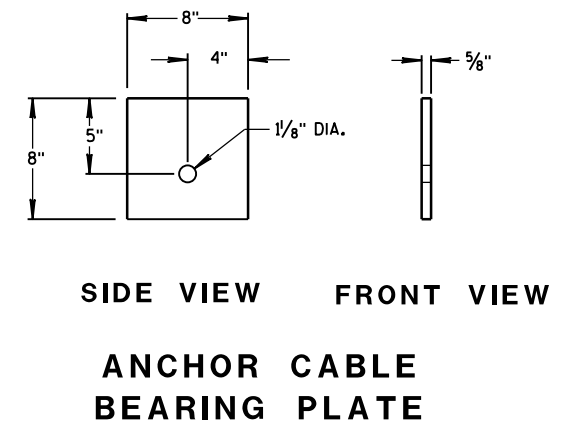
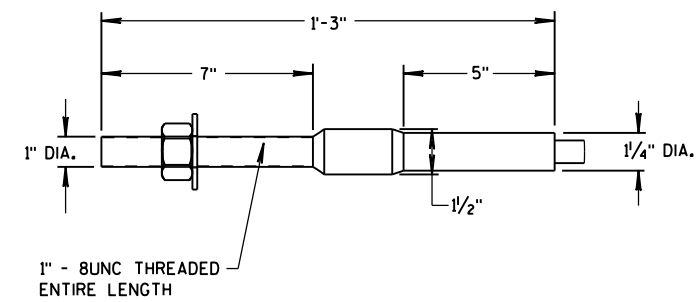
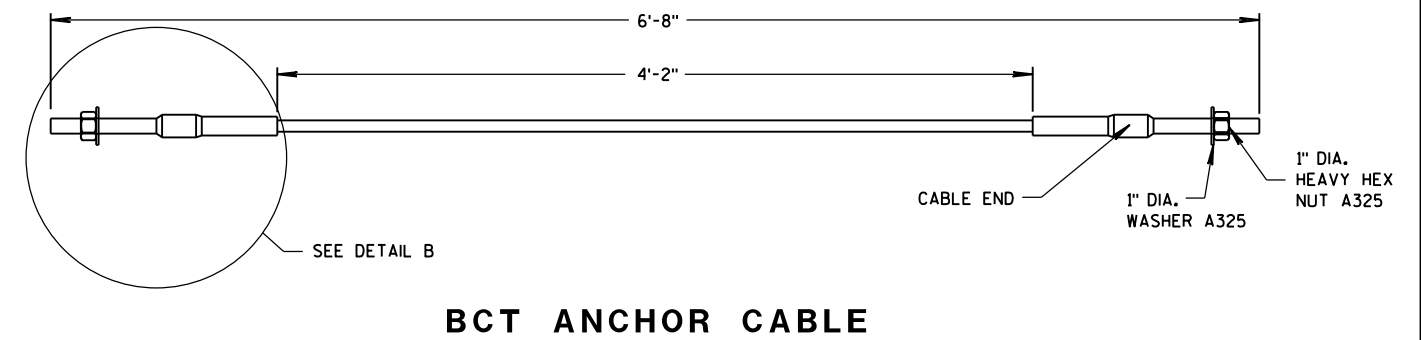
MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



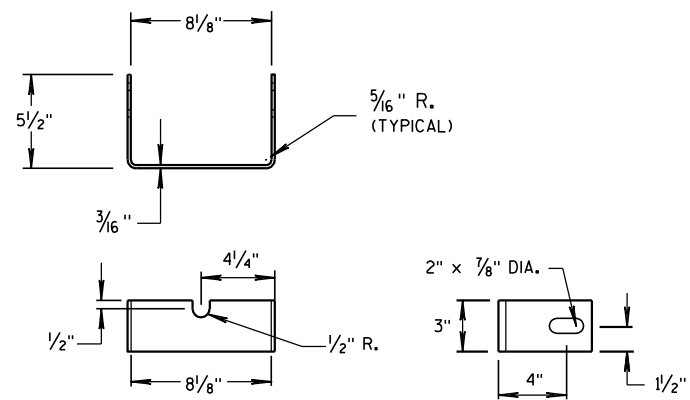
GENERAL NOTES

BCT ANCHOR CABLE IS A $\frac{3}{8}$ " DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. THE END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. THE TREADED STUD SHOULD CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.

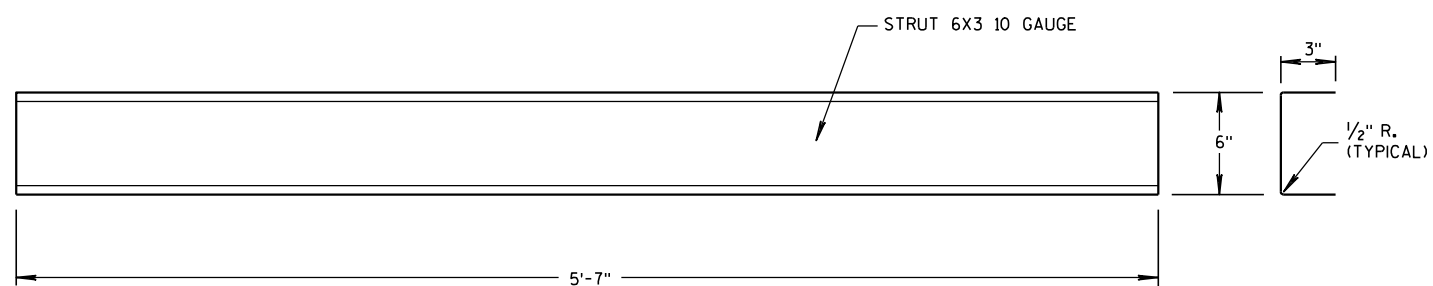


MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

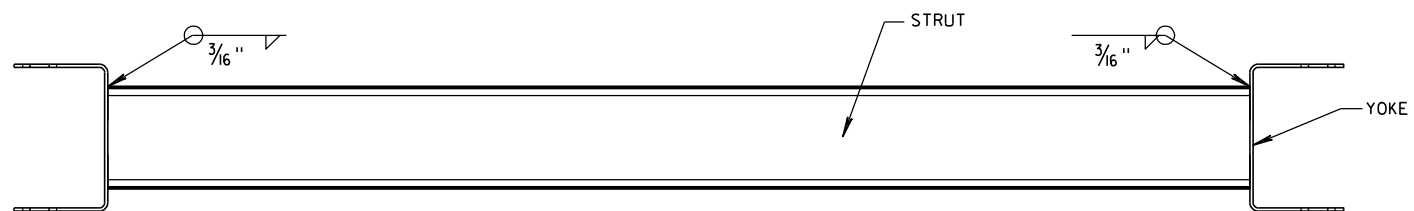
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



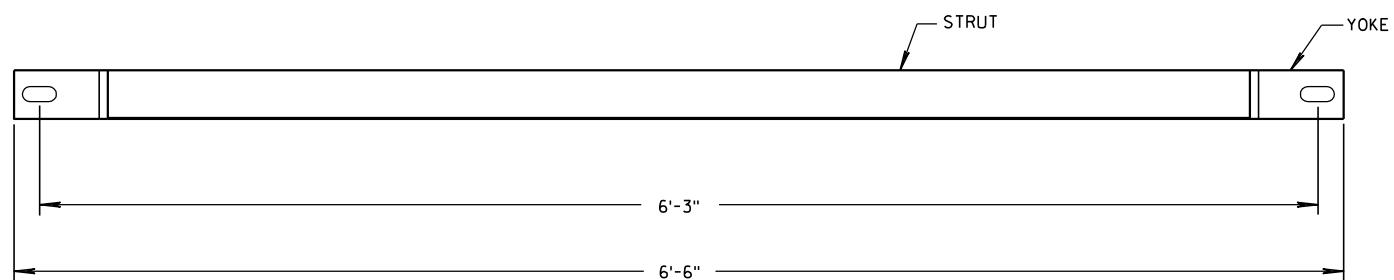
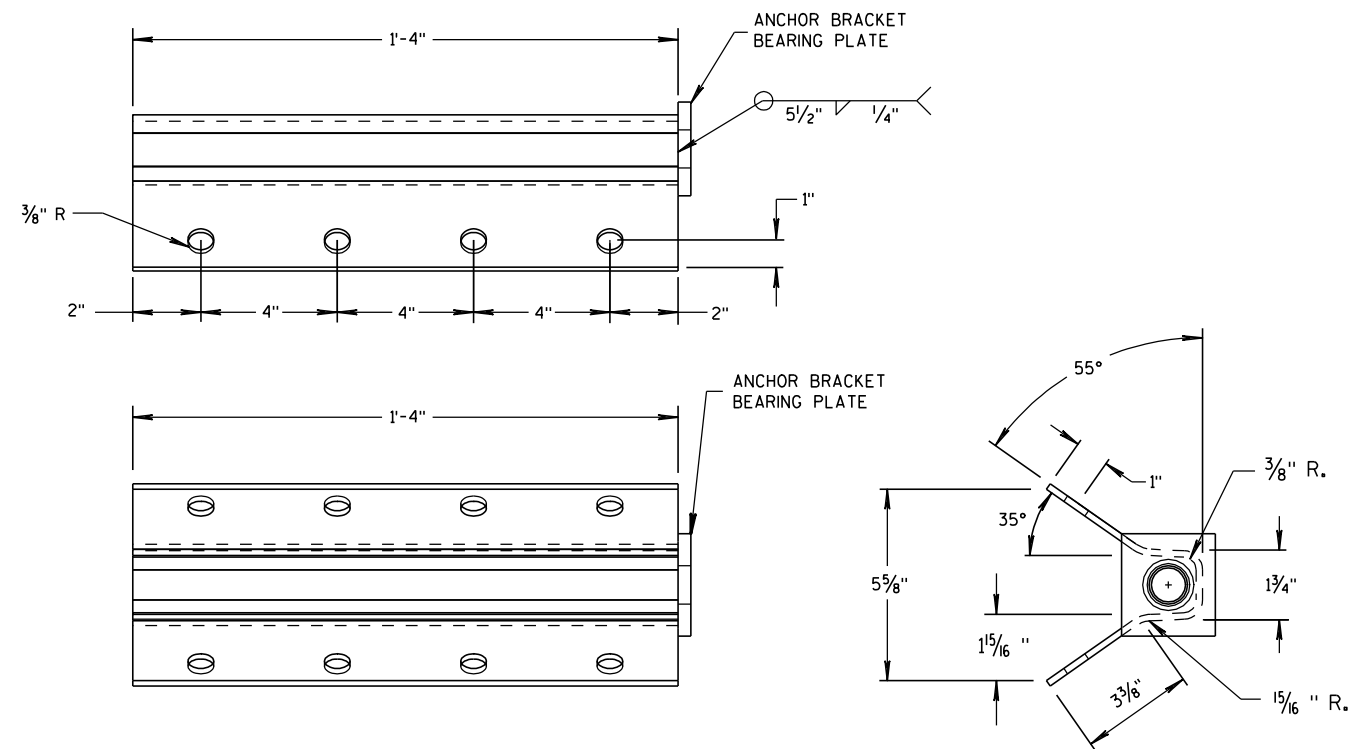
YOKE DETAIL



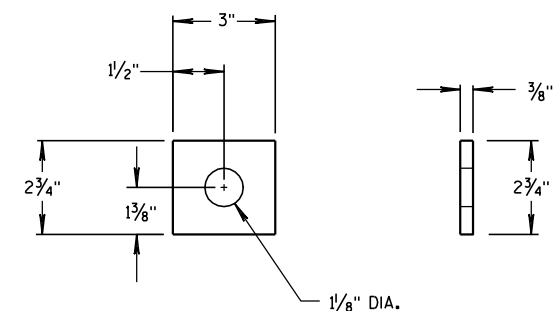
STRUT DETAIL



PLAN VIEW

FRONT VIEW
GROUND STRUT DETAIL

ANCHOR BRACKET

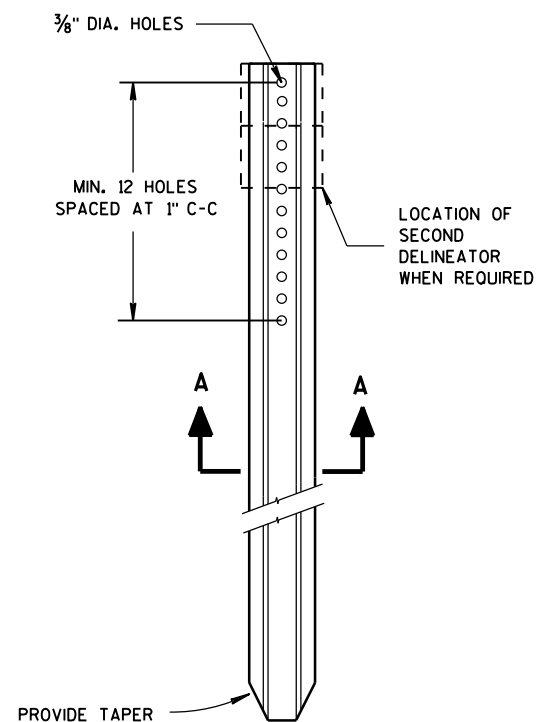
ANCHOR BRACKET
BEARING PLATEMIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINALSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

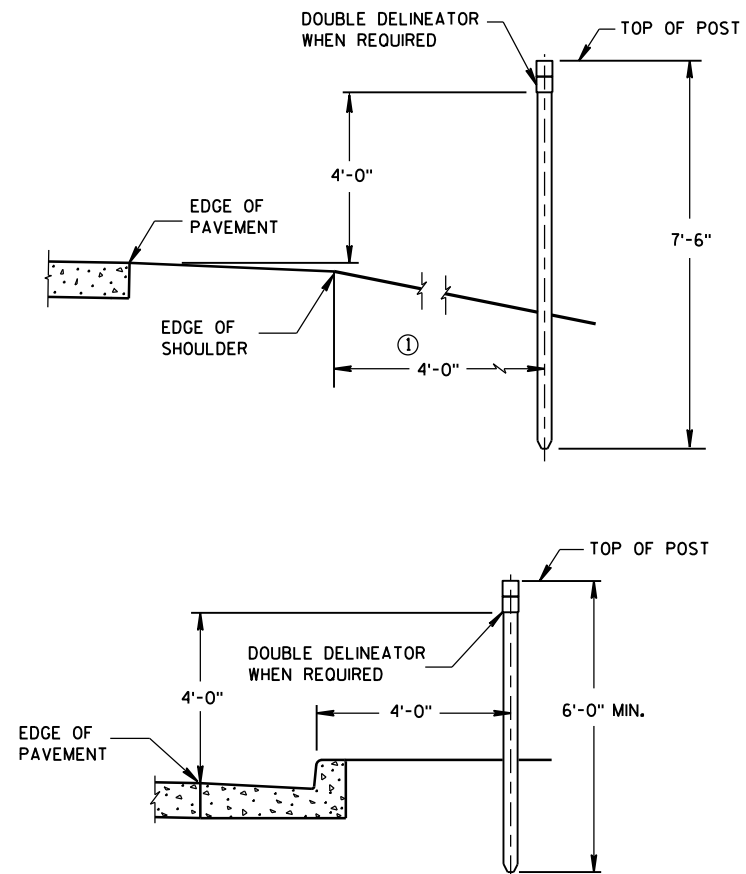
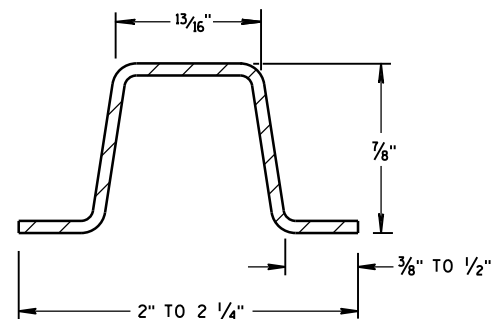
5/23/2011
DATE

FHWA

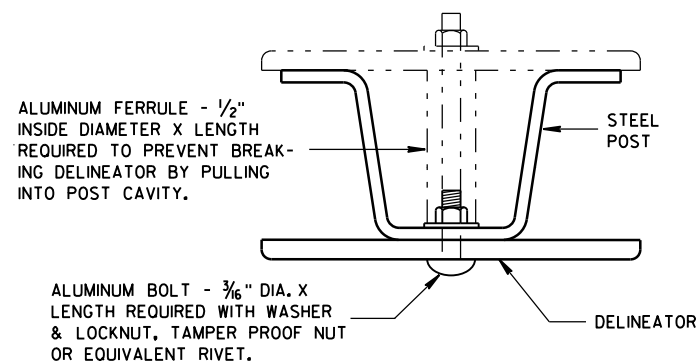
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



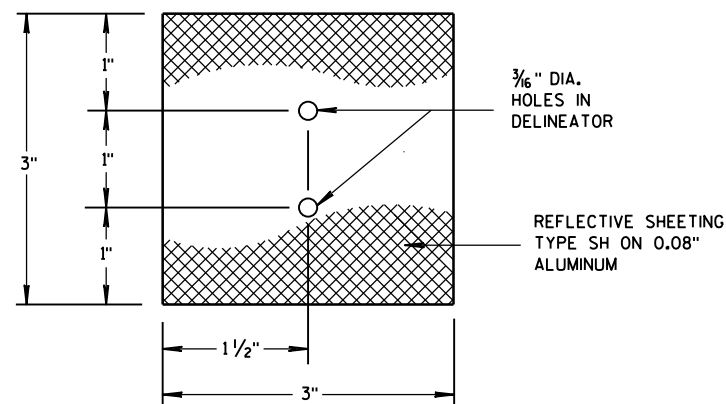
DELINEATOR POST



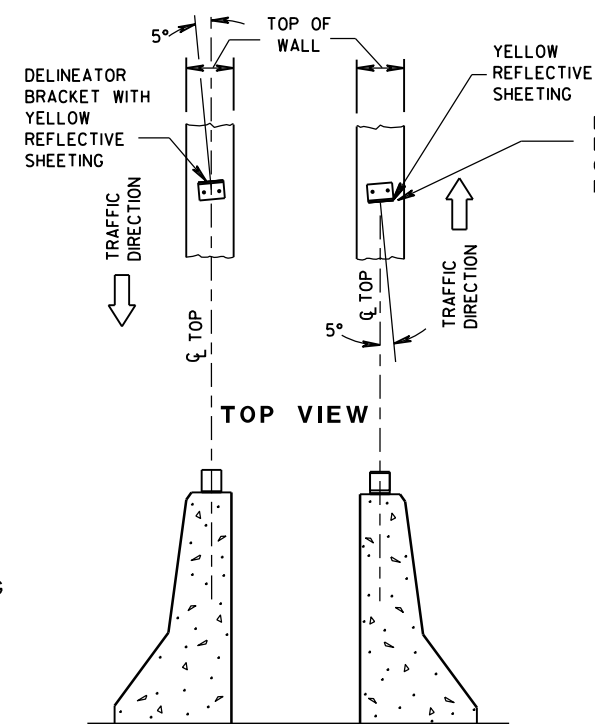
TYPICAL INSTALLATIONS OF DELINEATOR POSTS



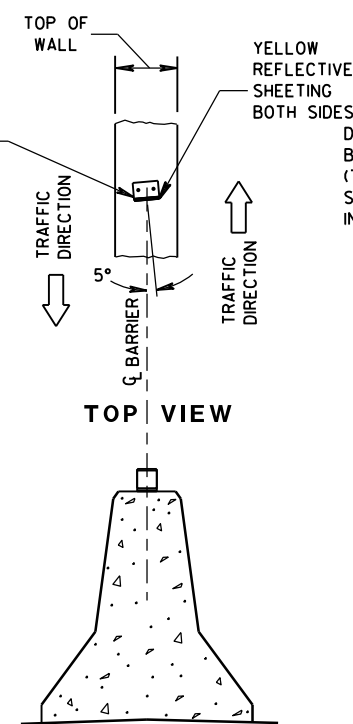
MOUNTING DETAIL FOR DELINEATOR



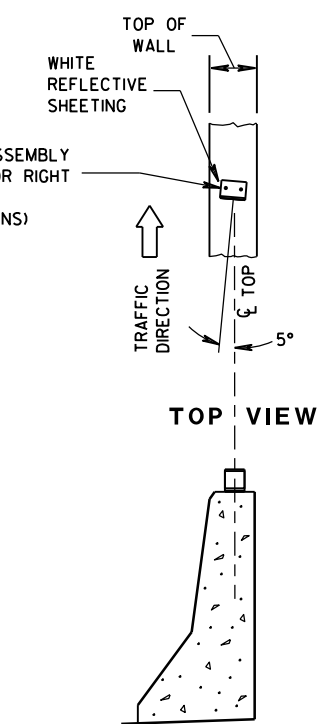
3" x 3" DELINEATOR



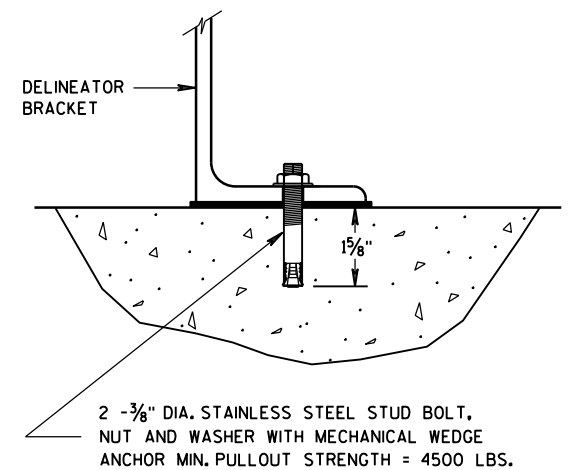
DOUBLE BARRIERS IN MEDIAN



MEDIAN BARRIER



BARRIER LOCATED TO RT. OF TRAFFIC FLOW

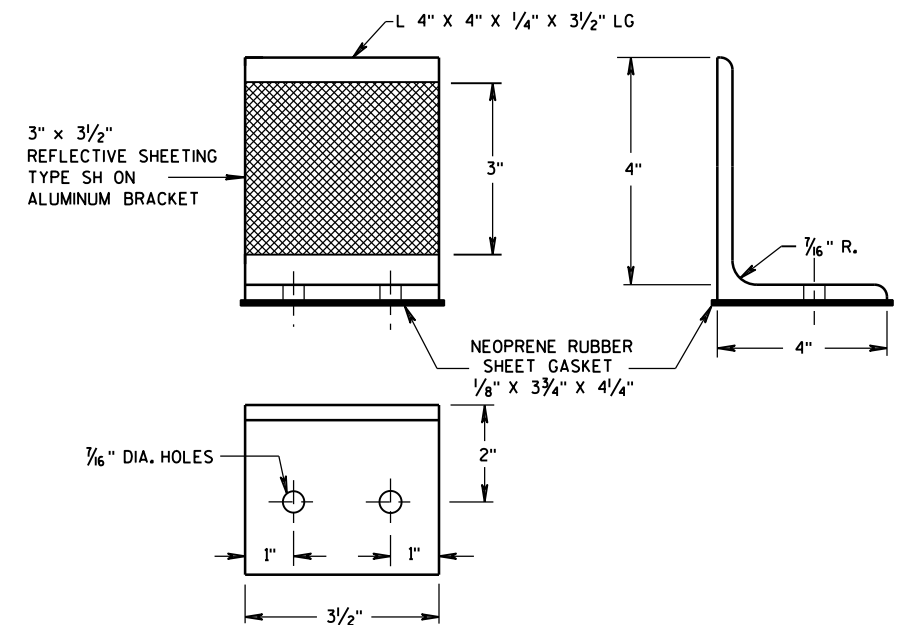


DELINEATOR BRACKET MOUNTING DETAIL

GENERAL NOTES

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

- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



DELINEATOR BRACKET

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS

DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

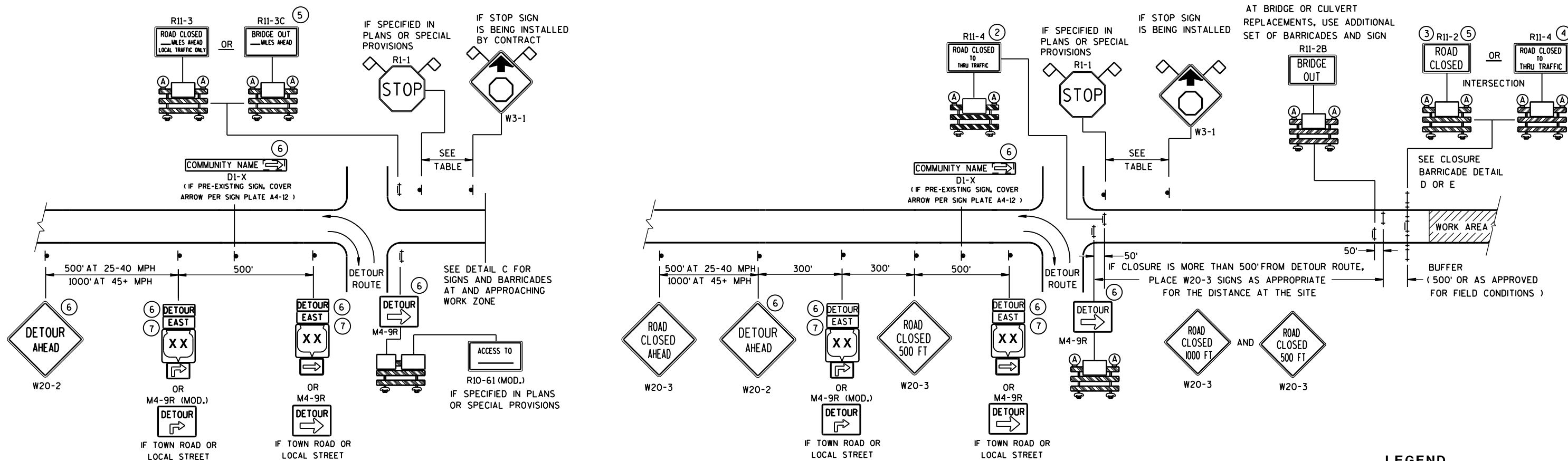
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA



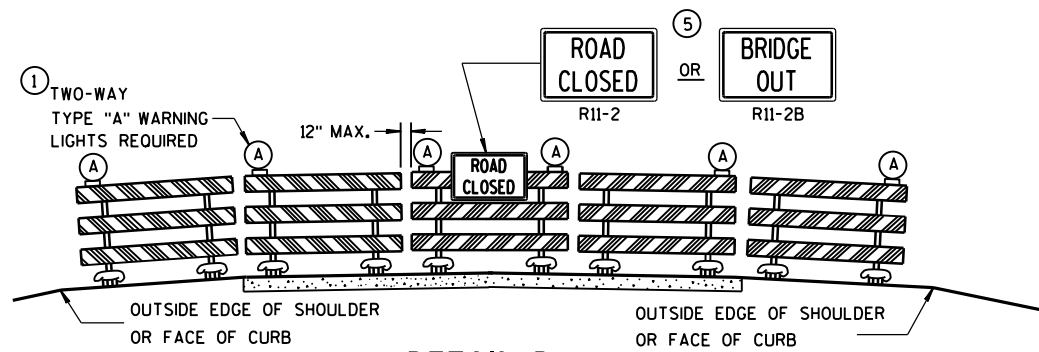
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

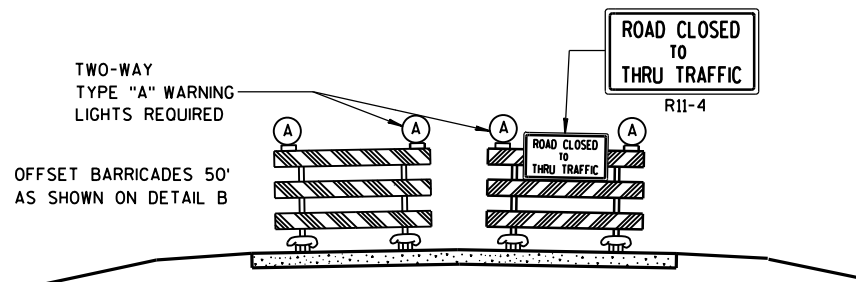
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE /S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN
FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

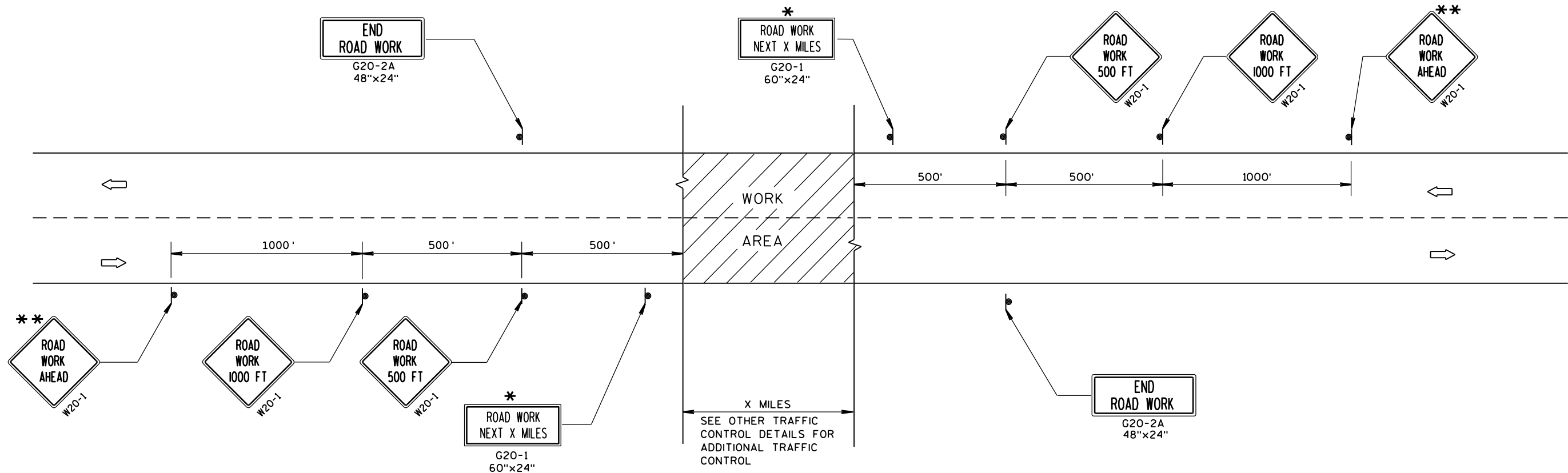
R1-1 SHALL BE 36" X 36".

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

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.

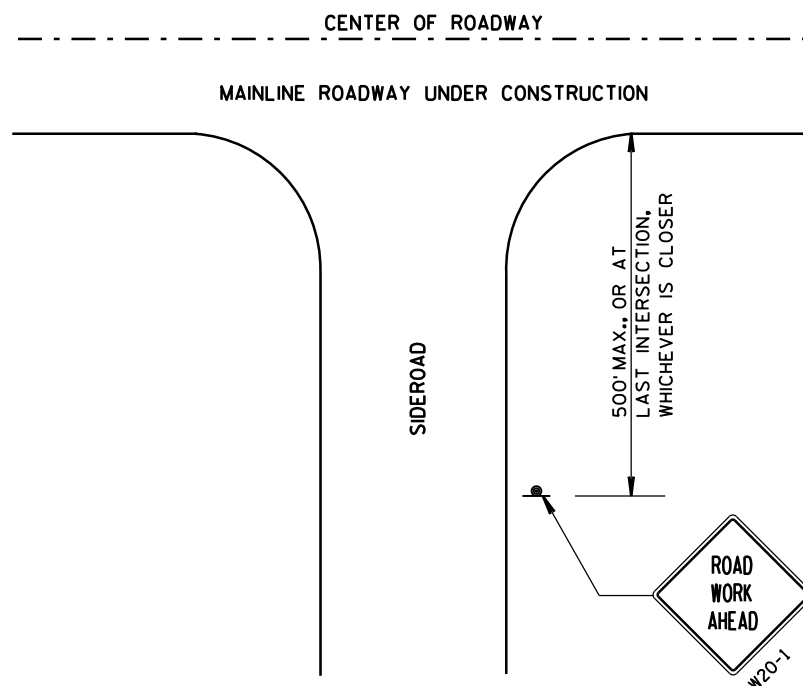
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 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 RE-ESTABLISHED.

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

** PLACE ADDITIONAL W20-1 "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

TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

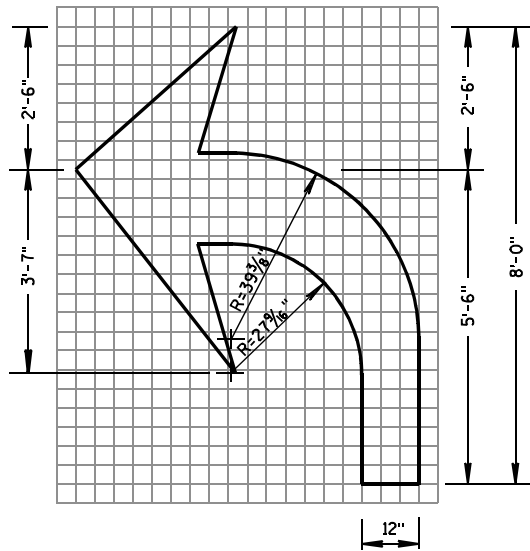
APPROVED

8/2013

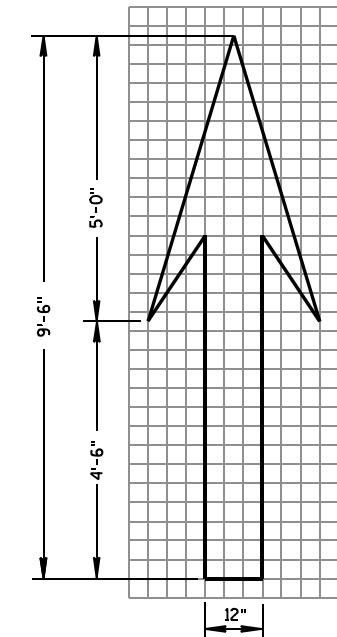
DATE

FHWA

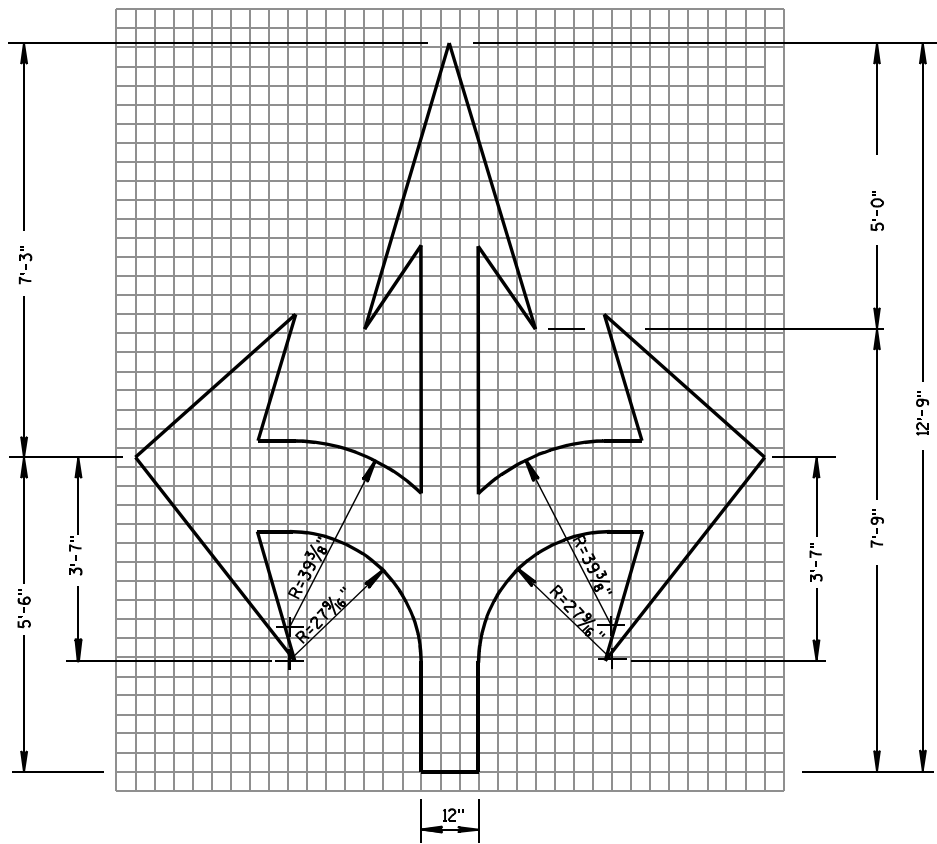
/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN



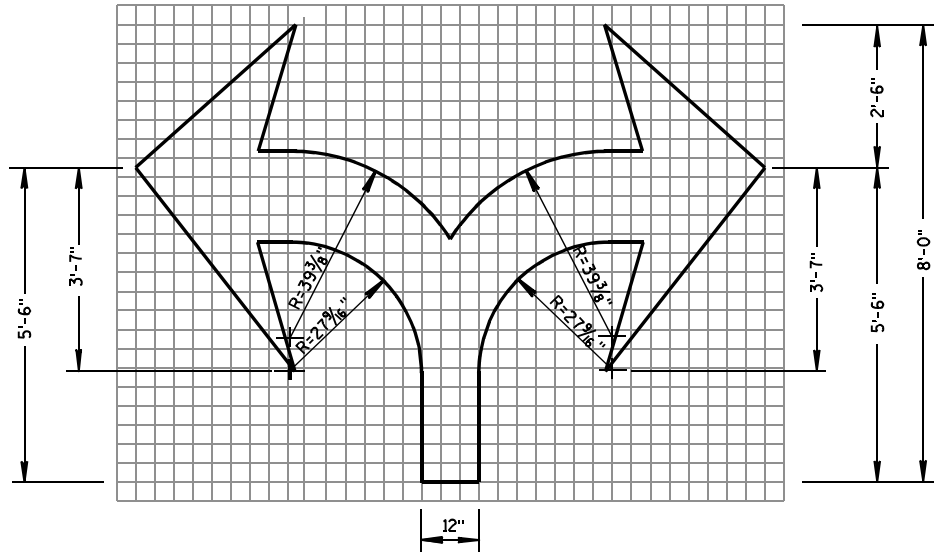
TYPE 2



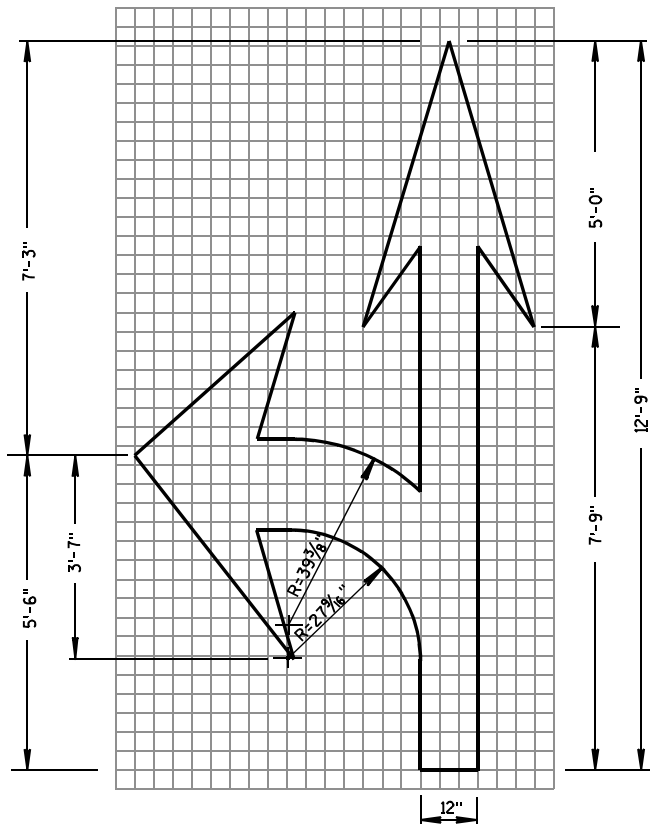
TYPE 1



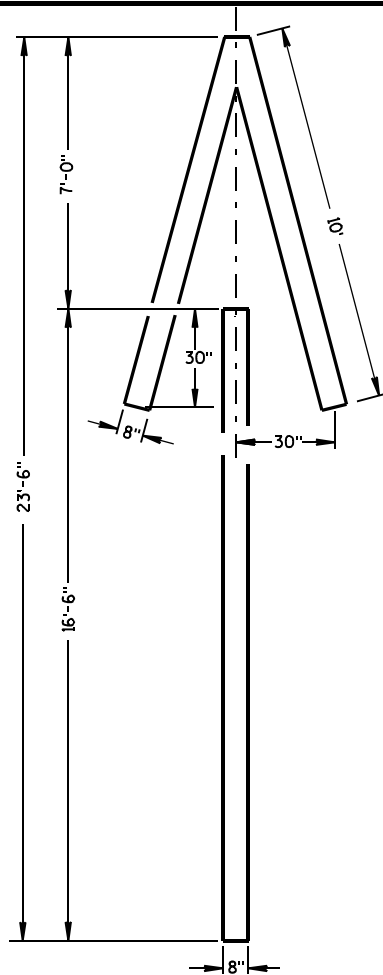
TYPE 6



TYPE 7



TYPE 3

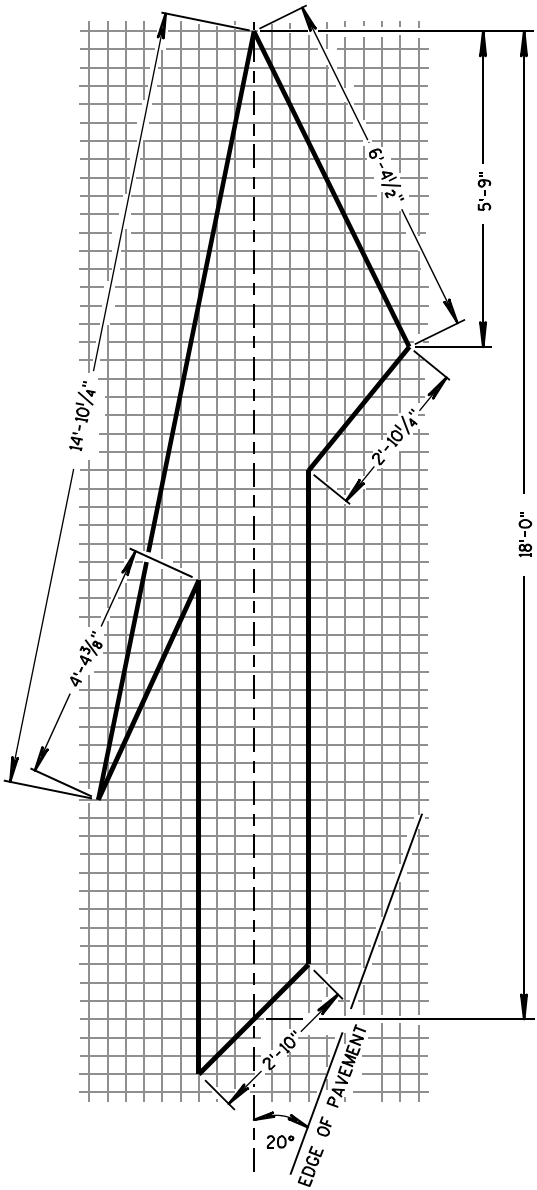


TYPE 4

GENERAL NOTES

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

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



TYPE 5 LANE DROP ARROW

PAVEMENT MARKING ARROWS

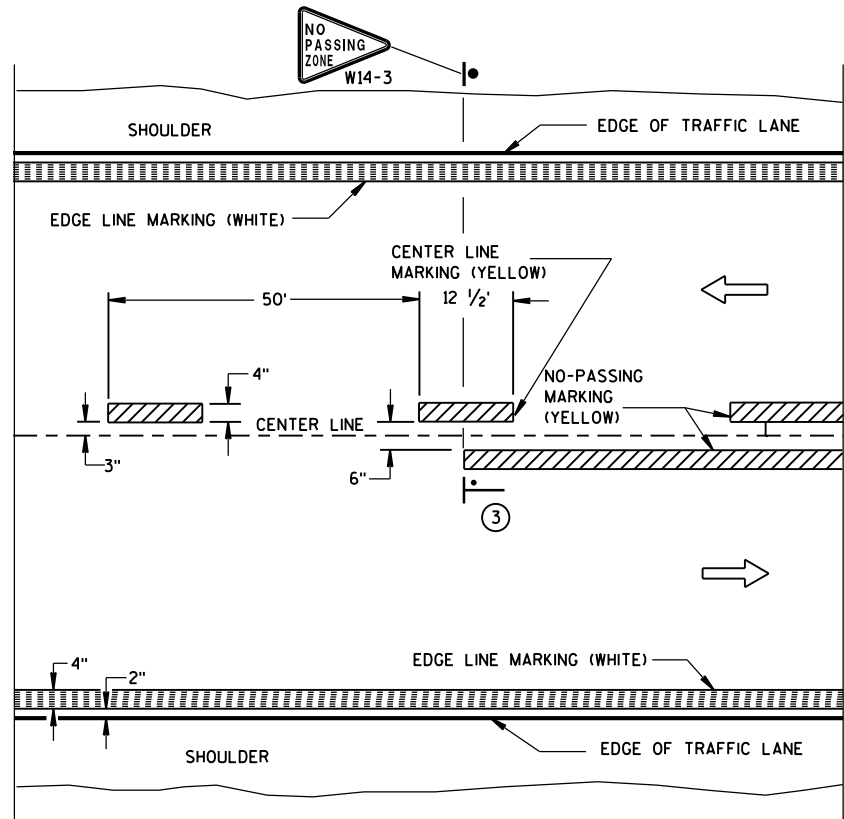
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

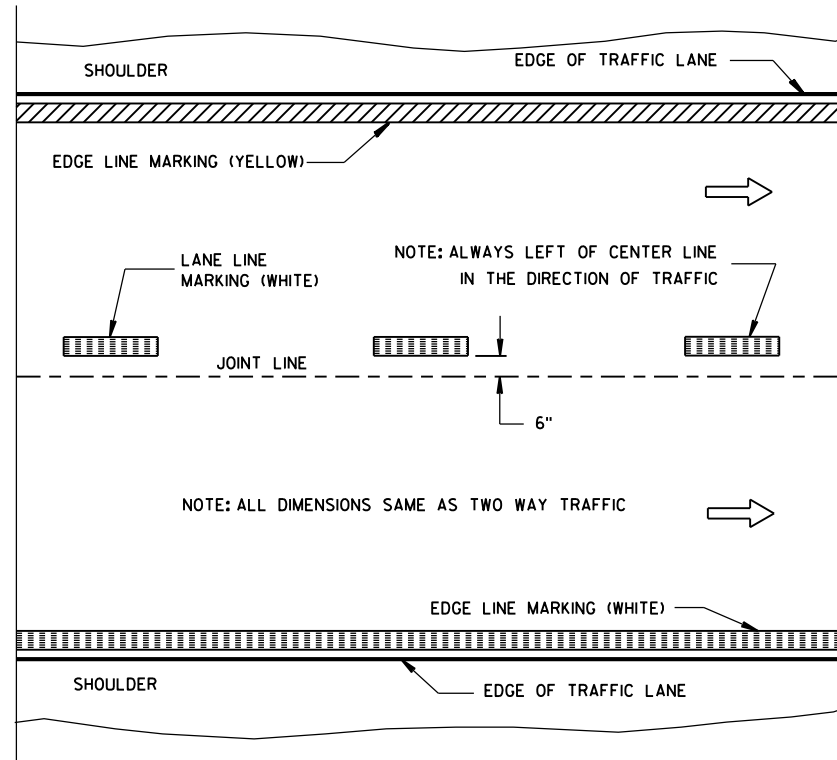
7/1/11
DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

FHWA

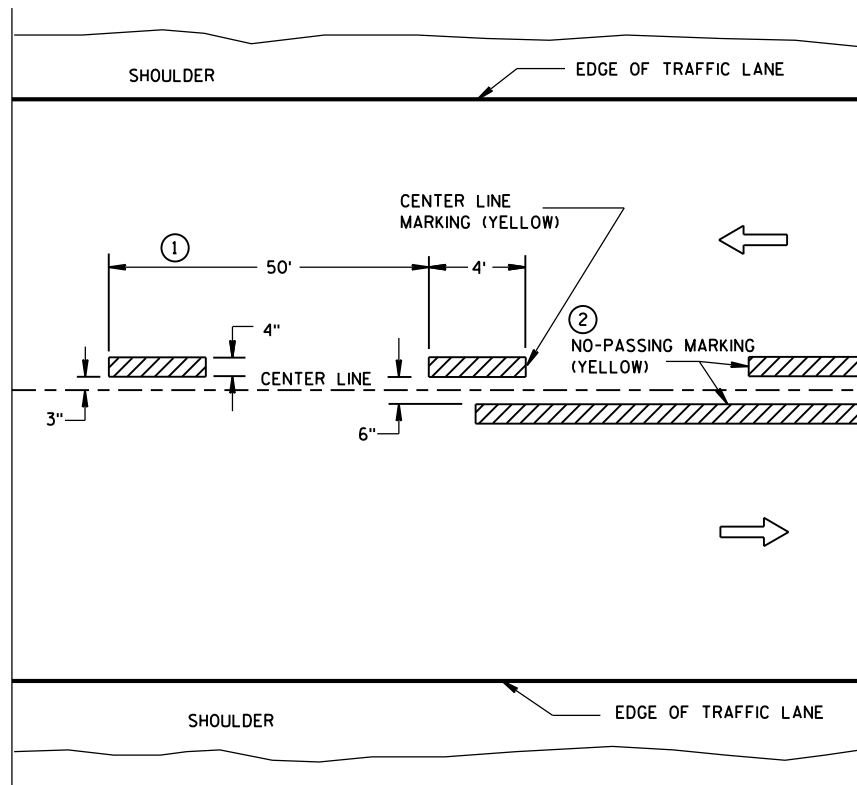


TWO WAY TRAFFIC

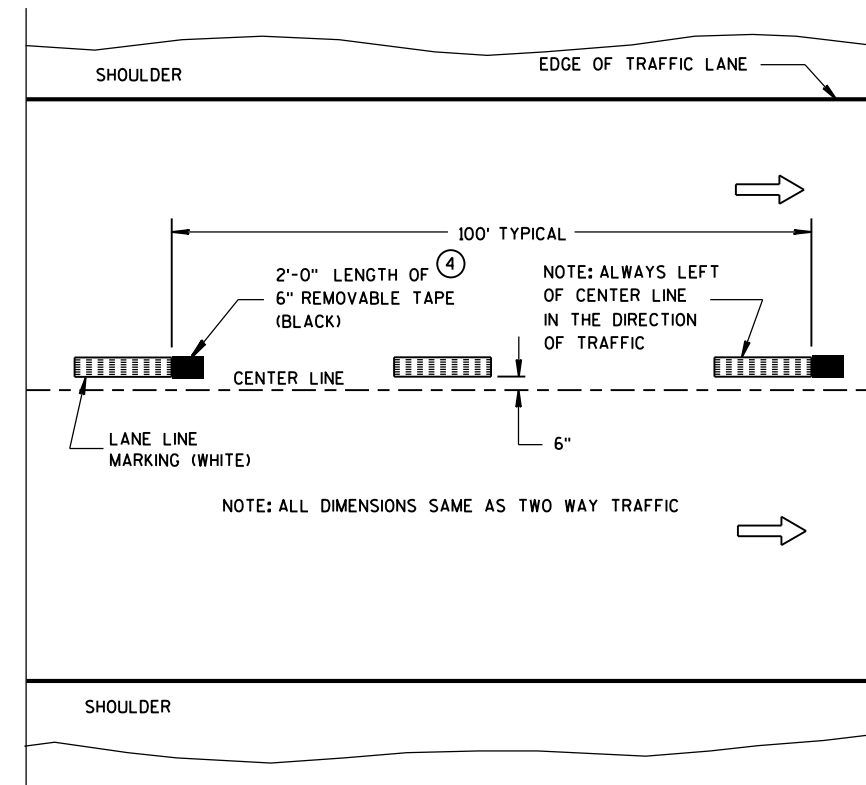


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

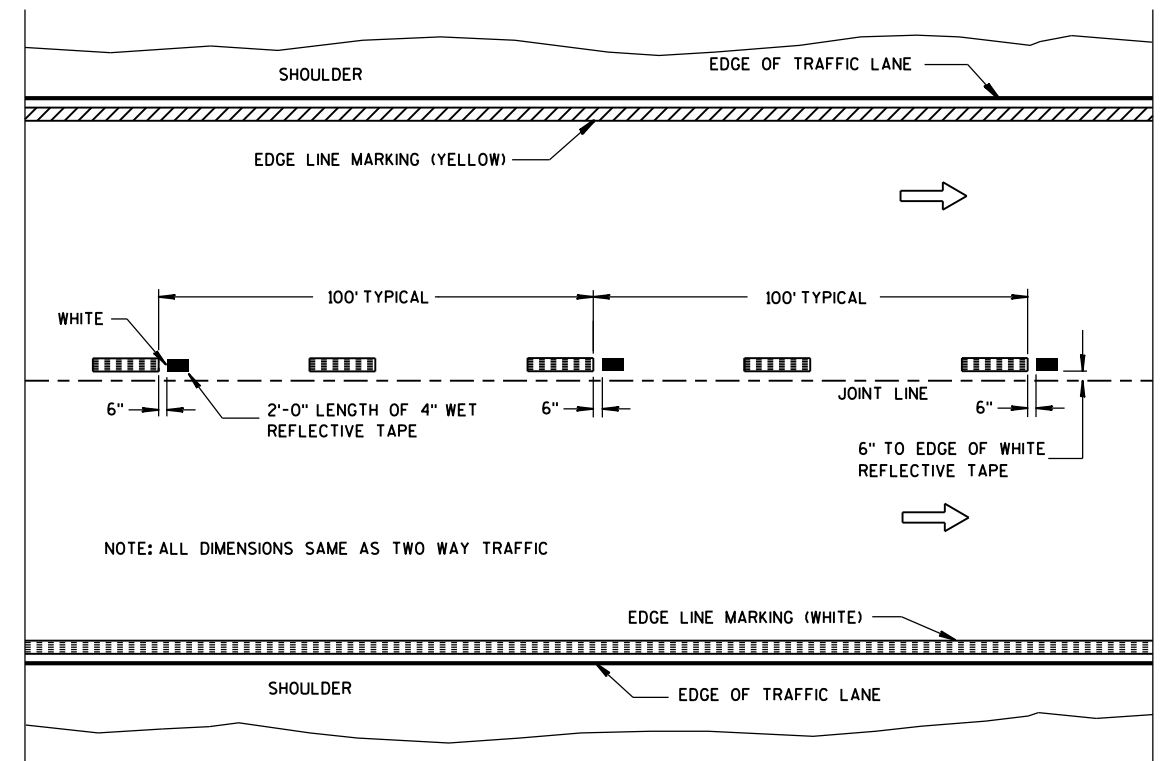
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

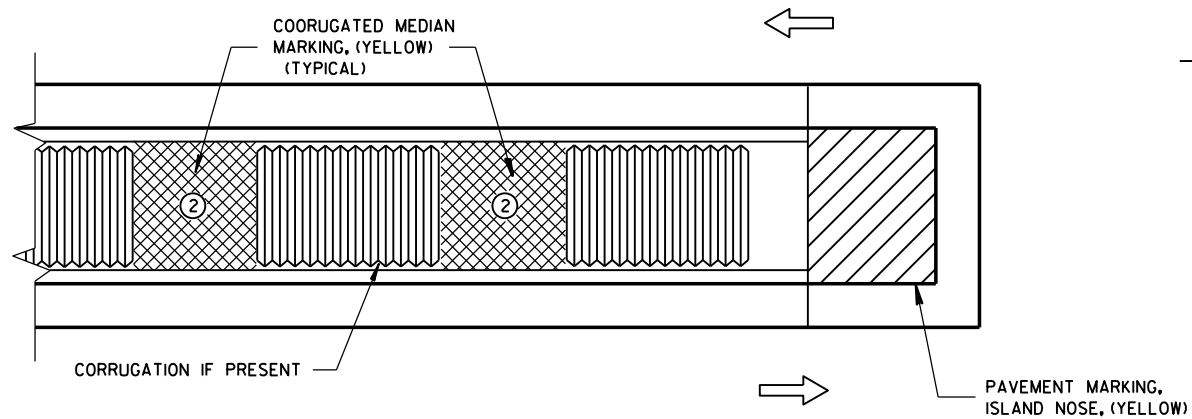
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

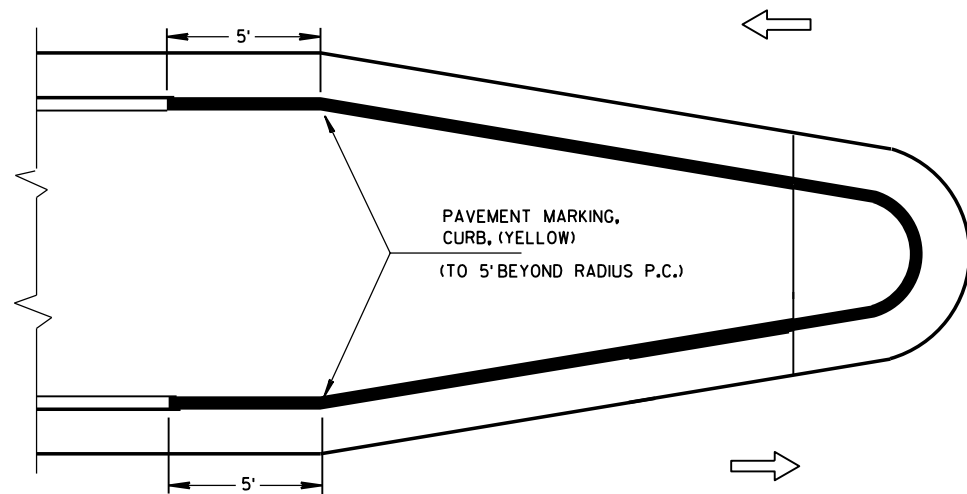
PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

