

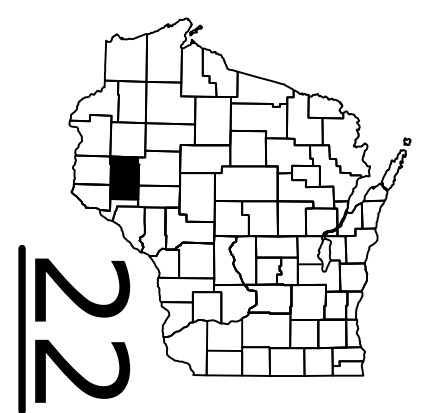
EAU WITH: NA PROJECT ID: 1020-05-63 / 1021-01-78 COUNTY: DUNN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1020-05-63	WISC 2027009	1
1021-01-78		

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

TOTAL SHEETS =



DESIGN DESIGNATION			
A.A.D.T.	2019	=	36,380
A.A.D.T.	2047	=	38,890
D.H.V.		=	
D.D.		=	
T.		=	
DESIGN SPEED		=	70 MPH
ESALS		=	33,330,000

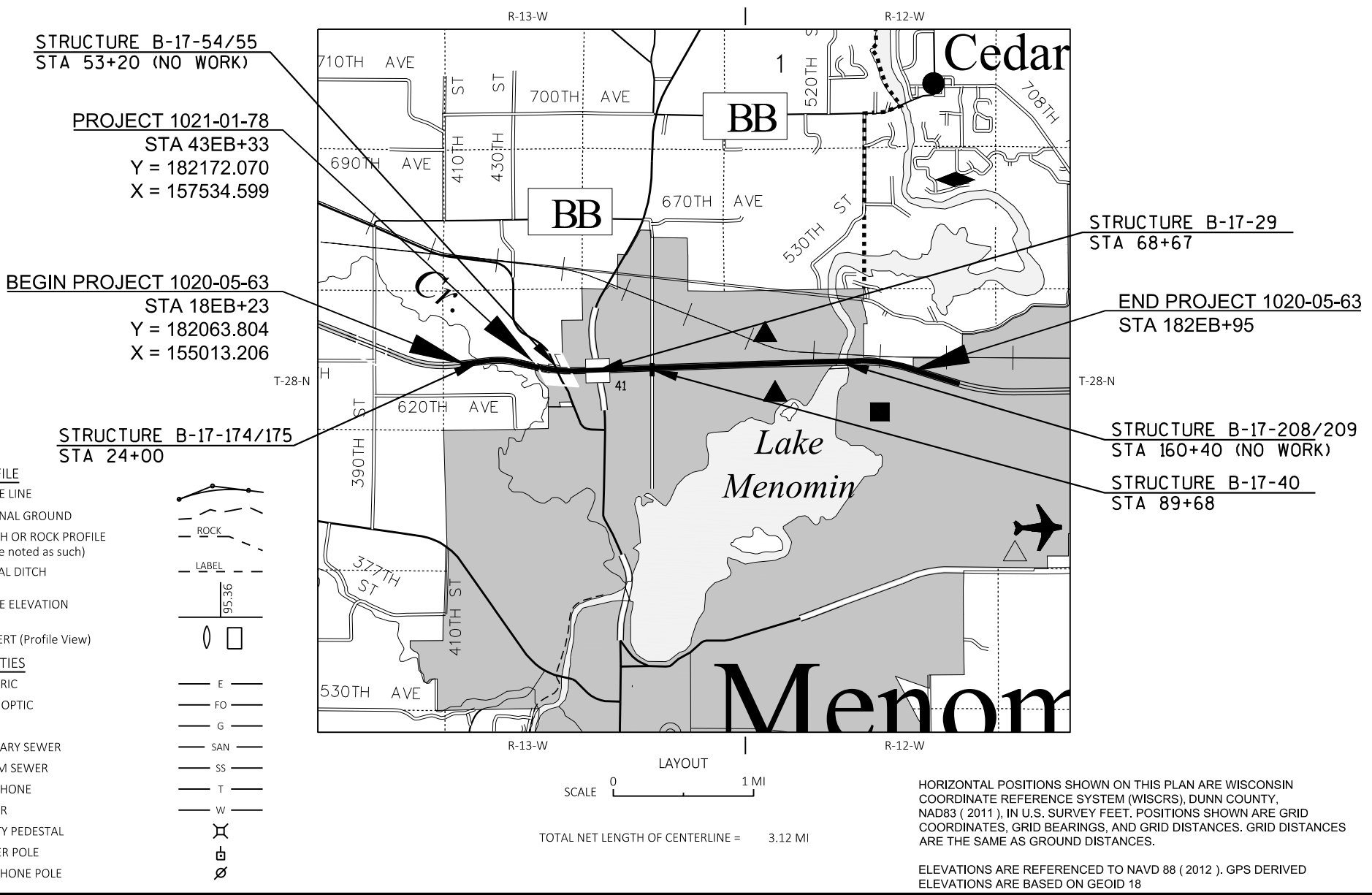
CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
	STORM SEWER
	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE
MARSH AREA	
WOODED OR SHRUB AREA	

MENOMONIE - EAU CLAIRE
WILSON CREEK TO RED CEDAR RIVER

BALDWIN - MENOMONIE
EAST BRANCH WILSON CREEK BRIDGE, B-17-51

STATE PROJECT NUMBER	STATE PROJECT NUMBER
1020-05-63	1021-01-78



ORIGINAL PLANS PREPARED BY

DATE: 4/23/2026

(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor CBS SQUARED, INC.

Designer CBS SQUARED, INC.

Project Manager ADAM HETRICK

Regional Examiner NW REGION

Regional Supervisor JEFF OLSON

APPROVED FOR THE DEPARTMENT

Adam M. Hetrick, P.E.

DATE:

(Signature)

E

UTILITIES CONTACTS

24-7 TELECOM
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DOWNSVILLE, WI 54735
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800 WILSON AVE
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GAS / PETROLEUM
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CENTURYLINK
COMMUNICATION LINE
GENERAL MAILBOX CENTURYLINK
NATIONAL OSP RELOC
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DESIGN PROJECT MANAGER

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DESIGN CONTACT

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EMAIL: TTUCKER@CBSSQUAREDINC.COM

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
GUARDRAIL DETAILS
CURB RAMP DETAILS
FTMS (BY WISDOT)
EROSION CONTROL
PIPE DETAILS
PERMANENT SIGNING
LIGHTING REMOVALS (BY KL ENGINEERING)
LIGHTING PLAN (BY KL ENGINEERING)
PAVEMENT MARKING
ADVANCED WARNING SIGNING
TRAFFIC CONTROL

GENERAL NOTES

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

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY OPERATIONS, OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

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

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE

RADIUS DIMENSIONS FOR THE CURB AND GUTTER ARE TO THE FLANGE LINE UNLESS OTHERWISE NOTED.

CURVE DATA IS BASED ON THE RADIUS DEFINITION.

PAVEMENT REMOVAL WILL BE TO THE NEAREST JOINT OR A SAWED EDGE WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.

PIPE AND INLET ELEVATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS

CURB AND GUTTER PLAN GRADES ARE AT THE FLANGE LINE UNLESS OTHERWISE NOTED.

THE PROPOSED SHOULDER WIDTH SHOWN IN THE TYPICAL SECTIONS ARE MINIMUM WIDTH. PERPETUATE EXISTING SHOULDERS THAT ARE WIDER THAN WHAT IS SHOWN IN THE TYPICAL SECTIONS.

THE CONTRACTOR'S PAVING OPERATION SHALL BE CONSISTENT WITH THE TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING, OR PARKING LANE.

CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN PAVING OR PIPE LAYING OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS TO DRIVEWAYS SHALL BE RE-ESTABLISHED IMMEDIATELY AFTER OPERATIONS ARE COMPLETED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.

DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.

RUNOFF COEFFICIENT TABLE

LAND USE:	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	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 STRIPTURF:	.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 SLOPETURF:			.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 = 53.767 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 3.146 ACRES

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

STANDARD ABBREVIATIONS

ABUT	ABUTMENT	LT	LEFT
AC	ACRE	LHF	LEFT HAND FORWARD
AGG	AGGREGATE	L	LENGTH OF CURVE
AH	AHEAD	LF	LINEAR FOOT
∠	ANGLE	LC	LONG CHORD OF CURVE
AADT	ANNUAL AVERAGE DAILY TRAFFIC	LS	LUMP SUM
AEW	APRON ENDWALL	MGAL	ONE THOUSAND GALLONS
ASPH	ASPHALTIC	MH	MANHOLE
BK	BACK	ML OR M/L	MATCH LINE
BC	BACK OF CURB	NOM	NOMINAL
BAD	BASE AGGREGATE DENSE	NC	NORMAL CROWN
BL OR B/L	BASE LINE	NB	NORTHBOUND
BM	BENCH MARK	NO	NUMBER
CB	CATCH BASIN	OD	OUTSIDE DIAMETER
CL OR C/L	CENTER LINE	PAVT	PAVEMENT
Δ	CENTRAL ANGLE OR DELTA	PLE	PERMANENT LIMITED EASEMENT
CE	COMMERCIAL ENTRANCE	PC	POINT OF CURVATURE
CONC	CONCRETE	PI	POINT OF INTERSECTION
CSW	CONCRETE SIDEWALK	PT	POINT OF TANGENCY
CONST	CONSTRUCTION	PCC	PORTLAND CEMENT CONCRETE
CP	CONTROL POINT	LB	POUND
CO	COUNTY	PSI	POUNDS PER SQUARE INCH
CTH	COUNTY TRUCK HIGHWAY	PE	PRIVATE ENTRANCE
CY	CUBIC YARD	PROJ	PROJECT
CP	CULVERT PIPE	PL	PROPERTY LINE
CPCA	CULVERT PIPE CORRUGATED ALUMINUM	PRW	PROPOSED RIGHT OF WAY
CPCPE	CULVERT PIPE CORRUGATED POLYETHYLENE	R	RADIUS
CPCPP	CULVERT PIPE CORRUGATED POLYPROPYLENE	RL OR R/L	REFERENCE LINE
CPCS	CULVERT PIPE CORRUGATED STEEL	REQD	REQUIRED
CPCSAC	CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED	RT	RIGHT
CPCSPC	CULVERT PIPE CORRUGATED STEEL POLYMER COATED	RHF	RIGHT HAND FORWARD
CPRC	CULVERT PIPE REINFORCED CONCRETE	R/W	RIGHT OF WAY
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL	RD	ROAD
CPS	CULVERT PIPE SALVAGED	RDWY	ROADWAY
CPT	CULVERT PIPE TEMPORARY	SHLDR	SHOULDER
C & G	CURB AND GUTTER	SW	SIDEWALK
D	DEGREE OF CURVE	SB	SOUTHBOUND
DHV	DESIGN HOUR VOLUME	SPECS	SPECIFICATIONS
DIA	DIAMETER	SF	SQUARE FEET
DD	DIRECTIONAL DISTRIBUTION	SY	SQUARE YARD
DE	DRAINAGE EASEMENT	SDD	STANDARD DETAIL DRAWINGS
DWY	DRIVEWAY	STH	STATE TRUNK HIGHWAY
EA	EACH	STA	STATION
EB	EASTBOUND	SSPC	STORM SEWER PIPE COMPOSITE
EL OR ELEV	ELEVATION	SSCPE	STORM SEWER PIPE CORRUGATED POLYETHYLENE
EMB	EMBANKMENT	SSCPP	STORM SEWER PIPE CORRUGATED POLYPROPYLENE
EW	ENDWALL	SSPNRC	STORM SEWER PIPE NON-REINFORCED CONCRETE
EAT	ENERGY ABSORBING TERMINAL	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
ESALS	EQUIVALENT SINGLE AXLE LOADS	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
EXC	EXCAVATION	SSPRCHE	STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
EBS	EXCAVATION BELOW SUBGRADE	SE	SUPERELEVATION
EXIST	EXISTING	SL OR S/L	SURVEY LINE
FERT	FERTILIZER	TEMP	TEMPORARY
FE	FIELD ENTRANCE	TI	TEMPORARY INTEREST
FL OR F/L	FLOW LINE	TLE	TEMPORARY LIMITED EASEMENT
FT	FOOT	TC	TOP OF CURB
FTMS	FREE TRAFFIC MANAGEMENT SYSTEM	TL OR T/L	TRANSIT LINE
HES	HIGH EARLY STRENGTH	T	TRUCKS (PERCENT OF)
HE	HIGHWAY EASEMENT	TYP	TYPICAL
CWT	HUNDRED WEIGHT	USH	UNITED STATES HIGHWAY
IN DIA	INCH DIAMETER	VAR	VARIABLE
INL	INLET	VC	VERTICAL CURVE
ID	INSIDE DIAMETER	VPC	VERTICAL POINT OF CURVATURE
INTERS	INTERSECTION	VPI	VERTICAL POINT OF INTERSECTION
IH	INTERSTATE HIGHWAY	VPT	VERTICAL POINT OF TANGENCY
INV	INVERT	W	WEST
JT	JOINT	WB	WESTBOUND

ALIGNMENT ABBREVIATIONS

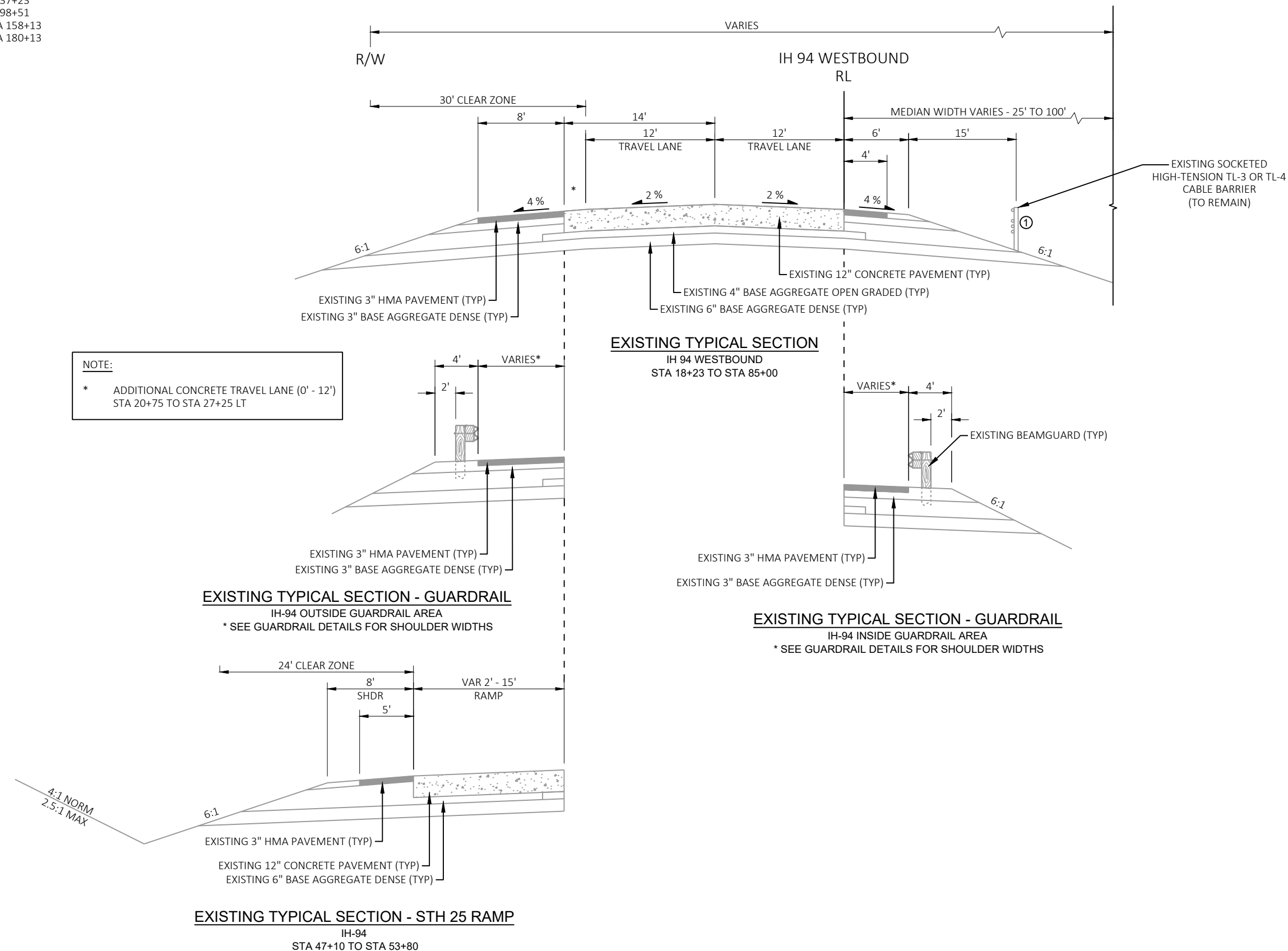
EB - IH 94 EASTBOUND
WB - IH 94 WESTBOUND

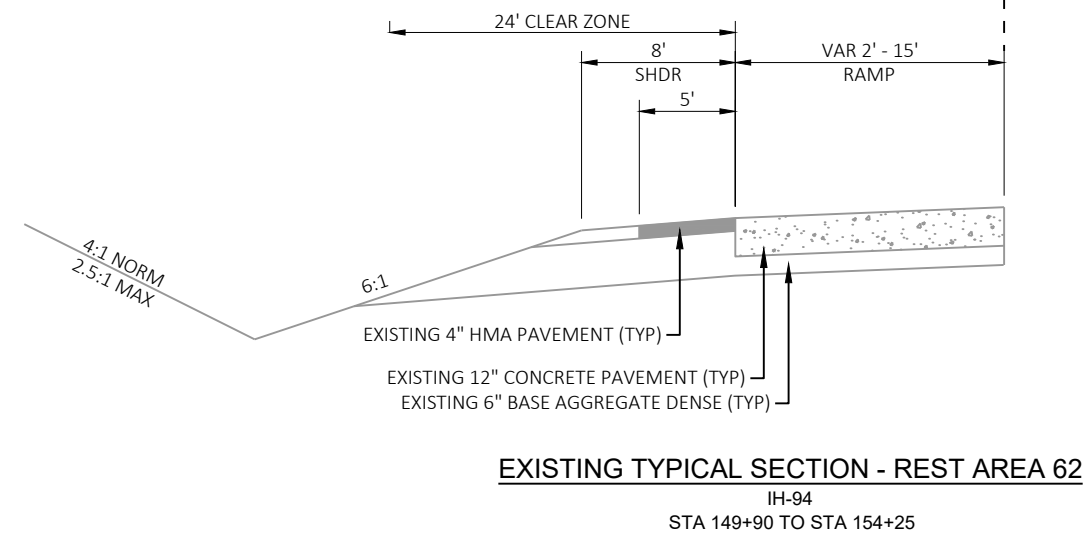
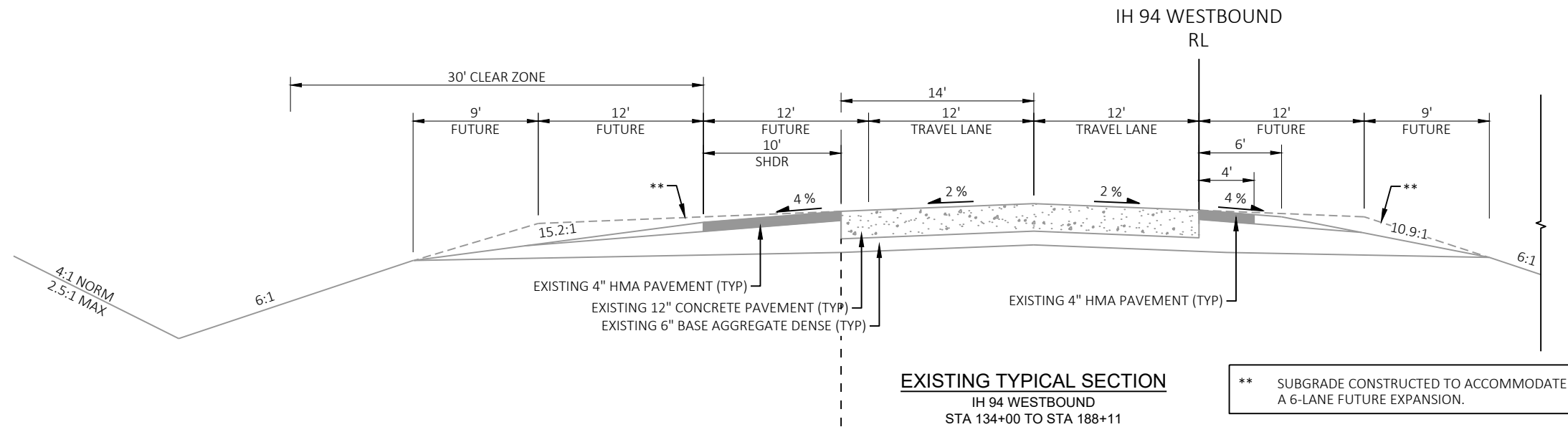
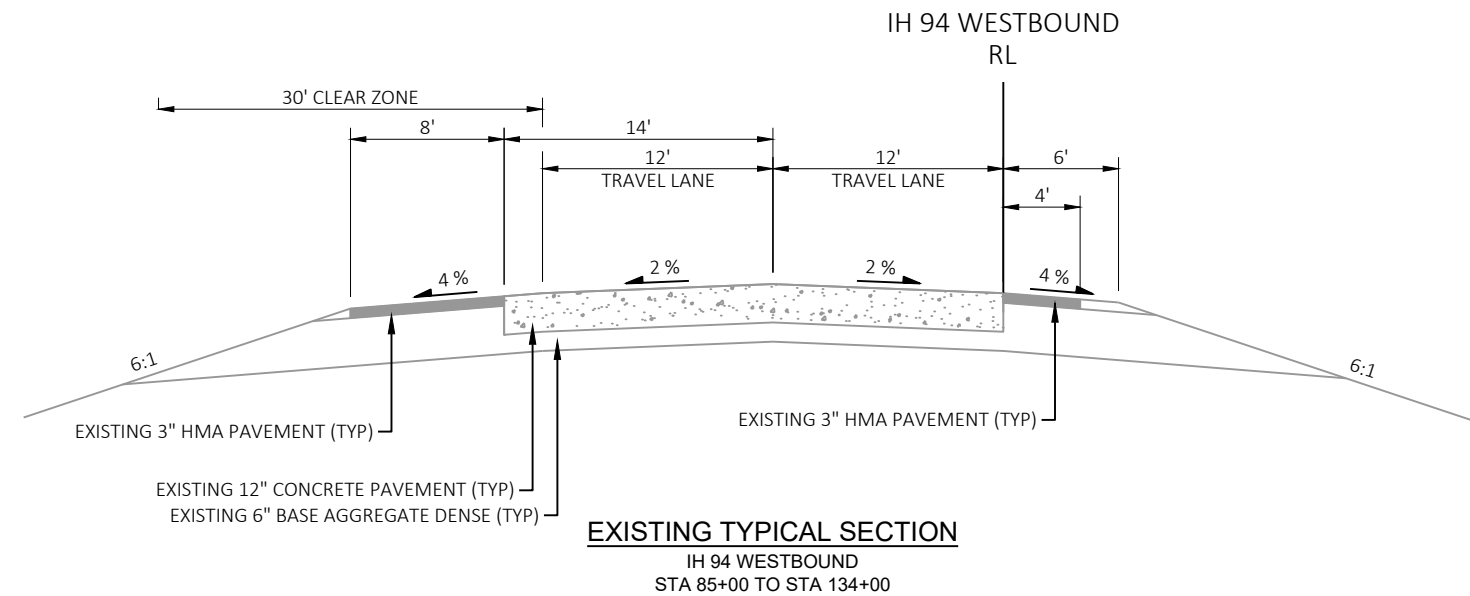
EC - EASTBOUND REST AREA RAMP
WC - WESTBOUND REST AREA RAMP

NB - STH 25 NORTHBOUND
SB - STH 25 SOUTHBOUND

① CABLE BARRIER LOCATED:

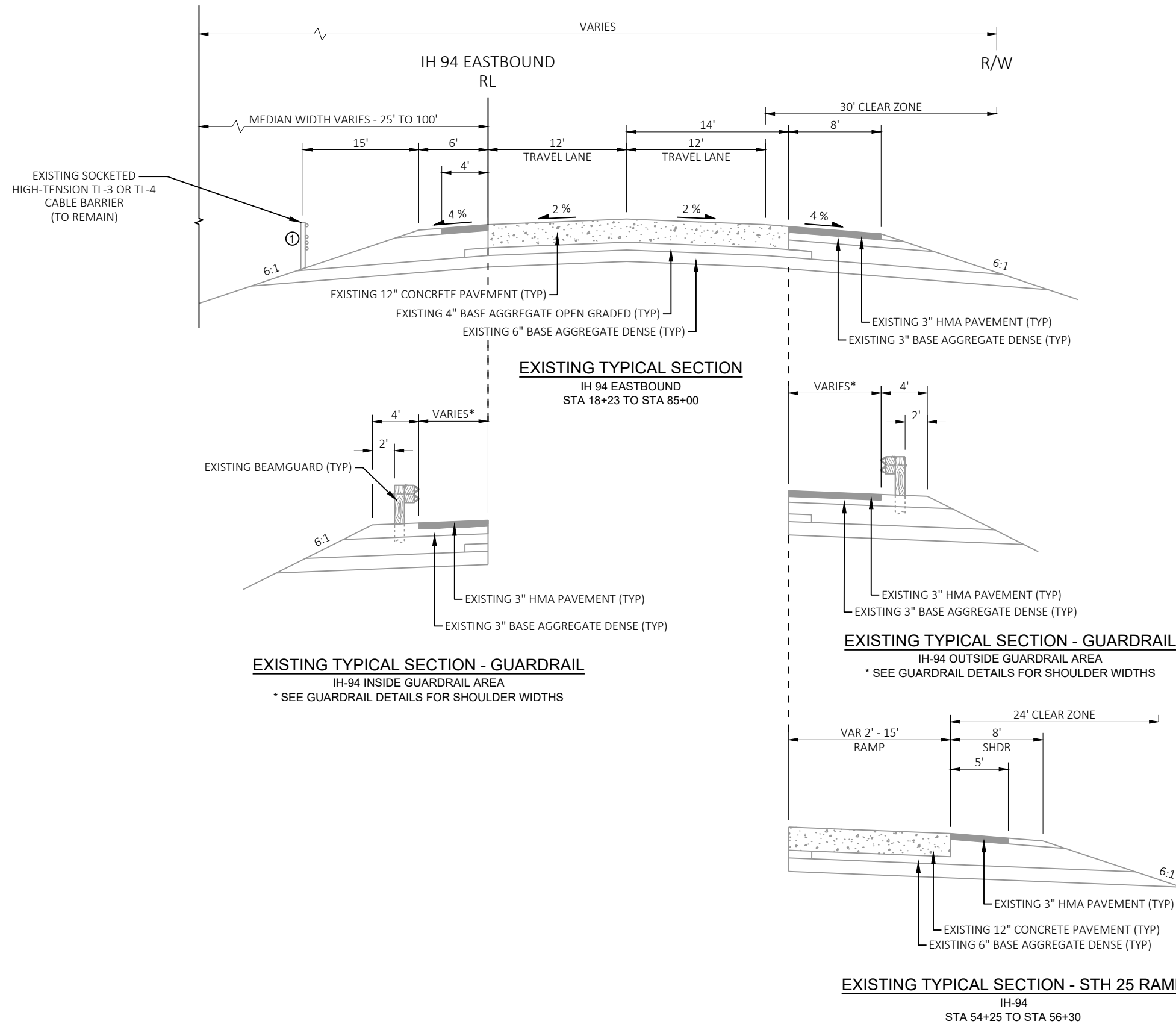
STA 24+78 TO STA 37+23
STA 54+13 TO STA 98+51
STA 151+48 TO STA 158+13
STA 163+13 TO STA 180+13

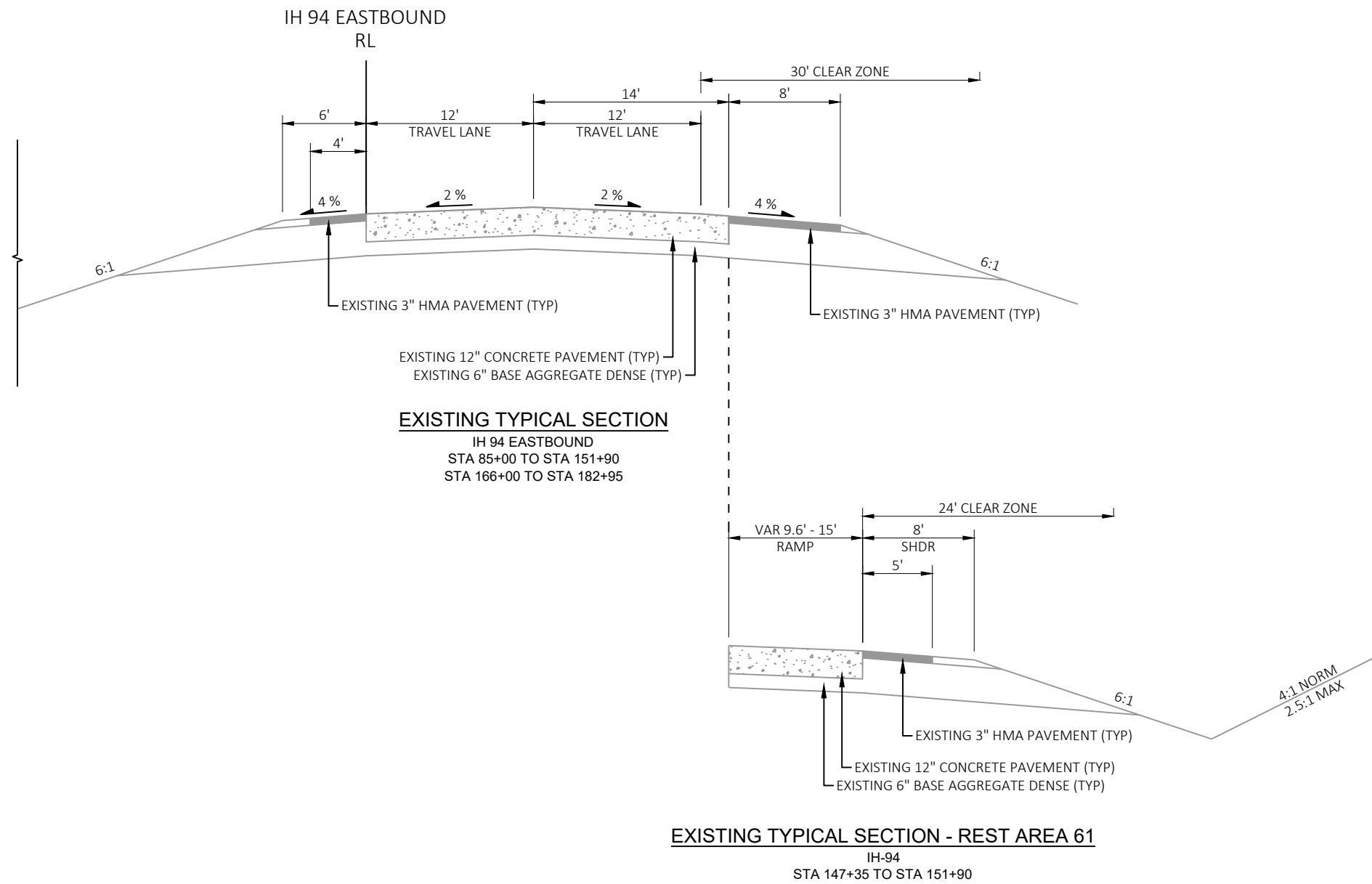


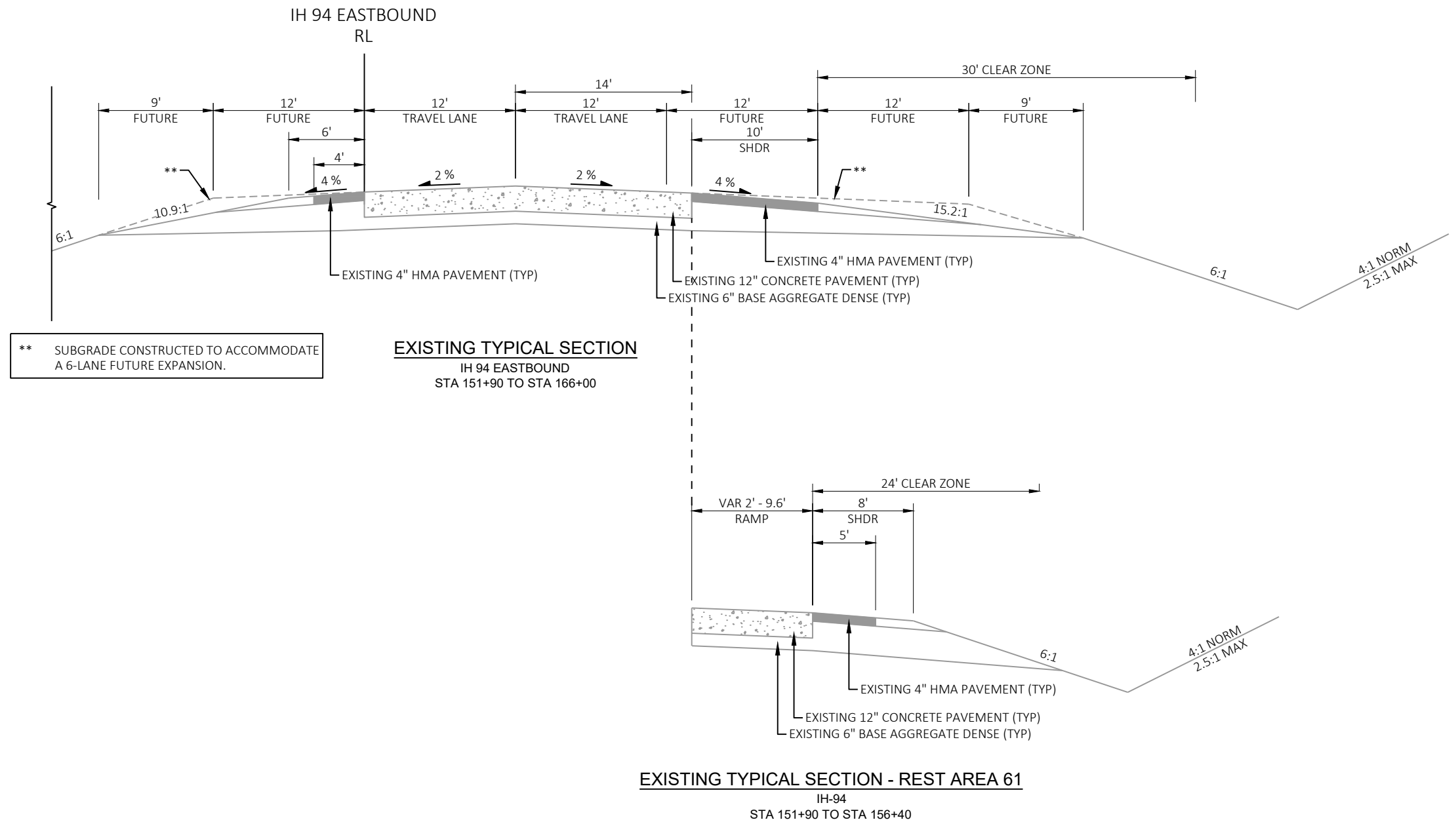


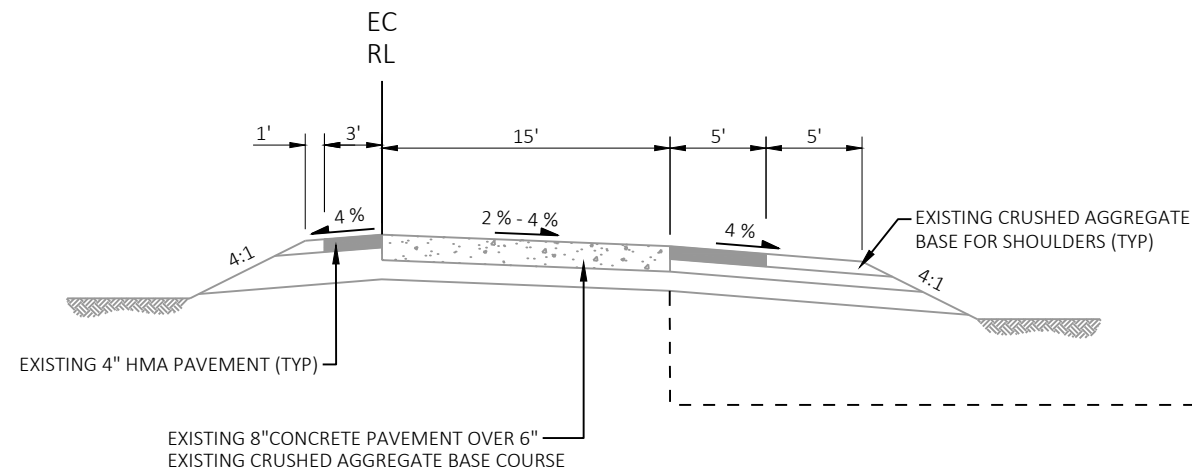
① CABLE BARRIER LOCATED:

STA 37+98 TO STA 52+33
STA 99+08 TO STA 150+63



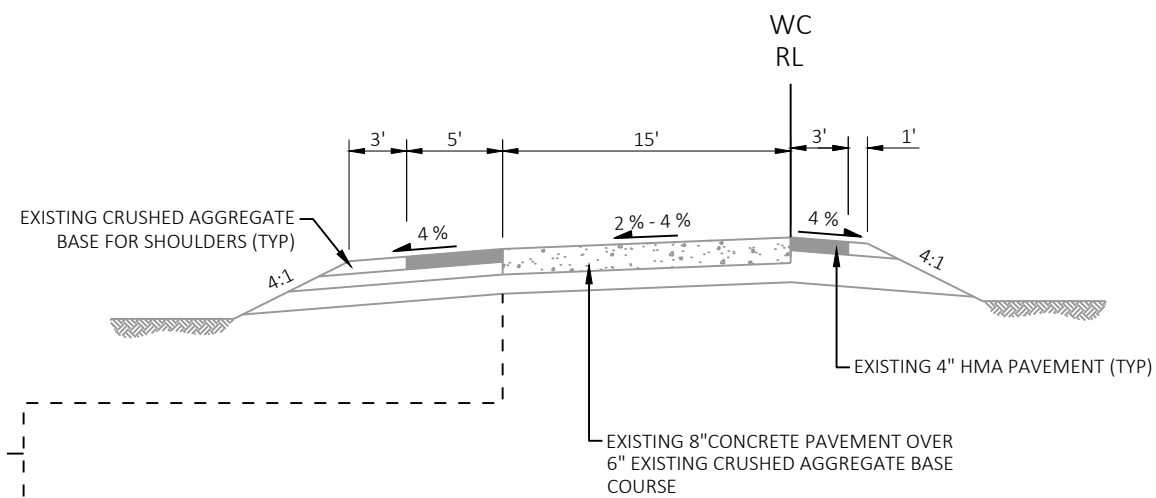






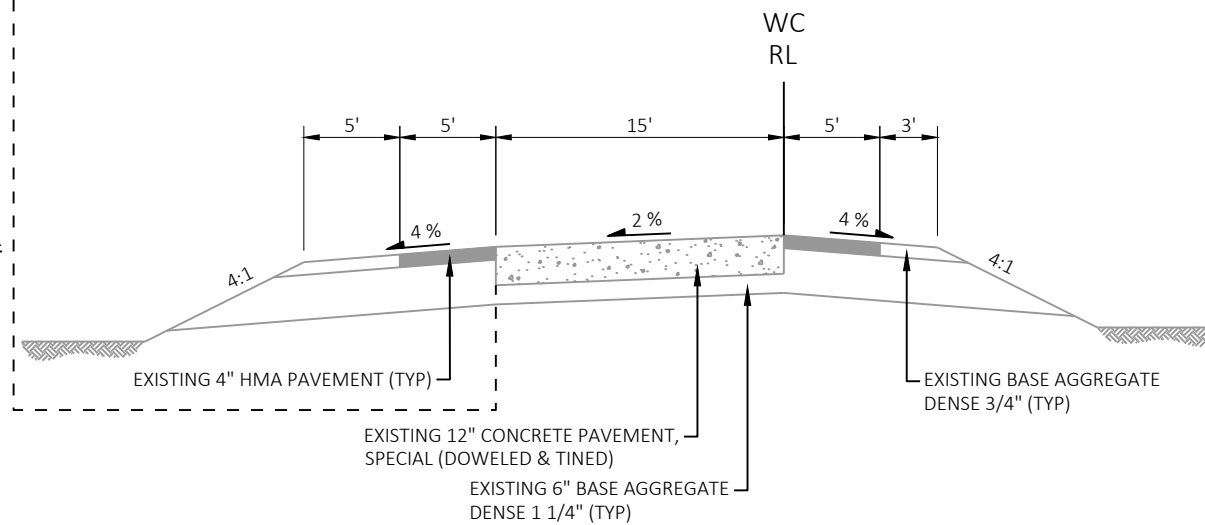
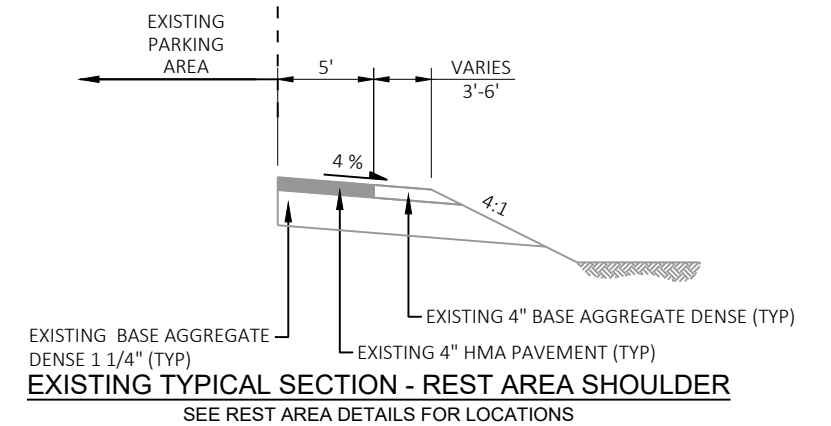
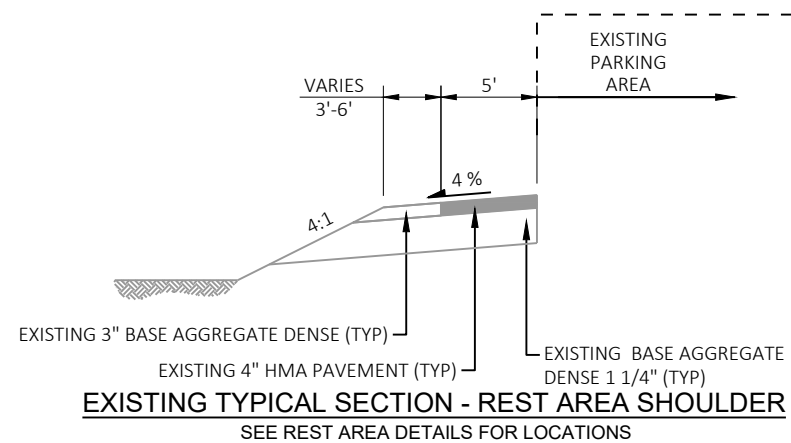
EXISTING TYPICAL SECTION REST AREA #61 RAMP - EB IH 94 ENTRANCE, EB IH 94 EXIT

STA 120+00 EC TO STA 128+00 EC
STA 102+00 EC TO STA 110+00 EC



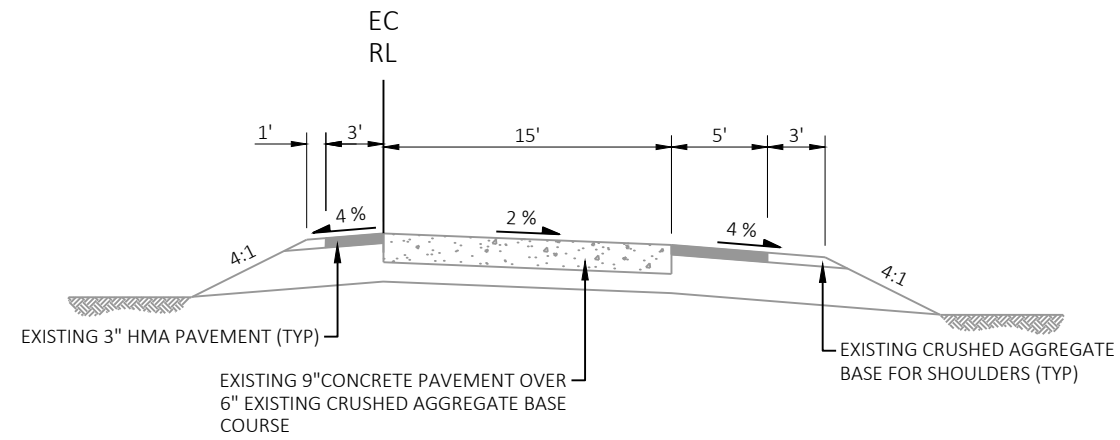
EXISTING TYPICAL SECTION REST AREA #62 RAMP - WB IH 94 ENTRANCE

STA 120+00 WC TO STA 128+00 WC

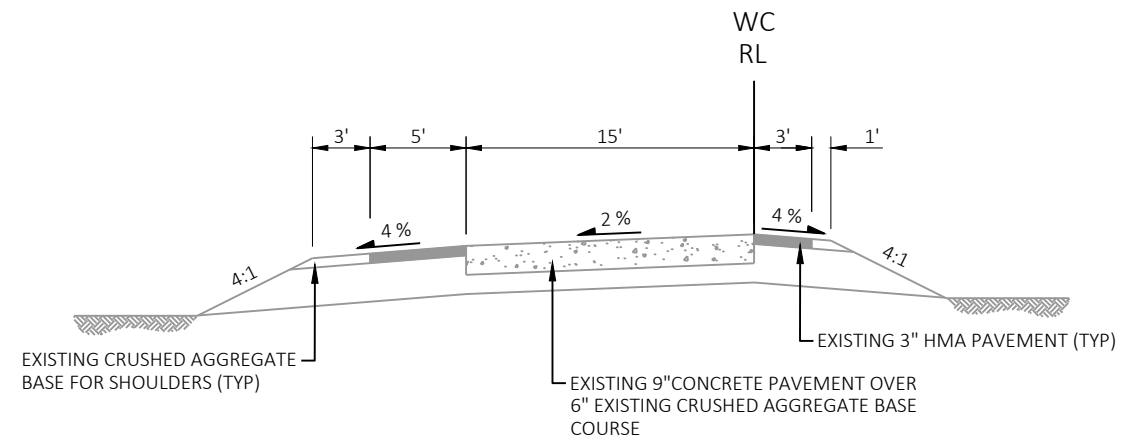


EXISTING TYPICAL SECTION REST AREA #62 RAMP - WB IH 94 EXIT

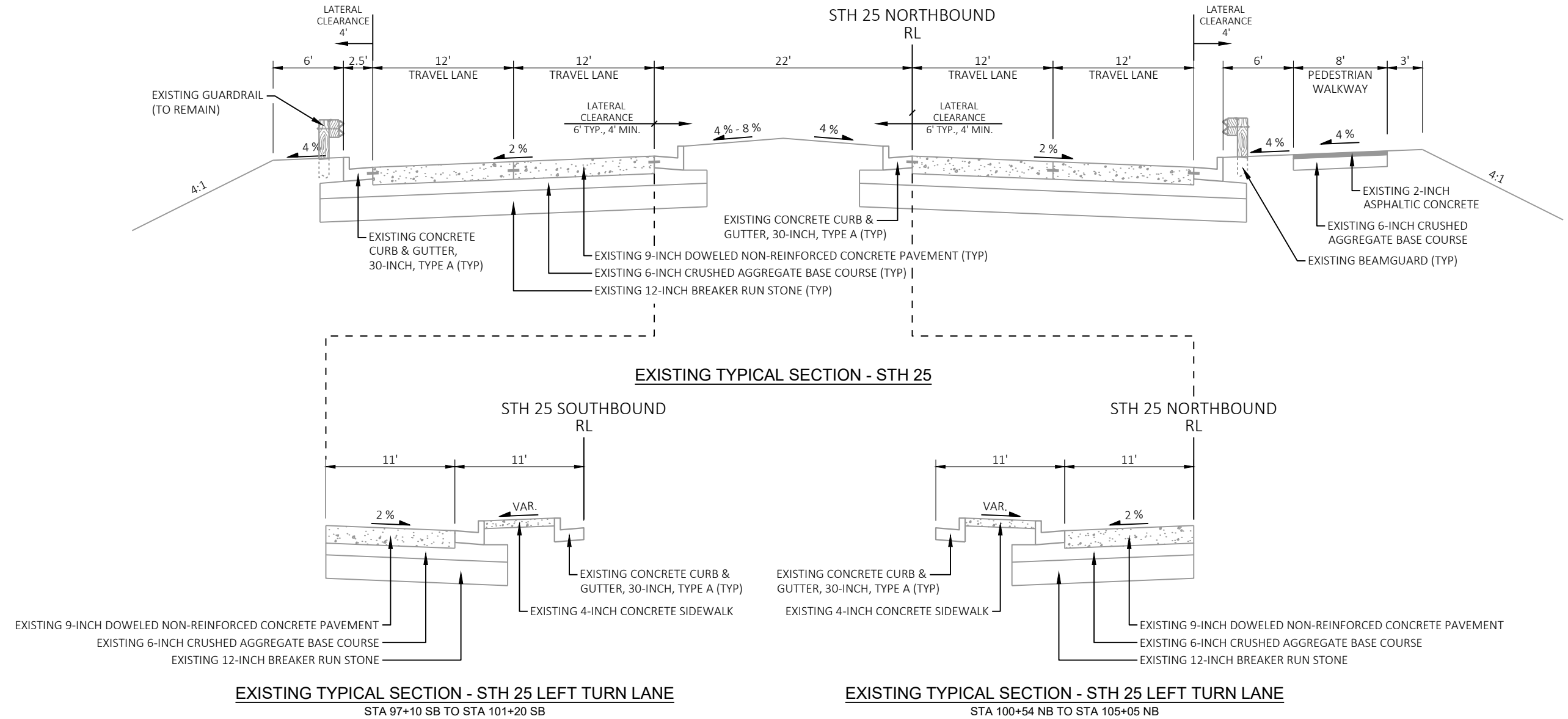
STA 136+00 WC TO STA 150+00 WC



EXISTING TYPICAL RAMP SECTION
STH 25 INTERCHANGE - EASTBOUND



EXISTING TYPICAL RAMP SECTION
STH 25 INTERCHANGE - WESTBOUND



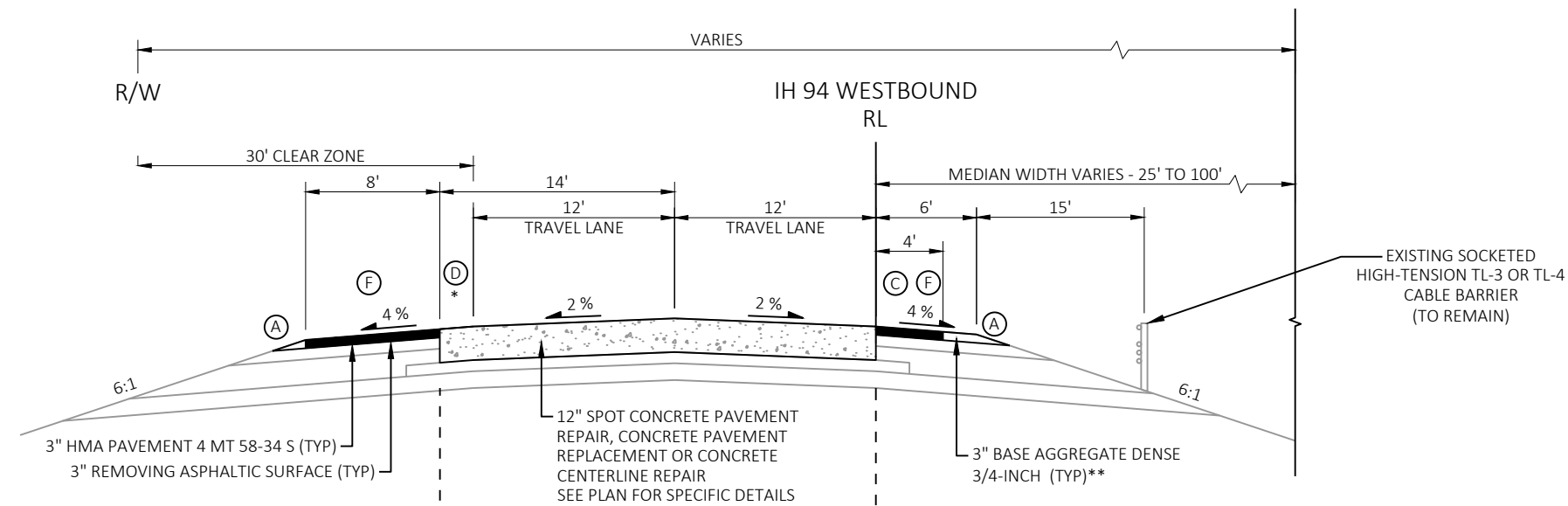
SEE EXISTING TYPICAL SECTIONS FOR
CABLE BARRIER LOCATIONS

NOTES:

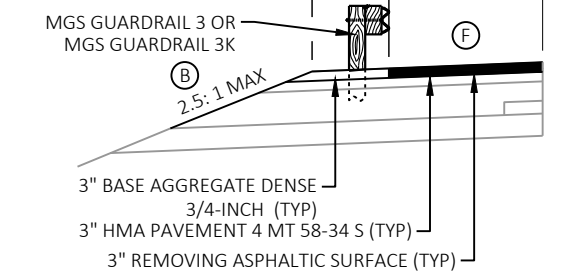
- (A) MATCH EXISTING SHOULDER POINT.
DO NOT STEEPEN INSLOPE.
- (B) SALVAGED TOPSOIL, SEED,
FERTILIZER, AND EROSION MAT.
- (C) ASPHALTIC RUMBLE STRIPS,
SHOULDER DIVIDED HIGHWAY
- (D) CONCRETE RUMBLE STRIPS,
SHOULDER DIVIDED HIGHWAY
- (E) PREPARE FOUNDATION FOR
ASPHALTIC SHOULDERS
- (F) PREPARE FOUNDATION FOR
ASPHALT PAVING

NOTE:

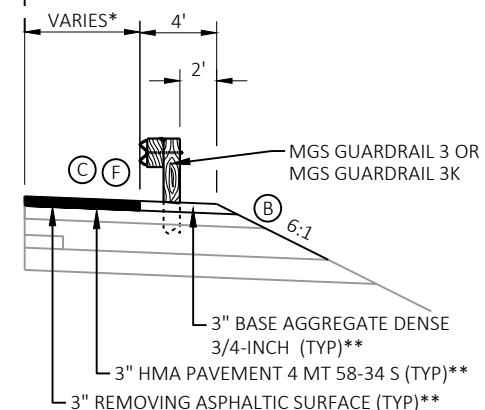
* ADDITIONAL CONCRETE TRAVEL LANE (0' - 12')
STA 20+75 TO STA 27+25 LT



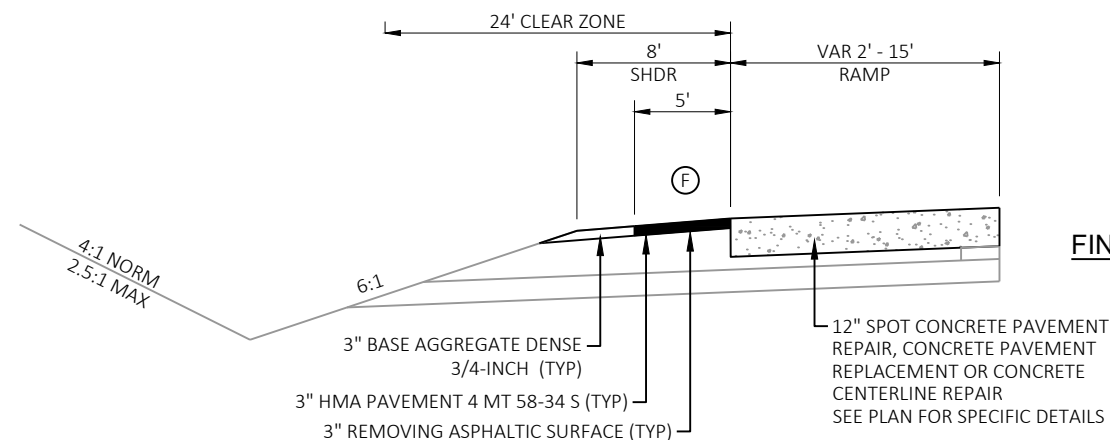
FINISHED TYPICAL SECTION
IH 94 WESTBOUND



FINISHED TYPICAL SECTION - GUARDRAIL
IH-94 OUTSIDE GUARDRAIL AREA
* SEE GUARDRAIL DETAILS FOR SHOULDER WIDTHS



FINISHED TYPICAL SECTION - GUARDRAIL
IH-94 INSIDE GUARDRAIL AREA
* SEE GUARDRAIL DETAILS FOR SHOULDER WIDTHS
** 4" REMOVING ASPHALTIC SURFACE, PAVEMENT, AND BASE FROM STATION 134+00 TO END**

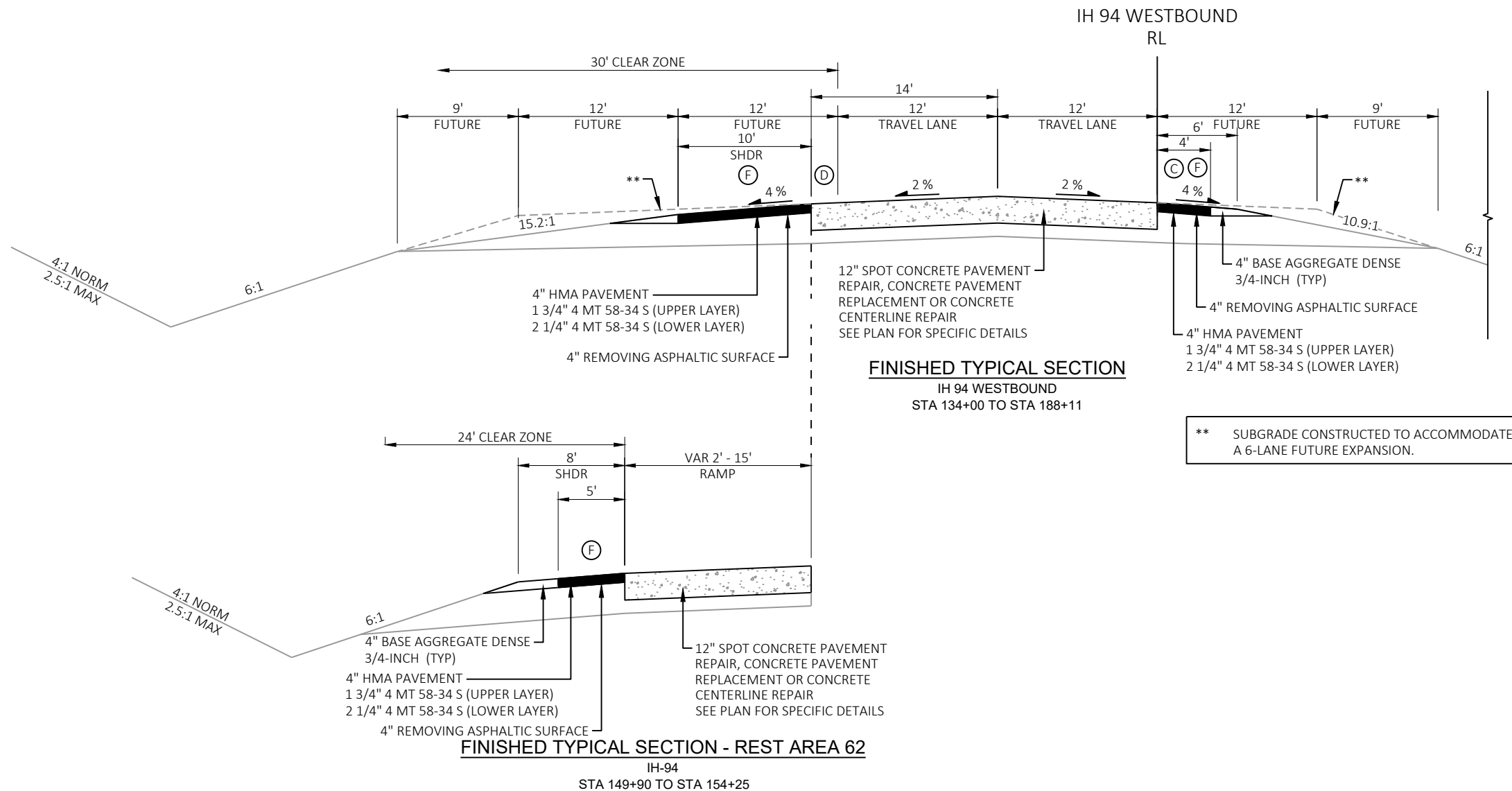
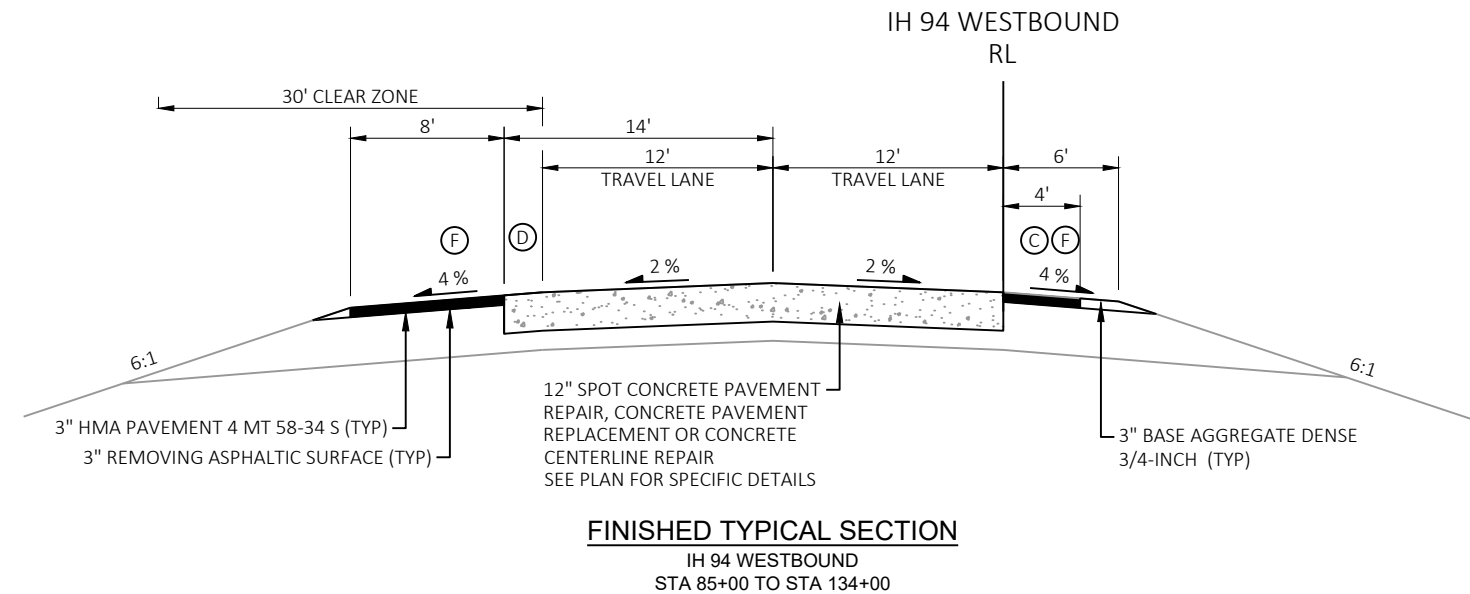


FINISHED TYPICAL SECTION - STH 25 RAMP
IH-94
STA 47+10 TO STA 53+80

FINISHED TYPICAL SECTIONS
IH-94 WESTBOUND
STA 18+23 TO STA 85+00

NOTES:

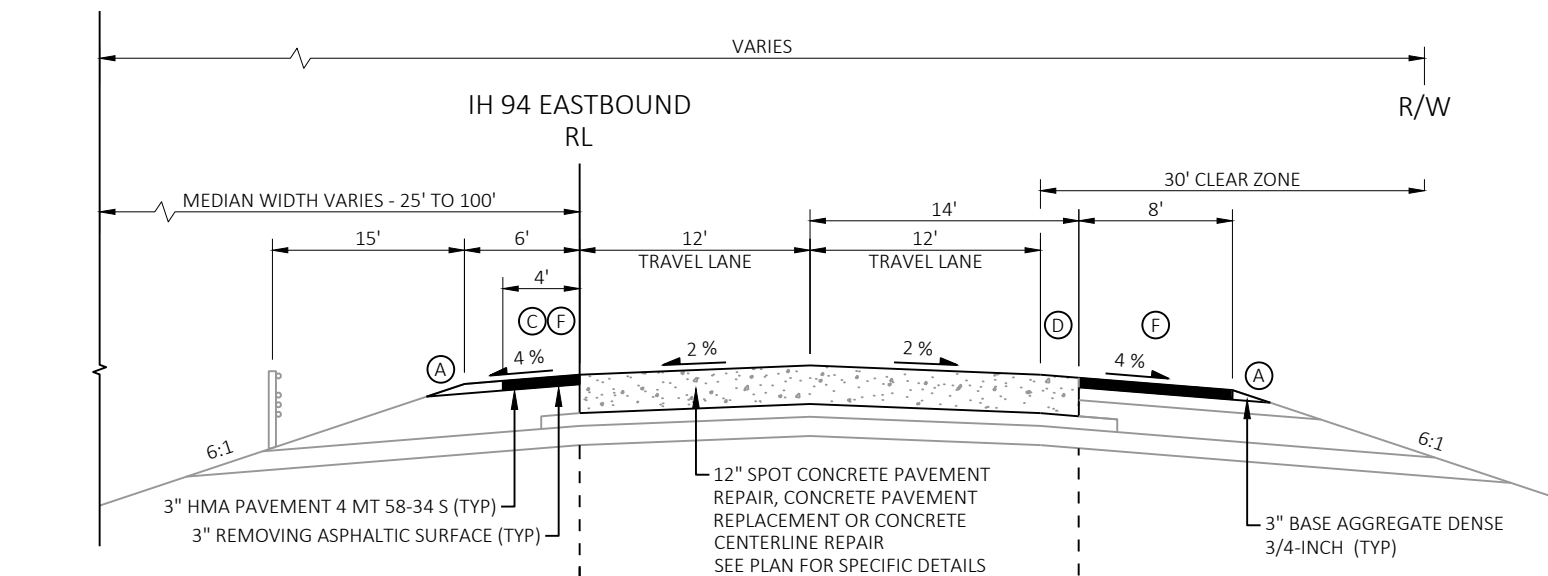
- (A) MATCH EXISTING SHOULDER POINT.
DO NOT STEEPEN INSLOPE.
- (B) SALVAGED TOPSOIL, SEED,
FERTILIZER, AND EROSION MAT.
- (C) ASPHALTIC RUMBLE STRIPS,
SHOULDER DIVIDED HIGHWAY
- (D) CONCRETE RUMBLE STRIPS,
SHOULDER DIVIDED HIGHWAY
- (E) PREPARE FOUNDATION FOR
ASPHALTIC SHOULDERS
- (F) PREPARE FOUNDATION FOR
ASPHALT PAVING



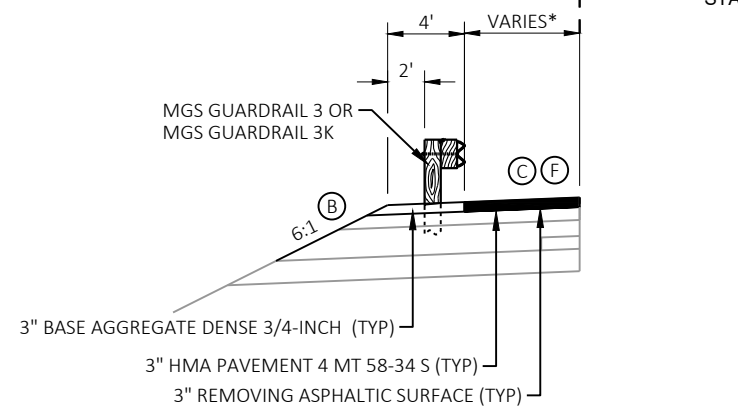
SEE EXISTING TYPICAL SECTIONS FOR
CABLE BARRIER LOCATIONS

NOTES:

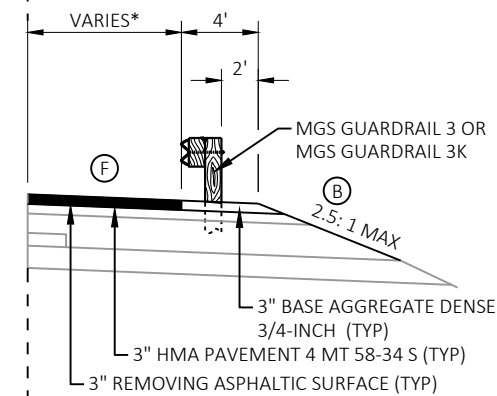
- (A) MATCH EXISTING SHOULDER POINT.
DO NOT STEEPEN INSLOPE.
- (B) SALVAGED TOPSOIL, SEED,
FERTILIZER, AND EROSION MAT.
- (C) ASPHALTIC RUMBLE STRIPS,
SHOULDER DIVIDED HIGHWAY
- (D) CONCRETE RUMBLE STRIPS,
SHOULDER DIVIDED HIGHWAY
- (E) PREPARE FOUNDATION FOR
ASPHALTIC SHOULDERS
- (F) PREPARE FOUNDATION FOR
ASPHALT PAVING



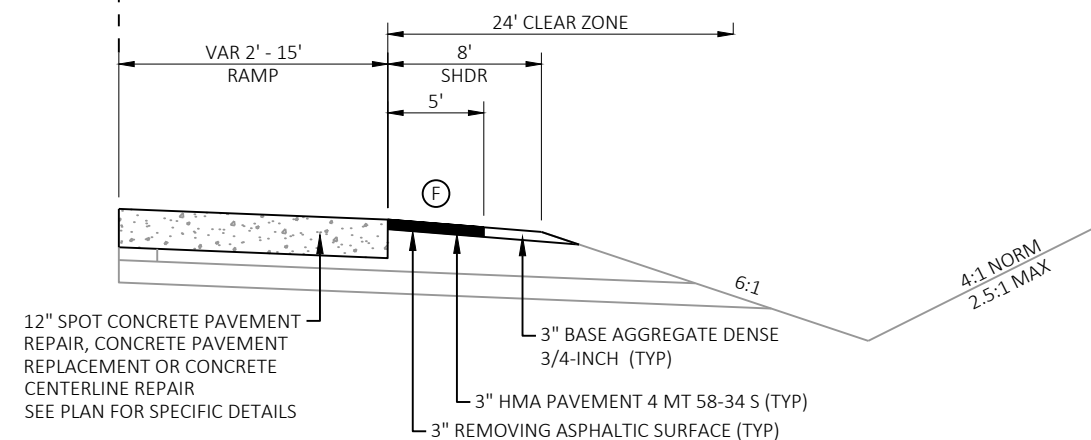
FINISHED TYPICAL SECTION
IH 94 EASTBOUND
STA 18+23 TO STA 85+00



FINISHED TYPICAL SECTION - GUARDRAIL
IH-94 INSIDE GUARDRAIL AREA
* SEE GUARDRAIL DETAILS FOR SHOULDER WIDTHS



FINISHED TYPICAL SECTION - GUARDRAIL
IH-94 OUTSIDE GUARDRAIL AREA
* SEE GUARDRAIL DETAILS FOR SHOULDER WIDTHS

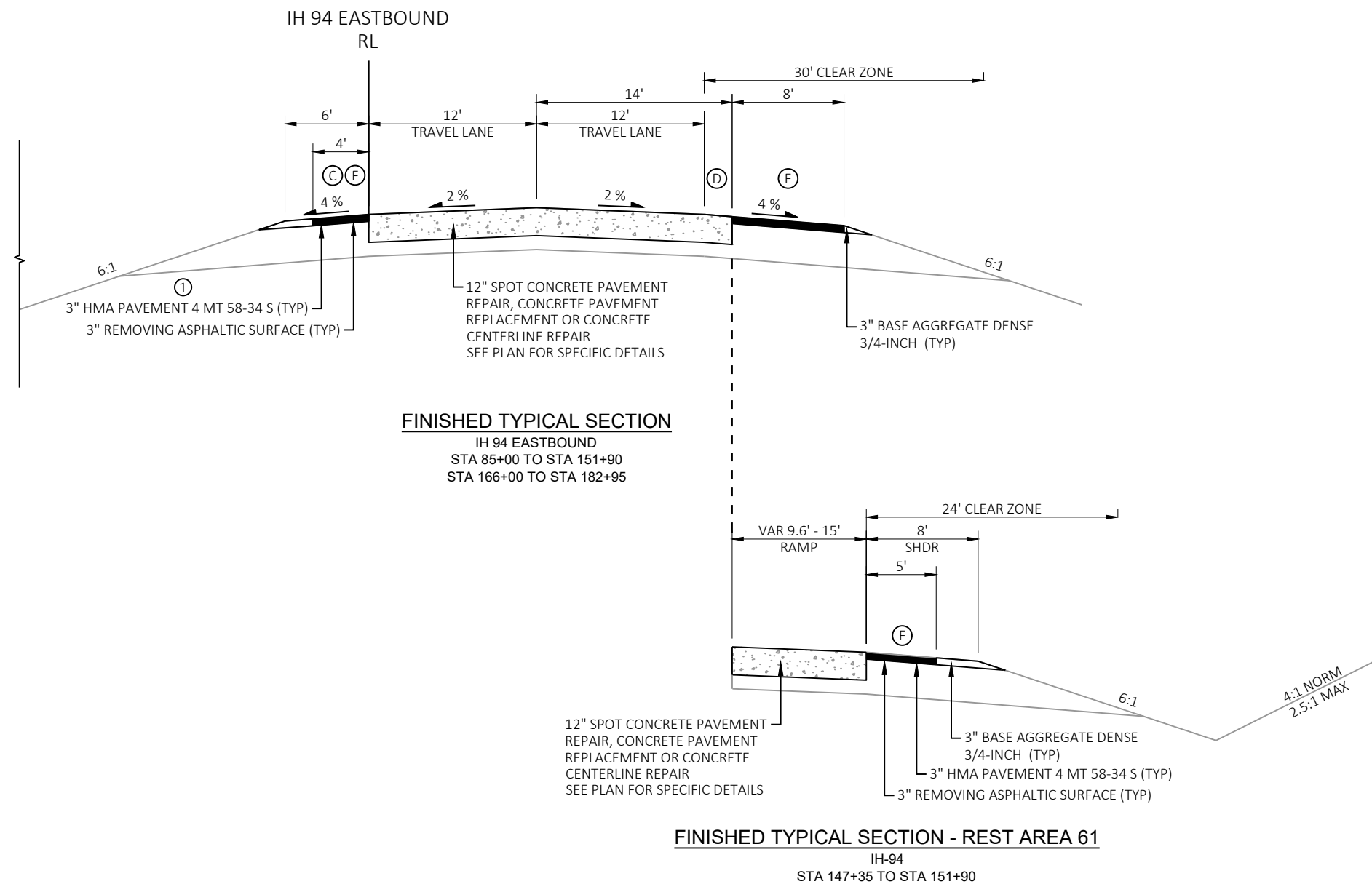


FINISHED TYPICAL SECTION - STH 25 RAMP
IH-94
STA 54+25 TO STA 56+30

① 4-INCH ASPHALTIC REMOVAL
AND HMA DEPTH FOR STA
166+00 TO STA 182+95

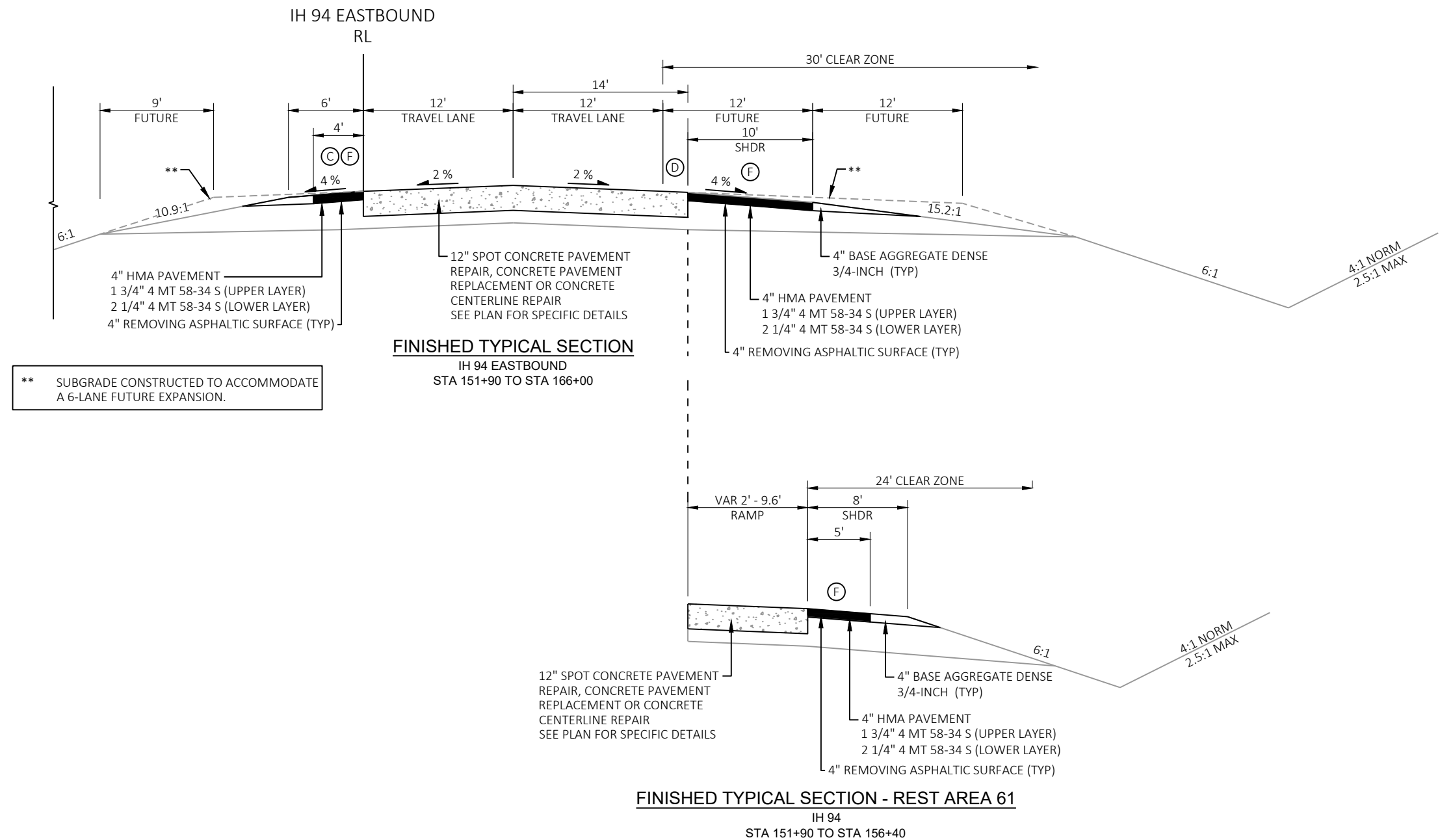
NOTES:

- (A) MATCH EXISTING SHOULDER POINT.
DO NOT STEEPEN INSLOPE.
- (B) SALVAGED TOPSOIL, SEED,
FERTILIZER, AND EROSION MAT.
- (C) ASPHALTIC RUMBLE STRIPS,
SHOULDER DIVIDED HIGHWAY
- (D) CONCRETE RUMBLE STRIPS,
SHOULDER DIVIDED HIGHWAY
- (E) PREPARE FOUNDATION FOR
ASPHALTIC SHOULDERS
- (F) PREPARE FOUNDATION FOR
ASPHALT PAVING



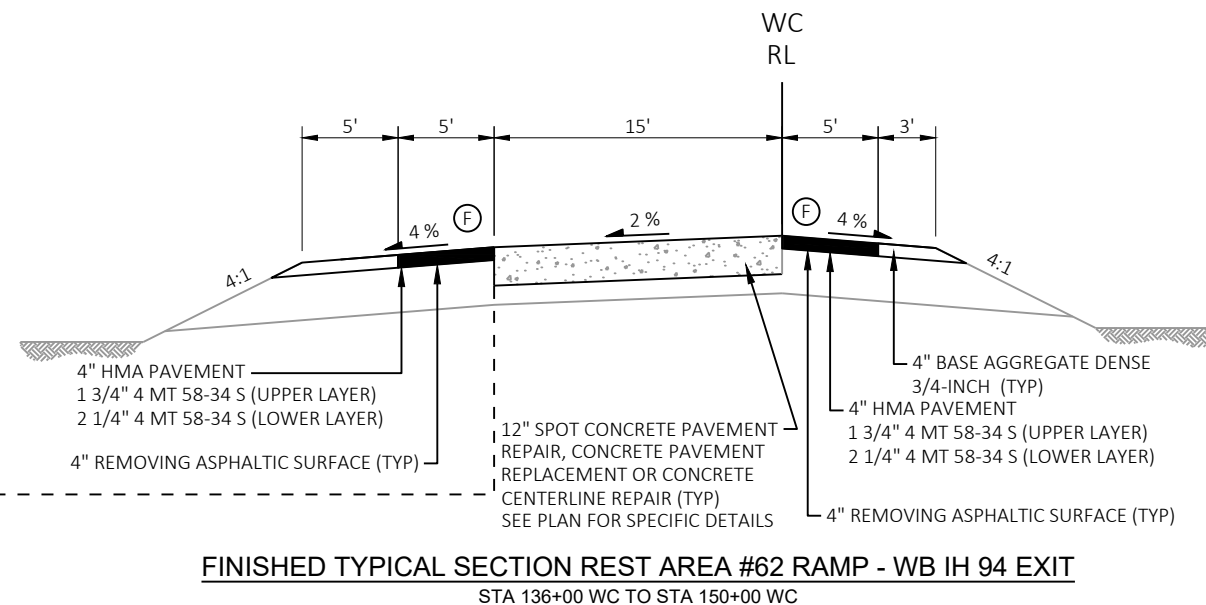
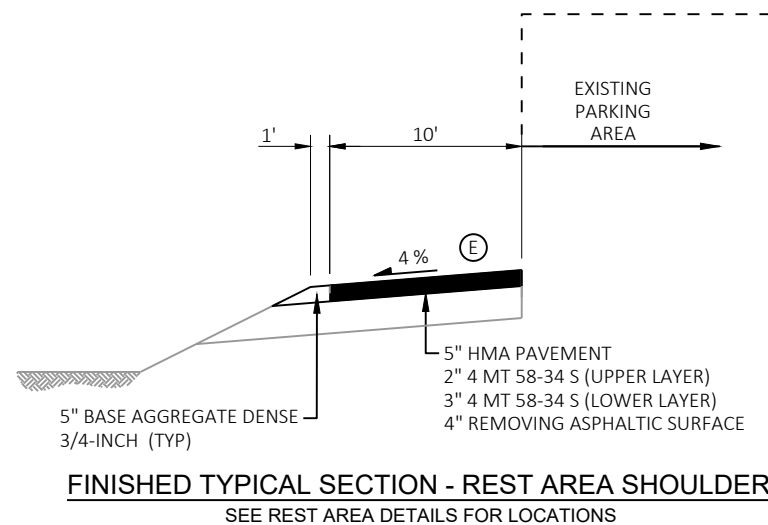
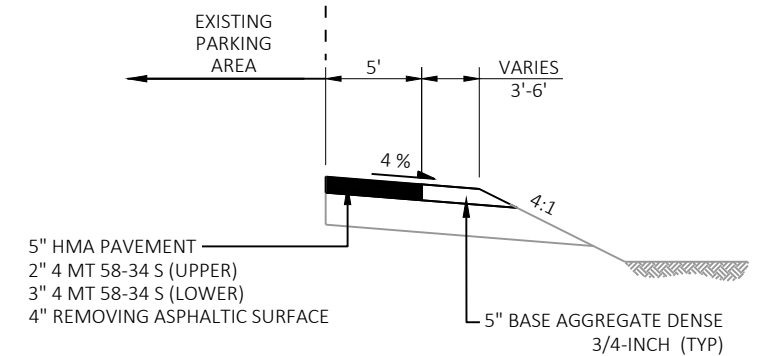
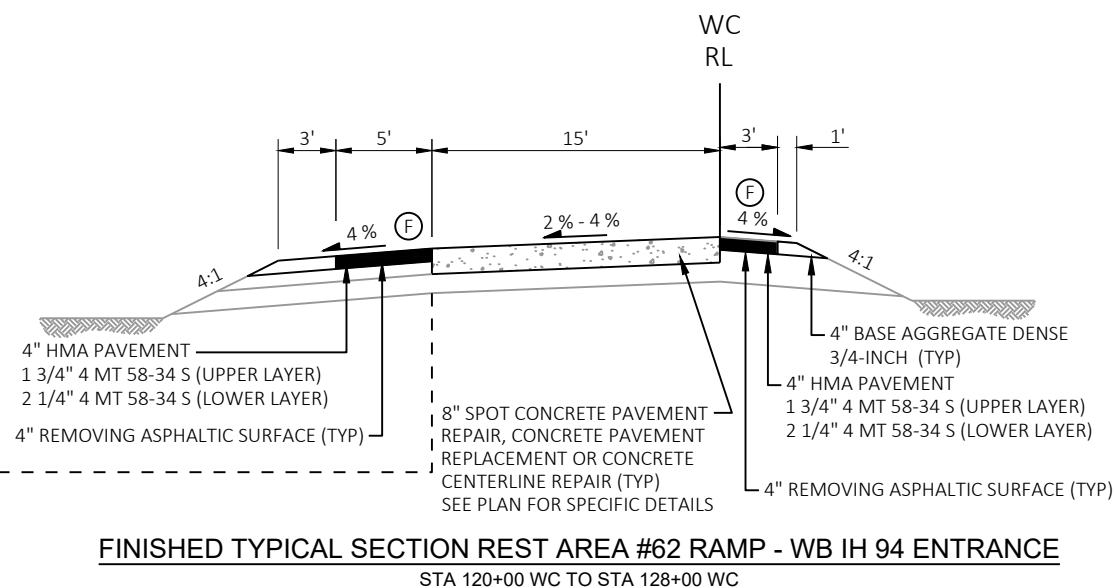
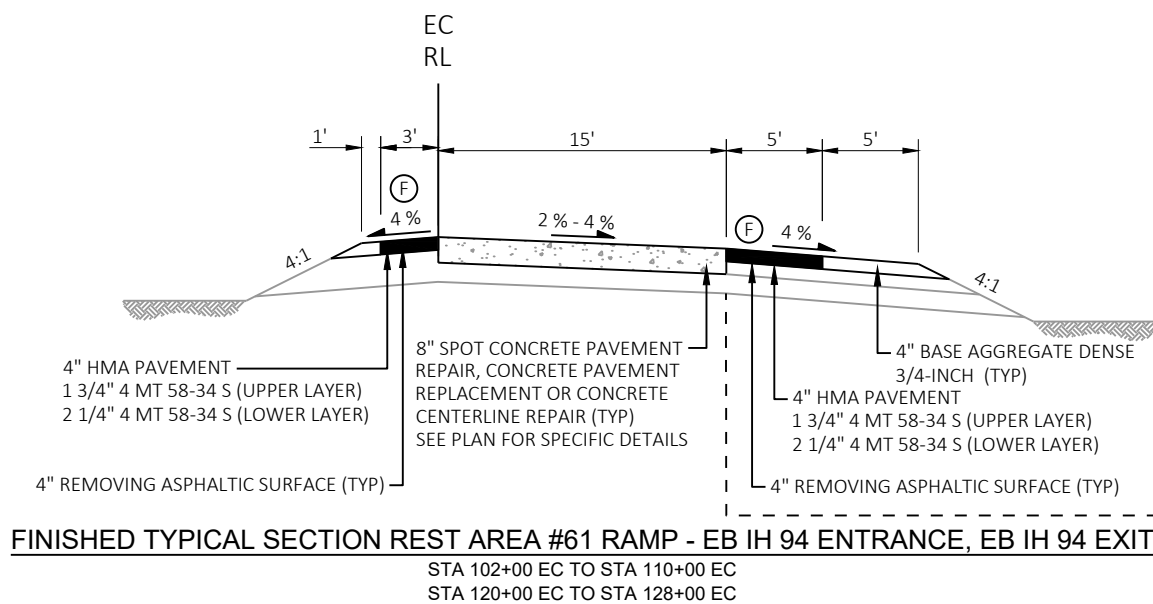
NOTES:

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FERTILIZER, AND EROSION MAT.
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- (F) PREPARE FOUNDATION FOR
ASPHALT PAVING



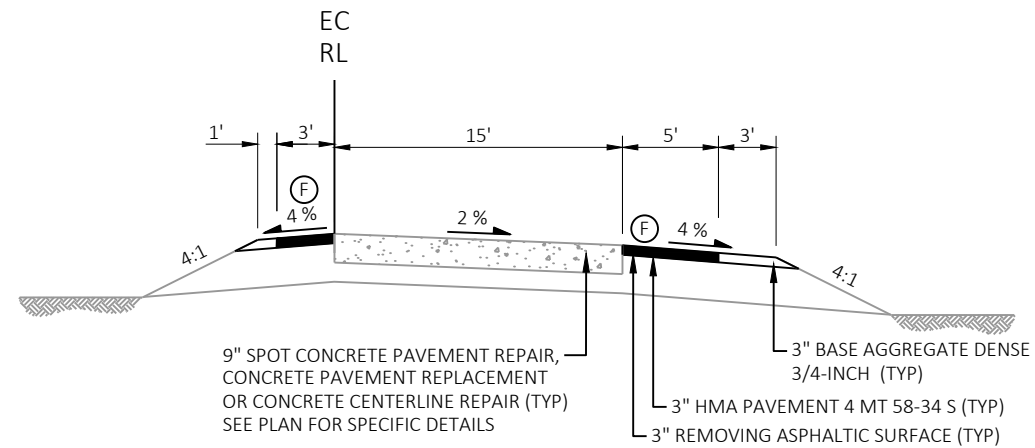
NOTES:

- (A) MATCH EXISTING SHOULDER POINT.
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- (B) SALVAGED TOPSOIL, SEED,
FERTILIZER, AND EROSION MAT.
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SHOULDER DIVIDED HIGHWAY
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ASPHALTIC SHOULDERS
- (F) PREPARE FOUNDATION FOR
ASPHALT PAVING

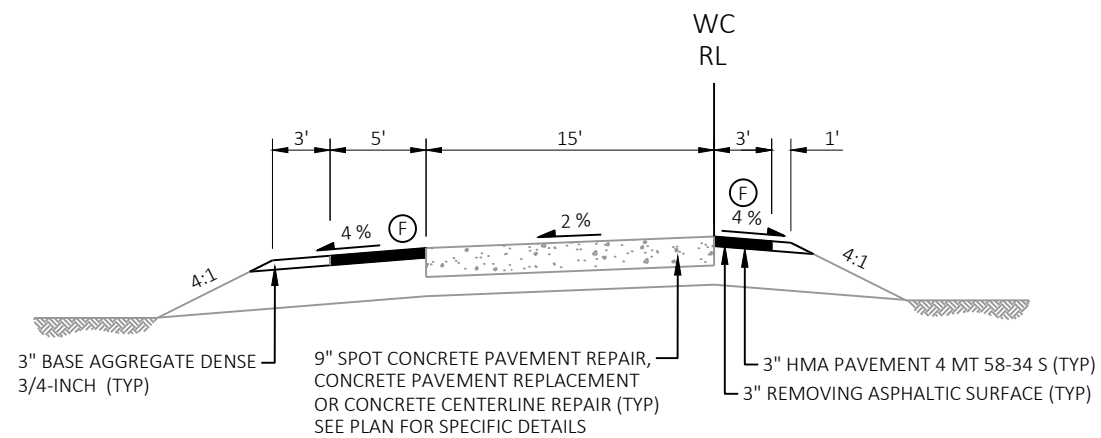


NOTES:

- (A) MATCH EXISTING SHOULDER POINT.
DO NOT STEEPEN INSLOPE.
- (B) SALVAGED TOPSOIL, SEED,
FERTILIZER, AND EROSION MAT.
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SHOULDER DIVIDED HIGHWAY
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ASPHALTIC SHOULDERS
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ASPHALT PAVING



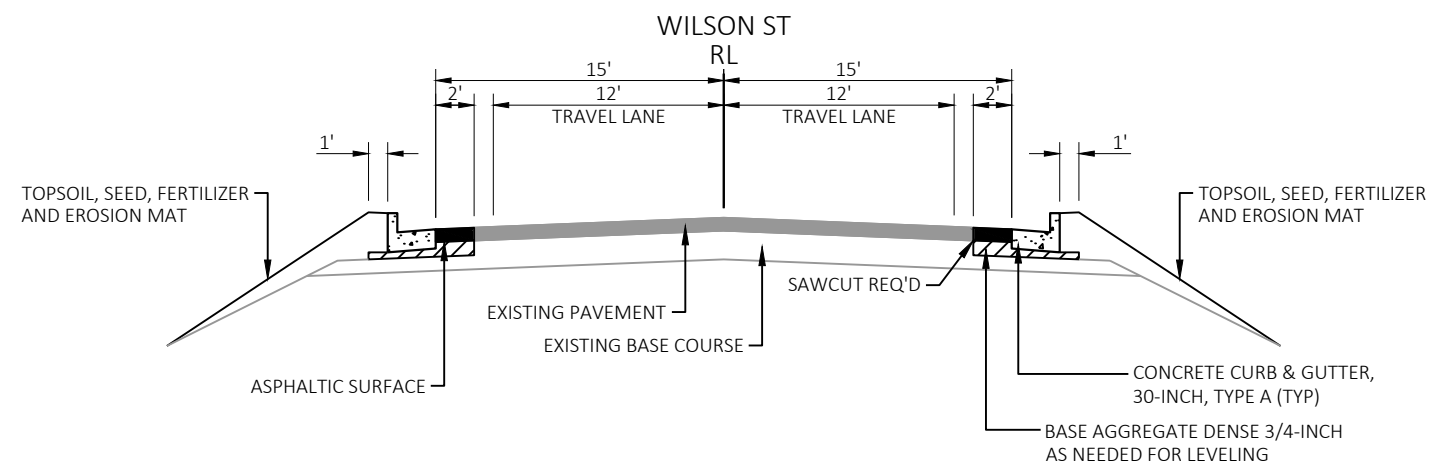
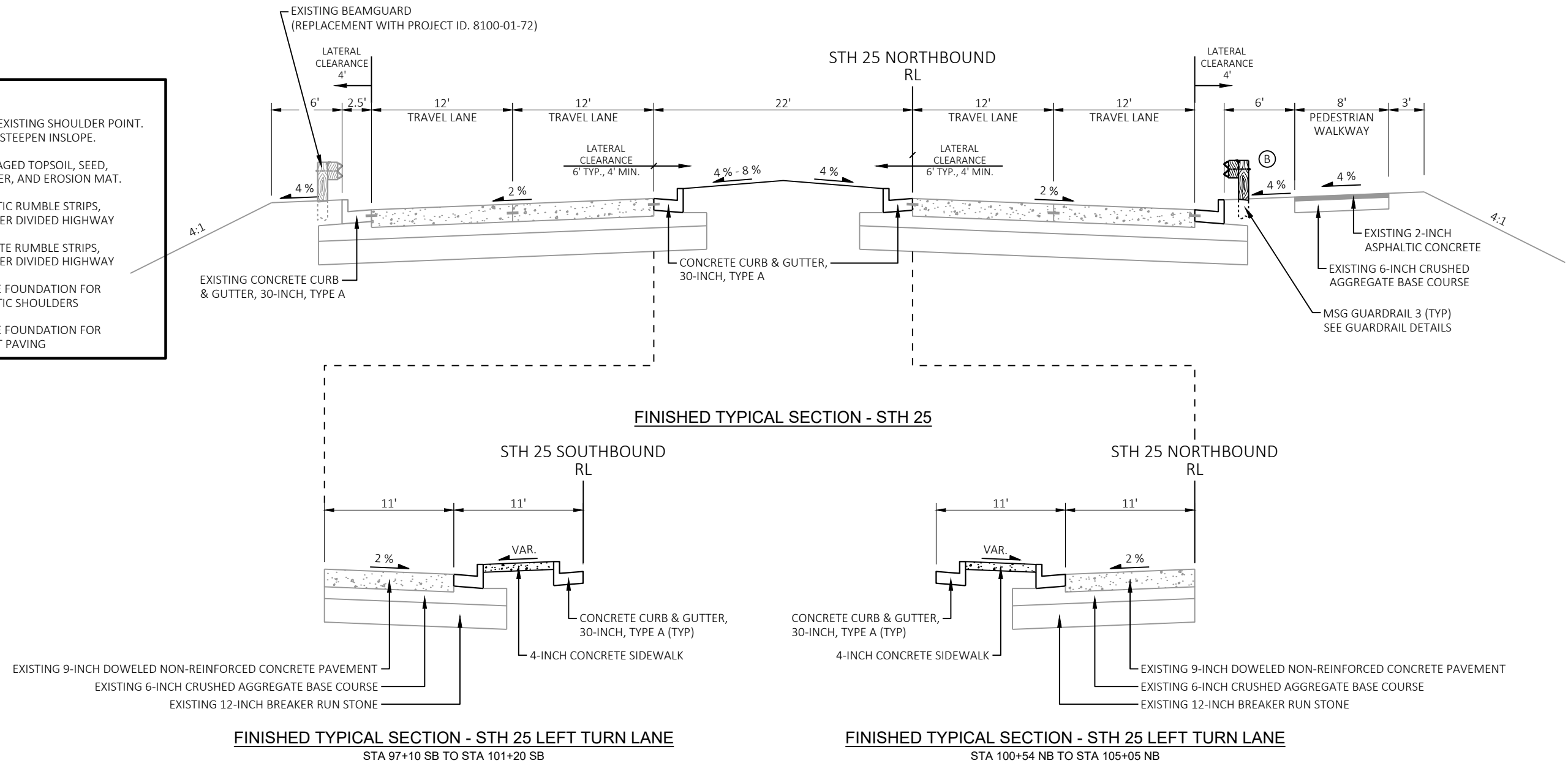
FINISHED TYPICAL RAMP SECTION
STH 25 INTERCHANGE - EASTBOUND

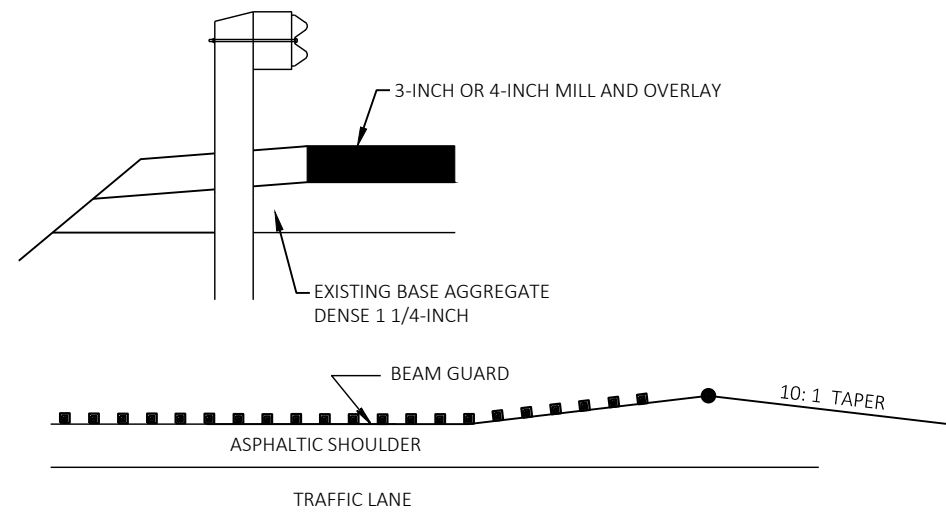


FINISHED TYPICAL RAMP SECTION
STH 25 INTERCHANGE - WESTBOUND

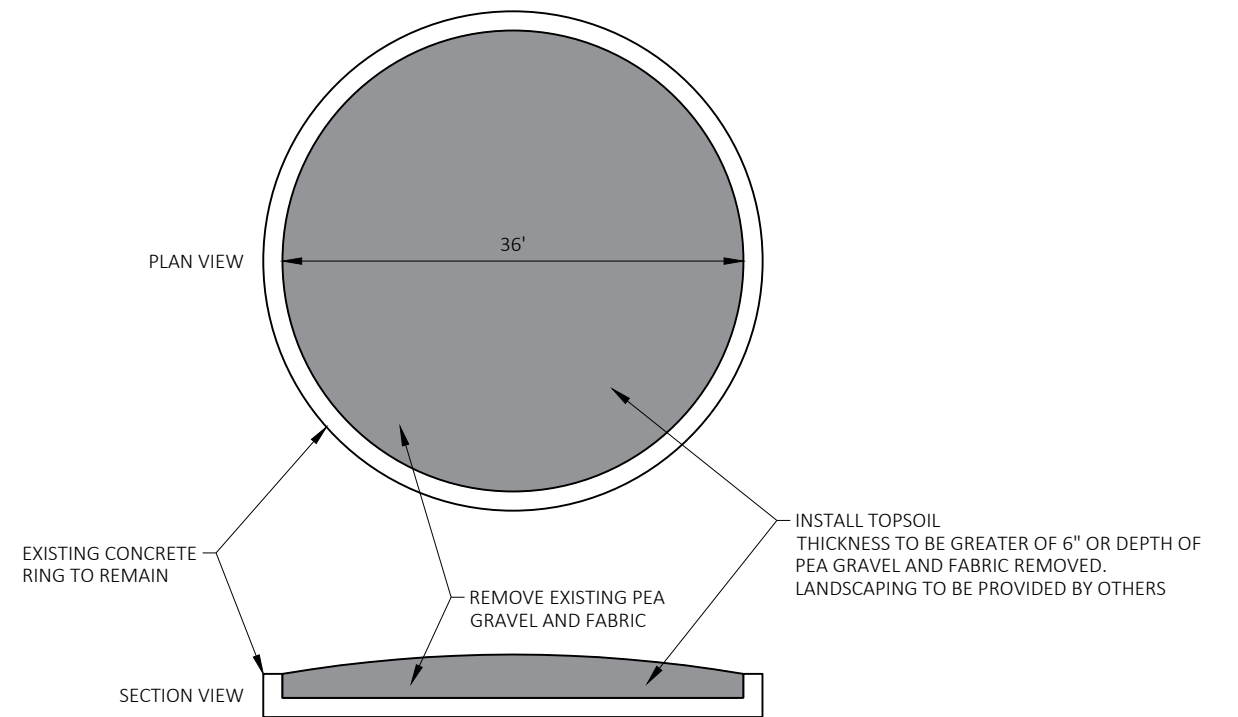
NOTES:

- (A) MATCH EXISTING SHOULDER POINT.
DO NOT STEEPEN INSLOPE.
- (B) SALVAGED TOPSOIL, SEED,
FERTILIZER, AND EROSION MAT.
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ASPHALTIC SHOULDERS
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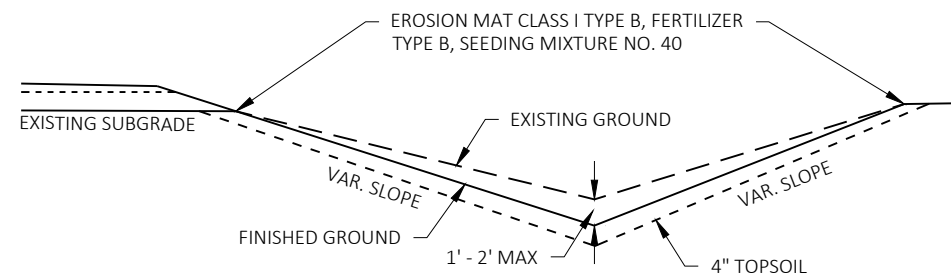




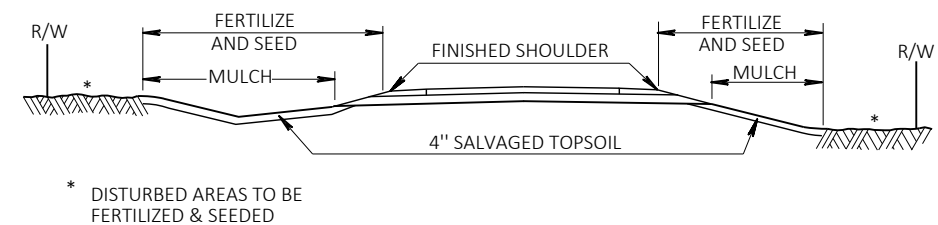
DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD ON IH 94



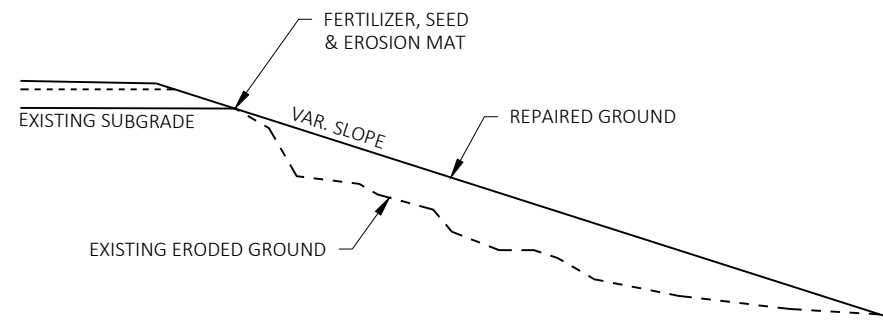
REMOVE PLAYGROUND LANDSCAPING
REST AREA 61 AND REST AREA 62



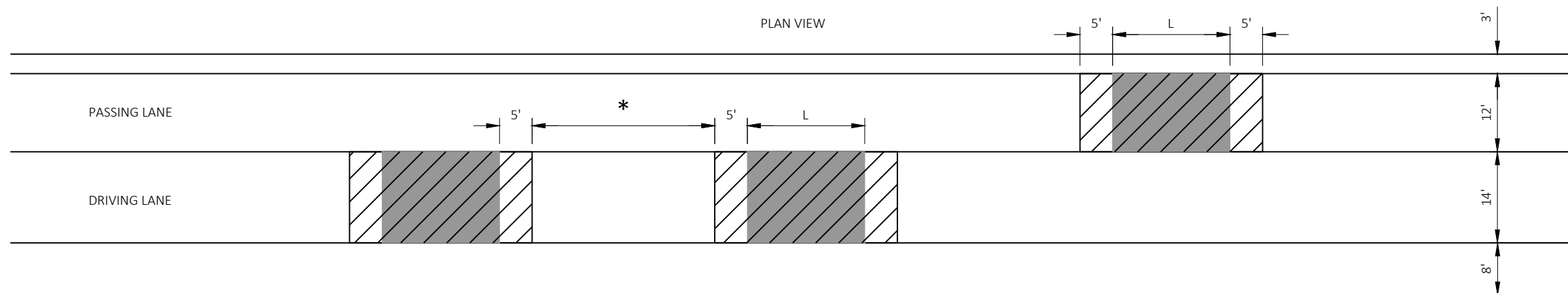
DITCH CLEANING DETAIL



DETAIL FOR FINISHING ITEMS



REPAIR EMBANKMENT DETAIL



DETAIL FOR LIMITS OF DIAMOND GRINDING - IH 94

* NOTE: CONNECT DIAMOND GRINDING OPERATIONS AT LOCATIONS WHERE CONSECUTIVE JOINTS ARE BEING REPAIRED AND THE DISTANCE IS LESS THAN OR EQUAL TO 10 FEET.

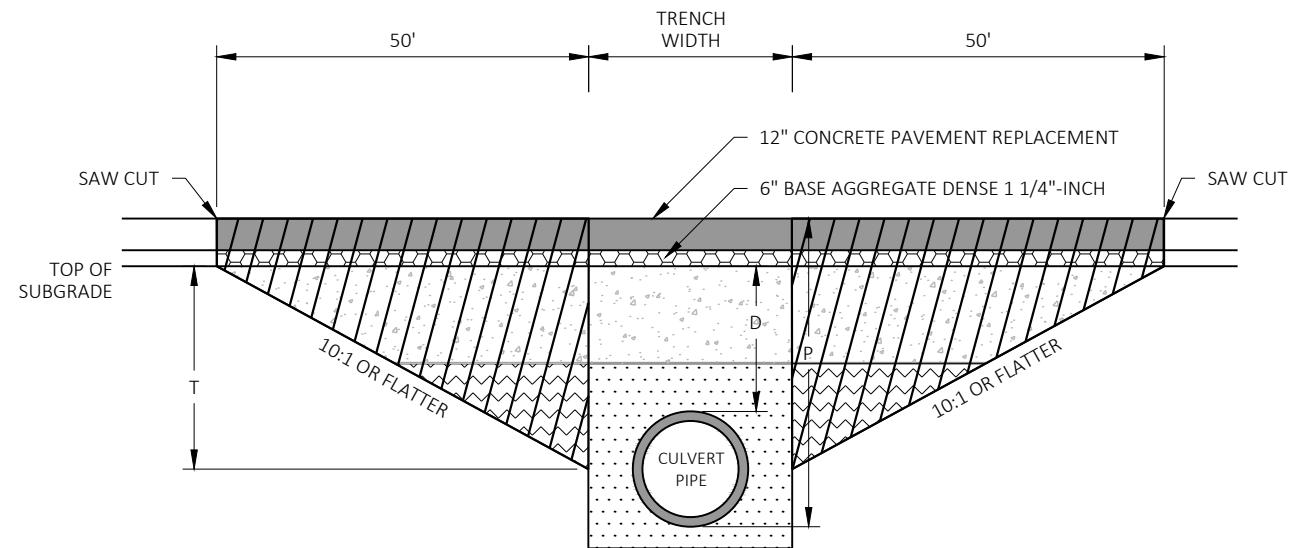


CONCRETE PAVEMENT REPAIR OR REPLACEMENT AREA
(MEASURED BY THE SQUARE YARD)



CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT
(MEASURED BY THE SQUARE YARD)

L = LENGTH OF REPAIR OR REPLACEMENT SHOWN ELSEWHERE IN PLANS



DEPTH D < 6 FT

TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

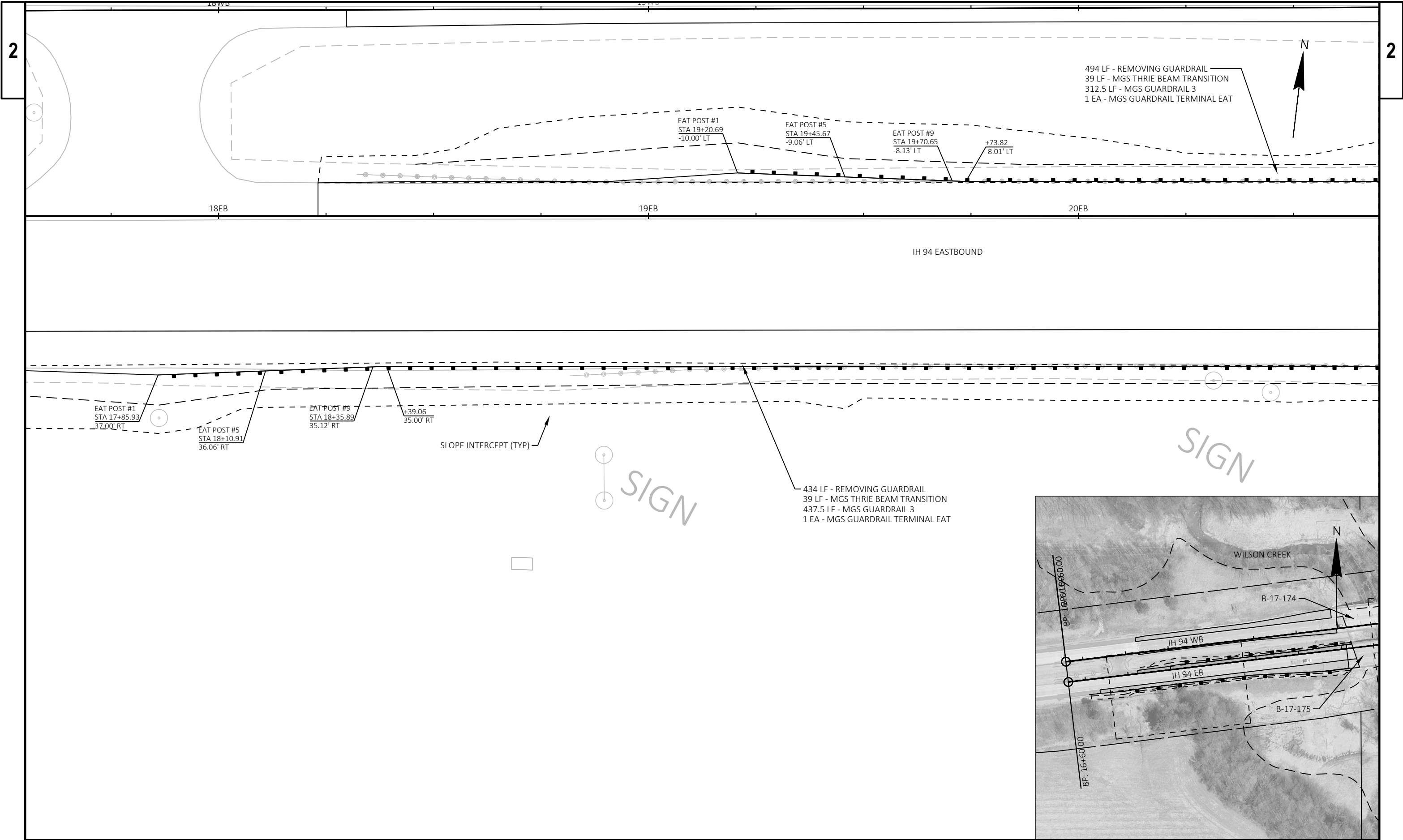
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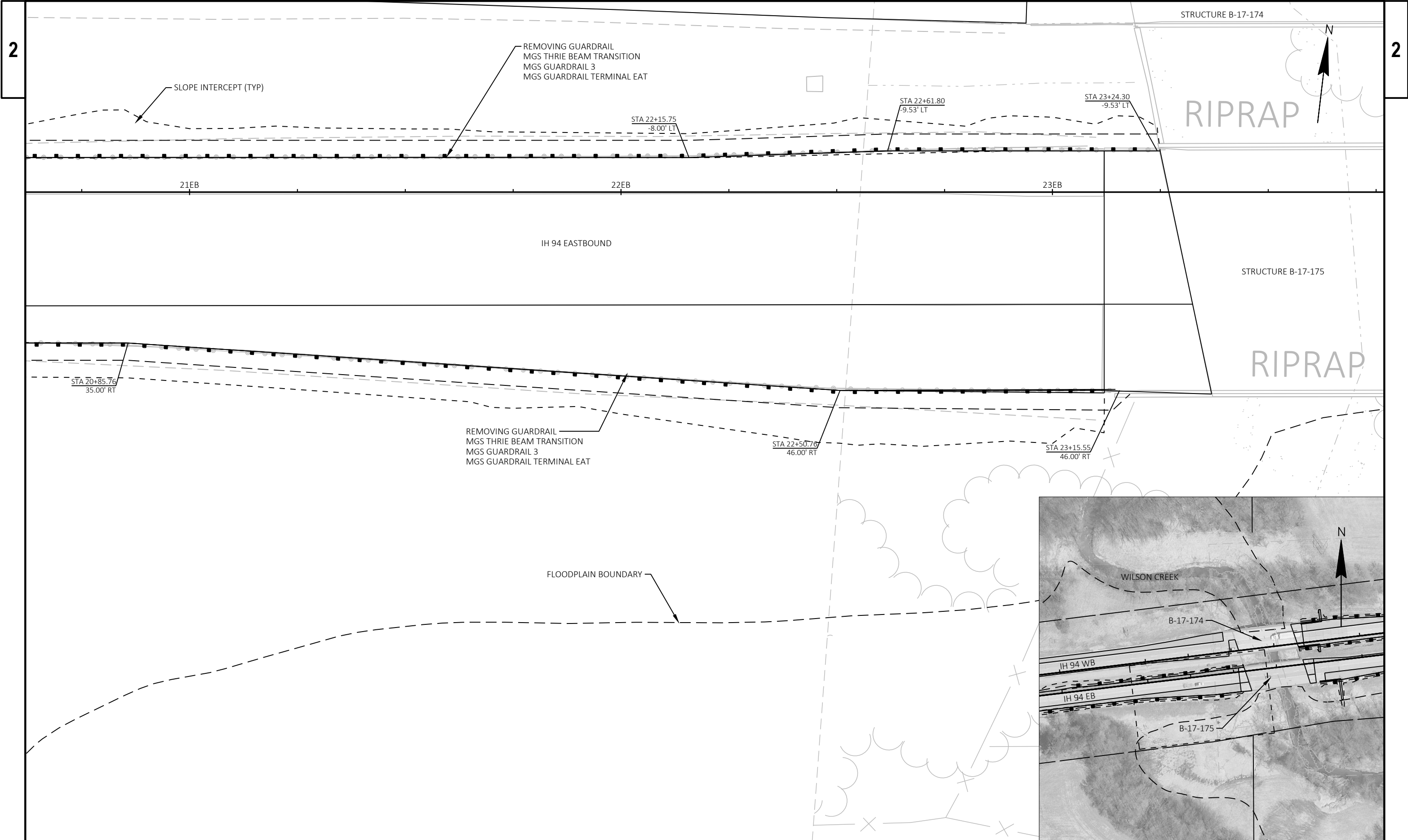
TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
PERFORM CULVERT PIPE INSTALLATION BEFORE MILLING AND PAVING.

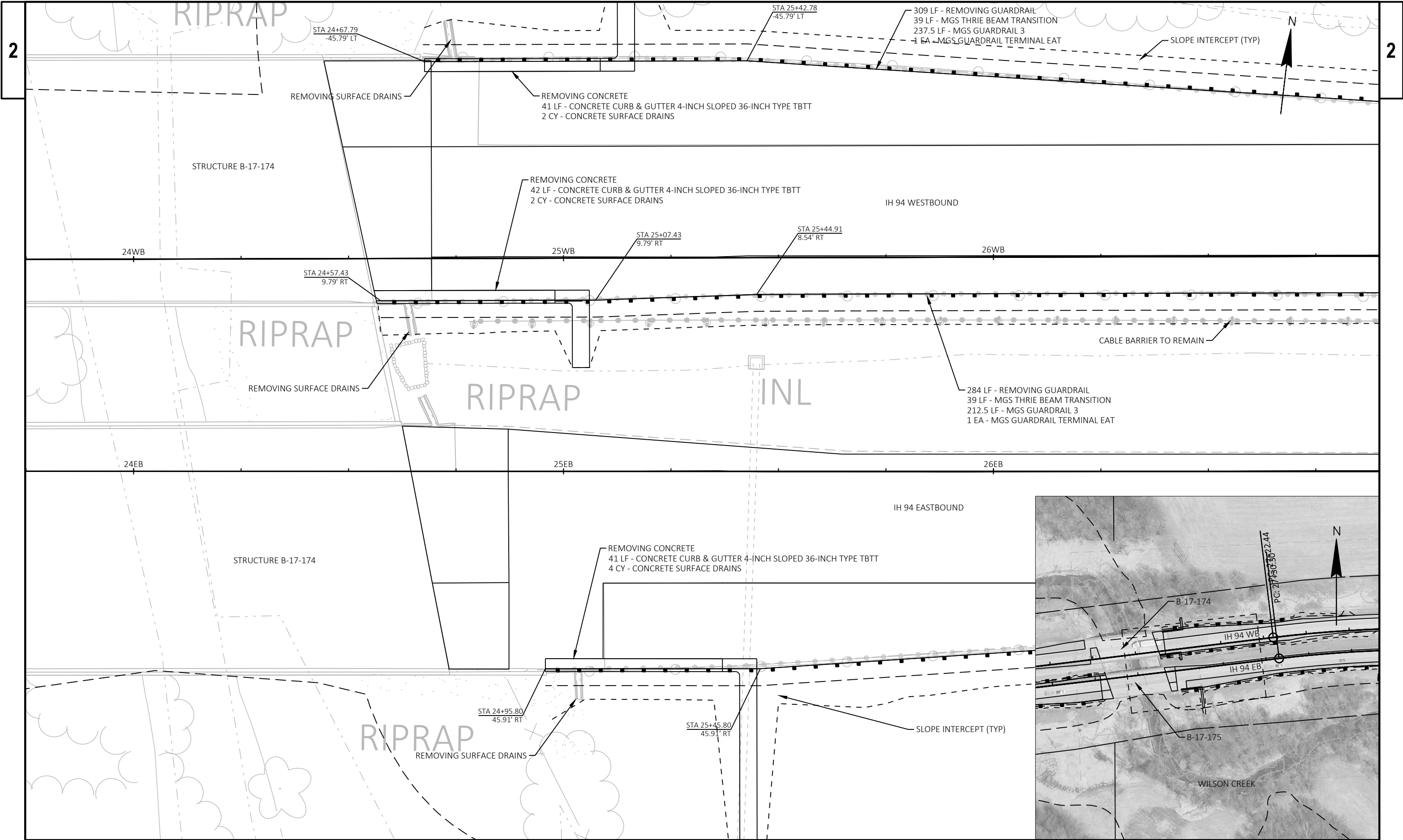
CULVERT PIPE TRANSITION

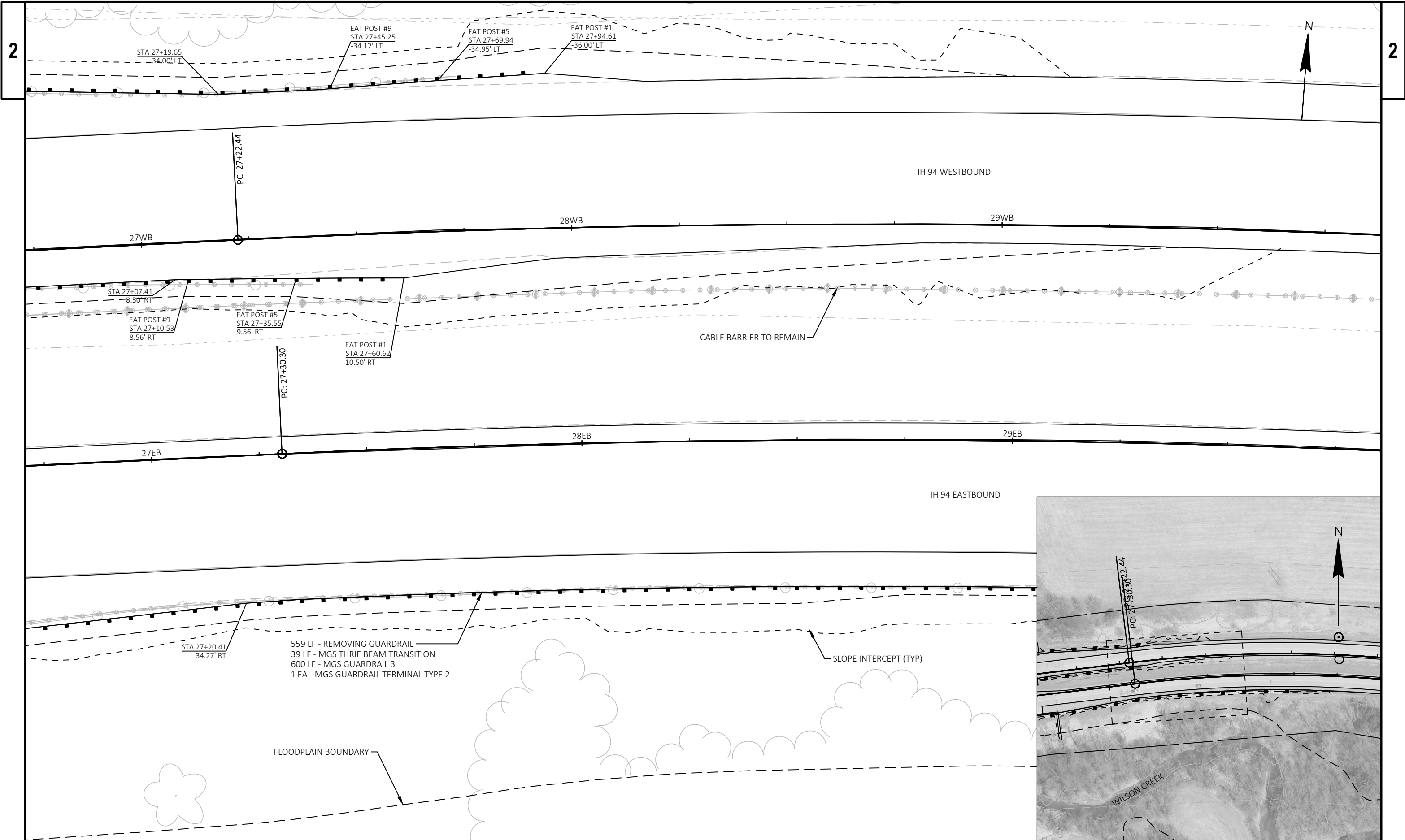
ROUTE	STA (CL)	DEPTH (FT)	PIPE DIA (IN)	DEPTH*
IH 94 EB	80+45	3.83	24"	6.08'

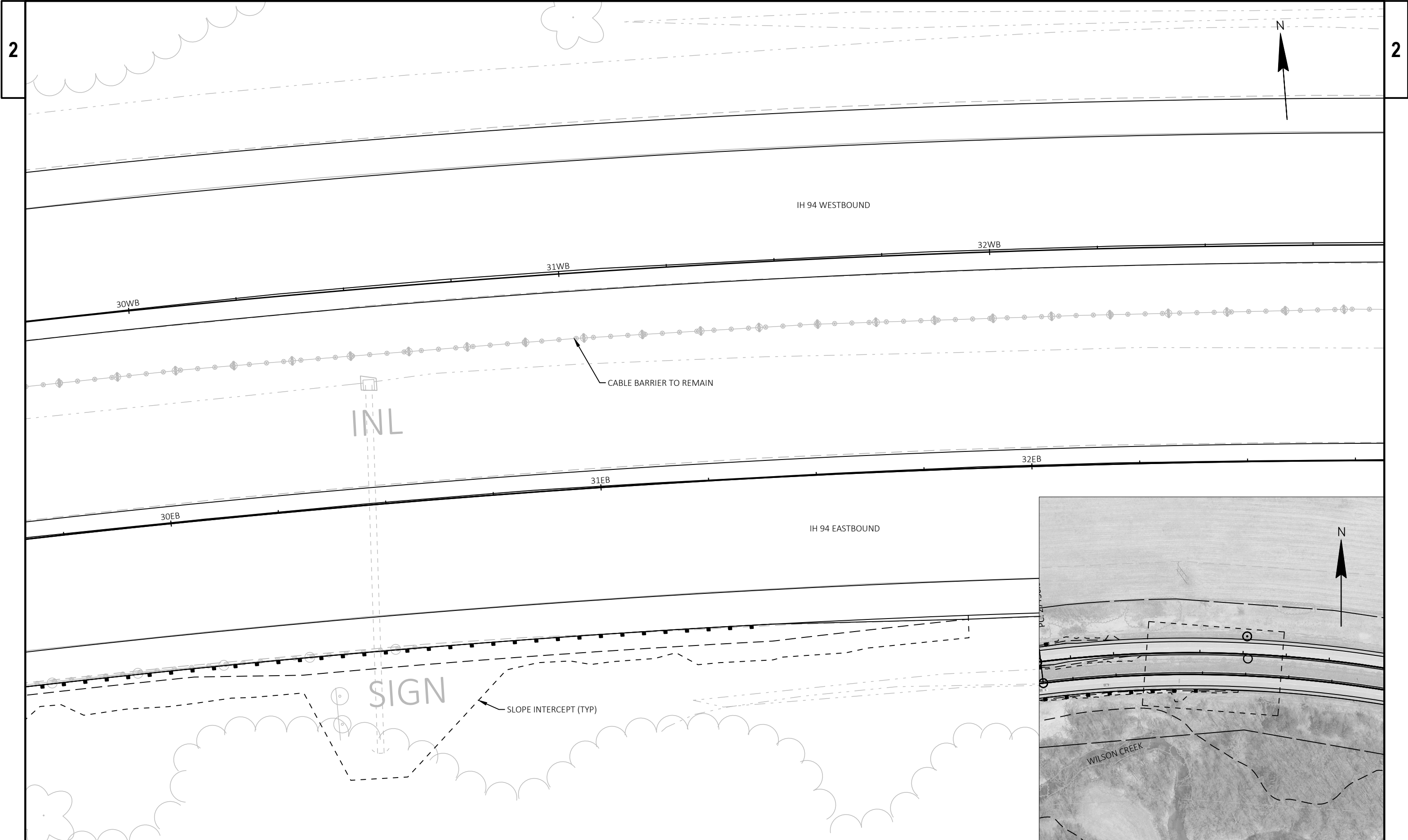
* DEPTH TO BOTTOM OF PIPE FROM EXISTING PAVEMENT ELEVATION (P)

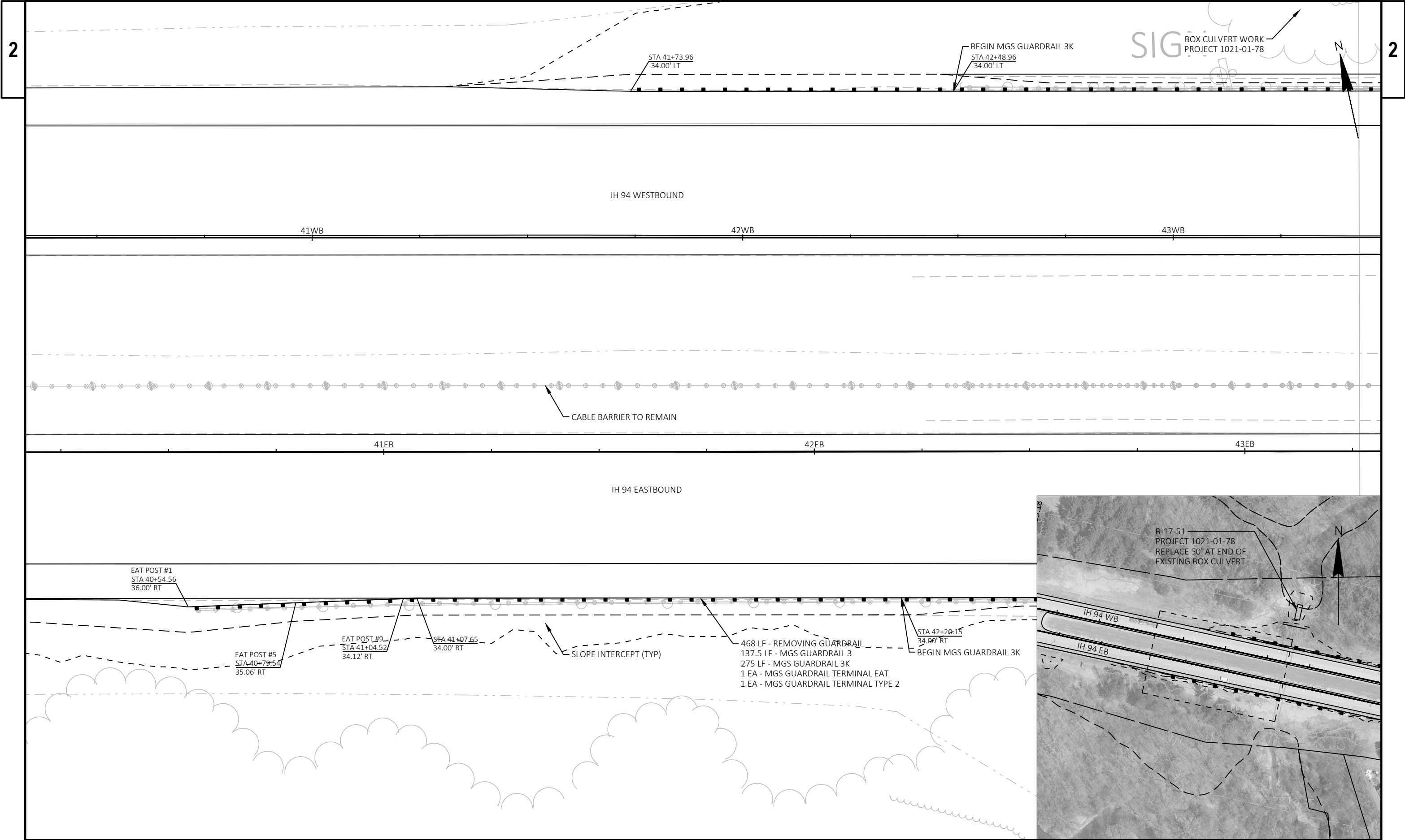


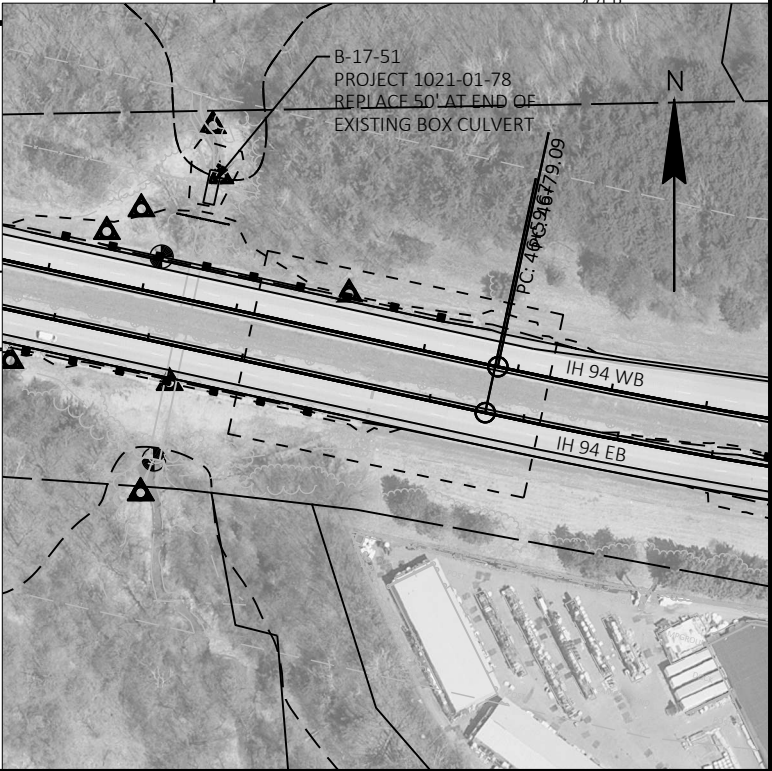
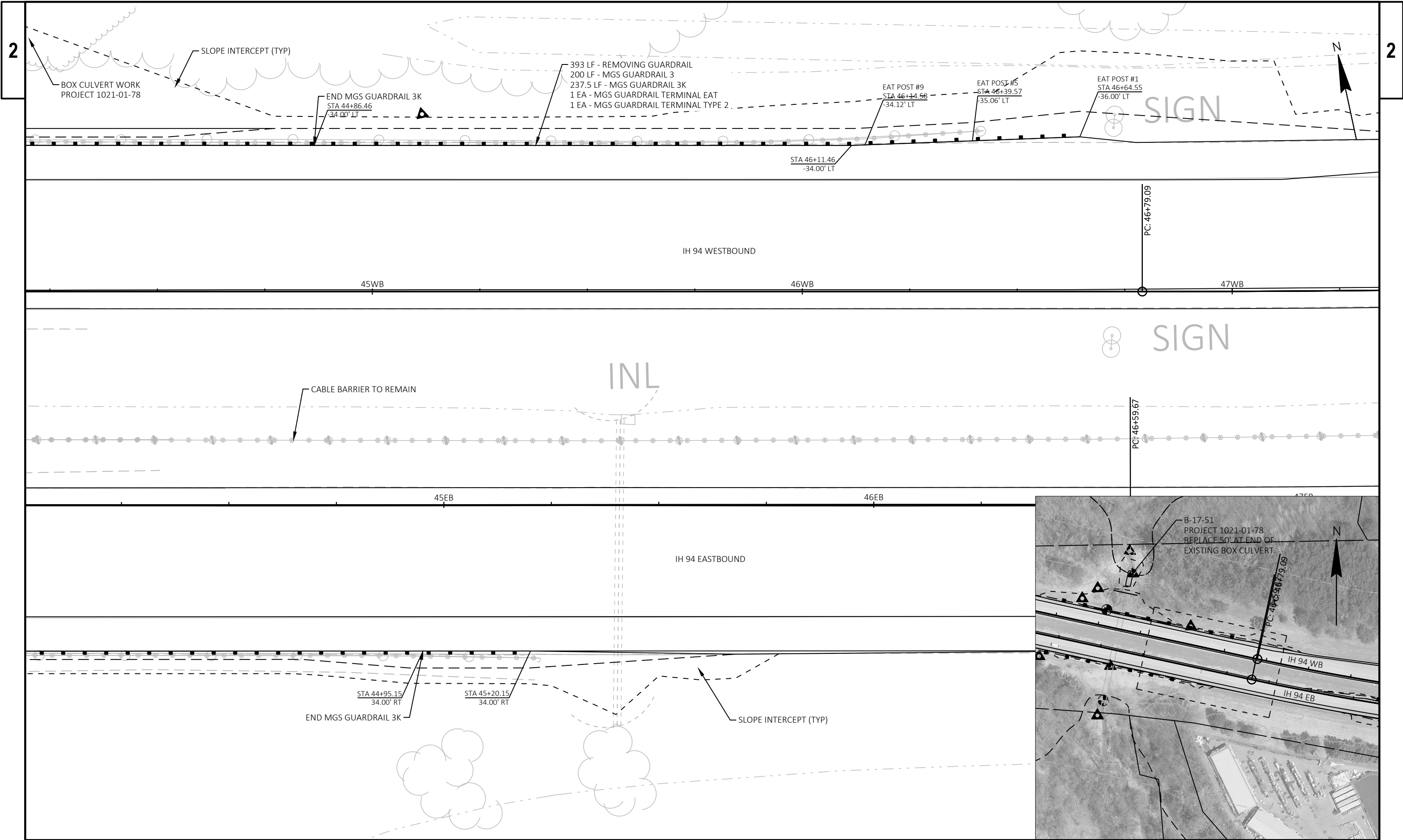




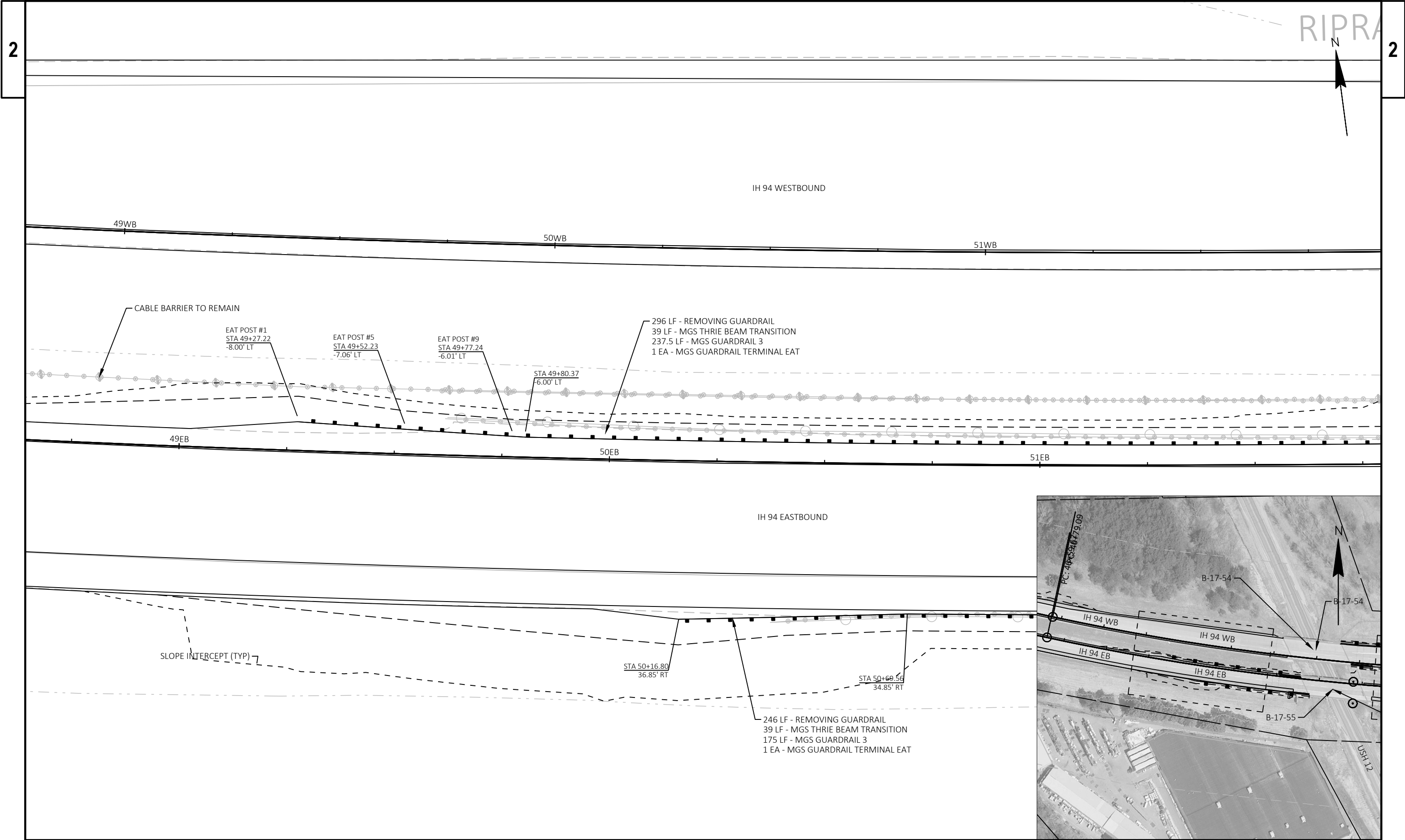




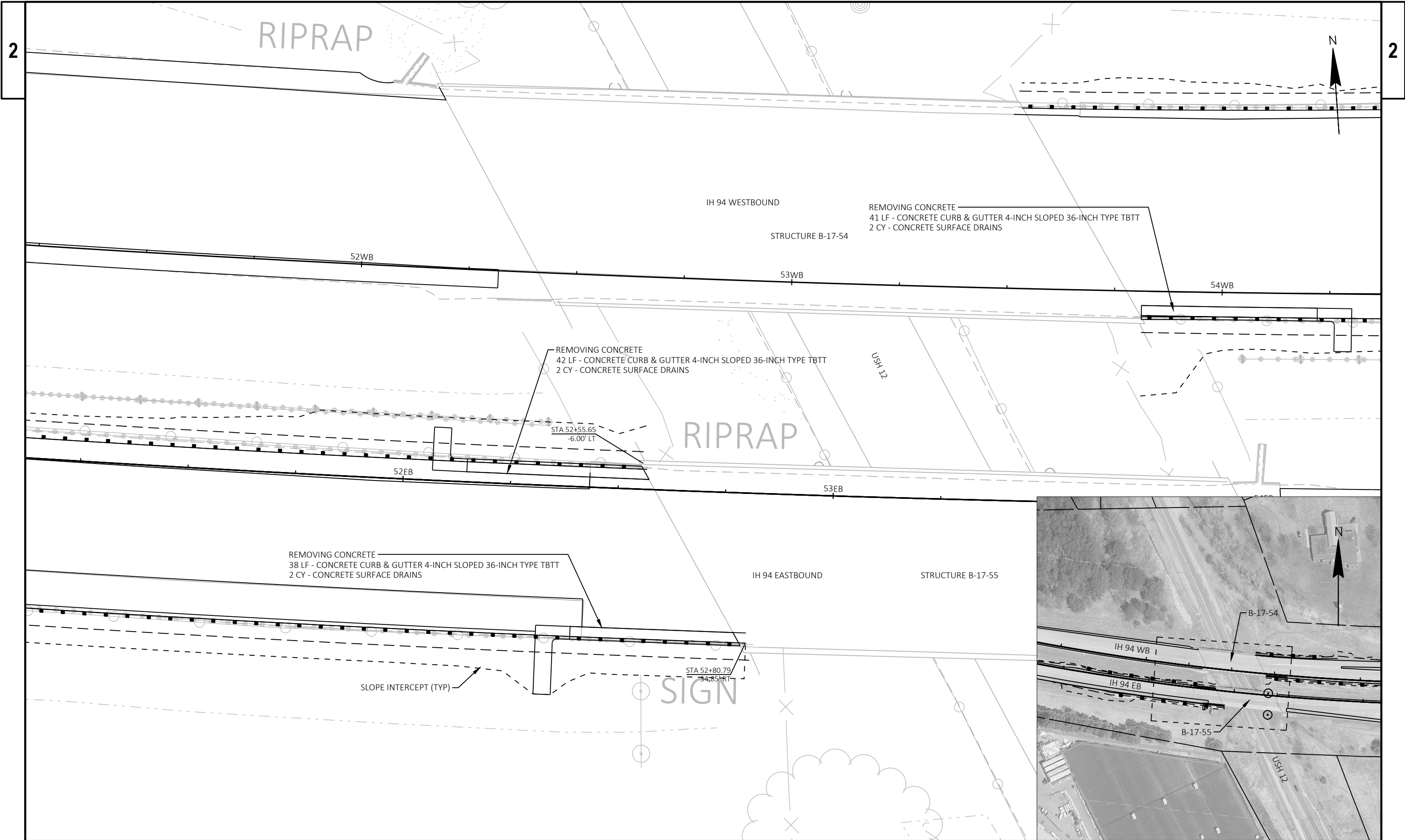


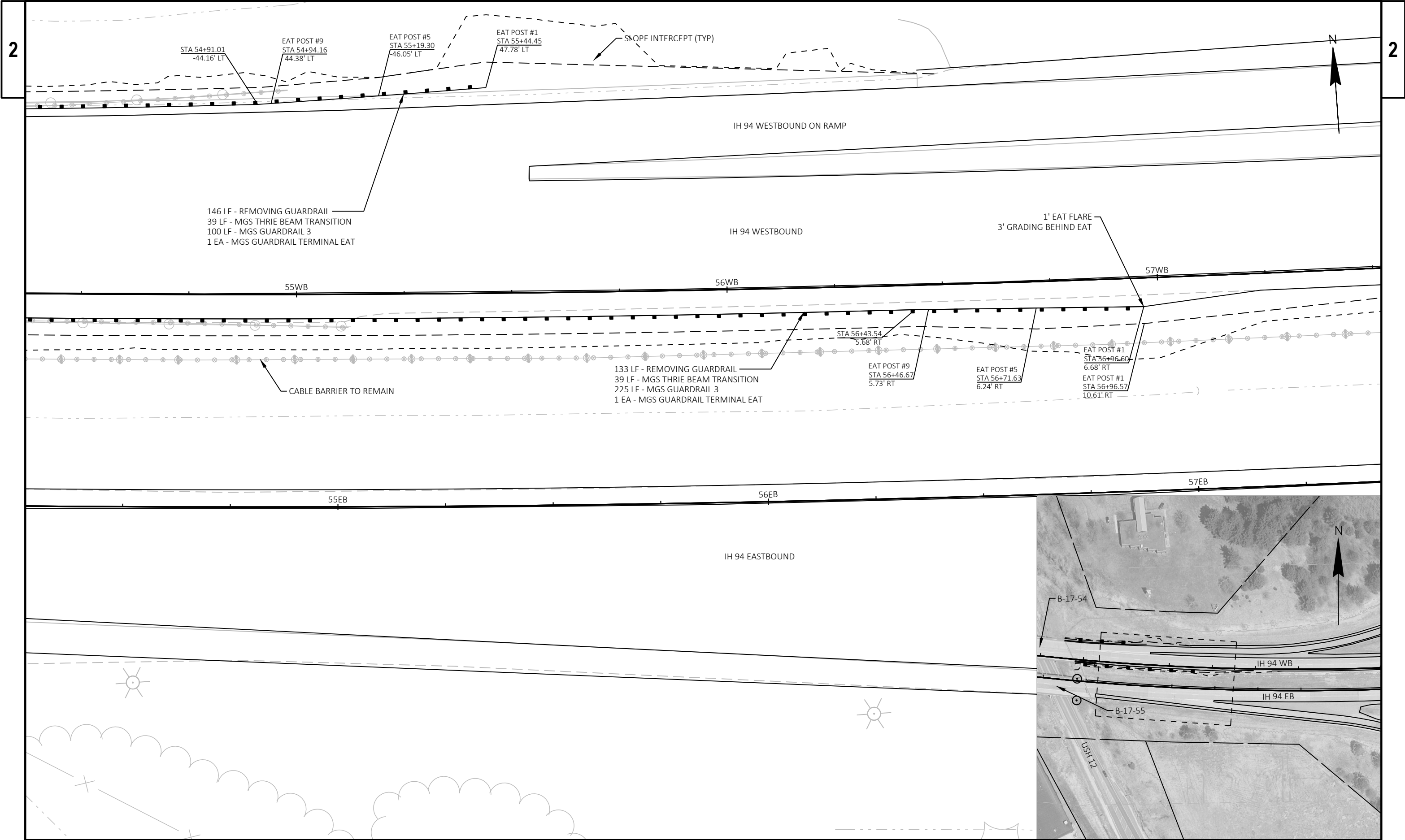


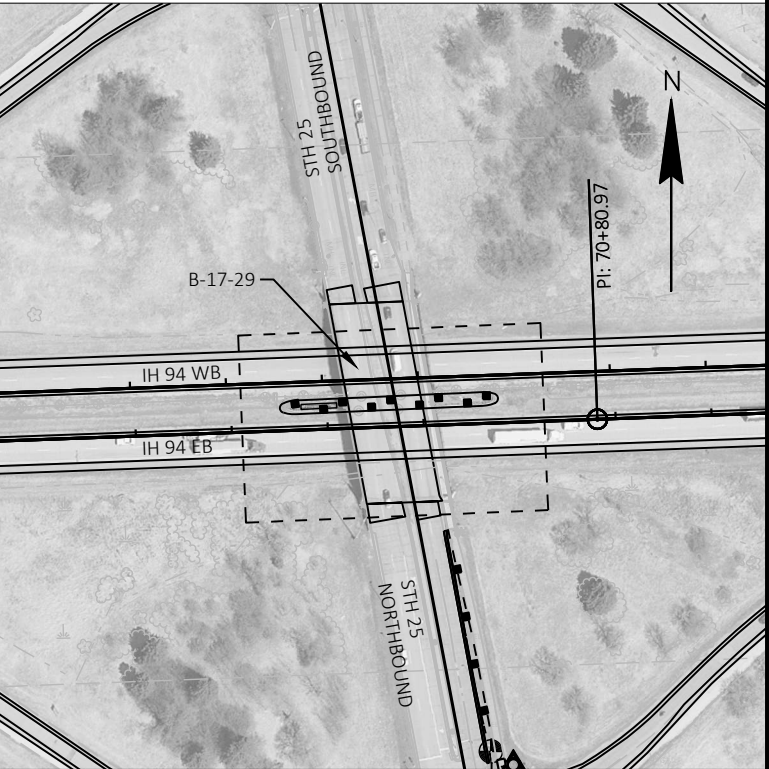
PROJECT NO: 1020-05-63 / 1021-01-78	HWY: IH 94	COUNTY: DUNN	GUARDRAIL DETAILS	SHEET 30	E
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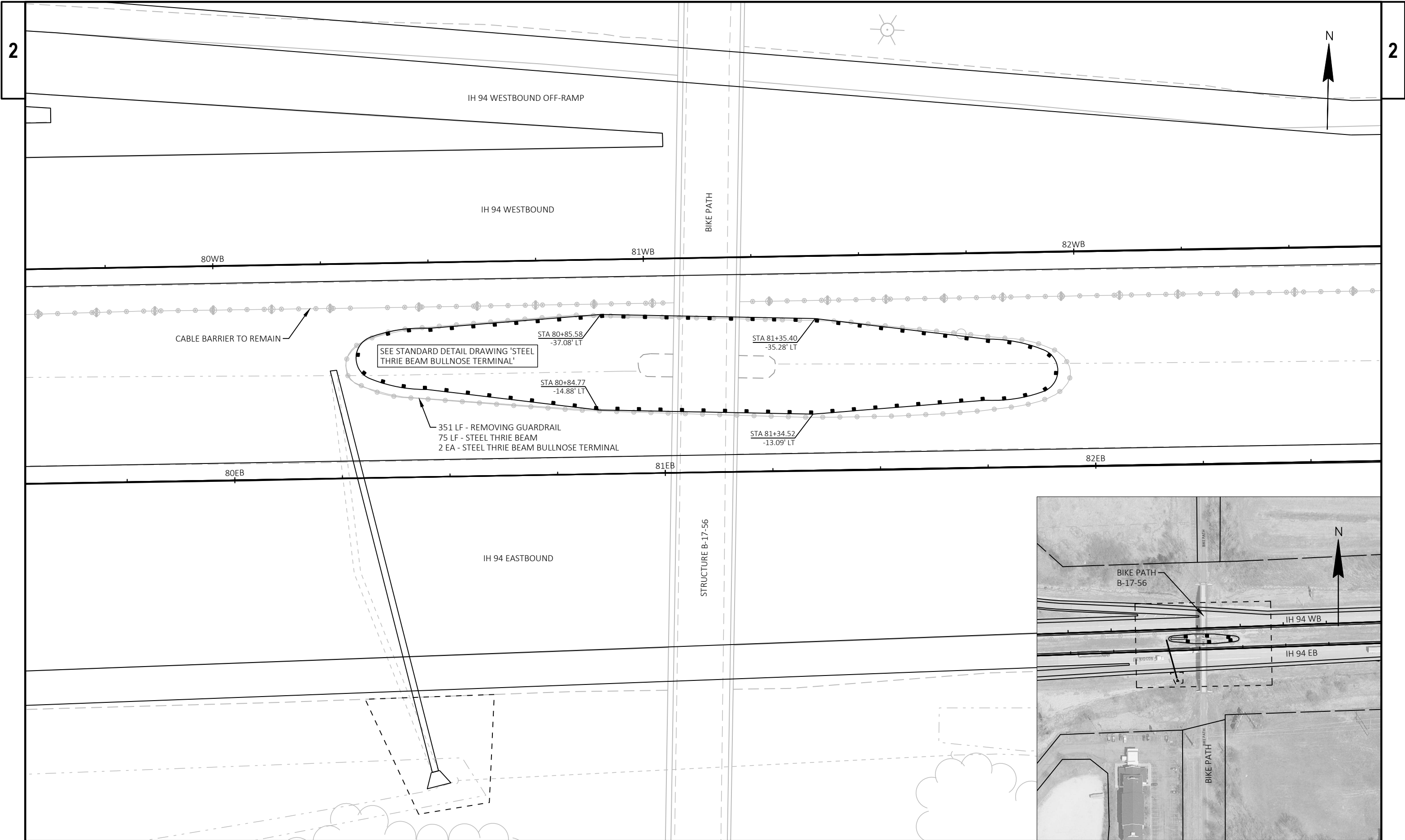


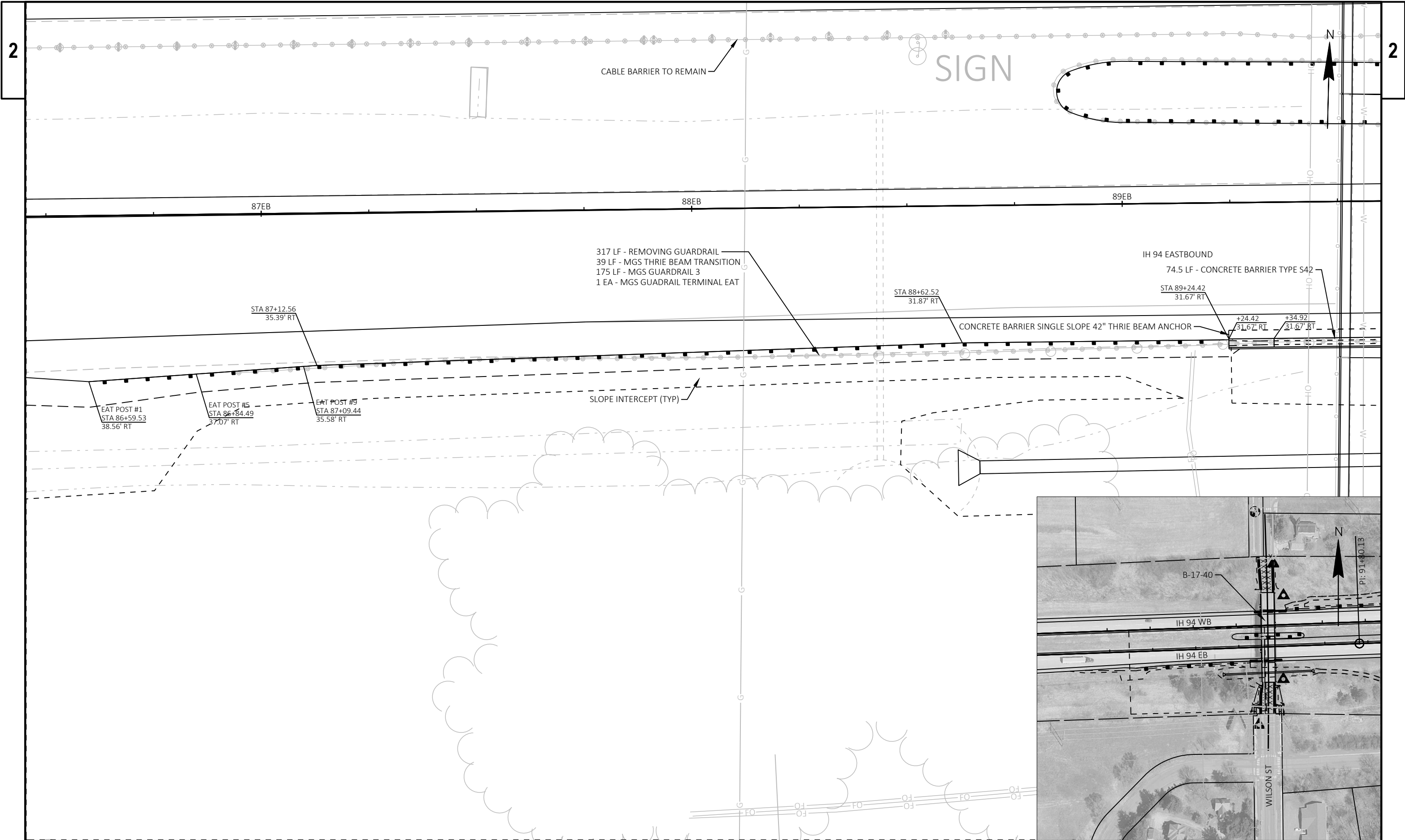
PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	GUARDRAIL DETAILS	SHEET 31	E
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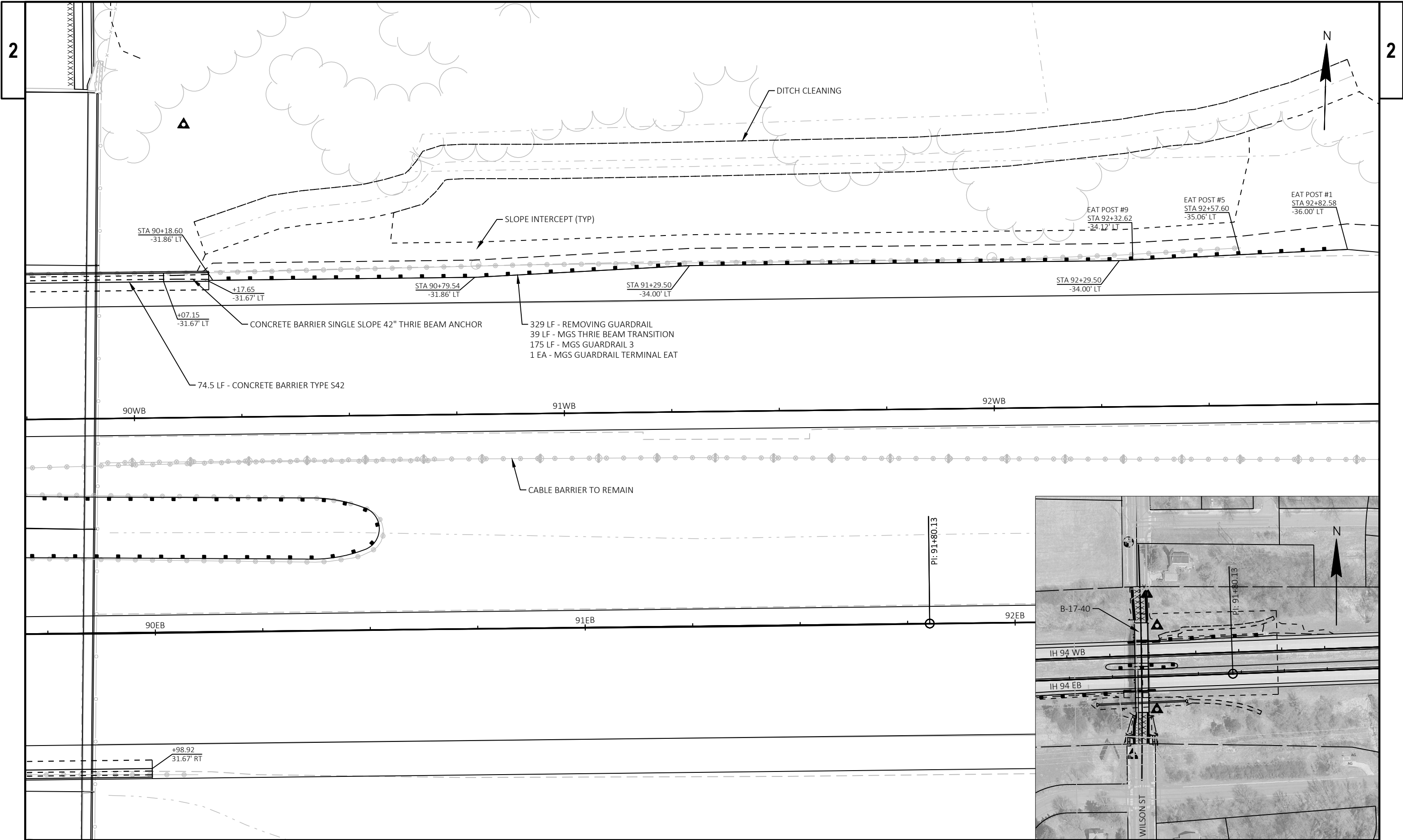


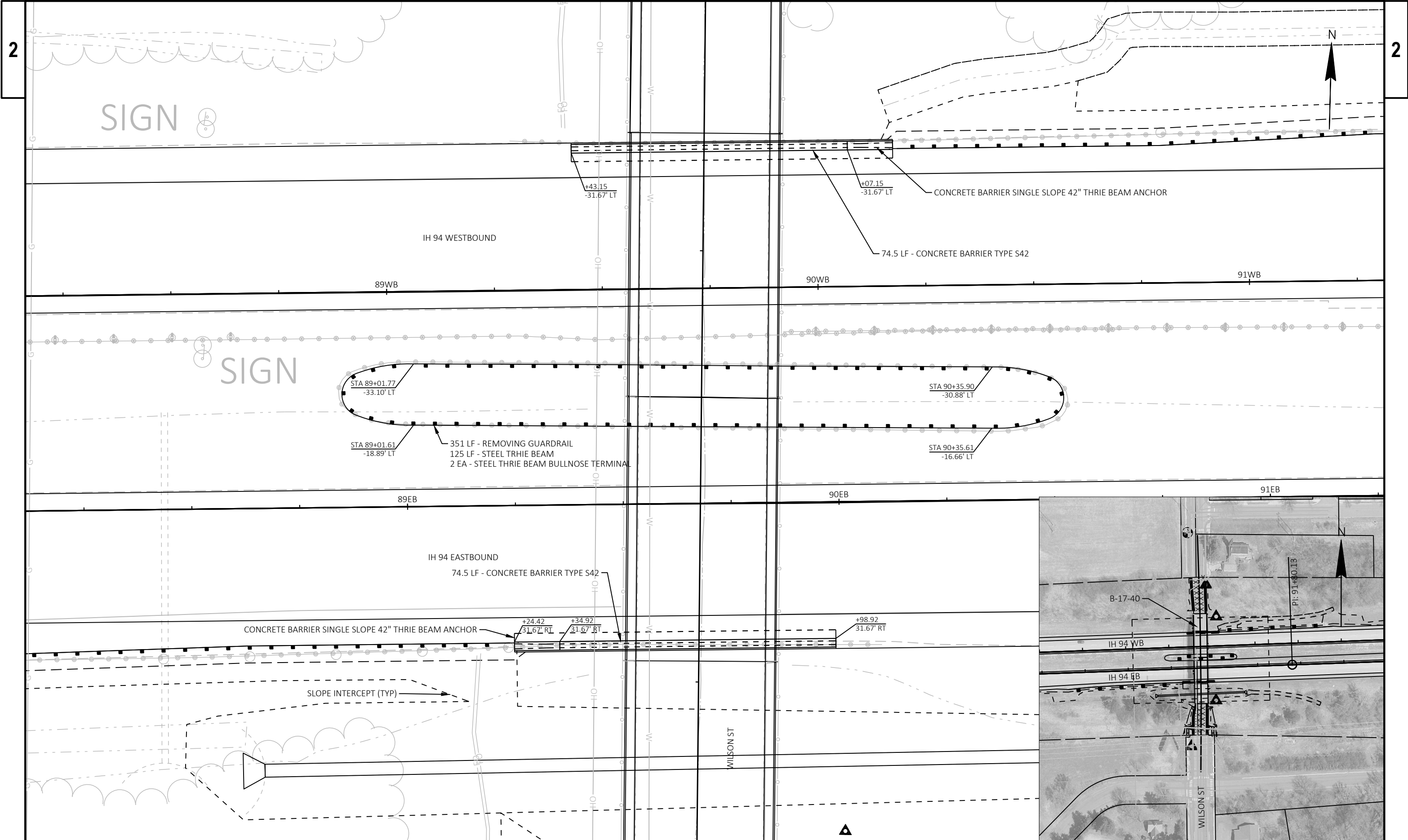


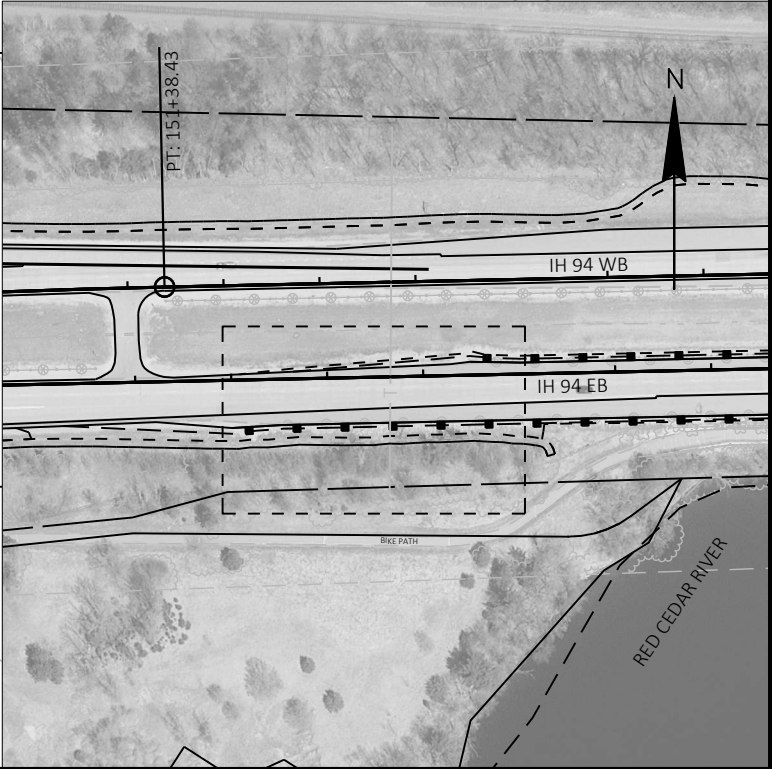
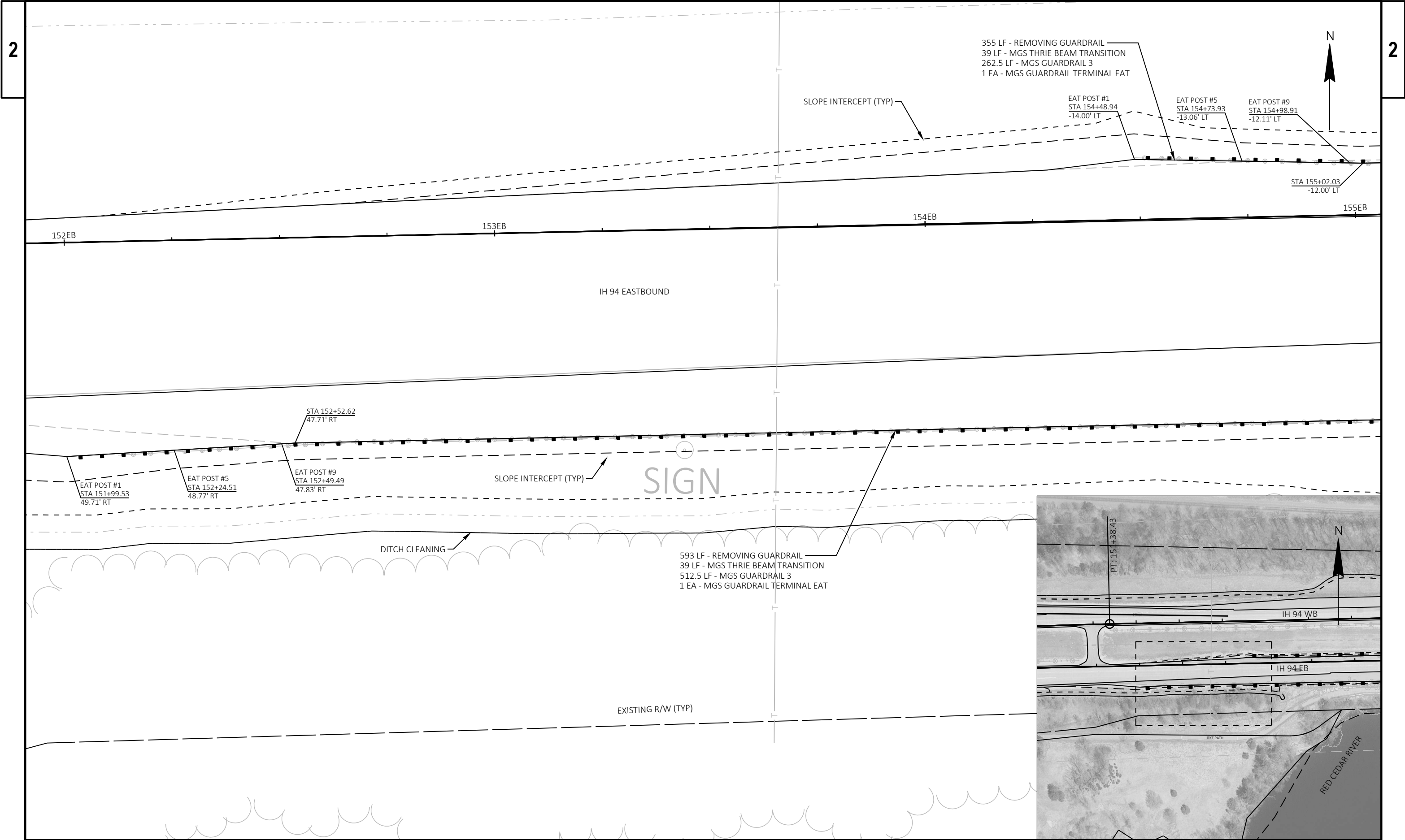


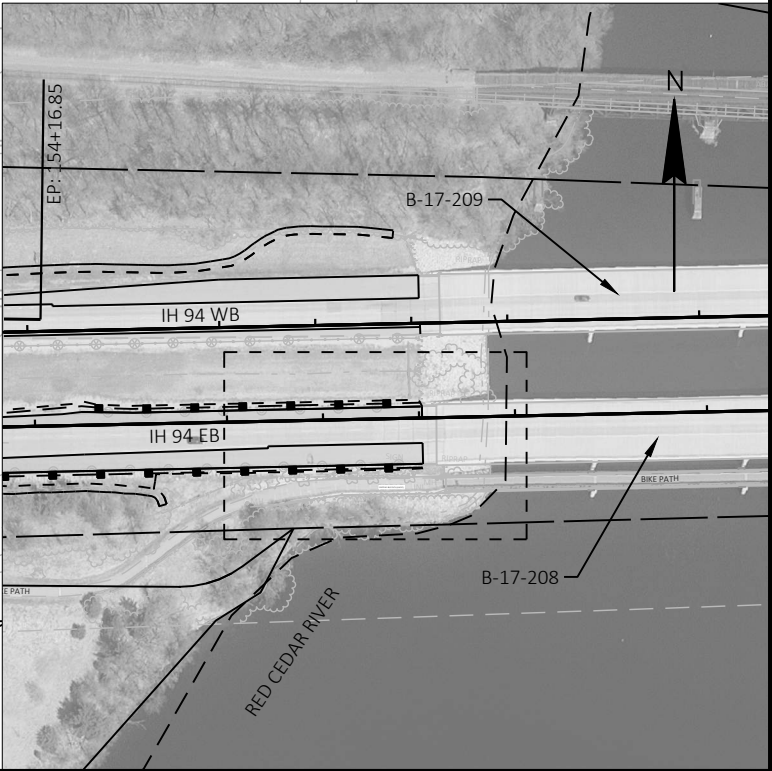
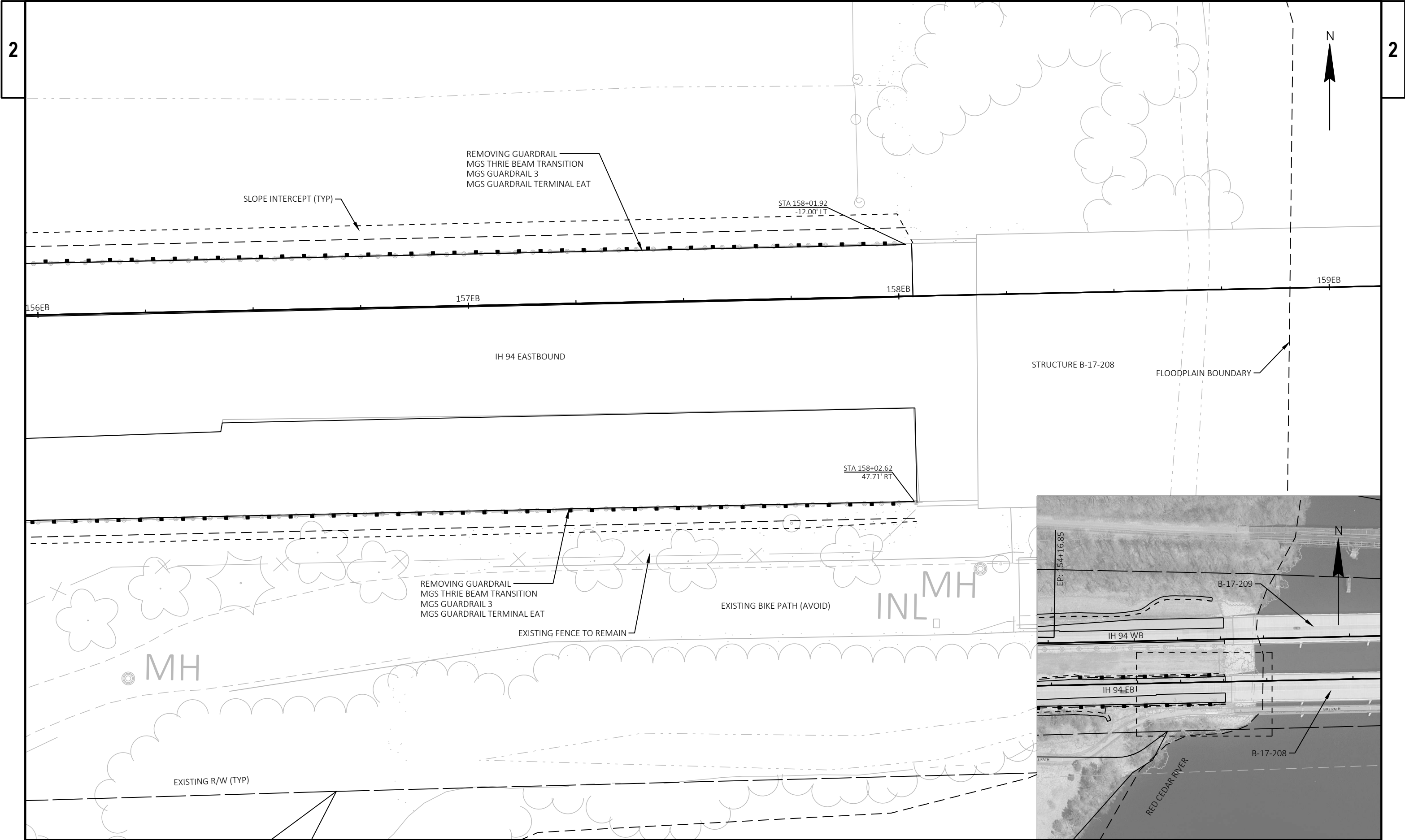


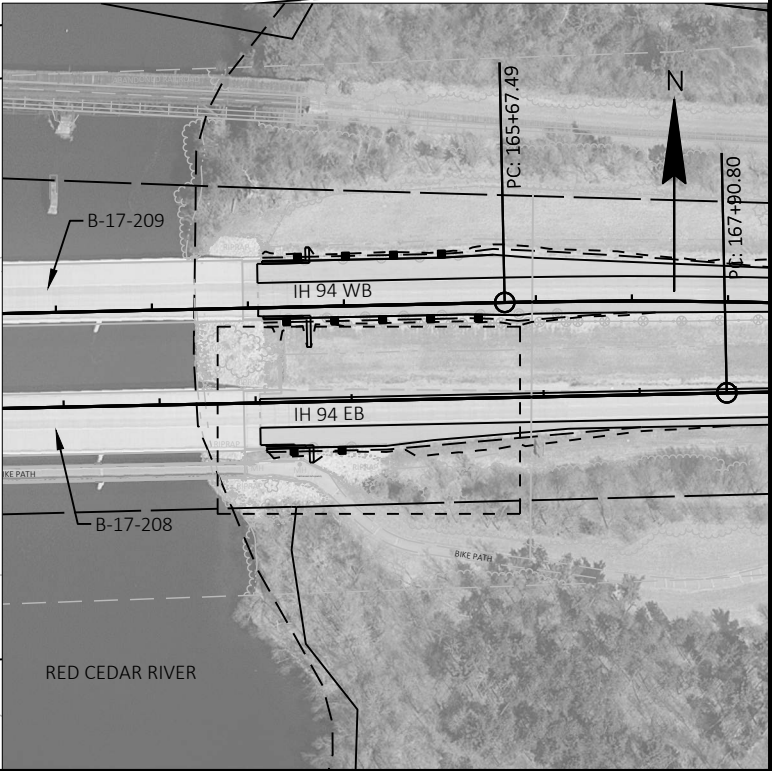
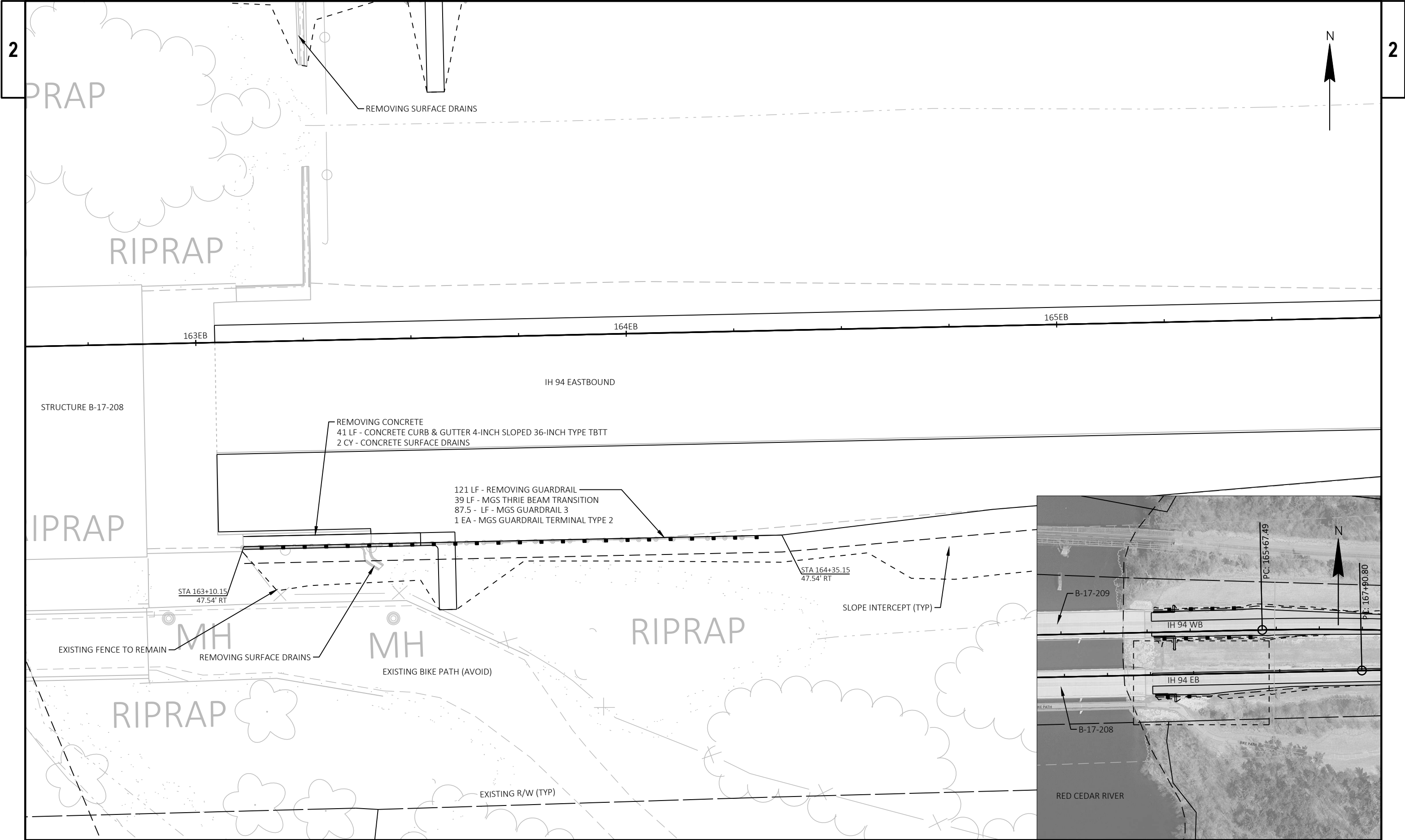


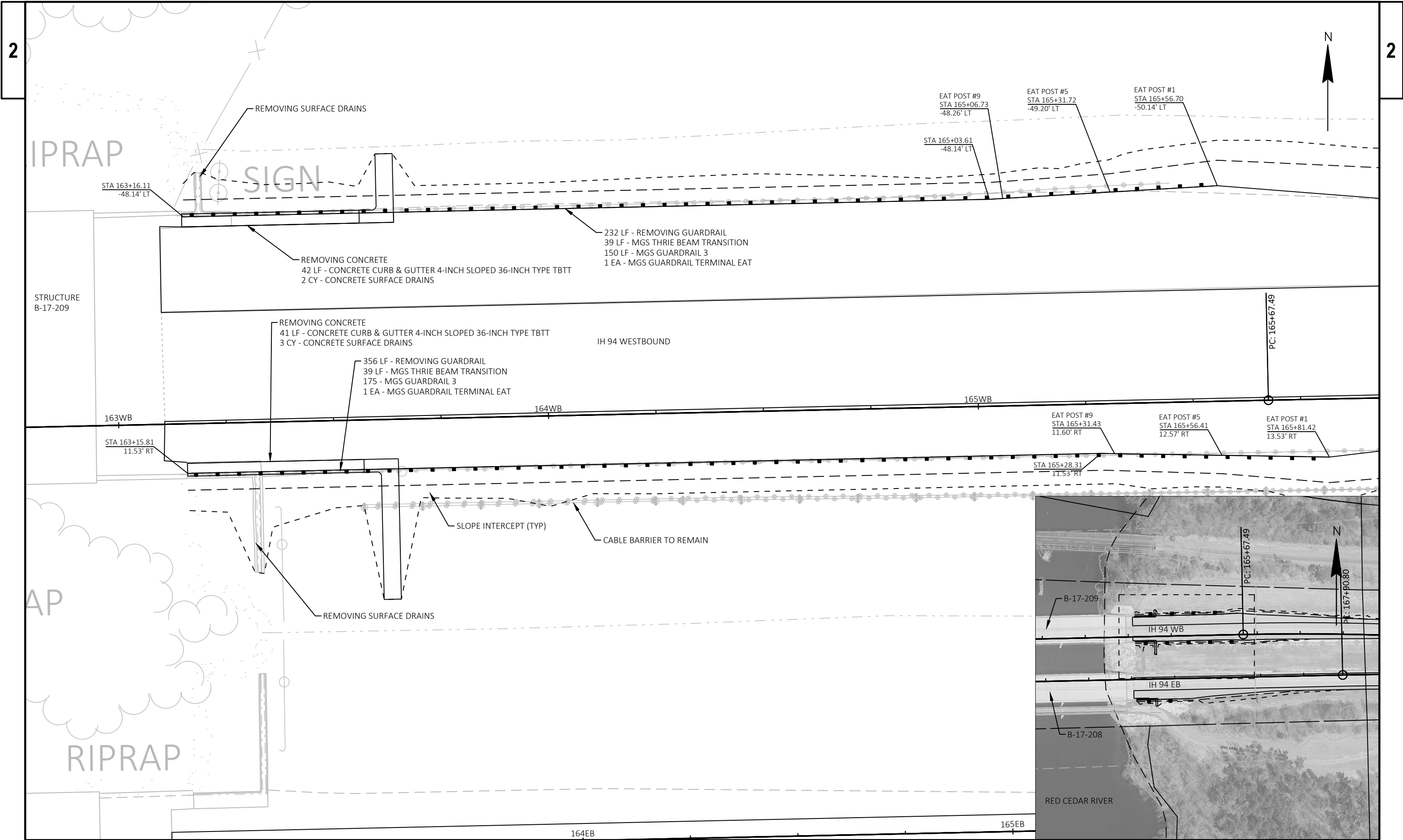


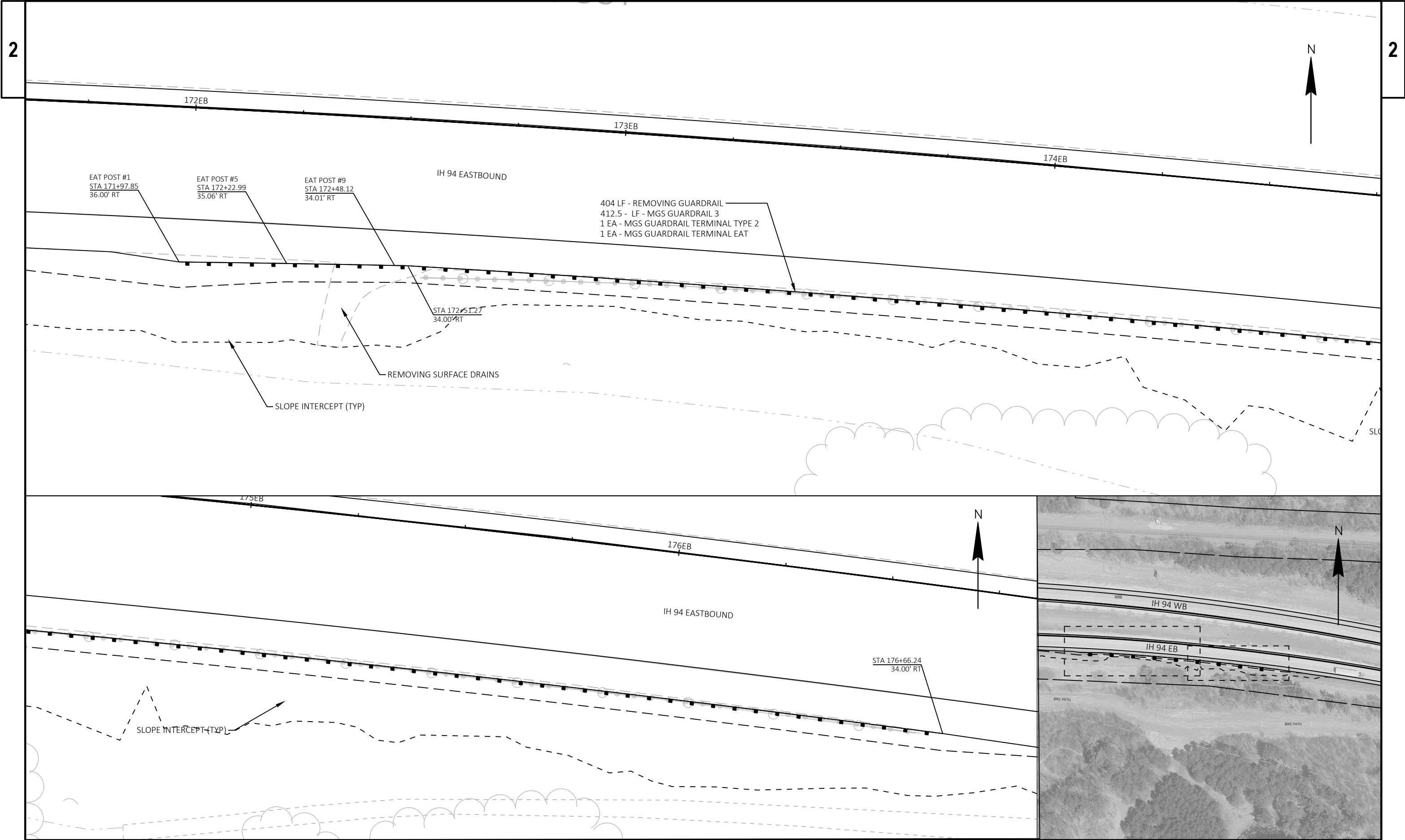


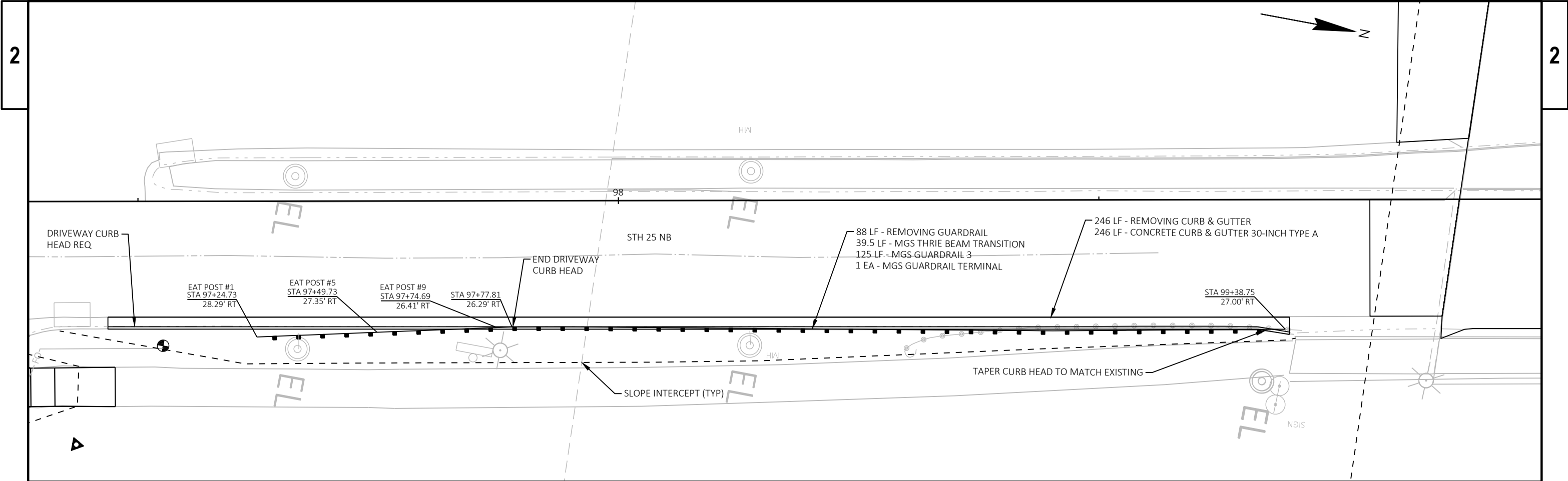


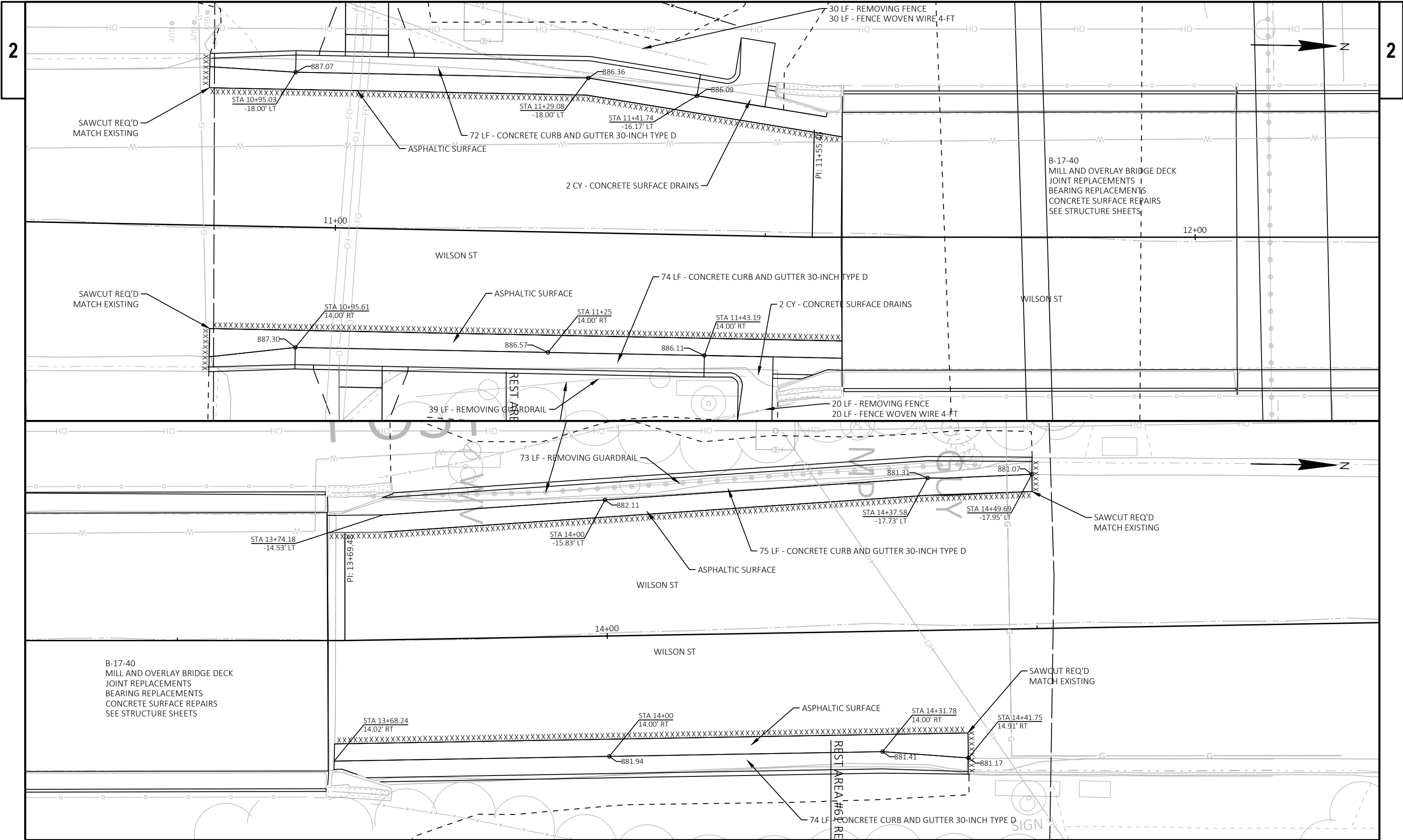


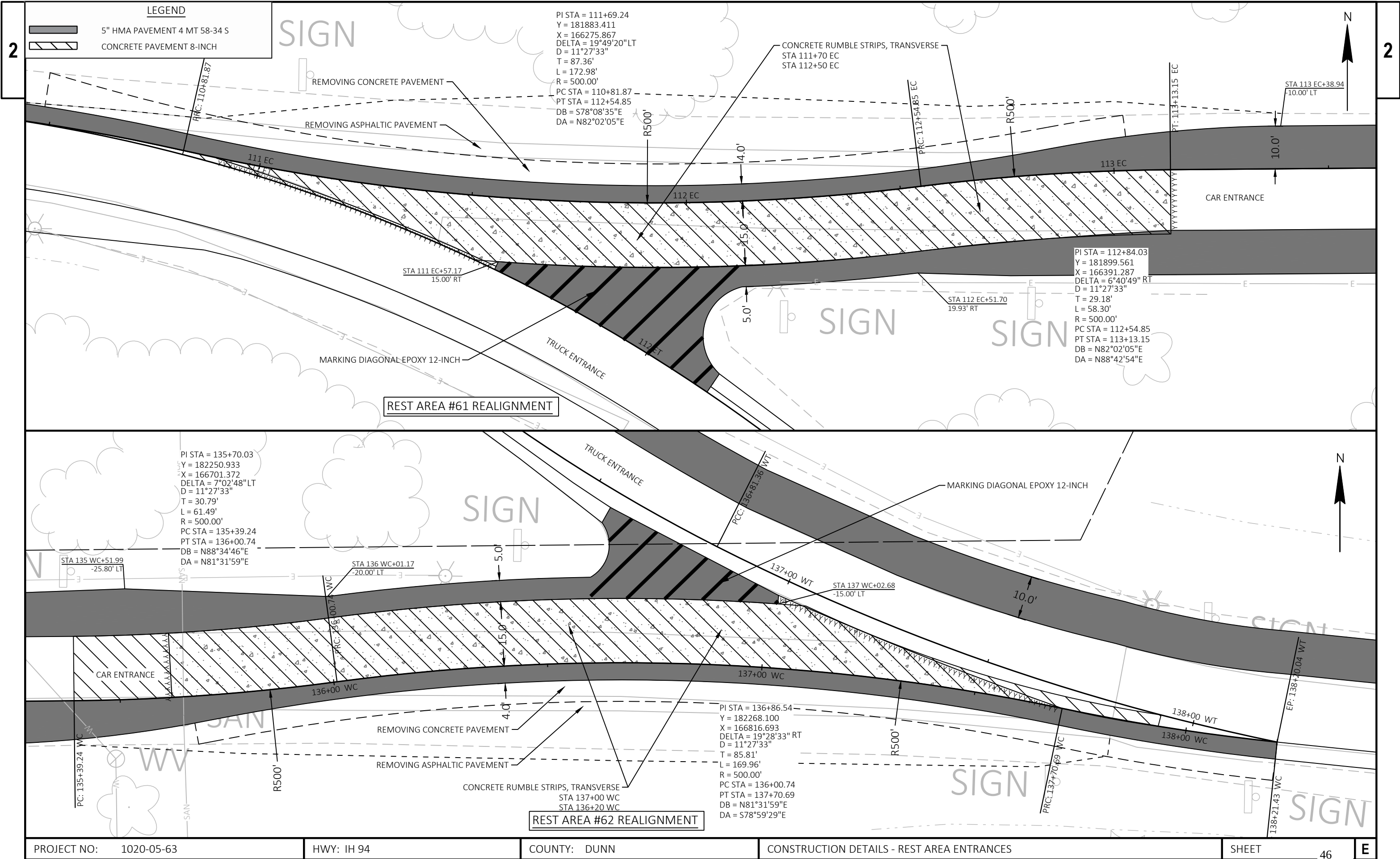


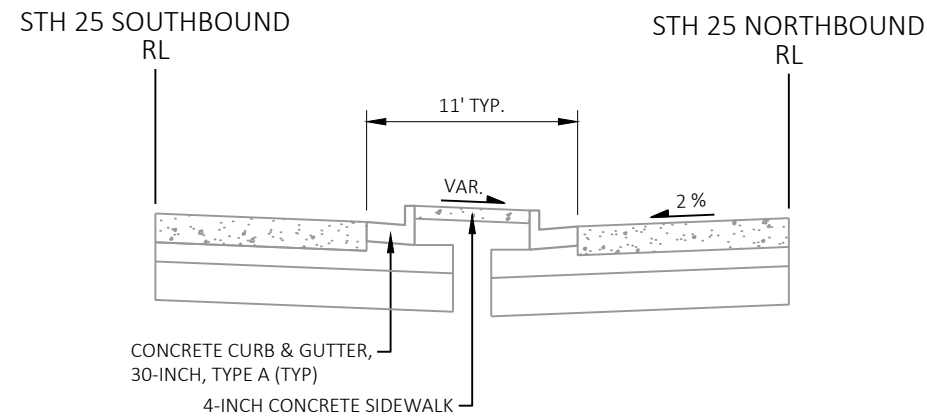




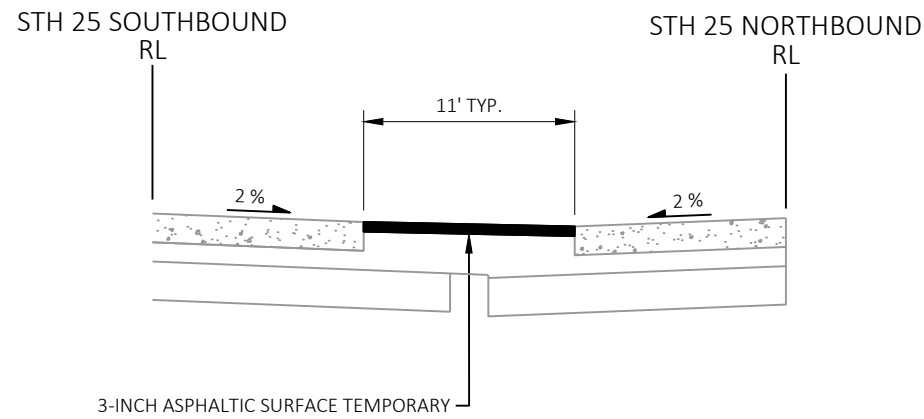




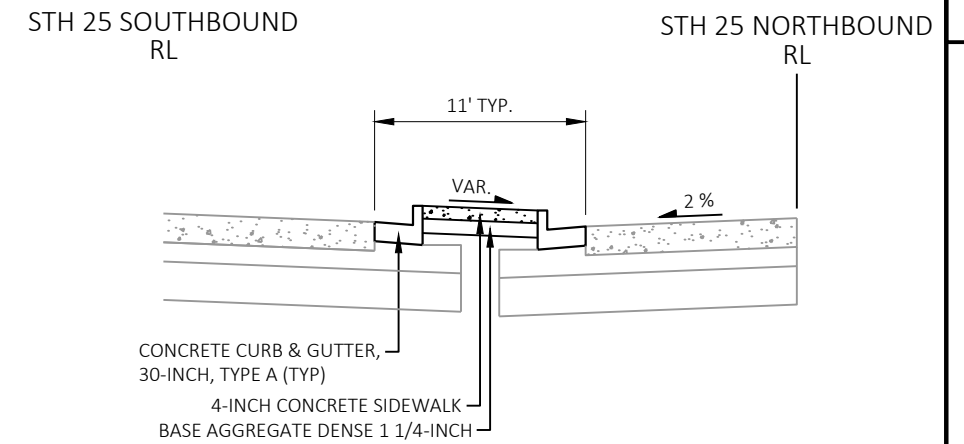




EXISTING TYPICAL SECTION - STH 25 MEDIAN



TEMPORARY TYPICAL SECTION - STH 25 MEDIAN

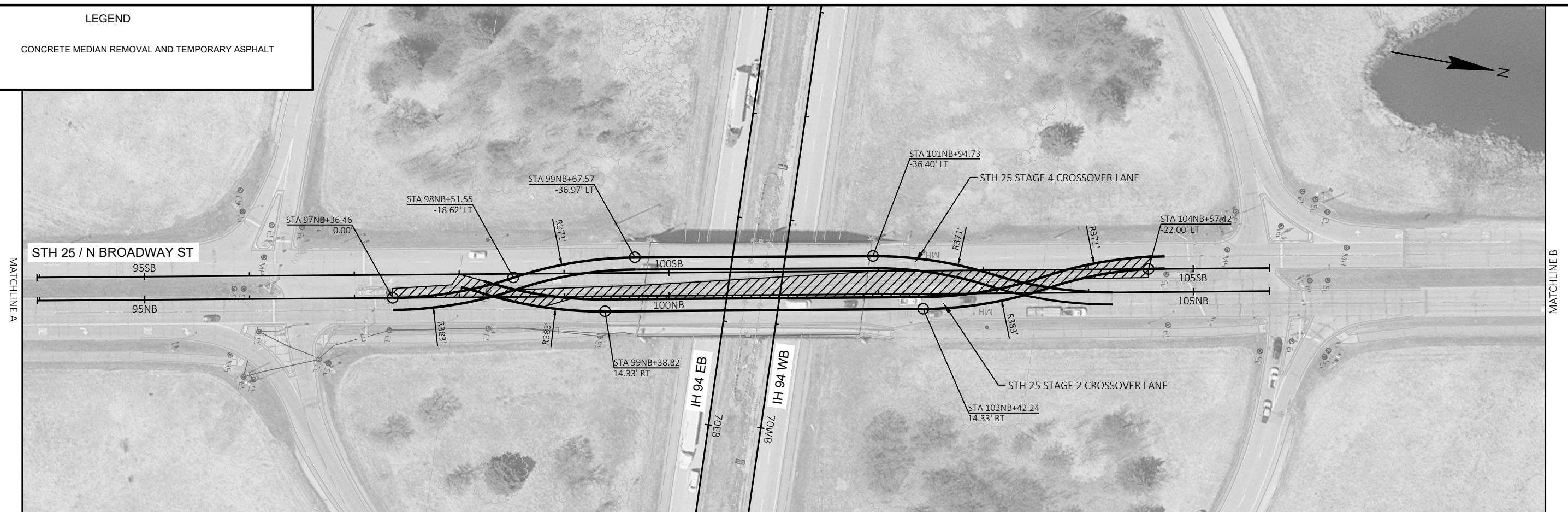


FINISHED TYPICAL SECTION - STH 25 MEDIAN

LEGEND



CONCRETE MEDIAN REMOVAL AND TEMPORARY ASPHALT



PROJECT NO: 1020-05-63 / 1021-01-78

HWY: IH 94

COUNTY: DUNN

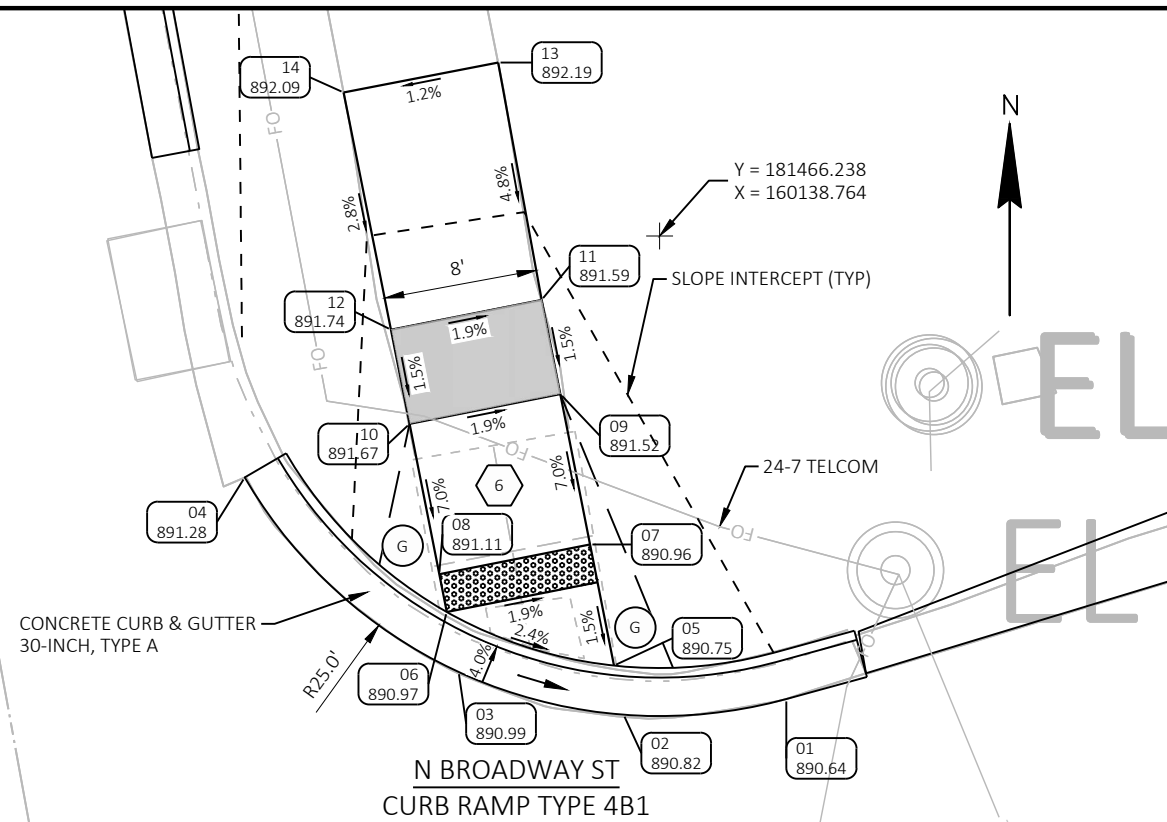
CONSTRUCTION DETAIL - STH 25 TEMPORARY CROSSOVER

SHEET

47

E

2



STH25-NE					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
01	96+59.89	51.33' RT	890.64	181442.12	160145.36
02	96+60.66	42.86' RT	890.82	181441.31	160136.89
03	96+64.45	34.83' RT	890.99	181443.54	160128.30
04	96+76.46	25.76' RT	891.28	181453.66	160117.16
05	96+63.27	42.84' RT	890.75	181443.86	160136.39
06	96+67.63	34.80' RT	890.97	181446.66	160127.68
07	96+69.70	42.78' RT	890.96	181450.17	160135.14
08	96+69.63	34.78' RT	891.11	181448.62	160127.29
09	96+77.68	42.72' RT	891.52	181458.00	160133.59
10	96+77.61	34.72' RT	891.67	181456.45	160125.74
11	96+82.68	42.67' RT	891.59	181462.91	160132.62
12	96+82.61	34.67' RT	891.74	181461.36	160124.77
13	96+95.25	42.74' RT	892.19	181475.27	160130.36
14	96+95.21	34.55' RT	892.09	181473.71	160122.31

NOTES:

1. CONTRACTOR TO FIELD VERIFY ELEVATION, GRADES, SLOPES, LENGTHS AND MATCH POINTS PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
2. THE ENGINEER MAY ADJUST ELEVATIONS TO FIT FIELD CONDITIONS.
3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.
5. DETECTABLE WARNING FIELDS SHOWN IN PLANS ARE STANDARD RECTANGULAR PLATES UNLESS OTHERWISE NOTED.
6. ALL SIDEWALK SHOWN IS CONCRETE SIDEWALK 4-INCH UNLESS OTHERWISE NOTED.

LEGEND:

← FLOW DIRECTION

SAWCUT CONCRETE (SAWCUTS TO BE AT NEAREST EXISTING JOINT)

Y Y Y Y Y Y SAWCUT ASPHALT

 DETECTABLE WARNING FIELD

 GUTTER PAN SLOPE TRANSITION (6.25% EXISTING TO 4.0% PROPOSED)
(UNLESS OTHERWISE NOTED)

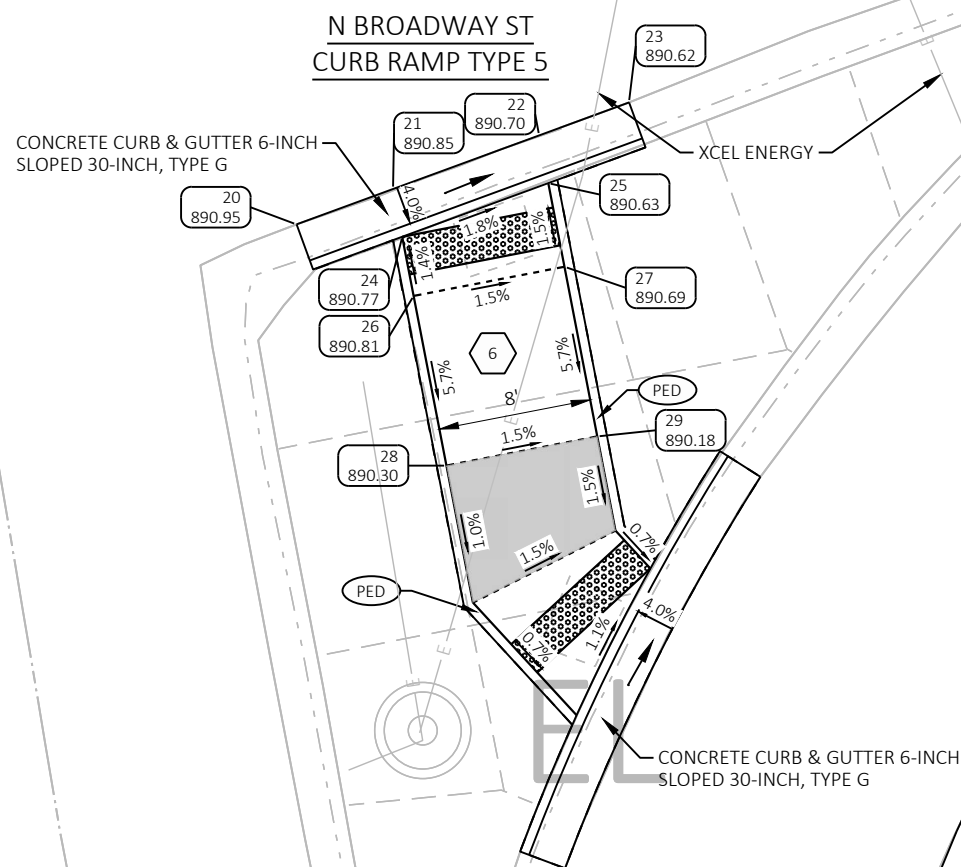
6:1 GRADED FLARE

6 CONCRETE SIDEWALK 6-INCH

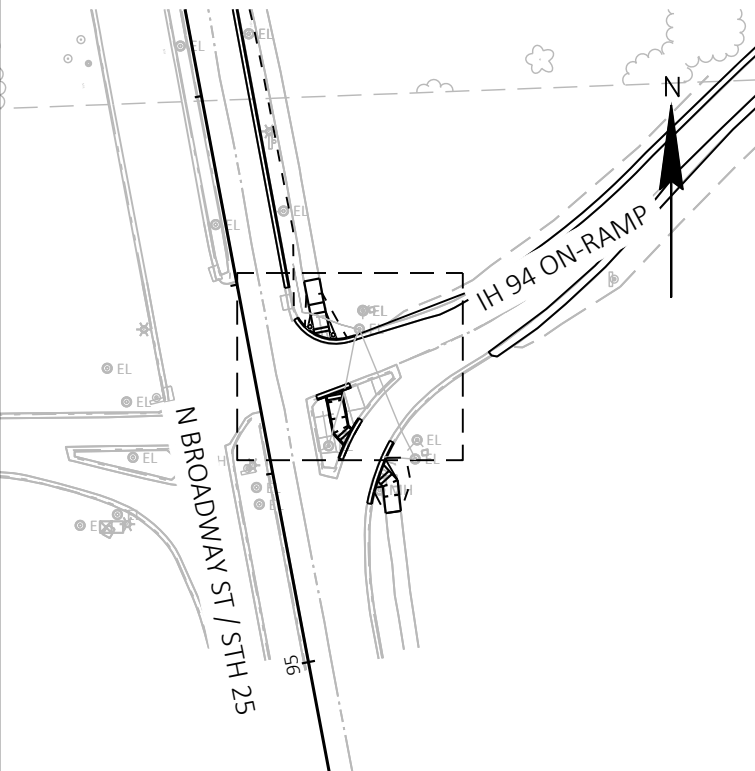
 CONCRETE CURB PEDESTRIAN

XXXX POINT NUMBER & ELEVATION

 LEVEL LANDING



STH25-Island-N					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
20	96+35.77	29.67' RT	890.95	181414.40	160128.55
21	96+36.65	34.95' RT	890.85	181416.24	160133.58
22	96+37.98	42.95' RT	890.70	181419.04	160141.19
23	96+38.80	47.87' RT	890.62	181420.75	160145.87
24	96+34.11	34.96' RT	890.77	181413.76	160134.06
25	96+35.45	42.96' RT	890.63	181416.55	160141.67
26	96+30.98	34.98' RT	890.81	181410.68	160134.65
27	96+31.01	42.98' RT	890.69	181412.19	160142.51
28	96+21.98	35.02' RT	890.30	181401.84	160136.36
29	96+22.01	43.02' RT	890.18	181403.36	160144.22



PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

CURB RAMP DETAILS

SHEET

48

E

FILE NAME : N:\PDS\C3D\10200533\SHEETS\021301-CR.DWG
LAYOUT NAME - 01

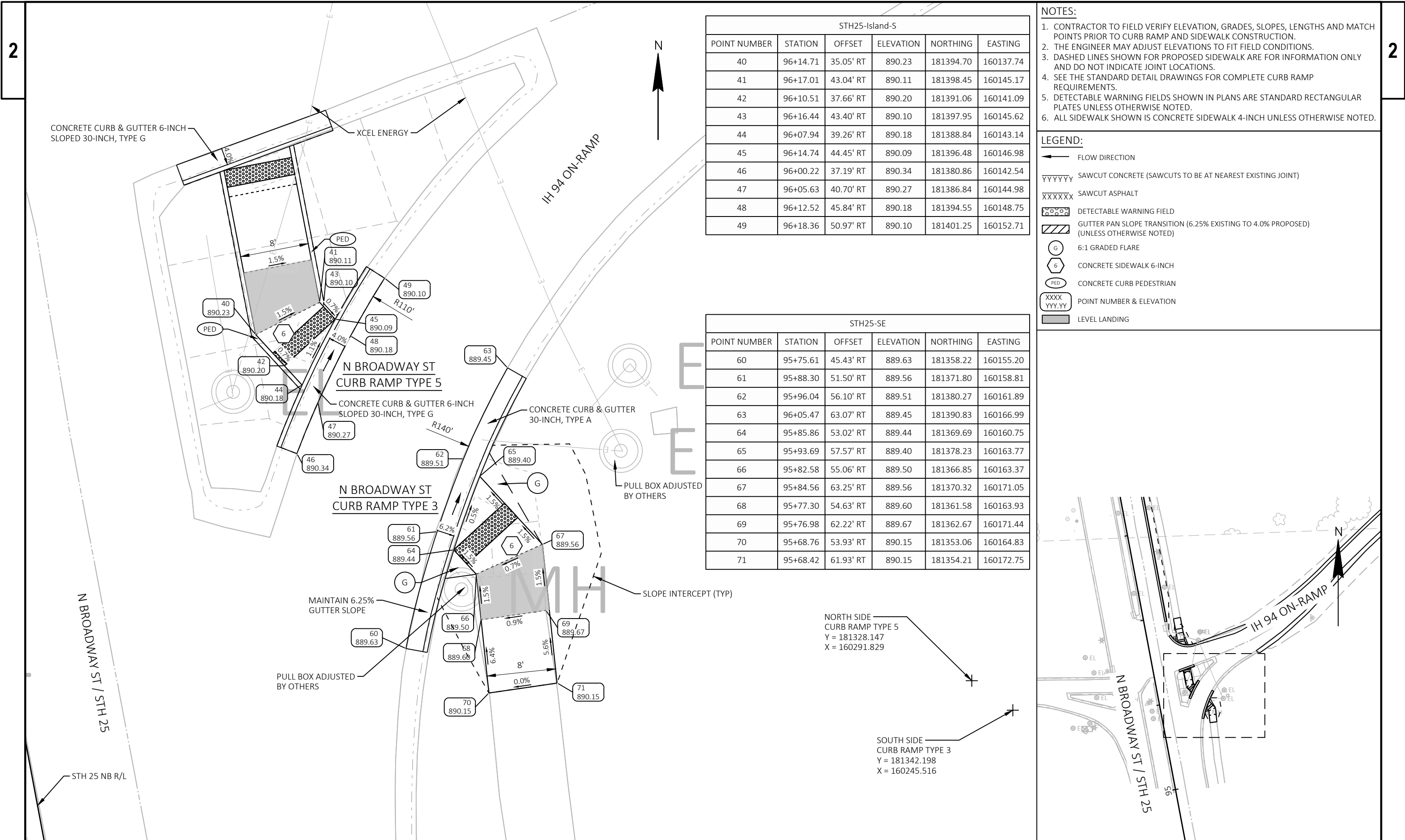
PLOT DATE : 5/1/2026 8:15 AM

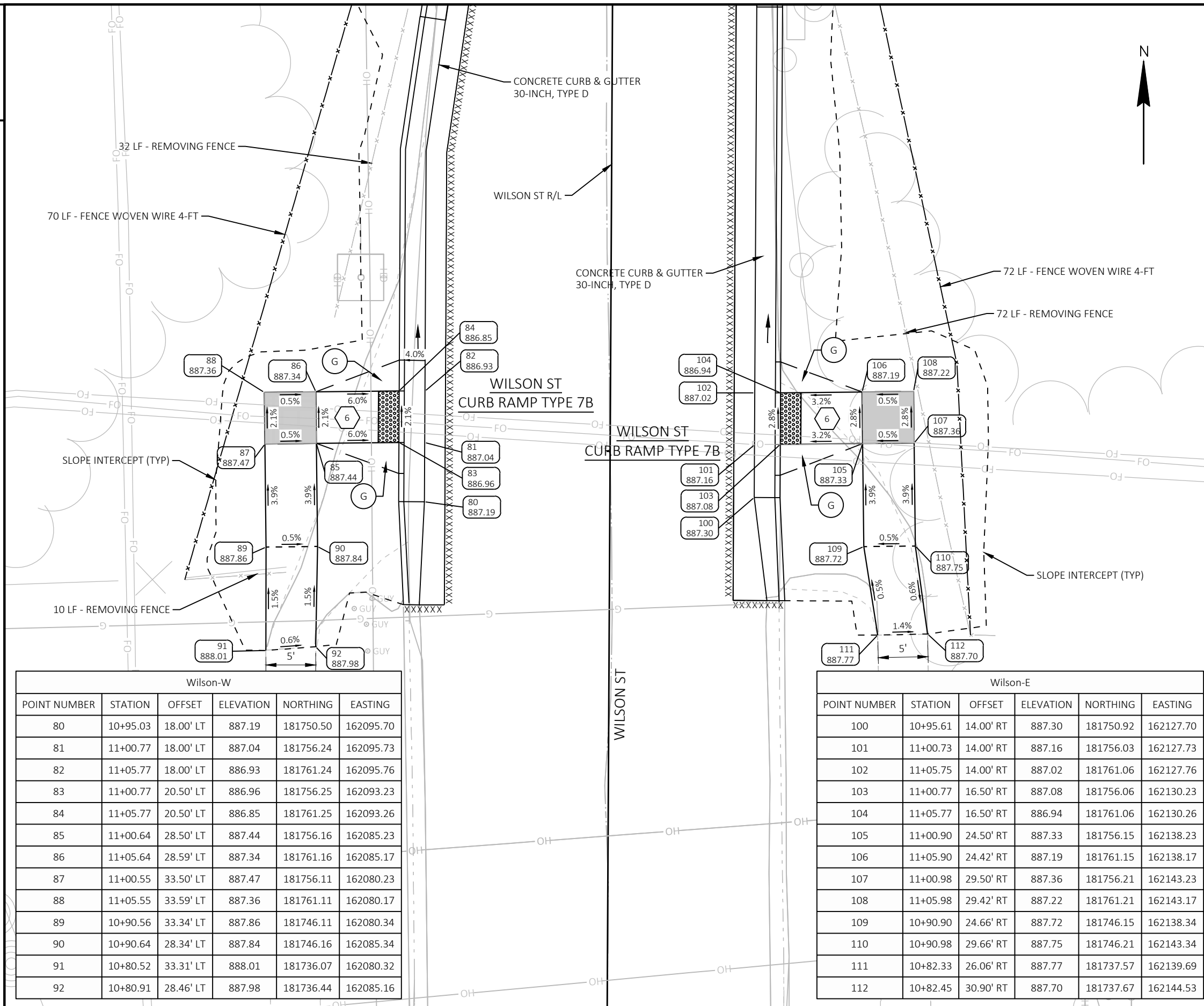
PLOT BY : CHRIS BURNS

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 42



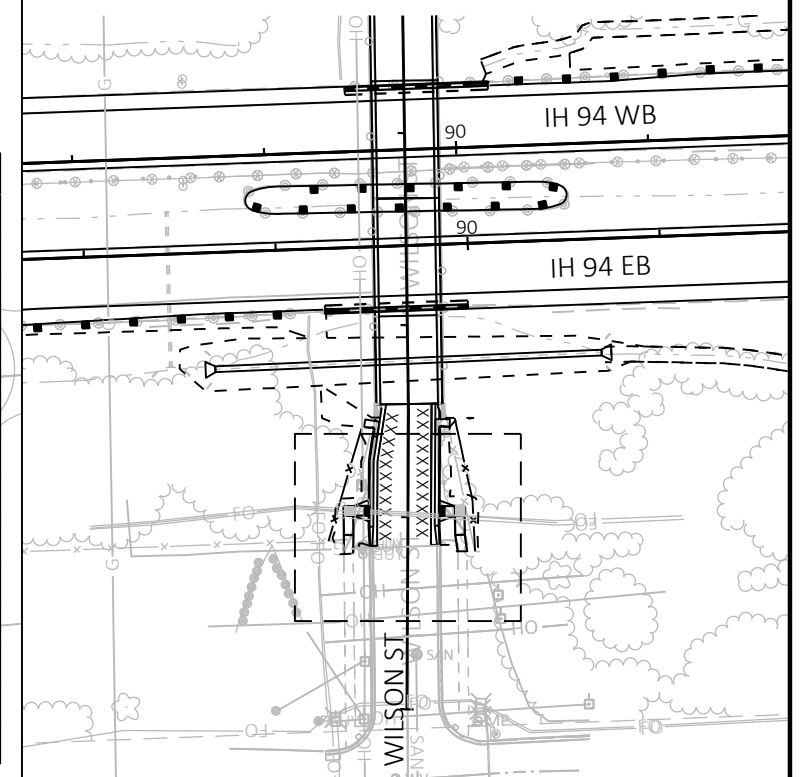


NOTES:

1. CONTRACTOR TO FIELD VERIFY ELEVATION, GRADES, SLOPES, LENGTHS AND MATCH POINTS PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
2. THE ENGINEER MAY ADJUST ELEVATIONS TO FIT FIELD CONDITIONS.
3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.
5. DETECTABLE WARNING FIELDS SHOWN IN PLANS ARE STANDARD RECTANGULAR PLATES UNLESS OTHERWISE NOTED.
6. ALL SIDEWALK SHOWN IS CONCRETE SIDEWALK 4-INCH UNLESS OTHERWISE NOTED.

LEGEND:

- ← FLOW DIRECTION
- YYYYYY SAWCUT CONCRETE (SAWCUTS TO BE AT NEAREST EXISTING JOINT)
- XXXXXX SAWCUT ASPHALT
- DETECTABLE WARNING FIELD
- GUTTER PAN SLOPE TRANSITION (6.25% EXISTING TO 4.0% PROPOSED) (UNLESS OTHERWISE NOTED)
- 6:1 GRADED FLARE
- CONCRETE SIDEWALK 6-INCH
- CONCRETE CURB PEDESTRIAN
- POINT NUMBER & ELEVATION
- LEVEL LANDING



PROJECT NO: 1020-05-63

HWY: IH 94

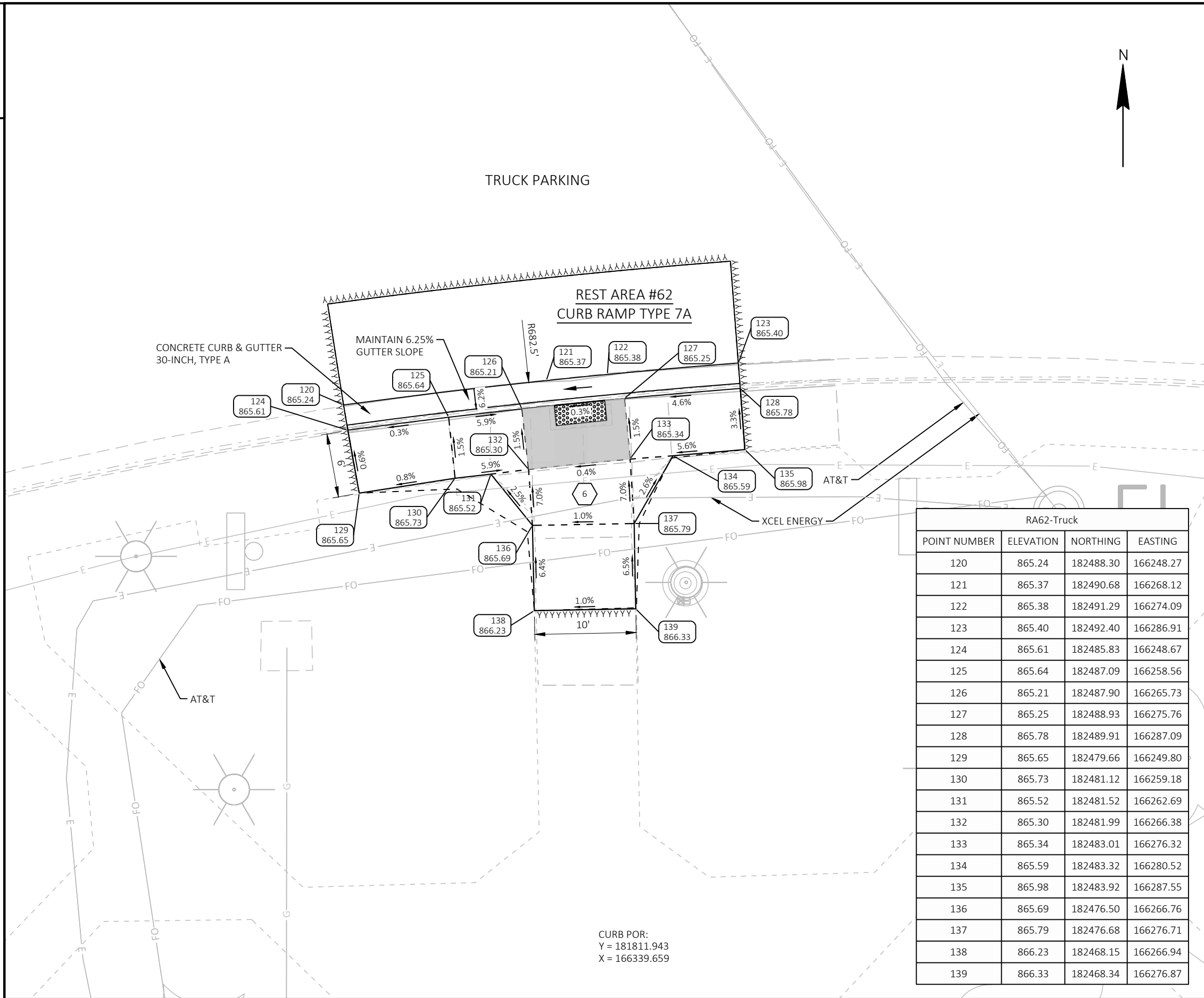
COUNTY: DUNN

CURB RAMP DETAILS

SHEET

50

E

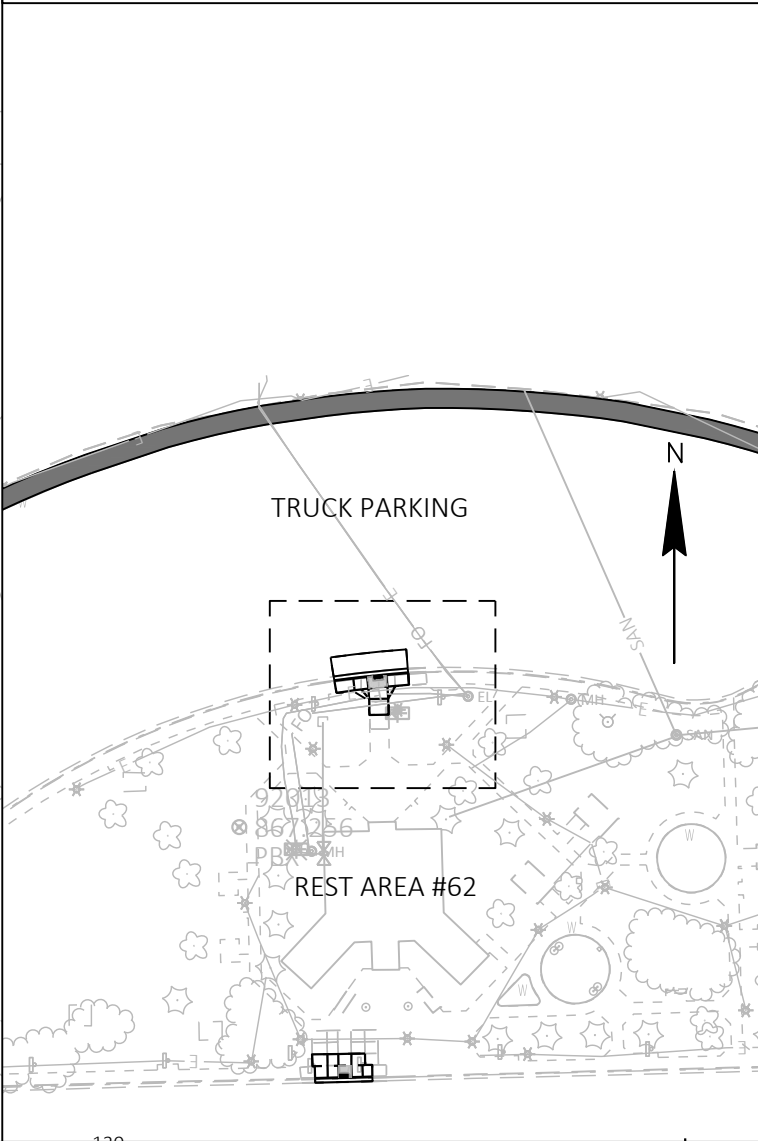


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4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.
5. DETECTABLE WARNING FIELDS SHOWN IN PLANS ARE STANDARD RECTANGULAR PLATES UNLESS OTHERWISE NOTED.
6. ALL SIDEWALK SHOWN IS CONCRETE SIDEWALK 4-INCH UNLESS OTHERWISE NOTED.

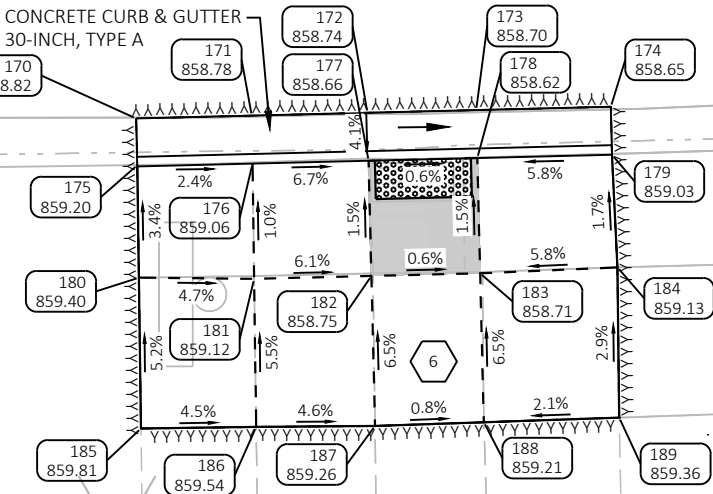
LEGEND:

- ← FLOW DIRECTION
- YYYYYY SAWCUT CONCRETE (SAWCUTS TO BE AT NEAREST EXISTING JOINT)
- XXXXXX SAWCUT ASPHALT
- [Symbol] DETECTABLE WARNING FIELD
- [Symbol] GUTTER PAN SLOPE TRANSITION (6.25% EXISTING TO 4.0% PROPOSED) (UNLESS OTHERWISE NOTED)
- [Symbol] 6:1 GRADED FLARE
- [Symbol] CONCRETE SIDEWALK 6-INCH
- [Symbol] CONCRETE CURB PEDESTRIAN
- XXXX
YYY.YY POINT NUMBER & ELEVATION
- [Symbol] LEVEL LANDING



DRIVE AISLE / CAR PARKING

REST AREA #61
CURB RAMP TYPE 7A



NOTE: ADA SIGNS ON MOVABLE BASES
TO BE MOVED AND REINSTALLED UPON
COMPLETION OF WORK.

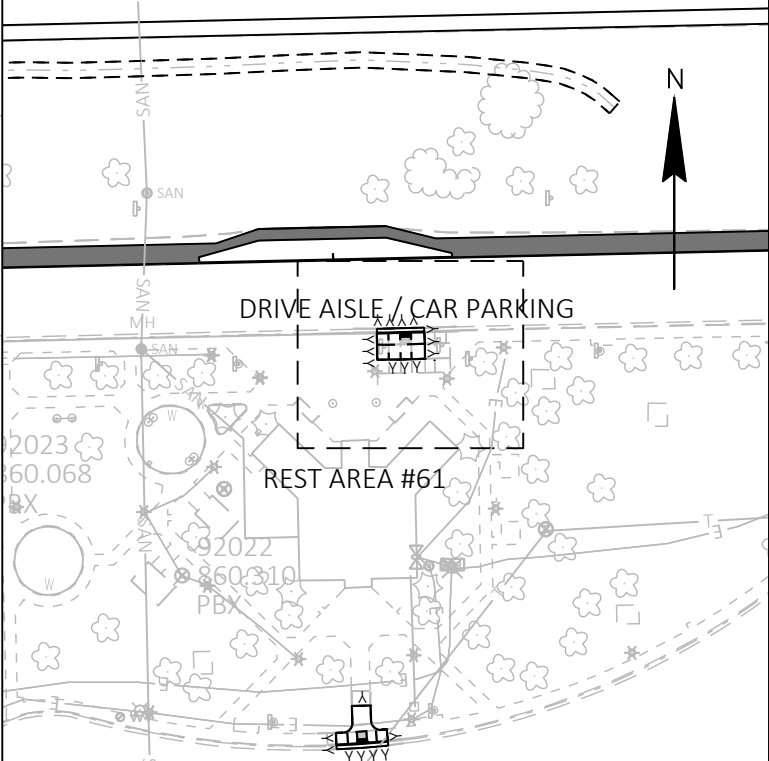
RA61-Car			
POINT NUMBER	ELEVATION	NORTHING	EASTING
170	858.82	181873.05	166830.16
171	858.78	181873.20	166836.19
172	858.74	181873.34	166842.20
173	858.70	181873.48	166847.87
174	858.65	181873.66	166854.88
175	859.20	181870.61	166830.22
176	859.06	181870.70	166836.22
177	858.66	181870.85	166842.26
178	858.62	181870.98	166847.93
179	859.03	181871.16	166854.94
180	859.40	181864.76	166830.30
181	859.12	181864.70	166836.30
182	858.75	181864.85	166842.41
183	858.71	181864.99	166848.07
184	859.13	181865.29	166855.22
185	859.81	181856.90	166830.41
186	859.54	181856.98	166836.41
187	859.26	181857.03	166842.60
188	859.21	181857.23	166848.26
189	859.36	181857.47	166855.32

NOTES:

1. CONTRACTOR TO FIELD VERIFY ELEVATION, GRADES, SLOPES, LENGTHS AND MATCH POINTS PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
2. THE ENGINEER MAY ADJUST ELEVATIONS TO FIT FIELD CONDITIONS.
3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.
5. DETECTABLE WARNING FIELDS SHOWN IN PLANS ARE STANDARD RECTANGULAR PLATES UNLESS OTHERWISE NOTED.
6. ALL SIDEWALK SHOWN IS CONCRETE SIDEWALK 4-INCH UNLESS OTHERWISE NOTED.

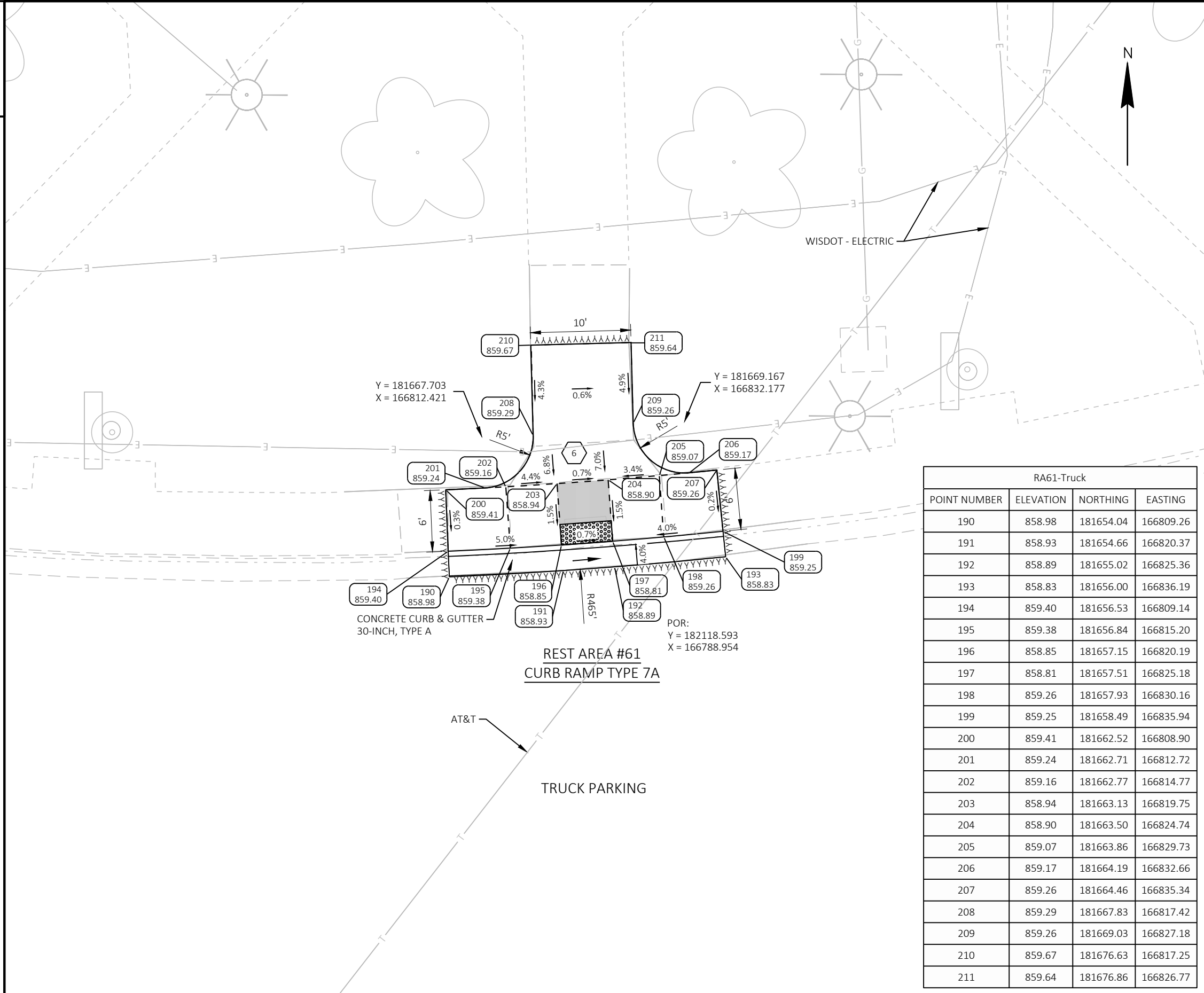
LEGEND:

- ← FLOW DIRECTION
- YYYYYY SAWCUT CONCRETE (SAWCUTS TO BE AT NEAREST EXISTING JOINT)
- XXXXXX SAWCUT ASPHALT
- [Pattern] DETECTABLE WARNING FIELD
- [Pattern] GUTTER PAN SLOPE TRANSITION (6.25% EXISTING TO 4.0% PROPOSED) (UNLESS OTHERWISE NOTED)
- (G) 6:1 GRADED FLARE
- (6) CONCRETE SIDEWALK 6-INCH
- (PED) CONCRETE CURB PEDESTRIAN
- XXXX
YYY.YY POINT NUMBER & ELEVATION
- [Shaded Box] LEVEL LANDING



2

2



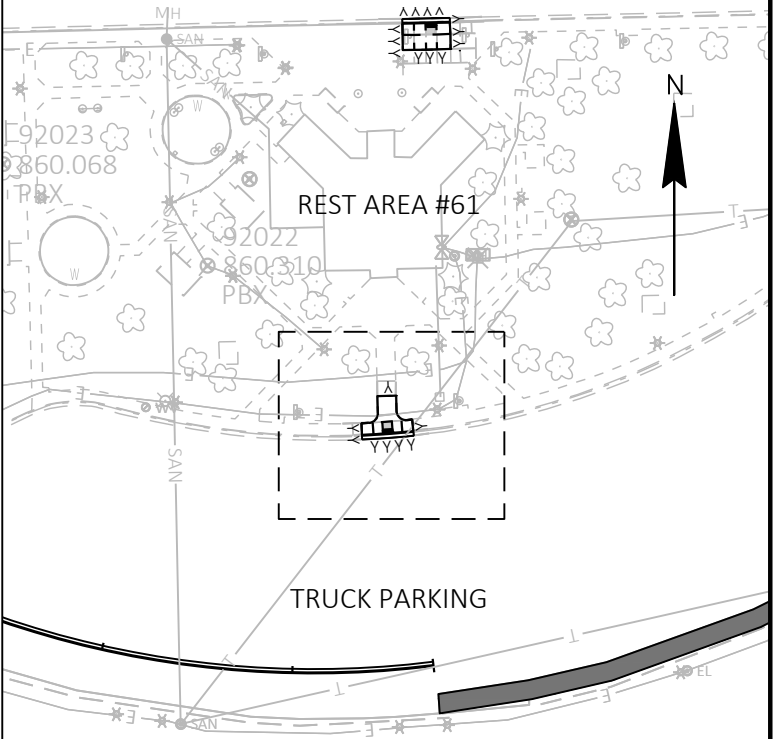
NOTES:

1. CONTRACTOR TO FIELD VERIFY ELEVATION, GRADES, SLOPES, LENGTHS AND MATCH POINTS PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION.
2. THE ENGINEER MAY ADJUST ELEVATIONS TO FIT FIELD CONDITIONS.
3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS.
4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS.
5. DETECTABLE WARNING FIELDS SHOWN IN PLANS ARE STANDARD RECTANGULAR PLATES UNLESS OTHERWISE NOTED.
6. ALL SIDEWALK SHOWN IS CONCRETE SIDEWALK 4-INCH UNLESS OTHERWISE NOTED.

LEGEND:

	FLOW DIRECTION
	SAWCUT CONCRETE (SAWCUTS TO BE AT NEAREST EXISTING JOINT)
	SAWCUT ASPHALT
	DETECTABLE WARNING FIELD
	GUTTER PAN SLOPE TRANSITION (6.25% EXISTING TO 4.0% PROPOSED) (UNLESS OTHERWISE NOTED)
	6:1 GRADED FLARE
	CONCRETE SIDEWALK 6-INCH
	CONCRETE CURB PEDESTRIAN
	POINT NUMBER & ELEVATION
	LEVEL LANDING

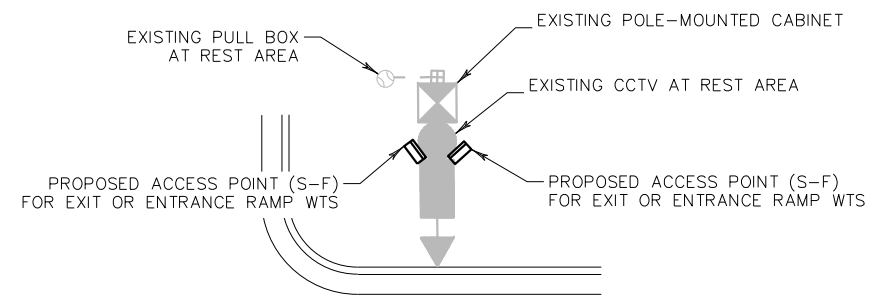
RA61-Truck			
POINT NUMBER	ELEVATION	NORTHING	EASTING
190	858.98	181654.04	166809.26
191	858.93	181654.66	166820.37
192	858.89	181655.02	166825.36
193	858.83	181656.00	166836.19
194	859.40	181656.53	166809.14
195	859.38	181656.84	166815.20
196	858.85	181657.15	166820.19
197	858.81	181657.51	166825.18
198	859.26	181657.93	166830.16
199	859.25	181658.49	166835.94
200	859.41	181662.52	166808.90
201	859.24	181662.71	166812.72
202	859.16	181662.77	166814.77
203	858.94	181663.13	166819.75
204	858.90	181663.50	166824.74
205	859.07	181663.86	166829.73
206	859.17	181664.19	166832.66
207	859.26	181664.46	166835.34
208	859.29	181667.83	166817.42
209	859.26	181669.03	166827.18
210	859.67	181676.63	166817.25
211	859.64	181676.86	166826.77



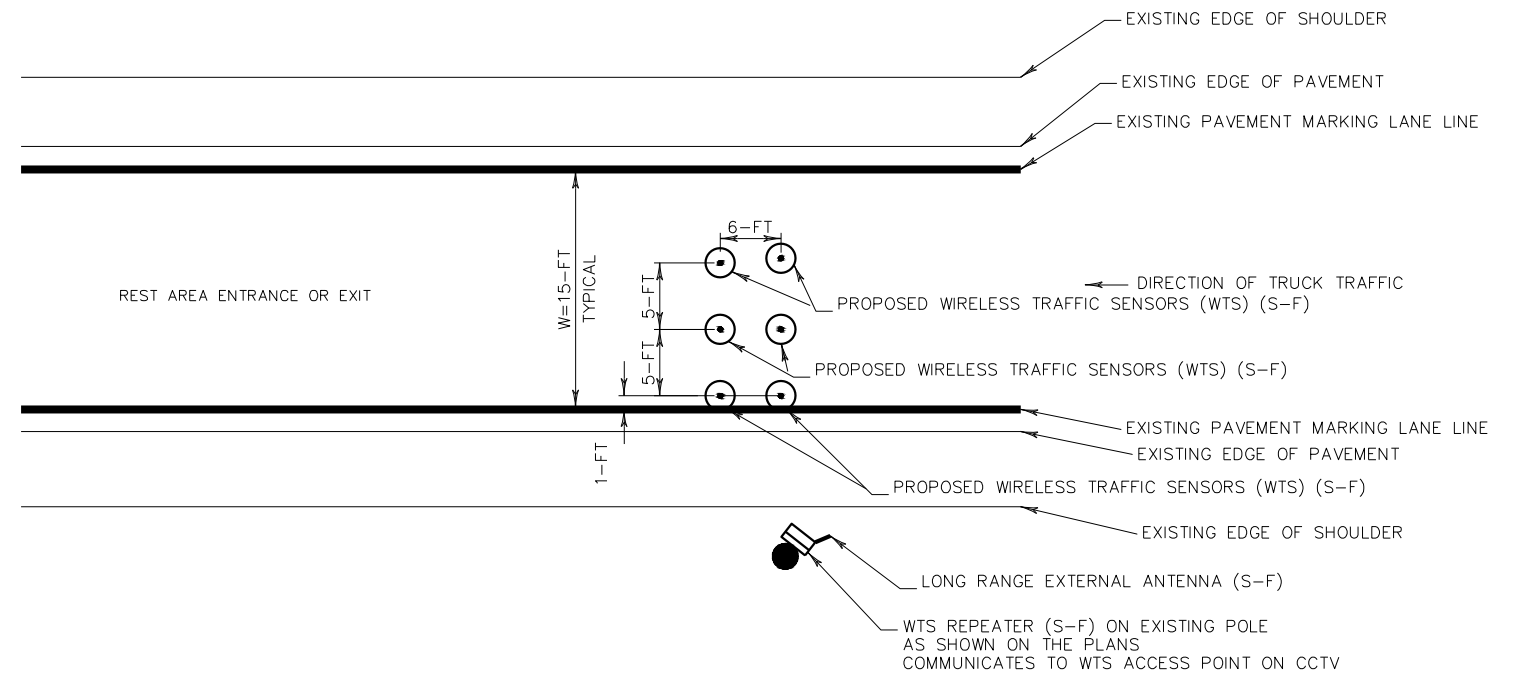
LEGEND	PROPOSED	EXISTING
FTMS CONVENTIONAL SYMBOLS		
POLE MOUNTED CABINET		
CSCP PULL BOX		
FTMS (ITS) CONDUIT		
BREAKER DISCONNECT BOX		
CCTV BASE, POLE, AND CAMERA		
WIRELESS TRAFFIC SENSOR		
WIRELESS TRAFFIC SENSOR ACCESS POINT		
WIRELESS TRAFFIC SENSOR REPEATER		

- THESE PLANS AND THE ASSOCIATED SPECIAL PROVISIONS REFLECT CONDITIONS KNOWN DURING THE DEVELOPMENT OF THE PLANS AND TECHNICAL SPECIAL PROVISIONS. ALL SCALES, DIMENSIONS AND LOCATIONS SHOWN IN THESE PLANS ARE APPROXIMATE. ACTUAL PHYSICAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR THE APPLICATION OF WORK SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE APPLICATION OF ALL WORK SHOWN IN THE PLANS TO THE ACTUAL PHYSICAL FIELD CONDITIONS TO PROVIDE A COMPLETE AND ACCEPTED PROJECT. IN THE EVENT THAT ACTUAL PHYSICAL FIELD CONDITIONS AFFECT OR PREVENT THE APPLICATION OR PROGRESSION OF ANY WORK SHOWN IN THE PLANS OR TECHNICAL SPECIAL PROVISIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, AND PRIOR TO ANY FURTHER WORK ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY LOCATION CHANGES OTHER THAN MINOR ADJUSTMENTS.
- BE AWARE THAT ALL EXISTING UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES WITHIN THE SCOPE OF THIS PROJECT MAY NOT BE LOCATED IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES.
- BE AWARE THAT NO TEST BORINGS WERE MADE WHERE CONDUITS, PULLBOXES, POLES, CABINET FOUNDATIONS, OR OTHER EQUIPMENT IS TO BE INSTALLED. THE CONTRACTOR IS FULLY RESPONSIBLE FOR EXAMINING THE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS.
- NO TREES (AND/OR SHRUBS) SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
- AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR FTMS CONSTRUCTION SHALL BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED, AND EROSION MAT, AND SHALL BE INCLUDED IN THE COST OF INSTALLING FTMS ITEMS. RESTORATION FOR AREAS DISTURBED FOR OTHER CONSTRUCTION OPERATIONS BUT ALSO CONTAINING FTMS CONSTRUCTION SHALL BE DONE ACCORDING TO REQUIREMENTS AND PAYMENT PROVISIONS FOR THE OTHER CONSTRUCTION OPERATIONS.
- THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- DUE TO RAMP, LANE, SHOULDER CLOSURE RESTRICTIONS, AND WORK UNDER OTHER CONTRACTS, SOME WORK MAY BE REQUIRED TO BE PERFORMED AT NIGHT.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR COORDINATING RAMP, LANE, SHOULDER, AND ROADWAY CLOSURES WITH OTHER CONTRACTS IN THE AREA.
- THE CONTRACTOR SHALL CONTACT THE WISDOT STATEWIDE TRAFFIC OPERATIONS CENTER AT (414)227-2166 FIVE (5) WORKING DAYS PRIOR TO ENTERING ANY EXISTING WISDOT FTMS OR ITS CABINET.
- ALL LOOP DETECTORS ARE STATIONED TO CENTER OF LEADING EDGE AS APPROACHED BY NORMAL VEHICLE PATH.
- HAND DIG TRENCHES CROSSING EXISTING CONDUIT CONTAINING FIBER OPTIC CABLE.
- VISUALLY VERIFY DEPTHS OF EXISTING CONDUITS CONTAINING FIBER OPTIC CABLE PRIOR TO CROSSING BY DIRECTIONAL BORE OR SPECIAL METHOD.

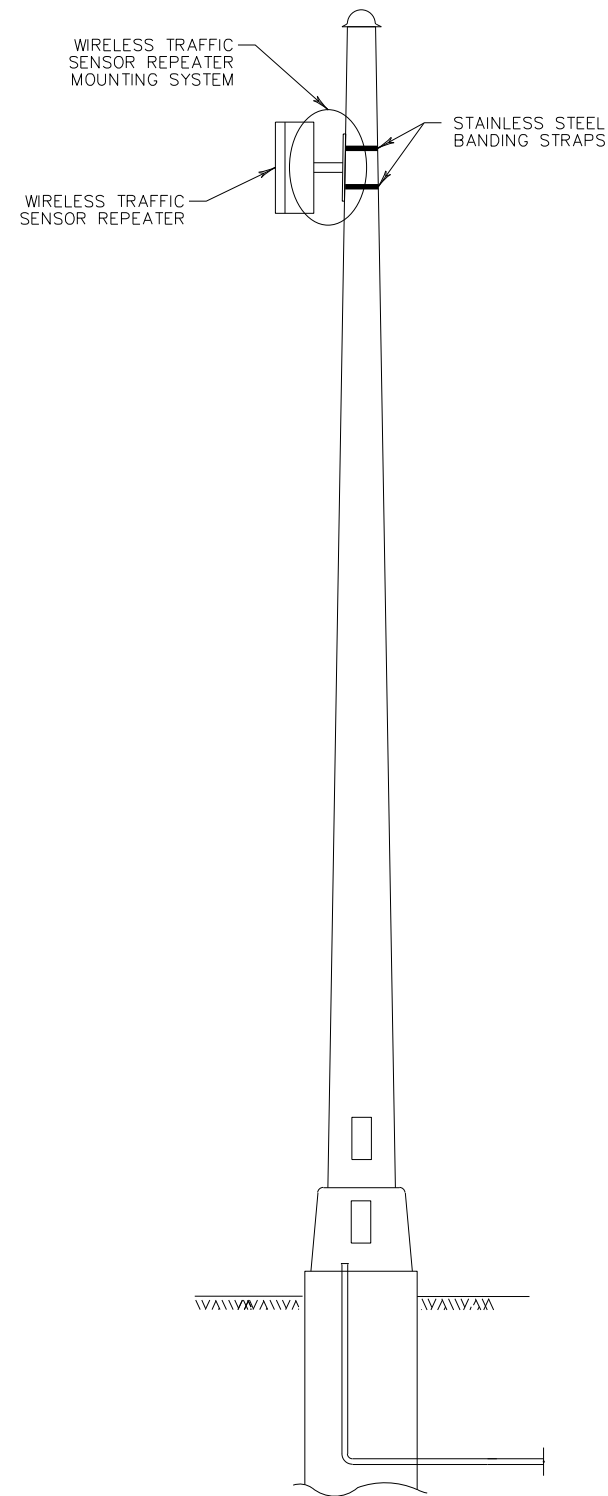
FTMS STANDARD ABBREVIATIONS	
CB	CONTROLLER CABINET
CCTV	CLOSED CIRCUIT TELEVISION SITE
CV	COMMUNICATIONS VAULT
PB	PULL BOX
EX	EXISTING
FOC	FIBER OPTIC CABLE
F.O.	FIBER OPTIC
S-F	STATE-FURNISHED
DMS	DYNAMIC MESSAGE SIGN



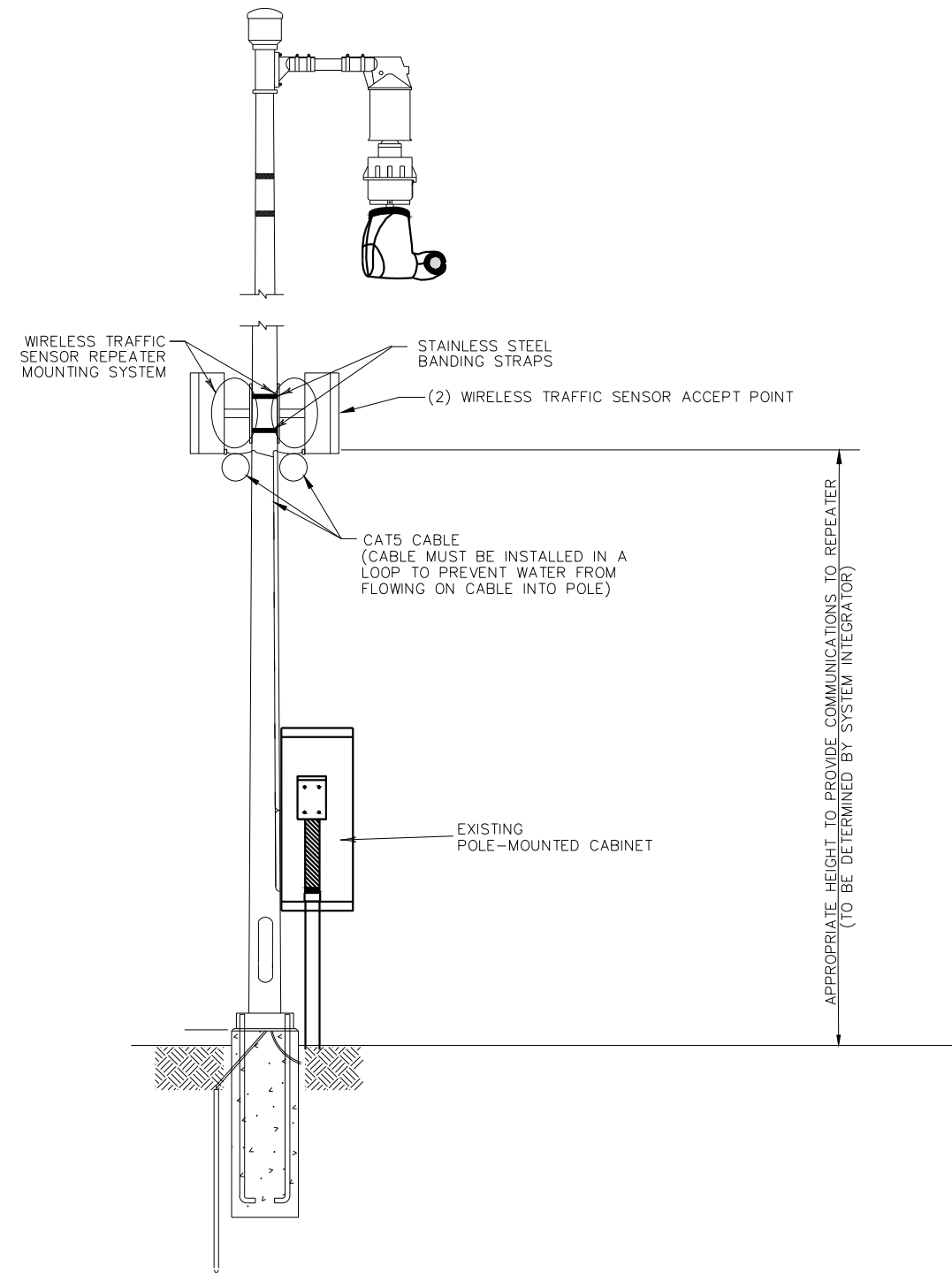
WIRELESS TRAFFIC SENSOR ACCESS POINT



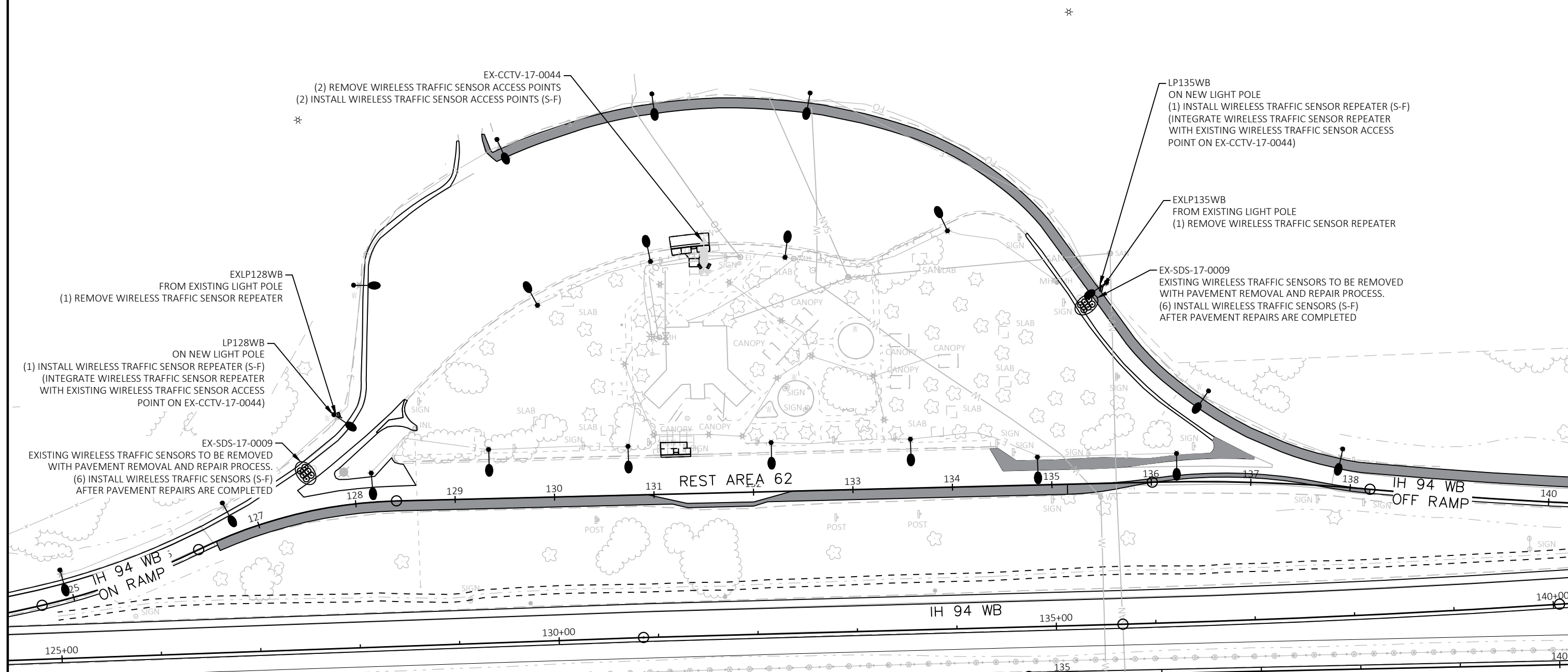
WIRELESS TRAFFIC SENSOR AND REPEATER



TYPE 5 POLE WITH
WIRELESS TRAFFIC SENSOR
REPEATER (NOT TO SCALE)



CCTV CAMERA POLE WITH
WIRELESS TRAFFIC SENSOR
ACCESS POINT (NOT TO SCALE)



PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

FTMS PLANS

SHEET

58

E

FILE NAME : I:\77532\BASE\DUNN\1020-05-63 REST AREAS 61-62\10200563_DUNNCO_RAS.DWG
LAYOUT NAME - 03

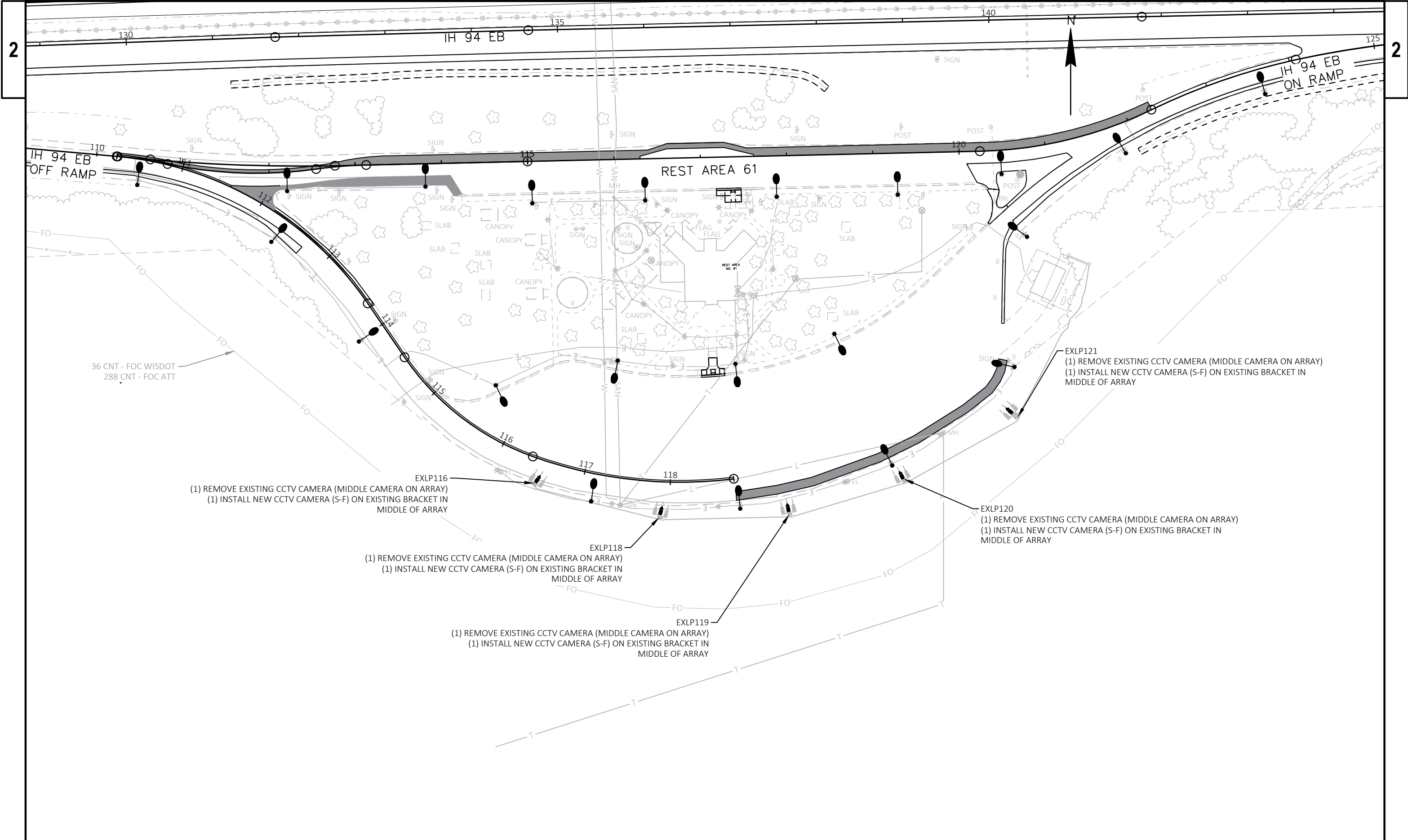
PLOT DATE : 2/3/2026 2:16 PM

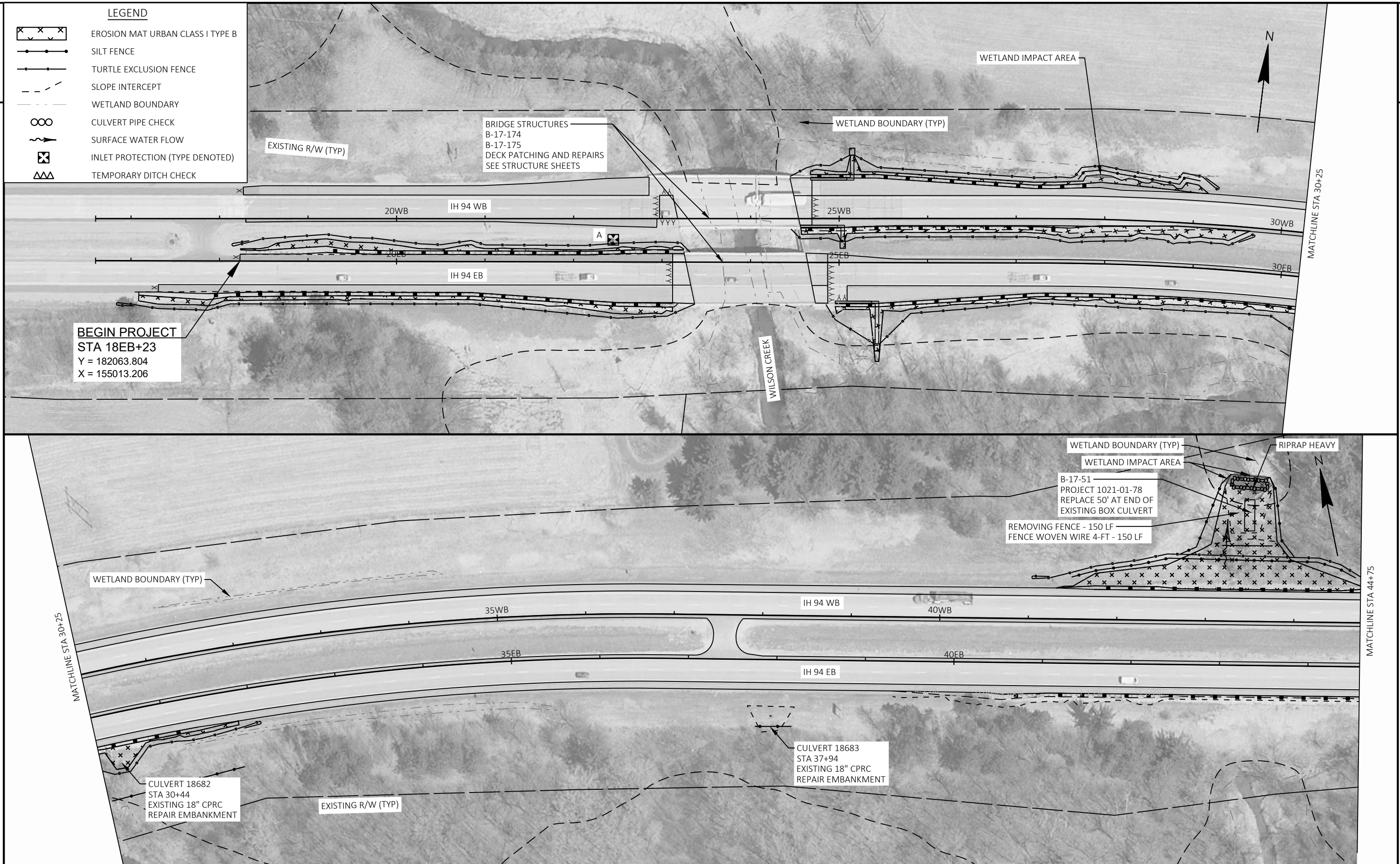
PLOT BY : MATTHEW MAY

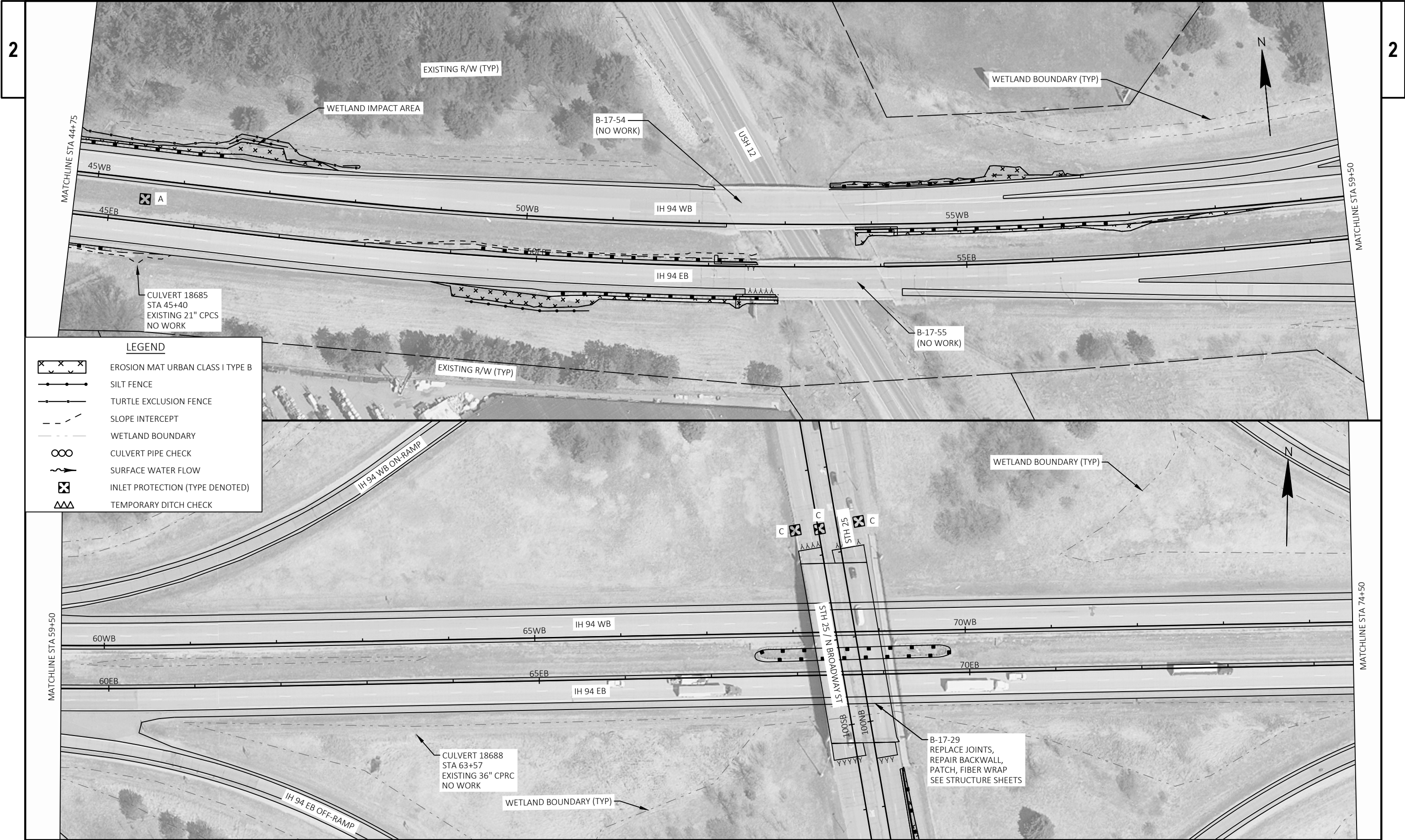
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42

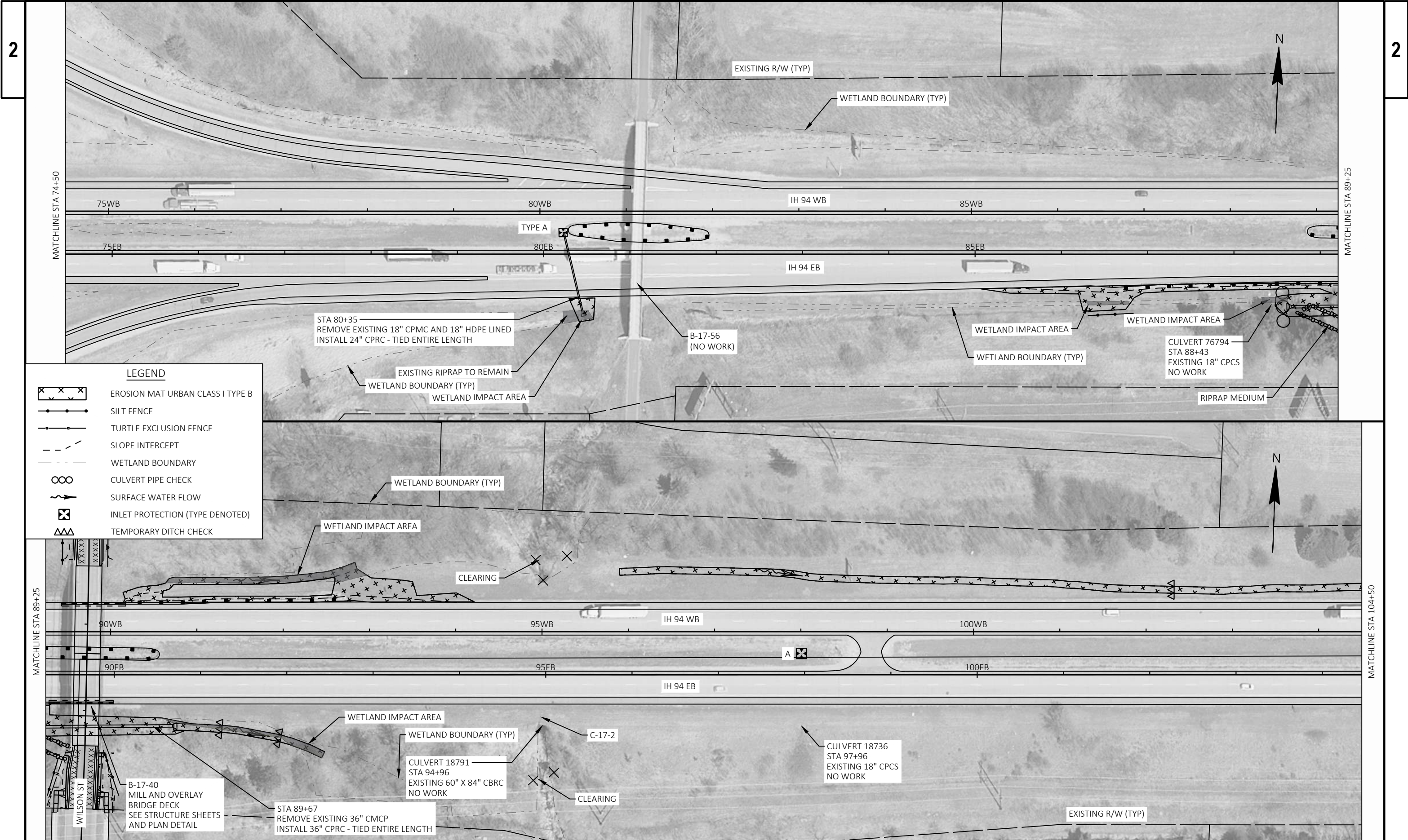






LEGEND

- EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- TURTLE EXCLUSION FENCE
- SLOPE INTERCEPT
- WETLAND BOUNDARY
- CULVERT PIPE CHECK
- SURFACE WATER FLOW
- INLET PROTECTION (TYPE DENOTED)
- TEMPORARY DITCH CHECK













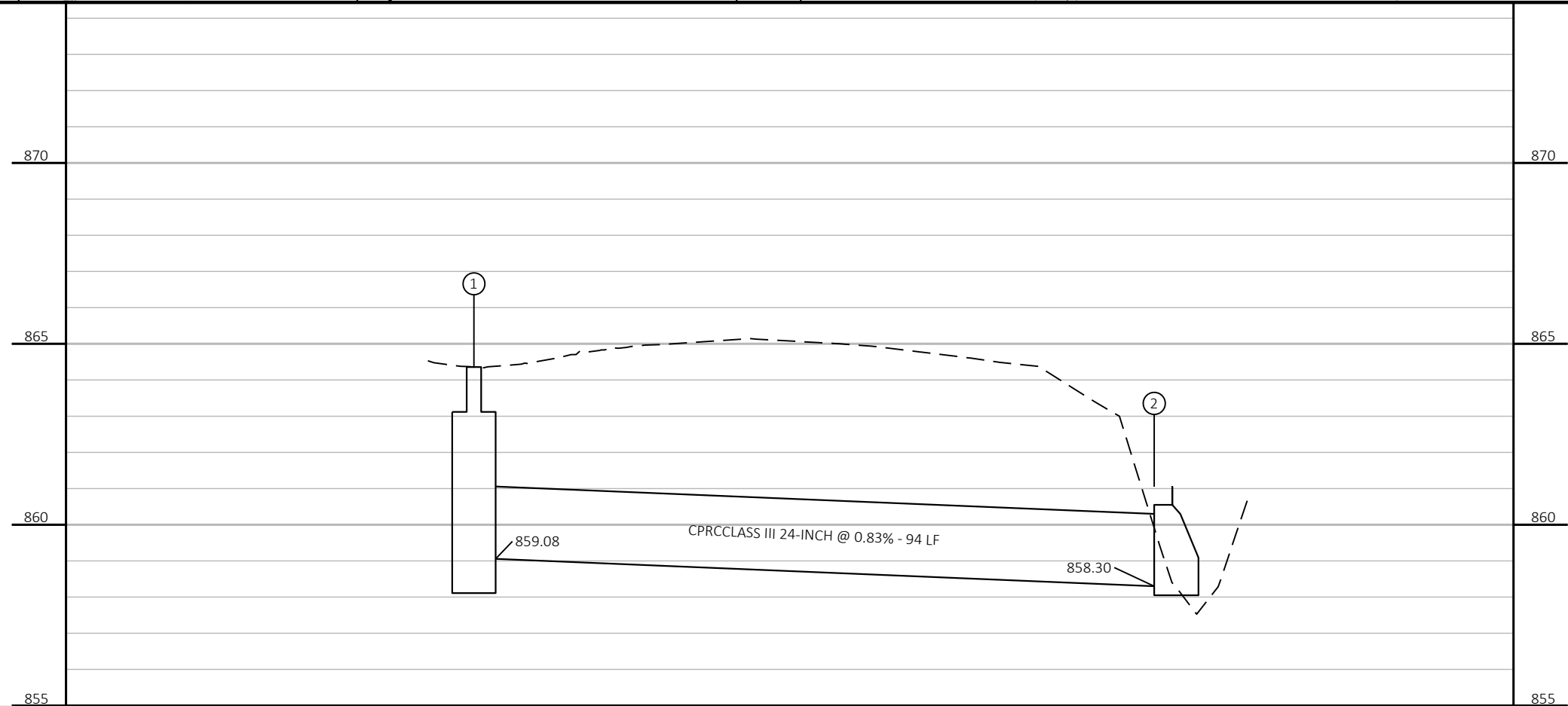
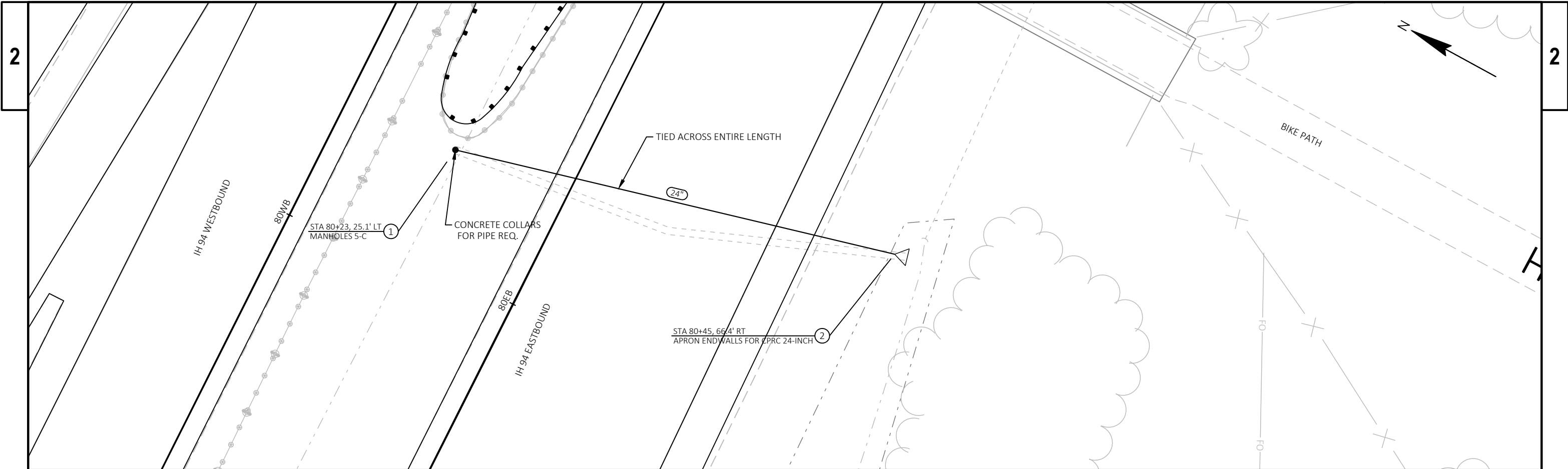
LEGEND

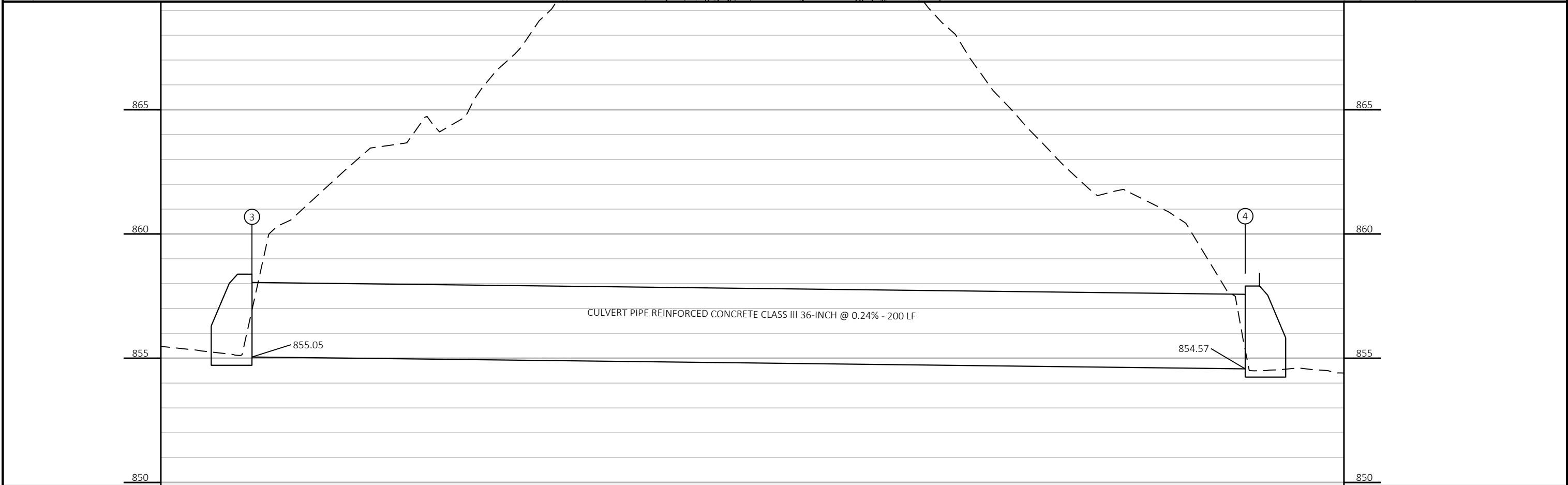
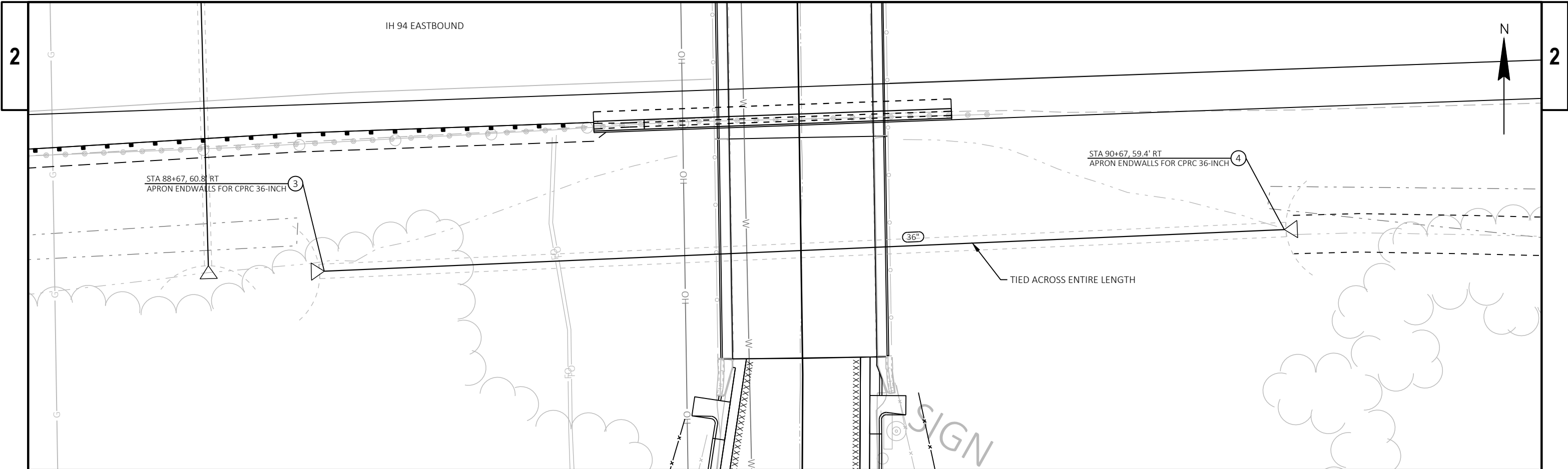
	EROSION MAT URBAN CLASS I TYPE B
	SILT FENCE
	TURTLE EXCLUSION FENCE
	SLOPE INTERCEPT
	WETLAND BOUNDARY
	CULVERT PIPE CHECK
	SURFACE WATER FLOW
	INLET PROTECTION (TYPE DENOTED)
	TEMPORARY DITCH CHECK

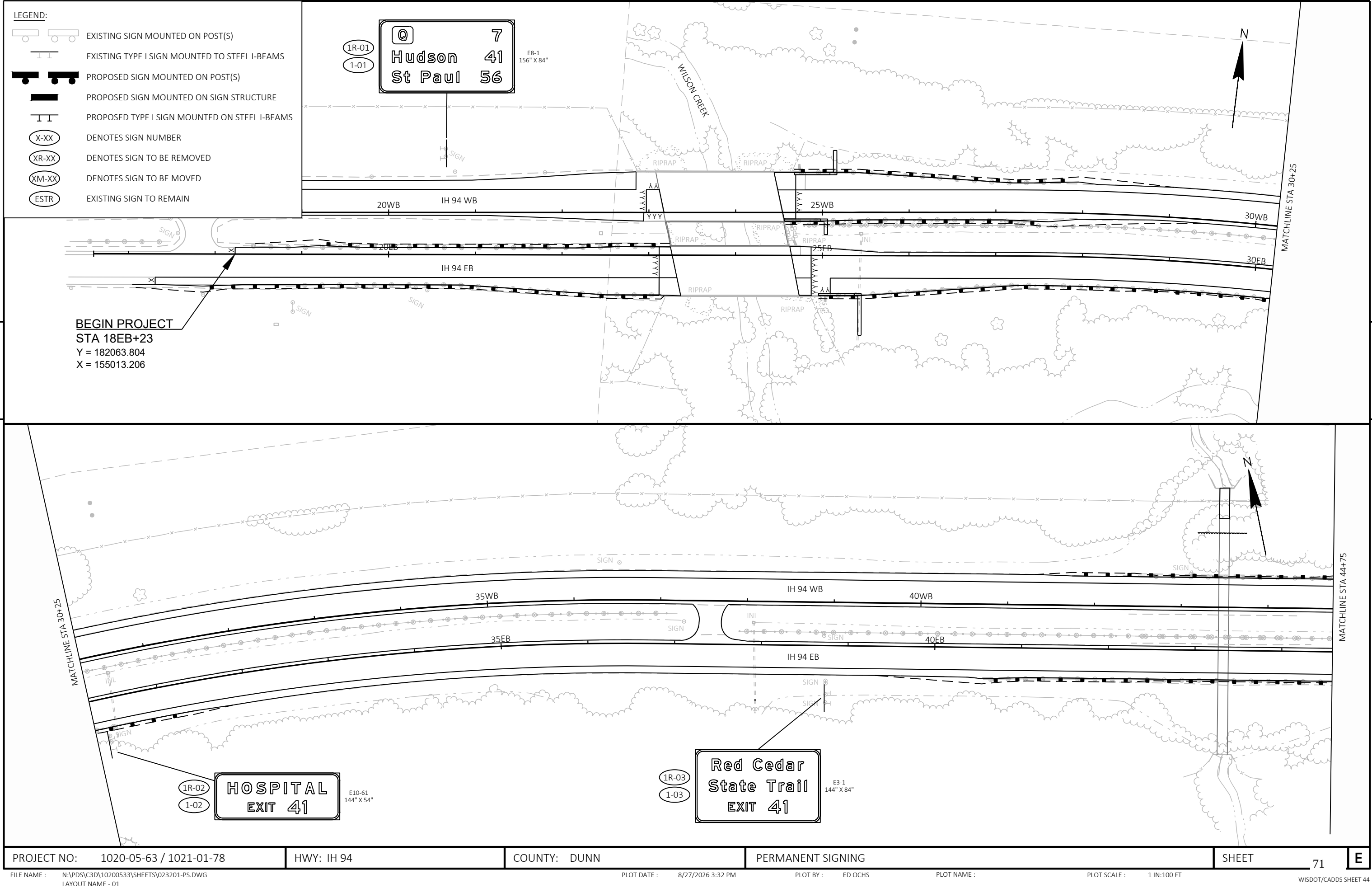


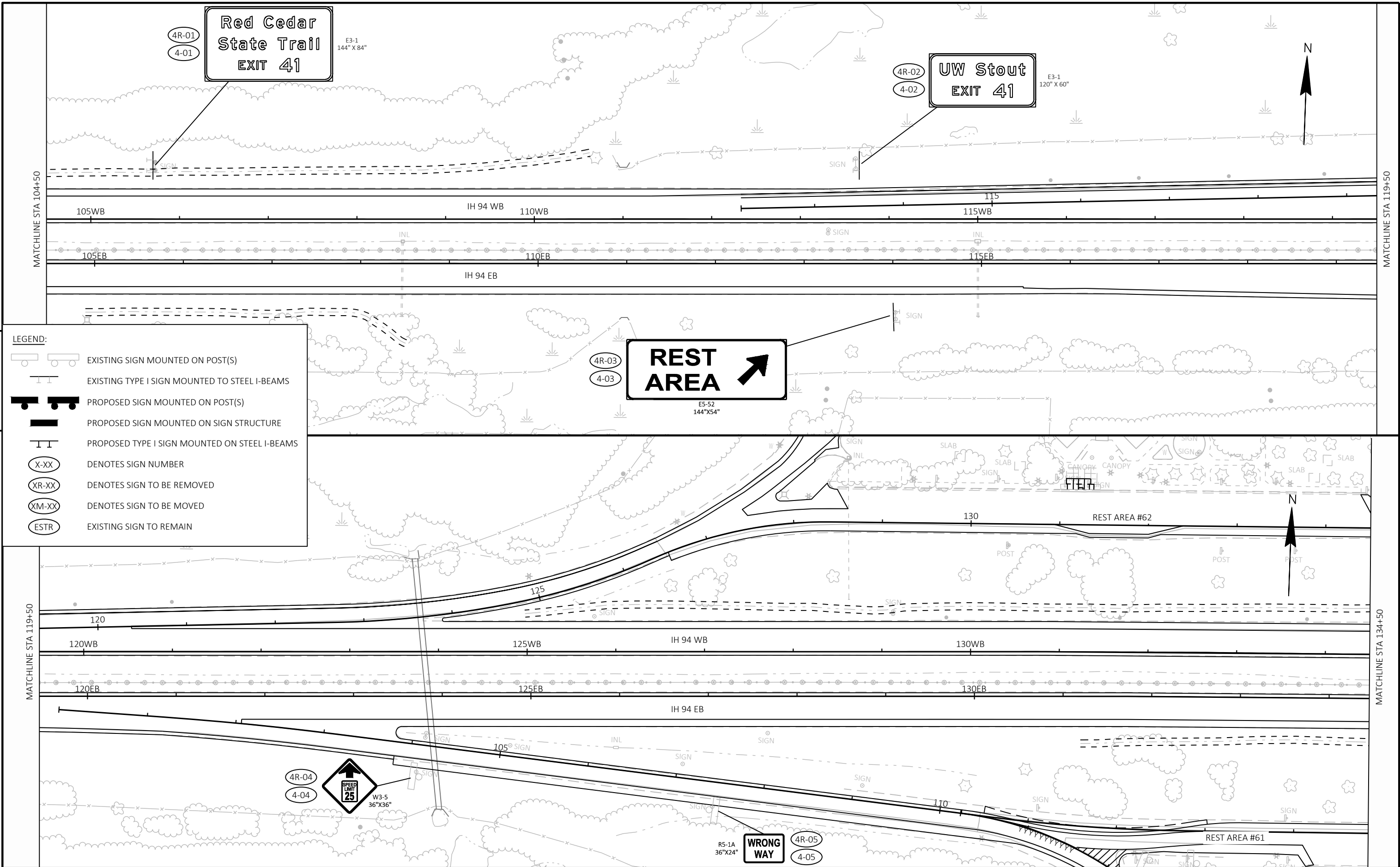
LEGEND	
	EROSION MAT URBAN CLASS I TYPE B
	SILT FENCE
	TURTLE EXCLUSION FENCE
	SLOPE INTERCEPT
	WETLAND BOUNDARY
	CULVERT PIPE CHECK
	SURFACE WATER FLOW
	INLET PROTECTION (TYPE DENOTED)
	TEMPORARY DITCH CHECK

PROJECT NO: 1020-05-63	HWY: STH 25	COUNTY: DUNN	EROSION CONTROL	SHEET 68	E
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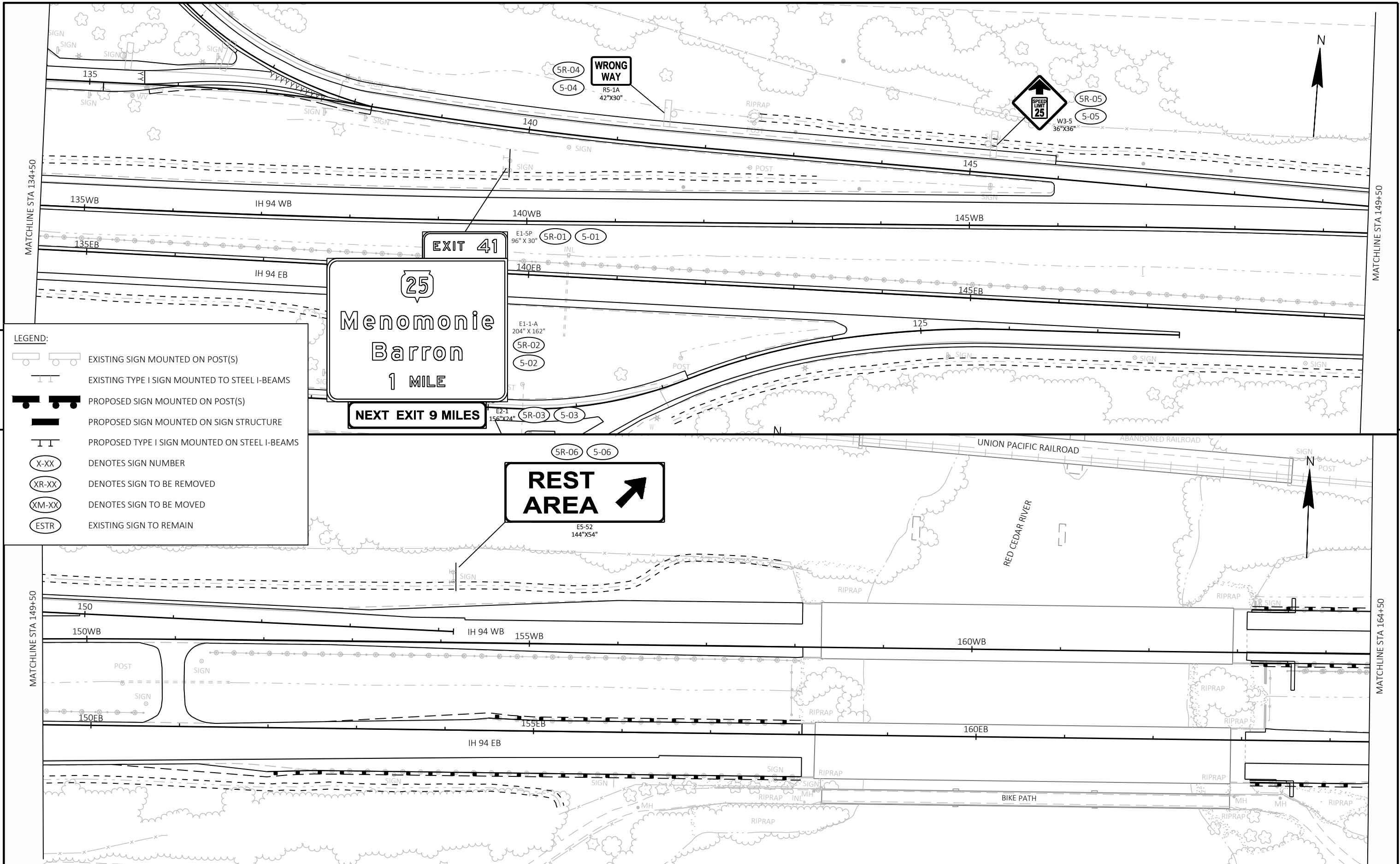






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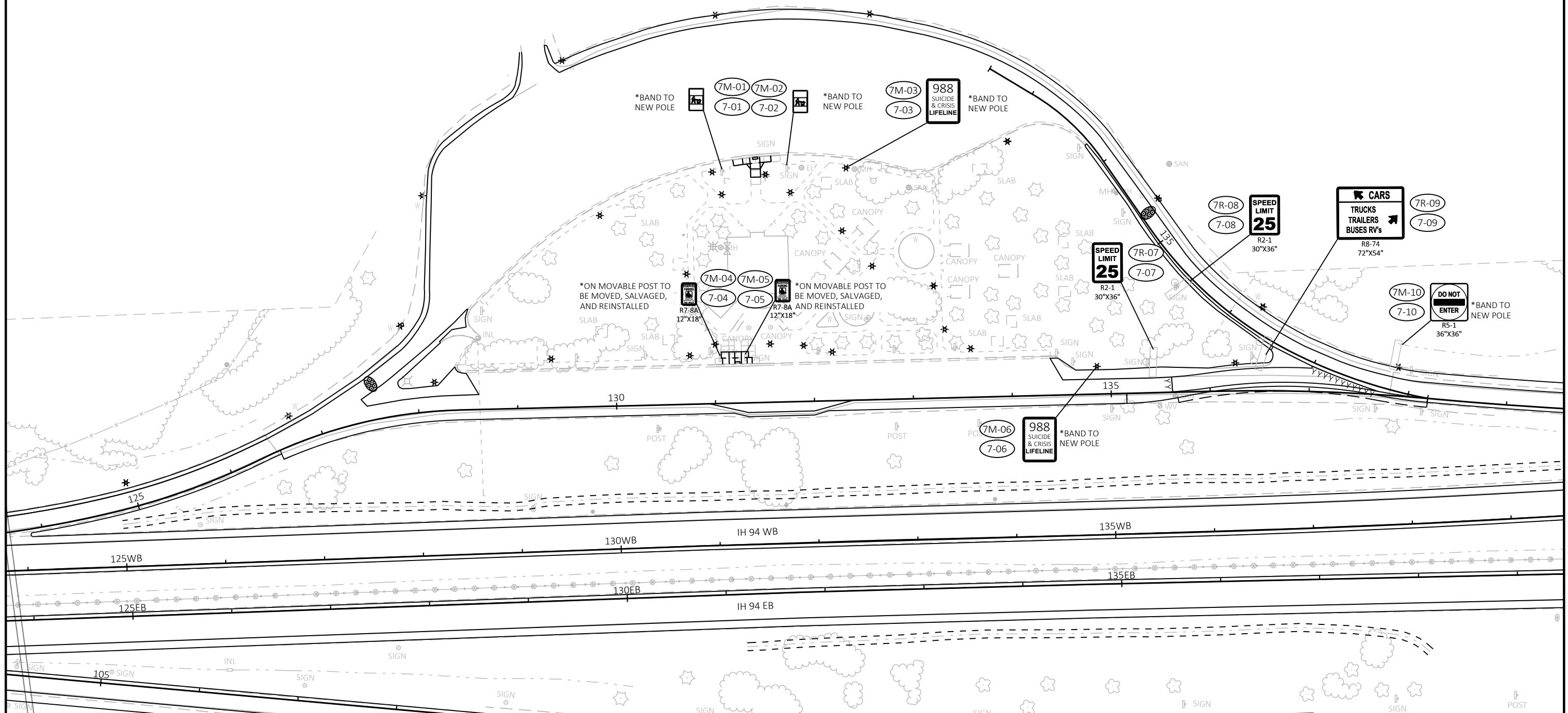
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	EXISTING TYPE I SIGN MOUNTED TO STEEL I-BEAMS
	PROPOSED SIGN MOUNTED ON POST(S)
	PROPOSED SIGN MOUNTED ON SIGN STRUCTURE
	PROPOSED TYPE I SIGN MOUNTED ON STEEL I-BEAMS
	DENOTES SIGN NUMBER
	DENOTES SIGN TO BE REMOVED
	DENOTES SIGN TO BE MOVED
	EXISTING SIGN TO REMAIN

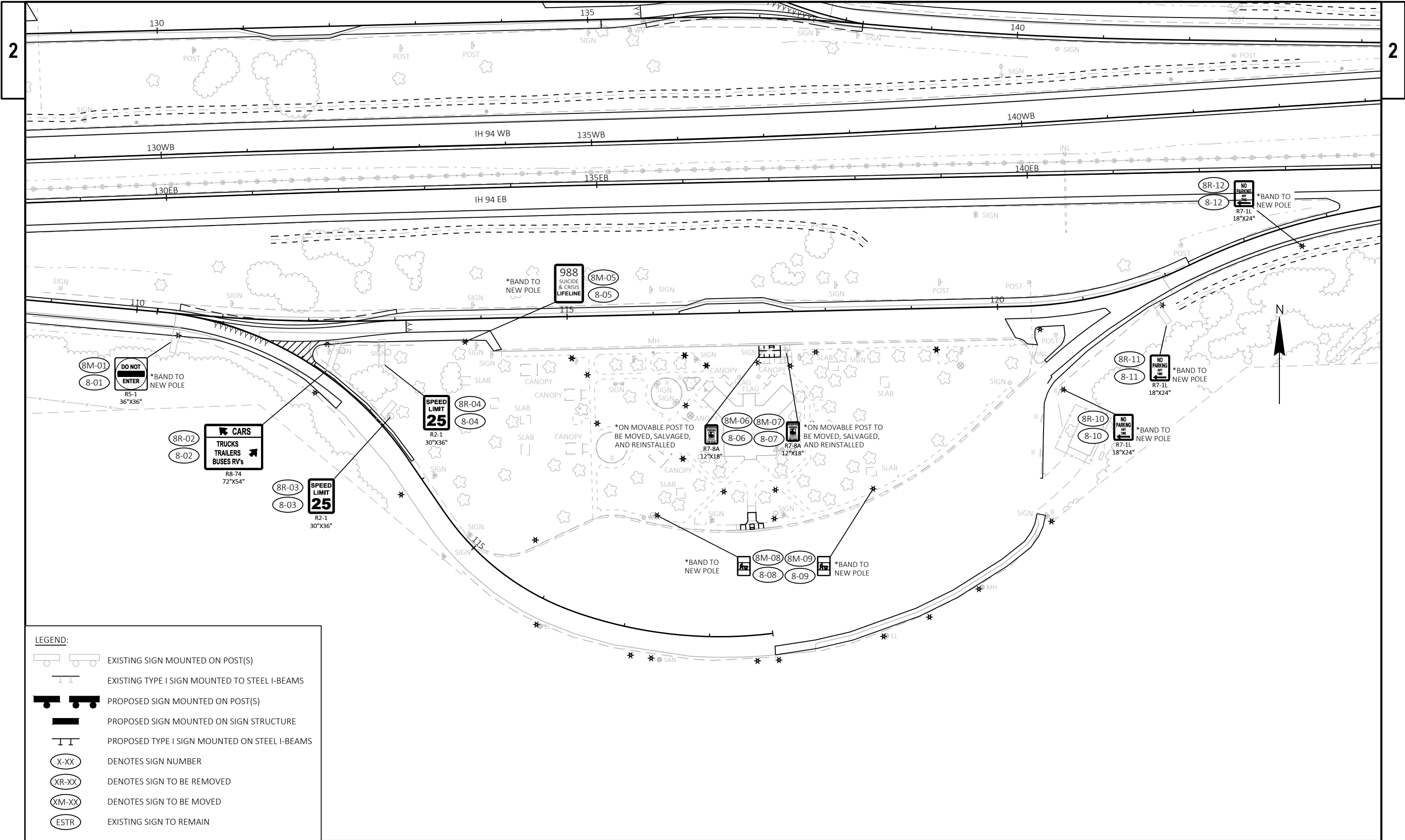


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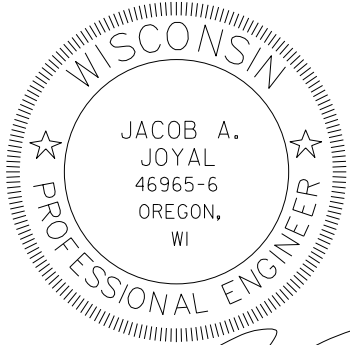
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	PROPOSED SIGN MOUNTED ON POST(S)
	PROPOSED SIGN MOUNTED ON SIGN STRUCTURE
	PROPOSED TYPE I SIGN MOUNTED ON STEEL I-BEAMS
	DENOTES SIGN NUMBER
	DENOTES SIGN TO BE REMOVED
	DENOTES SIGN TO BE MOVED
	EXISTING SIGN TO REMAIN

- LEGEND:
- EXISTING SIGN MOUNTED ON POST(S)
 - EXISTING TYPE I SIGN MOUNTED TO STEEL I-BEAMS
 - PROPOSED SIGN MOUNTED ON POST(S)
 - PROPOSED SIGN MOUNTED ON SIGN STRUCTURE
 - PROPOSED TYPE I SIGN MOUNTED ON STEEL I-BEAMS
 - (X-XX) DENOTES SIGN NUMBER
 - (XR-XX) DENOTES SIGN TO BE REMOVED
 - (XM-XX) DENOTES SIGN TO BE MOVED
 - (ESTR) EXISTING SIGN TO REMAIN





- LEGEND:
- EXISTING SIGN MOUNTED ON POST(S)
 - EXISTING TYPE I SIGN MOUNTED TO STEEL I-BEAMS
 - PROPOSED SIGN MOUNTED ON POST(S)
 - PROPOSED SIGN MOUNTED ON SIGN STRUCTURE
 - PROPOSED TYPE I SIGN MOUNTED ON STEEL I-BEAMS
 - (X-XX) DENOTES SIGN NUMBER
 - (XR-XX) DENOTES SIGN TO BE REMOVED
 - (XM-XX) DENOTES SIGN TO BE MOVED
 - (ESTR) EXISTING SIGN TO REMAIN



[Signature]

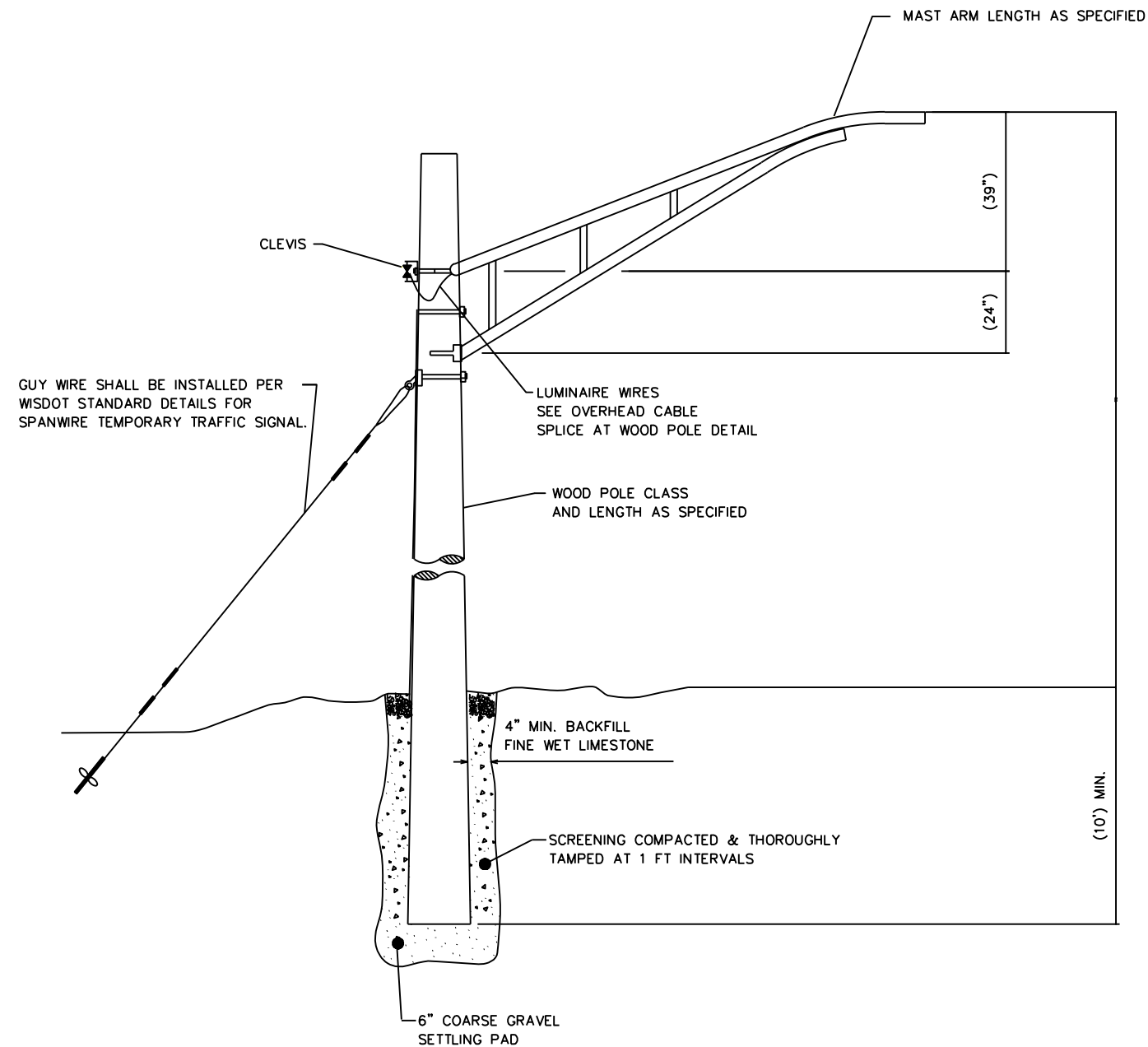
04/20/2026

(DATE)

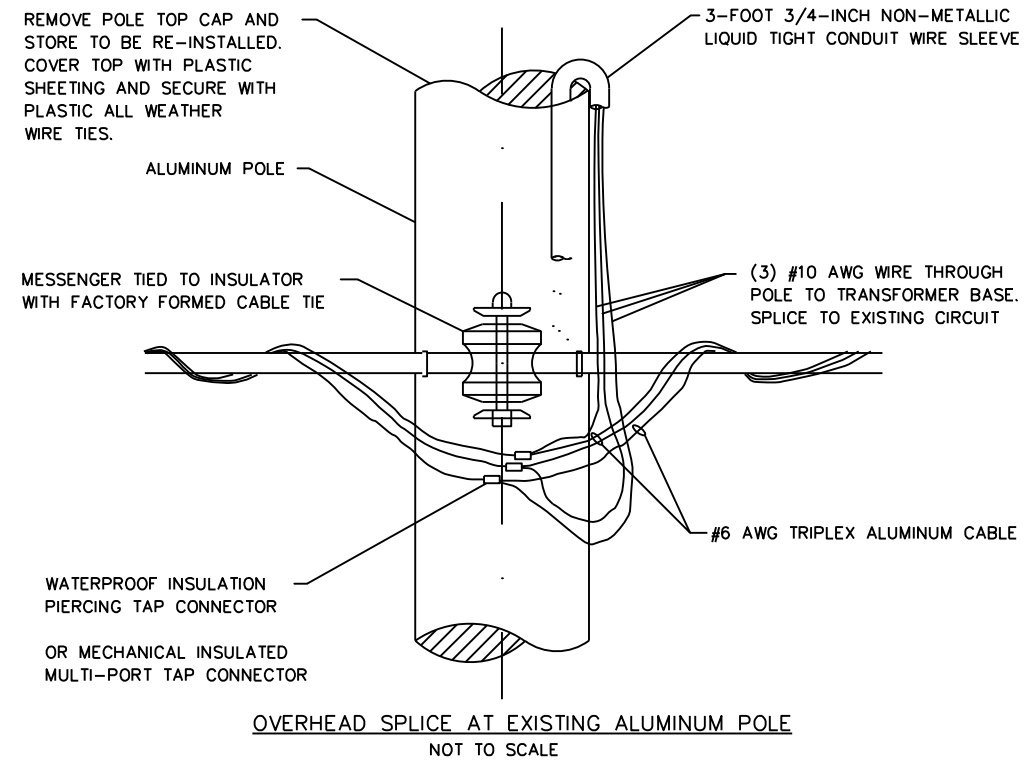
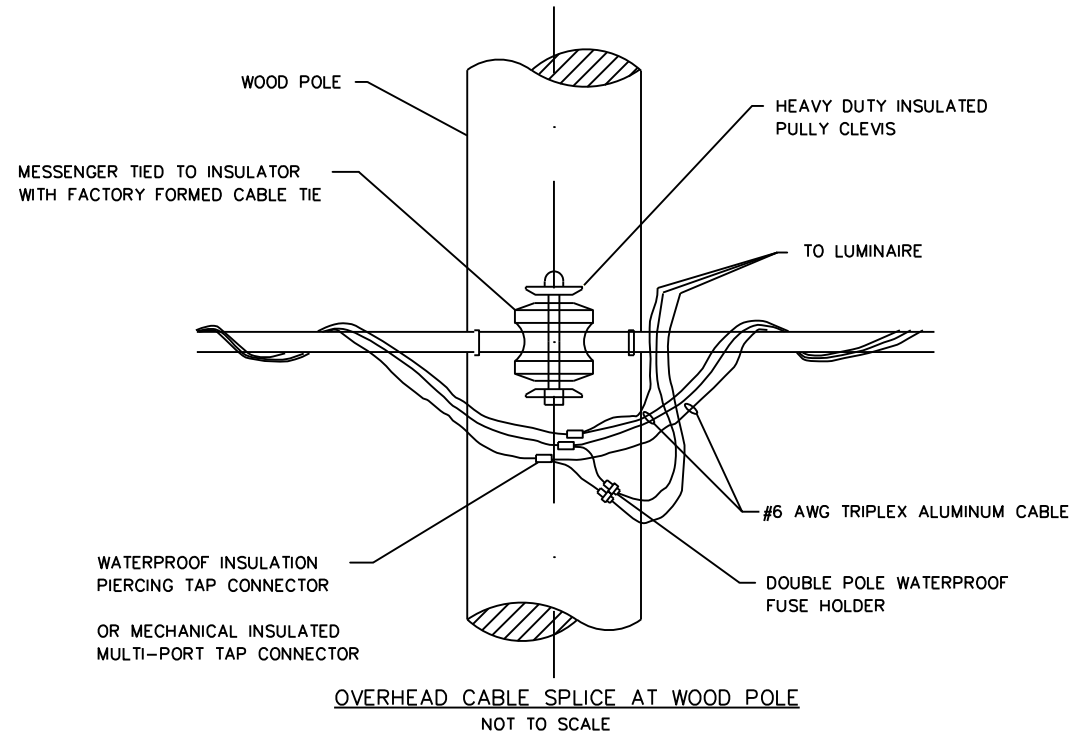
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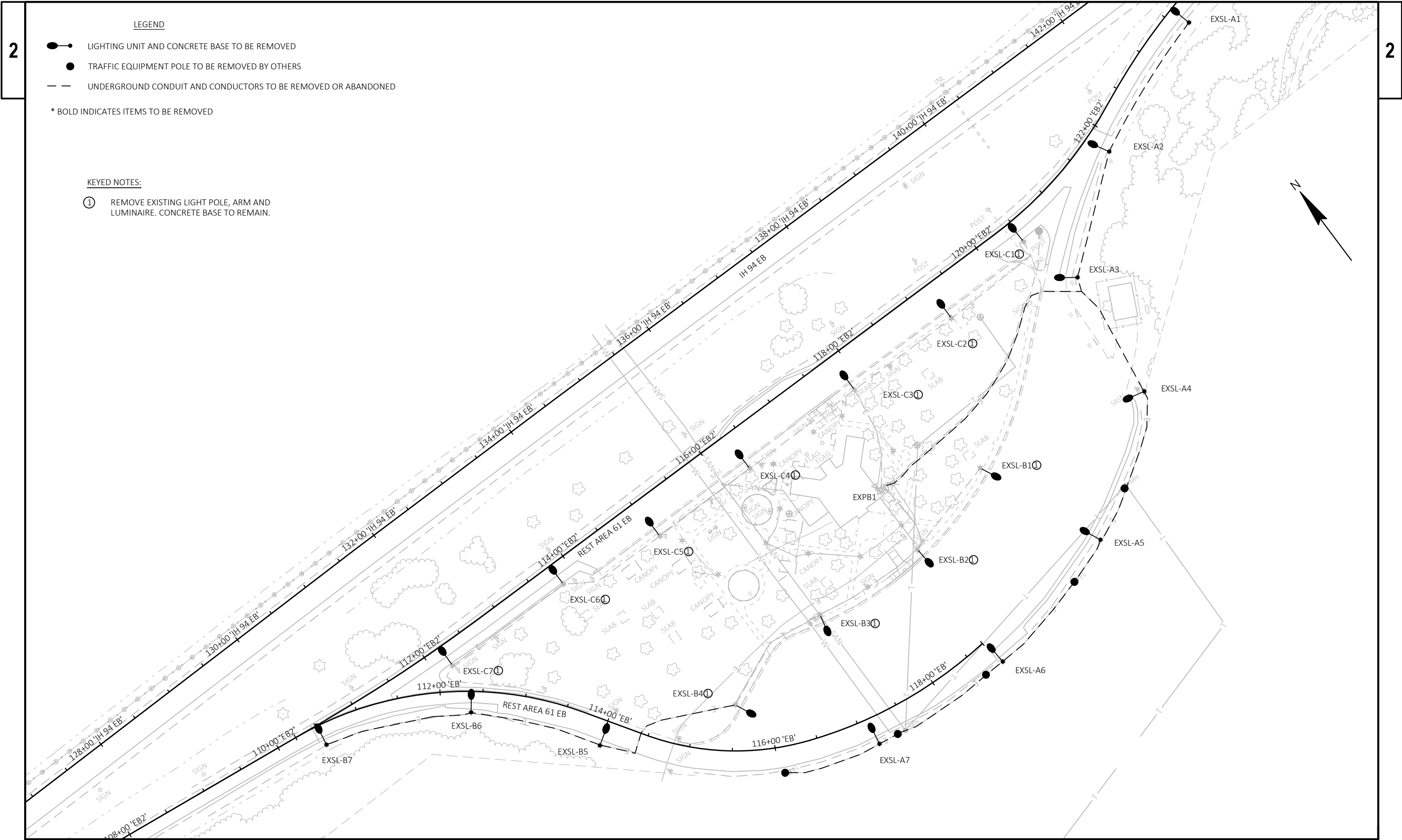
GENERAL STREET LIGHTING NOTES:

- 1) THE ENGINEER SHALL APPROVE THE FINAL LOCATION FOR ALL CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION.
- 2) PITCH ALL CONDUITS TOWARD PULL BOXES, INSTALL A 2" DRAIN DUCT TO DITCH OR STORM SEWER AS REQUIRED FOR DAMAGE. THIS 2" DRAIN DUCT IS INCIDENTAL TO THE PULL BOX BID ITEM. DRAIN DUCT IS NOT SHOWN.
- 3) THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- 4) REFER TO STAKING DATA FOR EXACT LOCATIONS, WITH ALL LOCATIONS APPROVED BY THE ENGINEER PRIOR TO INSTALL. GENERAL GUIDELINES FOR OFFSETS ARE AS FOLLOWS:
 - BEHIND SHOULDER: GREATER OF 5' FROM EDGE OF GRAVEL SHOULDER OR 7' FROM EDGE OF PAVEMENT TO EDGE OF CONCRETE BASE.
- 5) TRACER WIRE SHALL BE CONTINUOUSLY CONNECTED THROUGHOUT THE SYSTEM AND TIED INTO THE SYSTEM GROUND AT THE NEAREST ABOVE GROUND ACCESS POINT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.



WOOD POLE LIGHTING UNIT MOUNTING
NOT TO SCALE





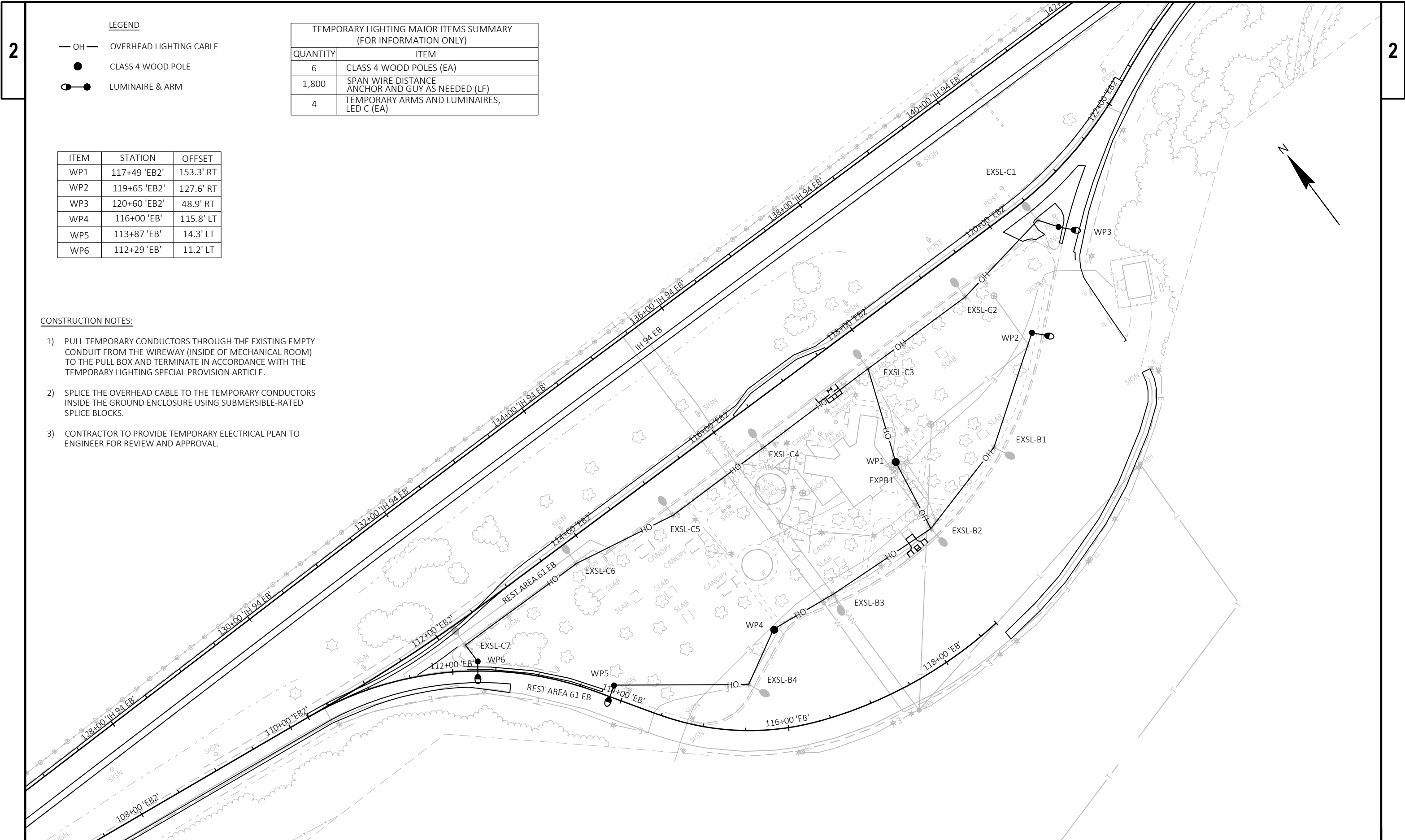
LEGEND

- LIGHTING UNIT AND CONCRETE BASE TO BE REMOVED
- TRAFFIC EQUIPMENT POLE TO BE REMOVED BY OTHERS
- UNDERGROUND CONDUIT AND CONDUCTORS TO BE REMOVED OR ABANDONED

* BOLD INDICATES ITEMS TO BE REMOVED

KEYED NOTES:

- ① REMOVE EXISTING LIGHT POLE, ARM AND LUMINAIRE. CONCRETE BASE TO REMAIN.



LEGEND

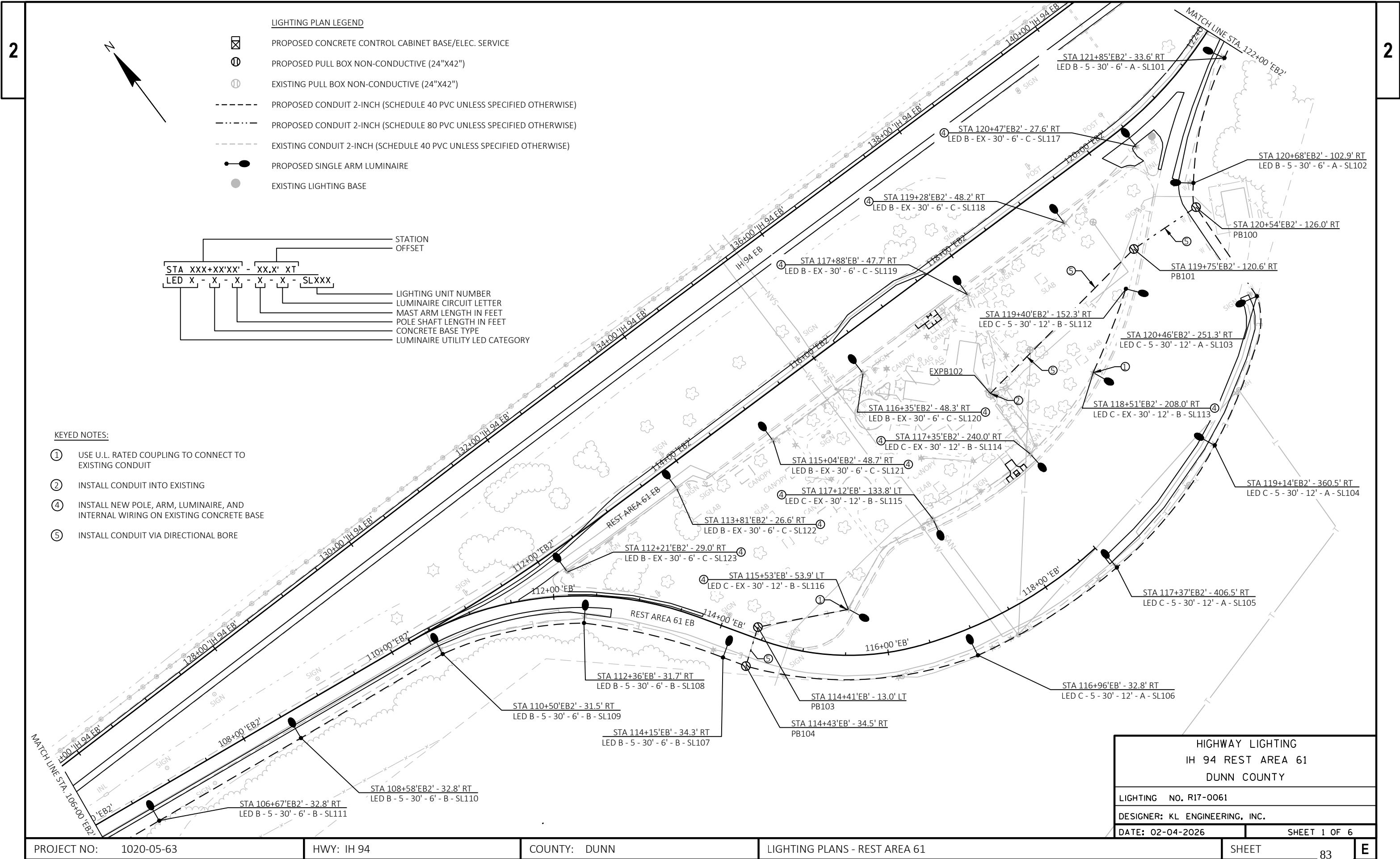
- OH — OVERHEAD LIGHTING CABLE
- CLASS 4 WOOD POLE
- LUMINAIRE & ARM

TEMPORARY LIGHTING MAJOR ITEMS SUMMARY (FOR INFORMATION ONLY)	
QUANTITY	ITEM
6	CLASS 4 WOOD POLES (EA)
1,800	SPAN WIRE DISTANCE ANCHOR AND GUY AS NEEDED (LF)
4	TEMPORARY ARMS AND LUMINAIRES, LED C (EA)

ITEM	STATION	OFFSET
WP1	117+49 'EB2'	153.3' RT
WP2	119+65 'EB2'	127.6' RT
WP3	120+60 'EB2'	48.9' RT
WP4	116+00 'EB'	115.8' LT
WP5	113+87 'EB'	14.3' LT
WP6	112+29 'EB'	11.2' LT

CONSTRUCTION NOTES:

- 1) PULL TEMPORARY CONDUCTORS THROUGH THE EXISTING EMPTY CONDUIT FROM THE WIREWAY (INSIDE OF MECHANICAL ROOM) TO THE PULL BOX AND TERMINATE IN ACCORDANCE WITH THE TEMPORARY LIGHTING SPECIAL PROVISION ARTICLE.
- 2) SPLICE THE OVERHEAD CABLE TO THE TEMPORARY CONDUCTORS INSIDE THE GROUND ENCLOSURE USING SUBMERSIBLE-RATED SPLICE BLOCKS.
- 3) CONTRACTOR TO PROVIDE TEMPORARY ELECTRICAL PLAN TO ENGINEER FOR REVIEW AND APPROVAL.



CONDUCTOR COLOR LEGEND

CB100

WISDOT SERVICE

LIGHTING CONDUCTORS

A - BLACK
B - RED
C - BLACK

240V PHASE TO PHASE

CONDUIT/CONDUCTOR LEGEND

SERVICE CABINET
NO. OF CONDUITS
CONDUIT SIZE

CB100	1	2"
A	1	#2
A	1	#2

SIZE (AWG) OF GROUNDING CONDUCTOR
QTY. OF GROUNDING CONDUCTOR
SIZE (AWG) OF CONDUCTORS
QTY. OF CONDUCTORS
CIRCUIT

ABBREVIATIONS

T.W.O. - TRACER WIRE ONLY REQ'D

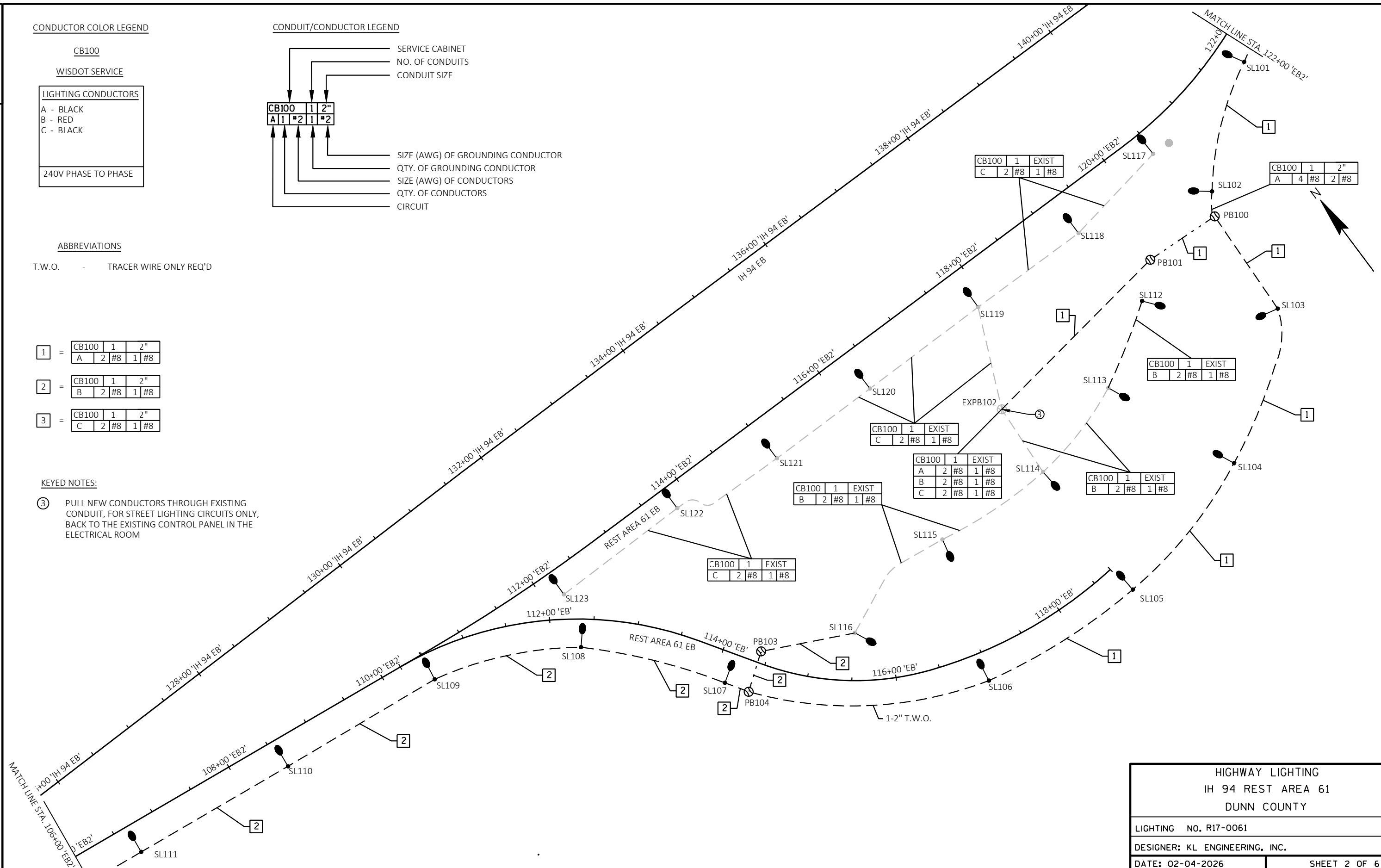
1	=	CB100	1	2"
		A	2	#8
		1	#8	

2	=	CB100	1	2"
		B	2	#8
		1	#8	

3	=	CB100	1	2"
		C	2	#8
		1	#8	

KEYED NOTES:

- ③ PULL NEW CONDUCTORS THROUGH EXISTING CONDUIT, FOR STREET LIGHTING CIRCUITS ONLY, BACK TO THE EXISTING CONTROL PANEL IN THE ELECTRICAL ROOM



HIGHWAY LIGHTING
IH 94 REST AREA 61
DUNN COUNTY

LIGHTING NO. R17-0061

DESIGNER: KL ENGINEERING, INC.

