

LAX
PROJECT ID:
WITH: N/A

5180-00-73

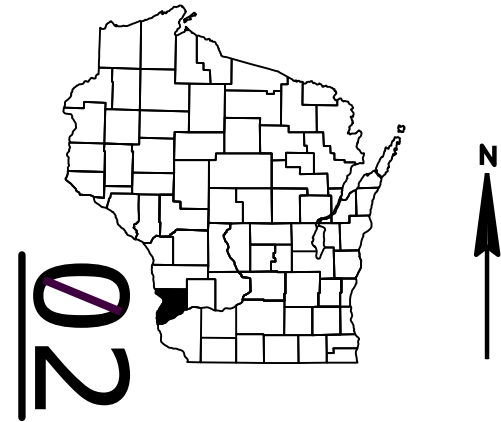
COUNTY:
CRAWFORD

OCTOBER 2026

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 = 144



DESIGN DESIGNATION 5180-00-03

A.A.D.T.	2027	=	2800
A.A.D.T.	2047	=	2800
D.H.V.		=	348
D.D.		=	60/40
T.		=	16.9 %
DESIGN SPEED		=	55 MPH
ESALS		=	840,000

CONVENTIONAL SYMBOLS

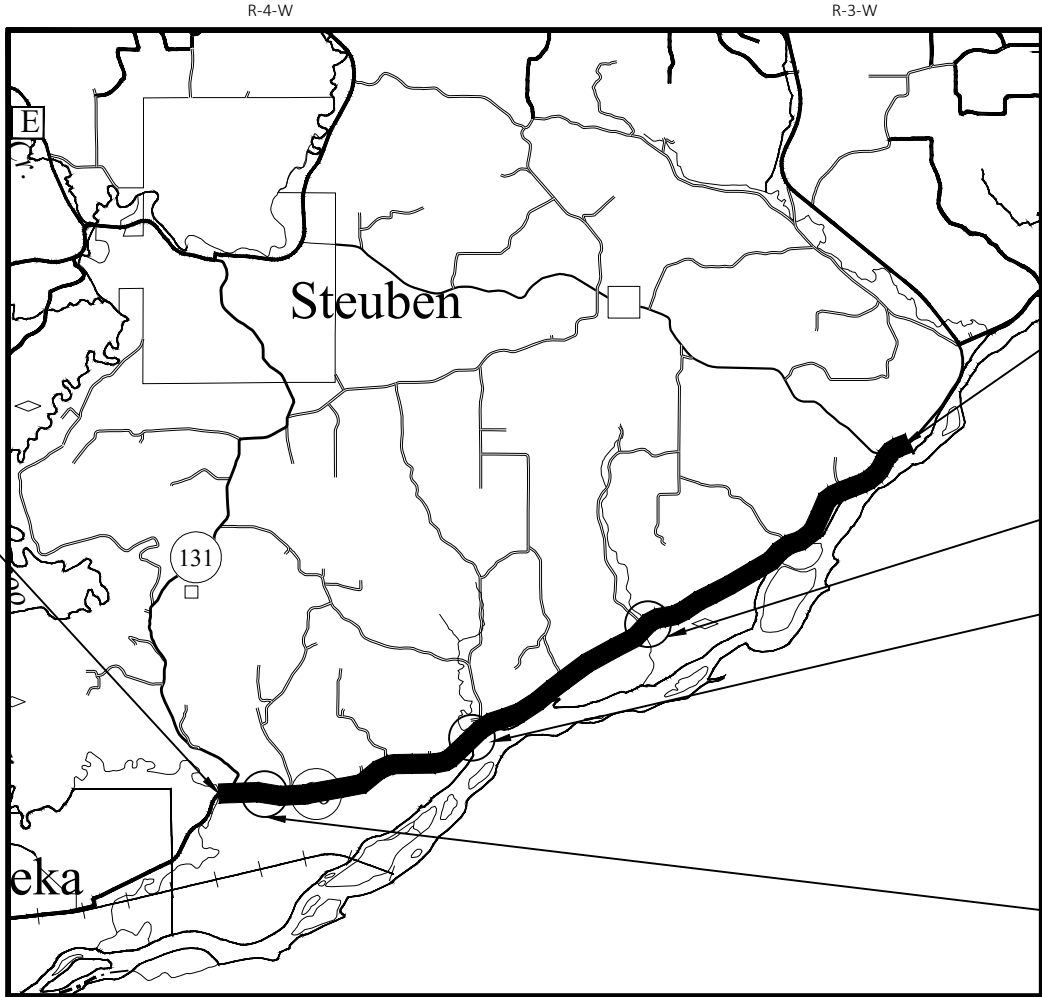
<u>PLAN</u>	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

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

BEGIN PROJECT
STA 100+00
X = 394601.2150
Y = 139938.1370

T-8-N

T-7-N



LAYOUT
SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 8.325 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN
COORDINATE REFERENCE SYSTEM (WISCRS), CRAWFORD COUNTY,
NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID
COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES
ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED
ELEVATIONS ARE BASED ON GEOID A12

END PROJECT
STA 539+58

NET EXCEPTION TO C/L LENGTH
B-12-0037
STA 360+79 - STA 361+96

NET EXCEPTION TO C/L LENGTH
B-12-102
STA 253+25 - STA 254+25

NET EXCEPTION TO C/L LENGTH
B-12-101
STA 153+81 - STA 154+48

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5180-00-73	WICS 2027001	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	WISDOT
Surveyor	KATHLEEN KLUDY, P.E.
Designer	PAUL VALENTI, P.E.
Project Manager	SW REGION
Regional Examiner	RANDY BYOM, P.E.
Regional Supervisor	
APPROVED FOR THE DEPARTMENT	
DATE: 04/30/2026	(Signature)

E

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
TIE SHEETS
PLAN DETAILS
EROSION CONTROL
ALIGNMENT

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.
- THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- RIGHT OF WAY LINES SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE
- ALL RADII ARE MEASURED TO EDGE OF PAVEMENT UNLESS OTHERWISE SHOWN OR NOTED ON THE PLAN.
- APPLY TACK COAT AT A RATE OF 0.07 GAL/SY TO MILLED PAVEMENT SURFACES AND 0.05 GAL/SY BETWEEN LAYERS OF HMA PAVEMENT.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

STANDARD ABBREVIATIONS

AC	ACRE	LC.	LONG CHORD
AGG	AGGREGATE	LS	LUMP SUM
<	ANGLE	M.P.	MARKER POST
AE, AEW	APRON ENDWALL	MGAL	1000 GALLONS
ASPH.	ASPHALTIC	N.C.	NORMAL CROWN
A.D.T.	AVERAGE DAILY TRAFFIC	N	NORTH
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC	NB	NORTHBOUND
B.F.	BACK FACE	NOR	NORMAL
BM	BENCHMARK	NO.	NUMBER
BTWN	BETWEEN	PAV'T	PAVEMENT
CTR.	CENTER	P.L.E.	PERMANENT LIMITED EASEMENT
C/L	CENTER LINE	P.C.	POINT OF CURVATURE
Δ	CENTRAL ANGLE OR DELTA	P.I.	POINT OF INTERSECTION
C.E.	COMMERCIAL ENTRANCE	P.T.	POINT OF TANGENCY
CONST.	CONSTRUCTION	PCC	PORTLAND CEMENT CONCRETE
CMCP	CORRUGATED METAL CULVERT PIPE	P.E.	PRIVATE ENTRANCE
CMP	CORRUGATED METAL PIPE	PGL	PROFILE GRADE LINE
CO.	COUNTY	P.L.	PROPERTY LINE
CTH	COUNTY TRUNK HIGHWAY	R	RADIUS OR RANGE
CR.	CREEK	R/L	REFERENCE LINE
CABC	CRUSHED AGGREGATE BASE COURSE	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
CY	CUBIC YARD	REQ'D	REQUIRED
CP	CONTROL POINT OR CULVERT PIPE	RT	RIGHT
C&G	CURB AND GUTTER	R.H.F.	RIGHT HAND FORWARD
D	DEGREE OF CURVE	R/W	RIGHT OF WAY
D.H.V.	DESIGN HOURLY VOLUME	RD.	ROAD
DIA.	DIAMETER	SHLD.	SHOULDER(S)
D.D.	DIRECTIONAL DISTRIBUTION	SHR.	SHRINKAGE
DISCH.	DISCHARGE	S	SOUTH
DMS	DYNAMIC MESSAGE SIGN	SB	SOUTHBOUND
EA	EACH	S.F.	SQUARE FOOT (FEET)
E	EAST	SDD	STANDARD DETAIL DRAWING(S)
EB	EASTBOUND	STH	STATE TRUNK HIGHWAY
ELEC.	ELECTRIC(AL), ELEC. CABLE	STA.	STATION
EL., ELEV.	ELEVATION	S.E.	SUPERELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS	S/L	SURVEY LINE
EXC.	EXCAVATION	SYM	SYMMETRICAL
EXIST	EXISTING	T.	PERCENT TRUCKS
F.F.	FACE TO FACE	TEL.	TELEPHONE
FERT.	FERTILIZER	TEMP.	TEMPORARY
F.E.	FIELD ENTRANCE	T.L.E.	TEMPORARY LIMITED EASEMENT
F/L, F.L.	FLOW LINE	T.O.C.	TOP OF CURB
GALV.	GALVANIZE	TYP	TYPICAL
H.S.	HIGH STRENGTH	UNCL.	UNCLASSIFIED
CWT	HUNDRED WEIGHT	U.G.	UNDERGROUND (CABLE)
INL	INLET	VAR	VARIABLE
INTER.	INTERSECTION	V.C.	VERTICAL CURVE
IH	INTERSTATE HIGHWAY	V.P.C.	VERTICAL POINT OF CURVATURE
JT.	JOINT	V.P.I.	VERTICAL POINT OF INTERSECTION
LT	LEFT	V.P.T.	VERTICAL POINT OF TANGENCY
L.H.F.	LEFT HAND FORWARD	Wt.	WEIGHT
L.	LENGTH OF CURVE	W	WEST
L.F.	LINEAR FOOT(FEET)	WB	WESTBOUND

UTILITY CONTACTS

ATC MANAGEMENT, INC- ELECTRICITY - TRANSMISSION
DOUG VOSBERG
2489 RINDEN ROAD
COTTAGE GROVE, WI 53527
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DVOSBERG@ATCLLC.COM

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MICHAEL REYNOLDS
1006 WISCONSIN AVE
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(608) 375-5030
DPW@BOSCOBEL.WI.US

BRIGHTSPEED WESTERN WISCONSIN-COMMUNICATION LINE
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135 N. BONSON ST.
PLATTEVILLE, WI 53818
(608) 482-5377
DOUG.MCGOWAN@BRIGHTSPEED.COM

CENTURY LINK-COMMUNICATION
KYLE SCHLAMPP
20 SOUTH WILSON AVE
RICE LAKE, WI 54868
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(715) 292-0082 CELL
kyle.schlammpp@lumen.com

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MICHAEL LYDON
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(608) 787-1381
MICHAEL.LYDON@DAIRYLANDPOWER.COM

MEDIA.COM WISCONSIN LLC - COMMUNICATION
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100 NORTH MARQUETTE RD SUITE 116
PRAIRIE DU CHEIN, WI 53821
CEGGERT@MEDIA.COMOC.COM

RICHLAND GRANT TELEPHONE COOPERATIVE - COMMUNICATION
JOSH LIEN
202 NEAST STREET
PO BOX 67
BLUE RIVER, WI 53518
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(608) 434-2796 CELL
JOSHL@RGTC.COOP

SCENIC RIVERS ENERGY COOPERATIVE- ELECTRICITY
CHAD OLMSTEAD
206 COUNTY ROAD K
LANCASTER, WI 53813
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COLMSTEAD@SREC.NET

DESIGN CONTACTS

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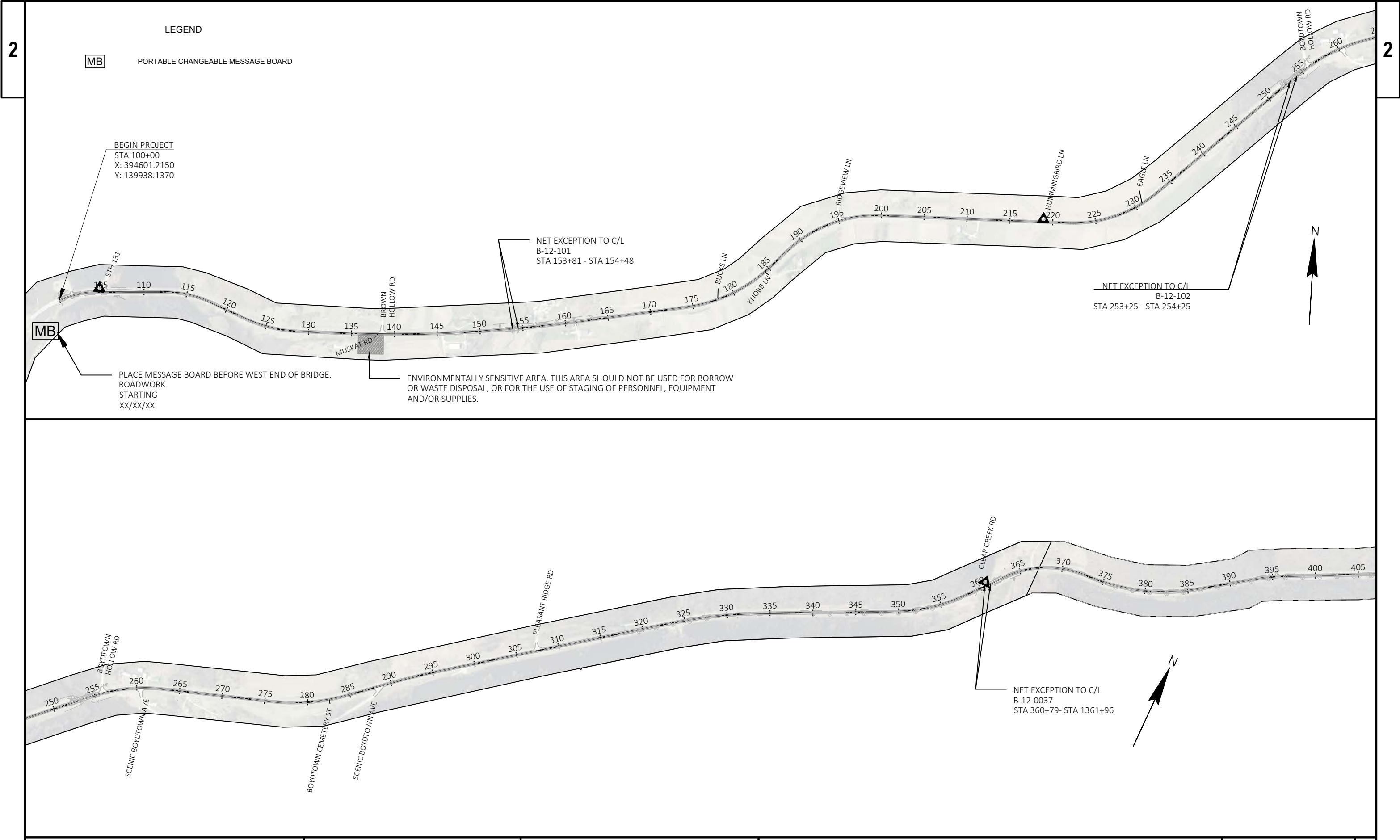
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3550 MORMON COULEE RD
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(608) 785-9948
KATHLEEN.KLUDY@DOT.WI.GOV

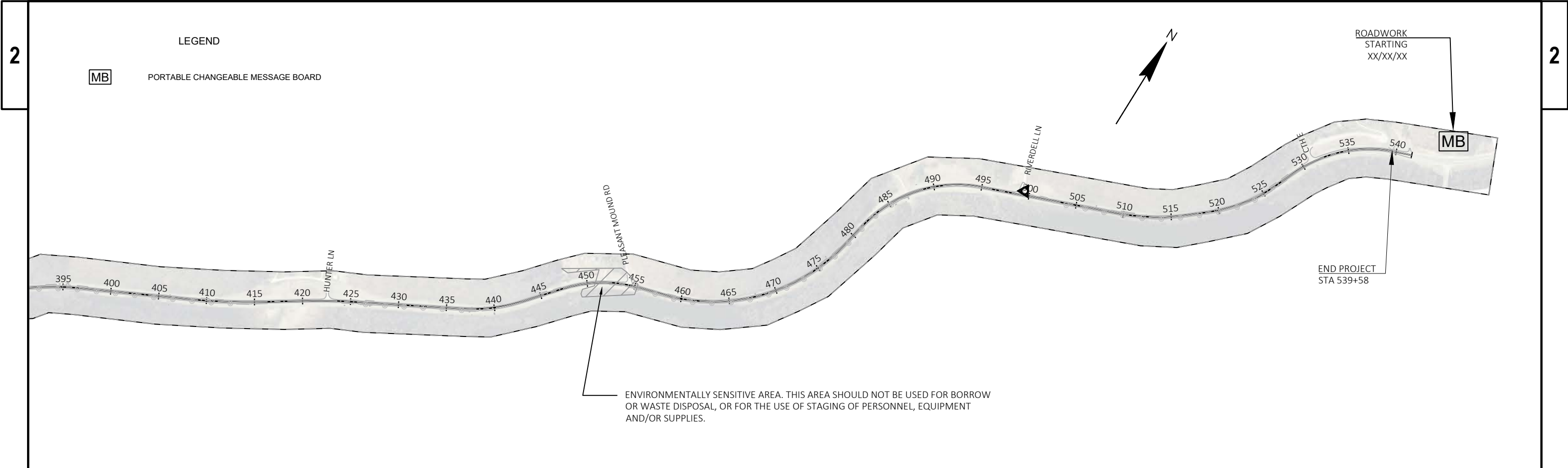
ENVIRONMENTAL CONTACTS

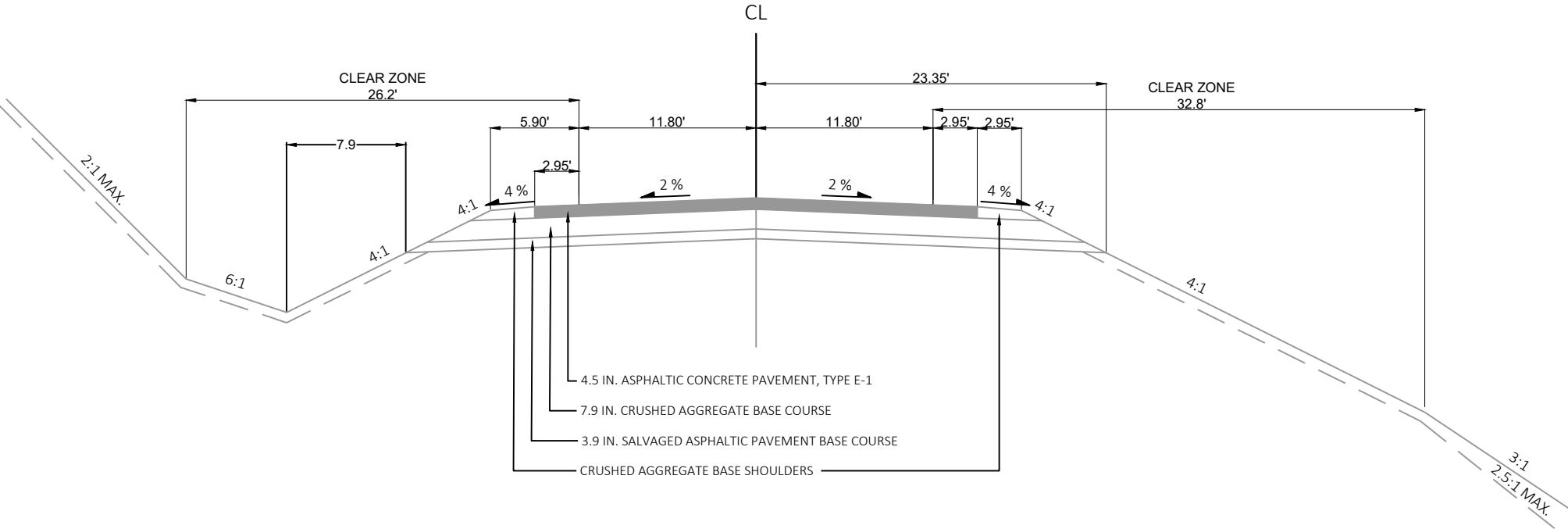
KAREN KALVELAGE
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
WISCONSIN DEPT. OF NATURAL RESOURCES
WEST CENTRAL REGION
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
(608) 785-9115
karen.kalvelage@dot.wi.gov



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

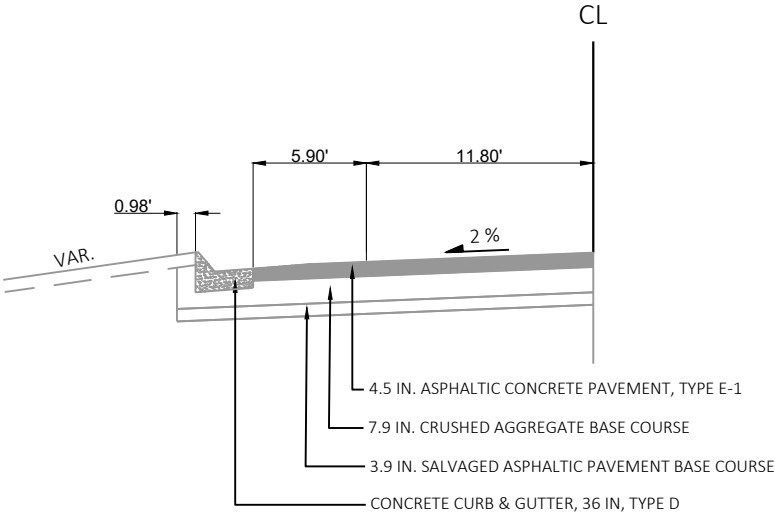






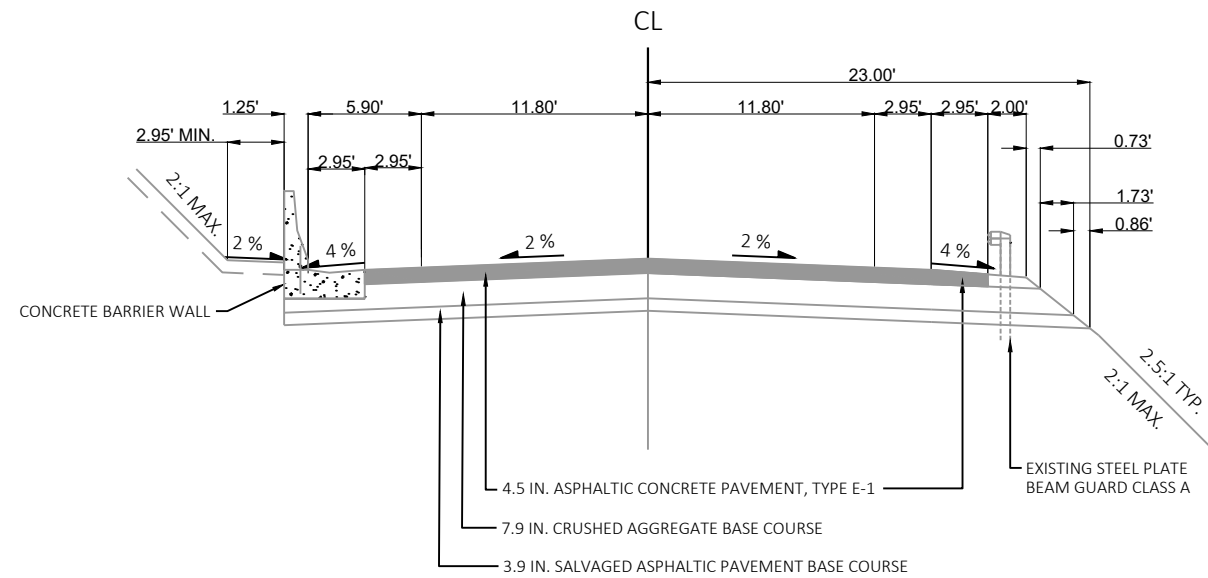
EXISTING TYPICAL MAINLINE SECTION (STH 60)

STATION 100+00 TO STATION 153+81.00	STATION 339+18.40 TO STATION 347+10.40	STATION 410+46.40 TO STATION 428+41.60
STATION 154+48 TO STATION 253+25.00	STATION 351+85.60 TO STATION 372+97.60	STATION 445+84.00 TO STATION 456+92.80
STATION 254+25 TO STATION 308+56.00	STATION 381+42.40 TO STATION 386+44.00	STATION 476+46.40 TO STATION 503+39.20
STATION 321+23.20 TO STATION 328+62.40	STATION 393+56.80 TO STATION 398+32.00	STATION 527+15.20 TO STATION 539+58.00



EXISTING TYPICAL MAINLINE SECTION WITH
CONCRETE CURB & GUTTER

STATION 308+56.00 TO STATION 321+23.20



EXISTING TYPICAL BARRIER WALL & BEAM GUARD SECTION

STATION 328+62.40 TO STATION 339+18.40

STATION 347+10.40 TO STATION 351+85.60

STATION 372+97.60 TO STATION 374+56.00

STATION 378+78.40 TO STATION 381+42.40

STATION 386+44.00 TO STATION 393+56.80

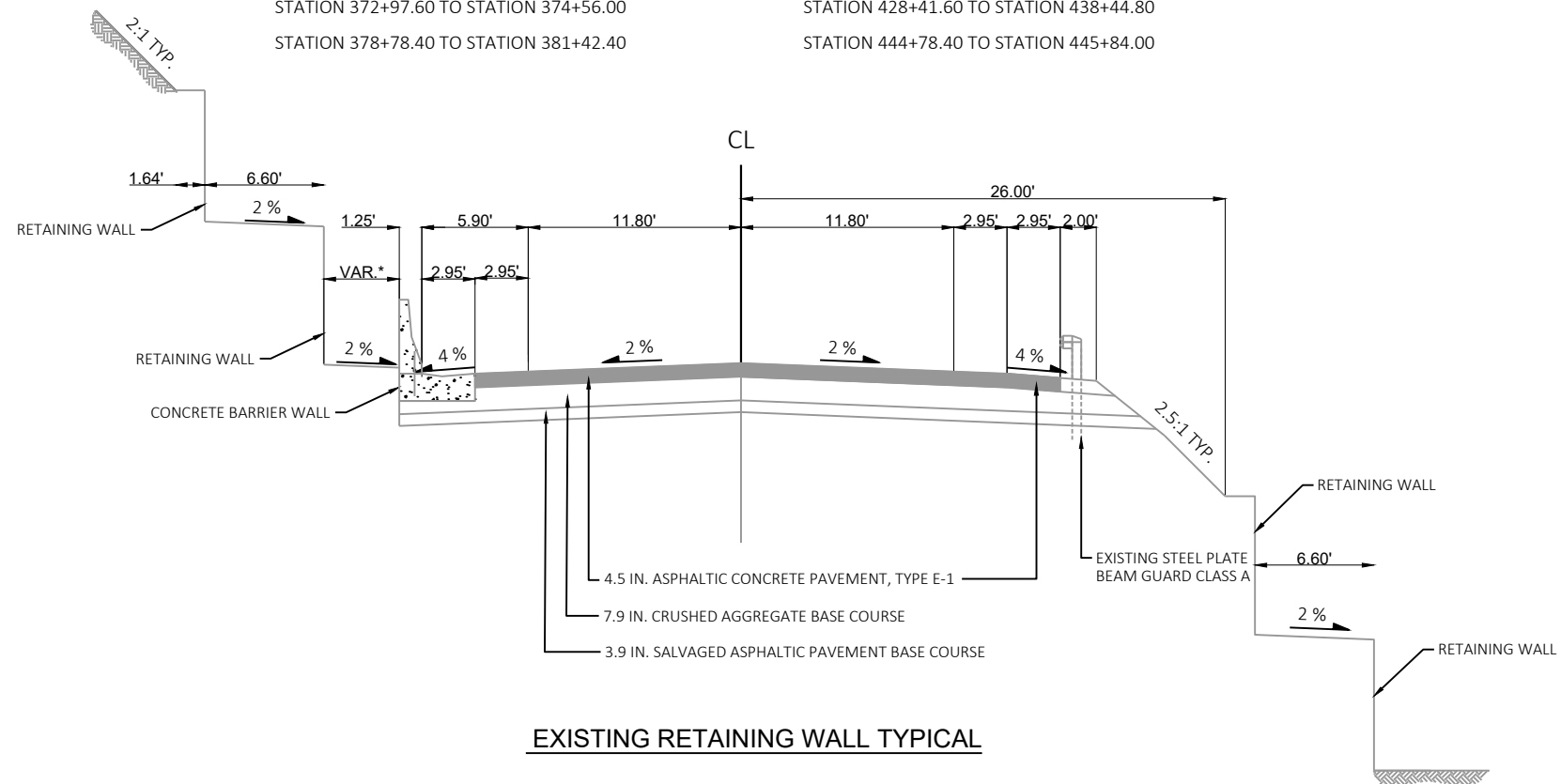
STATION 398+32.00 TO STATION 410+46.40

STATION 428+41.60 TO STATION 438+44.80

STATION 444+78.40 TO STATION 445+84.00

STATION 463+79.20 TO STATION 476+46.40

STATION 507+08.80 TO STATION 511+31.20



EXISTING RETAINING WALL TYPICAL

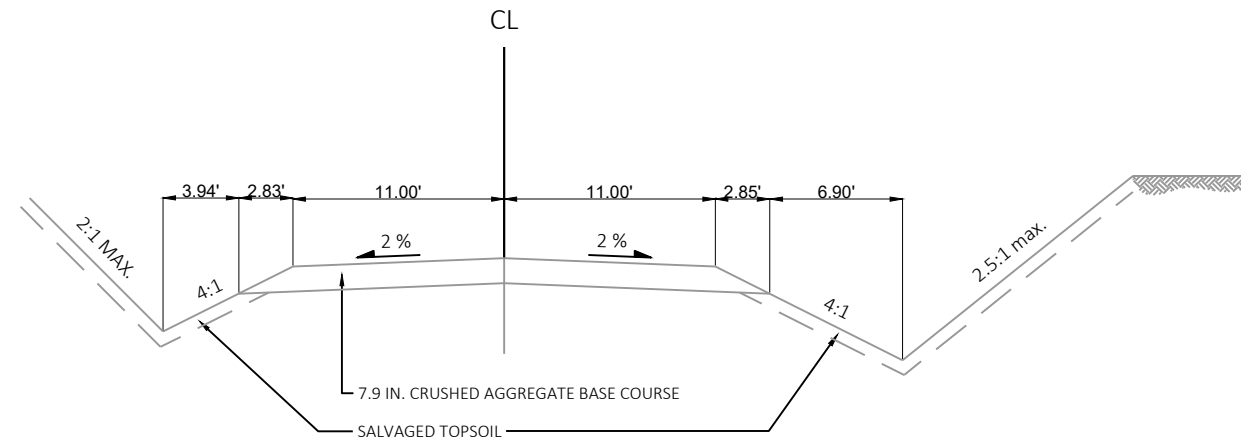
STATION 374+56.00 TO STATION 378+78.40

STATION 438+44.80 TO STATION 444+78.40

STATION 456+92.80 TO STATION 463+79.20

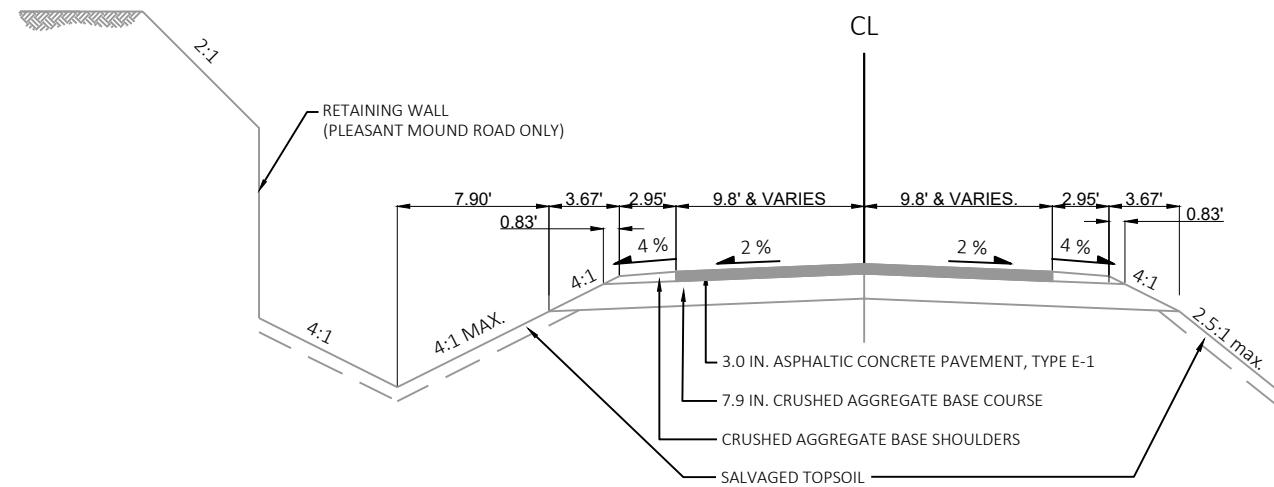
STATION 503+39.20 TO STATION 507+08.80

STATION 511+31.20 TO STATION 527+15.20



EXISTING TYPICAL TOWN ROAD SECTION

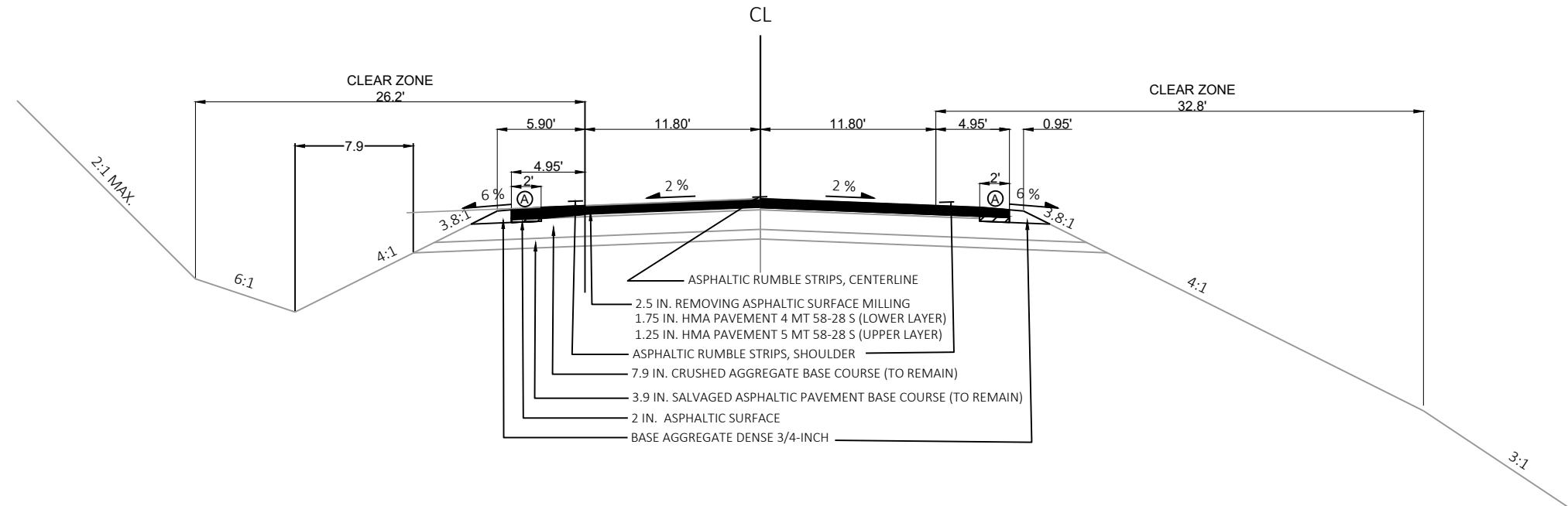
MUSKRAT LN, BUCKS LN, KNOB LN, HUMMINGBIRD LN, EAGLE LN



EXISTING TYPICAL TOWN ROAD SECTION

BROWN HOLLOW, RIDGEVIEW ROAD, BOYDTOWN HOLLOW, OLD STH 60 WEST, OLD STH 60 EST, PLEASANT RIDGE, CLEAR CREEK, PLEASANT MOUND, RIVENDALL LANE, SCENIC BOYDTON AVE, HUNTER LN

(A) PREPARE FOUNDATION FOR
ASPHALTIC SHOULDERS



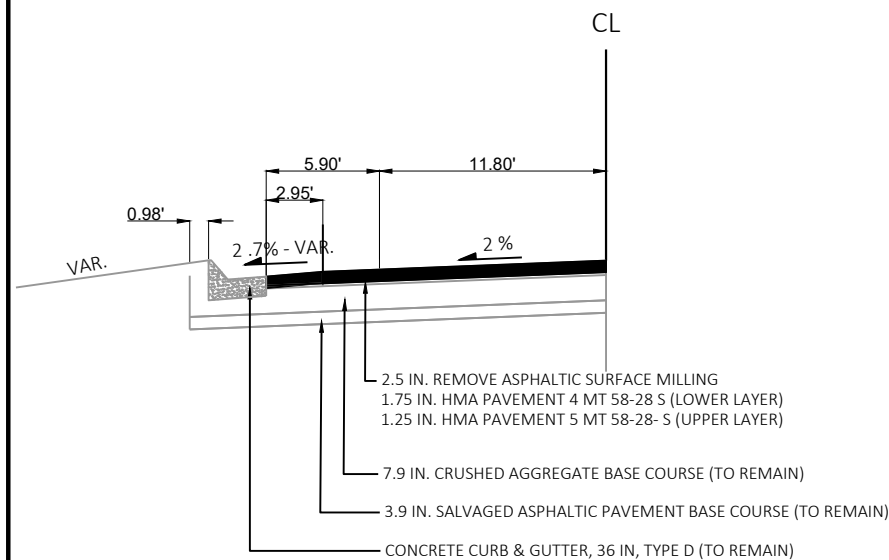
FINISHED TYPICAL MAINLINE SECTION (STH 60)

Stationing will be corrected

STATION 100+00.00 TO STATION 153+81.00
STATION 154+48.00 TO STATION 253+25.00
STATION 254+25.00 TO STATION 308+56.00
STATION 321+23.20 TO STATION 328+62.40

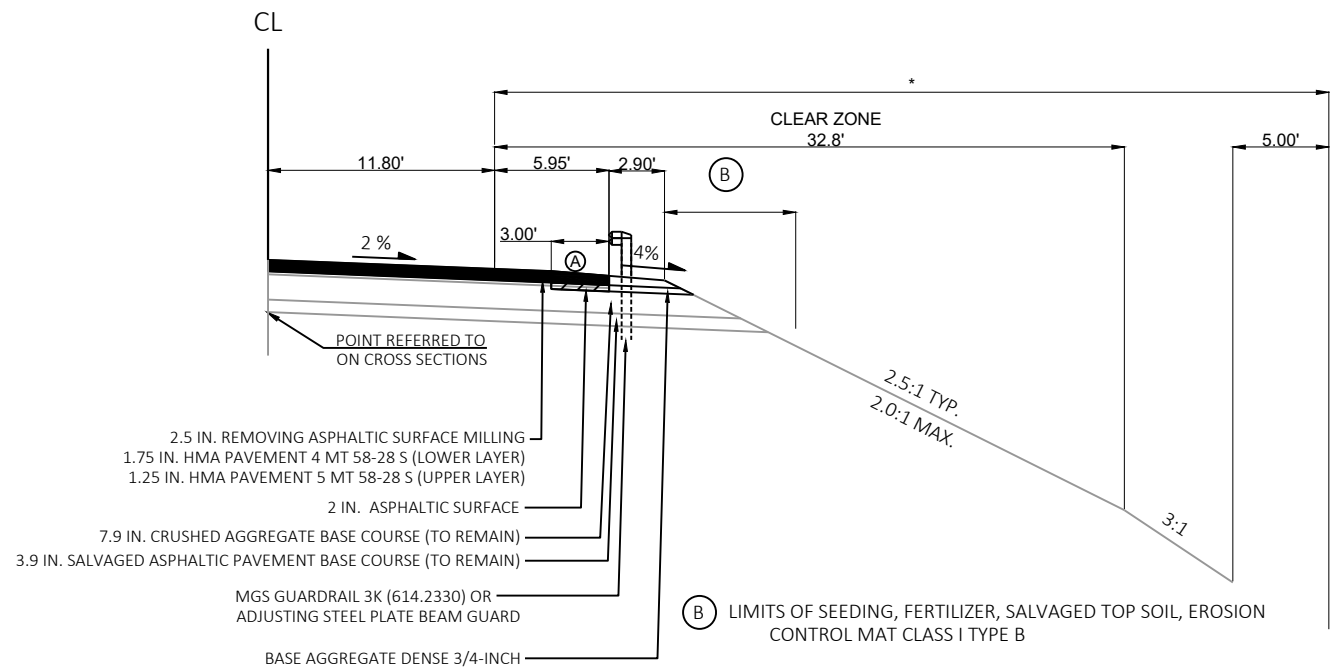
STATION 339+18.40 TO STATION 347+10.40
STATION 351+85.60 TO STATION 372+97.60
STATION 381+42.40 TO STATION 386+44.00
STATION 393+56.80 TO STATION 398+32.00