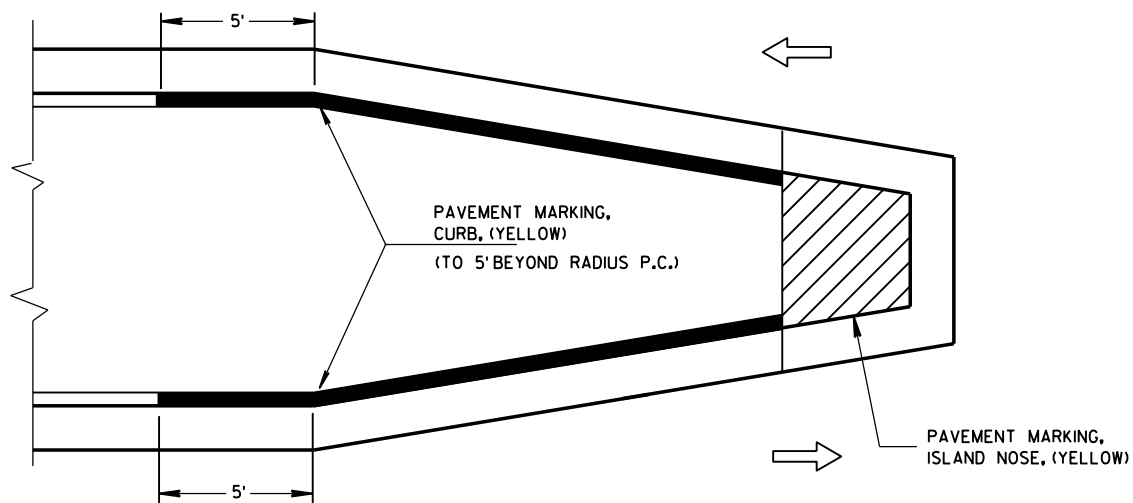
APPROVED
5-13-2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER
FHWA



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

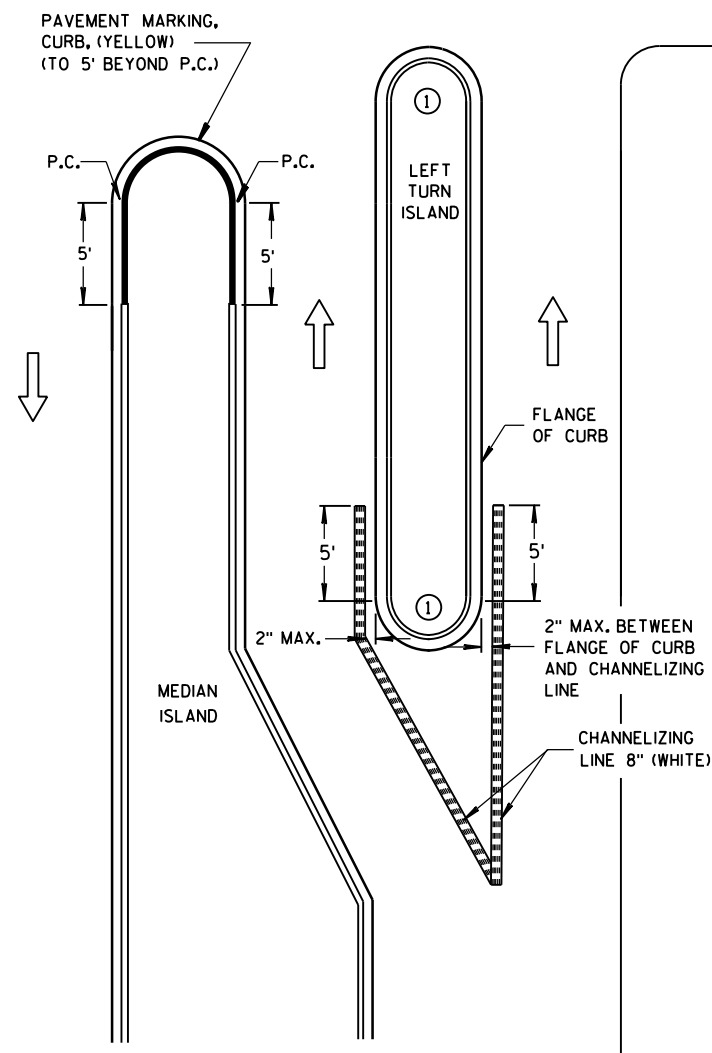


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

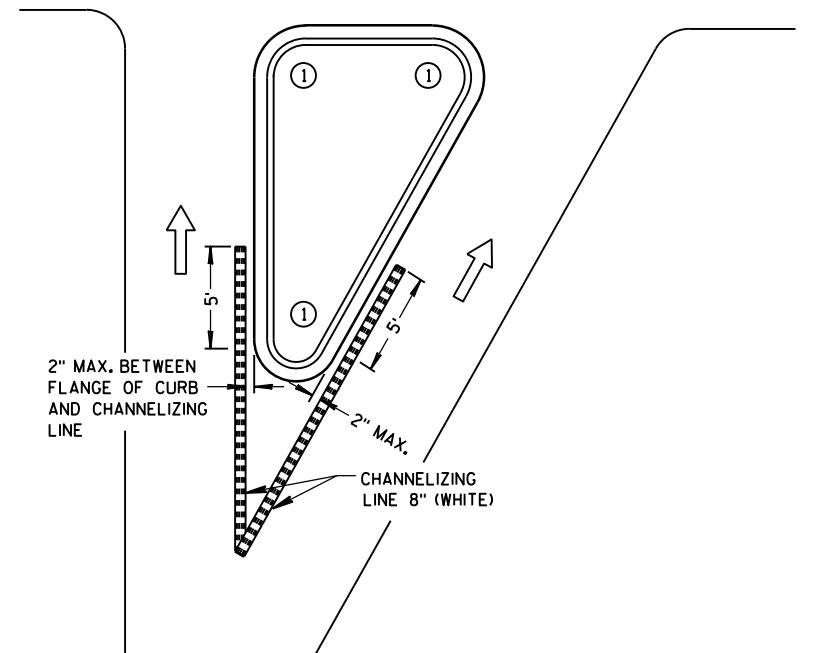
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

- 1 DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.
- 2 WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND

LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING (ISLANDS)

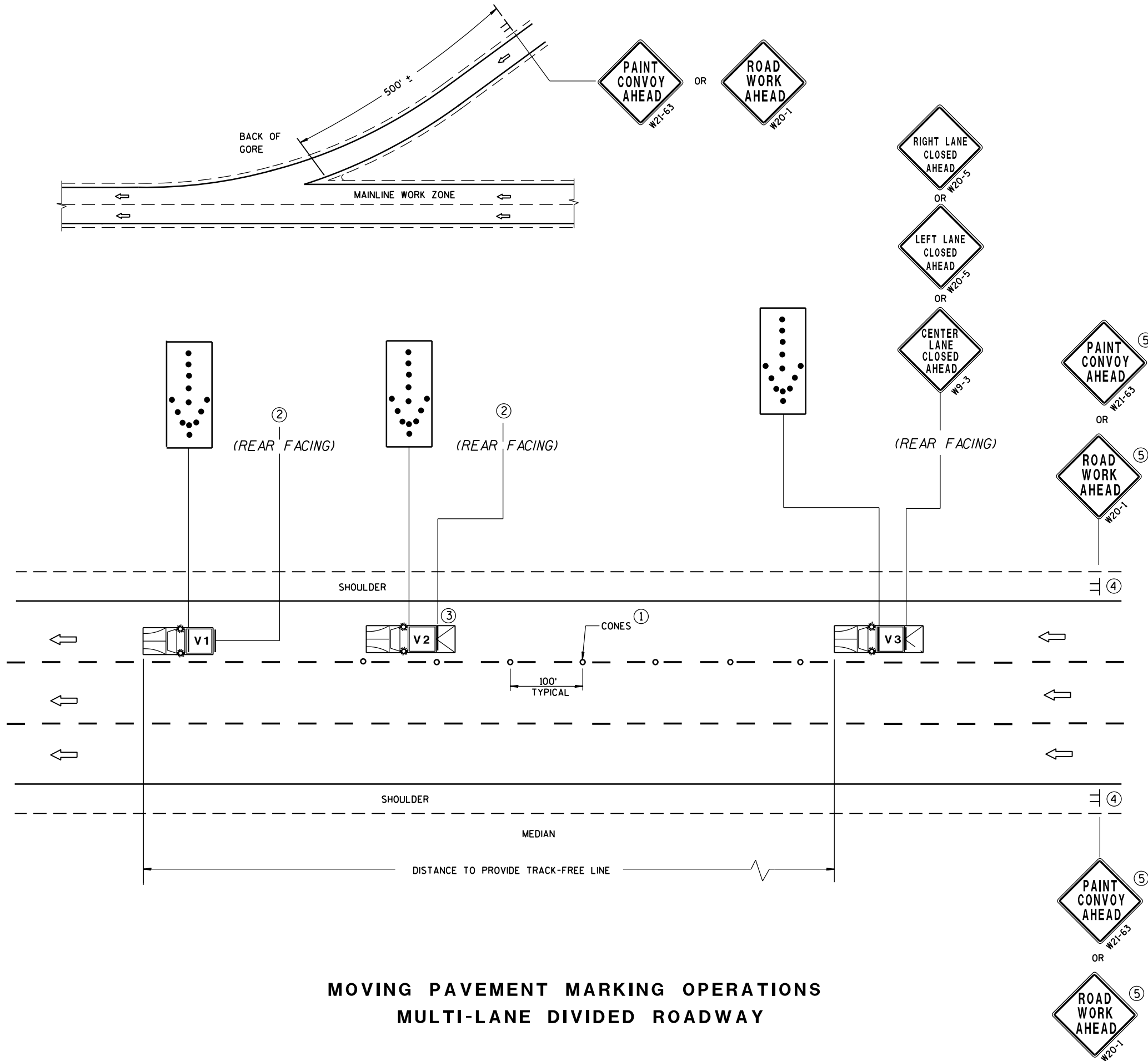
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SECTION B-B

ALTERNATIVE SHAPES

[illegible]



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE DIVIDED ROADWAY

GENERAL NOTES

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.

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, 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.

WHEN WORK ACTIVITY BLOCKS THE LEFT 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.

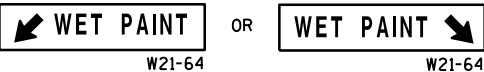
USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGE LINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR EDGE LINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.



LEGEND

- V1 LEAD VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL VEHICLE WITH TMA
- TMA TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (MERGE)

MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/3/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER
FHWA	

LEGEND

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



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



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



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

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

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

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

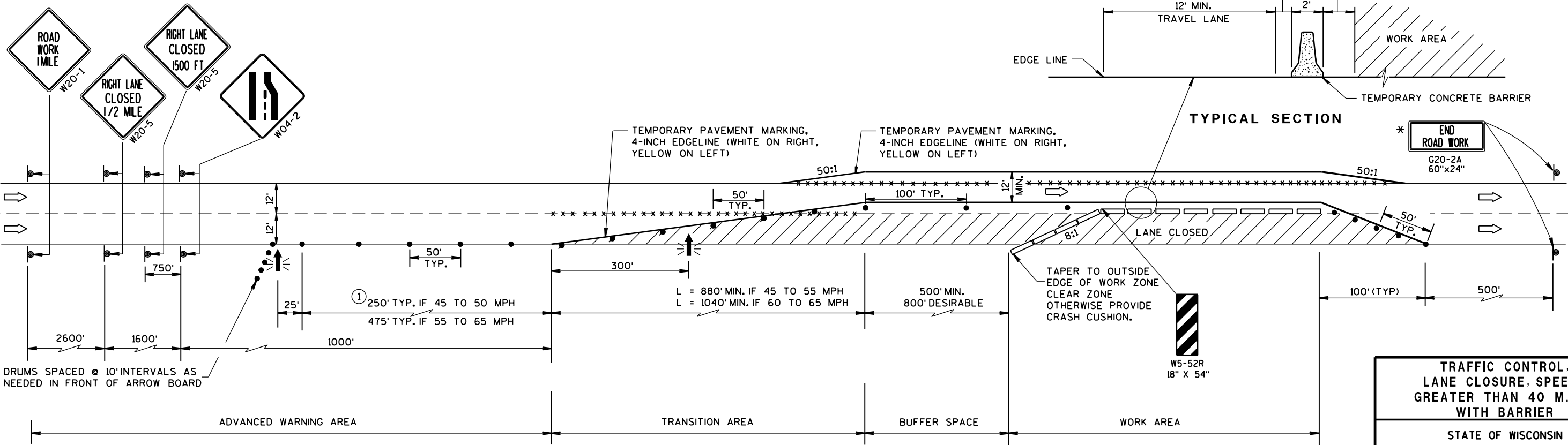
- ① CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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

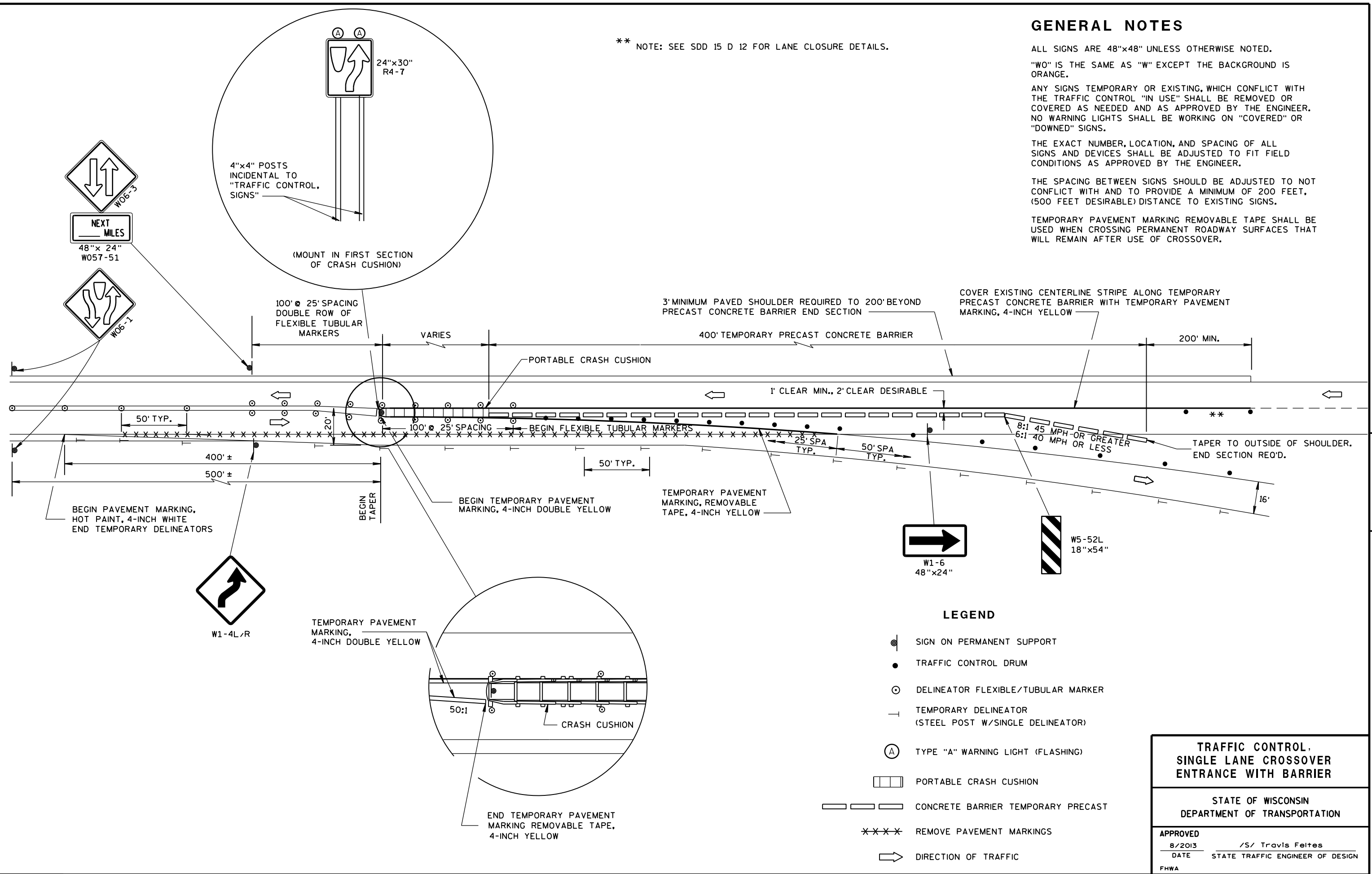
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

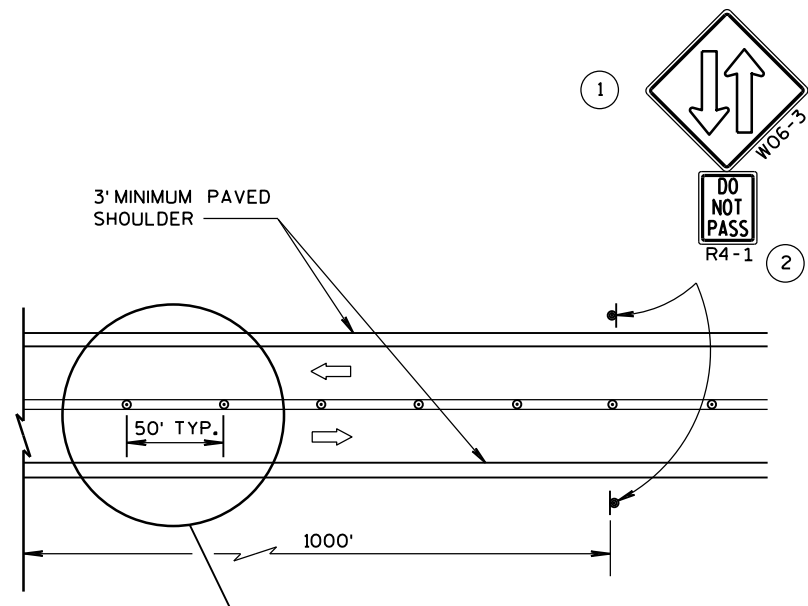
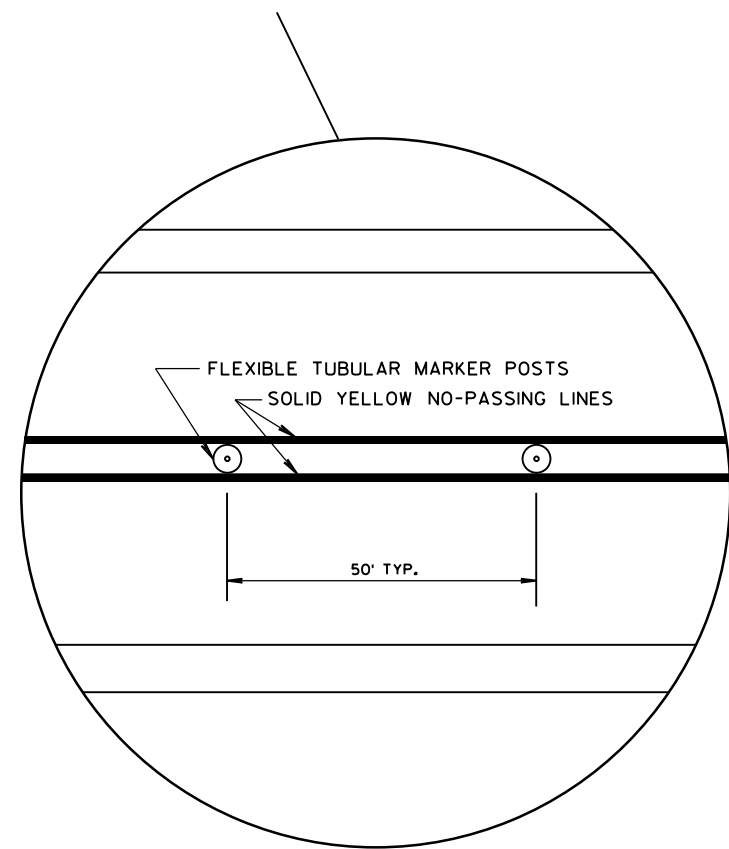
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013	/S/ Travis Feltes
DATE	STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



**TWO LANE, TWO WAY OPERATION****LEGEND**

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

GENERAL NOTES

ALL SIGNS ARE 48"x48" UNLESS OTHERS NOTED.

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

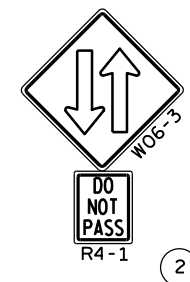
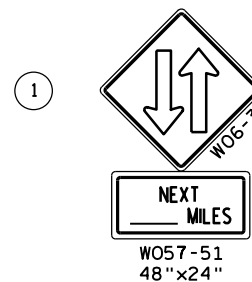
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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 FEET 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, 4-INCH DOUBLE YELLOW.



THE WO6-3 WITH THE WO57-51 SHALL BE LOCATED 200 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND/OR 500 FEET BEYOND ANY SIDEROAD. THE WO6-3 WITH THE R4-1 SHALL BE LOCATED 1000 FEET BEYOND THE WO6-3 AND THE WO57-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN WO6-3 SIGNS.

CONVENTIONAL: 24"x30"
FREEWAY AND EXPRESSWAY: 36"x48"

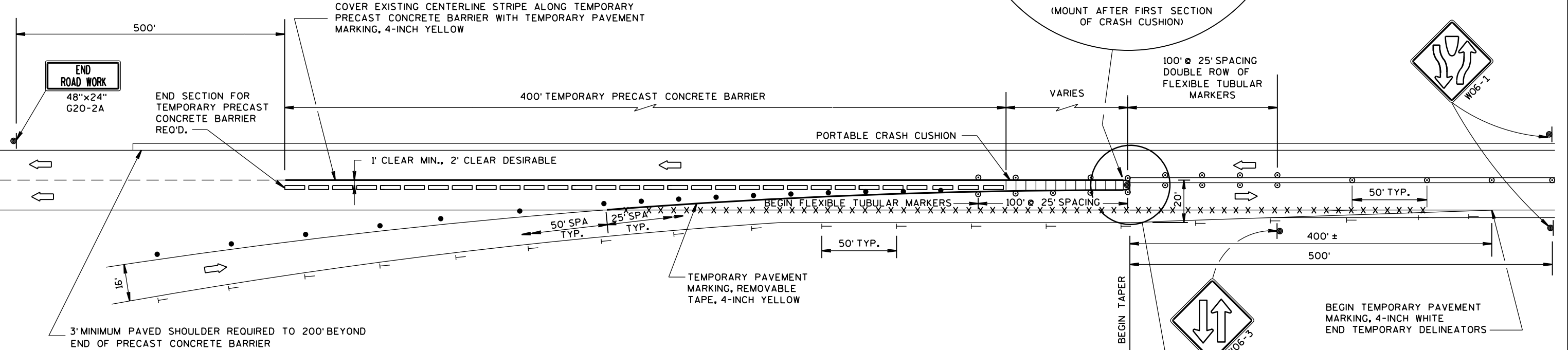
**TRAFFIC CONTROL,
TWO LANE TWO
WAY OPERATION**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- TEMPORARY DELINEATOR
(STEEL POST W/SINGLE DELINEATOR)
COLOR OF DELINEATOR SHALL MATCH THE COLOR OF
THE RESPECTIVE EDGELINE MARKING
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ▢ PORTABLE CRASH CUSHION
- ▢ CONCRETE BARRIER TEMPORARY PRECAST
- *** REMOVE PAVEMENT MARKINGS
- ➡ DIRECTION OF TRAFFIC



GENERAL NOTES

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

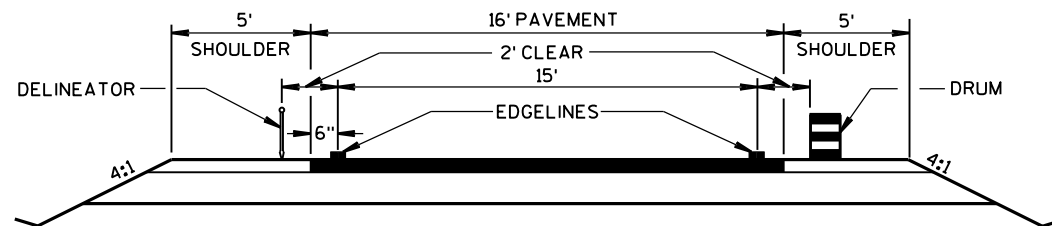
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

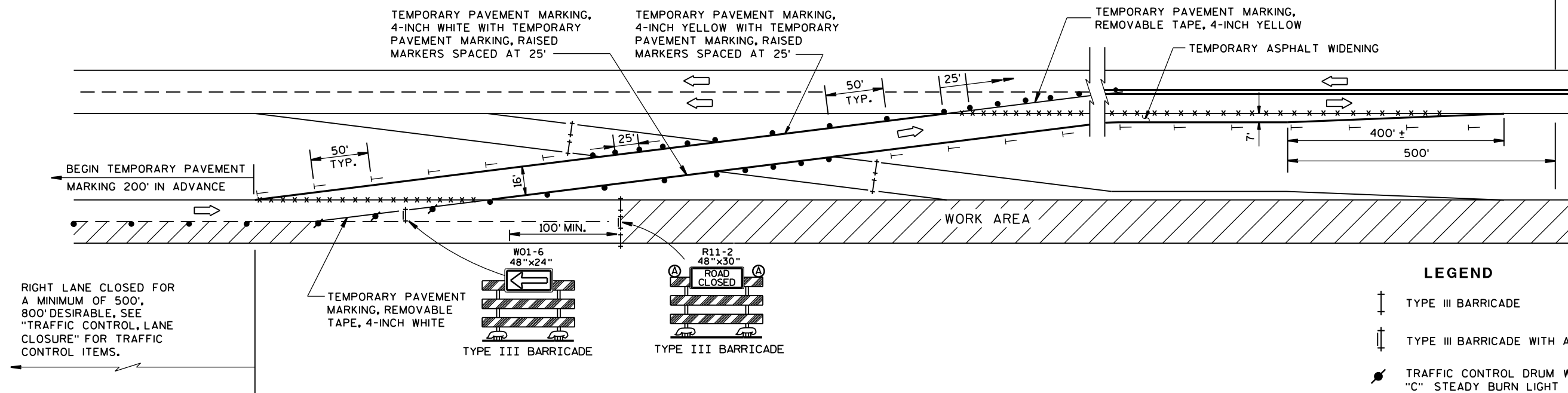
TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER.

TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT WITH BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



TYPICAL CROSSOVER ROADWAY DIMENSIONS

SEE S.D.D. 15 D 10, "TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT WITH BARRIER" OR "TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT" DETAIL FOR ADDITIONAL TRAFFIC CONTROL ITEMS AND LAYOUT DIMENSIONS.



LEGEND

- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- ⊥ TEMPORARY DELINEATOR (STEEL POST W/SINGLE DELINEATOR) COLOR OF DELINEATOR SHALL MATCH THE COLOR OF THE RESPECTIVE EDGELINE MARKING
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ⊥ TEMPORARY DELINEATOR (DOUBLE SIDED)
- *** REMOVING PAVEMENT MARKINGS
- ⊙ DELINEATOR FLEXIBLE/TUBULAR MARKER
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

GENERAL NOTES

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

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

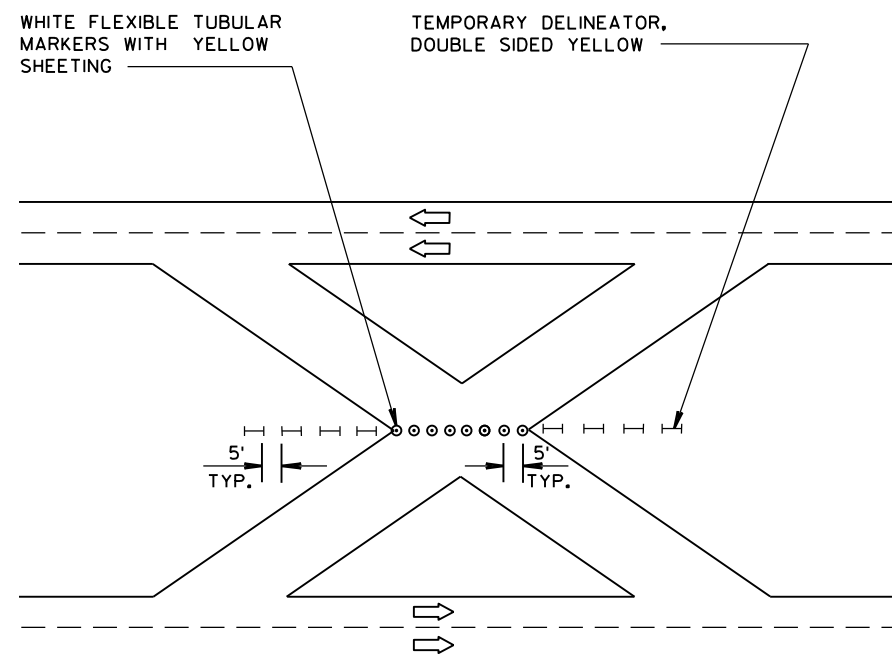
TEMPORARY PAVEMENT MARKING REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER AND TEMPORARY PAVEMENT MARKING WHERE USED.

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 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.

REVERSE DEVICES WHEN OTHER LEG OF CROSSOVER IS IN USE.



**PROTECTION OF CROSSOVER NOT IN USE
WHEN CONSTRUCTION IS NOT TAKING PLACE**

**TRAFFIC CONTROL,
SINGLE LANE CROSSOVER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

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

GENERAL NOTES

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

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

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

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

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

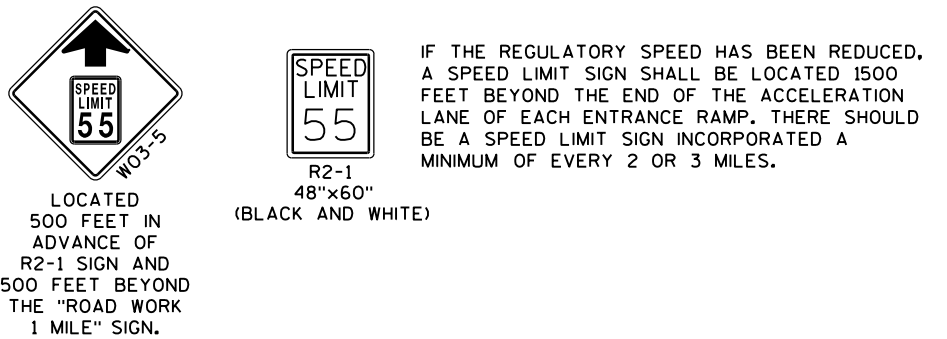
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

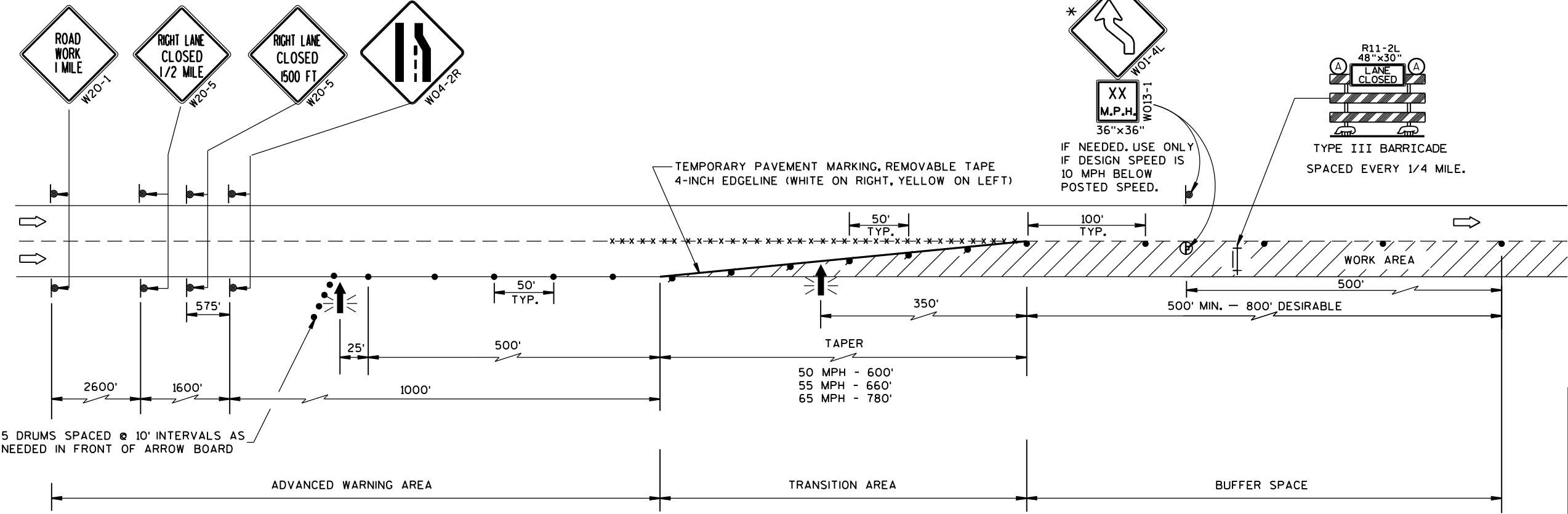
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

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



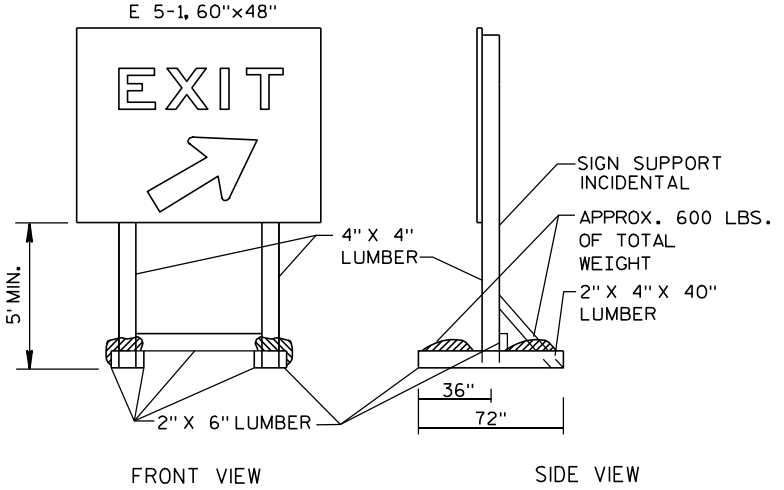
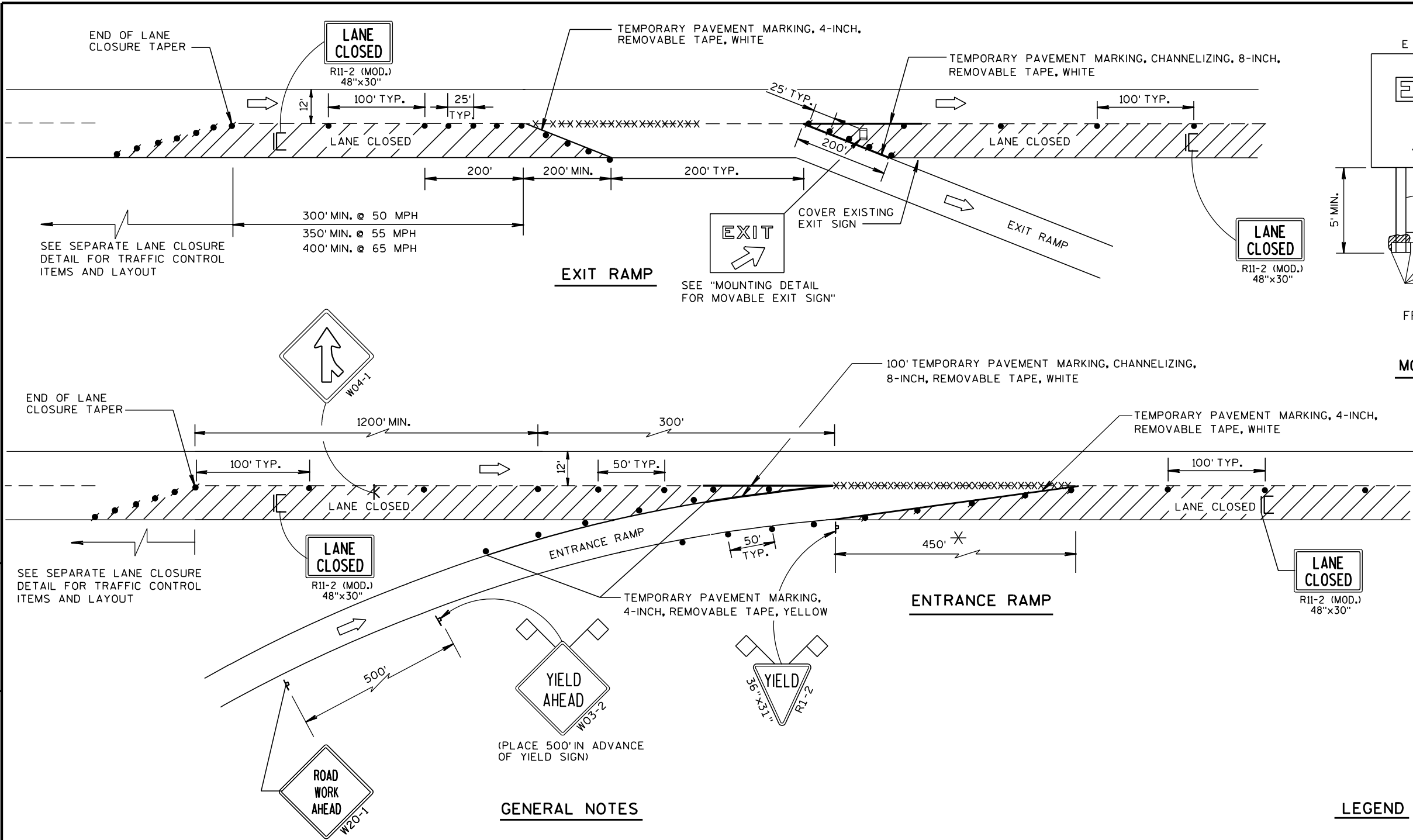
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TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013	/S/ Travis Feltes
DATE	STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

S.D.D. 15 D 12-3

S.D.D. 15 D 12-3



FRONT VIEW SIDE VIEW
NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL
MOUNTING DETAIL FOR MOVABLE EXIT SIGN

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH 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.

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"x48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2 (MOD.) "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

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

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

LEGEND

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/24/2000 DATE /S/ Chester J. Spang
CHIEF SIGNS AND MARKING ENGINEER

FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE



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

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"x48" UNLESS OTHERWISE NOTED.

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

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

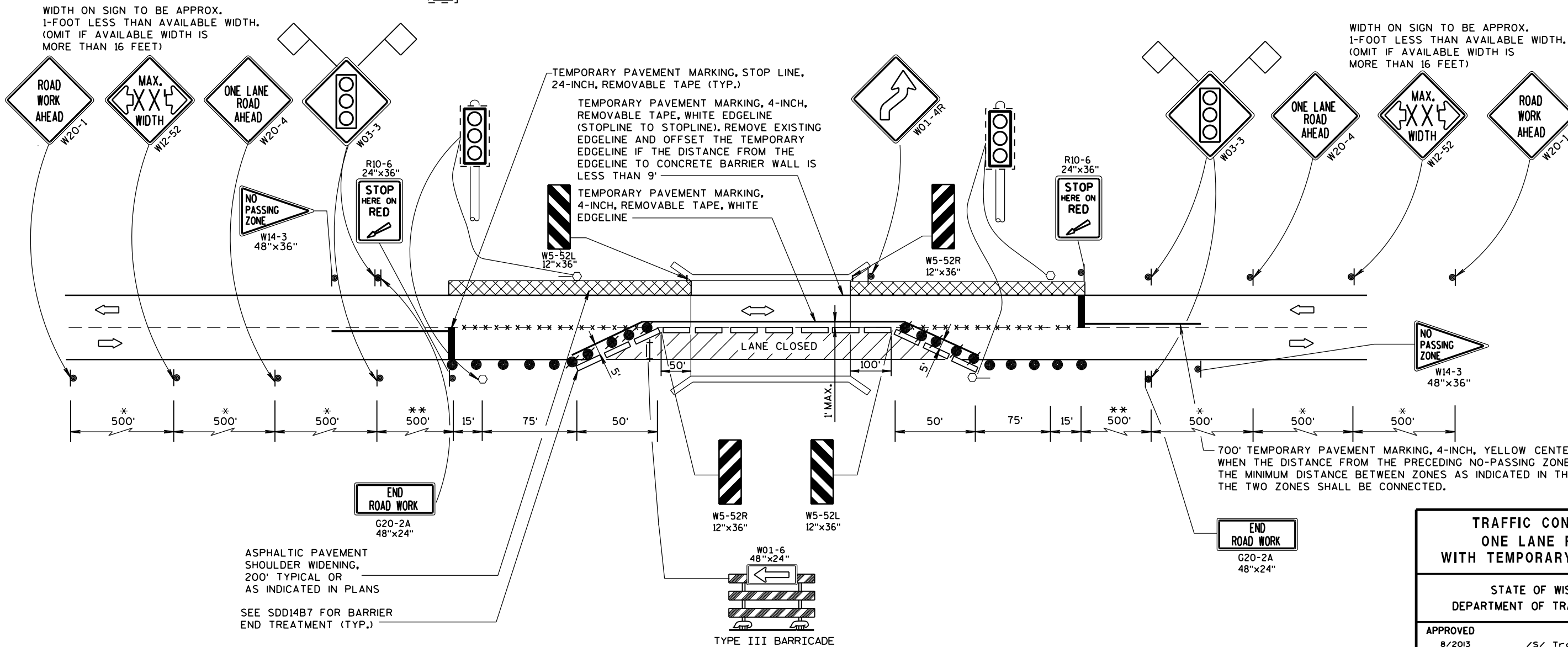
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY 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.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.

6



S.D.D. 15 D 33-3

TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

S.D.D. 15 D 33-3

★ LONGITUDINAL CONST. JOINT, SEAL WITH CRACK SEALER
PER SECTION 502.3.13 OF THE STANDARD SPEC.

STATE PROJECT NUMBER

DESIGN DATA

LIVE LOAD:

INVENTORY RATING; HS-25
OPERATIONAL RATING; HS-42
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY OVERLAY DECKS — $f'_c = 4,000$ P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — $f_y = 60,000$ P.S.I.

BRIDGE OFFICE CONTACTS:

ANDREW SMITH (608) 266-0989
DAVE KIEKBUSCH (608) 266-5084

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK, MEDIAN AND JOINT REPAIR SURFACES AND THE FRONT FACE AND THE TOP OF THE ENTIRE PARAPETS FROM END TO END.

APPLY BRIDGE SEAT PROTECTION, PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF ALL ABUTMENTS BELOW EXPANSION DEVICES. POWER WASH AND ADEQUATELY DRY SURFACES BEFORE APPLICATION. WORK TO BE INCIDENTAL TO "JOINT REPAIR".

➡➡➡ CLEAN AND PAINT ALL EXISTING EXPOSED SUPERSTRUCTURE STEEL WITHIN 5'-0" OF THE ENDS OF GIRDERS (ABUTMENT ENDS ONLY) - INCLUDING GIRDERS, DIAPHRAGMS AND HARDWARE THE COLOR SHALL BE BLUE (FEDERAL COLOR NO. 25240) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS.

ANY EXCAVATION NECESSARY TO COMPLETE THE JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "JOINT REPAIR".

CONTACT THE BUREAU OF STRUCTURES BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN $\frac{1}{2}$ ".

➡➡➡ CLEAN AND PAINT BEARINGS AT ABUTMENTS. FINISH COLOR IS TO BE BLUE (FEDERAL COLOR #25240) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

REPAIR AND RESEAL BOTH ABUTMENTS SLOPE PAVING CRUSHED AGGREGATE. ADD CRUSHED AGGREGATE AS REQUIRED TO THE ORIGINAL BERM ELEVATIONS AND FILL IN ERODED AREAS/VOIDS. PRIOR TO RESEALING, ALL OF WHICH SHALL BE INCLUDED UNDER BID ITEM "SLOPE PAVING REPAIR CRUSHED AGGREGATE".

REMOVE ANY/ALL LOOSE CONCRETE AT ABUTMENTS, DECK AND PARAPETS UNDER THE BID ITEM "CONCRETE SURFACE REPAIR". THIS INCLUDES ANY AREAS ON THE PARAPET WITH CRACKING AND RUST BLEEDING, SEE SHEET 3 FOR DETAILS. SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL REINFORCEMENT SHALL BE BRUSHED CLEAN PRIOR TO THE CONCRETE SURFACE REPAIRS BEING COMPLETED. "CONCRETE SURFACE REPAIR" AREAS SHALL BE DETERMINED BY THE FIELD ENGINEER.

REMOVAL LINES SHALL BE DEFINED BY 1" DEEP SAW CUT AT CONCRETE SURFACES.

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2 AND FULL-DEPTH DECK REPAIR AREAS DETERMINED BY THE FIELD ENGINEER.

EXISTING CURVE DATA

R STH 11 & 35

P.I. = 17'B'+42.51

$\Delta = 3^\circ-39'-23.85''$

D = 1°-15'-00"

T = 146.32'

L = 292.53'

R = 4583.66'

SE = 0.027%

P.C. = 15'B'+96.19

P.T. = 18'B'+88.73

LIST OF DRAWINGS

1. CONCRETE OVERLAY
2. ABUTMENT DETAILS
3. PARAPET DETAILS
4. EXPANSION DEVICE
5. COVER PLATE DETAILS
6. MEDIAN DETAILS

SECTION THRU ROADWAY - LOOKING EAST

TOTAL ESTIMATED QUANTITIES

502.3100	EXPANSION DEVICE B-22-61	1	LS
502.3200	PROTECTIVE SURFACE TREATMENT	1900	SY
502.5005	MASONRY ANCHORS TYPE L NO.5 BARS	160	EACH
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	5100	LB
509.0301	PREPARATION DECKS TYPE 1	136	SY
509.0302	PREPARATION DECKS TYPE 2	70	SY
509.0500	CLEANING DECKS	1360	SY
509.1000	JOINT REPAIR	58	SY
509.1500	CONCRETE SURFACE REPAIR	222	SF
509.2000	FULL-DEPTH DECK REPAIR	5	SY
*** 509.2500	CONCRETE MASONRY OVERLAY DECKS	105	CY
➡➡➡ 517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-22-61	1	LS
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-22-61	1	LS
517.6001.S	PORTABLE DECONTAMINATION FACILITY	1	EACH
604.9010.S	SLOPE PAVING REPAIR CRUSHED AGGREGATE	7	CY
➡➡➡ SPV.0060	CLEANING AND PAINTING BEARINGS	14	EACH
SPV.0180	CLEANING PARAPETS AND MEDIAN	497	SY

*** BID ITEM INCLUDES:
CONCRETE FOR PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, JOINT REPAIR AND FULL DEPTH DECK REPAIR

EXISTING SECTION A-A

SHOWING REMOVAL
TYP. (BOTH ABUTMENTS)

PLAN

BENCH MARK

DESCRIPTION	ELEV.
ALUMINUM DISK ON SOUTH SIDE OF STH 35 - WEST OF BRIDGE N=404415.345, E=844795.353	861.26

NO.	DATE	REVISION	BY
 Plans Prepared By WISDOT BUREAU OF STRUCTURES			
ACCEPTED <i>William C. Dehner</i>		4/7/14	
CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-22-61			
STH 11 & STH 35 OVER USH 61/151			
COUNTY	GRANT	TOWN	JAMESTOWN
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	ADS	DESIGN CKD.	MWL
DRAWN BY	DDS	PLANS CKD.	ADS
CONCRETE OVERLAY			SHEET 1 OF 6

I.D. 1200-01-04A

DATE: APRIL 2014

SCALE = 15:0

BILL OF BARS

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

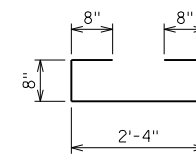
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	144	4'-8"	X		ABUT. DIAPH. - VERT.
S602	X	50	9'-3"			ABUT. DIAPH. - HORIZ.
S603	X	18	38'-3"			JOINT REPAIR - HORIZ. - STAGE 1
S604	X	18	27'-10"			JOINT REPAIR - HORIZ. - STAGE 2
S405	X	20	9'-2"			ABUT. DIAPH. - HORIZ.
S506	X	124	3'-0"	X		BACKWALL/PAV. BLOCK - CONC. MASONRY ANCHORS - VERT.
S507	X	20	3'-6"	X		BACKWALL/MEDIAN - CONC. MASONRY ANCHORS - VERT.
S408	X	2	15'-7"			WEST MEDIAN - HORIZ.
S409	X	2	3'-7"			EAST MEDIAN - HORIZ.
S410	X	20	9'-2"			EXPANSION DEVICE - BTWN. GIRDERS 1 THRU 3 & 4 THRU 7

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-6" INTO EXISTING CONCRETE. EPOXY ANCHORED.

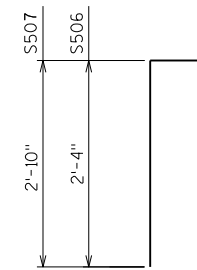
BILL OF BARS

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

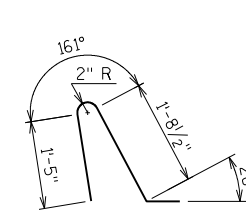
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S411	X	8	5'-6"			EXPANSION DEVICE - BETWEEN GIRDERS 3 & 4
S612	X	10	5'-10"			ABUT. DIAPH. - HORIZ. - BETWEEN GIRDERS 3 & 4
S613	X	10	6'-7"			ABUT. DIAPH. - HORIZ. - BETWEEN GIRDERS 3 & 4
S414	X	8	5'-6"			ABUT. DIAPH. - HORIZ. - BETWEEN GIRDERS 3 & 4
S515	X	32	4'-3"	X		PARAPET - VERT.
S516	X	32	4'-10"	X		PARAPET - VERT.
S517	X	8	3'-6"			PARAPET - VERT. - CONC. MASONRY ANCHORS
S518	X	8	3'-6"	X		PARAPET - VERT. - CONC. MASONRY ANCHORS
S519	X	20	2'-7"			PARAPET - HORIZ.
S520	X	10	0'-9"			PARAPET - HORIZ.
S521	X	10	1'-4"			PARAPET - HORIZ.



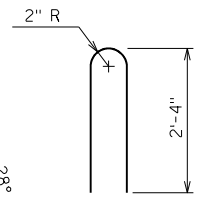
S401



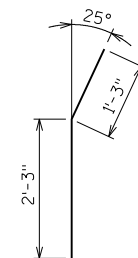
S506, S507



S515



S516

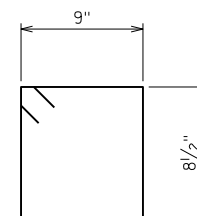


S518

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A401	X	62	3'-5"	X		PAVING BLOCK - VERT. - E. ABUT.
A502	X	15	8'-1"			PAVING BLOCK - HORIZ. - E. ABUT.
A503	X	12	7'-9"			PAVING BLOCK - HORIZ. - E. ABUT.
A404	X	2	15'-7"			MEDIAN - HORIZ. - E. ABUT.
B401	X	62	3'-5"	X		PAVING BLOCK - VERT. - W. ABUT.
B502	X	15	8'-1"			PAVING BLOCK - HORIZ. - W. ABUT.
B503	X	12	7'-9"			PAVING BLOCK - HORIZ. - W. ABUT.
B404	X	2	3'-7"			MEDIAN - HORIZ. - W. ABUT.



A401, B401

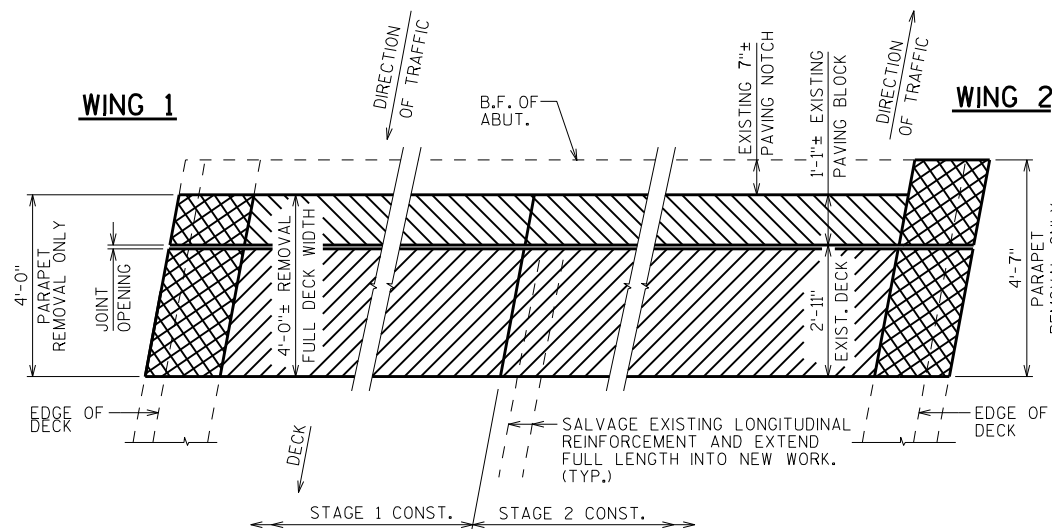
NOTE: SALVAGE ALL EXISTING HORIZONTAL PARAPET REINFORCEMENT AND EXTEND FULL LENGTH INTO NEW WORK.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-61			
DRAWN BY DDS		PLANS CK'D. ADS	
ABUTMENT DETAILS		SHEET 2	

SCALE = 4.0

WING 1

WING 2



PLAN - WEST ABUTMENT

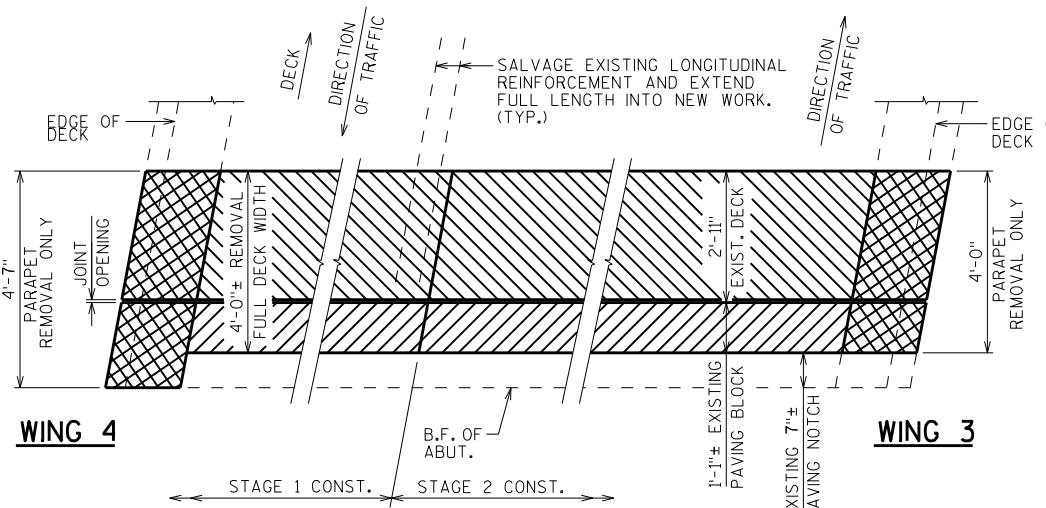
SHOWING REMOVAL

WING 4

PLAN - EAST ABUTMENT

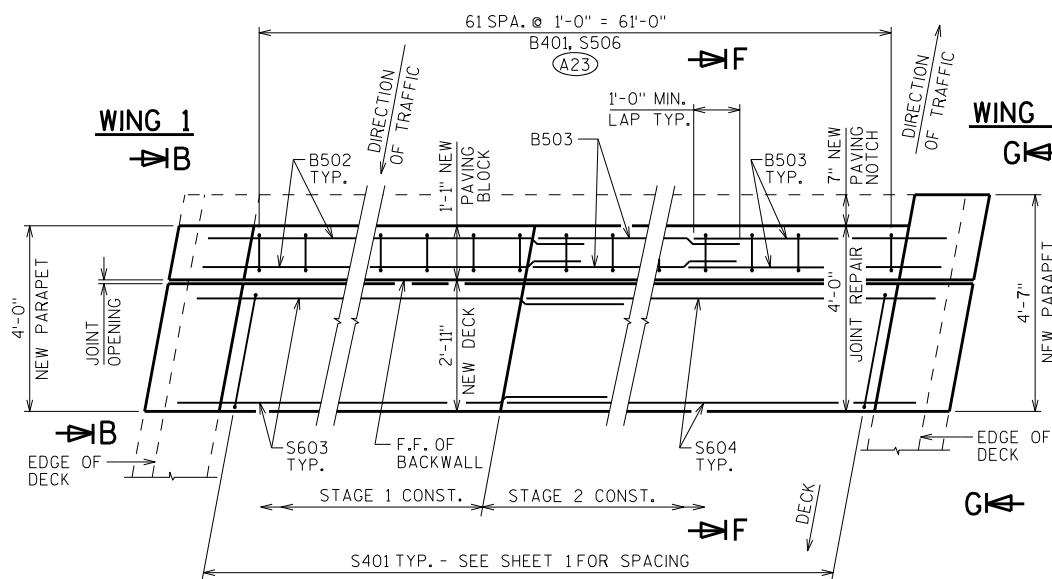
SHOWING REMOVAL

WING 3



WING 1

WING 2



PLAN - WEST ABUTMENT

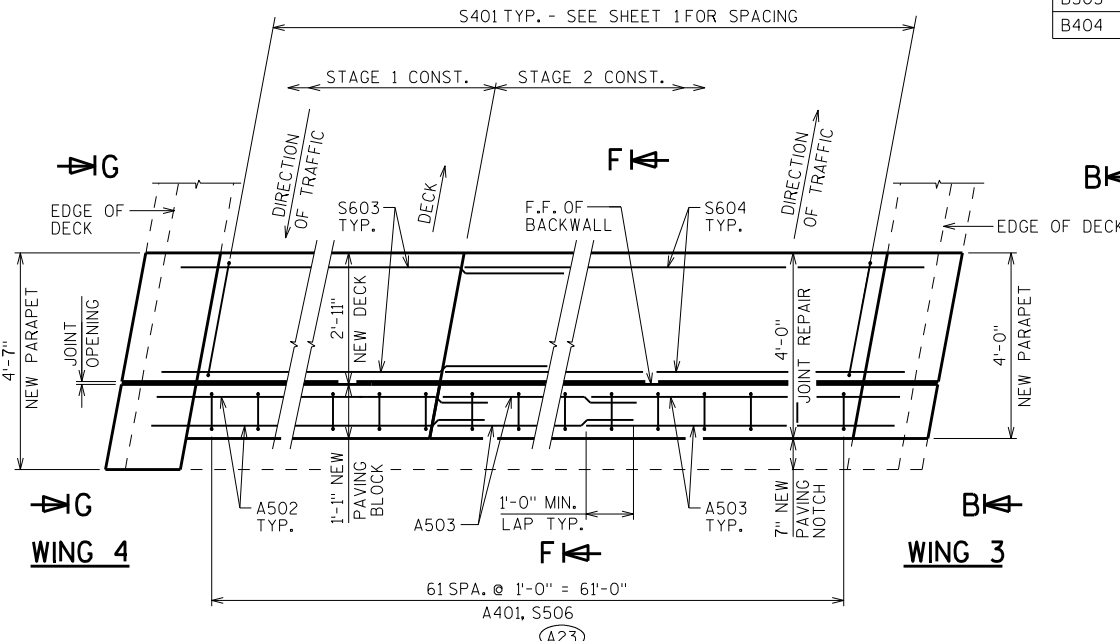
FOR SECTION VIEWS SEE SHEET 3

WING 4

PLAN - EAST ABUTMENT

FOR SECTION VIEWS SEE SHEET 3

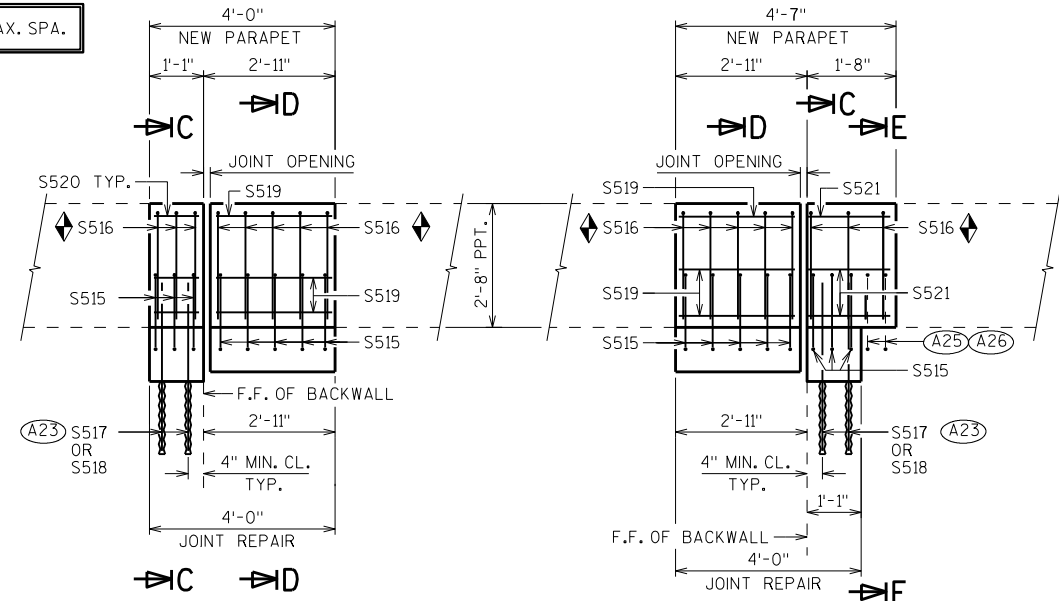
WING 3



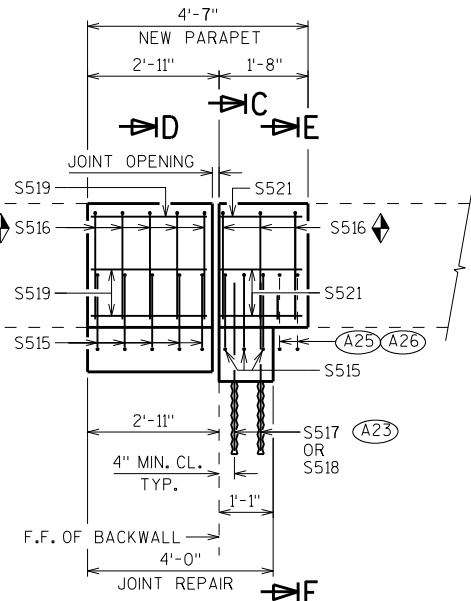
8" MAX. SPA.