DATE: 02-04-2026

SHEET 2 OF 6

PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

LIGHTING PLANS - REST AREA 61

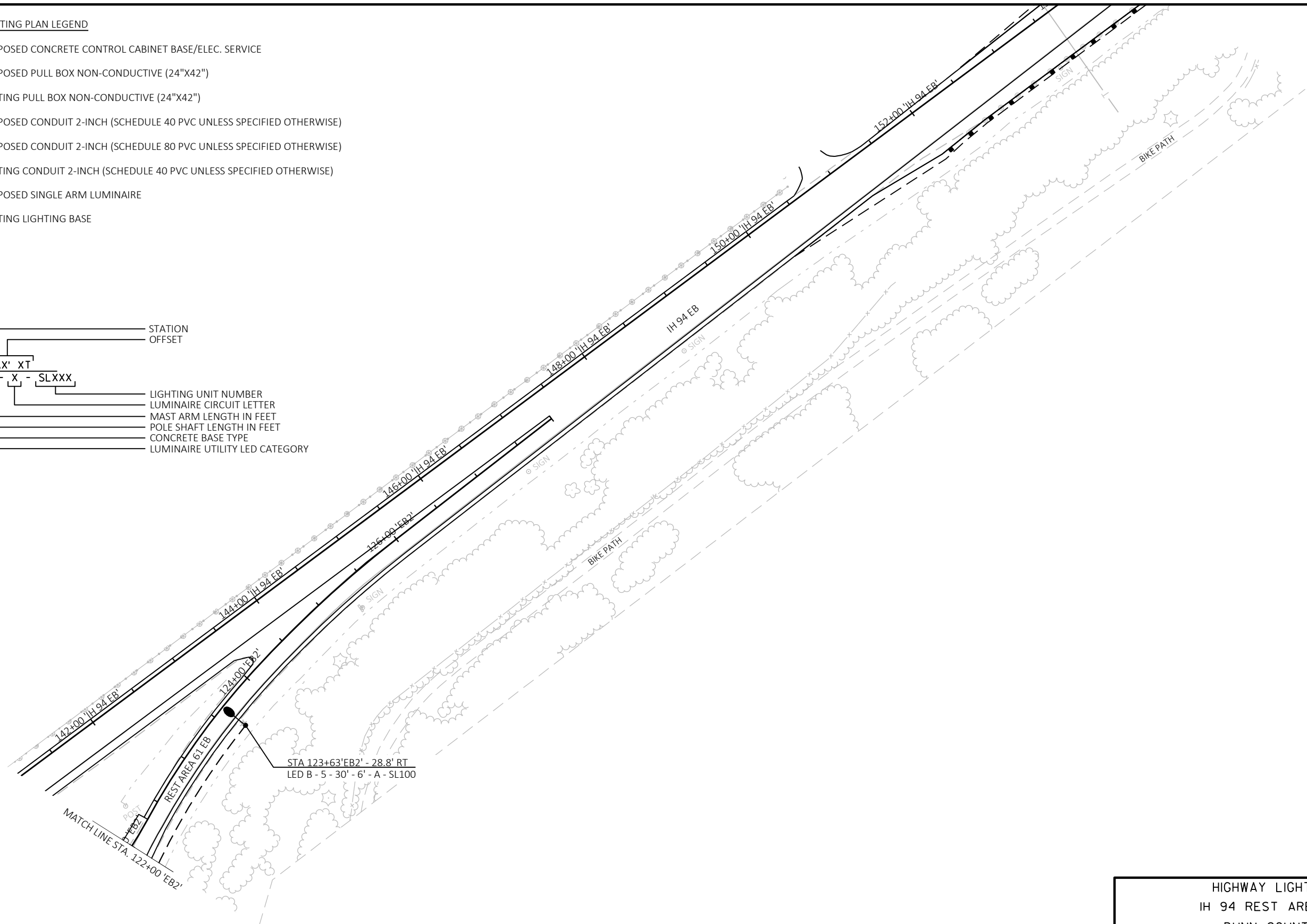
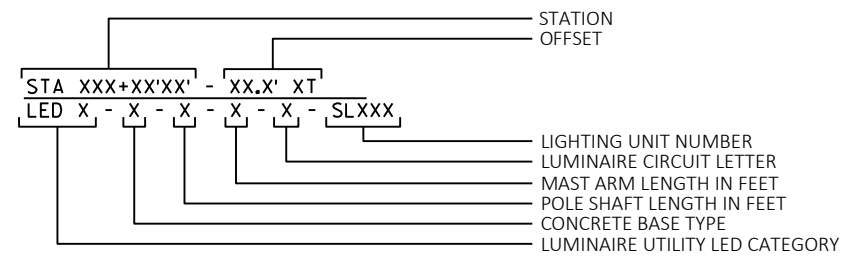
SHEET

84

E

LIGHTING PLAN LEGEND

- ☒ PROPOSED CONCRETE CONTROL CABINET BASE/ELEC. SERVICE
- Ⓢ PROPOSED PULL BOX NON-CONDUCTIVE (24"X42")
- Ⓢ EXISTING PULL BOX NON-CONDUCTIVE (24"X42")
- PROPOSED CONDUIT 2-INCH (SCHEDULE 40 PVC UNLESS SPECIFIED OTHERWISE)
- · - · - PROPOSED CONDUIT 2-INCH (SCHEDULE 80 PVC UNLESS SPECIFIED OTHERWISE)
- EXISTING CONDUIT 2-INCH (SCHEDULE 40 PVC UNLESS SPECIFIED OTHERWISE)
- PROPOSED SINGLE ARM LUMINAIRE
- EXISTING LIGHTING BASE



HIGHWAY LIGHTING
IH 94 REST AREA 61
DUNN COUNTY

LIGHTING NO. R17-0061

DESIGNER: KL ENGINEERING, INC.

DATE: 02-04-2026

SHEET 3 OF 6

PROJECT NO: 1020-05-63

HWY: IH 94

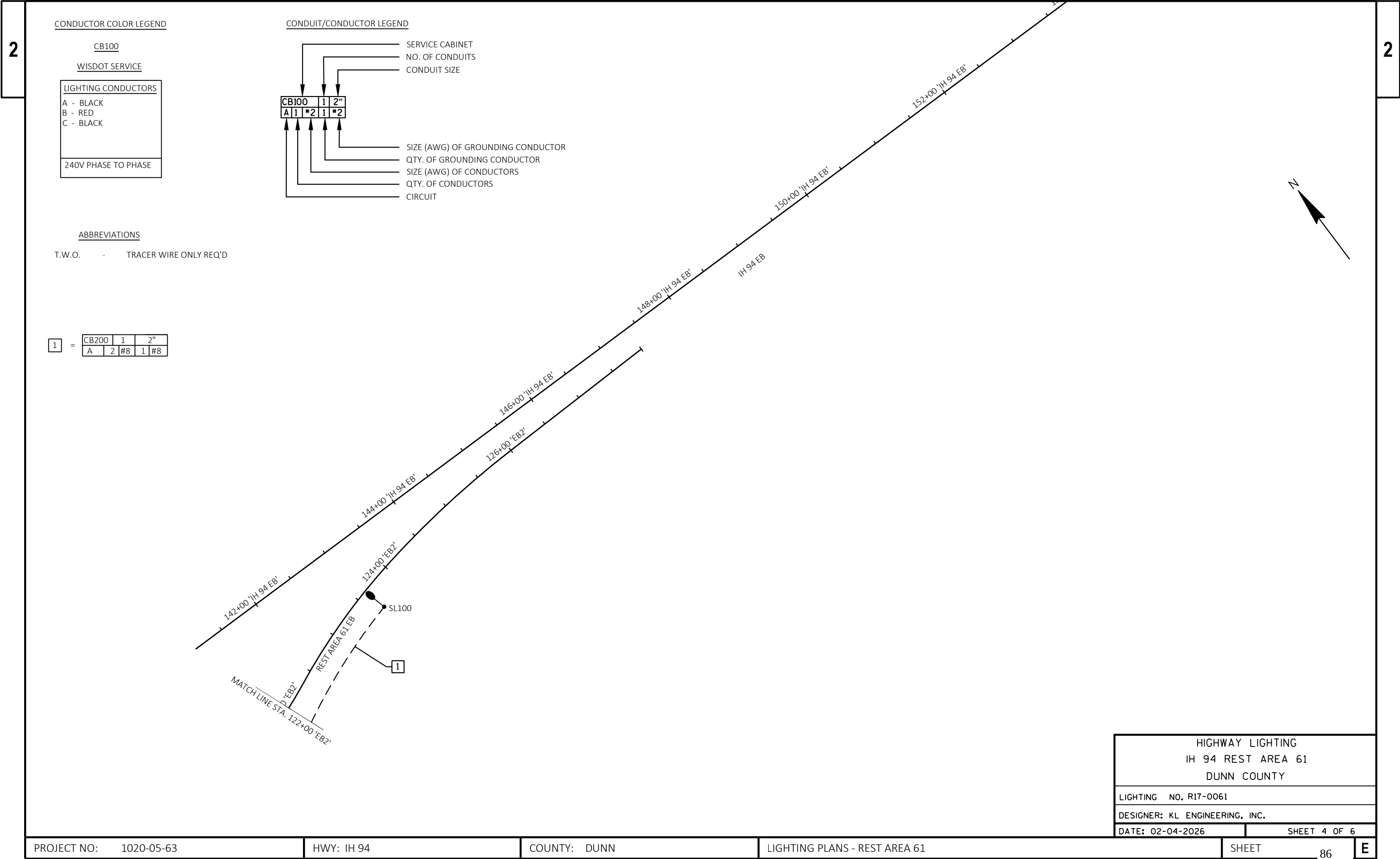
COUNTY: DUNN

LIGHTING PLANS - REST AREA 61

SHEET

85

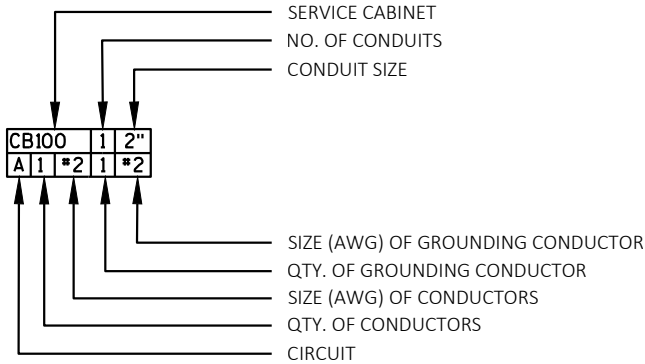
E



CONDUCTOR COLOR LEGEND

CB100	
WISDOT SERVICE	
LIGHTING CONDUCTORS	
A	- BLACK
B	- RED
C	- BLACK
240V PHASE TO PHASE	

CONDUIT/CONDUCTOR LEGEND



ABBREVIATIONS

T.W.O. - TRACER WIRE ONLY REQ'D

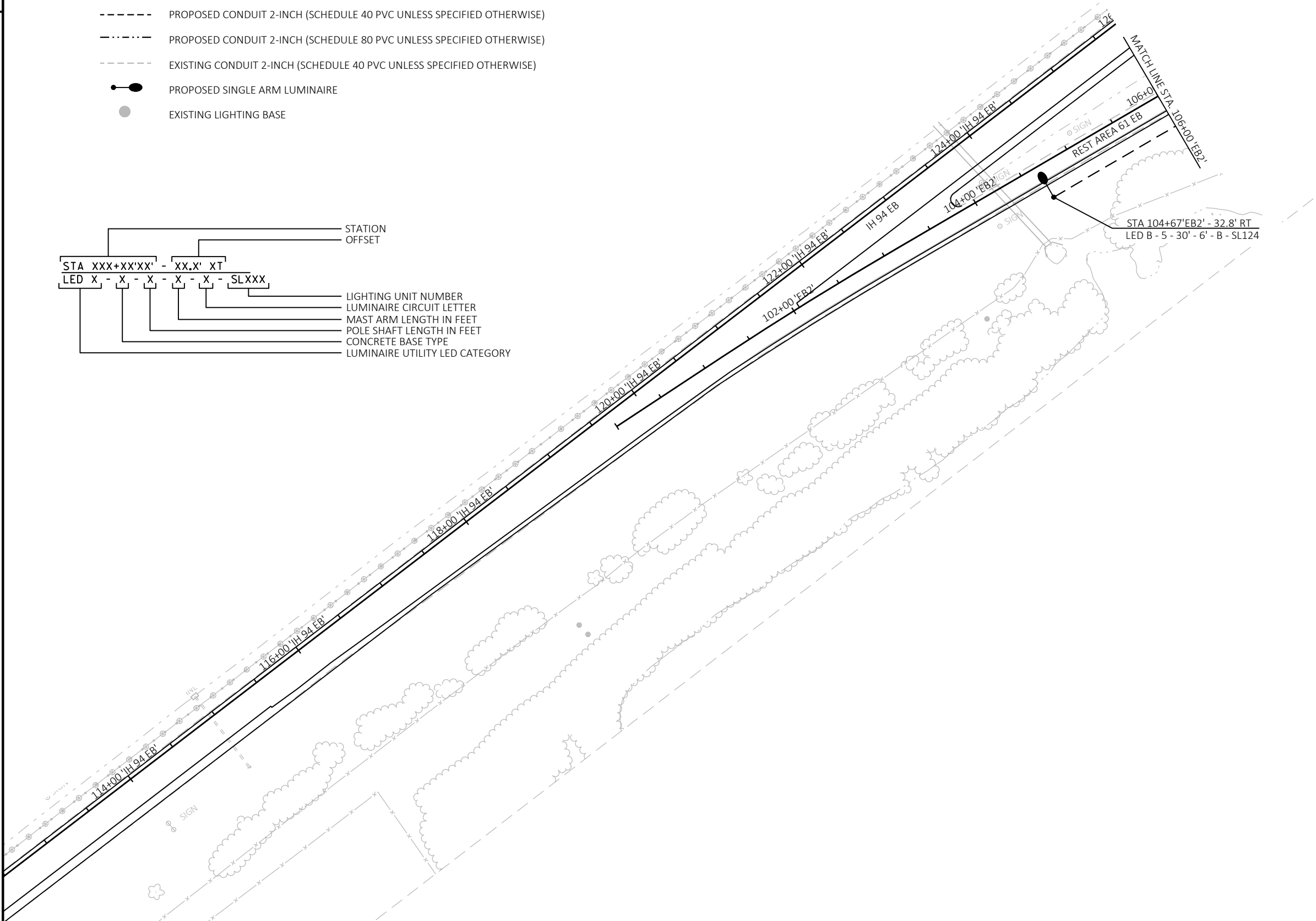
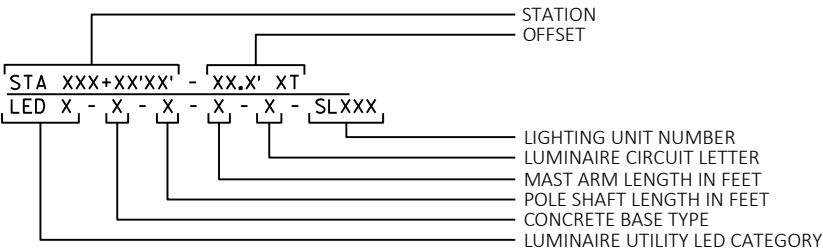
1	=	CB200	1	2"
		A	2 #8	1 #8

HIGHWAY LIGHTING	
IH 94 REST AREA 61	
DUNN COUNTY	
LIGHTING NO.	R17-0061
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-04-2026	SHEET 4 OF 6

PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	LIGHTING PLANS - REST AREA 61	SHEET 86	E
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LIGHTING PLAN LEGEND

- ☒ PROPOSED CONCRETE CONTROL CABINET BASE/ELEC. SERVICE
- Ⓢ PROPOSED PULL BOX NON-CONDUCTIVE (24"X42")
- Ⓜ EXISTING PULL BOX NON-CONDUCTIVE (24"X42")
- PROPOSED CONDUIT 2-INCH (SCHEDULE 40 PVC UNLESS SPECIFIED OTHERWISE)
- · - · - PROPOSED CONDUIT 2-INCH (SCHEDULE 80 PVC UNLESS SPECIFIED OTHERWISE)
- - - - EXISTING CONDUIT 2-INCH (SCHEDULE 40 PVC UNLESS SPECIFIED OTHERWISE)
- PROPOSED SINGLE ARM LUMINAIRE
- EXISTING LIGHTING BASE



HIGHWAY LIGHTING IH 94 REST AREA 61 DUNN COUNTY	
LIGHTING NO. R17-0061	
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-04-2026	SHEET 5 OF 6

PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	LIGHTING PLANS - REST AREA 61	SHEET 87	E
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CONDUCTOR COLOR LEGEND

CB100

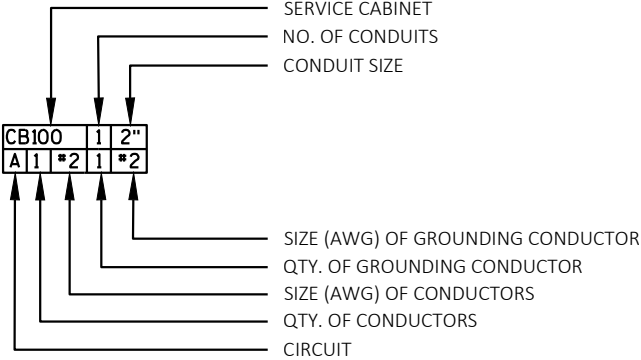
WISDOT SERVICE

LIGHTING CONDUCTORS

- A - BLACK
- B - RED
- C - BLACK

240V PHASE TO PHASE

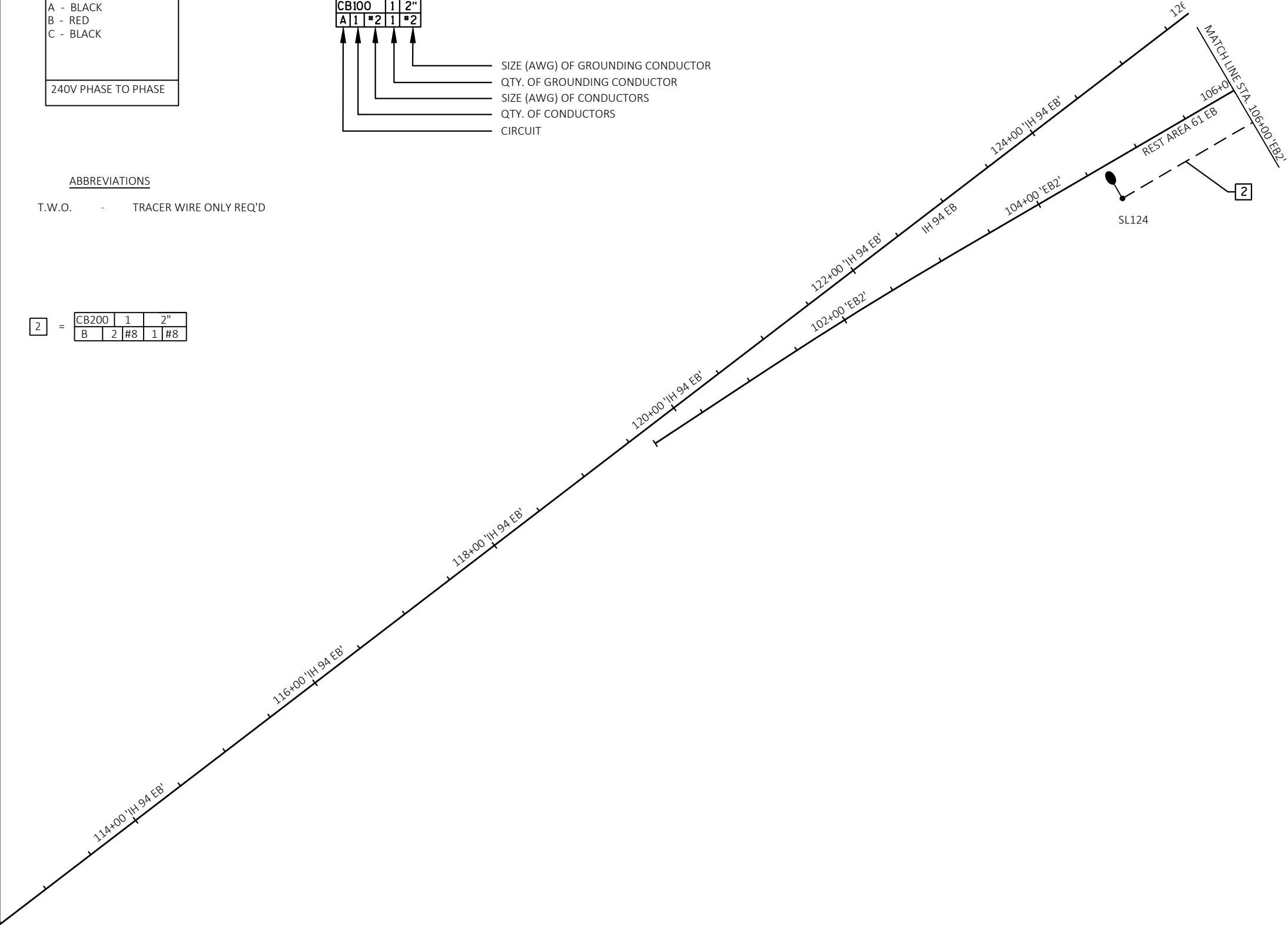
CONDUIT/CONDUCTOR LEGEND



ABBREVIATIONS

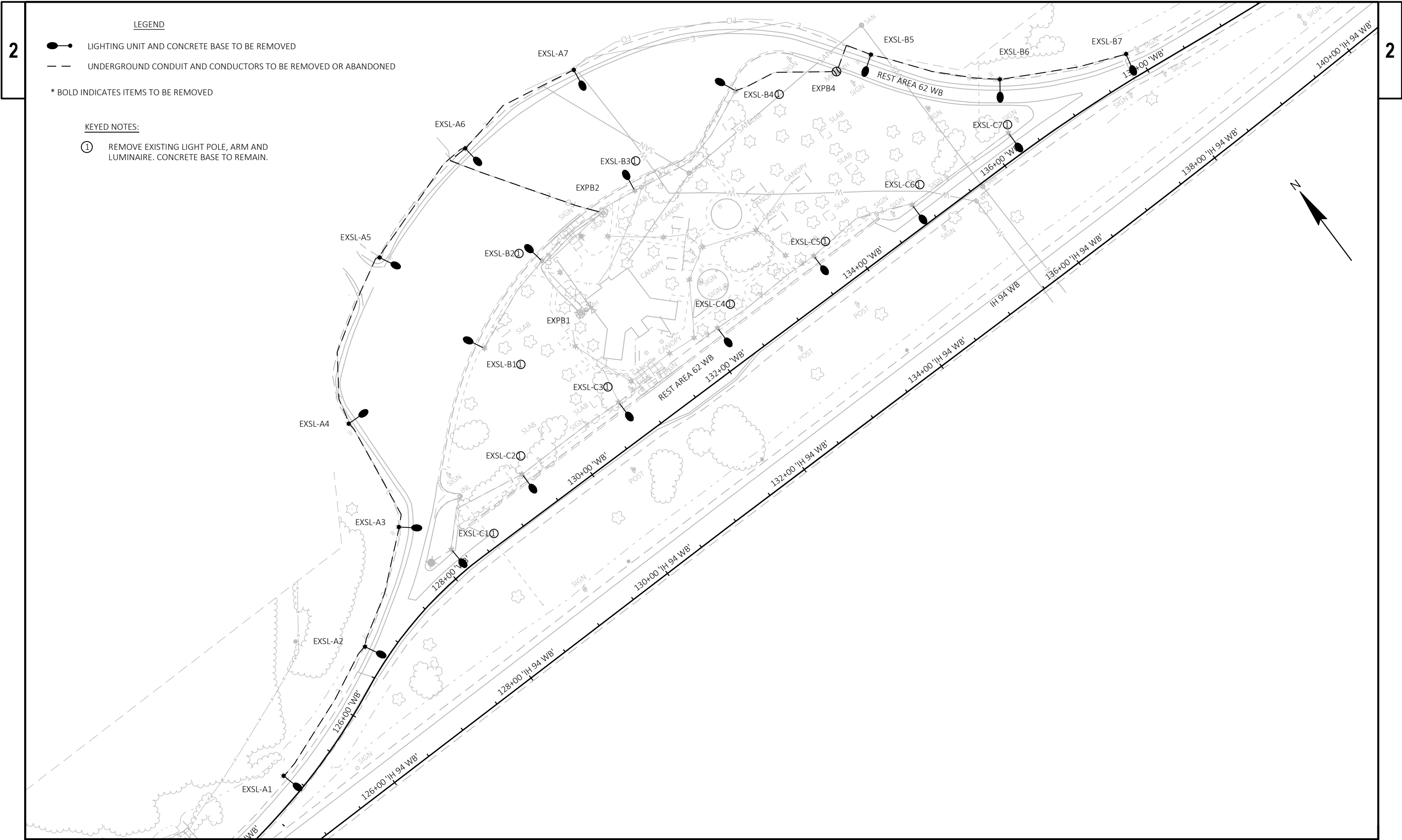
T.W.O. - TRACER WIRE ONLY REQ'D

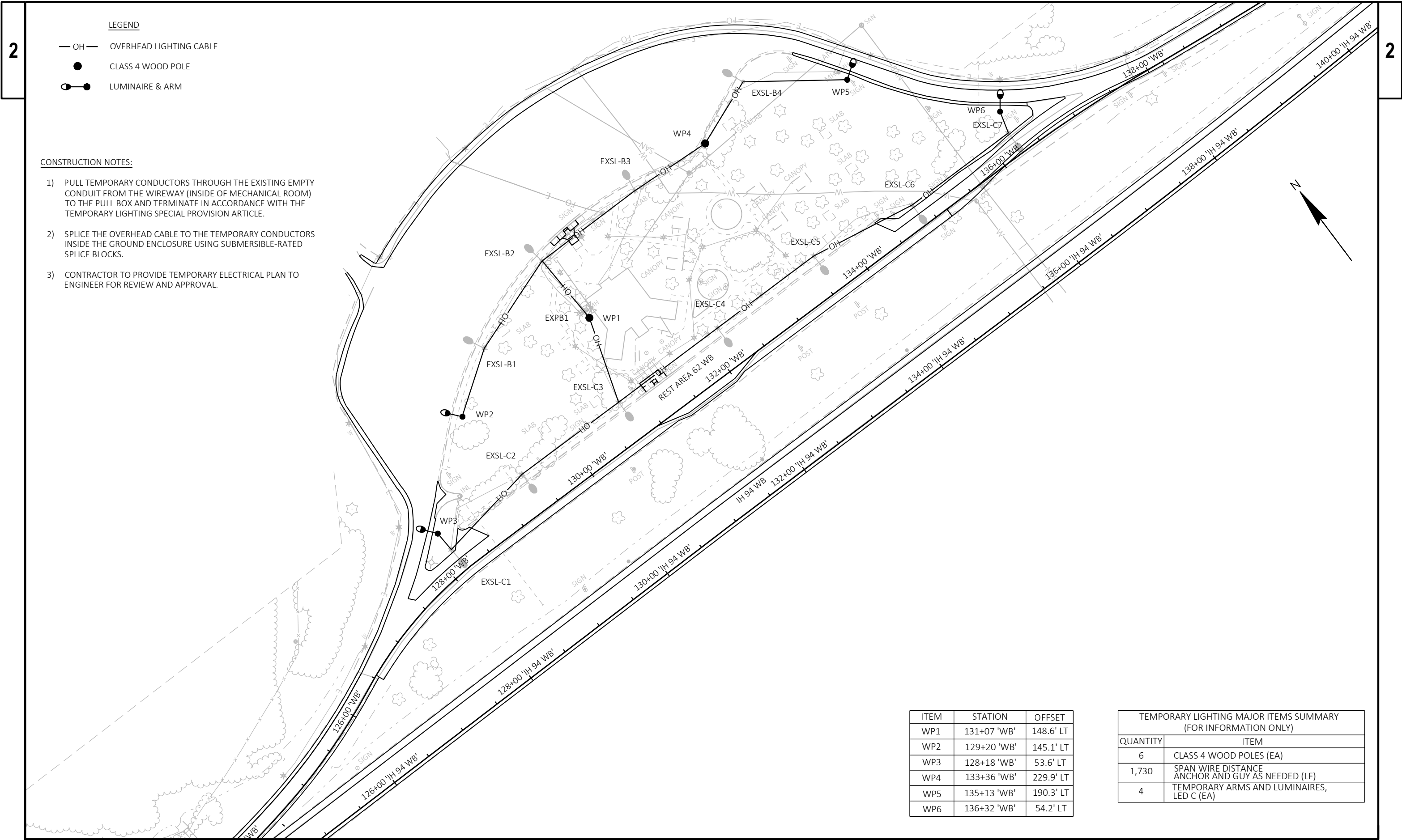
2	=					
	CB200	1	2"			
	B	2	#8	1	#8	



HIGHWAY LIGHTING	
IH 94 REST AREA 61	
DUNN COUNTY	
LIGHTING NO.	R17-0061
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-04-2026	SHEET 6 OF 6

PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	LIGHTING PLANS - REST AREA 61	SHEET 88	E
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LEGEND

- OH — OVERHEAD LIGHTING CABLE
- CLASS 4 WOOD POLE
- LUMINAIRE & ARM

CONSTRUCTION NOTES:

- 1) PULL TEMPORARY CONDUCTORS THROUGH THE EXISTING EMPTY CONDUIT FROM THE WIREWAY (INSIDE OF MECHANICAL ROOM) TO THE PULL BOX AND TERMINATE IN ACCORDANCE WITH THE TEMPORARY LIGHTING SPECIAL PROVISION ARTICLE.
- 2) SPLICE THE OVERHEAD CABLE TO THE TEMPORARY CONDUCTORS INSIDE THE GROUND ENCLOSURE USING SUBMERSIBLE-RATED SPLICE BLOCKS.
- 3) CONTRACTOR TO PROVIDE TEMPORARY ELECTRICAL PLAN TO ENGINEER FOR REVIEW AND APPROVAL.

ITEM	STATION	OFFSET
WP1	131+07 'WB'	148.6' LT
WP2	129+20 'WB'	145.1' LT
WP3	128+18 'WB'	53.6' LT
WP4	133+36 'WB'	229.9' LT
WP5	135+13 'WB'	190.3' LT
WP6	136+32 'WB'	54.2' LT

TEMPORARY LIGHTING MAJOR ITEMS SUMMARY (FOR INFORMATION ONLY)	
QUANTITY	ITEM
6	CLASS 4 WOOD POLES (EA)
1,730	SPAN WIRE DISTANCE ANCHOR AND GUY AS NEEDED (LF)
4	TEMPORARY ARMS AND LUMINAIRES, LED C (EA)

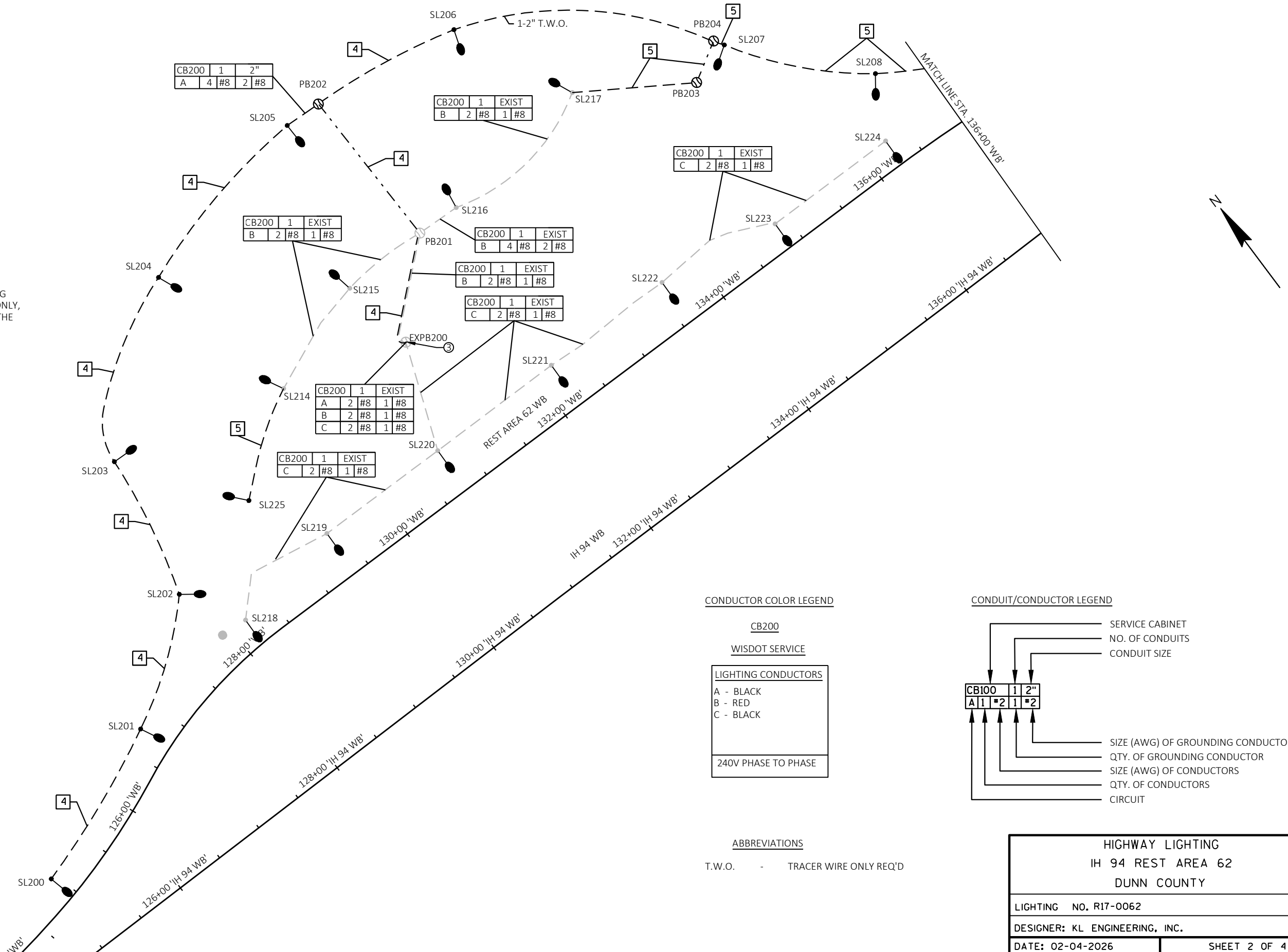


2

2

4	=	<table><tr><td>CB200</td><td>1</td><td>2"</td></tr><tr><td>A</td><td>2 #8</td><td>1 #8</td></tr></table>	CB200	1	2"	A	2 #8	1 #8
CB200	1	2"						
A	2 #8	1 #8						
5	=	<table><tr><td>CB200</td><td>1</td><td>2"</td></tr><tr><td>B</td><td>2 #8</td><td>1 #8</td></tr></table>	CB200	1	2"	B	2 #8	1 #8
CB200	1	2"						
B	2 #8	1 #8						
6	=	<table><tr><td>CB200</td><td>1</td><td>2"</td></tr><tr><td>C</td><td>2 #8</td><td>1 #8</td></tr></table>	CB200	1	2"	C	2 #8	1 #8
CB200	1	2"						
C	2 #8	1 #8						

③ PULL NEW CONDUCTORS THROUGH EXISTING CONDUIT, FOR STREET LIGHTING CIRCUITS ONLY, BACK TO THE EXISTING CONTROL PANEL IN THE ELECTRICAL ROOM



<u>CONDUCTOR COLOR LEGEND</u>	
<u>CB200</u>	
<u>WISDOT SERVICE</u>	
<u>LIGHTING CONDUCTORS</u>	
A - BLACK	
B - RED	
C - BLACK	
240V PHASE TO PHASE	

CONDUIT/CONDUCTOR LEGEND

The diagram shows a table with two rows and three columns. The top row contains the text 'CB100', '1', and '2"'. The bottom row contains 'A', '1 *2', and '1 *2'. Arrows point from labels on the right to specific fields in the table: 'SERVICE CABINET' points to 'CB100'; 'NO. OF CONDUITS' points to the '1' in the top row, second column; 'CONDUIT SIZE' points to the '2"' in the top row, third column; 'SIZE (AWG) OF GROUNDING CONDUCTOR' points to the '1' in the bottom row, third column; 'QTY. OF GROUNDING CONDUCTOR' points to the '*' in the bottom row, second column; 'SIZE (AWG) OF CONDUCTORS' points to the '1' in the bottom row, second column; 'QTY. OF CONDUCTORS' points to the '*' in the bottom row, first column; and 'CIRCUIT' points to the 'A' in the bottom row, first column.

CB100	1	2"
A	1 *2	1 *2

SERVICE CABINET
NO. OF CONDUITS
CONDUIT SIZE
SIZE (AWG) OF GROUNDING CONDUCTOR
QTY. OF GROUNDING CONDUCTOR
SIZE (AWG) OF CONDUCTORS
QTY. OF CONDUCTORS
CIRCUIT

HIGHWAY LIGHTING IH 94 REST AREA 62 DUNN COUNTY	
LIGHTING NO. R17-0062	
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-04-2026	SHEET 2 OF 4

LIGHTING PLAN LEGEND



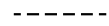
PROPOSED CONCRETE CONTROL CABINET BASE/ELEC. SERVICE



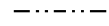
PROPOSED PULL BOX NON-CONDUCTIVE (24"X42")



EXISTING PULL BOX NON-CONDUCTIVE (24"X42")



PROPOSED CONDUIT 2-INCH (SCHEDULE 40 PVC UNLESS SPECIFIED OTHERWISE)



PROPOSED CONDUIT 2-INCH (SCHEDULE 80 PVC UNLESS SPECIFIED OTHERWISE)



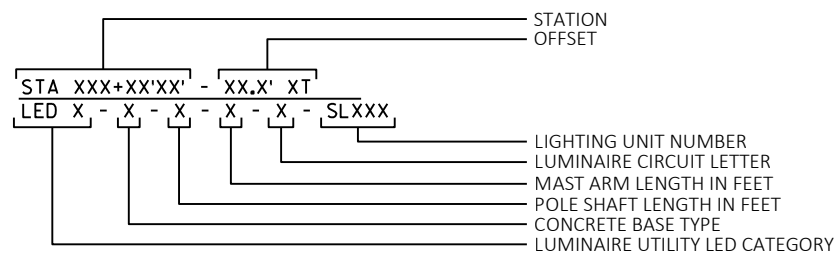
EXISTING CONDUIT 2-INCH (SCHEDULE 40 PVC UNLESS SPECIFIED OTHERWISE)



PROPOSED SINGLE ARM LUMINAIRE



EXISTING LIGHTING BASE



STA 145+14'WB' - 33.8' LT
LED B - 5 - 30' - 6' - B - SL213

STA 143+33'WB' - 33.8' LT
LED B - 5 - 30' - 6' - B - SL212

STA 141+49'WB' - 33.8' LT
LED B - 5 - 30' - 6' - B - SL211

STA 139+67'WB' - 33.8' LT
LED B - 5 - 30' - 6' - B - SL210

STA 137+90'WB' - 35.7' LT
LED B - 5 - 30' - 6' - B - SL209

MATCH LINE STA. 136+00'WB'

HIGHWAY LIGHTING
IH 94 REST AREA 62
DUNN COUNTY

LIGHTING NO. R17-0062

DESIGNER: KL ENGINEERING, INC.

DATE: 02-04-2026

SHEET 3 OF 4

PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

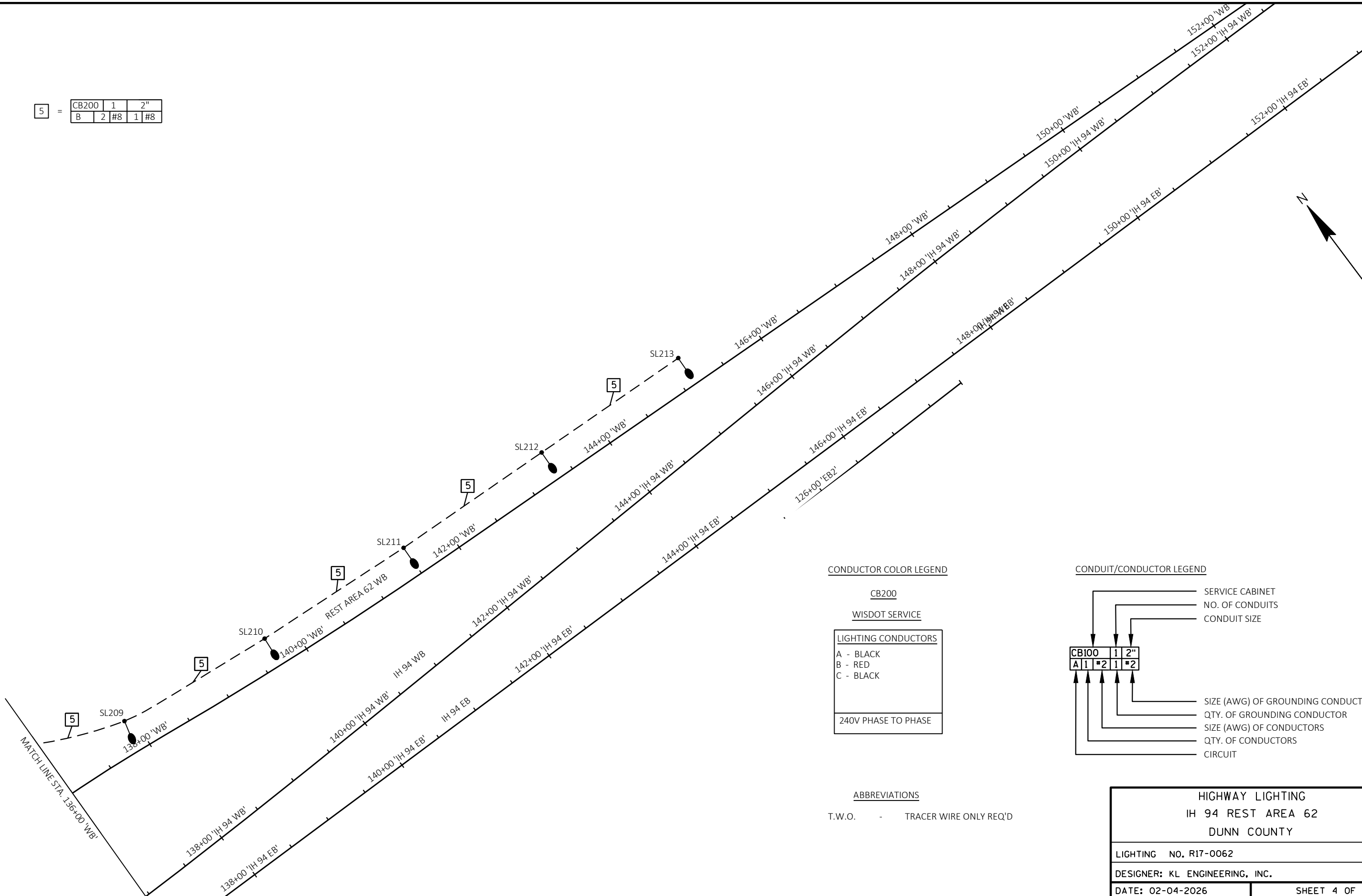
LIGHTING PLANS - REST AREA 62

SHEET

93

E

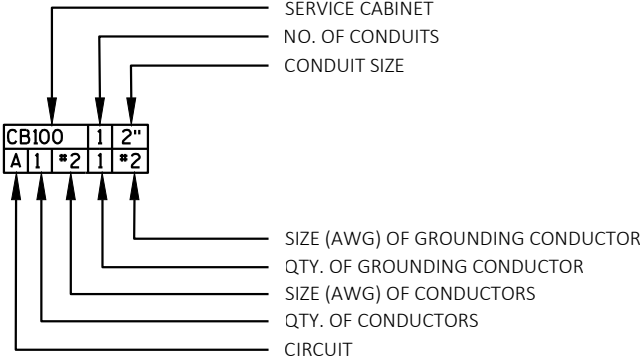
5	=	CB200	1	2"
		B	2 #8	1 #8



CONDUCTOR COLOR LEGEND

CB200
WISDOT SERVICE
LIGHTING CONDUCTORS
A - BLACK
B - RED
C - BLACK
240V PHASE TO PHASE

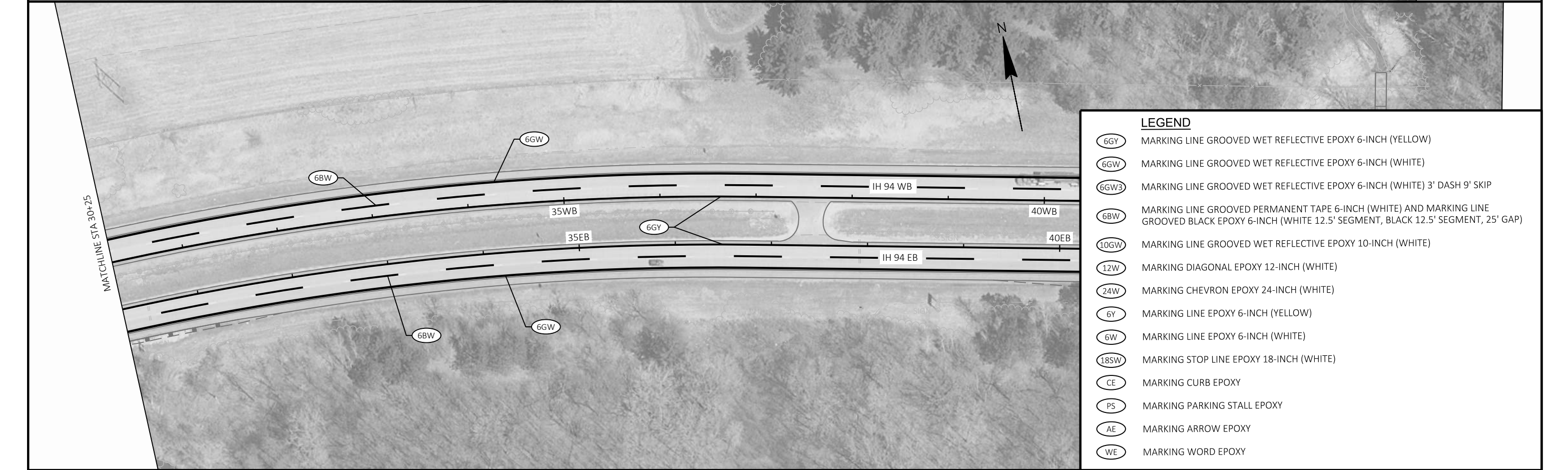
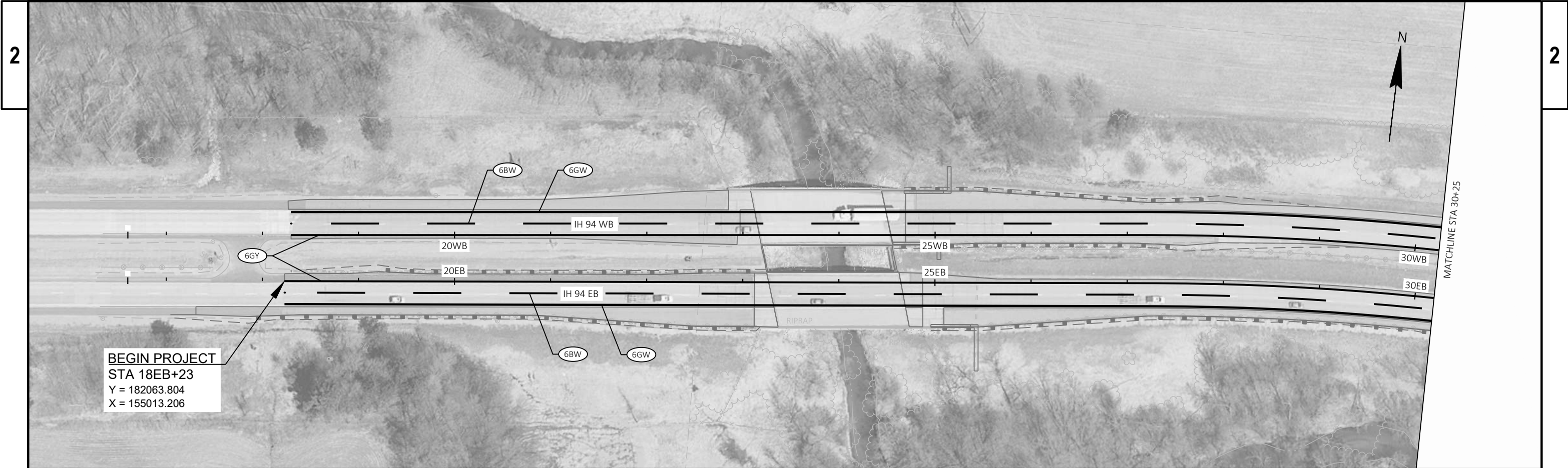
CONDUIT/CONDUCTOR LEGEND



ABBREVIATIONS

T.W.O. - TRACER WIRE ONLY REQ'D

HIGHWAY LIGHTING	
IH 94 REST AREA 62	
DUNN COUNTY	
LIGHTING NO.	R17-0062
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-04-2026	SHEET 4 OF 4



LEGEND	
	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE) 3' DASH 9' SKIP
	MARKING LINE GROOVED PERMANENT TAPE 6-INCH (WHITE) AND MARKING LINE GROOVED BLACK EPOXY 6-INCH (WHITE 12.5' SEGMENT, BLACK 12.5' SEGMENT, 25' GAP)
	MARKING LINE GROOVED WET REFLECTIVE EPOXY 10-INCH (WHITE)
	MARKING DIAGONAL EPOXY 12-INCH (WHITE)
	MARKING CHEVRON EPOXY 24-INCH (WHITE)
	MARKING LINE EPOXY 6-INCH (YELLOW)
	MARKING LINE EPOXY 6-INCH (WHITE)
	MARKING STOP LINE EPOXY 18-INCH (WHITE)
	MARKING CURB EPOXY
	MARKING PARKING STALL EPOXY
	MARKING ARROW EPOXY
	MARKING WORD EPOXY



LEGEND

- 6GY MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
- 6GW MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
- 6GW3 MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE) 3' DASH 9' SKIP
- 6BW MARKING LINE GROOVED PERMANENT TAPE 6-INCH (WHITE) AND MARKING LINE GROOVED BLACK EPOXY 6-INCH (WHITE 12.5' SEGMENT, BLACK 12.5' SEGMENT, 25' GAP)
- 10GW MARKING LINE GROOVED WET REFLECTIVE EPOXY 10-INCH (WHITE)
- 12W MARKING DIAGONAL EPOXY 12-INCH (WHITE)
- 24W MARKING CHEVRON EPOXY 24-INCH (WHITE)
- 6Y MARKING LINE EPOXY 6-INCH (YELLOW)
- 6W MARKING LINE EPOXY 6-INCH (WHITE)
- 18SW MARKING STOP LINE EPOXY 18-INCH (WHITE)
- CE MARKING CURB EPOXY
- PS MARKING PARKING STALL EPOXY
- AE MARKING ARROW EPOXY
- WE MARKING WORD EPOXY

PROJECT NO: 1020-05-63

HWY: IH 94

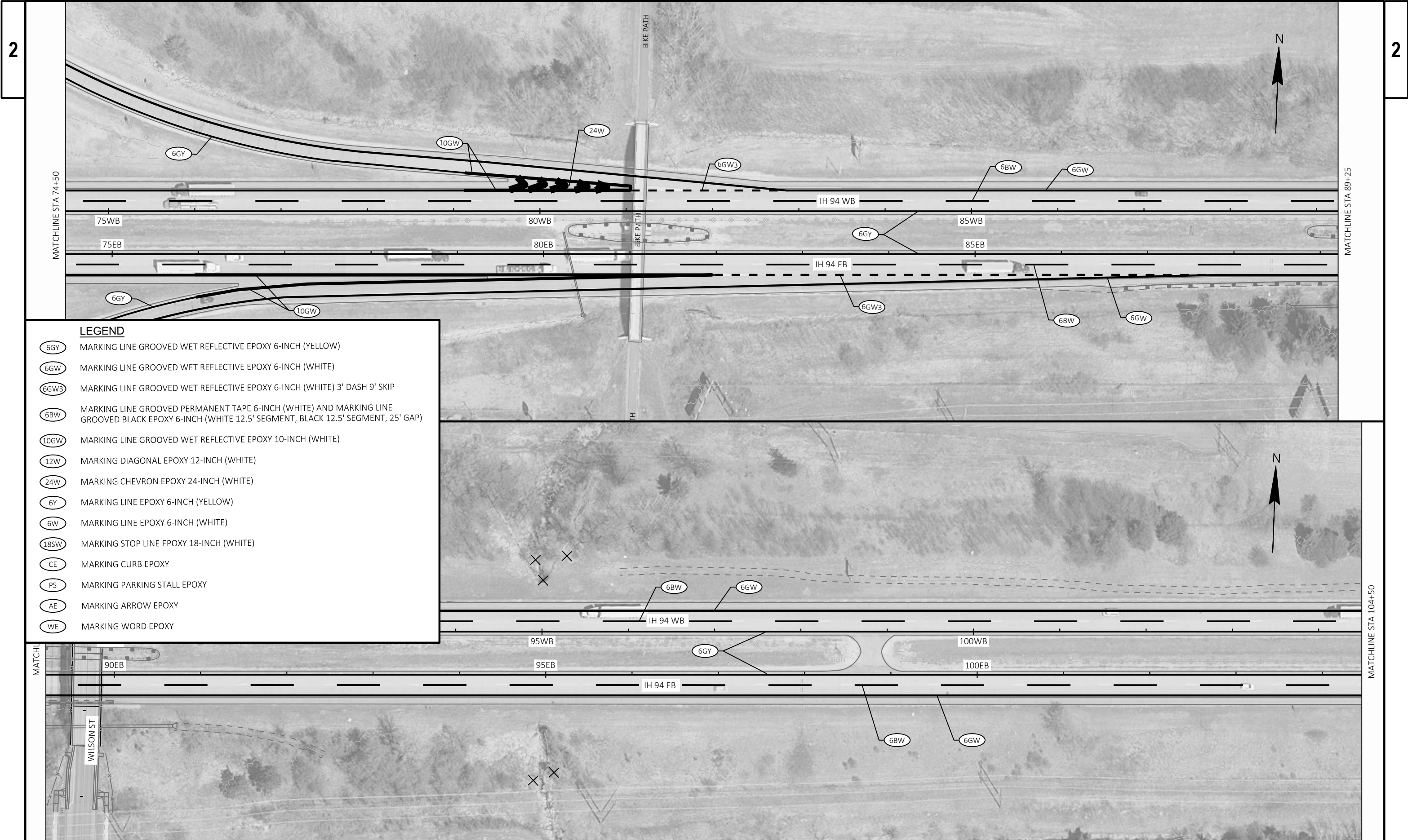
COUNTY: DUNN

PAVEMENT MARKING

SHEET

96

E



LEGEND

- 6GY MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
- 6GW MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
- 6GW3 MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE) 3' DASH 9' SKIP
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- 24W MARKING CHEVRON EPOXY 24-INCH (WHITE)
- 6Y MARKING LINE EPOXY 6-INCH (YELLOW)
- 6W MARKING LINE EPOXY 6-INCH (WHITE)
- 18SW MARKING STOP LINE EPOXY 18-INCH (WHITE)
- CE MARKING CURB EPOXY
- PS MARKING PARKING STALL EPOXY
- AE MARKING ARROW EPOXY
- WE MARKING WORD EPOXY

PROJECT NO: 1020-05-63

HWY: IH 94

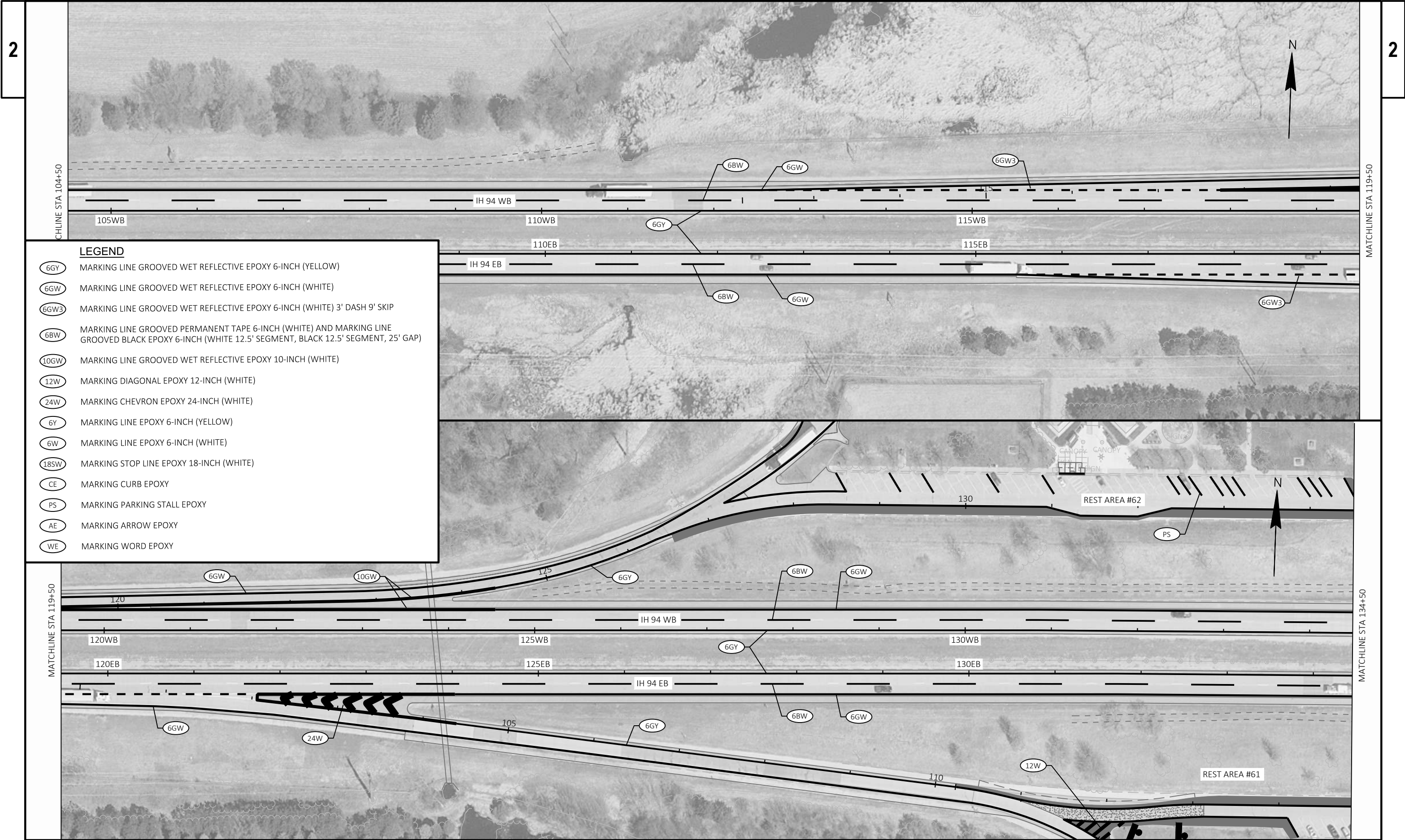
COUNTY: DUNN

PAVEMENT MARKING

SHEET

97

E

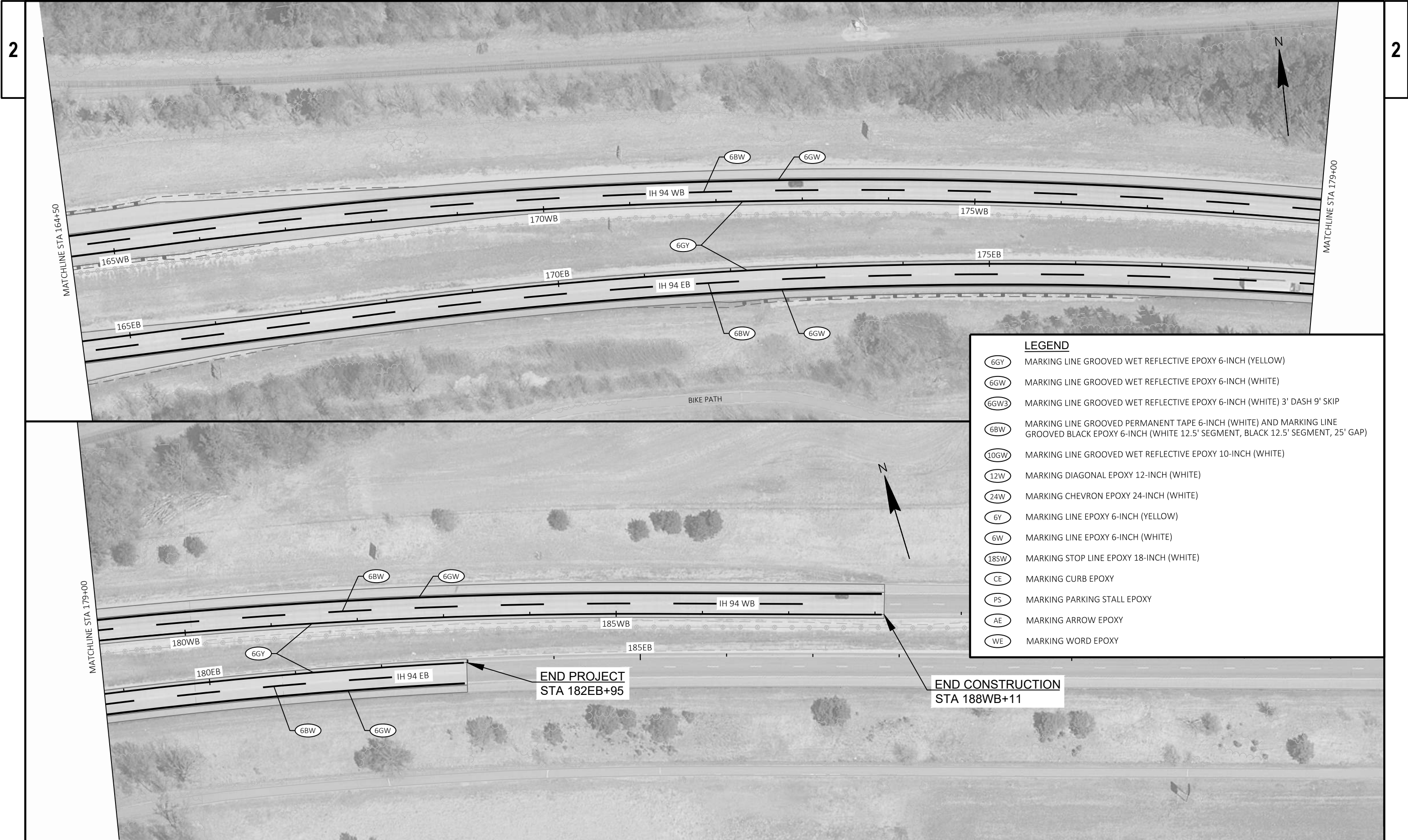


LEGEND

- (6GY) MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
- (6GW) MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
- (6GW3) MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE) 3' DASH 9' SKIP
- (6BW) MARKING LINE GROOVED PERMANENT TAPE 6-INCH (WHITE) AND MARKING LINE GROOVED BLACK EPOXY 6-INCH (WHITE 12.5' SEGMENT, BLACK 12.5' SEGMENT, 25' GAP)
- (10GW) MARKING LINE GROOVED WET REFLECTIVE EPOXY 10-INCH (WHITE)
- (12W) MARKING DIAGONAL EPOXY 12-INCH (WHITE)
- (24W) MARKING CHEVRON EPOXY 24-INCH (WHITE)
- (6Y) MARKING LINE EPOXY 6-INCH (YELLOW)
- (6W) MARKING LINE EPOXY 6-INCH (WHITE)
- (18SW) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (CE) MARKING CURB EPOXY
- (PS) MARKING PARKING STALL EPOXY
- (AE) MARKING ARROW EPOXY
- (WE) MARKING WORD EPOXY



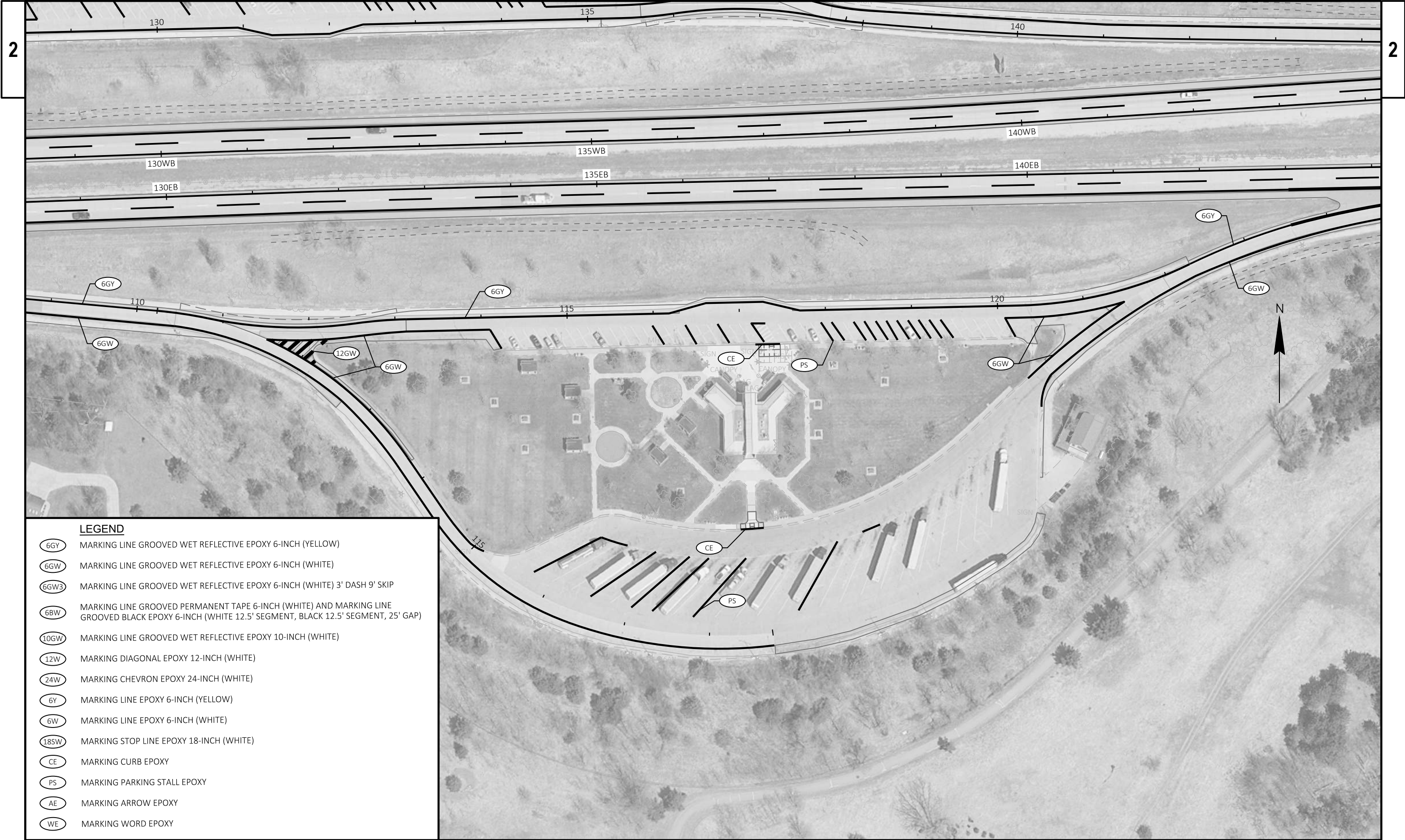
LEGEND	
(6GY)	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
(6GW)	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
(6GW3)	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE) 3' DASH 9' SKIP
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(10GW)	MARKING LINE GROOVED WET REFLECTIVE EPOXY 10-INCH (WHITE)
(12W)	MARKING DIAGONAL EPOXY 12-INCH (WHITE)
(24W)	MARKING CHEVRON EPOXY 24-INCH (WHITE)
(6Y)	MARKING LINE EPOXY 6-INCH (YELLOW)
(6W)	MARKING LINE EPOXY 6-INCH (WHITE)
(18SW)	MARKING STOP LINE EPOXY 18-INCH (WHITE)
(CE)	MARKING CURB EPOXY
(PS)	MARKING PARKING STALL EPOXY
(AE)	MARKING ARROW EPOXY
(WE)	MARKING WORD EPOXY



LEGEND

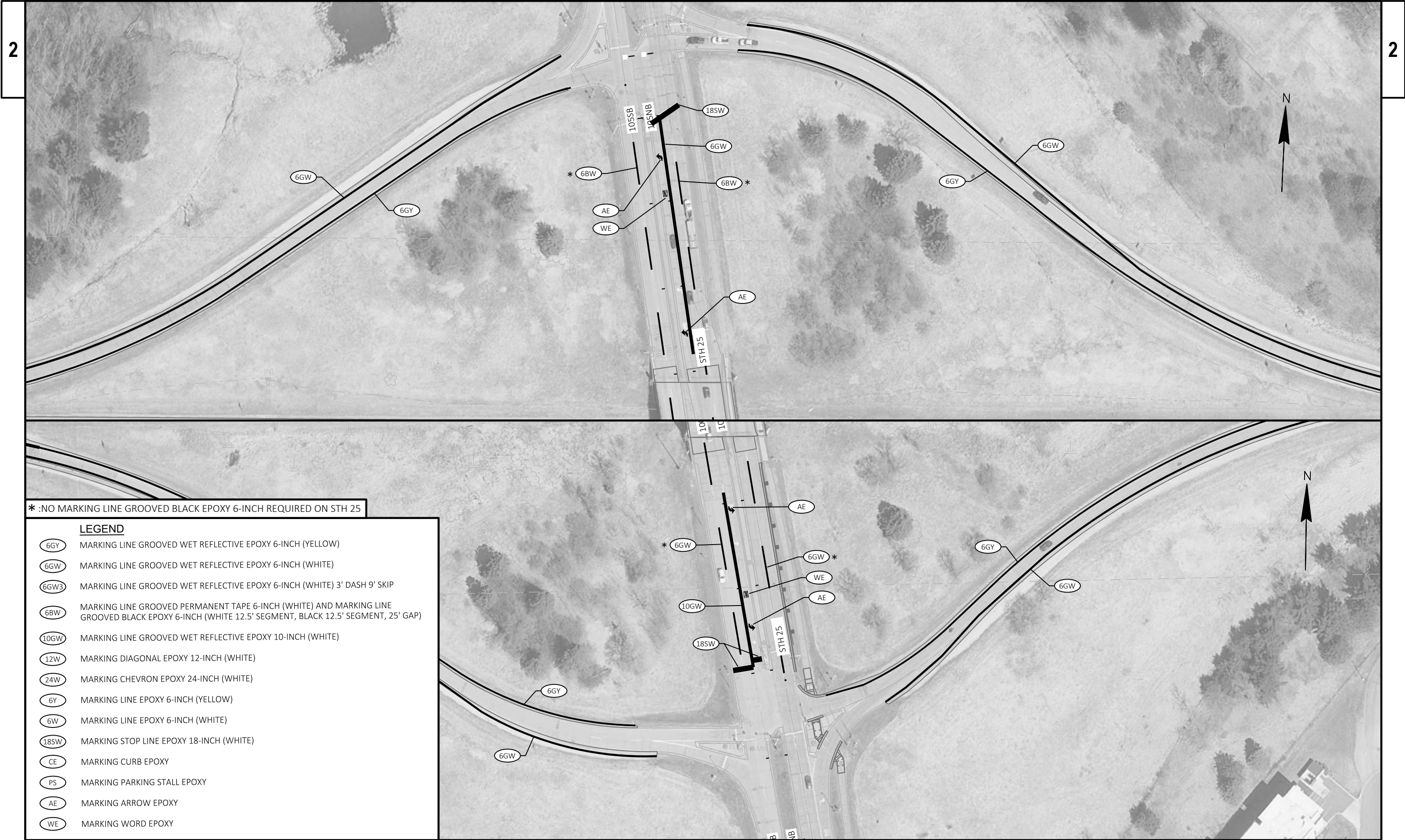
- 6GY MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
- 6GW MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
- 6GW3 MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE) 3' DASH 9' SKIP
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- 24W MARKING CHEVRON EPOXY 24-INCH (WHITE)
- 6Y MARKING LINE EPOXY 6-INCH (YELLOW)
- 6W MARKING LINE EPOXY 6-INCH (WHITE)
- 18SW MARKING STOP LINE EPOXY 18-INCH (WHITE)
- CE MARKING CURB EPOXY
- PS MARKING PARKING STALL EPOXY
- AE MARKING ARROW EPOXY
- WE MARKING WORD EPOXY





LEGEND

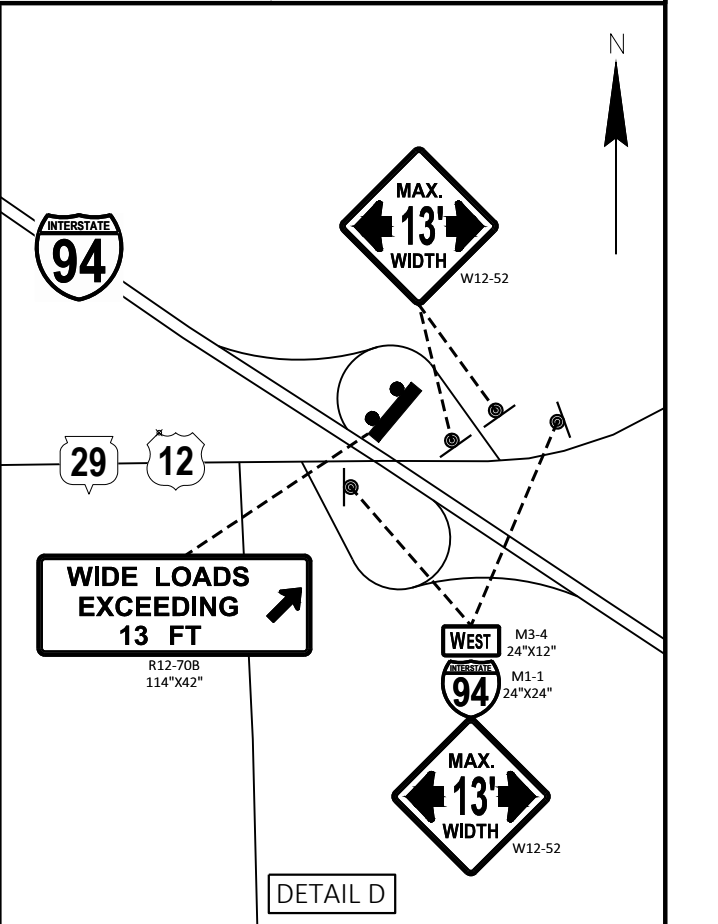
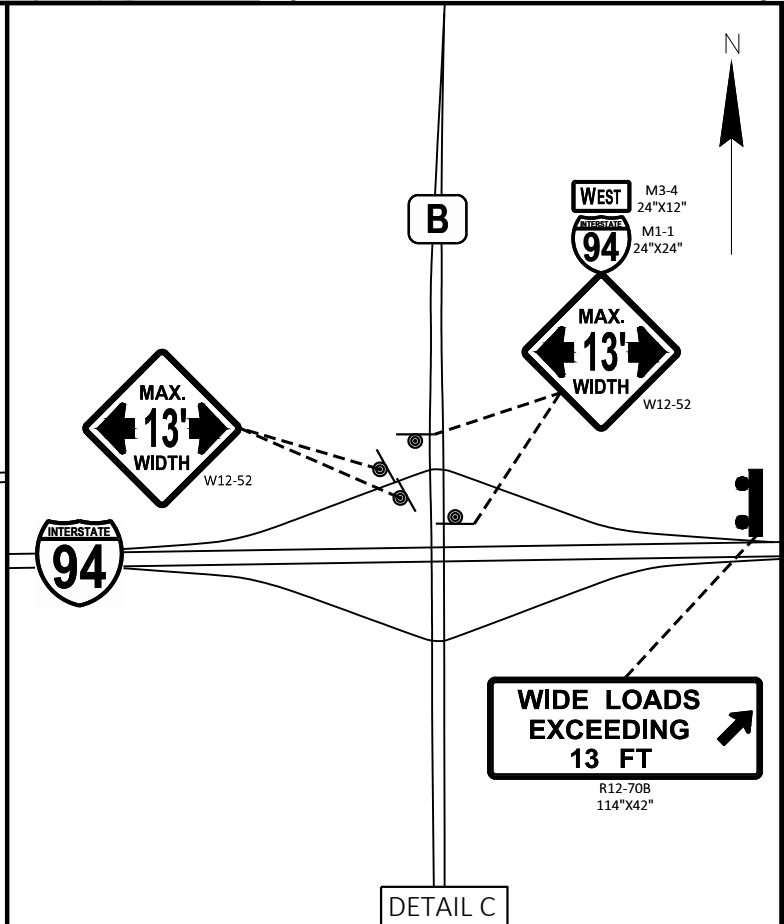
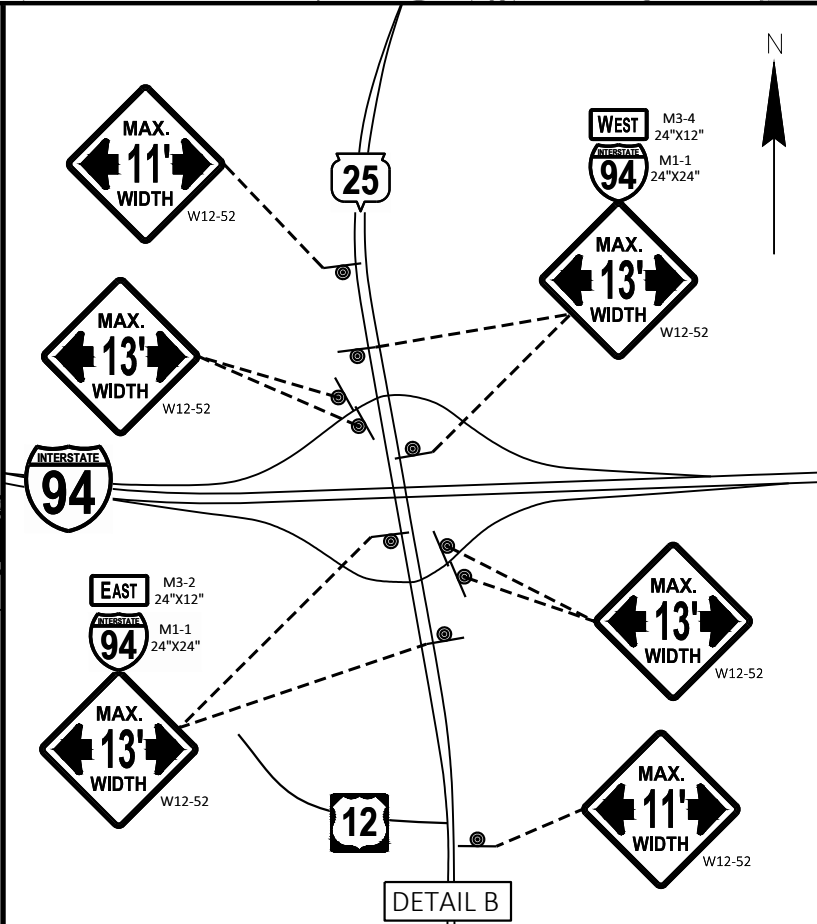
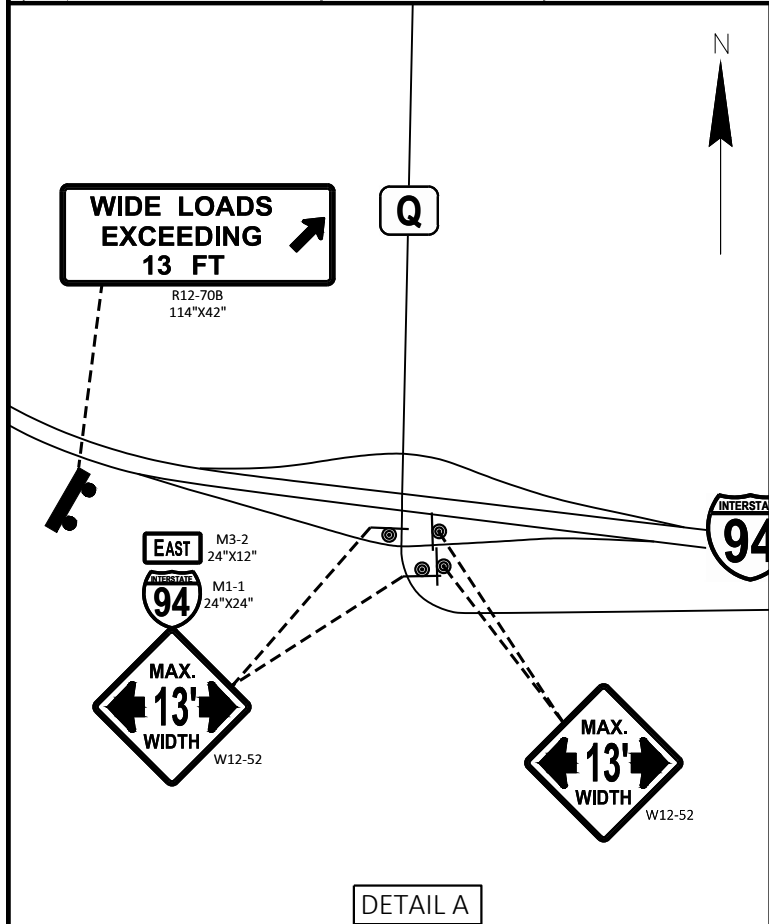
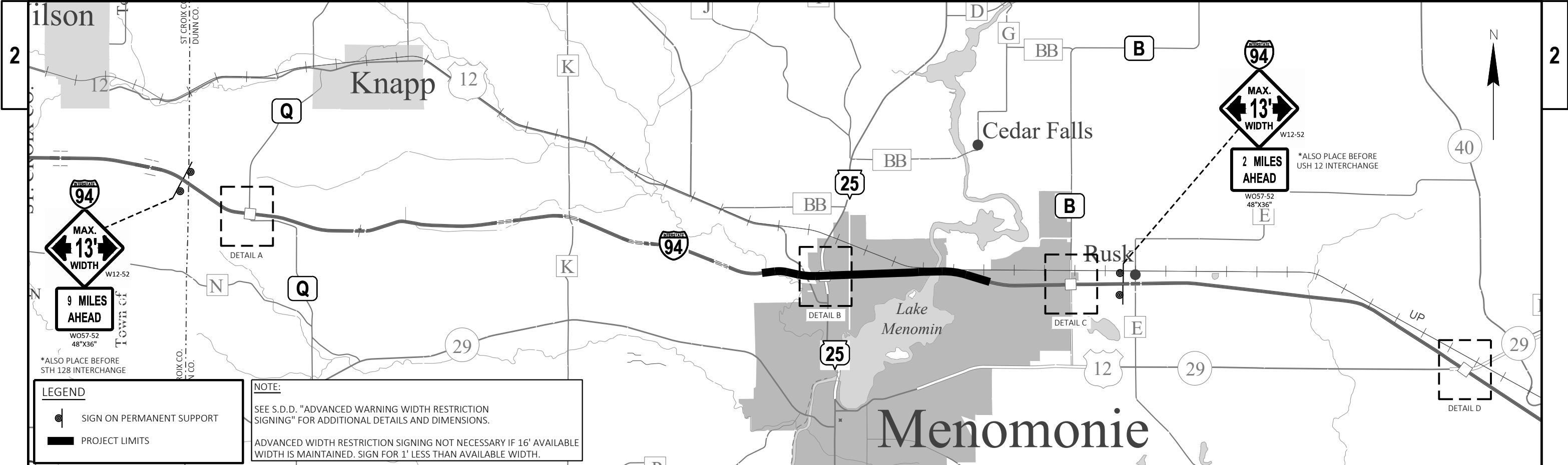
- (6GY) MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
- (6GW) MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
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- (12W) MARKING DIAGONAL EPOXY 12-INCH (WHITE)
- (24W) MARKING CHEVRON EPOXY 24-INCH (WHITE)
- (6Y) MARKING LINE EPOXY 6-INCH (YELLOW)
- (6W) MARKING LINE EPOXY 6-INCH (WHITE)
- (18SW) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (CE) MARKING CURB EPOXY
- (PS) MARKING PARKING STALL EPOXY
- (AE) MARKING ARROW EPOXY
- (WE) MARKING WORD EPOXY



* :NO MARKING LINE GROOVED BLACK EPOXY 6-INCH REQUIRED ON STH 25

LEGEND

- 6GY MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
- 6GW MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
- 6GW3 MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE) 3' DASH 9' SKIP
- 6BW MARKING LINE GROOVED PERMANENT TAPE 6-INCH (WHITE) AND MARKING LINE GROOVED BLACK EPOXY 6-INCH (WHITE 12.5' SEGMENT, BLACK 12.5' SEGMENT, 25' GAP)
- 10GW MARKING LINE GROOVED WET REFLECTIVE EPOXY 10-INCH (WHITE)
- 12W MARKING DIAGONAL EPOXY 12-INCH (WHITE)
- 24W MARKING CHEVRON EPOXY 24-INCH (WHITE)
- 6Y MARKING LINE EPOXY 6-INCH (YELLOW)
- 6W MARKING LINE EPOXY 6-INCH (WHITE)
- 18SW MARKING STOP LINE EPOXY 18-INCH (WHITE)
- CE MARKING CURB EPOXY
- PS MARKING PARKING STALL EPOXY
- AE MARKING ARROW EPOXY
- WE MARKING WORD EPOXY



TRAFFIC CONTROL LEGEND

 TYPE III BARRICADE

 TYPE III BARRICADE WTH ATTACHED SIGN

 TRAFFIC CONTROL DRUM

 TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT

 SIGN ON PERMANENT SUPPORT

 SIGN ON TEMPORARY SUPPORT

 FLEXIBLE TUBULAR MARKER POST

 CONCRETE BARRIER TEMPORARY PRECAST

 DIRECTION OF TRAFFIC

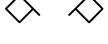
 PORTABLE CHANGEABLE MESSAGE BOARD

 WORK AREA

 TRAILER MOUNTED TRAFFIC SIGNAL

 FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

 REMOVING PAVEMENT MARKING

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

 FLASHING BEACON SIGNS

 DIGITAL SPEED LIMIT TRAILER (DSLTL)

PAVEMENT MARKING LEGEND

 TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)

 TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (YELLOW)

PCMS MESSAGE OVERVIEW					
SIGN OWNER	PCMS SITE NO. (DIR.)	7 DAYS PRIOR TO CONSTRUCTION		DURING CLOSURE	
		FRAME 1 (2 SEC)	FRAME 2 (2 SEC)	FRAME 1	FRAME 2
CONTRACTOR	1 (IH 94 EB)	ROAD WORK STARTS	STARTING XX/XX/XX		
CONTRACTOR	2 (IH 94 WB)	ROAD WORK STARTS	STARTING XX/XX/XX		
CONTRACTOR	3-4 (IH-94 ON-RAMPS AT STH 25)	RAMP TO CLOSE	STARTING XX/XX/XX	RAMP CLOSED	RAMP CLOSED
CONTRACTOR	5 (IH-94 EB OFF-RAMP AT STH 25)	RAMP TO CLOSE	STARTING XX/XX/XX	EXIT 41 CLOSED	USE EXIT 52
CONTRACTOR	6 (IH-94 WB OFF-RAMP AT STH 25)	RAMP TO CLOSE	STARTING XX/XX/XX	EXIT 41 CLOSED	USE EXIT 28
CONTRACTOR	9-12 (IH 94 WB FOR BRIDGE WORK)	RAMP TO CLOSE	STARTING XX/XX/XX		
CONTRACTOR	7-8 (REST AREA ENTRANCES)	REST AREA TO CLOSE	STARTING XX/XX/XX		

TRAFFIC CONTROL GENERAL NOTES:

ALL TRAFFIC CONTROL SIGNS AND DEVICES AND THEIR LOCATION SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD), THE PLANS, SPECIFICATIONS, CONTRACT AND APPLICABLE STANDARD DETAIL DRAWINGS.

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

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

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

ALL SIGNS INAPPROPRIATE TO THE WORKZONE, INCLUDING PRE-EXISTING SIGNING, SHALL BE COVERED, REMOVED, OR ALTERED AS SPECIFIED IN THE PLANS AND/OR SPECIALS PROVISIONS OR AS DIRECTED BY THE ENGINEER.

ALL EXISTING CONFLICTING PAVEMENT MARKING SHALL BE REMOVED.

SHEETING OR SHORING REQUIRED FOR BOX CULVERT CONSTRUCTION SHOWN ON THE STAGING PLANS IS FOR INFORMATION ONLY. CONTRACTOR SHALL DETERMINE SHORING SYSTEM LOCATIONS AND NEEDS. SHEETING OR SHORING REQUIRED FOR STORM SEWER CONSTRUCTION IS INCIDENTAL TO THE STORM SEWER BID ITEMS.

PCMS WITH MESSAGE AS DIRECTED BY THE ENGINEER

GENERAL TRAFFIC CONTROL REQUIREMENTS:

MINIMUM LANE WIDTH REQUIRED ON IH 94 IS 12'. MINIMUM LANE WIDTH REQUIRED ON STH 25 AND WILSON STREET IS 11'.

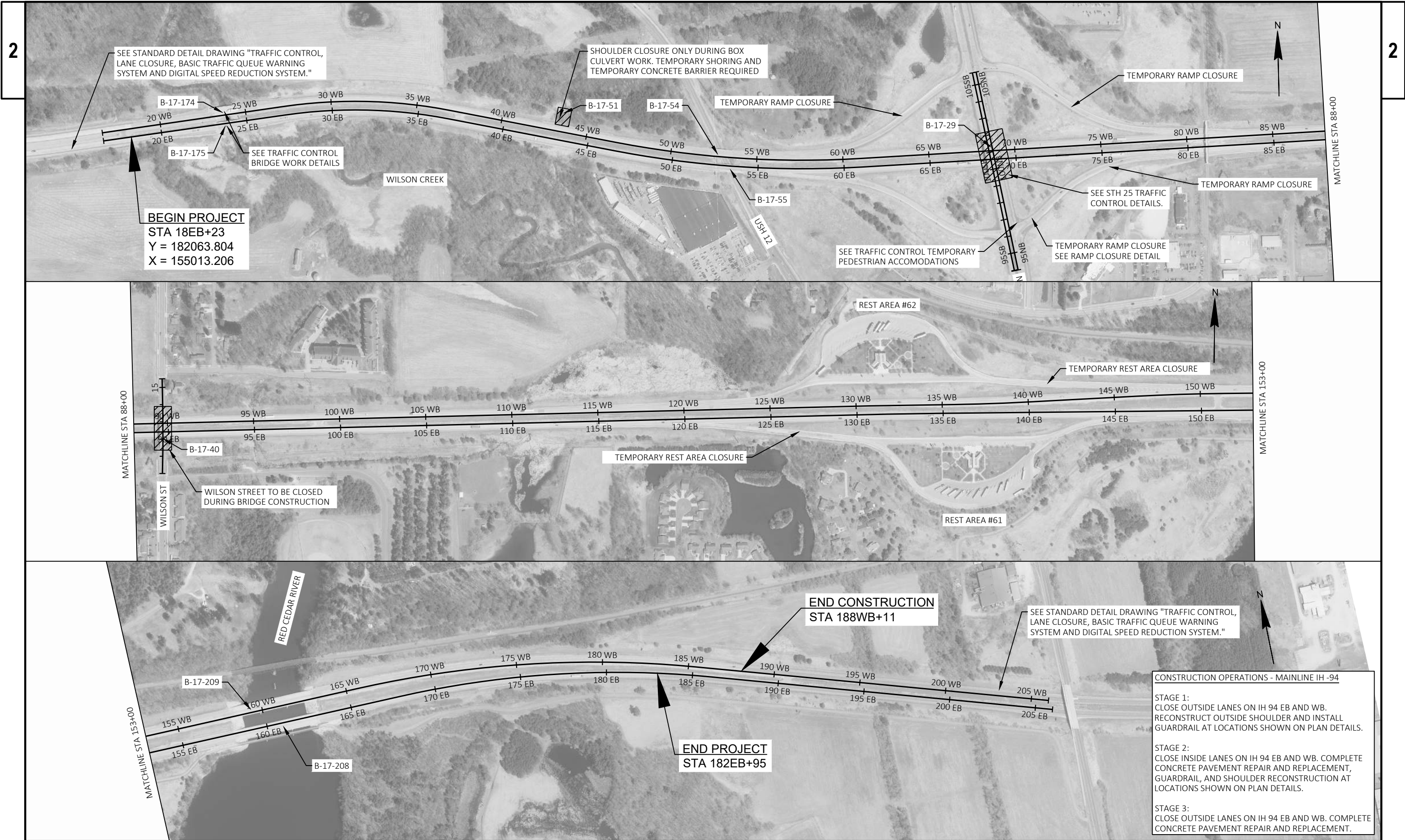
USE TEMPORARY MARKING LINE REMOVABLE TAPE X-INCH ON FINISHED PAVEMENT SURFACES THAT WILL REMAIN.

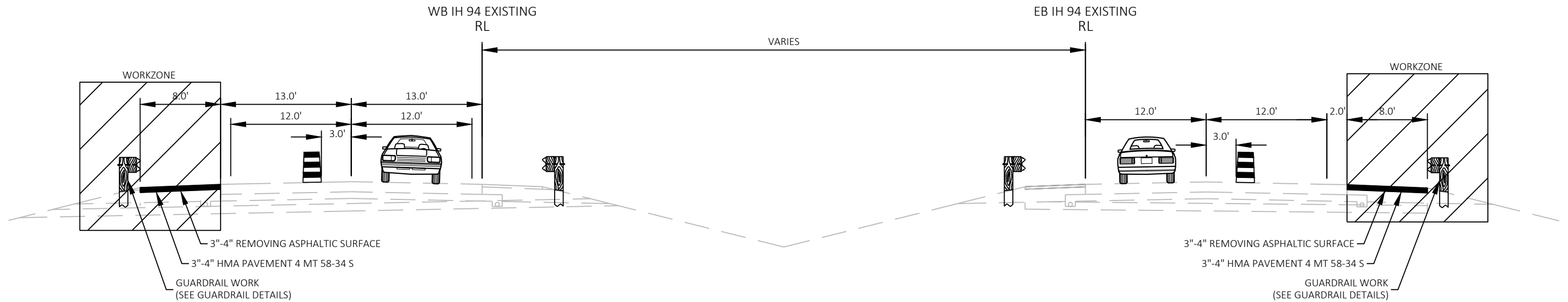
DO NOT CLOSE BOTH REST AREAS AT SAME TIME

DO NOT LEAVE RUMBLE STRIPS IN PLACE OR INSTALL RUMBLE STRIPS FOR MAINLINE STAGES 2 AND 3

TRAFFIC CONTROL INDEX OF SHEETS:

- TRAFFIC CONTROL GENERAL NOTES
- TRAFFIC CONTROL OVERVIEW
- TRAFFIC CONTROL - IH 94 BRIDGE WORK
- TRAFFIC CONTROL - IH 94
- TRAFFIC CONTROL - STH 25
- TRAFFIC CONTROL - WILSON STREET
- TRAFFIC CONTROL - ON-RAMP CLOSURE
- TRAFFIC CONTROL - TYPICAL SECTIONS
- TRAFFIC CONTROL - TEMPORARY PEDESTRIAN ACCOMODATIONS

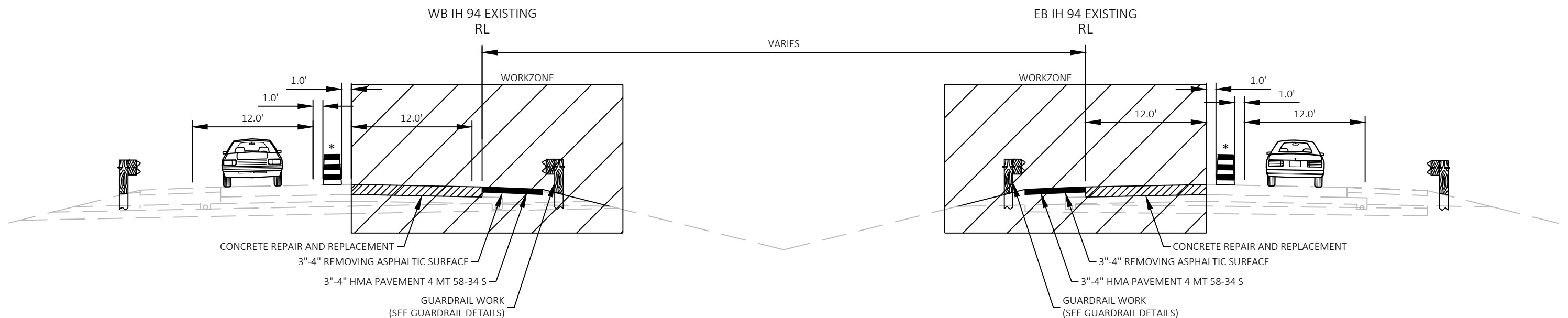




STAGE 1 TYPICAL SECTION IH 94
STA 18+23 WB TO STA 188+11 WB

STAGE 1 TYPICAL SECTION IH 94
STA 18+23 EB TO STA 182+95 EB

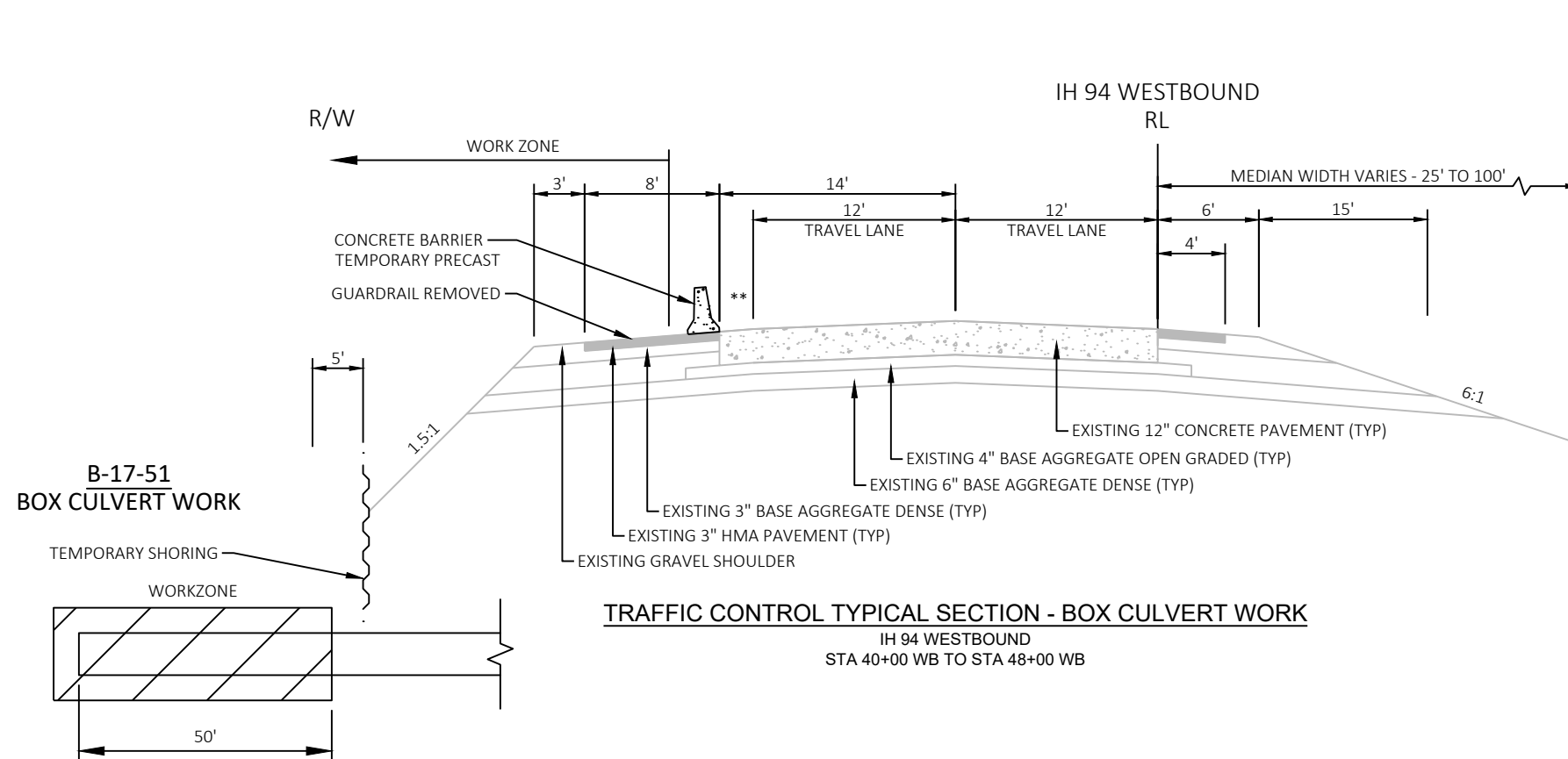
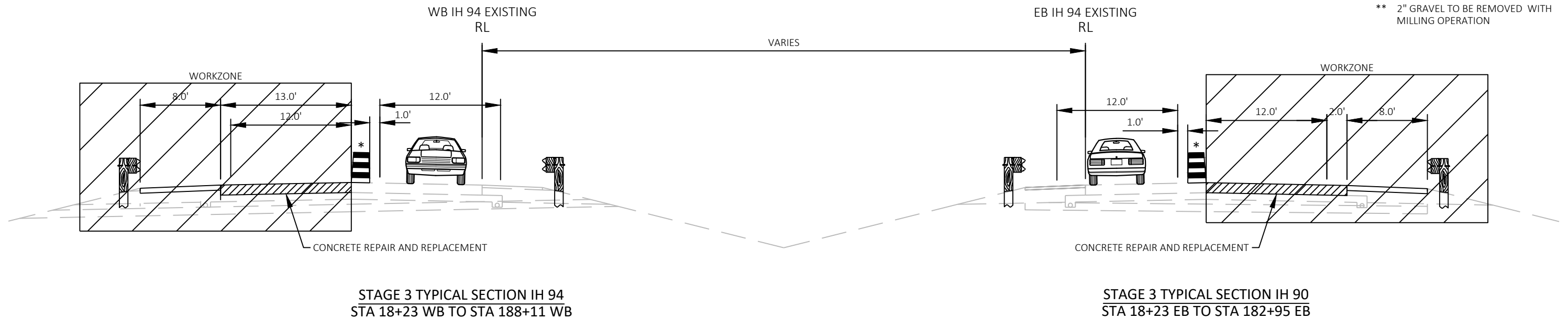
* DRUMS TO BE PLACED BACK OVER
LANE LINE OR INTO CLOSED LANE
WHEN CONTRACTOR NOT WORKING



STAGE 2 TYPICAL SECTION IH 94
STA 18+23 WB TO STA 188+11 WB

STAGE 2 TYPICAL SECTION IH 94
STA 18+23 EB TO STA 182+95 EB

- * DRUMS TO BE PLACED BACK OVER LANE LINE OR INTO CLOSED LANE WHEN CONTRACTOR NOT WORKING
- ** 2" GRAVEL TO BE REMOVED WITH MILLING OPERATION



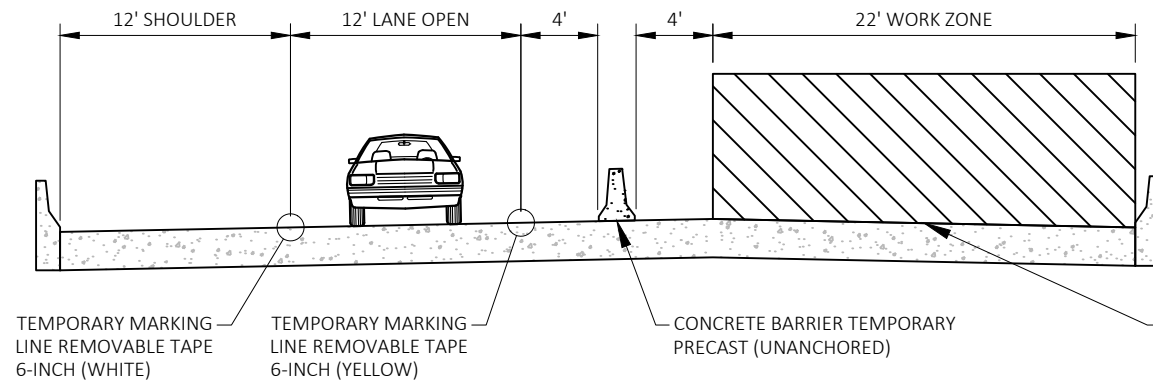
B-17-174 & B-17-175 WORK

STAGE 1 & 2 BRIDGE WORK TRAFFIC:

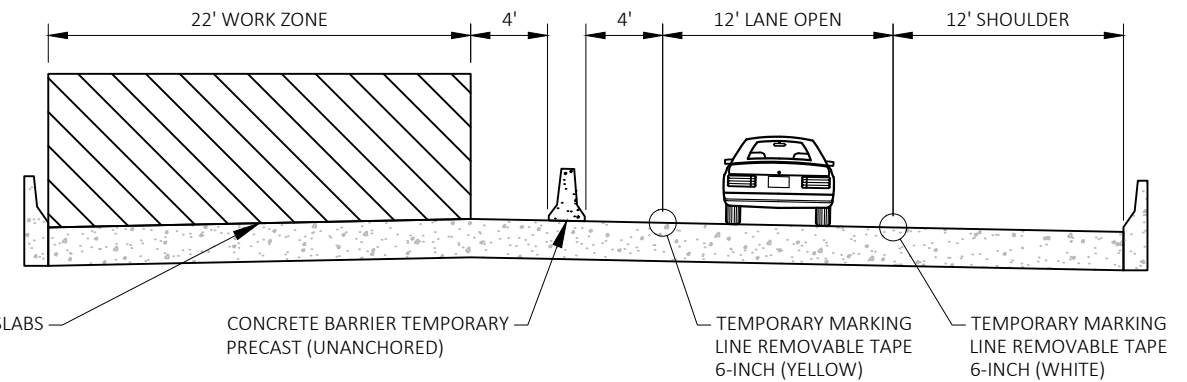
IH 94 WILL REMAIN OPEN TO ONE LANE OF TRAFFIC AT ALL TIMES UTILIZING A CONTINUOUS LANE CLOSURE AND SPEED REDUCTION. USE DYNAMIC LANE MERGE WARNING SYSTEM.

CONSTRUCTION TO BE COMPLETED THIS STAGE:

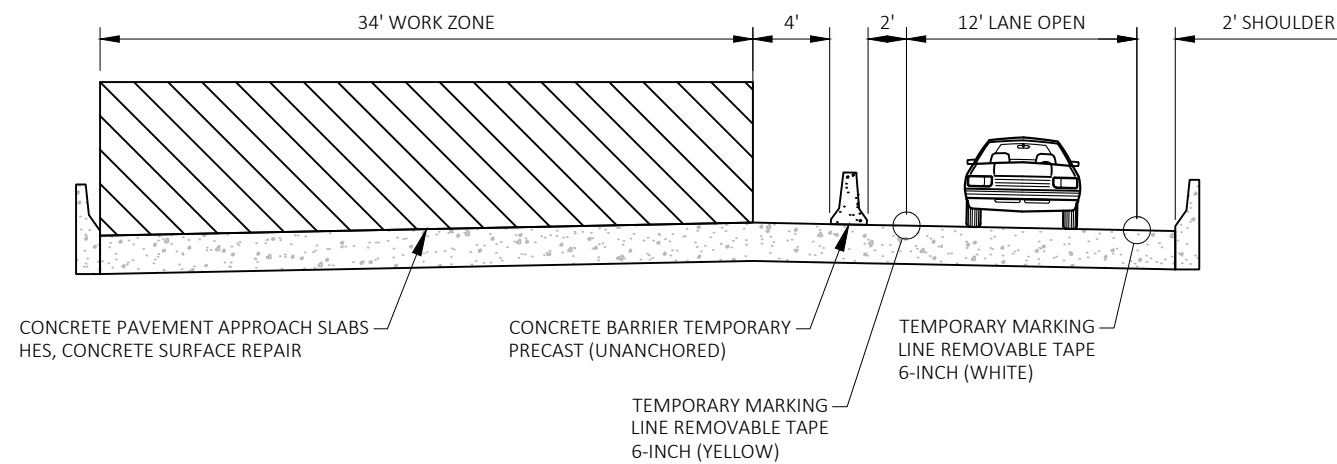
CONCRETE PAVEMENT APPROACH SLABS HES, PREPARATION DECKS, CONCRETE SURFACE REPAIR.



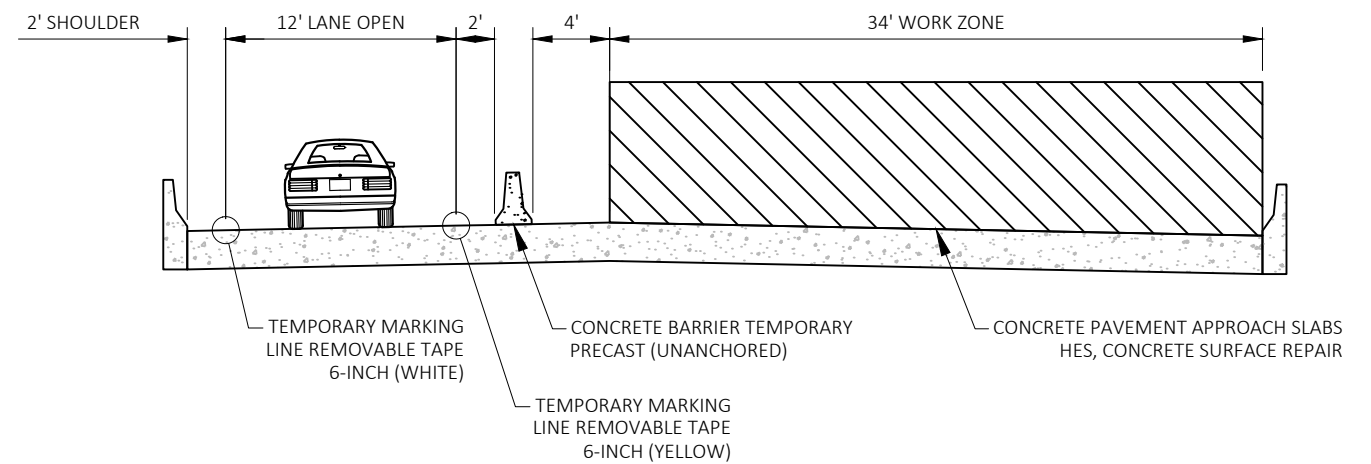
B-17-174 WORK STAGE 1
WB TYPICAL SECTION



B-17-175 WORK STAGE 1
EB TYPICAL SECTION



B-17-174 WORK STAGE 2
WB TYPICAL SECTION



B-17-175 WORK STAGE 2
EB TYPICAL SECTION

- STAGE 1 TRAFFIC
- UTILIZE INSIDE LANE CLOSURES ON IH-94 EB AND WB TO FACILITATE STAGE 1 BRIDGE WORK.
 - MAINTAIN TRAFFIC ON THE OUTSIDE LANES WITH TRAFFIC CONTROL DRUMS AND CONCRETE BARRIER TEMPORARY PRECAST.
- STAGE 1 CONSTRUCTION
- REPLACE EXISTING CONCRETE PAVEMENT APPROACH SLABS.
 - PERFORM BRIDGE DECK REPAIRS.

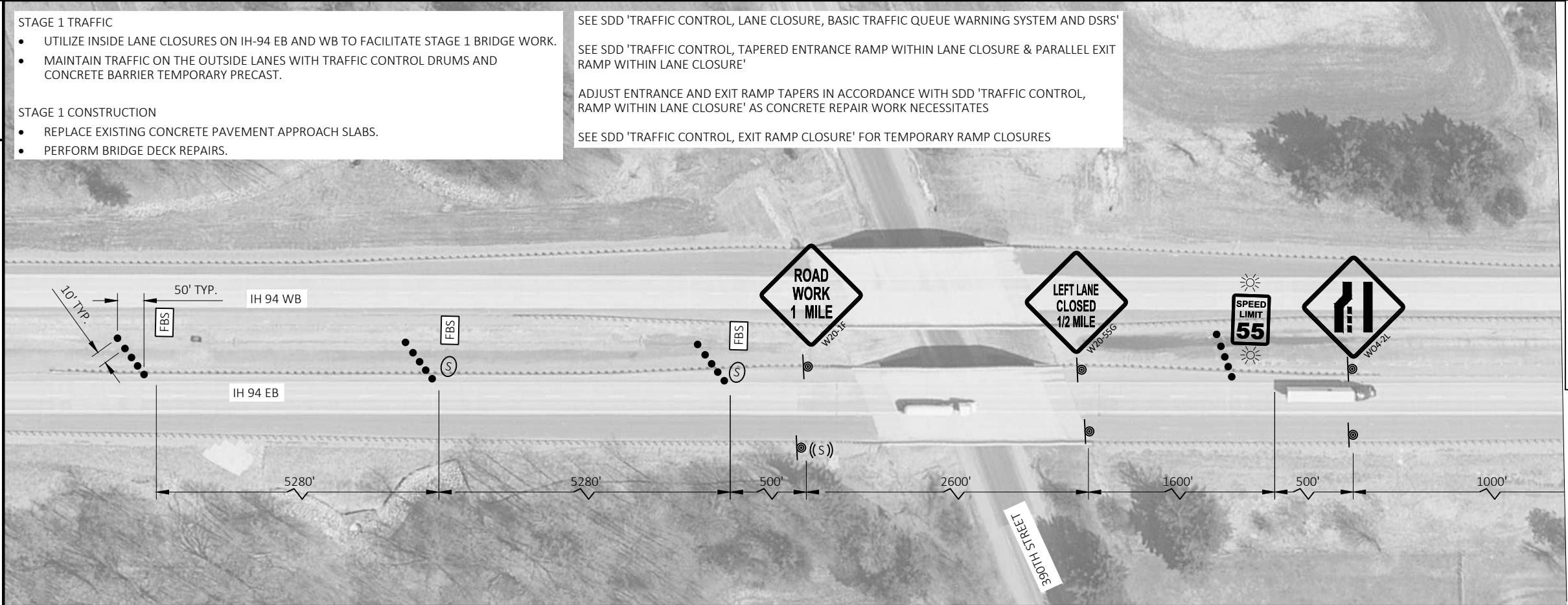
SEE SDD 'TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM AND DSRS'

SEE SDD 'TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE & PARALLEL EXIT RAMP WITHIN LANE CLOSURE'

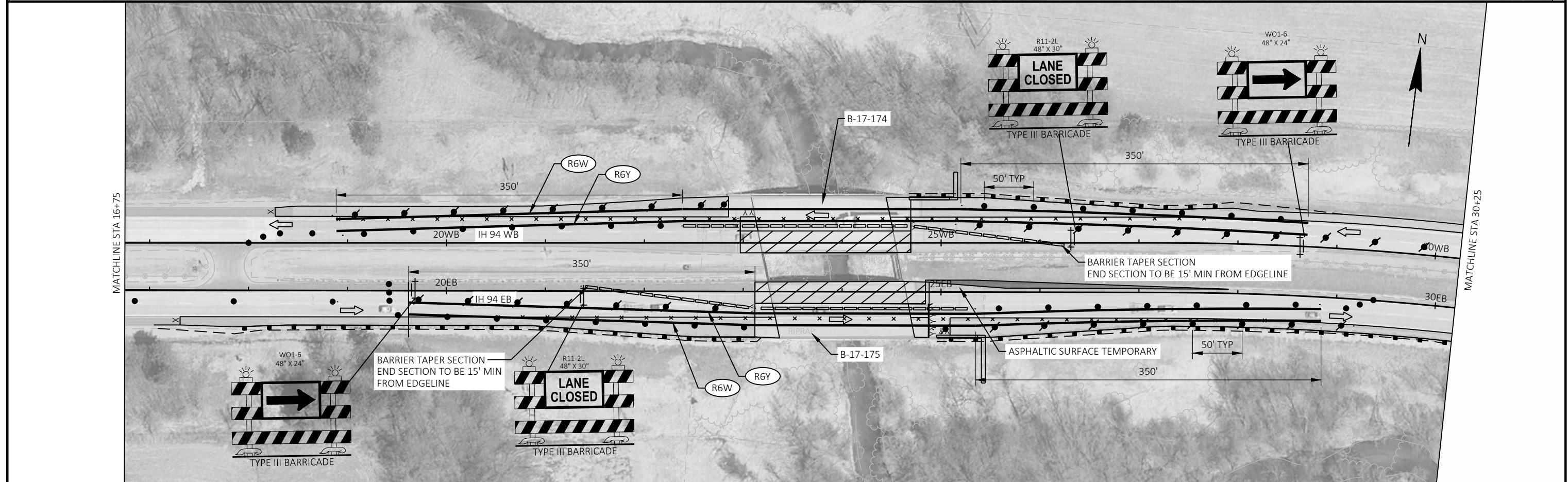
ADJUST ENTRANCE AND EXIT RAMP TAPERS IN ACCORDANCE WITH SDD 'TRAFFIC CONTROL, RAMP WITHIN LANE CLOSURE' AS CONCRETE REPAIR WORK NECESSITATES

SEE SDD 'TRAFFIC CONTROL, EXIT RAMP CLOSURE' FOR TEMPORARY RAMP CLOSURES

- LEGEND:
- TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - SIGN ON PERMANENT SUPPORT
 - ⚡ TYPE "A" WARNING LIGHT (FLASHING)
 - ⚡ TYPE III BARRICADE WITH ATTACHED SIGN
 - x x x REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
 - CONCRETE BARRIER TEMPORARY PRECAST
 - ➡ DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ⚡ CONNECTED ARROW BOARD
 - ((s)) WZ START LOCATION MARKER
 - ((E)) WZ END LOCATION MARKER
 - (S) PORTABLE TRAFFIC SENSOR (PTS)
 - FBS FLASHING BEACON SIGNS

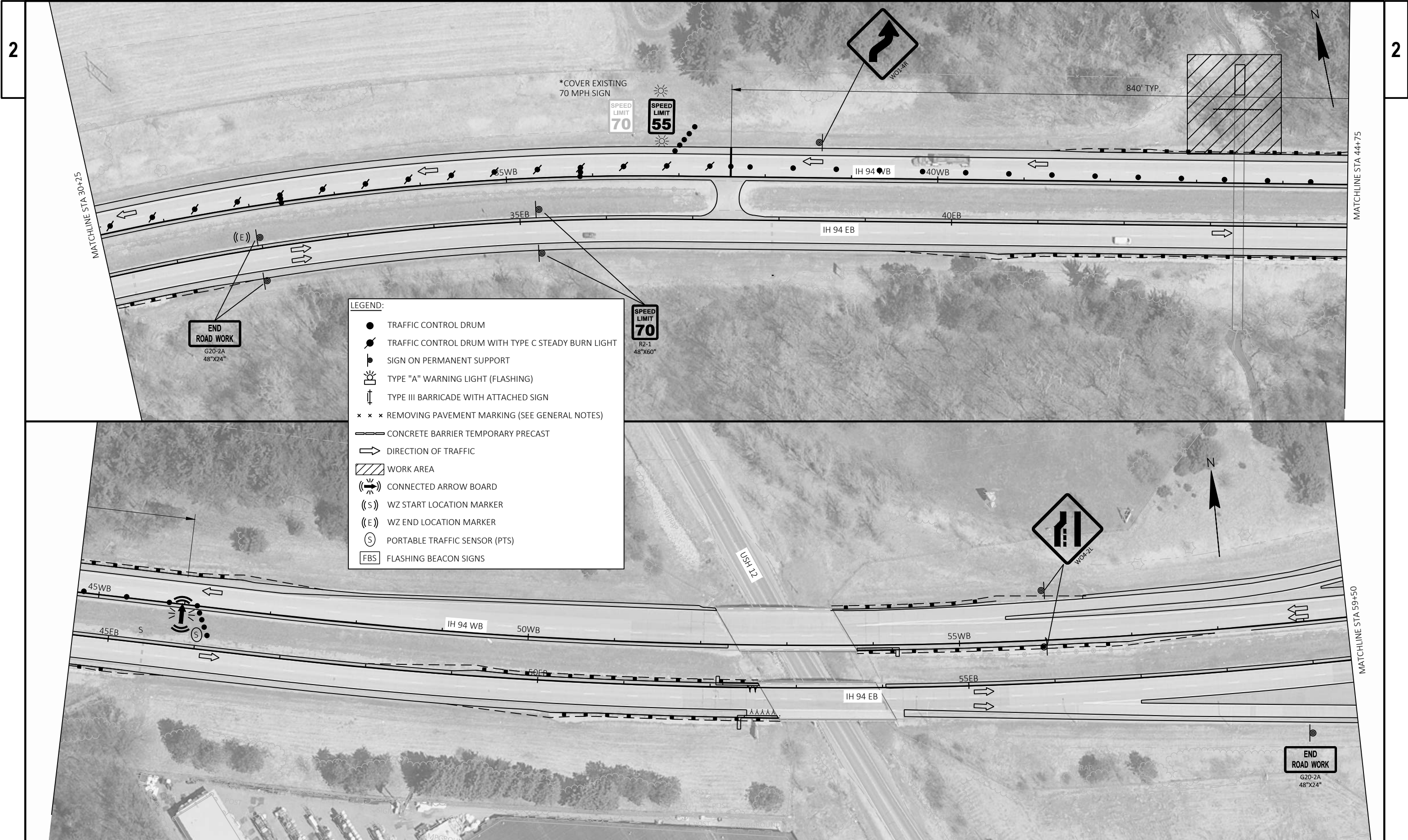


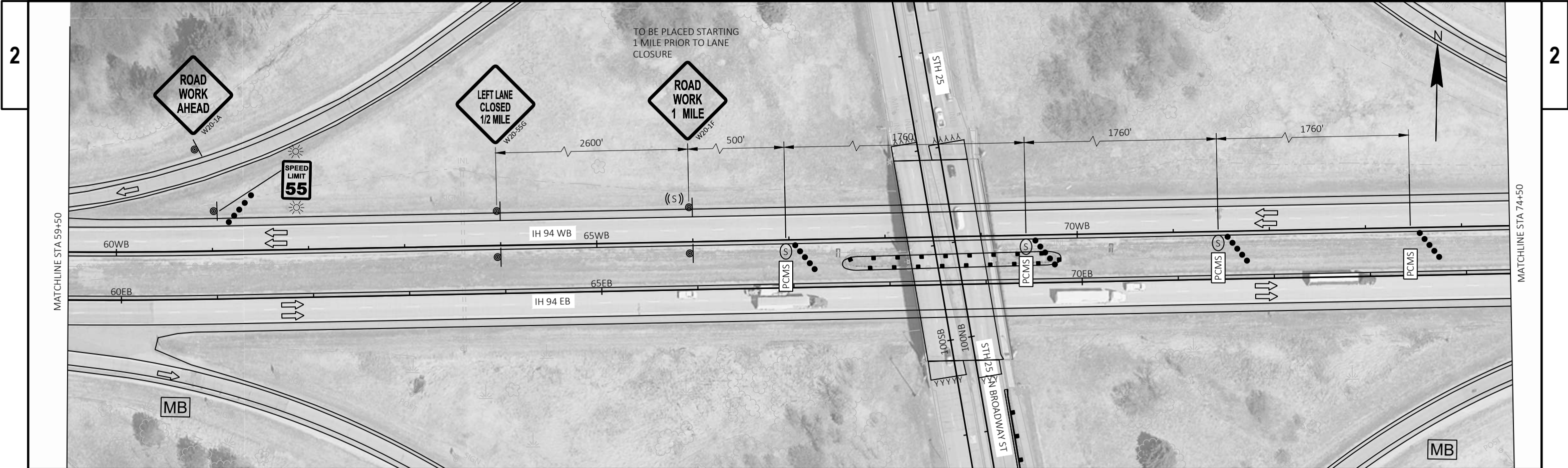
LEGEND:	
●	TRAFFIC CONTROL DRUM
●	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
●	SIGN ON PERMANENT SUPPORT
☀	TYPE "A" WARNING LIGHT (FLASHING)
↑	TYPE III BARRICADE WITH ATTACHED SIGN
× × ×	REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
▬▬▬	CONCRETE BARRIER TEMPORARY PRECAST
➡	DIRECTION OF TRAFFIC
▨	WORK AREA
☀	CONNECTED ARROW BOARD
((S))	WZ START LOCATION MARKER
((E))	WZ END LOCATION MARKER
Ⓢ	PORTABLE TRAFFIC SENSOR (PTS)
FBS	FLASHING BEACON SIGNS



■

WISDOT/CADDS SHEET 44





NOTE:
TRAFFIC QUEUE WARNING SYSTEM REQUIRED
FOR WB FOR APPROACH SLAB WORK AS SHOWN.
BASIC QUEUE WARNING SYSTEM MAY BE USED
AFTER APPROACH SLAB WORK COMPLETED.

- LEGEND:
- TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - ⌋ SIGN ON PERMANENT SUPPORT
 - ⚡ TYPE "A" WARNING LIGHT (FLASHING)
 - ⌋ TYPE III BARRICADE WITH ATTACHED SIGN
 - × × × REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
 - ▬ CONCRETE BARRIER TEMPORARY PRECAST
 - ➡ DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ➡ CONNECTED ARROW BOARD
 - ((S)) WZ START LOCATION MARKER
 - ((E)) WZ END LOCATION MARKER
 - (S) PORTABLE TRAFFIC SENSOR (PTS)
 - [FBS] FLASHING BEACON SIGNS

- STAGE 2 TRAFFIC
- UTILIZE OUTSIDE LANE CLOSURES ON IH-94 EB AND WB TO FACILITATE STAGE 2 BRIDGE WORK.
 - MAINTAIN TRAFFIC ON THE INSIDE LANES WITH TRAFFIC CONTROL DRUMS AND CONCRETE BARRIER TEMPORARY PRECAST.
- STAGE 2 CONSTRUCTION
- REPLACE EXISTING CONCRETE PAVEMENT APPROACH SLABS.
 - PERFORM BRIDGE DECK REPAIRS.

SEE SDD 'TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM AND DSRS'

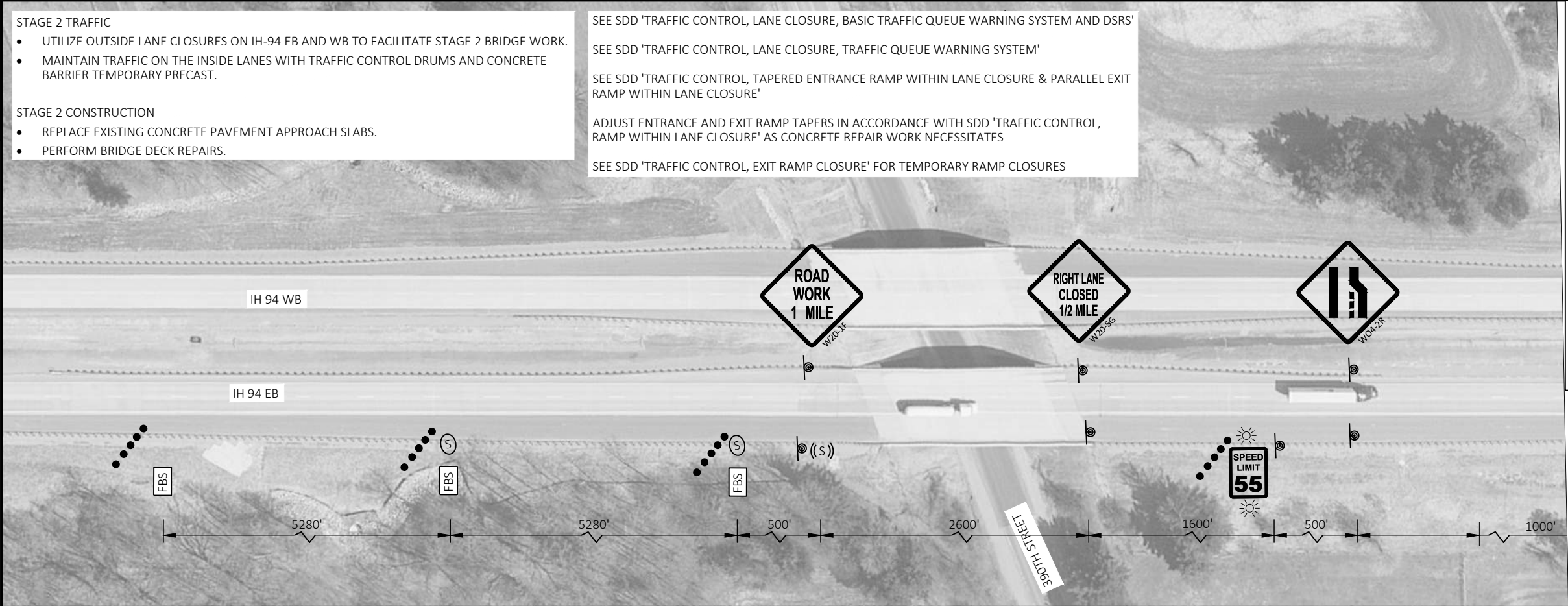
SEE SDD 'TRAFFIC CONTROL, LANE CLOSURE, TRAFFIC QUEUE WARNING SYSTEM'

SEE SDD 'TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE & PARALLEL EXIT RAMP WITHIN LANE CLOSURE'

ADJUST ENTRANCE AND EXIT RAMP TAPERS IN ACCORDANCE WITH SDD 'TRAFFIC CONTROL, RAMP WITHIN LANE CLOSURE' AS CONCRETE REPAIR WORK NECESSITATES

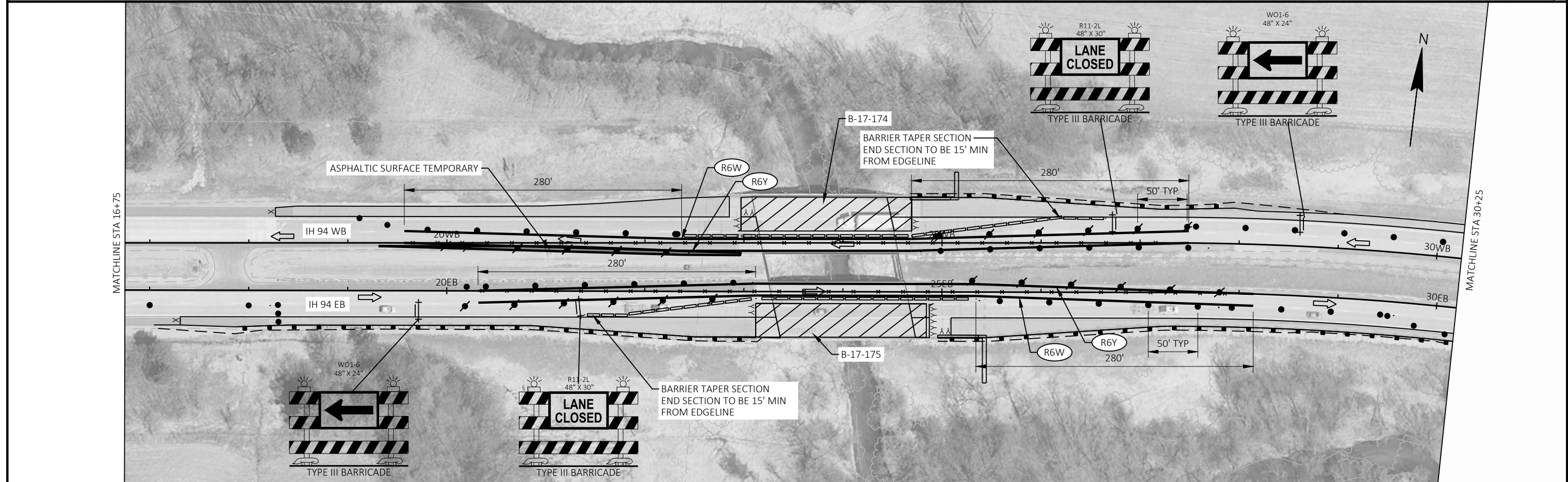
SEE SDD 'TRAFFIC CONTROL, EXIT RAMP CLOSURE' FOR TEMPORARY RAMP CLOSURES

- LEGEND:
- TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - SIGN ON PERMANENT SUPPORT
 - ⚡ TYPE "A" WARNING LIGHT (FLASHING)
 - ↑ TYPE III BARRICADE WITH ATTACHED SIGN
 - × × × REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
 - CONCRETE BARRIER TEMPORARY PRECAST
 - ➡ DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ↔ CONNECTED ARROW BOARD
 - ((s)) WZ START LOCATION MARKER
 - ((E)) WZ END LOCATION MARKER
 - (S) PORTABLE TRAFFIC SENSOR (PTS)
 - FBS FLASHING BEACON SIGNS



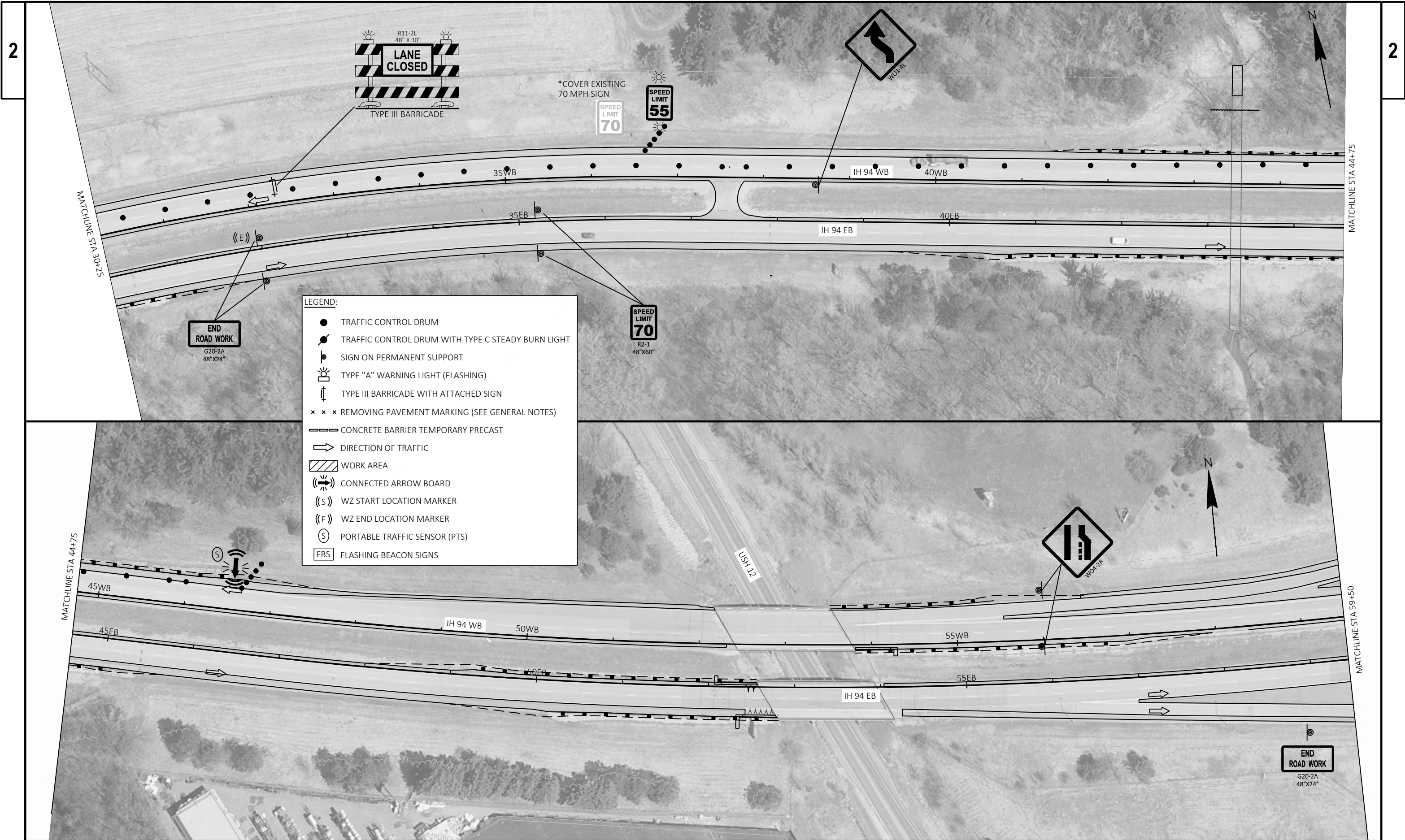
LEGEND:

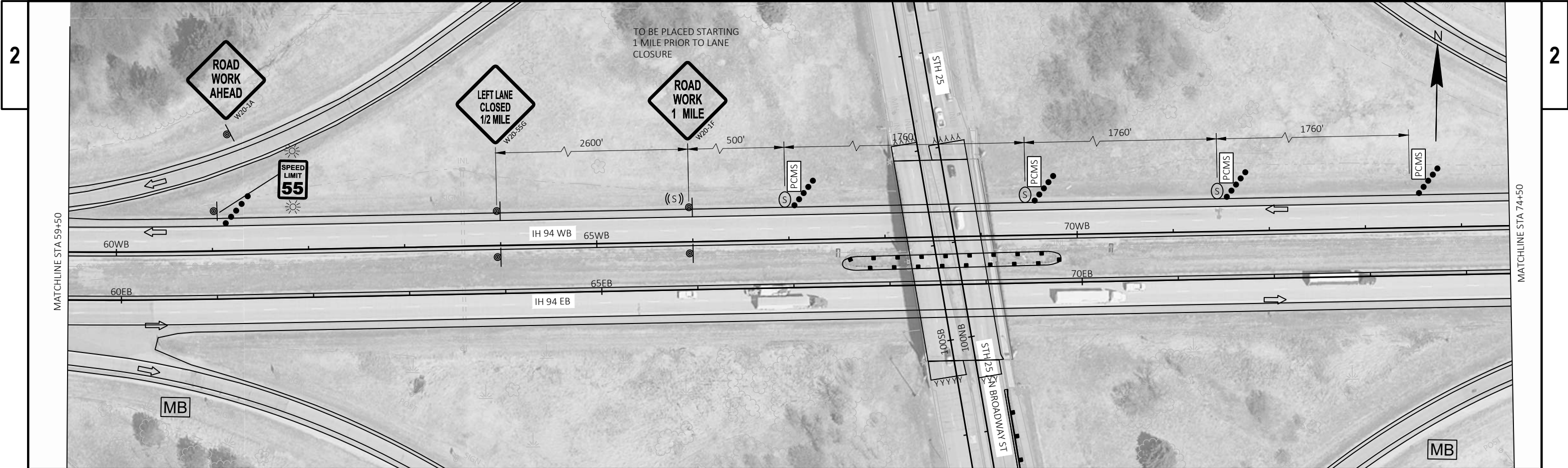
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ⌋ SIGN ON PERMANENT SUPPORT
- ☀ TYPE "A" WARNING LIGHT (FLASHING)
- ⊕ TYPE III BARRICADE WITH ATTACHED SIGN
- × × × REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- ▬▬ CONCRETE BARRIER TEMPORARY PRECAST
- ➞ DIRECTION OF TRAFFIC
- ▨ WORK AREA
- ⬆ CONNECTED ARROW BOARD
- ((S)) WZ START LOCATION MARKER
- ((E)) WZ END LOCATION MARKER
- Ⓢ PORTABLE TRAFFIC SENSOR (PTS)
- Ⓡ FLASHING BEACON SIGNS



15

WISDOT/CADDS SHEET 44





NOTE:
TRAFFIC QUEUE WARNING SYSTEM REQUIRED
FOR APPROACH SLAB WORK AS SHOWN. BASIC
QUEUE WARNING SYSTEM MAY BE USED AFTER
APPROACH SLAB WORK COMPLETED.

- LEGEND:
- TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - ▬ SIGN ON PERMANENT SUPPORT
 - ☼ TYPE "A" WARNING LIGHT (FLASHING)
 - ▬ TYPE III BARRICADE WITH ATTACHED SIGN
 - × × × REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
 - ▬ CONCRETE BARRIER TEMPORARY PRECAST
 - ➡ DIRECTION OF TRAFFIC
 - ▨ WORK AREA
 - ↔ CONNECTED ARROW BOARD
 - ((S)) WZ START LOCATION MARKER
 - ((E)) WZ END LOCATION MARKER
 - Ⓢ PORTABLE TRAFFIC SENSOR (PTS)
 - Ⓡ FLASHING BEACON SIGNS

NOTE: TRAFFIC CONTROL DEVICES SAME FOR STAGE 1 AND 3. SEE TRAFFIC CONTROL TYPICAL SECTIONS FOR DRUM PLACEMENTS

SEE SDD TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM AND DSRs

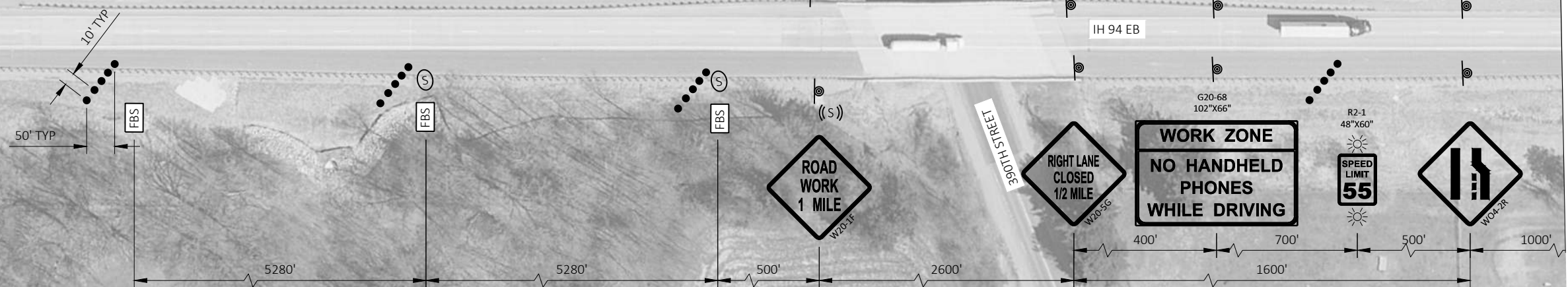
SEE SDD TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE & PARALLEL EXIT RAMP WITHIN LANE CLOSURE

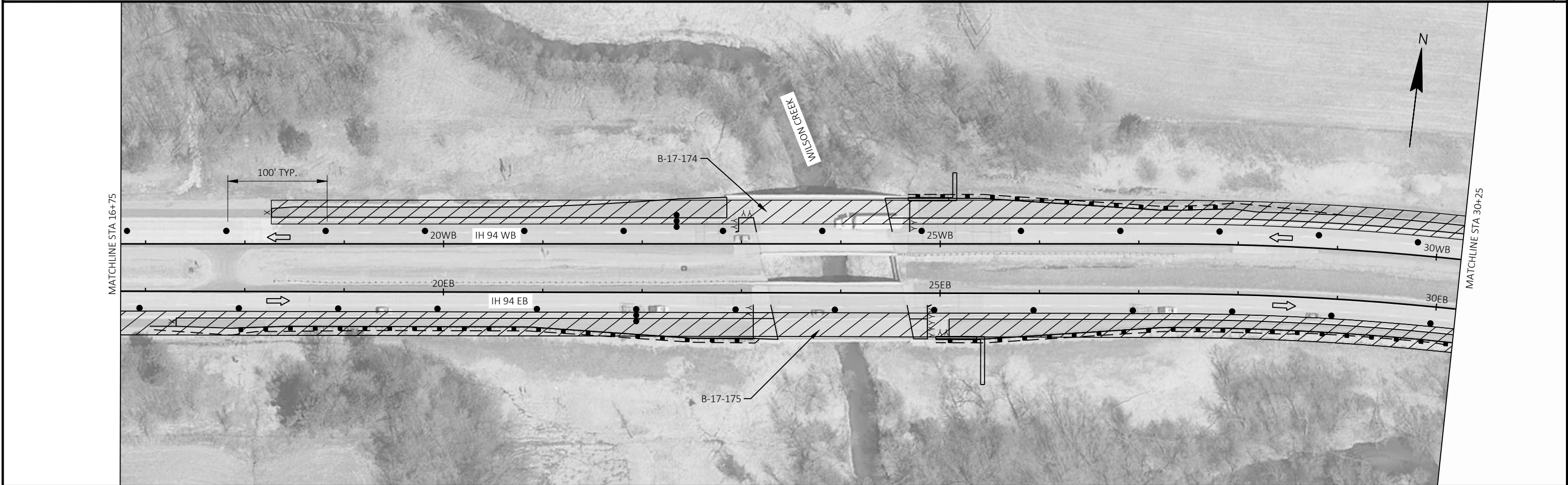
ADJUST ENTRANCE AND EXIT RAMP TAPERS IN ACCORDANCE WITH SDD 'TRAFFIC CONTROL, RAMP WITHIN LANE CLOSURE' AS CONCRETE REPAIR WORK NECESSITATES

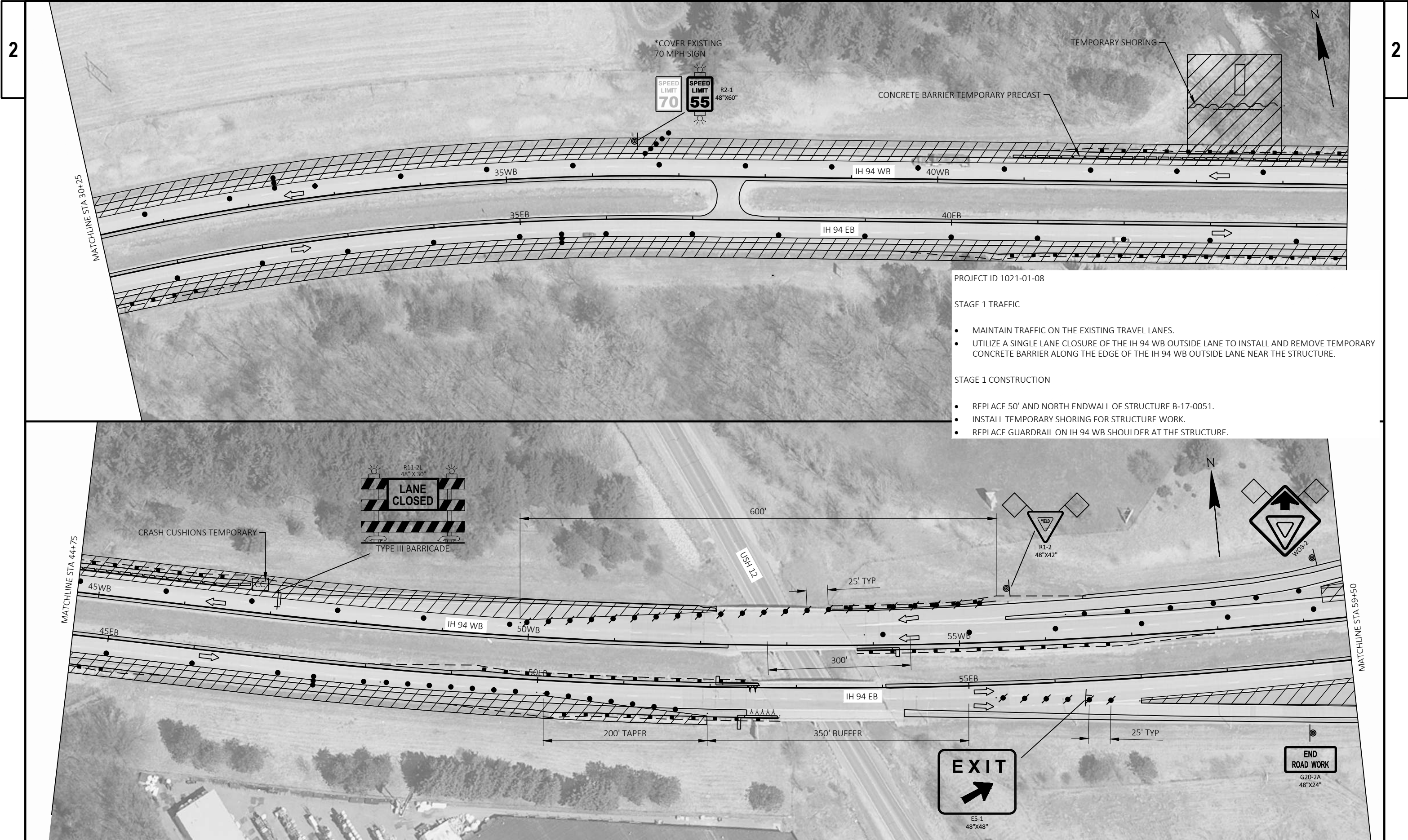
SEE SDD 'TRAFFIC CONTROL, EXIT RAMP CLOSURE' FOR TEMPORARY RAMP CLOSURES

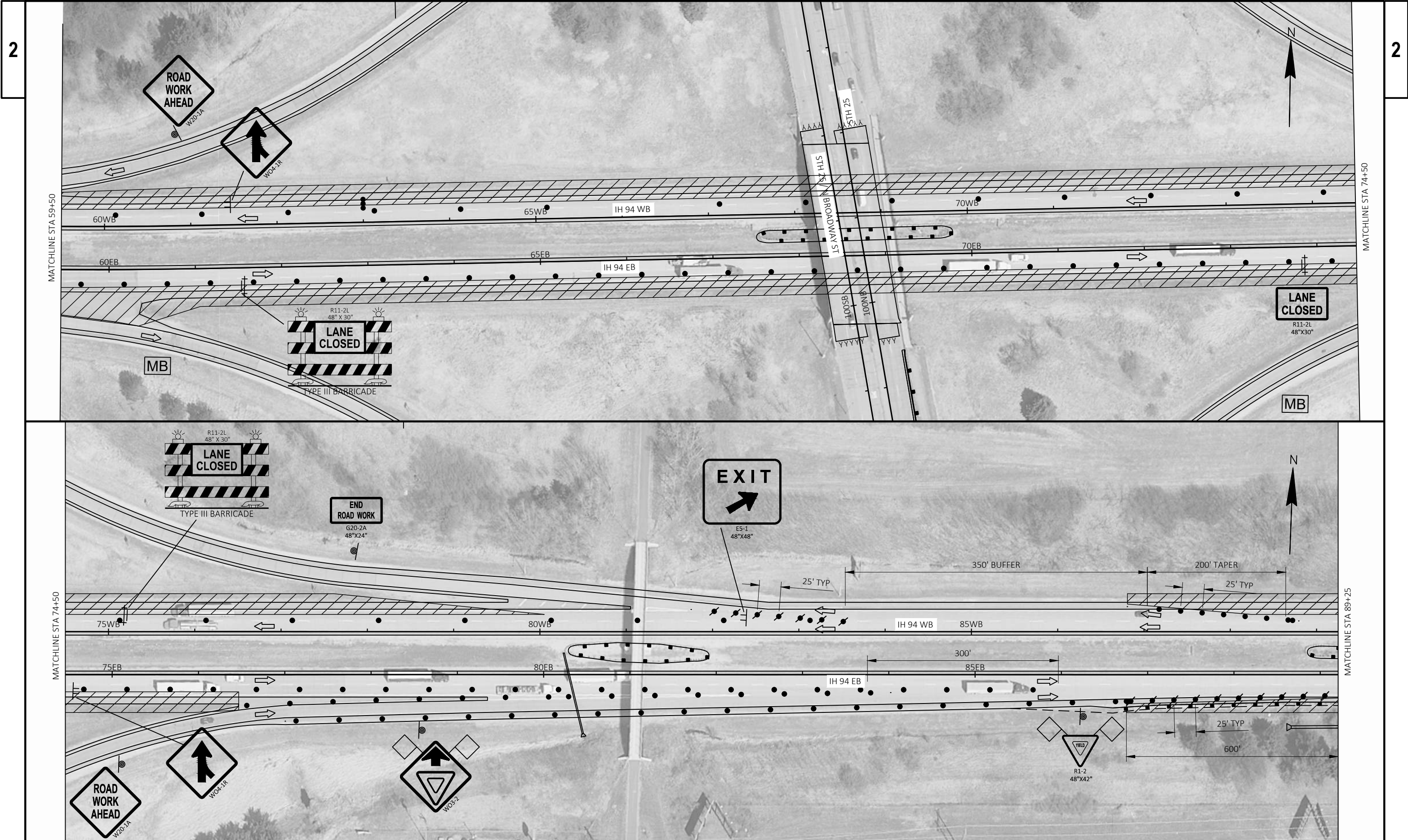
- STAGE 1 TRAFFIC
- UTILIZE DAILY IH 94 WB AND IH 94 EB OUTSIDE LANE CLOSURES TO FACILITATE STAGE 1 WORK.
 - MAINTAIN TRAFFIC ON THE INSIDE LANE WITH TRAFFIC CONTROL DRUMS DELINEATING THE WORK ZONE.
- STAGE 1 CONSTRUCTION
- MILL AND PAVE THE IH 94 WB AND IH 94 EB OUTSIDE SHOULDERS THROUGHOUT THE PROJECT.
 - REPLACE THE GUARDRAIL ALONG THE OUTSIDE SHOULDER.
 - PLACE SHOULDER BASE AGGREGATE.
 - CLEAN DITCHES AND CULVERTS FOR IMPROVED DRAINAGE.
 - REPAIR EMBANKMENTS.

- STAGE 3 TRAFFIC
- UTILIZE DAILY IH 94 WB AND IH 94 EB OUTSIDE LANE CLOSURES TO FACILITATE STAGE 3 WORK.
 - MAINTAIN TRAFFIC ON THE INSIDE LANE AND SHIFTED APPROXIMATELY 3 FEET ONTO THE MEDIAN SHOULDER WITH TRAFFIC CONTROL DRUMS DELINEATING THE WORK ZONE.
- STAGE 3 CONSTRUCTION
- REPAIR AND REPLACE SPOT AREAS OF CONCRETE IN THE IH 94 WB AND IH 94 EB OUTSIDE LANES.
 - DRUMS TO BE REMOVED FROM DRIVING LANES WHEN WORK ZONE IS NOT ACTIVE.

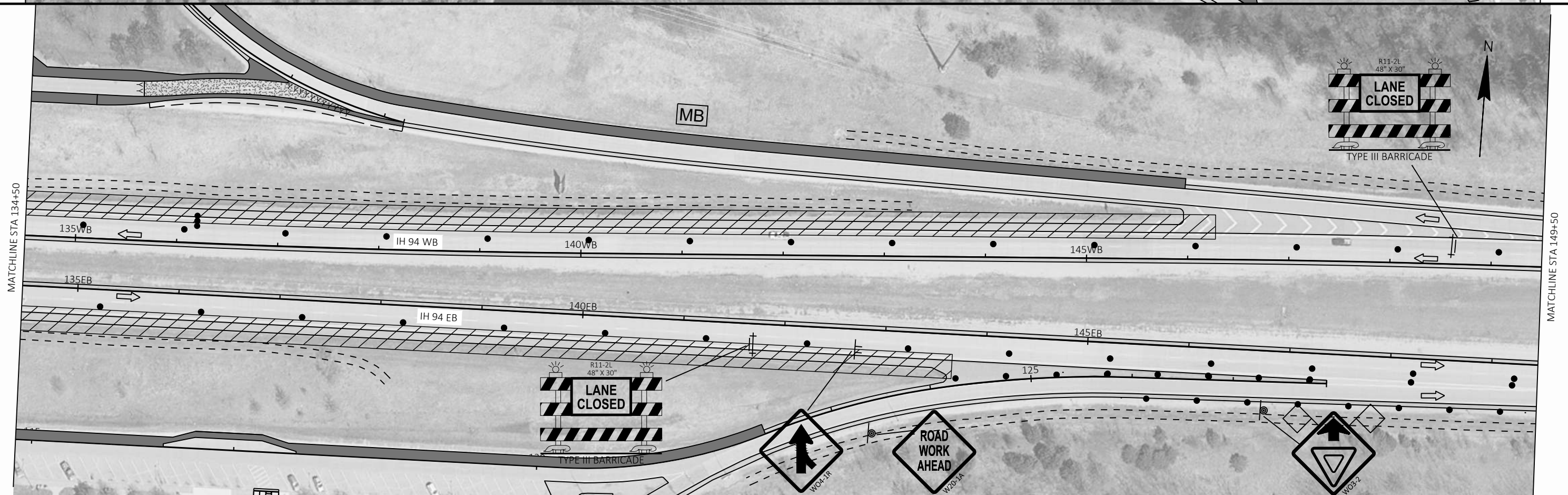
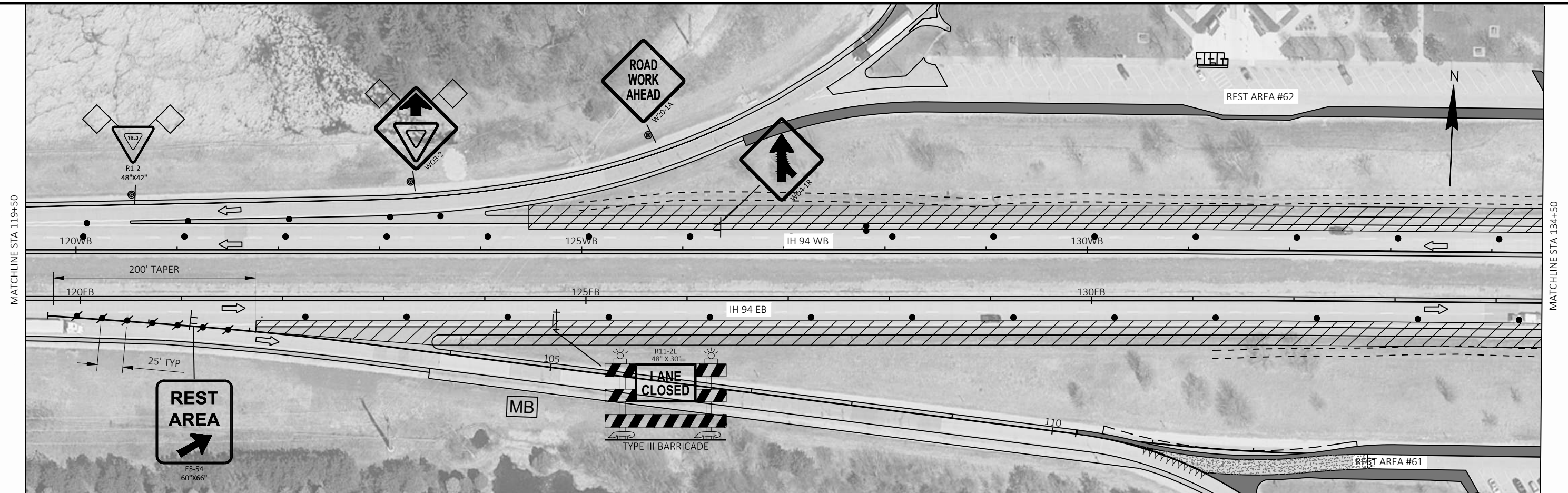












PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

TRAFFIC CONTROL IH-94 - STAGES 1 AND 3

SHEET

123

E

FILE NAME: N:\PDS\VC3D\10200533\SHEETS\025101-TC_MAINLINE.DWG
LAYOUT NAME: S1-06

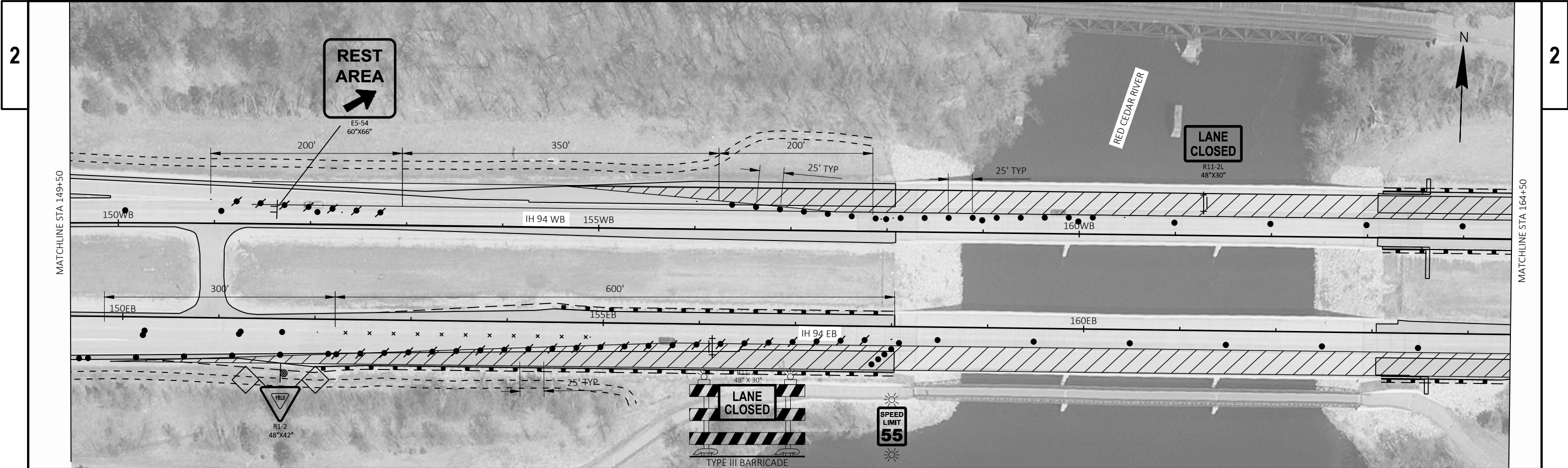
PLOT DATE: 8/28/2026 11:22 AM

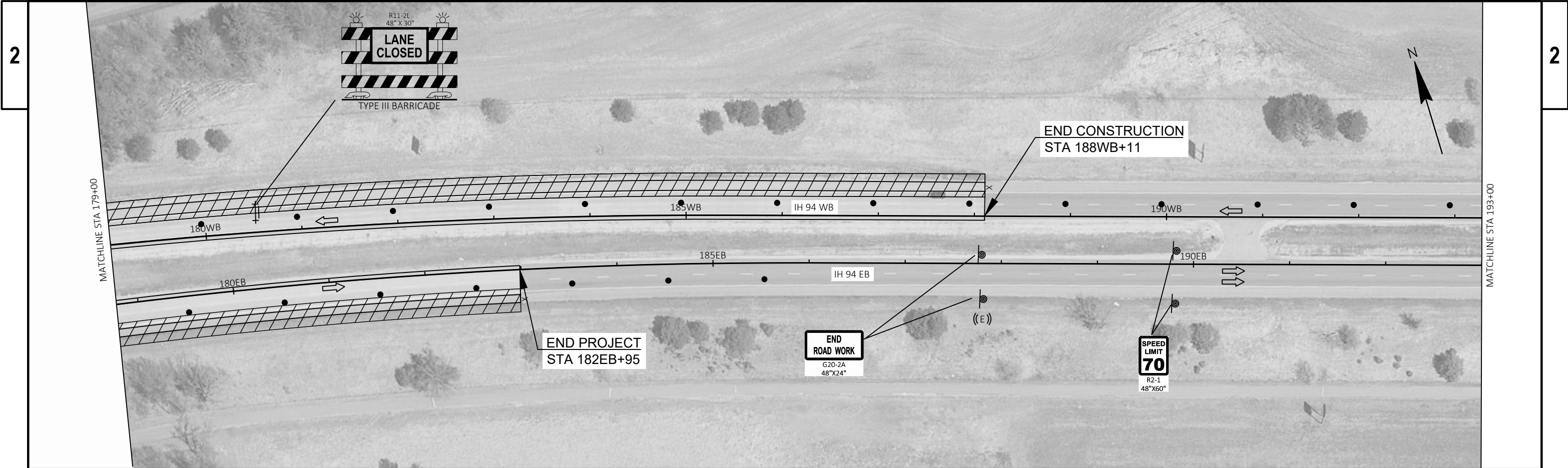
PLOT BY: ED OCHS

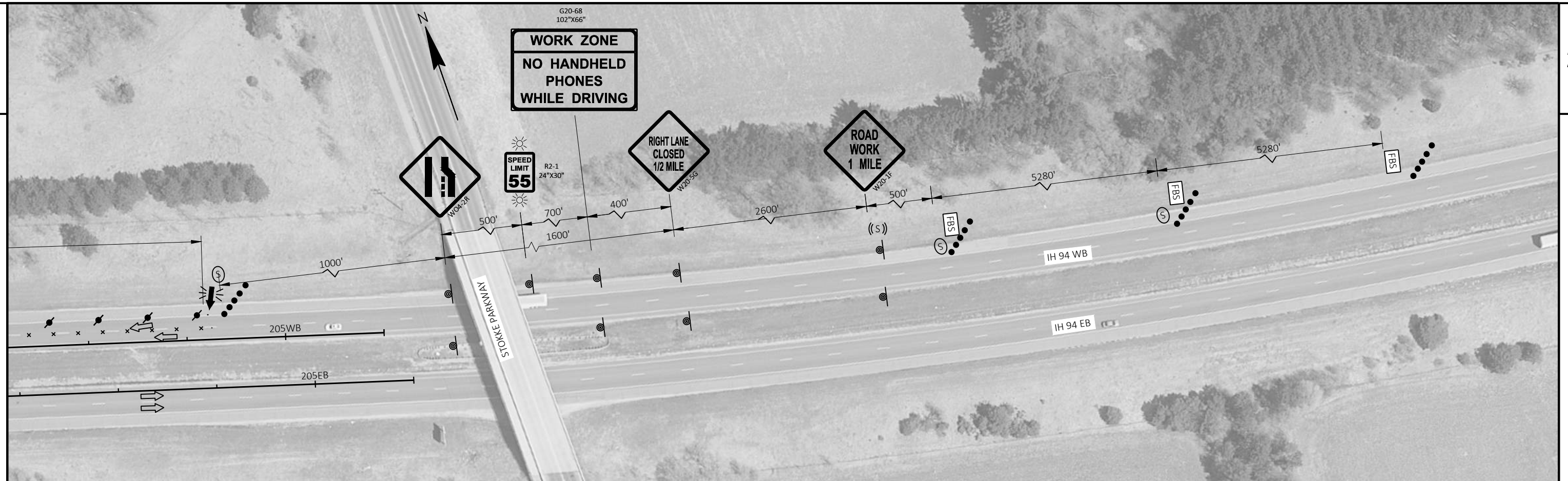
PLOT NAME:

PLOT SCALE: 1 IN:100 FT

WISDOT/CADDs SHEET 44







NOTE: TRAFFIC CONTROL DEVICES SAME FOR STAGE 1 AND 3. SEE TRAFFIC CONTROL TYPICAL SECTIONS FOR DRUM PLACEMENTS

SEE SDD TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM AND DSRS

SEE SDD TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE & PARALLEL EXIT RAMP WITHIN LANE CLOSURE

ADJUST ENTRANCE AND EXIT RAMP TAPERS IN ACCORDANCE WITH SDD 'TRAFFIC CONTROL, RAMP WITHIN LANE CLOSURE' AS CONCRETE REPAIR WORK NECESSITATES

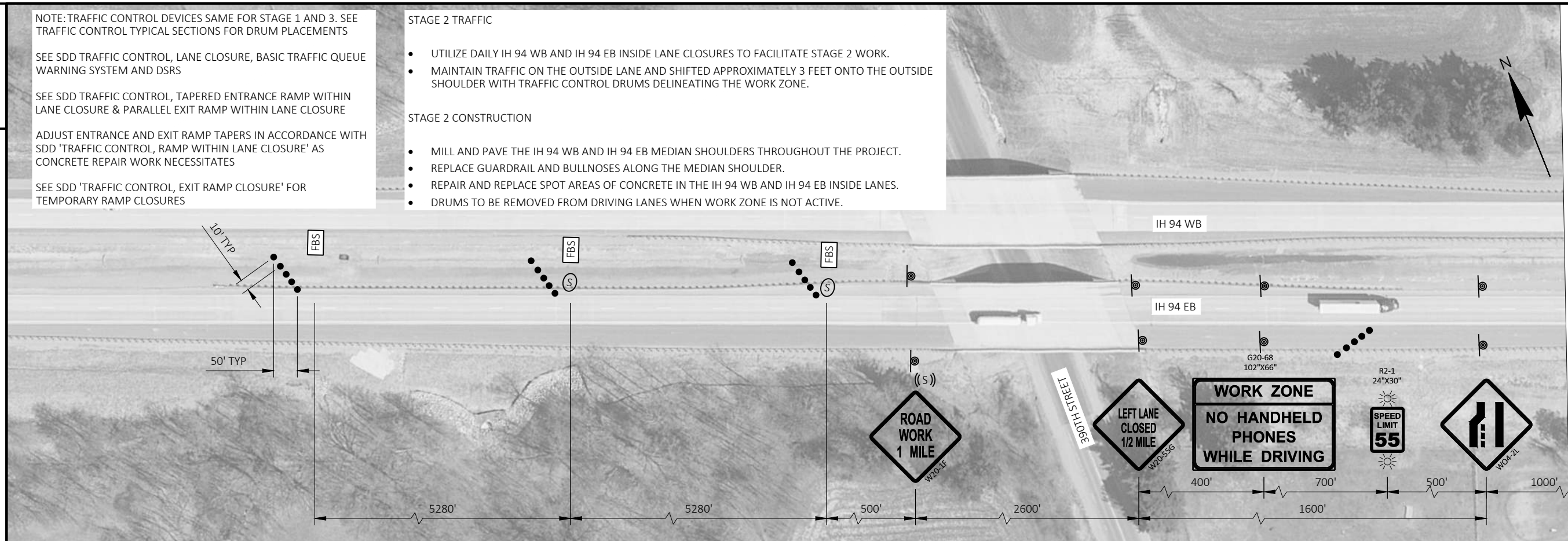
SEE SDD 'TRAFFIC CONTROL, EXIT RAMP CLOSURE' FOR TEMPORARY RAMP CLOSURES

STAGE 2 TRAFFIC

- UTILIZE DAILY IH 94 WB AND IH 94 EB INSIDE LANE CLOSURES TO FACILITATE STAGE 2 WORK.
- MAINTAIN TRAFFIC ON THE OUTSIDE LANE AND SHIFTED APPROXIMATELY 3 FEET ONTO THE OUTSIDE SHOULDER WITH TRAFFIC CONTROL DRUMS DELINEATING THE WORK ZONE.

STAGE 2 CONSTRUCTION

- MILL AND PAVE THE IH 94 WB AND IH 94 EB MEDIAN SHOULDERS THROUGHOUT THE PROJECT.
- REPLACE GUARDRAIL AND BULLNOSES ALONG THE MEDIAN SHOULDER.
- REPAIR AND REPLACE SPOT AREAS OF CONCRETE IN THE IH 94 WB AND IH 94 EB INSIDE LANES.
- DRUMS TO BE REMOVED FROM DRIVING LANES WHEN WORK ZONE IS NOT ACTIVE.



PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

TRAFFIC CONTROL IH-94 - STAGE 2

SHEET

127

E

FILE NAME : N:\PDS\VC3D\10200533\SHEETS\025101-TC_MAINLINE.DWG
LAYOUT NAME - S2-01

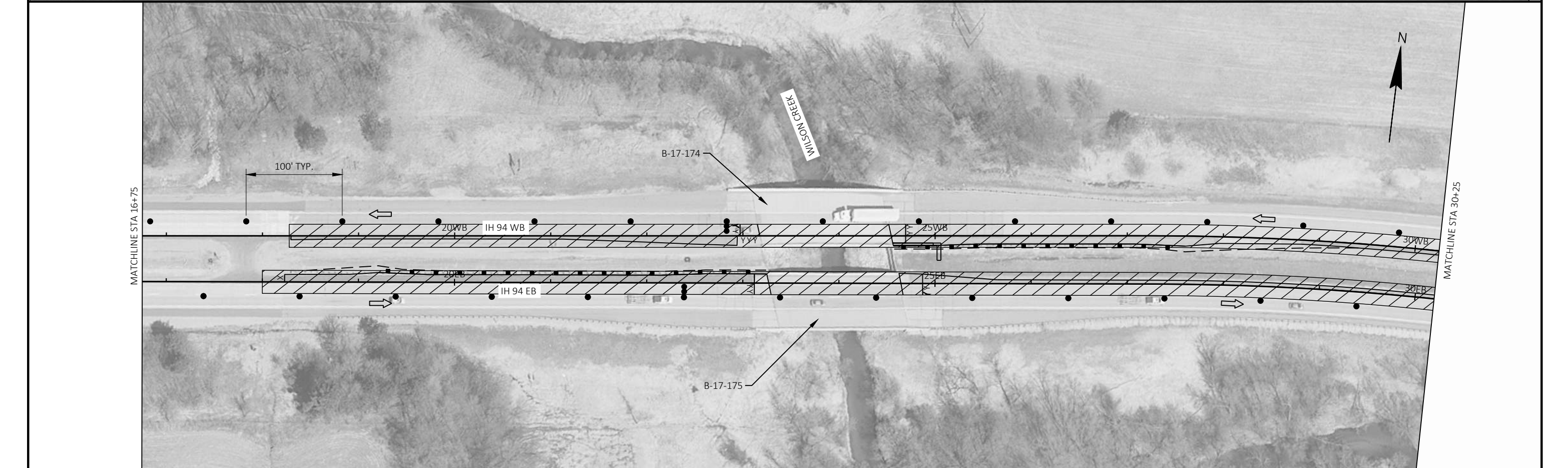
PLOT DATE : 8/28/2026 11:22 AM

PLOT BY : ED OCHS

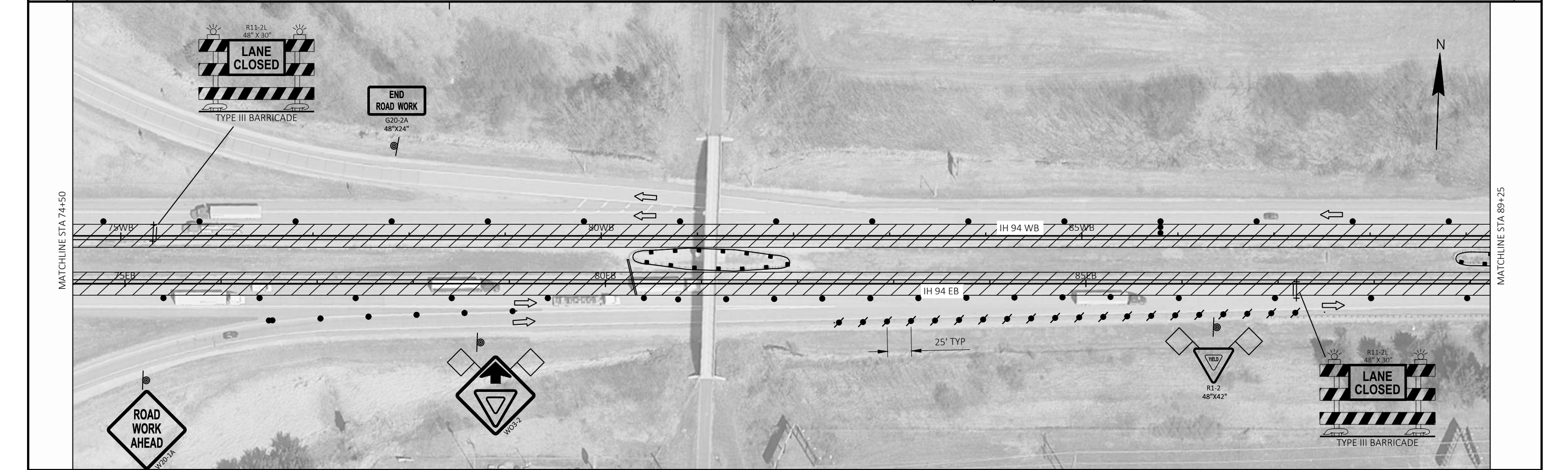
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 44





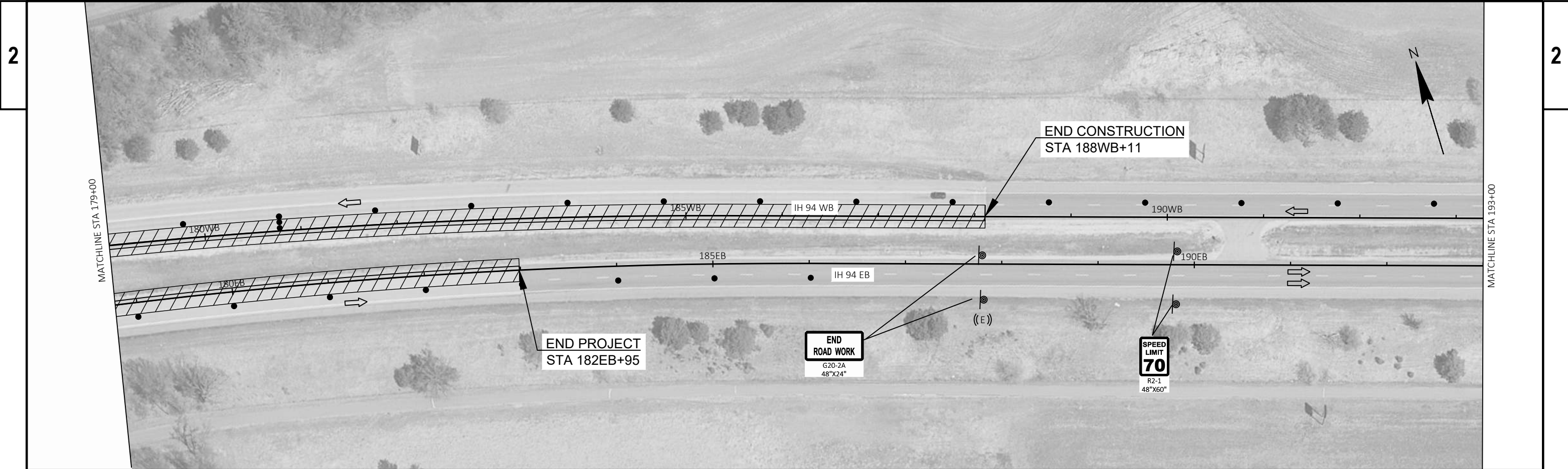


PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	TRAFFIC CONTROL IH-94 - STAGE 2	SHEET 130	E
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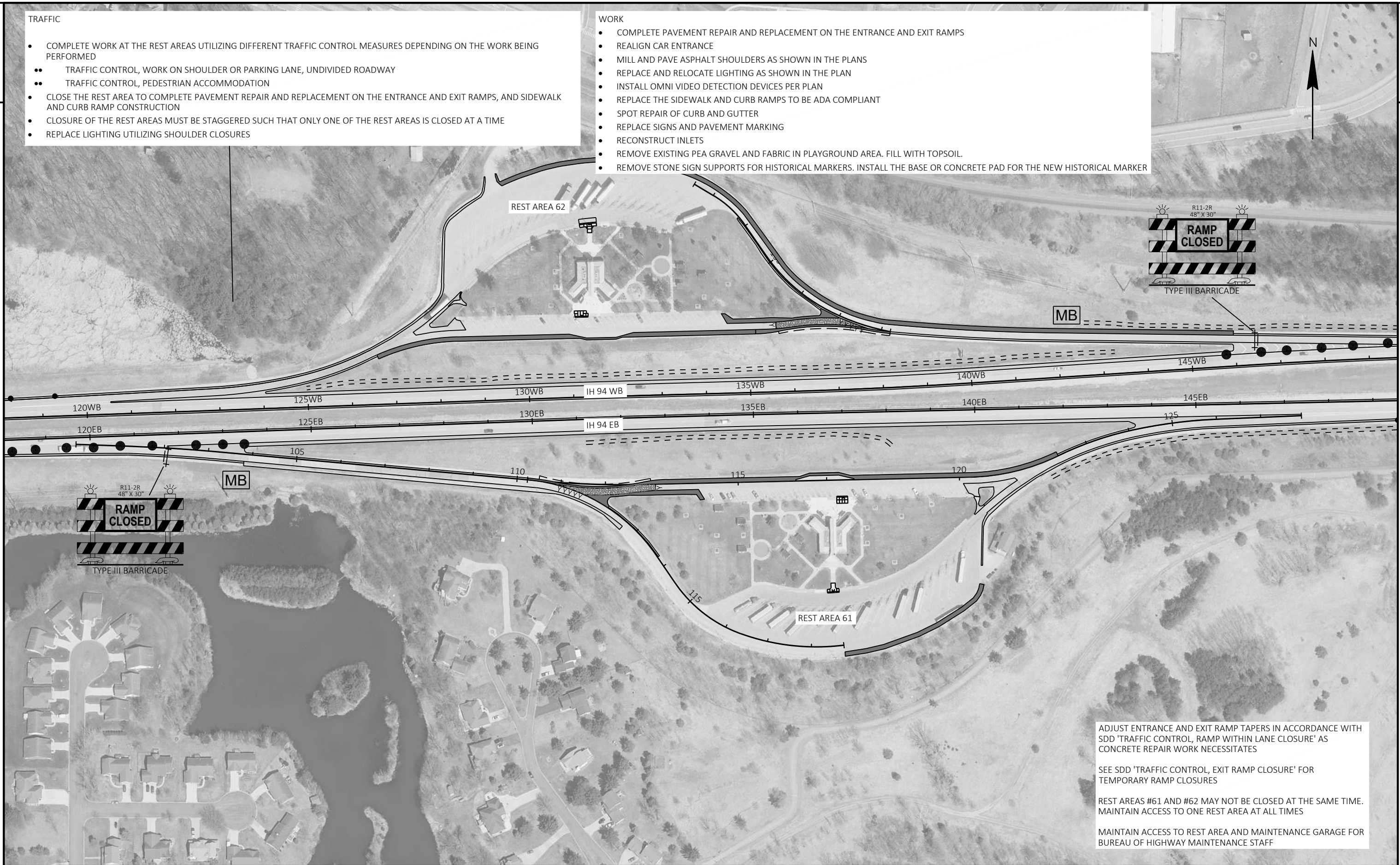


TRAFFIC

- COMPLETE WORK AT THE REST AREAS UTILIZING DIFFERENT TRAFFIC CONTROL MEASURES DEPENDING ON THE WORK BEING PERFORMED
 - TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
 - TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
- CLOSE THE REST AREA TO COMPLETE PAVEMENT REPAIR AND REPLACEMENT ON THE ENTRANCE AND EXIT RAMP, AND SIDEWALK AND CURB RAMP CONSTRUCTION
- CLOSURE OF THE REST AREAS MUST BE STAGGERED SUCH THAT ONLY ONE OF THE REST AREAS IS CLOSED AT A TIME
- REPLACE LIGHTING UTILIZING SHOULDER CLOSURES

WORK

- COMPLETE PAVEMENT REPAIR AND REPLACEMENT ON THE ENTRANCE AND EXIT RAMP
- REALIGN CAR ENTRANCE
- MILL AND PAVE ASPHALT SHOULDERS AS SHOWN IN THE PLANS
- REPLACE AND RELOCATE LIGHTING AS SHOWN IN THE PLAN
- INSTALL OMNI VIDEO DETECTION DEVICES PER PLAN
- REPLACE THE SIDEWALK AND CURB RAMPS TO BE ADA COMPLIANT
- SPOT REPAIR OF CURB AND GUTTER
- REPLACE SIGNS AND PAVEMENT MARKING
- RECONSTRUCT INLETS
- REMOVE EXISTING PEA GRAVEL AND FABRIC IN PLAYGROUND AREA. FILL WITH TOPSOIL.
- REMOVE STONE SIGN SUPPORTS FOR HISTORICAL MARKERS. INSTALL THE BASE OR CONCRETE PAD FOR THE NEW HISTORICAL MARKER



ADJUST ENTRANCE AND EXIT RAMP TAPERS IN ACCORDANCE WITH SDD 'TRAFFIC CONTROL, RAMP WITHIN LANE CLOSURE' AS CONCRETE REPAIR WORK NECESSITATES

SEE SDD 'TRAFFIC CONTROL, EXIT RAMP CLOSURE' FOR TEMPORARY RAMP CLOSURES

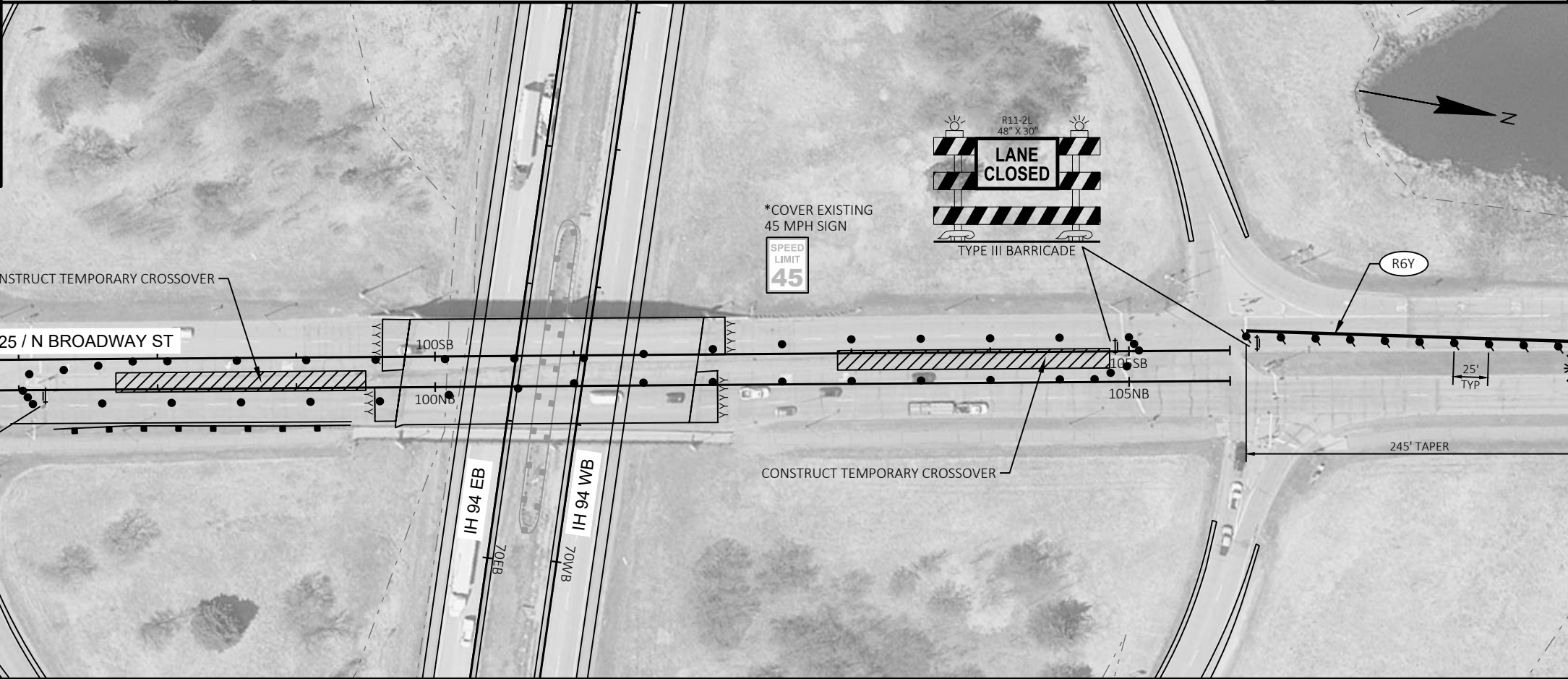
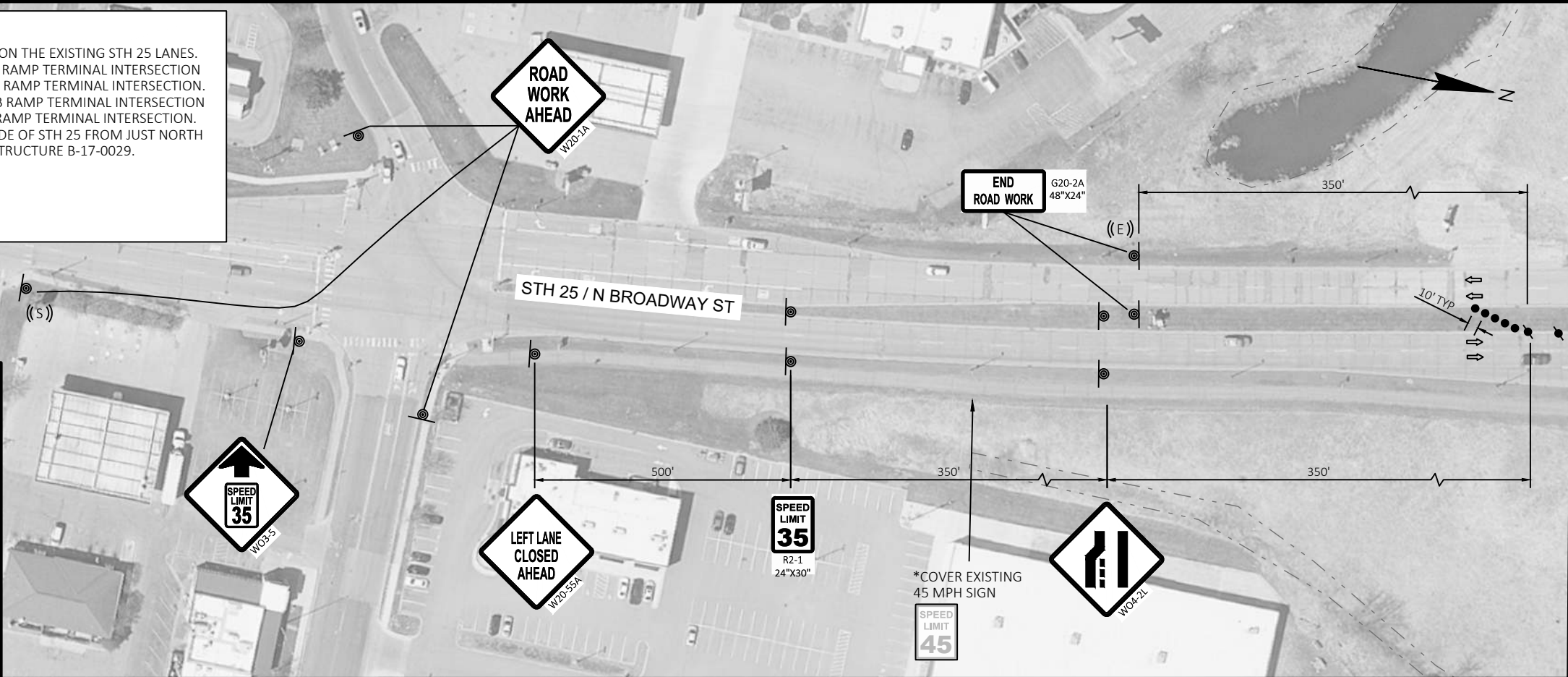
REST AREAS #61 AND #62 MAY NOT BE CLOSED AT THE SAME TIME. MAINTAIN ACCESS TO ONE REST AREA AT ALL TIMES

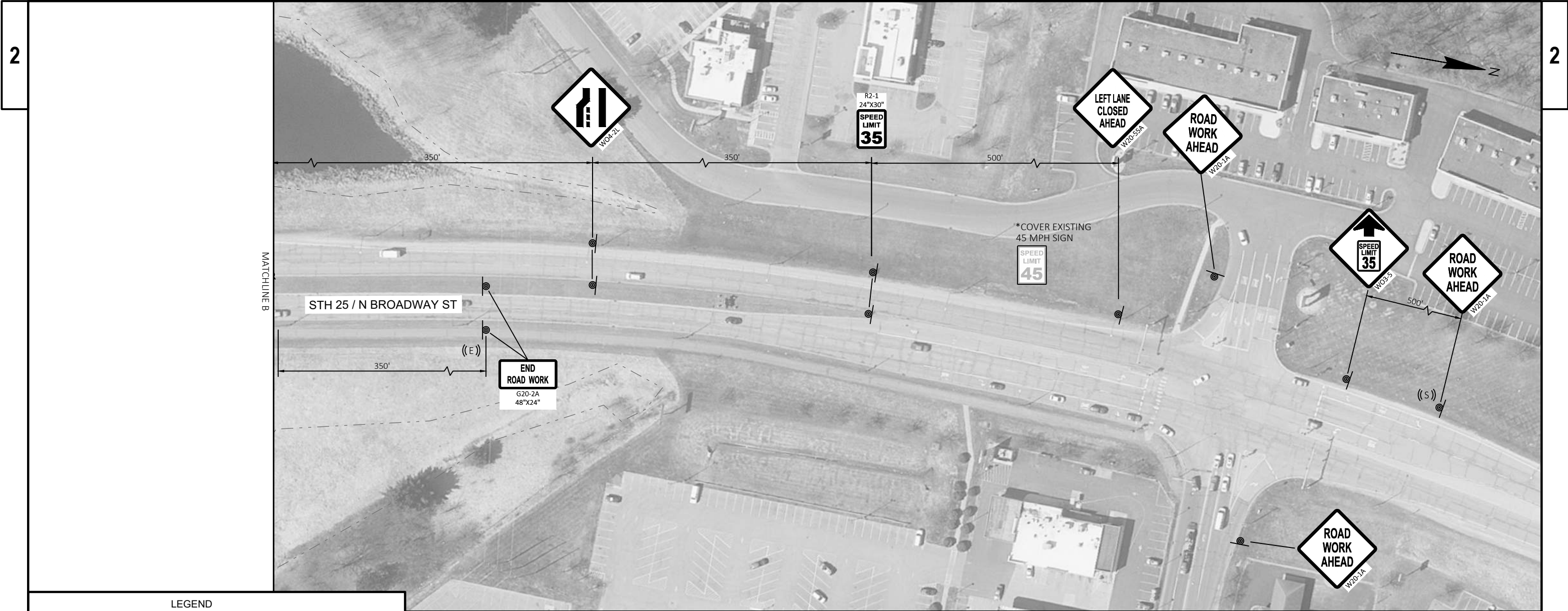
MAINTAIN ACCESS TO REST AREA AND MAINTENANCE GARAGE FOR BUREAU OF HIGHWAY MAINTENANCE STAFF

2	STAGE 1 TRAFFIC • MAINTAIN STH 25 NB AND SB TRAFFIC IN A CONTINUOUS SINGLE LANE CLOSURE ON THE EXISTING STH 25 LANES. • TRANSITION FROM TWO STH 25 NB LANES TO ONE LANE SOUTH OF THE IH 94 EB RAMP TERMINAL INTERSECTION FOLLOWING THE EXISTING OUTSIDE LANE OF STH 25 NB THROUGH THE IH 94 WB RAMP TERMINAL INTERSECTION. • TRANSITION FROM TWO STH 25 SB LANES TO ONE LANE NORTH OF THE IH 94 WB RAMP TERMINAL INTERSECTION FOLLOWING THE EXISTING OUTSIDE LANE OF STH 25 SB THROUGH THE IH 94 EB RAMP TERMINAL INTERSECTION. • MAINTAIN PEDESTRIAN TRAFFIC ON THE EXISTING SIDEWALK ALONG THE EAST SIDE OF STH 25 FROM JUST NORTH OF THE IH 94 EB ONRAMP TO THE NORTH PROJECT LIMITS, INCLUDING ACROSS STRUCTURE B-17-0029. STAGE 1 CONSTRUCTION • REMOVE MEDIAN ISLAND ON STH 25 TO CONSTRUCT TEMPORARY CROSSOVER.
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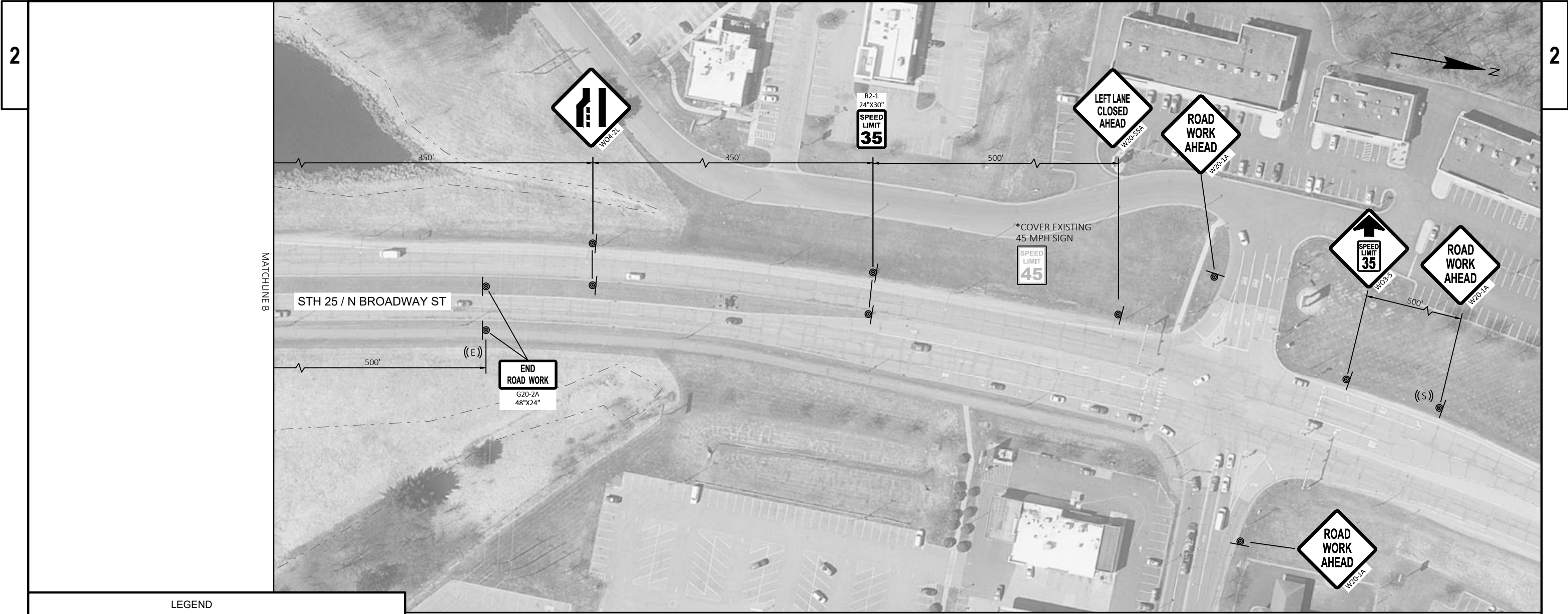
USE THE FOLLOWING SDD'S
TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LEFT LANE CLOSURE

LEGEND	
	TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY PEDESTRIAN RAMP
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (YELLOW)
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (DOUBLE YELLOW)
	WZ START LOCATION MARKER
	WZ END LOCATION MARKER





LEGEND	
	TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY PEDESTRIAN RAMP
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (YELLOW)
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (DOUBLE YELLOW)
	WZ START LOCATION MARKER
	WZ END LOCATION MARKER

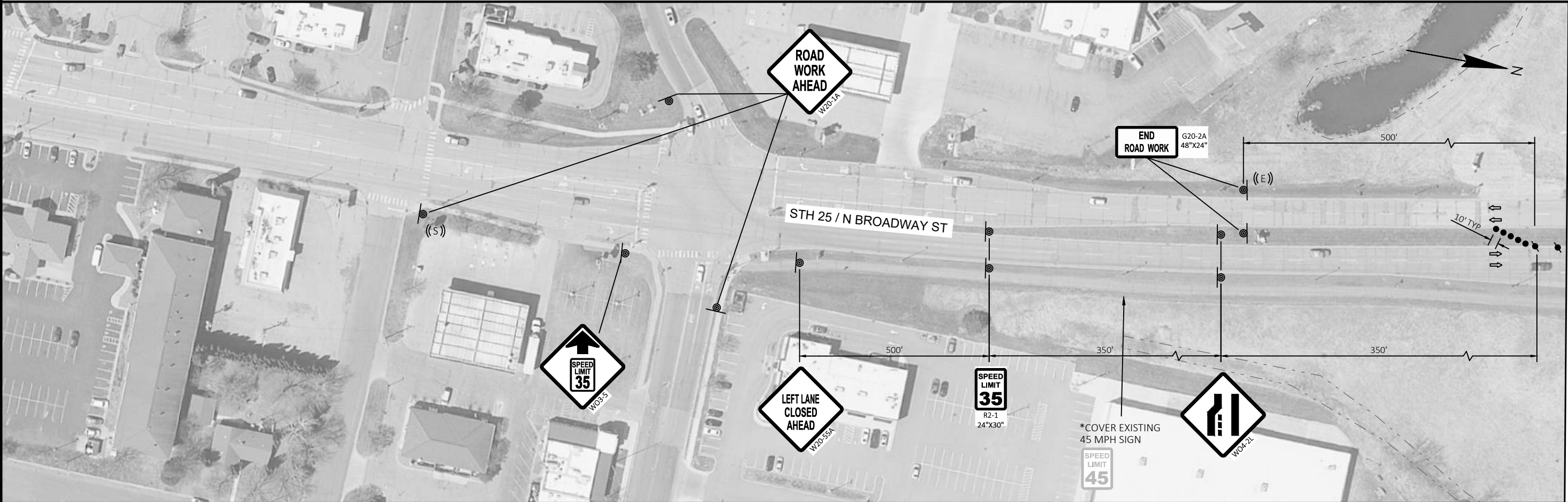


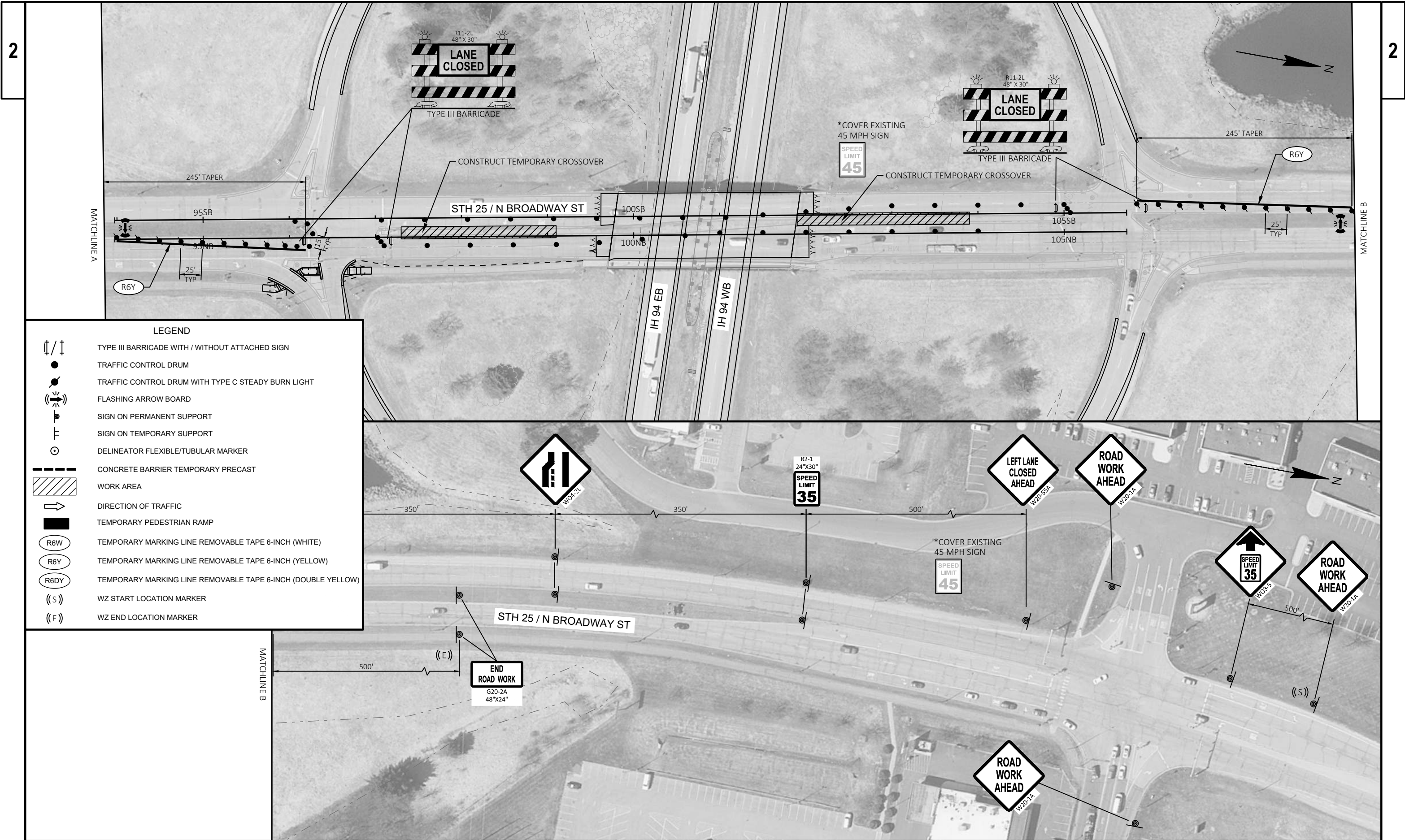
LEGEND	
	TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY PEDESTRIAN RAMP
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (YELLOW)
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (DOUBLE YELLOW)
	WZ START LOCATION MARKER
	WZ END LOCATION MARKER

- STAGE 3 TRAFFIC
- MAINTAIN STH 25 NB AND SB TRAFFIC IN A CONTINUOUS SINGLE LANE CLOSURE ON THE EXISTING STH 25 LANES.
 - TRANSITION FROM TWO STH 25 NB LANES TO ONE LANE SOUTH OF THE IH 94 EB RAMP TERMINAL INTERSECTION FOLLOWING THE EXISTING OUTSIDE LANE OF STH 25 NB THROUGH THE IH 94 WB RAMP TERMINAL INTERSECTION.
 - TRANSITION FROM TWO STH 25 SB LANES TO ONE LANE NORTH OF THE IH 94 WB RAMP TERMINAL INTERSECTION FOLLOWING THE EXISTING OUTSIDE LANE OF STH 25 SB THROUGH THE IH 94 EB RAMP TERMINAL INTERSECTION.
 - MAINTAIN PEDESTRIAN TRAFFIC ON THE EXISTING SIDEWALK ALONG THE EAST SIDE OF STH 25 FROM JUST NORTH OF THE IH 94 EB ONRAMP TO THE NORTH PROJECT LIMITS, INCLUDING ACROSS STRUCTURE B-17-0029.
- STAGE 3 CONSTRUCTION
- REMOVE MEDIAN ISLAND ON STH 25 TO CONSTRUCT TEMPORARY CROSSOVER.

USE THE FOLLOWING SDD'S"
TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY
TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LEFT LANE CLOSURE

LEGEND	
	TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY PEDESTRIAN RAMP
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (YELLOW)
	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (DOUBLE YELLOW)
	WZ START LOCATION MARKER
	WZ END LOCATION MARKER





STAGE 4 TRAFFIC

- MAINTAIN STH 25 NB AND SB TRAFFIC IN A CONTINUOUS SINGLE LANE CLOSURE ON THE EXISTING STH 25 SB LANES.
- TRANSITION FROM TWO STH 25 SB LANES TO ONE LANE NORTH OF THE IH 94 WB RAMP TERMINAL INTERSECTION FOLLOWING THE EXISTING OUTSIDE LANE OF STH 25 SB THROUGH THE IH 94 EB RAMP TERMINAL INTERSECTION.
- TRANSITION FROM TWO STH 25 NB LANES TO ONE LANE SOUTH OF THE IH 94 EB RAMP TERMINAL INTERSECTION AND THEN CROSS OVER TO THE EXISTING MEDIAN LANE OF STH 25 SB AT THE IH 94 EB RAMP TERMINAL INTERSECTION THROUGH THE IH 94 WB RAMP TERMINAL INTERSECTION.
- TEMPORARILY CLOSE THE IH 94 EB ON RAMP FOR CURB RAMP CONSTRUCTION. OPEN THE IH 94 EB ON RAMP WHILE CONCRETE IS CURING. DETOUR IH 94 EB TRAFFIC ON USH 12.

STAGE 4A PEDESTRIAN TRAFFIC

- MAINTAIN PEDESTRIAN TRAFFIC ON THE EXISTING SIDEWALK ALONG THE EAST SIDE OF STH 25.
- INSTALL TEMPORARY PEDESTRIAN ACCOMMODATIONS FOR REPLACING THE PEDESTRIAN RAMPS AT THE IH 94 EB ONRAMP AND AT THE STRUCTURE FOR STAGE 2B.

STAGE 4A CONSTRUCTION

- REMOVE MEDIAN ISLAND ON STH 25 TO CONSTRUCT TEMPORARY CROSSOVER.
- COMPLETE THE STRUCTURE REHAB WORK ON THE STH 25 NB LANES OF BRIDGE STRUCTURE B-17-0029.
- REPLACE THE CONCRETE APPROACH SLABS ON THE STH 25 NB LANES.
- RECONSTRUCT THE PEDESTRIAN RAMPS AT THE IH 94 EB ONRAMP TO BE ADA COMPLIANT.

STAGE 4B PEDESTRIAN TRAFFIC

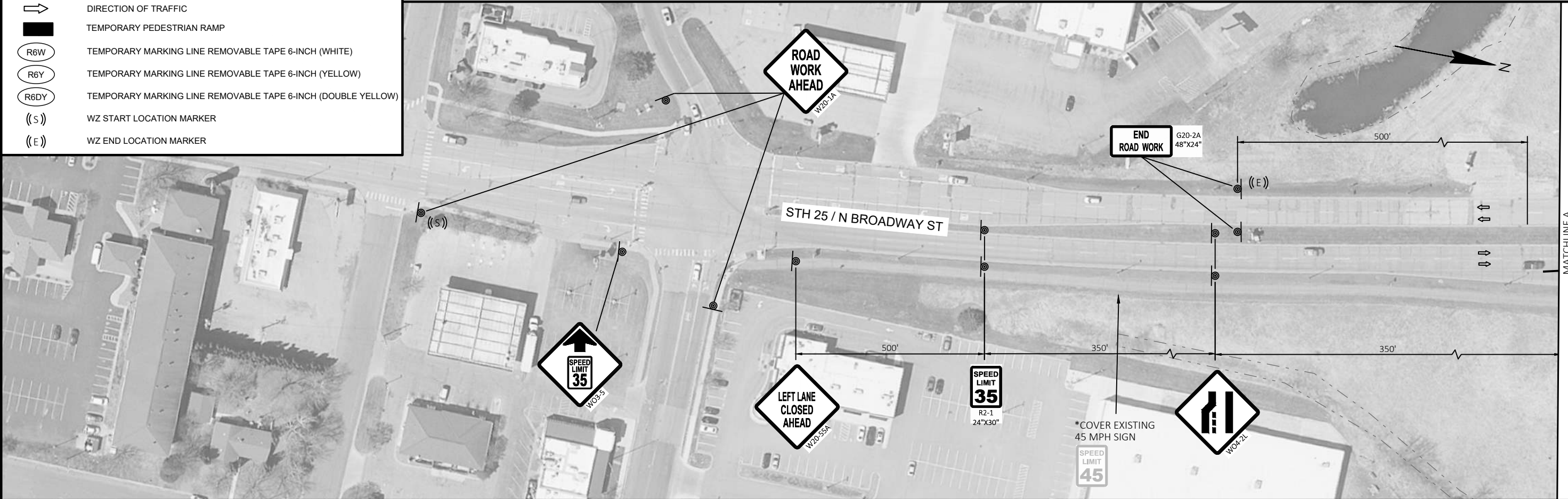
- MAINTAIN PEDESTRIAN TRAFFIC ON THE EXISTING SIDEWALK ALONG THE EAST SIDE OF STH 25 TO THE SOUTH AND NORTH OF STRUCTURE B-17-0029.
- INSTALL TEMPORARY PEDESTRIAN ACCOMMODATIONS IN THE CLOSED STH 25 NB LANES ACROSS STRUCTURE B-17-0029 WITH TEMPORARY PEDESTRIAN BARRICADE ALONG THE WEST SIDE AND TEMPORARY CONCRETE BARRIER ALONG THE EAST SIDE.

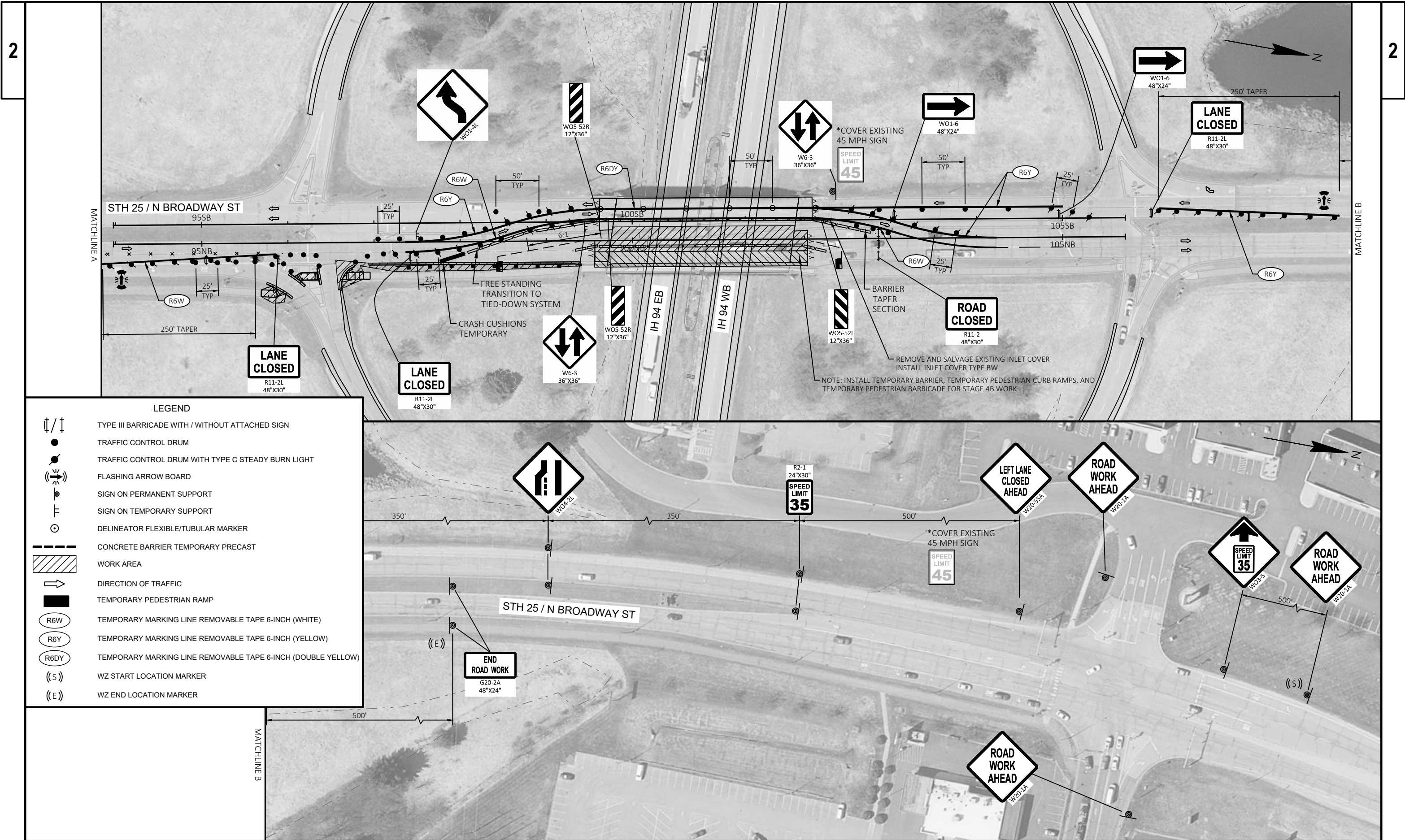
STAGE 4B CONSTRUCTION

- COMPLETE THE STRUCTURE REHAB WORK ALONG THE SIDEWALK ON THE EAST SIDE STH 25 BRIDGE STRUCTURE B-17-0029.
- RECONSTRUCT THE PEDESTRIAN RAMPS AT THE IH 94 EB ONRAMP TO BE ADA COMPLIANT.
- INSTALL GUARDRAIL AFTER PEDESTRIAN ACCESS HAS BEEN REESTABLISHED.

LEGEND

- TYPE III BARRICADE WITH / WITHOUT ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- TEMPORARY PEDESTRIAN RAMP
- TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)
- TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (YELLOW)
- TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (DOUBLE YELLOW)
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER





STAGE 5 TRAFFIC

- MAINTAIN STH 25 NB AND SB TRAFFIC IN A CONTINUOUS SINGLE LANE CLOSURE ON THE EXISTING STH 25 LANES.
- TRANSITION FROM TWO STH 25 NB LANES TO ONE LANE SOUTH OF THE IH 94 EB RAMP TERMINAL INTERSECTION FOLLOWING THE EXISTING OUTSIDE LANE OF STH 25 NB THROUGH THE IH 94 WB RAMP TERMINAL INTERSECTION.
- TRANSITION FROM TWO STH 25 SB LANES TO ONE LANE NORTH OF THE IH 94 WB RAMP TERMINAL INTERSECTION FOLLOWING THE EXISTING OUTSIDE LANE OF STH 25 SB THROUGH THE IH 94 EB RAMP TERMINAL INTERSECTION.
- MAINTAIN PEDESTRIAN TRAFFIC ON THE EXISTING SIDEWALK ALONG THE EAST SIDE OF STH 25 FROM JUST NORTH OF THE IH 94 EB ONRAMP TO THE NORTH PROJECT LIMITS, INCLUDING ACROSS STRUCTURE B-17-0029.

STAGE 5 CONSTRUCTION

- REMOVE TEMPORARY MEDIAN CROSSOVER AND RECONSTRUCT STH 25 MEDIAN.

USE THE FOLLOWING SDD'S"

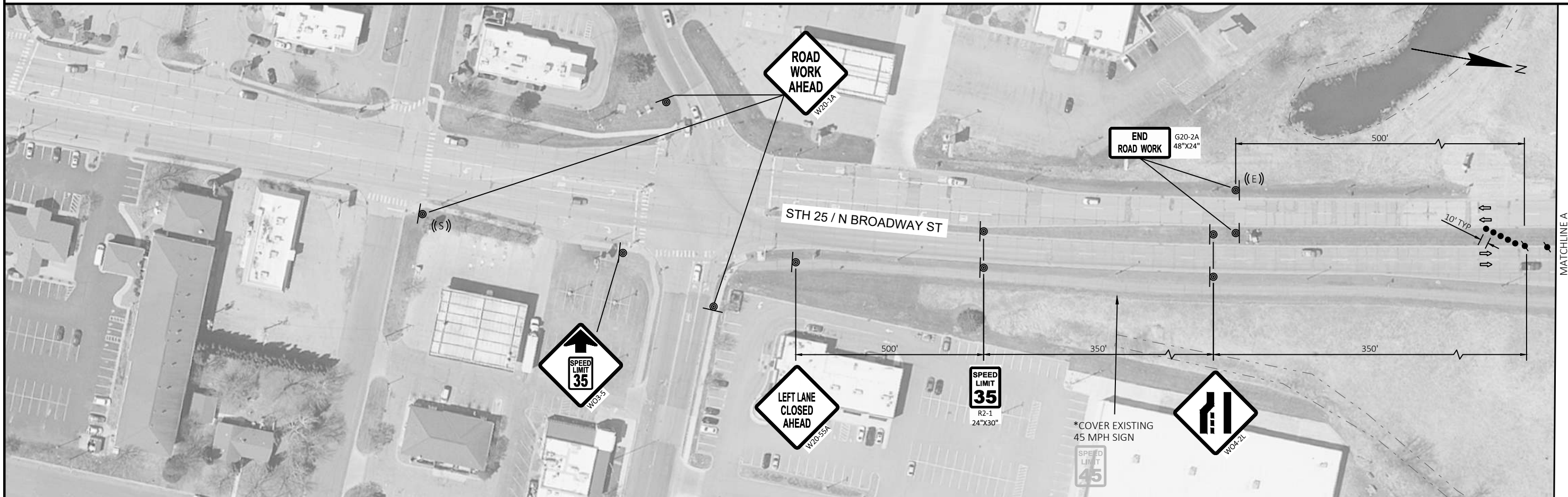
TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

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

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LEFT LANE CLOSURE

LEGEND

	TYPE II / III BARRICADE
	TYPE II / III BARRICADE WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY PEDESTRIAN RAMP
	TEMPORARY PAVEMENT MARKING LINE 6-INCH (WHITE)
	TEMPORARY PAVEMENT MARKING LINE 6-INCH (YELLOW)
	TEMPORARY PAVEMENT MARKING LINE 6-INCH (DOUBLE YELLOW)
	WZ START LOCATION MARKER
	WZ END LOCATION MARKER



PROJECT NO: 1020-05-63 / 1021-01-78

HWY: IH 94

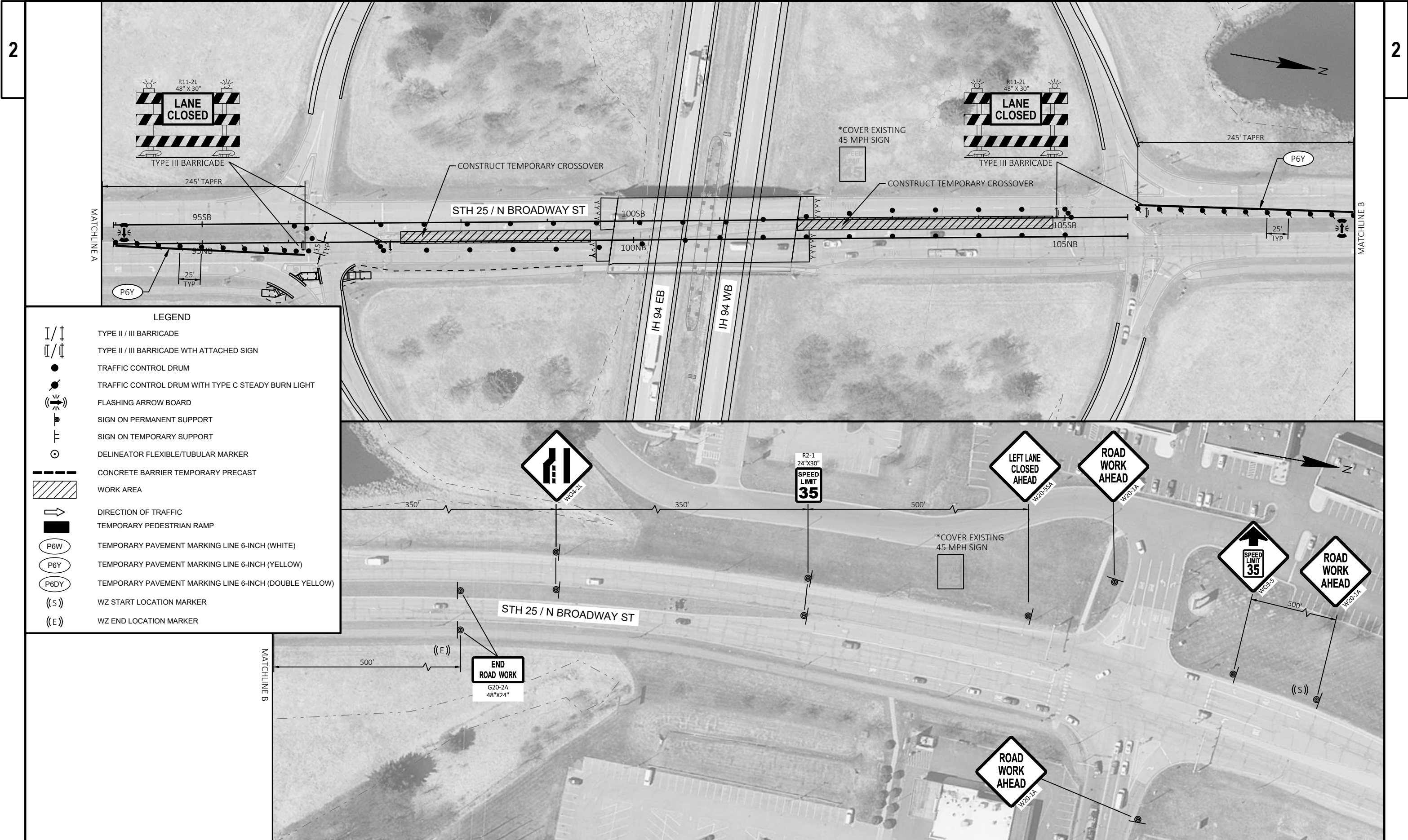
COUNTY: DUNN

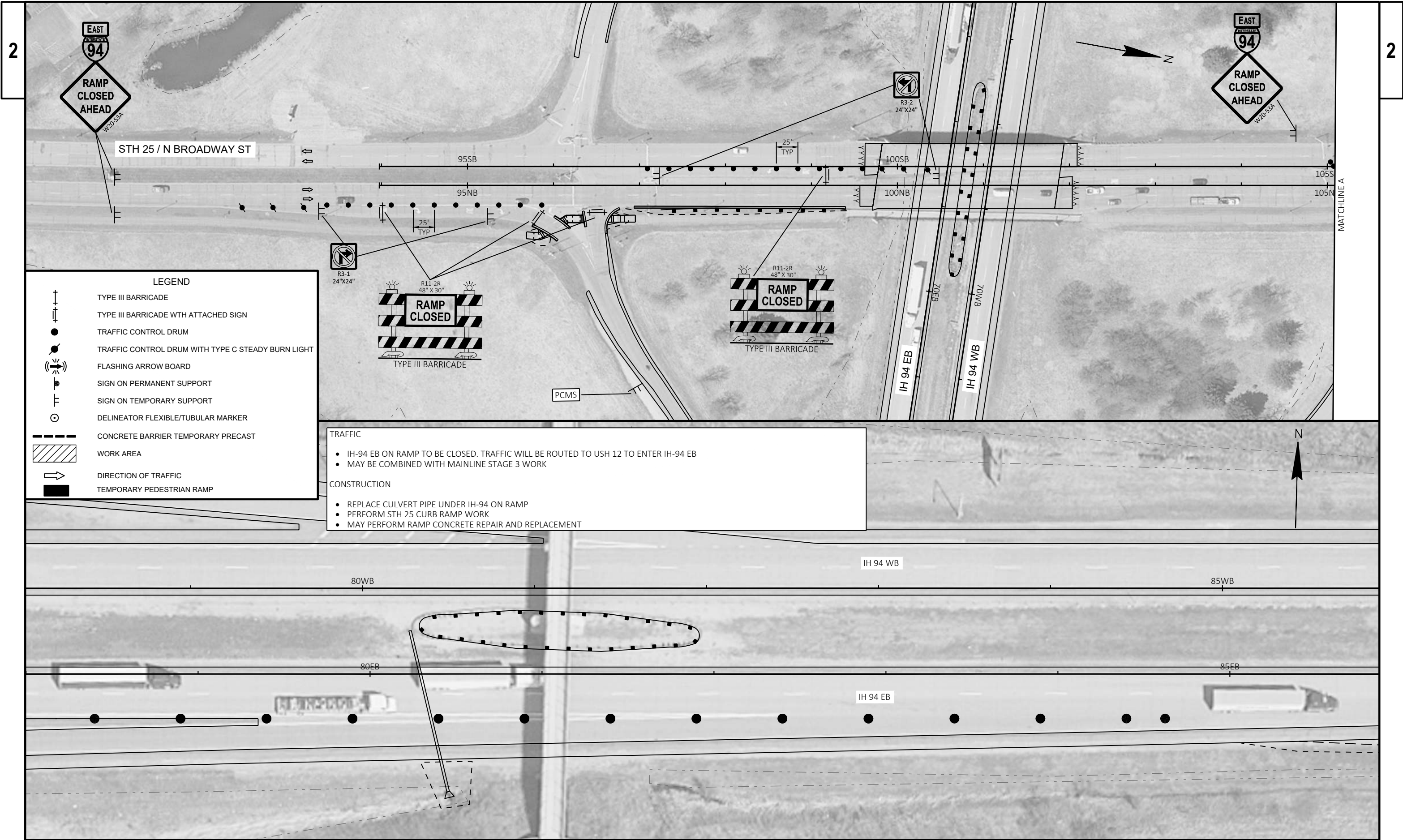
TRAFFIC CONTROL STH 25 - STAGE 5

SHEET

145

E

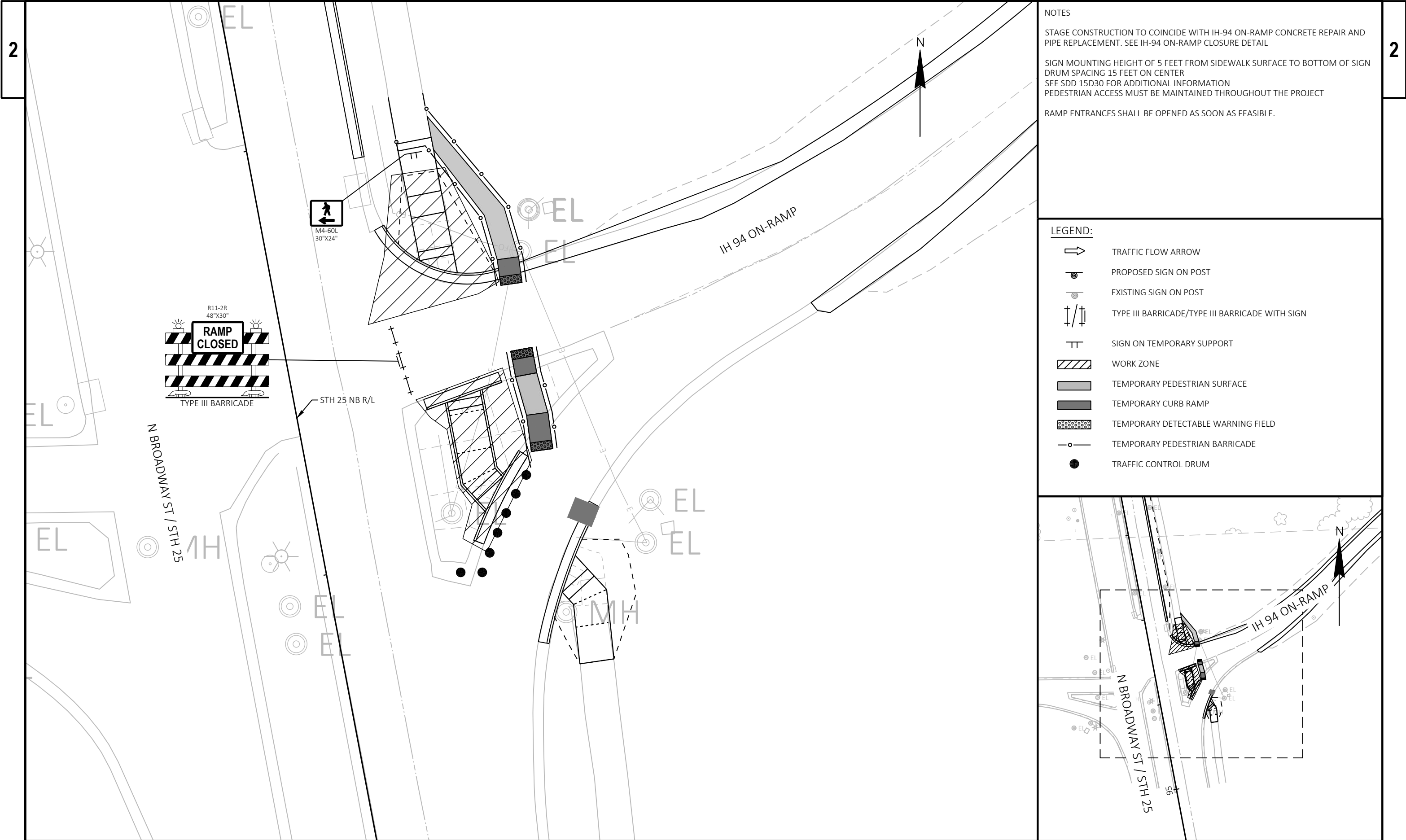






STAGE 1 TRAFFIC

- CLOSE WILSON STREET OVER STRUCTURE B-17-0040.



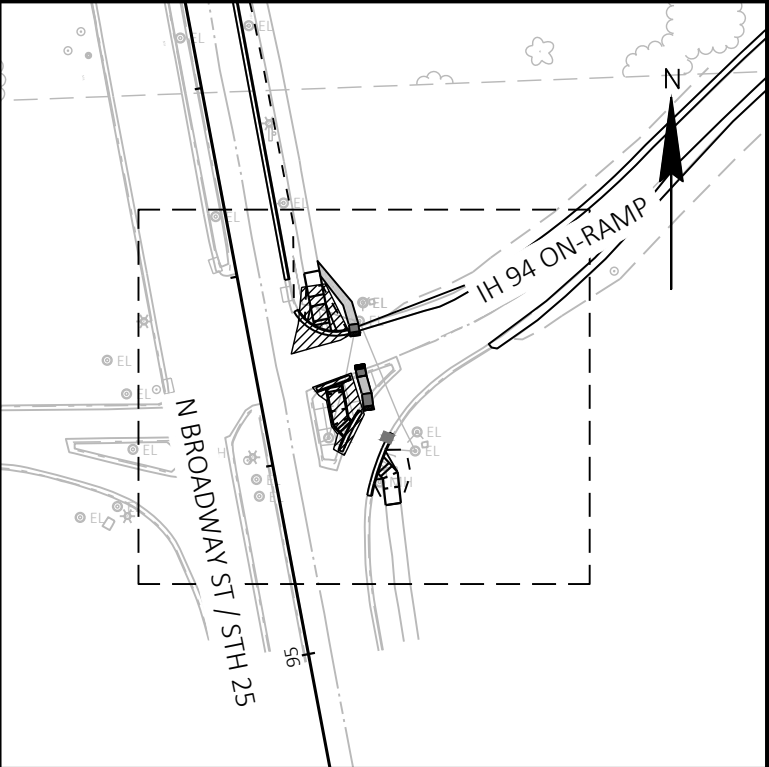
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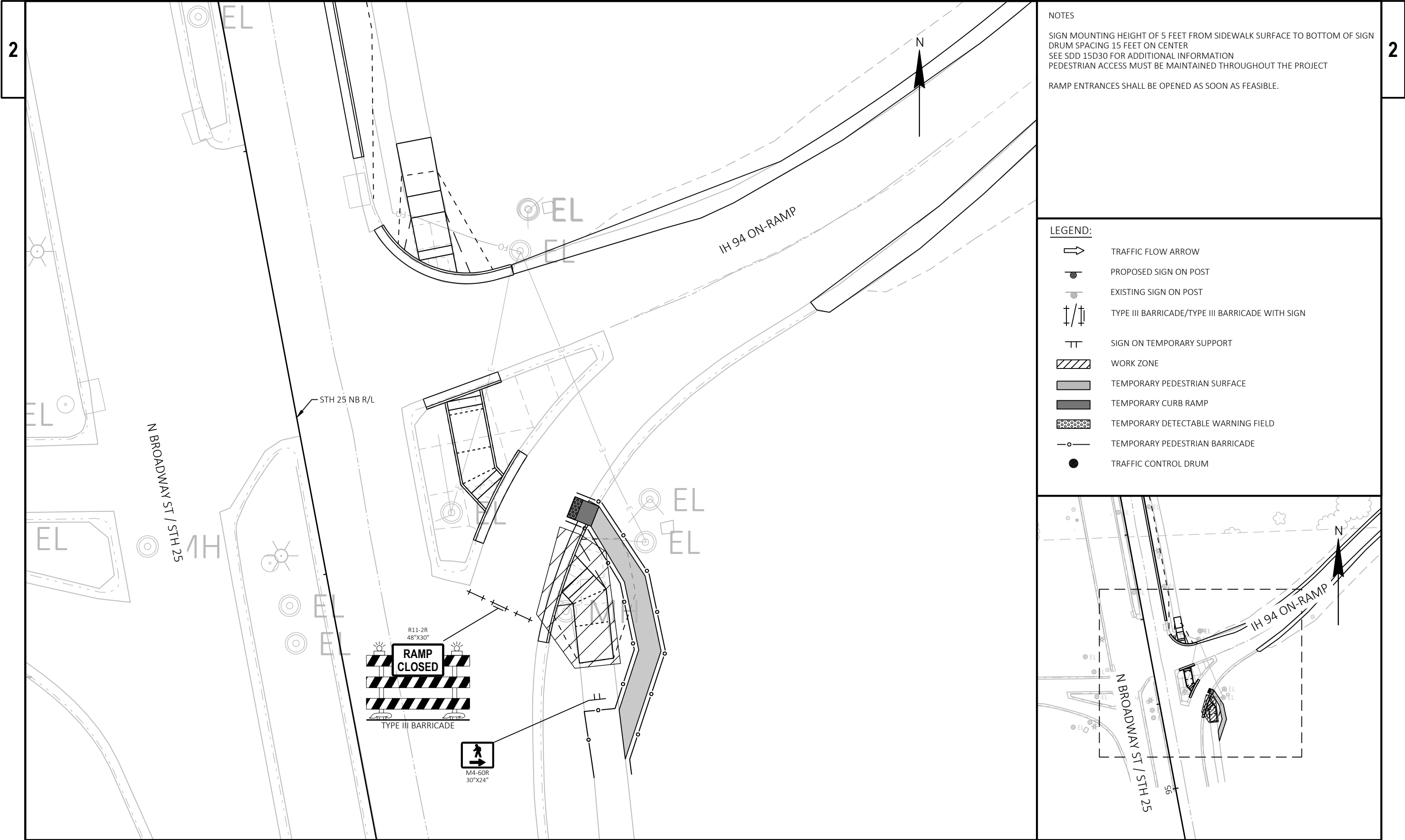
STAGE CONSTRUCTION TO COINCIDE WITH IH-94 ON-RAMP CONCRETE REPAIR AND PIPE REPLACEMENT. SEE IH-94 ON-RAMP CLOSURE DETAIL

SIGN MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN
DRUM SPACING 15 FEET ON CENTER
SEE SDD 15D30 FOR ADDITIONAL INFORMATION
PEDESTRIAN ACCESS MUST BE MAINTAINED THROUGHOUT THE PROJECT

RAMP ENTRANCES SHALL BE OPENED AS SOON AS FEASIBLE.

- LEGEND:
- TRAFFIC FLOW ARROW
 - PROPOSED SIGN ON POST
 - EXISTING SIGN ON POST
 - TYPE III BARRICADE/TYPE III BARRICADE WITH SIGN
 - SIGN ON TEMPORARY SUPPORT
 - WORK ZONE
 - TEMPORARY PEDESTRIAN SURFACE
 - TEMPORARY CURB RAMP
 - TEMPORARY DETECTABLE WARNING FIELD
 - TEMPORARY PEDESTRIAN BARRICADE
 - TRAFFIC CONTROL DRUM



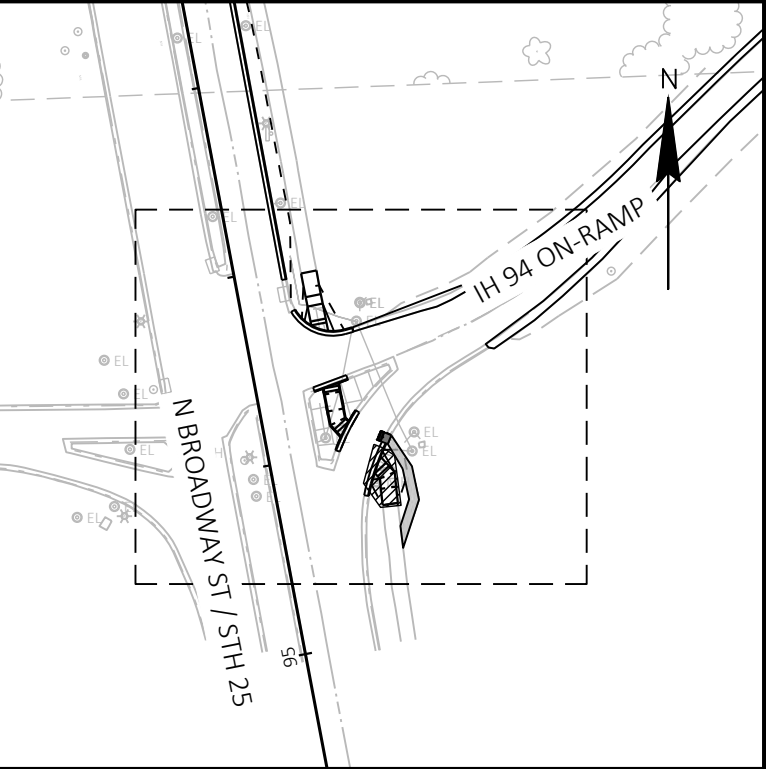


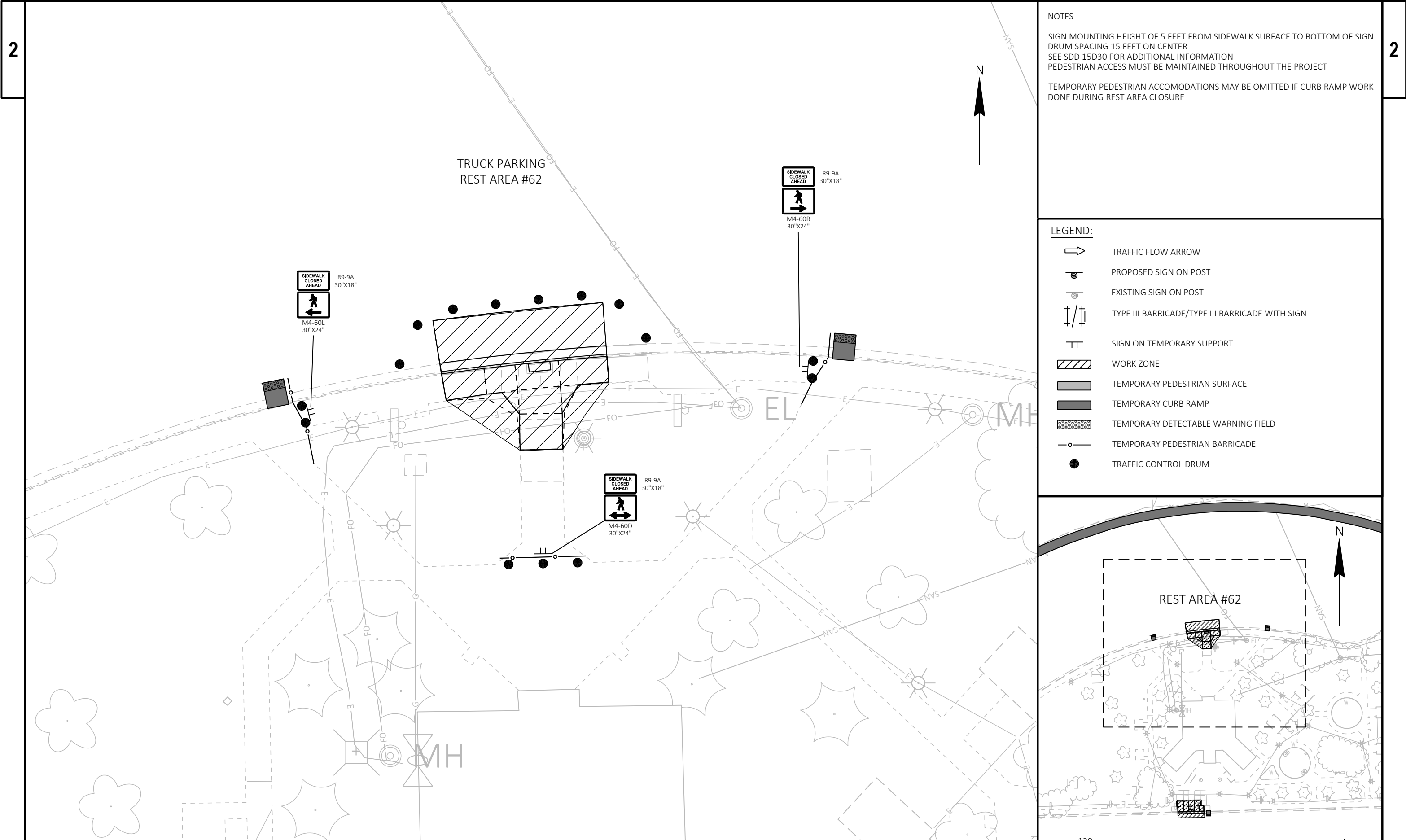
NOTES

SIGN MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN
DRUM SPACING 15 FEET ON CENTER
SEE SDD 15D30 FOR ADDITIONAL INFORMATION
PEDESTRIAN ACCESS MUST BE MAINTAINED THROUGHOUT THE PROJECT

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- LEGEND:
- TRAFFIC FLOW ARROW
 - PROPOSED SIGN ON POST
 - EXISTING SIGN ON POST
 - TYPE III BARRICADE/TYPE III BARRICADE WITH SIGN
 - SIGN ON TEMPORARY SUPPORT
 - WORK ZONE
 - TEMPORARY PEDESTRIAN SURFACE
 - TEMPORARY CURB RAMP
 - TEMPORARY DETECTABLE WARNING FIELD
 - TEMPORARY PEDESTRIAN BARRICADE
 - TRAFFIC CONTROL DRUM





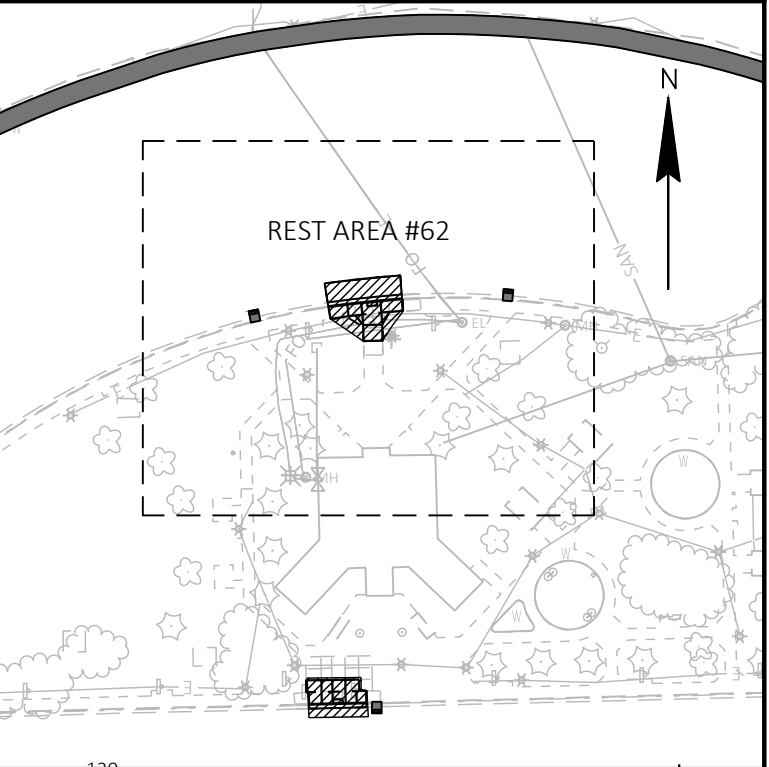
NOTES

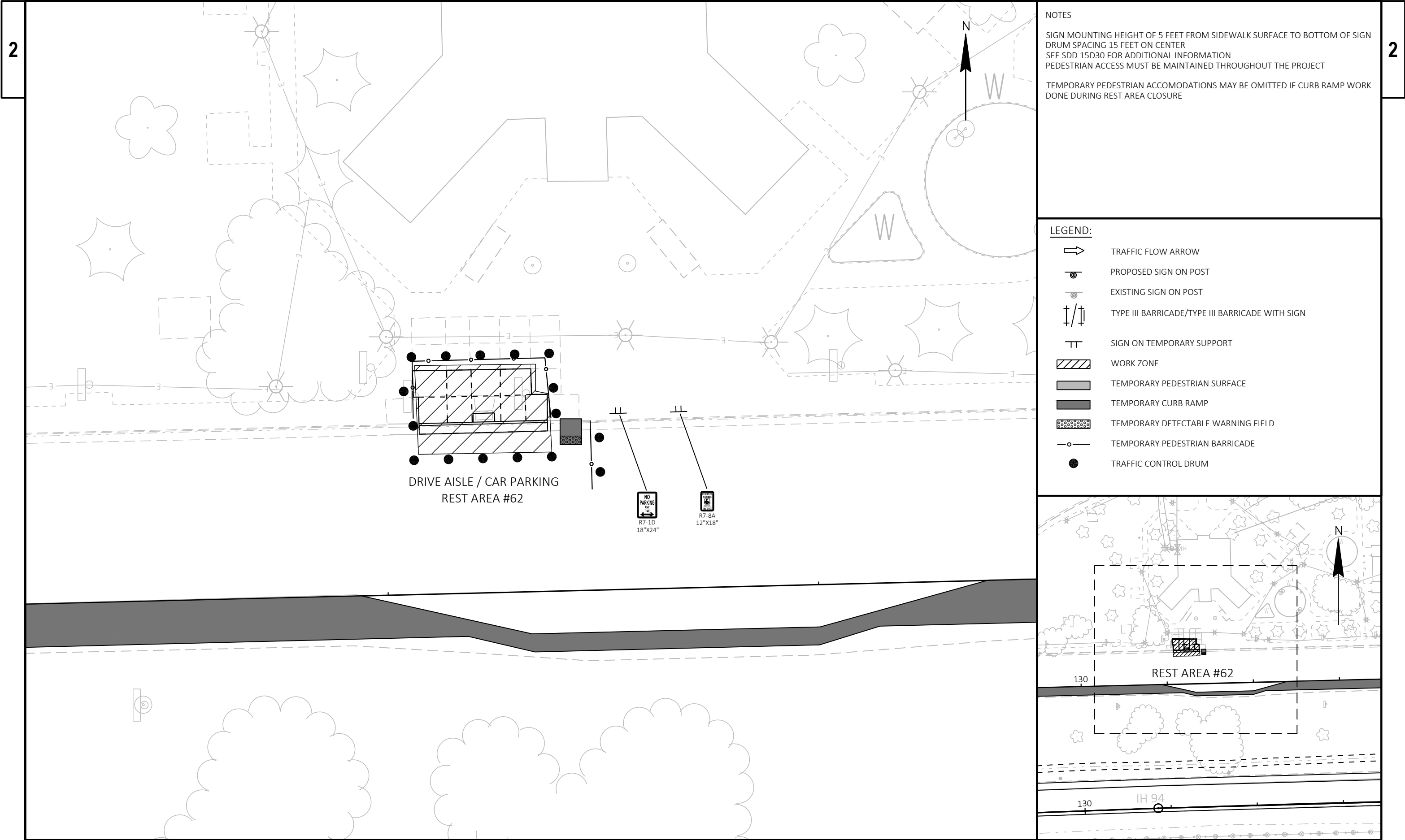
SIGN MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN
DRUM SPACING 15 FEET ON CENTER
SEE SDD 15D30 FOR ADDITIONAL INFORMATION
PEDESTRIAN ACCESS MUST BE MAINTAINED THROUGHOUT THE PROJECT

TEMPORARY PEDESTRIAN ACCOMODATIONS MAY BE OMITTED IF CURB RAMP WORK
DONE DURING REST AREA CLOSURE

LEGEND:

	TRAFFIC FLOW ARROW
	PROPOSED SIGN ON POST
	EXISTING SIGN ON POST
	TYPE III BARRICADE/TYPE III BARRICADE WITH SIGN
	SIGN ON TEMPORARY SUPPORT
	WORK ZONE
	TEMPORARY PEDESTRIAN SURFACE
	TEMPORARY CURB RAMP
	TEMPORARY DETECTABLE WARNING FIELD
	TEMPORARY PEDESTRIAN BARRICADE
	TRAFFIC CONTROL DRUM



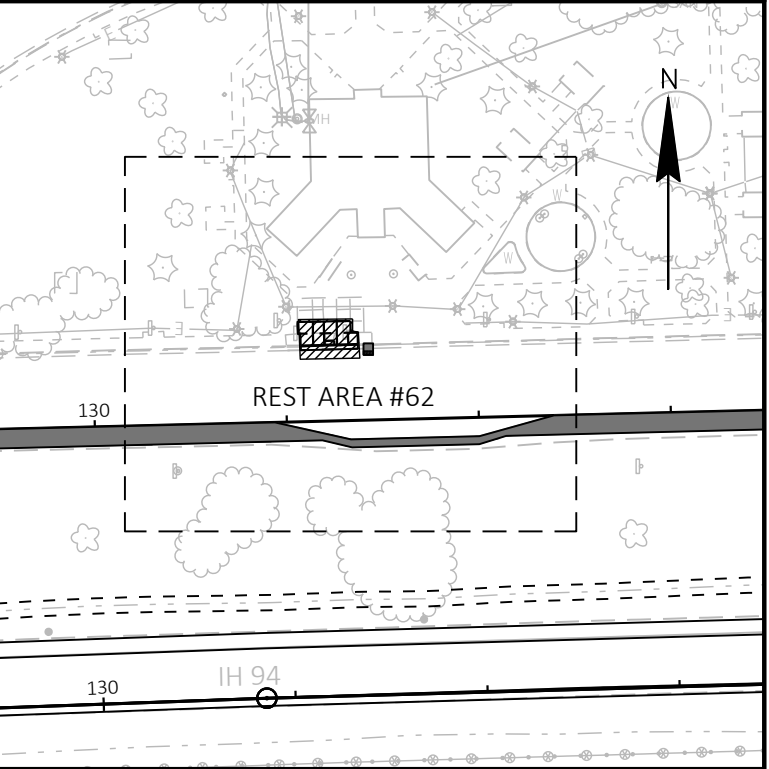


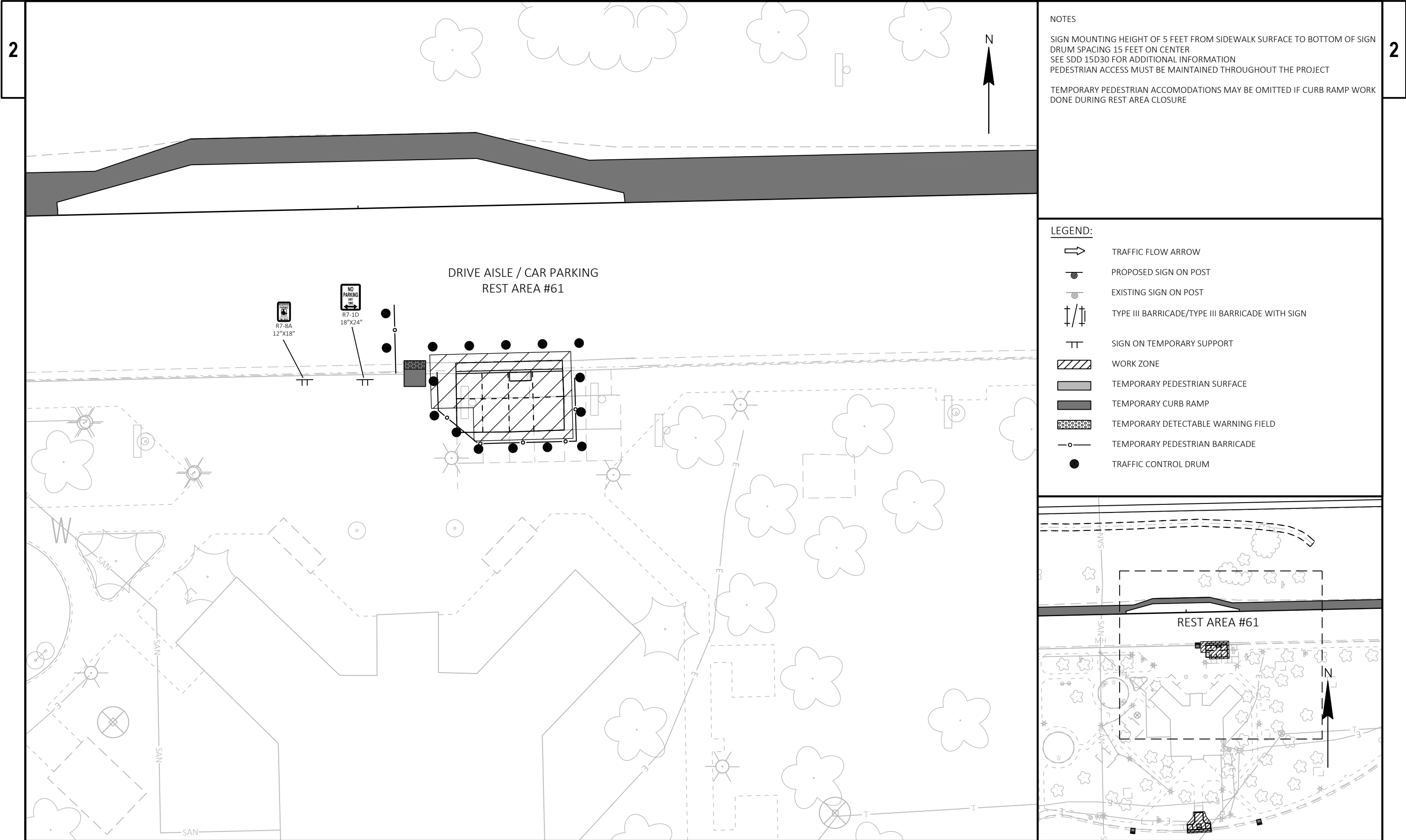
NOTES

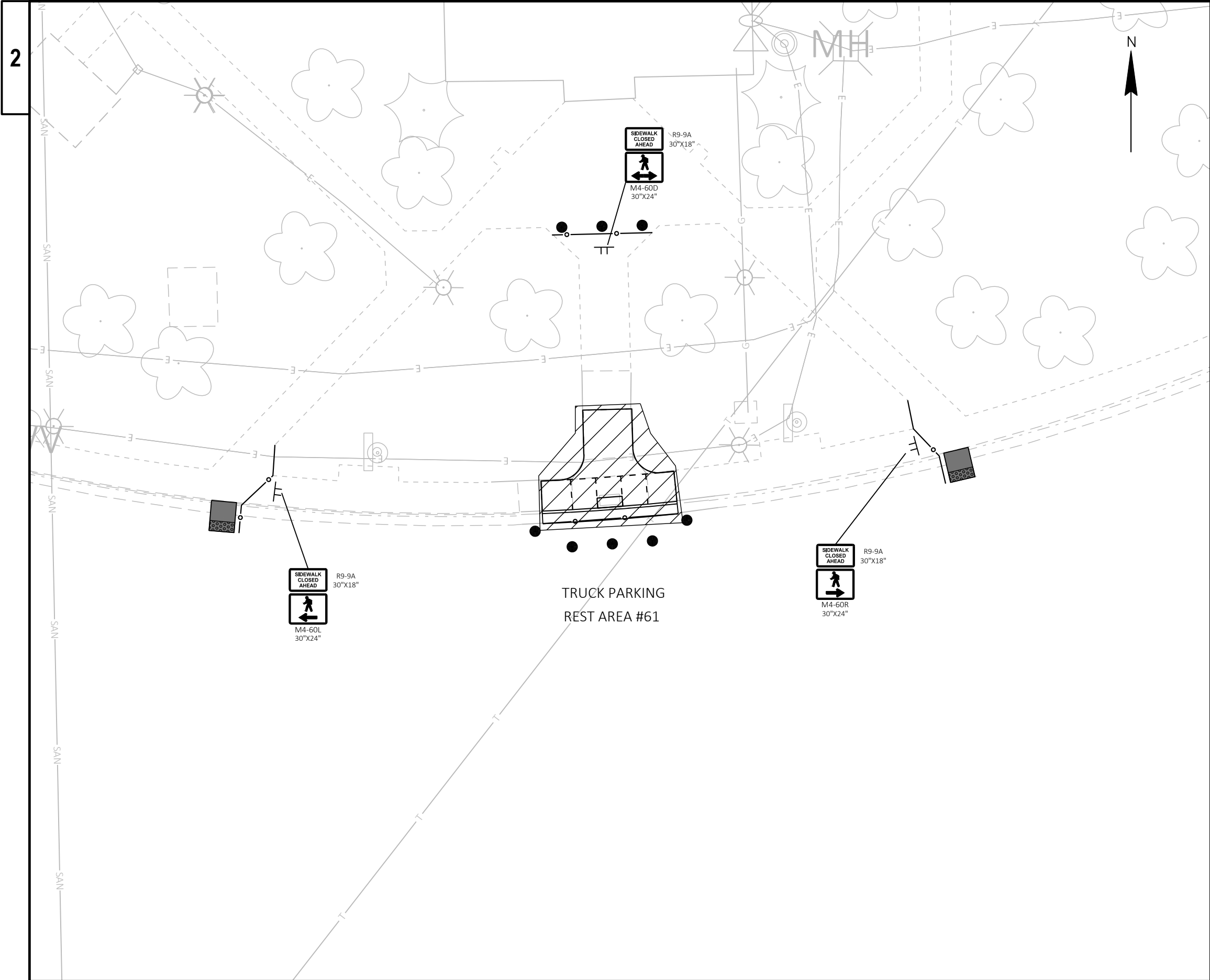
SIGN MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN
DRUM SPACING 15 FEET ON CENTER
SEE SDD 15D30 FOR ADDITIONAL INFORMATION
PEDESTRIAN ACCESS MUST BE MAINTAINED THROUGHOUT THE PROJECT

TEMPORARY PEDESTRIAN ACCOMODATIONS MAY BE OMITTED IF CURB RAMP WORK
DONE DURING REST AREA CLOSURE

- LEGEND:
- TRAFFIC FLOW ARROW
 - PROPOSED SIGN ON POST
 - EXISTING SIGN ON POST
 - TYPE III BARRICADE/TYPE III BARRICADE WITH SIGN
 - SIGN ON TEMPORARY SUPPORT
 - WORK ZONE
 - TEMPORARY PEDESTRIAN SURFACE
 - TEMPORARY CURB RAMP
 - TEMPORARY DETECTABLE WARNING FIELD
 - TEMPORARY PEDESTRIAN BARRICADE
 - TRAFFIC CONTROL DRUM







NOTES

SIGN MOUNTING HEIGHT OF 5 FEET FROM SIDEWALK SURFACE TO BOTTOM OF SIGN
DRUM SPACING 15 FEET ON CENTER
SEE SDD 15D30 FOR ADDITIONAL INFORMATION
PEDESTRIAN ACCESS MUST BE MAINTAINED THROUGHOUT THE PROJECT

TEMPORARY PEDESTRIAN ACCOMODATIONS MAY BE OMITTED IF CURB RAMP WORK
DONE DURING REST AREA CLOSURE

LEGEND:

TRAFFIC FLOW ARROW

PROPOSED SIGN ON POST

EXISTING SIGN ON POST

TYPE III BARRICADE/TYPE III BARRICADE WITH SIGN

SIGN ON TEMPORARY SUPPORT

WORK ZONE

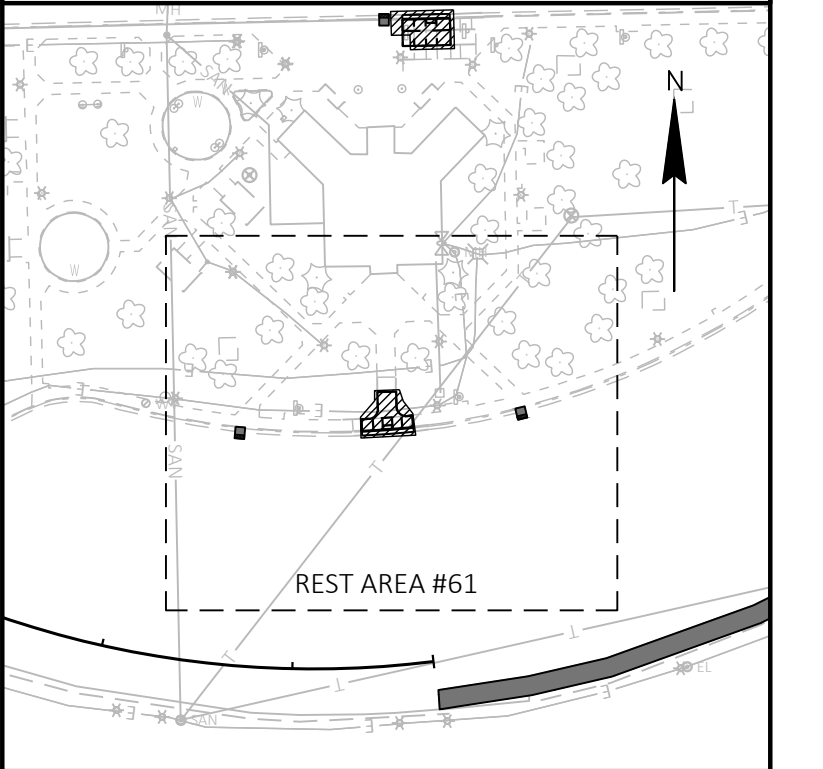
TEMPORARY PEDESTRIAN SURFACE

TEMPORARY CURB RAMP

TEMPORARY DETECTABLE WARNING FIELD

TEMPORARY PEDESTRIAN BARRICADE

TRAFFIC CONTROL DRUM



Estimate Of Quantities

					1020-05-63	1021-01-78
Line	Item	Item Description	Unit	Total	Qty	Qty
0002	201.0105	Clearing	STA	3.000	2.000	1.000
0004	201.0205	Grubbing	STA	1.000		1.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000	
0008	203.0220	Removing Structure (structure) 01. B-17-29	EACH	1.000	1.000	
0010	203.0220	Removing Structure (structure) 01. B-17-51	EACH	1.000		1.000
0012	204.0100	Removing Concrete Pavement	SY	788.000	788.000	
0014	204.0110	Removing Asphaltic Surface	SY	57,866.000	57,866.000	
0016	204.0115	Removing Asphaltic Surface Butt Joints	SY	31.000	31.000	
0018	204.0150	Removing Curb & Gutter	LF	1,185.000	1,185.000	
0020	204.0155	Removing Concrete Sidewalk	SY	467.000	467.000	
0022	204.0157	Removing Concrete Barrier	LF	192.000	192.000	
0024	204.0165	Removing Guardrail	LF	7,822.000	7,429.000	393.000
0026	204.0170	Removing Fence	LF	200.000	50.000	150.000
0028	204.0190	Removing Surface Drains	EACH	7.000	7.000	
0030	204.0195	Removing Concrete Bases	EACH	20.000	20.000	
0032	204.0210	Removing Manholes	EACH	1.000	1.000	
0034	204.9060.S	Removing (item description) 01. Street Light Assembly	EACH	42.000	42.000	
0036	204.9060.S	Removing (item description) 02. Wireless Traffic Sensor Access Point	EACH	2.000	2.000	
0038	204.9060.S	Removing (item description) 03. Wireless Traffic Sensor Repeater	EACH	2.000	2.000	
0040	204.9090.S	Removing (item description) 01. Electrical Conductors From Existing Conduit	LF	6,810.000	6,810.000	
0042	205.0100	Excavation Common	CY	424.000	424.000	
0044	206.1001	Excavation for Structures Bridges (structure) 01. B-17-29	EACH	1.000	1.000	
0046	206.2001	Excavation for Structures Culverts (structure) 01. B-17-51	EACH	1.000		1.000
0048	208.0100	Borrow	CY	144.000	144.000	
0050	210.1500	Backfill Structure Type A	TON	537.000	537.000	
0052	210.2500	Backfill Structure Type B	TON	1,440.000		1,440.000
0054	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 1020-05-63	EACH	1.000	1.000	
0056	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	68.000	68.000	
0058	213.0100	Finishing Roadway (project) 01. 1020-05-63	EACH	1.000	1.000	
0060	213.0100	Finishing Roadway (project) 01. 1021-01-78	EACH	1.000		1.000
0062	305.0110	Base Aggregate Dense 3/4-Inch	TON	4,161.000	4,161.000	
0064	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	108.000	108.000	
0066	305.0500	Shaping Shoulders	STA	340.000	340.000	
0068	311.0110	Breaker Run	TON	347.000		347.000
0070	415.0080	Concrete Pavement 8-Inch	SY	681.000	681.000	
0072	415.0410	Concrete Pavement Approach Slab	SY	241.000	241.000	
0074	415.1410	Concrete Pavement Approach Slab HES	SY	212.000	212.000	
0076	416.0610	Drilled Tie Bars	EACH	1,622.000	1,622.000	
0078	416.0620	Drilled Dowel Bars	EACH	5,095.000	5,095.000	
0080	416.1710	Concrete Pavement Repair	SY	495.000	495.000	
0082	416.1720	Concrete Pavement Replacement	SY	1,711.000	1,711.000	
0084	420.1000	Continuous Diamond Grinding Concrete Pavement	SY	11,976.000	11,976.000	
0086	455.0605	Tack Coat	GAL	4,322.000	4,322.000	
0088	460.2000	Incentive Density HMA Pavement	DOL	6,460.000	6,460.000	
0090	460.6244	HMA Pavement 4 MT 58-34 S	TON	12,504.000	12,504.000	
0092	465.0125	Asphaltic Surface Temporary	TON	110.000	110.000	
0094	465.0510	Asphaltic Rumble Strips, Shoulder Divided Roadway	LF	31,562.000	31,562.000	
0096	502.0100	Concrete Masonry Bridges	CY	140.000	140.000	
0098	502.3101	Expansion Device	LF	170.000	170.000	

Estimate Of Quantities

				1020-05-63	1021-01-78		
Line	Item	Item Description	Unit	Total	Qty	Qty	
0100	502.3200	Protective Surface Treatment	SY	827.000	827.000		
0102	502.3205	Pigmented Surface Sealer Reseal	SY	220.000	220.000		
0104	502.3210	Pigmented Surface Sealer	SY	15.000	15.000		
0106	502.3215	Protective Surface Treatment Reseal	SY	269.000	269.000		
0108	502.4205	Adhesive Anchors No. 5 Bar	EACH	138.000	62.000	76.000	
0110	504.0100	Concrete Masonry Culverts	CY	214.000		214.000	
0112	505.0400	Bar Steel Reinforcement HS Structures	LB	31,970.000		31,970.000	
0114	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	21,810.000	19,820.000	1,990.000	
0116	505.0904	Bar Couplers No. 4	EACH	25.000		25.000	
0118	505.0907	Bar Couplers No. 7	EACH	87.000		87.000	
0120	505.0909	Bar Couplers No. 9	EACH	101.000		101.000	
0122	506.5000	Bearing Assemblies Fixed (structure) 01. B-17-40	EACH	24.000	24.000		
0124	506.6000	Bearing Assemblies Expansion (structure) 01. B-17-40	EACH	24.000	24.000		
0126	506.7050.S	Removing Bearings (structure) 01. B-17-40	EACH	48.000	48.000		
0128	509.0301	Preparation Decks Type 1	SY	52.000	52.000		
0130	509.0302	Preparation Decks Type 2	SY	22.000	22.000		
0132	509.0310.S	Sawing Pavement Deck Preparation Areas	LF	220.000	220.000		
0134	509.0505.S	Cleaning Decks to Reapply Concrete Masonry Overlay	SY	695.000	695.000		
0136	509.1000	Joint Repair	SY	85.000	85.000		
0138	509.1500	Concrete Surface Repair	SF	702.000	692.000	10.000	
0140	509.2000	Full-Depth Deck Repair	SY	3.000	3.000		
0142	509.2100.S	Concrete Masonry Deck Repair	CY	3.000	3.000		
0144	509.2500	Concrete Masonry Overlay Decks	CY	70.000	70.000		
0146	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 01. B-17-40	SY	695.000	695.000		
0148	511.1200	Temporary Shoring (structure) 01. B-17-29	SF	520.000	520.000		
0150	511.1200	Temporary Shoring (structure) 01. B-17-51	SF	5,676.000		5,676.000	
0152	516.0500	Rubberized Membrane Waterproofing	SY	98.000	38.000	60.000	
0154	517.1010.S	Concrete Staining (structure) 01. B-17-29	SF	97.000	97.000		
0156	517.1050.S	Architectural Surface Treatment (structure) 01. B-17-29	SF	111.000	111.000		
0158	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000		
0160	520.8700	Cleaning Culvert Pipes	EACH	1.000	1.000		
0162	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	94.000	94.000		
0164	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	200.000	200.000		
0166	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	1.000	1.000		
0168	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000		
0170	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	1,591.000	1,591.000		
0172	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	281.000	281.000		
0174	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	364.000	364.000		
0176	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	76.000	76.000		
0178	601.0600	Concrete Curb Pedestrian	LF	48.000	48.000		
0180	602.0405	Concrete Sidewalk 4-Inch	SF	2,553.000	2,553.000		
0182	602.0415	Concrete Sidewalk 6-Inch	SF	2,035.000	2,035.000		
0184	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	107.000	107.000		
0186	602.3010	Concrete Surface Drains	CY	25.000	25.000		
0188	602.3210	Concrete Rumble Strips, Shoulder Divided Roadway	LF	26,889.000	26,889.000		
0190	602.3280	Concrete Rumble Strips, Transverse	SY	144.000	144.000		
0192	603.1142	Concrete Barrier Type S42	LF	149.000	149.000		
0194	603.8000	Concrete Barrier Temporary Precast Delivered	LF	3,645.000	3,049.000	596.000	
0196	603.8125	Concrete Barrier Temporary Precast Installed	LF	3,645.000	3,049.000	596.000	

Estimate Of Quantities

		1020-05-63		1021-01-78		
Line	Item	Item Description	Unit	Total	Qty	Qty
0198	604.9015.S	Reseal Crushed Aggregate Slope Paving	SY	570.000	570.000	
0200	606.0200	Riprap Medium	CY	3.000	3.000	
0202	606.0300	Riprap Heavy	CY	26.000		26.000
0204	611.0610	Inlet Covers Type BW	EACH	1.000	1.000	
0206	611.0612	Inlet Covers Type C	EACH	1.000	1.000	
0208	611.0624	Inlet Covers Type H	EACH	1.000	1.000	
0210	611.2005	Manholes 5-FT Diameter	EACH	1.000	1.000	
0212	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000	
0214	611.8120.S	Cover Plates Temporary	EACH	1.000	1.000	
0216	614.0010	Barrier System Grading Shaping Finishing	EACH	23.000	22.000	1.000
0218	614.0220	Steel Thrie Beam Bullnose Terminal	EACH	6.000	6.000	
0220	614.0230	Steel Thrie Beam	LF	450.000	450.000	
0222	614.0905	Crash Cushions Temporary	EACH	3.000	2.000	1.000
0224	614.2300	MGS Guardrail 3	LF	4,950.000	4,750.000	200.000
0226	614.2330	MGS Guardrail 3 K	LF	512.500	275.000	237.500
0228	614.2500	MGS Thrie Beam Transition	LF	671.500	671.500	
0230	614.2610	MGS Guardrail Terminal EAT	EACH	18.000	17.000	1.000
0232	614.2620	MGS Guardrail Terminal Type 2	EACH	5.000	4.000	1.000
0234	615.1000	Wisconsin Historical Marker	EACH	2.000	2.000	
0236	616.0100	Fence Woven Wire (height) 01. 4-FT	LF	200.000	50.000	150.000
0238	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1020-05-63	EACH	1.000	1.000	
0240	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1021-01-78	EACH	1.000		1.000
0242	619.1000	Mobilization	EACH	1.000	0.900	0.100
0244	624.0100	Water	MGAL	40.000	40.000	
0246	625.0100	Topsoil	SY	21.000	21.000	
0248	625.0500	Salvaged Topsoil	SY	1,439.000	179.000	1,260.000
0250	627.0200	Mulching	SY	21.000	21.000	
0252	628.1104	Erosion Bales	EACH	10.000		10.000
0254	628.1504	Silt Fence	LF	3,263.000	2,963.000	300.000
0256	628.1520	Silt Fence Maintenance	LF	3,263.000	2,963.000	300.000
0258	628.1905	Mobilizations Erosion Control	EACH	10.000	8.000	2.000
0260	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	2.000	1.000
0262	628.2008	Erosion Mat Urban Class I Type B	SY	1,474.000	214.000	1,260.000
0264	628.7005	Inlet Protection Type A	EACH	6.000	6.000	
0266	628.7015	Inlet Protection Type C	EACH	4.000	4.000	
0268	628.7504	Temporary Ditch Checks	LF	168.000	168.000	
0270	628.7555	Culvert Pipe Checks	EACH	6.000	6.000	
0272	629.0210	Fertilizer Type B	CWT	1.000	0.200	0.800
0274	630.0120	Seeding Mixture No. 20	LB	57.000		57.000
0276	630.0140	Seeding Mixture No. 40	LB	9.000	9.000	
0278	630.0200	Seeding Temporary	LB	57.000		57.000
0280	634.0616	Posts Wood 4x6-Inch x 16-FT	EACH	22.000	22.000	
0282	635.0300	Sign Supports Replacing Base Connection Bolts	EACH	16.000	16.000	
0284	637.1220	Signs Type I Reflective SH	SF	1,446.000	1,446.000	
0286	637.2210	Signs Type II Reflective H	SF	111.000	111.000	
0288	637.2230	Signs Type II Reflective F	SF	35.500	35.500	
0290	638.2102	Moving Signs Type II	EACH	11.000	11.000	
0292	638.2601	Removing Signs Type I	EACH	16.000	16.000	
0294	638.2602	Removing Signs Type II	EACH	17.000	17.000	

Estimate Of Quantities

				1020-05-63	1021-01-78	
Line	Item	Item Description	Unit	Total	Qty	Qty
0296	638.3000	Removing Small Sign Supports	EACH	16.000	16.000	
0298	642.5001	Field Office Type B	EACH	1.000	0.900	0.100
0300	643.0300	Traffic Control Drums	DAY	68,747.000	68,617.000	130.000
0302	643.0370.S	Digital Speed Reduction System (DSRS)	DAY	116.000	116.000	
0304	643.0420	Traffic Control Barricades Type III	DAY	1,407.000	1,387.000	20.000
0306	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	16.000	16.000	
0308	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	16.000	16.000	
0310	643.0705	Traffic Control Warning Lights Type A	DAY	2,696.000	2,696.000	
0312	643.0715	Traffic Control Warning Lights Type C	DAY	9,424.000	9,344.000	80.000
0314	643.0810	Traffic Control Connected Arrow Boards	DAY	236.000	226.000	10.000
0316	643.0900	Traffic Control Signs	DAY	5,577.000	5,547.000	30.000
0318	643.0910	Traffic Control Covering Signs Type I	EACH	4.000	4.000	
0320	643.0920	Traffic Control Covering Signs Type II	EACH	35.000	35.000	
0322	643.1050	Traffic Control Signs PCMS	DAY	392.000	382.000	10.000
0324	643.1200.S	Portable Automated Real-Time Traffic Queue Warning System	DAY	12.000	12.000	
0326	643.1205.S	Basic Traffic Queue Warning System	DAY	104.000	104.000	
0328	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	13,860.000	13,860.000	
0330	643.5000	Traffic Control	EACH	1.000	0.850	0.150
0332	644.1440	Temporary Pedestrian Surface Matting	SF	465.000	465.000	
0334	644.1601	Temporary Pedestrian Curb Ramp	DAY	50.000	50.000	
0336	644.1605	Temporary Pedestrian Detectable Warning Field	SF	100.000	100.000	
0338	644.1810	Temporary Pedestrian Barricade	LF	575.000	575.000	
0340	645.0105	Geotextile Type C	SY	261.000		261.000
0342	645.0120	Geotextile Type HR	SY	44.000	12.000	32.000
0344	646.2025	Marking Line Grooved Black Epoxy 6-Inch	LF	8,370.000	8,370.000	
0346	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	83,122.000	83,122.000	
0348	646.2050	Marking Line Grooved Permanent Tape 6-Inch	LF	9,430.000	9,430.000	
0350	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	8,040.000	8,040.000	
0352	646.5020	Marking Arrow Epoxy	EACH	4.000	4.000	
0354	646.5120	Marking Word Epoxy	EACH	2.000	2.000	
0356	646.6120	Marking Stop Line Epoxy 18-Inch	LF	90.000	90.000	
0358	646.7120	Marking Diagonal Epoxy 12-Inch	LF	135.000	135.000	
0360	646.7220	Marking Chevron Epoxy 24-Inch	LF	1,190.000	1,190.000	
0362	646.8120	Marking Curb Epoxy	LF	125.000	125.000	
0364	646.8320	Marking Parking Stall Epoxy	LF	618.000	618.000	
0366	646.9000	Marking Removal Line 4-Inch	LF	86,250.000	86,250.000	
0368	646.9002	Marking Removal Line 6-Inch	LF	3,295.000	3,295.000	
0370	646.9100	Marking Removal Line 8-Inch	LF	8,040.000	8,040.000	
0372	646.9200	Marking Removal Line Wide	LF	570.000	570.000	
0374	650.4000	Construction Staking Storm Sewer	EACH	1.000	1.000	
0376	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	282.000	282.000	
0378	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000	
0380	650.6501	Construction Staking Structure Layout (structure) 01. B-17-51	EACH	1.000		1.000
0382	650.7000	Construction Staking Concrete Pavement	LF	486.000	486.000	
0384	650.7500	Construction Staking Concrete Barrier	LF	149.000	149.000	
0386	650.8000	Construction Staking Resurfacing Reference	LF	38,626.000	38,626.000	
0388	650.9000	Construction Staking Curb Ramps	EACH	9.000	9.000	
0390	650.9500	Construction Staking Sidewalk (project) 01. 1020-05-63	EACH	1.000	1.000	
0392	650.9911	Construction Staking Supplemental Control (project) 01. 1020-05-63	EACH	1.000	1.000	

Estimate Of Quantities

				1020-05-63	1021-01-78
Line	Item	Item Description	Unit	Total	Qty
0394	650.9911	Construction Staking Supplemental Control (project) 01. 1021-01-78	EACH	1.000	1.000
0396	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	5,180.000	5,180.000
0398	652.0325	Conduit Rigid Nonmetallic Schedule 80 2-Inch	LF	50.000	50.000
0400	652.0605	Conduit Special 2-Inch	LF	650.000	650.000
0402	652.0700.S	Install Conduit into Existing Item	EACH	3.000	3.000
0404	653.0164	Pull Boxes Non-Conductive 24x42-Inch	EACH	7.000	7.000
0406	653.0900	Adjusting Pull Boxes	EACH	1.000	1.000
0408	654.0105	Concrete Bases Type 5	EACH	29.000	29.000
0410	655.0610	Electrical Wire Lighting 12 AWG	LF	8,284.000	8,284.000
0412	655.0620	Electrical Wire Lighting 8 AWG	LF	29,154.000	29,154.000
0414	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	51.000	51.000
0416	657.0322	Poles Type 5-Aluminum	EACH	51.000	51.000
0418	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	33.000	33.000
0420	657.0710	Luminaire Arms Truss Type 4 1/2-Inch Clamp 12-FT	EACH	18.000	18.000
0422	659.1120	Luminaires Utility LED B	EACH	33.000	33.000
0424	659.1125	Luminaires Utility LED C	EACH	18.000	18.000
0426	659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH	42.000	42.000
0428	670.0101	Field System Integrator	EACH	1.000	1.000
0430	677.0200	Install Camera Assembly	EACH	5.000	5.000
0432	677.9200.S	Removing CCTV Camera	EACH	5.000	5.000
0434	690.0150	Sawing Asphalt	LF	7,564.000	7,564.000
0436	690.0250	Sawing Concrete	LF	13,219.000	13,219.000
0438	715.0502	Incentive Strength Concrete Structures	DOL	1,285.000	1,285.000
0440	715.0603	Incentive Strength Concrete Barrier	DOL	75.000	75.000
0442	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	1,840.000	1,840.000
0444	999.2100.S	Installing and Maintaining Climbing Turtle Exclusion Fence	LF	5,852.000	5,852.000
0446	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,500.000	2,500.000
0448	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	2,000.000	2,000.000
0450	SPV.0060	Special 01. Repair Embankment	EACH	3.000	3.000
0452	SPV.0060	Special 02. Reset and Retie End Section	EACH	1.000	1.000
0454	SPV.0060	Special 03. Remove Stone Sign Supports	EACH	2.000	2.000
0456	SPV.0060	Special 04. Remove Playground Landscaping	EACH	2.000	2.000
0458	SPV.0060	Special 05. Modify Existing Lighting Controls	EACH	2.000	2.000
0460	SPV.0060	Special 06. Temporary Street Lighting System (Rest Area #61)	EACH	1.000	1.000
0462	SPV.0060	Special 07. Temporary Street Lighting System (Rest Area #62)	EACH	1.000	1.000
0464	SPV.0060	Special 08. Install Wireless Traffic Sensor	EACH	12.000	12.000
0466	SPV.0060	Special 09. Install Wireless Traffic Sensor Access Point	EACH	2.000	2.000
0468	SPV.0060	Special 10. Install Wireless Traffic Sensor Repeater	EACH	2.000	2.000
0470	SPV.0060	Special 11. Fence Repairs B-17-29	EACH	1.000	1.000
0472	SPV.0060	Special 12. Bearing Maintenance B-17-29	EACH	26.000	26.000
0474	SPV.0060	Special 13. Temporary Water Diversion, Structure B-17-51	EACH	1.000	1.000
0476	SPV.0060	Special 14. Cleaning Box Culvert	EACH	1.000	1.000
0478	SPV.0060	Special 15. Culvert Pipe Replacement Limits Exploration and Removal	EACH	1.000	1.000
0480	SPV.0090	Special 01. Cleaning Ditch	LF	8,195.000	8,195.000
0482	SPV.0165	Special 01. Fiber Wrap Reinforcing Non-Structural	SF	4,181.000	4,181.000
0484	SPV.0165	Special 02. Prestressed Girder Surface Repair	SF	57.000	57.000
0486	SPV.0180	Special 01. Rapid Concrete Pavement Repair	SY	1,761.000	1,761.000
0488	SPV.0180	Special 02. Rapid Concrete Pavement Replacement	SY	4,336.000	4,336.000

Estimate Of Quantities

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REMOVALS														
CATEGORY	ROADWAY	STATION	TO	STATION	LOCATION	201.0105	204.0100	204.0110	204.0150	204.0155	204.0157	204.0190	211.0400	
						CLEARING STA	REMOVING CONCRETE PAVEMENT SY	REMOVING ASPHALTIC SURFACE SY	REMOVING CURB & GUTTER LF	REMOVING CONCRETE SIDEWALK SY	REMOVING CONCRETE BARRIER LF	REMOVING SURFACE DRAINS EACH	FOUNDATION FOR ASPHALTIC SHOULDERS STA	
0010	IH 94		95+00		LT & RT	2	-	-	-	-	-	1	-	
0010		18EB+23	-	52EB+78	LT & RT	-	-	3325	-	-	-	-	2	
0010		54EB+00	-	158EB+15	LT & RT	-	40	11820	-	-	-	-	2	
0010		163EB+00	-	182EB+95	LT & RT	-	-	2092	-	-	-	-	1	
0010		18WB+23	-	52WB+42	LT & RT	-	-	3013	-	-	-	2	2	
0010		53WB+56	-	158WB+15	LT & RT	-	-	11386	-	-	-	-	1	
0010		163WB+00	-	188WB+11	LT & RT	-	-	3382	-	-	-	2	-	
0010		18EB+23	-	52EB+78	LT & RT	-	-	1848	-	-	-	-	2	
0010		54EB+00	-	158EB+15	LT & RT	-	-	5347	-	-	-	-	1	
0010		163EB+00	-	182EB+95	LT & RT	-	-	890	-	-	-	2	-	
0010		18WB+23	-	52WB+42	LT & RT	-	-	1707	-	-	-	-	2	
0010		53WB+56	-	158WB+15	LT & RT	-	-	4891	-	-	-	-	1	
0010		163WB+00	-	188WB+11	LT & RT	-	-	1642	-	-	-	-	-	
0010		STH 25			STH 25	-	-	-	246	-	-	-	-	
0010					IH 94 ON RAMP TERMINI	-	-	-	110	69	-	-	-	
0010					MEDIAN	-	-	-	704	239	-	-	-	
0010			-											
0010			-											
TOTAL 0010						2	40	51,343	1,060	308	0	7	14	
0040			-		REST AREA 61	-	362	3001	56	77	96	-	24	
0040			-		REST AREA 62	-	386	3522	69	82	96	-	30	
0040			-											
TOTAL 0040						0	748	6,523	125	159	192	0	54	
PROJECT TOTAL						2	788	57866	1185	467	192	7	68	

CONCRETE PAVEMENT							
CATEGORY	LOCATION	305.0120	415.0080	415.0410	415.1410	602.3280	715.0720
		BASE AGGREGATE DENSE 1 1/4-INCH TON	CONCRETE PAVEMENT 8-INCH SY	CONCRETE PAVEMENT APPROACH SLAB SY	CONCRETE PAVEMENT APPROACH SLAB HES SY	CONCRETE RUMBLE STRIPS, TRANSVERSE SY	INCENTIVE COMPRESSIVE STRENGTH CONCRETE PAVEMENT DOL
0010	80EB+30	43	-	-	-	-	PIPE REPLACEMENT
0010	B-17-174	-	-	-	103	-	
0010	B-17-175	-	-	-	109	-	
0010	STH 25	-	-	241	-	-	
0010							
TOTAL 0010		43	0	241	212	0	0
0040	REST AREA 61	33	348	-	-	72	500
0040	REST AREA 62	32	333	-	-	72	500
TOTAL 0040		65	681	0	0	144	1,000
PROJECT TOTAL		108	681	241	212	144	1000

EARTHWORK CULVERTS				
CATEGORY	STATION	LOCATION	205.0100 EXCAVATION COMMON CY	208.0100 BORROW CY
0010	80+23	IH 94 EB	424	144
TOTAL 0010			424	144

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CONCRETE PAVEMENT REPAIR														
CATEGORY	STAGE	LOCATION	STATION	TO	STATION	416.0610	416.0620	416.1710	416.1720	420.1000	690.0150	690.0250	SPV.0180.01	SPV.0180.02
						DRILLED TIE BARS	DRILLED DOWEL BARS	CONCRETE PAVEMENT REPAIR	CONCRETE PAVEMENT REPLACEMENT	CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT	SAWING ASPHALT	SAWING CONCRETE	SPECIAL (01. RAPID CONCRETE PAVEMENT REPAIR)	SPECIAL (02. RAPID CONCRETE PAVEMENT REPLACEMENT)
						EACH	EACH	SY	SY	SY	LF	LF	SY	SY
STAGE 2														
0010		IH 94 EB	17+30	-	52+78	-	80	-	-	110	32	152	43	-
0010			53+95	-	83+00	82	112	-	-	128	36	404	48	132
0010			83+00	-	120+00	-	32	-	-	51	18	66	24	-
0010			120+00	-	160+00	-	32	-	-	62	26	74	35	-
0010			163+00	-	183+00	80	16	-	-	283	202	226	-	270
0010			UNDISTRIBUTED			-	47	-	-	92	287	131	23	45
STAGE 2 TOTAL						174	511	0	0	1011	3157	1434	253	492
STAGE 3														
0010		IH 94 EB	17+30	-	52+78	16	252	-	-	417	128	520	134	66
0010			53+95	-	83+00	177	324	-	-	445	126	1034	140	388
0010			83+00	-	120+00	12	198	-	-	307	87	395	84	52
0010			120+00	-	160+00	31	270	-	-	651	164	792	293	125
0010			163+00	-	183+00	40	72	-	-	259	114	238	38	159
0010		IH 94 WB	17+30	-	52+78	53	252	-	-	517	192	584	84	215
0010			53+95	-	83+00	5	162	-	-	238	63	315	75	24
0010			83+00	-	120+00	108	486	-	-	1036	396	1152	165	452
0010			120+00	-	160+00	41	252	-	-	487	173	565	97	173
0010			163+00	-	183+00	6	72	-	-	123	39	151	35	27
0010			UNDISTRIBUTED			49	234	-	-	448	149	575	115	169
STAGE 3 TOTAL						538	2,574	0	0	4,928	1,631	6,321	1,260	1,850
RAMPS														
0010		IH 94 EB	OFF RAMP TO STH 25			130	242	-	-	761	385	787	90	448
0010			ON RAMP FROM STH 25			97	206	-	-	683	299	641	71	422
0010			OFF RAMP TO REST AREA			152	54	-	-	694	386	476	-	644
0010			ON RAMP FROM REST AREA			-	18	-	-	28	8	36	13	-
0010		IH 94 WB	ON RAMP FROM STH 25			-	18	-	-	27	7	35	11	-
0010			OFF RAMP TO STH 25			83	126	-	-	422	250	250	63	261
0010			ON RAMP FROM REST AREA			52	18	-	-	235	131	161	-	219
0010			OFF RAMP TO REST AREA			-	-	-	-	-	-	-	-	-
RAMPS TOTAL						514	682	0	0	2,850	1,466	2,386	248	1,994
TOTAL 0010						1,226	3,767	0	0	8,789	6,254	10,141	1,761	4,336
RAMPS														
0040			REST AREA 61			201	616	254	827	1538	661	1485	-	-
0040			REST AREA 62			195	712	241	884	1649	649	1593	-	-
TOTAL 0040						396	1,328	495	1,711	3,187	1,310	3,078	0	0
PROJECT TOTAL						1622	5095	495	1711	11976	7564	13219	1761	4336

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ANCILLARY CONCRETE															
			601.0409	601.0411	601.0588	601.0590	601.0600	602.0405	602.0415	602.0505	602.3010	603.1142	603.8000	603.8125	715.0603
			CONCRETE CURB & GUTTER 30-INCH TYPE A	CONCRETE CURB & GUTTER 30-INCH TYPE D	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT	CONCRETE CURB PEDESTRIAN	CONCRETE SIDEWALK 4-INCH	CONCRETE SIDEWALK 6-INCH	CURB RAMP DETECTABLE WARNING FIELD YELLOW	CONCRETE SURFACE DRAINS	CONCRETE BARRIER TYPE S42	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	INCENTIVE STRENGTH CONCRETE BARRIER
CATEGORY	LOCATION	STAGE	LF	LF	LF	LF	LF	SF	SF	SF	CY	LF	LF	LF	DOL
0010	IH 94 - Wilson Creek Bridge	1	-	-	121	27	-	-	-	-	8	-	800	800	-
0010	IH 94 - Wilson Creek Bridge	2	-	-	-	-	-	-	-	-	-	-	825	825	-
0010	STH 12 Bridge	2 & 3	-	-	96	49	-	-	-	-	6	-	-	-	-
0010	STH 25 Temp Crossover	2	1111	-	-	-	-	2553	-	-	-	-	637	637	-
0010	STH 25 Temp Crossover	4	-	-	-	-	-	-	-	-	-	-	787	787	-
0010	STH 25 Intersection		356	-	-	-	48	-	647	67	-	-	-	-	-
0010	Wilson St		-	281	-	-	-	-	-	-	4	149	-	-	75
0010	Red Cedar Bridge		-	-	147	-	-	-	-	-	7	-	-	-	-
TOTAL 0010			1,467	281	364	76	48	2,553	647	67	25	149	3,049	3,049	75
0040	Rest Area #61		55	-	-	-	-	-	642	20	-	-	-	-	-
0040	Rest Area #62		69	-	-	-	-	-	746	20	-	-	-	-	-
TOTAL 0040			124	0	0	0	0	0	1,388	40	0	0	0	0	0
PROJECT TOTAL			1591	281	364	76	48	2553	2035	107	25	149	3049	3049	75

ASPHALT SHOULDERS													
						305.0110	305.0500	455.0605	460.6244	465.0125	465.0510	602.3210	624.0100
						BASE AGGREGATE DENSE 3/4-INCH	SHAPING SHOULDERS	TACK COAT	HMA PAVEMENT 4 MT 58-34 S	ASPHALTIC SURFACE TEMPORARY	ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY	CONCRETE RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY	WATER
CATEGORY	STATION	TO	STATION	LOCATION		TON	STA	GAL	TON	TON	LF	LF	MGAL
0010				PROJECT		3729	340	-	-	-	-	-	40
0010	18EB+23	-	52EB+78	IH 94 EB LT		-	-	233	559	10	3180	-	-
0010	54EB+00	-	158EB+15	IH 94 EB LT		-	-	827	2054	-	10370	-	-
0010	163EB+00	-	182EB+95	IH 94 EB LT		-	-	155	424	-	1987	-	-
0010	18WB+23	-	52WB+42	IH 94 WB RT		-	-	211	506	10	3160	-	-
0010	53WB+56	-	158WB+15	IH 94 WB RT		-	-	811	2062	-	10375	-	-
0010	163WB+00	-	188WB+11	IH 94 WB RT		-	-	301	758	-	2490	-	-
0010	18EB+23	-	52EB+78	IH 94 EB RT		-	-	129	310	-	-	3279	-
0010	54EB+00	-	158EB+15	IH 94 EB RT		-	-	374	939	-	-	7812	-
0010	163EB+00	-	182EB+95	IH 94 EB RT		-	-	62	157	-	-	1978	-
0010	18WB+23	-	52WB+42	IH 94 WB LT		-	-	119	287	-	-	3145	-
0010	53WB+56	-	158WB+15	IH 94 WB LT		-	-	342	891	-	-	8175	-
0010	163WB+00	-	188WB+11	IH 94 WB LT		-	-	115	368	-	-	2500	-
0010		-		STH 25 CROSSOVER		-	-	-	-	90	-	-	-
0010		-		WILSON STREET		-	-	-	90	-	-	-	-
TOTAL 0010						3,729	340	3,679	9,405	110	31,562	26,889	40
0040				PROJECT		-	-	-	-	-	-	-	-
0040		-		REST AREA 61 ENTRANCE REALIGNMENT		-	-	-	348	-	-	-	-
0040		-		REST AREA 62 ENTRANCE REALIGNMENT		-	-	-	333	-	-	-	-
0040		-		REST AREA 61 SHOULDERS		216	-	285	1096	-	-	-	-
0040		-		REST AREA 62 SHOULDERS		216	-	358	1322	-	-	-	-
TOTAL 0040						432	0	643	3,099	0	0	0	0.00
PROJECT TOTAL						4161	340	4322	12504	110	31562	26889	40

PROJECT NO:	1020-05-63	HWY: IH 94	COUNTY: DUNN	MISCELLANEOUS QUANTITIES	SHEET	163	E
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CULVERT PIPE																								
								203.0100	204.0210	520.8000	520.8700	522.0124	522.0136	522.1024 APRON ENDWALLS FOR CULVERT PIPE	522.1036 APRON ENDWALLS FOR CULVERT PIPE	611.0612	611.2005	SPV.0060.01	SPV.0060.02	SPV.0060.15				
								REMOVING SMALL PIPE CULVERTS EACH	REMOVING MANHOLES EACH	CONCRETE COLLARS FOR PIPE EACH	CLEANING MANHOLES PIPES EACH	CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH LF	REINFORCED CONCRETE 24-INCH EACH	REINFORCED CONCRETE 36-INCH EACH	INLET COVERS TYPE C EACH	MANHOLES 5-FT DIAMETER EACH	SPECIAL (01. REPAIR EMBANKME NT) EACH	SPECIAL (02. RESET AND RETIE END SECTION) EACH	SPECIAL (15. CULVERT PIPE REPLACEMENT LIMITS EXPLORATION AND REMOVAL) EACH	INVERT EL	OUTLET EL	SLOPE	REMARKS
0010				IH 94 EB	30+44 EB RT	-	30+44 EB RT	-	-	-	-	-	-	-	-	-	-	1	-	-				Culvert 18682 Existing 18" CRPC
0010				IH 94 EB	37+94 EB RT	-	37+94 EB RT	-	-	-	-	-	-	-	-	-	-	1	1	-				Culvert 18683 Existing 18" CRPC
0010	1	-	2	IH 94 EB	80+23 EB, 25.1' LT	-	80+45EB, 66.4' RT	-	-	-	-	94	-	1	-	1	1	-	-	1	859.08	858.30	0.83%	PIPE TIED ACROSS ENTIRE LENGTH
0010	3	-	4	IH 94 EB	88+66 EB, 60.8' RT	-	90+68 EB, 59.4' RT	1	1	1	-	-	200	-	2	-	-	-	-	-	855.05	854.57	0.24%	PIPE TIED ACROSS ENTIRE LENGTH
0010				IH 94 EB	108+46 EB RT	-	108+46 EB RT	-	-	-	1	-	-	-	-	-	-	1	-	-				Culvert 18739 Existing 18" CPCS
TOTAL 0010								1	1	1	1	94	200	1	2	1	1	3	1	1				

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DITCH CLEANING

					*	*	SPV.0090.01	FOR INFORMATION ONLY			
					628.1504	628.1520	SPECIAL (01. CLEANING DITCH)				
CATEGORY	STATION	TO	STATION	LOCATION	SILT FENCE LF	SILT FENCE MAINTENANCE LF	LF	SALVAGED TOPSOIL SY	EROSION MAT CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 40 LB
0010	90+69	-	92+44	IH 94 EB RT	-	-	175	158	158	0.1	8
0010	104+90	-	108+52	IH 94 EB RT	-	-	362	330	330	0.3	15
0010	131+19	-	138+13	IH 94 EB RT	-	-	694	619	619	0.4	28
0010	141+70	-	158+03	IH 94 EB RT	1014	1014	1633	1896	1896	1.2	86
0010	142+62	-	157+82	IH 94 WB LT	992	992	1520	1365	1365	0.9	62
0010	24+57	-	29+65	IH 94 WB RT	-	-	508	385	385	0.3	18
0010	95+90	-	110+63	IH 94 WB LT	-	-	1473	385	385	0.3	18
0010	124+97	-	143+27	IH 94 WB LT	-	-	1830	385	385	0.3	18
TOTAL 0010					2,006	2,006	8,195				

EROSION CONTROL

					606.0200	625.0100	625.0500	627.0200	*	*	628.1905	628.1910	628.2008	628.7005	628.7015	628.7504	628.7555	629.0210	630.0140	645.0120	REMARKS
					RIPRAP MEDIUM CY	TOPSOIL SY	SALVAGED TOPSOIL SY	MULCHING SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EROSION CONTROL EACH	EROSION MAT URBAN CLASS I TYPE B SY	INLET PROTECTION TYPE A EACH	INLET PROTECTION TYPE C EACH	TEMPORARY DITCH CHECKS LF	CULVERT PIPE CHECKS EACH	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 40 LB	GEOTEXTILE TYPE HR SY	
0010				PROJECT	-	-	-	-	-	-	8	2	35	-	-	-	-	-	-	1	REPAIR EMBANKMENT REPAIR EMBANKMENT
0010		22+45		IH 94 EB LT	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
0010	30+23.07	-	31+83.07	IH 94 EB RT	-	-	-	-	155	155	-	-	-	-	-	-	-	-	-	-	
0010	37+75.93	-	38+17.23	IH 94 EB RT	-	-	-	-	41.5	41.5	-	-	-	-	-	-	-	-	-	-	
0010		45+40		IH 94 EB LT	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
0010		80+23		IH 94 EB LT	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
0010	90+00	-	125+00	IH 94 EB RT	-	-	-	-	-	-	-	-	-	-	-	32	3	-	-	-	DITCH CLEANING
0010		97+97		IH 94 EB LT	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
0010		108+48		IH 94 EB LT	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
0010		106+29		IH 94 EB LT	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	
0010	125+00	-	182+95	IH 94 LT & RT	-	-	-	-	-	-	-	-	-	-	-	136	-	-	-	-	DITCH CLEANING
0010		142+49.29		IH 94 WB LT	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	
0010	10+85	-	14+50	WILSON STREET	3	21	-	21	255	255	-	-	-	-	-	-	-	0.0	-	12	
0010	95+00	-	105+00	STH 25	-	-	179	-	30	30	-	-	179	-	4	-	-	0.2	9	-	
TOTAL 0010					3	21	179	21	482	482	8	2	214	6	4	168	6	0.2	9	12	

CONSTRUCTION STAKING

					650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.7500 CONSTRUCTION STAKING CONCRETE BARRIER LF	650.8000 CONSTRUCTION RESURFACING LF	650.9000 CONSTRUCTION STAKING CURB RAMPS EACH
0010		PROJECT			-	-	-	-	-	33429	-
0010		80+23			1	-	-	-	-	-	-
0010		89+67			-	-	1	-	-	-	-
0010	89+24	-	90+18		-	-	-	-	149	-	-
0010		STH 25			-	-	-	-	-	1000	3
0010		WILSON STREET			-	282	-	-	-	-	2
TOTAL 0010					1	282	1	0	149	34,429	5
0040		-		REST AREA 61	-	-	-	232	-	2284	2
0040		-		REST AREA 62	-	-	-	254	-	1913	2
TOTAL 0040					0	0	0	486	0	4,197	4
PROJECT TOTAL					1	282	1	486	149	38626	9

PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

MISCELLANEOUS QUANTITIES

SHEET

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SIGN ITEMS															
							634.0616	635.0300	637.1220	637.2210	637.2230	638.2102	638.2601	638.2602	638.3000
CATEGORY	STATION	LOCATION	SIGN #	SIGN CODE	SIZE IN X IN	DESCRIPTION	POSTS WOOD 4X6-INCH X 16-FT	SIGN SUPPORTS REPLACING BASE CONNECTION BOLTS	SIGNS TYPE I REFLECTIVE SH	SIGNS TYPE II REFLECTIVE H	SIGNS TYPE II REFLECTIVE F	MOVING SIGNS TYPE II	REMOVING SIGNS TYPE I	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS
							EACH	EACH	SF	SF	SF	EACH	EACH	EACH	EACH
0010	20+66 WB	IH 94	1-01	E8-1	156 X 84		-	1	91	-	-	-	1	-	-
0010	30+41 EB	IH 94	1-02	E10-61	144 X 54	HOSPITAL EXIT 41	-	1	54	-	-	-	1	-	-
0010	36+76 EB	IH 94	1-03	E3-1	144 X 84	Red Cedar State Trail EXIT 41	-	1	84	-	-	-	1	-	-
0010	52+51 EB	IH 94	2-01	E1-5P	84 X 30	EXIT 41	-	1	17.5	-	-	-	1	-	-
0010	52+51 EB	IH 94	2-02	E4-1-A	204 X 168	25 Menomonie Barron W/ ARROW	-	1	238	-	-	-	1	-	-
0010	83+69 WB	IH 94	3-01	E1-5P	96 X 30	EXIT 41	-	1	20	-	-	-	1	-	-
0010	83+69 WB	IH 94	3-02	E4-1A	204 X 168	25 Menomonie Barron W/ ARROW	-	1	238	-	-	-	1	-	-
0010	89+54.75 EB	IH 94	3-03	E5-51	144 X 60	REST AREA 1/2 MILE	-	1	60	-	-	-	1	-	-
0010	98+61 WB	IH 94	3-04	E3-1	216 X 84	Historic Downtown Menomonie EXIT 41	-	1	126	-	-	-	1	-	-
0010	89+55 WB	IH 94	3-05			Logger's Trail Sign	-	-	-	-	-	-	-	1	1
0010	89+85 EB	IH 94	3-06			Logger's Trail Sign	-	-	-	-	-	-	-	1	1
0010	105+63.50 WB	IH 94	4-01	E3-1	144 X 84	Red Cedar State Trail EXIT 41	-	1	84	-	-	-	1	-	-
0010	113+60 WB	IH 94	4-02	E3-1	120 x 60	UW STOUT EXIT 41	-	1	50	-	-	-	1	-	-
0010	114+05 EB	IH 94	4-03	E5-52	144 X 54	REST AREA W/ ARROW	-	1	54	-	-	-	1	-	-
0010	139+78 WB	IH 94	5-01	E1-5P	96 x 30	EXIT 41	-	1	20	-	-	-	1	-	-
0010	139+78 WB	IH 94	5-02	E1-1-A	204 x 162	25 Menomonie Barron 1 MILE	-	1	229.5	-	-	-	1	-	-
0010	139+78 WB	IH 94	5-03	E2-1	156 X 24	NEXT EXIT 9 MILES	-	1	26	-	-	-	1	-	-
0010	154+10 WB	IH 94	5-06	E5-52	144 X 54	REST AREA W/ ARROW	-	1	54	-	-	-	1	-	-
TOTAL 0010							0	16	1,446	0	0	0	16	2	2
0040	104+12	EB REST STOP OFF RAMP	4-04	W3-5	36 X 36	SPEED REDUCED AHEAD 25 MPH	1	-	-	-	9	-	-	1	1
0040	107+45	EB REST STOP OFF RAMP	4-05	R5-1A	42 X 30	WRONG WAY	1	-	-	-	8.75	-	-	1	1
0040	141+58	WB REST STOP OFF RAMP	5-04	R5-1A	42 X 30	WRONG WAY	1	-	-	-	8.75	-	-	1	-
0040	145+17	WB REST STOP OFF RAMP	5-05	W3-5	36 X 36	SPEED REDUCED AHEAD 25 MPH	1	-	-	-	9	-	-	1	1
0040	131+14	REST STOP	7-01			ALL PETS MUST BE ON A LEASH	1	-	-	-	-	1	-	-	-
0040	131+81	REST STOP	7-02			ALL PETS MUST BE ON A LEASH	1	-	-	-	-	1	-	-	-
0040	132+38	REST STOP	7-03			988 SUICIDE & CRISIS LIFELINE	1	-	-	-	-	1	-	-	-
0040	131+07	REST STOP	7-04	R7-8A	12 X 18	RESERVED PARKING	-	-	-	-	-	1	-	-	-
0040	131+33	REST STOP	7-05	R7-8A	12 X 18	RESERVED PARKING	-	-	-	-	-	1	-	-	-
0040	134+86	REST STOP	7-06			988 SUICIDE & CRISIS LIFELINE	1	-	-	-	-	1	-	-	-
0040	135+35	REST STOP	7-07	R2-1	30 X 36	SPEED LIMIT 25	1	-	-	7.5	-	-	-	1	1
0040	135+38	REST STOP	7-08	R2-1	30 X 36	SPEED LIMIT 25	1	-	-	7.5	-	-	-	1	1
0040	136+42	REST STOP	7-09	R8-74	72 X 54	Cars Trucks Trailers Buses RV's (arrows)	1	-	-	27	-	-	-	1	1
0040	137+81	REST STOP	7-10	R5-1	36 X 36	DO NOT ENTER	1	-	-	9	-	-	-	1	1
0040	110+51	REST STOP	8-01	R5-1	36 X 36	DO NOT ENTER	1	-	-	9	-	-	-	1	1
0040	112+35	REST STOP	8-02	R8-74	72 X 54	Cars Trucks Trailers Buses RV's (arrows)	1	-	-	27	-	-	-	1	1
0040	113+23	REST STOP	8-03	R2-1	30 X 36	SPEED LIMIT 25	1	-	-	7.5	-	-	-	1	1
0040	112+90	REST STOP	8-04	R2-1	30 X 36	SPEED LIMIT 25	1	-	-	7.5	-	-	-	1	1
0040	113+81	REST STOP	8-05			988 SUICIDE & CRISIS LIFELINE	1	-	-	-	-	1	-	-	-
0040	117+25	REST STOP	8-06	R7-8A	12 X 18	RESERVED PARKING	-	-	-	-	-	1	-	-	-
0040	117+56	REST STOP	8-07	R7-8A	12 X 18	RESERVED PARKING	-	-	-	-	-	1	-	-	-
0040	116+00	REST STOP	8-08			ALL PETS MUST BE ON A LEASH	1	-	-	-	-	1	-	-	-
0040	118+51	REST STOP	8-09			ALL PETS MUST BE ON A LEASH	1	-	-	-	-	1	-	-	-
0040	120+66	REST STOP	8-10	R7-1L	18 X 24	NO PARKING ANYTIME LEFT ARROW	1	-	-	3	-	-	-	1	1
0040	121+84	REST STOP	8-11	R7-1L	18 X 24	NO PARKING ANYTIME LEFT ARROW	1	-	-	3	-	-	-	1	1
0040	120+79	REST STOP	8-12	R7-1L	18 X 24	NO PARKING ANYTIME LEFT ARROW	1	-	-	3	-	-	-	1	1
TOTAL 0040							22	0	0	111	35.50	11	0	15	14
PROJECT TOTAL							22	16	1446	111	35.50	11	16	17	16

PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

MISCELLANEOUS QUANTITIES

SHEET

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BASIC TRAFFIC QUEUE WARNING SYSTEM - INFORMATION ONLY

LOCATION	STAGE	FLASHING BEACON SIGNS (FBS)	PORTABLE TRAFFIC SENSORS (PTS)	BASIC QUEUE WARNING SYSTEM (DAY)
IH 94 EB	1	3	3	21
IH 94 WB	1	3	3	21
IH 94 EB	2	3	3	18
IH 94 WB	2	3	3	18
IH 94 EB	3	3	3	7
IH 94 WB	3	3	3	7
IH 94 EB	BRIDGE WORK 1	3	3	6
IH 94 EB	BRIDGE WORK 2	3	3	6

*THESE ITEMS ARE PART OF THE QWS AND ARE PAID FOR ONE COMPLETE SYSTEM PER ROADWAY

DIGITAL SPEED REDUCTION SYSTEM - INFORMATION ONLY

LOCATION	STAGE	DIGITAL SPEED LIMIT TRAILERS (DSLTL)	DIGITAL SPEED REDUCTION SYSTEM (DAY)
IH 94 EB	1	3	21
IH 94 WB	1	3	21
IH 94 EB	2	3	18
IH 94 WB	2	3	18
IH 94 EB	3	3	7
IH 94 WB	3	3	7
IH 94 EB	BRIDGE WORK 1	1	6
IH 94 WB	BRIDGE WORK 1	2	6
IH 94 EB	BRIDGE WORK 2	1	6
IH 94 WB	BRIDGE WORK 2	2	6

TRAFFIC QUEUE WARNING SYSTEM - INFORMATION ONLY

LOCATION	STAGE	FLASHING BEACON SIGNS (FBS)	PORTABLE TRAFFIC SENSORS (PTS)	TRAFFIC QUEUE WARNING SYSTEM (DAY)
IH 94 WB	BRIDGE WORK 1	3	3	6
IH 94 WB	BRIDGE WORK 2	3	3	6

*THESE ITEMS ARE PART OF THE QWS AND ARE PAID FOR ONE COMPLETE SYSTEM PER ROADWAY

3

TRAFFIC CONTROL

		643.0300		643.0370.S		643.0420		643.0705		643.0715		643.0900		643.1050		643.1200.S PORTABLE AUTOMATED		643.1205.S		
		TRAFFIC CONTROL DRUMS		DIGITAL SPEED REDUCTION SYSTEM (DSRS)		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL SIGNS PCMS		REAL-TIME TRAFFIC QUEUE WARNING SYSTEM		BASIC TRAFFIC QUEUE WARNING SYSTEM		
CATEGORY	LOCATION	DAYS IN SERVICE	NUMBER	DAY	NUMBER	DAY	NUMBER	DAY	NUMBER	DAY	NUMBER	DAY	NUMBER	DAY	EACH	DAY	NUMBER	DAY	NUMBER	DAY
0010	ADVANCED WARNING	189	157	29673	-	-	-	-	-	-	-	-	-	-	2	378	-	-	-	-
0010	IH 94 EB STAGE 1	21	370	7770	1	21	7	147	14	294	79	1659	29	609	-	-	-	-	1	21
0010	IH 94 EB STAGE 2	18	331	5958	1	18	4	72	8	144	62	1116	23	414	-	-	-	-	1	18
0010	IH 94 EB STAGE 3	7	370	2590	1	7	7	49	14	98	79	553	29	203	-	-	-	-	1	7
0010	IH 94 EB STH 25 EXIT RAMP	1	17	17	-	-	4	4	6	6	-	-	5	5	1	1	-	-	-	-
0010	IH 94 EB STH 25 ENTRANCE RAMP	1	42	42	-	-	1	1	8	8	6	6	13	13	1	1	-	-	-	-
0010	IH 94 EB REST AREA EXIT RAMP	1	9	9	-	-	1	1	2	2	-	-	1	1	-	-	-	-	-	-
0010	IH 94 EB REST AREA ENTRANCE RAMP	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0010	IH 94 WB STAGE 1	21	317	6657	1	21	7	147	14	294	76	1596	30	630	-	-	-	-	1	21
0010	IH 94 WB STAGE 2	18	309	5562	1	18	4	72	8	144	61	1098	22	396	-	-	-	-	1	18
0010	IH 94 WB STAGE 3	7	317	2219	1	7	7	49	14	98	76	532	30	210	-	-	-	-	1	7
0010	IH 94 WB STH 25 ENTRANCE RAMP	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0010	IH 94 WB STH 25 EXIT RAMP	1	17	17	-	-	4	4	6	6	-	-	5	5	1	1	-	-	-	-
0010	IH 94 WB REST AREA ENTRANCE RAMP	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-
0010	IH 94 WB REST AREA EXIT RAMP	1	6	6	-	-	1	1	2	2	-	-	1	1	-	-	-	-	-	-
0010	STH 25 STAGE 1	5	72	360	-	-	4	20	8	40	20	100	24	120	-	-	-	-	-	-
0010	STH 25 STAGE 2	20	69	1380	-	-	8	160	14	280	37	740	32	640	-	-	-	-	-	-
0010	STH 25 STAGE 3	5	68	340	-	-	4	20	8	40	22	110	24	120	-	-	-	-	-	-
0010	STH 25 STAGE 4	20	69	1380	-	-	4	80	12	240	40	800	33	660	-	-	-	-	-	-
0010	STH 25 STAGE 5	5	67	335	-	-	4	20	8	40	22	110	24	120	-	-	-	-	-	-
0010	WILSON STREET CLOSURE	50	-	-	-	-	6	300	12	600	-	-	10	500	-	-	-	-	-	-
0010	IH 94 WB B-17-0174 STAGE 1	6	111	666	1	6	2	12	4	24	45	270	14	84	-	-	1	6	-	-
0010	IH 94 WB B-17-0174 STAGE 2	6	90	540	1	6	3	18	6	36	30	180	15	90	-	-	1	6	-	-
0010	IH 94 EB B-17-0175 STAGE 1	6	111	666	1	6	2	12	4	24	48	288	12	72	-	-	-	-	1	6
0010	IH 94 EB B-17-0175 STAGE 2	6	95	570	1	6	3	18	6	36	31	186	13	78	-	-	-	-	1	6
0010	REST AREAS	30	62	1860	-	-	6	180	8	240	-	-	20	600	-	-	-	-	-	-
TOTAL 0010			68,617		116		1,387		2,696		9,344		5,571		382		12		104	

CONNECTED WORK ZONES

		643.0810			643.1220	
		TRAFFIC CONTROL CONNECTED ARROW BOARDS			TRAFFIC CONTROL CONNECTED WORK ZONE START AND END LOCATION MARKERS	
CATEGORY	LOCATION	DAYS IN SERVICE	NUMBER	DAY	NUMBER	DAY
0010	IH 94 EB STAGE 1	21	1	21	1	21
0010	IH 94 EB STAGE 2	18	1	18	1	18
0010	IH 94 EB STAGE 3	7	1	7	1	7
0010	IH 94 WB STAGE 1	21	1	21	1	21
0010	IH 94 WB STAGE 2	18	1	18	1	18
0010	IH 94 WB STAGE 3	7	1	7	1	7
0010	STH 25 STAGE 1	5	2	10	2	10
0010	STH 25 STAGE 2	20	2	40	2	40
0010	STH 25 STAGE 3	5	2	10	2	10
0010	STH 25 STAGE 4	20	2	40	2	40
0010	STH 25 STAGE 5	5	2	10	2	10
0010	IH 94 WB B-17-0174 STAGE 1	6	1	6	1	6
0010	IH 94 WB B-17-0174 STAGE 2	6	1	6	1	6
0010	IH 94 EB B-17-0175 STAGE 1	6	1	6	1	6
0010	IH 94 EB B-17-0175 STAGE 2	6	1	6	1	6
TOTAL 0010			226		226	

PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

MISCELLANEOUS QUANTITIES

SHEET

E

LIGHTING REMOVALS				
ITEM		204.0195 REMOVING CONCRETE BASES EACH	204.9060.S.01 REMOVING STREET LIGHT ASSEMBLY EACH	659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR EACH
CATEGORY 0040				
REST AREA #61				
EXSL	A1	1	1	1
EXSL	A2	1	1	1
EXSL	A3	1	1	1
EXSL	A4	1	1	1
EXSL	A5	1	1	1
EXSL	A6	1	1	1
EXSL	A7	1	1	1
EXSL	B1	--	1	1
EXSL	B2	--	1	1
EXSL	B3	--	1	1
EXSL	B4	--	1	1
EXSL	B5	1	1	1
EXSL	B6	1	1	1
EXSL	B7	1	1	1
EXSL	C1	--	1	1
EXSL	C2	--	1	1
EXSL	C3	--	1	1
EXSL	C4	--	1	1
EXSL	C5	--	1	1
EXSL	C6	--	1	1
EXSL	C7	--	1	1
REST AREA #61 SUBTOTAL		10	21	21
REST AREA #62				
EXSL	A1	1	1	1
EXSL	A2	1	1	1
EXSL	A3	1	1	1
EXSL	A4	1	1	1
EXSL	A7	1	1	1
EXSL	A6	1	1	1
EXSL	A7	1	1	1
EXSL	B1	--	1	1
EXSL	B2	--	1	1
EXSL	B3	--	1	1
EXSL	B4	--	1	1
EXSL	B5	1	1	1
EXSL	B6	1	1	1
EXSL	B7	1	1	1
EXSL	C1	--	1	1
EXSL	C2	--	1	1
EXSL	C3	--	1	1
EXSL	C4	--	1	1
EXSL	C5	--	1	1
EXSL	C6	--	1	1
EXSL	C7	--	1	1
REST AREA #62 SUBTOTAL		10	21	21
PROJECT TOTAL		20	42	42

LIGHTING LINEAR REMOVALS			
FROM		- TO	204.9090.S.01 REMOVING ELECTRICAL CONDUCTORS FROM EXISTING CONDUIT LF
CATEGORY 0040			
REST AREA #61			
EXPB 1	-	EXSL B2	90
EXSL B2	-	EXSL B1	120
EXSL B2	-	EXSL B3	140
EXSL B3	-	EXSL B4	150
EXSL B4	-	EXSL B5	190
EXSL B5	-	EXSL B6	160
EXSL B6	-	EXSL B7	180
EXPB 1	-	EXSL C3	130
EXSL C3	-	EXSL C2	140
EXSL C2	-	EXSL C1	140
EXSL C3	-	EXSL C4	160
EXSL C4	-	EXSL C5	130
EXSL C5	-	EXSL C6	130
EXSL C6	-	EXSL C7	160
EXPB 1	-	EXSL A3	370
EXSL A3	-	EXSL A2	150
EXSL A2	-	EXSL A1	180
EXSL A3	-	EXSL A4	160
EXSL A4	-	EXSL A5	190
EXSL A5	-	EXSL A6	190
EXSL A6	-	EXSL A7	190
REST AREA #61 SUBTOTAL			3450
REST AREA #62			
EXPB 1	-	EXPB 2	180
EXPB 2	-	EXSL B2	100
EXSL B2	-	EXSL B1	130
EXPB 2	-	EXSL B3	50
EXSL B3	-	EXSL B4	180
EXSL B4	-	EXPB 4	130
EXPB 4	-	EXSL B5	70
EXSL B5	-	EXSL B6	160
EXSL B6	-	EXSL B7	150
EXPB 1	-	EXSL C3	130
EXSL C3	-	EXSL C2	140
EXSL C2	-	EXSL C1	140
EXSL C3	-	EXSL C4	150
EXSL C4	-	EXSL C5	140
EXSL C5	-	EXSL C6	140
EXSL C6	-	EXSL C7	140
EXPB 2	-	EXSL A6	220
EXSL A6	-	EXSL A7	160
EXSL A6	-	EXSL A5	170
EXSL A5	-	EXSL A4	210
EXSL A4	-	EXSL A3	140
EXSL A3	-	EXSL A2	150
EXSL A2	-	EXSL A1	180
REST AREA #62 SUBTOTAL			3360
PROJECT TOTAL			6810

LIGHTING CONDUIT AND WIRE							
FROM - TO		652.0225	652.0325	652.0605	655.0610 *	655.0620	REMARKS
		CONDUIT RIGID NONMETALLIC	CONDUIT	SPECIAL	ELECTRICAL WIRE	ELECTRICAL WIRE	
		SCHEDULE 40	SCHEDULE 80	2-INCH	LIGHTING	LIGHTING	
		2-INCH	2-INCH	2-INCH	12 AWG	8 AWG	
		LF	LF	LF	LF	LF	
CATEGORY 0040							
REST AREA #61							
EXCB 100	-	EXPB 102	--	--	--	1,062	EXISTING CONDUIT
SL 100	-	SL 101	180	--	--	570	--
SL 101	-	SL 102	150	--	--	480	--
SL 102	-	PB 100	30	--	--	258	--
PB 100	-	SL 103	130	--	--	429	--
SL 103	-	SL 104	185	--	--	585	--
SL 104	-	SL 105	185	--	--	585	--
SL 105	-	SL 106	195	--	--	615	--
SL 106	-	PB 104	275	--	288	--	TRACER WIRE ONLY
PB 100	-	PB 101	--	80	--	288	--
PB 101	-	EXPB 102	--	235	--	753	--
EXPB 102	-	SL 119	--	--	--	399	EXISTING CONDUIT
SL 119	-	SL 118	--	--	--	465	EXISTING CONDUIT
SL 118	-	SL 117	--	--	--	405	EXISTING CONDUIT
SL 119	-	SL 120	--	--	--	495	EXISTING CONDUIT
SL 120	-	SL 121	--	--	--	435	EXISTING CONDUIT
SL 121	-	SL 122	--	--	--	435	EXISTING CONDUIT
SL 122	-	SL 123	--	--	--	525	EXISTING CONDUIT
PB 102	-	SL 114	--	--	--	294	EXISTING CONDUIT
SL 114	-	SL 113	--	--	--	405	EXISTING CONDUIT
SL 113	-	SL 112	110	--	--	360	EXISTING CONDUIT
SL 114	-	SL 115	--	--	--	450	
SL 115	-	SL 116	--	--	--	480	EXISTING CONDUIT
SL 116	-	PB 103	110	--	--	369	--
PB 103	-	PB 104	--	45	--	183	--
PB 104	-	SL 107	30	--	--	129	--
SL 107	-	SL 108	170	--	--	540	--
SL 108	-	SL 109	170	--	--	540	--
SL 109	-	SL 110	195	--	--	615	--
SL 110	-	SL 111	195	--	--	615	--
SL 111	-	SL 124	200	--	--	630	--
REST AREA #61 SUBTOTAL		2510	0	360	288	14394	

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

LIGHTING CONDUIT AND WIRE (CONTINUED)							
		652.0225	652.0325	652.0605	655.0610 *	655.0620	REMARKS
		CONDUIT RIGID NONMETALLIC	CONDUIT	SPECIAL	ELECTRICAL WIRE	ELECTRICAL WIRE	
		SCHEDULE 40	SCHEDULE 80		LIGHTING	LIGHTING	
FROM	TO	2-INCH	2-INCH	2-INCH	12 AWG	8 AWG	
		LF	LF	LF	LF	LF	
CATEGORY 0040							
REST AREA #62							
EXCB 200	- EXPB 200	--	--	--	--	612	EXISTING CONDUIT
EXPB 200	- SL 220	--	--	--	--	384	EXISTING CONDUIT
SL 220	- SL 219	--	--	--	--	450	EXISTING CONDUIT
SL 219	- SL 218	--	--	--	--	435	EXISTING CONDUIT
SL 220	- SL 221	--	--	--	--	465	EXISTING CONDUIT
SL 221	- SL 222	--	--	--	--	450	EXISTING CONDUIT
SL 222	- SL 223	--	--	--	--	435	EXISTING CONDUIT
SL 223	- SL 224	--	--	--	--	465	EXISTING CONDUIT
EXPB 200	- EXPB 201	--	--	--	--	393	EXISTING CONDUIT
EXPB 200	- EXPB 201	--	--	125	--	423	--
EXPB 201	- SL 215	--	--	--	--	309	EXISTING CONDUIT
SL 215	- SL 214	--	--	--	--	405	EXISTING CONDUIT
SL 214	- SL 225	125	--	--	--	405	--
EXPB 201	- SL 216	--	--	--	--	348	EXISTING CONDUIT
SL 216	- SL 217	--	--	--	--	570	EXISTING CONDUIT
SL 217	- PB 203	125	--	--	--	414	--
PB 203	- PB 204	--	50	--	--	198	--
PB 204	- SL 207	15	--	--	--	84	--
SL 207	- SL 208	160	--	--	--	510	--
SL 208	- SL 209	155	--	--	--	495	--
SL 209	- SL 210	180	--	--	--	570	--
SL 210	- SL 211	185	--	--	--	585	--
SL 211	- SL 212	185	--	--	--	585	--
SL 212	- SL 213	185	--	--	--	585	--
EXPB 201	- PB 202	--	--	165	--	543	--
PB 202	- SL 206	160	--	--	--	519	--
SL 206	- PB 204	270	--	--	283	--	TRACER WIRE ONLY
PB 202	- SL 205	40	--	--	--	318	--
SL 205	- SL 204	205	--	--	--	645	--
SL 204	- SL 203	200	--	--	--	630	--
SL 203	- SL 202	155	--	--	--	495	--
SL 202	- SL 201	145	--	--	--	465	--
SL 201	- SL 200	180	--	--	--	570	--
REST AREA #62 SUBTOTAL		2670	50	290	283	14760	
PROJECT TOTAL		5180	50	650	571	29154	

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

LIGHTING PULLBOXES						
PULLBOX NUMBER	STATION	OFFSET	R/L	652.0700.S	653.0164	
				INSTALL CONDUIT INTO EXISTING ITEM EACH	PULL BOXES NON-CONDUCTIVE 24X42-INCH EACH	
CATEGORY 0040						
REST AREA #61						
PB 100	120+54'EB2'	126.0'	RT	--		1
PB 101	119+75'EB2'	120.6'	RT	--		1
EXPB 102	FIELD LOCATE			1		--
PB 103	114+41'EB2'	13.0'	RT	--		1
PB 104	114+43'EB2'	34.5'	RT	--		1
REST AREA #61 SUBTOTAL				1		4
REST AREA #62						
EXPB 200	FIELD LOCATE			1		--
PB 201	FIELD LOCATE			1		--
PB 202	131+89'WB'	402.6'	LT	--		1
PB 203	135+08'WB'	190.3'	LT	--		1
PB 204	135+47'WB'	213.6'	LT	--		1
REST AREA #62 SUBTOTAL				2		3
PROJECT TOTAL				3		7

LIGHTING CONTROL				
CABINET NUMBER	STATION	OFFSET	R/L	SPV.0060.05 MODIFY EXISTING LIGHTING CONTROLS EACH
CATEGORY 0040				
REST AREA #61				
EXCB100	FIELD LOCATE			1
REST AREA #61 SUBTOTAL				1
REST AREA #62				
EXCB200	FIELD LOCATE			1
REST AREA #62 SUBTOTAL				1
PROJECT TOTAL				2

TEMPORARY LIGHTING		
	SPV.0060.06 TEMPORARY STREET LIGHTING SYSTEM (REST AREA #61) EACH	SPV.0060.07 TEMPORARY STREET LIGHTING SYSTEM (REST AREA #62) EACH
CATEGORY 0040		
REST AREA #61	1	--
REST AREA #61 SUBTOTAL	1	0
REST AREA #62	--	1
REST AREA #62 SUBTOTAL	0	1
PROJECT TOTAL	1	1

STREET LIGHTS												
				654.0105 CONCRETE BASES TYPE 5 EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0322 POLES TYPE 5 ALUMNUM EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1//2-INCH CLAMP 6-FT EACH	657.0710 LUMINAIRE ARMS TRUSS TYPE 4 1//2-INCH CLAMP 12-FT EACH	659.1120 LUMINAIRES UTILITY LED B EACH	659.1125 LUMINAIRES UTILITY LED C EACH	655.0610 * WIRE LIGHTING 12AWG LF	
LIGHT NUMBER	STATION	OFFSET	R/L									
CATEGORY 0040												
REST AREA #61												
SL	100	123+63'EB2'	28.8'	RT	1	1	1	1	--	1	--	147
SL	101	121+85'EB2'	33.6'	RT	1	1	1	1	--	1	--	147
SL	102	120+68'EB2'	102.9'	RT	1	1	1	1	--	1	--	147
SL	103	120+46'EB2'	251.3'	RT	1	1	1	--	1	--	1	159
SL	104	119+14'EB2'	360.5'	RT	1	1	1	--	1	--	1	159
SL	105	117+37'EB2'	406.5'	RT	1	1	1	--	1	--	1	159
SL	106	116+96'EB'	32.8'	RT	1	1	1	--	1	--	1	159
SL	107	114+15'EB'	34.3'	RT	1	1	1	1	--	1	--	147
SL	108	112+36'EB'	31.7'	RT	1	1	1	1	--	1	--	147
SL	109	110+50'EB2'	31.5'	RT	1	1	1	1	--	1	--	147
SL	110	108+58'EB2'	32.8'	RT	1	1	1	1	--	1	--	147
SL	111	106+67'EB2'	32.8'	RT	1	1	1	1	--	1	--	147
SL	112	119+40'EB2'	152.3'	RT	1	1	1	--	1	--	1	159
SL	113	118+51'EB2'	208.0'	RT	--	1	1	--	1	--	1	159
SL	114	117+35'EB2'	240.0'	RT	--	1	1	--	1	--	1	159
SL	115	117+12'EB'	133.8'	RT	--	1	1	--	1	--	1	159
SL	116	115+53'EB'	53.9'	RT	--	1	1	--	1	--	1	159
SL	117	120+47'EB2'	27.6'	RT	--	1	1	1	--	1	--	147
SL	118	119+28'EB2'	48.2'	RT	--	1	1	1	--	1	--	147
SL	119	117+88'EB2'	47.7'	RT	--	1	1	1	--	1	--	147
SL	120	116+35'EB2'	48.3'	RT	--	1	1	1	--	1	--	147
SL	121	115+04'EB2'	48.7'	RT	--	1	1	1	--	1	--	147
SL	122	113+81'EB2'	26.6'	RT	--	1	1	1	--	1	--	147
SL	123	112+21'EB2'	29.0'	RT	--	1	1	1	--	1	--	147
SL	124	104+67'EB2'	32.8'	RT	1	1	1	1	--	1	--	147
REST AREA #61 SUBTOTAL					14	25	25	16	9	16	9	3783
*ADDITIONAL QUANTITIES FOUND ELSEWHERE												

STREET LIGHTS (CONTINUED)													
						654.0105	657.0255	657.0322	657.0610	657.0710	659.1120	659.1125	655.0610 *
						CONCRETE	TRANSFORMER BASES	POLES	LUMINAIRE ARMS	LUMINAIRE ARMS			
						BASES	BREAKAWAY 11 1/2-INCH	TYPE 5	SINGLE MEMBER 4 1/2-INCH	TRUSS TYPE 4 1/2-INCH	LUMINAIRES	LUMINAIRES	
						TYPE 5	BOLT CIRCLE	ALUMINUM	CLAMP 6-FT	CLAMP 12-FT	UTILITY LED B	UTILITY LED C	
LIGHT		STATION	OFFSET	R/L		EACH	EACH	EACH	EACH	EACH	EACH	EACH	12AWG
NUMBER													LF
CATEGORY 0040													
REST AREA #62													
SL	200	124+94'WB'	27.9'	LT	1	1	1	1	--	1	--	147	
SL	201	126+74'WB'	35.1'	LT	1	1	1	1	--	1	--	147	
SL	202	127+90'WB'	93.1'	LT	1	1	1	1	--	1	--	147	
SL	203	128+18'WB'	237.4'	LT	1	1	1	--	1	--	1	159	
SL	204	129+53'WB'	359.1'	LT	1	1	1	--	1	--	1	159	
SL	205	131+50'WB'	404.0'	LT	1	1	1	--	1	--	1	159	
SL	206	133+44'WB'	380.5'	LT	1	1	1	--	1	--	1	159	
SL	207	135+54'WB'	204.0'	LT	1	1	1	1	--	1	--	147	
SL	208	136+56'WB'	89.8'	LT	1	1	1	1	--	1	--	147	
SL	209	137+90'WB'	35.7'	LT	1	1	1	1	--	1	--	147	
SL	210	139+67'WB'	33.8'	LT	1	1	1	1	--	1	--	147	
SL	211	141+49'WB'	33.8'	LT	1	1	1	1	--	1	--	147	
SL	212	143+33'WB'	33.8'	LT	1	1	1	1	--	1	--	147	
SL	213	145+14'WB'	33.8'	LT	1	1	1	1	--	1	--	147	
SL	214	129+88'WB'	193.0'	LT	--	1	1	--	1	--	1	159	
SL	215	131+02'WB'	234.2'	LT	--	1	1	--	1	--	1	159	
SL	216	132+38'WB'	235.0'	LT	--	1	1	--	1	--	1	159	
SL	217	134+01'WB'	257.6'	LT	--	1	1	--	1	--	1	159	
SL	218	128+18'WB'	29.2'	LT	--	1	1	1	--	1	--	147	
SL	219	129+35'WB'	49.3'	LT	--	1	1	1	--	1	--	147	
SL	220	130+75'WB'	49.1'	LT	--	1	1	1	--	1	--	147	
SL	221	132+19'WB'	49.4'	LT	--	1	1	1	--	1	--	147	
SL	222	133+59'WB'	49.3'	LT	--	1	1	1	--	1	--	147	
SL	223	134+86'WB'	28.0'	LT	--	1	1	1	--	1	--	147	
SL	224	136+26'WB'	28.4'	LT	--	1	1	1	--	1	--	147	
SL	225	128+92'WB'	123.5'	LT	1	1	1	--	1	--	1	159	
REST AREA #62 SUBTOTAL						15	26	26	17	9	17	9	3930
PROJECT TOTAL						29	51	51	33	18	33	18	7713

*ADDITIONAL QUANTITIES FOUND ELSEWHERE

FTMS TRAFFIC SENSORS AND CAMERAS

CATEGORY	ROADWAY / SITE	ITEM ID.	LOCATION	204.9060.S.02	204.9060.S.03	677.0200	677.9200.S	SPV.0060.08	SPV.0060.09	SPV.0060.10
				REMOVING WIRELESS TRAFFIC SENSOR ACCESS POINT EACH	REMOVING WIRELESS TRAFFIC SENSOR REPEATER EACH	INSTALL CAMERA ASSEMBLY EACH	REMOVING CCTV CAMERA EACH	INSTALL WIRELESS TRAFFIC SENSOR EACH	INSTALL WIRELESS TRAFFIC SENSOR ACCESS POINT EACH	INSTALL WIRELESS TRAFFIC SENSOR REPEATER EACH
40	REST AREA 61	EXLP116	EXIST	--	--	1	1	--	--	--
		EXLP118	EXIST	--	--	1	1	--	--	--
		EXLP119	EXIST	--	--	1	1	--	--	--
		EXLP120	EXIST	--	--	1	1	--	--	--
		EXLP121	EXIST	--	--	1	1	--	--	--
	REST AREA 62	EXLP128WB	EXIST	--	1	--	--	--	--	--
		LP128WB	SEE LIGHTING PLANS	--	--	--	--	--	--	1
		EX-SDS-17-0009	127+55*	--	--	--	--	6	--	--
		EX-CCTV-17-0044	EXIST	2	--	--	--	--	2	--
		EXLP135WB	EXIST	--	1	--	--	--	--	--
		LP135WB	SEE LIGHTING PLANS	--	--	--	--	--	--	1
		EX-SDS-17-0009	135+40*	--	--	--	--	6	--	--
		TOTALS		2	2	5	5	12	2	2

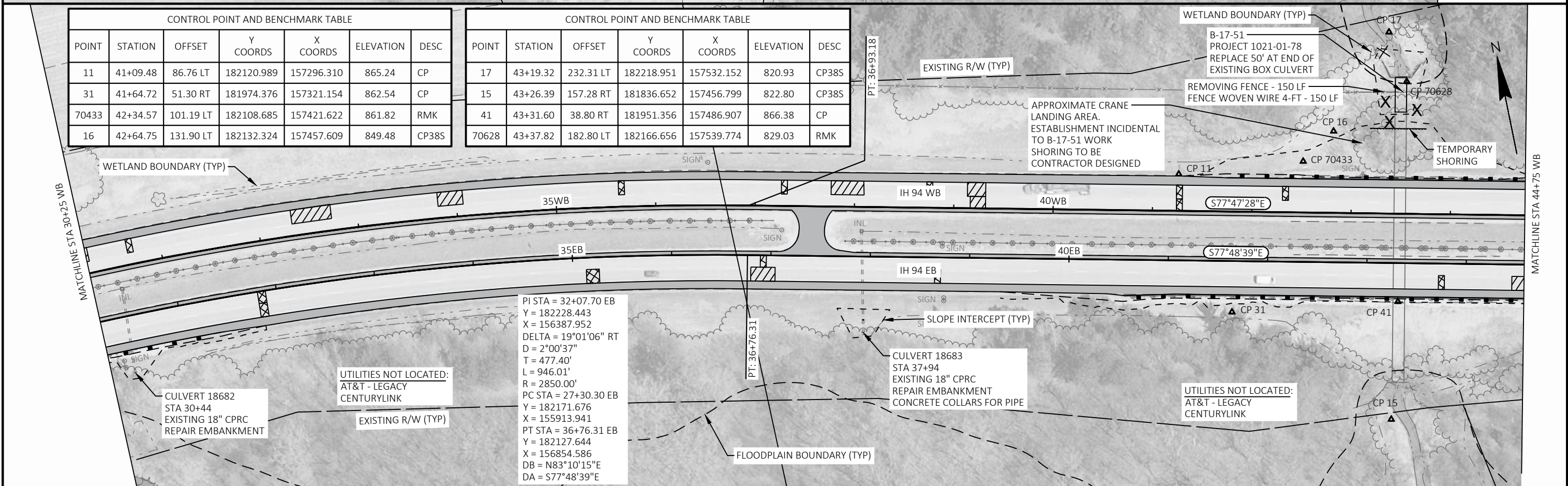
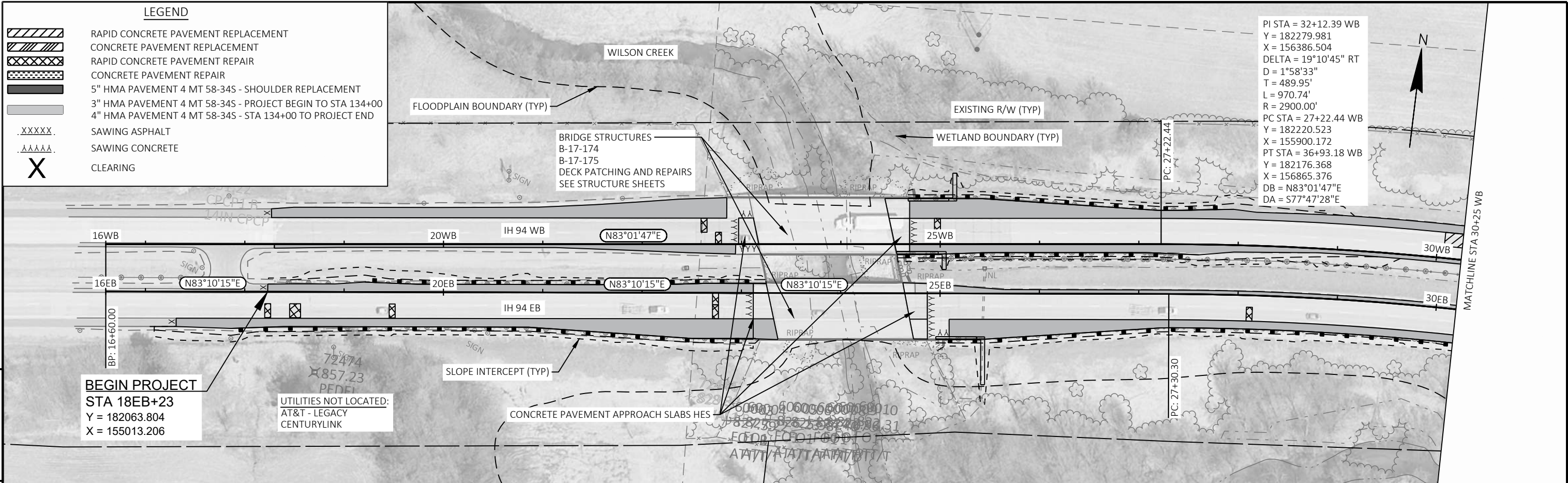
* - PLACE SENSORS BASED ON DIMENSIONS SHOWN IN CONSTRUCTION DETAILS. STATION SHOWN TO FRONT CENTER SENSOR

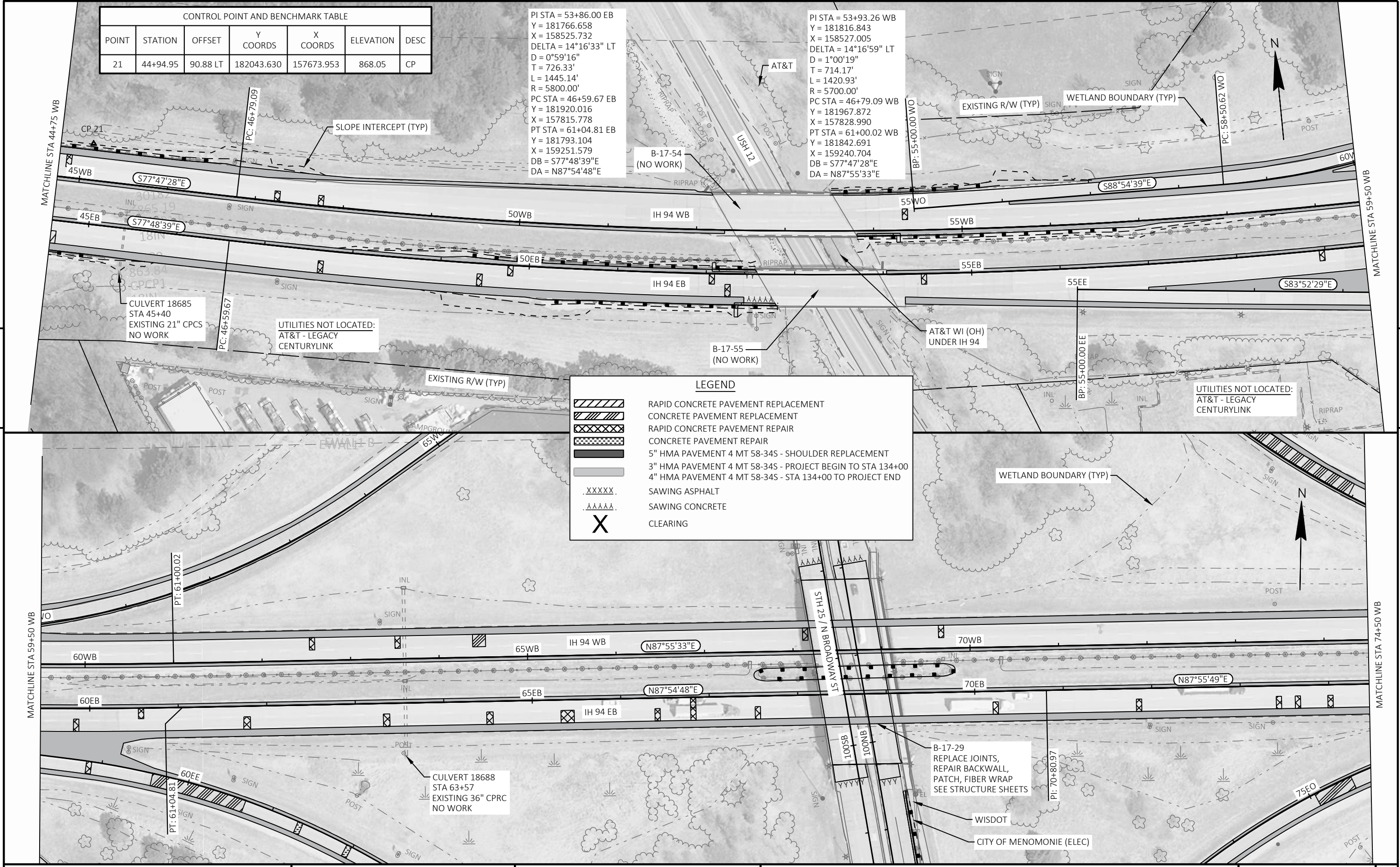
MISCELLANEOUS ITEMS

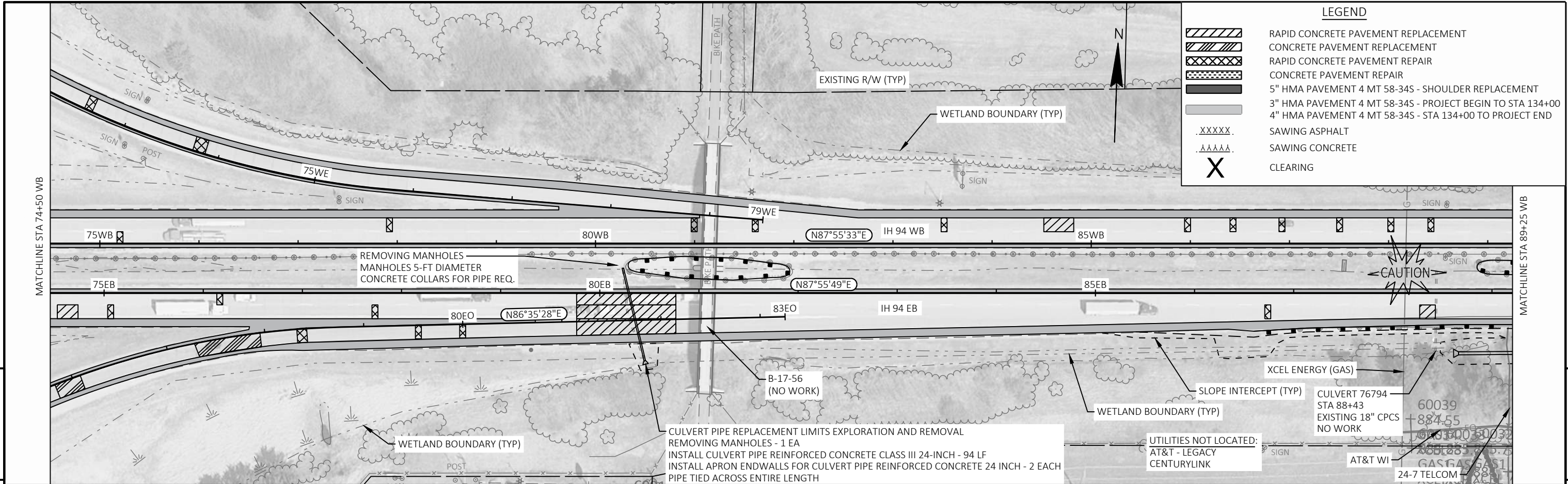
CATEGORY	ROADWAY / SITE	ROADWAY	670.0101
			FIELD SYSTEM INTEGRATOR EACH
40	REST AREAS 61 AND 62	IH 94	1
TOTALS			1

3

BARRIERS														







LEGEND

RAPID CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPLACEMENT

RAPID CONCRETE PAVEMENT REPAIR

CONCRETE PAVEMENT REPAIR

5" HMA PAVEMENT 4 MT 58-34S - SHOULDER REPLACEMENT

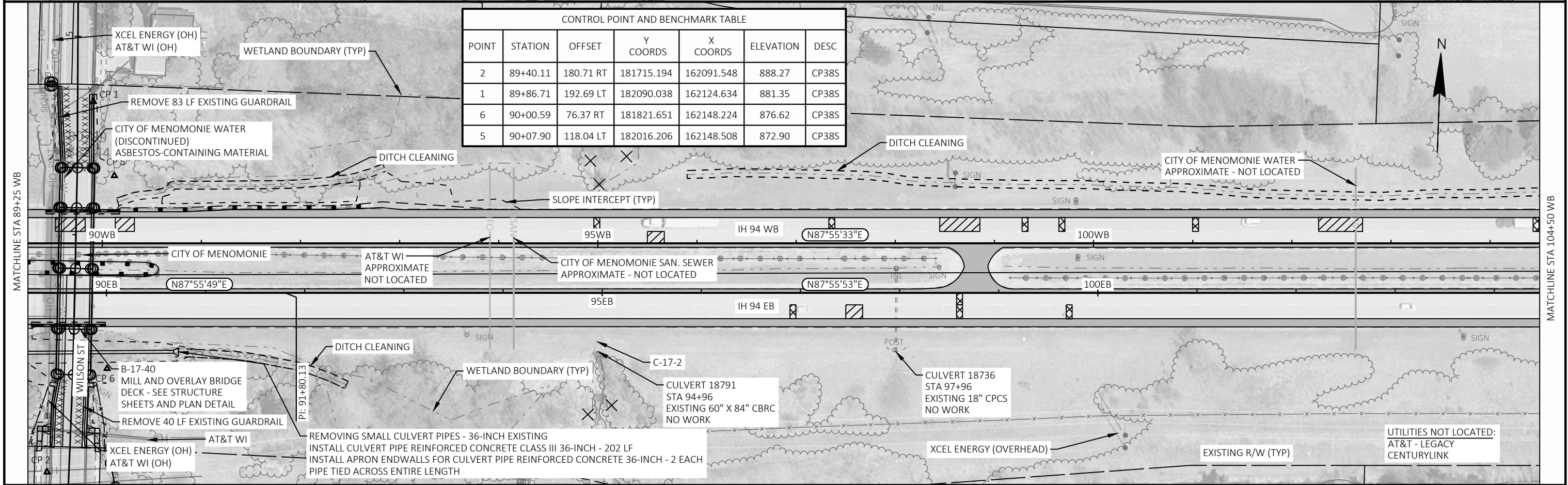
3" HMA PAVEMENT 4 MT 58-34S - PROJECT BEGIN TO STA 134+00

4" HMA PAVEMENT 4 MT 58-34S - STA 134+00 TO PROJECT END

SAWING ASPHALT

SAWING CONCRETE

CLEARING



LEGEND

- RAPID CONCRETE PAVEMENT REPLACEMENT
- CONCRETE PAVEMENT REPLACEMENT
- RAPID CONCRETE PAVEMENT REPAIR
- CONCRETE PAVEMENT REPAIR
- 5" HMA PAVEMENT 4 MT 58-34S - SHOULDER REPLACEMENT
- 3" HMA PAVEMENT 4 MT 58-34S - PROJECT BEGIN TO STA 134+00
- 4" HMA PAVEMENT 4 MT 58-34S - STA 134+00 TO PROJECT END
- SAWING ASPHALT
- SAWING CONCRETE
- CLEARING

EXISTING R/W (TYP)

WETLAND BOUNDARY (TYP)

C-17-8

SIGN

N87°55'33"E

105WB

IH 94 WB

110WB

112'WB2'

115WB

115'WB2'

105EB

IH 94 EB

110EB

115EB

DITCH CLEANING

SLOPE INTERCEPT (TYP)

**CULVERT 18739
STA 108+46
EXISTING 18" CPCS
CLEANING CULVERT PIPES
REPAIR EMBANKMENT**

**UTILITIES NOT LOCATED:
AT&T - LEGACY
CENTURYLINK**

**CULVERT 18740
STA 114+96
EXISTING 18" CPCS
NO WORK**

WISDOT - ELECTRIC

XCEL ENERGY (OVERHEAD)

REST AREA #62

120WB

125WB

IH 94 WB

130WB

120'WB2'

125'WB2'

130'WB2'

120EB

125EB

130EB

100'EB2'

105'EB2'

110'EB2'

115'EB2'

120'WB2'

125'WB2'

130'WB2'

120EB

125EB

130EB

100'EB2'

105'EB2'

110'EB2'

115'EB2'

DITCH CLEANING

SLOPE INTERCEPT (TYP)

REST AREA #61

WISDOT - ELECTRIC

**CULVERT 18797
STA 123+96
EXISTING 72" CPCS
NO WORK**

**UTILITIES NOT LOCATED:
AT&T - LEGACY
CENTURYLINK**

WETLAND BOUNDARY (TYP)

PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

PLAN SHEETS

SHEET 181

E

FILE NAME : N:\PDS\C3D\10200533\SHEETS\050101-PN.DWG
LAYOUT NAME - 04

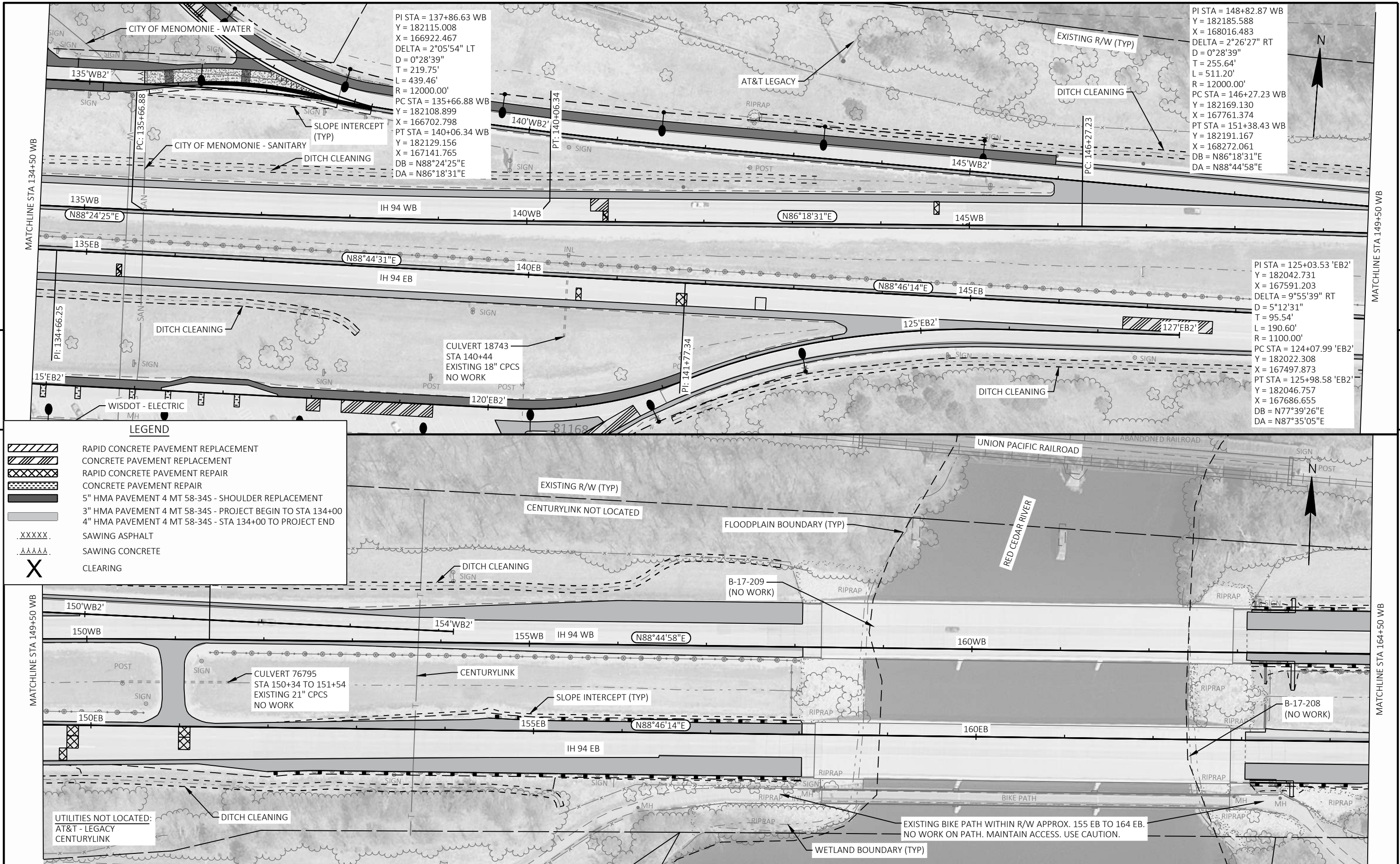
PLOT DATE : 8/27/2026 4:31 PM

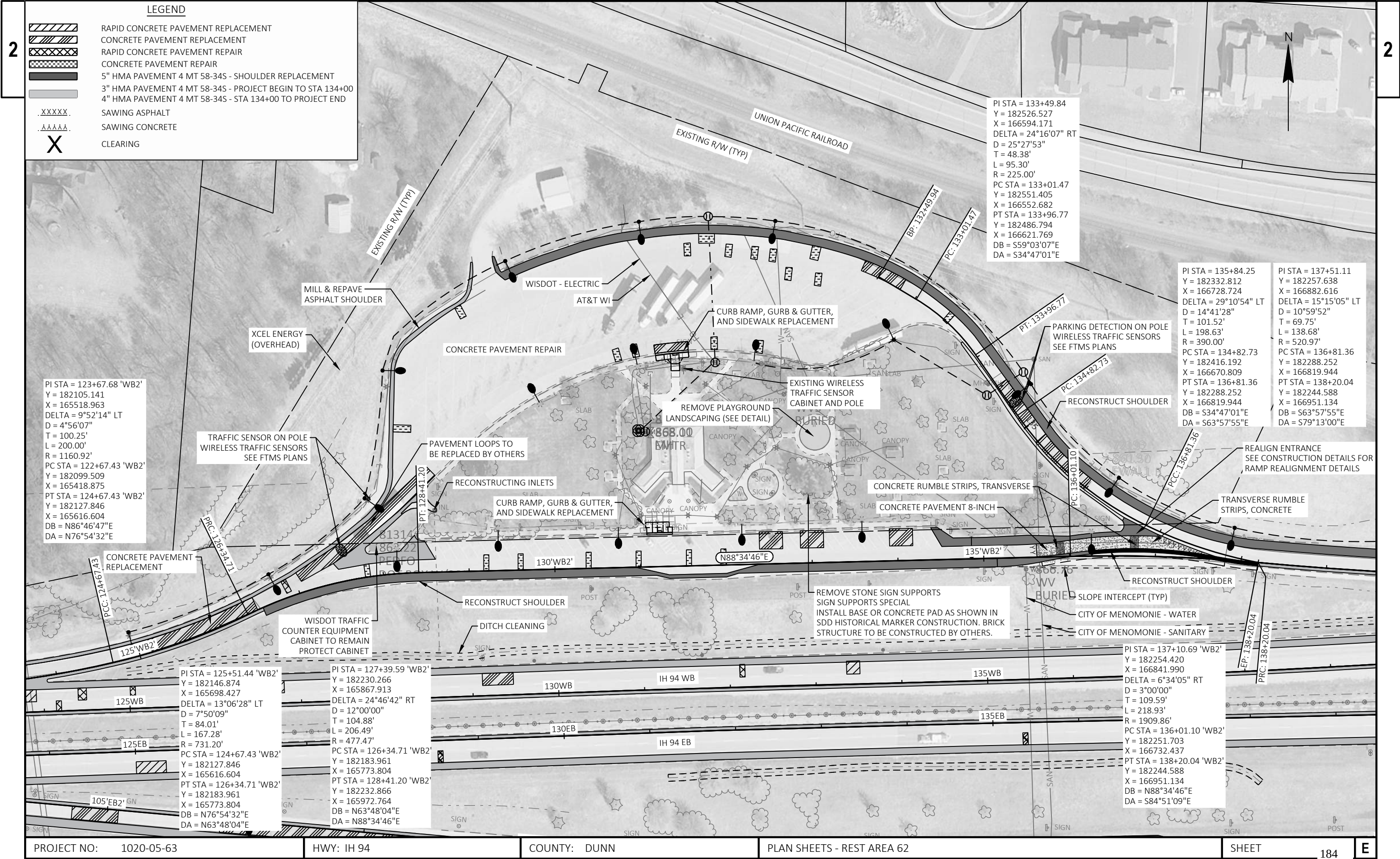
PLOT BY : ED OCHS

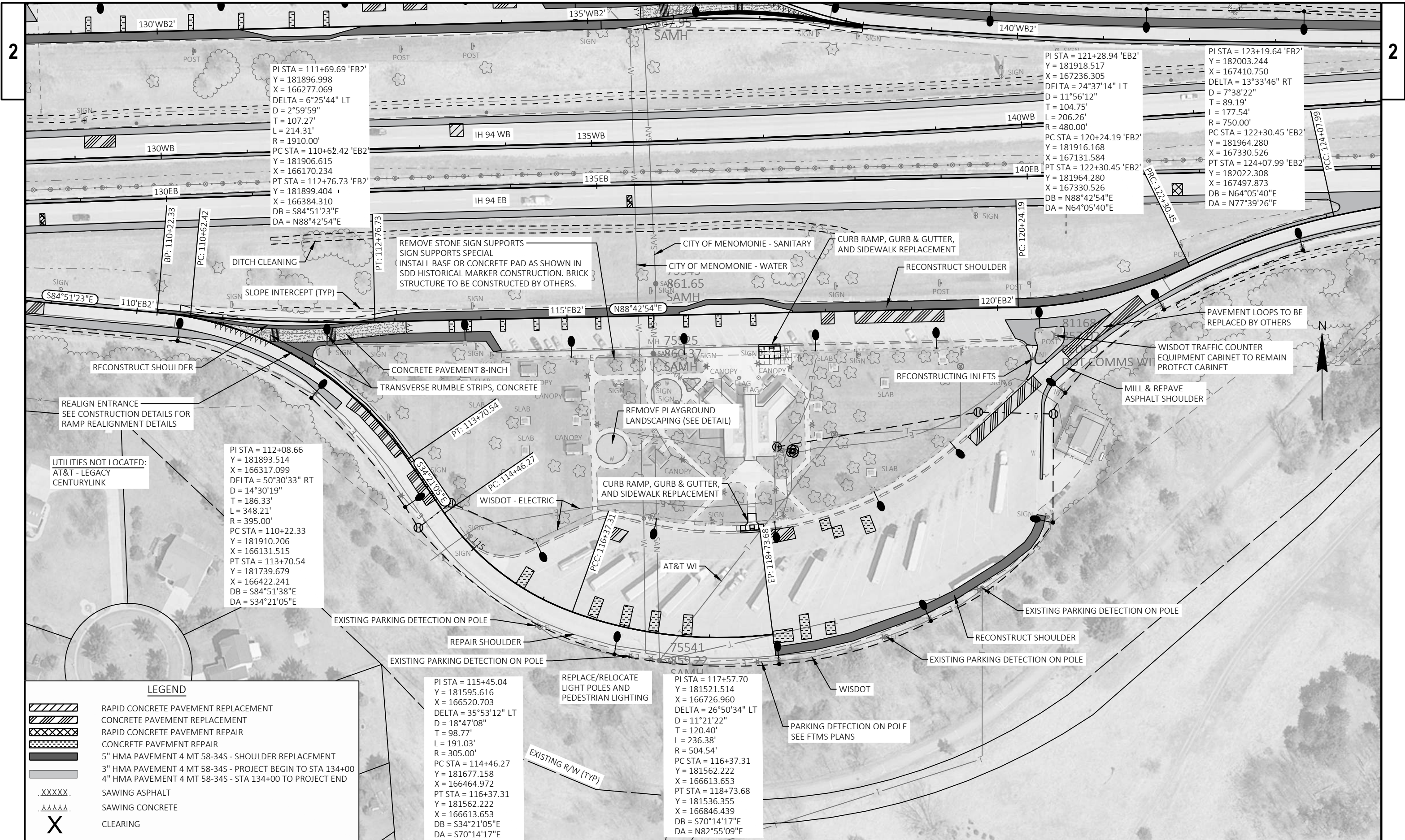
PLOT NAME :

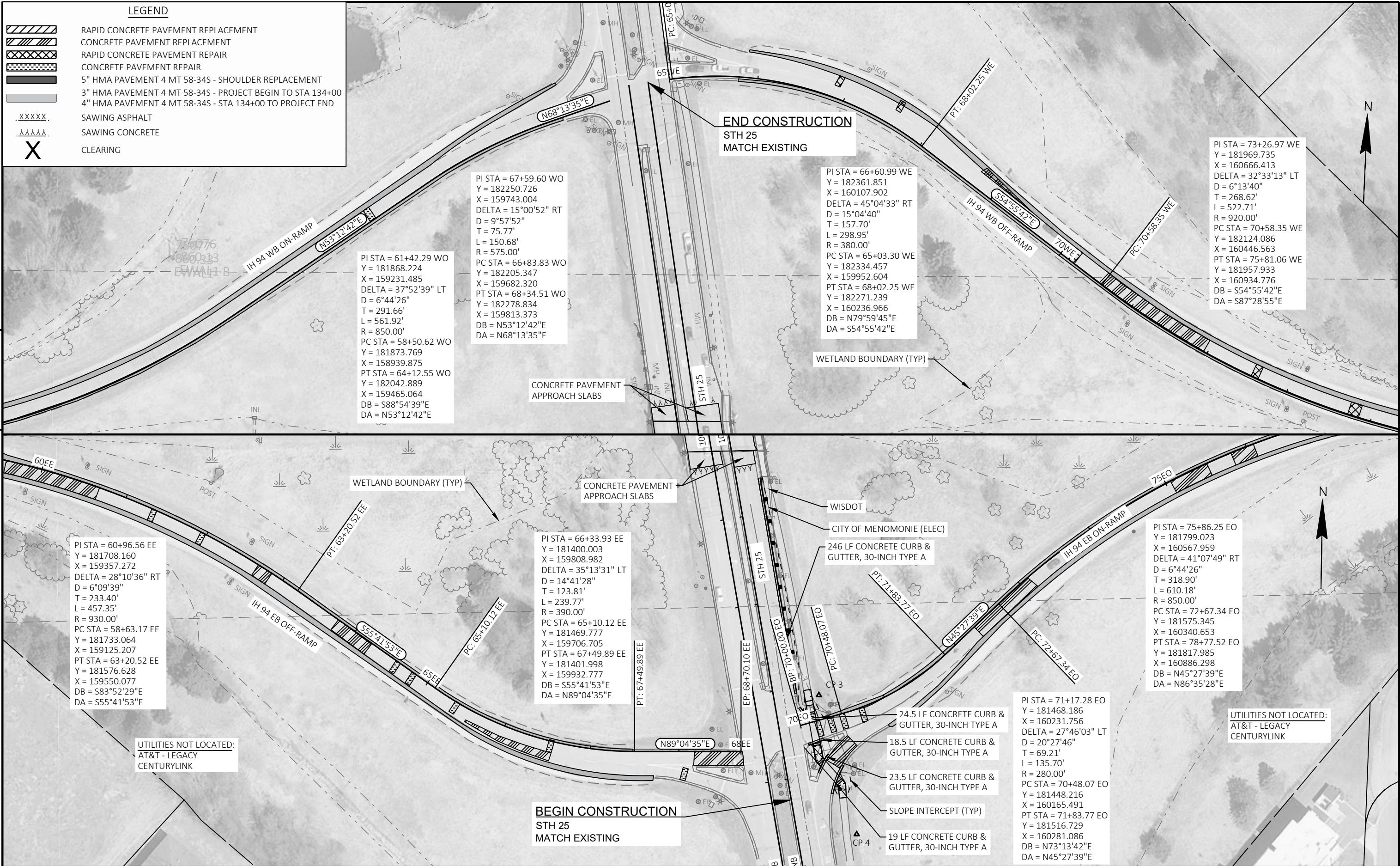
PLOT SCALE : 1 IN=100 FT

WISDOT/CADD SHEET 44









Standard Detail Drawing List

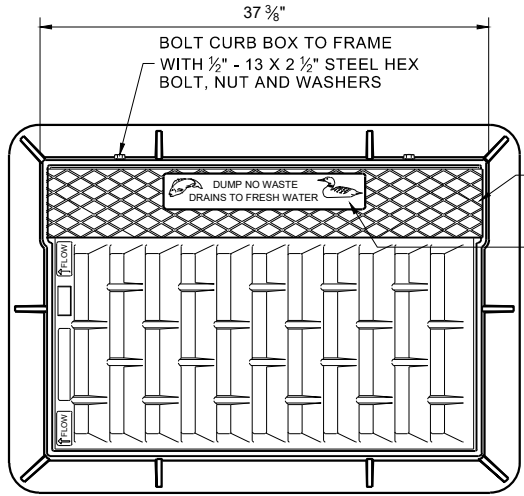
08A05-22A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-22B	INLET COVERS TYPE B, B-A, C, MS, MS-A, DW & WM
08A05-22E	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-04	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08D01-24A	CONCRETE CURB & GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D05-22A	CURB RAMPS TYPES 1 AND 1-A
08D05-22B	CURB RAMPS TYPES 2 AND 3
08D05-22C	CURB RAMPS TYPES 4A AND 4A1
08D05-22D	CURB RAMPS TYPES 4B AND 4B1
08D05-22E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-22F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-22G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B16-04	PULL BOX NON-CONDUCTIVE
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09E01-17D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-17G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
11A01-06	MAINTENANCE CROSSOVER FOR FREEWAYS
13A05-06A	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A05-06B	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A09-02	TRANSVERSE RUMBLE STRIPS, CONCRETE
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C09-18A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18D	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
14B07-16A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16J	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16K	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16L	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16M	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16N	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B20-12A	STEEL THRIE BEAM STRUCTURE APPROACH
14B26-05A	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05B	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05C	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05D	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05E	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05F	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05G	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-05H	STEEL THRIE BEAM BULLNOSE TERMINAL

Standard Detail Drawing List

14B32-11A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11B	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11C	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11D	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11E	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11F	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11G	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11H	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B33-02A	CONCRETE BARRIER SINGLE SLOPE 32" THRIE BEAM ANCHOR
14B33-02B	CONCRETE BARRIER SINGLE SLOPE 32" THRIE BEAM ANCHOR
14B33-02C	CONCRETE BARRIER SINGLE SLOPE 32" THRIE BEAM ANCHOR
14B33-02D	CONCRETE BARRIER SINGLE SLOPE 36" THRIE BEAM ANCHOR
14B33-02E	CONCRETE BARRIER SINGLE SLOPE 36" THRIE BEAM ANCHOR
14B33-02F	CONCRETE BARRIER SINGLE SLOPE 36" THRIE BEAM ANCHOR
14B33-02G	CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR
14B33-02H	CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-06A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06D	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06E	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06F	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06G	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14C02-03	HISTORICAL MARKER CONSTRUCTION
14D01-01	TURTLE EXCLUSION FENCE CLIMBING TURTLE
15A04-08E	DELINEATOR POST WITH REFLECTIVE SHEETING
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-10A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-10B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-10D	ON RAMP LANE CLOSURE
15C02-10E	OFF RAMP LANE CLOSURE
15C02-10F	ADVANCED WIDTH RESTRICTION SIGNING
15C02-10G	TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C07-16A	PAVEMENT MARKING SYMBOLS
15C07-16B	PAVEMENT MARKING WORDS
15C07-16C	PAVEMENT MARKING ARROWS
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-24B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-24C	PAVEMENT MARKING (TURN LANES)
15C08-24D	PAVEMENT MARKING (TURN LANES)
15C11-11A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C18-09A	MEDIAN ISLAND PAVEMENT MARKINGS
15C31-08A	PAVEMENT MARKING EXIT RAMP AND PARALLEL EXIT RAMP
15C31-08C	PAVEMENT MARKING ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP
15C33-05	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15C36-01	PARKING STALL MARKING
15D06-07	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D12-16A	TRAFFIC CONTROL, LANE CLOSURE
15D12-16B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D12-16D	TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM
15D12-16E	TRAFFIC CONTROL, LANE CLOSURE, TRAFFIC QUEUE WARNING SYSTEM
15D12-16G	TRAFFIC CONTROL, LANE CLOSURE , DIGITAL SPEED REDUCTION SYSTEM
15D15-08A	TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-08B	TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-08C	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE

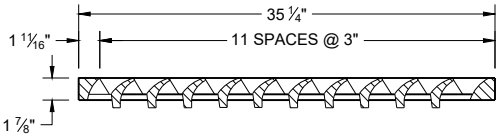
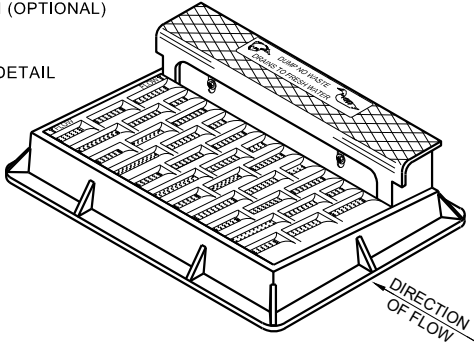
Standard Detail Drawing List

15D15-08D	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-07	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-11A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY
15D21-07A	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D21-07B	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-05	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D30-12A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-12B	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-12C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-12D	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-12G	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D39-03	TRAFFIC CONTROL, DROP-OFF SIGNING
15D41-06A	TRAFFIC CONTROL, MULTIPLE LANE SHIFT, MULTILANE DIVIDED ROAD

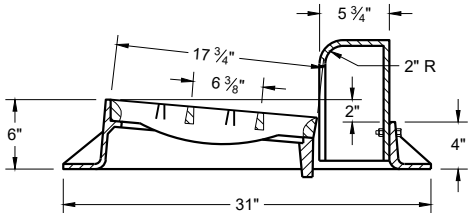
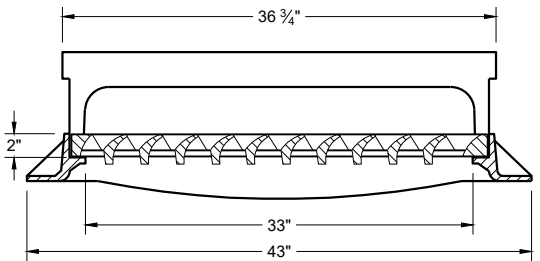
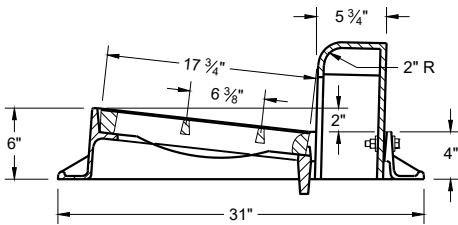
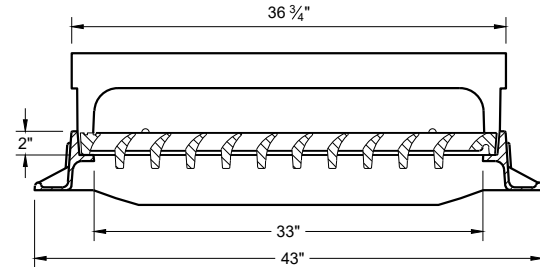


NOTE: EITHER CASTING IS ACCEPTABLE

TYPE "C" CHECKERED TOP DESIGN (OPTIONAL)
SEE LOGO DETAIL

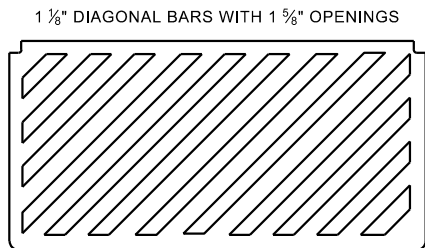


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

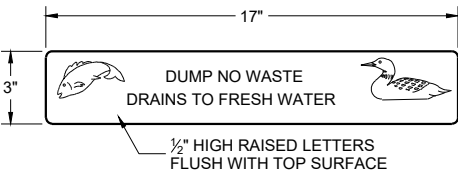


TYPE "H"

NOTE: EITHER CASTING IS ACCEPTABLE



SPECIAL GRATE FOR TYPE "H" COVER
(MEASURES 35" X 17 3/4" X 2")
(NOTED AS TYPE H-S ON DRAINAGE TABLE)



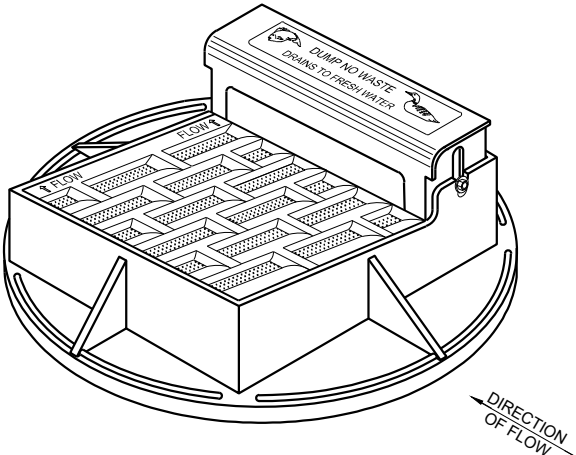
LOGO DETAIL

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.