STATION 410+46.40 TO STATION 428+41.60
STATION 445+84.00 TO STATION 456+92.80
STATION 476+46.40 TO STATION 503+39.20
STATION 527+15.20 TO STATION 539+58.00



FINISHED TYPICAL MAINLINE SECTION WITH CONCRETE CURB & GUTTER

STATION 308+56.00 TO STATION 321+23.20



FINISHED TYPICAL MAINLINE SECTION WITH BEAM GUARD (STH 60)

STATION 100+00 TO STATION 100+90 LT & RT
STATION 152+27 TO STATION 155+16 RT
STATION 152+83 TO STATION 156+05 LT
STATION 156+76 TO STATION 164+75 LT
STATION 251+63 TO STATION 255+70 RT
STATION 251+80 TO STATION 255+51 LT

STATION 360+10 TO STATION 361+96 RT
STATION 360+82 TO STATION 361+01 LT
STATION 361+70 TO STATION 362+40 RT
STATION 361+86 TO STATION 362+58 LT
STATION 375+28 TO STATION 414+76 RT
STATION 393+17 TO STATION 394+04 LT

STATION 396+79 TO STATION 397+66 LT
STATION 425+79 TO STATION 438+29 RT
STATION 426+55 TO STATION 427+44 LT
STATION 444+86 TO STATION 445+68 LT
STATION 454+02 TO STATION 487+00 RT
STATION 475+35 TO STATION 476+22 LT

STATION 501+03 TO STATION 501+98 LT
STATION 502+61 TO STATION 527+94 RT
STATION 525+81 TO STATION 526+76 LT

PROJECT NO: 5180-00-73

HWY: STH 60

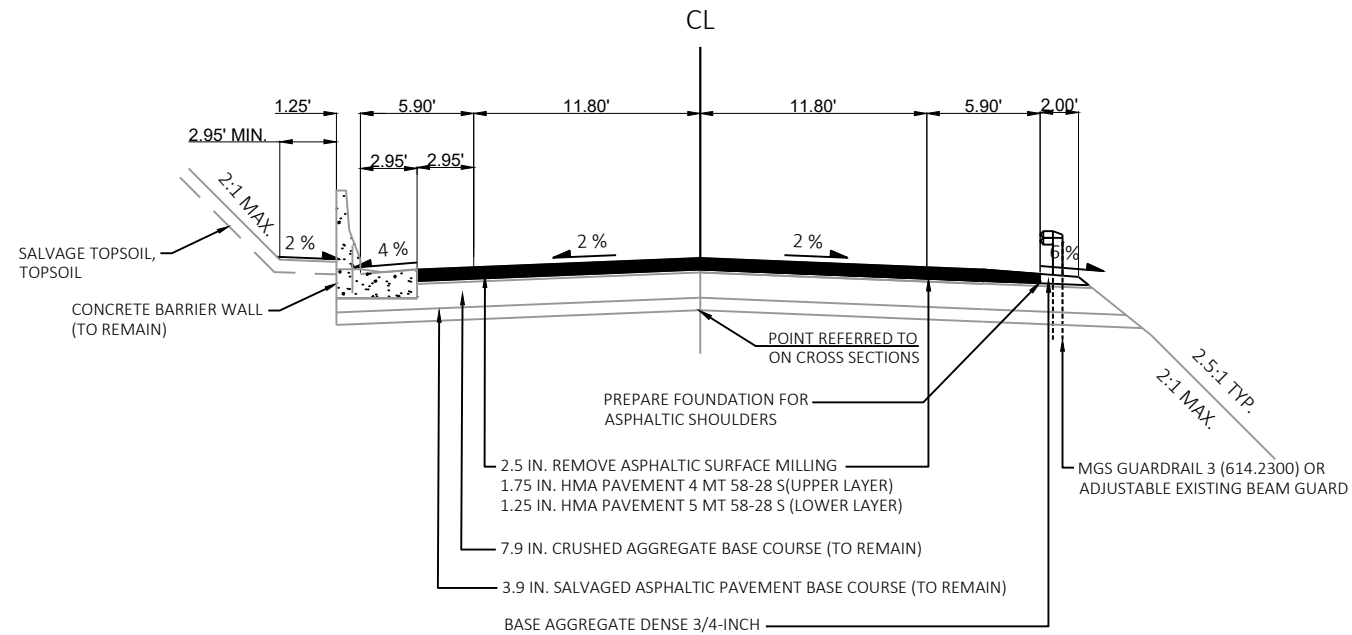
COUNTY: CRAWFORD

TYPICAL SECTIONS

SHEET

9

E

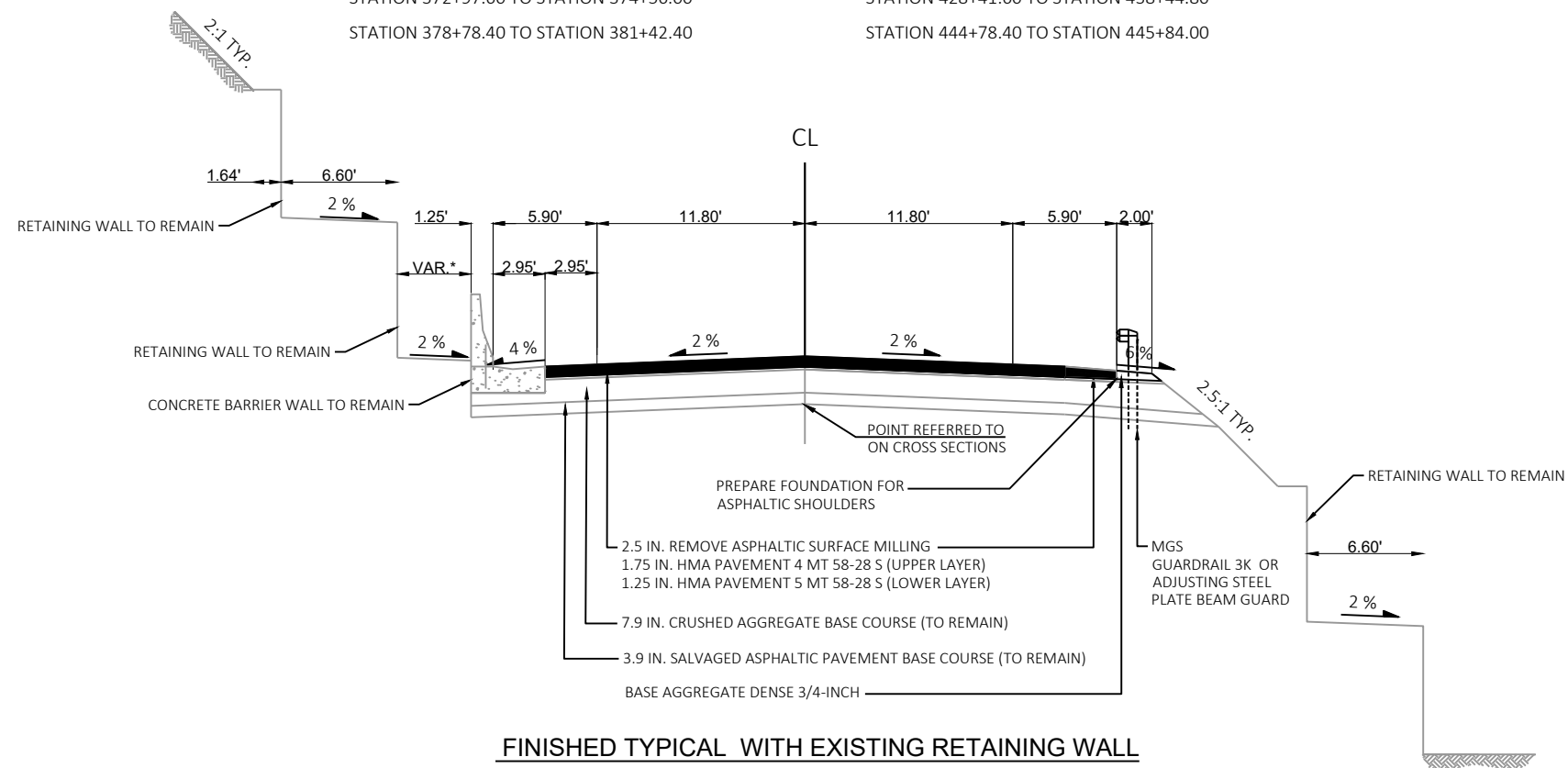


FINISHED TYPICAL BARRIER WALL & BEAM GUARD SECTION

STATION 328+62.40 TO STATION 339+18.40
STATION 347+10.40 TO STATION 351+85.60
STATION 372+97.60 TO STATION 374+56.00
STATION 378+78.40 TO STATION 381+42.40

STATION 386+44.00 TO STATION 393+56.80
STATION 398+32.00 TO STATION 410+46.40
STATION 428+41.60 TO STATION 438+44.80
STATION 444+78.40 TO STATION 445+84.00

STATION 463+79.20 TO STATION 476+46.40
STATION 507+08.80 TO STATION 511+31.20

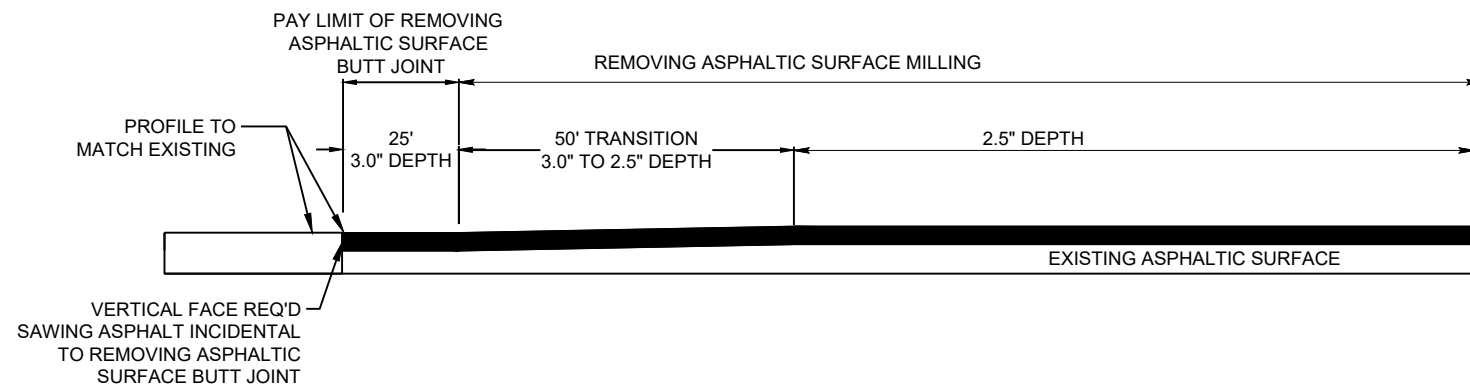


FINISHED TYPICAL WITH EXISTING RETAINING WALL

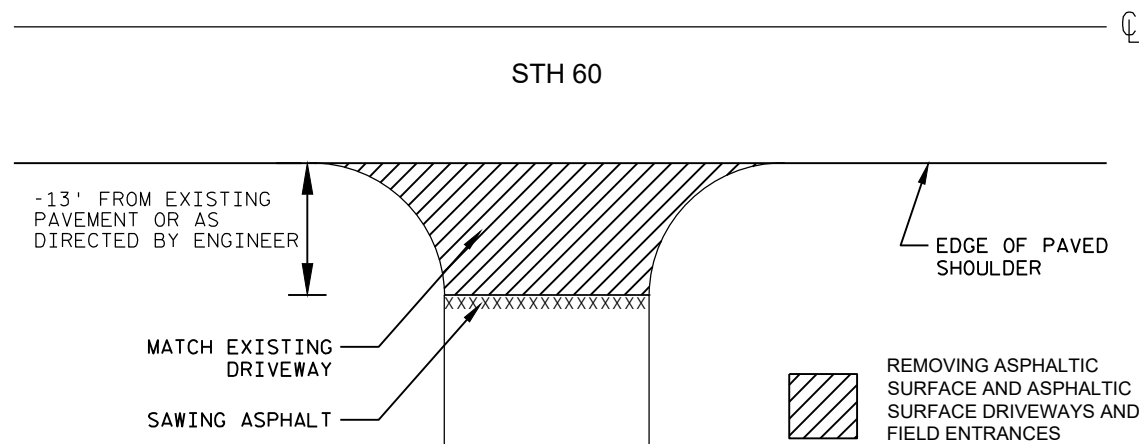
STATION 374+56.00 TO STATION 378+78.40
STATION 438+44.80 TO STATION 444+78.40

STATION 456+92.80 TO STATION 463+79.20
STATION 503+39.20 TO STATION 507+08.80

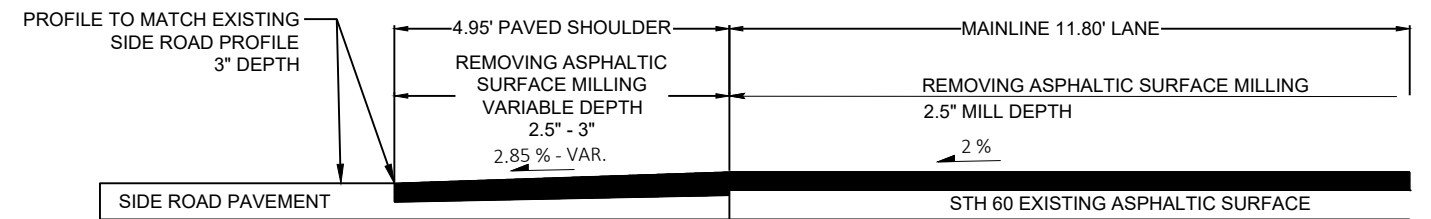
STATION 511+31.20 TO STATION 527+15.20



REMOVING ASPHALTIC SURFACE BUTT JOINTS DETAIL
END PROJECT STA. 539+58

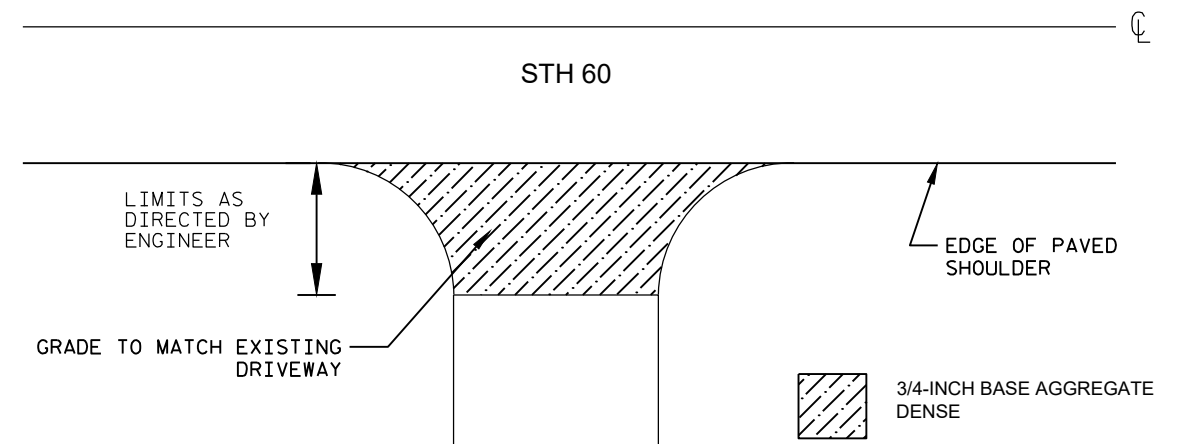


RURAL ASPHALT DRIVEWAY DETAIL

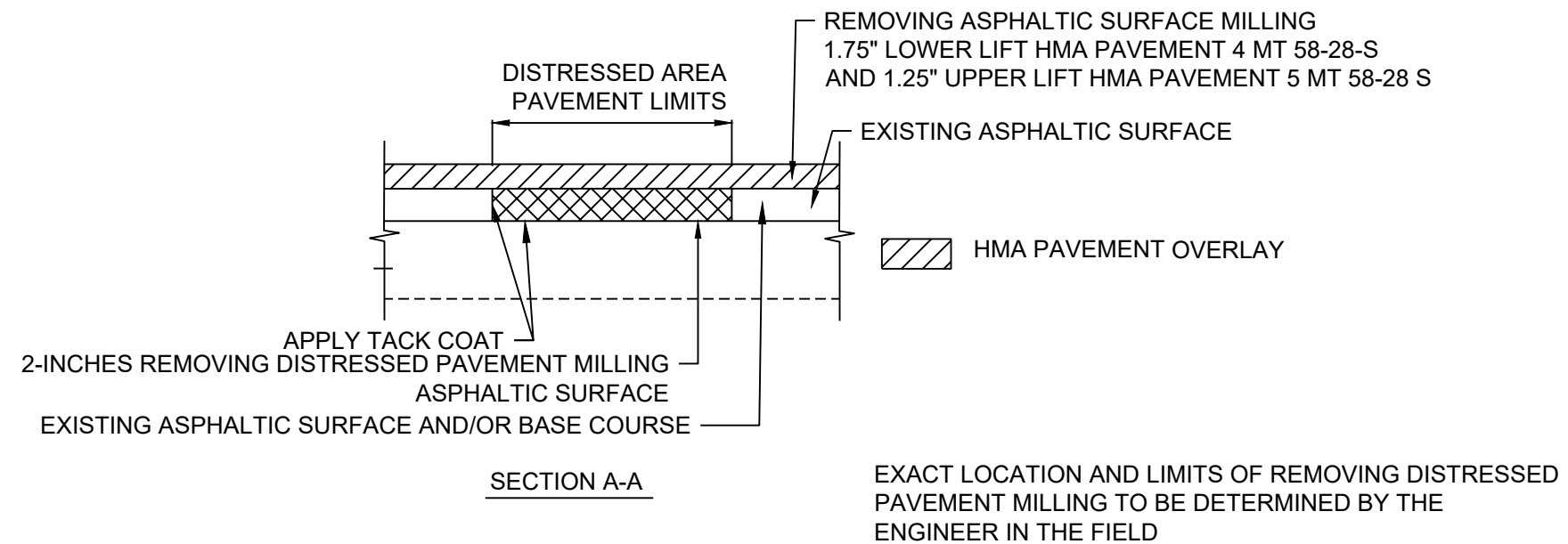
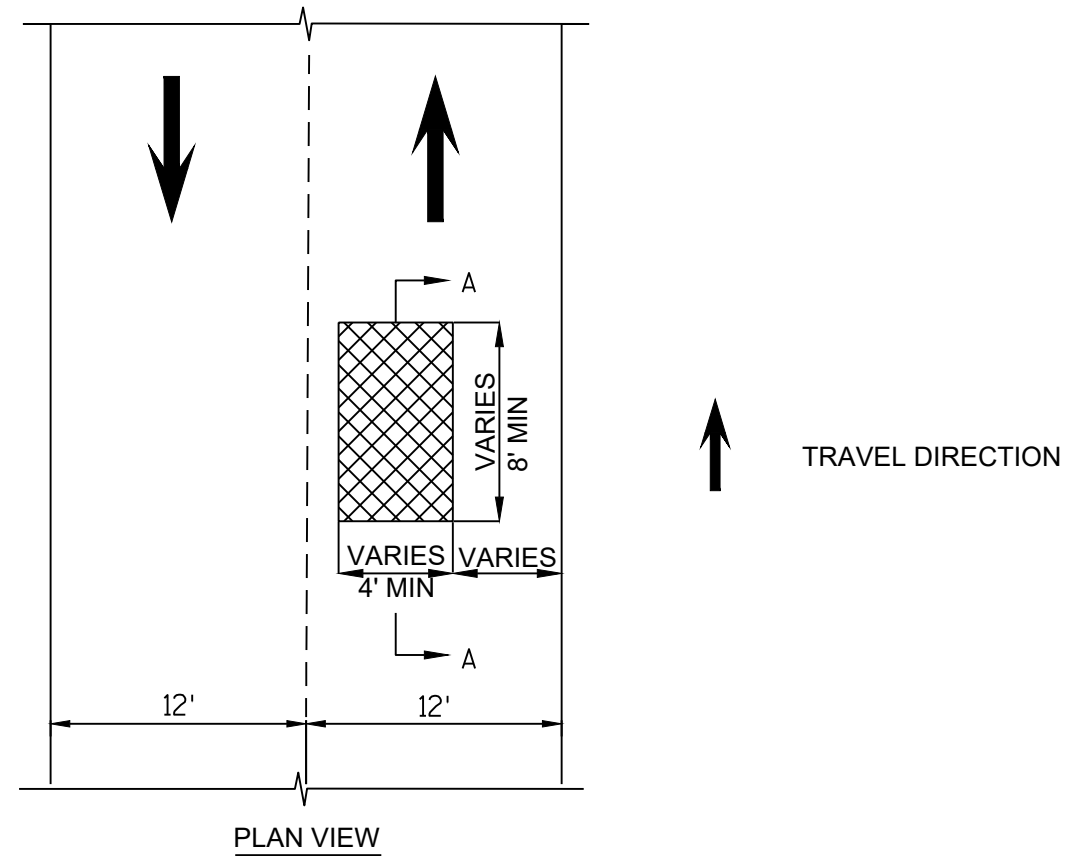


SIDE ROAD PROFILE TRANSITION DETAIL

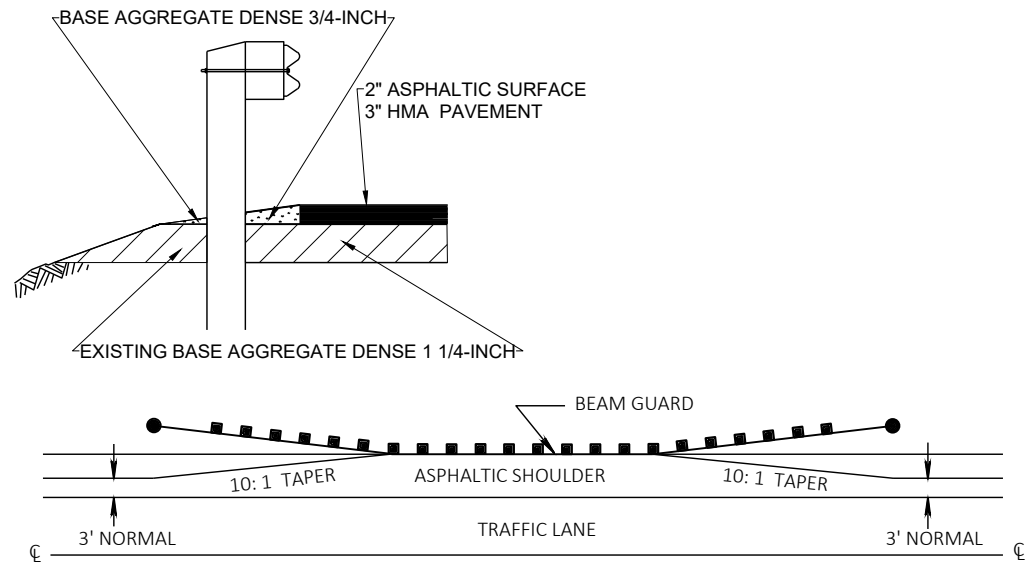
*LIMITS TO BE DETERMINED IN THE FIELD BY THE ENGINEER. ADJUST TRANSITION WIDTH AS NEEDED TO PROVIDE A SMOOTH PROFILE.



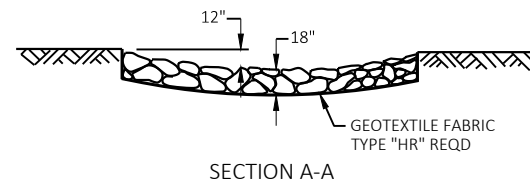
RURAL AGGREGATE DRIVEWAY DETAIL



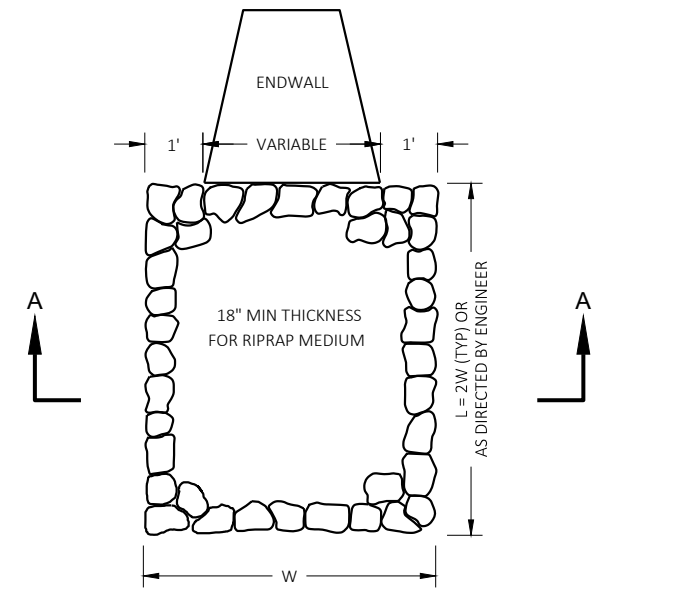
REMOVING DISTRESSED PAVEMENT MILLING



DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD



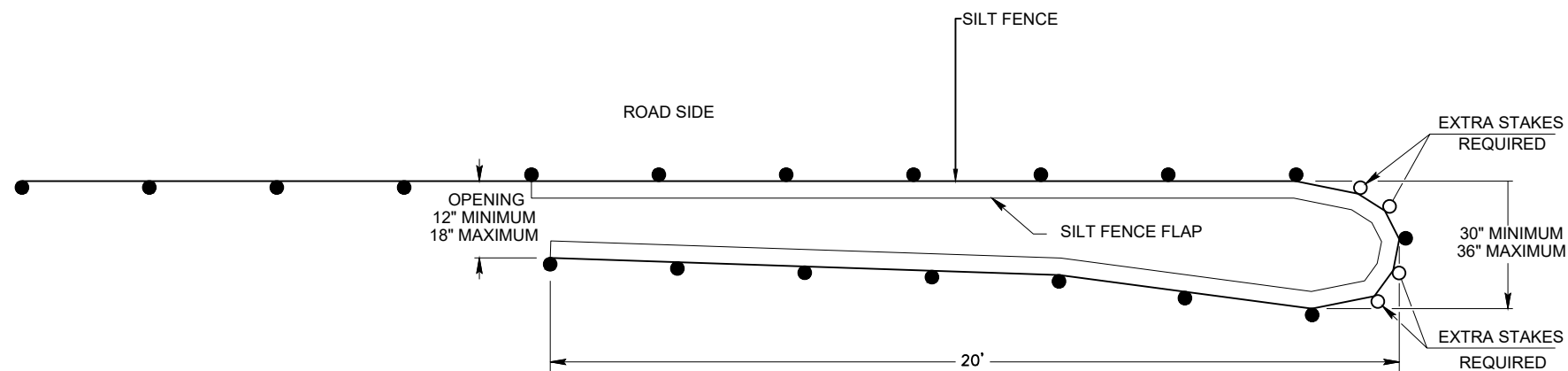
RIPRAP MEDIUM TREATMENT AT CULVERTS



RIPRAP TREATMENT AT CULVERTS

STA 107+10 LT $\frac{L}{8 \text{ FT}}$ $\frac{W}{4.5 \text{ FT}}$
STA 364+30 RT 14 FT 4 FT

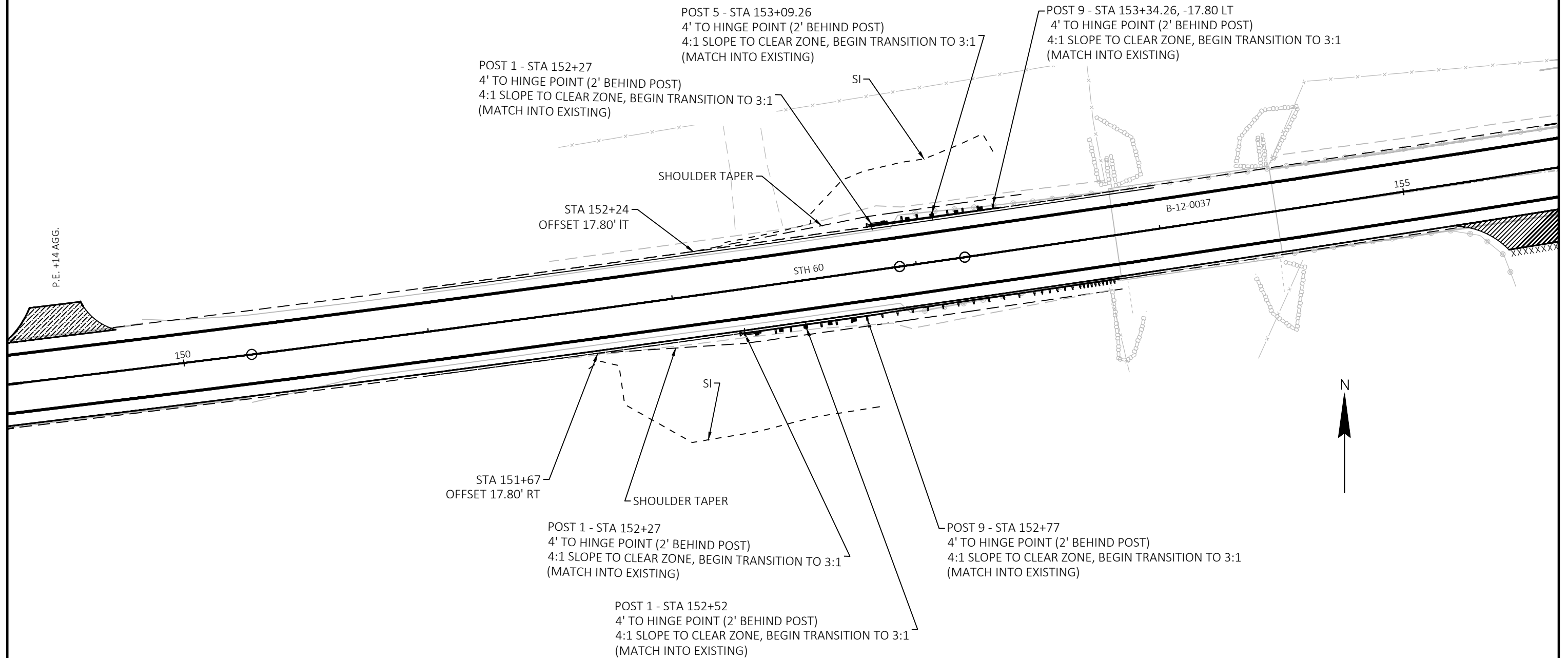
NOTES:
SILT FENCE POSTS FOR THE TURN-AROUND SHALL BE ON THE OUTSIDE OF THE TURN-AROUND.
TO BE PAID FOR AS SILT FENCE.



PLAN VIEW

TEMPORARY SMALL ANIMAL TURN-AROUND

STA 11+00 RT



2

POST 5 - STA 252+07.03, 17.80' LT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

SHOULDER TAPER 7 5 SI

R65.2679

BOYDTOWN ALLOC

2

SHOULDER TAPER-

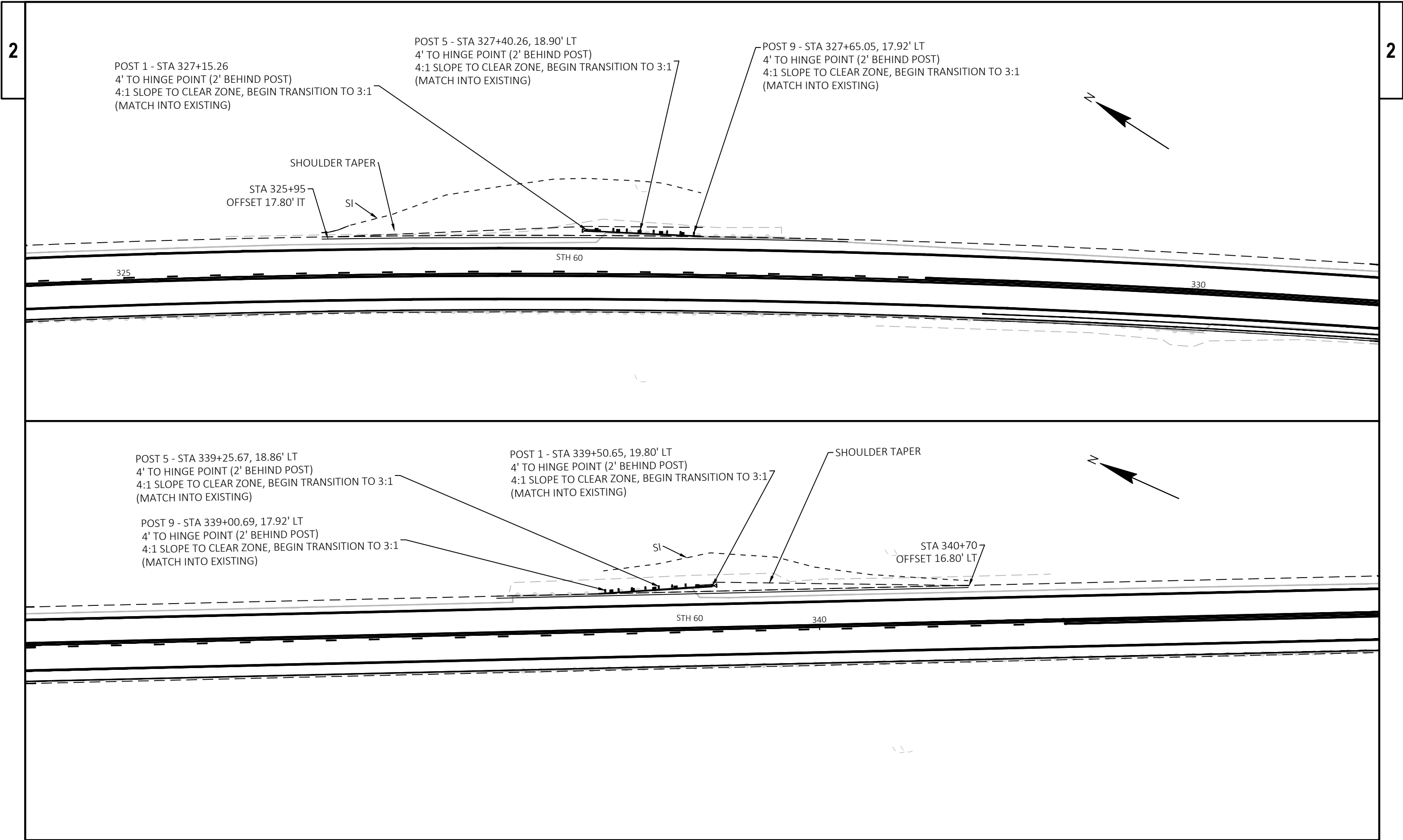
SHOULDER TAPER-

POST 1 - STA 251+91.36, 17.80' RT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 9 - STA 252+16.36, 17.80' RT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

FILE NAME :	N:\PDS\C3D\51800003\SHEETSPLAN\021002-CD.DWG	PLOT DATE :	4/23/2026 10:33 AM	PLOT BY :	KLUDY, KATHLEEN M	PLOT NAME :		PLOT SCALE :	1 IN=40 FT
LAYOUT NAME :	021006-CD								WISDOT/CADD'S SHEET 42

ET 42



POST 1 - STA 427+01.72, 17.80 LT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 5 - STA 426+76.72, 17.80 LT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 9 - STA 426+51.74, 17.80' LT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

SHOULDER TAPER
STA 528+59
OFFSET 16.80' LT

SI

425

GUY

SHOULDER TAPER

SI

POST 9 - STA 426+29.87, 17.80 RT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

STA 425+20, OFFSET 16.80' RT

POST 5 - STA 426+04.87, 17.80' RT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 1 - STA 425+79.87, 17.80' RT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 1 - STA 526+76.98, 19.80' LT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 5 - STA 526+52, 48.89' LT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 9 - STA 526+26.74, 17.80' LT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

SHOULDER TAPER

STA 528+59
OFFSET 18' LT

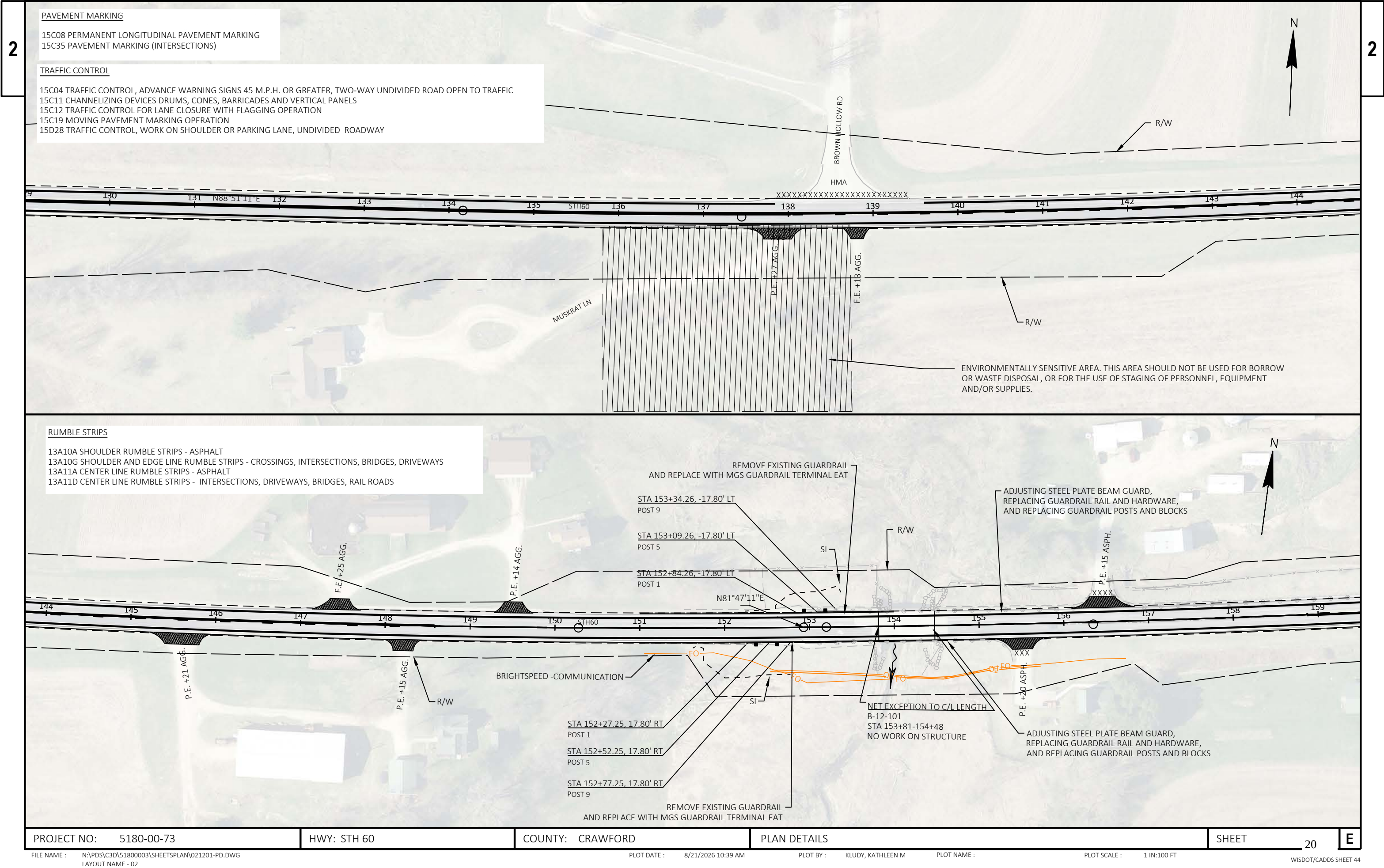
STH 60

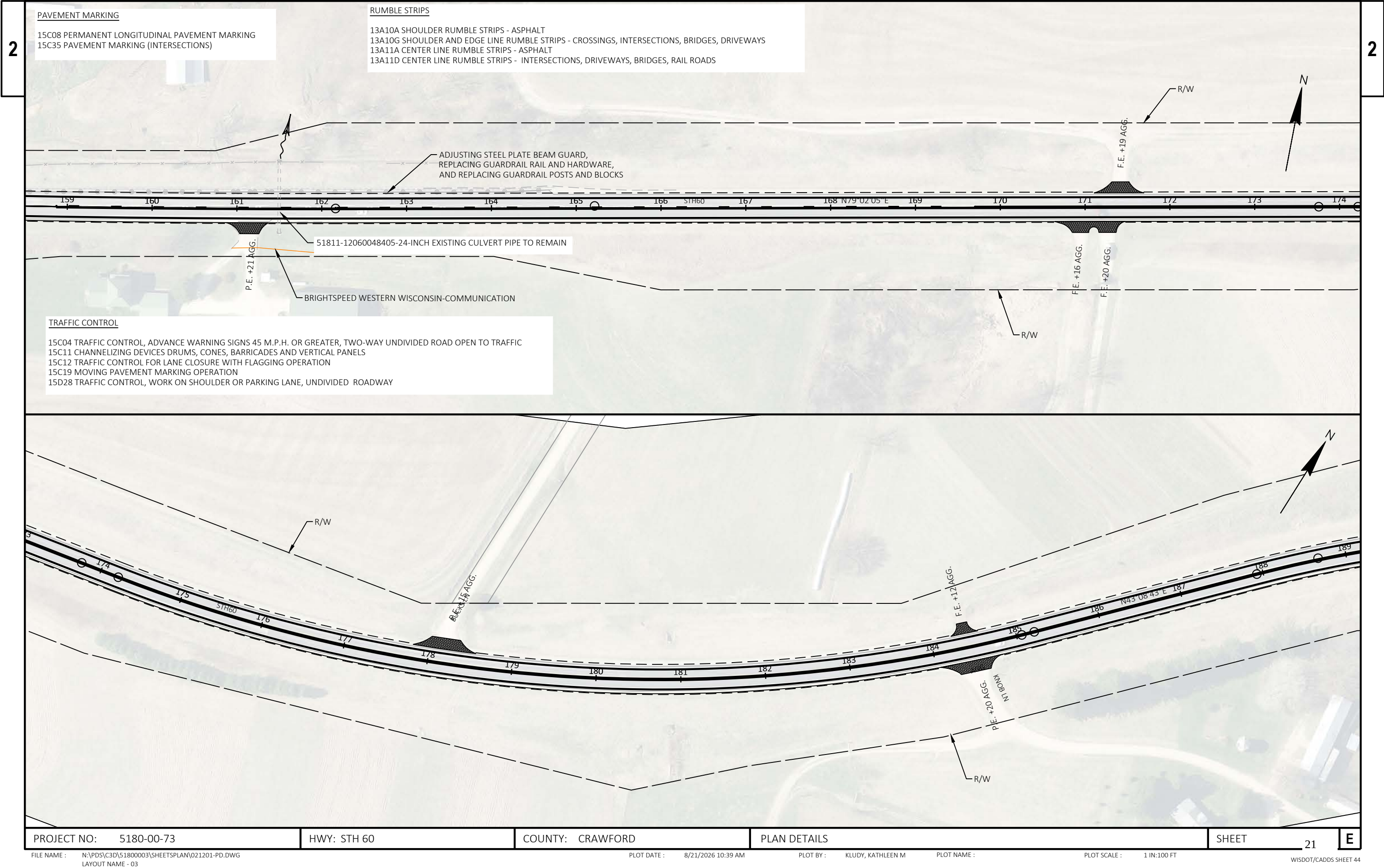
SHOULDER TAPER
STA 528+59
OFFSET 18' RT

POST 1 - STA 527+49.31, 17.8' RT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 5 - STA 527+74.31, 17.80' RT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)