STATE PROJECT NUMBER

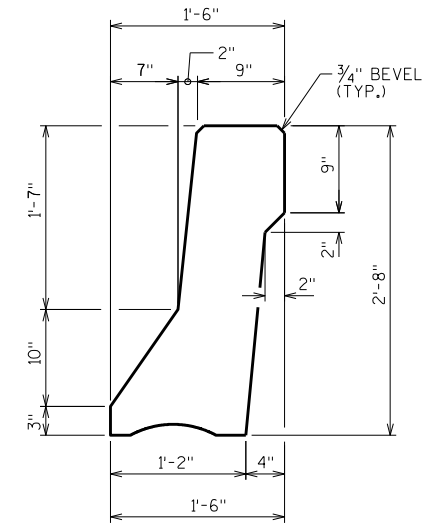
1200-01-74



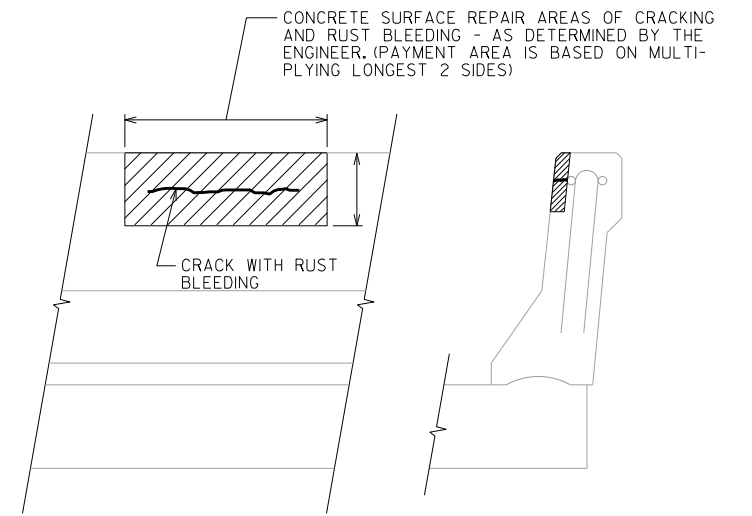
SECTION B-B
WINGS 1 & 3



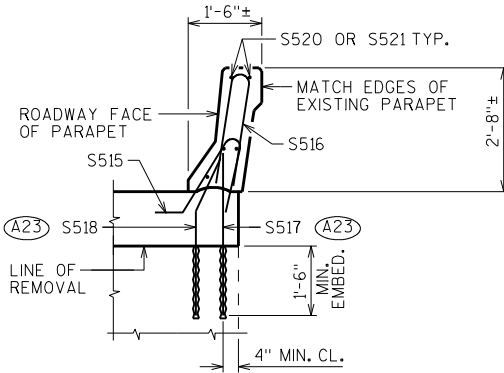
SECTION G-G
WINGS 2 & 4



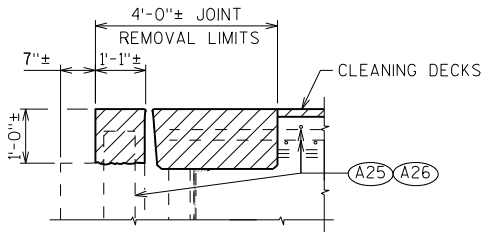
SECTION THRU PARAPET



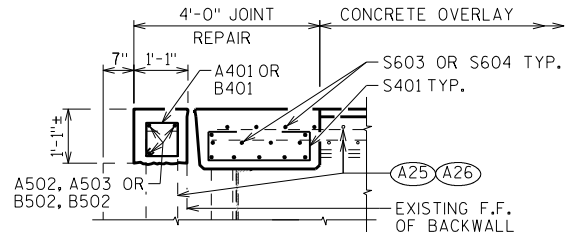
CONCRETE SURFACE REPAIR
PARAPET LOCATIONS



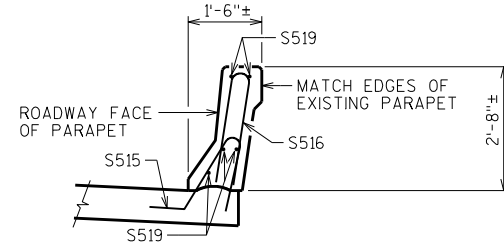
SECTION C-C



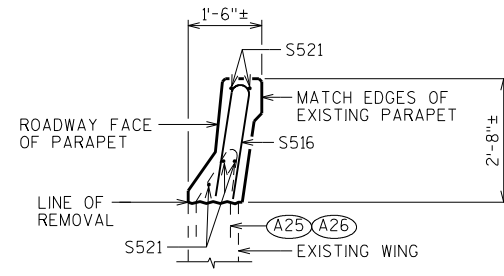
EXISTING SECTION F-F
SHOWING REMOVAL



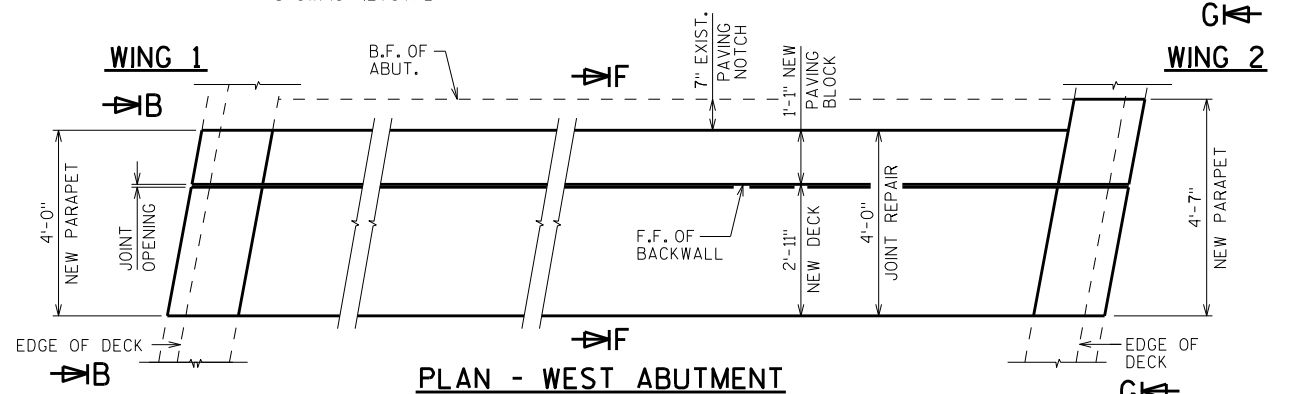
NEW SECTION F-F



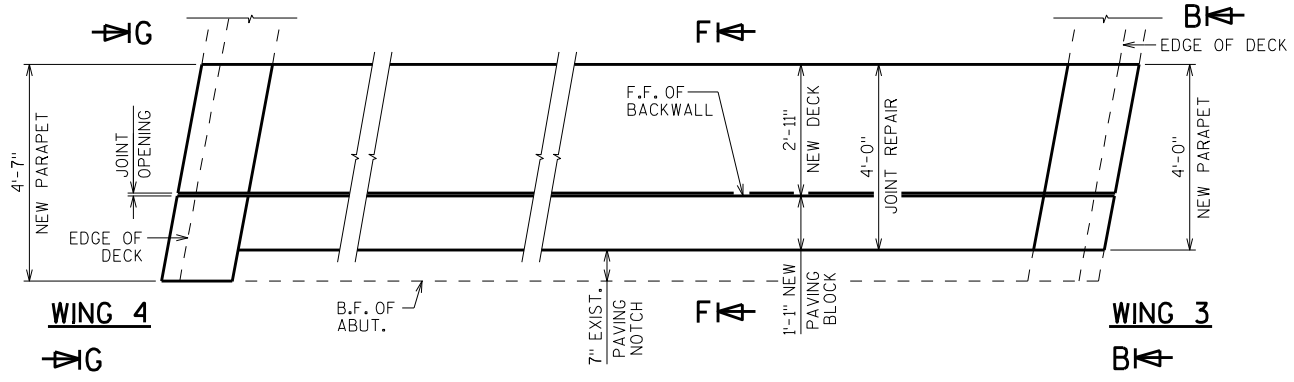
SECTION D-D



SECTION E-E



PLAN - WEST ABUTMENT



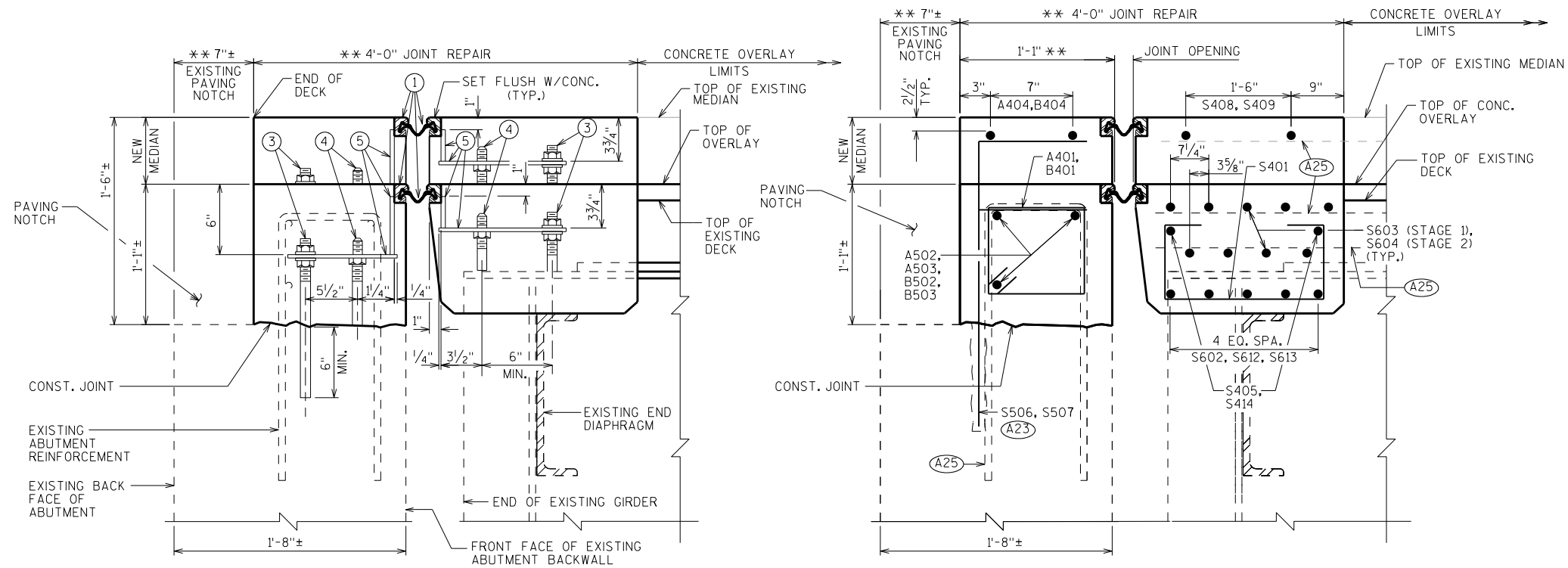
PLAN - EAST ABUTMENT

NOTE:
SALVAGE ALL EXISTING HORIZONTAL
PARAPET REINFORCEMENT AND EXTEND
FULL LENGTH INTO NEW WORK.

- (A23) MASONRY ANCHORS TYPE L NO.5 BARS, EMBED 1'-6" INTO EXISTING CONCRETE. EPOXY ANCHORED.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- (A26) IF EXISTING BARS ARE SEVERELY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH EPOXY ANCHORED NO. 5 L-SHAPED BARS WITH A 10" HORIZ. LEG. EMBEDDED A MIN. OF 7" IN CONCRETE. WORK TO BE PAID UNDER ITEM "JOINT REPAIR".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-61			
DRAWN BY DDS		PLANS CKD. ADS	
PARAPET DETAILS		SHEET 3	

SCALE = 4.0

**SECTION THRU JOINT AT ABUTMENT**

NORMAL TO CL SUBSTRUCTURE

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-6" INTO EXISTING CONCRETE, EPOXY ANCHORED.

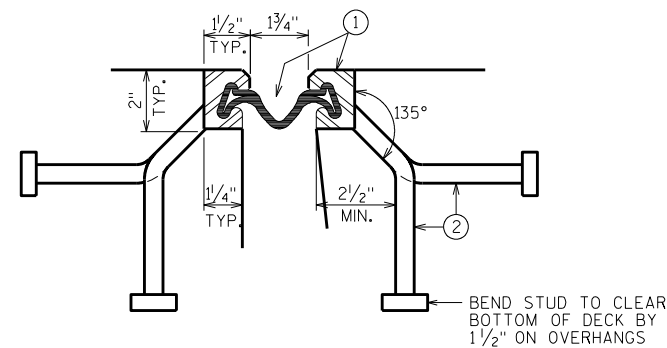
(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

SECTION THRU JOINT AT ABUTMENT

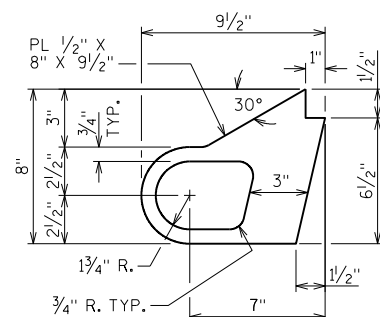
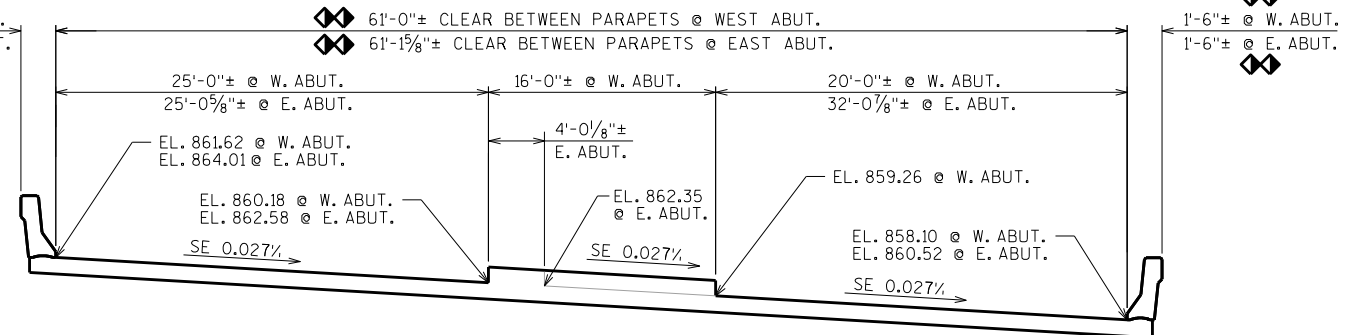
NORMAL TO CL SUBSTRUCTURE

** DIMENSION IS TAKEN NORMAL TO CL SUBSTRUCTURE

◆◆ = MEASURED ALONG F.F. OF BACKWALL

**SECTION THRU JOINT**

EXTERIOR GIRDER TO EDGE OF DECK AT PARAPETS AND AT MEDIAN

**ALTERNATE STRIP SEAL ANCHOR****CROSS SECTION THRU ROADWAY AT EXPANSION DEVICE**

LOOKING EAST

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

GENERAL NOTES

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

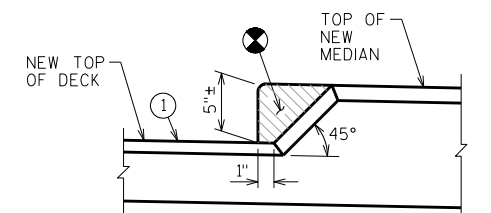
AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

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

SANDBLAST PLATES & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING THE PLATES & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

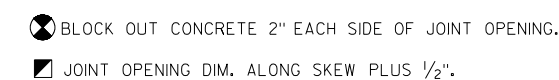
ANCHOR SYSTEM NO. 8 & NO. 9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-22-61".

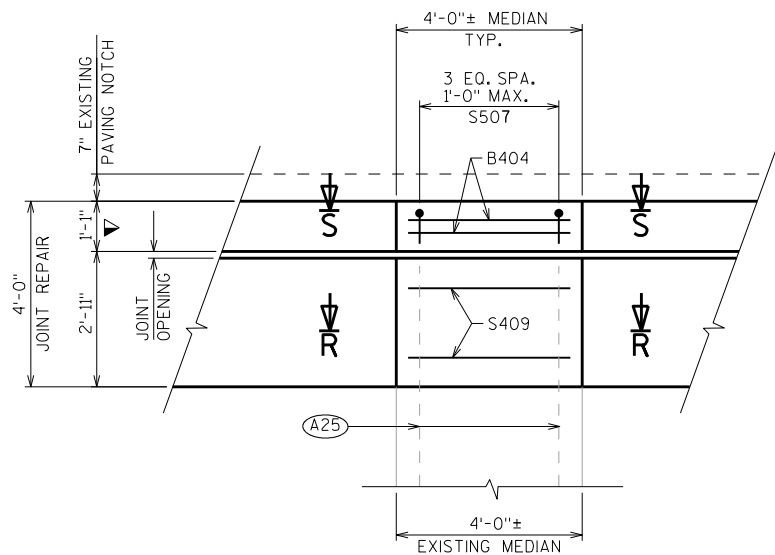
**SECTION AT MEDIAN**

TYP.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-61			
DRAWN BY DDS		PLANS CK'D. ADS	
EXPANSION DEVICE			SHEET 4



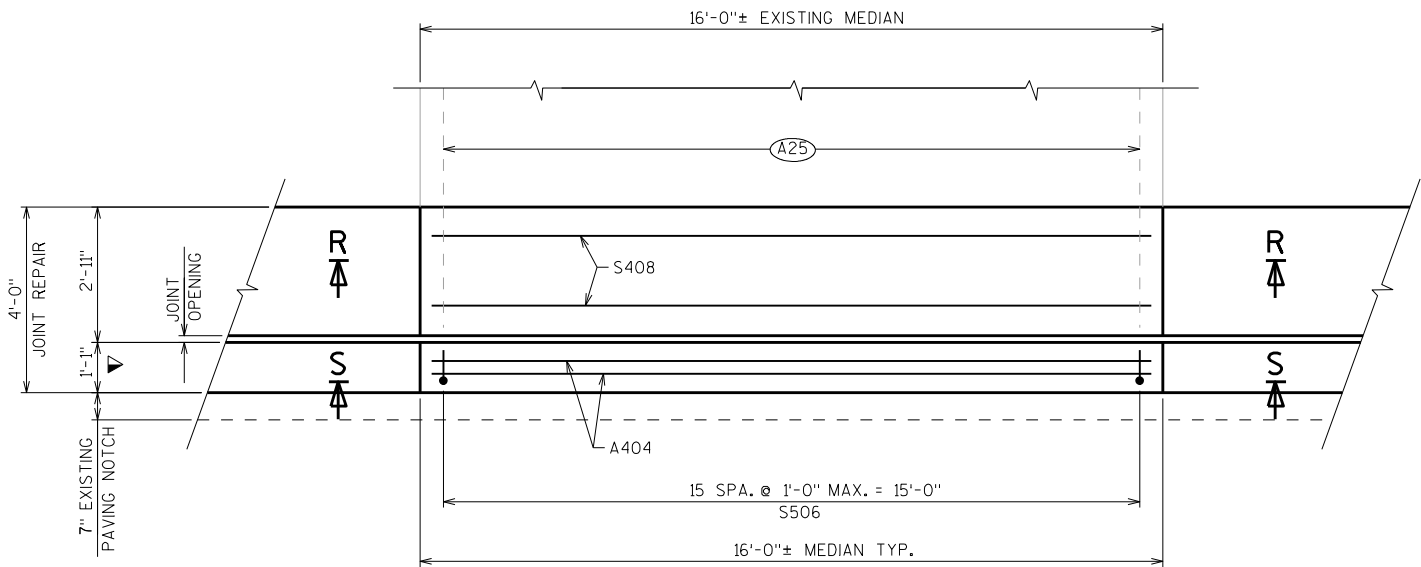
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		B-22-61	
DRAWN BY		DDS	PLANS CKD. ADS
COVER PLATE		SHEET 5	
DETAILS			



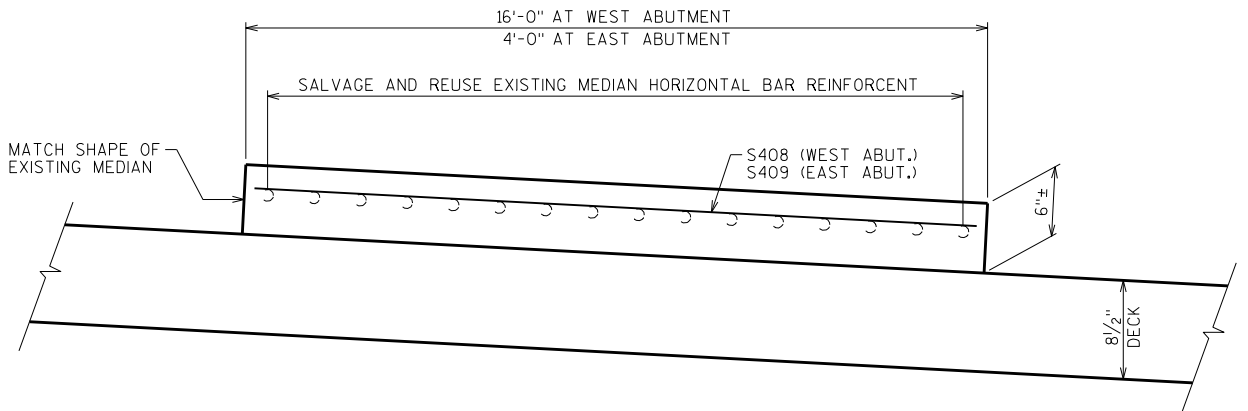
PLAN - EAST ABUTMENT

- (A23) MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-6" INTO EXISTING CONCRETE, EPOXY ANCHORED.
- (A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

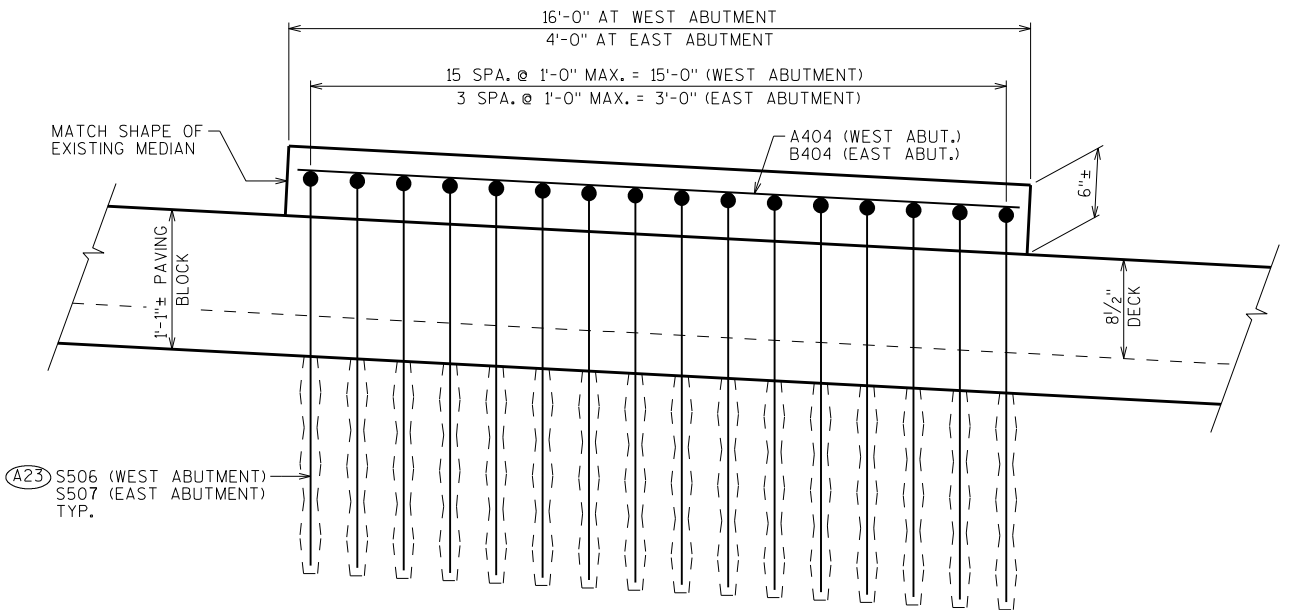
▷ = PAVING BLOCK



PLAN - WEST ABUTMENT



SECTION R-R



SECTION S-S

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-61			
DRAWN BY DDS		PLANS CK'D. ADS	
MEDIAN DETAILS		SHEET 6	

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.15
OPERATING RATING FACTOR: RF=1.49
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

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

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB— $f'_c = 4,000$ P.S.I. ALL OTHER— $f'_c = 3,500$ P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60— $f_y = 60,000$ P.S.I.
36W" PRESTRESSED GIRDERS, CONCRETE MASONRY— $f'_c = 8,000$ P.S.I.
STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS WITH SPREAD FOOTINGS TO BE SUPPORTED ON SOUND ROCK WITH A REQUIRED FACTORED BEARING RESISTANCE OF 5,500 PSF ***. A GEOTECHNICAL ENGINEER WILL DETERMINE THE FACTORED BEARING RESISTANCE BY VISUAL INSPECTION PRIOR TO CONSTRUCTION OF THE ABUTMENT FOOTING.

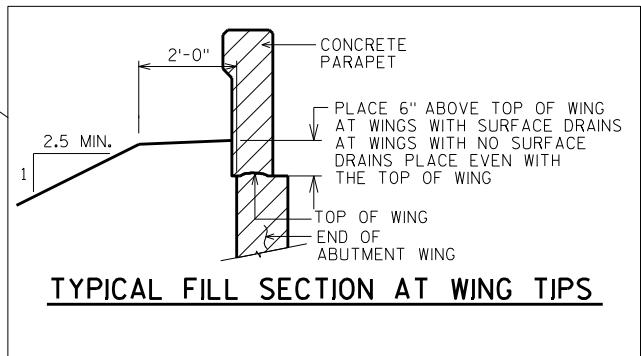
PIERS WITH SPREAD FOOTINGS TO BE SUPPORTED ON SOUND ROCK WITH A REQUIRED FACTORED BEARING RESISTANCE OF 8,000 PSF ***. A GEOTECHNICAL ENGINEER WILL DETERMINE THE FACTORED BEARING RESISTANCE BY VISUAL INSPECTION PRIOR TO CONSTRUCTION OF THE PIER FOOTING.

***THE FACTORED BEARING RESISTANCE IS THE VALUE USED FOR DESIGN.

TRAFFIC VOLUME

U.S.H. 61
A.D.T.= 15,400 (2016)
R.D.S.= 70 M.P.H.

EAGLE POINT RD.
A.D.T.= 110 (2023)
R.D.S.= 45 M.P.H.



LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT WING 1
6. SOUTH ABUTMENT WING 2
7. SOUTH ABUTMENT DETAILS
8. NORTH ABUTMENT
9. NORTH ABUTMENT WING 3
10. NORTH ABUTMENT WING 4
11. NORTH ABUTMENT DETAILS
12. PIER 1
13. PIER 2
14. PRESTRESSED GIRDER BEARINGS
15. 36W" PRESTRESSED GIRDER DETAILS
16. 36W" PRESTRESSED GIRDER DETAILS
17. STEEL DIAPHRAGMS
18. SUPERSTRUCTURE CROSS SECTION
19. SUPERSTRUCTURE
20. SUPERSTRUCTURE DETAILS
21. EXPANSION DEVICE
22. COVER PLATE DETAILS
23. SINGLE SLOPE PARAPET 32SS
24. SLOPE PAVING (CRUSHED AGGREGATE)
25. ALTERNATE CONSTRUCTION JOINT

STRUCTURES DESIGN CONTACTS:
EMILY KNUDTSON (608) 266-5089
DAVE KIEKBUSCH (608) 266-5084

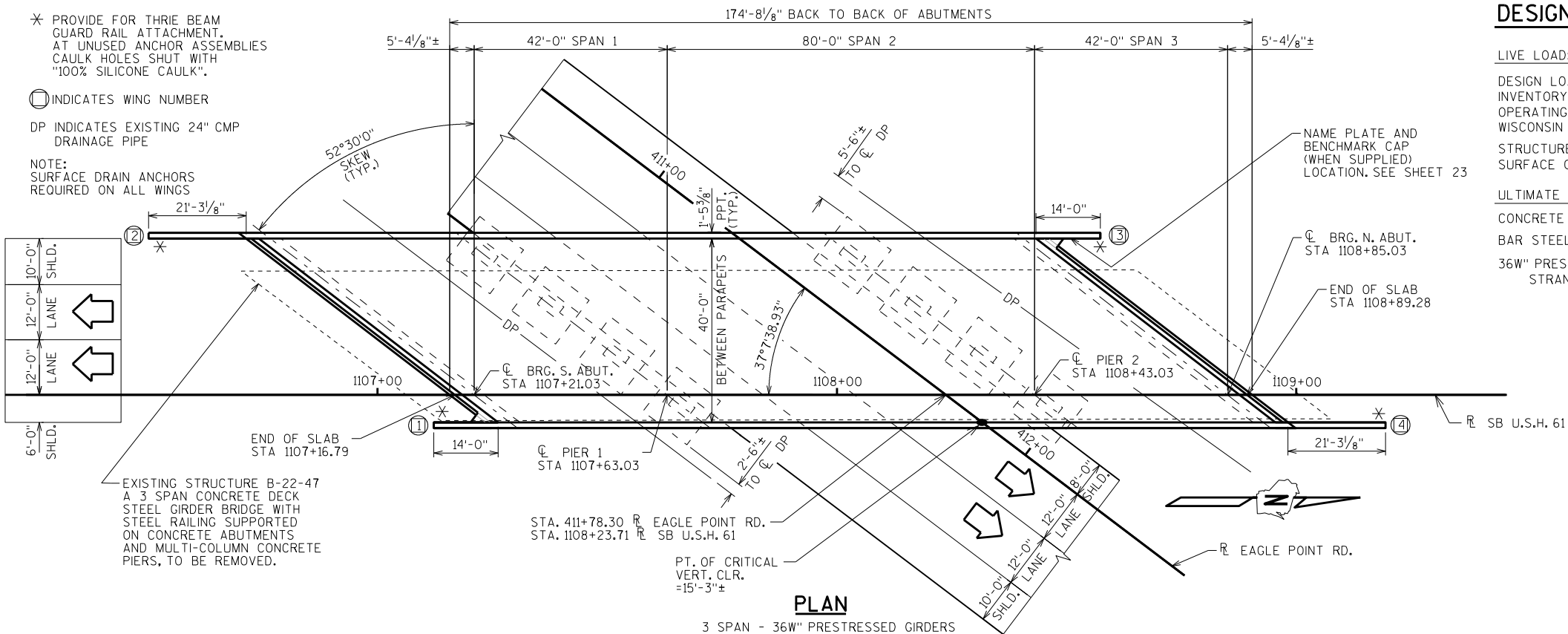
NO.	DATE	REVISION	BY
ACCEPTED <i>William C. Dehn</i> 12-17-12 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-22-273			
U.S.H. 61 OVER EAGLE POINT RD.			
COUNTY	GRANT	TOWN/CITY/VILLAGE	JAMESTOWN
DESIGN SPEC. AASHTO LRFD DESIGN SPEC.			
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
EMK	CK'D.	MSC	EMK
GENERAL PLAN			SHEET 1 OF 25

* PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

Ⓢ INDICATES WING NUMBER

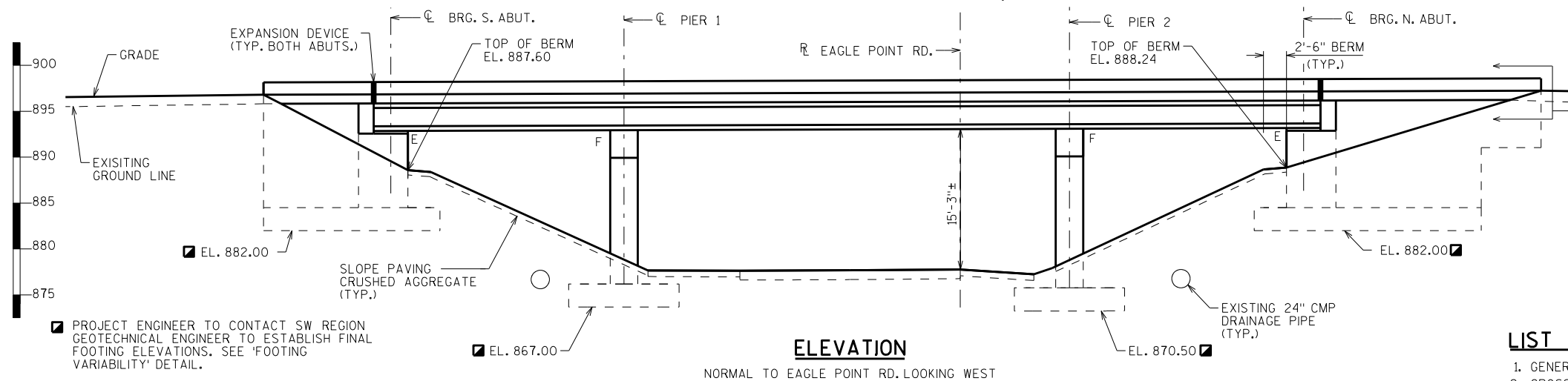
DP INDICATES EXISTING 24" CMP DRAINAGE PIPE

NOTE:
SURFACE DRAIN ANCHORS REQUIRED ON ALL WINGS



PLAN

3 SPAN - 36W" PRESTRESSED GIRDERS

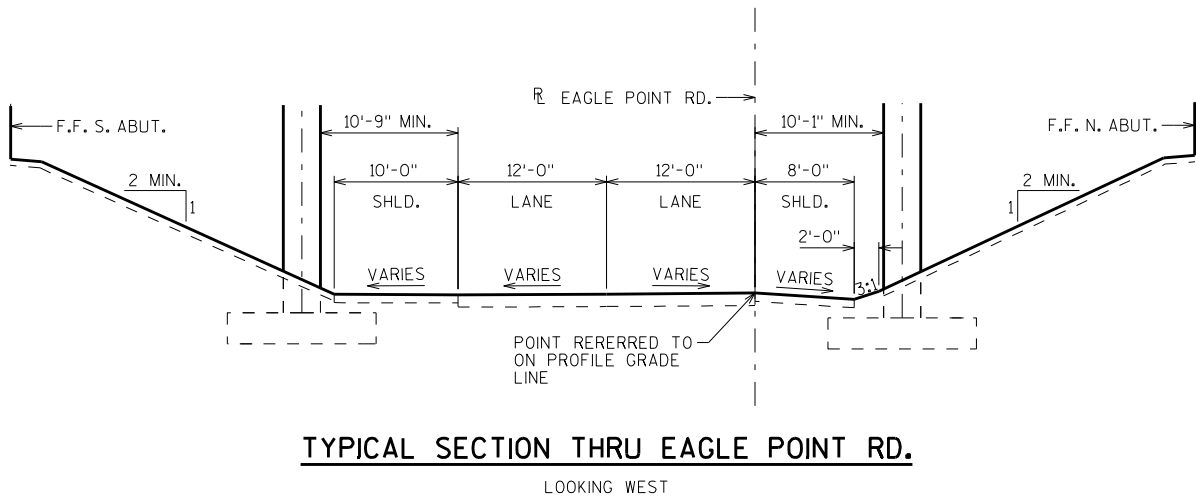
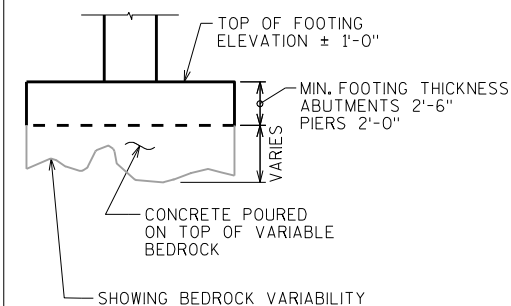


ELEVATION

NORMAL TO EAGLE POINT RD. LOOKING WEST

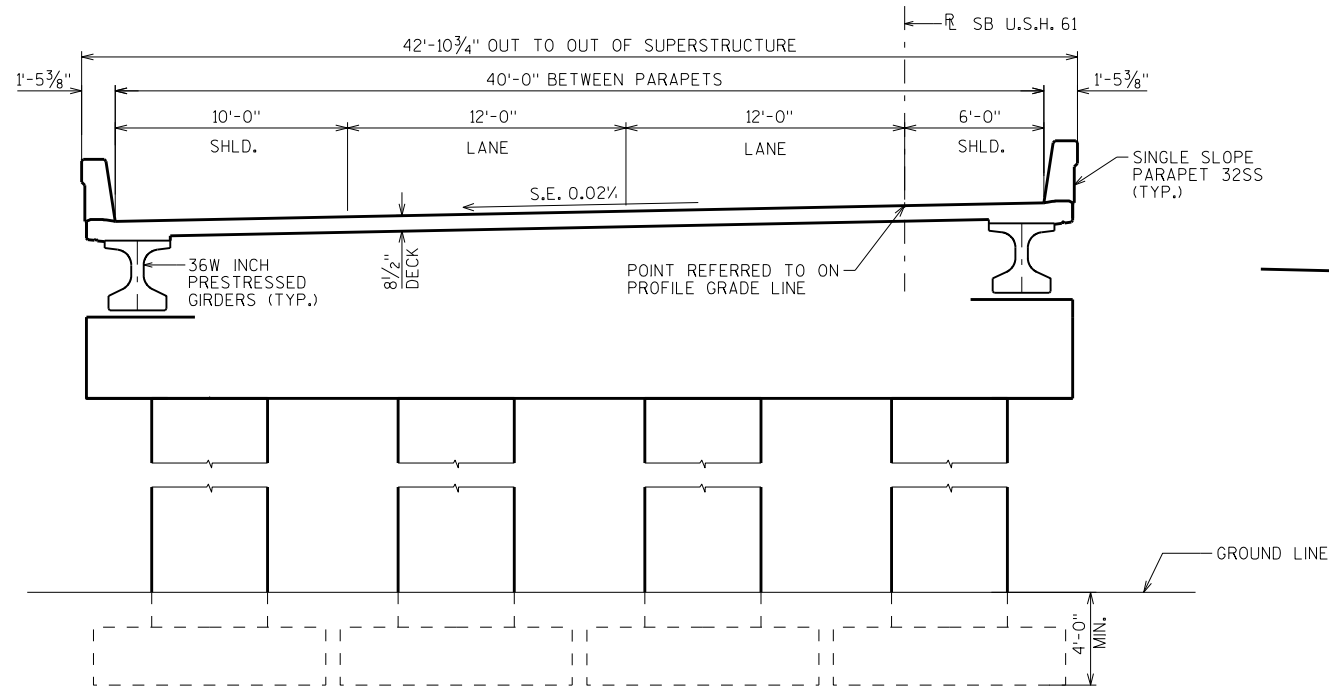
FOOTING VARIABILITY

THE TOP OF FOOTING ELEVATIONS ARE ALLOWED TO VARY $\pm 1'-0"$ (BAR STEEL ACCOUNTS FOR THIS). FOOTINGS TO BE POURED TO A MINIMUM FOOTING THICKNESS AS SHOWN ON PLANS. VARIABLE BEDROCK NECESSITATES EXTENDED FOOTING DEPTHS TO ENSURE CONCRETE IS POURED ON TOP OF BEDROCK.

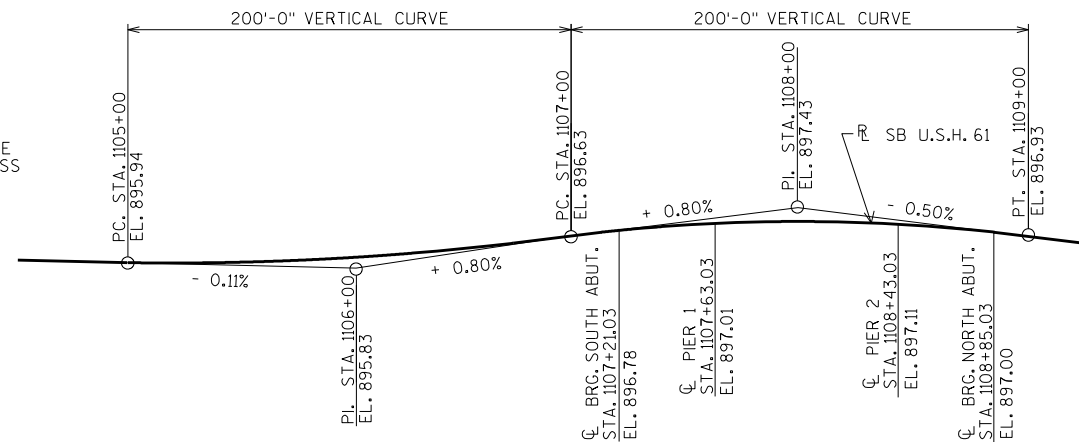


TYPICAL SECTION THRU EAGLE POINT RD.

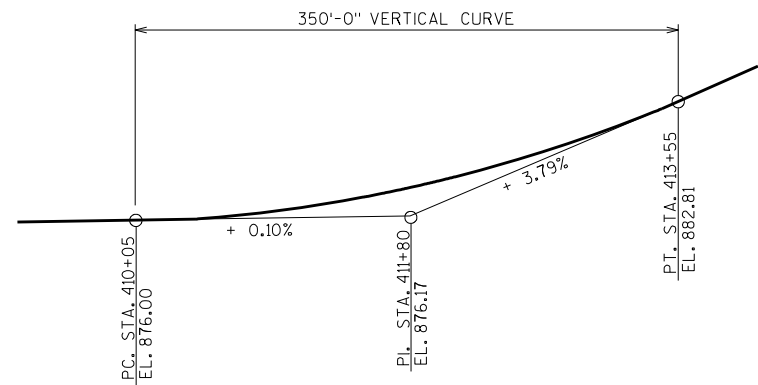
LOOKING WEST



CROSS SECTION THRU ROADWAY LOOKING NORTH (B-22-273)



PROFILE GRADE LINE SB U.S.H. 61



PROFILE GRADE EAGLE POINT RD.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	PIER 1	PIER 2	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 1108+03.17	LS	—	—	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-22-273	LS	—	—	—	—	—	1
210.0100	BACKFILL STRUCTURE	CY	—	376	401	—	—	777
502.0100	CONCRETE MASONRY BRIDGES	CY	305	256	262	143	136	989
502.3100	EXPANSION DEVICE B-22-273	LS	—	—	—	—	—	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	937	—	—	—	—	937
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	823	—	—	—	—	823
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	—	10650	10880	3680	3680	28890
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	58460	5440	5440	23850	21700	114890
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	—	—	—	10	10	20
506.2610	BEARING PADS ELASTOMERIC LAMINATED	EACH	—	5	5	—	—	10
506.4000	STEEL DIAPHRAGMS B-22-273	EACH	12	—	—	—	—	12
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	31	31	—	—	62
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	—	200	222	—	—	422
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	110	110	—	—	220
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	—	—	—	—	4
			—	—	—	—	—	
			—	—	—	—	—	
			—	—	—	—	—	
	NON-BID ITEMS							
	BRIDGE SEAT PROTECTION	LS	—	—	—	—	—	1
		SIZE	—	—	—	—	—	1/2" & 3/4"

★ REMOVAL AND REPLACEMENT OF EXISTING 24" CMP DRAINAGE PIPE, IF NECESSARY, TO BE INCIDENTAL TO "EXCAVATION FOR STRUCTURE BRIDGES B-22-273".

● CONCRETE MASONRY BRIDGES QUANTITY FOR SOUTH ABUT., NORTH ABUT., PIER 1, AND PIER 2 INCLUDES AN ADDITIONAL 1'-0" OF FOOTING DEPTH TO ACCOUNT FOR VARIABILITY OF BEDROCK.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

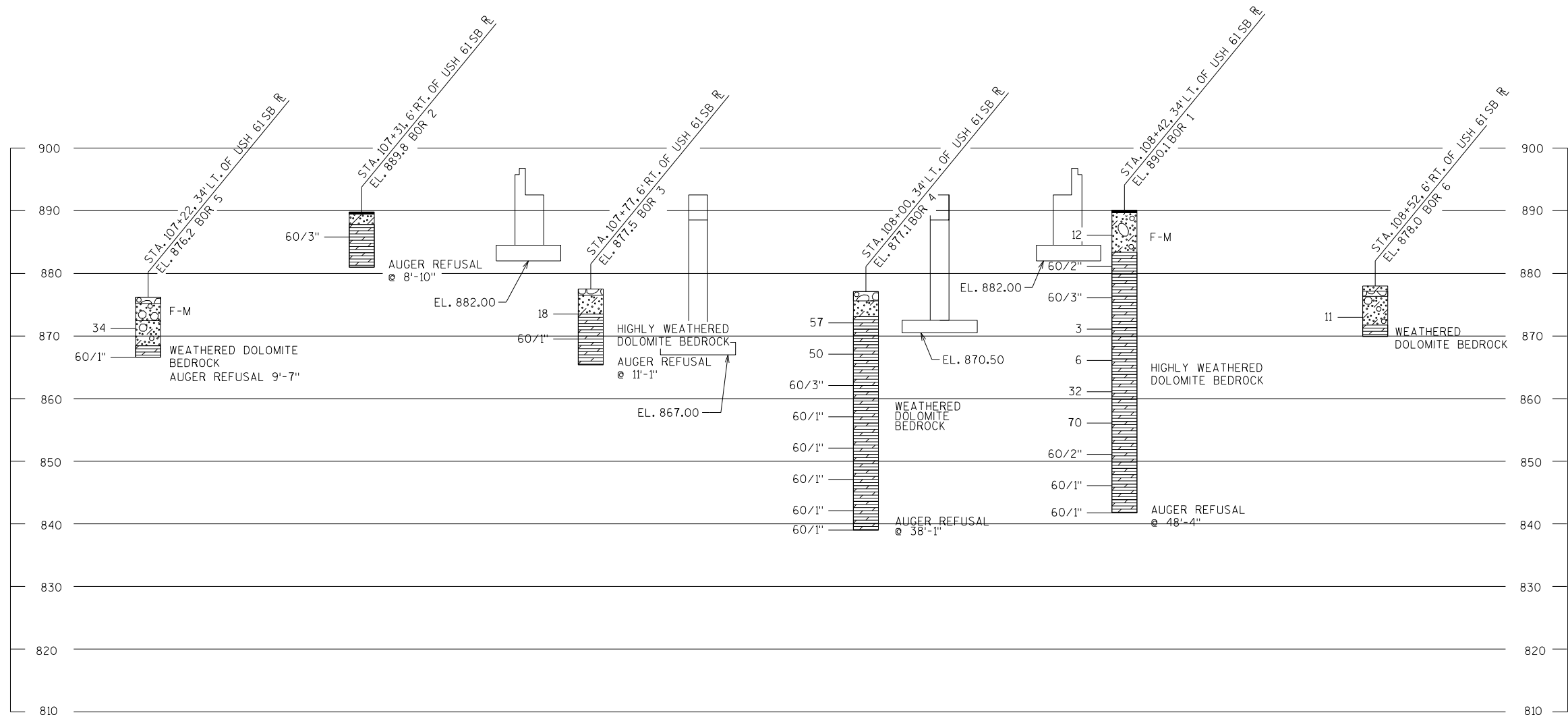
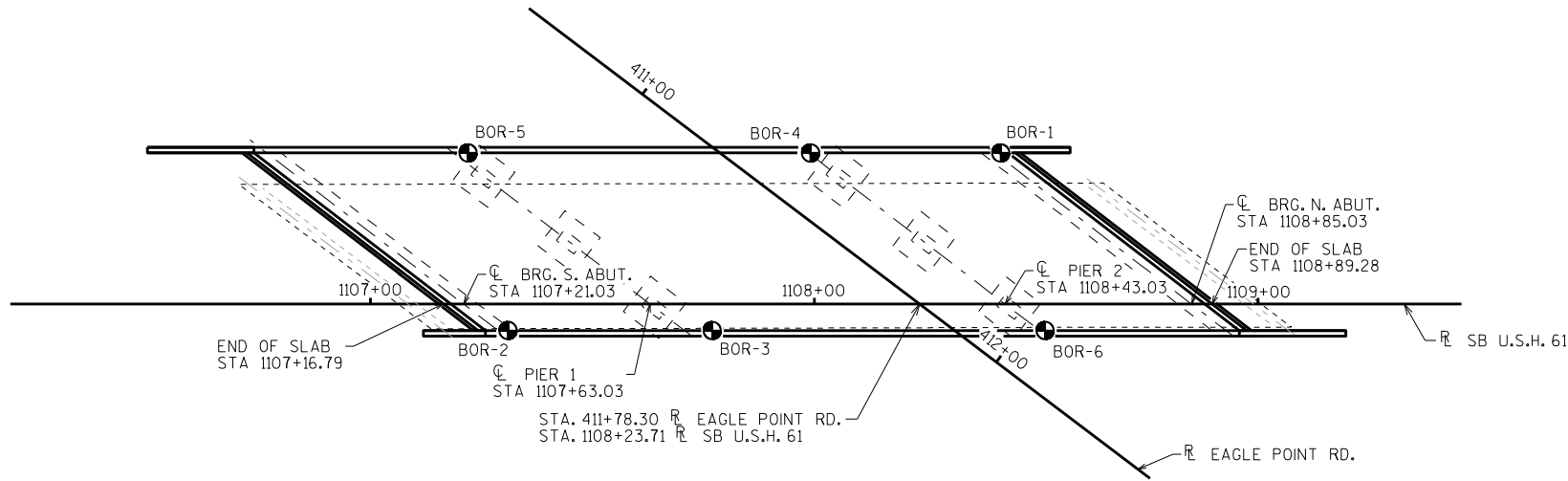
THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
CROSS SECTION & QUANTITIES			SHEET 2

DUBUQUE - DICKEYVILLE
EAGLE PT RD OVERPASS



STATE PROJECT NUMBER

1200-01-74

ABBREVIATIONS

F— FINE M— MEDIUM C— COARSE
WS— WEATHERED SO— SOUND

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6
95/6=95 BLOWS FOR 6"
PENETRATION
PROBING TAKEN WITH
A 350# WT.
FALLING 18" ON A 2"
O.D. POINT.

LEGEND OF BORING

ELEV. BORING NO.
STA.
UNCONFINED STRENGTH → 7.7
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

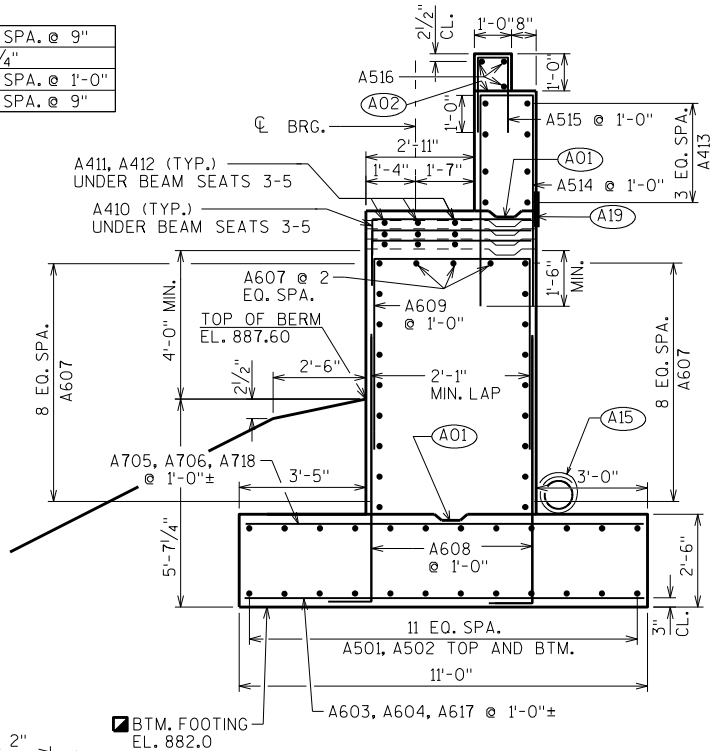
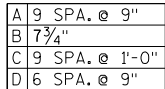
UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CKD. AMB	
SUBSURFACE EXPLORATION		SHEET 3	

SCALE = 10



PROJECT ENGINEER TO CONTACT SW REGION
GEOTECHNICAL ENGINEER TO ESTABLISH FINAL
FOOTING ELEVATIONS. SEE 'FOOTING
VARIABILITY' DETAIL SHEET 1.

A01 CONSTRUCTION JOINT: KEYWAY FORMED
BY A BEVELED 2 x 6.

A02 CONSTRUCTION JOINT: POUR CONCRETE ABOVE
THIS JOINT AFTER SUPERSTRUCTURE CONCRETE
IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.

A04 VERT. CONSTRUCTION JOINT: KEYWAY FORMED
BY A BEVELED 2 x 8. 3/4" "V" GROOVE @
THE FRONT FACE AND 18" R.M.W. @ BACKFACE.
FOR OPTIONAL DETAILS SEE "ALTERNATE
CONSTRUCTION JOINT" SHEET.

A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.
SEE SHEET 7 FOR RODENT SCREEN DETAILS.

A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL
ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2"
FILLER WITH NON-STAINING GRAY NON-BITUMINOUS
JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW
SURFACE OF CONCRETE). EXTEND SEALER 3"
BELOW GUTTER LINE AT INSIDE FACE.