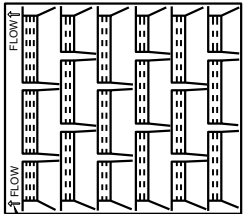
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

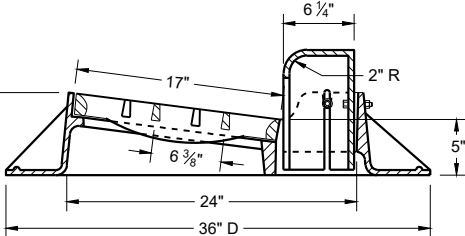
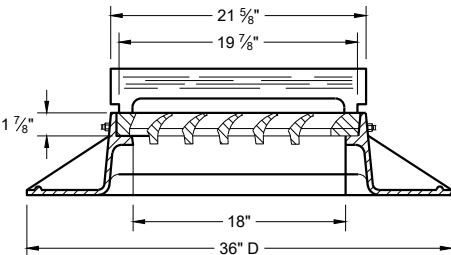
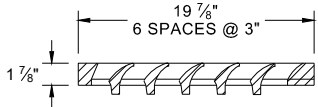


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

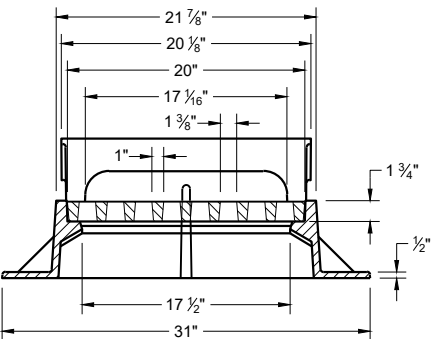
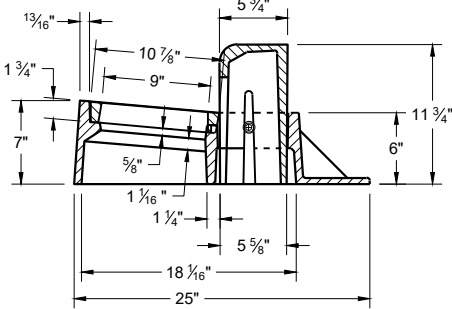
NOTE: EITHER CASTING IS ACCEPTABLE



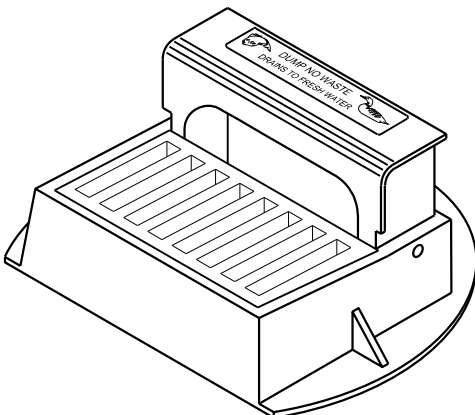
DIRECTION OF FLOW ARROWS



TYPE "A"



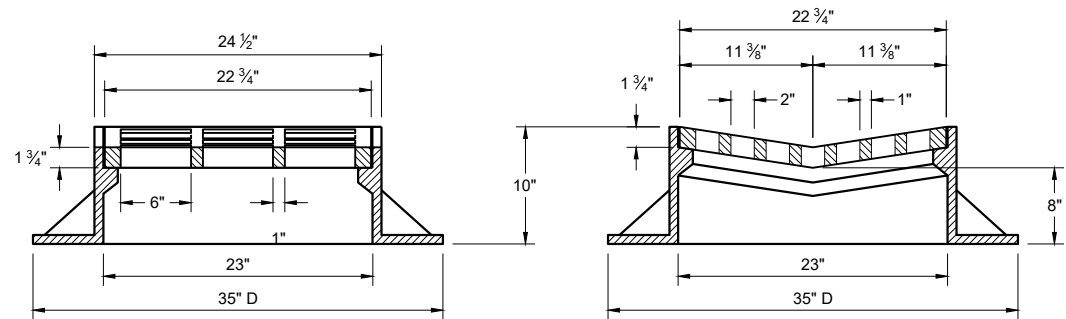
TYPE "Z"



**INLET COVERS
TYPES A, H, A-S, H-S AND Z**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

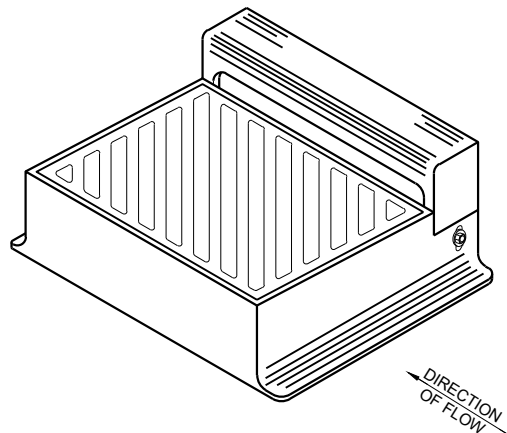
APPROVED
February 2025
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



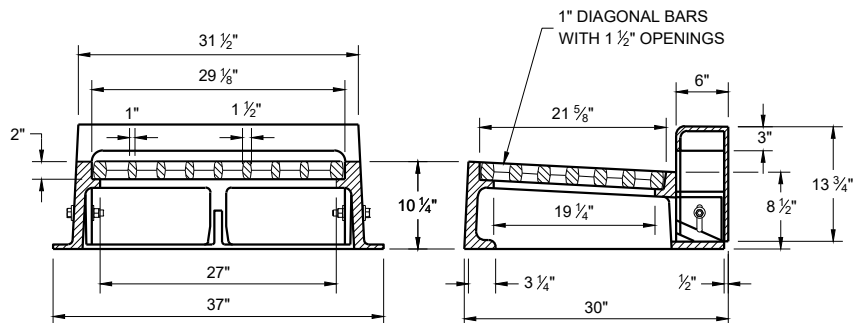
TYPE "B"

ALTERNATIVE GRATE FOR
TYPE "B" COVER

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

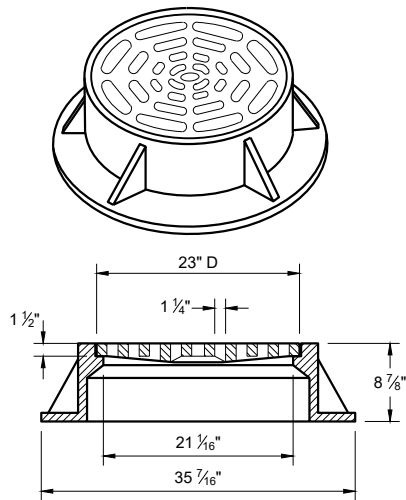
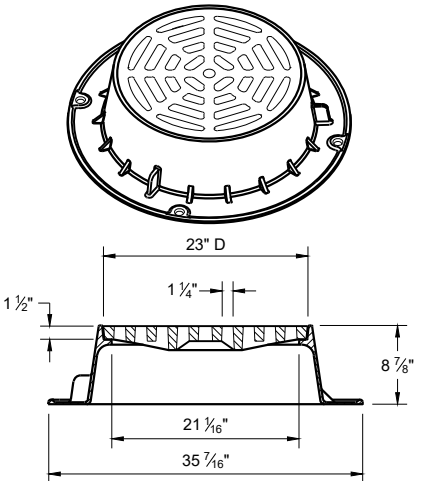


DIAGONAL SLOTS SHALL BE ORIENTED TO THE
DIRECTION OF FLOW AS ILLUSTRATED.
GRATES ARE MANUFACTURED TO BE REVERSIBLE.



TYPE "WM"

NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"



TYPE "C"

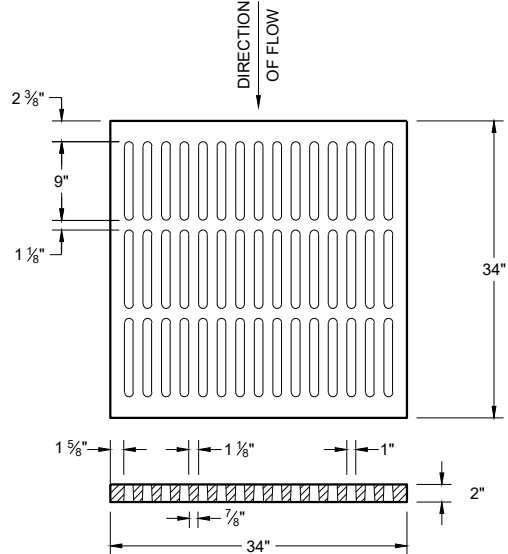
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

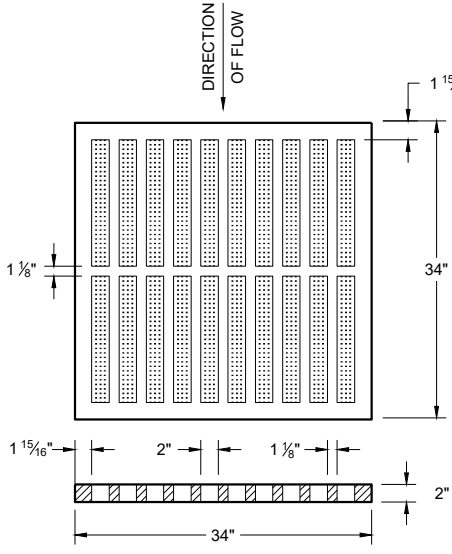
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

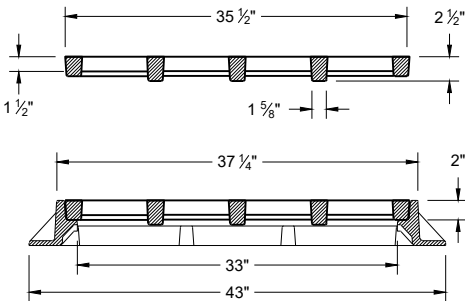
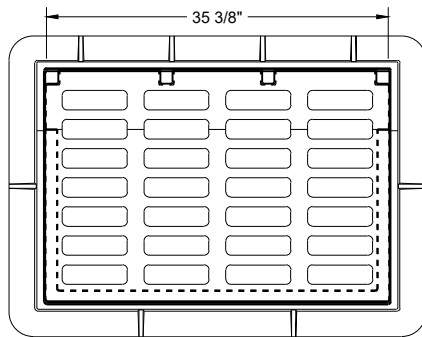
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



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

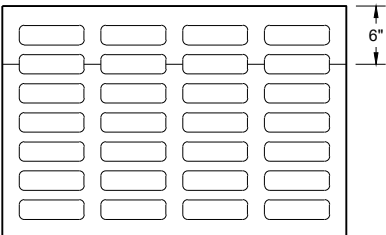
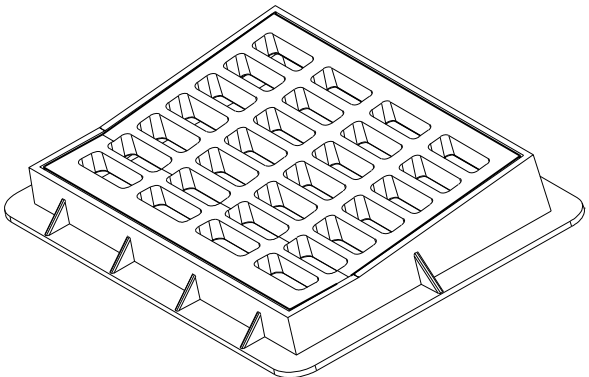


TYPE "MS"
USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON THE
DRAINAGE TABLE



TYPE "DW"

NOTES: FOR USE IN A SUMP CONDITION. THIS OPTION IS
ONLY TO BE USED IF NO OTHER INLETS ARE APPLICABLE.



INLET COVERS
TYPES B, B-A, C,
MS, MS-A ,DW AND WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

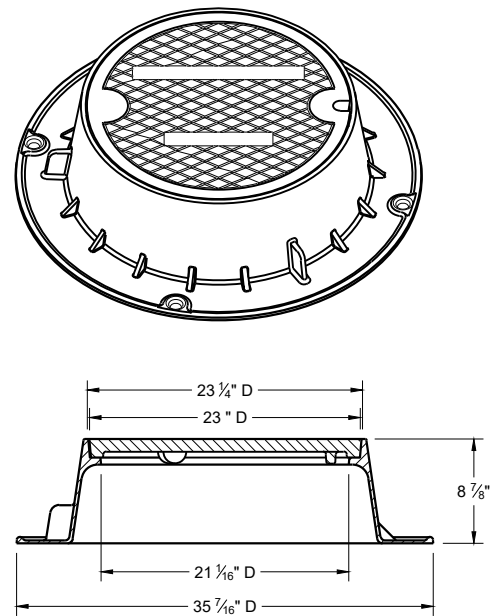
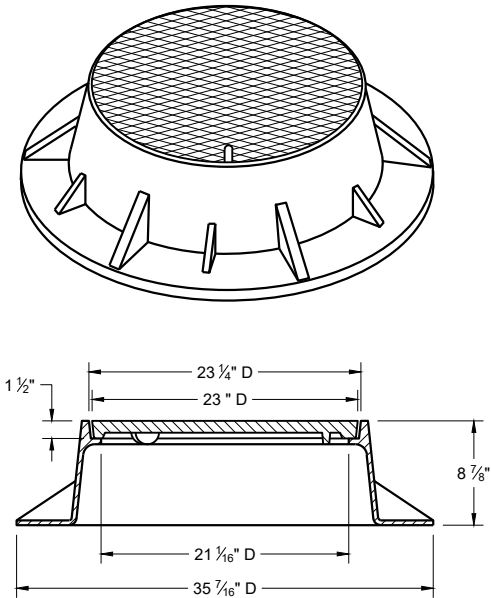
APPROVED
February 2025
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

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.

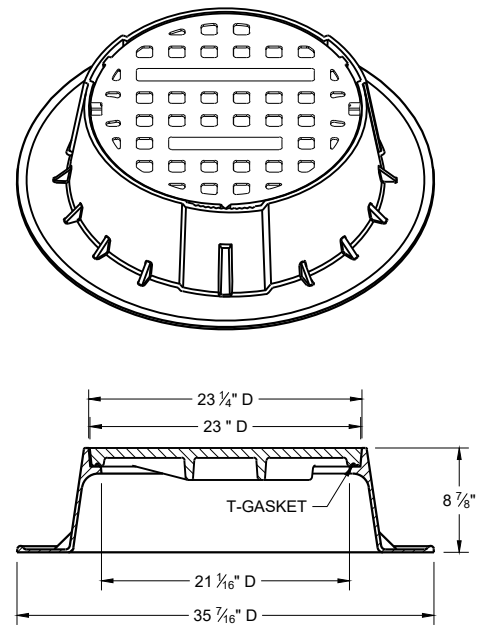
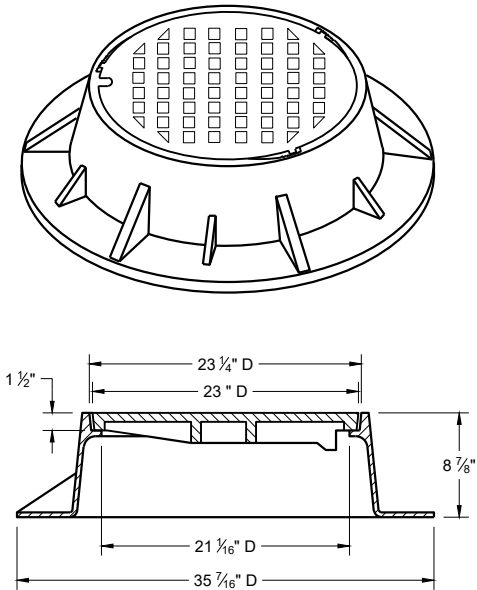
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



TYPE "J"

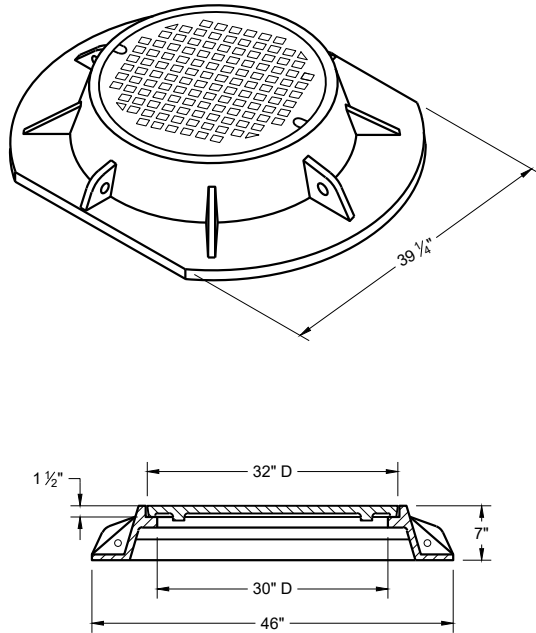
NOTE: EITHER CASTING IS ACCEPTABLE



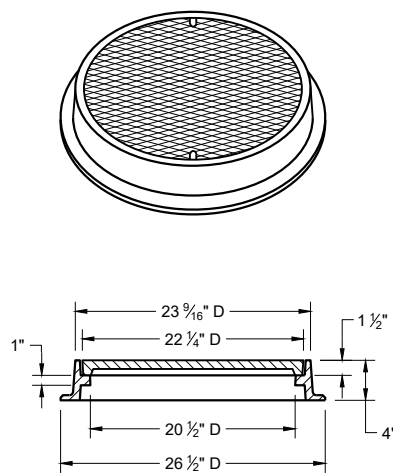
TYPE "J" SPECIAL

TYPE "B" NON-ROCKING SELF-SEAL LID (NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

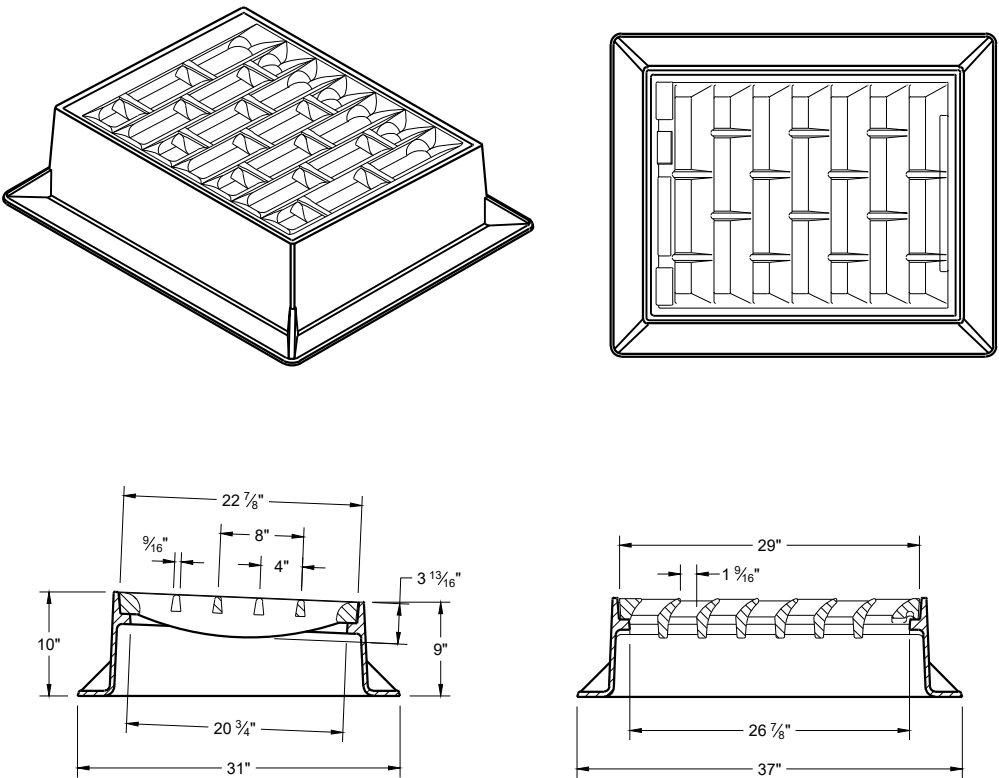
NOTE: EITHER CASTING IS ACCEPTABLE



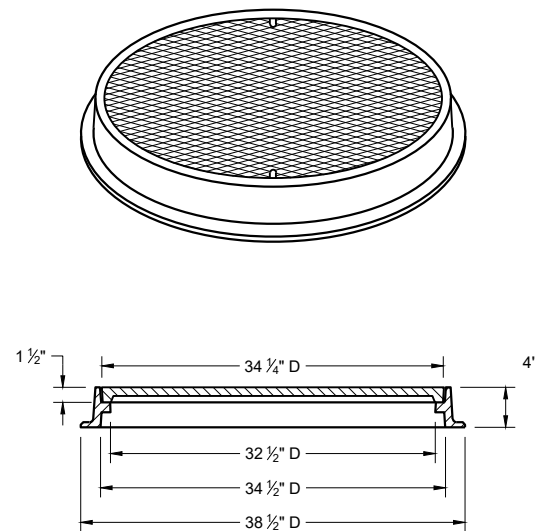
TYPE "K"



TYPE "L"



INLET COVER TYPE "BW"

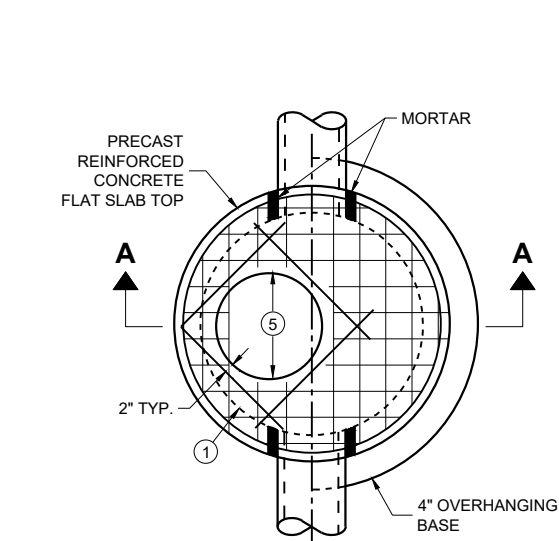


TYPE "M"

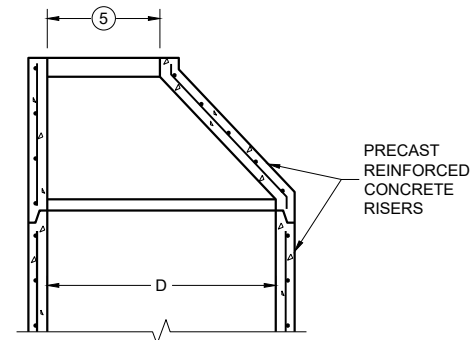
INLET COVERS TYPES BW
MANHOLE COVERS TYPES K,
J, J-S, L, AND M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

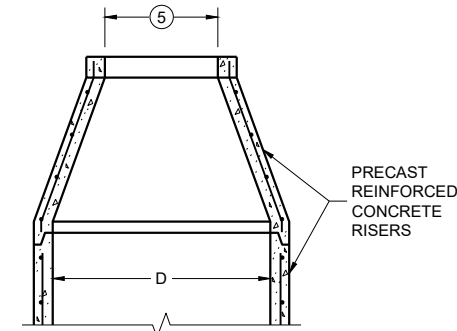
APPROVED
February 2025 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



PLAN VIEW
CIRCULAR OPENING



OPTIONAL PRECAST
REINFORCED CONCRETE
ECCENTRIC TOP



OPTIONAL PRECAST
REINFORCED CONCRETE
CONCENTRIC TOP

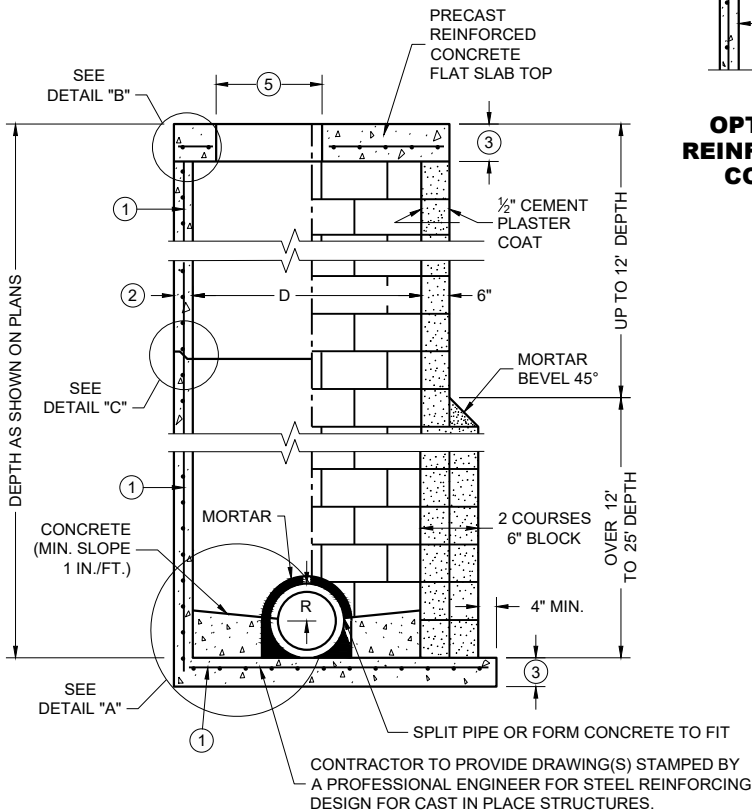
MANHOLE COVER OPENING MATRIX

MANHOLE COVER OPENING SIZE (FT.)	C	ALL JS	K	L	M
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42 *	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT	72	60	10	10

*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES.
SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.

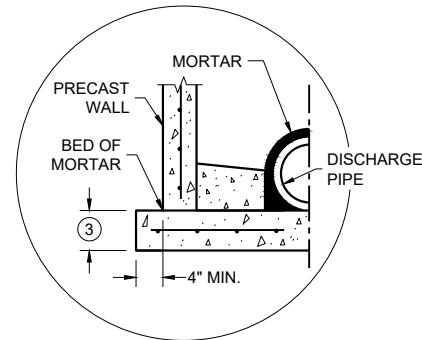


SECTION A - A

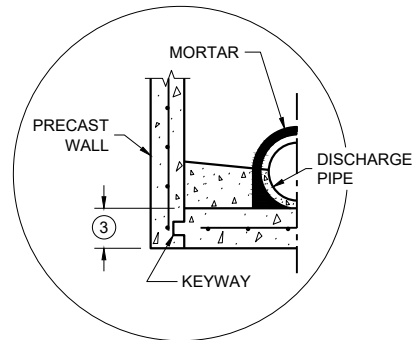
PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE

1

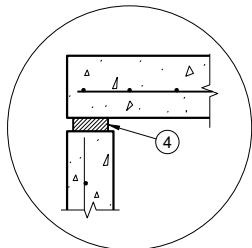


SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

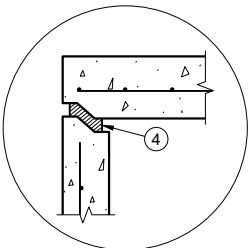


PRECAST REINFORCED CONCRETE
WITH INTEGRAL BASE OPTION

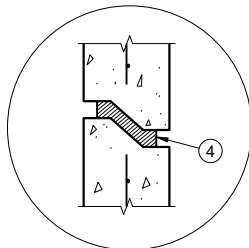
DETAIL "A"



TOP WITH PLAIN
END JOINT



TOP WITH TONGUE
AND GROOVE JOINT



RISER WITH TONGUE
AND GROOVE JOINT

DETAIL "B"

DETAIL "C"

GENERAL NOTES

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

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

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

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

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

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

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

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

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 3/8 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

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

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

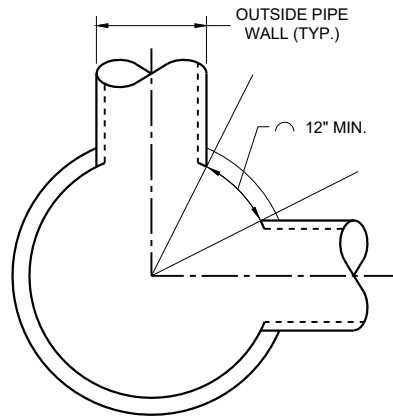
PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

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

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

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

- 1 FOR PRECAST MANHOLES AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- 2 SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES
- 3 SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.
- 4 JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFORMING TO ASTM C443.
- 5 SEE MANHOLE COVER OPENING MATRIX.



MINIMUM HORIZONTAL
PIPE SEPARATION

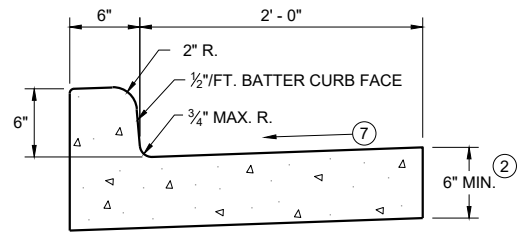
DETAIL "D"

MANHOLES, 3-FT, 4-FT
5-FT, 6-FT, 7-FT, 8-FT, 9-FT
AND 10-FT DIAMETER

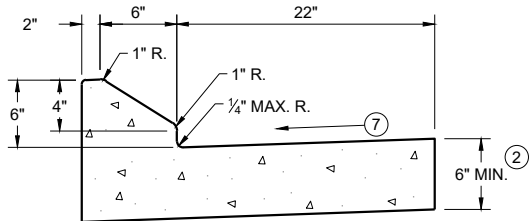
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

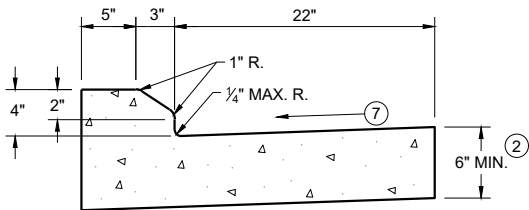
FHWA



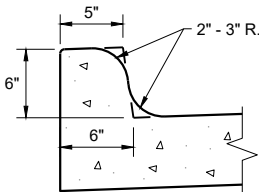
TYPES A^① & D



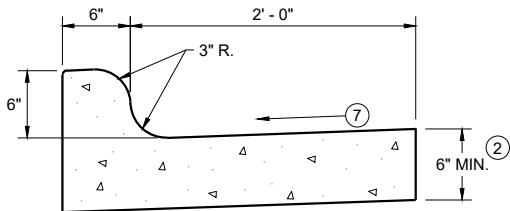
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

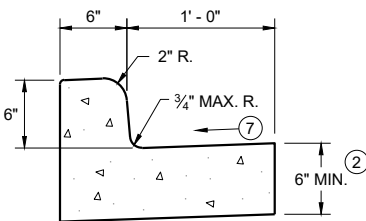


TYPES K^① & L
(OPTIONAL CURB SHAPE)



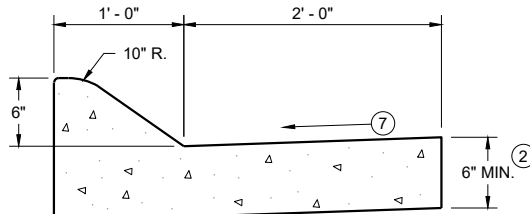
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

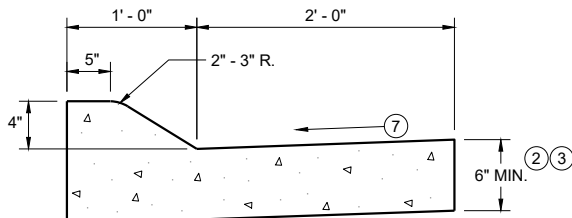


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

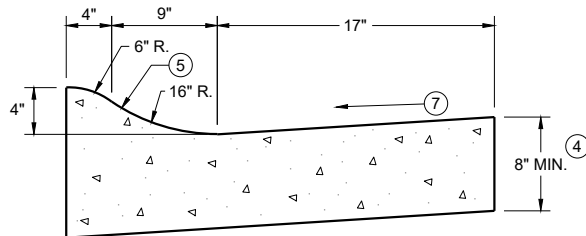


6" SLOPED CURB TYPES A^① & D



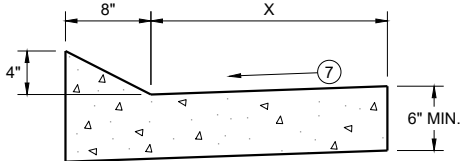
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T
CONCRETE CURB AND GUTTER 30"

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

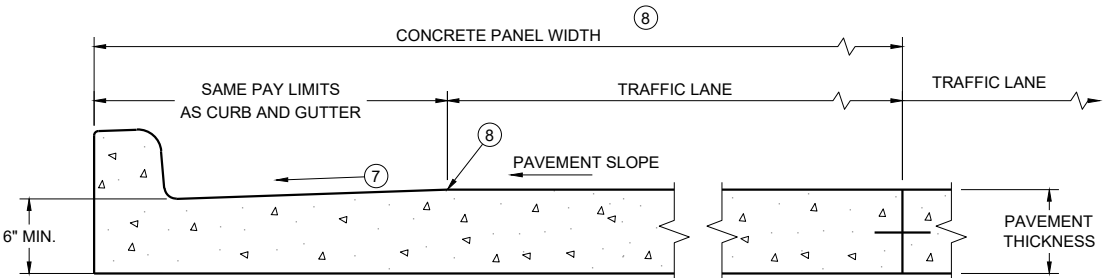


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

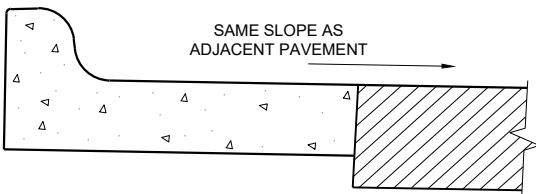
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

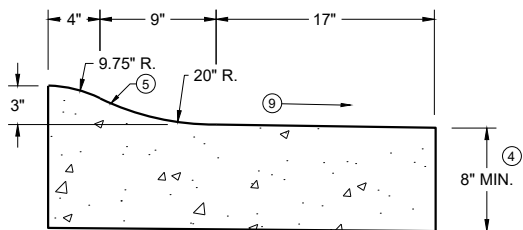


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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



3" SLOPED CURB TYPES R^① & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

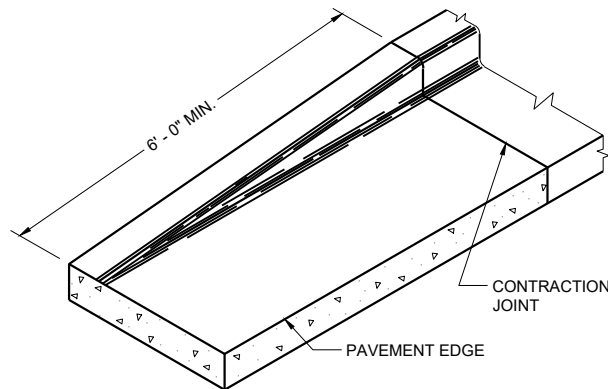
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

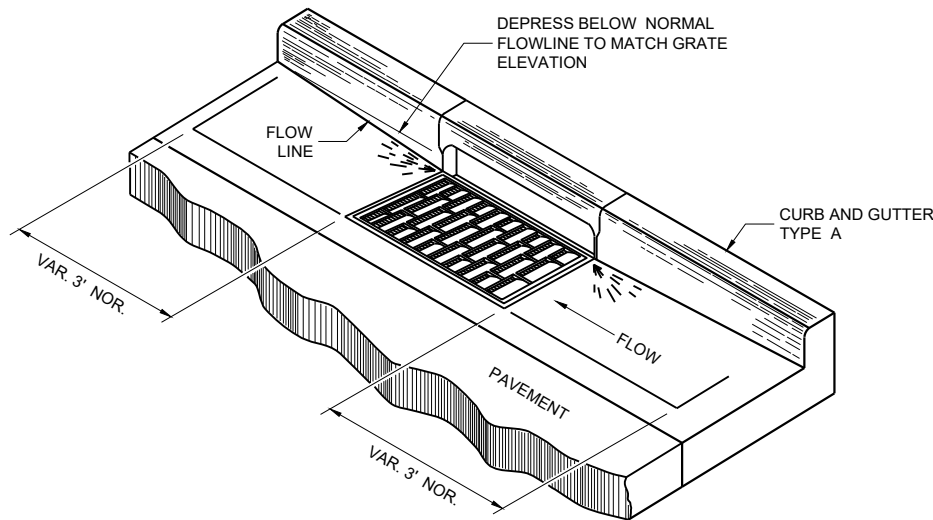
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

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

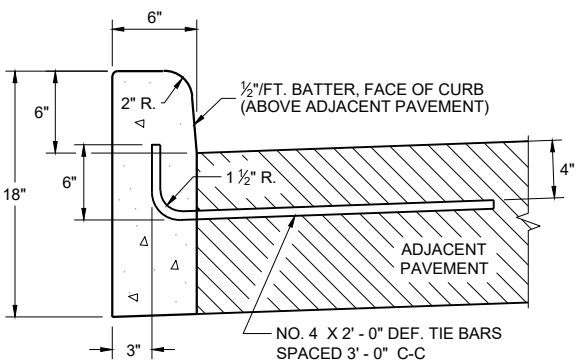


END SECTION CURB AND GUTTER

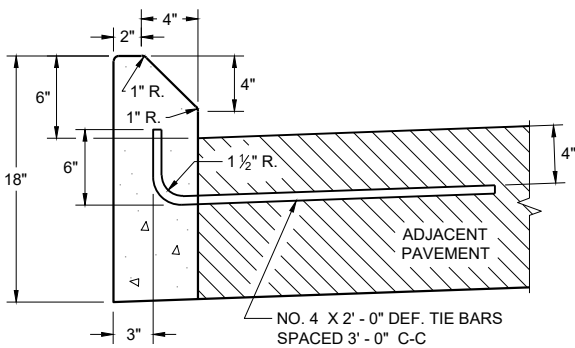


DETAIL OF CURB AND GUTTER AT INLETS

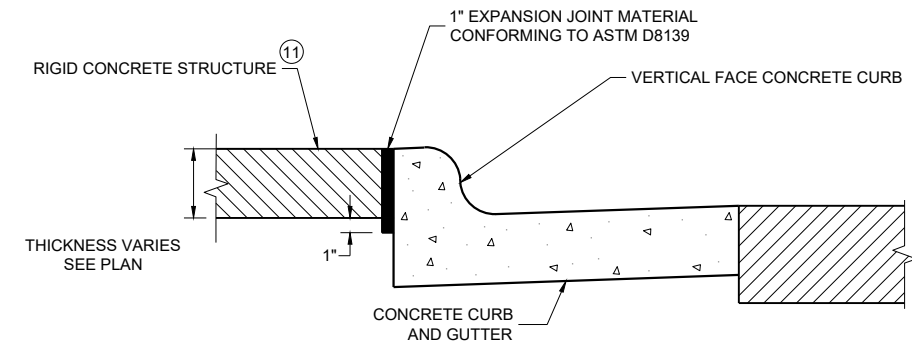
(TYPICAL H INLET COVER SHOWN)



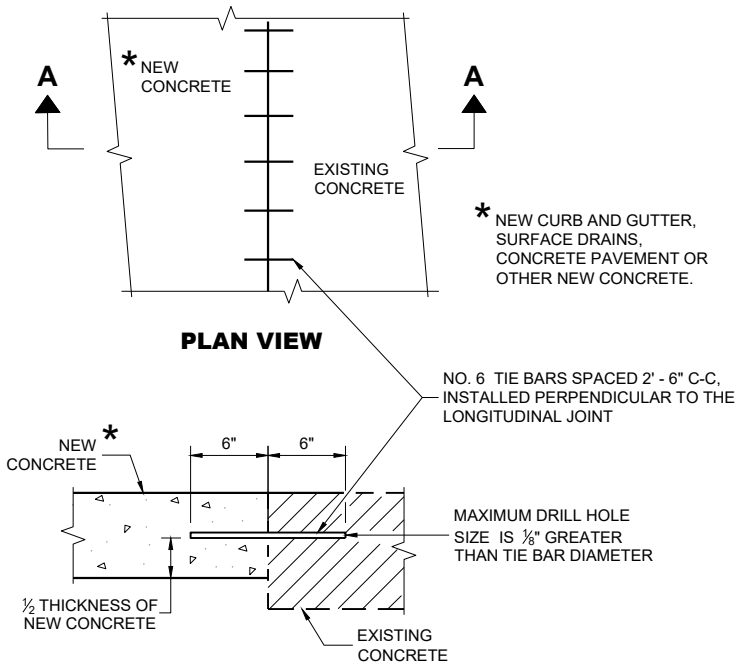
TYPES A^① & D



TYPES G^① & J
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

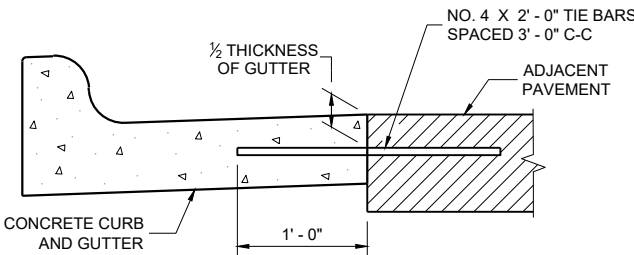
GENERAL NOTES

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

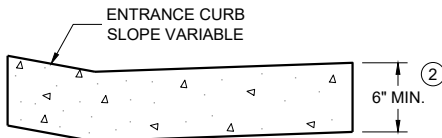
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

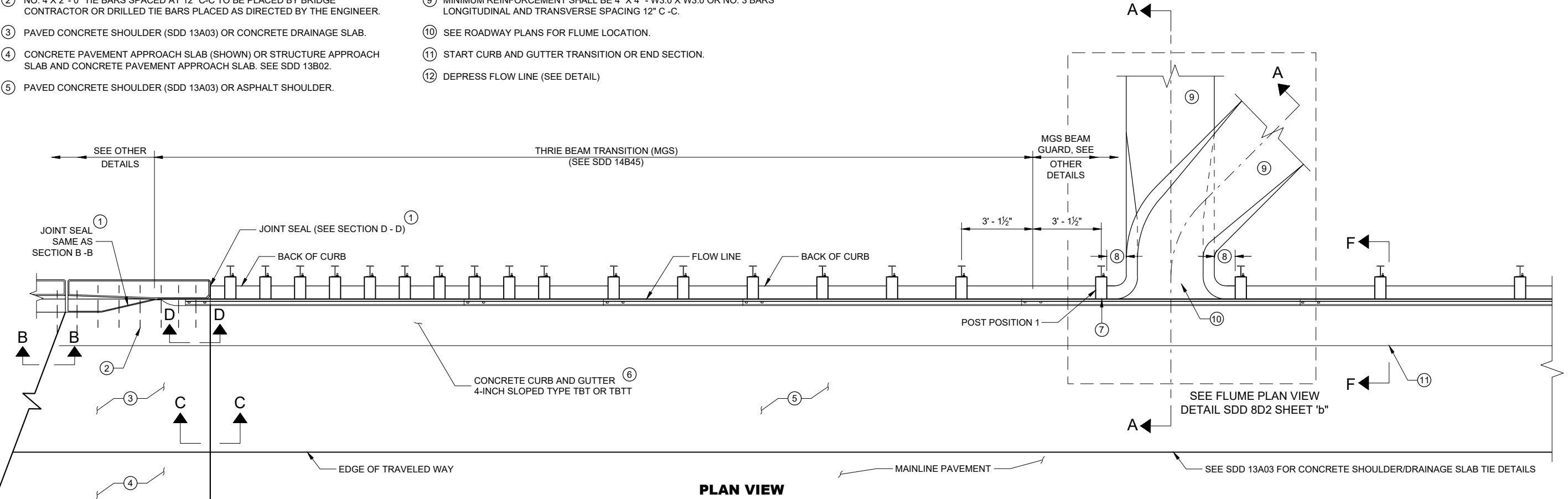
GENERAL NOTES

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.

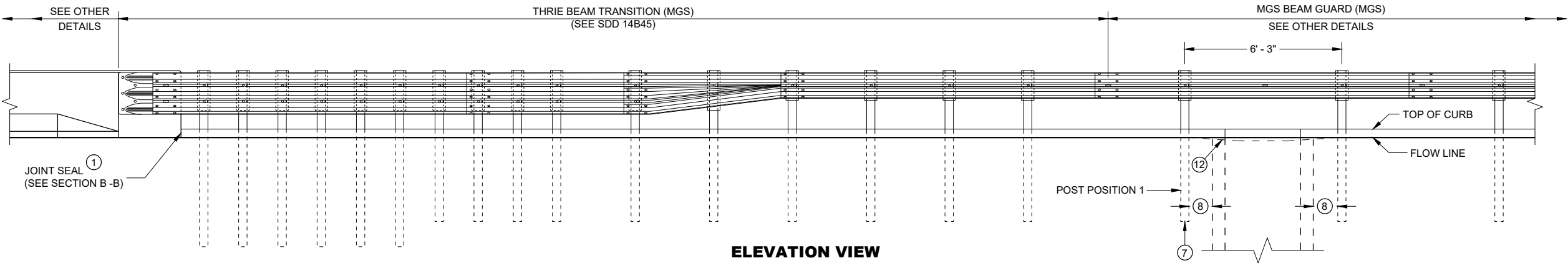
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 1 USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 2 NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- 3 PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- 4 CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- 5 PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- 6 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- 7 PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- 8 CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- 9 MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- 10 SEE ROADWAY PLANS FOR FLUME LOCATION.
- 11 START CURB AND GUTTER TRANSITION OR END SECTION.
- 12 DEPRESS FLOW LINE (SEE DETAIL)



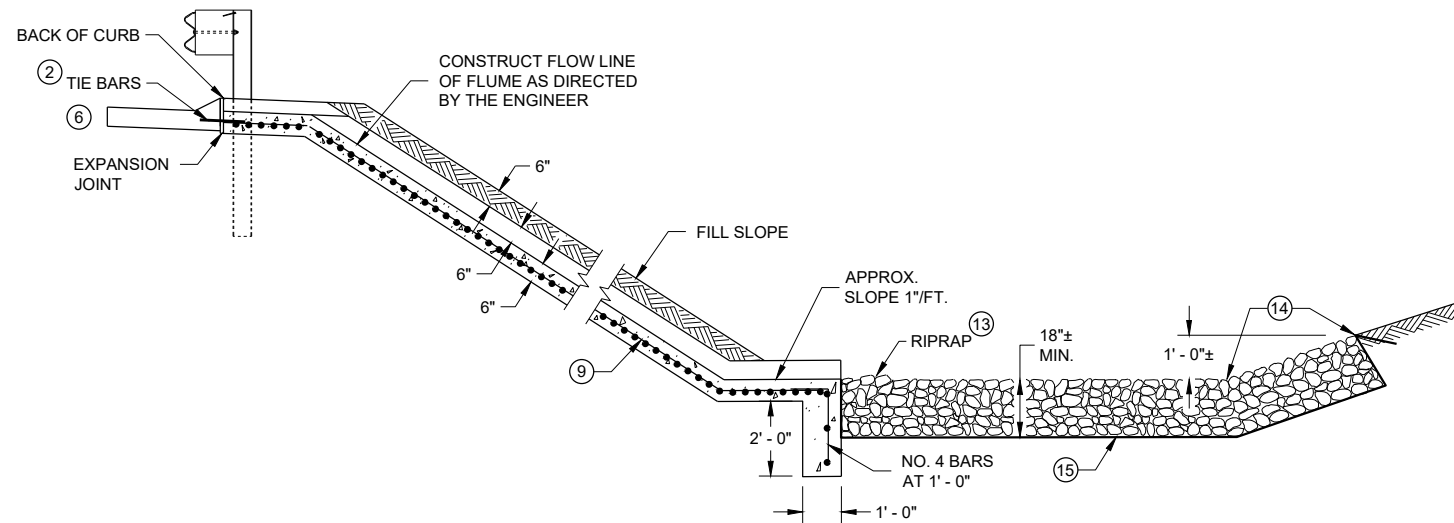
PLAN VIEW



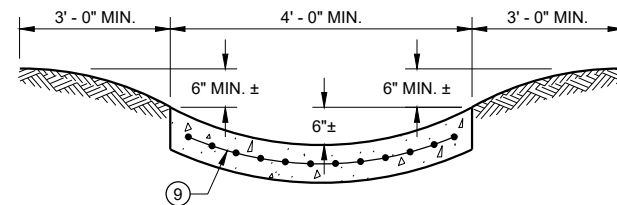
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

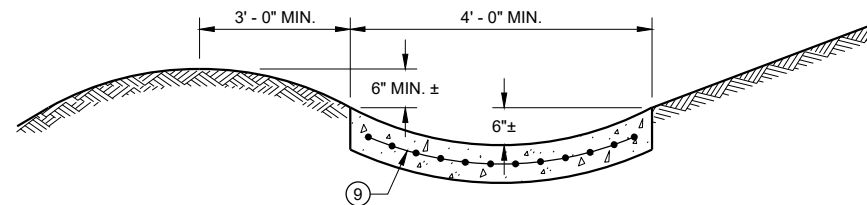
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



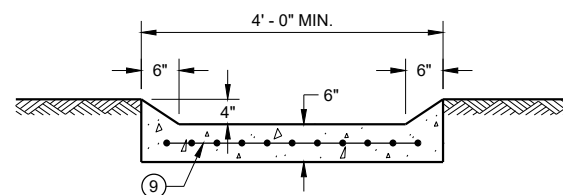
SECTION A - A



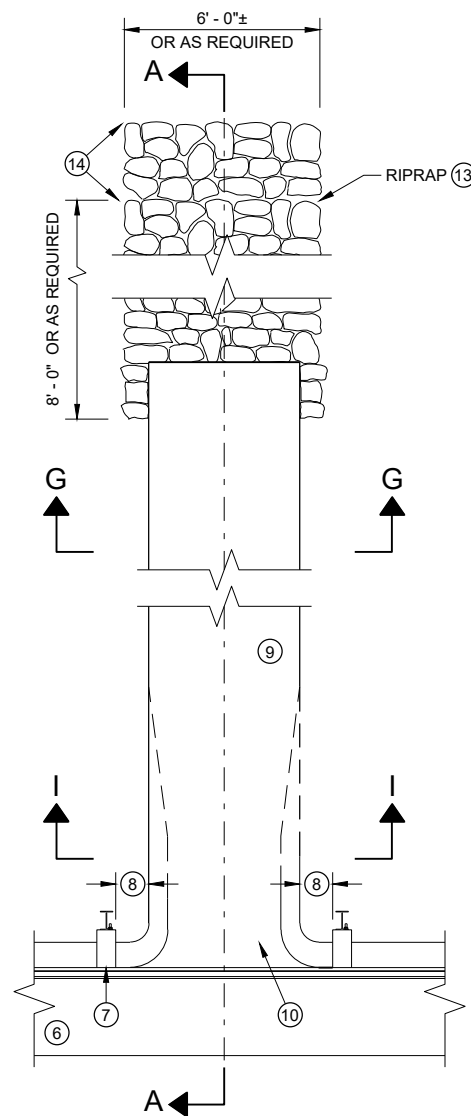
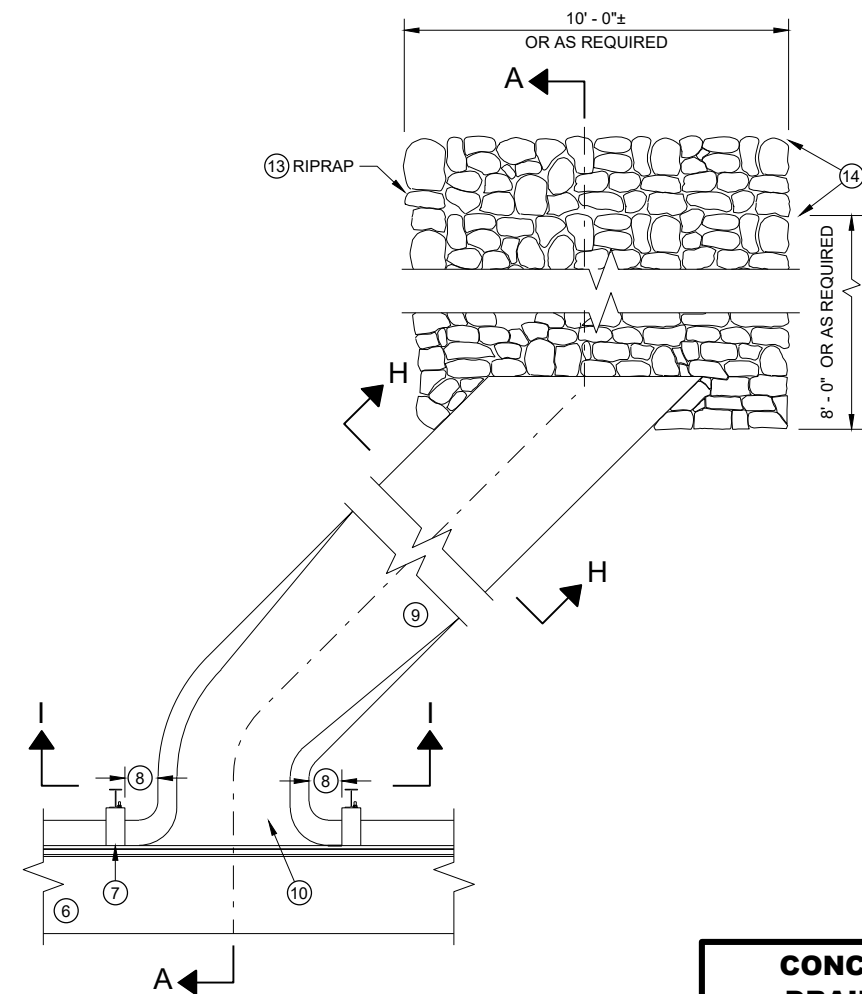
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW
PERPENDICULAR FLUMEPLAN VIEW
SKEWED FLUME

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.

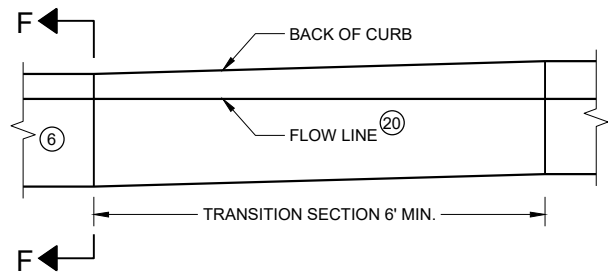
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
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- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

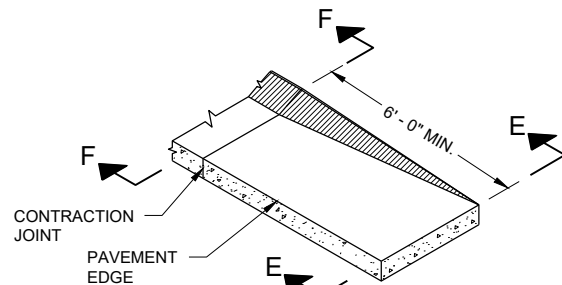
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

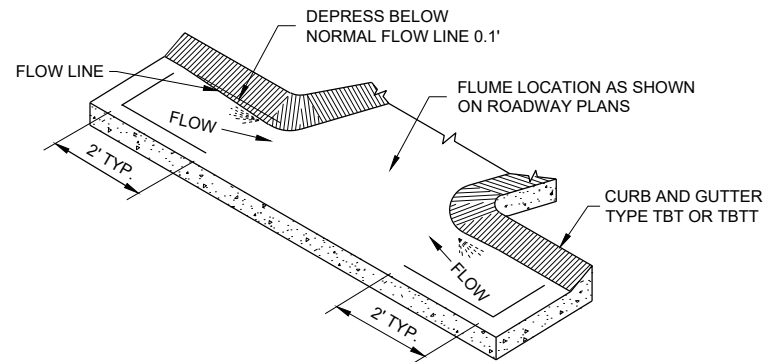
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 197



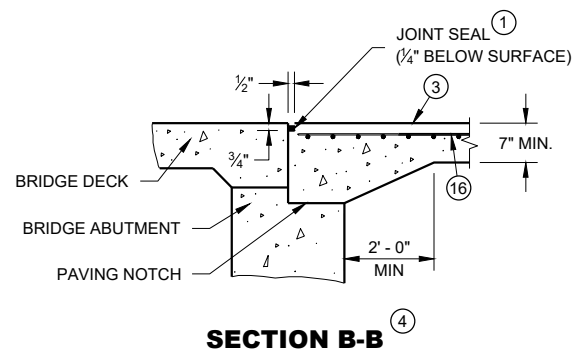
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



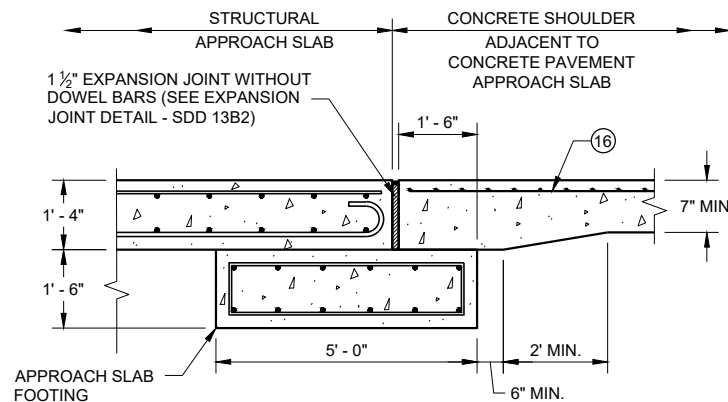
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



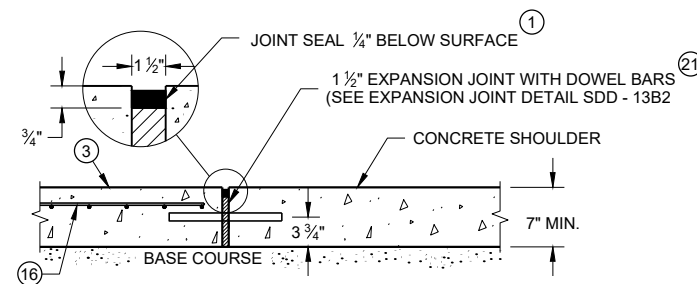
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



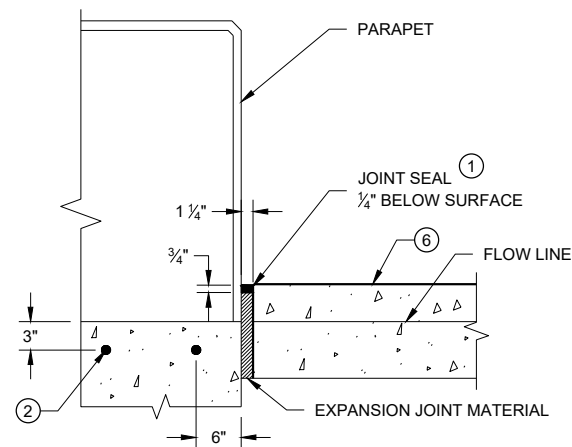
SECTION B-B



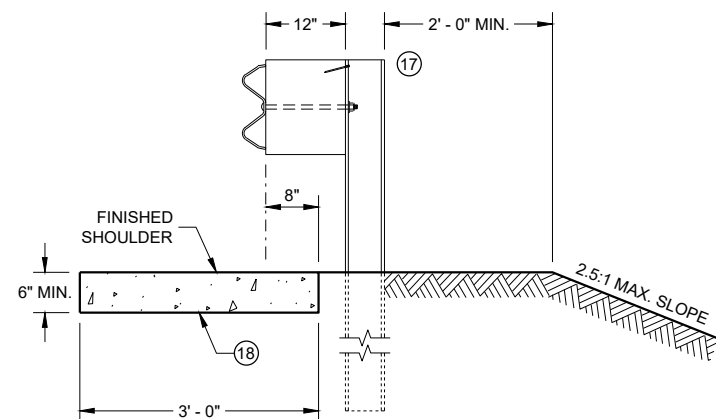
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



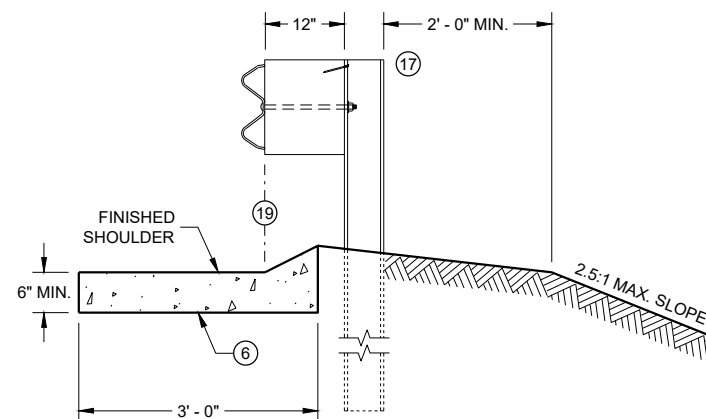
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

GENERAL NOTES

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

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

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
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- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑮ GEOTEXTILE TYPE HR.
- ⑯ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑰ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑱ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑲ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑳ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ㉑ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

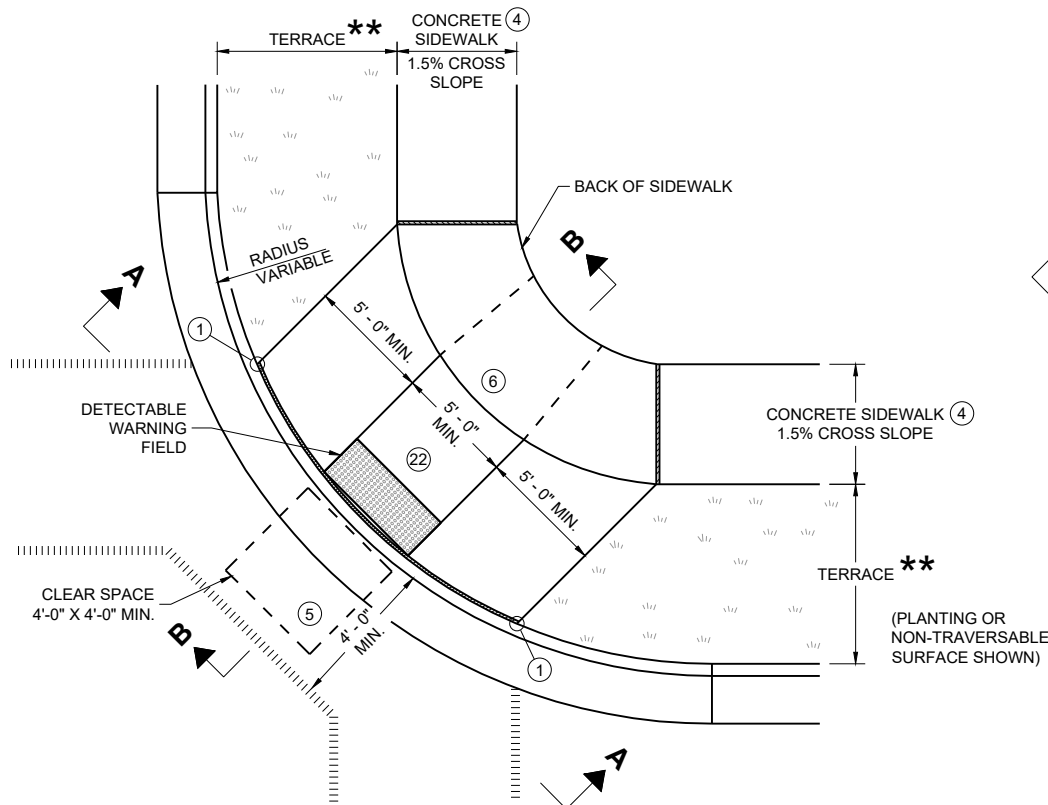
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DATE

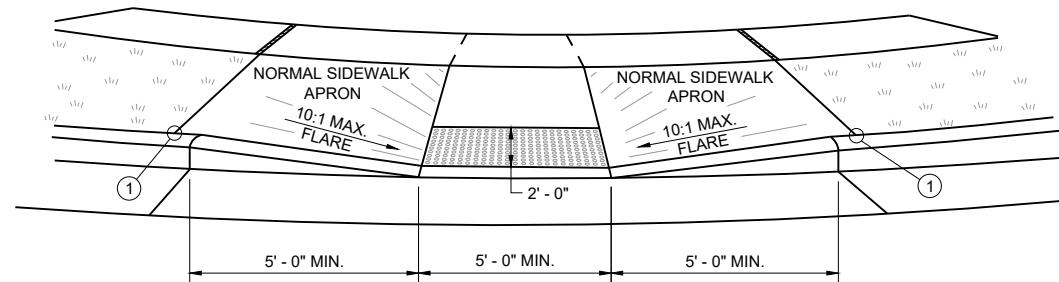
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

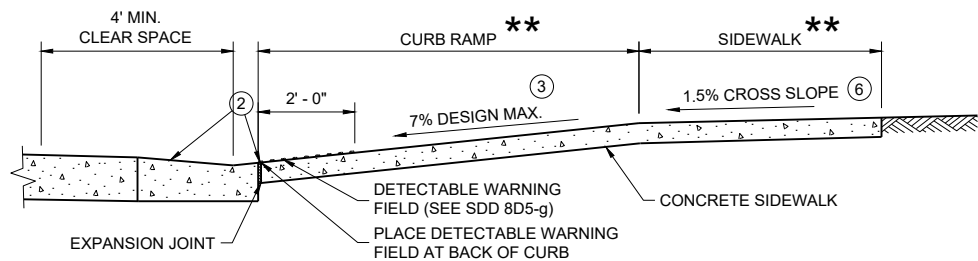
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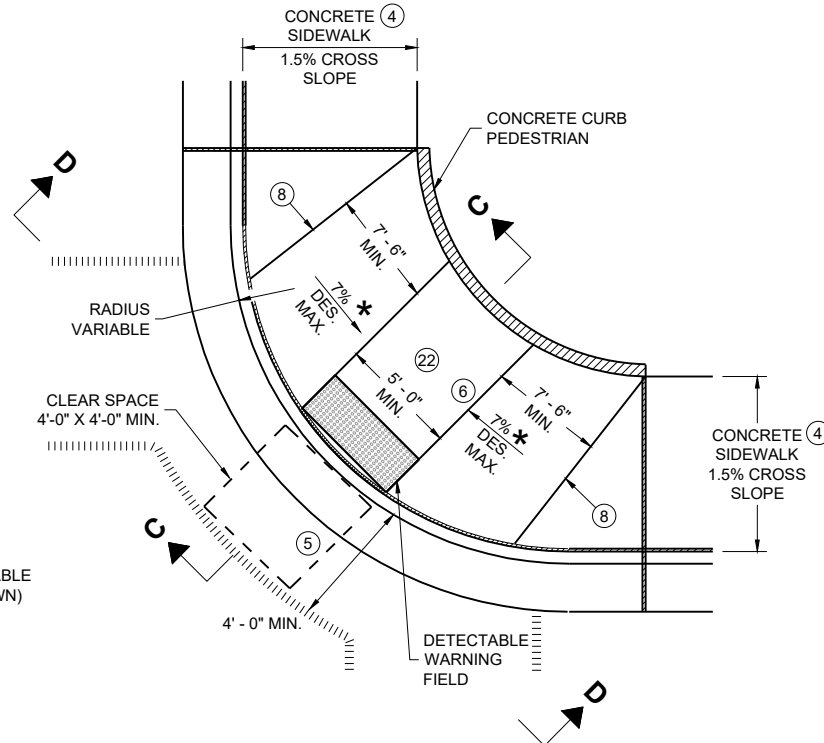
PLAN VIEW
CURB RAMP TYPE 1
(CENTER OF CORNER RADIUS)



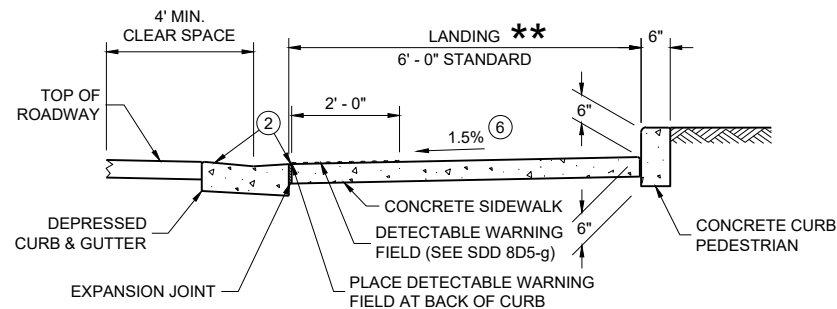
VIEW A - A FOR TYPE 1



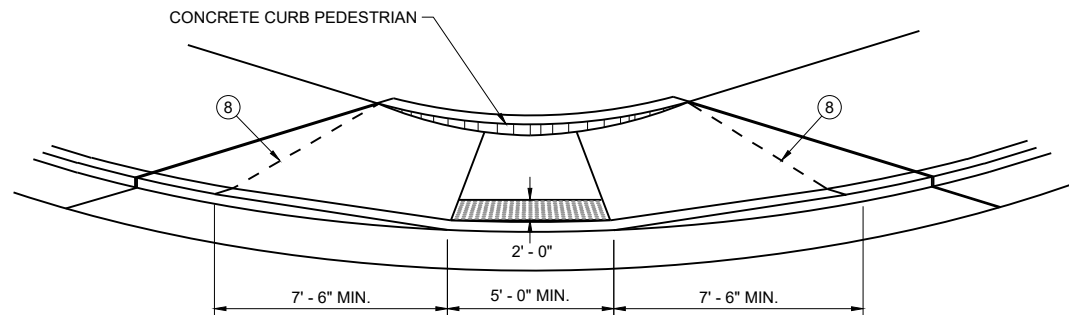
SECTION B - B FOR TYPE 1



PLAN VIEW
CURB RAMP TYPE 1 - A
(NO TERRACE)



SECTION C - C FOR TYPE 1 - A



VIEW D - D FOR TYPE 1 - A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF CURB RAMP ACCESS AREAS.

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE CURB RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF CURB RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE CURB RAMP.

- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER COUNTER SLOPE AND THE CURB RAMP SLOPE IS DESIRABLY 11% OR LESS AND SHALL NOT EXCEED 13.3%. TYPICAL GUTTER COUNTER SLOPE IS 4% BUT MAY BE MODIFIED TO FIT FIELD CONDITIONS. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5%, DESIRABLY 7% OR LESS, AND SHALL NOT EXCEED A MAXIMUM OF 8.3%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ MAXIMUM 8.3% CURB RAMP SLOPE IS ALLOWABLE WITH GUTTER COUNTER SLOPE OF 5% MAXIMUM AND A 13.3% MAXIMUM GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.1% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A CLEAR SPACE IN THE STREET AND GUTTER AREA. WHEN THE GUTTER CROSS SLOPE EXCEEDS 2.1%, CONSTRUCT THE CLEAR SPACE IN THE STREET AREA AND THE 4 FOOT WIDTH IS MEASURED FROM THE FLANGE LINE. FOR RECONSTRUCTION AND MODERNIZATION PROJECTS THE CLEAR SPACE SLOPE PARALLEL TO THE CURBLINE SHOULD BE 2.1% MAX FOR CROSSINGS THAT ARE STOP AND YIELD CONTROLLED, AND 5% MAX FOR THOSE THAT ARE SIGNAL CONTROLLED. FOR PERPETUATION AND REHABILITATION PROJECTS THE SLOPE OF THE CLEAR SPACE PARALLEL TO THE CURBLINE WILL MATCH THE ROADWAY LONGITUDINAL SLOPE. THE SLOPE OF THE CLEAR SPACE PERPENDICULAR TO THE CURBLINE WILL MATCH THE ROADWAY CROSS SLOPE BUT SHOULD NOT EXCEED 5% UNLESS THE ROADWAY IS SUPERELEVATED (WHEN SUPERELEVATED THE ROADWAY CROSS SLOPE SHOULD MATCH THE SUPERELEVATION).
- ⑥ PROVIDE A 5 FOOT BY 5 FOOT LANDING. SLOPE PERPENDICULAR TO CURB SHALL BE 2.1% MAXIMUM. SLOPE PARALLEL TO CURB SHALL MATCH THE CURB AND GUTTER LONGITUDINAL SLOPE.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑪ A MAXIMUM 2-INCH CONCRETE BORDER IS PERMITTED ALONG ALL SIDES OF THE DETECTABLE WARNING FIELD SURFACE.
- ⑫ THE ENTIRE RAMP SHALL BE A PLANAR SURFACE. DO NOT WARP THE RUNNING SLOPE OR CROSS SLOPE OF THE RAMP. WARPING OF THE SIDEWALK CROSS SLOPE SHALL TAKE PLACE BETWEEN THE LANDING AND MATCH POINT.

LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- * MAXIMUM 8.3%
- ** WIDTH SHOWN ELSEWHERE IN THE PLANS

CURB RAMPS
TYPE 1 AND 1-A

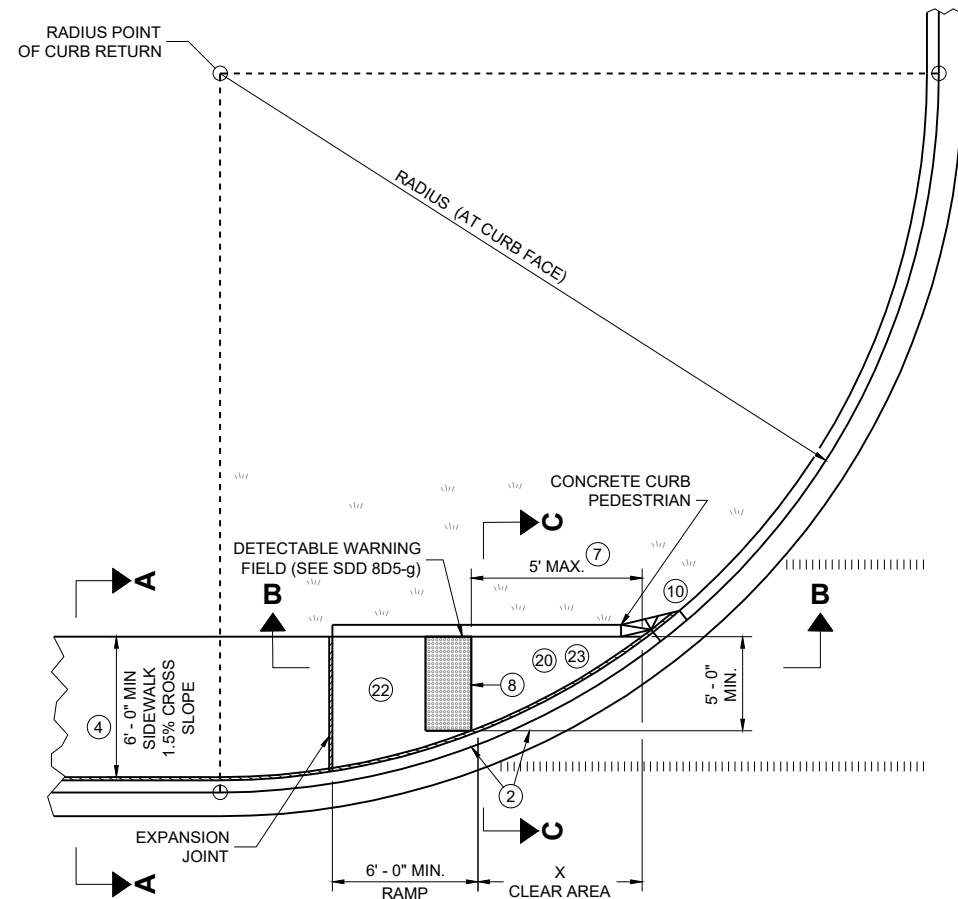
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



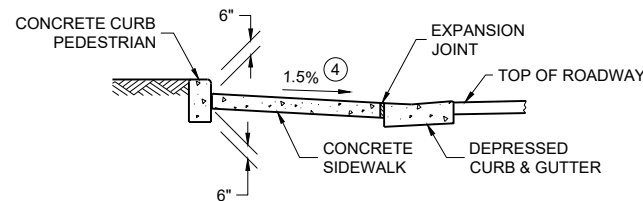
	1/2" EXPANSION JOINT SIDEWALK
	CONTRACTION JOINT SIDEWALK
	PAVEMENT MARKING CROSSWALK (WHITE)
	MAXIMUM 2.1% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK
	WIDTH SHOWN ELSEWHERE IN THE PLANS
	CONSTRUCT 6" WEDGE TO AVOID CONCRETE BRAKEAGE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

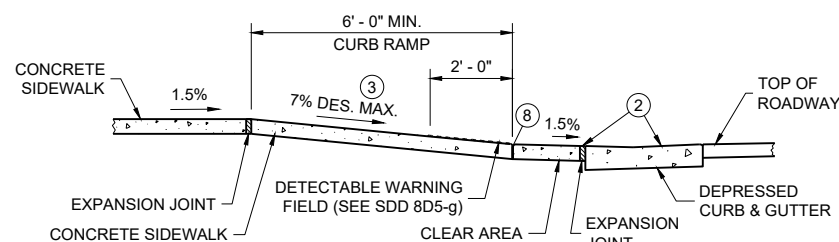
- ② GRADE CHANGE BETWEEN GUTTER COUNTER SLOPE AND THE CURB RAMP SLOPE IS DESIRABLY 11% OR LESS AND SHALL NOT EXCEED 13.3%. TYPICAL GUTTER COUNTER SLOPE IS 4% BUT MAY BE MODIFIED TO FIT FIELD CONDITIONS. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5%, DESIRABLY 7% OR LESS, AND SHALL NOT EXCEED A MAXIMUM OF 8.3%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ MAXIMUM 8.3% CURB RAMP SLOPE IS ALLOWABLE WITH GUTTER COUNTER SLOPE OF 5% MAXIMUM AND A 13.3% MAXIMUM GRADE CHANGE.
- ④ $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.1% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑦ WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑨ WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% DESIGN MAXIMUM SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% DESIGN MAXIMUM SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.
- ⑰ A MAXIMUM 2-INCH CONCRETE BORDER IS PERMITTED ALONG ALL SIDES OF THE DETECTABLE WARNING FIELD SURFACE.
- ⑲ WHERE A LANDING SERVES TWO CURB RAMPS, THE LANDING SLOPE SHALL NOT EXCEED THE CROSS SLOPE AT THE BOTTOM OF THE RAMP OR WITHIN THE CROSSWALK PARALLEL TO THE DIRECTION OF TRAVEL.
- ⑲ PROVIDE A LANDING WITH A SLOPE PARALLEL TO ROADWAY THAT MATCHES SLOPE AT THE BOTTOM OF THE ADJACENT RAMP. SLOPE PERPENDICULAR TO ROADWAY SHALL BE 2.1% MAXIMUM. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑲ THE ENTIRE RAMP SHALL BE A PLANAR SURFACE. DO NOT WARP THE RUNNING SLOPE OR CROSS SLOPE OF THE RAMP. WARPING OF THE SIDEWALK CROSS SLOPE SHALL TAKE PLACE BETWEEN THE LANDING AND MATCH POINT.
- ⑲ THE CLEAR AREA BETWEEN THE BOTTOM OF RAMP AND BACK OF CURB SHALL BE SLOPED SO THAT WATER DRAINS OUT OF ONE SIDE OR BOTH SIDES OF THE CURB OPENING.



PLAN VIEW
CURB RAMP TYPE 4A



SECTION C - C FOR TYPE 4A

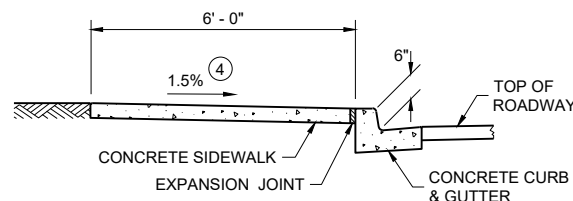


SECTION B - B FOR
TYPE 4A AND TYPE 4A1

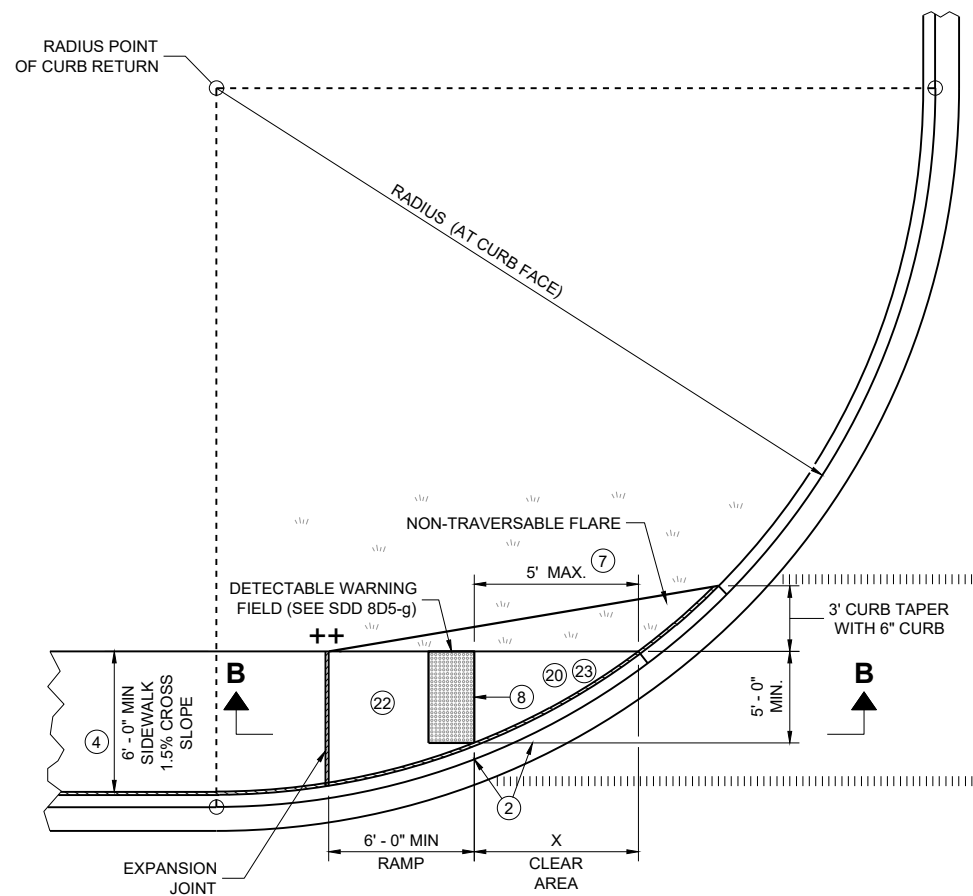
- LEGEND**
- 1/2" EXPANSION JOINT SIDEWALK
 - CONTRACTION JOINT SIDEWALK
 - PAVEMENT MARKING CROSSWALK (WHITE)
 - ++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

RADIUS (AT CURB FACE)	X
10 FEET	4' - 7"

INTERMEDIATE RADII CAN BE INTERPOLATED



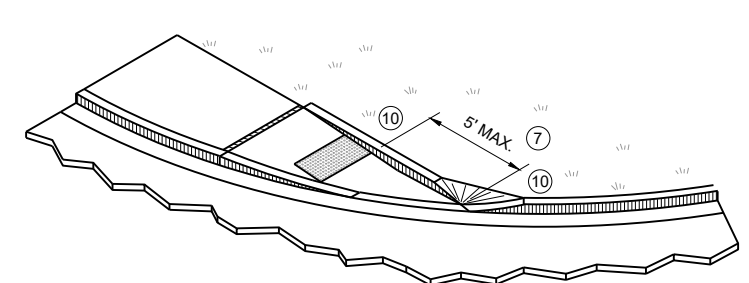
SECTION A - A FOR TYPE 4A



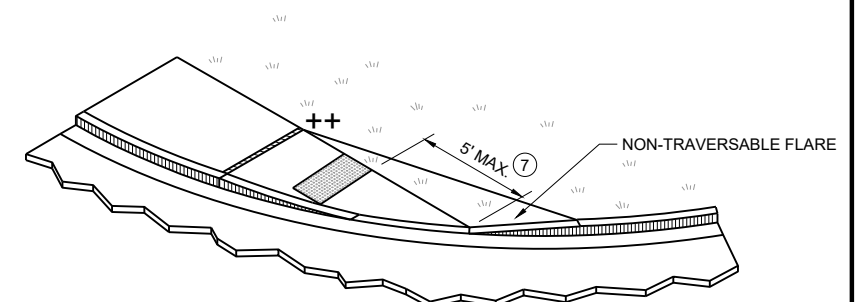
PLAN VIEW
CURB RAMP TYPE 4A1

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF CURB RAMP ACCESS AREAS.
- 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.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- GRADE CHANGE BETWEEN GUTTER COUNTER SLOPE AND THE CURB RAMP SLOPE IS DESIRABLY 11% OR LESS AND SHALL NOT EXCEED 13.3%. TYPICAL GUTTER COUNTER SLOPE IS 4% BUT MAY BE MODIFIED TO FIT FIELD CONDITIONS. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5%, DESIRABLY 7% OR LESS, AND SHALL NOT EXCEED A MAXIMUM OF 8.3%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- MAXIMUM 8.3% CURB RAMP SLOPE IS ALLOWABLE WITH GUTTER COUNTER SLOPE OF 5% MAXIMUM AND A 13.3% MAXIMUM GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.1% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- A MAXIMUM 2-INCH CONCRETE BORDER IS PERMITTED ALONG ALL SIDES OF THE DETECTABLE WARNING FIELD SURFACE.
- MAXIMUM 1.5% DESIGN MAXIMUM AND 2.1% PROWAG MAXIMUM RUNNING SLOPE ON CLEAR AREA. CROSS SLOPE OF CLEAR AREA SHALL MATCH THE CROSS SLOPE OF THE ADJACENT CROSSWALK.
- THE ENTIRE RAMP SHALL BE A PLANAR SURFACE. DO NOT WARP THE RUNNING SLOPE OR CROSS SLOPE OF THE RAMP. WARPING OF THE SIDEWALK CROSS SLOPE SHALL TAKE PLACE BETWEEN THE LANDING AND MATCH POINT.
- THE CLEAR AREA BETWEEN THE BOTTOM OF RAMP AND BACK OF CURB SHALL BE SLOPED SO THAT WATER DRAINS OUT OF ONE SIDE OR BOTH SIDES OF THE CURB OPENING.



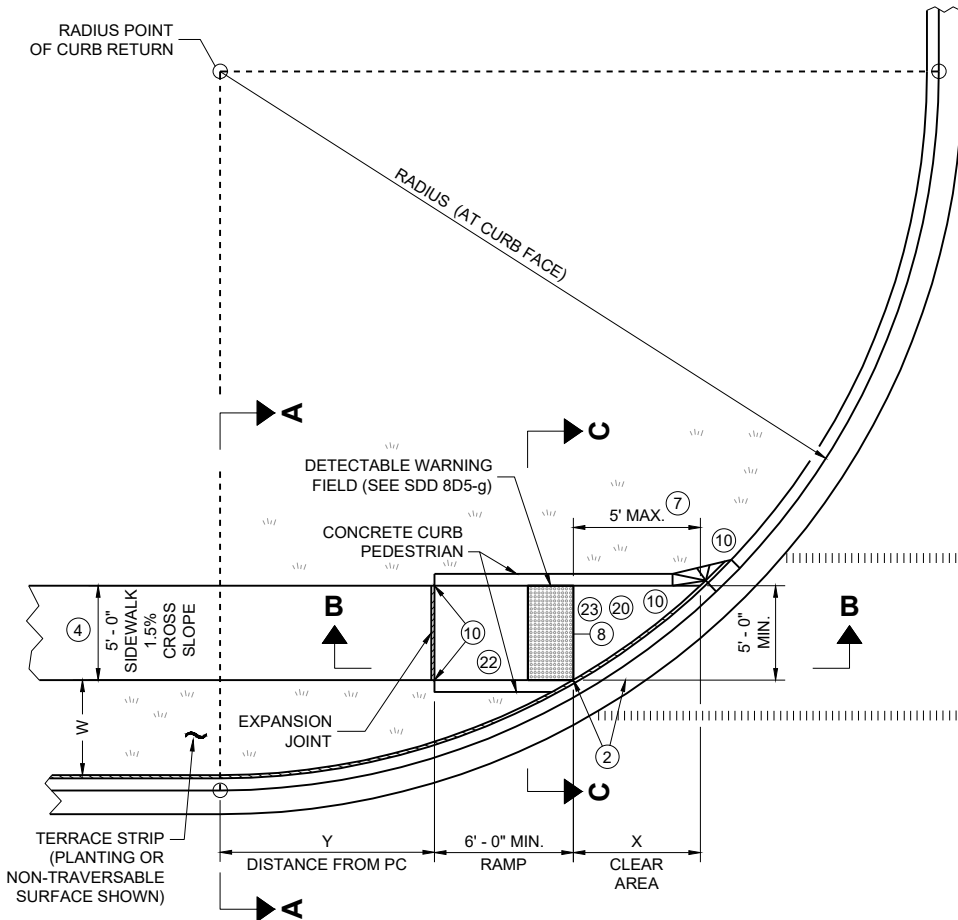
ISOMETRIC VIEW FOR TYPE 4A



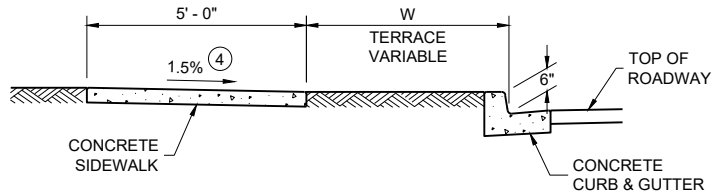
ISOMETRIC VIEW FOR TYPE 4A1

**CURB RAMPS
TYPE 4A AND 4A1**

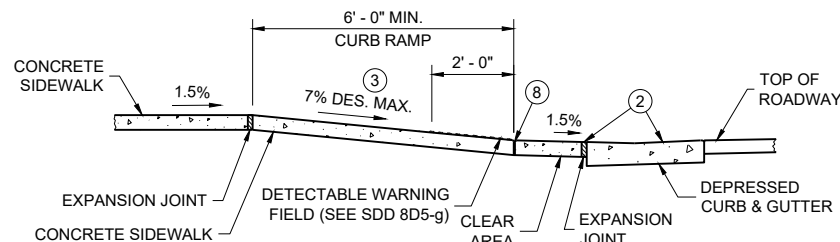
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
CURB RAMP TYPE 4B



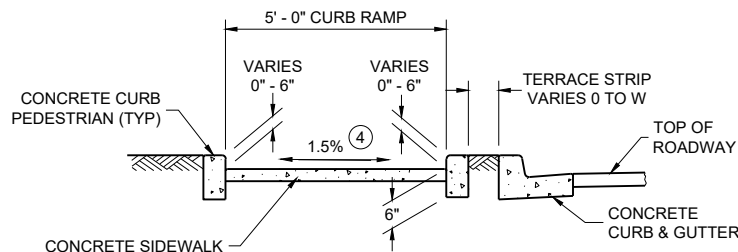
SECTION A - A FOR TYPE 4B



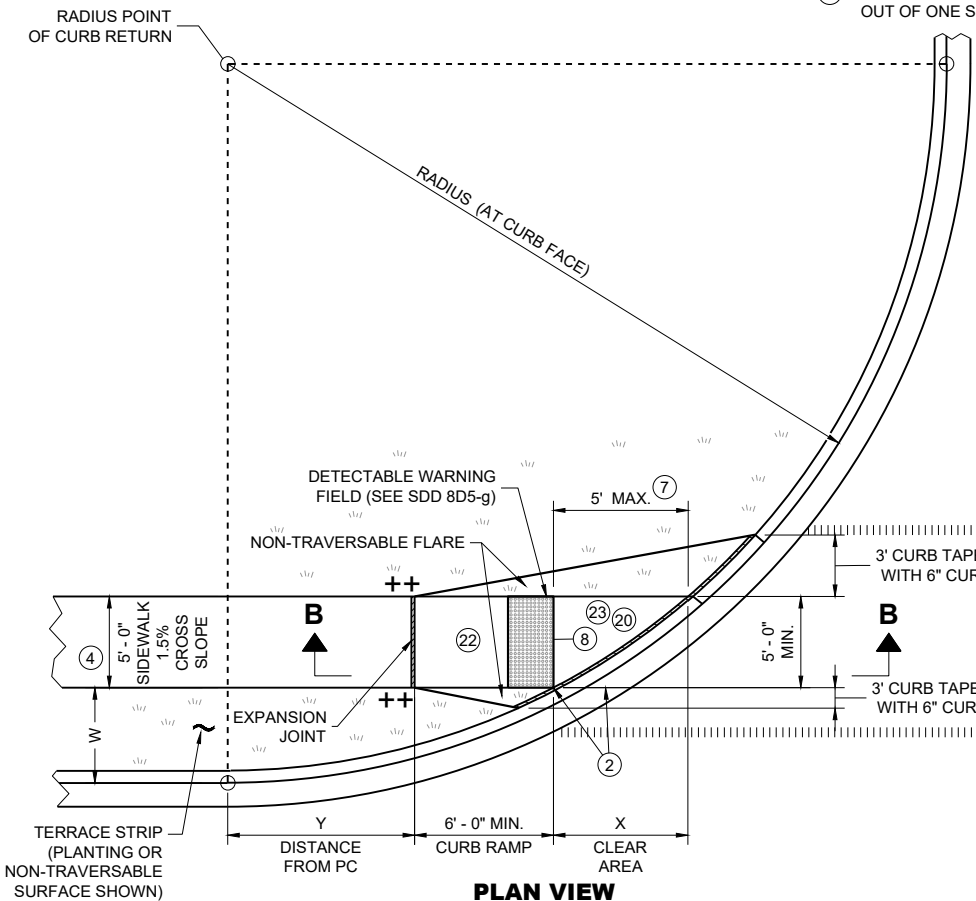
SECTION B - B FOR TYPE 4B AND TYPE 4B1

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 1/4"	0' - 5"	2' - 1"	1' - 4 1/2"	1' - 5"	2' - 1"	0' - 10"	2' - 7 1/2"	0' - 3 1/4"	3' - 0 1/4"						
15 FEET	4' - 6 3/4"	2' - 1 3/4"	3' - 9"	3' - 5 3/4"	3' - 1 1/4"	4' - 6"	2' - 6 3/4"	5' - 4 1/2"	2' - 1"	6' - 1"	1' - 8"	6' - 8 1/2"	1' - 3 1/4"	7' - 2 1/2"	0' - 10 3/4"	7' - 7 1/4"
20 FEET			4' - 11 1/2"	5' - 1 3/4"	4' - 3 1/4"	6' - 5 1/2"	3' - 8 3/4"	7' - 7"	3' - 3"	8' - 6 1/2"	2' - 10"	9' - 4 1/2"	2' - 5 1/2"	10' - 1 1/4"	2' - 1 1/4"	10' - 9"
30 FEET									4' - 10 3/4"	12' - 5 3/4"	4' - 5 1/2"	13' - 7 3/4"	4' - 0 3/4"	14' - 8 1/2"	3' - 8 1/2"	15' - 8 1/4"
40 FEET															4' - 10 3/4"	19' - 8 1/4"

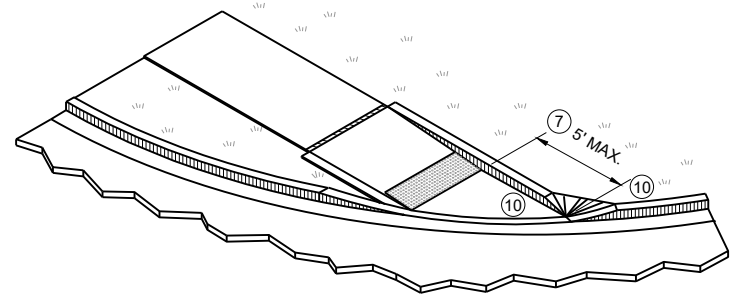
INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH



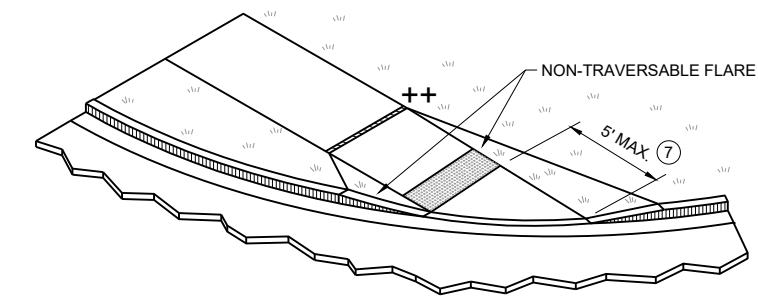
SECTION C - C FOR TYPE 4B



PLAN VIEW
CURB RAMP TYPE 4B1



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

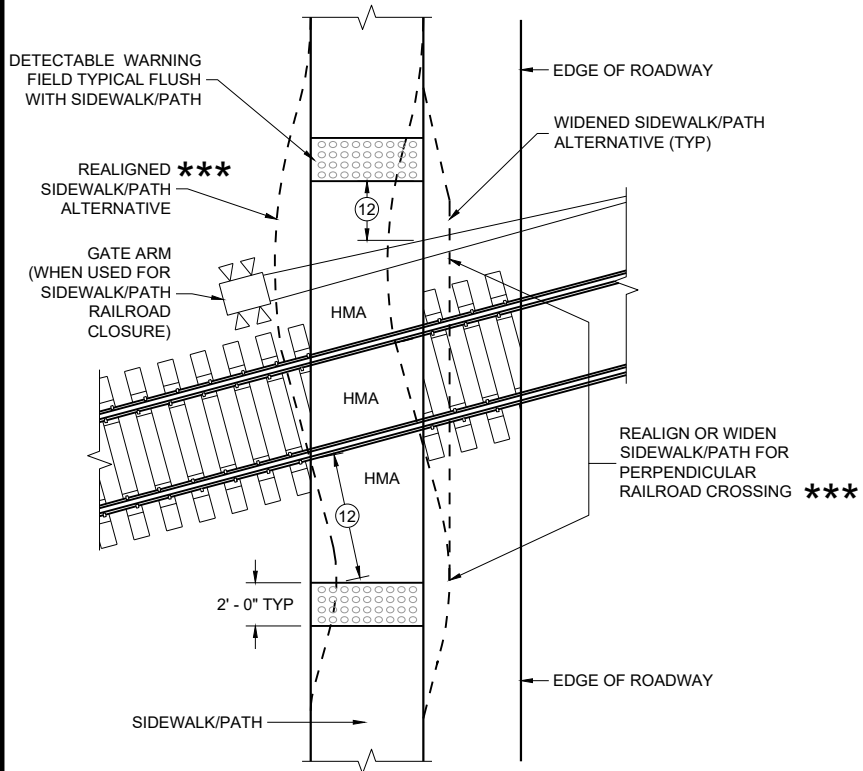
- LEGEND**
- 1/2" EXPANSION JOINT SIDEWALK
 - CONTRACTION JOINT SIDEWALK
 - PAVEMENT MARKING CROSSWALK (WHITE)
 - MAXIMUM 2.1% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK
 - CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

GENERAL NOTES

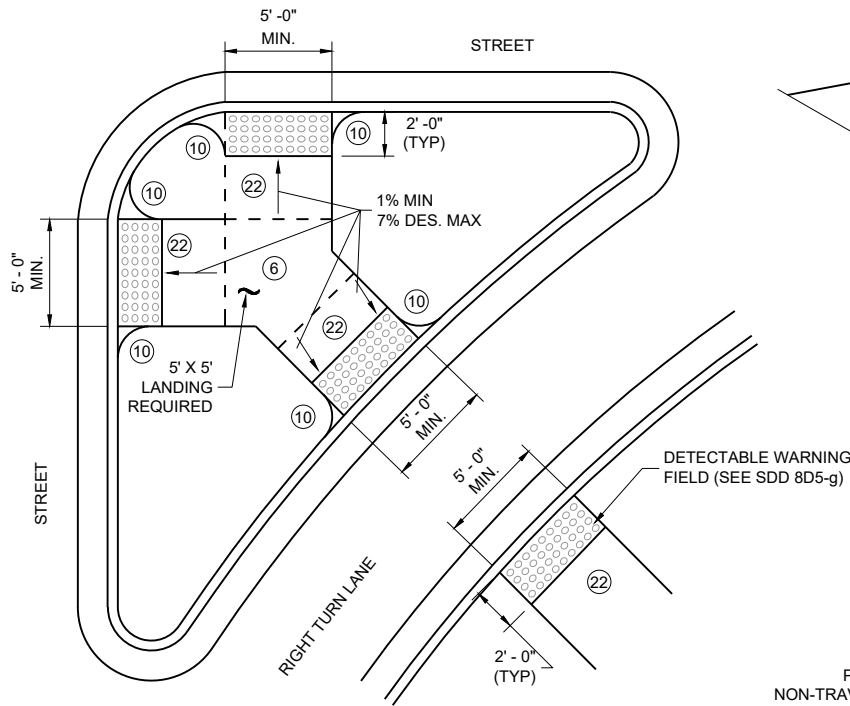
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF CURB RAMP ACCESS AREAS.
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- GRADE CHANGE BETWEEN GUTTER COUNTER SLOPE AND THE CURB RAMP SLOPE IS DESIRABLY 11% OR LESS AND SHALL NOT EXCEED 13.3%. TYPICAL GUTTER COUNTER SLOPE IS 4% BUT MAY BE MODIFIED TO FIT FIELD CONDITIONS. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5%, DESIRABLY 7% OR LESS, AND SHALL NOT EXCEED A MAXIMUM OF 8.3%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- MAXIMUM 8.3% CURB RAMP SLOPE IS ALLOWABLE WITH GUTTER COUNTER SLOPE OF 5% MAXIMUM AND A 13.3% MAXIMUM GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.1% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- A MAXIMUM 2-INCH CONCRETE BORDER IS PERMITTED ALONG ALL SIDES OF THE DETECTABLE WARNING FIELD SURFACE.
- MAXIMUM 1.5% DESIGN MAXIMUM AND 2.1% PROWAG MAXIMUM RUNNING SLOPE ON CLEAR AREA. CROSS SLOPE OF CLEAR AREA SHALL MATCH THE CROSS SLOPE OF THE ADJACENT CROSSWALK.
- THE ENTIRE RAMP SHALL BE A PLANAR SURFACE. DO NOT WARP THE RUNNING SLOPE OR CROSS SLOPE OF THE RAMP. WARPING OF THE SIDEWALK CROSS SLOPE SHALL TAKE PLACE BETWEEN THE LANDING AND MATCH POINT.
- THE CLEAR AREA BETWEEN THE BOTTOM OF RAMP AND BACK OF CURB SHALL BE SLOPED SO THAT WATER DRAINS OUT OF ONE SIDE OR BOTH SIDES OF THE CURB OPENING.

CURB RAMPS
TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

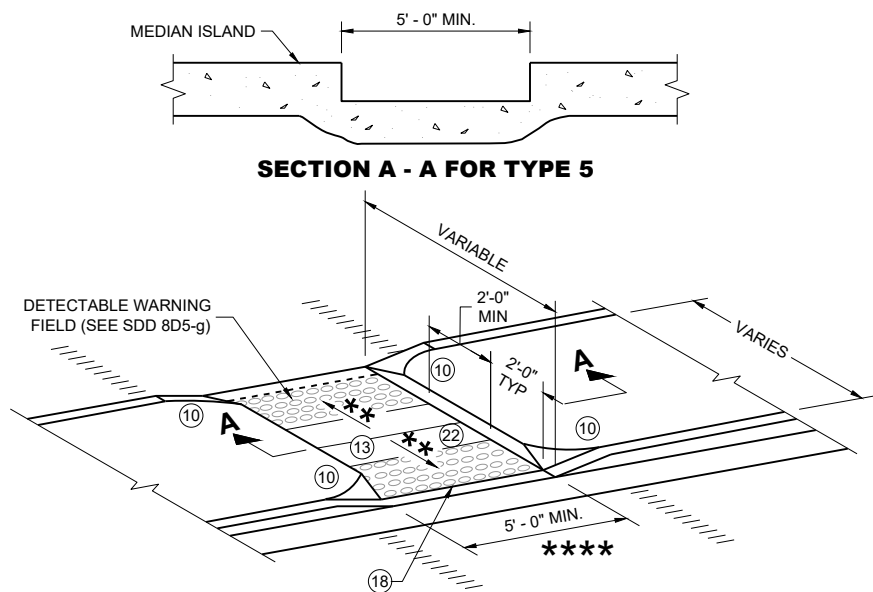


CURB RAMP TYPE 8
DETECTABLE WARNINGS
FOR SIDEWALKS OR SHARED USE PATHS
AT RAILROAD CROSSINGS

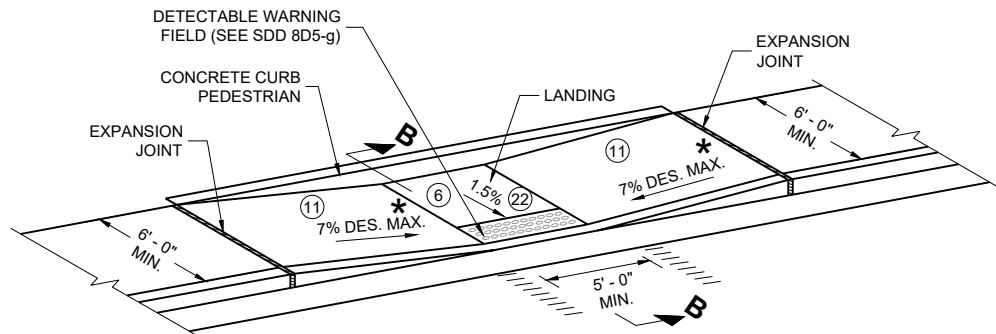


CURB RAMP TYPE 6
DETECTABLE WARNING AT ISLANDS

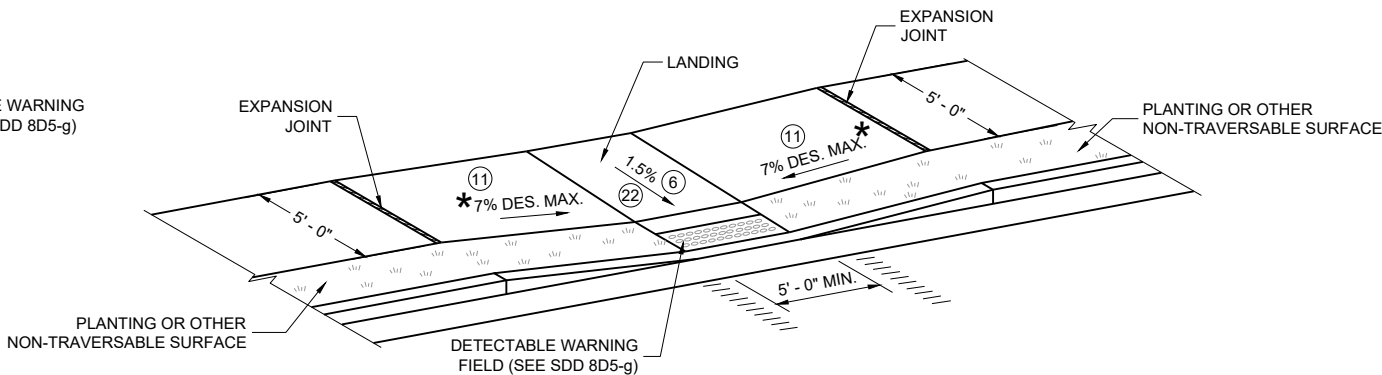
REFER TO GENERAL NOTES ② AND ③
FOR ALL ISLAND CURB RAMPS



CURB RAMP TYPE 5
MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING



CURB RAMP TYPE 7A
FOR INTERSECTIONS AND
MID BLOCK CROSSINGS



CURB RAMP TYPE 7B
FOR INTERSECTIONS AND
MID BLOCK CROSSINGS

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF CURB RAMP ACCESS AREAS.

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.

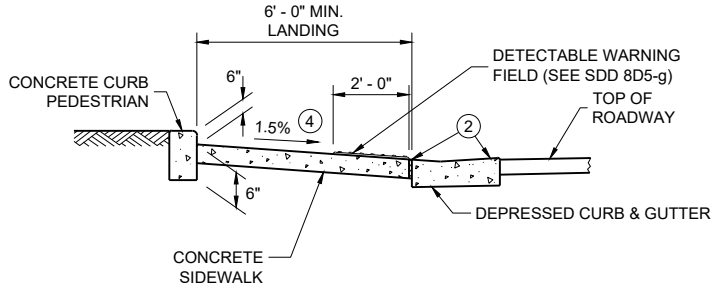
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.1%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER COUNTER SLOPE AND THE CURB RAMP SLOPE IS DESIRABLY 11% OR LESS AND SHALL NOT EXCEED 13.3%. TYPICAL GUTTER COUNTER SLOPE IS 4% BUT MAY BE MODIFIED TO FIT FIELD CONDITIONS. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5%, DESIRABLY 7% OR LESS, AND SHALL NOT EXCEED A MAXIMUM OF 8.3%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ MAXIMUM 8.3% CURB RAMP SLOPE IS ALLOWABLE WITH GUTTER COUNTER SLOPE OF 5% MAXIMUM AND A 13.3% MAXIMUM GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.1% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A 5 FOOT BY 5 FOOT LANDING. SLOPE PERPENDICULAR TO CURB SHALL BE 2.1% MAXIMUM. SLOPE PARALLEL TO CURB SHALL MATCH THE CURB AND GUTTER LONGITUDINAL SLOPE.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK/PATH. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD TRACK IS 15 FEET MAXIMUM AND 12 FEET MINIMUM, 15 FEET TYPICAL FROM THE NEAREST RAIL.
- ⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.
- ⑰ A MAXIMUM 2-INCH CONCRETE BORDER IS PERMITTED ALONG ALL SIDES OF THE DETECTABLE WARNING FIELD SURFACE.
- ⑱ WHEN THE DISTANCE BETWEEN THE BACK OF CURBS IS LESS THAN 6 FEET BUT THE FACE OF CURB TO FACE OF CURB DISTANCE IS 6 FEET OR GREATER THEN THE DETECTABLE WARNING FIELDS MAY BE MOVED SO THAT THE EDGE OF THE WARNING FIELD IS PLACED AT THE GUTTER FLOWLINE. MAINTAIN A MINIMUM OF TWO FEET BETWEEN DETECTABLE WARNING FIELD PANELS.
- ⑳ THE ENTIRE RAMP SHALL BE A PLANAR SURFACE. DO NOT WARP THE RUNNING SLOPE OR CROSS SLOPE OF THE RAMP. WARPING OF THE SIDEWALK CROSS SLOPE SHALL TAKE PLACE BETWEEN THE LANDING AND MATCH POINT.

LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- MAXIMUM 8.3%
- 1% MINIMUM (PROVIDE DRAINAGE)
- DETAILS TO BE DETERMINED BY ENGINEER
- FOR SHARED USE PATHS, WIDTH MUST BE AS WIDE AS THE CROSSWALK

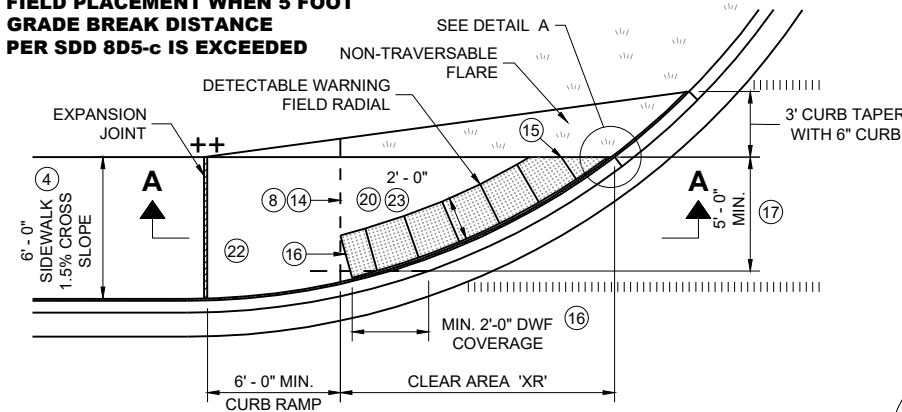


SECTION B - B FOR TYPE 7A

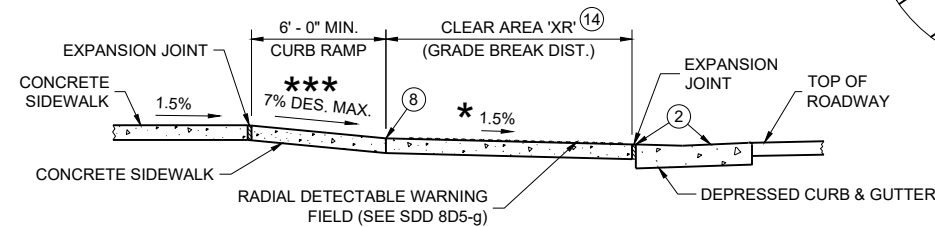
CURB RAMPS
TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

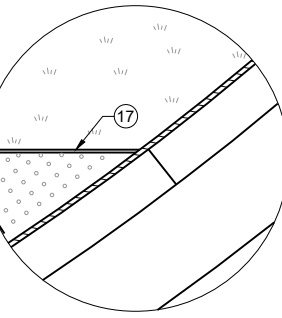
**RADIAL DETECTABLE WARNING
FIELD PLACEMENT WHEN 5 FOOT
GRADE BREAK DISTANCE
PER SDD 8D5-c IS EXCEEDED**



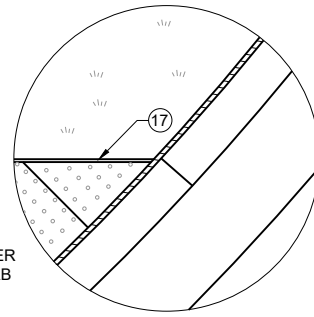
PLAN VIEW
CURB RAMP TYPE 4A1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



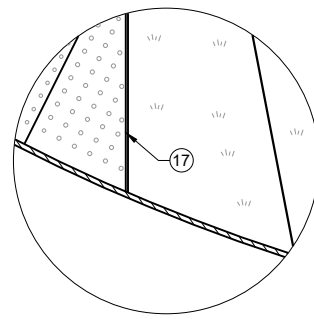
SECTION A - A FOR TYPE 4A1



DETAIL A

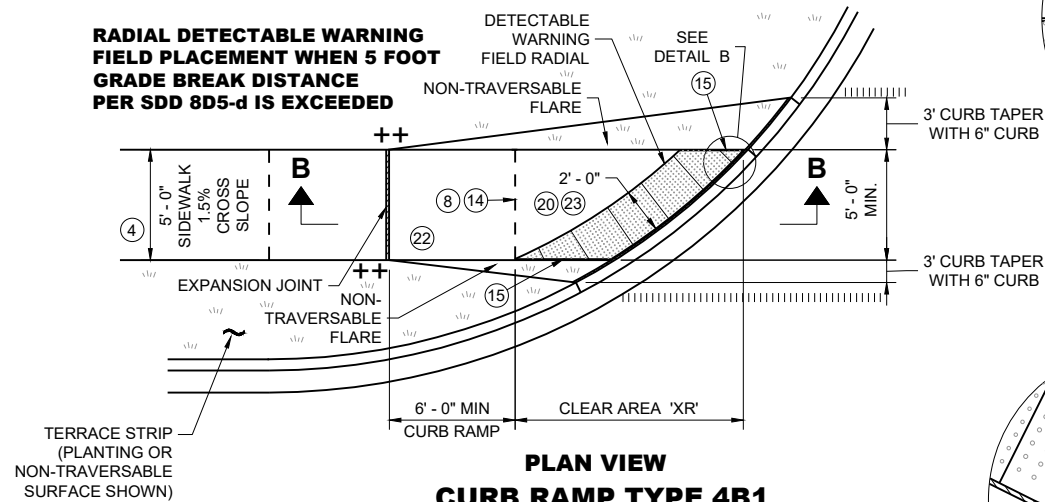


DETAIL B

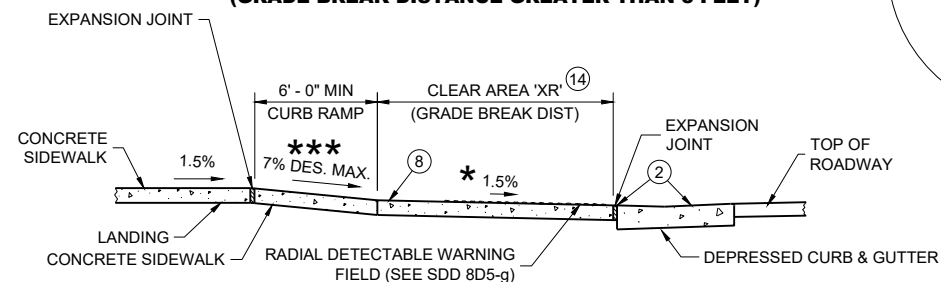


DETAIL C

**RADIAL DETECTABLE WARNING
FIELD PLACEMENT WHEN 5 FOOT
GRADE BREAK DISTANCE
PER SDD 8D5-d IS EXCEEDED**



PLAN VIEW
CURB RAMP TYPE 4B1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



SECTION B - B FOR TYPE 4B1

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF CURB RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

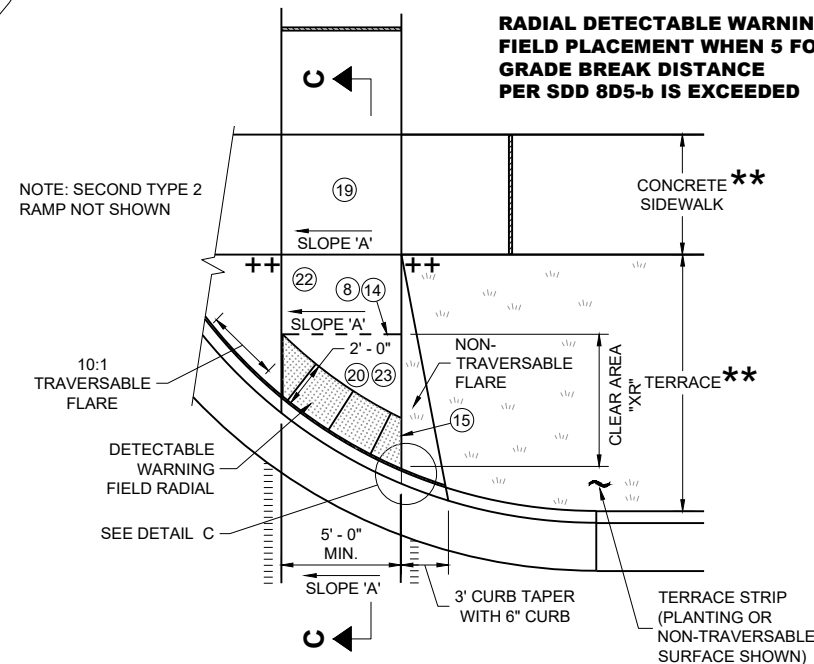
REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

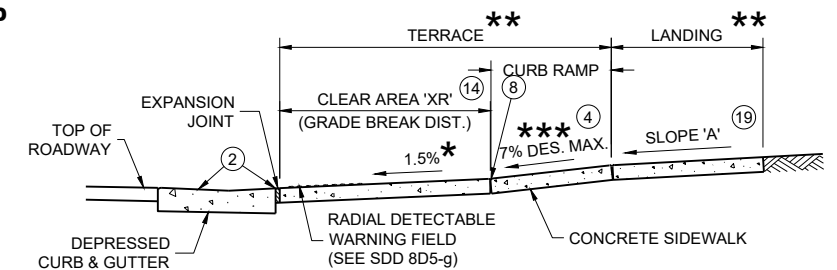
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

- ② GRADE CHANGE BETWEEN GUTTER COUNTER SLOPE AND THE CURB RAMP SLOPE IS DESIRABLY 11% OR LESS AND SHALL NOT EXCEED 13.3%. TYPICAL GUTTER COUNTER SLOPE IS 4% BUT MAY BE MODIFIED TO FIT FIELD CONDITIONS. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5%, DESIRABLY 7% OR LESS, AND SHALL NOT EXCEED A MAXIMUM OF 8.3%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ MAXIMUM 8.3% CURB RAMP SLOPE IS ALLOWABLE WITH GUTTER COUNTER SLOPE OF 5% MAXIMUM AND A 13.3% MAXIMUM GRADE CHANGE.
- ④ $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.1% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A 5 FOOT BY 5 FOOT LANDING. SLOPE PERPENDICULAR TO CURB SHALL BE 2.1% MAXIMUM. SLOPE PARALLEL TO CURB SHALL MATCH THE CURB AND GUTTER LONGITUDINAL SLOPE.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑭ CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- ⑮ FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN $\frac{1}{8}$ " DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- ⑮ USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- ⑰ A MAXIMUM 2-INCH CONCRETE BORDER IS PERMITTED ALONG ALL SIDES OF THE DETECTABLE WARNING FIELD SURFACE.
- ⑰ WHERE A LANDING SERVES TWO CURB RAMPS, THE LANDING SLOPE SHALL NOT EXCEED THE CROSS SLOPE AT THE BOTTOM OF THE RAMP OR WITHIN THE CROSSWALK PARALLEL TO THE DIRECTION OF TRAVEL.
- ⑳ MAXIMUM 1.5% DESIGN MAXIMUM AND 2.1% PROWAG MAXIMUM RUNNING SLOPE ON CLEAR AREA. CROSS SLOPE OF CLEAR AREA SHALL MATCH THE CROSS SLOPE OF THE ADJACENT CROSSWALK.
- ㉓ THE ENTIRE RAMP SHALL BE A PLANAR SURFACE. DO NOT WARP THE RUNNING SLOPE OR CROSS SLOPE OF THE RAMP. WARPING OF THE SIDEWALK CROSS SLOPE SHALL TAKE PLACE BETWEEN THE LANDING AND MATCH POINT.
- ㉓ THE CLEAR AREA BETWEEN THE BOTTOM OF RAMP AND BACK OF CURB SHALL BE SLOPED SO THAT WATER DRAINS OUT OF ONE SIDE OR BOTH SIDES OF THE CURB OPENING.

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-b IS EXCEEDED



PLAN VIEW
CURB RAMP TYPE 2
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)



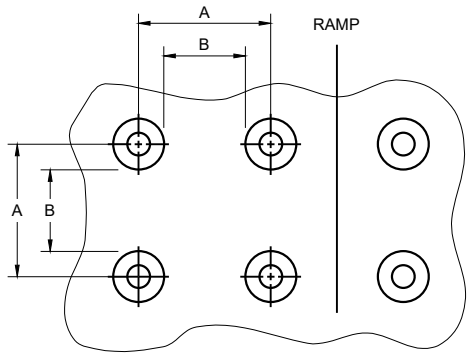
SECTION C - C FOR TYPE 2

CURB RAMPS
RADIAL DETECTABLE WARNING

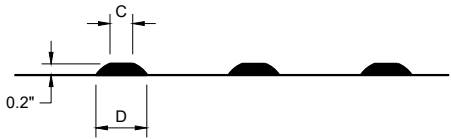
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

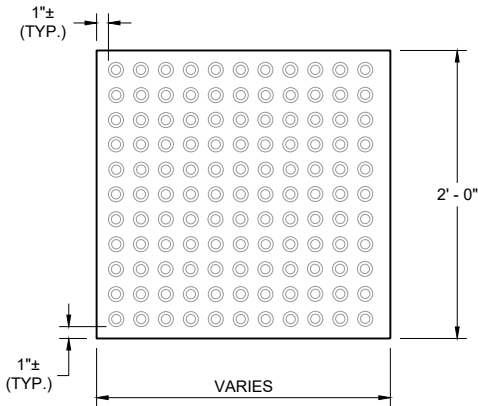


PLAN VIEW

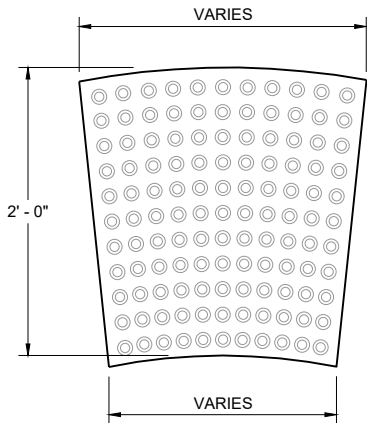


ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

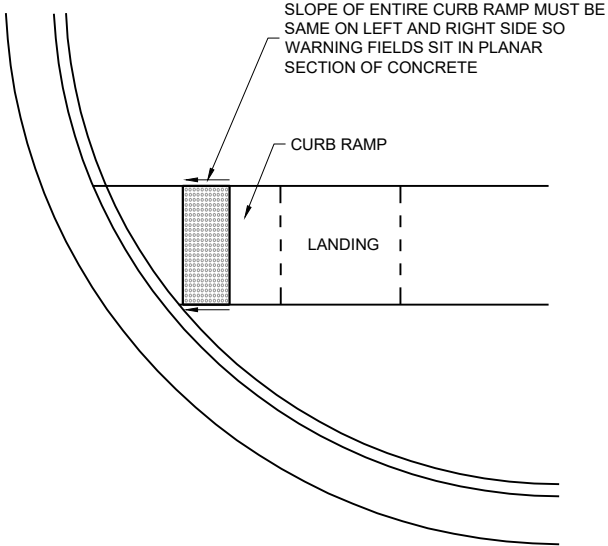


RECTANGULAR
PLATES

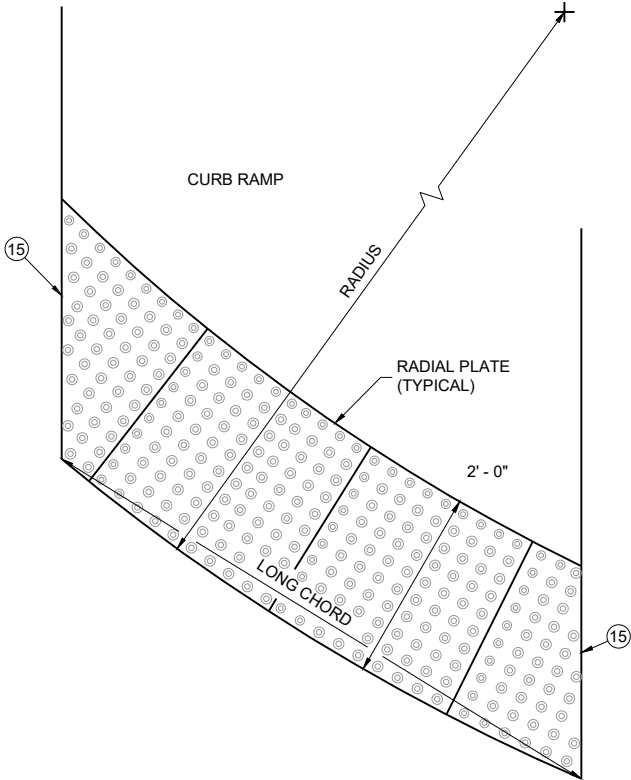


RADIAL
PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)



DETECTABLE WARNING FIELD
PLANAR INSTALLATION



PLAN VIEW
RADIAL DETECTABLE
WARNING FIELD ATTRIBUTES

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

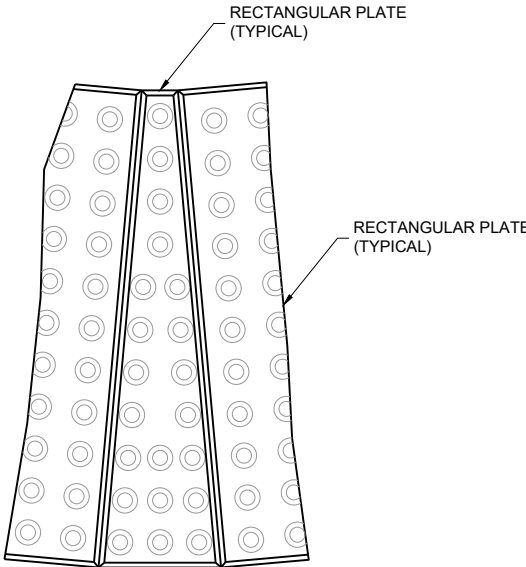
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.



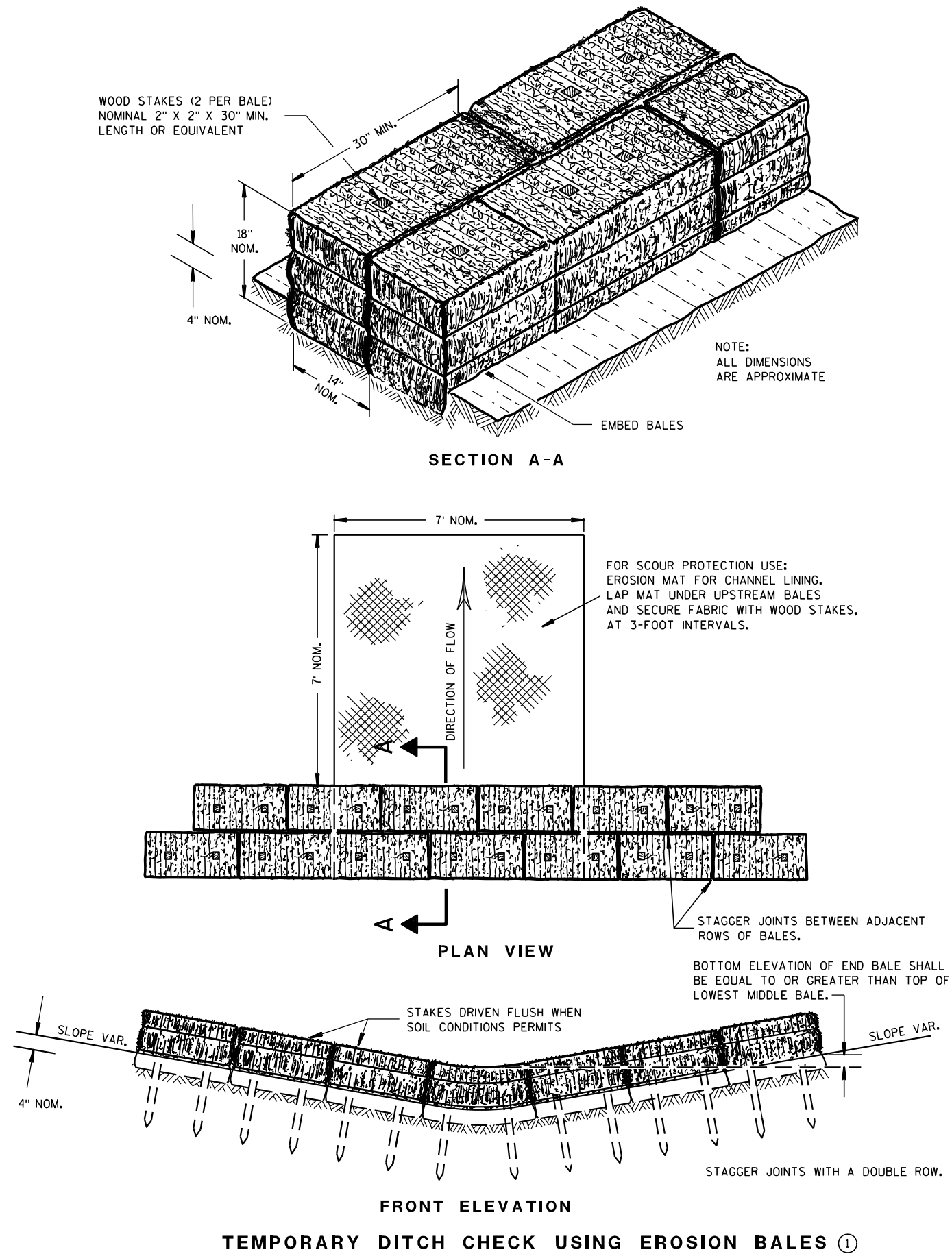
PLAN VIEW
RADIAL WEDGE PLATE
CONNECTION DETAIL

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

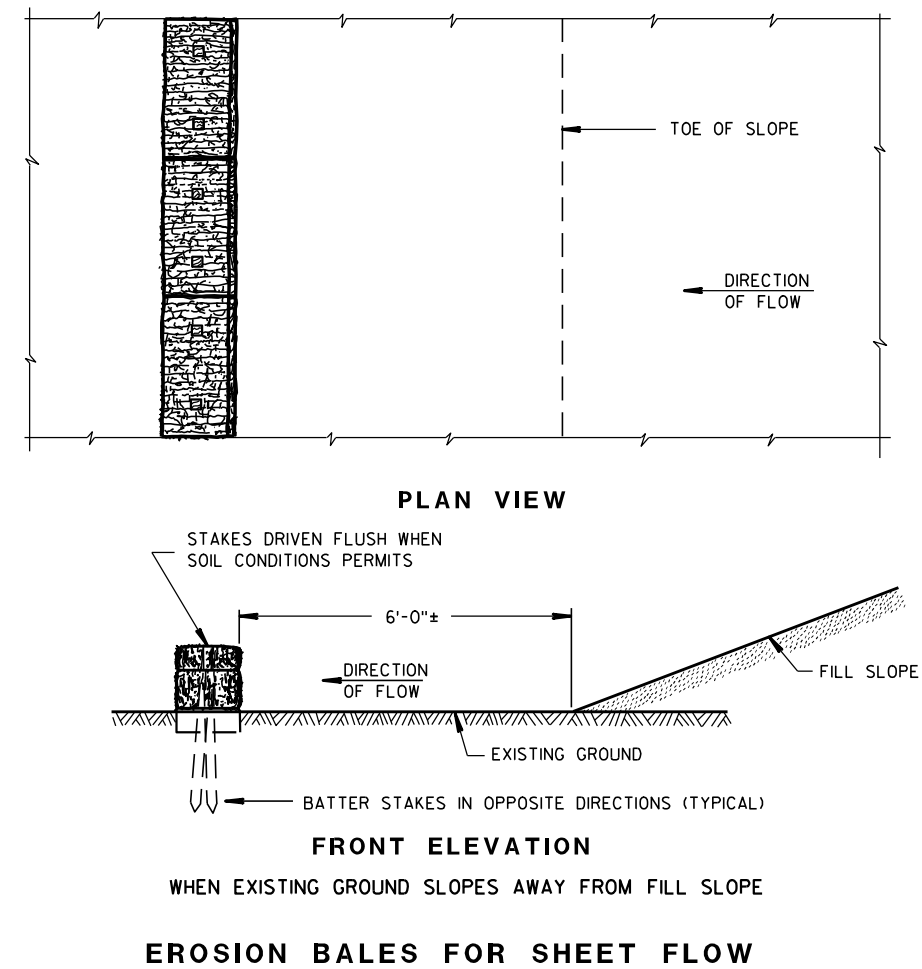
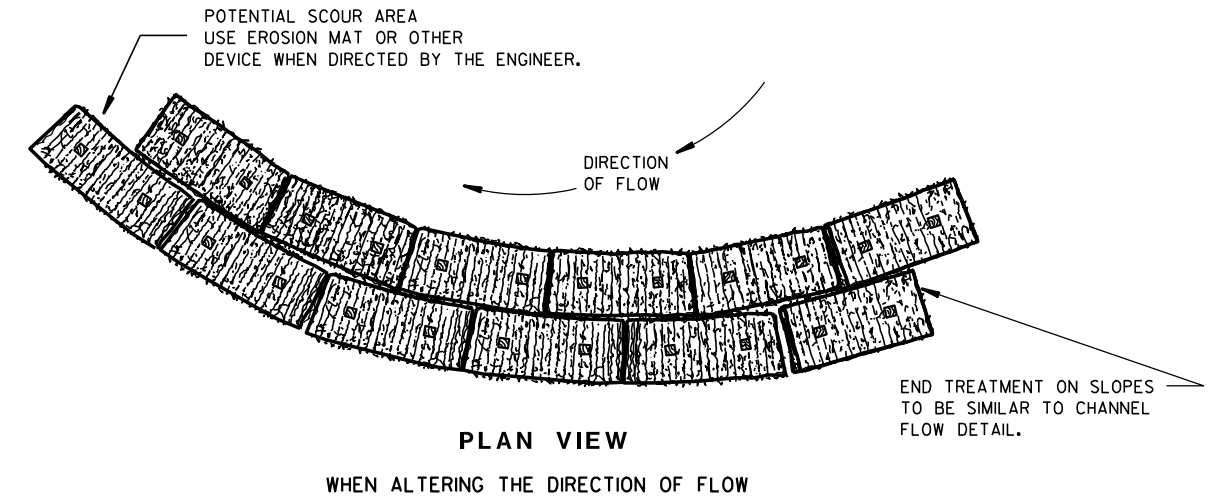
APPROVED
February 2025 /S/ Rodney Taylor
DATE <position>

FHWA 205

**GENERAL NOTES**

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

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



**TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS**

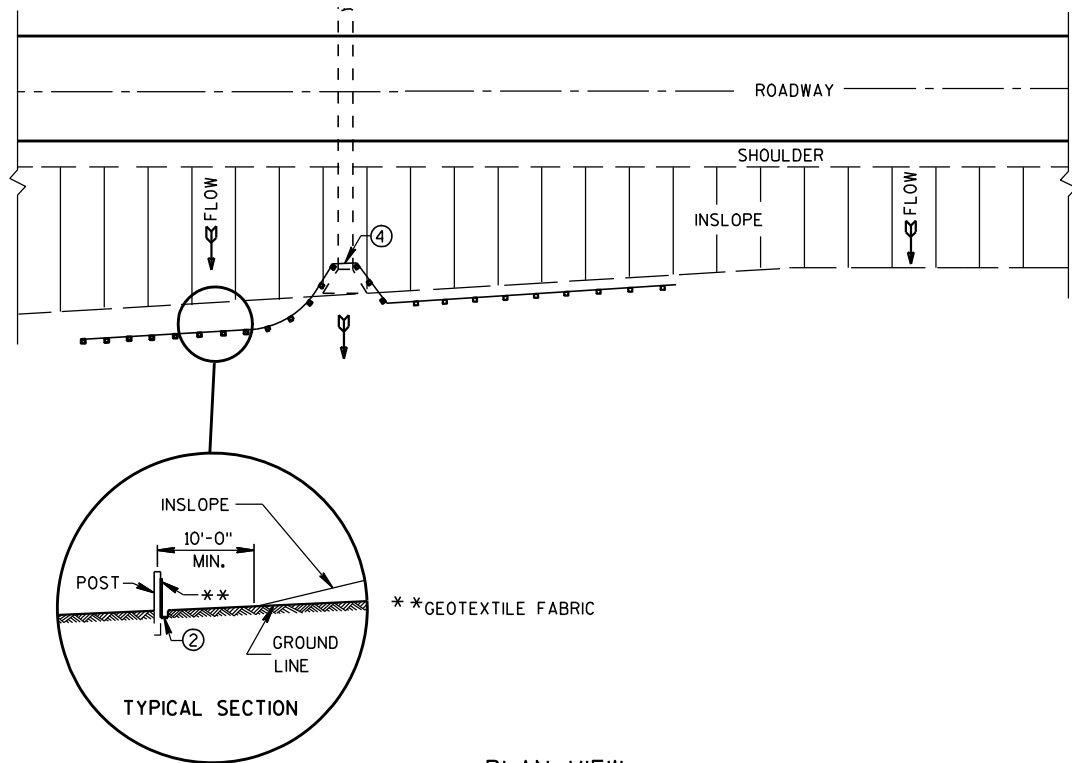
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

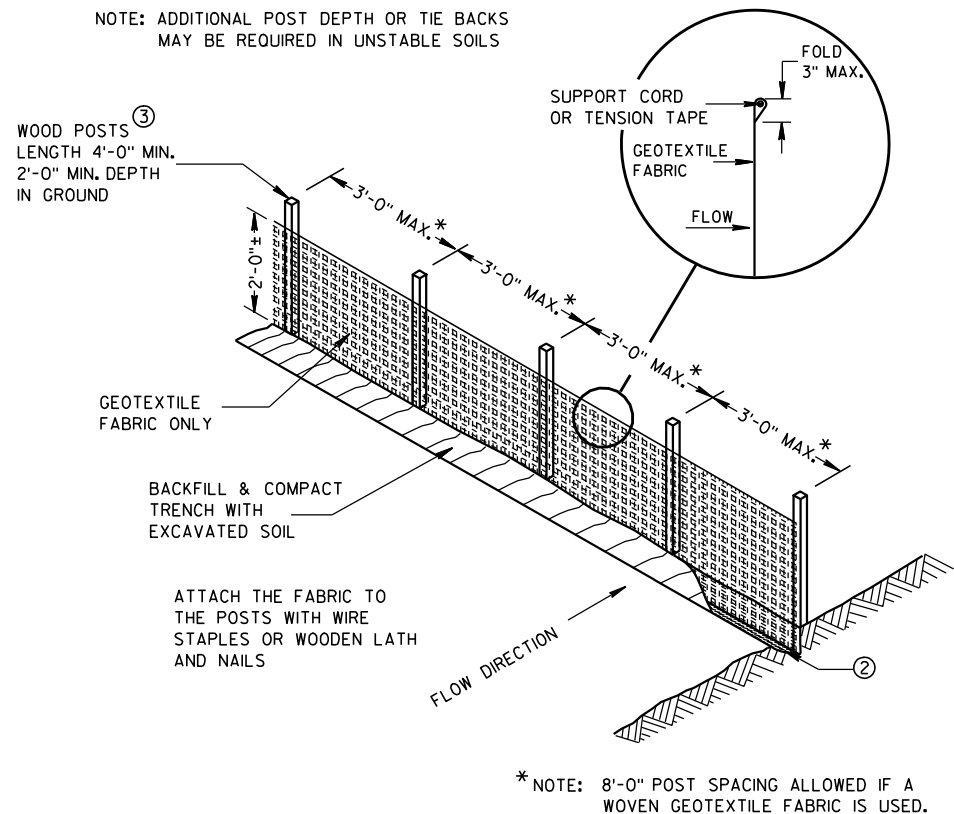
6/04/02
DATE

/S/ Beth Conn-----
CHIEF ROADWAY DEVELOP 206 ENGINEER

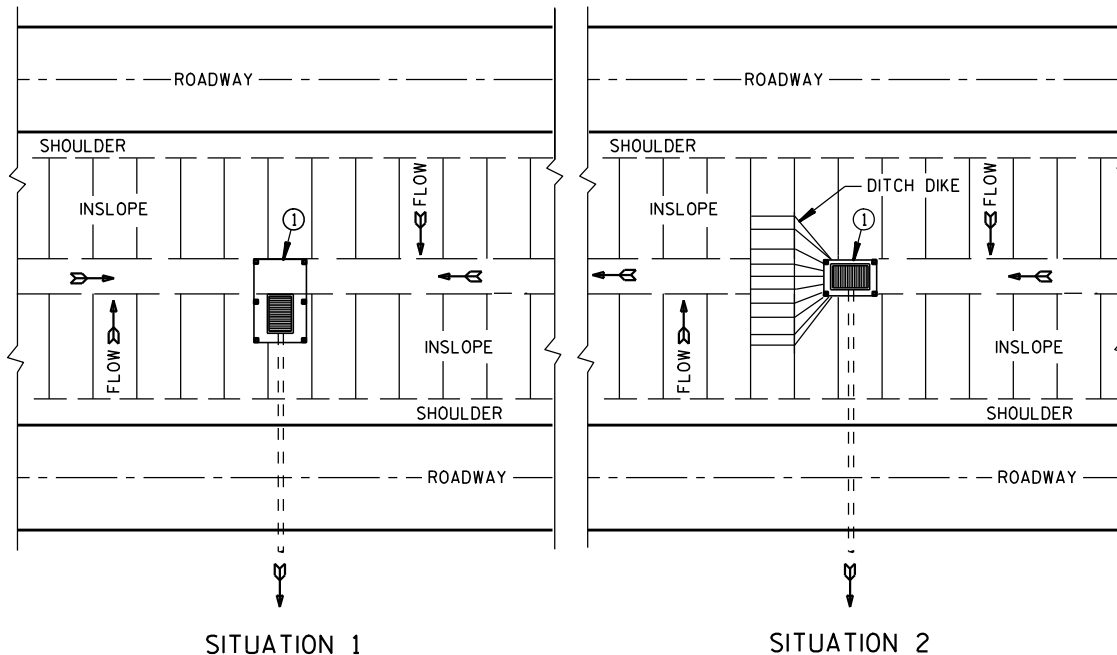
FHWA



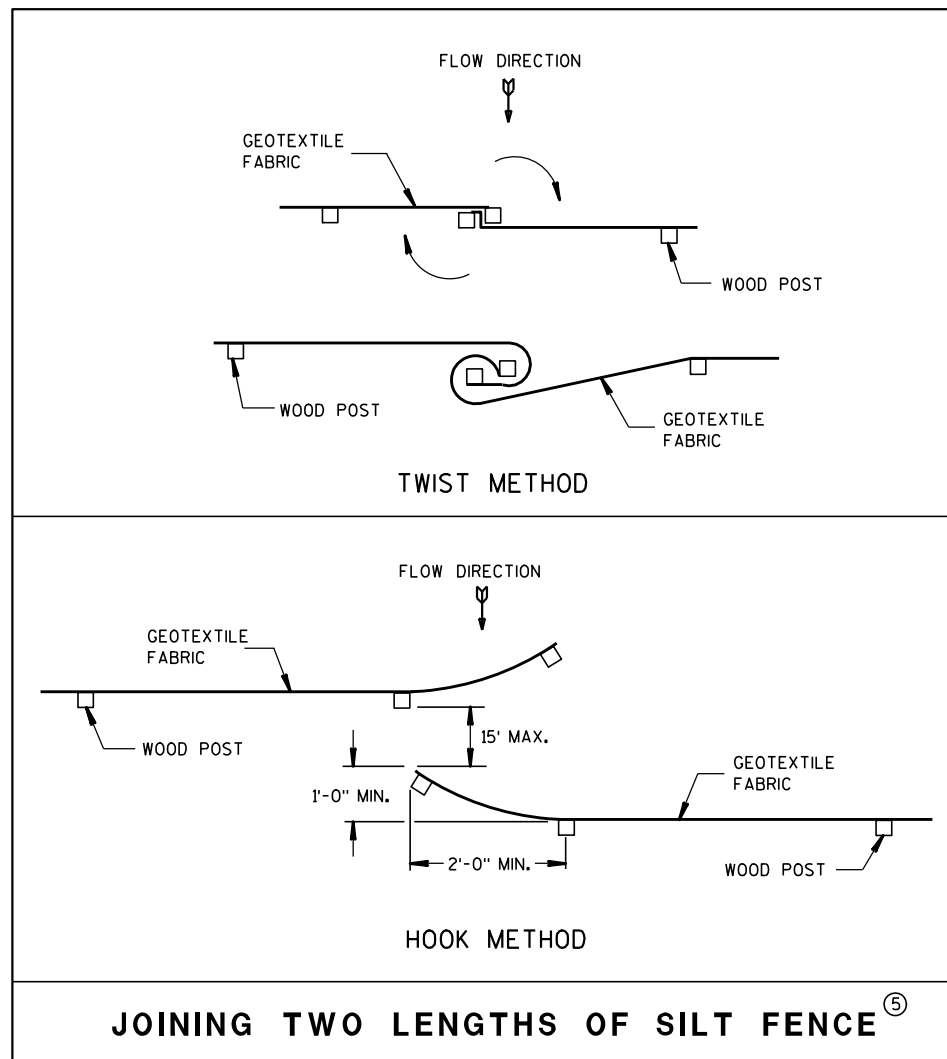
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

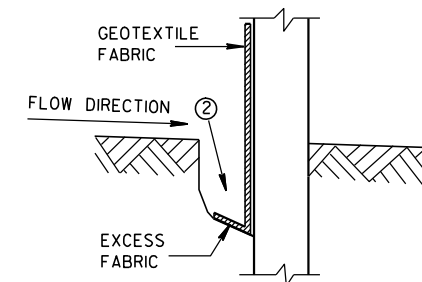


JOINING TWO LENGTHS OF SILT FENCE

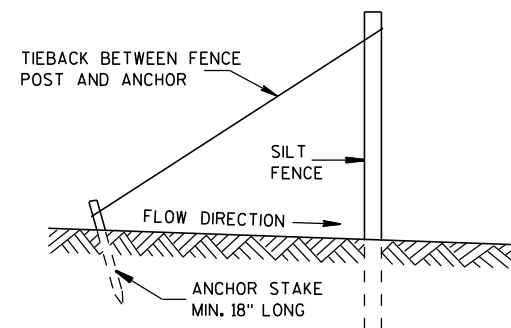
GENERAL NOTES

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

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

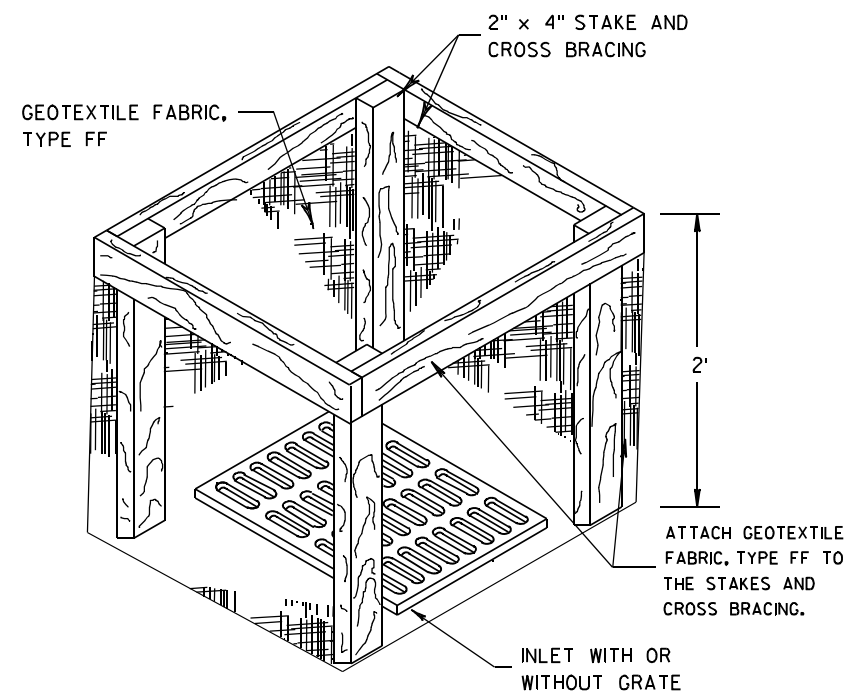
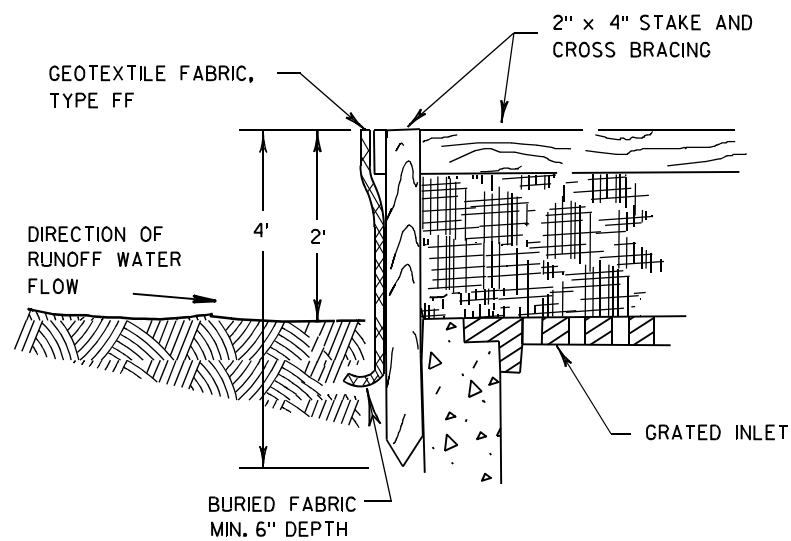


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Conn CHIEF ROADWAY DEVELOPER 207 ENGINEER
FHWA	



INLET PROTECTION, TYPE A

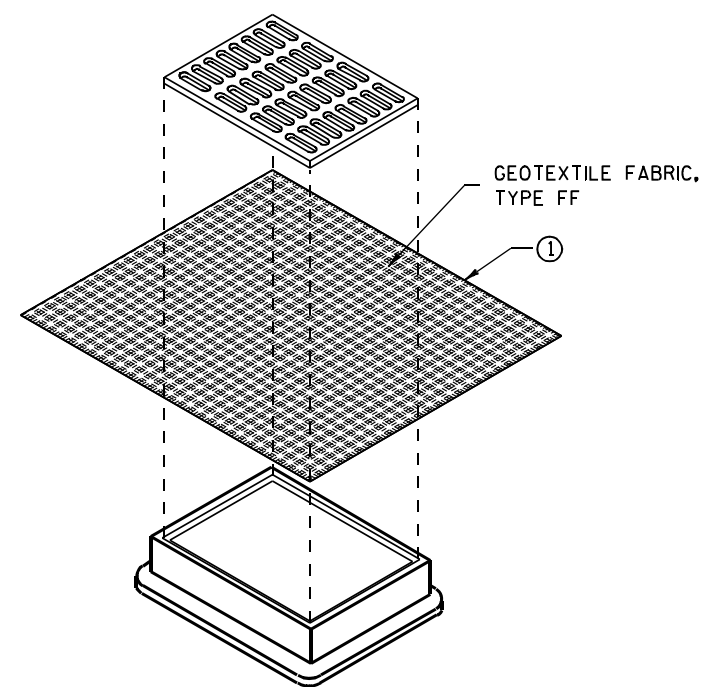
GENERAL NOTES

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.

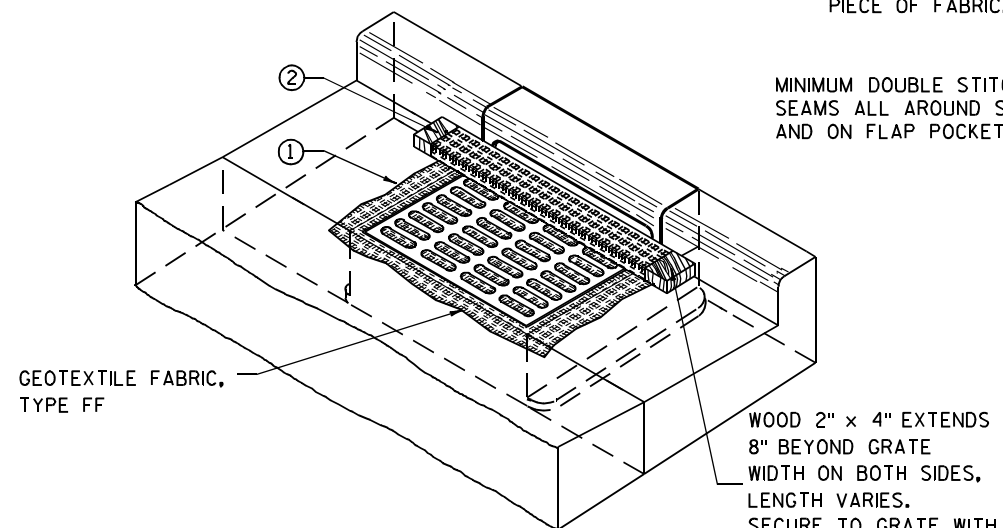
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

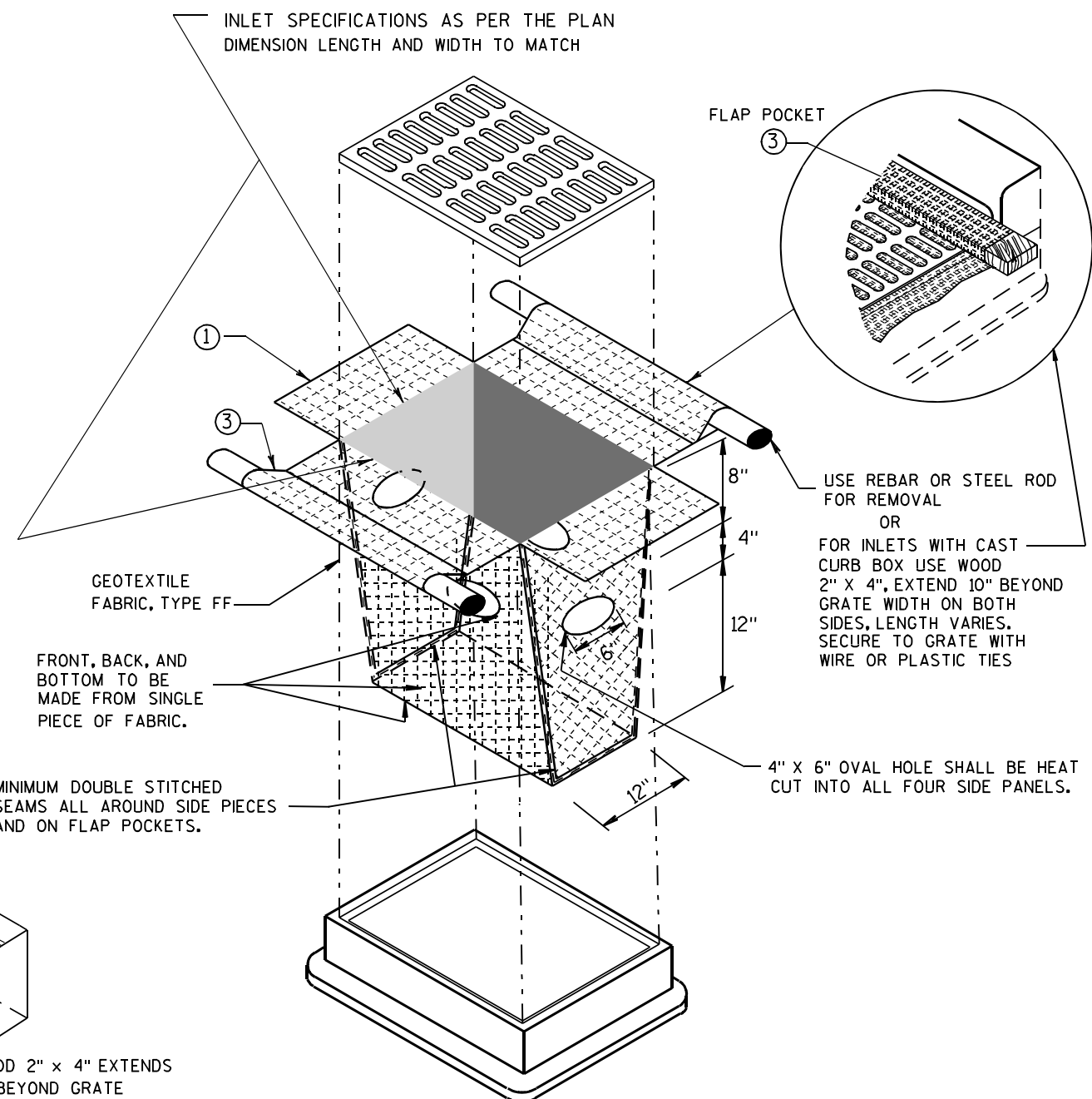
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.

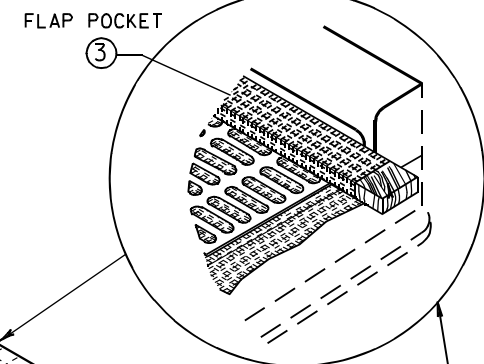
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

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)



USE REBAR OR STEEL ROD FOR REMOVAL OR
FOR INLETS WITH CAST CURB BOX USE WOOD 2" X 4", EXTEND 10" BEYOND GRATE WIDTH ON BOTH SIDES, LENGTH VARIES. SECURE TO GRATE WITH WIRE OR PLASTIC TIES

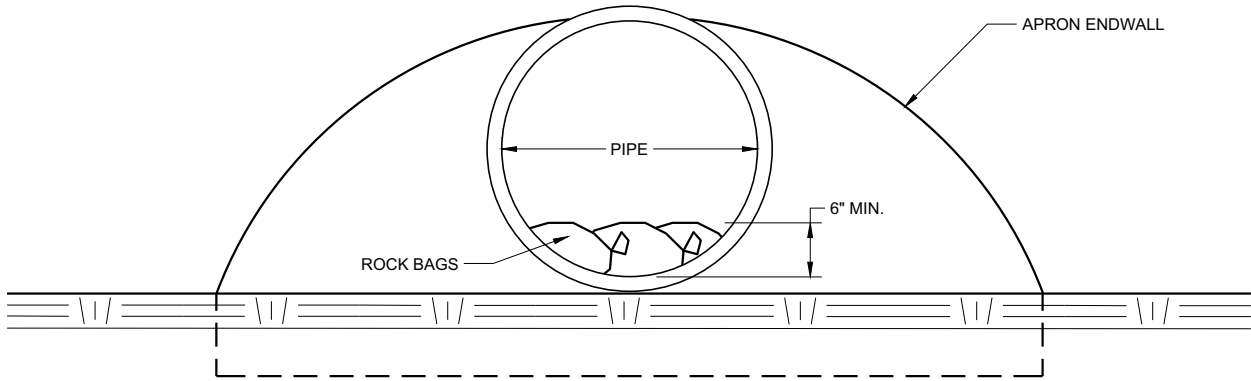
MINIMUM DOUBLE STITCHED SEAMS ALL AROUND SIDE PIECES AND ON FLAP POCKETS.

WOOD 2" X 4" EXTENDS 8" BEYOND GRATE WIDTH ON BOTH SIDES, LENGTH VARIES. SECURE TO GRATE WITH WIRE OR PLASTIC TIES

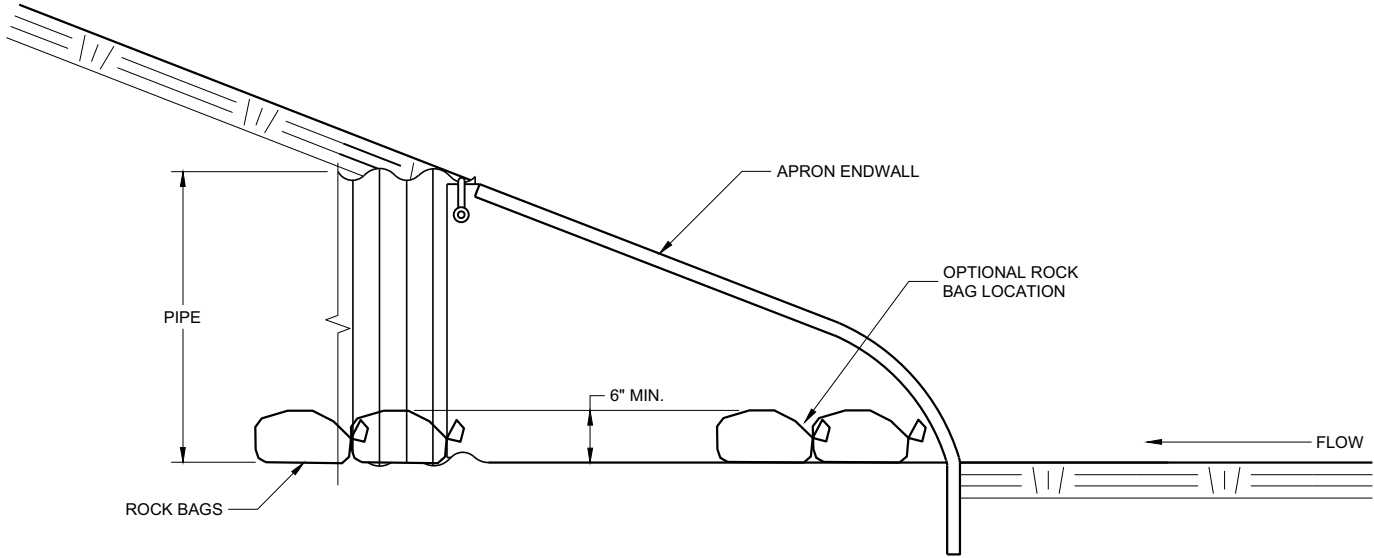
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 208
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



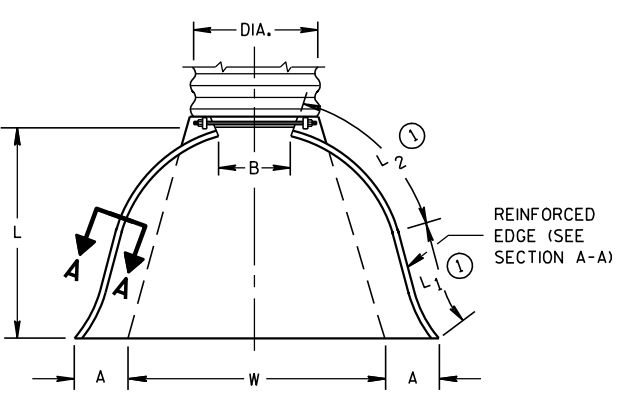
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 209
FHWA	

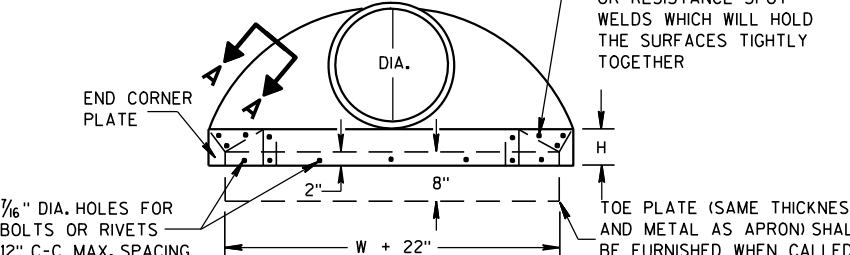
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	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



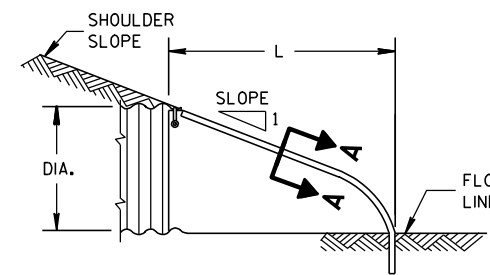
PLAN VIEW

REINFORCED
EDGE (SEE
SECTION A-A)



END VIEW

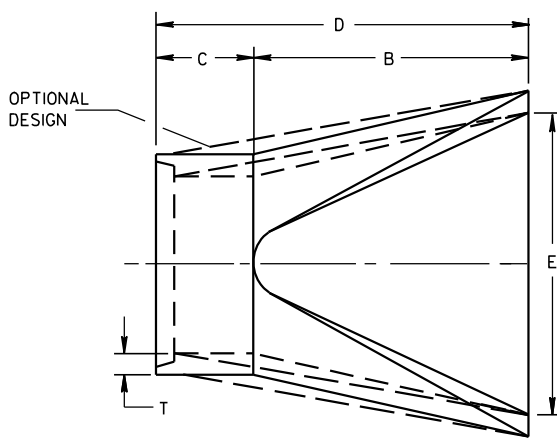
TOE PLATE (SAME THICKNESS
AND METAL AS APRON) SHALL
BE FURNISHED WHEN CALLED
FOR ON THE PLANS



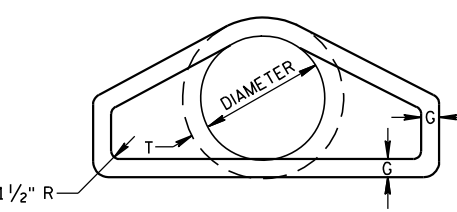
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 1/8	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			

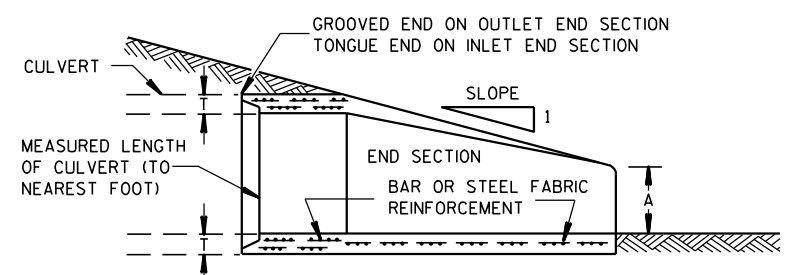
* MINIMUM
** MAXIMUM



PLAN

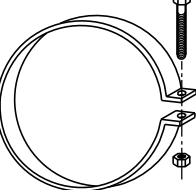


END VIEW

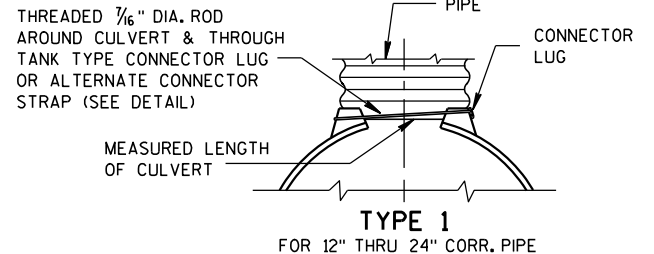


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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

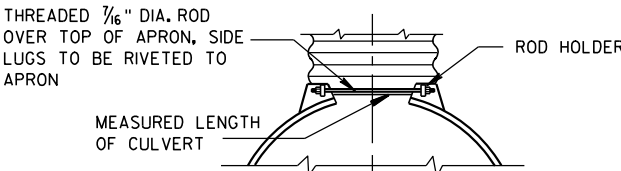


ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



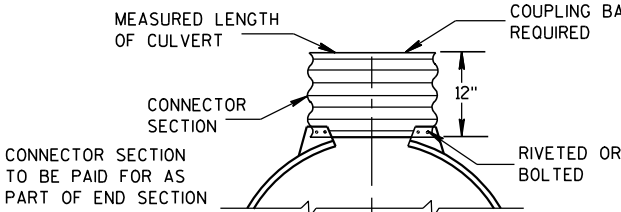
TYPE 1

FOR 12" THRU 24" CORR. PIPE



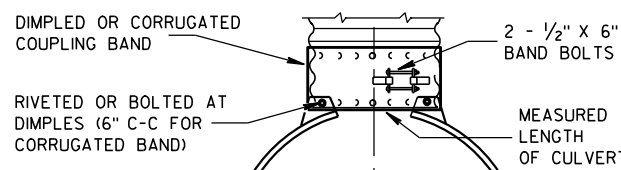
TYPE 2

FOR 30" THRU 96" CORR. PIPE



TYPE 3

FOR 42" THRU 96" CORR. PIPE



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

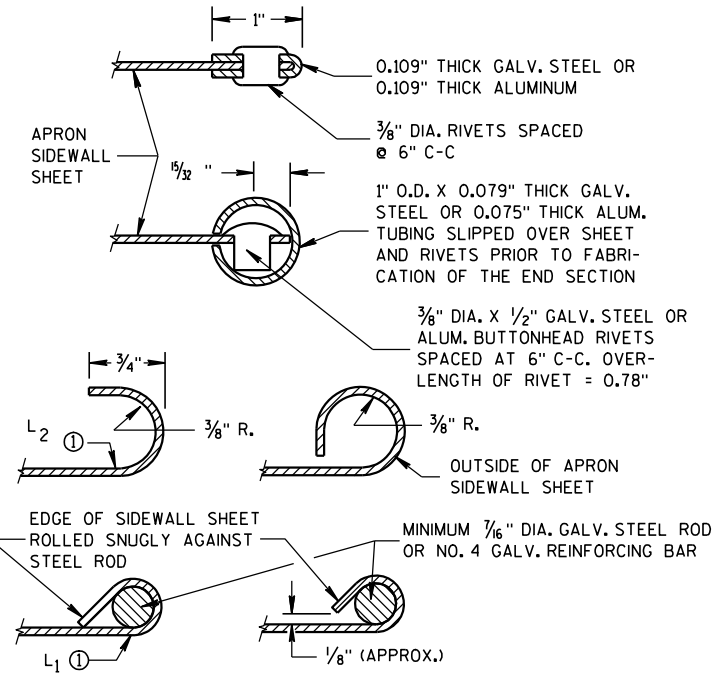
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

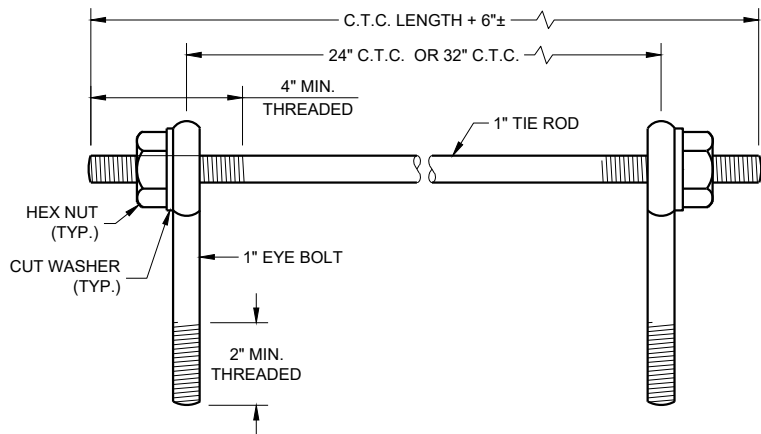
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR CULVERT PIPE

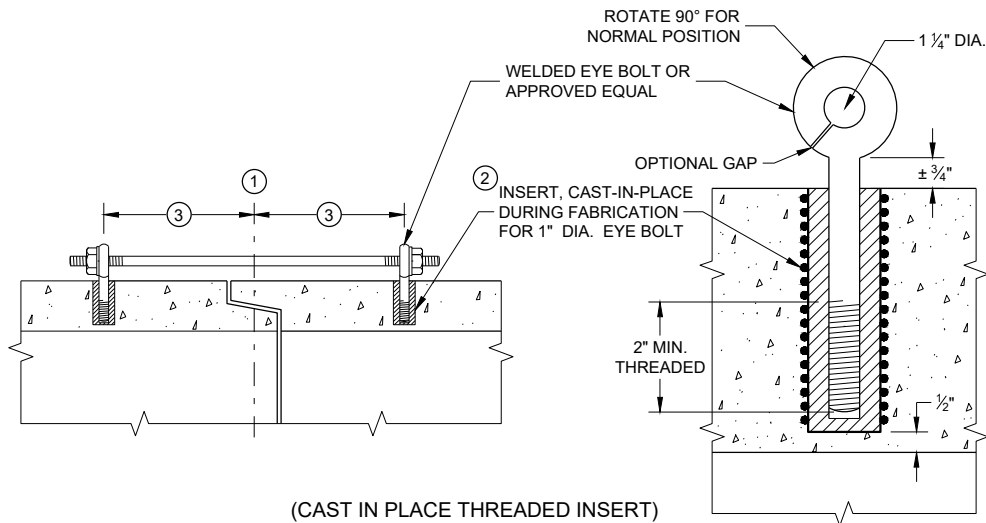
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPMENT
NEER
FHWA



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

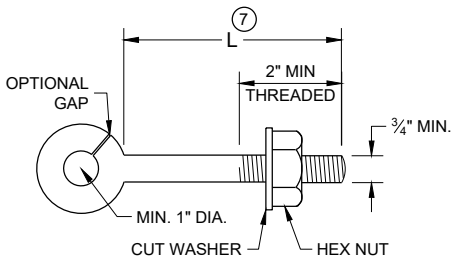
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

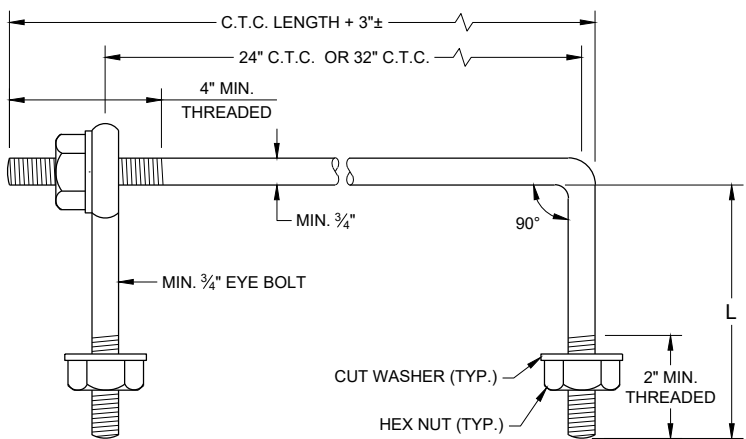
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 1 CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- 2 THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- 3 HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 4 BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- 5 OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- 6 LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- 7 EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

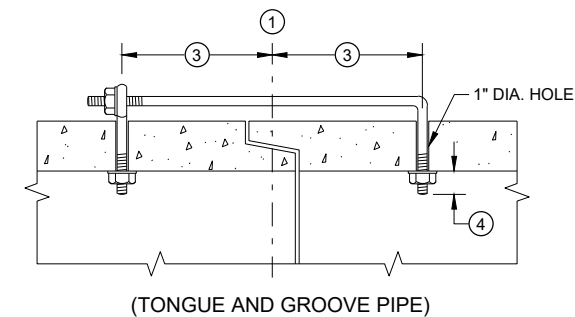


EYE BOLT 7

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



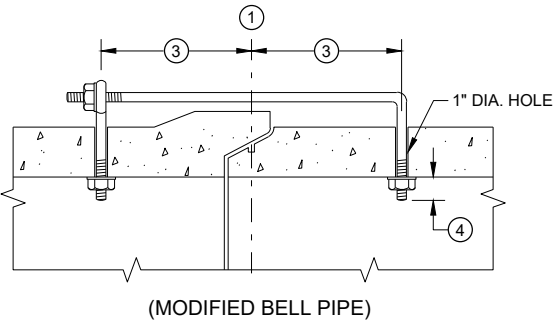
EYE BOLT AND TIE ROD



LONGITUDINAL SECTION

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

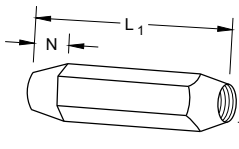


(MODIFIED BELL PIPE)

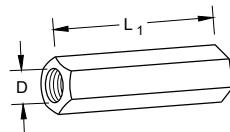
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES

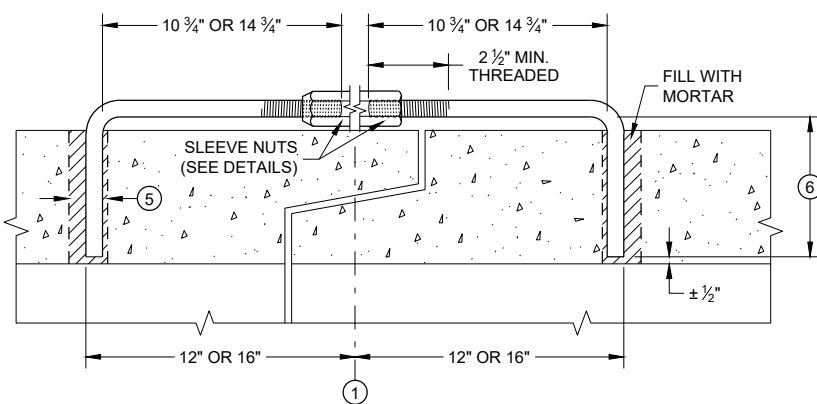


TAPERED



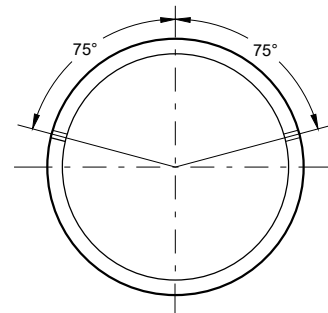
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



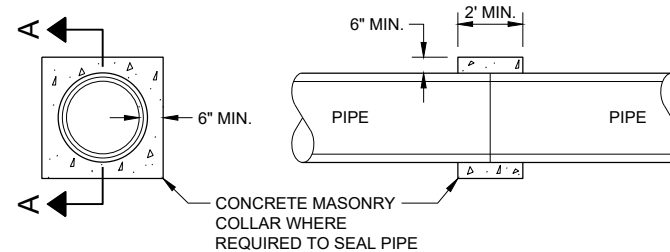
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



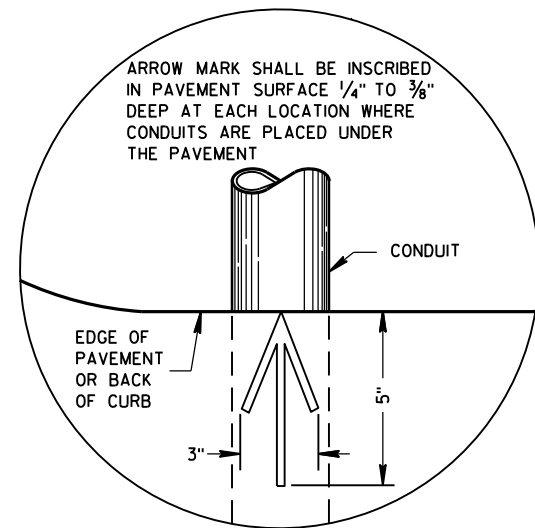
SECTION A - A

CONCRETE COLLAR DETAIL

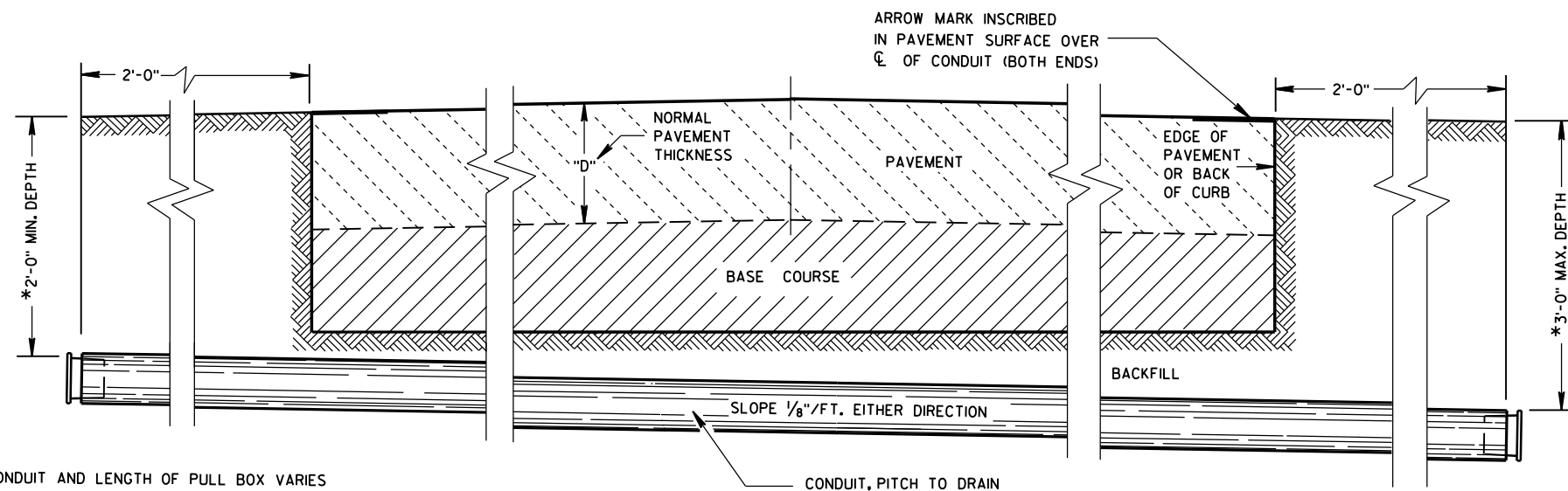
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA 211



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

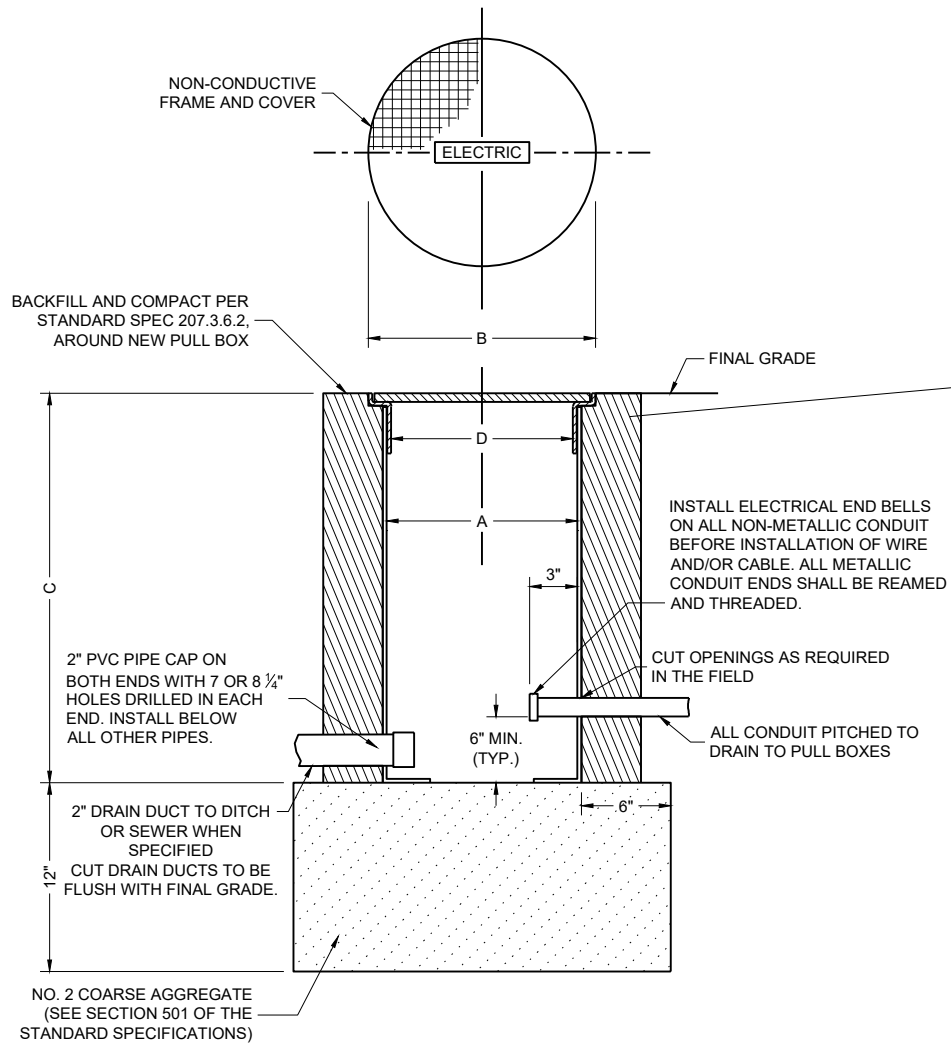
APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 212
FHWA

TABLE OF NOMINAL DIMENSIONS
AND WEIGHTS

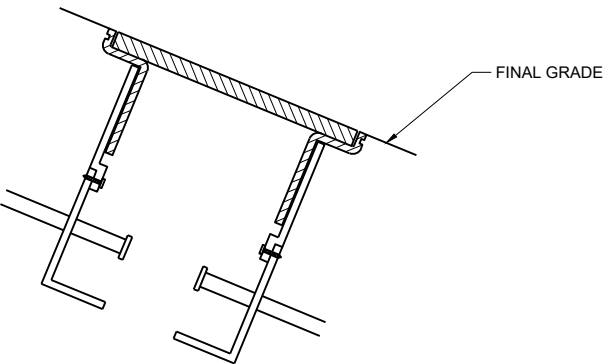
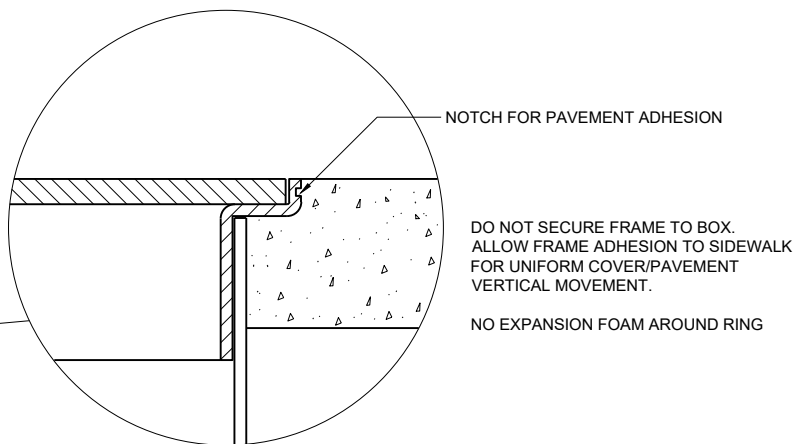
DIMENSION IN INCHES		NON- CONDUCTIVE PULL BOX	
BOX DIAMETER ** (INSIDE)	A	24	24
BOX OVERALL OUTSIDE DIAMETER	B	27	27
BOX LENGTH	C	36	42
FRAME OPENING	D	22 ½	22 ½
WEIGHT IN POUNDS *			
COVER		50	50
BOX ONLY		75	85

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

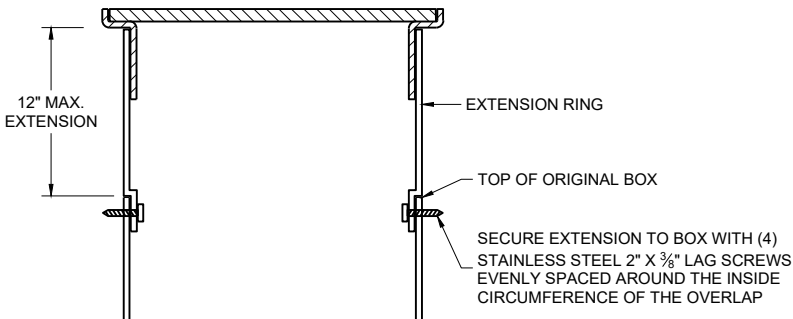
** DIAMETER VARIES FROM TOP TO BOTTOM WITH THE DIAMETER LARGER AT THE BOTTOM TO PREVENT FROST HEAVE.



NON-CONDUCTIVE PULL BOX

INSTALLED IN SOD
OR CRUSHED AGGREGATE

INSTALLED IN SIDEWALK



BOX EXTENSION

GENERAL NOTES

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

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

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

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

COVER SHALL BE MAGNETICALLY LOCATABLE.

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

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

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

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

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

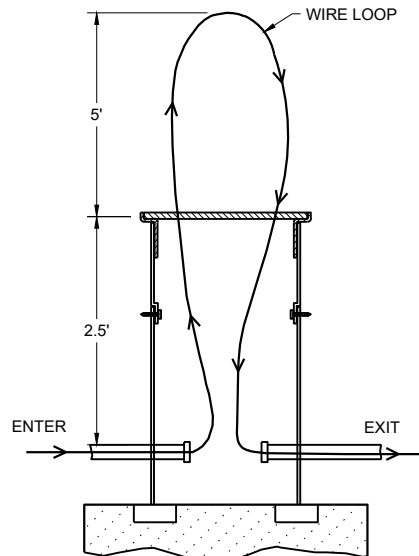
WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE.

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

INSTALL PULL BOX TO MATCH GRADE UP TO 3:1 MAX.

RING SHALL BE FLUSH WITH TOP OF PULL BOX.

COMPACT AROUND PULL BOX.

MEASUREMENT DETAIL FOR
WIRE/CABLE IN THE PULL BOXPULL BOXES
NON-CONDUCTIVE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

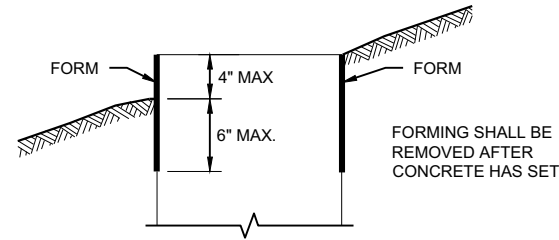
February 2026
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

FHWA

213

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



FORMING DETAIL

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

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

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

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

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

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

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

GENERAL NOTES

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

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

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

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

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

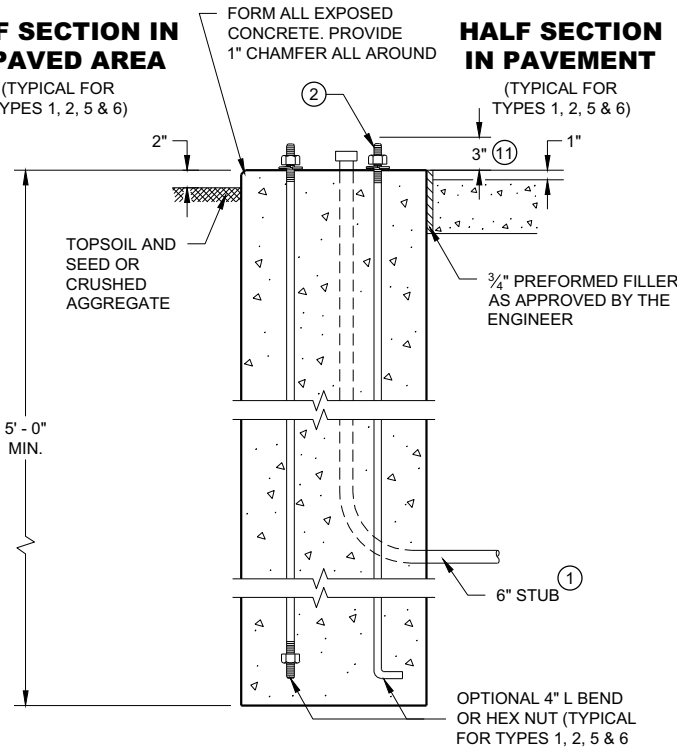
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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

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

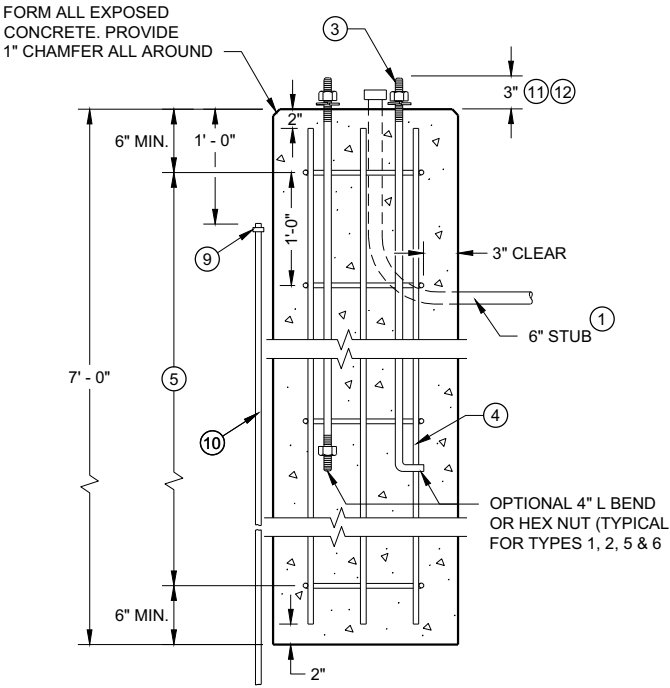
- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN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

HALF SECTION IN UNPAVED AREA



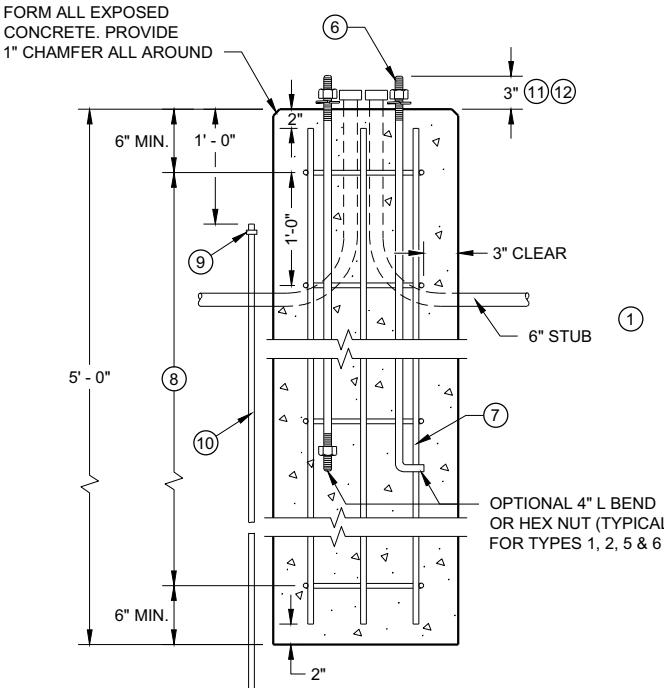
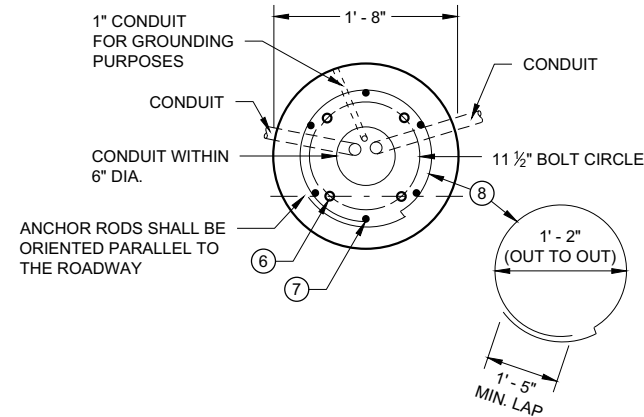
TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2

CONCRETE BASES



TYPE 5 & 6

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

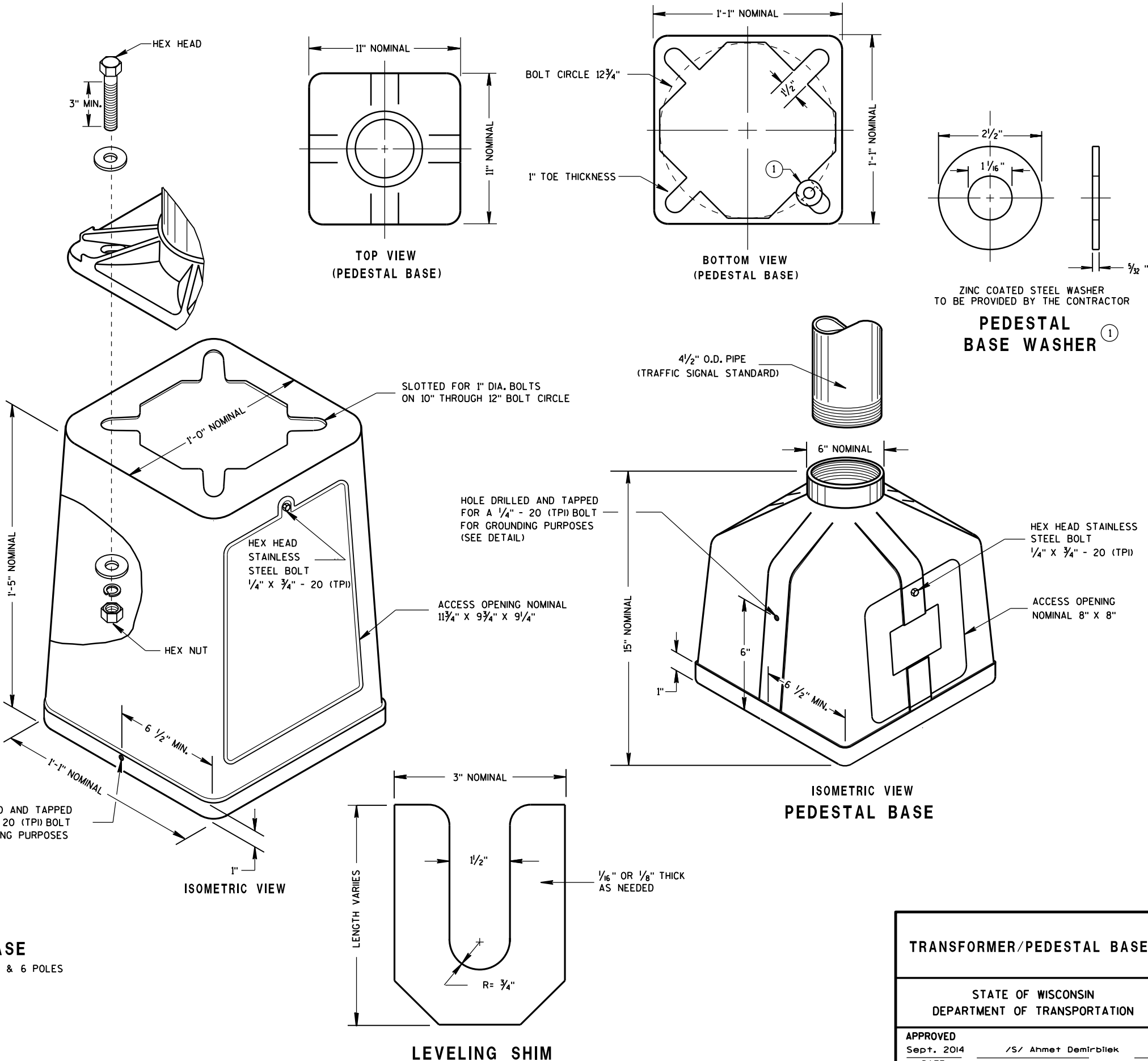
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

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

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

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



TYPICAL MECHANICAL
CONNECTOR LUG
TO BE FURNISHED WITH EACH BASE

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

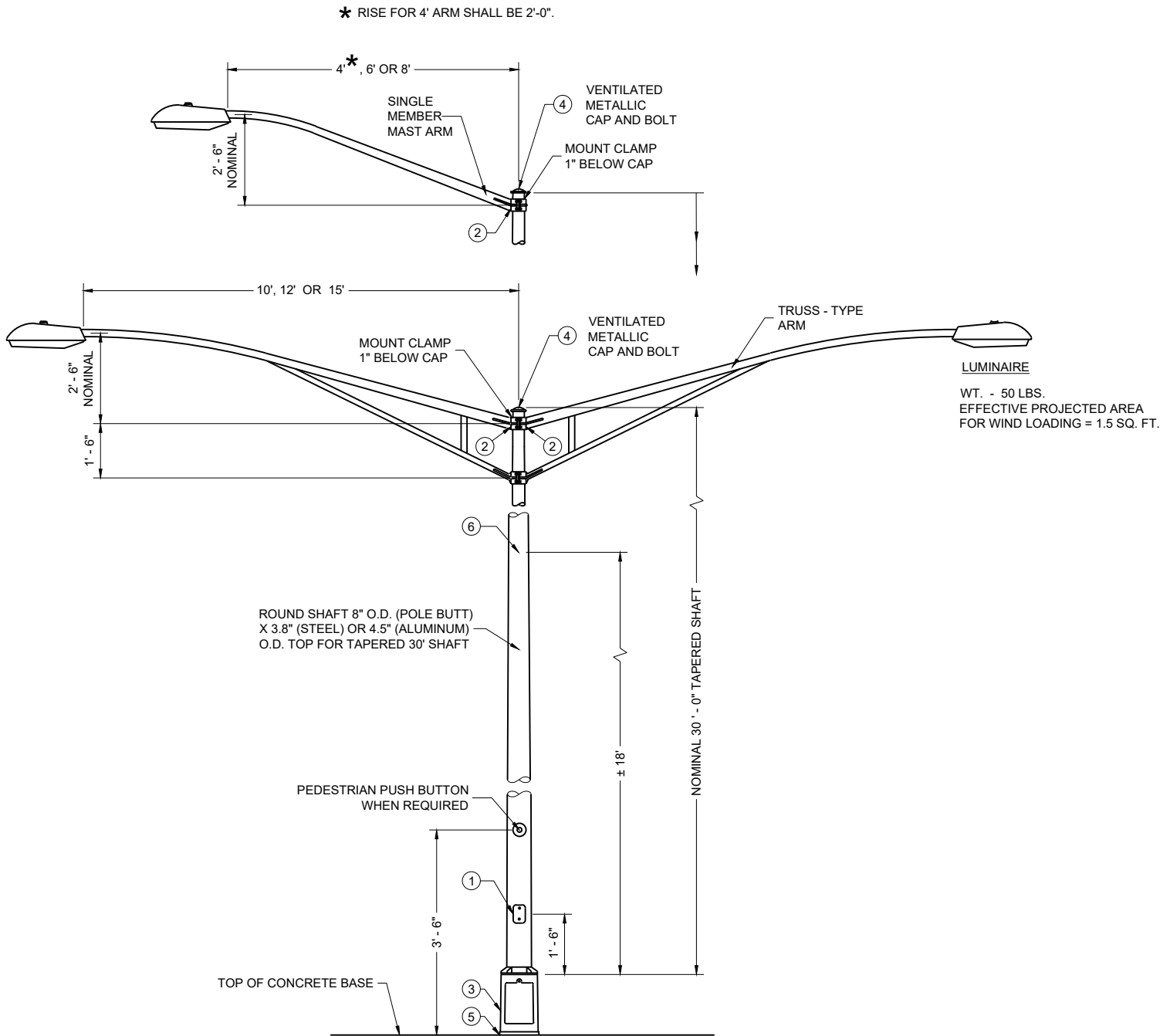
ISOMETRIC VIEW
PEDESTAL BASE

LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 215
FHWA



TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY

GENERAL NOTES

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

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

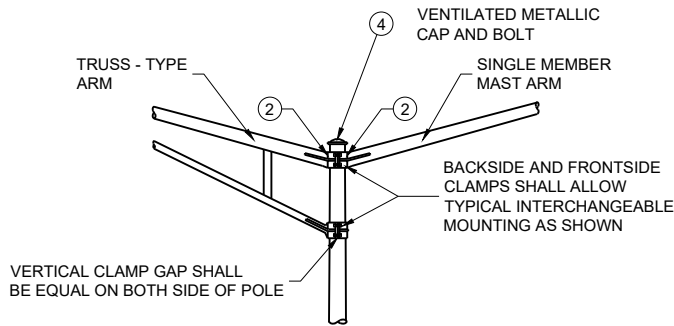
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8" INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

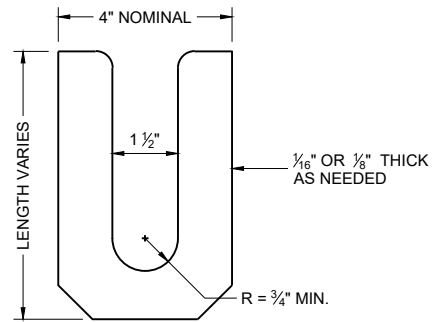
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4"X3/4" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH 1/4"X3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT. ONE (1)
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.



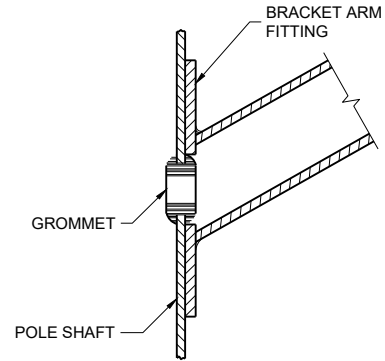
INTERCHANGEABLE MOUNTING DETAIL

**POLE MOUNTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)**

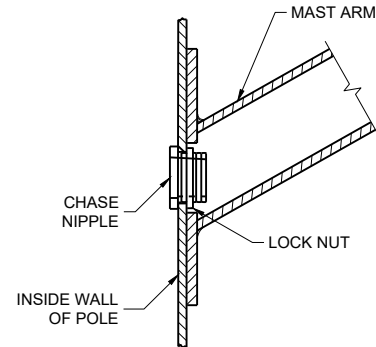
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



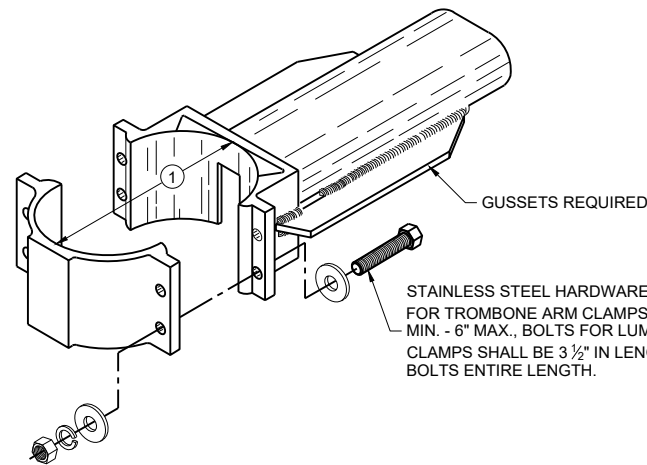
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

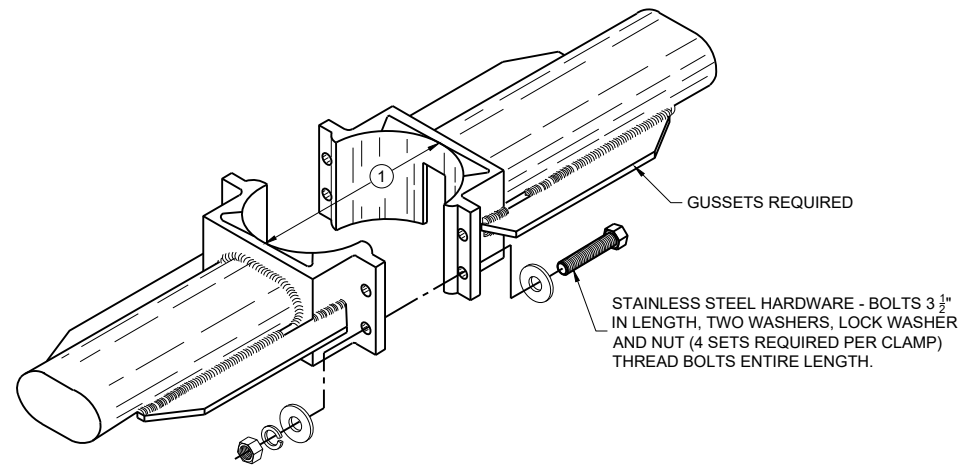
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

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

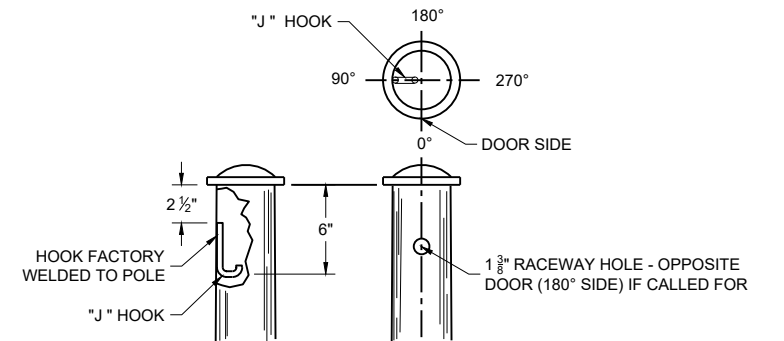
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



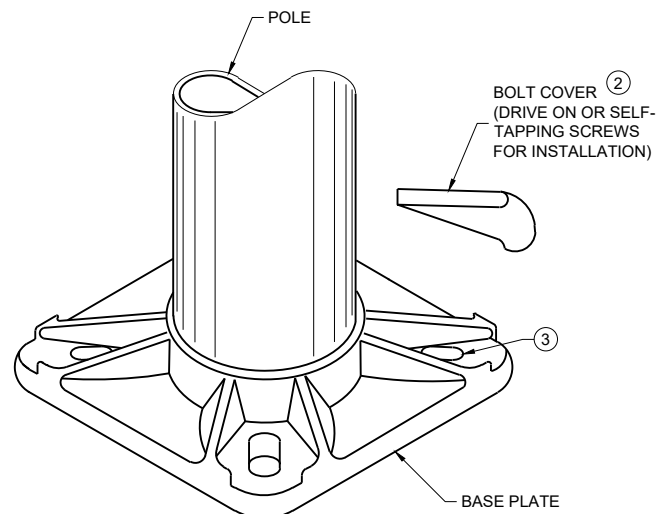
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



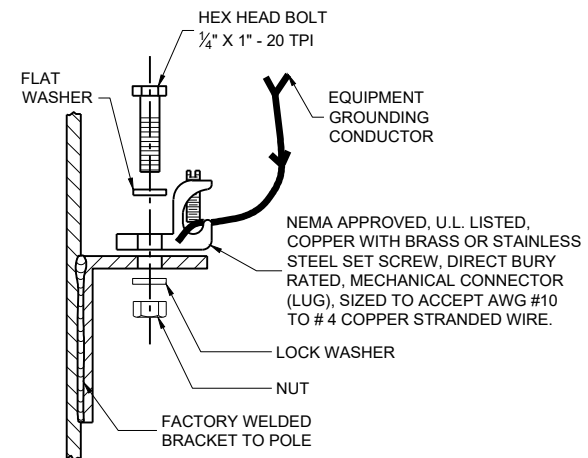
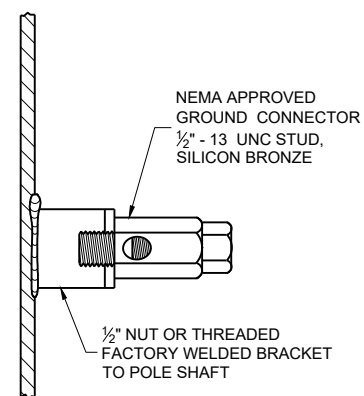
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



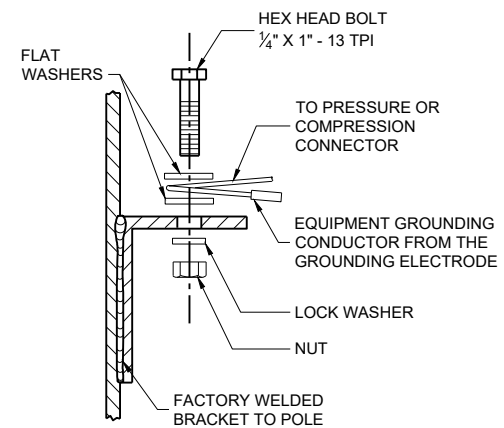
TYPICAL "J" HOOK LOCATION



BASE PLATE



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



HARDWARE DETAILS FOR POLE MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2026 DATE /S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

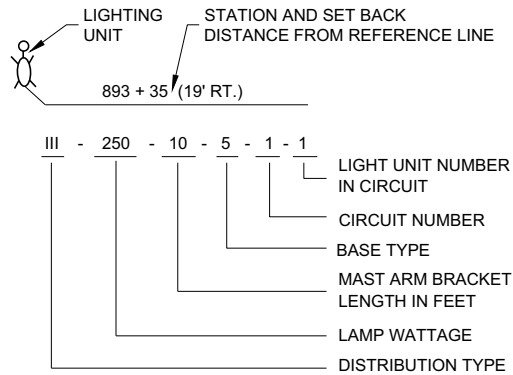
FHWA 217

GENERAL NOTES

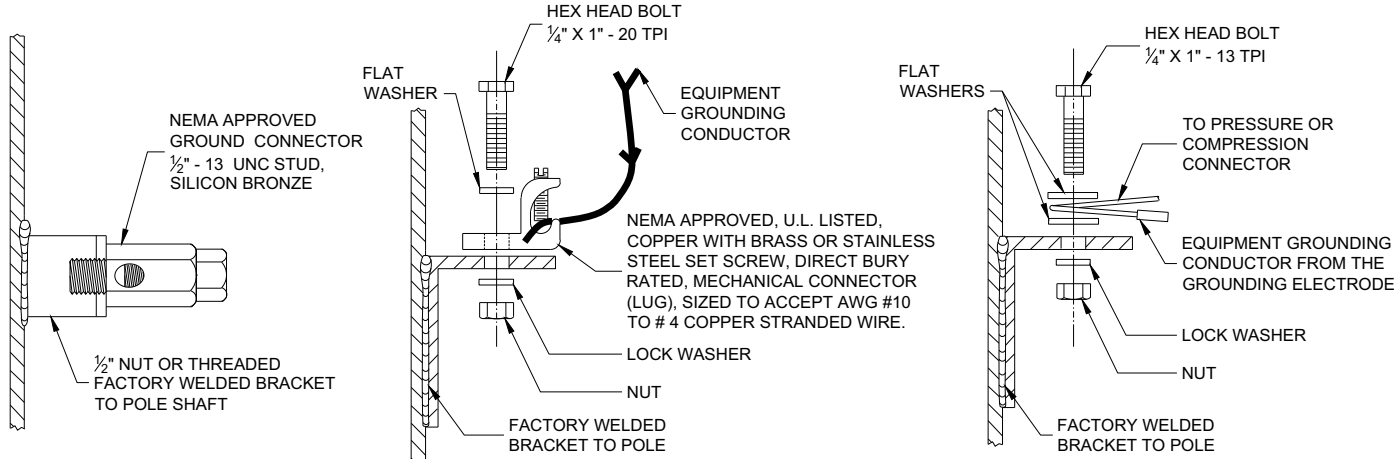
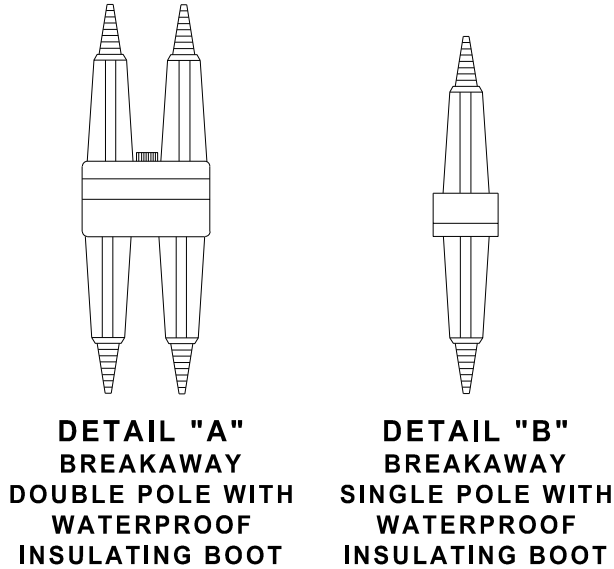
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

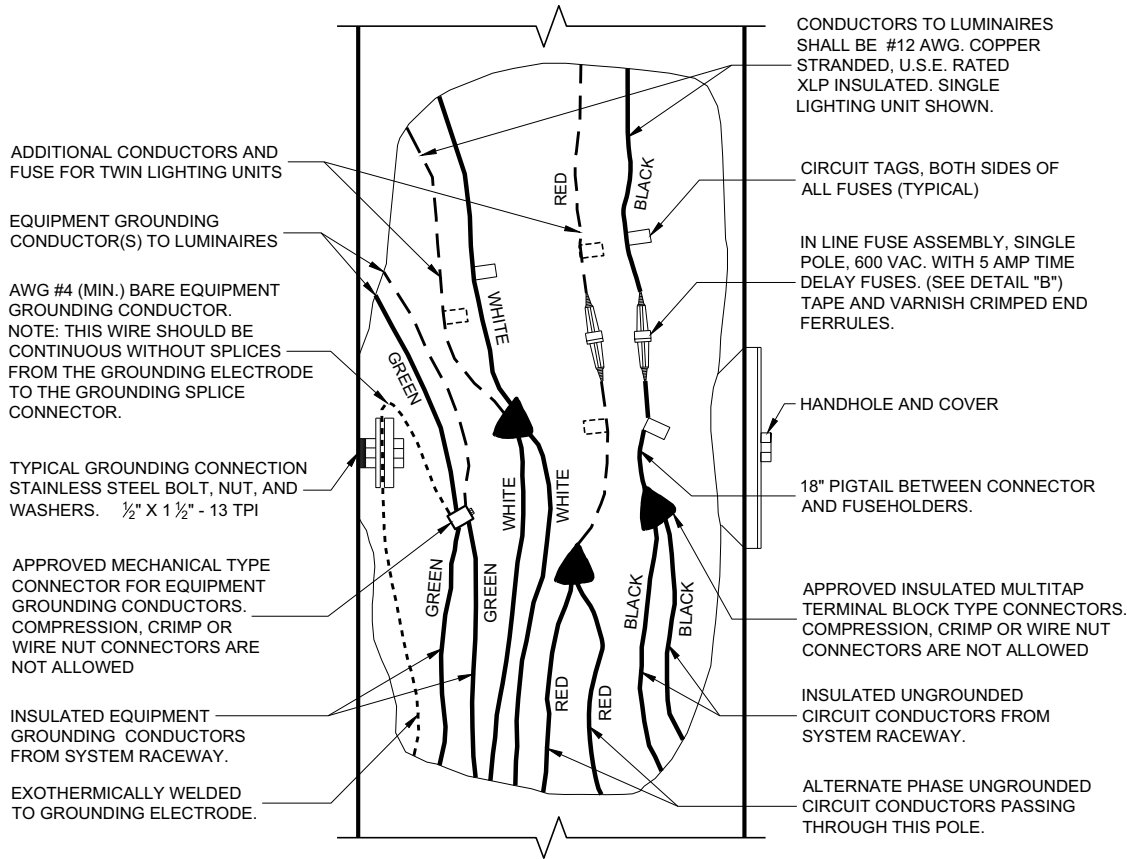


LIGHTING UNIT CODE
(TYPICAL)



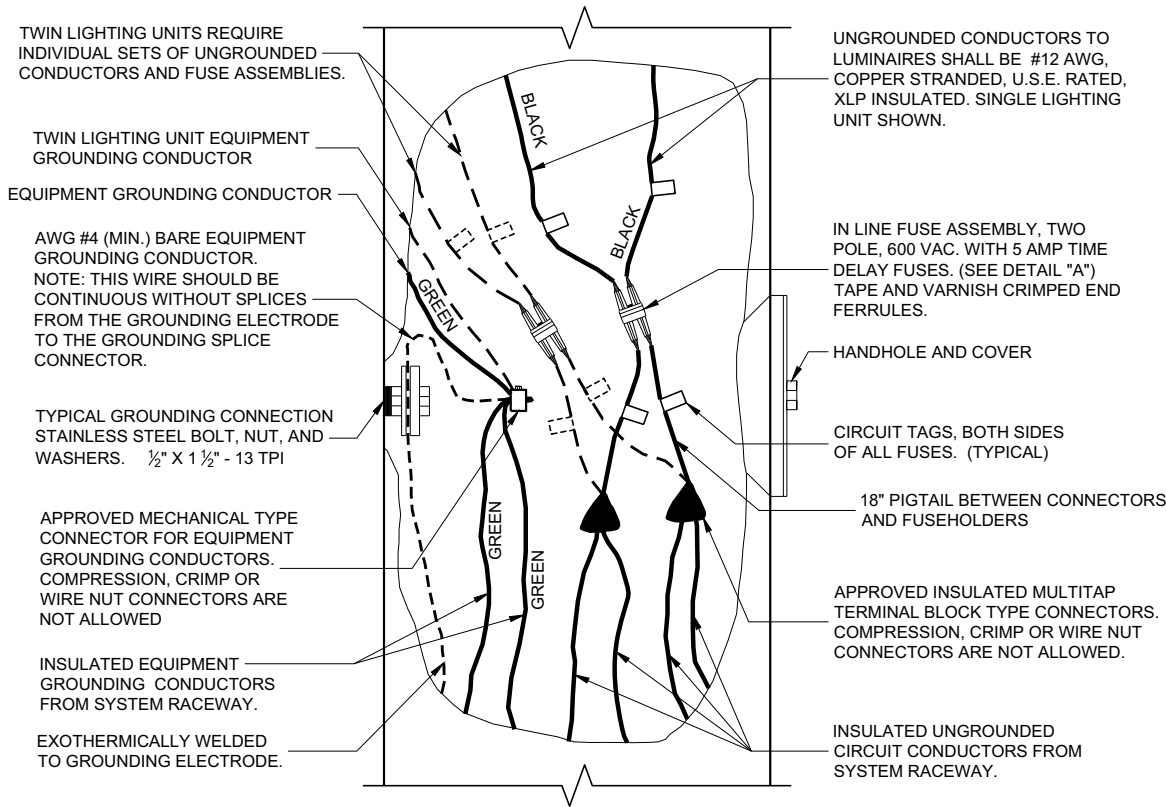
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

6



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTORS)
WITH GROUNDING CONDUCTOR AND
EQUIPMENT GROUNDING CONDUCTOR

6



2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS)
WITH EQUIPMENT GROUNDING CONDUCTOR

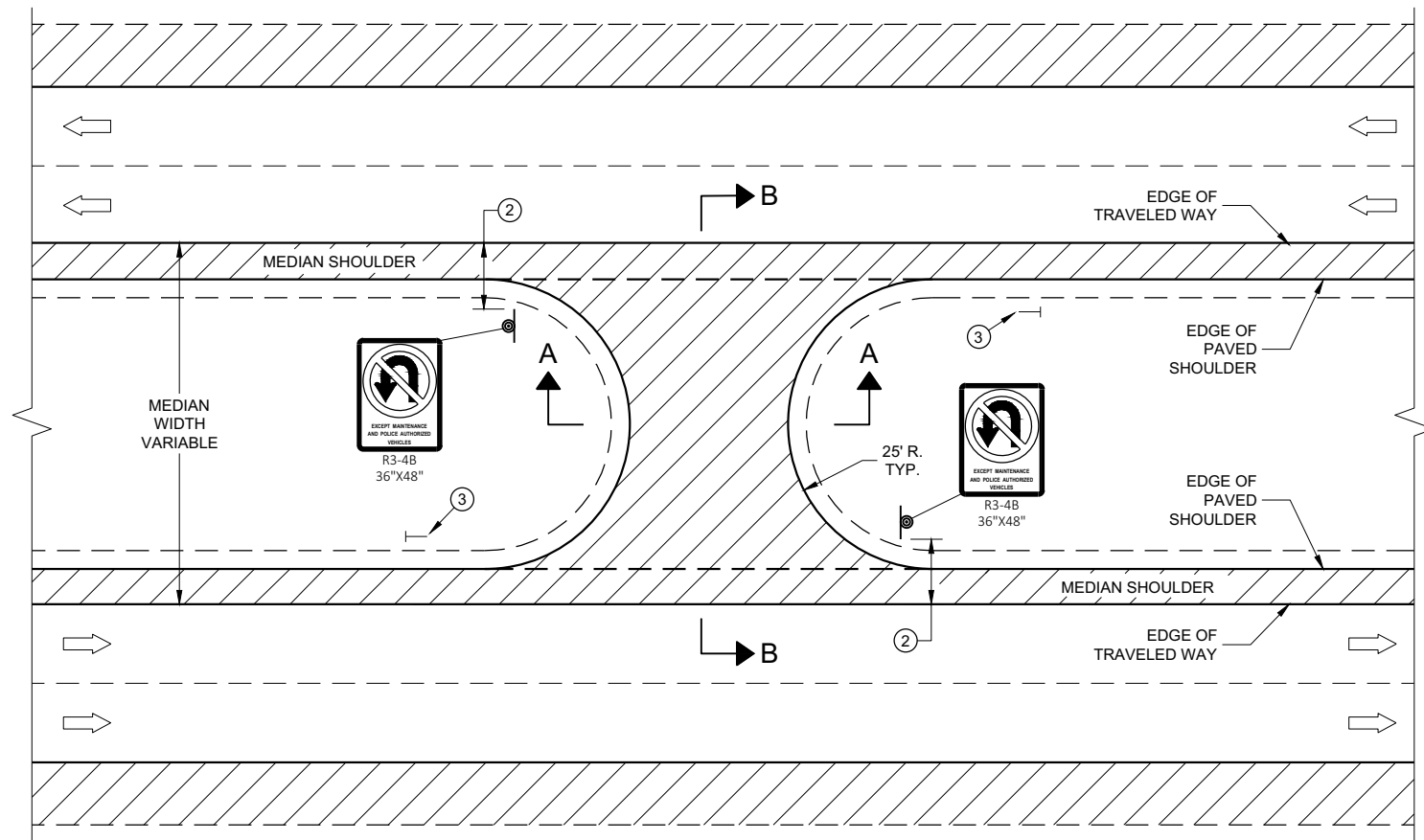
NON - FREEWAY LIGHTING UNIT
POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

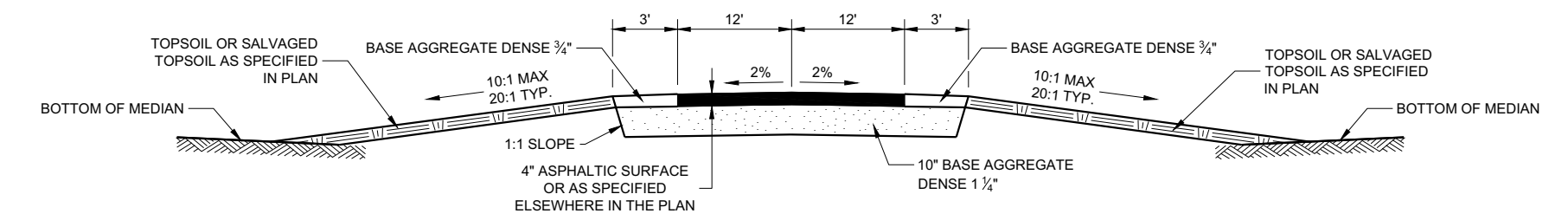
APPROVED
November 2018 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGI 218
FHWA

SDD 09E03 - 06

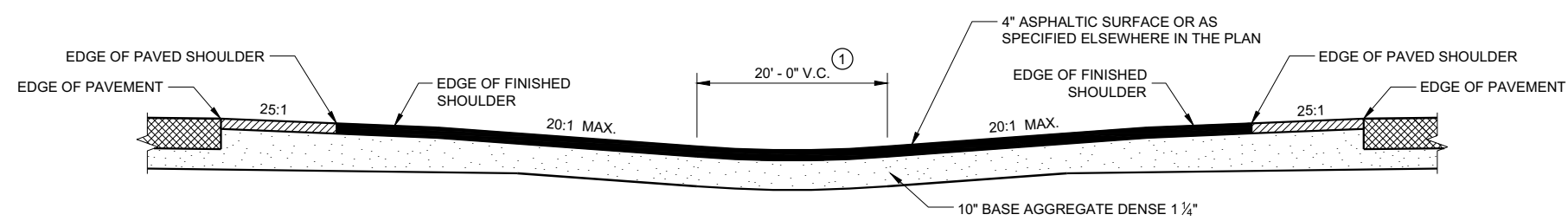
SDD 09E03 - 06



PLAN VIEW



SECTION A-A



SECTION B-B

GENERAL NOTES

- ① ADJUST VERTICAL CURVE LOCATION LATERALLY TO MAINTAIN 20:1 MAX.
- ② SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- ③ INSTALL DELINEATOR. SEE STANDARD DETAIL DRAWING 15A4.

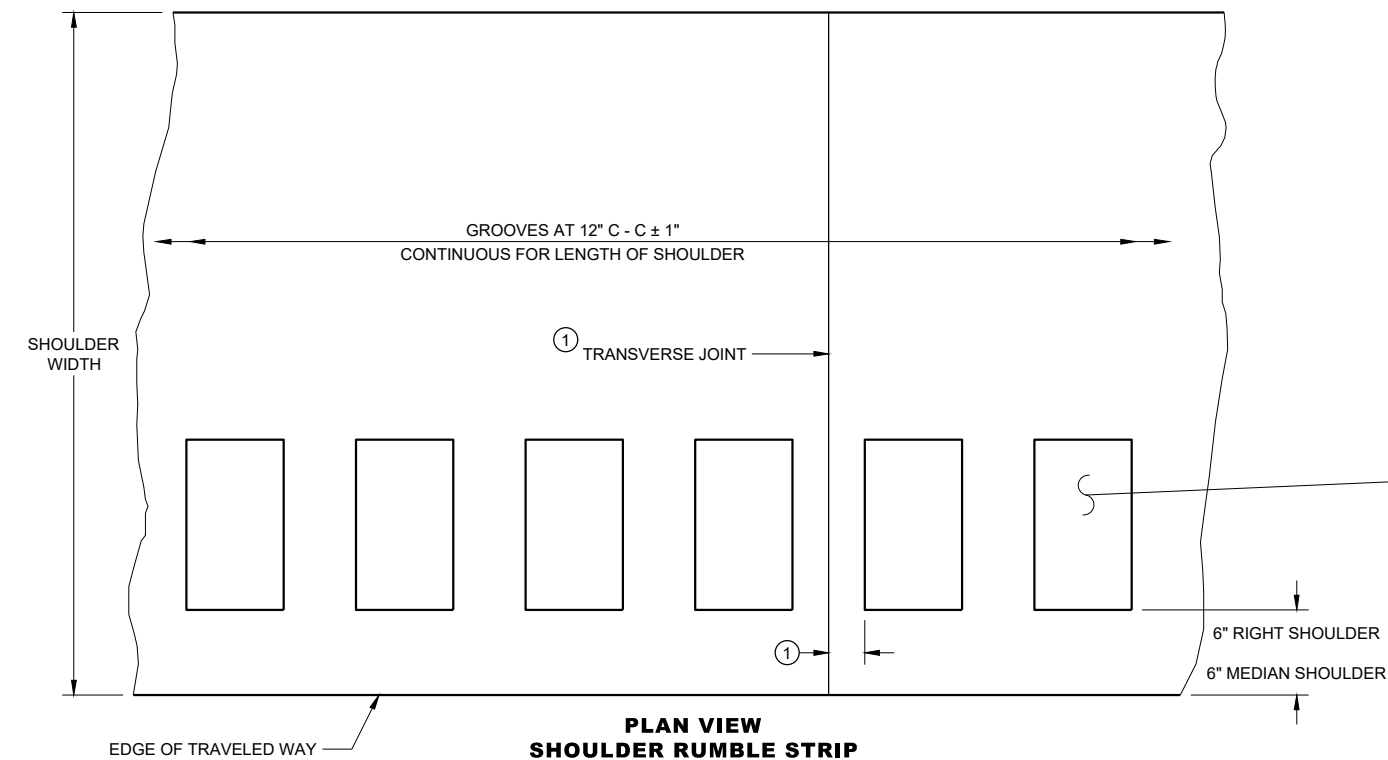
LEGEND

- SIGN ON PERMANENT SUPPORT
- DELINEATOR
- DIRECTION OF TRAFFIC

MAINTENANCE CROSSOVER
FOR FREEWAYS

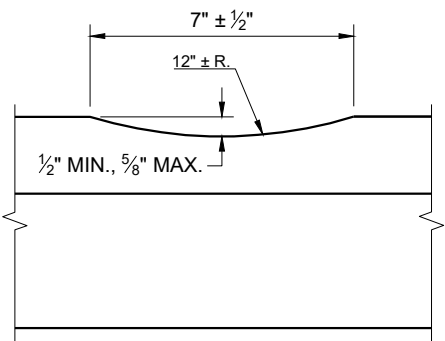
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 219
FHWA

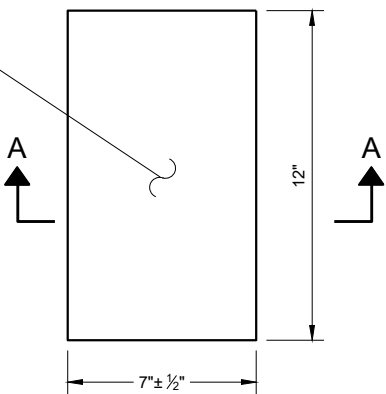


6

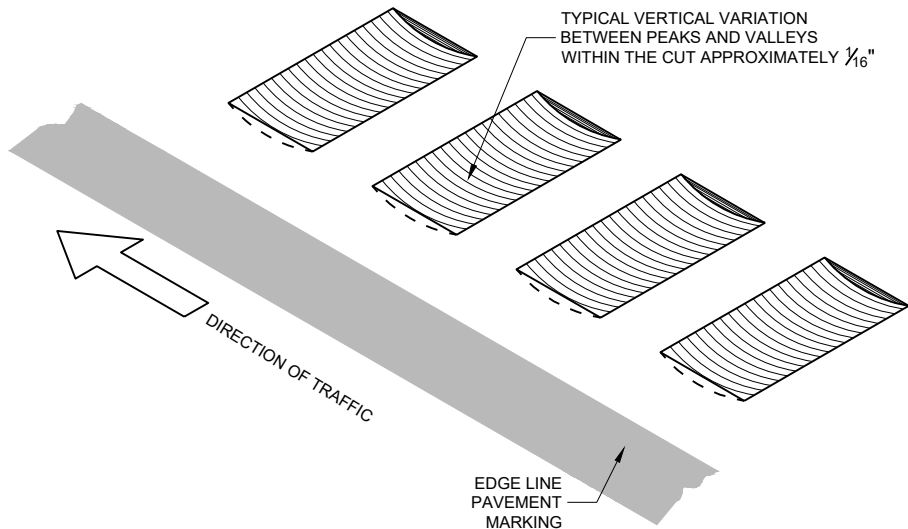
PLACEMENT DETAIL FOR RUMBLE STRIP



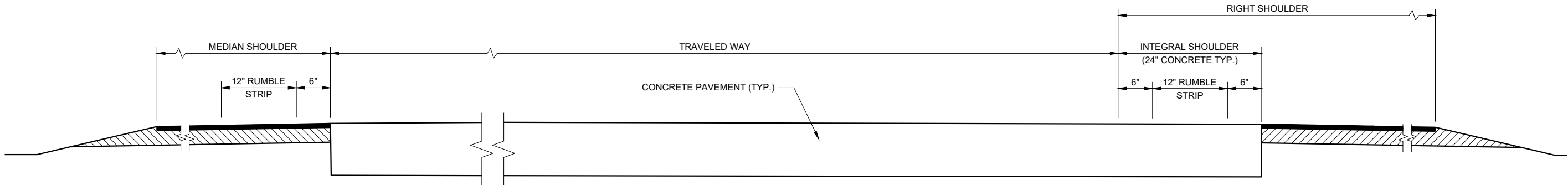
SECTION A - A



PLAN VIEW
(SINGLE GROOVE)



ISOMETRIC



SECTION VIEW

TYPICAL SHOULDER RUMBLE STRIPS
(ONE ROADWAY IS SHOWN)

GENERAL NOTES

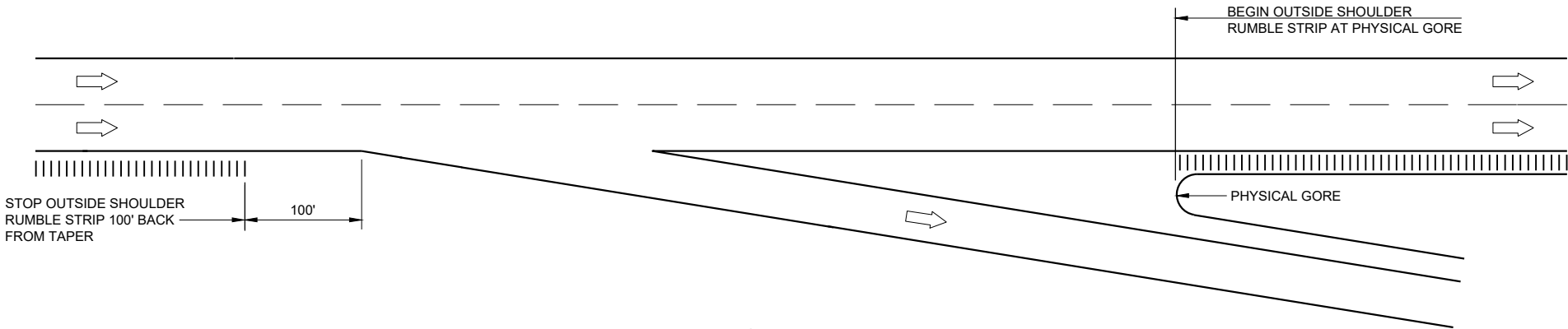
SDD 13A5, SHEET "b" SHOWS THE LOCATION OF THE RUMBLE STRIPS AT RAMP AND GORE LOCATIONS.

RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

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

SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TYPICAL EXIT RAMP

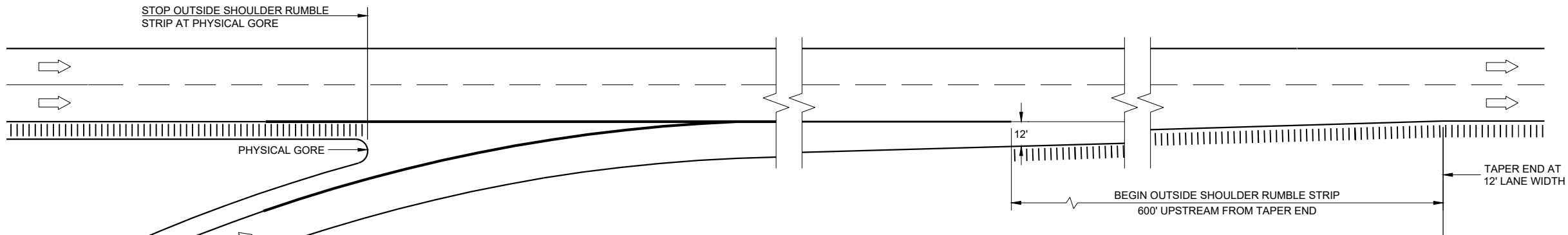
GENERAL NOTES

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

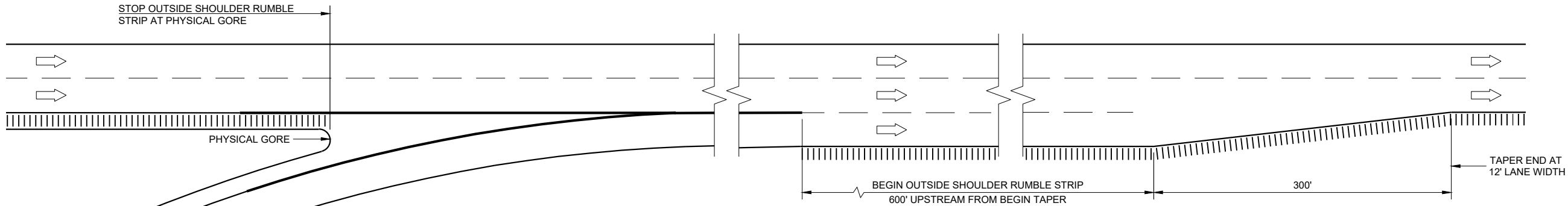
RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

LEGEND

➡ DIRECTION OF TRAFFIC



TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS



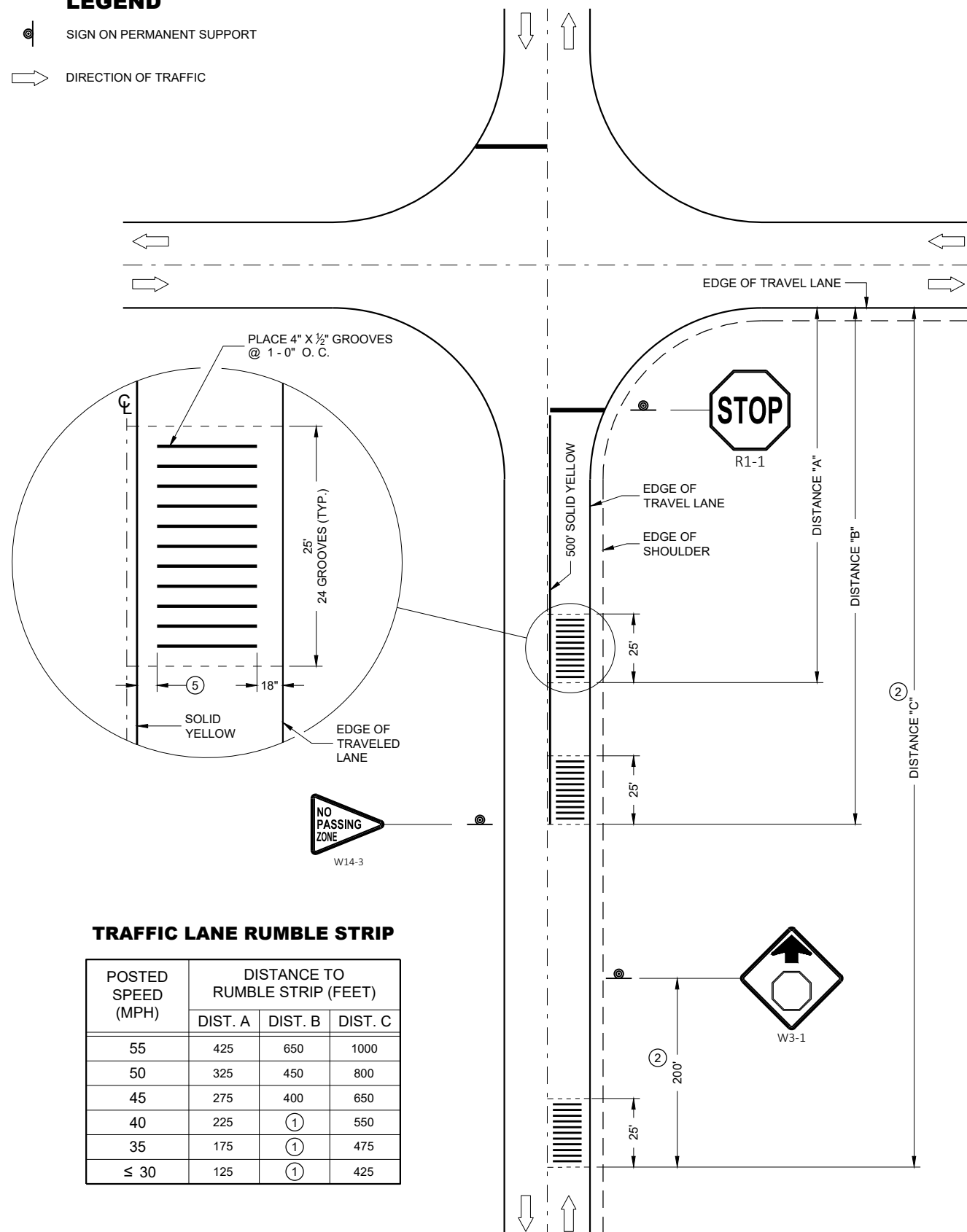
TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY DESIGN STAFF
UNIT SUPERVISOR 221
FHWA

 SIGN ON PERMANENT SUPPORT
 DIRECTION OF TRAFFIC



TRAFFIC LANE RUMBLE STRIP

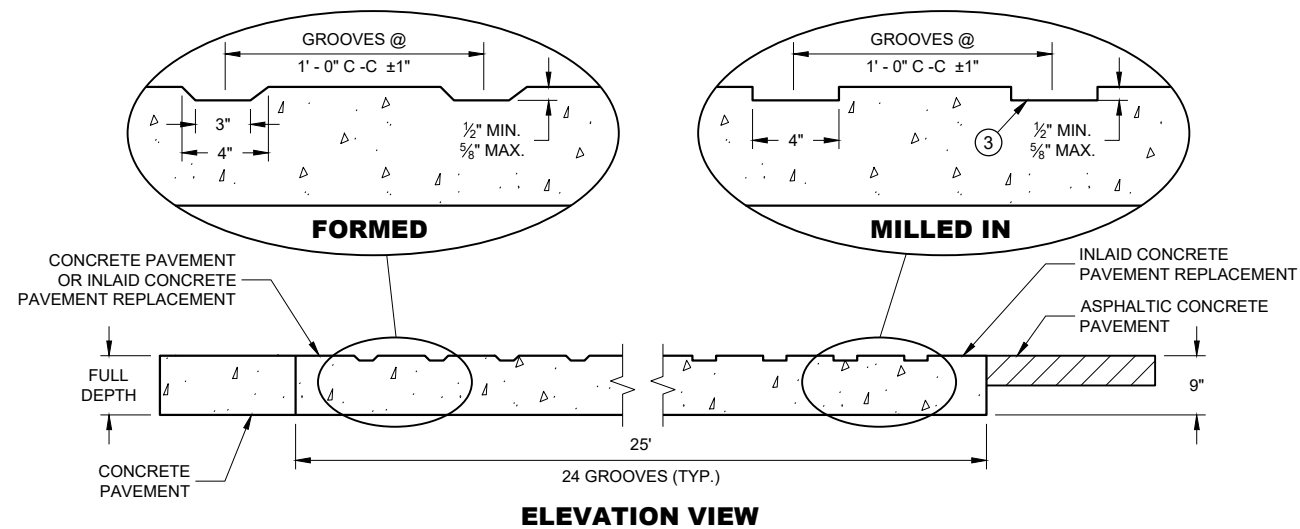
POSTED SPEED (MPH)	DISTANCE TO RUMBLE STRIP (FEET)		
	DIST. A	DIST. B	DIST. C
55	425	650	1000
50	325	450	800
45	275	400	650
40	225	(1)	550
35	175	(1)	475
≤ 30	125	(1)	425

CONTRACTOR SHALL CONFIRM RUMBLE STRIP LOCATION WITH THE ENGINEER PRIOR TO INSTALLATION. THE ENGINEER MAY MODIFY THE RUMBLE STRIP LOCATION AS FIELD CONDITIONS DICTATE.

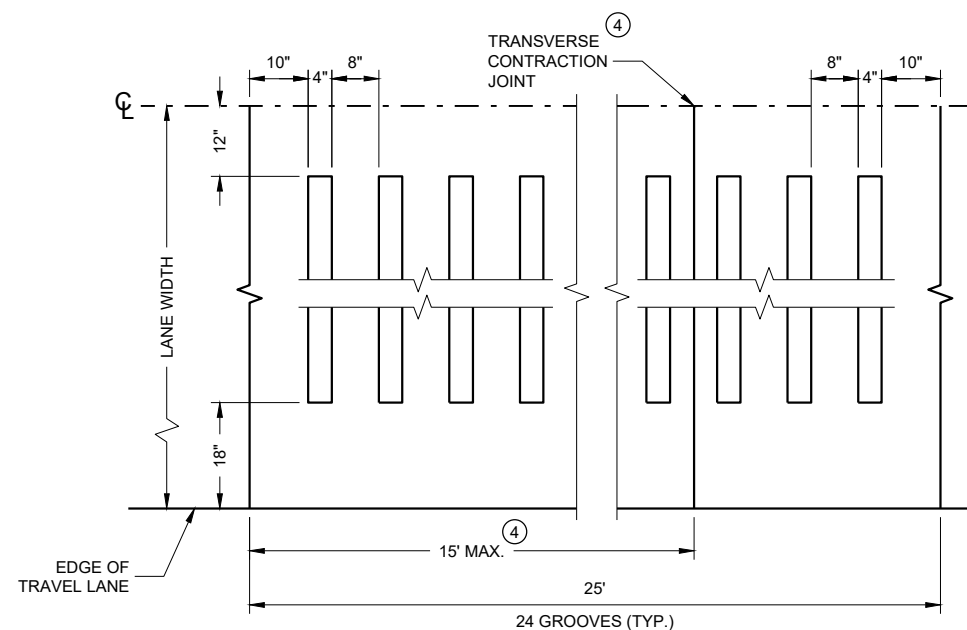
EXTEND CONCRETE FROM C TO THE EDGE OF TRAVELED WAY.

PAVEMENT MARKING AND SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDE ELSEWHERE IN THE CONTRACT.

- ① ELIMINATE THE MIDDLE SET OF RUMBLE STRIPS.
- ② LOCATE RUMBLE STRIP 200 FEET IN ADVANCE OF W3-1 SIGN AS SHOWN. IF W3-1 IS NOT IN PLACE, USE DISTANCE "C".
- ③ TYPICAL VERTICAL VARIATION BETWEEN PEAKS AND VALLEYS WITHIN THE CUT APPROXIMATELY $\frac{1}{16}$ ".
- ④ 15 FOOT MAXIMUM SPACING FOR TRANSVERSE CONTRACTION JOINT.
- ⑤ 12 INCH CLEAR BETWEEN THE SOLID YELLOW LINE AND THE EDGE OF THE RUMBLE.



ELEVATION VIEW



PLAN VIEW

CONCRETE PAVEMENT MILLED IN OR TOOLED IN

TRANSVERSE RUMBLE STRIPS, CONCRETE

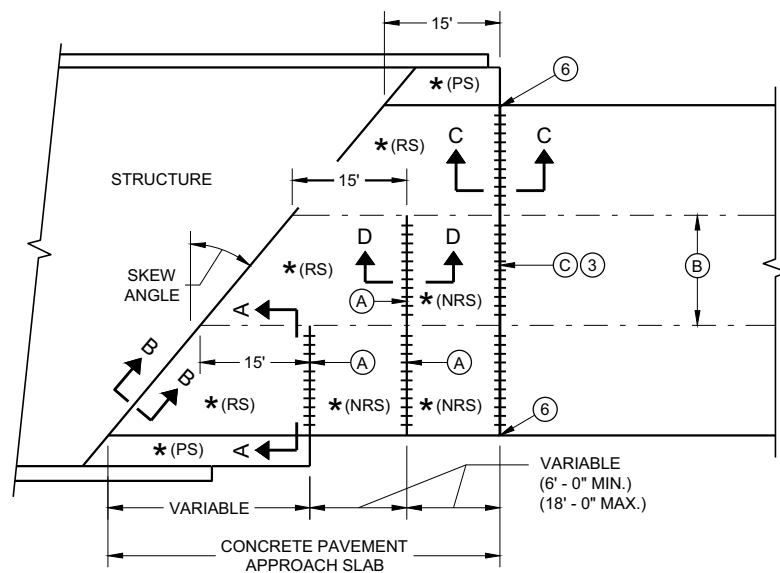
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
 DATE

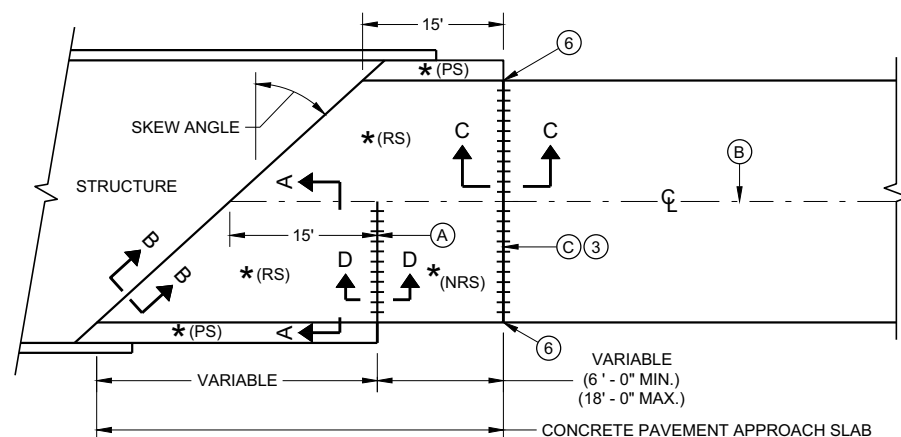
/S/ Rodney Taylor
 ROADWAY DESIGN STAFF
 UNIT SUPERVISOR

222

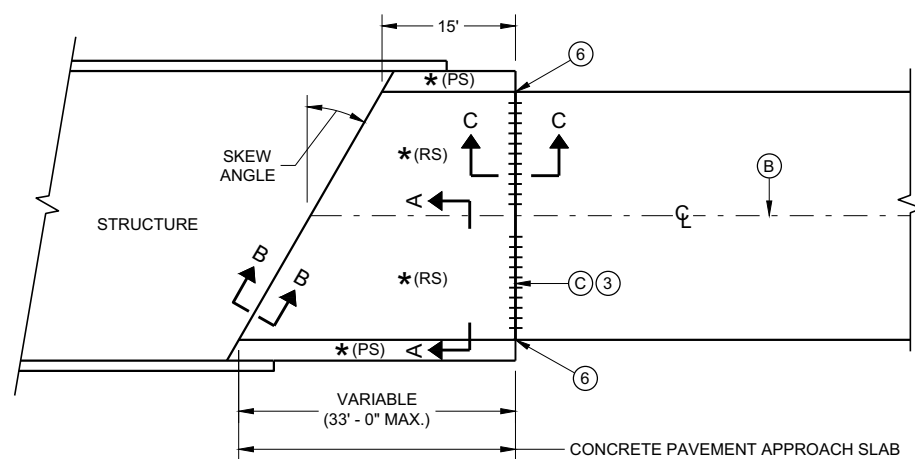
FHWA



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



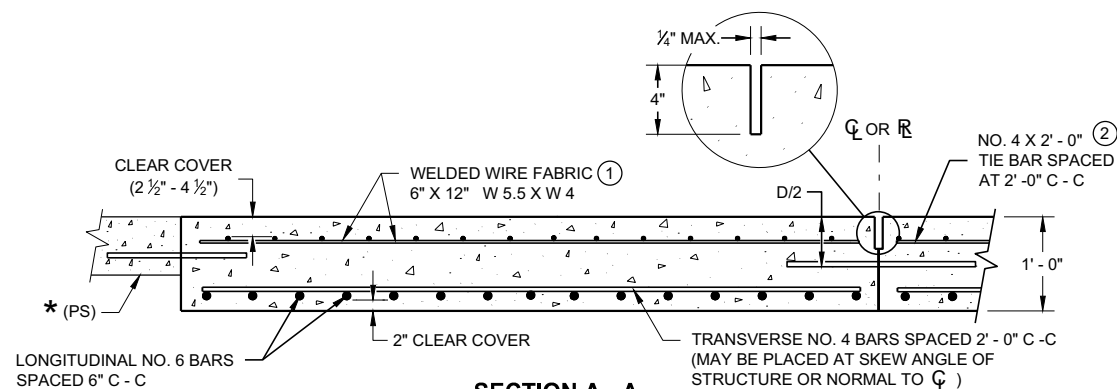
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



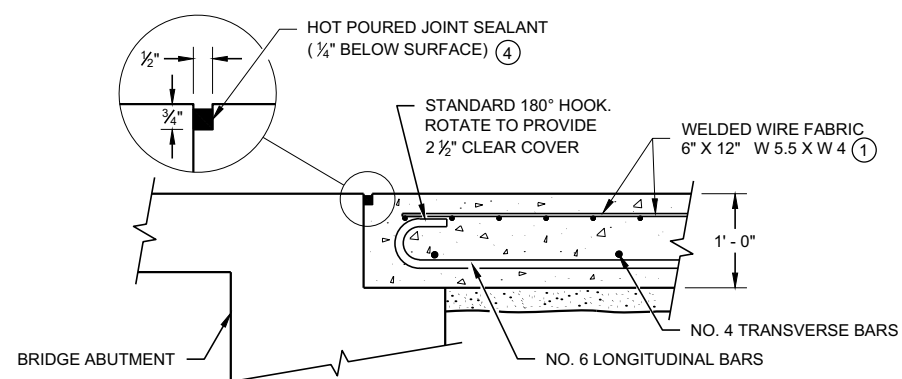
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

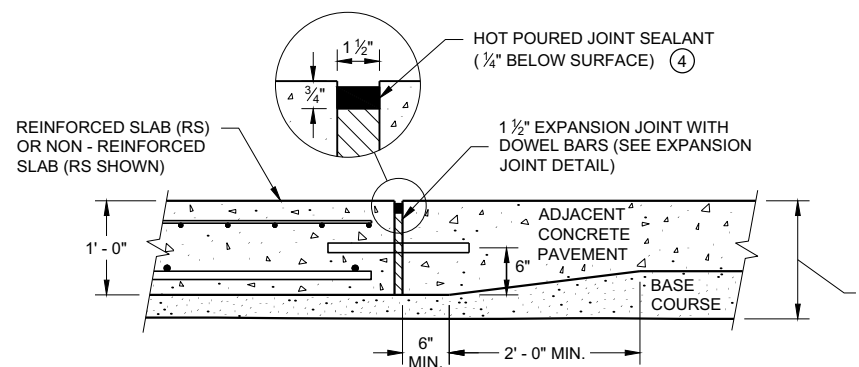
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



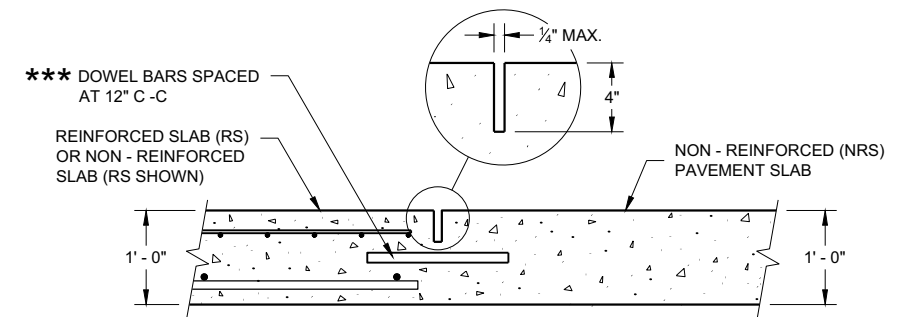
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

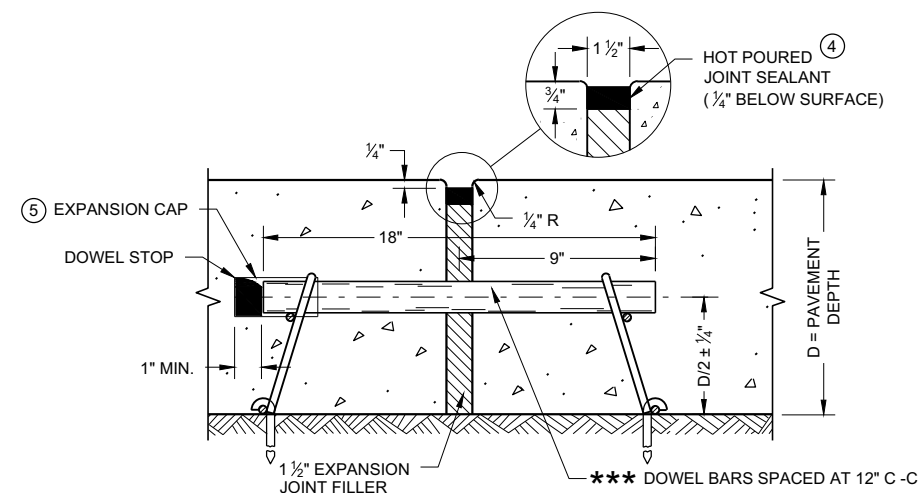
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.



**SECTION D - D
CONTRACTION JOINT**



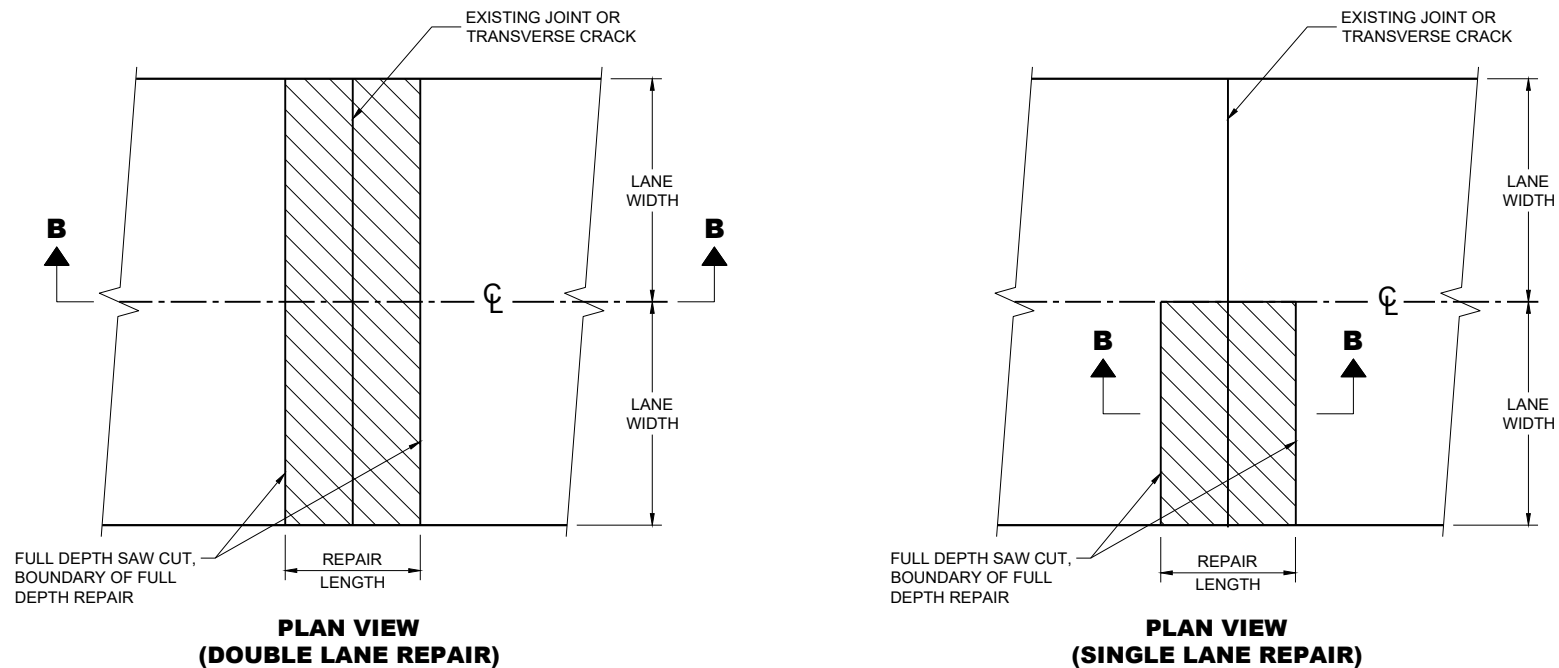
EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

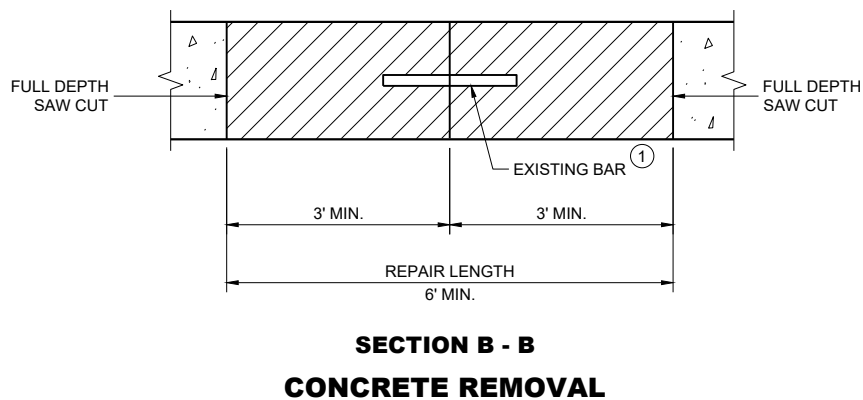
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR 223

FHWA



FULL DEPTH CONCRETE PAVEMENT REMOVAL



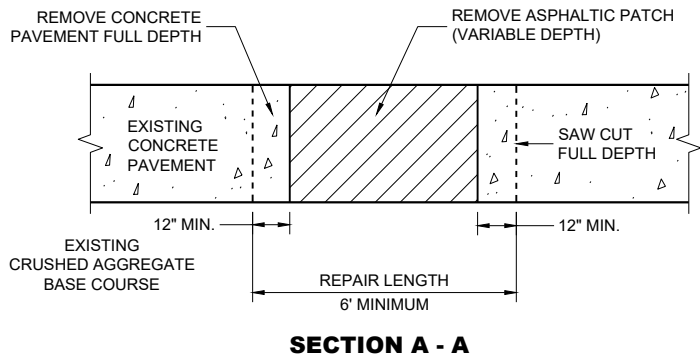
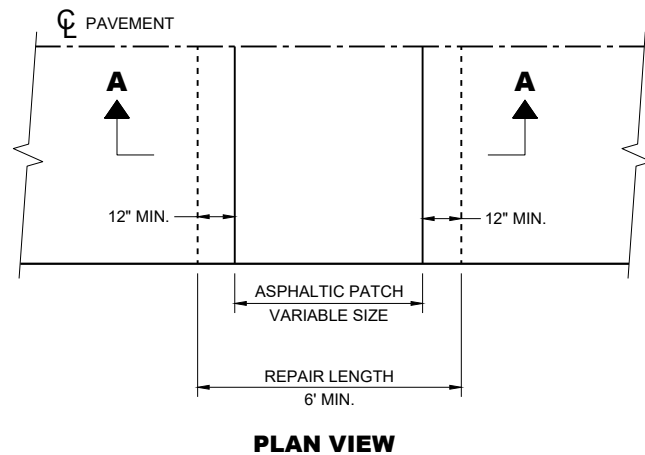
GENERAL NOTES

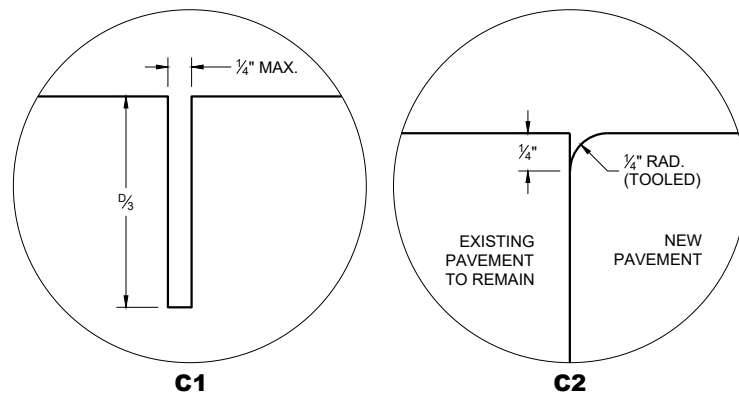
SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE A 6 FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREA TO ADJACENT TRANSVERSE JOINT OR CRACK.

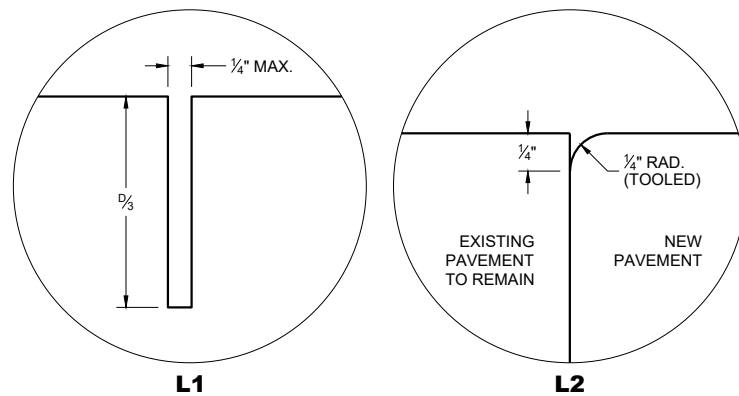
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

① DOWEL BARS MAY NOT BE PRESENT.

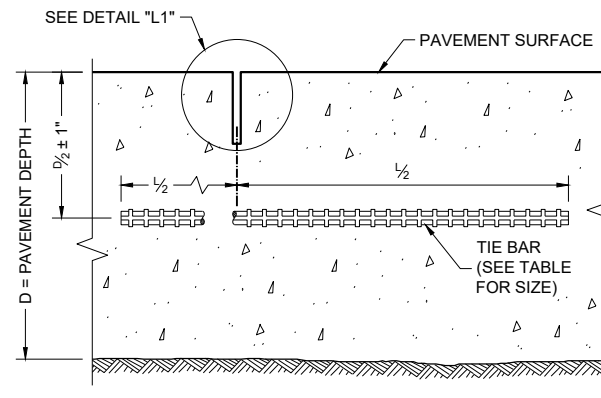
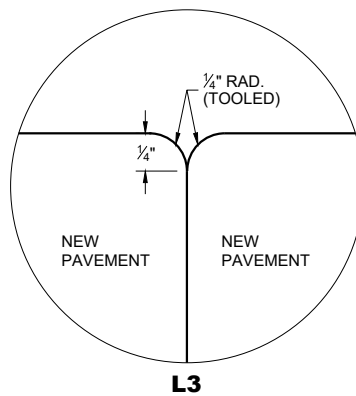
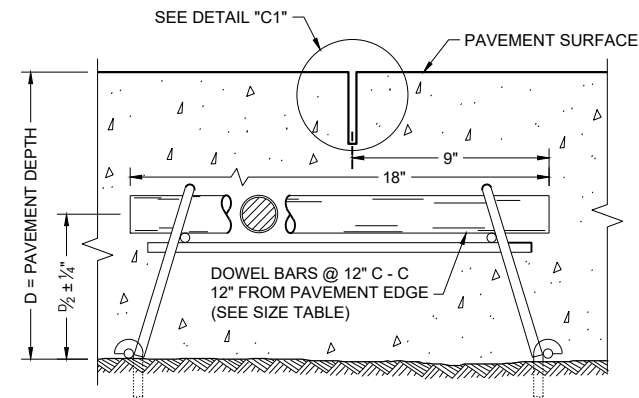
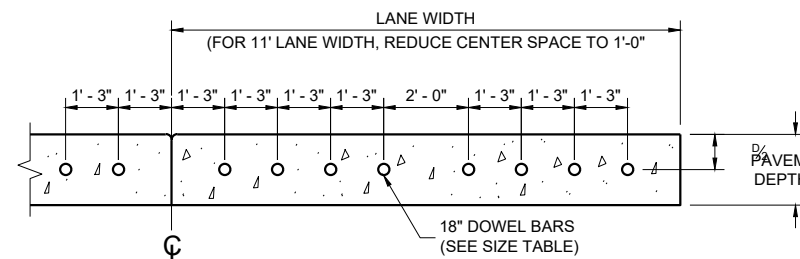
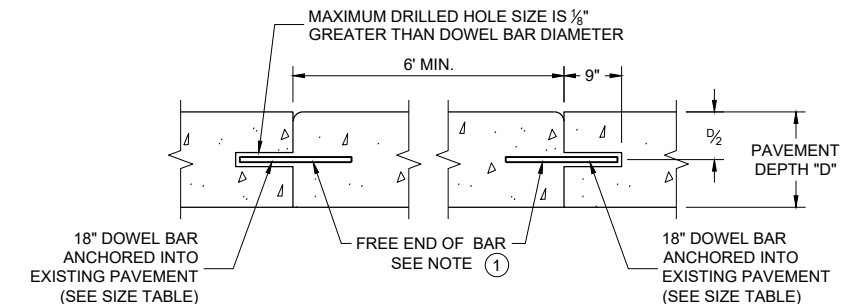




TRANSVERSE JOINTS



LONGITUDINAL JOINTS

SECTION C - C
SAWED LONGITUDINAL JOINTSECTION F - F
DOWELED CONTRACTION JOINTSECTION E - E
DRILLED DOWEL BAR CONSTRUCTION JOINT

SECTION D - D

TIE BAR TABLE

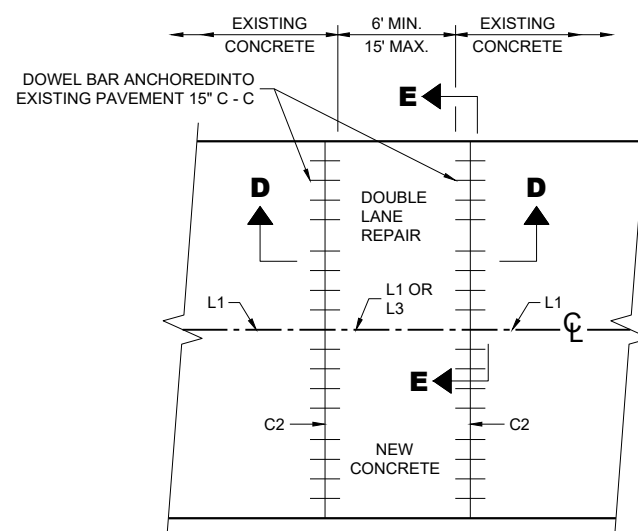
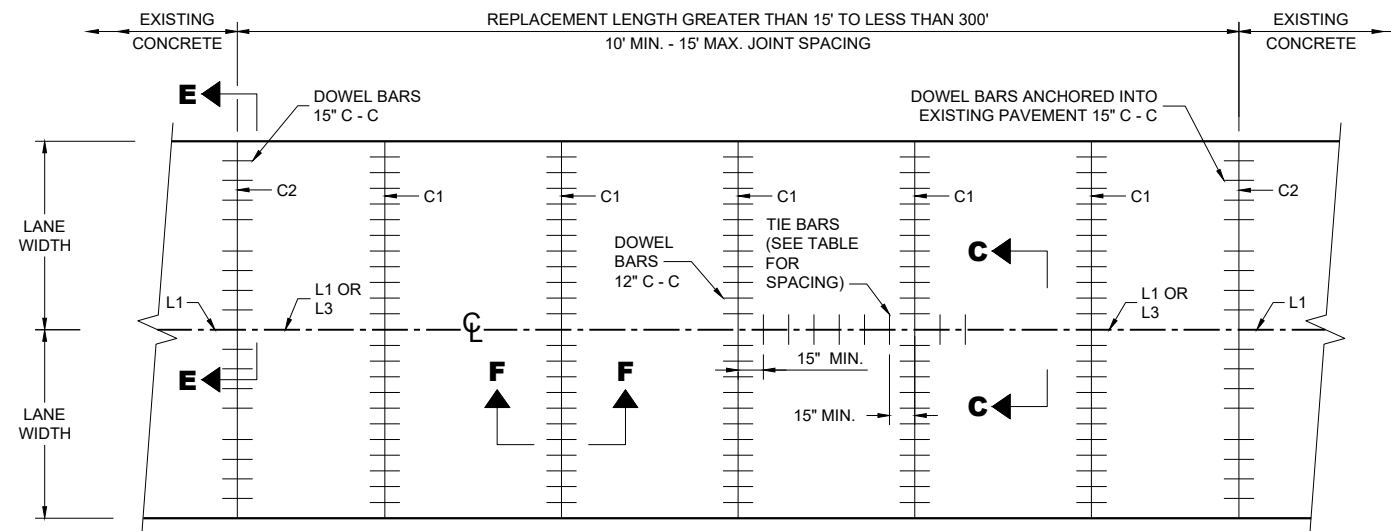
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24" **

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

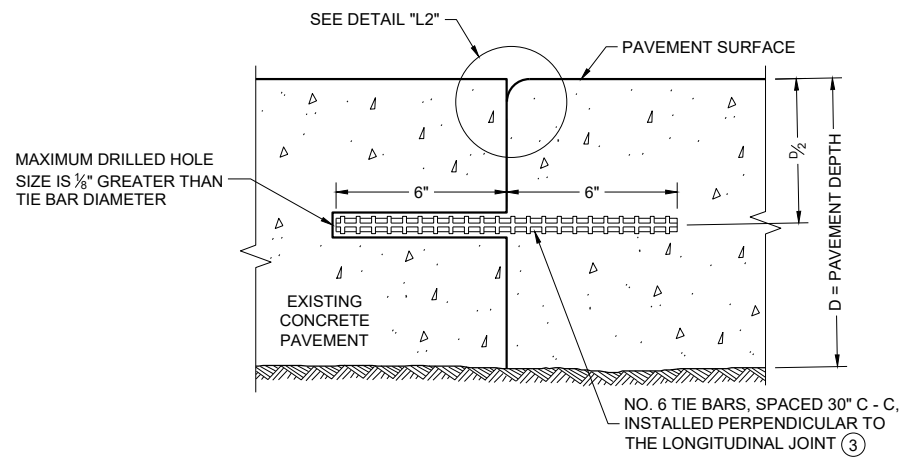
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

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

PLAN VIEW
MULTILANE CONCRETE PAVEMENT REPAIRPLAN VIEW
MULTILANE CONCRETE PAVEMENT REPLACEMENTCONCRETE PAVEMENT
REPAIR AND REPLACEMENT

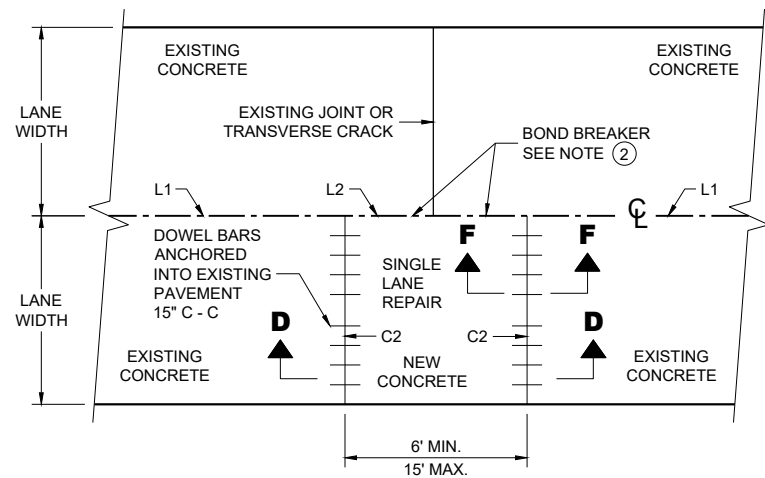
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



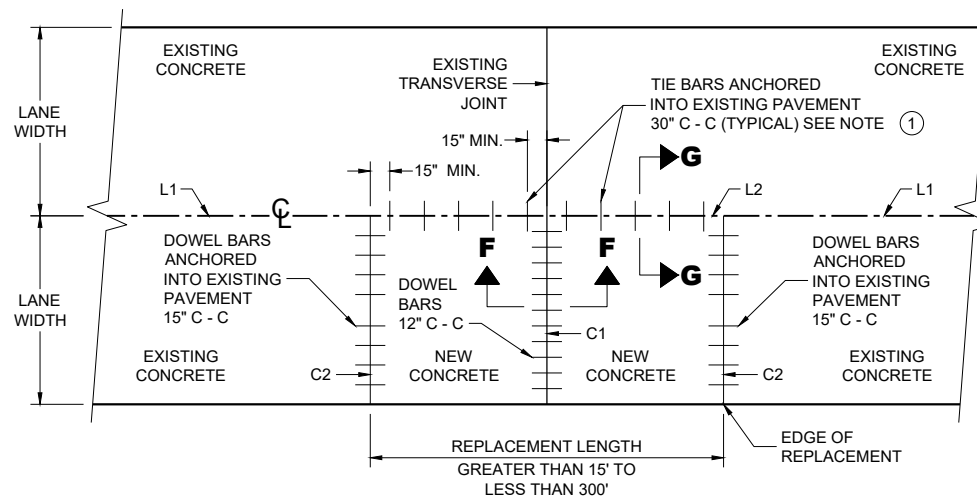
SECTION G - G
TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ② USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



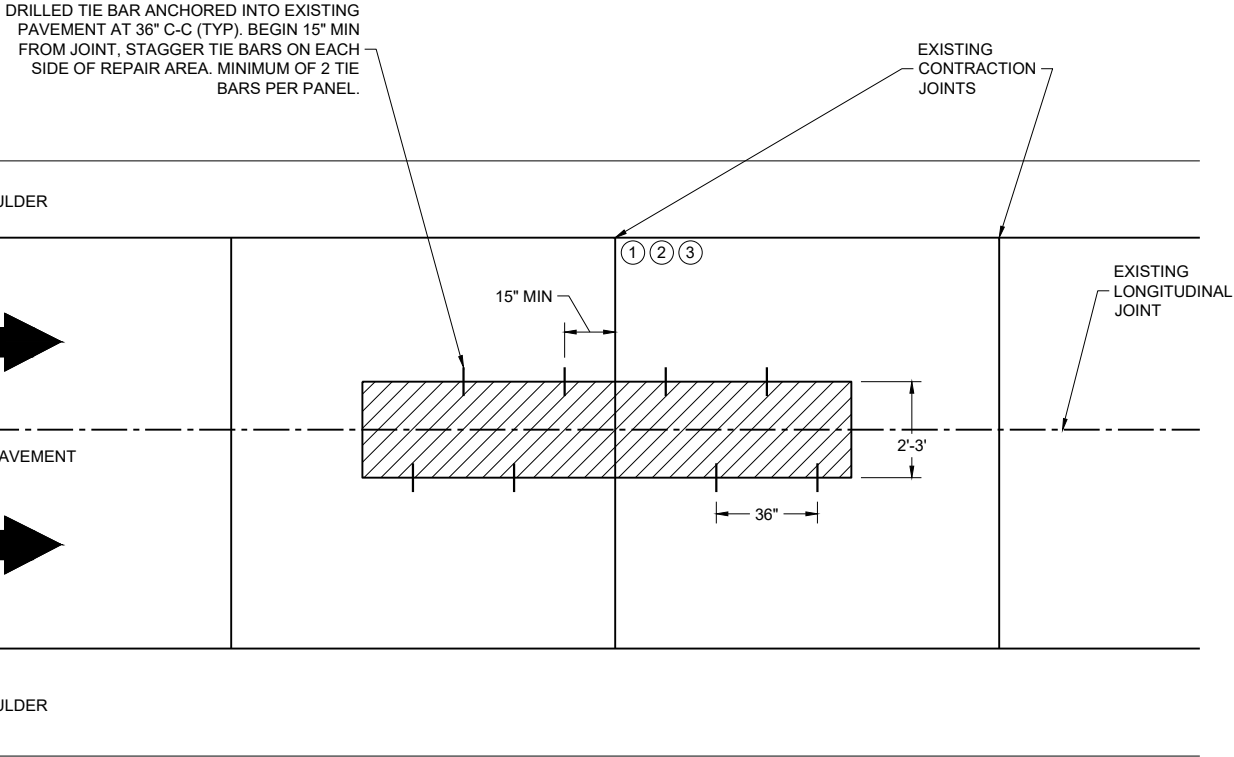
PLAN VIEW
SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW
SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE REPAIR AND REPLACEMENT

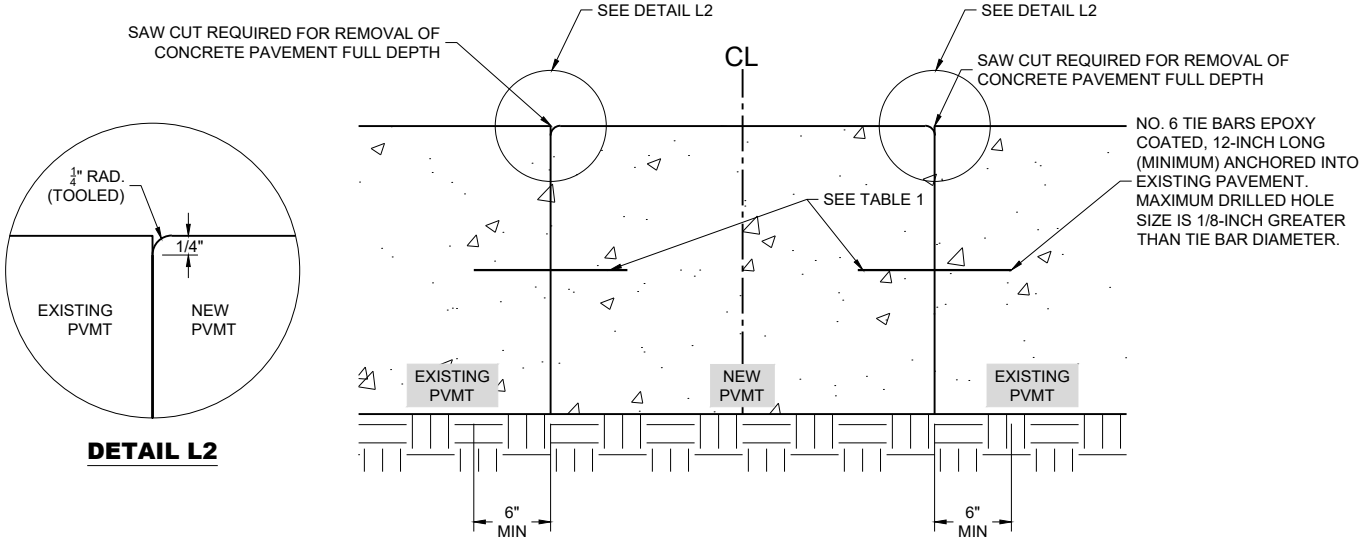
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PLAN VIEW

GENERAL NOTES

- ① TIE BARS MIN 15" FROM JOINT.
- ② LOCATION AND WIDTH OF PATCH ARE VARIABLE DEPENDING ON FIELD CONDITION
- ③ PRESERVE OR REESTABLISH EXISTING CONTRACTION JOINTS, KEEPING PATCH MATERIALS OUT OF REMAINING CONTRACTION JOINT.



SECTION VIEW

TABLE 1

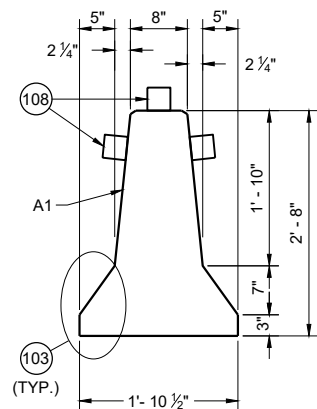
PATCH WIDTH	TIE BAR LENGTH
24"	12"
36"	18"

CONCRETE PAVEMENT
CENTERLINE JOINT
REPAIR

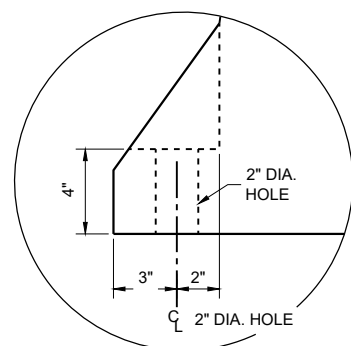
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
NOVEMBER 2025 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR

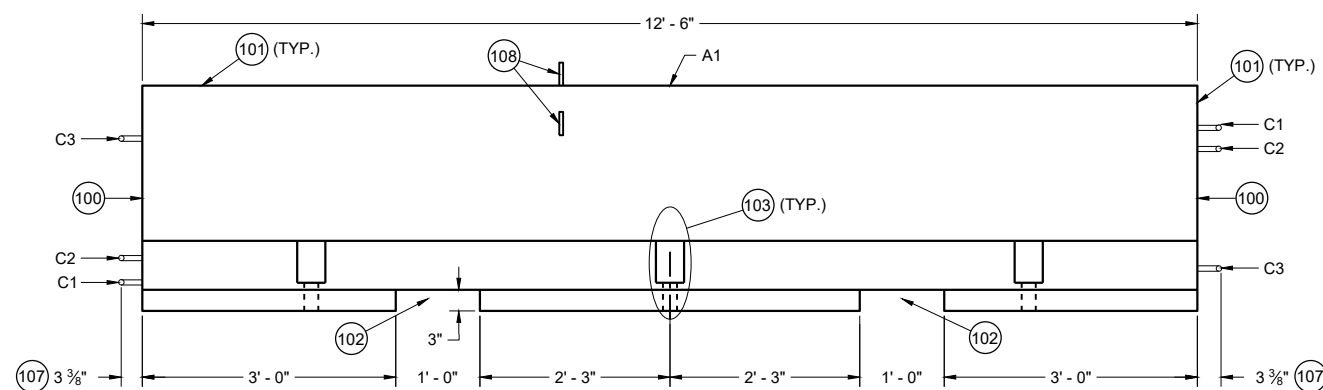
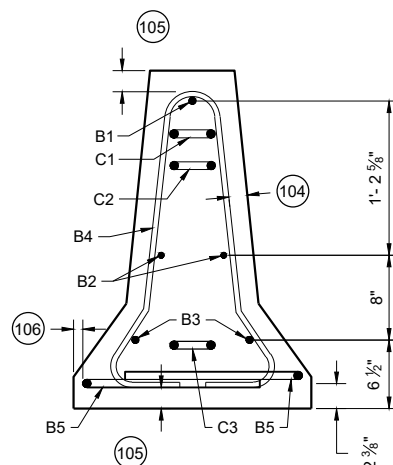
FHWA



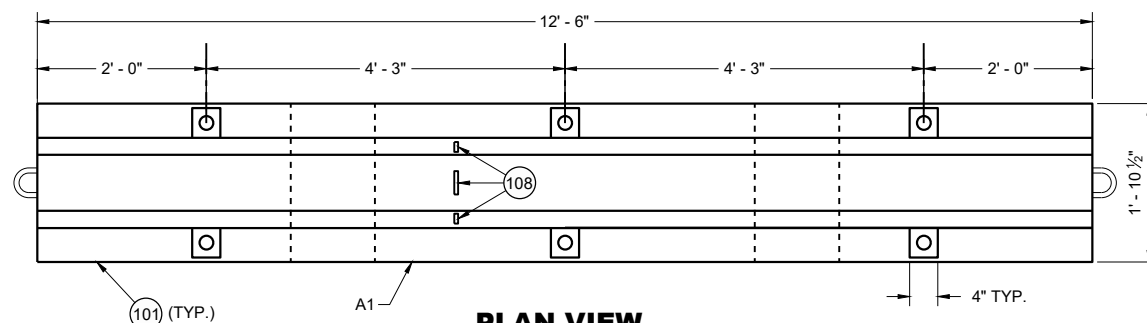
CROSS SECTION



ANCHOR BLOCK DETAIL

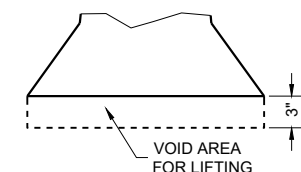


PROFILE VIEW

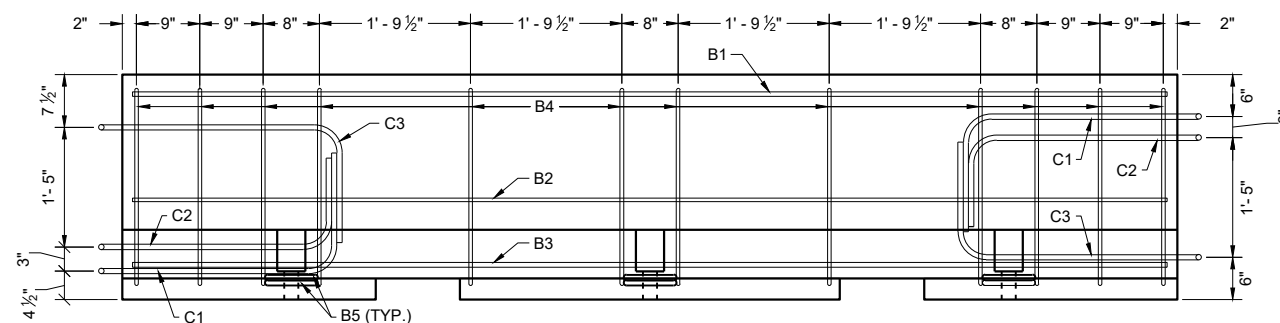
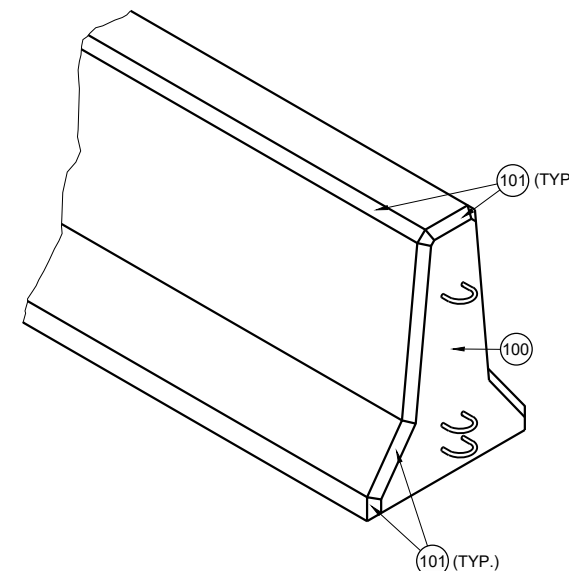


PLAN VIEW

TEMPORARY BARRIER



**LIFTING SLOT DETAIL
(TYP.)**



PROFILE VIEW

TEMPORARY BARRIER REINFORCEMENT

GENERAL NOTES

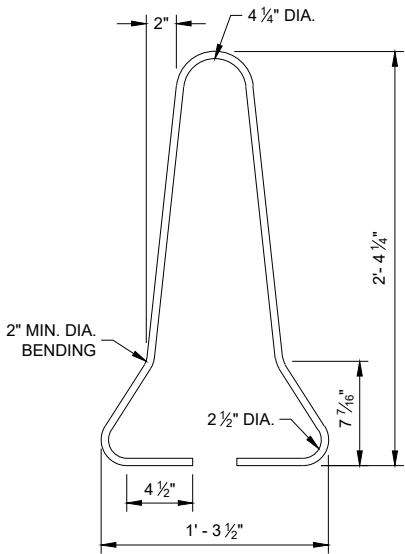
PLACE BARRIER ON PAVED SURFACE. BEFORE PLACEMENT OF TEMPORARY BARRIER, REMOVE ALL LOOSE MATERIAL FROM PAVED SURFACE.

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

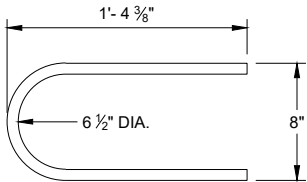
- 100 PERMANENTLY FORM INTO ONE END OF BARRIER THE FOLLOWING INFORMATION:
 - A. TYPE OF BARRIER: WI-CBTP
 - B. MANUFACTURER
 - C. DATE OF MANUFACTURE (MONTH AND YEAR)
- 101 1" OPTIONAL CHAMFER
- 102 SEE LIFTING SLOT DETAIL
- 103 SEE ANCHOR BLOCK DETAIL
- 104 1 3/4" MIN. CLEAR COVER
- 105 2" MIN. CLEAR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

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

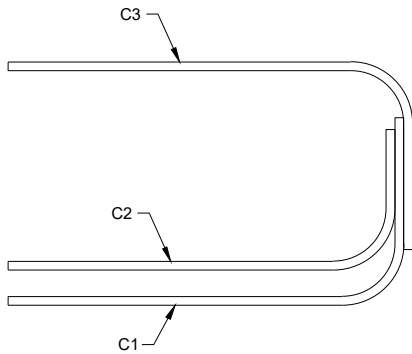
STATE OF WISCONSIN
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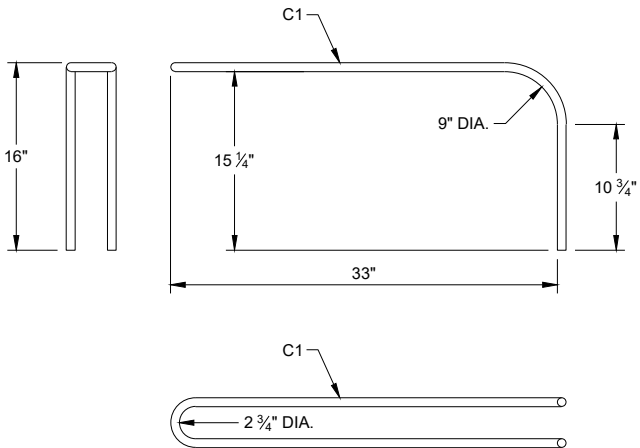
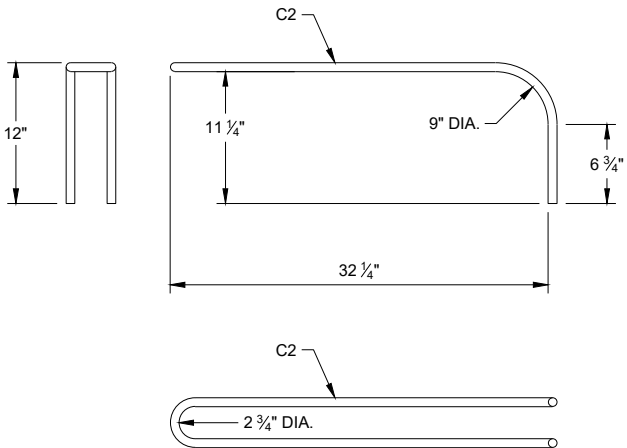
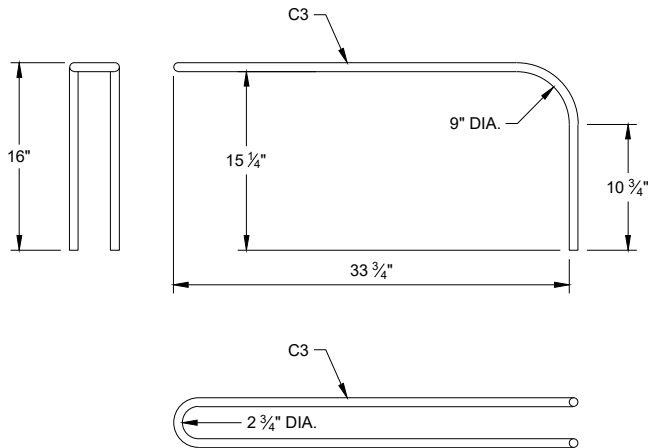
B4 BAR DETAIL



B5 BAR DETAIL



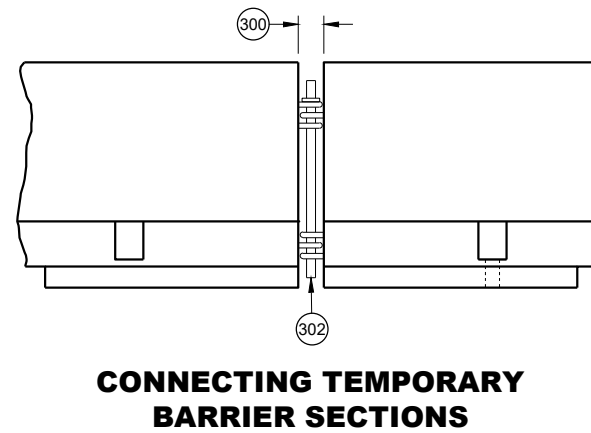
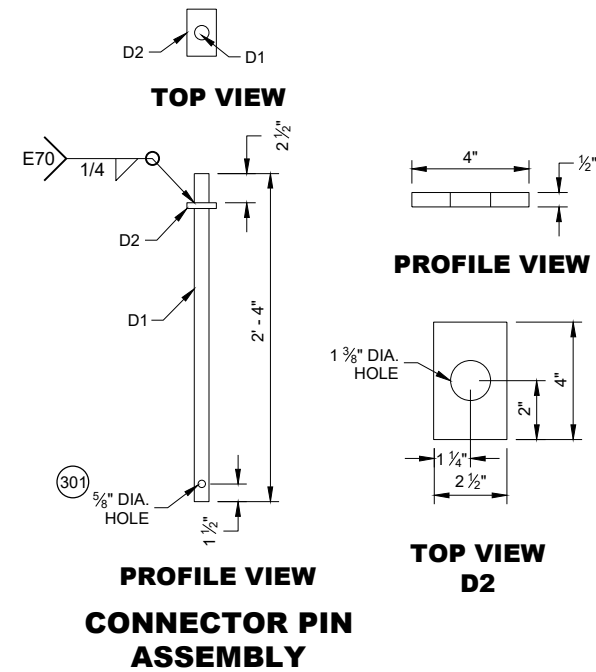
PROFILE VIEW
LOOP BAR ASSEMBLY



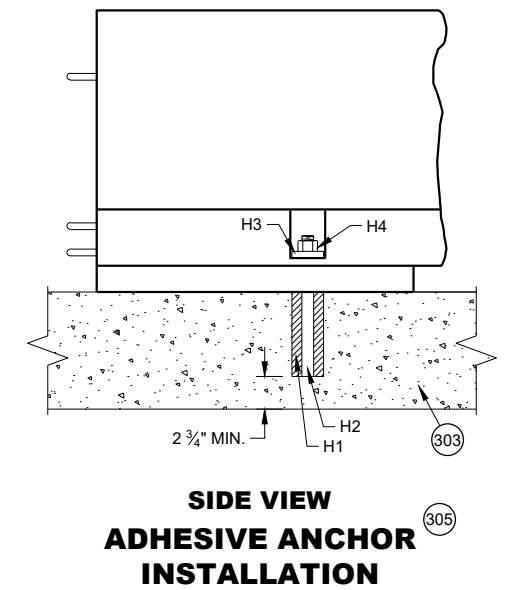
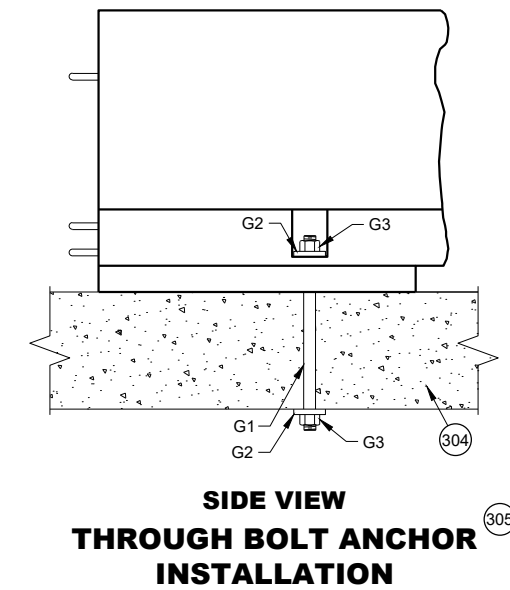
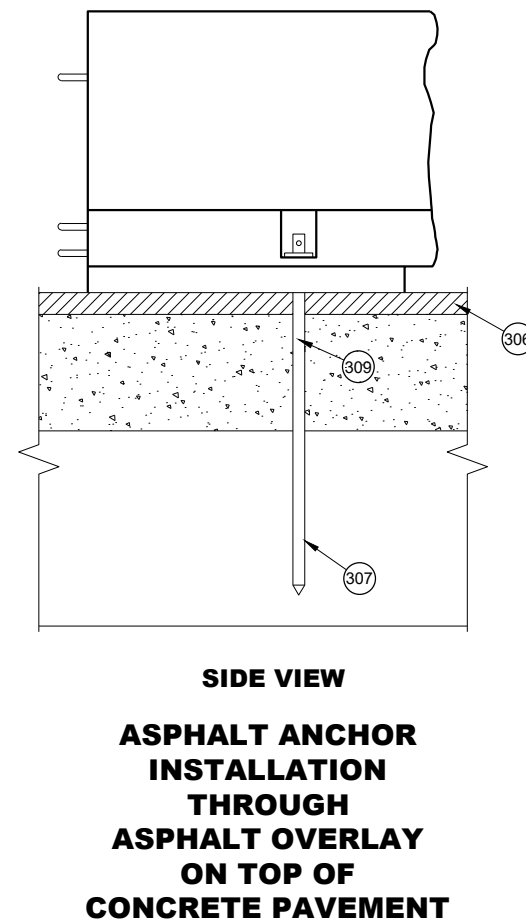
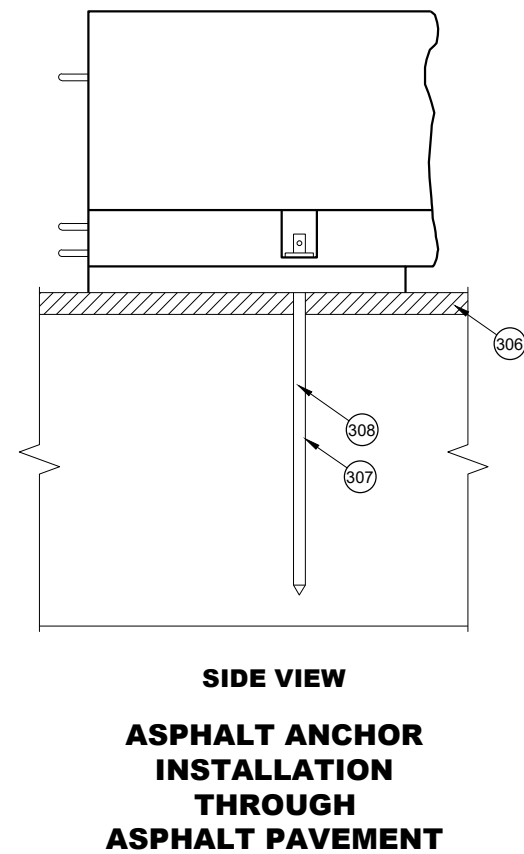
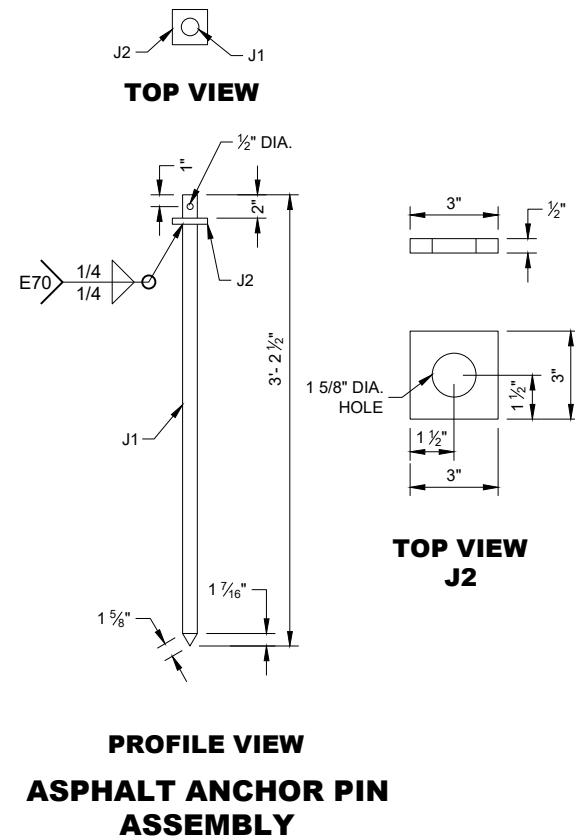
C BAR DETAILS

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 229

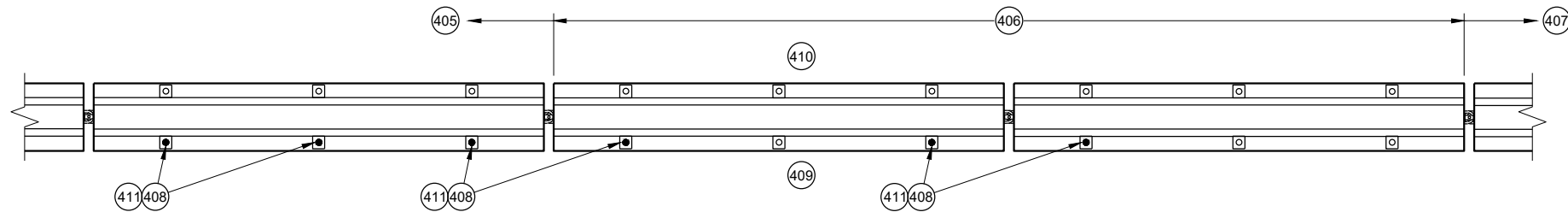


- ## GENERAL NOTES
- 300 SET WITH 3 5/8" WOOD BLOCK.
 - 301 HOLE IS OPTIONAL.
 - 302 CONNECTOR PIN ASSEMBLY.
 - 303 CONCRETE PAVEMENT, APPROACH SLAB, OR DECK.
 - 304 CONCRETE DECK.
 - 305 DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY OR CONCRETE PAVEMENT WITH ASPHALT OVERLAY.
 - 306 MINIMUM OF 2" OF ASPHALT.
 - 307 ASPHALT ANCHOR PIN ASSEMBLY
 - 308 IF DRILLING A PILOT HOLE, THE MAX. DIA. OF THE HOLE IS 3/4"
 - 309 WHEN THERE IS ASPHALT OVERLAYING CONCRETE PAVEMENT, A 1 5/8" DIA. PILOT HOLE CAN BE DRILLED INTO THE OVERLAY AND CONCRETE. IF NEEDED DRILL A 3/4" PILOT HOLE IN BASE COURSE.