POST 9 - STA 527+99.31, 17.8' RT
4' TO HINGE POINT (2' BEHIND POST)
4:1 SLOPE TO CLEAR ZONE, BEGIN TRANSITION TO 3:1
(MATCH INTO EXISTING)





PAVEMENT MARKING

15C08 PERMANENT LONGITUDINAL PAVEMENT MARKING
15C35 PAVEMENT MARKING (INTERSECTIONS)

RUMBLE STRIPS

13A10A SHOULDER RUMBLE STRIPS - ASPHALT
13A10G SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A11A CENTER LINE RUMBLE STRIPS - ASPHALT
13A11D CENTER LINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAIL ROADS

TRAFFIC CONTROL

15C04 TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C11 CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12 TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19 MOVING PAVEMENT MARKING OPERATION
15D28 TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

PROJECT NO: 5180-00-73

HWY: STH 60

COUNTY: CRAWFORD

PLAN DETAILS

SHEET

21

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FILE NAME : N:\PDS\C3D\51800003\SHEETS\PLAN\021201-PD.DWG
LAYOUT NAME - 03

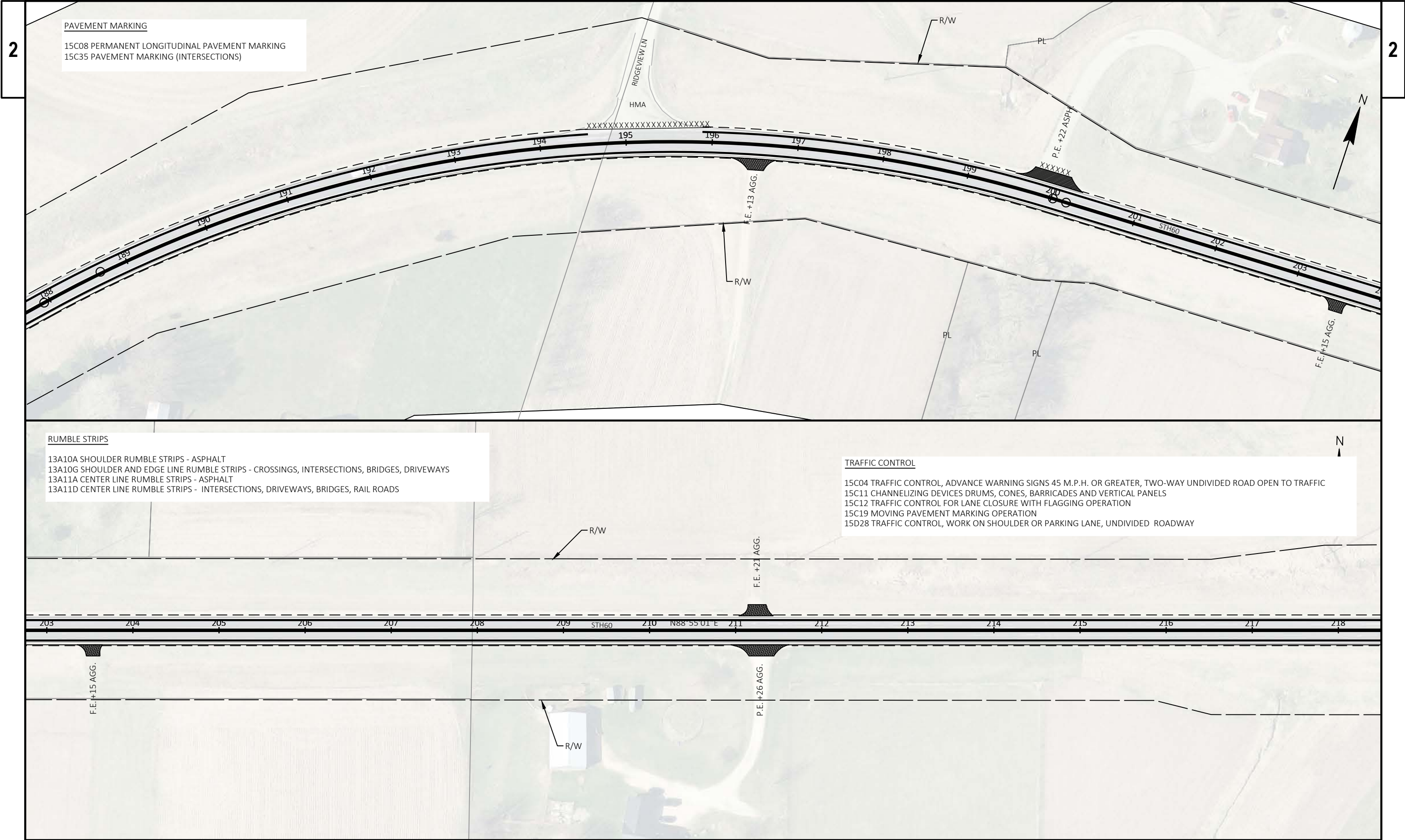
PLOT DATE : 8/21/2026 10:39 AM

PLOT BY : KLUDY, KATHLEEN M

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 44



2

PAVEMENT MARKING

15C08 PERMANENT LONGITUDINAL PAVEMENT MARKING

15C35 PAVEMENT MARKING (INTERSECTIONS)

15C08 PERMANENT LONGITUDINAL PAVEMENT MARKING
15C35 PAVEMENT MARKING (INTERSECTIONS)

TRAFFIC CONTROL

15C04 TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

15C11 CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

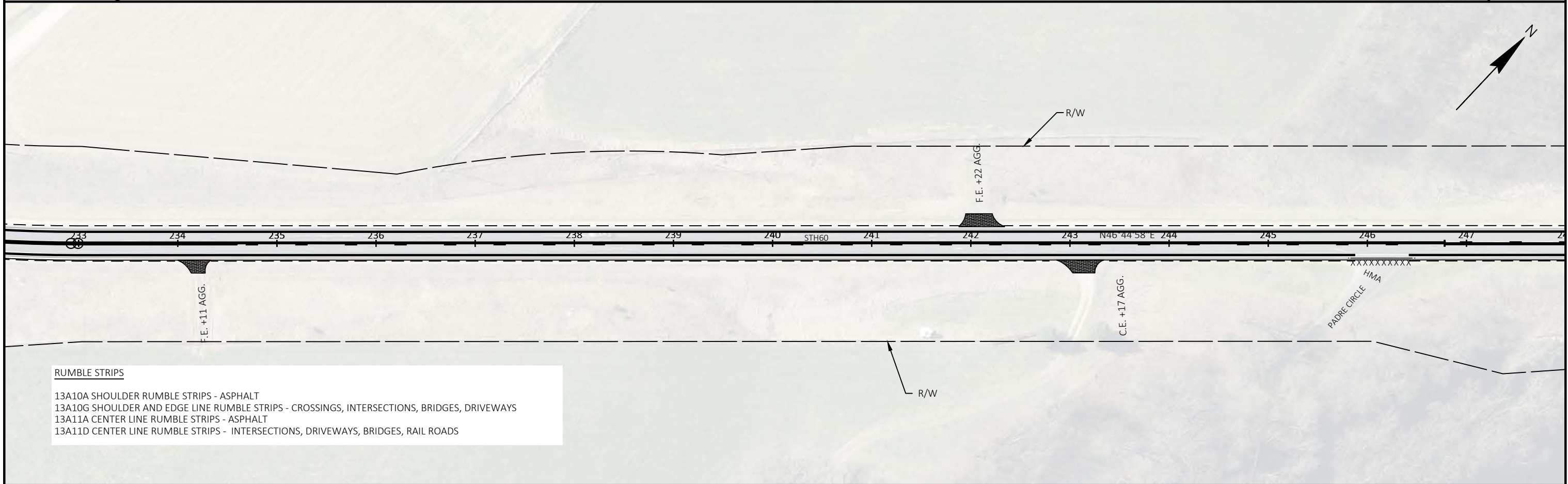
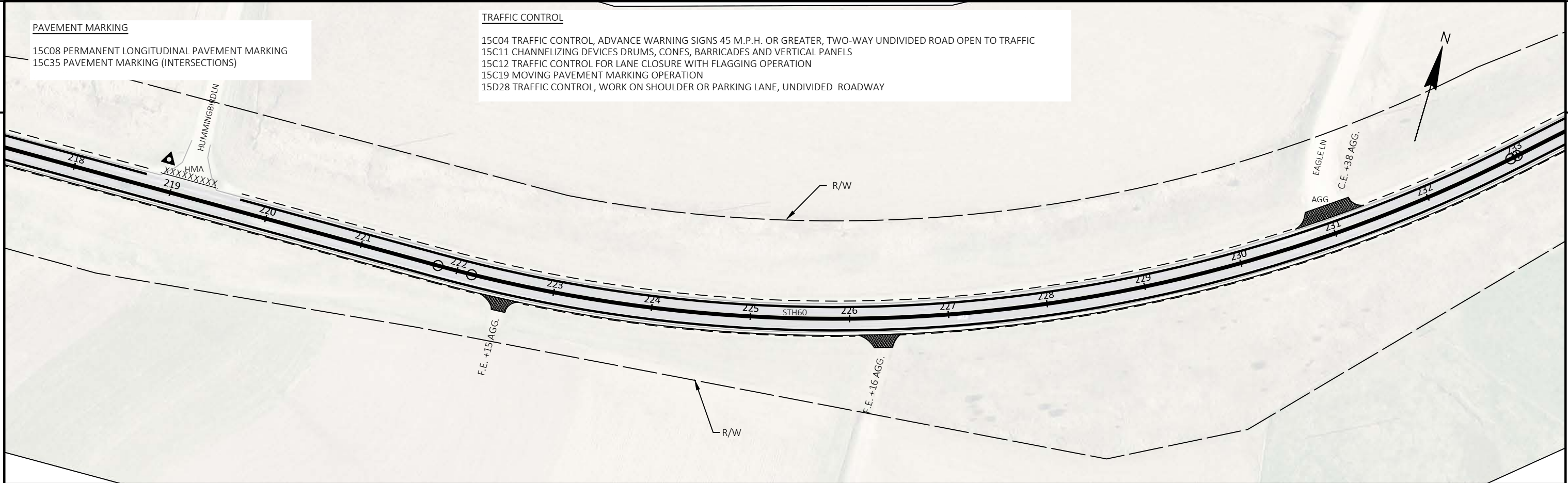
15C12 TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

15C19 MOVING PAVEMENT MARKING OPERATION

15D28 TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

15C04 TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C11 CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12 TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19 MOVING PAVEMENT MARKING OPERATION
15D28 TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

2



RUMBLE STRIPS

13A10A SHOULDER RUMBLE STRIPS - ASPHALT

13A10G SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS

13A11A CENTER LINE RUMBLE STRIPS - ASPHALT

13A11D CENTER LINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAIL ROADS

13A10A SHOULDER RUMBLE STRIPS - ASPHALT
13A10G SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A11A CENTER LINE RUMBLE STRIPS - ASPHALT
13A11D CENTER LINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAIL ROADS

PROJECT NO: 5180-00-73

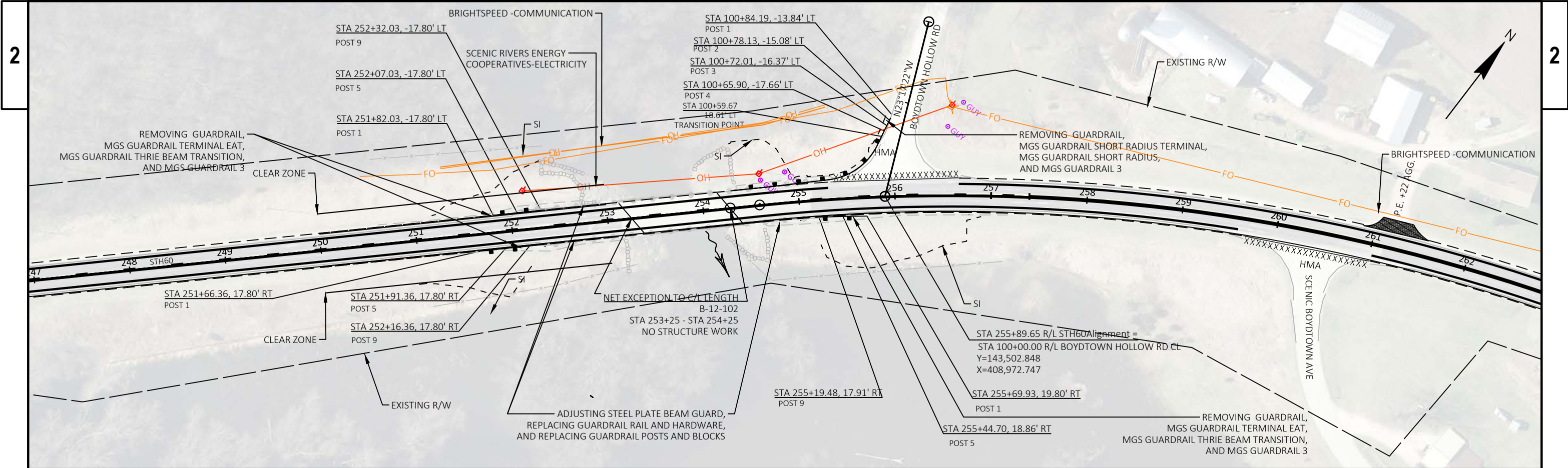
HWY: STH 60

COUNTY: CRAWFORD

PLAN DETAILS

SHEET 23

E

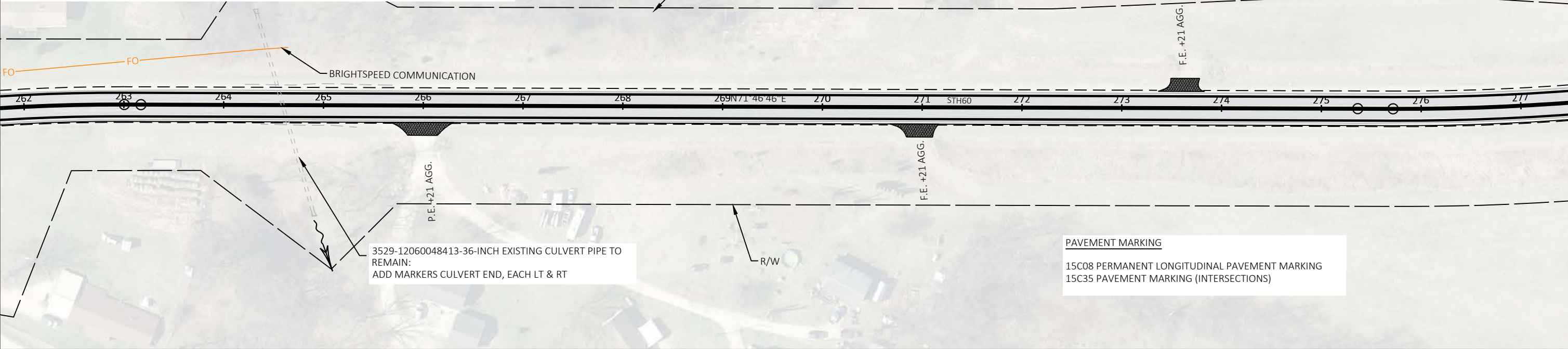


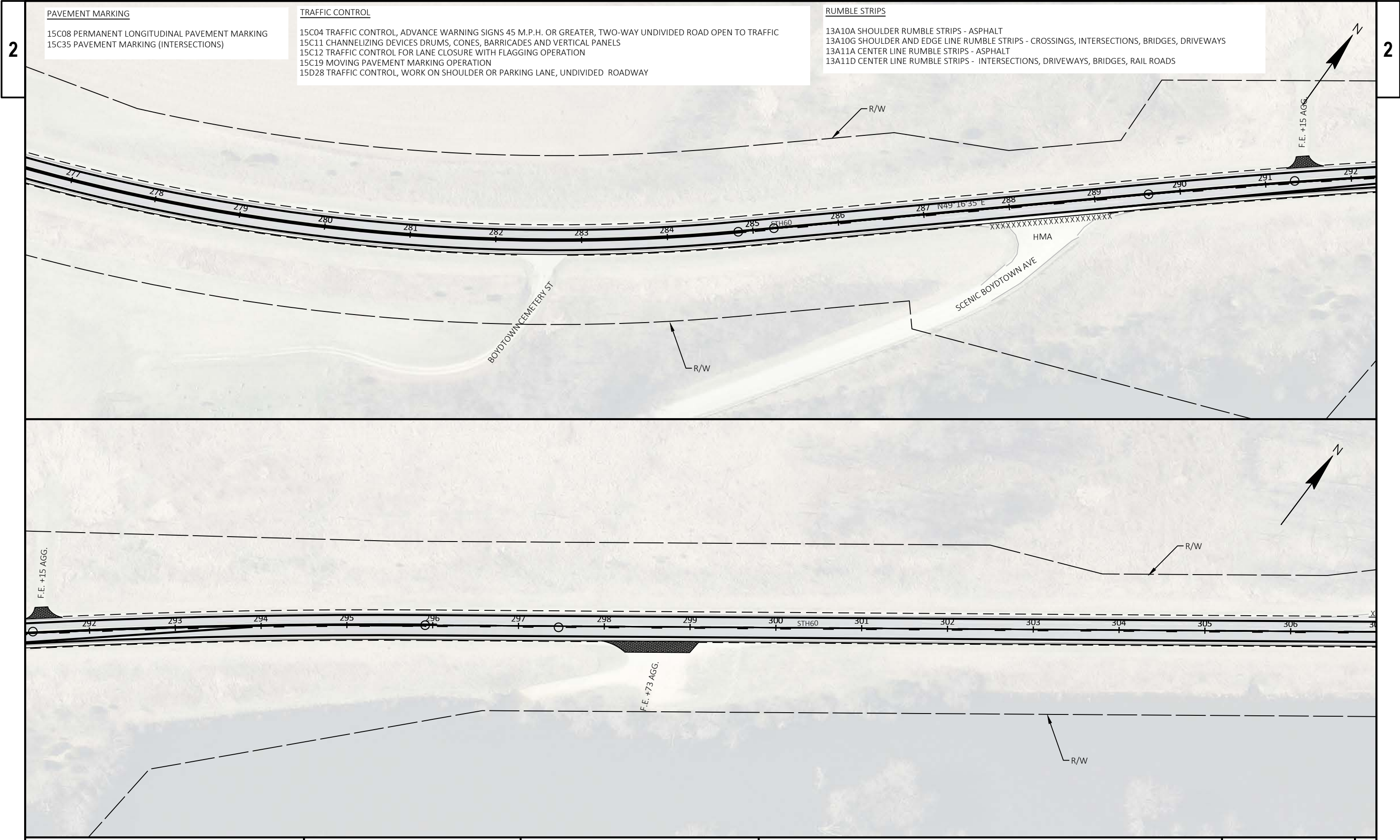
RUMBLE STRIPS

13A10A SHOULDER RUMBLE STRIPS - ASPHALT
13A10G SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
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13A11D CENTER LINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAIL ROADS

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15C19 MOVING PAVEMENT MARKING OPERATION
15D28 TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY





PAVEMENT MARKING

15C08 PERMANENT LONGITUDINAL PAVEMENT MARKING
15C35 PAVEMENT MARKING (INTERSECTIONS)

TRAFFIC CONTROL

15C04 TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
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13A11D CENTER LINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAIL ROADS

PROJECT NO: 5180-00-73

HWY: STH 60

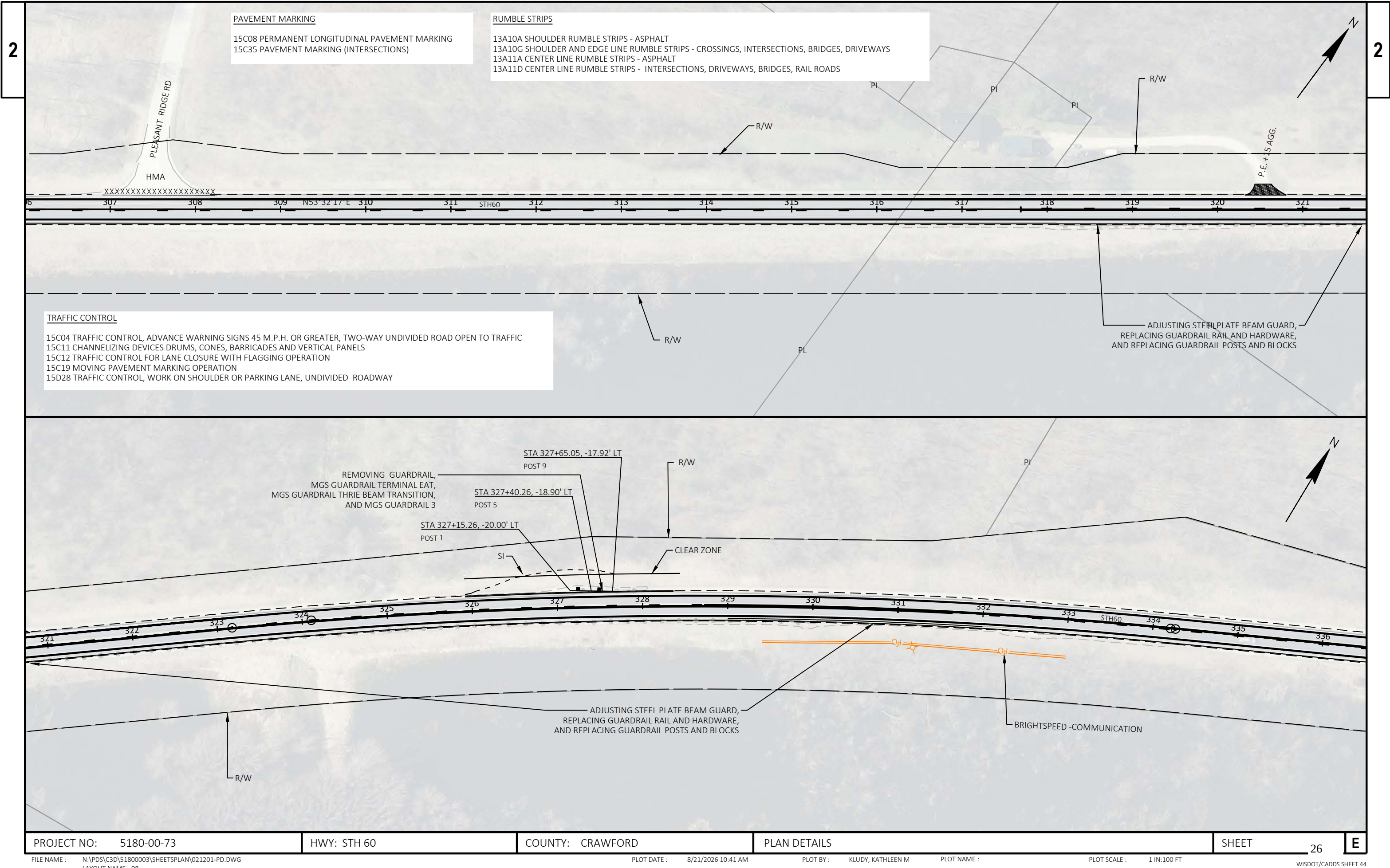
COUNTY: CRAWFORD

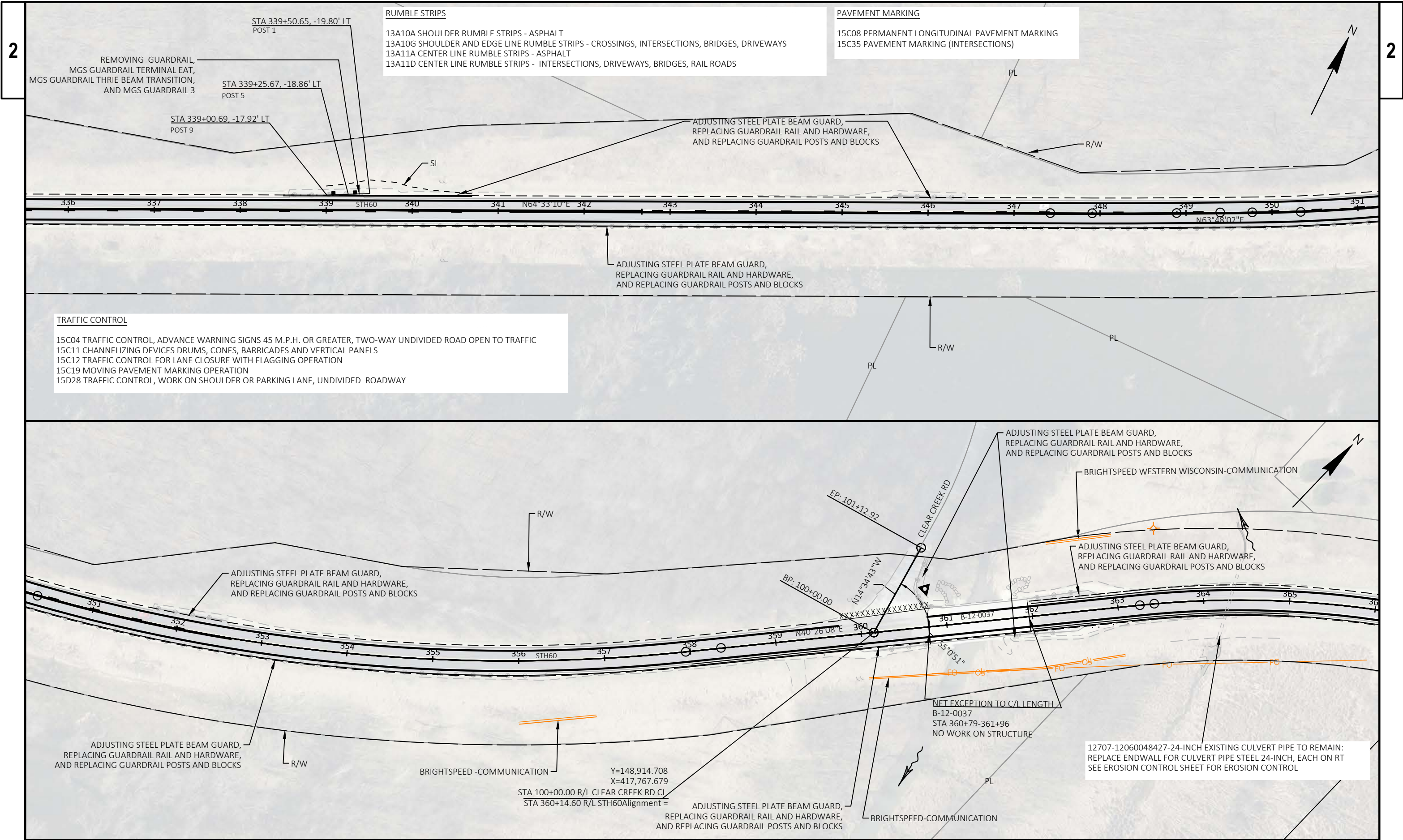
PLAN DETAILS

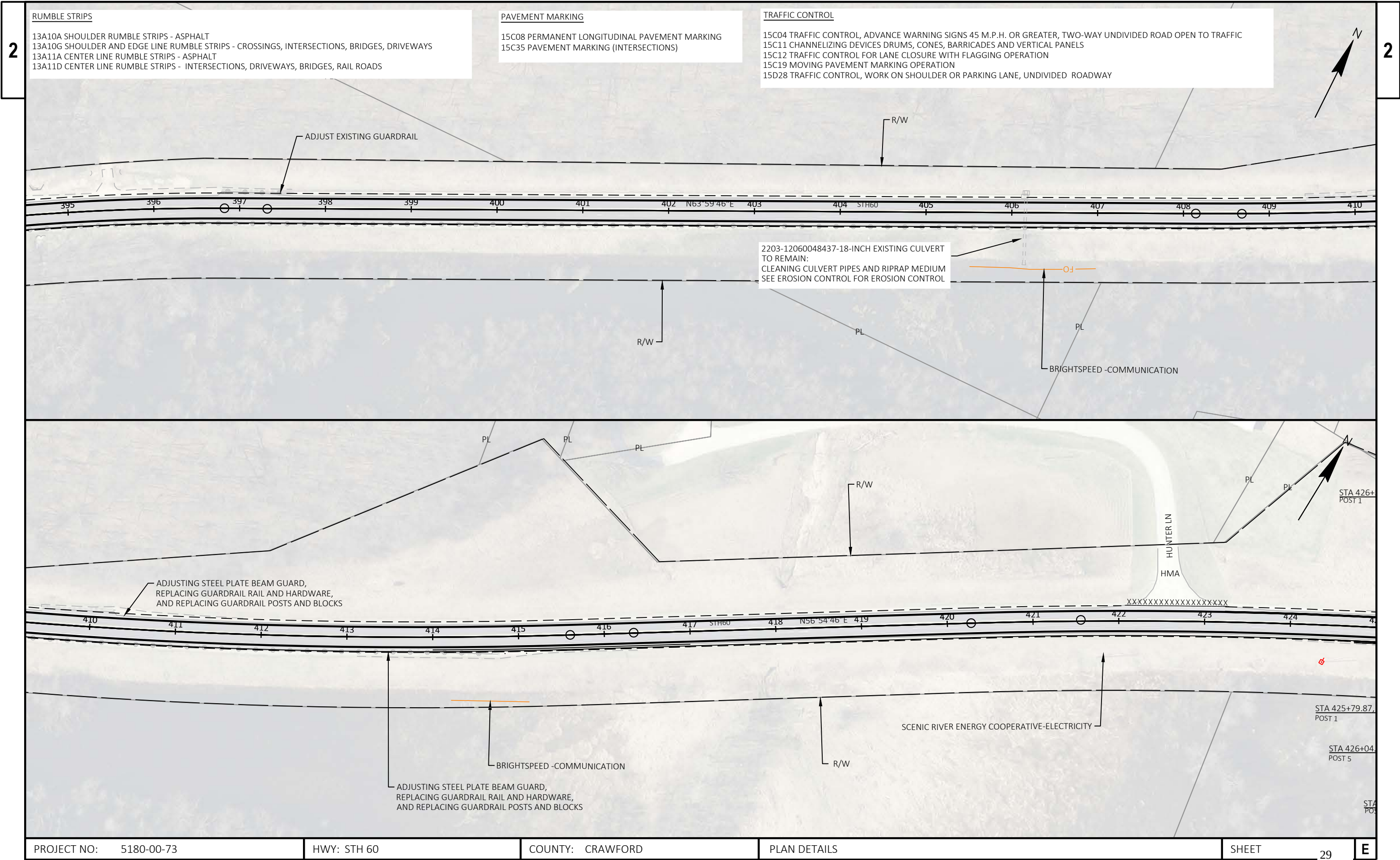
SHEET

25

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RUMBLE STRIPS
13A10A SHOULDER RUMBLE STRIPS - ASPHALT
13A10G SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A11A CENTER LINE RUMBLE STRIPS - ASPHALT
13A11D CENTER LINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAIL ROADS

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15D28 TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

2203-12060048437-18-INCH EXISTING CULVERT
TO REMAIN:
CLEANING CULVERT PIPES AND RIPRAP MEDIUM
SEE EROSION CONTROL FOR EROSION CONTROL

ADJUSTING STEEL PLATE BEAM GUARD,
REPLACING GUARDRAIL RAIL AND HARDWARE,
AND REPLACING GUARDRAIL POSTS AND BLOCKS

ADJUSTING STEEL PLATE BEAM GUARD,
REPLACING GUARDRAIL RAIL AND HARDWARE,
AND REPLACING GUARDRAIL POSTS AND BLOCKS

2

PL

STA 426+76.72, -18.80' LT
POST 5

STA 426+51.74, -19.80' LT
POST 1

STA 427+01.72, -17.80' LT
POST 9

REMOVE EXISTING GUARDRAIL
AND REPLACE WITH MGS GUARDRAIL TERMINAL EAT

REMOVE EXISTING GUARDRAIL AND REPLACE WITH MGS GUARDRAIL TERMINAL EAT

BRIGHTSPEED WESTERN WISCONSIN-COMMUNICATION

R/W

SI

FO

424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439

STH60 N61°53'03"E

SI

STA 425+79.87, 17.80' RT
POST 1

STA 426+04.87, 17.80' RT
POST 5

REPLACE WITH STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STA 426+29.87, 17.80' RT
POST 9

ADJUSTING STEEL PLATE BEAM GUARD,
REPLACING GUARDRAIL RAIL AND HARDWARE,
AND REPLACING GUARDRAIL POSTS AND BLOCKS

BRIGHTSPEED WESTERN WISCONSIN-COMMUNICATION

SCENIC RIVER ENERGY COOPERATIVE-ELECTRICITY

R/W

PL

BRIGHTSPEED WESTERN WISCONSIN-COMMUNICATION

2

N

RUMBLE STRIPS

13A10A SHOULDER RUMBLE STRIPS - ASPHALT

13A10G SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS

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PAVEMENT MARKING

15C08 PERMANENT LONGITUDINAL PAVEMENT MARKING
 15C35 PAVEMENT MARKING (INTERSECTIONS)

BRIGHTSPEED-COMMUNICATION

ADJUSTING STEEL PLATE BEAM GUARD, REPLACING GUARDRAIL RAIL AND HARDWARE, AND REPLACING GUARDRAIL POSTS AND BLOCKS

SCENIC RIVER ENERGY COOPERATIVE-ELECTRICITY

R/W

PL

ENVIRONMENTALLY SENSITIVE AREA. THIS AREA SHOULD NOT BE USED FOR BORROW OR WASTE DISPOSAL, OR FOR THE USE OF STAGING OF PERSONNEL, EQUIPMENT AND/OR SUPPLIES.

Stationing: 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454

Other labels: N40 34 24 E, STH60, P.E. +21.45PH, HMA, XXXXX, #45292, PL

PROJECT NO: 5180-00-73	HWY: STH 60	COUNTY: CRAWFORD	PLAN DETAILS	SHEET 30	E
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WISDOT/CADDs SHEET 44

15C04 TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C11 CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
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15C08 PERMANENT LONGITUDINAL PAVEMENT MARKING
15C35 PAVEMENT MARKING (INTERSECTIONS)

2

└ R/W

R/W -

L ADJUSTING STEEL PLATE BEAM GUARD, REPLACING GUARDRAIL RAIL AND HARDWARE, AND REPLACING GUARDRAIL POSTS AND BLOCKS

8026-12060048451-18-INCH EXISTING CULVERT PIPE
TO REMAIN: ADD MARKERS CULVERT ENDS LT & RT

ENVIRONMENTALLY SENSITIVE AREA. THIS AREA SHOULD NOT BE USED FOR BORROW OR WASTE DISPOSAL, OR FOR THE USE OF STAGING OF PERSONNEL, EQUIPMENT AND/OR SUPPLIES.