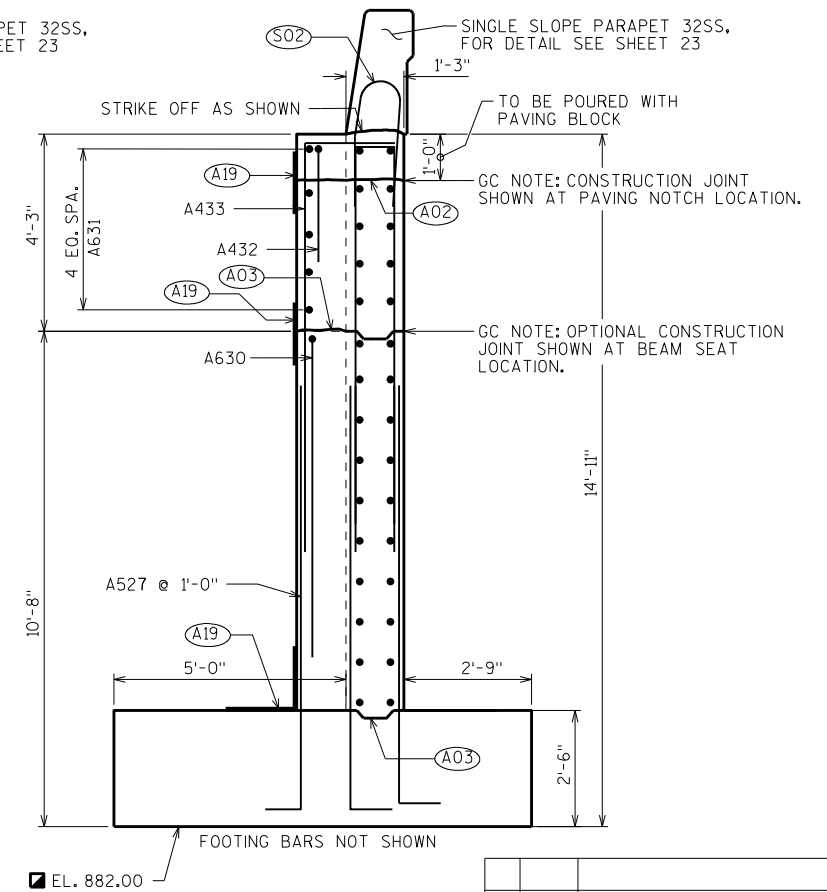
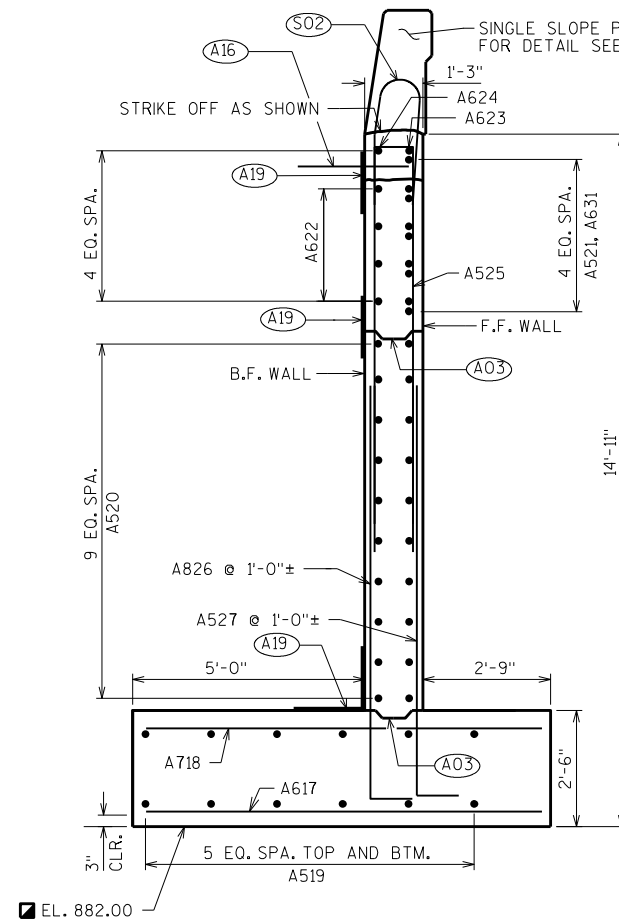
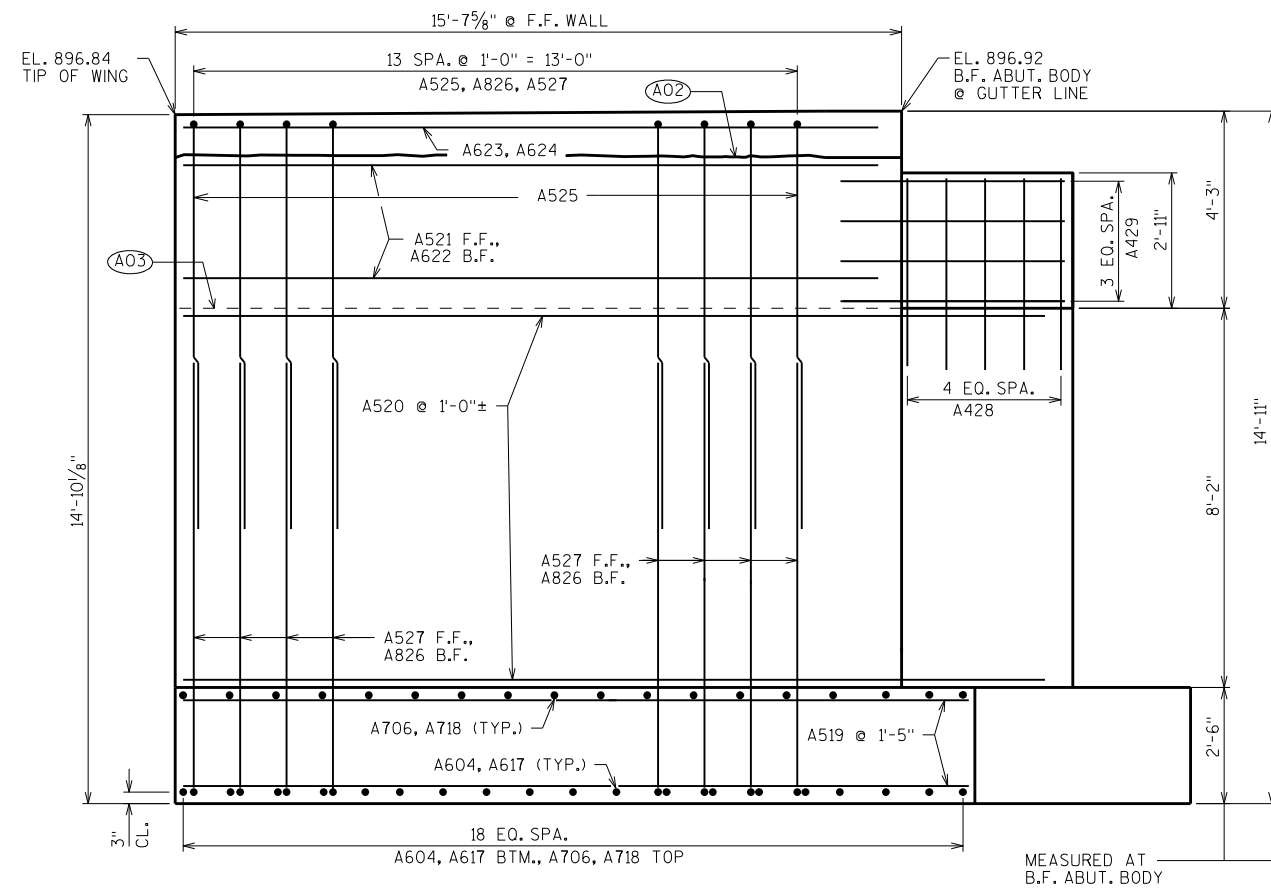
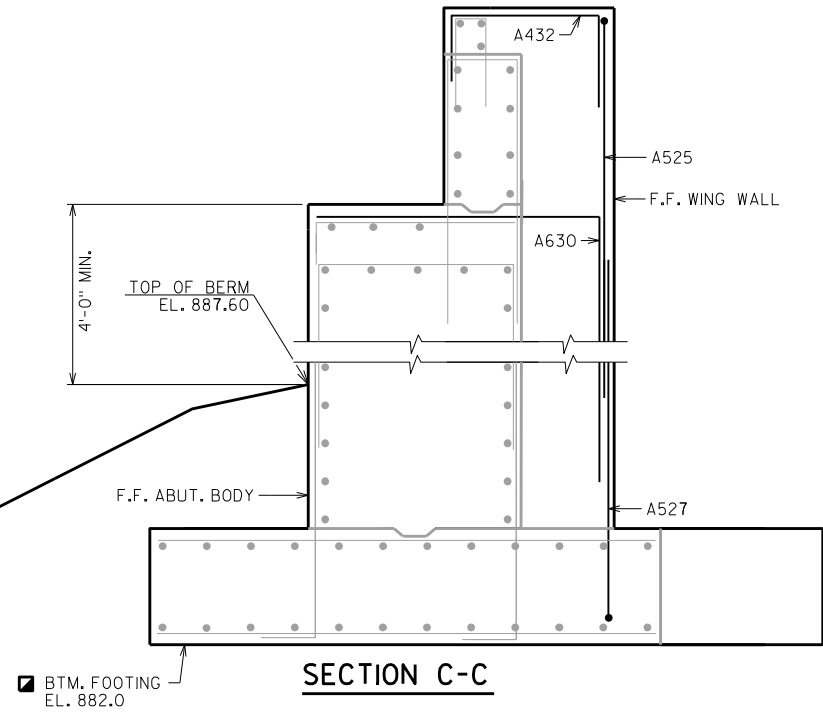
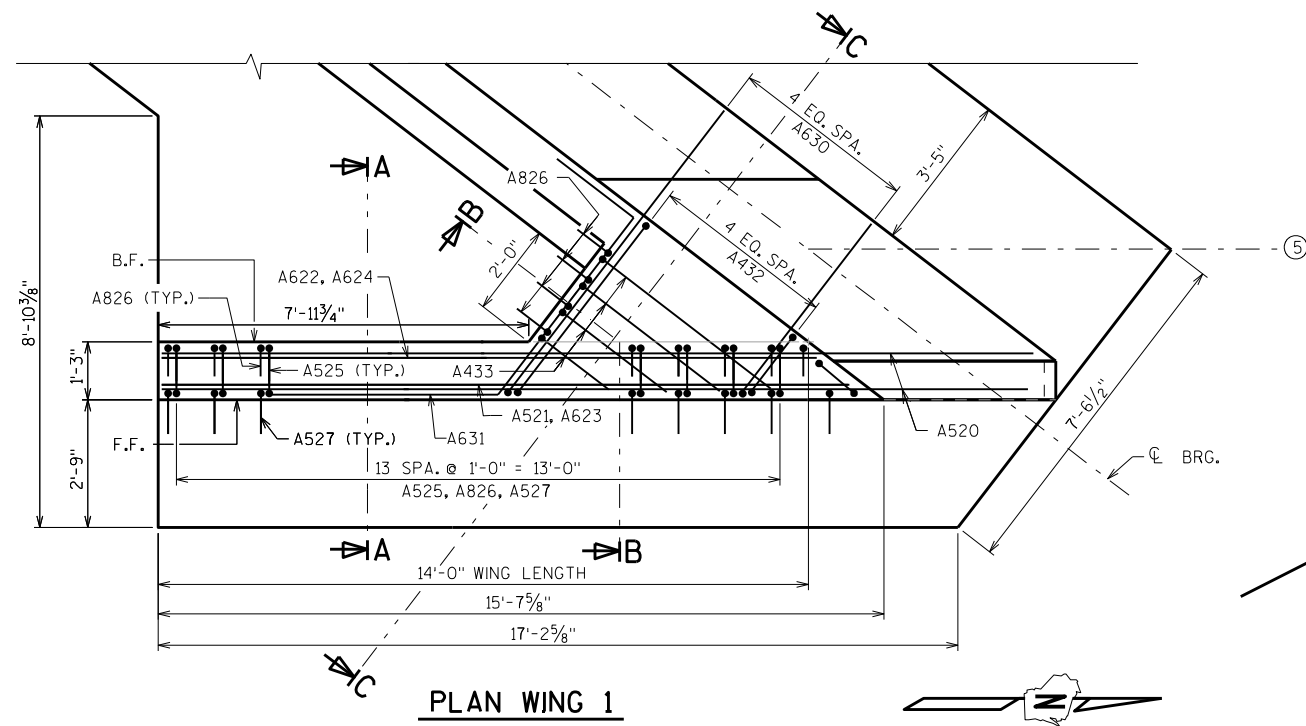
A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING
SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE
ABOVE FOOTING.

NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION					
STRUCTURE B-22-273					
			DRAWN BY EMK	PLANS CK'D.	AMB
SOUTH ABUTMENT				SHEET 4	

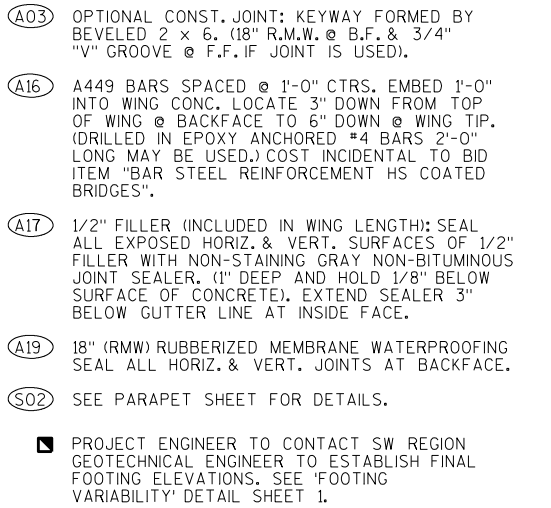
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8

- (A02) CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A16) A449 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS 2'-0" LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (S02) SEE PARAPET SHEET FOR DETAILS.
- PROJECT ENGINEER TO CONTACT SW REGION GEOTECHNICAL ENGINEER TO ESTABLISH FINAL FOOTING ELEVATIONS. SEE 'FOOTING VARIABILITY' DETAIL SHEET 1.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
SOUTH ABUTMENT WING 1		SHEET 5	



MEASURED AT F.F. WING

EL. 895.74 F.F. OF WING

13'-8 ⁷/₈"

4'-1 ⁵/₈"

7'-1 ¹/₄"

2'-6"

3" C.L.

5 EQ. SPA. A447

3 EQ. SPA. A448

13 EQ. SPA. A543, A845, A546

6 EQ. SPA.

19'-7 ⁵/₈" @ F.F. WALL

EL. 895.61 TIP OF WING

5'-0"

6'-1 ⁷/₈"

A641 F.F., A642 B.F.

A543

A544

A439 F.F., A440 B.F. @ 1'-0"±

A437 F.F., A438 B.F. @ 1'-0"±

A546 F.F., A845 B.F. @ 1'-0"±

A546 F.F., A845 B.F. @ 1'-0"±

A735 (TYP.)

A434 (TYP.)

A436

22 SPA. @ 1'-0" = 22'-0"

A434 BTM., A735 TOP

A17

SINGLE SLOPE PARAPET 32SS,
FOR DETAIL SEE SHEET 23

1'-3"

A642
A641

STRIKE OFF AS SHOWN

B.F. WALL

F.F. WALL

A543

5 E.O. SPA.
A437, A438

8 E.O. SPA.
A437, A438

A439, A440

A845 @ 1'-0"±

A546 @ 1'-0"±

5'-0"

2'-9"

2'-6"

A735

A434

A03

3" CL.

6 E.O. SPA.
A436 TOP AND BTM.

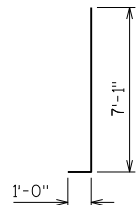
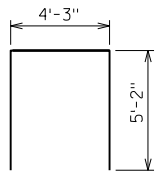
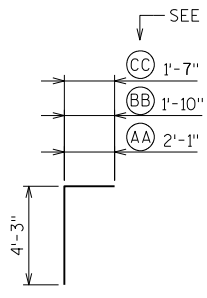
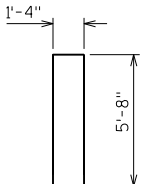
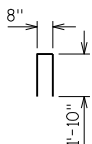
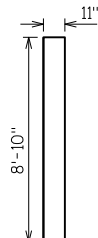
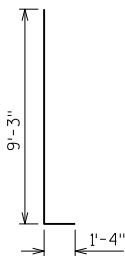
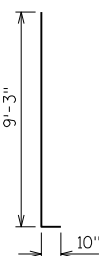
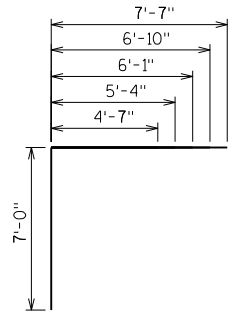
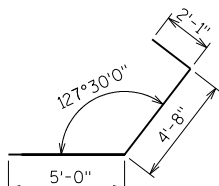
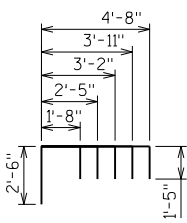
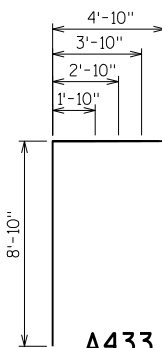
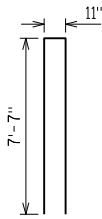
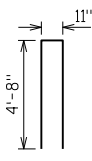
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SECTION A-A

NO.	DATE	

SECTION A-A

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-237			
DRAWN BY EMK		PLANS CK'D. AMB	
SOUTH ABUTMENT WING 2		SHEET 6	

**A608****A609****A410****A514****A515****A525****A826, A845****A527, A546****A630****A631****A432****A433****A543****A544****BAR SERIES TABLE**

MARK	NO. REOD.	LENGTH
A604	1 SERIES OF 14	17'-1" TO 7'-2"
A706	1 SERIES OF 14	17'-1" TO 7'-2"
A410	1 SERIES OF 44	6'-3" TO 5'-9"
A617	1 SERIES OF 5	16'-7" TO 11'-4"
A718	1 SERIES OF 5	16'-7" TO 11'-4"
A519	2 SERIES OF 6	12'-6" TO 2'-7"
A630	1 SERIES OF 5	11'-5" TO 14'-5"
A432	1 SERIES OF 5	5'-5" TO 8'-5"
A433	1 SERIES OF 4	10'-7" TO 13'-7"

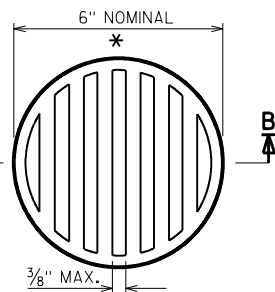
BUNDLE AND TAG EACH SERIES SEPARATELY.

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		24	60'-0"			FOOTING - LONGIT. TOP AND BTM.
A502		24	11'-2"			FOOTING - LONGIT. TOP AND BTM.
A603		50	10'-6"			FOOTING - TRANS. BTM.
▲ A604		14	12'-2"		X	FOOTING - TRANS. BTM. SERIES
A705		50	10'-6"			FOOTING - TRANS. TOP
▲ A706		14	12'-2"		X	FOOTING - TRANS. TOP SERIES
A607		63	25'-1"			BODY - HORIZ. B.F. AND F.F.
A608		138	7'-11"	X		FOOTING/BODY - VERT. B.F. AND F.F.
A609		74	14'-3"	X		BODY - VERT.
▲ A410		44	6'-0"	X	X	BODY - HORIZ. UNDER BEAM SEATS
A411		6	16'-6"			BODY - HORIZ. UNDER BEAM SEATS
A412		3	7'-6"			BODY - HORIZ. UNDER BEAM SEATS
A413	X	24	24'-4"			BACKWALL - HORIZ.
A514	X	72	12'-5"	X		BACKWALL - VERT.
A515	X	72	4'-1"	X		PAVING BLOCK/BACKWALL - VERT.
A516	X	30	8'-0"			PAVING BLOCK - HORIZ.
▲ A617		5	14'-0"		X	WING 1 - FOOTING HORIZ. BTM. BARS
▲ A718		5	14'-0"		X	WING 1 - FOOTING HORIZ. TOP BARS
▲ A519		12	7'-6"		X	WING 1 - FOOTING LONG. TOP & BTM. BARS
A520	X	20	18'-6"			WING 1 - STEM HORIZ. B.F. & F.F.
A521	X	4	14'-11"			WING 1 - STEM HORIZ. F.F.
A622	X	4	13'-9"			WING 1 - STEM HORIZ. B.F.
A623	X	1	14'-11"			WING 1 - STEM HORIZ. F.F.
A624	X	1	13'-9"			WING 1 - STEM HORIZ. B.F.
A525	X	14	18'-4"	X		WING 1 - STEM VERT.
A826	X	17	10'-4"	X		WING 1 - STEM/FOOTING VERT. @ B.F.
A527	X	14	10'-0"	X		WING 1 - STEM/FOOTING VERT. @ F.F.
A428	X	5	4'-5"			WING 1 - MASKWALL - VERT.
A429	X	4	5'-8"			WING 1 - MASKWALL - HORIZ.
▲ A630	X	5	12'-11"	X	X	WING 1 - STEM/ABUT. BODY - HORIZ.
▲ A631	X	5	11'-5"	X		WING 1 - STEM/ABUT. BODY F.F. - HORIZ.
▲ A432	X	5	6'-11"	X	X	WING 1 - STEM/ABUT. BODY - VERT.
▲ A433	X	4	12'-1"	X	X	WING 1 - STEM/ABUT. BODY - VERT.
A434	X	23	8'-6"			WING 2 - FOOTING HORIZ. BTM. BARS
A735	X	23	8'-6"			WING 2 - FOOTING HORIZ. TOP BARS
A436		14	22'-5"			WING 2 - FOOTING LONG. TOP & BTM. BARS
A437	X	9	12'-10"			WING 2 - STEM HORIZ. F.F.
A438	X	9	14'-0"			WING 2 - STEM HORIZ. B.F.
A439	X	5	19'-4"			WING 2 - STEM HORIZ. F.F.
A440	X	5	20'-6"			WING 2 - STEM HORIZ. B.F.
A641	X	1	19'-4"			WING 2 - STEM HORIZ. F.F.
A642	X	1	20'-6"			WING 2 - STEM HORIZ. B.F.
A543	X	15	15'-10"	X		WING 2 - STEM VERT.
A544	X	7	10'-0"	X		WING 2 - STEM VERT.
A845	X	15	10'-4"	X		WING 2 - STEM/FOOTING VERT. @ B.F.
A546	X	14	10'-0"	X		WING 2 - STEM/FOOTING VERT. @ F.F.
A447	X	6	4'-5"			WING 2 - MASKWALL - VERT.
A448	X	4	5'-10"			WING 2 - MASKWALL - HORIZ.
A449	X	28	2'-0"			SURFACE DRAIN ANCHORS

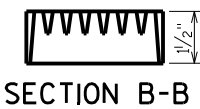
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

**RODENT SCREEN DETAIL**

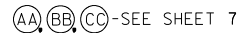
* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

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

**SECTION B-B**

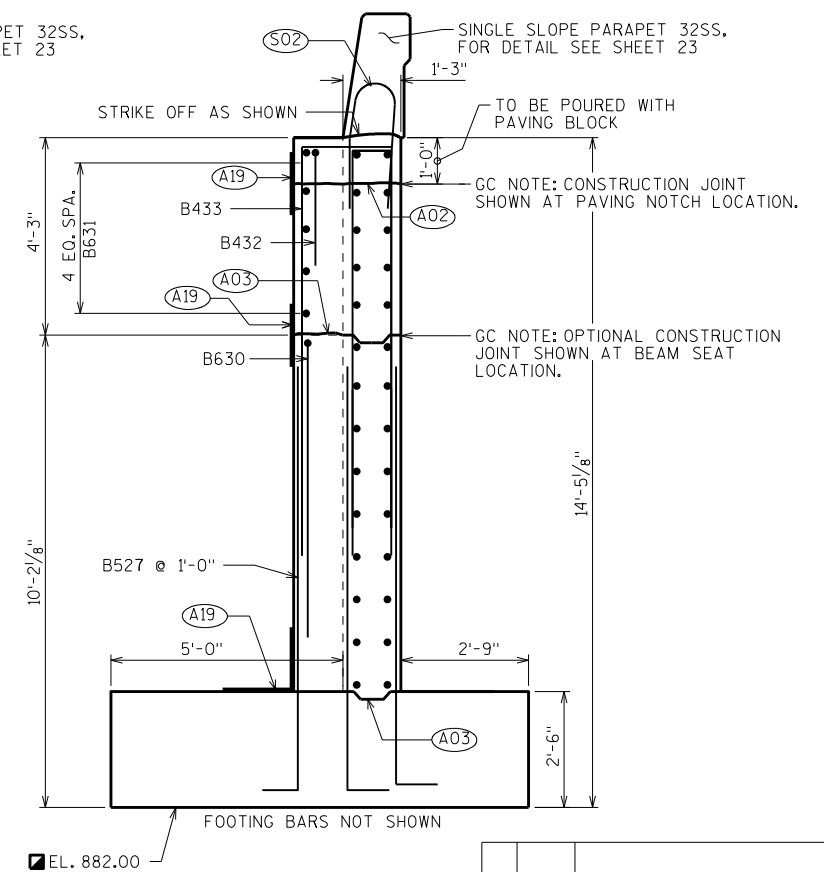
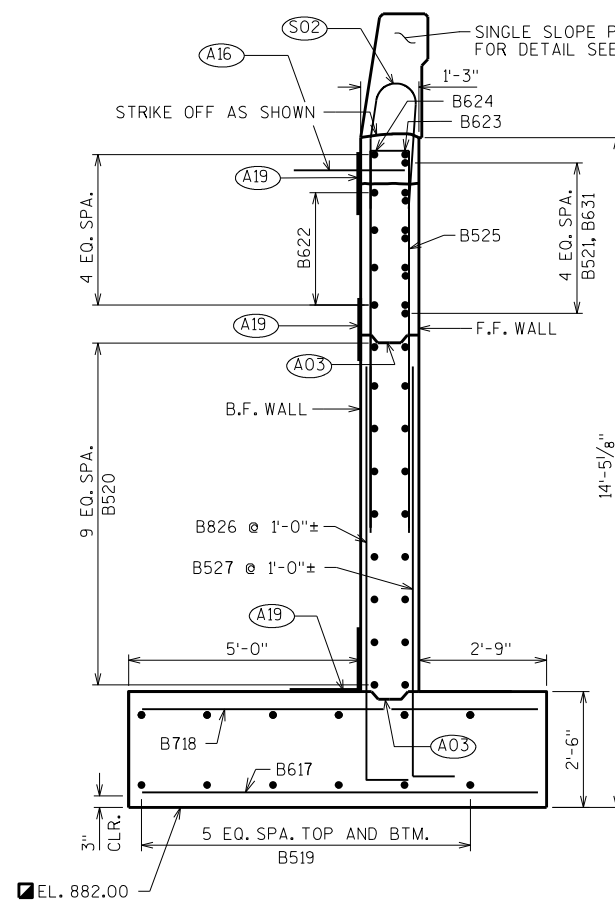
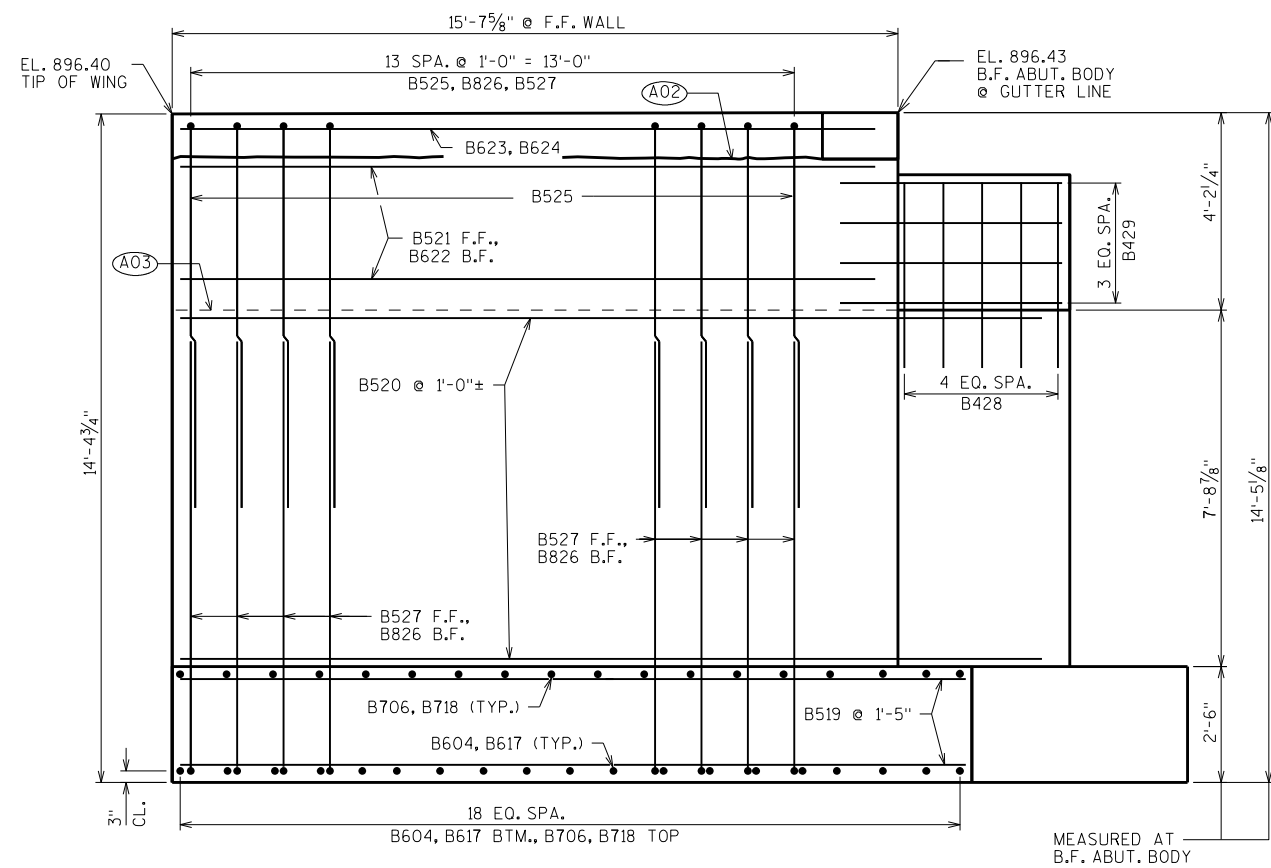
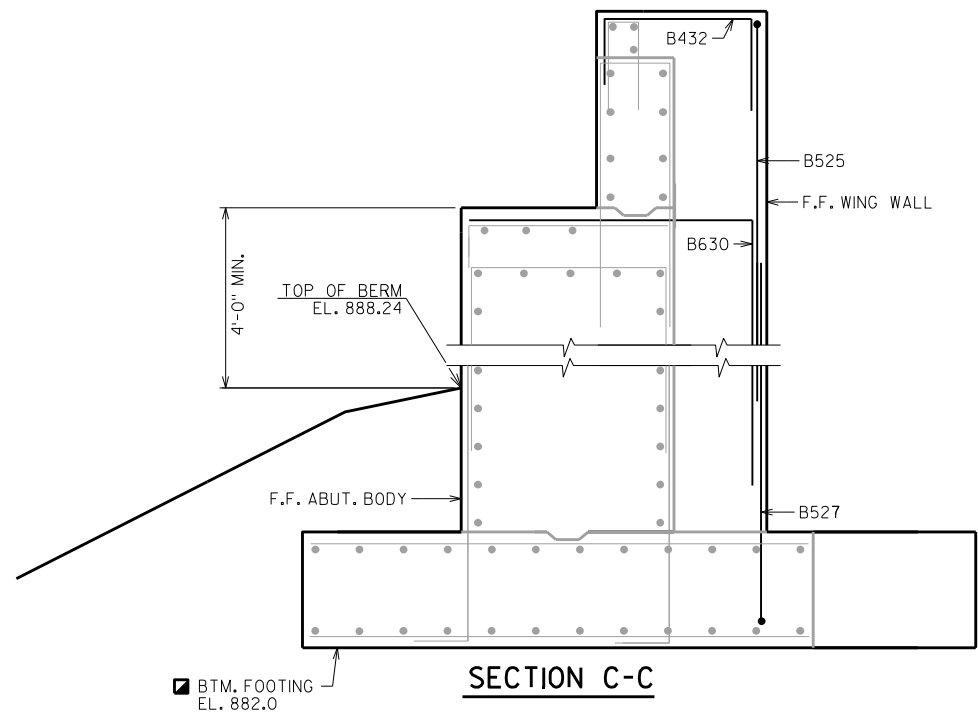
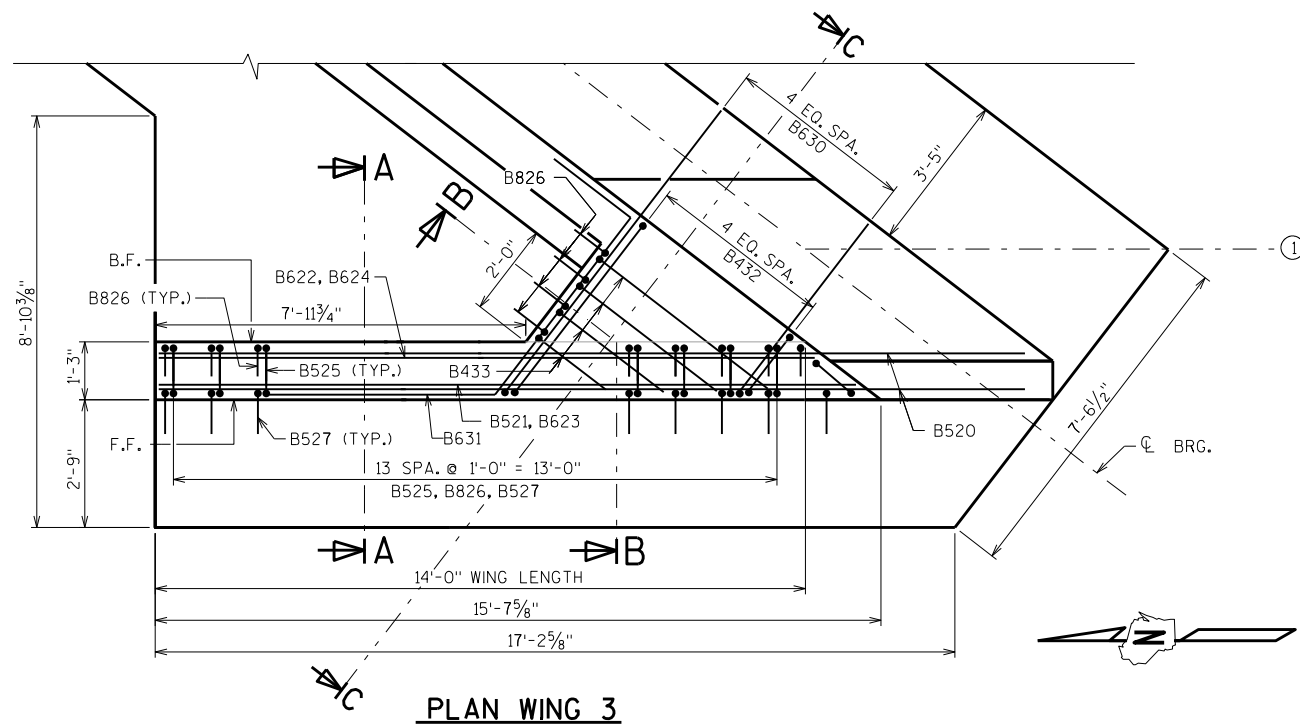
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
SOUTH ABUTMENT DETAILS		SHEET 7	



- PROJECT ENGINEER TO CONTACT SW REGION
GEOTECHNICAL ENGINEER TO ESTABLISH FINAL
FOOTING ELEVATIONS. SEE 'FOOTING
VARIABILITY' DETAIL SHEET 1.
- (A01) CONSTRUCTION JOINT: KEYWAY FORMED
BY A BEVELED 2 x 6.
- (A02) CONSTRUCTION JOINT: POUR CONCRETE ABOVE
THIS JOINT AFTER SUPERSTRUCTURE CONCRETE
IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED
BY A BEVELED 2 x 8. 3/4" "V" GROOVE @
THE FRONT FACE AND 18" R.M.W. @ BACKFACE.
FOR OPTIONAL DETAILS SEE "ALTERNATE
CONSTRUCTION JOINT" SHEET.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.
SEE SHEET 7 FOR RODENT SCREEN DETAILS.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL
ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2"
FILLER WITH NON-STAINING GRAY NON-BITUMINOUS
JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW
SURFACE OF CONCRETE), EXTEND SEALER 3"
BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) HORIZED MEMBRANE WATERPROOFING
SEAL ALL ROOF & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS C'K'D. AMB	
NORTH ABUTMENT		SHEET 8	

- (A02) CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONCRETE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2×6 . (18" R.M.W. @ B.F. & $3/4"$ "V" GROOVE @ F.F. IF JOINT IS USED).
- (A16) B449 BARS SPACED @ $1'-0"$ CTRS. EMBED $1'-0"$ INTO WING CONC. LOCATE $3"$ DOWN FROM TOP OF WING @ BACKFACE TO $6"$ DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS $2'-0"$ LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (S02) SEE PARAPET SHEET FOR DETAILS.
- PROJECT ENGINEER TO CONTACT SW REGION GEOTECHNICAL ENGINEER TO ESTABLISH FINAL FOOTING ELEVATIONS. SEE 'FOOTING VARIABILITY' DETAIL SHEET 1.

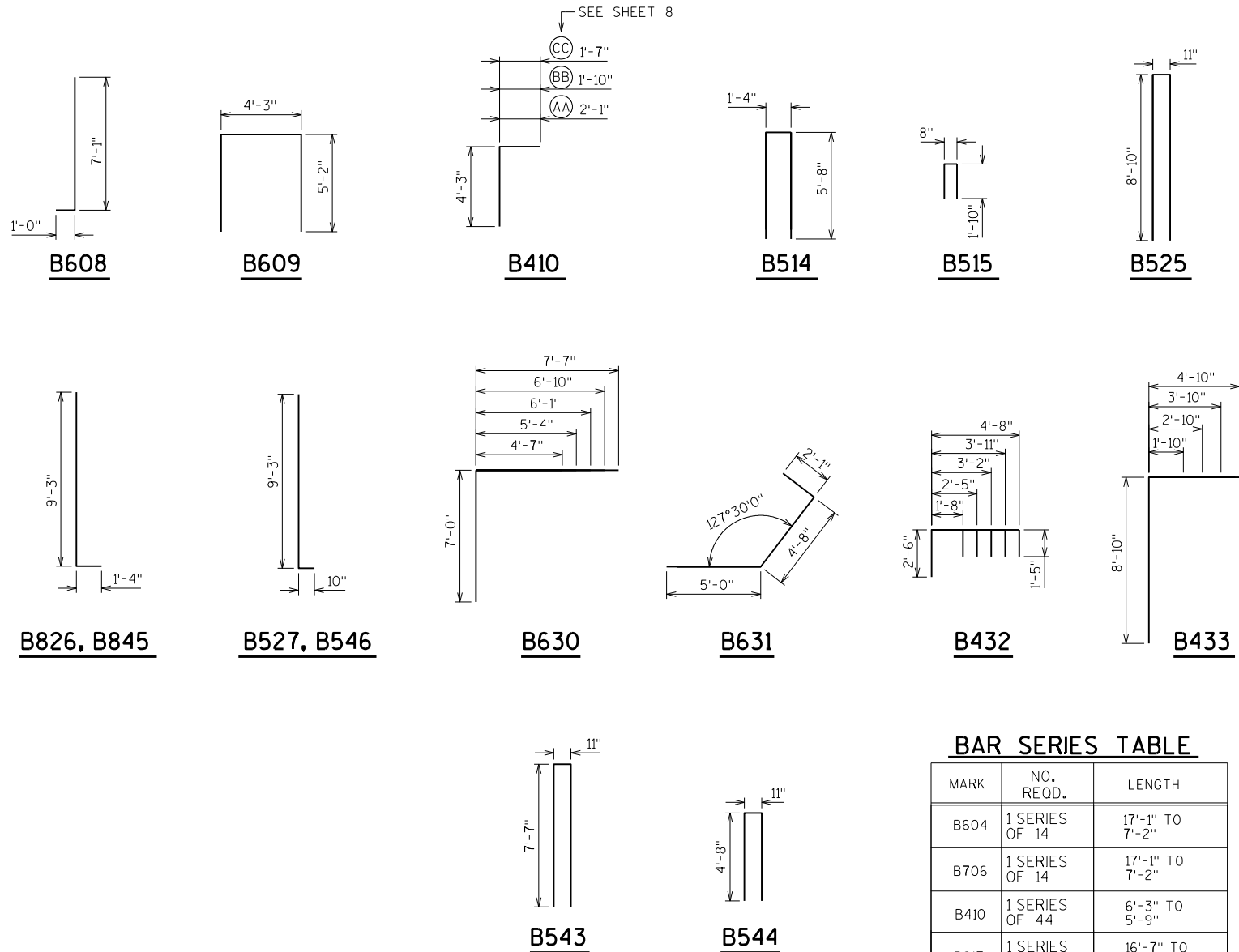


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
NORTH ABUTMENT WING 3		SHEET 9	



- PROJECT ENGINEER TO CONTACT SW REGION
GEOTECHNICAL ENGINEER TO ESTABLISH FINAL
FOOTING ELEVATIONS. SEE 'FOOTING
VARIABILITY' DETAIL SHEET 1.

NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION					
STRUCTURE B-22-237					
		DRAWN BY EMK		PLANS CK'D. AMB	
NORTH ABUTMENT WING 4				SHEET 10	



BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
B604	1 SERIES OF 14	17'-1" TO 7'-2"
B706	1 SERIES OF 14	17'-1" TO 7'-2"
B410	1 SERIES OF 44	6'-3" TO 5'-9"
B617	1 SERIES OF 5	16'-7" TO 11'-4"
B718	1 SERIES OF 5	16'-7" TO 11'-4"
B519	2 SERIES OF 6	12'-6" TO 2'-7"
B630	1 SERIES OF 5	11'-5" TO 14'-5"
B432	1 SERIES OF 5	5'-5" TO 8'-5"
B433	1 SERIES OF 4	10'-7" TO 13'-7"

BUNDLE AND TAG EACH SERIES SEPARATELY.

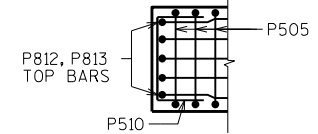
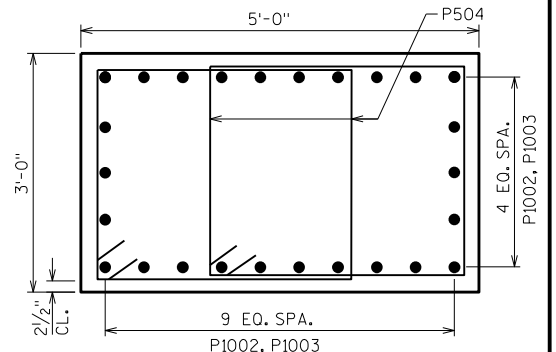
BILL OF BARS

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

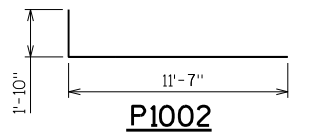
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		24	60'-0"			FOOTING - LONGIT. TOP AND BTM.
B502		24	11'-2"			FOOTING - LONGIT. TOP AND BTM.
B603		50	10'-6"			FOOTING - TRANS. BTM.
▲ B604		14	12'-2"	X		FOOTING - TRANS. BTM. SERIES
B705		50	10'-6"			FOOTING - TRANS. TOP
▲ B706		14	12'-2"	X		FOOTING - TRANS. TOP SERIES
B607		63	25'-1"			BODY - HORIZ. B.F. AND F.F.
B608		138	7'-11"	X		FOOTING/BODY - VERT. B.F. AND F.F.
B609		74	14'-3"	X		BODY - VERT.
▲ B410		44	6'-0"	X	X	BODY - HORIZ. UNDER BEAM SEATS
B411		6	16'-6"			BODY - HORIZ. UNDER BEAM SEATS
B412		3	7'-6"			BODY - HORIZ. UNDER BEAM SEATS
B413	X	24	24'-4"			BACKWALL - HORIZ.
B514	X	72	12'-5"	X		BACKWALL - VERT.
B515	X	72	4'-1"	X		PAVING BLOCK/BACKWALL - VERT.
B516	X	30	8'-0"			PAVING BLOCK - HORIZ.
▲ B617		5	14'-0"	X		WING 3 - FOOTING HORIZ. BTM. BARS
▲ B718		5	14'-0"	X		WING 3 - FOOTING HORIZ. TOP BARS
▲ B519		12	7'-6"	X		WING 3 - FOOTING LONG. TOP & BTM. BARS
B520	X	20	18'-6"			WING 3 - STEM HORIZ. B.F. & F.F.
B521	X	4	14'-11"			WING 3 - STEM HORIZ. F.F.
B622	X	4	13'-9"			WING 3 - STEM HORIZ. B.F.
B623	X	1	14'-11"			WING 3 - STEM HORIZ. F.F.
B624	X	1	13'-9"			WING 3 - STEM HORIZ. B.F.
B525	X	14	18'-4"	X		WING 3 - STEM VERT.
B826	X	17	10'-4"	X		WING 3 - STEM/FOOTING VERT. @ B.F.
B527	X	14	10'-0"	X		WING 3 - STEM/FOOTING VERT. @ F.F.
B428	X	5	4'-5"			WING 3 - MASKWALL - VERT.
B429	X	4	5'-8"			WING 3 - MASKWALL - HORIZ.
▲ B630	X	5	12'-11"	X	X	WING 3 - STEM/ABUT. BODY - HORIZ.
B631	X	5	11'-5"	X		WING 3 - STEM/ABUT. BODY F.F. - HORIZ.
▲ B432	X	5	6'-11"	X	X	WING 3 - STEM/ABUT. BODY - VERT.
▲ B433	X	4	12'-1"	X	X	WING 3 - STEM/ABUT. BODY - VERT.
B434	X	23	8'-6"			WING 4 - FOOTING HORIZ. BTM. BARS
B735	X	23	8'-6"			WING 4 - FOOTING HORIZ. TOP BARS
B436		14	22'-5"			WING 4 - FOOTING LONG. TOP & BTM. BARS
B437	X	9	12'-10"			WING 4 - STEM HORIZ. F.F.
B438	X	9	14'-0"			WING 4 - STEM HORIZ. B.F.
B439	X	5	19'-4"			WING 4 - STEM HORIZ. F.F.
B440	X	5	20'-6"			WING 4 - STEM HORIZ. B.F.
B641	X	1	19'-4"			WING 4 - STEM HORIZ. F.F.
B642	X	1	20'-6"			WING 4 - STEM HORIZ. B.F.
B543	X	15	15'-10"	X		WING 4 - STEM VERT.
B544	X	7	10'-0"	X		WING 4 - STEM VERT.
B845	X	15	10'-4"	X		WING 4 - STEM/FOOTING VERT. @ B.F.
B546	X	14	10'-0"	X		WING 4 - STEM/FOOTING VERT. @ F.F.
B447	X	6	4'-5"			WING 4 - MASKWALL - VERT.
B448	X	4	5'-10"			WING 4 - MASKWALL - HORIZ.
B449	X	28	2'-0"			SURFACE DRAIN ANCHORS

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

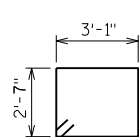
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
NORTH ABUTMENT DETAILS		SHEET 11	

PLAN VIEW SHOWING
END OF CAP REINF.

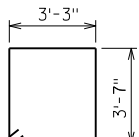
SECTION THRU COLUMN



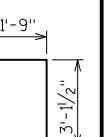
P1002



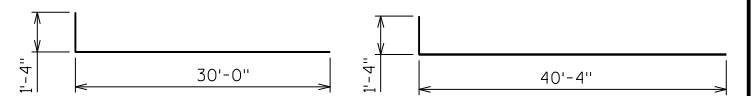
P504



P505



P510



P812

P813

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P801		120	11'-6"			FOOTING - HORIZ.
P1002	X	104	13'-2"	X		FOOTING/SHAFT - VERT.
P1003	X	104	21'-11"			SHAFT - VERT.
P504	X	332	12'-0"	X		SHAFT - HORIZ. - STIRRUPS
P505	X	49	14'-4"	X		CAP - STIRRUPS
P806	X	8	30'-0"			CAP - HORIZ. BARS - BTM.
P807	X	8	40'-4"			CAP - HORIZ. BARS - BTM.
P508	X	10	30'-0"			CAP - HORIZ. - SIDES
P509	X	10	36'-7"			CAP - HORIZ. - SIDES
P510	X	12	6'-5"	X		CAP - HORIZ. - ENDS
P511	X	20	2'-0"			DOWEL BARS
P812	X	5	31'-2"	X		CAP - HORIZ. BARS - TOP
P813	X	5	41'-6"	X		CAP - HORIZ. BARS - TOP

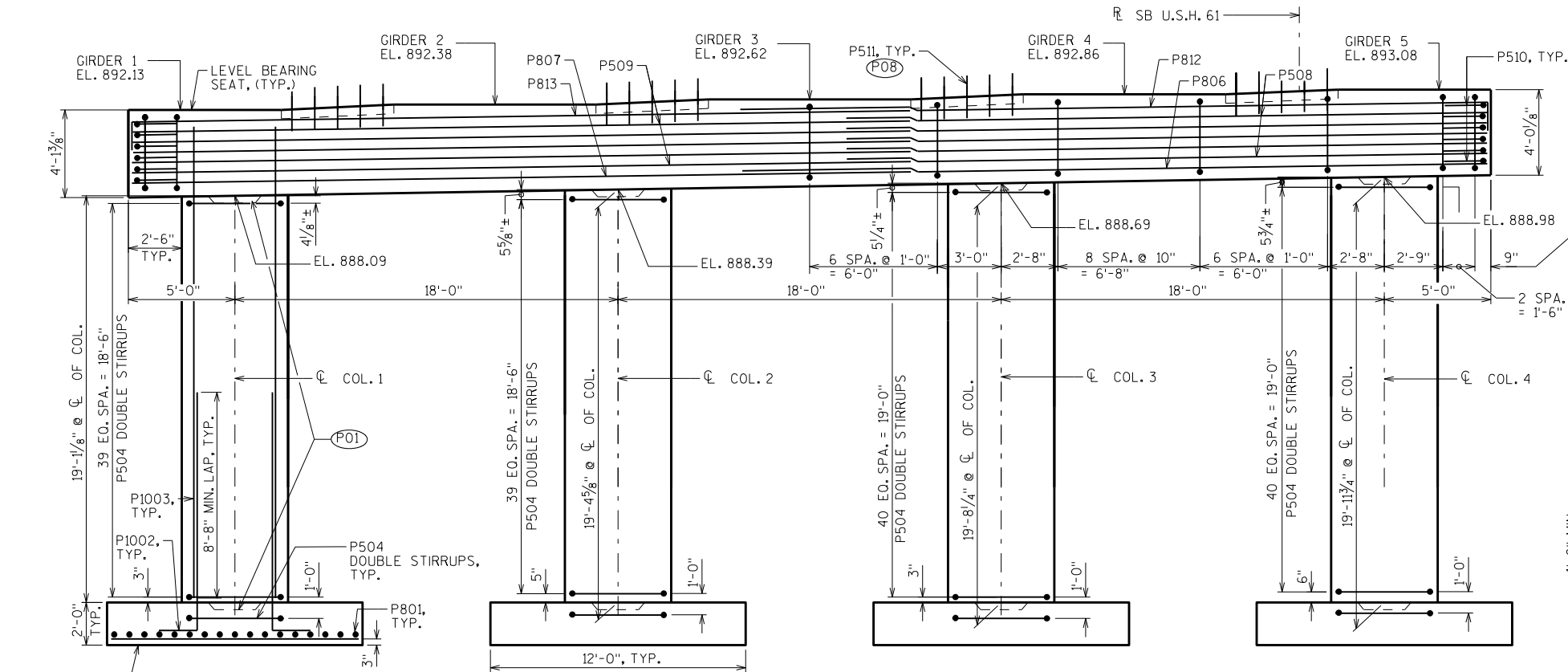
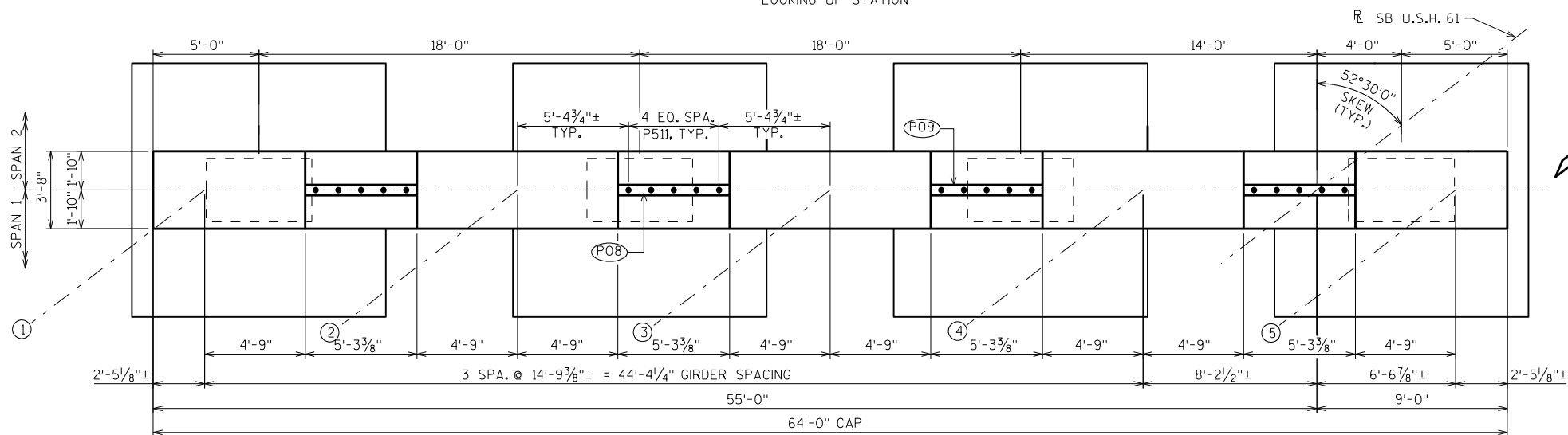
PROJECT ENGINEER TO CONTACT SW REGION
GEOTECHNICAL ENGINEER TO ESTABLISH FINAL
FOOTING ELEVATIONS. SEE 'FOOTING
VARIABILITY' DETAIL SHEET 1.

(P01) 1'-3" X 1'-3" X 2" CONSTRUCTION JOINT
FORMED BY BEVELED KEYWAY.

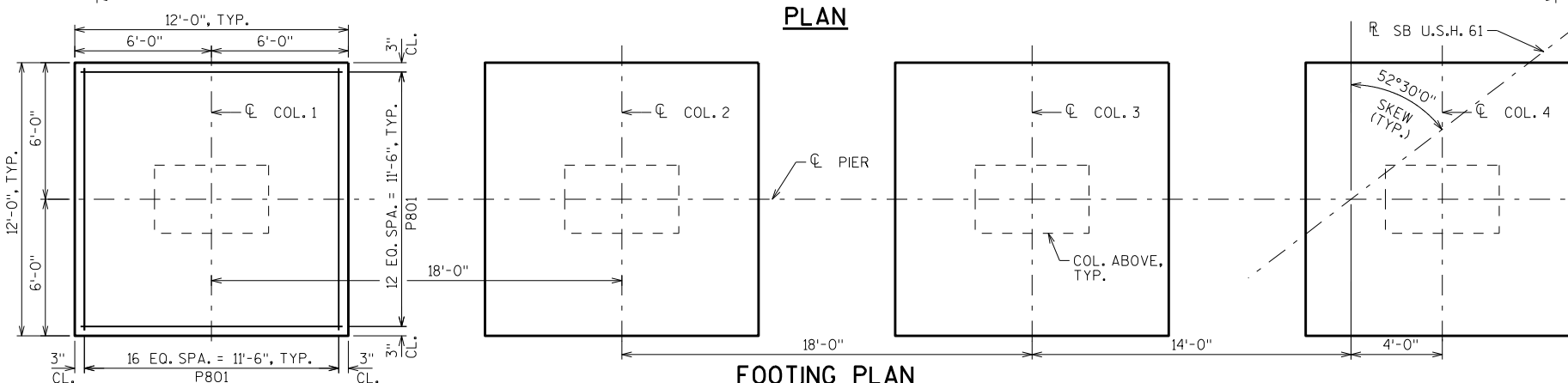
(P08) P511 BARS @ 1'-0" CTRS. BETWEEN BEAM
SEATS. MAY BE PLACED AFTER CONCRETE
IS POURED BUT BEFORE INITIAL SET HAS
TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONSTRUCTION JOINT-FORMED BY
BEVELED 2 X 6 BETWEEN BEAM SEATS.

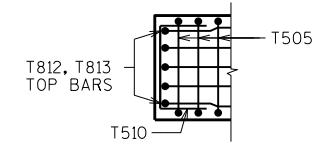
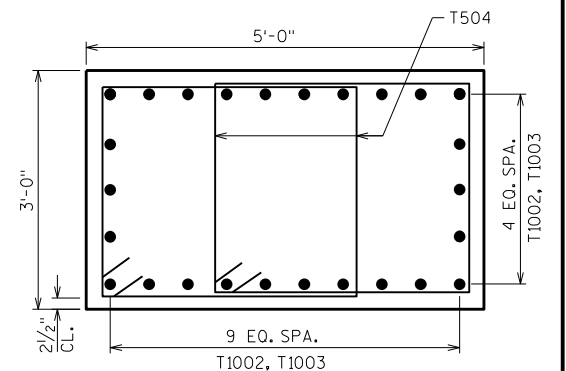
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CKD. AMB	
PIER 1		SHEET 12	

ELEVATION
LOOKING UP STATION

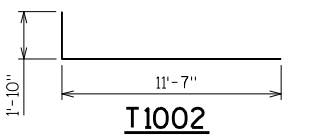
PLAN



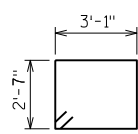
FOOTING PLAN

PLAN VIEW SHOWING
END OF CAP REINF.