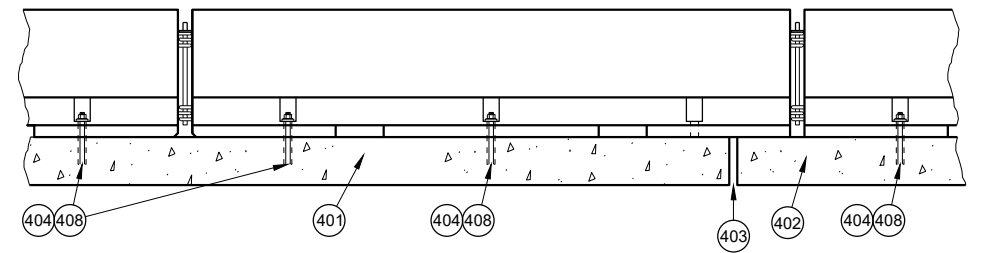


**CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"**

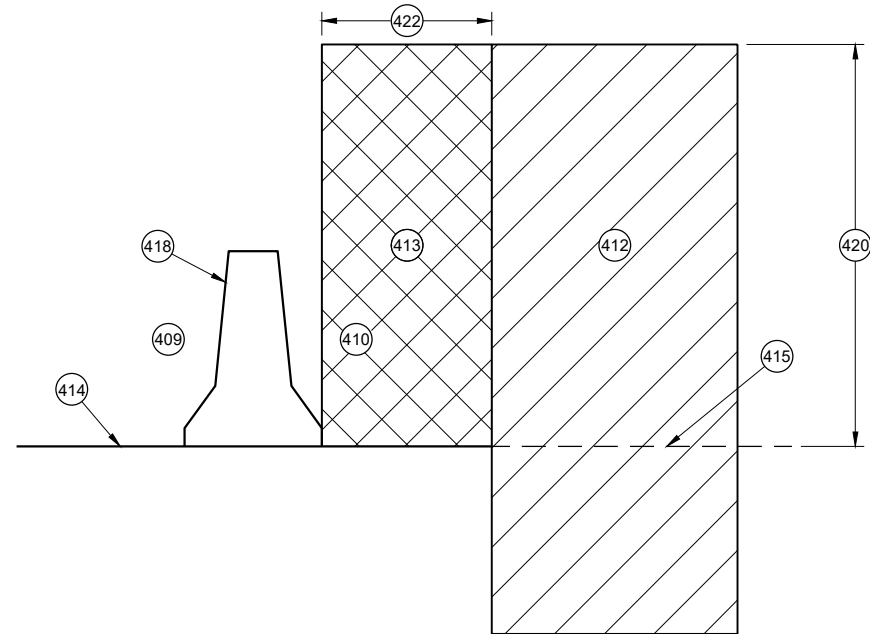
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 230



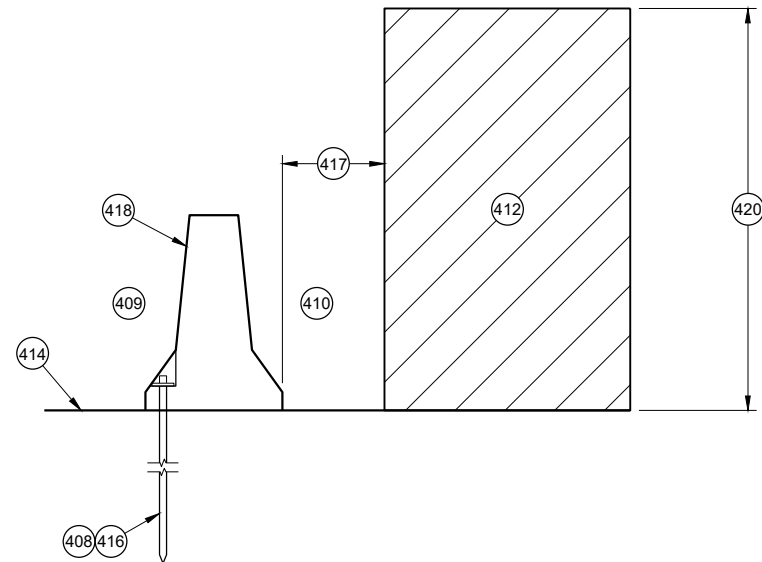
PLAN VIEW
TRANSITION FROM FREE STANDING TO ANCHORED BARRIER



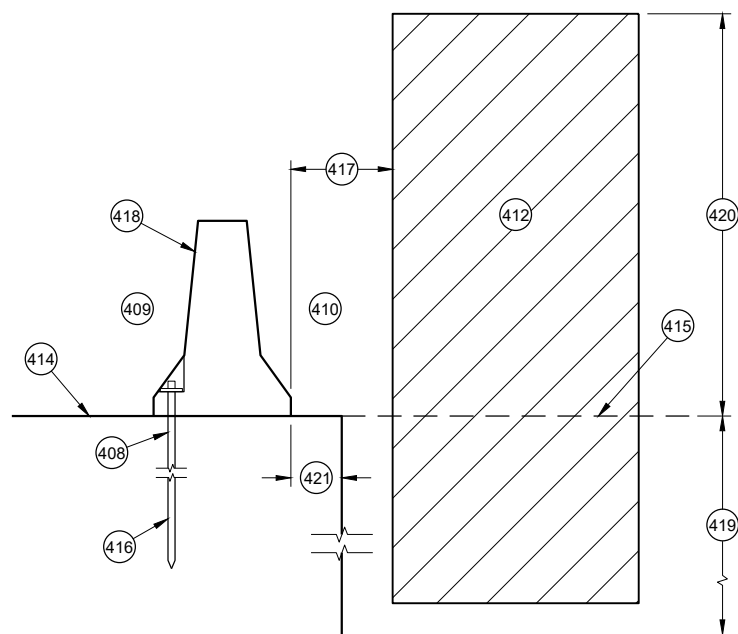
PROFILE VIEW
ANCHORED BARRIER NEAR EXPANSION JOINT



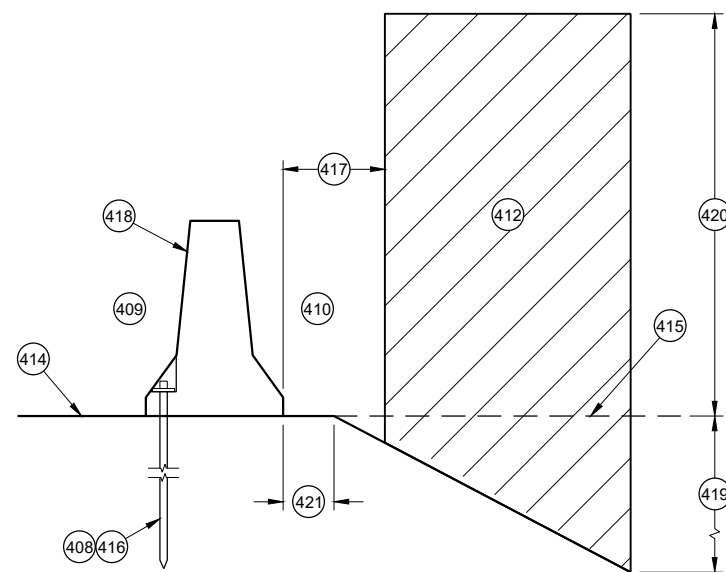
CROSS SECTION
FREE STANDING BARRIER



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



CROSS SECTION
ANCHORED BARRIER NEAR VERTICAL DROP OFF



CROSS SECTION
ANCHORED BARRIER NEAR A SLOPE

GENERAL NOTES

- (400) NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.
- (401) CONCRETE DECK
- (402) CONCRETE DECK OR APPROACH SLAB.
- (403) EXPANSION JOINT
- (404) ADHESIVE ANCHOR SHOWN. SEE ANCHOR DETAILS.
- (405) ANCHORED TEMPORARY BARRIER
- (406) TRANSITION FROM ANCHORED TEMPORARY BARRIER TO FREE STANDING
- (407) FREE STANDING BARRIER
- (408) REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.
- (409) TRAFFIC SIDE
- (410) NON-TRAFFIC SIDE
- (411) ANCHOR LOCATION. SEE ANCHORING DETAILS.
- (412) WORK AREA
- (413) AREA FREE OF OBJECTS AND WORKERS
- (414) GRADE LINE
- (415) EXTENDED GRADE LINE
- (416) ANCHORED TEMPORARY BARRIER. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR AN ASPHALT ANCHOR ROD DETAILS FOR MORE INFORMATION. ASPHALT ANCHOR ROD SHOWN.
- (417) WHEN OBJECTS EXTEND ABOVE THE GRADE. A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT.
- (418) OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR ALLOWED TO LEAN AGAINST THE BARRIER WITHOUT WRITTEN PERMISSION OF THE PROJECT ENGINEER.
- (419) DEPTHS OF 3 FEET OR MORE.
- (420) $Y = 6.5'$
- (421) OFFSET FROM BACK OF BARRIER EDGE:

CONCRETE PAVEMENT	0.5'
ASPHALT	0.5'
- (422) POSTED SPEED (MPH):

45 OR GREATER	4.0'
40 OR LOWER	2.0'

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 231

GENERAL NOTES

- 500 EXISTING RIGID BARRIERS (VARIES)

501 TEMPORARY BARRIER

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

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

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

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

507 VERTICAL BARRIER

508 SAFETY SHAPE BARRIER

509 SINGLE SLOPE BARRIER

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

511 BENT THRIE BEAM TO FIT.

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

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

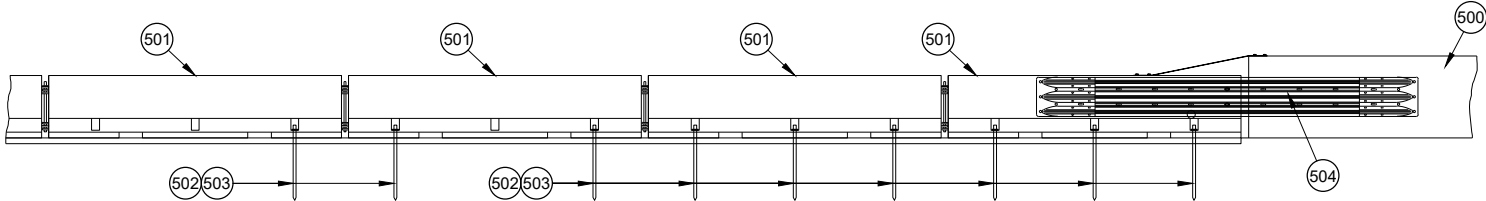
515 TWO (2) R1, R2 AND R3 ARE REQUIRED

516 CUT WOOD BLOCK TO FIT.

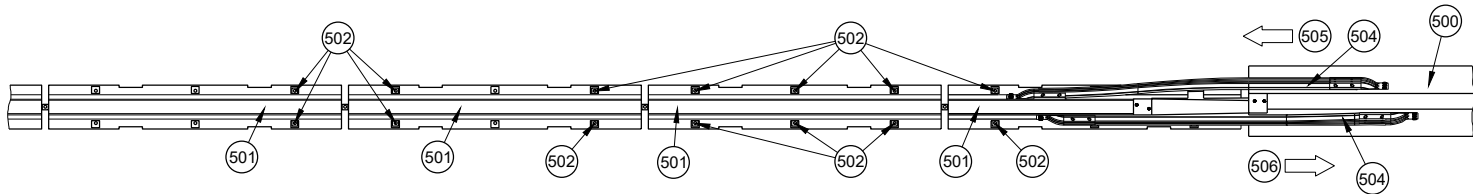
517 SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL ASSEMBLY.

518 CAP ASSEMBLY

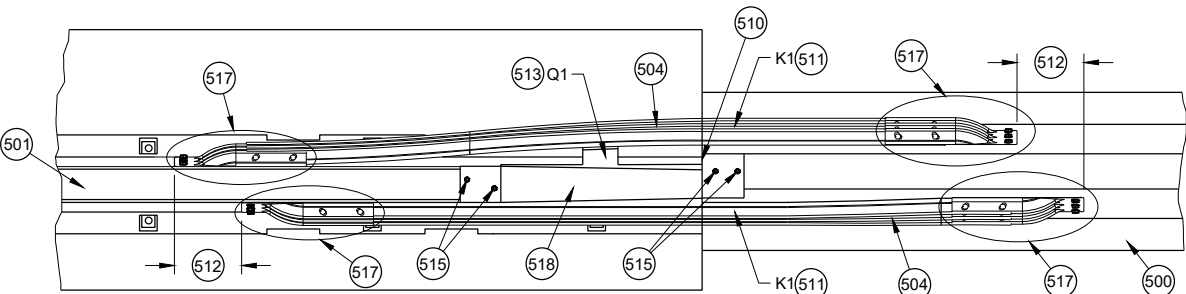
519 4" MAX. GAP BETWEEN TEMPORARY BARRIER AND RIGID BARRIER.
- 520 ALL TWELVE SPLICE HOLES REQUIRE M1 AND M2



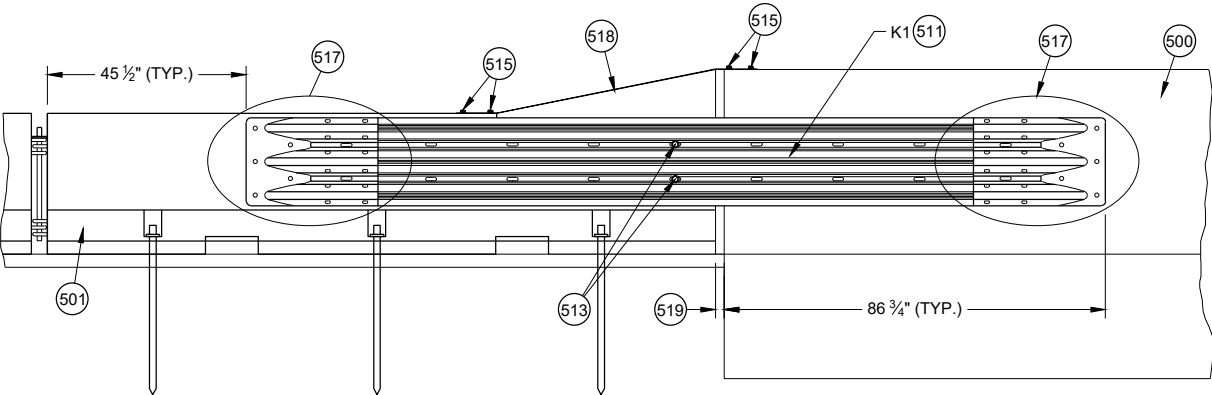
PROFILE VIEW



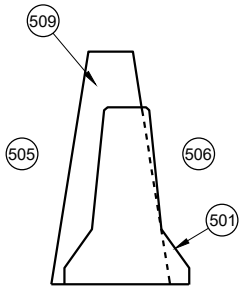
PLAN VIEW
TRANSITION TO RIGID BARRIER



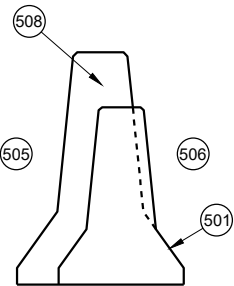
PLAN DETAIL VIEW
TRANSITION TO RIGID BARRIER



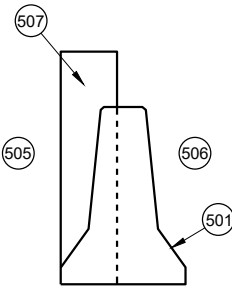
FRONT DETAIL VIEW
TRANSITION TO RIGID BARRIER



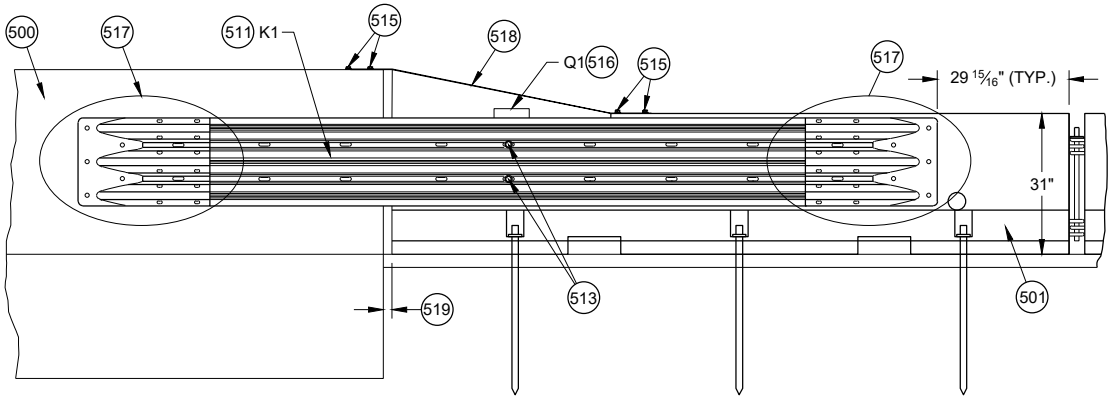
CROSS SECTION
TEMPORARY BARRIER
PLACEMENT SINGLE SLOPE



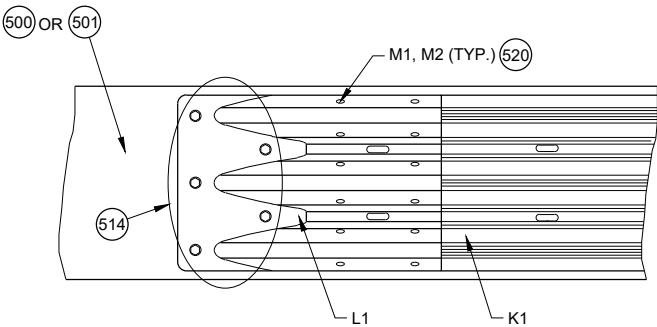
CROSS SECTION
TEMPORARY BARRIER
PLACEMENT SAFETY SHAPE



CROSS SECTION
TEMPORARY BARRIER
PLACEMENT VERTICAL



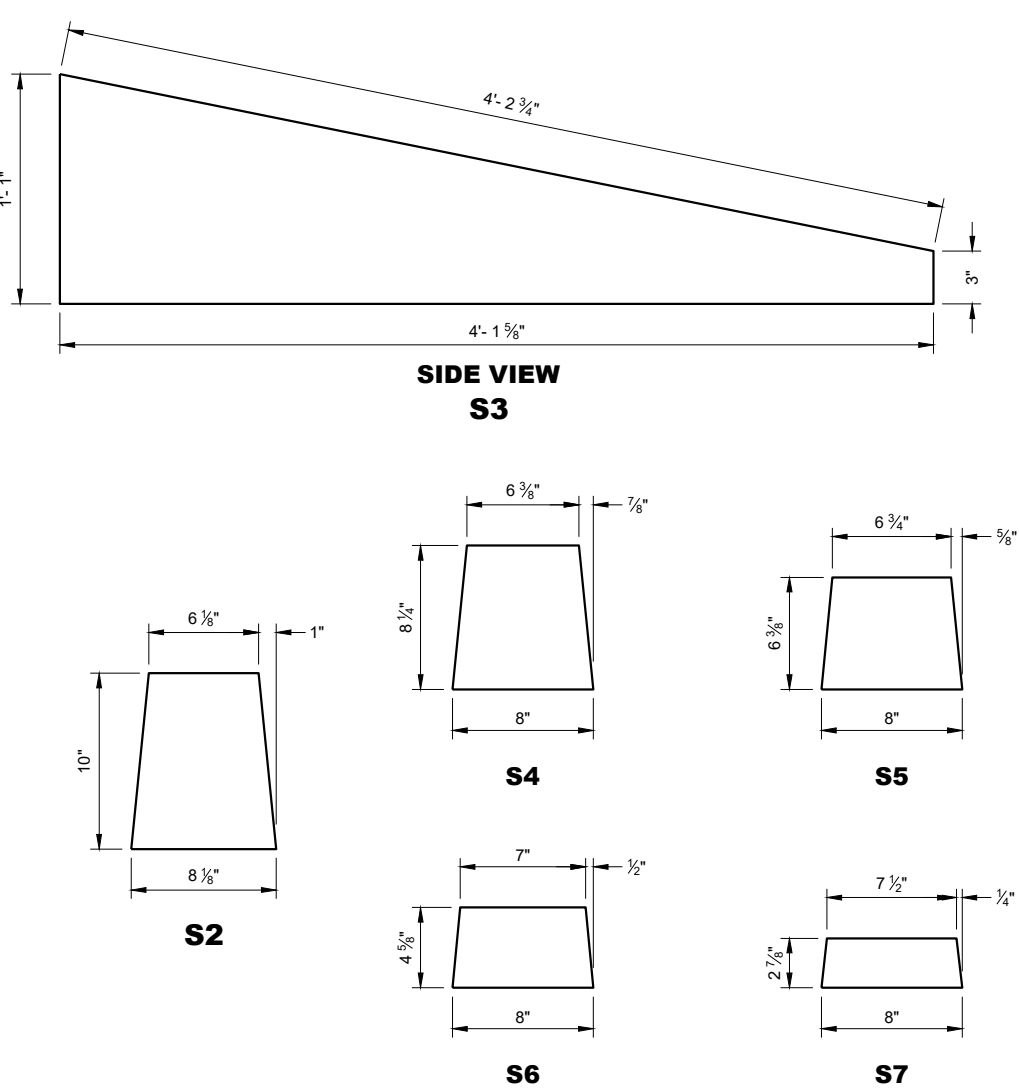
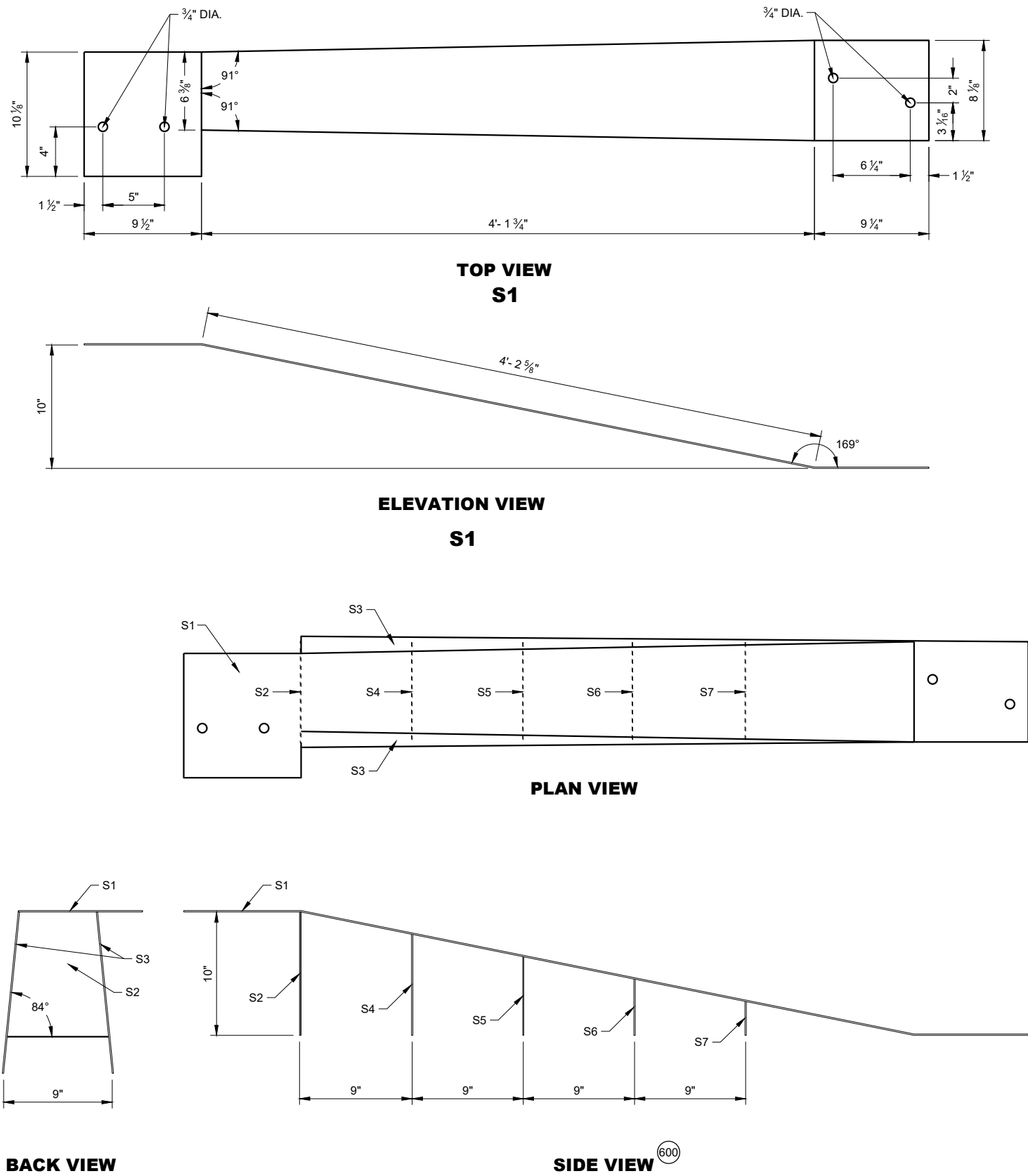
BACK DETAIL VIEW
TRANSITION TO RIGID BARRIER



517 DETAIL PLAN VIEW
THRIE BEAM RAIL TERMINAL CONNECTOR ASSEMBLY

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THREE SIDES

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

600 SIDE PLATES (S3) NOT SHOWN FOR CLARITY.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 233



**END
VIEW**

**END
VIEW**

GENERAL NOTES

STITCH WELD GUSSET PLATES AND END PLATES ON THRIR SIDS

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

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

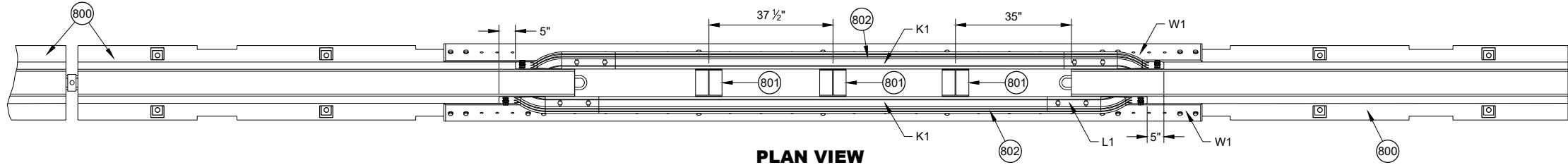
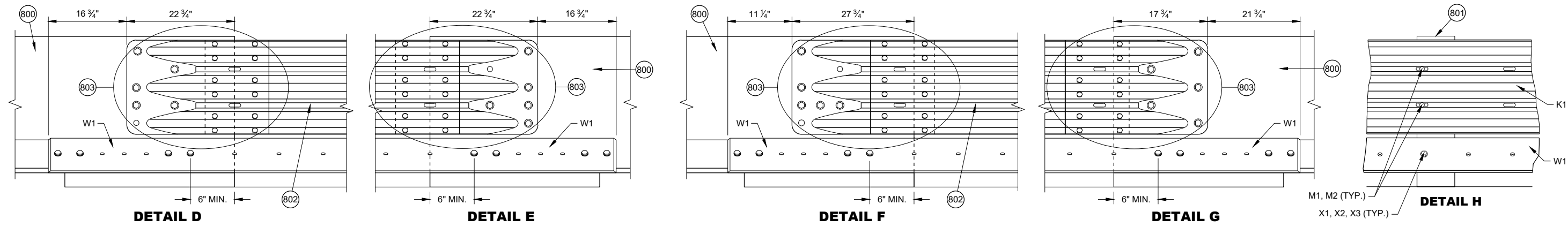
(700) SIDE PLATES (T3 AND T4) NOT SHOWN FOR CLARITY.



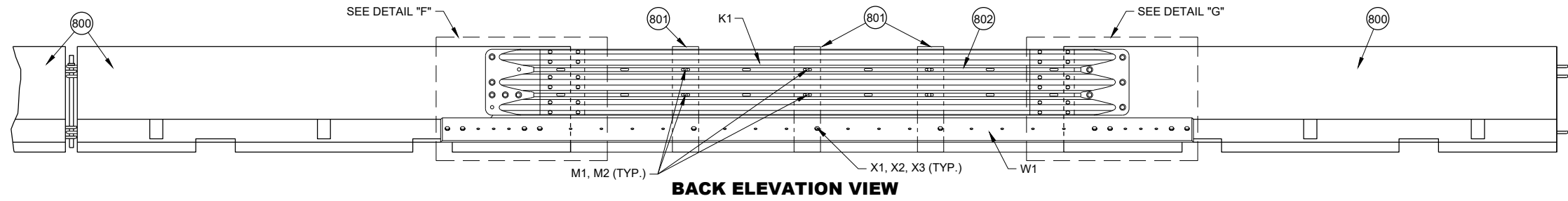
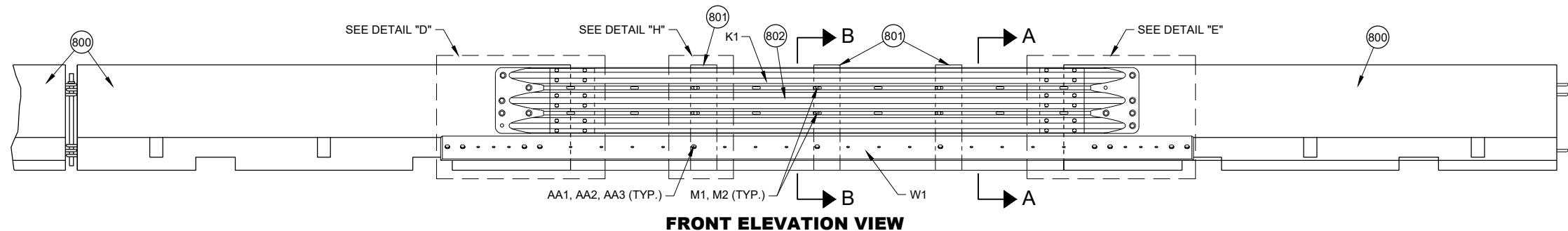
GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
T5	22 $\frac{13}{16}$ "	5 $\frac{1}{16}$ "	2 $\frac{5}{16}$ "	8 $\frac{1}{16}$ "
T6	21"	5 $\frac{7}{8}$ "	2 $\frac{3}{16}$ "	8 $\frac{1}{16}$ "
T7	19 $\frac{3}{16}$ "	6 $\frac{3}{16}$ "	1 $\frac{15}{16}$ "	8 $\frac{1}{16}$ "
T8	17 $\frac{3}{8}$ "	6 $\frac{1}{4}$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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 234

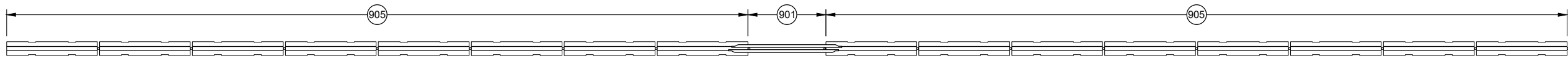


- GENERAL NOTES**
- 800 FREE STANDING TEMPORARY BARRIER
 - 801 GAP STIFFENER ASSEMBLY
 - 802 THRIE BEAMS ARE NESTED ON BOTH SIDES OF THE TEMPORARY BARRIER.
 - 803 SEE THRIE BEAM RAIL TERMINAL CONNECTOR DETAIL

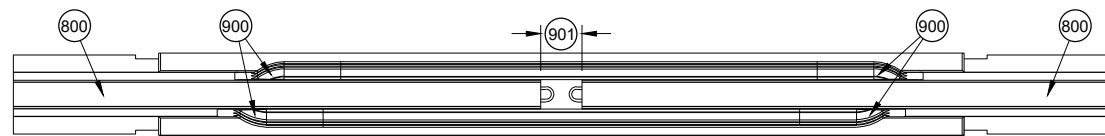


PORTABLE CONCRETE BARRIER GAP THRIE BEAM COVER

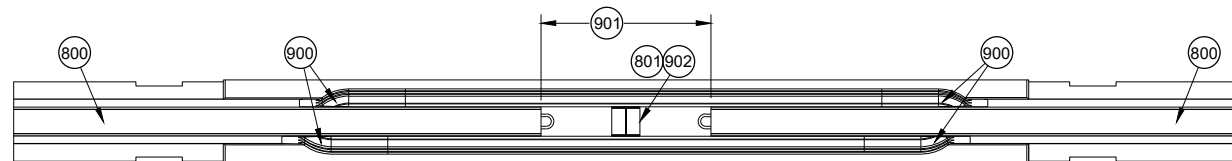
CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 235



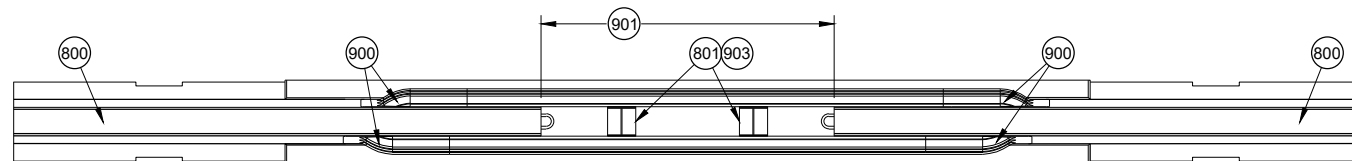
**PLAN VIEW
GAP WITHIN SPACING**



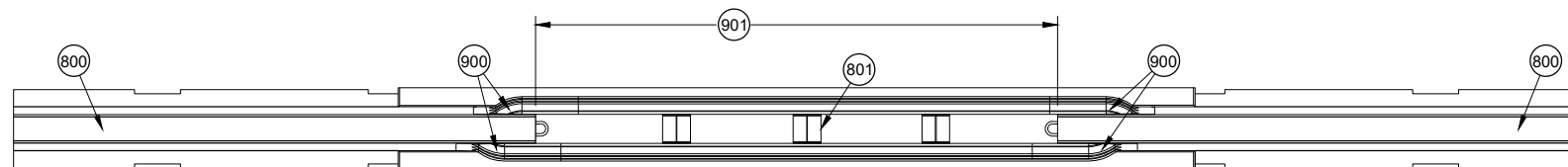
**PLAN VIEW
TEMPORARY BARRIER GAP OVER 4" TO 1' MAX.**



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



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



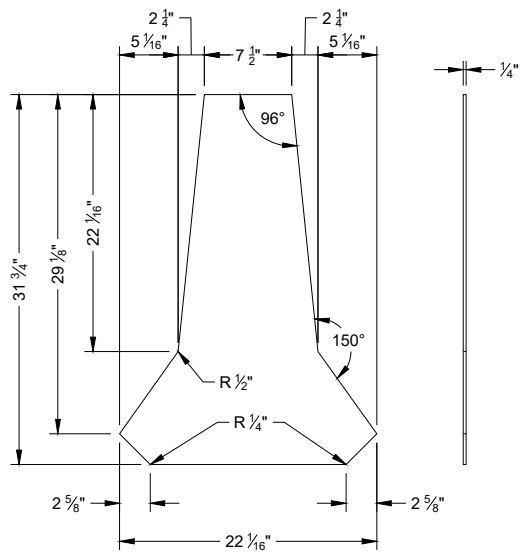
**PLAN VIEW
TEMPORARY BARRIER GAP OVER 7' TO 12.5' MAX.**

GENERAL NOTES

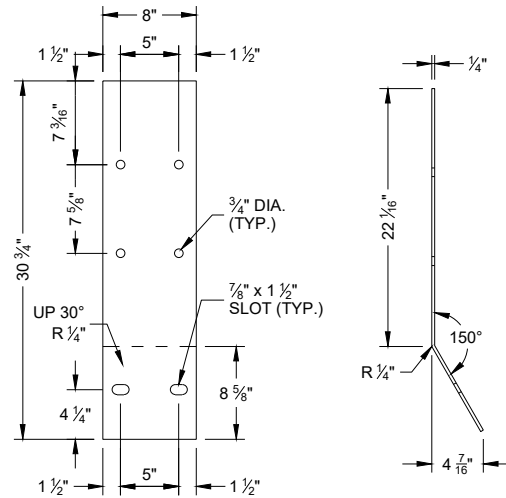
- 900 SEE OTHER DETAILS FOR TEMPORARY GAP HARDWARE (TYP.)
- 901 TEMPORARY BARRIER GAP
- 902 GAP STIFFENER ASSEMBLY CENTERED IN THE GAP.
- 903 GAP STIFFENER ASSEMBLY IS OFFSET 18 3/4" FROM CENTER
- 904 MINIMUM NUMBER OF GAP STIFFENERS SHOWN FOR THE GAP RANGE SHOWN.
- 905 MINIMUM OF 8 CONTINUOUS FREE STANDING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

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

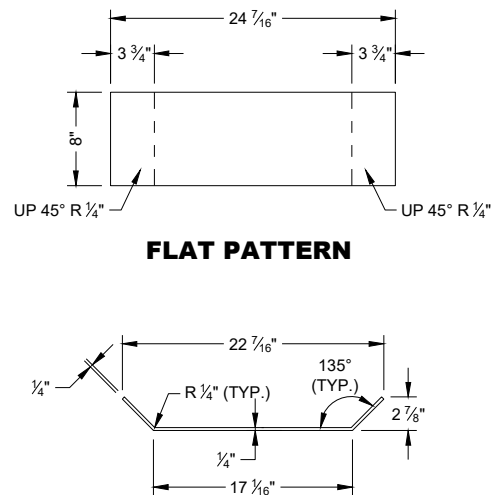
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 236



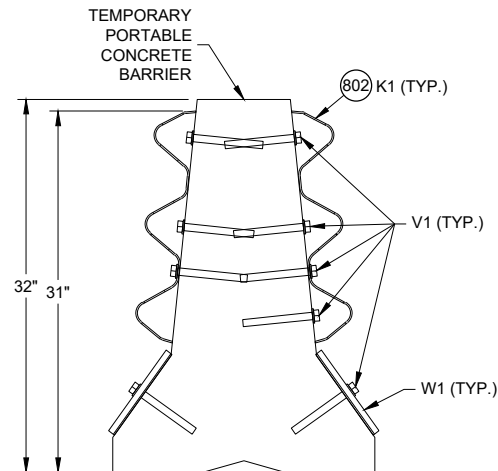
PROFILE VIEW
STIFFENER ASSEMBLY
CENTER PANEL U1



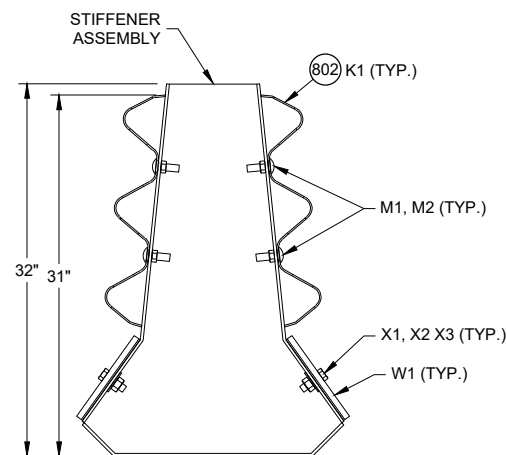
FLAT PATTERN
STIFFENER ASSEMBLY
SIDE PANEL U2



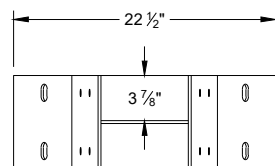
PROFILE VIEW
STIFFENER ASSEMBLY
BOTTOM PANEL U3



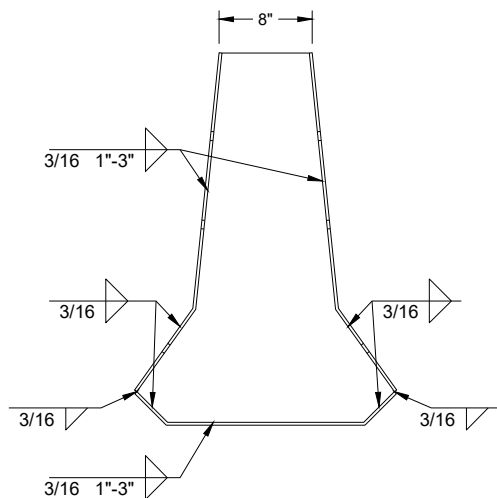
SECTION A - A



SECTION B - B

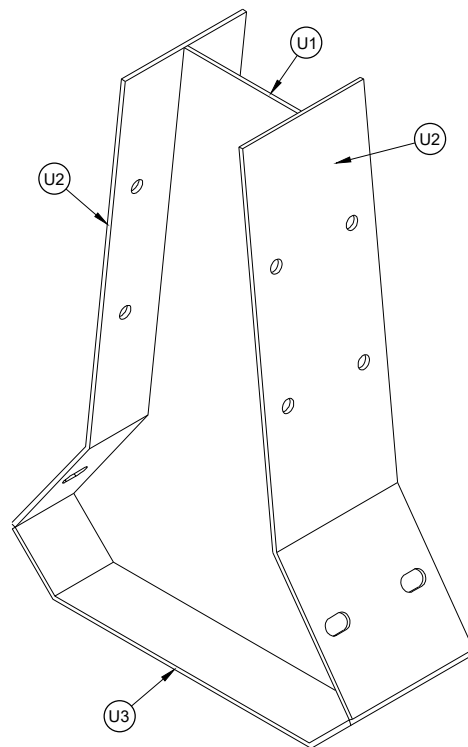


PLAN VIEW

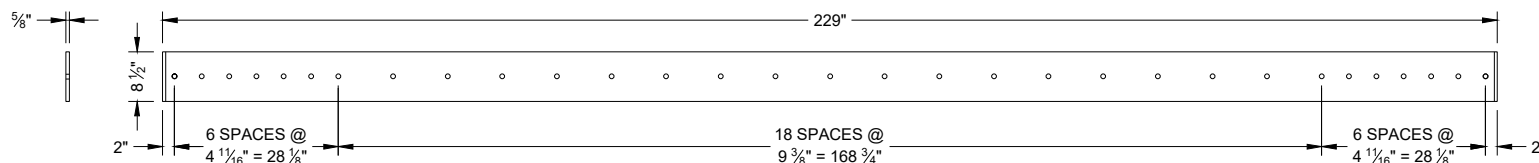


PROFILE VIEW
SIDE VIEW

GAP STIFFENER ASSEMBLY

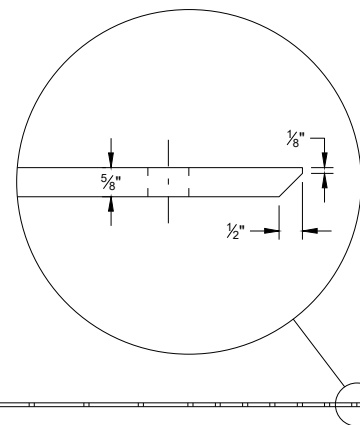


ISOMETRIC



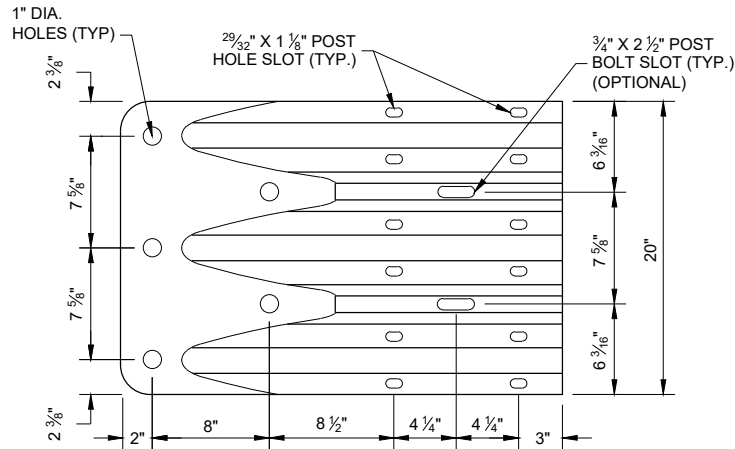
SIDE VIEW

ELEVATION VIEW
W1 TOE PLATE



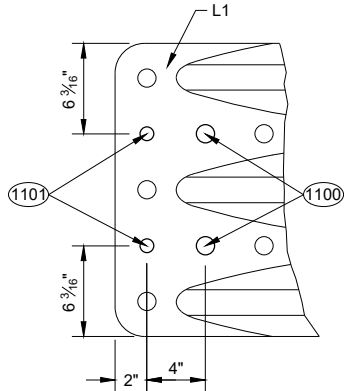
CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



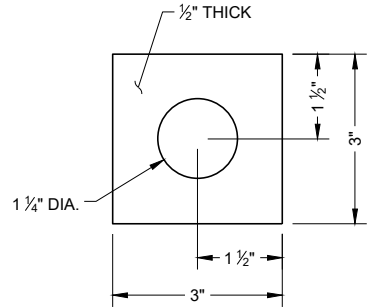
ELEVATION VIEW

**THRIE BEAM
TERMINAL CONNECTOR**



ELEVATION VIEW

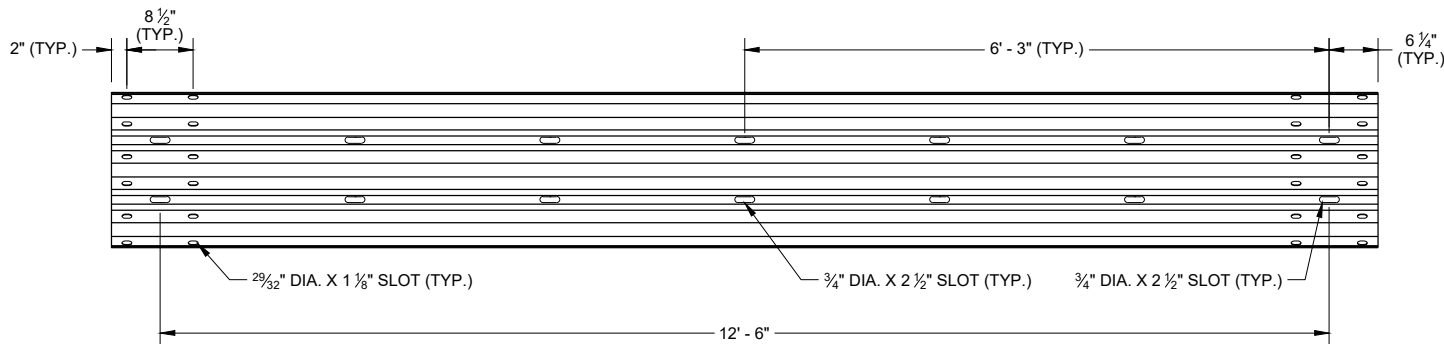
**ADDITIONAL THRIE BEAM
TERMINAL CONNECTOR HOLE DETAIL**



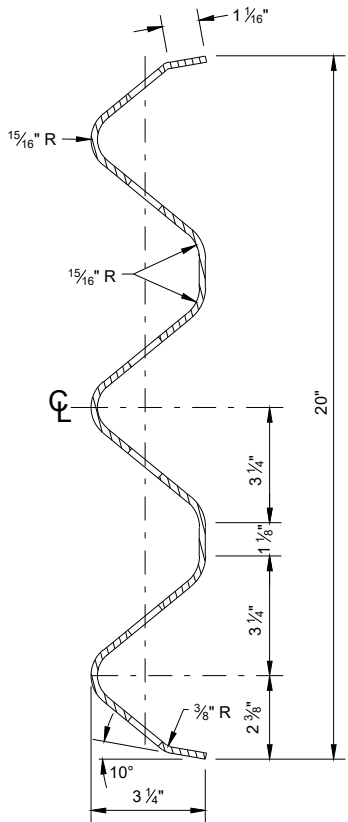
**PLATE WASHER DETAIL
G2, H3**

GENERAL NOTES

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



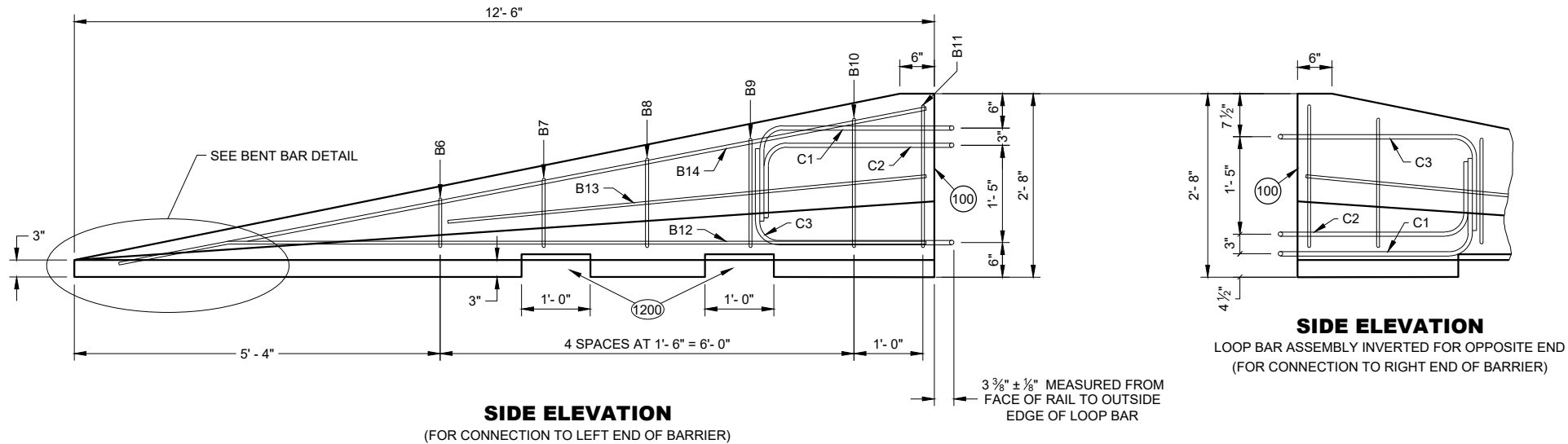
SLOTTED THRIE BEAM RAIL K1



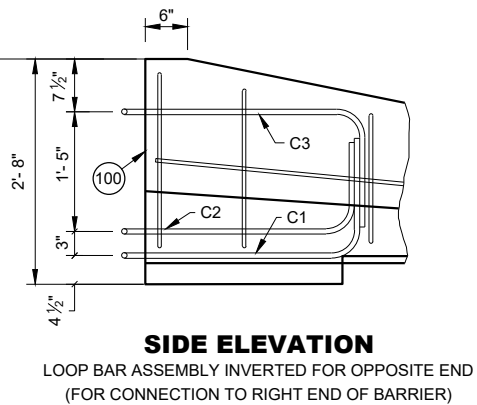
**SECTION THROUGH
BEAM K1**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



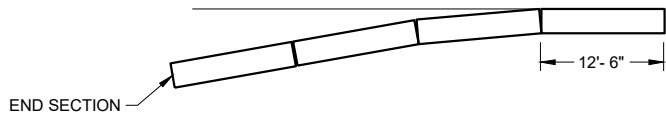
SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



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

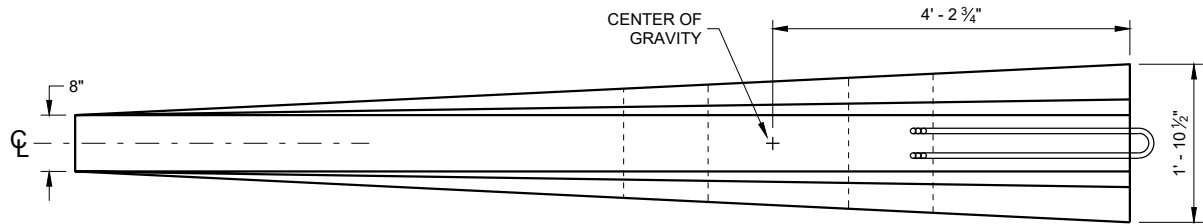
GENERAL NOTES

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

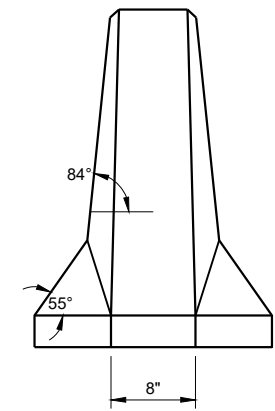


FLARE AT BARRIER END

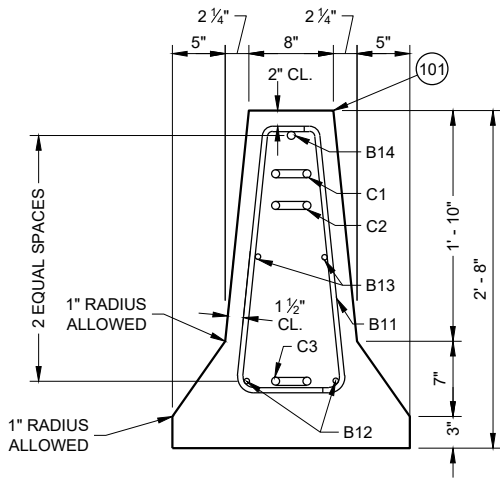
POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1



PLAN VIEW

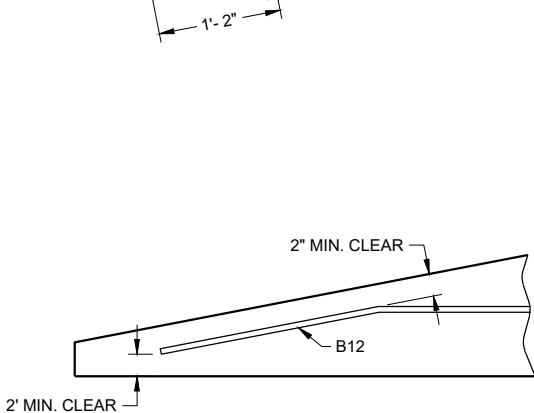
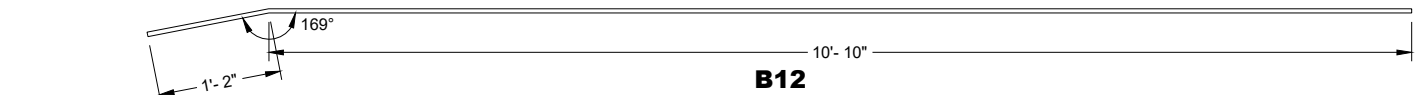


FRONT ELEVATION

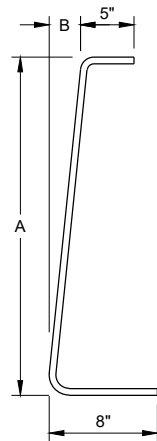


END SECTION

DETAILS OF BARRIER TAPER SECTION



BENT BAR DETAIL



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

B BARS
2 OF EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B07-16m

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	PRECAST TEMPORARY BARRIER - CONCRETE	MIN. = f'c 5000 PSI	
B1	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B2	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-2"
B3	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B4	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 6'-0"
B5	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#6 REBAR, LENGTH 2'-11"
B6	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 1'-11"
B7	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-2"
B8	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-6"
B9	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-9"
B10	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-2"
B11	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-4"
B12	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-0"
B13	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 7'-9"
B14	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 11'-9"
C1	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C2	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C3	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
D1	CONNECTION PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ¼" DIA.
D2	CONNECTION PIN - TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G1	BOLT THROUGH ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A OR SAE J429 GRADE 2 UNC	1 ⅝" DIA.
G2	BOLT THROUGH ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G3	BOLT THROUGH ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
H1	ADHESIVE ANCHOR - ADHESIVE	ICC-ES-AC308 5 ¼" EMBEDMENT WITH A MIN. BOND STRENGTH OF 1,650 PSI. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
H2	ADHESIVE ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A / SAE J429 GRADE 2 UNC	1 ⅝" DIA.
H3	ADHESIVE ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
H4	ADHESIVE ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
J1	ASPHALT ANCHOR PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ½" DIA.
J2	ASPHALT ANCHOR PIN - STOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
K1	THRIE BEAM RAIL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE
L1	THRIE BEAM RAIL - TERMINAL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE

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

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SDD 14B07-16m

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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BILL OF MATERIALS - CONCRETE BARRIER PRECAST

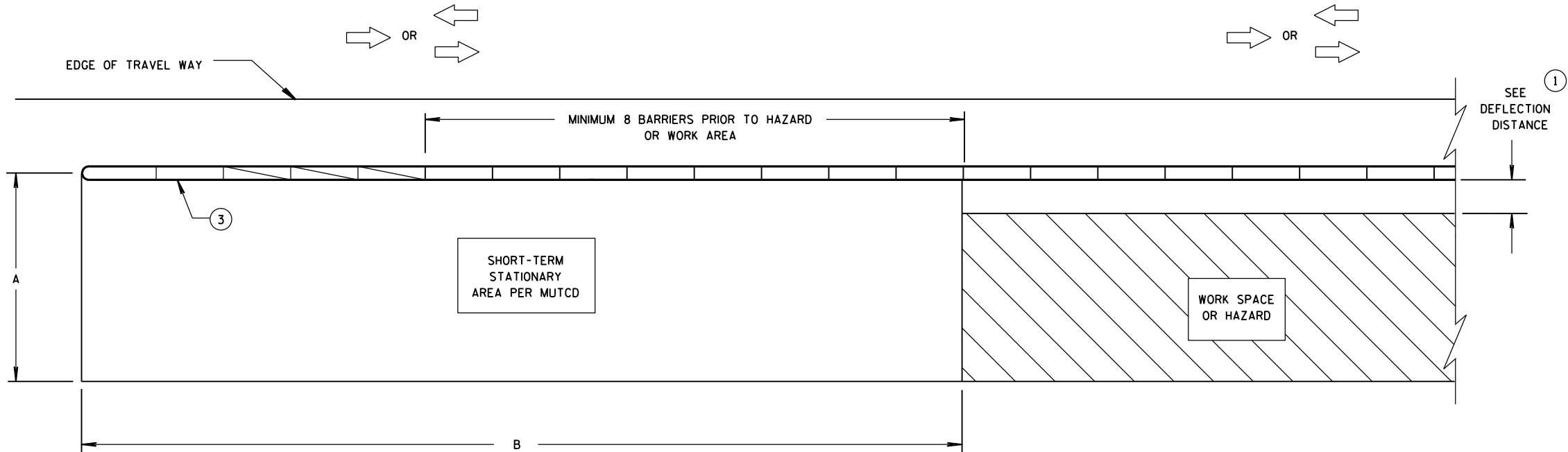
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
T1	CAP 56-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T2	CAP 56-INCH END PLATE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

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

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER 241
FHWA



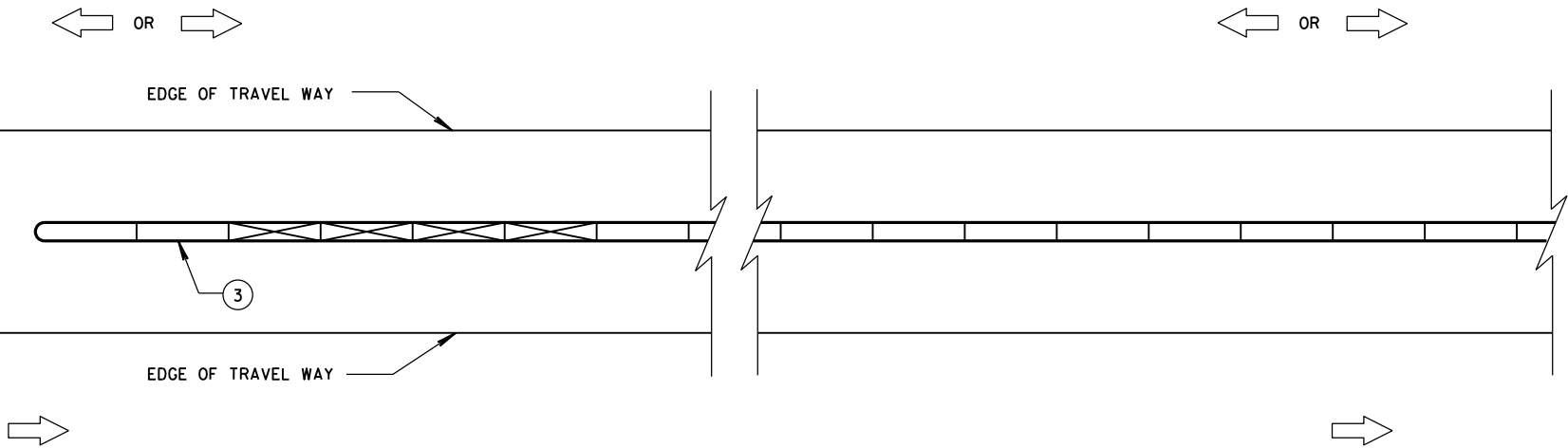
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE ②

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

DIMENSION B TABLE ②

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



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

LEGEND

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

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

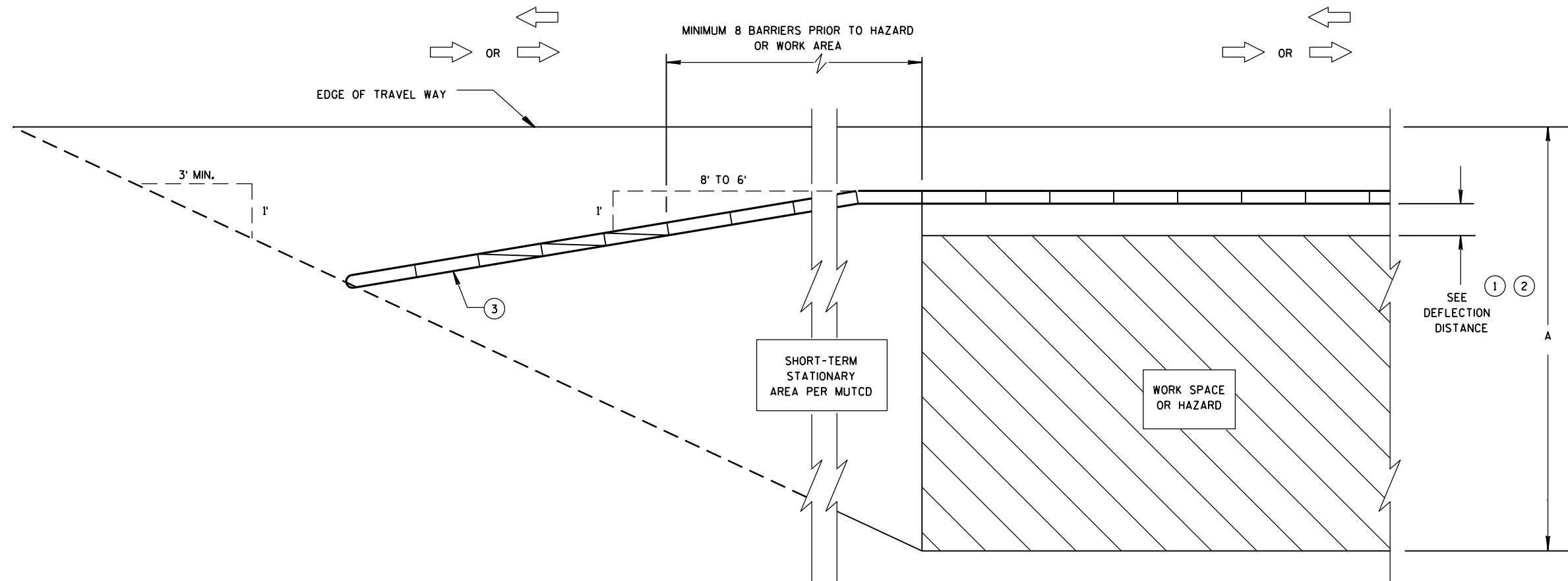
FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

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

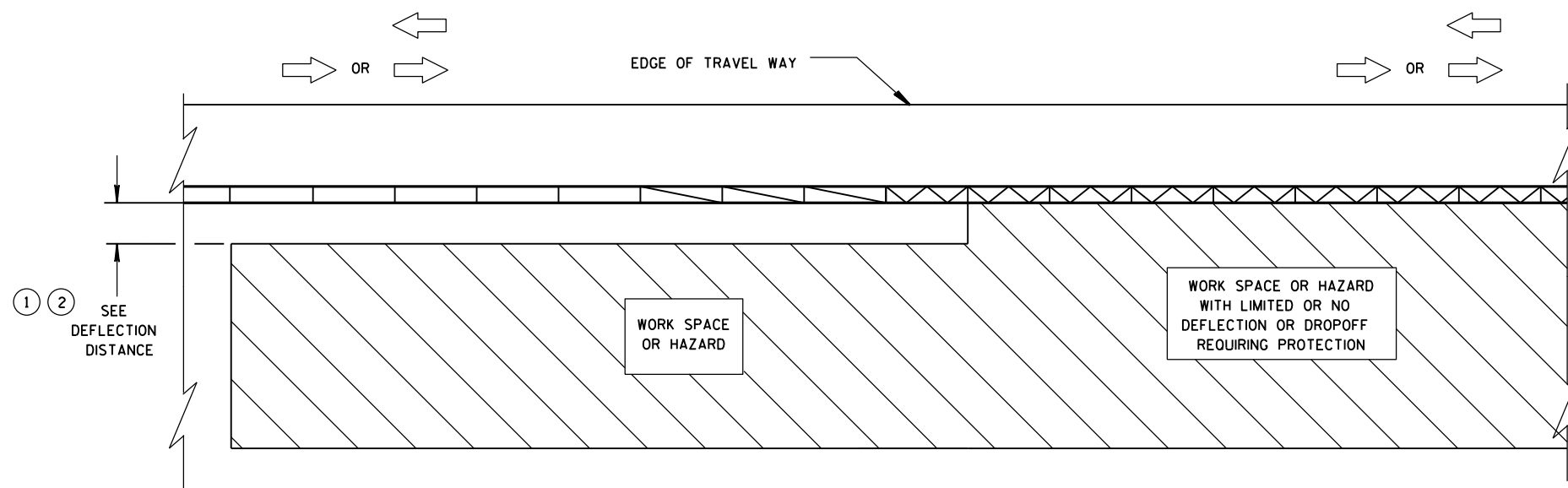
- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

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**



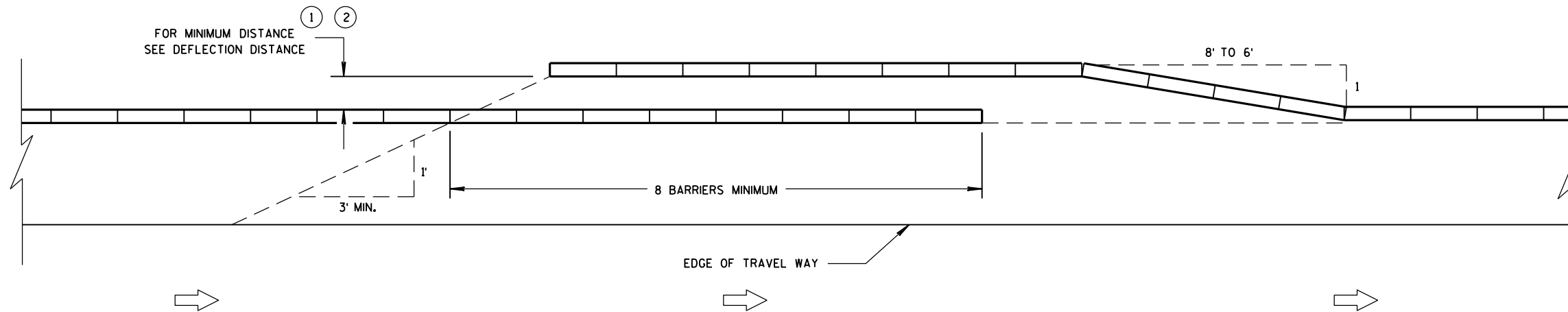
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

LEGEND

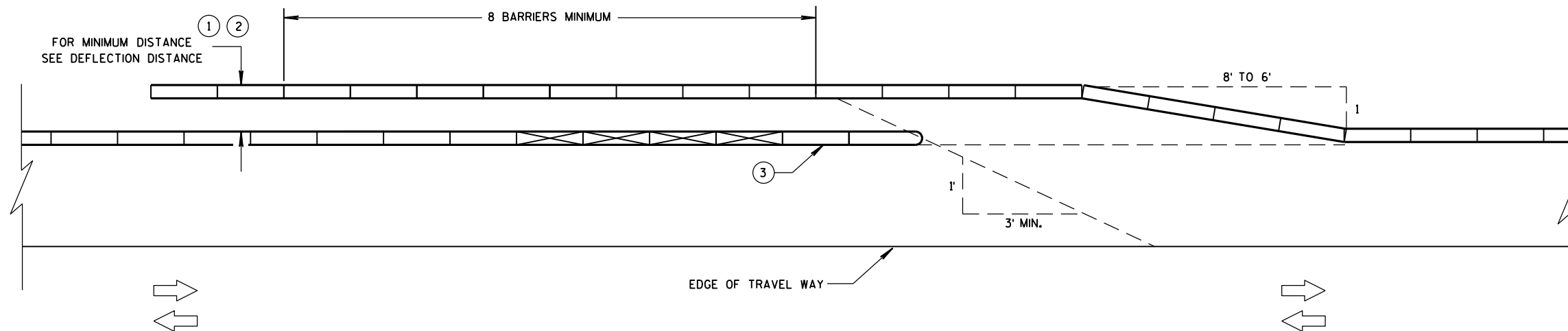
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

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

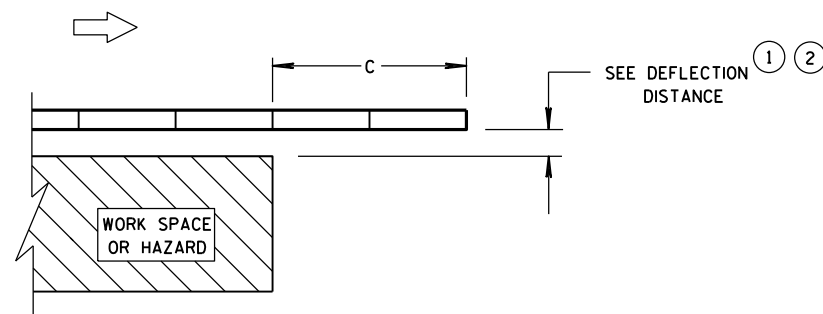
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



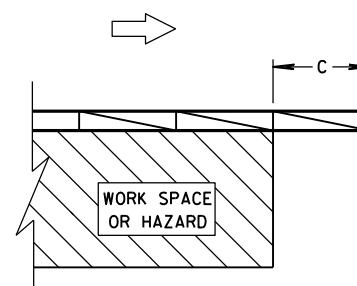
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



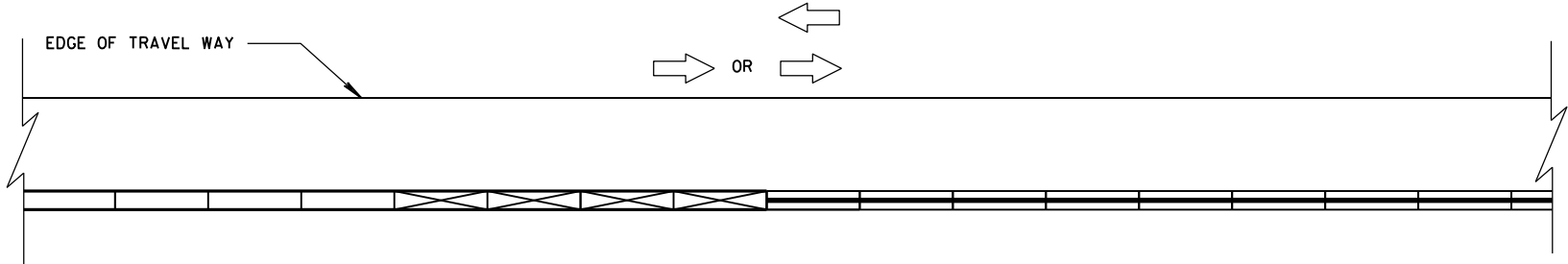
**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

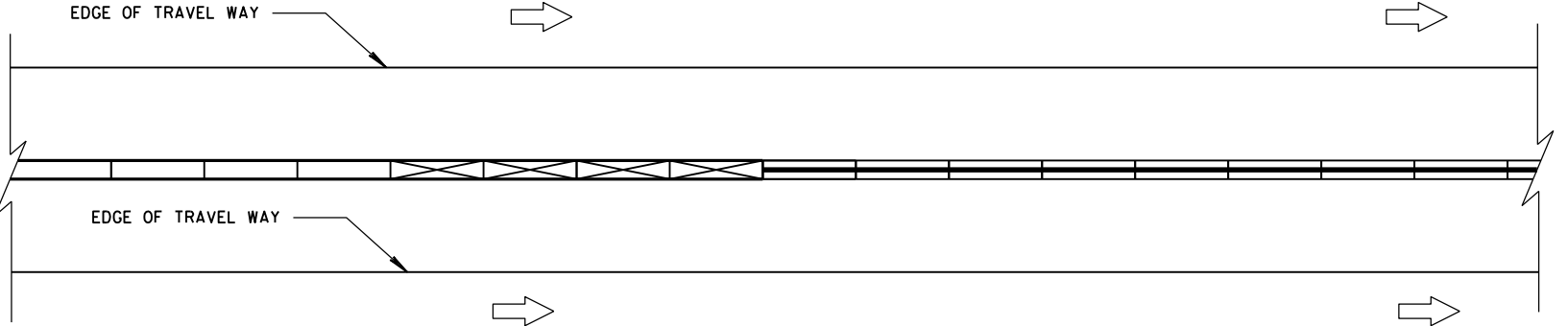
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



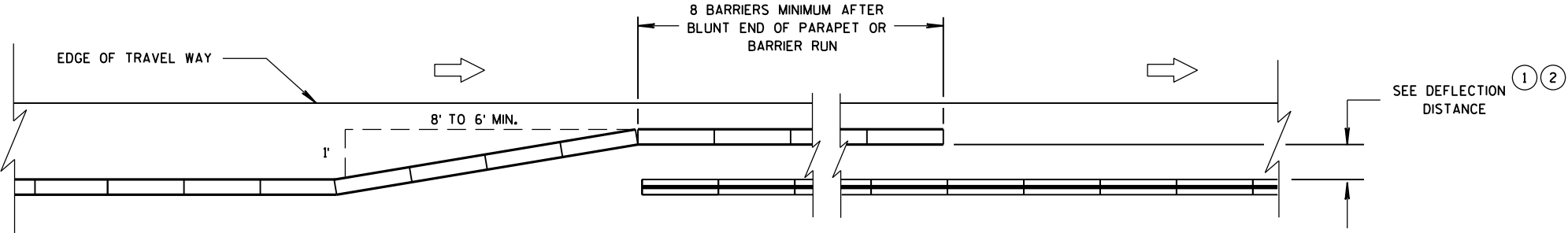
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



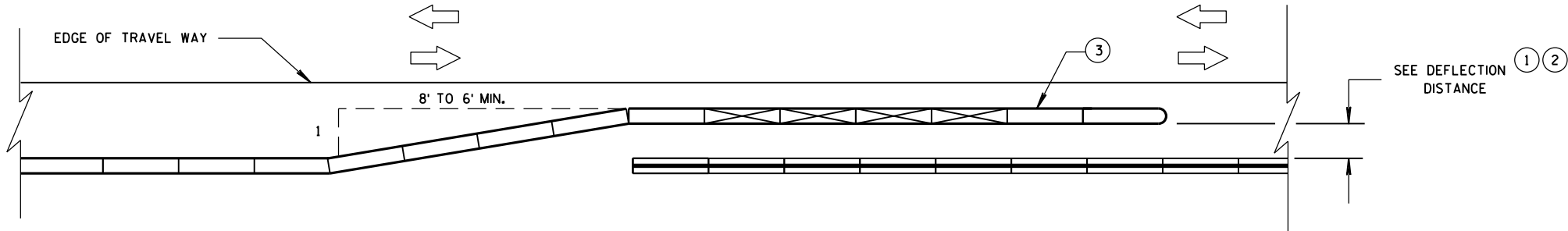
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

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

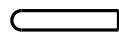
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

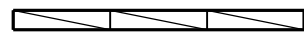
DIRECTION OF TRAVEL



CRASH CUSHION OR
SAND BARREL ARRAY



SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS



SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS



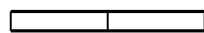
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER



PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET



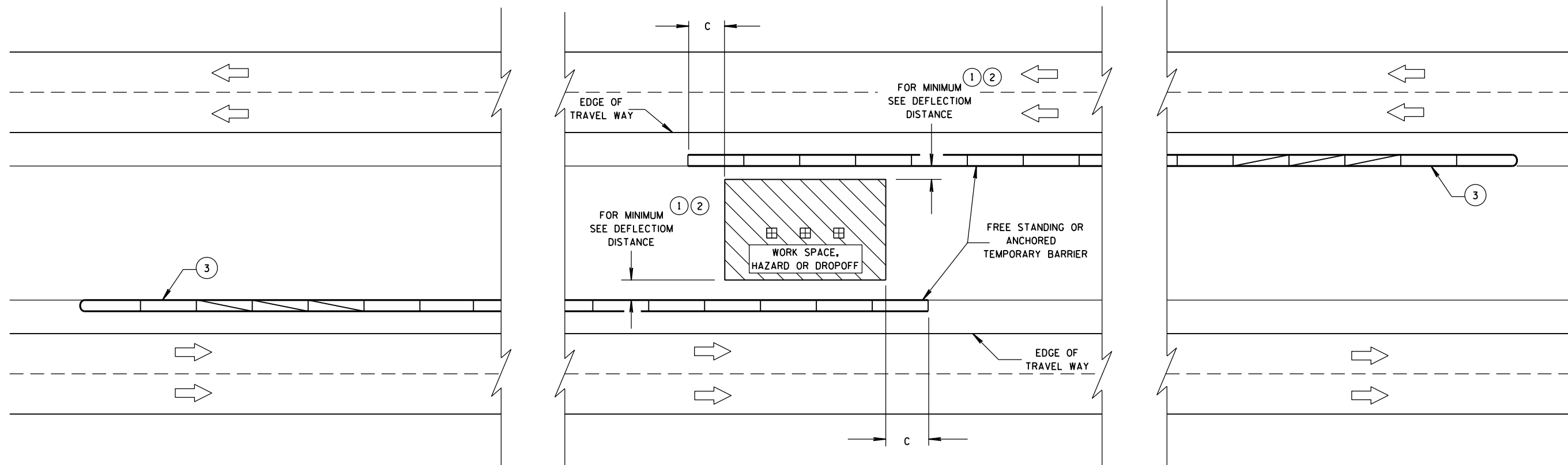
FREE STANDING TEMPORARY
BARRIER



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 8-2e

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 246 ENT
FHWA

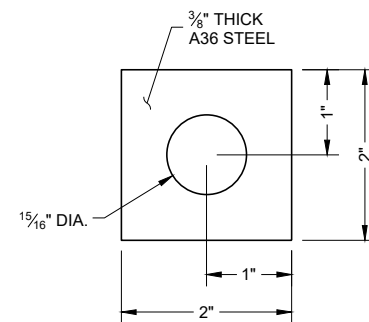
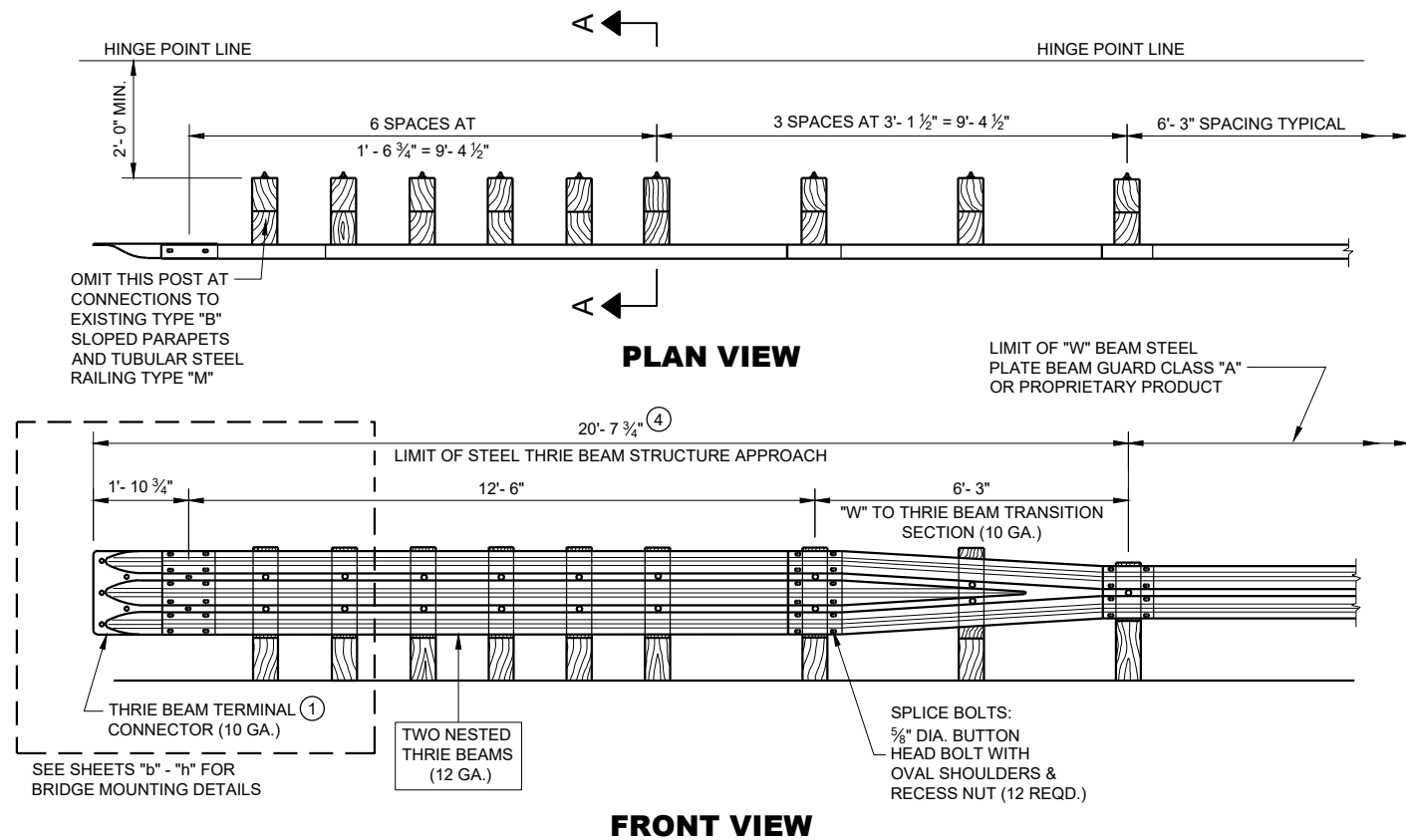


PLATE WASHER DETAIL

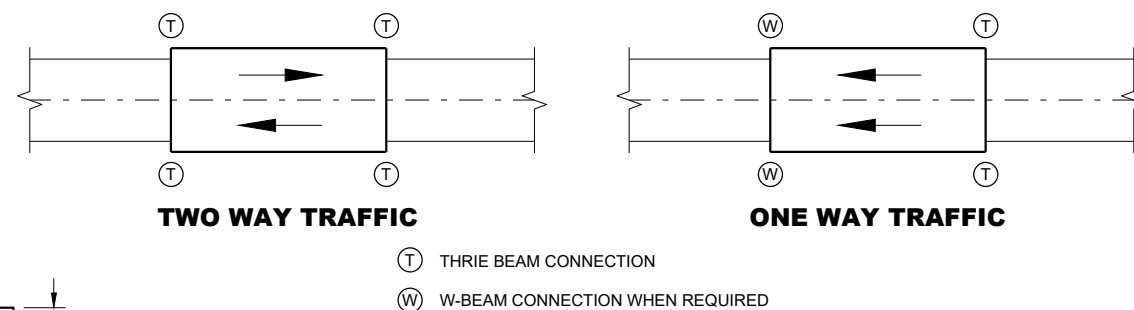
GENERAL NOTES

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".

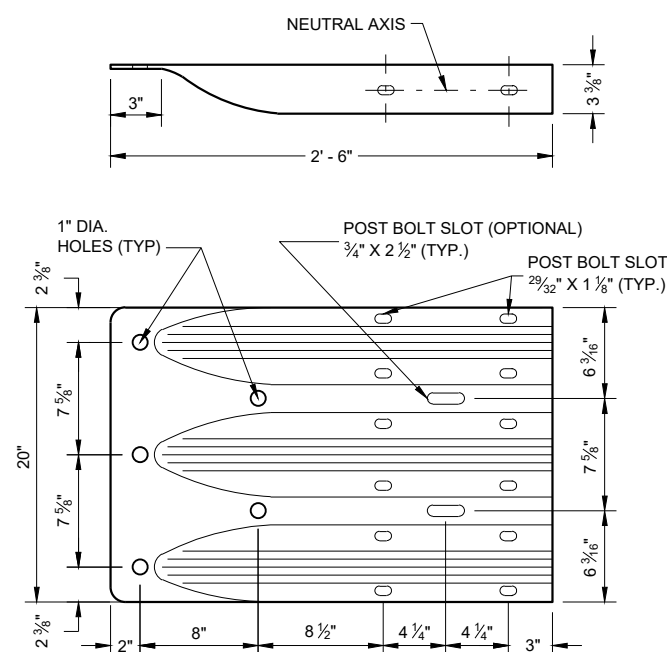
DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

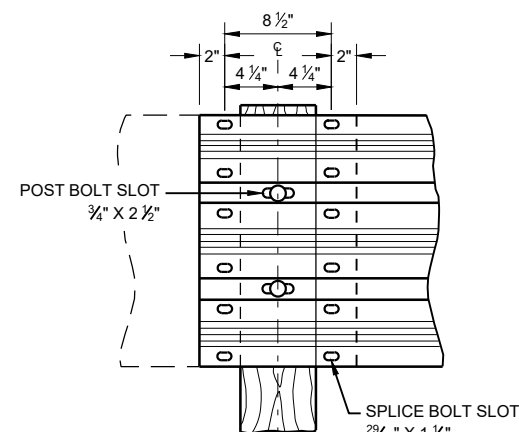
- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0".
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



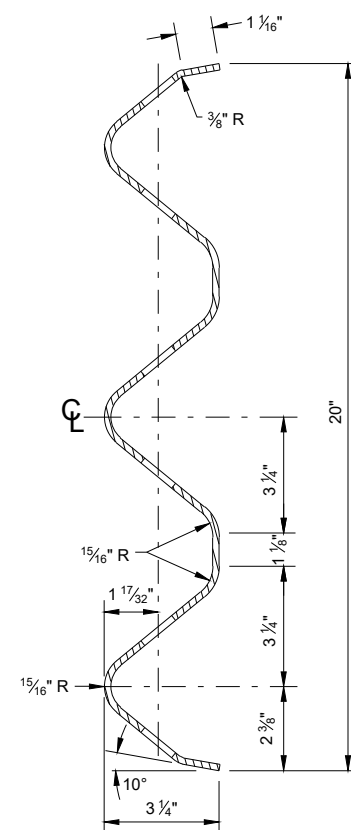
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



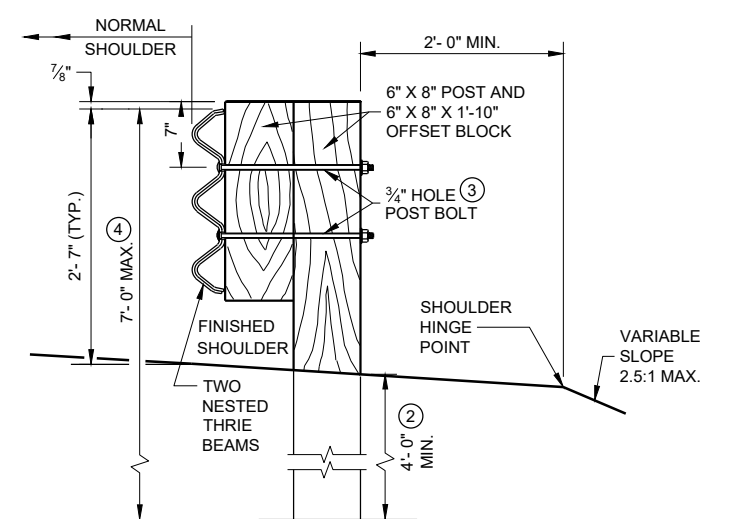
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU BEAM RAIL ELEMENT



SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH

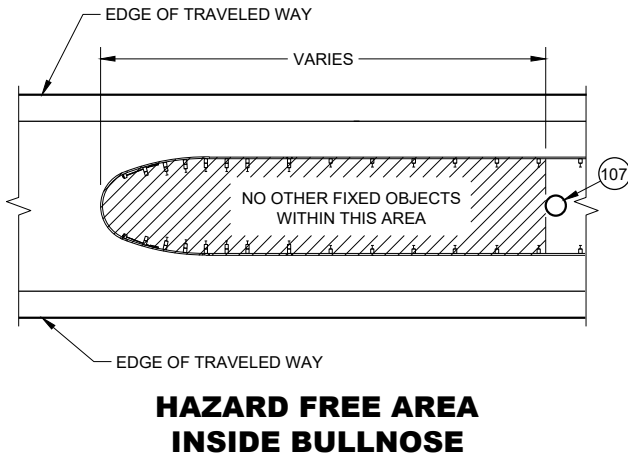
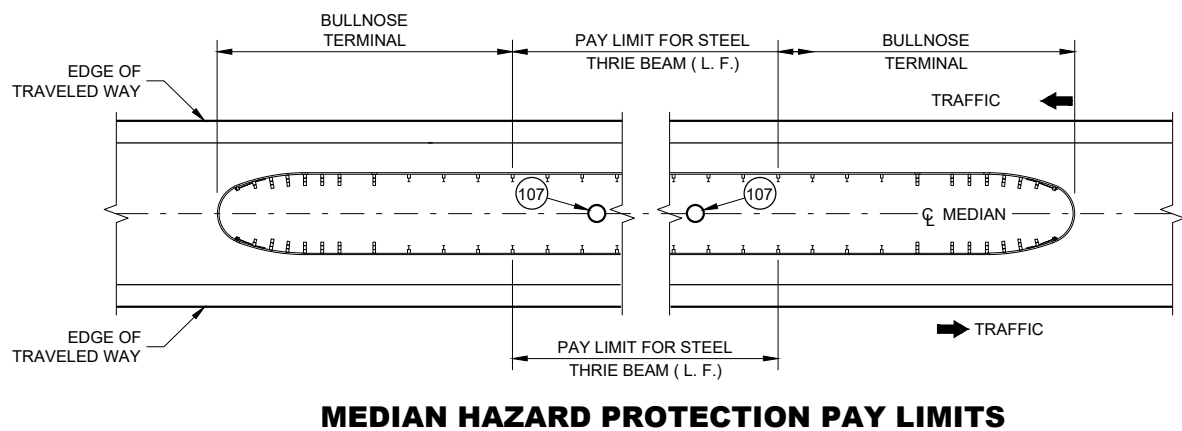
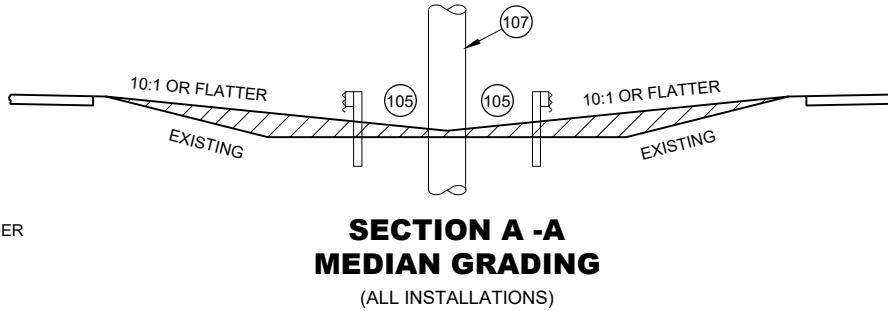
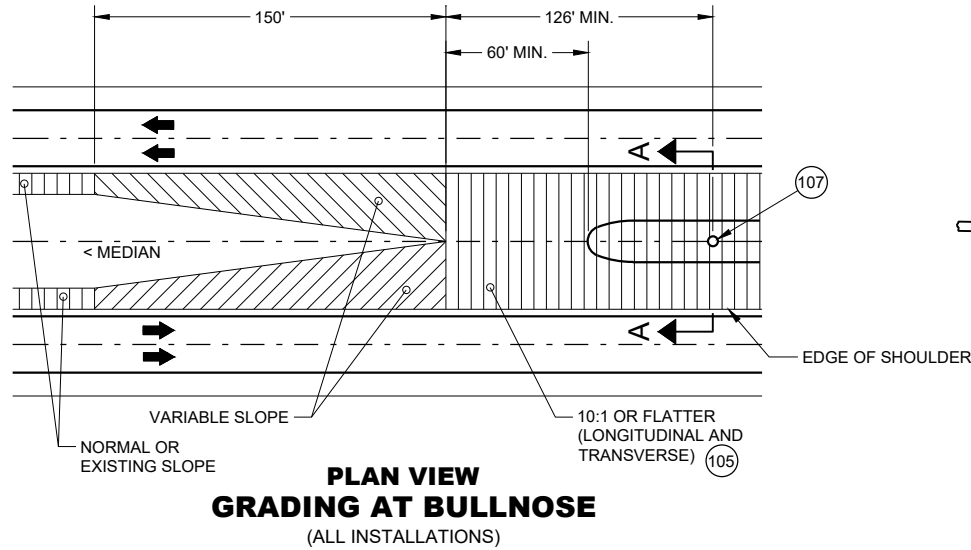
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

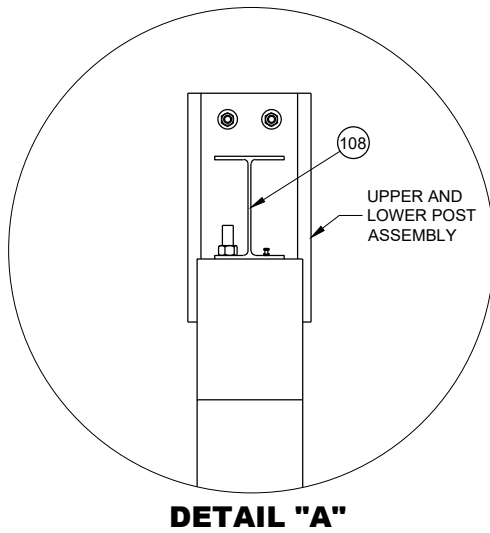
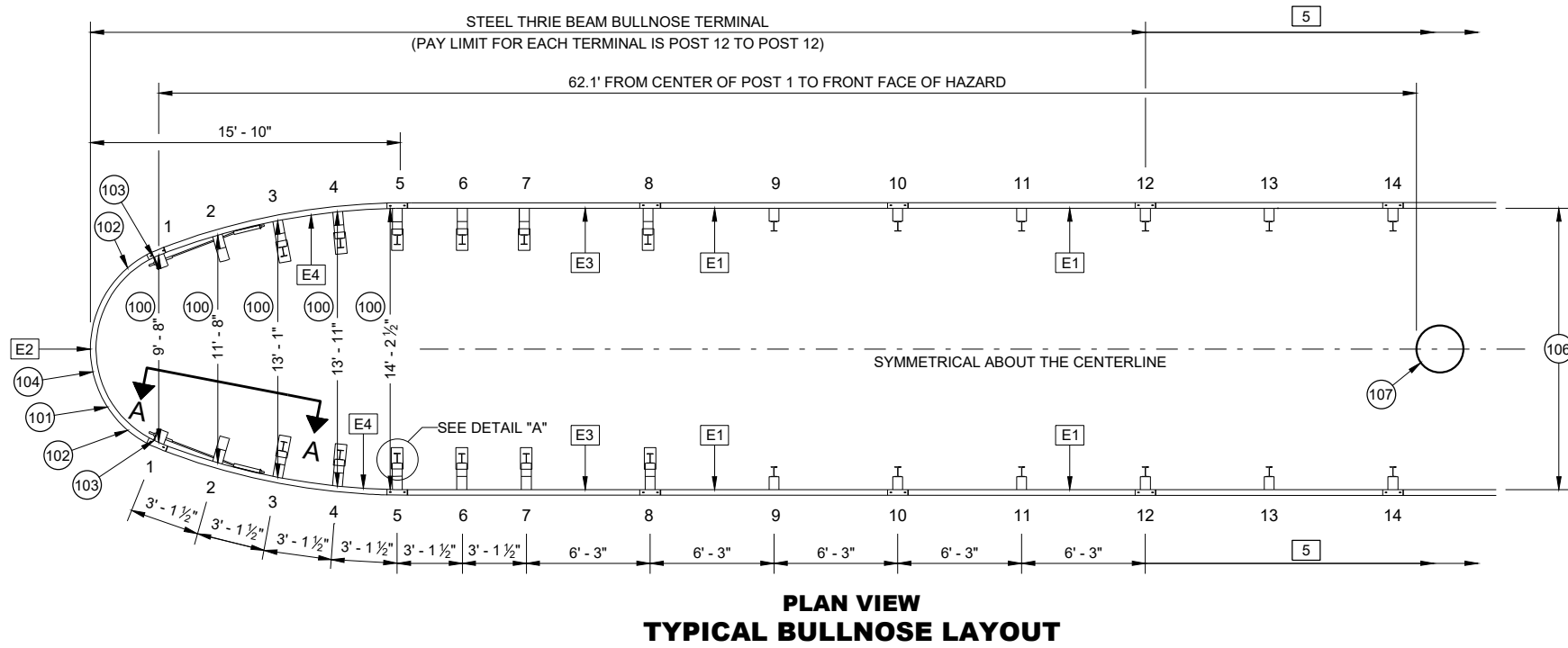
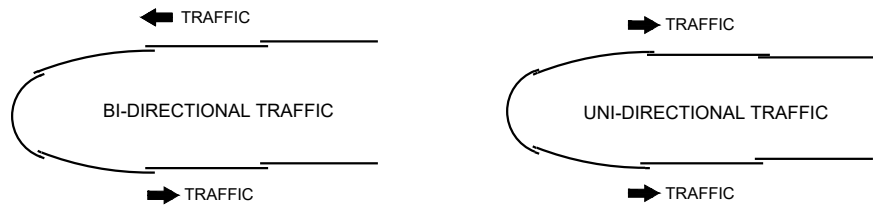
247

FHWA



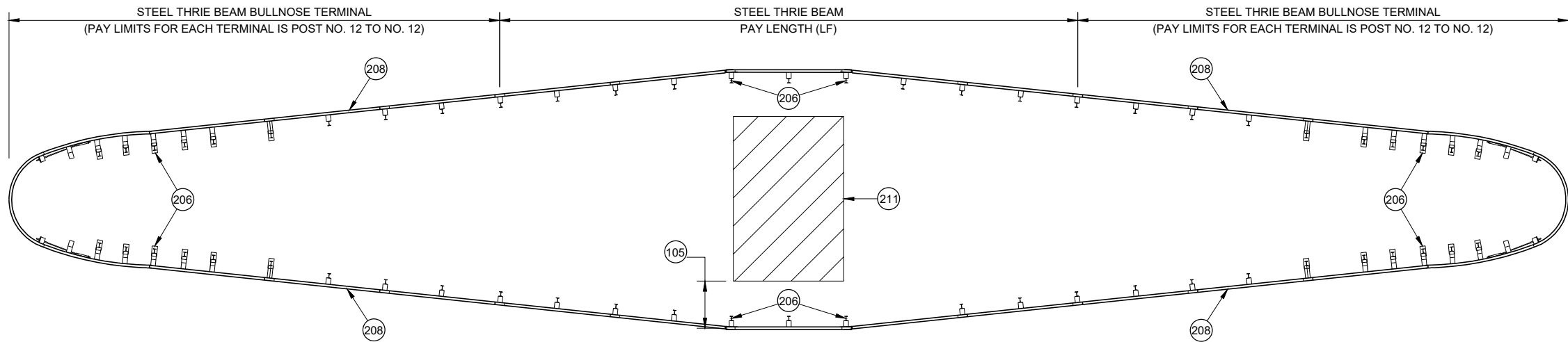
GENERAL NOTES

- THRIE BEAM RAILS MAY NEED TO BE FIELD BENT TO FIT THE LOCATION.
- SEE STANDARD DETAIL DRAWINGS 14B26 SHEETS a-h.
- IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2". MINIMUM DIAMETER OF THE ROCK REMOVAL IS 12" DIAMETER
- E1 UNBENT STANDARD THRIE BEAM RAIL B1 (POST 8 TO POST 10 AND POST 10 TO POST 12)
 - E2 SLOTTED THRIE BEAM RAIL E1 (POST 1 TO POST 1)
 - E3 SLOTTED THRIE BEAM RAIL B3 (POST 5 TO POST 8)
 - E4 SLOTTED THRIE BEAM RAIL E4 (POST 1 TO POST 5)
 - 5 BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.
 - 100 DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST OR BLOCK.
 - 101 U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.
 - 102 NOSE CABLE WITH SWAGGED END BUTTONS.
 - 103 NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).
 - 104 THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.
 - 105 MINIMUM WORKING WIDTH 4' - 2".
 - 106 MAX. WIDTH OF SYSTEM IS 14' - 2 1/2" MEASURED FROM THE BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.
 - 107 FIXED OBJECT OR OTHER HAZARD.
 - 108 PLAN IS TO PROVIDE STATION OFFSET TO CENTER OF POST 5 IN PLANS.

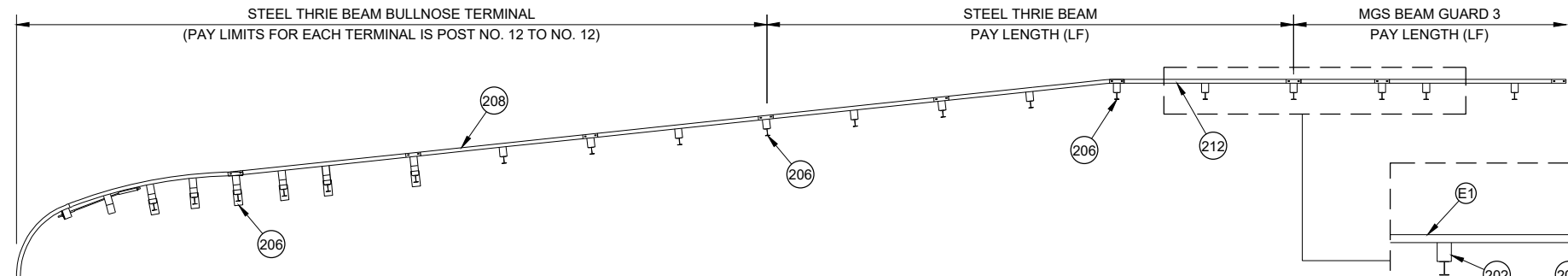


STEEL THRIE BEAM
BULLNOSE TERMINAL

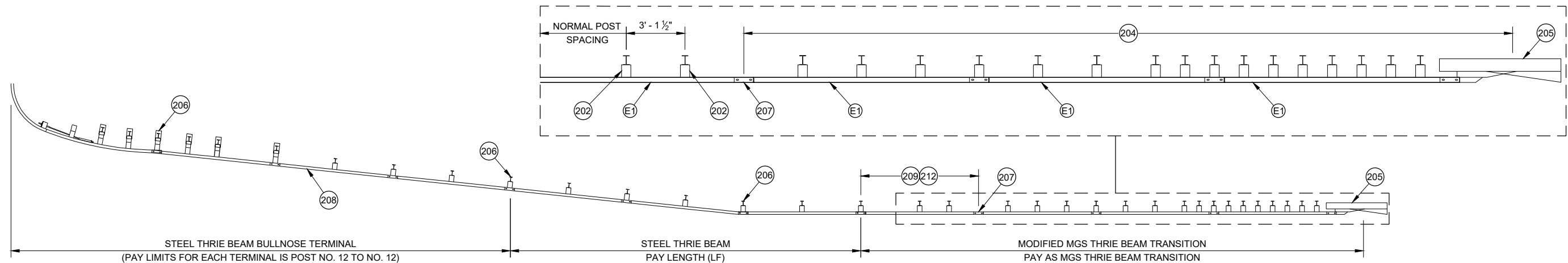
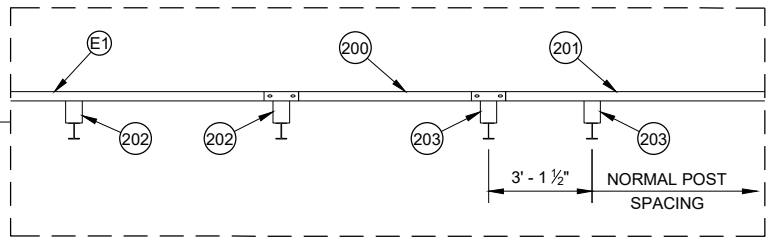
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 248



VARIABLE WIDTH BULLNOSE



**1/2 PLAN VIEW
VARIABLE WIDTH BULLNOSE
WITH CONNECTION TO MGS BEAM GUARD**



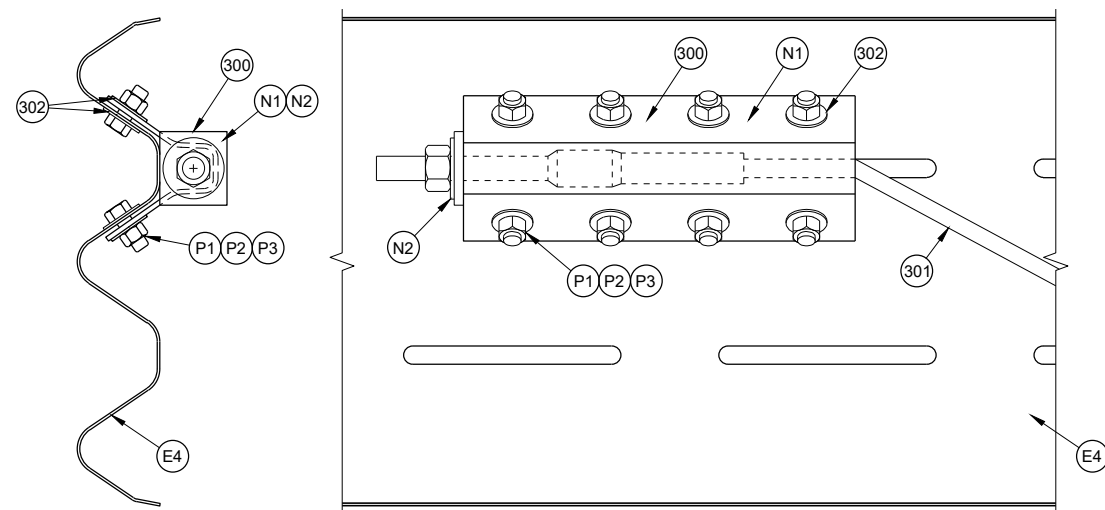
**1/2 PLAN VIEW
VARIABLE WIDTH BULLNOSE
WITH CONNECTION TO RIGID BARRIER**

GENERAL NOTES

- 200 6' - 3" ASYMMETRICAL 10-GAUGE W-BEAM TO THRIE BEAM GUARD TRANSITION. SEE SDD 14B45 FOR MORE INFORMATION.
- 201 W-BEAM RAIL. SEE SDD 14B42 FOR MORE INFORMATION.
- 202 SEE POST NO. 9 AND ALL STEEL THRIE BEAM POST BEYOND DETAIL.
- 203 SEE SDD 14B42 FOR INSTALLATION INFORMATION.
- 204 SEE SDD 14B45 FOR INSTALLATION DETAILS. REPLACE ASYMMETRICAL W-BEAM TO THRIE BEAM TRANSITION AND W-BEAM RAIL WITH E1. PAY FOR MODIFIED THRIE BEAM TRANSITION.
- 205 CONCRETE BARRIER OR BRIDGE RAIL.
- 206 SEE PLAN FOR STATION AND OFFSET TO CENTER OF POST.
- 207 SEE PLAN FOR STATION AND OFFSET TO CENTER OF SPLICE.
- 208 SEE PLAN FOR FLARE RATE.
- 209 A MINIMUM OF 25 FT OF THRIE BEAM TANGENT BEFORE TRANSITIONING TO BEAM GUARD OR THRIE BEAM TRANSITION.
- 210 NOT ALL BULLNOSE HARDWARE SHOWN. SEE OTHER SHEETS IN 14B26.
- 211 WIDER HAZARD TO BE SHIELDED.
- 212 TRANSITION RAIL HEIGHT TO 31" OVER THE LENGTH OF A 12' - 6" BEAM SECTION.

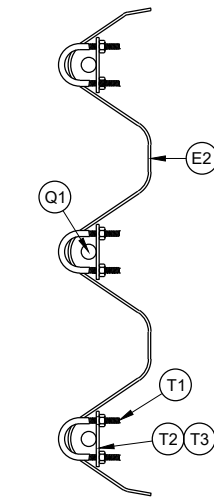
**STEEL THRIE BEAM
BULLNOSE TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

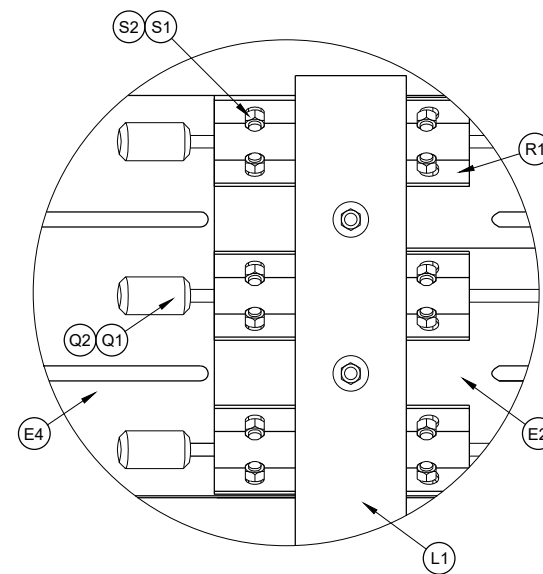


**PROFILE VIEW
CABLE ANCHOR
ASSEMBLY CONNECTION**

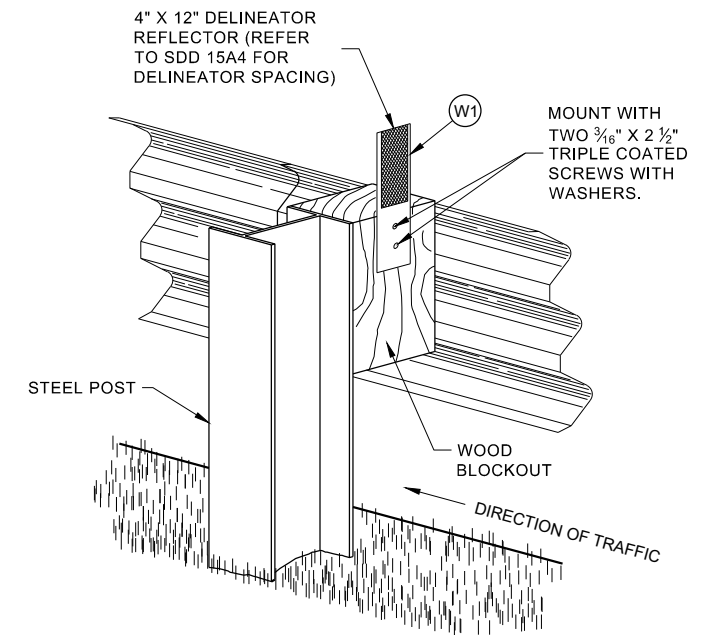
CABLE ANCHOR ASSEMBLY



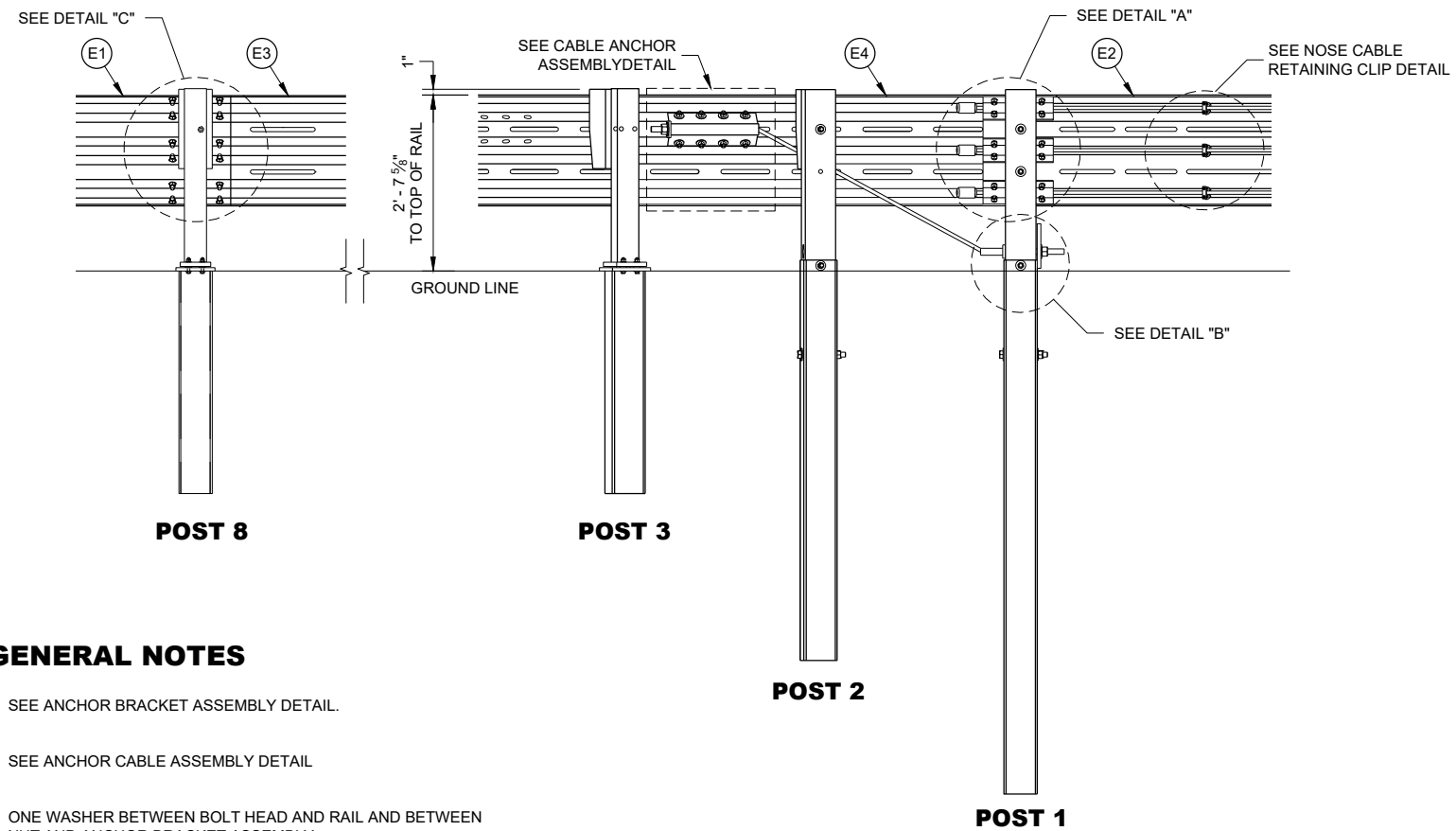
**NOSE CABLE
RETAINING CLIP**



DETAIL "A"



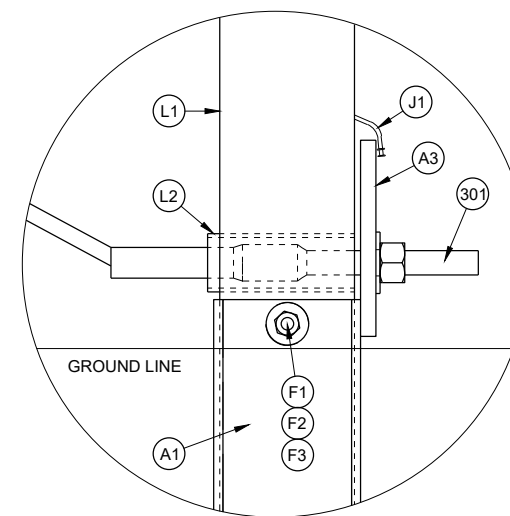
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**



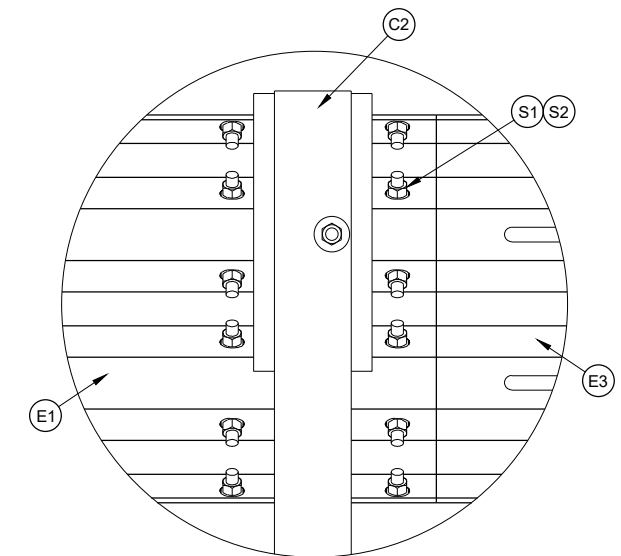
CROSS SECTION A - A

GENERAL NOTES

- (300) SEE ANCHOR BRACKET ASSEMBLY DETAIL.
- (301) SEE ANCHOR CABLE ASSEMBLY DETAIL.
- (302) ONE WASHER BETWEEN BOLT HEAD AND RAIL AND BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.
- (303) ONE WASHER BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.



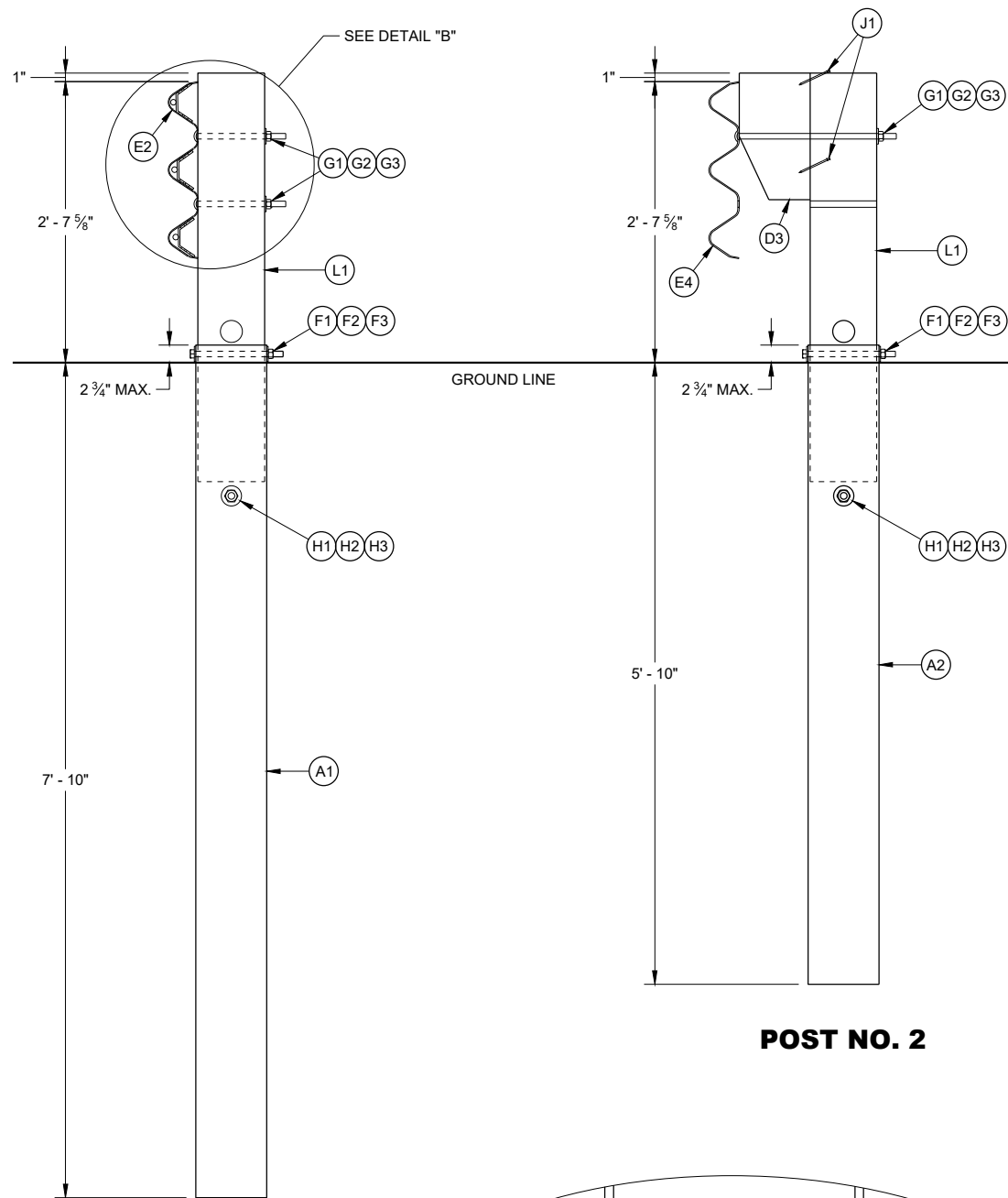
DETAIL "B"



**DETAIL "C"
THRIE BEAM SPLICE**

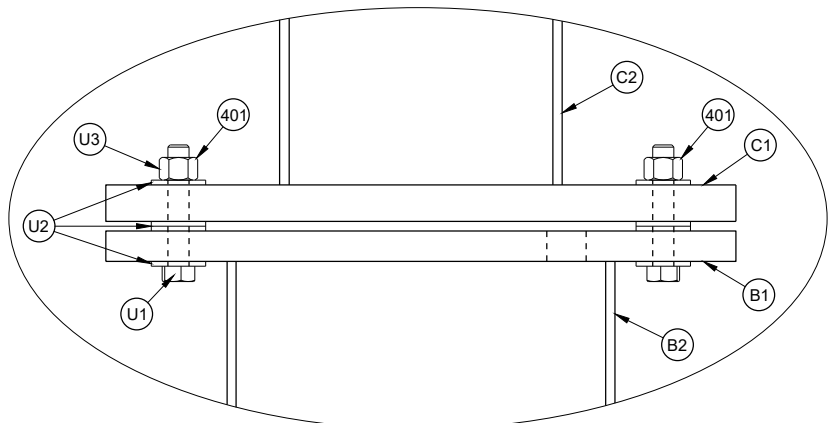
**STEEL THRIE BEAM
BULLNOSE TERMINAL**

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DEPARTMENT OF TRANSPORTATION 250

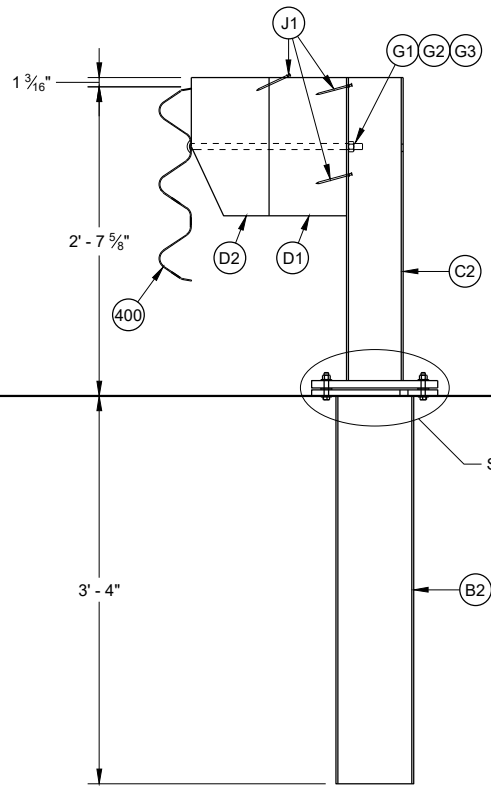


POST NO. 1

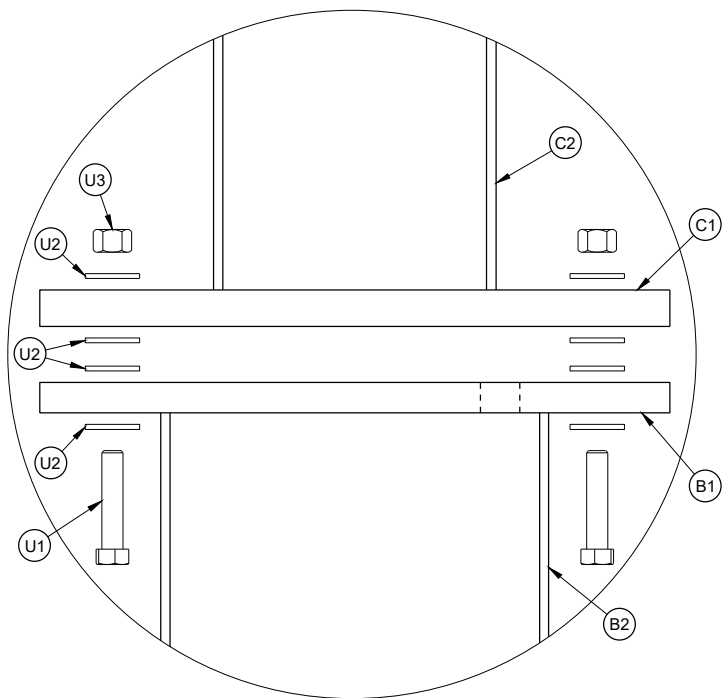
POST NO. 2



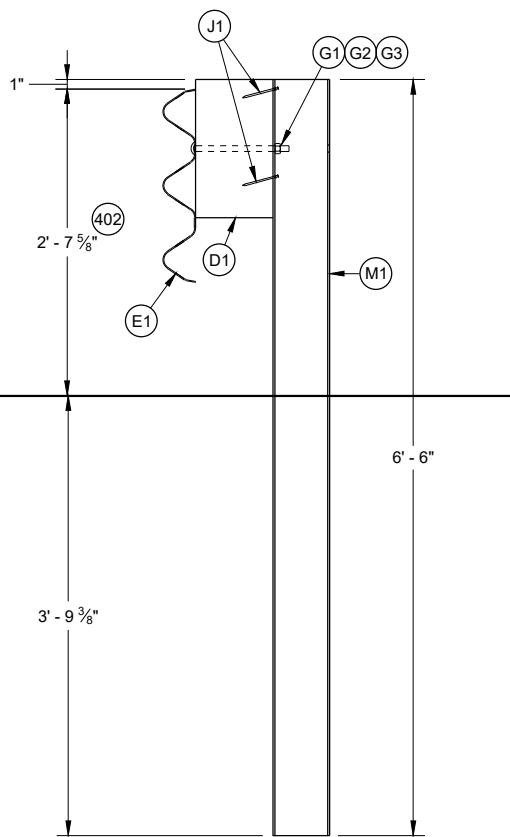
DETAIL "A"



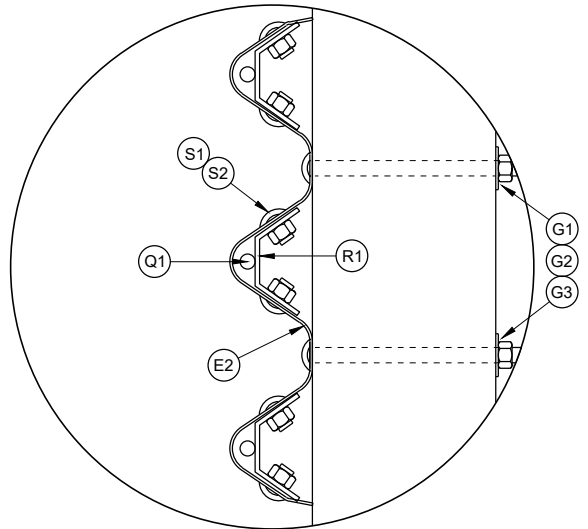
POST NOS. 3-8



EXPLODED VIEW
DETAIL "A"



POST NOS. 9 AND ALL STEEL
THRIE BEAM POSTS BEYOND



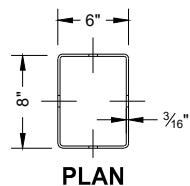
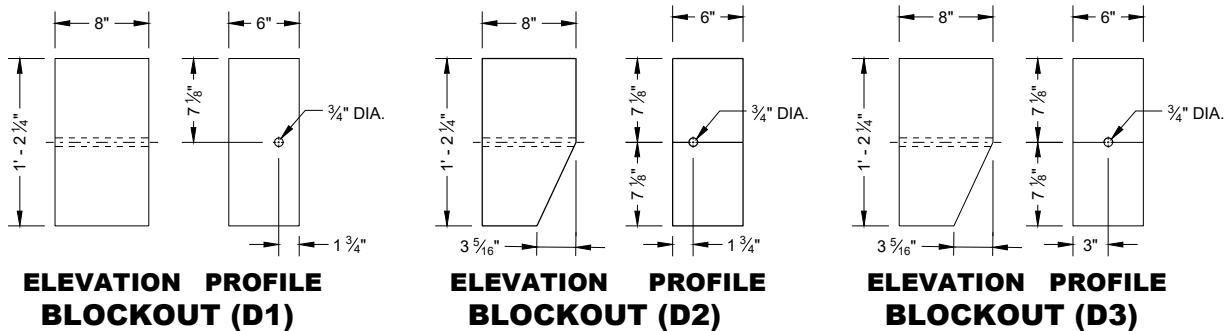
DETAIL "B"

GENERAL NOTES

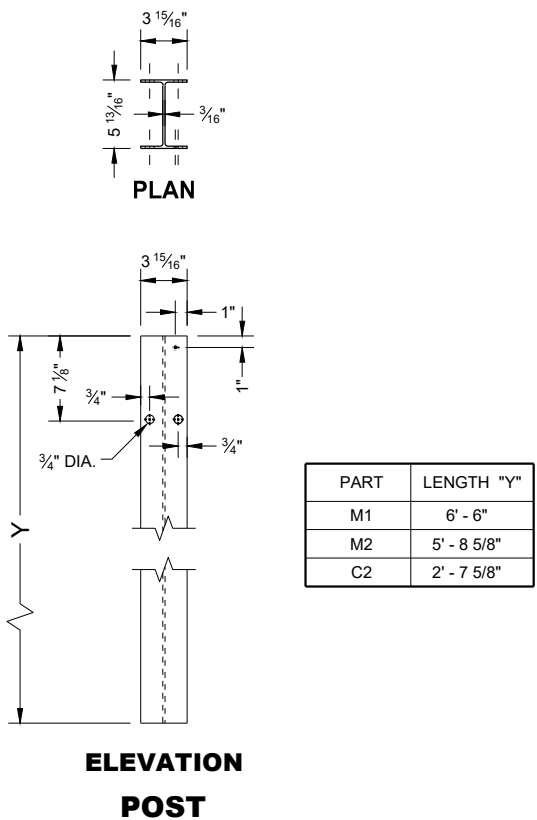
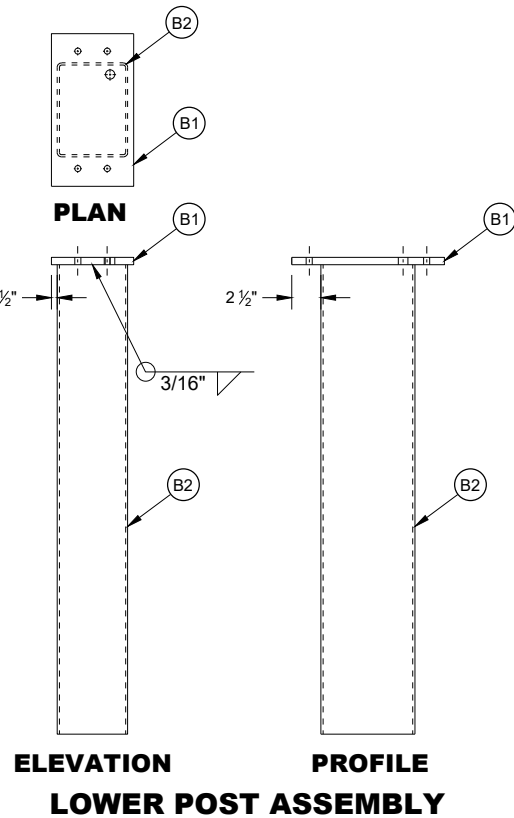
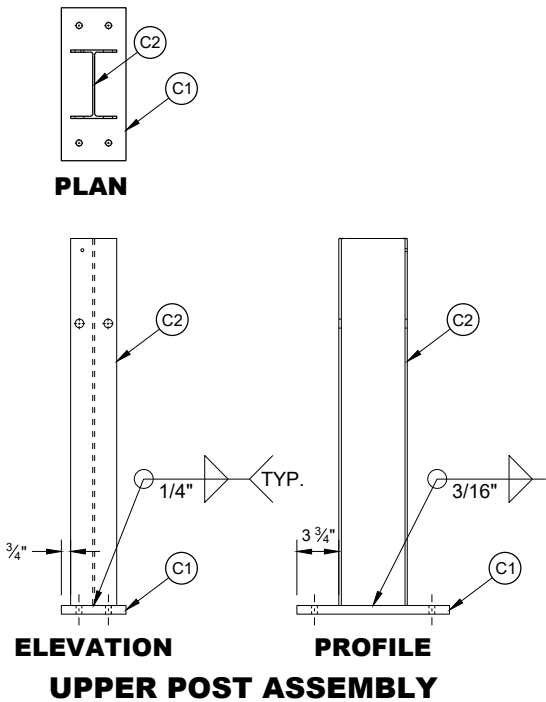
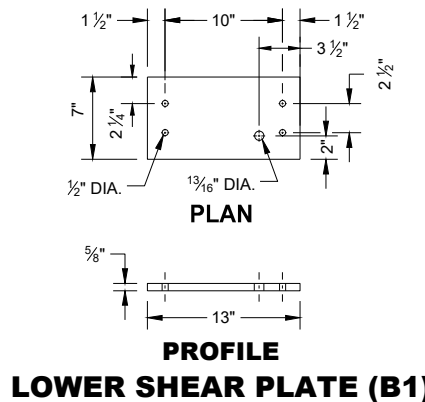
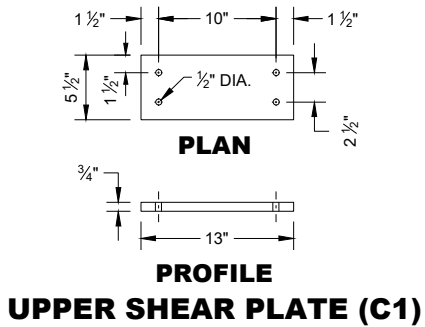
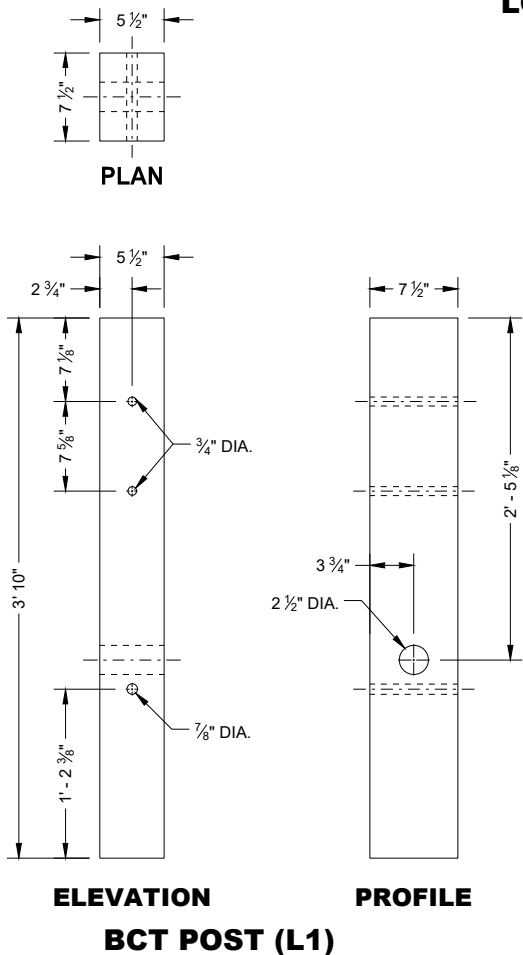
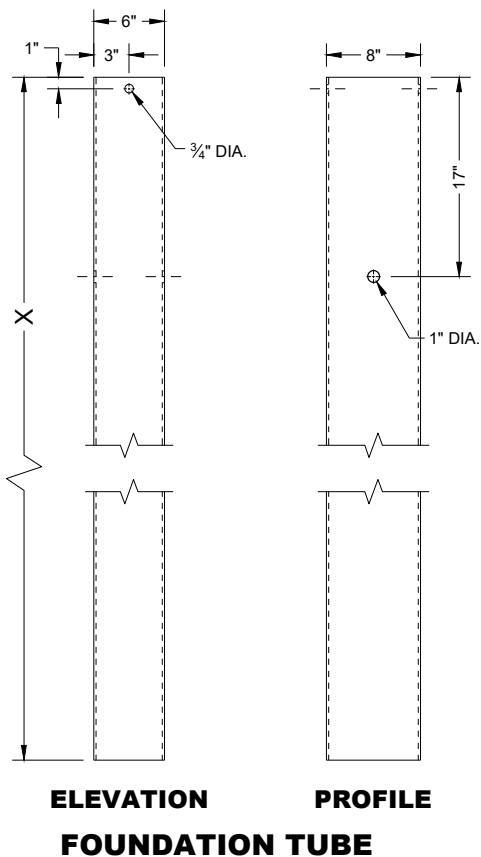
- 400 RAIL CAN BE E3 OR E4 DEPENDING ON POST LOCATION.
- 401 TORQUE BOLD BETWEEN 60-75 FT-LB
- 402 HEIGHT WILL VARY WITHIN HEIGHT TRANSITION TO OTHER HARDWARE. SEE NOTE 213, SHEET "b".

STEEL THRIE BEAM
BULLNOSE TERMINAL

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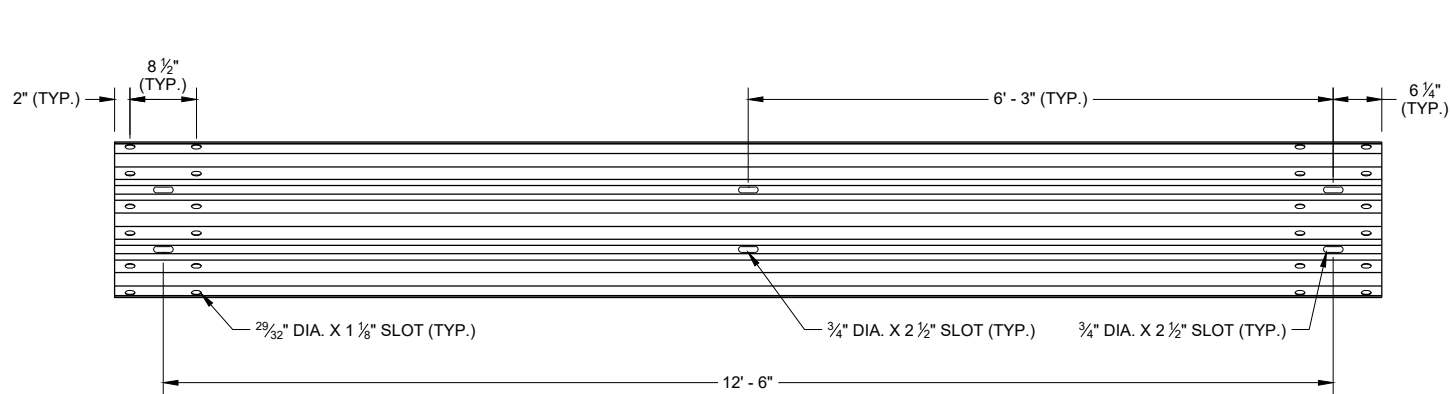
PART	LENGTH "X"
A1	8' - 0"
A2	6' - 0"
B2	3' - 4"



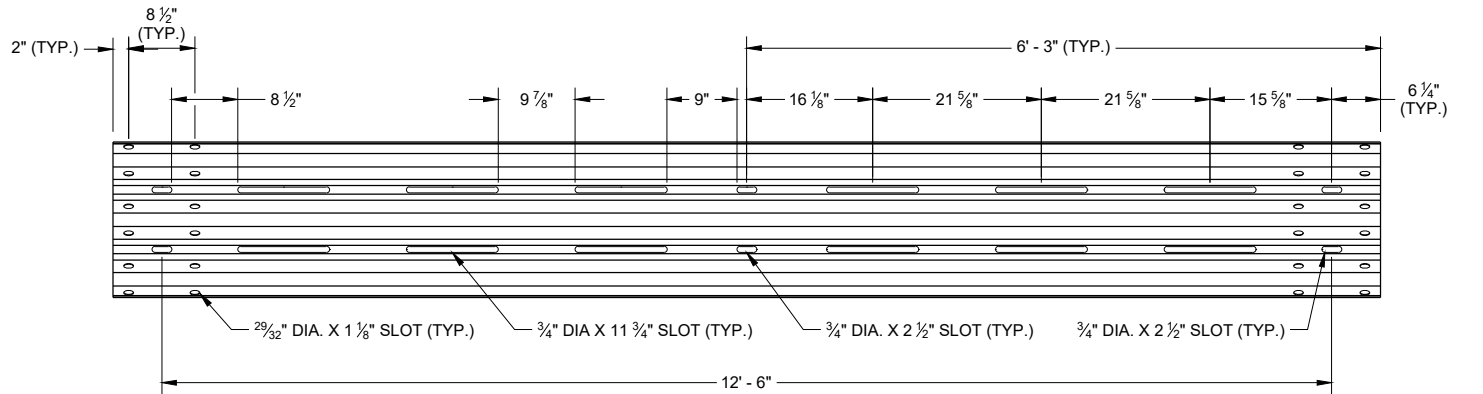
PART	LENGTH "Y"
M1	6' - 6"
M2	5' - 8 5/8"
C2	2' - 7 5/8"

**STEEL THRIE BEAM
BULLNOSE TERMINAL**

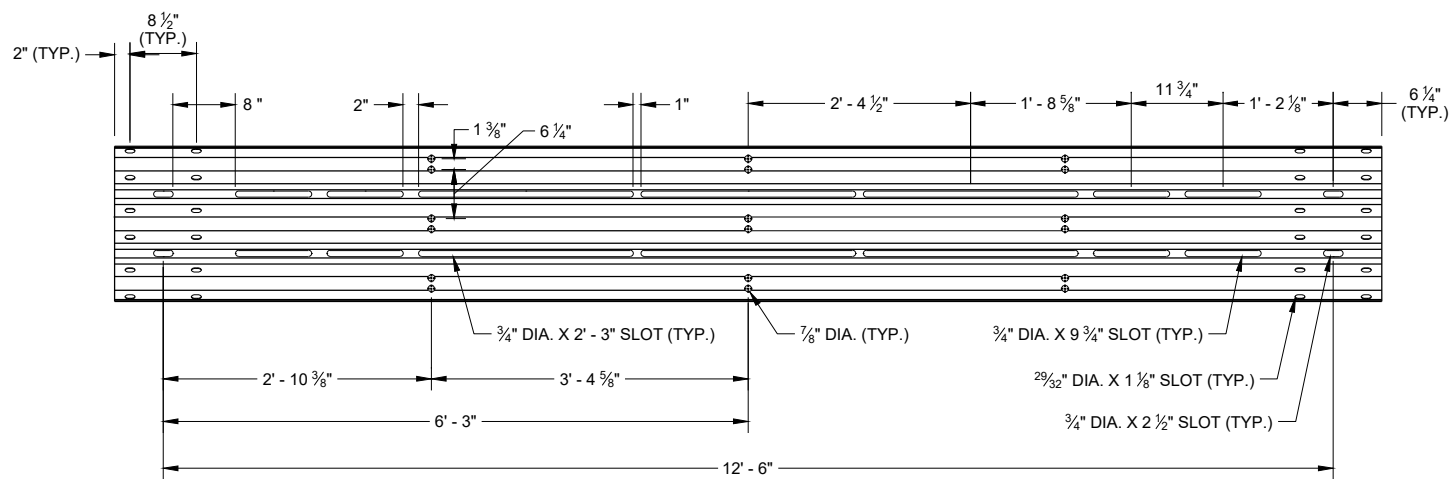
STATE OF WISCONSIN
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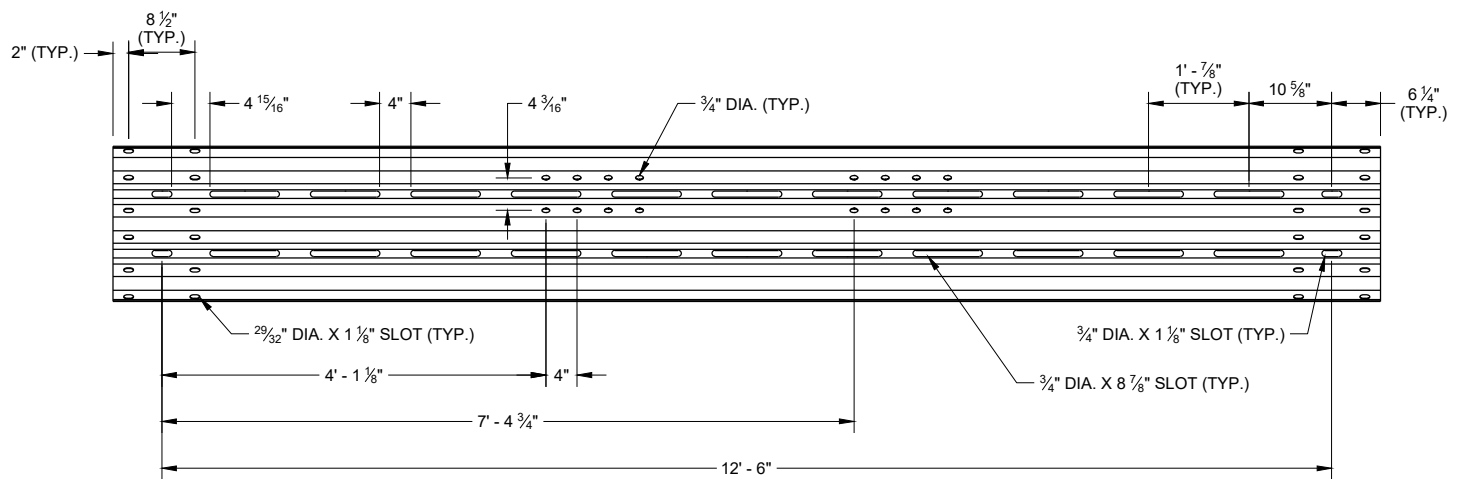
SLOTTED THRIE BEAM RAIL E1



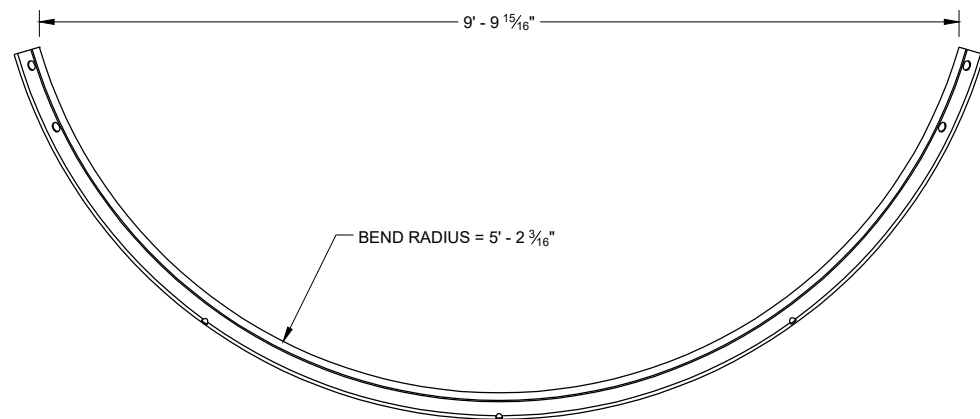
SLOTTED THRIE BEAM RAIL E3



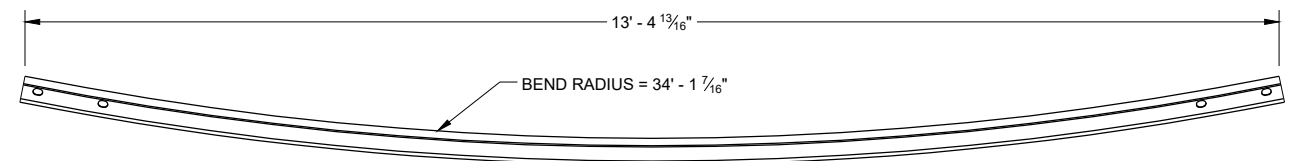
**ELEVATION VIEW NON - RADIUS
SLOTTED THRIE BEAM RAIL E2**



**ELEVATION VIEW NON - RADIUS
SLOTTED THRIE BEAM RAIL E4**



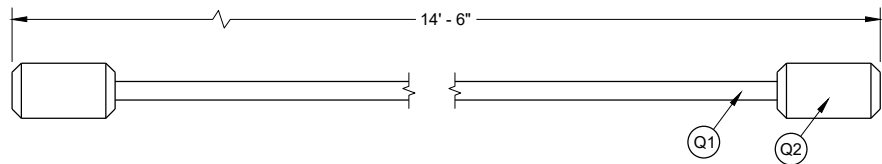
**PLAN VIEW
SLOTTED THRIE BEAM RAIL E2**



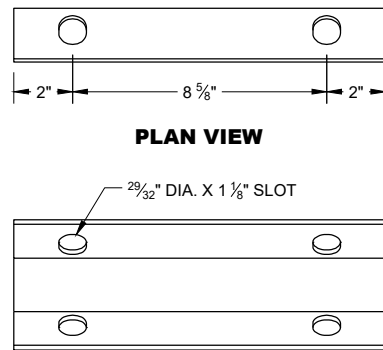
**PLAN VIEW
SLOTTED THRIE BEAM RAIL E4**

**STEEL THRIE BEAM
BULLNOSE TERMINAL**

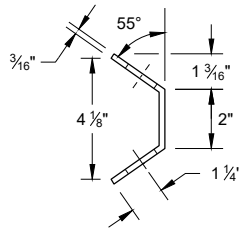
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



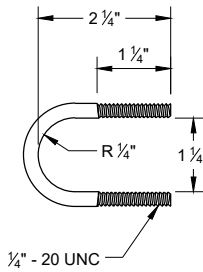
NOSE CABLE AND SWAGE BUTTON



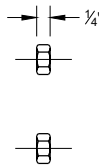
**ELEVATION VIEW
NOSE CABLE ANCHOR (R1)**



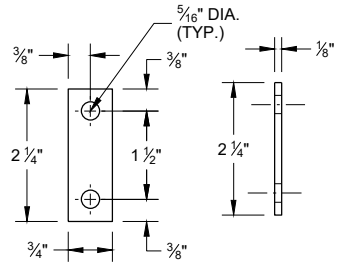
PROFILE VIEW



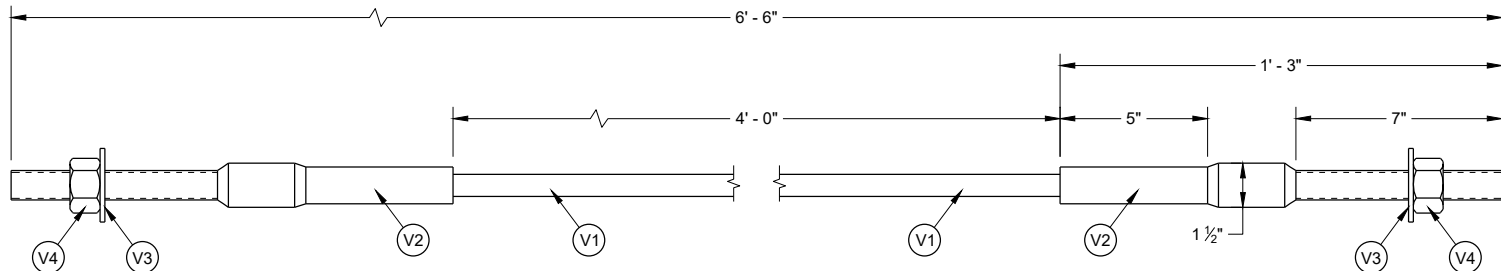
**U - BOLT
(T1)**



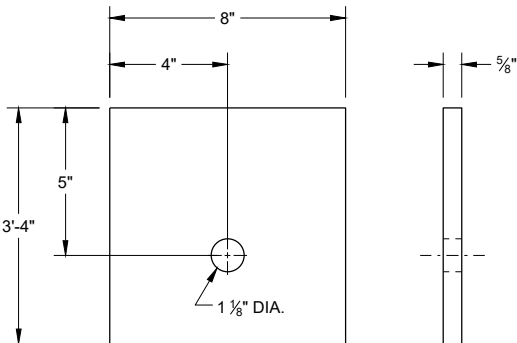
**U - BOLT
NUT (T3)**



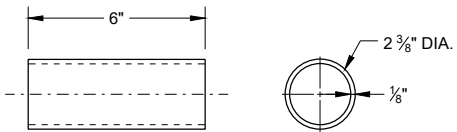
**ELEVATION VIEW PROFILE VIEW
U - BOLT
PLATE WASHER (T2)**



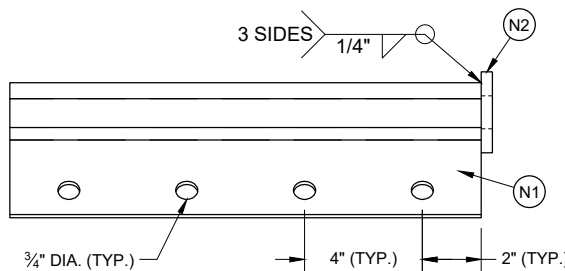
ANCHOR CABLE ASSEMBLY



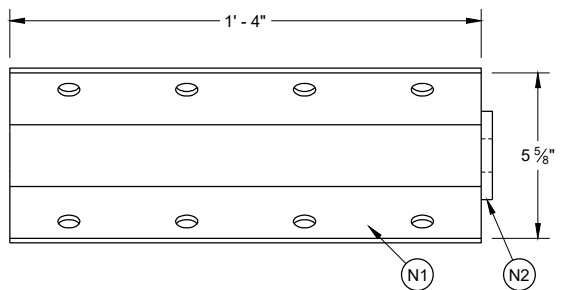
**ELEVATION VIEW PROFILE VIEW
BCT BEARING PLATE (A3)**



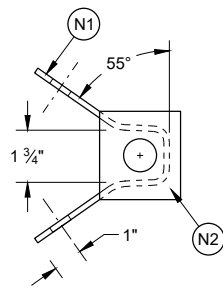
**ELEVATION VIEW PROFILE VIEW
BCT POST SLEEVE (L2)**



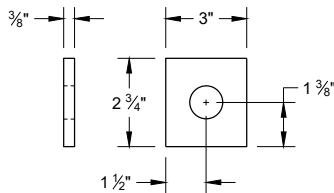
PLAN VIEW



**ELEVATION VIEW
ANCHOR BRACKET ASSEMBLY (N1)**



PROFILE VIEW



**ANCHOR BRACKET
END PLATE (N2)**

**STEEL THRIE BEAM
BULLNOSE TERMINAL**

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DEPARTMENT OF TRANSPORTATION 254

BILL OF MATERIALS LIST

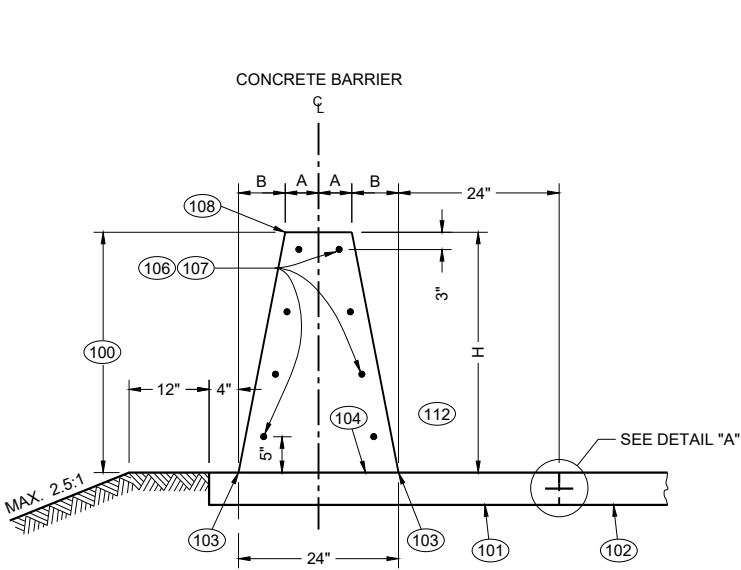
PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION
A1	LONG FOUNDATION TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
A2	FOUNDATION TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
A3	BEARING PLATE AT POST	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
B1	LOWER SLIP POST ASSEMBLY - PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
B2	LOWER SLIP POST ASSEMBLY - TUBE	AASHTO M111/ASTM A123 ASTM A500 GRADE B OR ASTM A-501
C1	UPPER SLIP POST ASSEMBLY - PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
C2	UPPER SLIP POST ASSEMBLY - POST	AASHTO M111/ASTM A123 ASTM A6 W6X9 OR W6X8.5 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
D1	BLOCK FOR STEEL POST - WOOD	WISDOT SPEC. 614
D2	TAPERED BLOCK FOR STEEL POST - WOOD	WISDOT SPEC. 614
D3	TAPERED BLOCK FOR BCT POST - WOOD	WISDOT SPEC. 614
E1	THRIE BEAM RAIL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER
E2	THRIE BEAM RAIL - SHOP BENT AND PUNCHED	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER. INDICATE RADIUS BEAM GUARD IS BENT TO ON THE BACKSIDE OF RAIL. FOLLOW AASHTO M180. MARK RADIUS.
E3	THRIE BEAM RAIL - PUNCHED	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER
E4	THRIE BEAM RAIL - SHOP BENT AND PUNCHED	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER. INDICATE RADIUS BEAM GUARD IS BENT TO ON THE BACKSIDE OF RAIL. FOLLOW AASHTO M180. MARK RADIUS.
F1	5/8" DIA. HEX HEAD GROUND STRUT AND YOKE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
F2	5/8" DIA. GROUND STRUT AND YOKE BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
F3	GROUND STRUT AND YOKE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
G1	5/8 " DIA. POST BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER TYPICALLY USED WITH STEEL POSTS) OR ASTM F844 (UNHARDENED WASHER TYPICALLY USED WITH WOOD)
G2	POST BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER TYPICALLY USED WITH STEEL POSTS) OR ASTM F844 (UNHARDENED WASHER TYPICALLY USED WITH WOOD)
G3	POST BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
H1	7/8" DIA. SOIL TUBE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
H2	SOIL TUBE BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 7/8" ASTM F844 TYPE 1 (HARDEN WASHER ONLY)
H3	SOIL TUBE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
J1	16D DOUBLE HEAD NAIL	ASTM A153 HOT DIPPED CLASS D DOUBLE HEAD ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)
L1	BCT TIMBER POST	WISDOT SPEC. 614 S4S FINISH ON 4 SIDE
L2	BCT POST SLEEVE	AASHTO M111/ASTM A123 2 3/8" OD ASTM 53 GRADE B
M1	W6X8.5 OR W6X9 STEEL POST	AASHTO M111/ASTM A123 ASTM A6 W6X9 OR W6X8.5 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
M2	W6X8.5 OR W6X9 STEEL POST	AASHTO M111/ASTM A123 ASTM A6 W6X9 OR W6X8.5 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
N1	ANCHOR BRACKET	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
N2	ANCHOR BRACKET - BEARING PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI

PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION
P1	5/8" DIA. ANCHOR BRACKET BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
P2	ANCHOR BRACKET BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
P3	SOIL TUBE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
Q1	5/8" DIA. NOSE CABLE	6X19 AASTHO M30 / ASTM A741 XIPS INDEPENDENT WIRE CORE (IWRC) PR 6X25 XIPS, IWRC NOMINAL BREAKING STRENGTH OF 41.2 KIPS.
Q2	NOSE CABLE-SWAGE BUTTON	COLD TUFF BUTTON, S-409 SIZE NO. 12 STOCK NUMBER 1040395 OR ANY OTHER SIMILAR SIZED WAGED-GRIP-BUTTON FERRULES. ASTM A576 GRADE 1035 SWAGE FITTING ARE TO BE FIELD SWAGED PER MANUFACTURERS RECOMMENDATION. NOMINAL BREAKING STRENGTH OF 41.2 KIPS.
R1	NOSE CABLE ANCHOR BRACKET	AASHTO M111/ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
S1	5/8" DIA. SPLICE BOLT - BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
S2	SPLICE - BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD 5/8" ASTM A563DH OR SAE J995 GRADE 5
T1	1/4" DIA. NOSE CABLE - U BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36
T2	U-BOLT - PLATE WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
T3	U-BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
U1	7/16" DIA. SLIP POST ASSEMBLY - BREAKAWAY BOLT	ASTM A153 OR B695 CLASS 55 OR F2329 UNC FULLY THREADED HEX HEAD TAP BOLT ASTM A449 OR SAE J429 GRADE 5
U2	7/16" DIA. SLIP POST ASSEMBLY - BREAKAWAY BOLT - WASHER	ASTM F436 TYPE I (HARDEN TYPICALLY USED WITH STEEL) GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP. TO POST BOLT CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 55, F2329
U3	SLIP POST ASSEMBLY - BREAKAWAY BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / STM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
V1	¾" DIA. BCT CABLE	AASHTO M30 / ASTM A741 6X19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6X19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN BREAKING STRENGTH OF 42.7 KIPS
V2	ANCHOR CABLE-SWAGE FITTING	UNC ASTM A576 GRADE 1035 SWAGE FITTING ARE TO BE FACTORY SWAGED. MIN. BREAKING STRENGTH OF 42.7 KIPS. ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS."
V3	1" DIA. ANCHOR CABLE-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)
V4	1" DIA. ANCHOR CABLE-NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5
W1	REFLECTOR	SEE SDD 15A4

STEEL THRIE BEAM
BULLNOSE TERMINAL

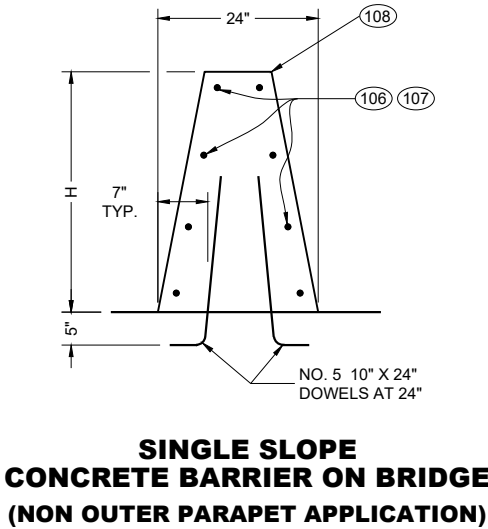
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 255
FHWA

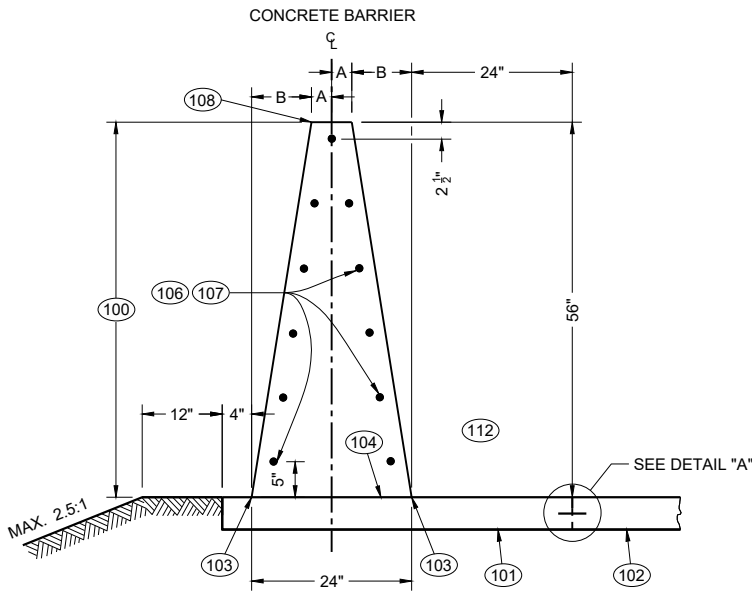


**32 - INCH, 36 - INCH OR 42 - INCH
SINGLE SLOPE CONCRETE BARRIER**
(TYPE S32, TYPE S36, TYPE S42)

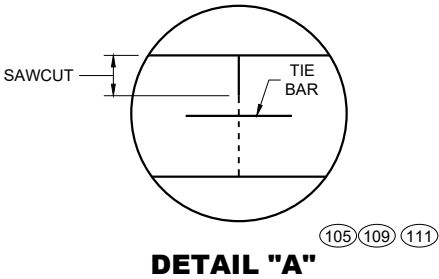
TABLE "A"			
BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6 ¼	5 ¾	8
42	5 ¼	6 ¾	10
56	3	9	11



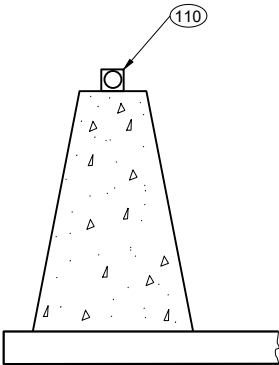
**SINGLE SLOPE
CONCRETE BARRIER ON BRIDGE**
(NON OUTER PARAPET APPLICATION)



**56 - INCH SINGLE
SLOPE CONCRETE BARRIER**
(TYPE S56)



DETAIL "A"



DELINEATION

GENERAL NOTES

WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.

LOCATE EXPANSION JOINTS IN CONCRETE BARRIER SHALL AT ALL DECK AND PRINCIPAL WALL JOINTS. FILL EXPANSION JOINT WITH EXPANSION JOINT MATERIAL. SEAL THE EXPANSION JOINT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.

2" CLEAR COVER TYPICAL

ANCHORS ARE REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN IN THIS SDD OR DETAIL SHOWN ON SDD 14B33. ANCHORS INCIDENTAL TO CBSS.

PROVIDE A 1" DEEP CONTRACTION JOINT IN BARRIER PAD AND BARRIER. JOINT IS TO MATCH ADJACENT CONCRETE JOINTS. NO DOWEL BARS ARE REQUIRED FOR BARRIER PAD. IF ADJACENT TO ASPHALT, CONTRACTION JOINT IS REQUIRED EVERY 15'.

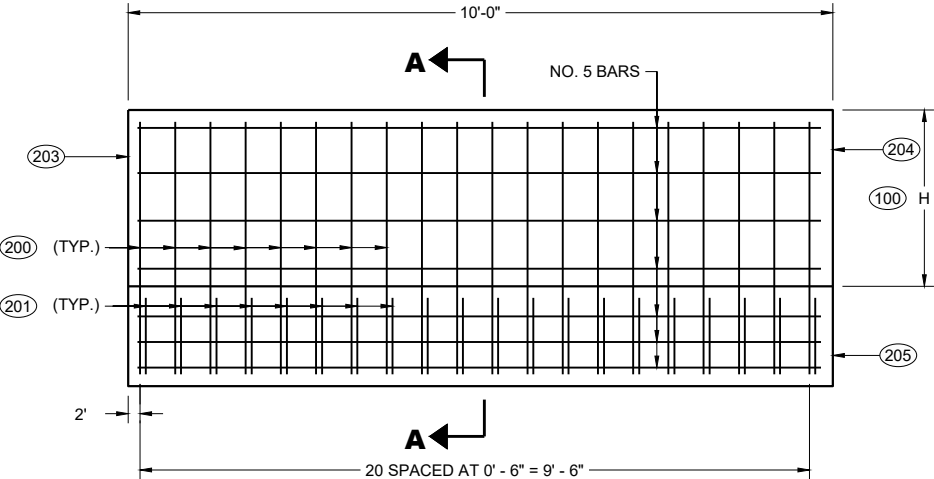
ALL REBAR SHALL BE EPOXY COATED M31 TYPE S. SEE STANDARD SPECIFICATION 505.

CONCRETE BARRIER, UPPER CONCRETE BARRIER, LOWER CONCRETE BARRIER, CONCRETE BARRIER PAD, AND FOOTINGS ARE TERMS USED TO DESCRIBE PARTS OF SINGLE SLOPE CONCRETE BARRIER BID ITEMS. THESE PARTS ARE INCIDENTAL TO THE SINGLE SLOPE CONCRETE BARRIER BID ITEMS.

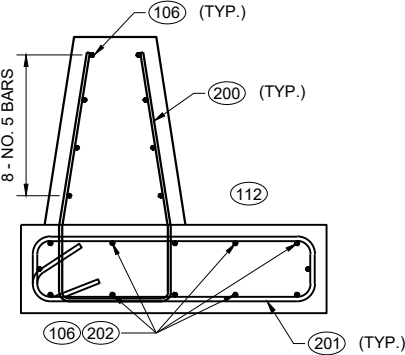
- (100) CONCRETE BARRIER
- (101) CONCRETE BARRIER PAD
- (102) PAVEMENT
- (103) WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1 ½", USE TYPE A SINGLE SLOPE BARRIER.
- (104) OPTIONAL CONSTRUCTION JOINT.
- (105) CONSTRUCTION JOINTS MAY BE ELIMINATED WHEN CONCRETE SHOULDER IS LESS THAT 10'.
- (106) STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL IS 2' BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
- (107) NO. 5 CONTINUOUS BARS EVENLY SPACED (SEE TABLE "A").
- (108) USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
- (109) CONCRETE BARRIER PAD UNDER CBSS MAY BE PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED ½ DEPTH. CONCRETE BARRIER PAD AND SAWING OF CONCRETE SHOULDER IS INCIDENTAL TO CONCRETE BARRIER BID ITEM. CONCRETE BARRIER PAD MINIMUM DEPTH IS 6", OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.
- (110) SEE SDD 15A04 FOR DELINEATOR DETAILS AND SPACING.
- (111) SEE SDD 13C01 FOR DETAILS TYPING CONCRETE BARRIER TO ADJACENT CONCRETE
- (112) TRAFFIC SIDE

**CONCRETE BARRIER
SINGLE SLOPE (CBSS)**

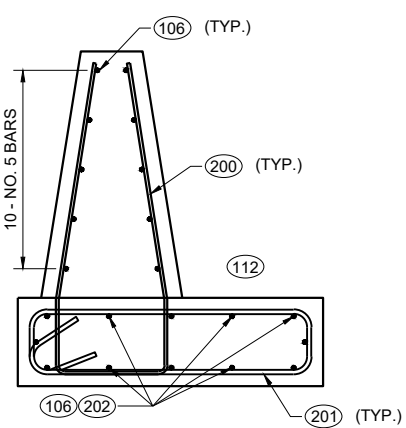
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



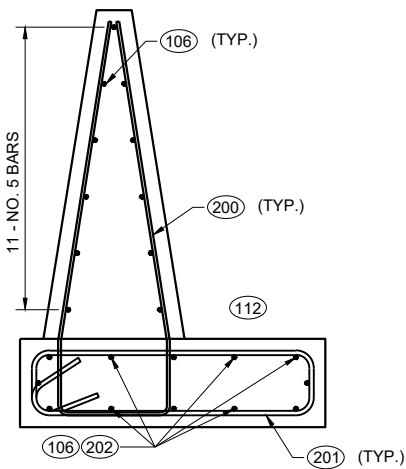
END ANCHOR SINGLE
SLOPE CONCRETE BARRIER



32" AND 36" CBSS



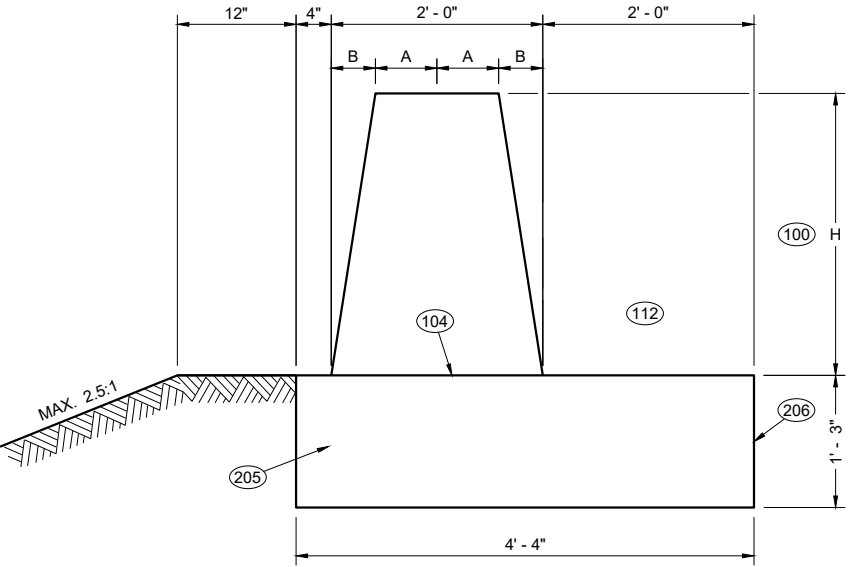
42" CBSS



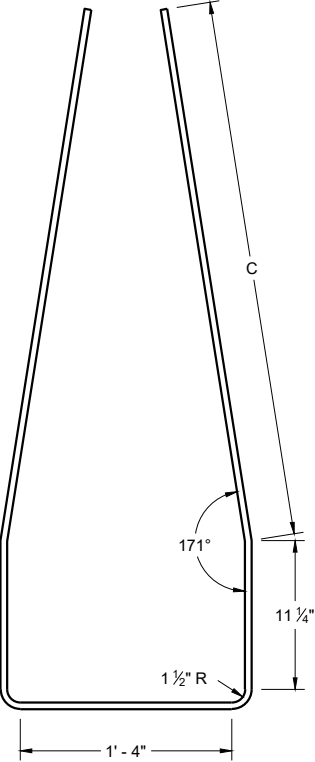
56" CBSS



STIRRUP BAR
BENDING DETAIL



SECTION A - A



V1 BAR
BENDING DETAIL

TABLE "B"

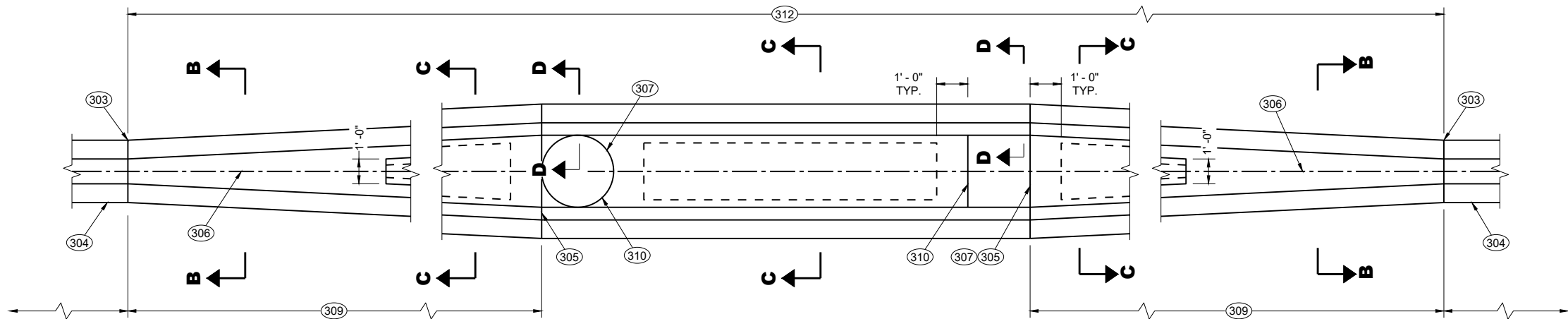
BARRIER HEIGHT H INCHES	C INCHES
32	2' - 6"
36	2' - 11"
42	3' - 4"
56	4' - 6 1/2"

GENERAL NOTES

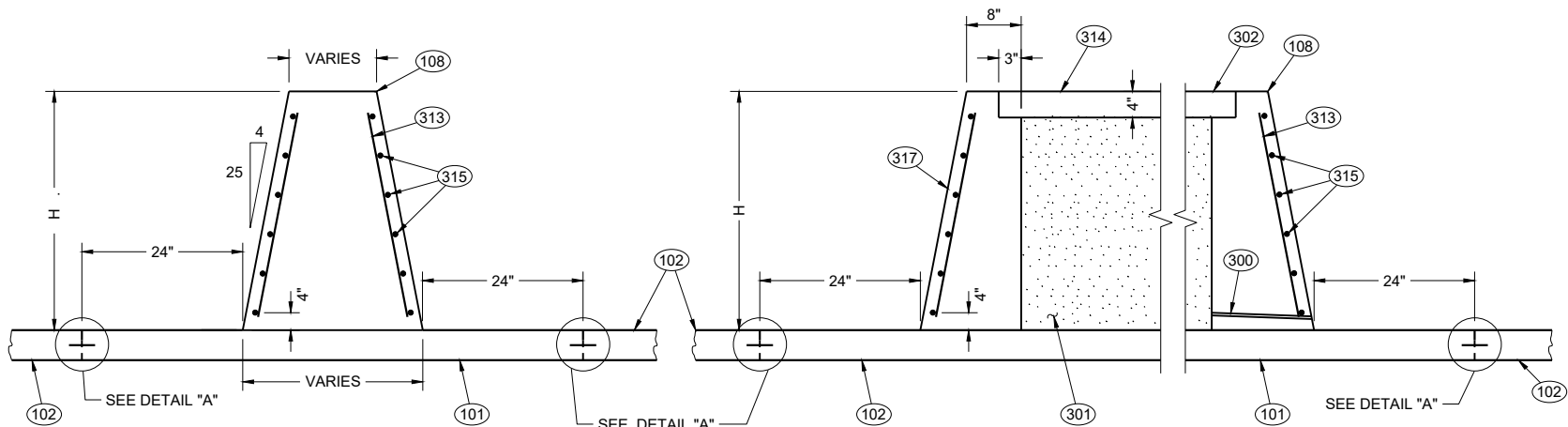
- (200) V1 BARS ARE NO. 5 BARS. (SEE BAR BENDING DETAIL)
- (201) STIRRUPS ARE NO. 6 BARS. (SEE BAR BENDING DETAIL)
- (202) TWELVE (12) NO. 5 BARS EVENLY SPACED
- (203) END OF INSTALLATION OR EXPANSION JOINT.
- (204) SEE COLD JOINT DETAIL TO CONNECT END ANCHOR SINGLE SLOPE CONCRETE BARRIER TO SINGLE SLOPE CONCRETE BARRIER.
- (205) FOOTING
- (206) DO NOT TIE TO FOOTING TO ADJACENT PAVEMENT.

CONCRETE BARRIER
SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

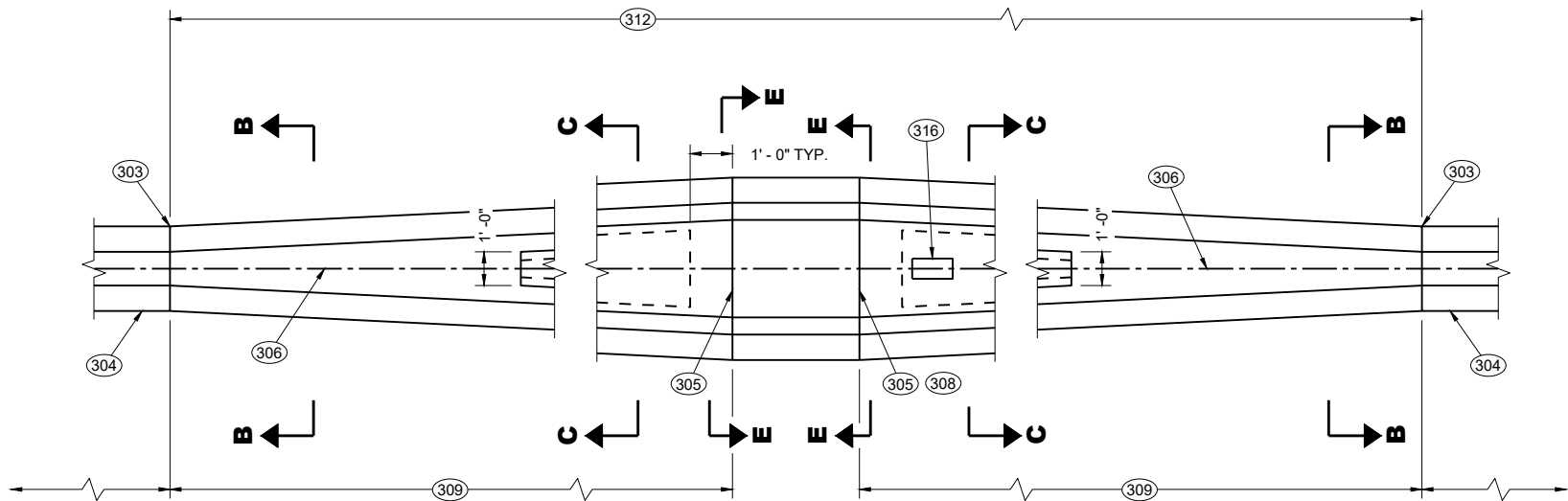


LARGE FIXED OBJECTS PROTECTION
(TYPE S32, TYPE S36, TYPE S42, TYPE S56)



SECTION B - B

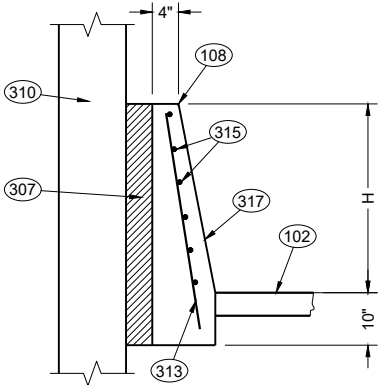
SECTION C - C

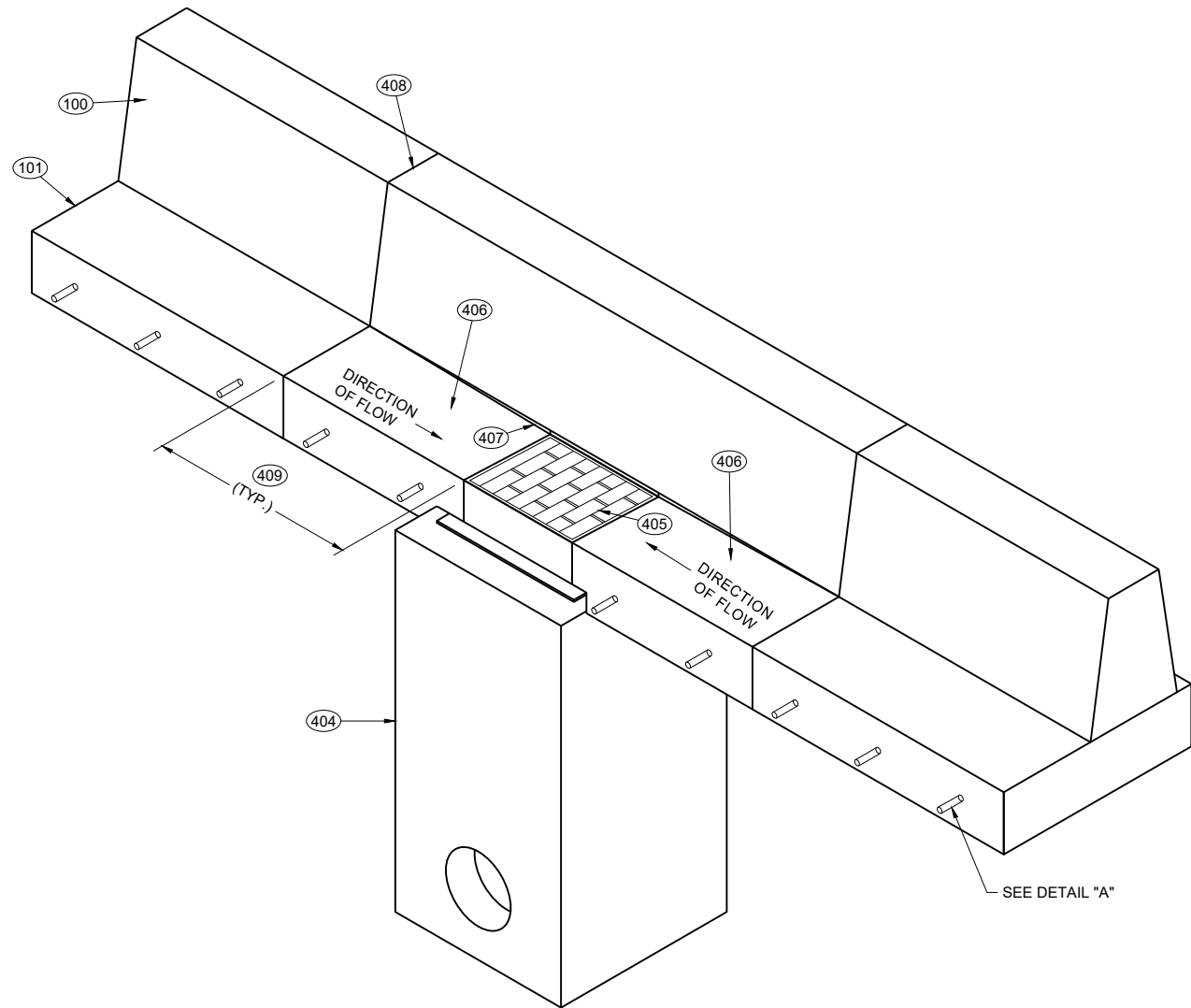


SMALL FIXED OBJECTS PROTECTION
(TYPE S32, TYPE S36, TYPE S42, TYPE S56)

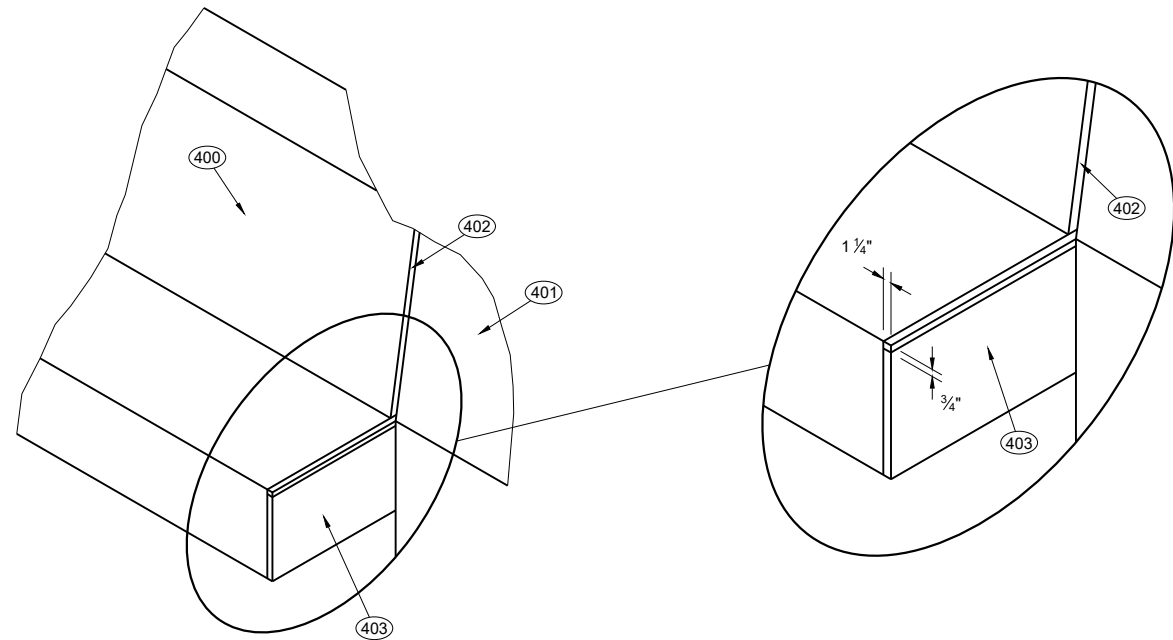
TABLE "C"

BARRIER HEIGHT H INCHES	BAR SIZE	NUMBER OF BARS EACH
32	4	6
36	4	6
42	5	6
56	5	6



**DRAINAGE DETAIL****GENERAL NOTES**

- (400) END ANCHOR SINGLE SLOPE CONCRETE BARRIER.
- (401) PARAPET, SIGN BRIDGE BASE, LIGHT POLE BASE OR OTHER OBJECT SINGLE SLOPE CONCRETE BARRIER CANNOT TIE INTO.
- (402) JOINT SEAL CONFORMING TO STANDARD SPECIFICATION 415.2.6
- (403) EXPANSION JOINT MATERIAL.
- (404) INLET (SEE PLAN)
- (405) INLET COVER BW (SEE PLAN)
- (406) WARP PAN TO MATCH INLET COVER.
- (407) EXTEND BARRIER SLOPE TO INLET. SEE PLAN FOR THE LENGTH OF EXTENSION.
- (408) CONTRACTION JOINT.
- (409) WHEN ADJACENT TO CONCRETE PAVEMENT OR SHOULDER, JOINT SHOULD MATCH CONCRETE JOINTS. OTHERWISE, 3' (TYP.). SEE SDD 13C18 FOR MORE INFORMATION.

**EXPANSION JOINT DETAIL**

**CONCRETE BARRIER
SINGLE SLOPE (CBSS)**

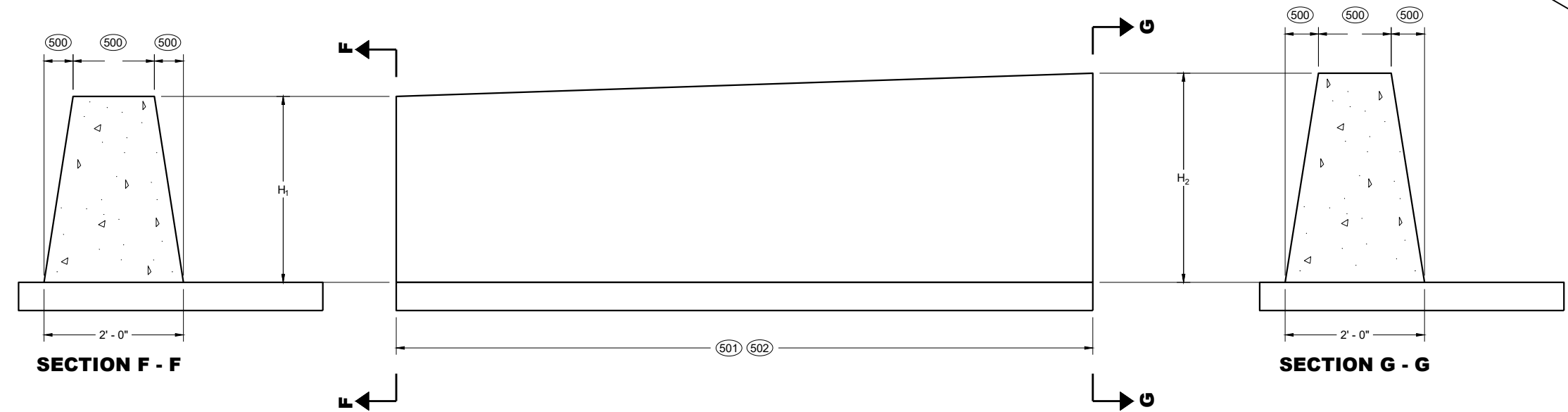
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

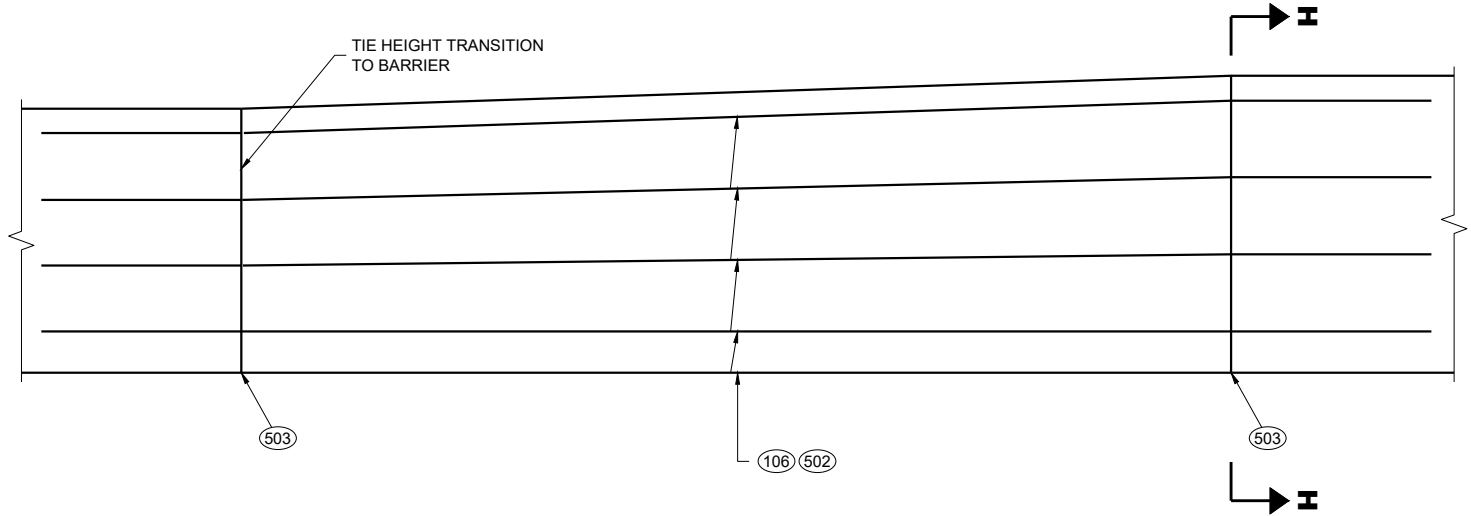
USE COLD JOINT TO CONNECT MULTIPLE HEIGHT TRANSITIONS.

- 500 SEE TABLE "A" FOR DIMENSIONS
- 501 SEE TABLE "D"
- 502 MULTIPLE HEIGHT TRANSITION MAY BE USED IN SEQUENCE TO GET APPROPRIATE HEIGHT.
- 503 COLD JOINT
- 504 BARRIER REBAR (SEE OTHER DETAILS FOR BAR SIZE, QUANTITY AND LOCATION). SINGLE SLOPE BARRIER SHOWN. SIMILAR DETAIL CAN BE USED FOR COLD JOINT IN

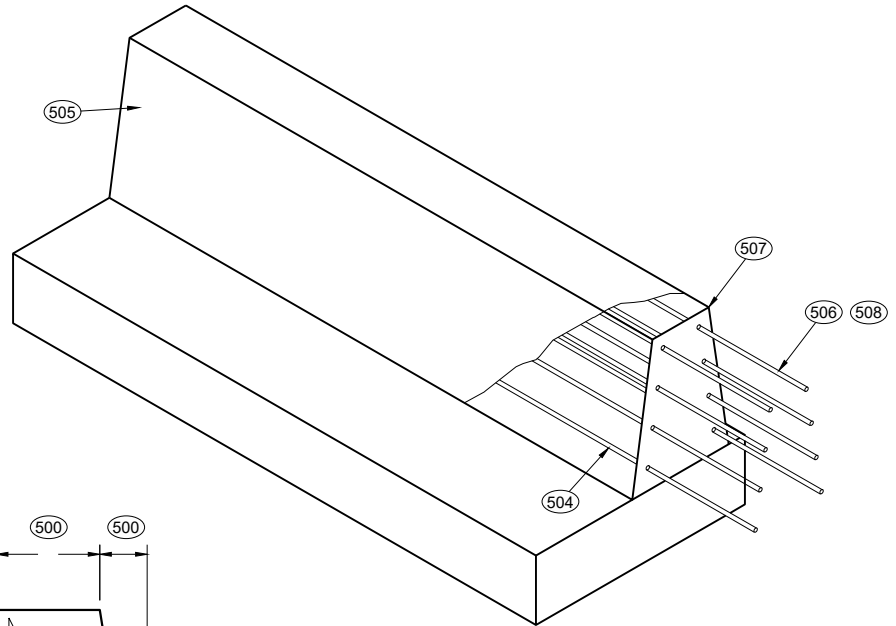
- 505 END ANCHORS AND TRANSITIONS.
- 506 NO. 5 REBAR FOR SPLICE. 3' OF SPLICE REBAR IS LAPPED AND TIED TO BARRIER REBAR. EXTEND 3' OF SPLICE REBAR BEYOND END OF POUR. ALL BARS ARE FIRMLY TIED OR CONNECTED. EVERY REBAR IN THE BARRIER SECTION REQUIRES A SPLICE BAR.
- 507 END OF POUR.
- 508 LAP AND TIE 3' OF NEXT POUR'S REBAR TO SPLICE REBAR.



DOUBLE COLD JOINT HEIGHT TRANSITION



STEEL REINFORCEMENT DETAIL

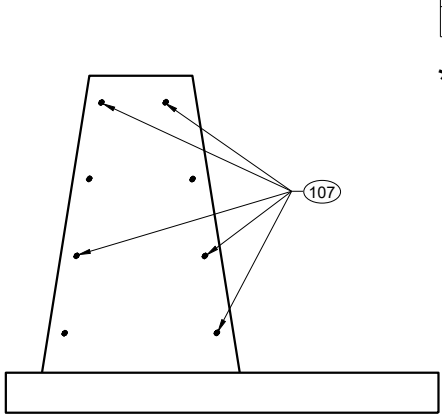


COLD JOINT DETAIL

TABLE "D"

H ₁	H ₂	L *	NUMBER OF NO. 5 BARS
32"	36"	10' - 0"	8
36"	42"	10' - 6"	10
42"	56"	24' - 6"	11

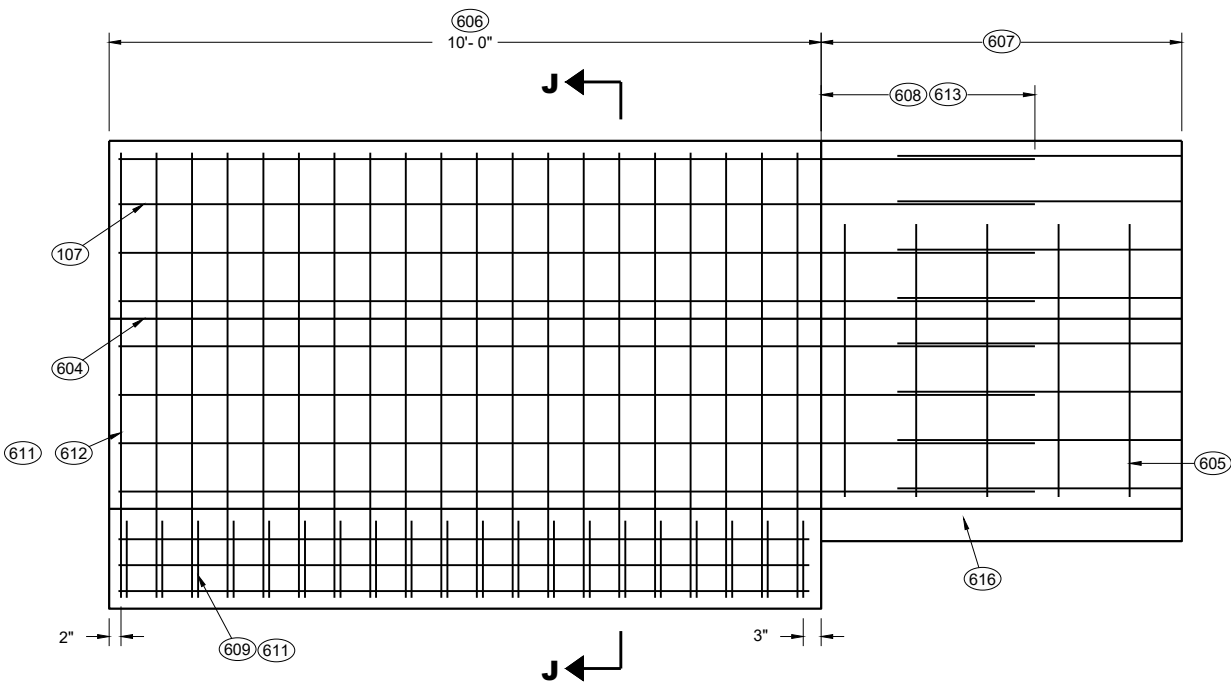
* LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF CBSS.



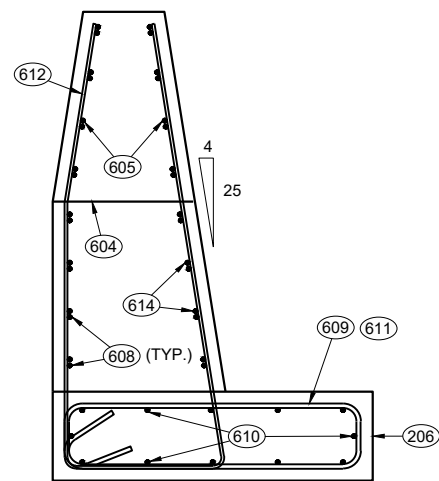
SECTION H - H

CONCRETE BARRIER
SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



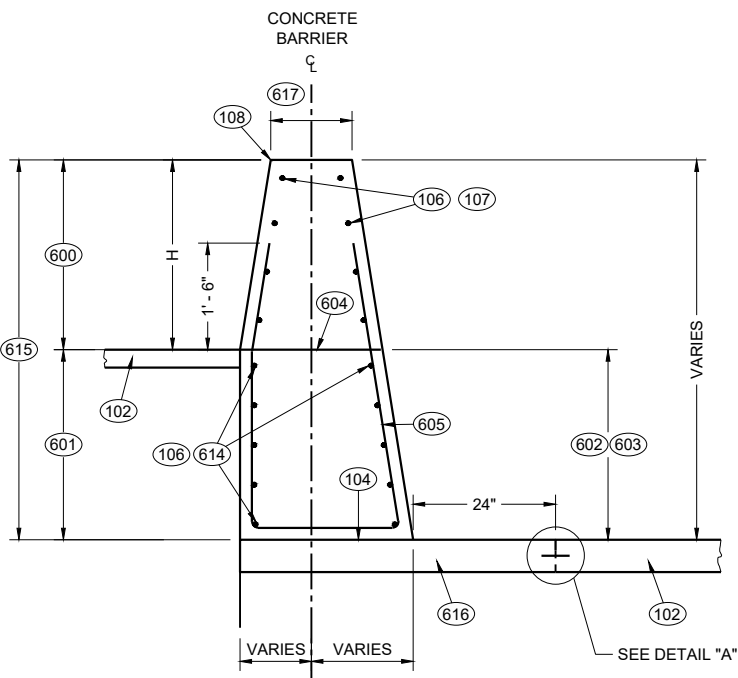
**END ANCHOR MEDIAN BARRIER
AND RETAINING WALL**



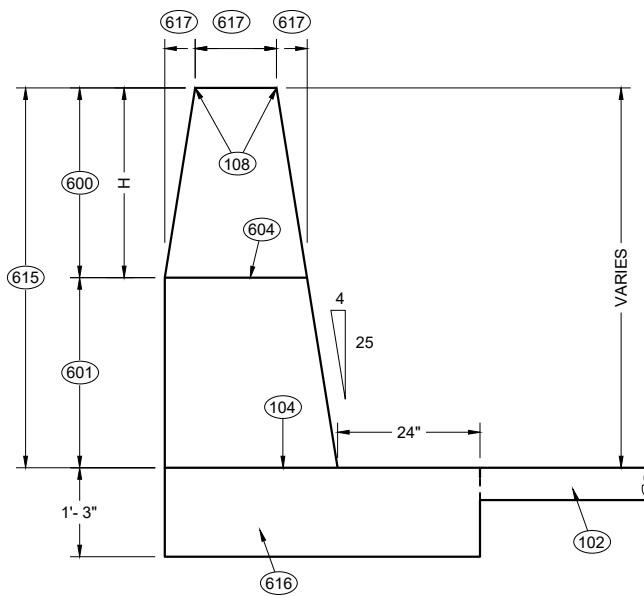
**SECTION J - J
END ANCHOR AND MEDIAN WALL END
ANCHOR REINFORCEMENT DETAIL**

GENERAL NOTES

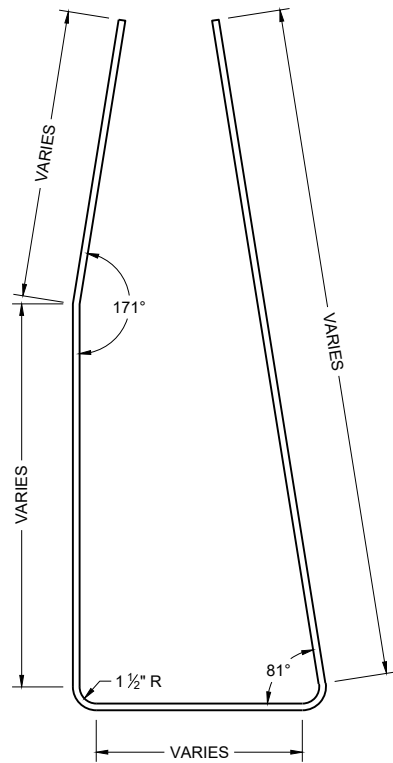
- 600 UPPER CONCRETE BARRIER
- 601 LOWER CONCRETE BARRIER
- 602 MAX HEIGHT 36".
- 603 VERTICAL OFFSET FROM TOP ROADWAY SURFACES
- 604 OPTIONAL CONSTRUCTION JOINT WHEN HEIGHT IS GREATER THAN 1 ½".
- 605 NO. 4 BARRIER LOOP BARS ARE NOT REQUIRED FOR ROADWAY OFFSETS ARE LESS THAN 1'-0", EXCEPT WHEN USED IN ANCHORS. BARRIER LOOP BARS ARE SPACED 12" CENTER TO CENTER OUTSIDE OF MEDIAN BARRIER AND RETAINING WALL END ANCHOR.
- 606 SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL ANCHOR
- 607 SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (SEE OTHER DETAILS)
- 608 NO. 5 REBAR 3' OF LAP OF LONGITUDINAL STEEL.
- 609 NO. 6 REBAR END ANCHOR FOOTING LOOP
- 610 TWELVE (12) NO. 5 BARS EVENLY SPACED.
- 611 SS ANCHOR END LOOP AND END ANCHOR FOOTING LOOP ARE SPACED 6" CENTER TO CENTER.
- 612 END ANCHOR LOOP BAR IS NO. 5 REBAR.
- 613 SEE COLD JOINT DETAIL.
- 614 SEE TABLE "E" FOR REQUIRED REBAR
- 615 TOTAL BARRIER HEIGHT (SEE PLAN FOR HEIGHT)
- 616 FOR SOME LOCATIONS, NO PAN IS NEEDED. SEE OTHER DETAILS.
- 617 SEE TABLE "A" FOR DIMENSIONS



**SINGLE SLOPE CONCRETE
BARRIER AND RETAINING WALL
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)
(BETWEEN ADJACENT ROADWAYS)**



**SECTION J - J
MEDIAN BARRIER AND RETAINING
WALL END ANCHOR DIMENSIONS**



**LOOP BAR
BENDING DETAIL**



**END ANCHOR STIRRUP BAR
BENDING DETAIL**

TABLE "E"

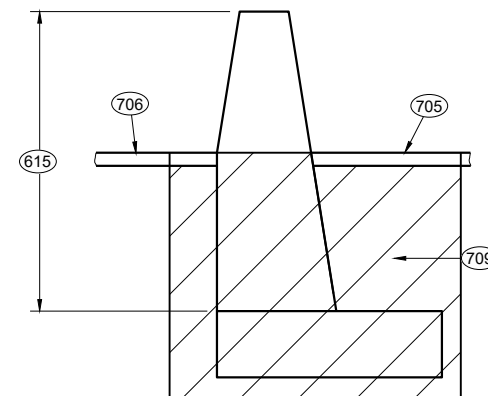
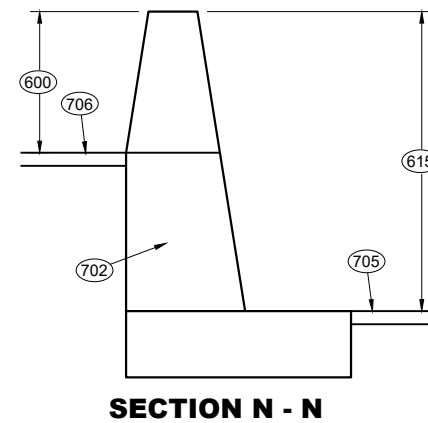
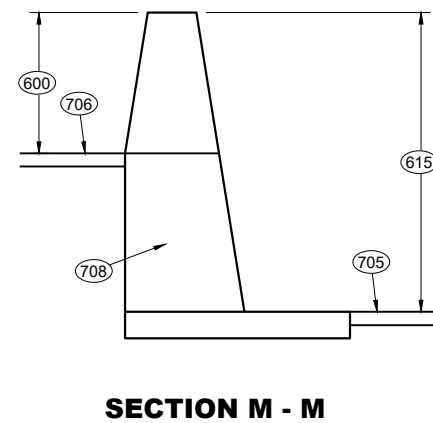
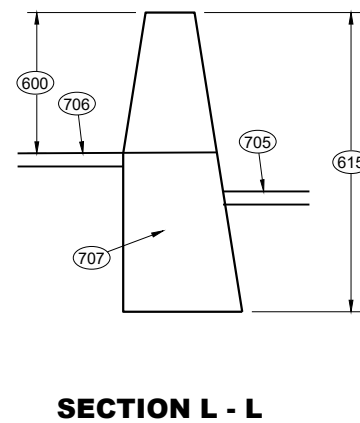
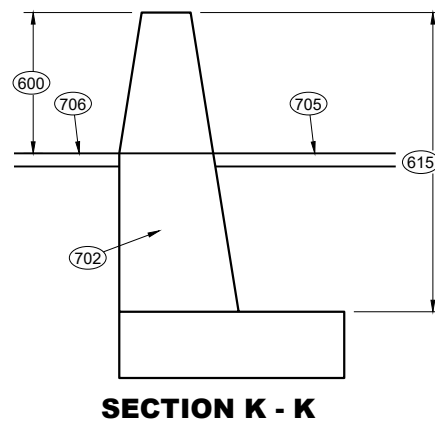
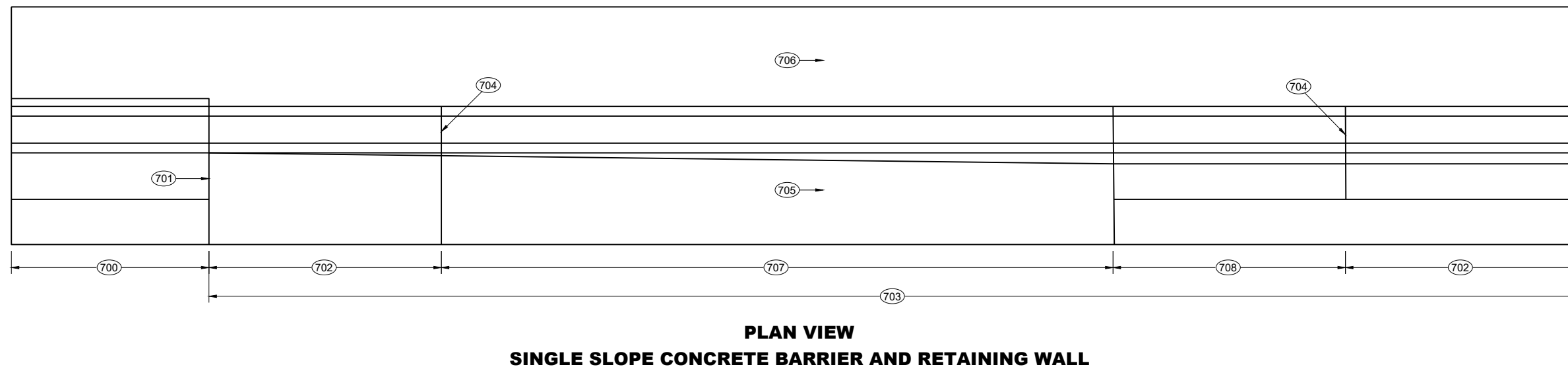
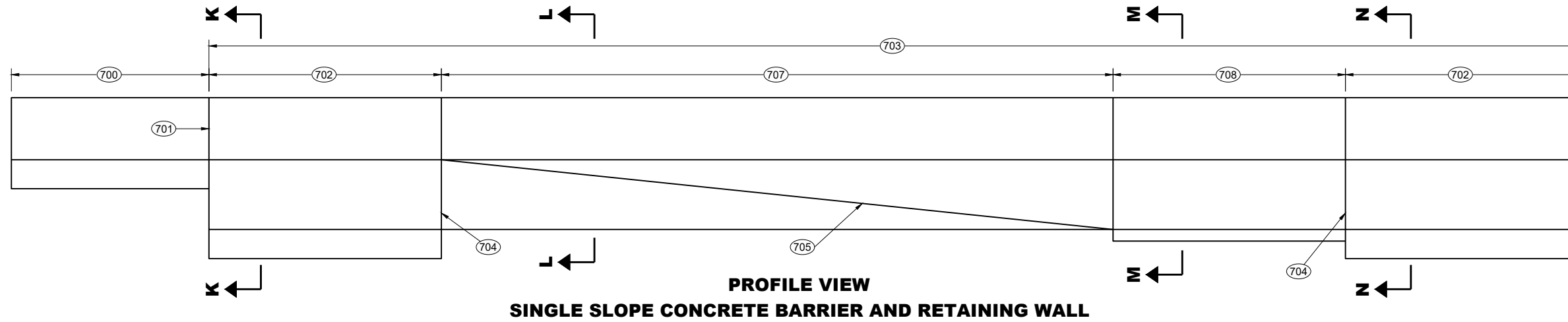
HEIGHT BETWEEN ROADWAY	QUANTITY OF NO. 6 BARS
0 TO 3"	0
GREATER THAN 3" TO 8"	2
GREATER THAN 8" TO 12"	4
GREATER THAN 12" TO 36"	8

**CONCRETE BARRIER
SINGLE SLOPE (CBSS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

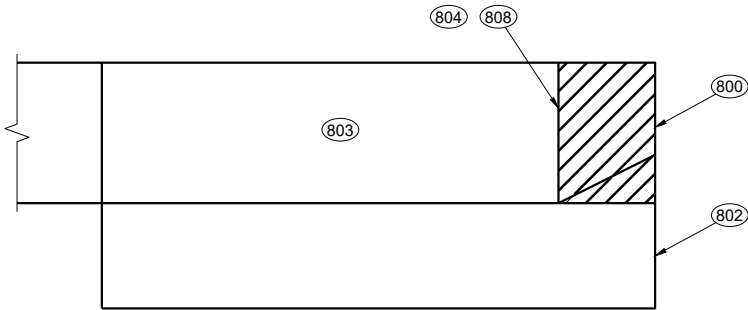
GENERAL NOTES

- 700 END ANCHOR SINGLE SLOPE CONCRETE BARRIER
- 701 SEE EXPANSION JOINT DETAIL
- 702 END ANCHOR SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL
- 703 PAY LIMIT FOR SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL
- 704 SEE COLD JOINT DETAIL
- 705 LOW SIDE SHOULDER
- 706 HIGH SIDE SHOULDER
- 707 SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL INSTALLED WITHOUT A PAN.
- 708 SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL INSTALLED WITH A PAN.
- 709 EXCAVATION AND COMPACTION

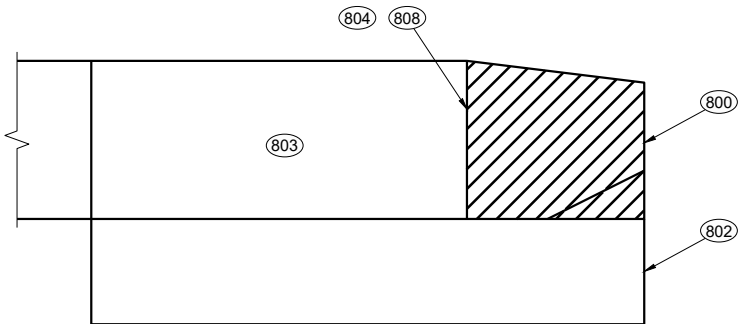


CONCRETE BARRIER SINGLE SLOPE (CBSS)

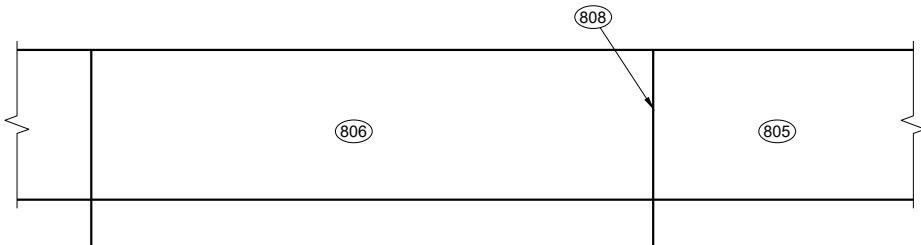
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



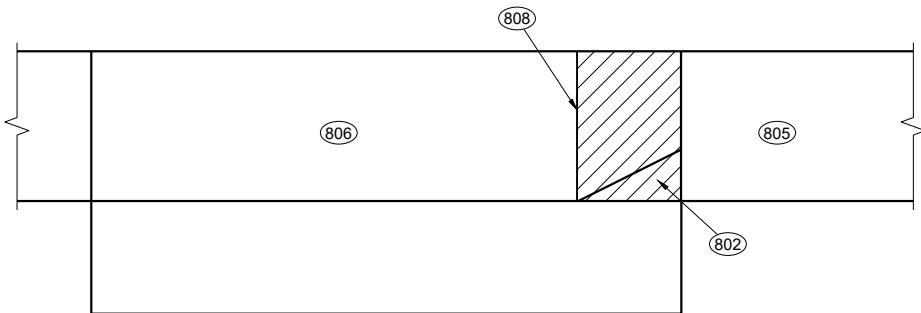
REMOVAL AREA OF
32" CONCRETE THRIE BEAM ANCHORAGE



REMOVAL AREA OF CONCRETE THRIE BEAM
ANCHORAGE WITH HEIGHT GREATER THAN 32"



CONCRETE BARRIER EXTENSION NEAR END ANCHORAGE



CONCRETE BARRIER EXTENSION NEAR THRIE BEAM TERMINAL

RETROFIT OR REPAIR SINGLE SLOPE CONCRETE BARRIER

GENERAL NOTES

END ANCHORAGE MAY OR MAY NOT BE PRESENT ON EXISTING BARRIER.

REMOVE THRIE BEAM ANCHORAGE AS SHOWN.

800 AREA OF BARRIER REMOVAL AN NEW CONCRETE AND STEEL IS INSTALLED.

801 MINIMUM LENGTH OF REMOVAL IS 15'

802 FOOTING BELOW GROUND MAY REMAIN IN PLACE.

803 CONCRETE BARRIER SINGLE SLOPE THRIE BEAM ANCHOR TO REMAIN.

804 SAW CUT

805 NEW SINGLE SLOPE CONCRETE BARRIER.

806 CONCRETE BARRIE SINGLE SLOPE TO REMAIN.

807 SINGLE SLOPE CONCRETE BARRIER OR CONCRETE BARRIER SINGLE SLOPE THRIE BEAM ANCHOR TO REMAIN.

808 SEE CONNECTION DETAIL.

809 NO. 5 CONTINUOUS BAR.

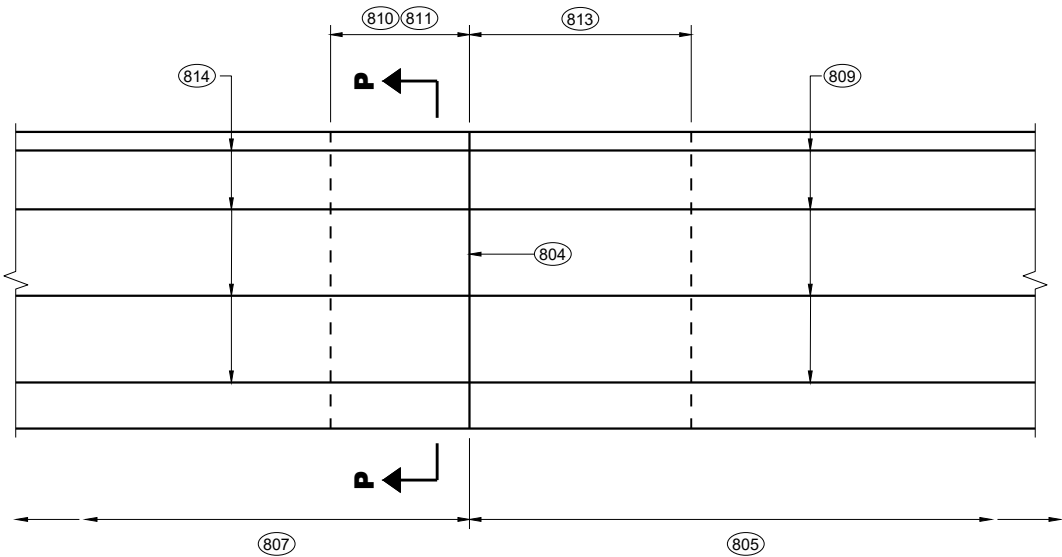
810 3' MIN. DRILL HOLES. USES NO. 5 ADHESIVE ANCHORS.

811 THE NUMBER OF DRILL HOLES IS EQUAL TO THE NUMBER OF HORIZONTAL REBAR IN BARRIER. DRILL HOLES ARE TO BE A MINIMUM OF 4" FROM EDGE OF CONCRETE.

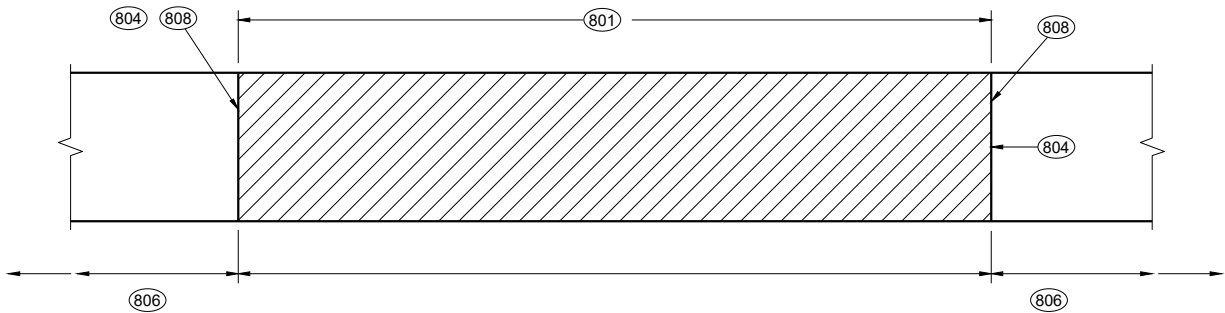
812 EXISTING REBAR IN EXISTING BARRIER OR END ANCHOR.

813 3' BAR OVERLAP

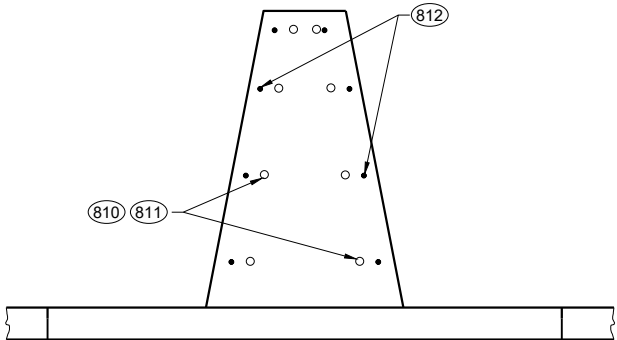
814 EXISTING REINFORCEMENT



CONNECTION DETAIL
SINGLE SLOPE CONCRETE BARRIER TO
NEW SINGLE SLOPE CONCRETE BARRIER



BARRIER REMOVAL AND REPLACEMENT



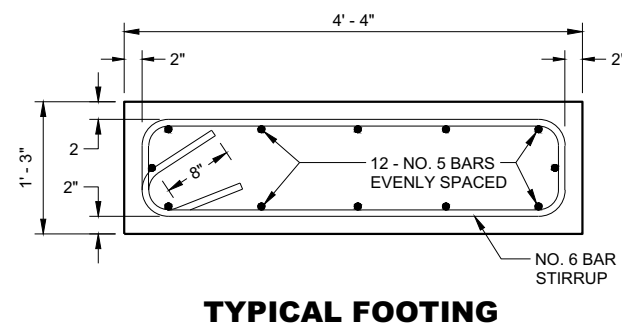
SECTION P - P

CONCRETE BARRIER
SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS OTHERWISE NOTED.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE $\frac{3}{4}$ " BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.

THREE BEAM ANCHOR INCIDENTAL TO CONCRETE BARRIER ITEM.

INSTALL SCHEDULE 40 PVC PIPE 1" DIAMETER AT LOCATIONS INDICATED.

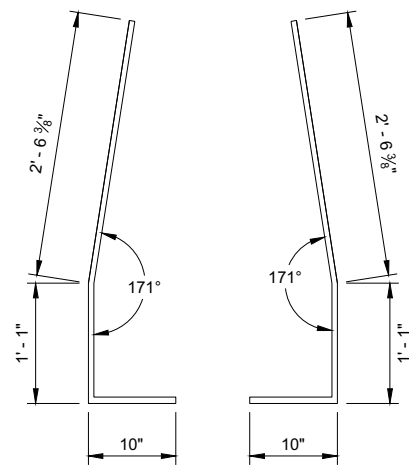
EXTEND PVC PIPE COMPLETELY THROUGH BARRIER.

CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE OF BARRIER.

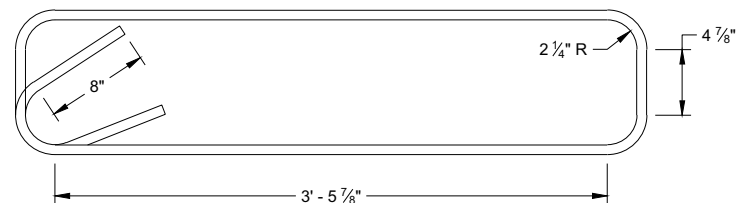
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

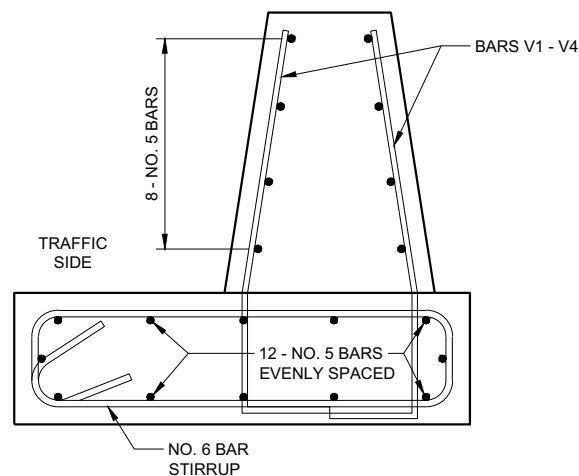
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 264



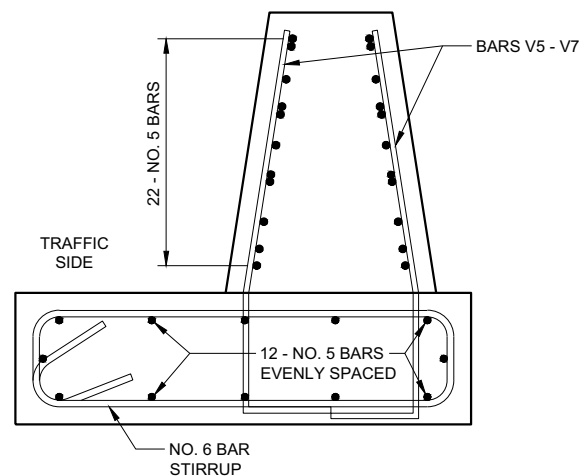
**BAR BENDING DETAIL
BARS 1 - 11**



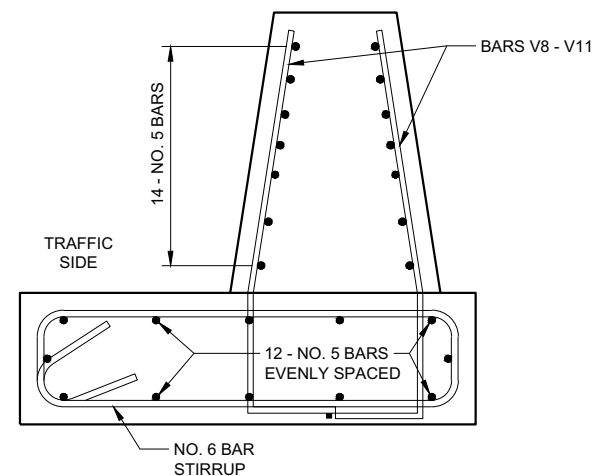
**STIRRUP BAR
BENDING DETAIL**



**BAR DETAIL
SECTIONS 1 - 4**



**BAR DETAIL
SECTIONS 5 - 7**



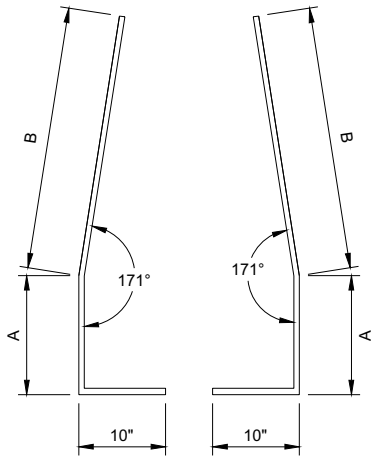
**BAR DETAIL
SECTIONS 8 - 11**

**CONCRETE BARRIER
SINGLE SLOPE 32"
THREE BEAM ANCHOR**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 265

BAR CHART
BAR POSITIONS
12 - 13

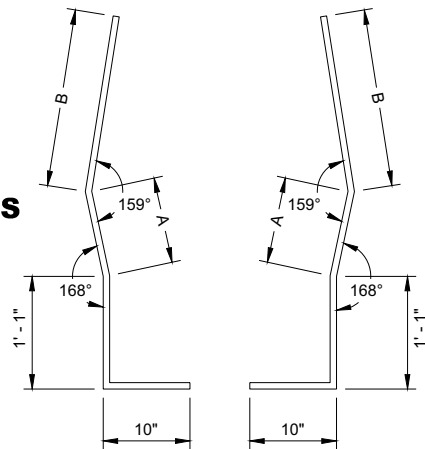
BAR	A	B
V12	1' - 3"	2' - 6"
V13	1' - 8"	2' - 1 1/2"



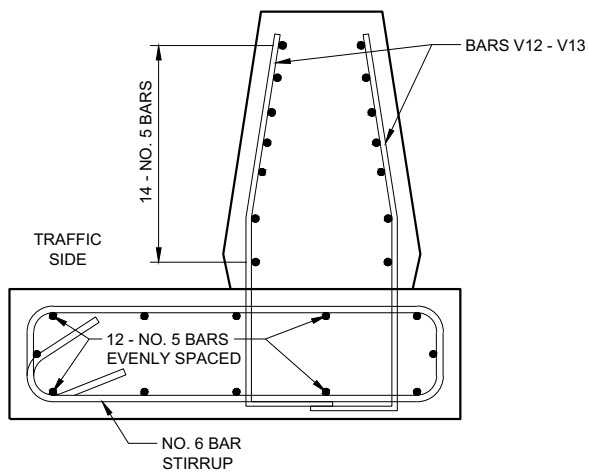
BAR BENDING DETAIL
SECTIONS V12- V13

BAR CHART
BAR POSITIONS
14 - 16

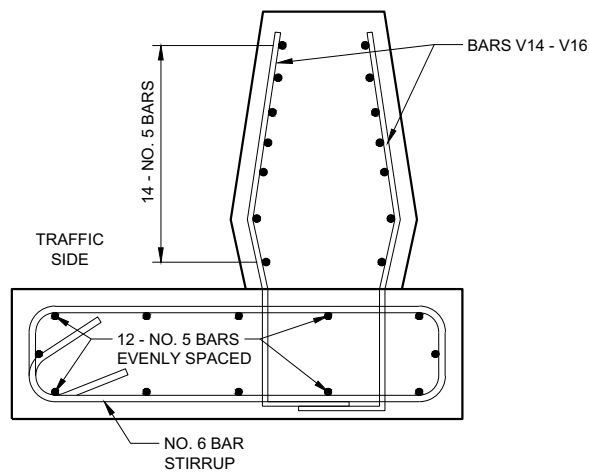
BAR	A	B
V14	6"	2' - 1"
V15	8"	1' - 11"
V16	10"	1' - 8 1/2"



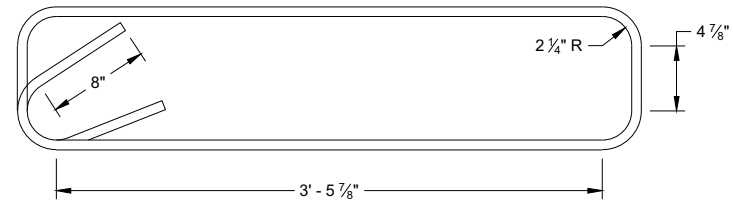
BAR BENDING DETAIL
SECTIONS V14 - V16



BAR DETAIL
SECTIONS 12 - 13



BAR DETAIL
SECTIONS 14 - 16



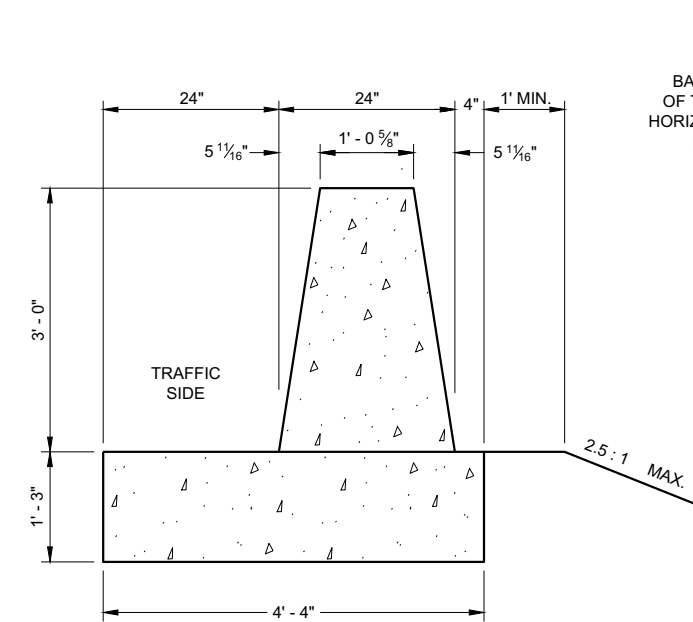
STIRRUP BAR
BENDING DETAIL

CONCRETE BARRIER
SINGLE SLOPE 32"
THRIE BEAM ANCHOR

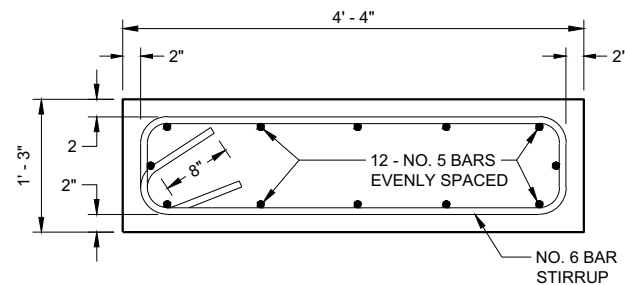
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
266

FHWA



SECTION A - A

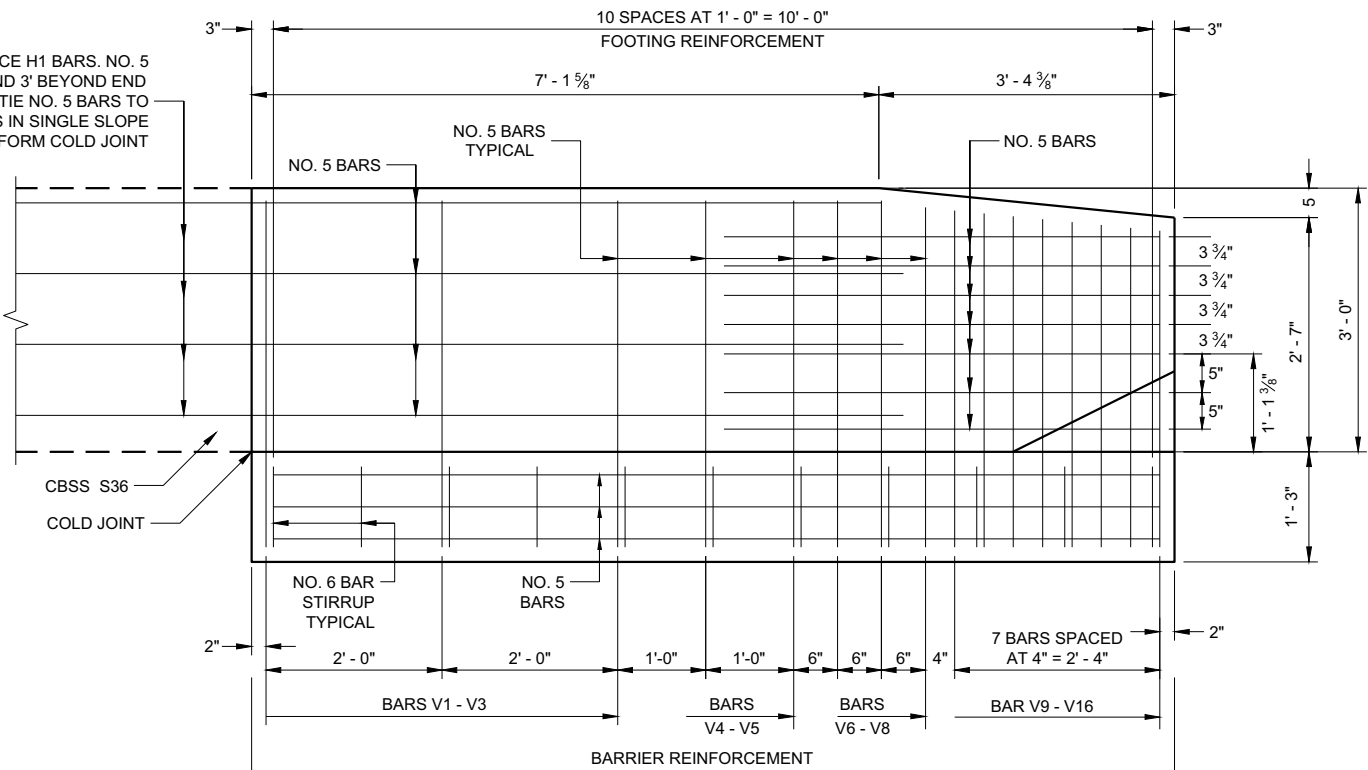


TYPICAL FOOTING

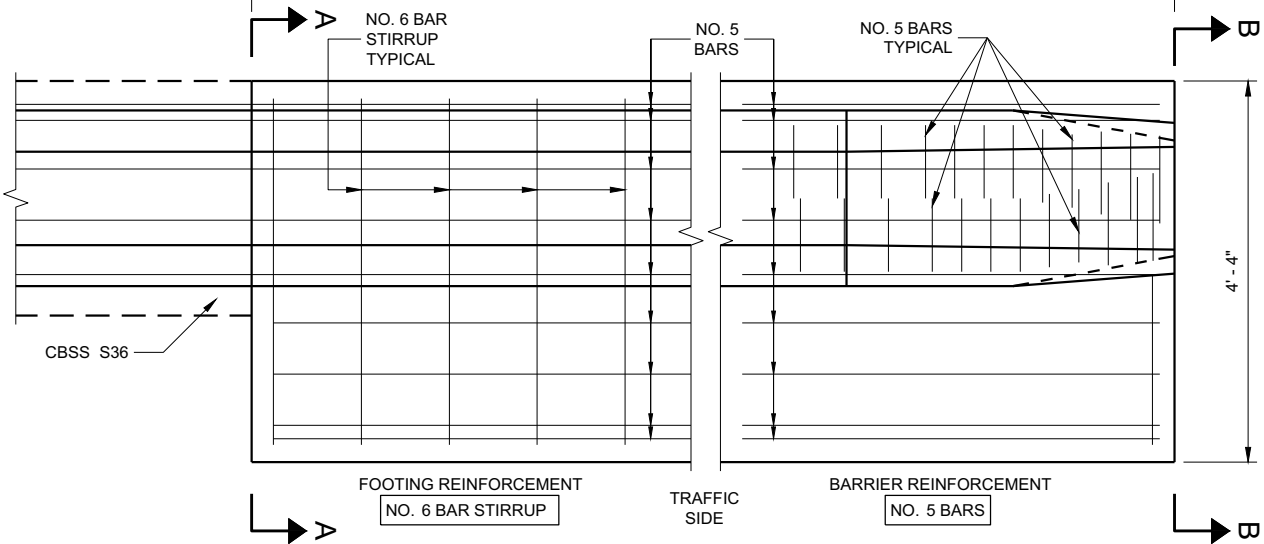
GENERAL NOTES

- CONSTRUCT PER STANDARD SPECIFICATION 603.
- SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS OTHERWISE NOTED.
- 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.
- USE 3/4" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
- THRIE BEAM ANCHOR INCIDENTAL TO CONCRETE BARRIER ITEM.
- INSTALL SCHEDULE 40 PVC PIPE 1" DIAMETER AT LOCATIONS INDICATED.
- EXTEND PVC PIPE COMPLETELY THROUGH BARRIER.
- CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE OF BARRIER.
- THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.
- 2" CLEAR COVER TYPICAL.

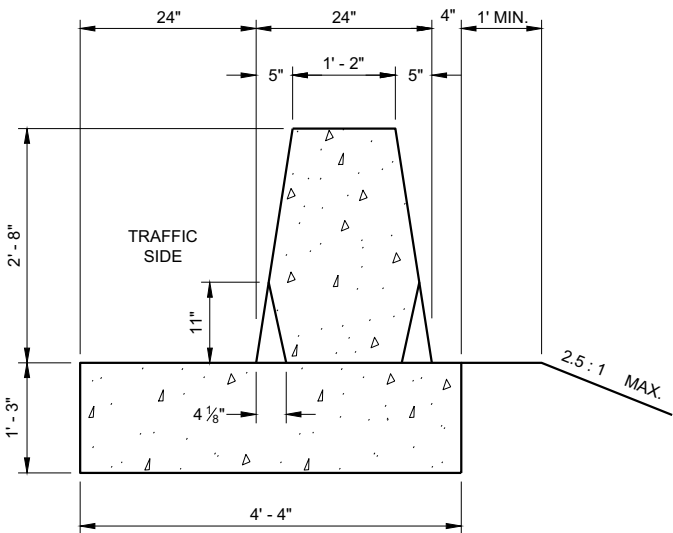
EVENLY SPACE H1 BARS. NO. 5 BARS TO EXTEND 3' BEYOND END OF TRANSITION. TIE NO. 5 BARS TO HORIZONTAL BARS IN SINGLE SLOPE BARRIER TO FORM COLD JOINT



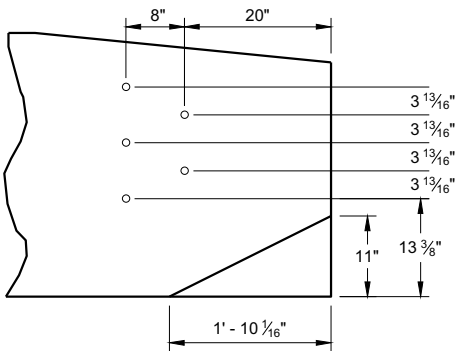
SEE SECTIONS ① THRU ⑩
ELEVATION VIEW



PLAN VIEW



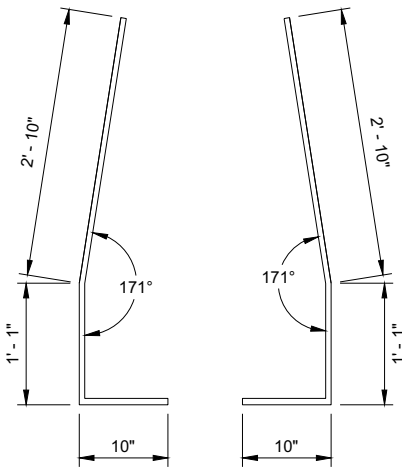
SECTION B - B



PVC PIPE LOCATIONS

CONCRETE BARRIER
SINGLE SLOPE 36"
THRIE BEAM ANCHOR

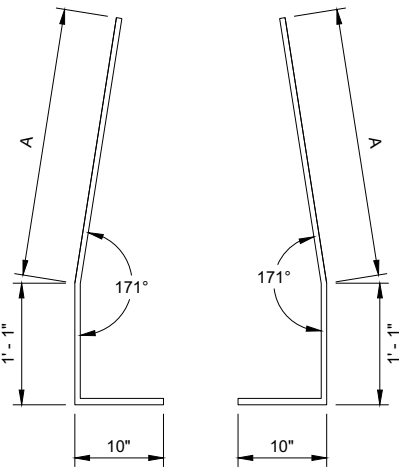
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 267



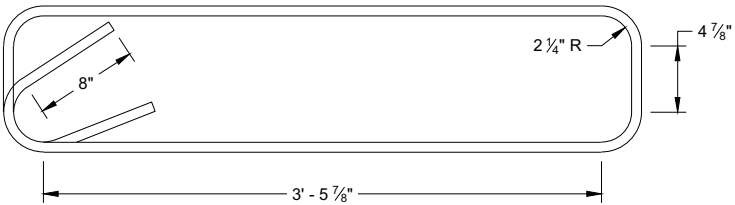
**BAR BENDING DETAIL
SECTIONS V1- V6**

**BAR CHART
BAR POSITIONS
7 - 11**

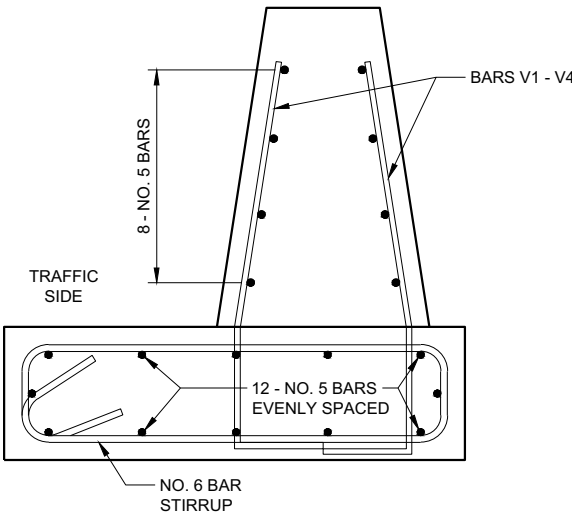
BAR	A
V7	2' - 10 1/4"
V8	2' - 9 3/4"
V9	2' - 9 1/4"
V10	2' - 9"
V11	2' - 8 1/2"



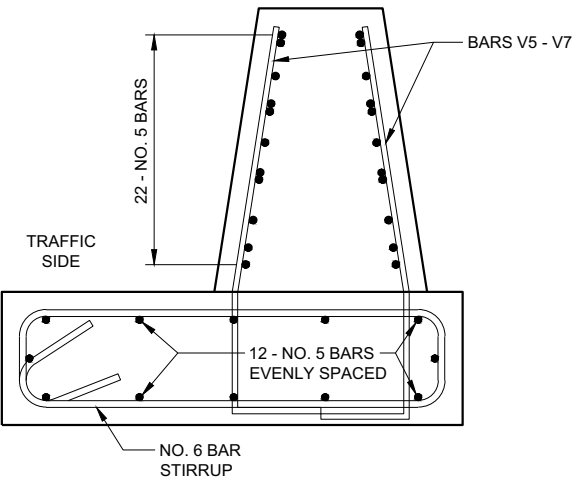
**BAR BENDING DETAIL
SECTIONS V7- V11**



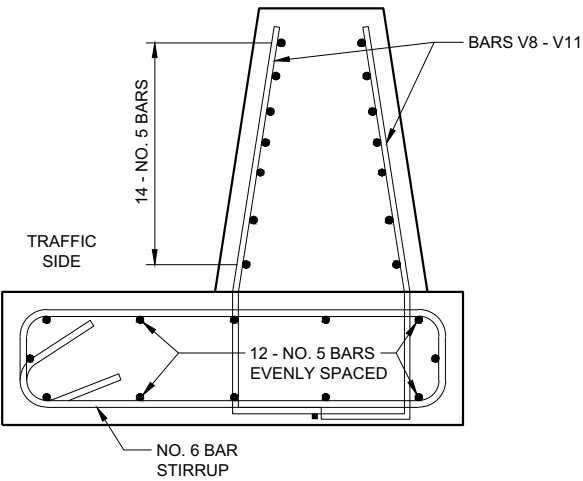
**STIRRUP BAR
BENDING DETAIL**



**BAR DETAIL
SECTIONS 1 - 4**



**BAR DETAIL
SECTIONS 5 - 7**



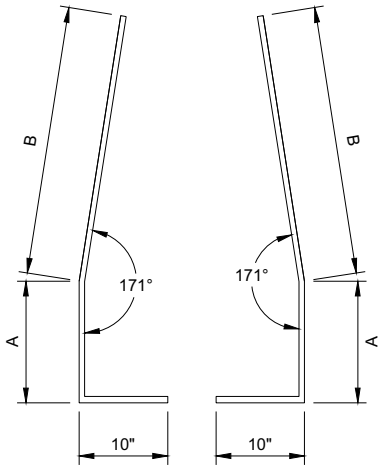
**BAR DETAIL
SECTIONS 8 - 11**

**CONCRETE BARRIER
SINGLE SLOPE 36"
THREE BEAM ANCHOR**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BAR CHART
BAR POSITIONS
12 - 13

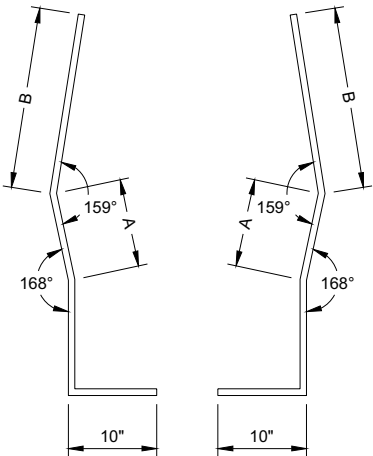
BAR	A	B
V12	1' - 3"	2' - 6"
V13	1' - 8"	2' - 1 1/2"



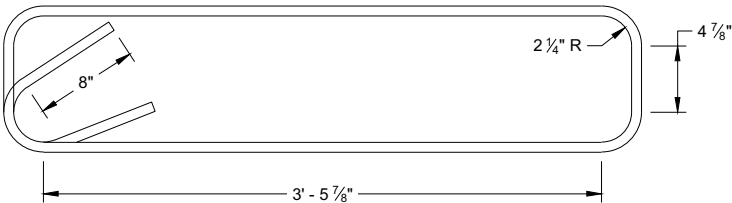
BAR BENDING DETAIL
SECTIONS V12 - V13

BAR CHART
BAR POSITIONS
14 - 16

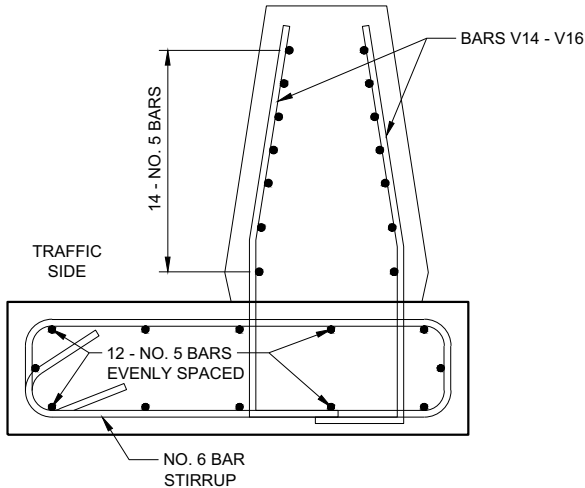
BAR	A	B
V14	6"	2' - 1"
V15	8"	1' - 11"
V16	10"	1' - 8 1/2"



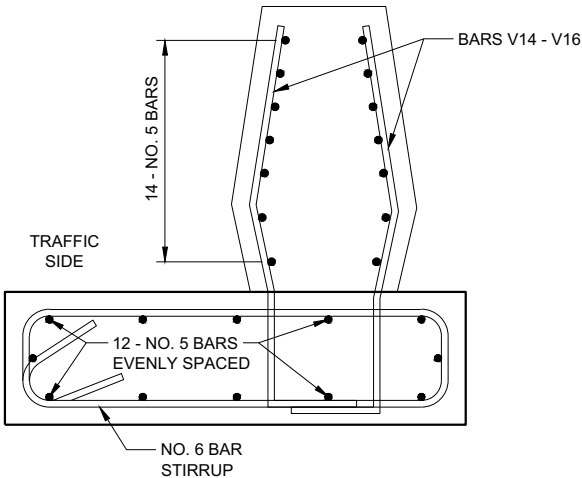
BAR BENDING DETAIL
SECTIONS V14 - V16



STIRRUP BAR
BENDING DETAIL



BAR DETAIL
SECTIONS 12 - 13



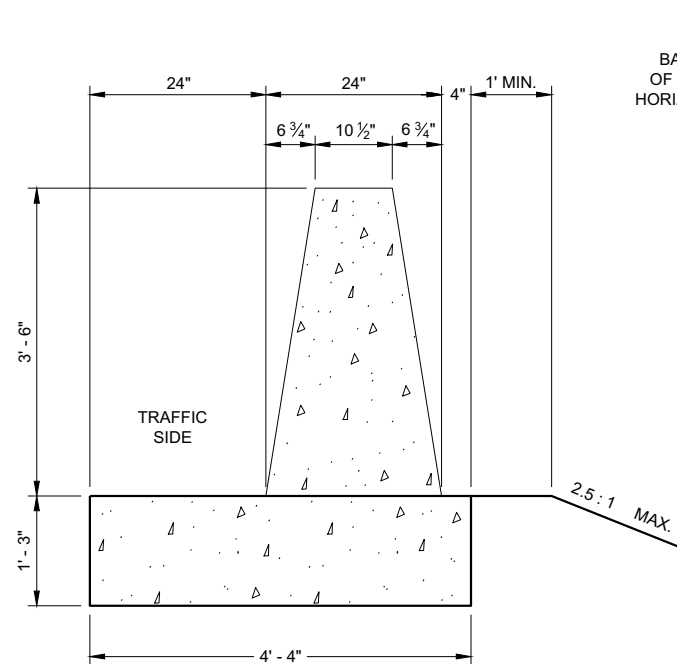
BAR DETAIL
SECTIONS 14 - 16

CONCRETE BARRIER
SINGLE SLOPE 36"
THRIE BEAM ANCHOR

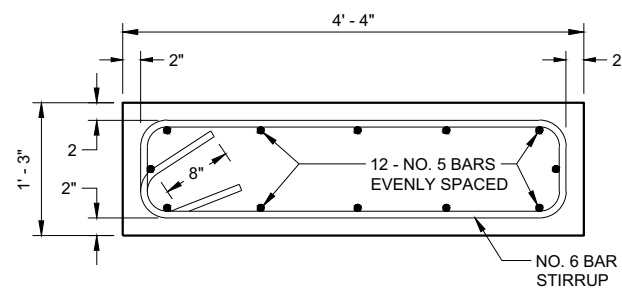
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
ENGINEER 269

FHWA



SECTION A - A



TYPICAL FOOTING

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS OTHERWISE NOTED.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE 3/4" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.

THRIE BEAM ANCHOR INCIDENTAL TO CONCRETE BARRIER ITEM.

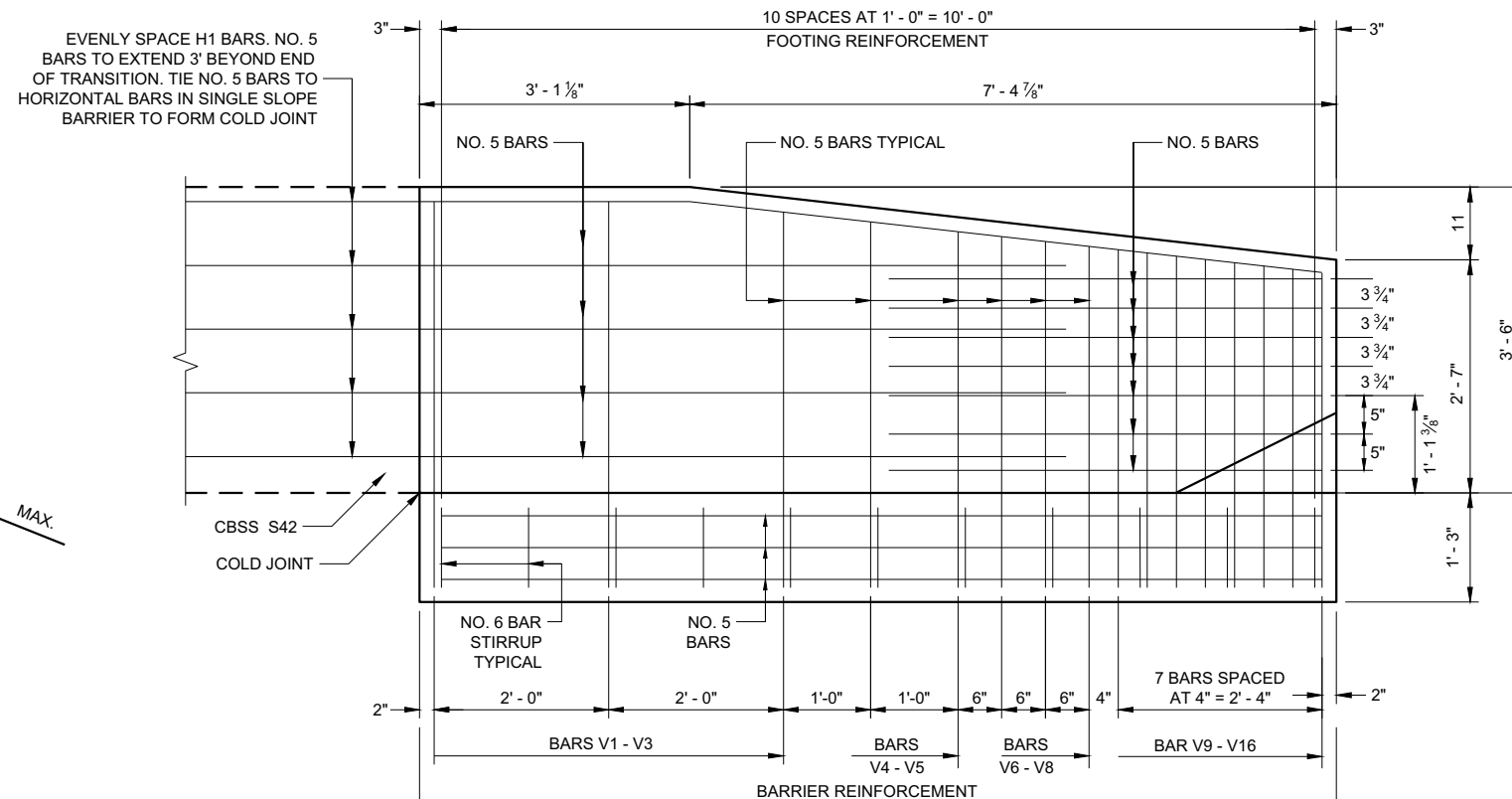
INSTALL SCHEDULE 40 PVC PIPE 1" DIAMETER AT LOCATIONS INDICATED.

EXTEND PVC PIPE COMPLETELY THROUGH BARRIER.

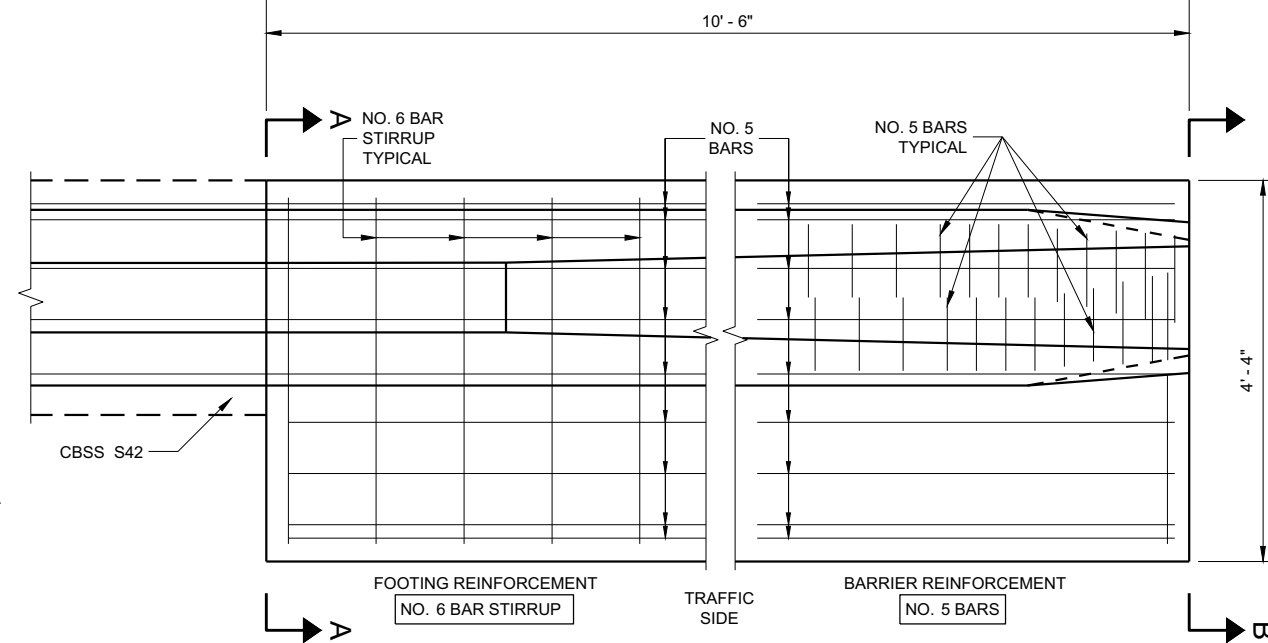
CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE OF BARRIER.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

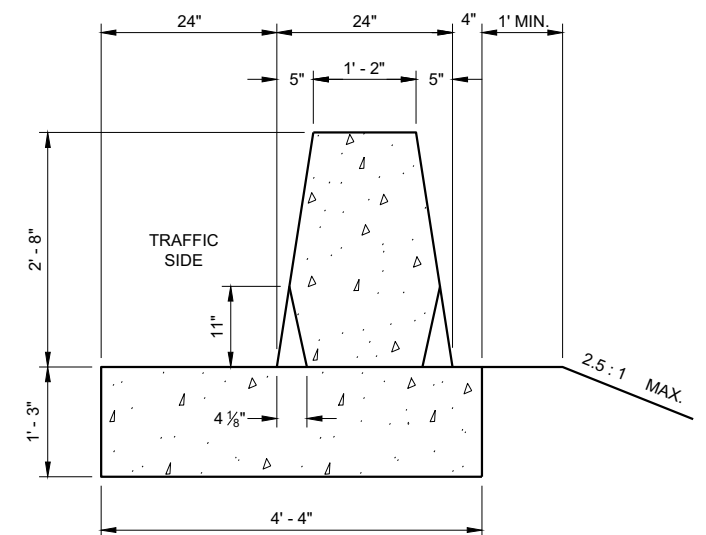
2" CLEAR COVER TYPICAL.



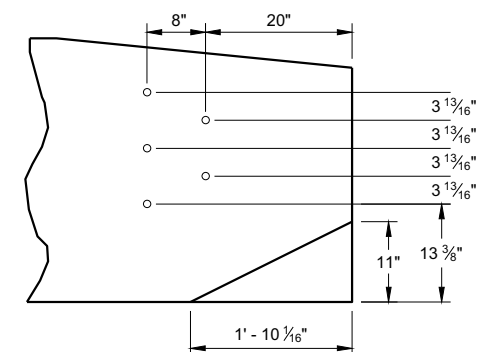
SEE SECTIONS ① THRU ⑩
ELEVATION VIEW



PLAN VIEW



SECTION B - B



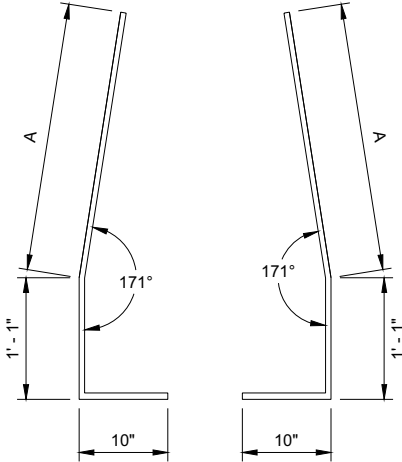
PVC PIPE LOCATIONS

**CONCRETE BARRIER
SINGLE SLOPE 42"
THRIE BEAM ANCHOR**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 270

**BAR CHART
BAR POSITIONS
1 - 11**

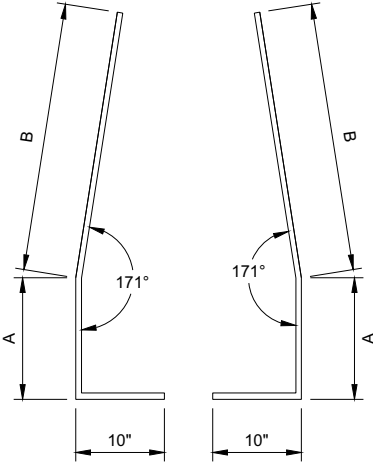
BAR	A
V1	3' - 4 ½"
V2	3' - 4 ½"
V3	3' - 2 ½"
V4	3' - 1"
V5	2' - 11 ½"
V6	2' - 11"
V7	2' - 10 ½"
V8	2' - 9 ½"
V9	2' - 9"
V10	2' - 8 ½"
V11	2' - 8"



**BAR BENDING DETAIL
SECTIONS V1 - V4**

**BAR CHART
BAR POSITIONS
12 - 13**

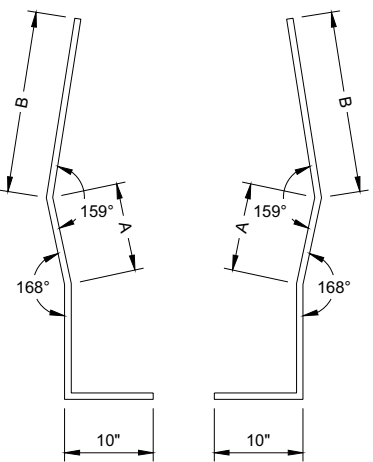
BAR	A	B
V12	1' - 3"	2' - 6"
V13	1' - 8"	2' - 1 ½"



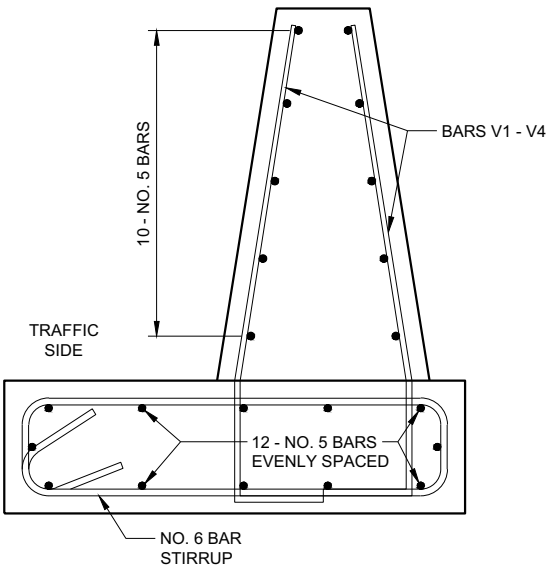
**BAR BENDING DETAIL
SECTIONS V12 - V13**

**BAR CHART
BAR POSITIONS
14 - 16**

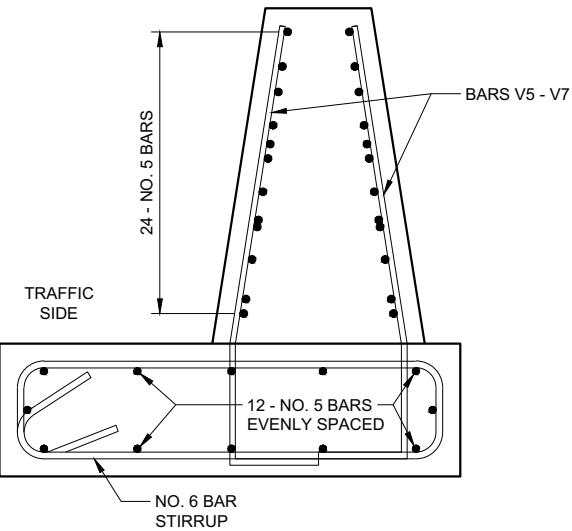
BAR	A	B
V14	6"	2' - 1"
V15	8"	1' - 11"
V16	10"	1' - 8 ½"



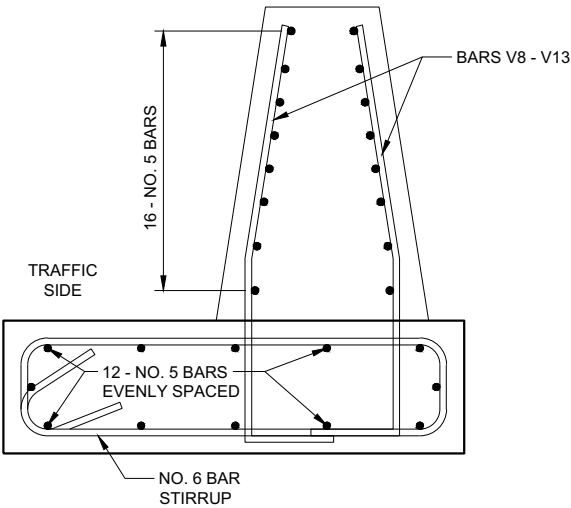
**BAR BENDING DETAIL
SECTIONS V14 - V16**



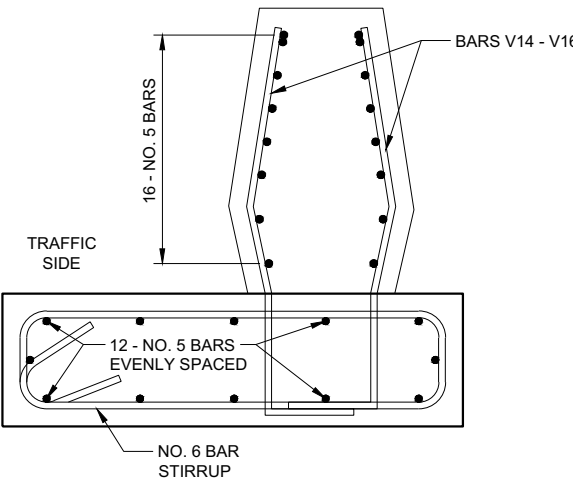
**BAR DETAIL
SECTIONS 1 - 4**



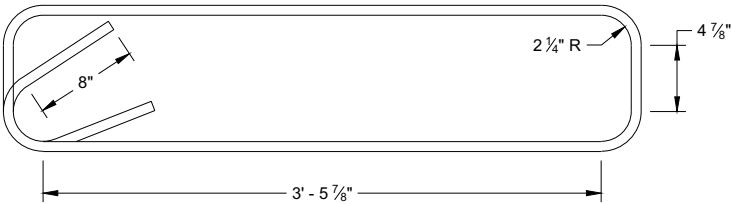
**BAR DETAIL
SECTIONS 5 - 7**



**BAR DETAIL
SECTIONS 8 - 13**



**BAR DETAIL
SECTIONS 14 - 16**



**STIRRUP BAR
BENDING DETAIL**

**CONCRETE BARRIER
SINGLE SLOPE 42"
THRIE BEAM ANCHOR**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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Ⓢ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42

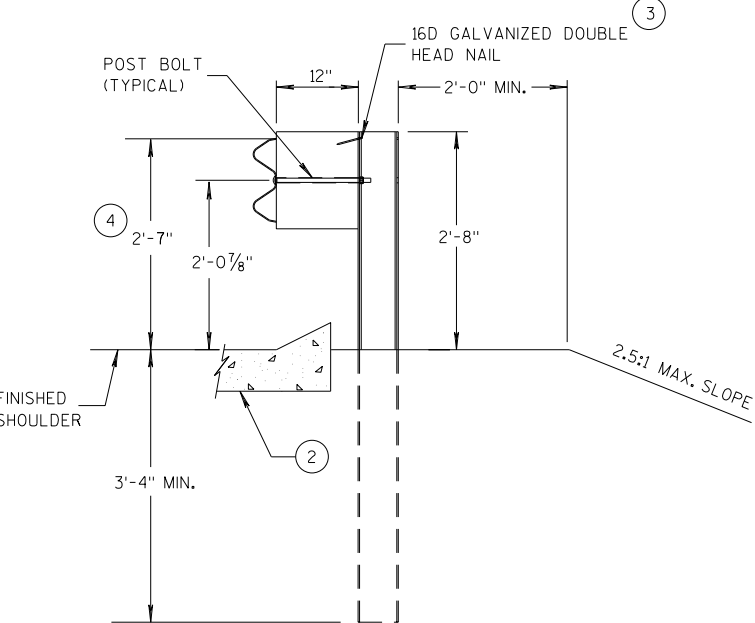


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

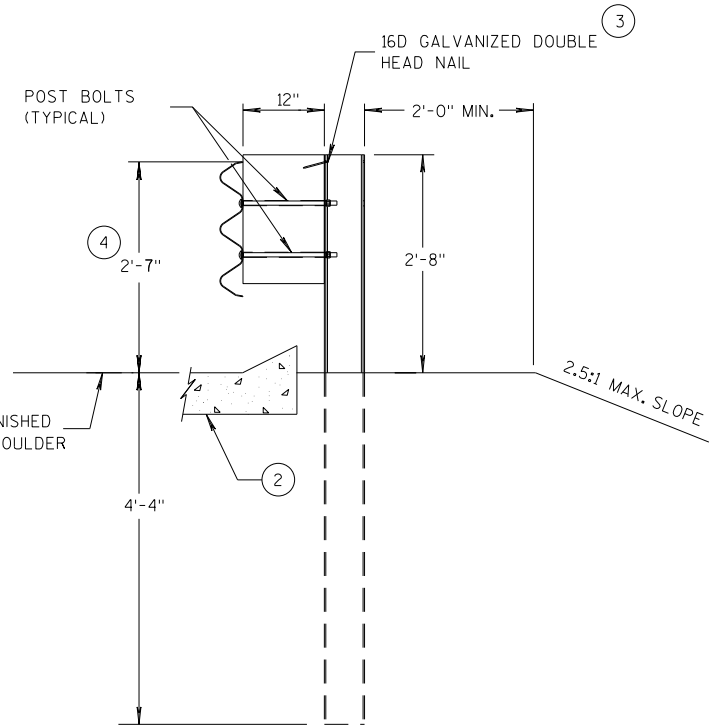
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 272

GENERAL NOTES

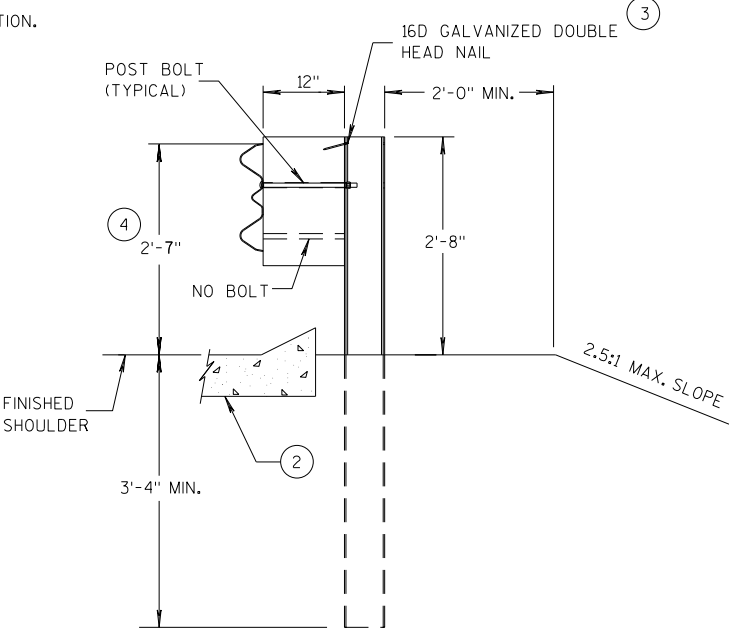
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.
- 13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



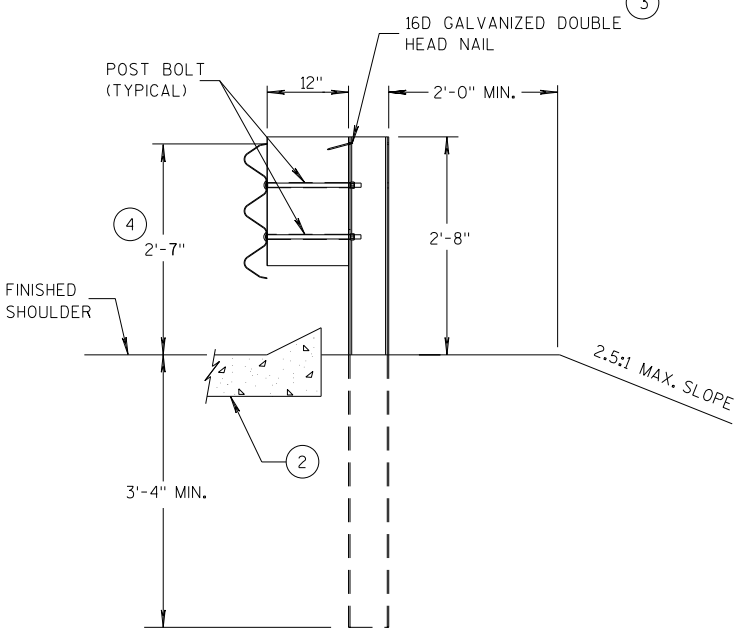
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

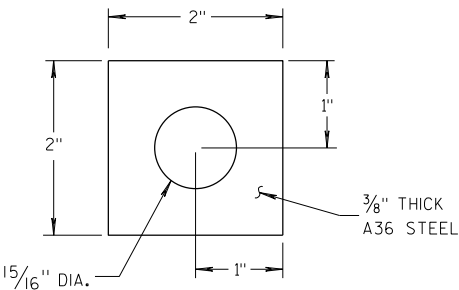
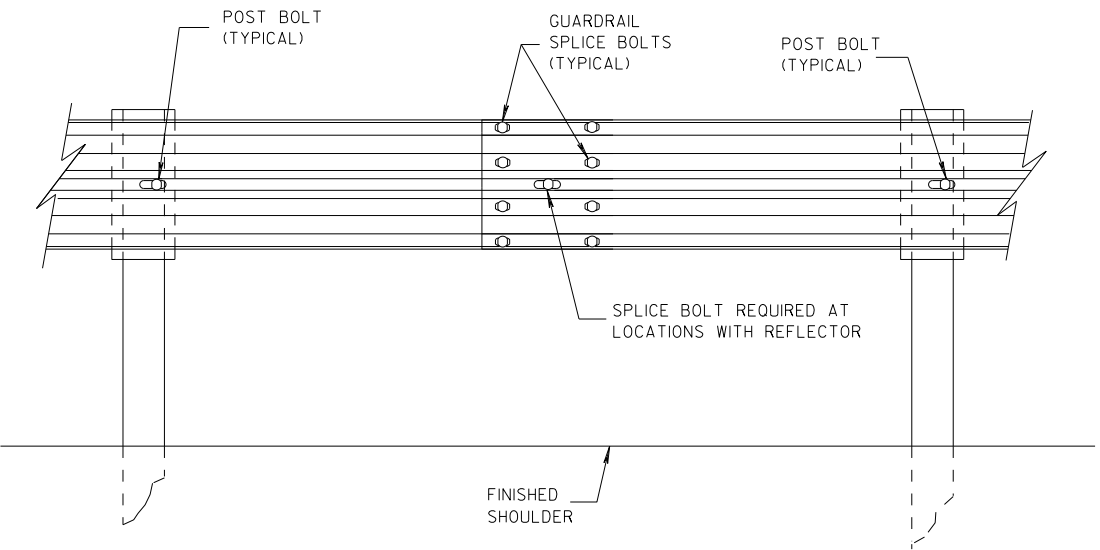
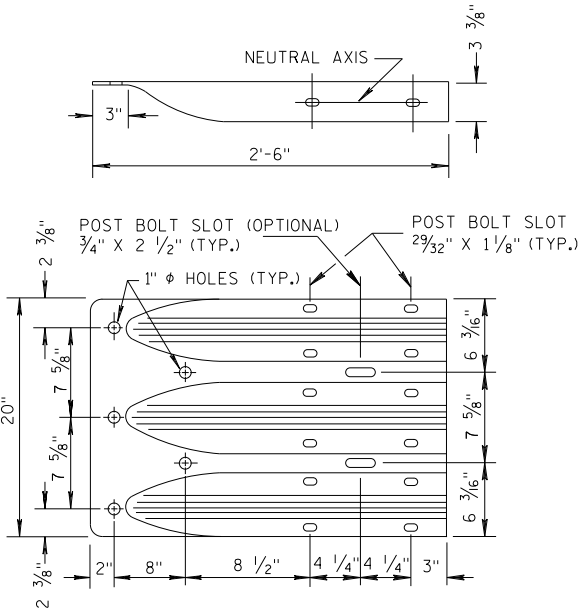


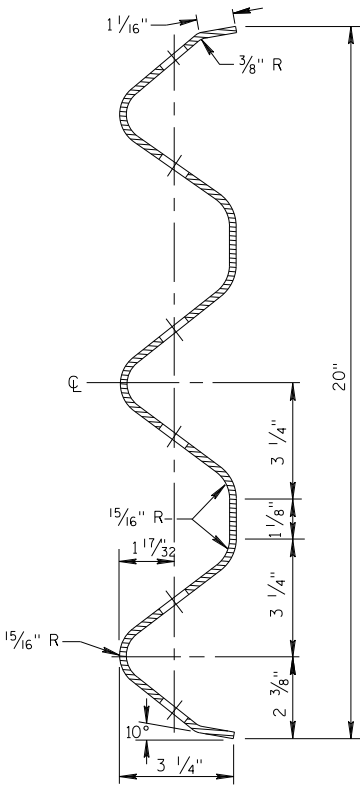
PLATE WASHER DETAIL



SPlice DETAIL



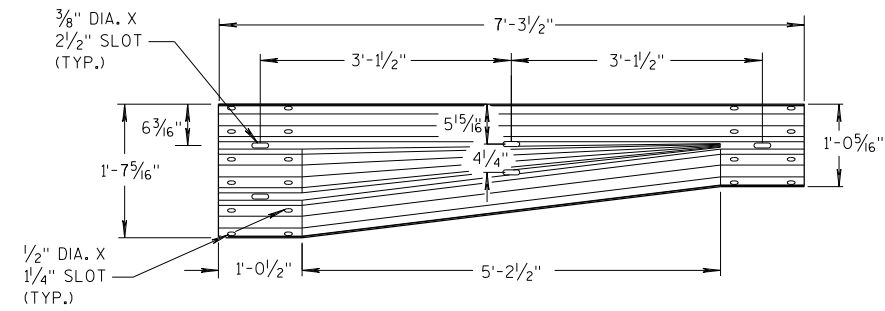
THRIE BEAM
TERMINAL CONNECTOR



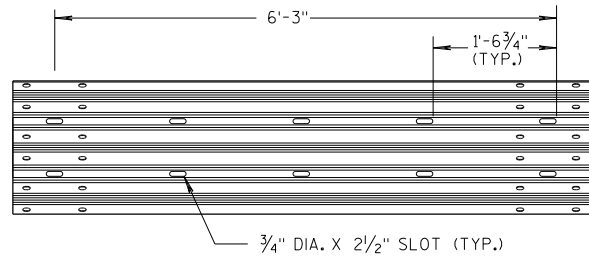
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

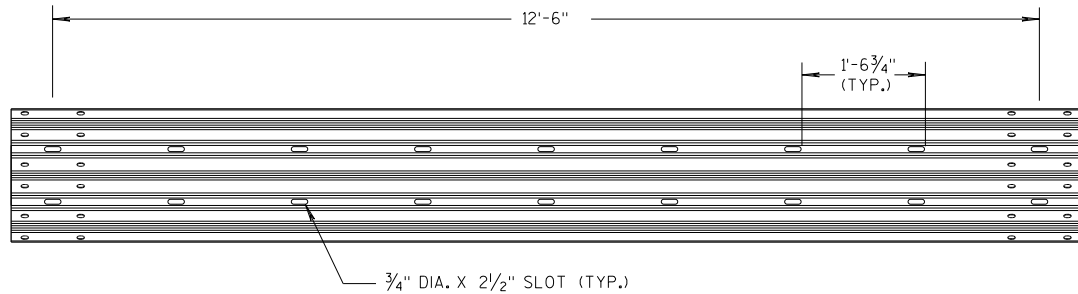
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



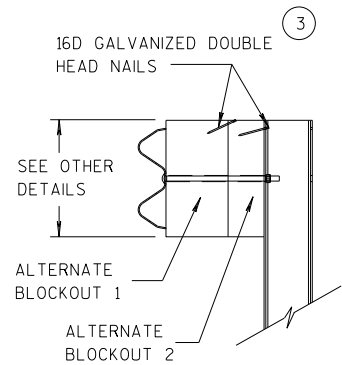
W-BEAM TO THRIE BEAM TRANSITION SECTION



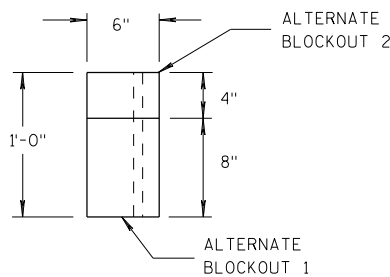
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

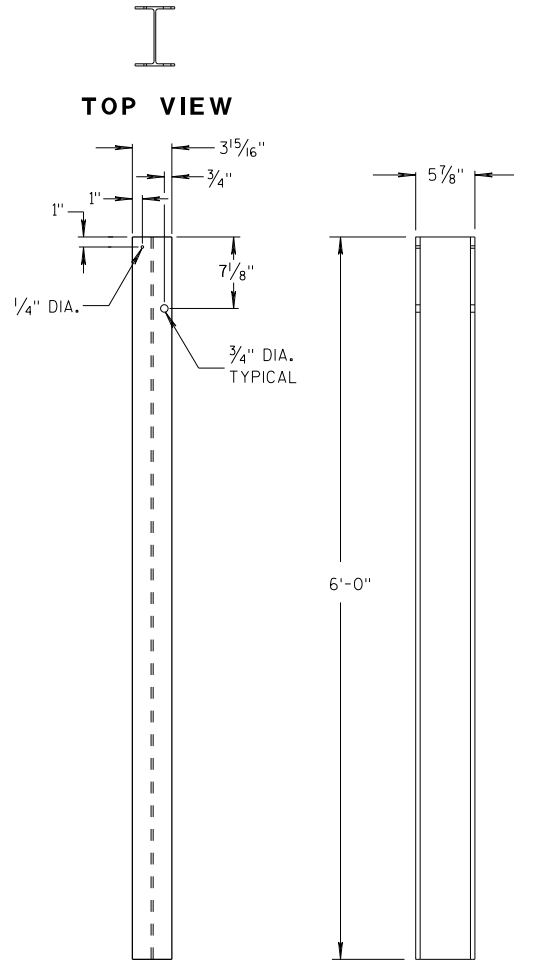


SIDE VIEW



TOP VIEW

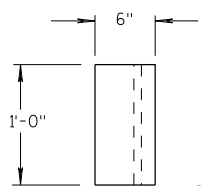
ALTERNATE WOOD BLOCKOUT DETAIL



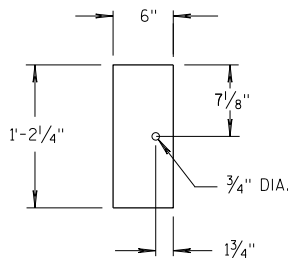
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

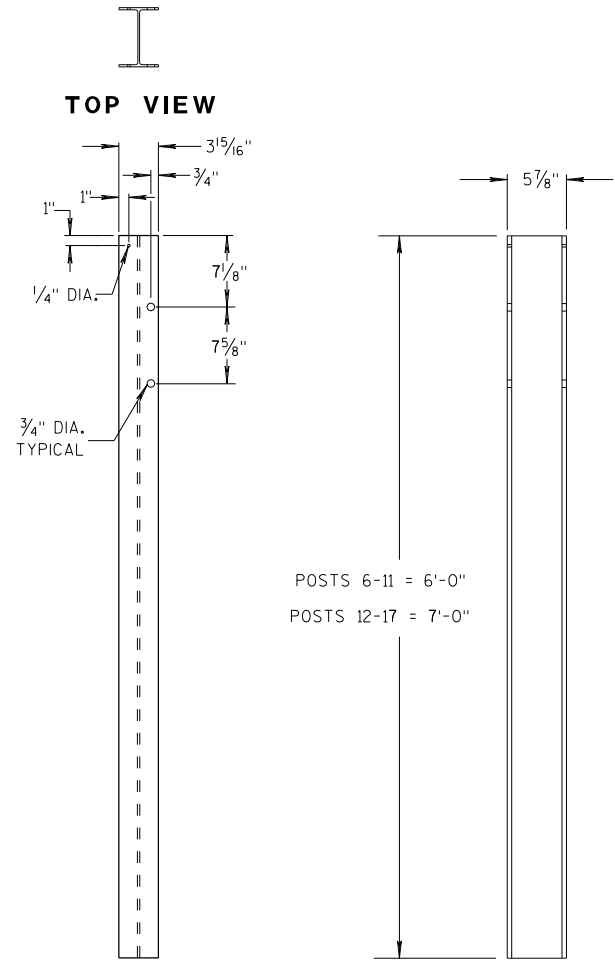


TOP VIEW



FRONT VIEW

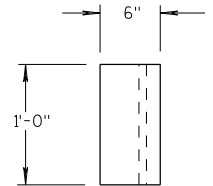
BLOCKOUT POSTS 1-5



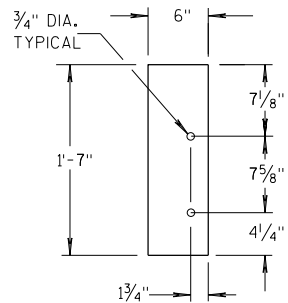
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

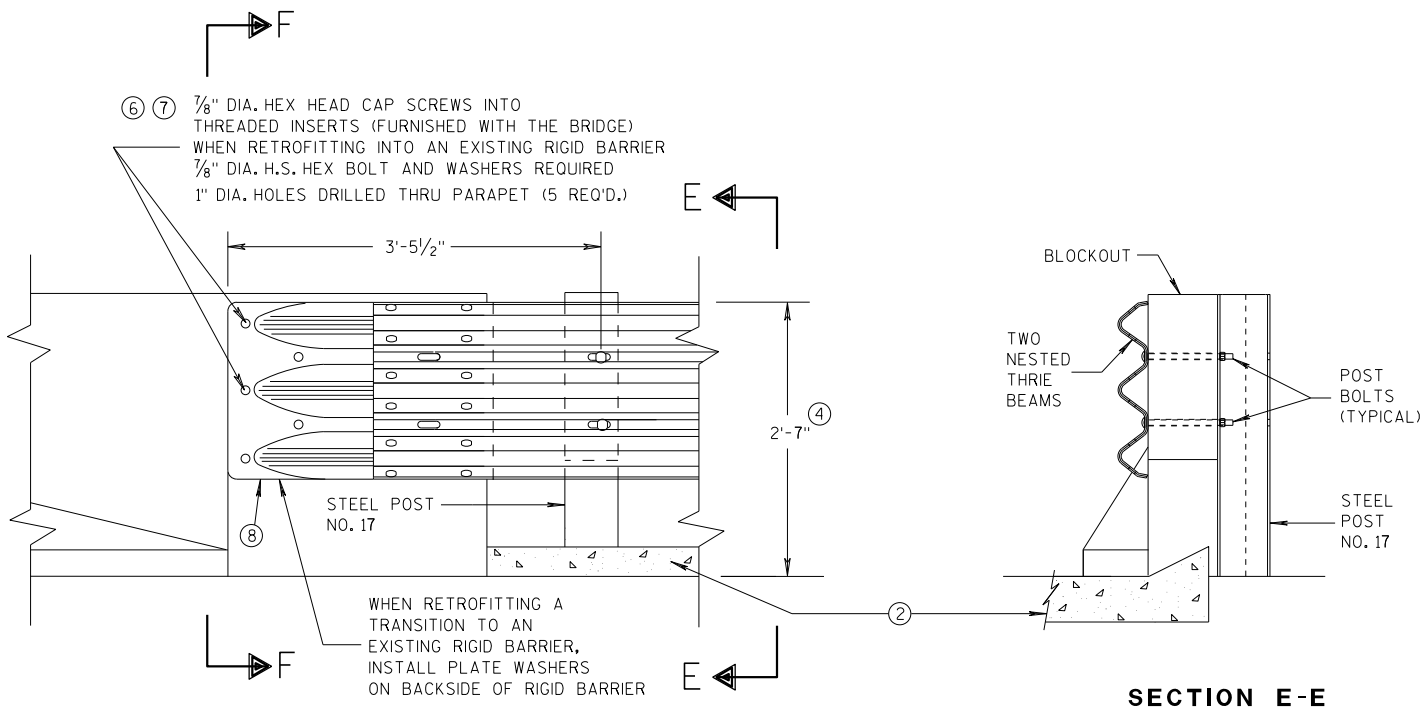
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

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

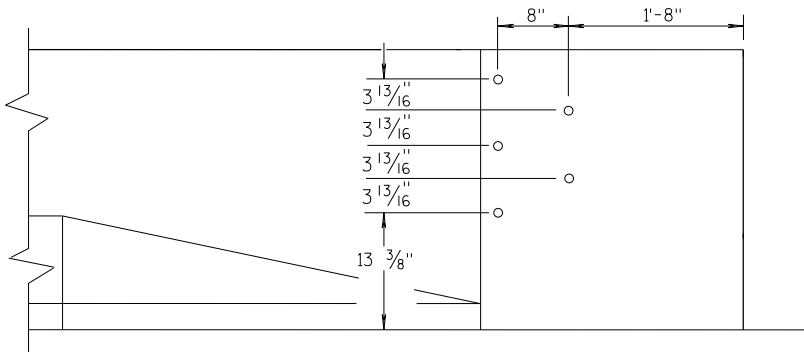
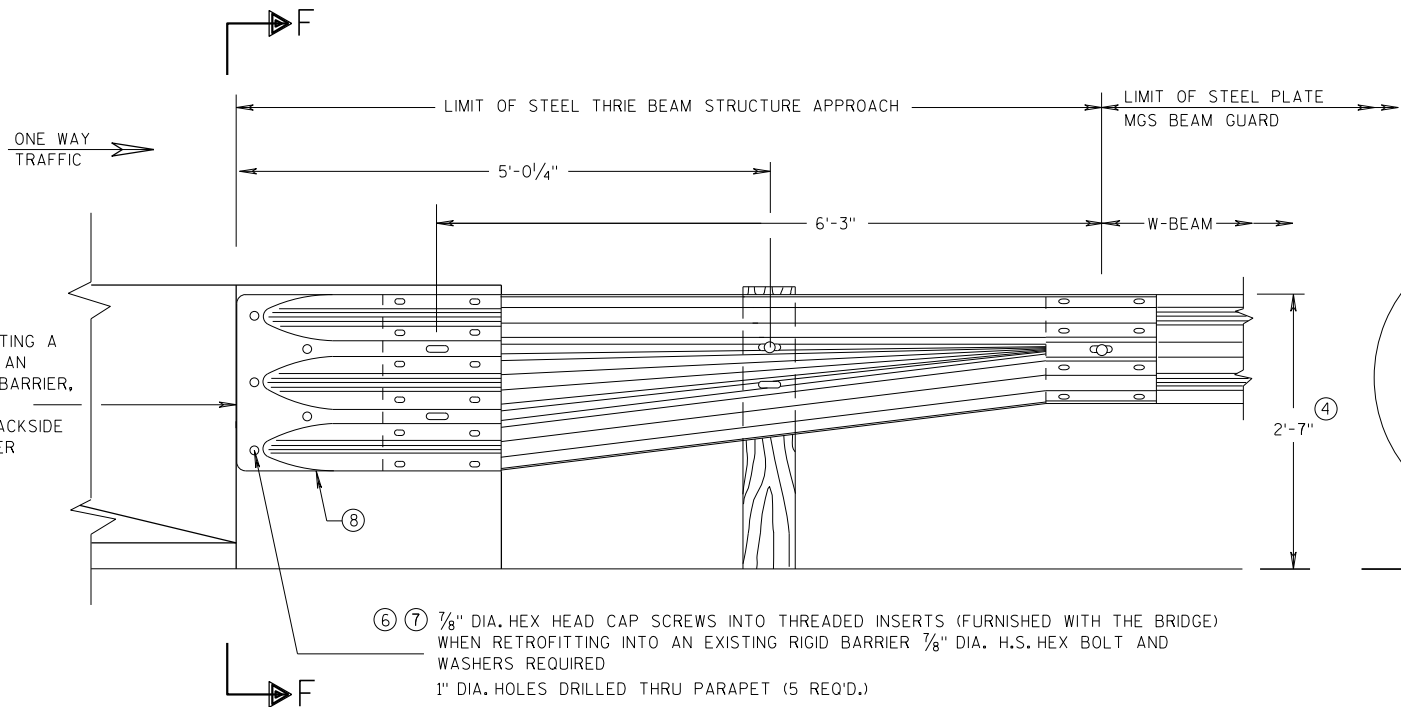
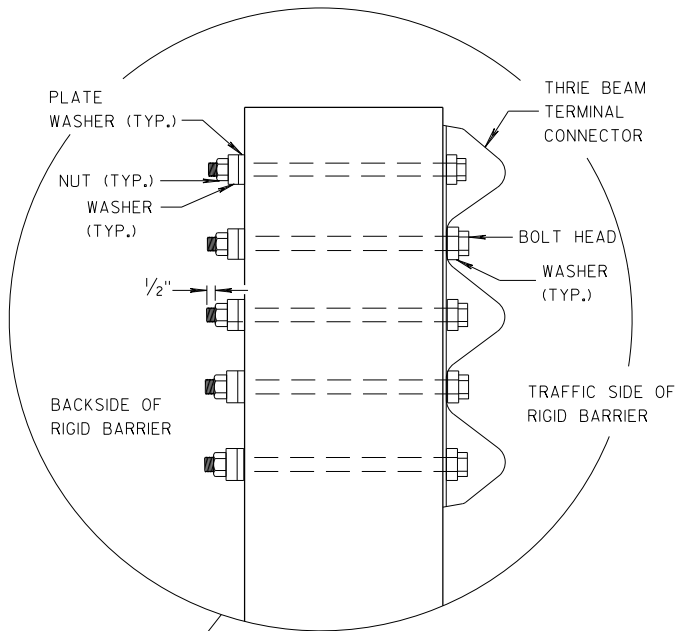
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

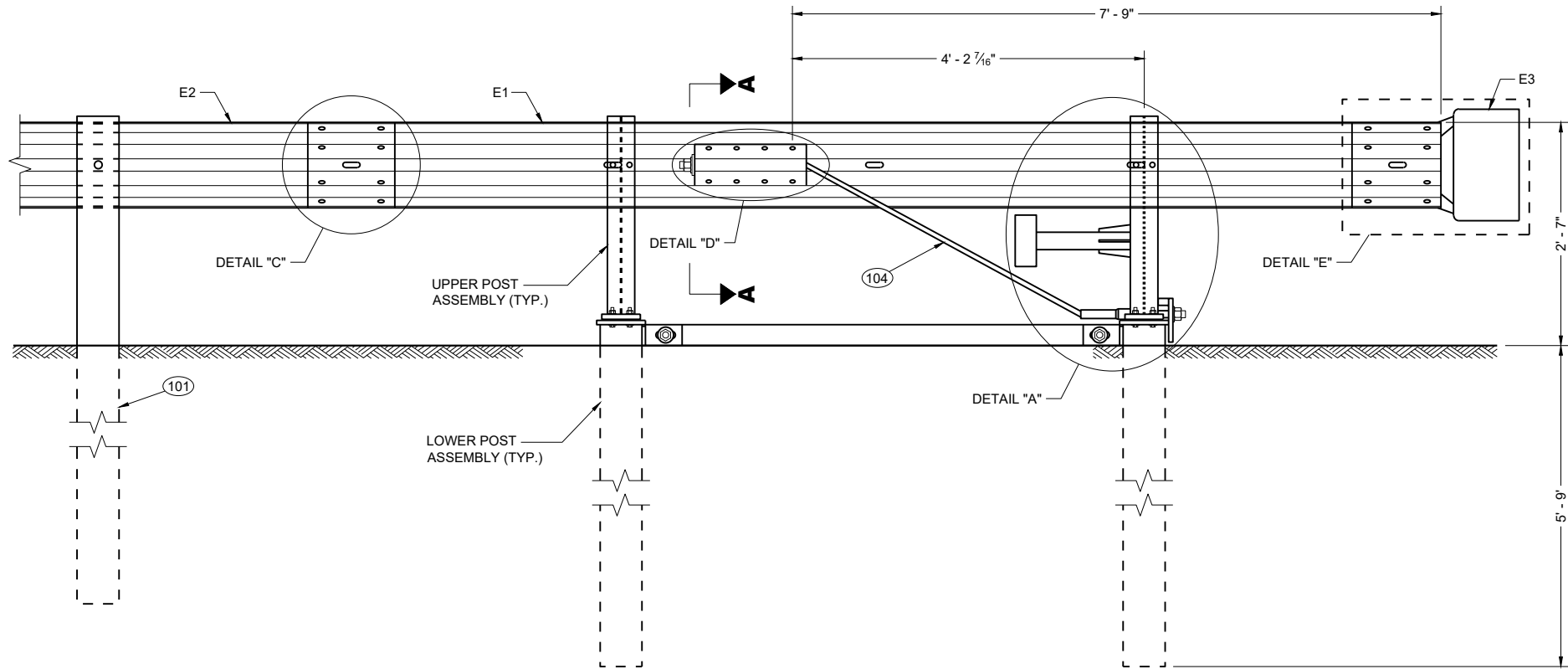


DRILL HOLE LOCATION

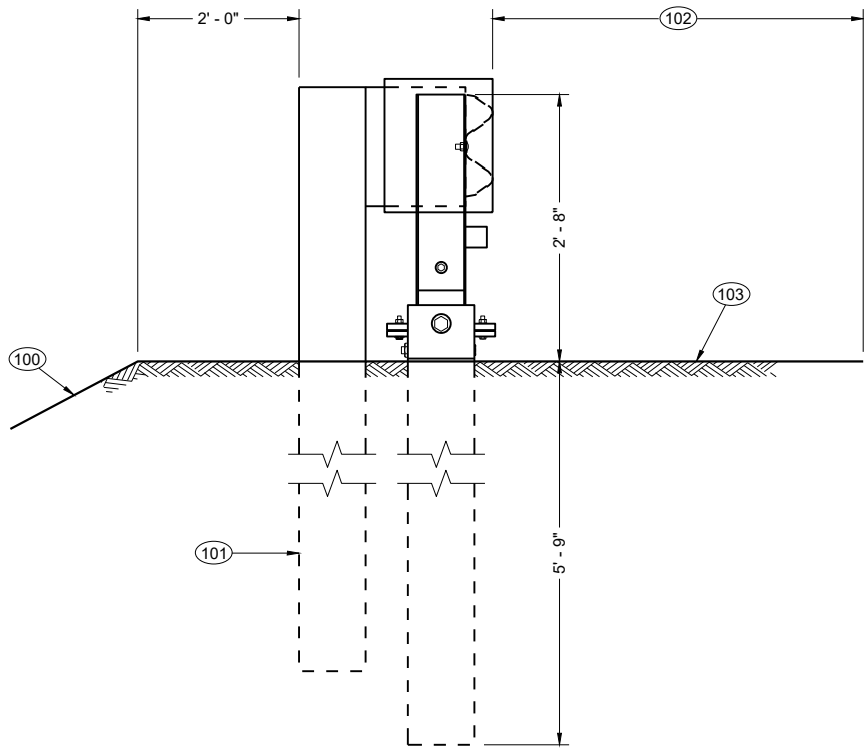
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

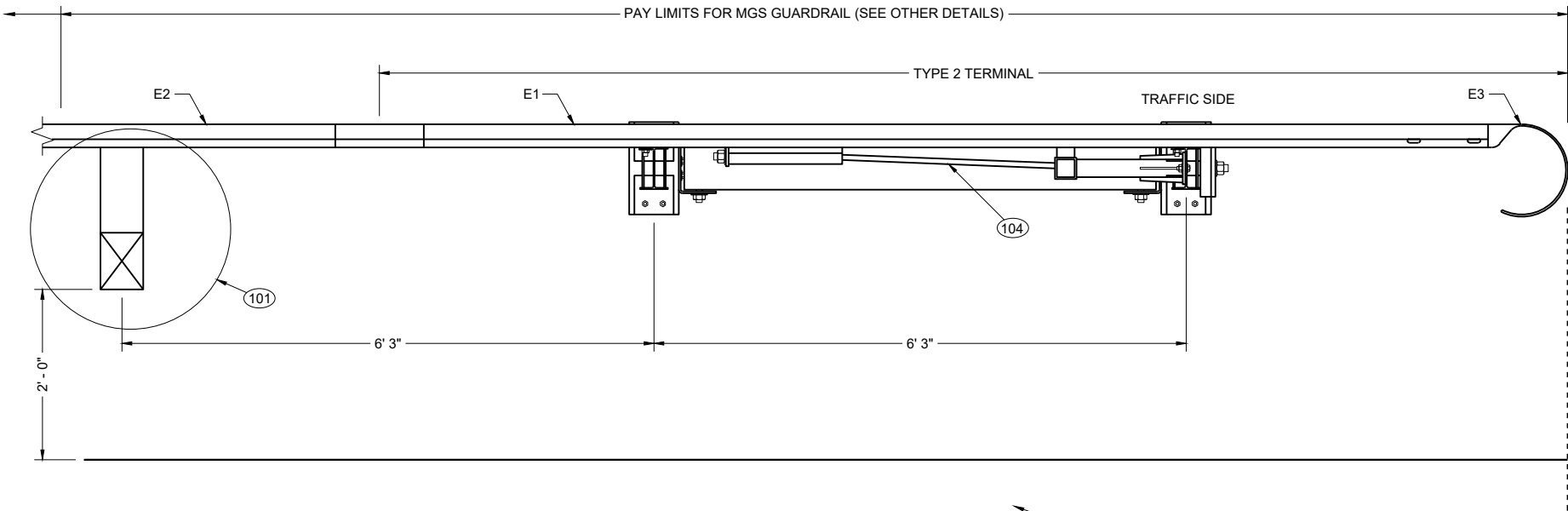
APPROVED
07/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
275
FHWA



BACK VIEW
TYPE 2 TERMINAL



SIDE VIEW
TYPE 2 TERMINAL



TOP VIEW
TYPE 2 TERMINAL

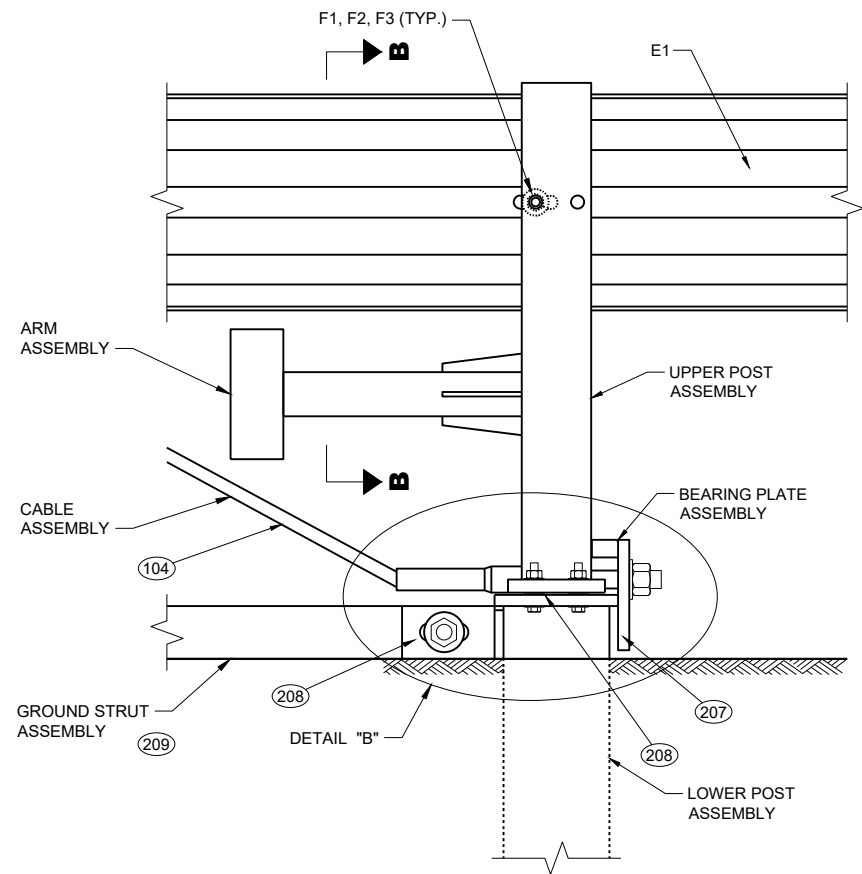
GENERAL NOTES

SEE SDD 14B42 FOR MORE INFORMATION

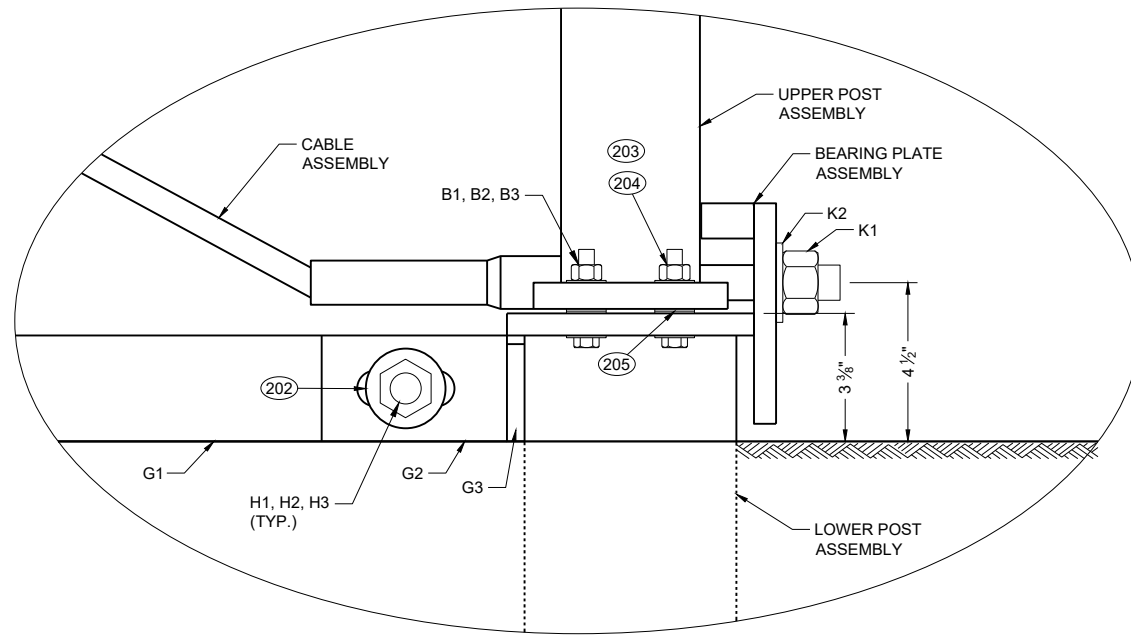
- (100) MAXIMUM SLOPE IS 2.5:1.
- (101) SEE SDD 14B42 FOR MORE INFORMATION.
- (102) SHOULDER
- (103) MAXIMUM SLOPE IS 10:1.
- (104) AFTER ASSEMBLY, CABLE IS TO BE TIGHTENED WITHOUT TWISTING THE CABLE.

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

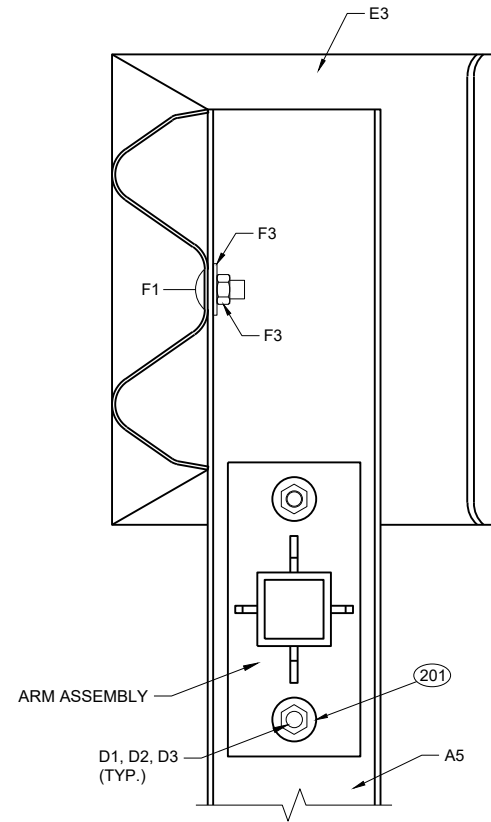
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



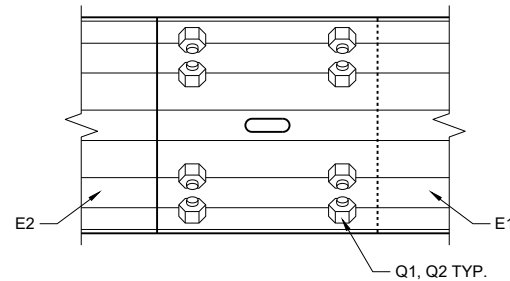
DETAIL "A"



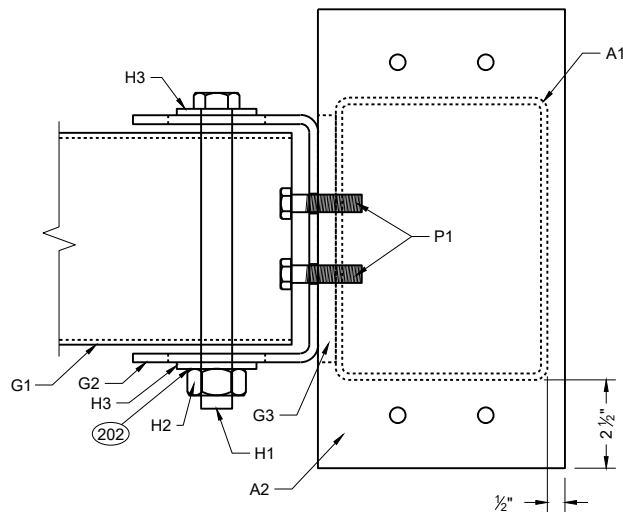
DETAIL "B"



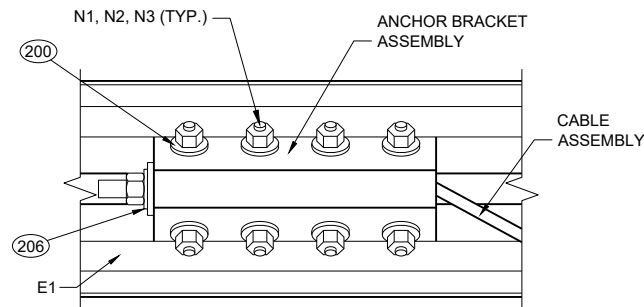
SECTION B - B



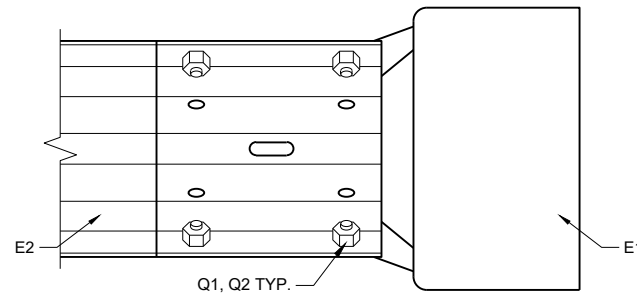
DETAIL "C"



TOP VIEW
GROUND STRUT
CONNECTION DETAIL



DETAIL "D"



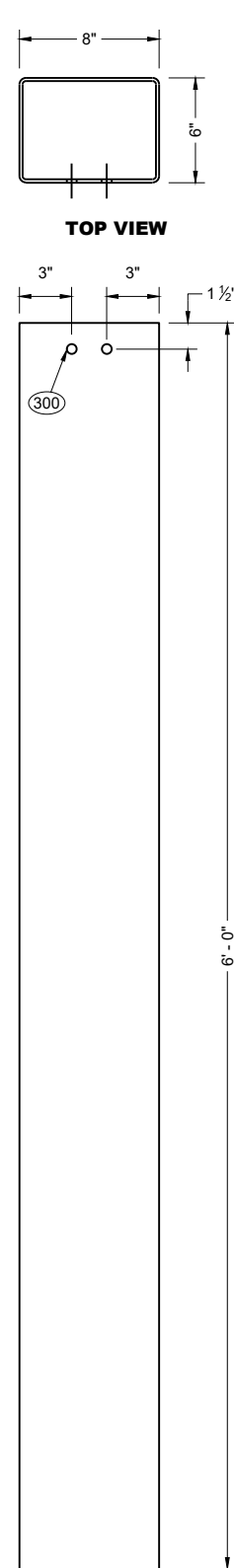
DETAIL "E"

GENERAL NOTES

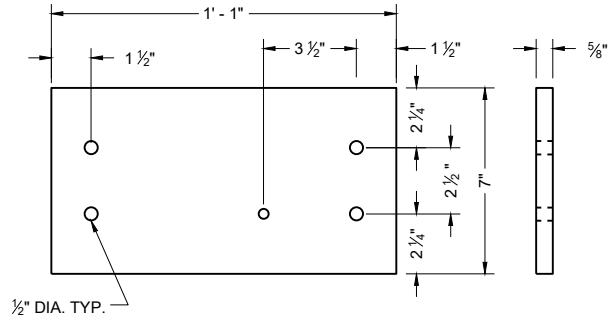
- 200 INSTALL ONE WASHER UNDER BOLT HEAD AND RAIL AND ON WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.
- 201 INSTALL ONE WASHER UNDER BOLT HEAD AND UPPER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND ARM PLATE.
- 202 INSTALL ONE WASHER UNDER BOLT HEAD AND GROUND STRUT CONNECTOR AND ONE WASHER BETWEEN NUT AND GROUND STRUT CONNECTOR.
- 203 INSTALL ONE WASHER UNDER BOLT HEAD AND LOWER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND UPPER POST ASSEMBLY.
- 204 TORQUE VALUE IS BETWEEN 60 - 75 FT-LB.
- 205 TWO WASHERS BETWEEN UPPER AND LOWER POST ASSEMBLY.
- 206 INSTALL ONE WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.
- 207 NO MATERIAL IS TO BE PLACED AGAINST THE VERTICAL FACES OF BEARING PLATE.
- 208 PREVENT OR REMOVE MATERIALS THAT BLOCK ACCESS TO BOLTS FOR POST ASSEMBLIES AND GROUND STRUT.
- 209 PREVENT OR REMOVE MATERIALS THAT IMPEDE REMOVAL OF GROUND STRUT.

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

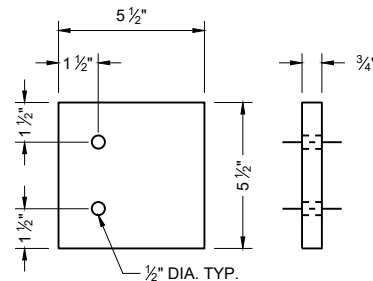
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



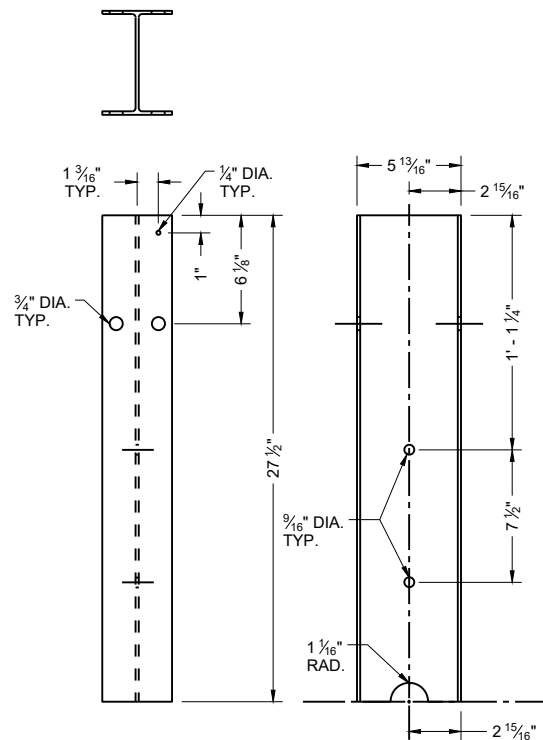
FOUNDATION
TUBE (A1)



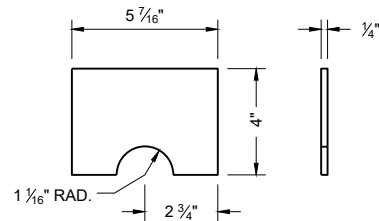
LOWER PLATE (A2)



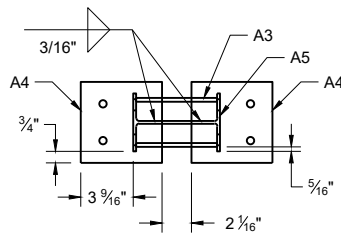
UPPER PLATE (A4)



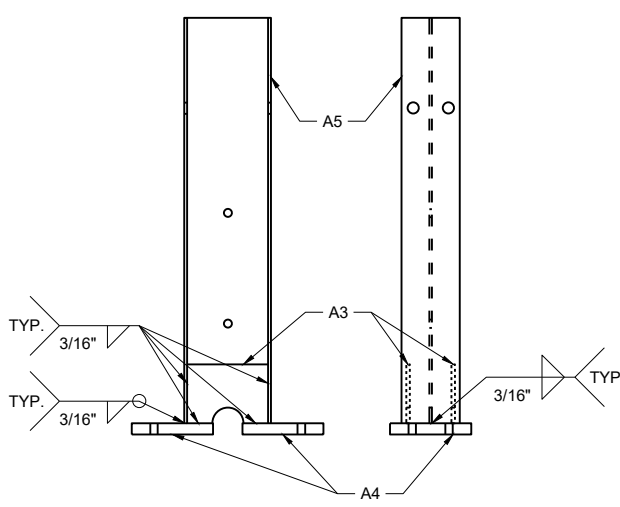
TYPE 2 POST (A5)



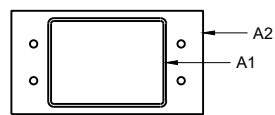
POST GUSSET (A3)



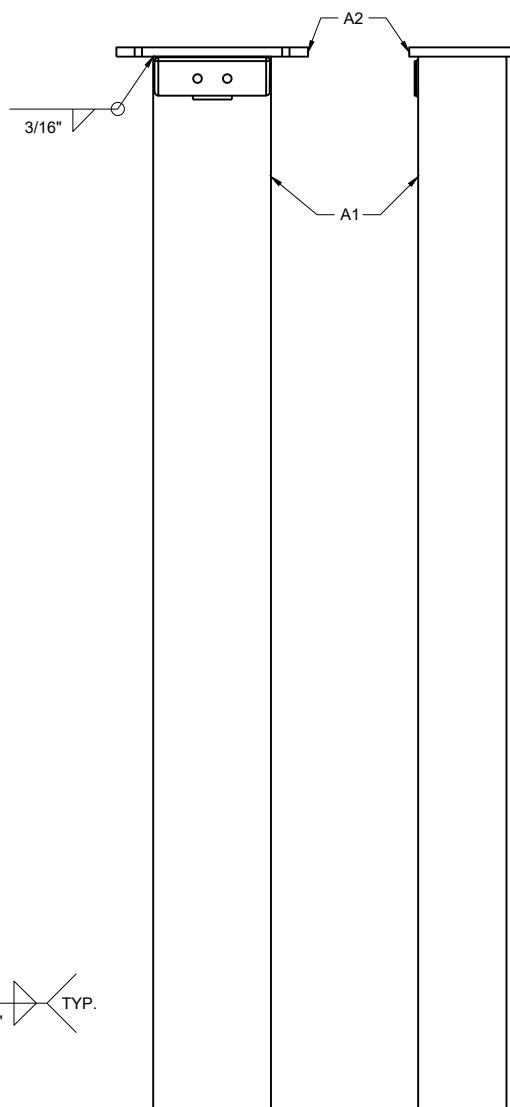
PLAN VIEW



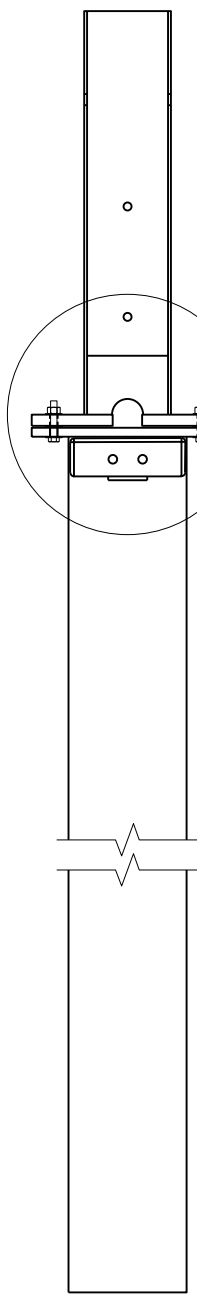
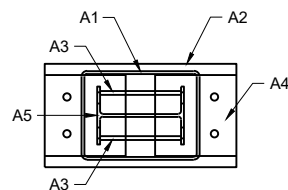
UPPER POST ASSEMBLY



PLAN VIEW



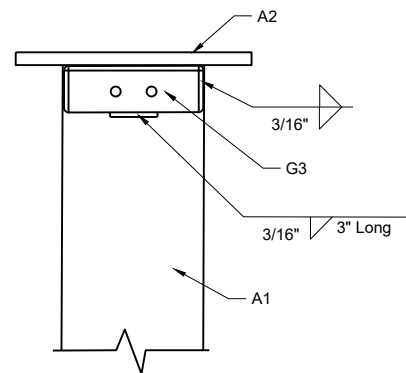
LOWER POST ASSEMBLY



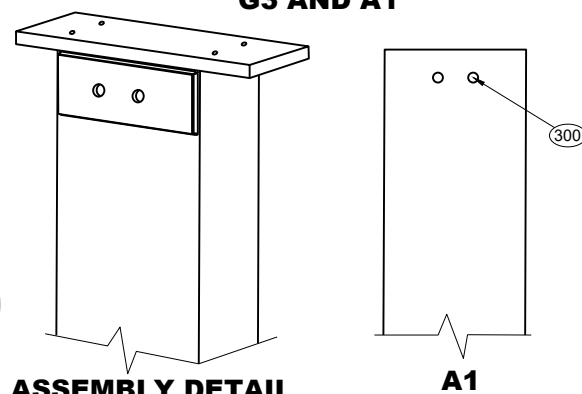
ASSEMBLED POST

GENERAL NOTES

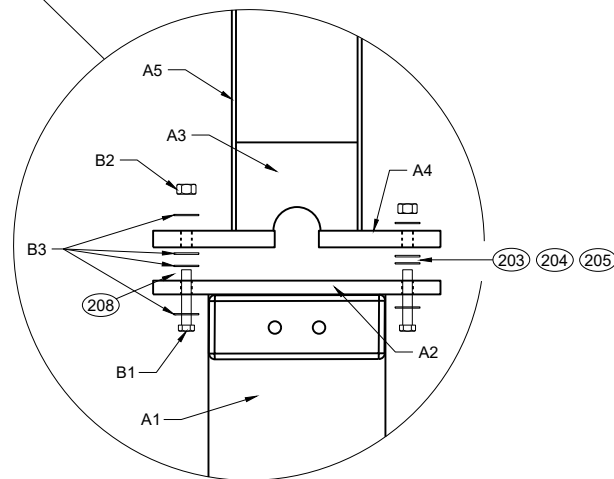
(300) TAP FOR 1/2" AFTER GALVANIZATION



WELDING DETAIL
G3 AND A1



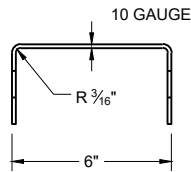
ASSEMBLY DETAIL
ISOMETRIC



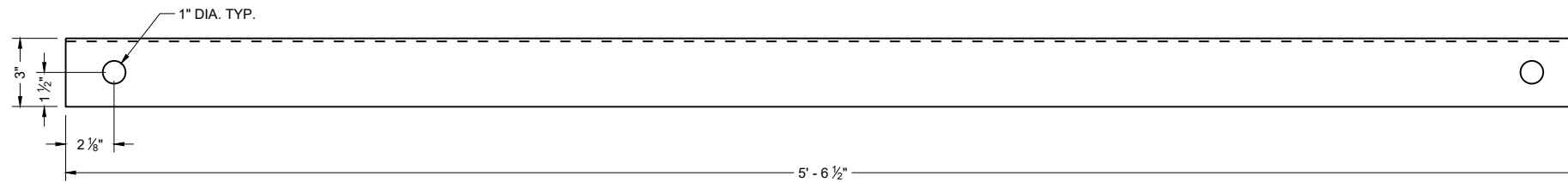
POST CONNECTION DETAIL

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

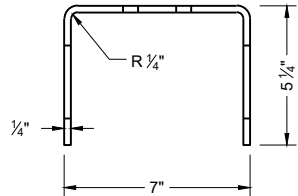


SIDE VIEW

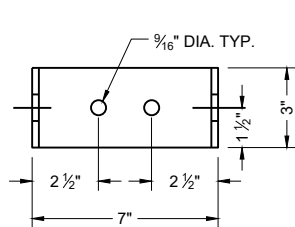


FRONT VIEW

GROUND STRUT CHANNEL (G1)

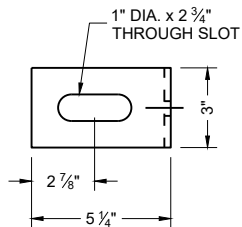


TOP VIEW



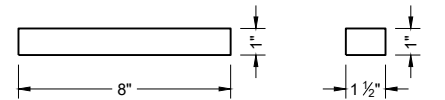
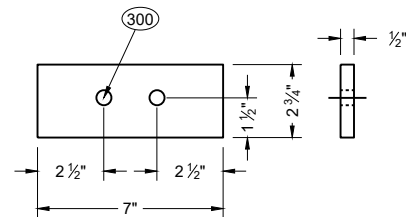
FRONT VIEW

GROUND STRUT CONNECTOR (G2)

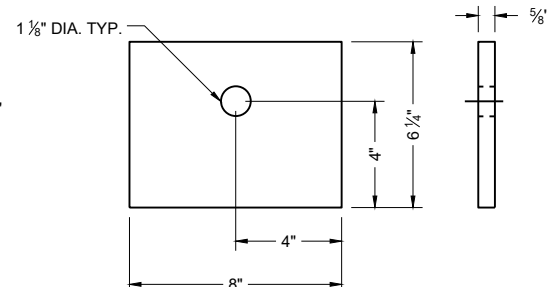


SIDE VIEW

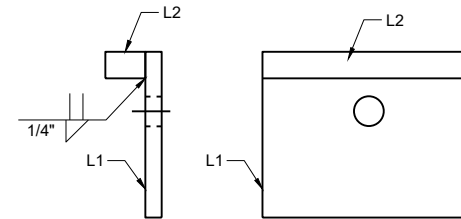
GROUND STRUT PLATE (G3)



BEARING PLATE FLANGE (L2)



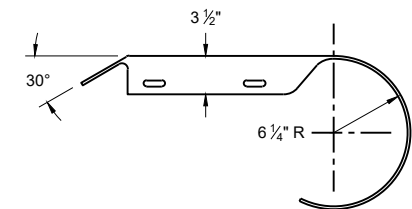
BEARING PLATE (L1)



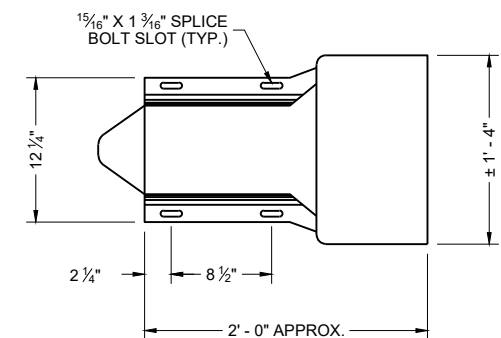
SIDE VIEW

FRONT VIEW

BEARING PLATE ASSEMBLY

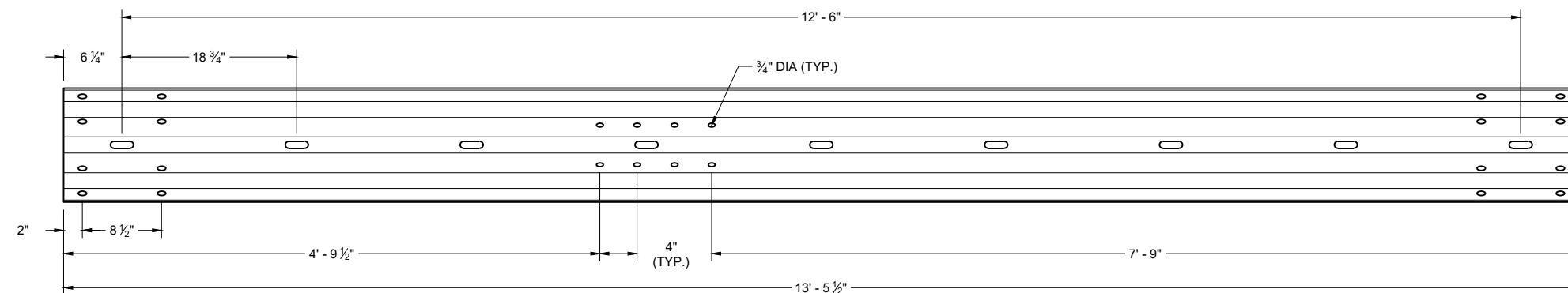


PLAN VIEW

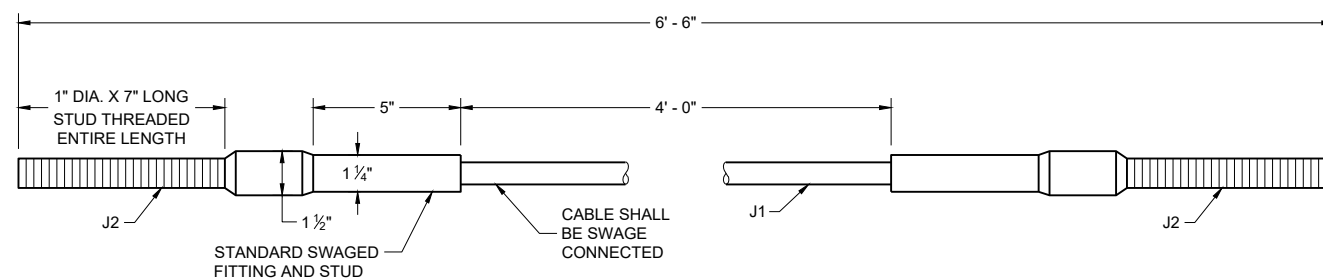


ELEVATION VIEW

ROUNDED BUFFER END (E3)



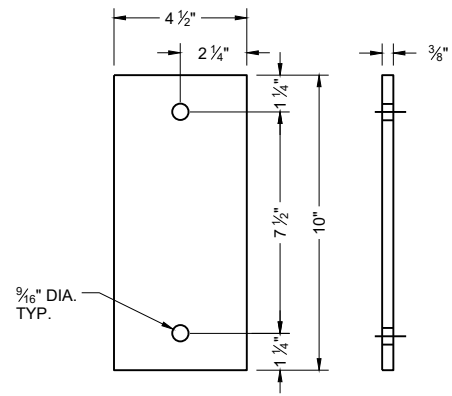
TYPE 2 GUARDRAIL (E1)



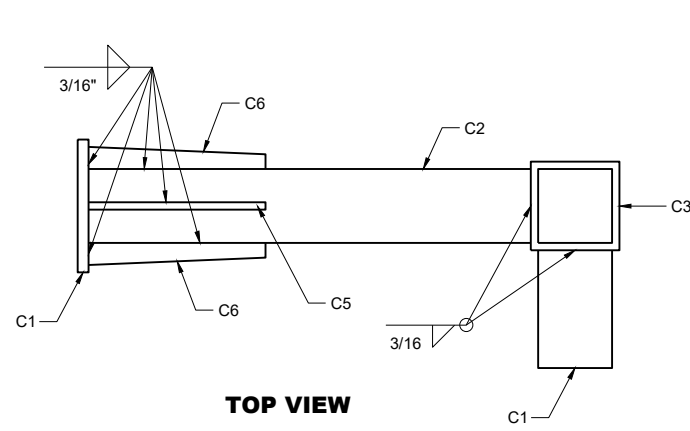
CABLE ASSEMBLY

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

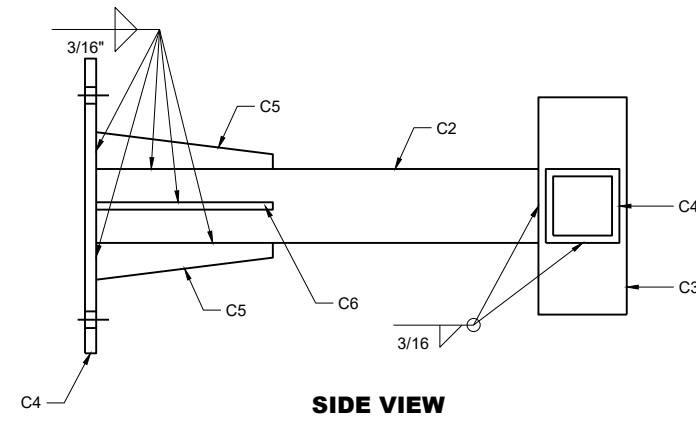
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



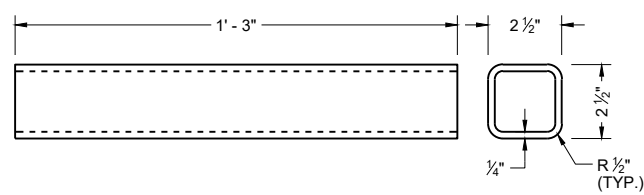
ARM PLATE (C1)



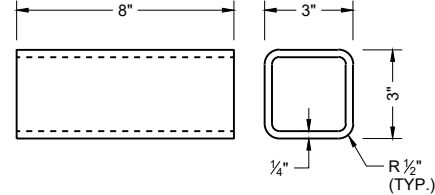
**TOP VIEW
ARM ASSEMBLY**



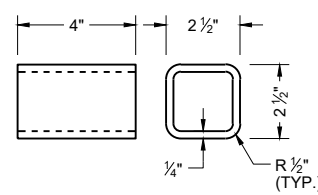
**SIDE VIEW
ARM ASSEMBLY**



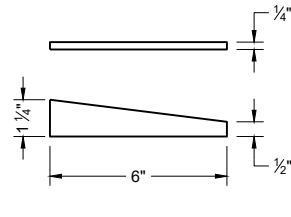
ARM TUBE 1 (C2)



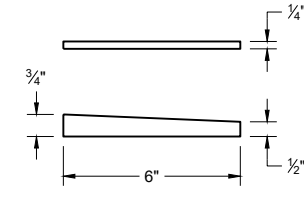
ARM TUBE 2 (C3)



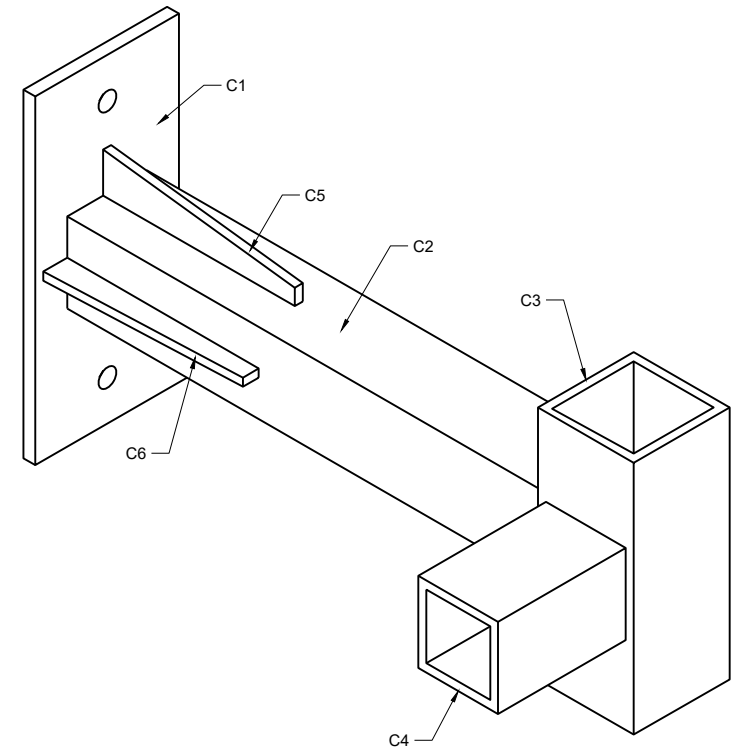
ARM TUBE 3 (C4)



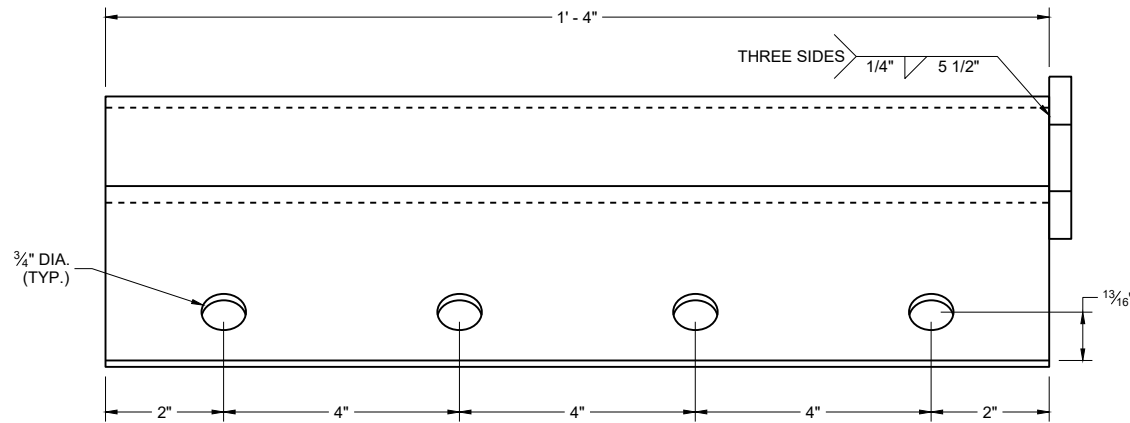
**ARM GUSSET
PLATE 1 (C5)**



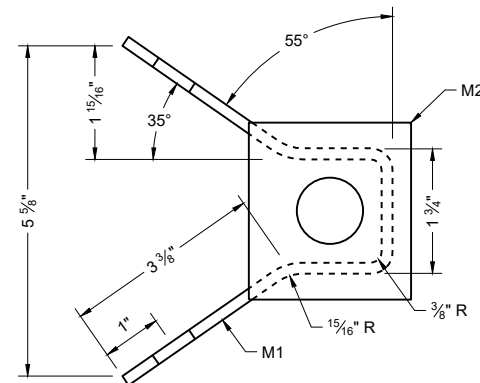
**ARM GUSSET
PLATE 2 (C6)**



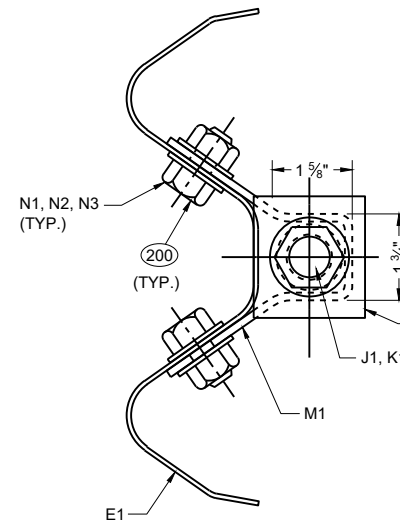
**ISOMETRIC VIEW
ARM ASSEMBLY**



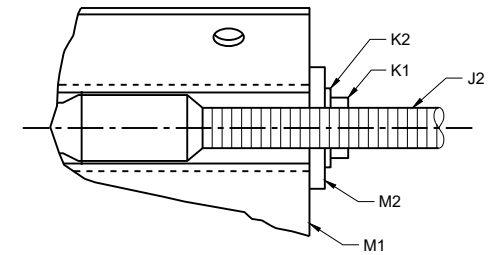
ANCHOR BRACKET (M1, M2)



ANCHOR BRACKET BEARING PLATE (M2)



SECTION A - A



**MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B47-07f

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	TYPE 2 FOUNDATION TUBE	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x $\frac{3}{16}$ "
A2	LOWER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{5}{8}$ " THICKNESS
A3	POST GUSSET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{4}$ " THICKNESS
A4	UPPER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{3}{4}$ " THICKNESS
A5	TYPE 2 POST	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI, w6x9 or w6x8.5	
B1	BREAKAWAY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED . PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	$\frac{7}{16}$ " DIA.
B2	BREAKAWAY BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{7}{16}$ " DIA.
B3	BREAKAWAY BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
C1	ARM ASSEMBLY PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{3}{8}$ " THICKNESS
C2	ARM ASSEMBLY TUBE 1	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x $\frac{3}{16}$ "
C3	ARM ASSEMBLY TUBE 2	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 3" x 3" x $\frac{1}{4}$ "
C4	ARM ASSEMBLY TUBE 3	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " X $\frac{1}{4}$ "
C5	ARM ASSEMBLY GUSSET PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{4}$ " THICKNESS
C6	ARM ASSEMBLY GUSSET PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{4}$ " THICKNESS
D1	ARM ASSEMBLY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	$\frac{1}{2}$ " DIA.
D2	ARM ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{1}{2}$ " DIA.
D3	ARM ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	$\frac{1}{2}$ " DIA.
E1	TYPE 2 GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E2	BEAM GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E3	BEAM GUARD ROUNDED BUFFER END	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
F1	POST BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	$\frac{5}{8}$ " DIA.
F2	POST BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{5}{8}$ " DIA.
F3	POST BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
G1	GROUND STRUT CHANNEL	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{2}$ " x 11 $\frac{3}{4}$ " x 10 GAUGE
G2	GROUND STRUT CONNECTOR	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{4}$ " THICKNESS
G3	GROUND STRUT PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{2}$ " THICKNESS

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B47-07f

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

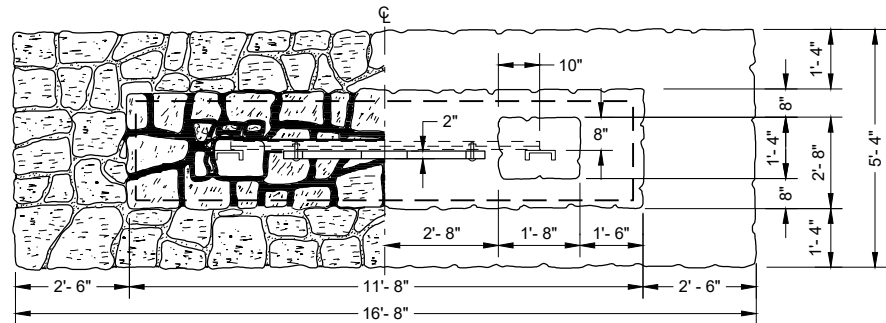
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
H1	GROUND STRUT BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	7/8" DIA.
H2	GROUND STRUT BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	7/8" DIA.
H3	GROUND STRUT BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
J1	BCT CABLE	AASHTO M30 / ASTM A741 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN. BREAKING STRENGTH OF 42.7 KIPS	3/4" DIA.
J2	BCT CABLE	UNC 1" ASTM A576 GRADE 1035 SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. MIN BREAKING STRENGTH OF 42.7 KIPS ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS."	
K1	CABLE ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1" DIA.
K2	CABLE ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1	1" DIA.
L1	BEARING PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	5/8" THICKNESS
L2	BEARING PLATE FLANGE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1" THICKNESS
M1	BEAM GUARD ANCHOR BRACKET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	
M2	BEAM GUARD ANCHOR END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/8" THICKNESS
N1	ANCHOR BRACKET BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	5/8" DIA.
N2	ANCHOR BRACKET BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
N3	ANCHOR BRACKET BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
P1	FOUNDATION TUBE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1/2" DIA.
Q1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
Q2	SPLICE NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	5/8" DIA.