R/W

ADJUSTING STEEL PLATE BEAM GUARD, REPLACING GUARDRAIL RAIL AND HARDWARE, AND REPLACING GUARDRAIL POSTS AND BLOCKS

STI

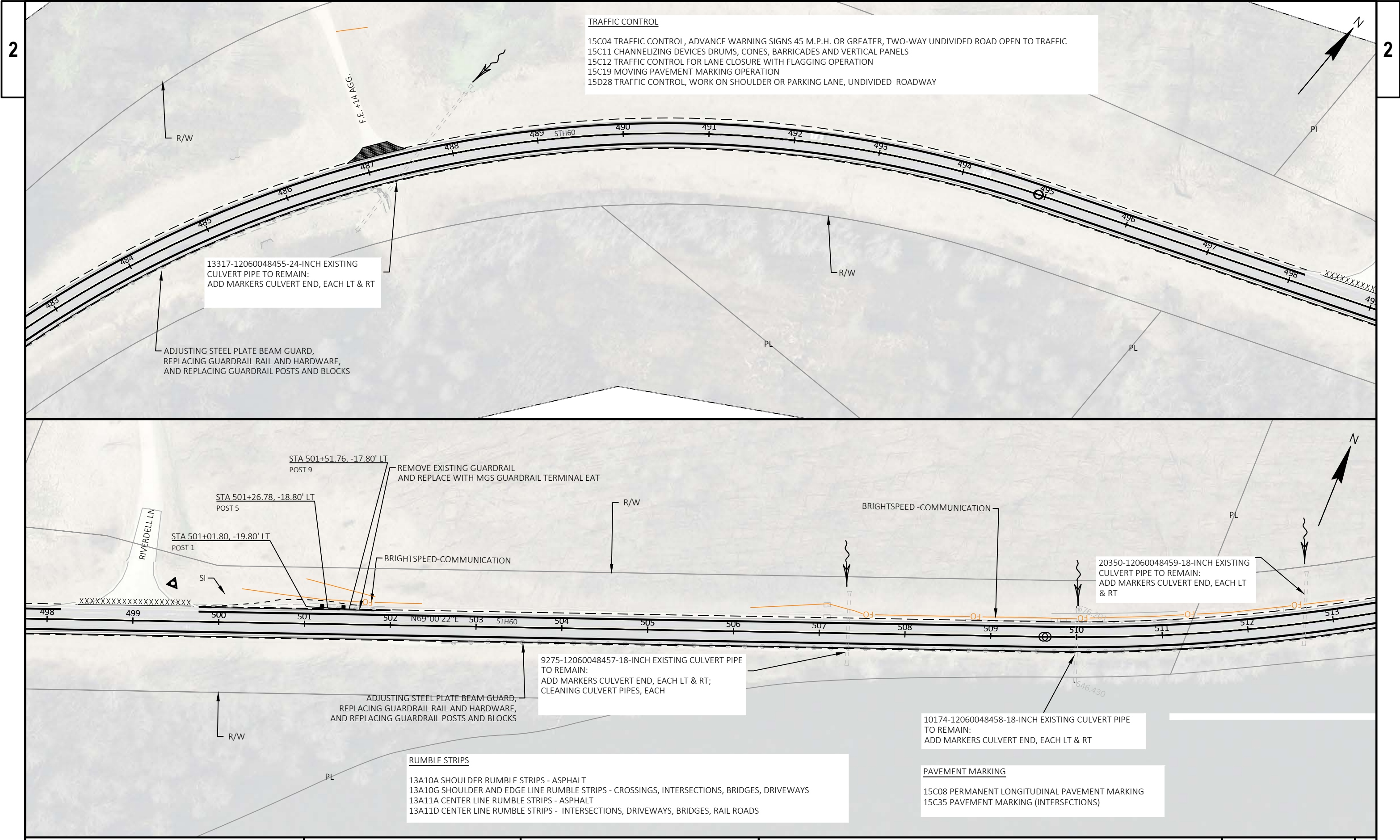
ADJUSTING STEEL PLATE BEAM GUARD, REPLACING GUARDRAIL RAIL AND HARDWARE, AND REPLACING GUARDRAIL POSTS AND BLOCKS

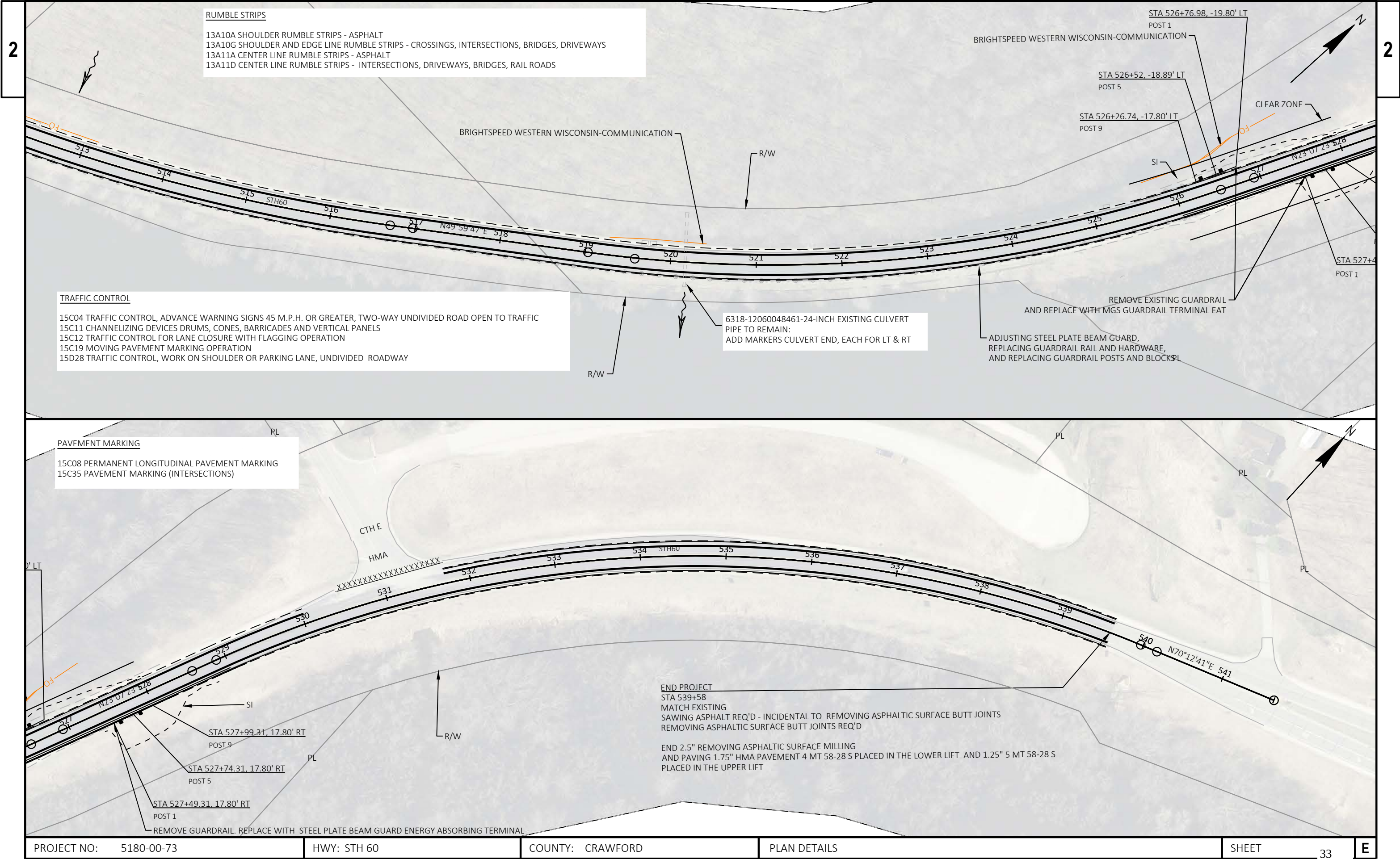
13A10A SHOULDER RUMBLE STRIPS - ASPHALT
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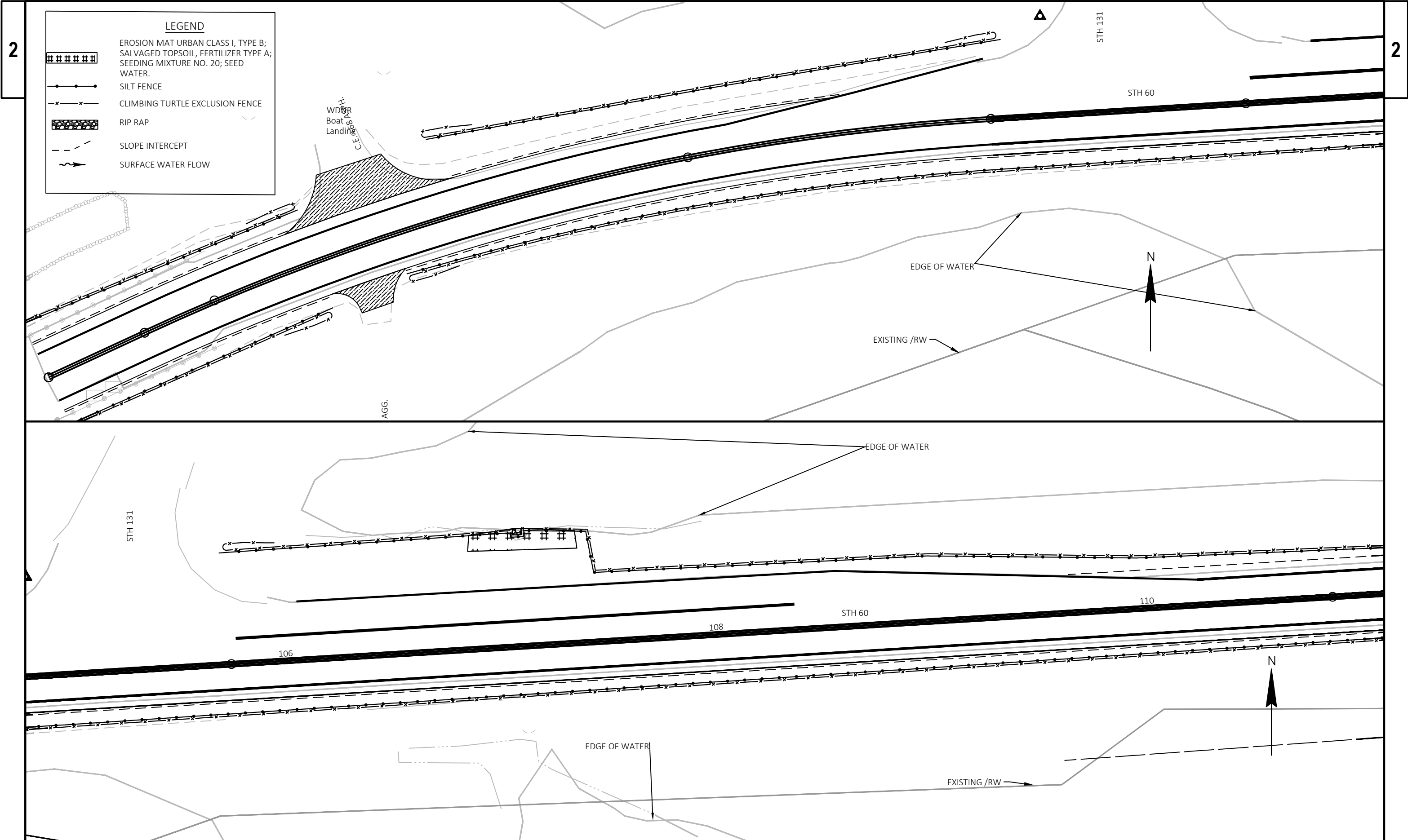
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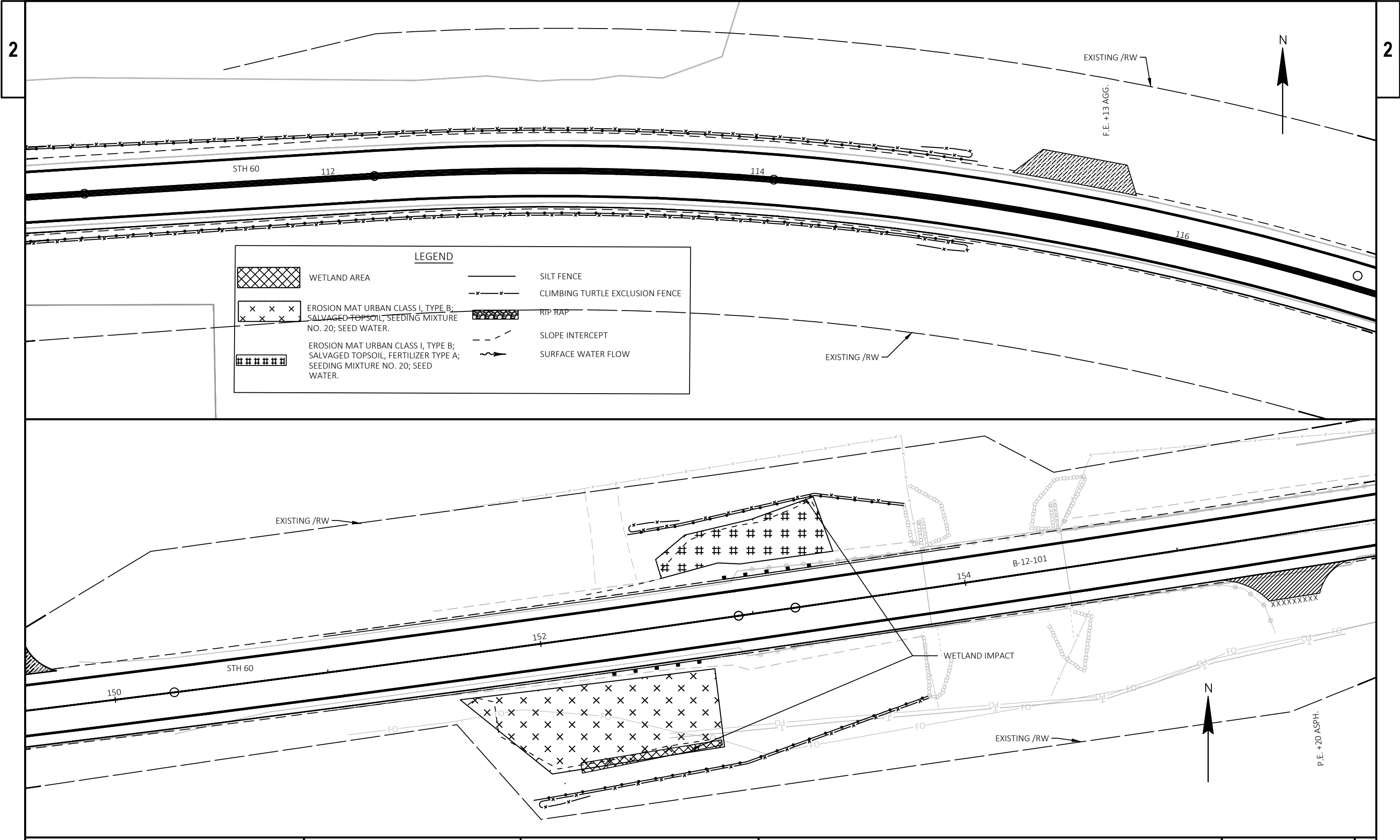
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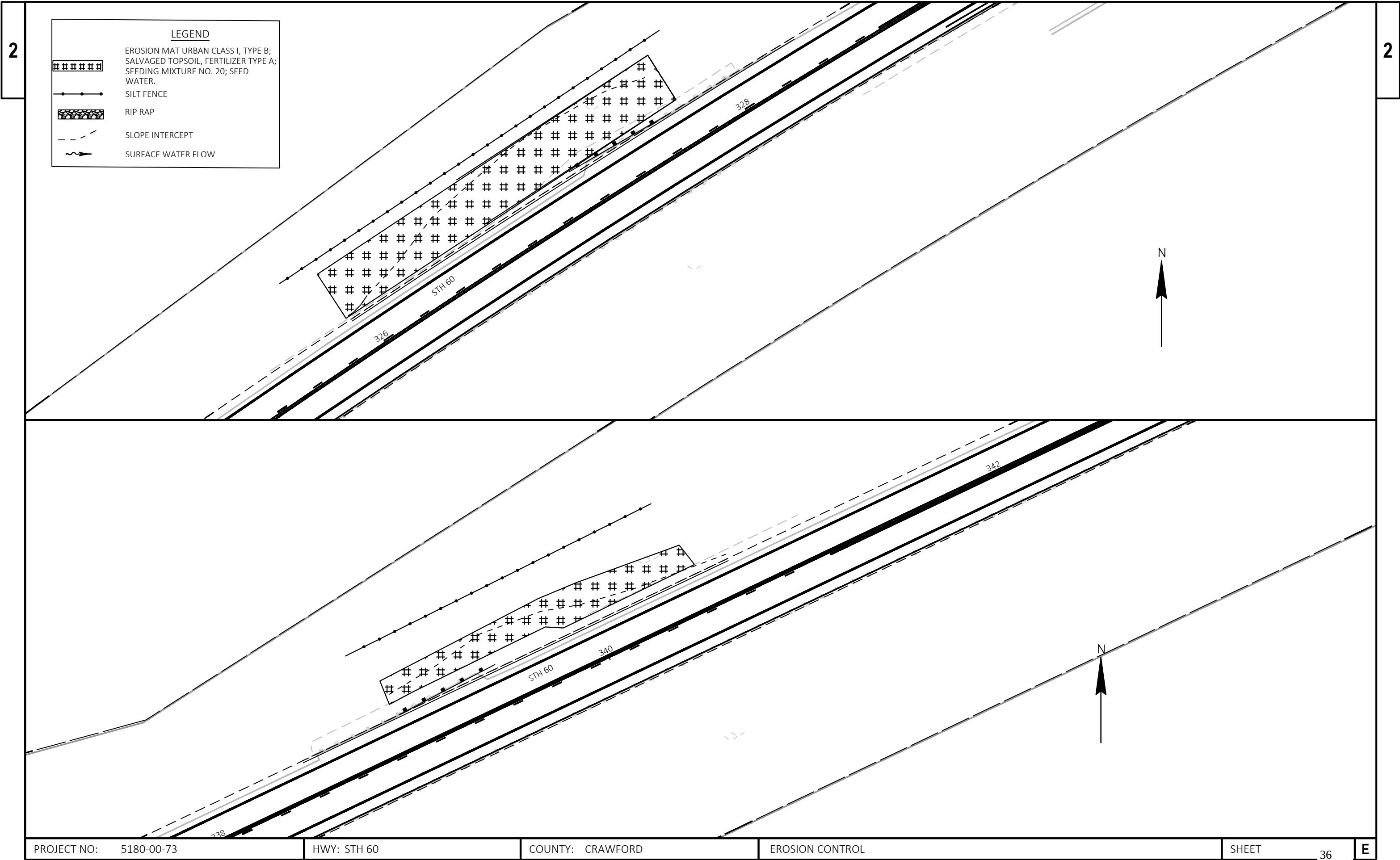
WISDOT/CADDS SHEET 44

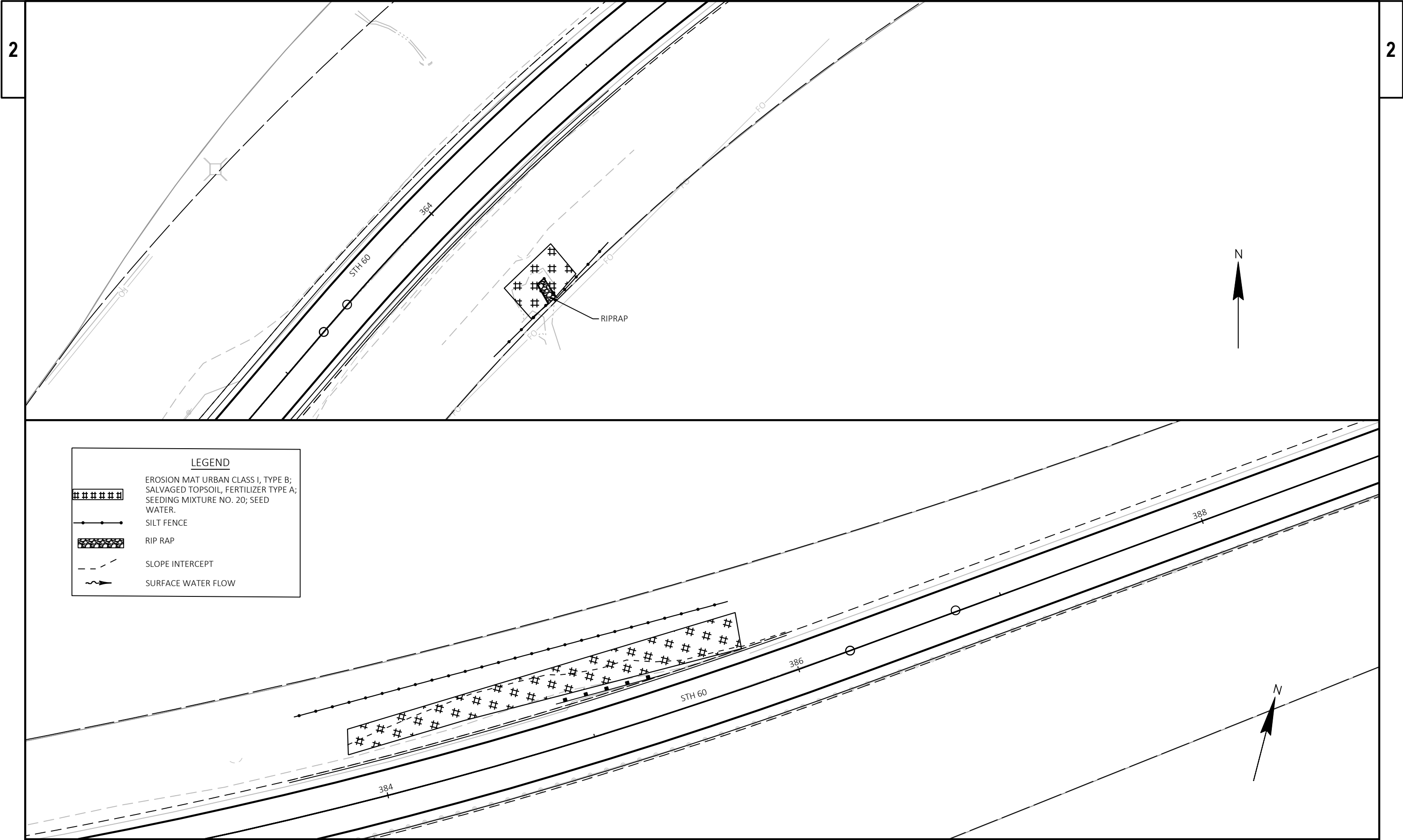


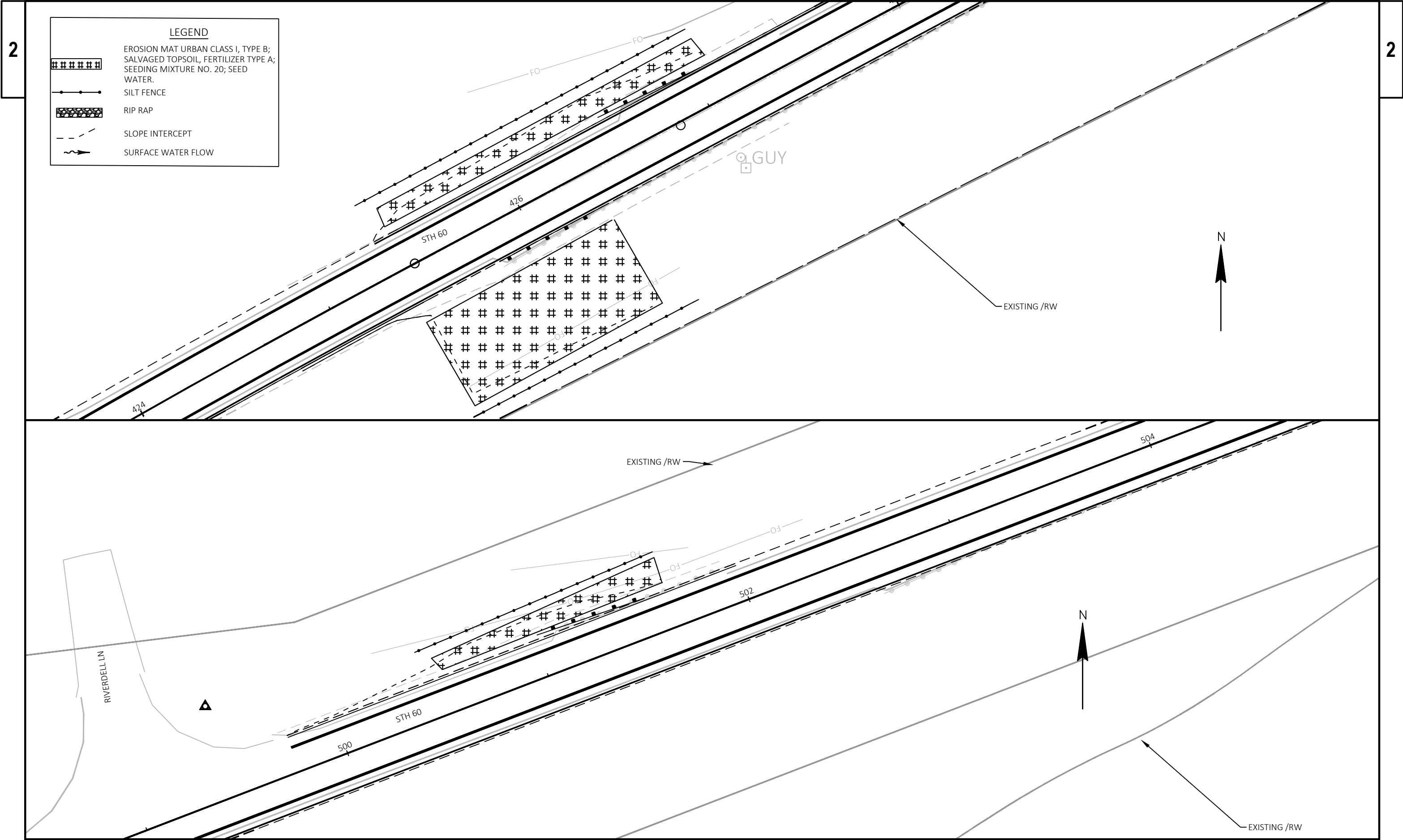


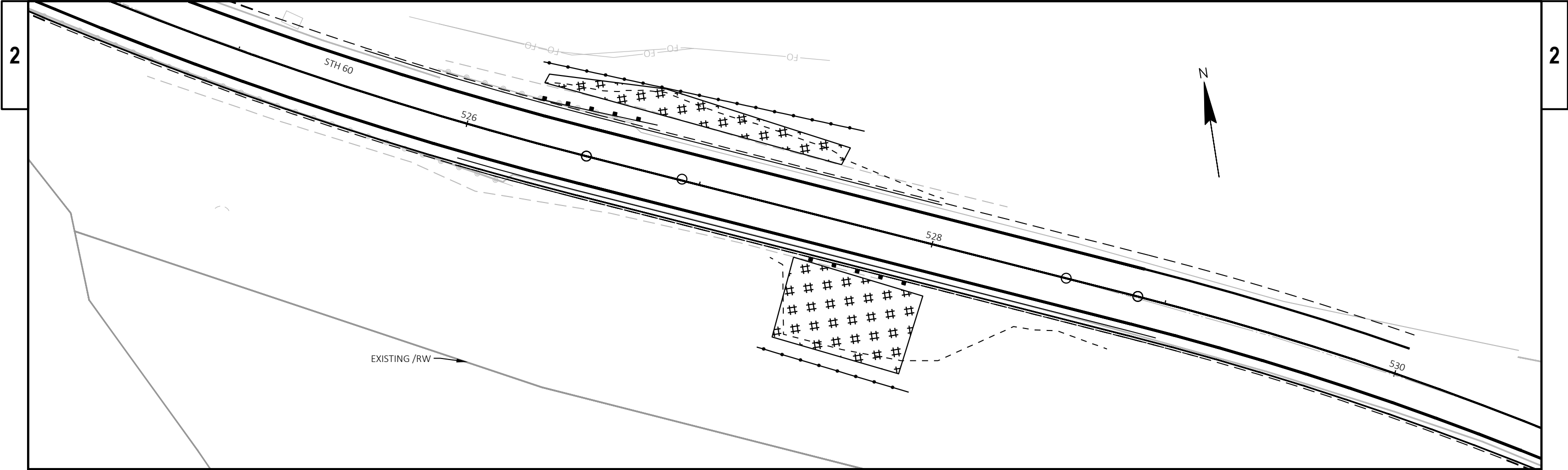








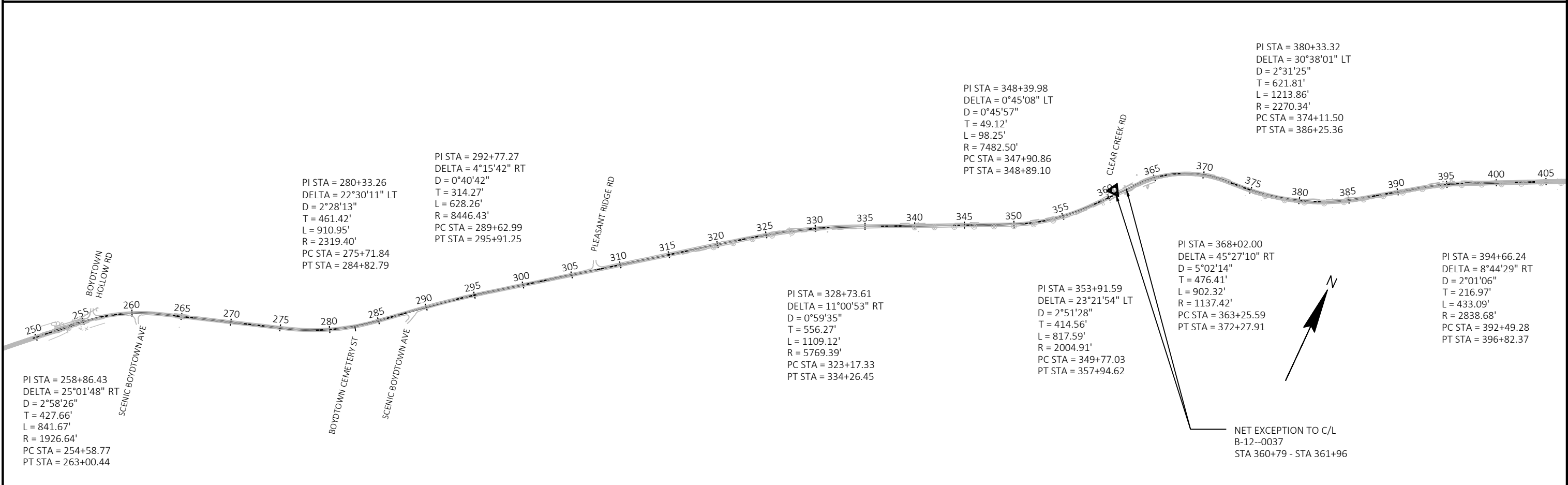
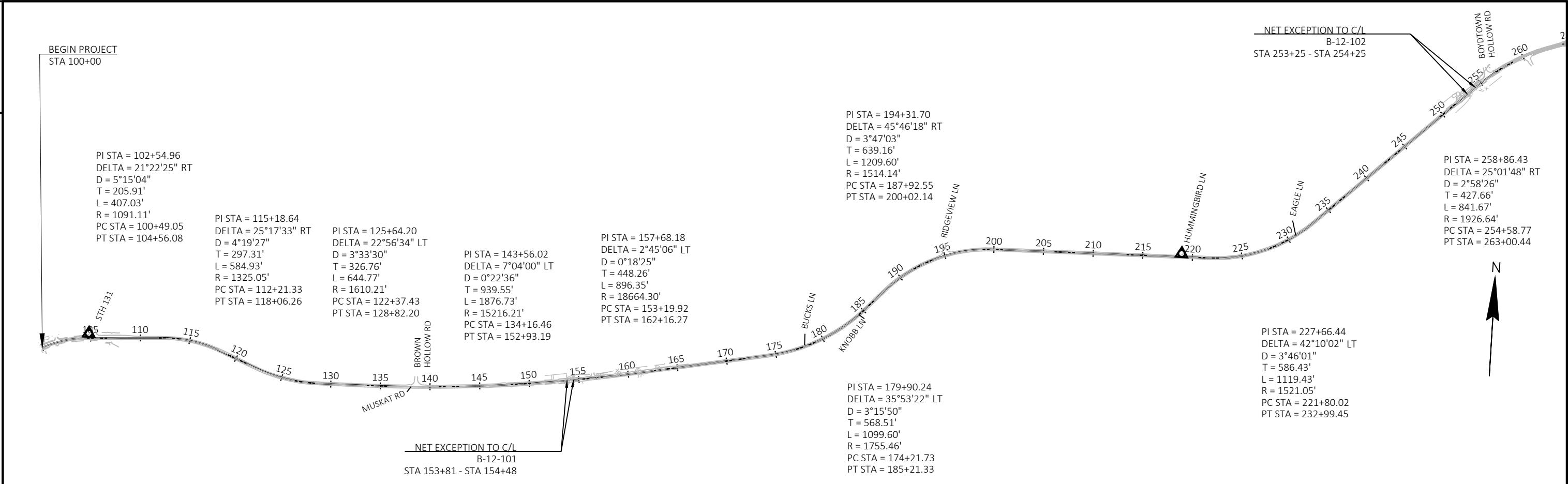




LEGEND

	EROSION MAT URBAN CLASS I, TYPE B; SALVAGED TOPSOIL, FERTILIZER TYPE A; SEEDING MIXTURE NO. 20; SEED WATER.
	SILT FENCE
	SLOPE INTERCEPT
	SURFACE WATER FLOW

2



PROJECT NO:	5180-00-73
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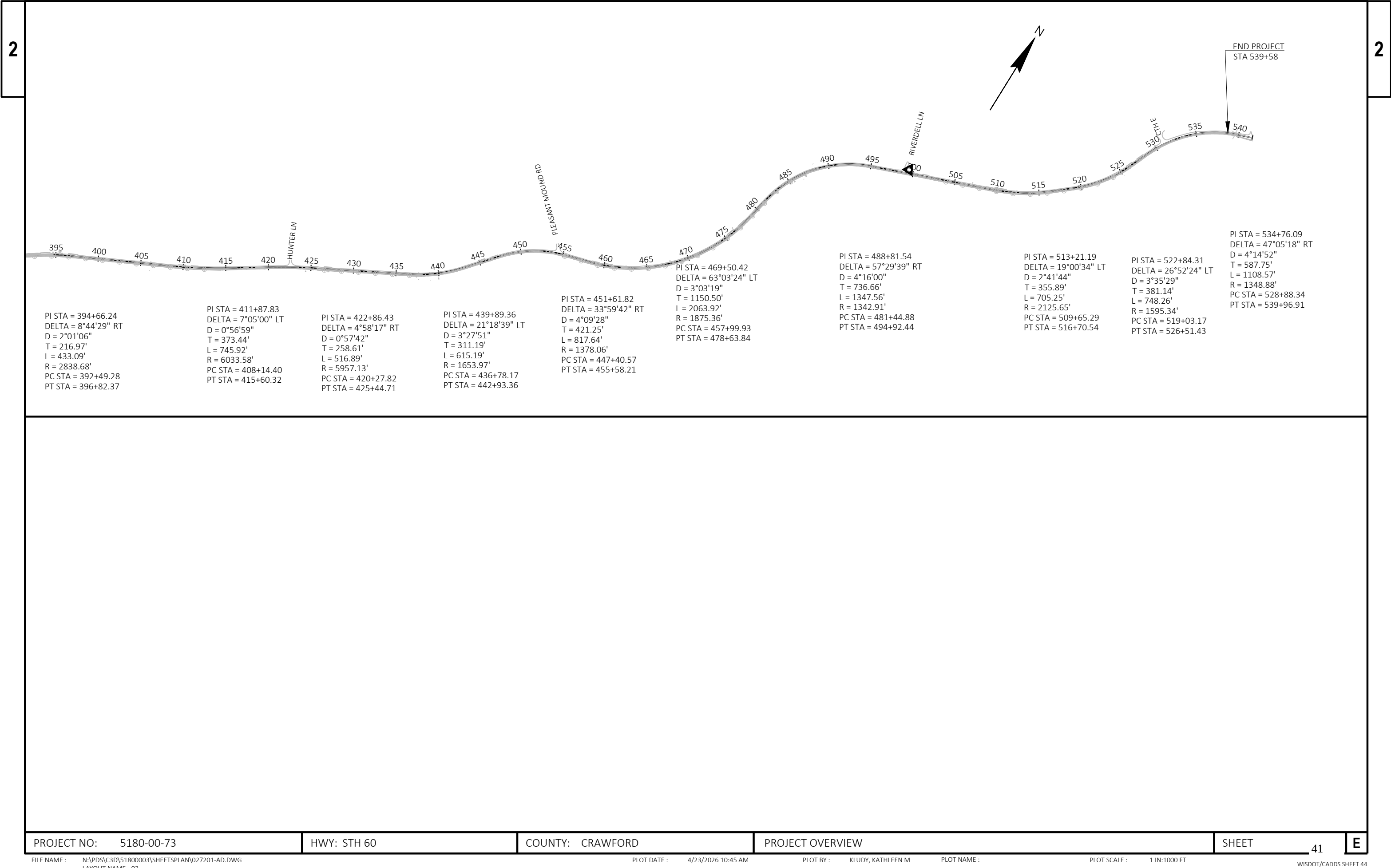
HWY: STH 60

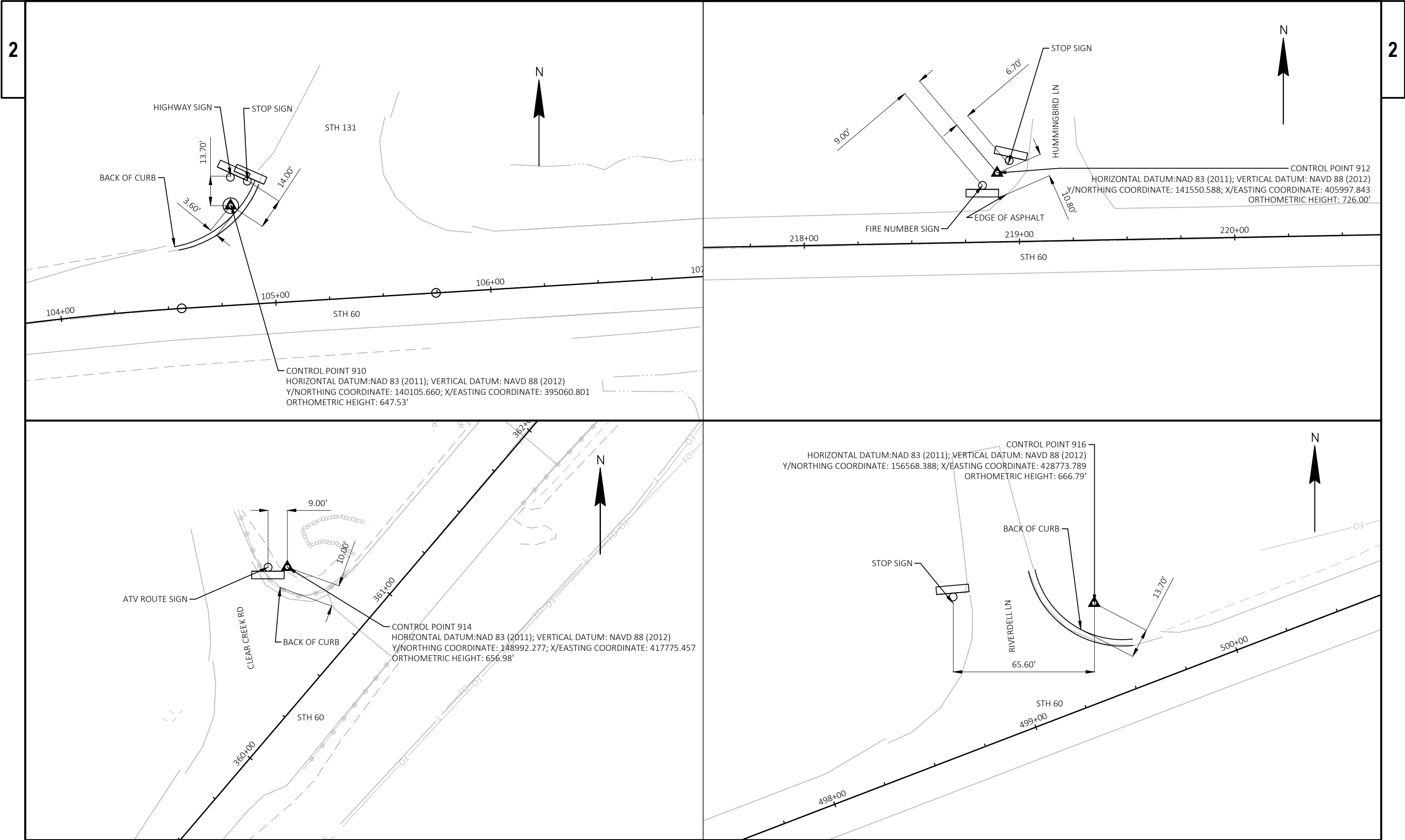
COUNTY: CRAWFORD

ALIGNMENT

SHEET	40	E
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Estimate Of Quantities