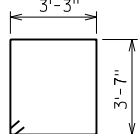
SECTION THRU COLUMN



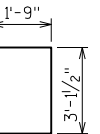
T1002



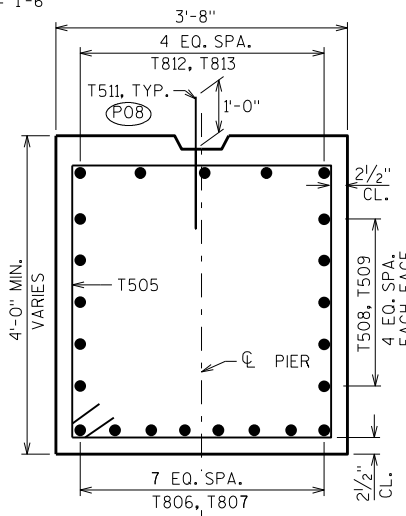
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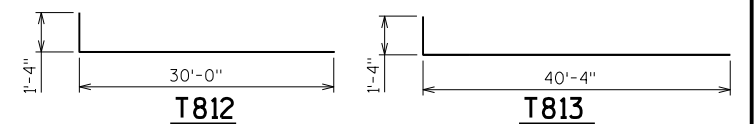
T505



T510



SECTION THRU CAP



T812

T813

BILL OF BARS

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

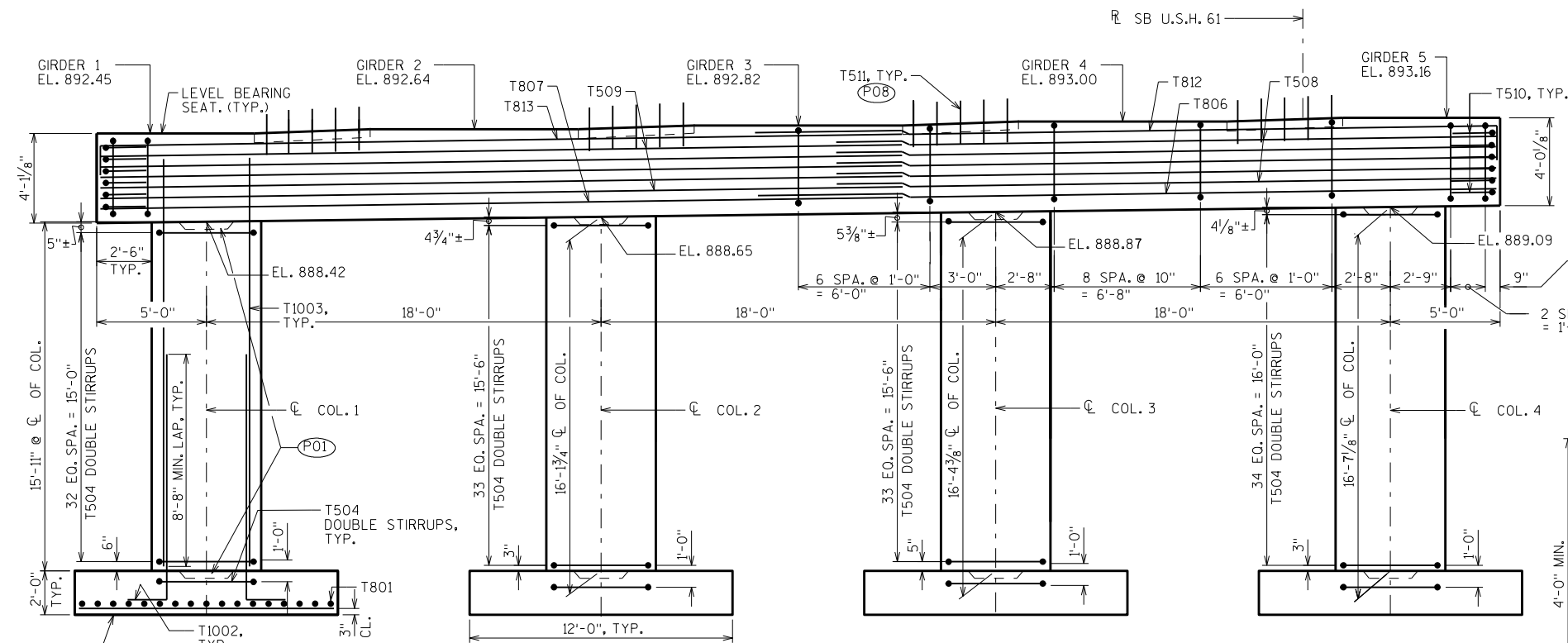
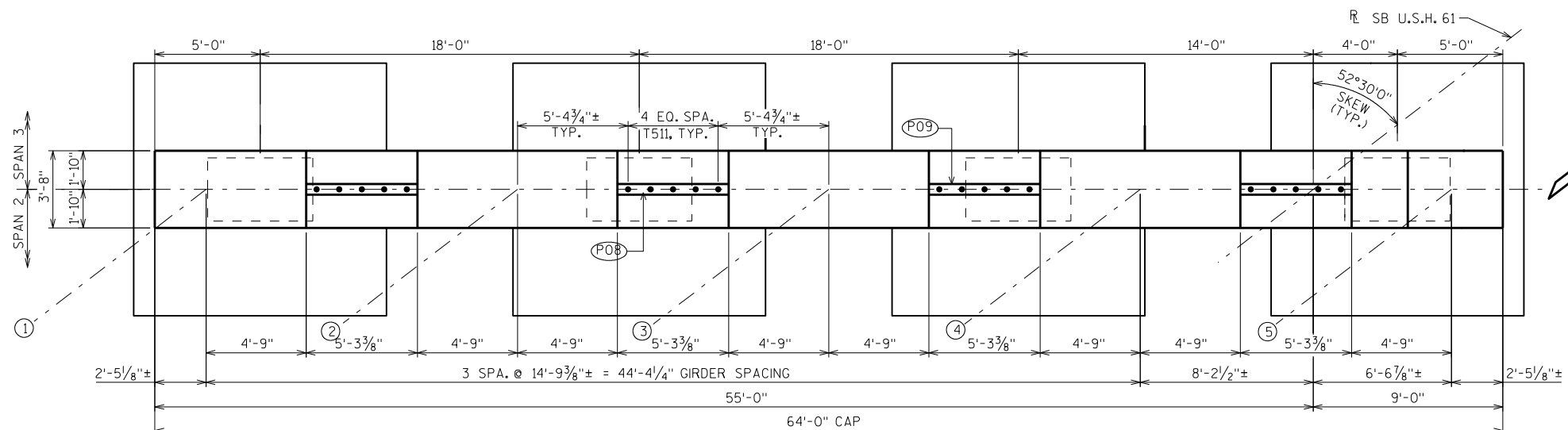
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
T801		120	11'-6"			FOOTING - HORIZ.
T1002	X	104	13'-2"	X		FOOTING/SHAFT - VERT.
T1003	X	104	18'-7"			SHAFT - VERT.
T504	X	280	12'-0"	X		SHAFT - HORIZ. - STIRRUPS
T505	X	49	14'-4"	X		CAP - STIRRUPS
T806	X	8	30'-0"			CAP - HORIZ. BARS - BTM.
T807	X	8	40'-4"			CAP - HORIZ. BARS - BTM.
T508	X	10	30'-0"			CAP - HORIZ. - SIDES
T509	X	10	36'-7"			CAP - HORIZ. - SIDES
T510	X	12	6'-5"	X		CAP - HORIZ. - ENDS
T511	X	20	2'-0"			DOWEL BARS
T812	X	5	31'-2"	X		CAP - HORIZ. BARS - TOP
T813	X	5	41'-6"	X		CAP - HORIZ. BARS - TOP

PROJECT ENGINEER TO CONTACT SW REGION
GEOTECHNICAL ENGINEER TO ESTABLISH FINAL
FOOTING ELEVATIONS. SEE 'FOOTING
VARIABILITY' DETAIL SHEET 1.

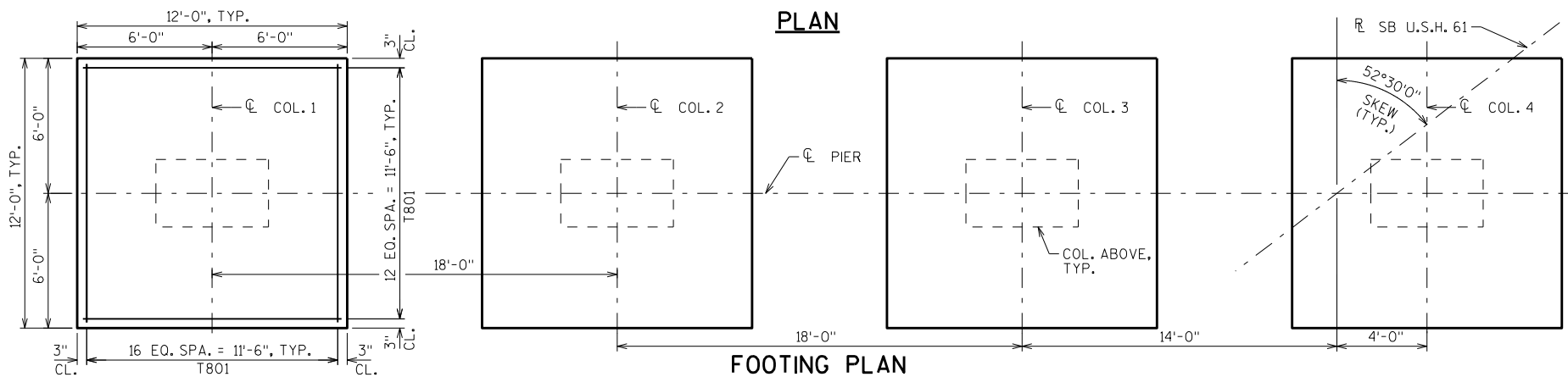
(P01) 1'-3" X 1'-3" X 2" CONSTRUCTION JOINT
FORMED BY BEVELED KEYWAY.

(P08) T511 BARS @ 1'-0" CTRS. BETWEEN BEAM
SEATS. MAY BE PLACED AFTER CONCRETE
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(P09) KEYED CONSTRUCTION JOINT-FORMED BY
BEVELED 2 X 6 BETWEEN BEAM SEATS.

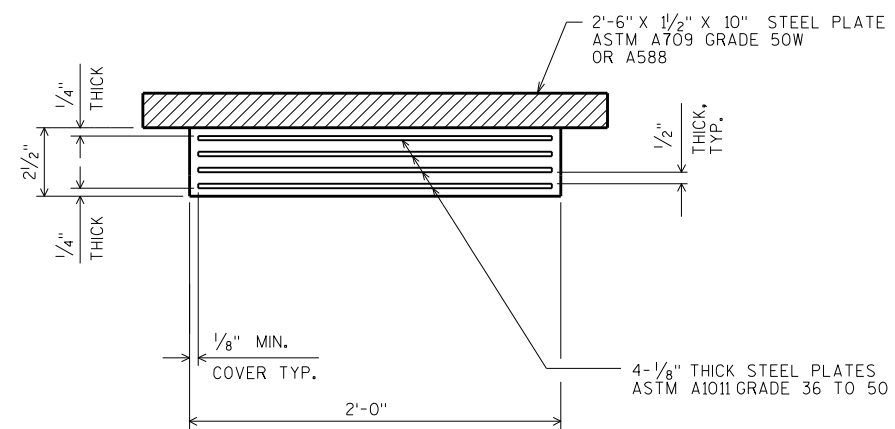
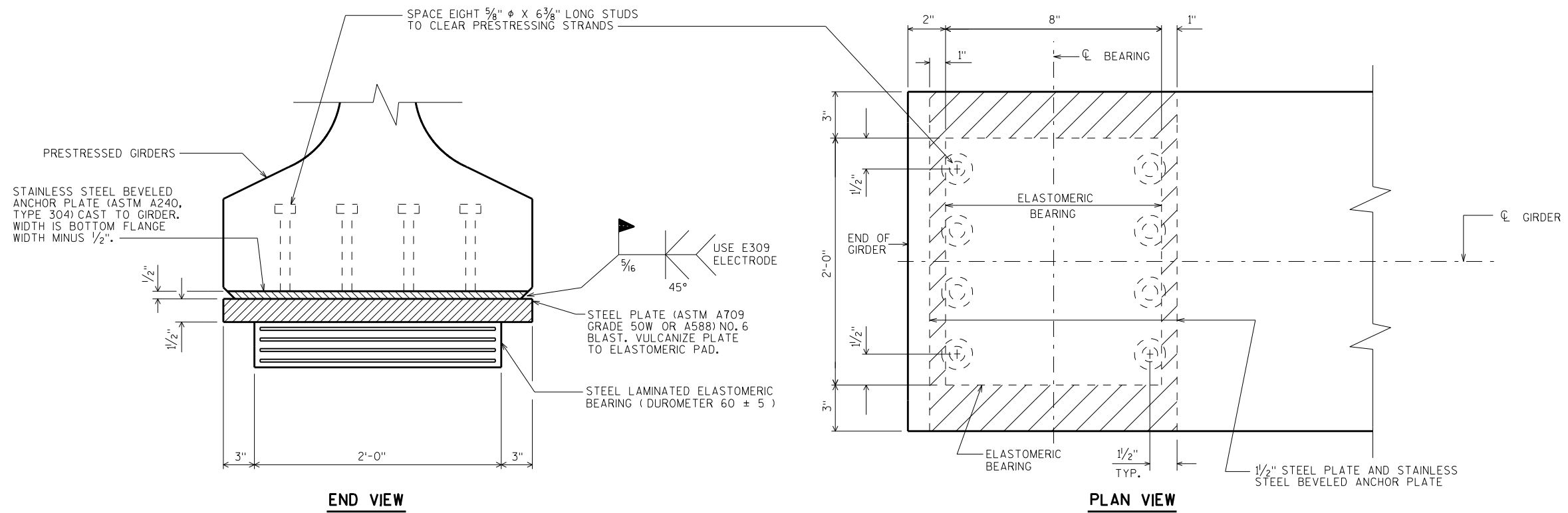
ELEVATION
LOOKING UP STATION

PLAN



FOOTING PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CKD. AMB	
PIER 2		SHEET 13	

**SECTION THRU ELASTOMERIC BEARING****BEARING NOTES**

BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE BELOW 5° F OR GREATER THAN 85° F.

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

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

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
PRESTRESSED GIRDER BEARINGS		SHEET 14	

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER, FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY, CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

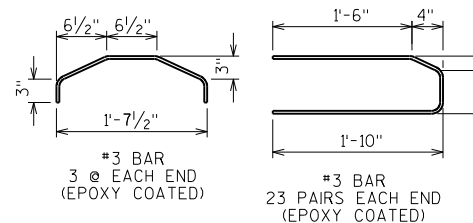
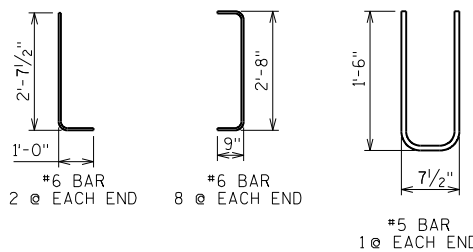
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE 0.6" DIA. -7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

**SIDE VIEW & TYP. SECTION IN SPAN**

(A) DETAIL TYP. AT EACH END

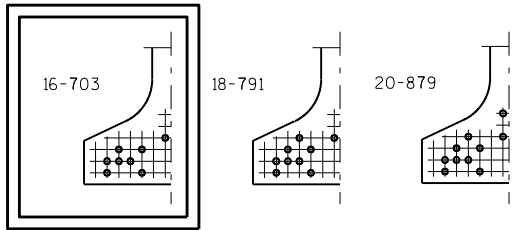
(B) 6 #5 BARS, FULL LENGTH, MIN. LAP = 2'-5" :: SPAN 1 & 3 ::
6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11" :: SPAN 2 ::

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

GIRDER DATA																								
SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. f'c (p.s.i.)	"P" 1ST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN						UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10						TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.)				TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
																			"A"	"B" MIN.	"B" MAX.	"C"		
1	ALL	42.375	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	8,000	7	7	7	0.6	-	-	-	-	-	16	6,400	
2	ALL	79.75	0.9	1.0	1.3	1.5	1.6	1.5	1.3	1.0	0.9	8,000	7	7	7	0.6	30	6,400	32	11	14	4	-	-
3	ALL	42.375	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	8,000	7	7	7	0.6	-	-	-	-	-	16	6,400	

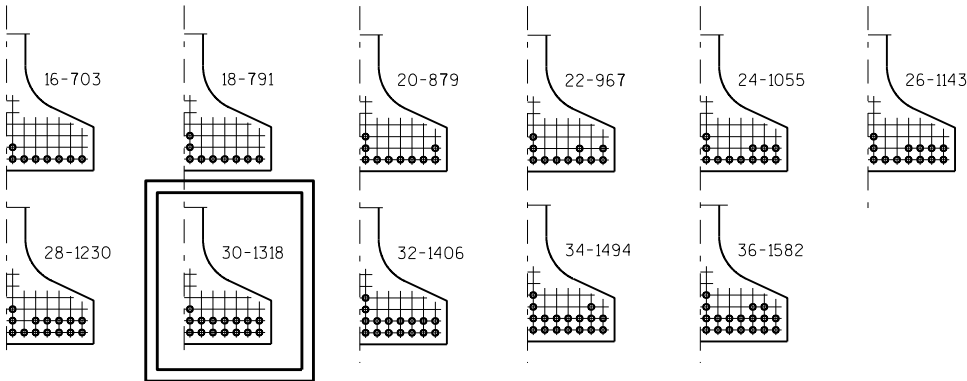
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CKD. AMB	
36W" PRESTRESSED GIRDER DETAILS		SHEET 15	



SPAN 1 AND 3

STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY
TO AVOID DRAPING OF STRANDS

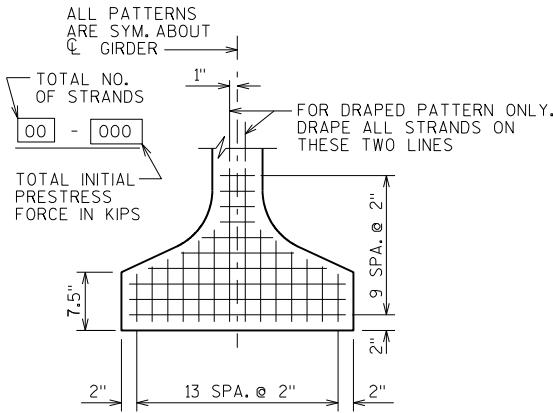
0.6"φ STRANDS



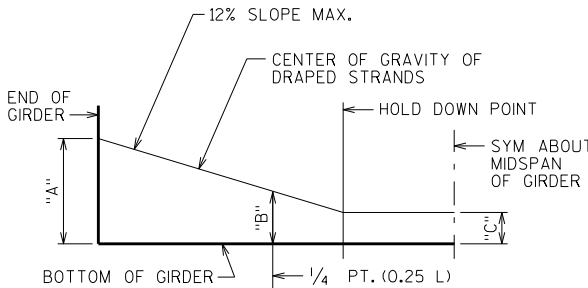
SPAN 2

ARRANGEMENT AT CL SPAN - FOR GIRDERS WITH DRAPED STRANDS

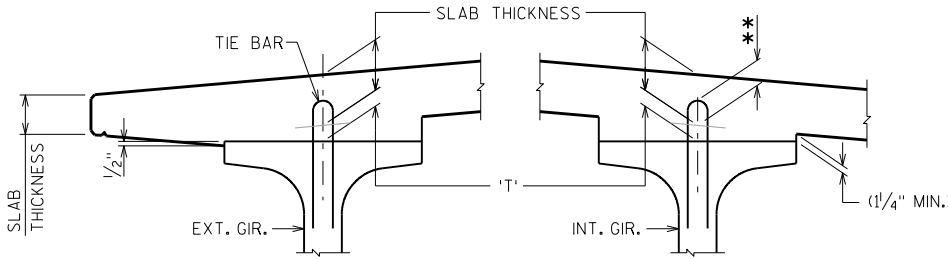
0.6"φ STRANDS



TYP. STRAND PATTERN



DRAPED STRAND PROFILE



SLAB HAUNCH DETAIL

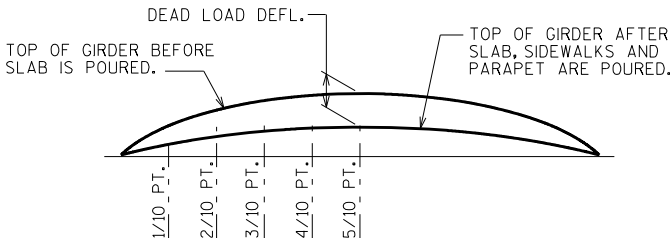
IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT CL OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- SLAB THICKNESS

= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2 3/4" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	0.62
2	3.25
3	0.62

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'.
USE ACTUAL GIRDER SHOTS.
THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

TOP OF DECK ELEVATIONS

	CL S ABUT	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL PIER 1
WEST EOD	895.77	895.79	895.82	895.86	895.89	895.92	895.95	895.99	896.02	896.05	896.08
GIRDER 1	895.83	895.86	895.90	895.93	895.96	895.99	896.03	896.06	896.09	896.12	896.15
GIRDER 2	896.10	896.13	896.17	896.20	896.23	896.26	896.29	896.32	896.35	896.37	896.40
GIRDER 3	896.37	896.40	896.44	896.47	896.49	896.52	896.55	896.57	896.60	896.62	896.64
GIRDER 4	896.64	896.67	896.70	896.72	896.75	896.77	896.80	896.82	896.84	896.86	896.88
GIRDER 5	896.90	896.92	896.95	896.97	896.99	897.02	897.04	897.05	897.07	897.09	897.10
EAST EOD	896.96	896.99	897.01	897.03	897.06	897.08	897.09	897.11	897.13	897.14	897.16

	CL PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL PIER 2
WEST EOD	896.08	896.13	896.18	896.22	896.26	896.30	896.33	896.36	896.39	896.41	896.42
GIRDER 1	896.15	896.20	896.24	896.29	896.32	896.36	896.39	896.41	896.44	896.45	896.47
GIRDER 2	896.40	896.44	896.48	896.52	896.55	896.58	896.60	896.62	896.64	896.65	896.66
GIRDER 3	896.64	896.68	896.72	896.75	896.77	896.79	896.81	896.83	896.84	896.84	896.84
GIRDER 4	896.88	896.91	896.94	896.96	896.98	897.00	897.01	897.02	897.02	897.02	897.02
GIRDER 5	897.10	897.13	897.15	897.17	897.19	897.20	897.20	897.20	897.20	897.19	897.18
EAST EOD	897.16	897.18	897.20	897.22	897.23	897.24	897.24	897.24	897.24	897.23	897.21

	CL PIER 2	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL N ABUT
WEST EOD	896.42	896.43	896.43	896.44	896.44	896.44	896.44	896.44	896.44	896.44	896.43
GIRDER 1	896.47	896.47	896.48	896.48	896.48	896.48	896.48	896.48	896.48	896.47	896.47
GIRDER 2	896.66	896.66	896.66	896.66	896.66	896.66	896.65	896.65	896.64	896.64	896.63
GIRDER 3	896.84	896.84	896.84	896.84	896.83	896.83	896.82	896.81	896.80	896.79	896.78
GIRDER 4	897.02	897.01	897.00	897.00	896.99	896.98	896.97	896.96	896.95	896.94	896.92
GIRDER 5	897.18	897.17	897.17	897.16	897.15	897.13	897.12	897.11	897.09	897.07	897.06
EAST EOD	897.21	897.21	897.20	897.19	897.17	897.16	897.15	897.13	897.11	897.10	897.08

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
36W" PRESTRESSED GIRDER DETAILS		SHEET 16	

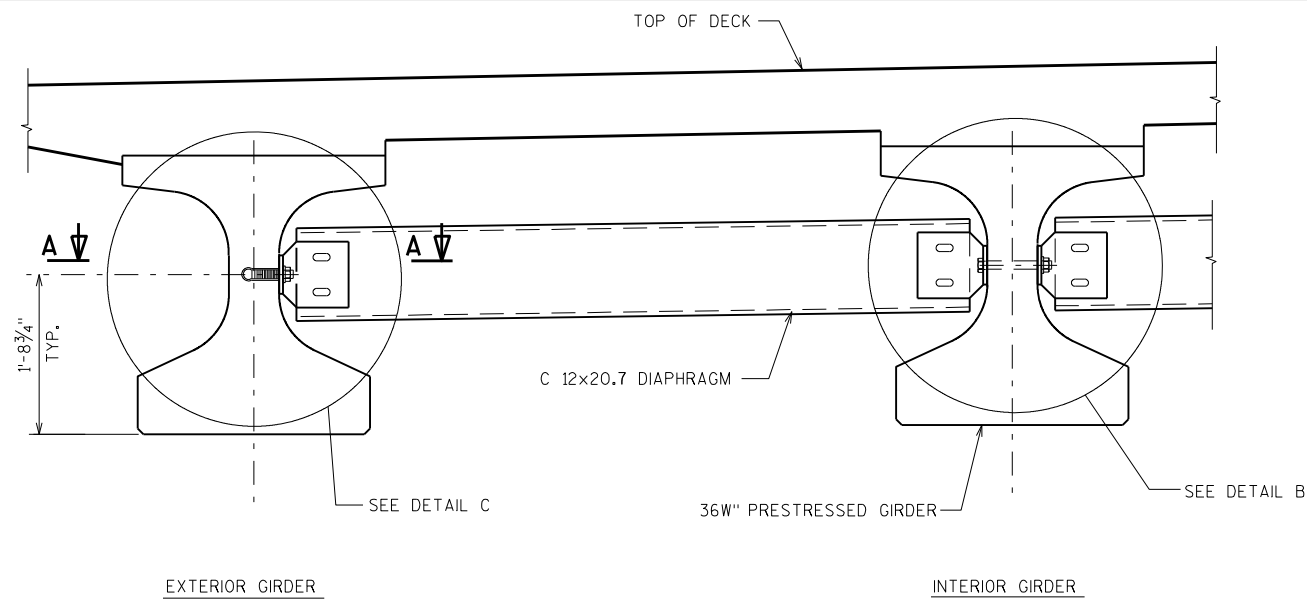
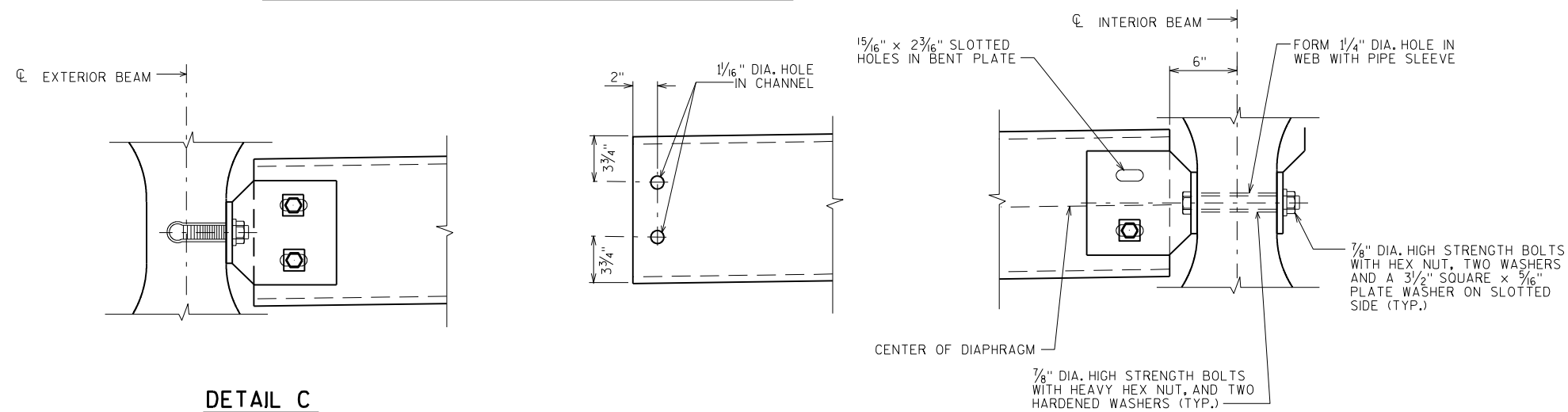
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-22-273", EACH.

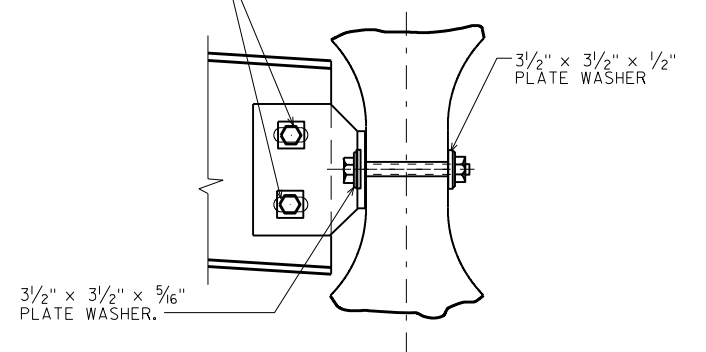
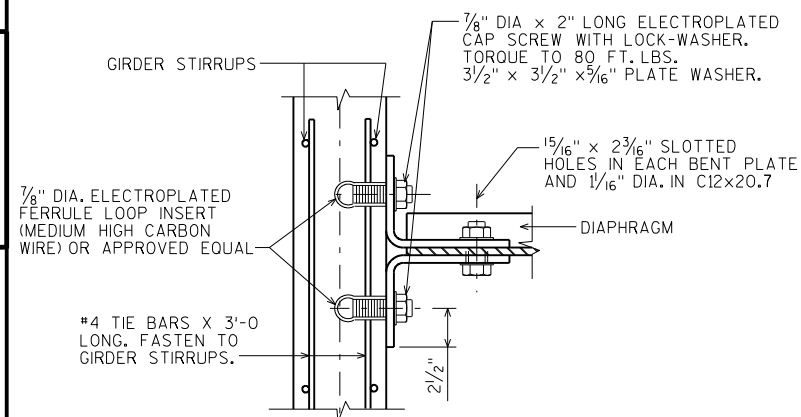
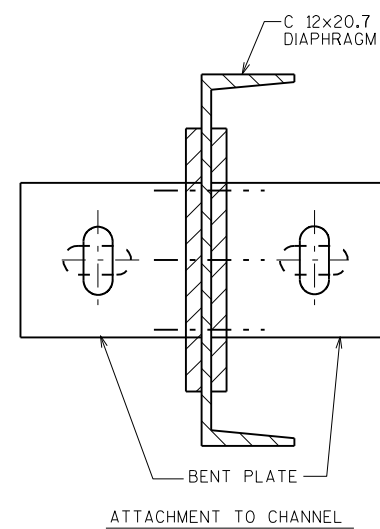
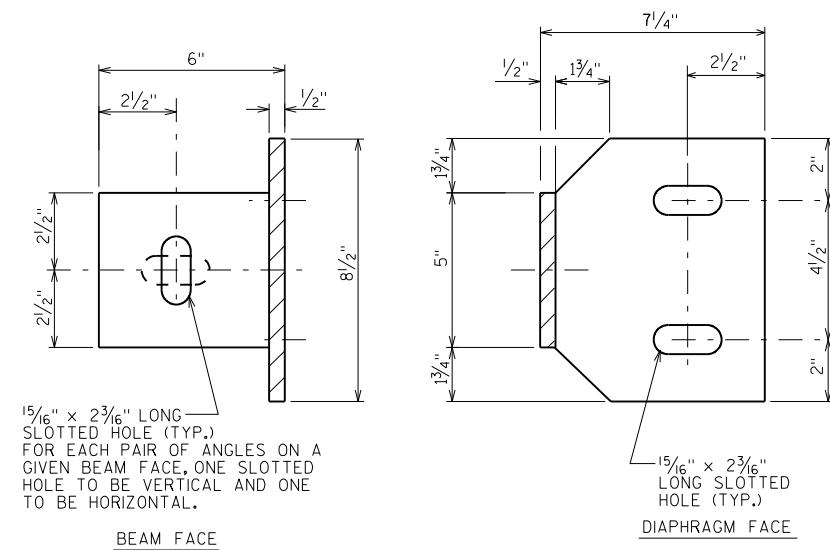
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

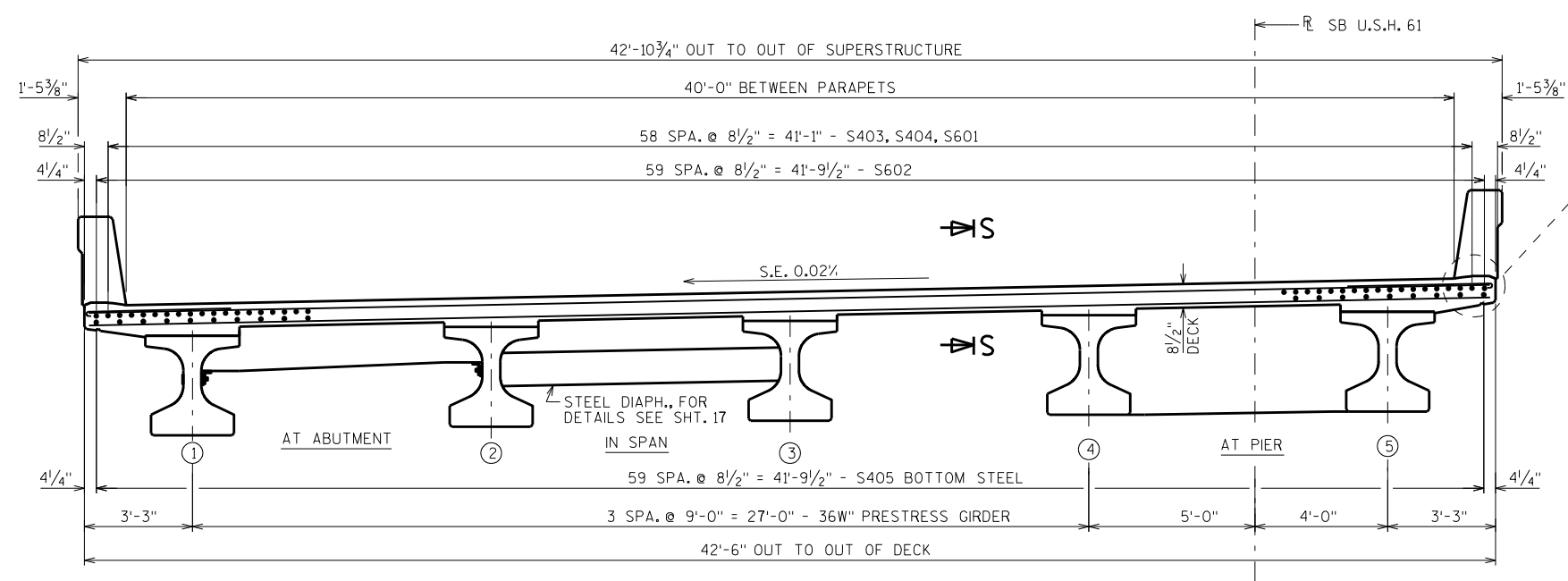
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

**PART TRANSVERSE SECTION AT DIAPHRAGM**

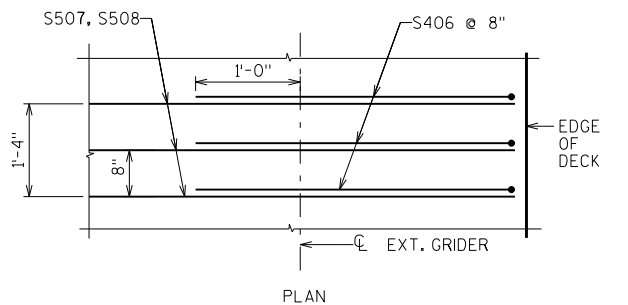
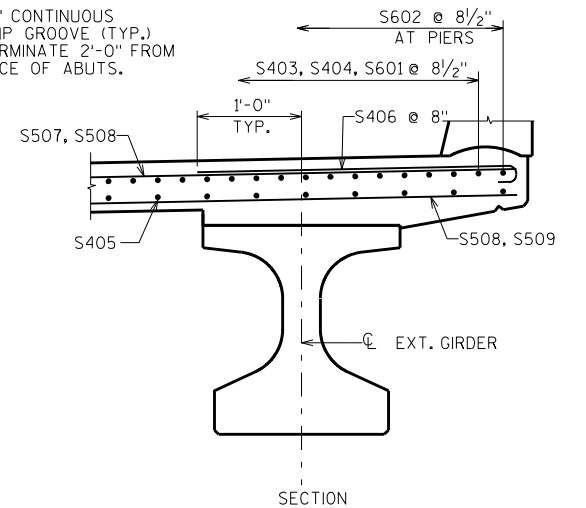
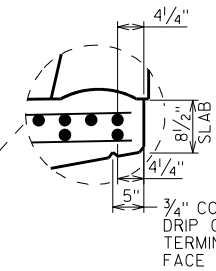
7/8" DIA HIGH STRENGTH BOLTS WITH HEX NUT, TWO WASHERS AND A 3/2" SQUARE x 5/16" PLATE WASHER ON SLOTTED SIDE.

**SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°****SECTION A-A**
(FOR EXTERIOR ATTACHMENT)

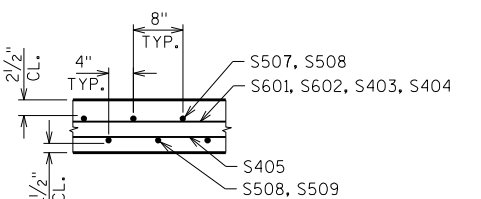
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
STEEL DIAPHRAGMS		SHEET 17	



CROSS SECTION THRU ROADWAY
(LOOKING NORTH)

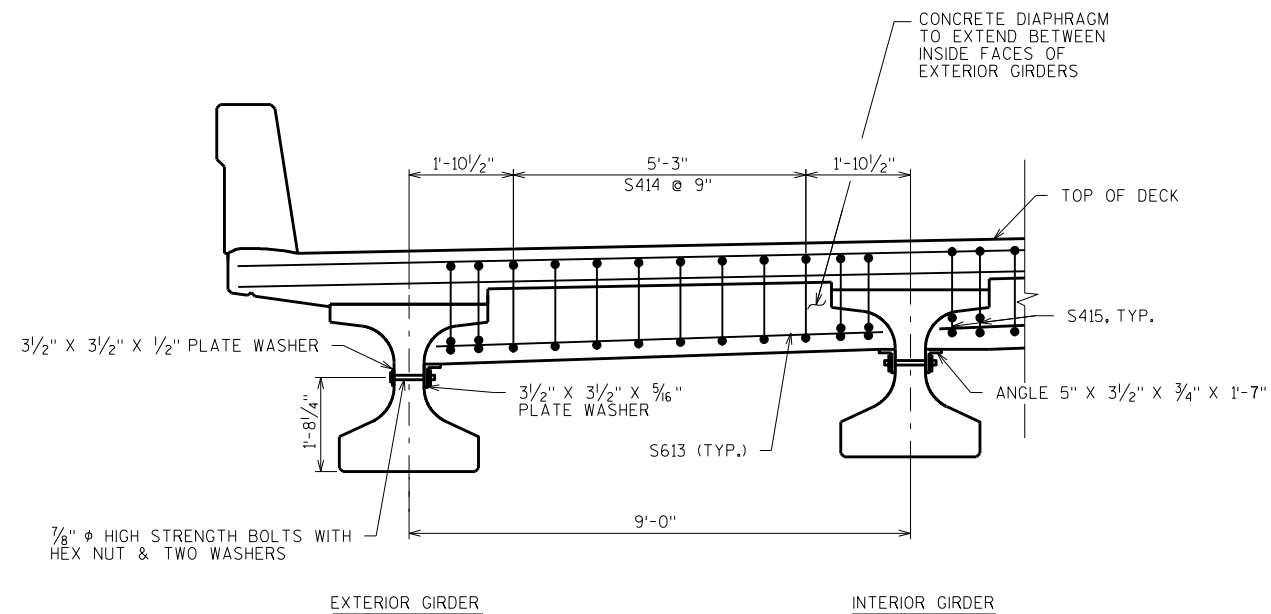


ADDITIONAL REINF. DETAIL
SHOWS TOP TRANSVERSE STEEL ONLY

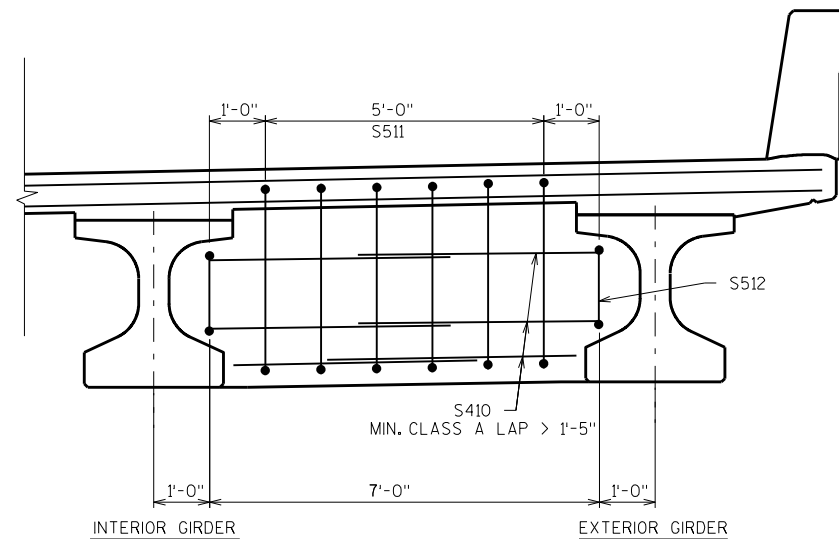


SECTION S-S

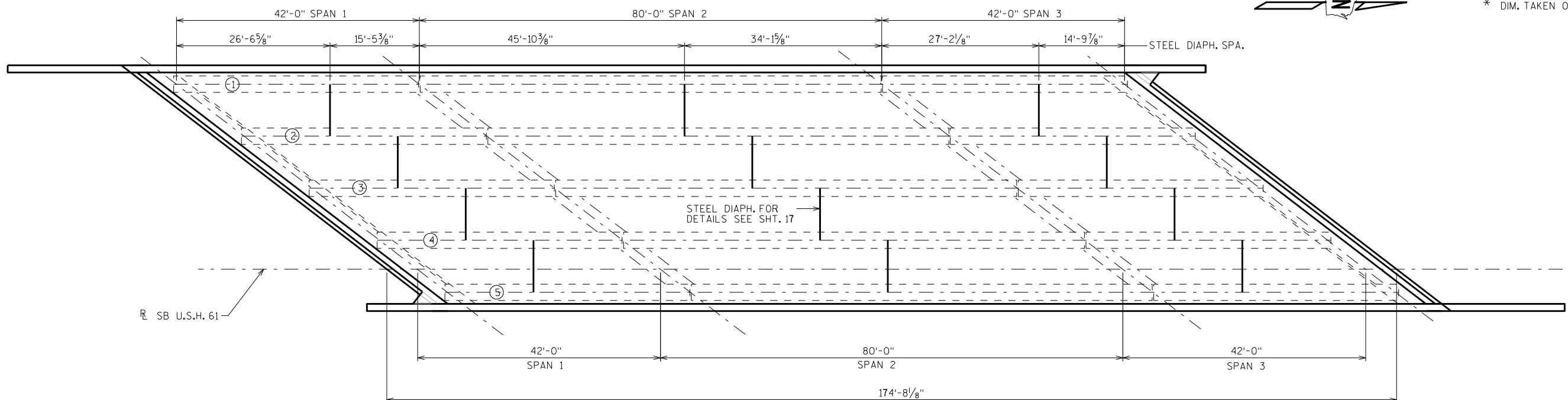
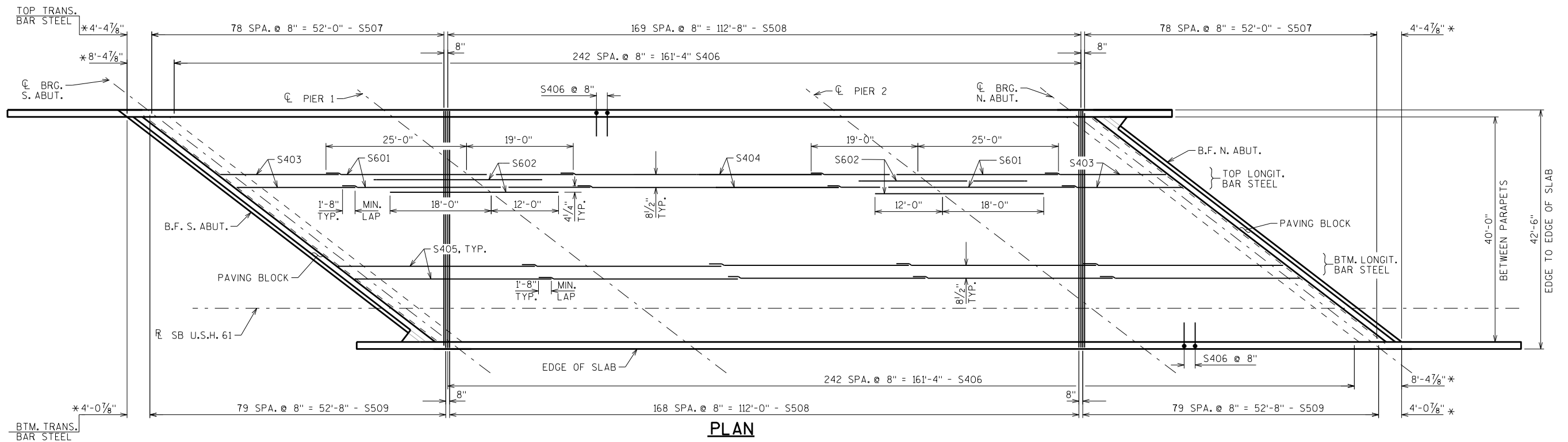
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
SUPERSTRUCTURE CROSS SECTION		SHEET 18	



AT ABUTMENT



AT PIER



PLAN
SHOWING DIAPH. SPA.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
SUPERSTRUCTURE		SHEET 19	

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S601	X	118	44'-0"			LONGITUDINAL CONTINUITY
S602	X	120	30'-0"			LONGITUDINAL CONTINUITY
S403	X	118	20'-7"			LONGITUDINAL TOP - SPAN 1 AND 3
S404	X	59	45'-4"			LONGITUDINAL TOP - SPAN 2
S405	X	300	35'-0"			LONGITUDINAL BOTTOM
S406	X	486	4'-7"	X		TRANSVERSE TOP - OVERHANG
S507	X	158	21'-9"		X	TRANSVERSE TOP
S508	X	339	42'-2"			TRANSVERSE TOP AND BOTTOM
S509	X	160	21'-9"		X	TRANSVERSE BOTTOM
S410	X	96	4'-4"			PIER DIAPHRAGM - HORIZ.
S511	X	48	12'-0"	X		PIER DIAPHRAGM - VERT.
S512	X	16	9'-4"	X		PIER DIAPHRAGM - VERT.
S613	X	40	8'-1"			ABUTMENT DIAPHRAGM - HORIZ.
S414	X	64	6'-8"	X		ABUTMENT DIAPHRAGM - VERT.
S415	X	32	5'-2"	X		ABUTMENT DIAPHRAGM - VERT.
S516	X	504	4'-5"	X		PARAPET - VERT.
S517	X	504	5'-0"	X		PARAPET - VERT.
S518	X	36	57'-6"			PARAPET - HORIZ.
S419	X	16	13'-4"			ABUT. EXPANSION DEVICE - HORIZ.

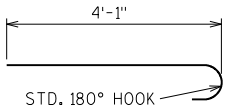
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

● "FAN" LAST TWO SETS OF PARAPET BARS ADJACENT TO F.F. ABUT. BACKWALL

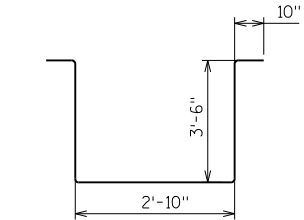
BAR SERIES TABLE

MARK	NO. REOD.	LENGTH
S507	2 SERIES OF 79	1'-8" TO 4'-10"
S509	2 SERIES OF 80	1'-5" TO 4'-1"

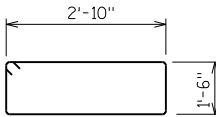
BUNDLE AND TAG EACH SERIES SEPARATELY.



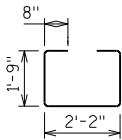
S406



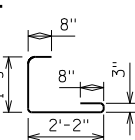
S511



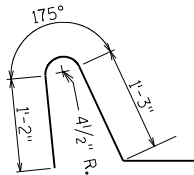
S512



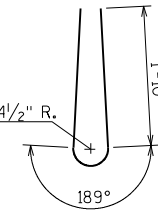
S414



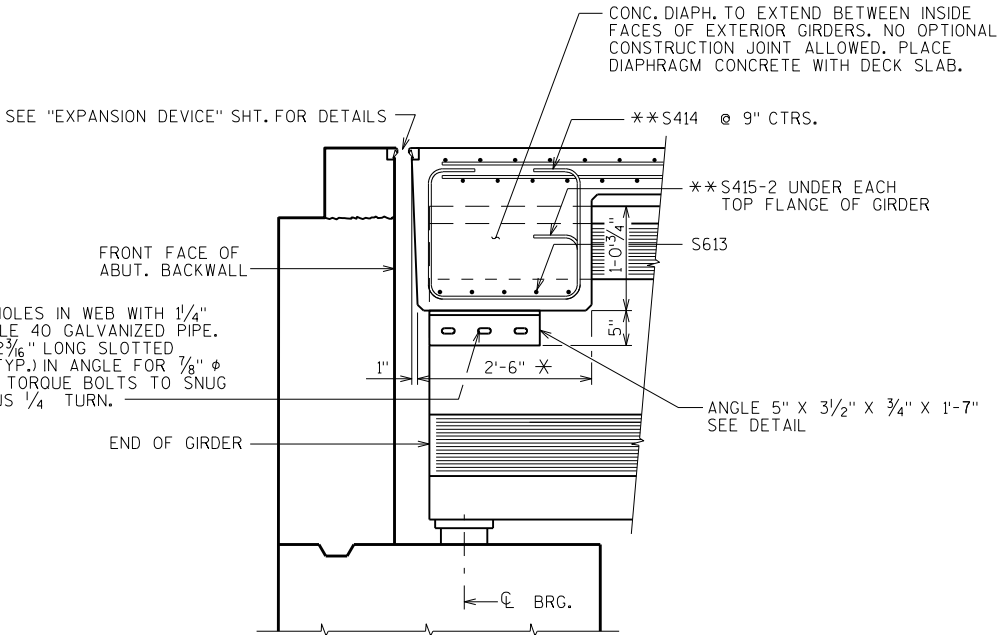
S415



S516



S517

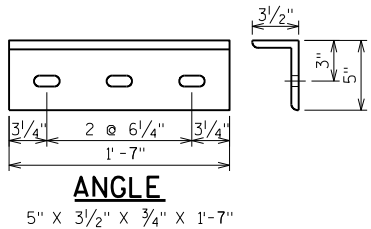


AT ABUT. DIAPHRAGM

* DIMENSION IS TAKEN NORMAL TO CL SUBSTRUCTURE UNITS.

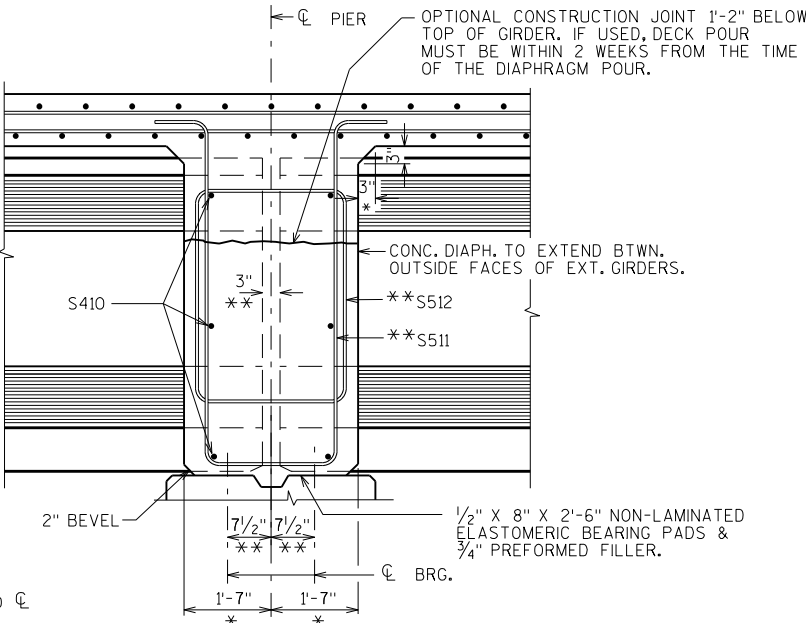
** DIMENSION IS TAKEN PARALLEL TO CL GIRDER.

PART LONGIT. SECTION



ANGLE

PROVIDE 3/2" X 3/2" X 5/16" PLATE WASHERS AT ALL LOCATIONS EXCEPT AT EXTERIOR FACES OF EXTERIOR GIRDERS WHERE 3/2" X 3/2" X 1/2" PLATE WASHERS SHALL BE PROVIDED.



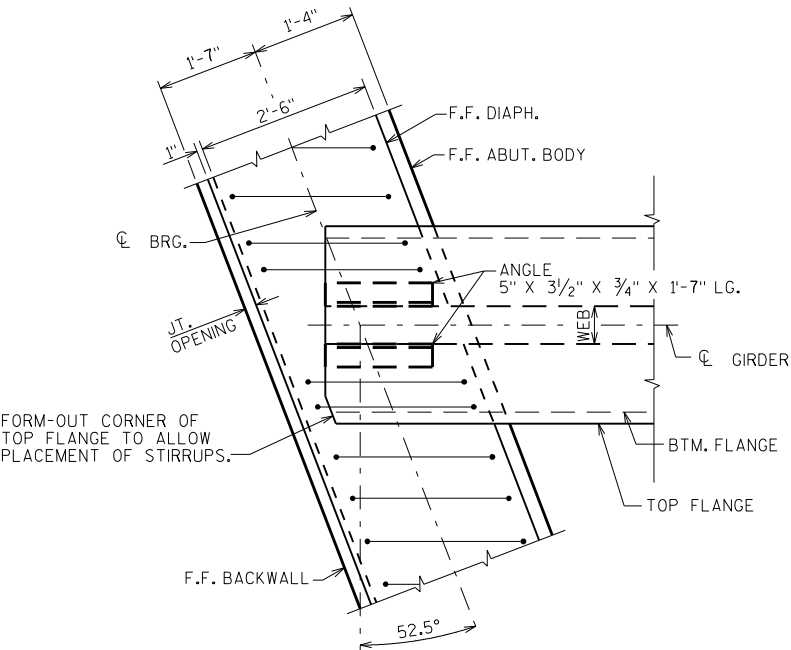
AT PIER DIAPHRAGM

NOTES

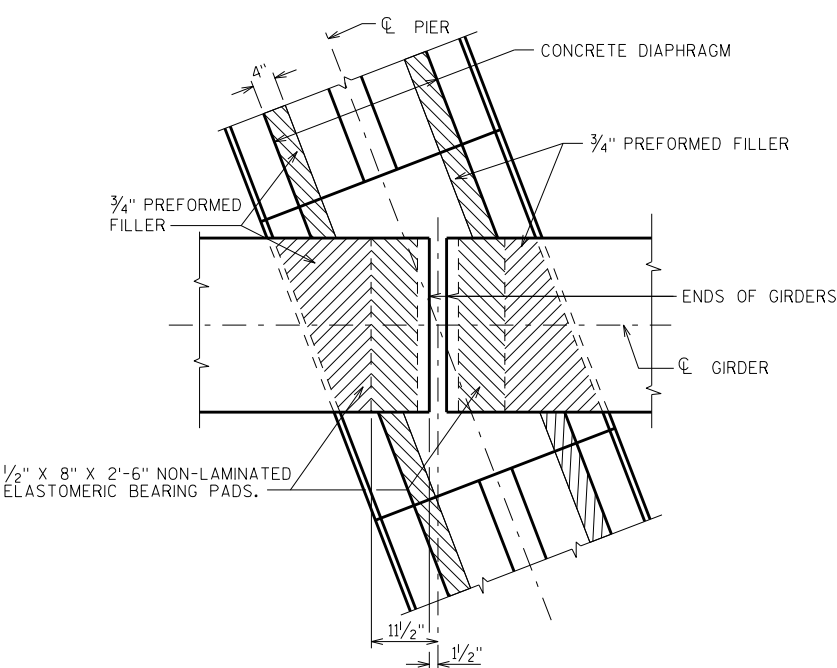
DIAPHRAGM SUPPORT ANGLES SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUT AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL SUPPORT ANGLES SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

ALL DIAPHRAGM SUPPORT HARDWARE SHALL BE INCIDENTAL TO "CONCRETE MASONRY BRIDGES".