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

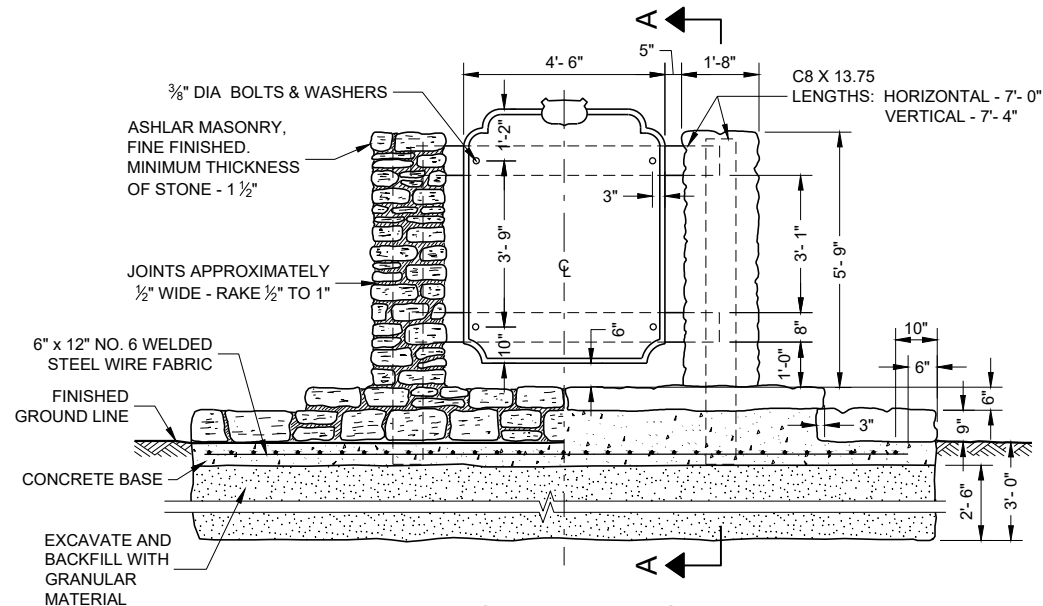
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2025 /S/ Rodney Taylor
DATE <position>

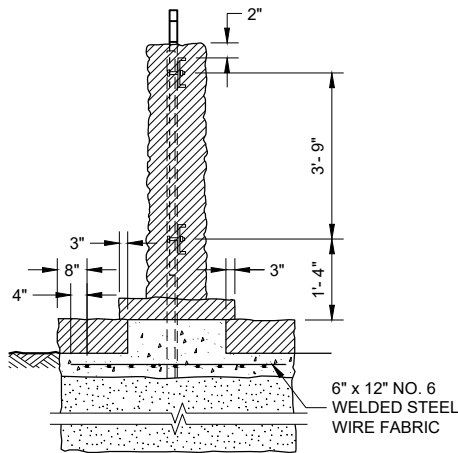
FHWA



TOP VIEW



FRONT ELEVATION
MASONRY CONSTRUCTION



SECTION A - A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 615.

CAST ALUMINUM PLAQUE SHALL BE STATE FURNISHED.

ALL CARRIAGE BOLTS USED IN CONSTRUCTION SHALL BE CUT OFF FLUSH WITH THE NUTS AND ALL NUTS SHALL BE COUNTER SUNK, EXCEPT FOR THOSE FASTENED TO THE PLAQUE.

DIMENSIONED POSTS & RAILS

POSTS SHALL BE DOUGLAS FIR, CONSTRUCTION GRADE. CROSS MEMBERS SHALL BE DOUGLAS FIR, FINISHED LUMBER, GRADE "C" SELECT OR BETTER. POSTS AND CROSS MEMBERS SHALL BE PAINTED WITH TWO COATS OF BROWN WOOD STAIN.

WELDED STEEL POST BASES SHALL BE FABRICATED. BASES SHALL BE PAINTED WITH DARK BROWN PAINT. GENEROUSLY TREAT ALL END GRAIN, DRILLED HOLES AND CUT SURFACES.

RUSTIC POSTS AND RAILS

POSTS AND CROSS MEMBERS MAY BE FROM ONE OF THE FOLLOWING SPECIES (SALVAGED UTILITY POLES OR TREATED TIMBER PILINGS MAY BE USED).

WHITE PINE
RED (NORWAY) PINE
NORTHERN RED CEDAR
NORTHERN HEMLOCK OR OAK

THE ABOVE-GROUND PORTION OF THE TREATED AND UNTREATED POSTS AND RAILS SHALL BE PAINTED WITH TWO COATS OF BROWN WOOD STAIN.

BILL OF MATERIALS

DIMENSIONED POSTS CONSTRUCTION

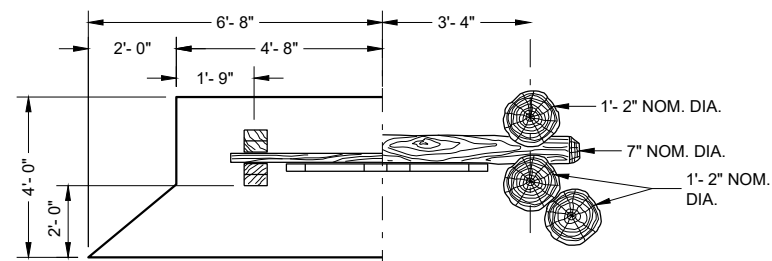
ITEM	UNIT	QUANTITY
CONCRETE (FLAT SLAB)	CY	0.80
WIRE FABRIC (FLAT SLAB)	SY	4.6
STEEL POST BASES	EA	2
POSTS	6" X 6" X 7' - 3"	4
LUMBER	2" X 6" X 6' - 10	2
ANCHOR BOLTS (FLAT SLAB)	3/8" X 5"	4
CARRIAGE BOLTS	3/8" X 4"	4
CARRIAGE BOLTS	3/8" X 14"	4
CARRIAGE BOLTS	3/8" X 6 1/2"	4
ANCHOR BOLTS (ROUND FOOTING)	3/8" "U"	2
CONCRETE (ROUND FOOTING)	CY	0.17

RUSTIC POSTS CONSTRUCTION

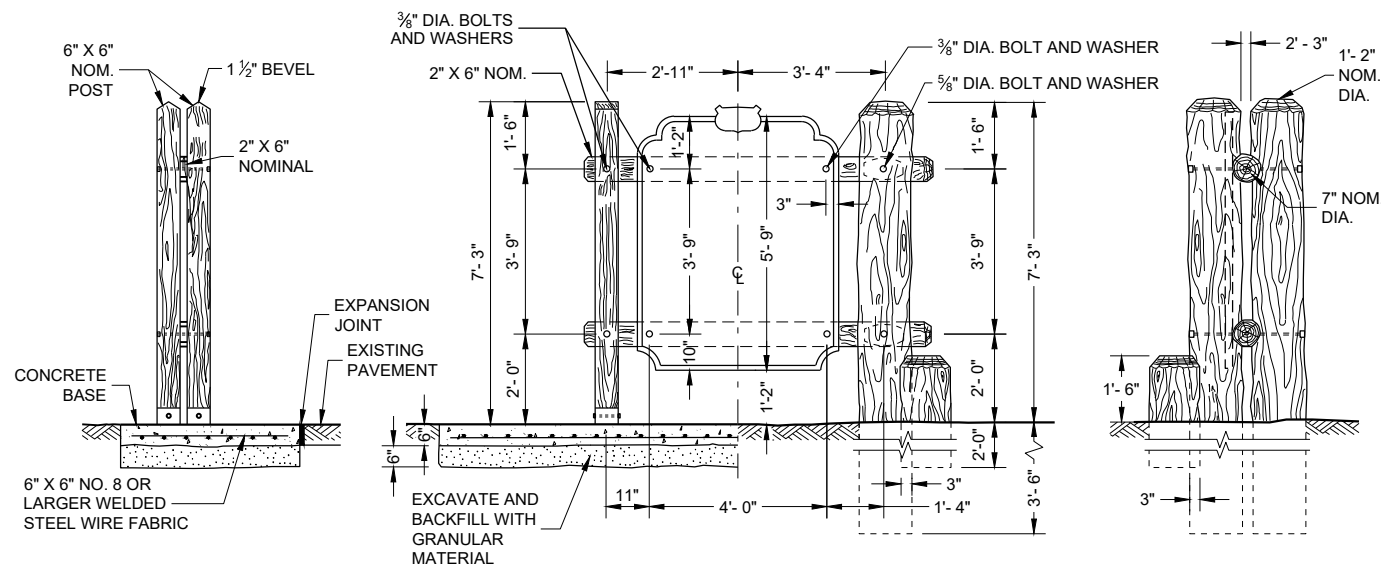
ITEM	UNIT	QUANTITY
POSTS	1' - 2" DIA. X 10' - 9"	4
POSTS	1' - 2" DIA. X 3' - 6"	2
RAILS	7" DIA. X 8' - 10"	2
CARRIAGE BOLTS	3/8" X 8"	4
CARRIAGE BOLTS	3/8" X 27"	4

MASONRY CONSTRUCTION

ITEM	UNIT	QUANTITY
CONCRETE (FLAT SLAB)	CY	2.3
ASHLAR MASONRY	CY	3.5
WIRE FABRIC (FLAT SLAB)	SY	9.8
CHANNEL STEEL	LBS	396
CARRIAGE BOLTS	3/8" X 2 3/4"	4



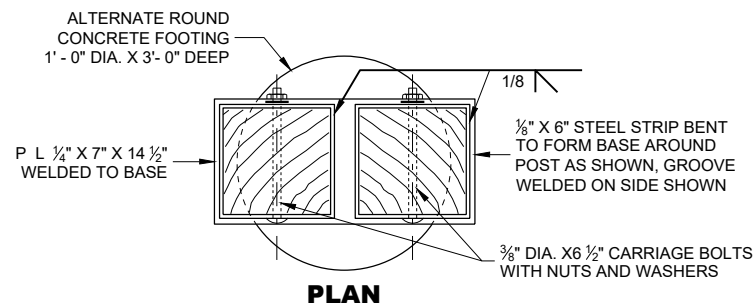
TOP VIEW



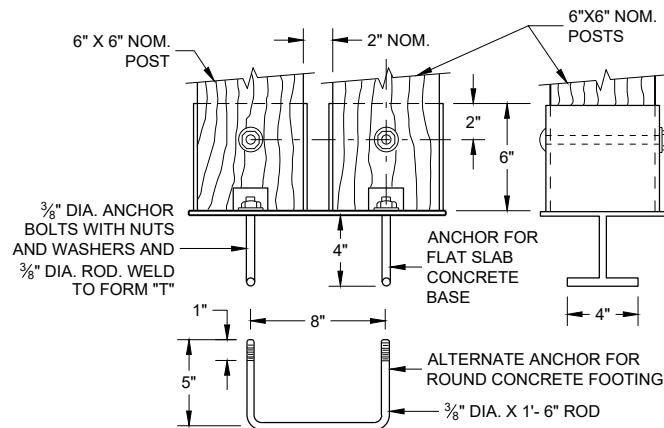
LEFT ELEVATION

FRONT ELEVATION
DIMENSIONED POST CONSTRUCTION

RIGHT ELEVATION



PLAN



POST BASE DETAIL
(DIMENSIONED POST CONSTRUCTION)

HISTORICAL MARKER CONSTRUCTION

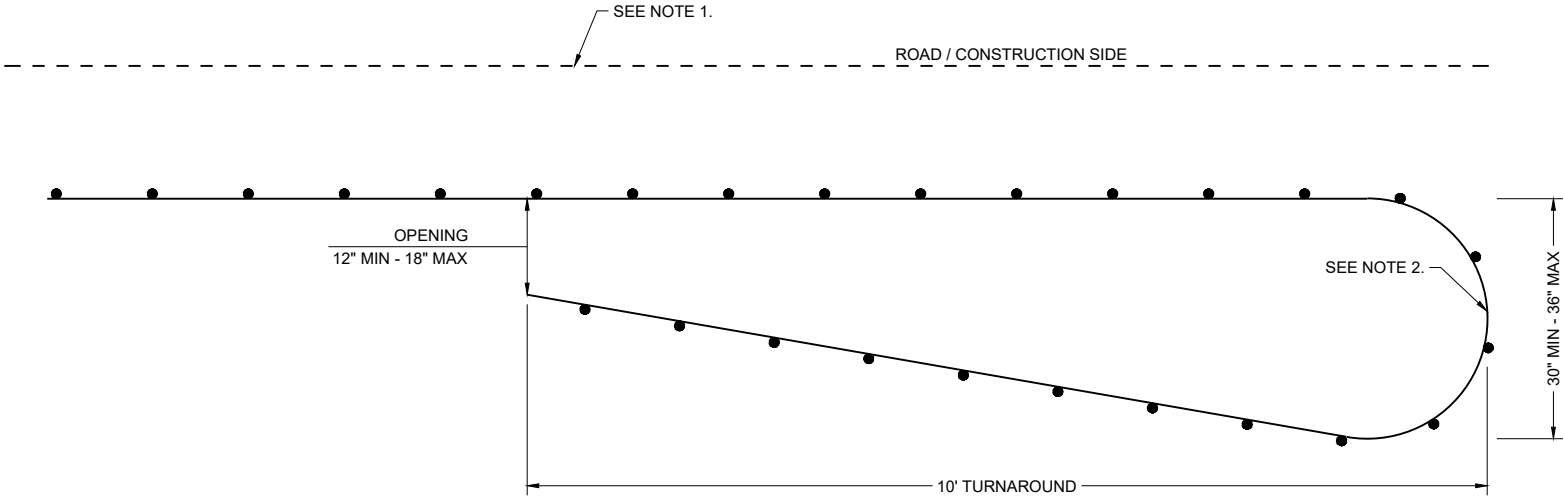
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 /S/ Joseph Coughlin
DATE
ROADSIDE FACILITIES ENC 283

FHWA

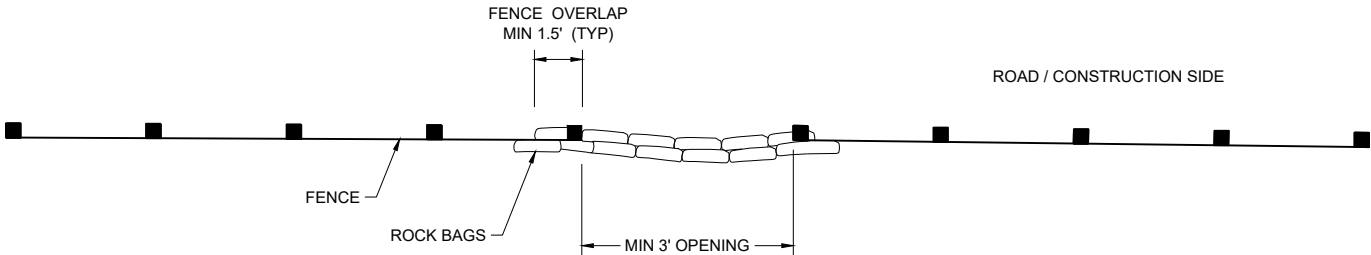
GENERAL NOTES:

- 1. WHERE SILT FENCE IS REQUIRED, IT SHALL BE PLACED ON THE CONSTRUCTION SIDE OF THE EXCLUSION FENCING, OR COMBINED WITH THE EXCLUSION FENCING AS ALLOWED IN THE SPECIFICATIONS. STAKES ON THIS DETAIL ARE OPPOSITE OF STANDARD SILT FENCE FOR SEDIMENT CONTROL.
 - 2. PLACE TURNAROUNDS AT ALL TERMINI ENDS OF THE EXCLUSION FENCING.
 - 3. IF TEMPORARY ACCESS POINTS ARE NEEDED DURING CONSTRUCTION THAT REQUIRE OPENINGS IN THE EXCLUSION FENCING, ACCESS OPENINGS SHOULD BE TIGHTLY SECURED WITH BALES OF HAY OR STRAW WHENEVER CONSTRUCTION RELATED ACTIVITIES ARE NOT OCCURRING. REINSTALL EXCLUSION FENCING WHEN THE WORK REQUIRING THE TEMPORARY ACCESS OPENING IS COMPLETED.
 - 4. THE FENCE CAP MAY BE A 6" UNDER DRAIN PIPE, SLIT DOWN THE CENTER AND PLACED OVER THE FENCE. COMMERCIALY AVAILABLE SAFETY CAPS WITH A LIP MAY BE USED. OTHER DNR APPROVED METHODS TO PREVENT TURTLES FROM PASSING OVER THE TOP OF THE FENCE MAY BE USED.
- SECURELY FASTEN THE CAP TO PREVENT IT FROM BEING DISLODGED.

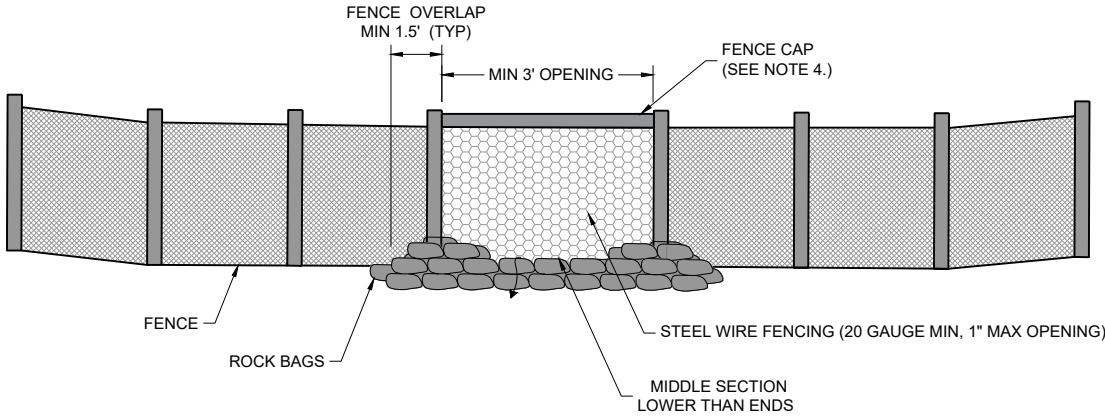


PLAN VIEW

CLIMBING TURTLE EXCLUSION FENCE DETAIL



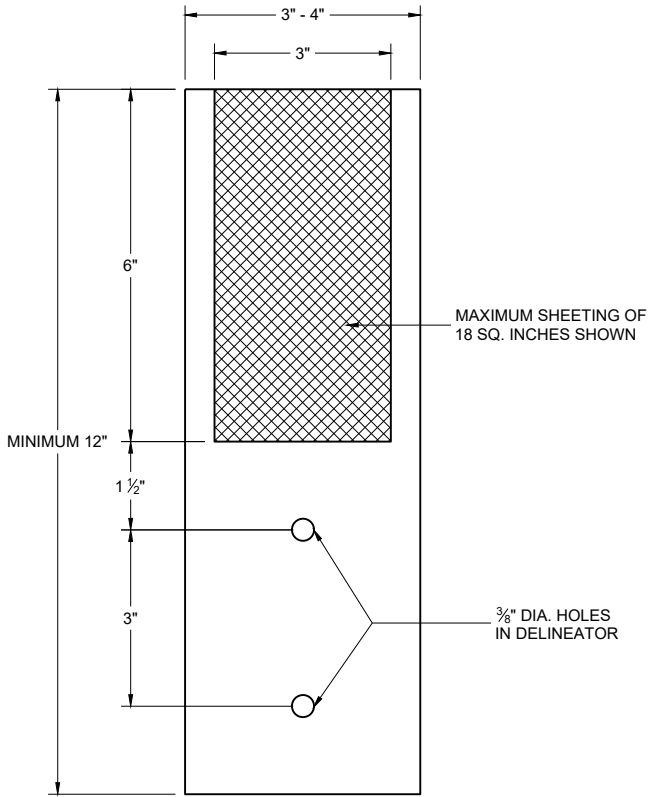
PLAN VIEW



FRONT VIEW

CLIMBING TURTLE FENCE RELIEF DETAIL

TURTLE EXCLUSION FENCE CLIMBING TURTLE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED AUGUST 2025 DATE	/S/ ALYSSA BARRETTE CHIEF STATEWIDE ENVIRONMENTAL SERVICES BUREAU OF TECHNICAL SER
FHWA 284	



4" x 12" DELINEATOR
WITH REFLECTIVE SHEETING

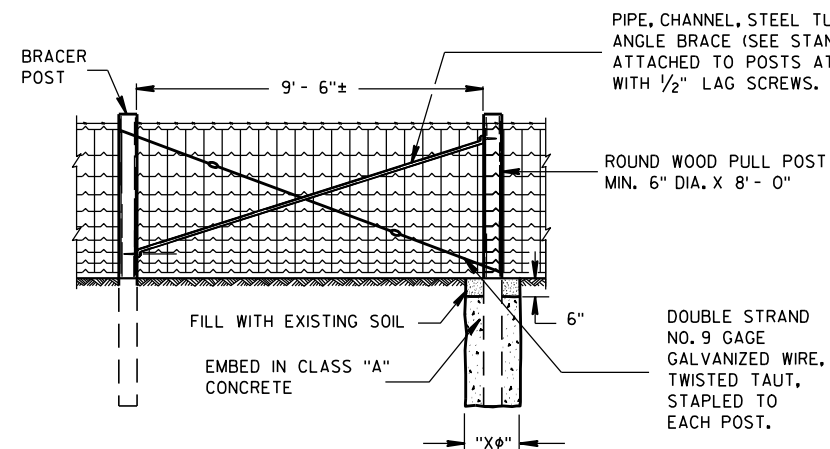
REFLECTOR SPACING TABLE

REFLECTOR SPACING	MINIMUM NUMBER OF REFLECTORS
100' C-C	3

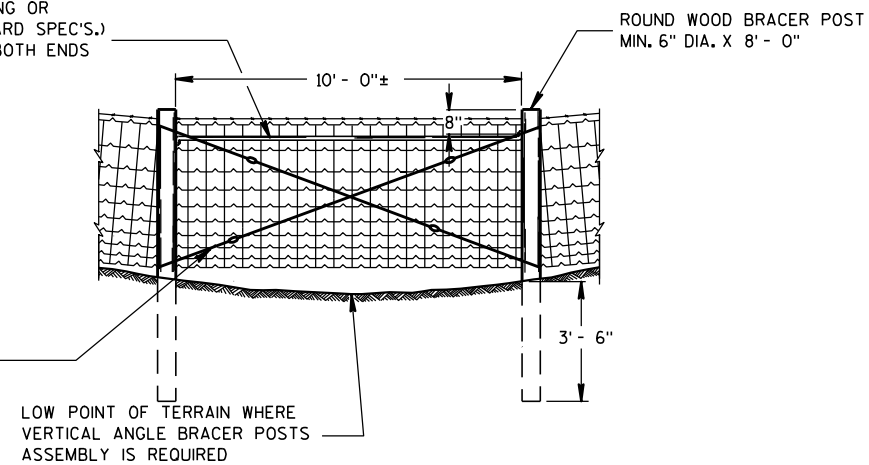
DELINEATOR POST WITH REFLECTIVE SHEETING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer

FHWA285

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY

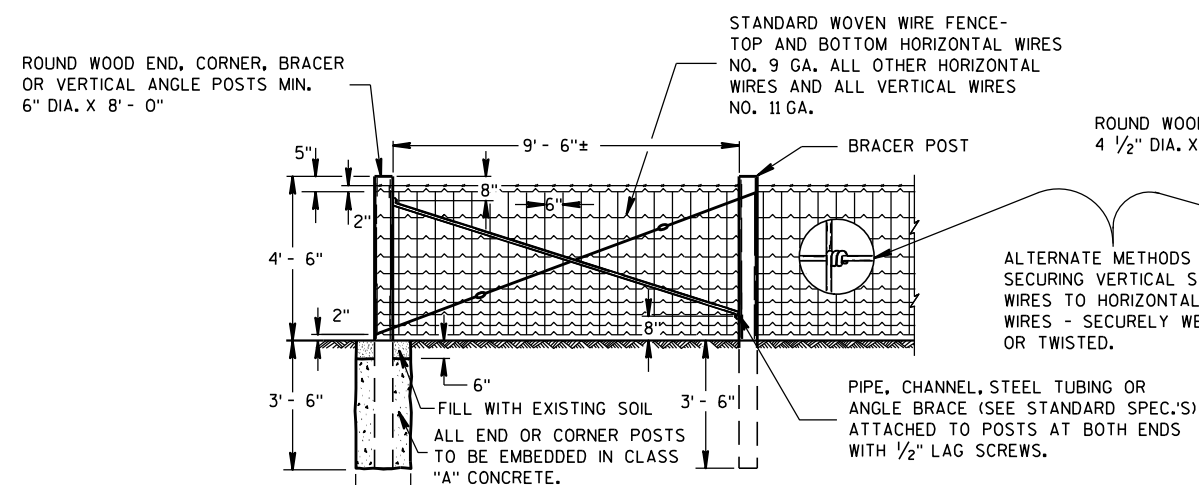


VERTICAL ANGLE BRACER POSTS ASSEMBLY

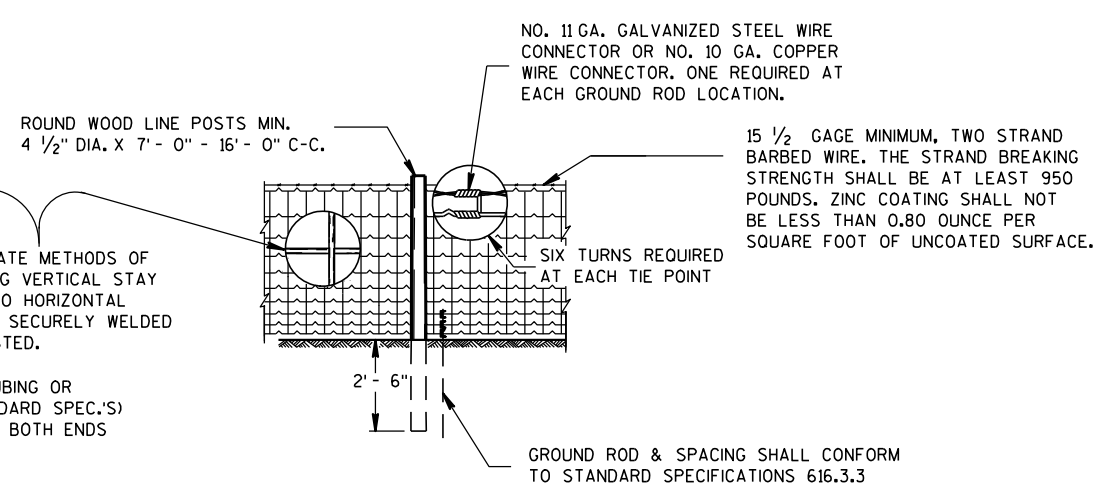
"X ϕ " = DIAMETER OF THE POST PLUS 12".

DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE
THE RIGHT OF WAY LINE UNLESS
OTHERWISE INDICATED ON THE PLANS.

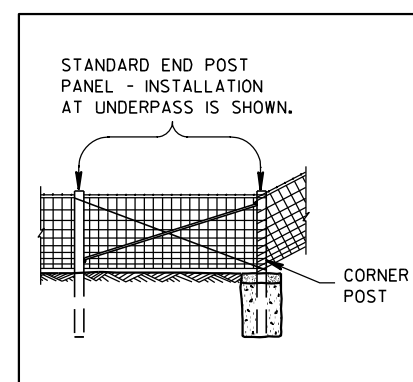


END OR CORNER POSTS ASSEMBLY

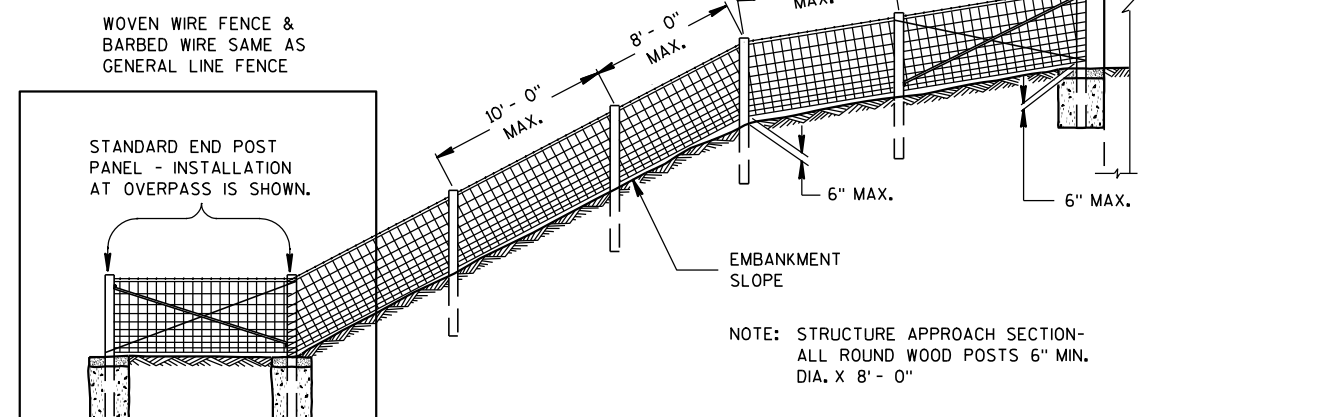


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE

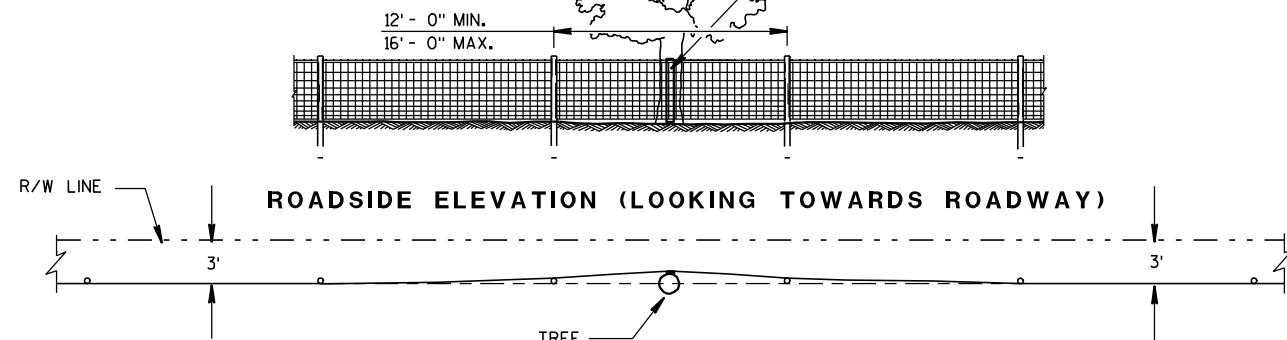


FENCE DESIGN AT STRUCTURE APPROACH

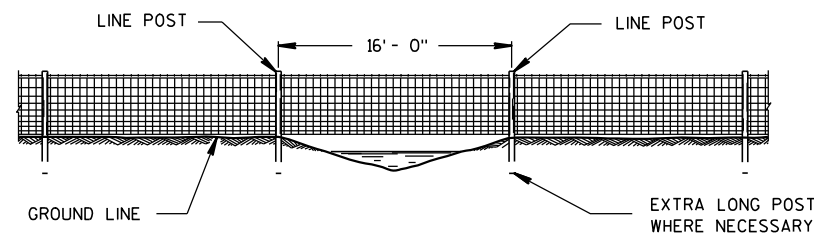
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

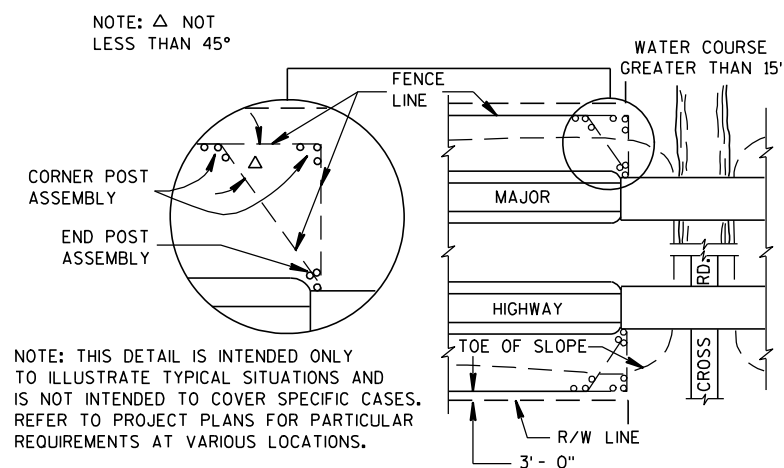
2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.



PLAN VIEW
FENCE DESIGN AT TREES REMAINING
IN NORMAL FENCE LINE

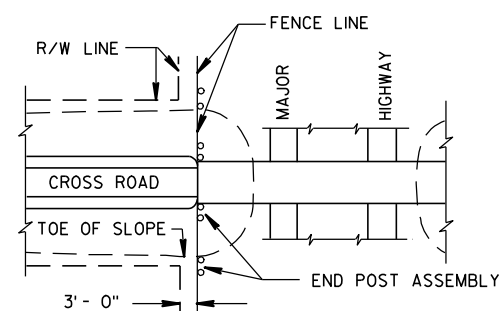


FENCE CONSTRUCTION OVER STREAM
COURSES OF 15 FT. OR LESS IN WIDTH

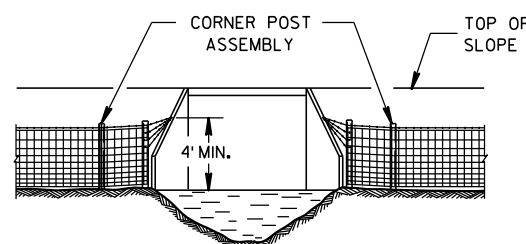


PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE
CROSSING OF GREATER THAN 15 FT. IN WIDTH

FENCE LOCATION AT STRUCTURES

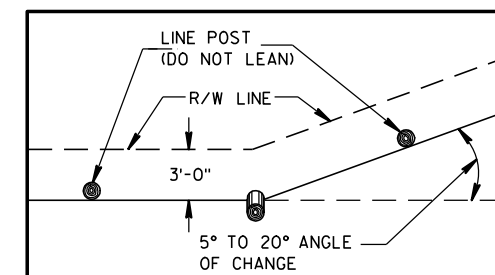


PLAN VIEW
MAJOR HIGHWAY UNDERPASS

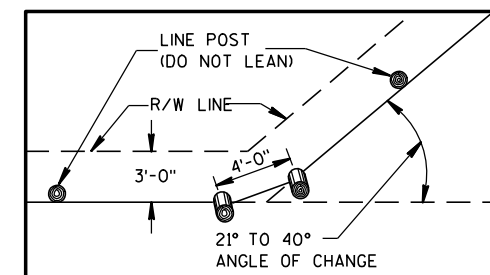


FENCE INSTALLATION TO WINGWALLS

NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



PLAN VIEW
SINGLE POST CORNER

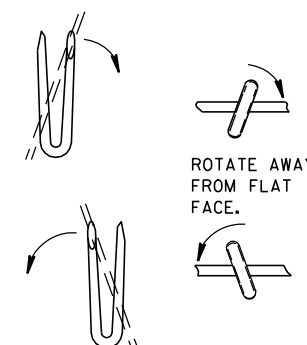


PLAN VIEW
DOUBLE POST CORNER

RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



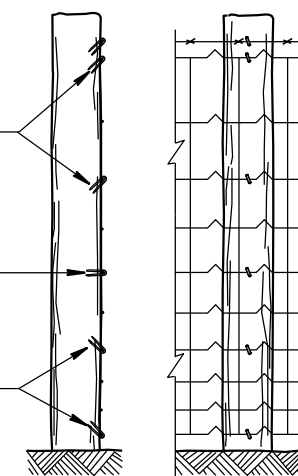
LINE POST

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.

STAPLES SLOPED DOWNWARD FOR SUSTAINED GRADES AND OVER KNOLLS.

STAPLES LEVEL FOR LEVEL GROUND.

SLOPE UPWARDS WHEN FENCE TENDS TO LIFT.



END ELEVATION
FARM SIDE ELEVATION
FENCE MOUNTING DETAIL

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/4/2008

DATE

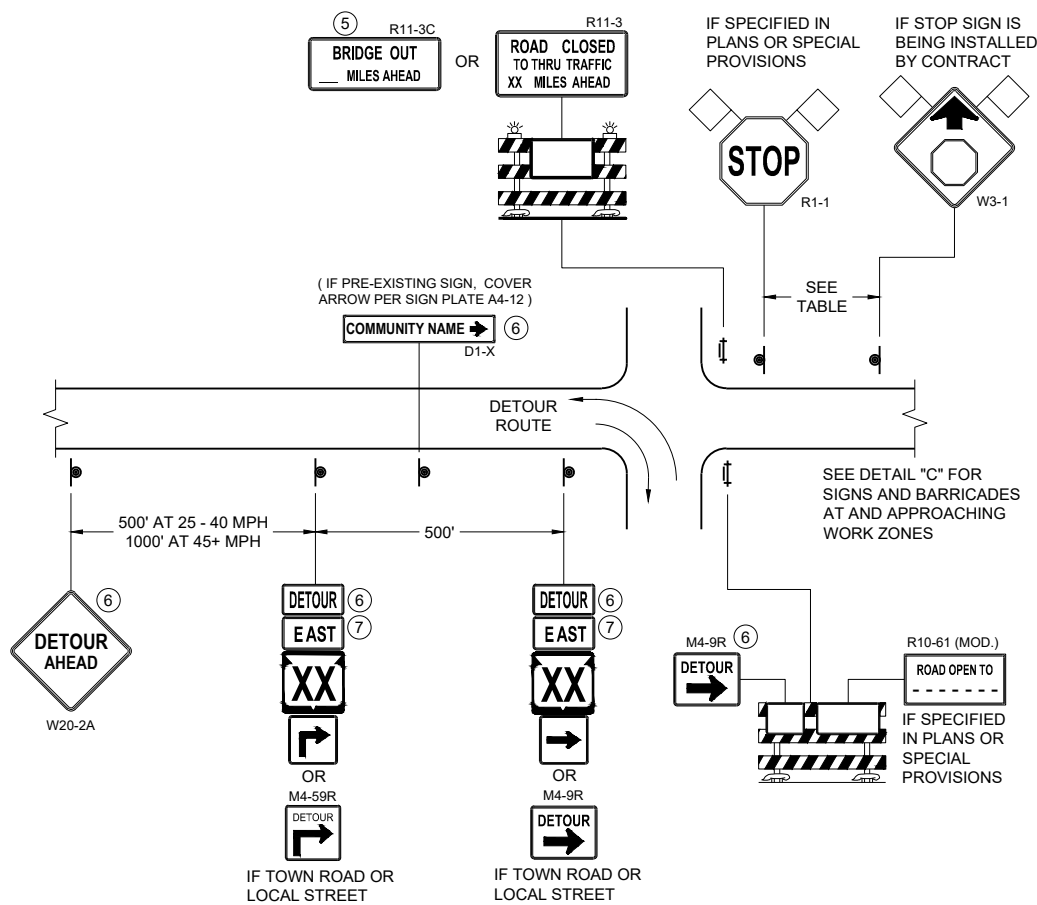
FHWA

/S/ Jerry H. 7---

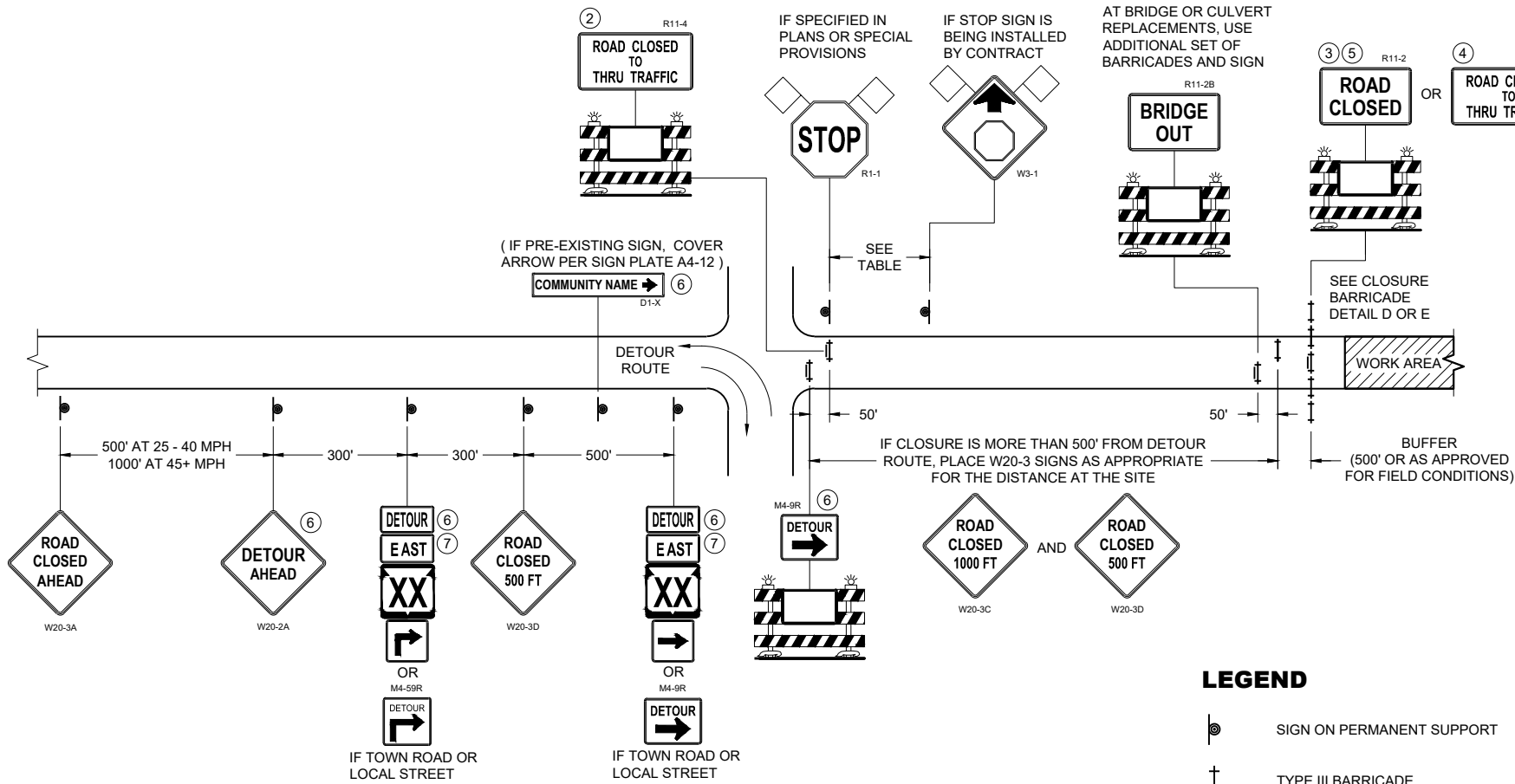
ROADWAY STANDARDS 287

ENGINEER

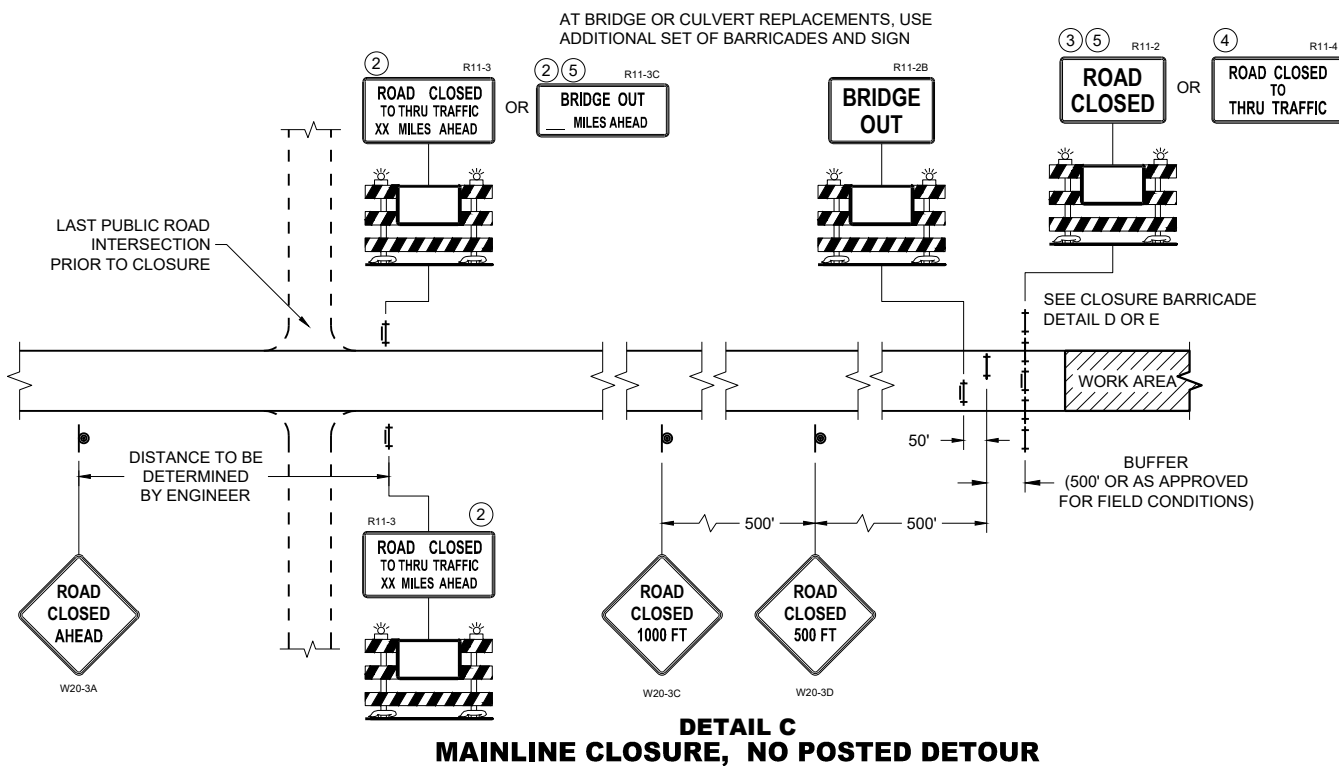
ENT



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

LEGEND

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

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

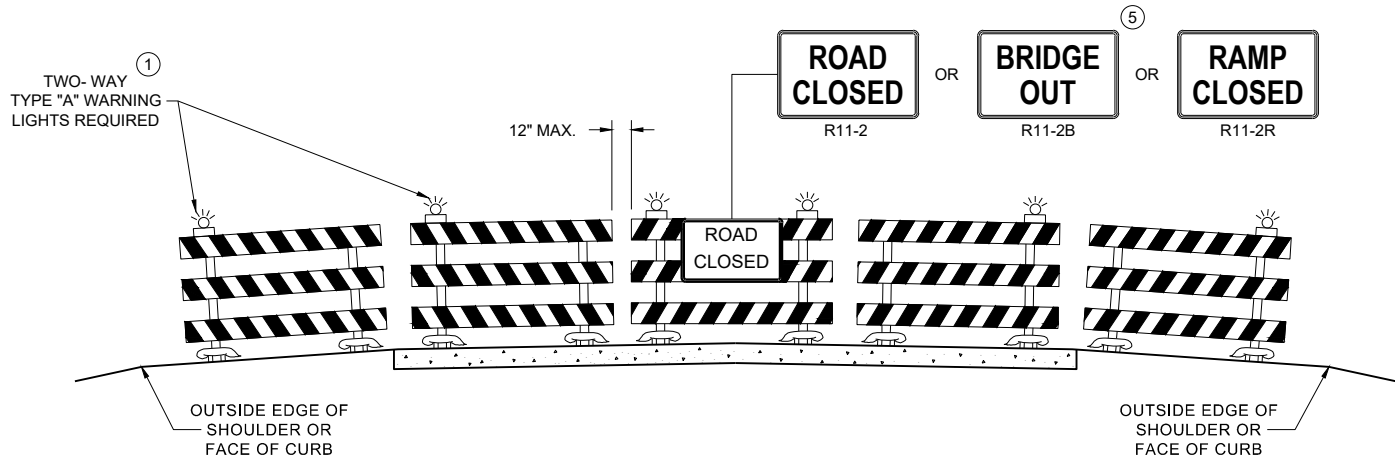
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

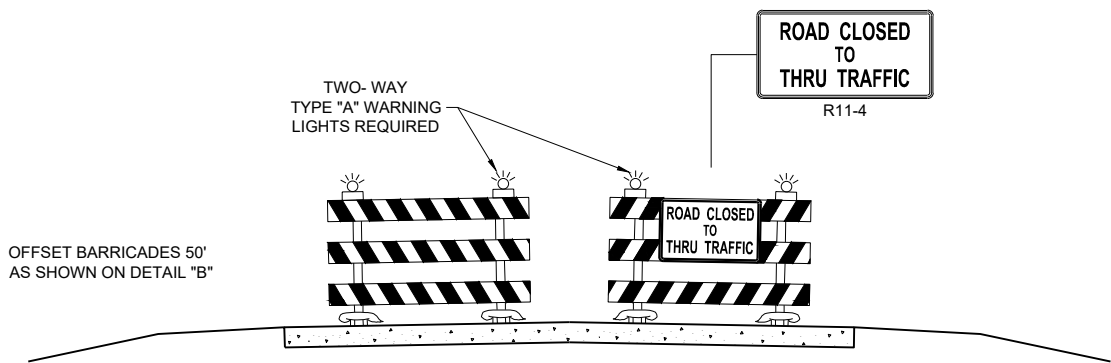
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
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.

PARTIAL NUMBERS ON SIGNS SHALL BE DISPLAYED AS A WHOLE NUMBER(AS NEEDED) FOLLOWED BY A FRACTION. SIGNS SHALL NOT DISPLAY NUMBERS IN DECIMAL FORM.

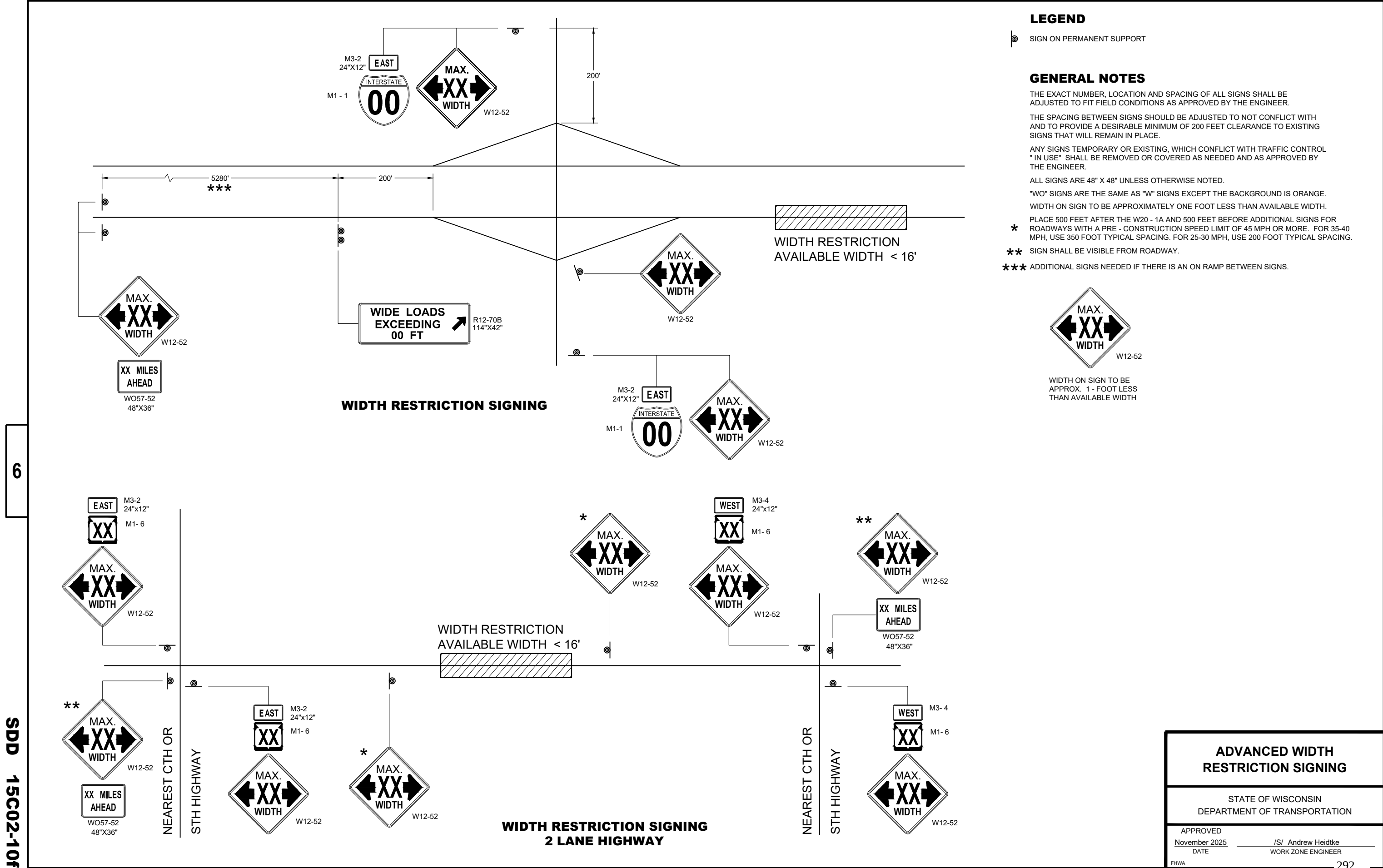
"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

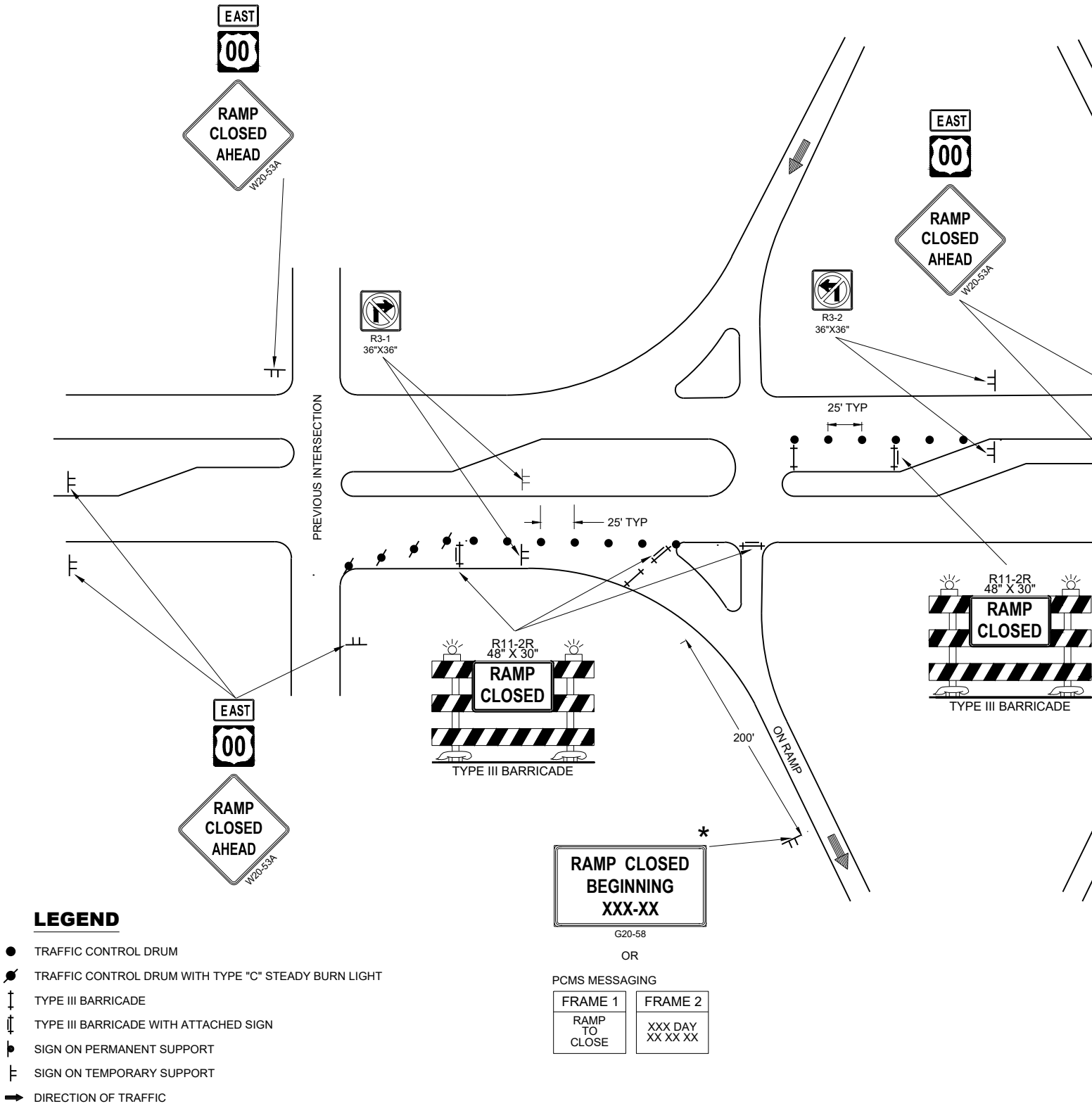
ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11 - 2 SHALL BE 48" X 30"
R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
M4 - 9 SHALL BE 30" X 24"
M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING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

SIGNS PLACED ON TYPE III BARRICADES THAT ARE SIZES OTHER THAN 48"X30" SHALL HAVE A CORRUGATED POLYPROPYLENE OR POLYETHYLENE PLASTIC SIGN BASE.

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2025 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA 289	





- LEGEND**
- TRAFFIC CONTROL DRUM
 - ⦿ TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
 - ↑ TYPE III BARRICADE
 - ↑↓ TYPE III BARRICADE WITH ATTACHED SIGN
 - ▮ SIGN ON PERMANENT SUPPORT
 - ▮ SIGN ON TEMPORARY SUPPORT
 - DIRECTION OF TRAFFIC

TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE

TRAFFIC CONTROL NOTES

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

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

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

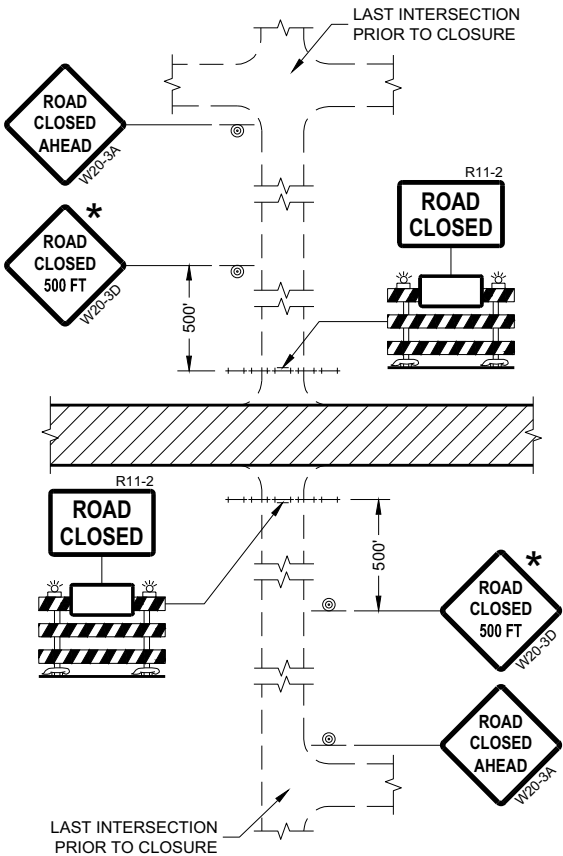
SIGNS THAT SHALL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

SIGN SIZES SHALL BE AS FOLLOWS:

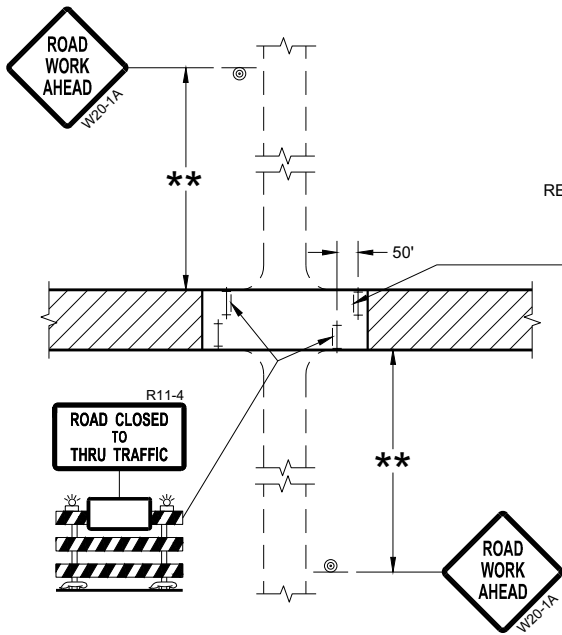
- M3-X SHALL BE 24"x24" (36" x18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-1, M1-4, AND M1-6 SHALL BE 24"x24" (36"x36" IF NEEDED TO MATCH EXISTING SIGNS)
- W20-53A SHALL BE 48"x48"

* PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.

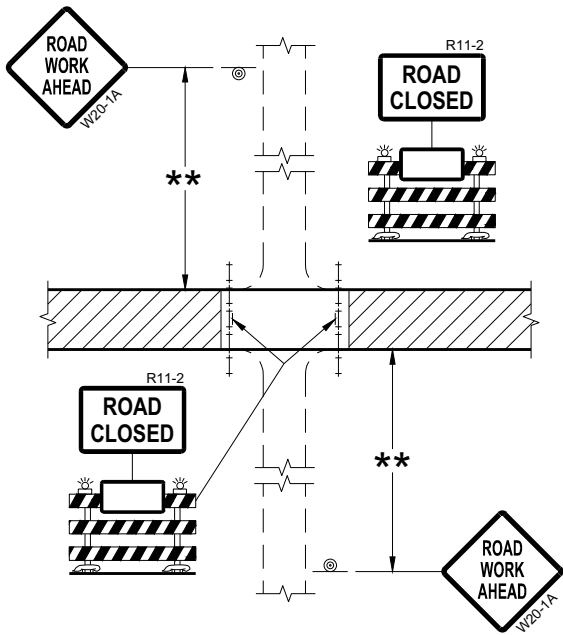
TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2025 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



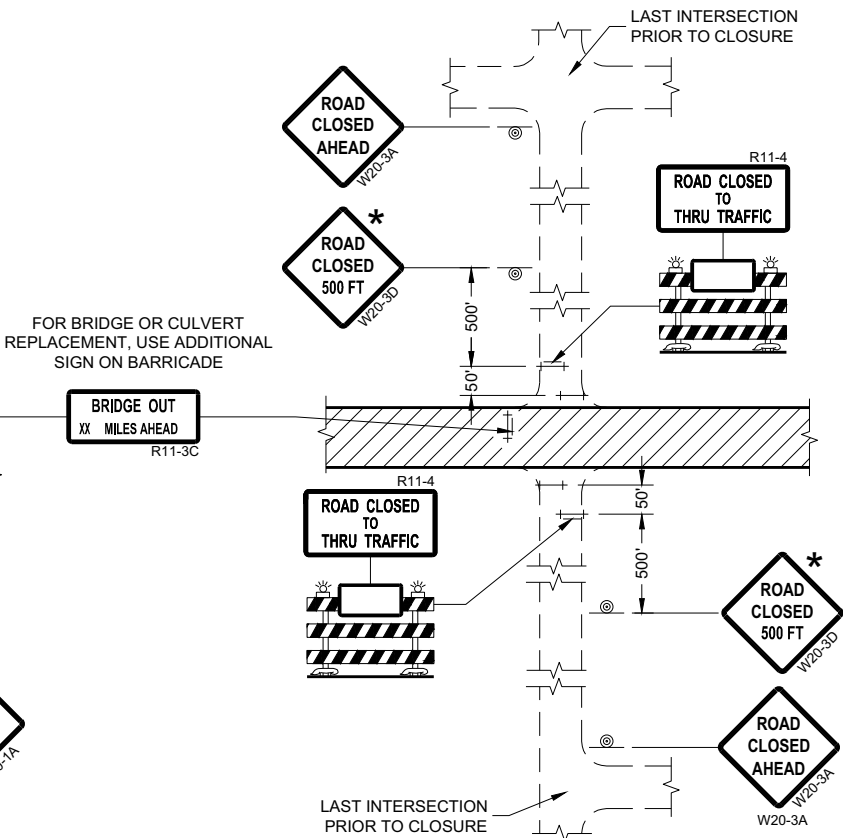
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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 (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN 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, AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

- * OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- ** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

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

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 294
FHWA

GENERAL NOTES

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

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

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

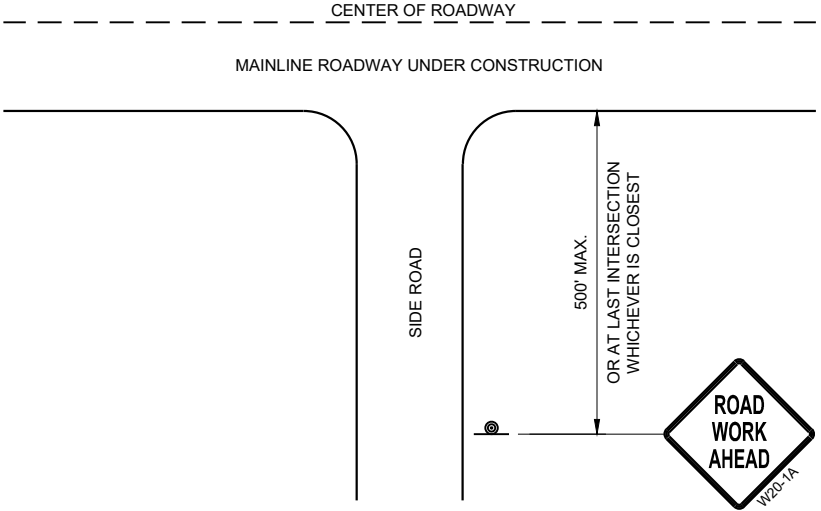
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

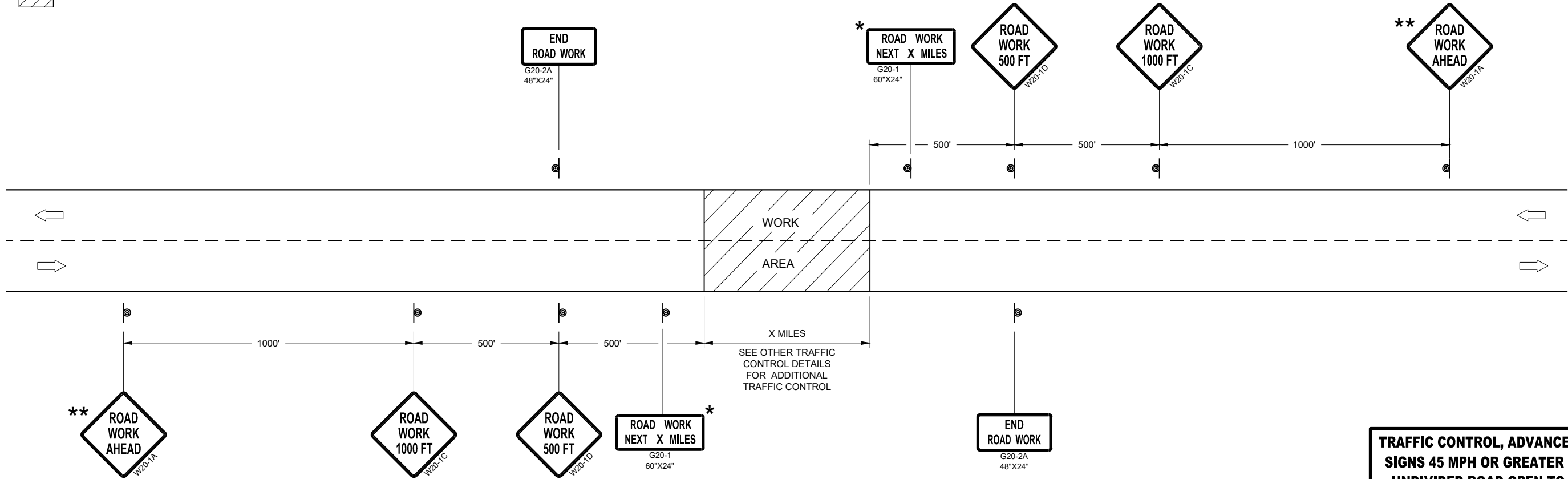
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 295
FHWA

GENERAL NOTES

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

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

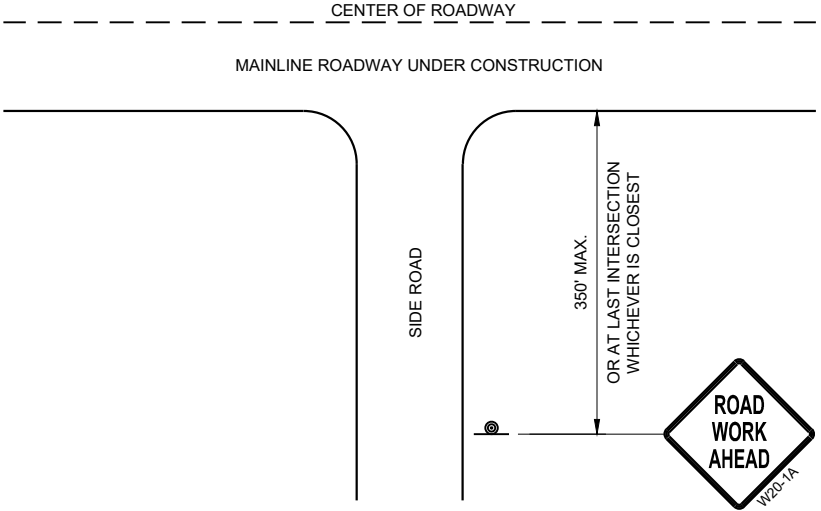
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

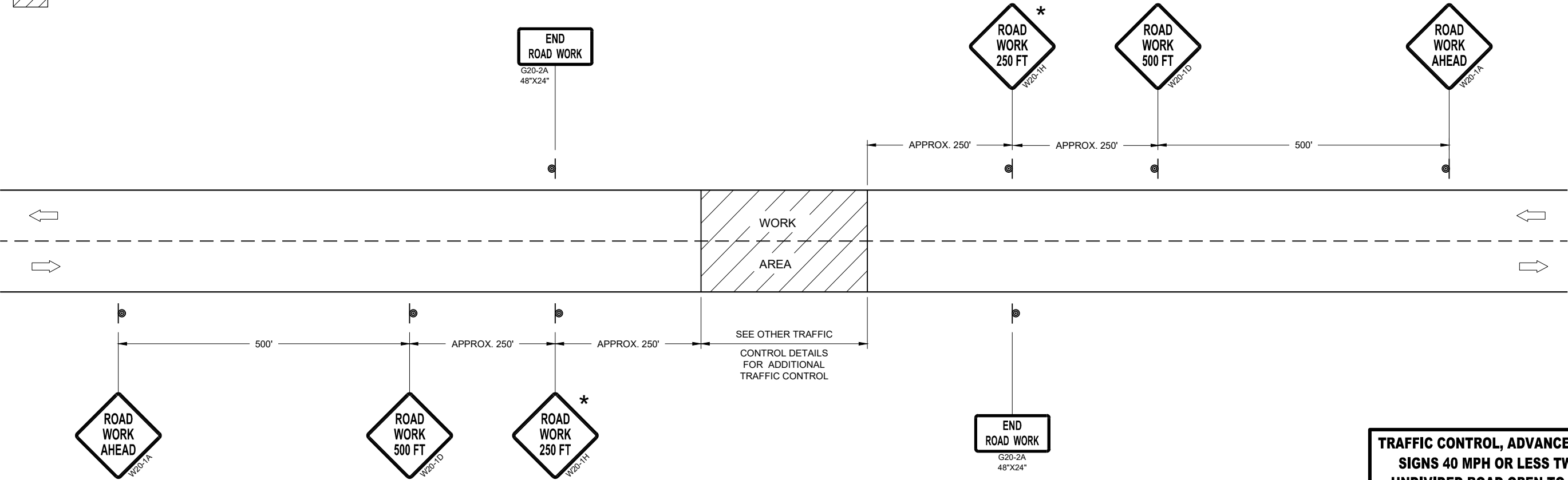
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



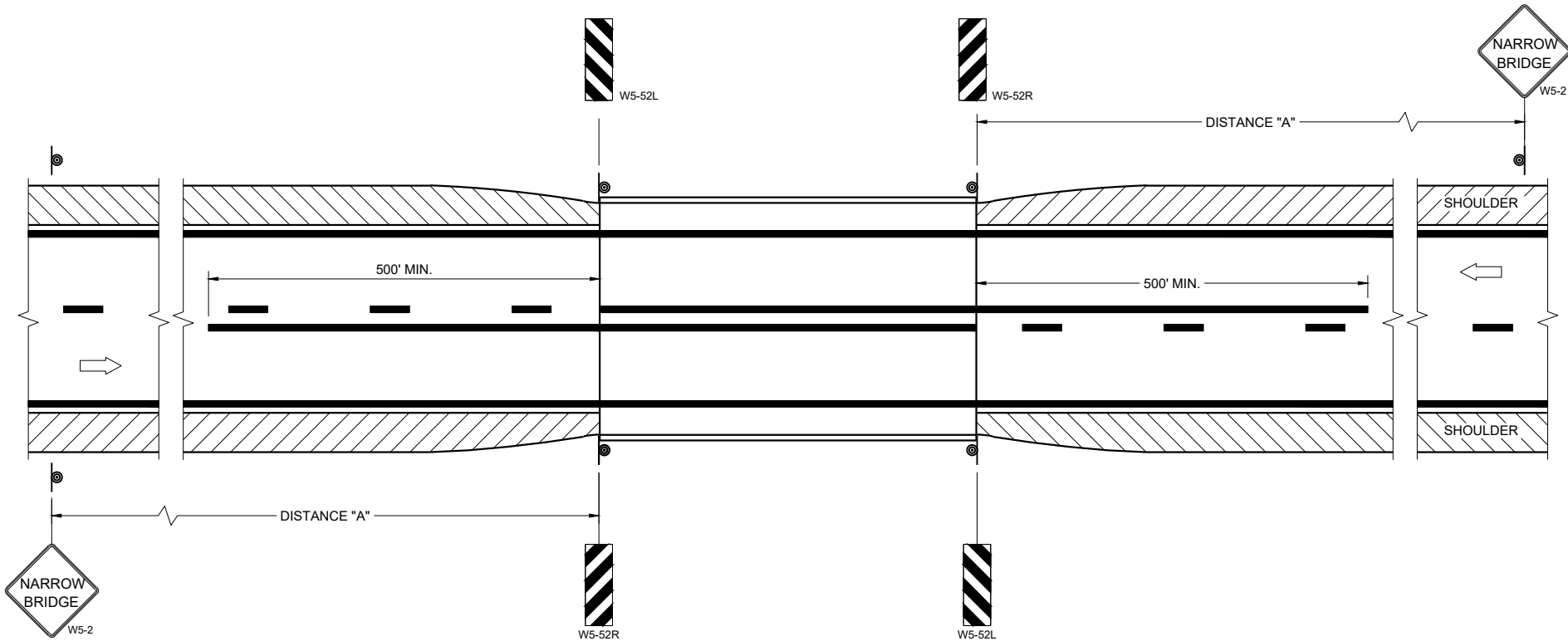
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 40 MPH OR LESS TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

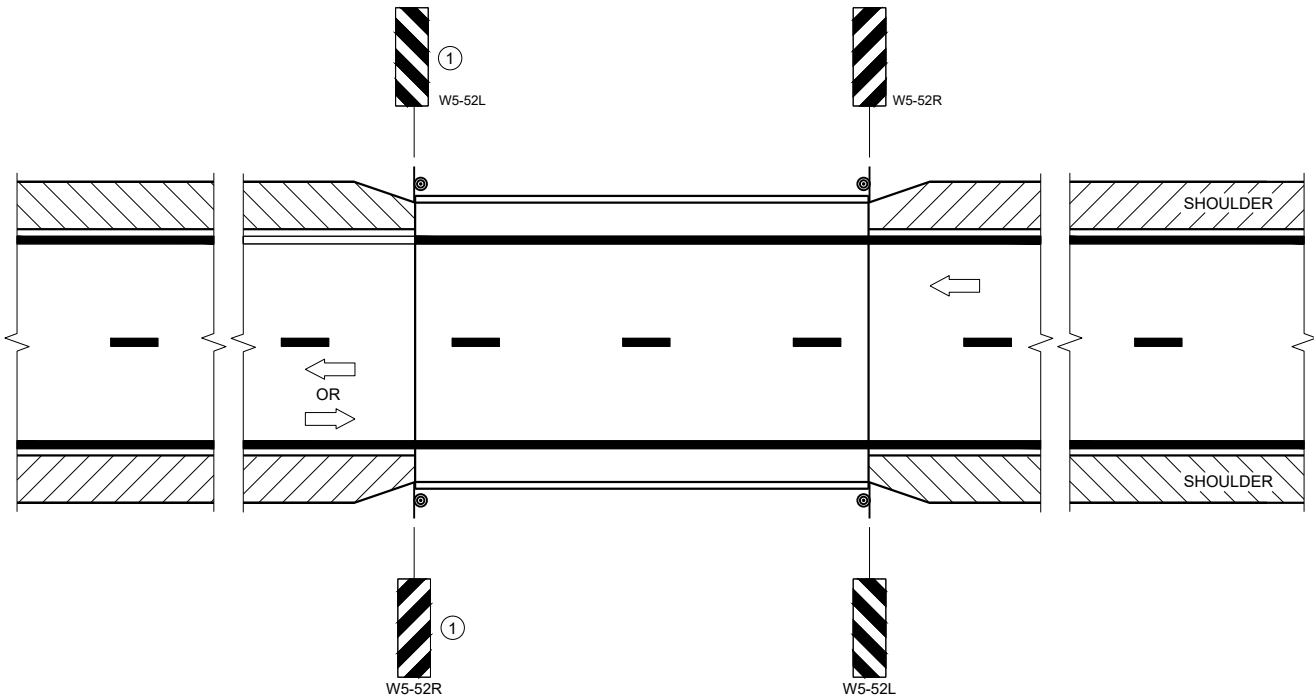
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 296

FHWA



SITUATION 1
WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



SITUATION 2
WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET

GENERAL NOTES

- DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THE DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.
- PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.
- ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.
- OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.
- ① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

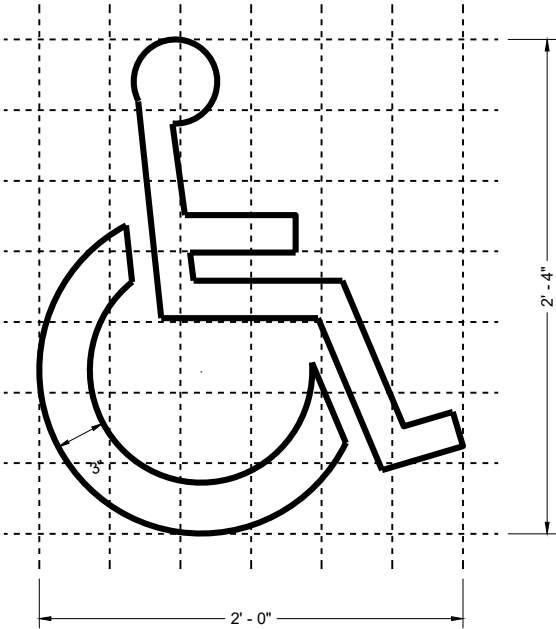
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

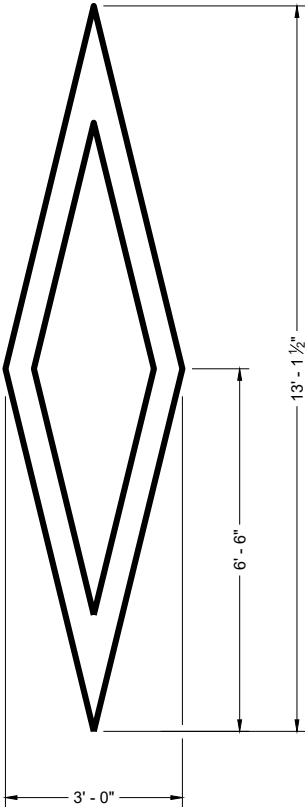
APPROVED
May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA 297



HANDICAP SYMBOL

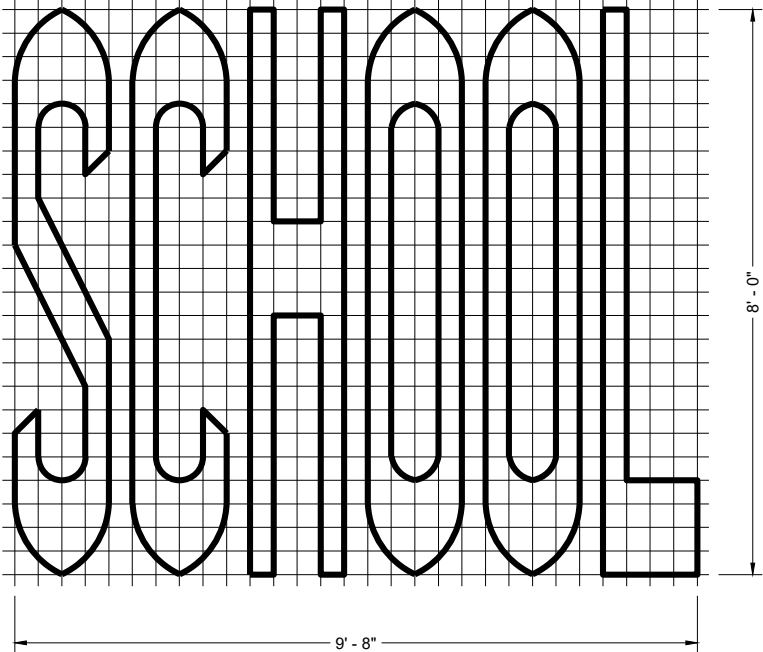
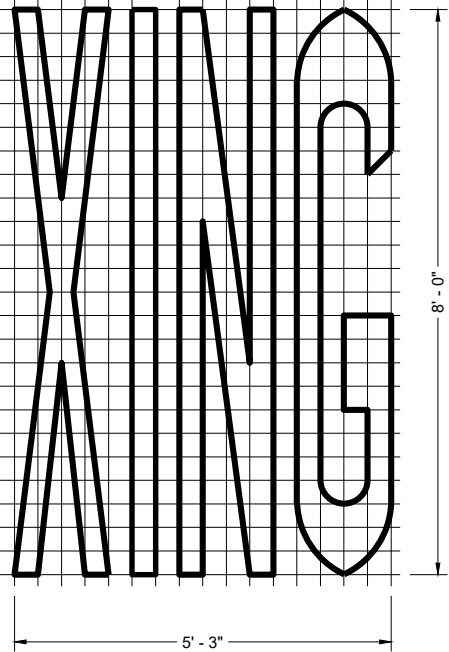
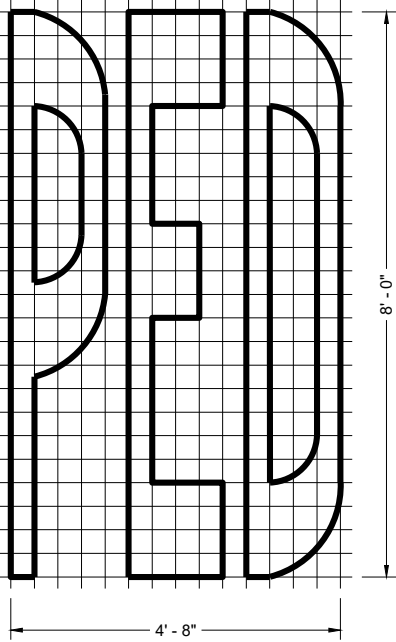
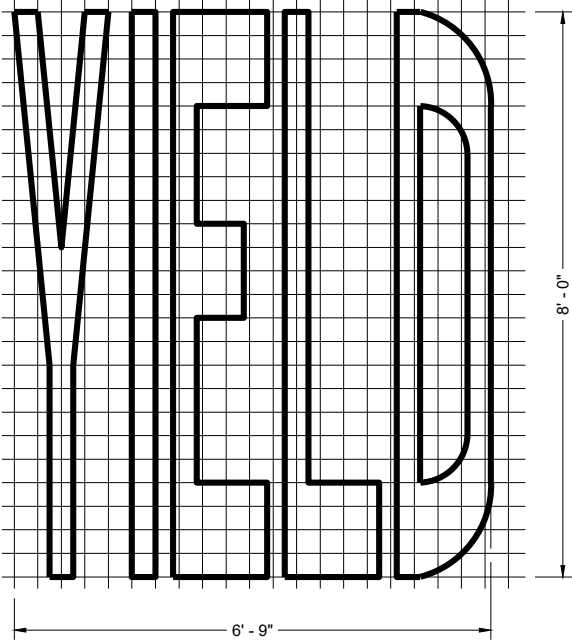
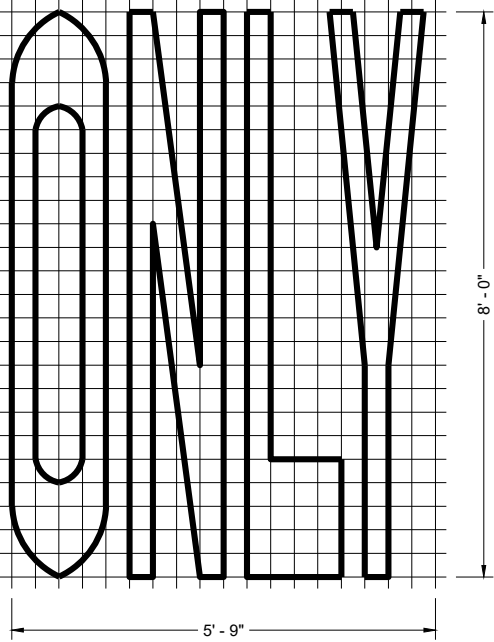
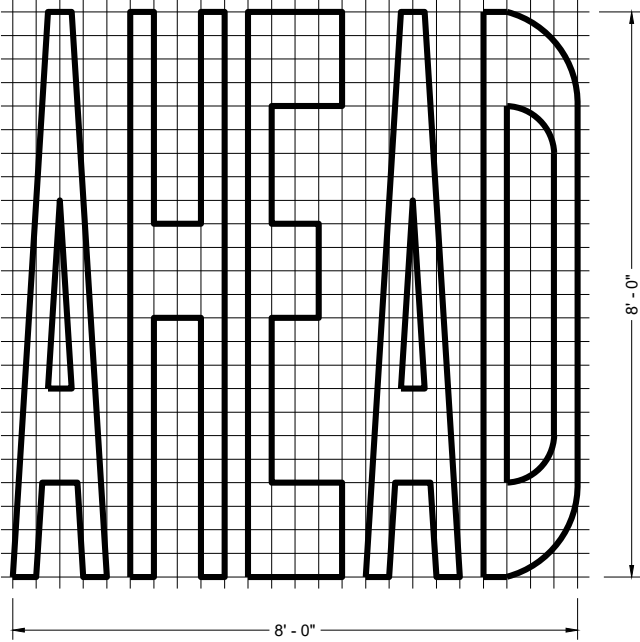
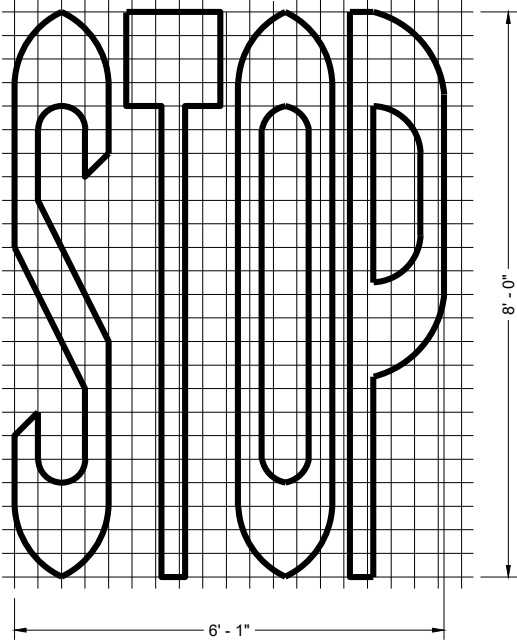


PREFERENTIAL
LANE SYMBOL

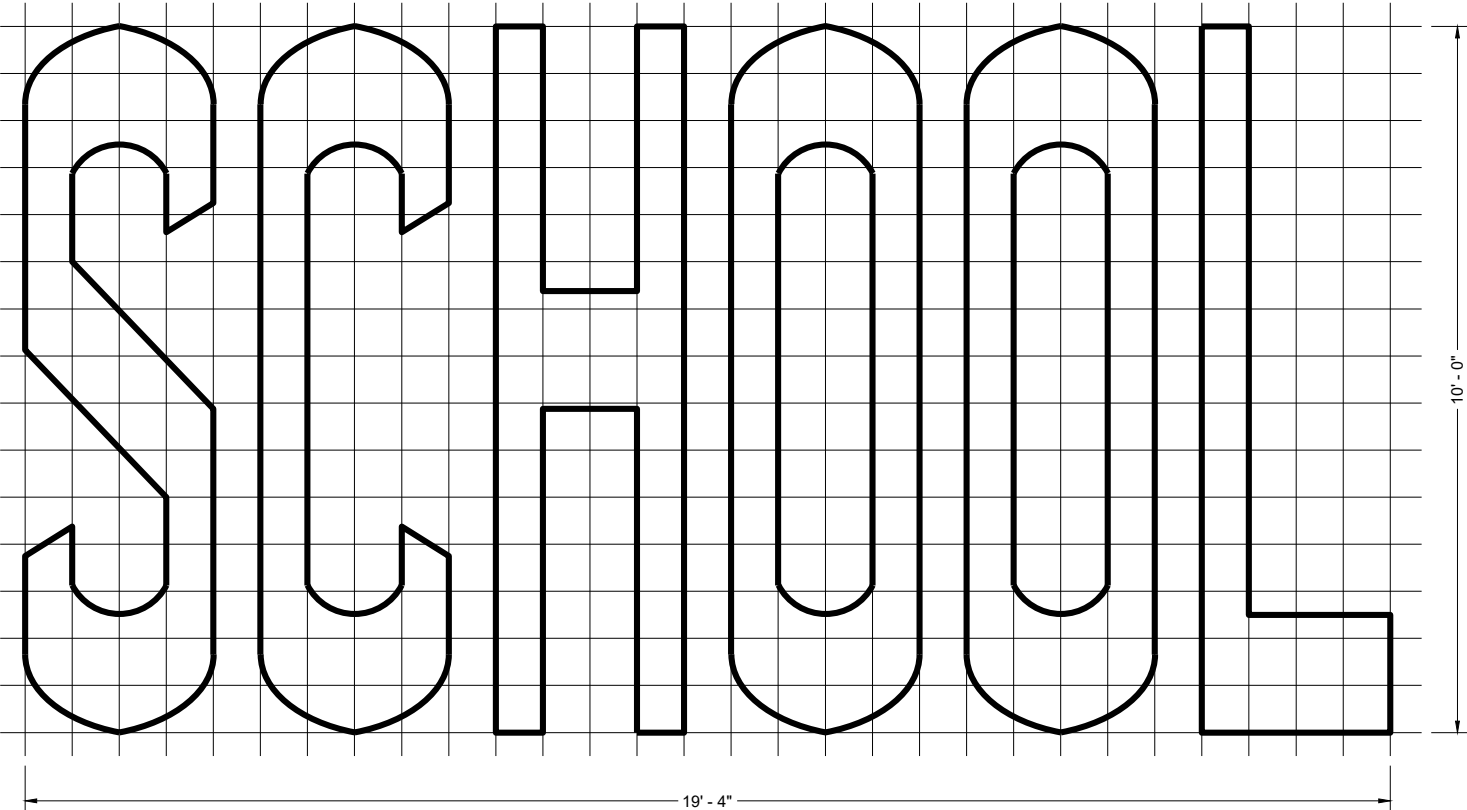
GENERAL NOTES

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

PAVEMENT MARKING SYMBOLS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2024 DATE	/S/ Jeannie Silver STATE SIGNING AND MARKING ENGINEER
FHWA	298



SINGLE LANE

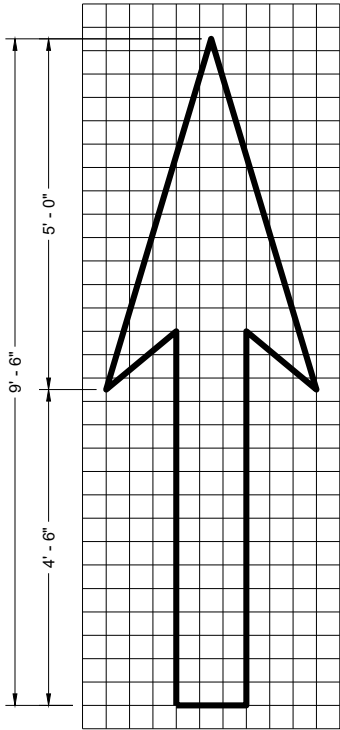


TWO - LANE

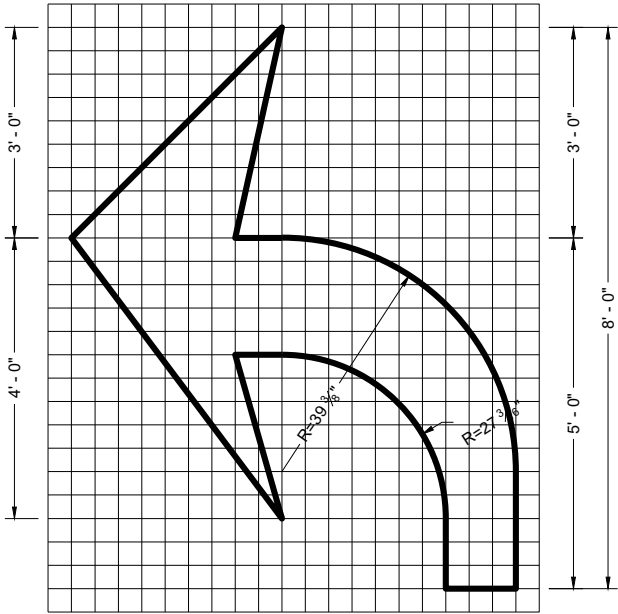
GENERAL NOTES

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

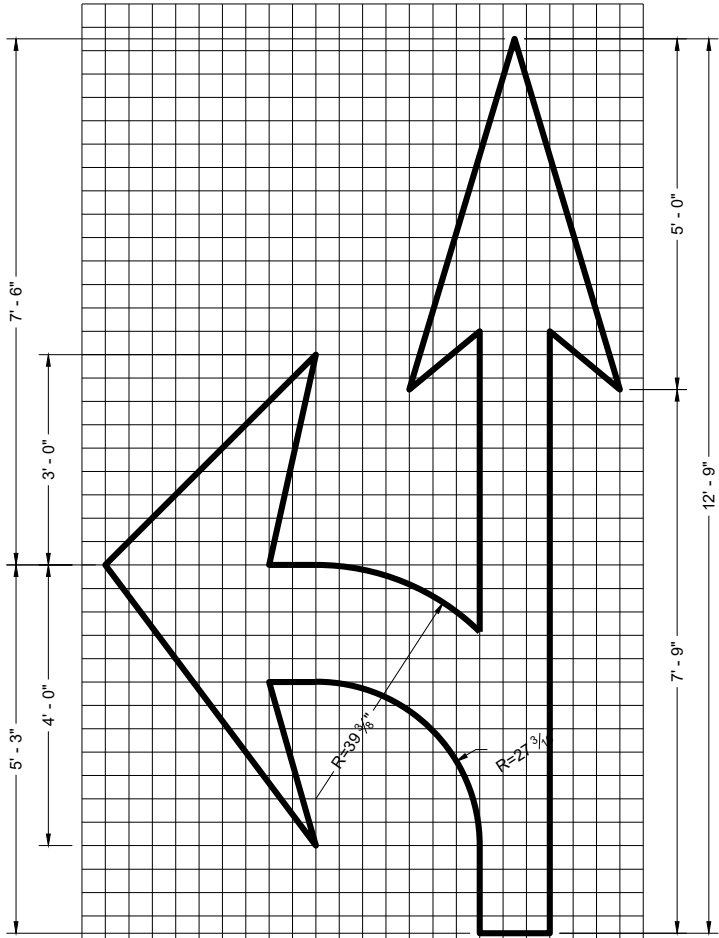
PAVEMENT MARKING WORDS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2024 DATE	/S/ Jeannie Silver STATE SIGNING AND MARKING ENGINEER
FHWA	299



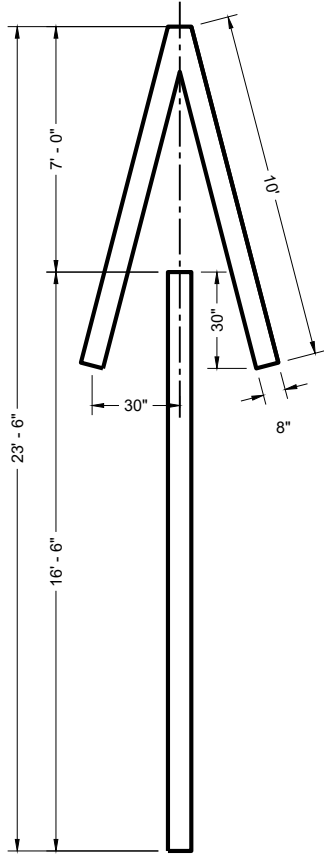
TYPE 1



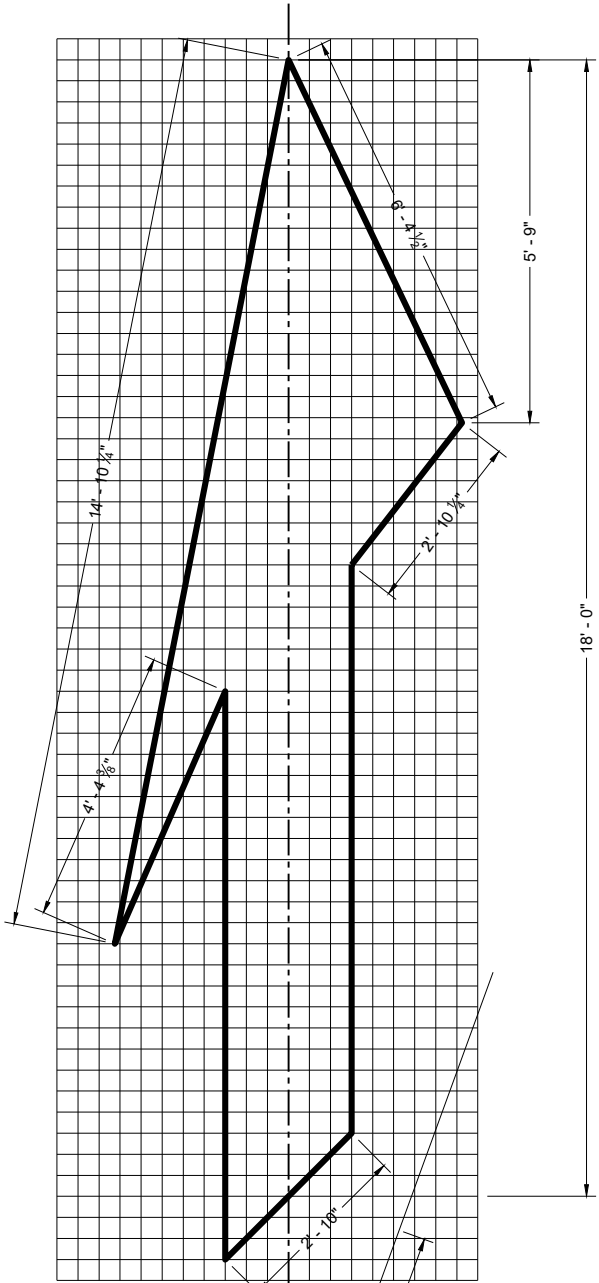
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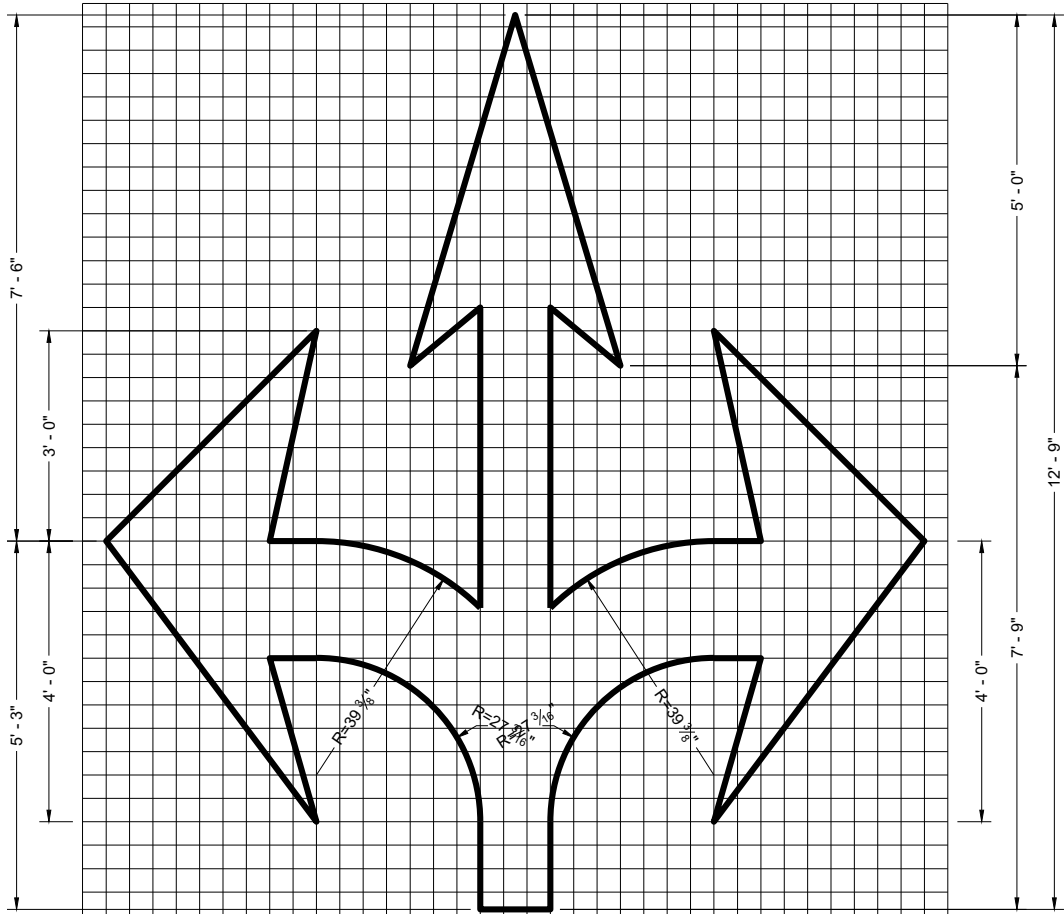
TYPE 3



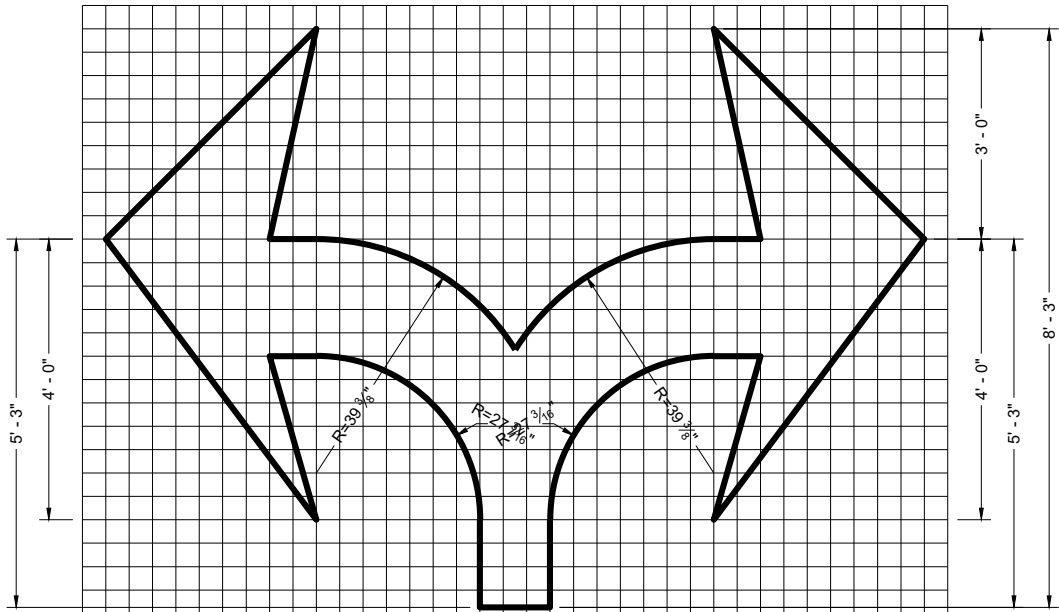
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

GENERAL NOTES

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

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 /S/ Jeannie Silver
DATE STATE SIGNING AND MARKING ENGINEER

FHWA

300

SDD 15C08-24a



PERMANENT PAVEMENT MARKING

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

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

LEGEND

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

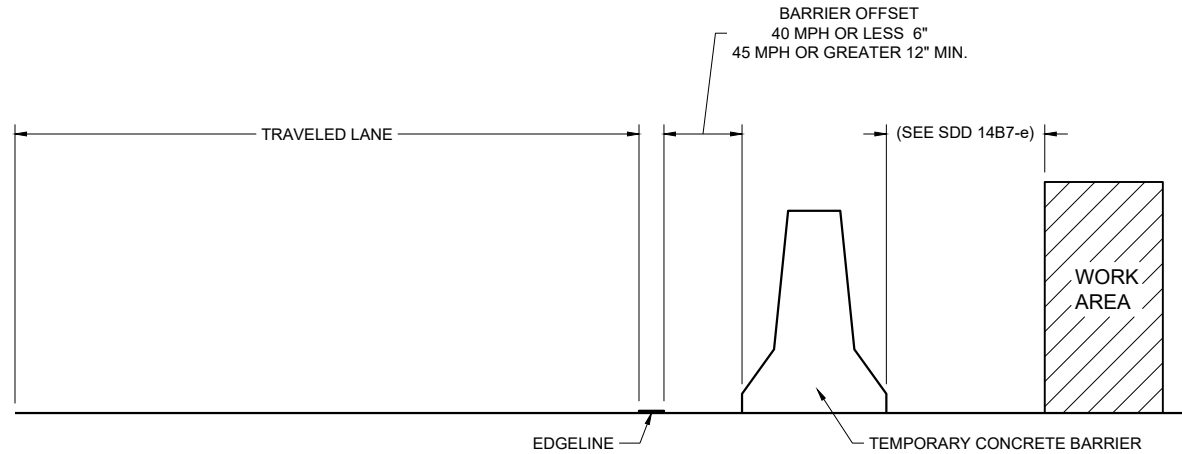
PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2024
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

000 15000 01



TEMPORARY BARRIER OFFSET FROM EDGE LINE

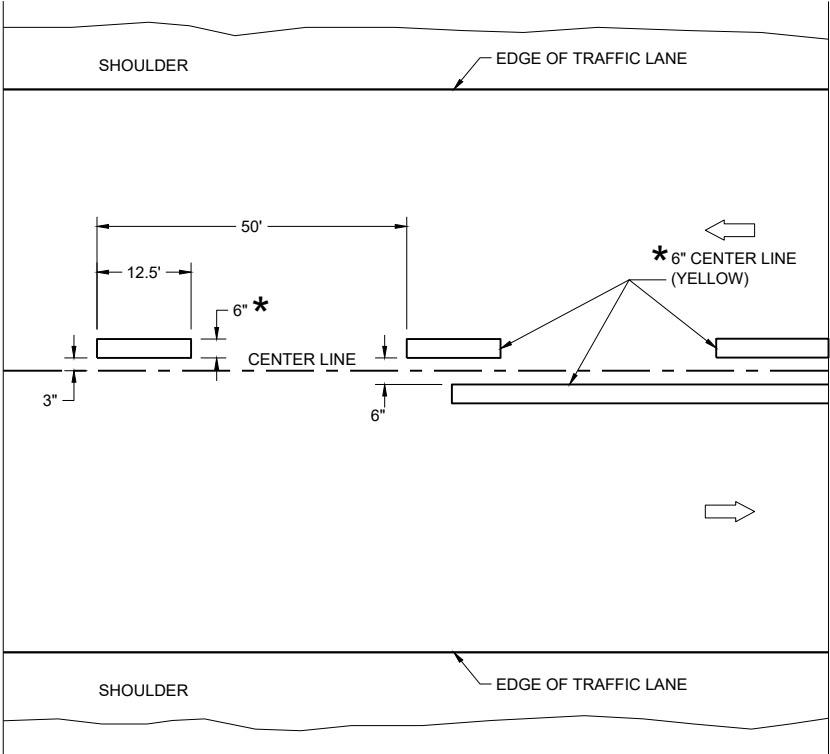
GENERAL NOTES

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

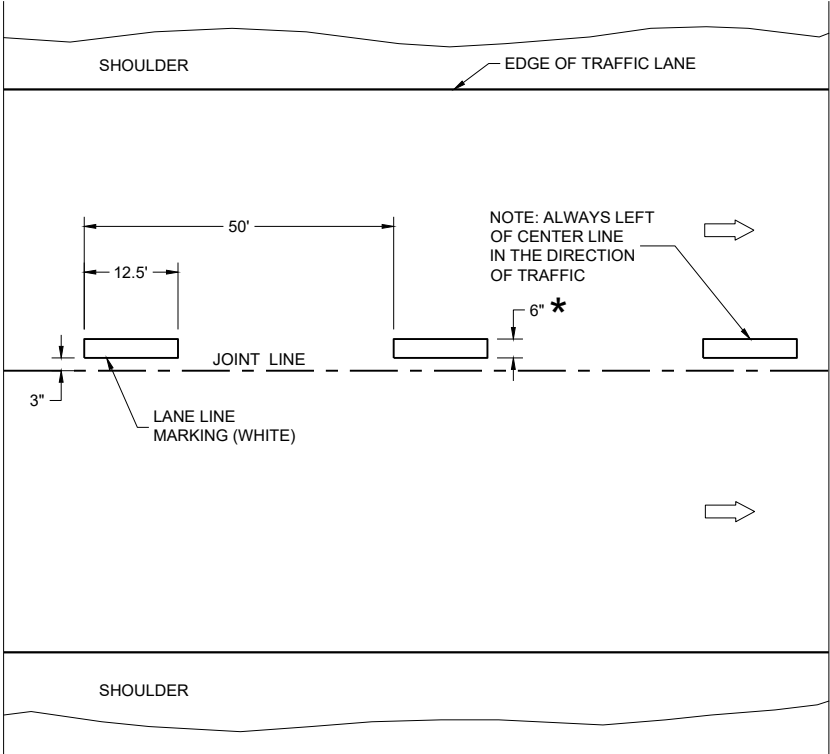
LEGEND

DIRECTION OF TRAFFIC

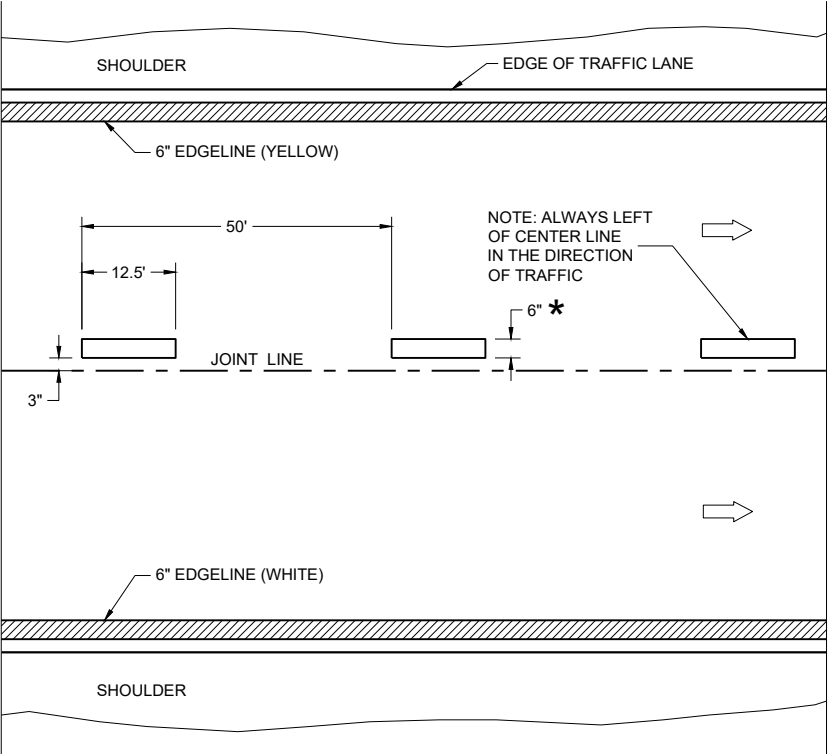
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



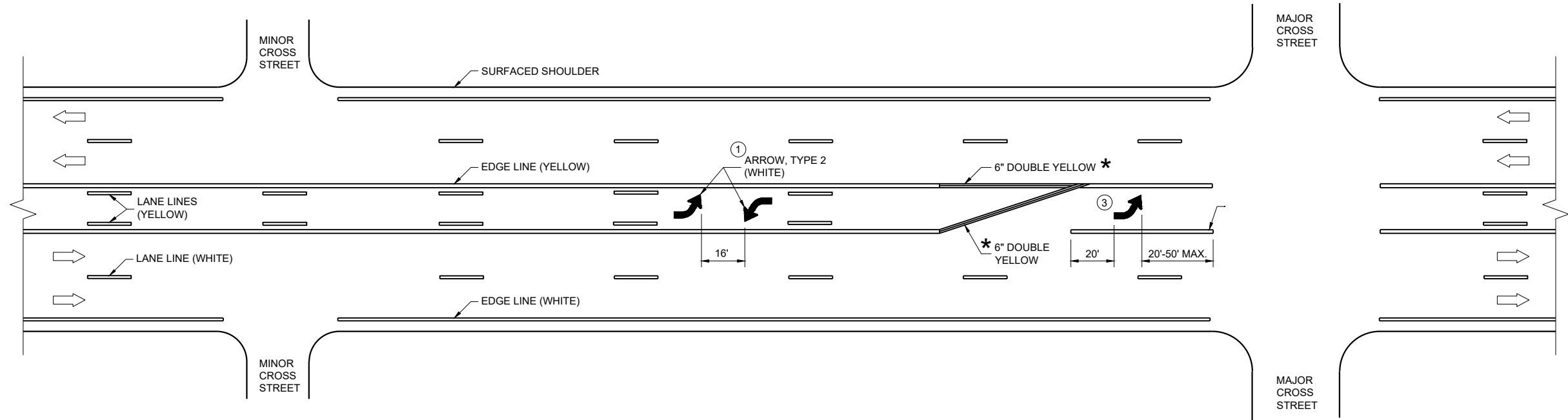
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	302



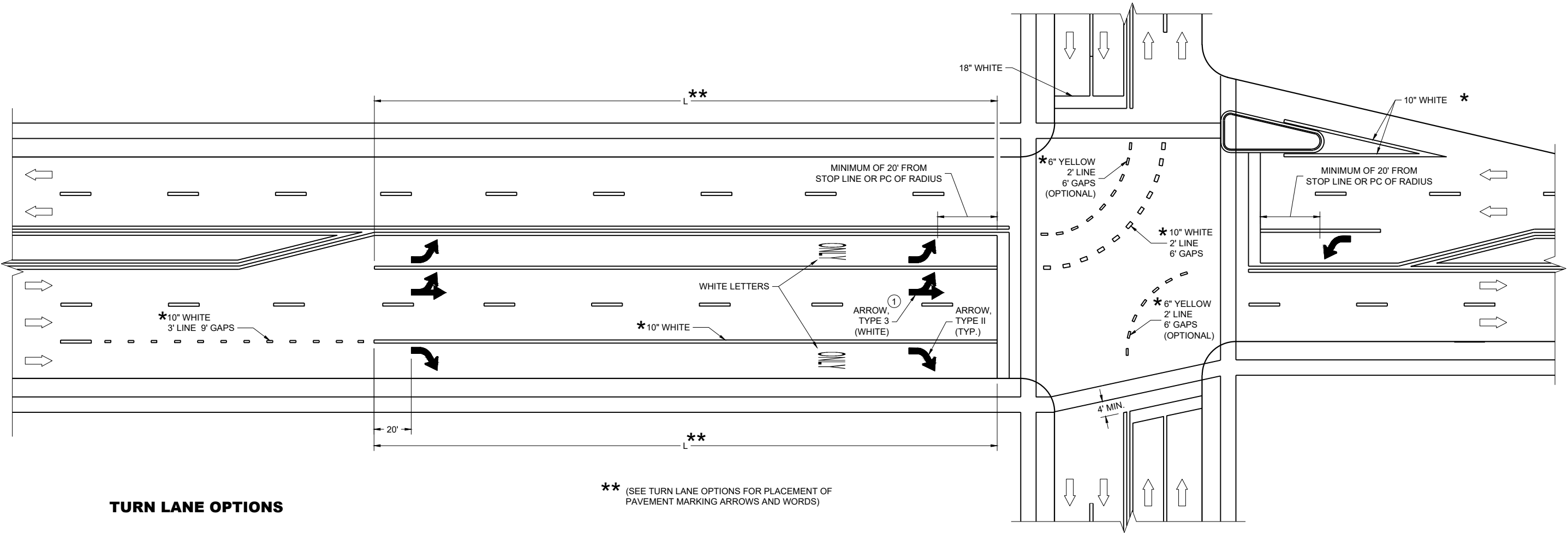
TWO WAY LEFT TURN LANE

GENERAL NOTES

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

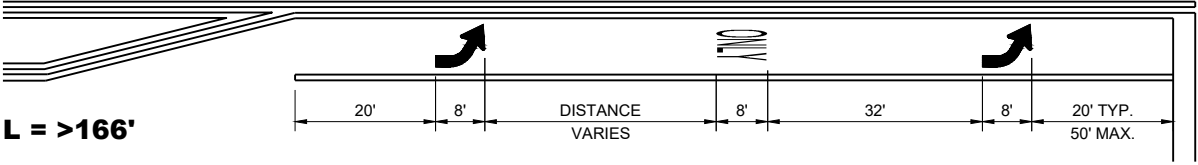
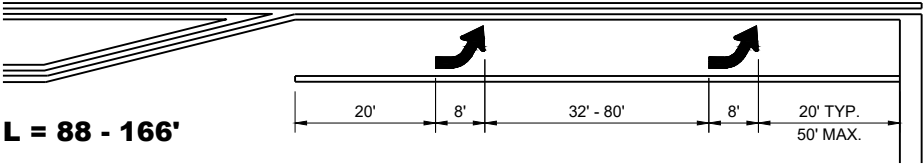
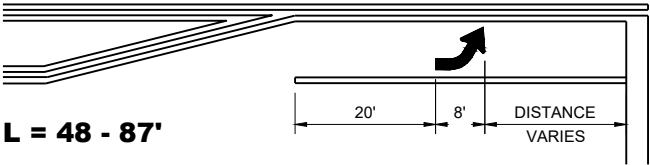
➡ DIRECTION OF TRAFFIC

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TURN LANE OPTIONS

LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



GENERAL NOTES

① QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

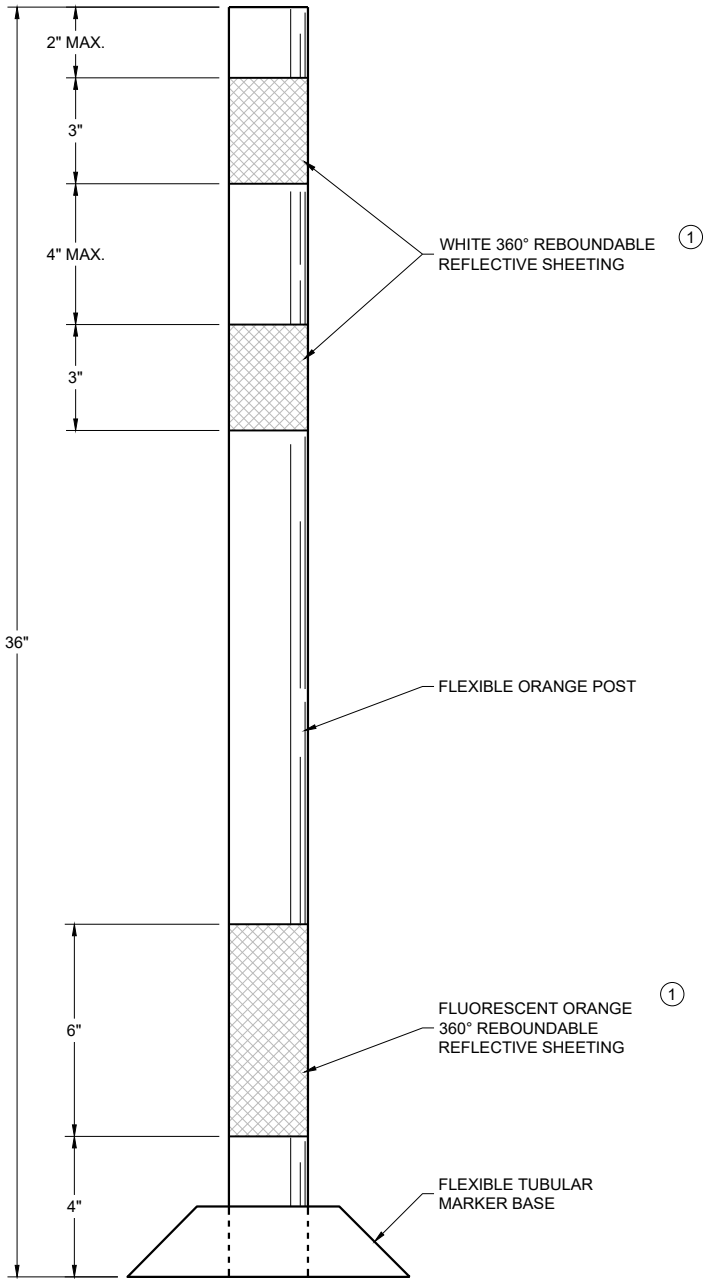
➡ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING
(TURN LANES)

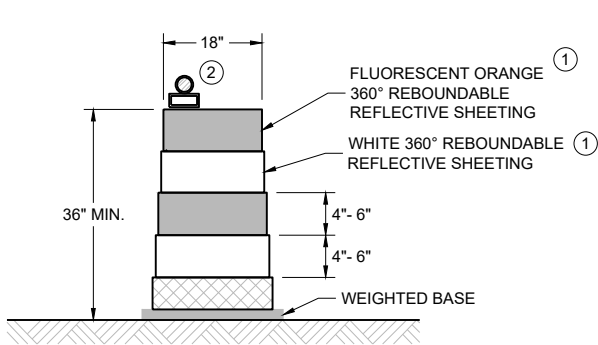
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



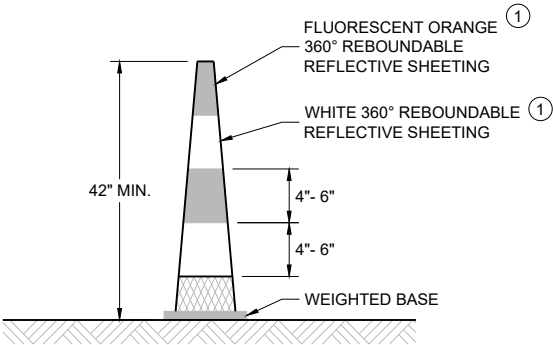
**FLEXIBLE TUBULAR
MARKER POST
WORK ZONE**

GENERAL NOTES

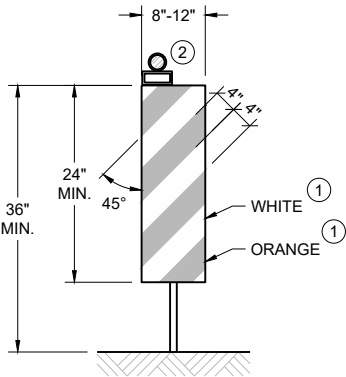
- DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.
- THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.



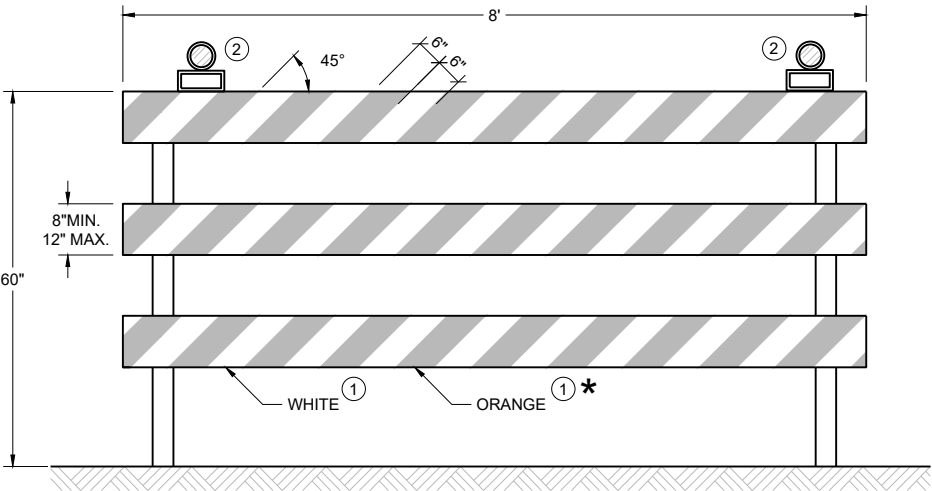
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE
DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



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



TYPE III BARRICADE
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.
* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

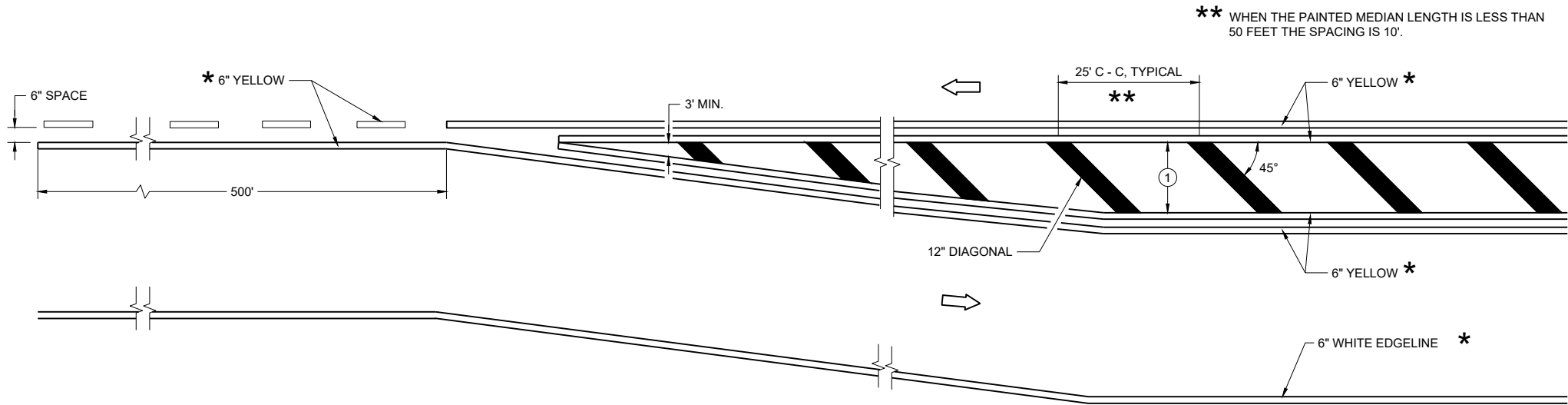
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

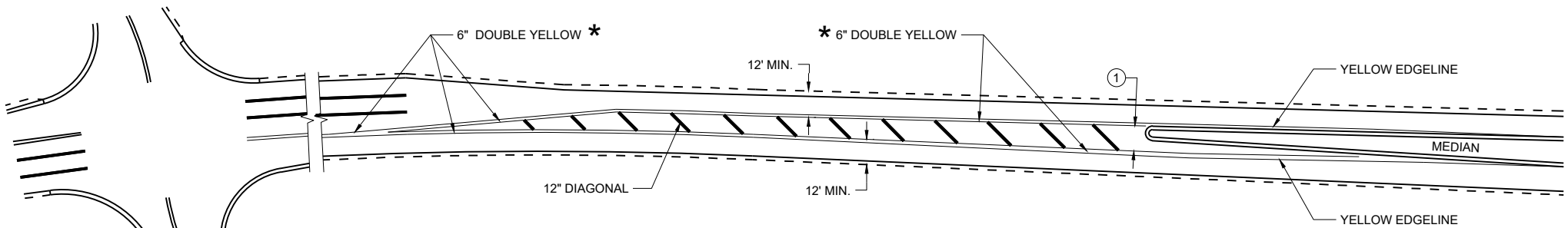
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2026 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

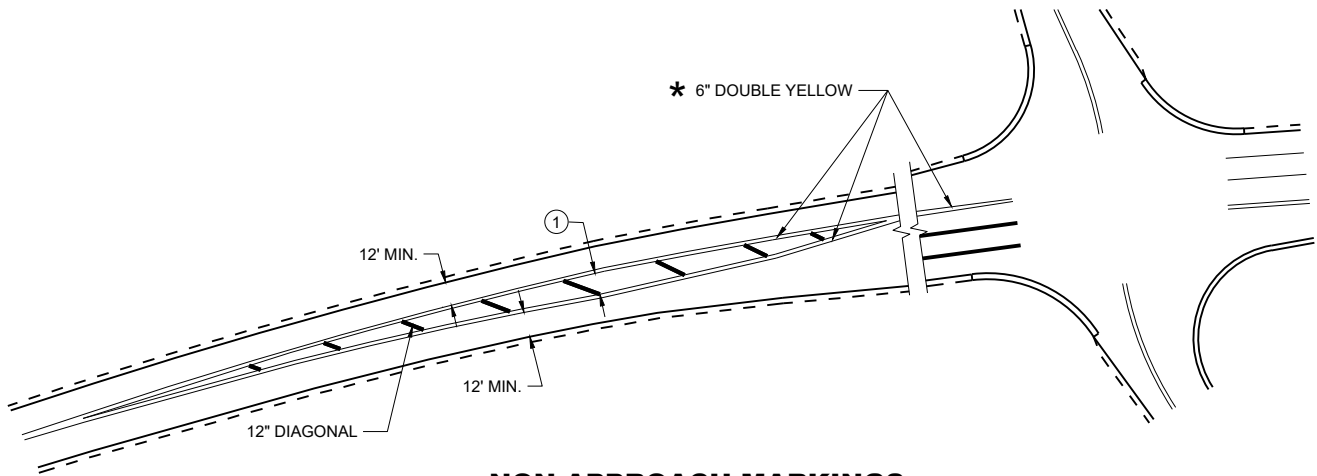
FHWA



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

GENERAL NOTES

- ① DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT THE WIDEST POINT. OMIT DIAGONALS IF WIDTH IS LESS THAN 4 FEET.

➡ DIRECTION OF TRAVEL

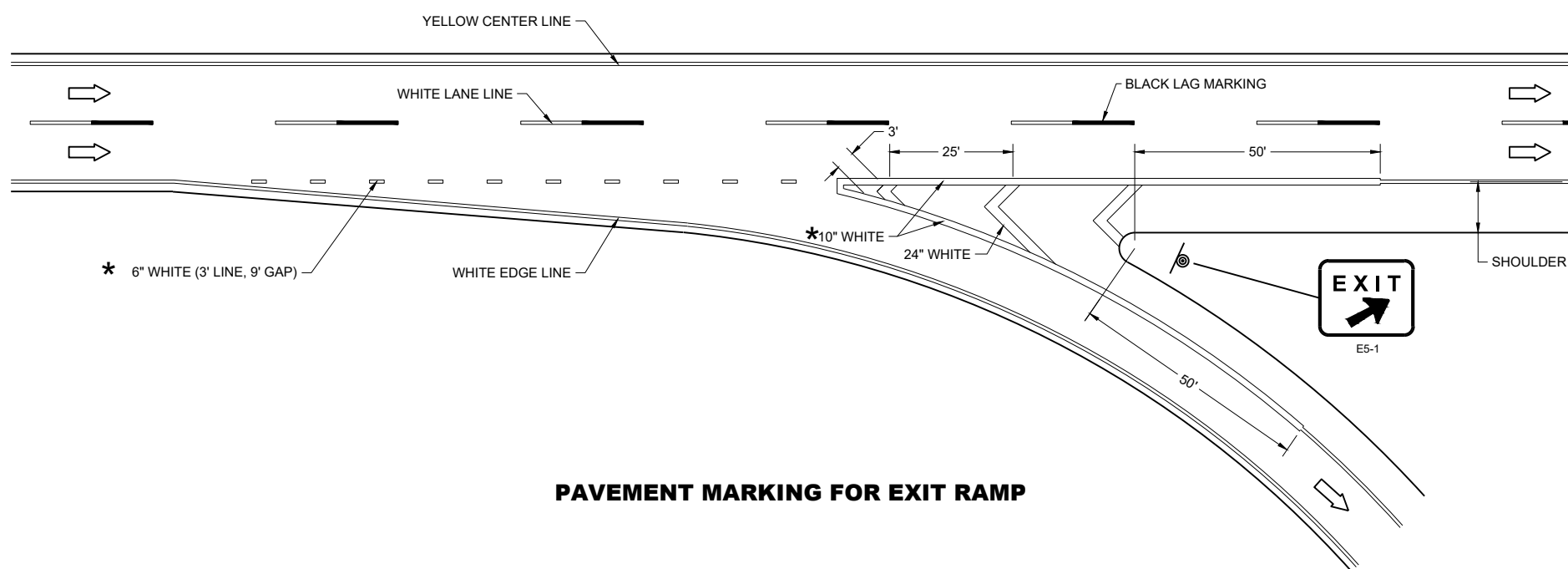
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

MEDIAN ISLAND
PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2024 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer

FHWA 307



GENERAL NOTES

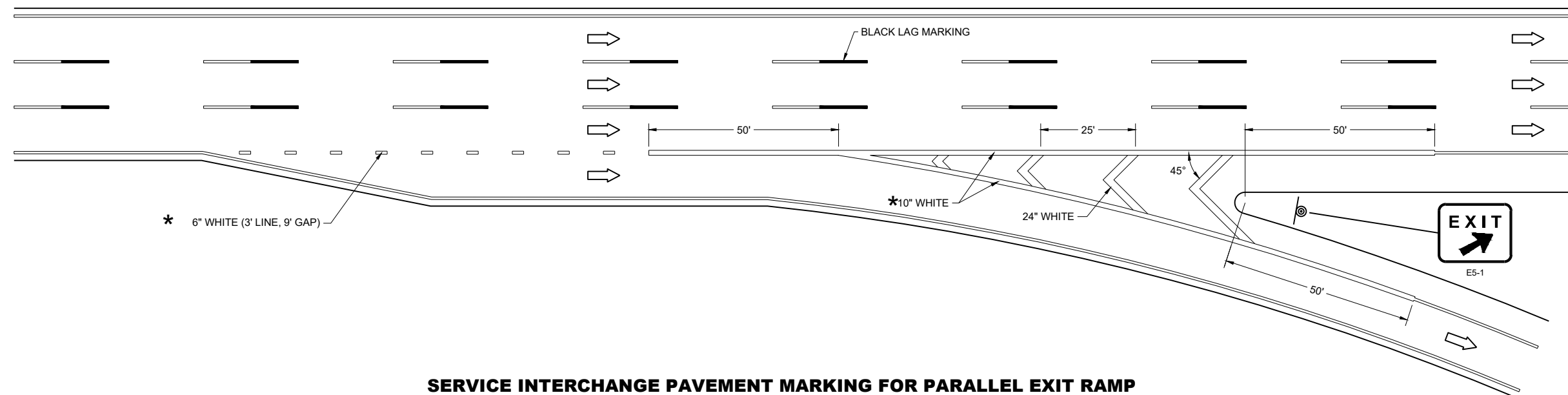
PLACE GROOVE 3 INCHES LEFT OF JOINT.

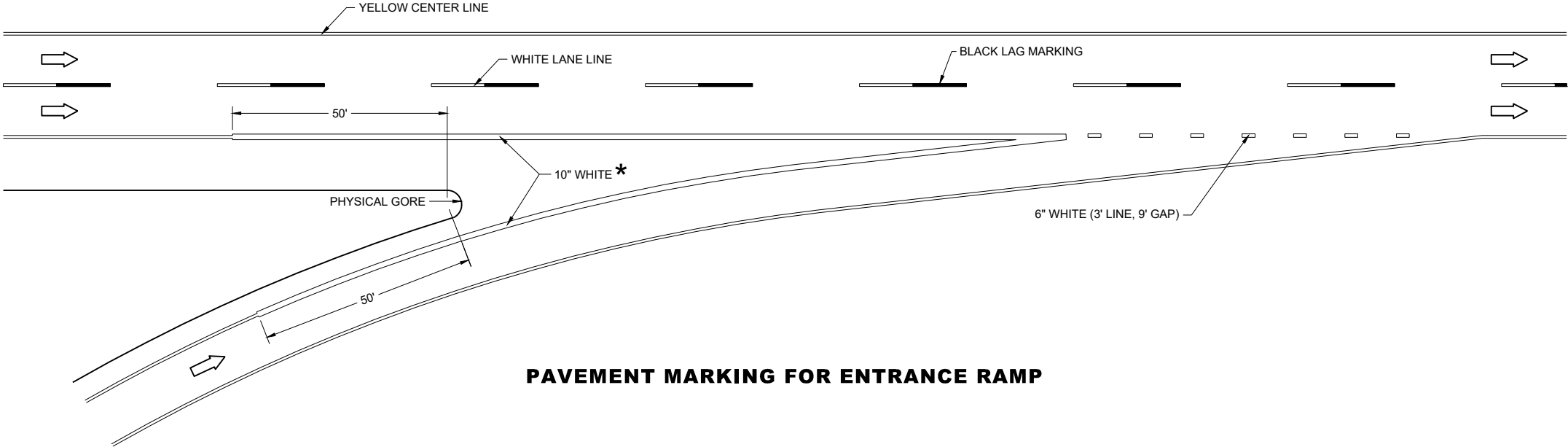
LEGEND

 SIGN ON PERMANENT SUPPORT

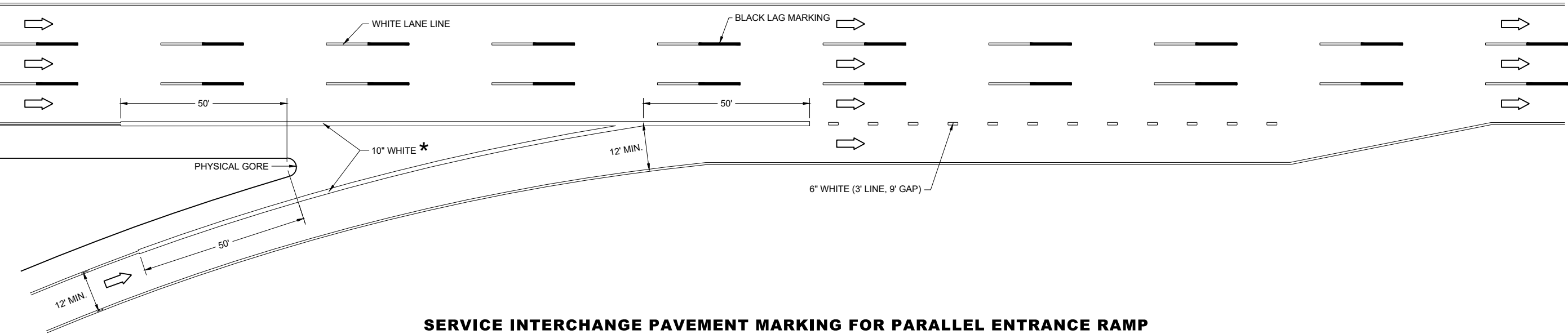
 DIRECTION OF TRAVEL

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES





PAVEMENT MARKING FOR ENTRANCE RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE RAMP

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

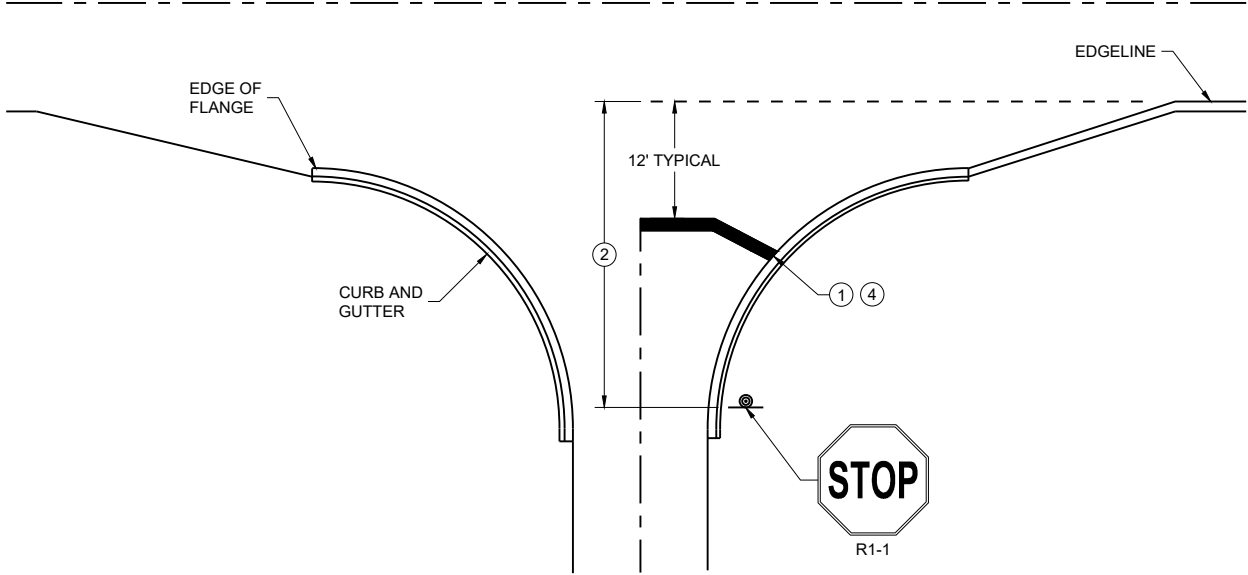
LEGEND

➡ DIRECTION OF TRAVEL

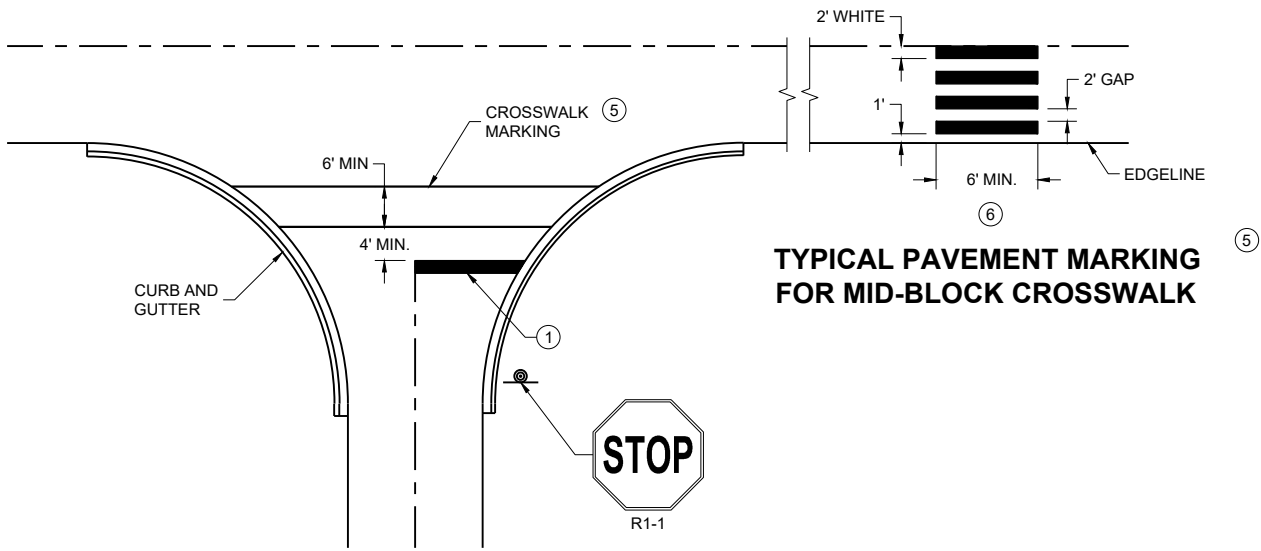
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING,
ENTRANCE RAMP AND
PARALLEL ENTRANCE RAMP

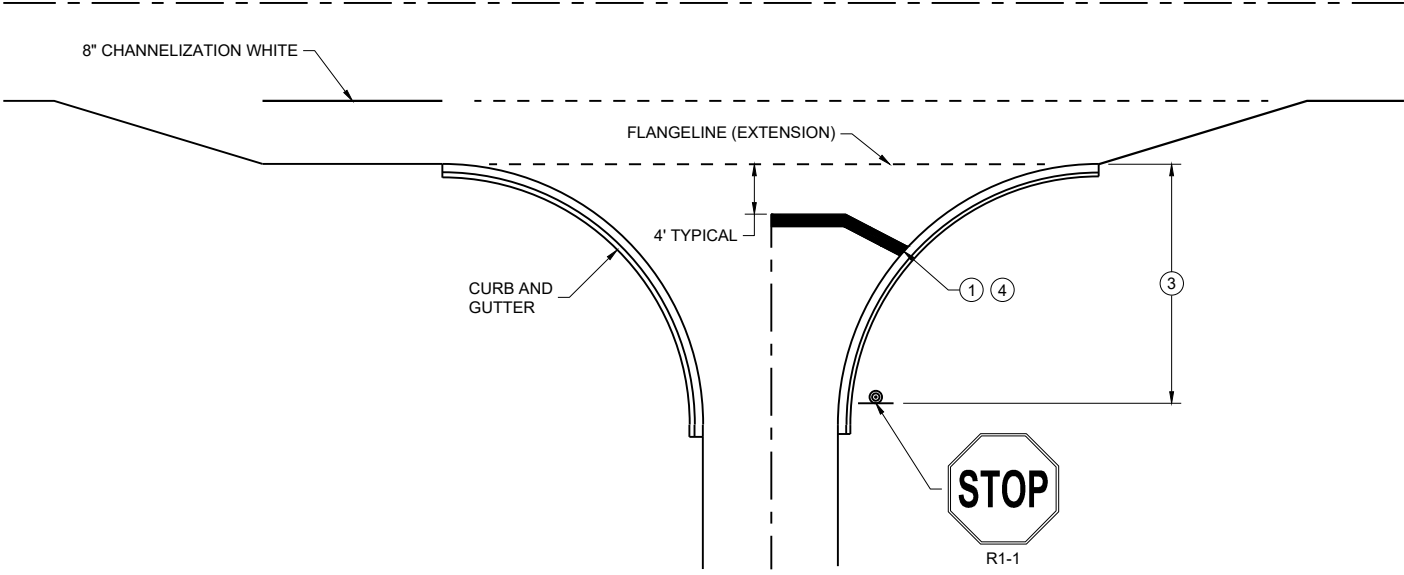
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



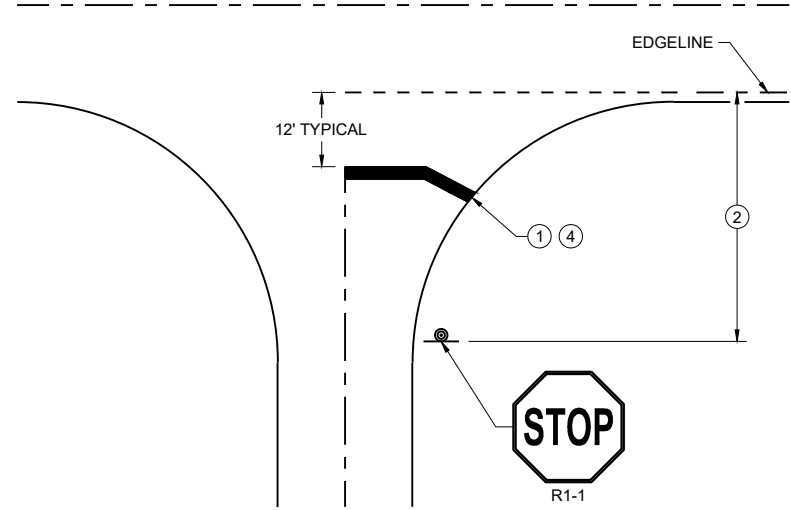
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDE ROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDE ROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

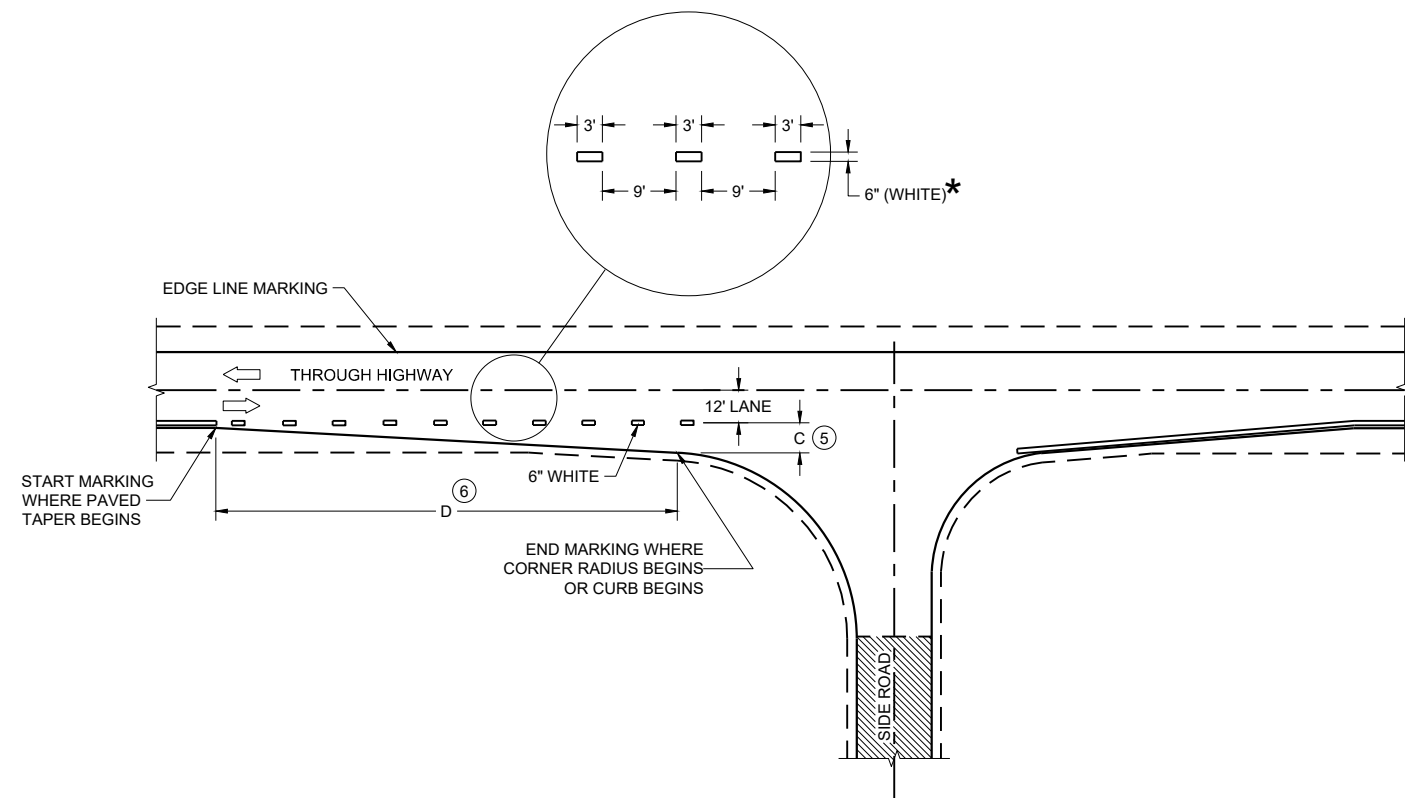
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES.
- ⑥ POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS

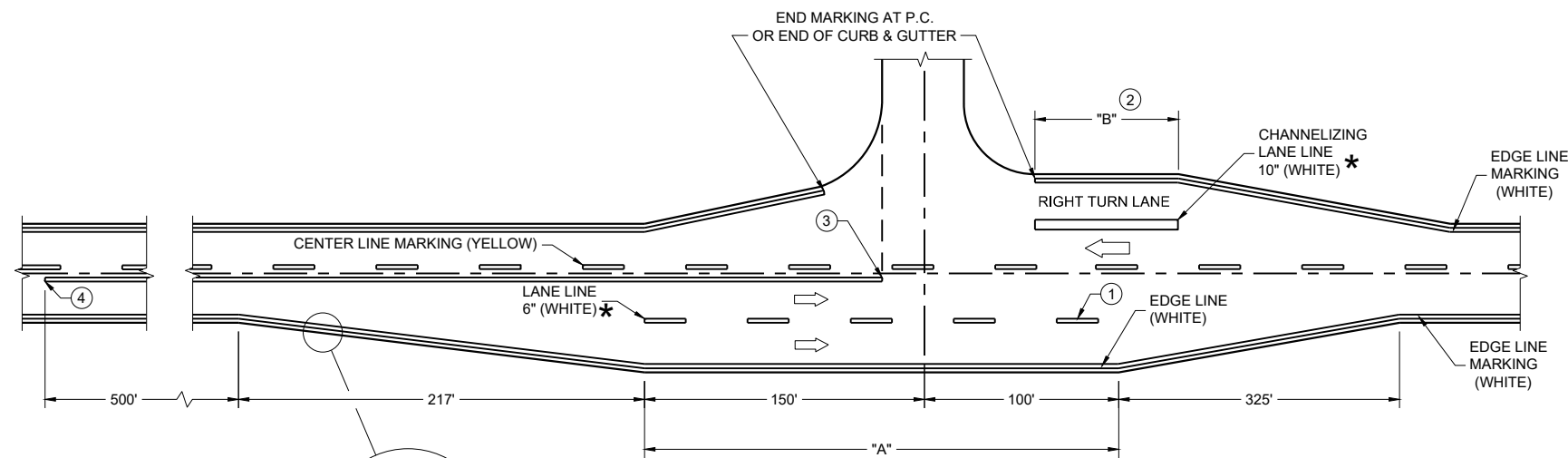
STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING
ENGINEER
FHWA



MINOR INTERSECTION



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

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

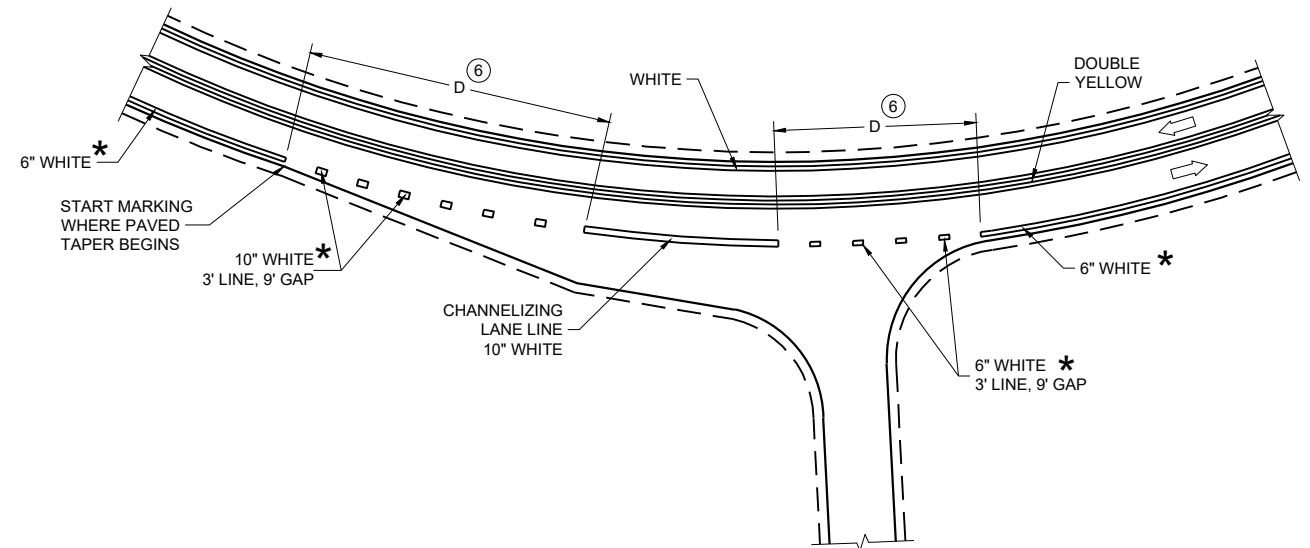
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

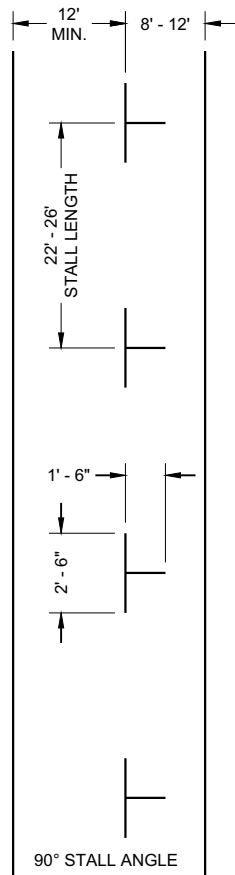
➡ DIRECTION OF TRAVEL



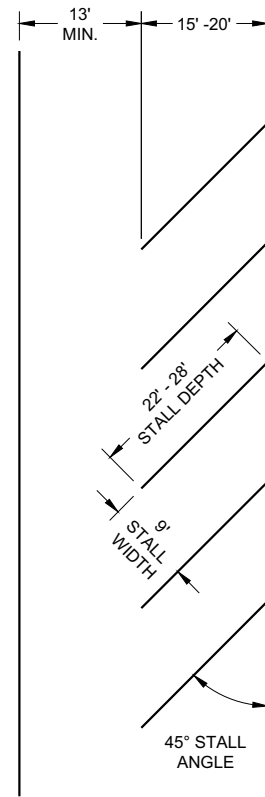
INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

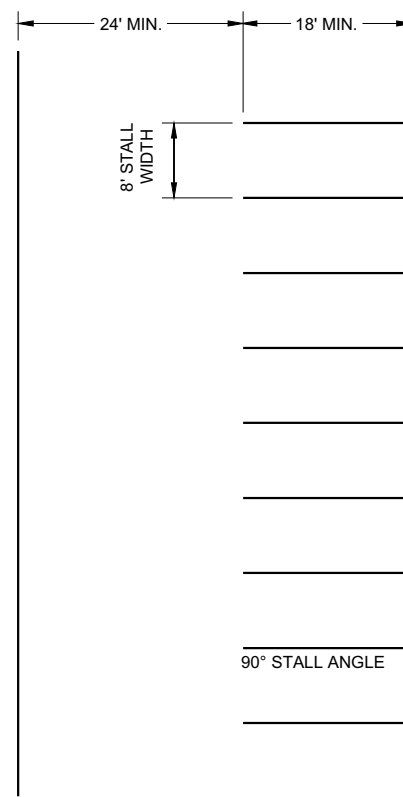
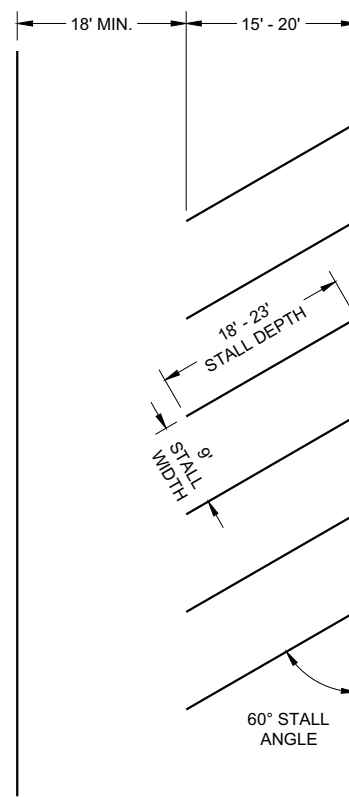


PARALLEL PARKING



ANGLED PARKING

(ANGLED PARKING IS NOT ALLOWED ON STATE HIGHWAYS UNLESS A DESIGN JUSTIFICATION HAS BEEN COMPLETED.)



PARKING LOTS

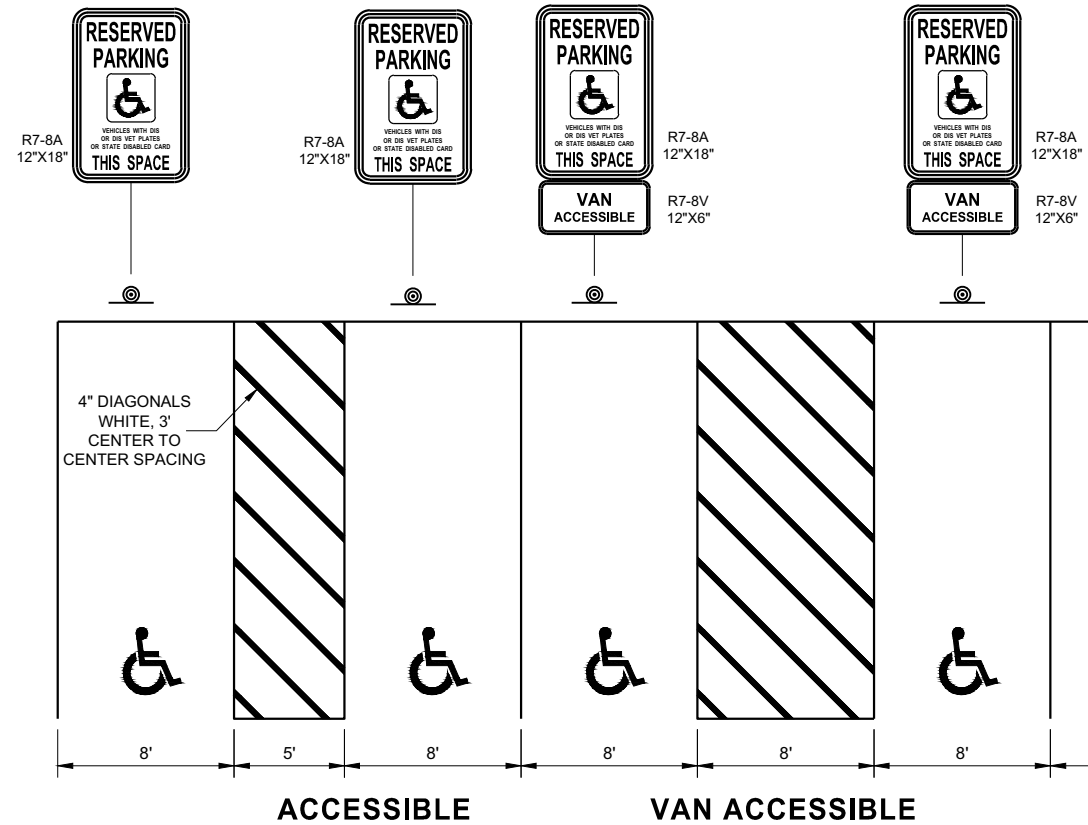
GENERAL NOTES

ALL LINES 4" WHITE (UNLESS OTHERWISE NOTED)

LAST PARKING STALL IS A MINIMUM OF 15' FROM THE CROSSWALK.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT



PARKING STALL MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 312
FHWA

●

SIGN ON PERMANENT SUPPORT

○

DELINEATOR, FLEXIBLE/TUBULAR MARKER

➡

DIRECTION OF TRAFFIC

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

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

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

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

COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING LINE, 6 INCH DOUBLE YELLOW.

PARTIAL NUMBERS ON SIGNS SHALL BE DISPLAYED AS A WHOLE NUMBER(AS NEEDED) FOLLOWED BY A FRACTION. SIGNS SHALL NOT DISPLAY NUMBERS IN DECIMAL FORM.

⬇️⬆️

W06-3

①

W057-51

48"X24"

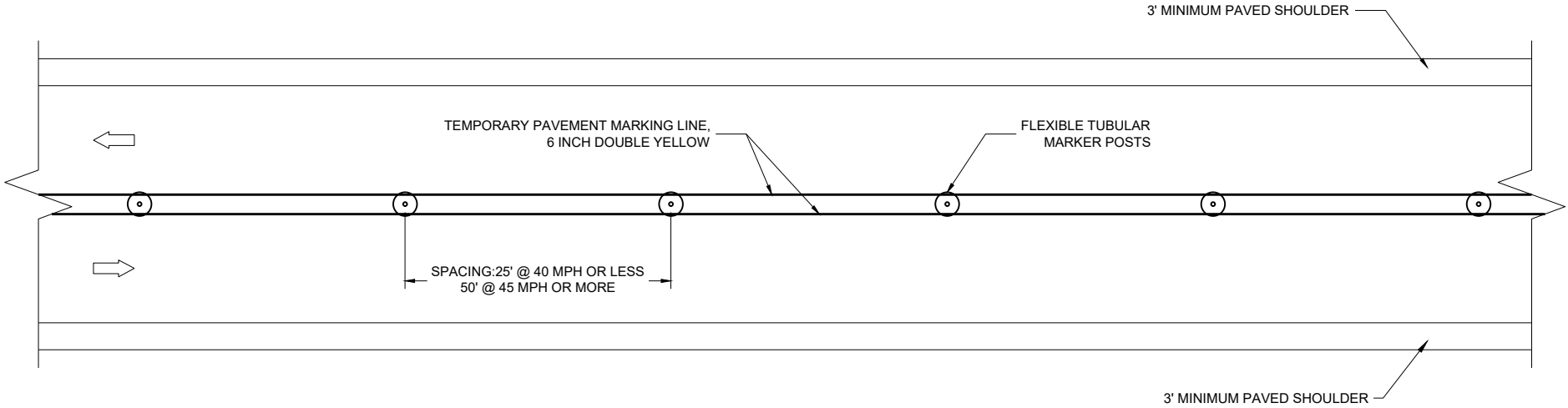
DO NOT PASS

②

R4-1

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

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



TWO LANE, TWO WAY OPERATION

TRAFFIC CONTROL
TWO LANE TWO WAY
OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA

313

GENERAL NOTES

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

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

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

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

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

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

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 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.

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

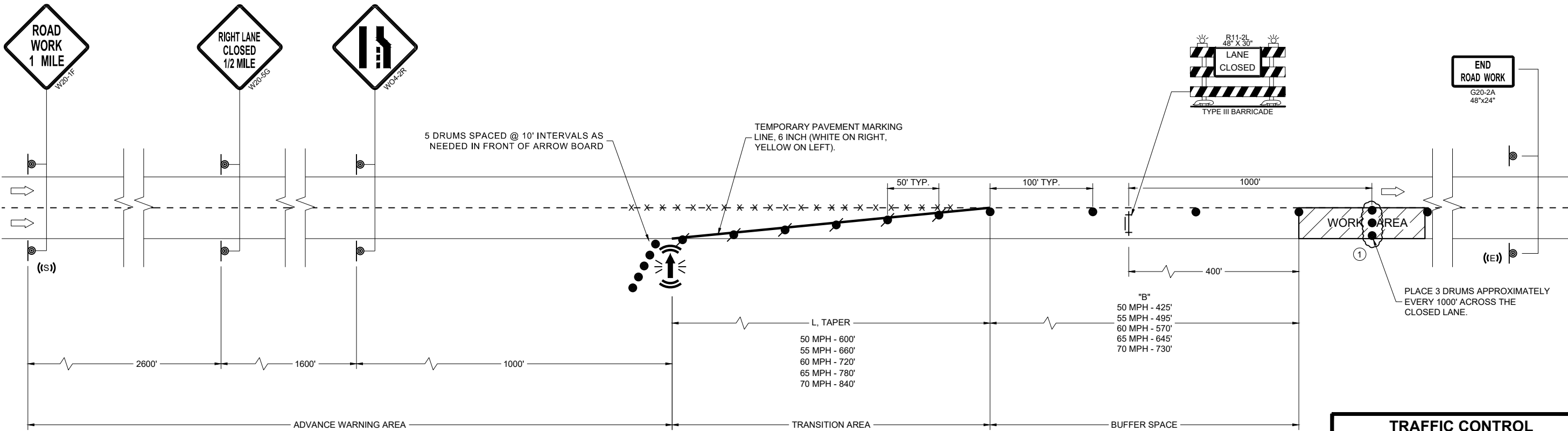
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF 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.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

① DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER



TRAFFIC CONTROL
LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

GENERAL NOTES

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

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

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

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

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

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

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

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

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

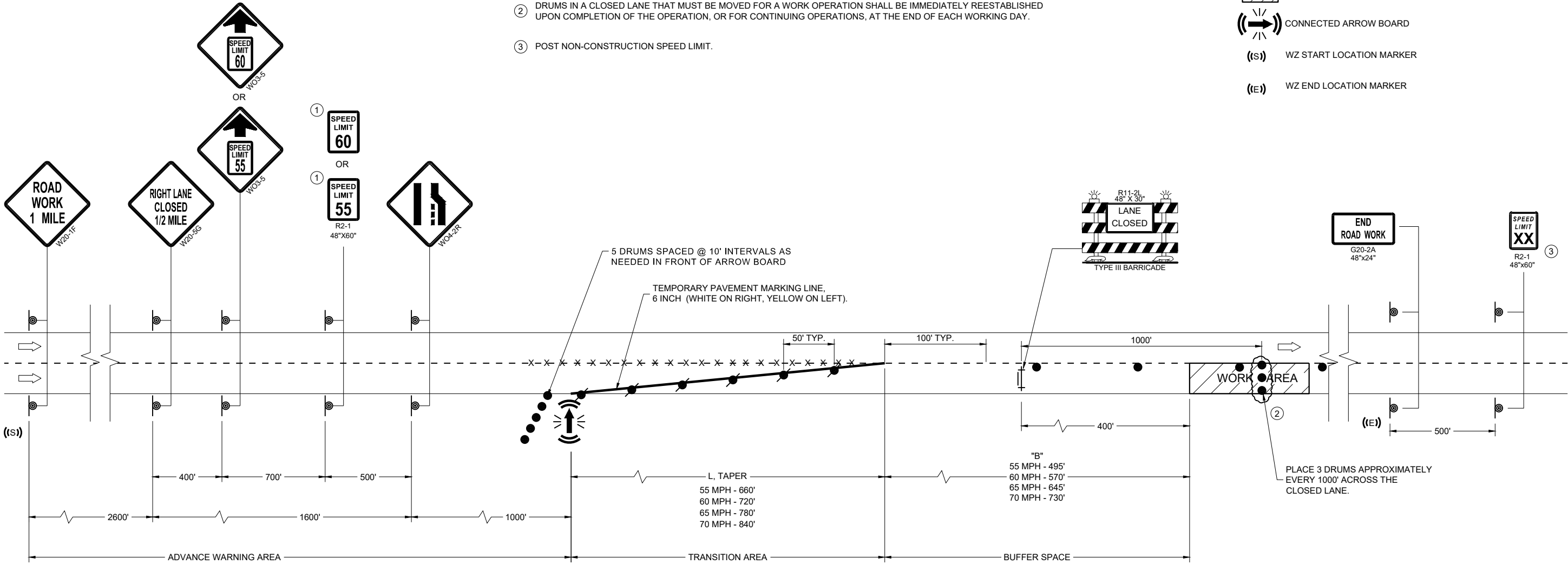
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE 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 ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

- 1 A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES.
- 2 DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.
- 3 POST NON-CONSTRUCTION SPEED LIMIT.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER



TRAFFIC CONTROL,
LANE CLOSURE,
SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  REMOVING PAVEMENT MARKINGS
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  WZ START LOCATION MARKER
-  WZ END LOCATION MARKER
-  CONNECTED ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  PORTABLE TRAFFIC SENSOR (PTS)
-  FLASHING BEACON SIGNS
- 

WO8-76
96" x 48"

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS, INCLUDING FBS 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.

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

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS. WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

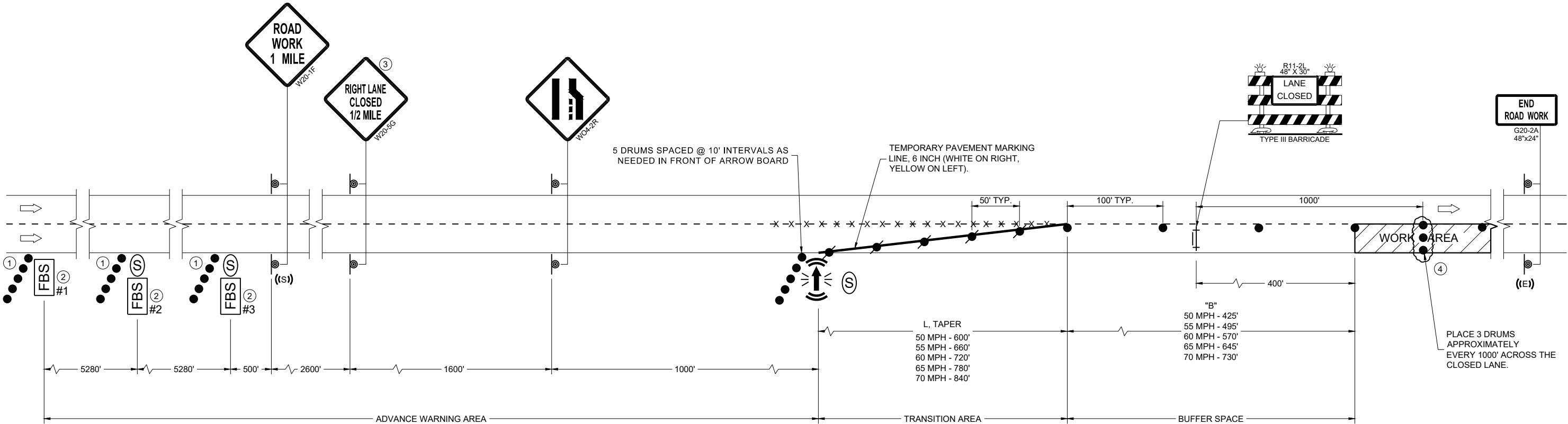
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE 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 ONE HALF 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.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON THE FBS, ARROW BOARD OR OTHER TRAILER DEVICES.

- 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.
- IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE FBS ON BOTH SIDES OF THE ROADWAY.
- IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN
- DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.



TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Erin Schwark
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)

-X -X -X REMOVING PAVEMENT MARKINGS

DIRECTION OF TRAFFIC

WORK AREA

CONNECTED ARROW BOARD

PCMS PORTABLE CHANGEABLE MESSAGE SIGN

PORTABLE TRAFFIC SENSOR (PTS)

WZ START LOCATION MARKER

WZ END LOCATION MARKER

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS, INCLUDING FBS 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.

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

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

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

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

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

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

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

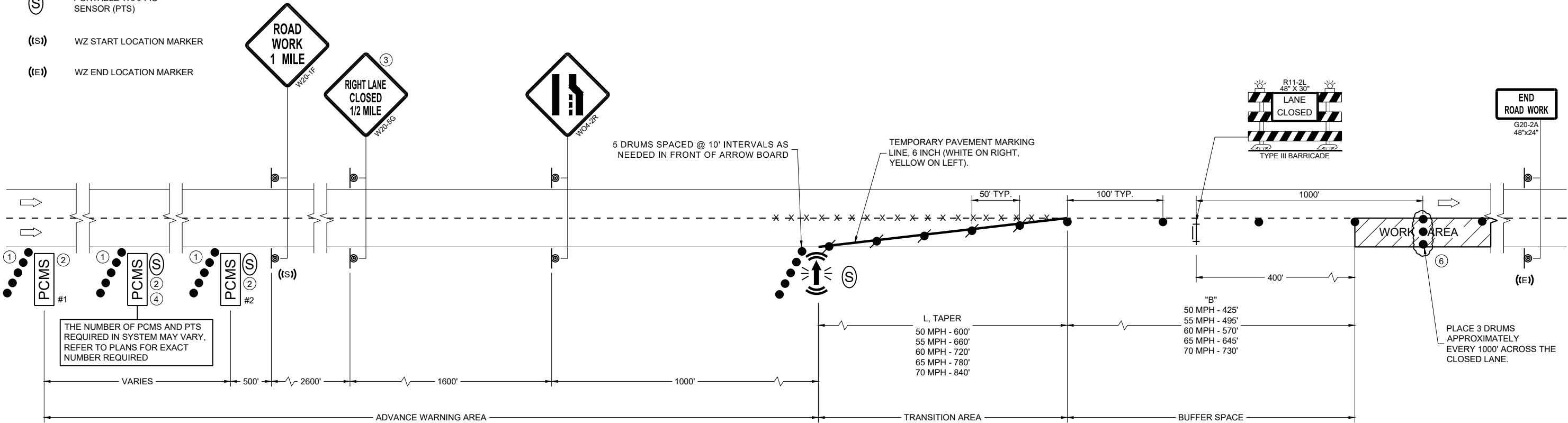
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE 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 ONE HALF 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.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON PCMS, ARROW BOARD OR OTHER TRAILER DEVICES.

- 1 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.
- 2 IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE PCMS ON BOTH SIDES OF THE ROADWAY.
- 3 IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.
- 4 PLACE PCMS EVERY ONE MILE BETWEEN PCMS #1 AND PCMS #2, OR AS THE ENGINEER DIRECTS. THE NUMBER OF PCMS MAY BE MORE THAN SHOWN ON THIS DETAIL.
- 5 PCMS SHALL FOLLOW ARROW BOARD STANDARDS WHEN DISPLAYING FLASHING FOUR CORNER CAUTION MODE OR ARROW MERGE MODE.
- 6 DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.



⑤ PCMS MESSAGING		
SPEEDS 0 MPH TO 19 MPH		SPEEDS 20 MPH TO 39 MPH
FRAME 1	FRAME 2	FRAME 1
STOPPED TRAFFIC AHEAD	EXPECT DELAYS	SLOW TRAFFIC AHEAD
		PREPARE TO STOP
		SPEEDS 40 MPH AND GREATER
		(FLASHING CAUTION MODE)

TRAFFIC CONTROL, LANE CLOSURE, TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Erin Schwark
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE 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 ONE HALF 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.

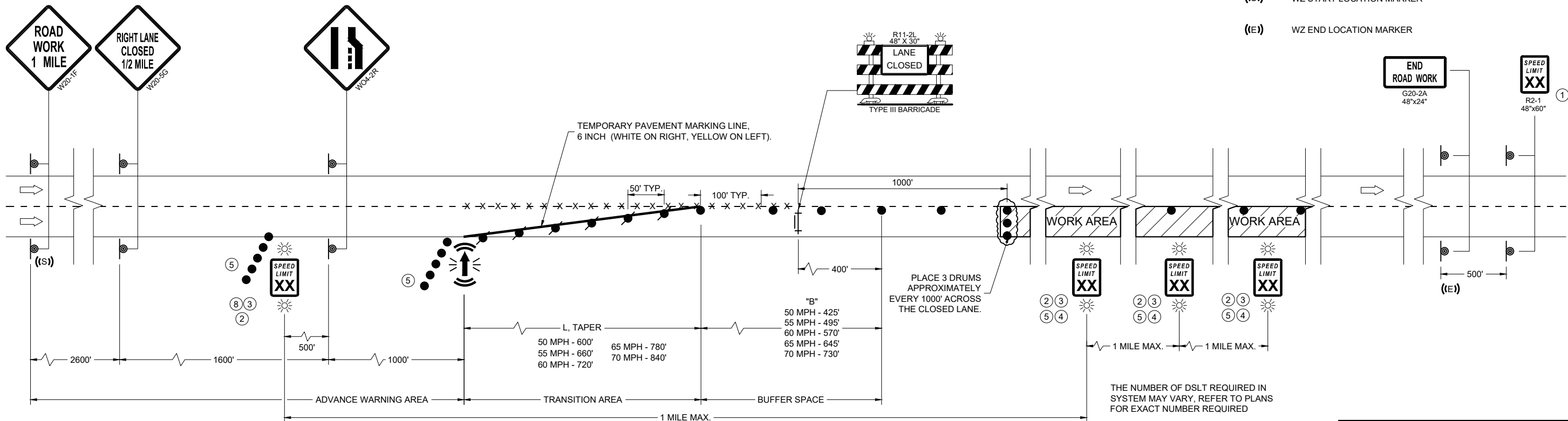
IF THE SPEED LIMIT WILL CHANGE BASED ON THE PRESENCE OF WORKERS, USE THE TAPER LENGTH THAT MATCHES THE HIGHER OF THE TWO SPEEDS FOR A CONTINUOUS LANE CLOSURE.

EXISTING POST MOUNTED SPEED LIMIT SIGNS SHOULD BE COVERED OR REMOVED.

- 1 POST NON-CONSTRUCTION SPEED LIMIT.
- 2 IF THE LANE CLOSURE MOVES DOWNSTREAM, LEAVE DSLT IN PLACE.
- 3 PLACE DSLT AT EXISTING POST MOUNTED SPEED LIMIT SIGN AFTER THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. IF THERE IS NOT AN EXISTING SIGN, PLACE 1,500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP
- 4 FOR LEFT LANE CLOSURES, DSLT REMAINS ON RIGHT SHOULDER.
- 5 5 DRUMS SPACED @ 10' INTERVALS AS NEEDED.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- DIGITAL SPEED LIMIT TRAILER (DSLT)
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER



TRAFFIC CONTROL, LANE CLOSURE, DIGITAL SPEED REDUCTION SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

LEGEND

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

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" X 48" 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 R11-2L "LANE CLOSED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

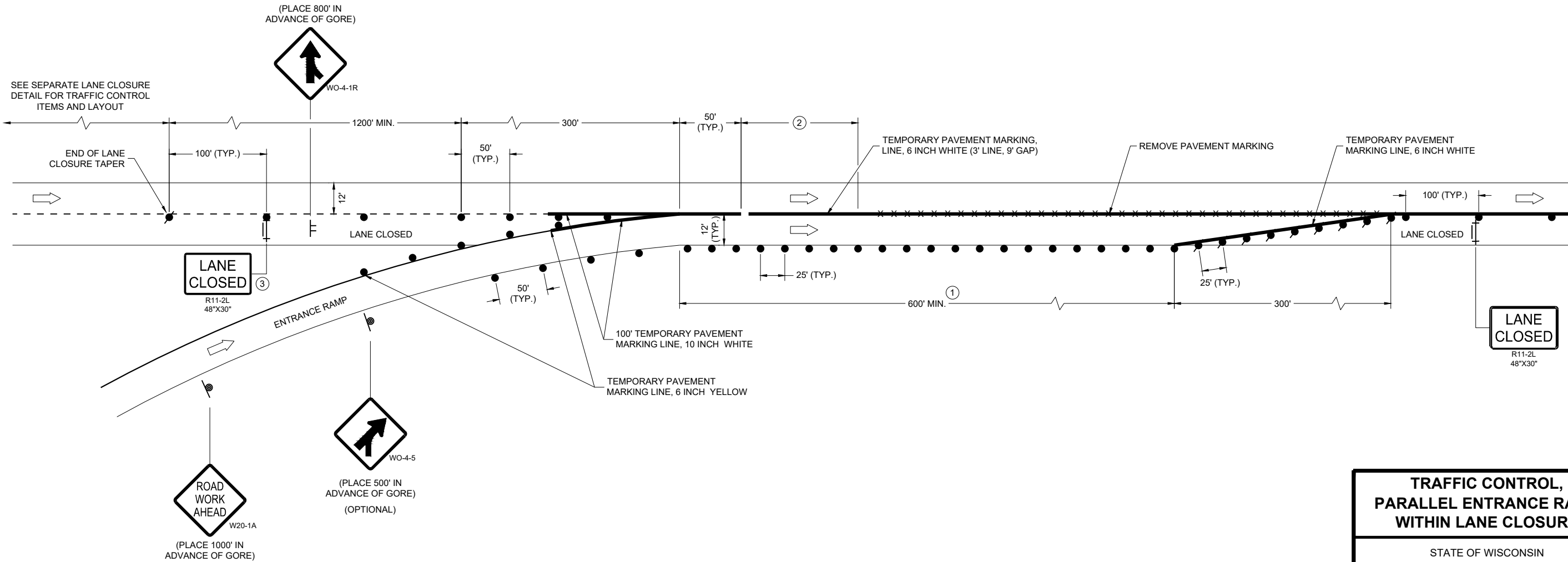
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

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

- ① EXTEND THE LENGTH OF THE MERGE ARE IF THE ENTERING (DESIGN) SPEED IS LESS THAN 50MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.
- ② END TEMPORARY PAVEMENT MARKING LINE AT 1/2 THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.
- ③ IF LOCATED AFTER INITIAL LANE CLOSURE BARRICADE AND "LANE CLOSED" SIGN, USE 3 DRUMS IN PLACE OF BARRICADE AND SIGN.



TRAFFIC CONTROL,
PARALLEL ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

LEGEND

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

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" X 48" 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 R11-2L "LANE CLOSED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE 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 /OR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

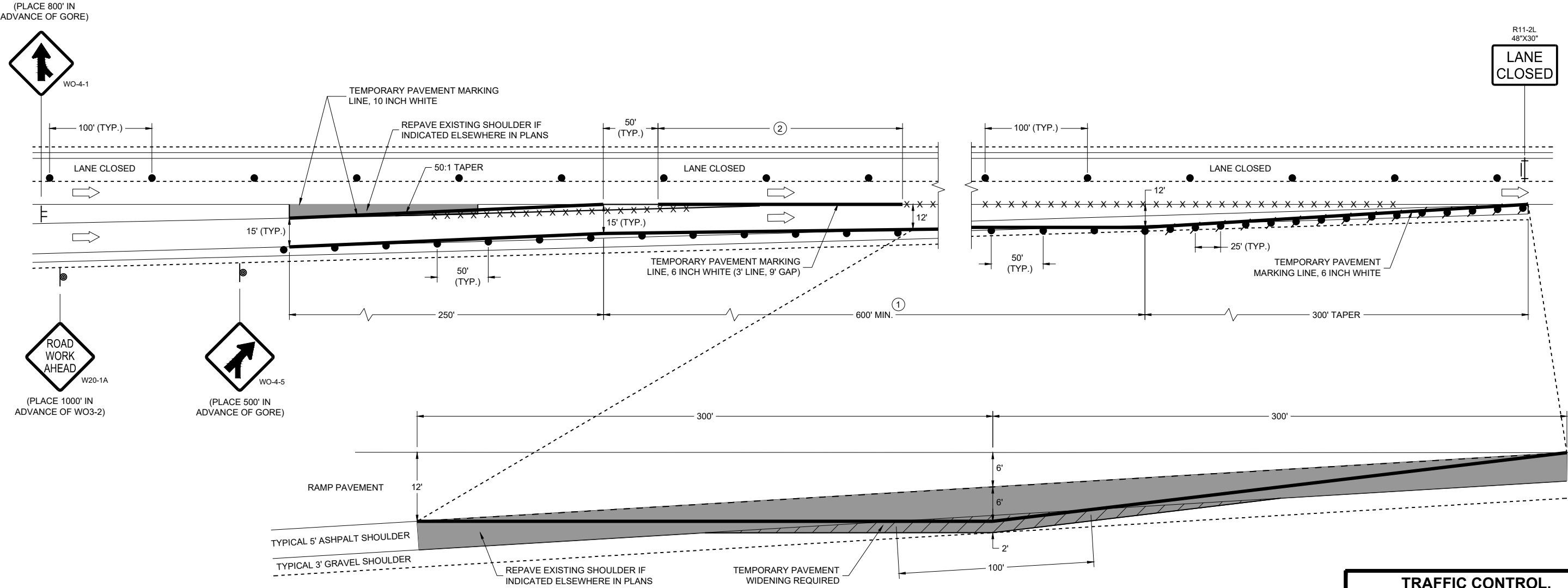
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

① EXTEND THE LENGTH OF THE MERGE AREA IF THE ENTERING (DESIGN) SPEED OF THE RAMP IS LESS THAN 50 MPH OR IF THE MAINLINE GRADE EXCEEDS $\pm 2.2\%$.

② END TEMPORARY PAVEMENT MARKING LINE AT 1/2 THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.



TEMPORARY PAVEMENT DETAIL

(EXISTING RAMP DIMENSIONS MAY VARY, ADJUST TEMPORARY PAVEMENT ACCORDINGLY)

TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLAGS, 16" X 16" MIN., ORANGE
- DIRECTION OF TRAFFIC

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" X 48" 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 R11-2L "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 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

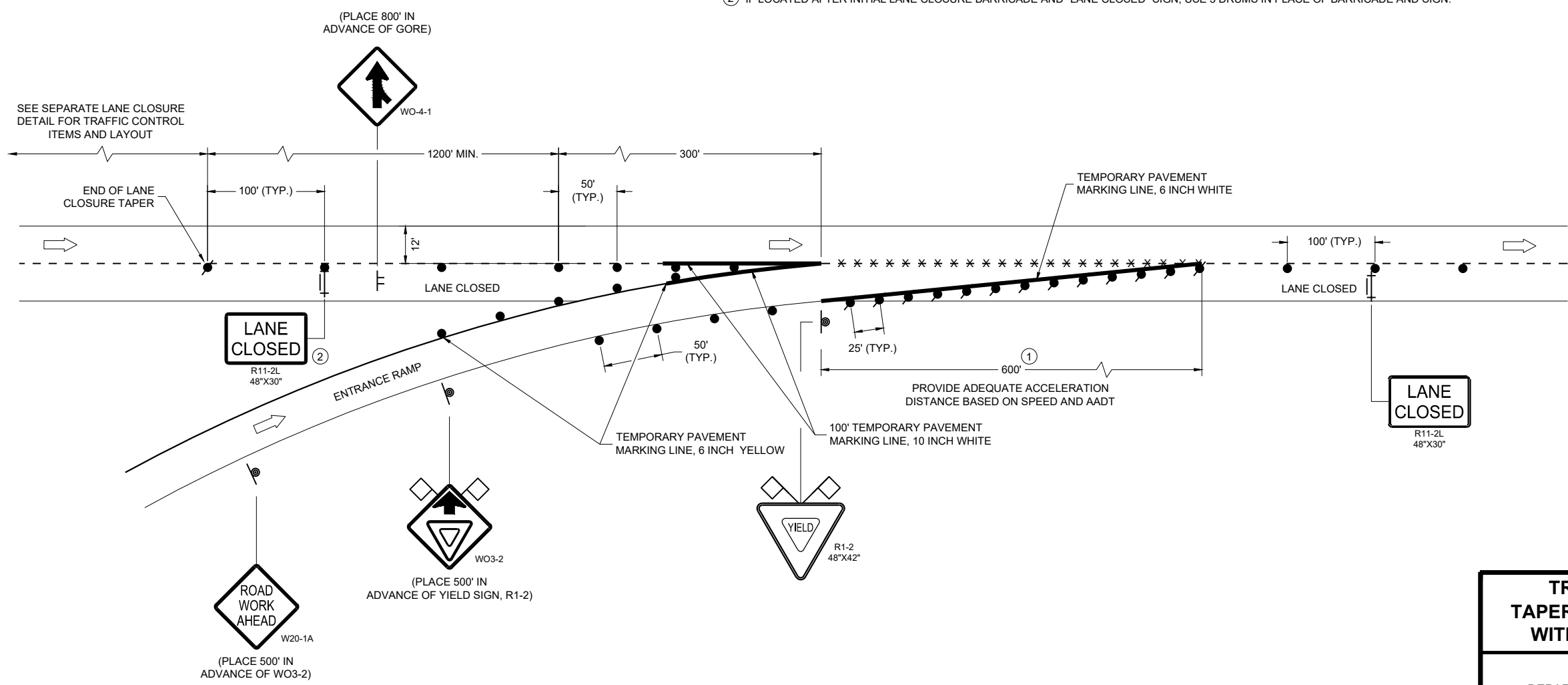
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

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

- ① CONSULT WITH REGIONAL WORK ZONE ENGINEER IF NEED TO REDUCE LENGTH EXISTS.
- ② IF LOCATED AFTER INITIAL LANE CLOSURE BARRICADE AND "LANE CLOSED" SIGN, USE 3 DRUMS IN PLACE OF BARRICADE AND SIGN.



TRAFFIC CONTROL,
TAPERED ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Andrew Heidtke
DATE <position>

FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  FLAGS, 16" X 16" MIN., ORANGE
-  DIRECTION OF TRAFFIC

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" X 48" 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 R11-2L "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.

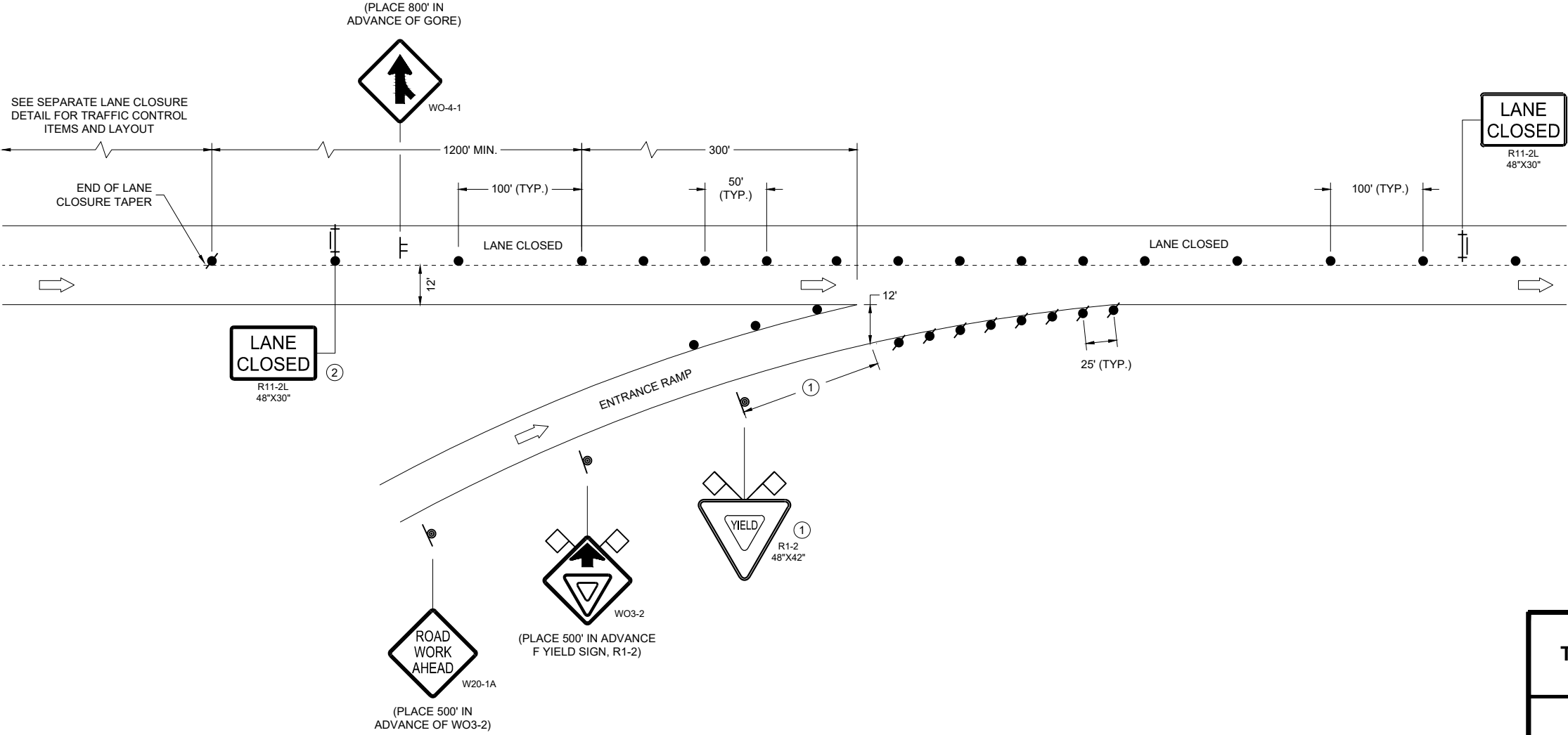
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

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.

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

- ① PLACE YIELD SIGN TO PROVIDE ADEQUATE SIGHT DISTANCE AND ACCELERATION DISTANCE.
- ② IF LOCATED AFTER INITIAL LANE CLOSURE BARRICADE AND "LANE CLOSED" SIGN, USE 3 DRUMS IN PLACE OF BARRICADE AND SIGN.

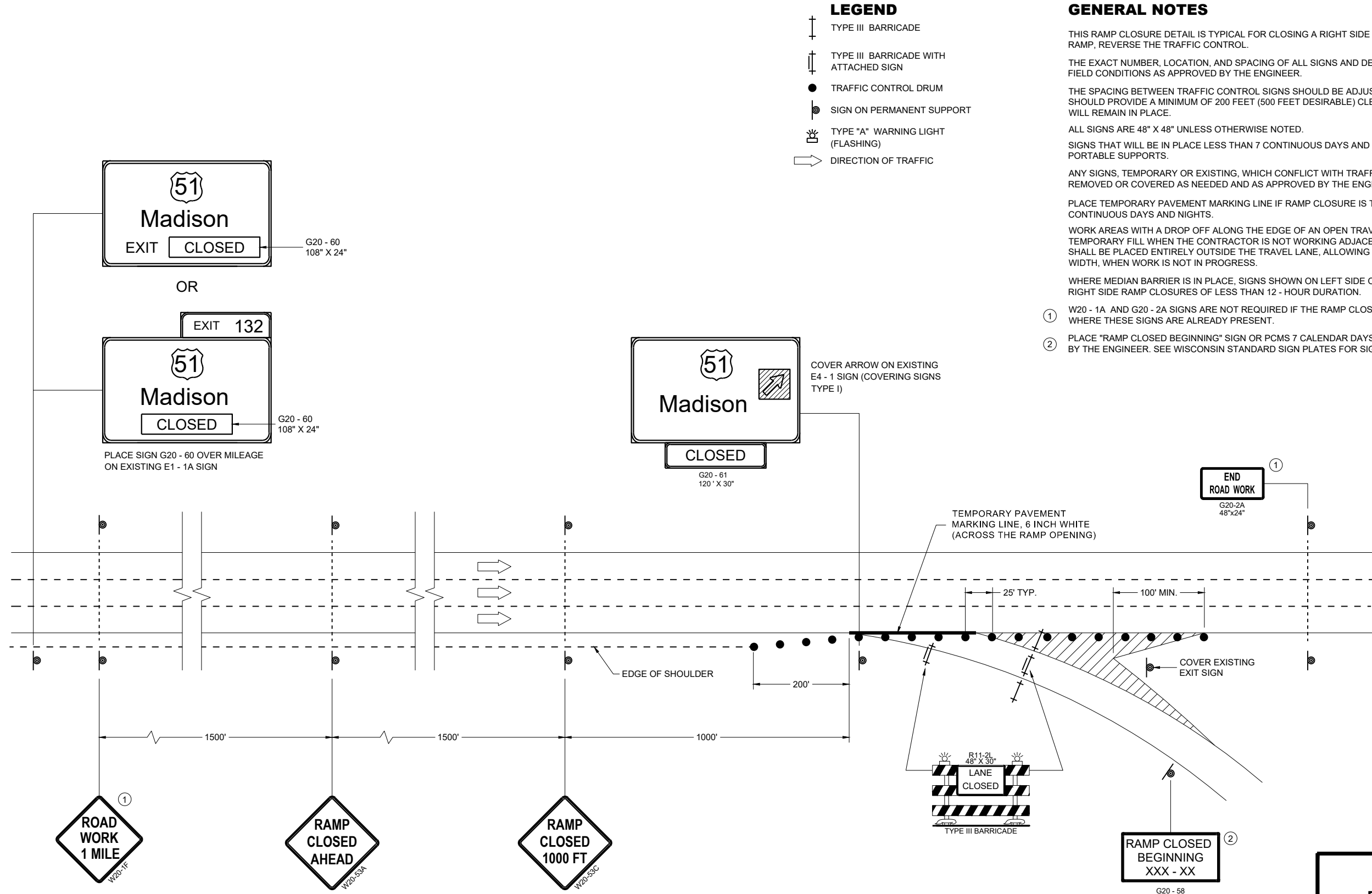


TRAFFIC CONTROL,
TAPERED ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



- LEGEND**
- TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - SIGN ON PERMANENT SUPPORT
 - TYPE "A" WARNING LIGHT (FLASHING)
 - DIRECTION OF TRAFFIC

GENERAL NOTES

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

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

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

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

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

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

PLACE TEMPORARY PAVEMENT MARKING LINE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROP OFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.

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

② PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

RAMP CLOSED BEGINNING XXX - XX	
G20 - 58 OR PCMS MESSAGING	
FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

TRAFFIC CONTROL, EXIT RAMP CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2025 DATE	/S/ Andrew Heidtke <position>
FHWA	

	SIGN ON PERMANENT SUPPORT
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
	TYPE III BARRICADE WITH ATTACHED SIGN
	TYPE "A" WARNING LIGHT (FLASHING)
	REMOVING PAVEMENT MARKINGS
	DIRECTION OF TRAFFIC
	WORK AREA
	CONNECTED ARROW BOARD
	WZ START LOCATION MARKER
	WZ END LOCATION MARKER

FOR WORK ON ROADWAYS WITH SPEEDS GREATER THAN 45MPH, USE SDD 15D12.

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

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

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

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

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 TEMPORARY SUPPORTS.

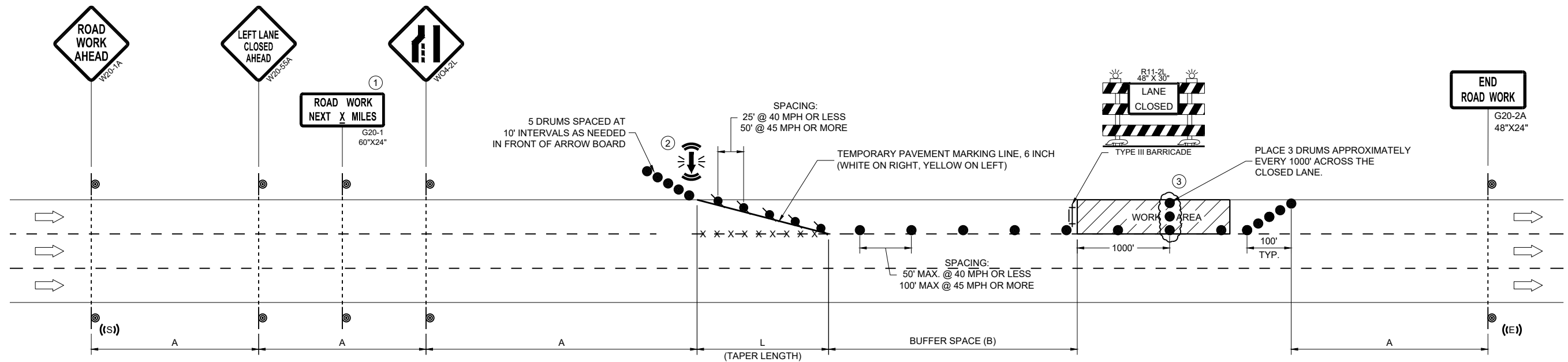
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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

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

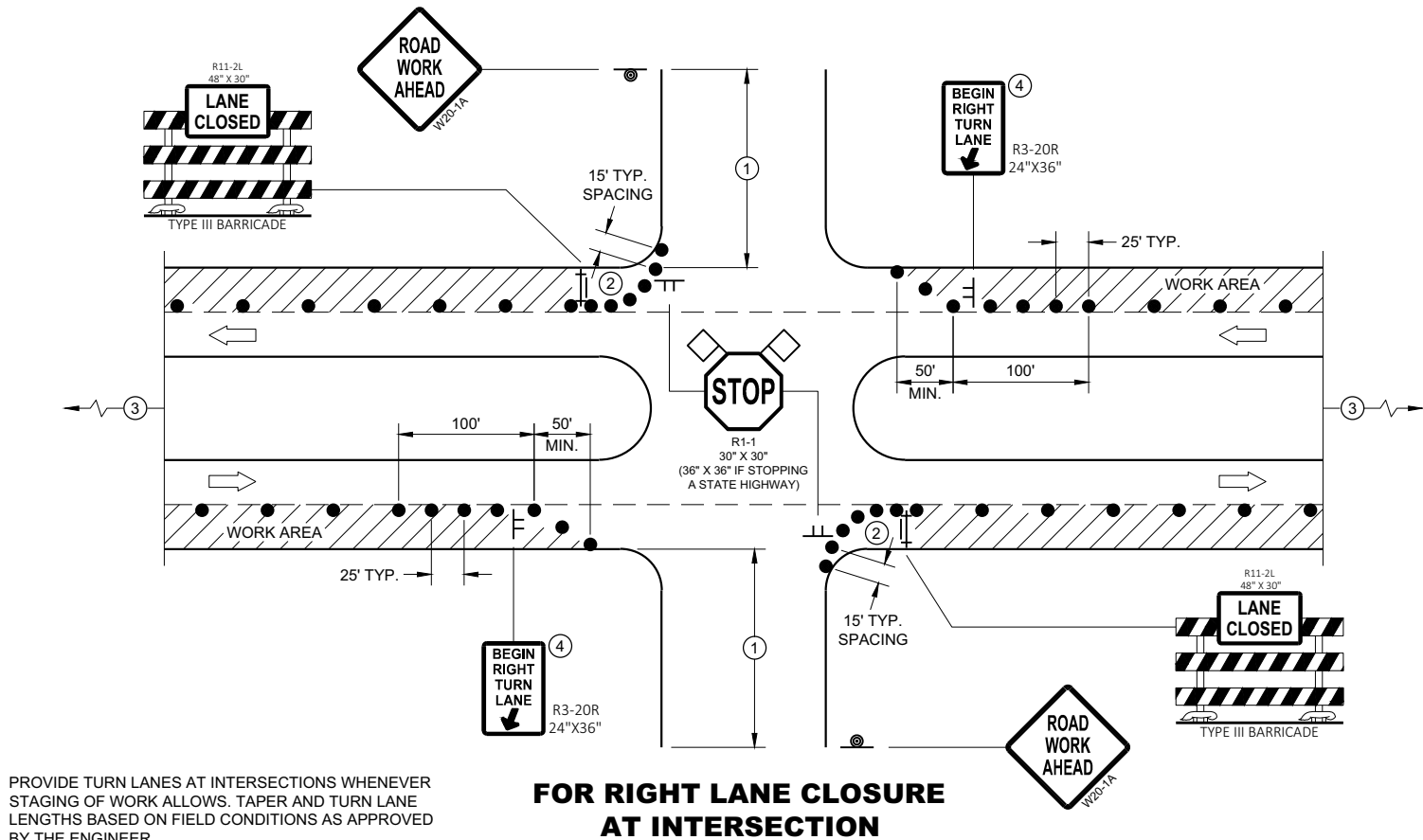
REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN

- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.
- ③ DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	155'
30	200'	180'	200'
35	350'	245'	250'
40	350'	320'	305'
45	500'	540'	360'

APPROVED
November 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER



GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. 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 TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

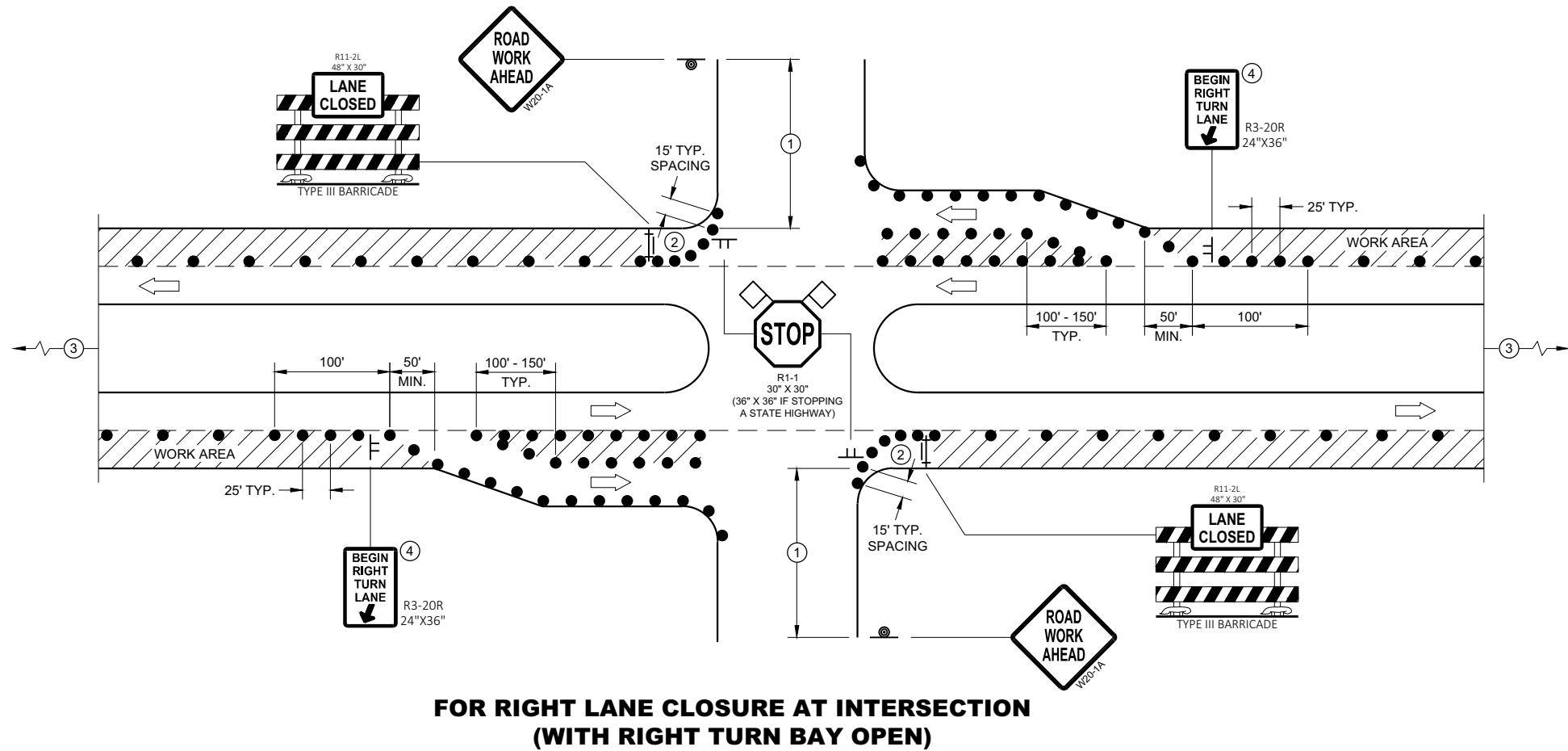
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.
- ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

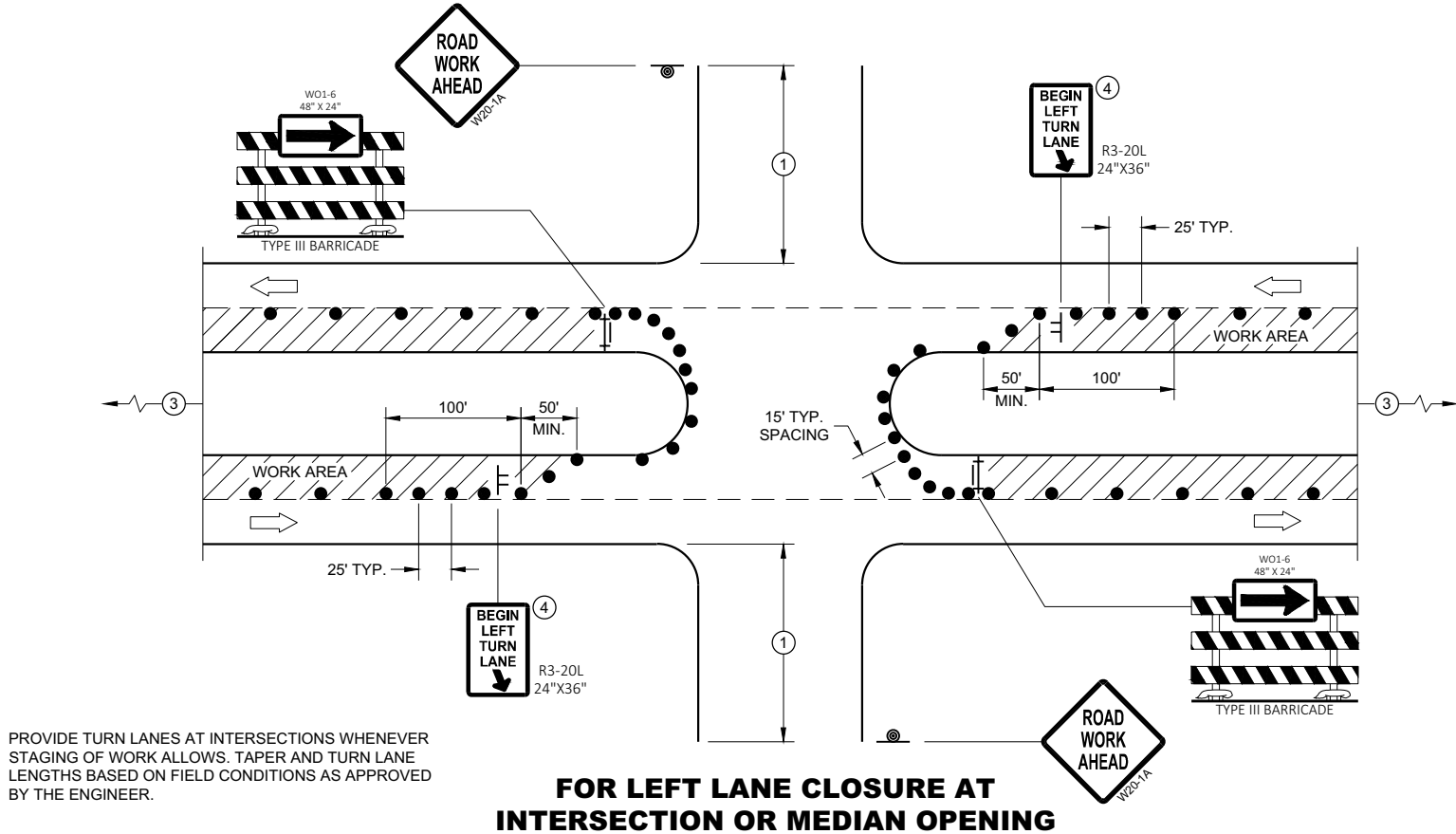


LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- ◇ ◇ FLAGS, 16" X 16" MIN., ORANGE
- ▨ WORK AREA

**TRAFFIC CONTROL,
INTERSECTION WITHIN SINGLE
RIGHT LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 325



GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. 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 TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

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

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

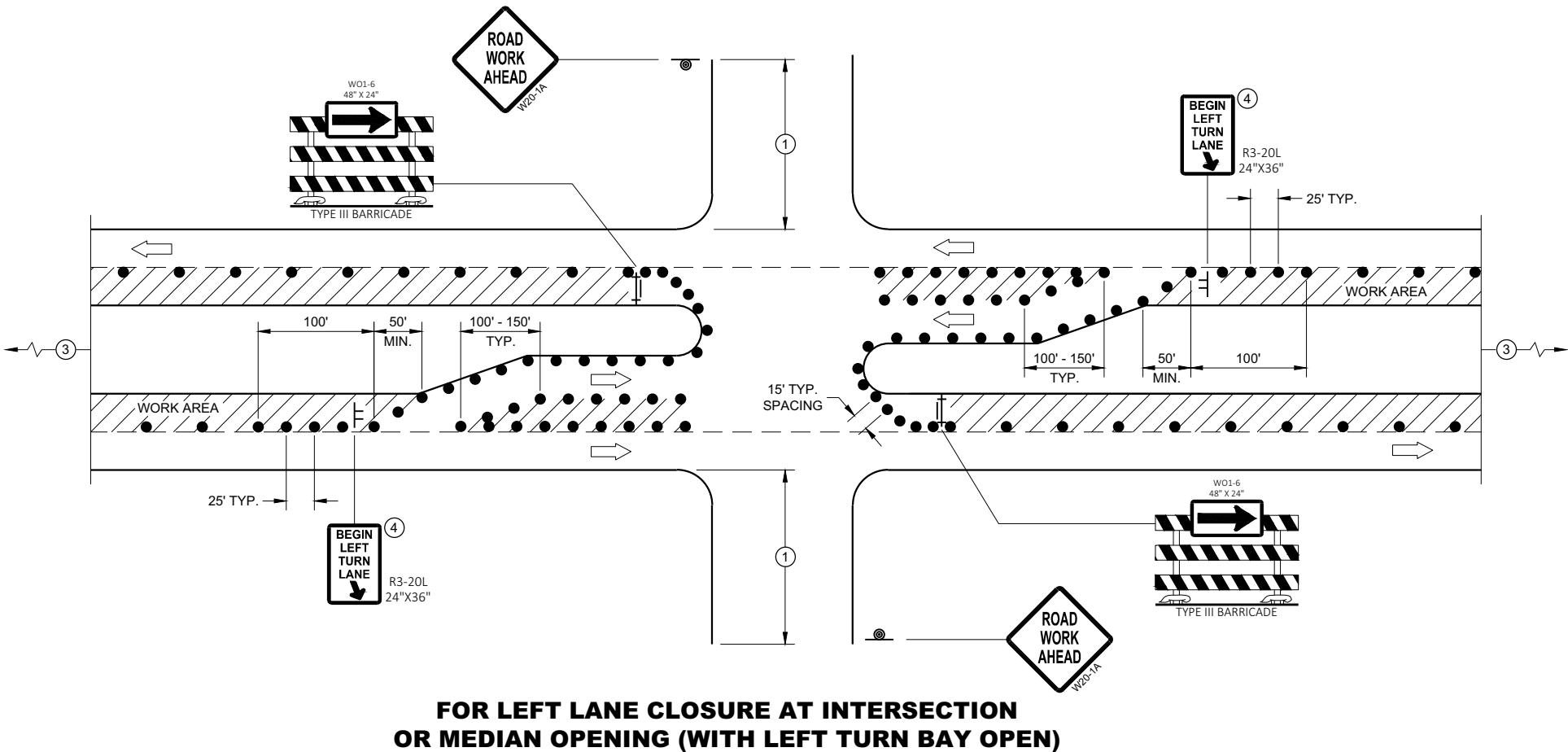
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.
- ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA



TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LEFT LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 326
FHWA	

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  CONNECTED ARROW BOARD
-  WORK AREA
-  WZ START LOCATION MARKER
-  WZ END LOCATION MARKER

GENERAL NOTES

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

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

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

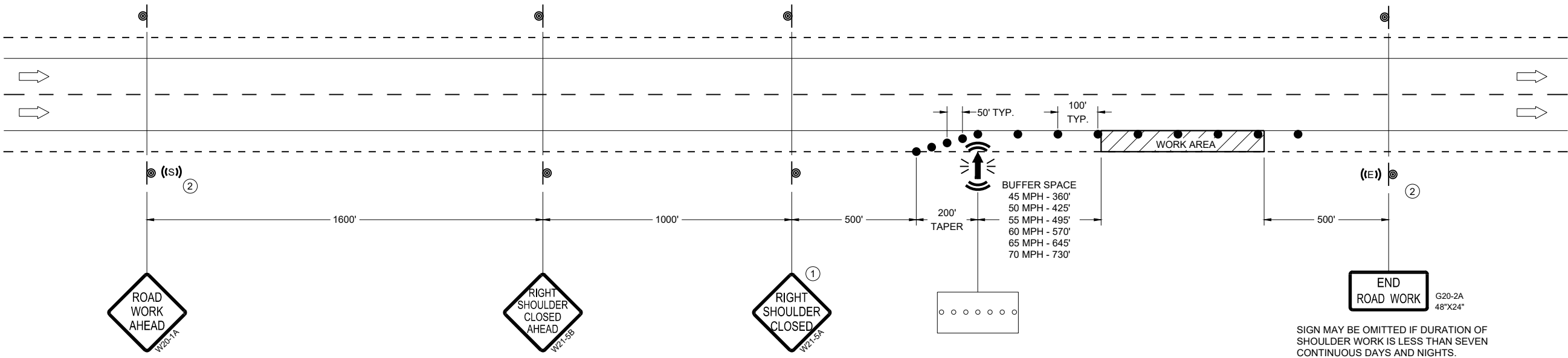
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

① FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR THE W21-5A SIGN MAY BE OMITTED.

② IF ALREADY PRESENT WITHIN PROJECT , DO NOT INCLUDE ADDITIONAL DEVICE.



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

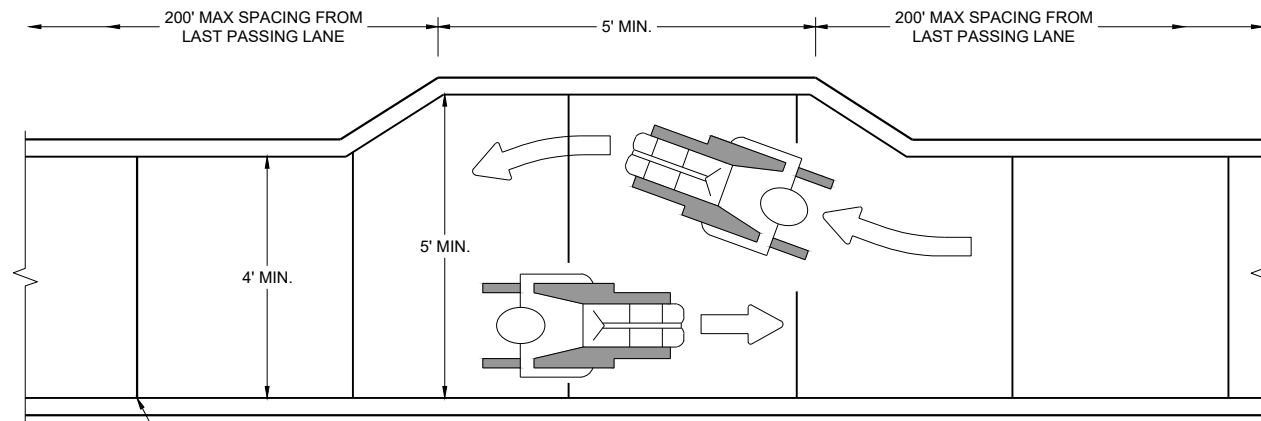
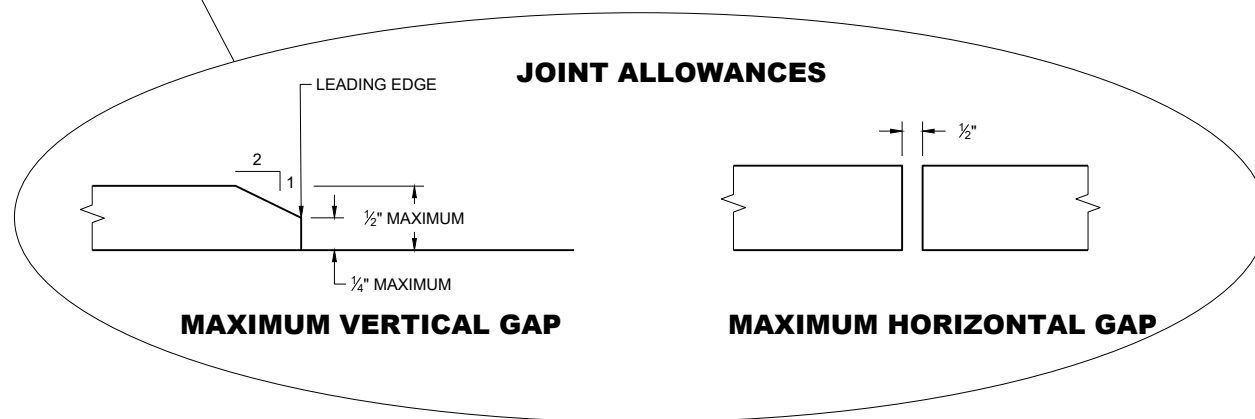
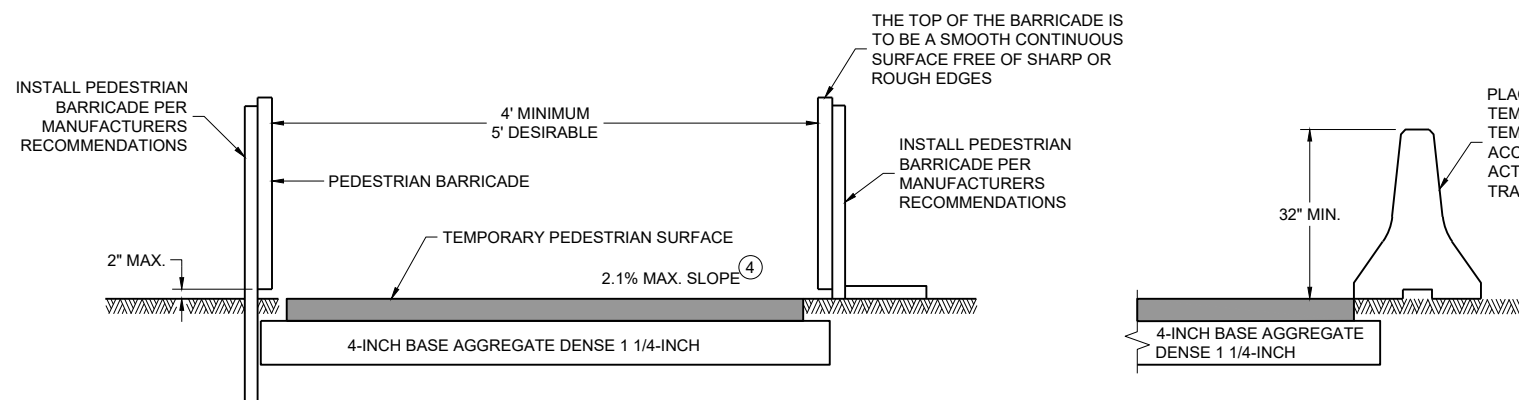
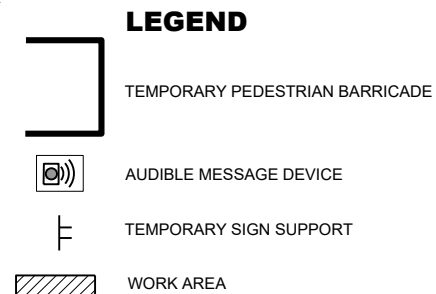
APPROVED

November 2025
DATE

FHWA

/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

327

**NARROW SIDEWALK PASSING DETAIL****MAXIMUM VERTICAL GAP****MAXIMUM HORIZONTAL GAP****TEMPORARY PEDESTRIAN ACCESS****GENERAL NOTES**

BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

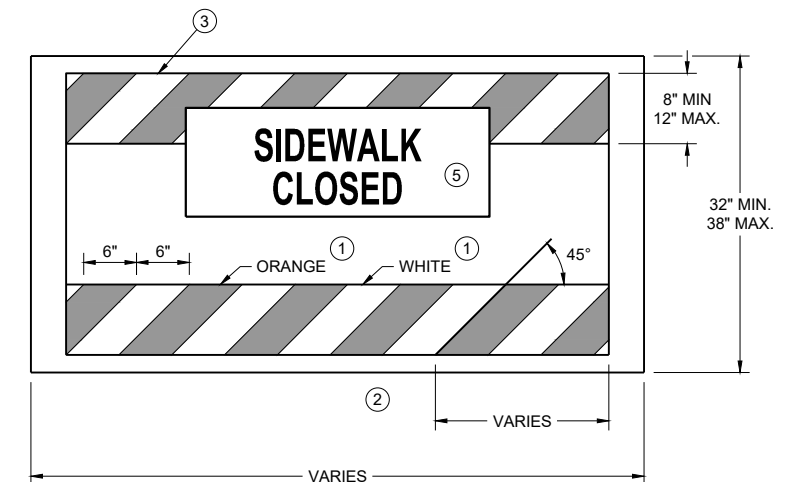
② SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.

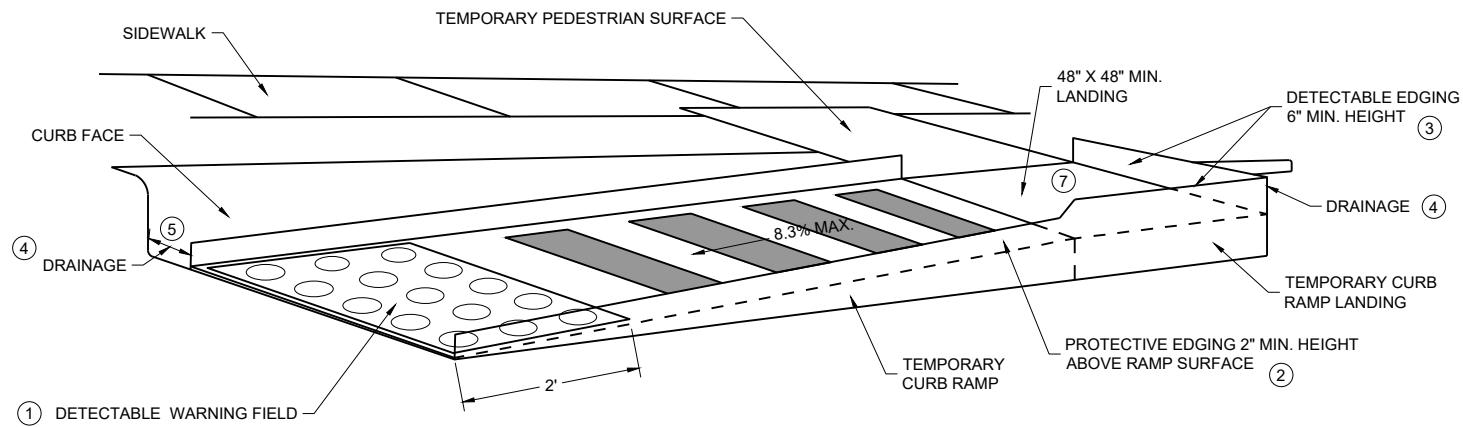
③ PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.

★ USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.

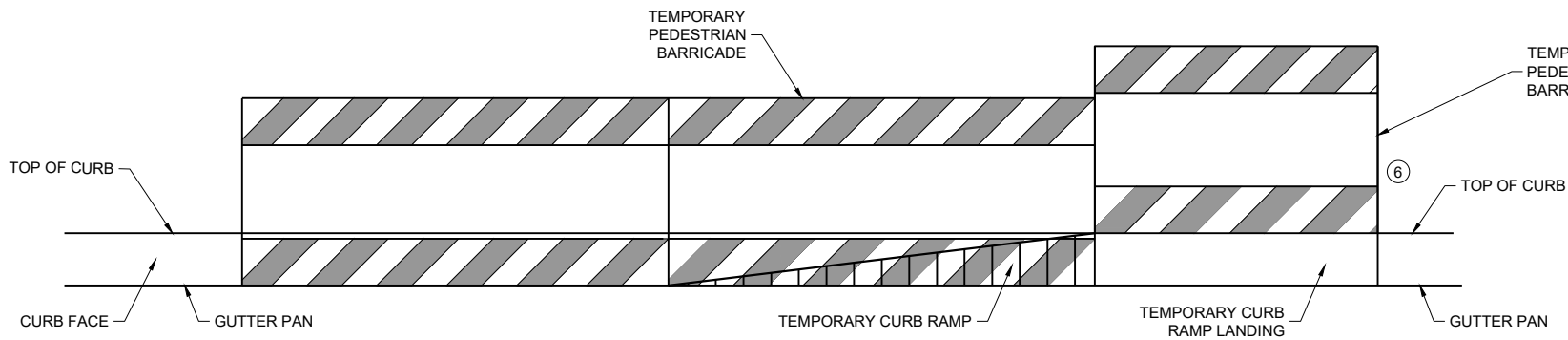
④ WHEN THE TEMPORARY PEDESTRIAN ACCESS ROUTE RUNS PARALLEL ON THE ROADWAY SURFACE, THE MAXIMUM CROSS SLOPE WILL MATCH THE EXISTING ROADWAY CROSS SLOPE.

⑤ WHERE SIGNS FOR TEMPORARY PEDESTRIAN ACCOMMODATIONS ARE SHOWN BEING PLACED BEHIND TEMPORARY PEDESTRIAN BARRICADE, THE SIGNS MAY BE MOUNTED ON THE TEMPORARY PEDESTRIAN BARRICADE INSTEAD. A CORRUGATED POLYPROPYLENE OR POLYETHYLENE PLASTIC SIGN BASE SHALL BE USED IF MOUNTED ON THE BARRICADE. THE TOP OF THE SIGN SHALL BE MOUNTED BELOW THE TOP OF THE BARRICADE TO ALLOW A CONTINUOUS HAND-TRAILING EDGE.

**TEMPORARY PEDESTRIAN BARRICADE *****TEMPORARY PEDESTRIAN FLAGGING****TRAFFIC CONTROL,
PEDESTRIAN
ACCOMMODATION**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

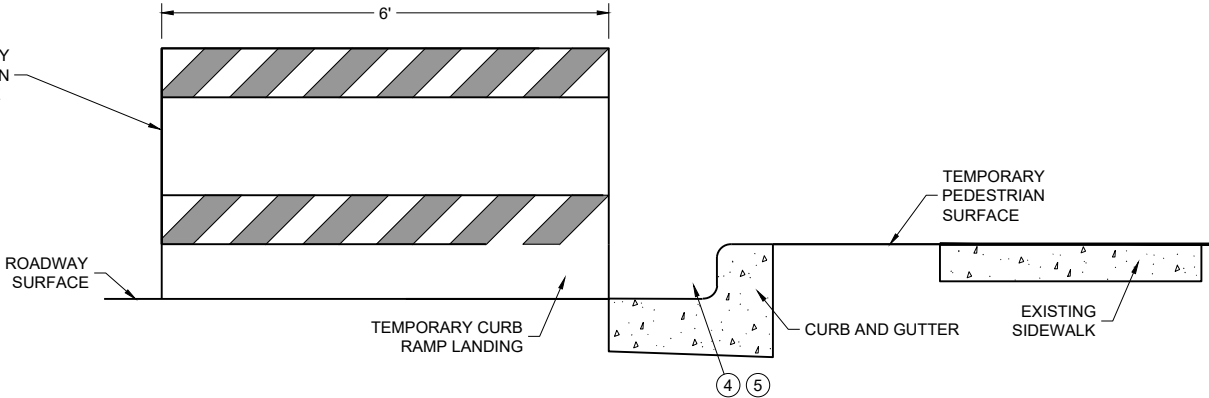


PERSPECTIVE VIEW



FRONT VIEW

TEMPORARY CURB RAMP PARALLEL TO CURB



SIDE VIEW

GENERAL NOTES

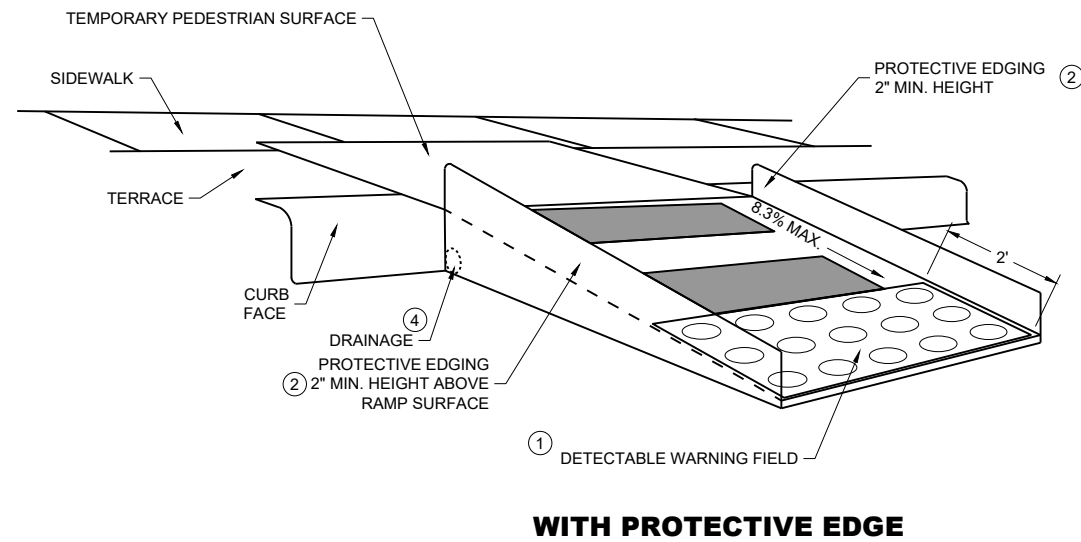
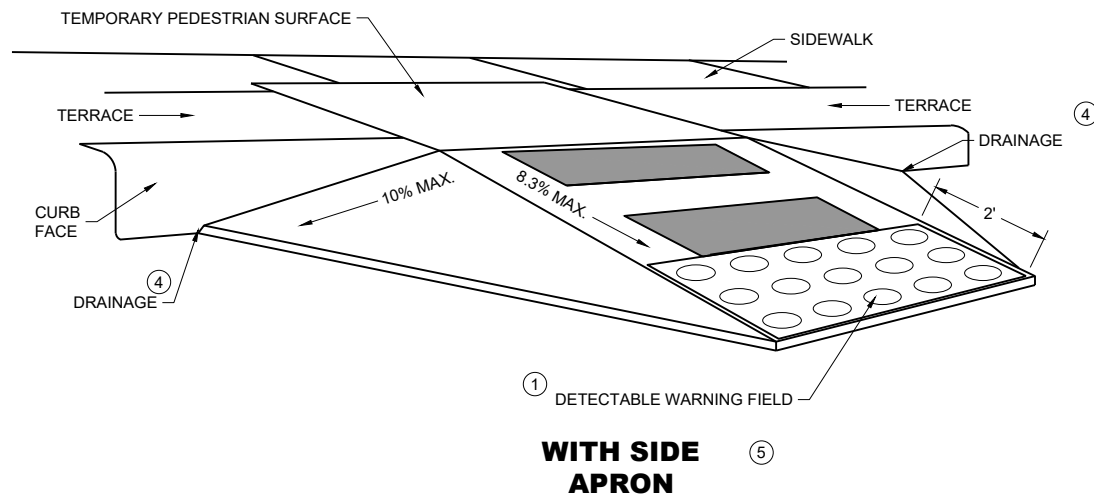
CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:48 (2.1%) MAX. CROSS-SLOPE.

CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

1. INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS.
2. PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
3. DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
5. ENSURE CURB RAMP IS OUT OF THE GUTTER PAN.
6. IF ONLY PART OF THE END PANEL OF TEMPORARY PEDESTRIAN BARRICADE PANEL IS NEEDED, EXTEND EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL HERE.
7. LANDING TO BE SLOPED A MAXIMUM OF 2.1% IN ALL DIRECTIONS OF PEDESTRIAN TRAVEL.



TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

CURB RAMPS SHALL BE 48" MINIMUM WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

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

CURB RAMPS AND LANDINGS SHALL HAVE A 1:48 (2.1%) MAX. CROSS-SLOPE.

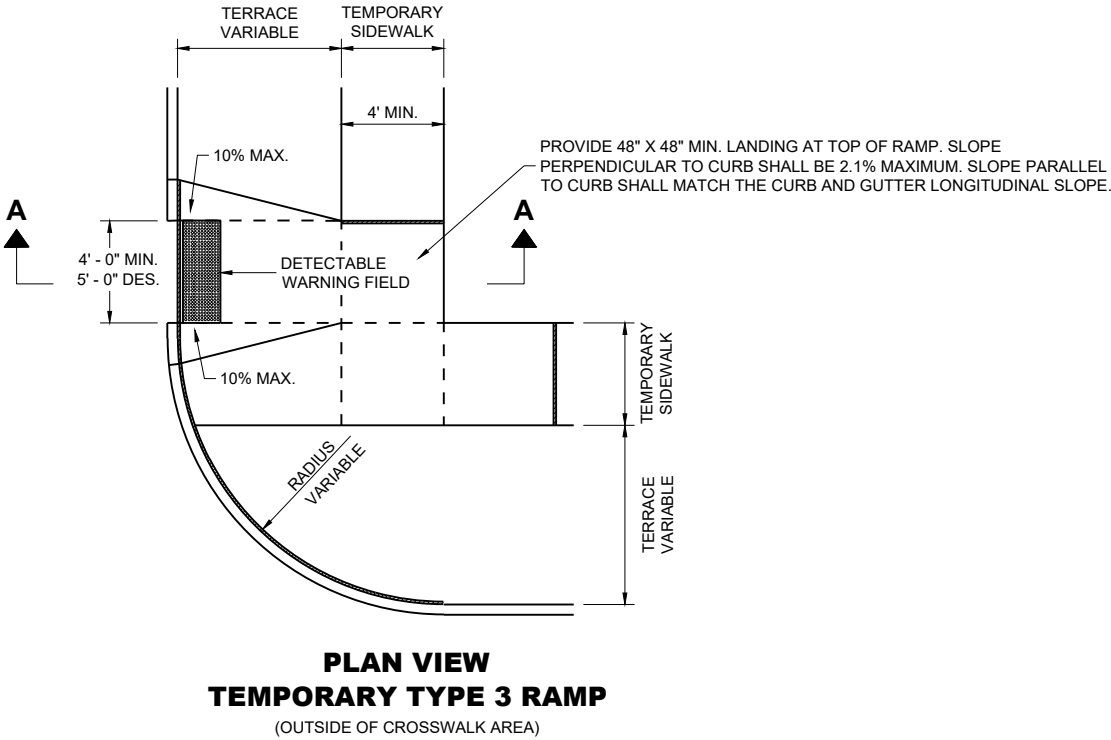
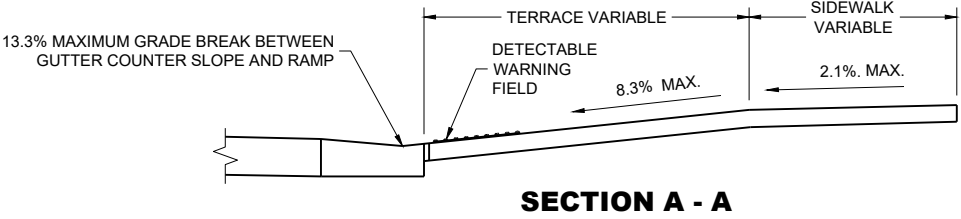
CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES MAY BE VERTICAL UP TO ¼" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN ¼" AND ½".

- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ CAN ONLY BE USED FOR RAMPS WITH 6" OR LESS OF VERTICAL CHANGE.

GENERAL NOTES



TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION

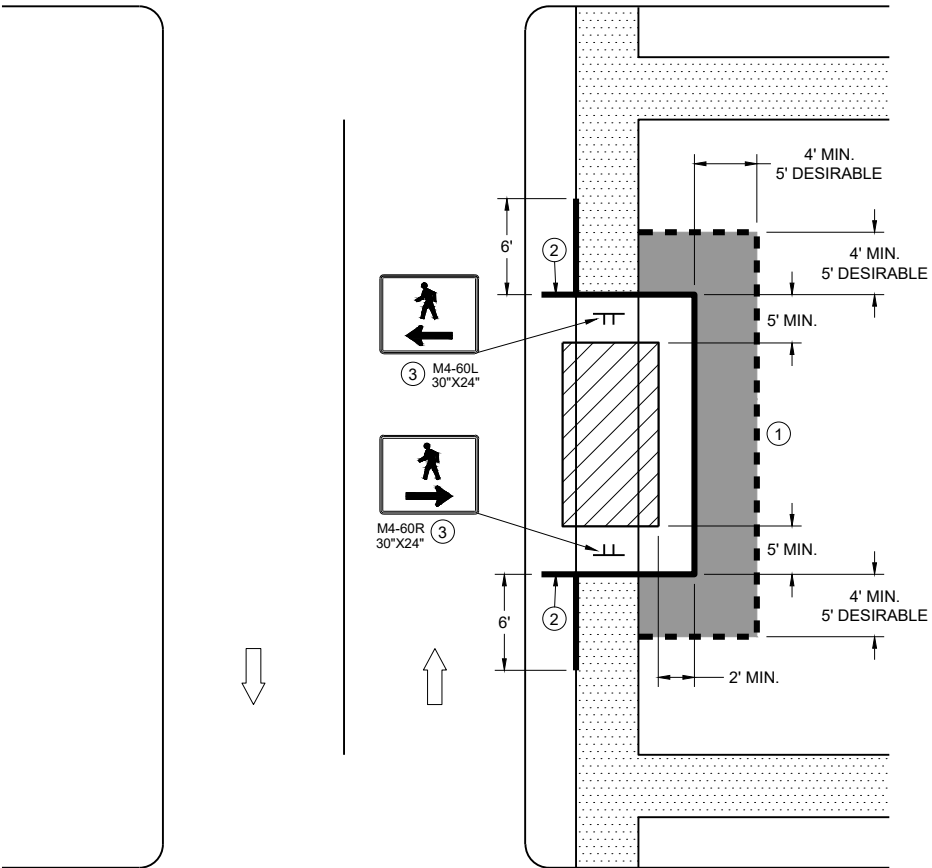
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

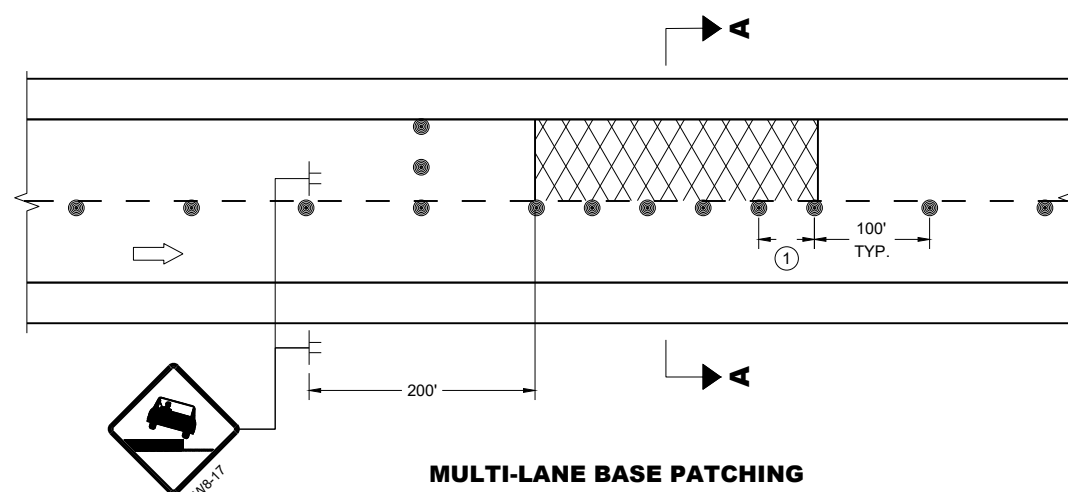
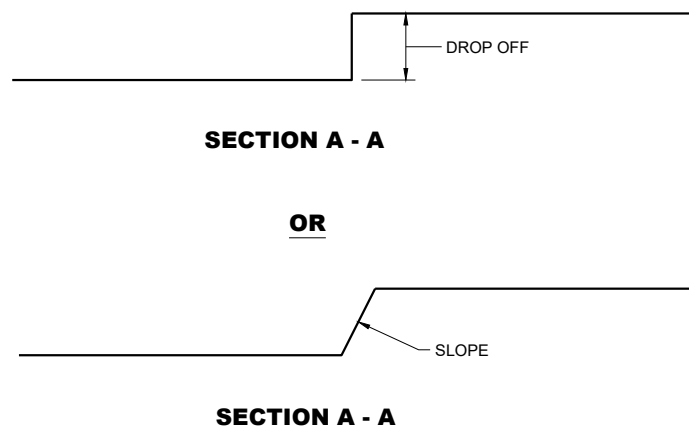
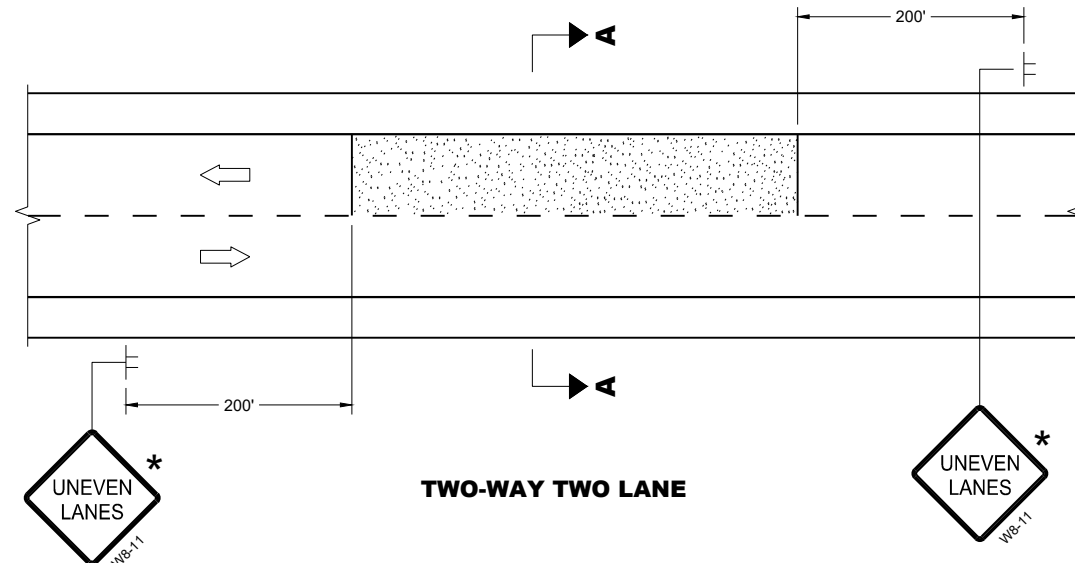
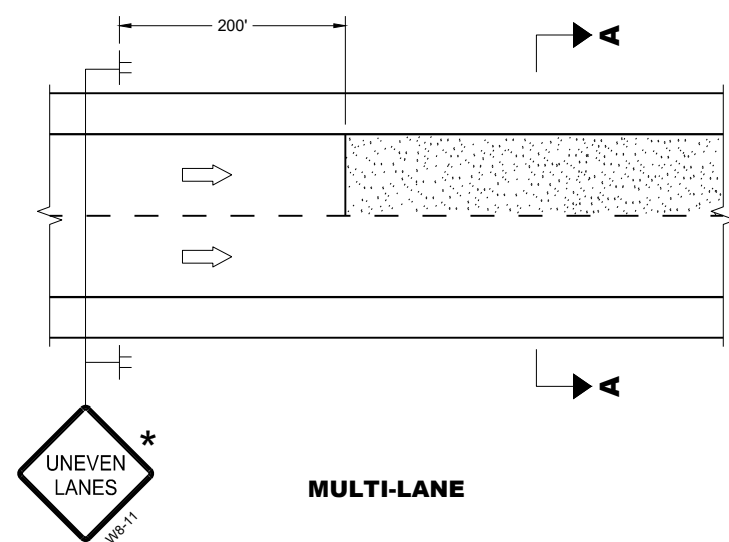
- SIGN ON TEMPORARY SUPPORT
- WORK AREA
- UNDER PEDESTRIAN TRAFFIC
- TEMPORARY PEDESTRIAN SURFACE
- TEMPORARY PEDESTRIAN BARRICADE
- OPTIONAL TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC

GENERAL NOTES

- TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.
- WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.
- SIGNS THAT REMAIN IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- 1 USE TEMPORARY PEDESTRIAN BARRICADE TO SEPARATE PEDESTRIANS FROM DROP OFFS OR FOR ADDITIONAL PEDESTRIAN CHANNELIZATION.
 - 2 IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
 - 3 MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.



SIDEWALK BYPASS
SINGLE SIDE



ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING
ADDITIONAL SIGNS.

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

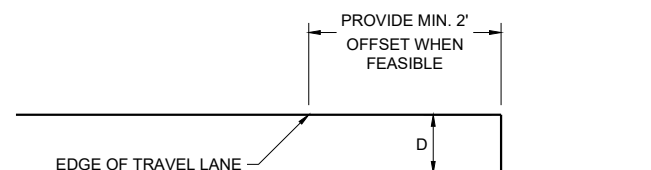
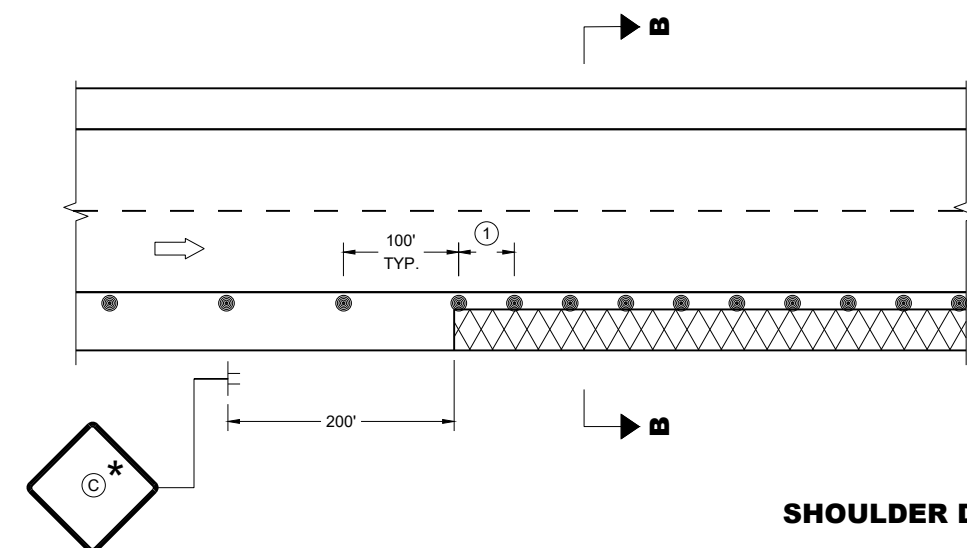
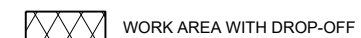
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

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

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND



SECTION B - B

SHOULDER DROP-OFFS

D	SIGN ©
< 2" WITH A SLOPE STEEPER THAN 3:1	 W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	 W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

333

6

6

SDD 15D39-03

SDD 15D39-03

LEGEND



TYPE III BARRICADE WITH ATTACHED SIGN



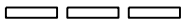
SIGN ON PERMANENT SUPPORT



TRAFFIC CONTROL DRUM



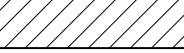
DIRECTION OF TRAFFIC



CONCRETE BARRIER TEMPORARY PRECAST



TYPE "A" WARNING LIGHT (FLASHING)



WORK AREA



WO3-5

OR



R2-1
48"x60"

OR



WO3-5

OR



R2-1
48"x60"

LOCATED 3000 FEET BEYOND THE "ROAD WORK 1 MILE" (W20-1F) SIGN

(BLACK AND WHITE) LOCATED 700 FEET BEYOND THE WO3-5 SIGN

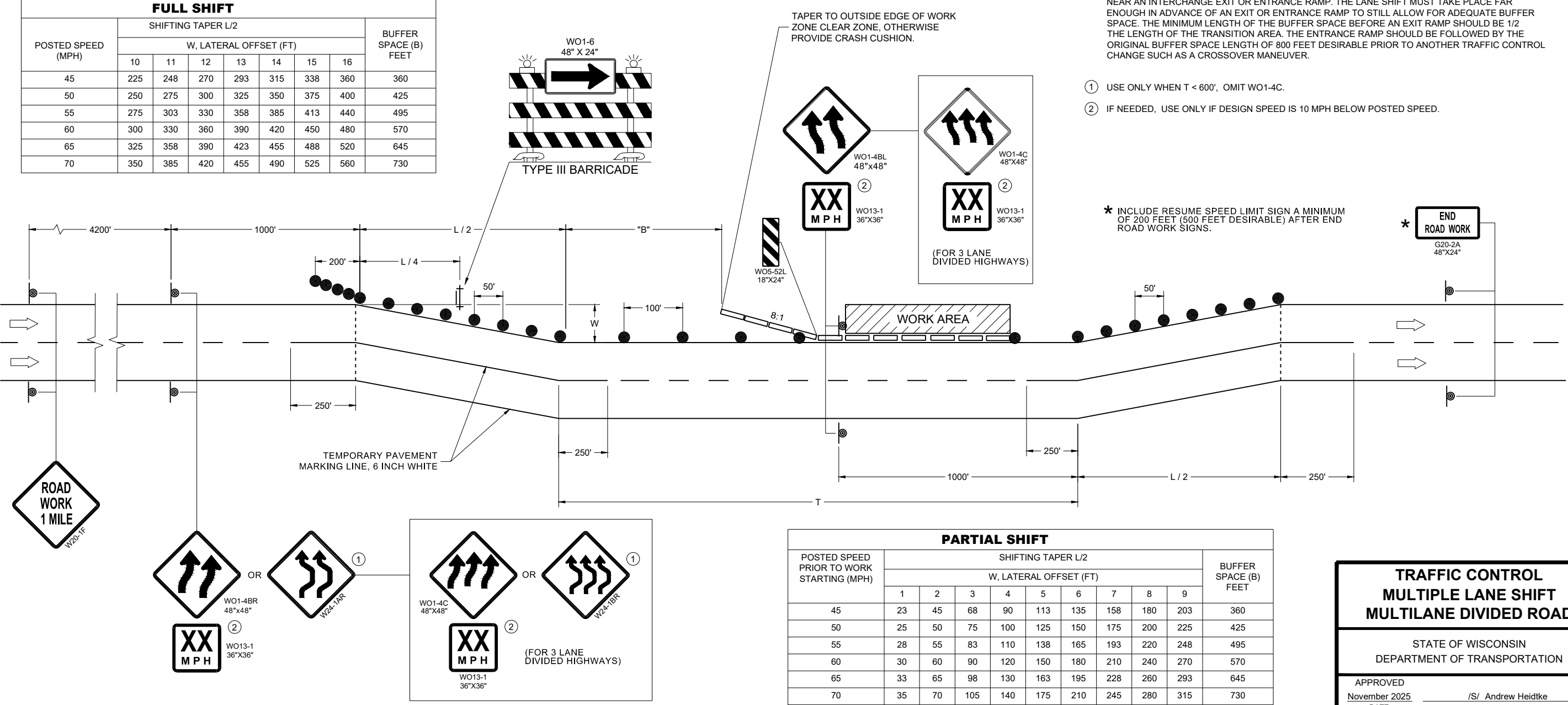
IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 3 MILES.

GENERAL NOTES

- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.
- THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT RIGHT - REVERSE FOR SHIFTING LEFT.
- ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.
- "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.
- IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.
- ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

- ① USE ONLY WHEN T < 600', OMIT WO1-4C.
- ② IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

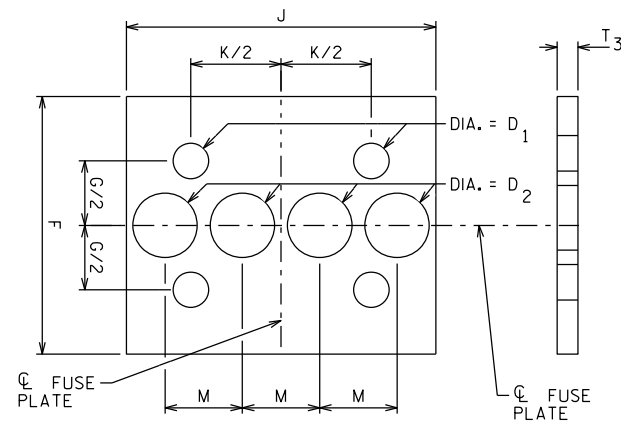
* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.



TRAFFIC CONTROL
MULTIPLE LANE SHIFT
MULTILANE DIVIDED ROAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

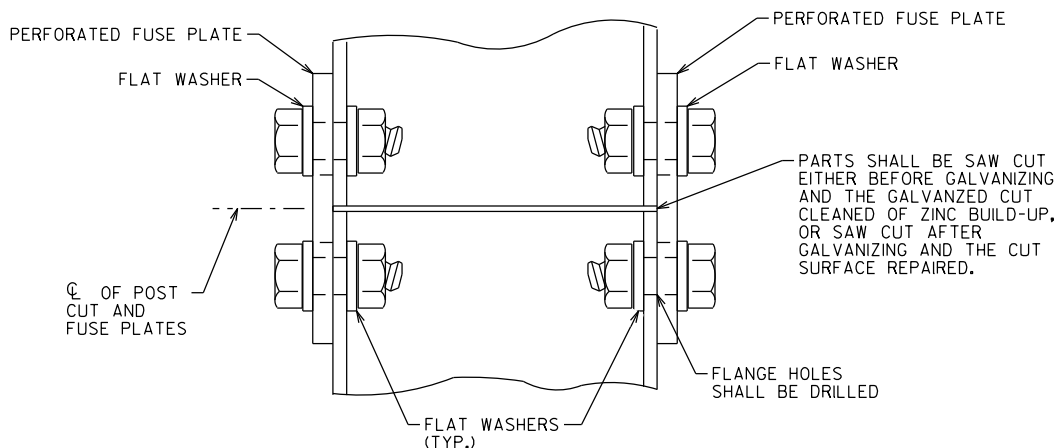
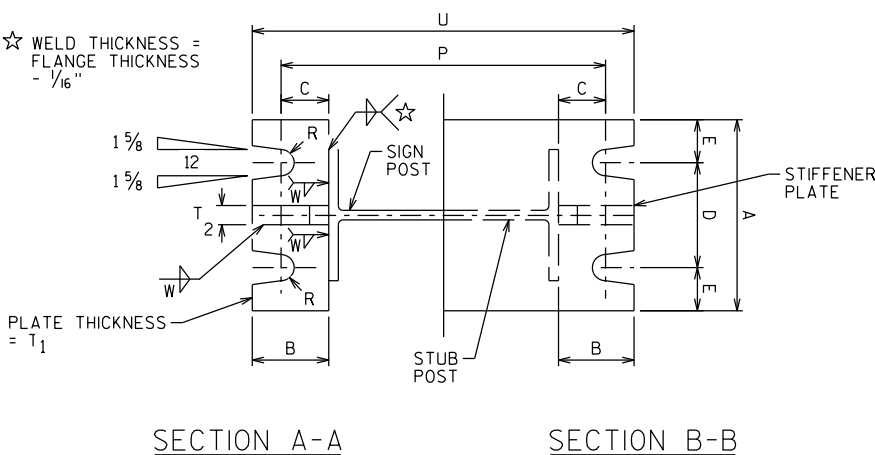
APPROVED
November 2025 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



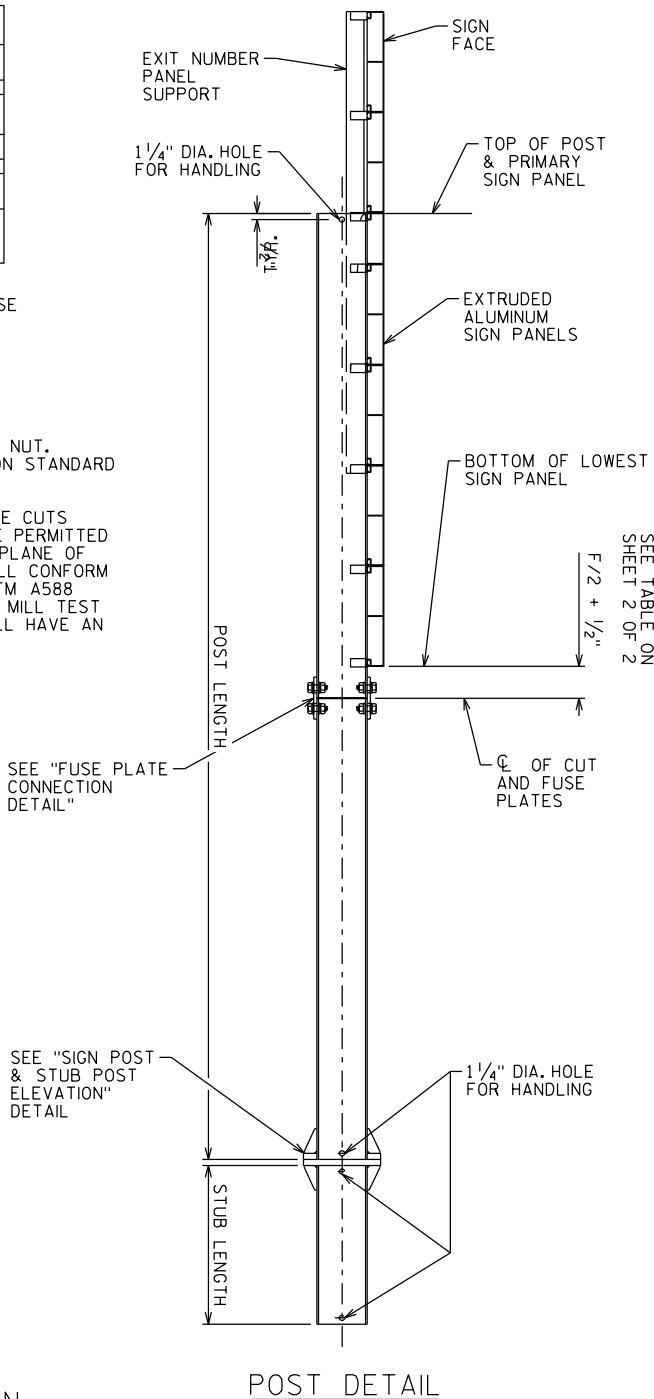
PERFORATED FUSE PLATE DETAIL

USE H.S. HEX HEAD BOLTS, HEX HEAD NUT AND FLAT WASHER UNDER NUT.
INSTALL BOLTS PER THE WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD
SPECIFICATION SECTION 506.3.12.3.

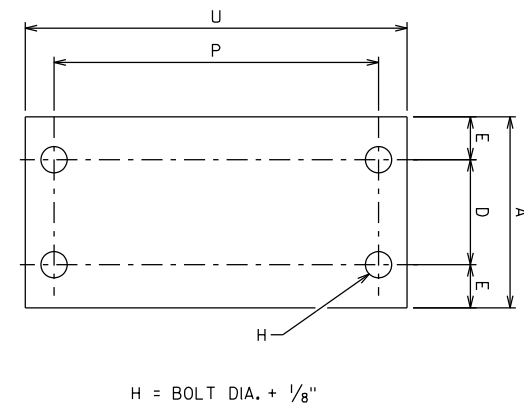
ALL HOLES SHALL BE DRILLED, SUB-PUNCHED AND REAMED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS. HOWEVER, FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, ASTM A572 GRADE 50 OR ASTM A588 MAY BE SUBSTITUTED FOR A36 AT THE OPTION OF THE FABRICATOR. MILL TEST REPORTS SHALL BE SUBMITTED FOR FUSE PLATES. STEEL USED SHALL HAVE AN ULTIMATE TENSILE STRENGTH NOT TO EXCEED 80 KSI.



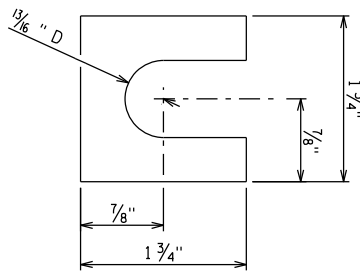
FUSE PLATE CONNECTION DETAIL



POST DETAIL



BOLT KEEPER PLATE DETAIL
30 GA GALVANIZED SHEET STEEL



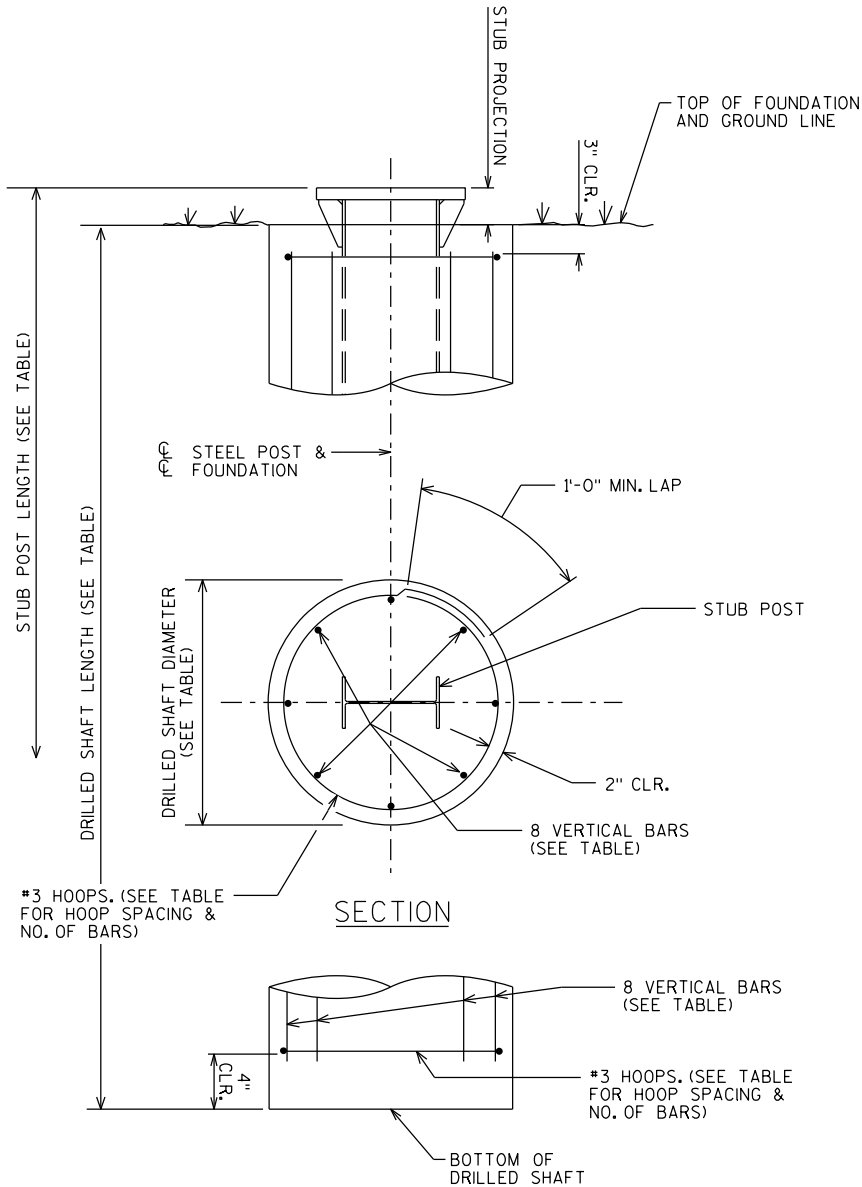
SHIM DETAIL

FURNISH TWO .012"± THICK AND TWO .032"± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO ASTM B36.

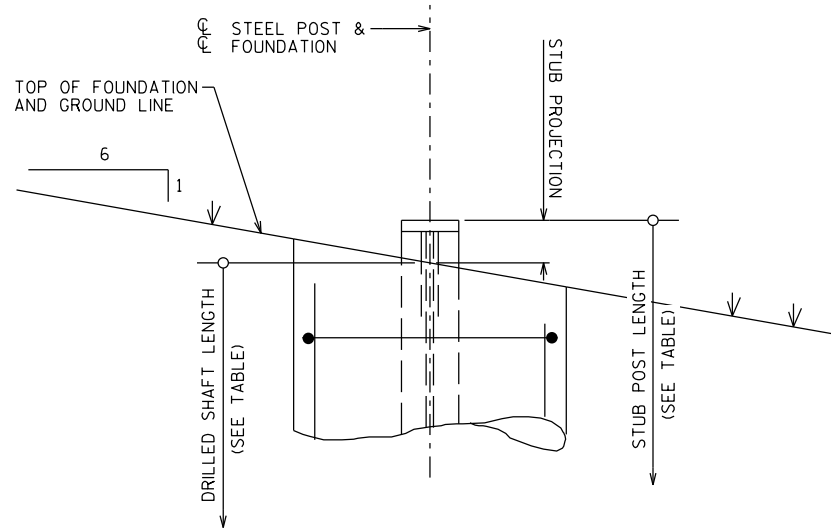
BOLTING PROCEDURE FOR BASE CONNECTION

1. ASSEMBLE SIGN POST, BOLT KEEPER PLATE, AND STUB POST WITH BOLTS AND THREE FLAT WASHERS PER BOLT AS SHOWN.
2. SHIM AS REQUIRED TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING, LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH A 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS.
5. LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PERSCRIBED TORQUE. (SEE TABLE FOR PERSCRIBED TORQUE). DO NOT OVER-TIGHTEN.
6. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
		DRAWN BY	PLANS CK'D.
CONNECTION & FOUNDATION DETAILS 1 OF 2		SHEET A3-1.20	
		335	



FOUNDATION DETAIL



SHAFT PLACEMENT

FOUNDATION DATA TABLE

POST SHAPE	STUB LENGTH	STUB PROJECTION	DRILLED SHAFT DIAMETER	DRILLED SHAFT LENGTH	VERTICAL BARS		HOOPS		CONCRETE VOLUME	TOTAL REINF. WEIGHT
					SIZE	LENGTH	MAX SPA.	NO.		
W6X15	2'-6"	3"	24"	6'-6"	#5	5'-11"	10"	9	0.8 CY	71 LB
W8X18	2'-6"	3"	24"	7'-6"	#6	6'-11"	12"	8	0.9 CY	102 LB
W8X21	3'-0"	2½"	24"	8'-0"	#6	7'-5"	12"	9	1.0 CY	110 LB
W10X22	3'-0"	2½"	24"	8'-6"	#7	7'-11"	12"	9	1.0 CY	151 LB
W12X26	3'-0"	2½"	24"	10'-0"	#7	9'-5"	12"	11	1.2 CY	180 LB

◆ QUANTITIES SHOWN ARE FOR ONE DRILLED SHAFT

BASE CONNECTION & FUSE PLATE DATA TABLE

		BASE CONNECTION DATA										BOLT KEEPER PLATE DATA		PERFORATED FUSE PLATE DATA													
POST SHAPE	WEIGHT PER FOOT	BOLT SIZE & TORQUE	A	B	C	D	E	T1	T2	W	R	P	U	F	G	J	K	M	D1	D2	T3	BOLT DIA.	WGT. EA. LBS	BOLT LENGTH	V 		
W6X15	15 LB	5/8" DIA. X 4"	5"	2"	1 1/4"	2 3/4"	1/8"	1 1/4"	1/2"	1/4"	1 1/32"	8 1/2"	10"	5"	2 1/2"	6"	3 1/2"	1 1/2"	1 1/16"	1 1/4"	3/8"	5/8"	2.4	2	73.0 LB		
W8X18	18 LB	36 TO 38 FT-LB										10 5/8"	12 1/8"	5"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	1 1/16"	1 1/16"	3/8"	5/8"	2.0	2	83.0 LB		
W8X21	21 LB	3/4" DIA. X 4 3/4"	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1 1/2"	3/4"	5/16"	1 1/32"	11"	12 3/4"	5 1/2"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	1 3/16"	1"	1 1/2"	3/4"	3.1	2 1/4"	124.0 LB		
W10X22	22 LB											12 7/8"	14 5/8"	6"	3"	5 3/4"	2 3/4"	1 3/8"	1 3/16"	1 1/8"	1 1/2"	3/4"	3.9	2 1/4"	134.0 LB		
W12X26	26 LB											62 TO 63 FT-LB	15"	16 3/4"	6"	3"	6 1/2"	3 1/2"	1 5/8"	1 3/16"	1 1/2"	3/4"	4.5	2 1/4"	152.0 LB		

■ TOTAL STRUCTURAL CARBON STEEL WEIGHT FOR ONE POST
= V + (POST LENGTH X POST WEIGHT PER FOOT)

"V" INCLUDES STUB POST, BASE PLATES, STIFFENER
PLATES, PERFORATED FUSE PLATES, BOLTS, NUTS, AND
WASHERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED

MATERIALS SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506, UNLESS
NOTED OTHERWISE.

FABRICATION SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506.

ALL POST, POST STUBS & ATTACHMENTS SHALL BE ASTM
A709 GRADE 50, GALVANIZED IN ACCORDANCE WITH ASTM A123.

THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST, FLANGE
SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER
FABRICATION.

H.S. BOLTS, WASHERS, & NUTS SHALL BE A325 GALVANIZED.

FOUNDATION MATERIAL PROPERTIES

CONCRETE MASONRY F'C = 3,500 P.S.I.
BAR STEEL REINFORCEMENT (UNCOATED), GRADE 60 FY = 60,000 P.S.I.

DESIGN DATA

DESIGN CONFORMS TO AASHTO LRFD SPECIFICATIONS FOR
STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND
TRAFFIC SIGNALS 1ST EDITION 2015 (WITH 2017 & 2018 INTERIM
REVISIONS).

DEAD LOADS (DL):

- STEEL POST SELF WEIGHT
- SIGN PANEL WEIGHT = 3 PSF

WIND LOADS (WL):

WIND LOADS WERE APPLIED TO THE PROJECTED AREAS OF THE SIGN
PANELS AND THE STEEL SIGN POSTS.

- BASIC WIND SPEED = 76 MPH
- MEAN RECURRENCE INTERVAL (MRI) = 10 YEARS
- HEIGHT & EXPOSURE FACTOR = 1.00
- DIRECTIONALITY FACTOR = 0.85
- GUST EFFECT FACTOR = 1.14

WIND LOAD CASES:

- WL CASE 1: 1.0 X NORMAL WIND
- WL CASE 2: 1.0 X TRANSVERSE WIND
- WL CASE 3: 0.75 X NORMAL WIND + 0.75 X TRANSVERSE WIND

LOAD COMBINATIONS:

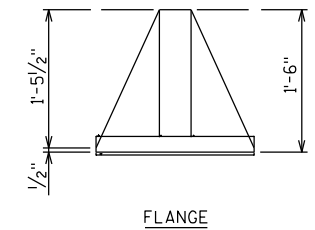
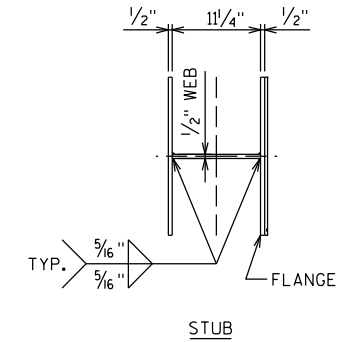
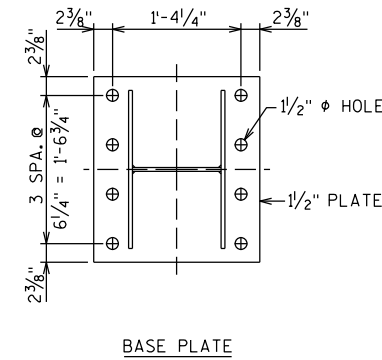
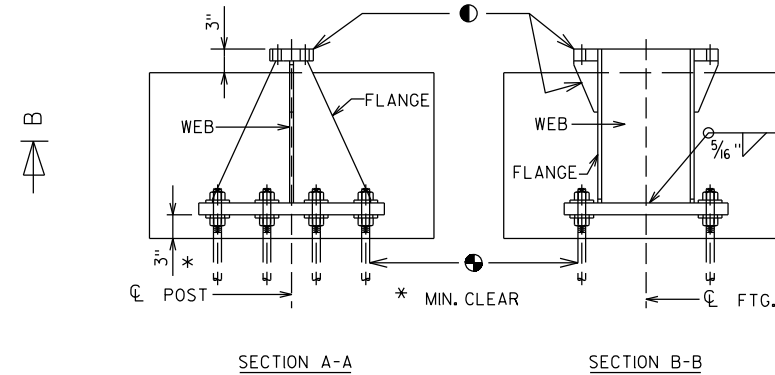
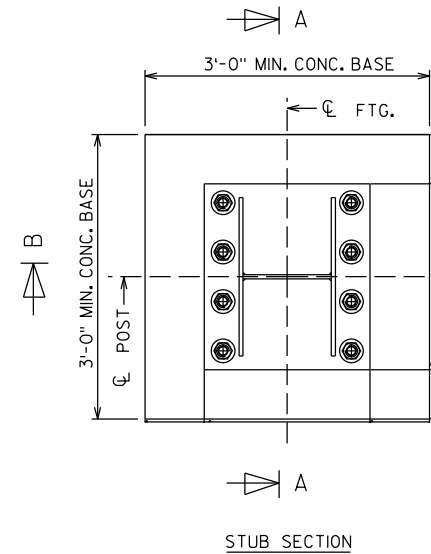
LOAD COMBINATION	TYPE	DL FACTOR	WL FACTOR
STRENGTH I	GRAVITY	1.25	-
EXTREME I	WIND	1.10	1.0
		0.9	1.0
SERVICE I	DEFLECTION	1.0	1.0

FOUNDATION DESIGN DATA

THE FOUNDATION DESIGN ASSUMED COHESIONLESS SOILS (LOOSE
SAND) ABOVE THE WATER TABLE WITH THE FOLLOWING PROPERTIES:

- SOIL UNIT WEIGHT = 115 PCF
- ANGLE OF INTERNAL FRICTION = 24 DEGREES
- SOIL MODULUS PARAMETER = 25 LB/IN³

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
		DRAWN BY	PLANS CK'D.
CONNECTION & FOUNDATION DETAILS 2 OF 2		SHEET A3-120	
		336	



- SEE BASE CONNECTION DETAILS ON "CONNECTIONS & FOUNDATION DETAILS" SHEETS.
- ADHESIVE ANCHORS 1/4-INCHES. ALLOWABLE PULL OUT CAPACITY = 15 KIPS. EMBED 1'-3" INTO ROCK.

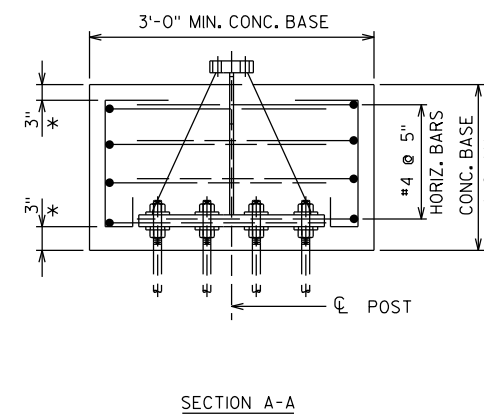
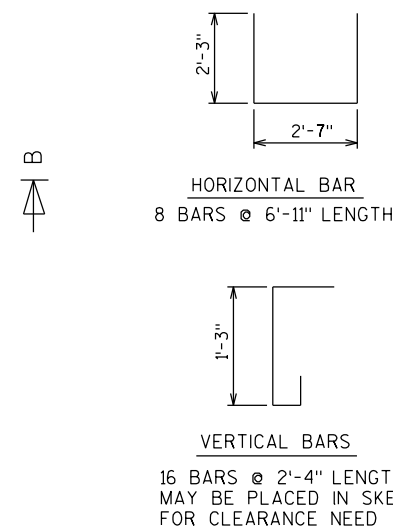
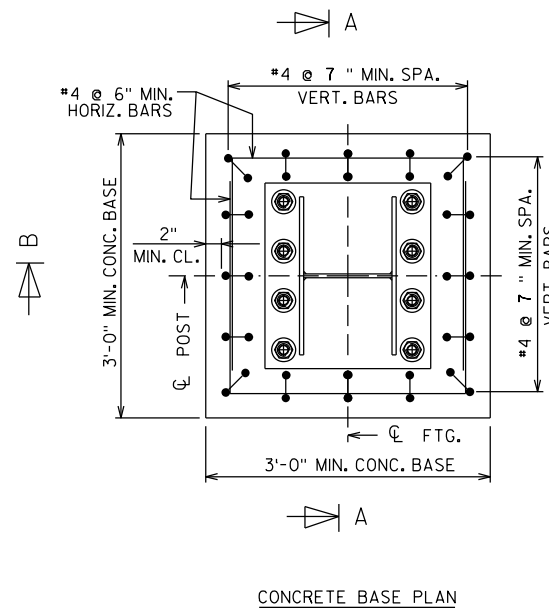
GENERAL NOTES:

QUANTITIES PER BASE:
 REINFORCING STEEL = 62 LB
 CONCRETE = 0.6 CY
 STRUCTURAL STEEL = 335 LB

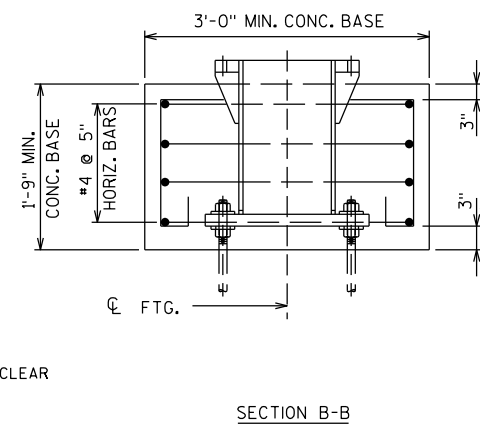
ALL MATERIALS, EXCEPT FOR ANCHOR ROD, NUTS, AND WASHERS, SHALL BE ASTM A709 GRADE 50. ALL MATERIALS TO BE GALVANIZED AFTER FABRICATION.

IF ROCK IS ENCOUNTERED PRIOR TO REACHING THE MINIMUM DRILLED SHAFT EMBEDMENT DEPTH DEFINED ON THE FOUNDATION DATA TABLE OF THE "CONNECTIONS & FOUNDATION DETAILS 2 OF 2" SHEET, THE CONTRACTOR SHALL INSTALL A TEST ADHESIVE ANCHOR AND DETERMINE THE PULL-OUT CAPACITY. IF THE FIELD TEST RESULTS IN A PULL-OUT CAPACITY GREATER THAN OR EQUAL TO 15 KIPS, THE CONTRACTOR MAY INSTALL THE ALTERNATE CONCRETE BASE AND BREAK-WAY STUB PER THE DETAILS ON THIS SHEET.

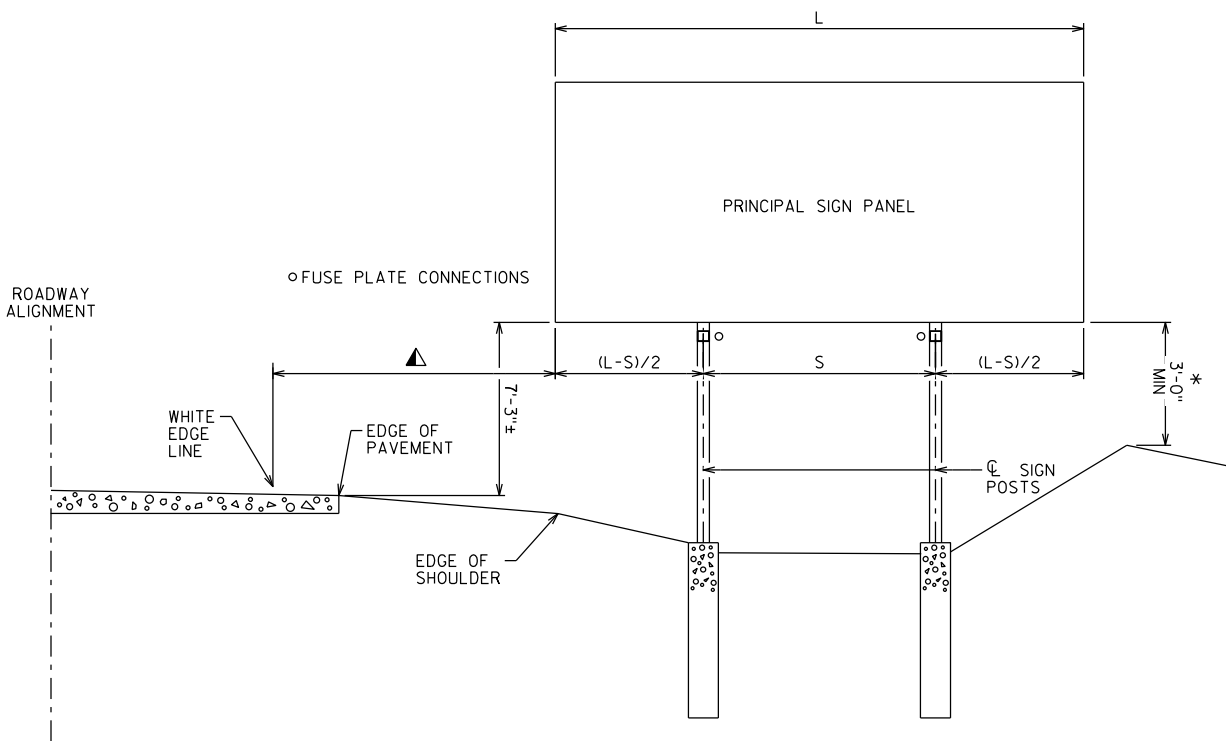
CONCRETE BASE DETAILS



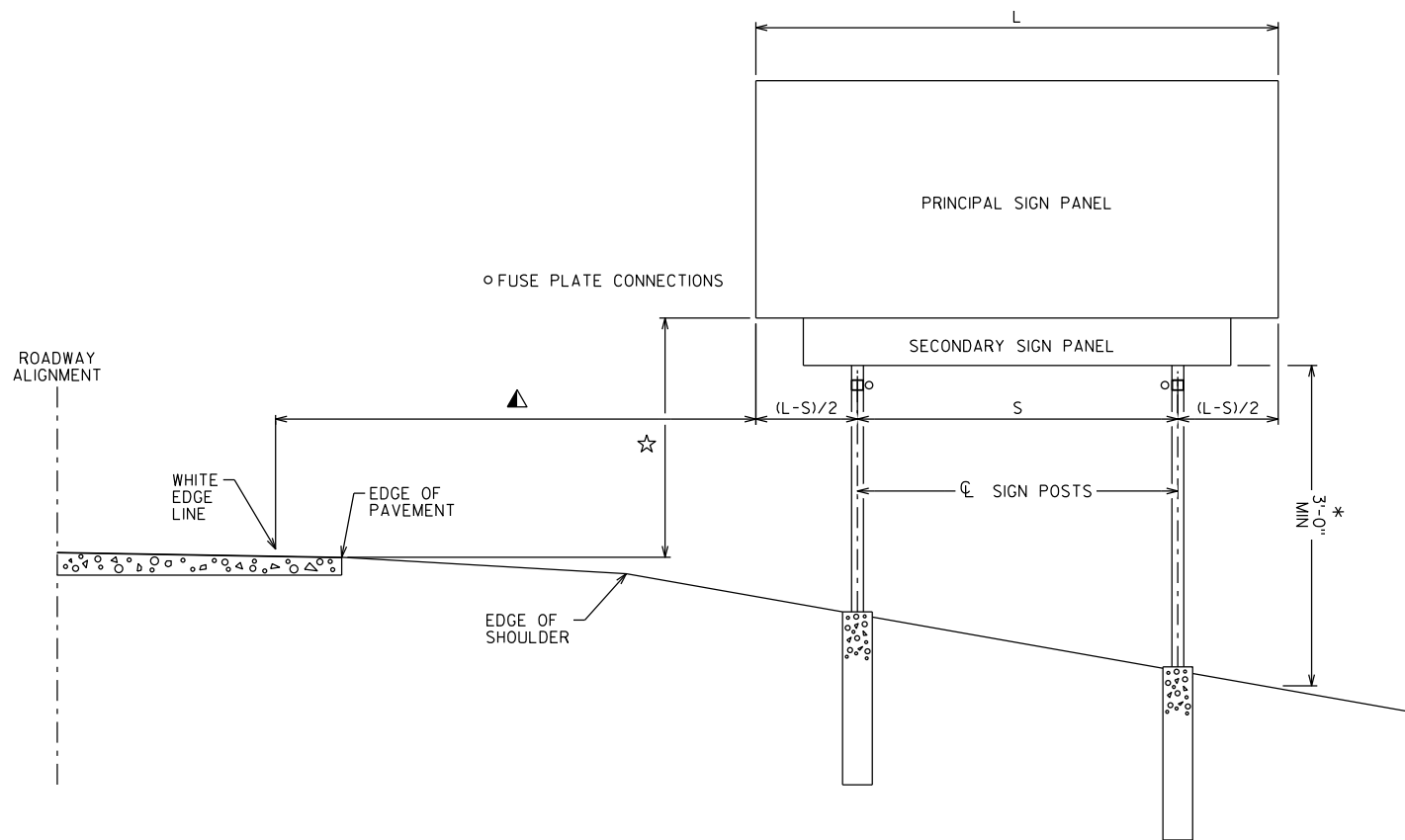
* MIN. CLEAR



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
DRAWN BY		PLANS CK'D.	
ALTERNATE BREAK-AWAY BASE ON ROCK		SHEET A3-1M.2	
		337	



INSTALLATION WITHOUT SECONDARY SIGN



INSTALLATION WITH SECONDARY SIGN

TYPE 1 SIGN INSTALLATION NOTES:

- FOR A 2-POST INSTALLATION, "S" EQUALS $3L/5$, BUT SHALL NOT BE LESS THAN 6'-0".

FOR A 3-POST INSTALLATION, "S" EQUALS $5L/7$, BUT SHALL NOT BE LESS THAN 12'-0". THE SPACING BETWEEN ANY TWO POSTS SHALL NOT BE LESS THAN 6'-0".

UNLESS NOTED IN THE PLANS, THE SIGN OFFSET DISTANCE SHALL BE A MINIMUM OF 17'-6" FROM THE WHITE EDGE LINE, DESIRABLE 30'-0".

WHERE SIGNS ARE MOUNTED BEHIND CRASH WORTHY PROTECTION SUCH AS GUARDRAIL OR BARRIER WALL, THE LATERAL OFFSET MAY BE 4'-6" BEHIND THE GUARDRAIL OR BARRIER WALL.

THE ± TOLERANCE SHOWN ON THIS SHEETS IS 3".

THE VERTICAL SIGN HEIGHT CLEARANCES SHOWN ON THIS SHEET ARE MEASURED FROM THE BOTTOM OF THE SIGN PANEL TO THE NEAR EDGE OF PAVEMENT.

☆ THE VERTICAL CLEARANCE SHALL BE 8'-3"± WHEN THE SECONDARY SIGN HEIGHT IS 3'-0" OR LESS. FOR SECONDARY SIGN HEIGHTS LARGER THAN 3'-0", THE VERTICAL CLEARANCE TO THE BOTTOM OF THE SECONDARY SIGN PANEL SHALL BE 5'-3"±.
- ☆ THE VERTICAL SIGN GROUND CLEARANCE ON RIGHT END OF SIGN SHALL BE A MINIMUM OF 3'-0"±.

○ FOR 2-POST SIGNS, IF THERE IS A SECONDARY SIGN THAT IS NOT AS WIDE AS THE POSTS, INSTALL FUSE PLATES BENEATH PRINCIPAL SIGN.

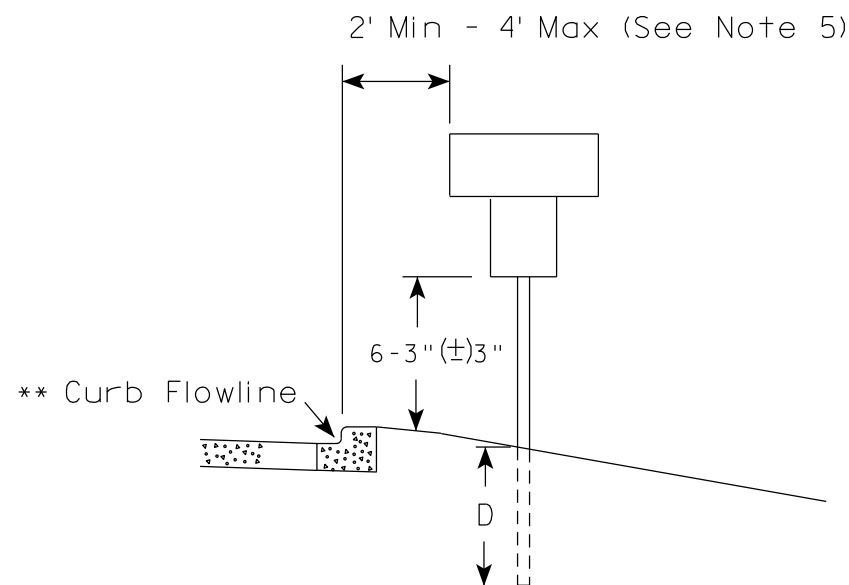
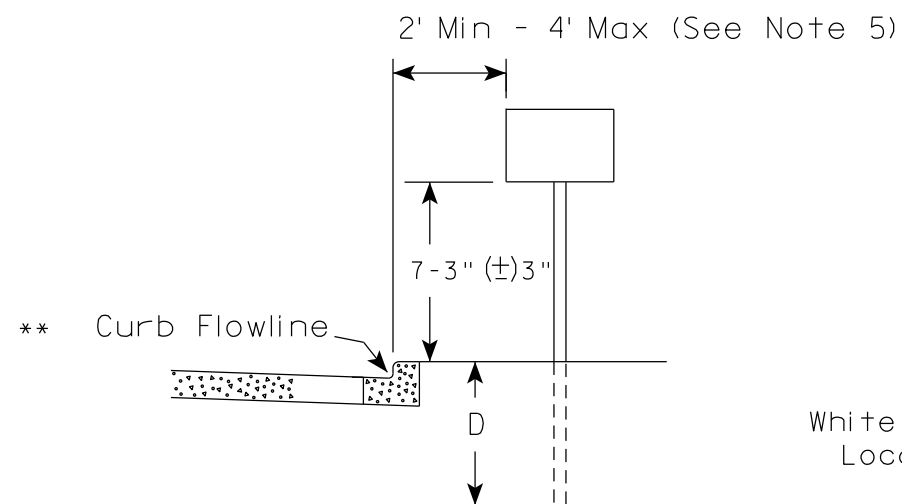
FOR SECONDARY SIGNS THAT ARE NOT AS WIDE AS THE EXTERIOR POSTS, SECURE SIGN WITH CHANNEL STEEL AS DESCRIBED IN A4-6.

POST LENGTHS SHOWN IN THE MISCELLANEOUS QUANTITIES ARE ESTIMATED LENGTHS. THE CONTRACTOR SHALL VERIFY POST LENGTHS AT THE TIME OF FINAL GRADING.

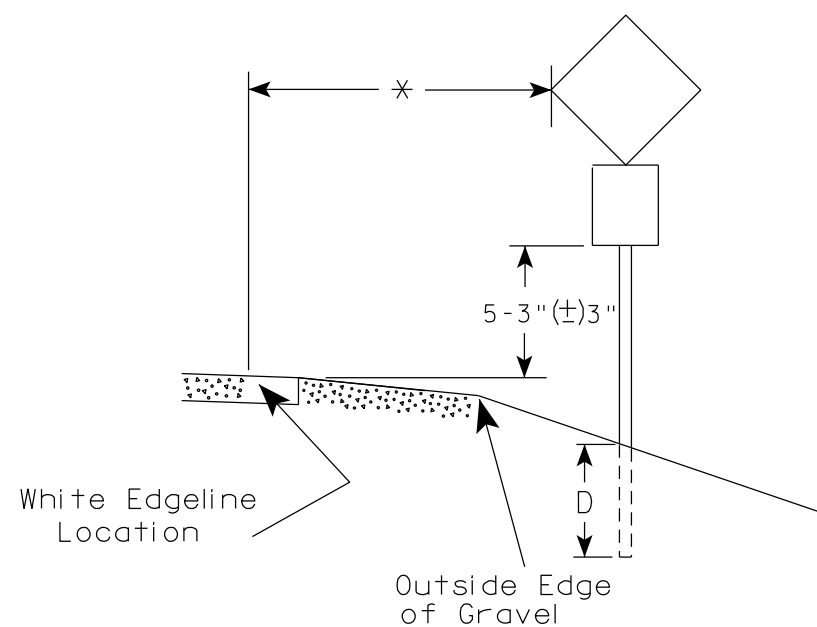
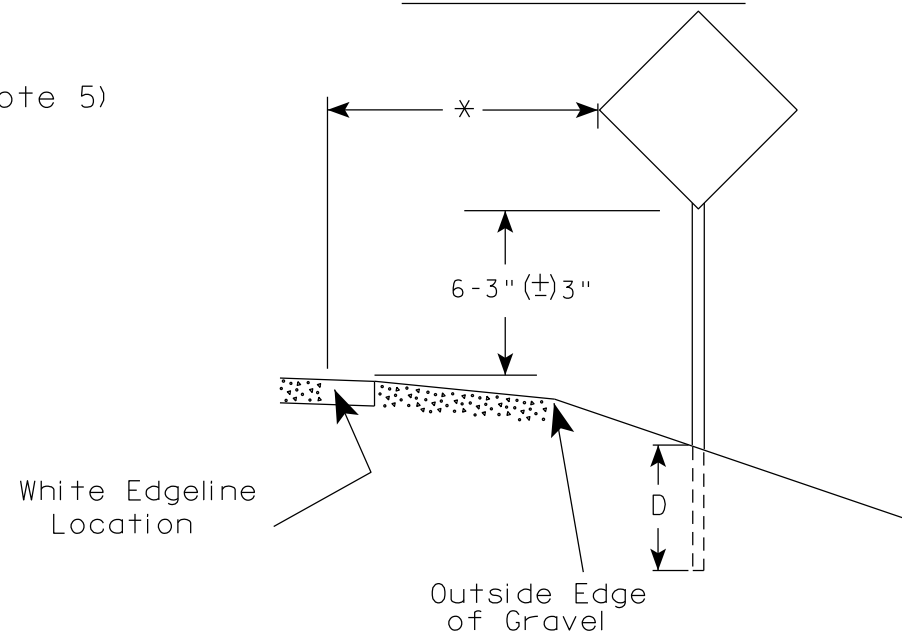
REFER TO THE TRAFFIC ENGINEERING OPERATIONS AND SAFETY MANUAL FOR FURTHER GUIDANCE ON MINIMUM VERTICAL CLEARANCE REQUIREMENTS.

	2/29/24		
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
		DRAWN BY	PLANS CKD.
TYPICAL TYPE I SIGN INSTALLATION		SHEET A4-1.11	

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

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

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

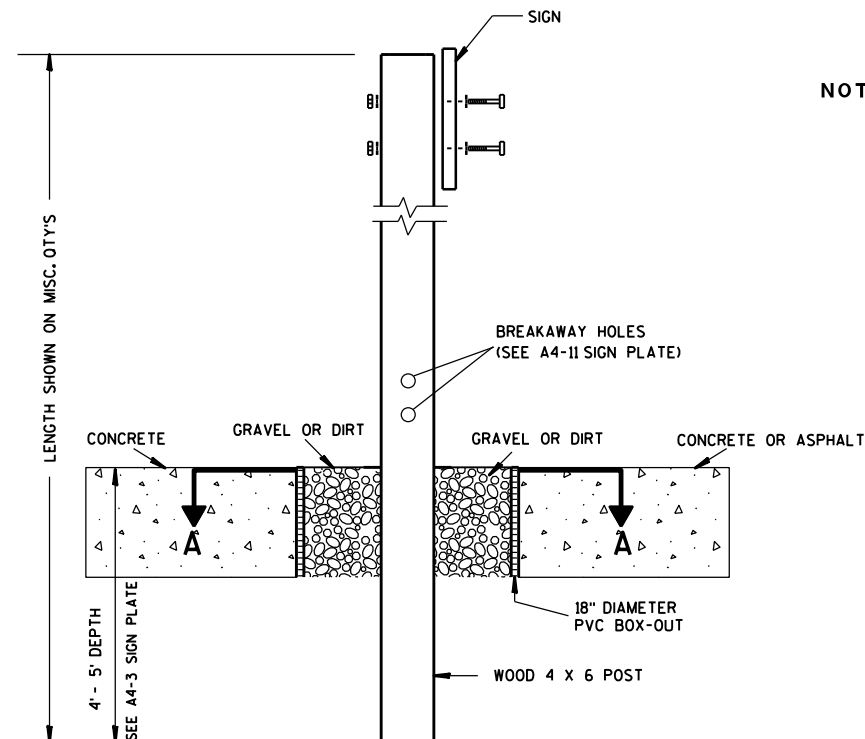
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

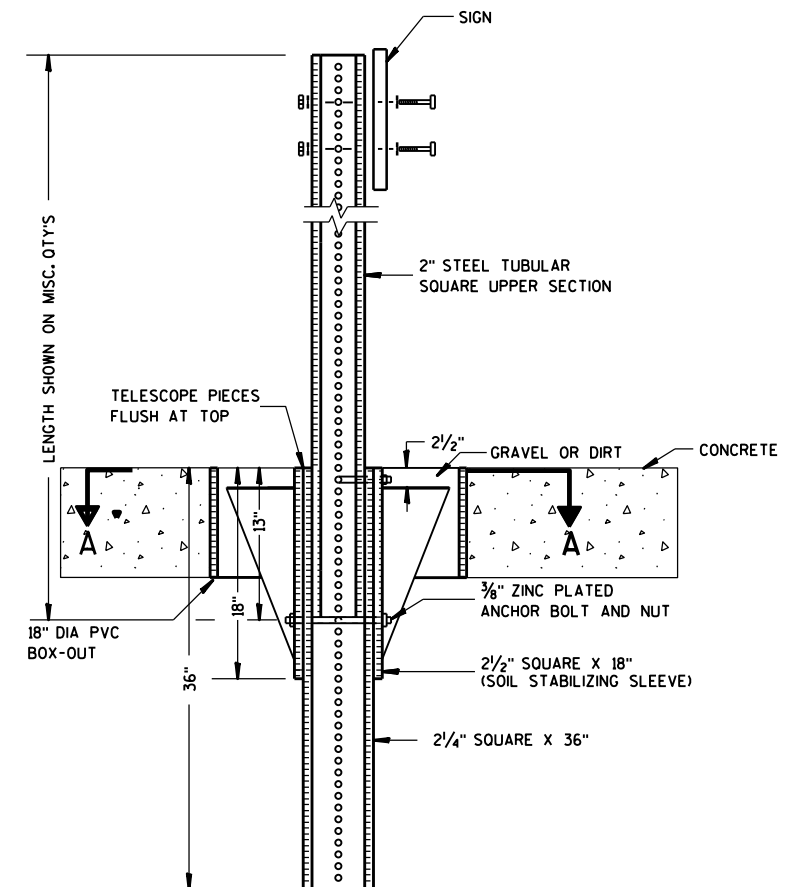
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

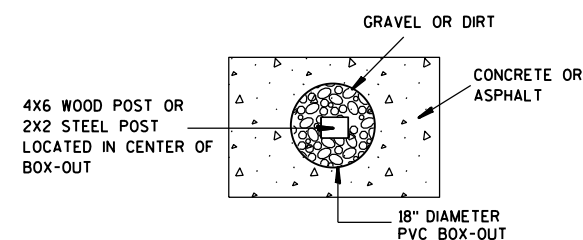
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 340 A4-3B.1

PROJECT NO:

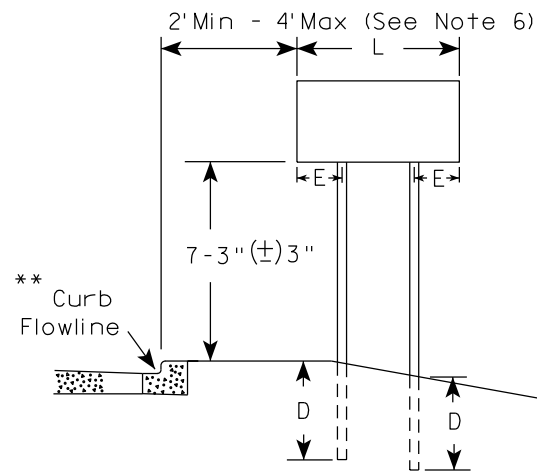
HWY:

COUNTY:

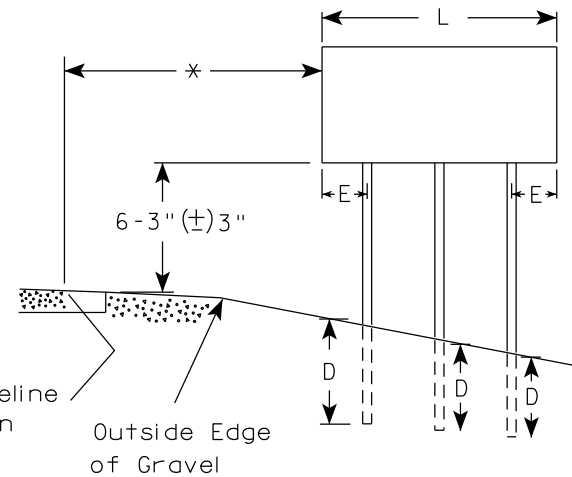
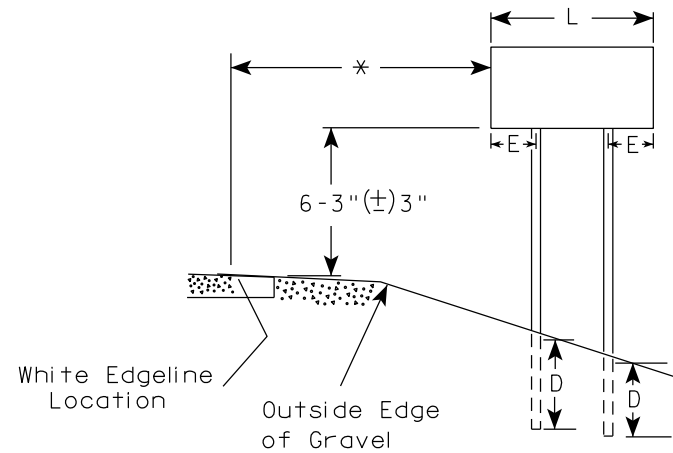
SHEET NO:

E

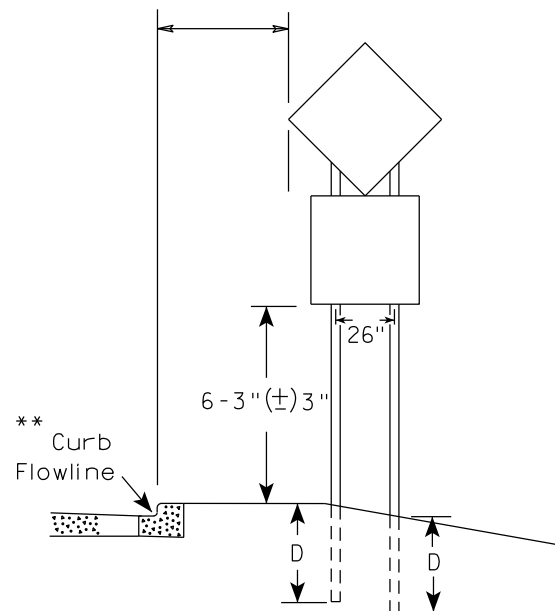
URBAN AREA



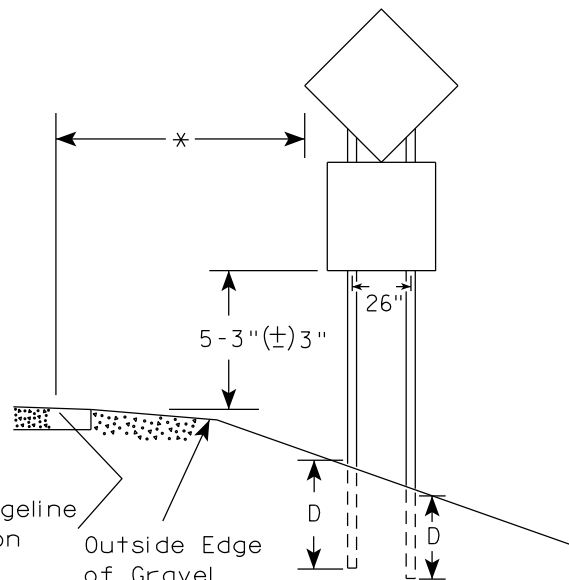
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

GENERAL NOTES

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

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

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

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

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

PROJECT NO:

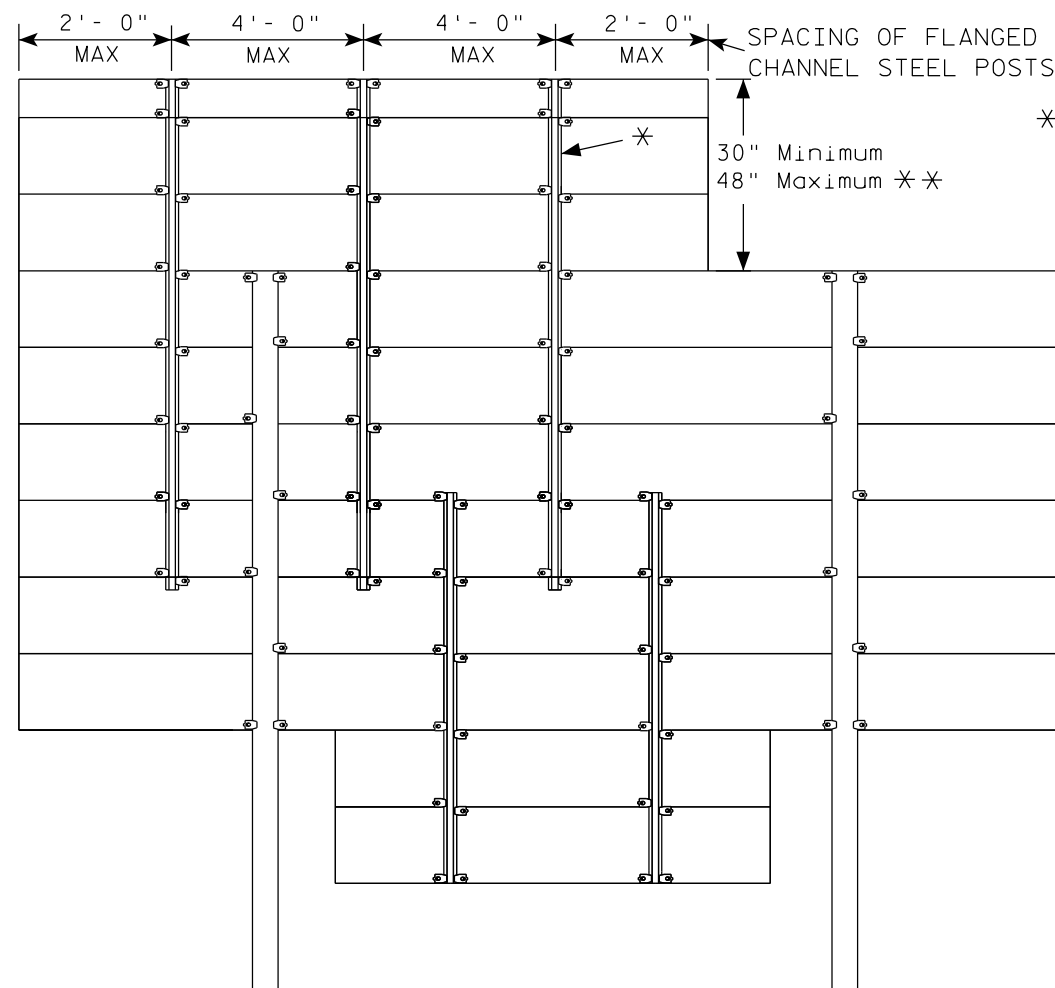
HWY:

COUNTY:

SHEET NO: 341

E

GROUND MOUNTED SIGN



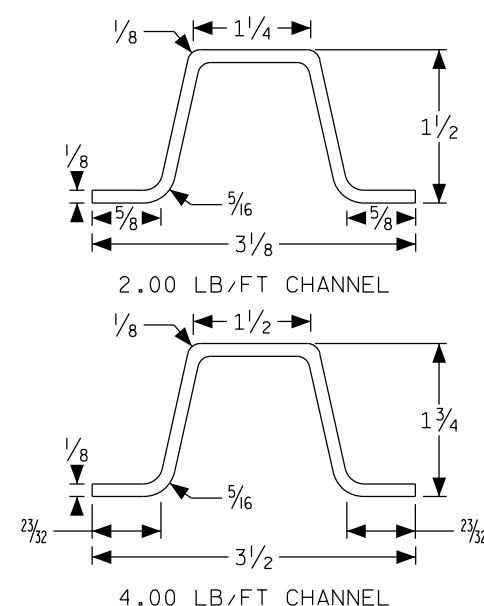
* = 2.00 lb/ft AND 4.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

* * = FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

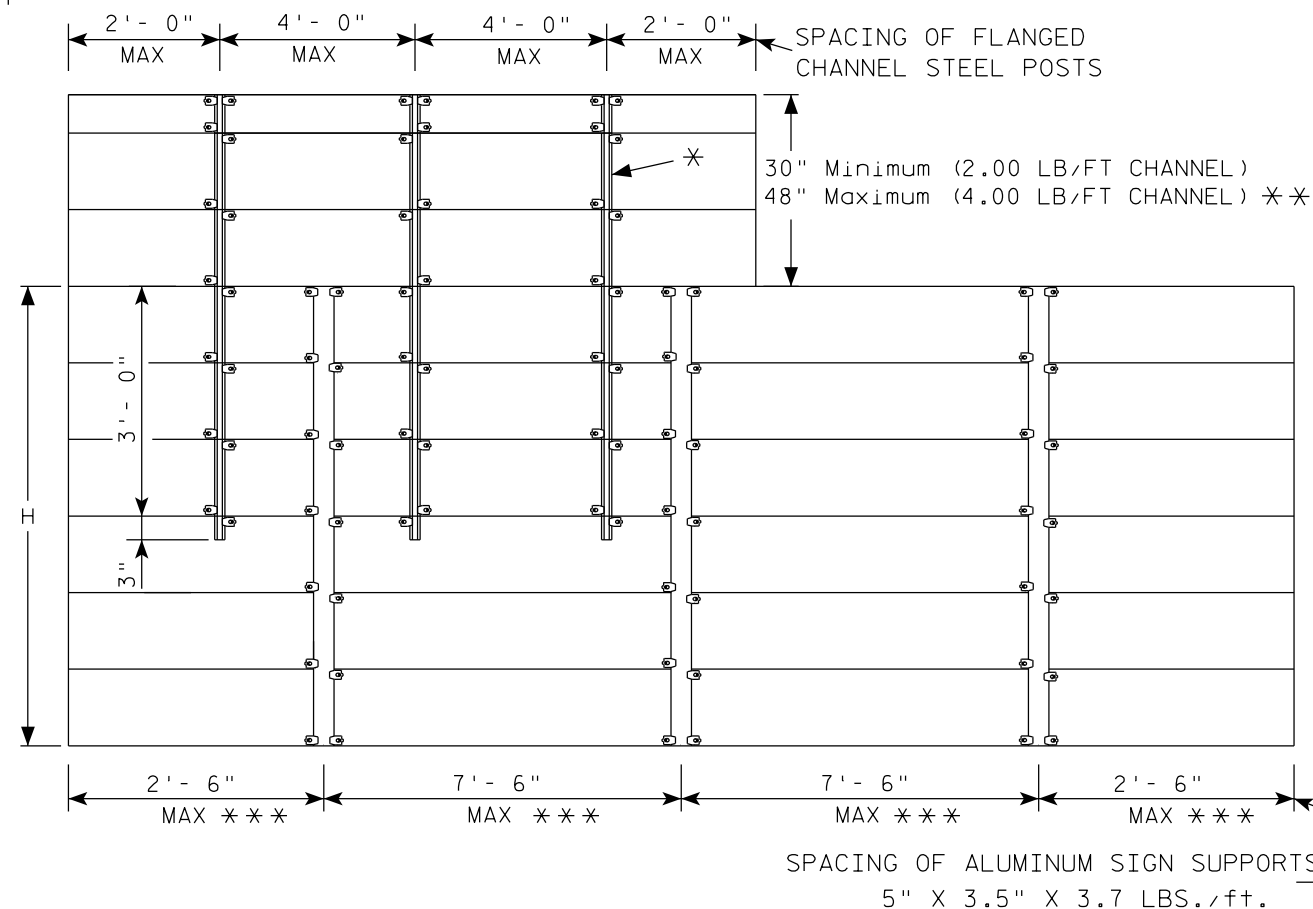
* * * THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 15 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 15 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAILS

NOT TO SCALE



SIGN BRIDGE MOUNTED SIGN



GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:
 PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
 PANEL LENGTH 9'-0" - 12'-0" = 3 CHANNELS
 PANEL LENGTH 13'-0" OR MORE = 4 CHANNELS
 If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.

3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
 for State Traffic Engineer

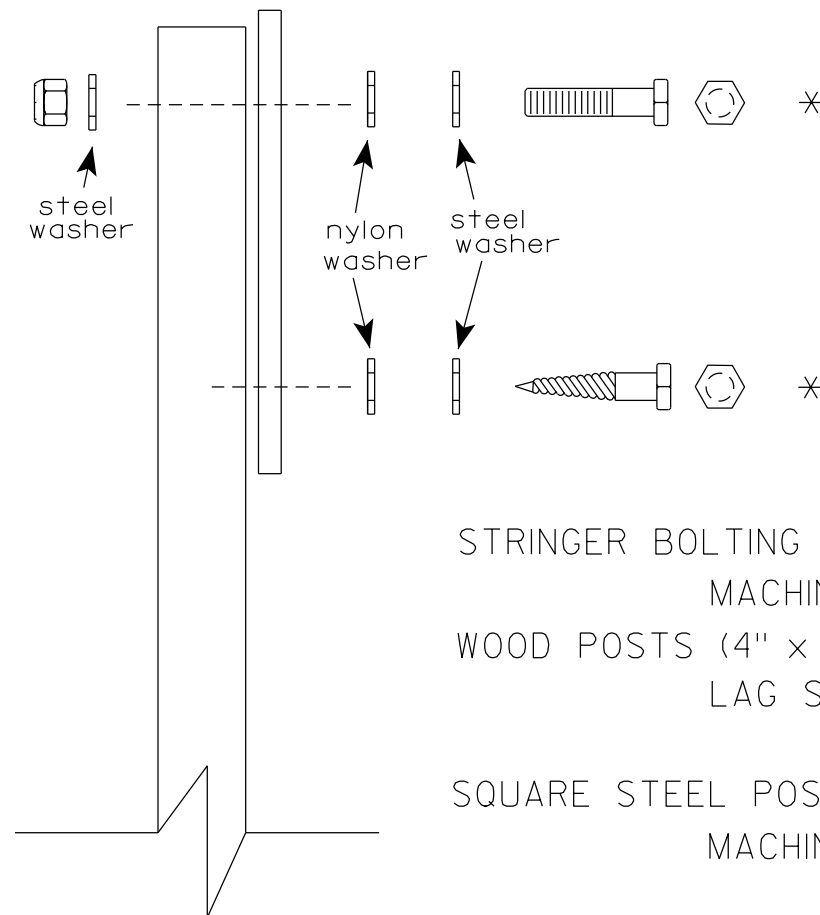
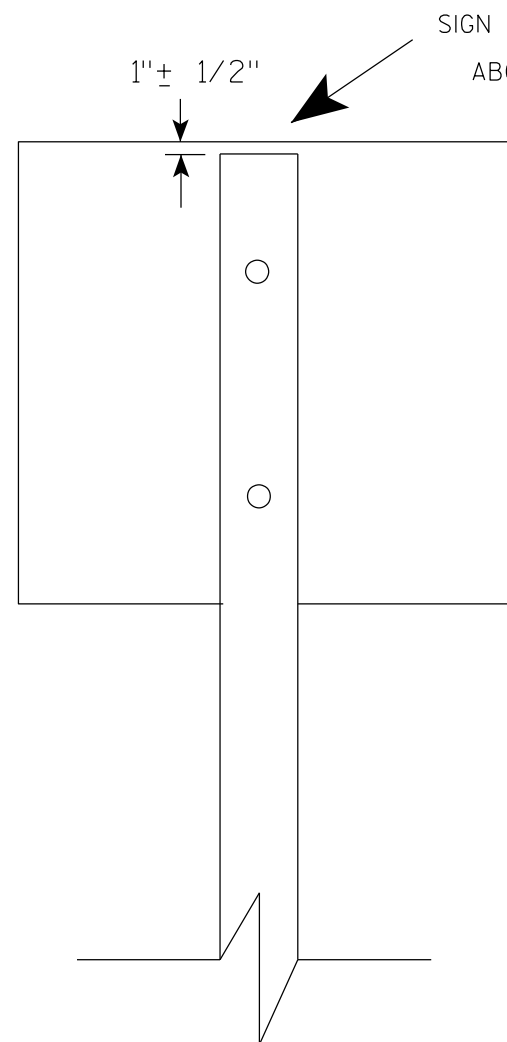
DATE 1/07/20

PLATE NO. A4-6.12

PROJECT NO:

SHEET NO: 342

E



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

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

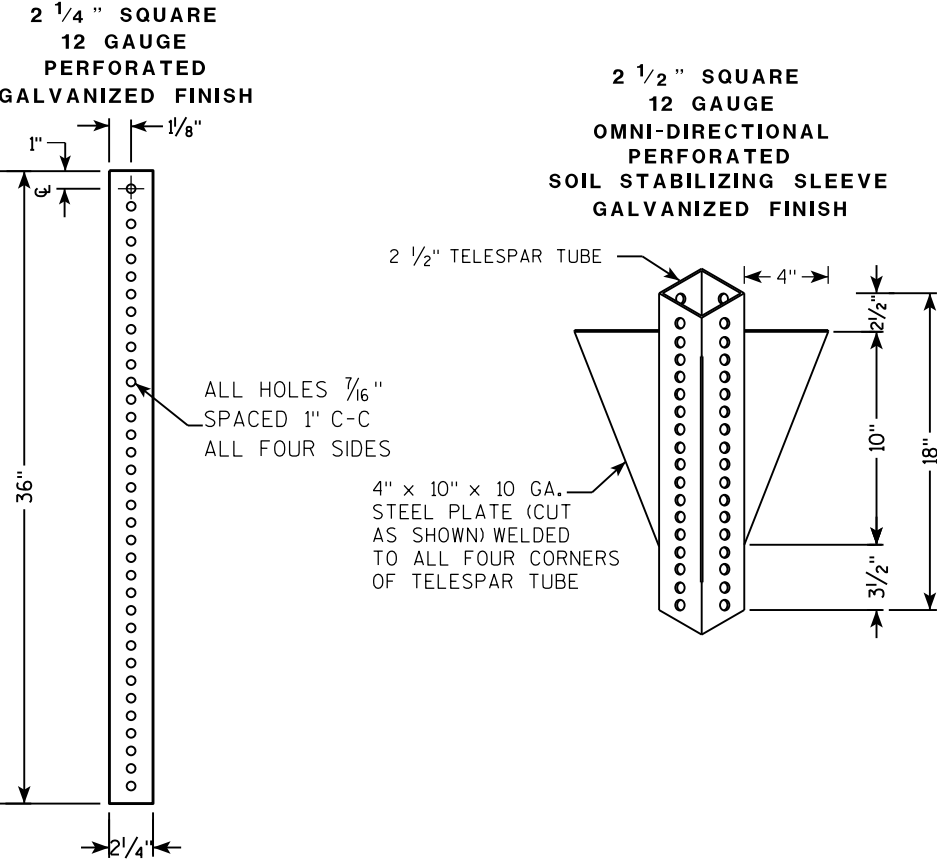
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

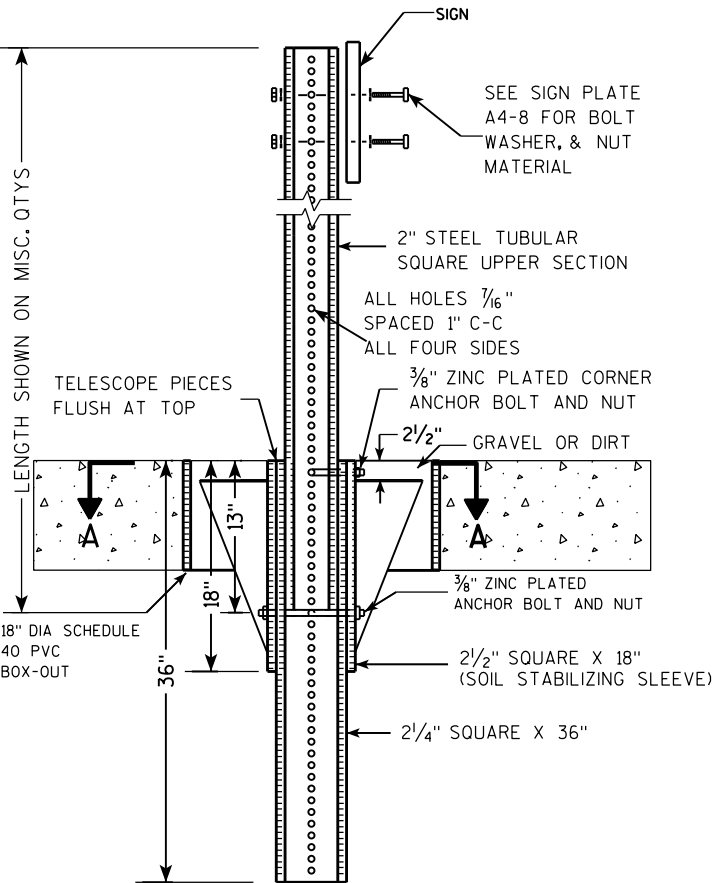
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

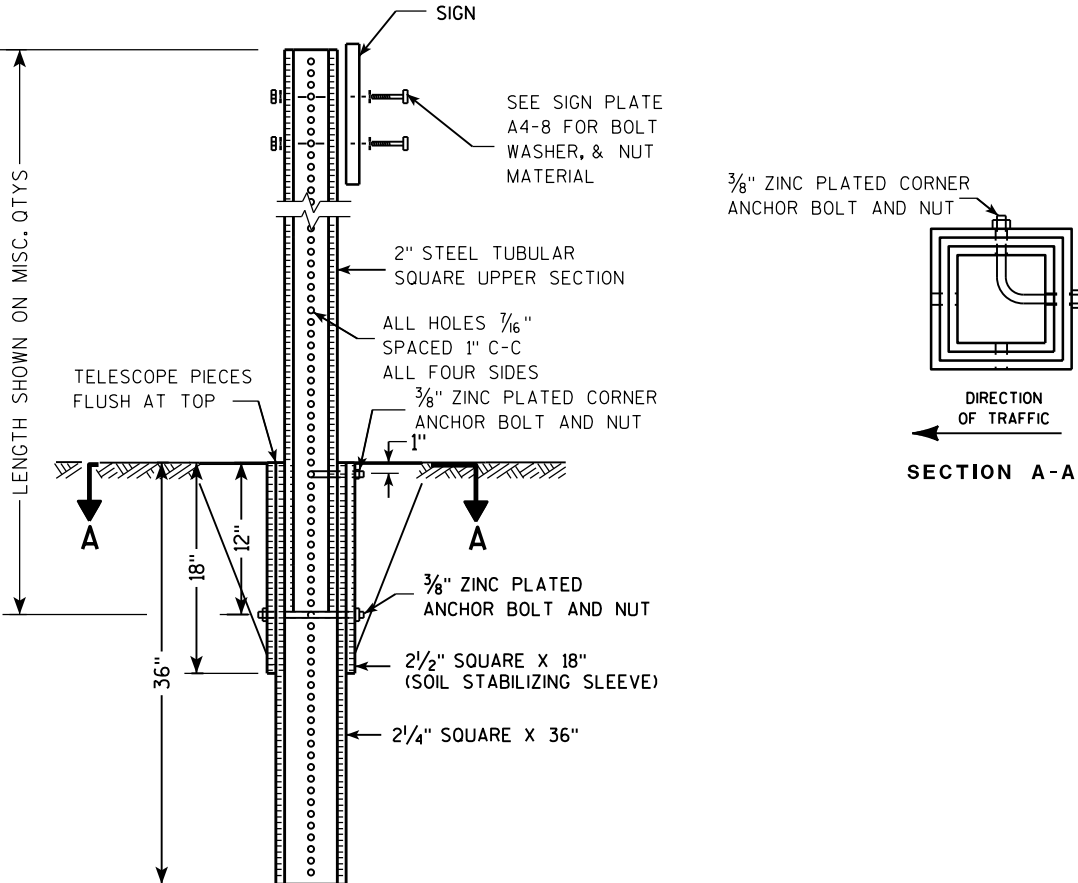
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

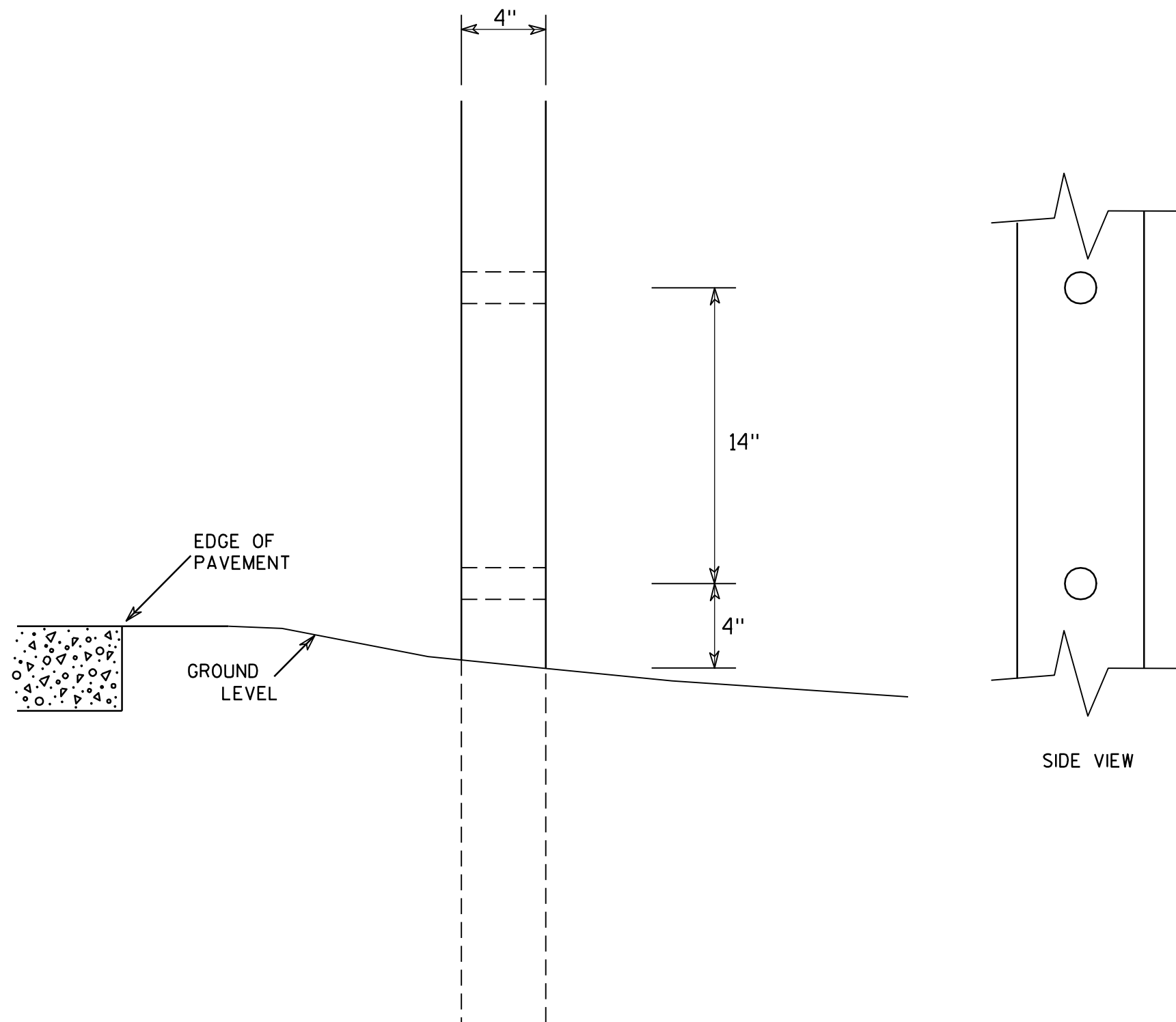
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 344 14-9.9

7

GENERAL NOTES

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

7

**4 X 6 WOOD POST
MODIFICATIONS**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

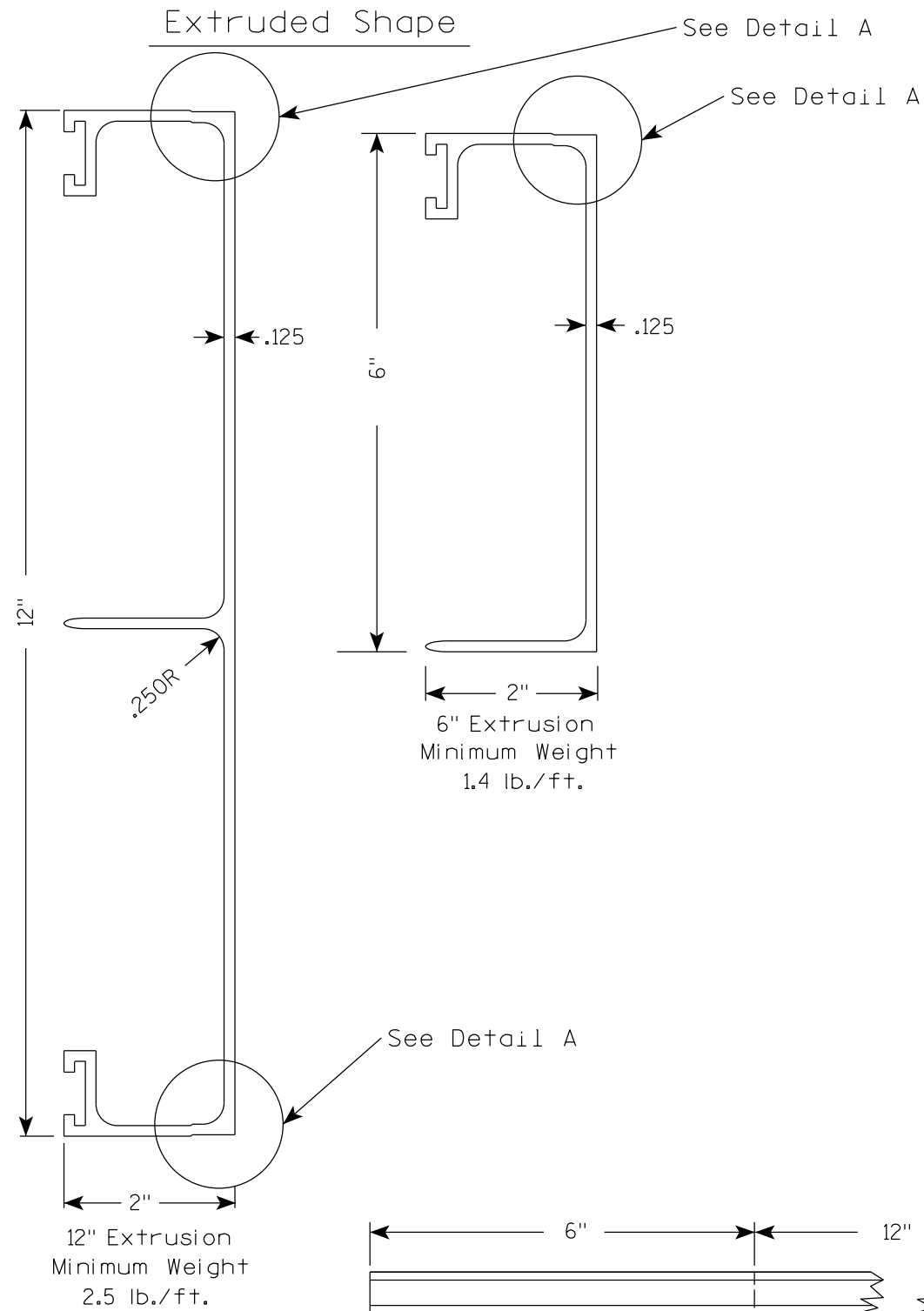
COUNTY:

SHEET NO: 345

E

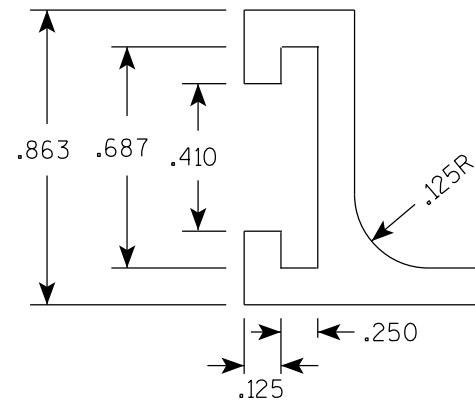
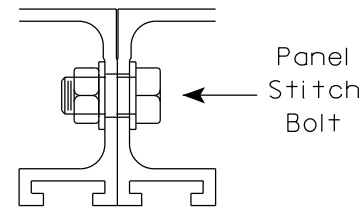
Extruded Shape

Hardware



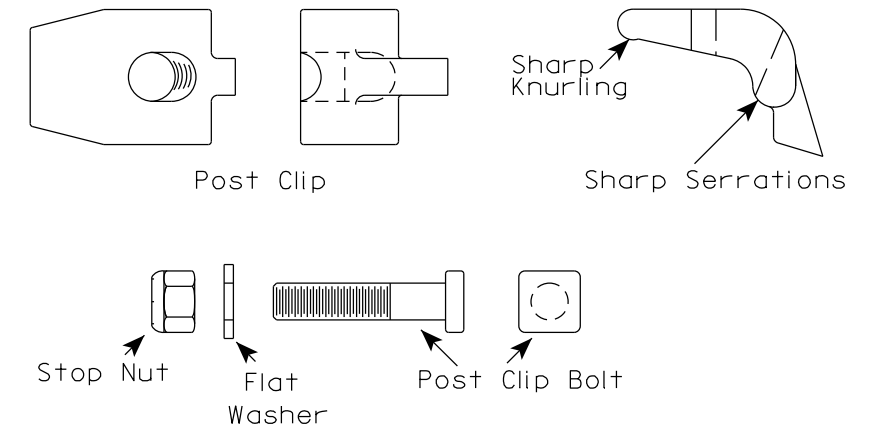
STITCH BOLT, WASHER & NUT

The hardware includes:
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy



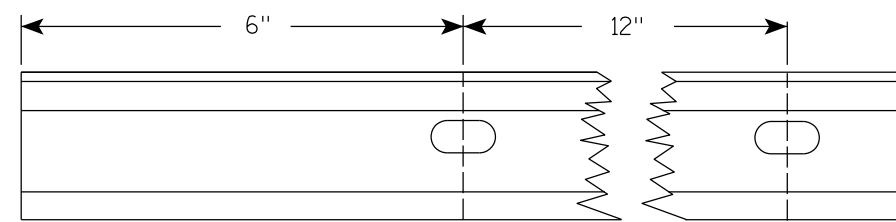
POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.

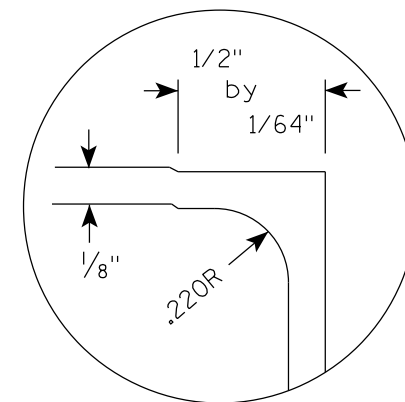


NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.
4. Edge wrapping of sign sheeting required on all extrusions joints shown in Detail A.



Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.