5180-00-73					
Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	373.000	373.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	100.000	100.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	140,859.000	140,859.000
0008	204.0165	Removing Guardrail	LF	1,219.000	1,219.000
0010	205.0100	Excavation Common	CY	2.000	2.000
0012	208.0100	Borrow	CY	289.000	289.000
0014	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 5180-00-73	EACH	1.000	1.000
0016	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	678.000	678.000
0018	213.0100	Finishing Roadway (project) 01. 5180-00-73	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,881.000	1,881.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	295.000	295.000
0024	455.0605	Tack Coat	GAL	15,583.000	15,583.000
0026	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0028	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0030	460.2005	Incentive Density PWL HMA Pavement	DOL	23,970.000	23,970.000
0032	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	25,470.000	25,470.000
0034	460.2010	Incentive Air Voids HMA Pavement	DOL	23,970.000	23,970.000
0036	460.6224	HMA Pavement 4 MT 58-28 S	TON	13,835.000	13,835.000
0038	460.6225	HMA Pavement 5 MT 58-28 S	TON	9,887.000	9,887.000
0040	465.0105	Asphaltic Surface	TON	1,892.000	1,892.000
0042	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	45.000	45.000
0044	465.0520	Asphaltic Rumble Strips, Shoulder	LF	72,701.000	72,701.000
0046	465.0560	Asphaltic Rumble Strips, Centerline	LF	43,958.000	43,958.000
0048	520.8700	Cleaning Culvert Pipes	EACH	4.000	4.000
0050	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	1.000	1.000
0052	606.0200	Riprap Medium	CY	6.000	6.000
0054	614.0305	Steel Plate Beam Guard Class A	LF	124.000	124.000
0056	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	2.000	2.000
0058	614.0400	Adjusting Steel Plate Beam Guard	LF	19,907.000	19,907.000
0060	614.0950	Replacing Guardrail Posts and Blocks	EACH	313.000	313.000
0062	614.0951	Replacing Guardrail Rail and Hardware	LF	2,004.000	2,004.000
0064	614.2300	MGS Guardrail 3	LF	717.000	717.000
0066	614.2350	MGS Guardrail Short Radius	LF	260.000	260.000
0068	614.2500	MGS Thrie Beam Transition	LF	429.000	429.000
0070	614.2610	MGS Guardrail Terminal EAT	EACH	11.000	11.000
0072	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000
0074	618.0100	Maintenance and Repair of Haul Roads (project) 01. 5180-00-73	EACH	1.000	1.000
0076	619.1000	Mobilization	EACH	1.000	1.000
0078	624.0100	Water	MGAL	97.000	97.000
0080	625.0500	Salvaged Topsoil	SY	4,434.000	4,434.000
0082	628.1504	Silt Fence	LF	4,321.000	4,321.000
0084	628.1520	Silt Fence Maintenance	LF	4,321.000	4,321.000
0086	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0088	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0090	628.2008	Erosion Mat Urban Class I Type B	SY	4,434.000	4,434.000
0092	629.0205	Fertilizer Type A	CWT	2.900	2.900
0094	630.0120	Seeding Mixture No. 20	LB	127.000	127.000
0096	630.0500	Seed Water	MGAL	81.000	81.000
0098	633.5200	Markers Culvert End	EACH	12.000	12.000

Estimate Of Quantities

5180-00-73					
Line	Item	Item Description	Unit	Total	Qty
0100	642.5001	Field Office Type B	EACH	1.000	1.000
0102	643.0300	Traffic Control Drums	DAY	5,937.000	5,937.000
0104	643.0900	Traffic Control Signs	DAY	500.000	500.000
0106	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0108	643.3165	Temporary Marking Line Paint 6-Inch	LF	171,589.000	171,589.000
0110	643.5000	Traffic Control	EACH	1.000	1.000
0112	645.0120	Geotextile Type HR	SY	11.000	11.000
0114	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	163,807.000	163,807.000
0116	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	260.000	260.000
0118	650.8000	Construction Staking Resurfacing Reference	LF	43,958.000	43,958.000
0120	650.9911	Construction Staking Supplemental Control (project) 01. 5180-00-73	EACH	1.000	1.000
0122	690.0150	Sawing Asphalt	LF	1,899.000	1,899.000
0124	740.0440	Incentive IRI Ride	DOL	33,300.000	33,300.000
0126	999.2100.S	Installing and Maintaining Climbing Turtle Exclusion Fence	LF	4,224.000	4,224.000
0128	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,400.000	2,400.000
0130	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	2,160.000	2,160.000
0132	SPV.0060	Special 01. Site Mowing	EACH	6.000	6.000
0134	SPV.0090	Special 01. Painting Beam Guard	LF	2,621.000	2,621.000
0136	SPV.0180	Special 01. Removing Distressed Pavement Milling	SY	1,410.000	1,410.000

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REMOVING ASPHALTIC SURFACE BUTT JOINTS

204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS						REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	SY	
0010	539+52	-	539+77	CL	100	END OF PROJECT
TOTAL 0010					100	

EXCAVATION AND BORROW SUMMARY

205.0100 EXCAVATION COMMON						* 208.0100 BORROW		REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	CY	CY		
0010	107+10	-	-	LT	1	1		CULVERT PIPE NO. 40555-1260048401 CULVERT PIPE NO. 12707-12060048427
0010	364+30	-	-	RT	1	1		
TOTAL 0010					2	2		

* ADDITIONAL AMOUNTS OF ITEM FOUND UNDER BARRIER SYTEM RESTORATION

BARRIER SYSTEM RESTORATION

* 208.0100 BORROW						* 625.0500 SALVAGED TOPSOIL	* 628.2008 EROSION MAT URBAN CLASS I TYPE B	* 629.0205 FERTILIZER TYPE A	* 630.0120 SEEDING MIXTURE NO. 20	* 630.0500 SEED WATER	REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	CY	SY	SY	CWT	LB	MGAL	
0010	152+14	-	153+44	LT	-	169	169	11	5	3	
0010	151+63	-	152+78	RT	-	429	429	27	12	8	
0010	251+18	-	252+36	LT	-	316	316	20	9	6	
0010	250+94	-	251+93	RT	-	169	169	11	5	3	
0010	254+35	-	255+95	LT	-	359	359	23	10	7	
0010	255+09	-	256+94	RT	-	736	736	47	20	13	
0010	325+91	-	328+70	LT	61	503	503	32	14	9	
0010	338+91	-	340+55	LT	10	231	231	15	7	4	
0010	383+95	-	385+47	LT	2	286	286	18	8	5	
0010	426+11	-	427+12	LT	-	178	178	12	5	3	
0010	425+63	-	426+40	RT	155	497	497	32	14	9	
0010	500+61	-	501+62	LT	-	118	118	8	4	2	
0010	526+27	-	527+25	LT	-	124	124	8	4	3	
0010	527+45	-	528+09	RT	59	211	211	14	6	4	
TOTAL 0010					287	4,326	4,326	278	123	79	

* ADDITIONAL AMOUNTS OF ITEM FOUND UNDER EROSION CONTROL SUMMARY AND EXCAVATION AND BORROW SUMMARY

PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) (01. 5180-00-73)

211.0101.01 PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) (01. 5180-00-73)						REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	EACH	
0010	100+00	-	539+58	CL	1	
TOTAL 0010					1	

ASPHALT SUMMARY										
CATEGORY	STATION	TO	STATION	LOCATION	204.0120	455.0605	460.6224	460.6225	465.0105	REMARKS
					REMOVING ASPHALTIC SURFACE MILLING SY	TACK COAT GAL	HMA PAVEMENT 4 MT 58-28 S TON	HMA PAVEMENT 5 MT 58-28 S TON	ASPHALTIC SURFACE TON	
0010	100+00	-	153+82	CL	14,112	1,694	1,383	988	-	MAINLINE
0010	154+48	-	253+25	CL	25,900	3,108	2,539	1,813	-	MAINLINE
0010	254+28	-	360+78	CL	27,928	3,351	2,737	1,955	-	MAINLINE
0010	361+96	-	539+58	CL	46,575	5,589	4,565	3,261	-	MAINLINE
0010	308+56	-	321+23	LT	831	58	82	59	-	SHOULDER
0010	328+62	-	339+18	LT	346	24	34	25	-	SHOULDER
0010	347+10	-	351+86	LT	156	11	16	11	-	SHOULDER
0010	372+98	-	374+56	LT	52	4	6	4	-	SHOULDER
0010	378+78	-	381+42	LT	87	6	9	7	-	SHOULDER
0010	386+44	-	393+57	LT	234	16	23	17	-	SHOULDER
0010	398+32	-	410+46	LT	398	28	40	28	-	SHOULDER
0010	428+42	-	438+45	LT	329	23	33	24	-	SHOULDER
0010	444+78	-	445+84	LT	35	2	4	3	-	SHOULDER
0010	463+79	-	476+46	LT	415	29	41	30	-	SHOULDER
0010	507+09	-	511+31	LT	138	10	14	10	-	SHOULDER
0010	374+56	-	378+78	LT	138	10	14	10	-	SHOULDER
0010	438+45	-	444+78	LT	208	15	21	15	-	SHOULDER
0010	456+93	-	463+79	LT	225	16	23	16	-	SHOULDER
0010	503+39	-	507+09	LT	121	8	12	9	-	SHOULDER
0010	511+31	-	527+15	LT	519	36	51	37	-	SHOULDER
0010	328+62	-	339+18	RT	692	48	68	49	-	SHOULDER
0010	347+10	-	351+86	RT	312	22	31	22	-	SHOULDER
0010	372+98	-	374+56	RT	104	7	11	8	-	SHOULDER
0010	378+78	-	381+42	RT	173	12	17	13	-	SHOULDER
0010	386+44	-	393+57	RT	467	33	46	33	-	SHOULDER
0010	398+32	-	410+46	RT	796	56	79	56	-	SHOULDER
0010	428+42	-	438+45	RT	658	46	65	47	-	SHOULDER
0010	444+78	-	445+84	RT	69	5	7	5	-	SHOULDER
0010	463+79	-	476+46	RT	831	58	82	59	-	SHOULDER
0010	507+09	-	511+31	RT	277	19	28	20	-	SHOULDER
0010	374+56	-	378+78	RT	277	19	28	20	-	SHOULDER
0010	438+45	-	444+78	RT	415	29	41	30	-	SHOULDER
0010	456+93	-	463+79	RT	450	32	45	32	-	SHOULDER
0010	503+39	-	507+09	RT	242	17	24	17	-	SHOULDER
0010	511+31	-	527+15	RT	1,038	73	102	73	-	SHOULDER
0010	104+17	-	110+24	LT	669	47	66	47	-	TURN LANE
0010	100+00	-	539+58	CL	-				240	UNDISTRIBUTED
TOTAL 0010					126,217	14,561	12,387	8,853	240	
0020	100+00	-	308+56	LT	4,635	324	455	325	520	SHOULDER WIDENING
0020	321+23	-	328+62	LT	164	11	17	12	19	SHOULDER WIDENING
0020	339+18	-	347+10	LT	176	12	18	13	20	SHOULDER WIDENING
0020	351+86	-	372+98	LT	469	33	46	33	53	SHOULDER WIDENING
0020	381+42	-	386+44	LT	111	8	11	8	13	SHOULDER WIDENING
0020	393+57	-	398+32	LT	106	7	11	8	12	SHOULDER WIDENING
0020	410+46	-	428+42	LT	399	28	40	28	45	SHOULDER WIDENING
0020	445+84	-	456+93	LT	246	17	25	18	28	SHOULDER WIDENING
0020	476+46	-	503+39	LT	598	42	59	42	68	SHOULDER WIDENING
0020	527+15	-	539+58	LT	276	19	28	20	32	SHOULDER WIDENING
0020	100+00	-	308+56	RT	4,635	324	455	325	520	SHOULDER WIDENING
0020	321+23	-	328+62	RT	164	11	17	12	19	SHOULDER WIDENING
0020	339+18	-	347+10	RT	176	12	18	13	20	SHOULDER WIDENING
0020	351+86	-	372+98	RT	469	33	46	33	53	SHOULDER WIDENING
0020	381+42	-	386+44	RT	111	8	11	8	13	SHOULDER WIDENING
0020	393+57	-	398+32	RT	106	7	11	8	12	SHOULDER WIDENING
0020	410+46	-	428+42	RT	399	28	40	28	45	SHOULDER WIDENING
0020	445+84	-	456+93	RT	246	17	25	18	28	SHOULDER WIDENING
0020	476+46	-	503+39	RT	598	42	59	42	68	SHOULDER WIDENING
0020	527+15	-	539+58	RT	276	19	28	20	32	SHOULDER WIDENING
0020	308+56	-	321+23	RT	282	20	28	20	32	SHOULDER WIDENING
TOTAL 0020					14,642	1,022	1,448	1,034	1,652	
PROJECT TOTAL					140,859	15,583	13,835	9,887	1,892	

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PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS						
CATEGORY	STATION	TO	STATION	LOCATION	STA	REMARKS
0010	100+00	-	153+64	CL	108	MAINLINE
0010	153+86	-	154+02	CL	2	MAINLINE
0010	255+07	-	361+36	CL	214	MAINLINE
0010	362+68	-	539+59	CL	354	MAINLINE
				TOTAL 0010	678	

PWL MIXTURE USE TABLE

LOCATION	STATION	TO	STATION	MIXTURE USE:	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
									MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
DRIVING LANE	100+00	-	539+58	UPPER LAYER	4 MT 58-28 S HMA SURFACE	5 MT 58-28 S	6,109	1.25"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
DRIVING LANE	100+00	-	539+58	LOWER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	11,290	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
4.95 FOOT SHOULDER	100+00	-	539+58	UPPER LAYER	4 MT 58-28 S HMA SURFACE	5 MT 58-28 S	1,823	1.25"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
4.95 FOOT SHOULDER	100+00	-	539+58	LOWER LAYER	BASE AGGREGATE	4 MT 58-28 S	2,545	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE

PWL SUMMARY

		460.0105.S HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS EACH	460.0110.S HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY EACH	REMARKS
CATEGORY	LOCATION			
0010		1	1	PROJECT 5180-00-73
	TOTAL 0010	1	1	

BEAM GUARD SUMMARY																
					204.0165	614.0305	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH	614.0400	614.0950	614.0951	614.2330	614.2350	614.2500	614.2610	614.2630	
					REMOVING GUARDRAIL LF	STEEL PLATE BEAM GUARD CLASS A LF		ADJUSTING STEEL PLATE BEAM GUARD LF	REPLACING GUARDRAIL POSTS AND BLOCKS EACH	REPLACING GUARDRAIL RAIL AND HARDWARE LF	MGS GUARDRAIL 3 K LF	MGS GUARDRAIL SHORT RADIUS LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH	MGS GUARDRAIL SHORT RADIUS TERMINAL EACH	
CATEGORY	STATION	TO	STATION	LOCATION												REMARKS
0010	100+00	-	101+06	LT	-	-	-	106	3	11	-	-	-	-	-	MAINLINE
0010	100+00	-	101+06	RT	-	-	-	106	3	11	-	-	-	-	-	MAINLINE
0010	152+84	-	153+34	LT	-	-	-	-	-	-	-	-	39	1	-	MAINLINE
0010	152+27	-	152+77	RT	-	-	-	-	-	-	63	-	39	1	-	MAINLINE
0010	153+11	-	153+86	LT	71	-	-	-	-	-	-	-	-	-	-	MAINLINE
0010	153+11	-	155+86	RT	71	-	-	-	-	-	-	-	-	-	-	MAINLINE
0010	153+33	-	156+50	LT	-	-	-	317	7	32	-	-	-	-	-	MAINLINE
0010	153+33	-	155+44	RT	-	-	-	212	6	22	-	-	-	-	-	MAINLINE
0010	156+50	-	164+94	LT	-	-	-	845	12	85	-	-	-	-	-	MAINLINE
0010	251+82	-	252+32	LT	-	-	-	-	-	-	218	-	39	1	-	MAINLINE
0010	251+66	-	252+16	RT	-	-	-	-	-	-	218	-	39	1	-	MAINLINE
0010	252+08	-	255+18	LT	289	-	-	-	-	-	-	-	-	-	-	MAINLINE
0010	252+34	-	255+44	RT	289	-	-	-	-	-	-	-	-	-	-	MANLINE/BOYDTOWN HOLLOW RD
0010	253+12	-	255+76	LT	-	-	-	265	6	27	-	-	-	-	-	MAINLINE
0010	253+12	-	256+29	RT	-	-	-	317	6	32	-	-	-	-	-	MAINLINE
0010	254+14	-	255+80	LT	-	-	-	-	-	-	-	260	-	-	1	BOYDTOWN HOLLOW RD - 10 CRT POST
0010	255+19	-	255+70	RT	-	-	-	-	-	-	218	-	39	1	-	MAINLINE
0010	318+59	-	330+74	RT	-	-	-	1215	20	122	-	-	-	-	-	MAINLINE
0010	327+15	-	328+70	LT	71	-	-	-	-	-	-	-	39	1	-	MAINLINE
0010	328+10	-	329+15	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	333+38	-	357+14	RT	-	-	-	2376	39	238	-	-	-	-	-	MAINLINE
0010	339+01	-	339+51	LT	71	-	-	-	-	-	-	-	39	1	-	MAINLINE
0010	339+18	-	340+24	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	346+05	-	363+47	LT	-	-	-	1743	2	175	-	-	-	-	-	MAINLINE
0010	360+83	-	361+36	RT	-	-	-	53	2	6	-	-	-	-	-	MAINLINE
0010	362+42	-	363+47	RT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	372+45	-	373+50	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	376+14	-	415+74	RT	-	-	-	3960	64	396	-	-	-	-	-	MAINLINE
0010	381+42	-	382+48	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	384+87	-	385+37	LT	71	-	-	-	-	-	-	-	39	1	-	MAINLINE
0010	385+65	-	386+70	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	393+57	-	394+62	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	397+79	-	398+32	LT	-	-	-	53	2	6	-	-	-	-	-	MAINLINE
0010	409+94	-	410+99	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	425+80	-	426+53	RT	73	-	1	-	-	-	-	-	-	-	-	MAINLINE
0010	426+52	-	427+02	LT	71	-	-	-	-	-	-	-	39	1	-	MAINLINE
0010	426+83	-	439+50	RT	-	-	-	1268	21	127	-	-	-	-	-	MAINLINE
0010	427+47	-	428+42	LT	-	-	-	95	2	10	-	-	-	-	-	MAINLINE
0010	446+37	-	446+90	LT	-	-	-	53	2	6	-	-	-	-	-	MAINLINE
0010	455+34	-	488+61	RT	-	-	-	3327	54	333	-	-	-	-	-	MAINLINE
0010	461+15	-	462+21	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	476+99	-	478+05	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	501+02	-	501+52	LT	71	-	-	-	-	-	-	-	39	1	-	MAINLINE
0010	502+34	-	503+39	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
0010	504+45	-	527+68	RT	-	-	-	2324	38	233	-	-	-	-	-	MAINLINE
0010	525+82	-	526+77	LT	71	-	-	-	-	-	-	-	39	1	-	MAINLINE
0010	526+26	-	527+50	RT	-	124	1	-	-	-	-	-	-	-	-	MAINLINE
0010	527+15	-	528+21	LT	-	-	-	106	2	11	-	-	-	-	-	MAINLINE
TOTAL 0010					1,219	124	2	19,907	313	2,004	717	260	429	11	1	

BASE AGGREGATE AND WATER SUMMARY								
CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	624.0100	REMARKS
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	WATER MGAL	
0010	-	-	101+13	RT	6	-	1	F.E
0010	-	-	115+13	LT	14	-	1	F.E
0010	-	-	117+13	RT	3	-	1	F.E
0010	-	-	137+27	RT	12	-	1	P.E
0010	-	-	138+13	RT	6	-	1	F.E
0010	-	-	145+21	RT	14	-	1	P.E
0010	-	-	147+25	LT	10	-	1	F.E
0010	-	-	148+15	RT	8	-	1	P.E
0010	-	-	149+14	LT	9	-	1	P.E
0010	-	-	161+21	RT	9	-	1	P.E
0010	-	-	171+36	RT	16	-	1	F.E
0010	-	-	171+19	LT	10	-	1	F.E
0010	-	-	184+12	LT	5	-	1	F.E
0010	-	-	184+20	RT	14	-	1	P.E
0010	-	-	196+13	RT	9	-	1	F.E
0010	-	-	203+15	RT	6	-	1	F.E
0010	-	-	211+21	LT	8	-	1	F.E
0010	-	-	211+36	RT	12	-	1	F.E
0010	-	-	219+21	LT	21	-	1	C.E
0010	-	-	222+15	RT	6	-	1	F.E
0010	-	-	226+16	RT	8	-	1	F.E
0010	-	-	234+11	RT	6	-	1	F.E
0010	-	-	242+22	LT	10	-	1	F.E
0010	-	-	243+17	RT	9	-	1	C.E
0010	-	-	261+22	LT	13	-	1	P.E
0010	-	-	266+21	RT	12	-	1	P.E
0010	-	-	271+21	RT	10	-	1	F.E
0010	-	-	273+21	LT	9	-	1	F.E
0010	-	-	291+15	LT	7	-	1	F.E
0010	-	-	298+73	RT	25	-	1	F.E
0010	-	-	320+15	LT	9	-	1	P.E
0010	-	-	366+16	LT	16	-	1	P.E
0010	-	-	487+14	LT	13	-	1	F.E
0010	-	-	-	-	-	295	6	FOR USE AROUND BEAM GUARD AREAS
TOTAL 0010					345	295	39	

BASE AGGREGATE SUMMARY CONTINUED								
CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	624.0100	REMARKS
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	WATER MGAL	
0020	100+00	-	101+06	LT	3	-	1	SHOULDERS
0020	101+58	-	104+75	LT	7	-	1	SHOULDERS
0020	105+81	-	115+31	LT	20	-	1	SHOULDERS
0020	115+84	-	138+54	LT	48	-	1	SHOULDERS
0020	139+60	-	147+52	LT	17	-	1	SHOULDERS
0020	148+05	-	149+63	LT	4	-	1	SHOULDERS
0020	150+16	-	156+50	LT	14	-	1	SHOULDERS
0020	157+02	-	171+28	LT	30	-	1	SHOULDERS
0020	171+81	-	178+14	LT	14	-	1	SHOULDERS
0020	178+67	-	192+40	LT	29	-	1	SHOULDERS
0020	196+10	-	200+32	LT	9	-	1	SHOULDERS
0020	200+85	-	211+41	LT	22	-	1	SHOULDERS
0020	211+94	-	219+33	LT	16	-	1	SHOULDERS
0020	219+86	-	227+78	LT	17	-	1	SHOULDERS
0020	231+47	-	253+65	LT	47	-	1	SHOULDERS
0020	254+70	-	256+29	LT	4	-	1	SHOULDERS
0020	257+34	-	261+57	LT	9	-	1	SHOULDERS
0020	262+10	-	307+50	LT	95	-	2	SHOULDERS
0020	321+23	-	328+62	LT	16	-	1	SHOULDERS
0020	339+18	-	347+10	LT	17	-	1	SHOULDERS
0020	352+38	-	360+30	LT	17	-	1	SHOULDERS
0020	362+42	-	367+17	LT	10	-	1	SHOULDERS
0020	367+70	-	373+50	LT	13	-	1	SHOULDERS
0020	381+95	-	386+70	LT	10	-	1	SHOULDERS
0020	394+10	-	398+32	LT	9	-	1	SHOULDERS
0020	410+46	-	422+61	LT	26	-	1	SHOULDERS
0020	424+19	-	428+42	LT	9	-	1	SHOULDERS
0020	446+37	-	452+70	LT	14	-	1	SHOULDERS
0020	453+23	-	455+34	LT	5	-	1	SHOULDERS
0020	456+40	-	462+21	LT	13	-	1	SHOULDERS
0020	476+99	-	499+70	LT	48	-	1	SHOULDERS
0020	501+28	-	503+39	LT	5	-	1	SHOULDERS
0020	527+68	-	531+90	LT	9	-	1	SHOULDERS
0020	532+96	-	540+88	LT	17	-	1	SHOULDERS
0020	100+00	-	145+41	RT	95	-	2	SHOULDERS
0020	150+69	-	154+38	RT	8	-	1	SHOULDERS
0020	154+91	-	155+44	RT	2	-	1	SHOULDERS
0020	155+97	-	246+26	RT	189	-	4	SHOULDERS
0020	247+31	-	254+18	RT	15	-	1	SHOULDERS
0020	255+23	-	260+51	RT	11	-	1	SHOULDERS
0020	262+10	-	283+22	RT	44	-	1	SHOULDERS
0020	283+74	-	288+50	RT	10	-	1	SHOULDERS
0020	290+08	-	361+36	RT	149	-	3	SHOULDERS
0020	362+42	-	539+58	RT	370	-	8	SHOULDERS
TOTAL 0020					1,536	0	58	
PROJECT TOTAL					1,881	295	97	

ASPHALTIC SURDFACE DRIVEWAY AND FIELD ENTERANCES SUMMARRY

CATEGORY	STATION	LOCATION	204.0110	465.0120	REMARKS
			REMOVING ASPHALTIC SURFACE SY	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	
0010	101+68	LT	108	13	C.E
0010	155+20	RT	52	6	P.E
0010	156+15	LT	64	8	P.E
0010	200+22	LT	81	10	P.E
0010	451+21	LT	68	8	P.E
TOTAL 0010			373	45	

ASPHALTIC RUMBLE STRIPS, SHOULDER

CATEGORY	STATION	TO	STATION	LOCATION	465.0520	REMARKS
					ASPHALTIC RUMBLE STRIPS, SHOULDER LF	
0020	100+00	-	101+06	LT	106	SHOULDERS
0020	101+58	-	104+75	LT	317	SHOULDERS
0020	105+81	-	115+31	LT	951	SHOULDERS
0020	115+84	-	138+54	LT	2,271	SHOULDERS
0020	139+60	-	147+52	LT	792	SHOULDERS
0020	148+05	-	149+63	LT	159	SHOULDERS
0020	150+16	-	156+50	LT	634	SHOULDERS
0020	157+02	-	171+28	LT	1,426	SHOULDERS
0020	171+81	-	178+14	LT	634	SHOULDERS
0020	178+67	-	192+40	LT	1,373	SHOULDERS
0020	196+10	-	200+32	LT	423	SHOULDERS
0020	200+85	-	211+41	LT	1,056	SHOULDERS
0020	211+94	-	219+33	LT	740	SHOULDERS
0020	219+86	-	227+78	LT	793	SHOULDERS
0020	231+47	-	253+65	LT	2,218	SHOULDERS
0020	254+70	-	256+29	LT	159	SHOULDERS
0020	257+34	-	261+57	LT	423	SHOULDERS
0020	262+10	-	307+50	LT	4,541	SHOULDERS
0020	321+23	-	328+62	LT	740	SHOULDERS
0020	339+18	-	347+10	LT	792	SHOULDERS
0020	352+38	-	360+30	LT	792	SHOULDERS
0020	362+42	-	367+17	LT	476	SHOULDERS
0020	367+70	-	373+50	LT	581	SHOULDERS
0020	381+95	-	386+70	LT	476	SHOULDERS
0020	394+10	-	398+32	LT	423	SHOULDERS
0020	410+46	-	422+61	LT	1,215	SHOULDERS
0020	424+19	-	428+42	LT	423	SHOULDERS
0020	446+37	-	452+70	LT	634	SHOULDERS
0020	453+23	-	455+34	LT	212	SHOULDERS
0020	456+40	-	462+21	LT	581	SHOULDERS
0020	476+99	-	499+70	LT	2,271	SHOULDERS
0020	501+28	-	503+39	LT	212	SHOULDERS
0020	527+68	-	531+90	LT	423	SHOULDERS
0020	532+96	-	540+88	LT	793	SHOULDERS
0020	100+00	-	145+41	RT	4,541	SHOULDERS
0020	150+69	-	154+38	RT	370	SHOULDERS
0020	154+91	-	155+44	RT	53	SHOULDERS
0020	155+97	-	246+26	RT	9,029	SHOULDERS
0020	247+31	-	254+18	RT	687	SHOULDERS
0020	255+23	-	260+51	RT	528	SHOULDERS
0020	262+10	-	283+22	RT	2,112	SHOULDERS
0020	283+74	-	288+50	RT	476	SHOULDERS
0020	290+08	-	361+36	RT	7,128	SHOULDERS
0020	362+42	-	539+58	RT	17,717	SHOULDERS
TOTAL 0020					72,701	

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PAVEMENT MARKING												
			465.0560		643.3165			646.2040			646.4040	
			ASPHALTIC RUMBLE STRIPS, CENTERLINE		TEMPORARY MARKING LINE PAINT 6-INCH			MARKING LINE GROOVED WET REF EPOXY 6-INCH			GROOVED WET REF EPOXY 10-INCH	
					YELLOW SOLID CL YELLOW 12.5' SKIP CL			WHITE EDGELINE YELLOW SOLID CL YELLOW 12.5' SKIP CL				
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	LF	LF	LF	LF	REMARKS
0010	100+00	-	138+02	CL	3,802	22,812	-	7,604	7,604	-	-	DOUBLE YELLOW CL; WHITE EDGELINE
0010	138+02	-	148+58	CL	1,056	3,168	792	2,112	1,056	264	-	YELLOW SOLID/SKIP CL; WHITE EDGELINE
0010	148+58	-	158+87	CL	1,029	-	772	2,058	-	258	-	YELLOW SINGLE SKIP CL; WHITE EDGELINE
0010	158+87	-	169+70	CL	1,083	3,249	813	2,166	1,083	271	-	YELLOW SKIP/SOLID CL; WHITE EDGELINE
0010	169+70	-	234+59	CL	6,489	38,934	-	12,978	12,978	-	-	DOUBLE YELLOW CL; WHITE EDGELINE
0010	234+59	-	246+78	CL	1,219	3,657	915	2,438	1,219	305	-	YELLOW SOLID/SKIP CL; WHITE EDGELINE
0010	246+78	-	257+40	CL	1,062	3,186	797	2,124	1,062	266	-	YELLOW SKIP/SOLID CL; WHITE EDGELINE
0010	257+40	-	284+91	CL	2,751	16,506	-	5,502	5,502	-	-	DOUBLE YELLOW CL; WHITE EDGELINE
0010	284+91	-	296+05	CL	1,114	3,342	836	2,228	1,114	279	-	YELLOW SOLID/SKIP CL; WHITE EDGELINE
0010	296+05	-	317+69	CL	2,164	-	1,623	4,328	-	541	-	YELLOW SINGLE SKIP CL; WHITE EDGELINE
0010	317+69	-	328+73	CL	1,104	3,312	828	2,208	1,104	276	-	YELLOW SKIP/SOLID CL; WHITE EDGELINED
0010	328+73	-	331+63	CL	290	1,740	-	580	580	-	-	DOUBLE YELLOW CL; WHITE EDGELINE
0010	331+63	-	341+14	CL	951	2,853	714	1,902	951	238	-	YELLOW SOLID/SKIP CL; WHITE EDGELINE
0010	341+14	-	342+67	CL	153	918	-	306	306	-	-	DOUBLE YELLOW CL; WHITE EDGELINE
0010	342+67	-	352+65	CL	998	2,994	749	1,996	998	250	-	YELLOW SKIP/SOLID CL; WHITE EDGELINE
0010	352+65	-	539+58	CL	18,693	56,079	-	37,386	37,386	-	-	DOUBLE YELLOW CL; WHITE EDGELINE
0010	105+77	-	108+37	CL	-	-	-	-	-	-	260	RIGHT TURN LANE 60WB AT 131
TOTAL 0010					43,958	171,589		163,807			260	

CULVERT SUMMARY									
		520.8700	521.1024	606.0200	633.5200	645.0120			
		CLEANING CULVERT PIPES	APRON ENDWALLS FOR CULVERT PIPE	RIPRAP MEDIUM	MARKERS CULVERT	GEOTEXTILE TYPE HR			
		STEEL 24-INCH	STEEL 24-INCH		END				
CATEGORY	STATION	LOCATION	EACH	EACH	CY	EACH	SY	CULVERT PIPE	REMARKS
0010	107+10	LT	1	-	2	-	4	CULVERT PIPE NO. 40555- 1260048401	30-INCH CULVERT PIPE
0010	364+30	LT	-	1	4	-	7	CULVERT PIPE NO. 12707-12060048427	24-INCH CULVERT PIPE
0010	406+15	CL	1	-	-	-	-	CULVERT PIPE NO. 2203-12060048437	18-INCH CULVERT PIPE
0010	462+40	CL	-	-	-	2	-	CULVERT PIPE NO. 5709-12060048448	18-INCH CULVERT PIPE
0010	467+82	CL	-	-	-	2	-	CULVERT PIPE NO. 8026-12060048451	18-INCH CULVERT PIPE
0010	507+33	CL	1	-	-	2	-	CULVERT PIPE NO. 9275-12060048457	24-INCH CULVERT PIPE
0010	510+00	CL	1	-	-	2	-	CULVERT PIPE NO. 10174-12060048458	18-INCH CULVERT PIPE
0010	512+66	CL	-	-	-	2	-	CULVERT PIPE NO. 20350-12060048459	18-INCH CULVERT PIPE
0010	520+17	CL	-	-	-	2	-	CULVERT PIPE NO. 6318-12060048461	24-INCH CULVERT PIPE
TOTAL 0010			4	1	6	12	11		

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EROSION CONTROL SUMMARY													
					625.0500	628.1504	628.1520	628.2008	629.0205	630.0120	630.0500	999.2100.S INSTALLING AND MAINTAINING CLIMBING TURTLE EXCLUSION FENCE	
					SALVAGED TOPSOIL	SILT FENCE	SILT FENCE	EROSION MAT	FERTILIZER TYPE A	SEEDING MIXTURE	SEED WATER		
CATEGORY	STATION	TO	STATION	LOCATION	SY	LF	LF	URBAN CLASS I TYPE B	CWT	NO. 20	MGAL	LF	REMARKS
0010	100+00	-	101+36	RT	-	147	147	-	-	-	-	173	MAINLINE
0010	100+00	-	101+36	LT	-	150	150	-	-	-	-	173	MAINLINE
0010	101+74	-	115+04	RT	-	1,330	1,330	-	-	-	-	1,367	MAINLINE
0010	102+00	-	104+62	LT	-	136	136	-	-	-	-	318	MAINLINE
0010	105+72	-	115+00	LT	-	955	955	-	-	-	-	981	MAINLINE
0010	106+70	-	107+45	LT	49	-	-	49	4	2	1	-	CULVERT PIPE BY END WALL
0010	151+87	-	153+75	RT	-	191	191	-	-	-	-	204	MAINLINE
0010	152+47	-	153+77	LT	-	131	131	-	-	-	-	144	MAINLINE
0010	250+89	-	253+15	RT	-	231	231	-	-	-	-	244	MAINLINE
0010	256+96	-	252+36	LT	-	152	152	-	-	-	-	165	MAINLINE
0010	254+28	-	255+99	LT	-	186	186	-	-	-	-	199	MAINLINE
0010	254+62	-	257+11	RT	-	243	243	-	-	-	-	256	MAINLINE
0010	325+74	-	327+85	LT	-	213	213	-	-	-	-	-	MAINLINE
0010	338+89	-	340+49	LT	-	160	160	-	-	-	-	-	MAINLINE
0010	363+71	-	364+50	RT	59	96	96	59	4	2	1	-	CULVERT PIPE BY END WALL
0010	383+95	-	385+47	LT	-	209	209	-	-	-	-	-	MAINLINE
0010	425+33	-	427+07	LT	-	175	175	-	-	-	-	-	MAINLINE
0010	425+35	-	426+54	RT	-	118	118	-	-	-	-	-	MAINLINE
0010	500+46	-	501+66	LT	-	120	120	-	-	-	-	-	MAINLINE
0010	526+24	-	527+61	LT	-	137	137	-	-	-	-	-	MAINLINE
0010	527+40	-	528+06	RT	-	66	66	-	-	-	-	-	MAINLINE
TOTAL 0010					108	4,321	4,321	108	8	4	2	4,224	

TRAFFIC CONTROL											
CATEGORY	STATION	TO	STATION	LOCATION	NO ADVANCED WARNING SIGNS	NO. DAYS	NO. DRUMS	643.0300 TRAFFIC CONTROL DRUMS	643.0900 TRAFFIC CONTROL SIGNS	643.1050 TRAFFIC CONTROL SIGNS PCMS	REMARKS
								DAY	DAY	DAY	
0010	100+00	-	539+58	PROJECT	2	7	-	-	-	14	ADVANCE NOTIFICATION
0010	100+00	-	539+58	PROJECT	10	-	-	-	500	-	ADVANCE WARNING
0010	100+00	-	108+50	LT	-	11	10	110	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/BOYDTOWN HOLLOW RD
0010	100+00	-	539+58	PROJECT	-	15	90	1,350	-	-	PROJECT 5180-00-73 - CURB LOCATIONS
0010	100+00	-	101+50	RT	-	11	9	99	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	145+25	-	155+50	RT	-	11	12	132	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	152+50	-	172+00	LT	-	11	20	220	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	244+50	-	256+50	RT	-	11	12	132	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	246+00	-	263+00	LT	-	11	17	187	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	311+50	-	363+50	RT	-	11	53	583	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	327+00	-	368+50	LT	-	11	42	462	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	369+00	-	415+75	RT	-	11	48	528	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	372+50	-	418+00	LT	-	11	47	517	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	418+50	-	439+50	RT	-	11	22	242	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	426+50	-	435+50	LT	-	11	10	110	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	446+00	-	447+00	LT	-	11	9	99	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	448+25	-	488+75	RT	-	11	42	462	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	461+00	-	462+25	LT	-	11	9	99	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	477+00	-	478+05	LT	-	11	9	99	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	497+50	-	527+50	RT	-	11	24	264	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	501+00	-	510+50	LT	-	11	11	121	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
0010	525+50	-	535+25	LT	-	11	11	121	-	-	ADUSTING BEAM GUARD/GUARDRAIL REMOVAL & INSTALLATION/MAINLINE
TOTAL 0010								5,937	500	14	

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CONSTRUCTION STAKING RESURFACING REFERENCE

650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE						REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	LF	
0010	100+00	-	539+58	CL	43,958	
TOTAL 0010					43,958	

SAWING ASPHALT

690.0150 SAWING ASPHALT						REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	LF	
0010	-	-	101+68	LT	31	C.E.
0010	104+51	-	105+93	LT	142	STH 131
0010	138+00	-	139+43	LT	143	BROWNHOLLOW RD
0010	-	-	155+20	RT	26	P.E.
0010	-	-	156+15	LT	28	P.E.
0010	194+53	-	195+97	LT	144	RIDGEVIEW LN
0010	-	-	200+22	LT	43	P.E.
0010	218+86	-	219+45	LT	59	HUMINGBIRD LN
0010	245+81	-	246+48	RT	67	PADRE CIRCLE
0010	255+34	-	256+68	LT	134	BOYDTOWN HOLLOW RD
0010	259+67	-	261+03	RT	136	SCENIC BOYDTOWN AVE
0010	287+74	-	289+21	RT	147	SCENIC BOYDTOWN AVE
0010	306+91	-	308+24	LT	133	PLEASANT RIDGE RD
0010	359+75	-	360+82	LT	107	CLEAR CREEK RD
0010	422+07	-	423+27	LT	120	HUNTER LN
0010	-	-	451+21	LT	35	P.E.
0010	453+81	-	455+22	LT	141	DRIVEWAY
0010	498+33	-	499+70	LT	137	RIVERDELL LN
0010	530+46	-	531+72	LT	126	CTH E
TOTAL 0010					1,899	

SPECIAL (01. SITE MOWING)

SPV.0060.01 SPECIAL (01. SITE MOWING)						REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	EACH	
0010	152+00	-	152+82	RT	1	
0010	152+57	-	153+38	LT	1	
0010	251+43	-	256+13	RT	1	
0010	251+55	-	252+36	LT	1	
0010	254+30	-	256+10	LT	1	
0010	254+65	-	256+16	RT	1	
TOTAL 0010					6	

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SPECIAL (01. PAINTING BEAM GUARD)

SPV.0090.01 SPECIAL (01. PAINTING BEAM GUARD)						
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	153+11	-	153+86	LT	95	MAINLINE
0010	153+11	-	155+86	RT	95	MAINLINE
0010	252+08	-	255+18	LT	310	MAINLINE
0010	252+34	-	255+44	RT	310	MANLINE/BOYDTOWN HOLLOW RD
0010	152+84	-	153+34	LT	39	MAINLINE
0010	152+27	-	152+77	RT	39	MAINLINE
0010	251+82	-	252+32	LT	218	MAINLINE
0010	251+66	-	252+16	RT	218	MAINLINE
0010	254+14	-	255+80	LT	260	BOYDTOWN HOLLOW RD
0010	255+19	-	255+70	RT	218	MAINLINE
0010	327+15	-	328+70	LT	155	MAINLINE
0010	338+55	-	339+50	LT	95	MAINLINE
0010	384+86	-	385+80	LT	94	MAINLINE
0010	426+62	-	427+47	LT	85	MAINLINE
0010	425+80	-	426+53	RT	73	MAINLINE
0010	501+02	-	502+00	LT	98	MAINLINE
0010	525+82	-	526+77	LT	95	MAINLINE
0010	526+26	-	527+50	RT	124	MAINLINE
				TOTAL 0010	2,621	

SPECIAL (01. REMOVING DISTRESSED PAVEMENT MILLING)

SPV.0180.01 SPECIAL (01. REMOVING DISTRESSED PAVEMENT MILLING)						
CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	100+00	-	539+58	CL	1,410	UNDISTRIBUTED
				TOTAL 0010	1,410	

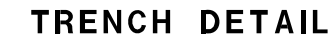
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Standard Detail Drawing List

08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09A01-14A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09A01-14B	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"
09A14-01	DRIVEWAYS WITHOUT CURB AND GUTTER
09A15-01	DRIVEWAYS WITHOUT CURB AND GUTTER RESURFACING PROJECTS RURAL
13A10-03A	SHOULDER RUMBLE STRIPS - ASPHALT
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A10-03H	SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
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)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14D01-01	TURTLE EXCLUSION FENCE CLIMBING TURTLE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-24B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-24C	PAVEMENT MARKING (TURN LANES)
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-11A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D28-05	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D39-03	TRAFFIC CONTROL, DROP-OFF SIGNING
16A02-01	GEODETIC SURVEY MONUMENT



- 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 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



SILT FENCE

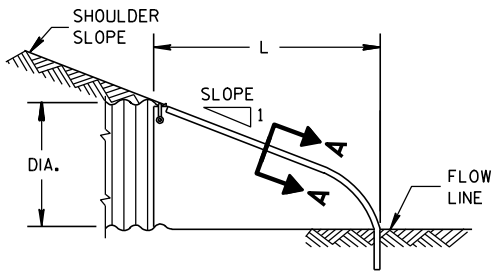
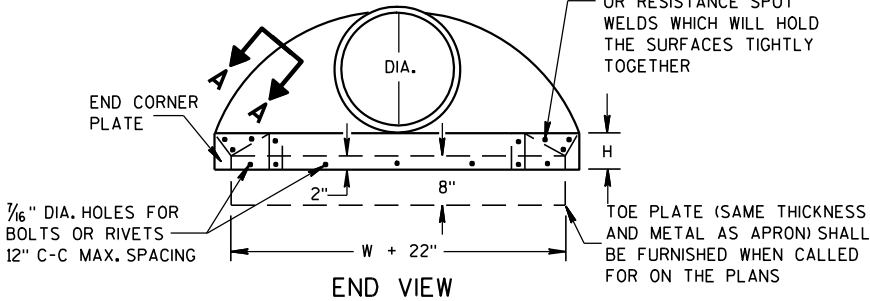
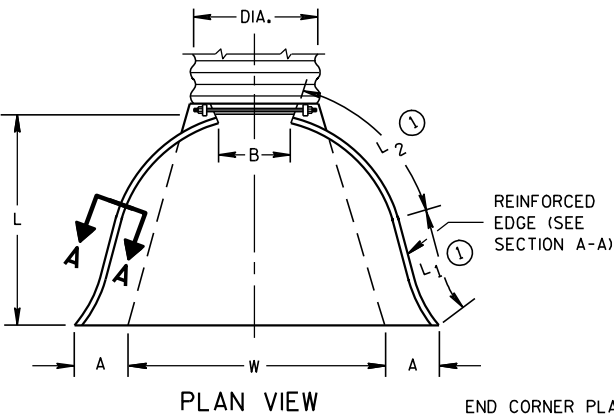
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT 57 INCHES

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")	L ₁ ①	L ₂ 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.