AT ABUTMENT



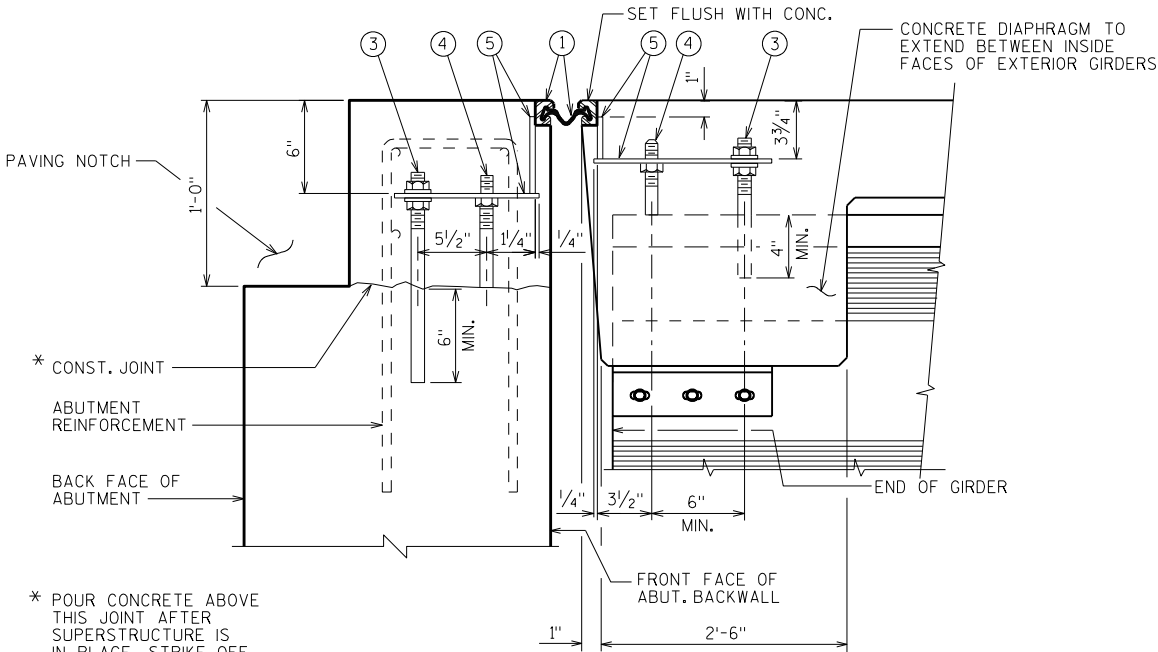
AT PIER

TOP VIEW OF DIAPHRAGM

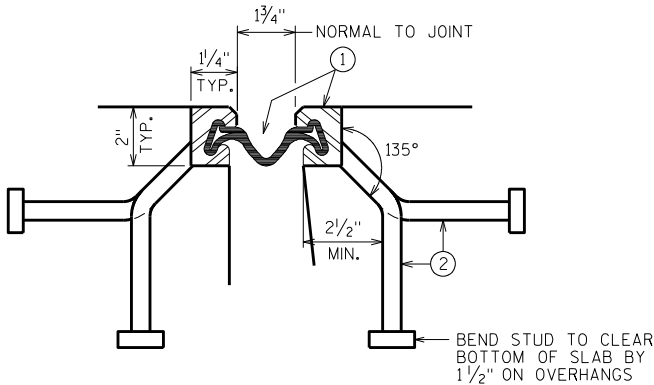
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
SUPERSTRUCTURE DETAILS		SHEET 20	

LEGEND

- ① NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.
- ② STUDS $\frac{5}{8}$ " ϕ X $6\frac{3}{4}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ③ $\frac{3}{4}$ " ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON ϕ OF GIRDER AND AS SHOWN ON ABUTMENT BACKWALL.
- ④ $\frac{3}{4}$ " ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- ⑤ FABRICATE SUPPORT FROM 3" X $\frac{1}{2}$ " BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $1\frac{1}{2}$ " ϕ HOLE FOR NO. 3 AND 1" ϕ HOLE FOR NO. 4.
- ⑥ GALVANIZED PLATE $\frac{3}{8}$ " X 10" X 3'-0" LONG WITH HOLES FOR NO. 7.
- ⑦ $\frac{3}{4}$ " ϕ X $1\frac{1}{2}$ " STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE, RECESS $\frac{1}{16}$ " BELOW PLATE SURFACE.
- ⑧ $\frac{3}{4}$ " ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- ⑨ $\frac{3}{4}$ " ϕ X $2\frac{1}{4}$ " GALVANIZED THREADED COUPLING.
- ⑩ 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

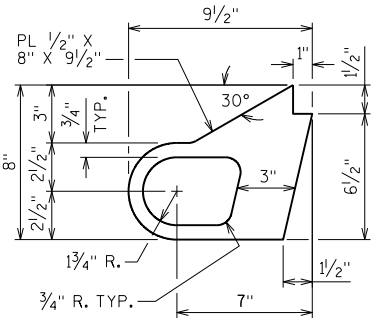


SECTION THRU JOINT AT ABUTMENT
NORMAL TO ϕ SUBSTRUCTURE

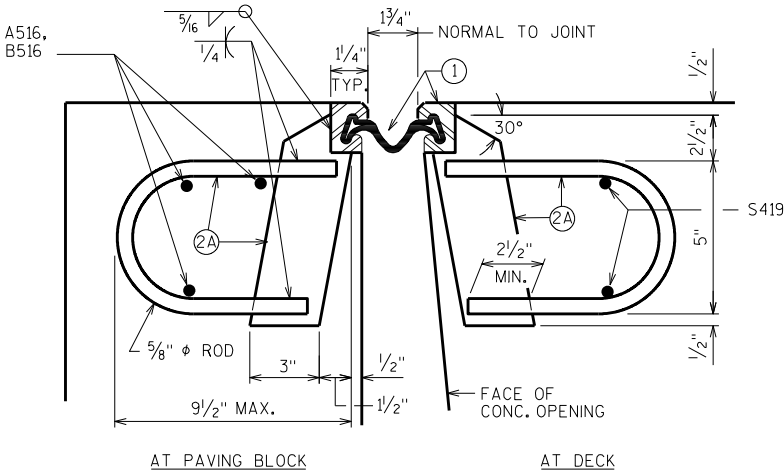


SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS, MEDIANS AND SIDEWALKS

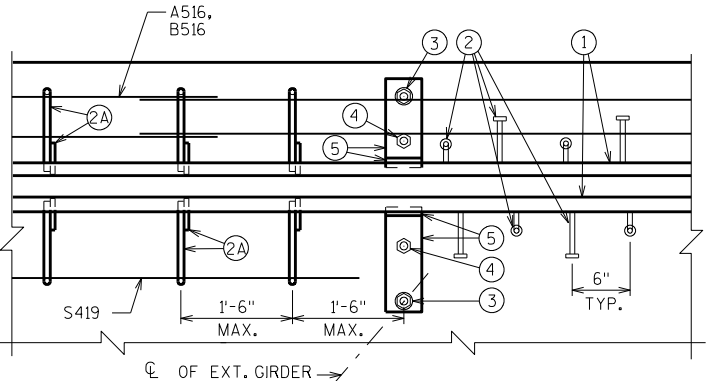


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

GENERAL NOTES

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

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

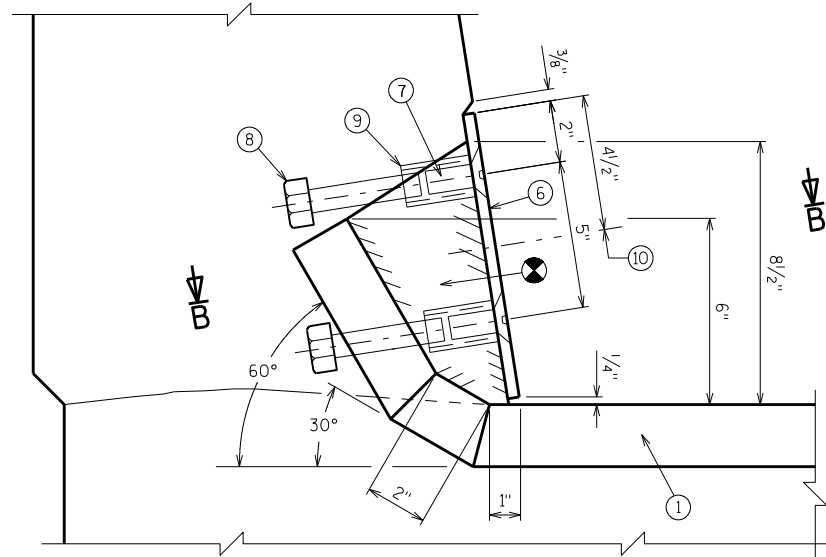
FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

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

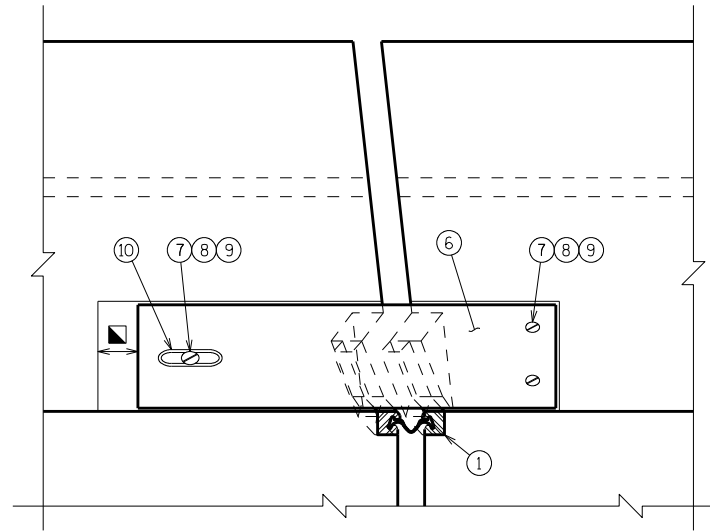
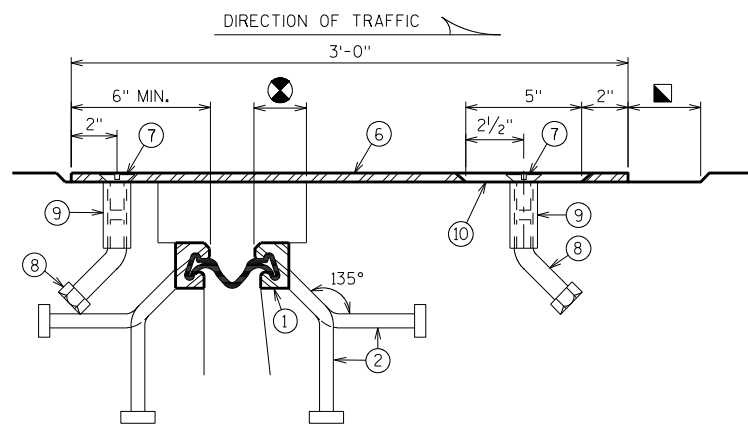
ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-22-273".

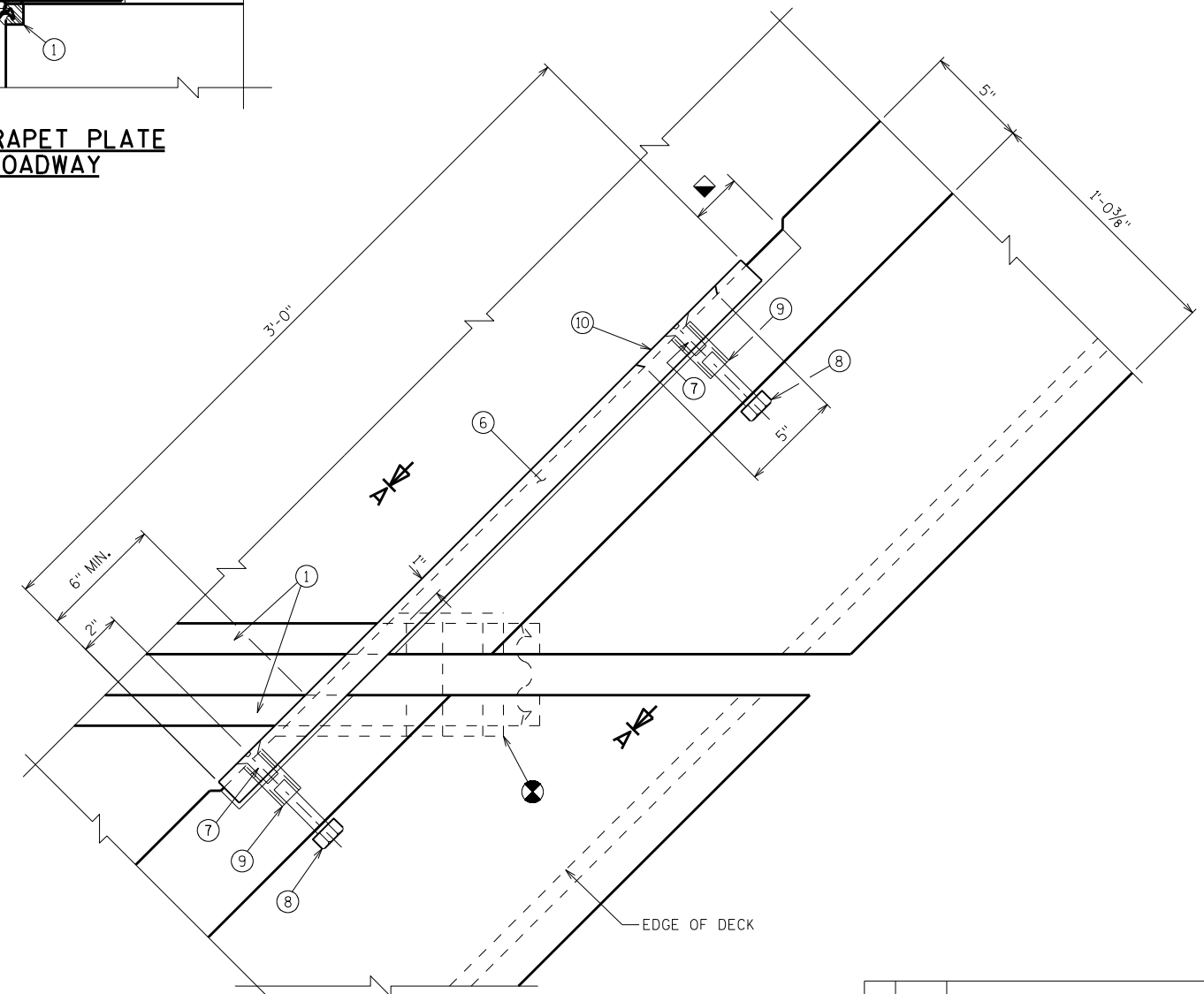
NO.		DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION				
STRUCTURE B-22-273				
DRAWN BY EMK			PLANS CK'D. AMB	
EXPANSION DEVICE				SHEET 21



SECTION A-A

VIEW OF PARAPET PLATE
FROM ROADWAY

SECTION B-B



PLAN

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

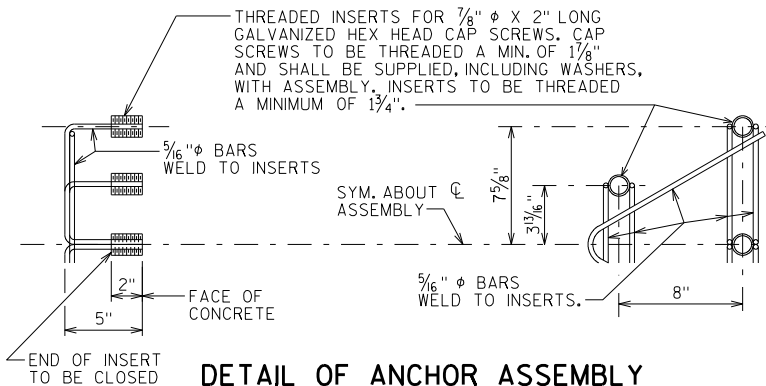
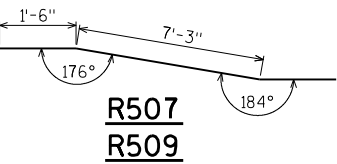
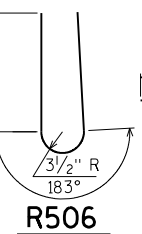
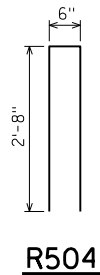
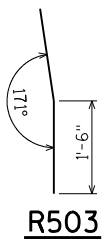
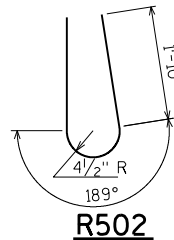
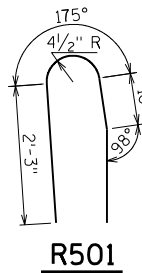
◼ JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
COVER PLATE DETAILS			SHEET 22

BILL OF BARS

FOR ABUTMENT PARAPETS

BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	31	31	5-10	X		PARAPET VERT.
R502	X	31	31	5-0	X		PARAPET VERT.
R503	X	24	24	3-0	X		PARAPET VERT.
R504	X	34	34	5-7	X		PARAPET VERT.
R505	X	22	22	4-9	X		PARAPET VERT.
R506	X	12	12	4-10	X		PARAPET VERT.
R507	X	1	1	13-5	X		PARAPET HORIZ.
R508	X	5	5	13-7			PARAPET HORIZ.
R509	X	1	1	23-5	X		PARAPET HORIZ.
R510	X	5	5	23-7			PARAPET HORIZ.



DETAIL OF ANCHOR ASSEMBLY

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

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

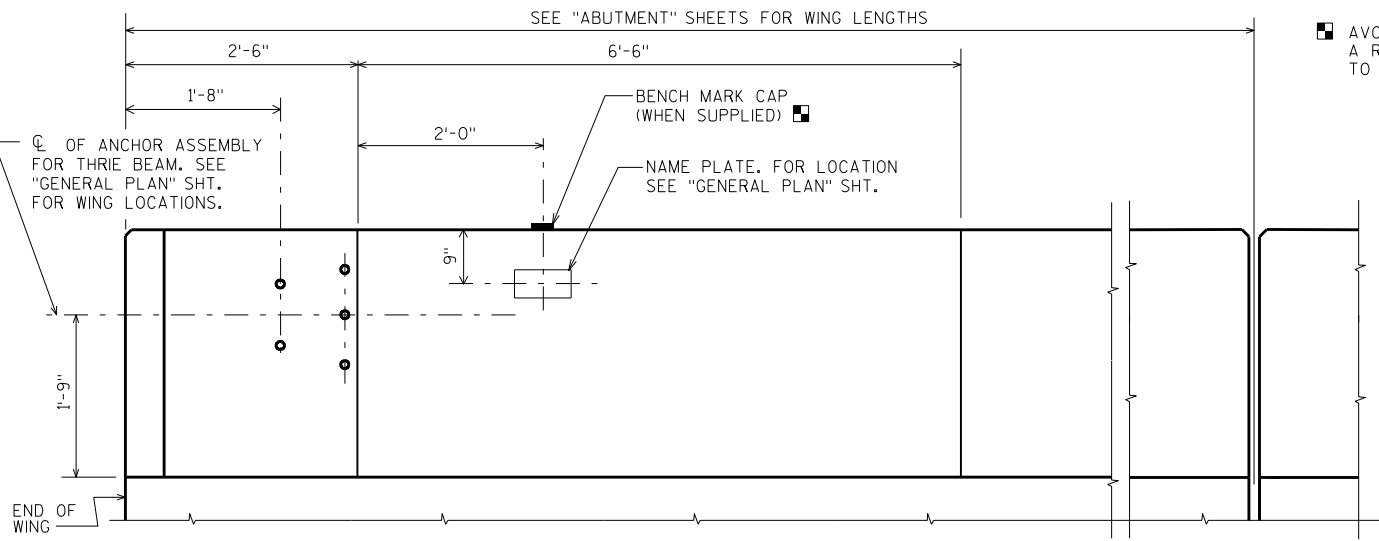
NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-22-273

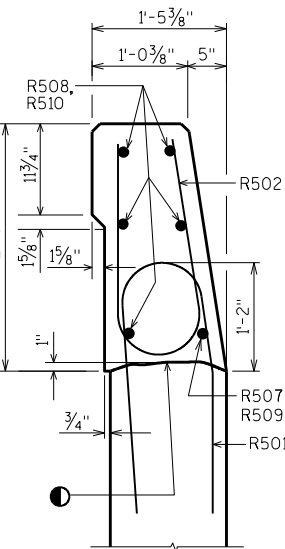
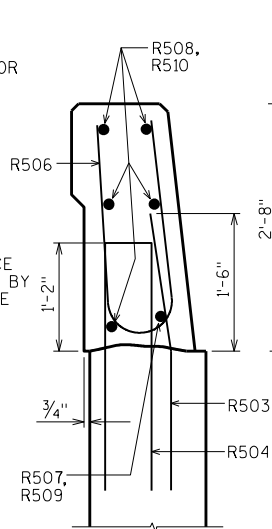
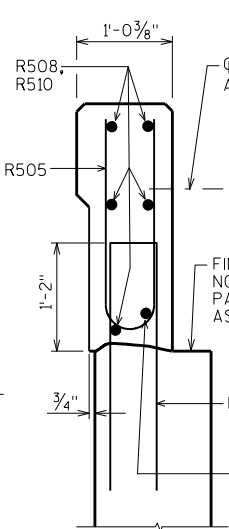
DRAWN BY EMK
PLANS CK'D. AMBSINGLE SLOPE
PARAPET 32SS

SHEET 23



INSIDE ELEVATION

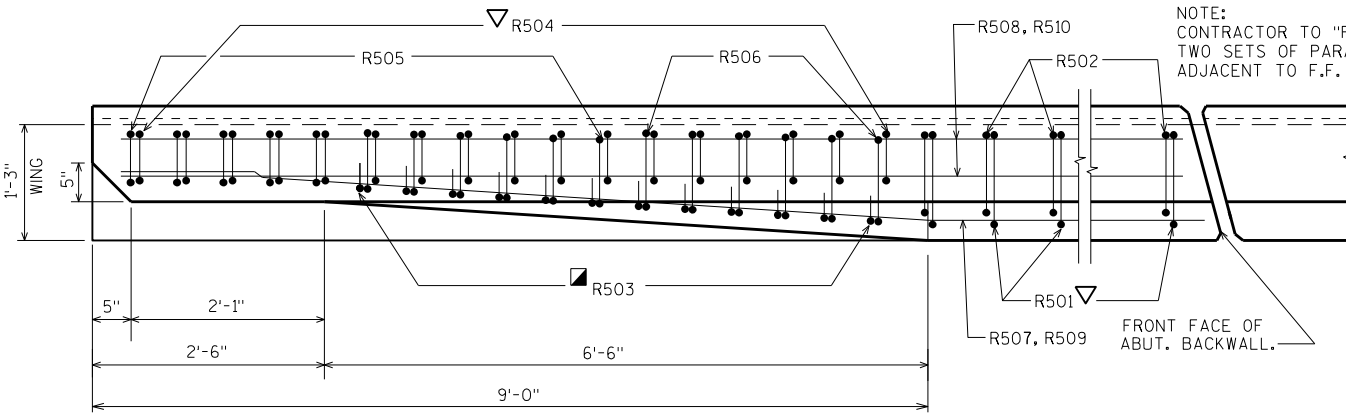
AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



SECTION A

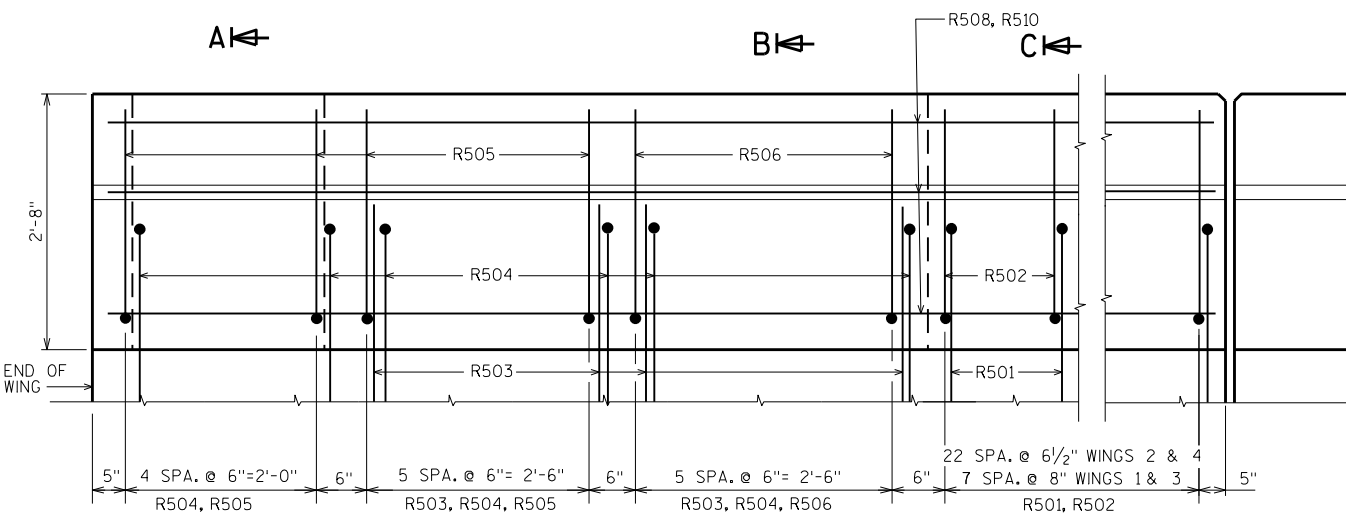
SECTION B

SECTION C

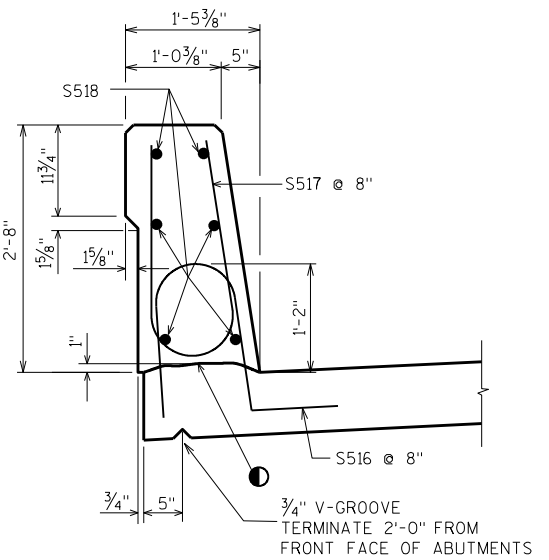


PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - 'V' GROOVE.



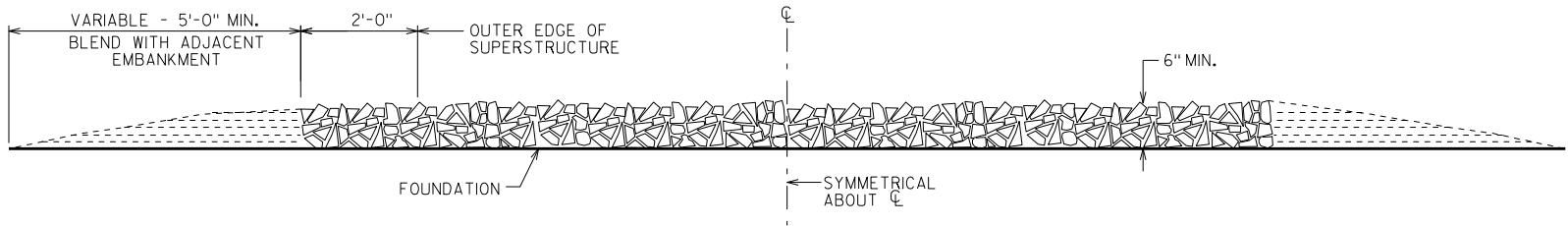
OUTSIDE ELEVATION



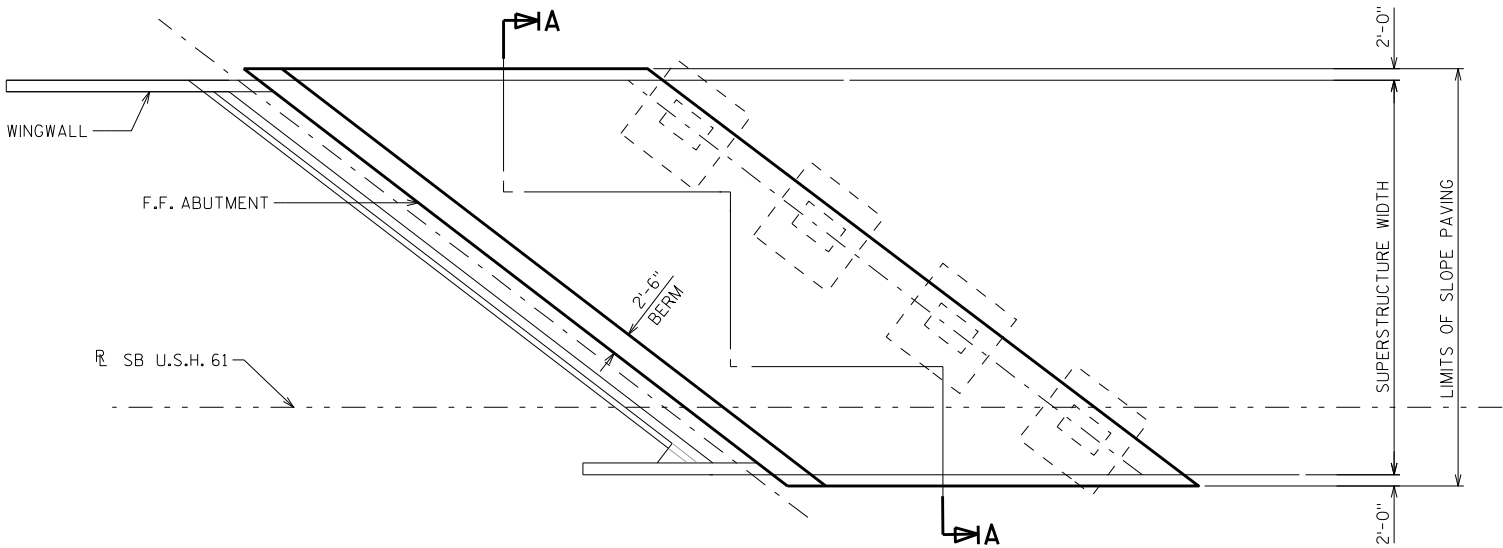
CONST. JOINT - STRIKE OFF AS SHOWN.

R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

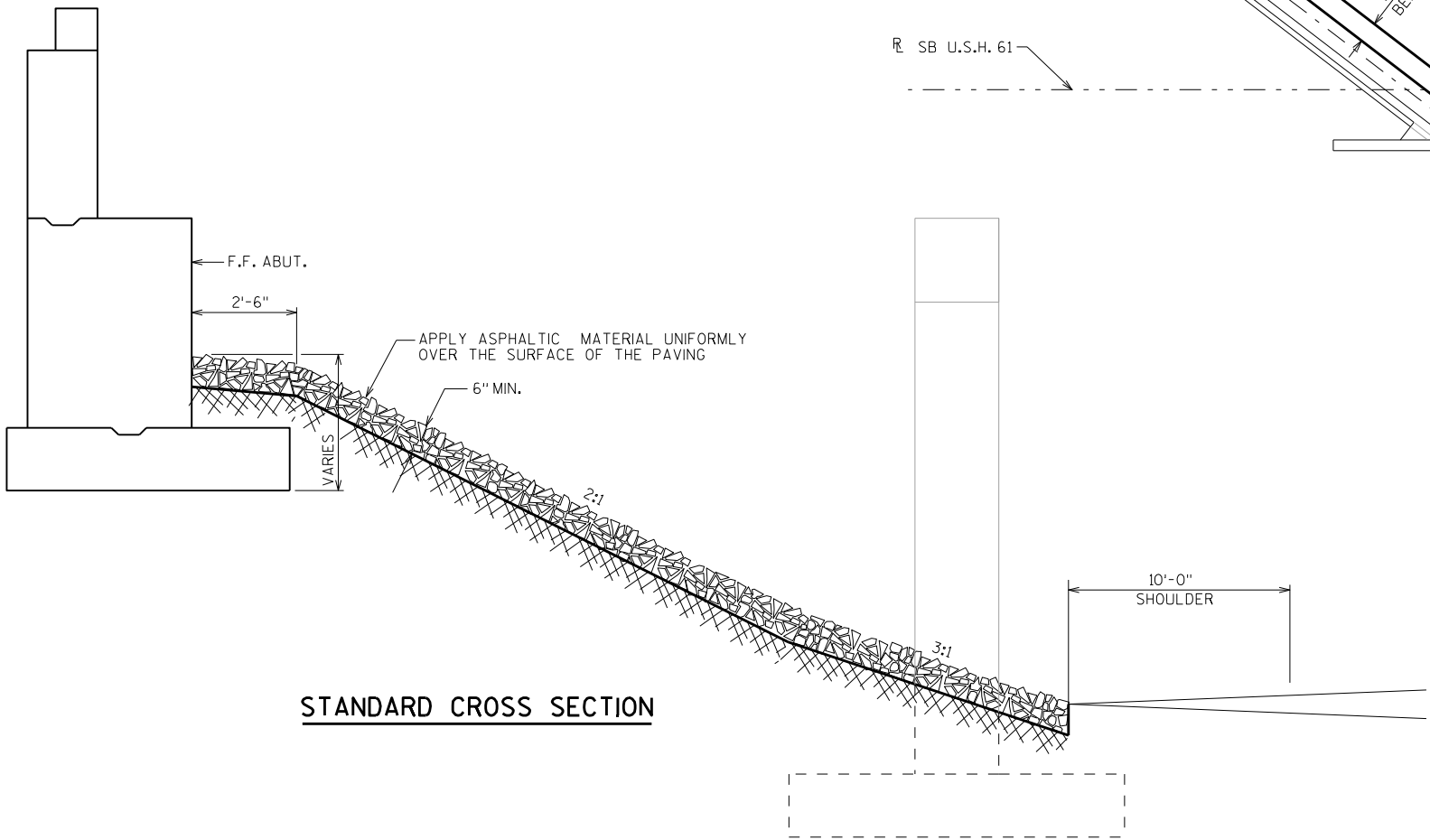
R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



SECTION A-A



PLAN



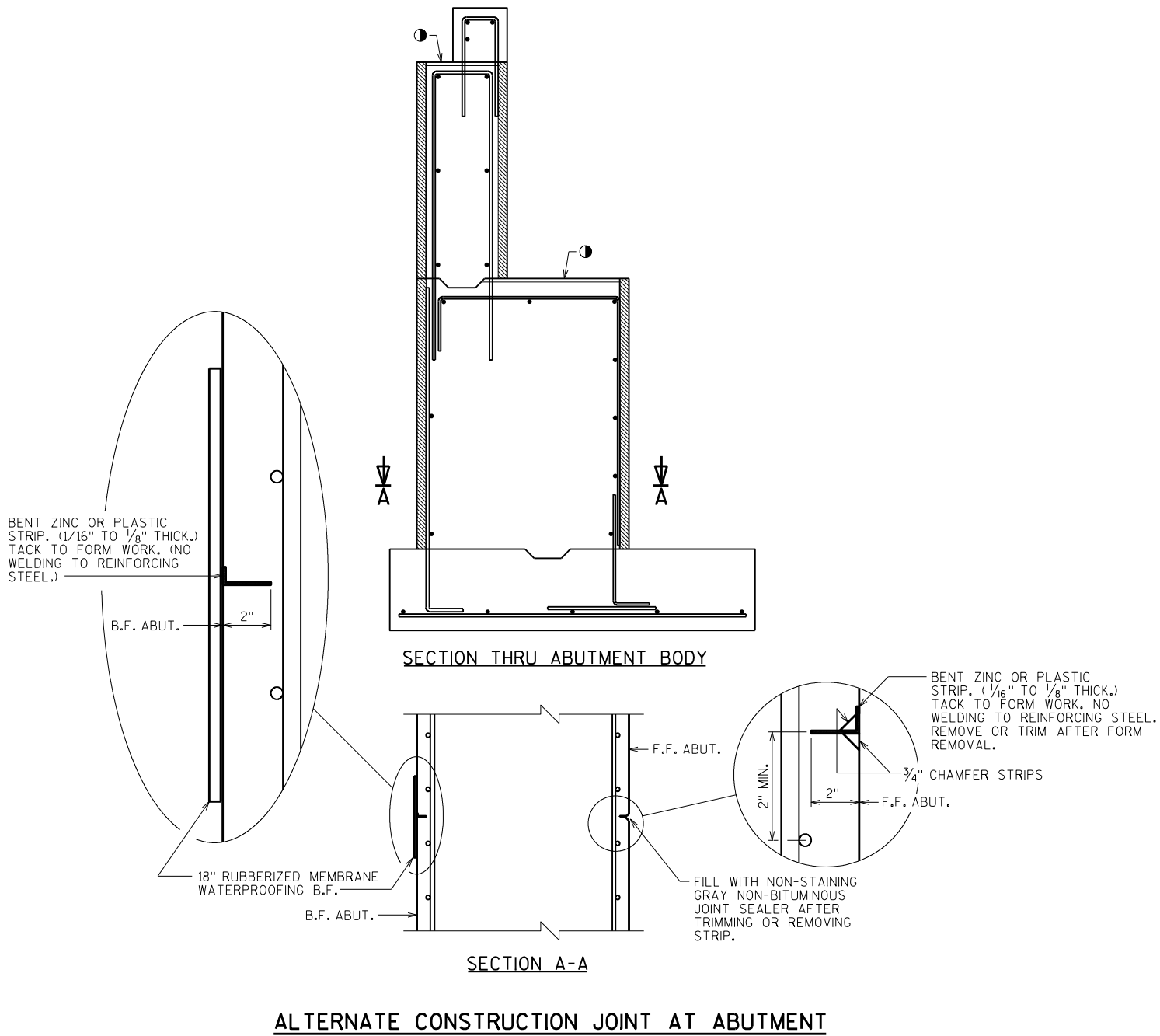
STANDARD CROSS SECTION

NOTES

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

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
SLOPE PAVING (CRUSHED AGGREGATE)		SHEET 24	



NOTES

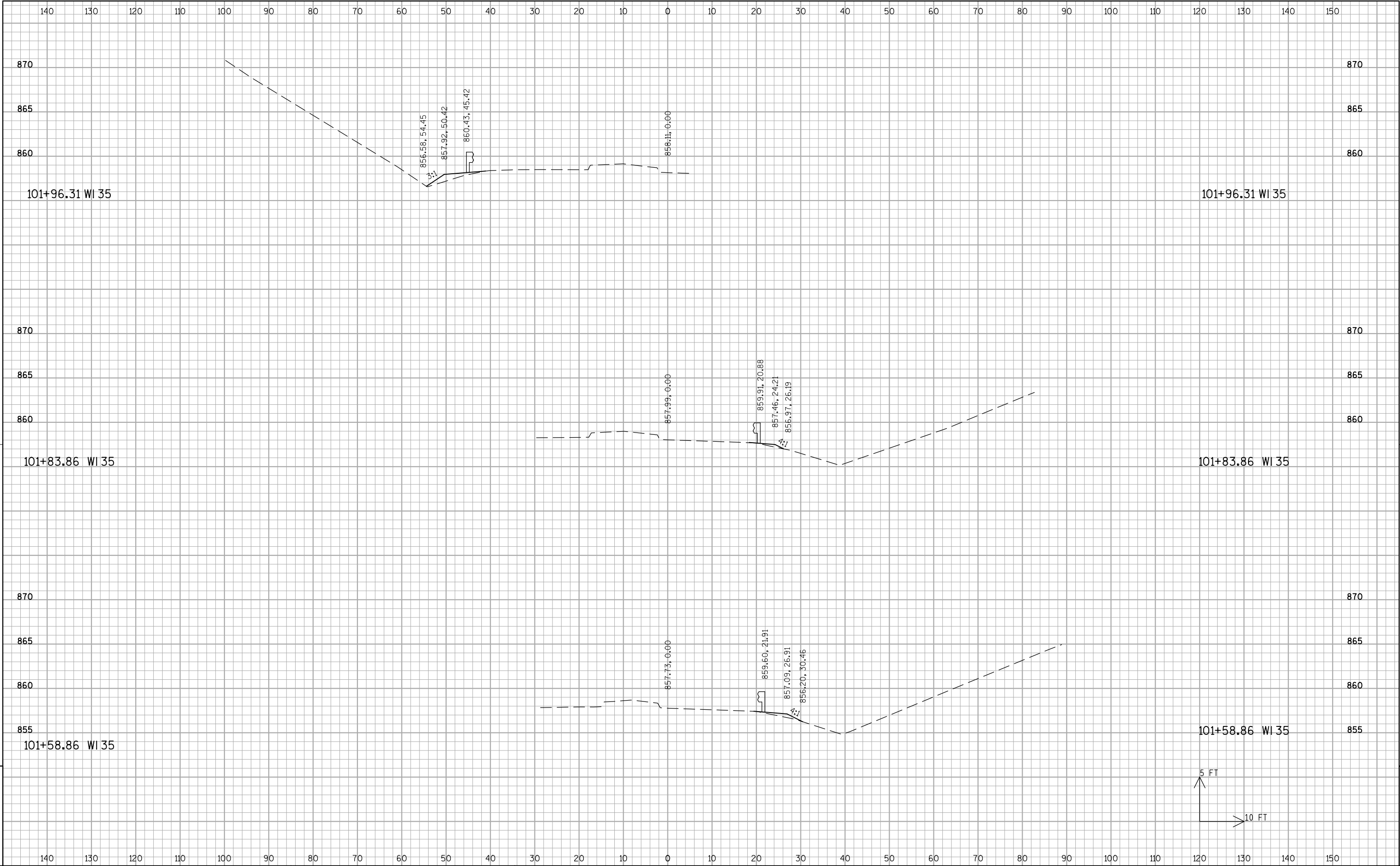
PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

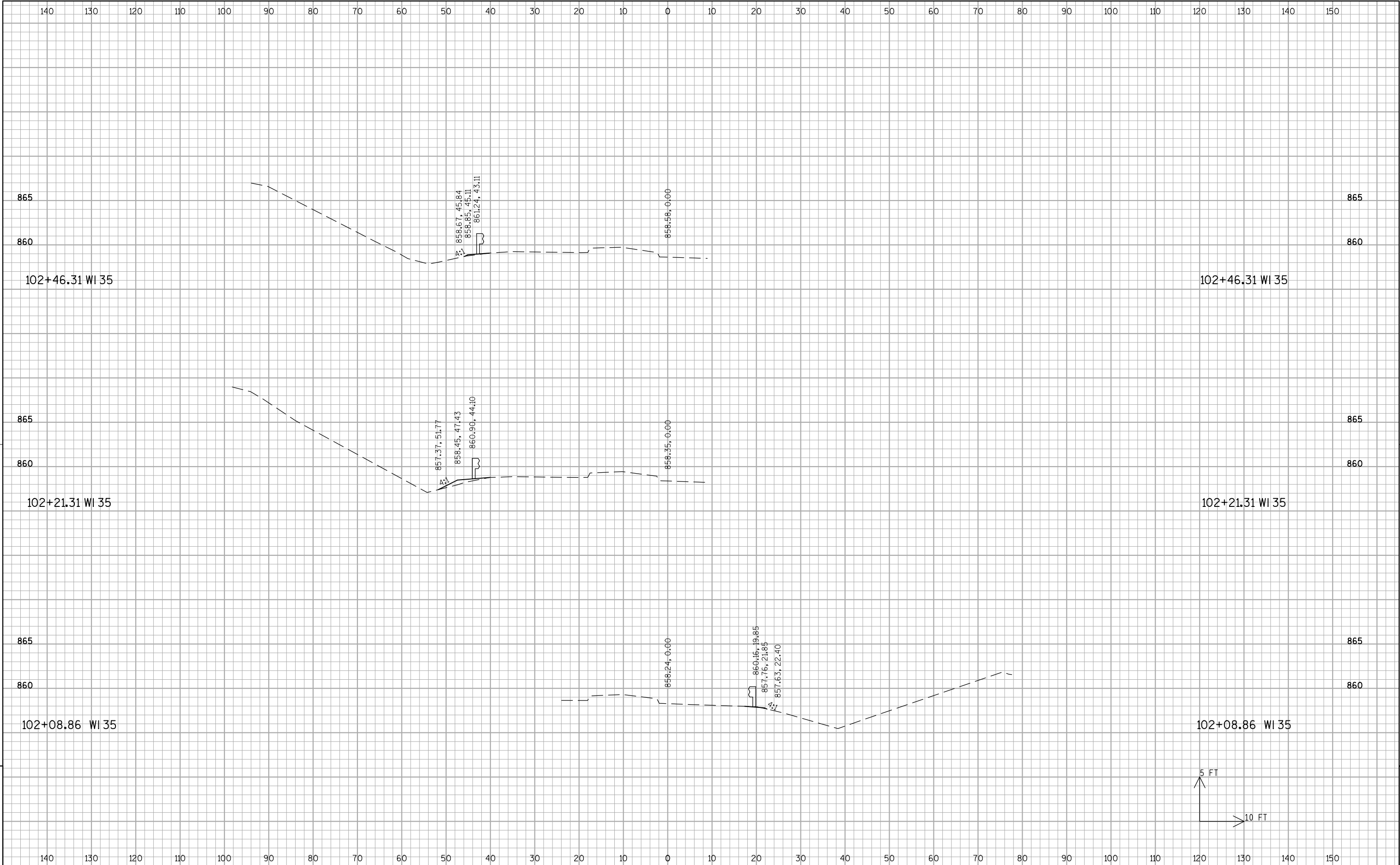
- 1 USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-273			
DRAWN BY EMK		PLANS CK'D. AMB	
ALTERNATE CONSTRUCTION JOINT			SHEET 25



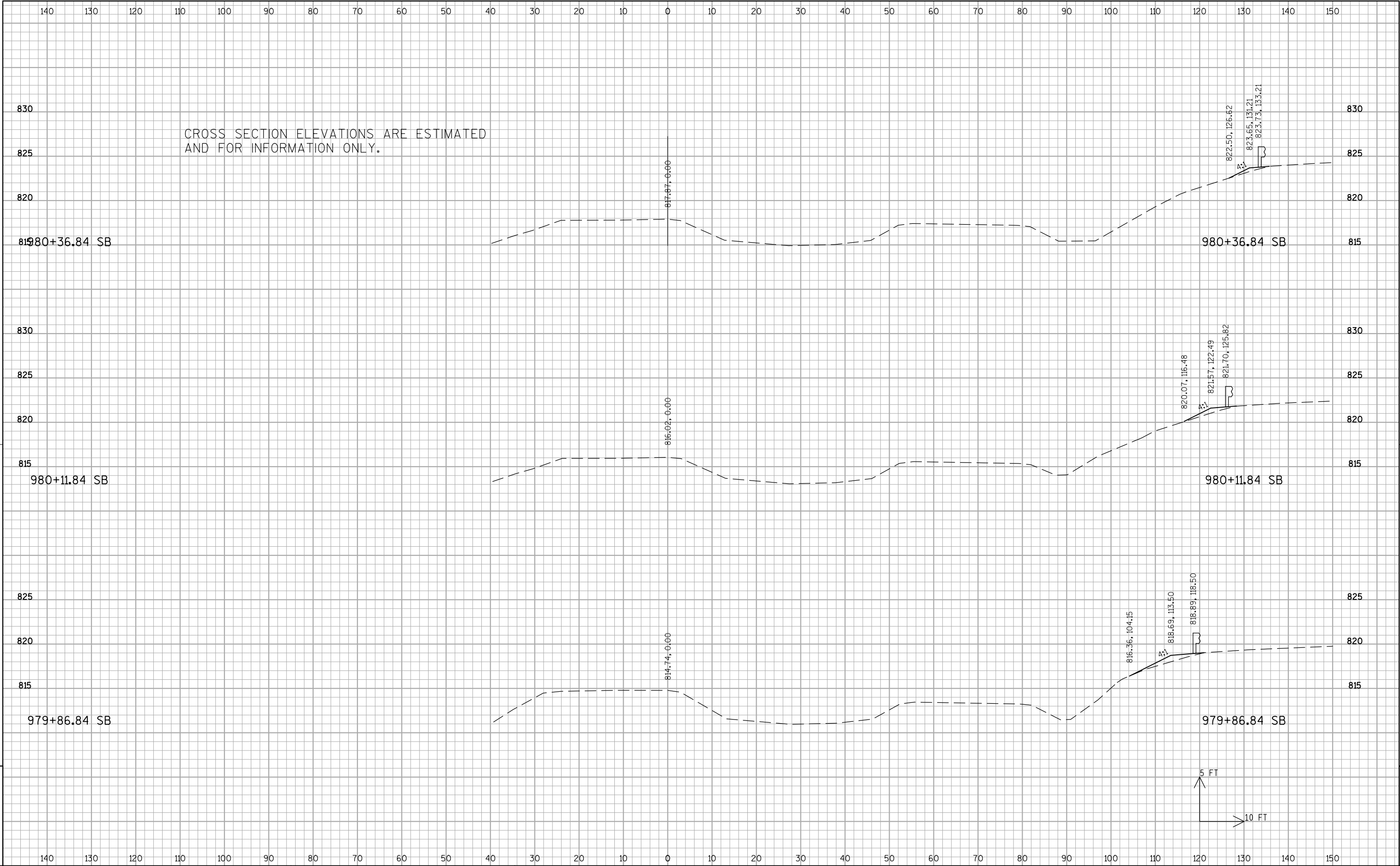
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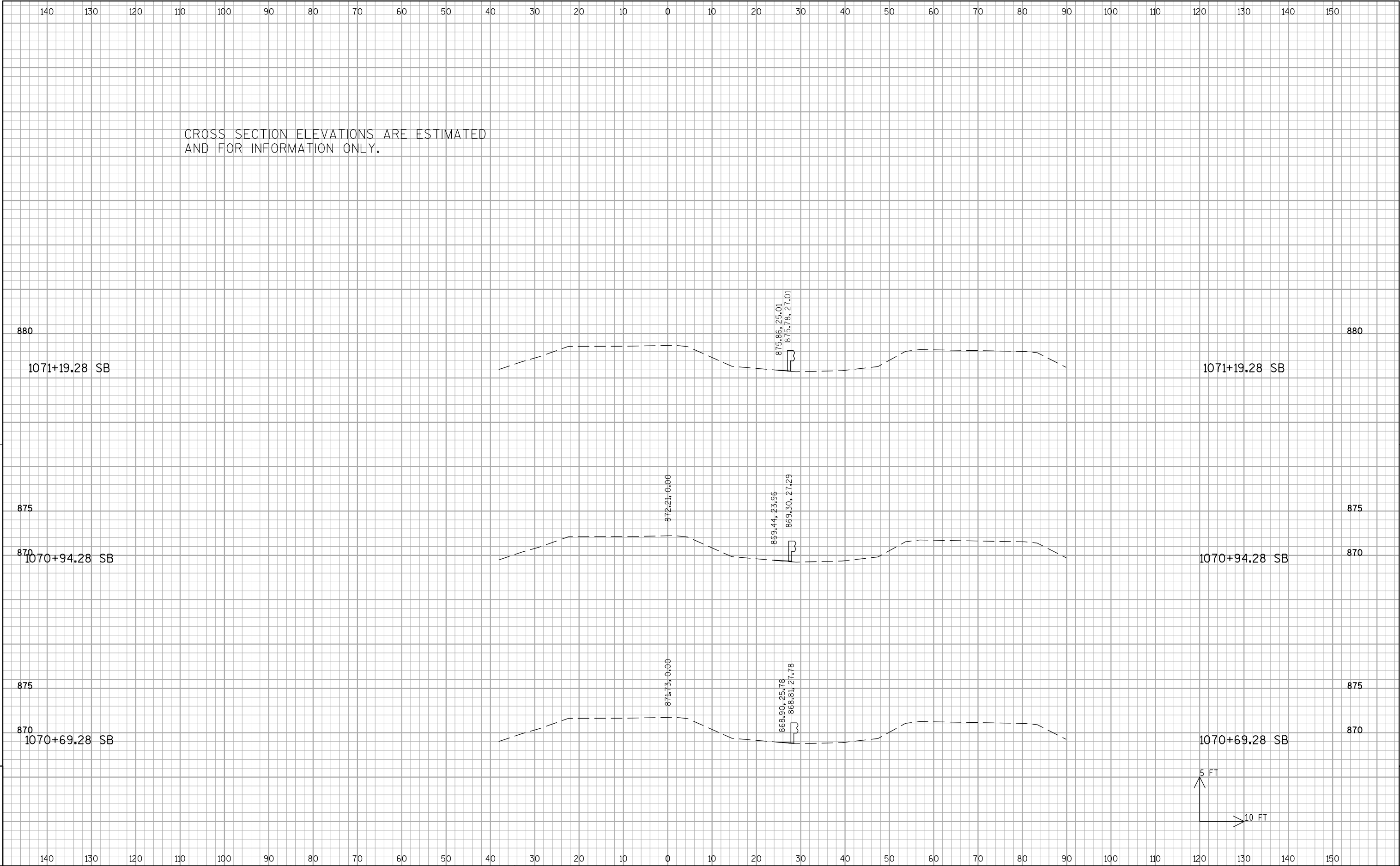
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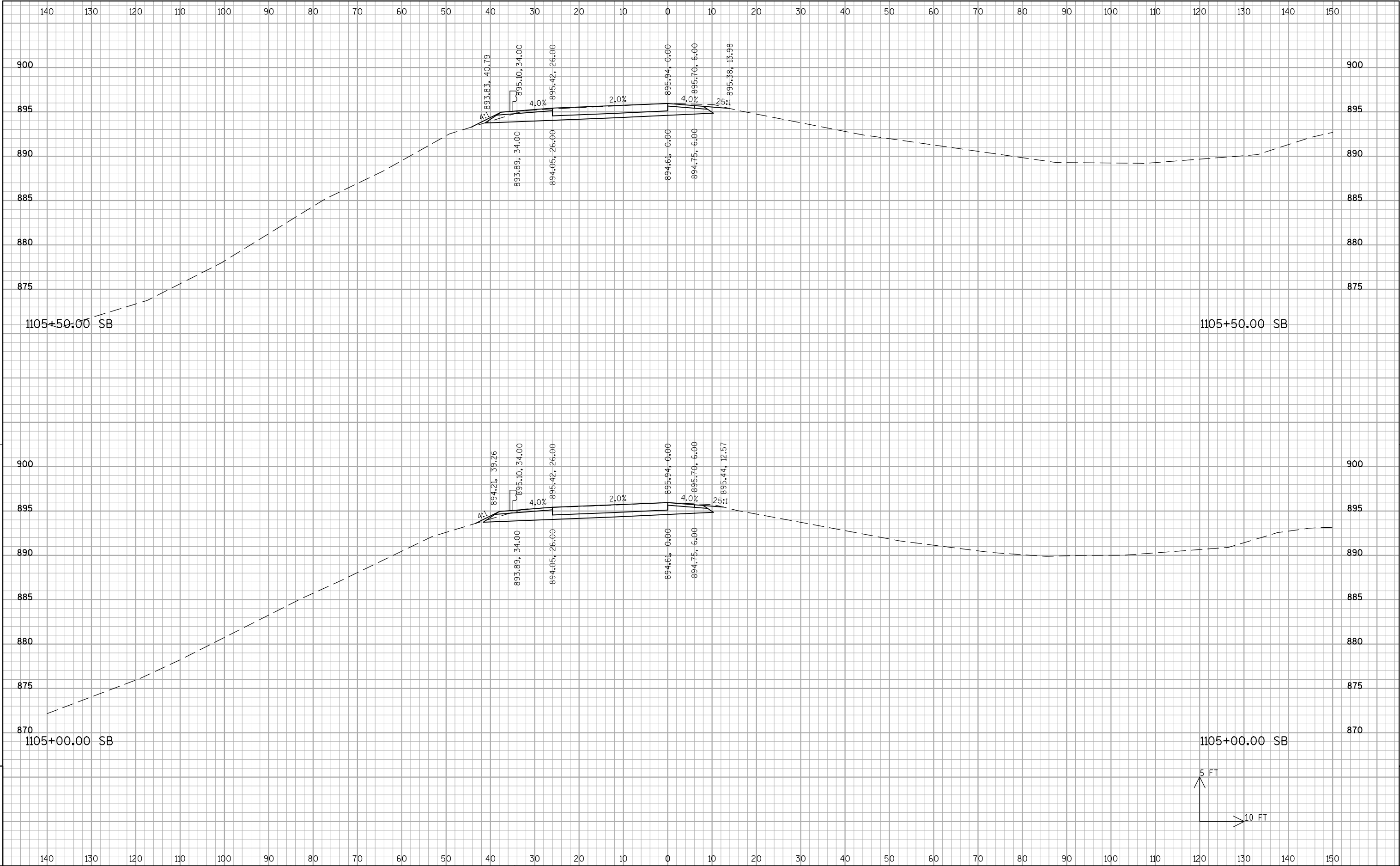


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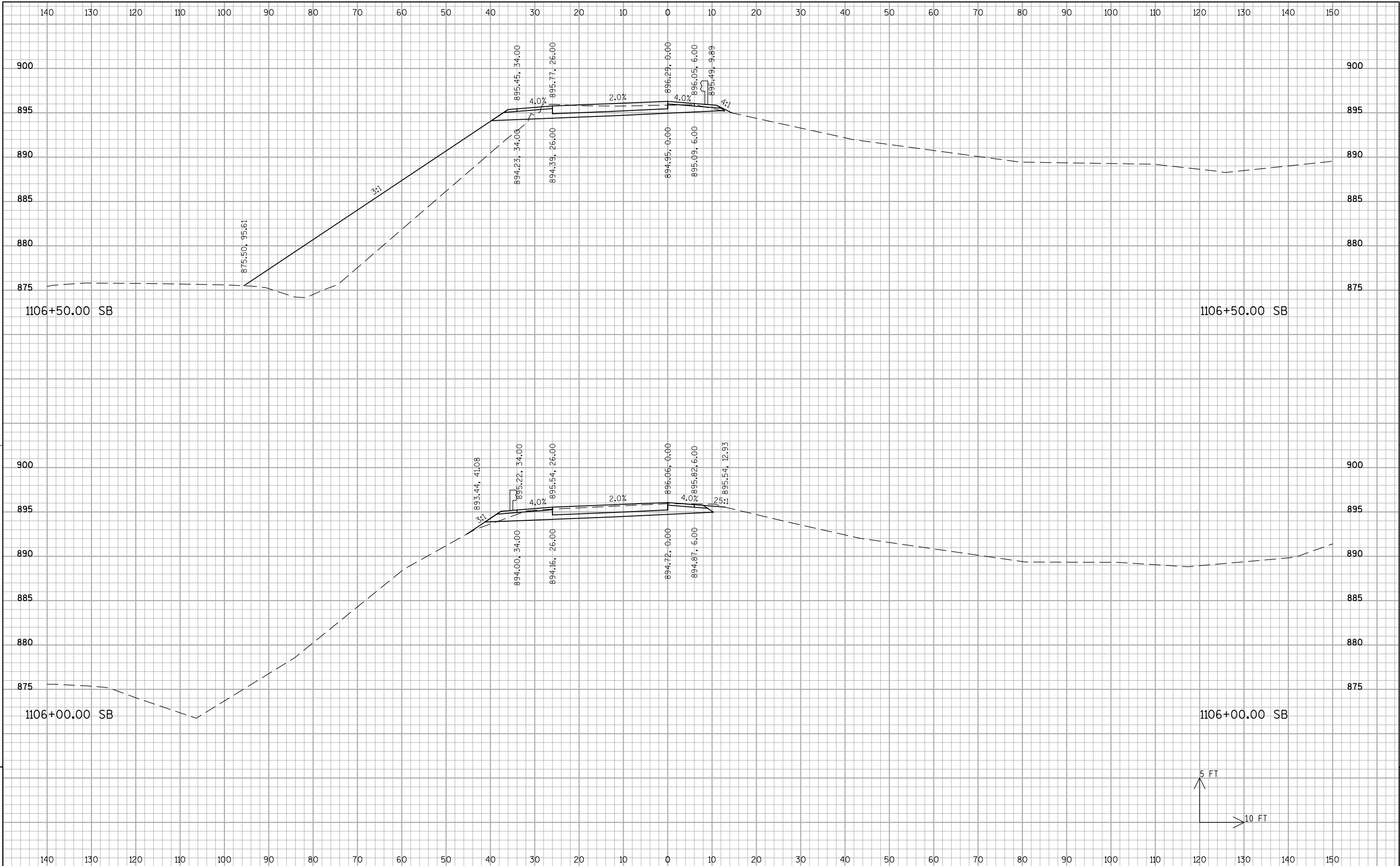