DETAIL A (EDGE WRAP JOINT)

ALUMINUM EXTRUSIONS FOR
TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 1/07/20 PLATE NO. A5-2.10

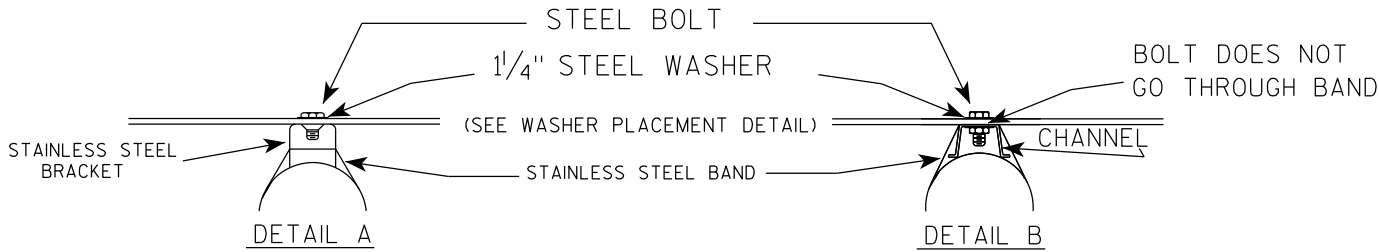
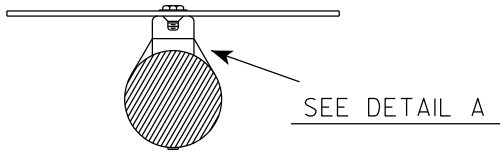
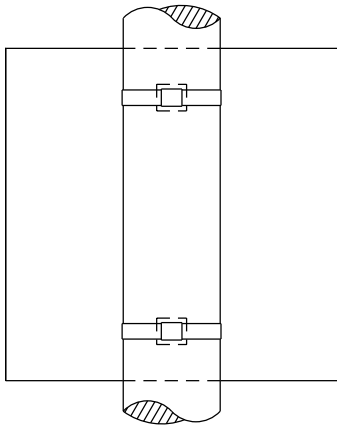
PROJECT NO:

SHEET NO: 346

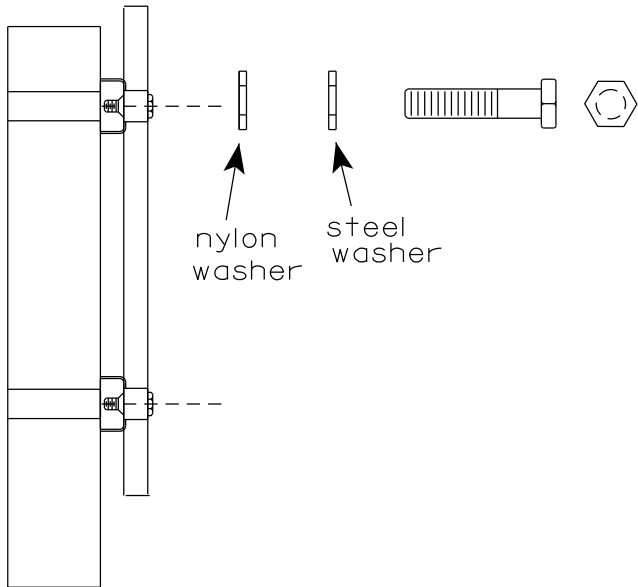
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

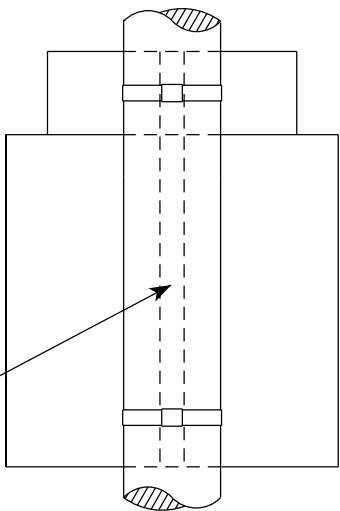


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

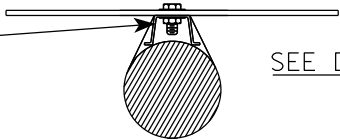
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

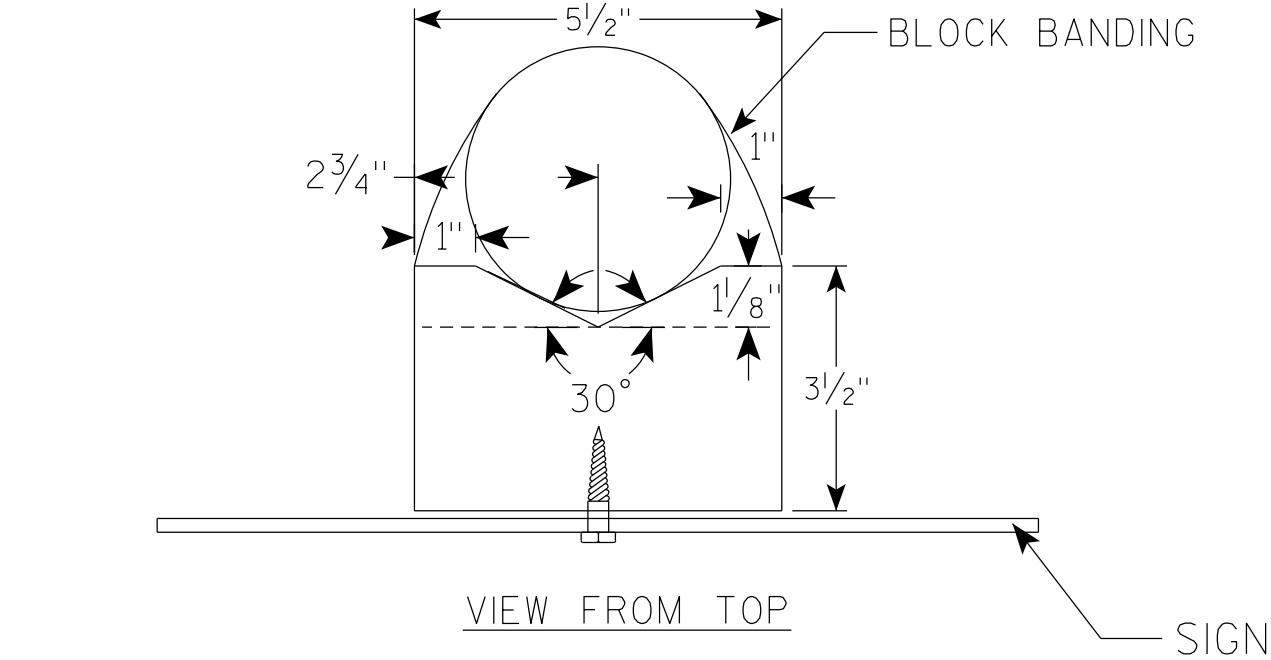
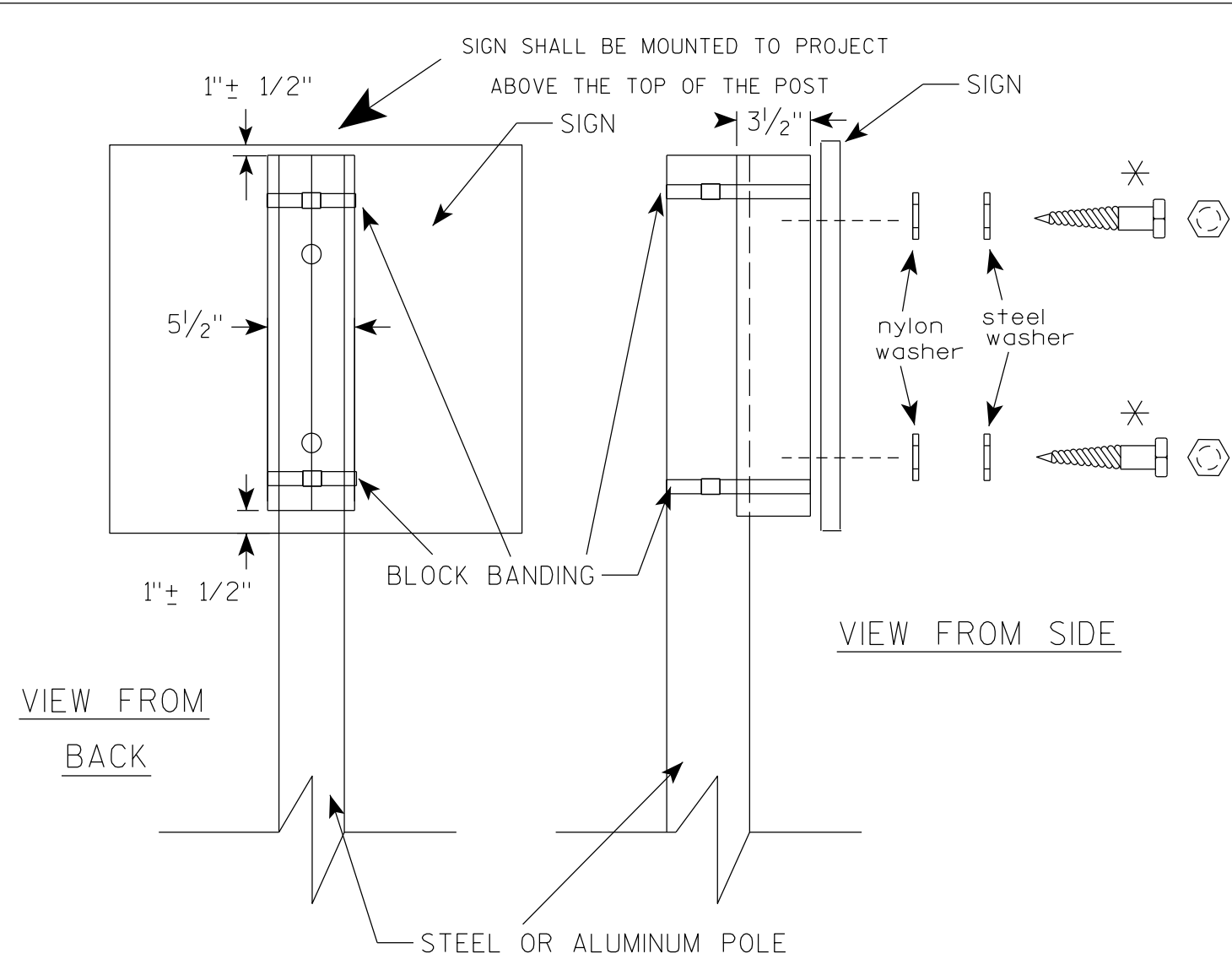


STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

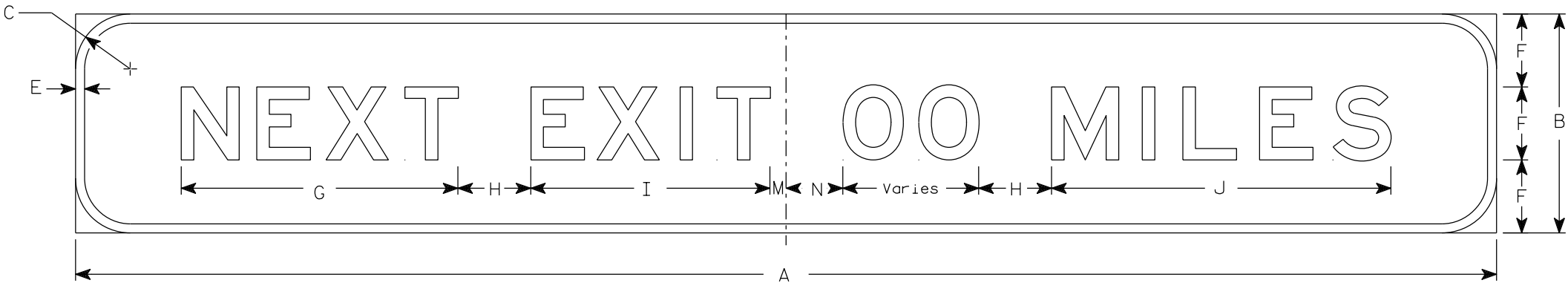
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

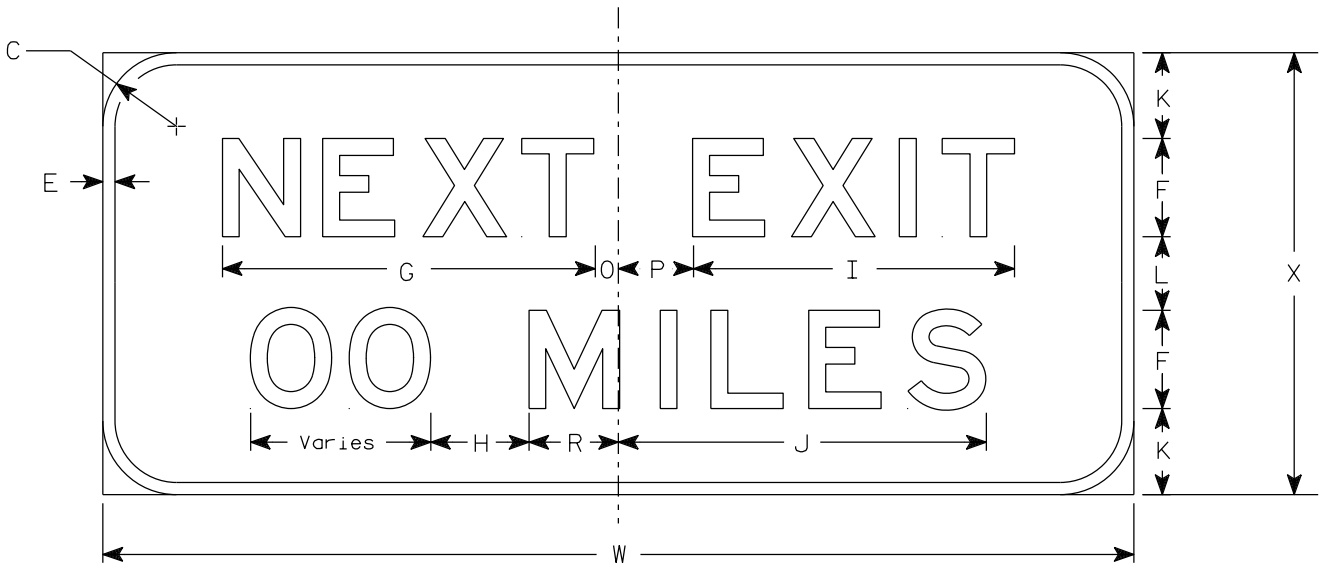
DATE 4/19/2022 PLATE NO. A5-10.3

NOTES

- 1. Signs are Type I - Type SH Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E
- 4. Substitute appropriate numerals and adjust spacing as required to achieve proper balance.
- 5. Use appropriate sign in conjunction with E1-1A. Width varies per sign



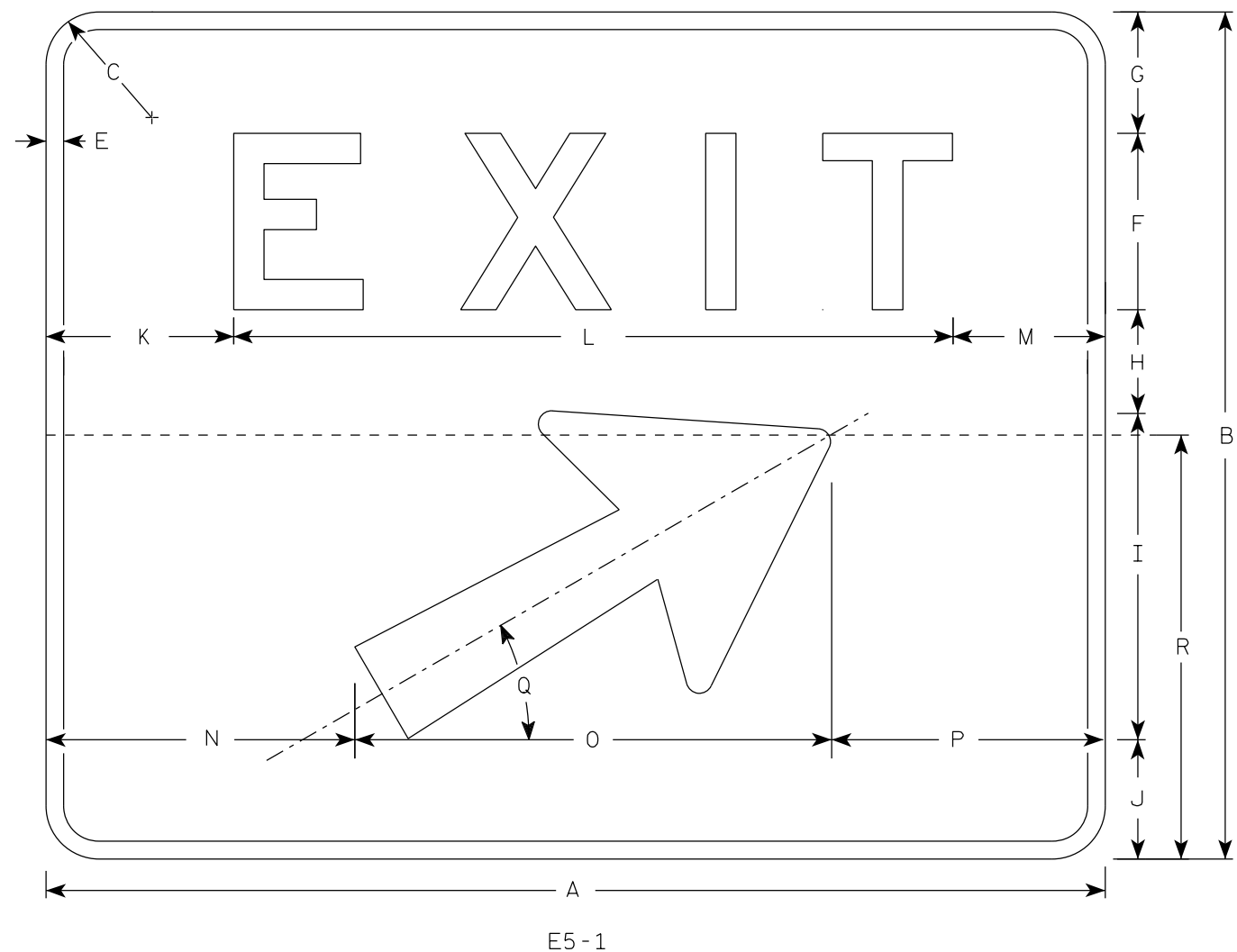
E2-1 *For use with E1-1A, 13' wide or wider. Sign width must match with of E1-1A.



E2-1A *For use with E1-1A, under 13'in width.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	E2-1	E2-1A	
																									Areq sq. ft.	Areq sq. ft.	
1																											
2																											
3																											
4	varies	24	6		1	8	30 3⁄8	8	26 1⁄4	30	7	6	1 3⁄4	6 1⁄4	1 7⁄8	6 1⁄8		7 1⁄4						84	36	varies	21.0
5	varies	24	6		1	8	30 3⁄8	8	26 1⁄4	30	7	6	1 3⁄4	6 1⁄4	1 7⁄8	6 1⁄8		7 1⁄4						84	36	varies	21.0

7



E5-1

NOTES

- 1. Sign is Type II - Type H reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E
- 4. Sign shall be split into two seperate pieces as shown on the detail by the dashed line (-----) for sizes 4 & 5.
- 5. Arrow is Type "A" from sign plate A1-1.
- 6. As per the Standard Spec's, this sign shall not have a vertical joint.
- 7. Size 3 E5-1 shall only be used in a Work Zone application with a Temporary Sign Support

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S																											
2M																											
3	48	48	3		1	10	6 7/8	5 7/8	18 1/2	6 3/4	8 1/2	31 1/8	8 3/8	11 1/2	27	9 1/2	30°	30									16.0
4	60	48	3		1	10	6 7/8	5 7/8	18 1/2	6 3/4	10 5/8	40 3/4	8 5/8	17 1/2	27	15 1/2	30°	30									20.0
5	72	60	3		1	12	9 3/4	10	18 1/2	9 3/4	13 1/4	48 1/2	10 1/4	23 1/2	27	21 1/2	30°	30									30.0

STANDARD SIGN
E5-1

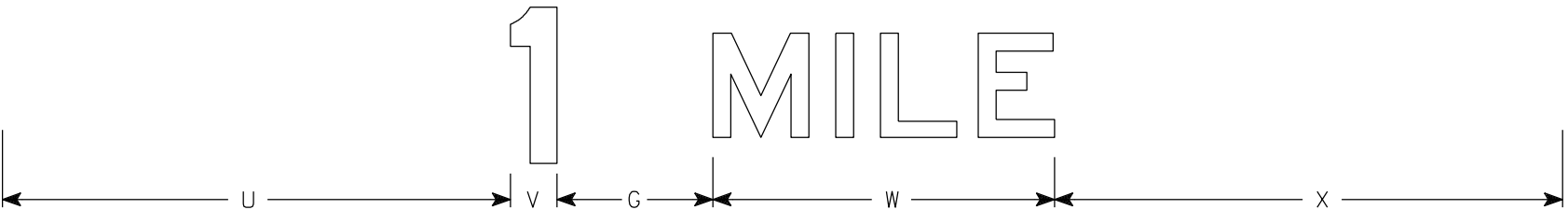
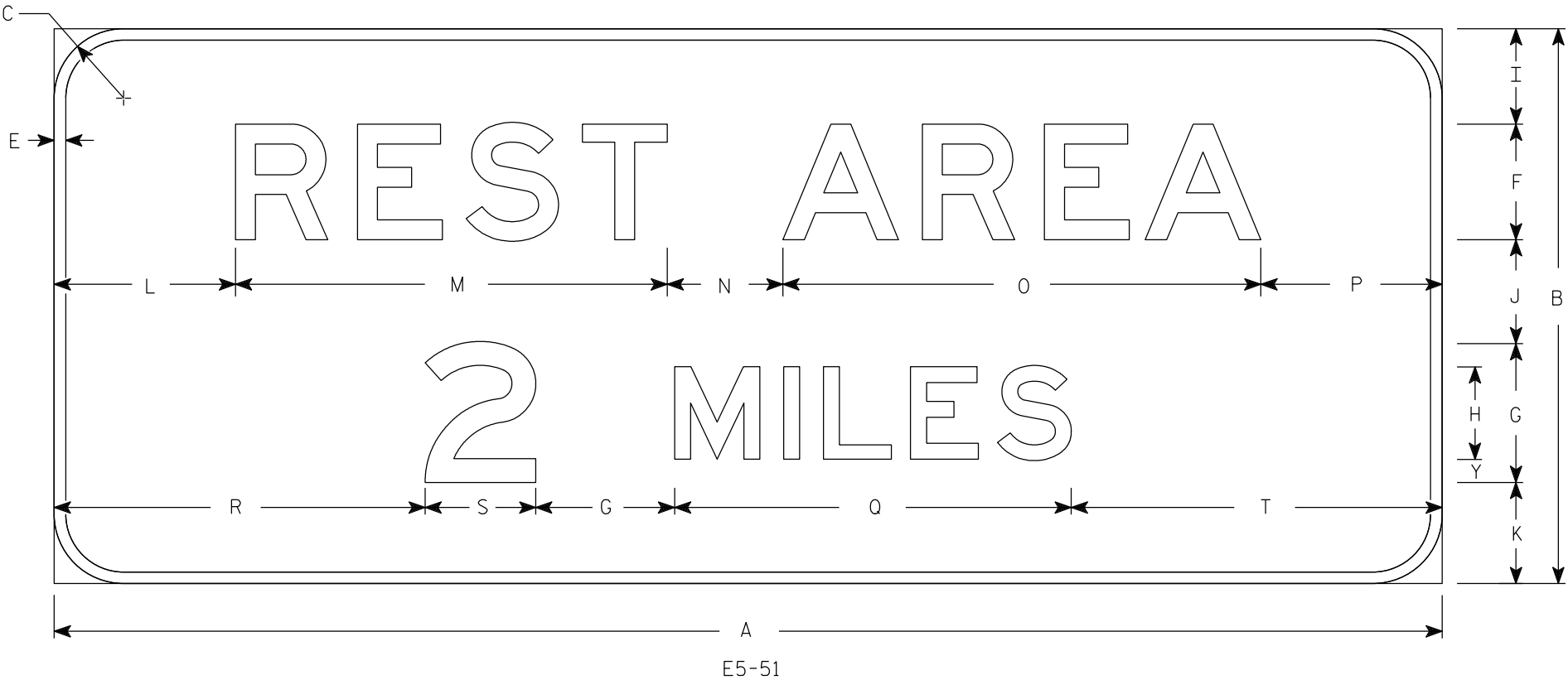
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/26/2023 PLATE NO. E5-1.12

NOTES

- 1. Sign is Type I - Type SH Reflective
- 2. Color:
 - Background - Blue
 - Message - White
- 3. Message Series - E
- 4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	120	48	6		1	10	12	8	8 1/4	9	8 3/4	15 5/8	37 3/8	10	41 3/8	15 5/8	34 1/4	32 1/8	9 1/2	32 1/8	39 1/8	3 1/2	26 1/4	39 1/8	2		40.0
5	144	60	6		2	13 1/4	15	10	10 7/8	10	10 7/8	12 7/8	49 3/4	13 3/8	55 1/8	12 7/8	42 7/8	37 1/8	11 7/8	37 1/8	45 7/8	4 3/8	32 7/8	45 7/8	2 1/2		60.0

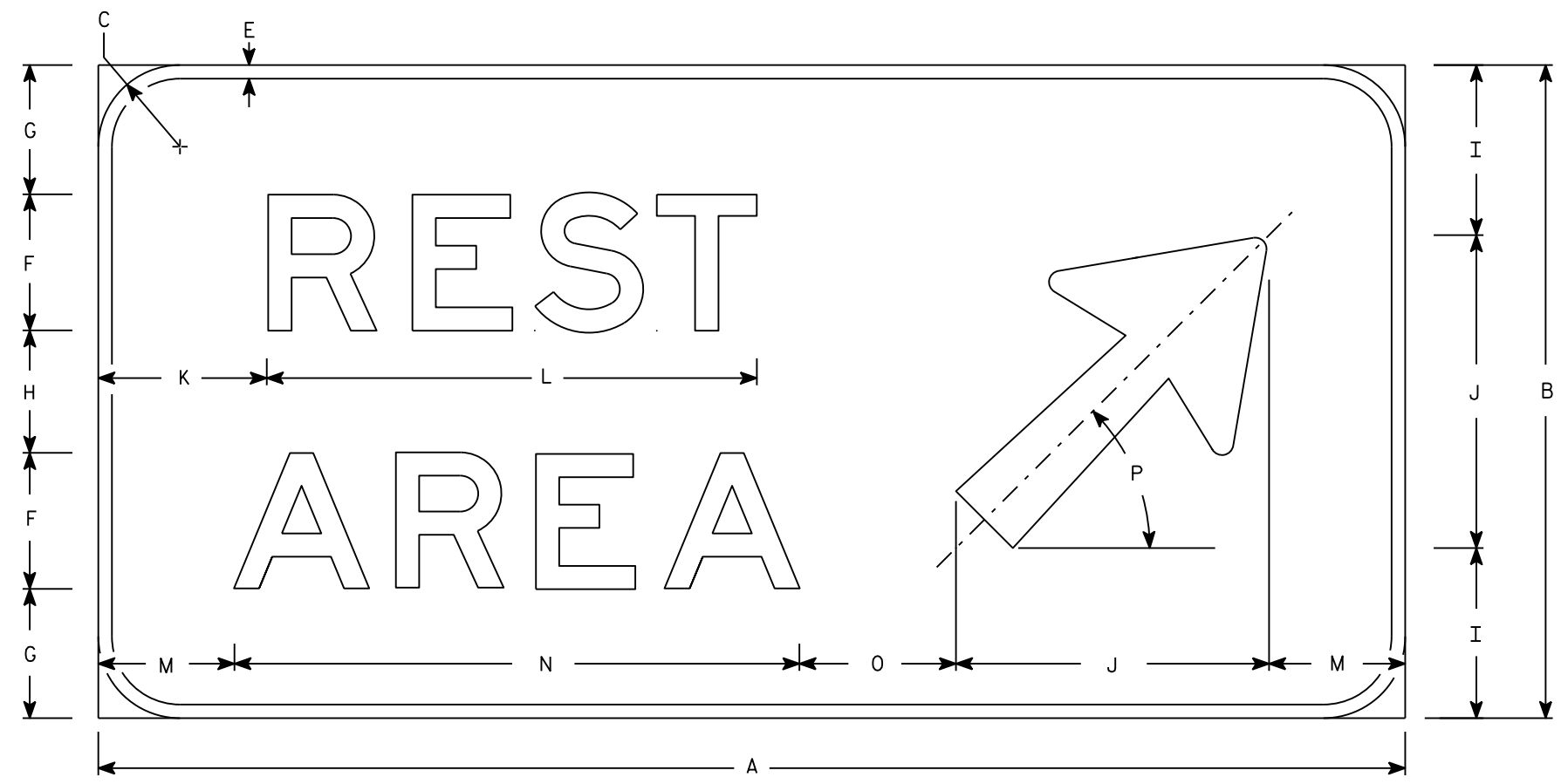
STANDARD SIGN
E5-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/10/2022 PLATE NO. E5-51.9

7



E5-52

- NOTES
1. Sign is Type I - Type SH Reflective
 2. Color:
Background - Blue
Message - White
 3. Message Series - E
 4. Arrow is standard Interstate Type A.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	144	54	6		2	15	8	8	13	28	20 1/4	62	16 1/4	68	15 1/2	45°											54.0
5	144	54	6		2	15	8	8	13	28	20 1/4	62	16 1/4	68	15 1/2	45°											54.0

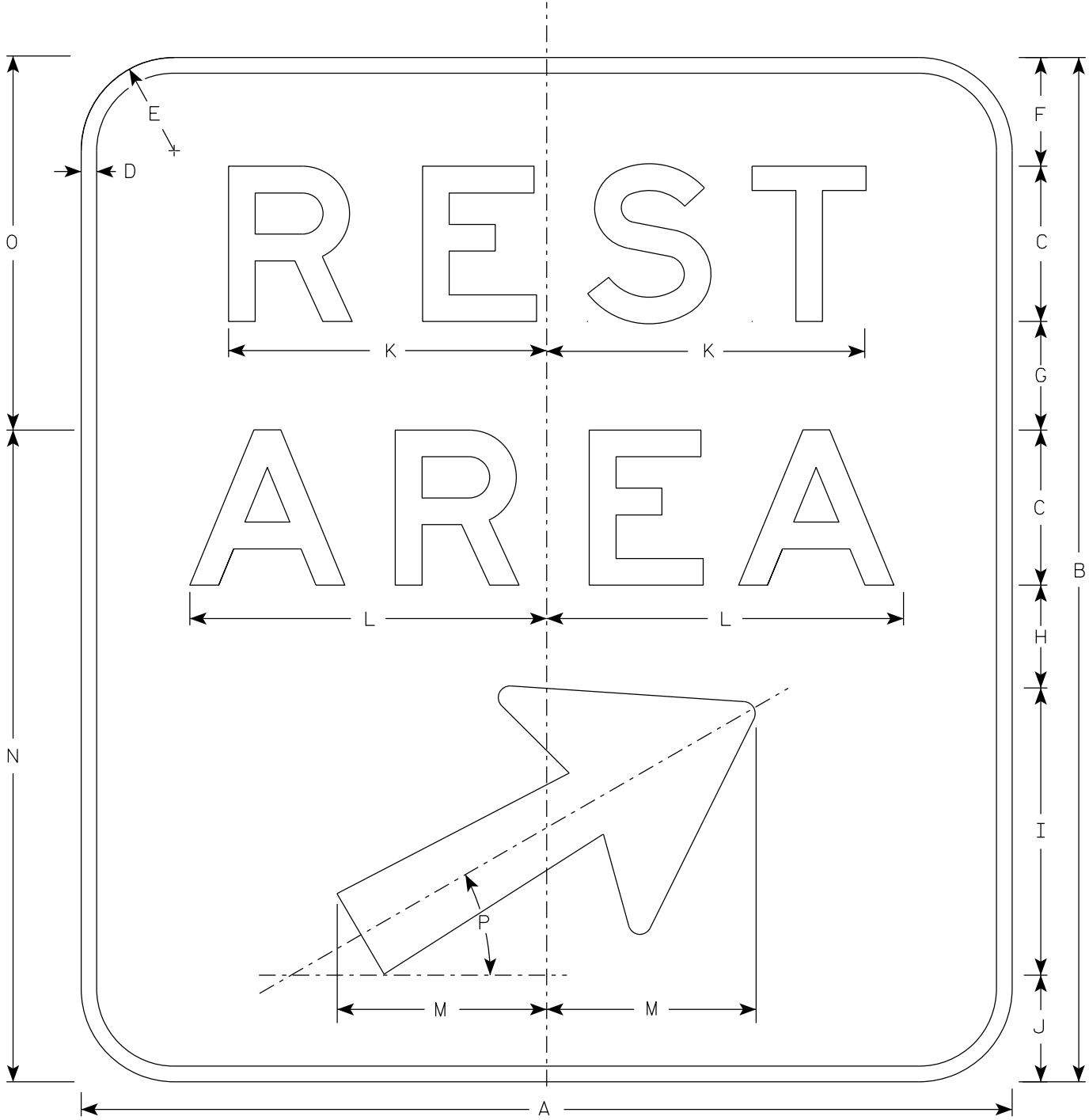
STANDARD SIGN
E5-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/23/17 PLATE NO. E5-52.11

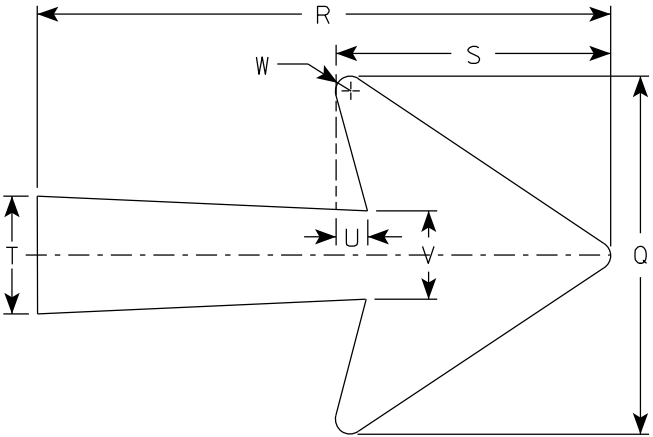
7



E5-54R

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - Blue
 - Message - White
- 3. Message Series - E
- 4. Arrow is Type A as per A1-1 standard
- 5. Dimensions N & O Indicate cutting lines for splice.
- 6. E5-54L is the same as E5-54R except the arrow is reversed.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	60	66	10	1	6	7	7	6 5⁄8	18 1⁄2	6 7⁄8	21	23	13 1⁄2	42	24	30°	18 1⁄4	29 1⁄4	14	6	1 1⁄2	4 1⁄2	3⁄4				27.5
5	72	72	12	1	9	7 1⁄4	7	8	18 1⁄2	7 1⁄4	25	27	13 1⁄2	48	24	30°	18 1⁄4	29 1⁄4	14	6	1 1⁄2	4 1⁄2	3⁄4				36.0

PROJECT NO:

HWY:

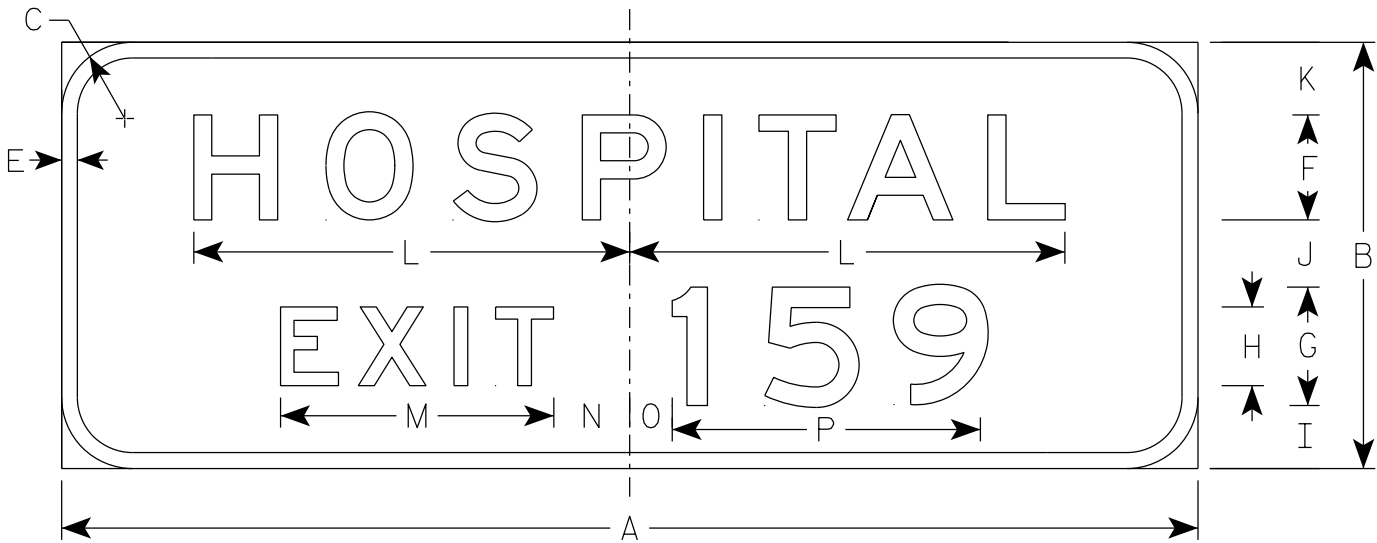
COUNTY:

SHEET NO: 353

E

NOTES

- 1. Sign is Type I - Type SH Reflective
- 2. Color:
Background - Blue
Message - White
- 3. Message Series - E
- 4. Apply proper Exit Numbers and letters, optically center to adjust spacing to achieve proper balance.



E10-61

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	144	54	9		2	13 ³ / ₈	15	10	8	8 ¹ / ₂	9 ¹ / ₄	55 ¹ / ₄	34 ⁵ / ₈	9 ⁵ / ₈	5 ³ / ₈	39											54.0
5	144	54	9		2	13 ³ / ₈	15	10	8	8 ¹ / ₂	9 ¹ / ₄	55 ¹ / ₄	34 ⁵ / ₈	9 ⁵ / ₈	5 ³ / ₈	39											54.0

TYPICAL SIGNS

E10-61

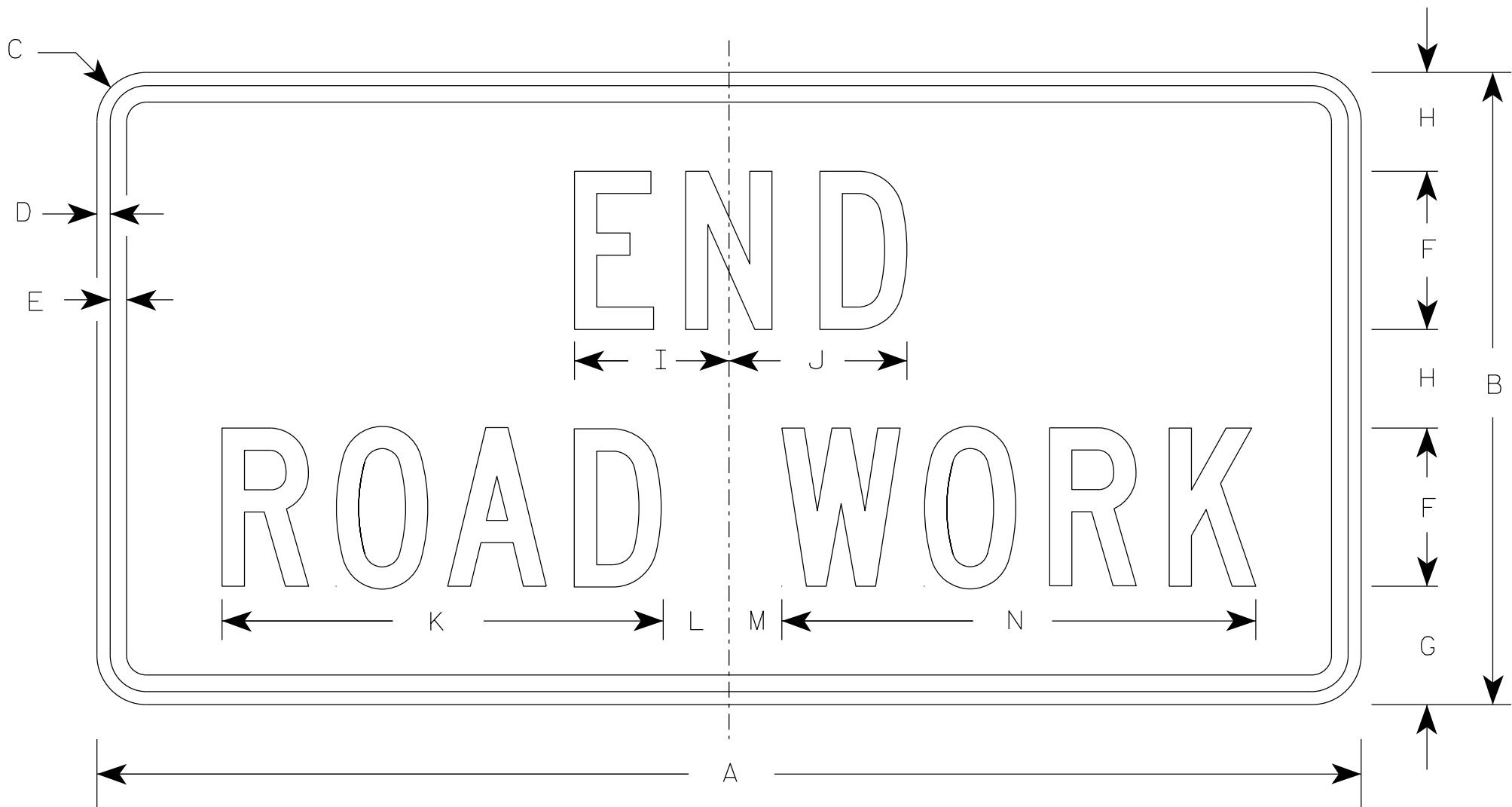
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/5/2020 PLATE NO. E10-61.4

NOTES

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



G20-2A

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

STANDARD SIGN

G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-2A.10

PROJECT NO:

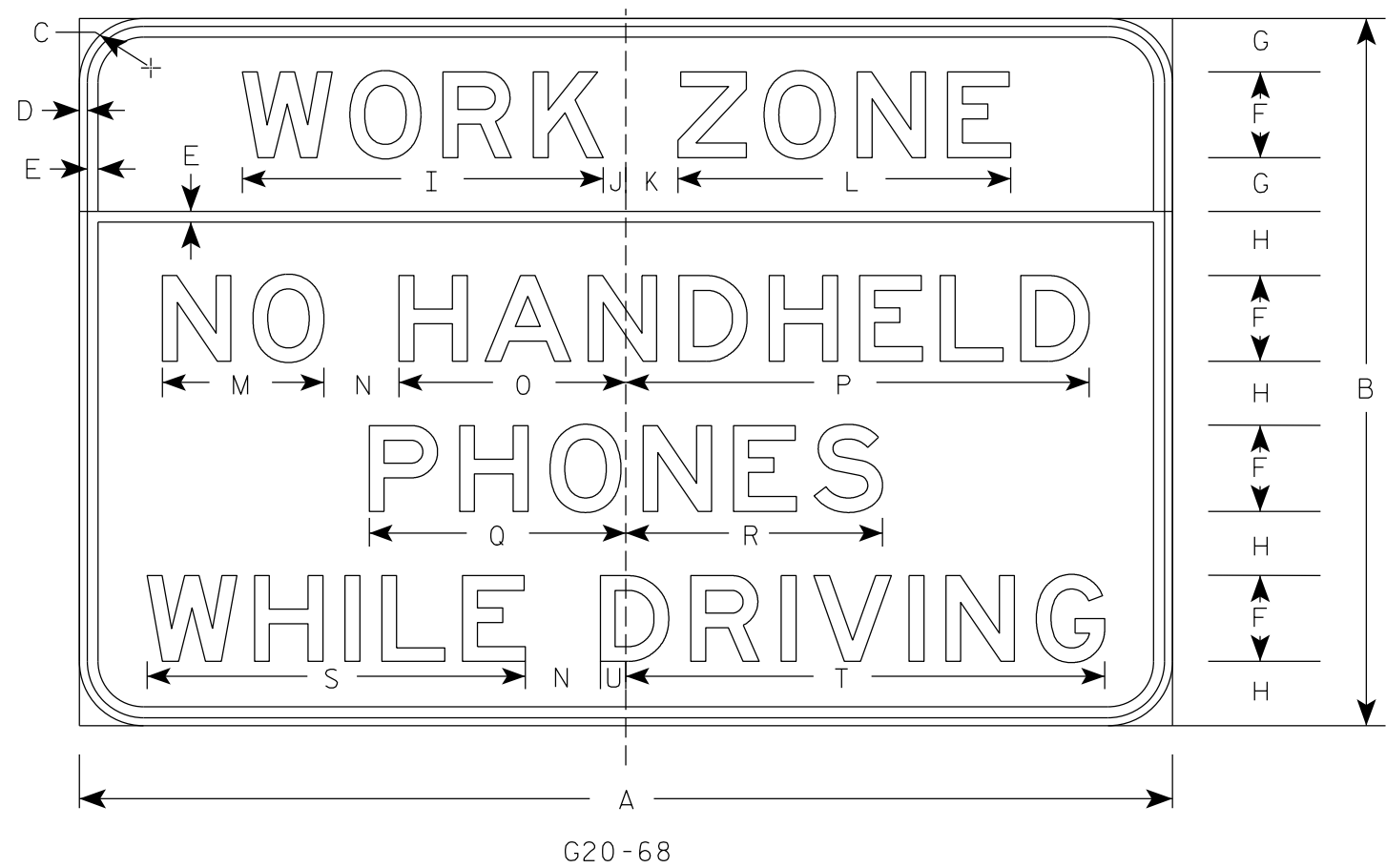
HWY:

COUNTY:

SHEET NO: 355

E

7



NOTES

- 1. Sign is Type II- Type H Reflective except as noted.
- 2. Color:
Background - White except Work Zone panel is Fluorescent Orange
Type F Reflective
Message - Black
- 3. Message Series - E
- 4. Traffic mitigation contract required for signs to be included on project.
- 5. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	78	48	3	5/8	3/4	6	3	4 1/2	24 7/8	2 3/8	4 1/4	23	11 1/4	6	15 1/2	32 3/4	18	18	26 1/2	33 7/8	1 3/8						26.0
2M	78	48	3	5/8	3/4	6	3	4 1/2	24 7/8	2 3/8	4 1/4	23	11 1/4	6	15 1/2	32 3/4	18	18	26 1/2	33 7/8	1 3/8						26.0
3	102	66	6	3/4	1	8	5	6	33 5/8	2 1/8	4 7/8	31	15	7	21 1/8	43 1/4	24	24	35 1/4	44 5/8	2 3/8						46.75
4	102	66	6	3/4	1	8	5	6	33 5/8	2 1/8	4 7/8	31	15	7	21 1/8	43 1/4	24	24	35 1/4	44 5/8	2 3/8						46.75
5	102	66	6	3/4	1	8	5	6	33 5/8	2 1/8	4 7/8	31	15	7	21 1/8	43 1/4	24	24	35 1/4	44 5/8	2 3/8						46.75

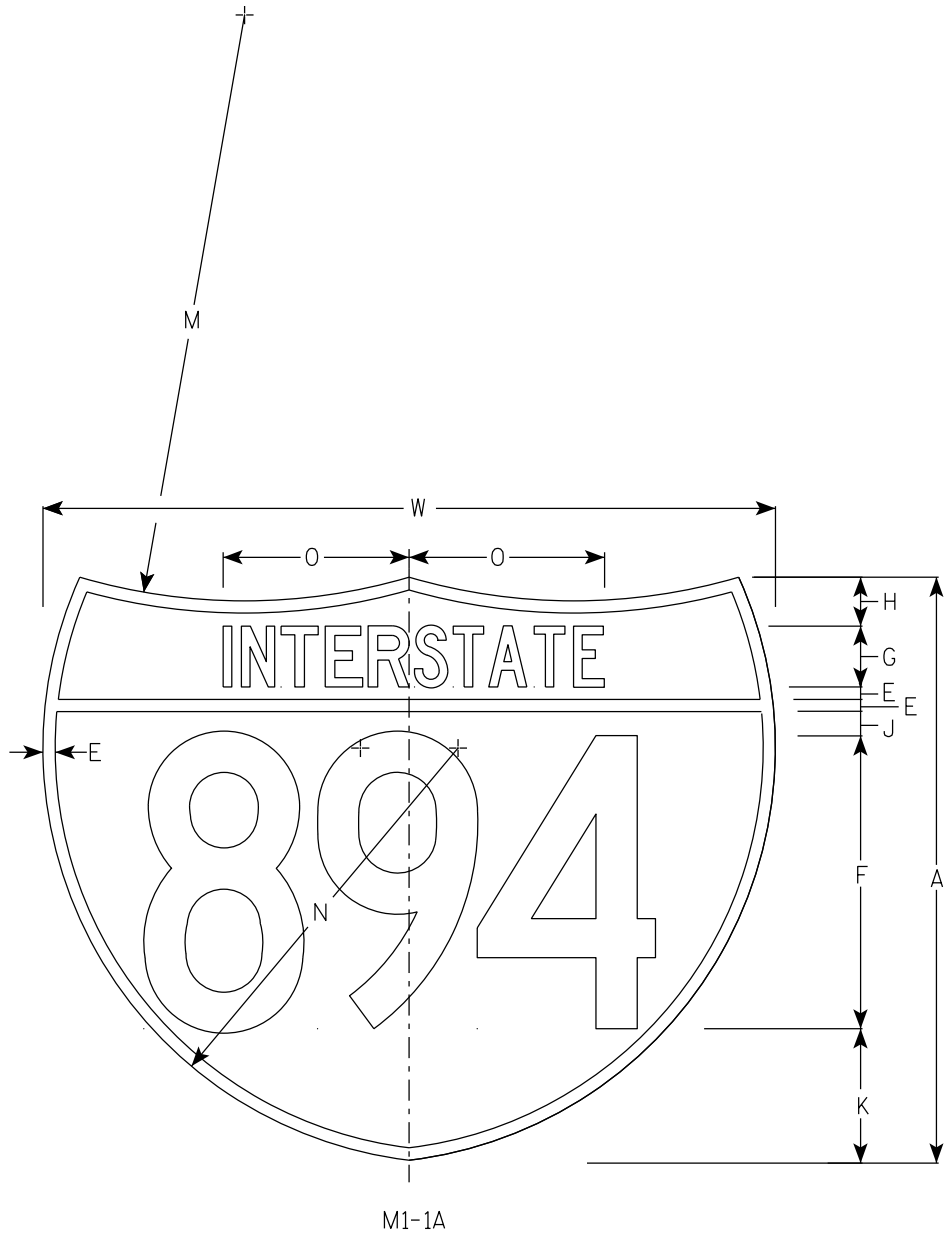
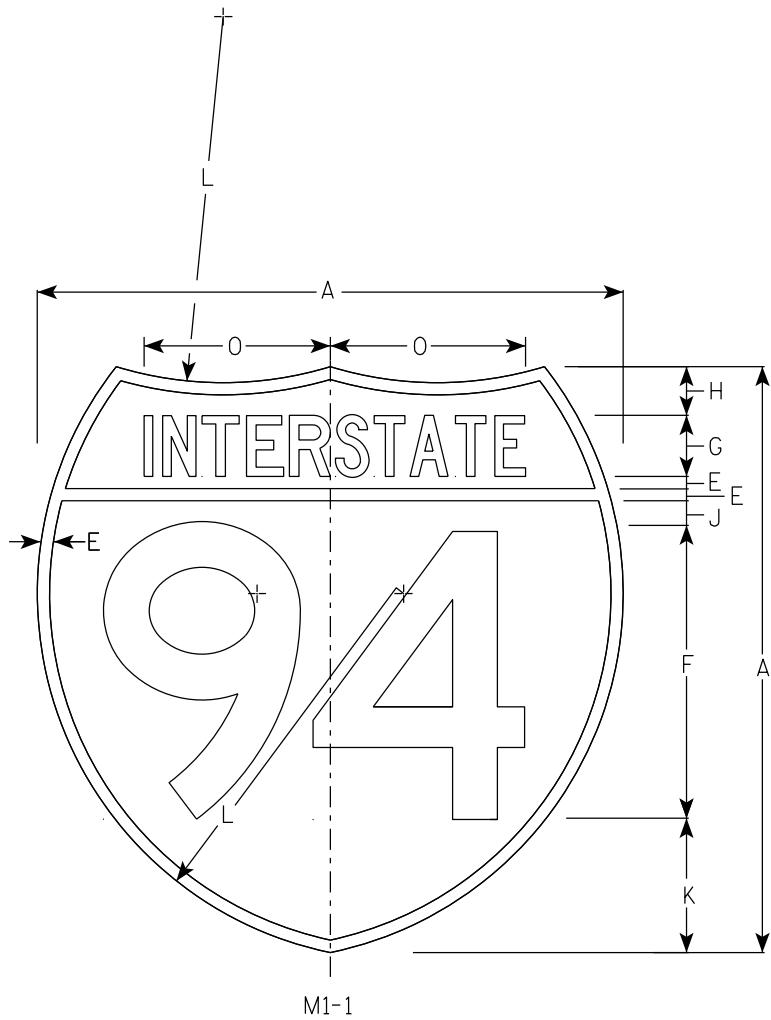
STANDARD SIGN
G20-68

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 6/10/19 PLATE NO. G20-68.1

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Top Red - Bottom Blue
Message - White
- 3. Message Series - See note 5
- 4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
- 5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C

7

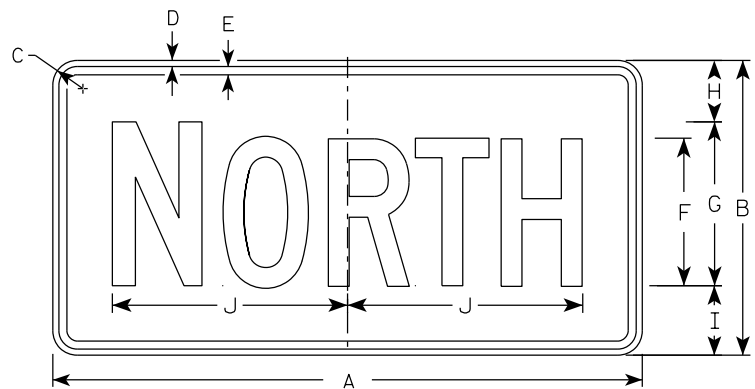
																										M1-1	M1-1A
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Area sq. ft.	Area sq. ft.
1																											
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
2M	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

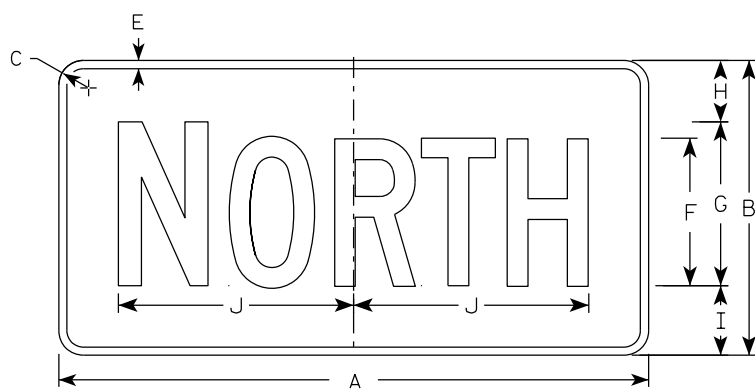
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

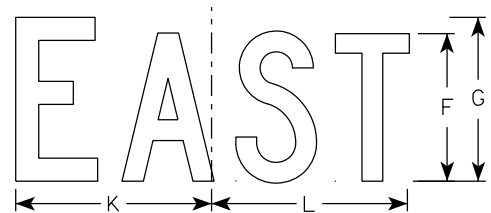
DATE 11/7/2022 PLATE NO. M1-1.9



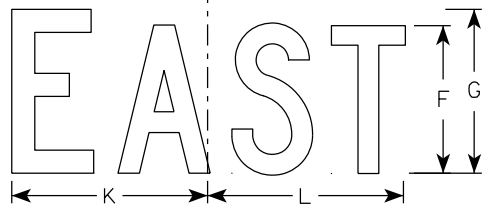
M3-1
MM3-1
MP3-1



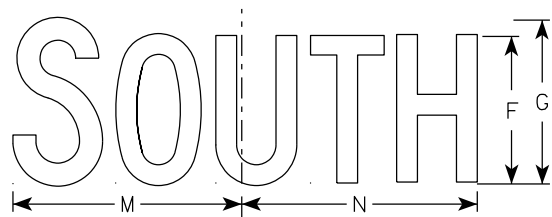
MB3-1
MK3-1
MN3-1



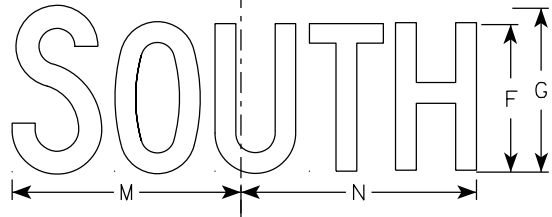
M3-2
MM3-2
MP3-2



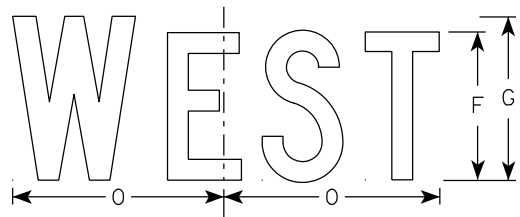
MB3-2
MK3-2
MN3-2



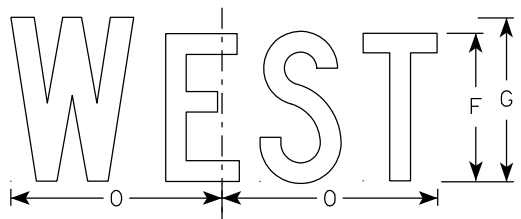
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

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

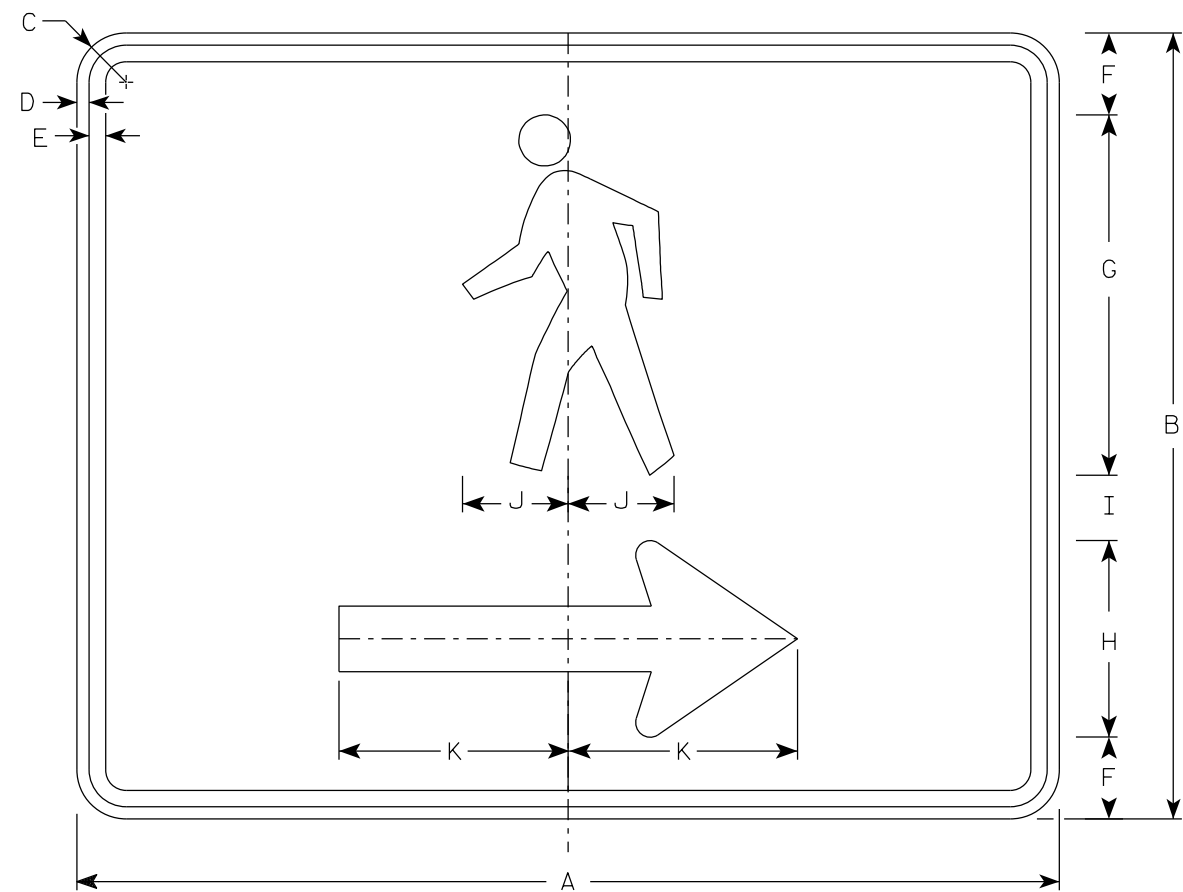
7

7

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 358	E
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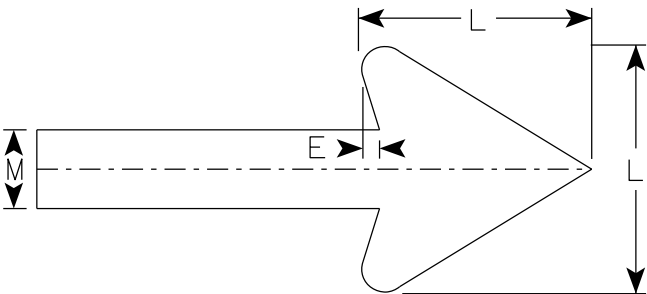
7



M4-60R

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M4-60L is the same as M4-60R except the arrow is reversed.



Arrow Detail

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

PROJECT NO:

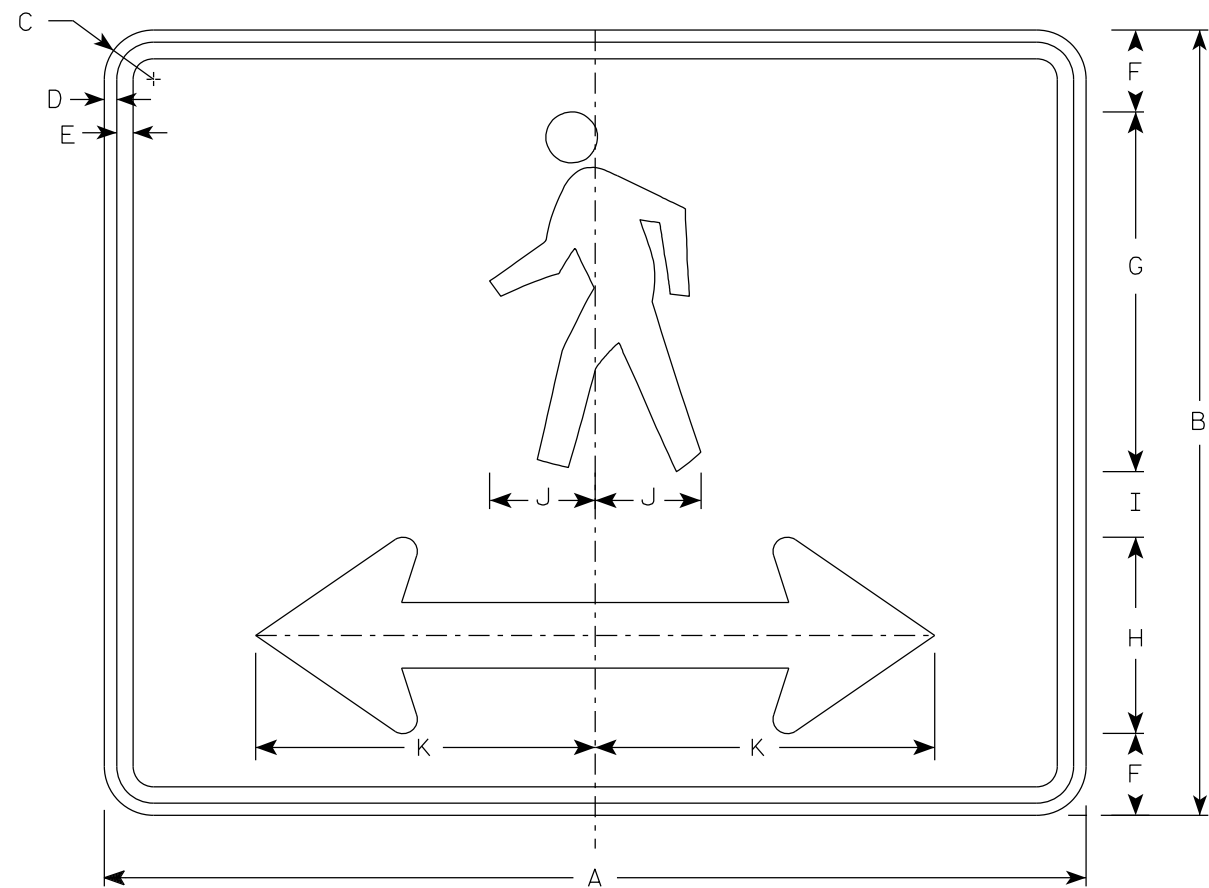
HWY:

COUNTY:

SHEET NO: 359

E

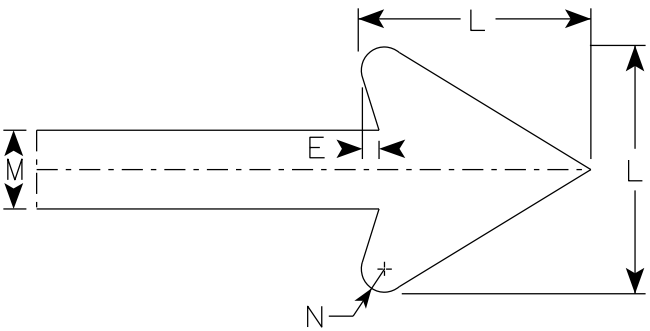
7



M4-60D

NOTES

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



Arrow Detail

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

STANDARD SIGN

M4-60D

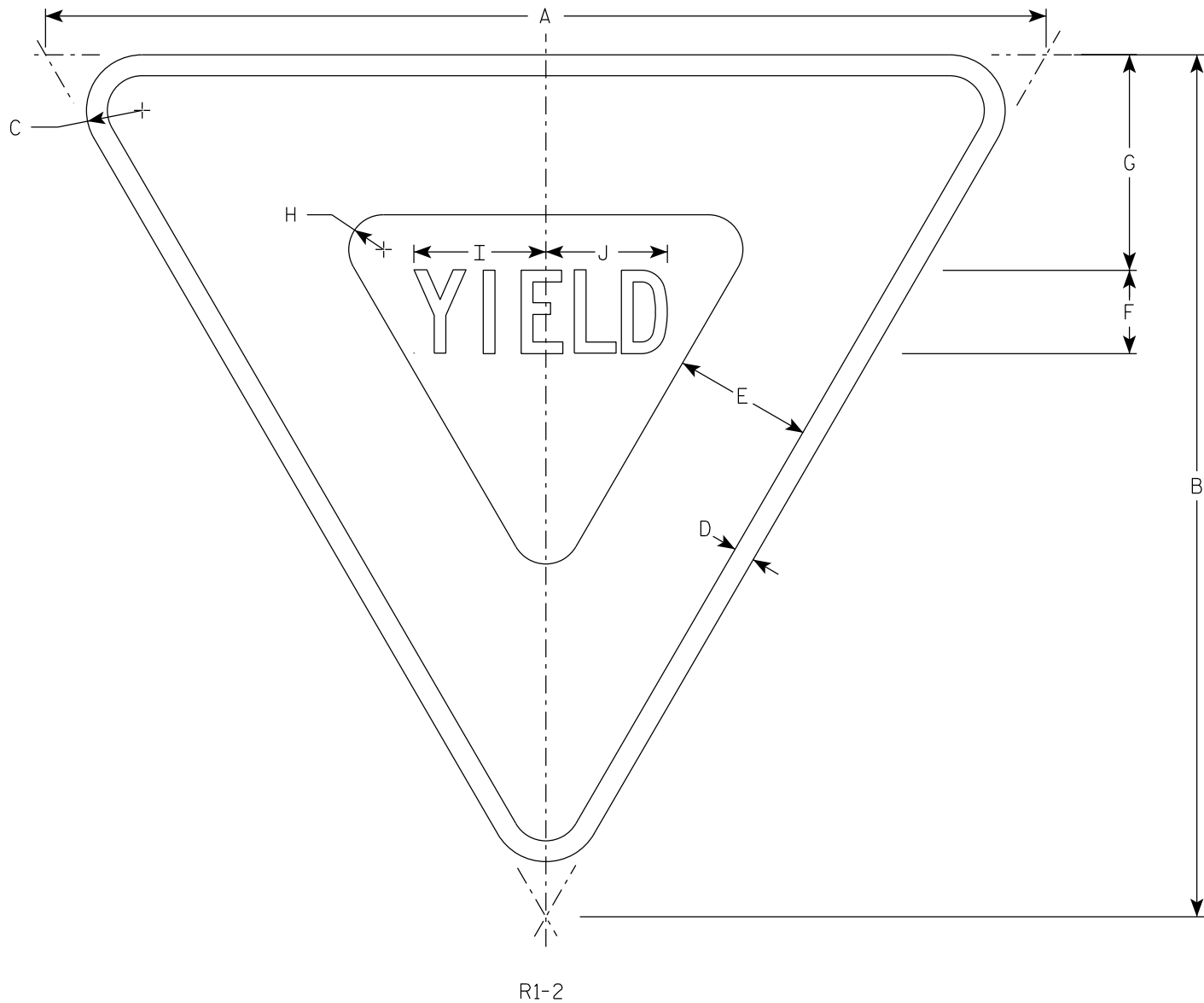
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*

For State Traffic Engineer

DATE 2/14/2023 PLATE NO. M4-60D.2

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - See note 4
- 3. Message Series - C
- 4. The border strip and word message are reflectorized red.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	2	5⁄8	4	2 1⁄2	6 3⁄8	7⁄8	4	3 5⁄8																	2.71
2S	36	31	2	3⁄4	5	3	7 3⁄4	1 1⁄4	4 3⁄4	4 3⁄8																	3.88
2M	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
3	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
4	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
5	60	52	3	1 1⁄2	8	5	13	2 1⁄2	7 7⁄8	7 1⁄4																	10.83
6																											
7	18	15 1⁄2	1	3⁄8	2 1⁄2	1 1⁄2	3 7⁄8	5⁄8	2 3⁄8	2 1⁄4																	0.97

PROJECT NO:

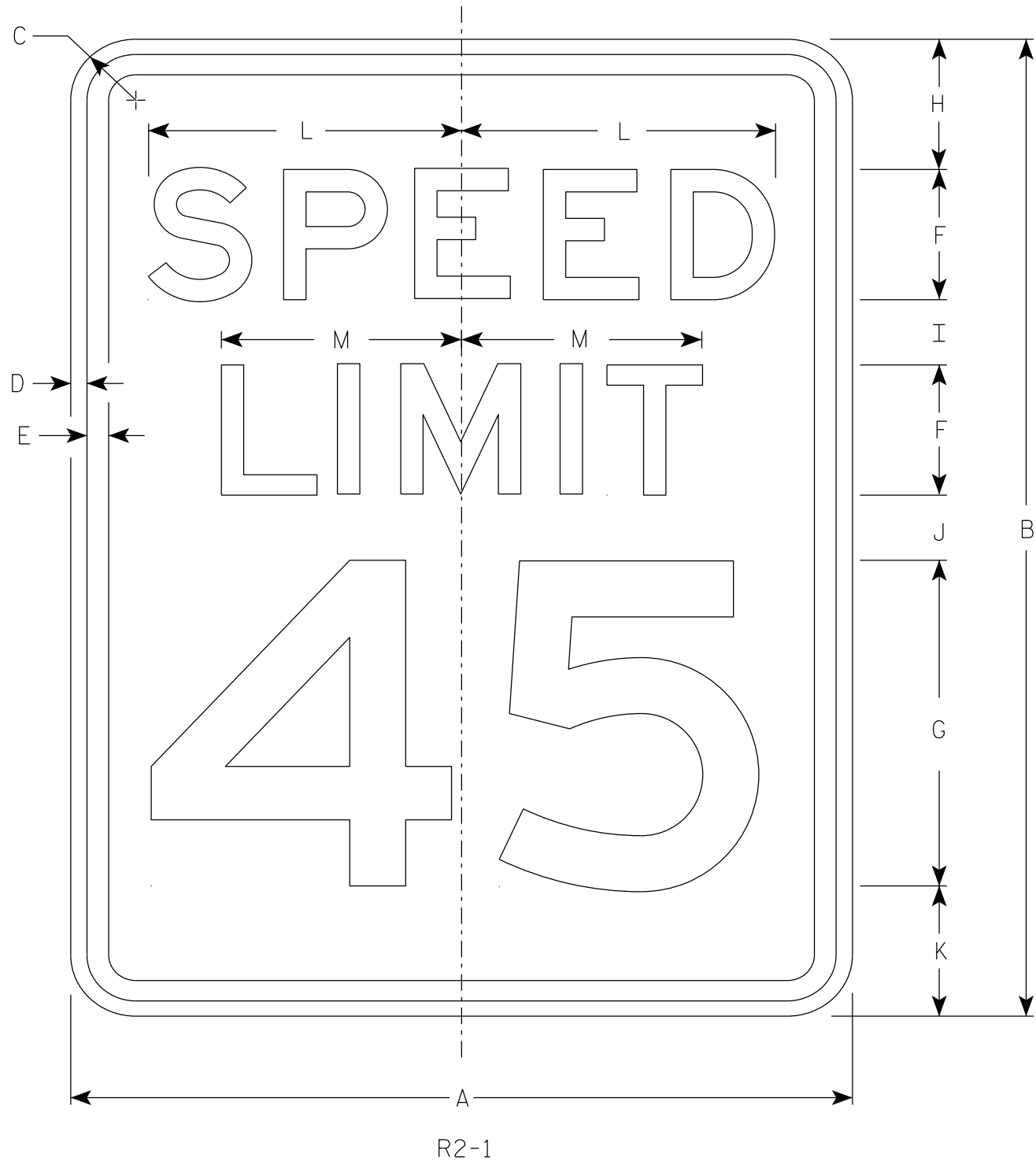
HWY:

COUNTY:

SHEET NO: 361

E

7



NOTES

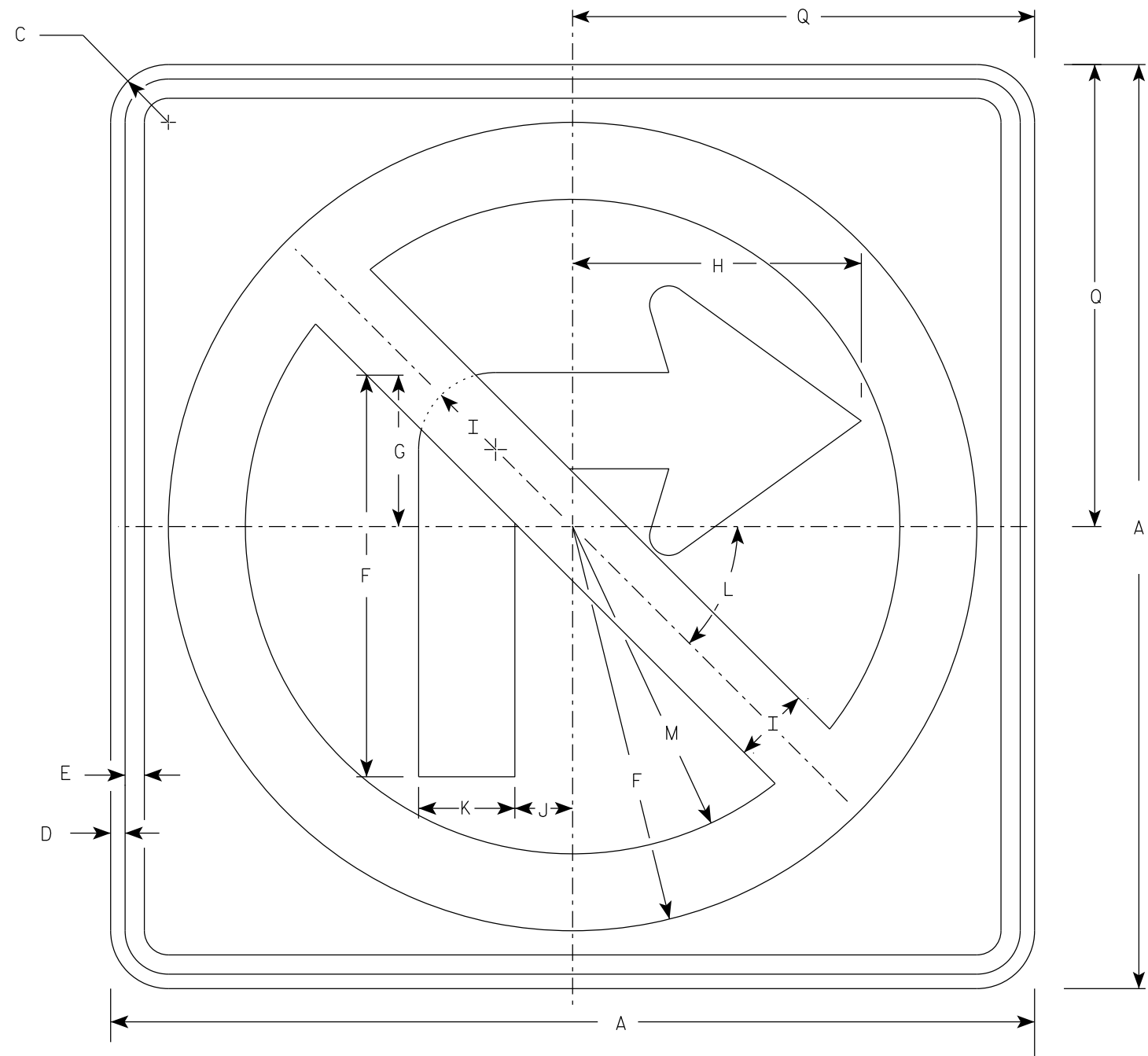
1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/2	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	3	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN R2-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE <u>2/1/23</u>	PLATE NO. <u>R2-1.14</u>

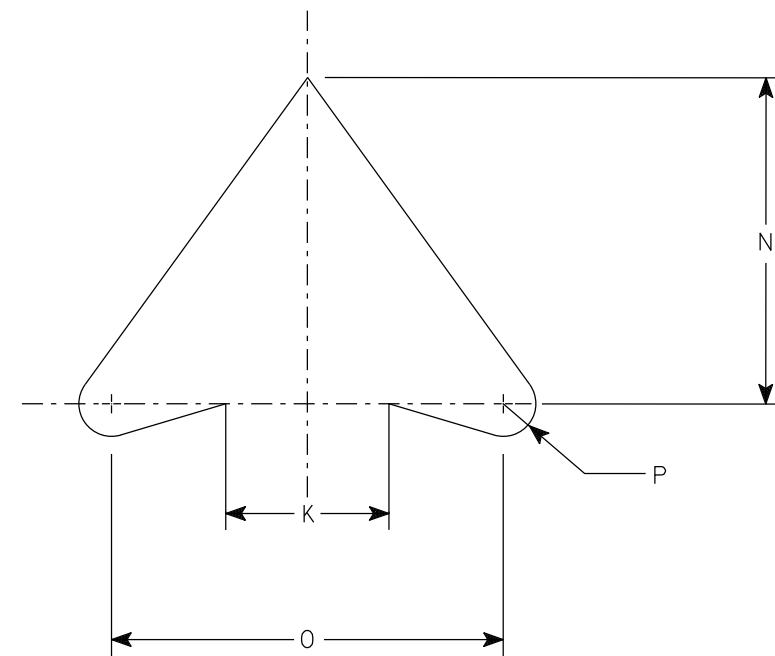
7



R3-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - See note 3
3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



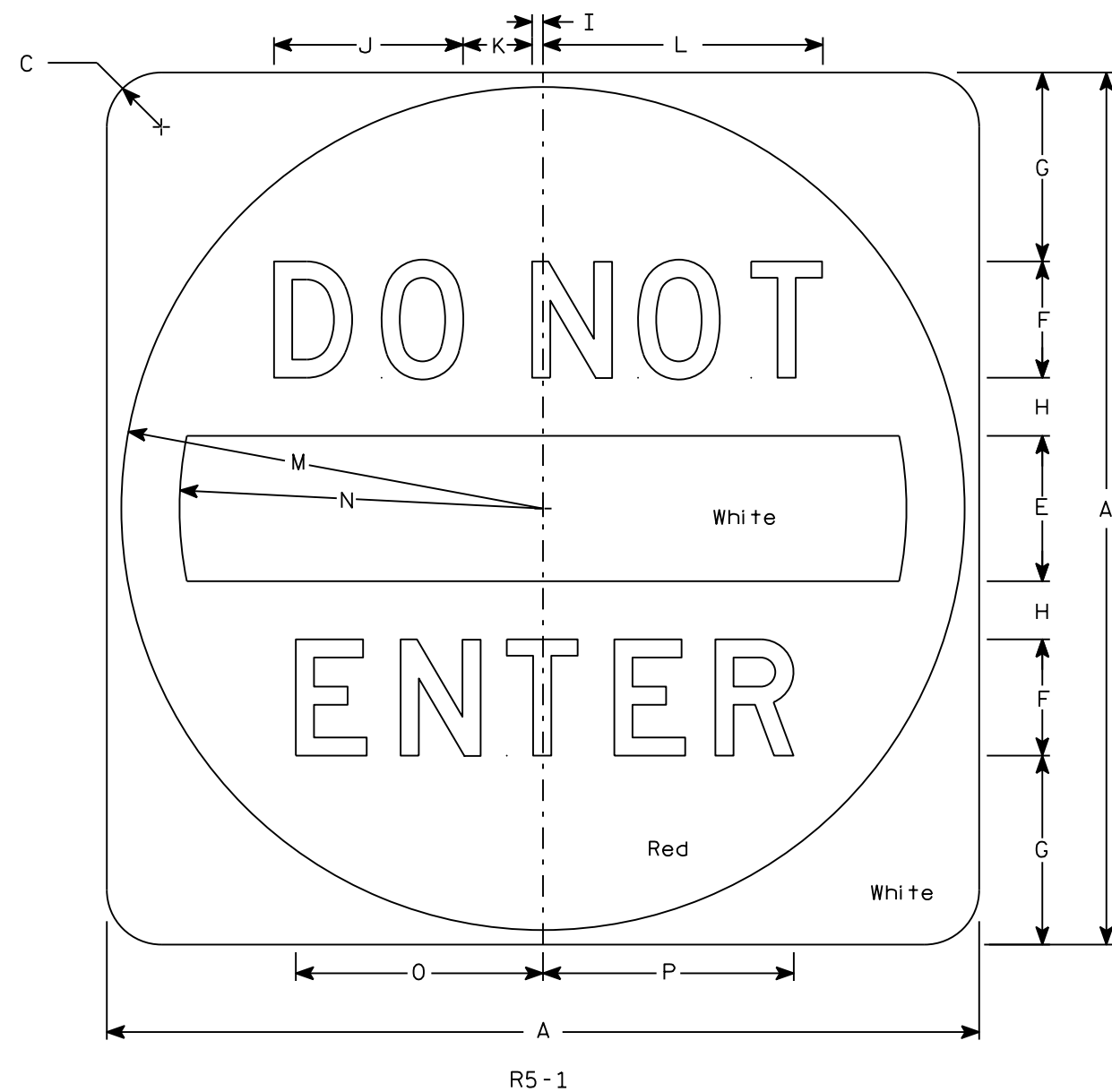
ARROW DETAIL

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 363												E
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7

7



NOTES

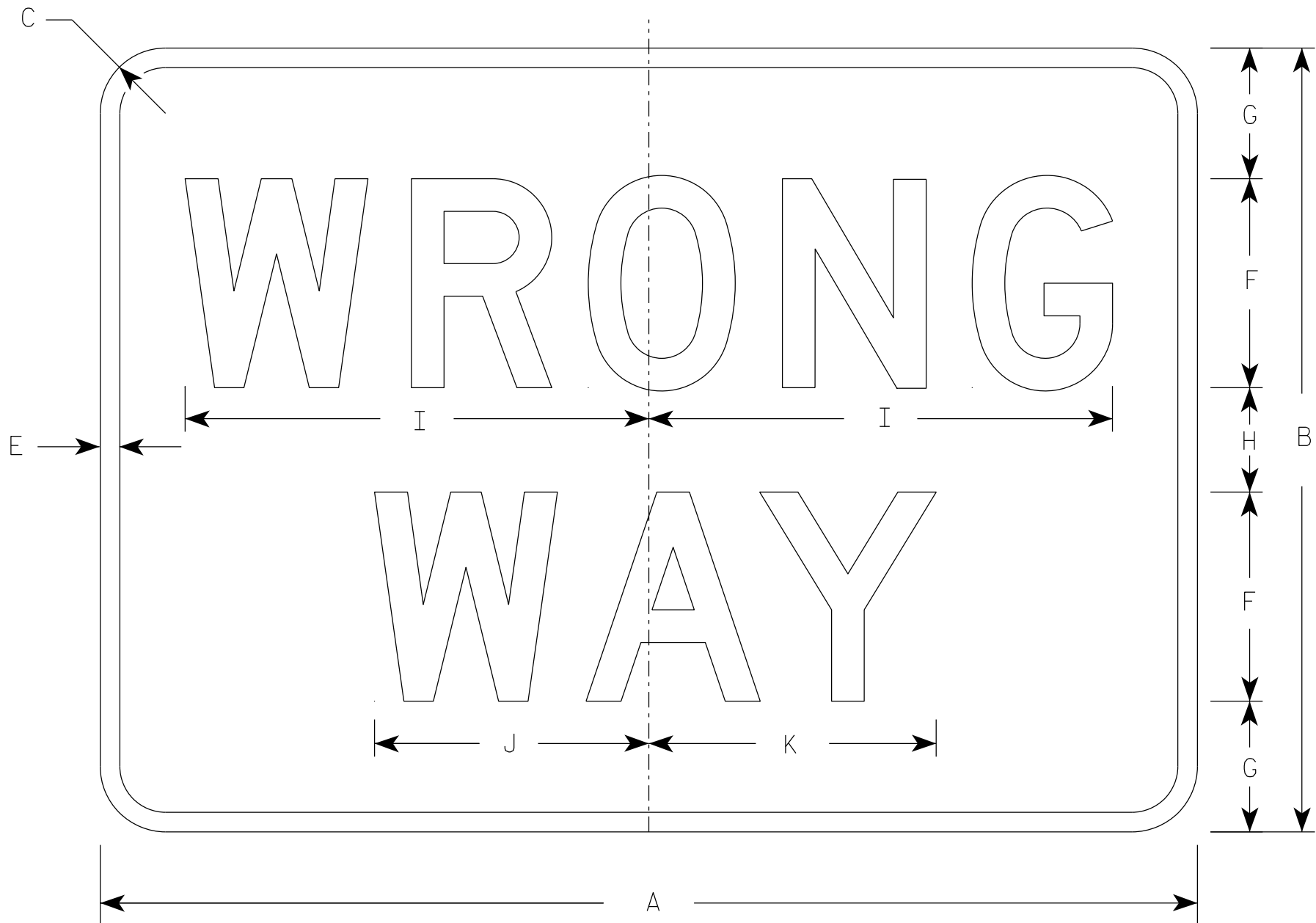
1. Sign is Type II - Type H Reflective
2. Color:
Background - See detail
Message - White
3. Message Series - D

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7⁄8		5	4	6 1⁄2	2	3⁄8	6 1⁄2	2 3⁄8	9 5⁄8	14 1⁄2	12 1⁄2	8 1⁄2	8 5⁄8											6.25
2M	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
3	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
4	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
5	48		3		8	6	11	3	5⁄8	9 3⁄4	3 5⁄8	14 1⁄2	23 1⁄2	20	12 3⁄4	12 7⁄8											16.0

STANDARD SIGN R5-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/15/18	PLATE NO. R5-1.16

7



R5-1A

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - Red
 - Message - White
- 3. Message Series - D

7

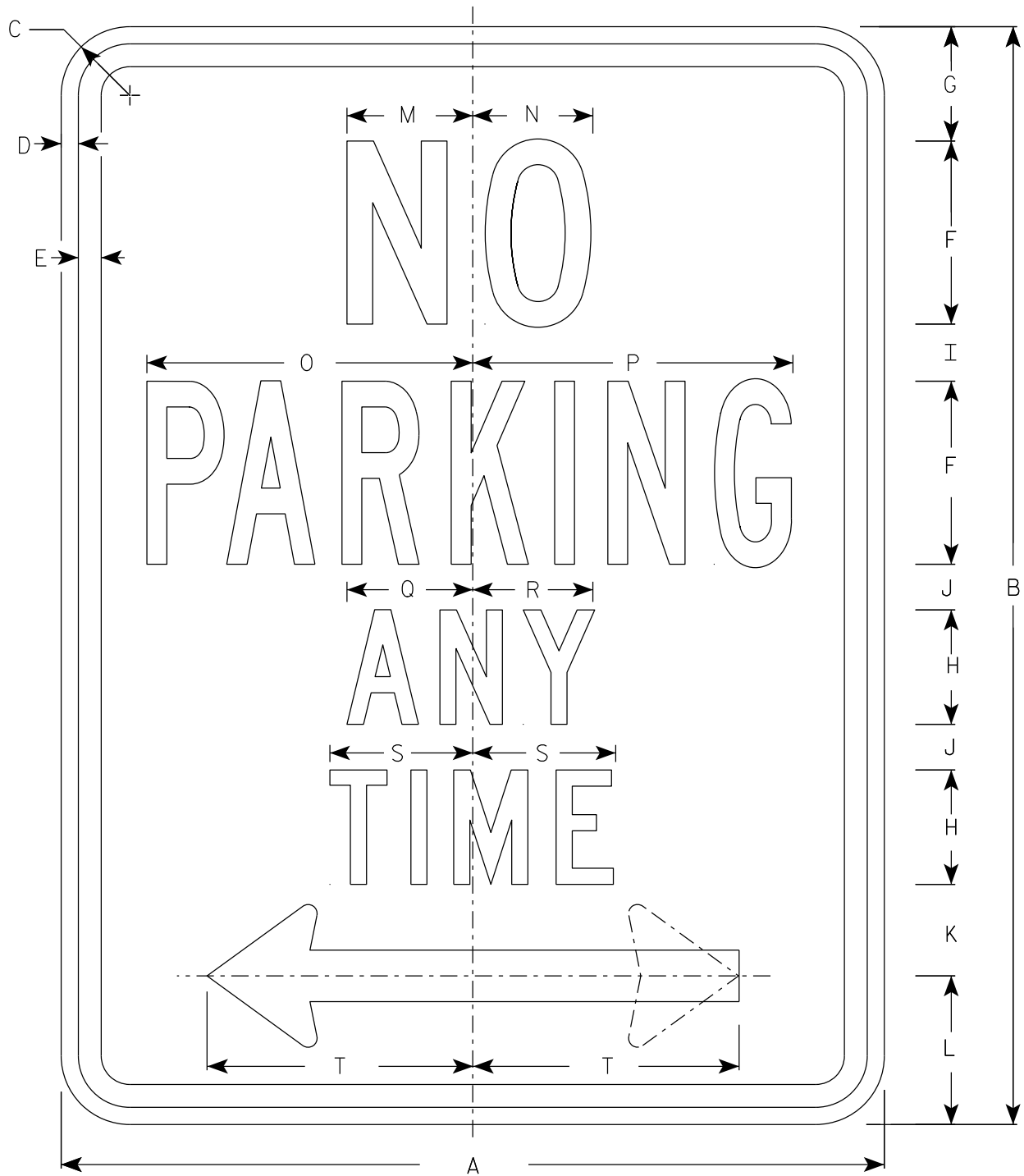
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	1 1/2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75

STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/17/23 PLATE NO. R5-1A.3

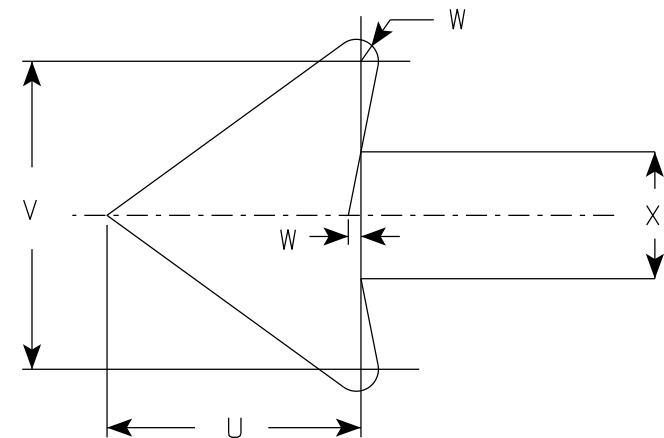


R7-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Red
3. Message Series - See Note 4
4. Lines 1, 3 and 4 are series C, line 2 is series B.
5. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)

ARROW DETAIL



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/2	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/2	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/2	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/2	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

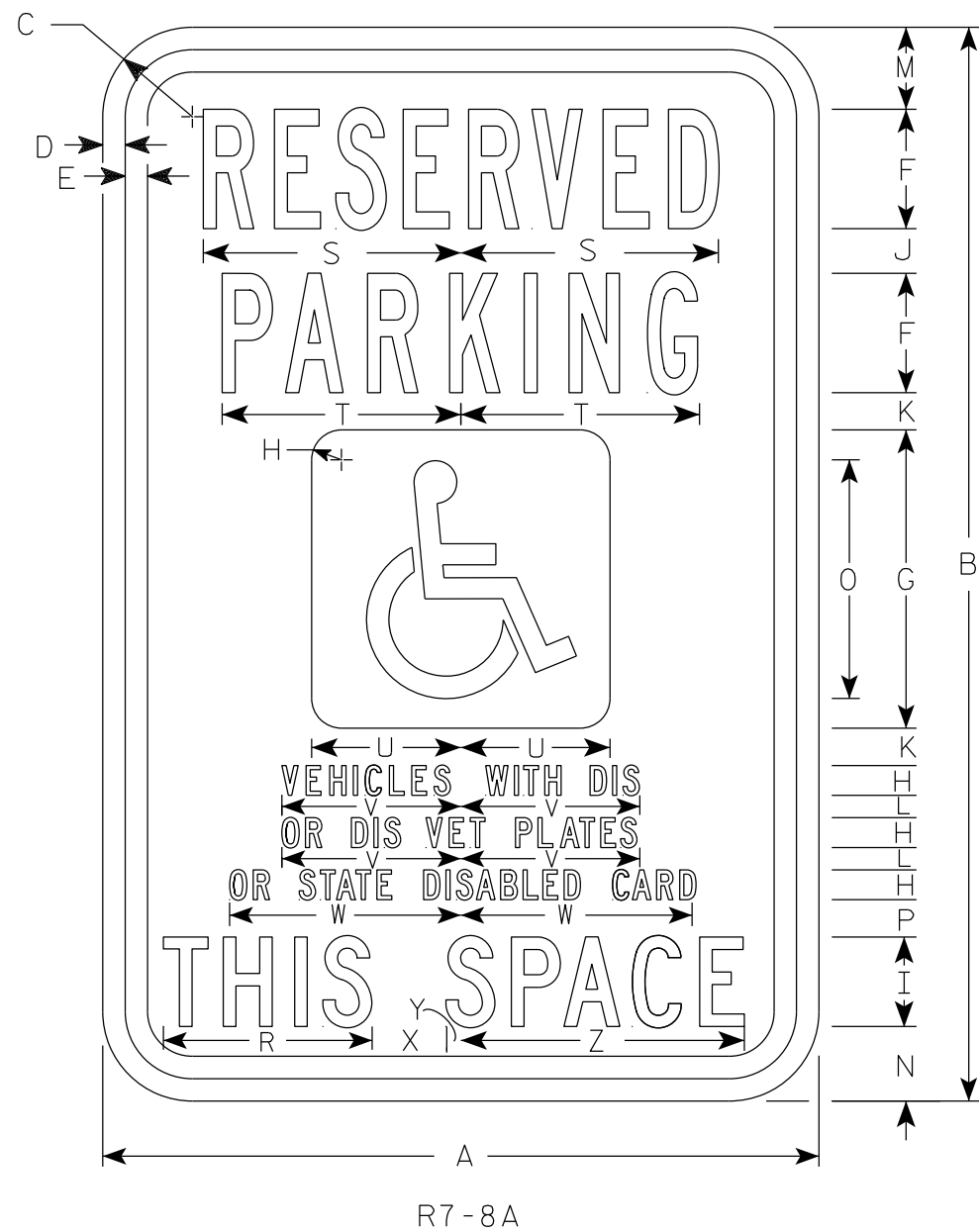
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/26/23 PLATE NO. R7-1.11

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 366	E
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R7-8A

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - Sign is white Type H Reflective; paraplegic background is blue.
 - Message - Legend and border are green; paraplegic symbol is white
- 3. Message Series - Lines 1 & 2 are Series B
Lines 3, 4, 5 & 6 are Series C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	18	1 1/2	3/8	3/8	2	5	1/2	1 1/2	3/4	5/8	3/8	1 3/8	1 1/4	4	5/8		3 1/2	4 3/8	4	2 1/2	3	3 7/8	1 1/4	1/4	4 3/4	1.5
2M	18	24	1 1/2	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
3	18	24	1 1/2	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
4																											
5																											

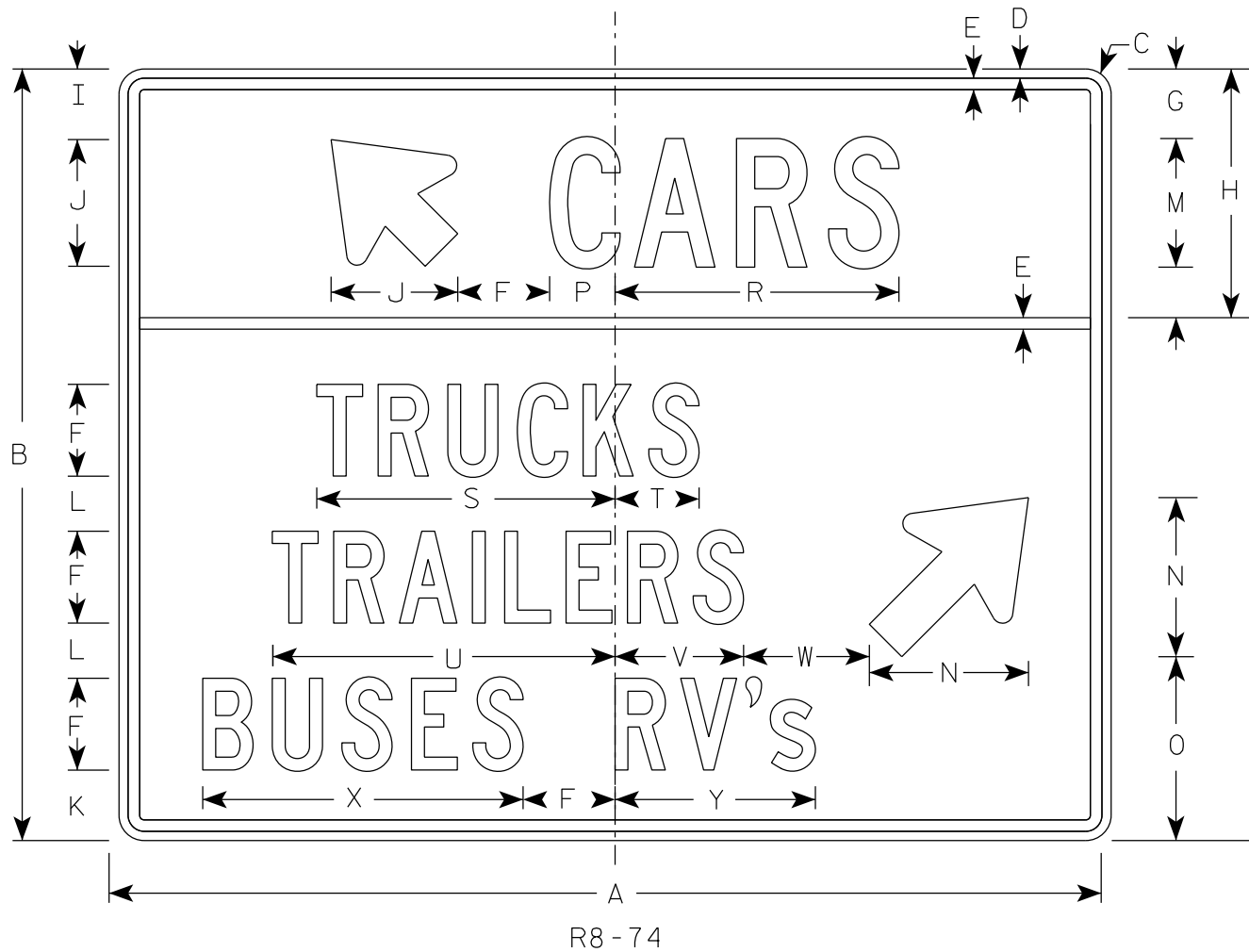
STANDARD SIGN

R7-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

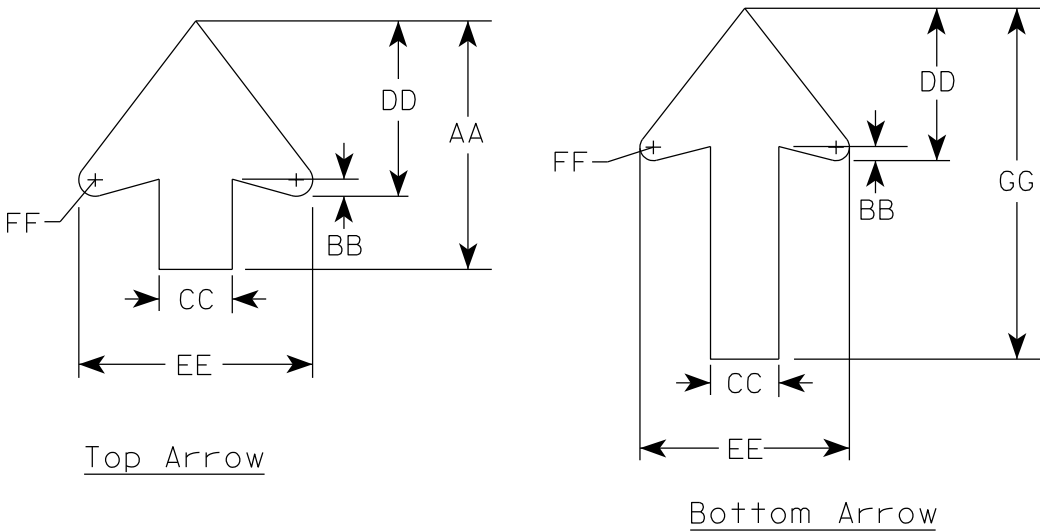
DATE 11/9/23 PLATE NO. R7-8A.7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C

Arrow Details



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1																											
2S	54	42	1 7⁄8	1⁄2	5⁄8	5	3 3⁄4	13 1⁄2	3 7⁄8	7	3 7⁄8	3	7	8 5⁄8	10	3 1⁄2		15 1⁄2	16 1⁄4	4 5⁄8	18 5⁄8	7	6 7⁄8	7 1⁄2	10 7⁄8		15.75
2M	54	42	1 7⁄8	1⁄2	5⁄8	5	3 3⁄4	13 1⁄2	3 7⁄8	7	3 7⁄8	3	7	8 5⁄8	10	3 1⁄2		15 1⁄2	16 1⁄4	4 5⁄8	18 5⁄8	7	6 7⁄8	7 1⁄2	10 7⁄8		15.75
3	72	54	3	3⁄4	1	7	4 3⁄8	16 3⁄4	4 3⁄8	9 7⁄8	4 3⁄4	3 5⁄8	9	14	11 7⁄8	4 1⁄2		20 1⁄8	22 1⁄2	6 5⁄8	26	10	6 7⁄8	24 3⁄4	17 7⁄8		27.00
4	72	54	3	3⁄4	1	7	4 3⁄8	16 3⁄4	4 3⁄8	9 7⁄8	4 3⁄4	3 5⁄8	9	14	11 7⁄8	4 1⁄2		20 1⁄8	22 1⁄2	6 5⁄8	26	10	6 7⁄8	24 3⁄4	17 7⁄8		27.00
5	72	54	3	3⁄4	1	7	4 3⁄8	16 3⁄4	4 3⁄8	9 7⁄8	4 3⁄4	3 5⁄8	9	14	11 7⁄8	4 1⁄2		20 1⁄8	22 1⁄2	6 5⁄8	26	10	6 7⁄8	24 3⁄4	17 7⁄8		27.00

SIZE	AA	BB	CC	DD	EE	FF	GG
1							
2S	8 1/2	3/8	2 5/8	5 1/2	8	3/8	11
2M	8 1/2	3/8	2 5/8	5 1/2	8	3/8	11
3	12	1/2	3 1/2	7 3/8	10 3/4	1/2	18
4	12	1/2	3 1/2	7 3/8	10 3/4	1/2	18
5	12	1/2	3 1/2	7 3/8	10 3/4	1/2	18

STANDARD SIGN
R8-74

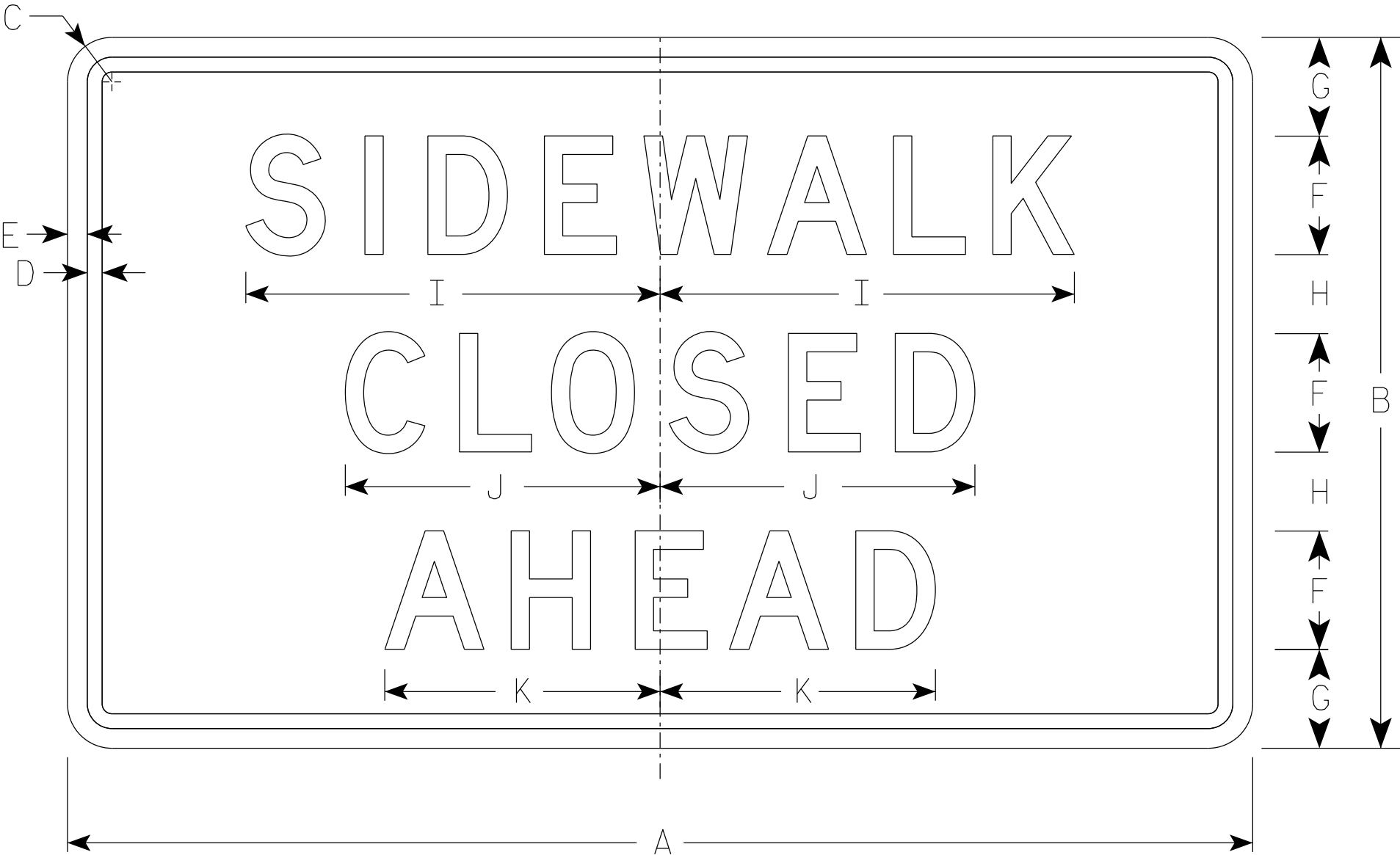
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/12/24 PLATE NO. R8-74.10

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - D



R9-9A

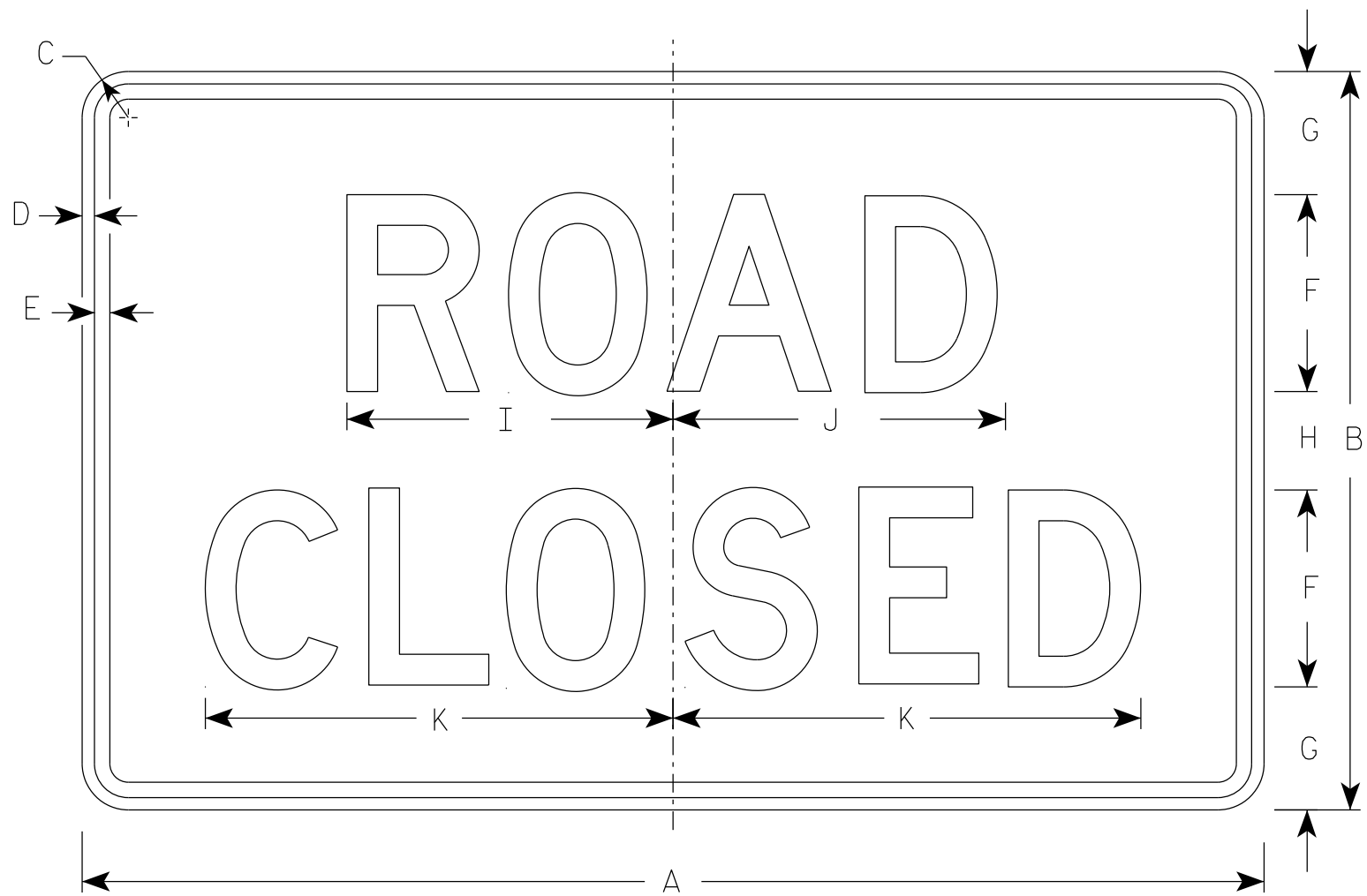
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	18	1 1/2	3/8	1/2	3	2 1/2	2	10 1/2	8	7																3.75
2M	30	18	1 1/2	3/8	1/2	3	2 1/2	2	10 1/2	8	7																3.75
3																											
4																											
5																											

STANDARD SIGN
R9-9A

WISCONSIN DEPT OF TRANSPORTATION

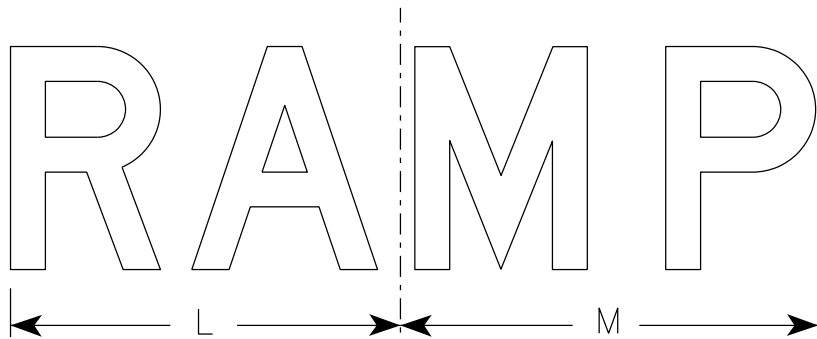
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/24/24 PLATE NO. R9-9A.2

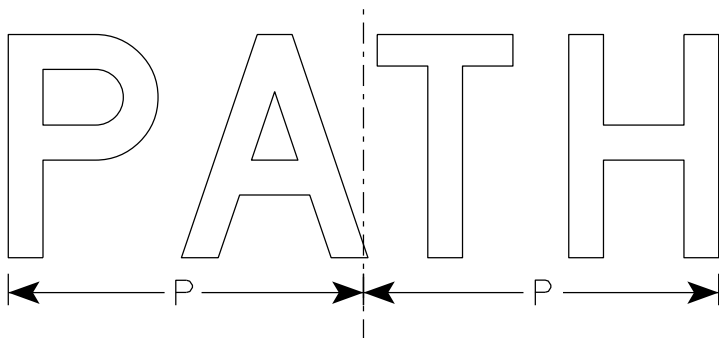


R11-2

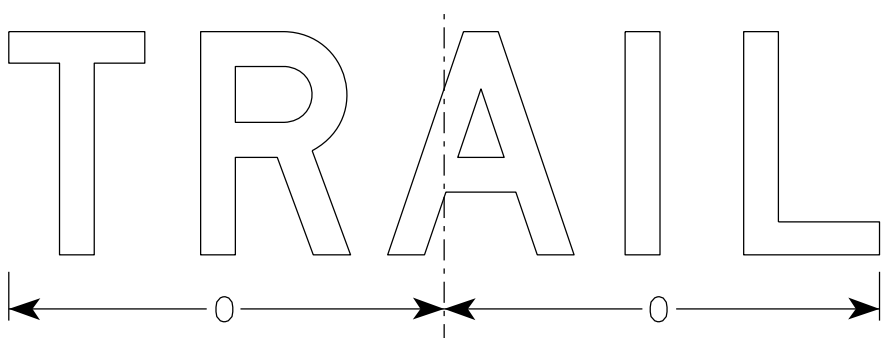
- NOTES
1. Sign is Type II - Type H Reflective
 2. Color:
Background - White
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 5. Modify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



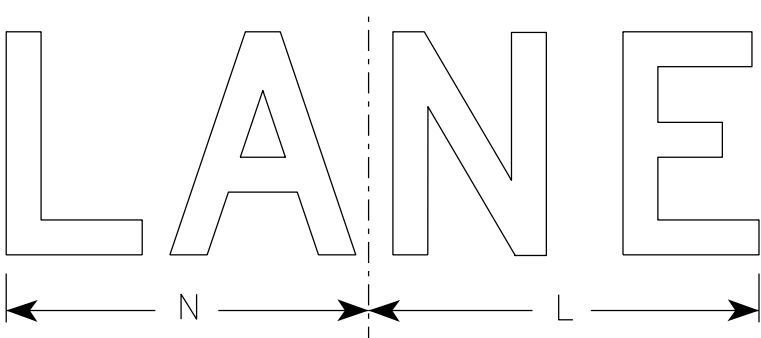
R11-2R



R11-2C



R11-2T

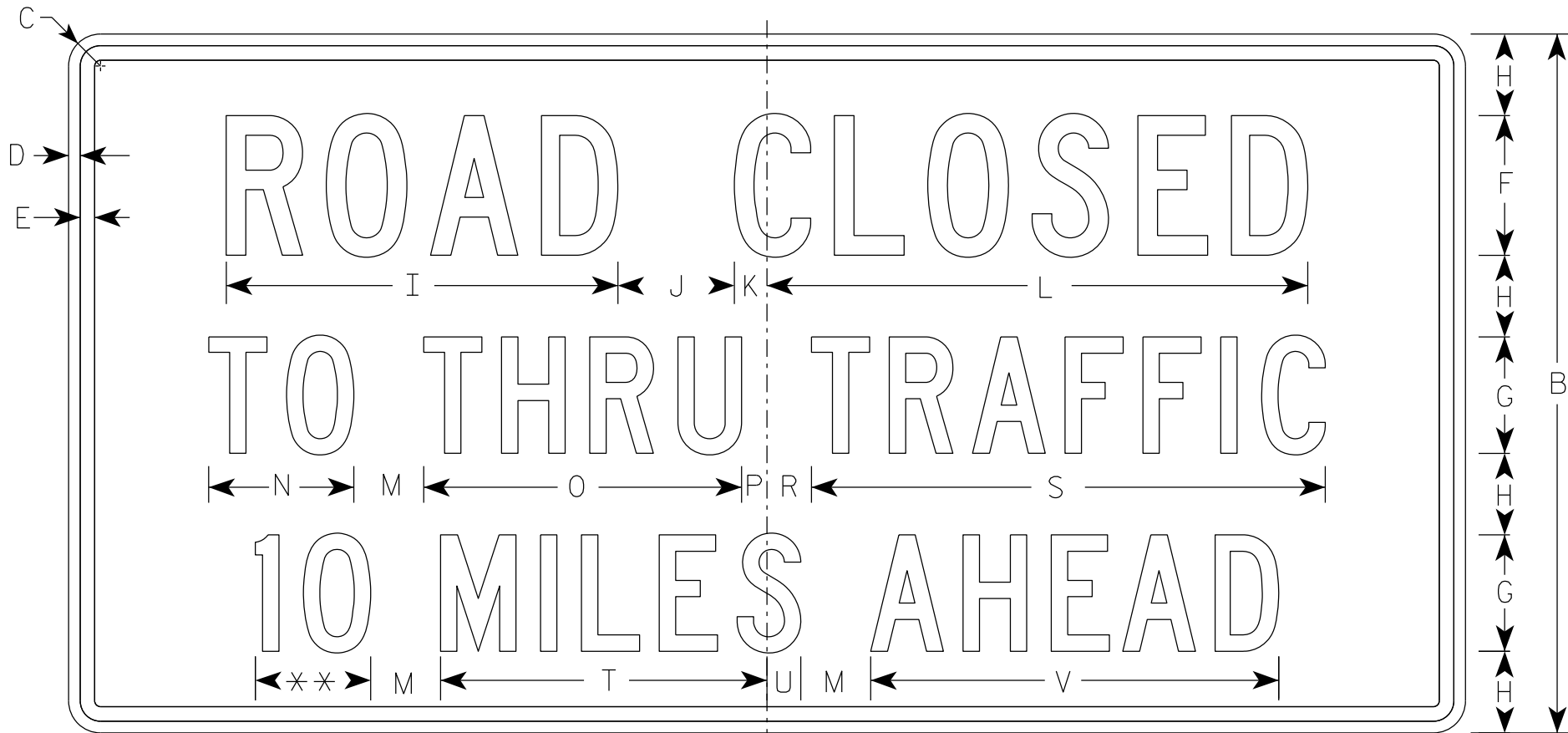


R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0
2M	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0
3	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0
4	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0
5	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0

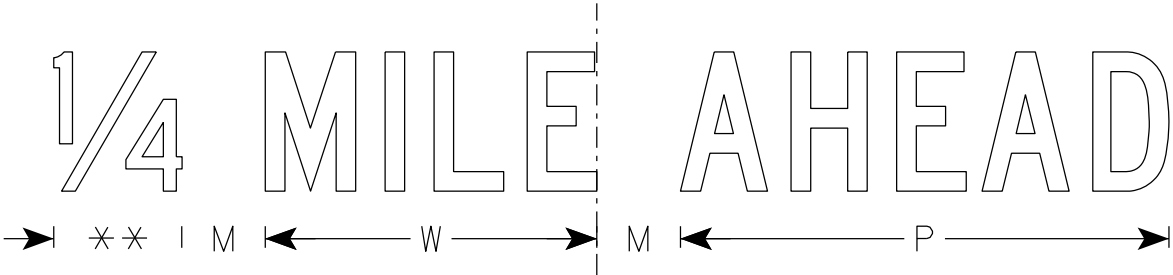
STANDARD SIGN R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 2/3/26	PLATE NO. R11-2.13

7



R11-3

** See Note 5



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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 371

E

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

Background - White

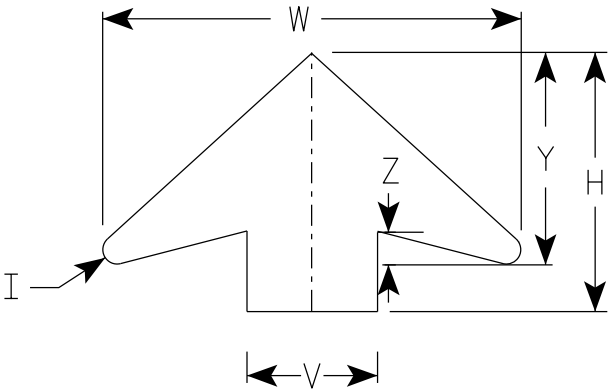
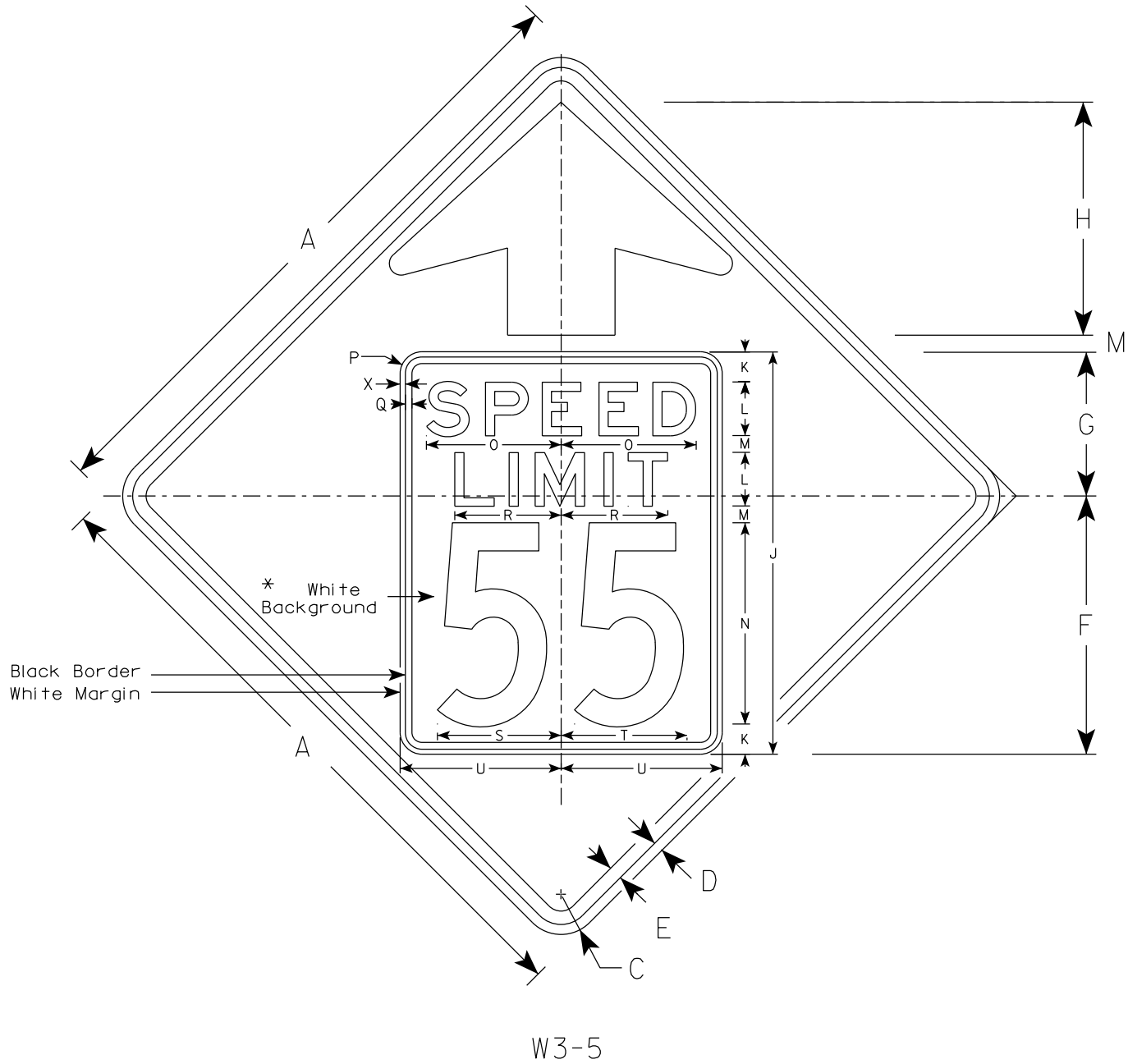
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing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

7

NOTES

- 1. Sign is Type II - See Note 2 for Sheeting Type
- 2. Color: *
Background - Yellow* (Type F Reflective)
Message - Black
- 3. Message Series - C for numbers Series E for wording
- 4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background with black message (Type SH Reflective)



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36		2 1/4	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2M	36		2 1/4	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
3	36		2 1/4	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
4	48		3	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		3	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

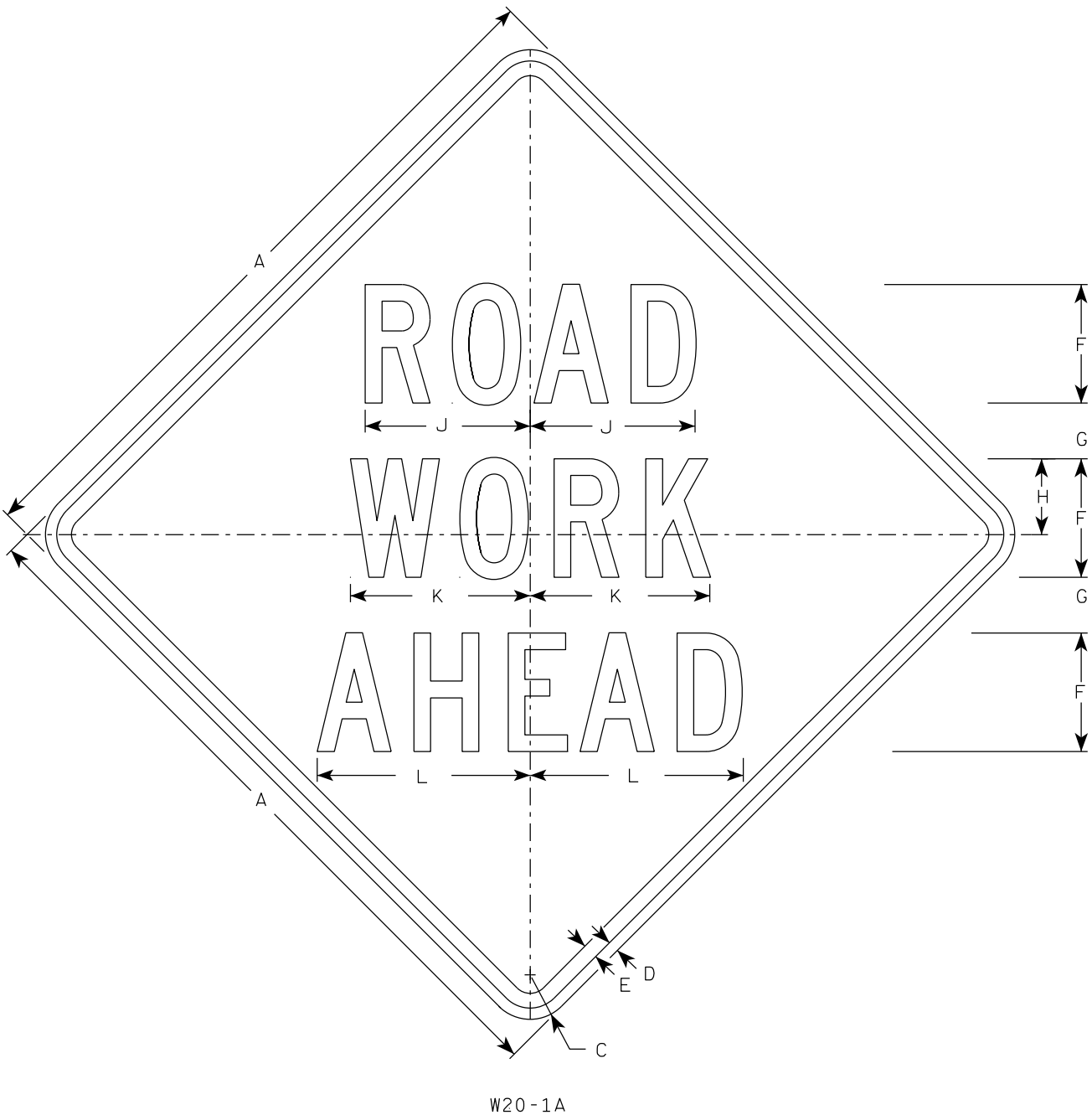
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/30/2023 PLATE NO. W3-5.7

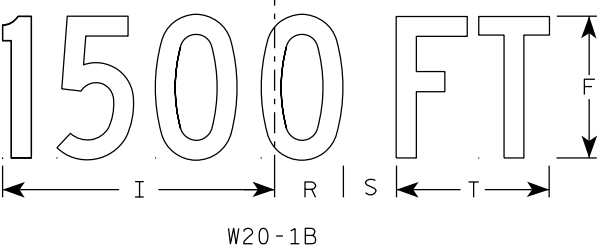
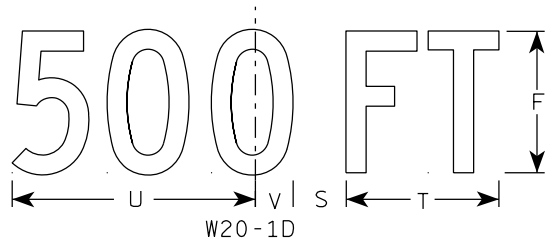
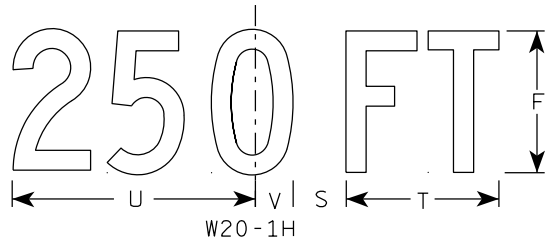
PROJECT NO:

SHEET NO: 372

E

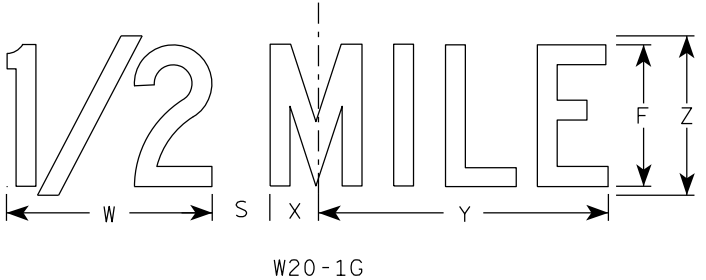


W20-1A

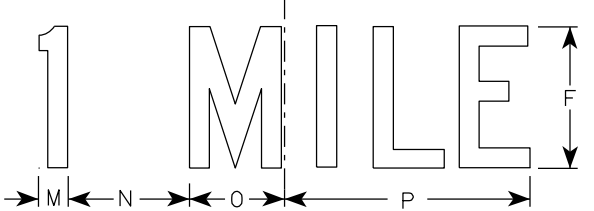


W20-1B

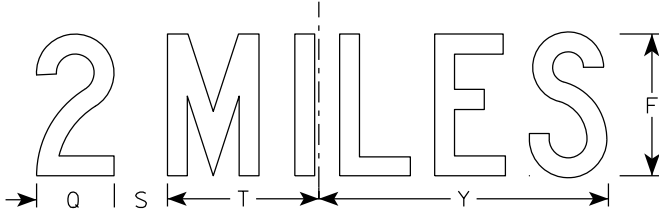
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G

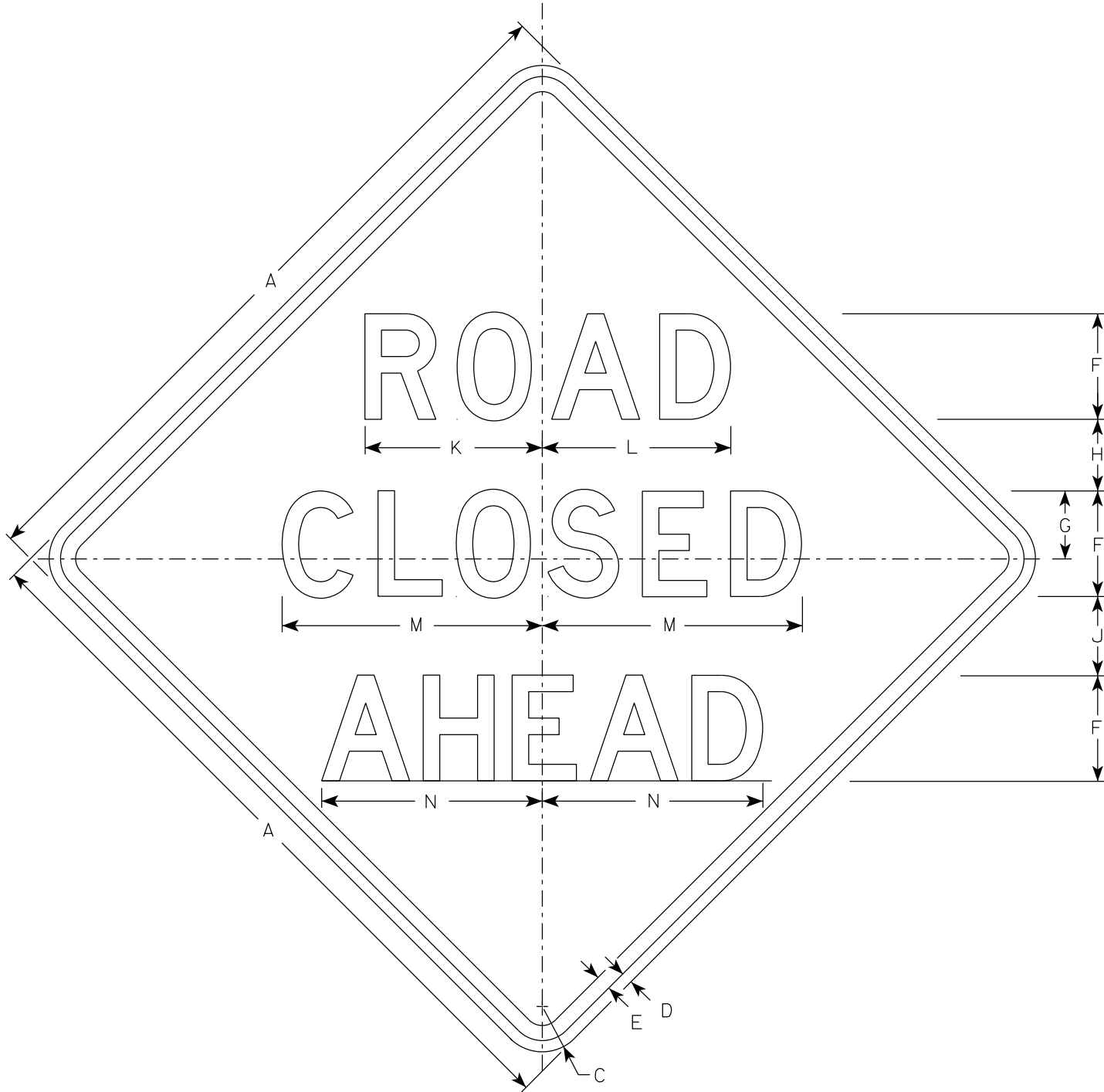


W20-1F

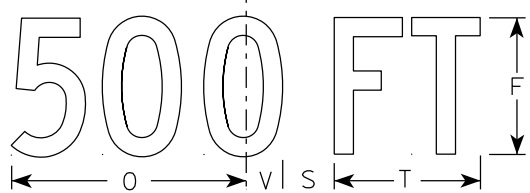


W20-1E

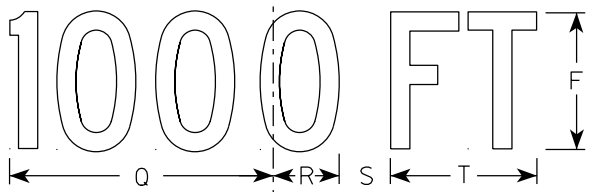
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13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



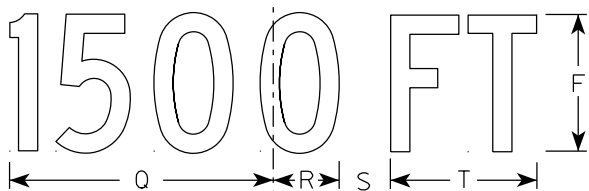
W20-3A



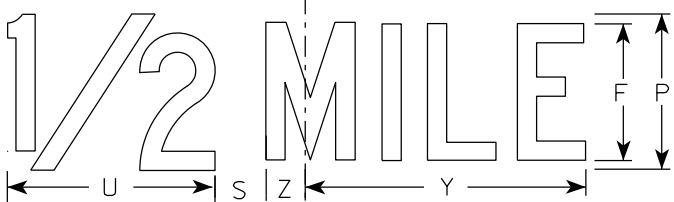
W20-3D



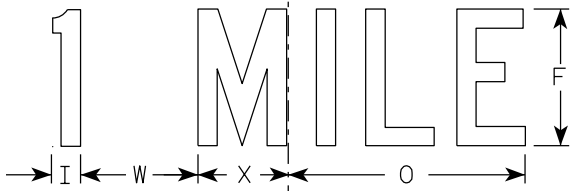
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

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

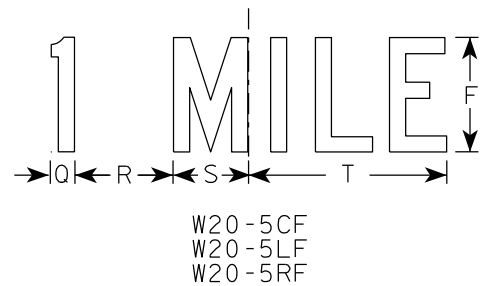
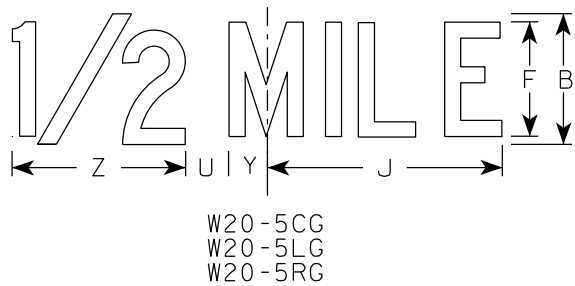
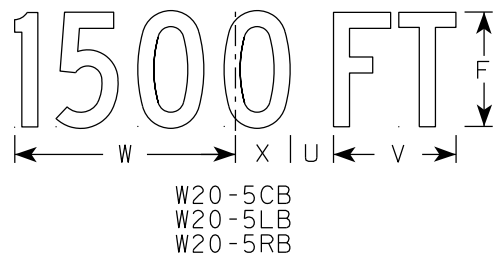
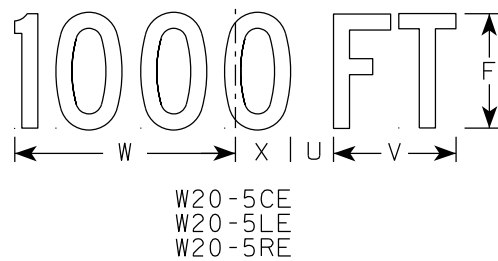
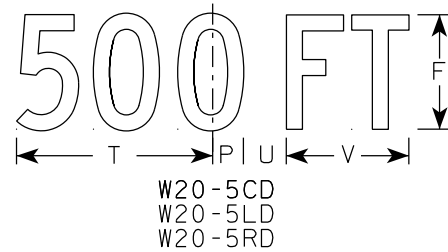
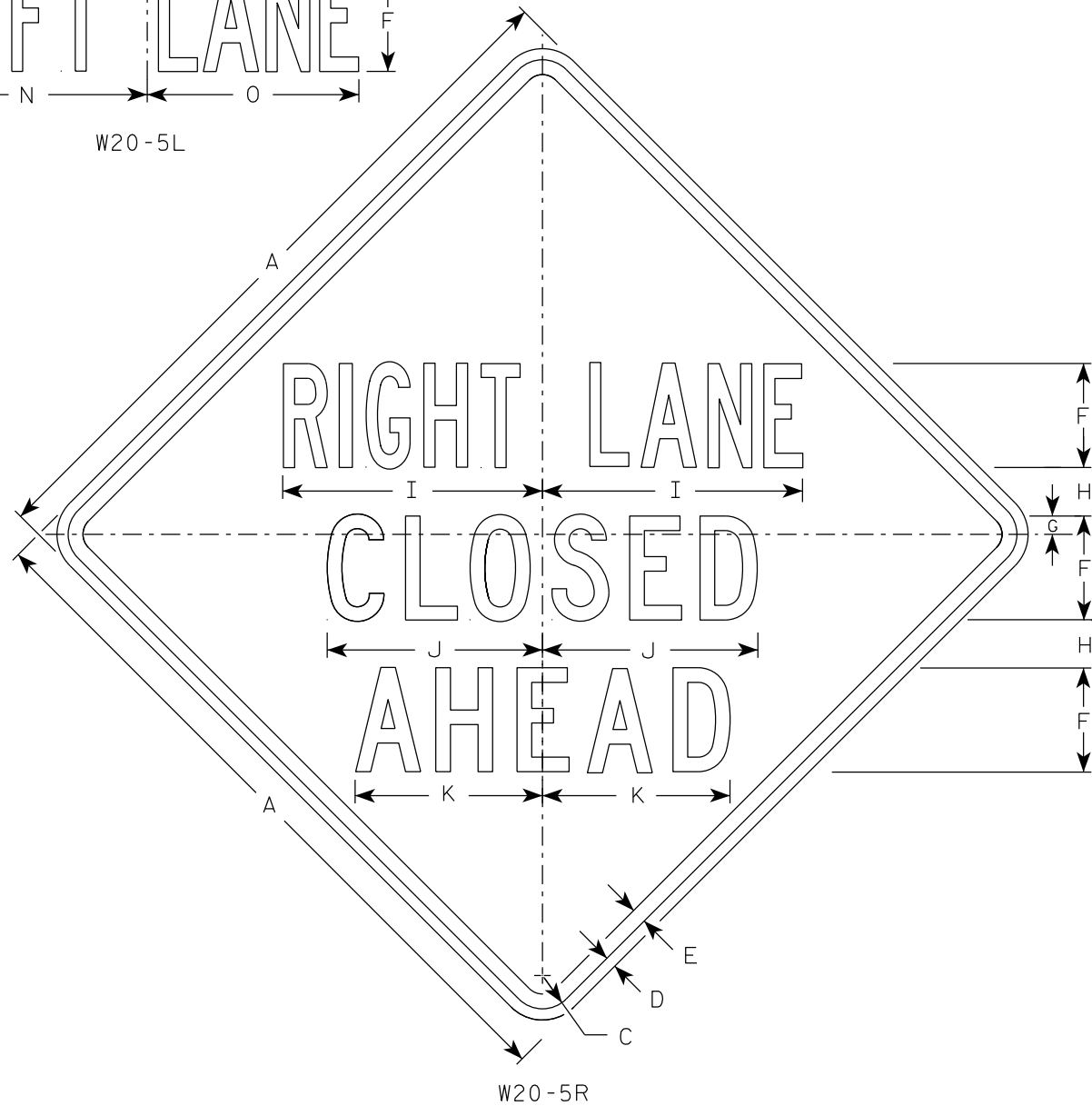
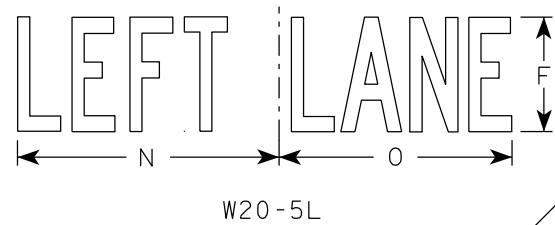
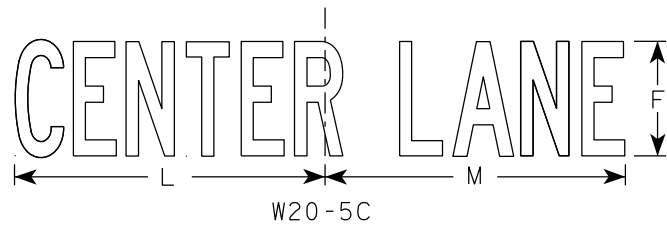
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-3.8



NOTES

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

7

7

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

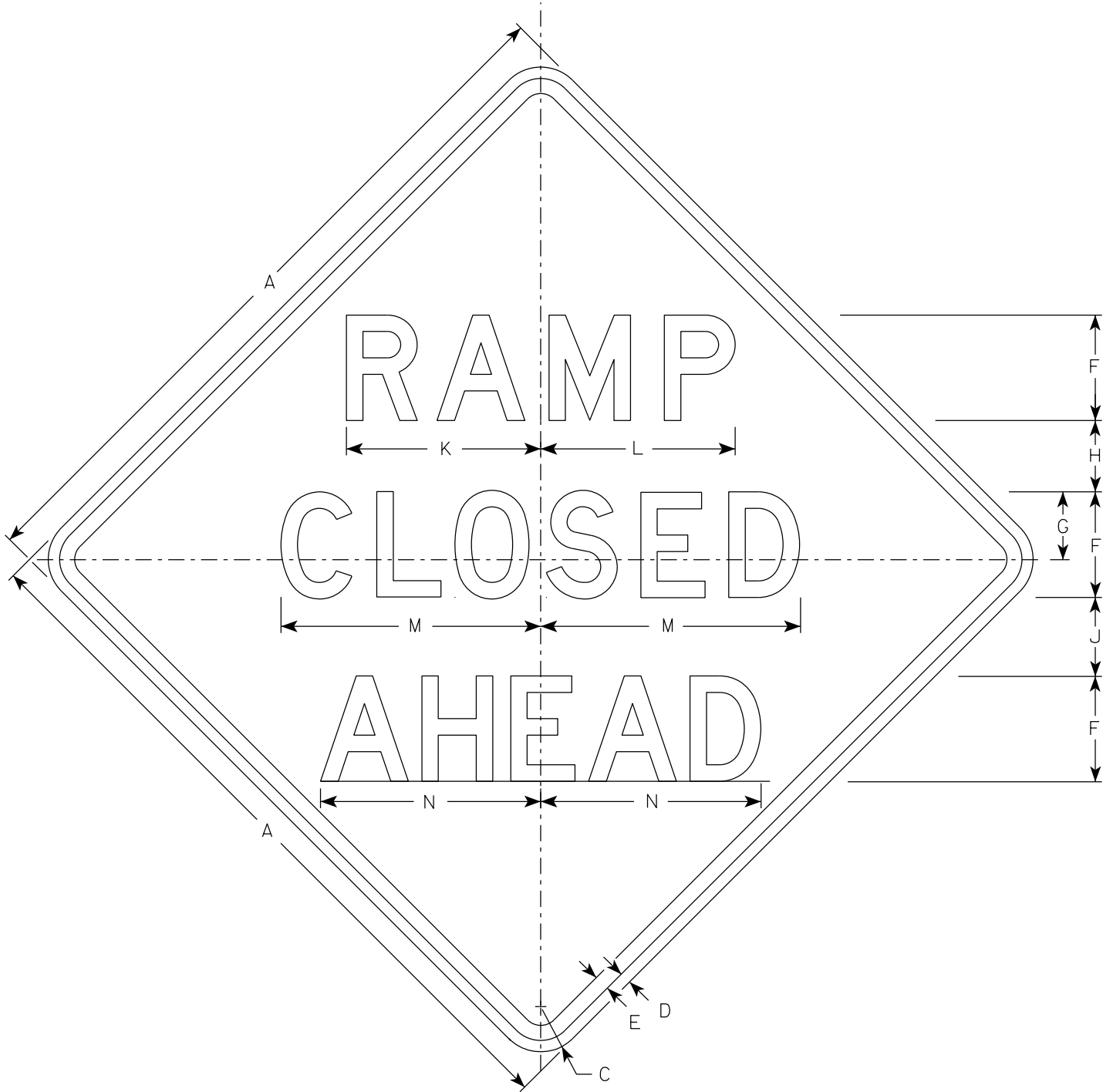
PROJECT NO:

HWY:

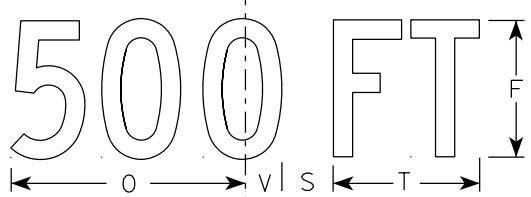
COUNTY:

SHEET NO: 375

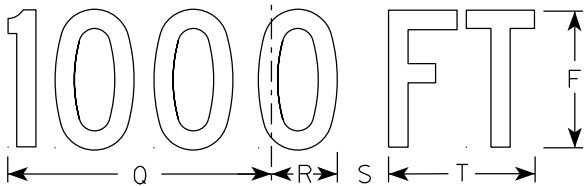
E



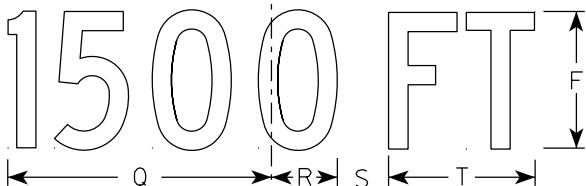
W20-53A



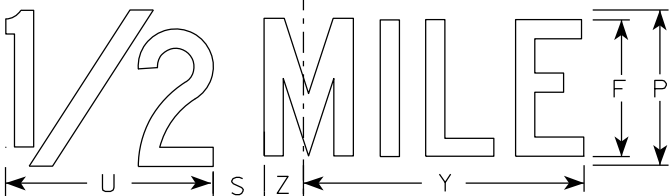
W20-53D



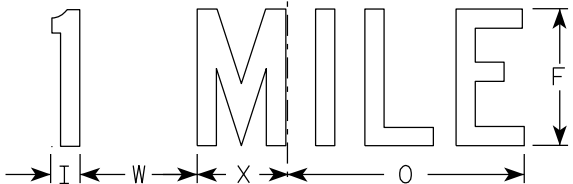
W20-53C



W20-53B



W20-53G



W20-53F

NOTES

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

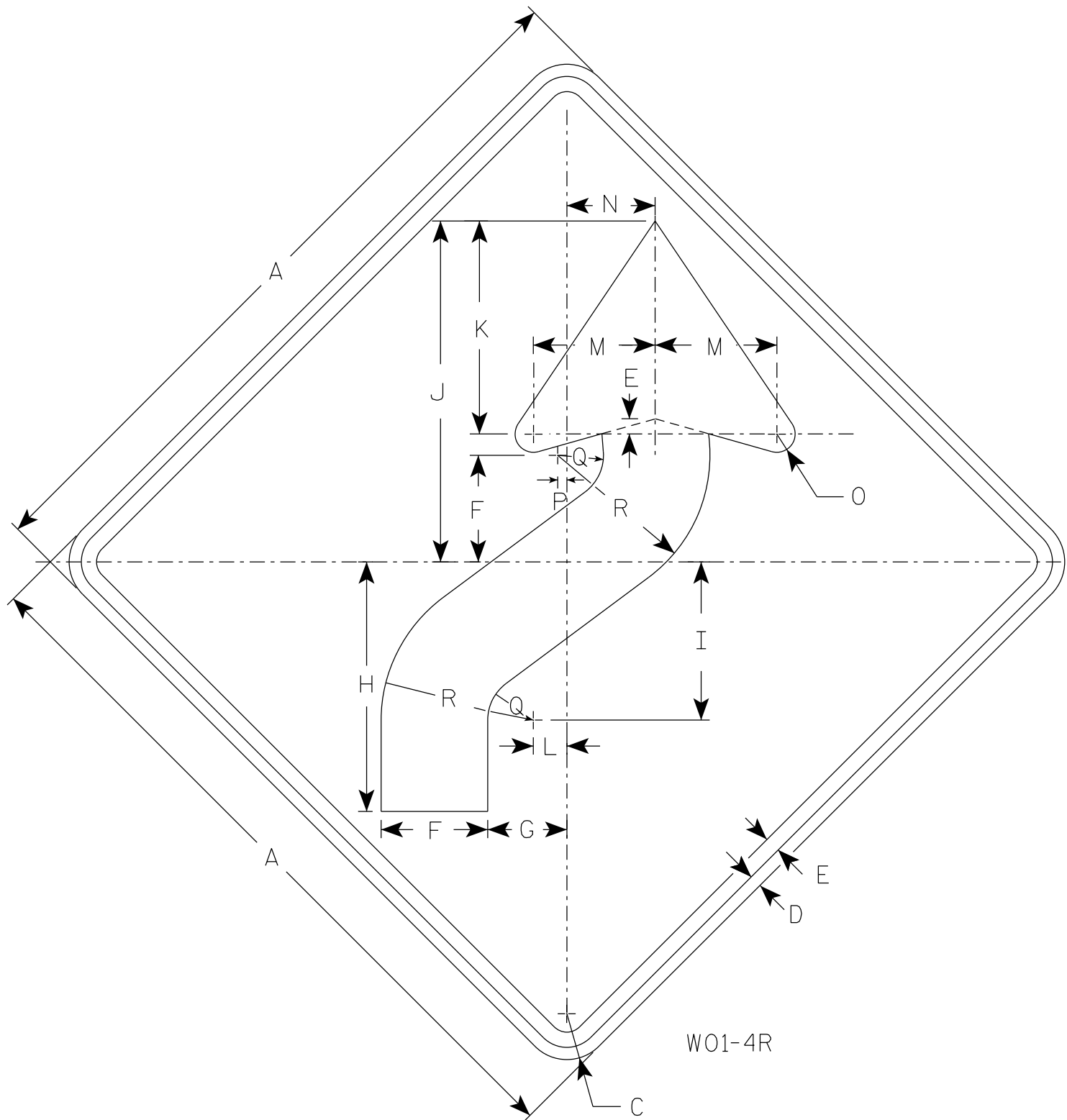
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	9 1/4	9 1/4	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10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

STANDARD SIGN
W20-53A,B,C,D,F,G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-53.2



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

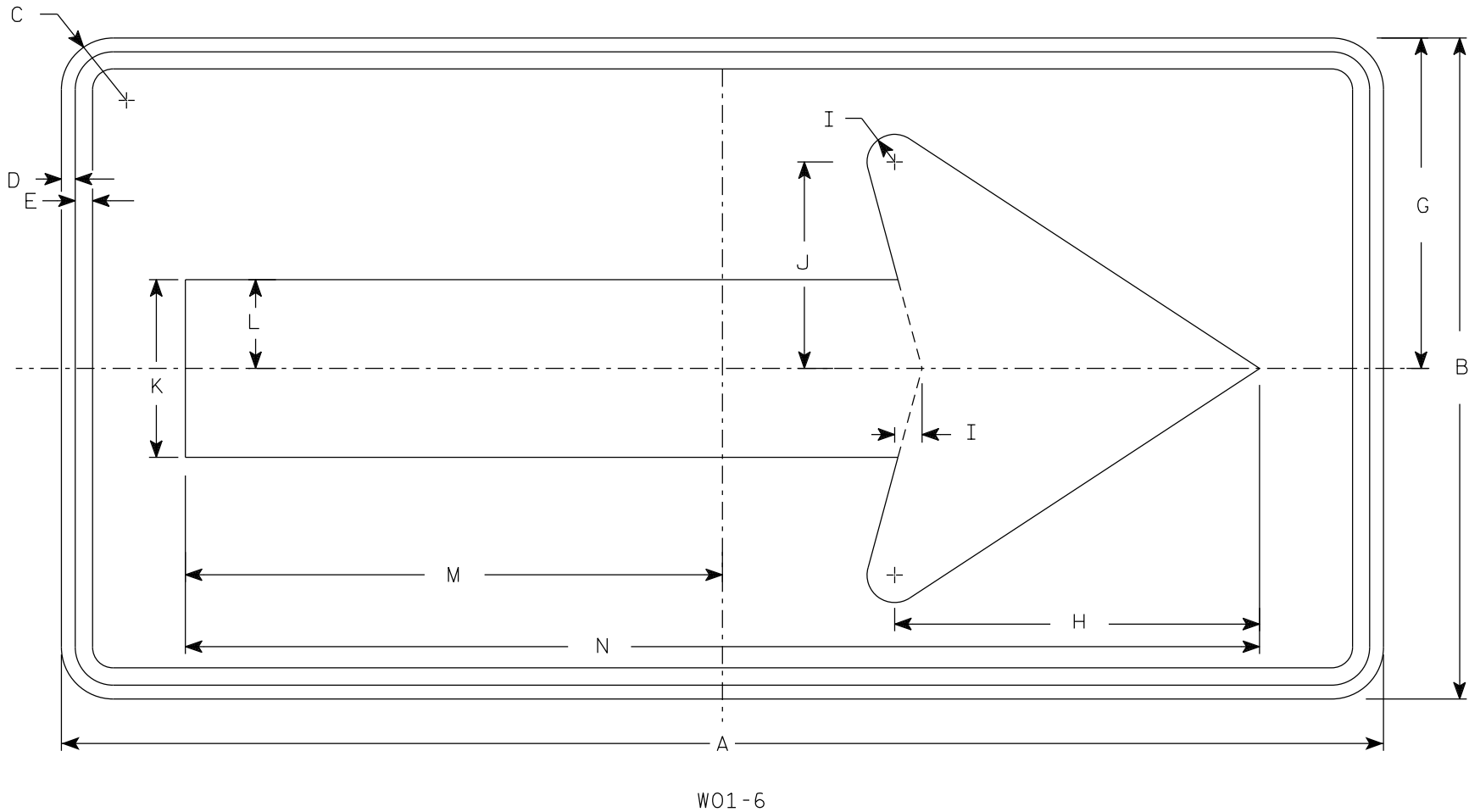
DATE 1/24/2024 PLATE NO. W01-4.2

NOTES

1. Sign is Type II - Type F Reflective
2. Color:

Background - Orange

Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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

STANDARD SIGN

W01-6

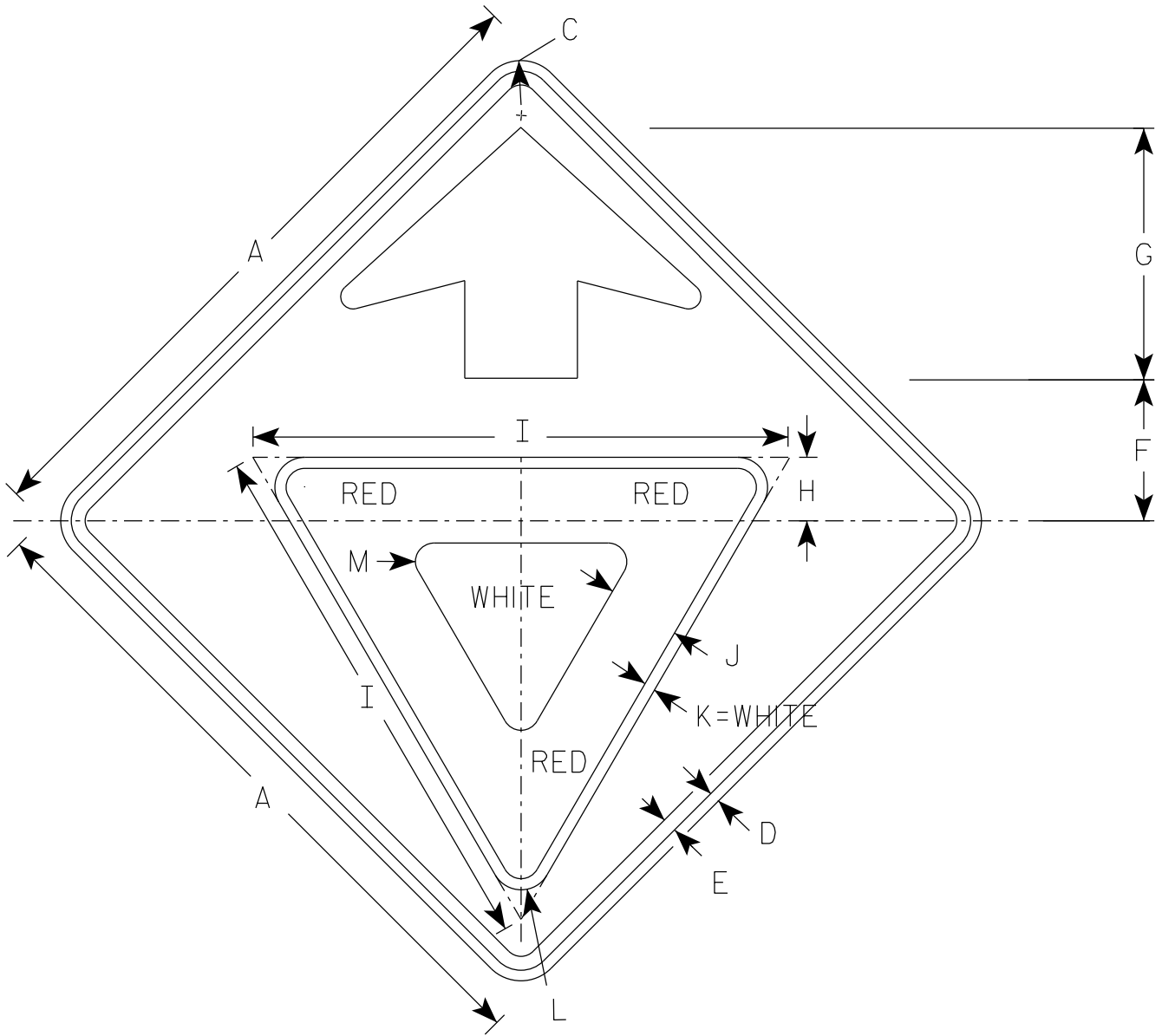
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch

for State Traffic Engineer

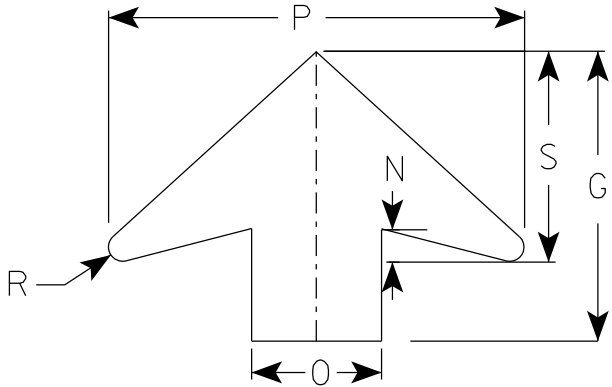
DATE 1/24/2024PLATE NO. W01-6.2



W03-2

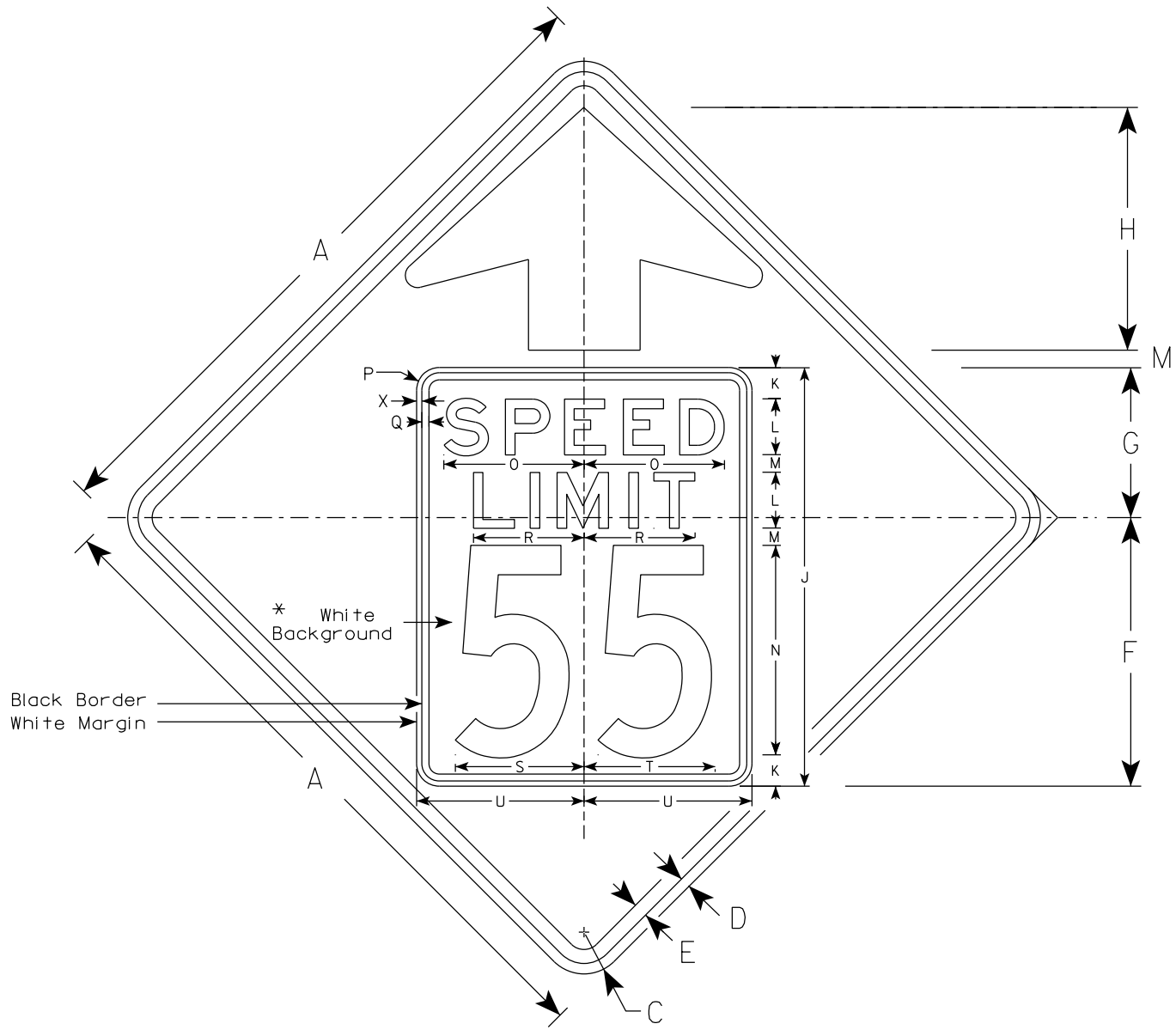
NOTES

- 1. All Signs Type II - Type F Reflective
- 2. Color:
 - Background - ORANGE
 - Arrow & Border - BLACK
 - Yield Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
2S	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
2M	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
3	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
4	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
5	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0

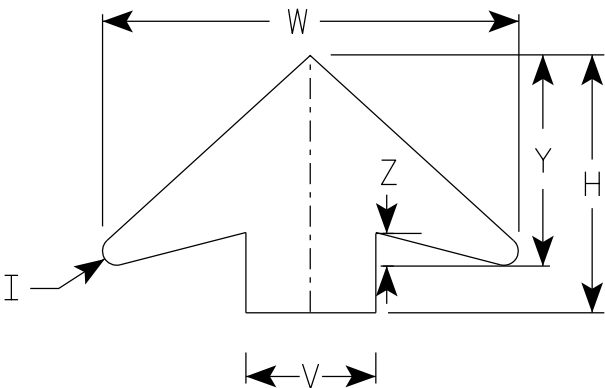


W03-5

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color: *
Background - ORANGE*
Message - BLACK
- 3. Message Series - C for numbers Series E for wording
- 4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2S	48		3	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
2M	48		3	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
3	48		3	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
4	48		3	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		3	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

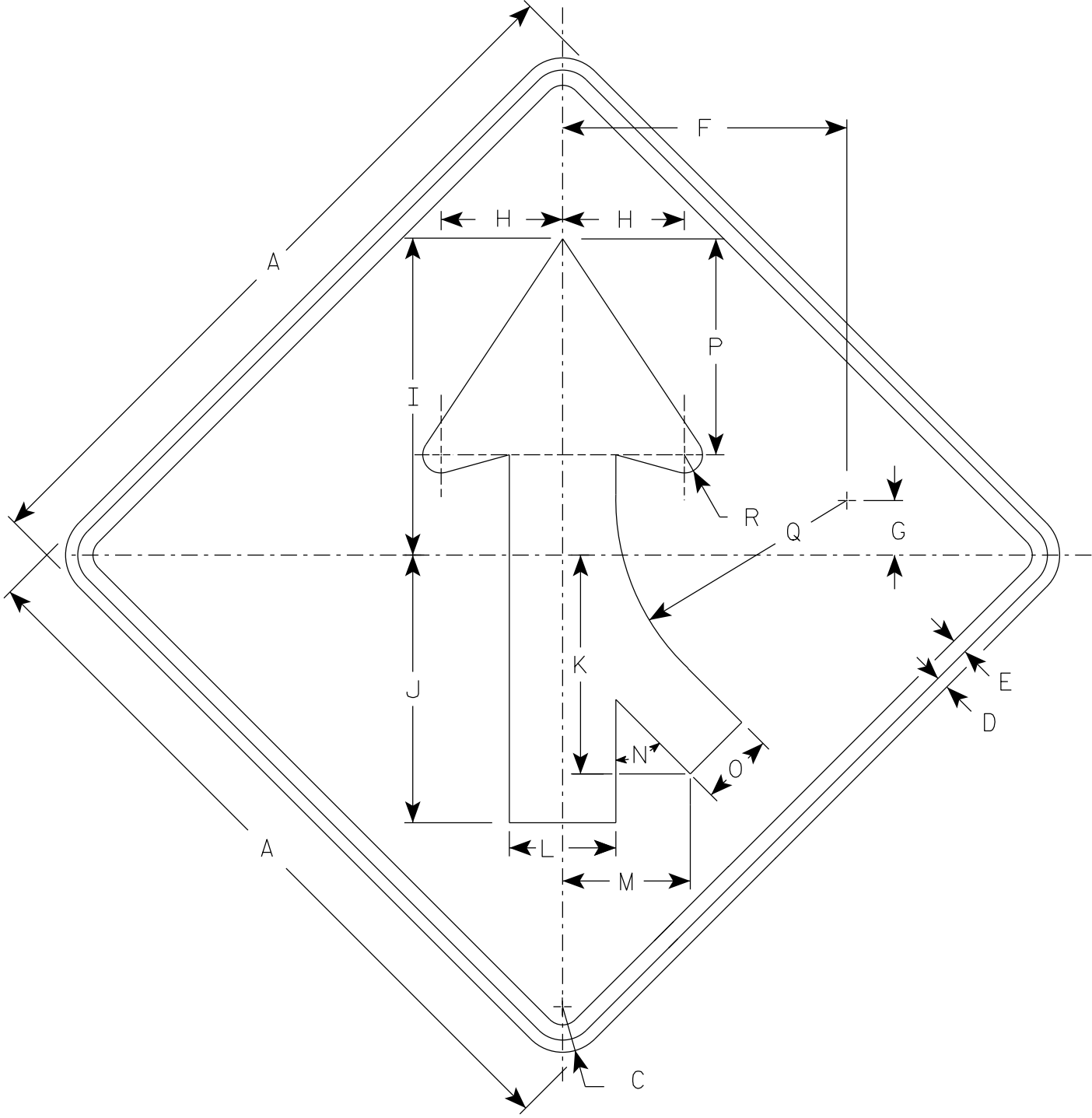
DATE 1/24/2024 PLATE NO. W03-5.2

PROJECT NO:

SHEET NO:

380

E



W04-1 R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-1L is the same as W04-1R except the arrow is reversed along the vertical centerline.

7

7

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

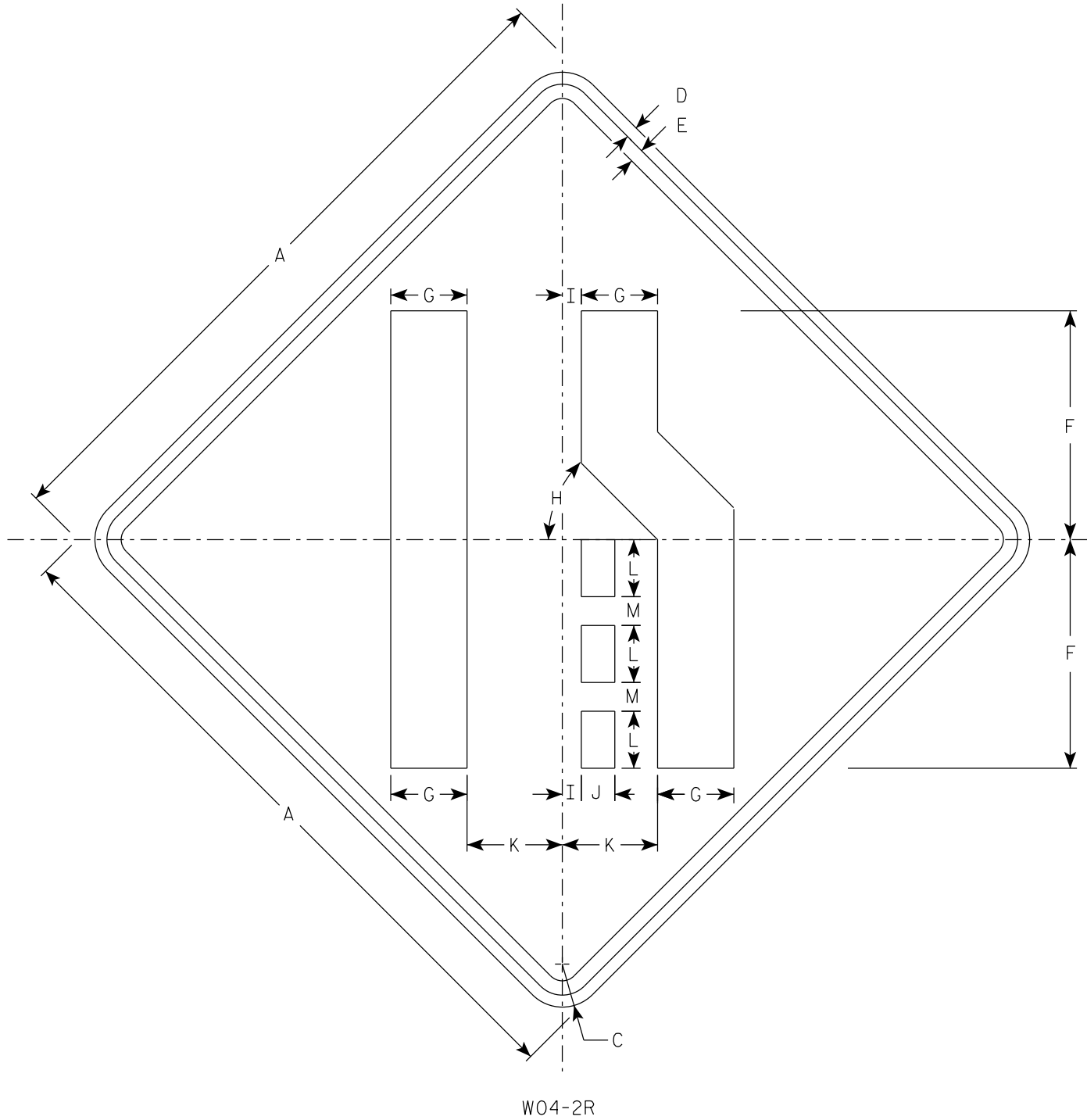
STANDARD SIGN

W04-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

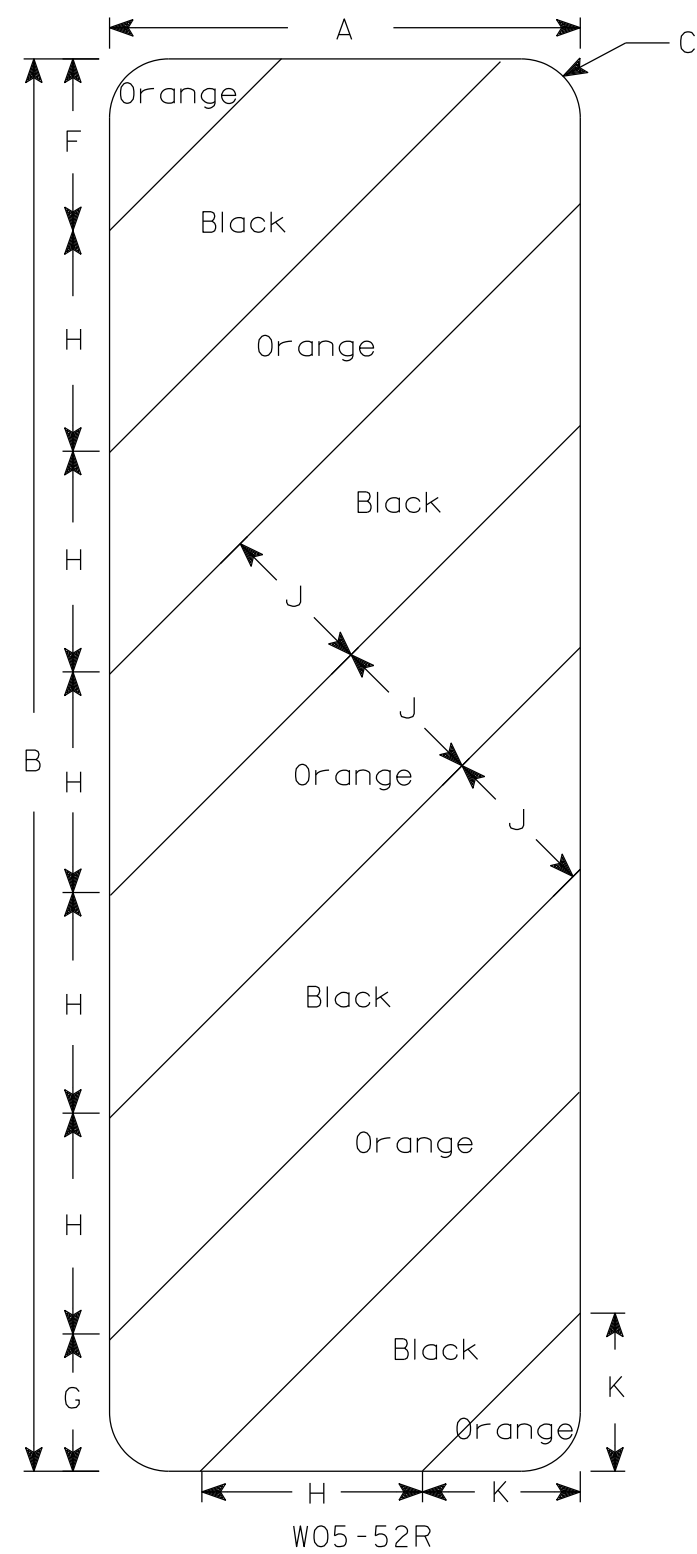
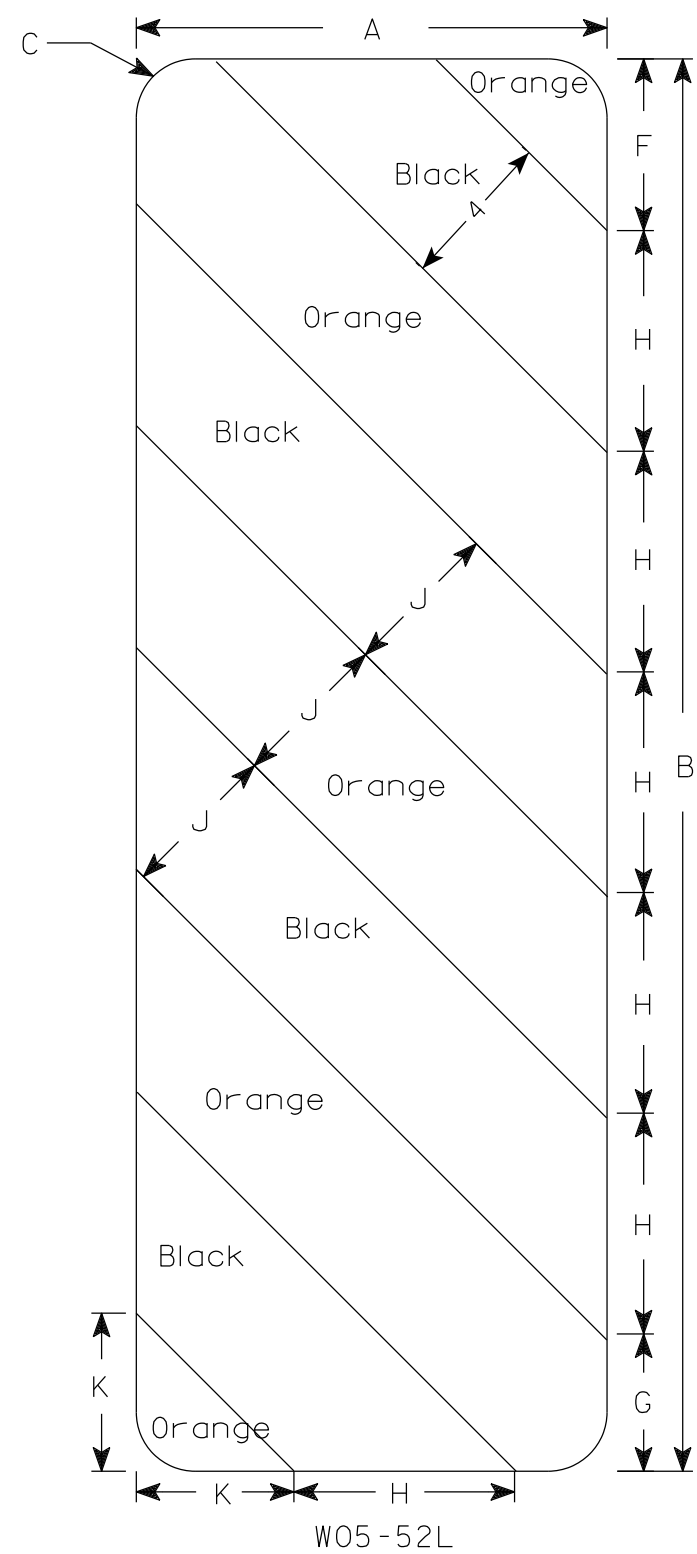
DATE 1/25/2024 PLATE NO. W04-1.3



NOTES

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

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



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
4. Alternate colors of stripes as shown.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Areg sq. ft.
1																											
2S	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

PROJECT NO:				HWY:				COUNTY:				SHEET NO: 383												E
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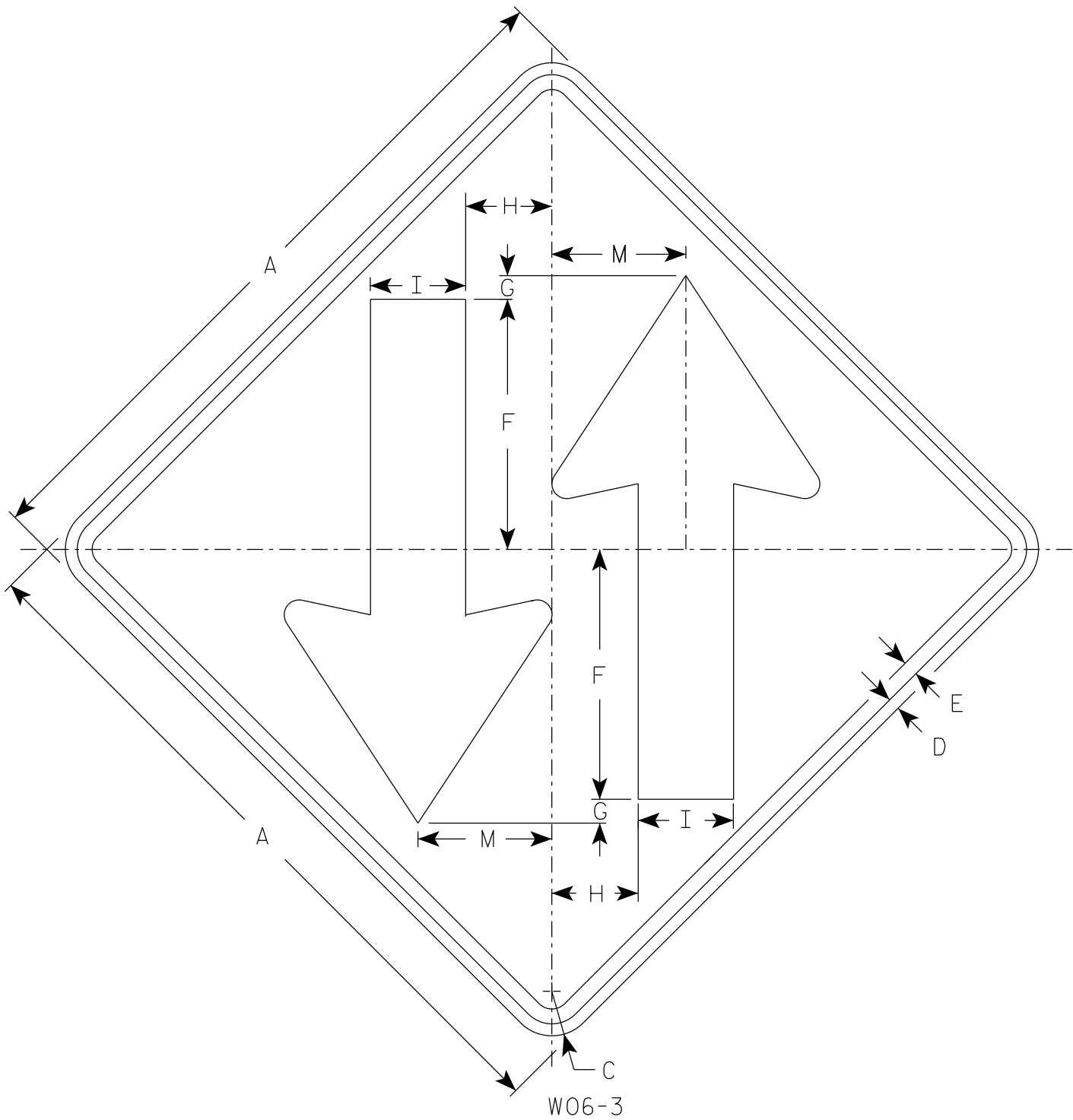
STANDARD SIGN

W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

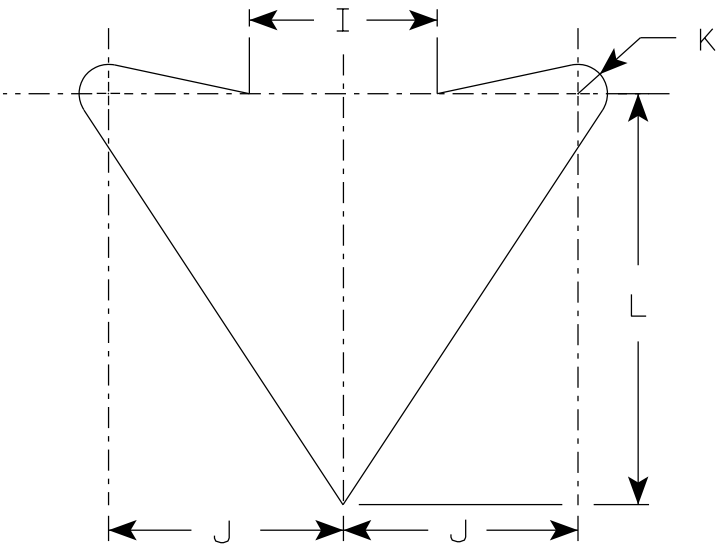
DATE 3/13/2024 PLATE NO. W05-52.2



W06-3

NOTES

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



ARROW DETAIL

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

STANDARD SIGN
W06-3

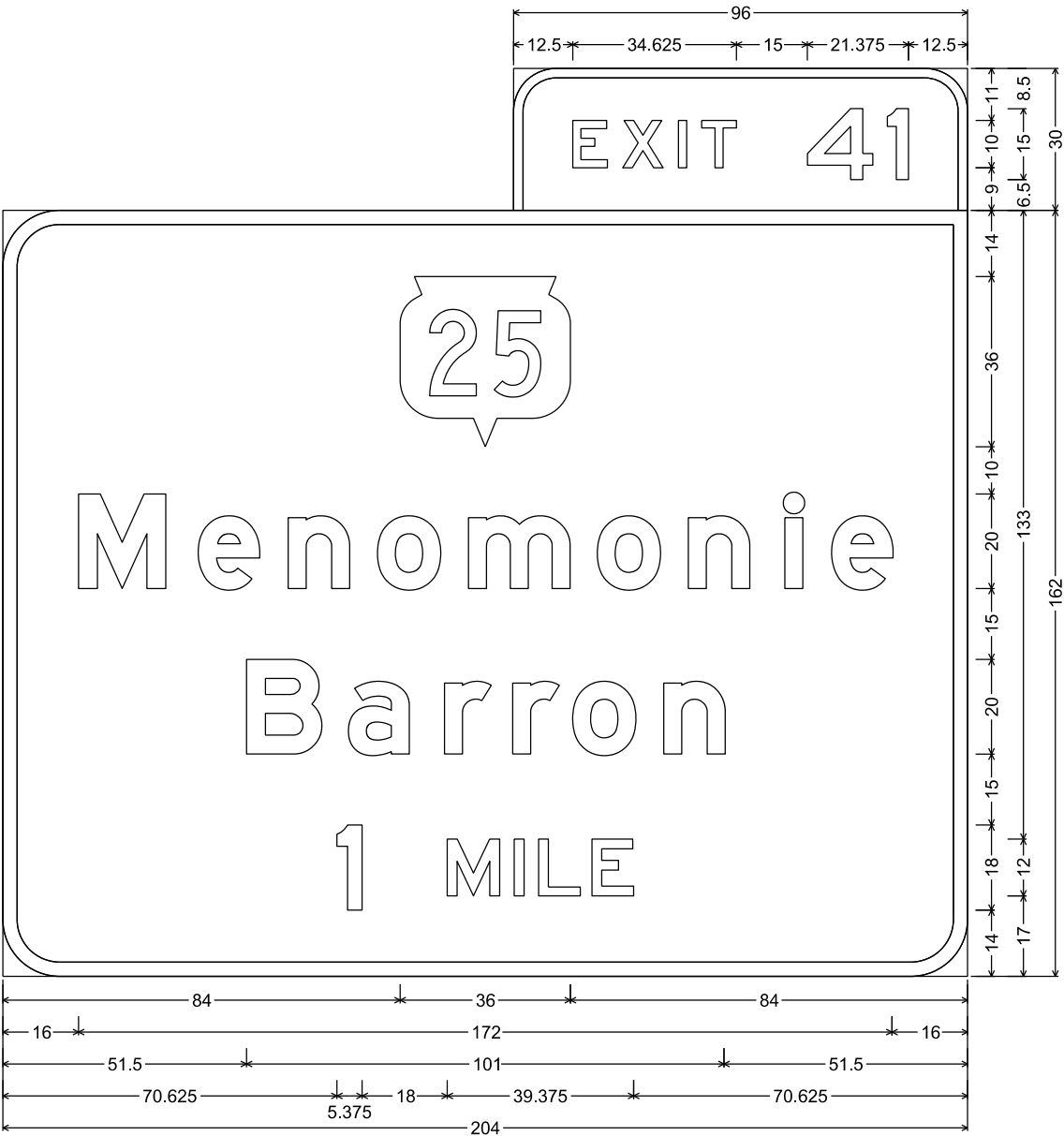
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

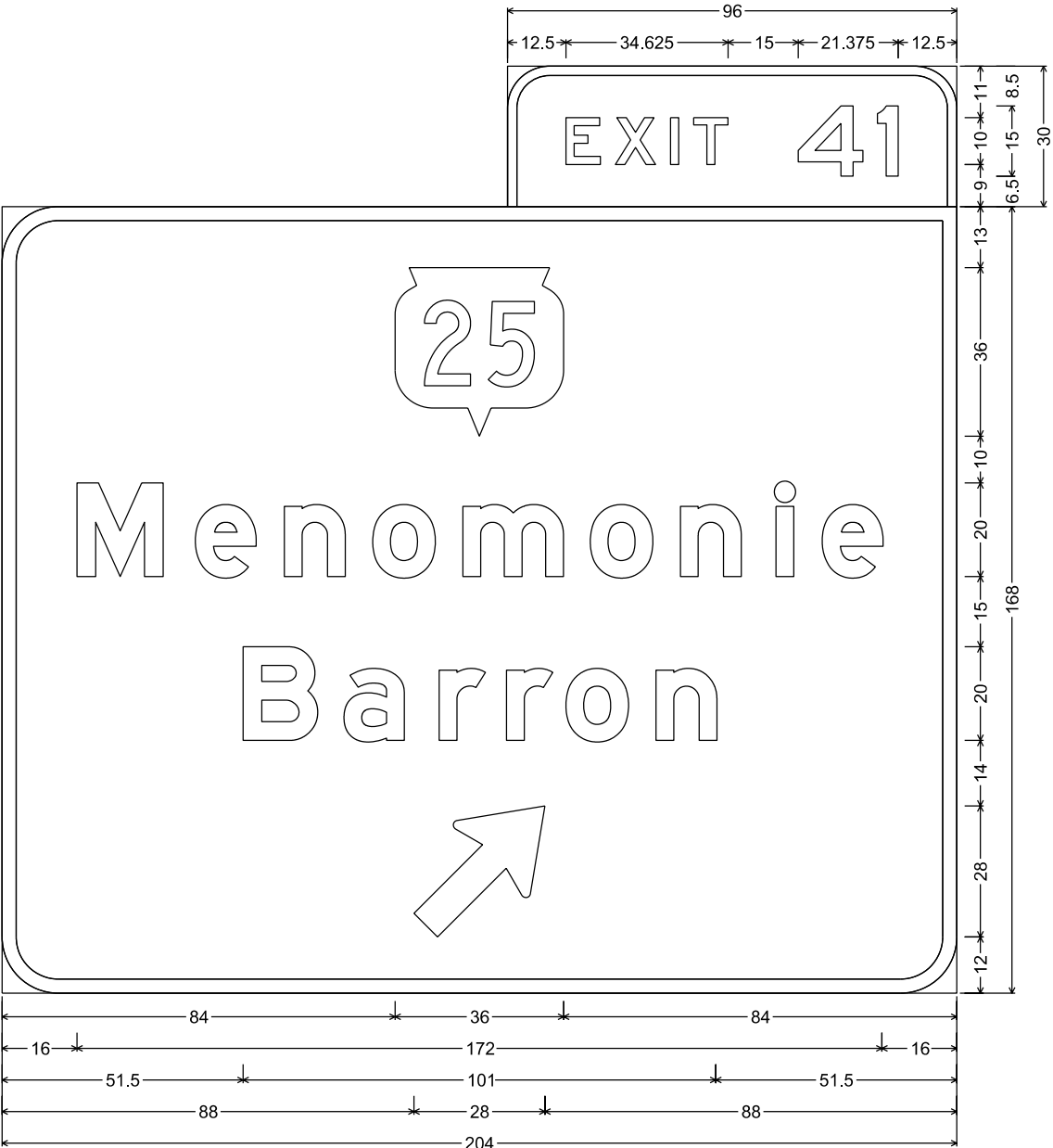
DATE 1/30/2024 PLATE NO. W06-3.2

NOTES

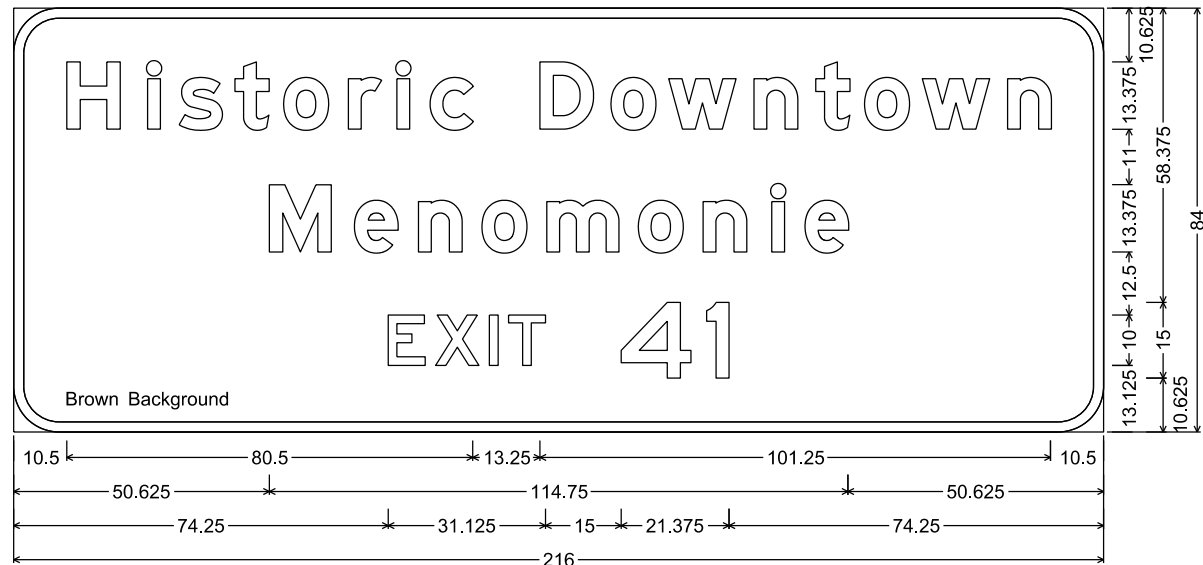
- 1. Signs are Type I - Type SH Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E Modified except all CAP words Series E



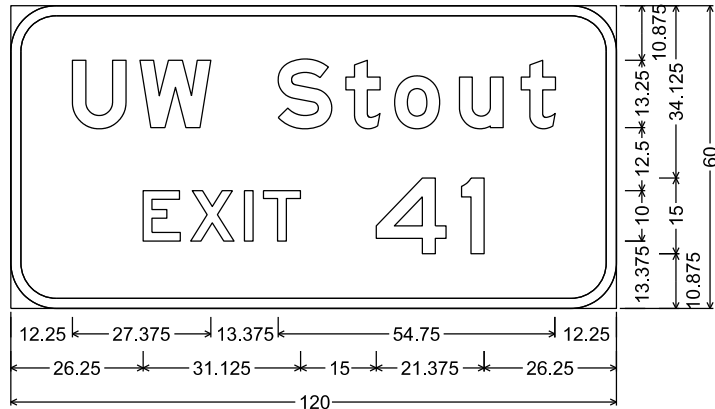
E1-5P; 9.000" Radius, 2.000" Border,
E1-1A; 12.000" Radius, 3.000" Border



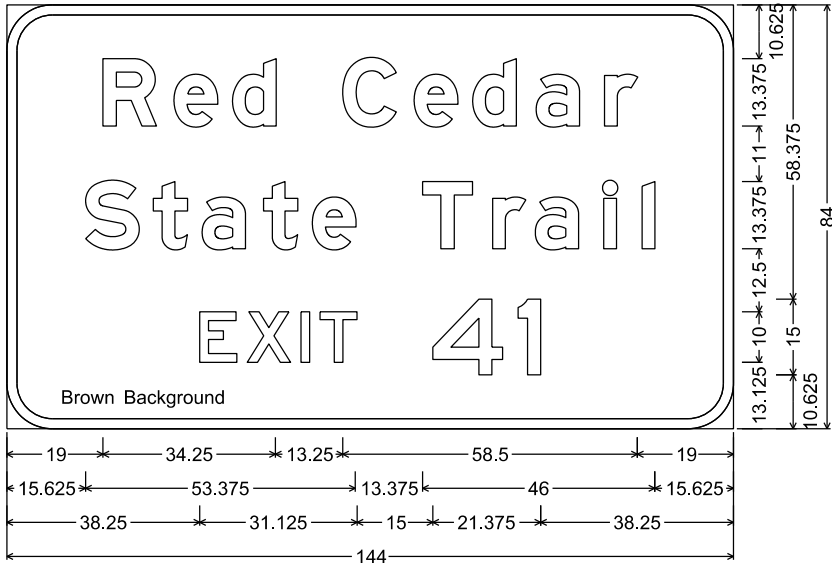
E1-5P; 9.000" Radius, 2.000" Border,
E4-1A; 12.000" Radius, 3.000" Border



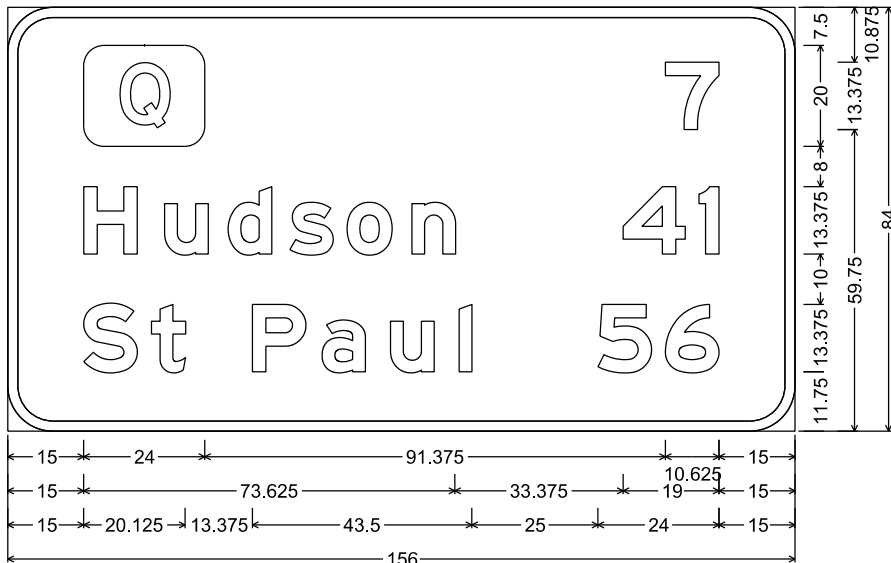
E3-1; 9.000" Radius, 2.000" Border, White on Brown



E3-1; 9.000" Radius, 2.000" Border



E3-1; 9.000" Radius, 2.000" Border, White on Brown



D2-3; 9.000" Radius, 2.000" Border

NOTES

1. Signs are Type I - Type SH Reflective
2. Color:
Background - Green except as noted
Message - White
3. Message Series - E Modified except all CAP words Series E

DESIGN DATA

LIVE LOAD:

TAKEN FROM HSI, 2/6/2026
INVENTORY RATING: HS-24
OPERATING RATING: HS-47
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE $f'_c = 4,000$ PSI
PRESTRESSED GIRDER SURFACE REPAIR $f'_c = 5,000$ PSI
ALL OTHER $f'_c = 3,500$ PSI
BAR STEEL REINFORCEMENT
GRADE 60 $f_y = 60,000$ PSI

SCOPE OF WORK B-17-29

- JOINT REMOVAL
- REMOVE ABUTMENT BACKWALL AND EXISTING DIAPHRAGMS
- BEARING MAINTENANCE
- BUILD FULL DEPTH ABUTMENT DIAPHRAGMS
- RESEAL CRUSHED AGGREGATE SLOPE PAVING
- REPAIR GIRDER ENDS
- FENCE REPAIR

TRAFFIC DATA

FEATURE ON: STH 25

A.D.T. = 18,100 (2023)
A.D.T. = 18,100 (2047)
R.D.S. = 45 MPH

FEATURE UNDER: IH 94

A.D.T. = 36,380 (2019)
A.D.T. = 38,890 (2047)
R.D.S. = 70 MPH

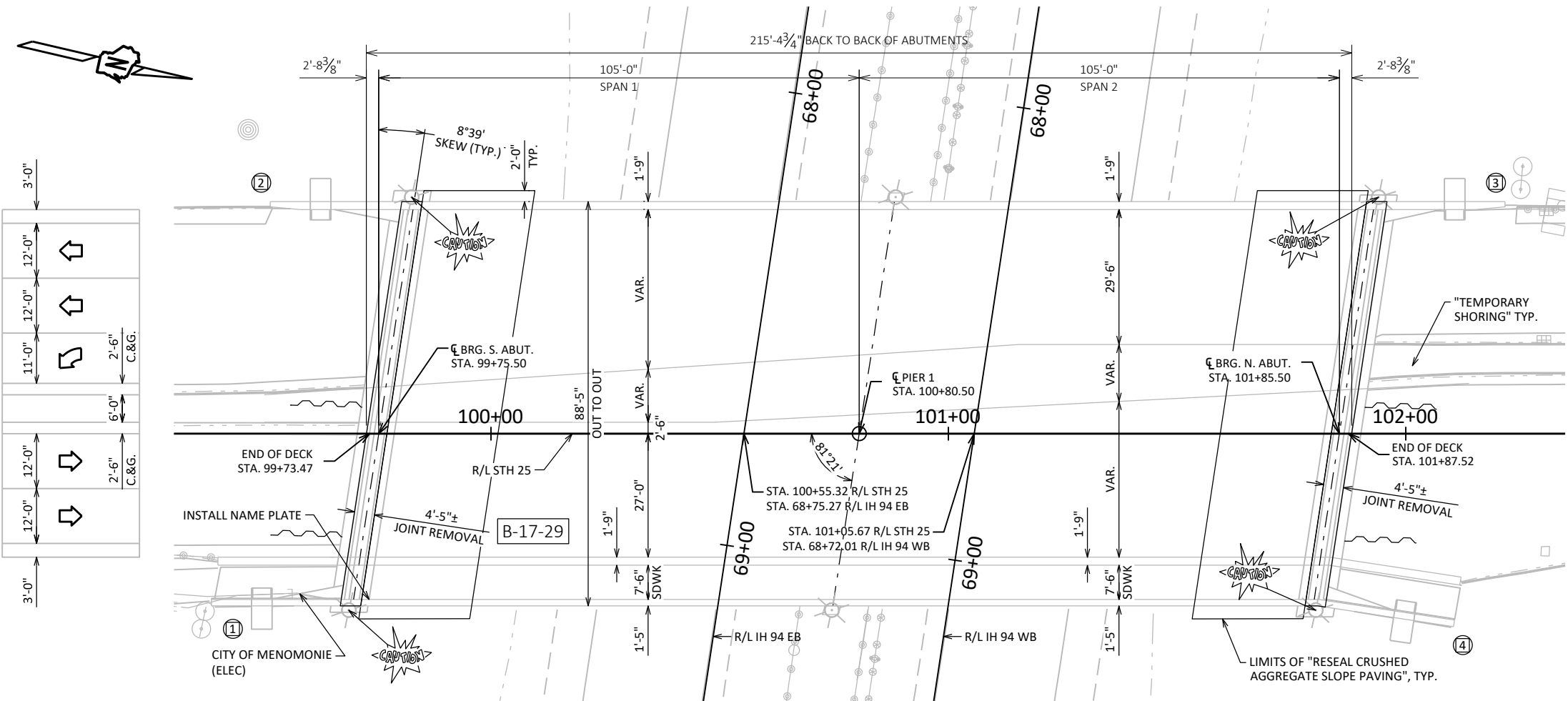
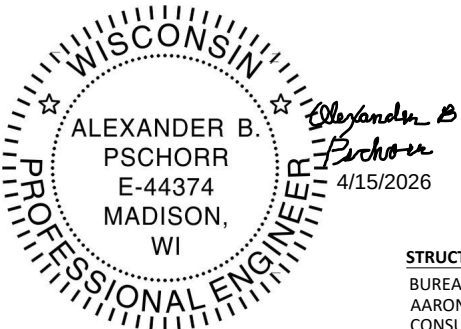
LIST OF DRAWINGS:

- GENERAL PLAN & ELEVATION
- GENERAL NOTES, QUANTITIES, & CROSS SECTION
- STAGING DETAILS
- REMOVAL DETAILS (1 OF 2)
- REMOVAL DETAILS (2 OF 2)
- ABUTMENT DIAPHRAGM DETAILS (1 OF 2)
- ABUTMENT DIAPHRAGM DETAILS (2 OF 2)
- PARAPET DETAILS (1 OF 2)
- PARAPET DETAILS (2 OF 2)
- MEDIAN DETAILS
- PARAPET AND MEDIAN DETAILS
- FENCE REPAIRS

NO.	DATE	REVISION	BY
Michael Baker MICHAEL BAKER INTERNATIONAL 1255 FOURIER DRIVE SUITE 100 INTERNATIONAL MADISON, WI 53717			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	CHIEF STRUCTURES DESIGN ENGINEER		DATE 05/11/26
STRUCTURE B-17-29			
STH 25/BROADWAY STREET OVER IH 94			
COUNTY	DUNN	CITY	MENOMONIE
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	DESIGN CK'D	ABP	DRAWN BY NDS
PLANS CK'D		ABP	
GENERAL PLAN & ELEVATION			SHEET 1 OF 12 387

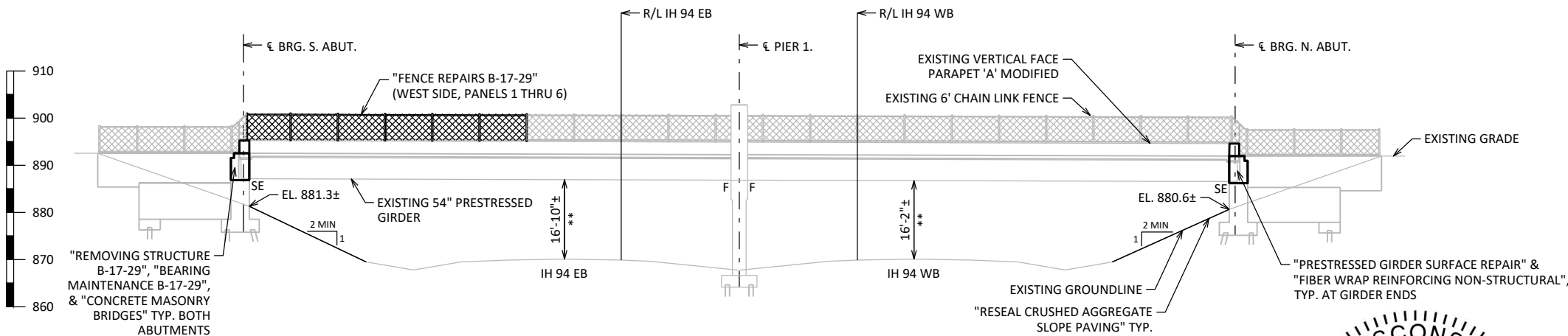
STRUCTURE DESIGN CONTACTS:

BUREAU OF STRUCTURES:
AARON BONK (608) 261-0261
CONSULTANT:
LINDA KRUEGER (608) 821-8704



PLAN

2 SPAN-54" PRESTRESSED GIRDERS - JOINT REPAIRS AND MISC. REPAIRS



ELEVATION

NORMAL TO IH 94
(LOOKING WEST)

(LIGHT PEDESTALS AND LIGHT POLES AT SUBSTRUCTURE UNITS NOT SHOWN FOR CLARITY)

**VERTICAL CLEARANCE TAKEN FROM HSI ON 11/19/2024

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

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

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

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE NEW TOP OF DECK SURFACE, INCLUDING TOP SURFACES OF NEW ABUTMENT DIAPHRAGMS, VERTICAL AND HORIZONTAL SURFACES OF PAVING NOTCHES, TOP AND SIDE SURFACES OF MEDIANS, AND TOP OF SIDEWALK. PROTECTIVE SURFACE TREATMENT SHALL NOT BE APPLIED TO THE TOP OF DECK SURFACES UNDER THE NEW MEDIANS OR THE PARAPETS. PROTECTIVE SURFACE TREATMENT RESEAL SHALL BE APPLIED TO THE TOP AND ROADWAY FACES OF EXISTING MEDIAN.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE TOP AND ROADWAY FACES OF NEW PARAPETS, INCLUDING PARAPETS ON WINGS. PIGMENTED SURFACE SEALER RESEAL SHALL BE APPLIED TO TOP AND ROADWAY FACES OF EXISTING PARAPETS INCLUDING PARAPETS ON WINGS.

PERFORM "CONCRETE SURFACE REPAIR" AT BOTH ABUTMENTS AND AS DIRECTED BY THE FIELD ENGINEER. QUANTITIES SHOWN ON THE PLANS ARE APPROXIMATE.

PERFORM "PRESTRESSED GIRDER SURFACE REPAIR" AT GIRDER ENDS AS DIRECTED BY THE FIELD ENGINEER BEFORE ENCASING IN FULL DEPTH CONCRETE DIAPHRAGM.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY THE DEPTH OF SAW CUT GIVEN IN THE STANDARD SPECIFICATION OR 1" DEEP UNLESS NOTED OTHERWISE.

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

PROTECT EXISTING JUNCTION BOXES AND CONDUIT IN PLACE AT ABUTMENT BACKWALL AND PARAPET REMOVAL AREAS. TAKE CARE TO PREVENT DAMAGE TO LINES DURING REMOVAL. RECAST JUNCTION BOXES AND CONDUIT IN FRESH CONCRETE.

THE COLOR OF "CONCRETE STAINING B-17-29" SHALL BE AMS STANDARD COLOR NO. 33722, LIGHT COFFEE (CREAMY BROWN). COLOR TO MATCH THE ADJACENT, EXISTING PARAPET. STAIN COLOR TO BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

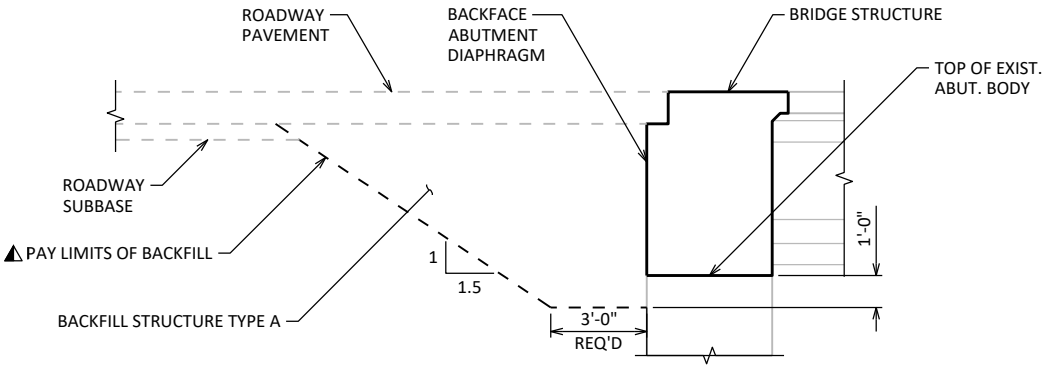
THE EXISTING STRUCTURE B-17-29 IS A 2-SPAN 54" PRESTRESSED CONCRETE GIRDER STRUCTURE WITH AN OUT-TO-OUT WIDTH OF 88'-5" AND A BACK-TO-BACK OF ABUTMENT LENGTH OF 215'-4 ¾". EXPANSION JOINTS AND PARTIAL DEPTH DIAPHRAGMS AT EACH ABUTMENT SHALL BE REMOVED, AND NEW FULL HEIGHT ABUTMENT DIAPHRAGMS SHALL BE CONSTRUCTED CHANGING THE ABUTMENT FIXITY TO SEMI-EXPANSION. CRUSHED AGGREGATE SLOPE PAVING SHALL BE COMPLETELY RESEALED AT BOTH ABUTMENTS. CONCRETE SURFACE REPAIR SHALL BE PERFORMED ON GIRDER ENDS, ABUTMENTS AND AS DIRECTED BY THE ENGINEER. DAMAGED CHAIN LINK FENCE AND PEDESTRIAN RAILING SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER.

TOTAL ESTIMATED QUANTITIES

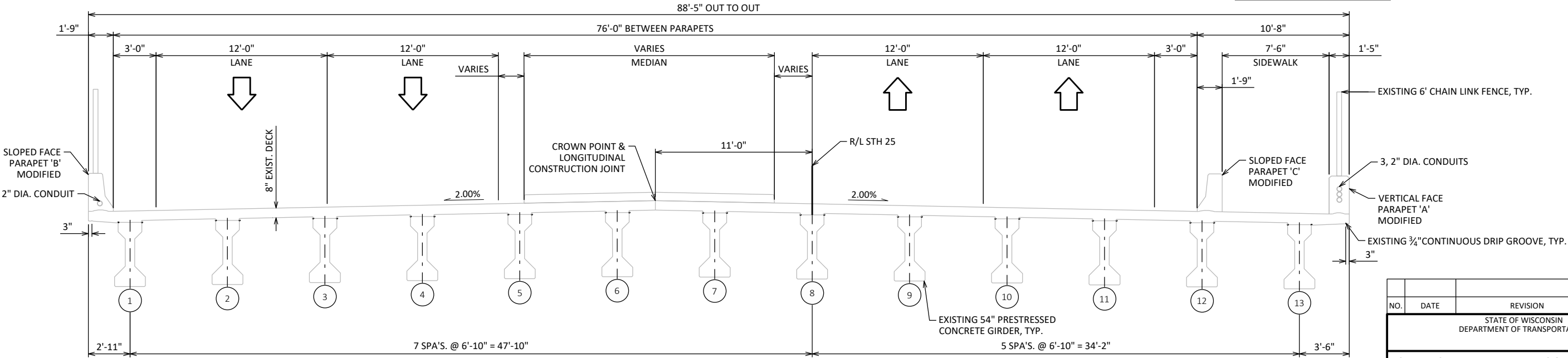
ITEM NUMBER	ITEM DESCRIPTION	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER.	TOTAL
203.0220	REMOVING STRUCTURE B-17-29	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-17-29	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	268	269	---	537
502.0100	CONCRETE MASONRY BRIDGES	CY	---	---	140	140
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	104	104
502.3205	PIGMENTED SURFACE SEALER RESEAL	SY	---	---	220	220
502.3210	PIGMENTED SURFACE SEALER	SY	---	---	15	15
502.3215	PROTECTIVE SURFACE TREATMENT RESEAL	SY	---	---	269	269
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	---	---	13,510	13,510
509.1500	CONCRETE SURFACE REPAIR	SF	5	5	---	10
511.1200	TEMPORARY SHORING B-17-29	SF	260	260	---	520
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	19	19	---	38
517.1010.S	CONCRETE STAINING B-17-29	SF	---	---	97	97
517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-17-29	SF	---	---	111	111
604.9015.S	RESEAL CRUSHED AGGREGATE SLOPE PAVING	SY	285	285	---	570
SPV.0060	FENCE REPAIRS B-17-29	EACH	---	---	1	1
SPV.0060	BEARING MAINTENANCE B-17-29	EACH	---	---	26	26
SPV.0165	FIBER WRAP REINFORCING NON-STRUCTURAL	SF	---	---	73	73
SPV.0165	PRESTRESSED GIRDER SURFACE REPAIR	SF	---	---	9	9
	NON-BID ITEMS					
	FILLER	SIZE				1/2"

NOTE: CONCRETE SURFACE REPAIR QUANTITIES ARE APPROXIMATE AND WILL NEED TO BE VERIFIED IN THE FIELD BY THE ENGINEER.

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



TYPICAL SECTION THRU ABUTMENT



CROSS-SECTION

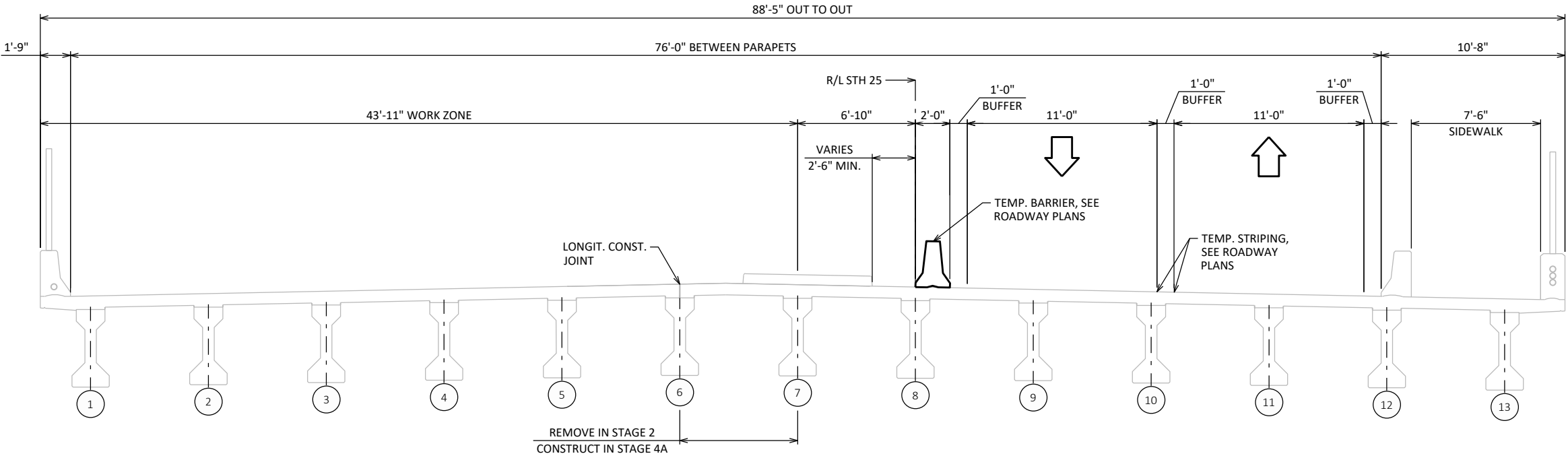
(LOOKING NORTH)
(LIGHT PEDESTALS AND LIGHT POLES NOT SHOWN FOR CLARITY)

INDICATES GIRDER NUMBER

STATE PROJECT NUMBER

1020-05-63

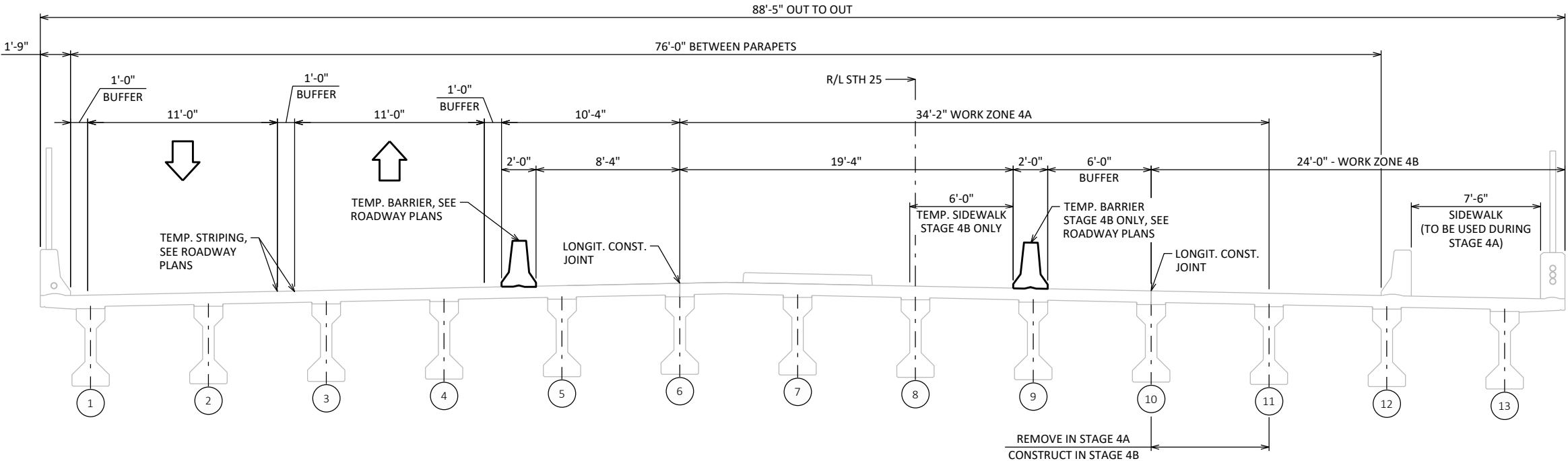
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
GENERAL NOTES, QUANTITIES, & CROSS-SECTION		SHEET 2 OF 12	
		388	



STAGE 2

(LOOKING NORTH)

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)



STAGE 4A & 4B

(LOOKING NORTH)

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
STAGING DETAILS		SHEET 3 OF 12 389	

LEGEND

- INDICATES REMOVAL LIMITS
- INDICATES WING NUMBER
- INDICATES GIRDER NUMBER
- CLEAN, STRAIGHTEN & INCORPORATE EXISTING LONGITUDINAL DECK, MEDIAN, AND PARAPET REINFORCEMENT INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED. REPLACE DAMAGED OR CORRODED REINFORCEMENT AS DIRECTED BY THE ENGINEER.
- MEASURE PARALLEL TO C/L ABUTMENT BEARING
- PAINT ENDS OF EXPOSED REINFORCEMENT WITH EPOXY CONFORMING TO AASHTO M-235, TYPE III, GRADE 2, CLASS B OR C.

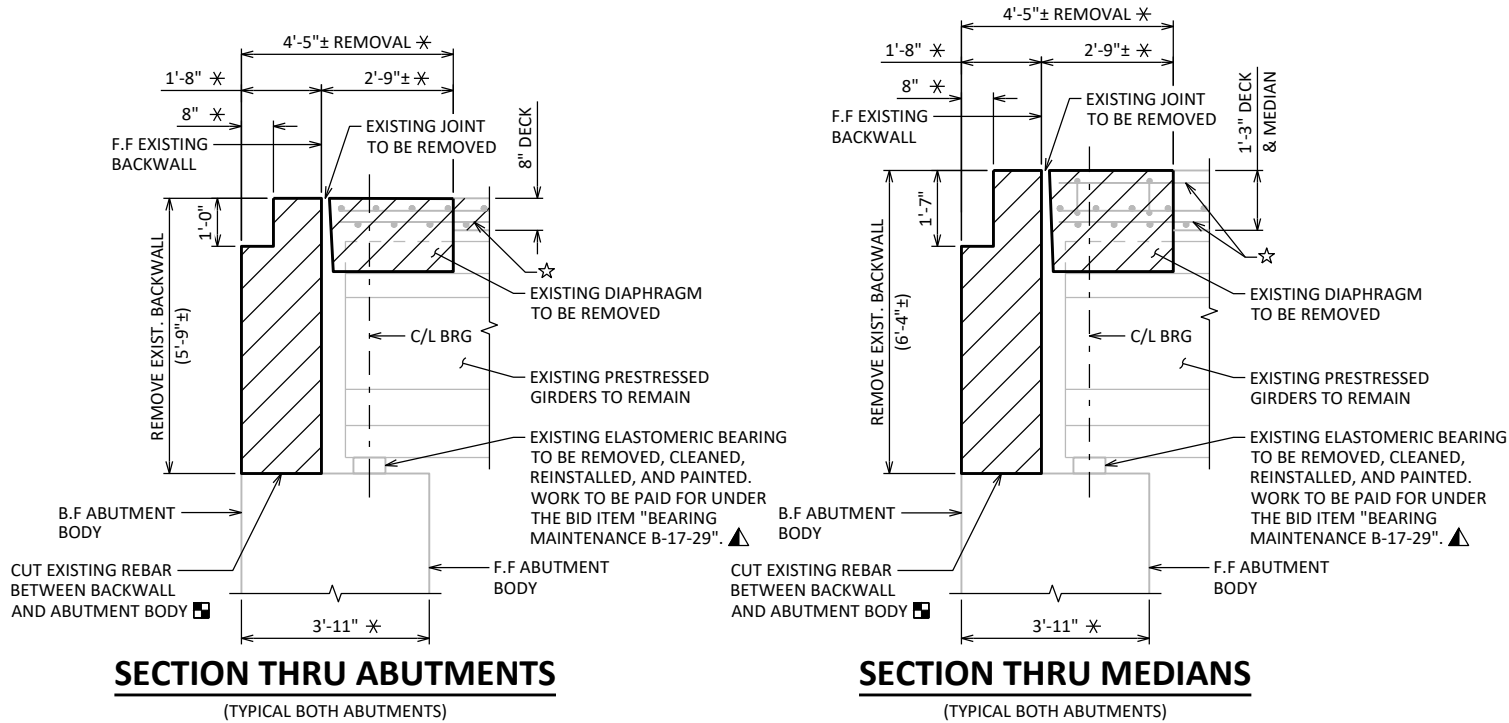
NOTES

PRIOR TO BEGINNING REMOVAL OPERATIONS. SURVEY GUTTER LINES AND CROWN POINTS ALONG NORTH AND SOUTH ABUTMENTS. FINAL TOP OF DECK ELEVATION TO MATCH EXISTING $\pm \frac{1}{2}$ ". FINAL SIDEWALK AND MEDIAN ELEVATIONS TO MATCH EXISTING.

SAWCUT THROUGH EXISTING CONCRETE AND REINFORCEMENT ON THE BACKWALL AND SLOPED FACE PARAPET 'B' MODIFIED (APPROACH SIDE ONLY). TAKE CARE TO SAWCUT AT AN ANGLE PARALLEL TO SKEW/F.F. OF ABUTMENT. PLACE $\frac{1}{2}$ " FILLER BETWEEN EXISTING WINGWALL AND NEW CONCRETE DIAPHRAGM. EXTEND $\frac{1}{2}$ " FILLER TO TOP OF PARAPET.

REMOVAL PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
REMOVAL DETAILS (1 OF 2)		SHEET 4 OF 12 390	

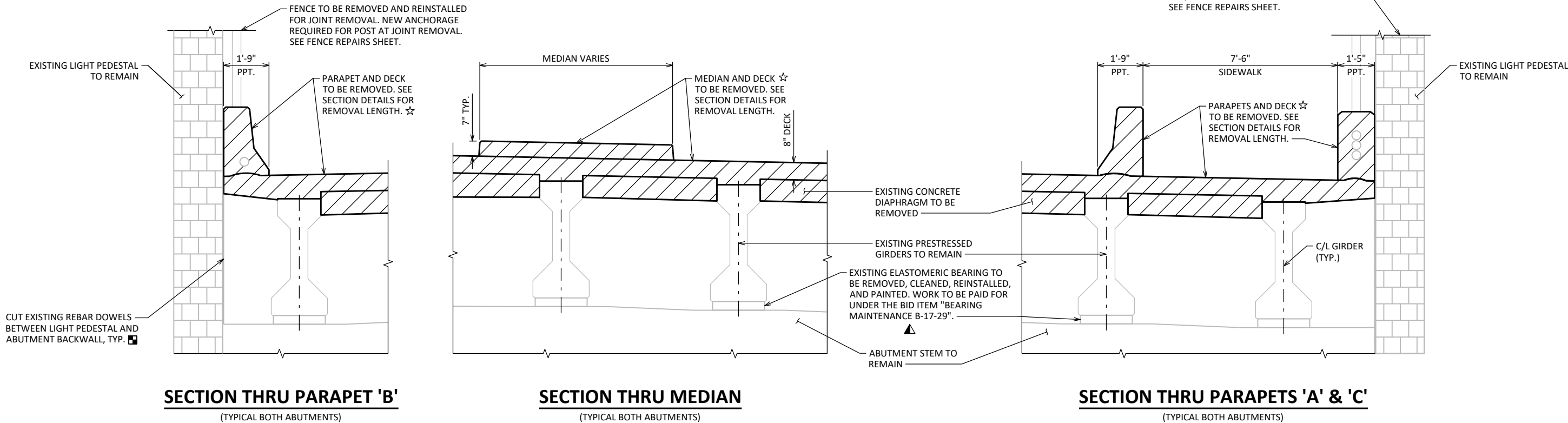


NOTES

SAWCUT THROUGH EXISTING CONCRETE AND REINFORCEMENT ON THE BACKWALL AND SLOPED FACE PARAPET 'B' MODIFIED (APPROACH SIDE ONLY). TAKE CARE TO SAWCUT AT AN ANGLE PARALLEL TO SKEW/F.F. OF ABUTMENT. PLACE ½" FILLER BETWEEN EXISTING WINGWALL AND NEW CONCRETE DIAPHRAGM. EXTEND ½" FILLER TO TOP OF PARAPET.

LEGEND

- INDICATES REMOVAL LIMITS
- * DIMENSIONS SHOWN ARE NORMAL TO THE C/L OF SUBSTRUCTURE UNIT.
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXISTING LONGITUDINAL DECK, MEDIAN, AND PARAPET REINFORCEMENT INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED. REPLACE DAMAGED OR CORRODED REINFORCEMENT AS DIRECTED BY THE ENGINEER.
- PAINT ENDS OF EXPOSED REINFORCEMENT WITH EPOXY CONFORMING TO AASHTO M-235, TYPE III, GRADE 2, CLASS B OR C.
- ESTABLISH EXISTING BOTTOM OF GIRDER ELEVATION PRIOR TO REMOVAL OF THE EXISTING BEARINGS. BOTTOM OF GIRDER ELEVATION SHALL REMAIN UNCHANGED FOR THE PROPOSED CONDITION.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
REMOVAL DETAILS (2 OF 2)		SHEET 5 OF 12 391	

LEGEND

- DIMENSION MEASURED NORMAL TO C/L OF SUBSTRUCTURE
- BARS PLACED PARALLEL TO C/L GIRDER
- 1/2" FILLER BETWEEN WINGS & DIAPHRAGM. EXTEND TO TOP OF PARAPET. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD 3/8" BELOW SURFACES OF CONCRETE.)
- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINT AT BACKFACE.
- PAVING NOTCH TRANSITIONS FROM 8" X 1' DEEP TO 8" X 6" DEEP AT THE SDWK FACE OF PARAPET 'C'.
- ESTABLISH EXISTING BOTTOM OF GIRDER ELEVATION PRIOR TO REMOVAL OF THE EXISTING BEARINGS. BOTTOM OF THE GIRDER ELEVATION SHALL REMAIN UNCHANGED FOR THE PROPOSED CONDITION.
- PLACE A DEPARTMENT APPROVED NON-SHRINK COMMERCIAL GROUT OVER THE WIDTH OF THE ABUTMENT TOP BETWEEN EXISTING BEAM SEATS PRIOR TO PLACING POLYETHYLENE SHEETS. CHIP OUT CONCRETE AS REQUIRED TO PLACE GROUT TO A MINIMUM THICKNESS OF 1/2". PLACE GROUT AS REQUIRED TO PRODUCE A SMOOTH SLIDING SURFACE FREE OF PROTRUSIONS. REMOVE DELAMINATED OR LOOSE CONCRETE AND CLEAN THE SURFACE PRIOR TO PLACING GROUT. ADDITIONAL SURFACE PREPARATION MAY BE REQUIRED PER THE MANUFACTURER'S INSTRUCTION. MIX, PLACE, AND CURE NON-SHRINK COMMERCIAL GROUT PER THE MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER. DO NOT APPLY LOADS TO THE NON-SHRINK COMMERCIAL GROUT UNTIL A MINIMUM COMPRESSIVE STRENGTH OF 3,500 P.S.I. IS ACHIEVED. NON-SHRINK COMMERCIAL GROUT AND SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY BRIDGES."
- PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE REINSTALLING ELASTOMERIC BEARINGS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

NOTES

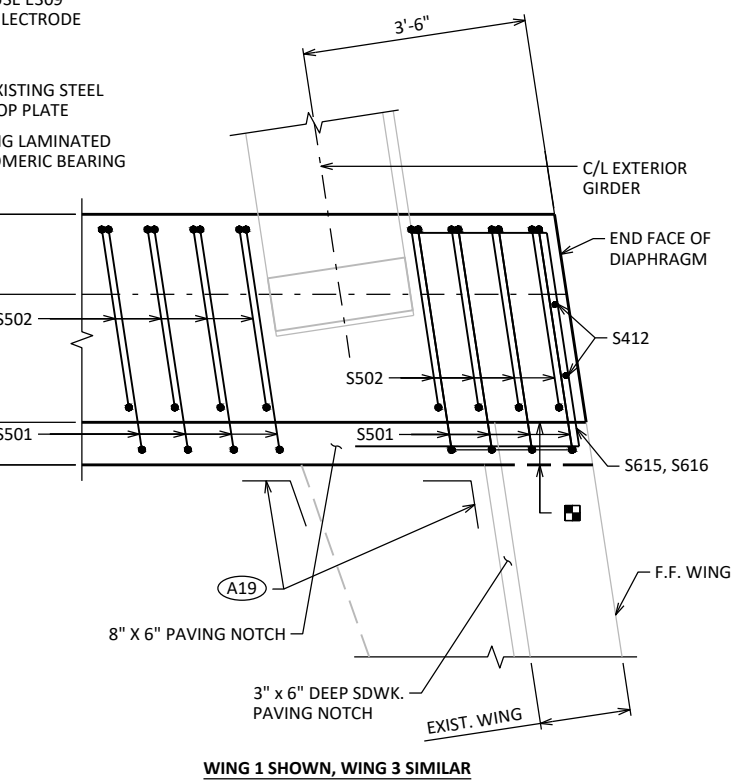
ENSURE THAT ALL PARAPET AND MEDIAN BARS THAT ARE EMBEDDED IN DECK OR DIAPHRAGM ARE INSTALLED BEFORE PLACING DECK AND DIAPHRAGM CONCRETE.

EXISTING ELASTOMERIC BEARINGS SHALL BE REINSTALLED AFTER POLYETHYLENE SHEETING IS INSTALLED AND BEFORE CONCRETE DIAPHRAGM IS CONSTRUCTED. REMOVE THE PAINT FROM TOP PLATE SURFACES THAT REQUIRE FIELD WELDING. AFTER WELDING, PROVIDE ONE COAT OF ORGANIC ZINC-RICH PRIMER AND ONE COAT OF HIGH-BUILD BROWN (AMS STANDARD COLOR NO. 20059) EPOXY PAINT IN ACCORDANCE WITH SECTION 517.3.1.8.2 OF THE STANDARD SPECIFICATIONS. FIELD APPLIED PAINT SHALL EXTEND BEYOND THE DAMAGED PAINT SURFACES. WORK TO BE PAID FOR UNDER THE BID ITEM "BEARING MAINTENANCE B-17-29".

ABUTMENT DIAPHRAGM ELEVATION

LOOKING NORTH
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR

USE E309 ELECTRODE
45°
EXISTING STEEL TOP PLATE
EXISTING LAMINATED ELASTOMERIC BEARING
TYP. BOTH SIDES OF BEARING



WING 2 SHOWN, WING 4 SIMILAR

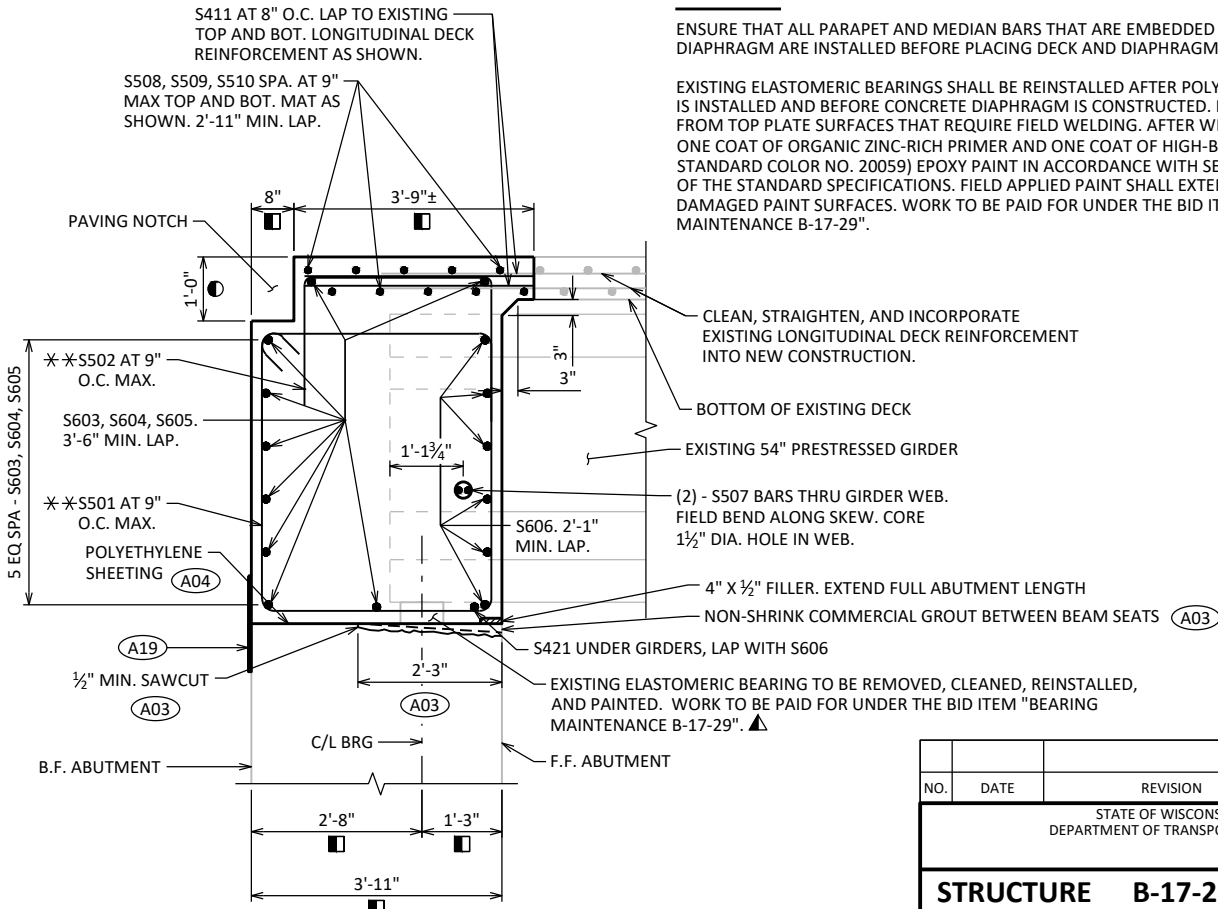
WING 1 SHOWN, WING 3 SIMILAR

ABUTMENT DIAPHRAGM CORNER PLAN DETAILS

(HORIZONTAL DIAPHRAGM REINF. NOT SHOWN FOR CLARITY)

ABUTMENT DIAPHRAGM SECTION

(TYP. AT NORTH AND SOUTH ABUTMENTS)



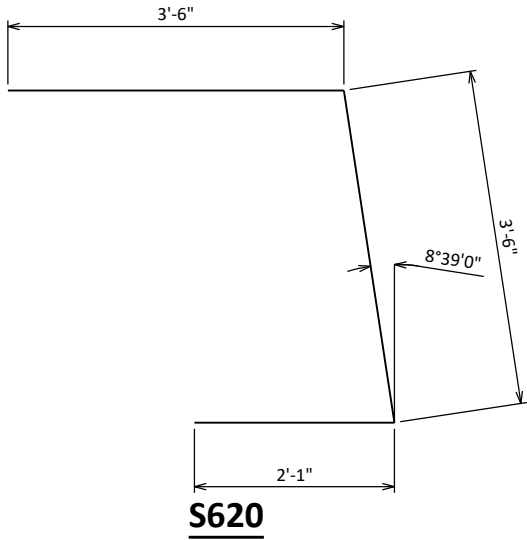
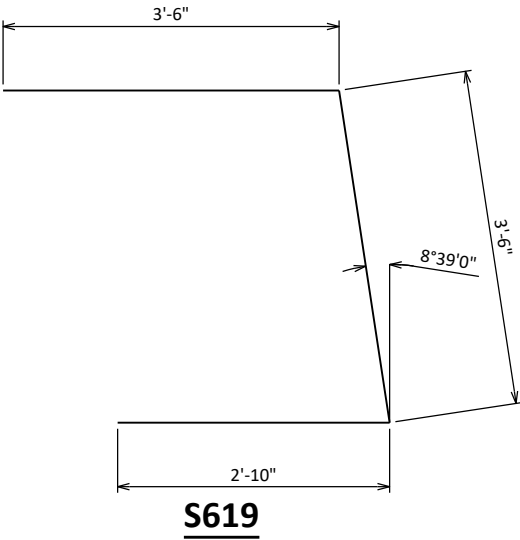
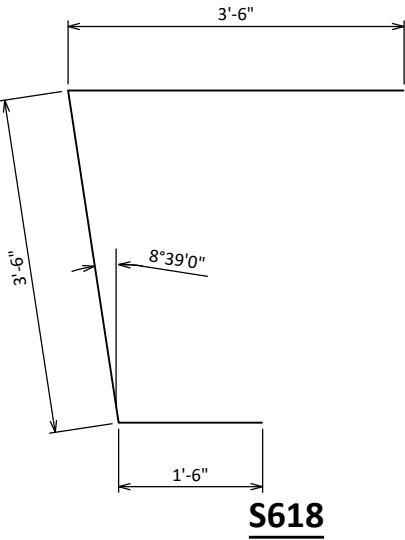
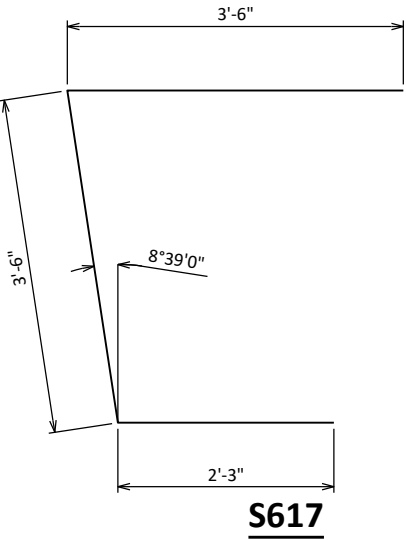
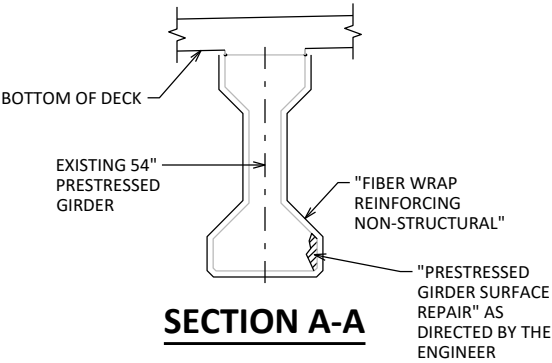
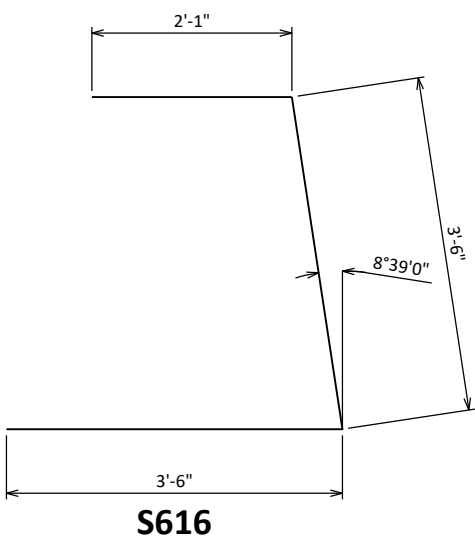
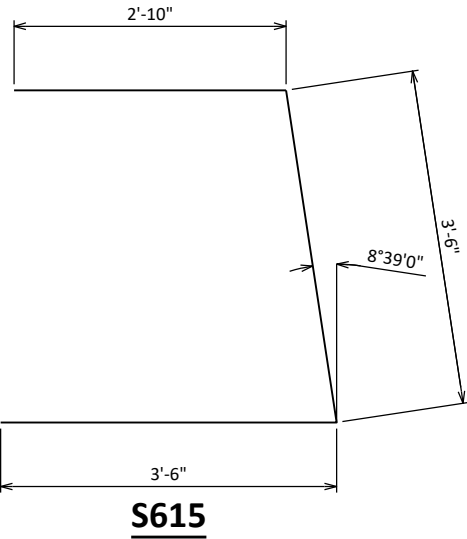
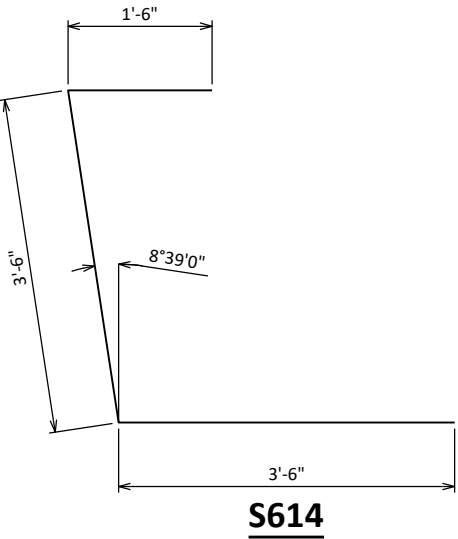
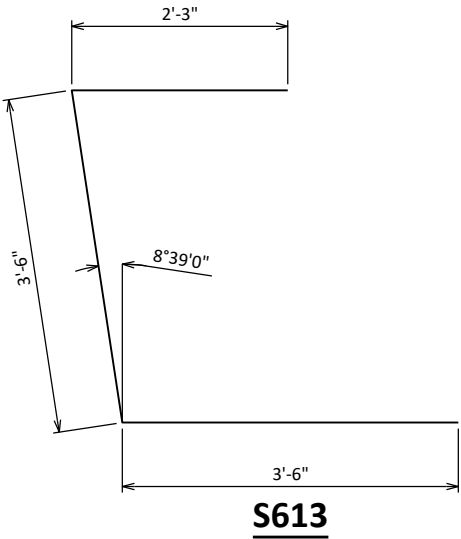
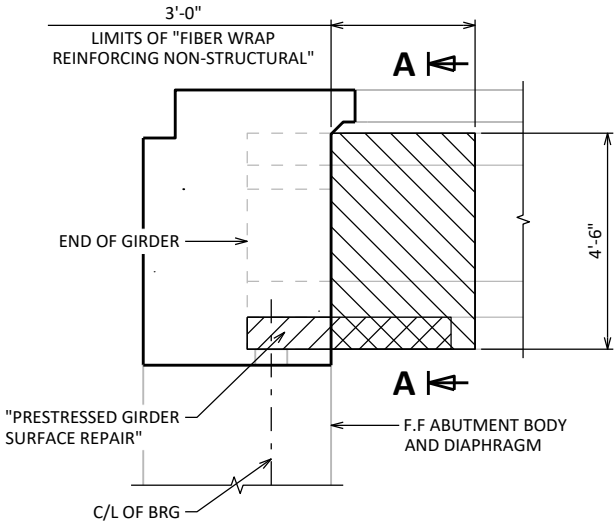
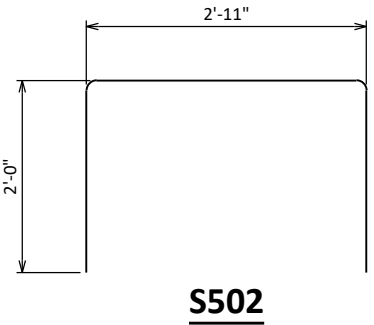
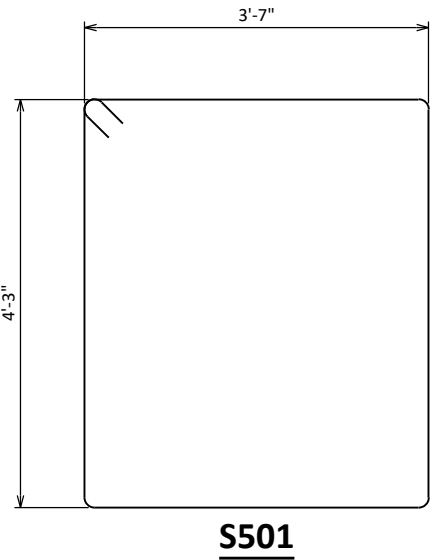
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
ABUTMENT DIAPHRAGM DETAILS (1 OF 2)		SHEET 6 OF 12 392	

BILL OF BARS

TOTAL COATED = 12,670 LBS

BAR MARK	NO. REQ'D.			LENGTH	COAT	BENT	LOCATION
	STAGE 2	STAGE 4A	STAGE 4B				
S501	76	56	50	16'-4"	X	X	ABUT. DIAPHRAGM - STIRRUPS
S502	76	56	50	6'-8"	X	X	ABUT. DIAPHRAGM - VERT. TOP
S603	18	0	0	41'-2"	X		ABUT. DIAPHRAGM - HORIZ. - TOP & B.F.
S604	0	18	0	31'-3"	X		ABUT. DIAPHRAGM - HORIZ. - TOP & B.F.
S605	0	0	18	23'-10"	X		ABUT. DIAPHRAGM - HORIZ. - TOP & B.F.
S606	120	96	72	4'-0"	X		ABUT. DIAPHRAGM - HORIZ. - F.F. BTW GIRDERS
S507	24	16	12	6'-0"	X		ABUT. DIAPHRAGM - THRU GIRDER WEBS
S508	20	0	0	40'-7"	X		ABUT. DIAPHRAGM - TOP TRANS. DECK
S509	0	20	0	30'-8"	X		ABUT. DIAPHRAGM - TOP TRANS. DECK
S510	0	0	20	23'-10"	X		ABUT. DIAPHRAGM - TOP TRANS. DECK
S411	222	164	144	3'-5"	X		ABUT. DIAPHRAGM - TOP LONGIT. DECK
S412	4	0	4	5'-2"	X		ABUT. DIAPHRAGM - VERT. ENDS
S613	3	0	0	8'-11"	X	X	ABUT. DIAPHRAGM - HORIZ. ENDS - WING 2
S614	3	0	0	8'-2"	X	X	ABUT. DIAPHRAGM - HORIZ. ENDS - WING 2
S615	0	0	3	9'-6"	X	X	ABUT. DIAPHRAGM - HORIZ. ENDS - WING 1
S616	0	0	3	8'-9"	X	X	ABUT. DIAPHRAGM - HORIZ. ENDS - WING 1
S617	3	0	0	8'-11"	X	X	ABUT. DIAPHRAGM - HORIZ. ENDS - WING 3
S618	3	0	0	8'-2"	X	X	ABUT. DIAPHRAGM - HORIZ. ENDS - WING 3
S619	0	0	3	9'-6"	X	X	ABUT. DIAPHRAGM - HORIZ. ENDS - WING 4
S620	0	0	3	8'-9"	X	X	ABUT. DIAPHRAGM - HORIZ. ENDS - WING 4
S421	12	8	6	5'-10"	X		ABUT. DIAPHRAGM BELOW GIRDERS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE
ADJUST AS NEEDED AT EXTERIOR GIRDERS TO MAINTAIN 2" CLEAR COVER AT DIAPHRAGM ENDS

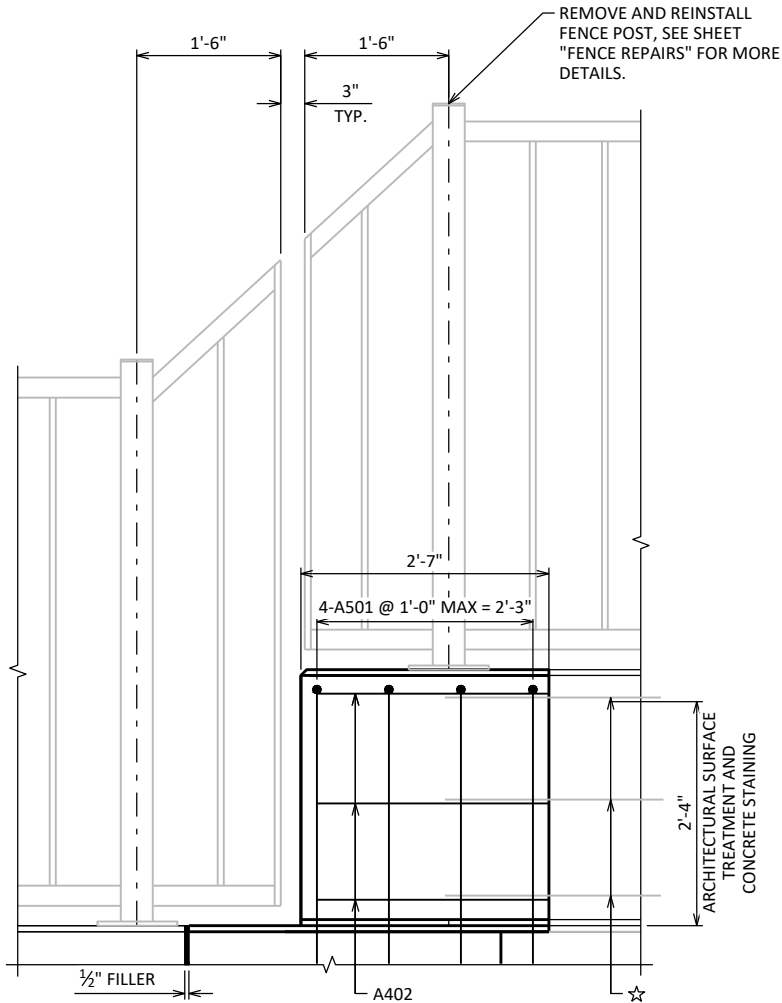


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
ABUTMENT DIAPHRAGM DETAILS (2 OF 2)		SHEET 7 OF 12 393	

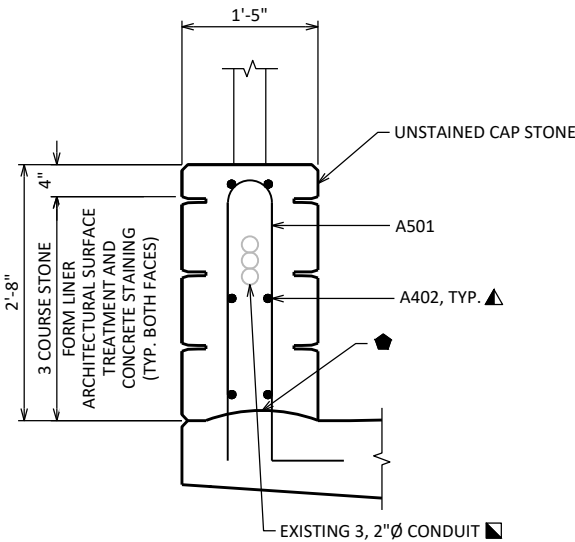
LEGEND

NEW PARAPET SHAPE & ELEVATIONS TO MATCH EXISTING PARAPET SHAPES & ELEVATIONS.

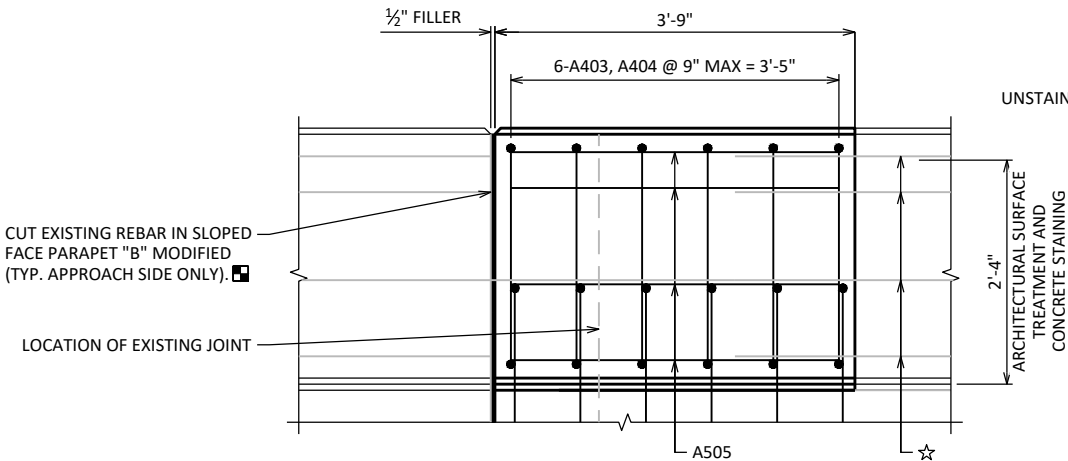
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXISTING LONGITUDINAL MEDIAN AND PARAPET REINFORCEMENT INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENT ARE VIOLATED. REPLACE DAMAGED OR CORRODED REINFORCEMENT AS DIRECTED BY THE ENGINEER.
- ▣ SAVE AND INCORPORATE EXISTING CONDUIT. REPLACE CONDUIT IF DAMAGED DURING CONSTRUCTION.
- ◆ CONST. JOINT. STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE 2%-SLOPE. DO NOT APPLY PROTECTIVE SURFACE TREATMENT TO THIS AREA.
- ▲ LAP TO EXISTING LONGITUDINAL PARAPET REINFORCING.
- PAINT ENDS OF EXPOSED REINFORCEMENT WITH EPOXY CONFORMING TO AASHTO M-235, TYPE III, GRADE 2, CLASS B OR C.



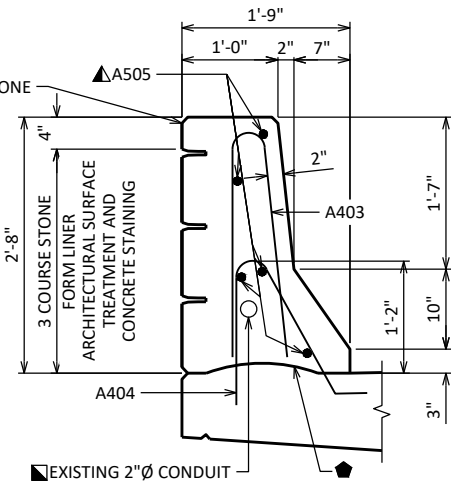
VERTICAL FACE PARAPET 'A' MODIFIED ELEVATION



SECTION THRU VERTICAL FACE PARAPET 'A' MODIFIED

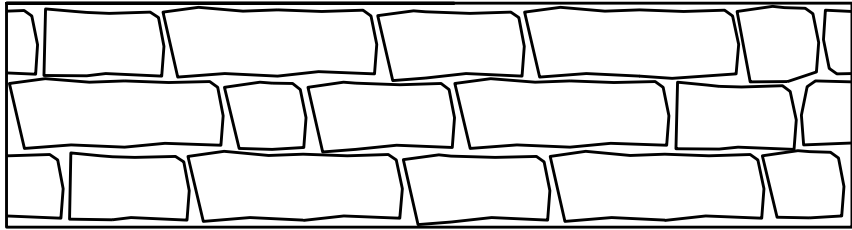


SLOPED FACE PARAPET 'B' MODIFIED ELEVATION



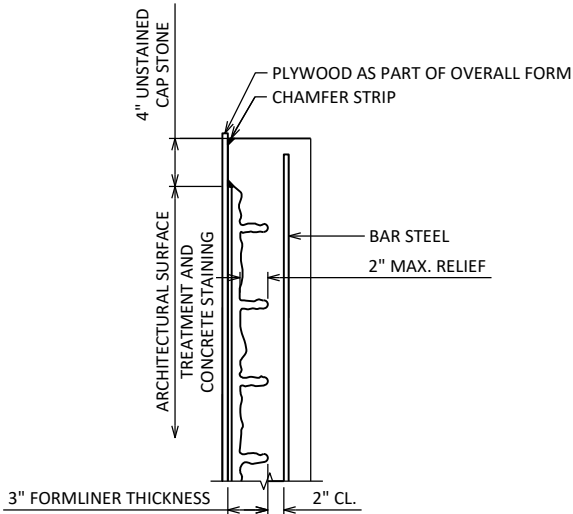
SECTION THRU SLOPED FACE PARAPET 'B' MODIFIED

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
PARAPET DETAILS (1 OF 2)		SHEET 8 OF 12 394	



RECTANGULAR CUT STONE

MATCH EXISTING COURSE HEIGHT AND NUMBER OF COURSES
MAX. RELIEF = 2"



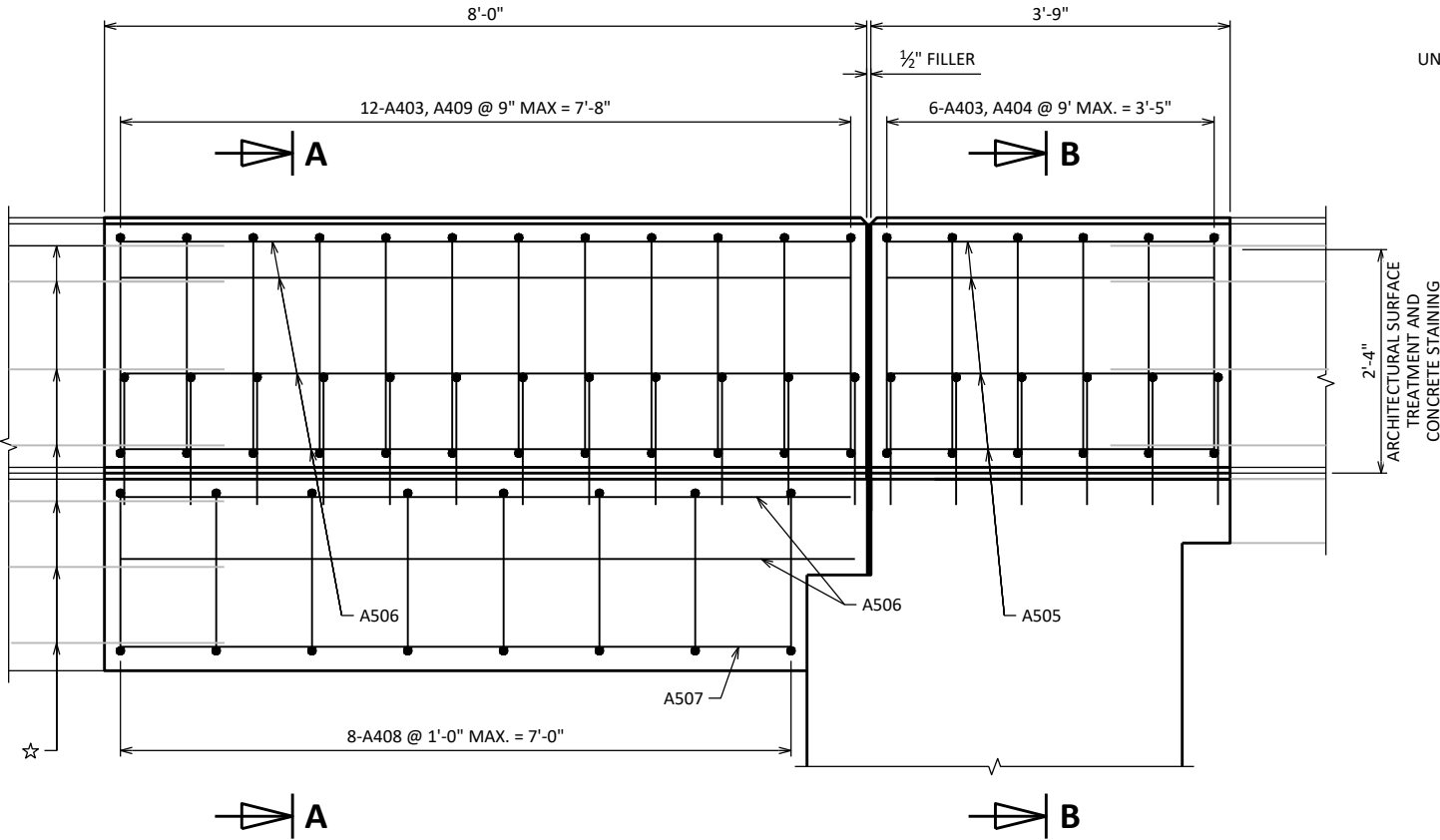
SECTION THRU FORMLINER

LEGEND

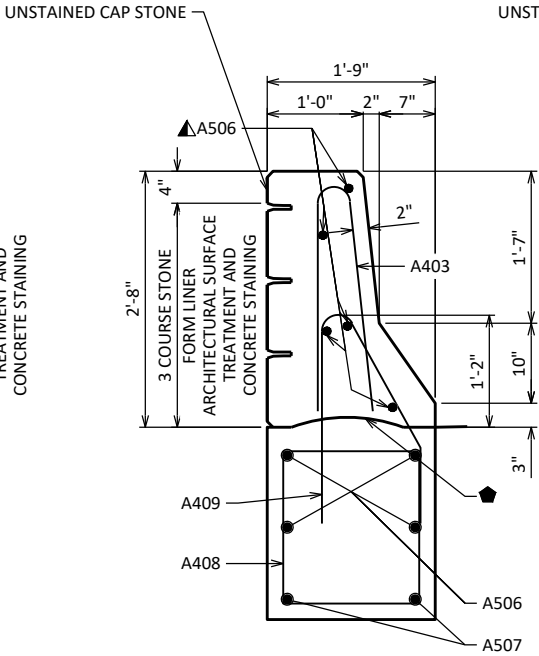
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXISTING LONGITUDINAL MEDIAN AND PARAPET REINFORCEMENT INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENT ARE VIOLATED. REPLACE DAMAGED OR CORRODED REINFORCEMENT AS DIRECTED BY THE ENGINEER.
- ▣ SAVE AND INCORPORATE EXISTING CONDUIT. REPLACE CONDUIT IF DAMAGED DURING CONSTRUCTION.
- ◆ CONST. JOINT. STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE 2%-SLOPE. DO NOT APPLY PROTECTIVE SURFACE TREATMENT TO THIS AREA.
- ▲ LAP TO EXISTING LONGITUDINAL PARAPET REINFORCING.

NOTES

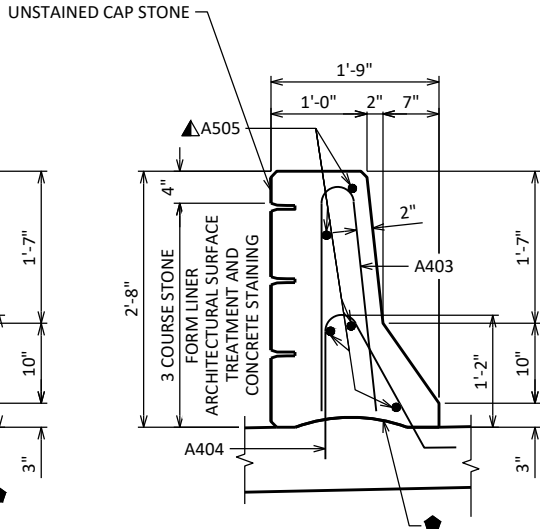
NEW PARAPET SHAPE & ELEVATIONS TO MATCH EXISTING PARAPET SHAPES & ELEVATIONS.
FORMLINER COURSING SHALL BE LEVEL.
FORMLINER COURSING SHALL BE VERTICALLY ALIGNED.
EXTEND FORMLINER BEHIND EXISTING LIGHT PEDESTAL AS FAR AS REASONABLY POSSIBLE, LIMITS TO BE APPROVED BY THE ENGINEER.



SLOPED FACE PARAPET 'C'
MODIFIED ELEVATION



SECTION A-A



SECTION B-B

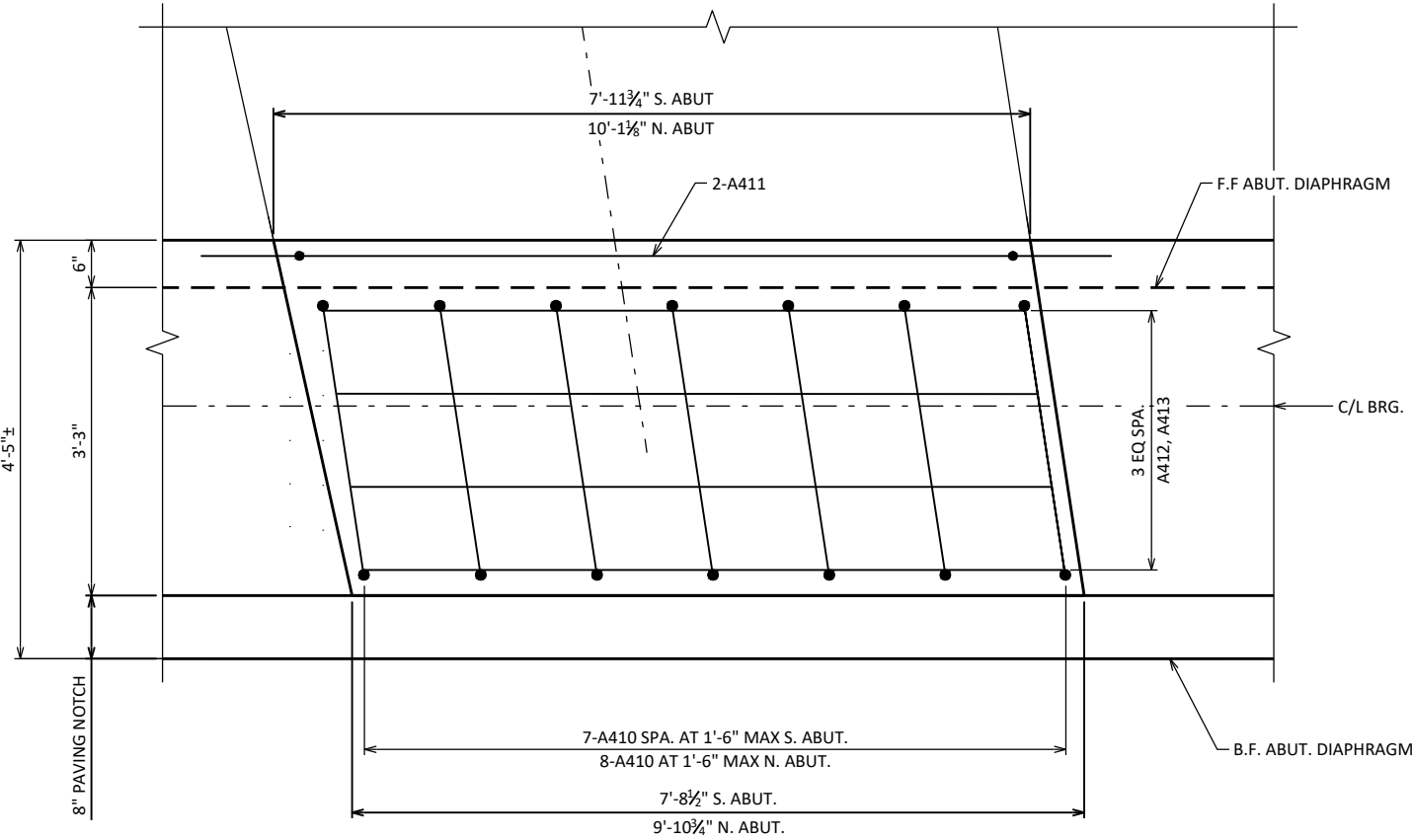
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
PARAPET DETAILS (2 OF 2)		SHEET 9 OF 12 395	

LEGEND

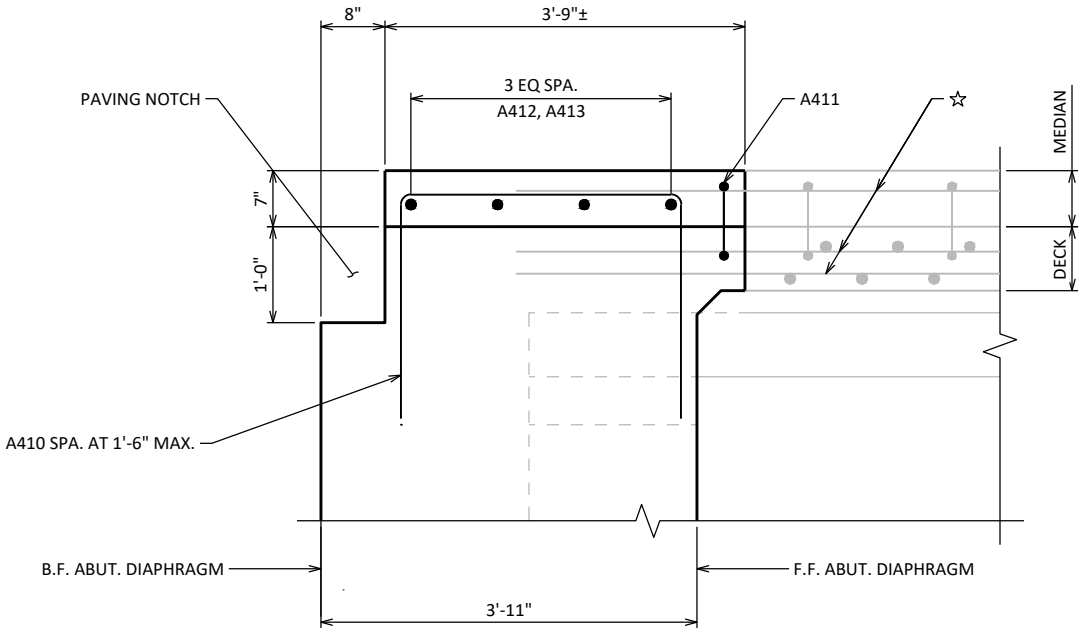
☆ CLEAN, STRAIGHTEN & INCORPORATE EXISTING LONGITUDINAL MEDIAN AND PARAPET REINFORCEMENT INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENT ARE VIOLATED. REPLACE DAMAGED OR CORRODED REINFORCEMENT AS DIRECTED BY THE ENGINEER.

NOTES

NEW MEDIAN SHAPE & ELEVATIONS TO MATCH EXISTING MEDIAN SHAPES & ELEVATIONS.



MEDIAN PLAN VIEW



SECTION THRU MEDIAN

(DECK AND DIAPHRAGM BARS NOT SHOWN FOR CLARITY)

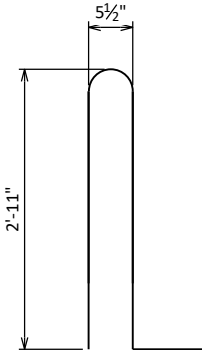
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
MEDIAN DETAILS		SHEET 10 OF 12	
		396	

BILL OF BARS

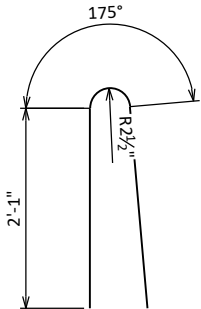
TOTAL COATED = 840 LBS

BAR MARK	NO. REQ'D.			LENGTH	COAT	BENT	LOCATION
	STAGE 2	STAGE 4A	STAGE 4B				
A501	0	0	8	7'-4"	X	X	SLAB & PARAPET A - VERT.
A402	0	0	12	2'-3"	X		PARAPET A - LONGIT.
A403	12	0	36	4'-10"	X	X	PARAPET B & C - VERT.
A404	12	0	12	4'-3"	X	X	SLAB & PARAPET B & C - VERT.
A505	10	0	10	3'-5"	X		PARAPET B & C - LONGIT.
A506	0	0	18	7'-8"	X		PARAPET C - LONGIT.
A507	0	0	4	7'-0"	X		PARAPET C - LONGIT.
A408	0	0	16	6'-6"	X	X	PARAPET C - STIRRUP
A409	0	0	24	4'-9"	X	X	PARAPET C - VERT.
A410	5	10	0	7'-5"	X	X	MEDIAN - VERT.
A411	2	2	0	7'-7"	X	X	MEDIAN - VERT. AT DECK
A412	0	4	0	7'-4"	X		MEDIAN - HORIZ. SOUTH ABUT.
A413	4	0	0	9'-6"	X		MEDIAN - HORIZ. NORTH ABUT.

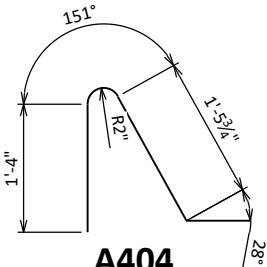
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE



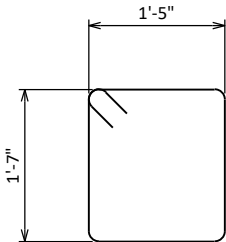
A501



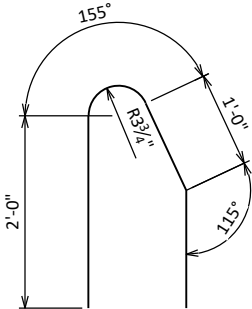
A403



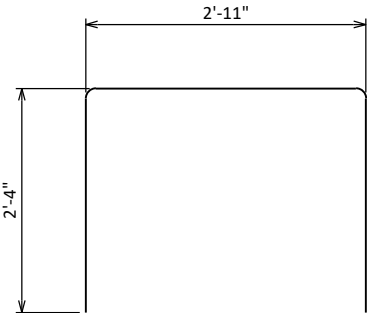
A404



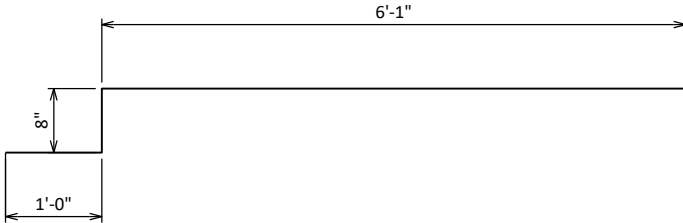
A408



A409



A410



A411

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
DRAWN BY		NDS	PLANS CK'D ABP
PARAPET AND MEDIAN DETAILS		SHEET 11 OF 12 397	

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-29			
	DRAWN BY	NDS	PLANS CK'D ABP
FENCE REPAIRS		SHEET 12 OF 12	
		398	



STATE PROJECT NUMBER

1020-05-63

DESIGN DATA

LIVE LOAD:

INVENTORY RATING: HS-12
OPERATING RATING: HS-34
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 240 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY:
OVERLAY DECKS $f'_c = 4,000$ PSI
PRESTRESSED GIRDER $f'_c = 5,000$ PSI
SURFACE REPAIR $f'_c = 3,500$ PSI
ALL OTHER $f'_c = 3,500$ PSI
BAR STEEL REINFORCEMENT
GRADE 60 $f_y = 60,000$ PSI

SCOPE OF WORK B-17-40

- JOINT REPAIR
- CONCRETE OVERLAY
- PATCH AND FIBER WRAP ALL GIRDER ENDS, PIER CAPS, AND PIER COLUMNS
- REMOVE AND REPLACE BEARINGS

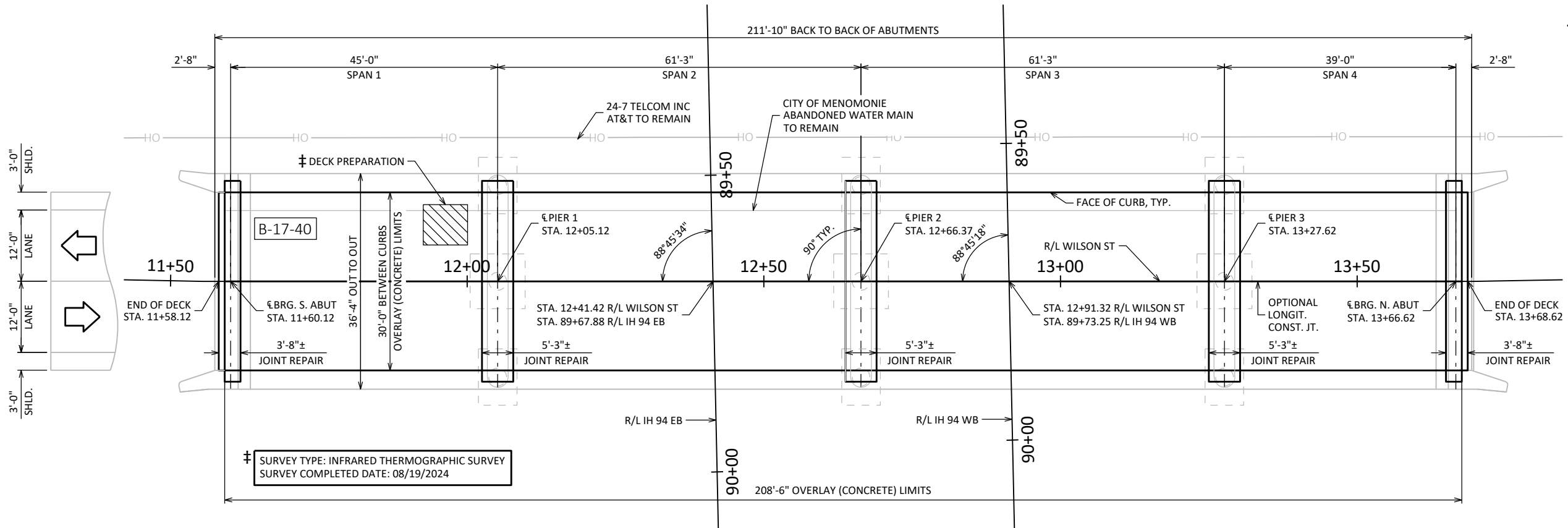
TRAFFIC DATA

FEATURE ON: WILSON ST

A.D.T. = 2,700 (2023)
R.D.S. = 30 MPH

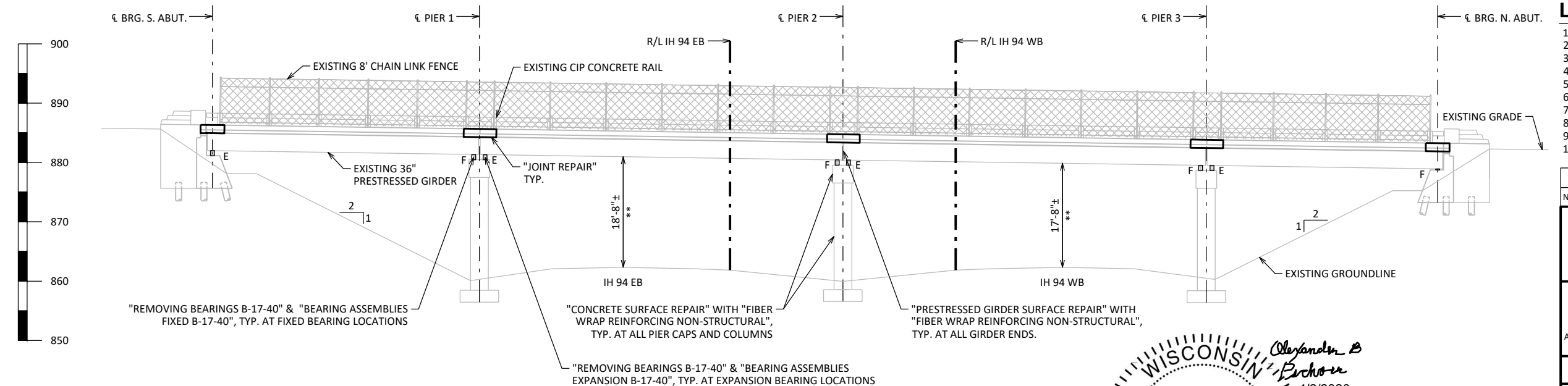
FEATURE UNDER: IH 94

A.D.T. = 36,380 (2019)
A.D.T. = 38,890 (2047)
R.D.S. = 70 MPH



PLAN

4 SPAN 36" PRESTRESSED GIRDER - CONCRETE OVERLAY, JOINT REPAIR, BEARING REPLACEMENT, & FIBER WRAP



ELEVATION

NORMAL TO IH 94
(LOOKING WEST)

** VERTICAL CLEARANCE TAKEN FROM HSI ON 11/21/2024

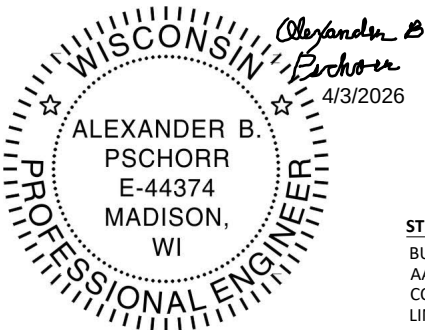
LIST OF DRAWINGS:

- GENERAL PLAN & ELEVATION
- GENERAL NOTES, QUANTITIES, & CROSS SECTION
- REMOVAL AND CURB DETAILS
- BEARING DETAILS
- EXPANSION DEVICE (1 OF 2)
- EXPANSION DEVICE (2 OF 2)
- BILL OF BARS
- COVER PLATE DETAILS
- FIBER WRAP DETAILS
- INFRARED THERMOGRAPHIC DECK SURVEY

NO.	DATE	REVISION	BY
Michael Baker MICHAEL BAKER INTERNATIONAL 1255 FOURIER DRIVE SUITE 100 MADISON, WI 53717 INTERNATIONAL			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>[Signature]</i>	CHIEF STRUCTURES DESIGN ENGINEER	DATE 05/11/26
STRUCTURE B-17-40			
WILSON ST OVER IH 94			
COUNTY	DUNN	CITY	MENOMONIE
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	ABP	DESIGN CK'D	MSC
DRAWN BY	NDS	PLANS CK'D	ABP
GENERAL PLAN & ELEVATION			SHEET 1 OF 10 399

STRUCTURE DESIGN CONTACTS:

BUREAU OF STRUCTURES:
AARON BONK (608) 261-0261
CONSULTANT:
LINDA KRUEGER (608) 821-8704



GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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

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

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

ALL CONCRETE REMOVAL SHALL BE DEFINED BY THE DEPTH OF SAW CUT GIVEN IN THE STANDARD SPECIFICATION OR 1" DEEP UNLESS NOTED OTHERWISE.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF THE NEW CONCRETE OVERLAY AND ALL FACES OF NEW CURB.

SEAL OVERLAY CONSTRUCTION JOINTS ACCORDING TO SECTION 502.3.13.1 OF THE STANDARD SPECIFICATIONS. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

A MINIMUM OF 1½" OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS TO REAPPLY CONCRETE MASONRY OVERLAY".

THE AVERAGE OVERLAY THICKNESS IS BASED ON THE MINIMUM OVERLAY THICKNESS PLUS ½-INCH TO ACCOUNT FOR VARIATIONS IN THE DECK SURFACE.

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL-DEPTH DECK REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ANY EXCAVATION NECESSARY TO COMPLETE THE OVERLAY OR JOINT REPAIRS AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1½" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION.

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.

THE EXISTING STRUCTURE B-17-40 IS A 4-SPAN 36" PRESTRESSED CONCRETE GIRDER STRUCTURE WITH AN OUT-TO-OUT WIDTH OF 36'-4" AND A BACK-TO-BACK OF ABUTMENT LENGTH OF 211'-10". THE ENTIRE BRIDGE DECK SHALL BE PREPARED FOR A NEW CONCRETE OVERLAY. THE COMPRESSION SEALS AT THE ABUTMENTS AND PIERS SHALL BE REPLACED WITH EXPANSION DEVICES. ALL BEARINGS SHALL BE REMOVED AND REPLACED. CONCRETE SURFACE REPAIRS WITH NON-STRUCTURAL FIBER WRAPPING SHALL BE PERFORMED AT ALL GIRDER ENDS, PIER CAPS, AND PIER COLUMNS.

PERFORM "CONCRETE SURFACE REPAIR" AT ABUTMENTS, PIER CAPS, AND PIER COLUMNS, AND AS DIRECTED BY THE FIELD ENGINEER. QUANTITIES SHOWN ON THE PLANS ARE APPROXIMATE.

PERFORM "PRESTRESSED GIRDER SURFACE REPAIR" AT GIRDER ENDS AS DIRECTED BY THE FIELD ENGINEER.

ABATEMENT OF ASBESTOS TO BE COMPLETED BY OTHERS.

STATE PROJECT NUMBER

1020-05-63

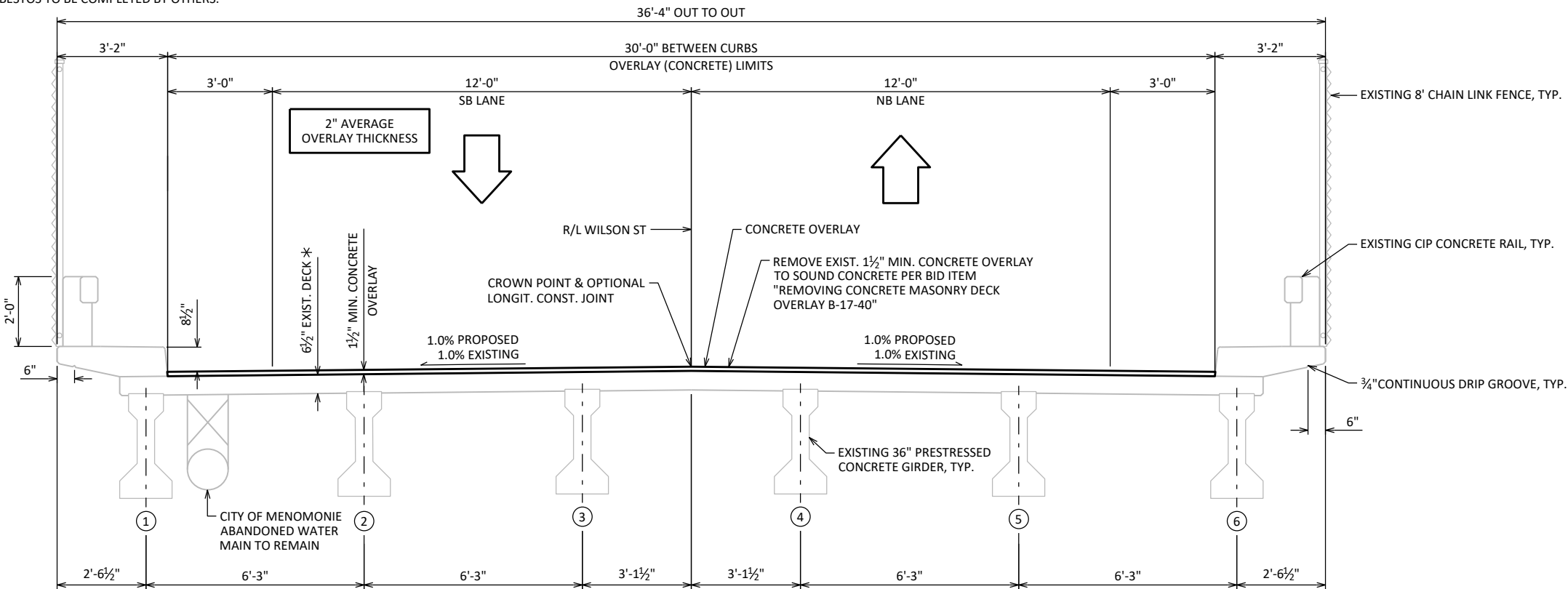
TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SOUTH ABUT.	PIER 1	PIER 2	PIER 3	NORTH ABUT.	SUPER.	TOTAL
502.3101	EXPANSION DEVICE	LF	---	---	---	---	---	170	170
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	---	---	---	723	723
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	31	---	---	---	---	31	62
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	320	---	---	---	320	5,670	6,310
506.5000	BEARING ASSEMBLIES FIXED B-17-40	EACH	---	6	6	6	6	---	24
506.6000	BEARING ASSEMBLIES EXPANSION B-17-40	EACH	6	6	6	6	---	---	24
506.7050.S	REMOVING BEARINGS B-17-40	EACH	6	12	12	12	6	---	48
509.0301	PREPARATION DECKS TYPE 1	SY	---	---	---	---	---	30	30
509.0302	PREPARATION DECKS TYPE 2	SY	---	---	---	---	---	12	12
509.0505.S	CLEANING DECKS TO REAPPLY CONCRETE MASONRY OVERLAY	SY	---	---	---	---	---	695	695
509.1000	JOINT REPAIR	SY	---	---	---	---	---	85	85
509.1500	CONCRETE SURFACE REPAIR	SF	---	234	227	221	---	---	682
509.2000	FULL-DEPTH DECK REPAIR	SY	---	---	---	---	---	1	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	---	---	---	---	---	70	70
509.9005.S	REMOVING CONCRETE MASONRY DECK OVERLAY B-17-40	SY	---	---	---	---	---	695	695
SPV.0165	FIBER WRAP REINFORCING NON-STRUCTURAL	SF	---	881	852	831	---	1,544	4,108
SPV.0165	PRESTRESSED GIRDER SURFACE REPAIR	SF	---	---	---	---	---	48	48
	NON-BID ITEMS								
	BRIDGE SEAT PROTECTION								

NOTE: CONCRETE SURFACE REPAIR AND DECK PREPARATION QUANTITIES ARE APPROXIMATE AND WILL NEED TO BE VERIFIED IN THE FIELD BY THE ENGINEER.

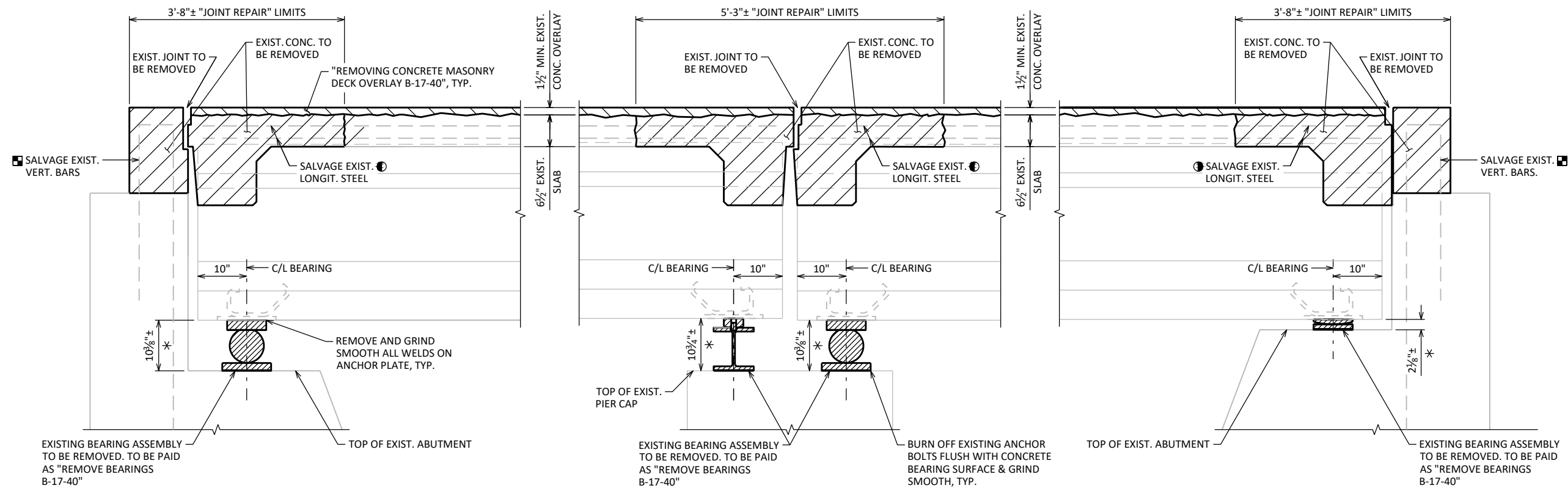
LEGEND

- * EXISTING DECK IN SPANS 2 AND 3 BETWEEN GIRDERS 4 AND 6 IS 8½". THIS PORTION OF THE DECK WAS REPLACED IN 1999.
- ① INDICATES GIRDER NUMBER



CROSS SECTION
(LOOKING NORTH)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-40			
		DRAWN BY	PLANS CK'D
		NDS	ABP
GENERAL NOTES, QUANTITIES, & CROSS SECTION		SHEET 2 OF 10	
		400	



**JOINT & BEARING REMOVAL
AT SOUTH ABUTMENT**

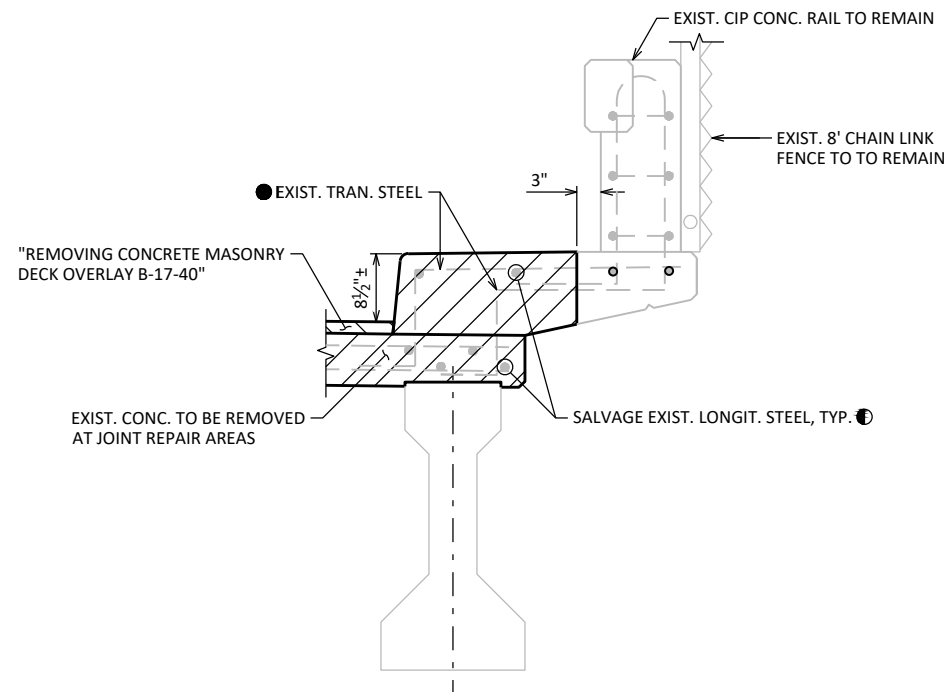
NORMAL TO C/L OF SUBSTRUCTURE

JOINT & BEARING REMOVAL AT PIER

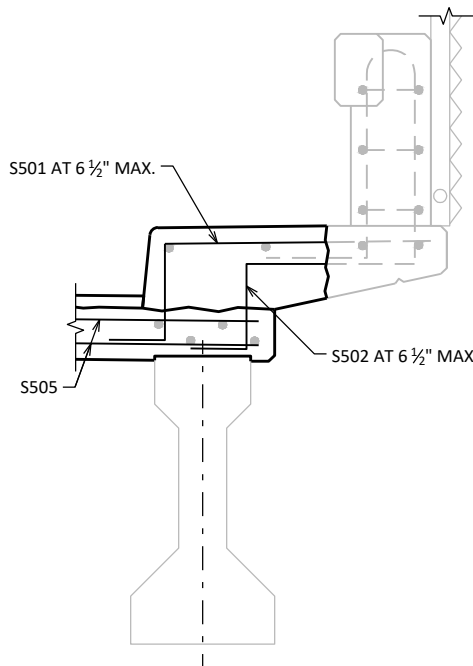
NORMAL TO C/L OF SUBSTRUCTURE

**JOINT & BEARING REMOVAL AT
NORTH ABUTMENT**

NORMAL TO C/L OF SUBSTRUCTURE



JOINT REMOVAL AT CURB



SECTION THRU CURB

LEGEND

- * DIMENSION BASED ON EXISTING STRUCTURE PLANS
- EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. SALVAGE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH THE BARS INDICATED BY ☆.
- CLEAN, STRAIGHTEN & INCORPORATE EXIST. LONGIT. REINF. INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED. REPLACE DAMAGED OR CORRODED REINFORCEMENT AS DIRECTED BY THE ENGINEER.
- CLEAN, STRAIGHTEN & INCORPORATE EXIST. TRAN. REINF. THAT IS EMBEDDED INTO REMAINING CONCRETE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-40			
DRAWN BY		NDS	PLANS CK'D ABP
REMOVAL AND CURB DETAILS		SHEET 3 OF 10 401	

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT C/L OF GIRDER AND C/L OF BEARING.

FINISH THESE SURFACES TO ANSI 250 IF 'Y' DIMENSION IS GREATER THAN 2".

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM F1554 GRADE 55, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING STAINLESS STEEL SHEET, TEFLON SURFACE, PINTLES, ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-17-40 " OR "BEARING ASSEMBLIES FIXED B-17-40 ", EACH.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

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

PROVIDE 3/8" THICK BEARING PAD THE SAME SIZE AS MASONRY PLATE "D" FOR EACH BEARING.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. BOLT LENGTH TO BE 2'-0", EXCEPT 1'-5" AT NORTH ABUTMENT. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2 1/4", ABOVE TOP OF CONCRETE.

CHAMFER TOP OF PINTLES 3/8". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.

STEEL PINTLES SHALL CONFORM TO ASTM A449 OR ASTM A572 GRADE 50.

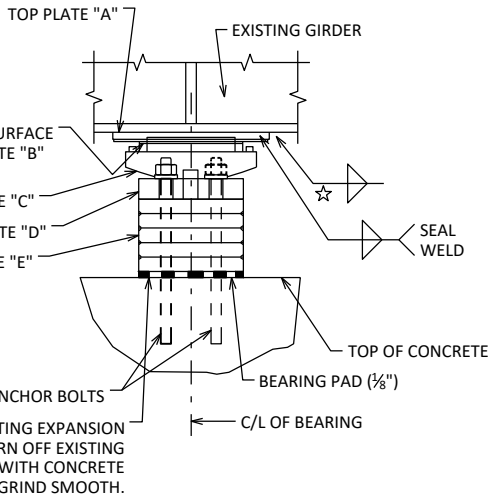
FIXED BEARINGS:
ROCKER PLATE "C" SHALL BE SHOP PAINTED WITH A WELDABLE PRIMER.
MASONRY PLATE "D" SHALL BE GALVANIZED.

EXPANSION BEARINGS:
ROCKER PLATE "C" AND MASONRY PLATE "D" SHALL BE GALVANIZED. TOP PLATE "A" AND STEEL PLATE "B" SHALL BE SHOP PAINTED. USE A WELDABLE PRIMER ON TOP PLATE "A". DO NOT PAINT STAINLESS STEEL OR TEFLON SURFACES.

PROVIDE A METHOD FOR HANDLING ROCKER PLATE "C" DURING GALVANIZING.

BOND STEEL PLATE "B" AND TEFLON WITH ADHESIVE MATERIAL MEETING REQUIREMENTS FOUND IN THE STANDARD SPECIFICATION.

AT INSTALLATION, ENSURE STAINLESS STEEL SLIDING FACE OF THE UPPER ELEMENT AND THE TFE SLIDING FACE OF THE LOWER ELEMENT HAVE THE SURFACE FINISH SPECIFIED AND ARE CLEAN AND FREE OF ALL DUST, MOISTURE, AND OTHER FOREIGN MATTER.



EXPANSION BEARING ASSEMBLY

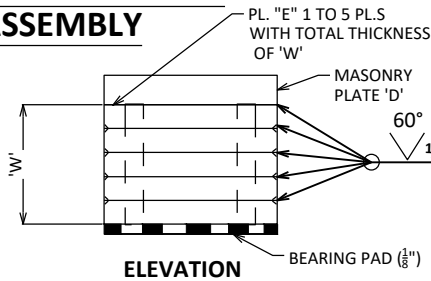
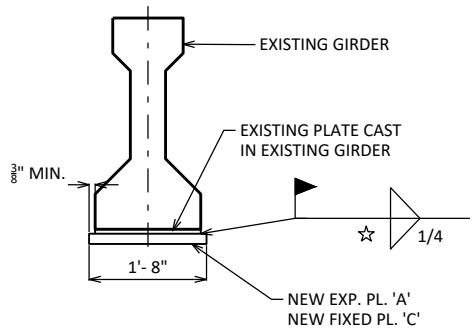


PLATE 'E' DETAILS

(FOR DIMS. 'X', 'Z', AND ANCHOR BOLT LOCATIONS SEE MASONRY PLATE "D".)



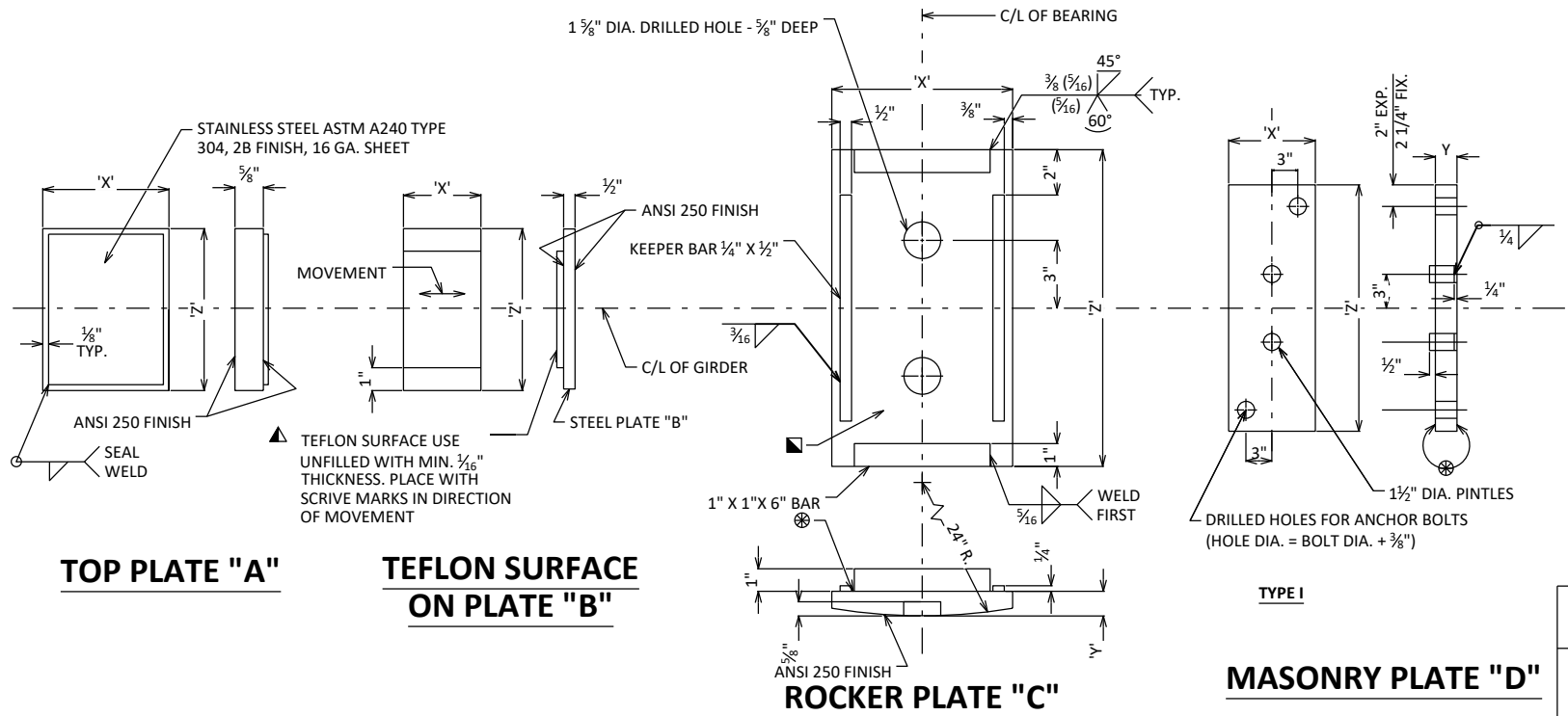
BEARING REPLACEMENT DETAILS

TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	5/16"
OVER 1 1/2" TO 2 1/4"	3/8"
OVER 2 1/4" TO 6"	1/2"

EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

MIN. PASS SIZE IS 5/16"



TOP PLATE "A"

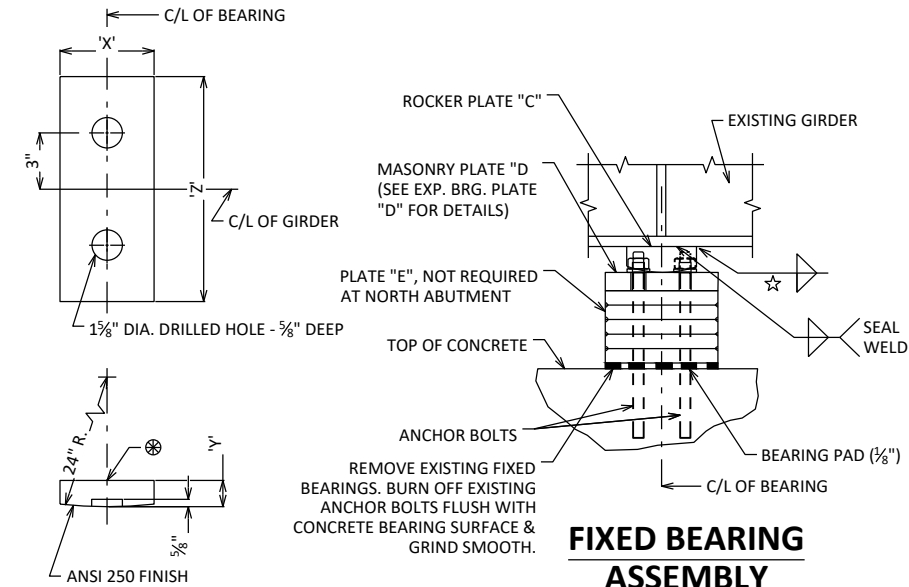
TEFLON SURFACE ON PLATE "B"

ROCKER PLATE "C"

MASONRY PLATE "D"

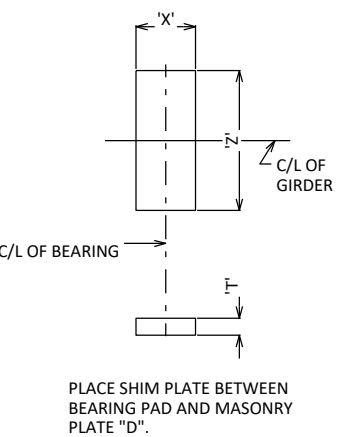
EXPANSION BEARING

	PLATE "A"		PLATE "B"		PLATE "C"			PLATE "D"			PLATE "D" TYPE	ANCHOR BOLT SIZE	NO. OF BRG'S REQ'D.	LOCATION
	'X'	'Z'	'X'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'				
EXPANSION BEARING	9"	1'-8"	5"	1'-8"	7"	1 7/16"	1'-10 1/4"	10"	1 1/2"	2'-6"	TYPE 1	1 1/4"	24	S. ABUT., PIER 1-SPAN 2, PIER 2-SPAN 3, PIER 3-SPAN 4
FIXED BEARING					5"	1 15/16"	1'-8"	11"	1 3/4"	2'-5"	TYPE 1	1 1/4"	18	PIER 1- SPAN 1, PIER 2-SPAN 2, PIER 3-SPAN 3
					8"	1"	1'-8"	11"	1"	2'-5"	TYPE 1	1 1/4"	6	NORTH ABUT.



ROCKER PLATE "C"

FIXED BEARING



SHIM PLATE DETAILS

IGNORE SHIM PLATES IN ABOVE TABLE WHEN BOTTOM FLANGE BUTT SPLICE IS NOT USED AND THE LARGER BOTTOM FLANGE PLATE IS EXTENDED TO THE END OF THE GIRDER.

IN LIEU OF USING SHIM PLATES, FABRICATOR MAY INCREASE THICKNESS OF TOP PLATE "A" OR MASONRY PLATE "D" BY "T", THE SHIM PLATE THICKNESS.

'T'	NO. REQ'D	LOCATION
1/16"	24	S. ABUT., PIER 1-SPAN 2, PIER 2-SPAN 3, PIER 3-SPAN 4
1/8"	24	S. ABUT., PIER 1-SPAN 2, PIER 2-SPAN 3, PIER 3-SPAN 4
1/16"	18	PIER 1-SPAN 1, PIER 2-SPAN 2, PIER 3-SPAN 3
1/8"	18	PIER 1-SPAN 1, PIER 2-SPAN 2, PIER 3-SPAN 3

FOR DIMS. 'X', 'Z' AND ANCHOR BOLT LOCATIONS SEE MASONRY PLATE "D".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-17-40			
DRAWN BY		CEB	PLANS CK'D LMVK
SHEET 4 OF 10		402	
BEARING DETAILS			



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-40			
		DRAWN BY	PLANS CK'D
		NDS	ABP
EXPANSION DEVICE (1 OF 2)		SHEET 5 OF 10 403	

NORMAL TO C/L OF SUBSTRUCTURE
SYMMETRICAL ABOUT C/L PIER

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS
SYMMETRIC ABOUT C/L JOINT

LEGEND

- ① NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS.
 - ② STUDS $\frac{5}{8}$ " DIA. X $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
 - ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDER.
 - ③ $\frac{3}{4}$ " DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON C/L OF GIRDER. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
 - ④ $\frac{3}{4}$ " DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
 - ⑤ FABRICATE SUPPORT FROM 3" X $\frac{1}{2}$ " BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $1\frac{1}{2}$ " DIA. HOLE FOR NO. 3 AND 1" DIA. HOLE FOR NO. 4.
- ▲ SET JOINT OPENING TO $1\frac{1}{2}$ " AT ABUTMENTS. SET JOINT OPENING AT $1\frac{3}{4}$ " AT PIERS.

NORMAL TO C/L OF SUBSTRUCTURE
SYMMETRICAL ABOUT C/L PIER
(SHOWING REINFORCEMENT)

PART PLAN AT PIER

NOTES

ONE FIELD SPICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, ANCHOR PLATES SHALL BE PROVIDED 3" FROM EACH SIDE OF THE FIELD SPICE. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPlicing PERMITTED IN NEOPRENE STRIP SEAL.

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

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

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED. 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 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND
HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE B-17-40". LF.

FOR SECTIONS THRU JOINT AND ALTERNATE STRIP SEAL ANCHOR DETAILS SEE SHEET
EXPANSION DEVICE (1 OF 2).

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-40			
DRAWN BY		NDS	PLANS CK'D ABP
EXPANSION DEVICE (2 OF 2)		SHEET 6 OF 10 404	

S. ABUT. - BILL OF BARS TOTAL COATED = 320 LBS

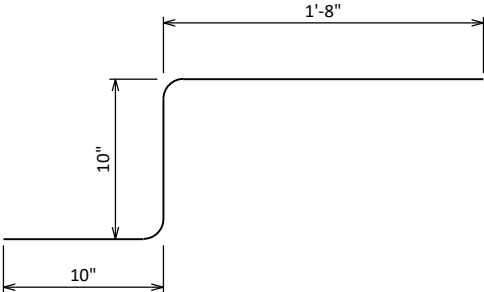
BAR MARK	NO. REQ'D.	LENGTH	COAT	BENT	LOCATION
A401	31	4'-0"	X	X	PAVING BLOCK - STIRRUP
A502	16	8'-0"	X		PAVING BLOCK - TRANSVERSE
A503	31	3'-0"	X	X	PAVING BLOCK - L-BAR

N. ABUT. - BILL OF BARS TOTAL COATED = 320 LBS

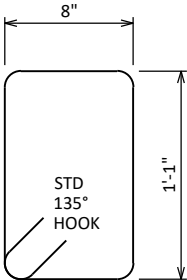
BAR MARK	NO. REQ'D.	LENGTH	COAT	BENT	LOCATION
B401	31	4'-0"	X	X	PAVING BLOCK - STIRRUP
B502	16	8'-0"	X		PAVING BLOCK - TRANSVERSE
B503	31	3'-0"	X	X	PAVING BLOCK - L-BAR

SUPER. - BILL OF BARS TOTAL COATED = 5,670 LBS

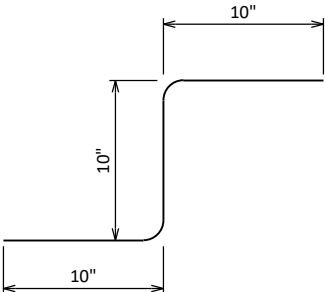
BAR MARK	NO. REQ'D.	LENGTH	COAT	BENT	LOCATION
S501	80	3'-1"	X	X	CURB - VERTICAL
S502	80	2'-3"	X	X	CURB - VERTICAL
S403	280	3'-9"	X	X	END DIAPHRAGM, BETWEEN GIRDERS - STIRRUP
S404	80	5'-11"	X		END DIAPHRAGM, BETWEEN GIRDERS - TRANSVERSE
S505	72	32'-5"	X		DECK - TRANSVERSE
S606	240	4'-11"	X		END DIAPHRAGM BTM., BETWEEN GIRDERS - TRANSVERSE



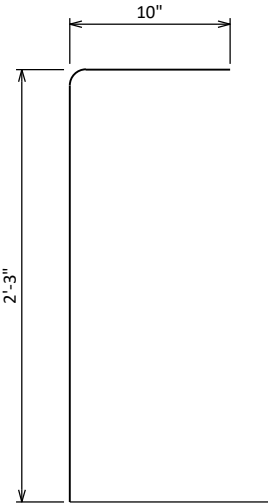
S501



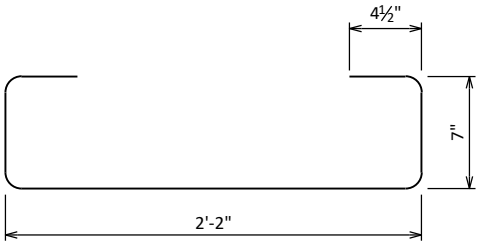
A401, B401



S502



A503, B503



S403

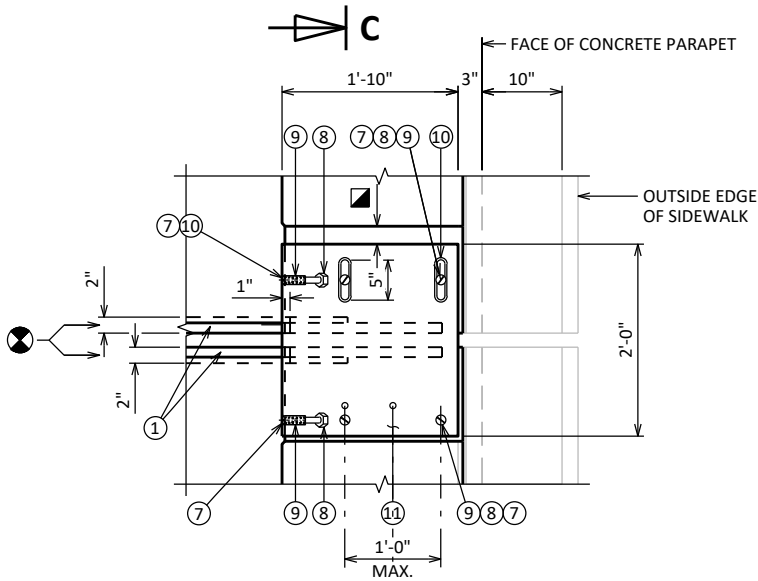
LEGEND

☆ ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-0" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.

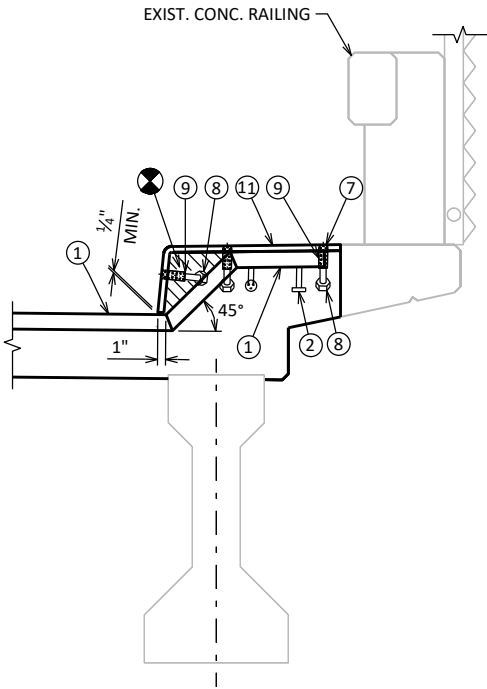
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-40			
DRAWN BY		NDS	PLANS CK'D ABP
BILL OF BARS		SHEET 7 OF 10 405	

LEGEND

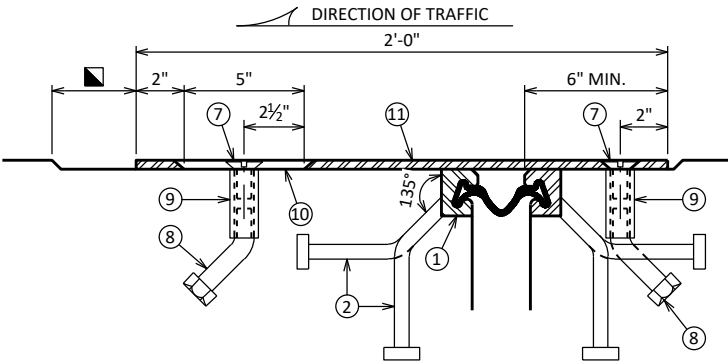
- ① STUDS 5/8" DIA. X 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ② NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS.
- ⑦ 3/4" DIA. X 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
- ⑧ 3/4" DIA. X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- ⑨ 3/4" DIA. X 2 1/4" GALVANIZED THREADED COUPLING.
- ⑩ 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.
- ⑪ SIDEWALK COVER PLATE 3/8" X 2'-0" X 2'-6". BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.



PLAN AT SIDEWALK

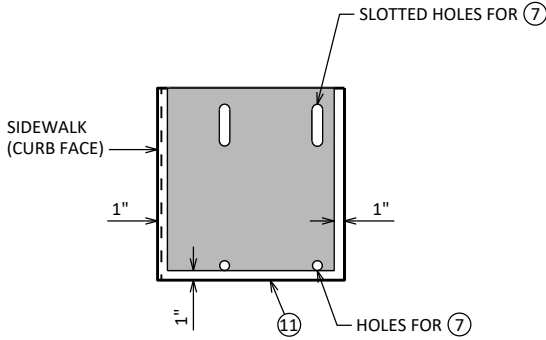


SECTION AT SIDEWALK



SECTION C-C

- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- ▣ 2" AT ABUTMENTS, 2 1/4" AT PIERS.

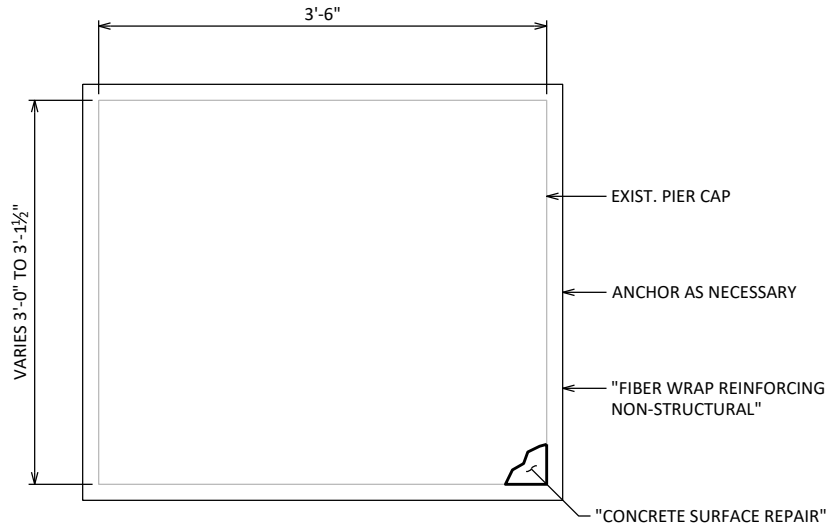


PLAN OF SIDEWALK COVER PLATE WITH SLIP-RESISTANT SURFACE

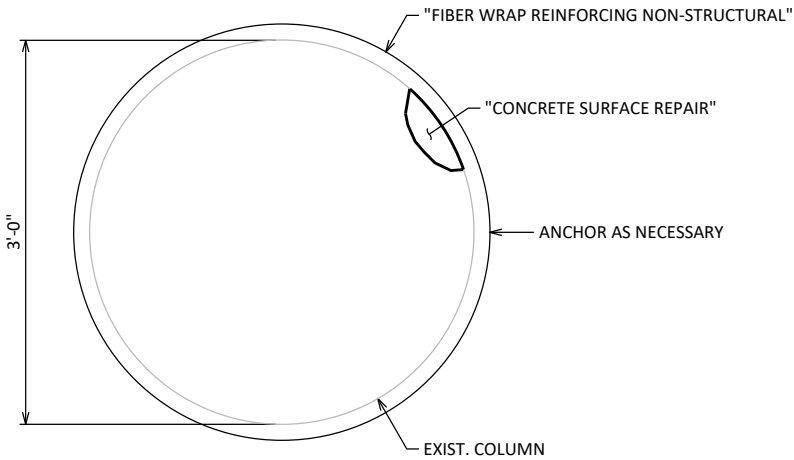
PLACE SLIP-RESISTANT SURFACE ON TOP WALKING SURFACE IN SHADED AREA ONLY.

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

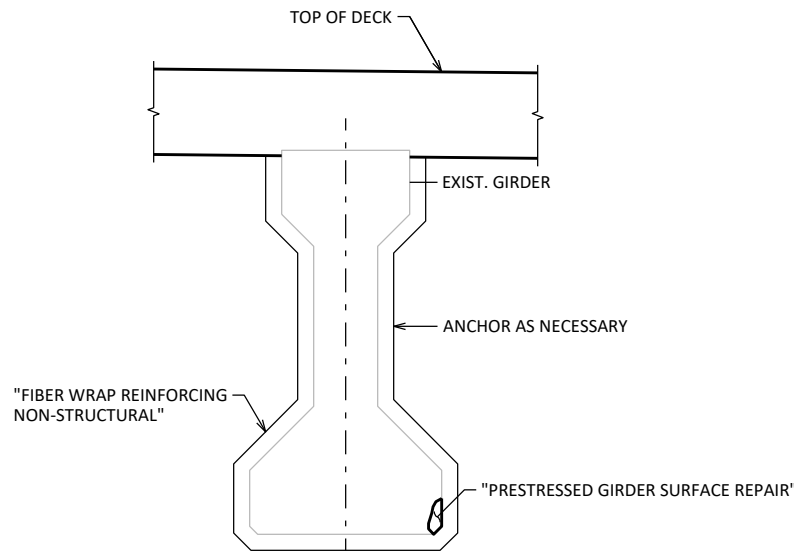
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-40			
DRAWN BY		NDS	PLANS CK'D ABP
COVER PLATE DETAILS		SHEET 8 OF 10 406	



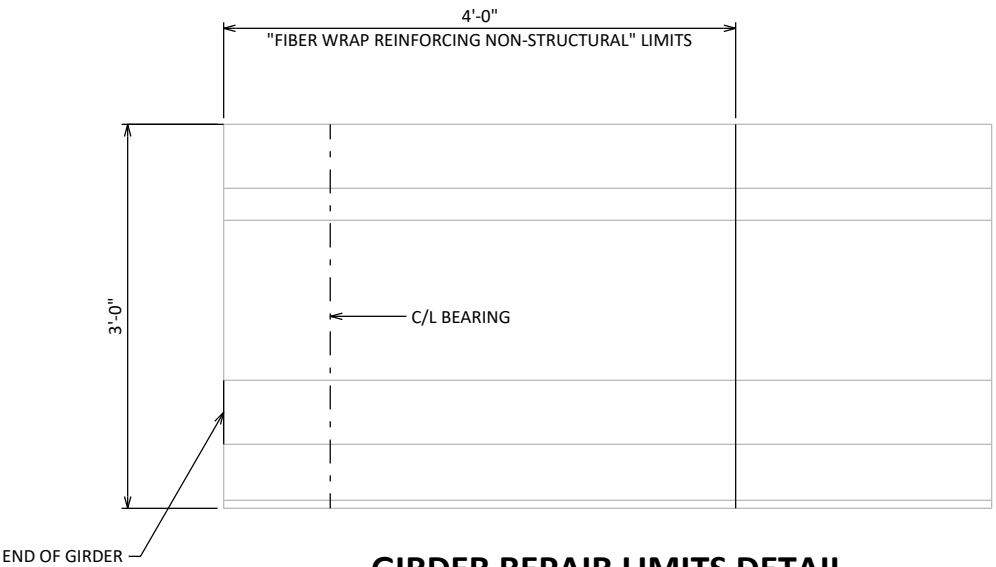
**FIBER WRAP REINFORCEMENT NON-STRUCTURAL
PIER CAP CROSS SECTION**



**FIBER WRAP REINFORCEMENT NON-STRUCTURAL
COLUMN CROSS SECTION**



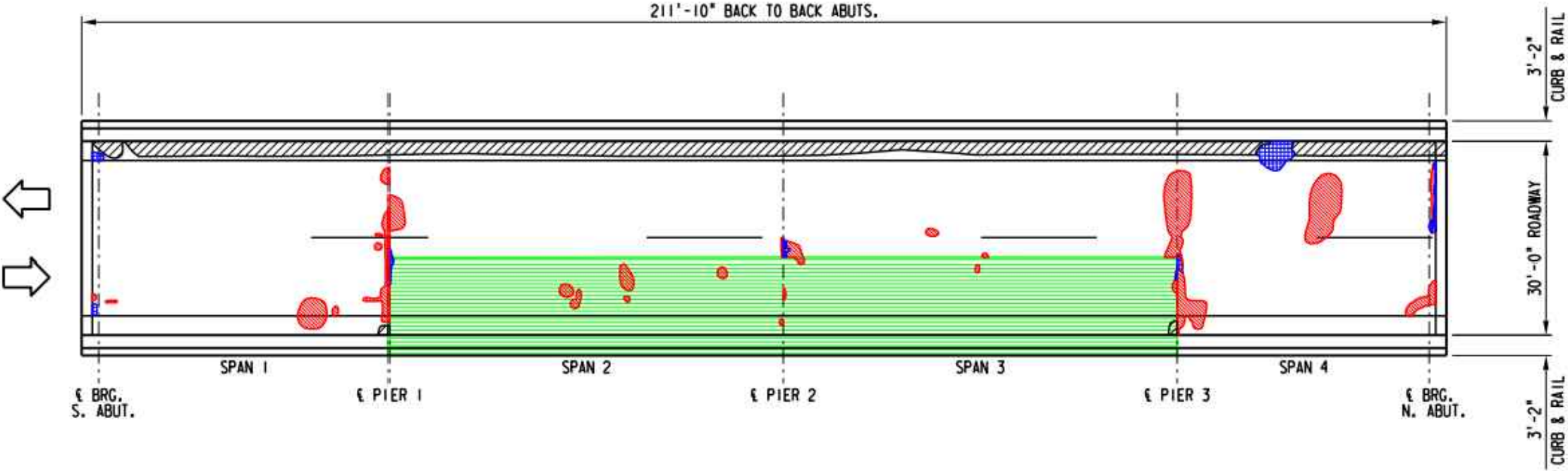
**FIBER WRAP REINFORCEMENT NON-STRUCTURAL
GIRDER CROSS SECTION**



GIRDER REPAIR LIMITS DETAIL

TYPICAL AT ALL GIRDER ENDS.
FIBER WRAP REINFORCEMENT TO BE APPLIED AFTER THE FULL
DEAD LOAD IS APPLIED TO THE GIRDER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-40			
DRAWN BY		NDS	PLANS CK'D ABP
FIBER WRAP DETAILS		SHEET 9 OF 10	
		407	

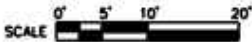


PLAN

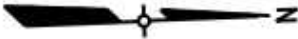
INFRARED THERMOGRAPHIC SURVEY RESULTS

FIELD OBSERVATIONS SUMMARY				STRUCTURE NO. B-17-40		LEGEND	
ITEM	UNIT	QUANT.	%				
TOTAL AREA	ft ²	6315				DELAMINATION	
SHADE/DEBRIS	ft ²	442				SPALL	
DELAMINATION	ft ²	199	3.4			DEBOND	
SPALL	ft ²	0	0			ASPHALT PATCH	
DEBOND	ft ²	0	0			PCC PATCH	
ASPHALT PATCH	ft ²	30	0.5			SHADE/DEBRIS	
PCC PATCH	ft ²	1847	NI*				

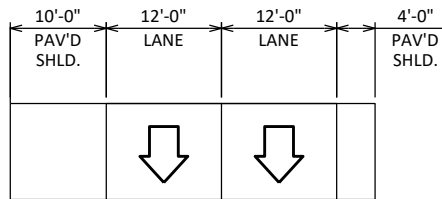
*2001 PCC REPAIR - NOT INCLUDED (NI) IN DEFECTS



SURFACE TYPE: CONCRETE OVERLAY
INFRARED INSPECTION DATE: 8/19/24, 3:05 PM



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-40			
DRAWN BY		NDS	PLANS CK'D ABP
INFRARED THERMOGRAPHIC DECK SURVEY		SHEET 10 OF 10 408	



STATE PROJECT NUMBER

1021-01-78

DESIGN DATA

LIVE LOAD (EXISTING CULVERT):

TAKEN FROM HSI, 12/13/2024
INVENTORY RATING: HS = 12
OPERATING RATING: HS = 20
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 170 (KIPS)

LIVE LOAD (REPLACEMENT SECTION):

DESIGN LOADING: HL-93
INVENTORY RATING: RF = 4.77
OPERATING RATING: RF = 6.18
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

EARTHLOAD (REPLACEMENT SECTION):

DESIGNED FOR 20.0 FT. OF FILL.

MATERIAL PROPERTIES:

CONCRETE MASONRY $f'_c = 3,500$ PSI
BAR STEEL REINFORCEMENT $f_y = 60,000$ PSI

HYDRAULIC DATA

100-YEAR FREQUENCY:

$Q_{100} = 1,046$ C.F.S.
 $V_{100} = 6.09$ F.P.S.
 $HW_{100} = \text{EL. } 830.92$
WATERWAY AREA = 174.5 SQ. FT.
DRAINAGE AREA = 4.97 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8

2-YEAR FREQUENCY:

$Q_{100} = 223$ C.F.S.
 $V_{100} = 1.30$ F.P.S.
 $HW_{100} = \text{EL. } 830.04$

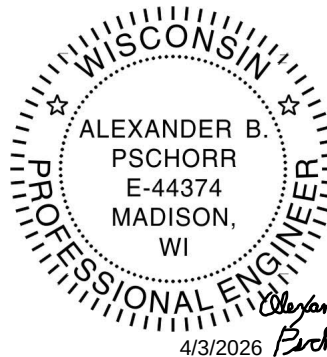
TRAFFIC DATA

FEATURE ON: IH 94

ADT = 36,380 (2019)
ADT = 38,890 (2047)
R.D.S. = 70 MPH

SCOPE OF WORK B-17-51

- REMOVE AND REPLACE INLET APRON, WINGS, AND 49'-9" OF CONCRETE BOX CULVERT BARREL AT NORTH END.
- REMOVE SEDIMENT IN CULVERT CELLS.



LIST OF DRAWINGS:

- GENERAL PLAN & ELEVATION
- GENERAL NOTES, QUANTITIES, & CROSS SECTION
- REMOVAL DETAILS
- BOX DETAILS (1 OF 2)
- BOX DETAILS (2 OF 2)
- APRON DETAILS
- WING DETAILS (1 OF 1)
- WING DETAILS (2 OF 2)
- STAGING DETAILS
- SUBSURFACE EXPLORATION

LEGEND

- INDICATES WING NUMBER
- INSIDE WALLS TO MATCH EXISTING (TYP.)
- 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING (R.M.W) UP WALLS, ACROSS TOP SLAB AT VERTICAL CONST. JOINTS, AND ALONG HORIZONTAL CONST. JOINTS. EXTEND R.M.W 6" MIN. BELOW THE TOP OF THE BOTTOM SLAB

PLAN

TWIN CELL REINFORCED CONCRETE BOX CULVERT - REMOVE AND REPLACE INLET END

ELEVATION

LOOKING EAST

NO.	DATE	REVISION	BY
Michael Baker International MICHAEL BAKER INTERNATIONAL 1255 FOURIER DRIVE SUITE 100 MADISON, WI 53717			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	CHIEF STRUCTURES DESIGN ENGINEER		DATE
05/11/26			
STRUCTURE B-17-51			
IH 94 OVER E BR WILSON CREEK			
COUNTY	DUNN	TOWN	MENOMONIE
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	DESIGN CK'D	SRA BY	PLANS CK'D ABP
NDS		NDS	
GENERAL PLAN & ELEVATION			SHEET 1 OF 10 409

STRUCTURE DESIGN CONTACTS:

BUREAU OF STRUCTURES:
AARON BONK (608) 261-0261
CONSULTANT:
LINDA KRUEGER (608) 821-8704

I.D. 1021-01-08

DATE: FEBRUARY 2026

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

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.

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

ALL CONCRETE REMOVAL SHALL BE DEFINED BY THE DEPTH OF SAW CUT GIVEN IN THE STANDARD SPECIFICATION OR 1" DEEP UNLESS NOTED OTHERWISE.

BEVEL ALL EXPOSED EDGES OF CONCRETE $\frac{3}{4}$ " UNLESS NOTED OTHERWISE.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS B-17-51" SHALL BE THE EXISTING GROUNDLINE.

WITHIN THE LENGTH OF THE BOX ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE ELEVATION AND SECTION EXISTING PRIOR TO EXCAVATION.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE B" REQUIRED ON THE BOX CULVERT SIDES AND BEHIND APRON WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

THE CONTRACTOR IS RESPONSIBLE FOR DIVERSION OF ANY WATER NECESSARY FOR CONSTRUCTION OF THE BOX CULVERT. COST IS INCLUDED IN THE BID ITEM PRICE FOR "TEMPORARY STREAM DIVERSION B-17-51". SEE ROADWAY PLANS.

THE EXISTING STRUCTURE B-17-51 IS A TWIN CELL CONCRETE BOX CULVERT WITH AN OUT-TO-OUT WIDTH OF 23'-0" AND BARREL LENGTH OF 305'-6". ORIGINAL CONSTRUCTION YEAR WAS 1959. THE INLET APRON, WINGS AND APPROXIMATELY 50' OF BOTH CELLS AT THE NORTH END OF THE CULVERT ARE TO BE REMOVED AND REPLACED. CONSTRUCTION IS TO OCCUR HALF AT A TIME WITH WATER DIVERTED THROUGH THE OTHER HALF DURING CONSTRUCTION. CONCRETE SURFACE REPAIR SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER.

THE CONCRETE IN THE CUT OFF WALL MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

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

IN LIEU OF USING BREAKER RUN FOR THE BOX CONSTRUCTION PLATFORM, THE CONTRACTOR MAY ELECT TO SUBSTITUTE COARSE AGGREGATE AASHTO NO. 67 OR AASHTO NO. 4 IN ACCORDANCE WITH STANDARD SPEC 310 AND 604, RESPECTIVELY, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL. THE REGION GEOTECHNICAL ENGINEER MAY BE CONTACTED TO DETERMINE IF "OTHER GRANULAR MATERIAL" IS ACCEPTABLE.

BACKFILL SHALL NOT BE PLACED UNTIL TOP SLAB CONCRETE IS PLACED AND HAS REACHED STRENGTH PER THE STANDARD SPECIFICATIONS.