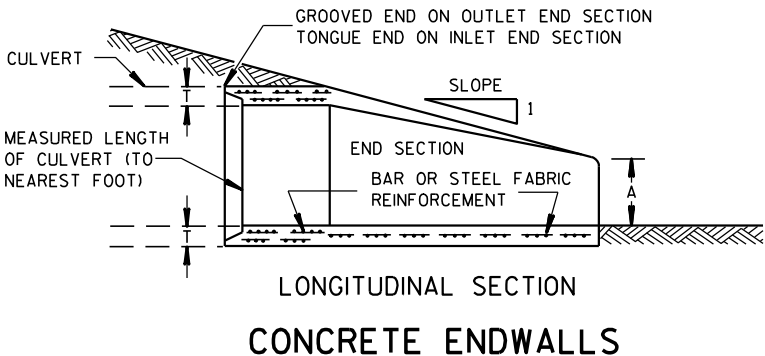
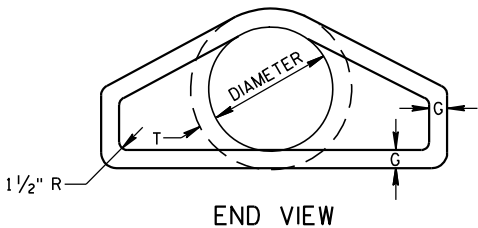
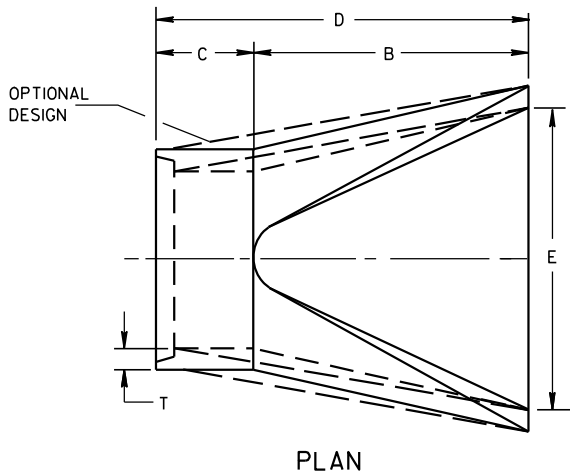
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



METAL ENDWALLS

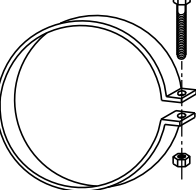
REINFORCED CONCRETE APRON ENDWALLS									
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE	
	T	A	B	C	D	E	G		
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1	
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1	
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1	
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1	
24	3	9 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

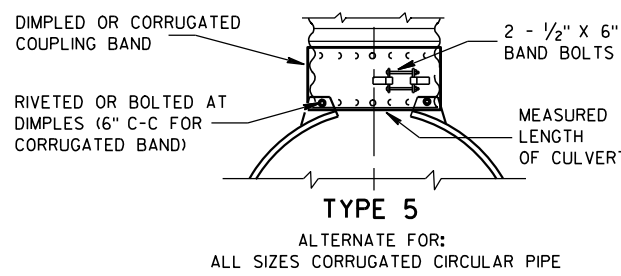
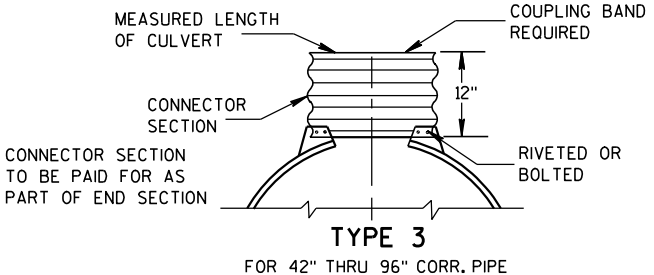
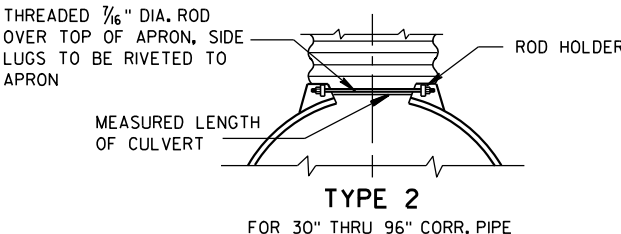
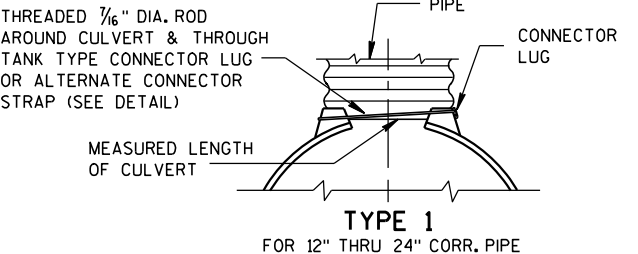


CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



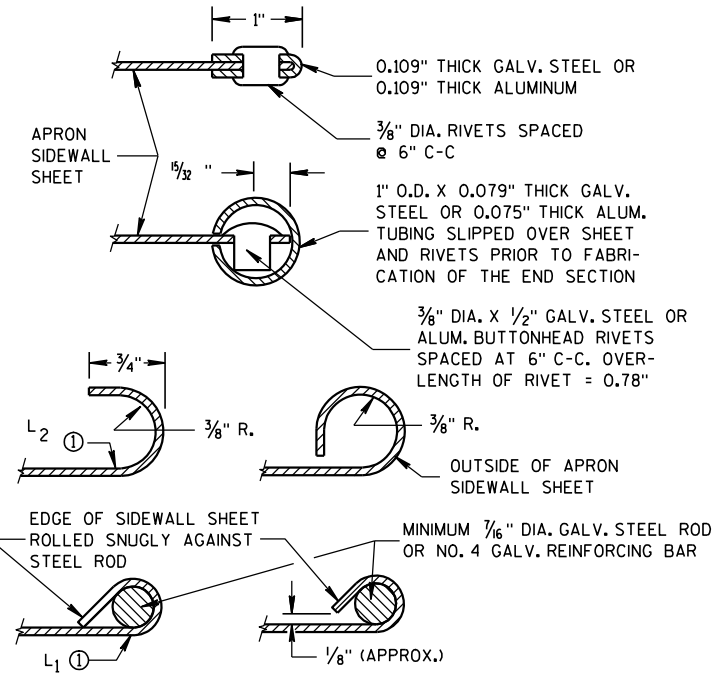
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

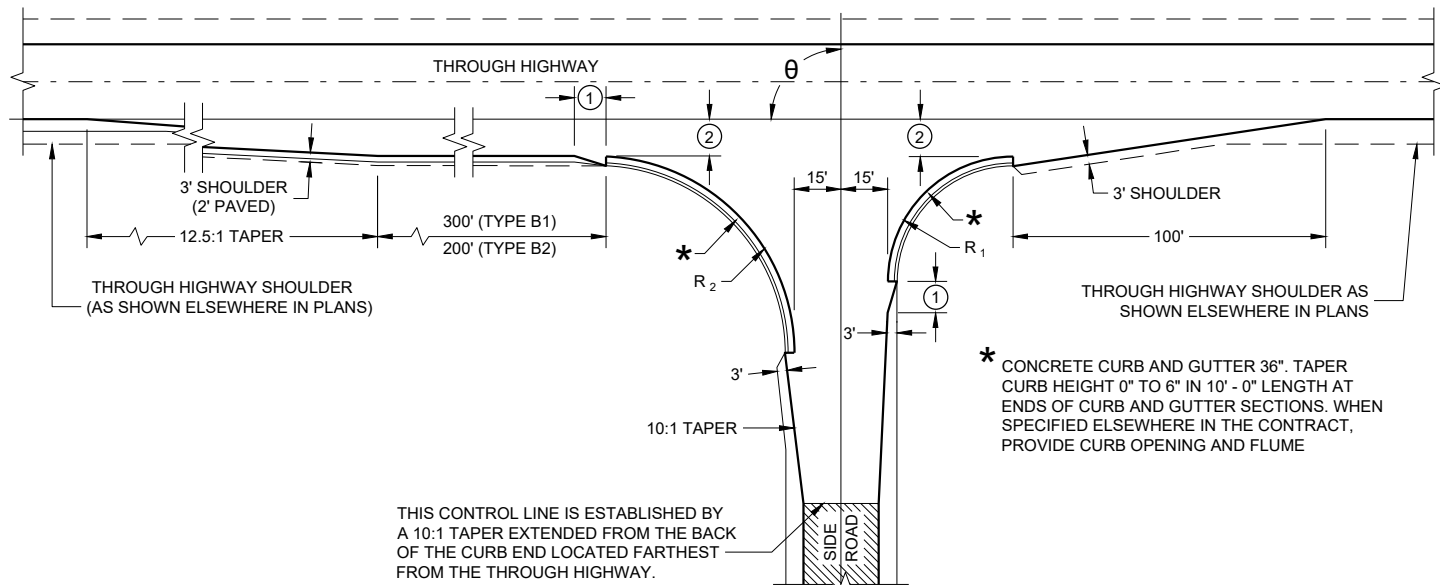
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

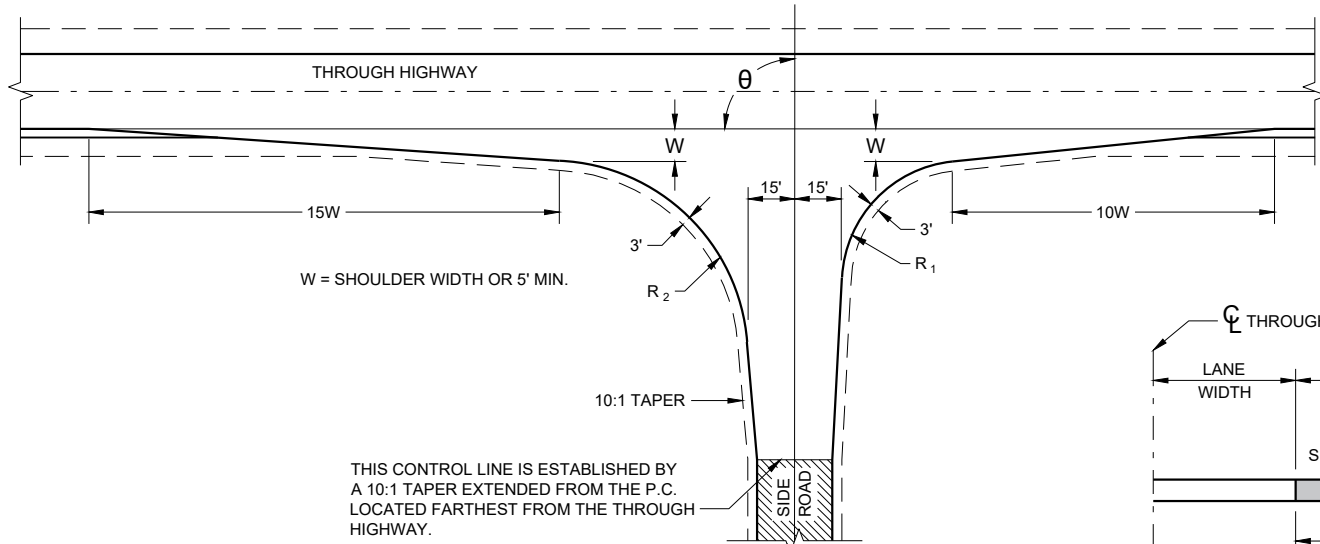
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

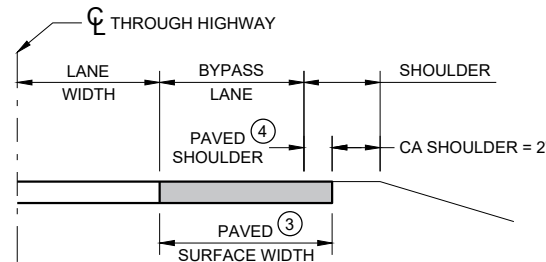
APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/30/94 DATE	/S/ Rory L. Rhin... CHIEF ROADWAY DEVELOP 58 NEER
FHWA	



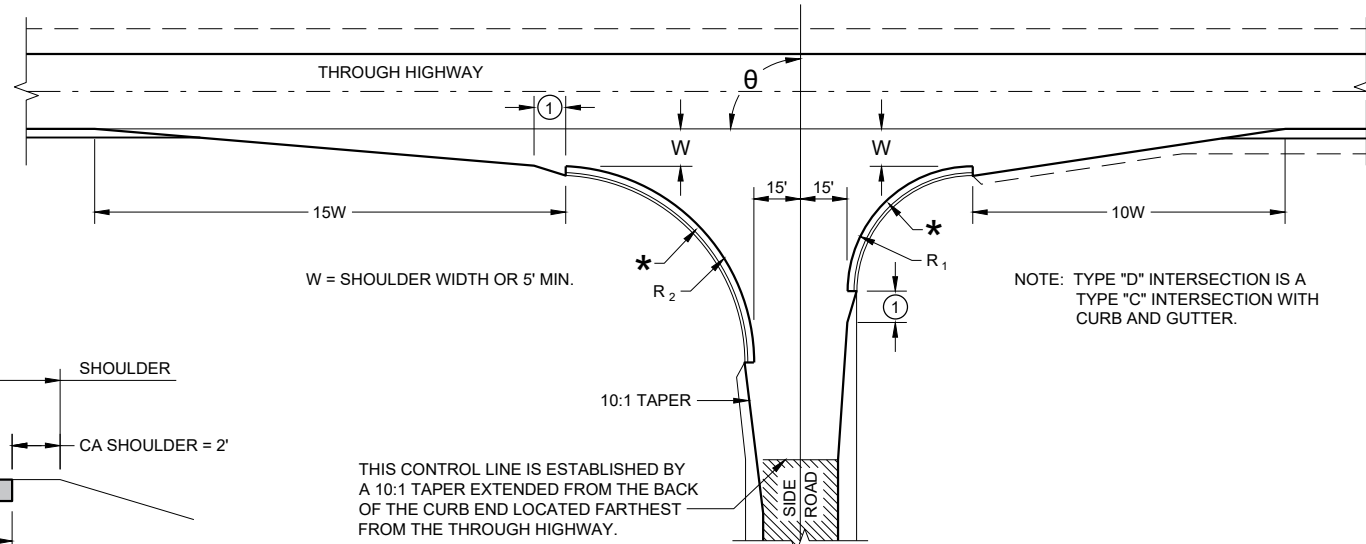
TYPE "B1" AND "B2"



TYPE "C"



SECTION A - A
(SHOWING BYPASS LANE AND SHOULDER)



TYPE "D"

RADII DIMENSIONS FOR TYPES "B1",
"B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65 - 70	35	70
71 - 80	40	70
81 - 90	40	60
91 - 100	50	55
101 - 110	60	45

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

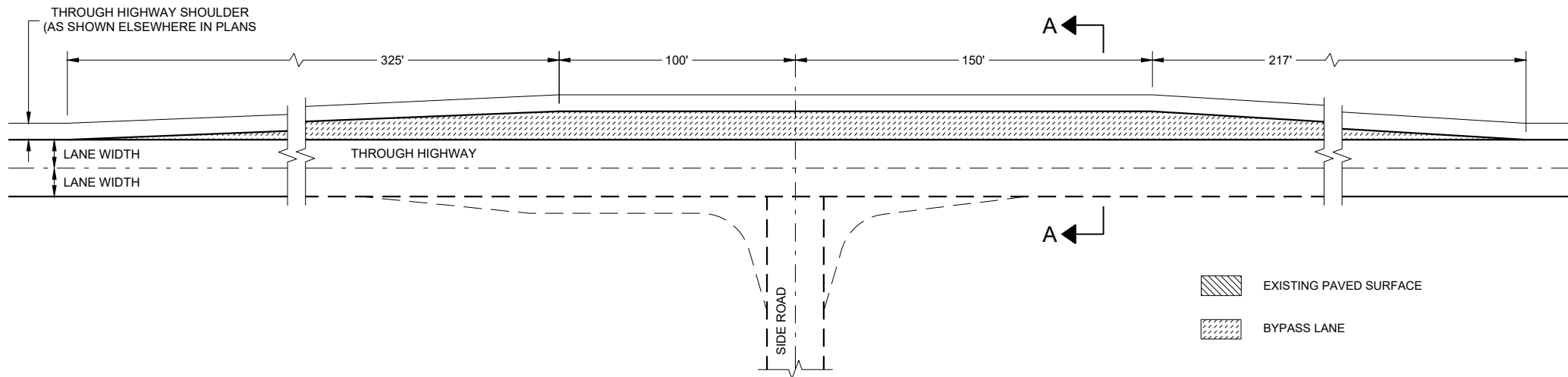
SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.
** 10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
- ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH
- PC CONCRETE = 13-FT PLUS PAVED SHOULDER WIDTH
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.

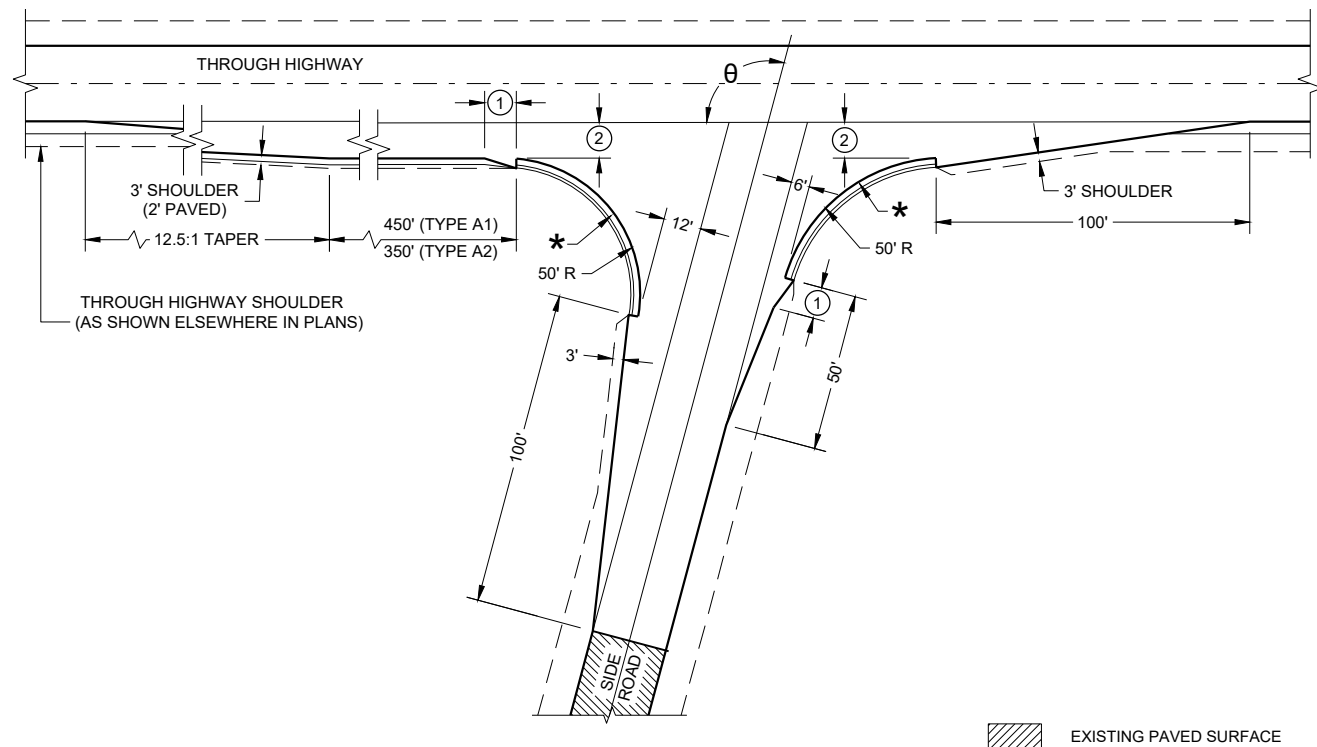


TEE INTERSECTION BYPASS LANE DETAIL

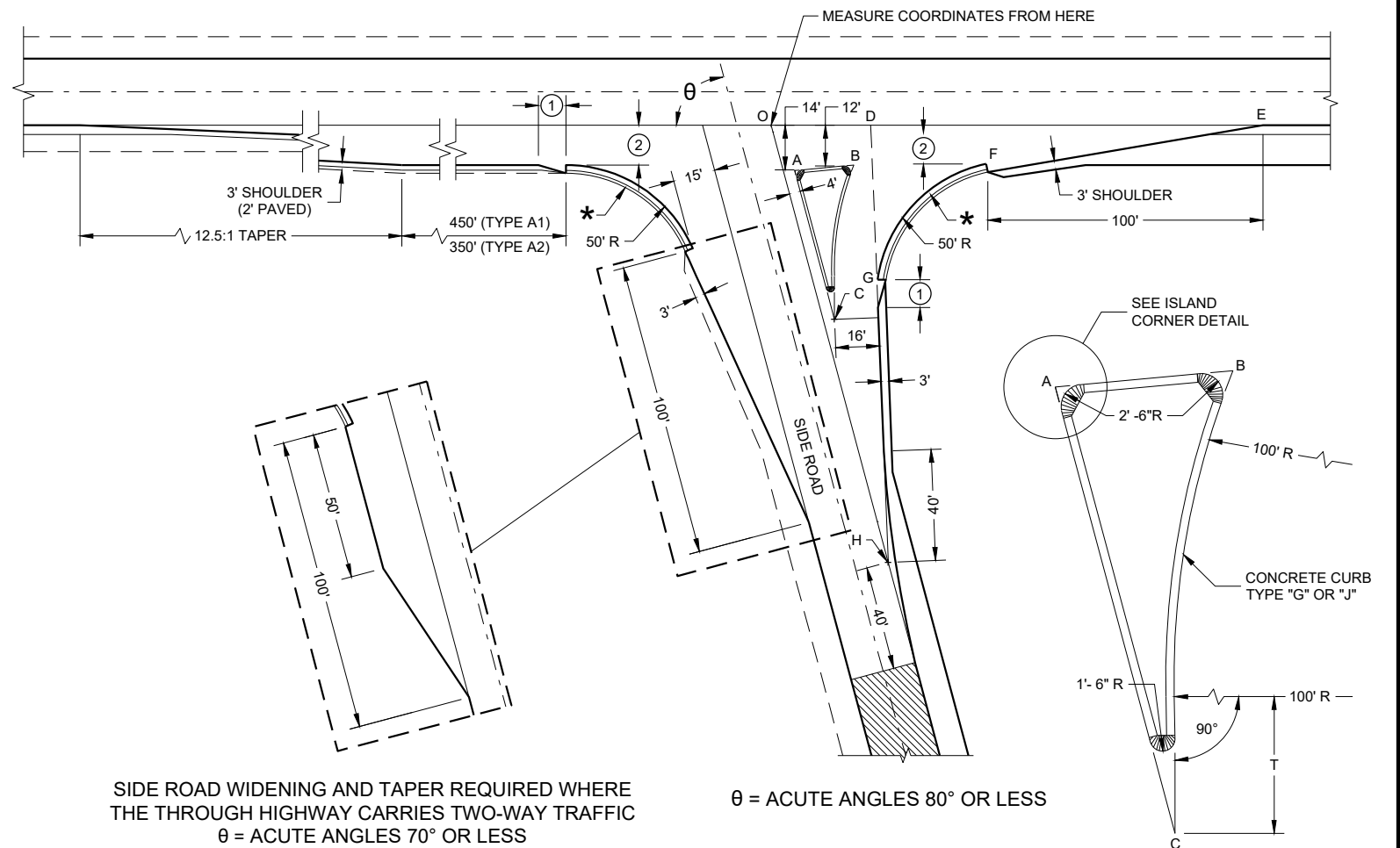
- EXISTING PAVED SURFACE
- BYPASS LANE

AT GRADE SIDE ROAD
INTERSECTION TYPES "B1",
"B2", "C", "D" AND TEE
INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

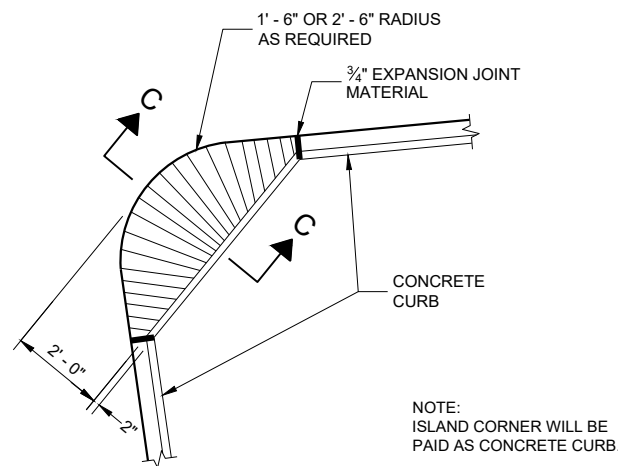


$\theta = \text{MORE THAN } 80^\circ$

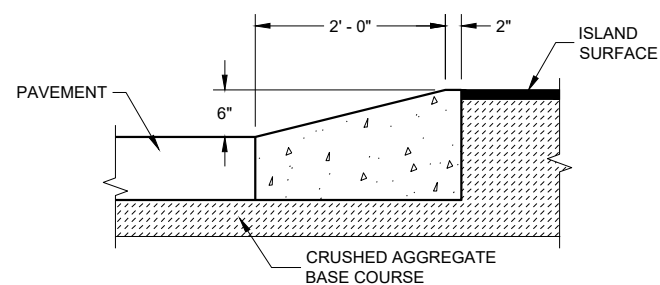


$\theta = \text{ACUTE ANGLES } 80^\circ \text{ OR LESS}$

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



PLAN VIEW



SECTION C - C

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

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

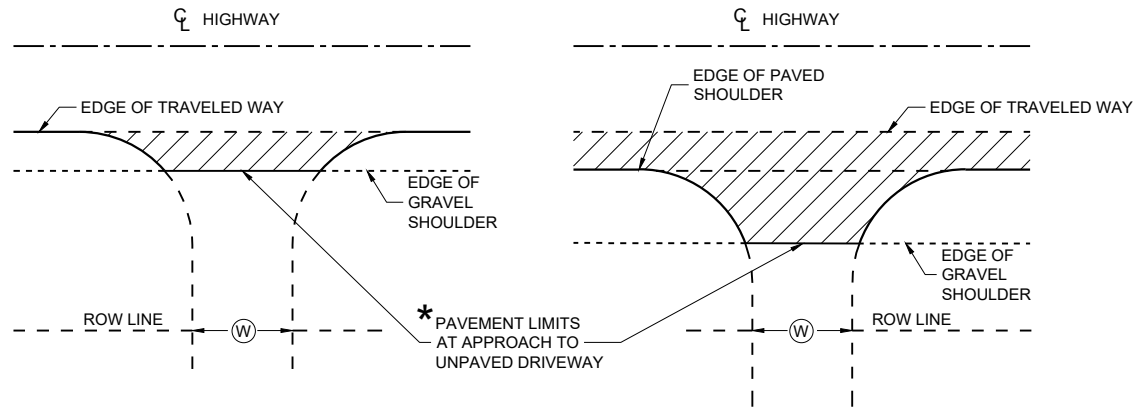
ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT 'O')								LENGTH IN FEET				
	A	B	C	D	E	F	G	H	AB	AC	T	OJ	OH
60	12.7 -14.0	44.9 -12.0	46.4 -72.4	41.9 0.0	205.0 0.0	104.6 -12.0	64.0 -75.5	85.0 -147.1	32.3	67.4	4.9	85.9	169.9
65	10.9 -14.0	39.0 -12.0	37.8 -71.6	39.4 0.0	196.1 0.0	95.7 -12.0	54.1 -71.5	70.5 -151.3	28.2	63.6	8.5	80.9	166.9
70	9.4 -14.0	33.9 -12.0	29.8 -70.1	37.4 0.0	188.3 0.0	87.8 -12.0	45.6 -67.5	56.1 -154.2	24.6	59.7	11.5	76.1	164.1
75	7.9 -14.0	29.3 -12.0	22.3 -67.9	35.7 0.0	181.2 0.0	80.7 -12.0	38.2 -63.4	41.8 -155.9	21.5	55.8	13.8	71.4	161.4
80	6.5 -14.0	25.4 -12.0	15.6 -65.2	34.4 0.0	174.8 0.0	74.4 -12.0	31.8 -59.3	27.6 -156.5	18.9	52.0	15.6	66.9	158.9

TYPE 'A1" AND "A2" SIDE ROAD INTERSECTION DETAILS

AT GRADE SIDE ROAD
INTERSECTIONS
TYPES "A1" AND "A2"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT ENGINEER
60
FHWA

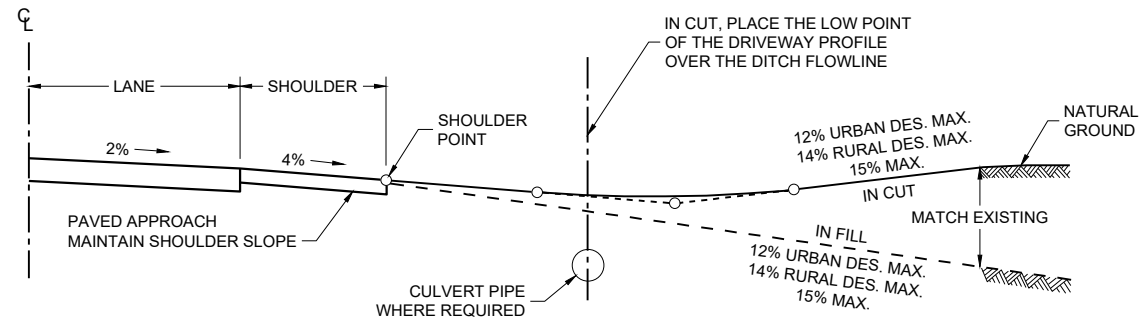


* WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

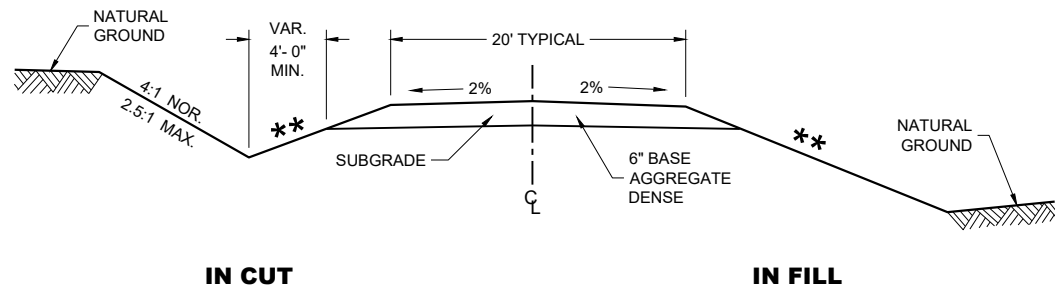
PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**



TYPICAL DRIVEWAY PROFILES

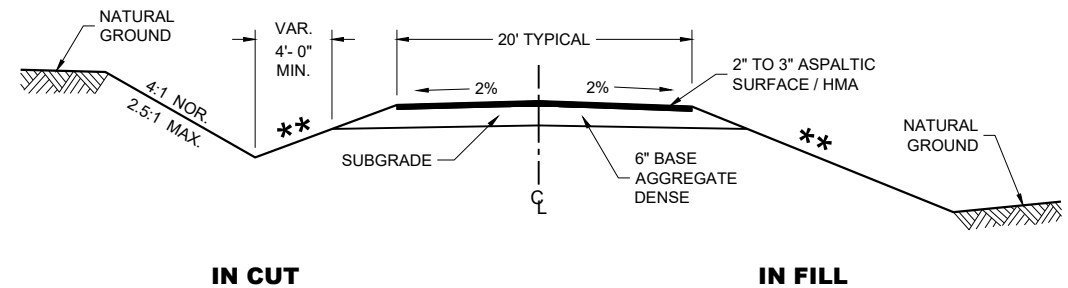
Ⓢ : DRIVEWAY WIDTHS (MEASURED AT ROW LINE)
 ~ COMMERCIAL & INDUSTRIAL 16' MIN. - 35' MAX.
 ~ RESIDENTIAL & AGRICULTURAL 16' MIN. - 24' MAX. (NONCOMMERCIAL)



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

SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

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



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

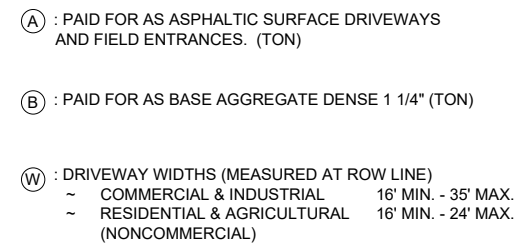
**DRIVEWAYS WITHOUT
CURB AND GUTTER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

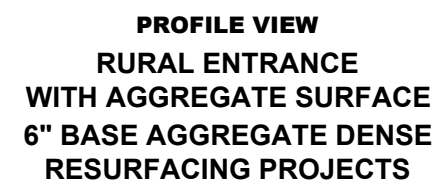
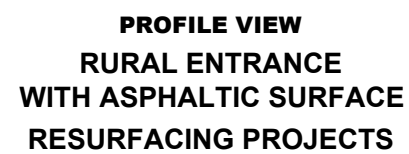
APPROVED
 November 2025 /S/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

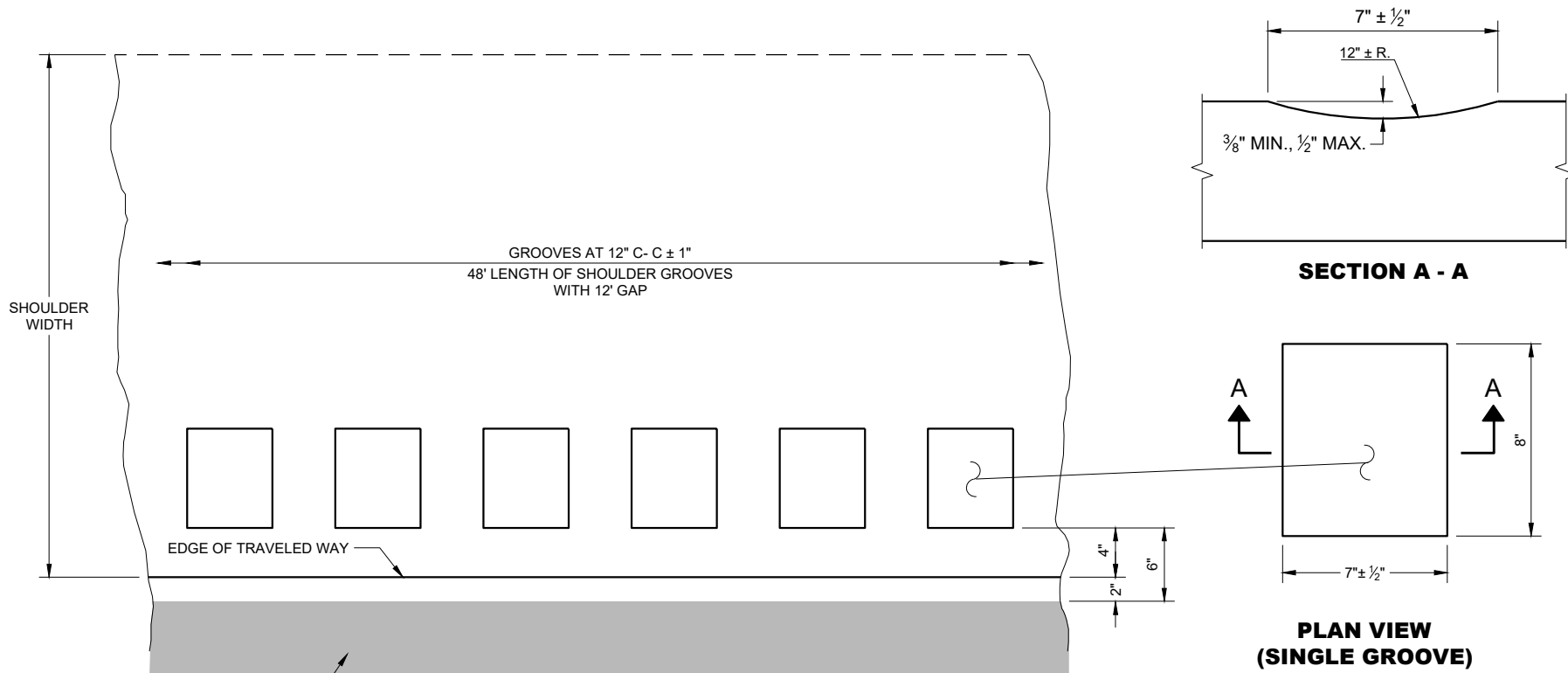
FHWA

① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.