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PROJECT NO: 1200-01-04

HWY: USH 61

COUNTY: GRANT

CROSS SECTIONS: USH 61

SHEET

E

FILE NAME : K:\123803_USH-61\3.0 Deliverables\3.2 Roadway\Sheets\090201_xs-SB 61-beam guard.dgn

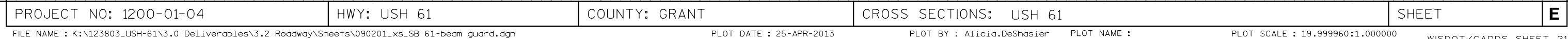
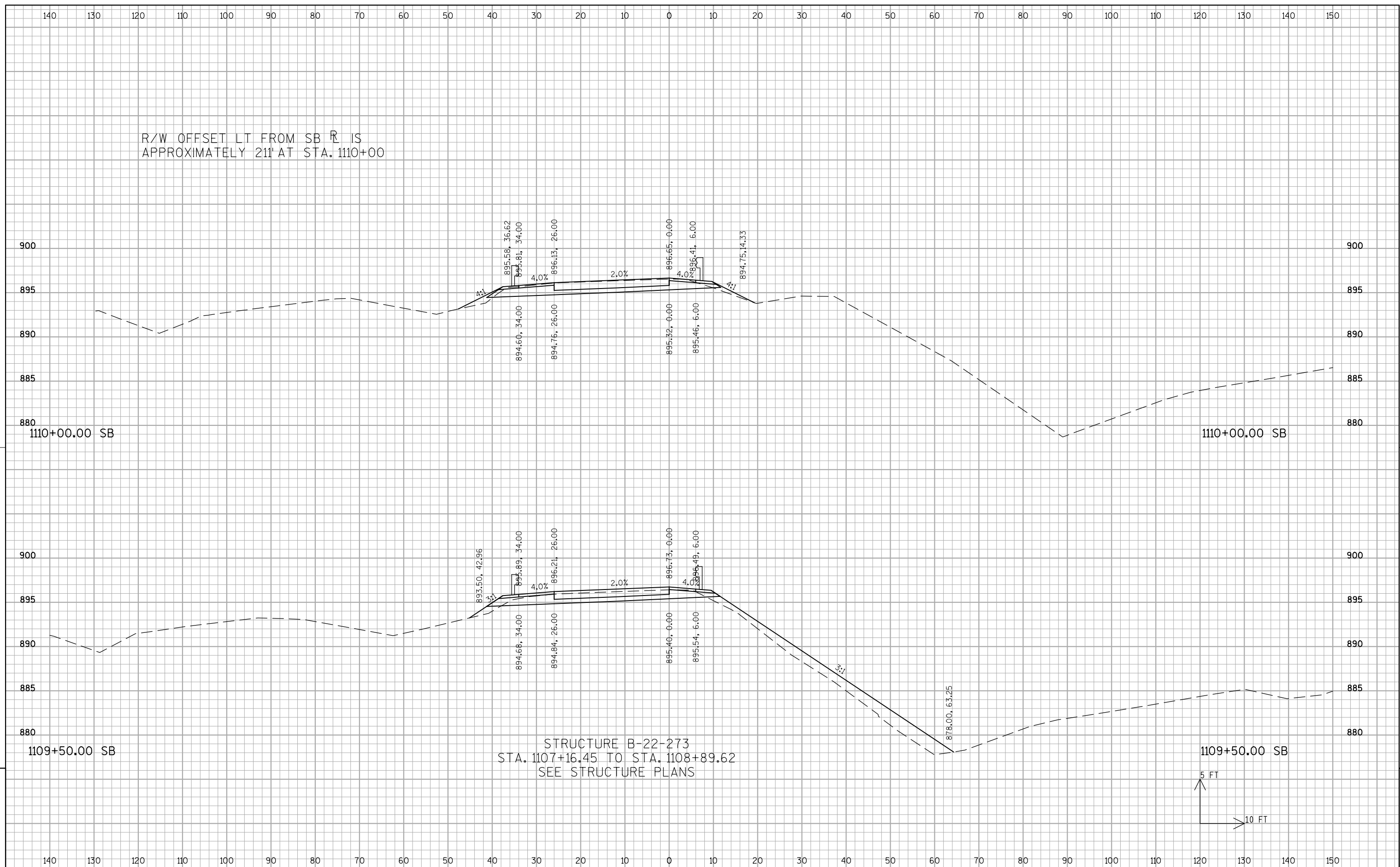
PLOT DATE : 25-APR-2013

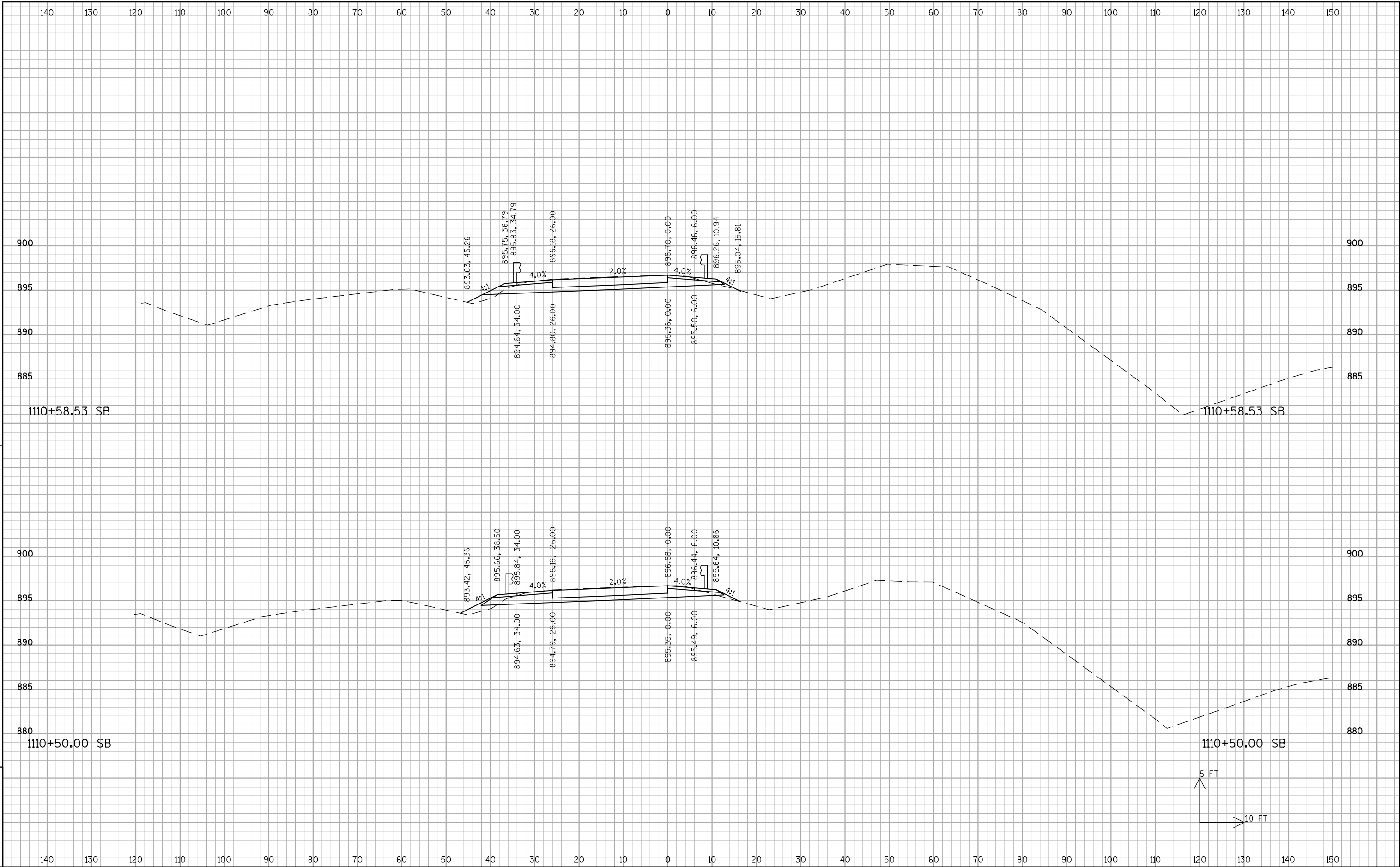
PLOT BY : Alicia.DeShasier

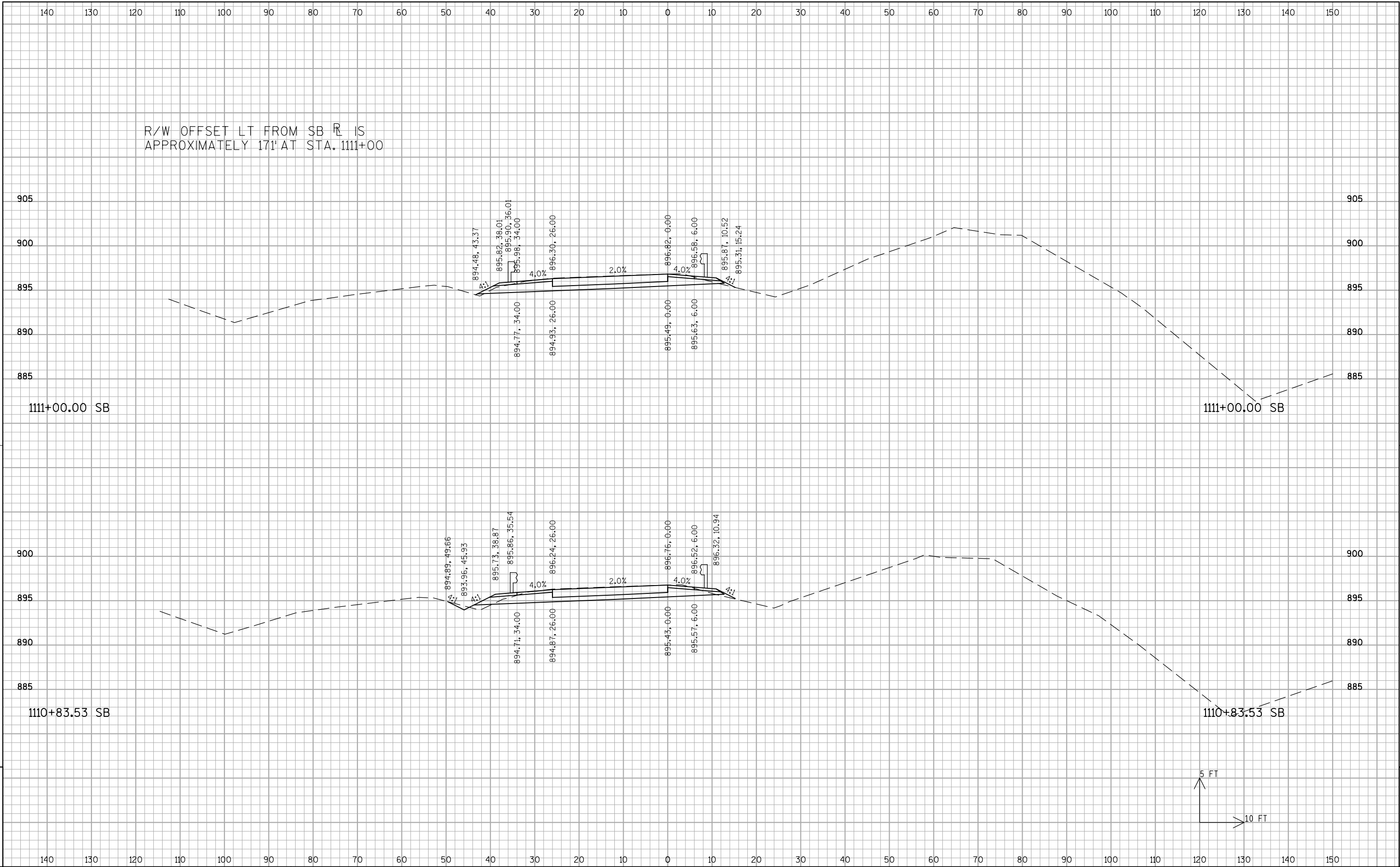
PLOT NAME :

PLOT SCALE : 19.999960:1.000000

WISDOT/CADDS SHEET 21

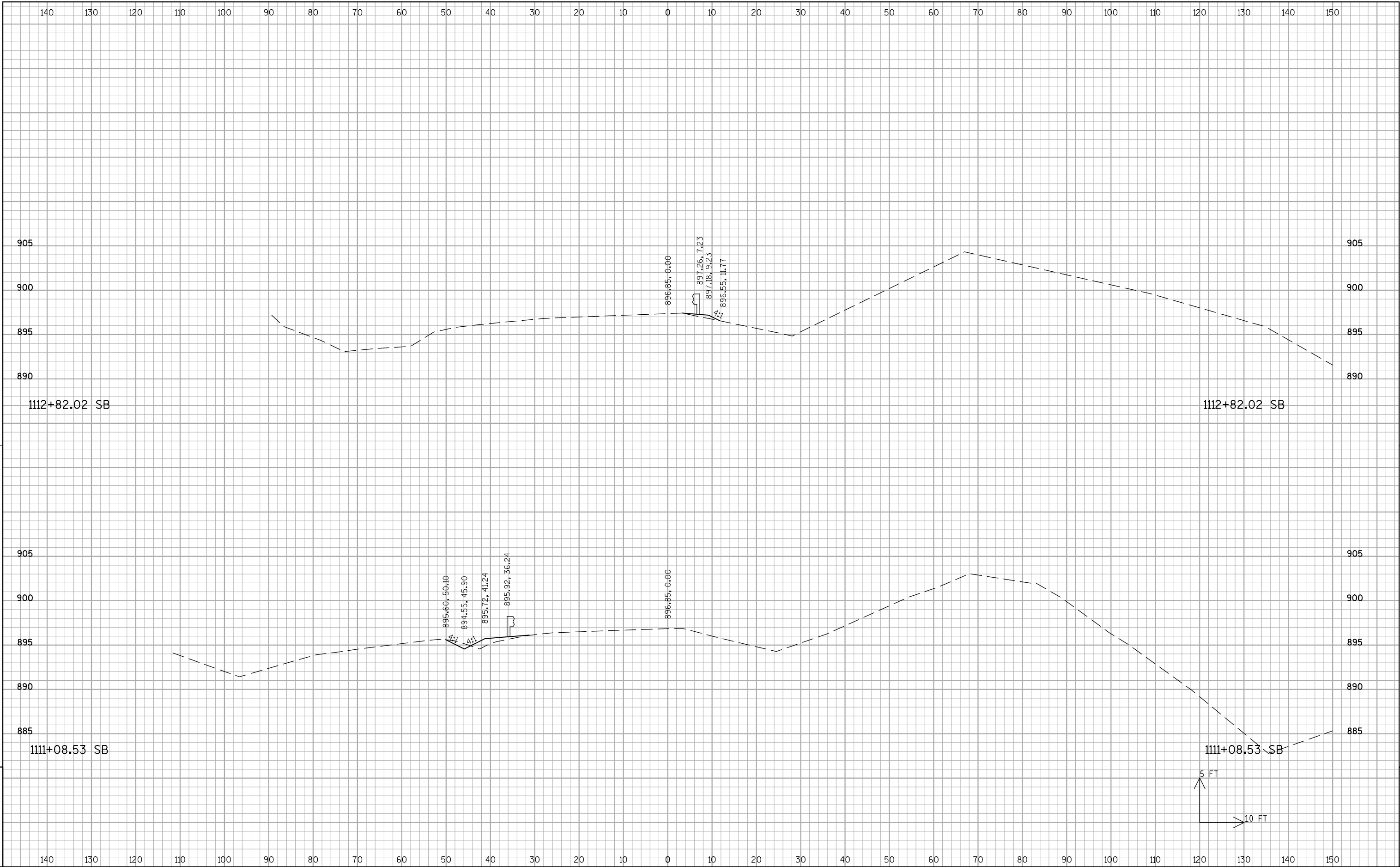


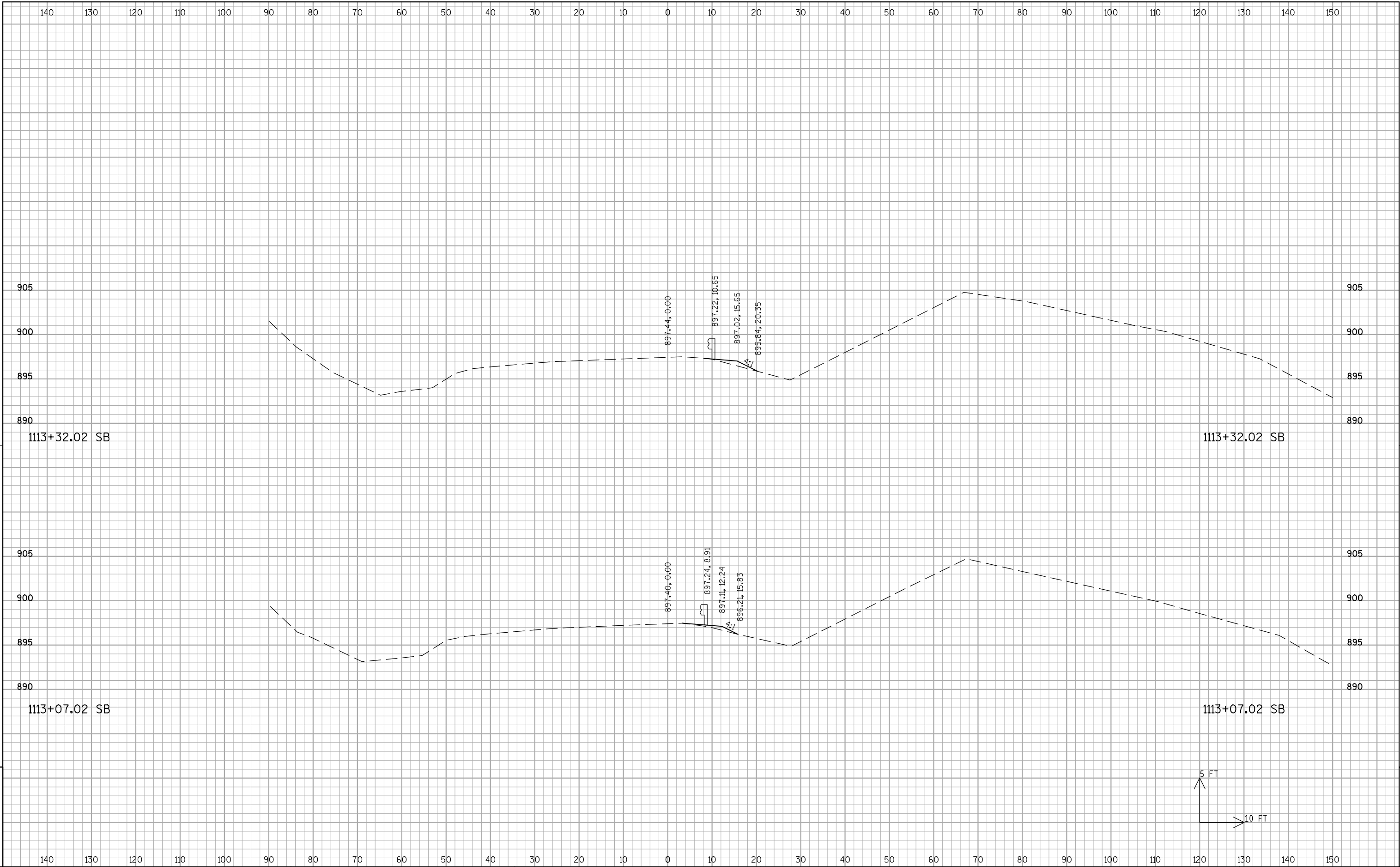


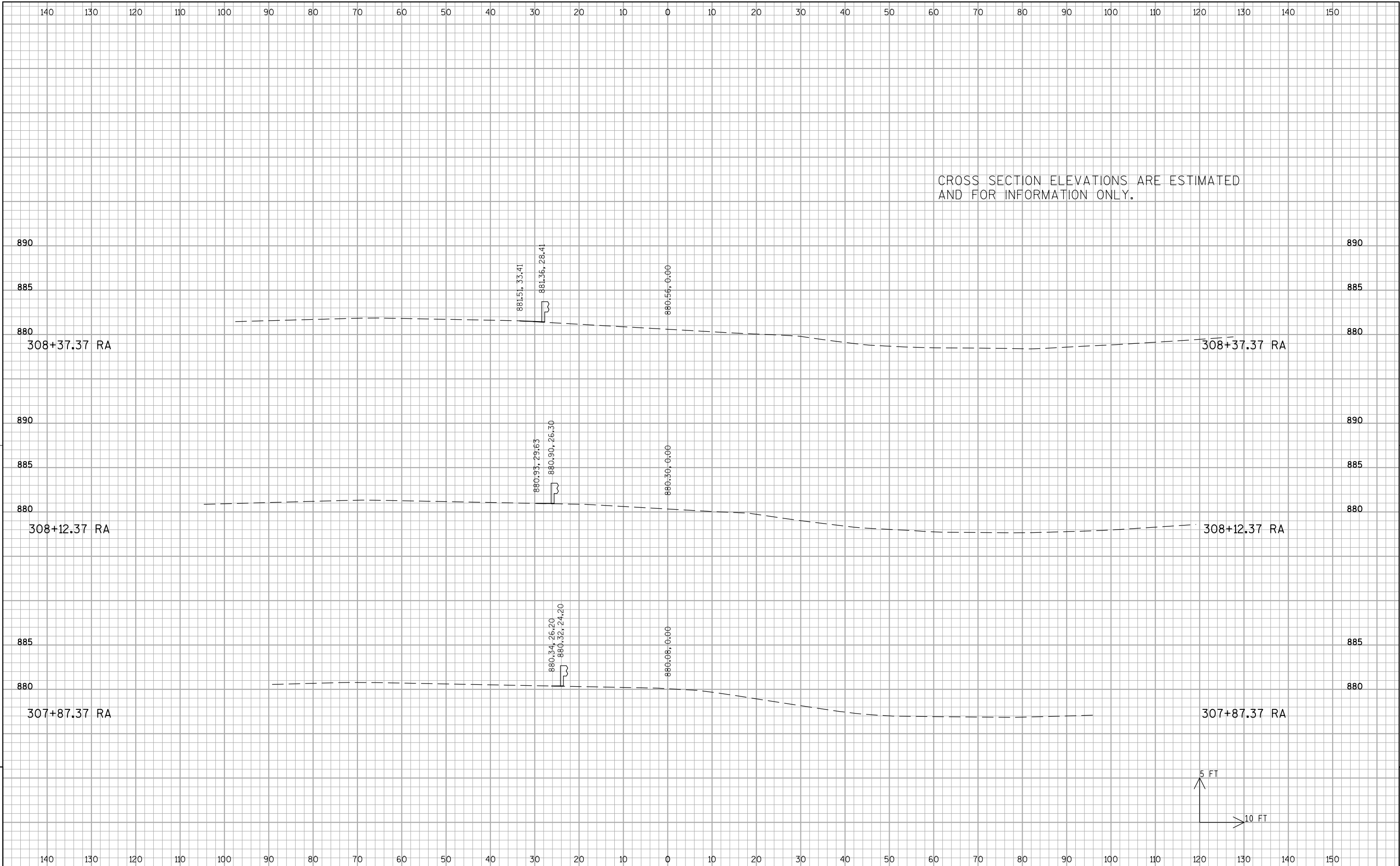


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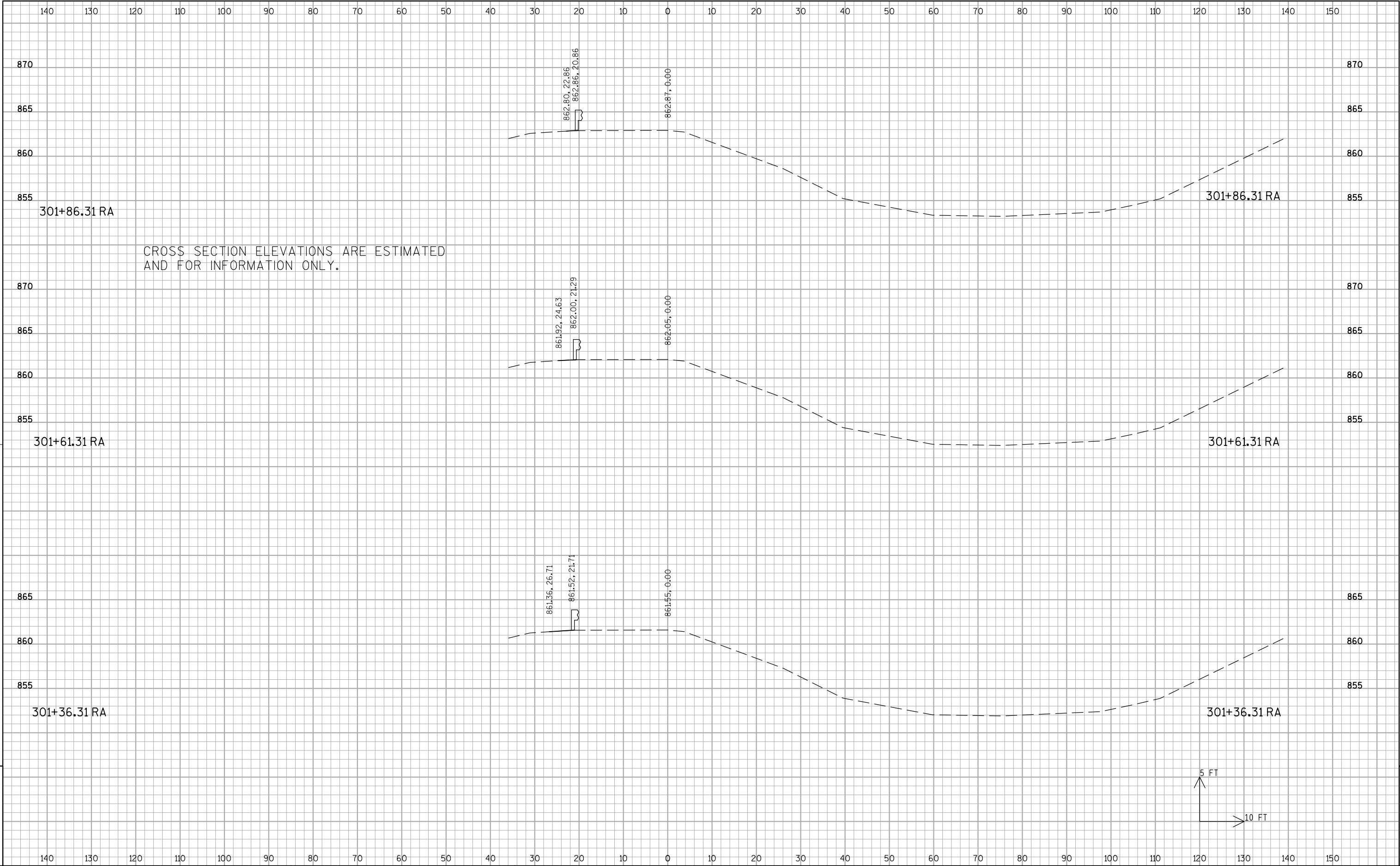






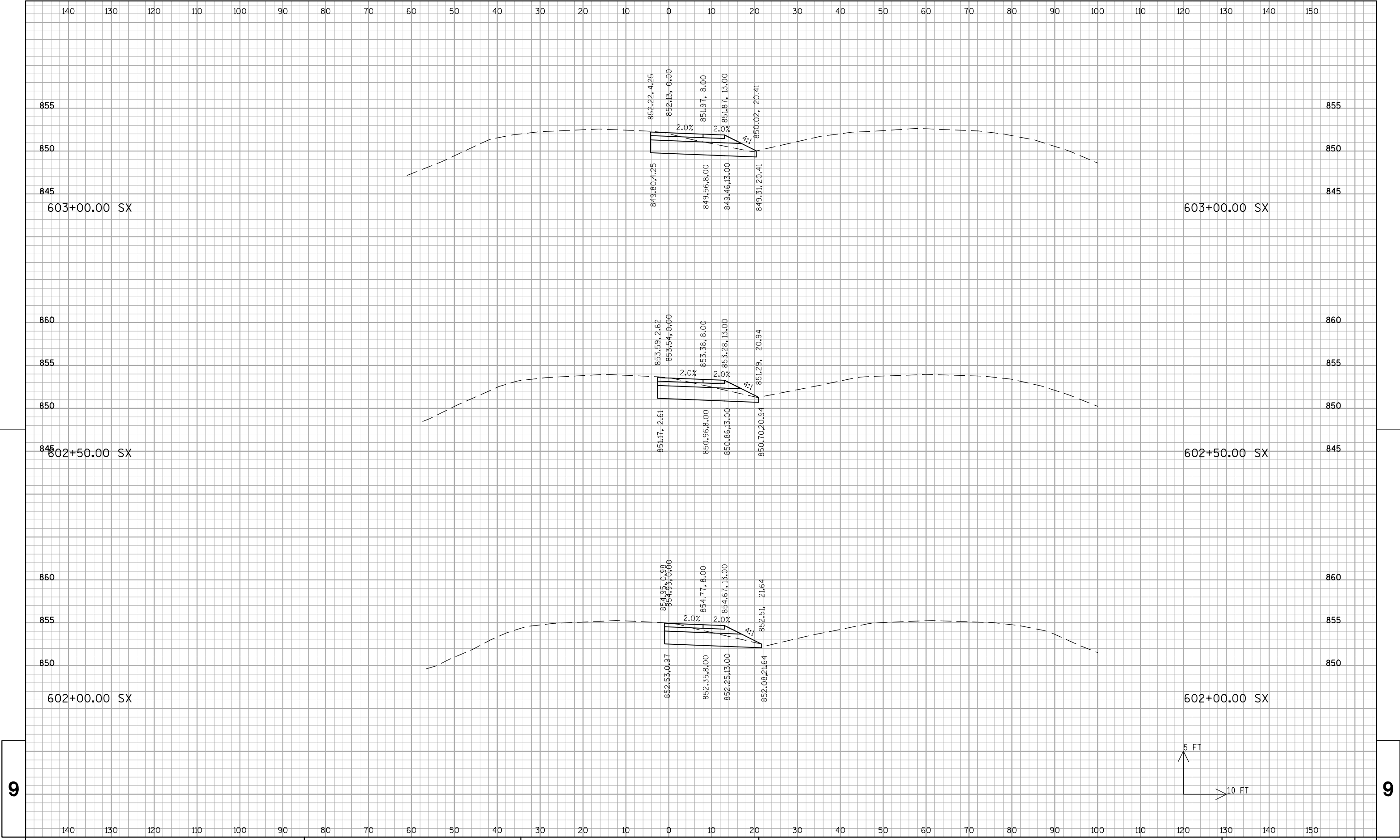
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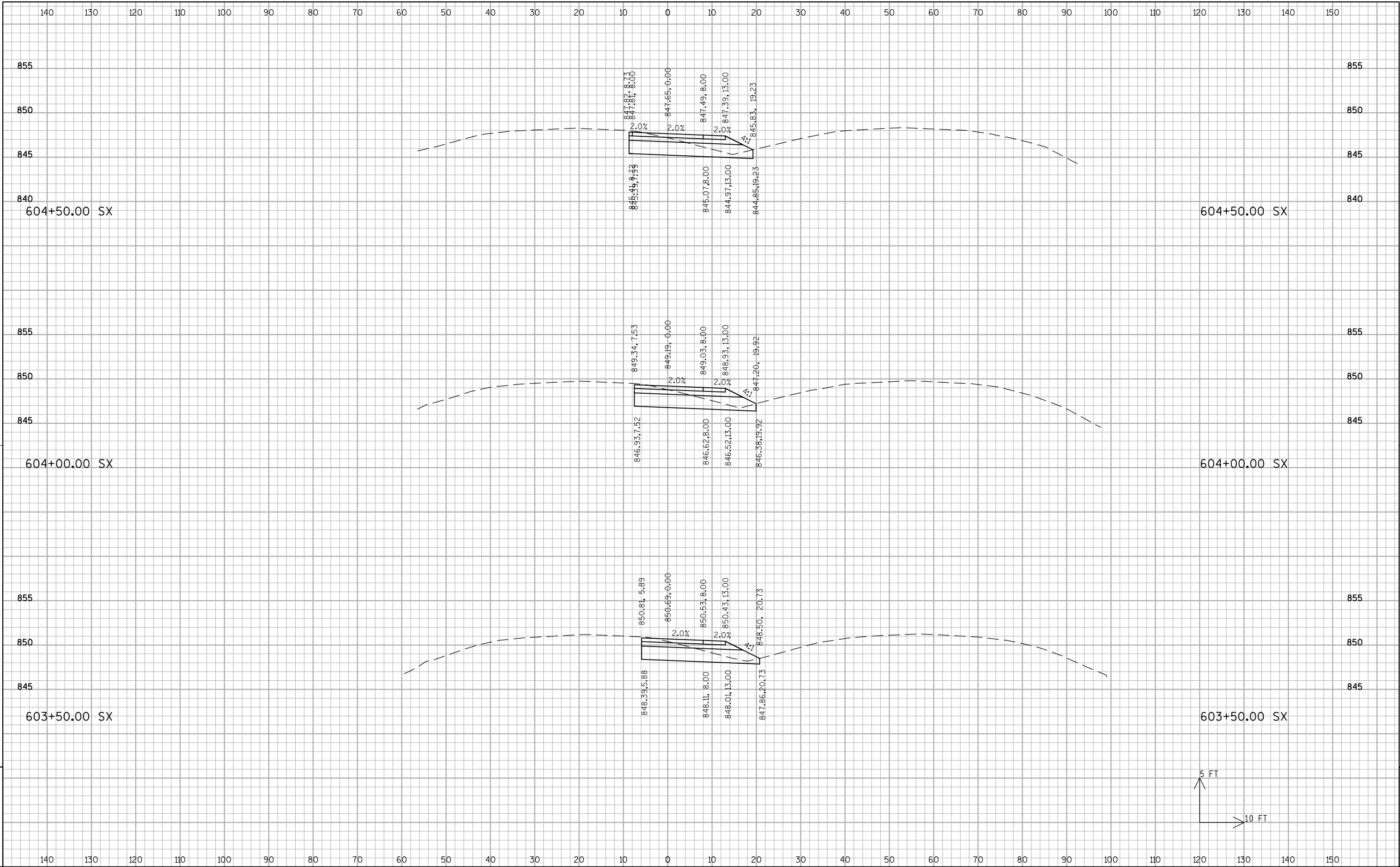
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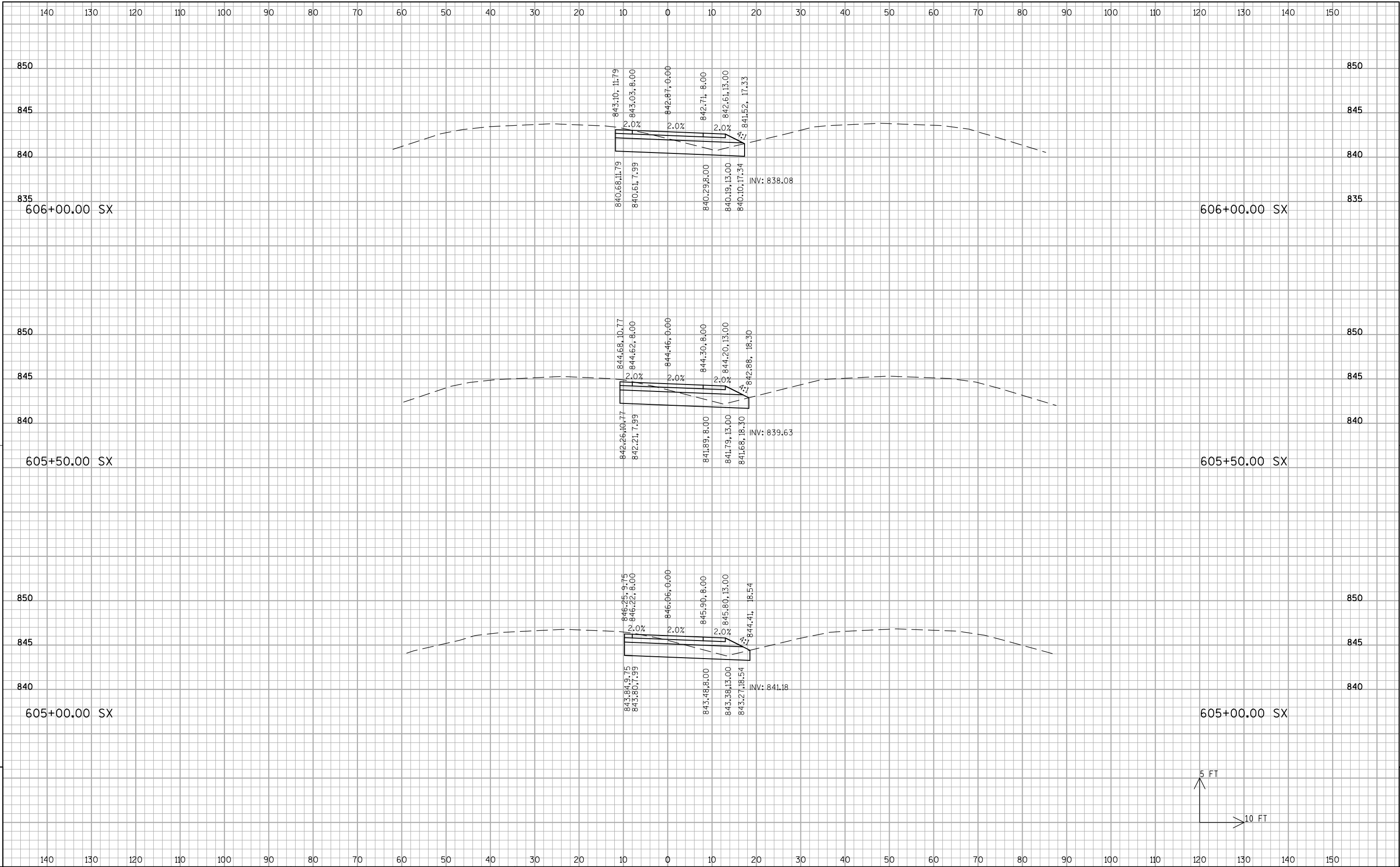


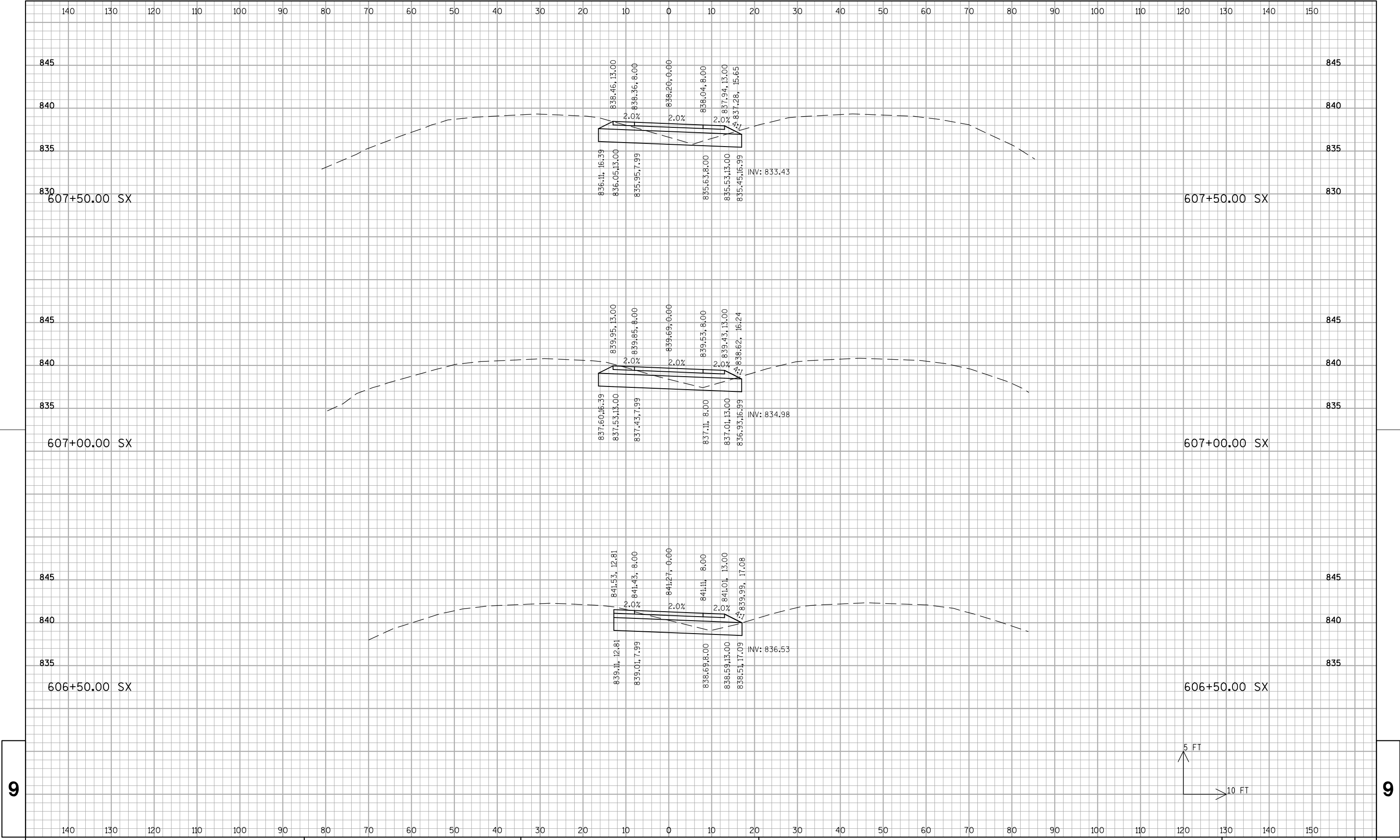
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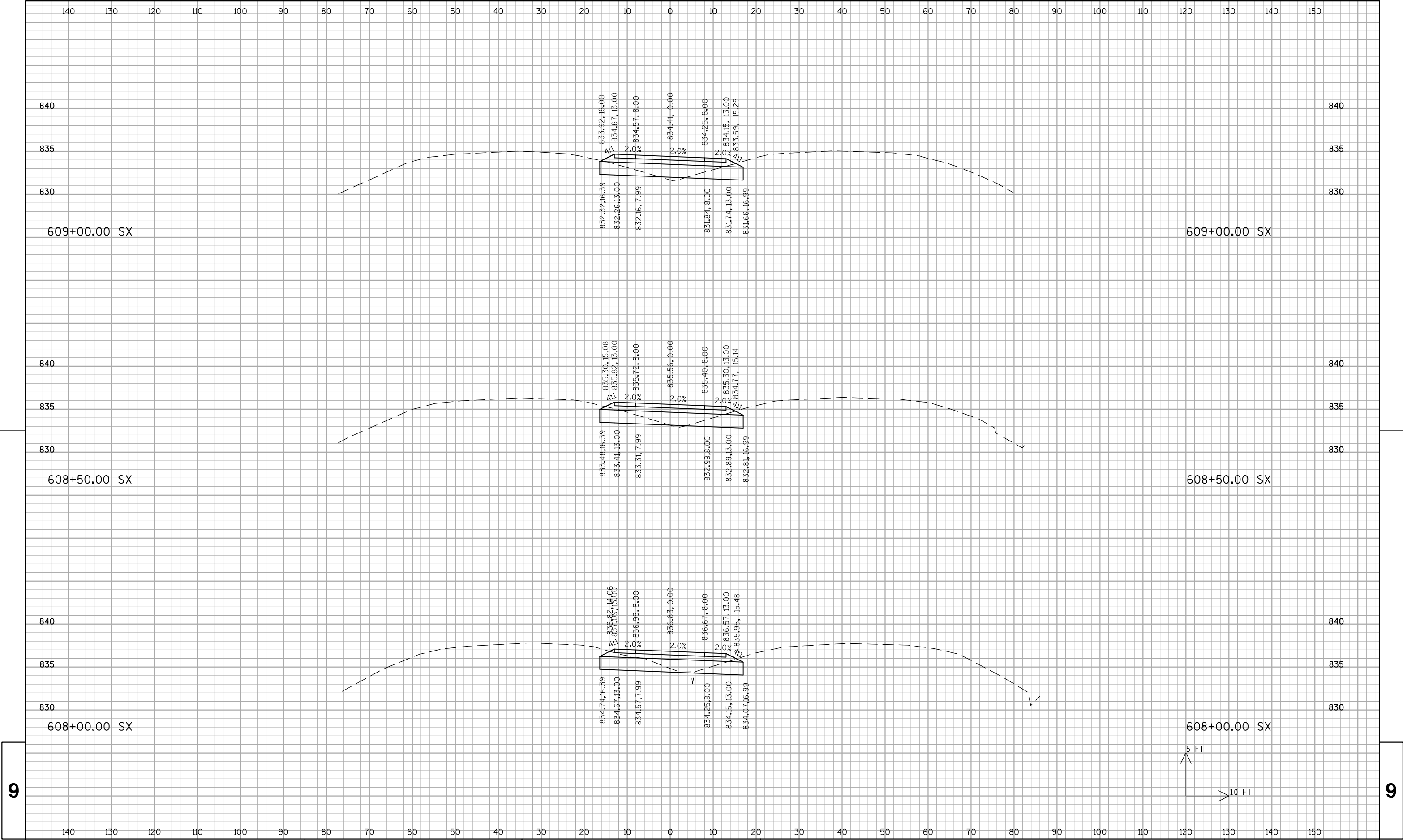
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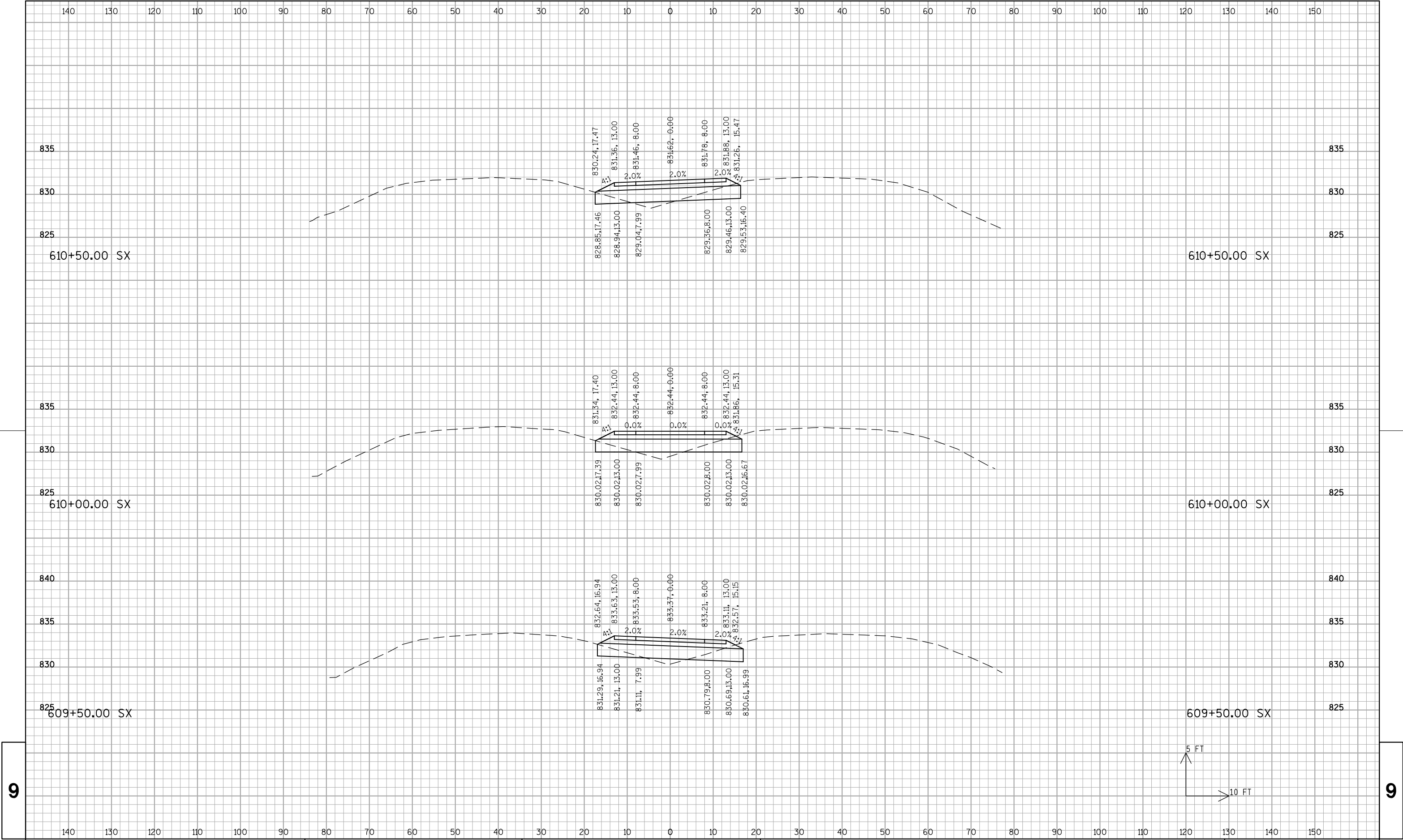