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	BOX	APRON	WINGS	TOTAL
203.0220	REMOVING STRUCTURE B-17-51	EACH	---	---	---	1
206.2001	EXCAVATION FOR STRUCTURES CULVERTS B-17-51	EACH	---	---	---	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	1,363	---	77	1,440
311.0110	BREAKER RUN	TON	214	104	29	347
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	76	---	---	76
504.0100	CONCRETE MASONRY CULVERTS	CY	170	35	9	214
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	30,780	1,190	---	31,970
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	---	---	1,990	1,990
505.0904	BAR COUPLERS NO. 4	EACH	---	25	---	25
505.0907	BAR COUPLERS NO. 7	EACH	87	---	---	87
505.0909	BAR COUPLERS NO. 9	EACH	101	---	---	101
509.1500	CONCRETE SURFACE REPAIR	SF	---	---	---	10
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	48	---	12	60
606.0300	RIPRAP HEAVY	CY	---	26	---	26
645.0105	GEOTEXTILE TYPE C	SY	161	78	22	261
645.0120	GEOTEXTILE TYPE HR	SY	---	32	---	32
SPV.0060	CLEANING BOX CULVERT B-17-51	EACH	1	---	---	1

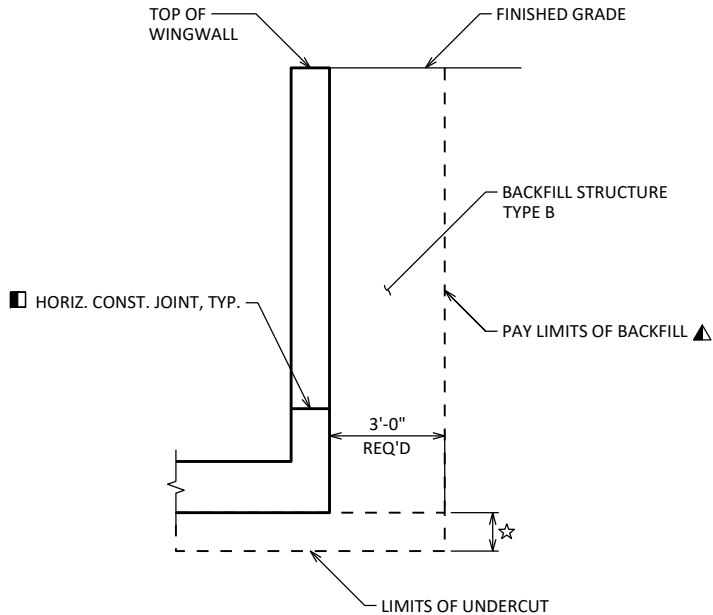
NOTE: CONCRETE SURFACE REPAIR QUANTITY IS APPROXIMATE AND WILL NEED TO BE VERIFIED BY IN THE FIELD BY THE ENGINEER

CONTROL POINT AND BENCHMARK TABLE

POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION	DESC
16	42+64.75	131.90 LT	182132.324	157457.609	849.48	¾" X 9" SPIKE NAIL
17	43+19.32	232.31 LT	182218.951	157532.152	820.93	¾" X 9" SPIKE NAIL

TOP OF BOX CULVERT
 23'-0"
 1'-0" 10'-0" 1'-0" 10'-0" 1'-0"
 1'-0" TYP.
 1'-3"
 9'-0"
 1'-4"
 11'-7"
 1" CHAMFER EXT. BOT. CORNERS
 11" TYP.
 3'-0" TYP.
 5 1/2"
 1'-4 1/2"
 3'-0" REQ'D
 HORIZ. CONST. JOINT. OMIT 1" CHAMFER AT CONST. JOINT.
 CONST. JOINT
 HORIZ. CONST. JOINT. OMIT 1" CHAMFER AT CONST. JOINT.
 HORIZ. CONST. JOINT, TYP. (EXT. OF EXT. WALLS ONLY)
 FINISHED GRADE
 PAY LIMITS OF BACKFILL
 BACKFILL STRUCTURE TYPE B
 LIMITS OF UNDERCUT
 BREAKER RUN
 STAGING CONSTRUCTION JOINT
 GEOTEXTILE TYPE C

CROSS SECTION THRU BARREL



TYPICAL SECTION THRU WINGWALL

LEGEND

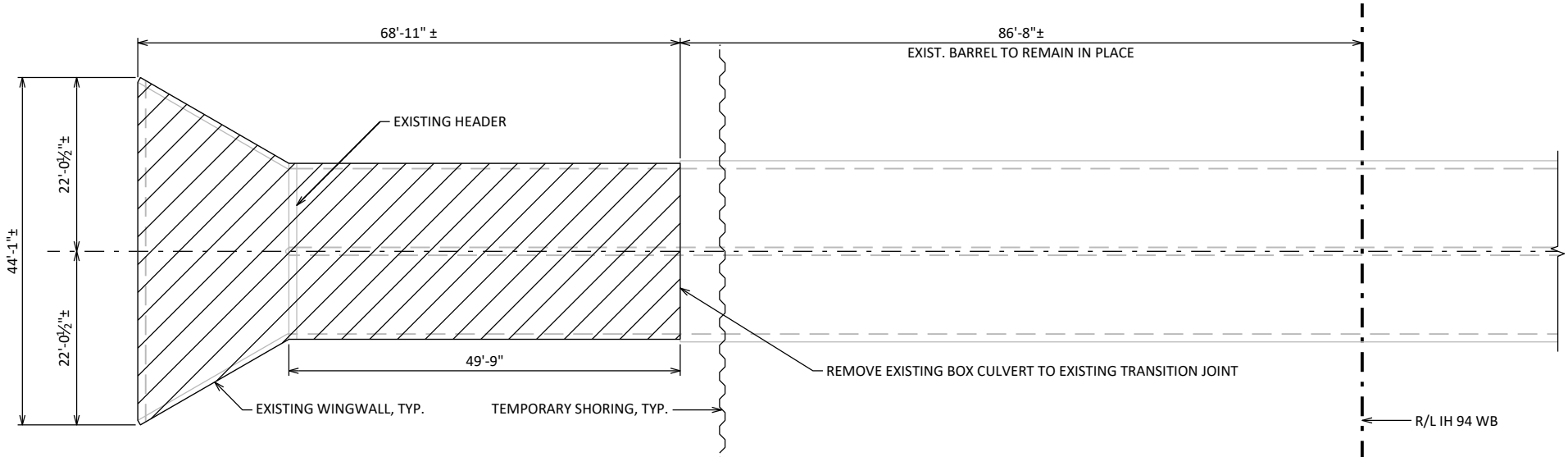
- 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING (R.M.W) UP WALLS, ACROSS TOP SLAB AT VERTICAL CONST. JOINTS, AND ALONG HORIZONTAL CONST. JOINTS. EXTEND R.M.W 6" MIN. BELOW THE TOP OF THE BOTTOM SLAB
- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ☆ UNDERCUT 2'-0". EXCAVATION FOR UNDERCUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE GEOTEXTILE TYPE 'C', AND BACKFILL WITH "BREAKER RUN". UNDERCUT SHALL EXTEND THE ENTIRE LENGTH OF THE NEW PORTIONS OF THE BOX CULVERT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-51			
DRAWN BY		NDS	PLANS CK'D ABP
GENERAL NOTES, QUANTITIES, & CROSS-SECTION		SHEET 2 OF 10	
		410	



STATE PROJECT NUMBER

1021-01-78

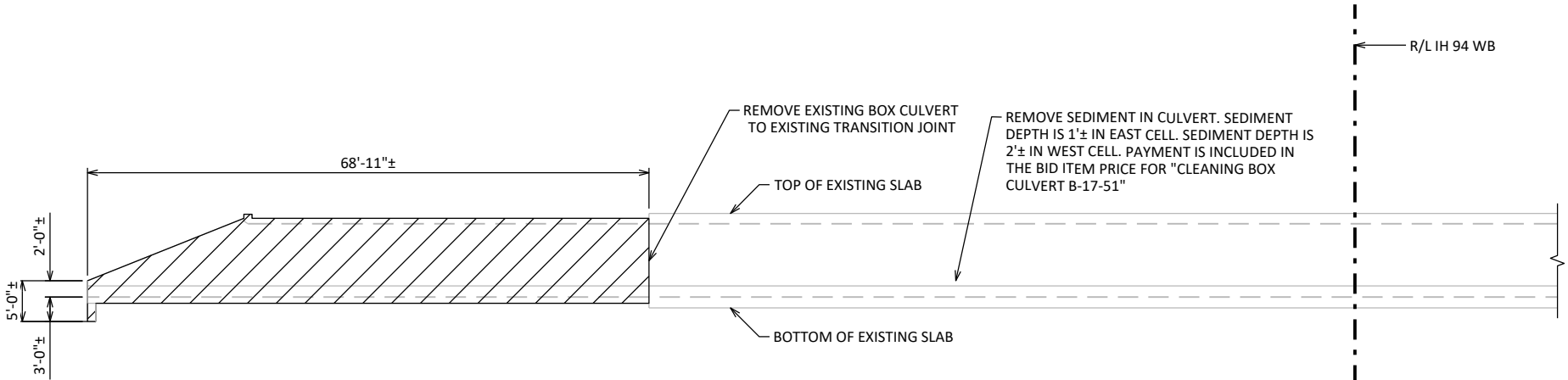


EXISTING PLAN

(REMOVE INLET END)

LEGEND

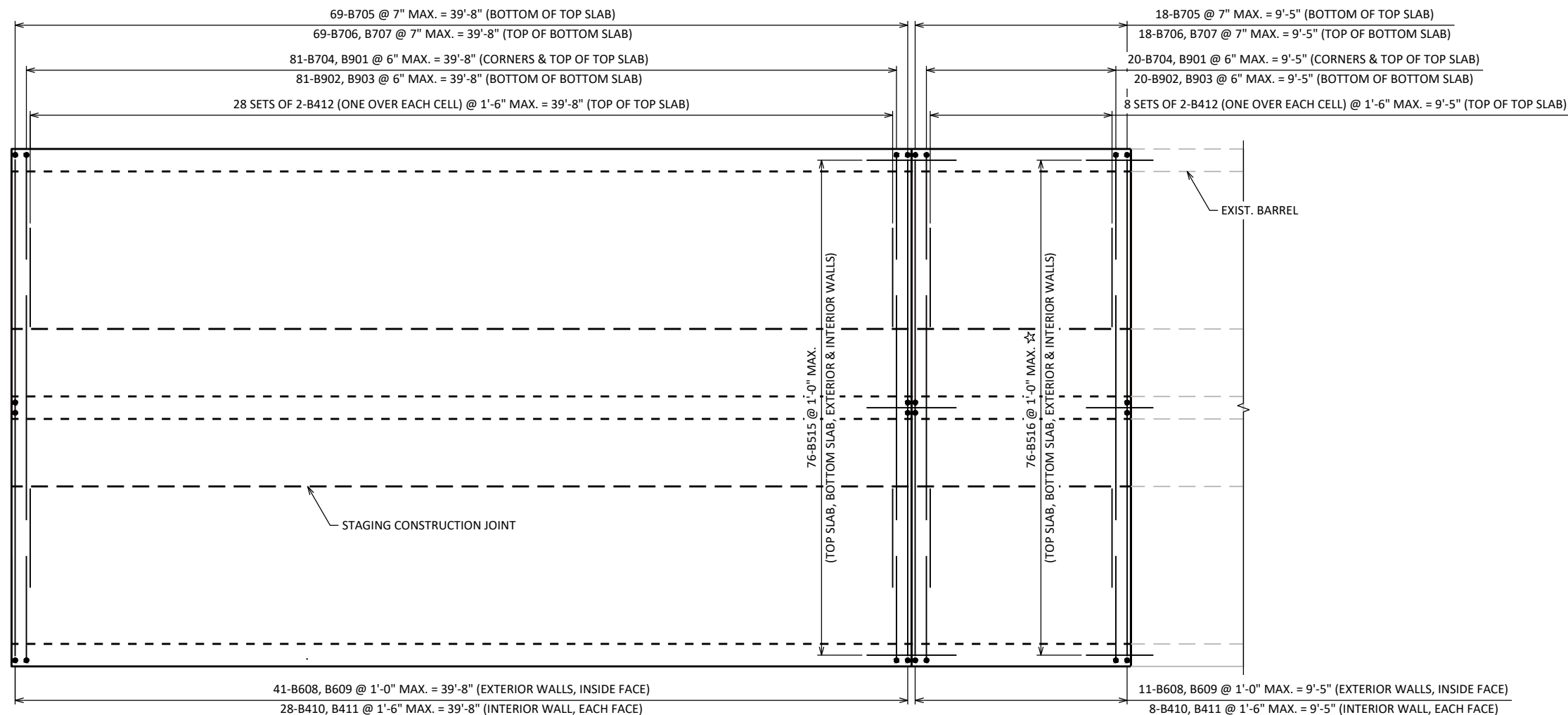
☒ AREA OF EXISTING CONCRETE BOX CULVERT TO BE REMOVED.



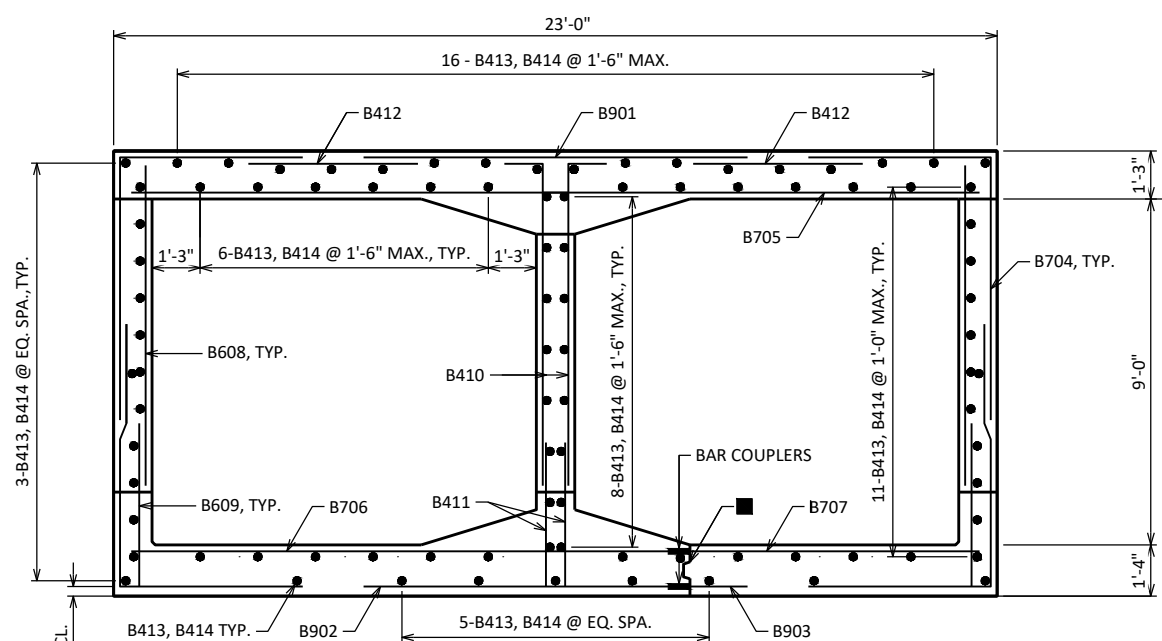
EXISTING ELEVATION

(LOOKING EAST)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-51			
DRAWN BY		NDS	PLANS CK'D ABP
REMOVAL DETAILS		SHEET 3 OF 10	
		411	



APRON AND HEADER ARE NOT SHOWN.



(LOOKING SOUTH)

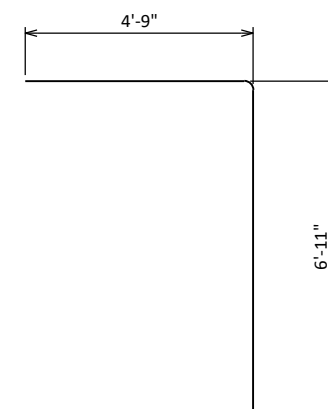
■ CONSTRUCTION JOINT FORMED BY BEVELED 2" X 4" KEYWAY

TOTAL UNCOATED = 30,780 LBS

BAR MARK	NO. REQ'D.		LENGTH	COAT	BENT	BAR SERIES	LOCATION
	SUBSTAGE C	SUBSTAGE D					
B901	0	101	10'-0"				TOP SLAB - TOP MAT - TRANSVERSE
B902	101	0	8'-6"				BOTTOM SLAB - BOTTOM MAT - TRANSVERSE
B903	0	101	1'-6"				BOTTOM SLAB - BOTTOM MAT - TRANSVERSE
B704	202	202	11'-6"		X		CORNERS
B705	0	87	22'-1"				TOP SLAB - BOTTOM MAT - TRANSVERSE
B706	87	0	14'-7"				BOTTOM SLAB - TOP MAT - TRANSVERSE
B707	0	87	7'-7"				BOTTOM SLAB - TOP MAT - TRANSVERSE
B608	52	52	8'-6"				EXTERIOR WALL - INSIDE FACE
B609	52	52	4'-3"				EXTERIOR WALL & BOTTOM SLAB - DOWEL INSIDE FACE
B410	72	0	9'-5"		X		INTERIOR WALL - VERT.
B411	72	0	3'-9"				INTERIOR WALL & BOTTOM SLAB - DOWEL
B412	0	72	4'-5"				TOP SLAB - TRANSVERSE
B413	39	52	39'-8"				LONGIT.
B414	39	52	9'-5"				LONGIT.
B515	49	50	4'-0"				VERT. CONST. JOINT & APRON CONNECTION
B516	34	42	3'-0"				VERT. CONST. JOINT
B317	0	32	3'-6"		X		HEADER - VERT.
B418	0	2	22'-8"				HEADER - TRANSVERSE

■ BAR COUPLER IS REQUIRED. BAR LENGTHS ARE COMPUTED TO THE C/L OF THE CONSTRUCTION JOINT AND SHALL BE MODIFIED BY THE BAR COUPLER MANUFACTURERS RECOMMENDATIONS. DOWEL BARS ARE NOT DETAILED AND ARE INCLUDED IN THE BAR COUPLER BID ITEM SHOULD THE DOWEL OPTION BE CHOSEN. SEE SHEET "BOX DETAILS (2 OF 2)" FOR MORE DETAILS.

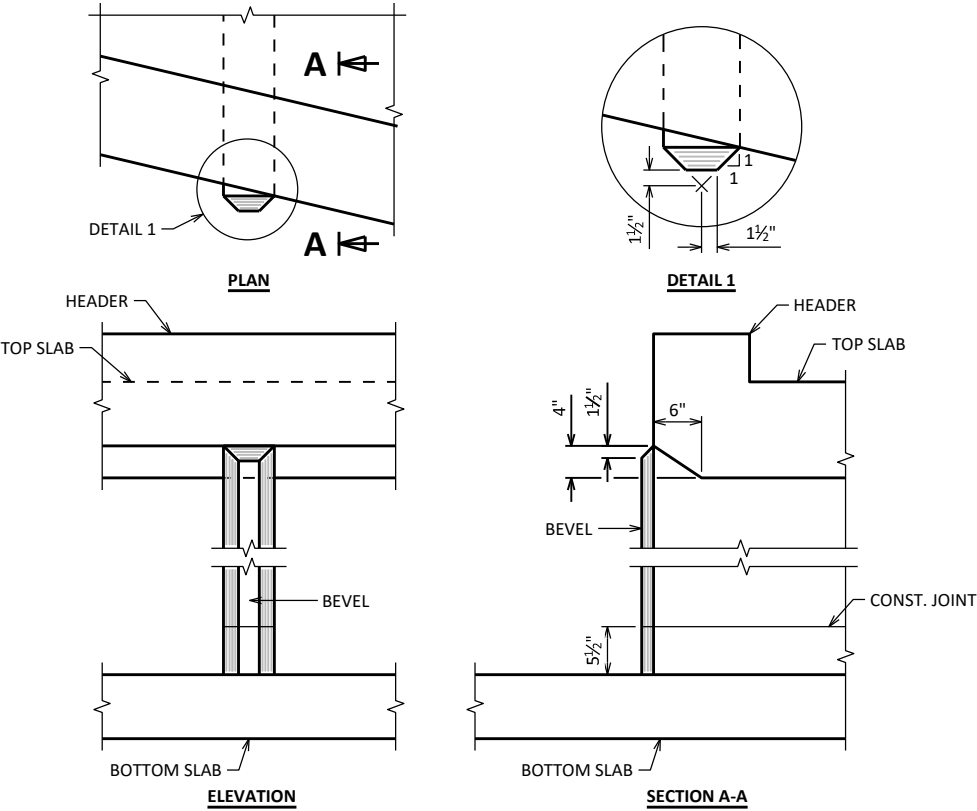
☆ ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP AND BOTTOM SLABS).



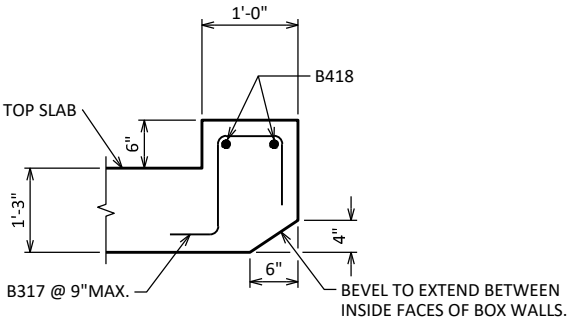
A diagram of a stepped profile. The top horizontal segment is labeled 8". The vertical segment on the left is labeled 1'5". The bottom horizontal segment is labeled 6". The vertical segment on the right is labeled 1'2".

B317

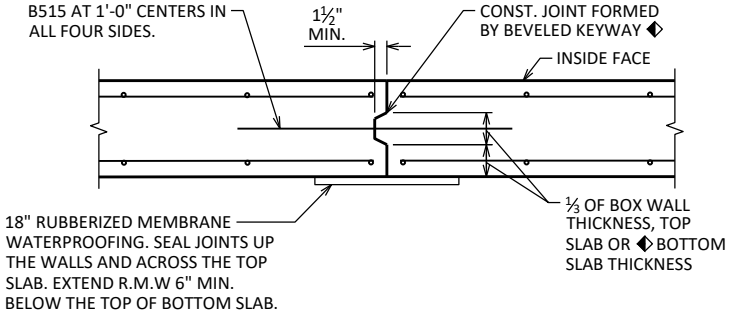
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-17-51	
DRAWN BY		NDS	PLANS CK'D ABP
BOX DETAILS (1 OF 2)		SHEET 4 OF 10	
		412	



INLET NOSE DETAILS

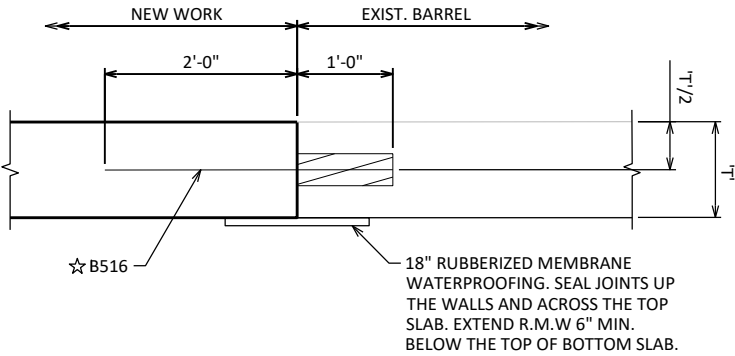


SECTION THRU HEADER



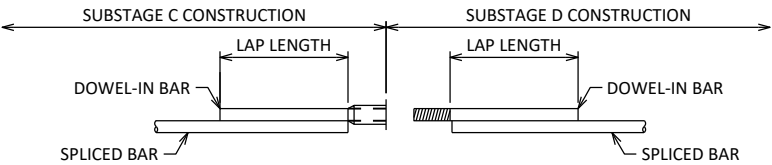
VERTICAL CONSTRUCTION JOINT

(AT NEW CONSTRUCTION)



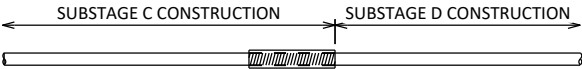
VERTICAL CONSTRUCTION JOINT

(AT EXISTING STRUCTURE AND NEW CONSTRUCTION)



DOWEL BAR COUPLER

SUBSTAGE D SCREWS INTO COUPLER PLACED IN SUBSTAGE C



ONE-PIECE THREADED COUPLER

BAR COUPLER ALTERNATIVES

NOTES

FOR DOWEL BAR COUPLERS, ALL DOWEL BARS SHALL BE LAPPED AND TIED TO THE REINFORCEMENT BARS.

LEGEND

- ◆ IN LIEU OF KEYED CONST. JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS, AFTER POURING. #5 BARS 4'-0" AT 1'-0" CENTERS REQUIRED FOR KEYED CONST. JOINTS AND CUT JOINTS.
- ☆ ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-0" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP AND BOTTOM SLABS).

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-51			
DRAWN BY		NDS	PLANS CK'D ABP
BOX DETAILS (2 OF 2)		SHEET 5 OF 10 413	

BILL OF BARS - APRON

TOTAL UNCOATED = 1,190 LBS

BAR MARK	NO. REQ'D.			COAT	BENT	BAR SERIES	LOCATION
	SUBSTAGE C	SUBSTAGE D	LENGTH				
A401	21	0	20'-7"			X	INLET APRON SLAB - HORIZ.
A402	0	21	13'-7"			X	INLET APRON SLAB - HORIZ.
A403	12	12	11'-0"			X	INLET APRON SLAB - HORIZ.
A404	26	20	3'-6"		X		INLET APRON AND CUTOFF WALL - VERT.
A405	4	0	25'-11"				INLET APRON AND CUTOFF WALL - HORIZ.
A406	0	4	18'-11"				INLET APRON AND CUTOFF WALL - HORIZ.
A407	14	8	20'-8"				INLET APRON SLAB - HORIZ.

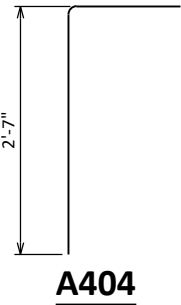
NOTE: LENGTH SHOWN FOR ANY BAR IN A BAR SERIES IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR COUPLER IS REQUIRED. BAR LENGTHS ARE COMPUTED TO THE C/L OF THE CONSTRUCTION JOINT AND SHALL BE MODIFIED BY THE BAR COUPLER MANUFACTURES RECOMMENDATIONS. DOWEL BARS ARE NOT DETAILED AND ARE INCLUDED IN THE BAR COUPLER BID ITEM SHOULD THE DOWEL OPTION BE CHOSEN. SEE SHEET "BOX DETAILS (2 OF 2)" FOR MORE DETAILS.

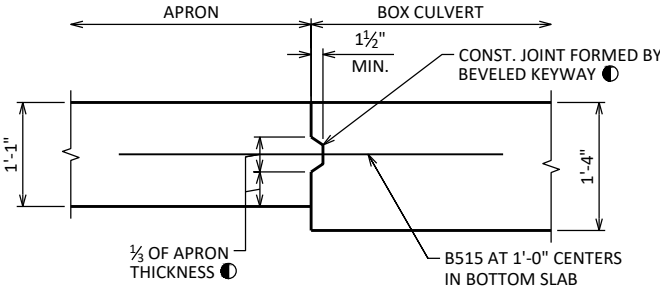
BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
A401	1 SERIES OF 21	14'-10" TO 26'-3"
A402	1 SERIES OF 21	7'-10" TO 19'-3"
A403	2 SERIES OF 12	1'-5" TO 20'-6"

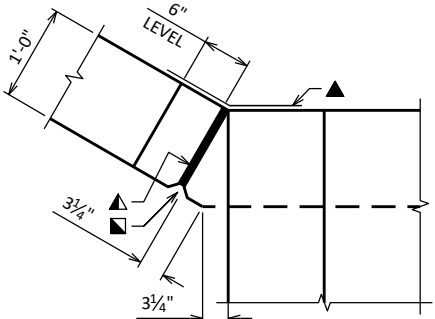
BUNDLE AND TAG EACH BAR SERIES SEPARATELY.



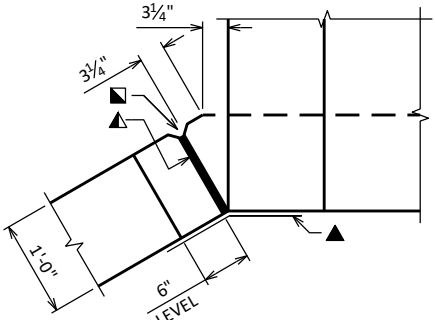
A404



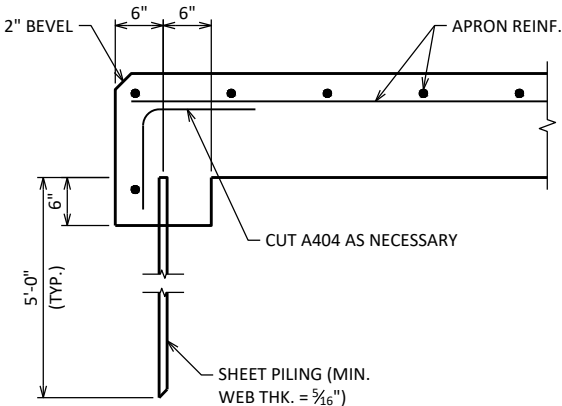
APRON CONNECTION DETAIL



CORNER 1

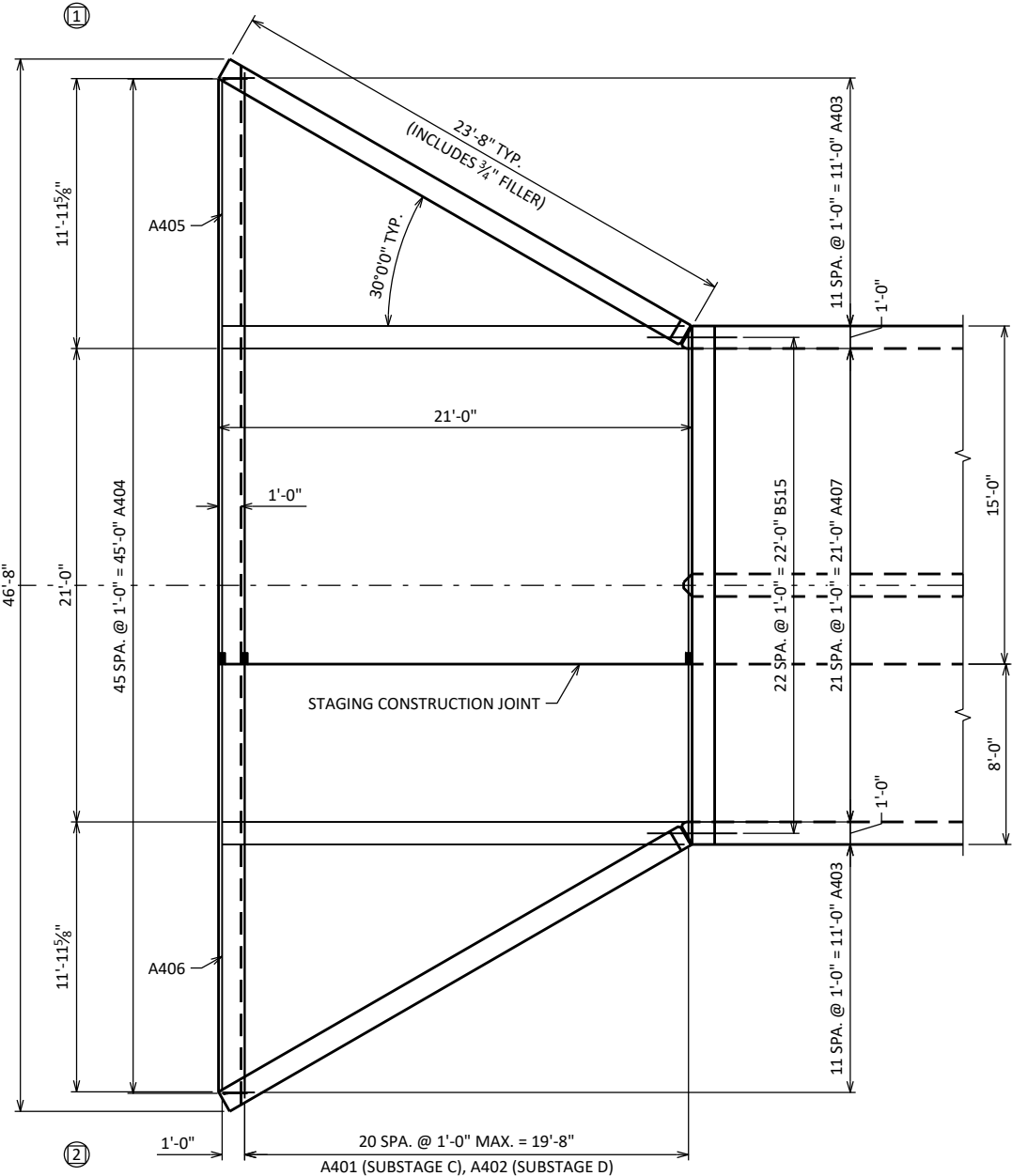


CORNER 2

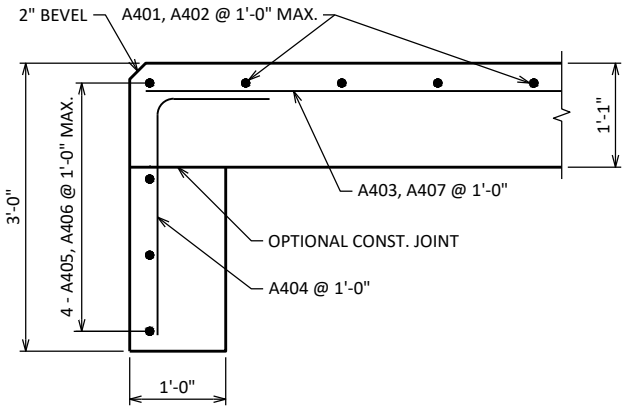


ALTERNATE CUTOFF WALL

THE ABOVE ALTERNATIVE MAY BE USED IN LIEU OF CAST-IN-PLACE CONCRETE CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONCRETE CUT-OFF WALLS.



INLET APRON PLAN



CUTOFF WALL - INLET

LEGEND

- ▲ 18-INCH RUBBERIZED MEMBRANE WATERPROOFING EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WALL (FLUSH WITH FACE OF CONCRETE)
- 1" BEVEL
- ▲ 3/4" FILLER TO EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING
- IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING. B515 AT 1'-0" CENTERS REQUIRED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-51			
DRAWN BY		NDS	PLANS CK'D ABP
APRON DETAILS		SHEET 6 OF 10 414	

BILL OF BARS - WINGS

TOTAL COATED = 1,990 LBS

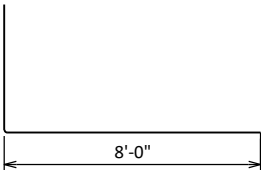
BAR MARK	NO. REQ'D.		LENGTH	COAT	BENT	BAR SERIES	LOCATION
	SUBSTAGE C	SUBSTAGE D					
W501	2	2	24'-4"	X			WING - HORIZ. - F.F. & B.F. - TOP
W402	11	11	23'-4"	X			WING - HORIZ. - BOTTOM
W403	12	12	12'-0"	X		X	WING - HORIZ. - F.F. & B.F.
W604	15	15	13'-4"	X	X		WING - B.F. - CORNER
W405	14	14	11'-8"	X	X	X	WING - B.F. - CORNER
W606	15	15	7'-0"	X		X	WING - VERT. - B.F.
W407	8	8	7'-0"	X		X	WING - VERT. - F.F.
W408	10	10	5'-0"	X		X	WING - VERT. - F.F.
W409	8	8	4'-1"	X			WING - VERT. - F.F.
W410	16	0	3'-0"	X			PIPE OPENING IN WING 1

NOTE: LENGTH SHOWN FOR ANY BAR IN A BAR SERIES IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

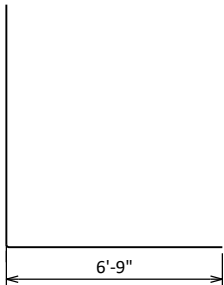
BAR SERIES TABLE

MARK	NO. REQ'D.	LENGTH
W403	4 SERIES OF 6	1'-5" TO 22'-6"
W405	2 SERIES OF 14	9'-4" TO 14'-0"
W606	2 SERIES OF 15	5'-4" TO 8'-7"
W407	2 SERIES OF 8	5'-4" TO 8'-7"
W408	2 SERIES OF 10	2'-8" TO 7'-4"

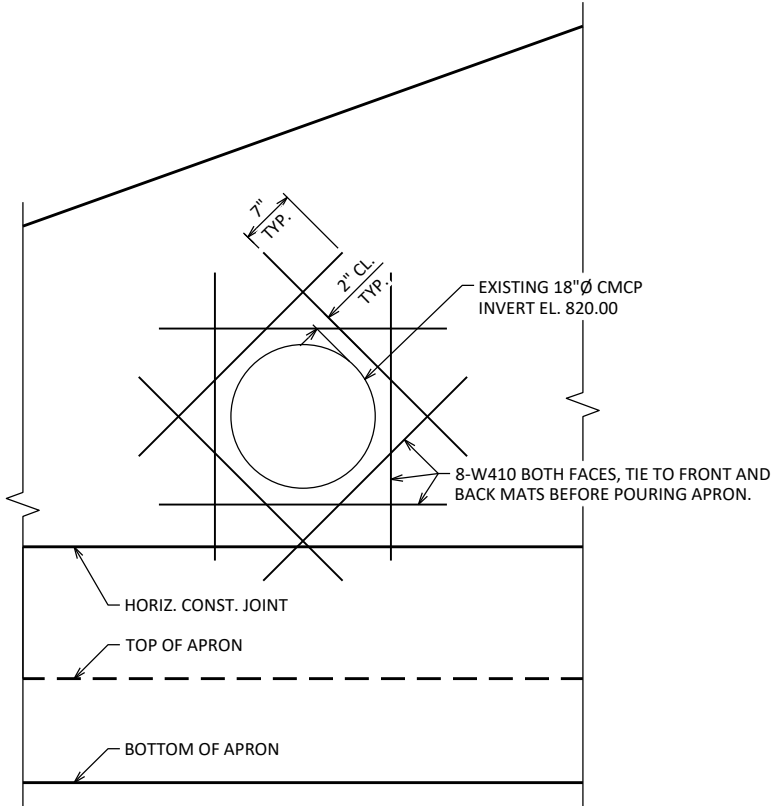
BUNDLE AND TAG EACH BAR SERIES SEPARATELY.



W604



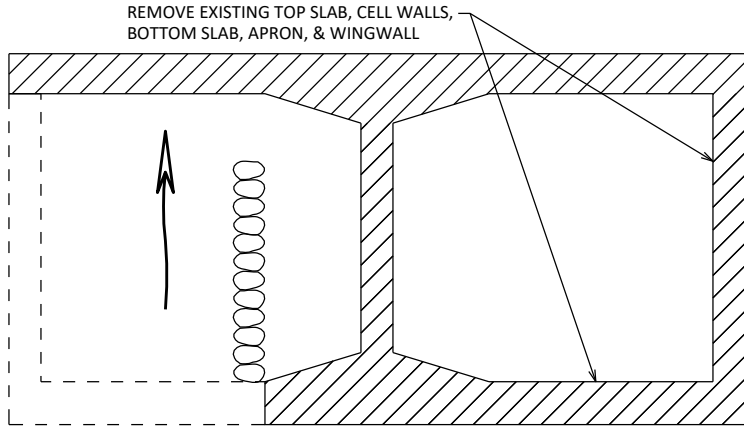
W405



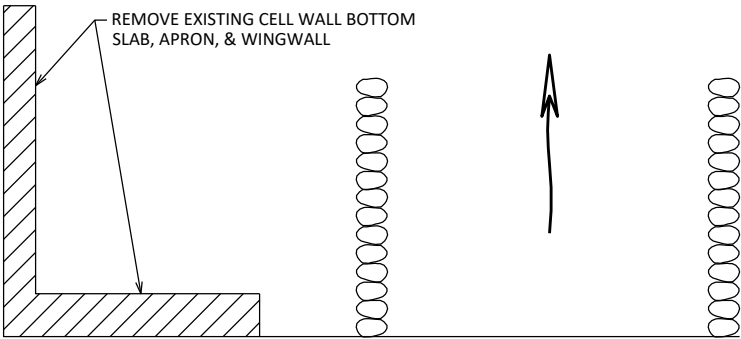
PIPE OPENING IN WING 1 DETAIL

WING 1 REINFORCEMENT NOT SHOWN FOR CLARITY, FIELD CUT 2" CLEAR AROUND OPENING.
REINFORCEMENT SHOWN IS IN ADDITION TO WING 1 REINFORCEMENT.

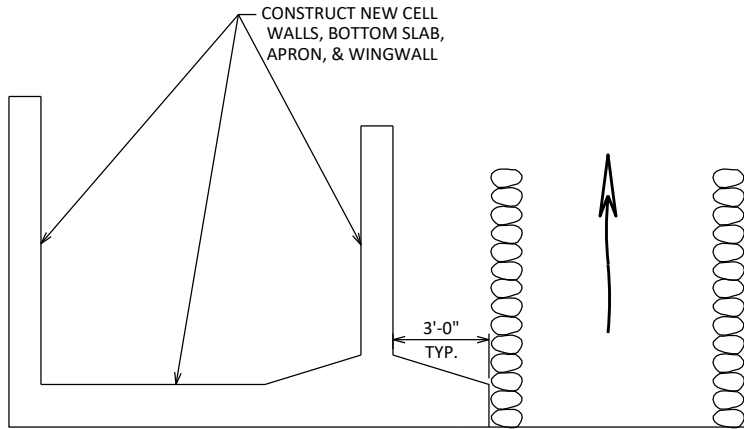
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-51			
		DRAWN BY	PLANS CK'D
		NDS	ABP
WING DETAILS (2 OF 2)		SHEET 8 OF 10 416	



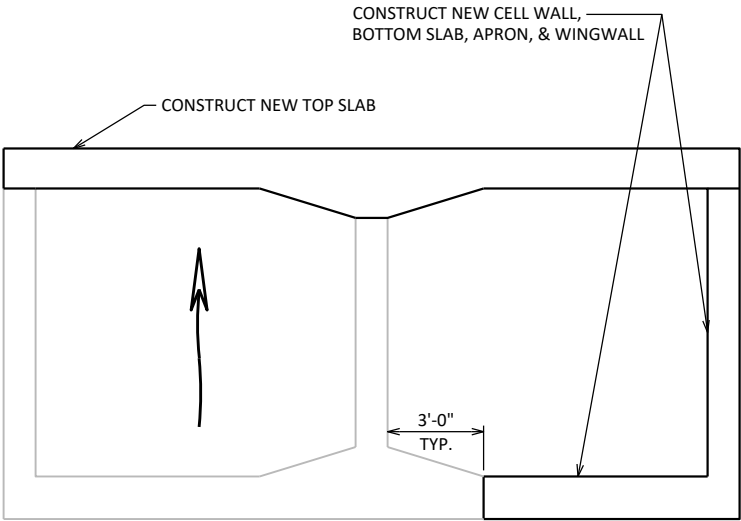
SUBSTAGE A - SECTION
LOOKING SOUTH



SUBSTAGE B - SECTION
LOOKING SOUTH



SUBSTAGE C - SECTION
LOOKING SOUTH



SUBSTAGE D - SECTION
LOOKING SOUTH

NOTES

WATER DIVERSION PAID FOR AS BID ITEM
"TEMPORARY WATER DIVERSION, STRUCTURE
B-17-51", SEE ROADWAY PLANS.

ALTERNATE STAGING PLANS MAY BE PROPOSED AND
SUBMITTED TO THE BUREAU OF STRUCTURES FOR APPROVAL

LEGEND

- = TO BE REMOVED IN THIS SUBSTAGE
- = SAND BAGS OR OTHER WATER CUT OFF METHOD
- = WATER FLOW DIRECTION

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-51			
DRAWN BY		CEB	PLANS CK'D LMVK
STAGING DETAILS		SHEET 9 OF 10	
		417	

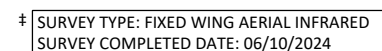
TAKEN FROM HSI, 11/21/2025
INVENTORY RATING: HS = 25
OPERATING RATING: HS = 50
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

CONCRETE MASONRY:
CONCRETE MASONRY DECK REPAIR _____ $f'_c = 4,000$ PSI

BAR STEEL REINFORCEMENT
GRADE 60 _____ $f_y = 60,000$ PSI

1. DECK PATCHING

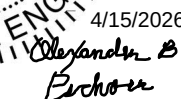
ADT = 36,380 (2019)
ADT = 38,890 (2047)
R.D.S. = 70 MPH



SINGLE-SPAN 70" PRESTRESSED GIRDERS - DECK PATCHING



ELEVATION
NORMAL TO WILSON CREEK



1. GENERAL PLAN & ELEVATION
2. GENERAL NOTES, QUANTITIES, & CROSS SECTION
3. STAGING DETAILS
4. FIXED WING AERIAL INFRARED SURVEY

Michael Baker MICHAEL BAKER INTERNATIONAL
1255 FOURIER DRIVE
SUITE 100
INTERNATIONAL MADISON, WI 53717

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED  JLR 05/11/2016

CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE	B-17-174
-----------	----------

IH 94 WB OVER WILSON CREEK

COUNTY	DUNN	TOWN	MENOMON
--------	------	------	---------

DESIGN SPEC.	
REHABILITATION N/A	

DESIGNED BY	NDS	DESIGN CHK'D	APB	DRAWN BY	TBG	PLANS CHK'D	ABE
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BY NDS CRD AFB BY TRG CRD AFB
SHEET 1 OF 4

GENERAL PLAN &
ELEVATION

SHEET 1 OF 4
419

STRUCTURE DESIGN CONTACTS:

BUREAU OF STRUCTURES:
AARON BONK (608) 261-0261
CONSULTANT:
LINDA KRUEGER (608) 821-8704

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL PLANS.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1 INCH DEEP SAW CUT UNLESS SPECIFIED OTHERWISE.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", AND "FULL-DEPTH DECK REPAIR" AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY DECK REPAIR".

THE EXISTING STRUCTURE, B-17-174, IS A SINGLE-SPAN PRESTRESSED CONCRETE GIRDER STRUCTURE WITH AN OVERALL WIDTH OF 58'-10¾" AND AN OVERALL LENGTH BETWEEN BACK OF ABUTMENTS OF 137'-9½". THE CONCRETE DECK SHALL BE REPAIRED AT DELAMINATION AND ASPHALT PATCH AREAS.

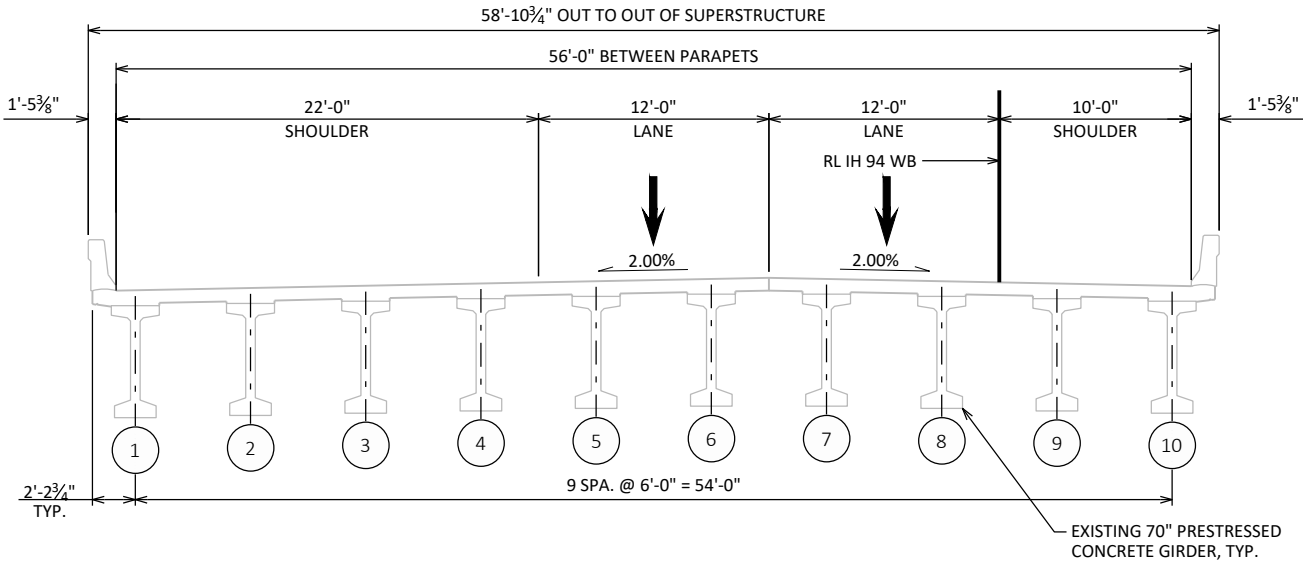
TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SUPER.	TOTAL
509.0301	PREPARATION DECKS TYPE 1	SY	14	14
509.0302	PREPARATION DECKS TYPE 2	SY	6	6
509.0310.S	SAWING PAVEMENT DECK PREPARATION AREAS	LF	140	140
509.2000	FULL-DEPTH DECK REPAIR	SY	1	1
509.2100.S	CONCRETE MASONRY DECK REPAIR	CY	2	2

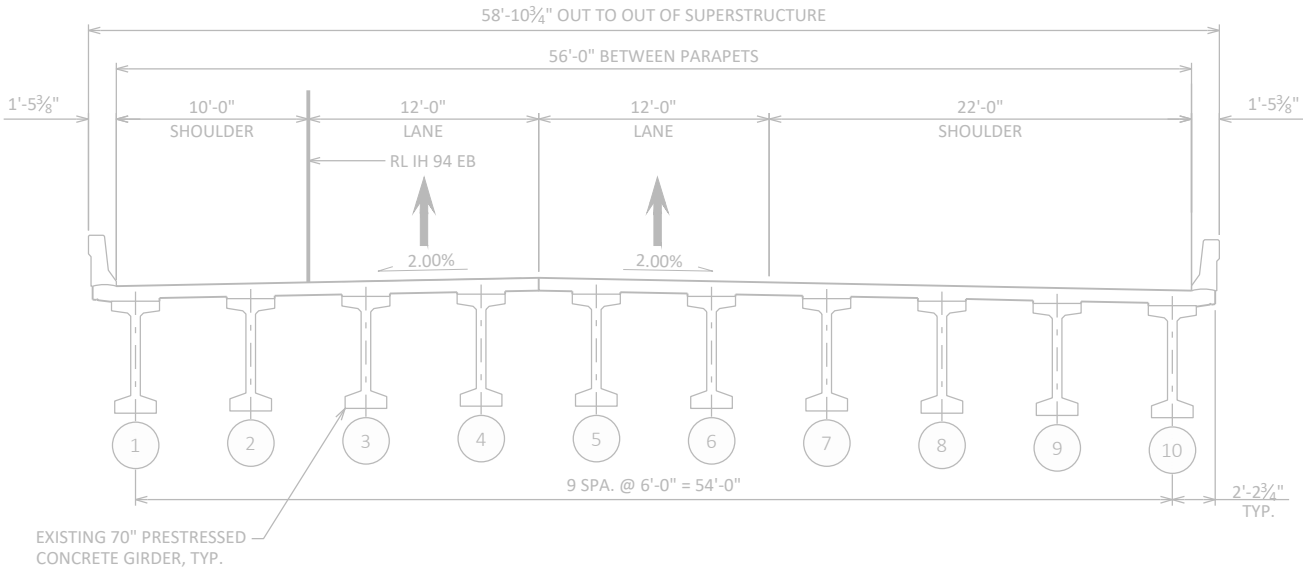
NOTE: DECK PREPARATION QUANTITIES ARE APPROXIMATE AND WILL NEED TO BE VERIFIED IN THE FIELD BY THE ENGINEER.

STATE PROJECT NUMBER

1020-05-63



WESTBOUND LANE (B-17-174)

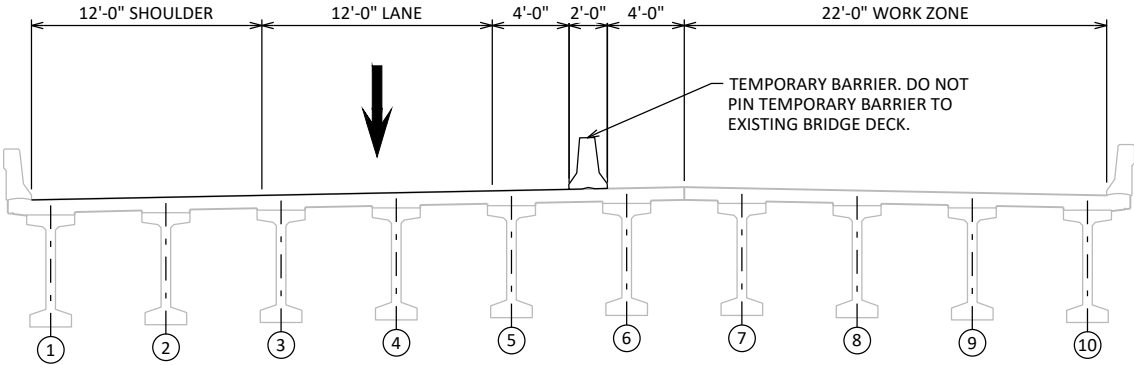


EASTBOUND LANE (B-17-175)

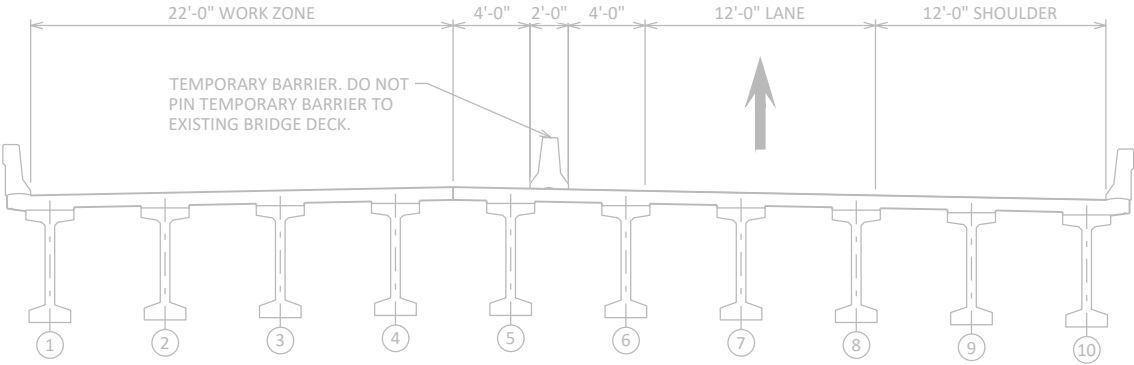
CROSS SECTION

LOOKING EAST

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-174			
DRAWN BY		TRG	PLANS CK'D ABP
GENERAL NOTES, QUANTITIES, & CROSS SECTION		SHEET 2 OF 4	
		420	



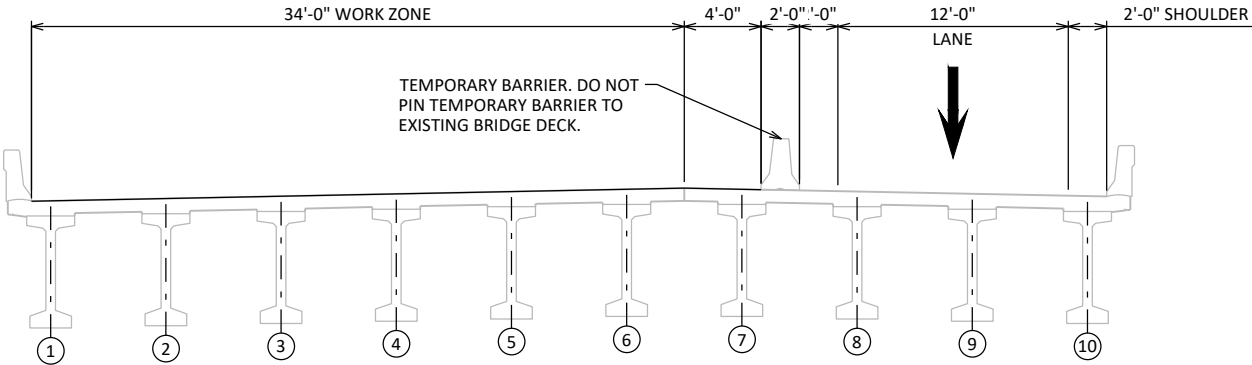
WESTBOUND LANE (B-17-174)



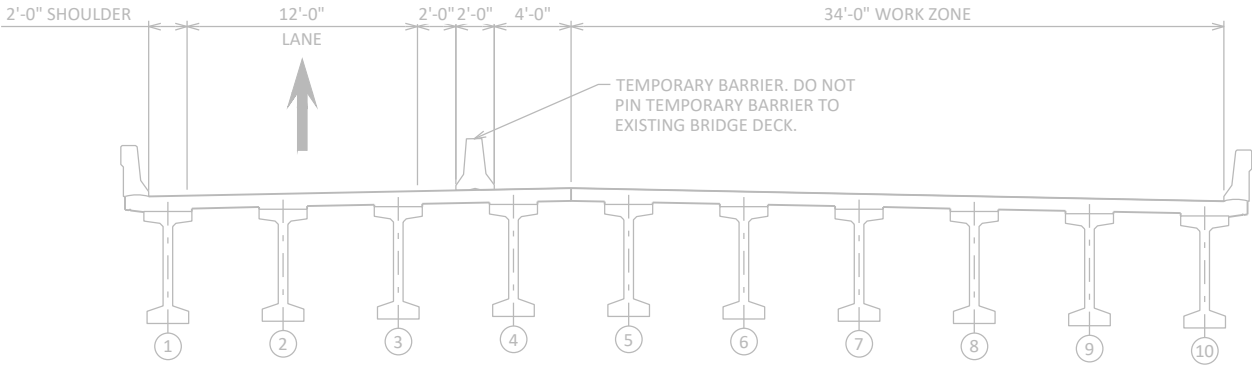
EASTBOUND LANE (B-17-175)

STAGE 1 CONSTRUCTION SECTION

(LOOKING EAST)



WESTBOUND LANE (B-17-174)

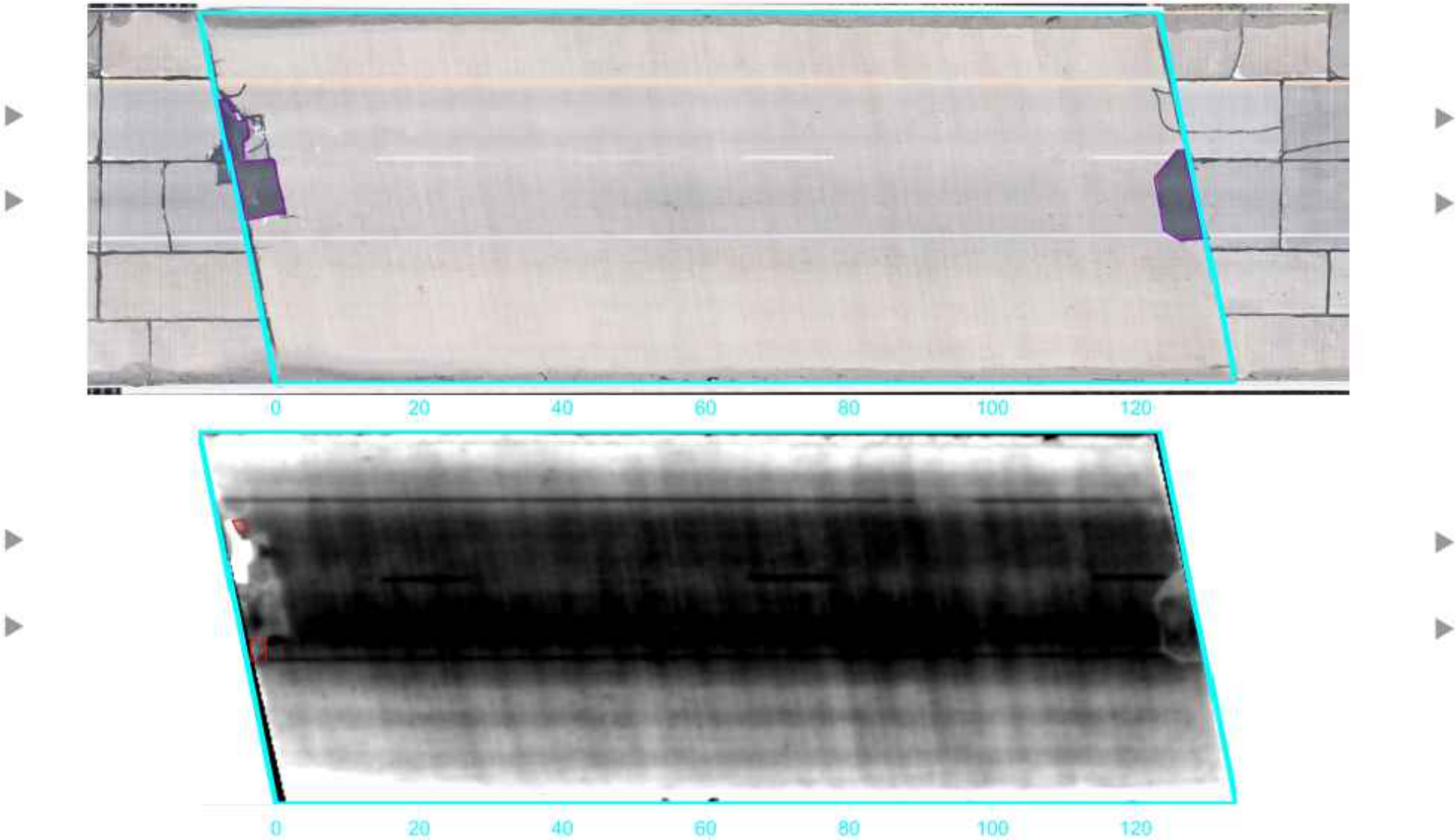


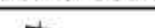
EASTBOUND LANE (B-17-175)

STAGE 2 CONSTRUCTION SECTION

(LOOKING EAST)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-174			
DRAWN BY		TRG	PLANS CK'D ABP
STAGING DETAILS		SHEET 3 OF 4 421	



Orientation & Scale	Survey Information	Mapping Legend			Quantity Summary		ft²	%	General Information		INFRASENSE
	Level 0 - Fixed Wing Aerial	Delamination detected by IR	Concrete Patching	Asphalt Patching	8000 – Wearing Surface (Bare)	6962	100	B170174			
	Scanned: 06/10/2024 04:23 PM				Delaminations	9	0.1	IH 94 WB over WILSON CREEK			
	► Direction of Traffic	Infrared Data (Temperature, F)	Debonding	Spalling	Area Not Analyzed	Debonding	0	0.0	Sheet 1 of 1 Analyzed By: RB Completed: 08/16/2024		
Average	90.4	Concrete Patching				0	0.0				
Standard Deviation	2.2	Asphalt Patching				116	1.7				
					Area Not Analyzed	0	0.0				

Note: The delamination % was calculated as (Delamination Area) / (Wearing Surface Area - Area Not Analyzed). The total deck area based on imagery is 6962 ft².

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-174			
DRAWN BY		NDS	PLANS CK'D ABP
FIXED WING AERIAL INFRARED SURVEY		SHEET 4 of 4 422	

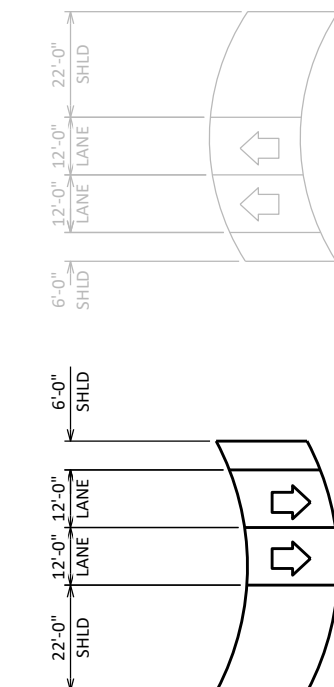
TAKEN FROM HSI, 11/21/2025
INVENTORY RATING: HS = 24
OPERATING RATING: HS = 48
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

CONCRETE MASONRY:
CONCRETE MASONRY DECK REPAIR ————— $f'_c = 4,000$ PSI

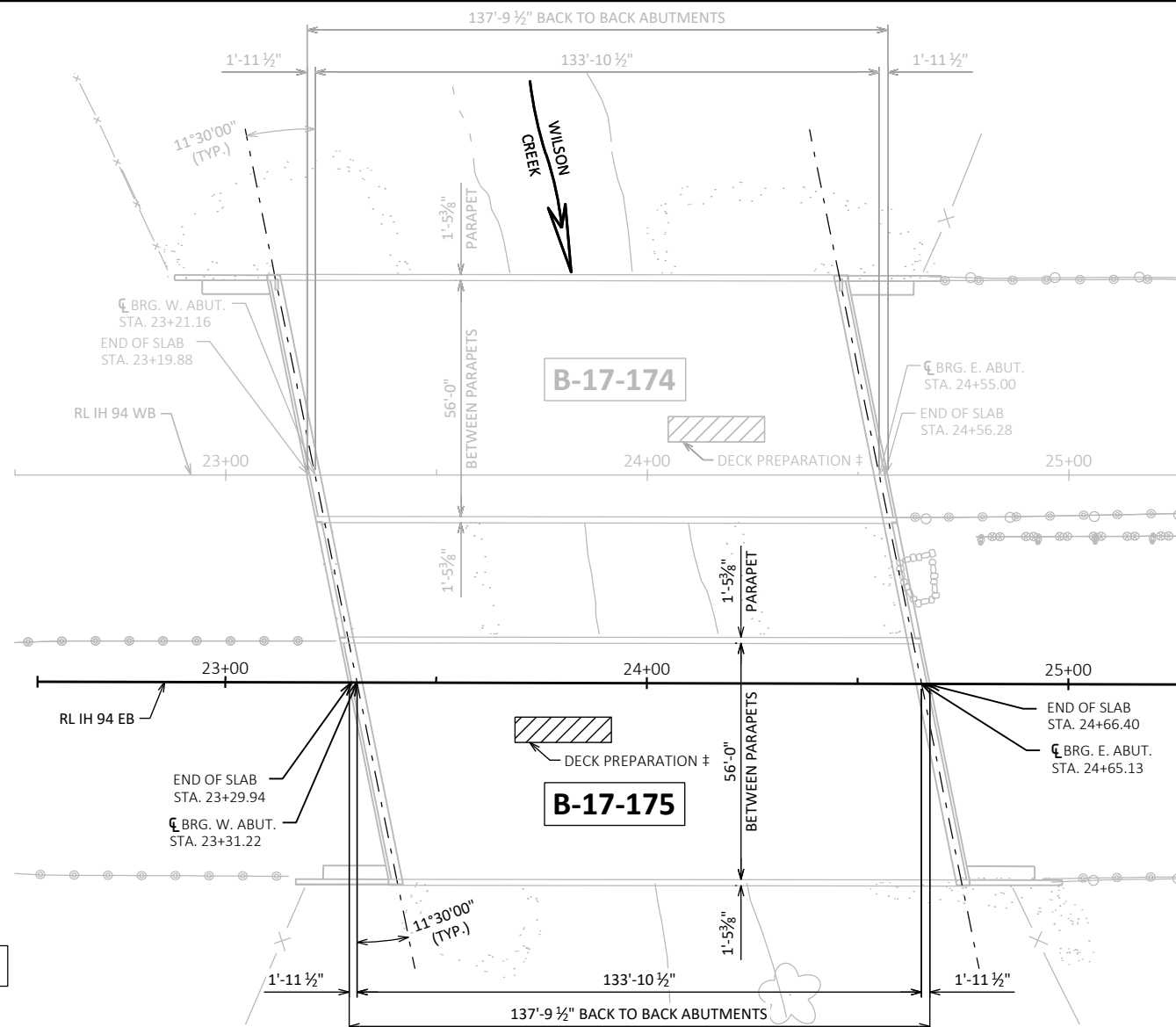
BAR STEEL REINFORCEMENT
GRADE 60 _____ $f_y = 60,000$ PSI

1. DECK PATCHING

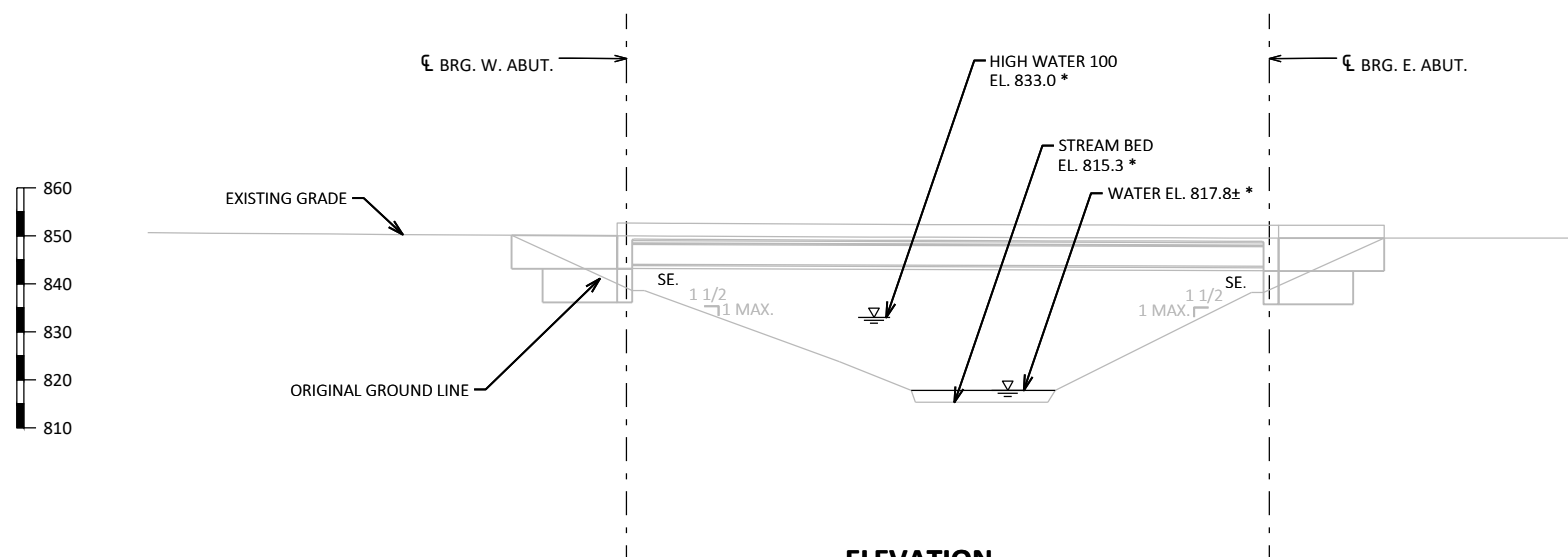
ADT = 36,380 (2019)
ADT = 38,890 (2047)
R.D.S. = 70 MPH



‡	SURVEY TYPE: FIXED WING AERIAL INFRARED SURVEY COMPLETED DATE: 06/10/2024
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SINGLE-SPAN 70" PRESTRESSED GIRDERS - DECK PATCHING



* ELEVATIONS BASED ON ORIGINAL 2004 PLANS

ELEVATION
NORMAL TO WILSON CREEK



4/15/2026

Alexander B
Pecher

1. GENERAL PLAN & ELEVATION
2. GENERAL NOTES, QUANTITIES, & CROSS SECTION
3. STAGING DETAILS
4. FIXED WING AERIAL INFRARED SURVEY

NO.	DATE	REVISION	B

Michael Baker
INTERNATIONAL

MICHAEL BAKER INTERNATIONAL
1255 FOURIER DRIVE
SUITE 100
MADISON, WI 53717

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED *[Signature]* JLR 05/11/2016
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE	B-17-175
------------------	-----------------

IH 94 EB OVER WILSON CREEK	
COUNTY	TOWN
DUNN	MENOMONIE

DESIGN SPEC.		REHABILITATION N/A	
DESIGNED BY	NDS	DESIGN CK'D	ABP
DRAWN BY	TRG	PLANS CK'D	ABP

GENERAL PLAN &
ELEVATION

STRUCTURE DESIGN CONTACTS:

BUREAU OF STRUCTURES:
AARON BONK (608) 261-0261
CONSULTANT:
LINDA KRUEGER (608) 821-8704

GENERAL NOTES

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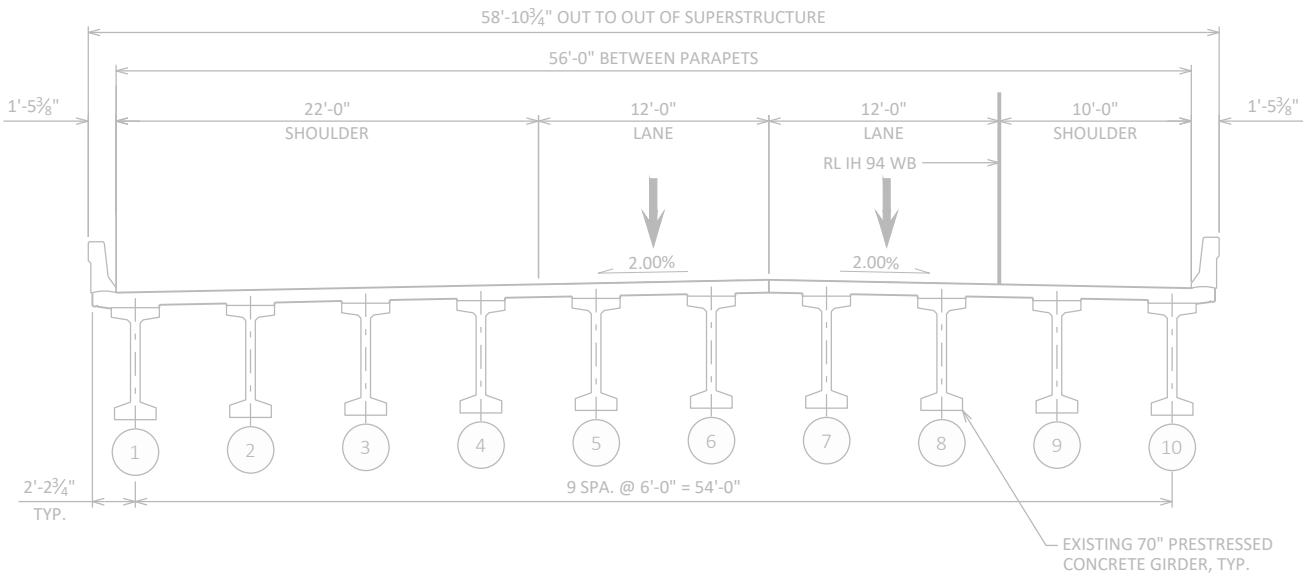
TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SUPER.	TOTAL
509.0301	PREPARATION DECKS TYPE 1	SY	8	8
509.0302	PREPARATION DECKS TYPE 2	SY	4	4
509.0310.S	SAWING PAVEMENT DECK PREPARATION AREAS	LF	80	80
509.2000	FULL-DEPTH DECK REPAIR	SY	1	1
509.2100.S	CONCRETE MASONRY DECK REPAIR	CY	1	1

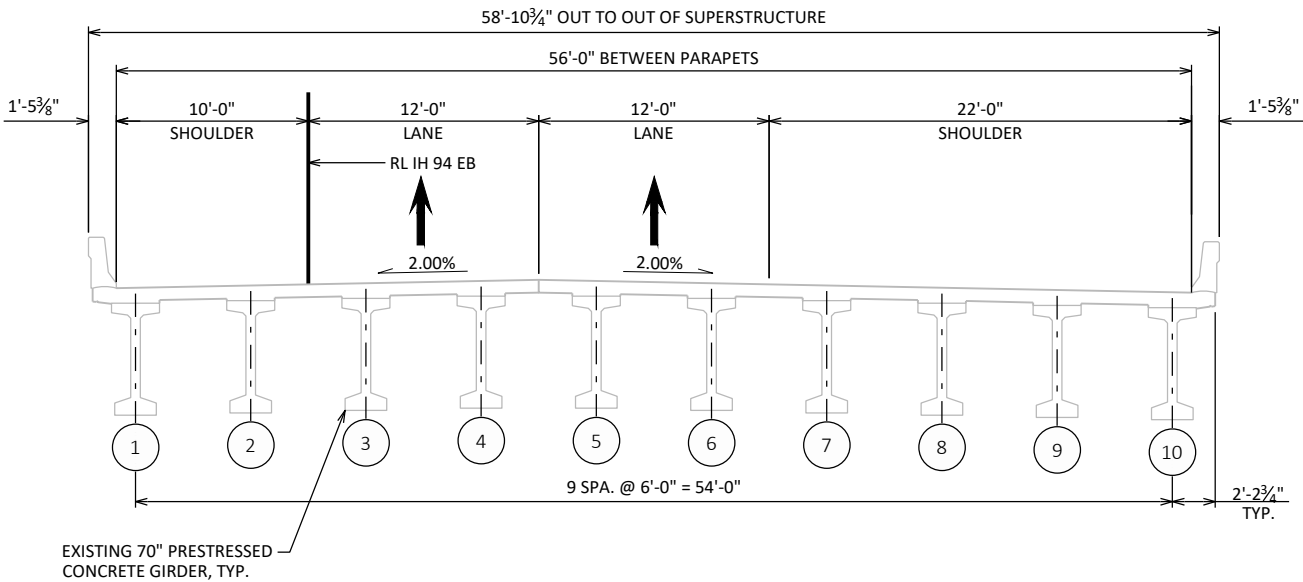
NOTE: DECK PREPARATION QUANTITIES ARE APPROXIMATE AND WILL NEED TO BE VERIFIED IN THE FIELD BY THE ENGINEER.

STATE PROJECT NUMBER

1020-05-63



WESTBOUND LANE (B-17-174)

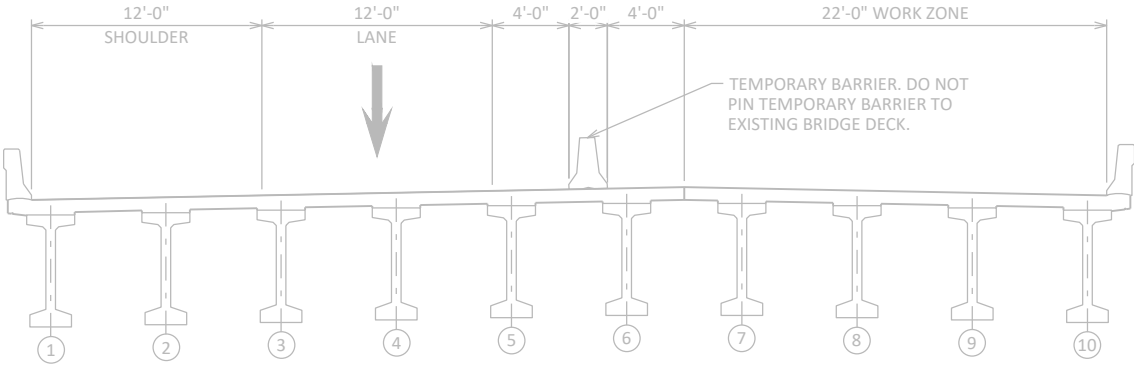


EASTBOUND LANE (B-17-175)

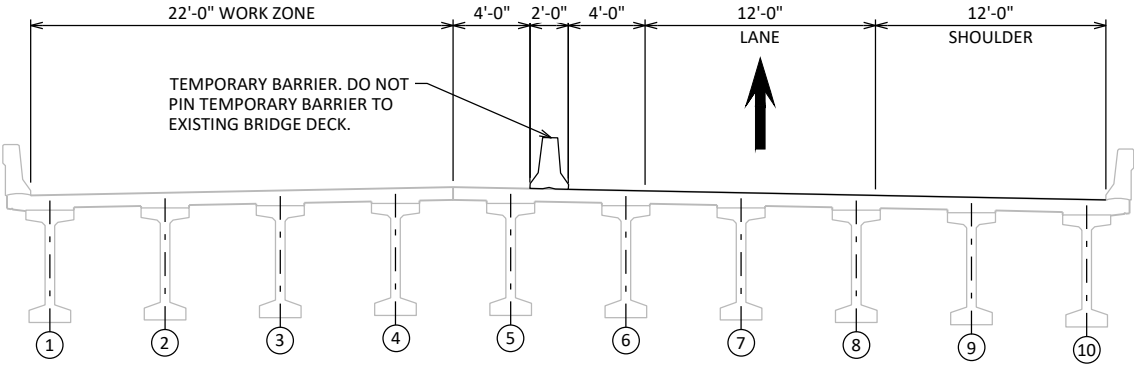
CROSS SECTION

LOOKING EAST

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-175			
DRAWN BY		TRG	PLANS CK'D ABP
GENERAL NOTES, QUANTITIES, & CROSS SECTION		SHEET 2 OF 4 424	



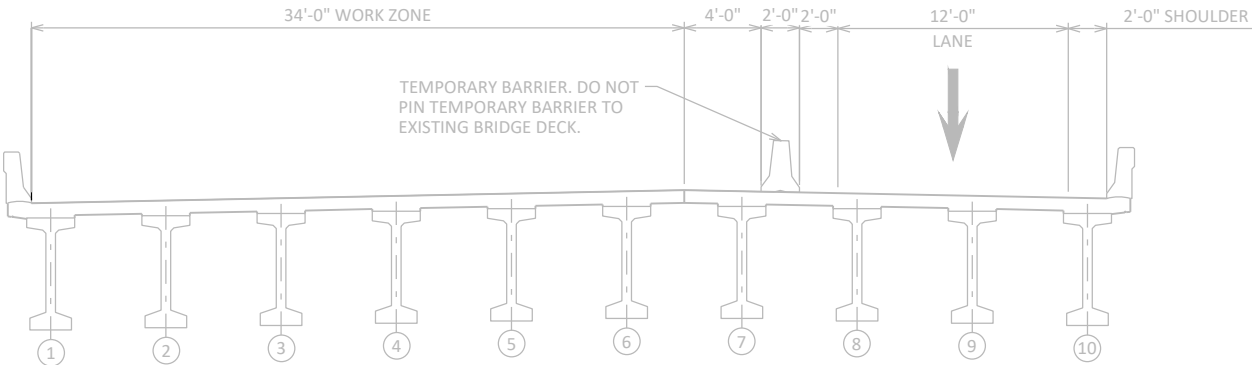
WESTBOUND LANE (B-17-174)



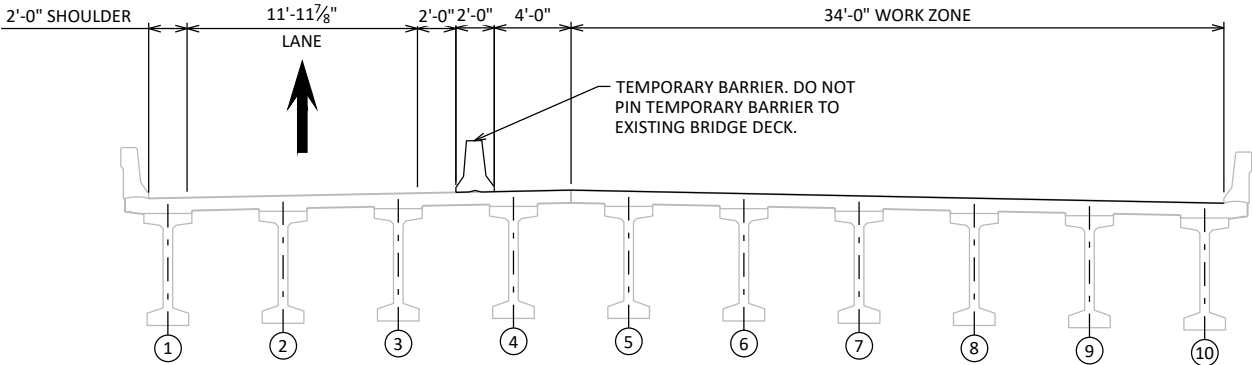
EASTBOUND LANE (B-17-175)

STAGE 1 CONSTRUCTION SECTION

(LOOKING EAST)



WESTBOUND LANE (B-17-174)

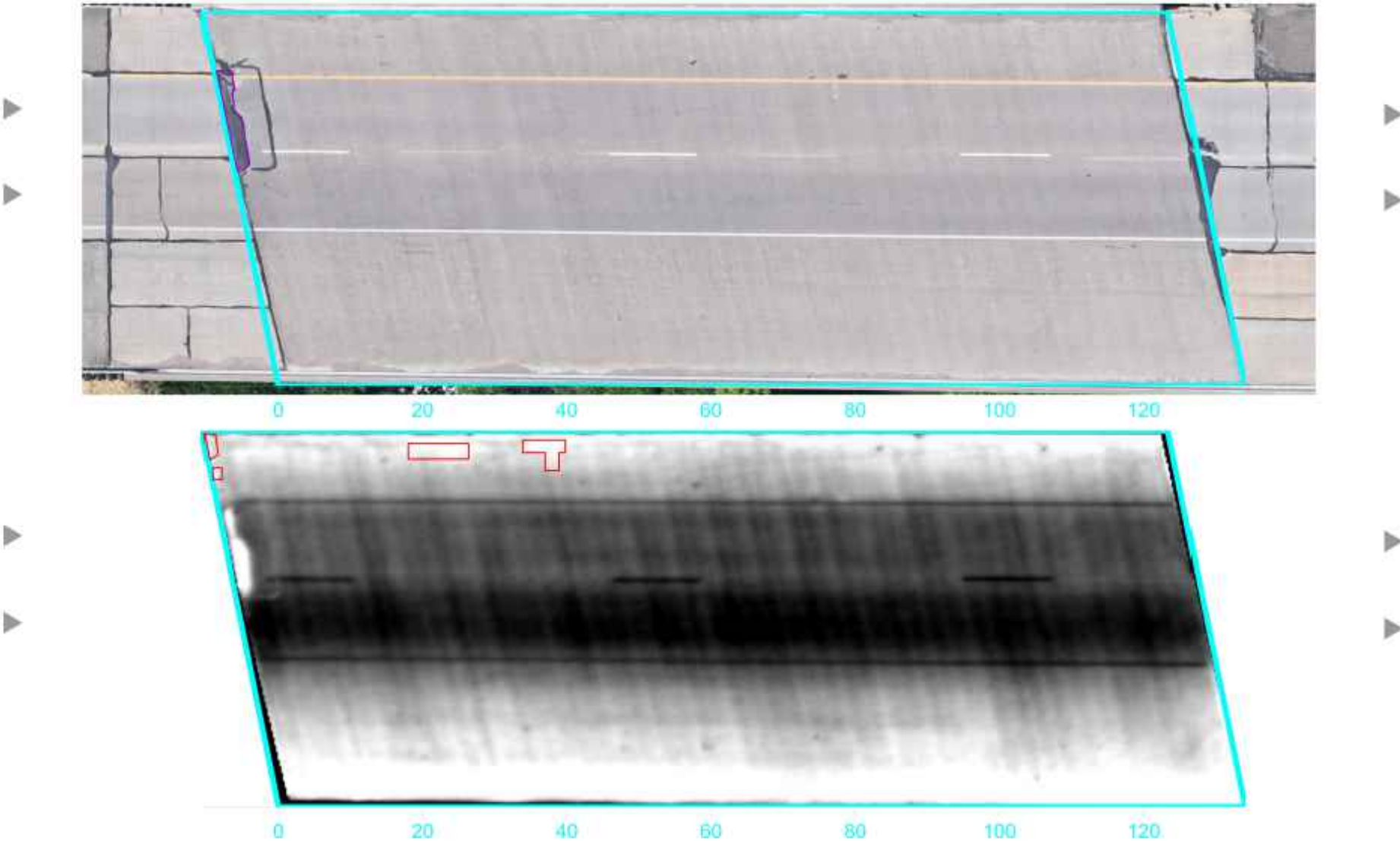


EASTBOUND LANE (B-17-175)

STAGE 2 CONSTRUCTION SECTION

(LOOKING EAST)

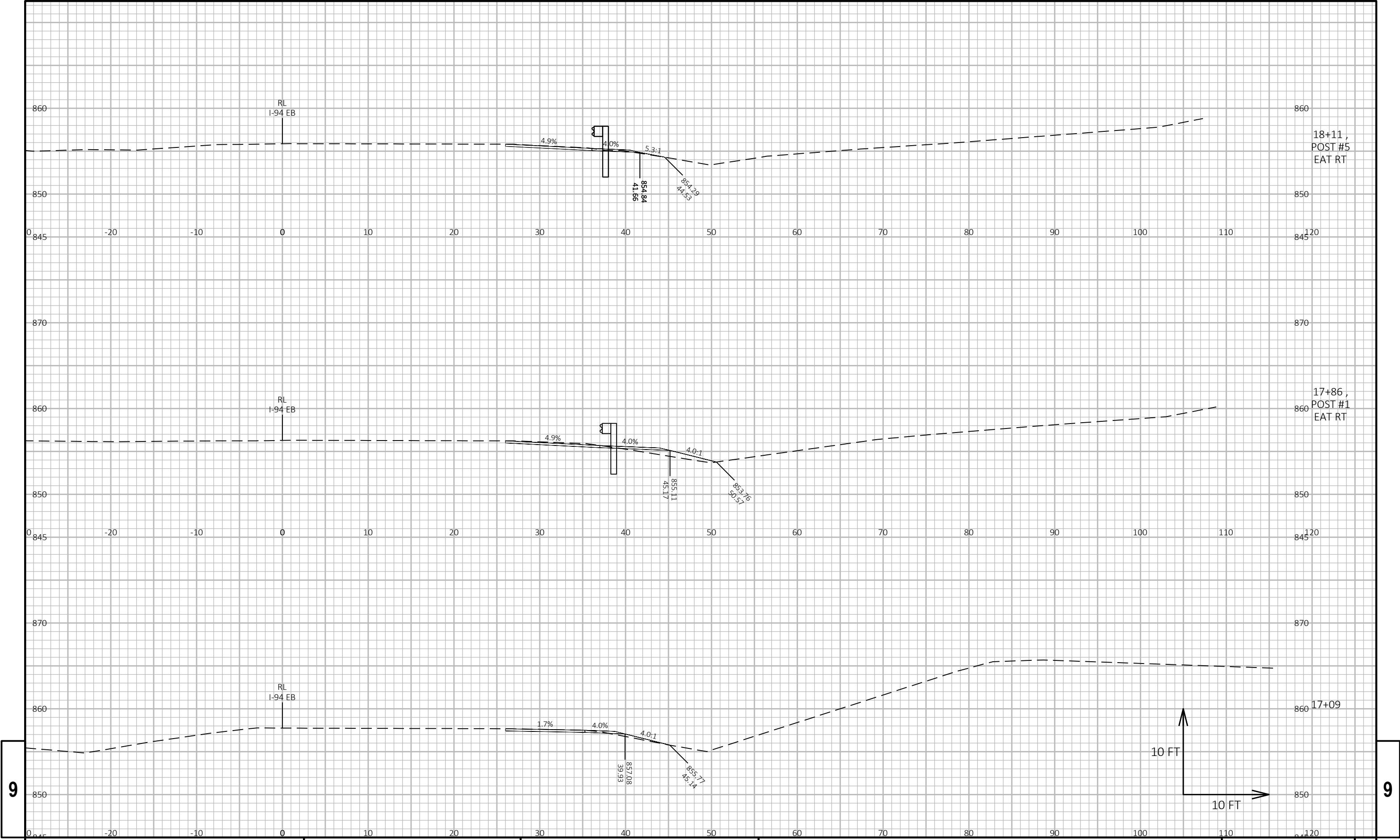
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-175			
DRAWN BY		TRG	PLANS CK'D ABP
STAGING DETAILS		SHEET 3 OF 4	
		425	

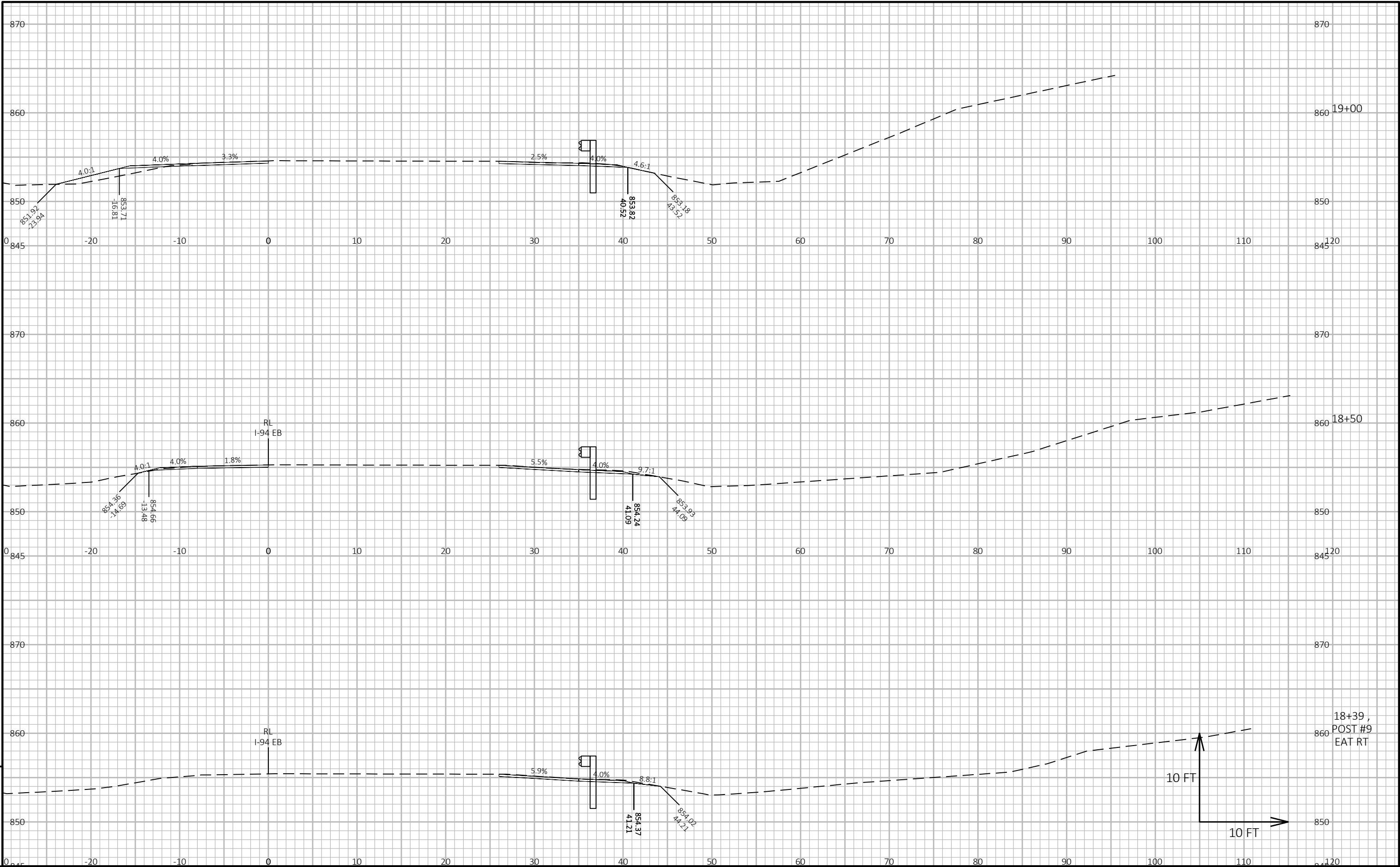


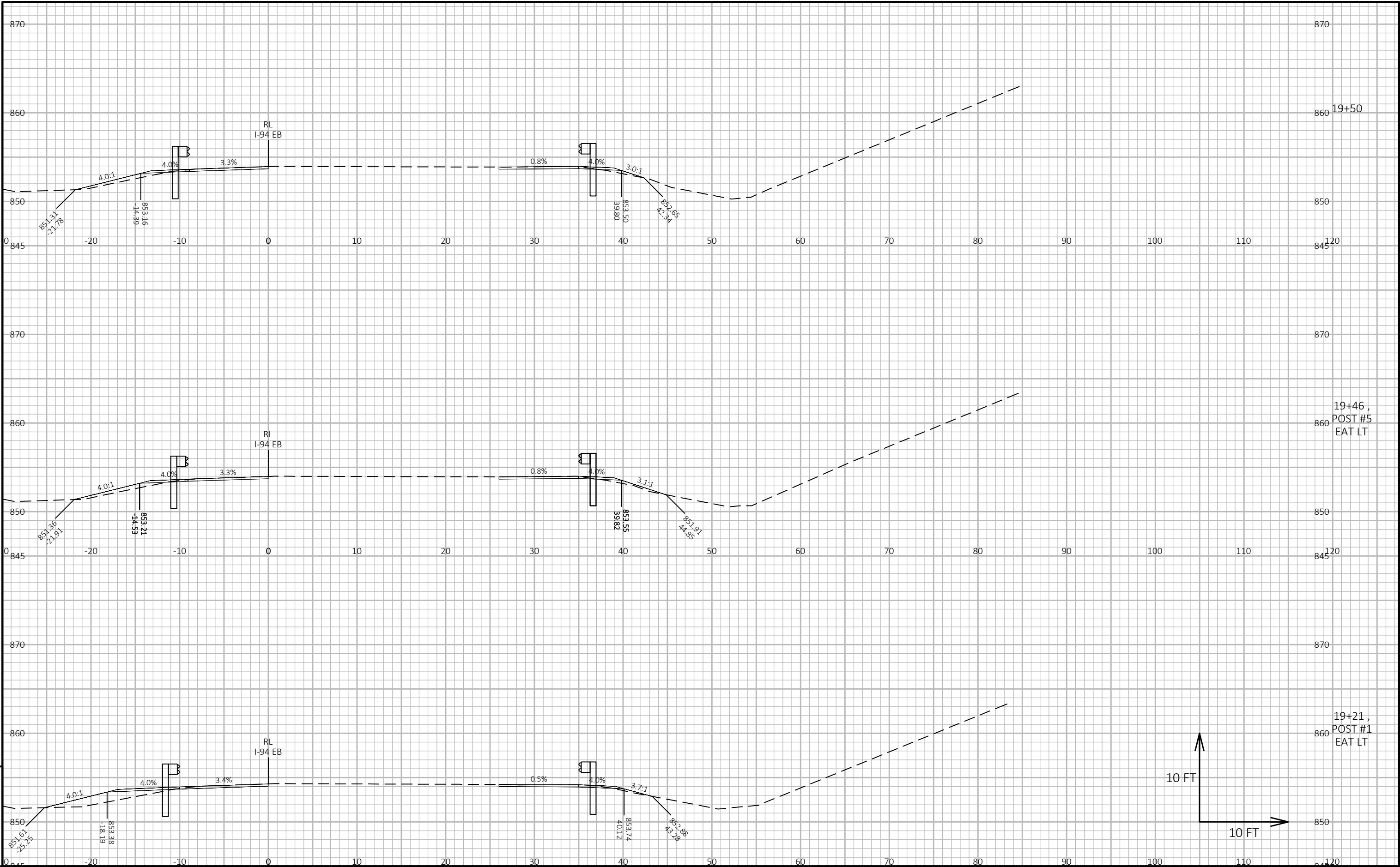
Orientation & Scale	Survey Information	Mapping Legend			Quantity Summary		ft²	%	General Information		INFRASENSE
	Level 0 - Fixed Wing Aerial	Delamination detected by IR	Concrete Patching	Asphalt Patching	8000 – Wearing Surface (Bare)	6962	100	B170175			
	Scanned: 06/10/2024 04:23 PM				Delaminations	39	0.6	IH 94 EB over WILSON CREEK			
	► Direction of Traffic	Infrared Data (Temperature, F)	Debonding	Spalling	Area Not Analyzed	Debonding	0	0.0	Sheet 1 of 1 Analyzed By: RB Completed: 08/16/2024		
Average	92.1	Spalling				0	0.0				
Standard Deviation	2.7	Area Not Analyzed				0	0.0				

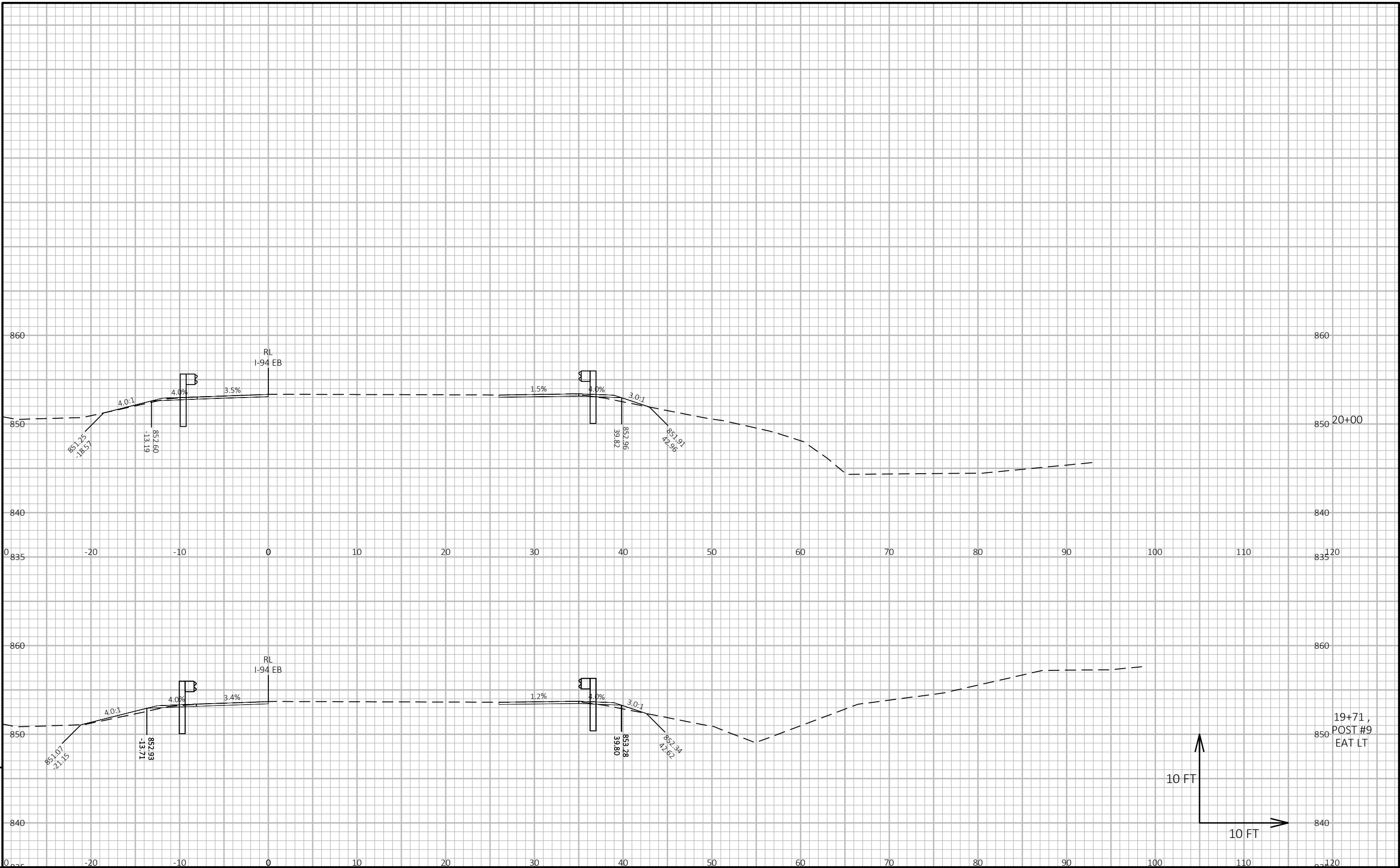
Note: The delamination % was calculated as (Delamination Area) / (Wearing Surface Area - Area Not Analyzed). The total deck area based on imagery is 6962 ft².

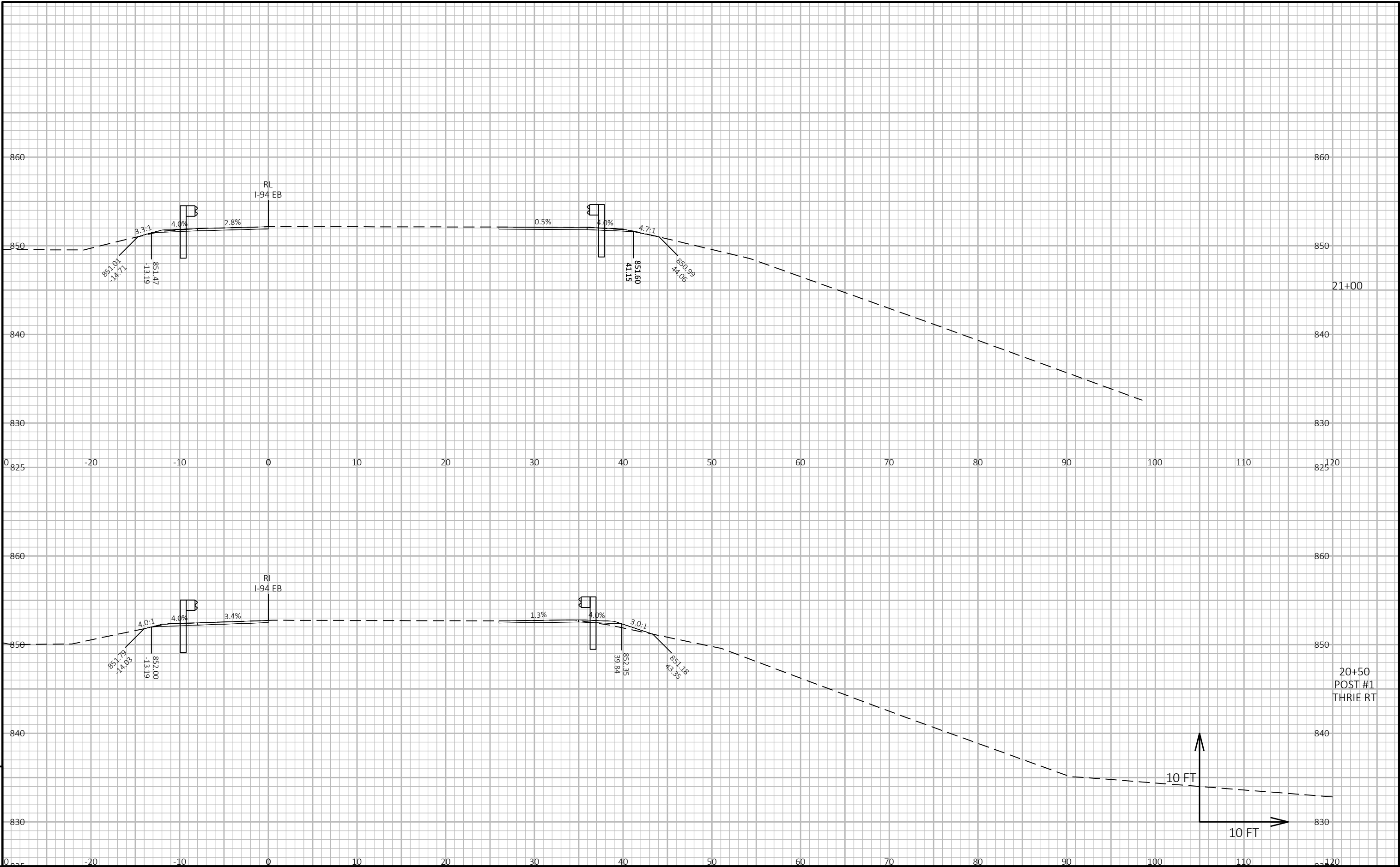
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-175			
DRAWN BY		NDS	PLANS CK'D ABP
FIXED WING AERIAL INFRARED SURVEY		SHEET 4 of 4 426	







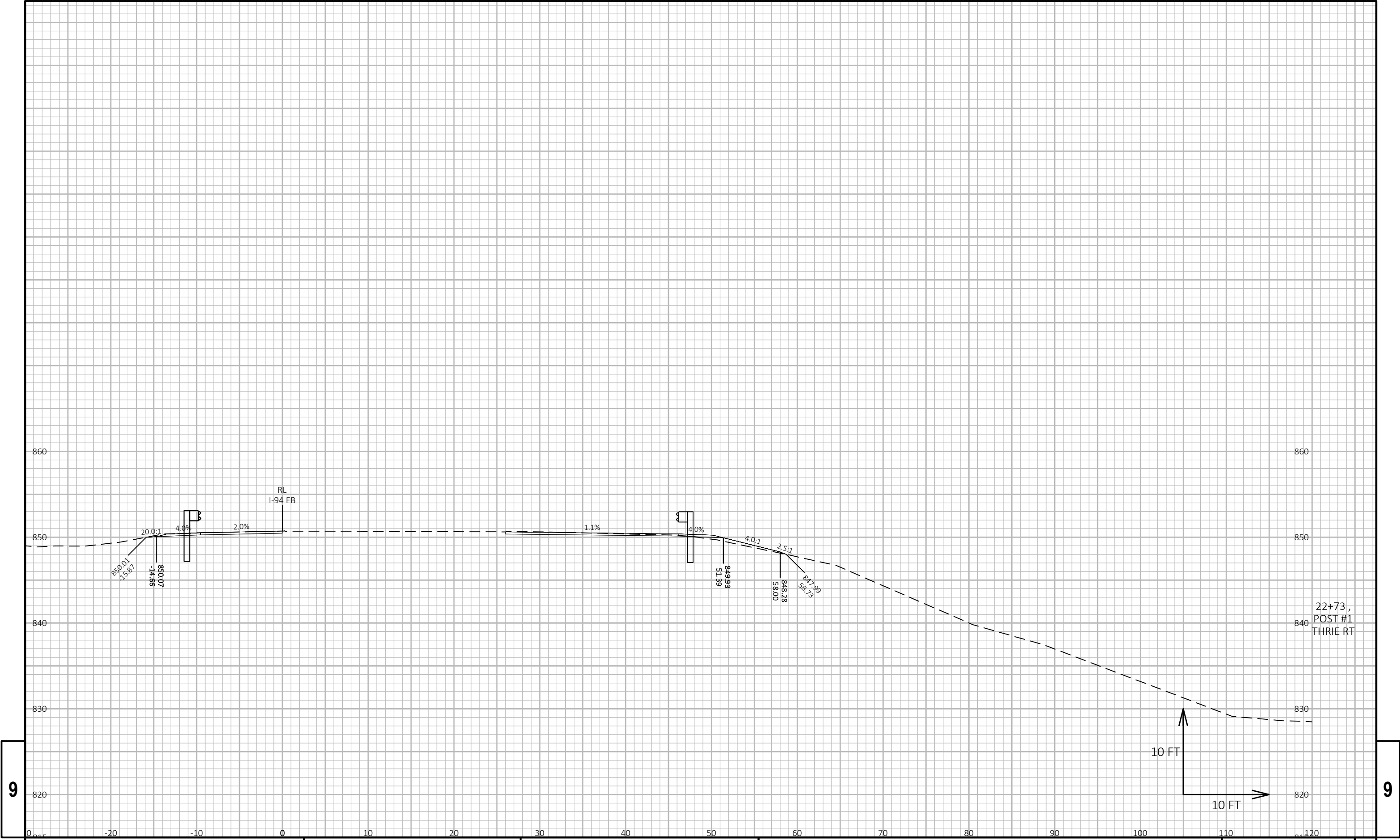


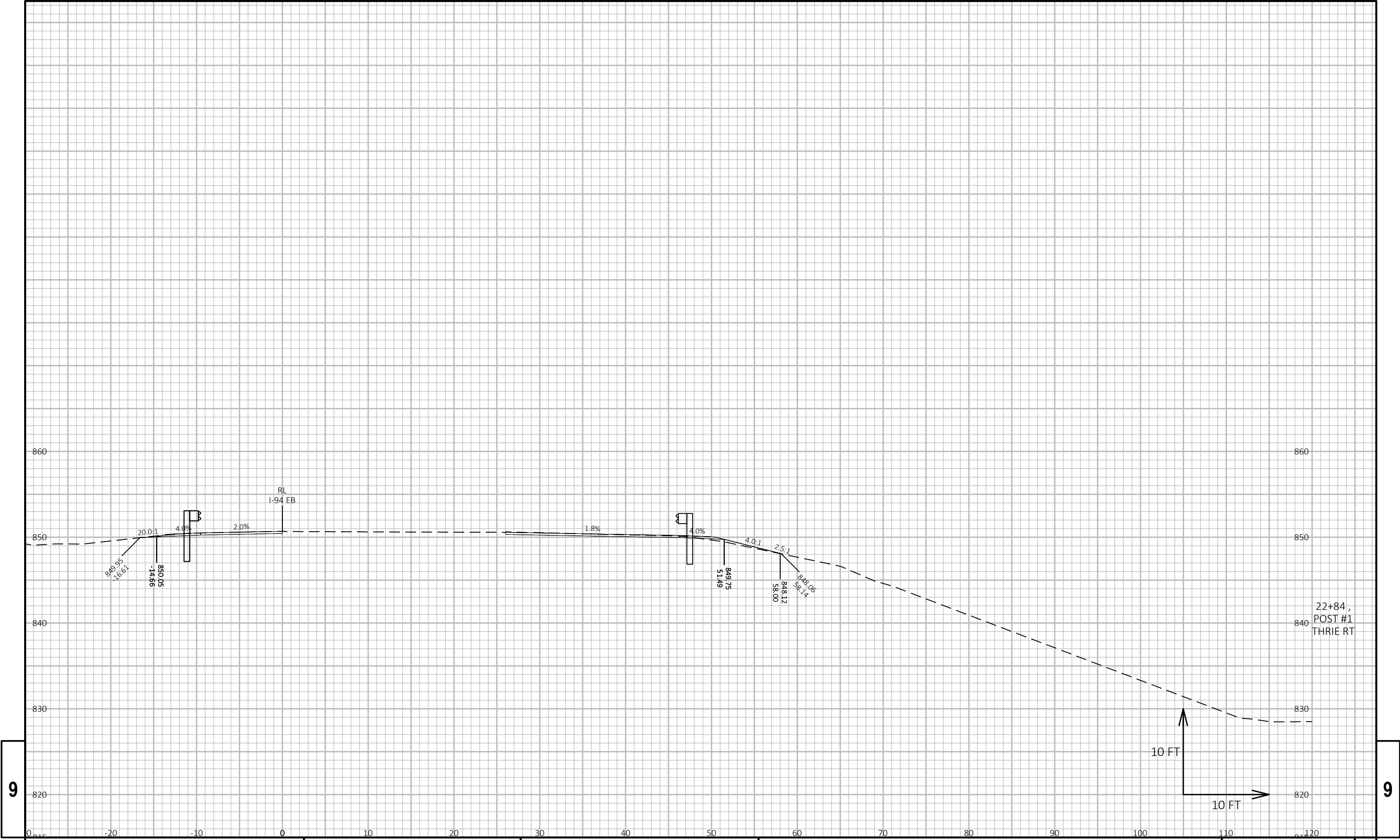




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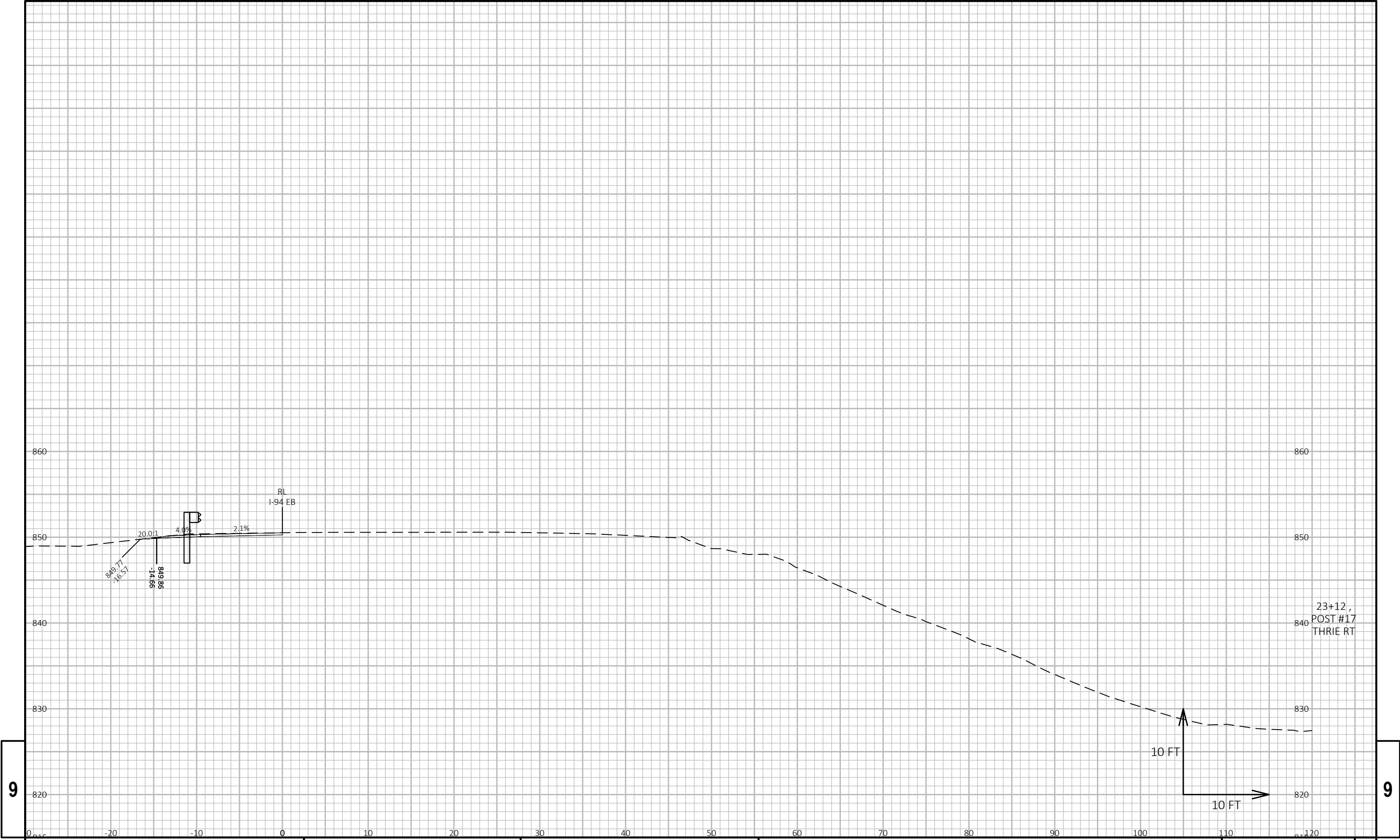
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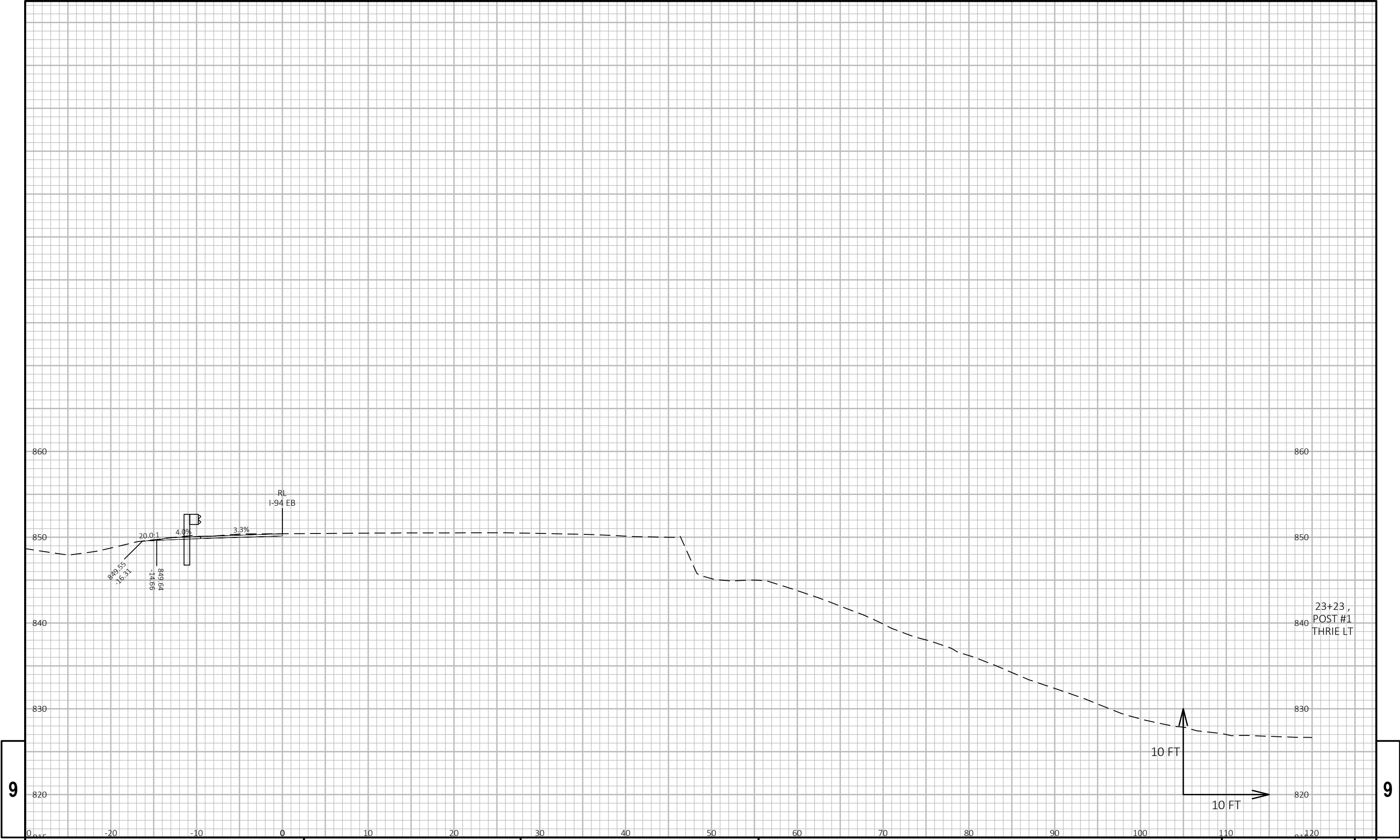
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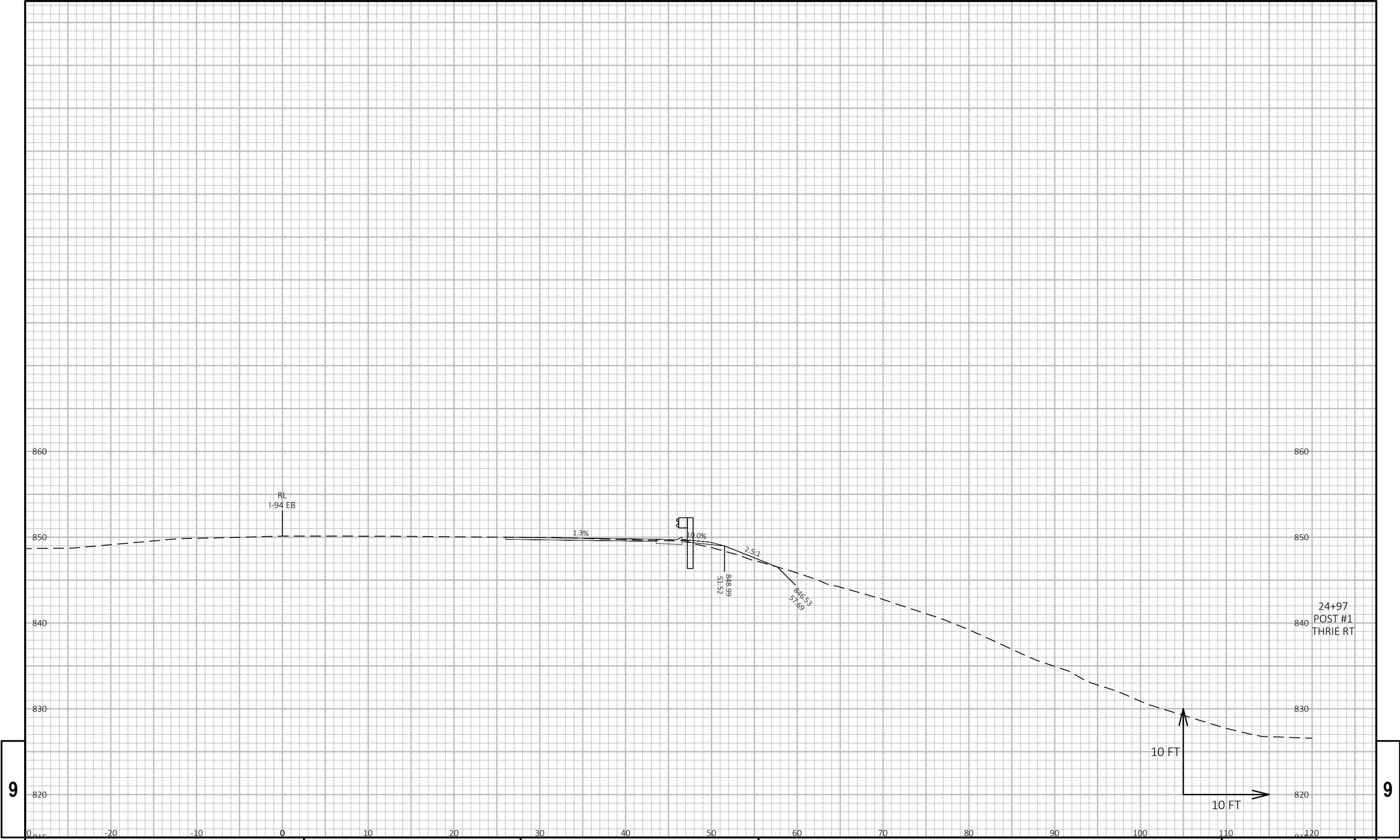
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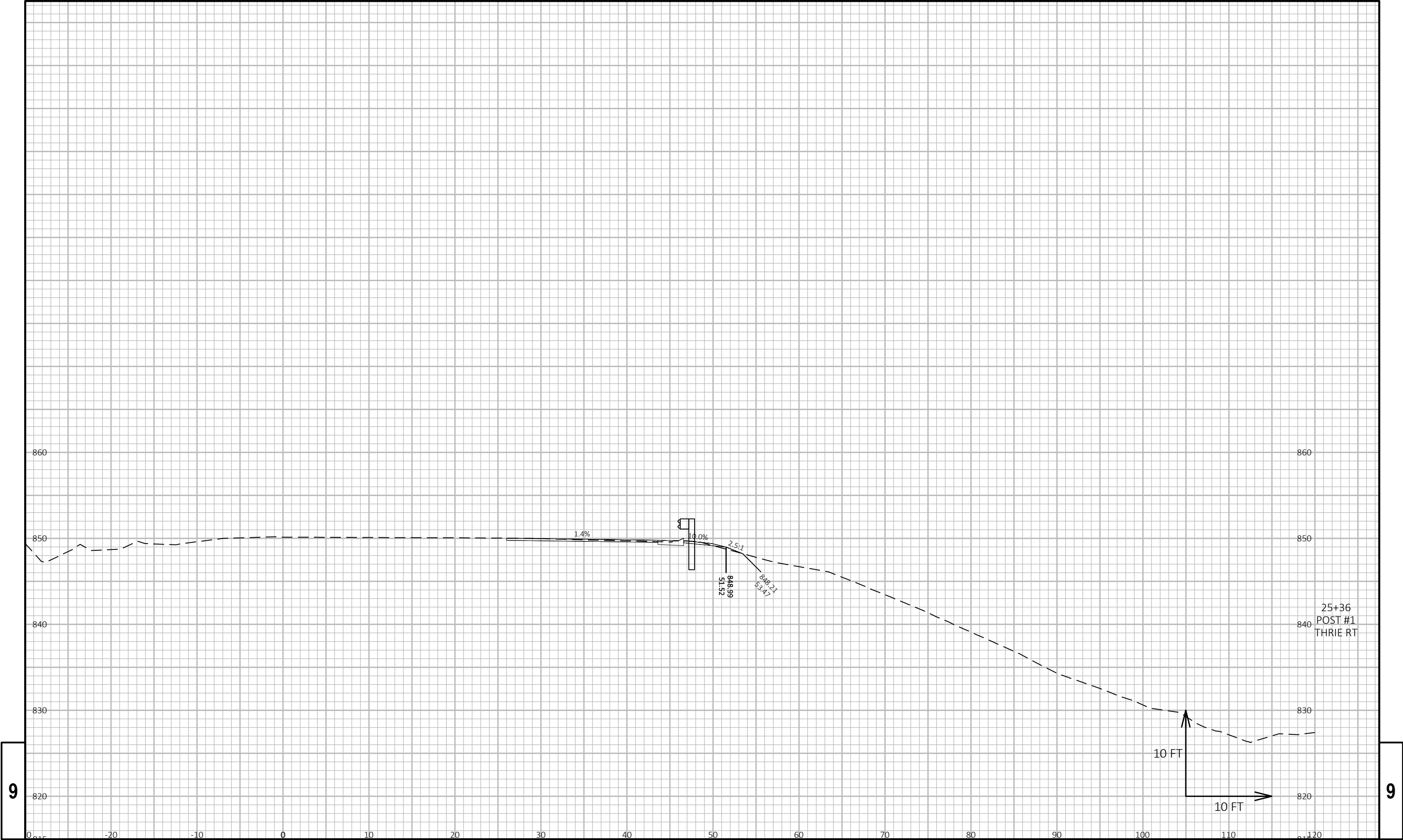
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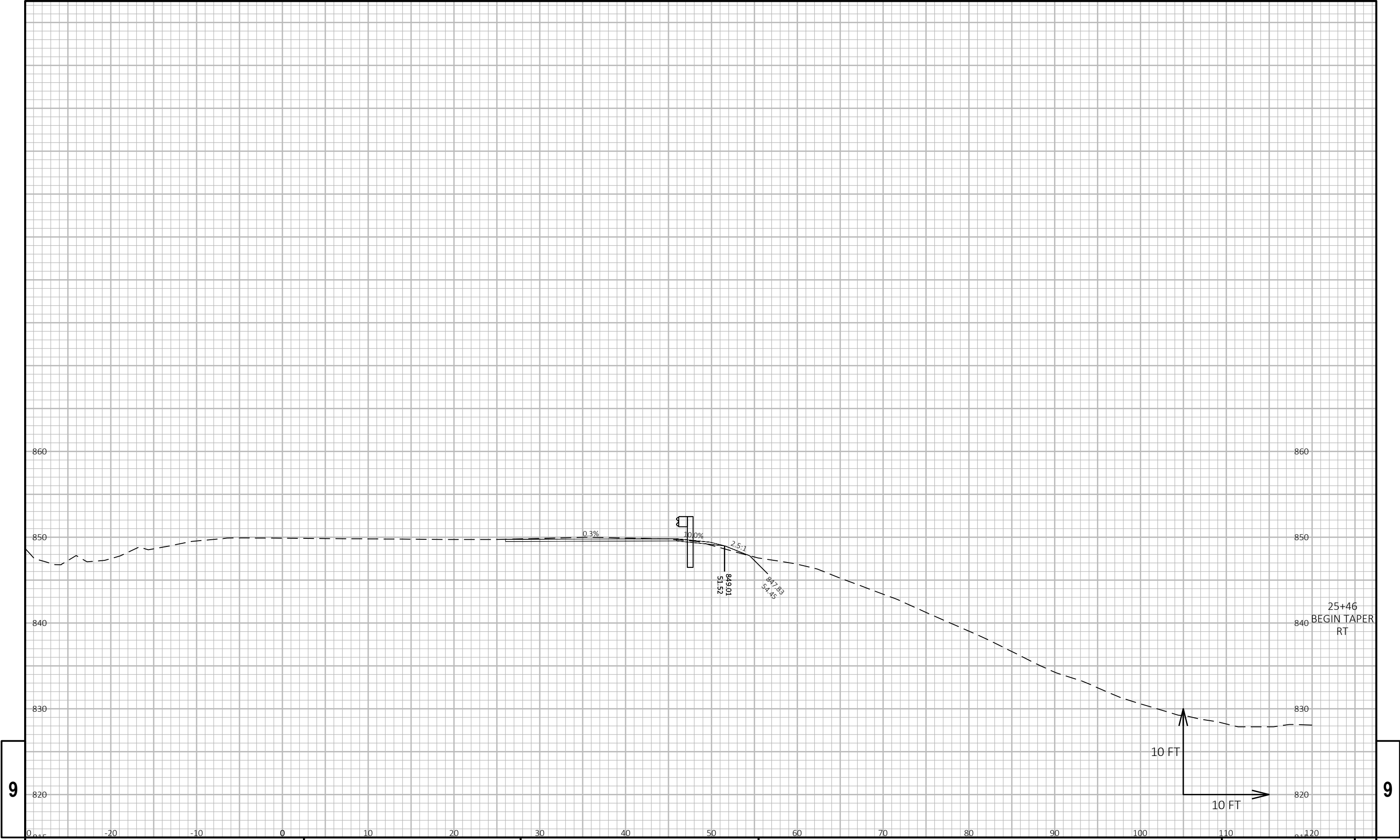
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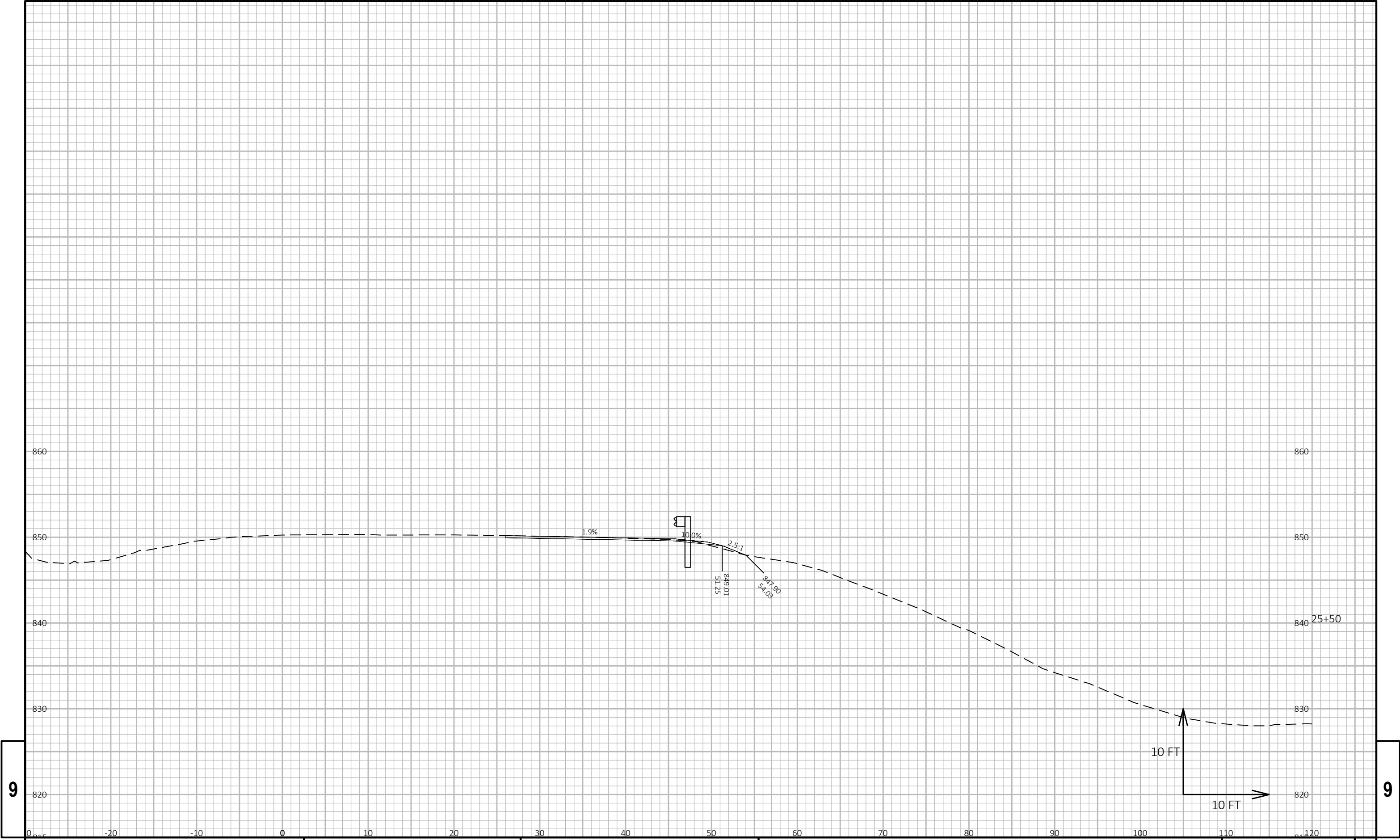
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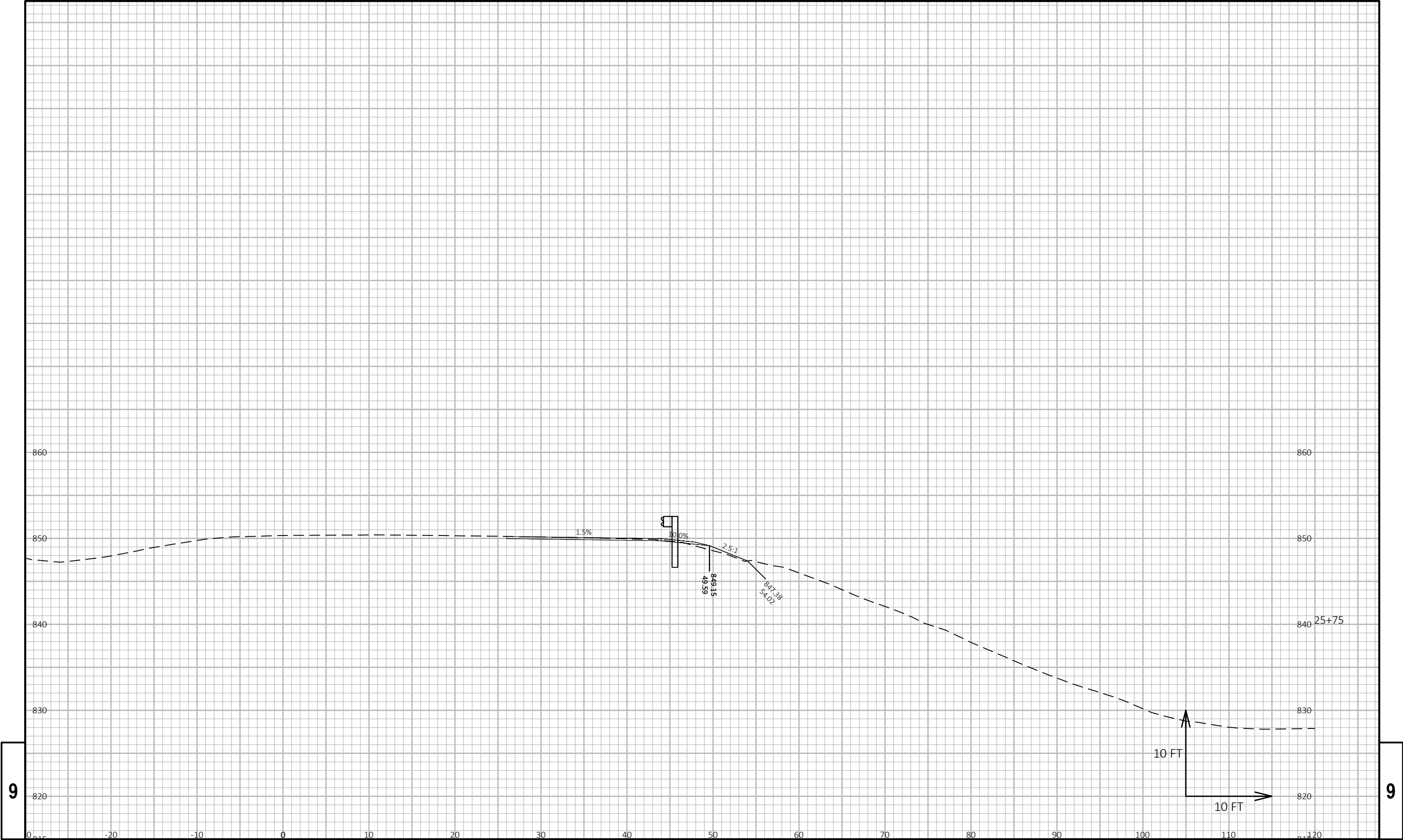
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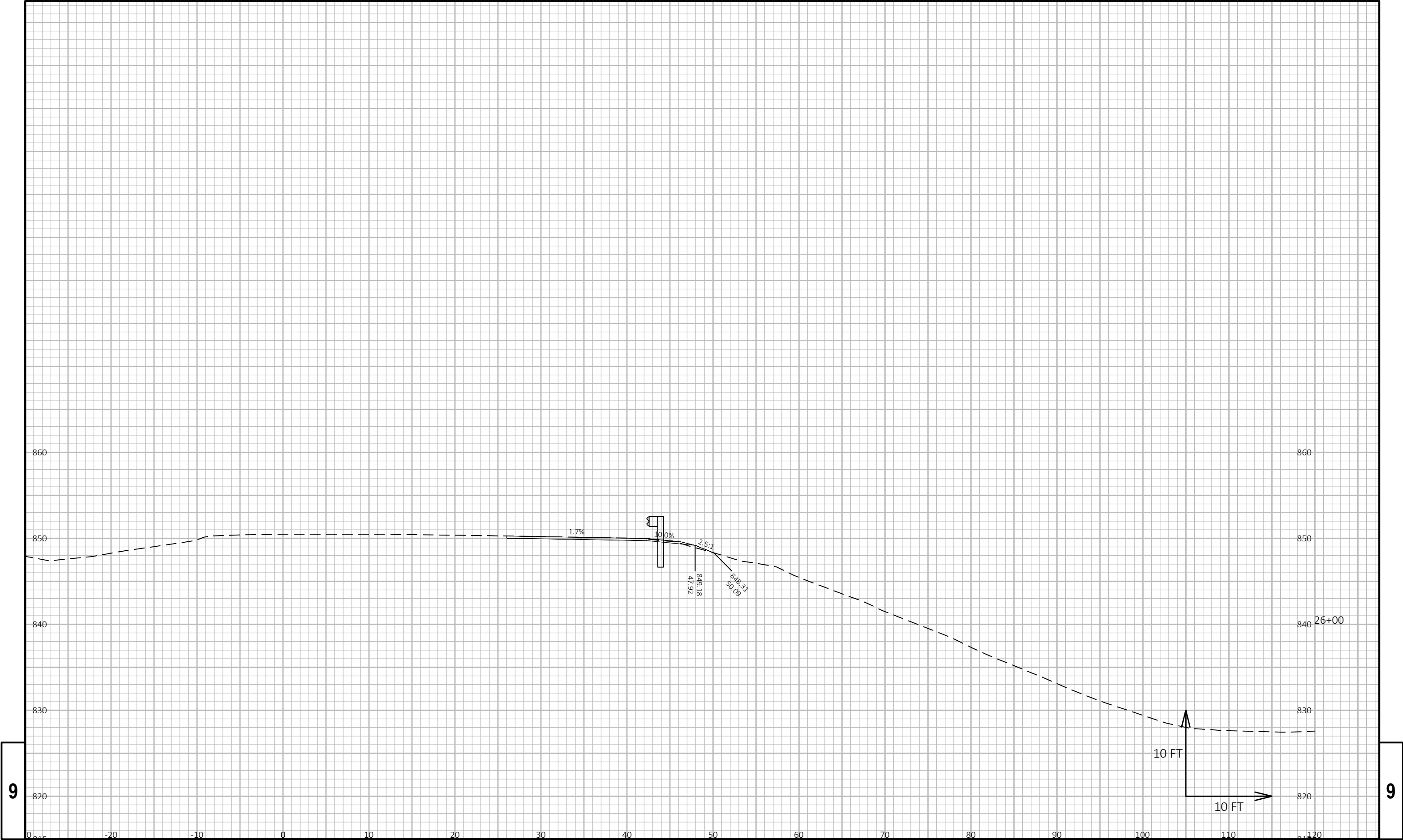
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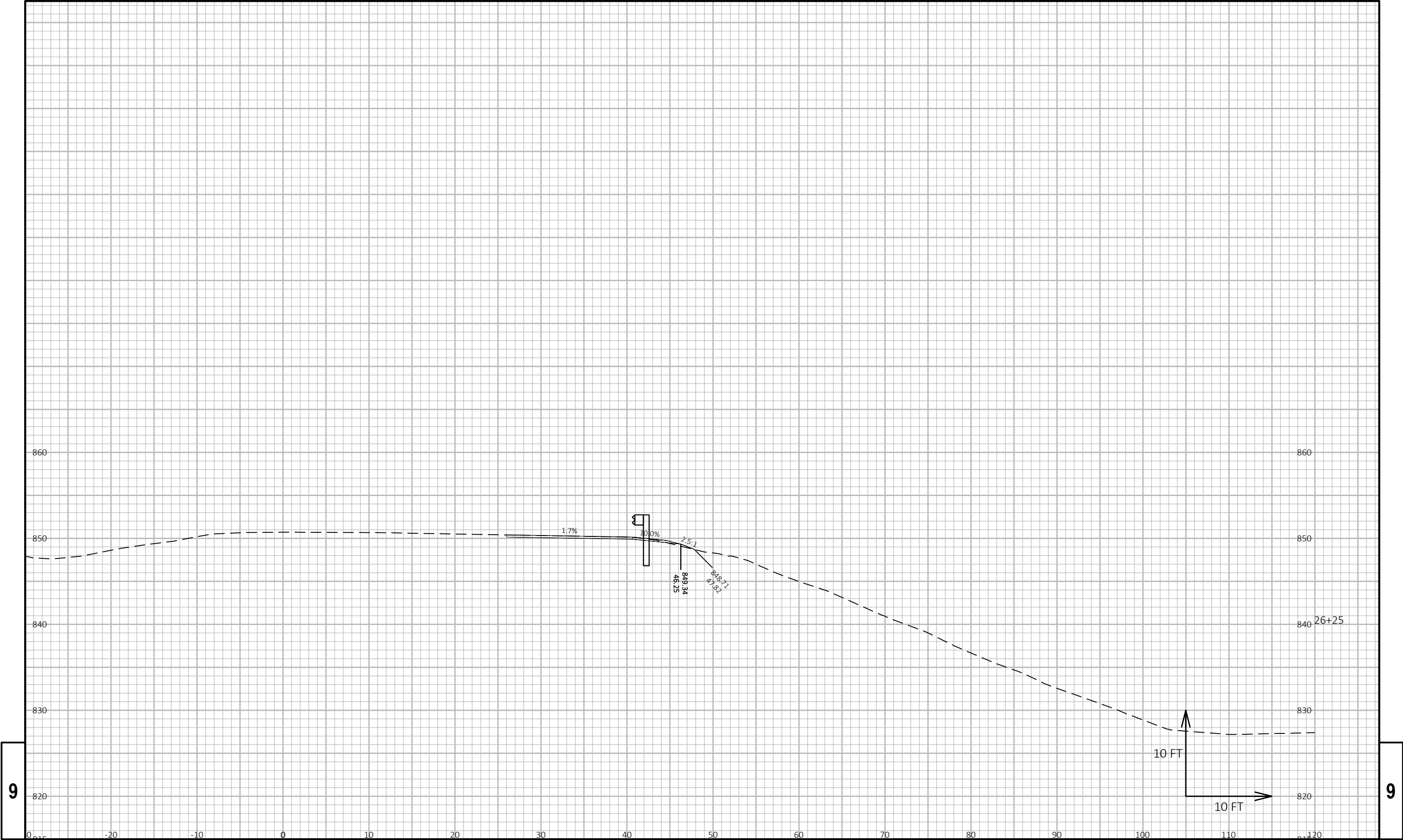
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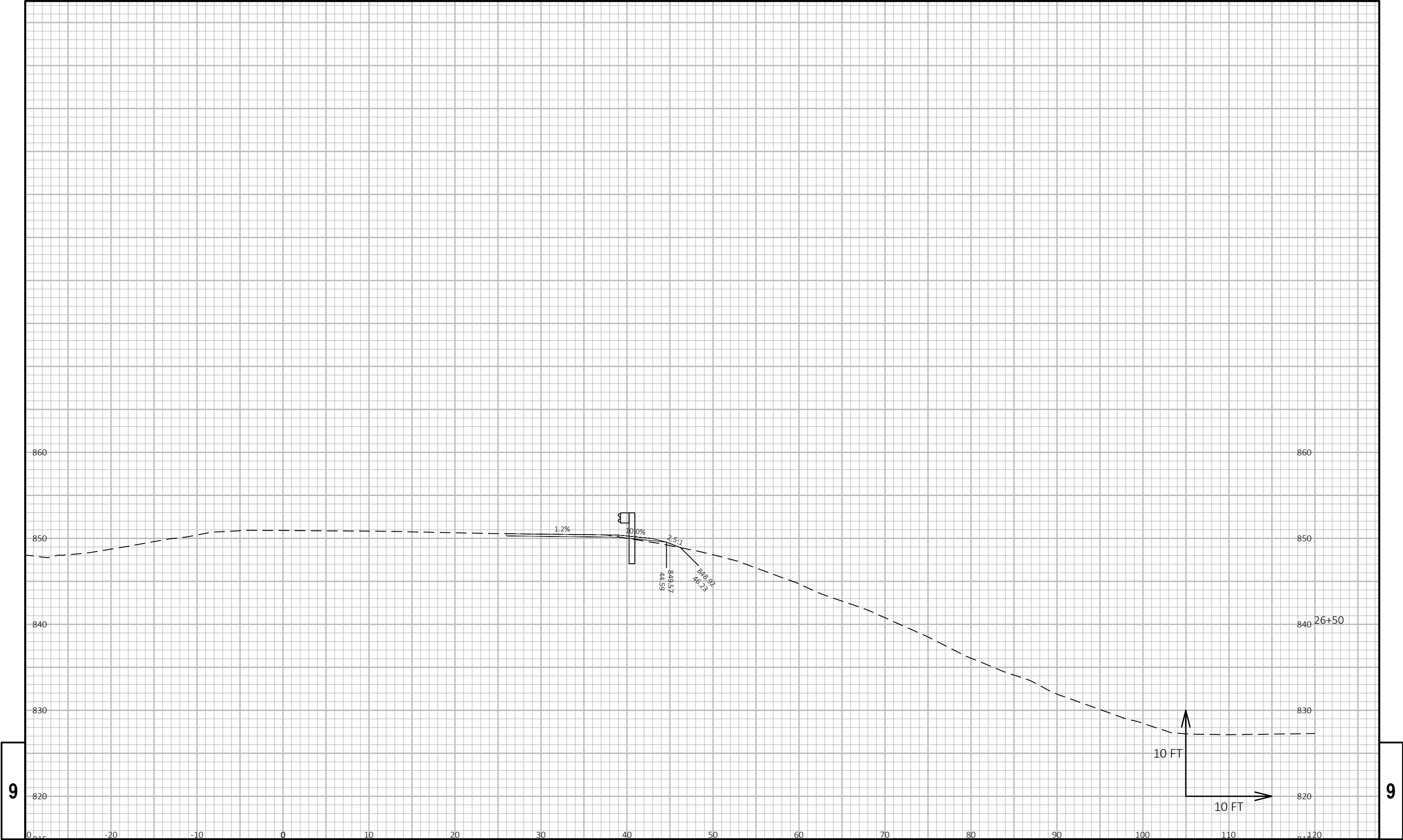
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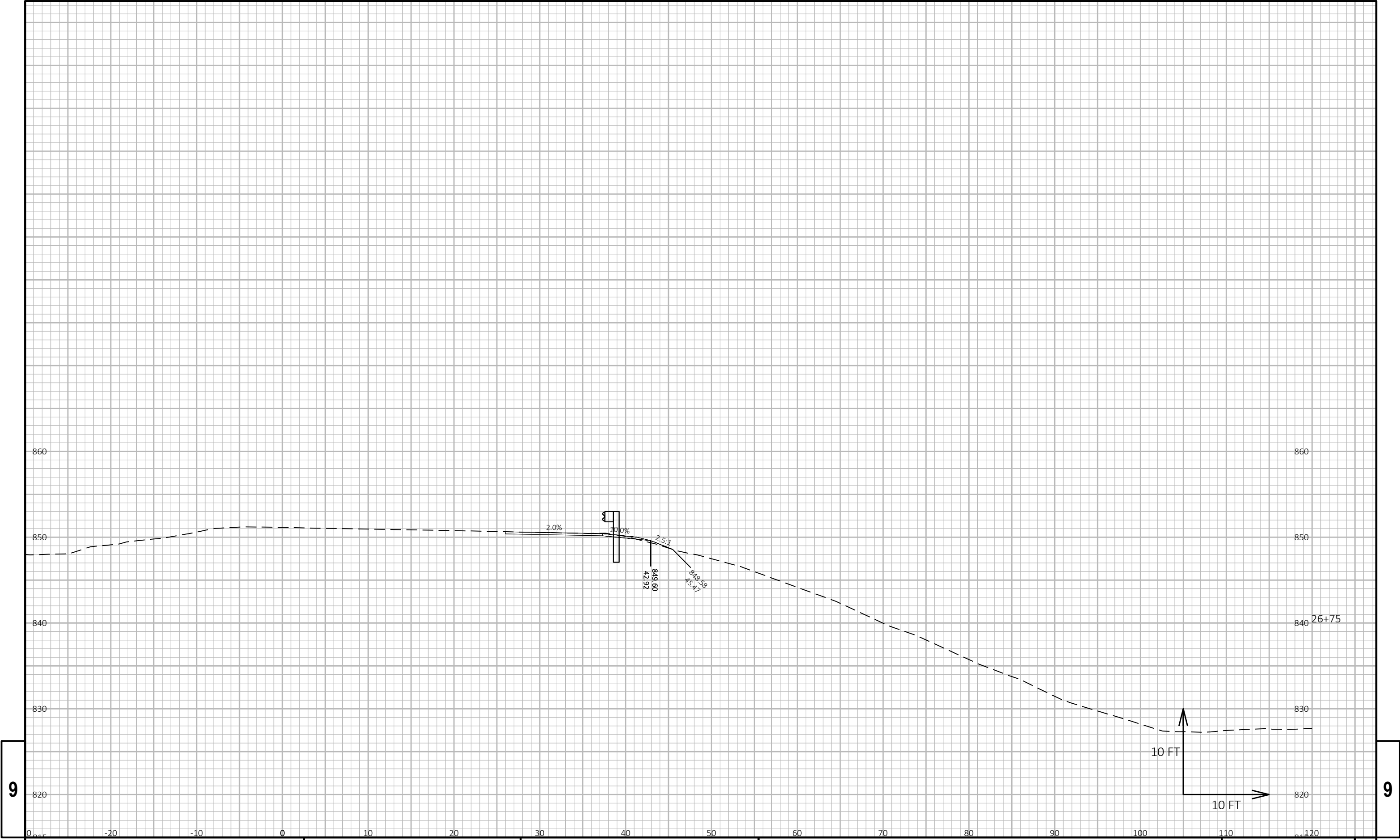
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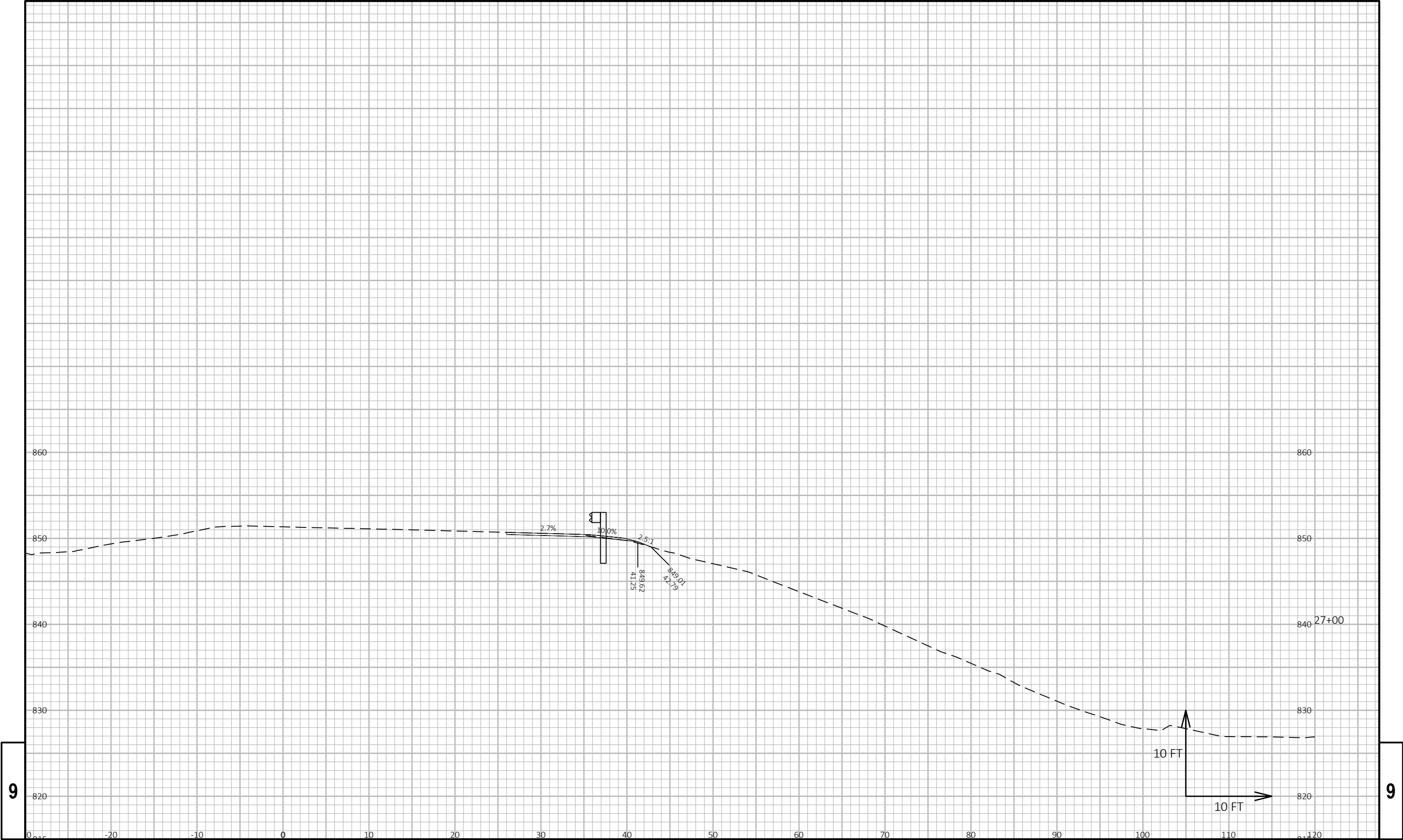
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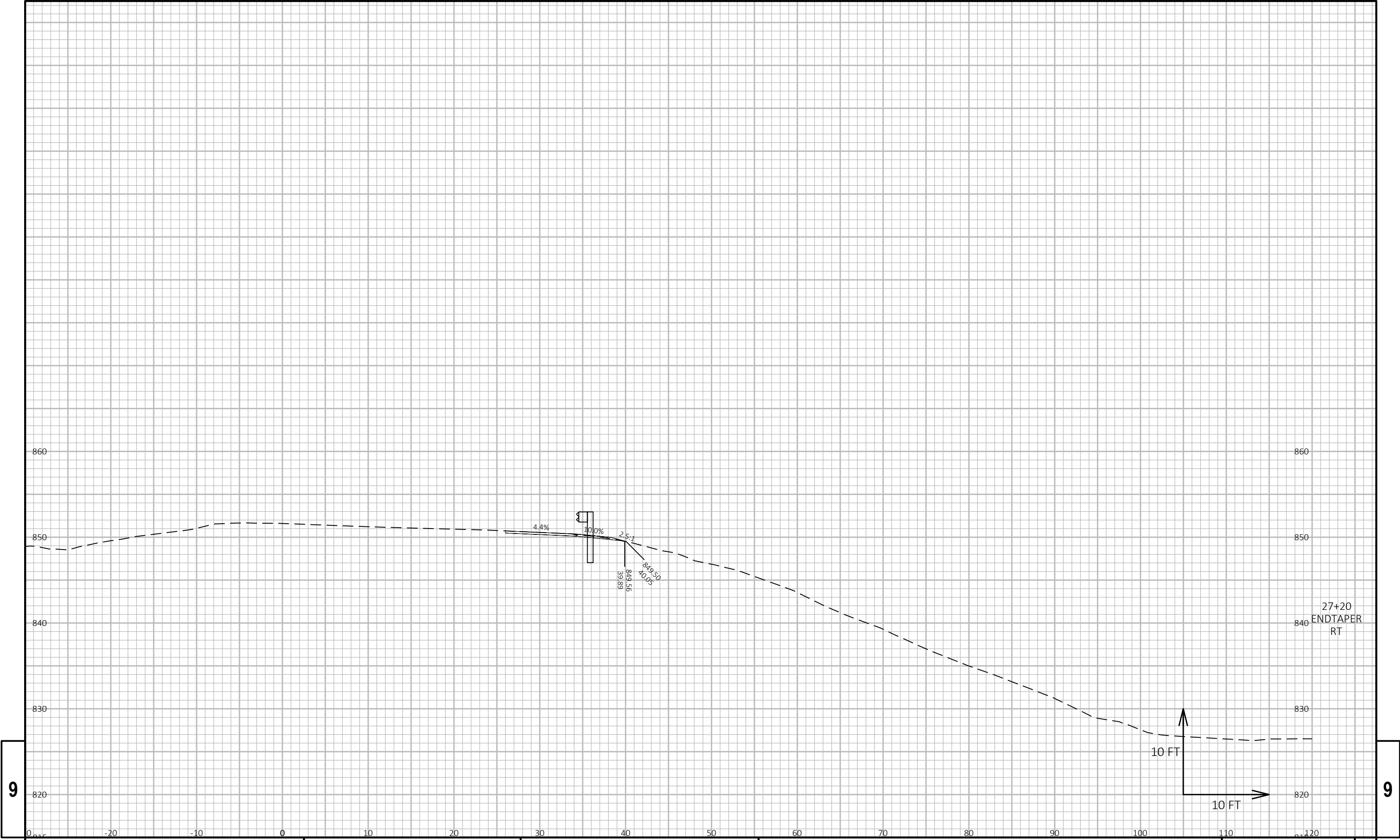
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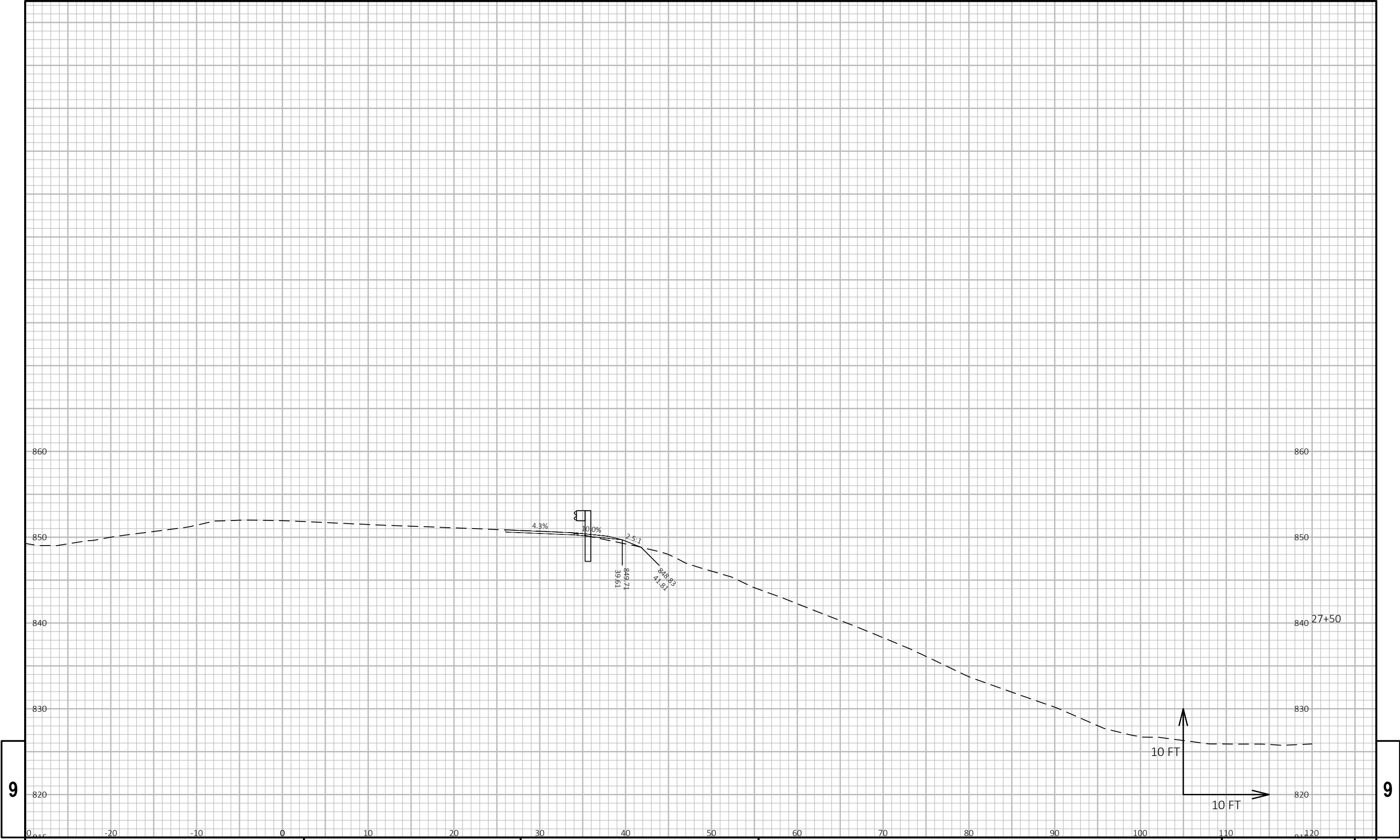
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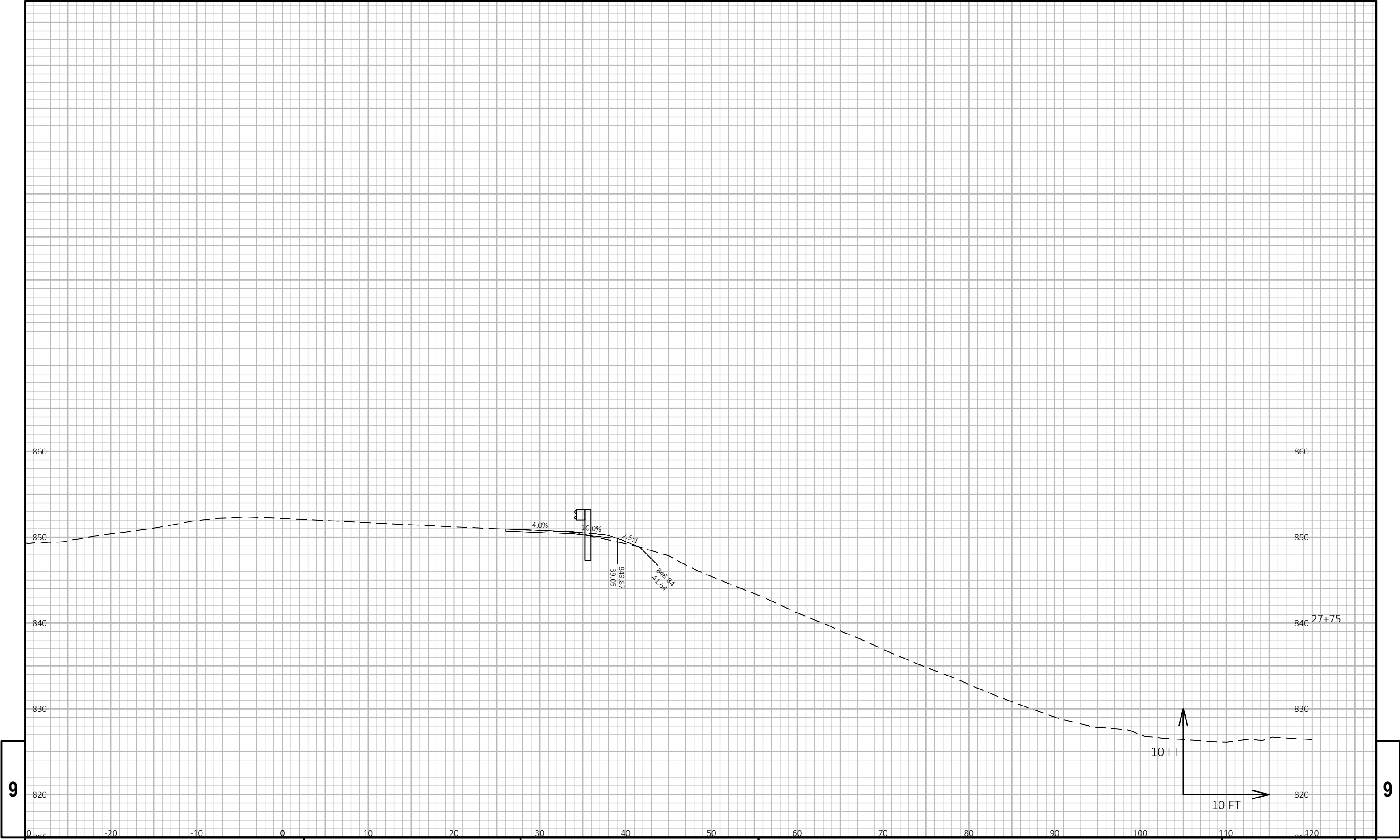
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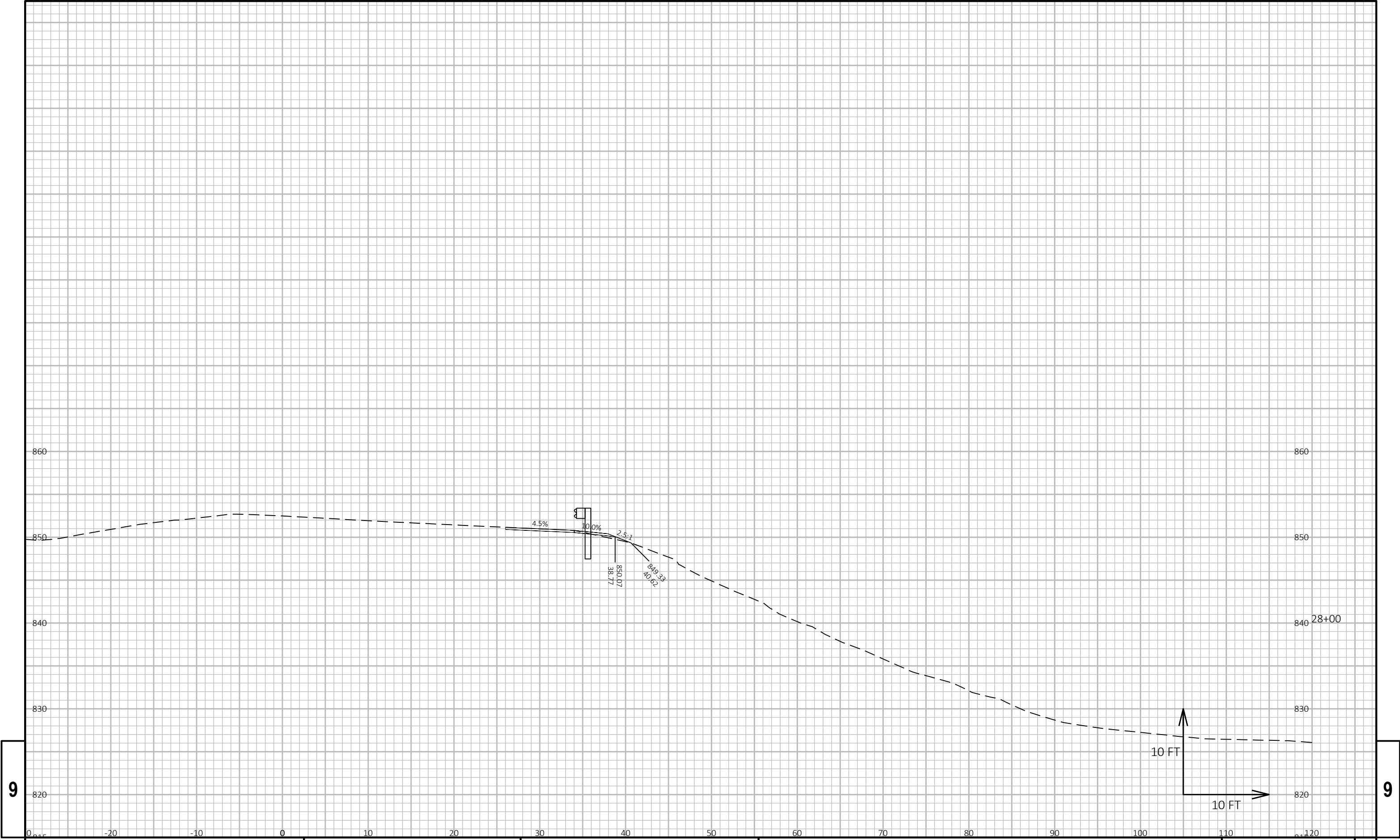
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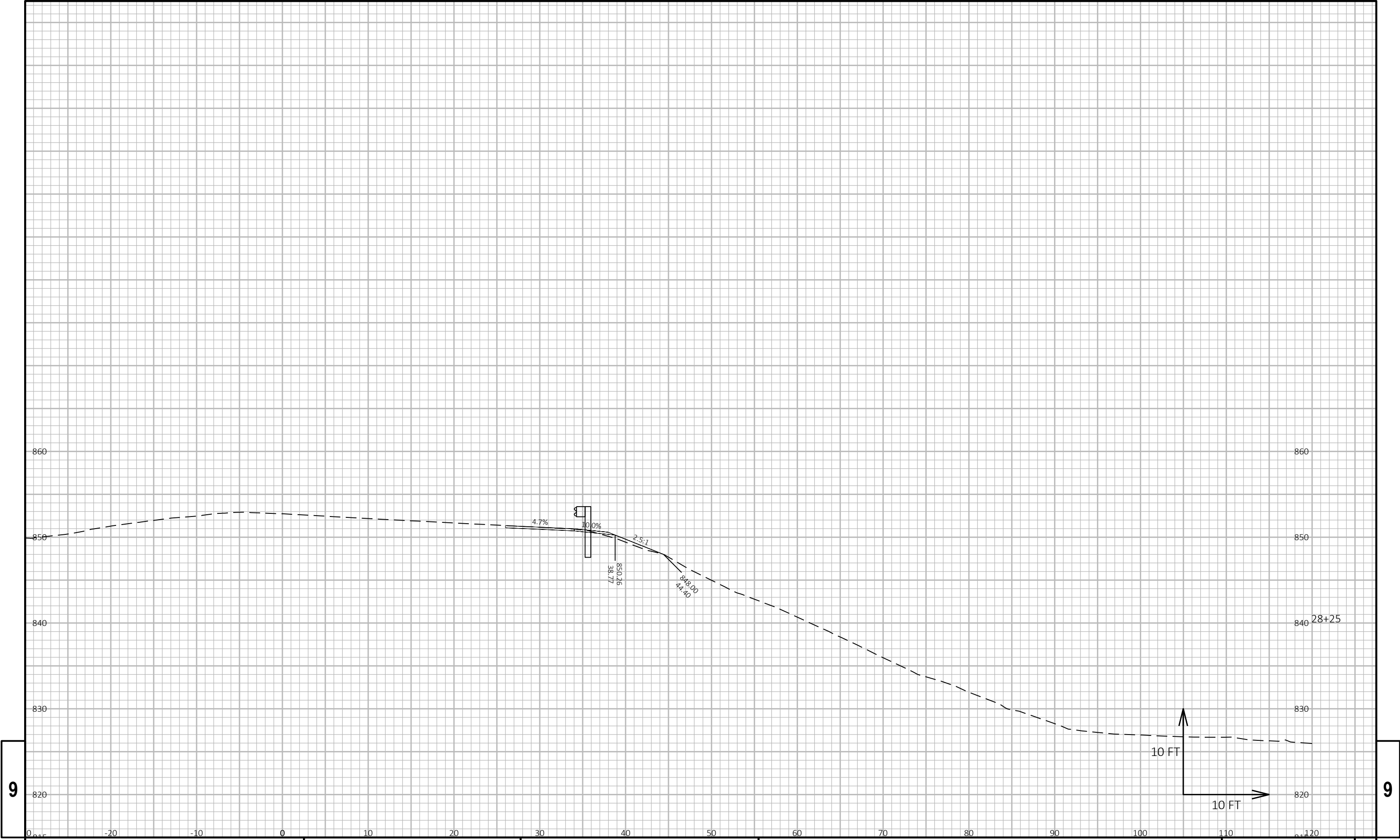
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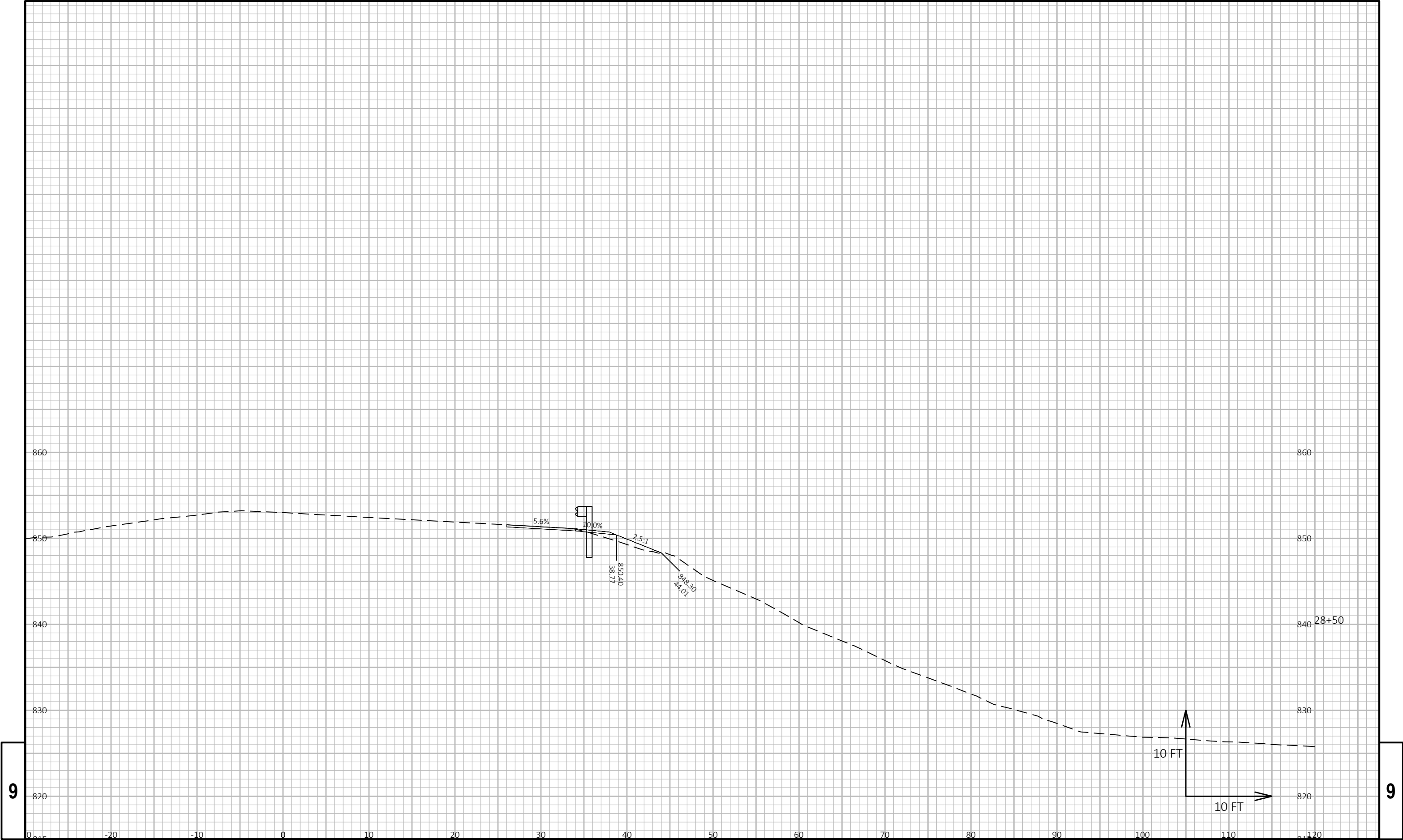
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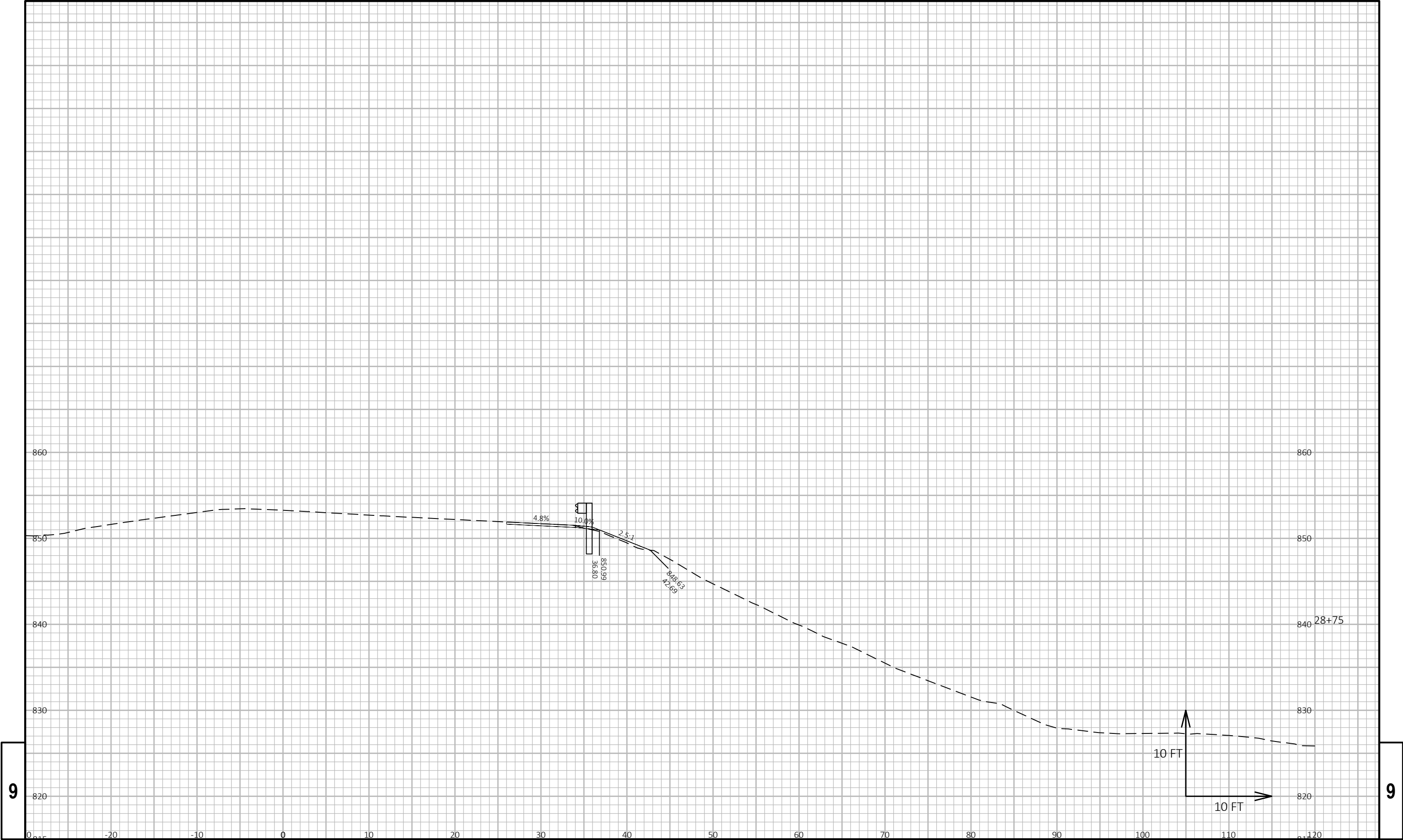
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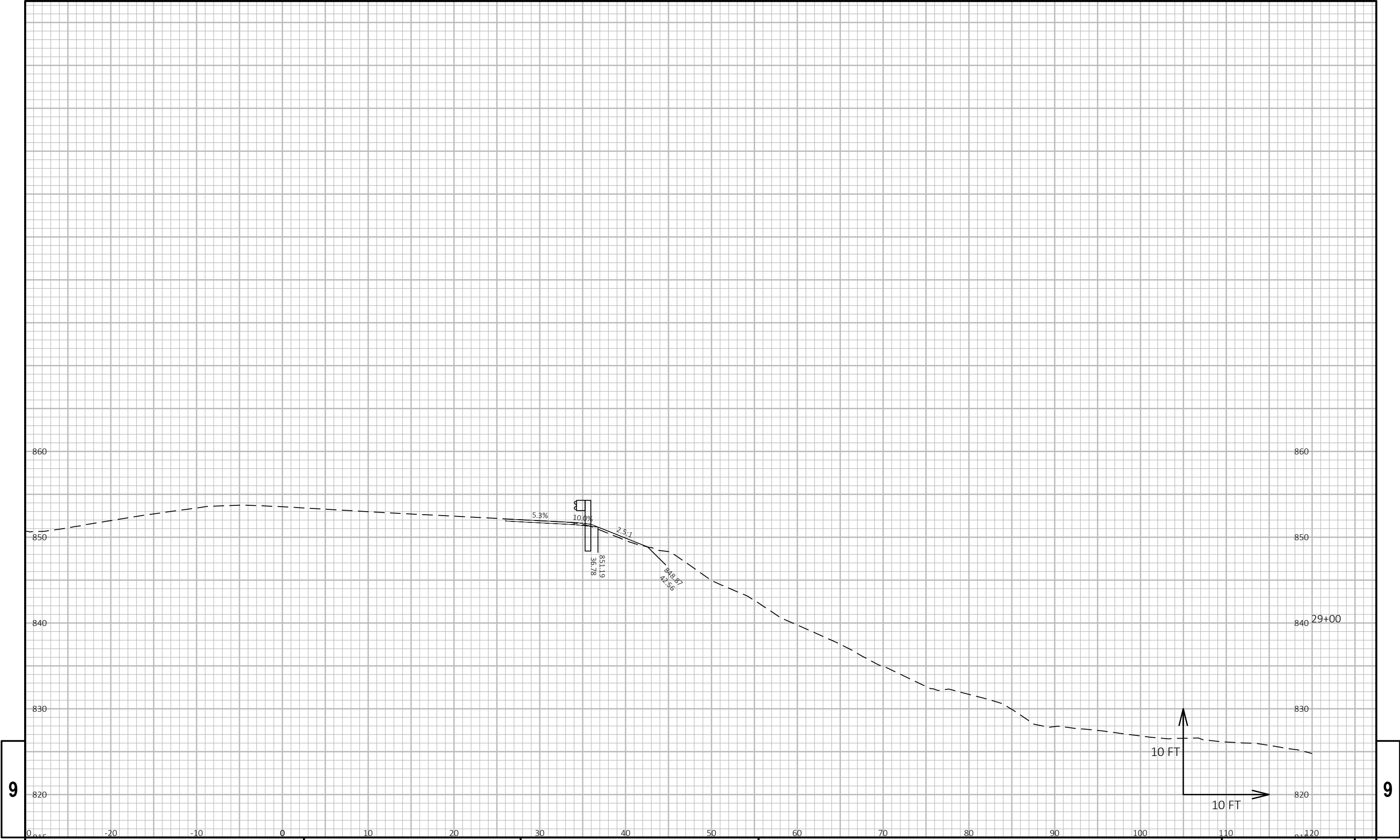
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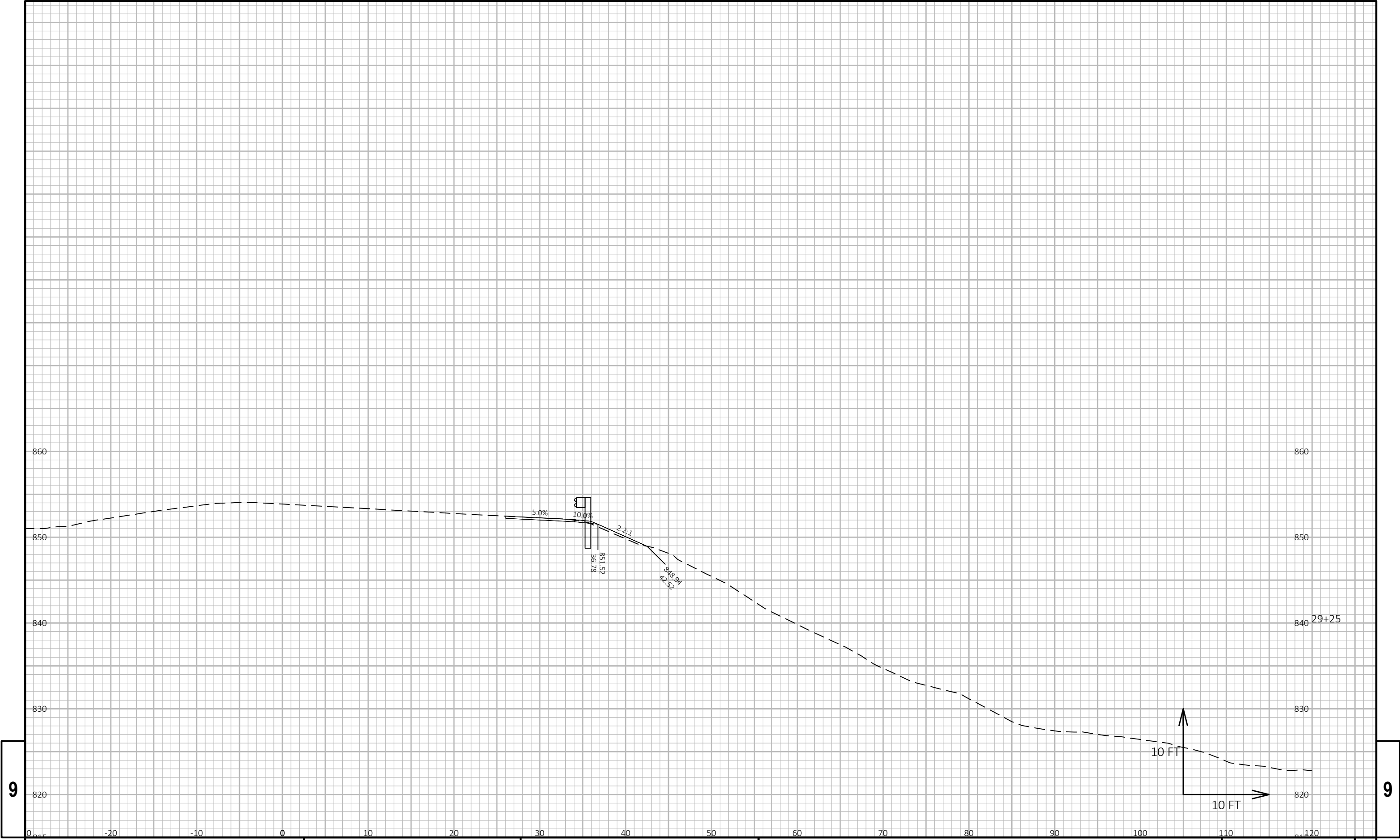
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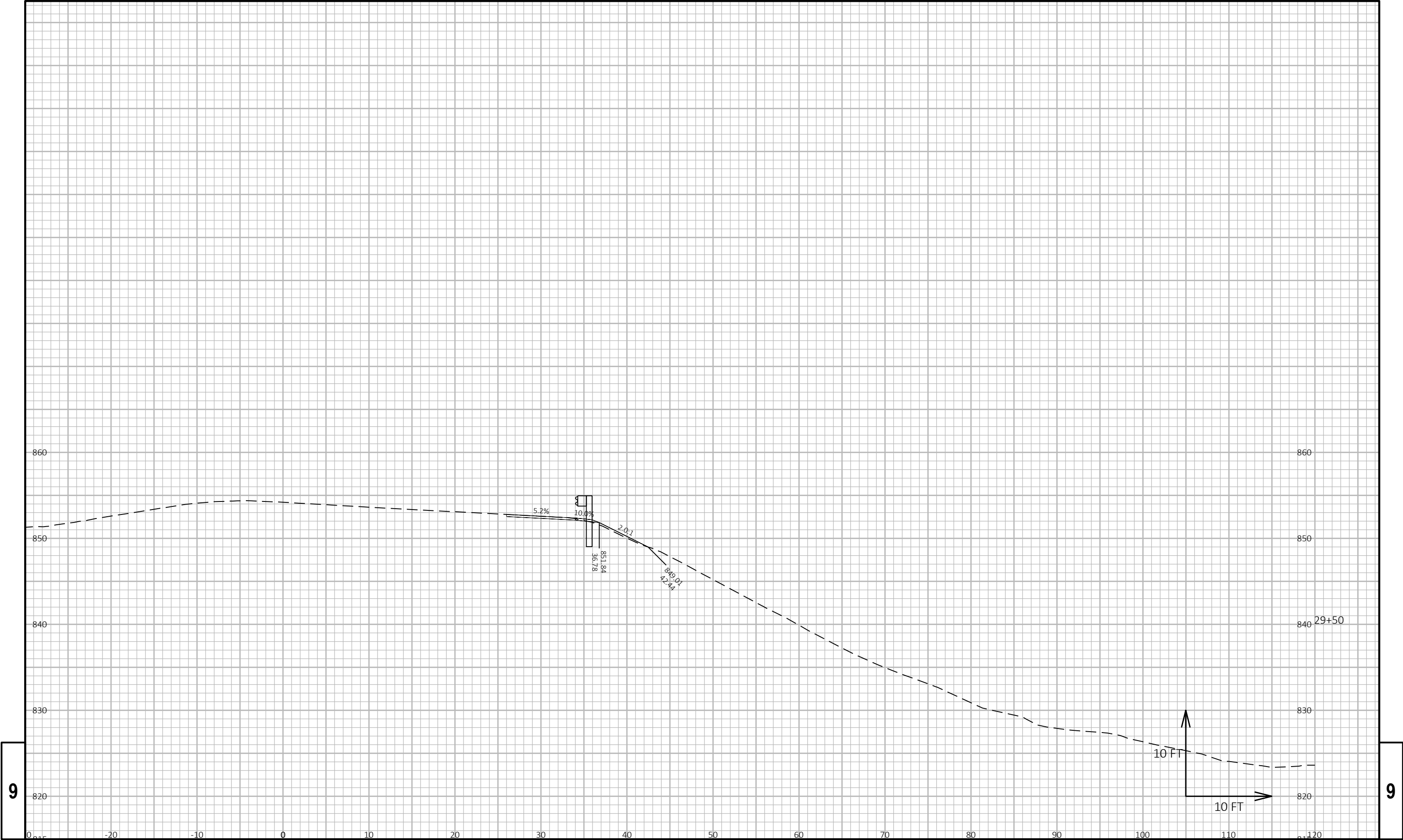
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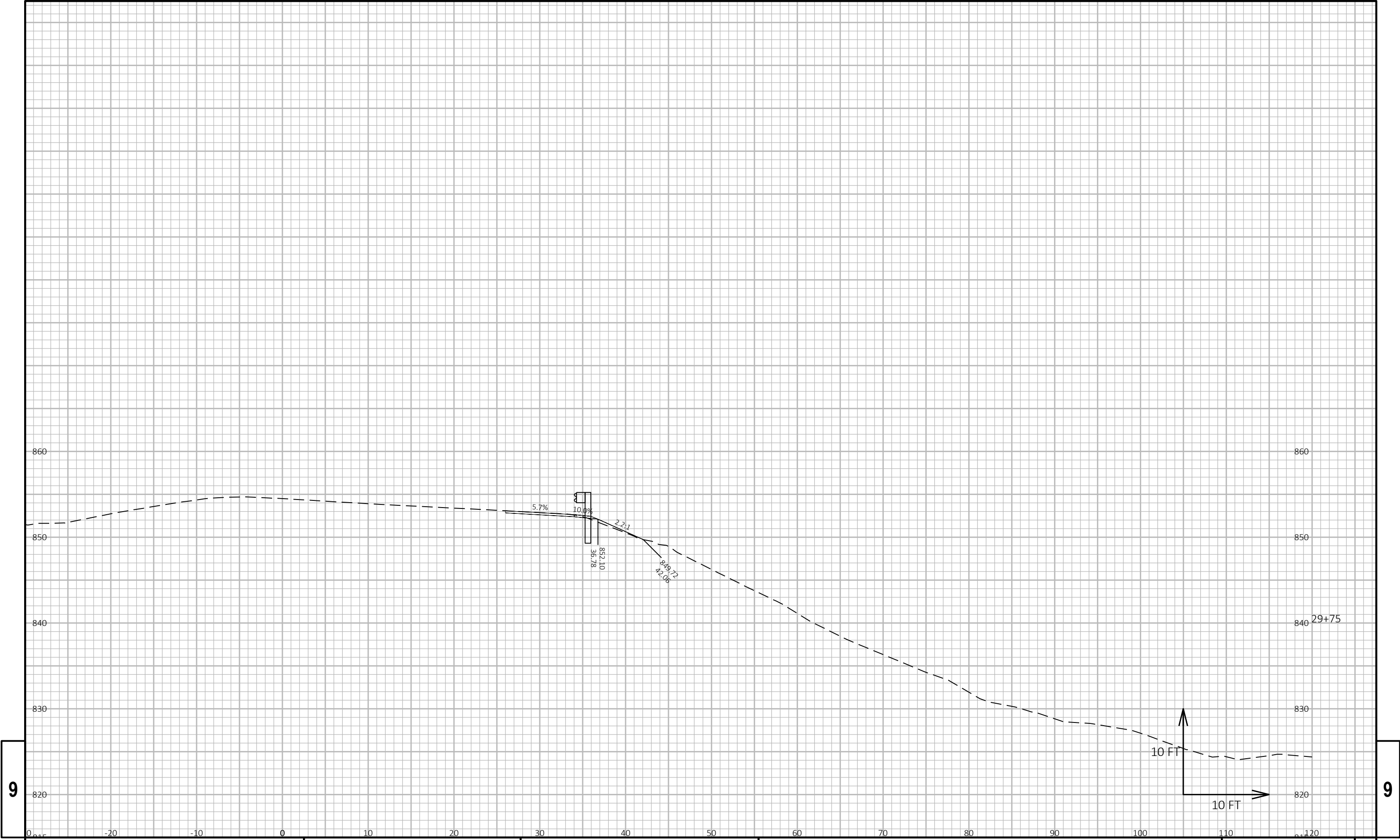
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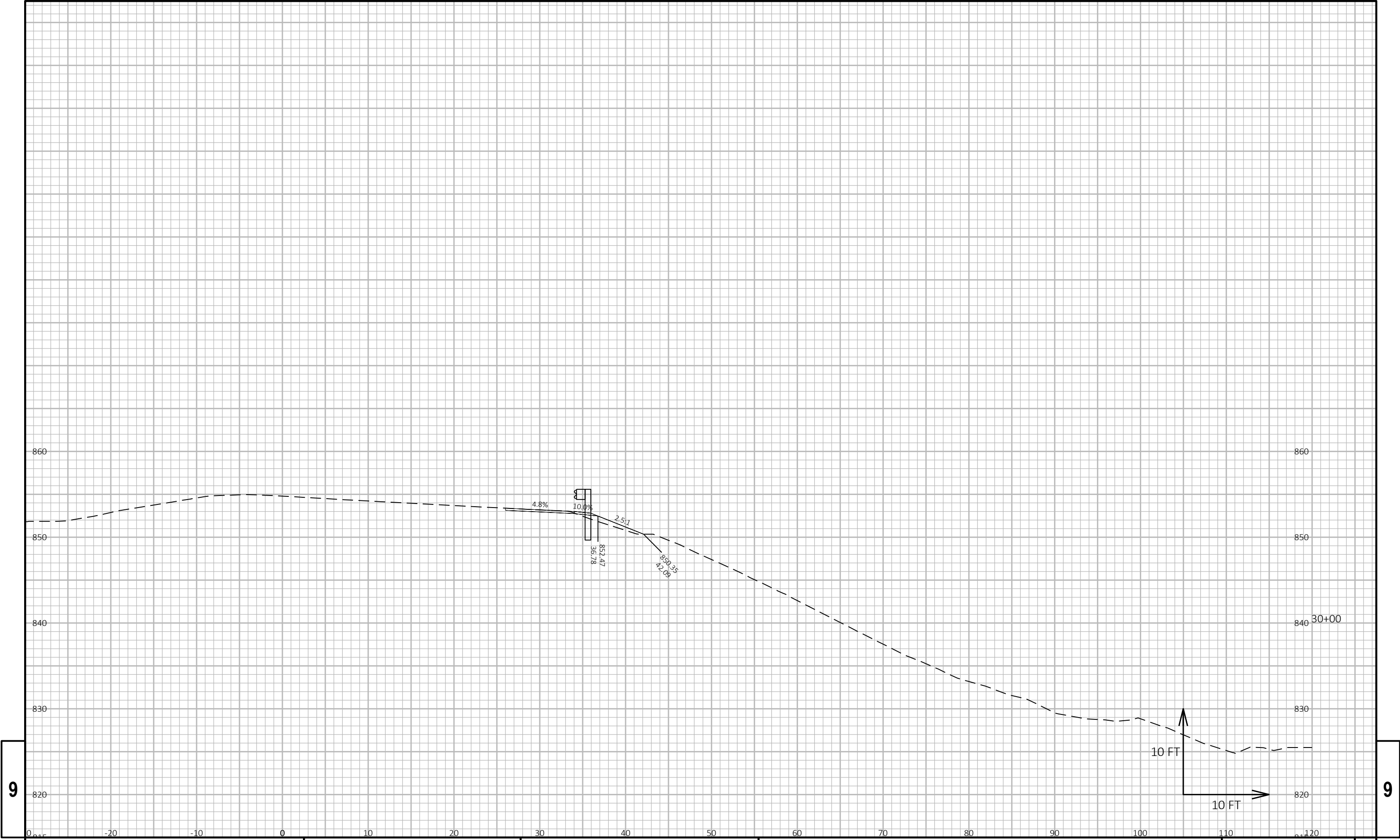
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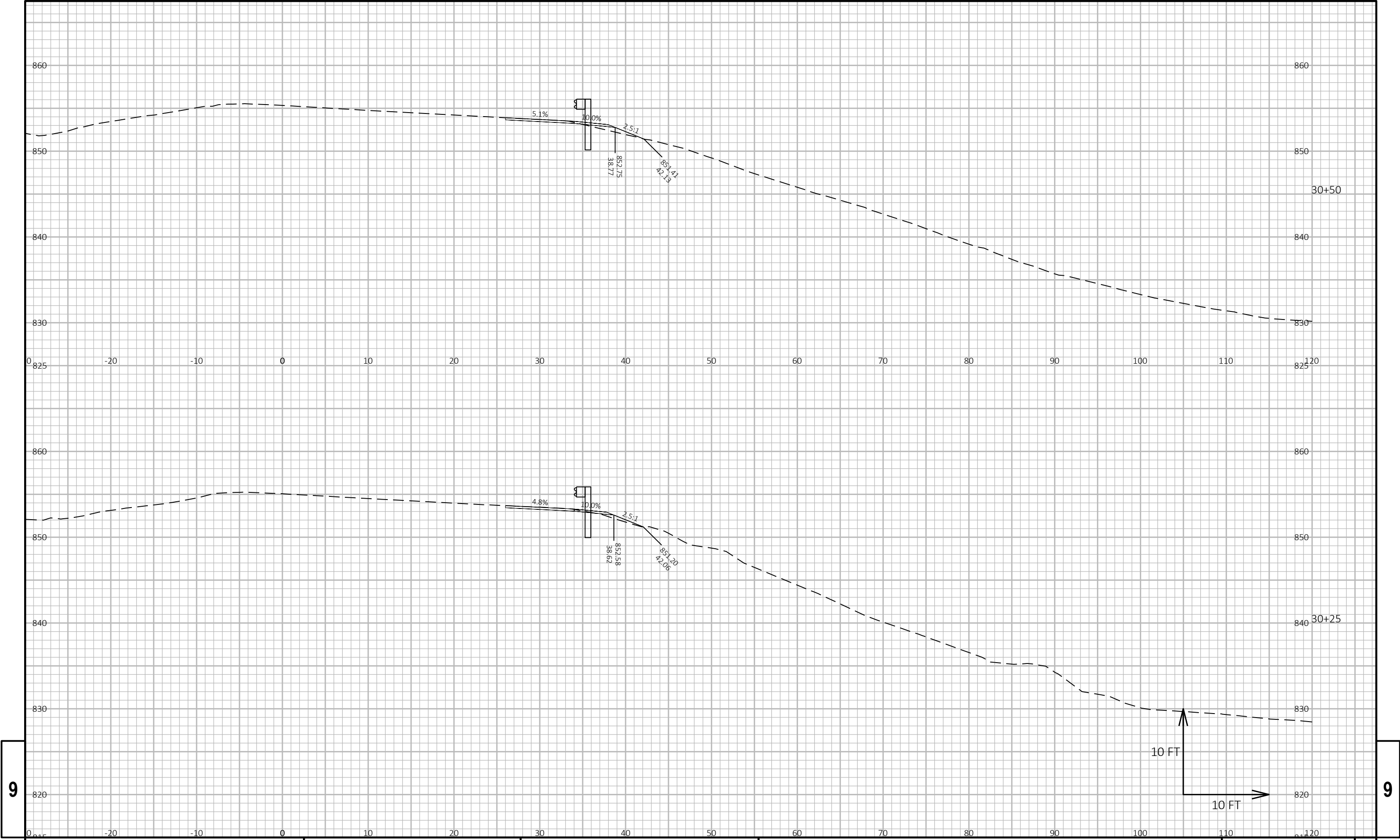
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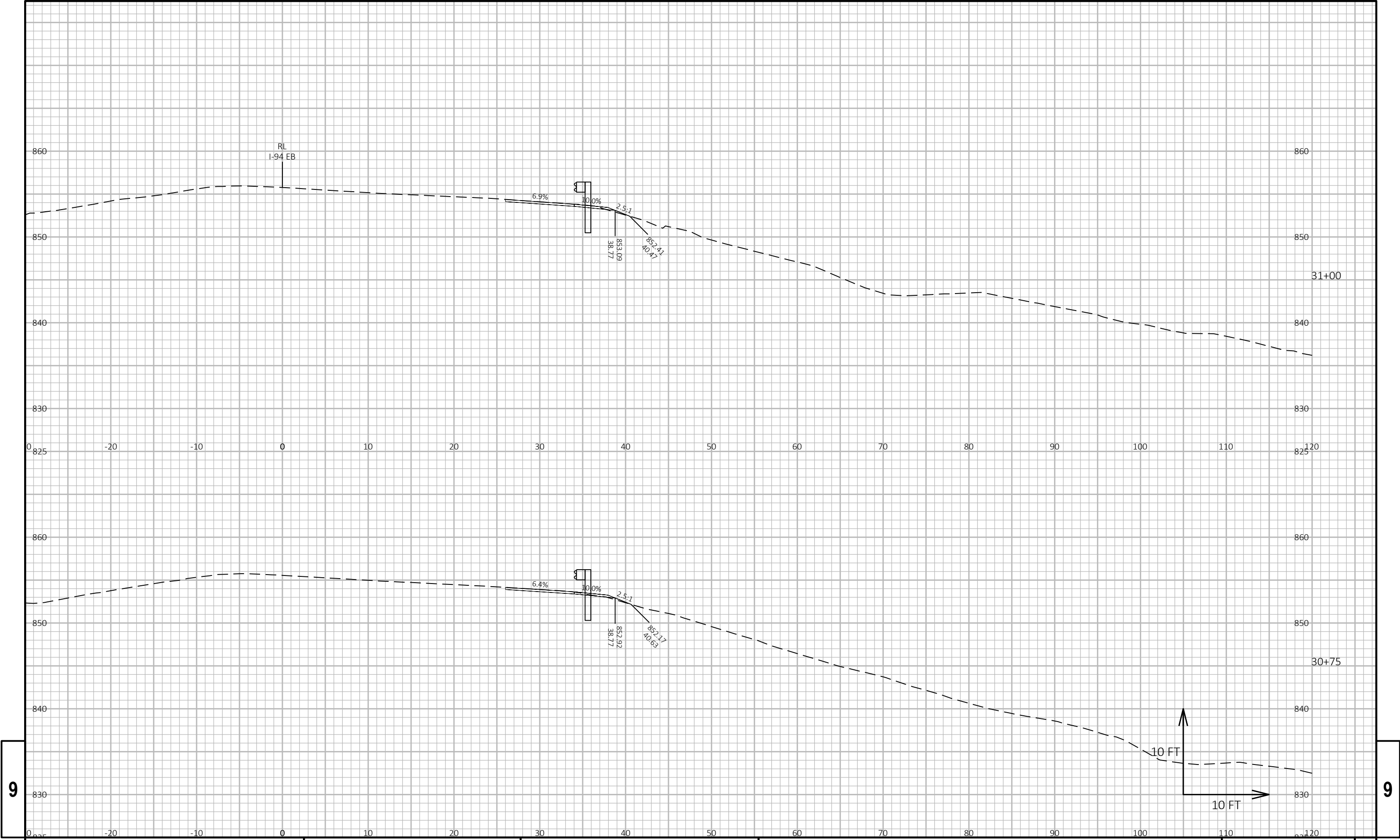
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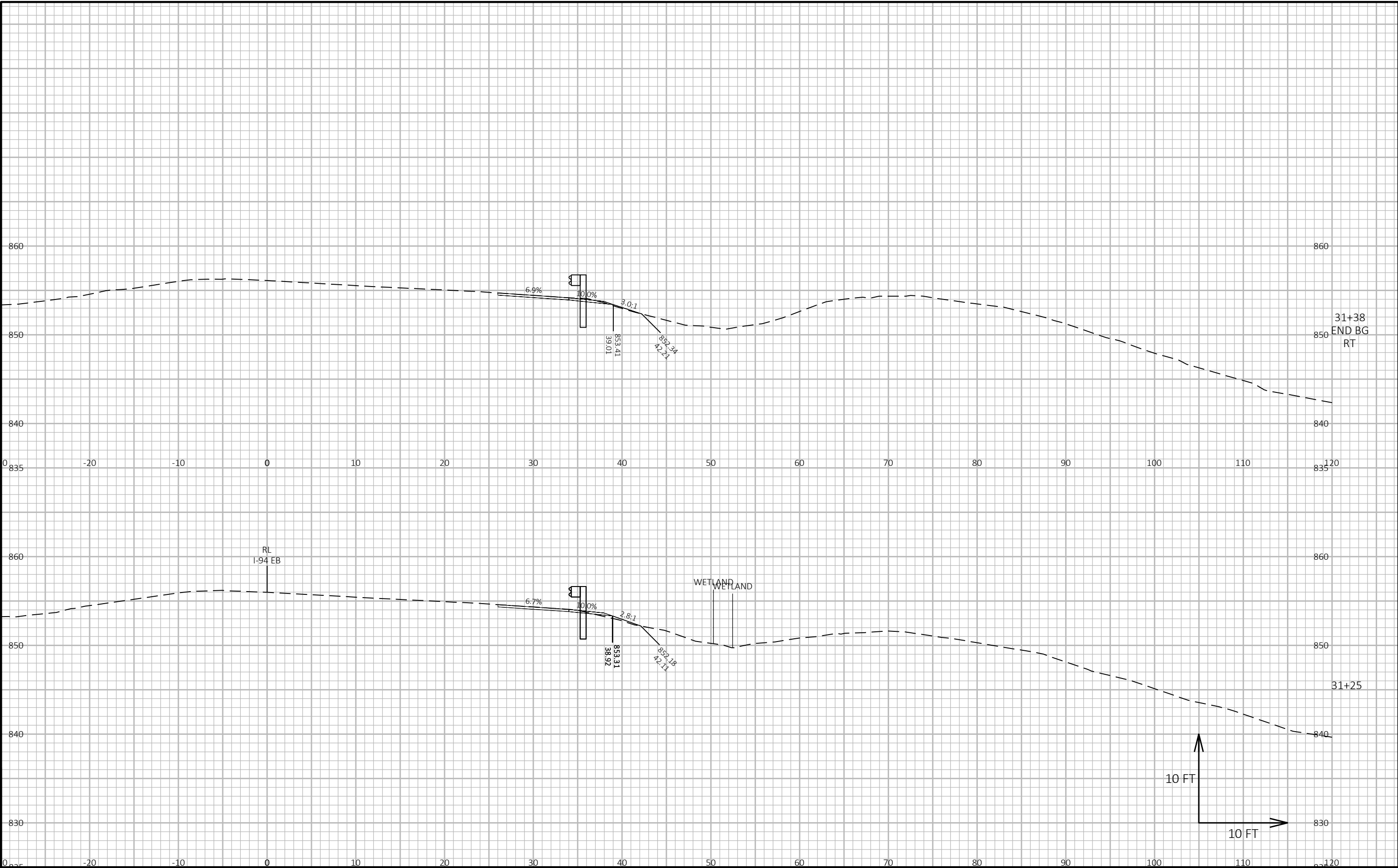
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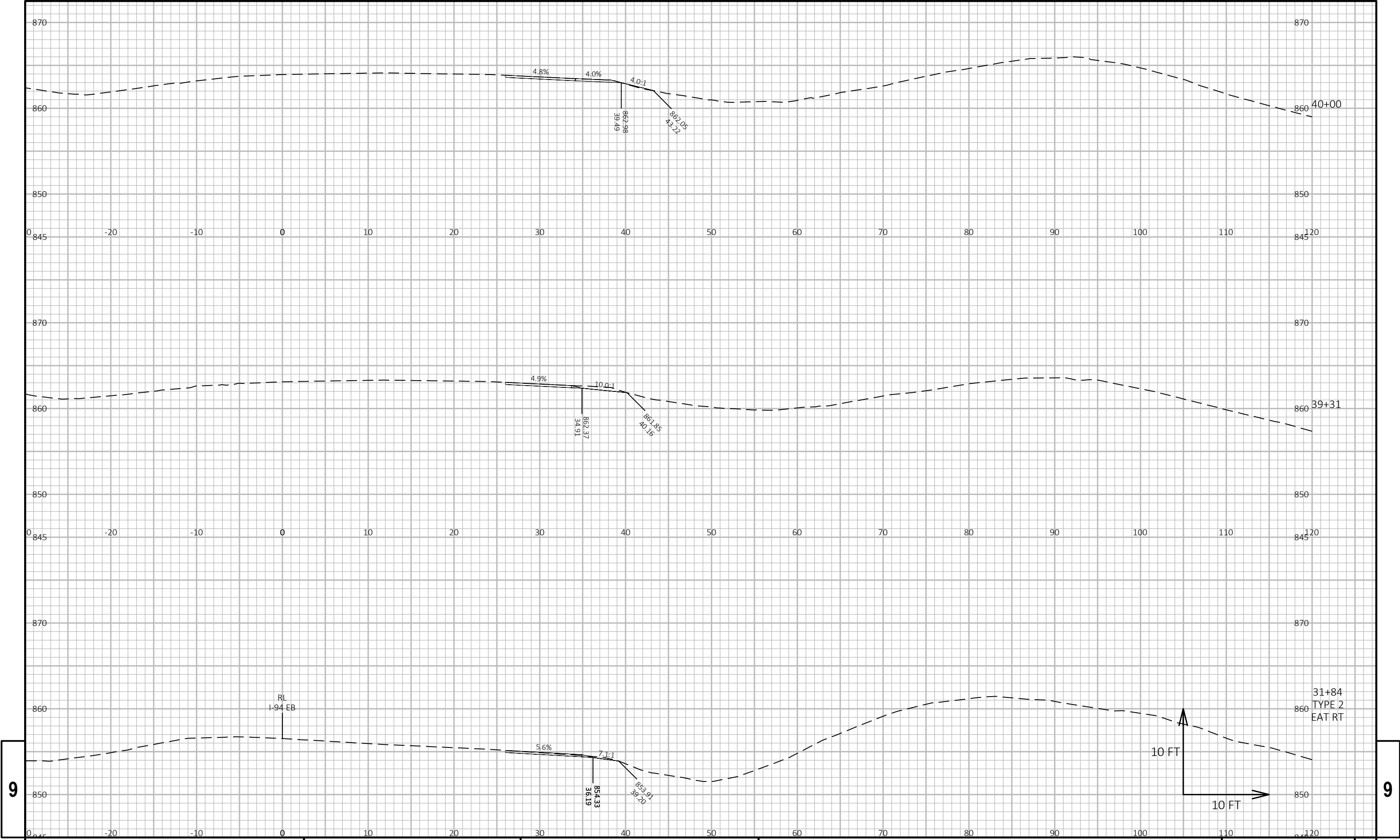
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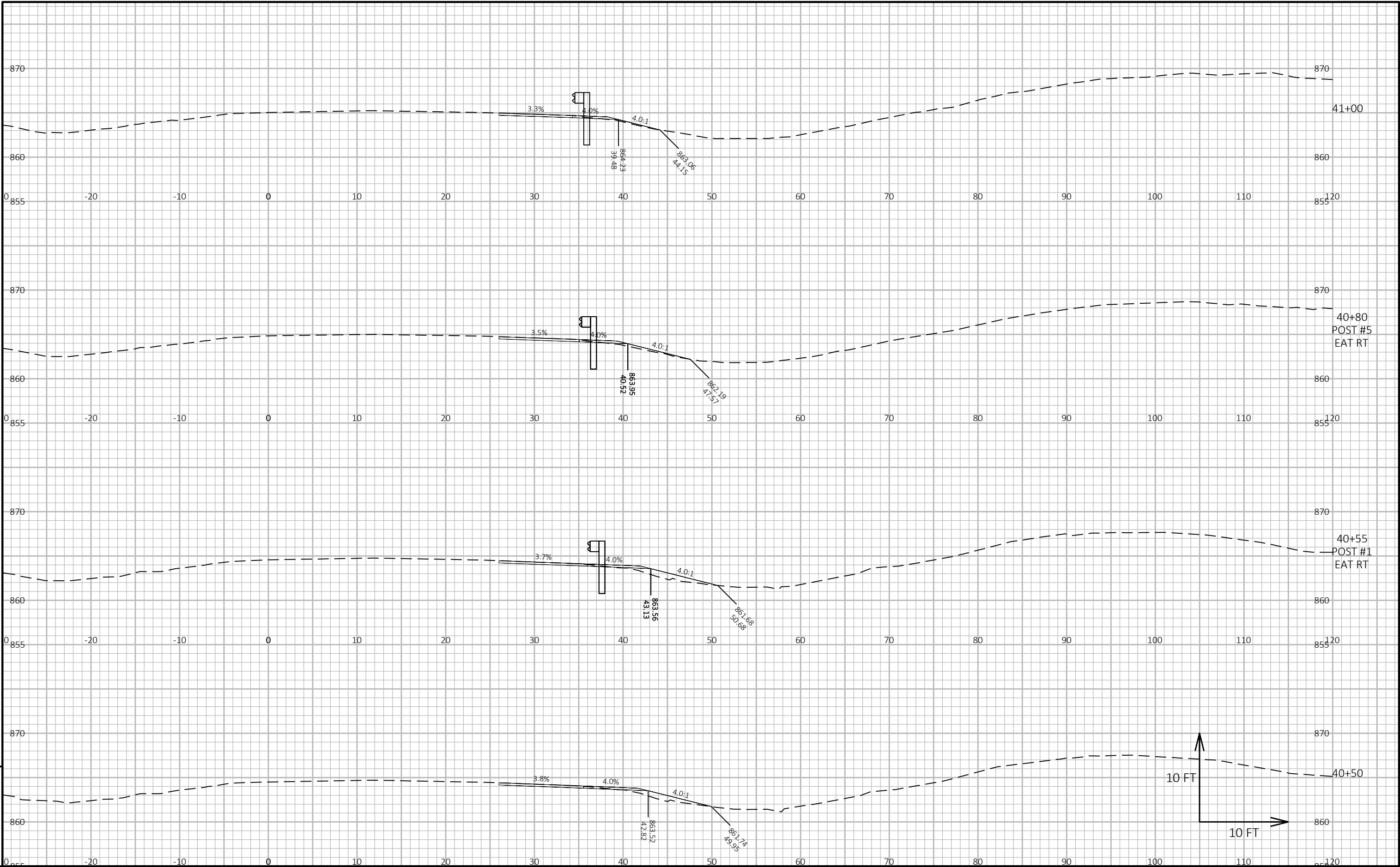


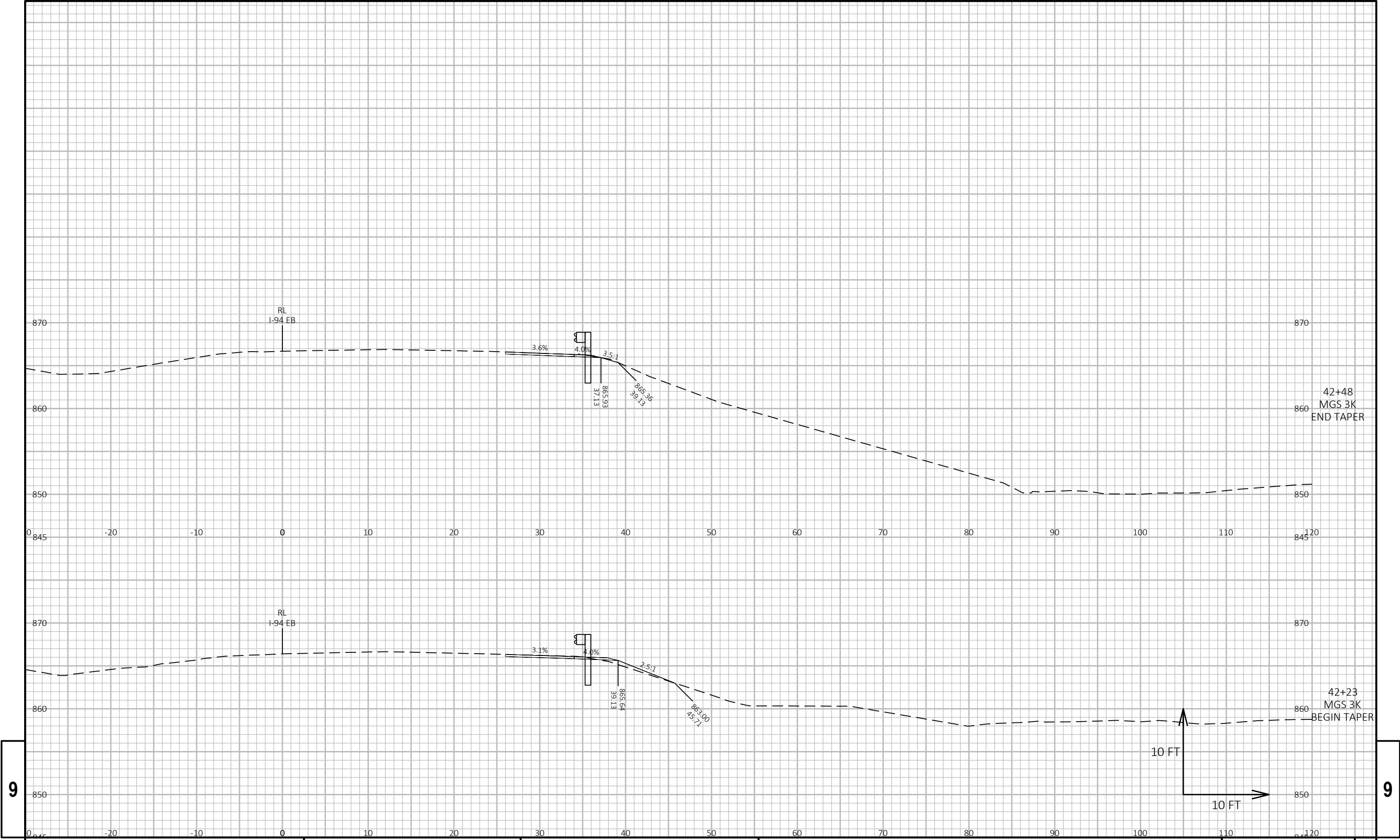
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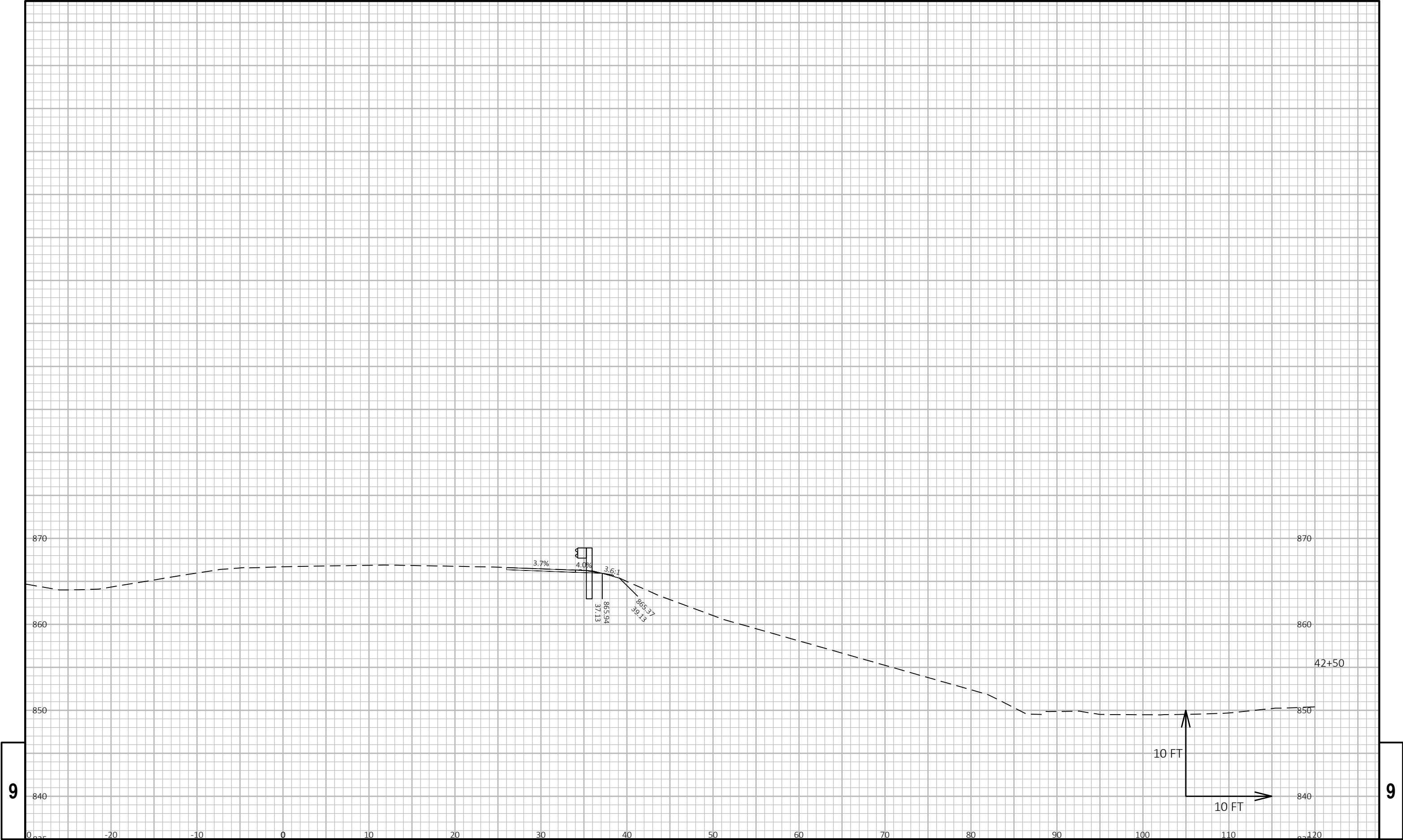






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PROJECT NO: 1020-05-63

HWY: IH 94

COUNTY: DUNN

CROSS SECTIONS: I-94 EASTBOUND

SHEET

467

E

FILE NAME : N:\PDS\C3D\10200533\SHEETS\090201-XS.DWG
LAYOUT NAME - 41

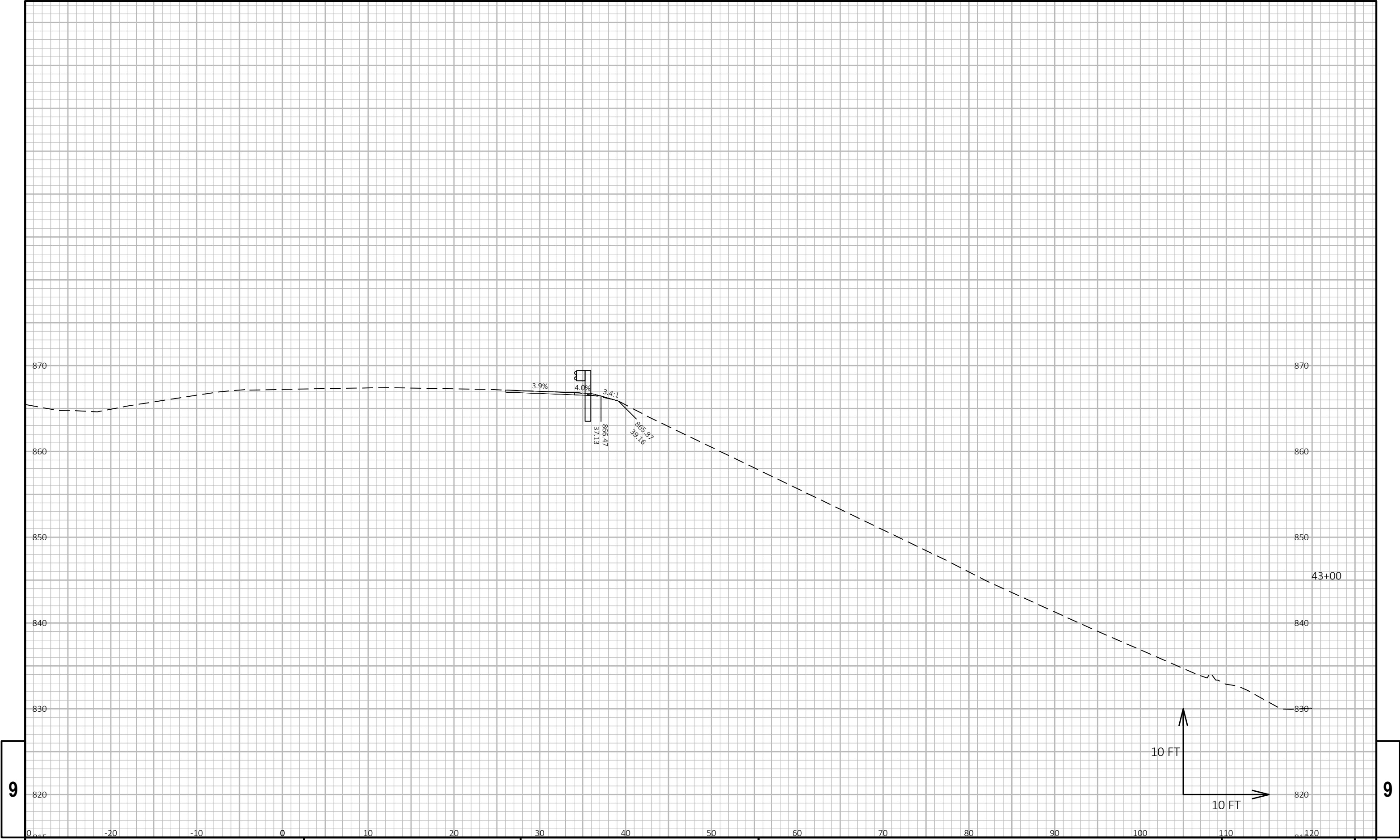
PLOT DATE : 5/1/2026 1:01 AM

PLOT BY : MATT PAYNE

PLOT NAME :

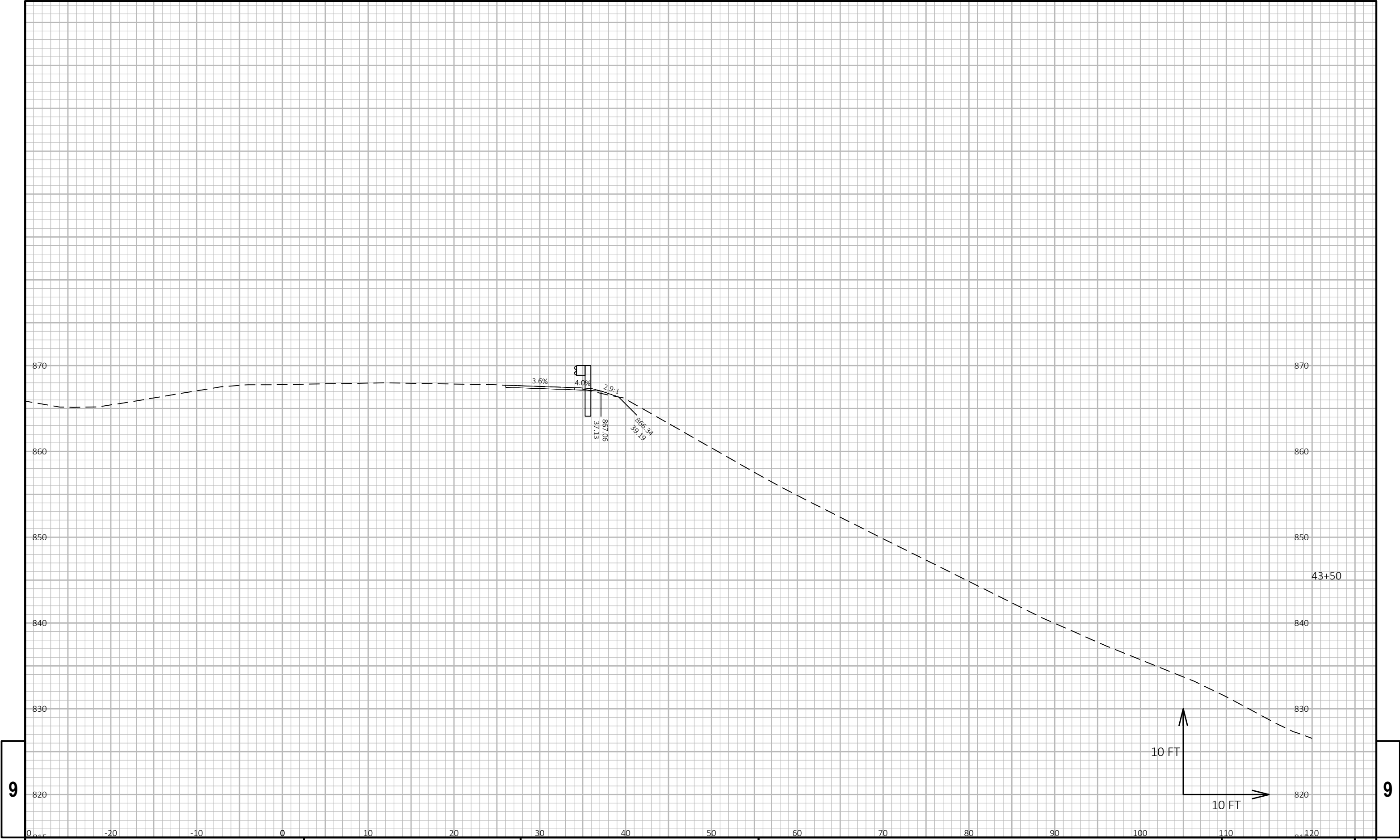
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDs SHEET 49



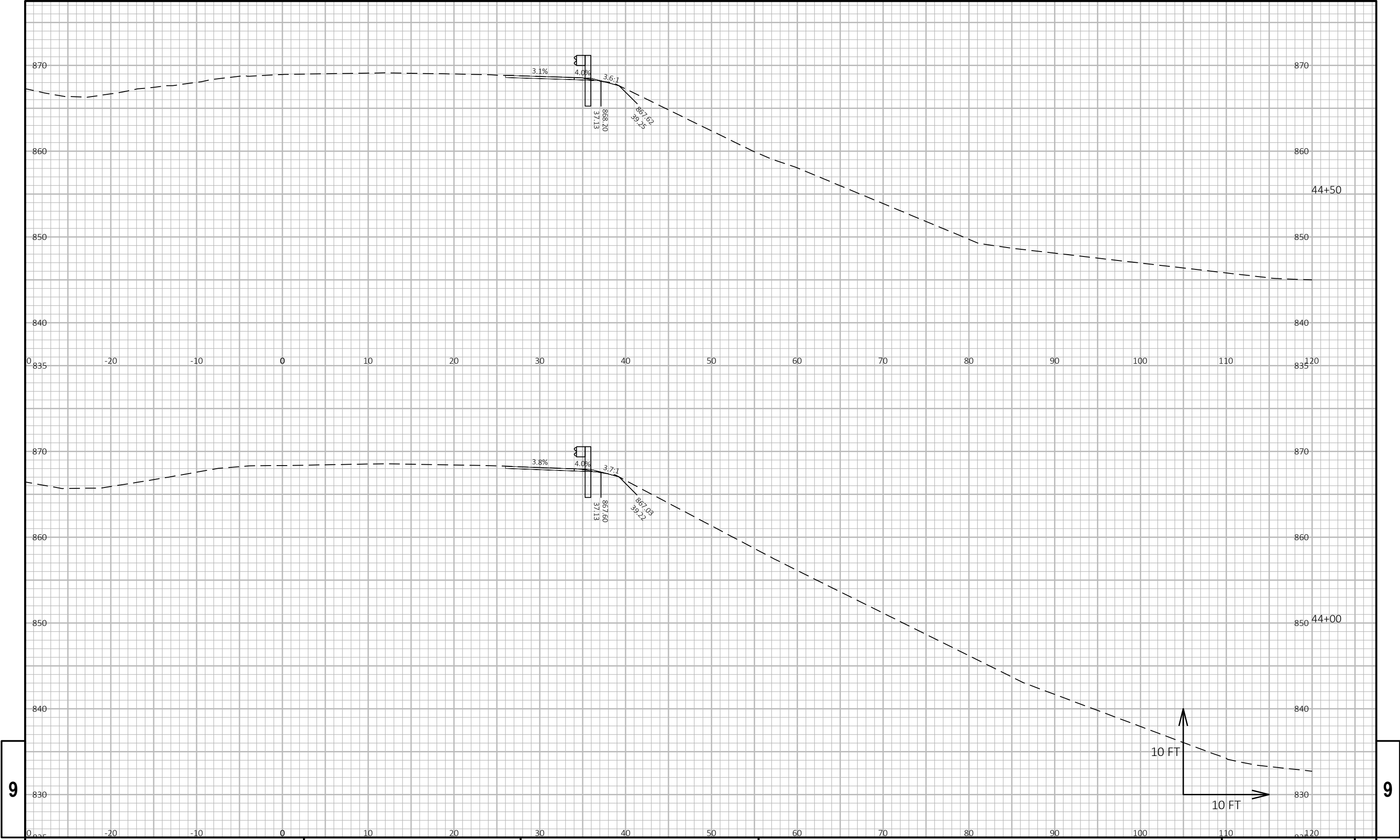
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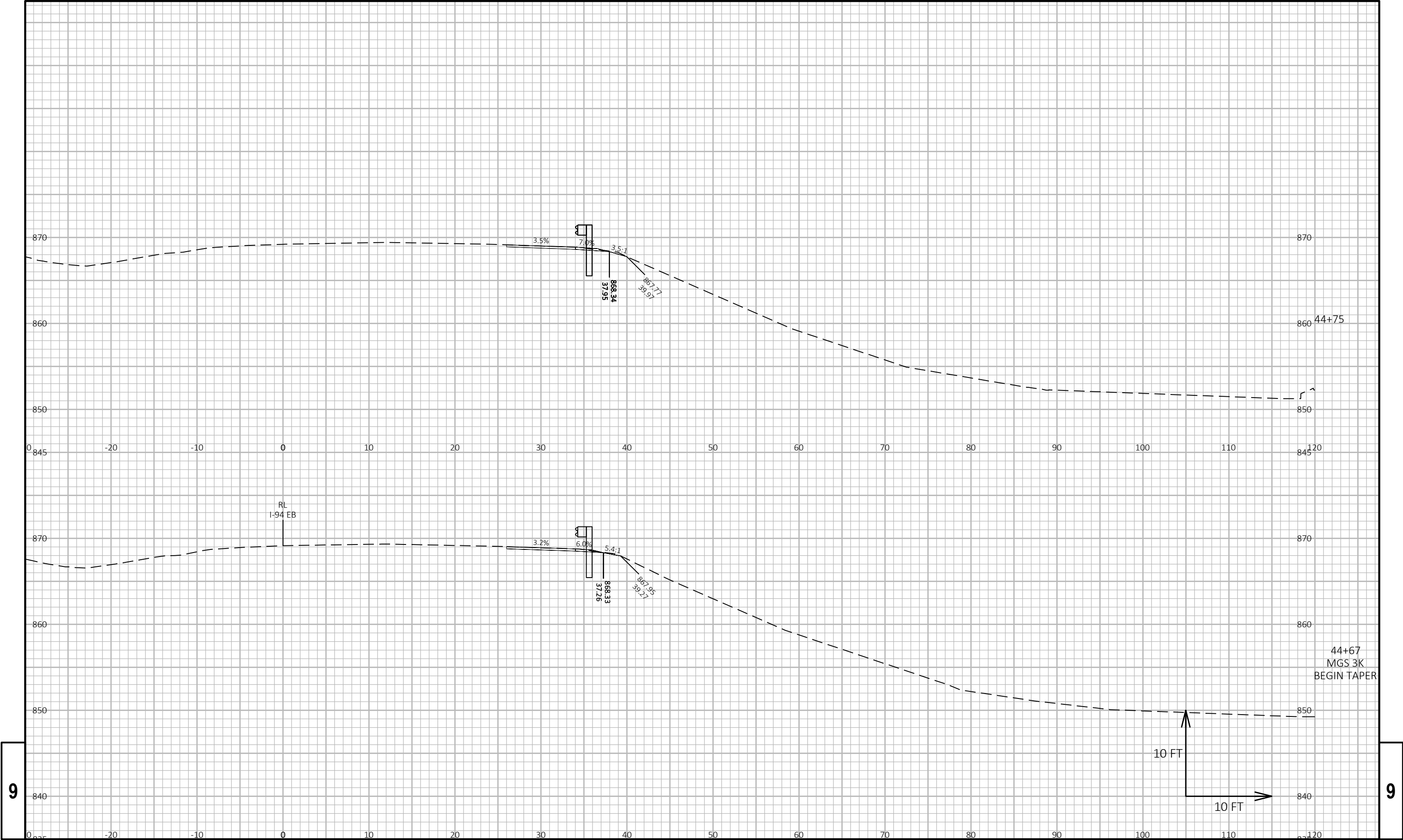
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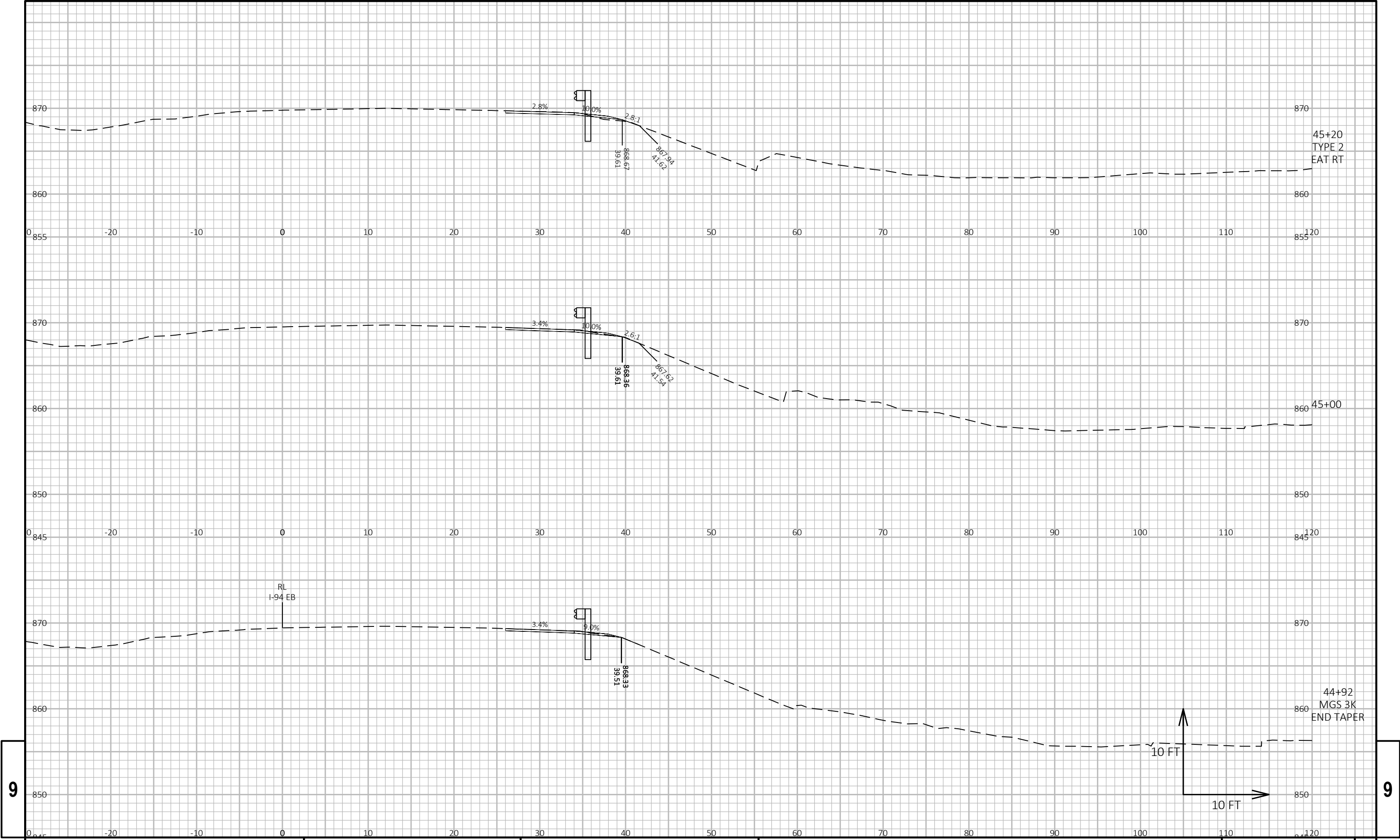
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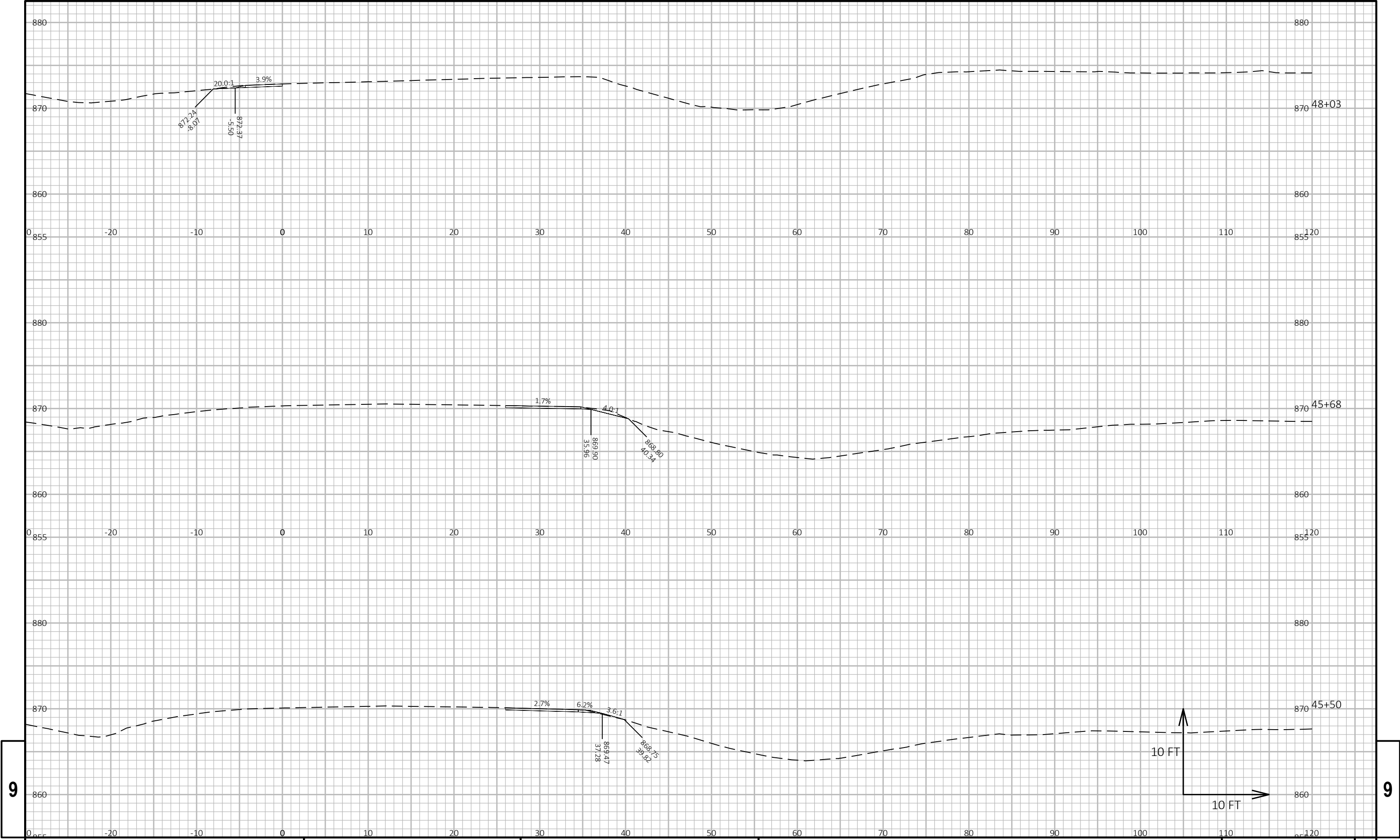
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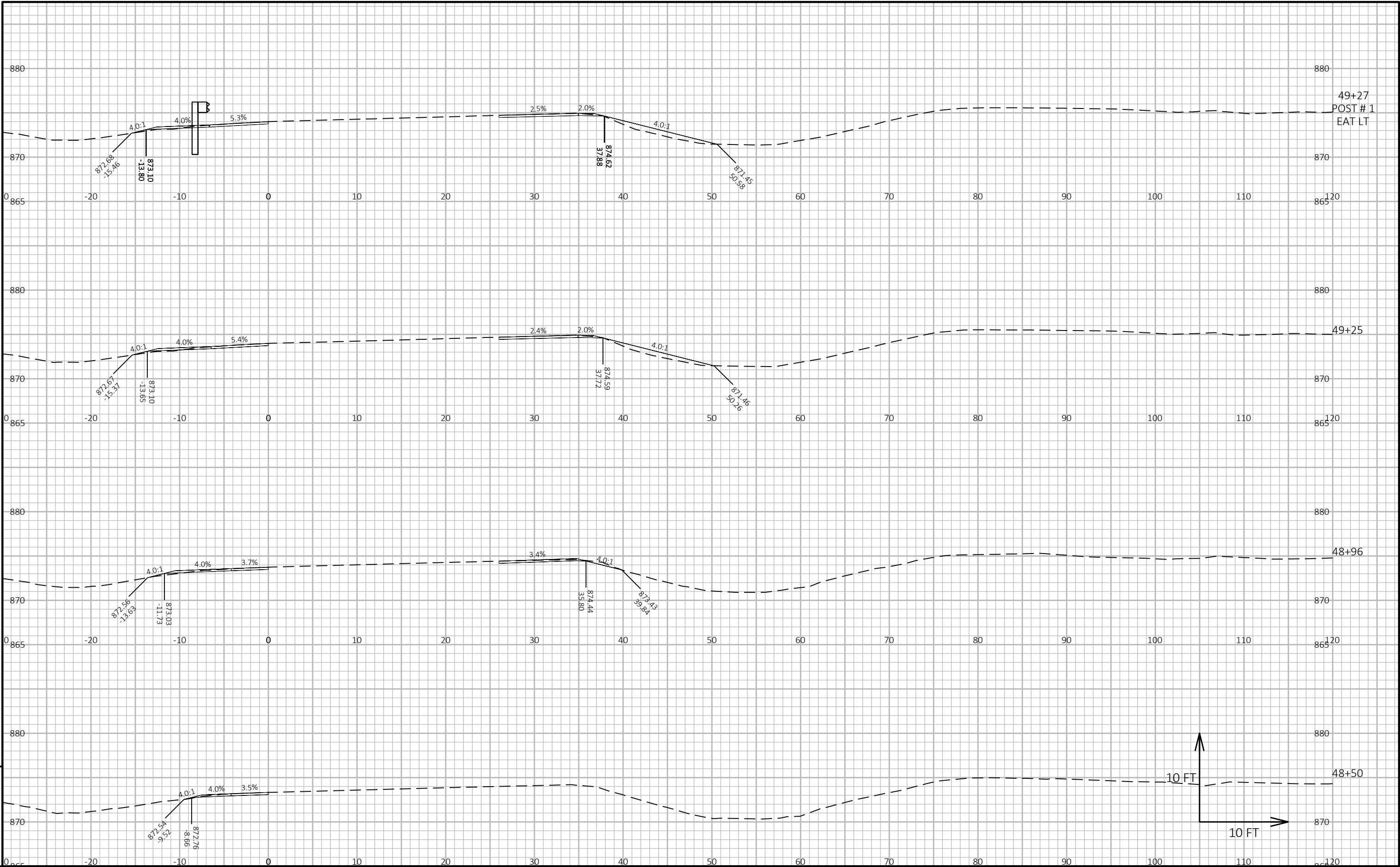
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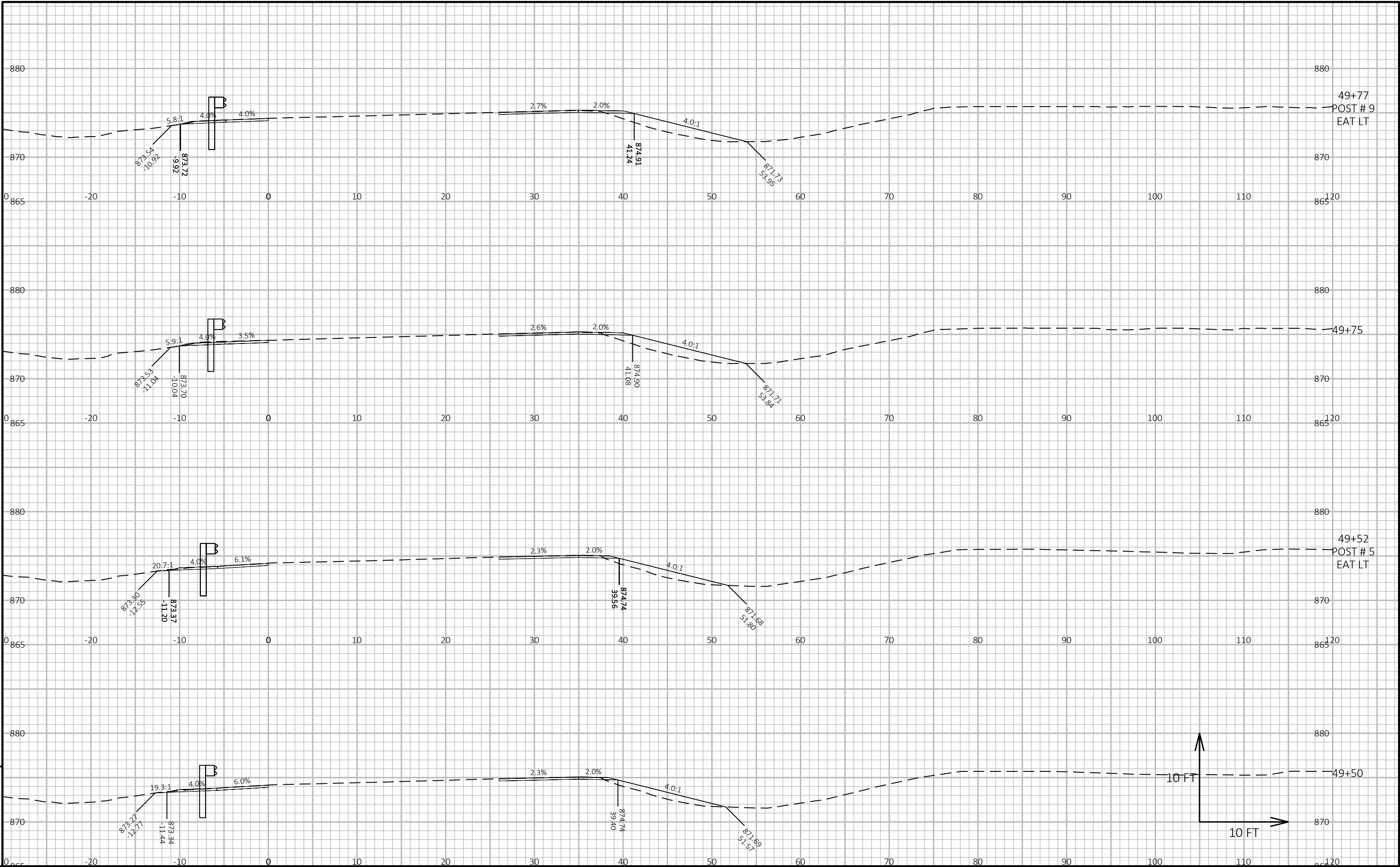
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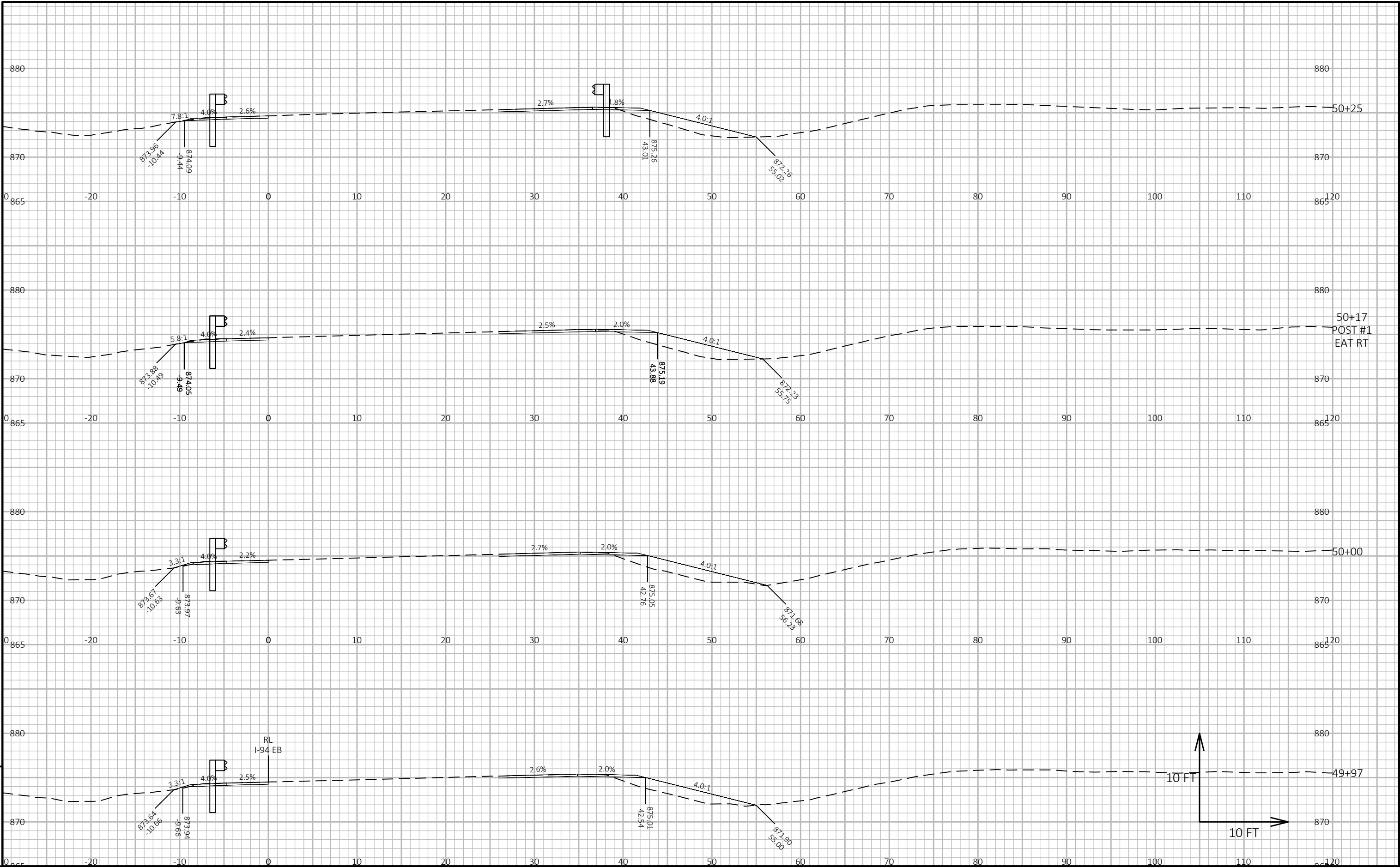


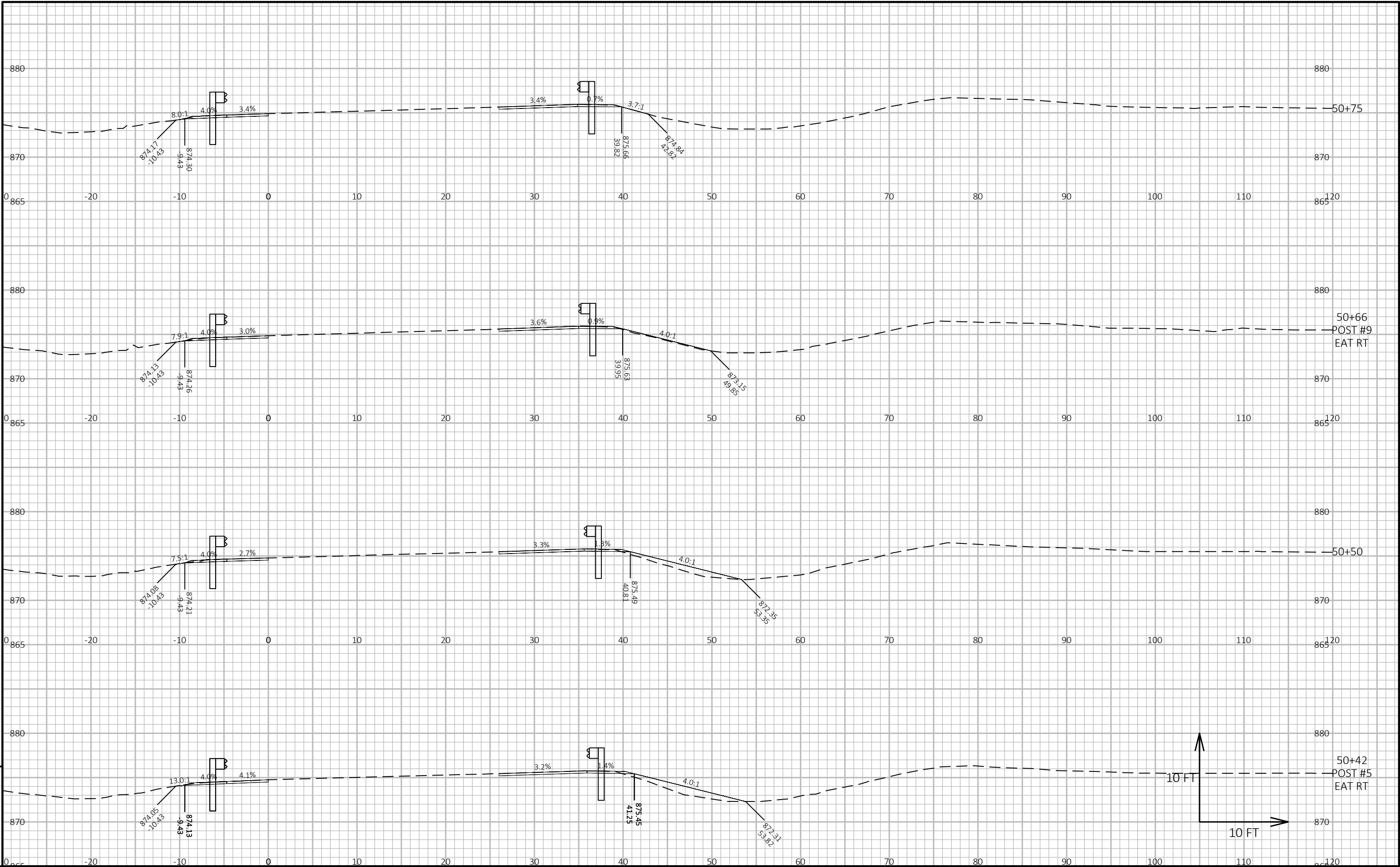
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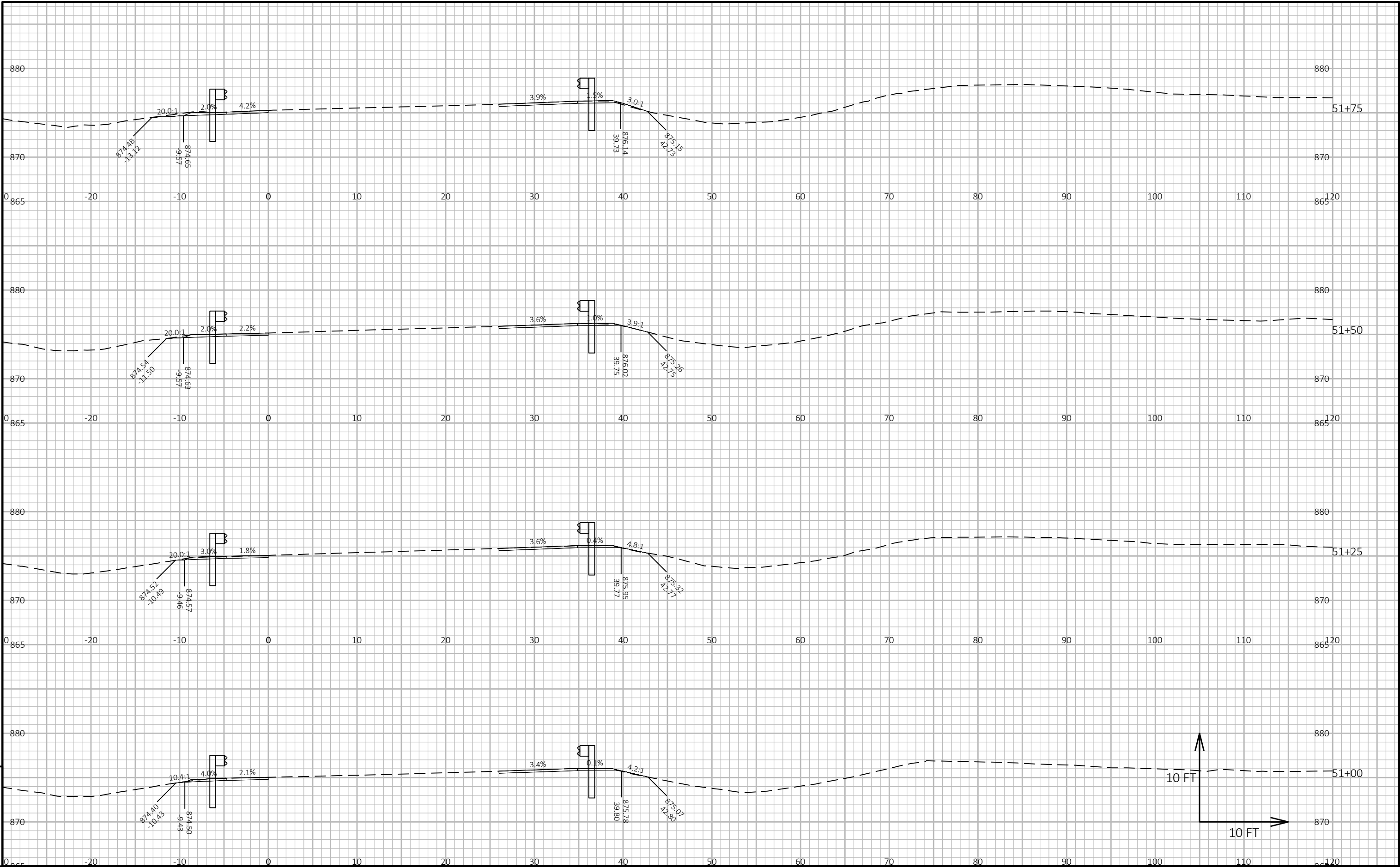
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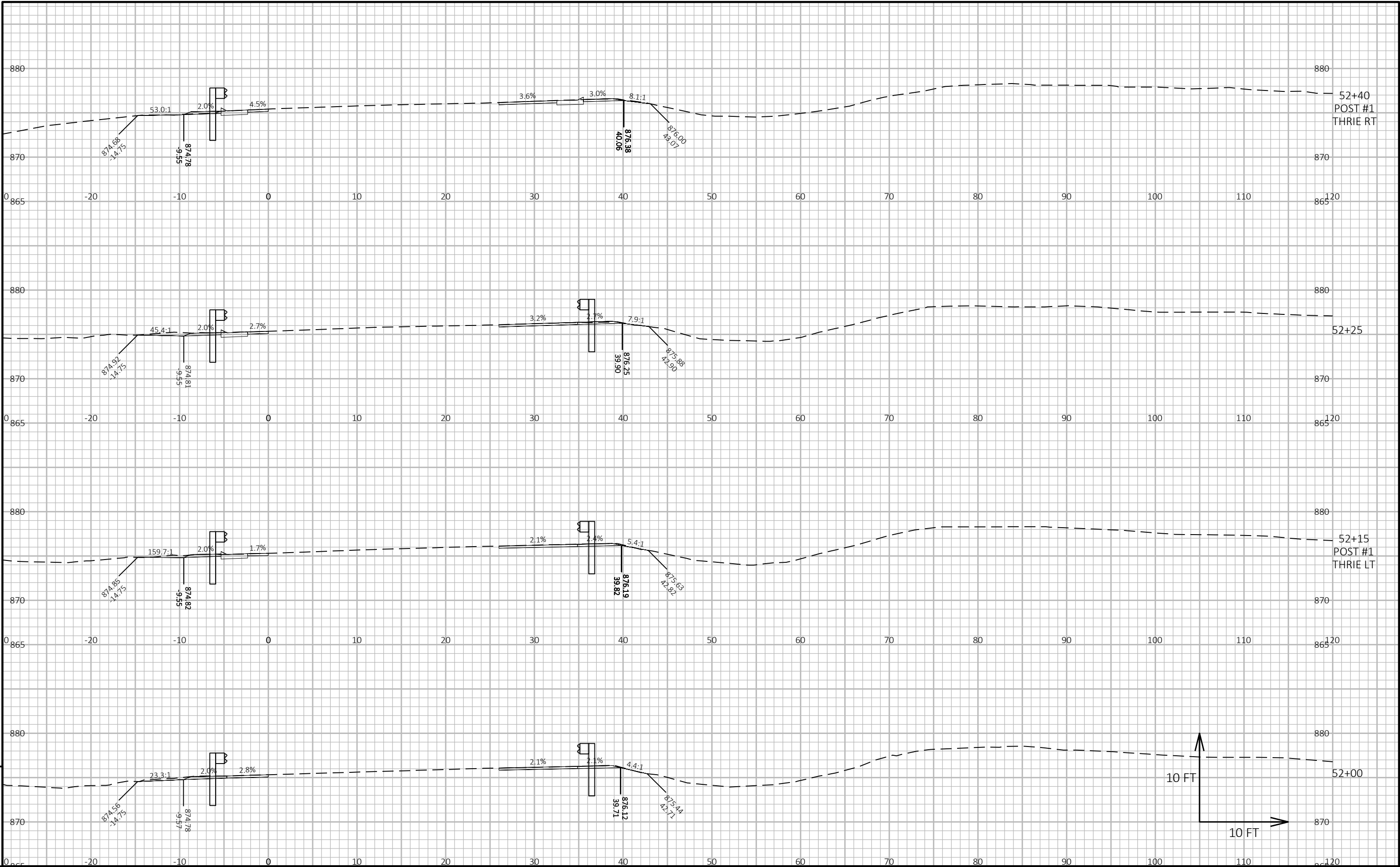


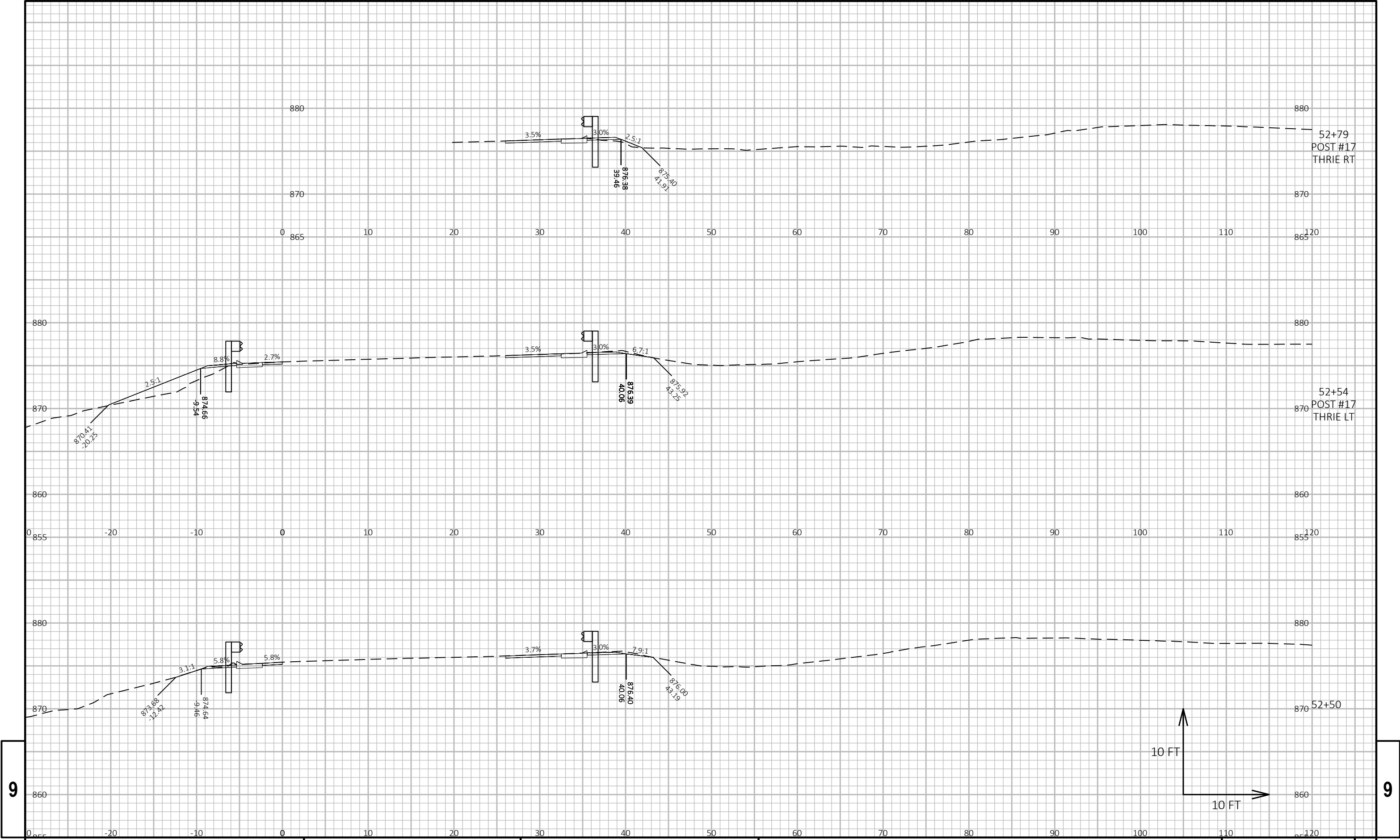






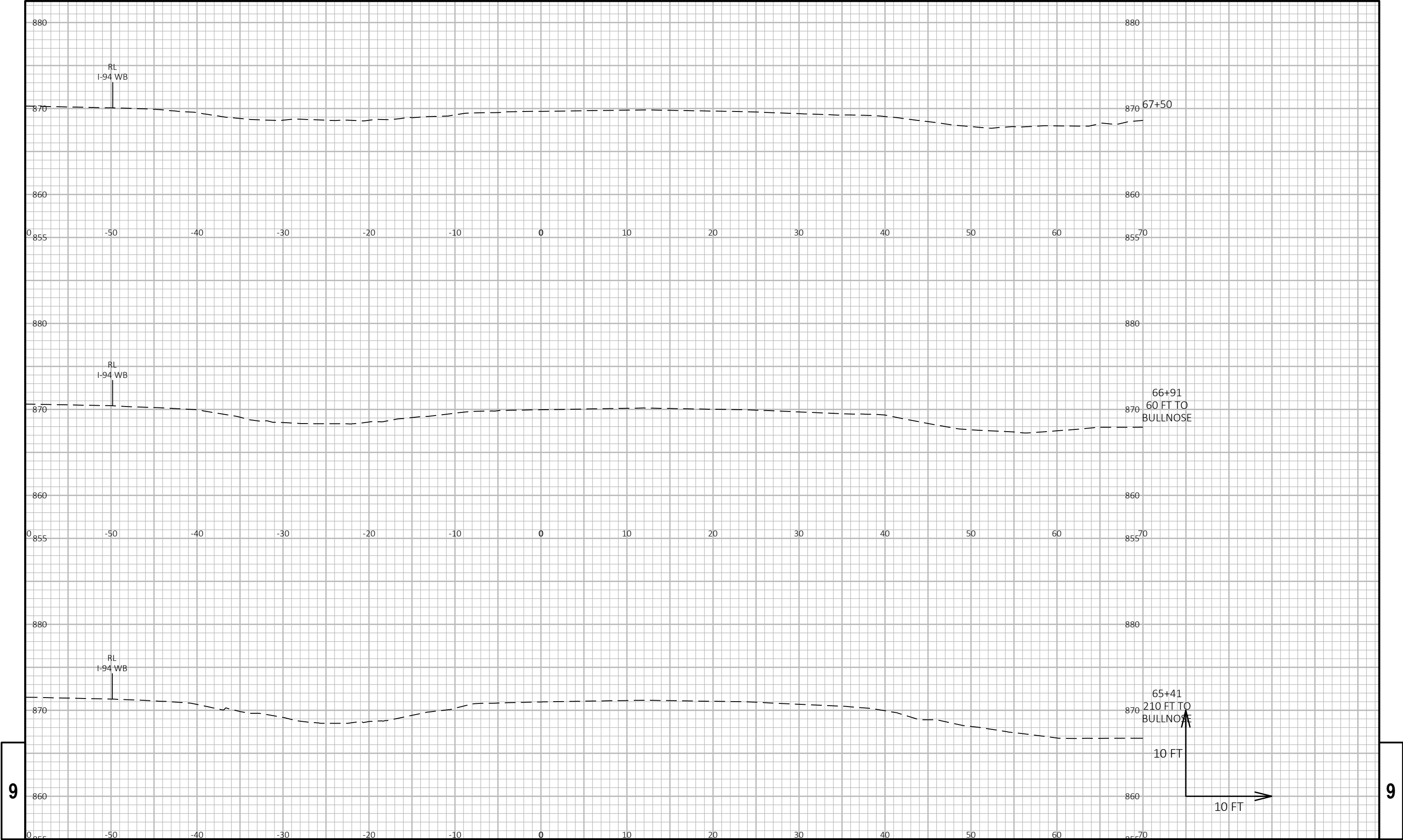






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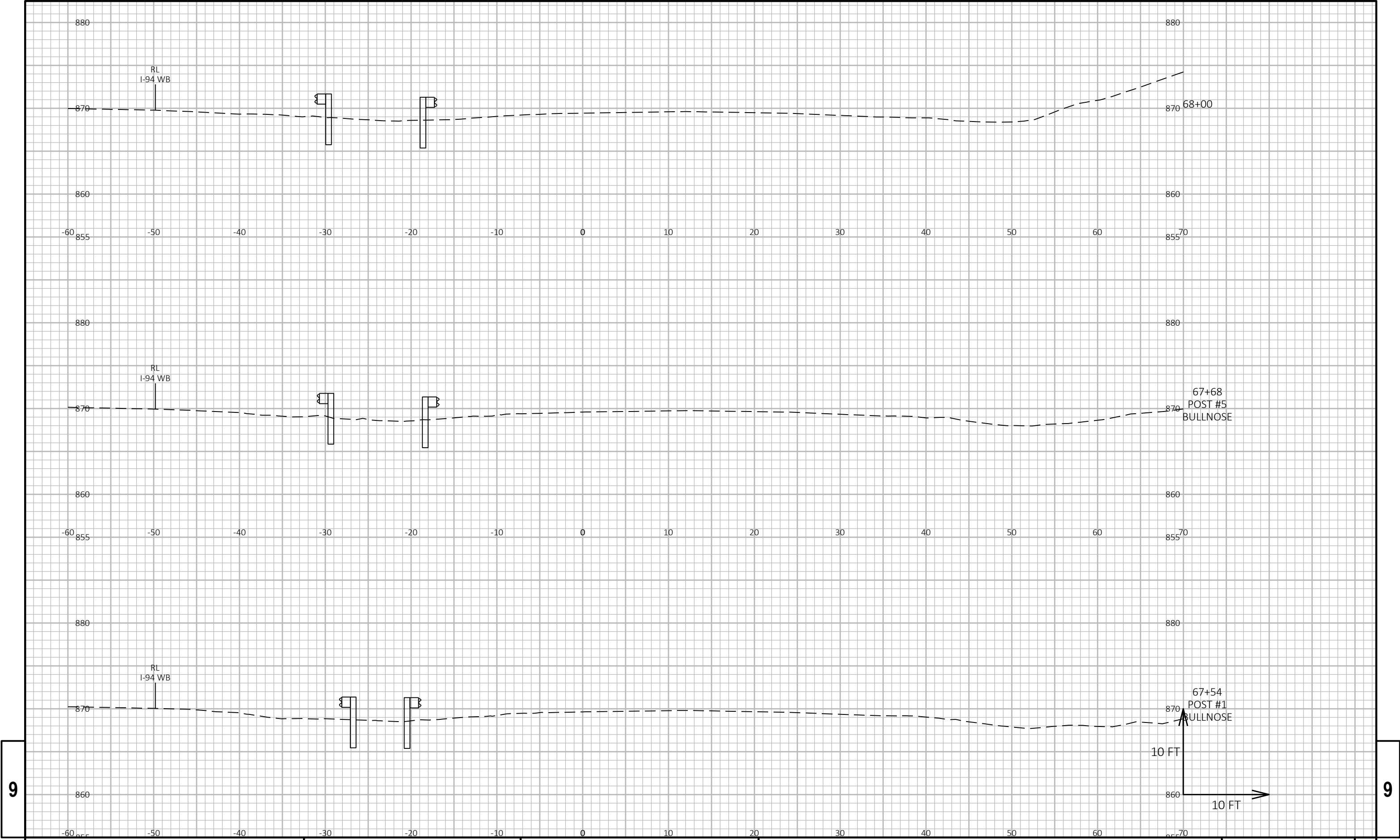
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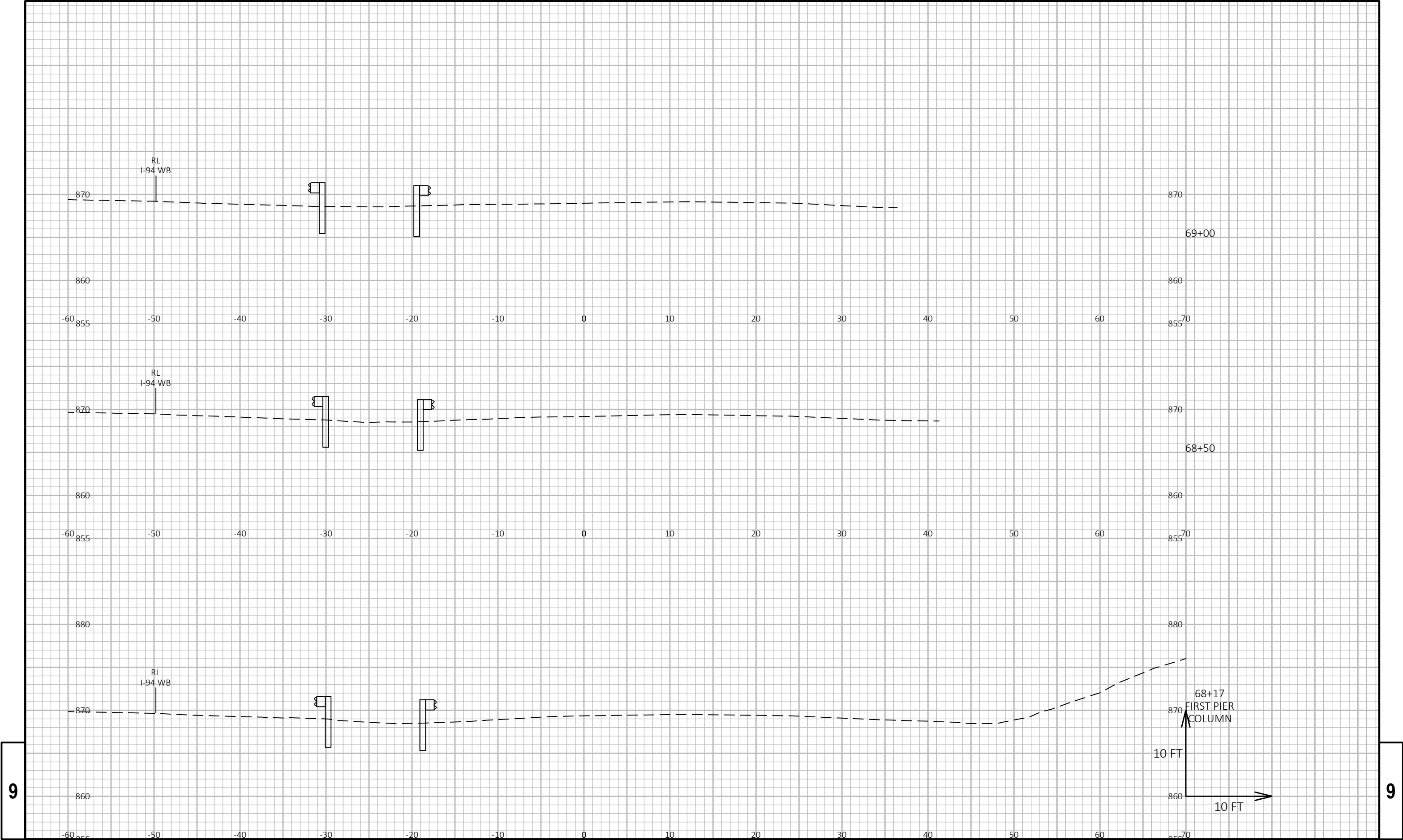
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PROJECT NO:	1020-05-63	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS:	I-94 EASTBOUND	SHEET	481	E
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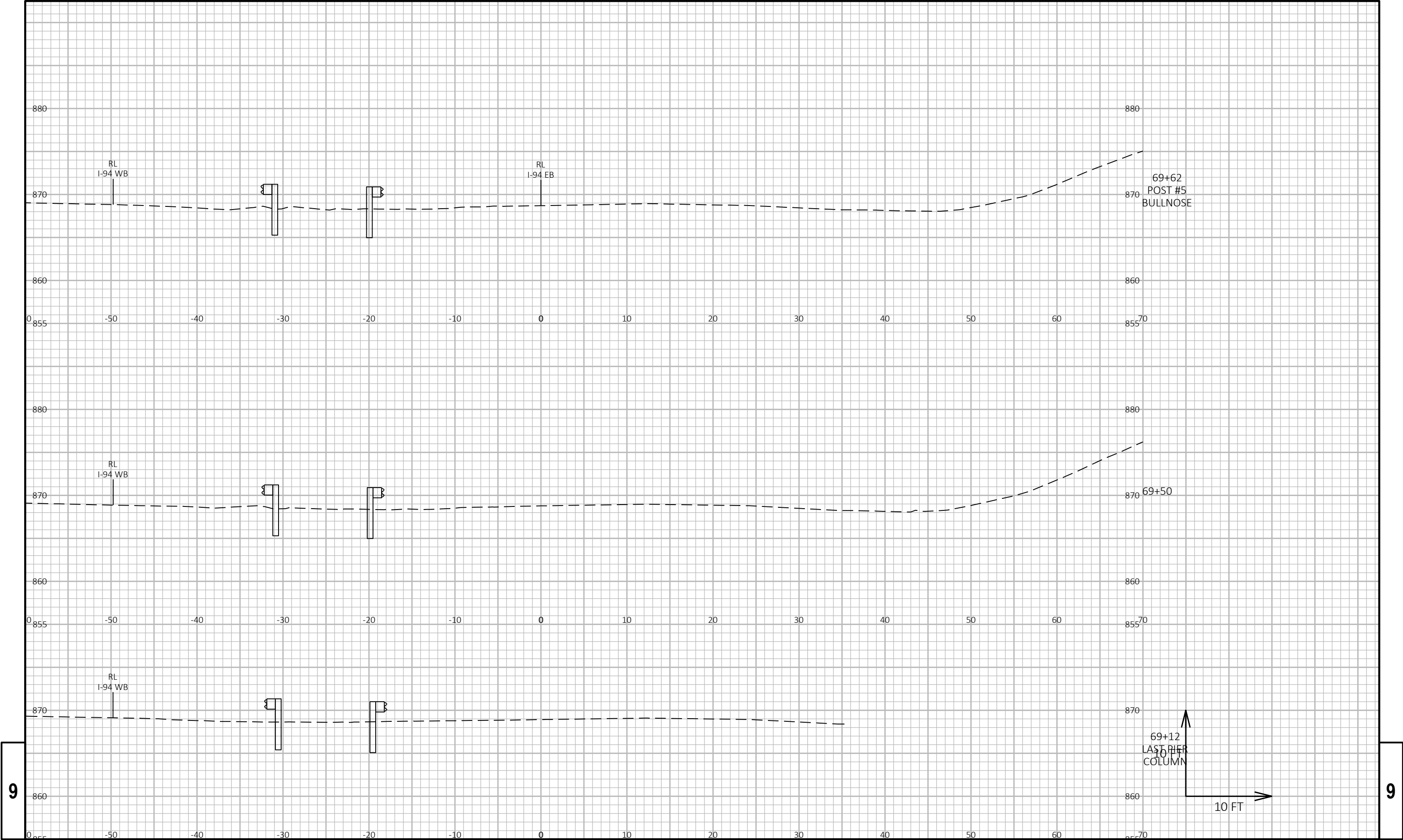
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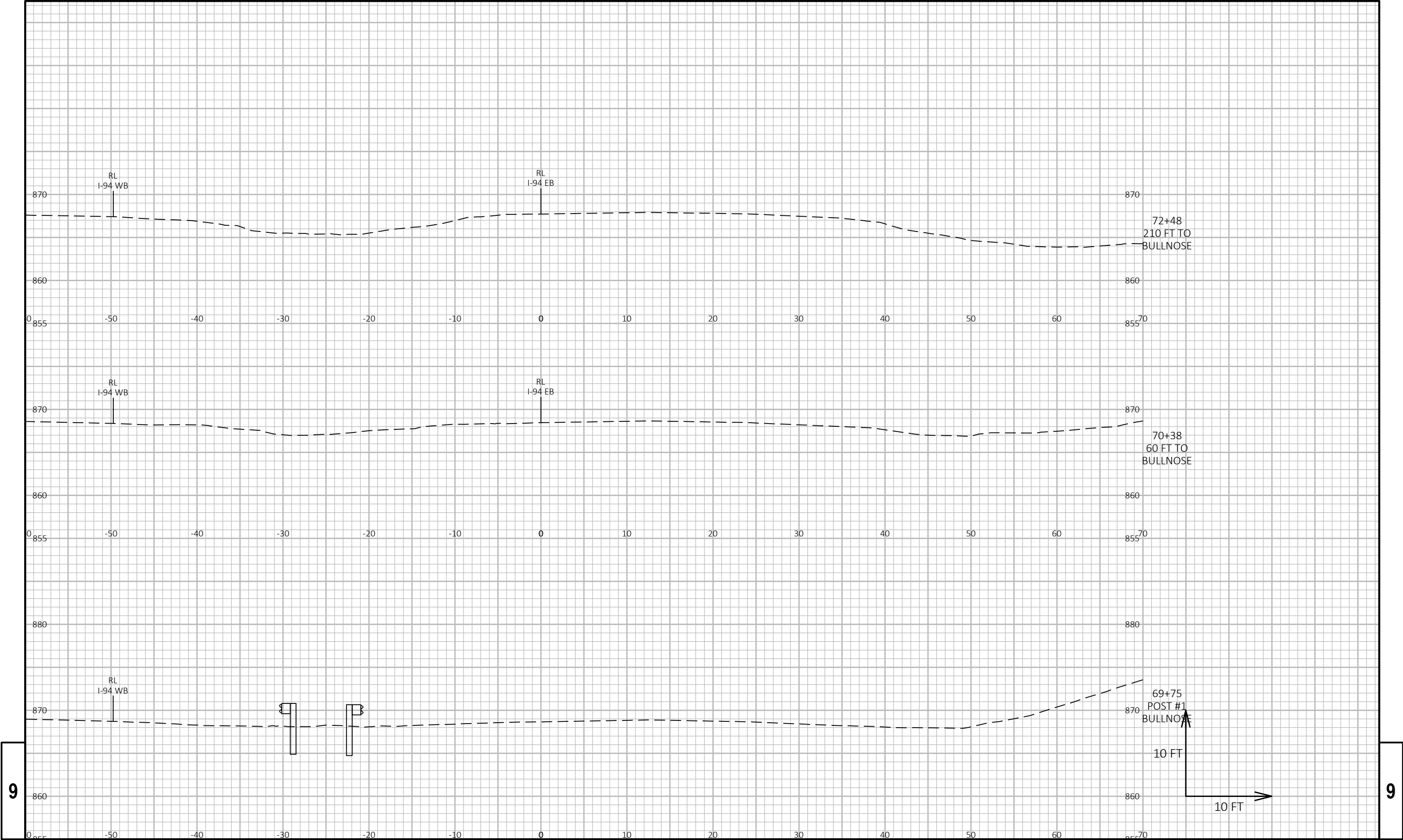
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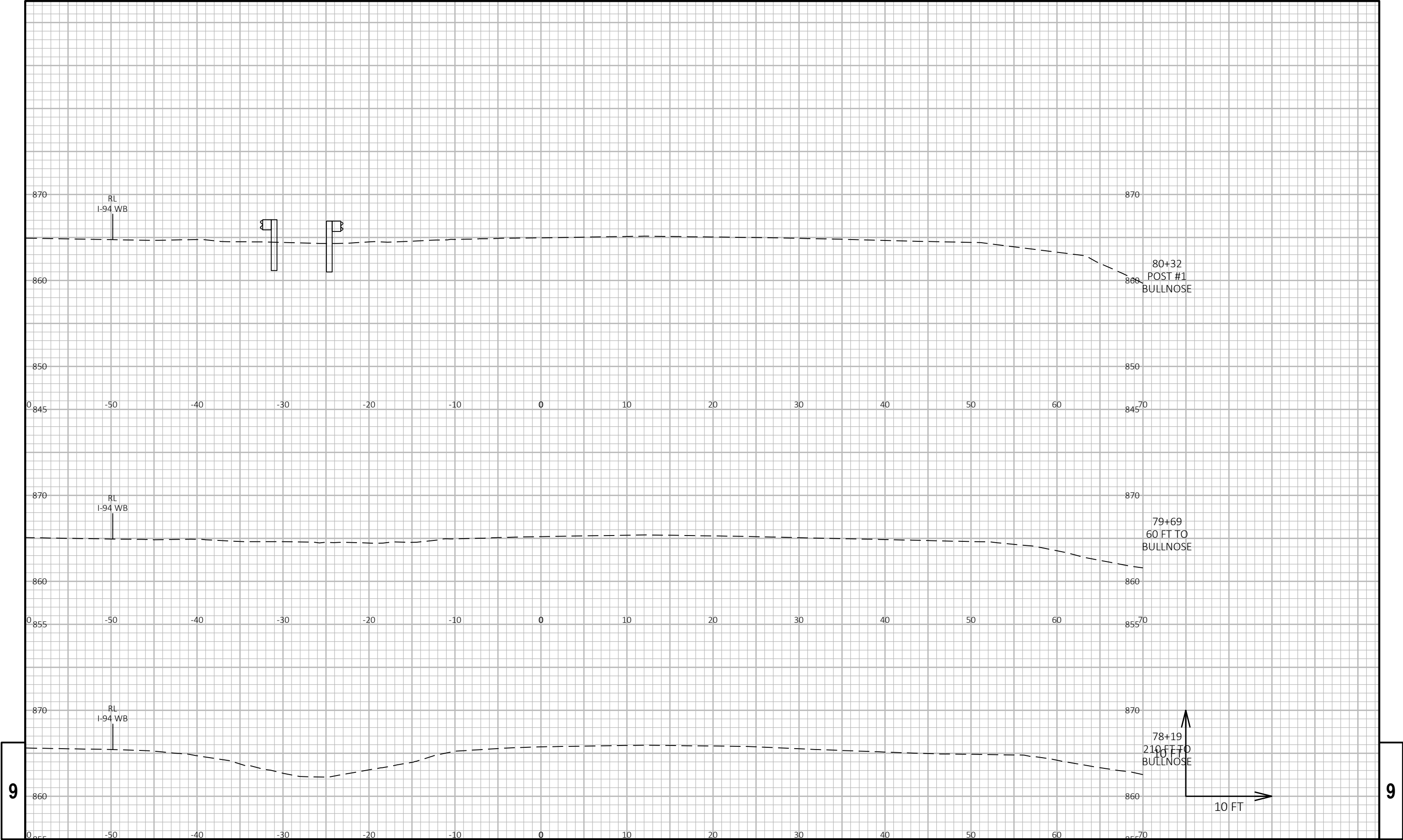
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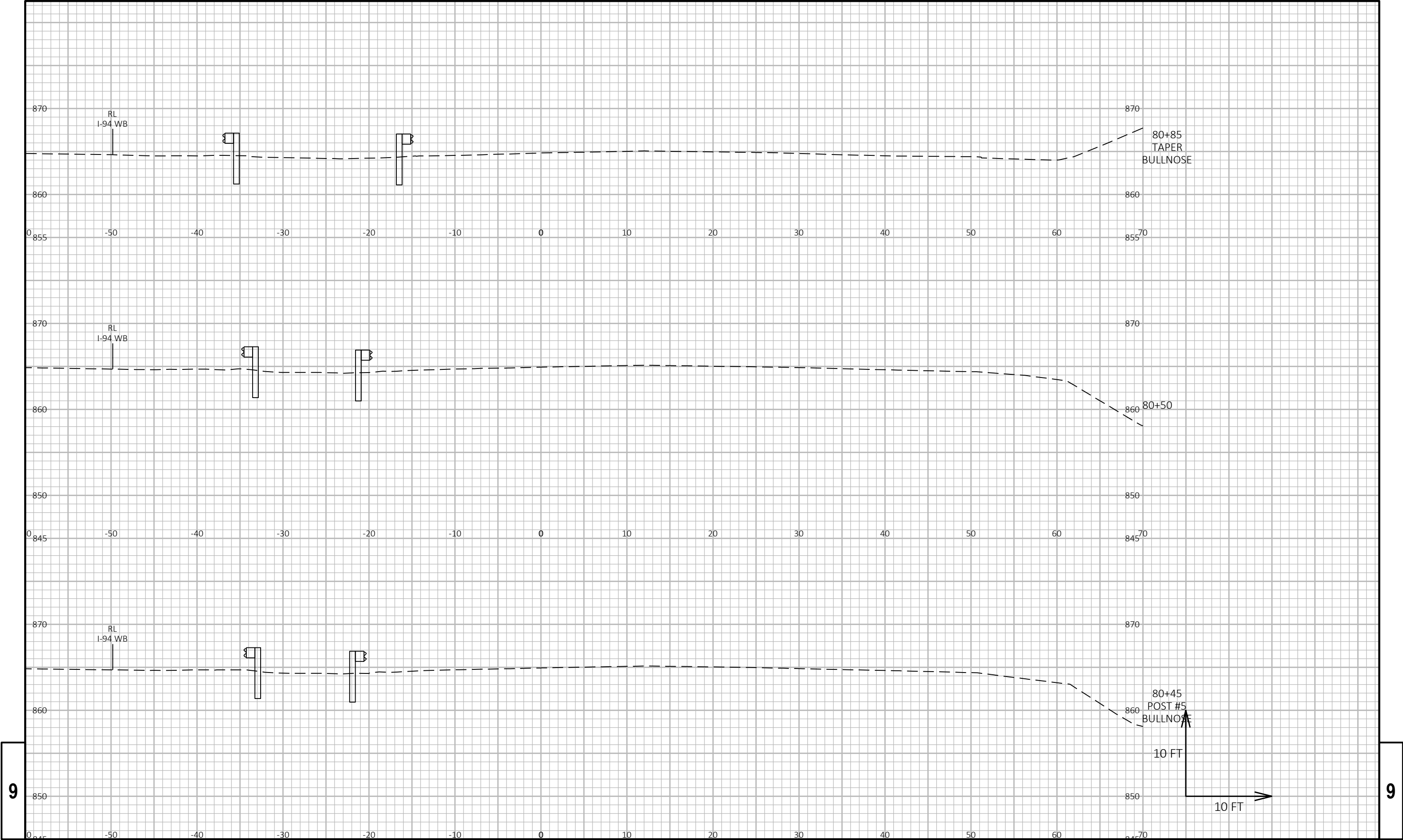
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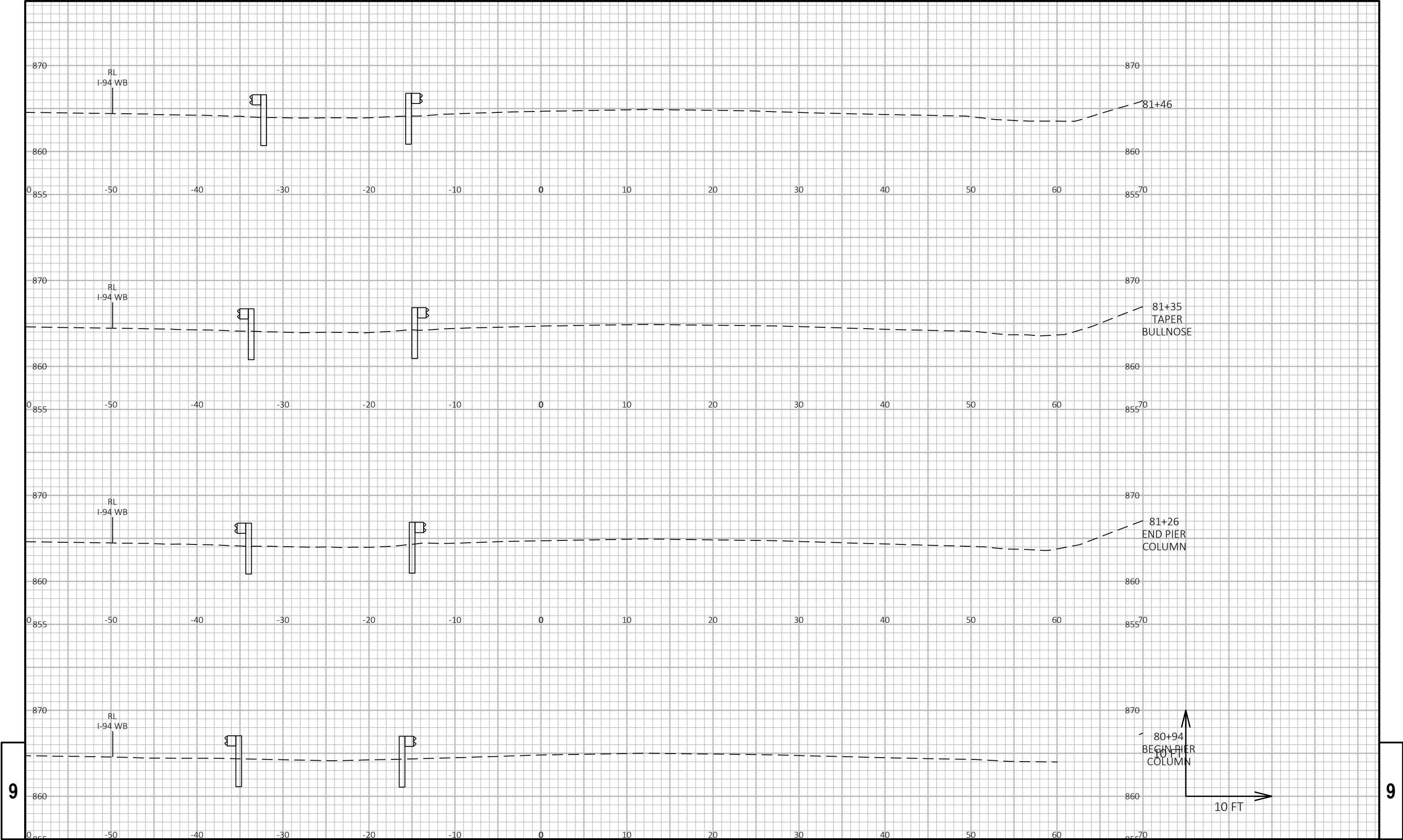
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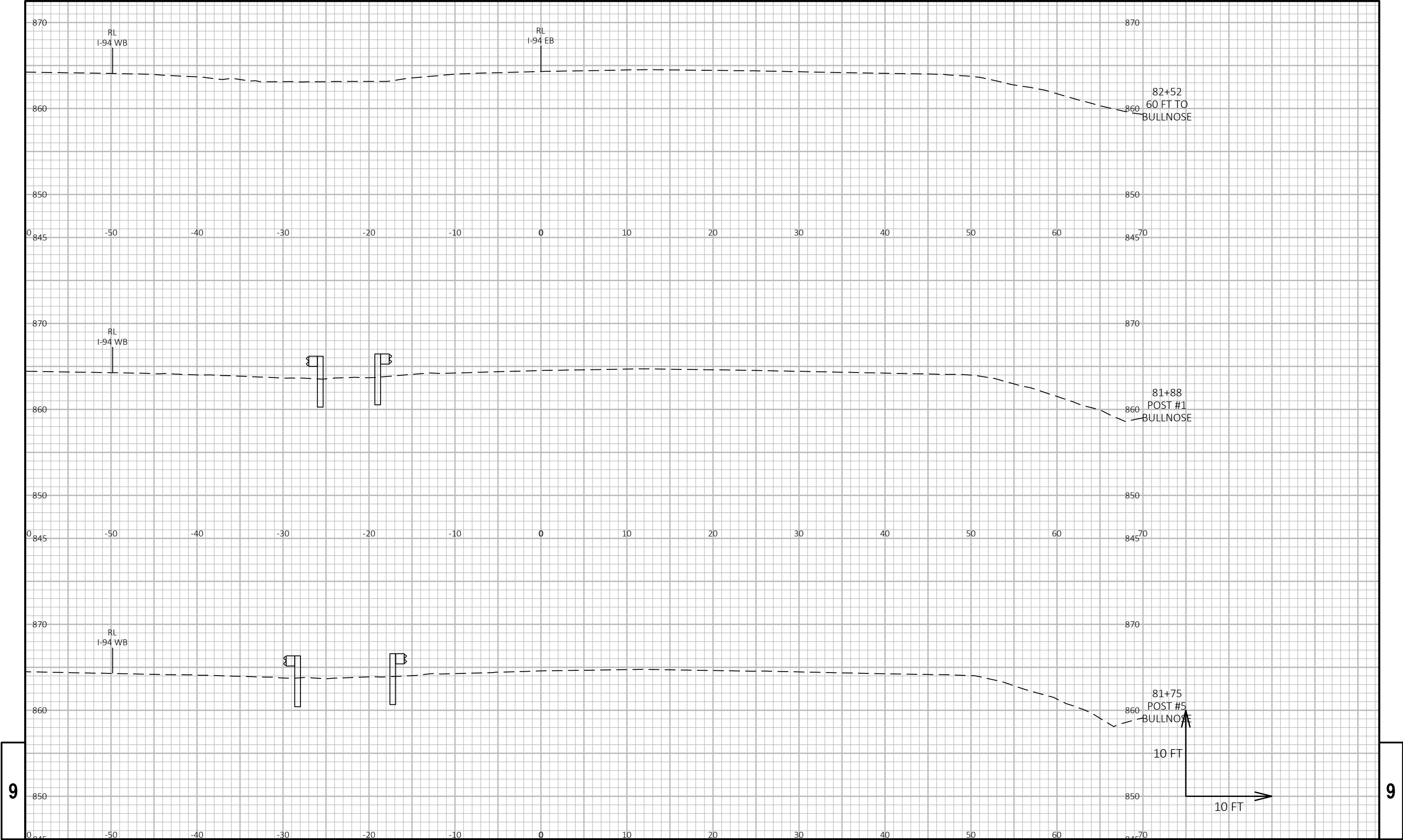
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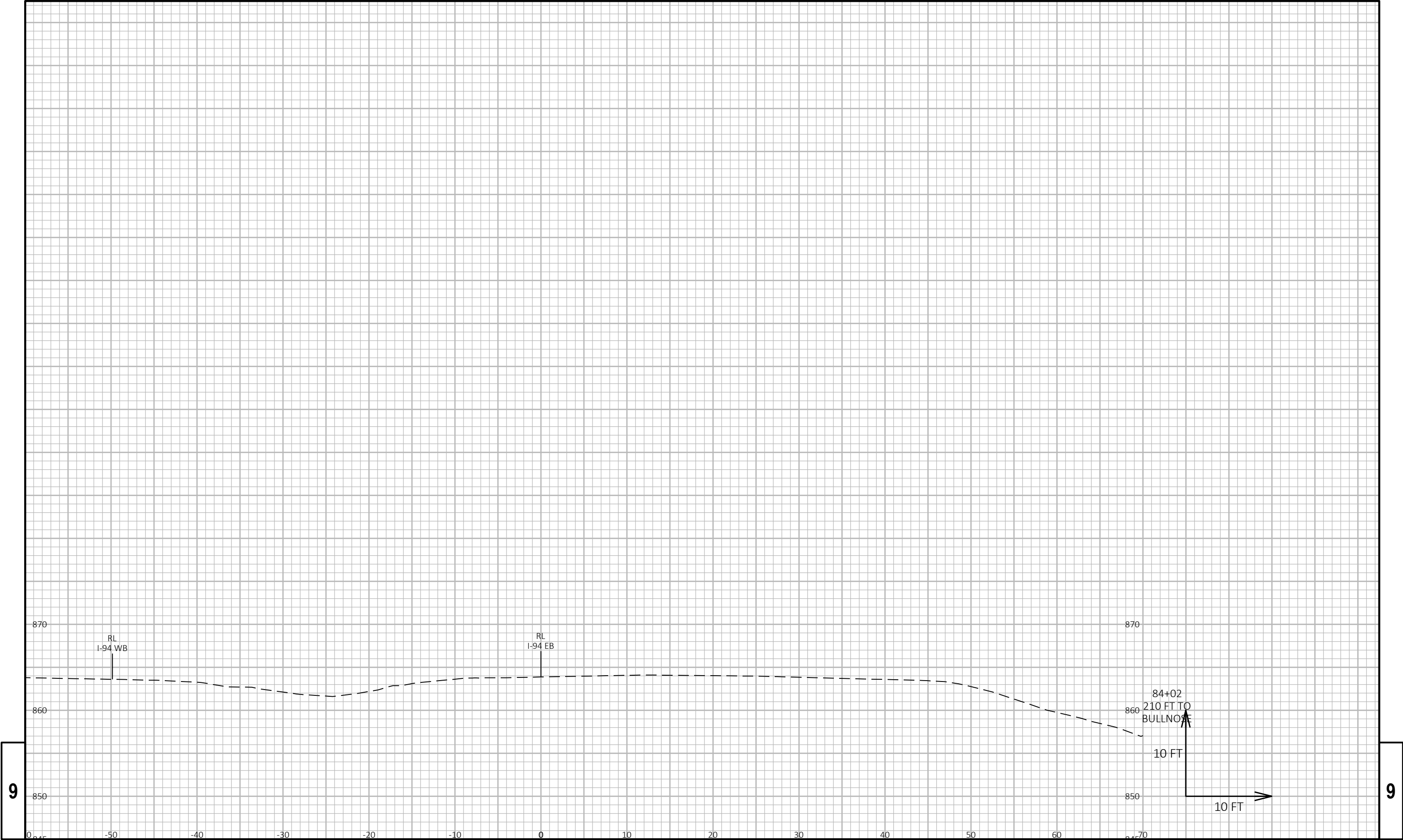
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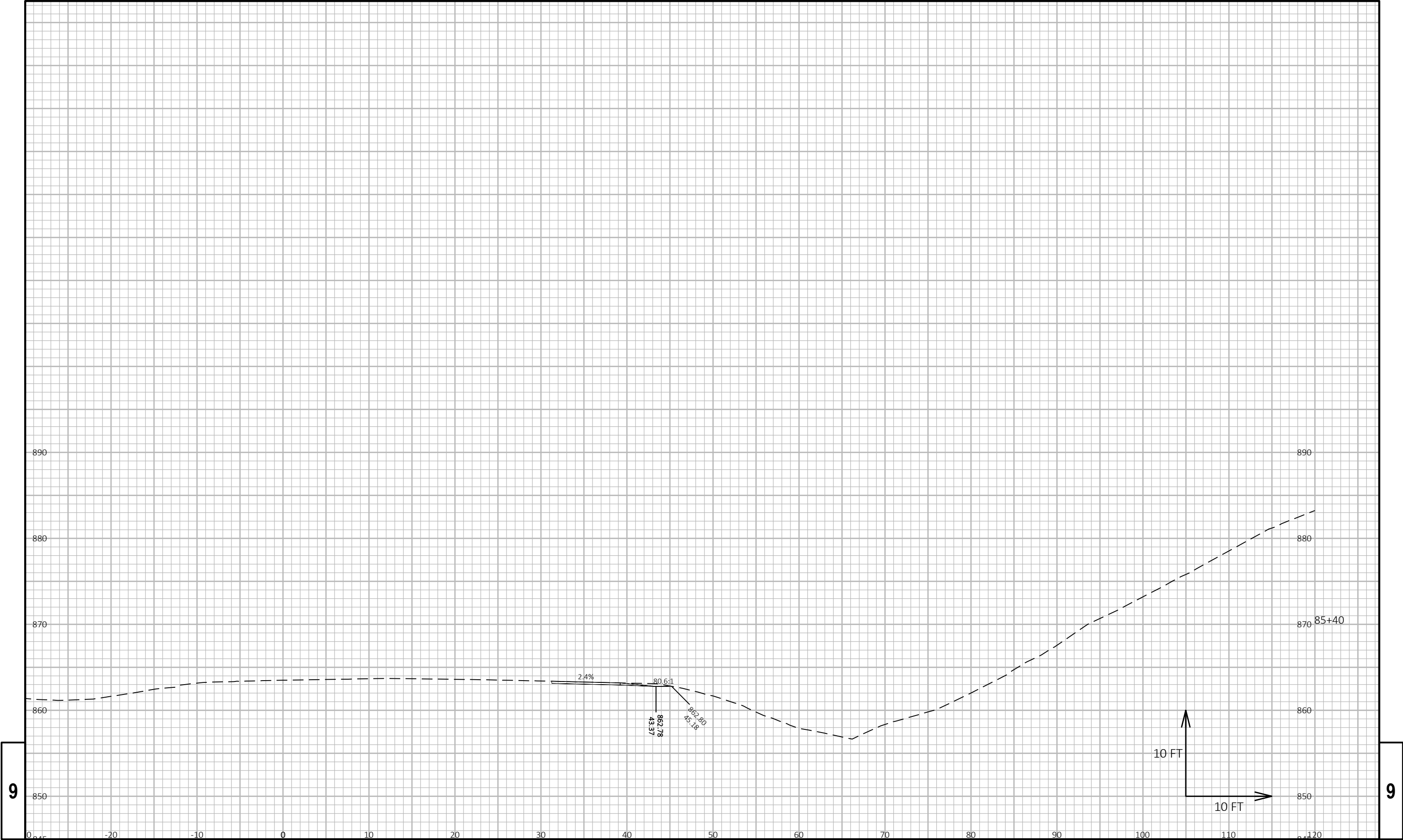
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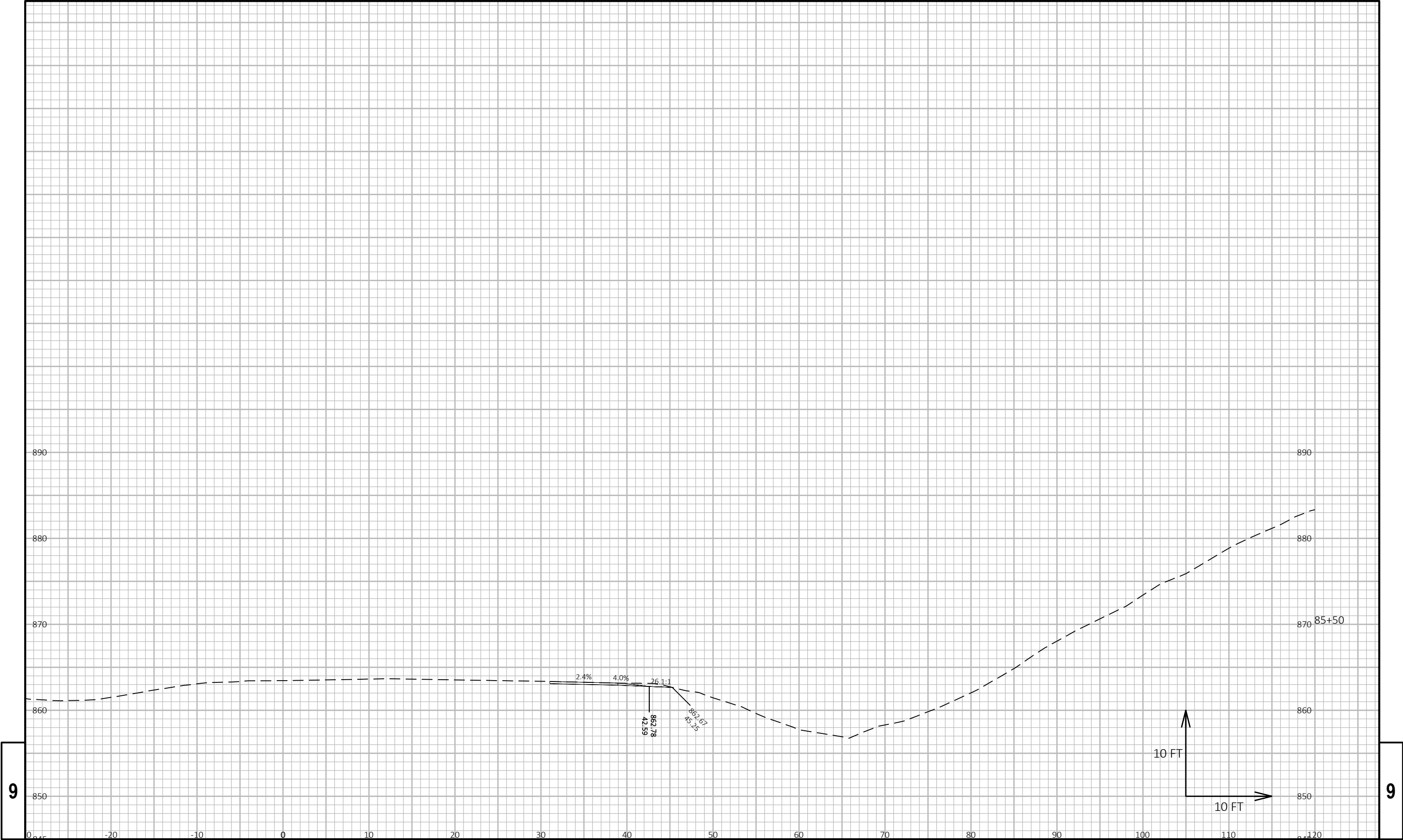
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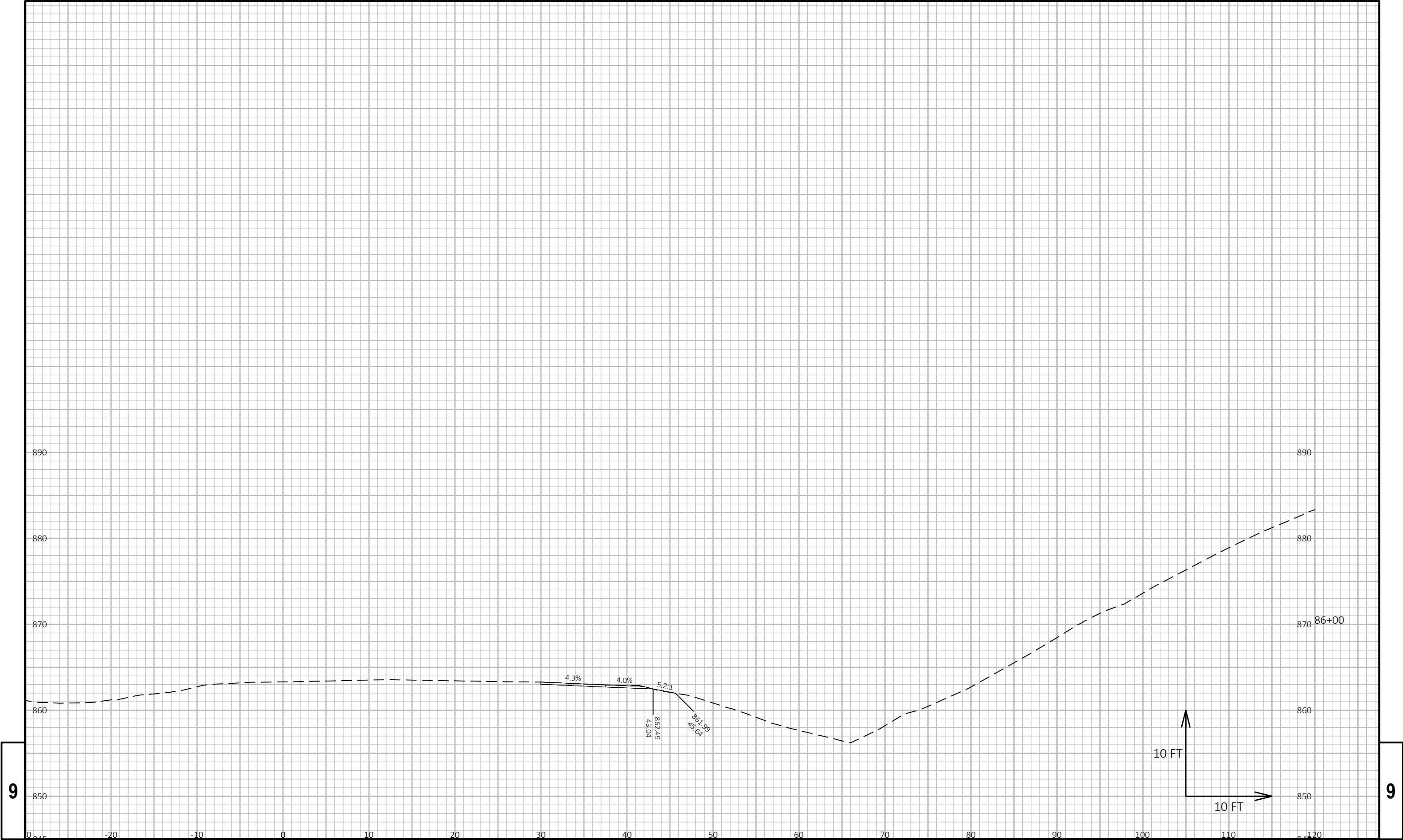