6



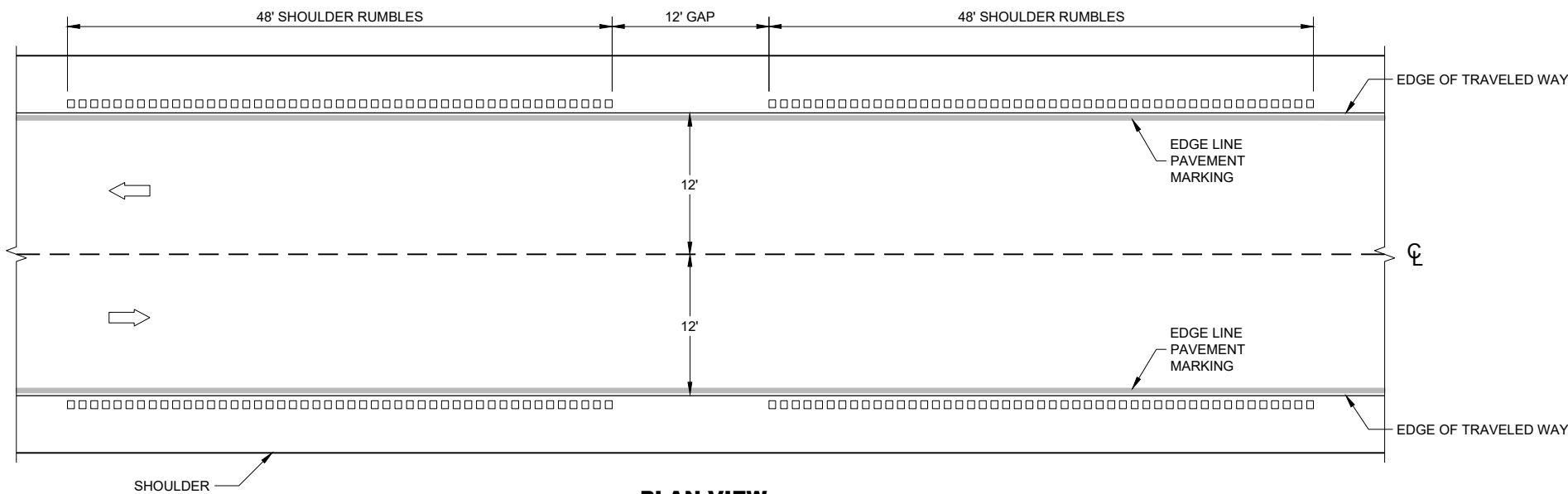
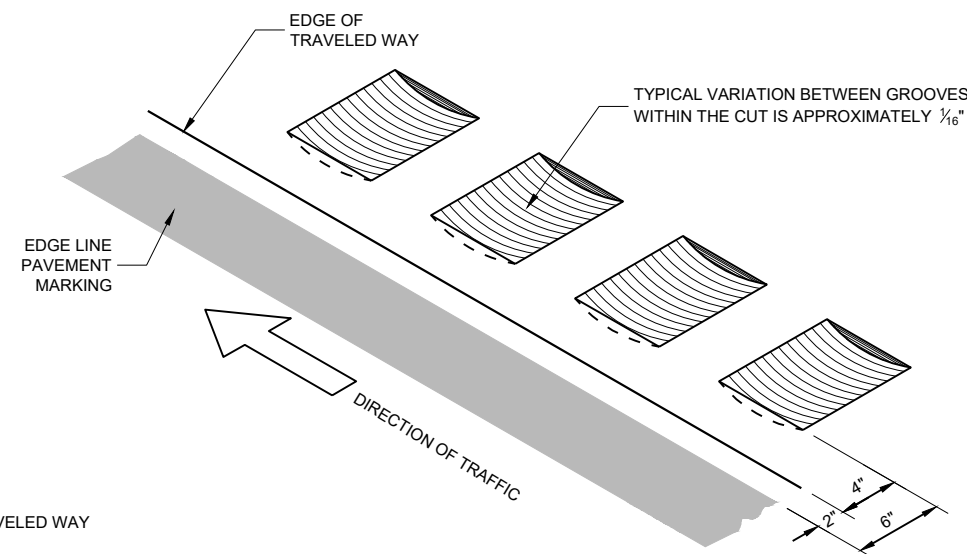


**PLAN DETAIL VIEW
SHOULDER WITH GROOVES**

GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

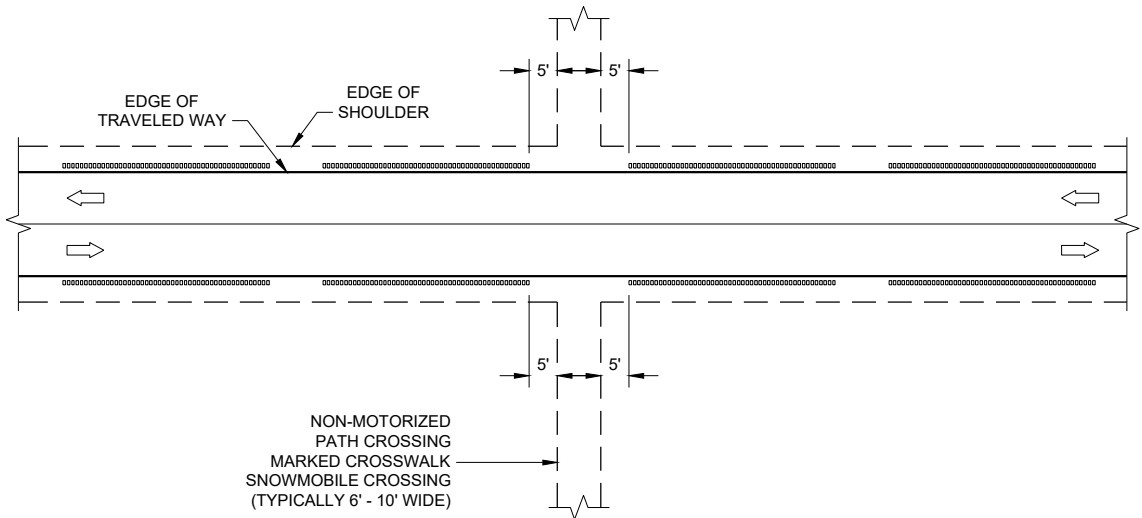


PLAN VIEW

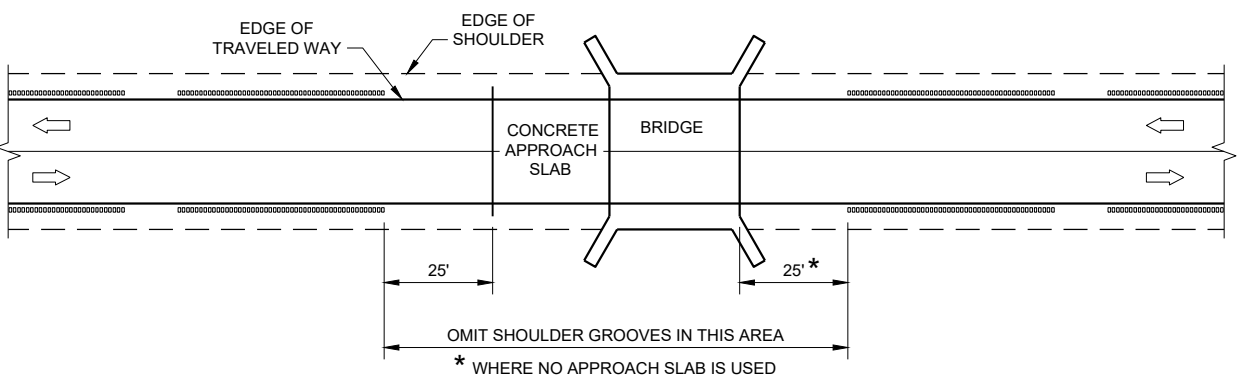
SHOULDER RUMBLE STRIPS - ASPHALT

**SHOULDER RUMBLE
STRIPS ASPHALT**

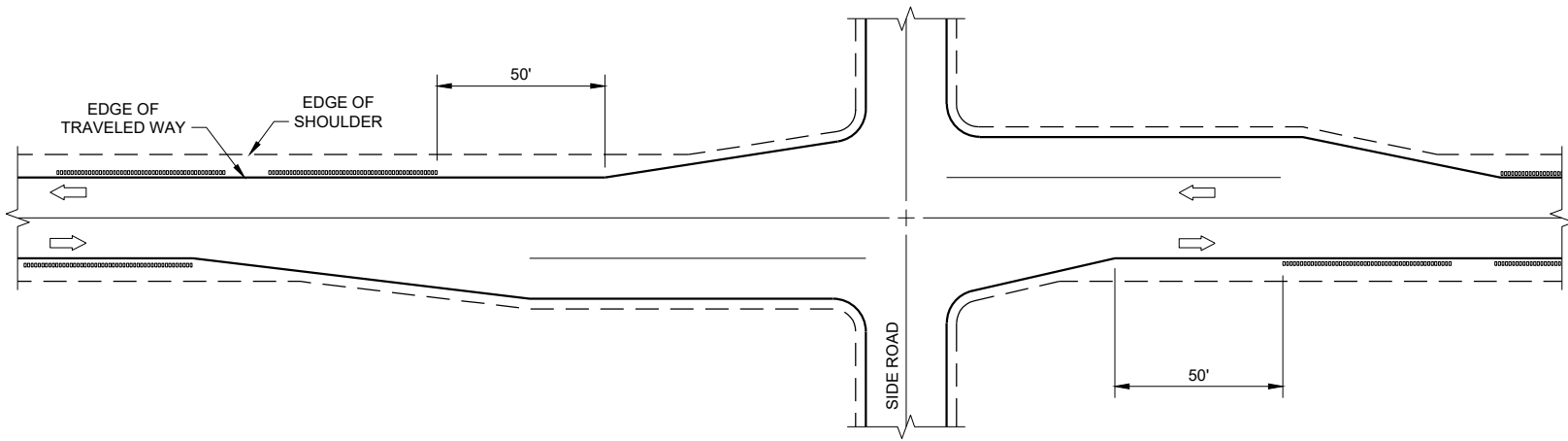
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



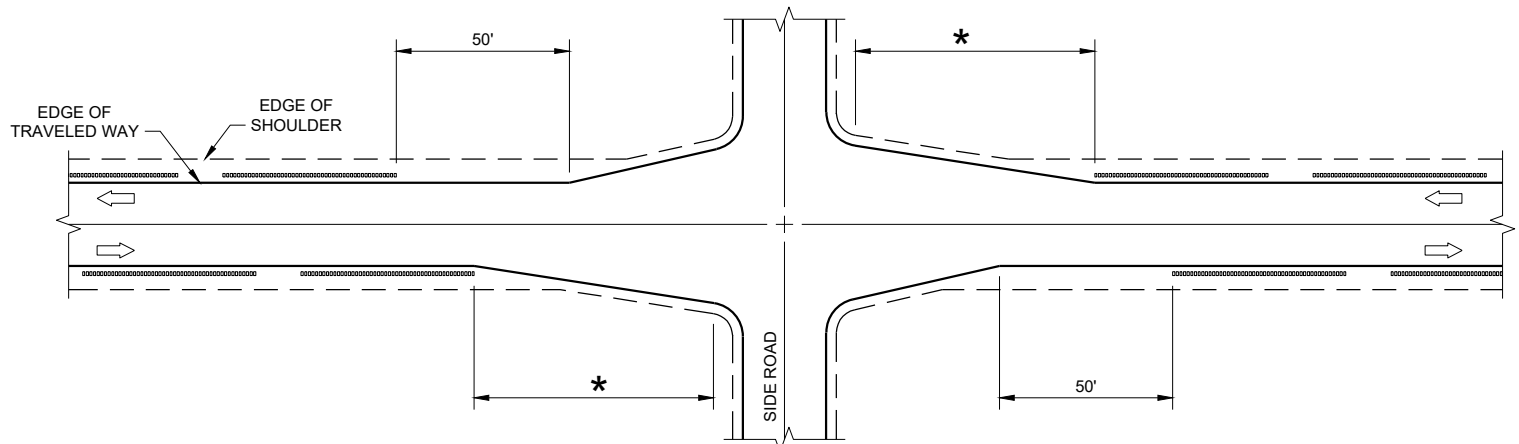
GROOVES AT MISCELLANEOUS CROSSINGS



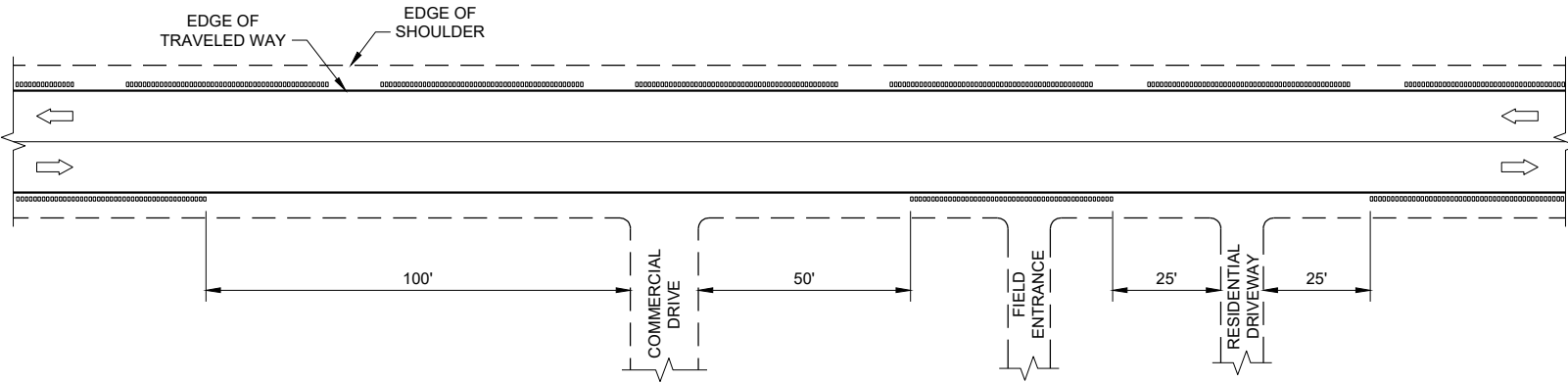
GROOVES AT BRIDGES



GROOVES AT RIGHT TURN LANE



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



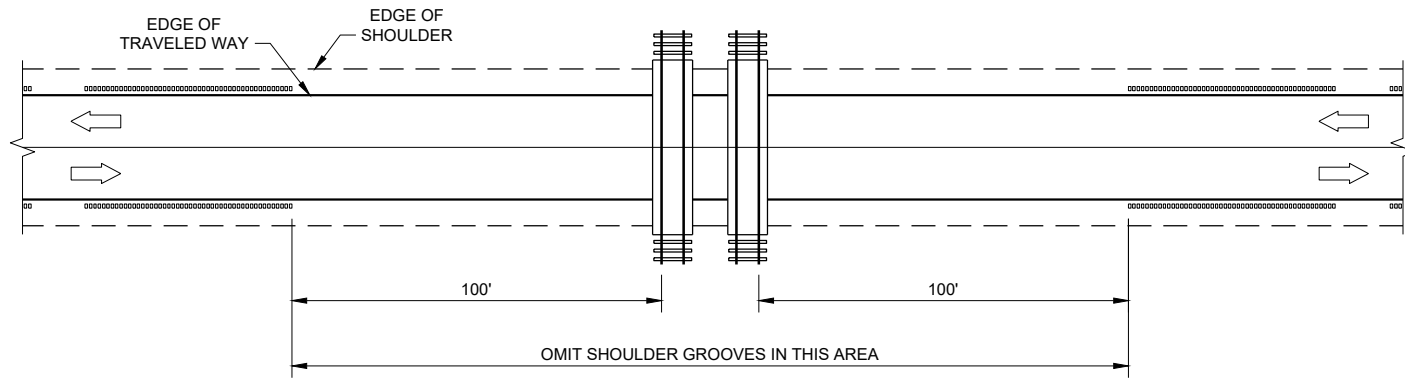
GROOVES AT DRIVEWAYS

GENERAL NOTES

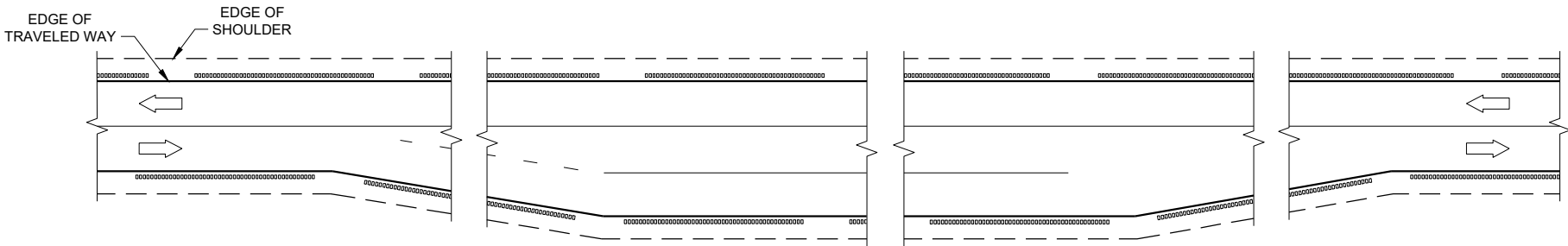
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

SHOULDER AND EDGE LINE
RUMBLE STRIPS
CROSSINGS, INTERSECTIONS,
BRIDGES, DRIVEWAYS

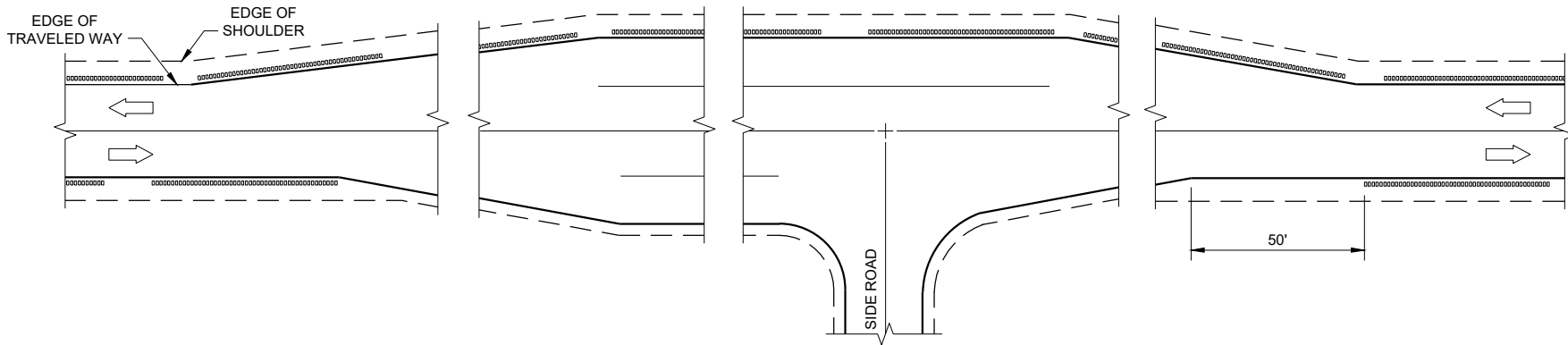
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES

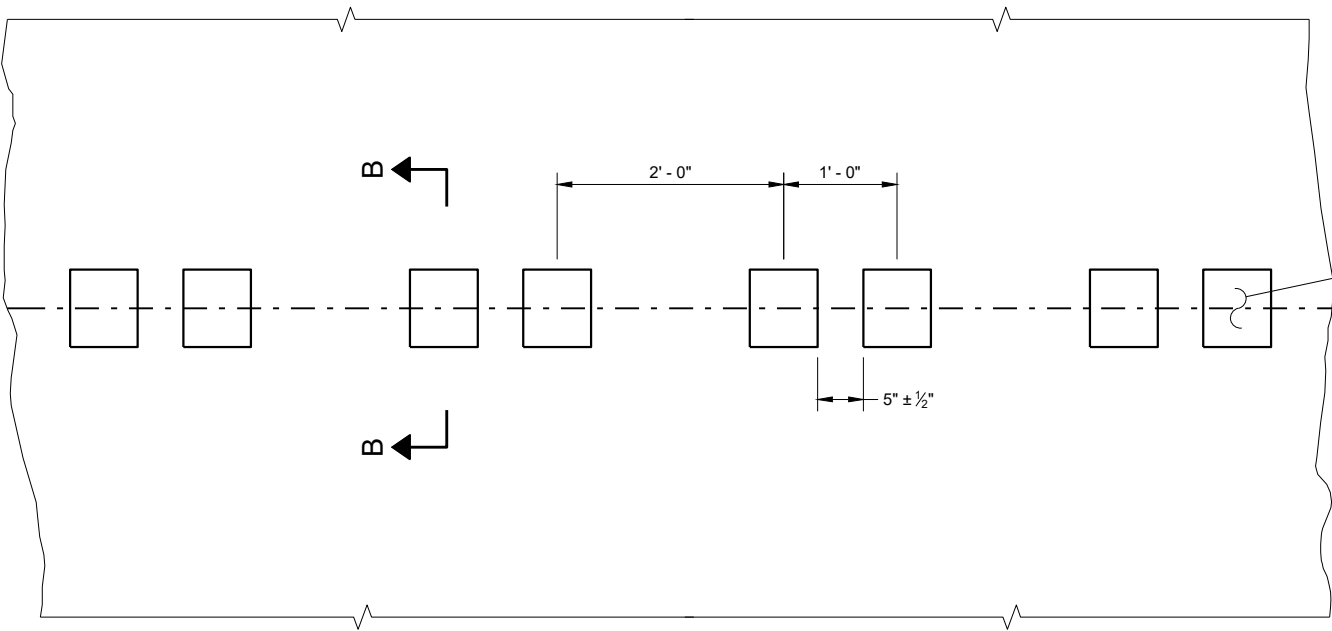


GROOVES AT BYPASS LANES

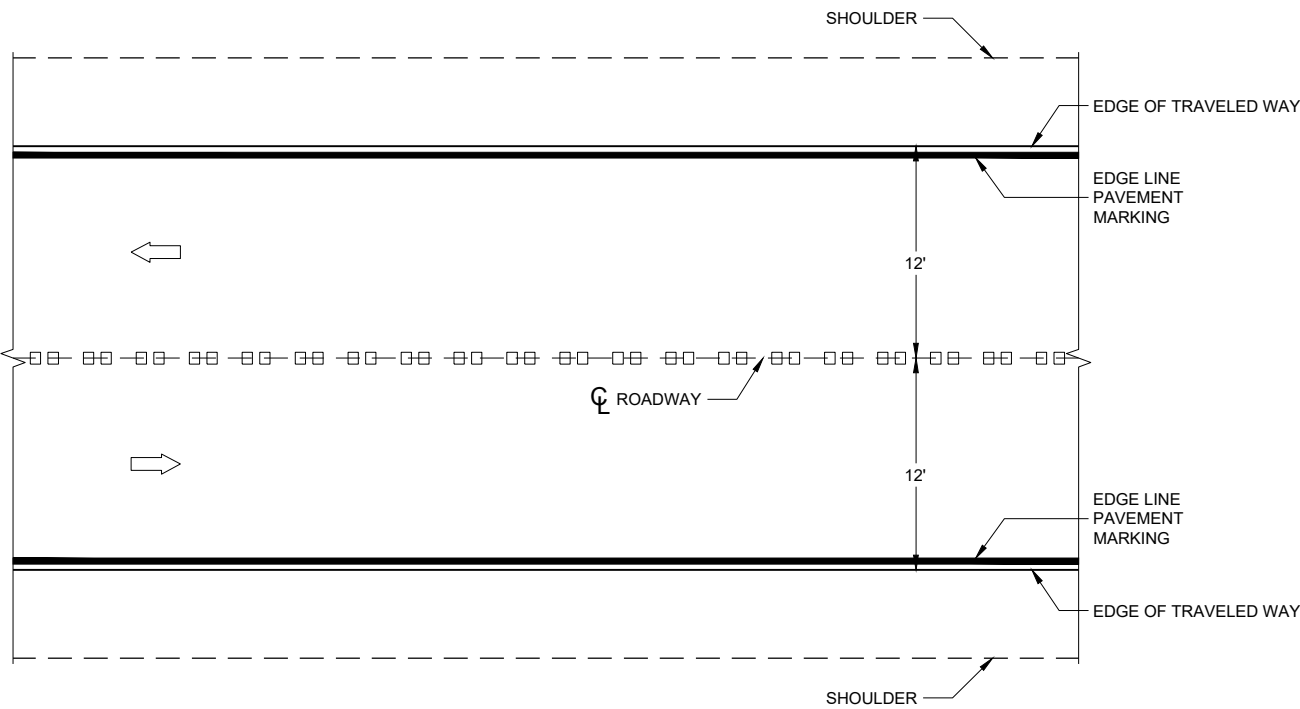
**SHOULDER AND EDGE LINE
RUMBLE STRIPS -
RAILROAD, PASSING,
CLIMBING AND BYPASS LANES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ John Jenkins
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 65
FHWA

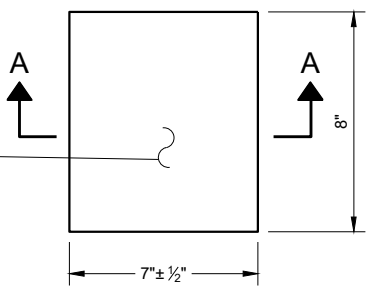


PLAN DETAIL VIEW

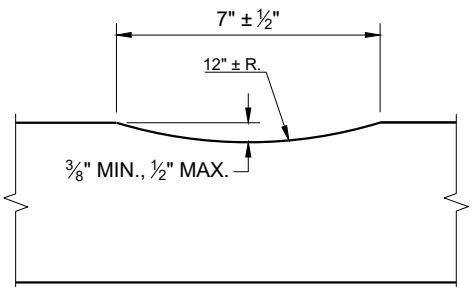


PLAN VIEW

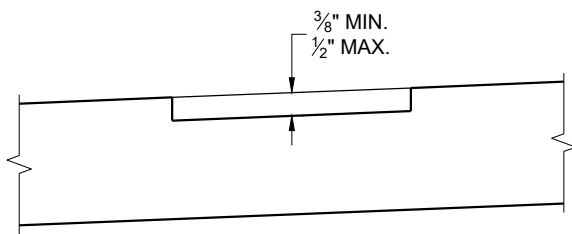
CENTERLINE RUMBLE STRIPS - ASPHALT



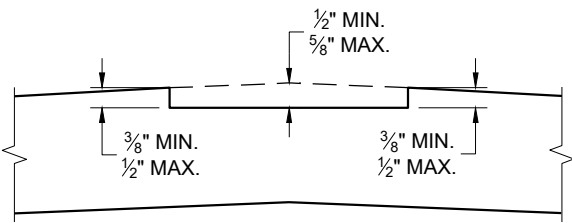
PLAN VIEW
(SINGLE GROOVE)



SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY

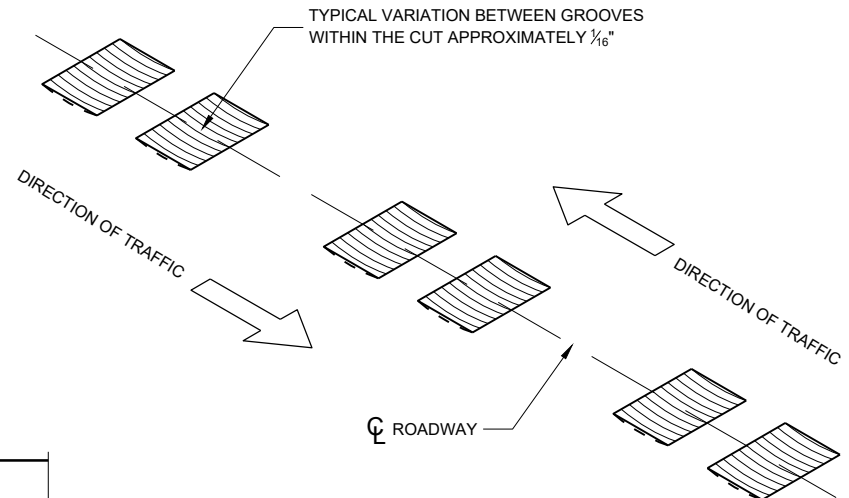


SECTION B - B
CROWNED ROADWAY

GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

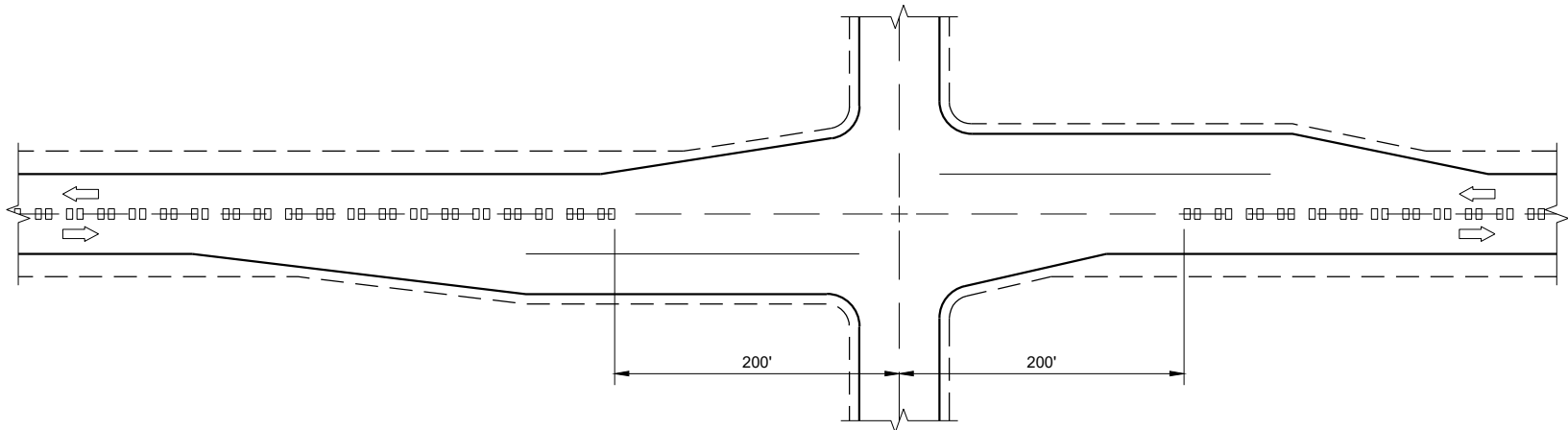
CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



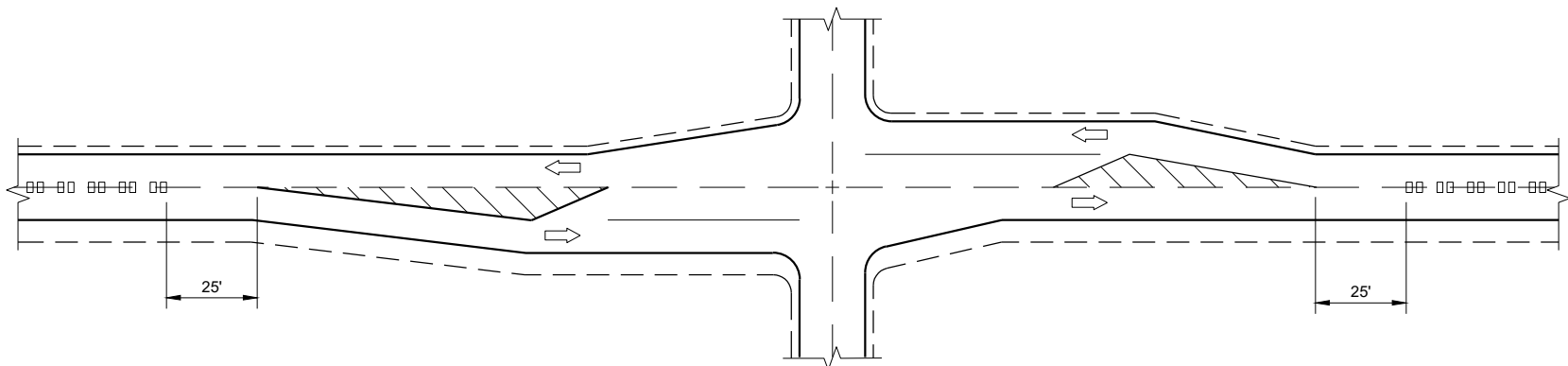
ISOMETRIC

CENTERLINE RUMBLE STRIPS - ASPHALT

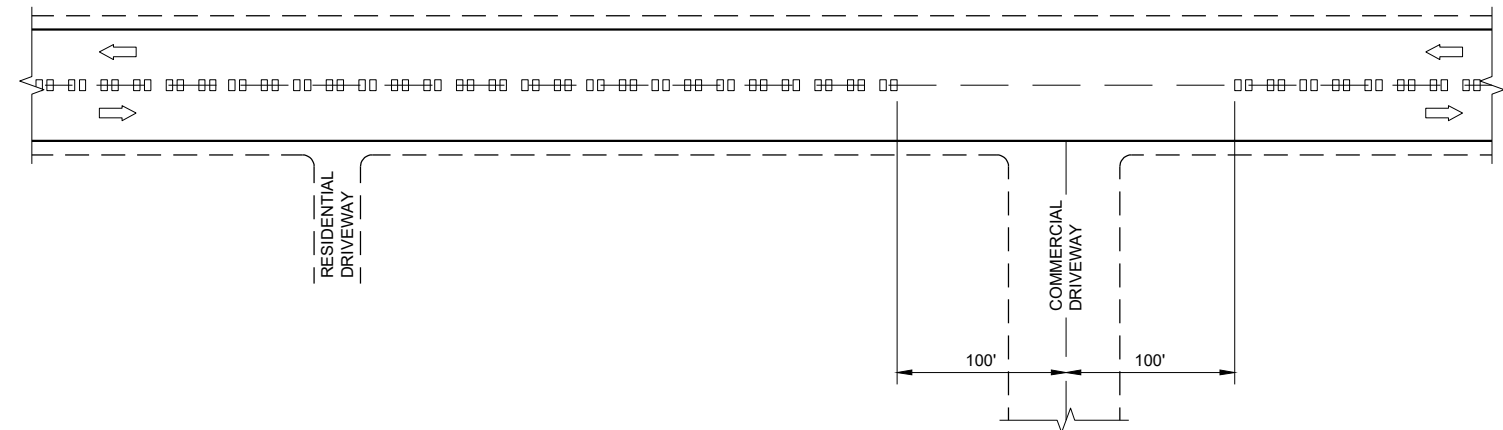
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



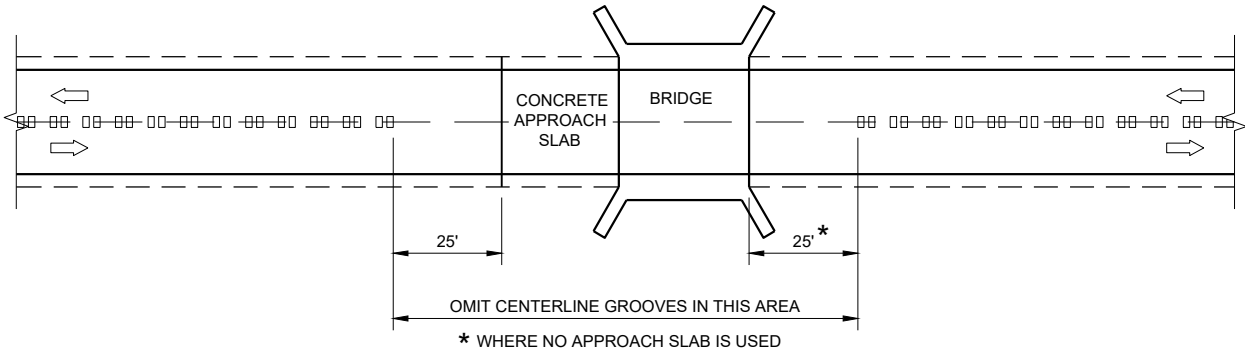
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



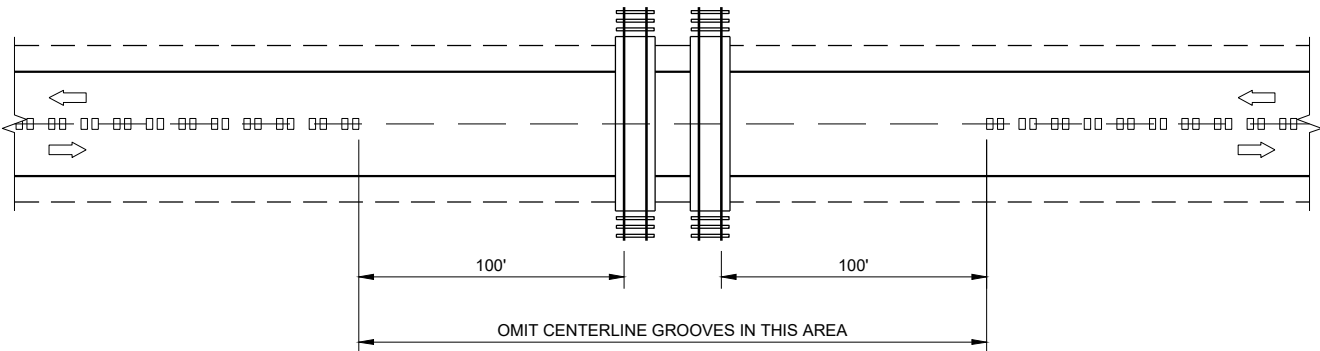
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES

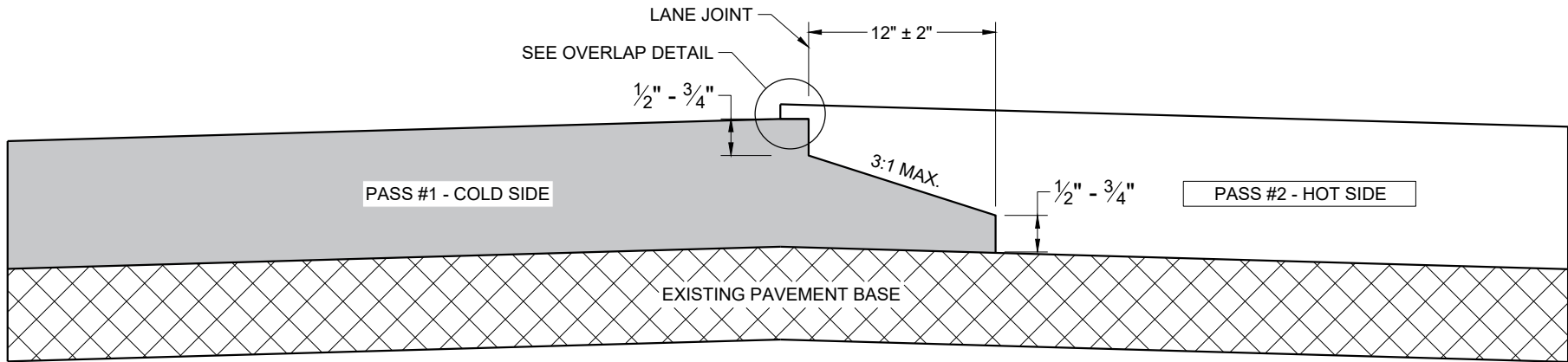


CENTERLINE GROOVES AT RAILROADS

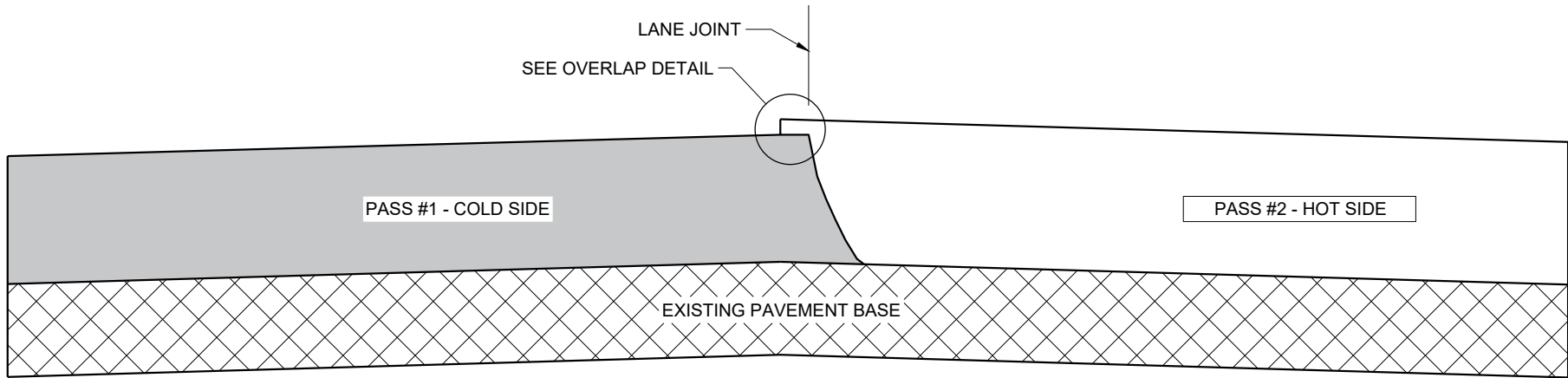
CENTER LINE
RUMBLE STRIPS -
INTERSECTIONS, DRIVEWAYS,
BRIDGES, RAIL ROADS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