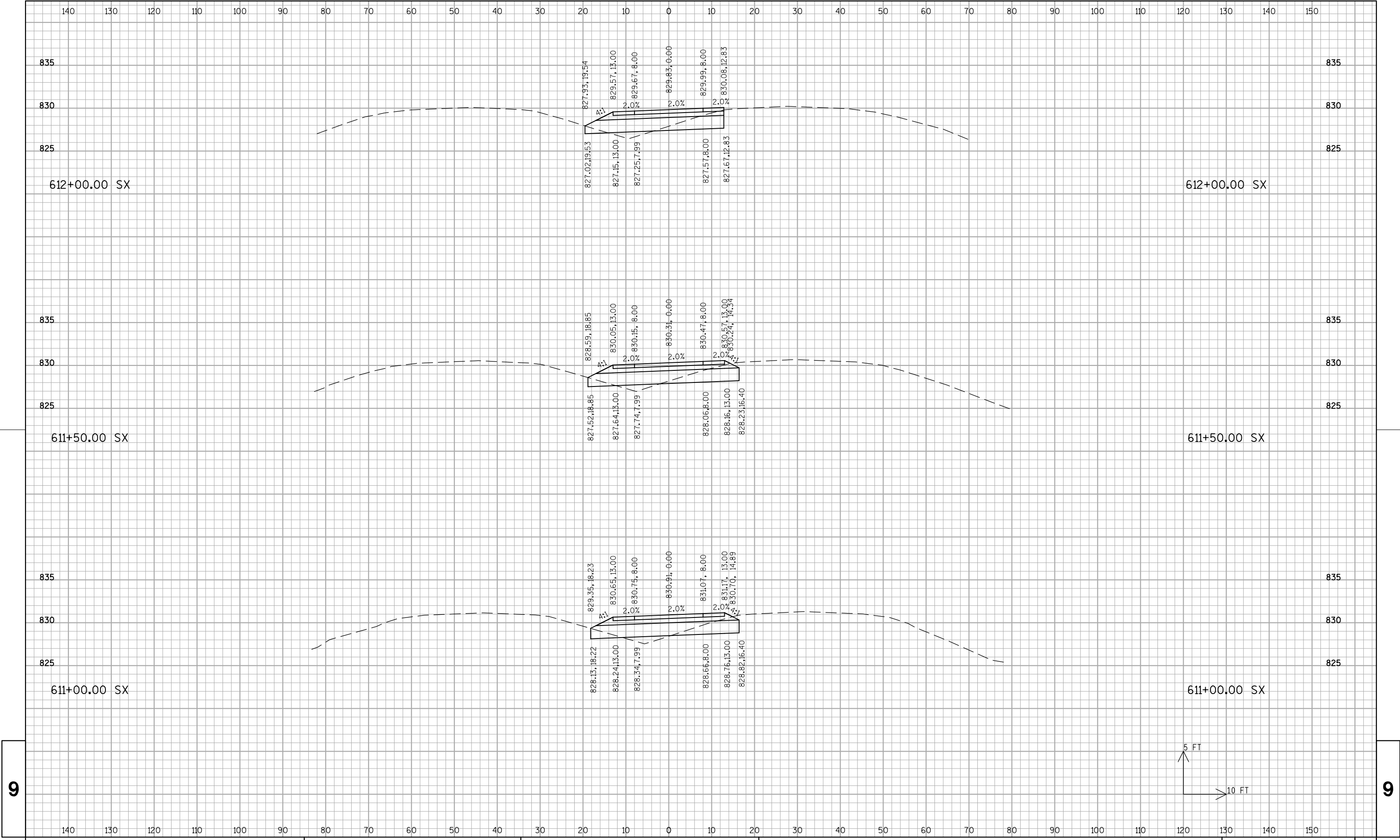
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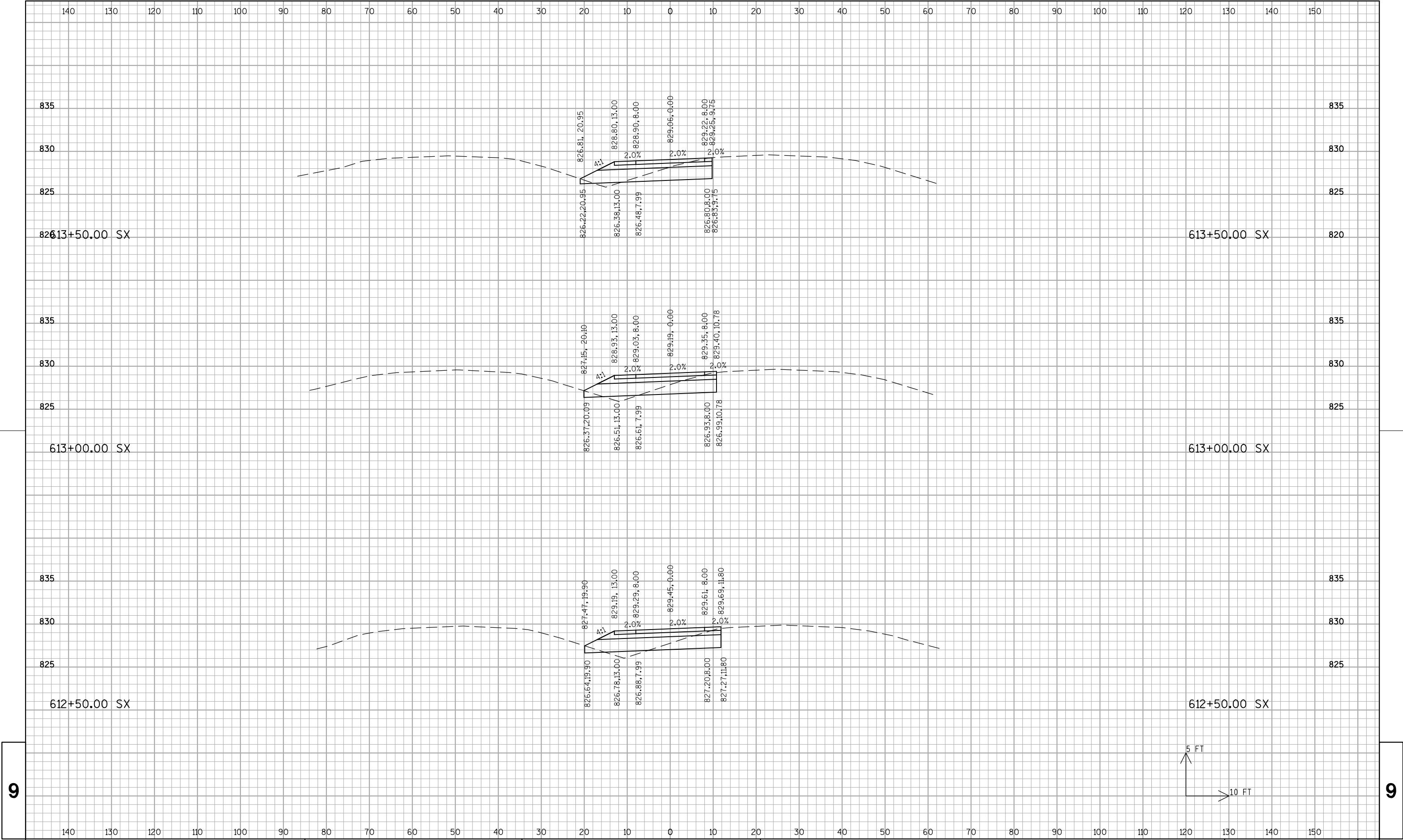
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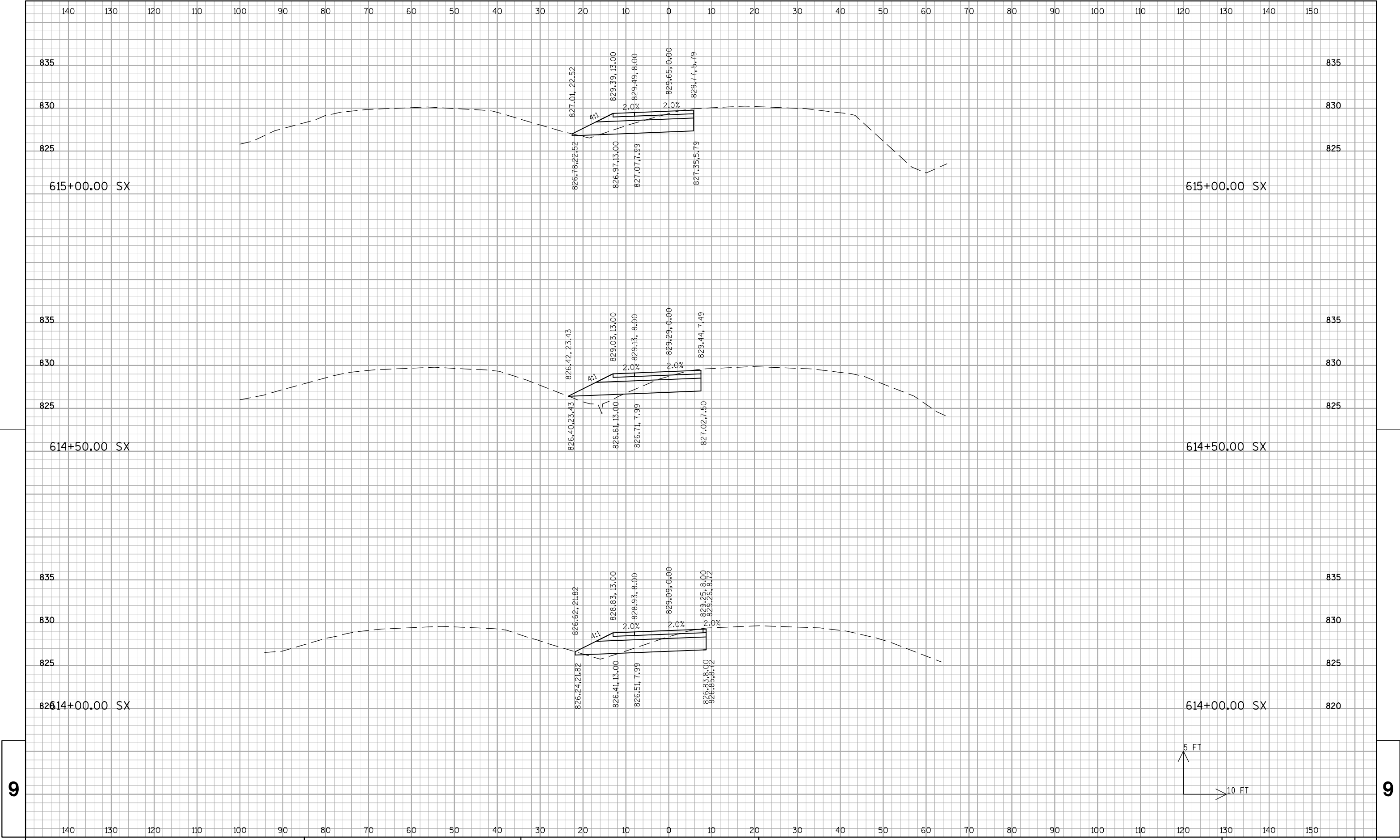
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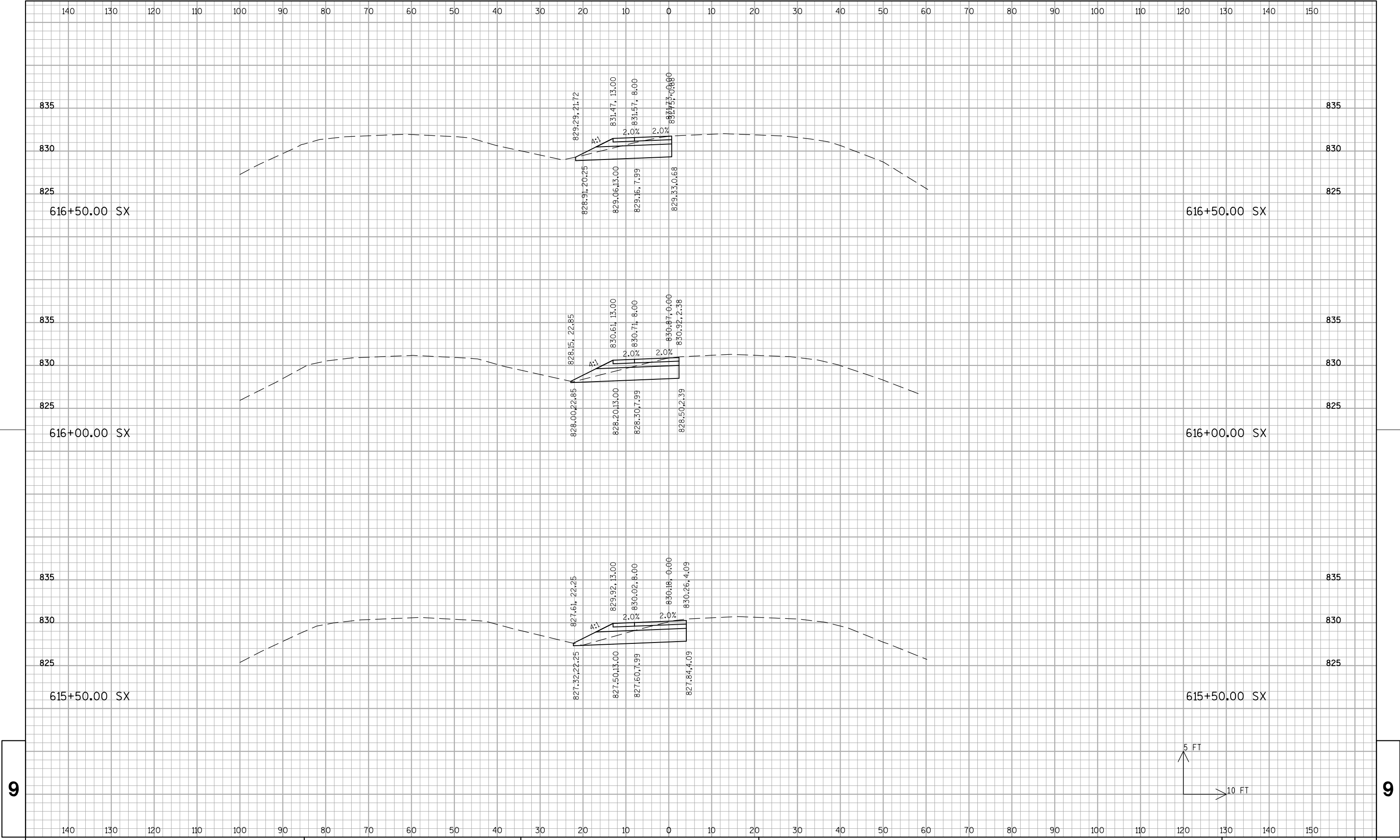
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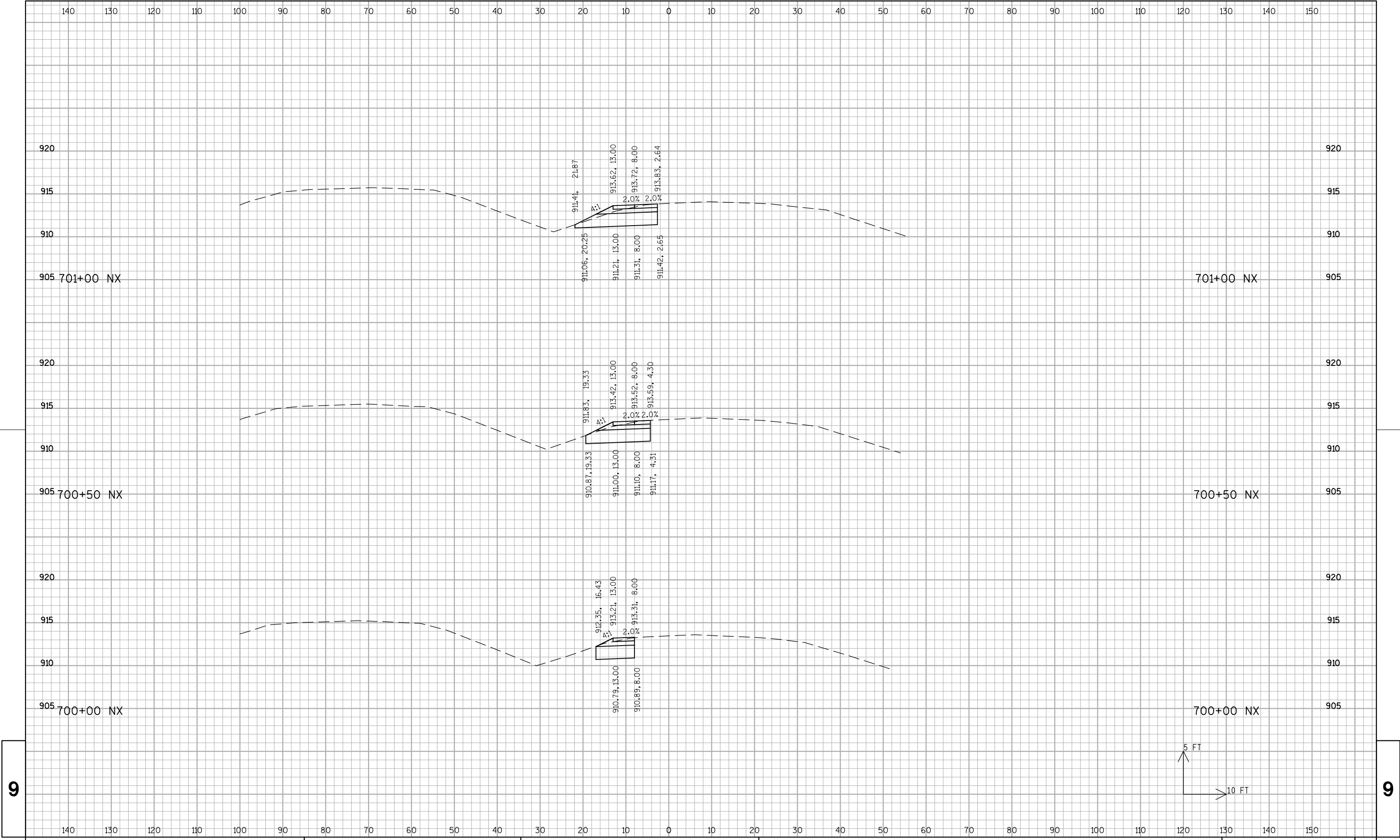
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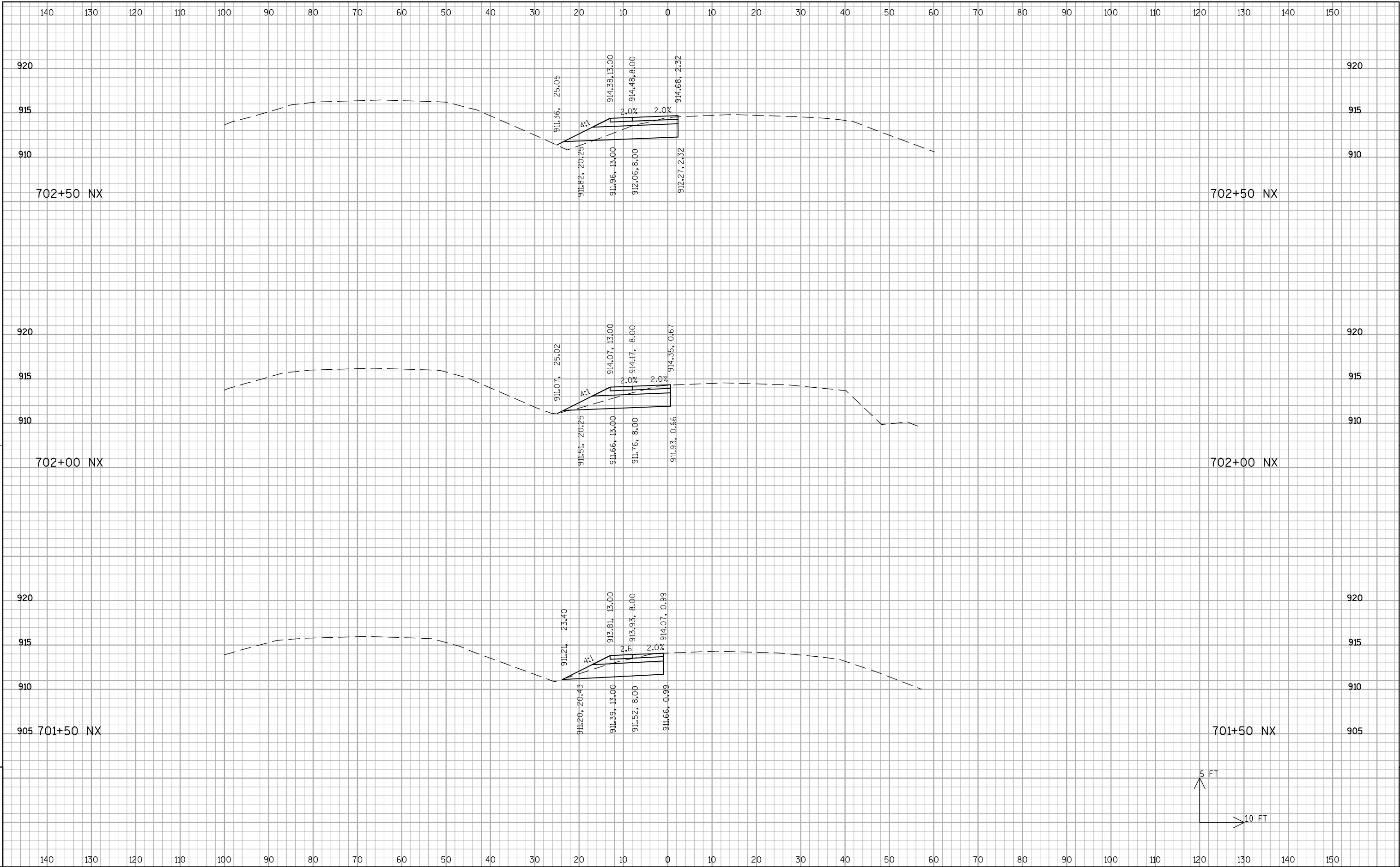
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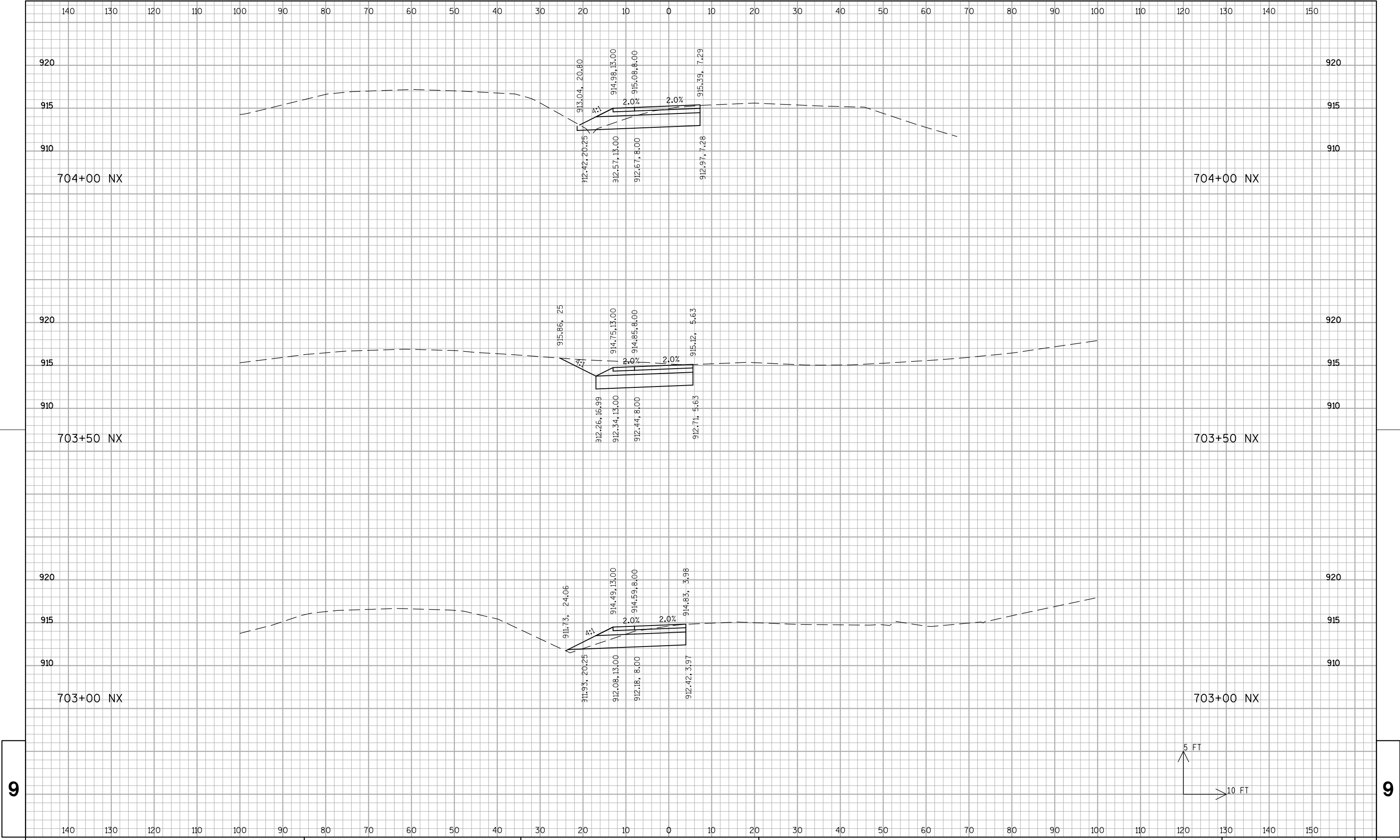
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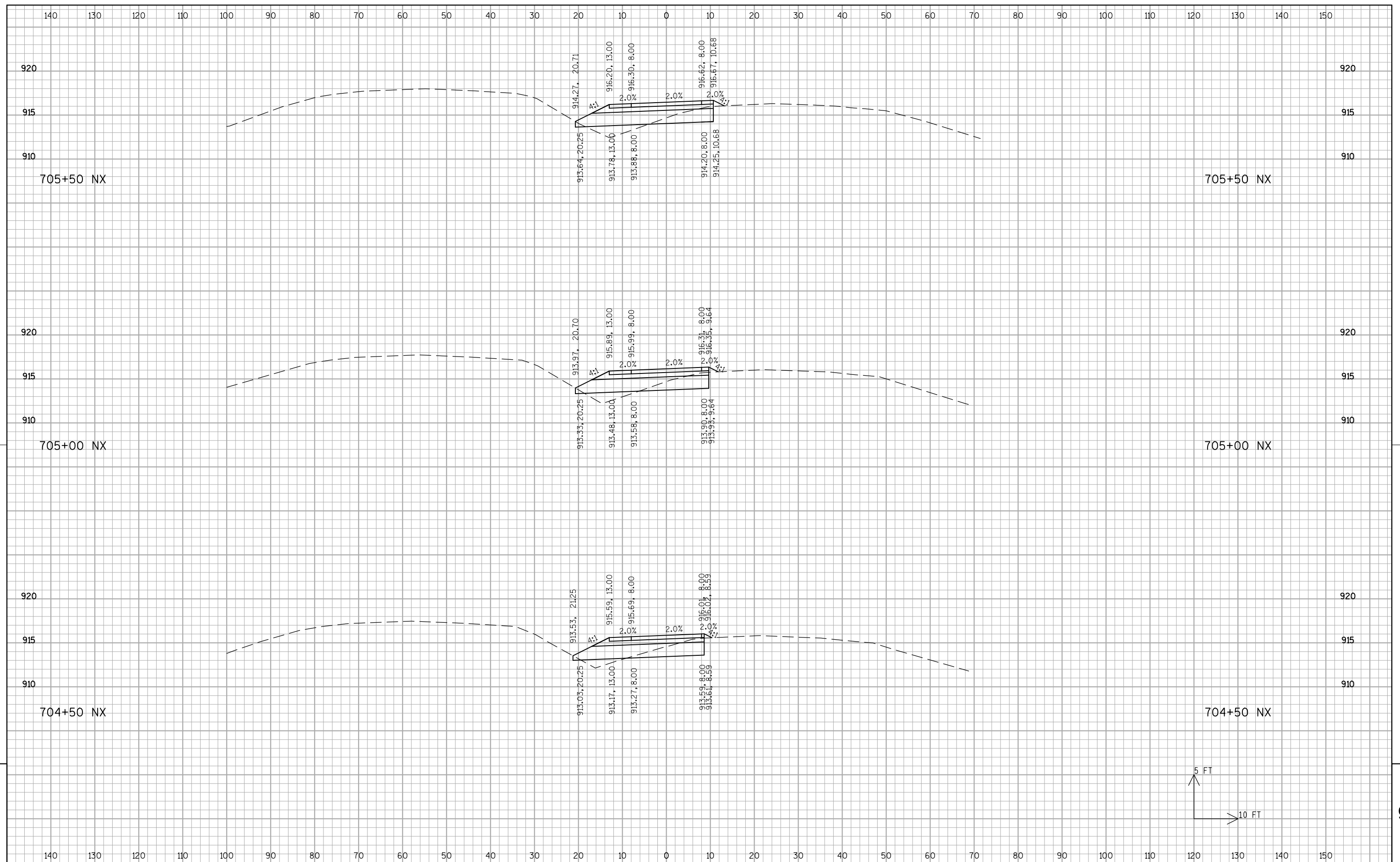
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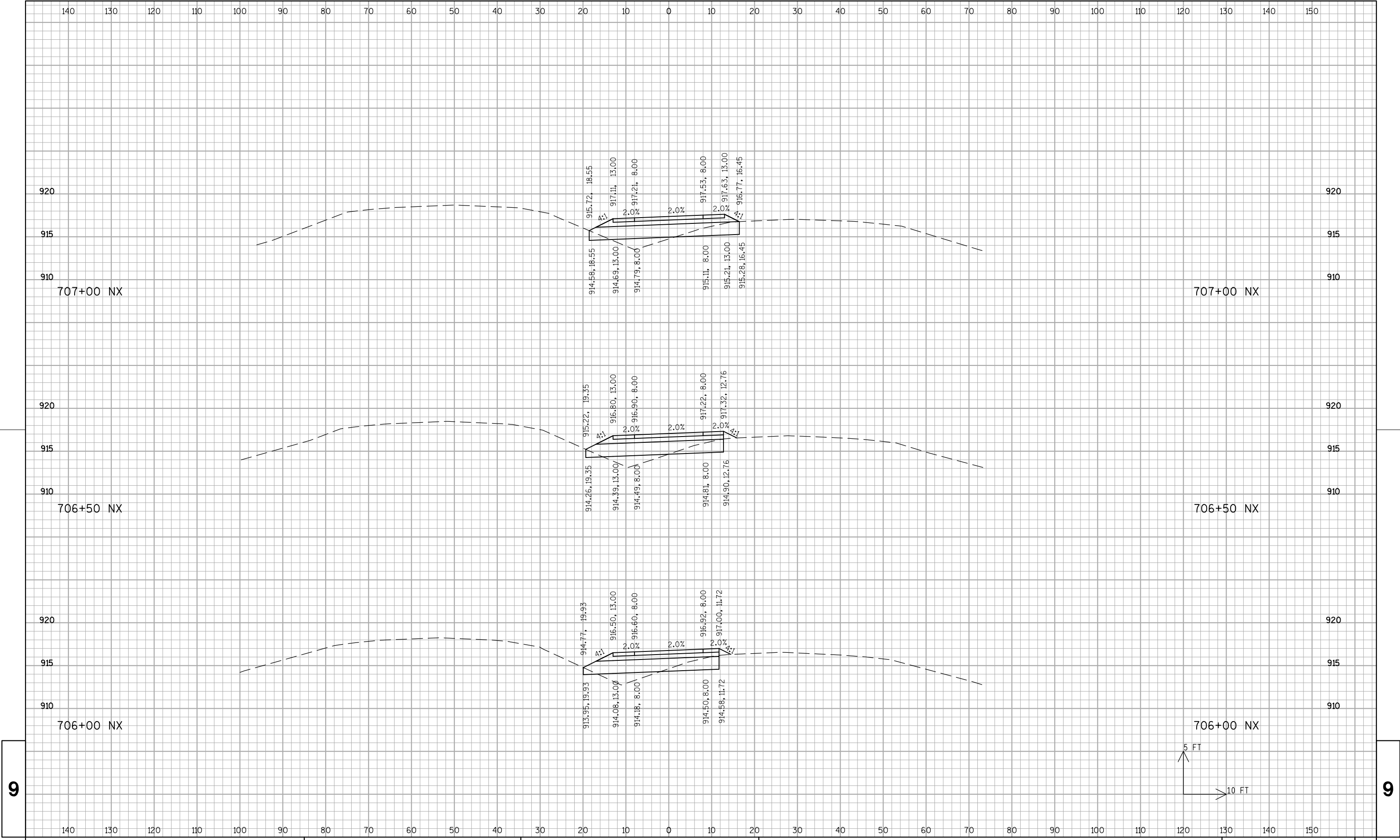




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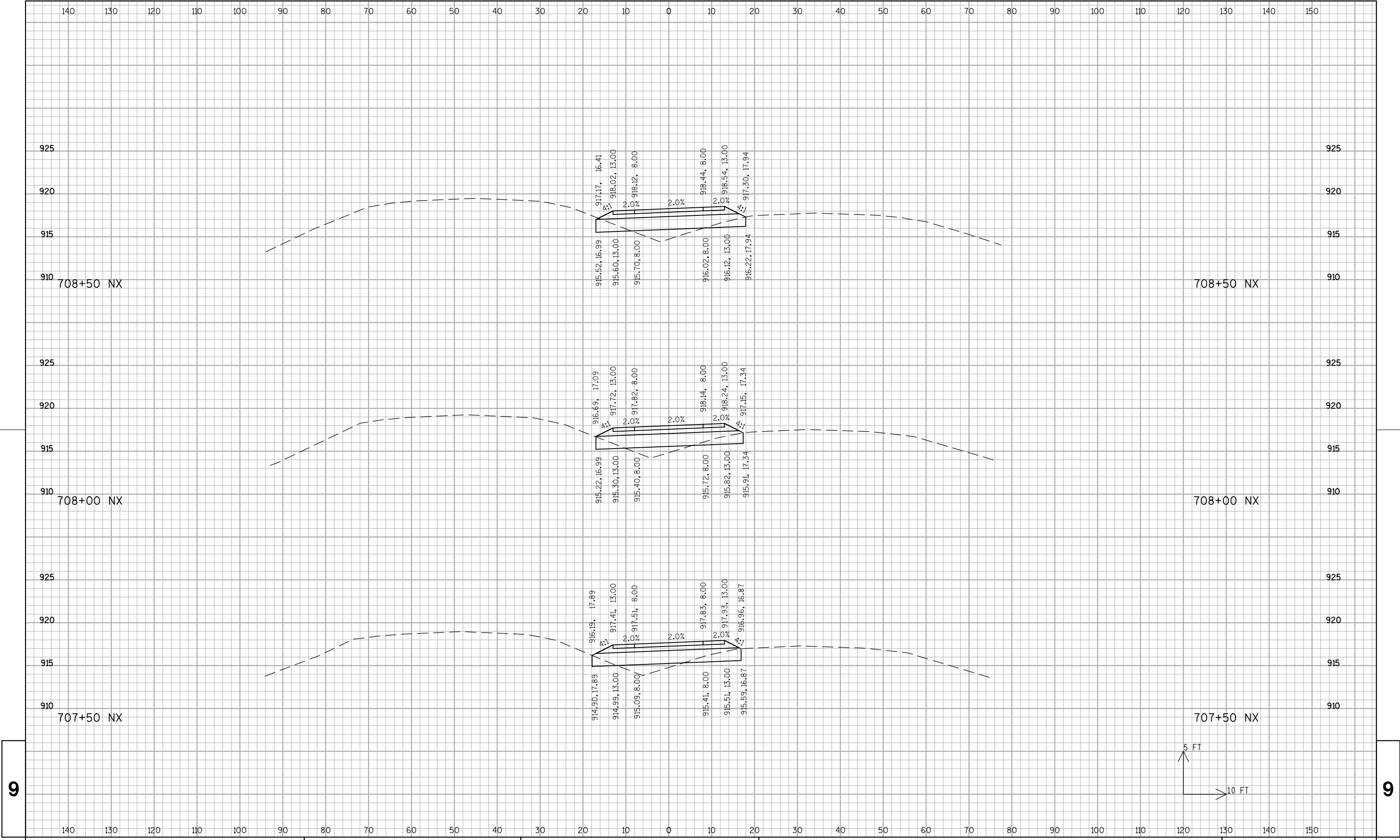
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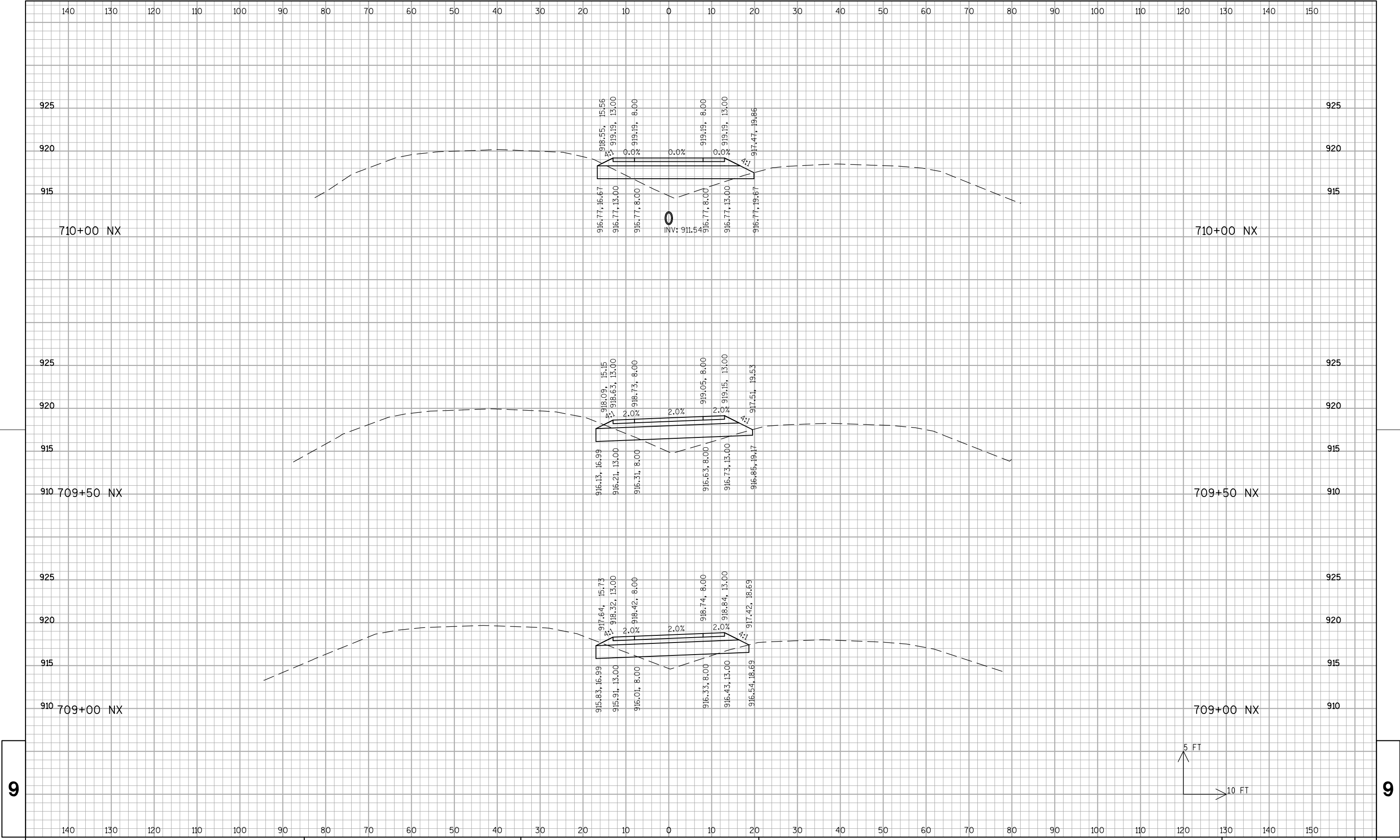
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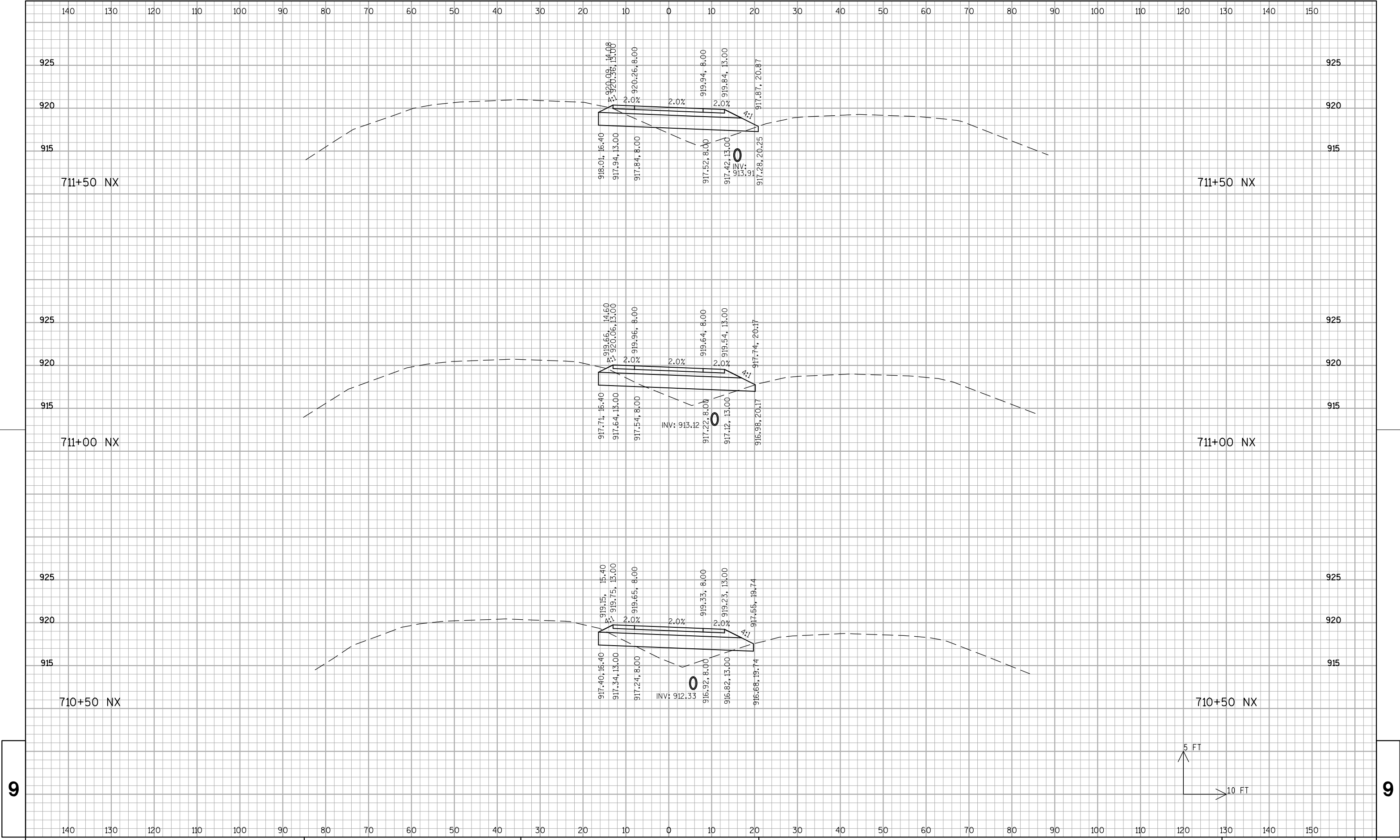
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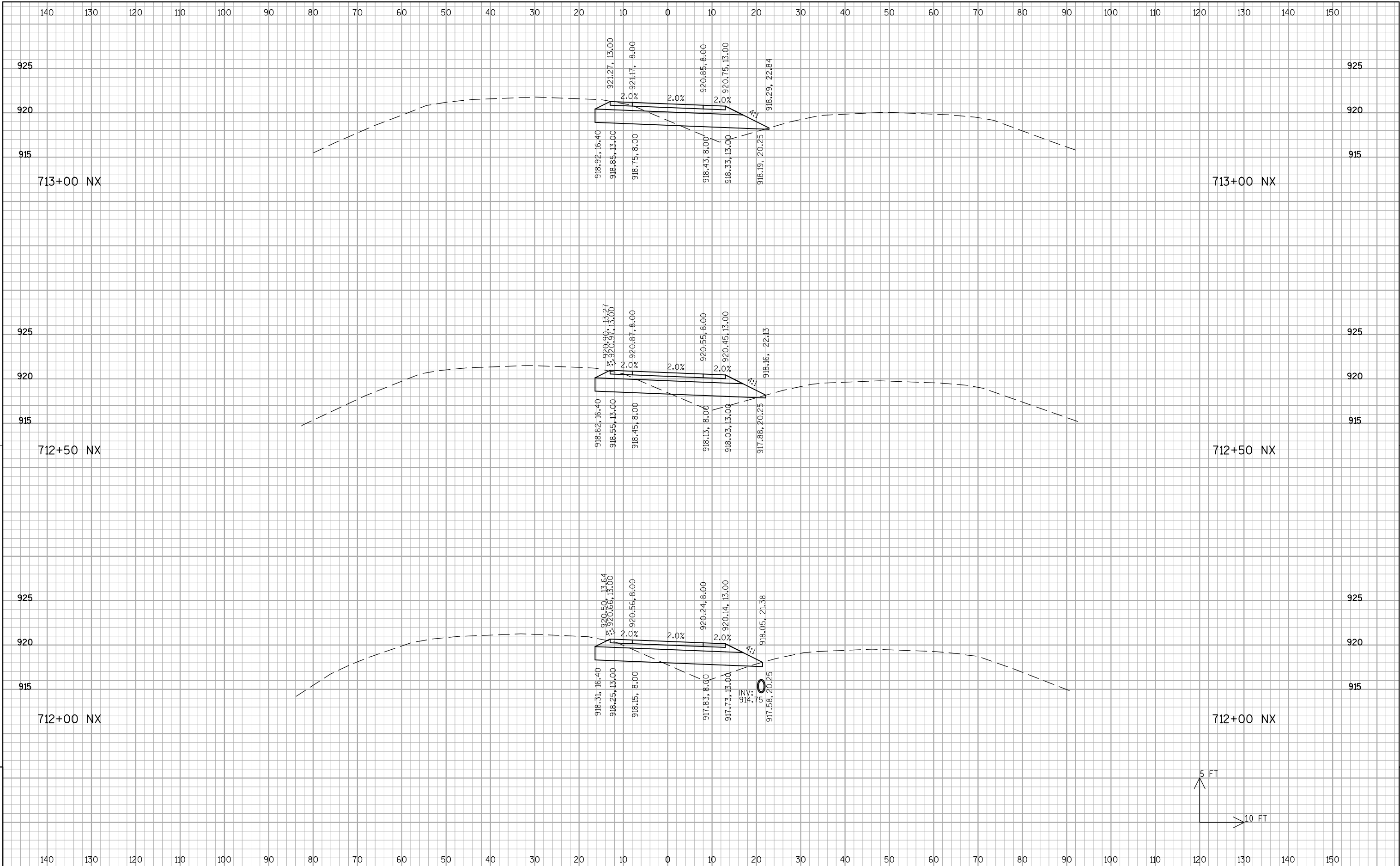
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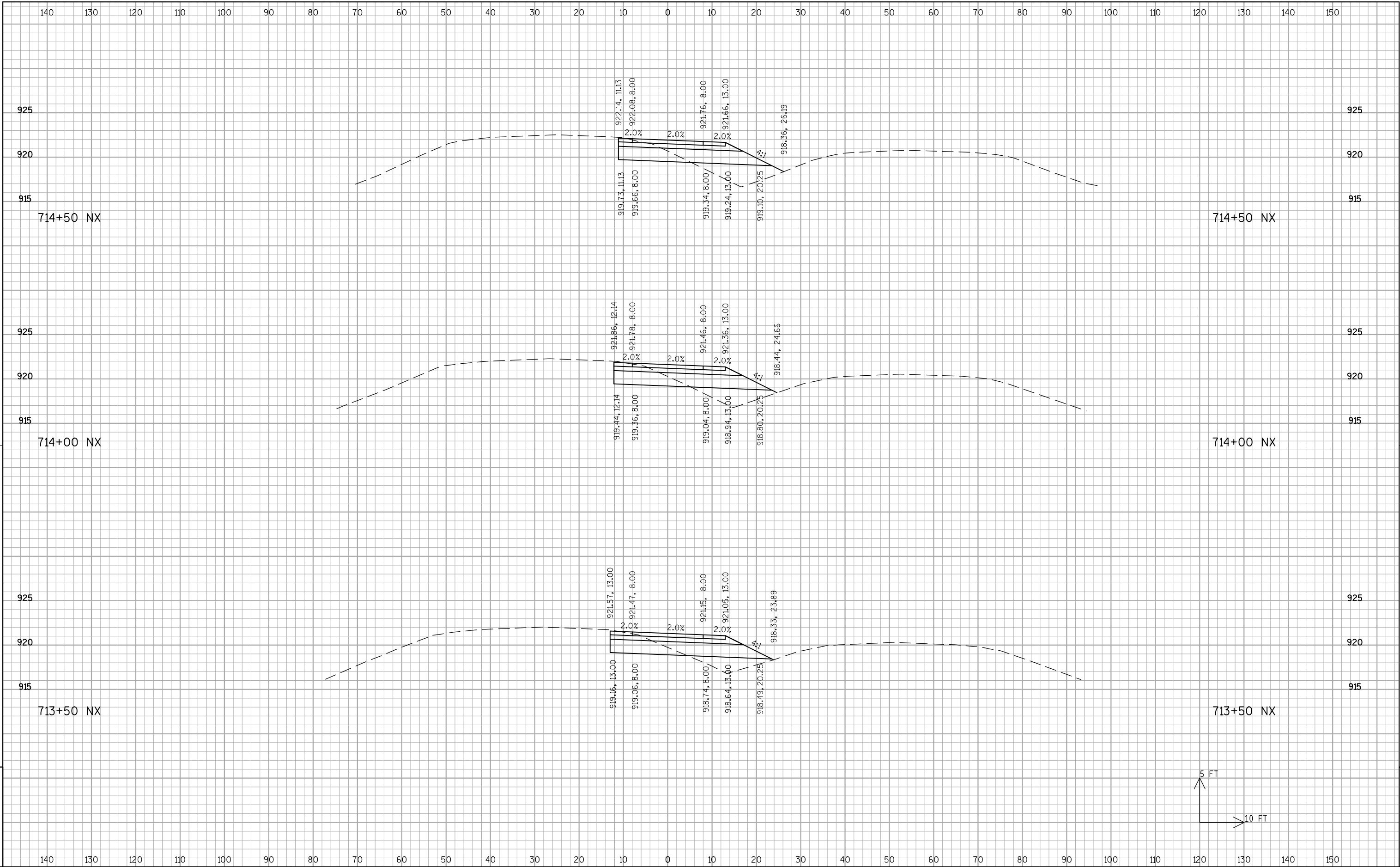


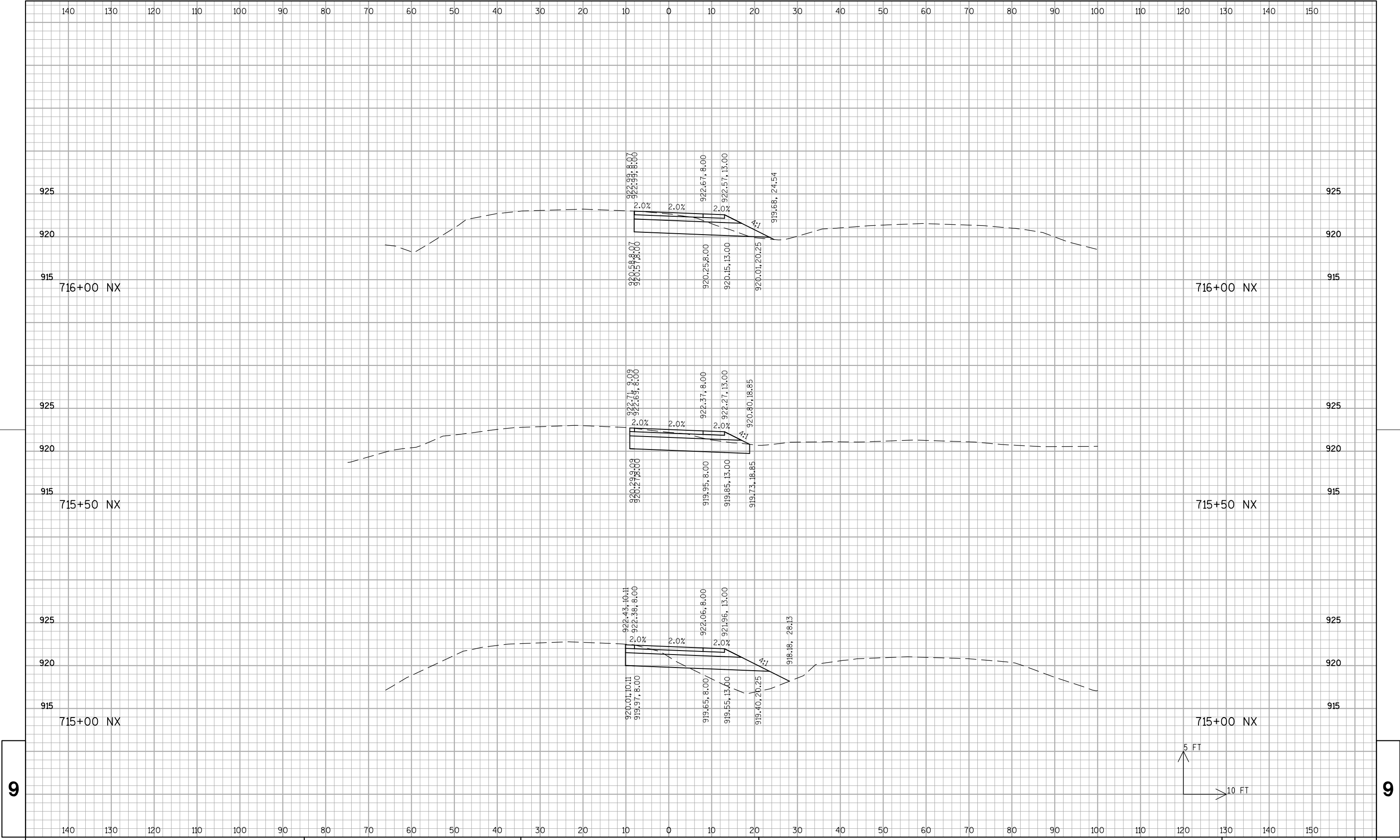
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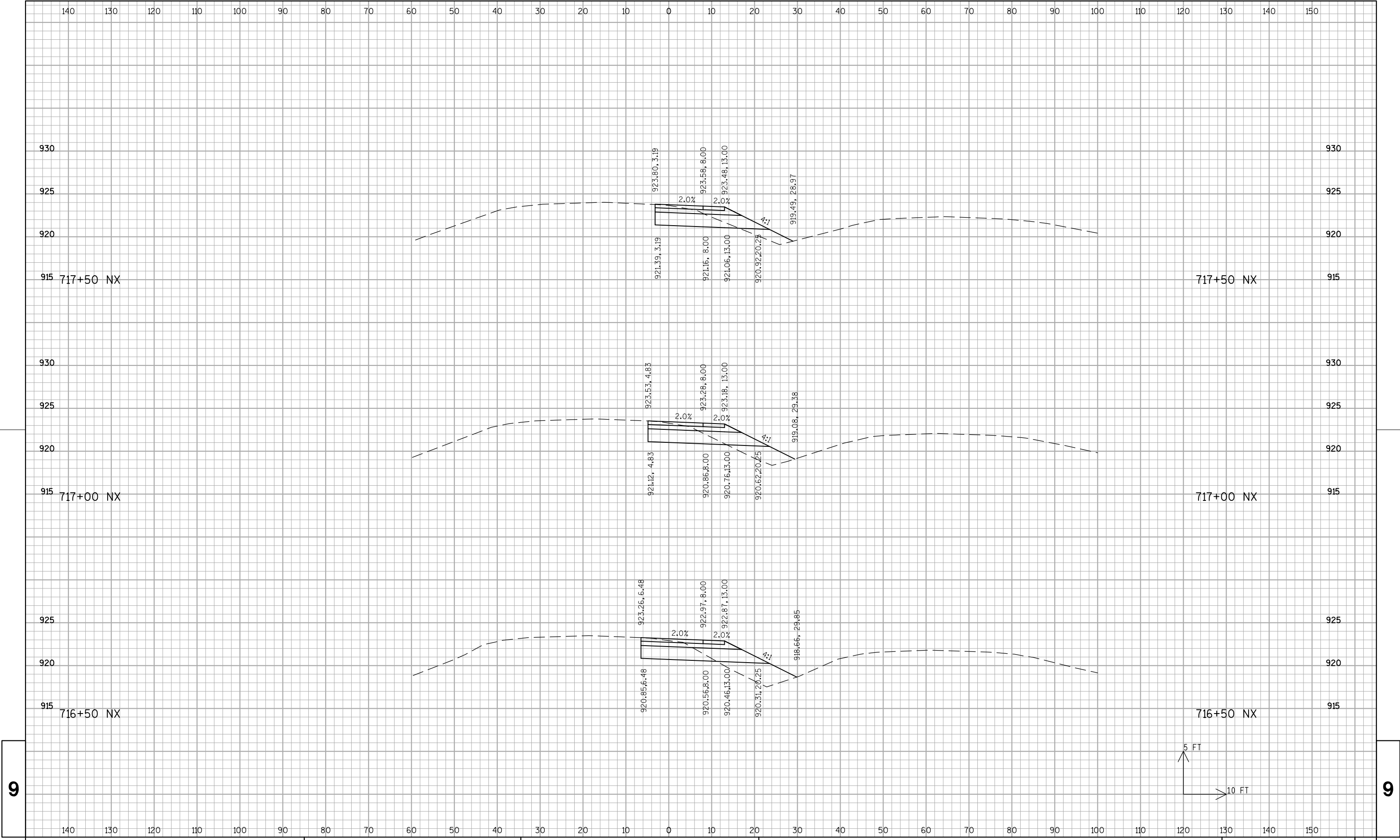
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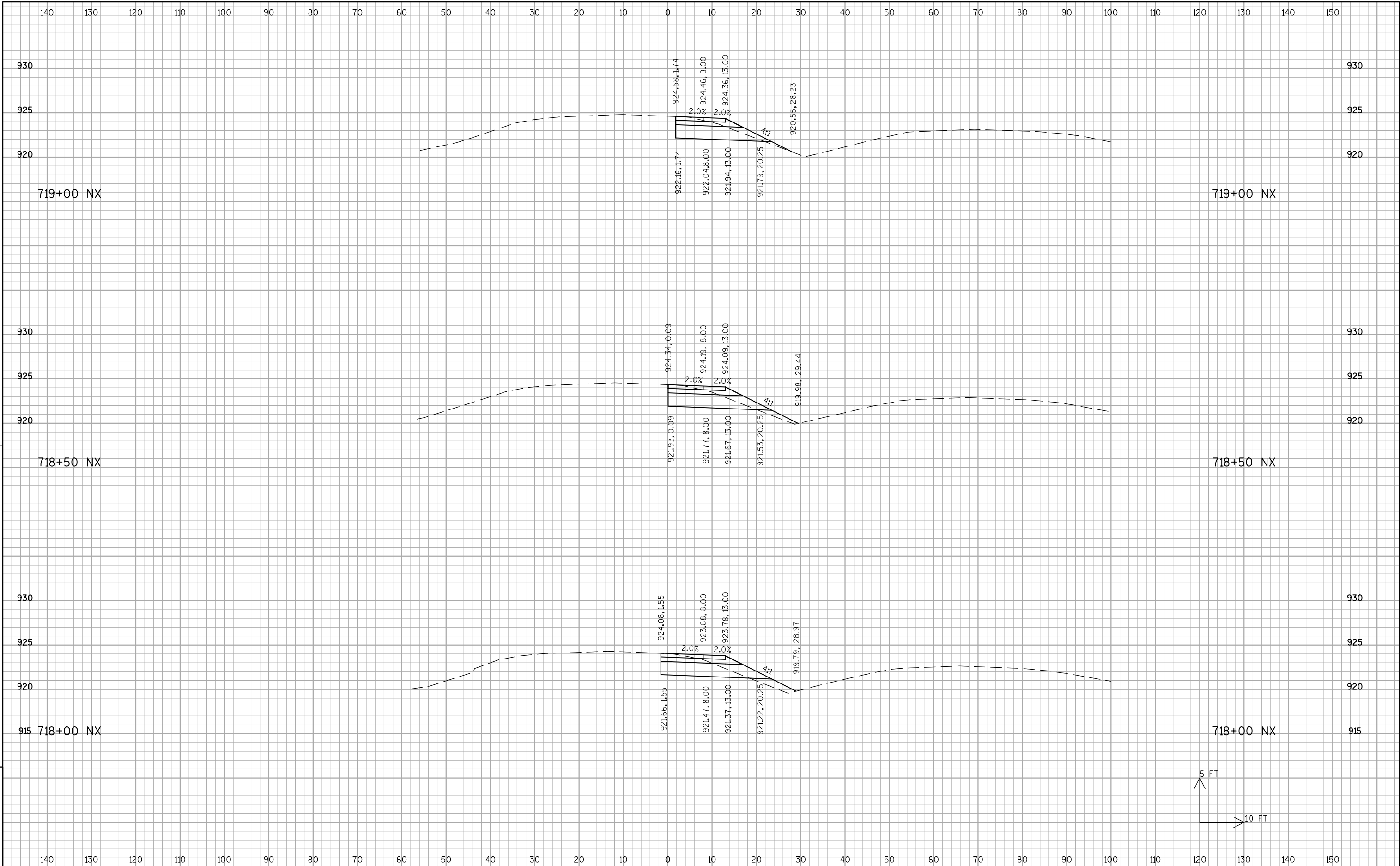


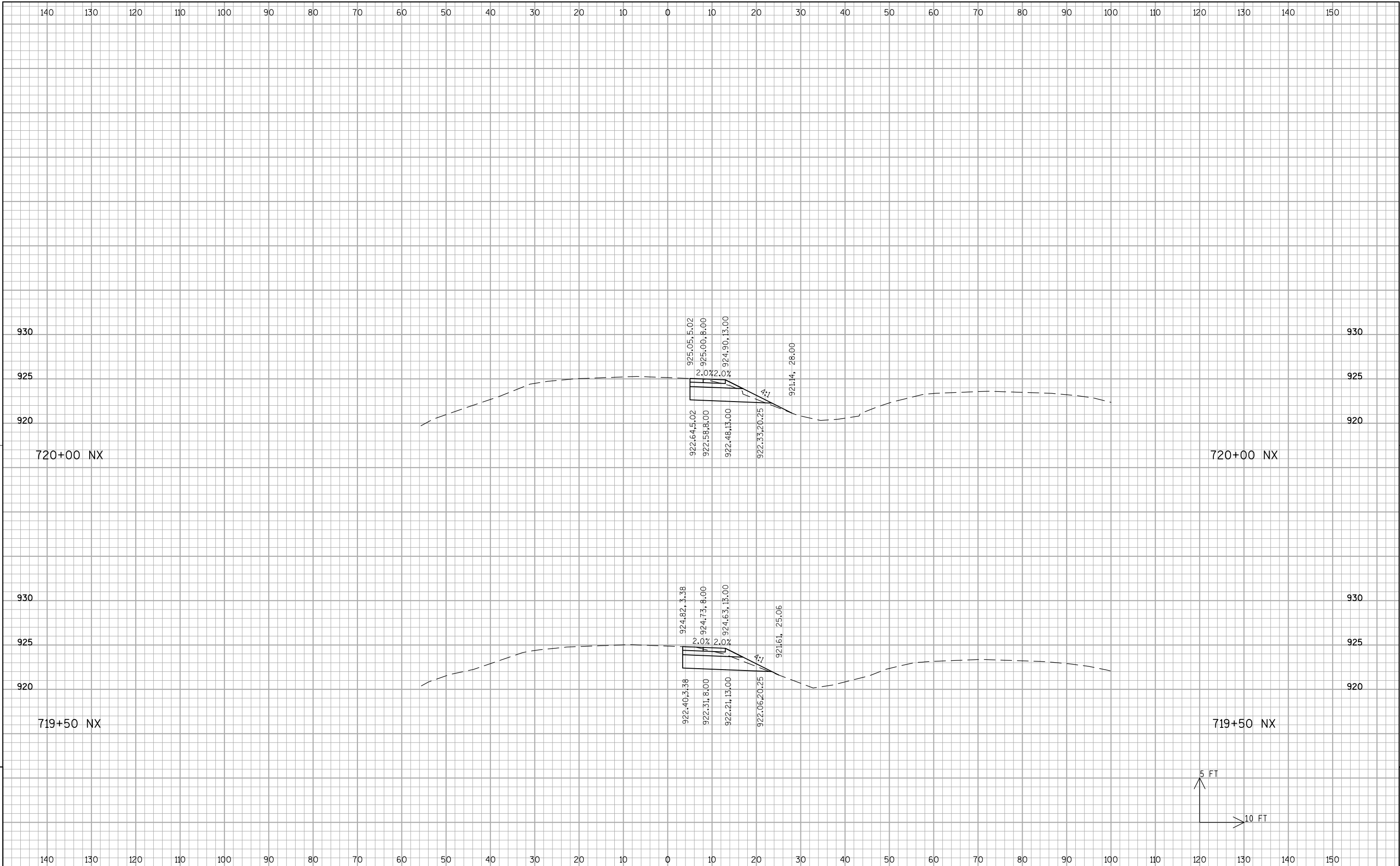


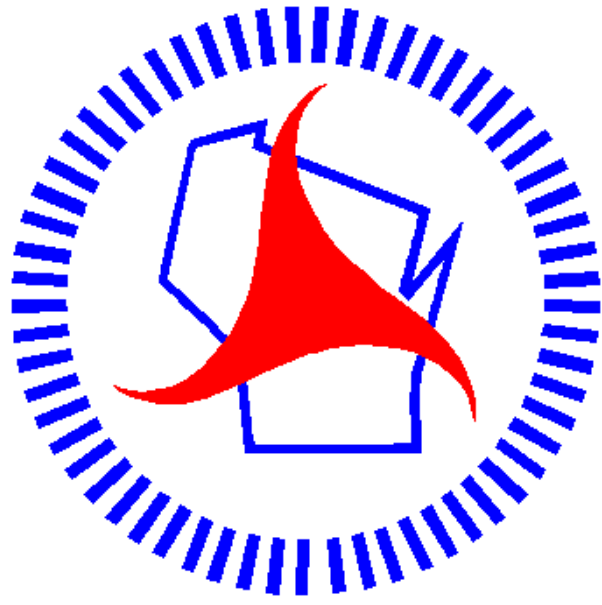












Wisconsin Department of Transportation

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