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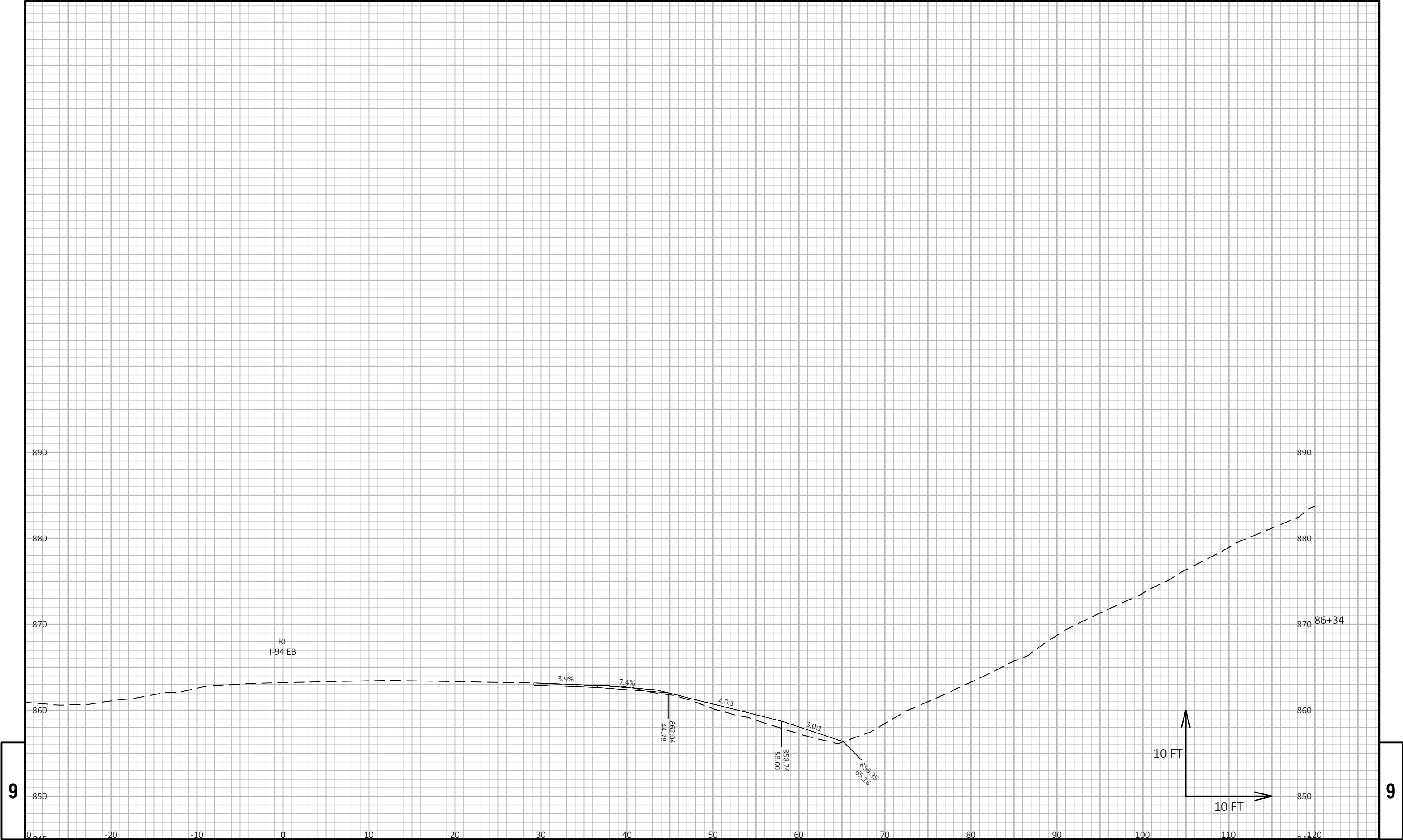
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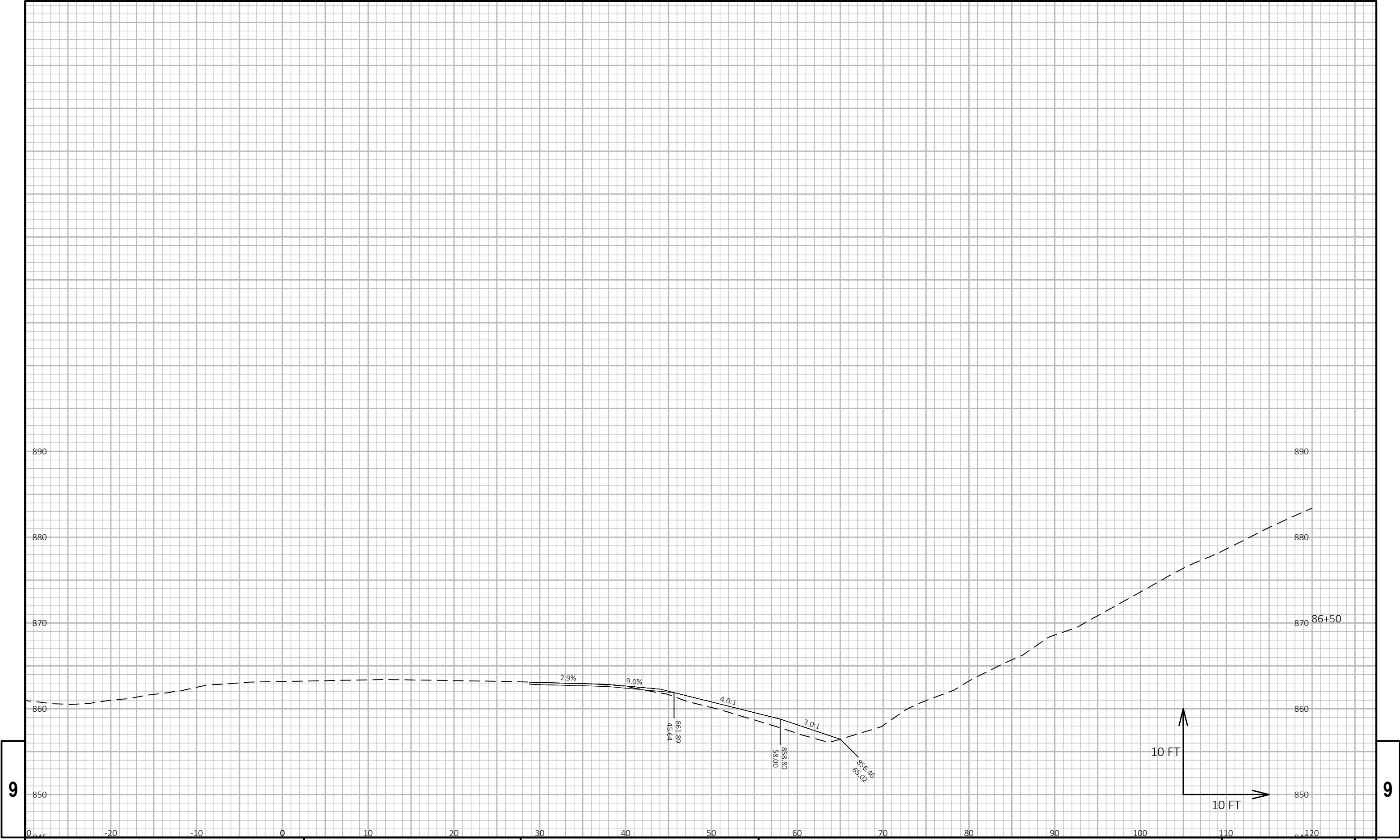
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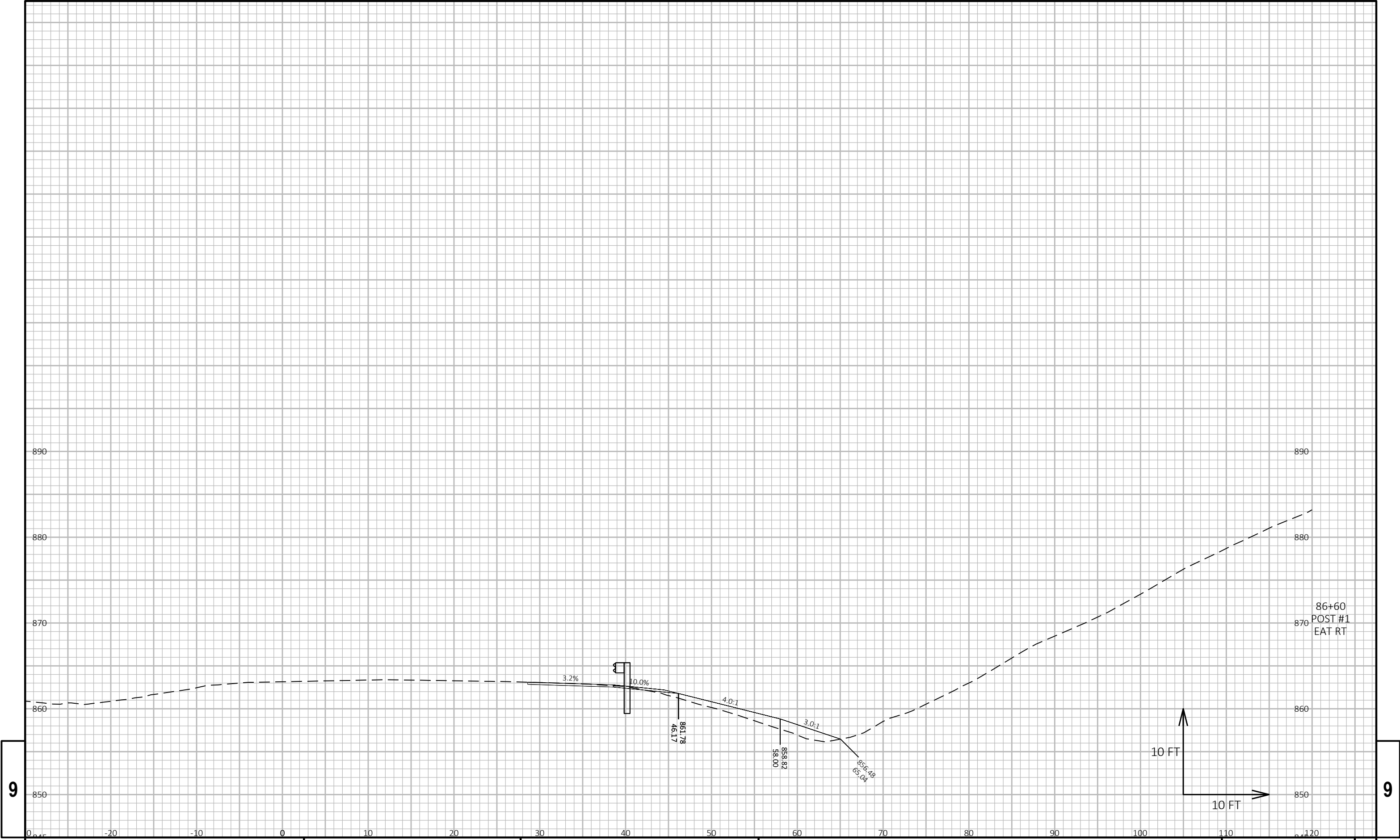
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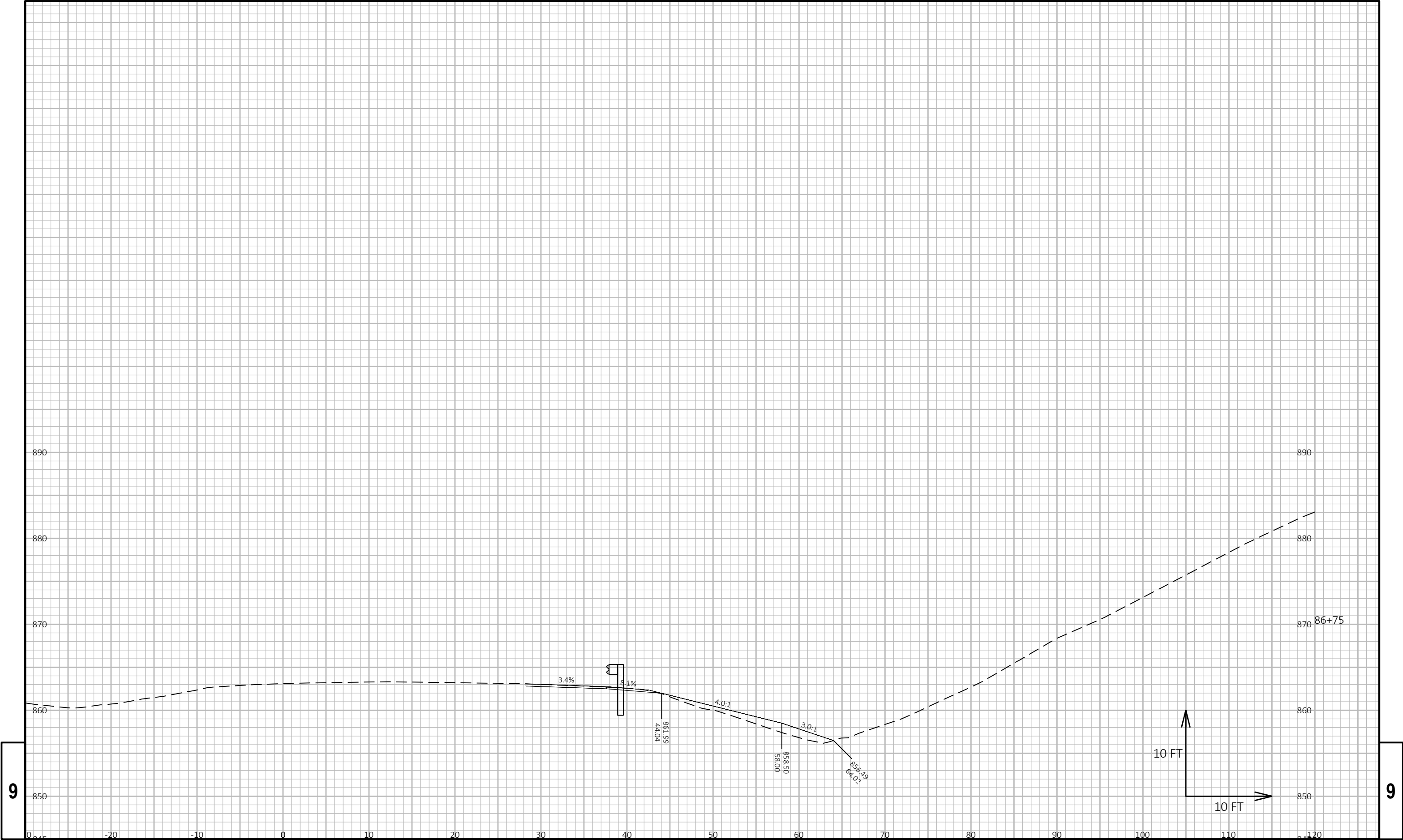
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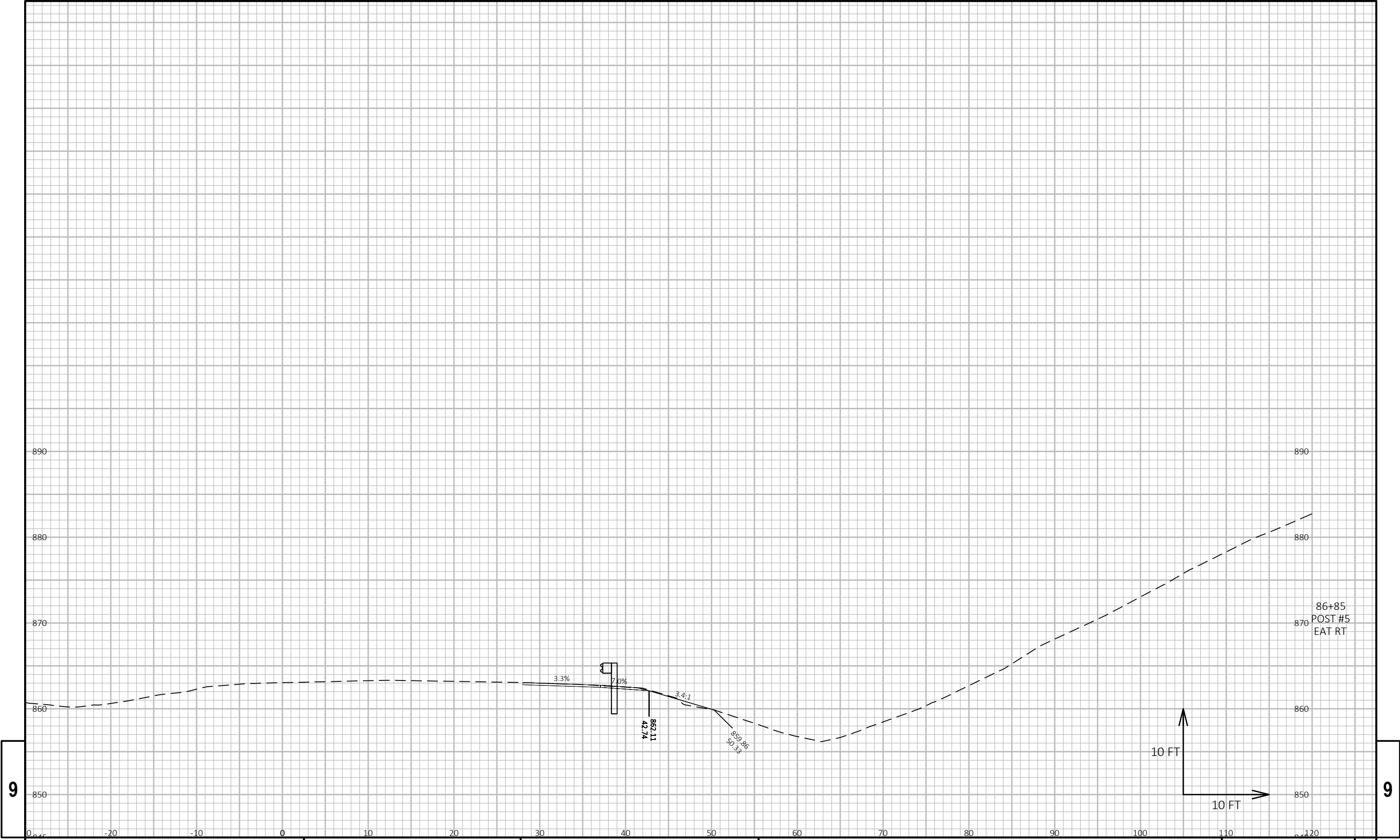
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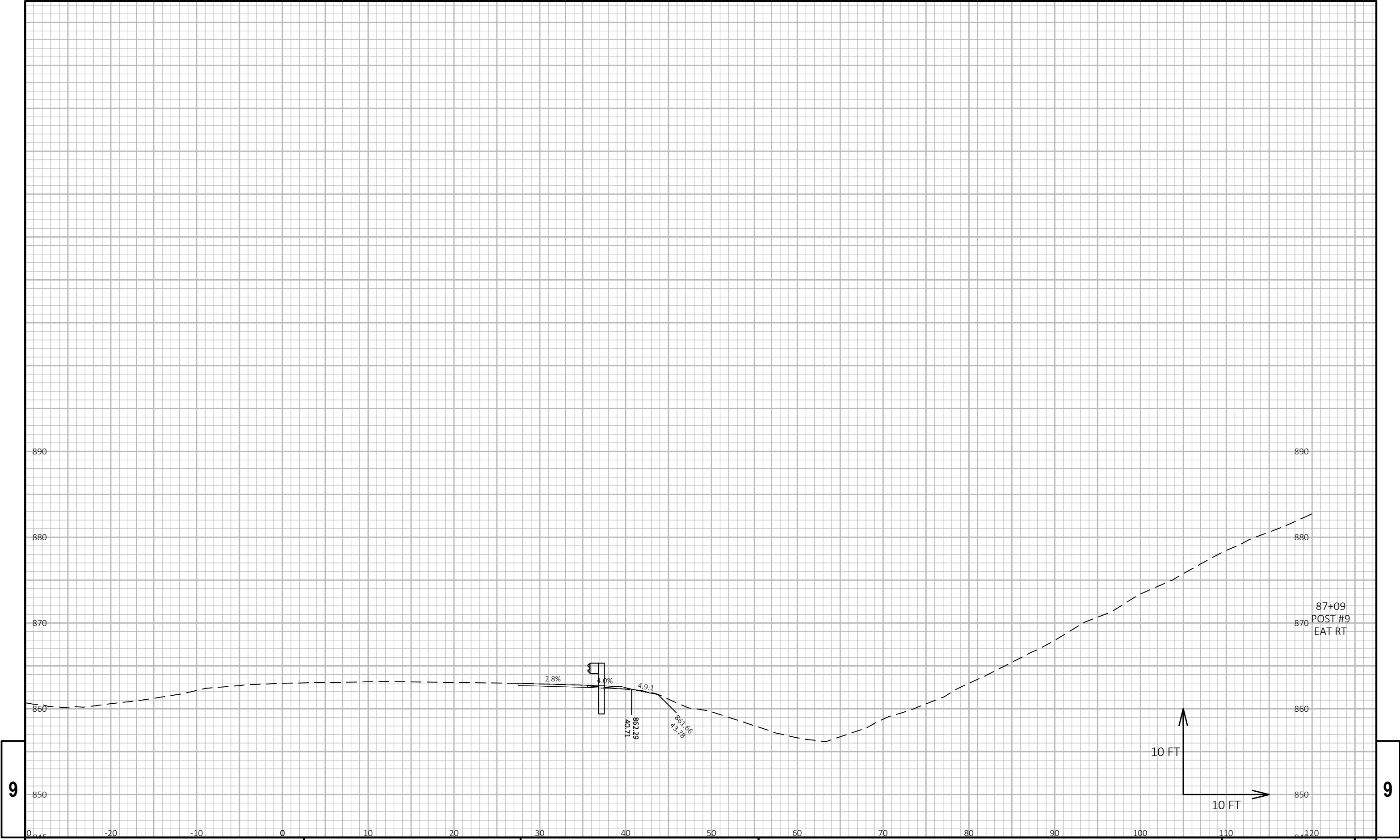
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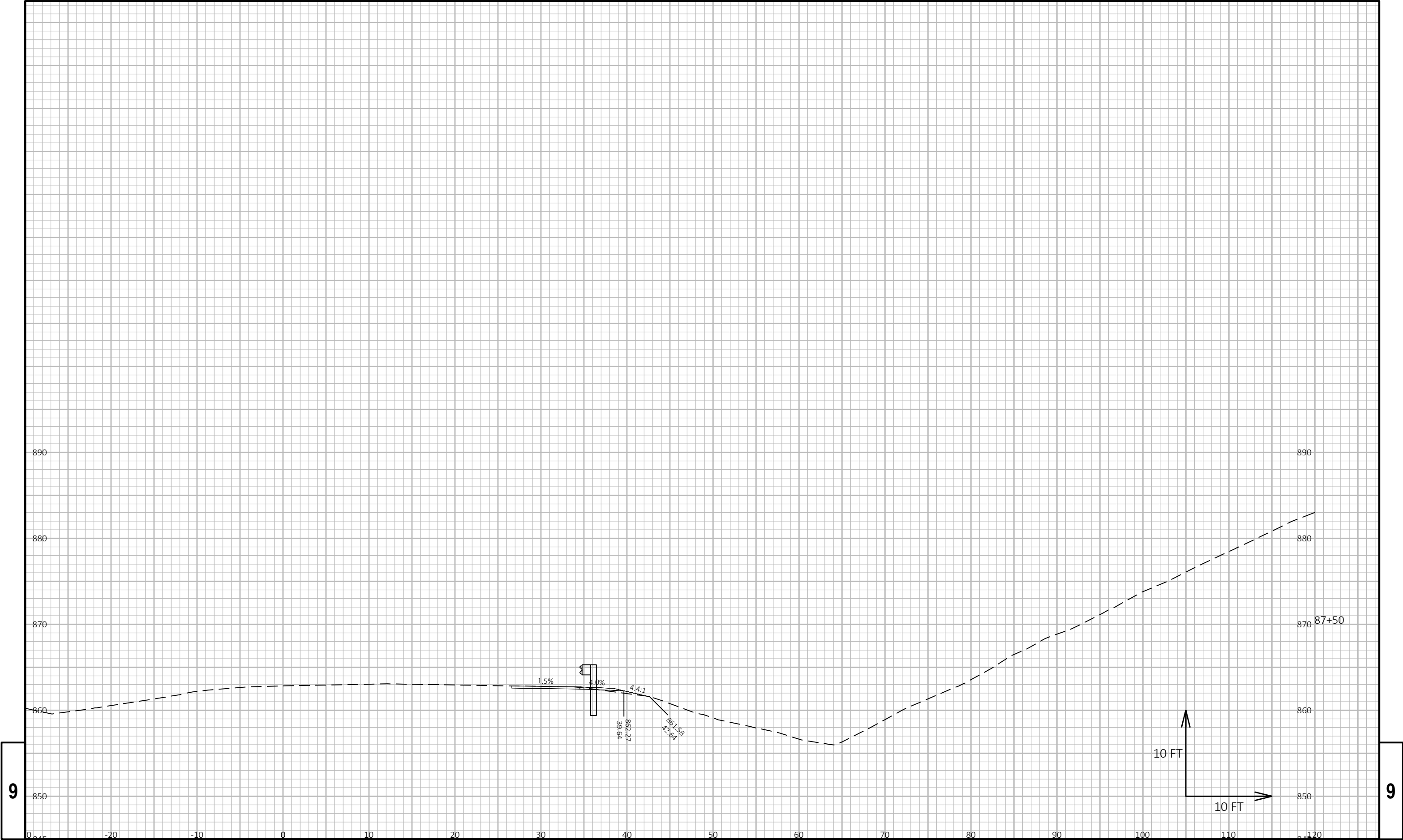
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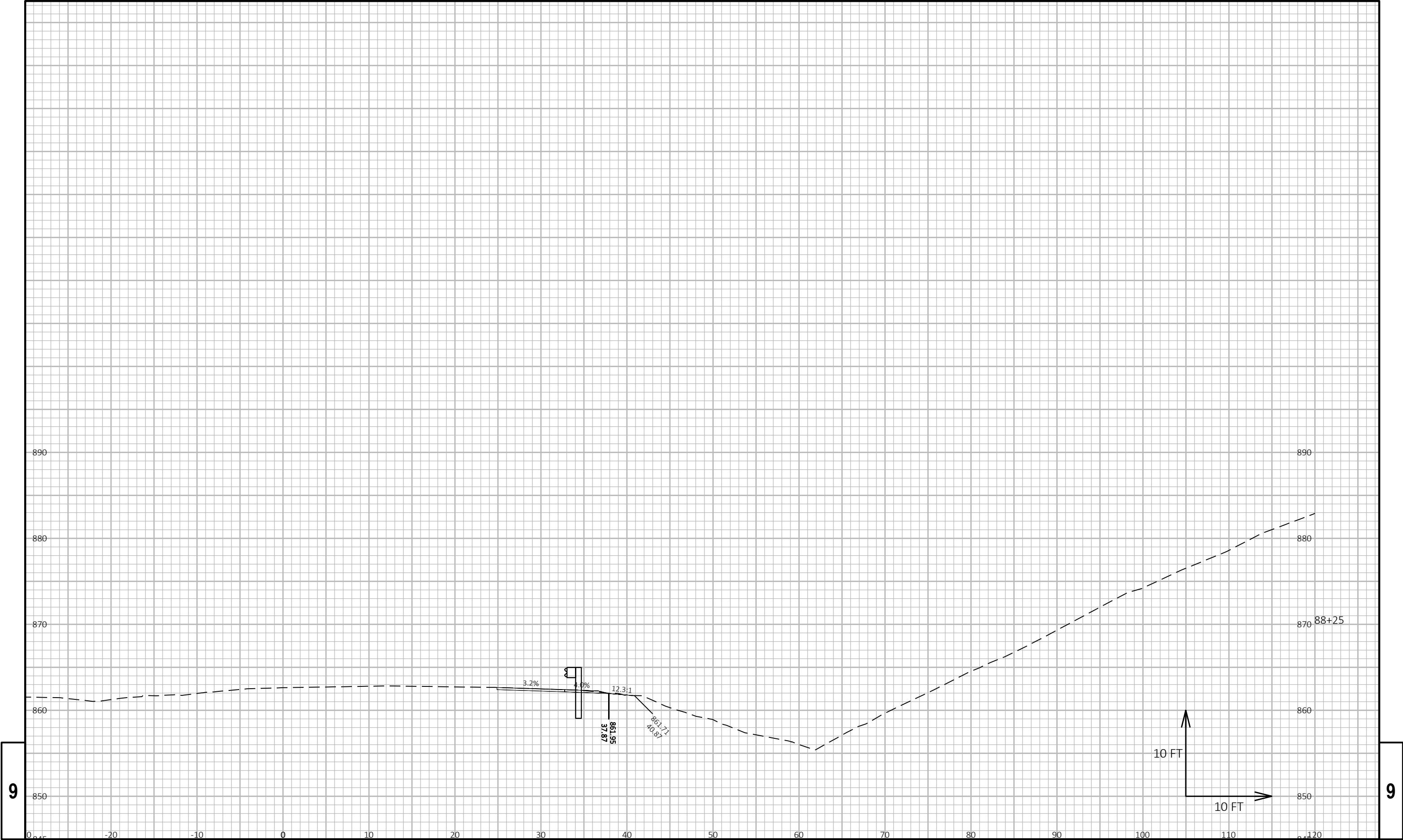
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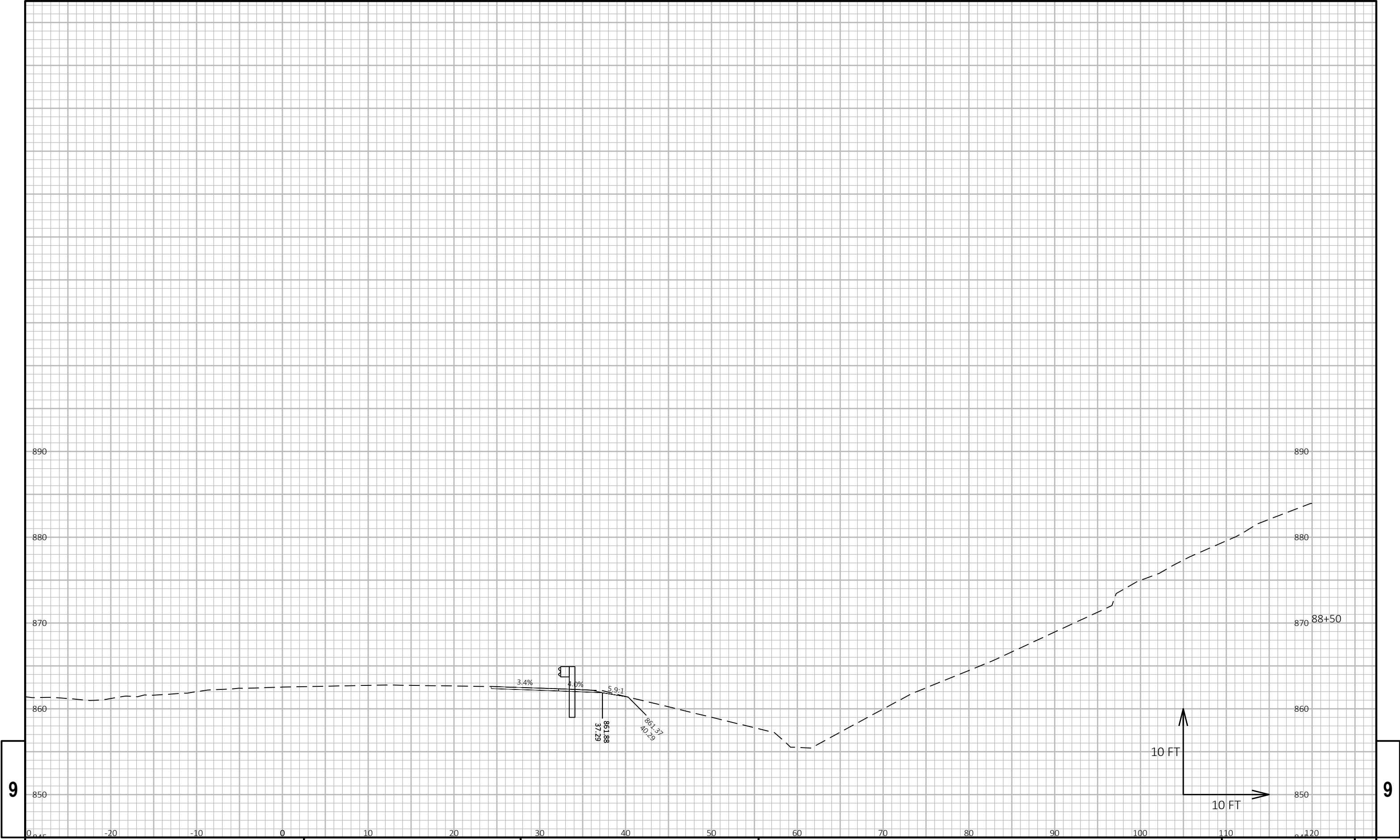
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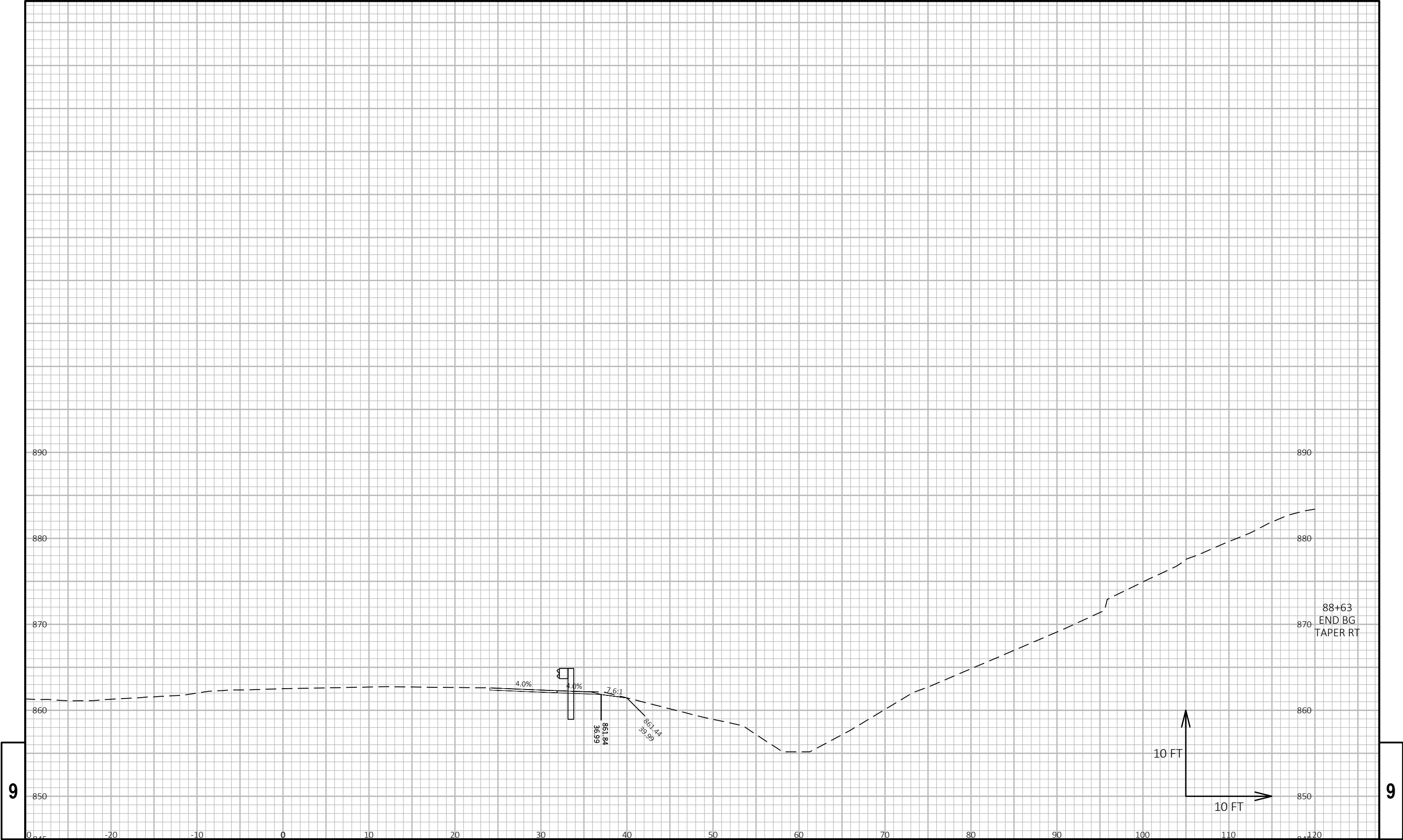
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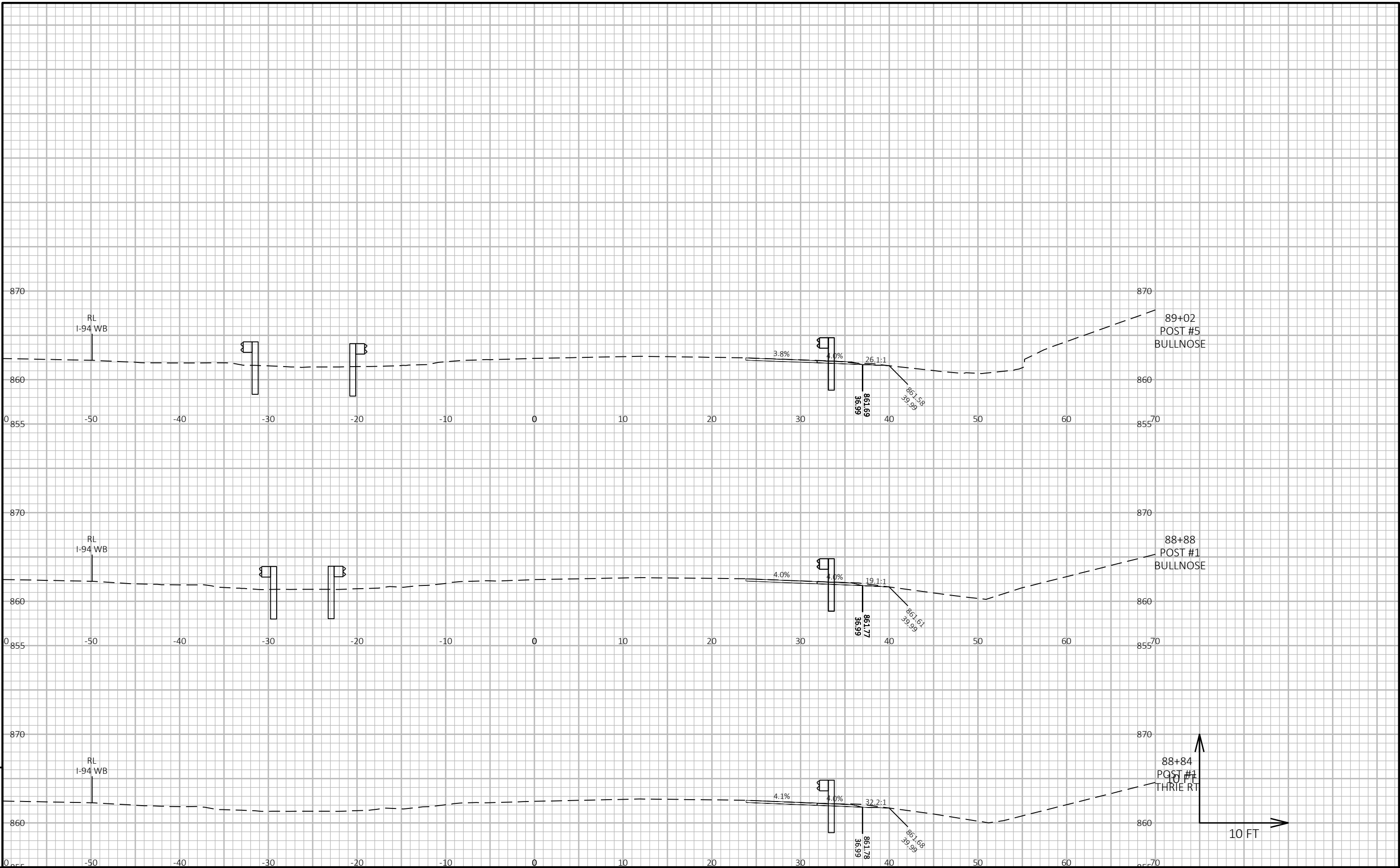
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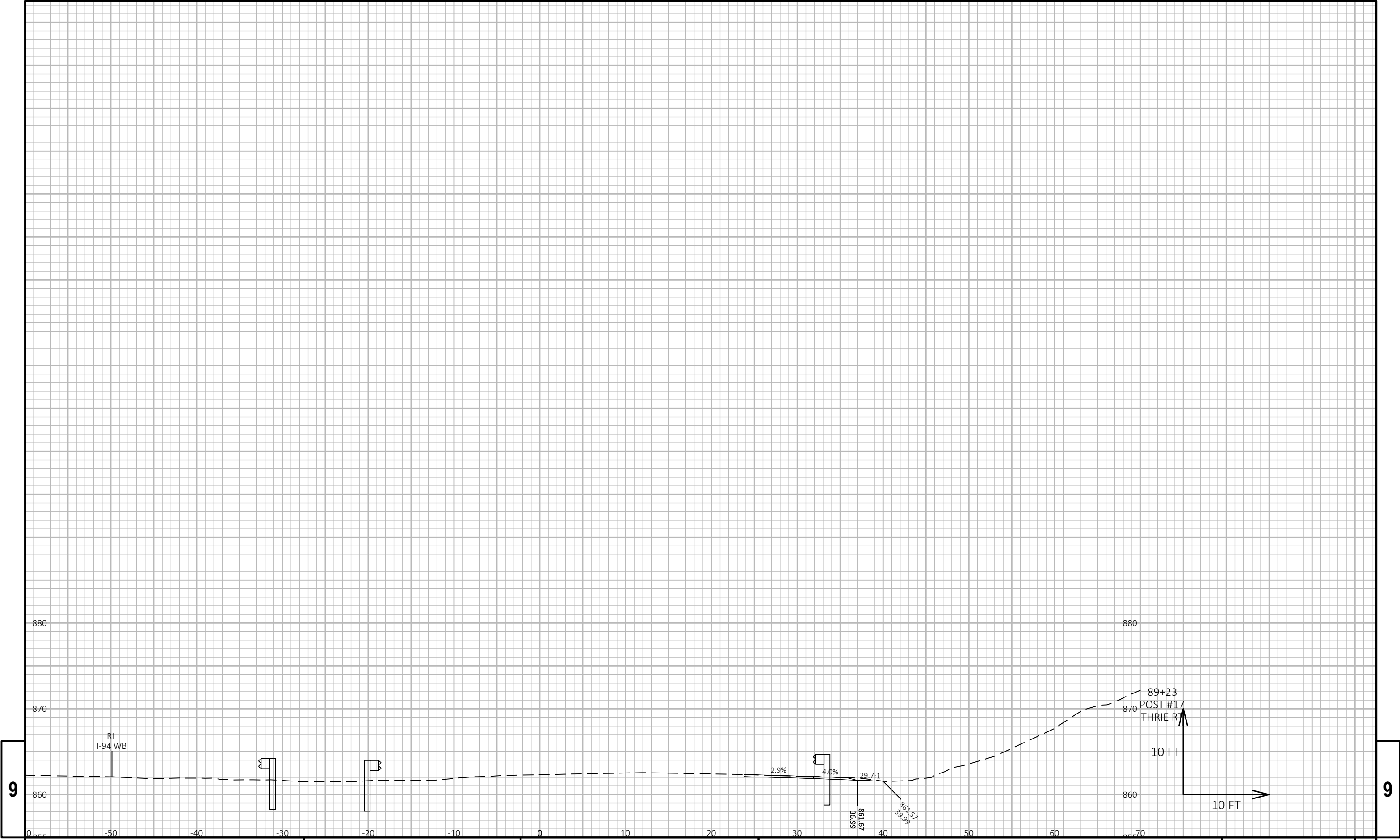
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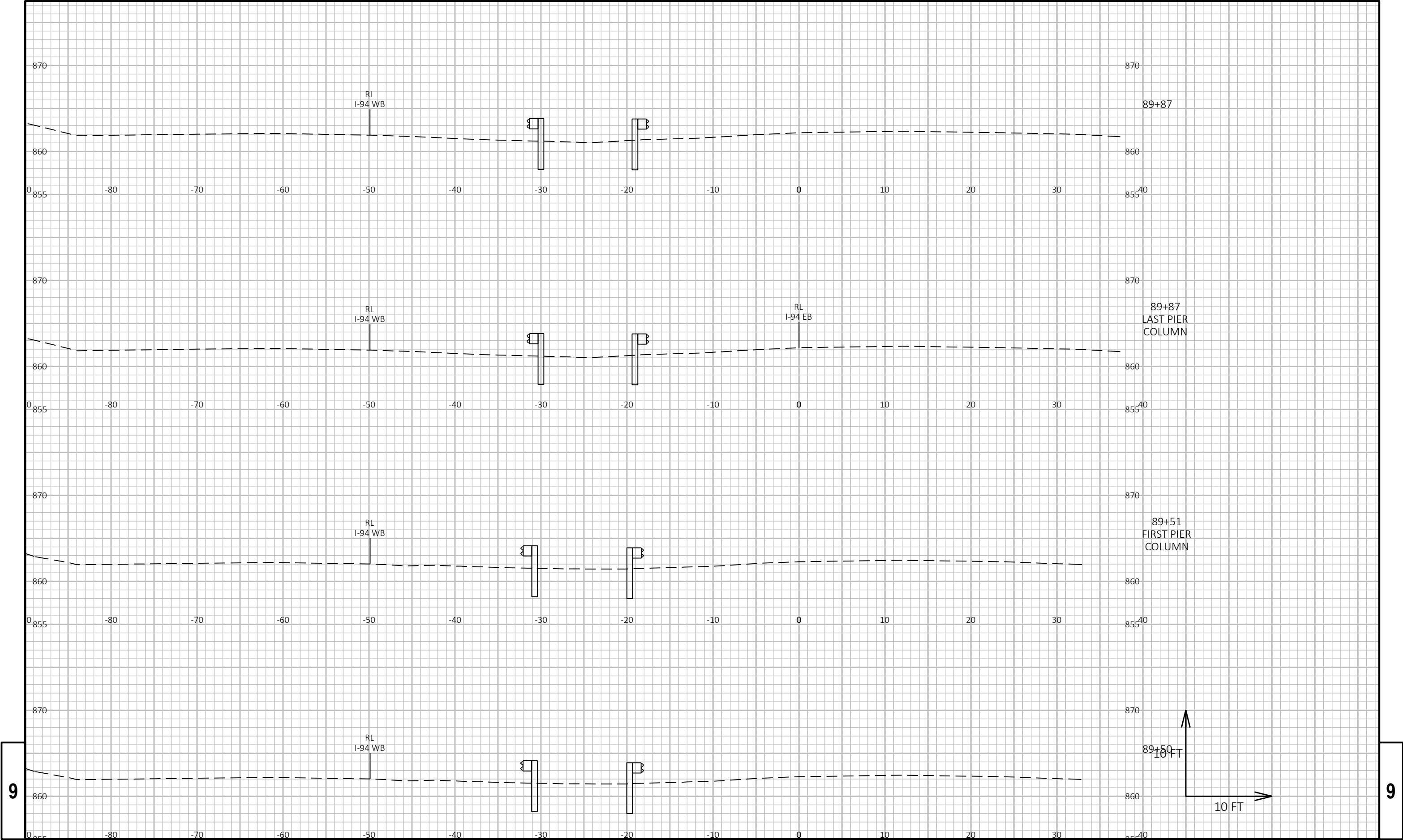
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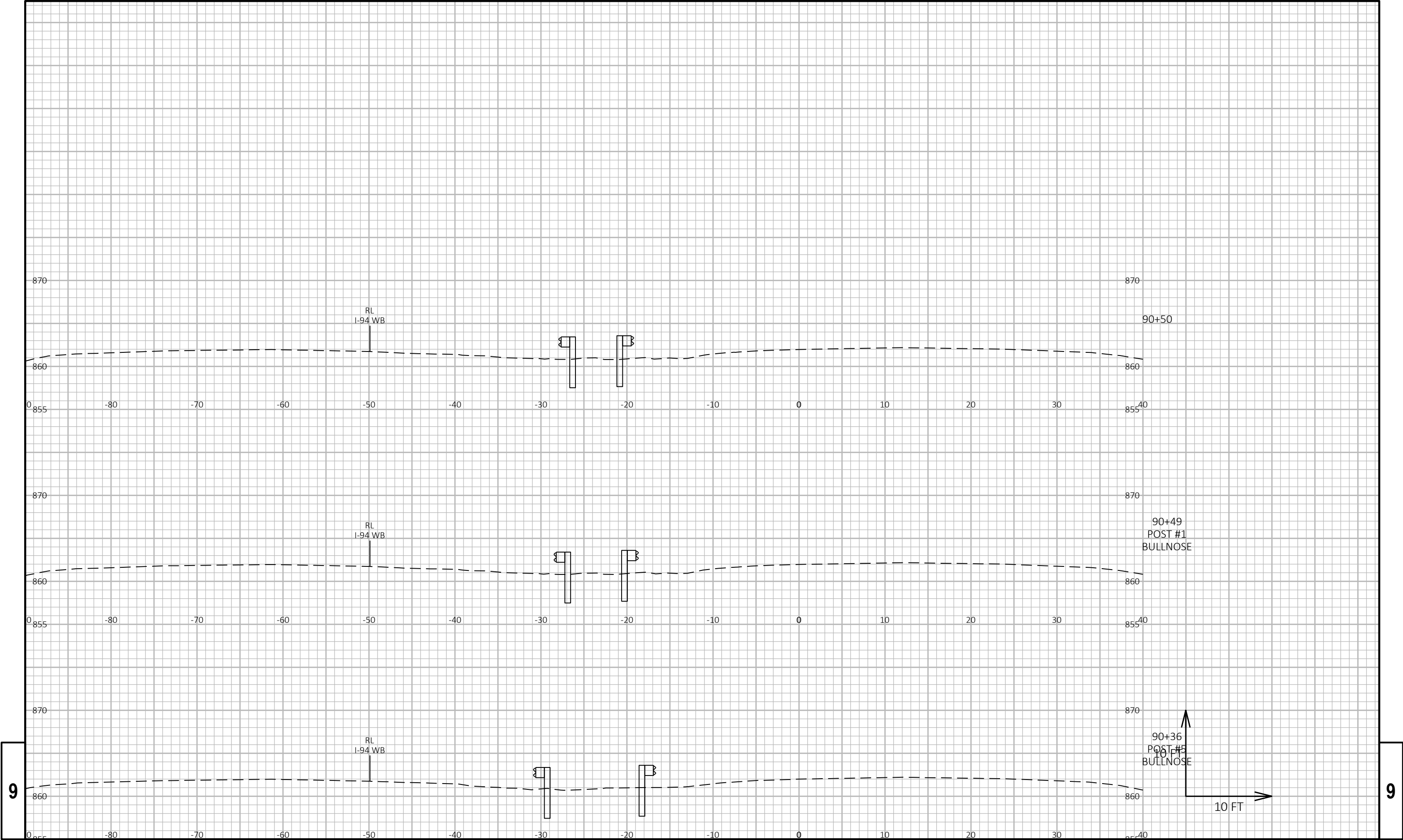
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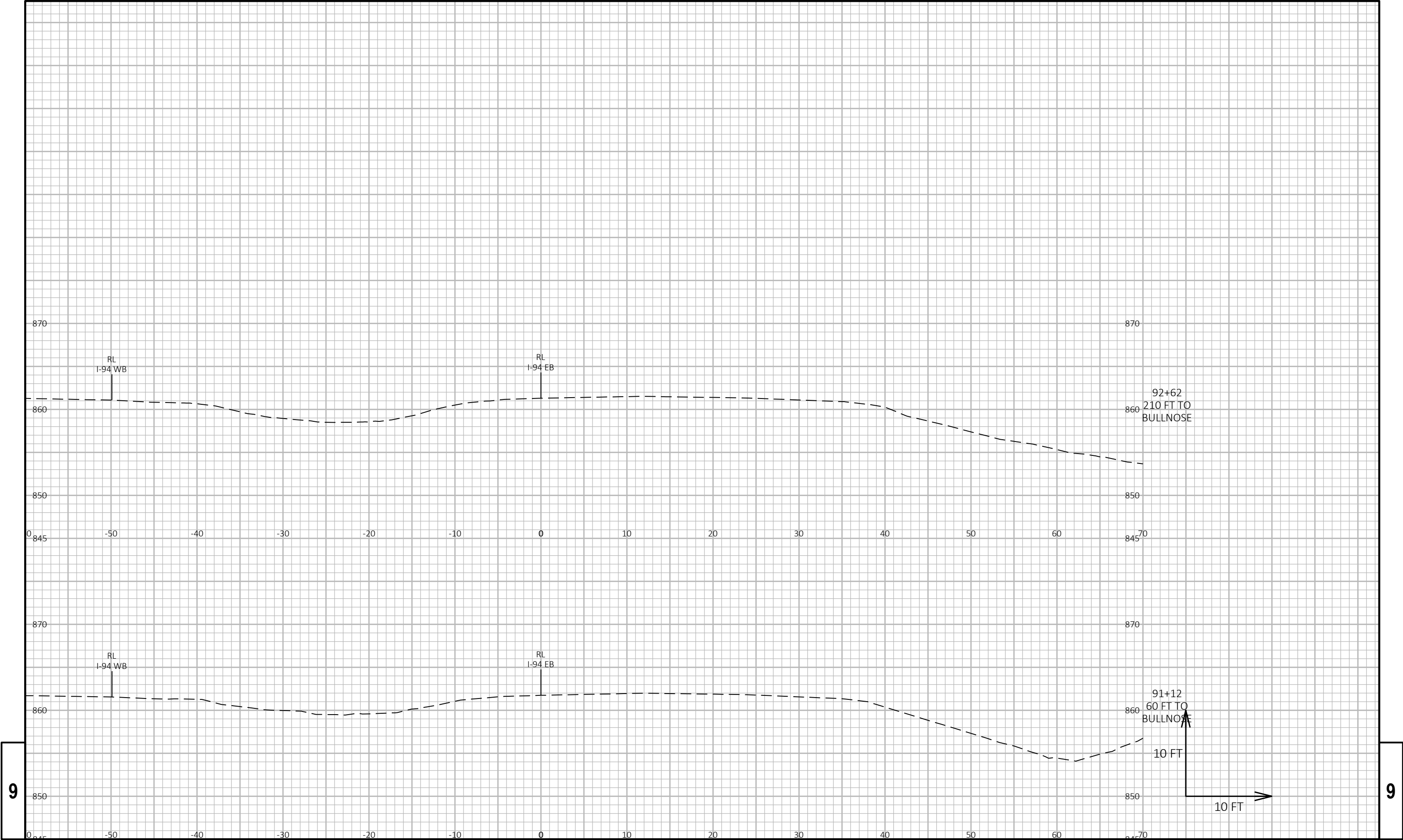
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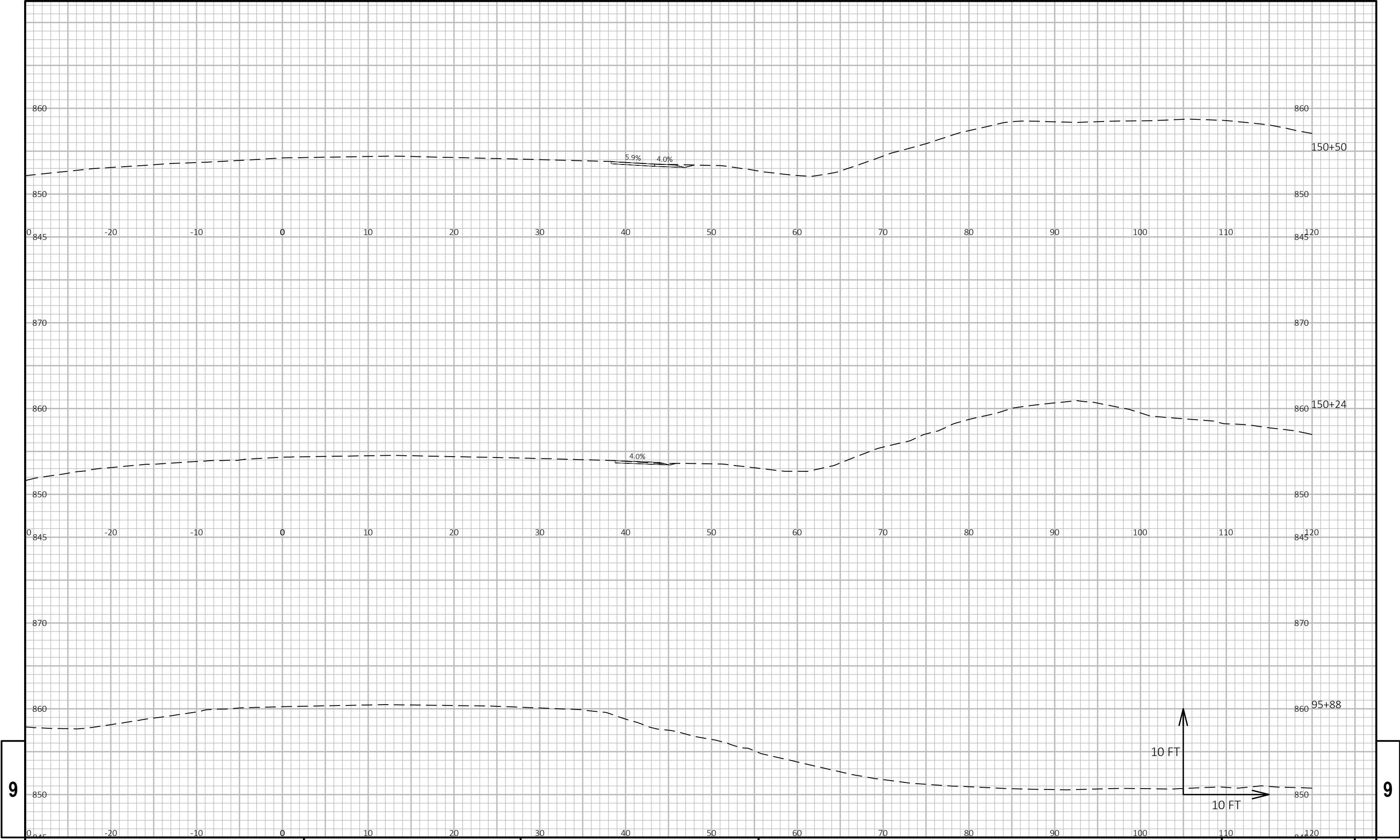
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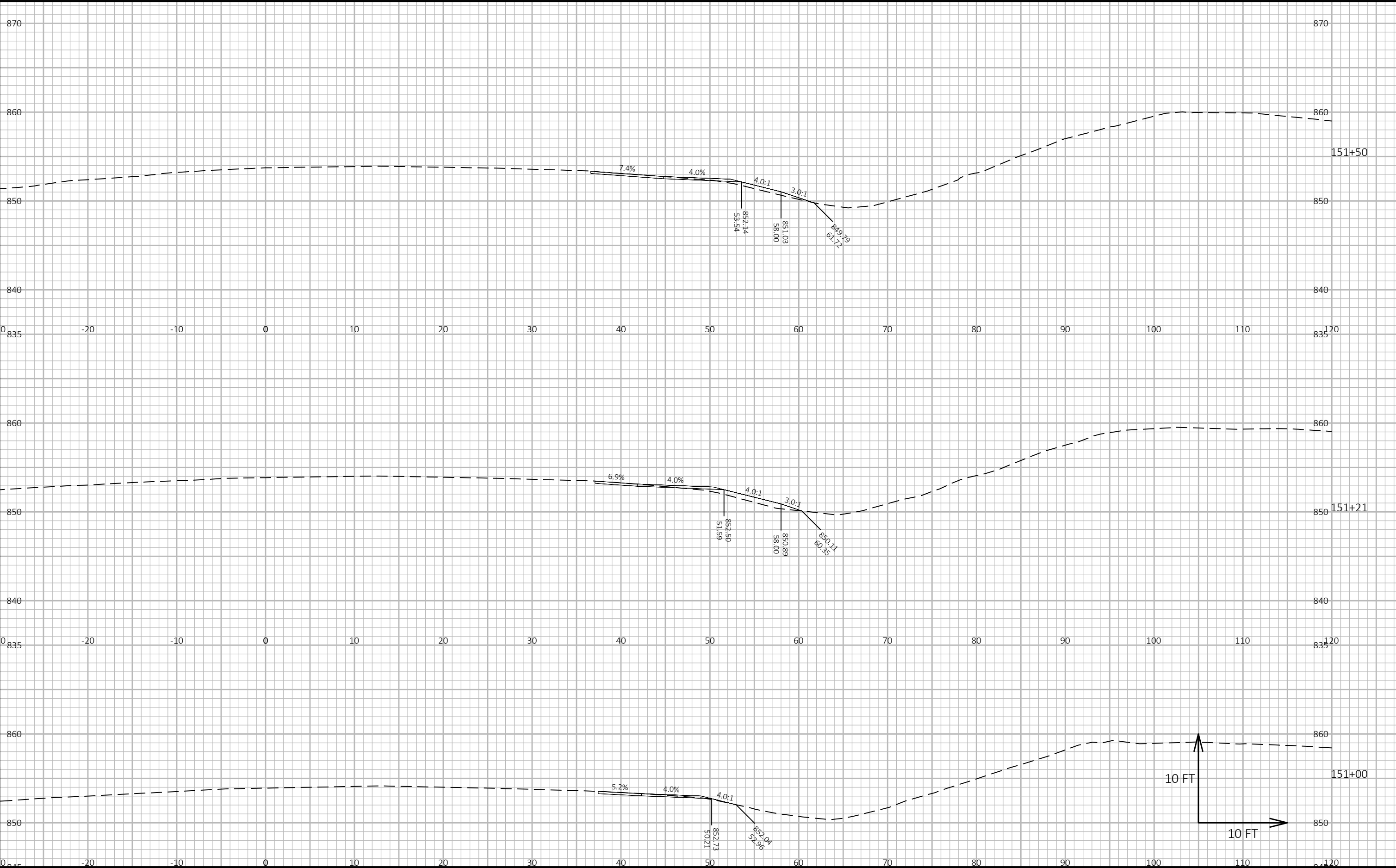




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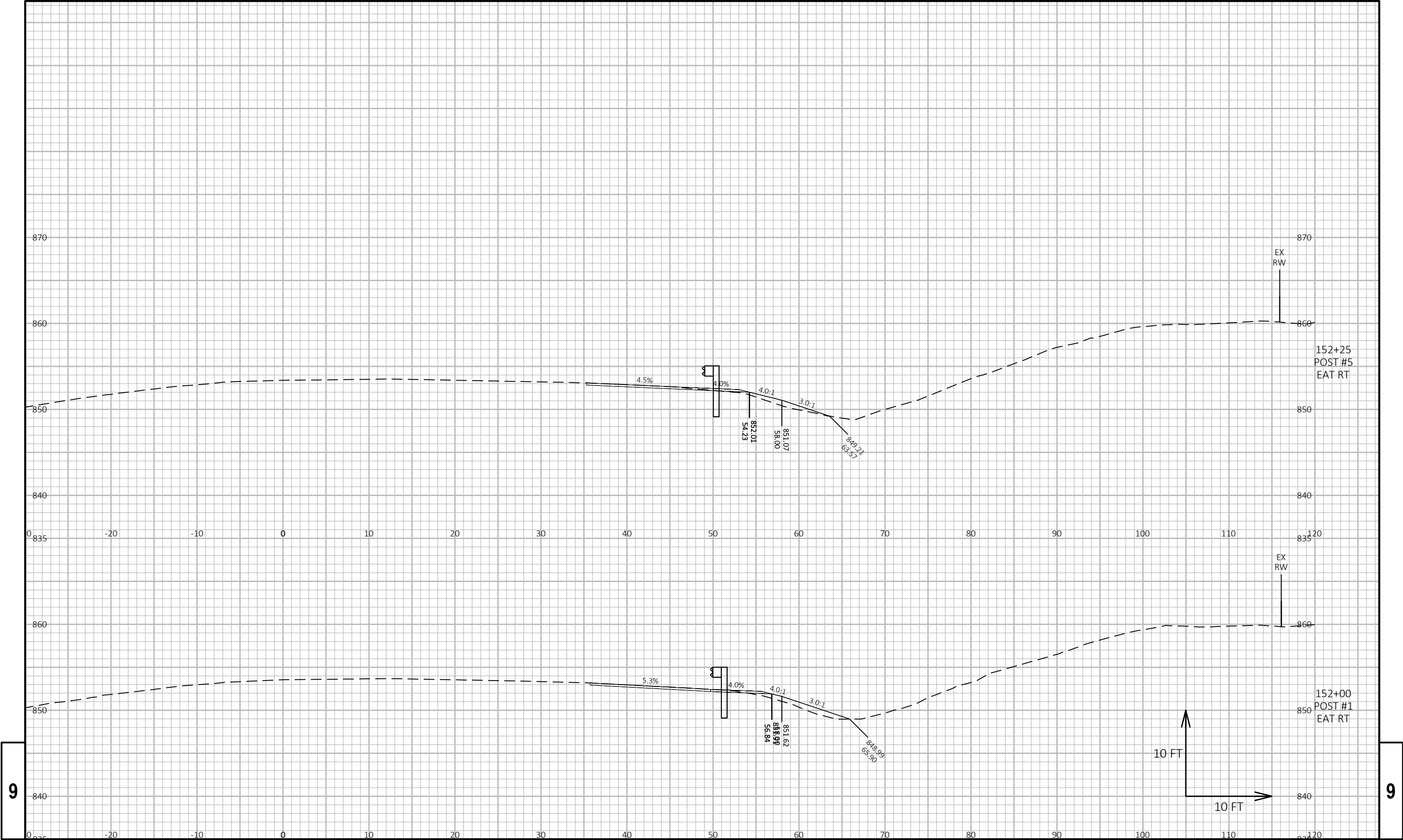
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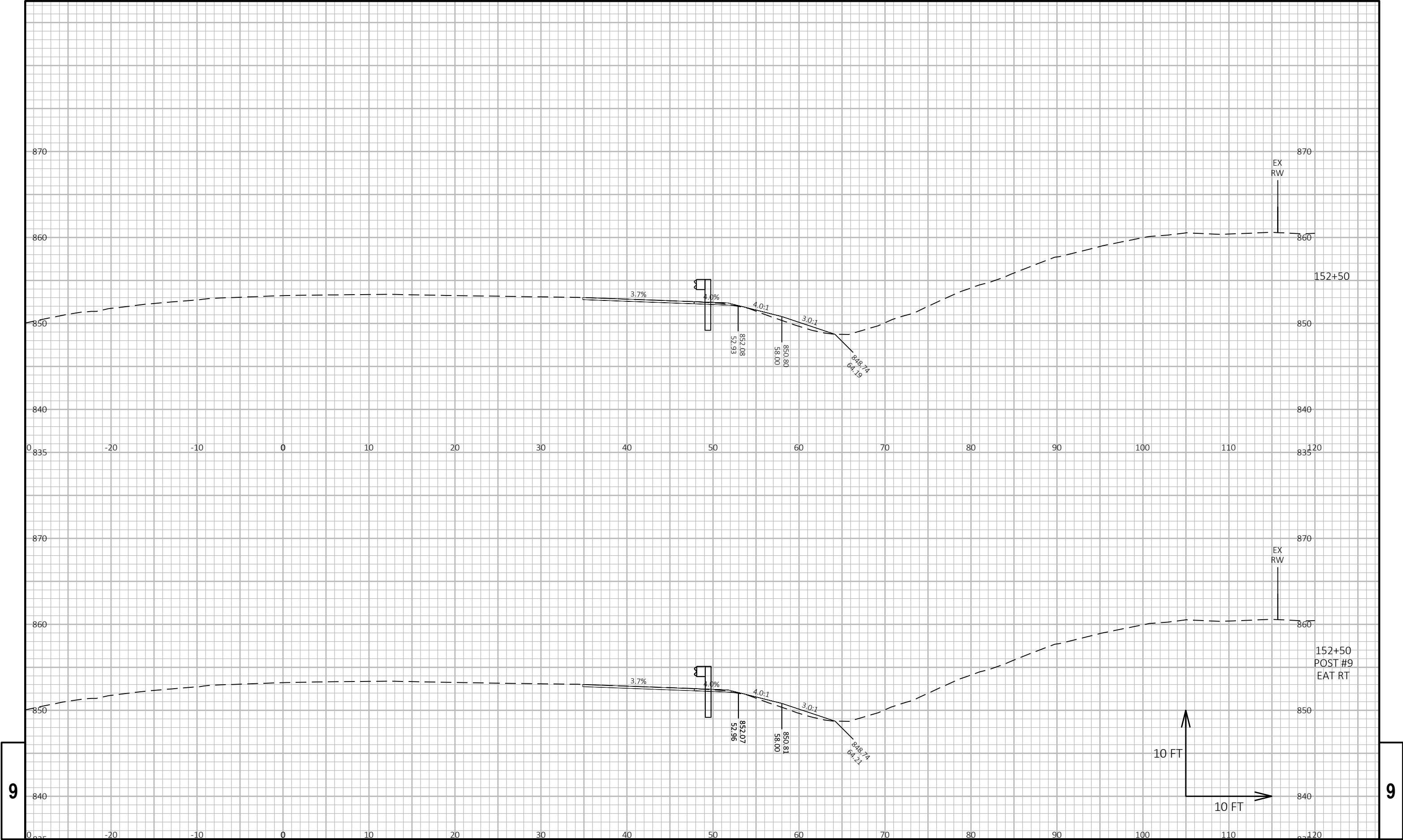
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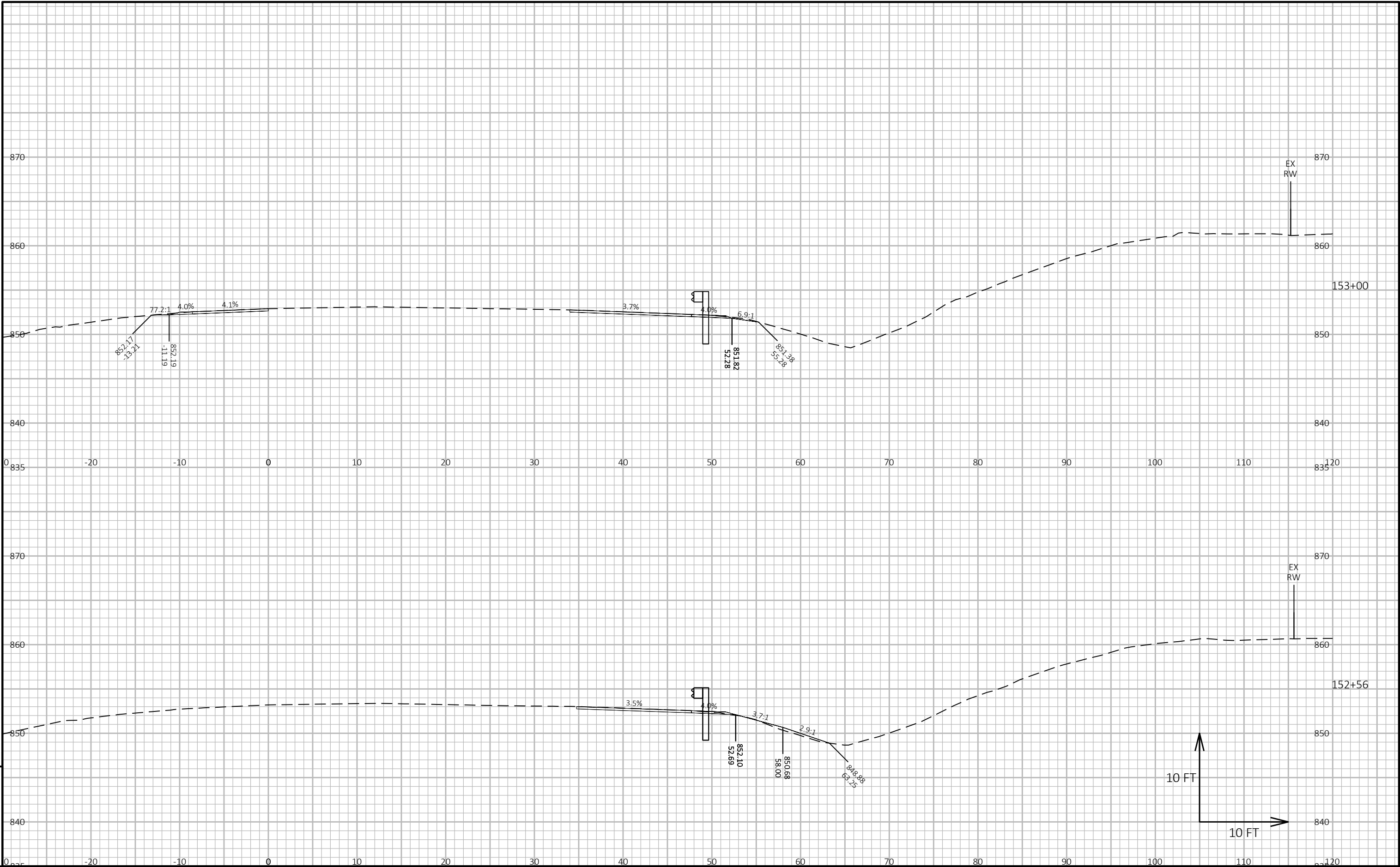
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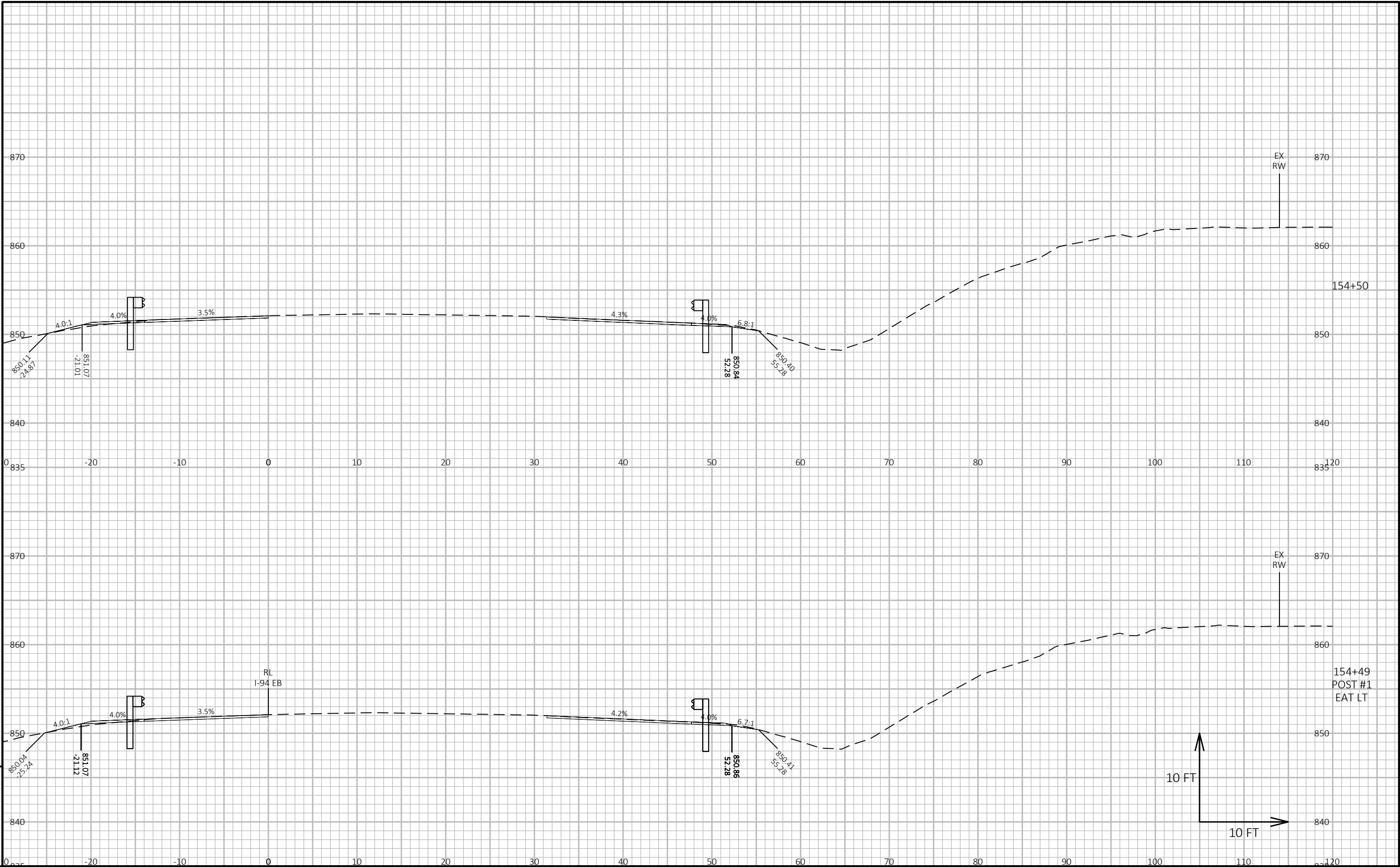
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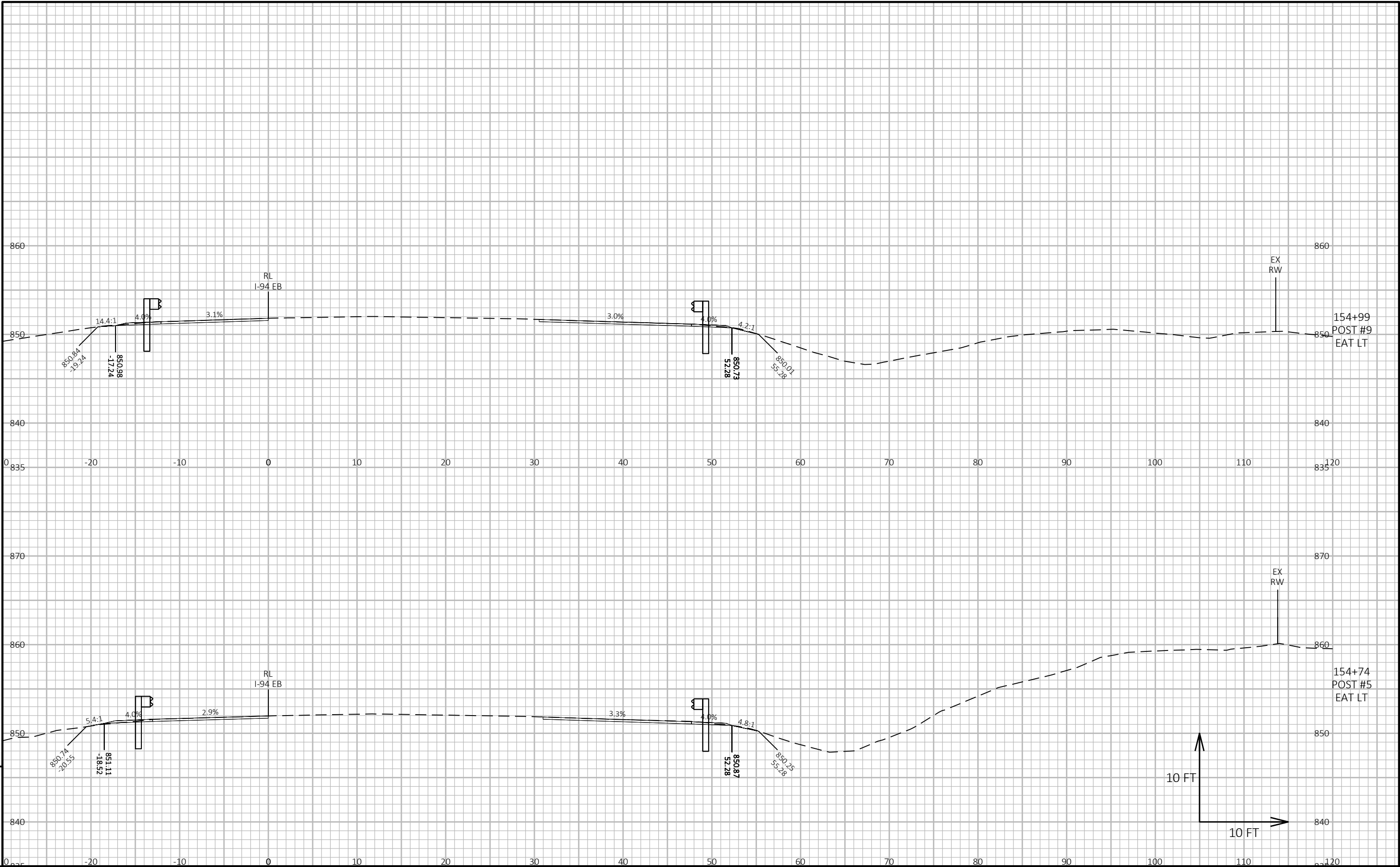
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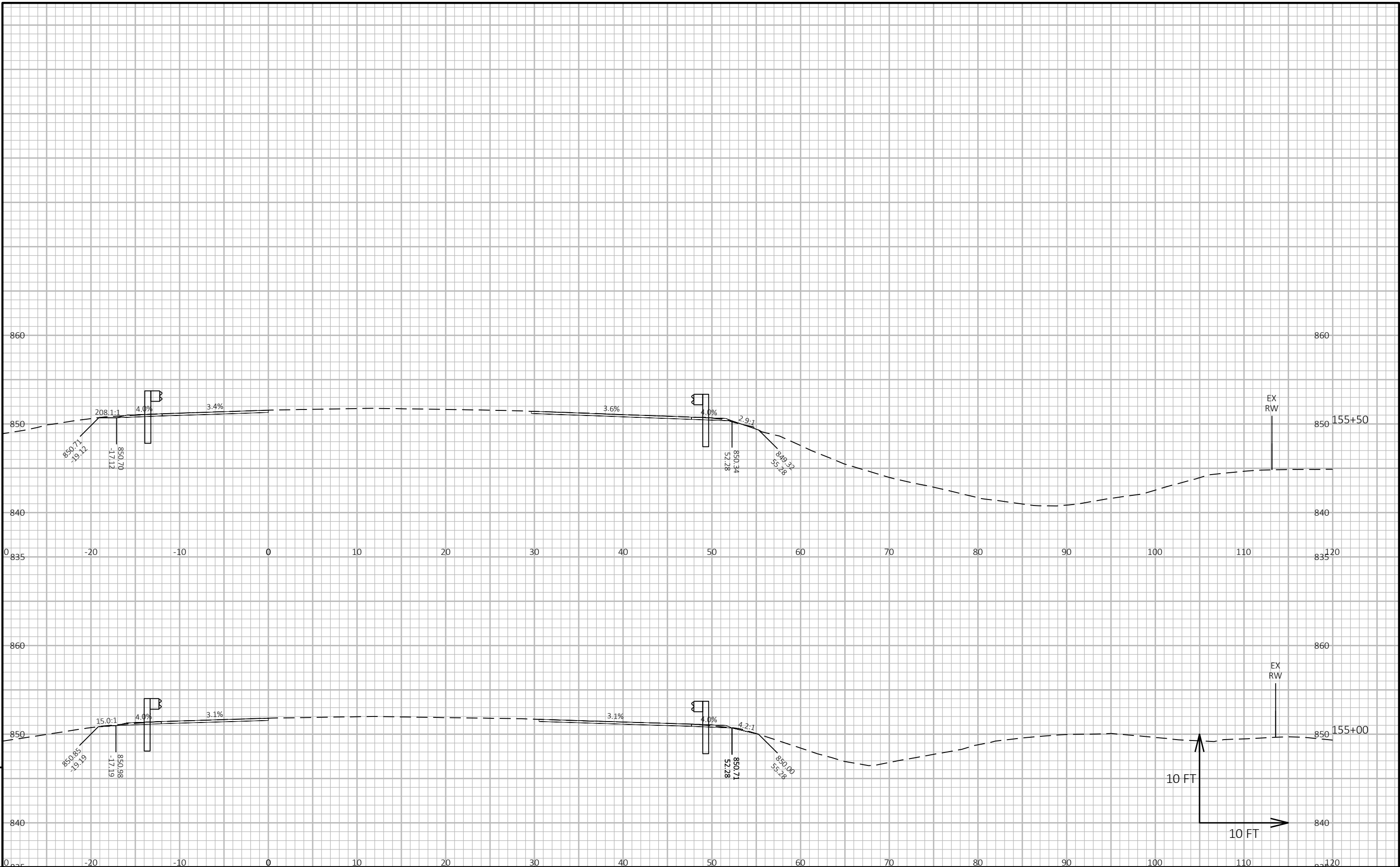


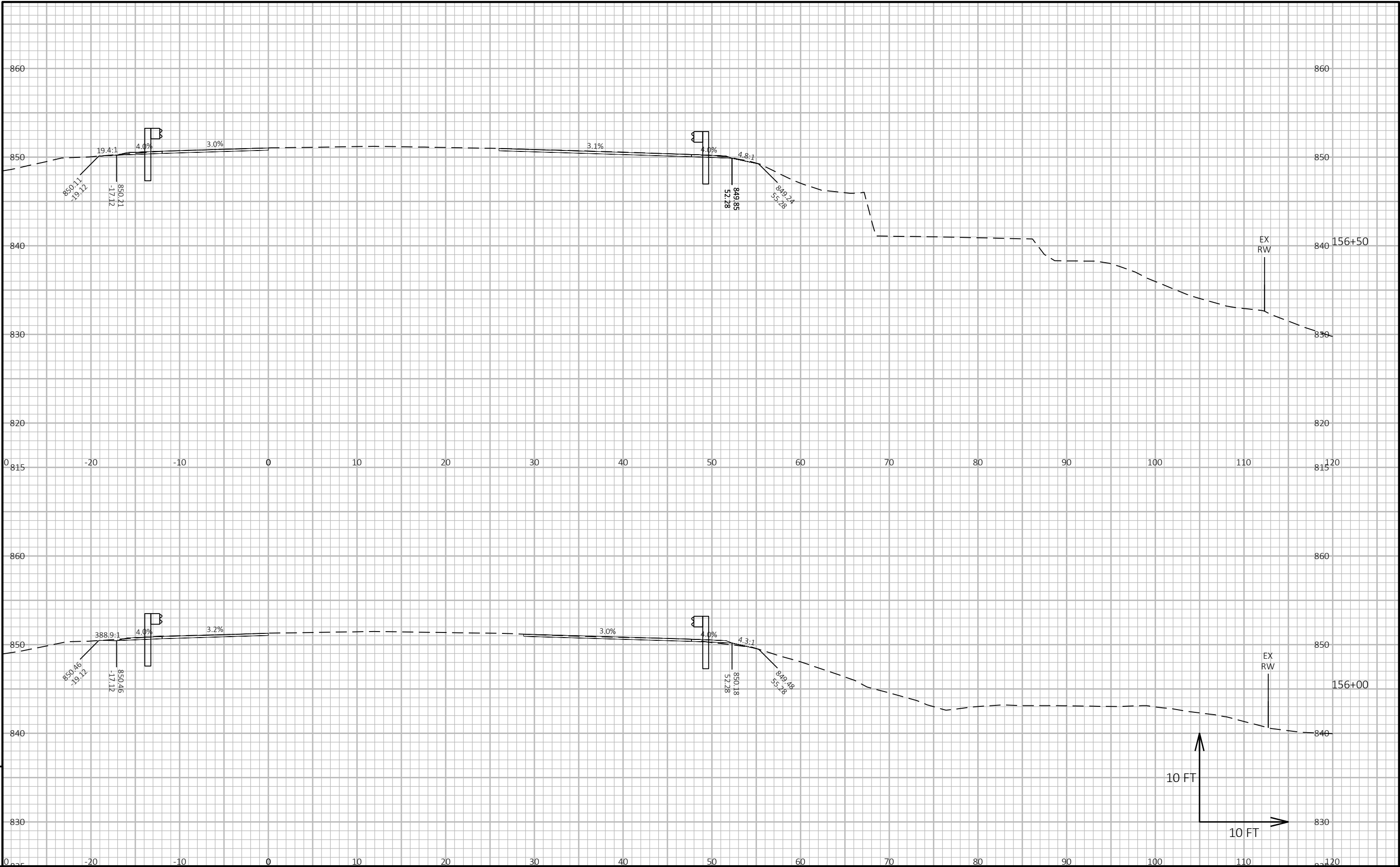
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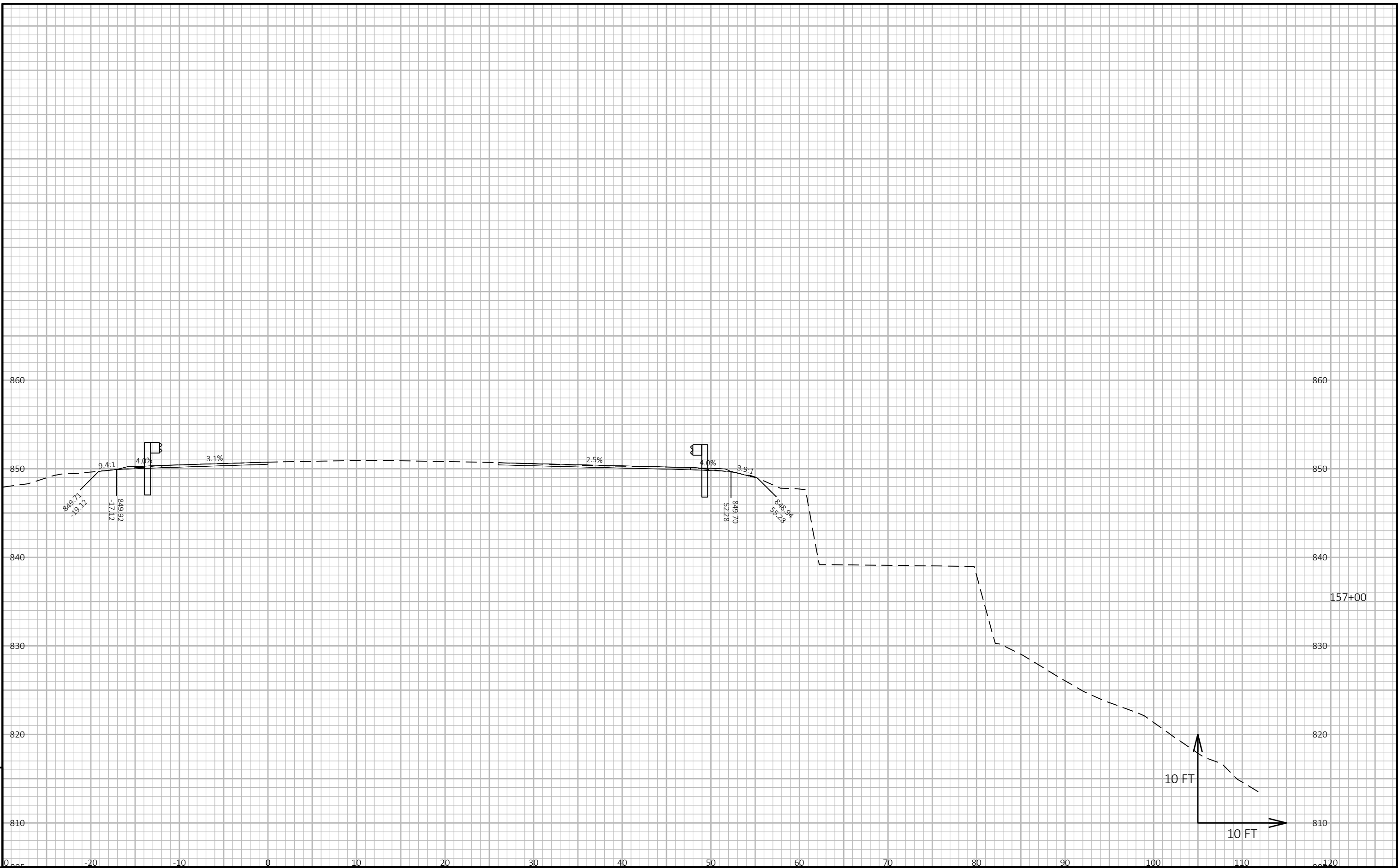
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PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: I-94 EASTBOUND	SHEET 516	E
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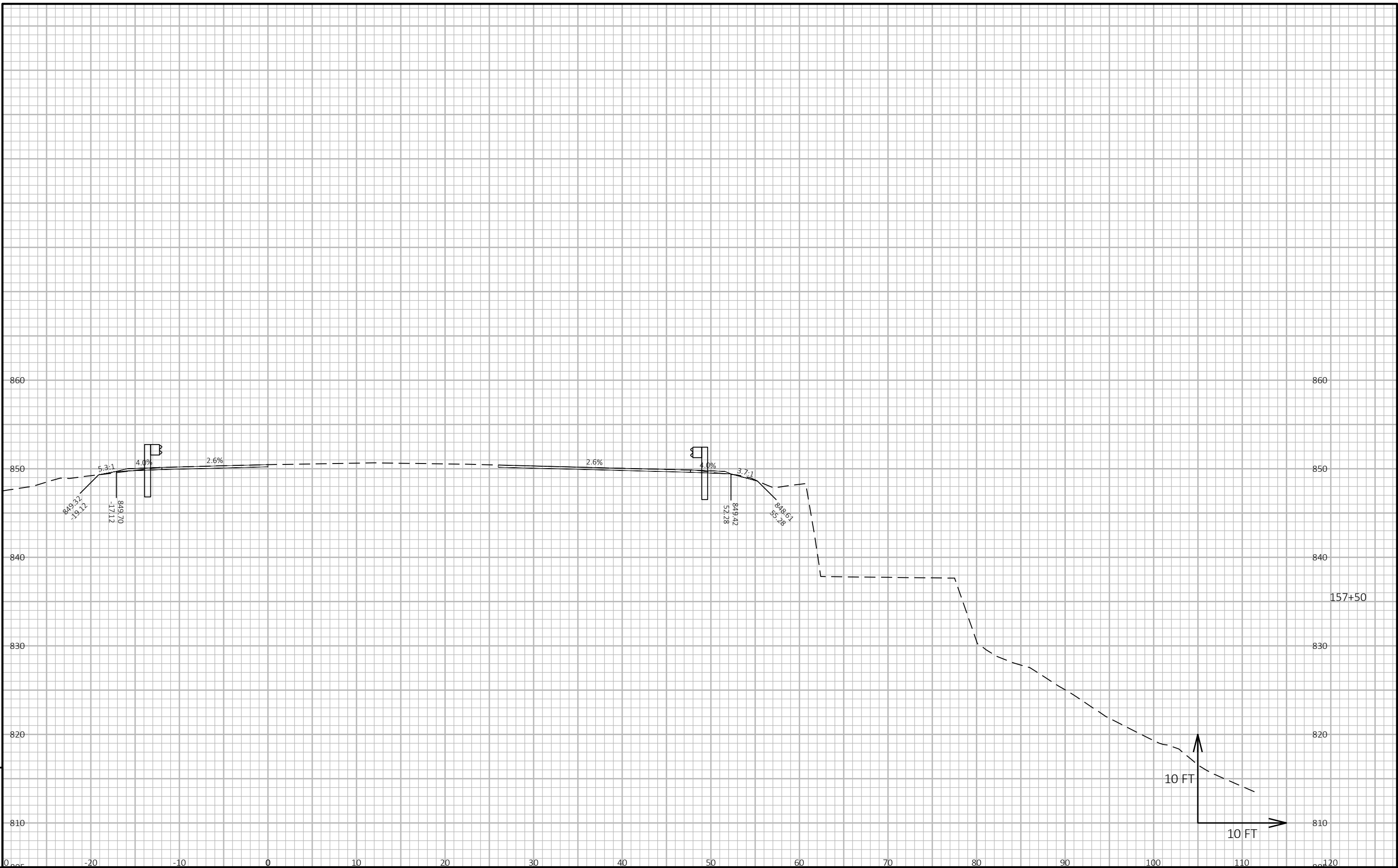






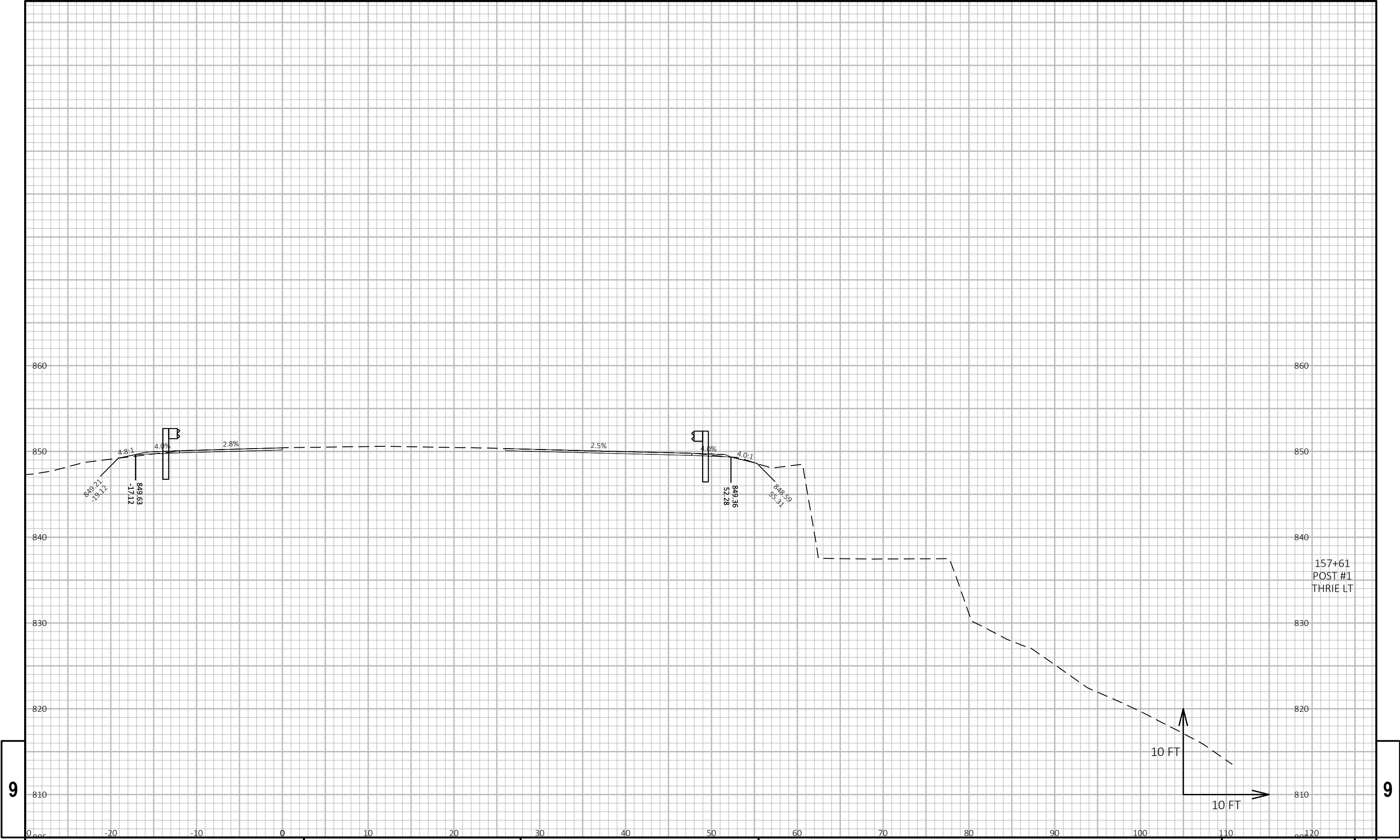
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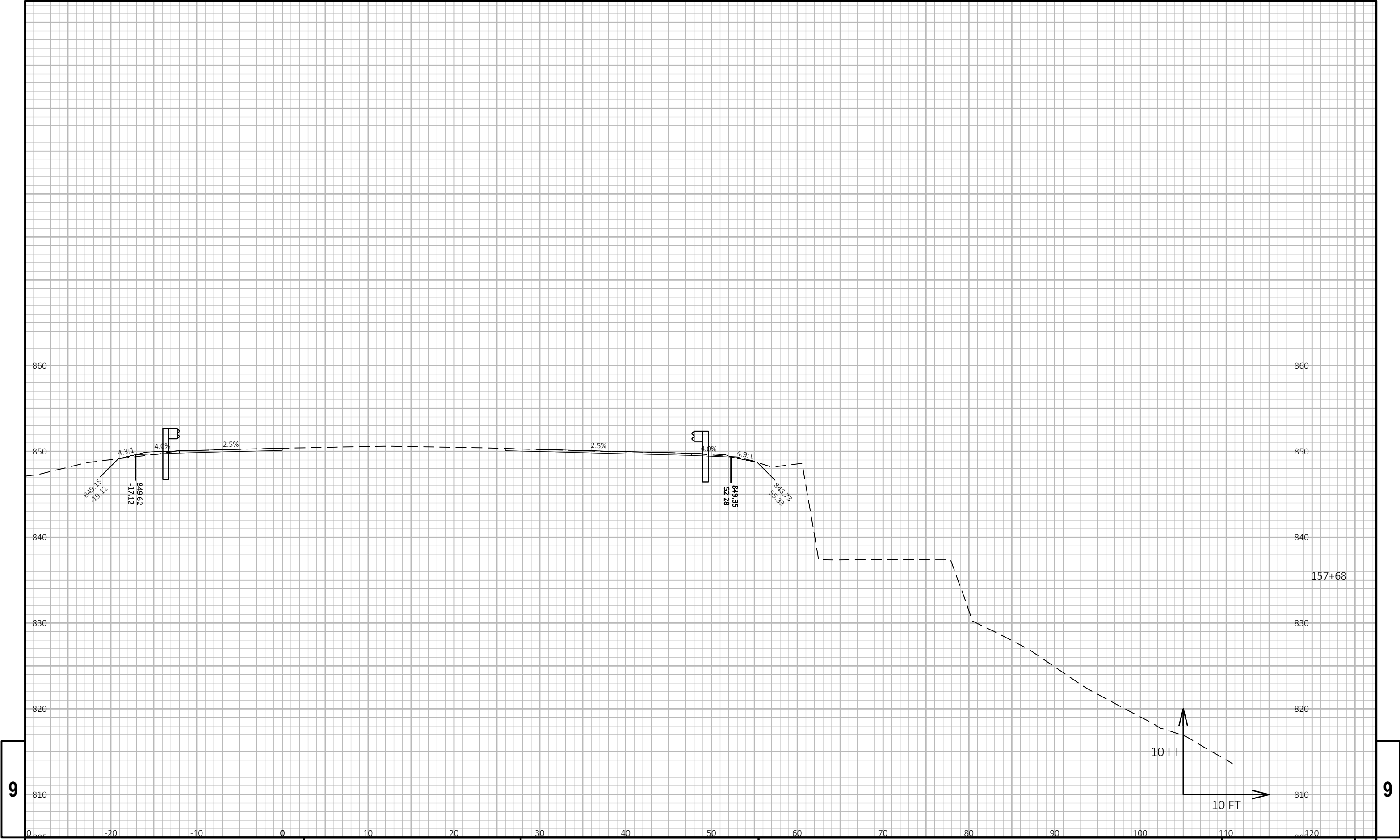
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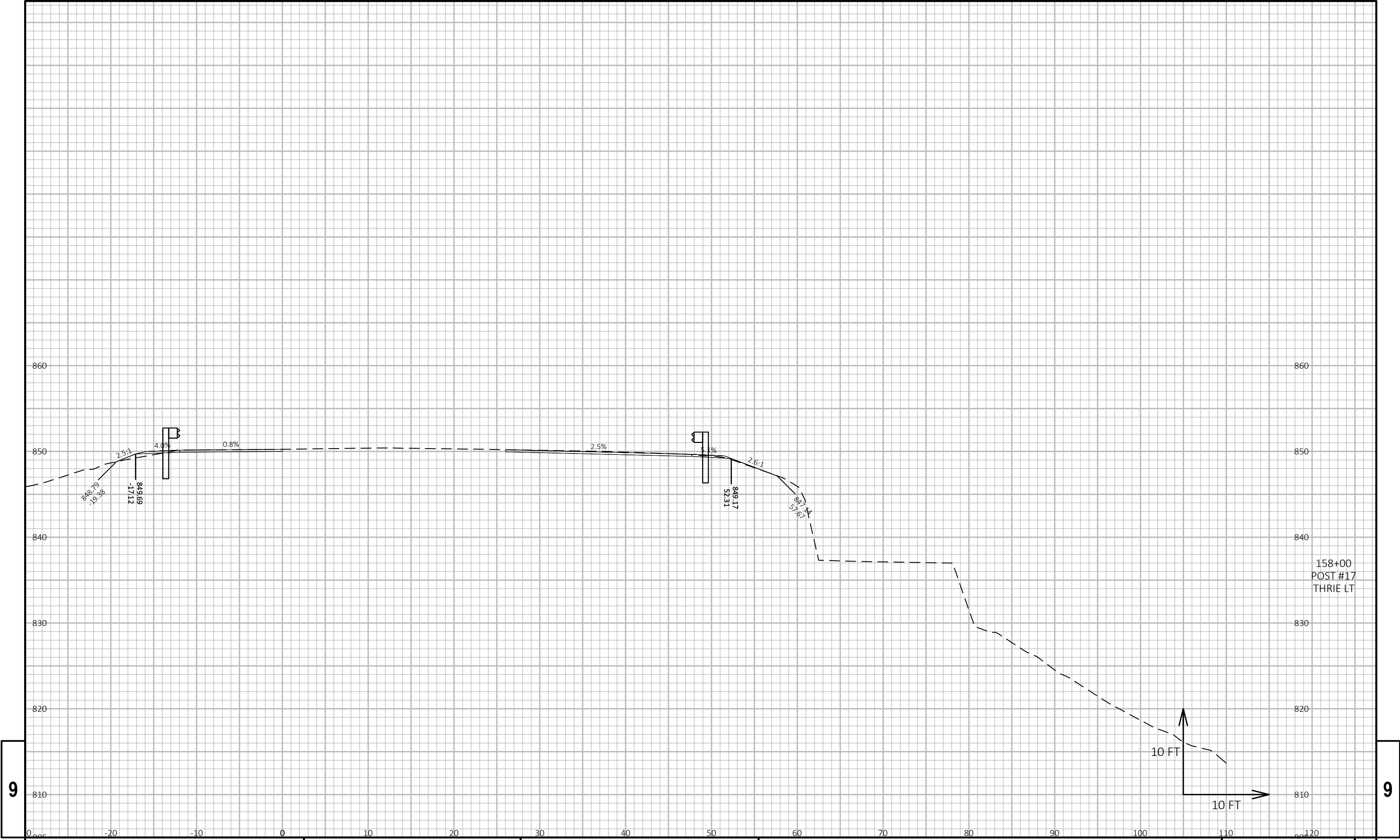
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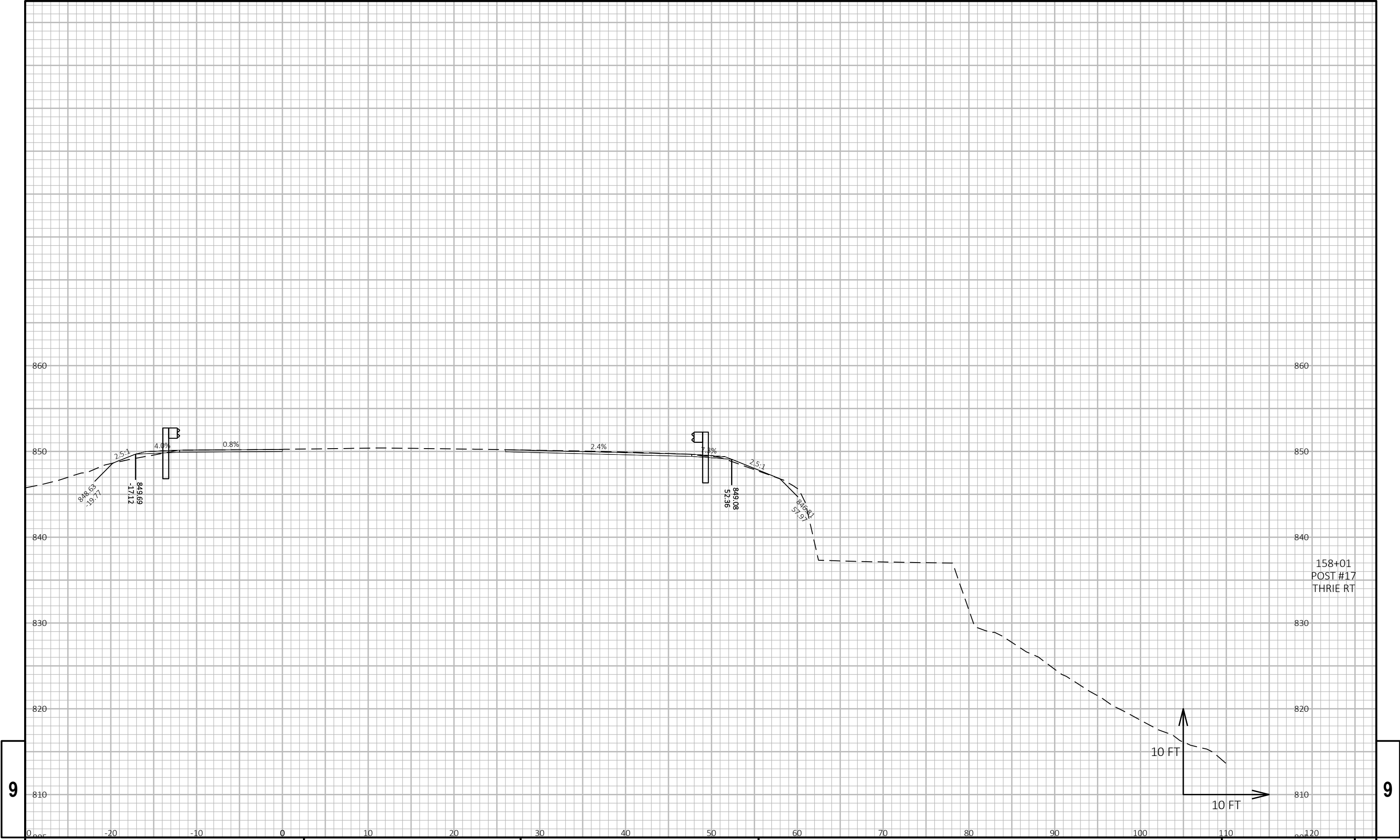
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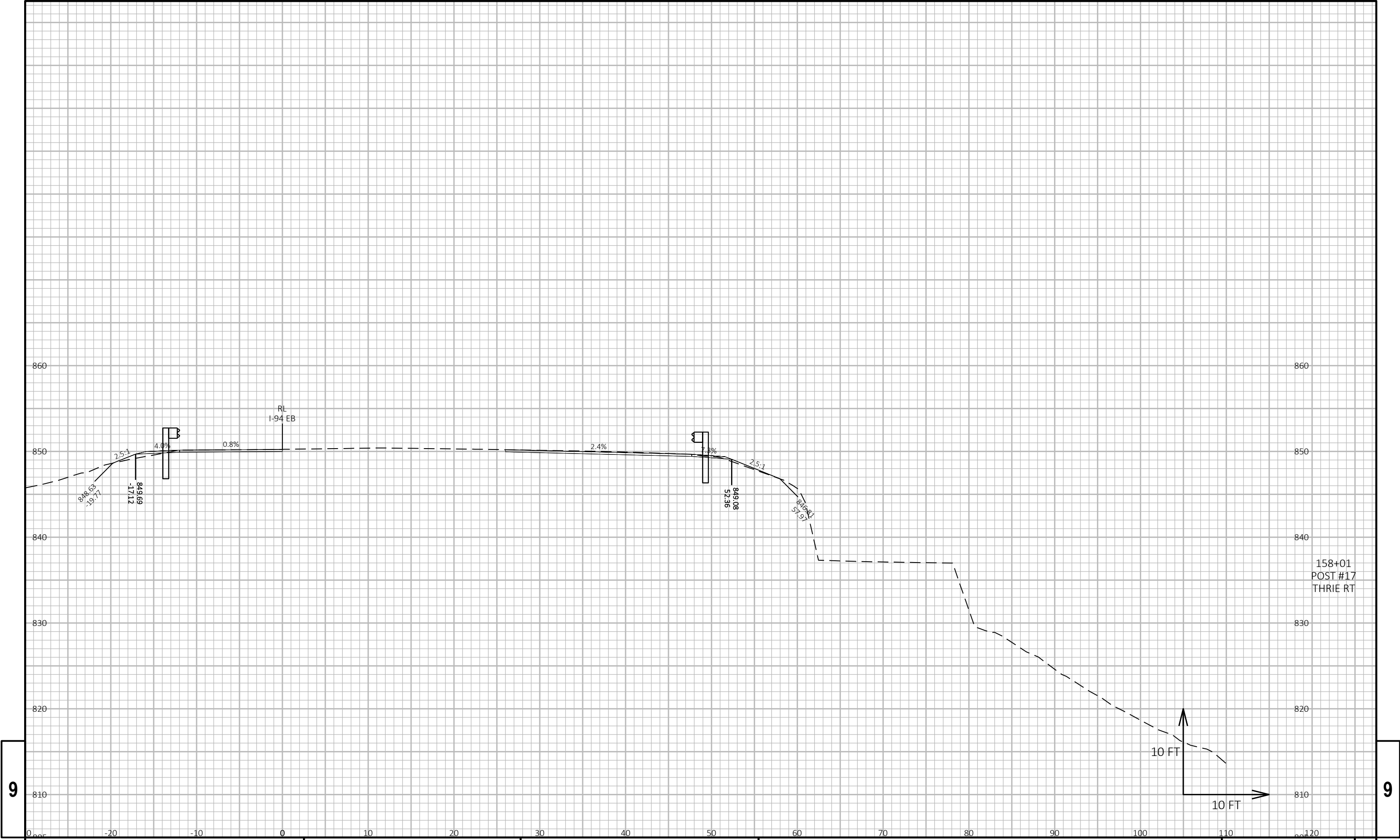
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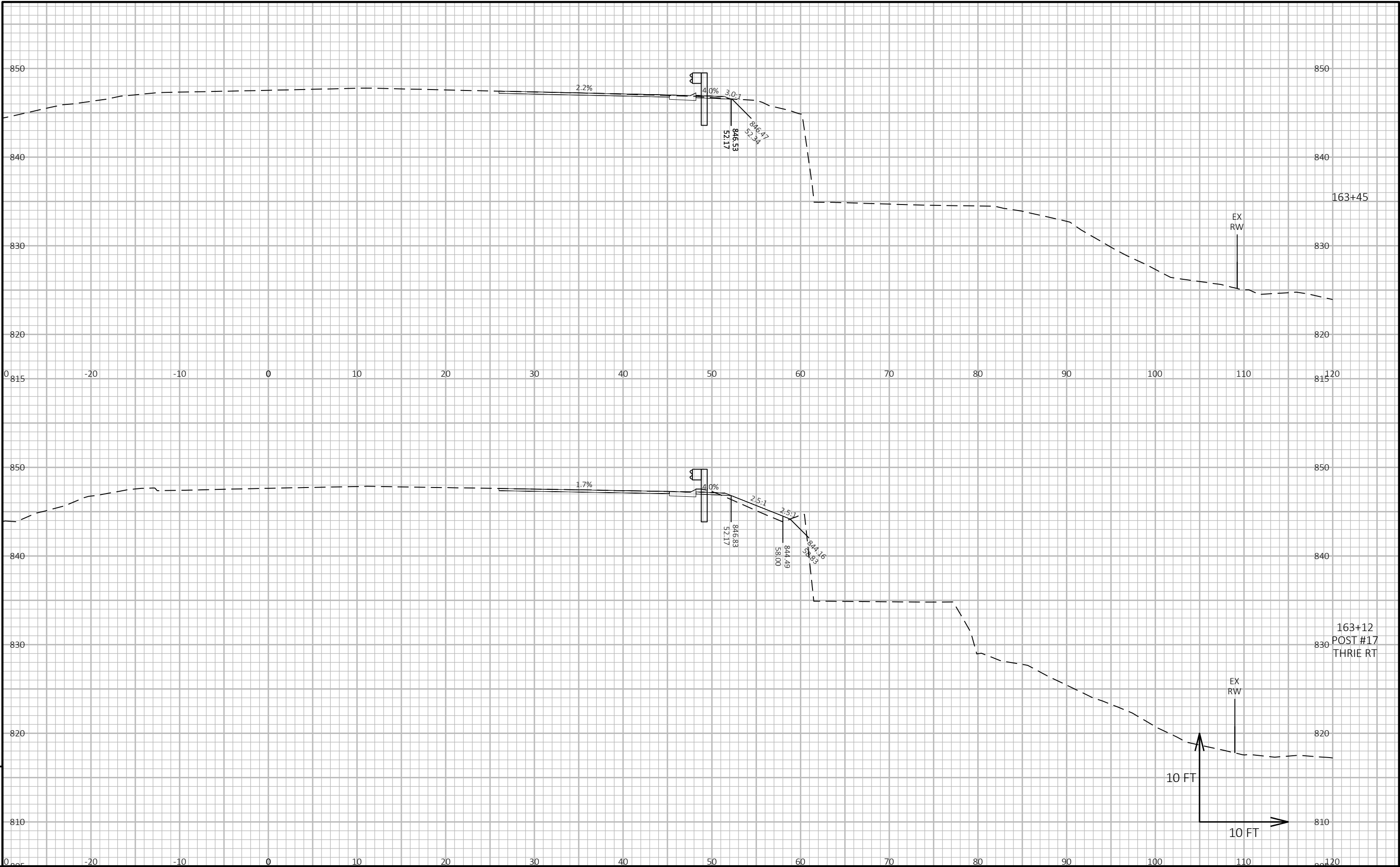
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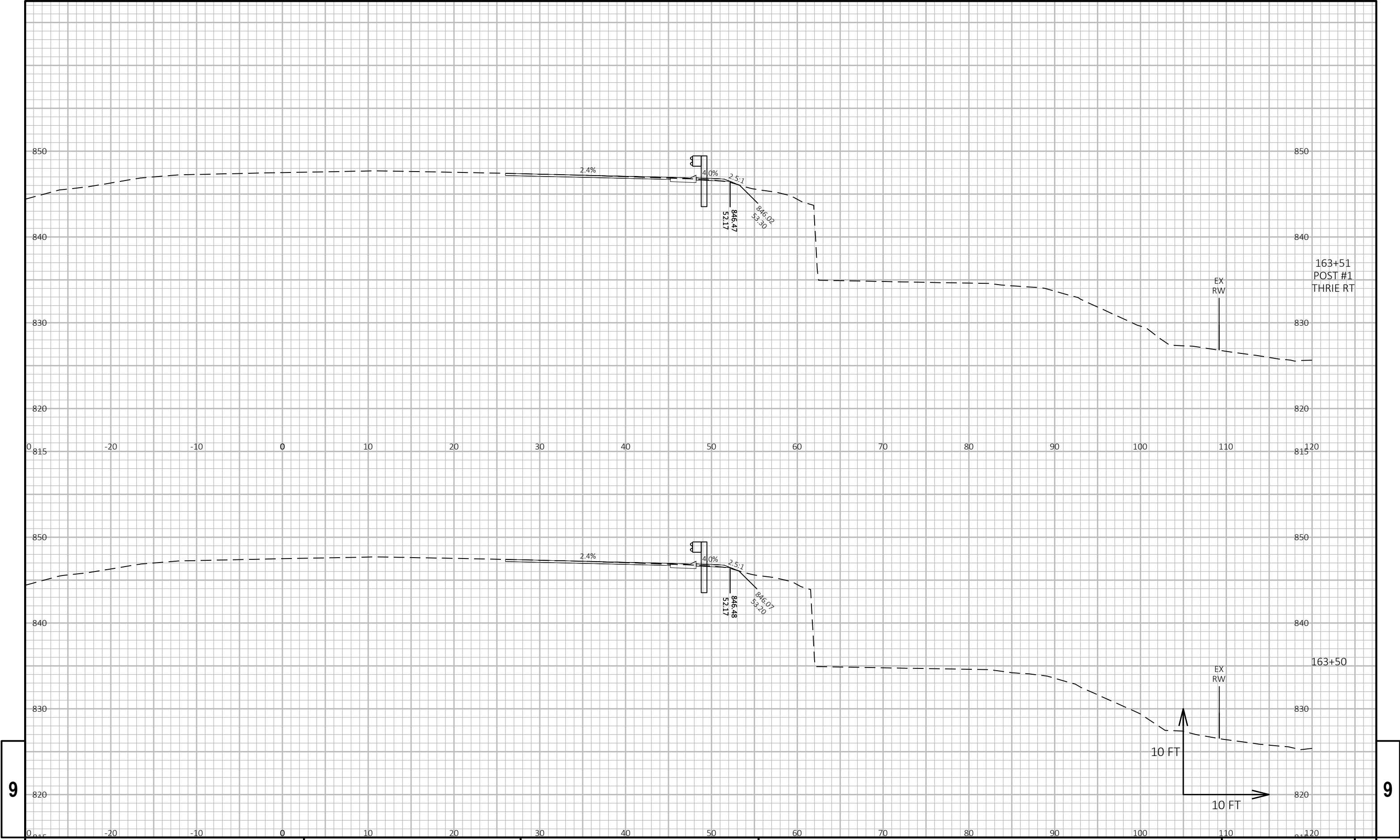
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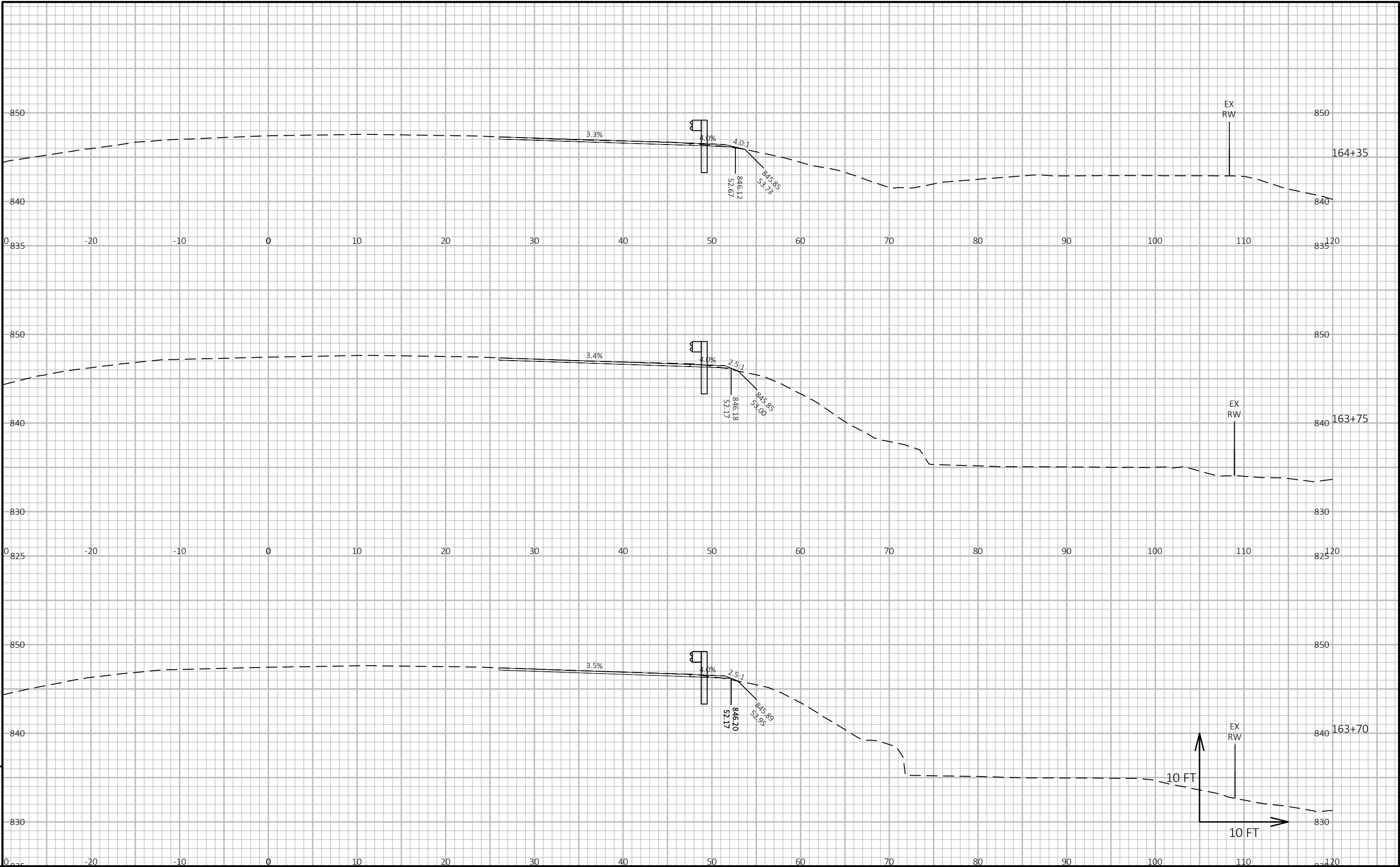
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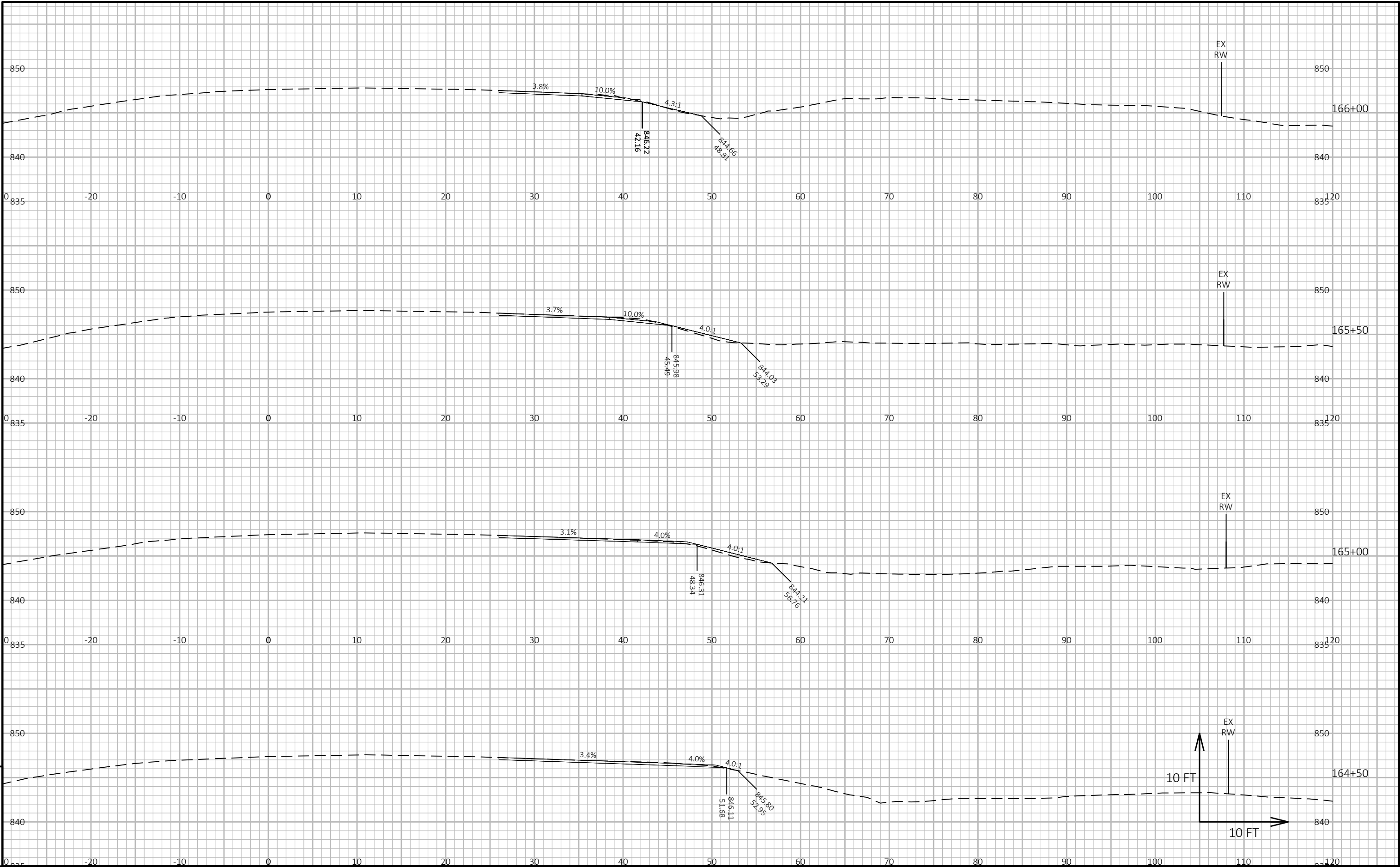
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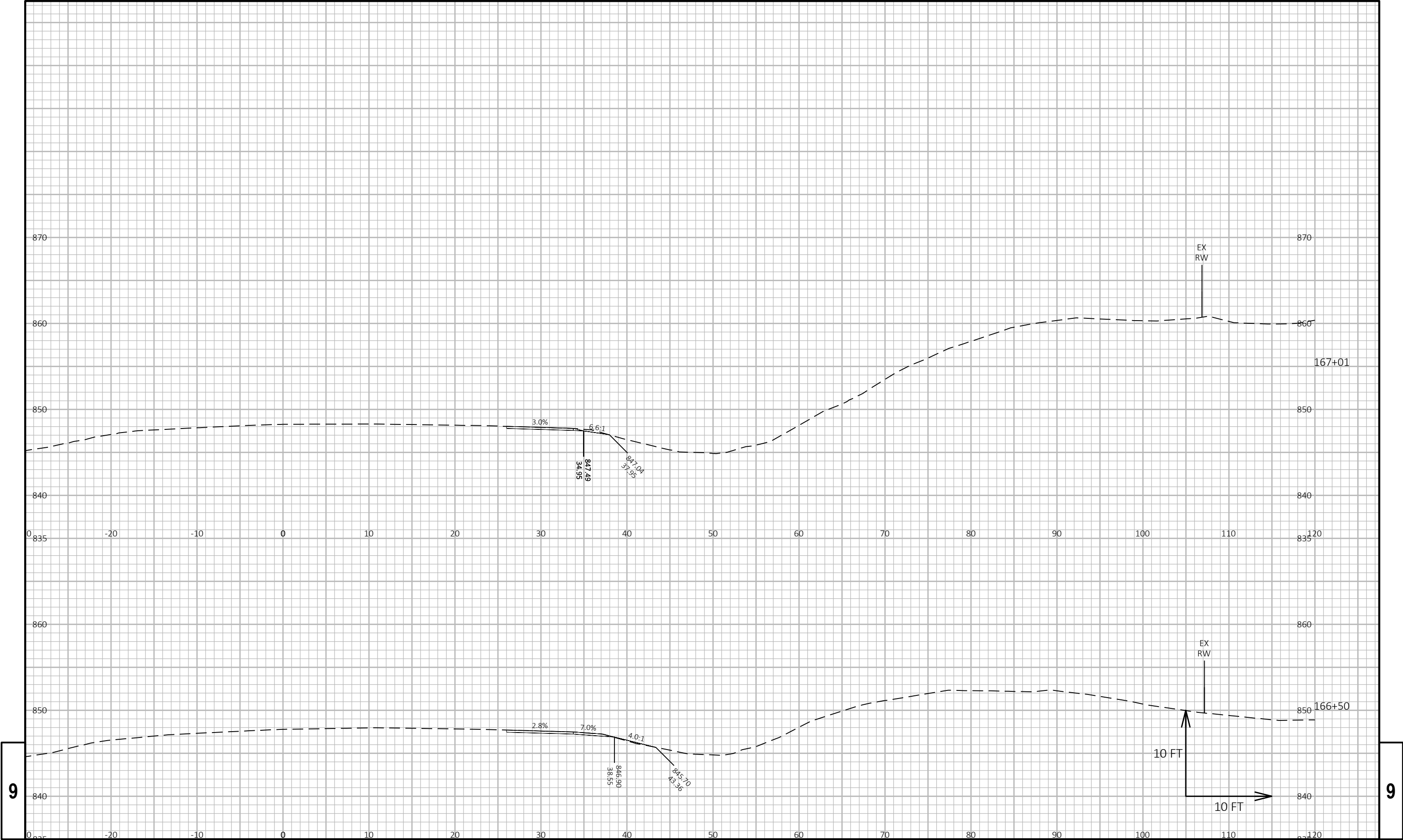
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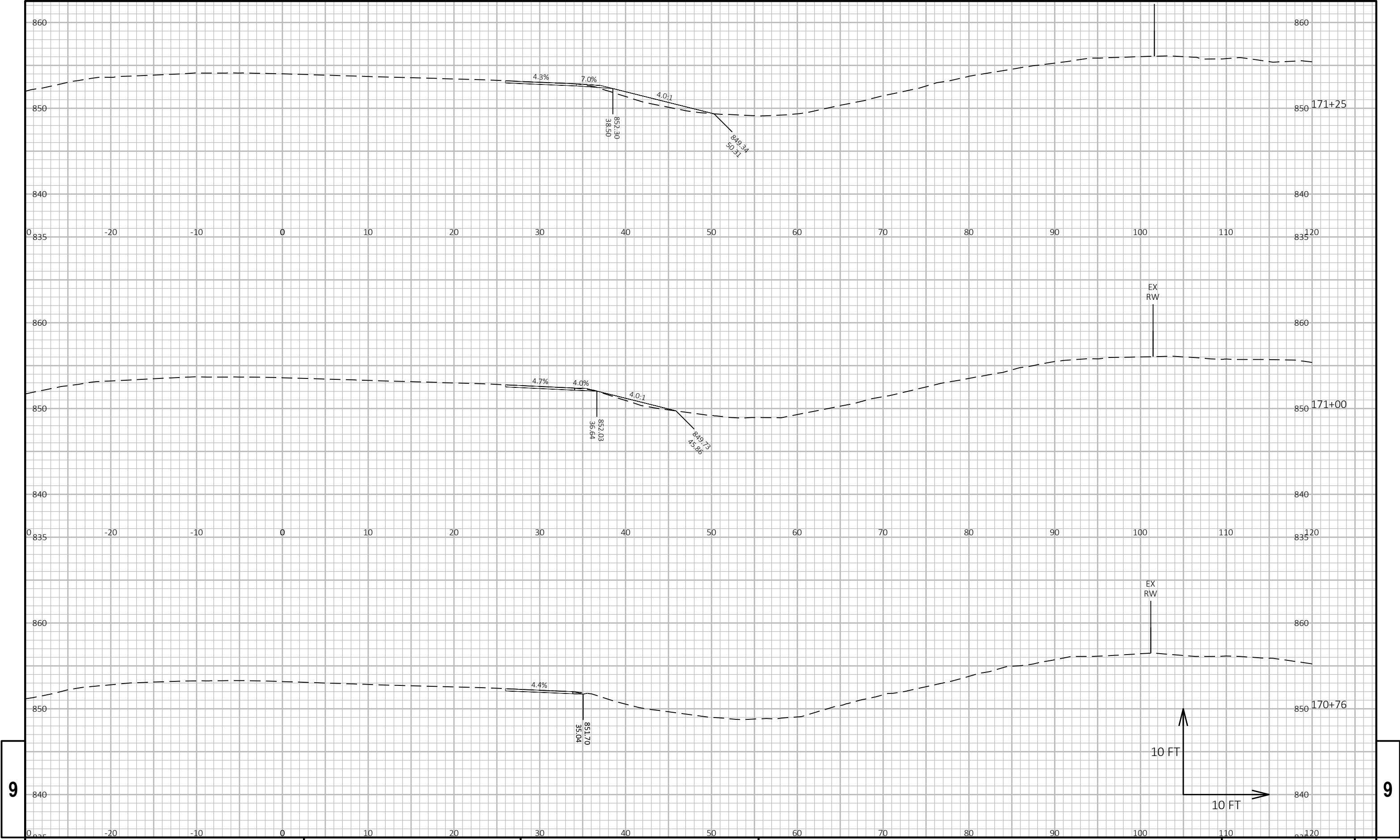
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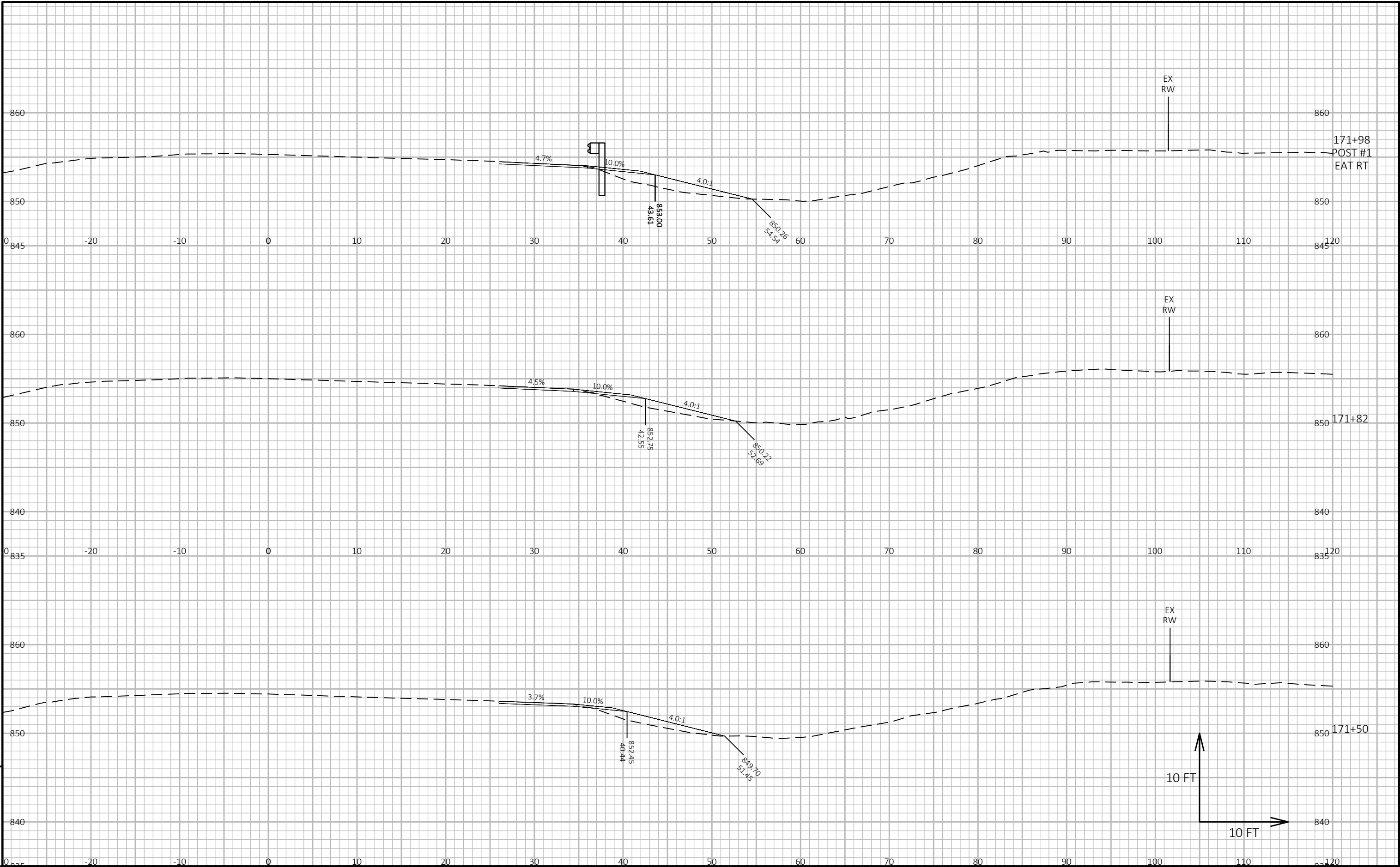
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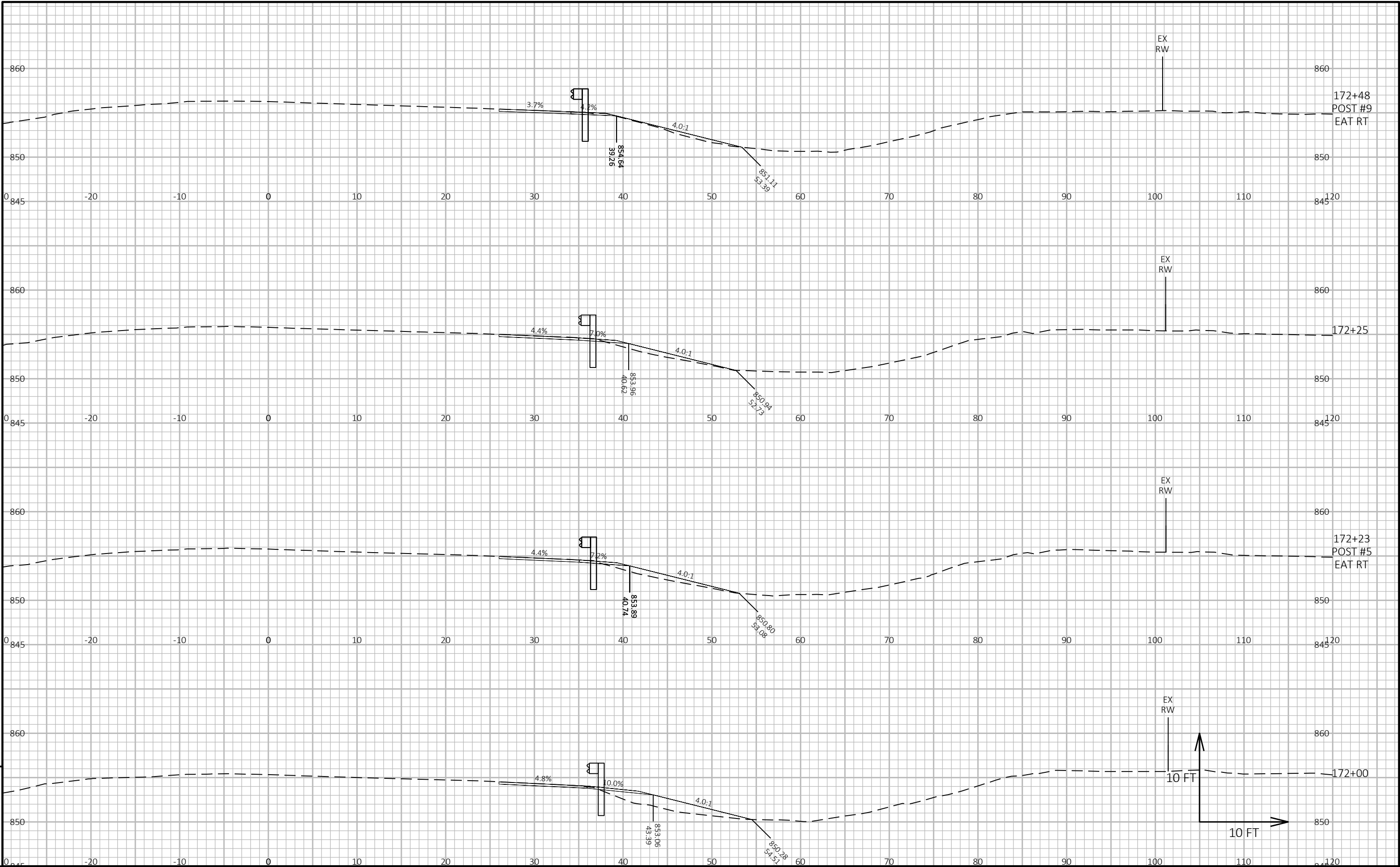
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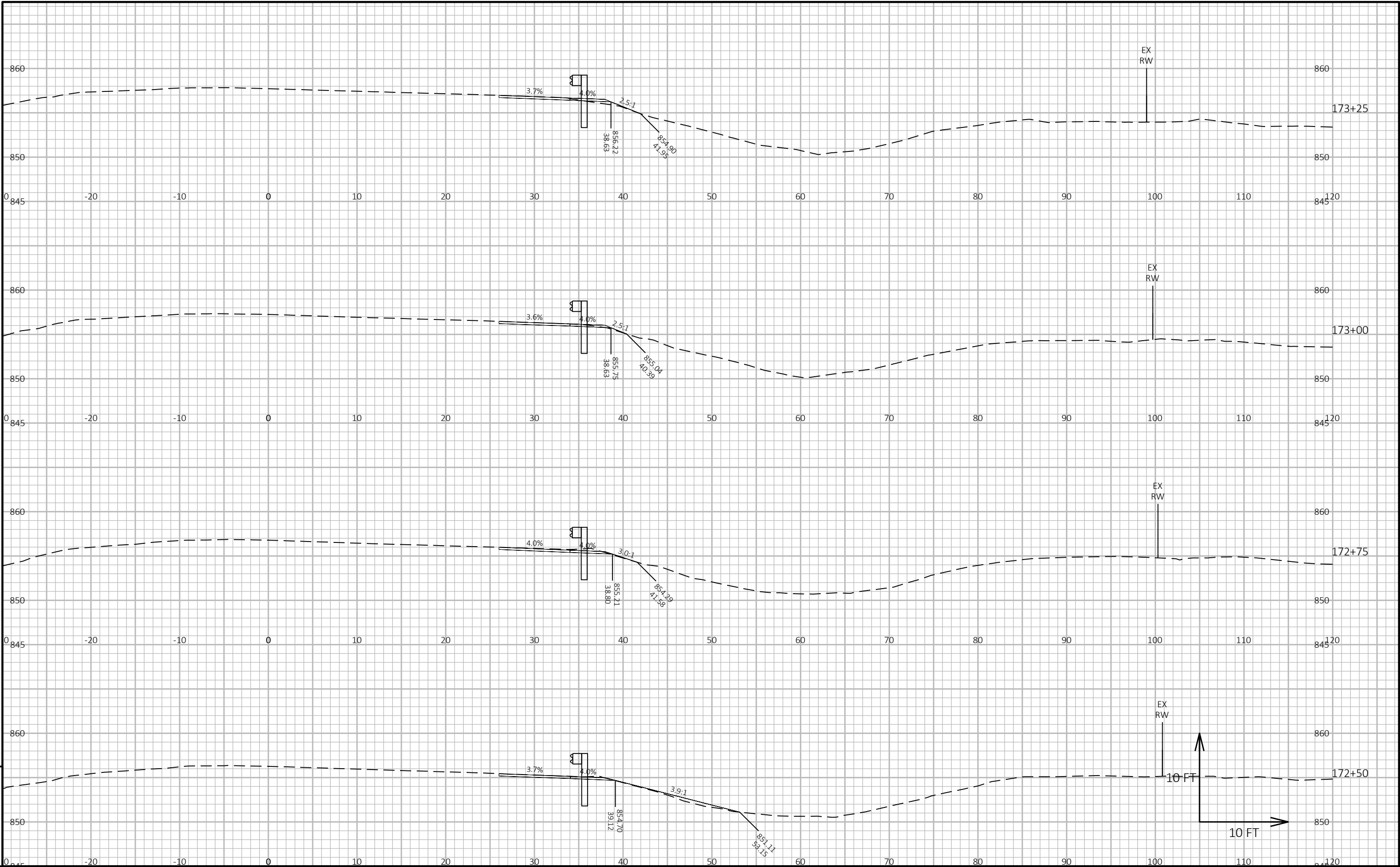
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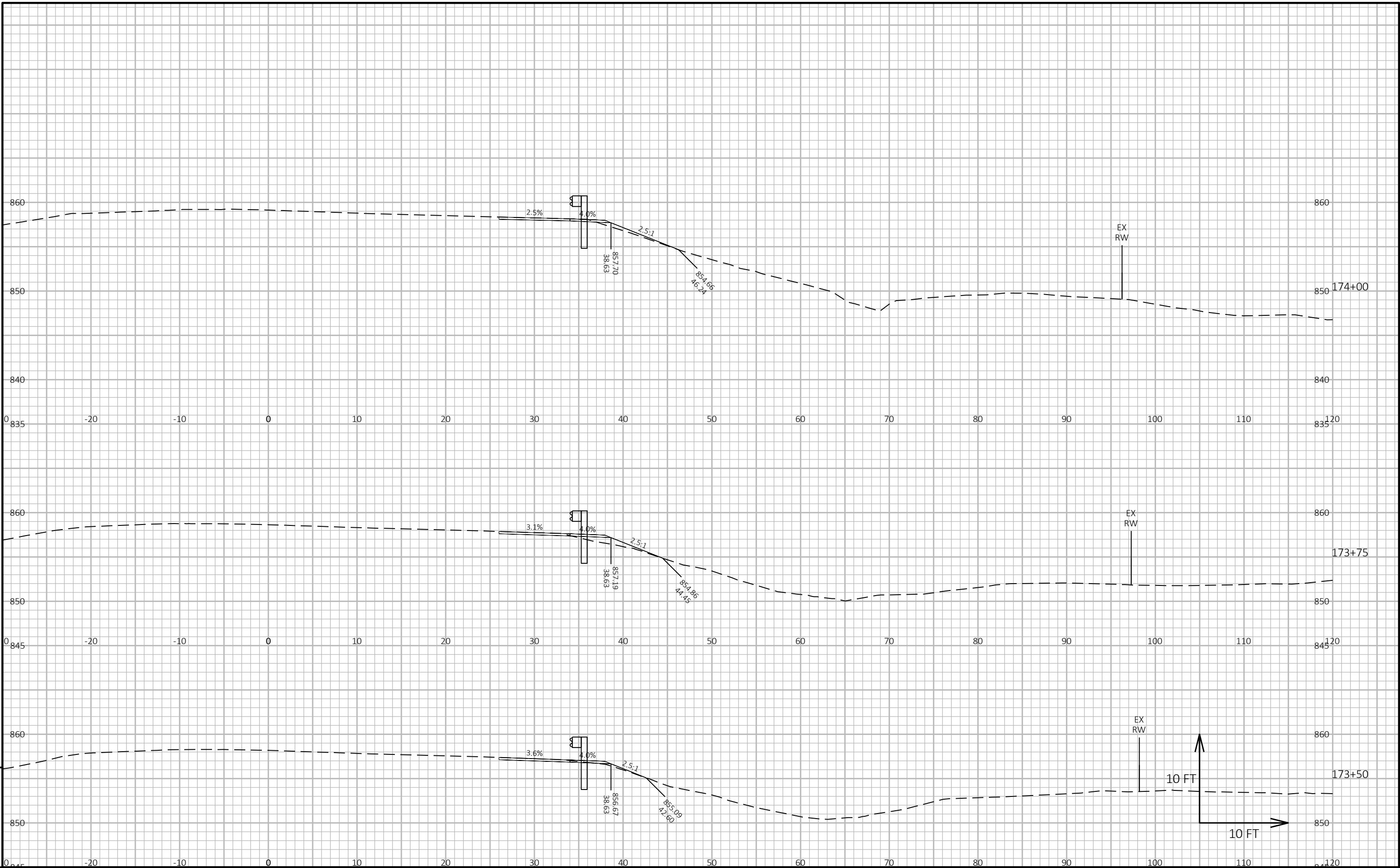
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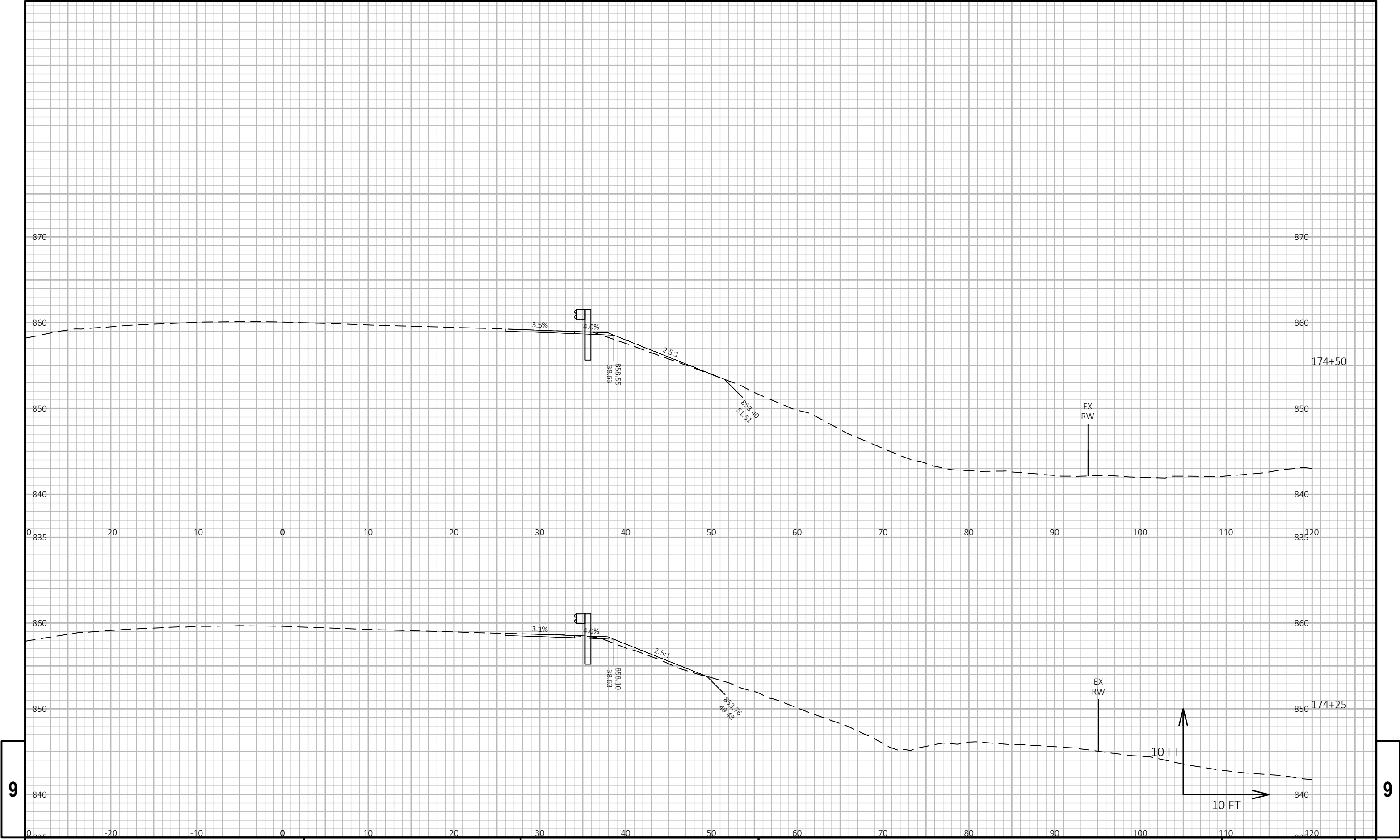
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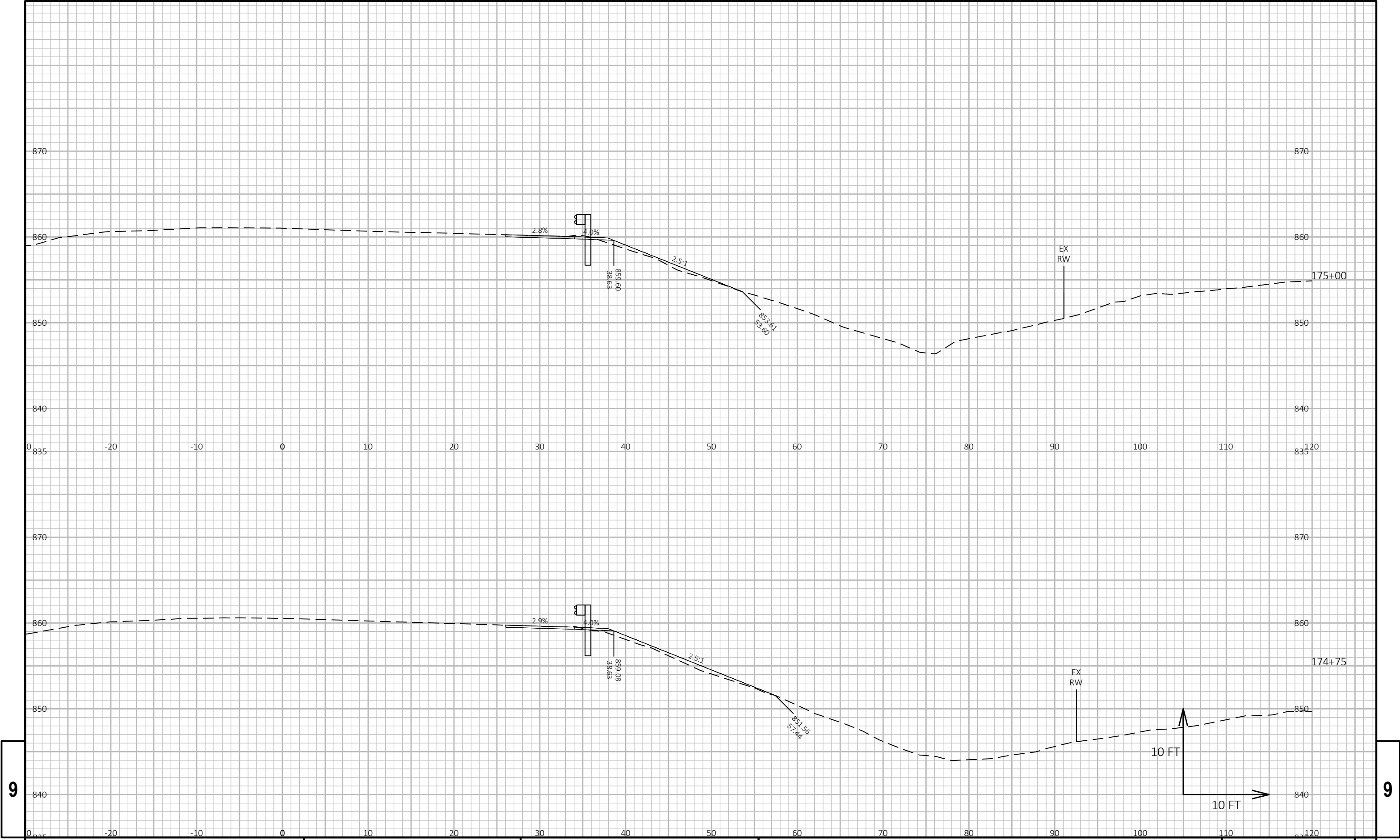
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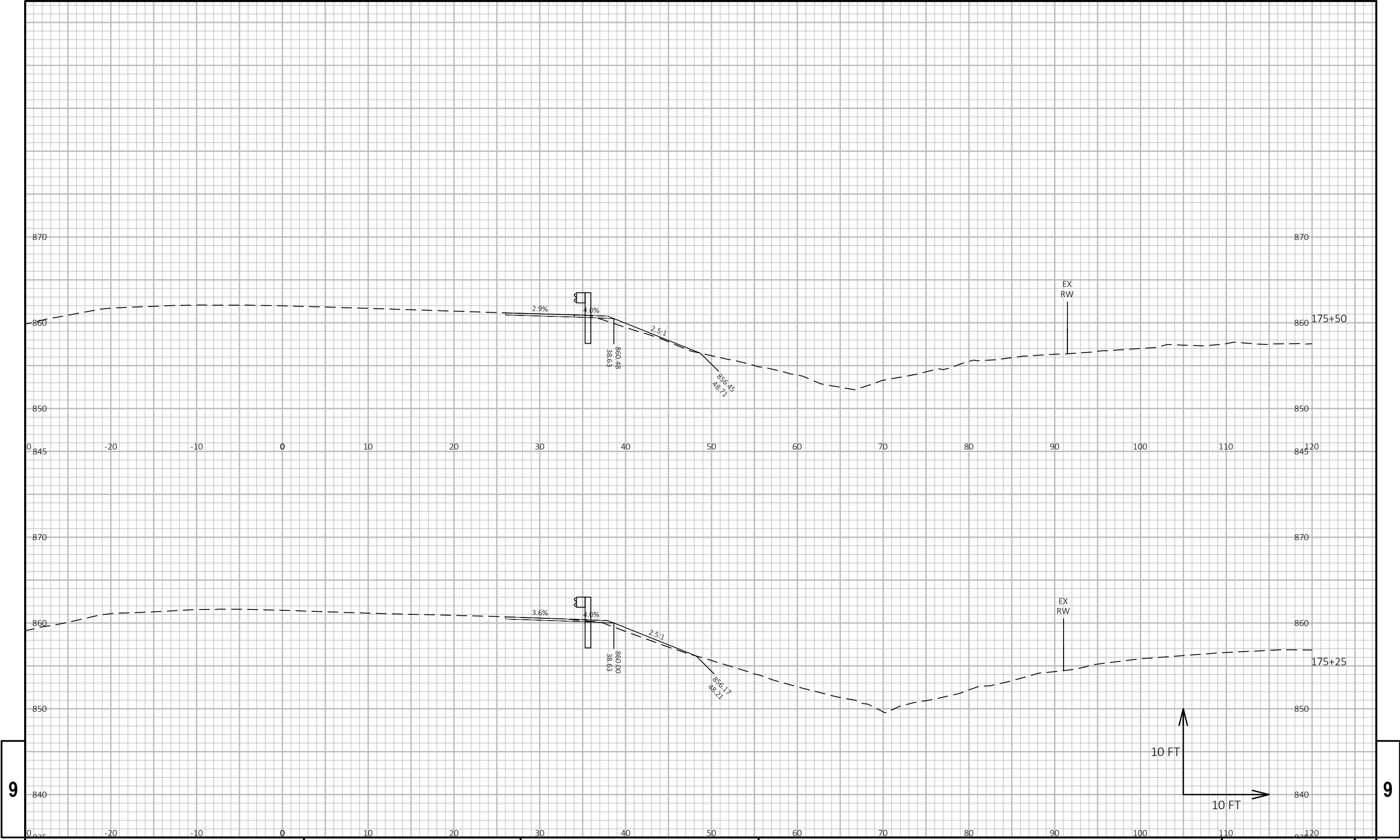




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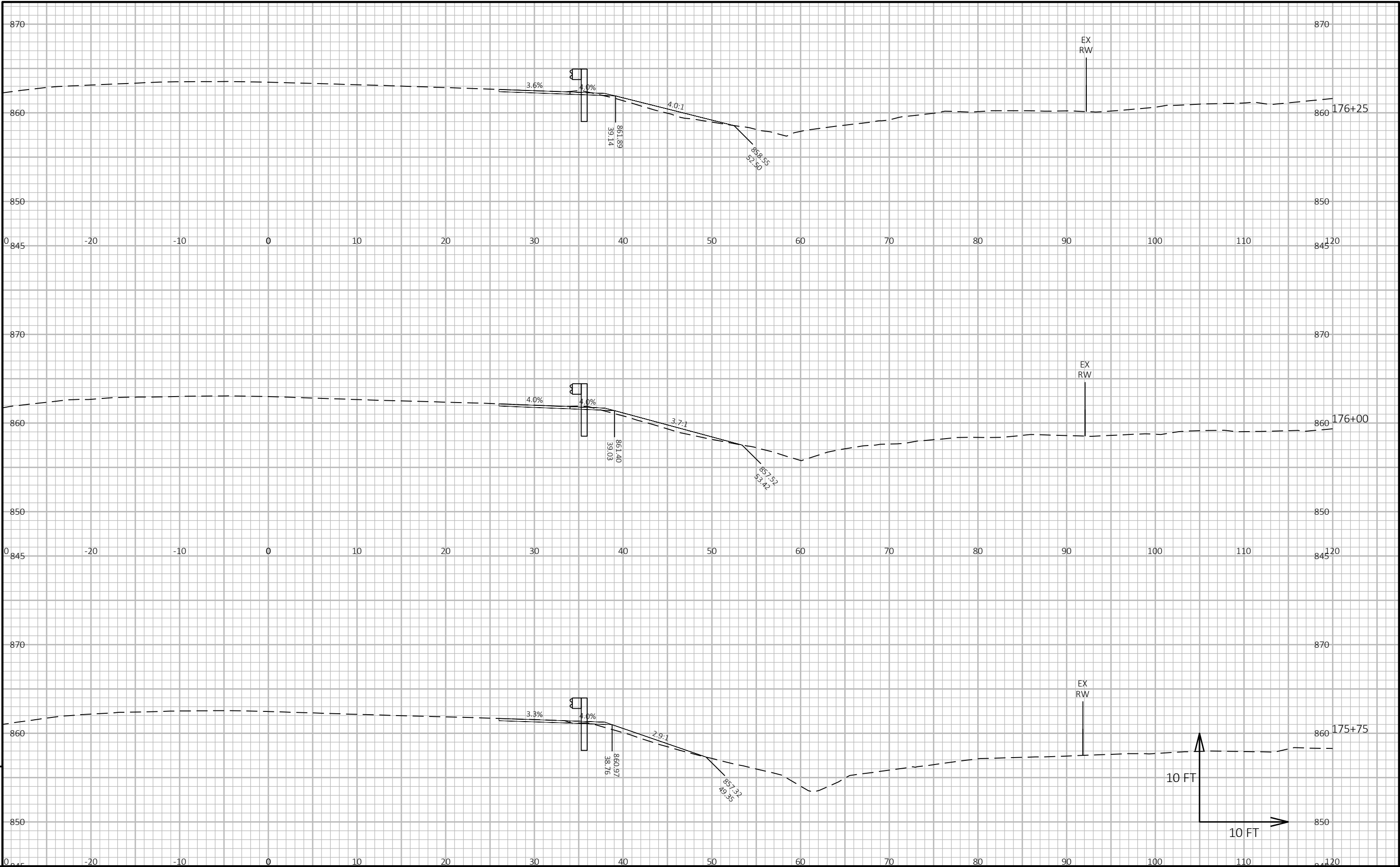
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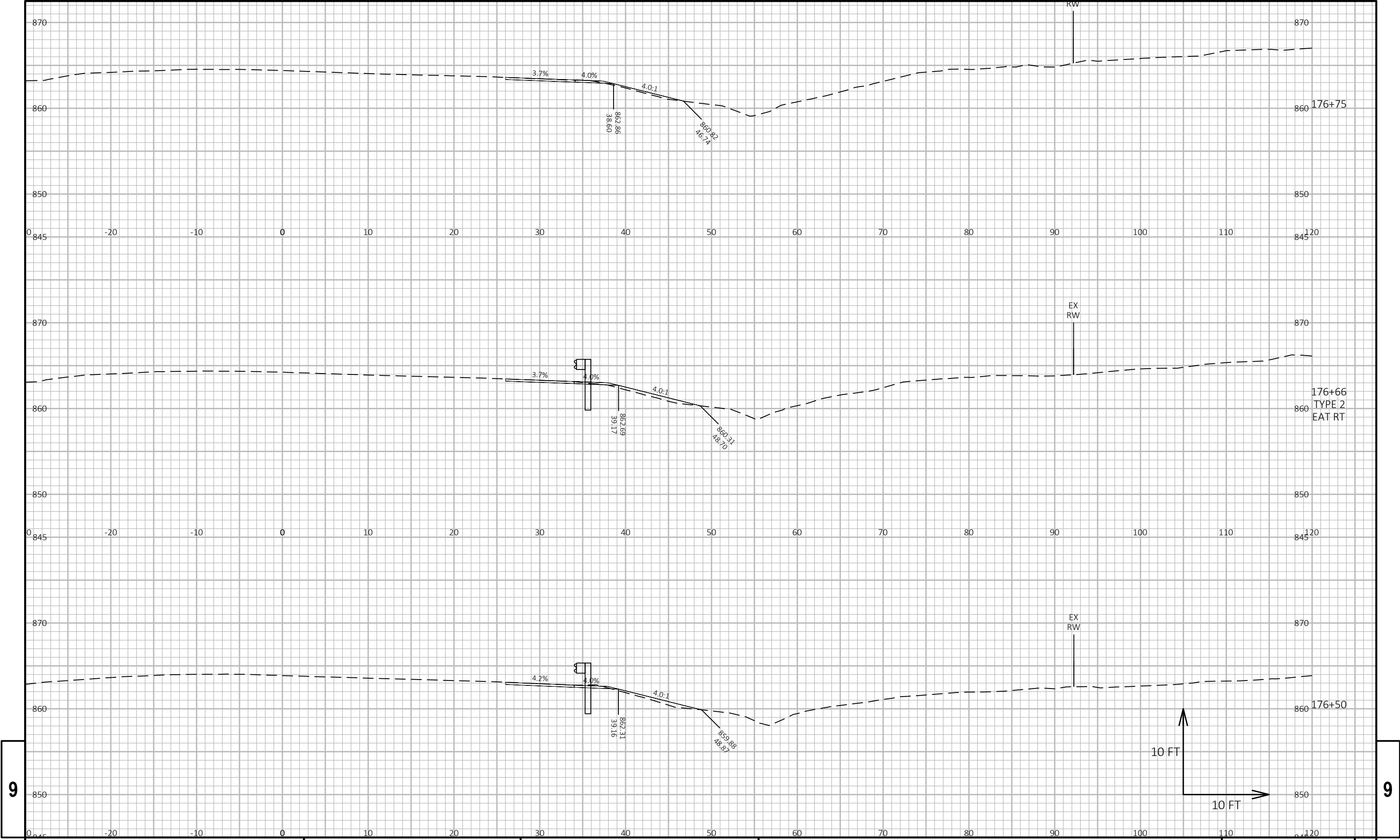
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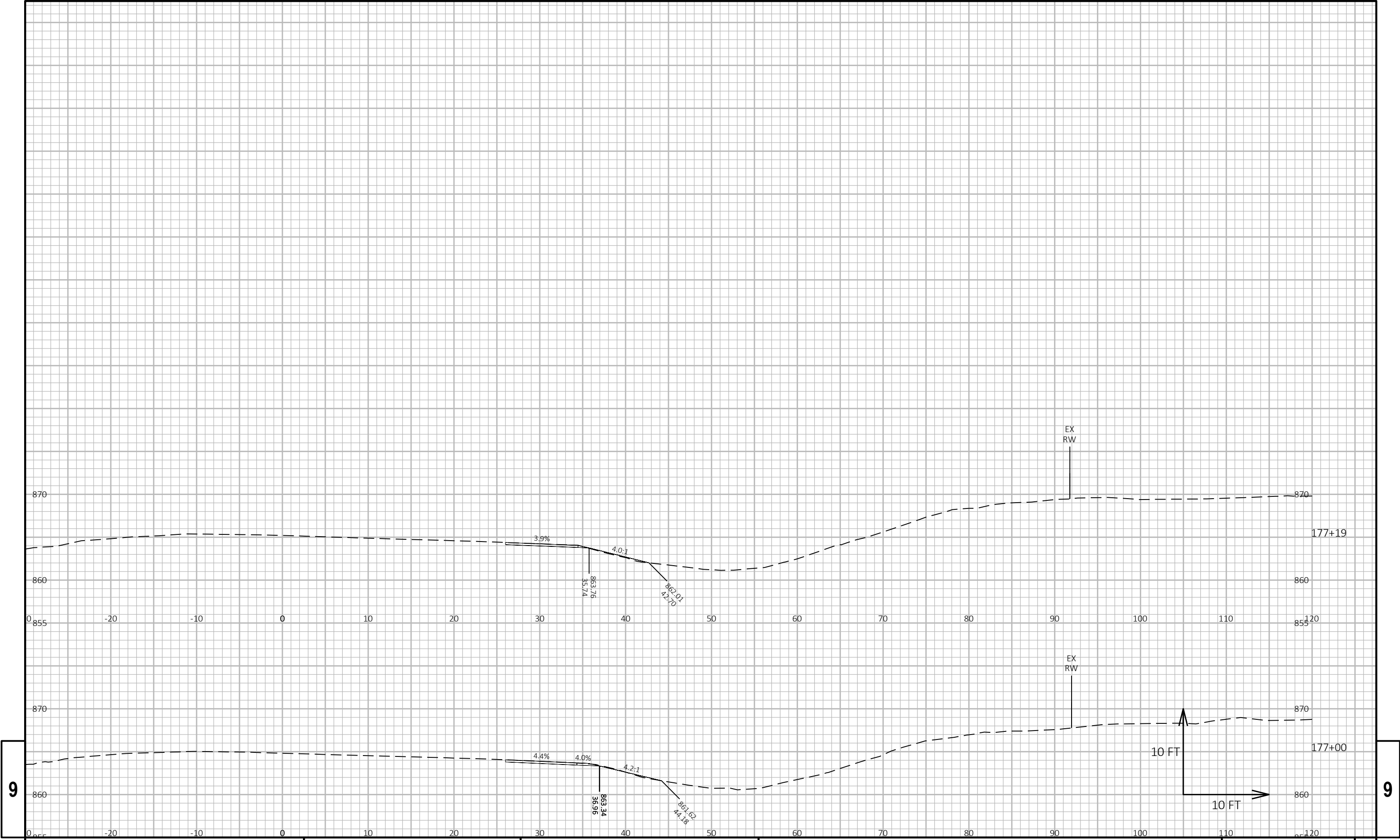
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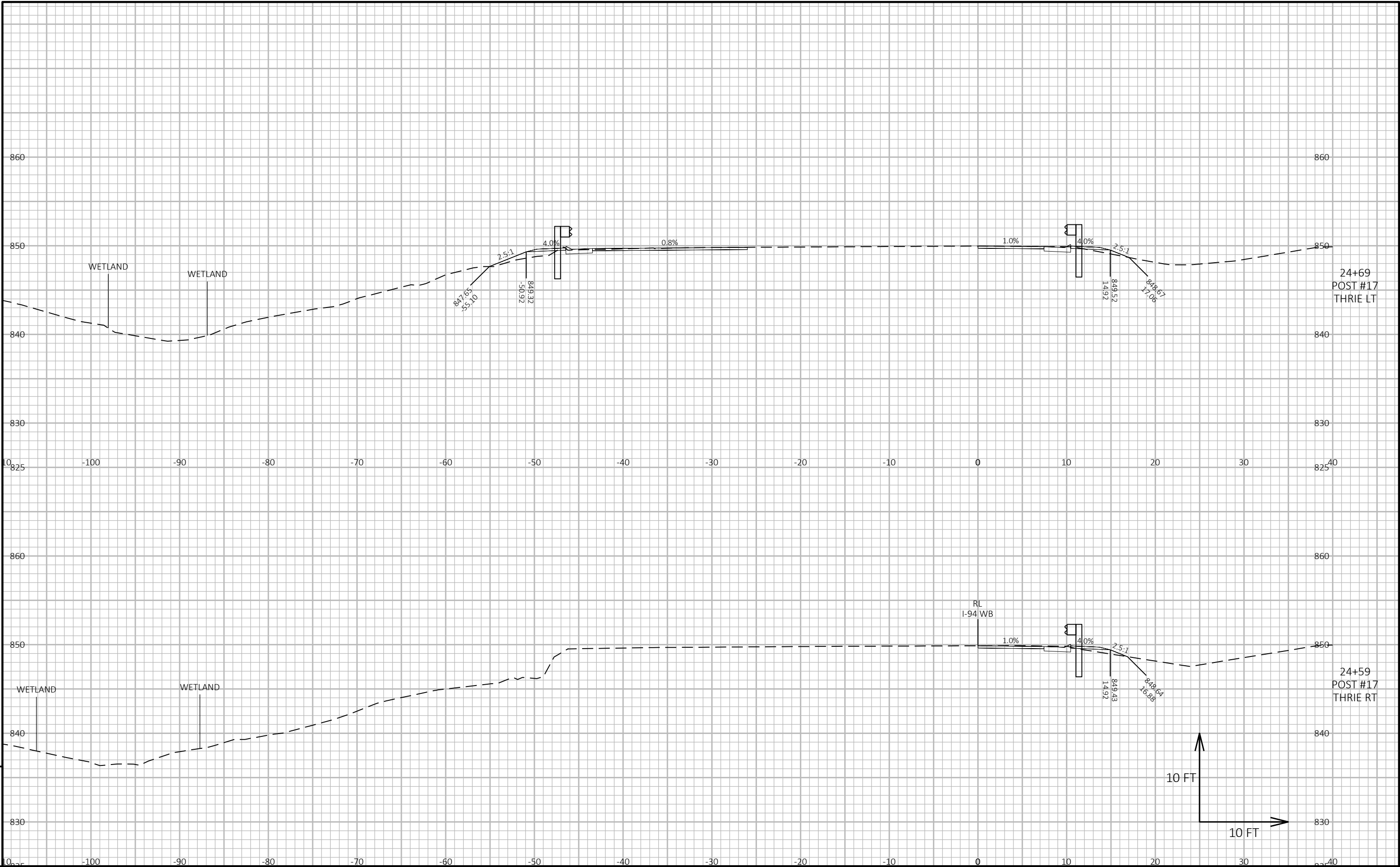
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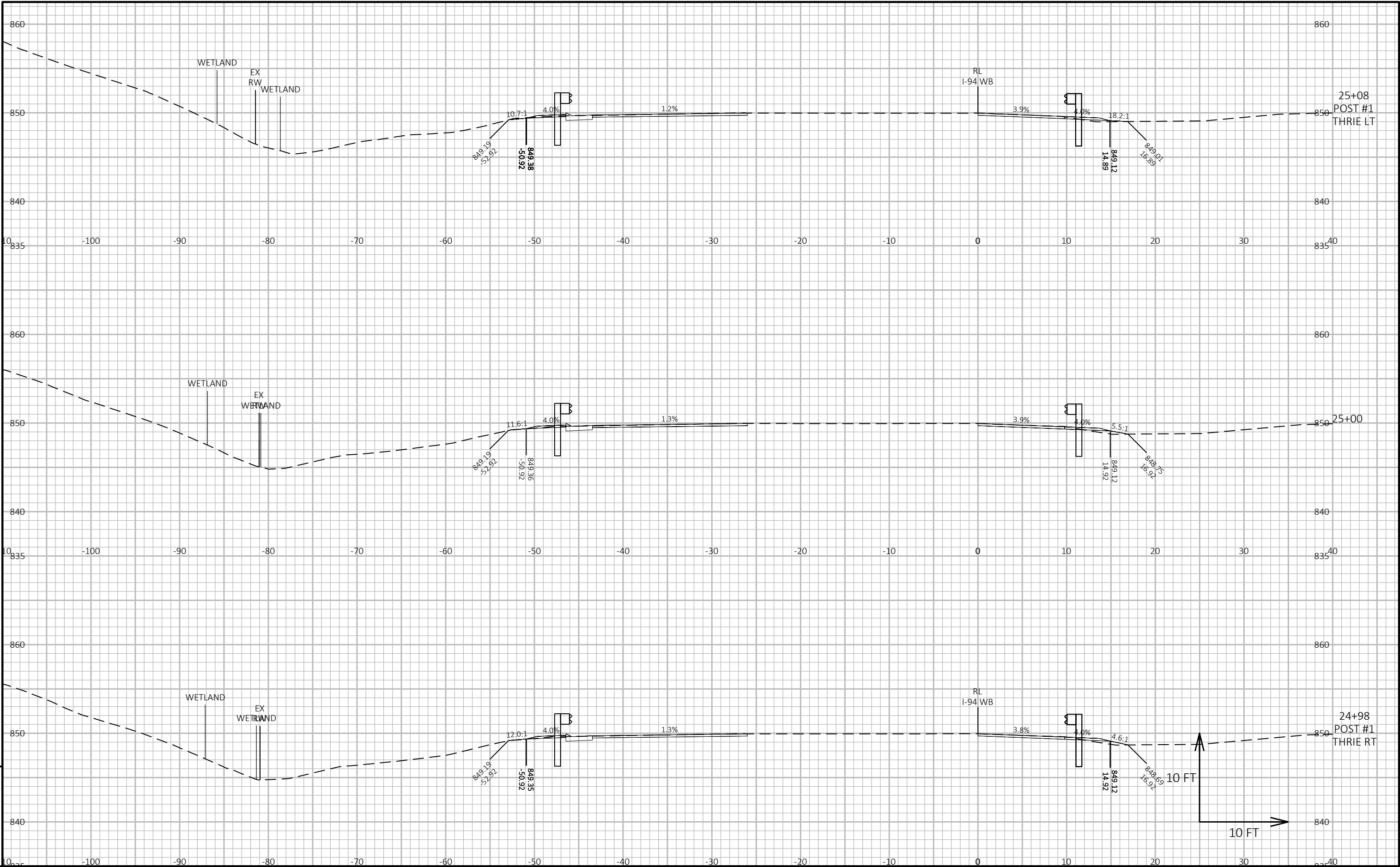
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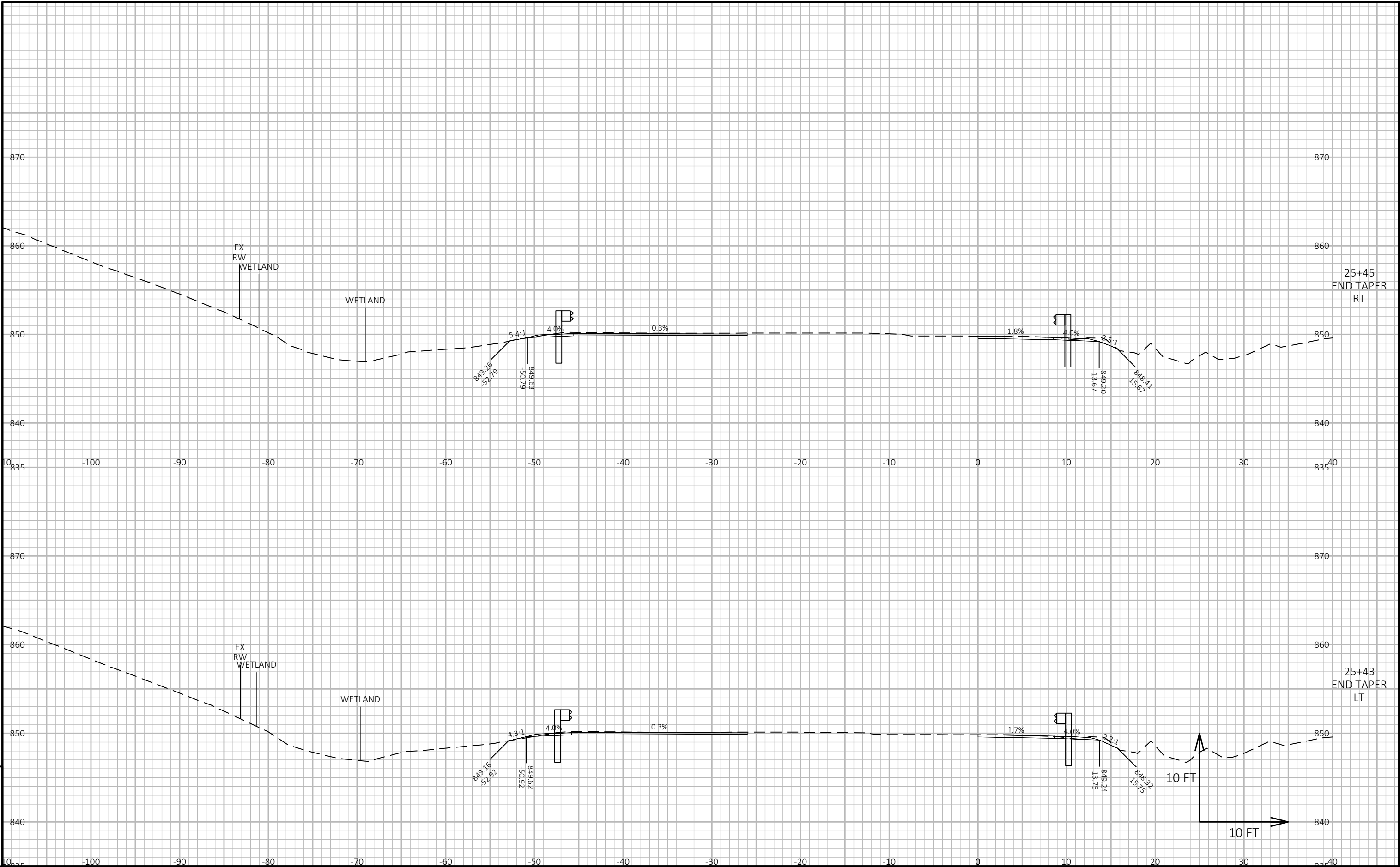


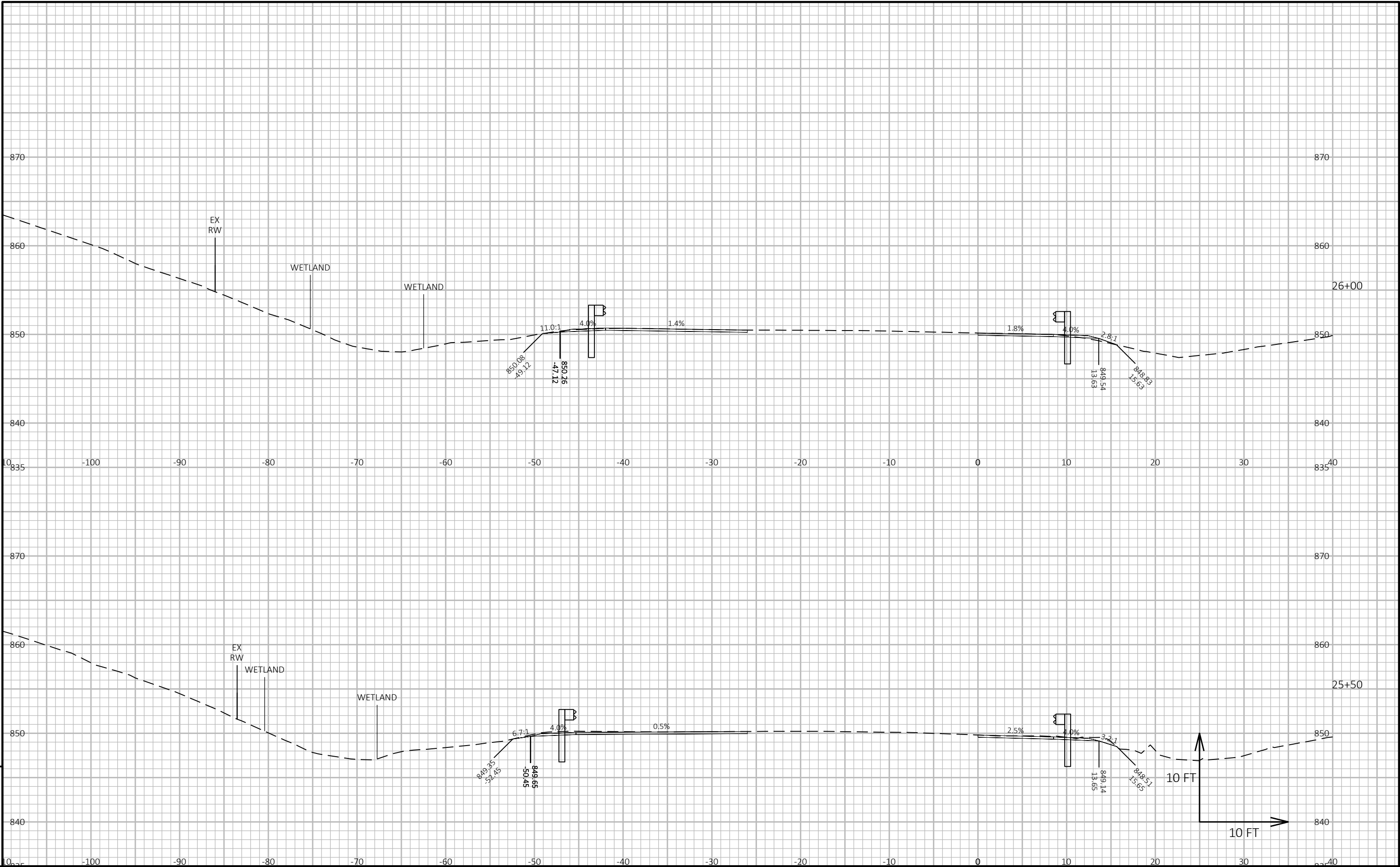
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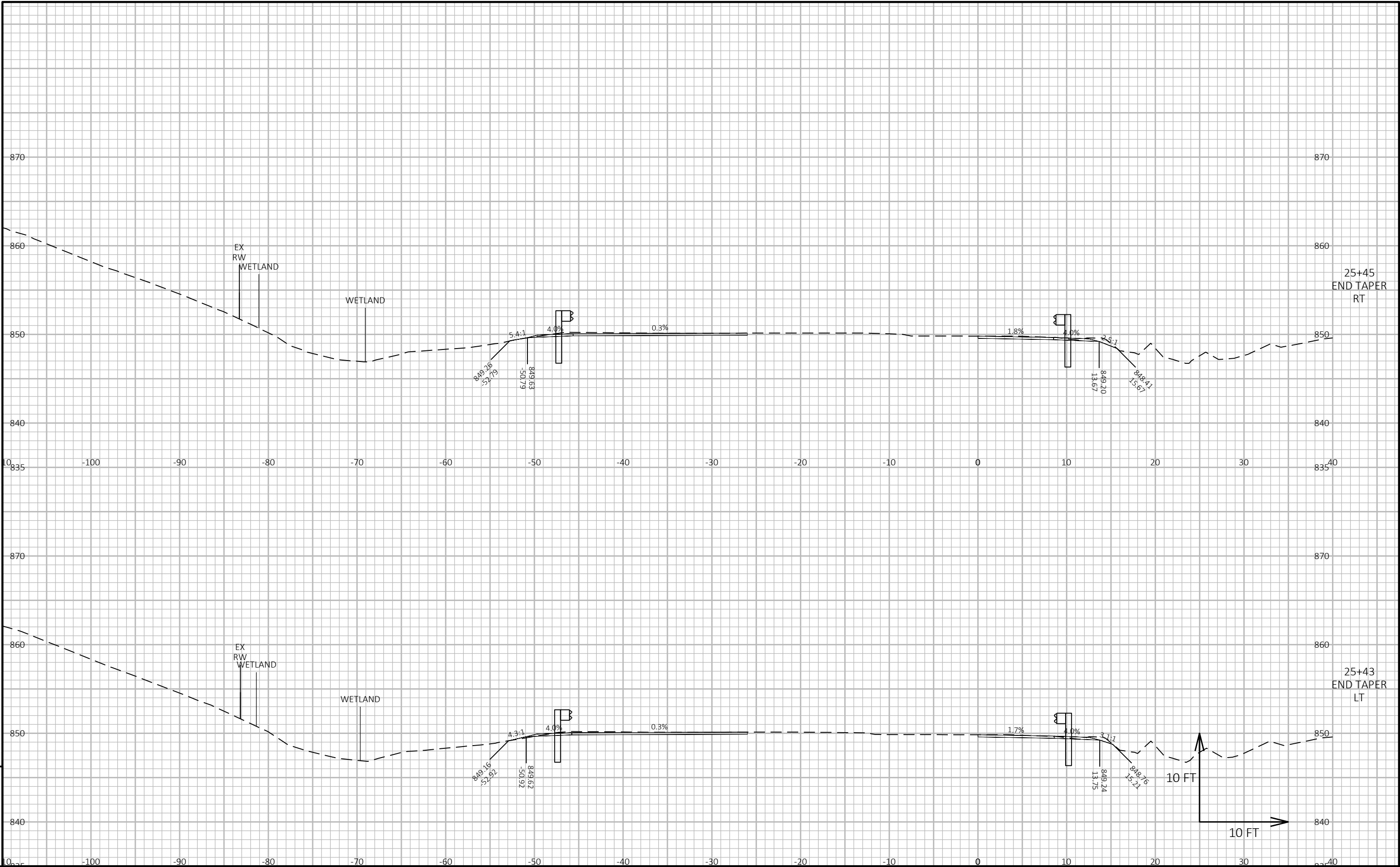
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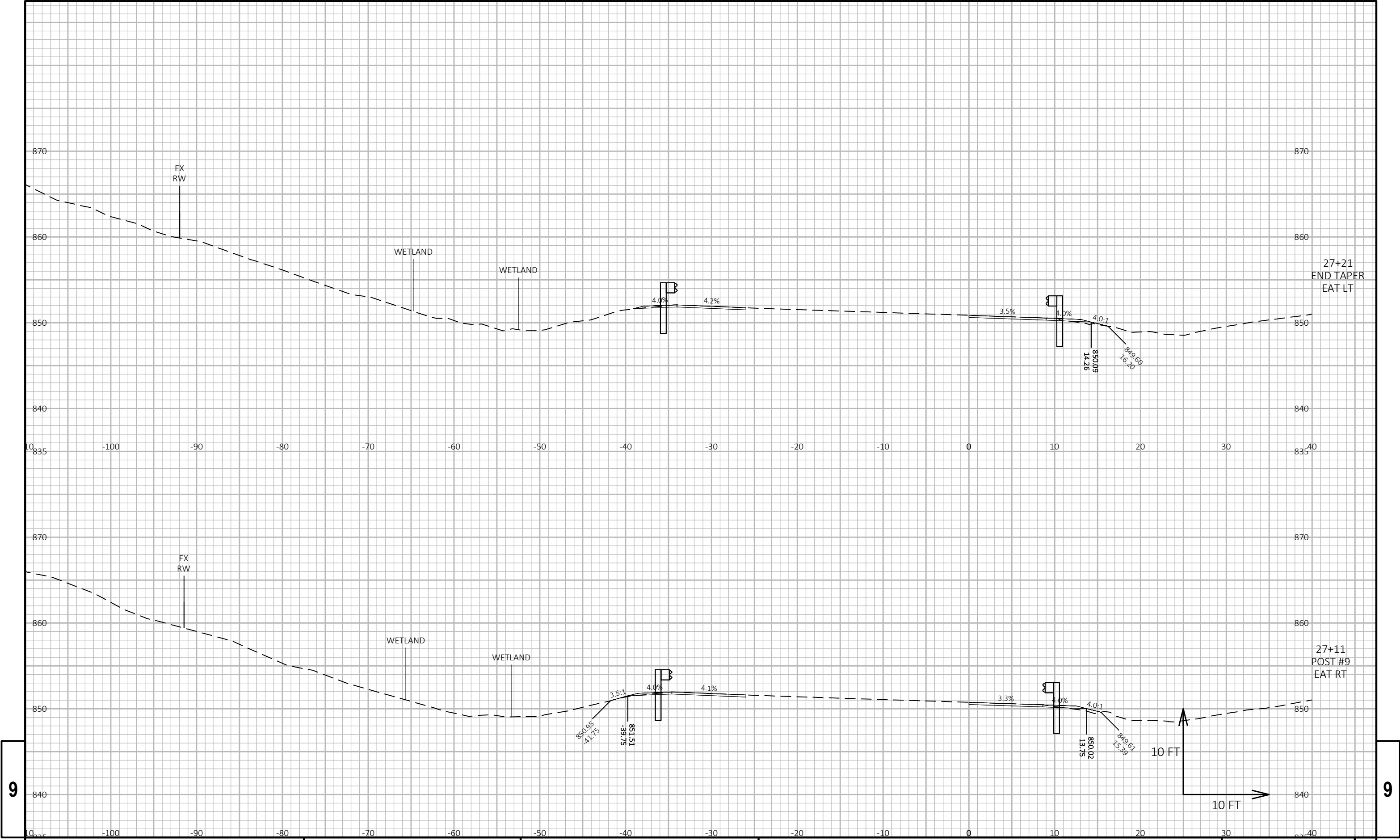








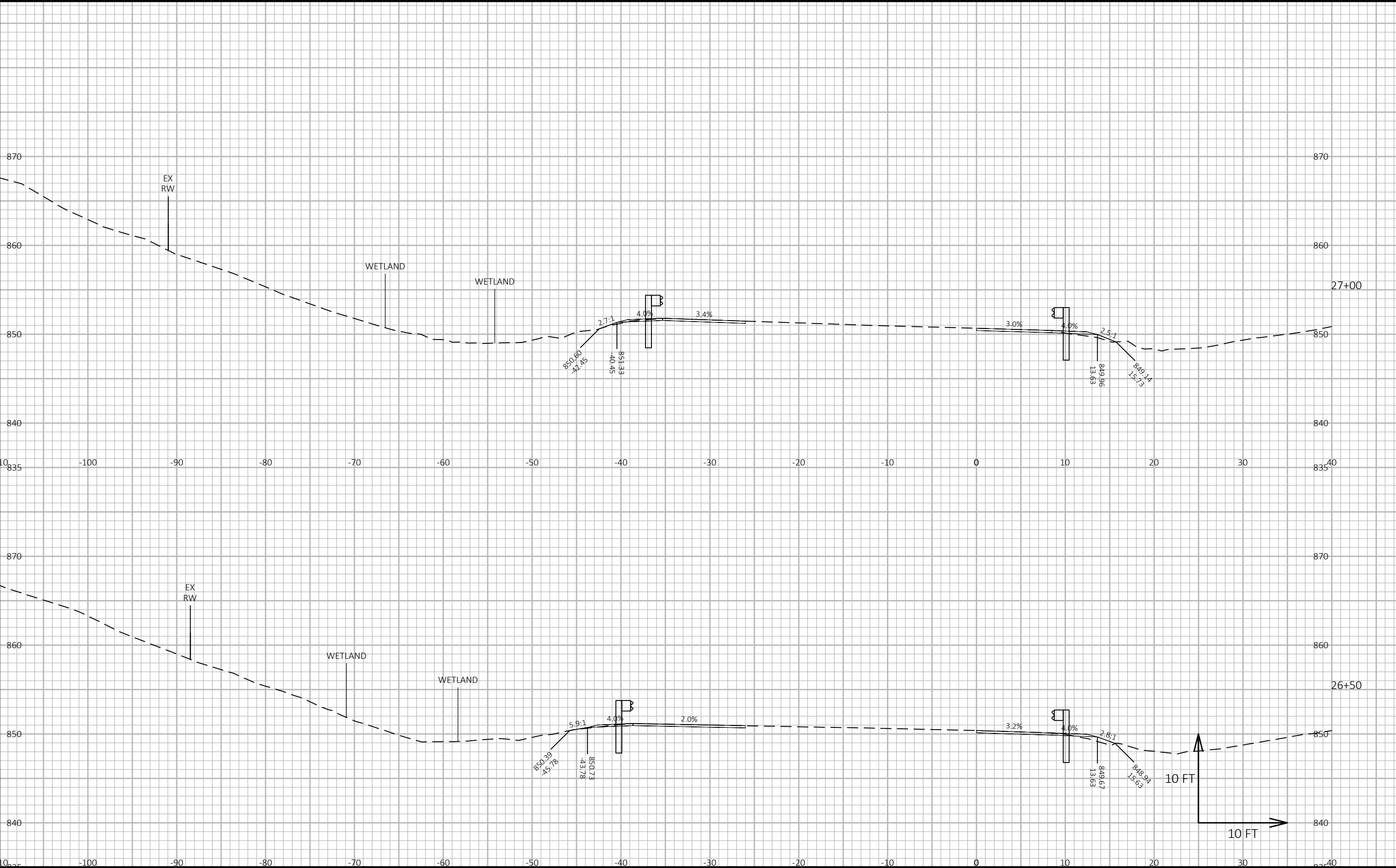


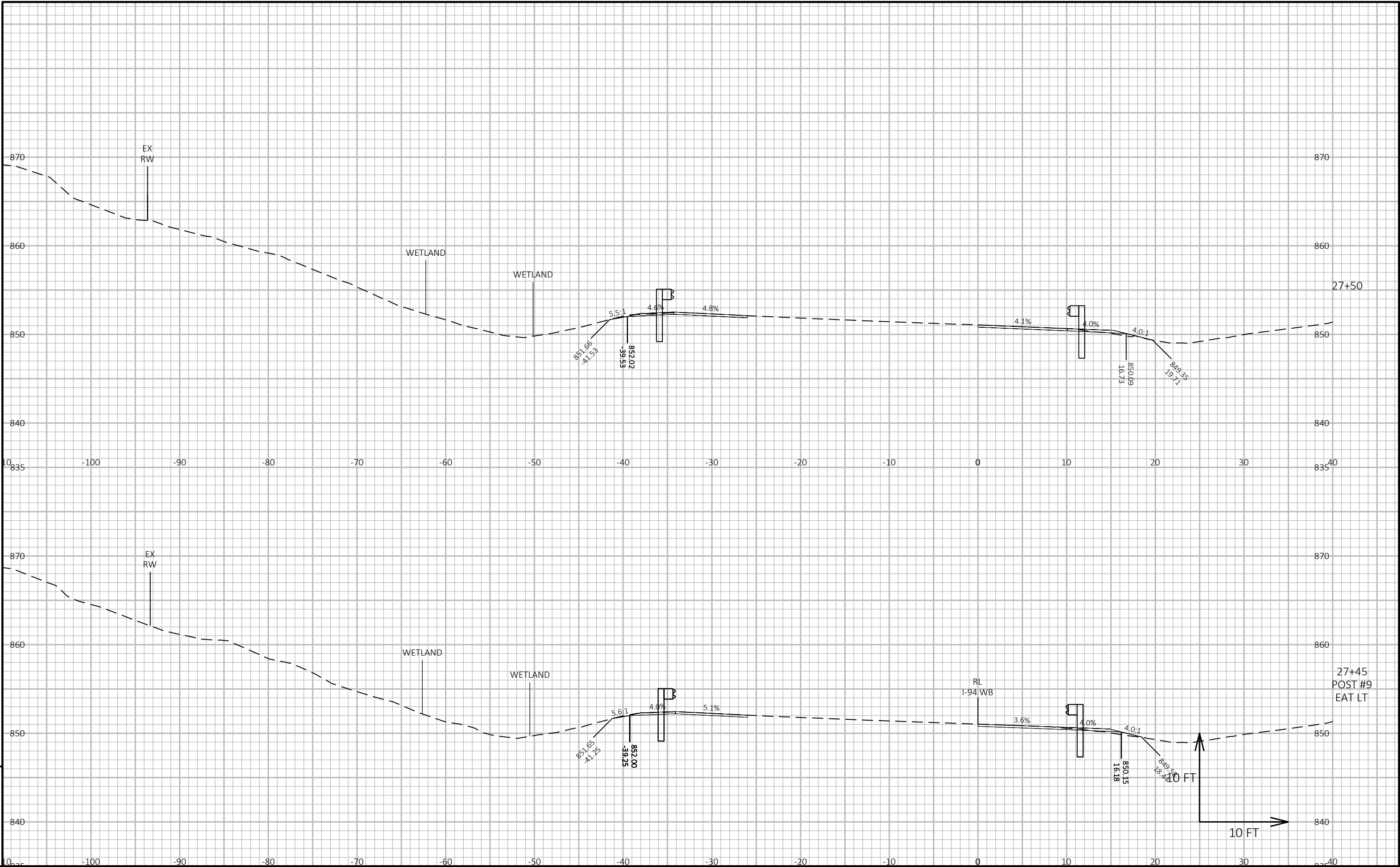


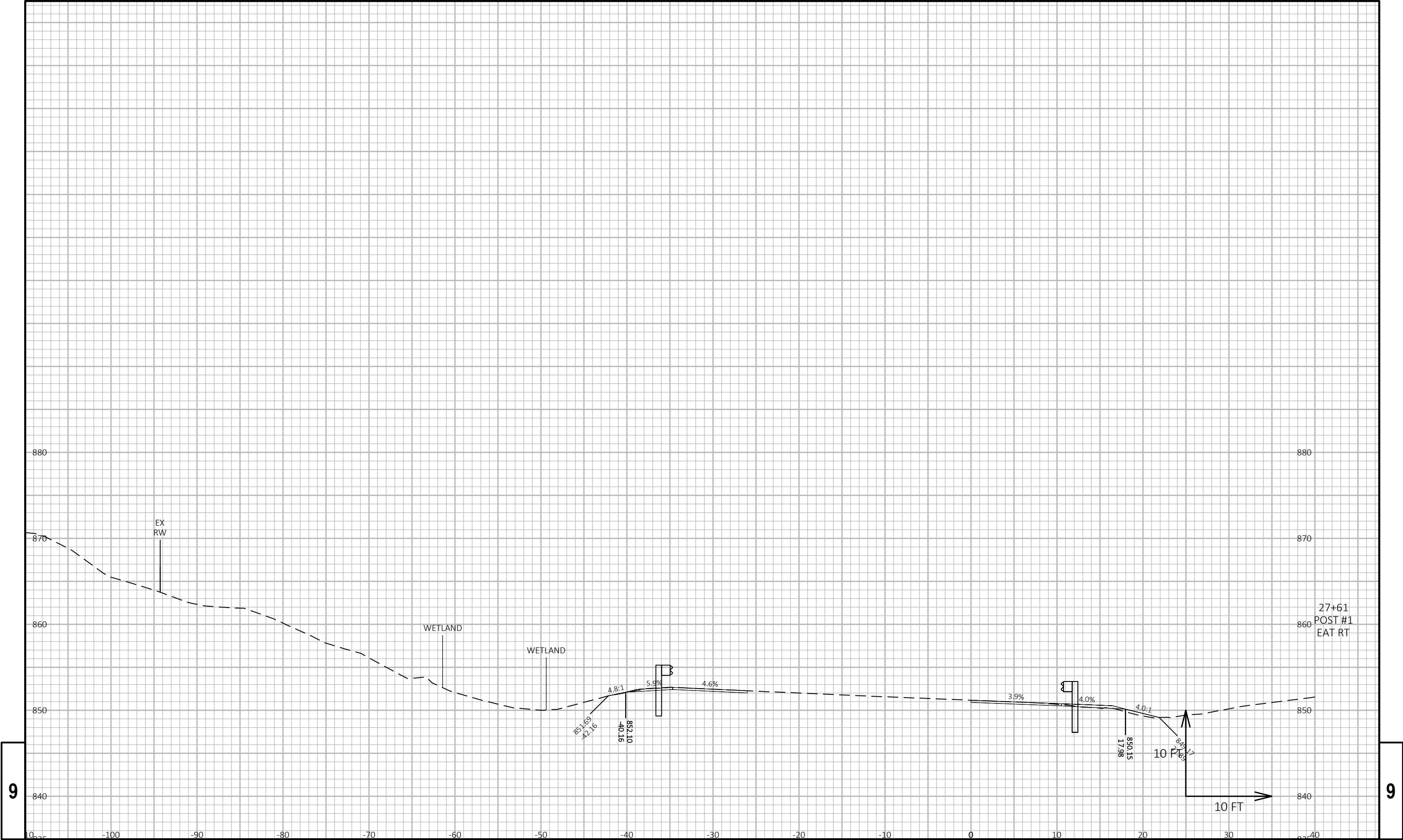
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PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: I-94 WESTBOUND	SHEET 548	E
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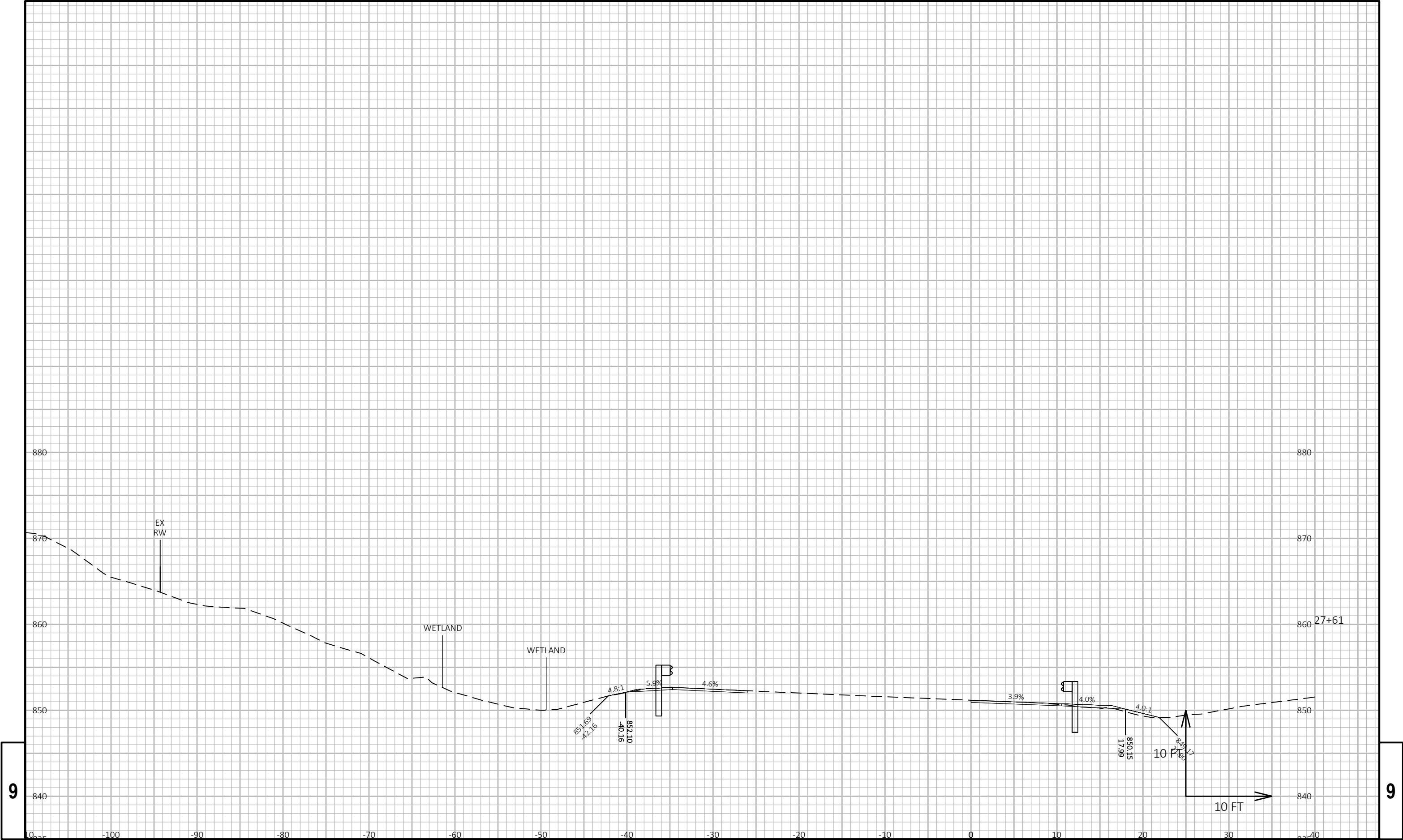






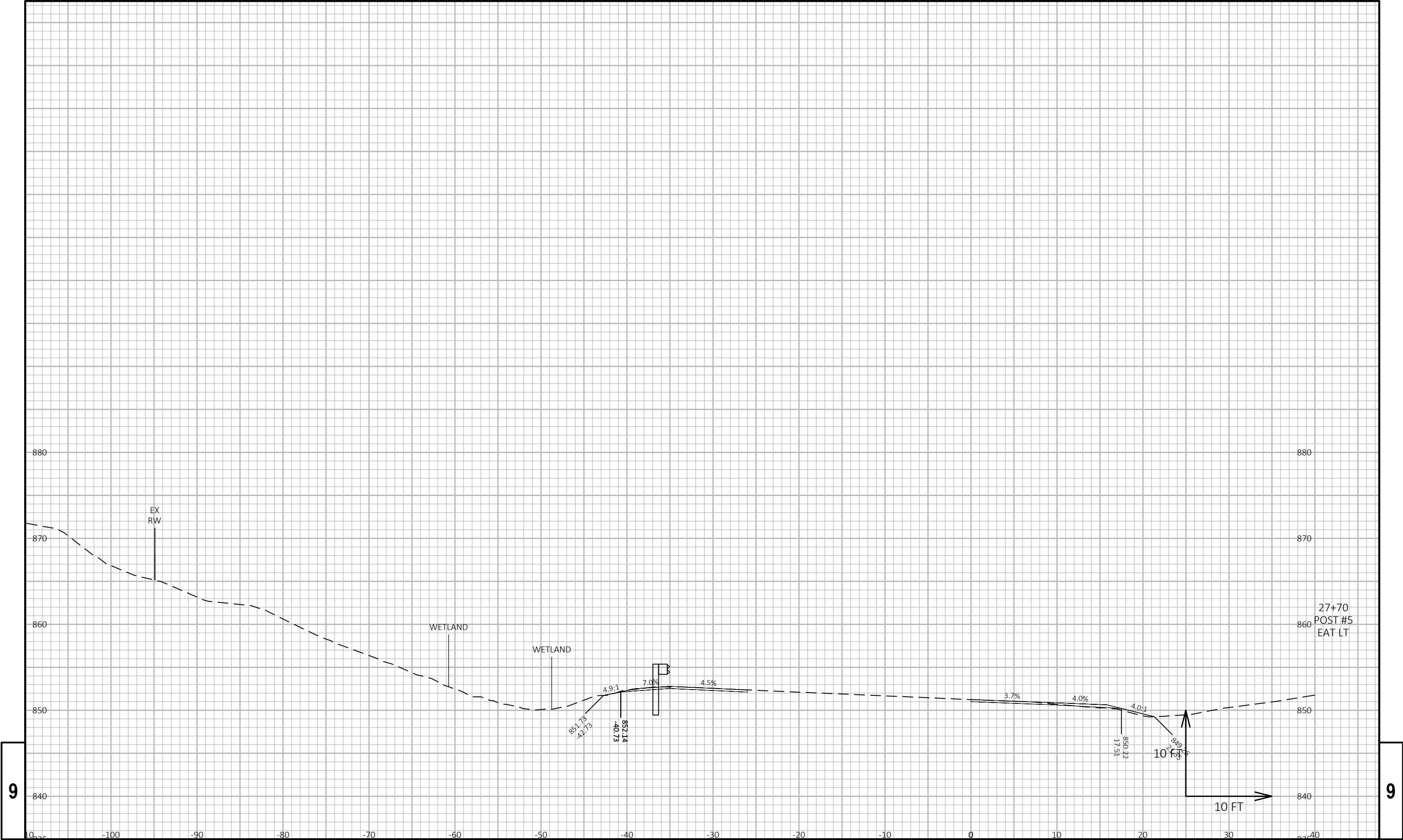
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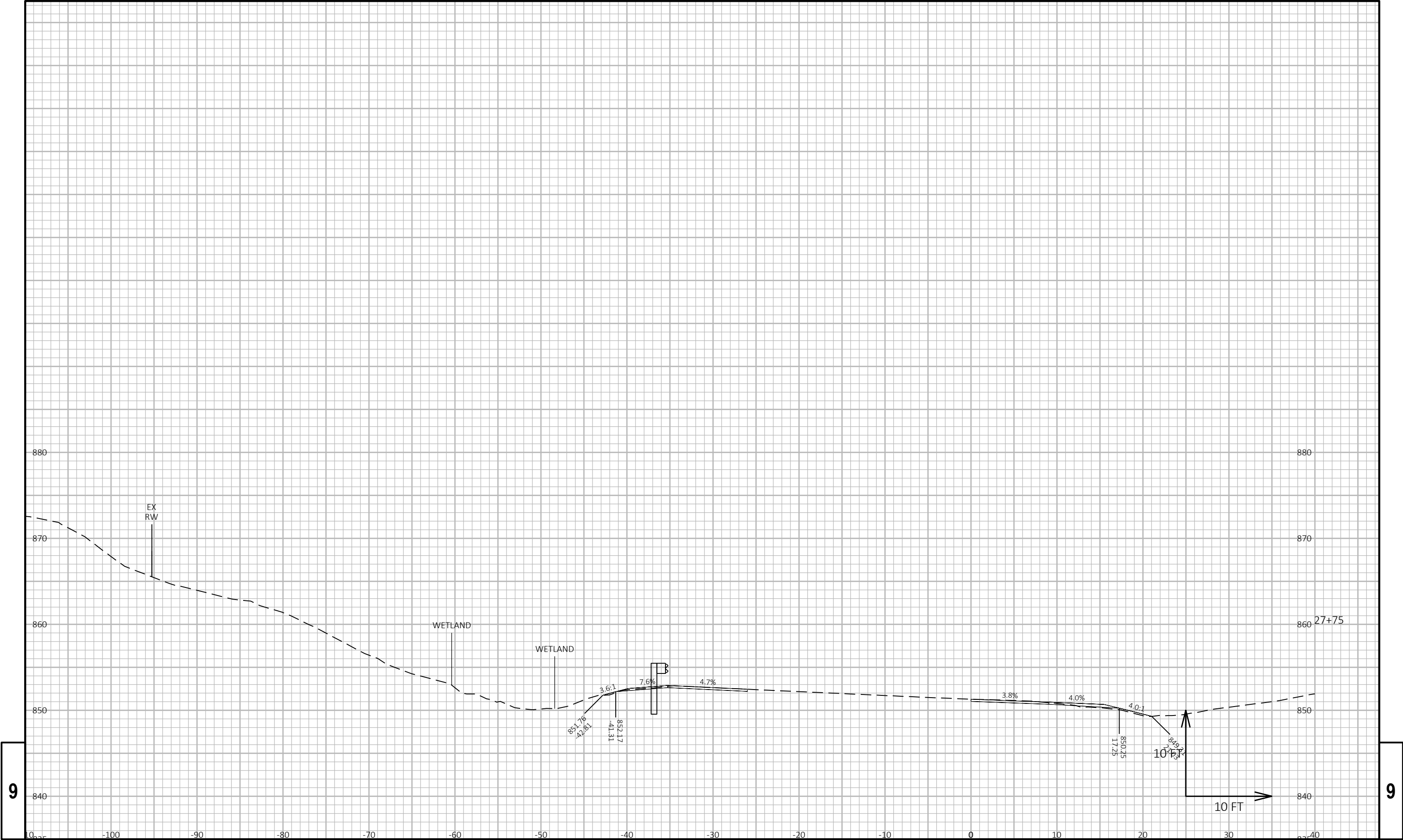
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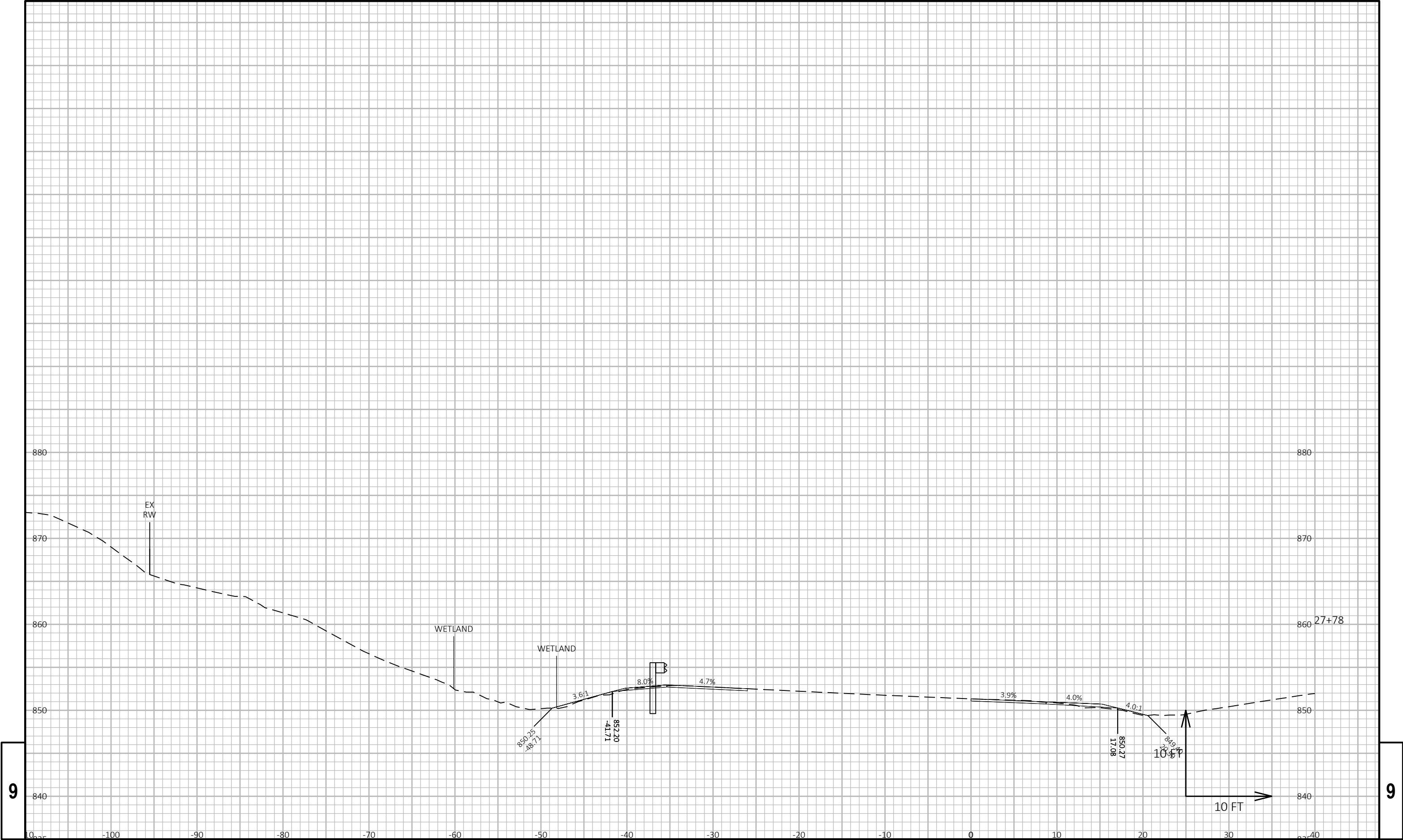
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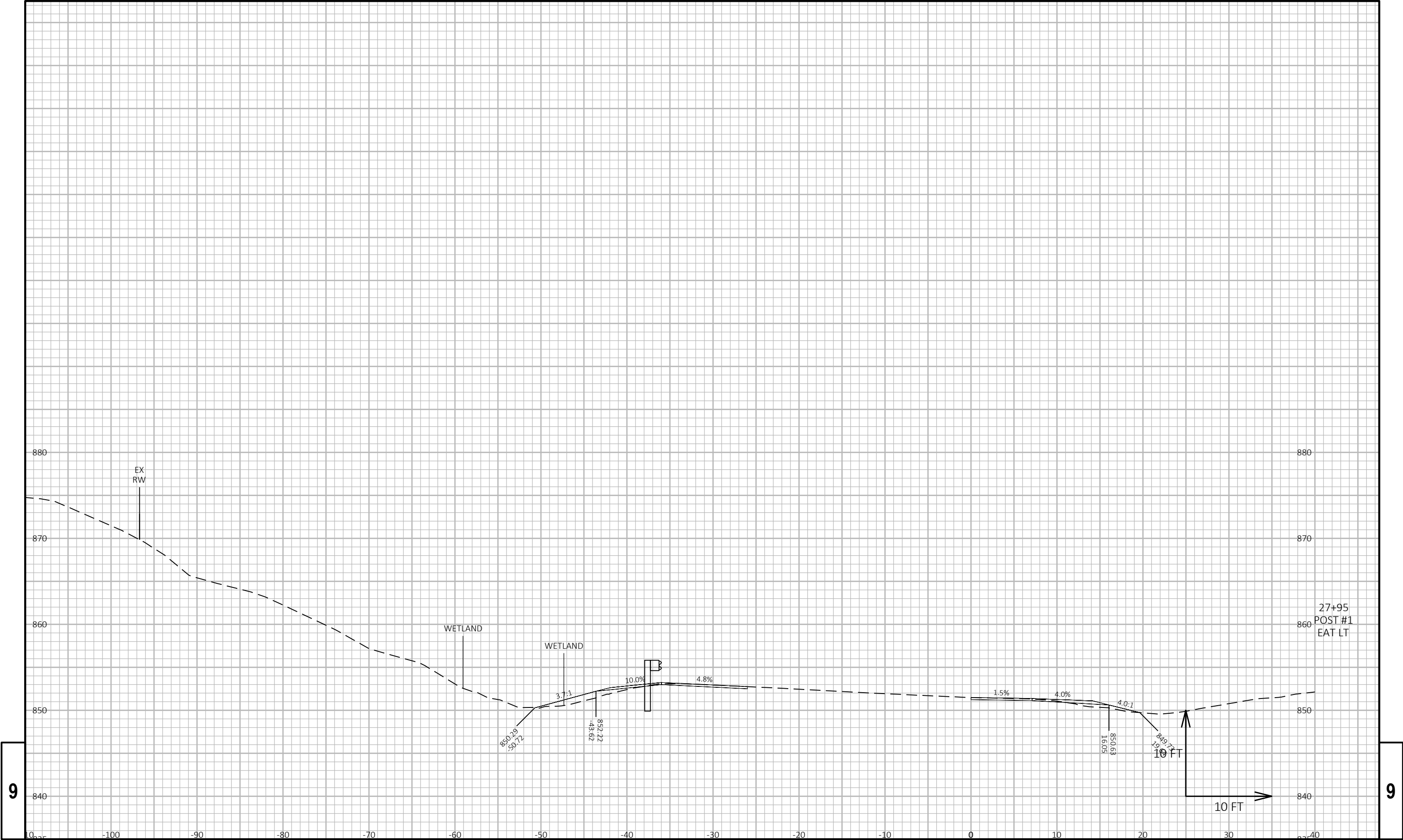
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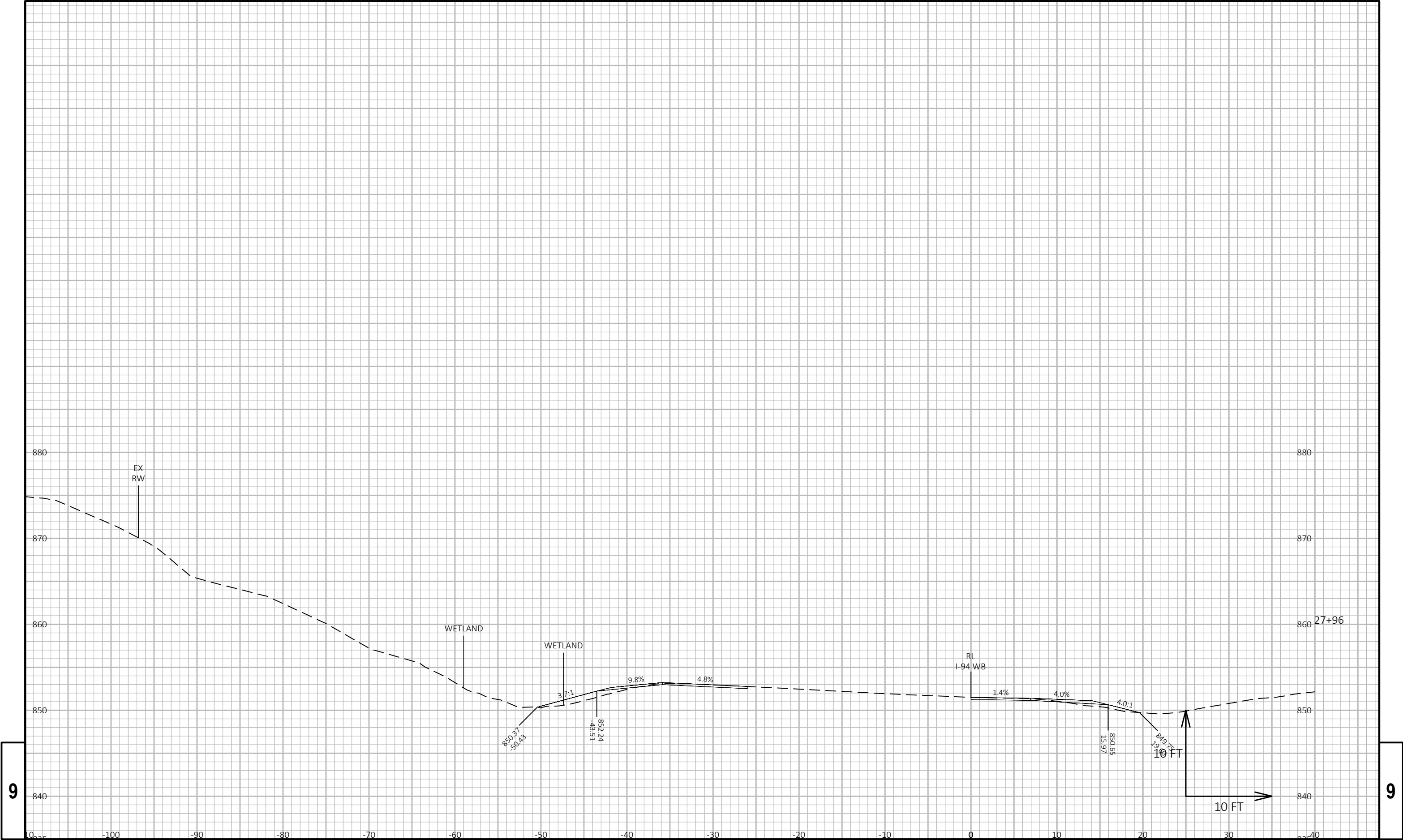
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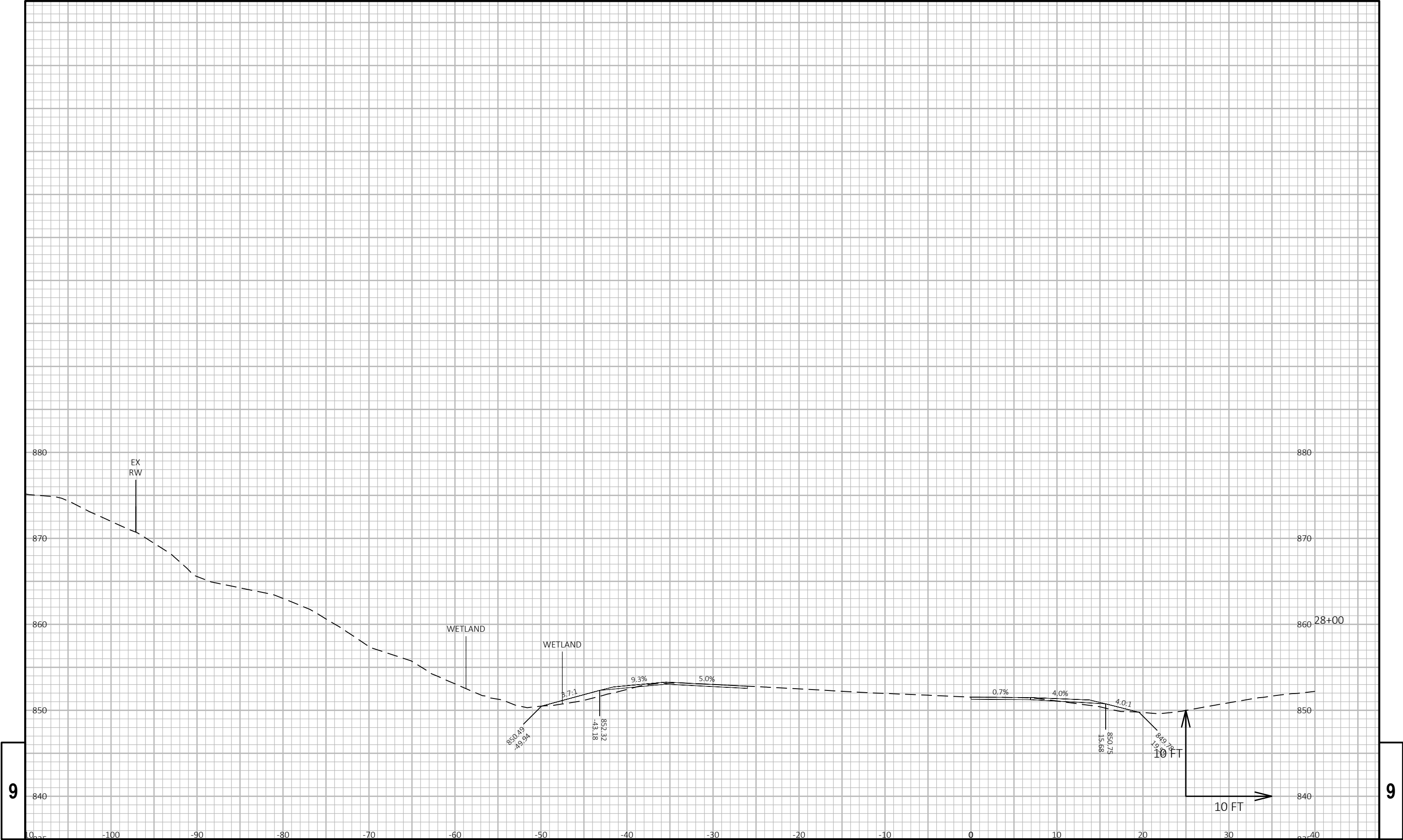
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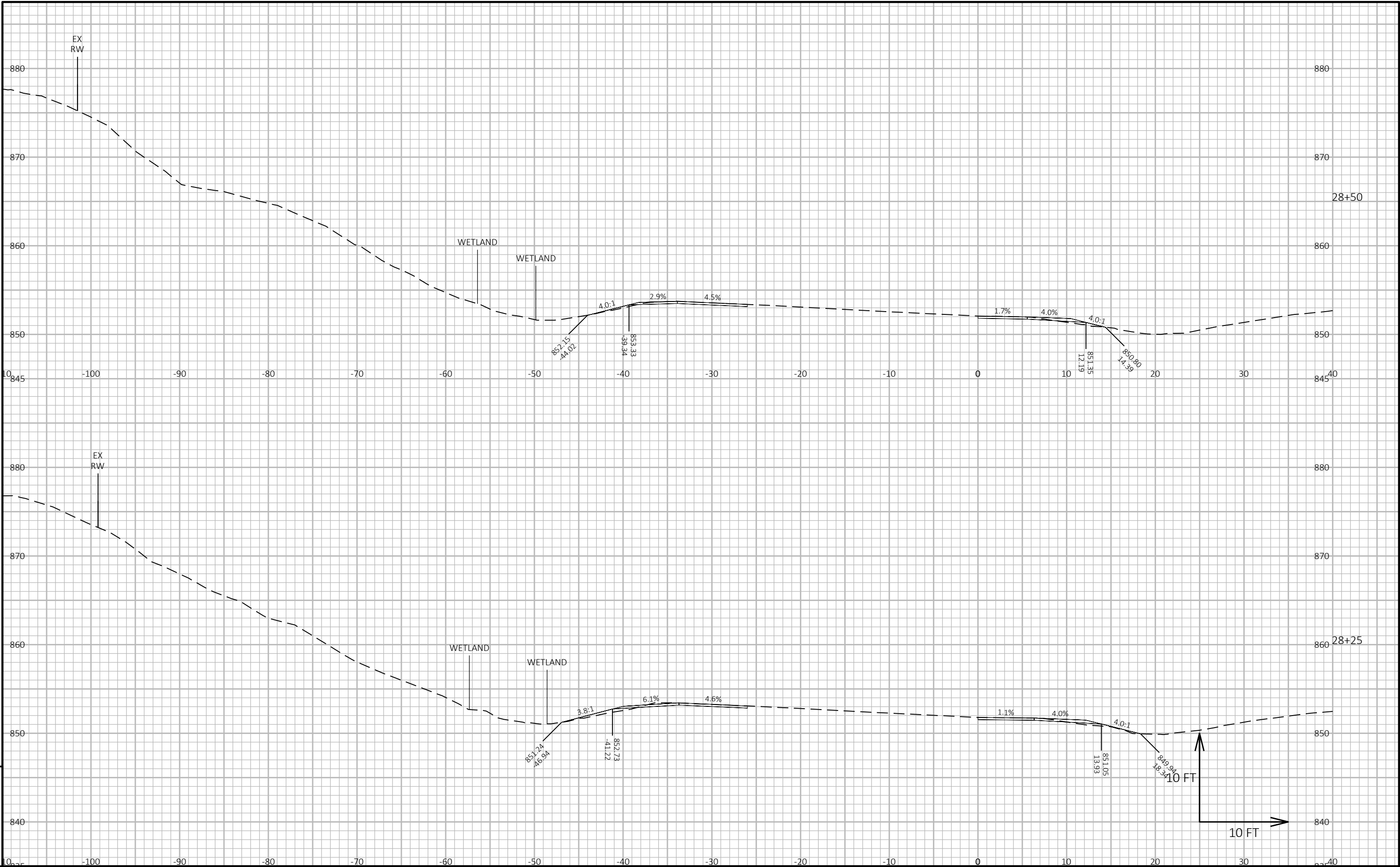
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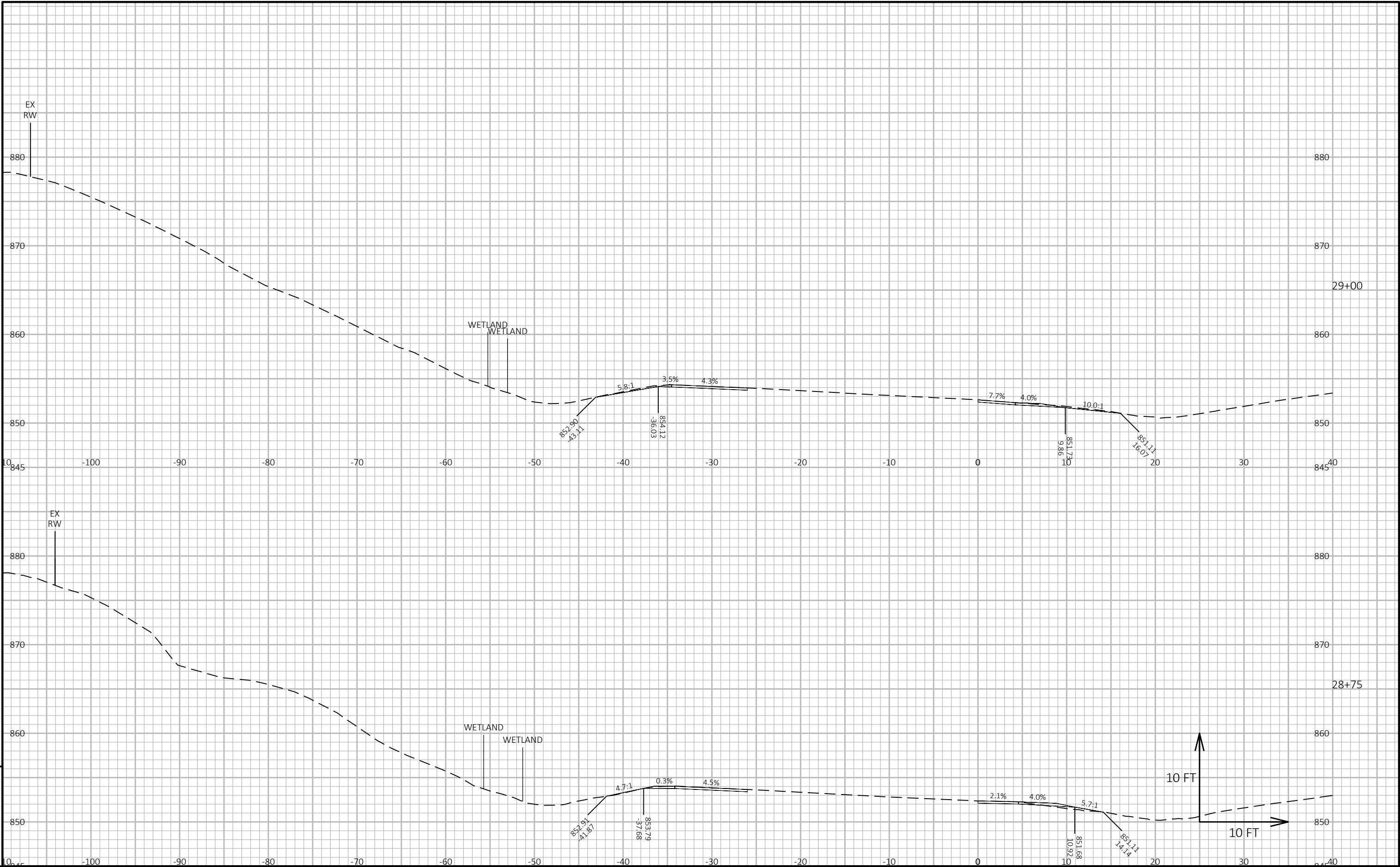
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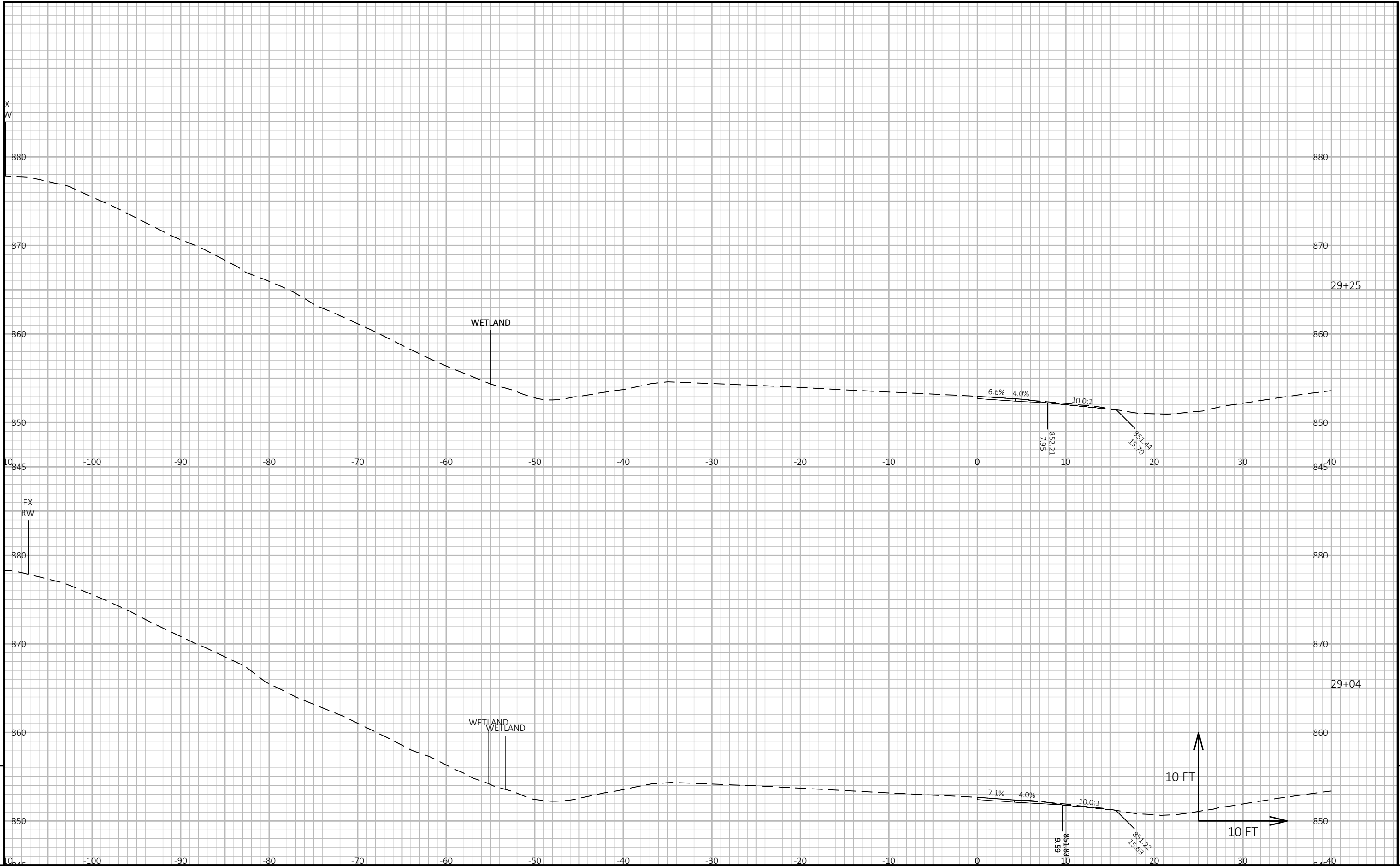


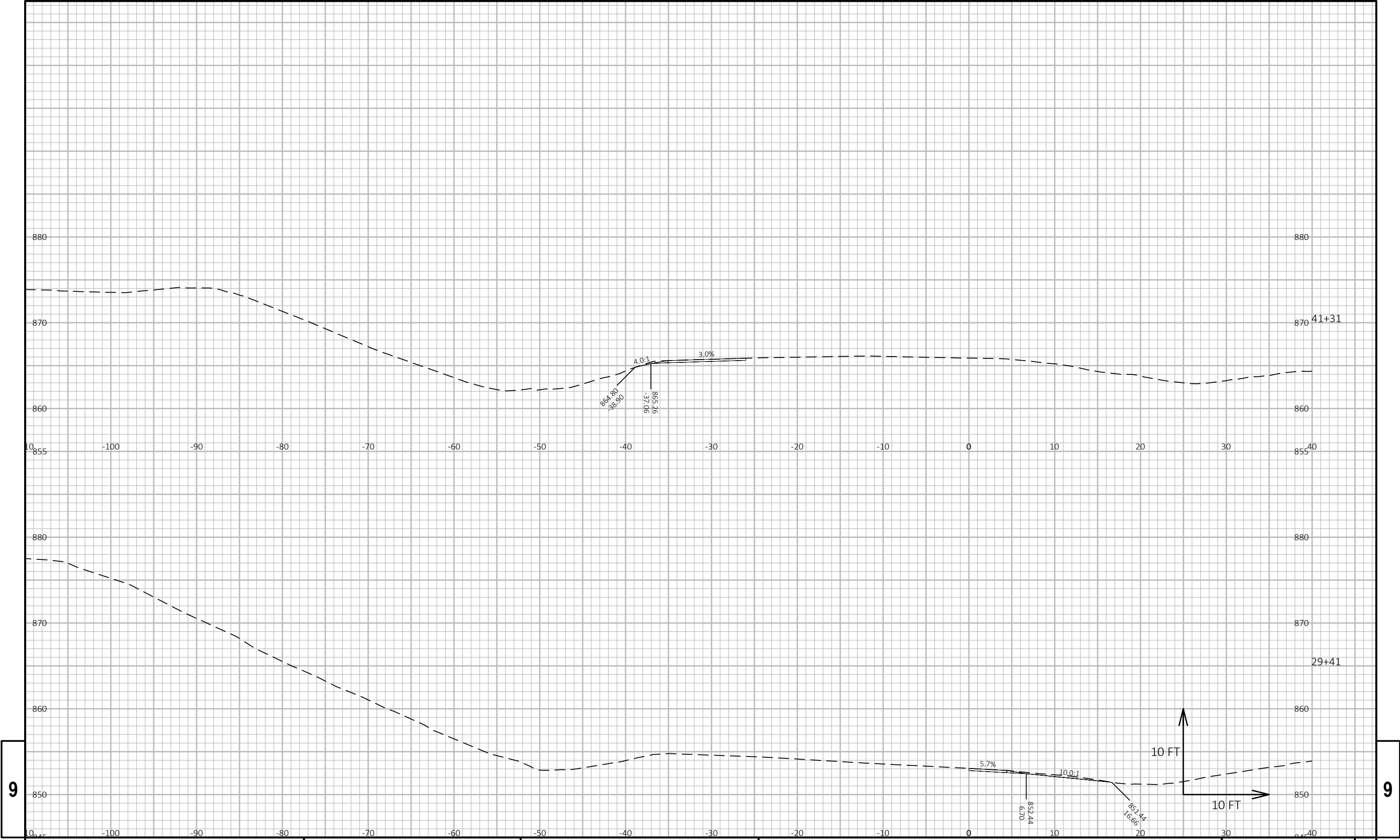
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PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: I-94 WESTBOUND	SHEET 559	E
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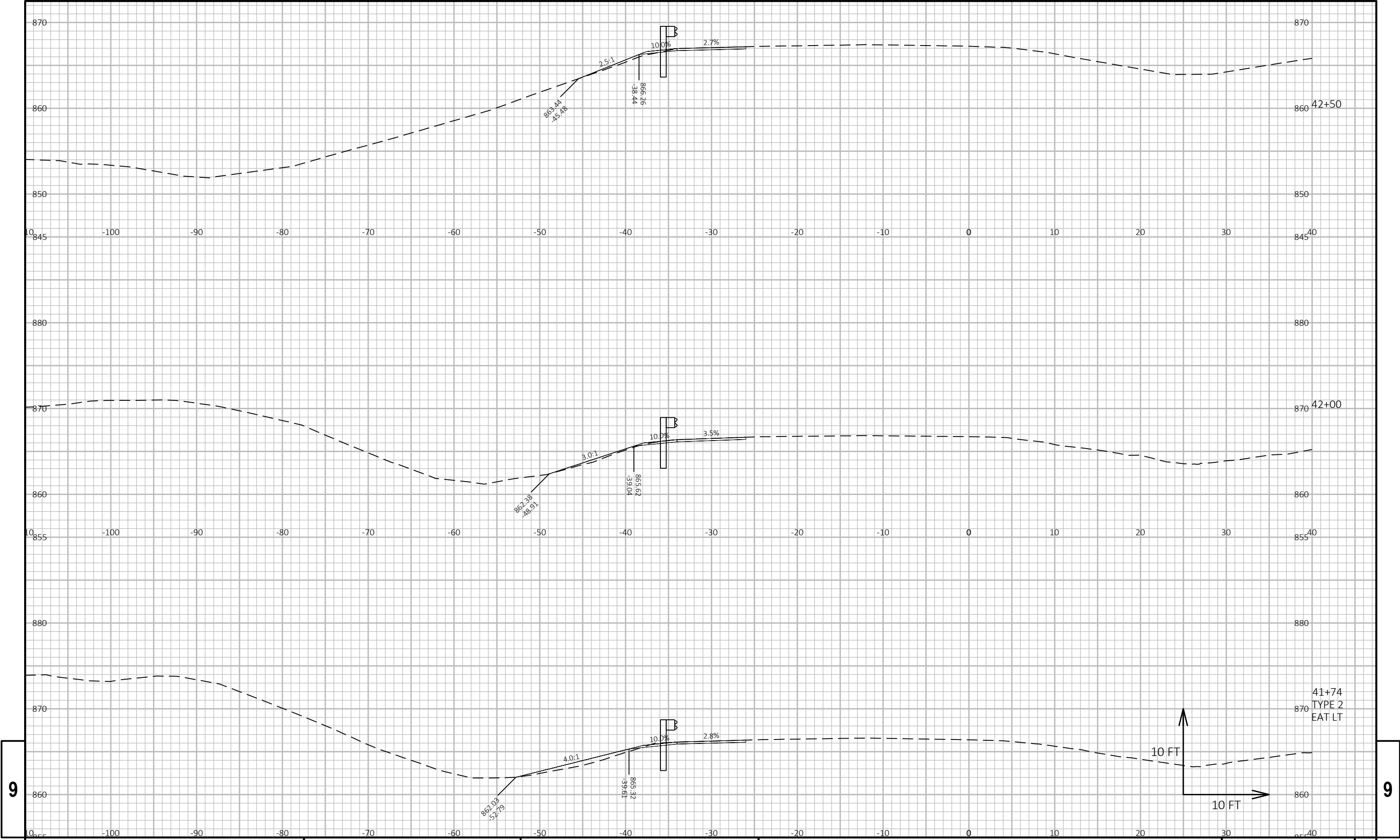






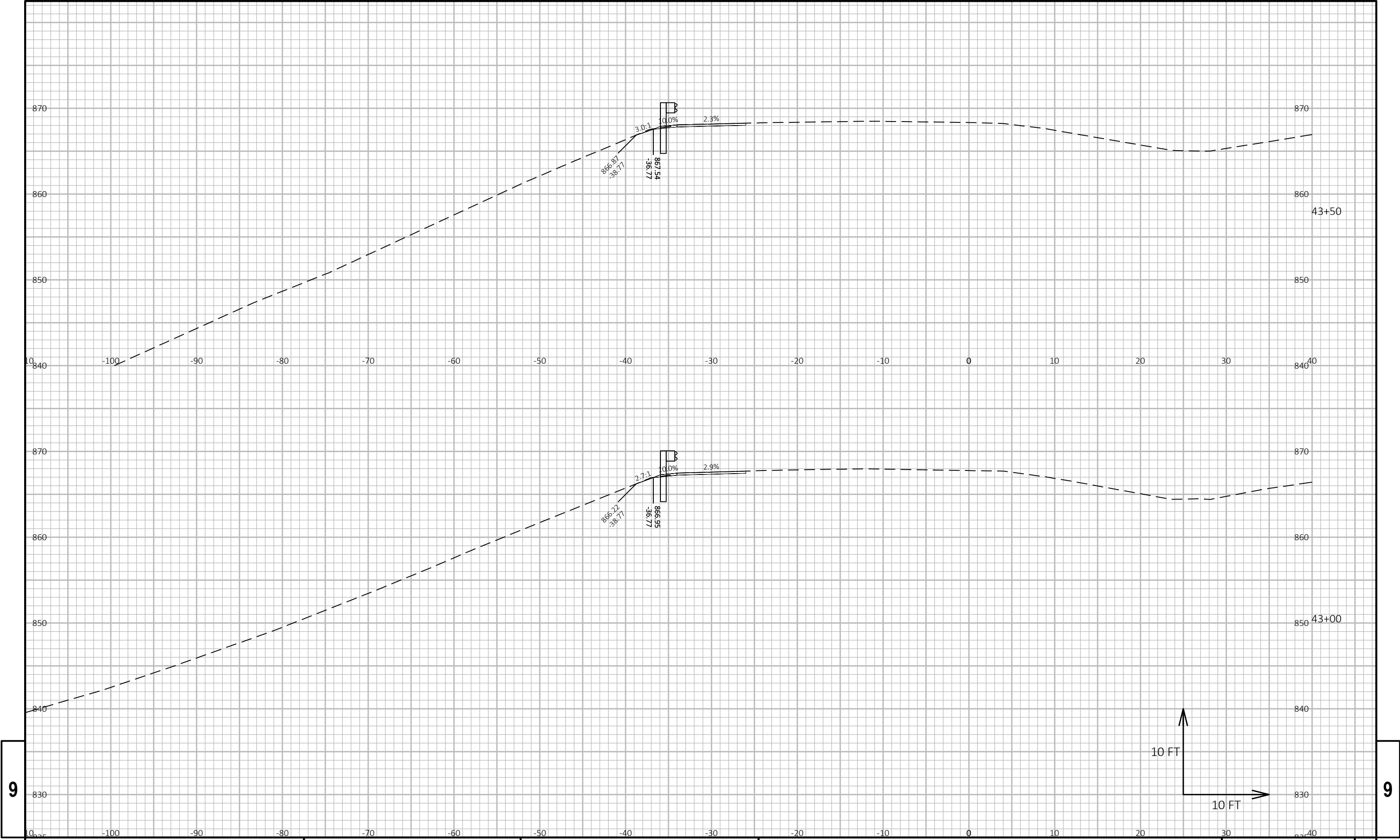
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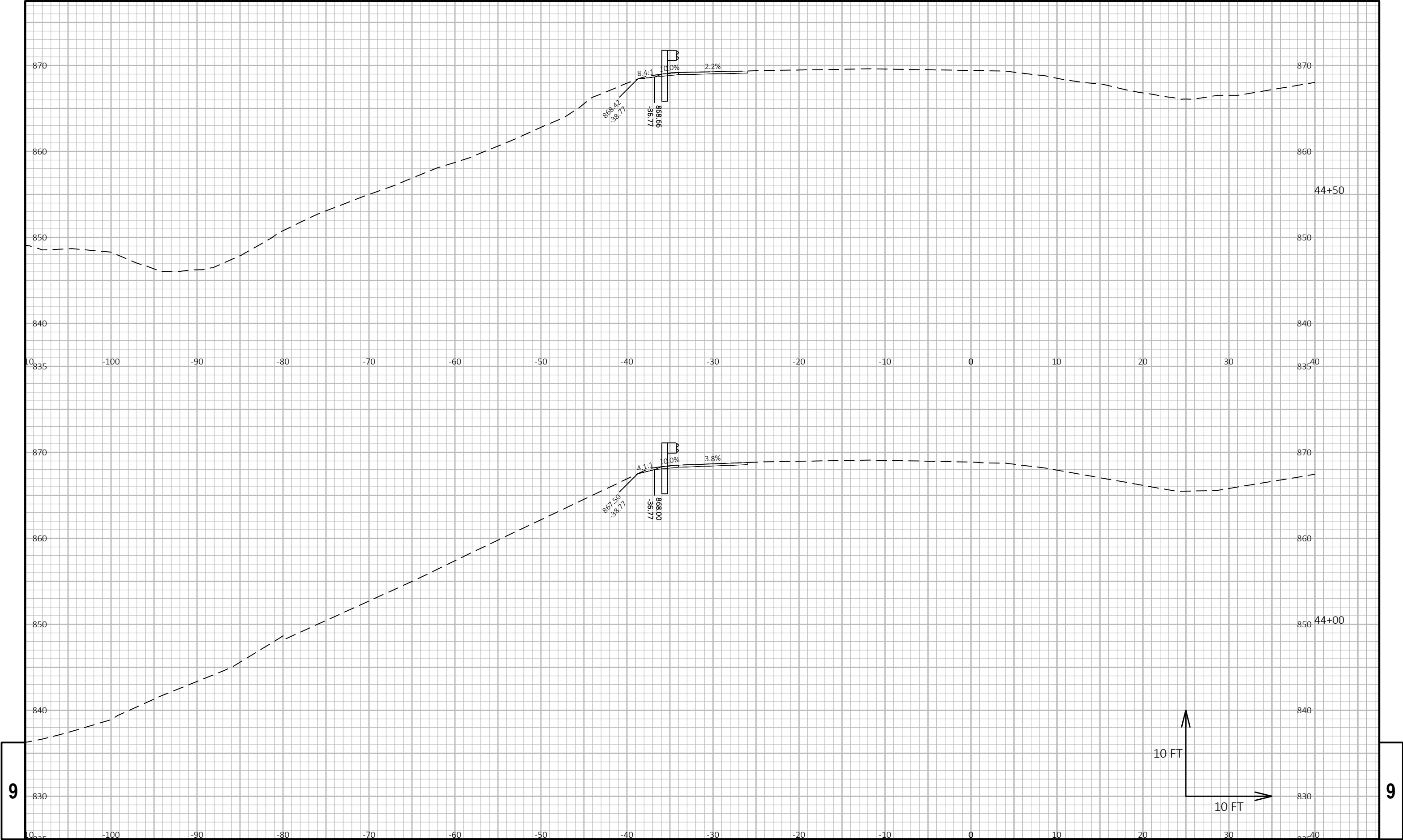
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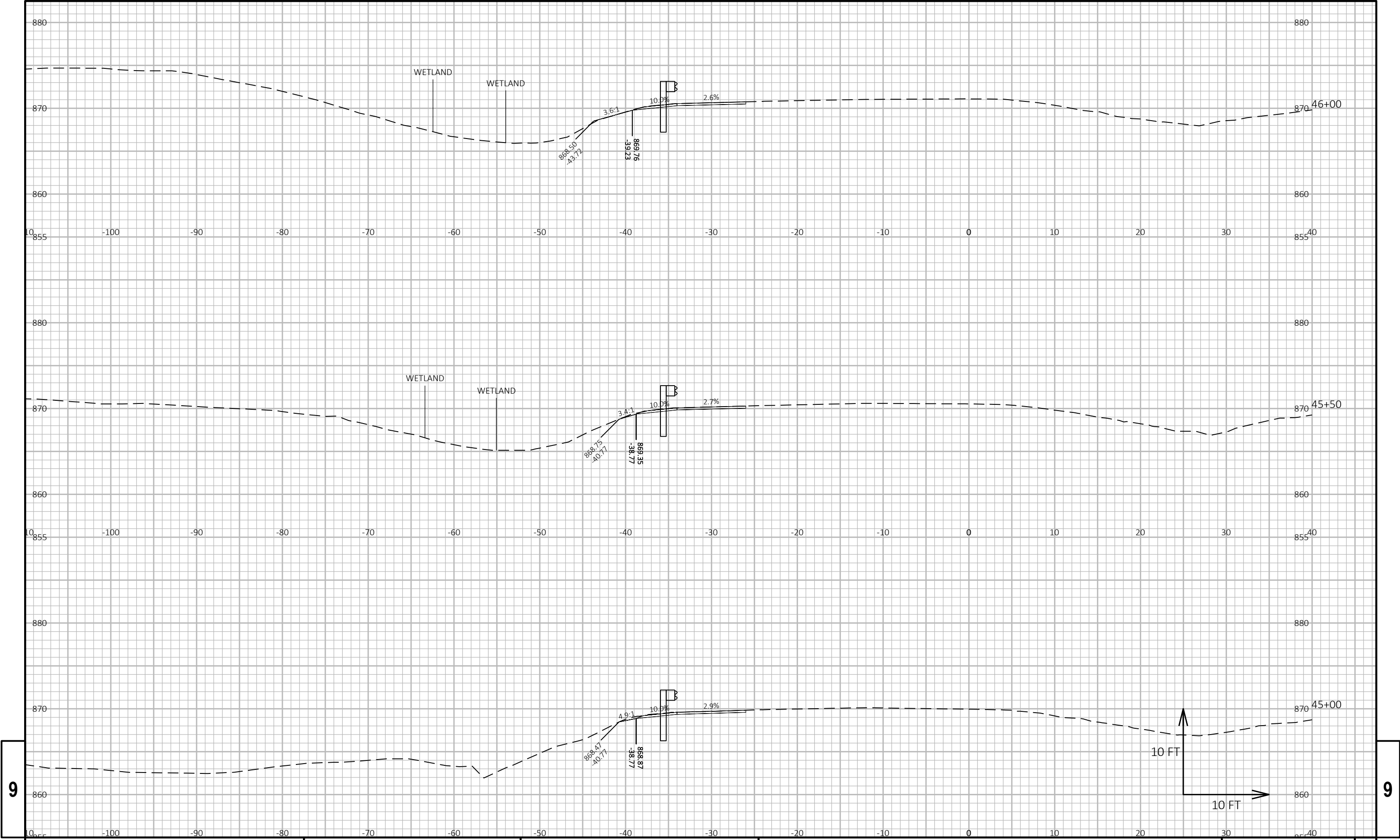


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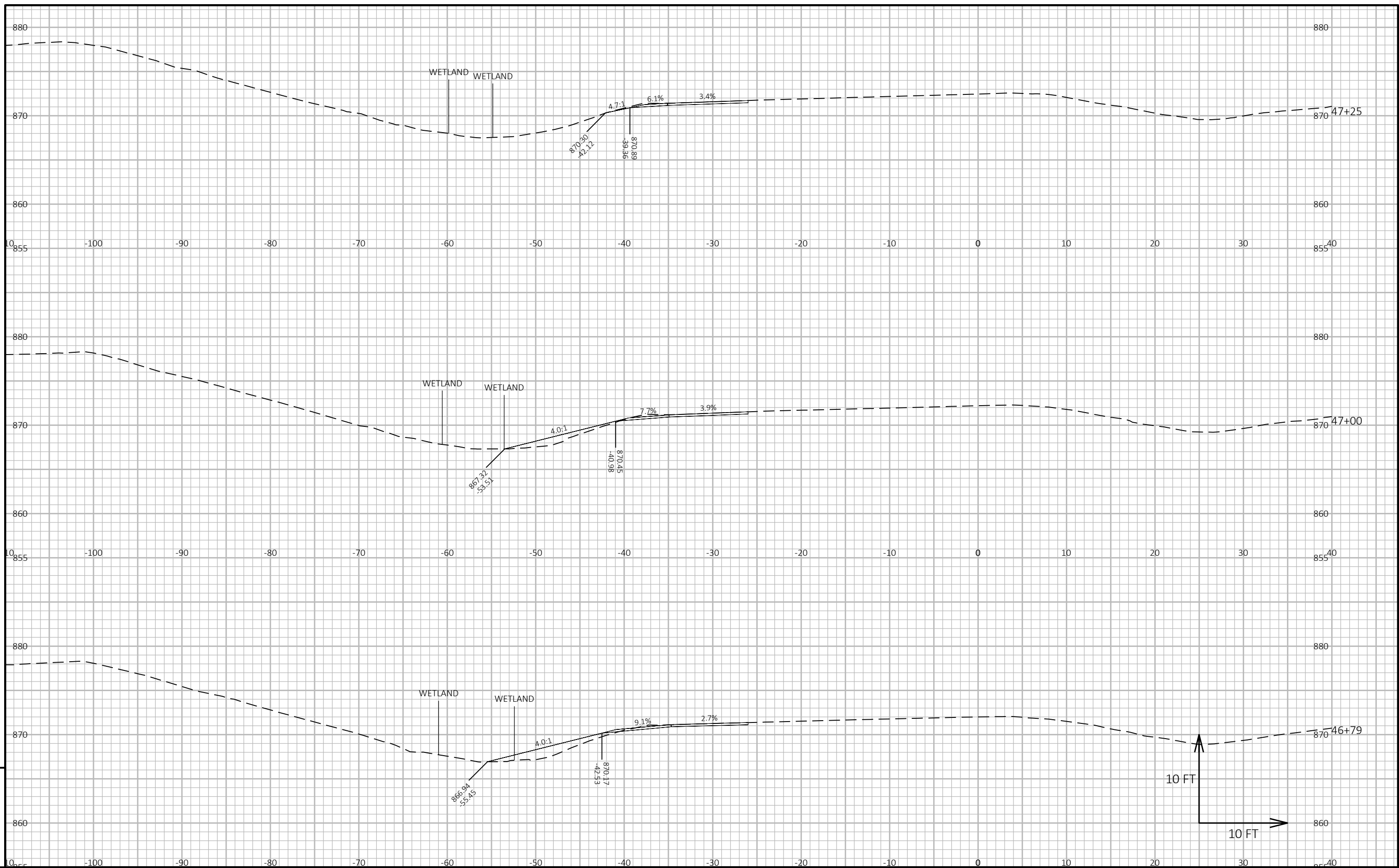
PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: I-94 WESTBOUND	SHEET 564	E
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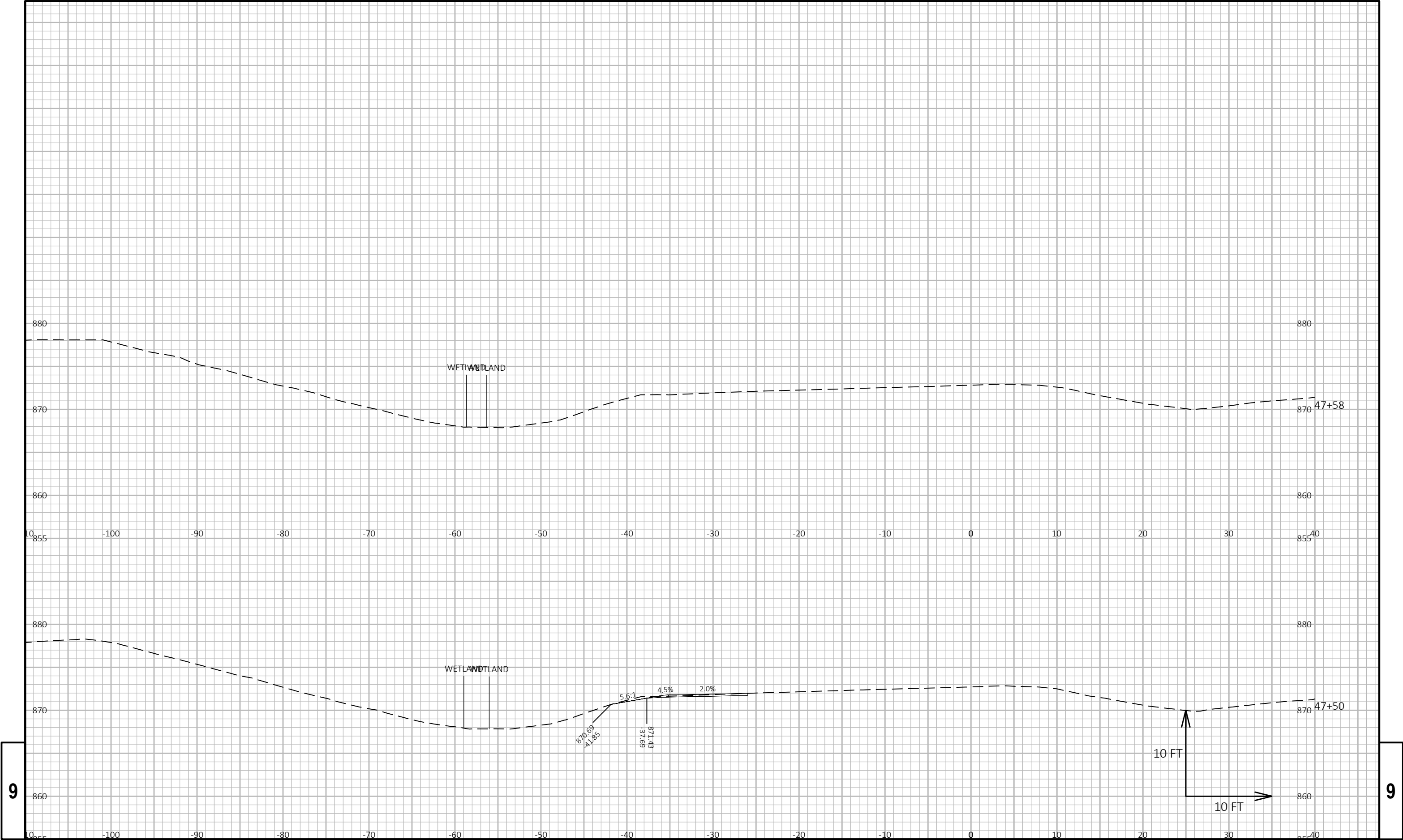


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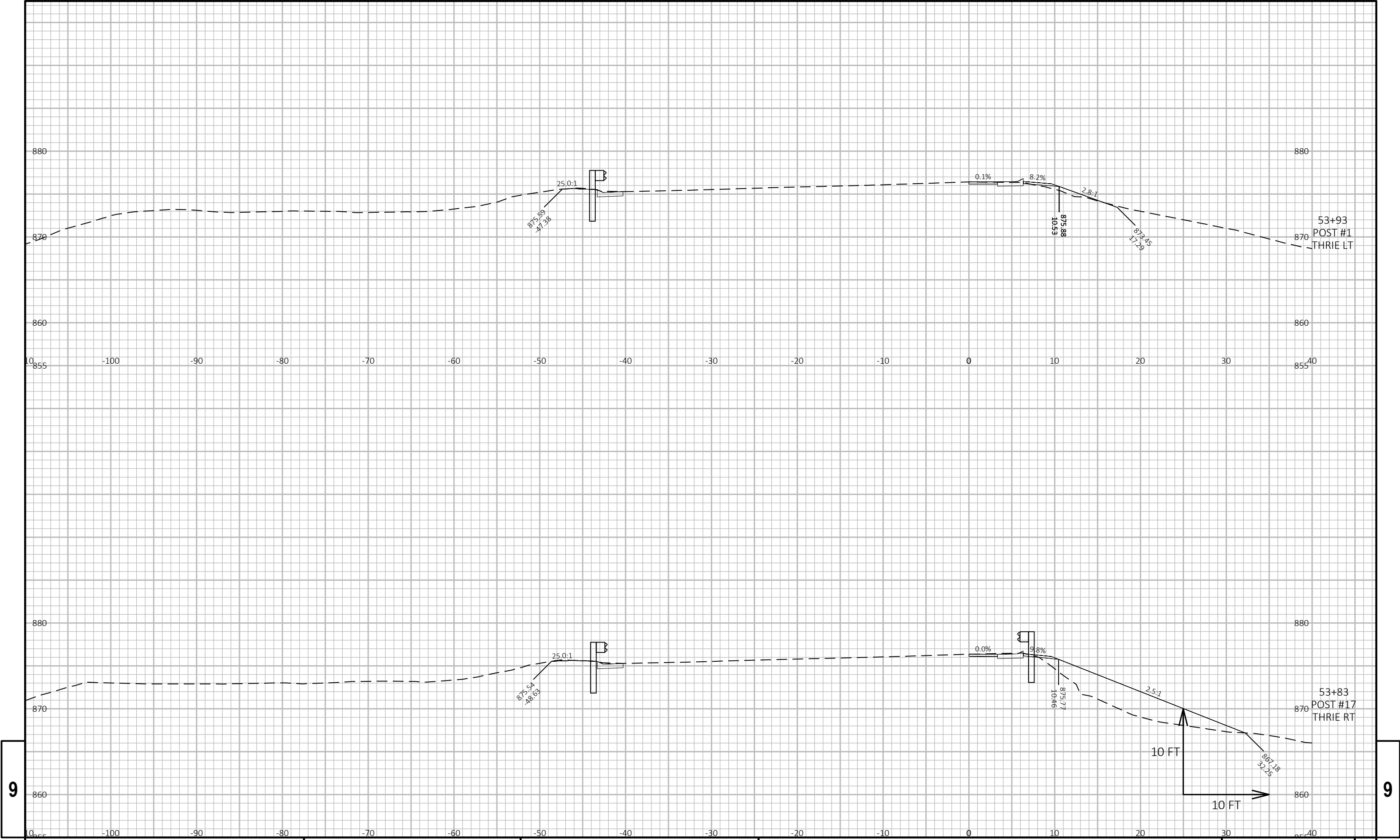


WISDOT/CADDS SHEET 49



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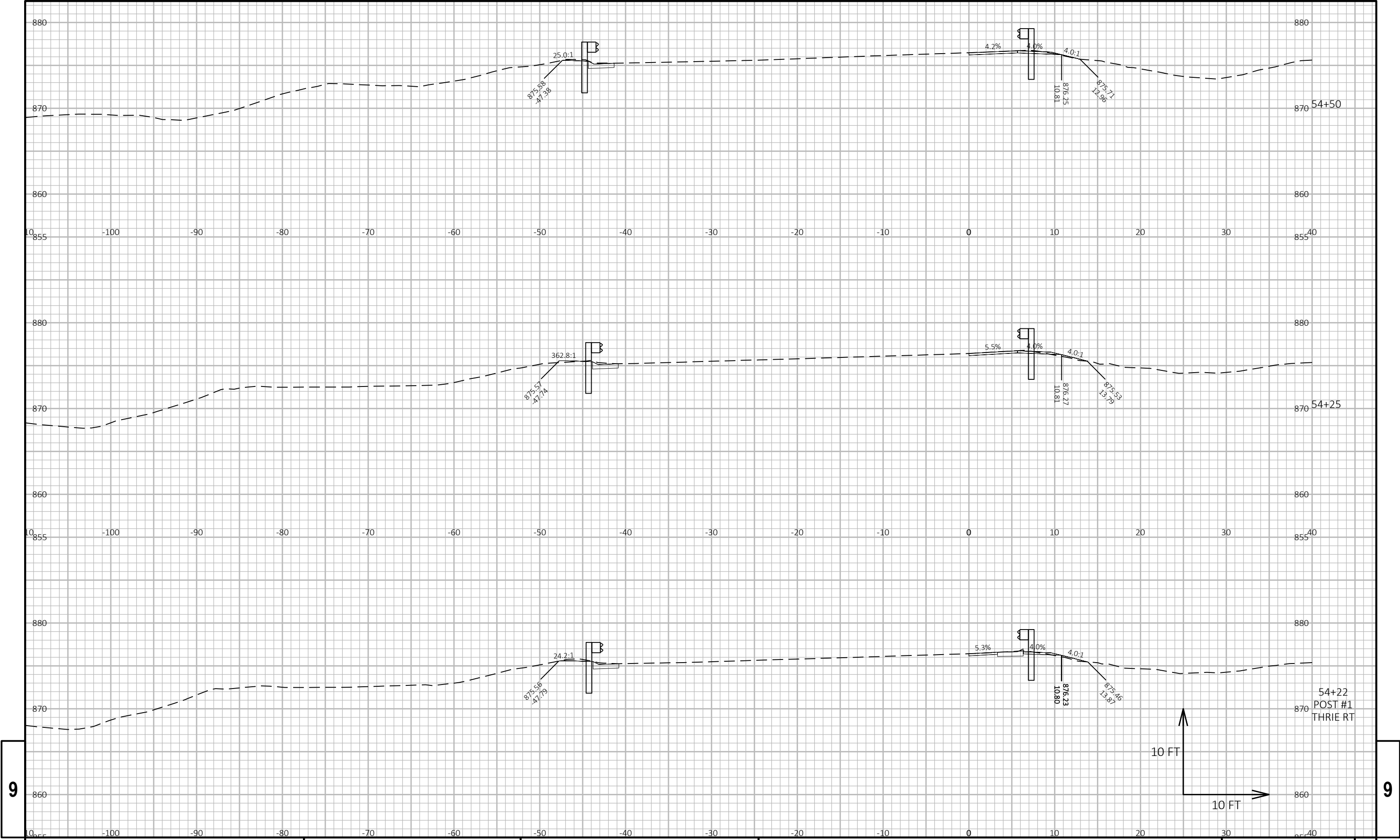
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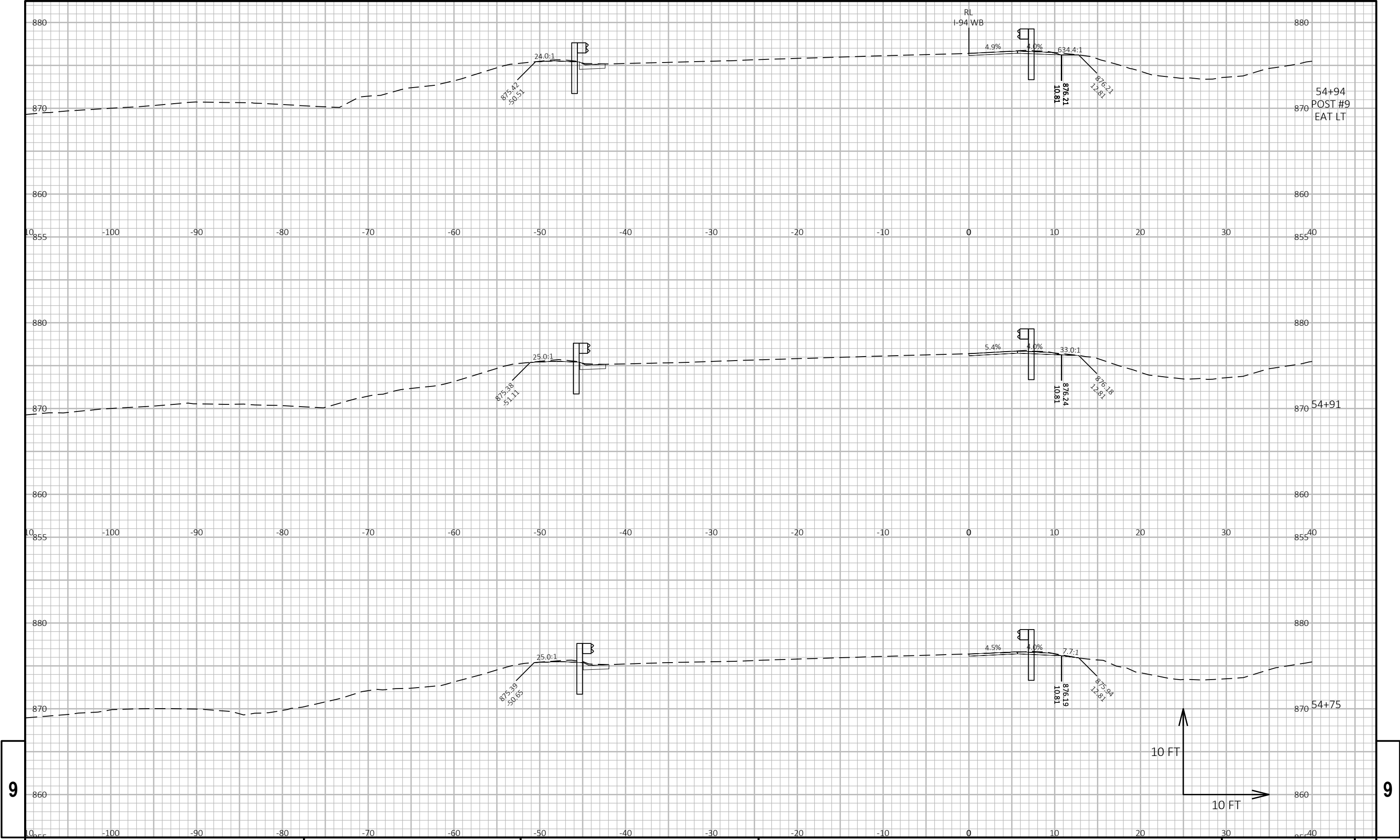
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PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: I-94 WESTBOUND	SHEET 570
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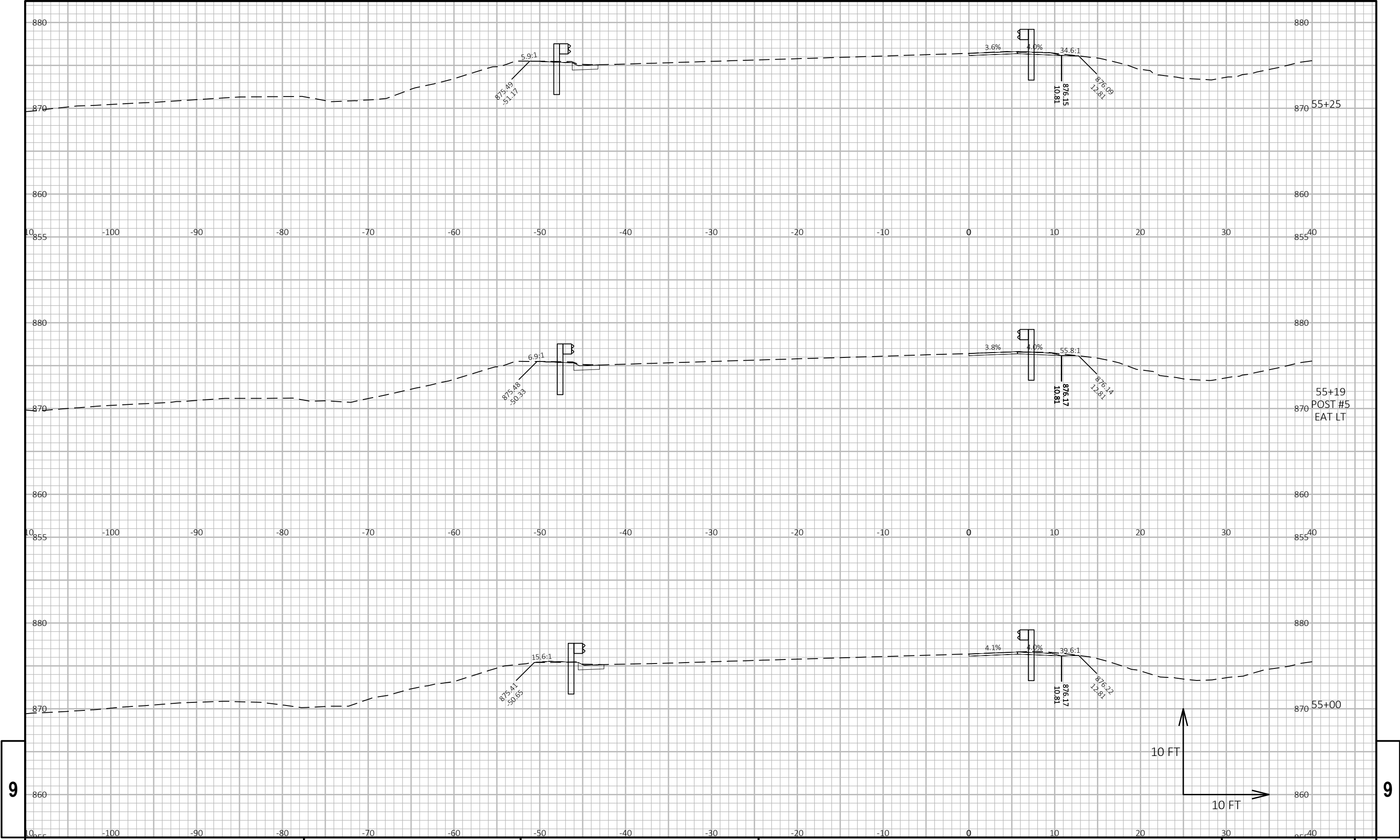
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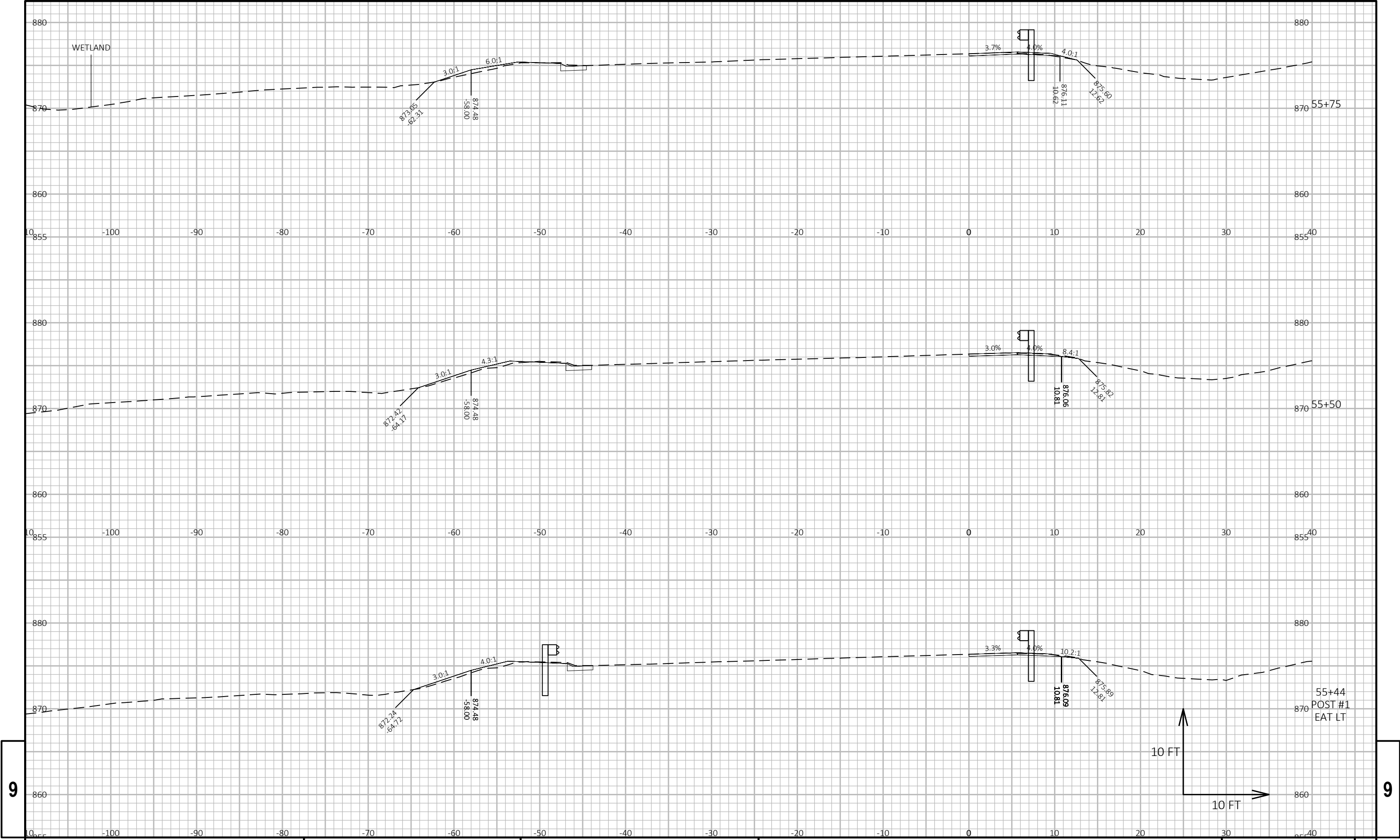
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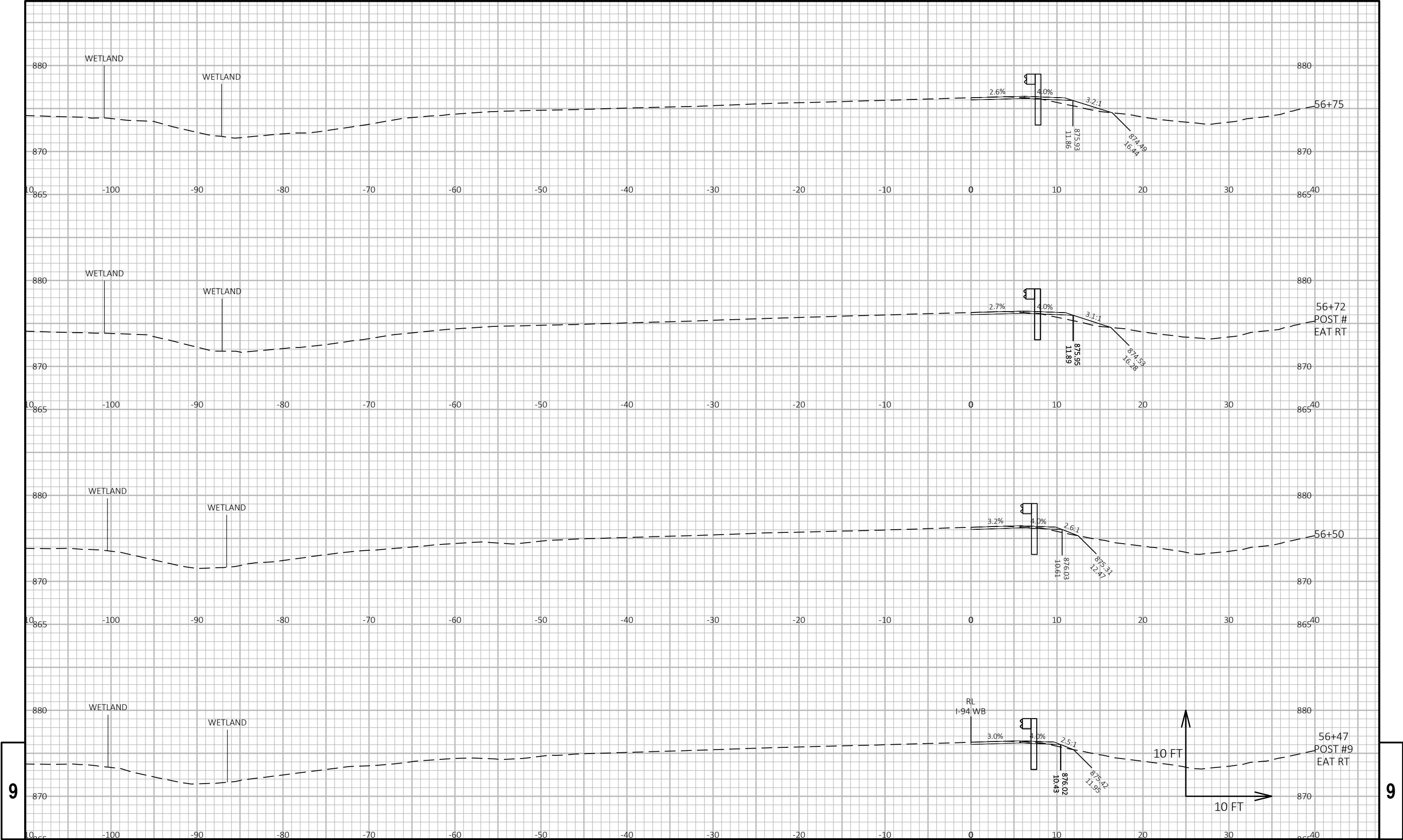
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PROJECT NO: 1020-05-63			HWY: IH 94			COUNTY: DUNN			CROSS SECTIONS: I-94 WESTBOUND			SHEET 573			E
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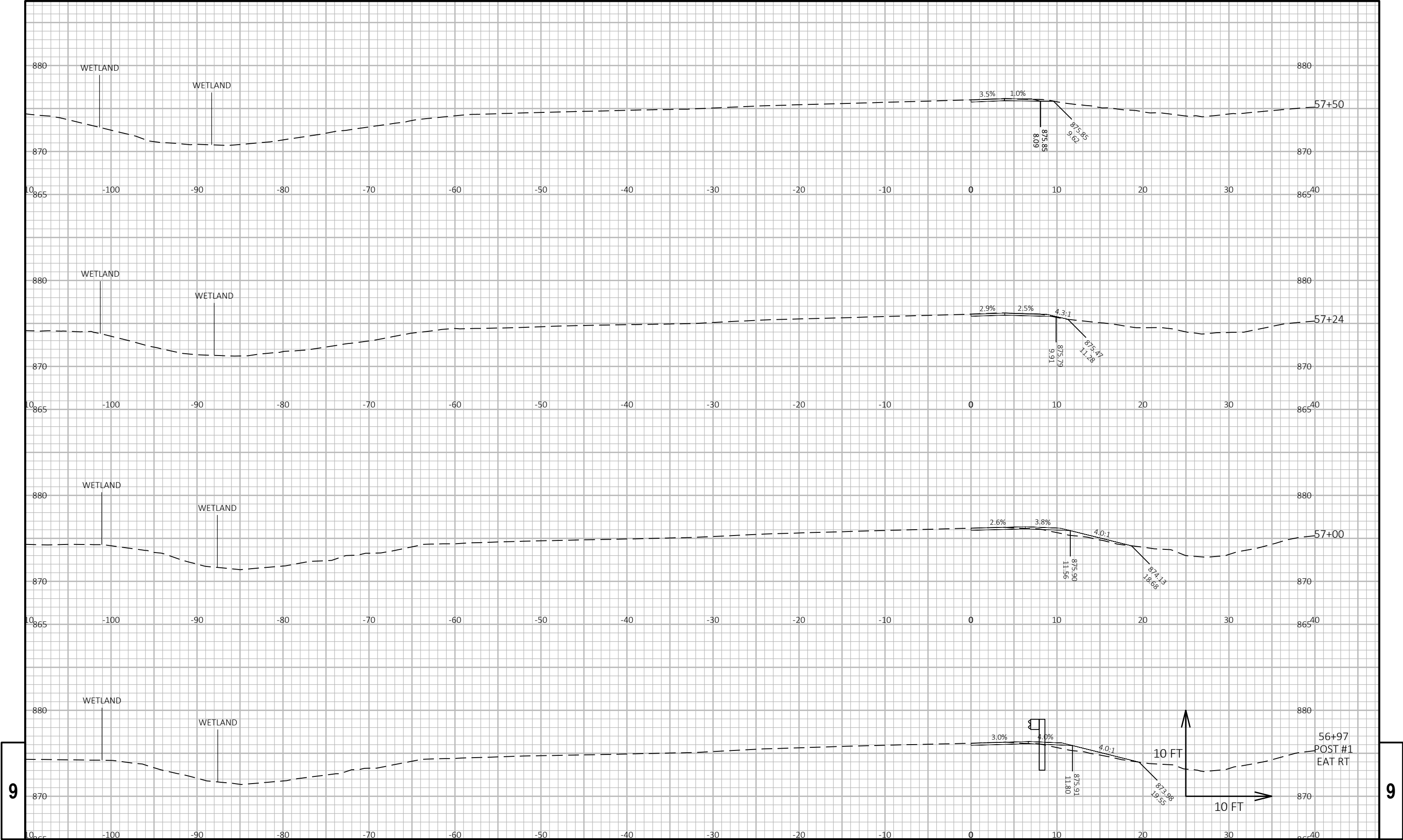
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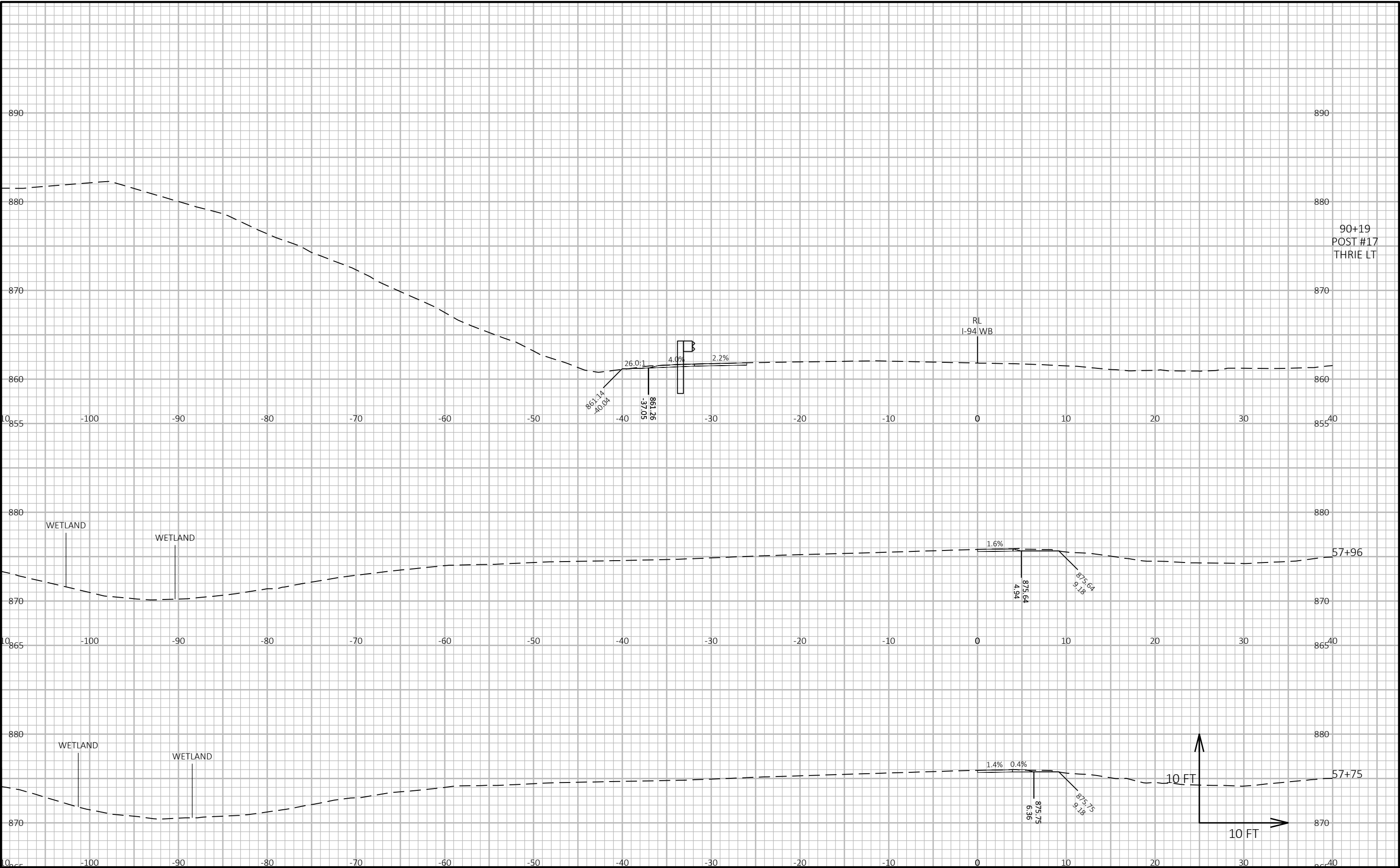
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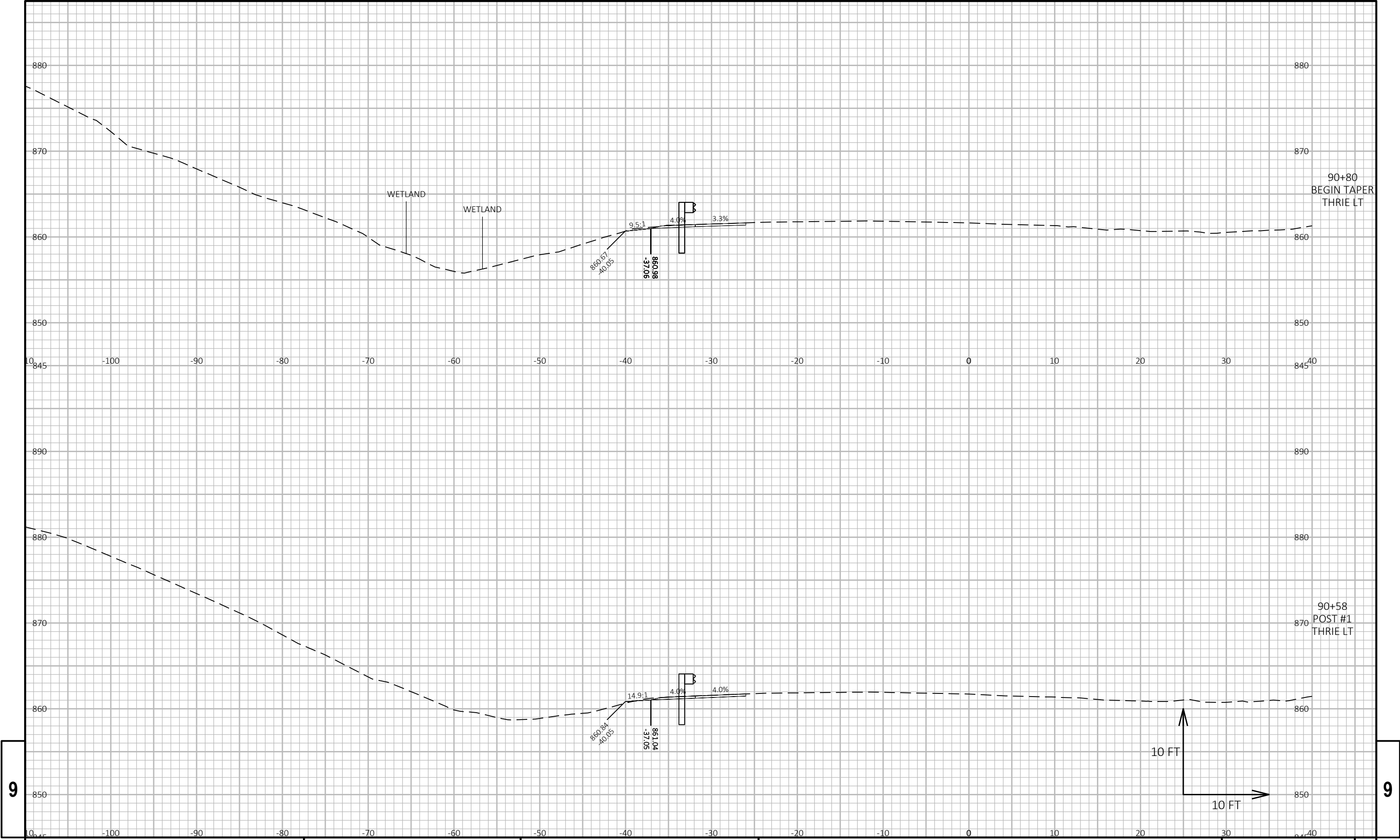
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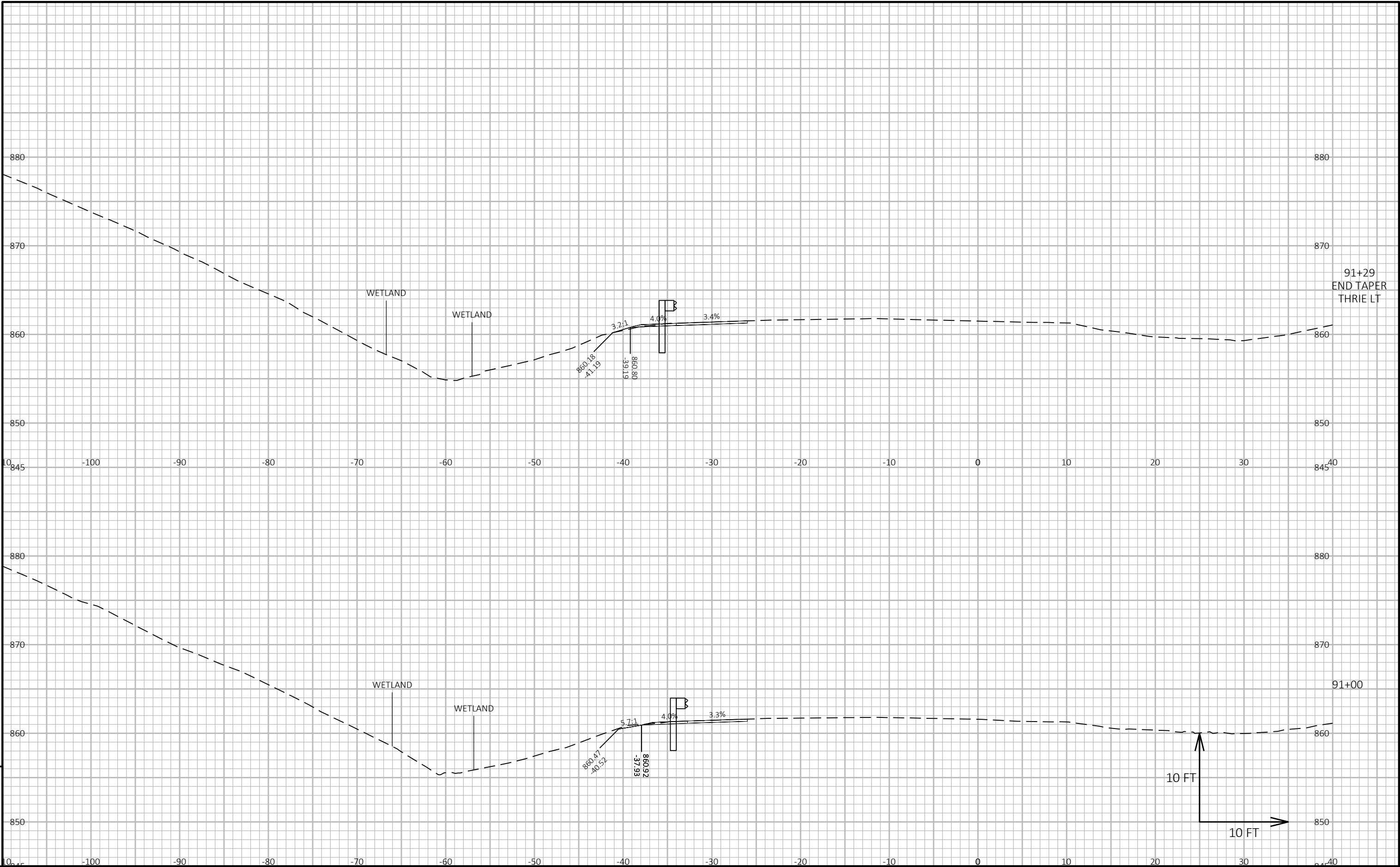
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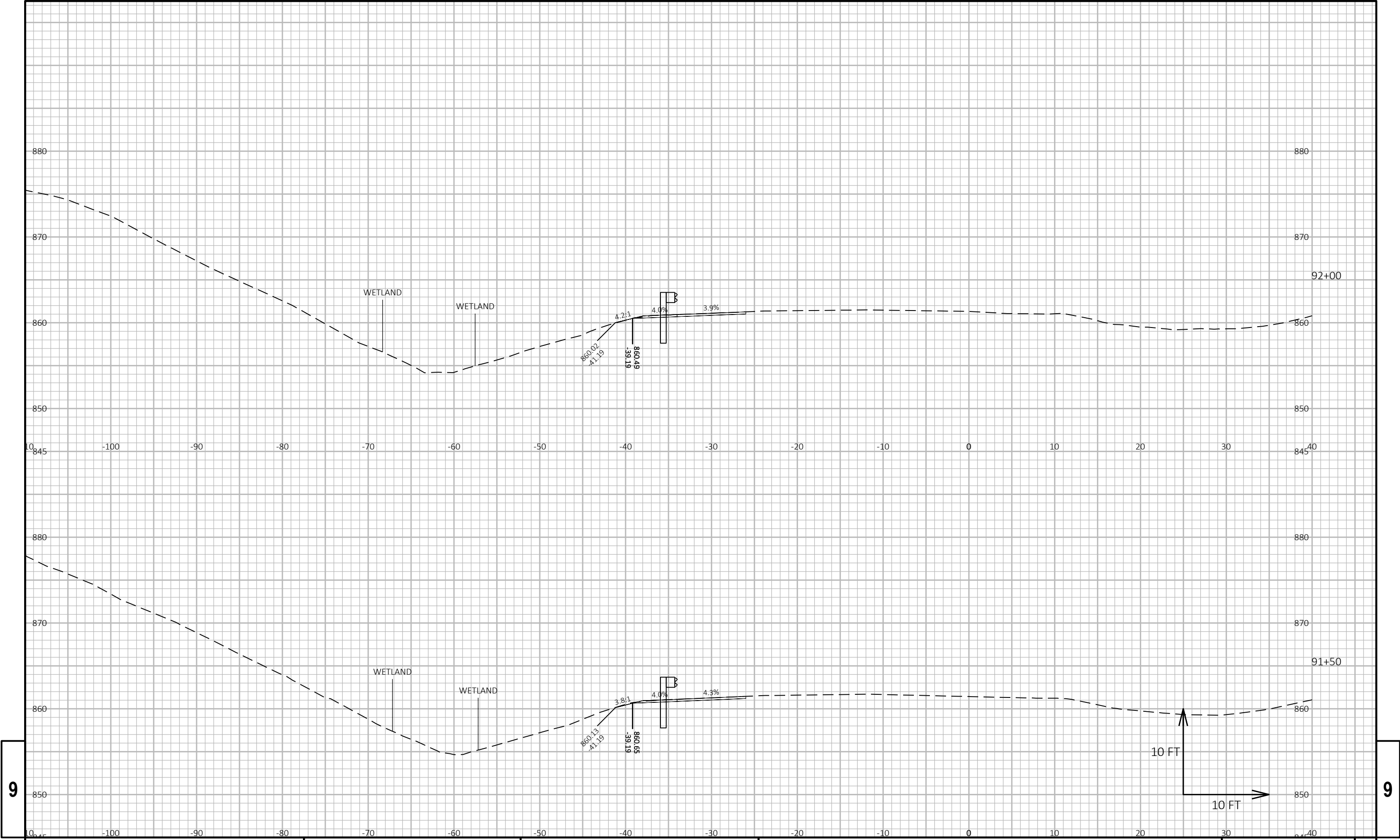
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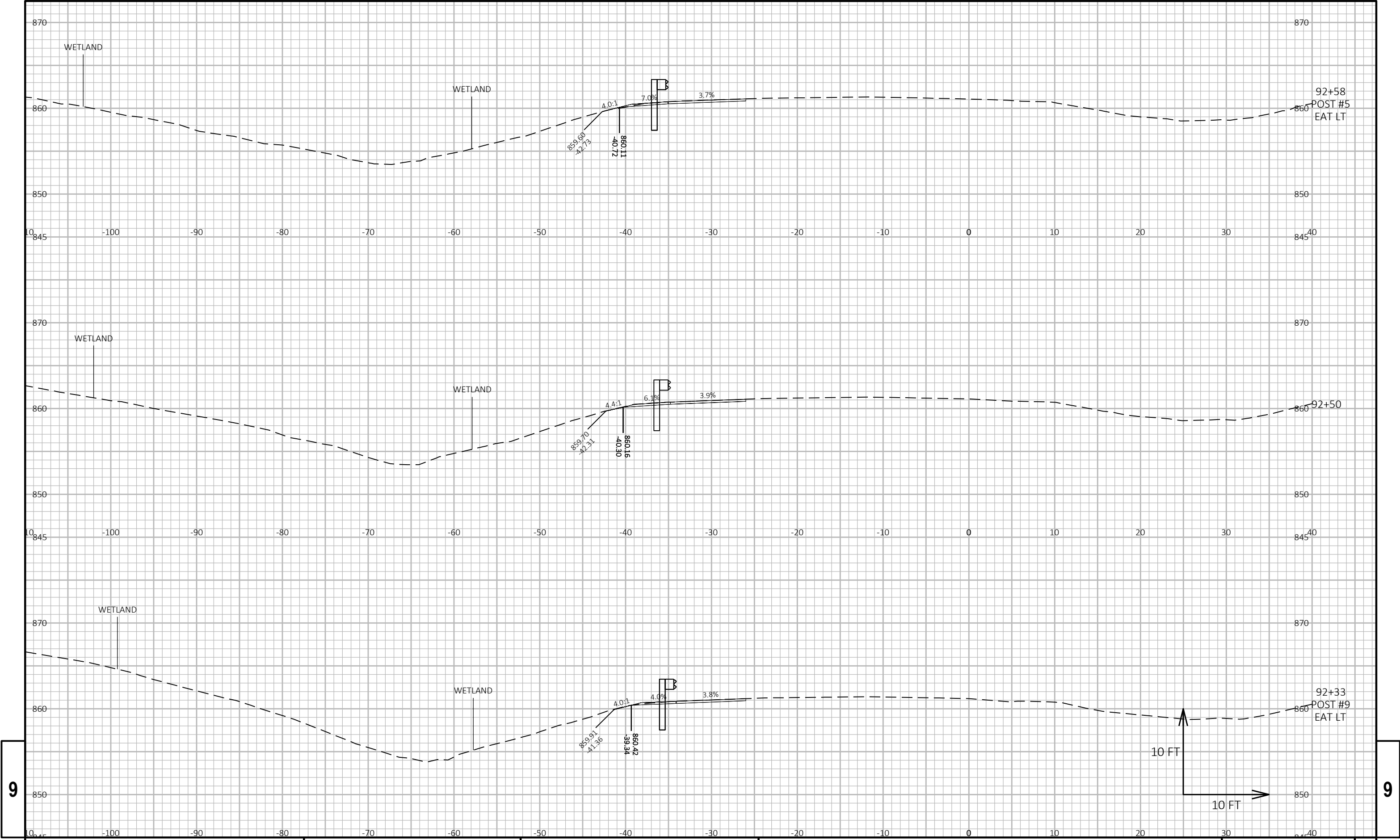
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PROJECT NO: 1020-05-63	HWY: IH 94	COUNTY: DUNN	CROSS SECTIONS: I-94 WESTBOUND	SHEET 580	E
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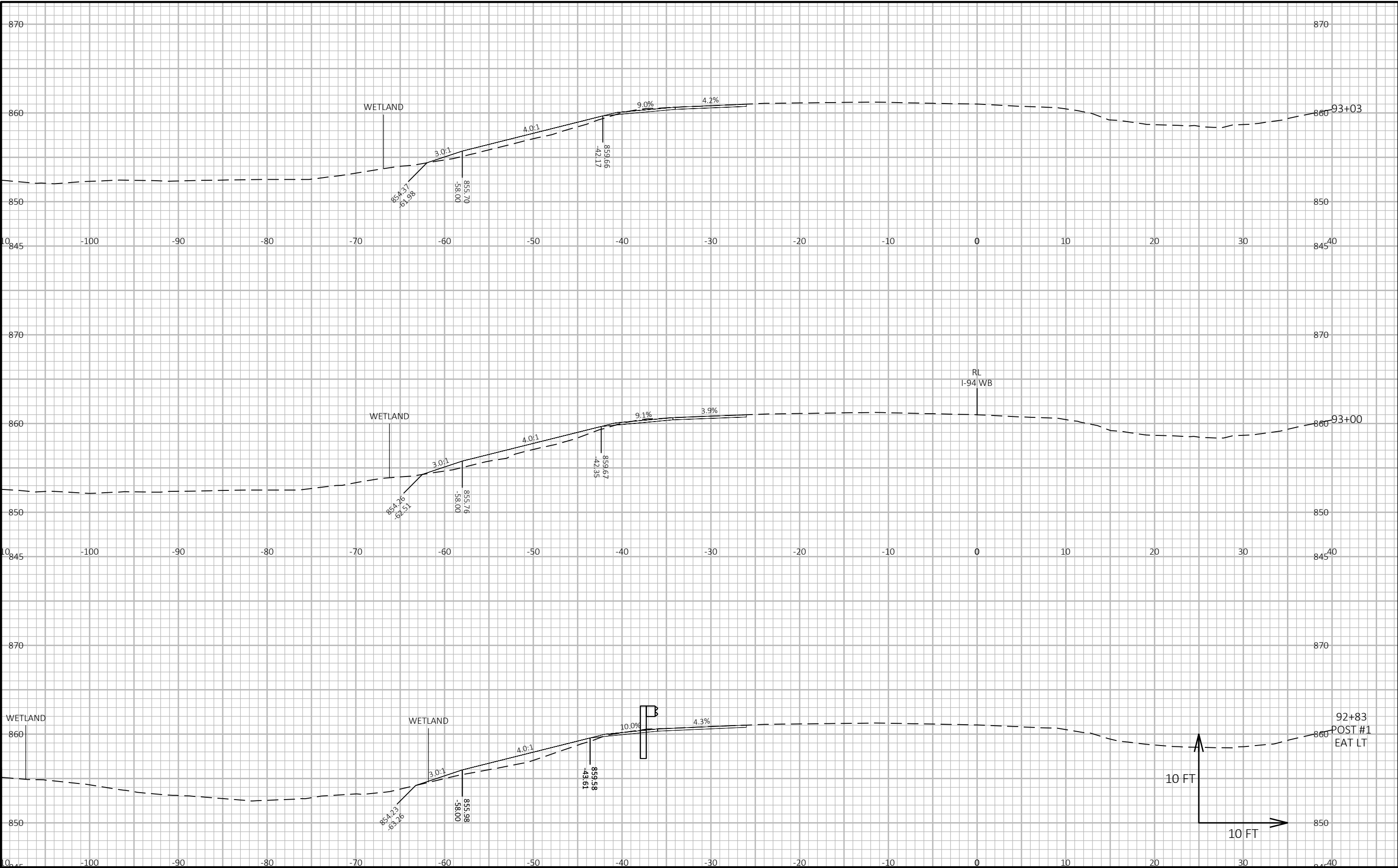
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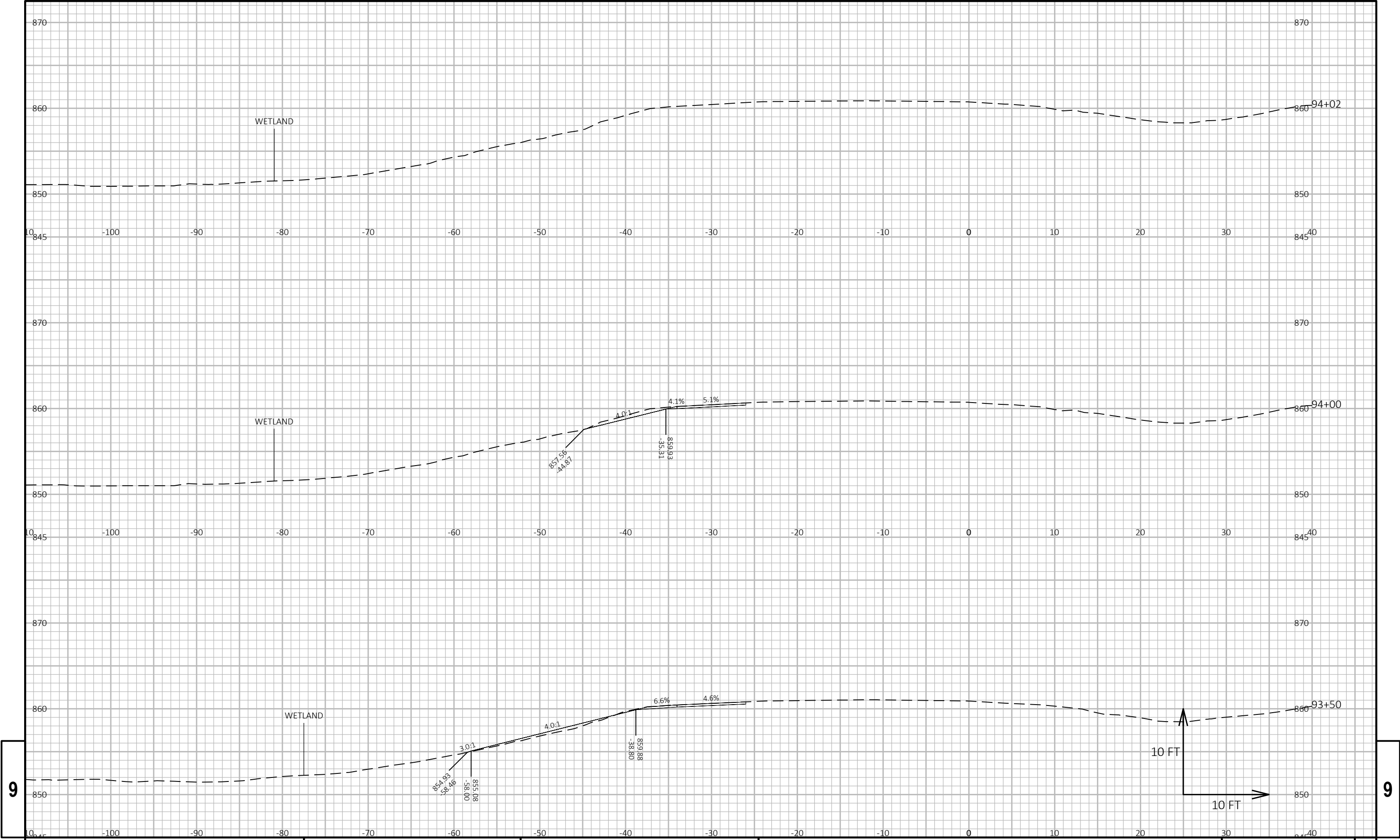
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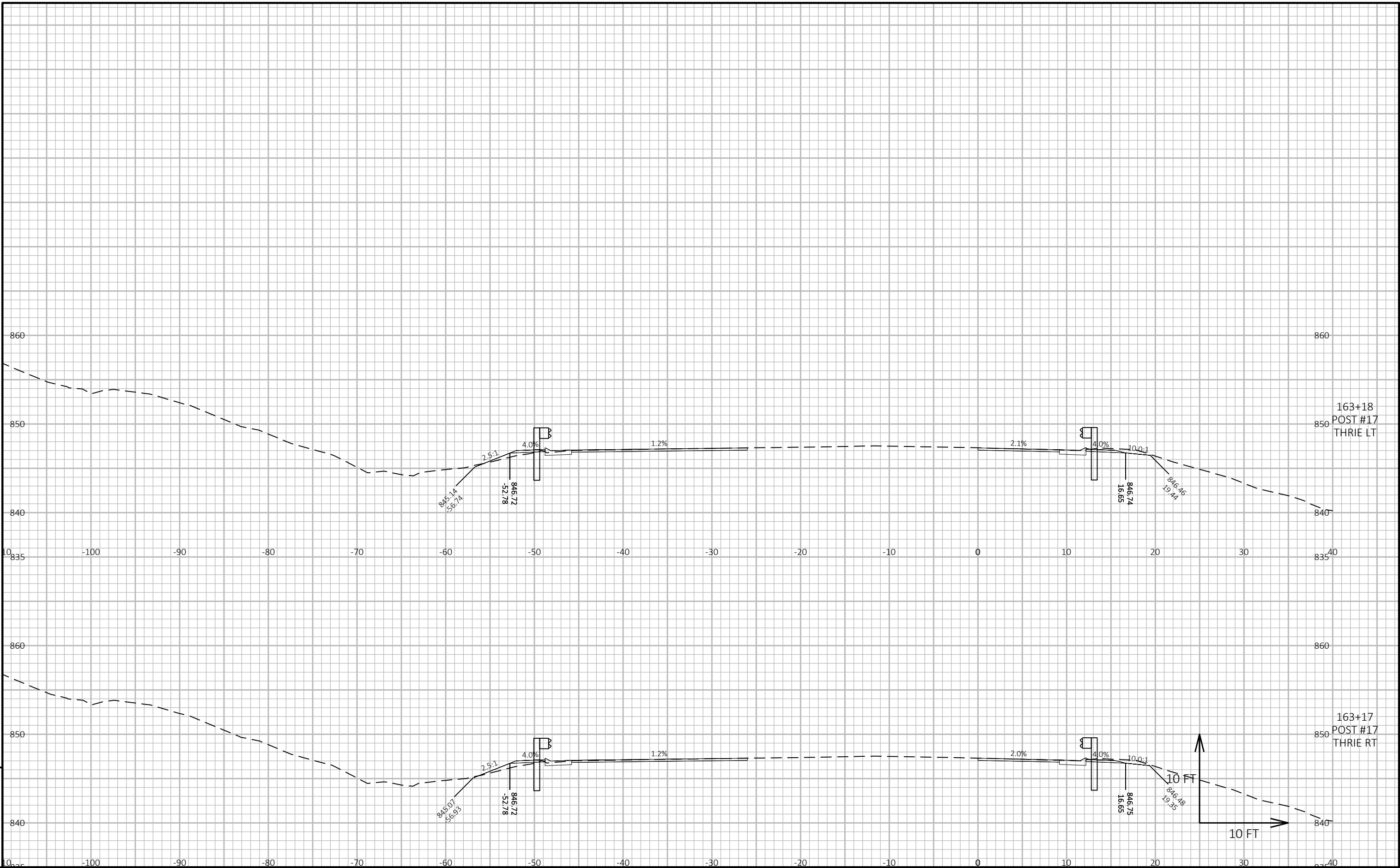
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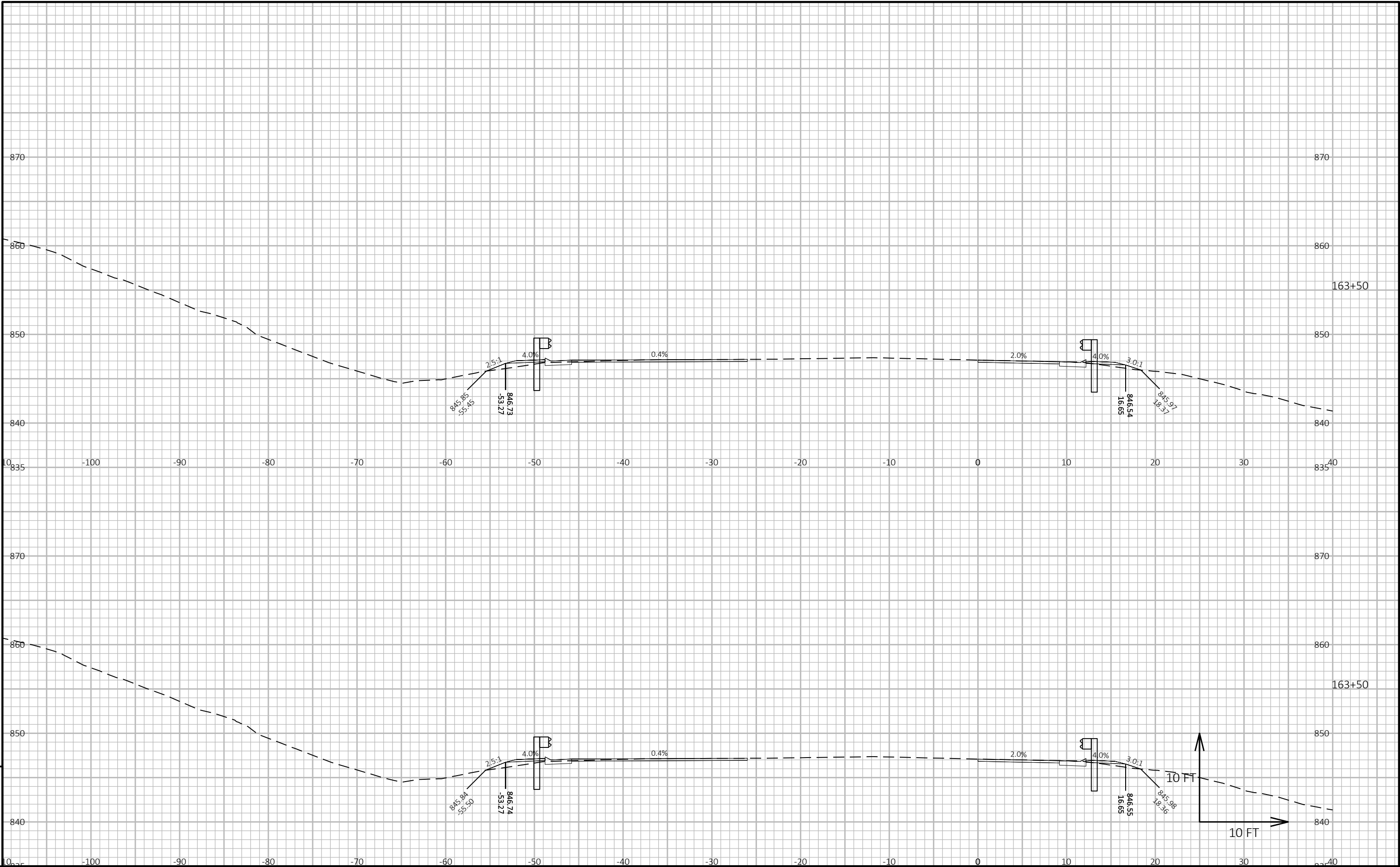




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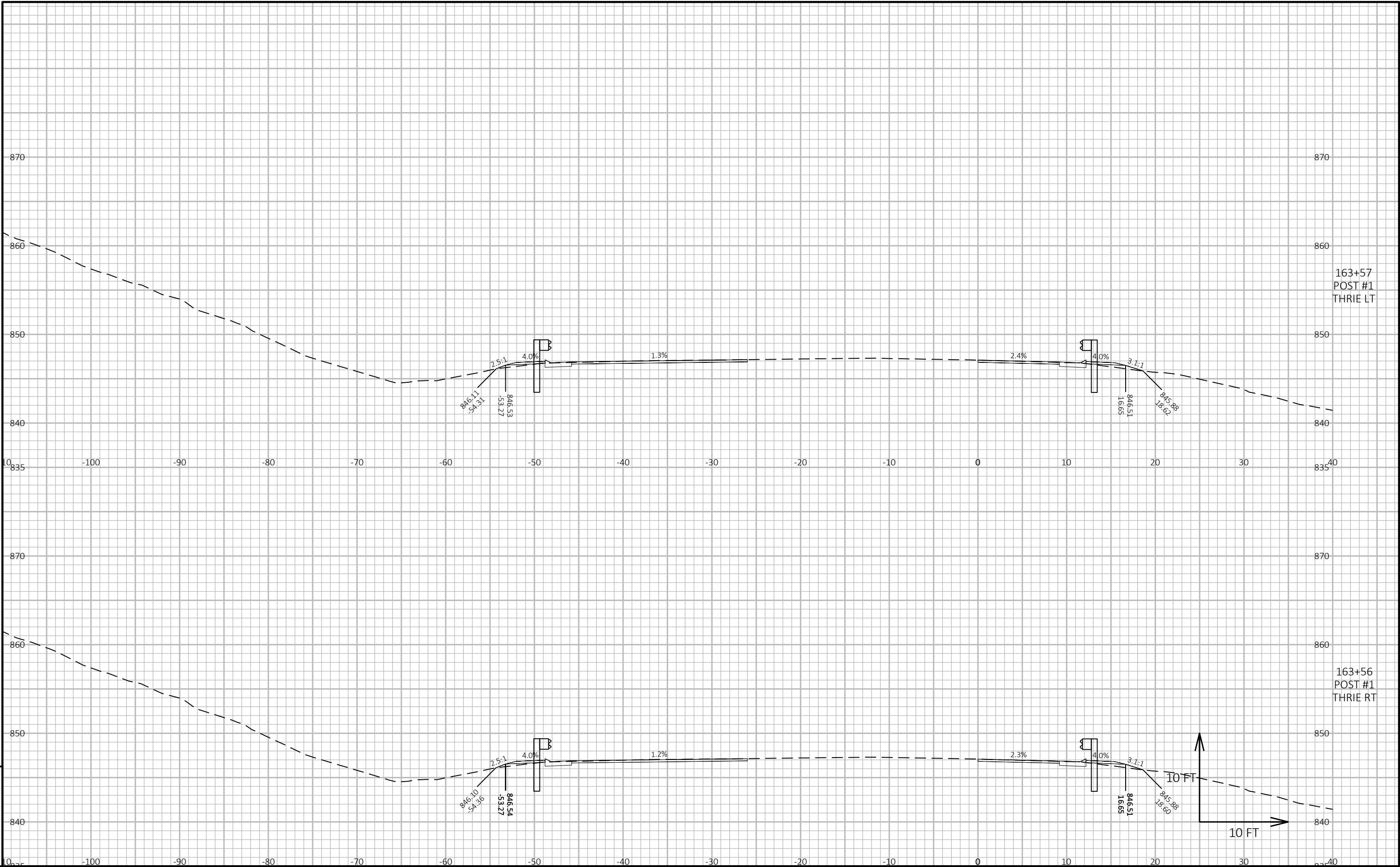
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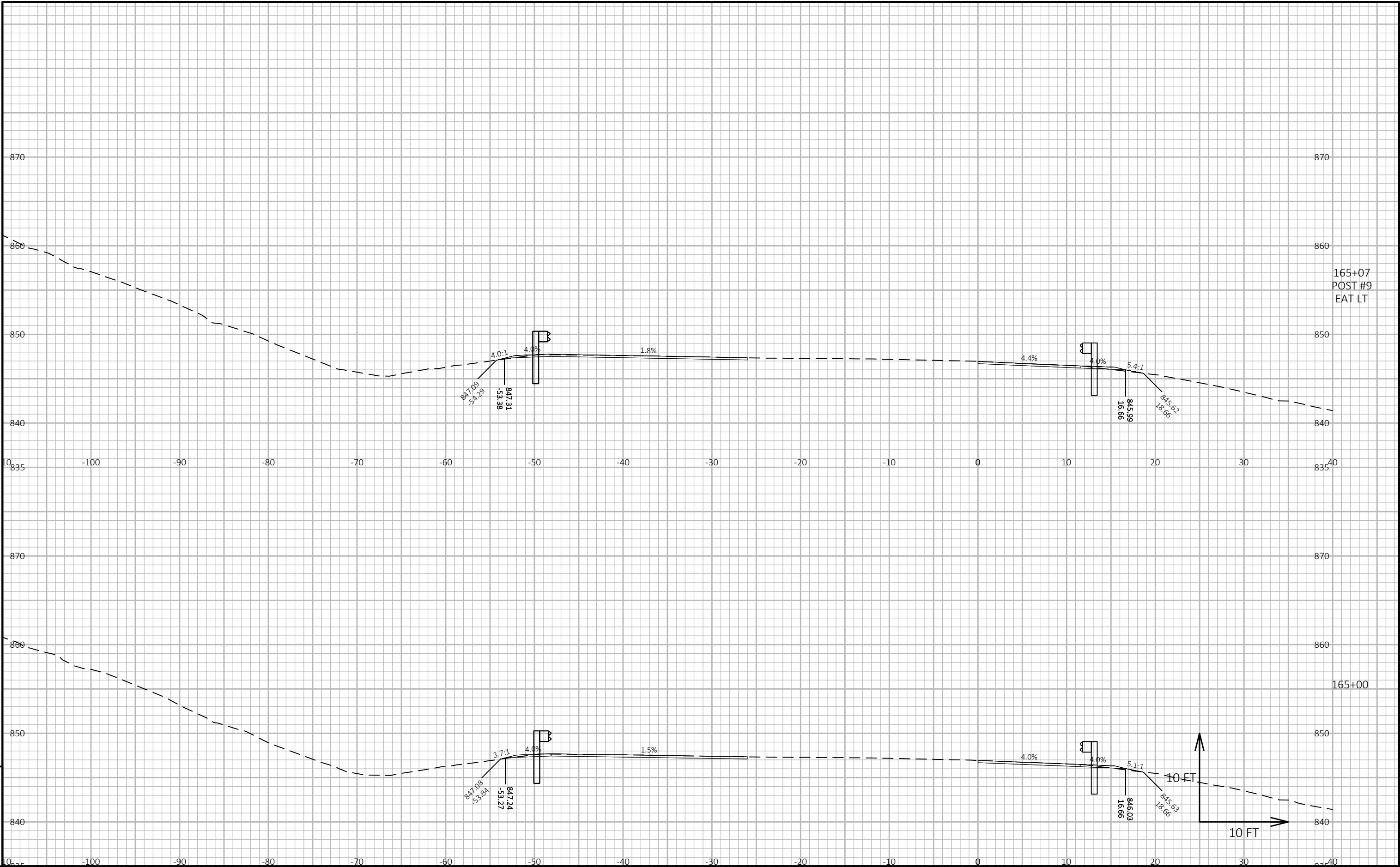


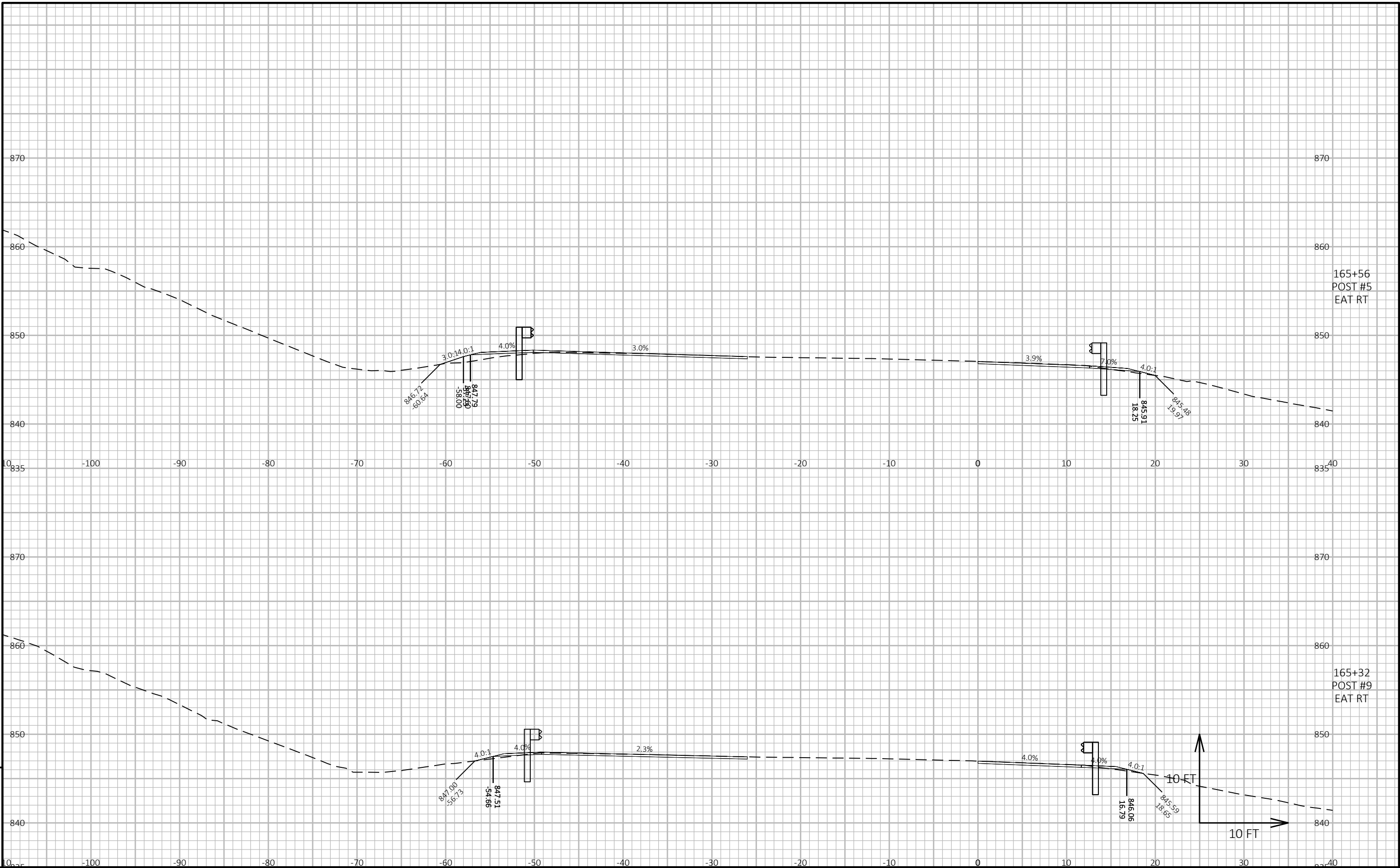


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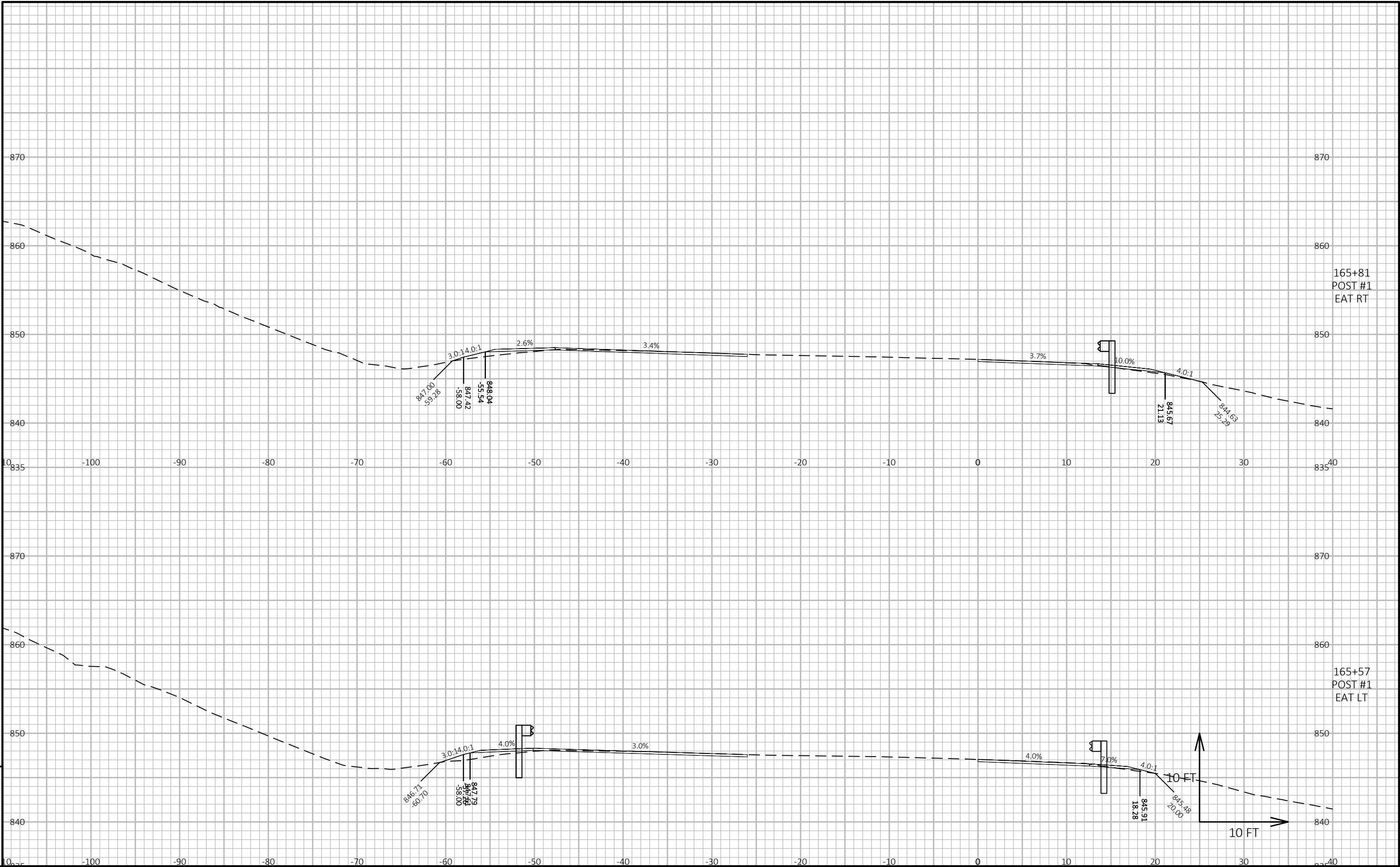




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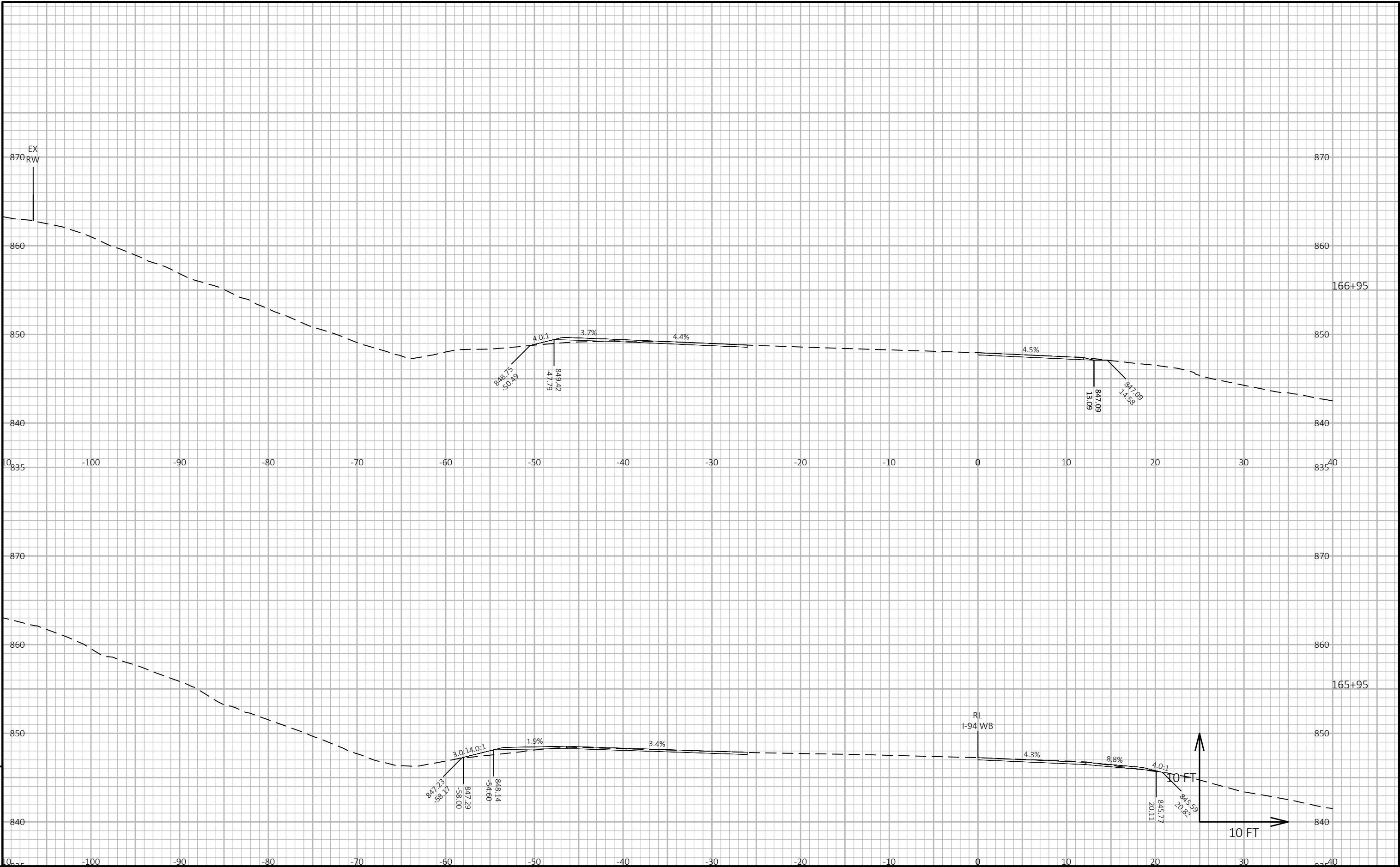
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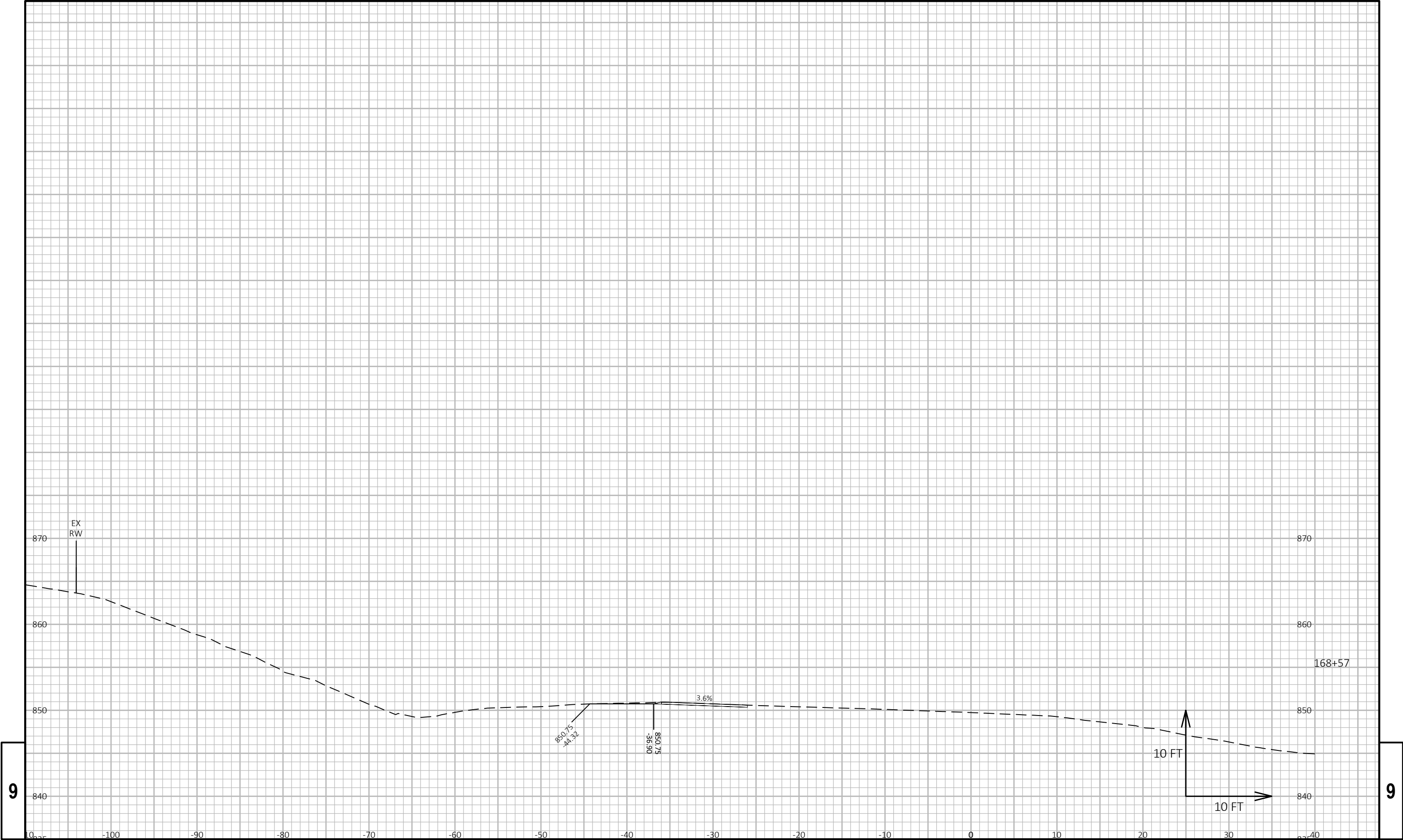


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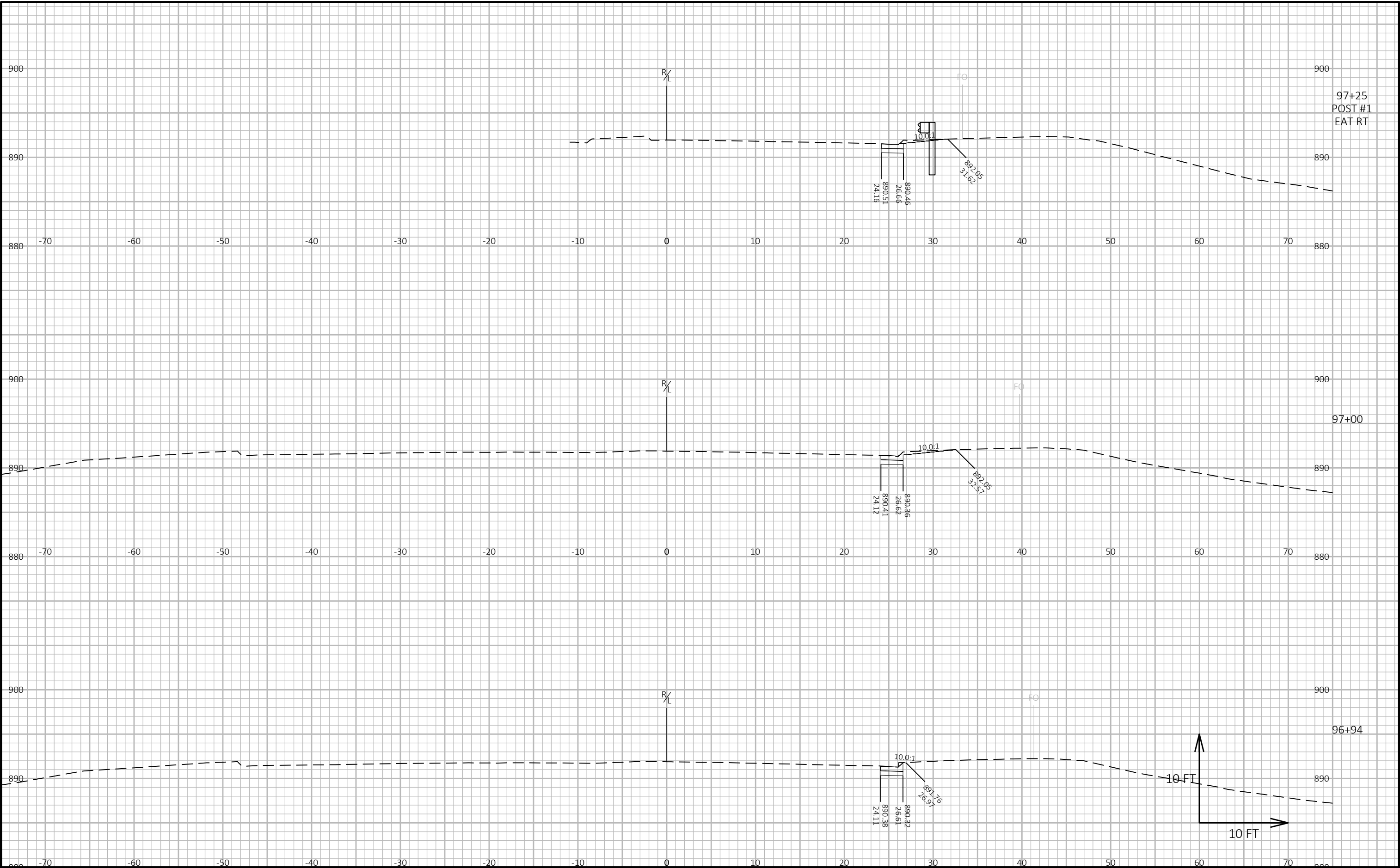
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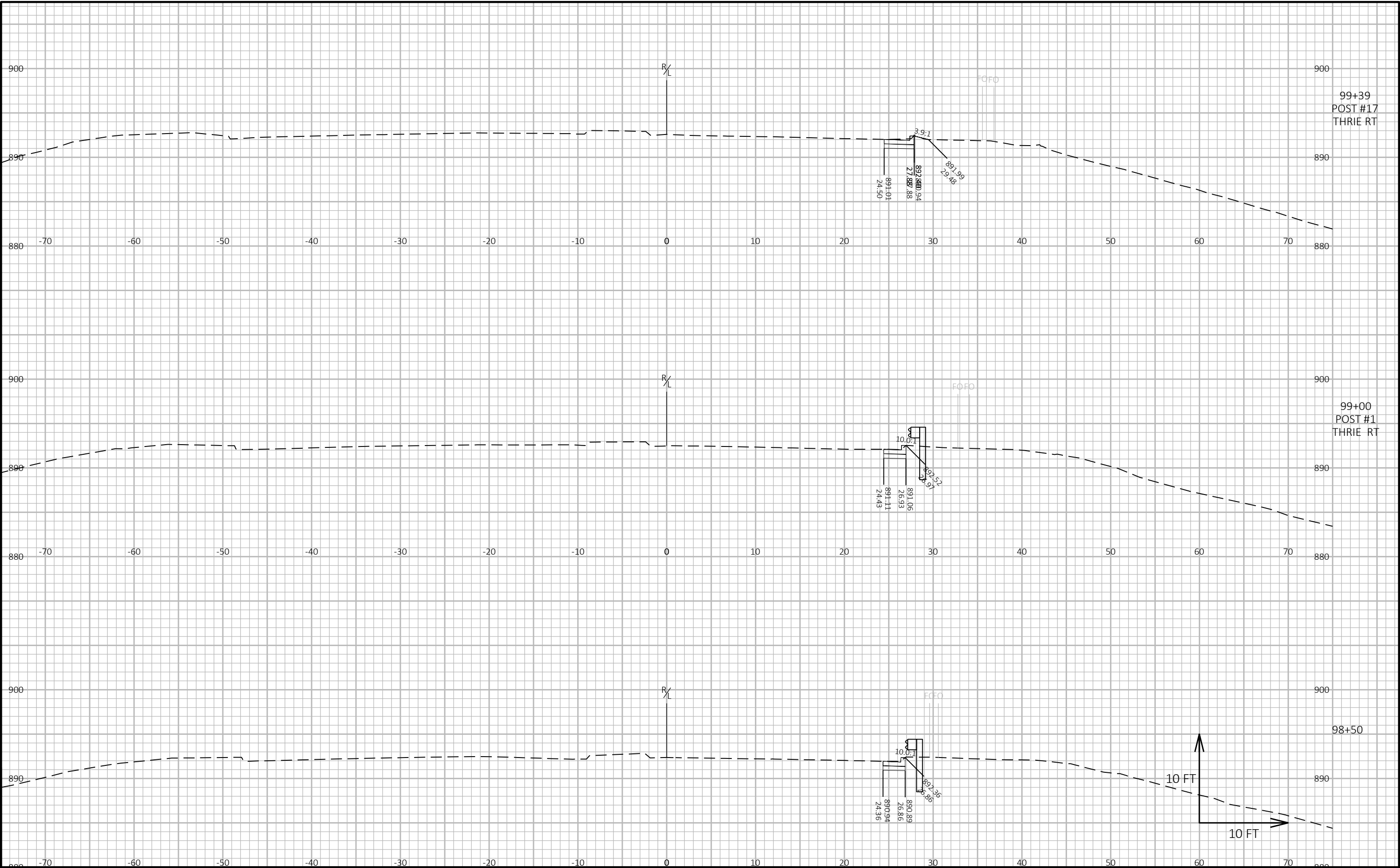


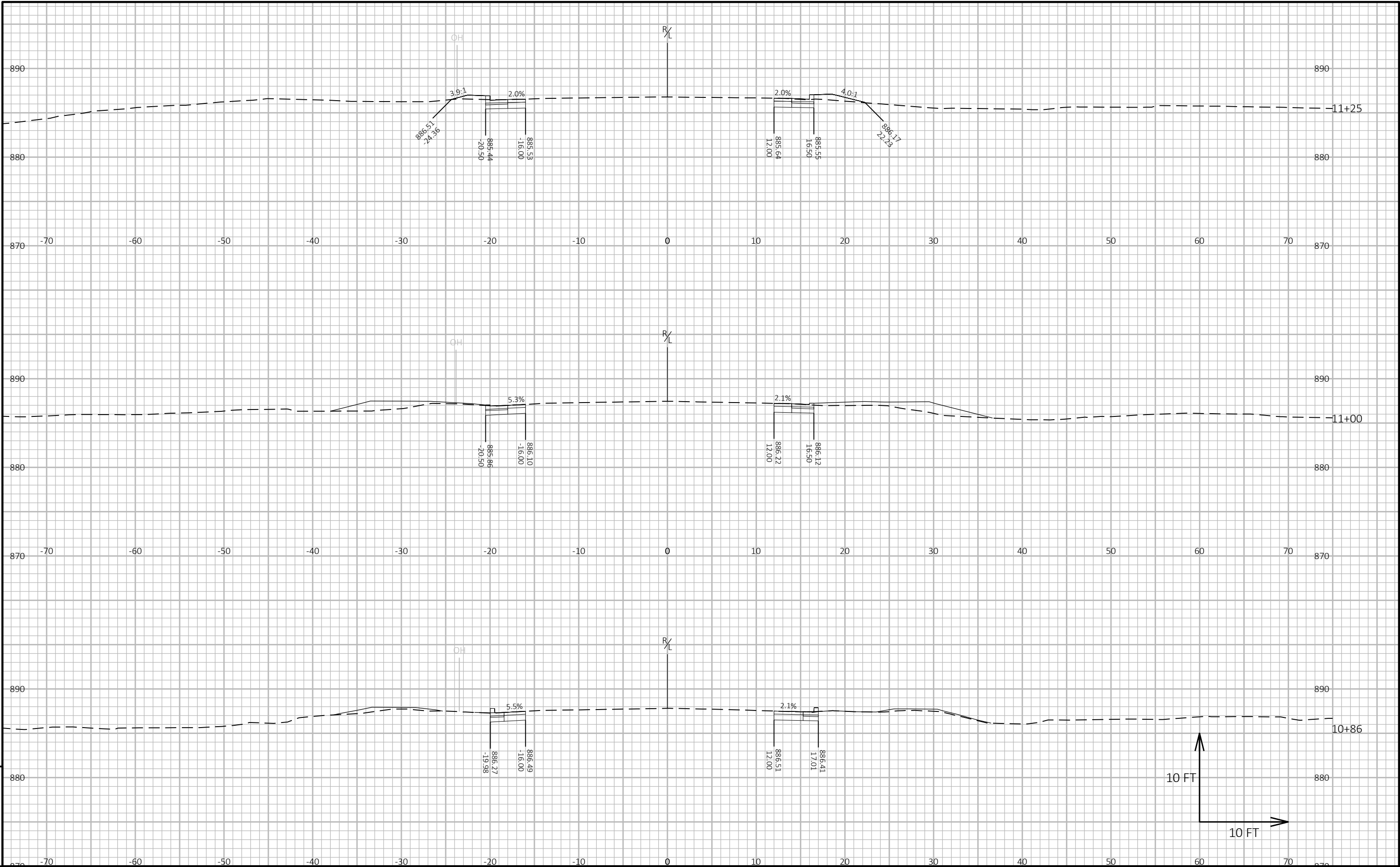


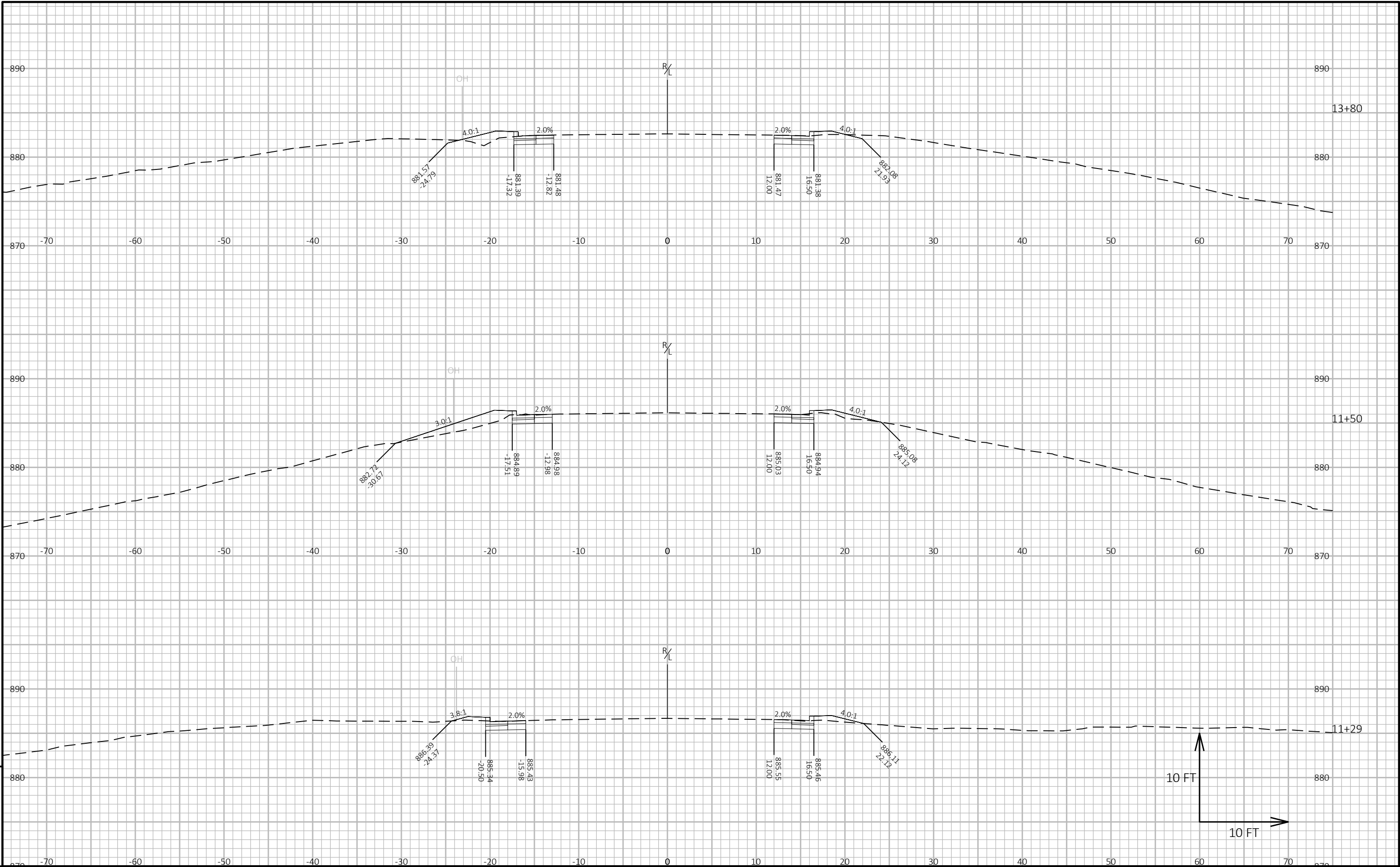
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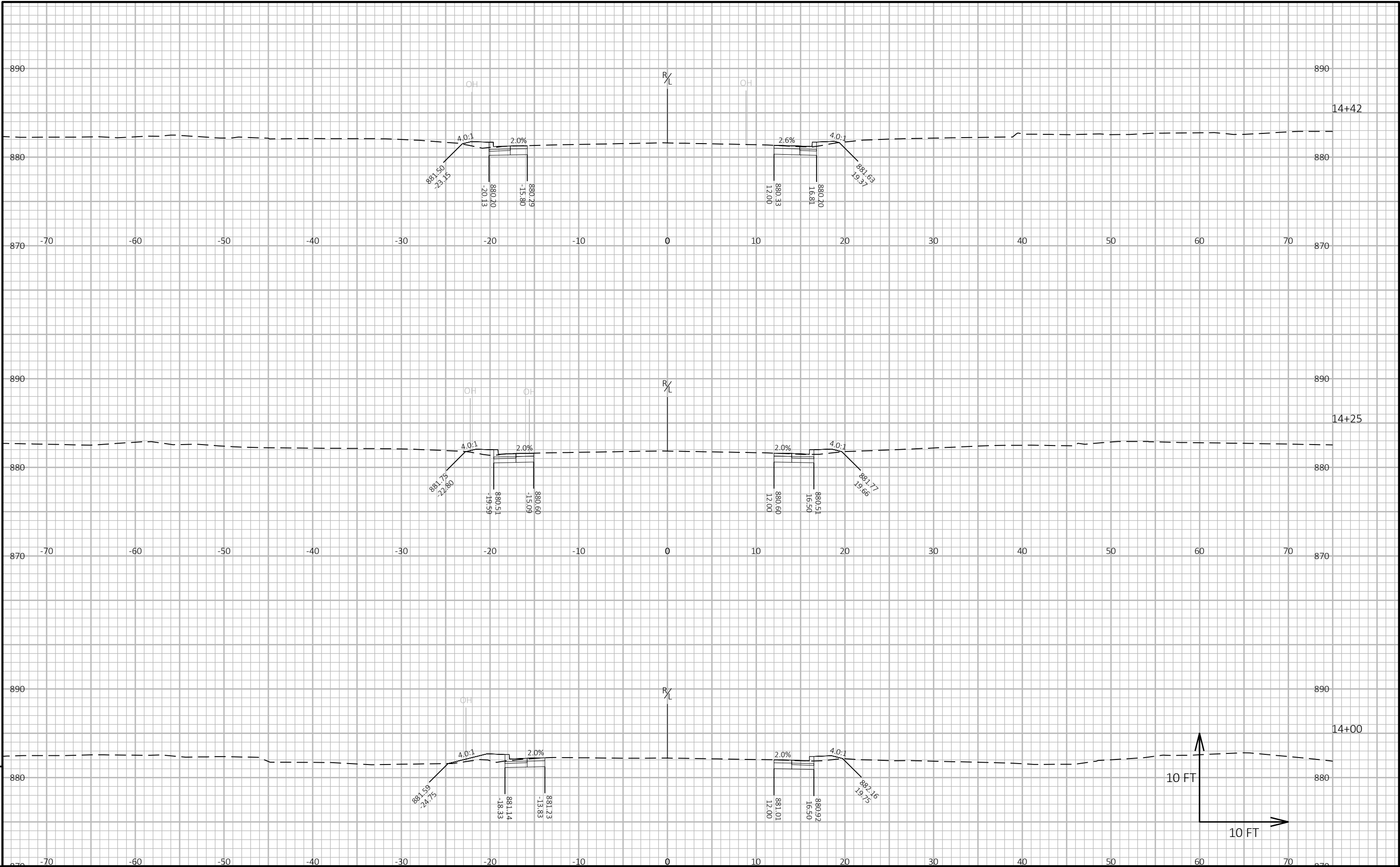
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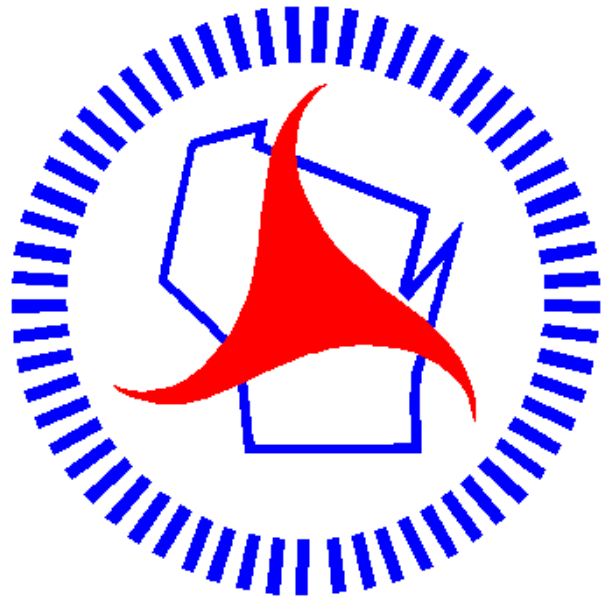












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