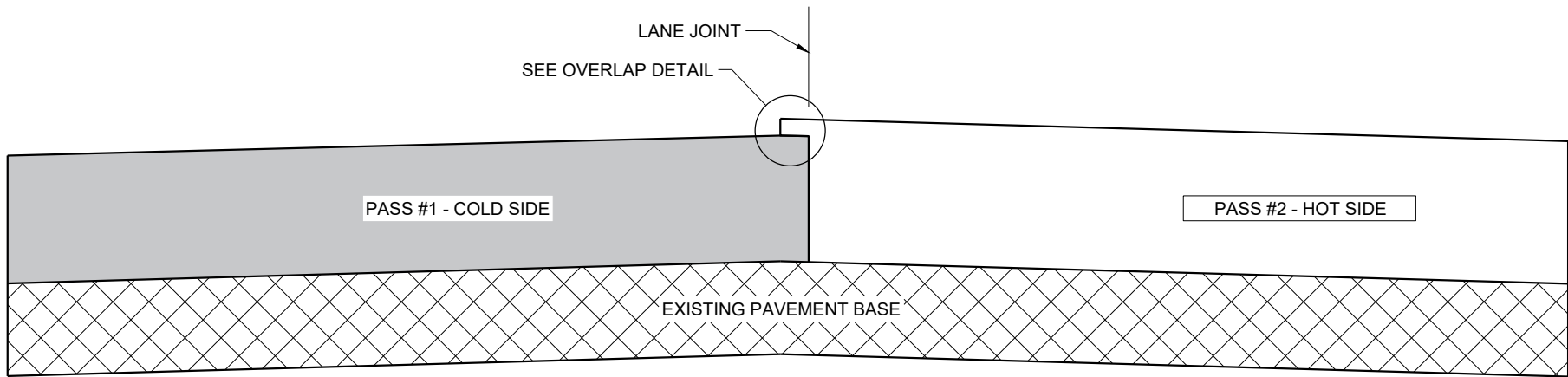
APPROVED
May 2023
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT ENGINEER
67
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

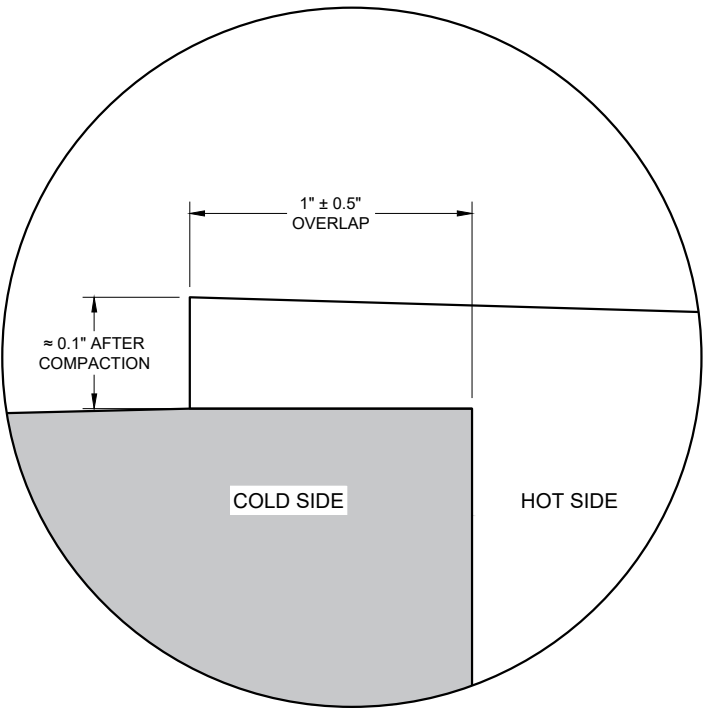
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 68

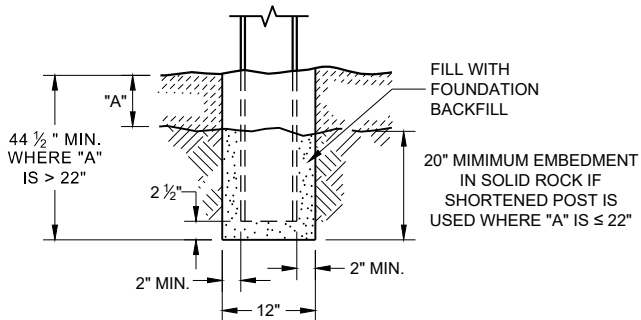
FHWA

GENERAL NOTES

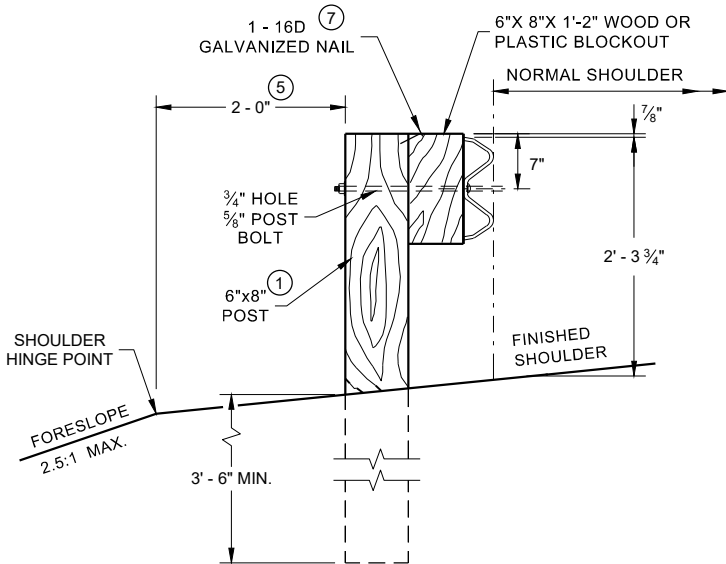
- WOOD OR STEEL POSTS (w6x9 OR w6x8.5) AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6"x8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL AND WOOD POSTS IN A SINGLE INSTALLATION.
- USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGE SPALTER COATING ON GALVANIZED POSTS.
- INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- IF THE DISTANCE FROM BACK OF POST TO SHOULDER HIGHE POINT IS LESS THAN 2 FEET, INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCHES IN DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT ADEQUATELY.
- 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.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

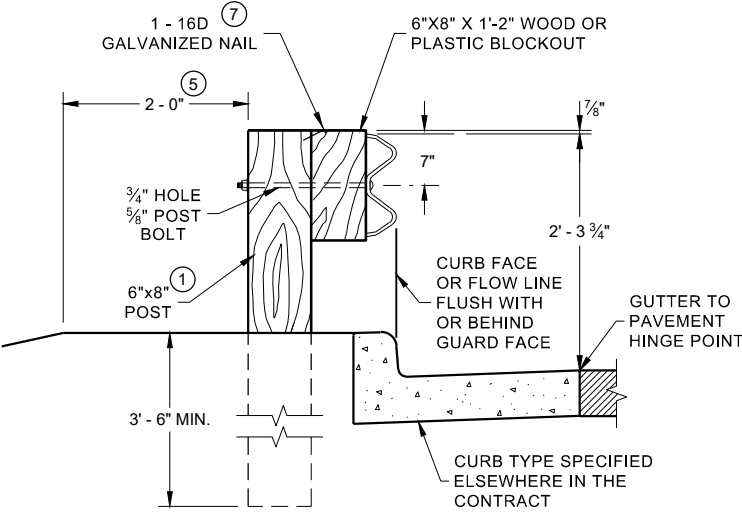
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



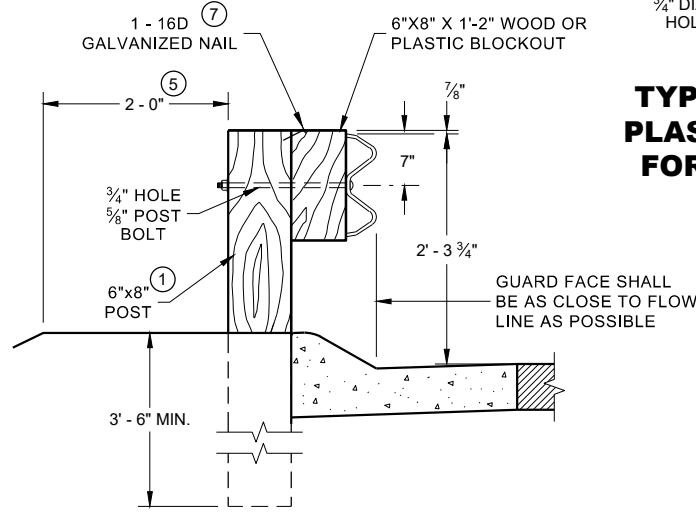
**END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥**



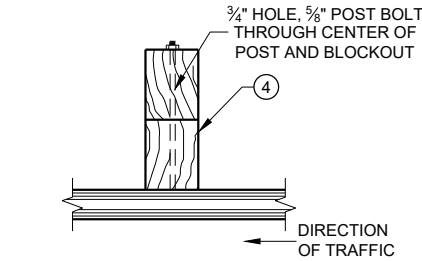
**END VIEW
LOCATED ALONG A ROADWAY
SHOULDER STANDARD INSTALLATION**



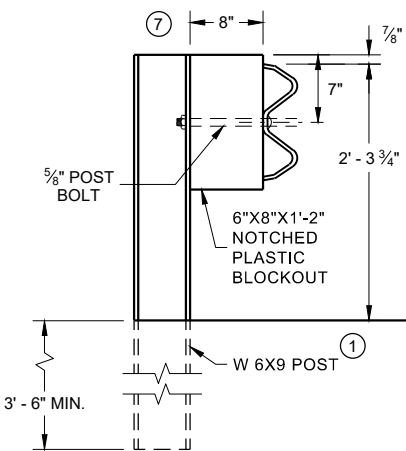
**END VIEW
LOCATED ALONG A CURBED ROADWAY**



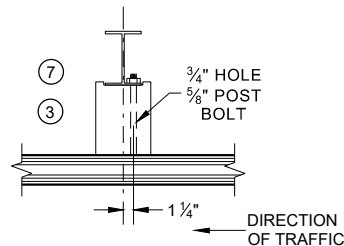
**END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY**



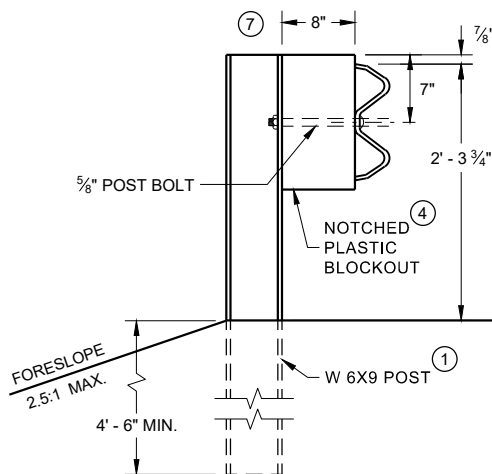
**PLAN VIEW
WOOD POST, BLOCKOUT
AND BEAM**



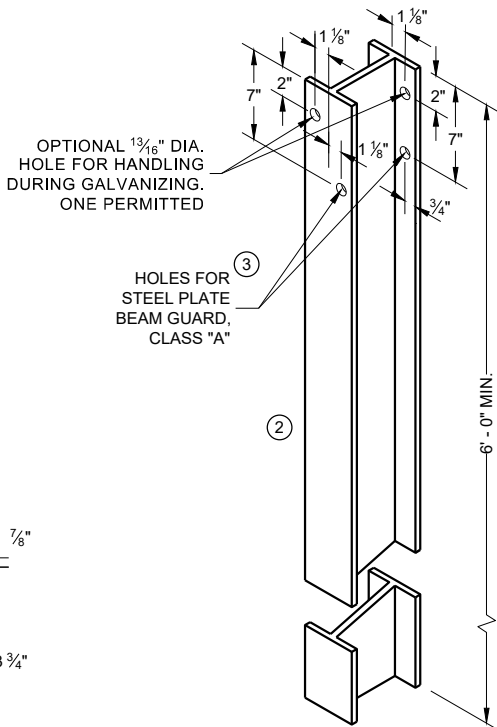
**END VIEW
STEEL POST AND NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION**



**PLAN VIEW
WOOD POST, BLOCKOUT
AND BEAM**

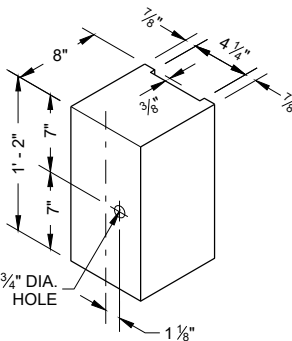


**END VIEW
LONGER POST AT HALF POST
SPACING W BEAM (LHW)**

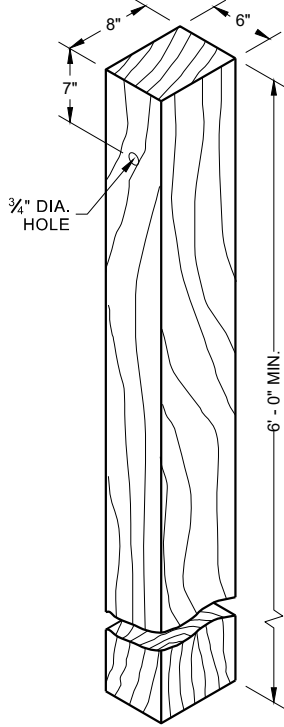


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

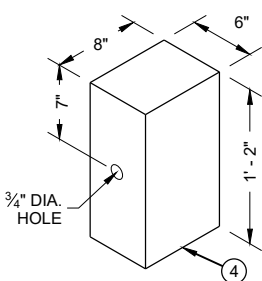
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



**TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS**



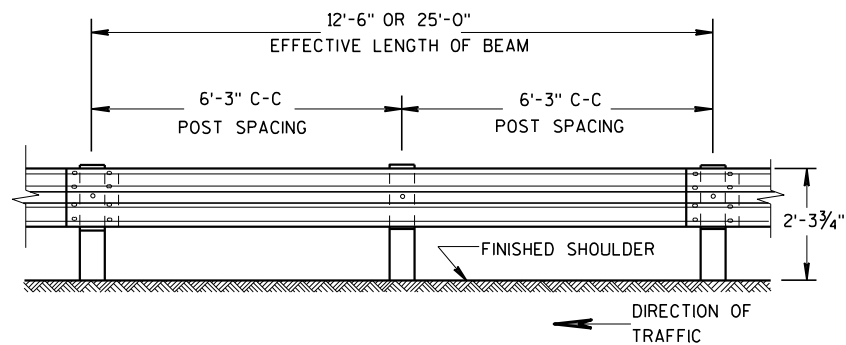
**WOOD POST
(6" X 8") NOMINAL ①**



**WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS**

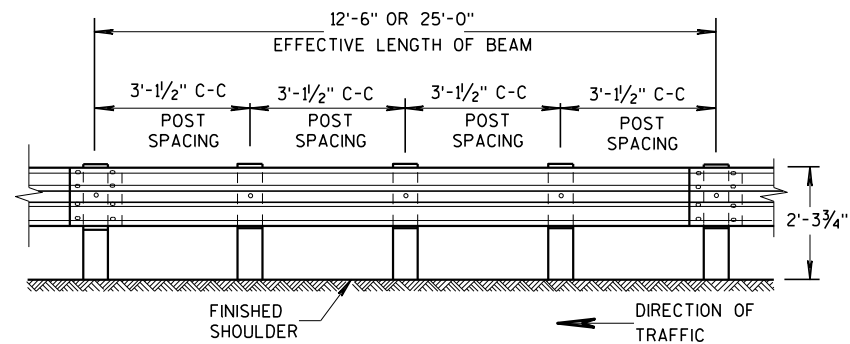
**STEEL PLATE BEAM GUARD,
CLASS "A" INSTALLATION
AND ELEMENTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 69



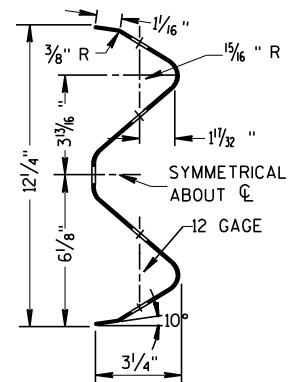
FRONT VIEW

POST SPACING STANDARD INSTALLATION

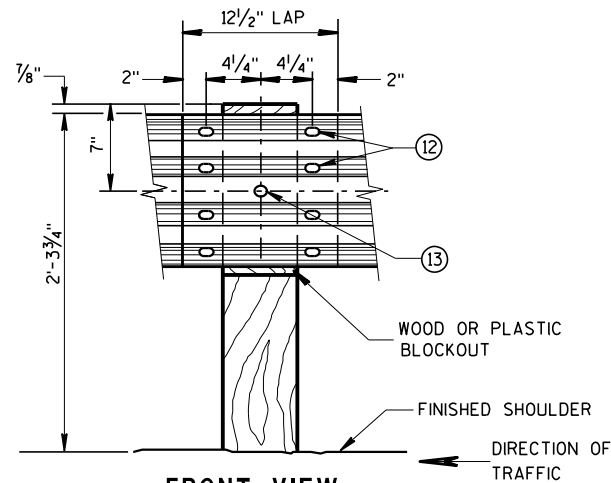


FRONT VIEW

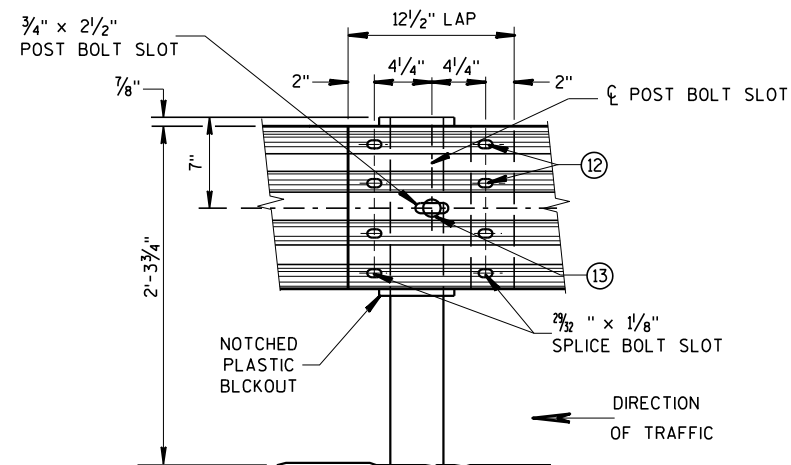
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

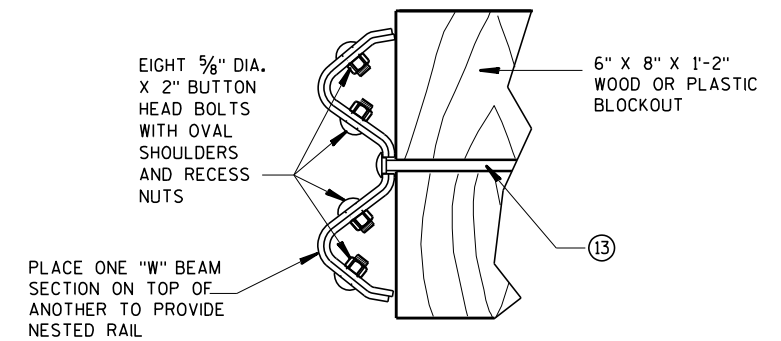


FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPlicing DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

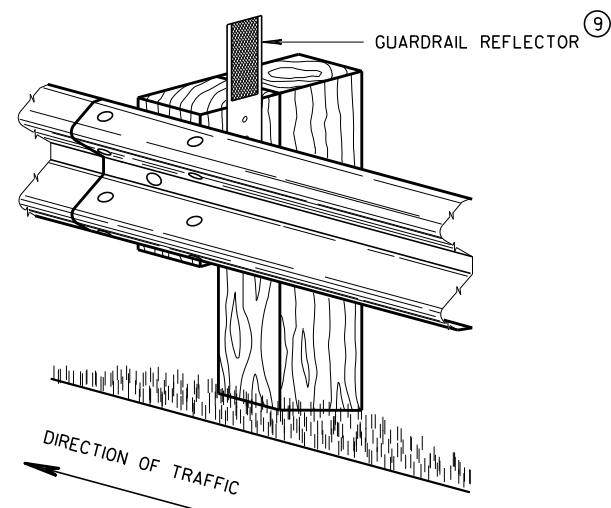
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



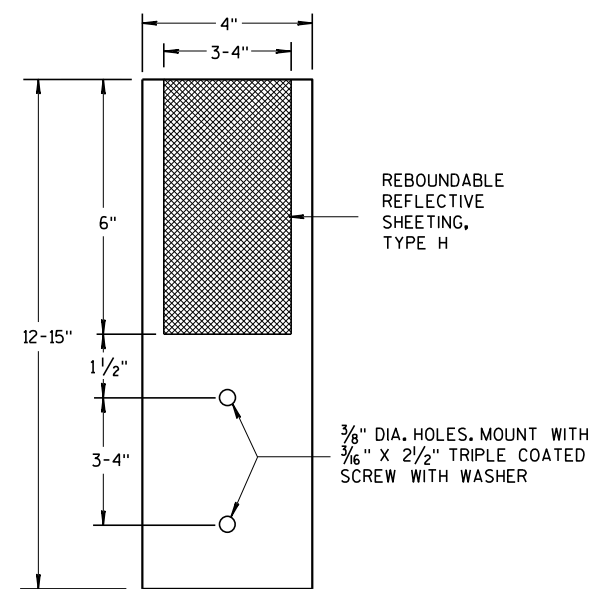
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



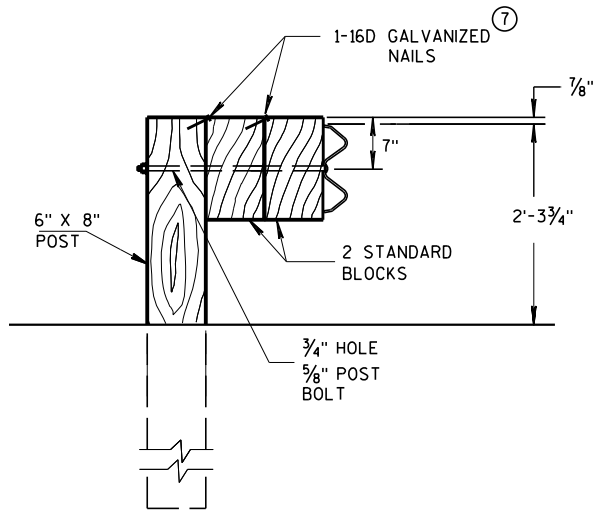
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

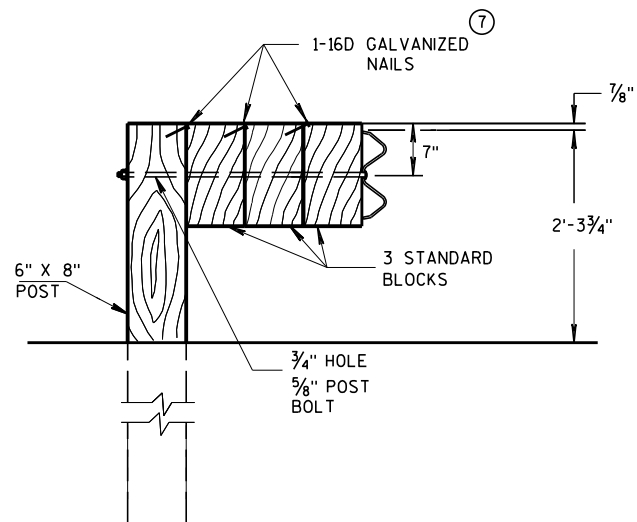
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCO⁷⁰
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

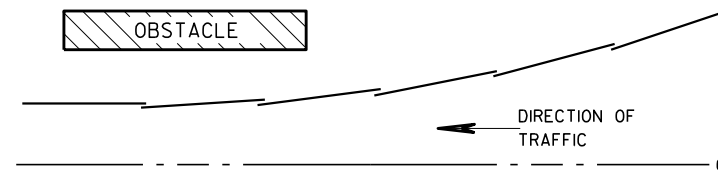


DETAIL FOR TRIPLE BLOCKS

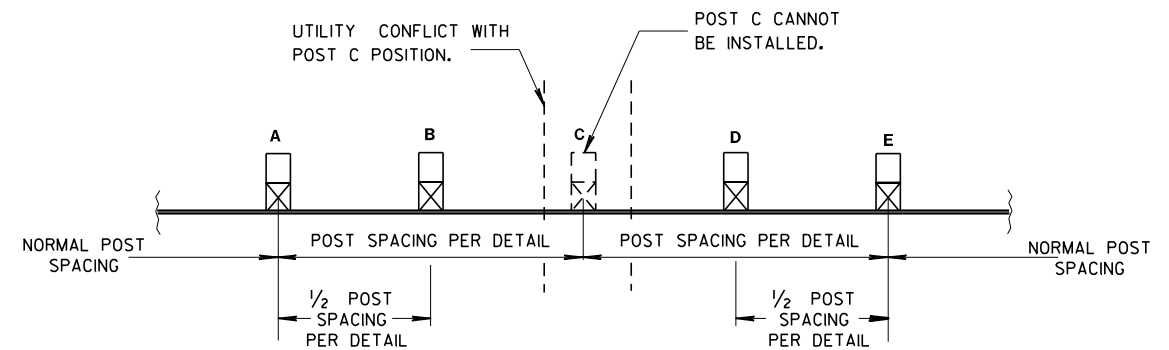
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

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



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 71 UNIT SUPERVISOR
FHWA

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

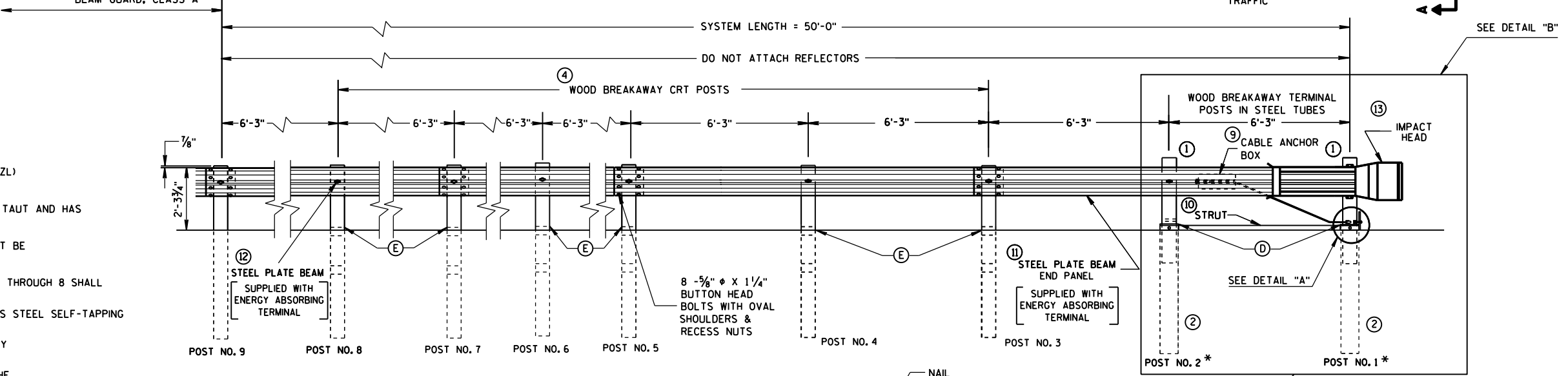
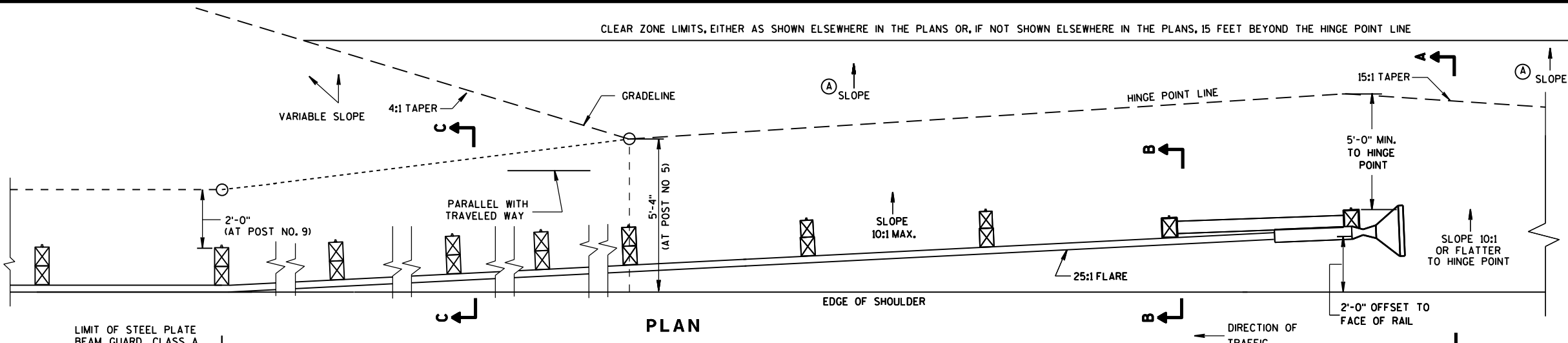
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

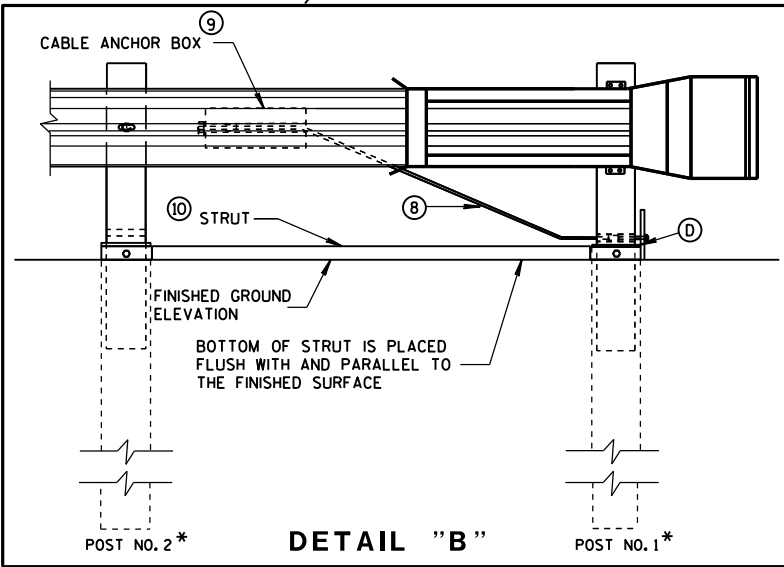
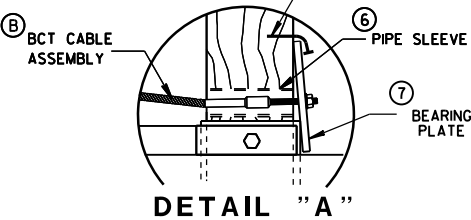
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



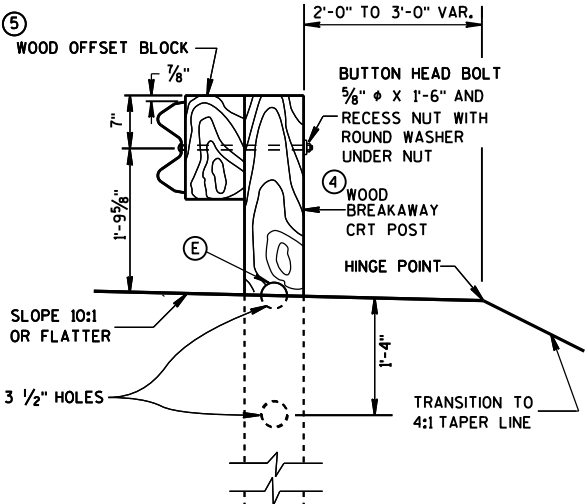
ELEVATION



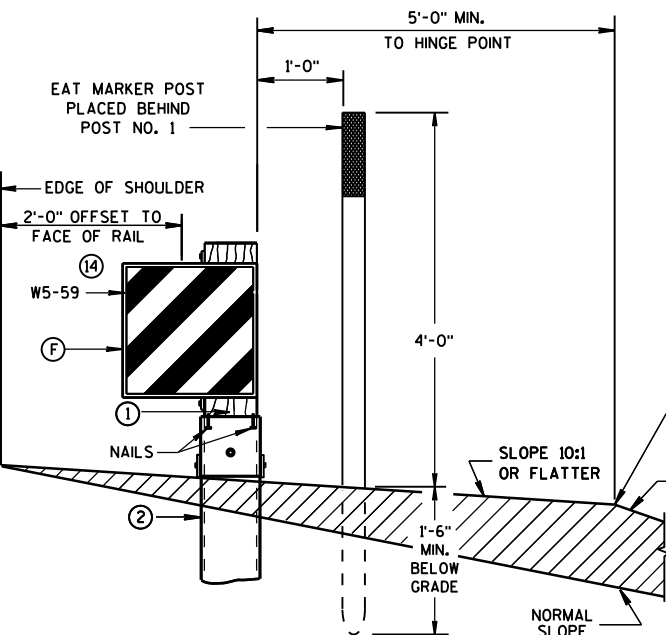
DETAIL "B"

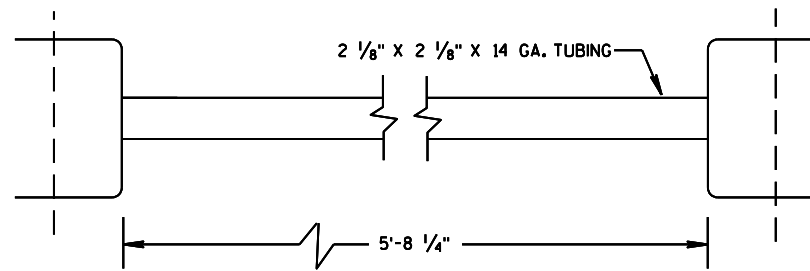
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

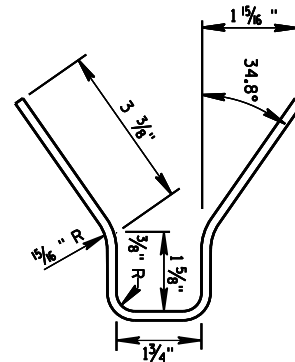
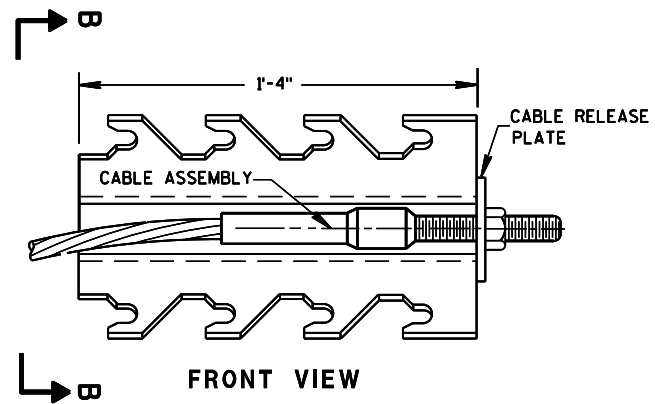


SECTION C-C
TYPICAL AT POST NOS. 6, 8

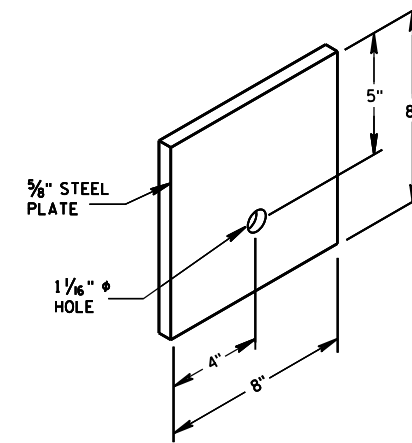




⑩ STRUT DETAIL



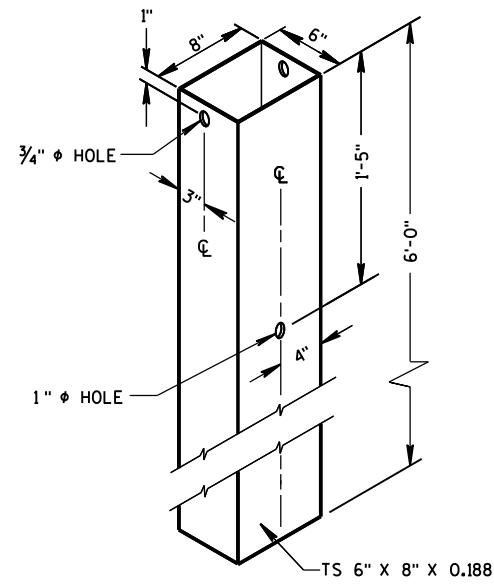
⑨ CABLE ANCHOR BOX



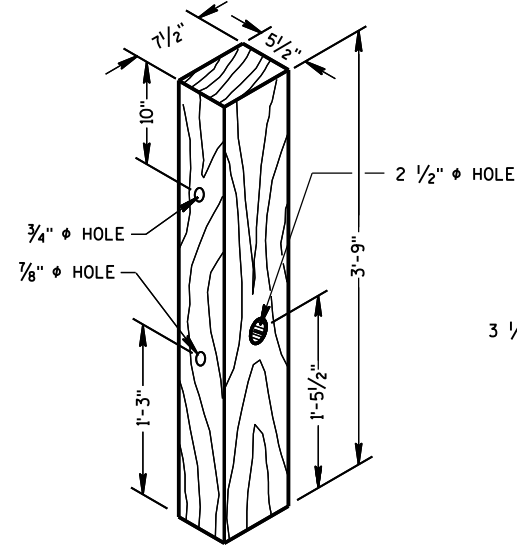
⑦ STEEL BEARING PLATE

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

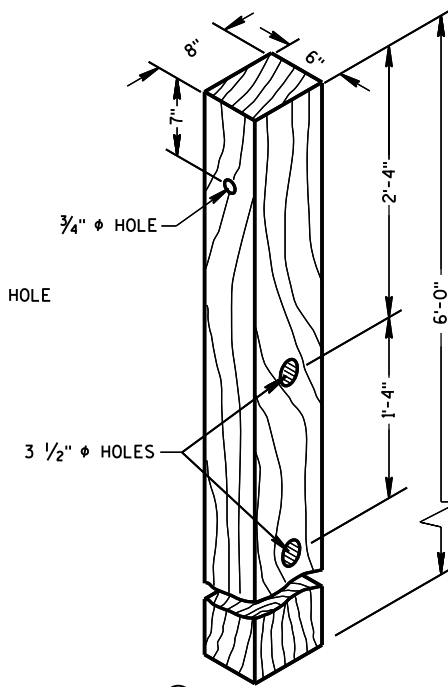
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



② **72" STEEL TUBE**
(POSTS NO. 1-2)

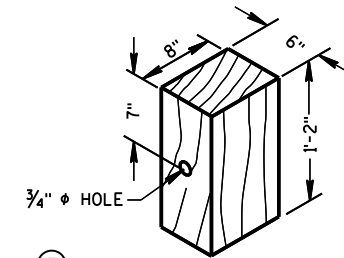


① **TERMINAL POST**



④ **CRT POST**
(POSTS NO'S 5-8)

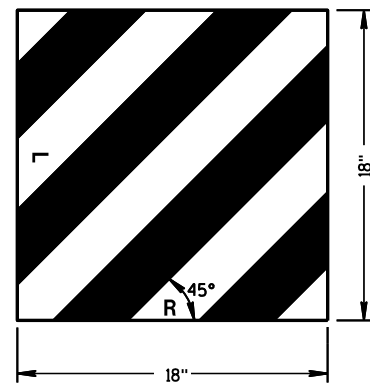
WOOD BREAKAWAY POSTS



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

GENERAL NOTES

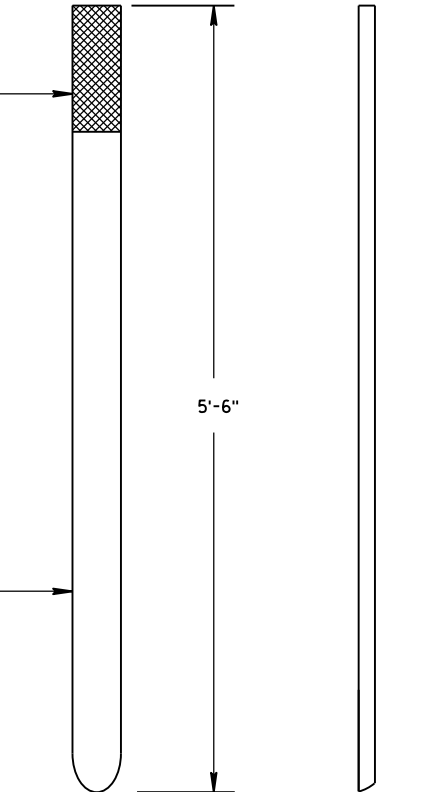
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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



⑭ **REFLECTIVE SHEETING DETAILS**

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.

E.A.T. MARKER
POST (YELLOW)
SEE APPROVED
PRODUCTS LIST



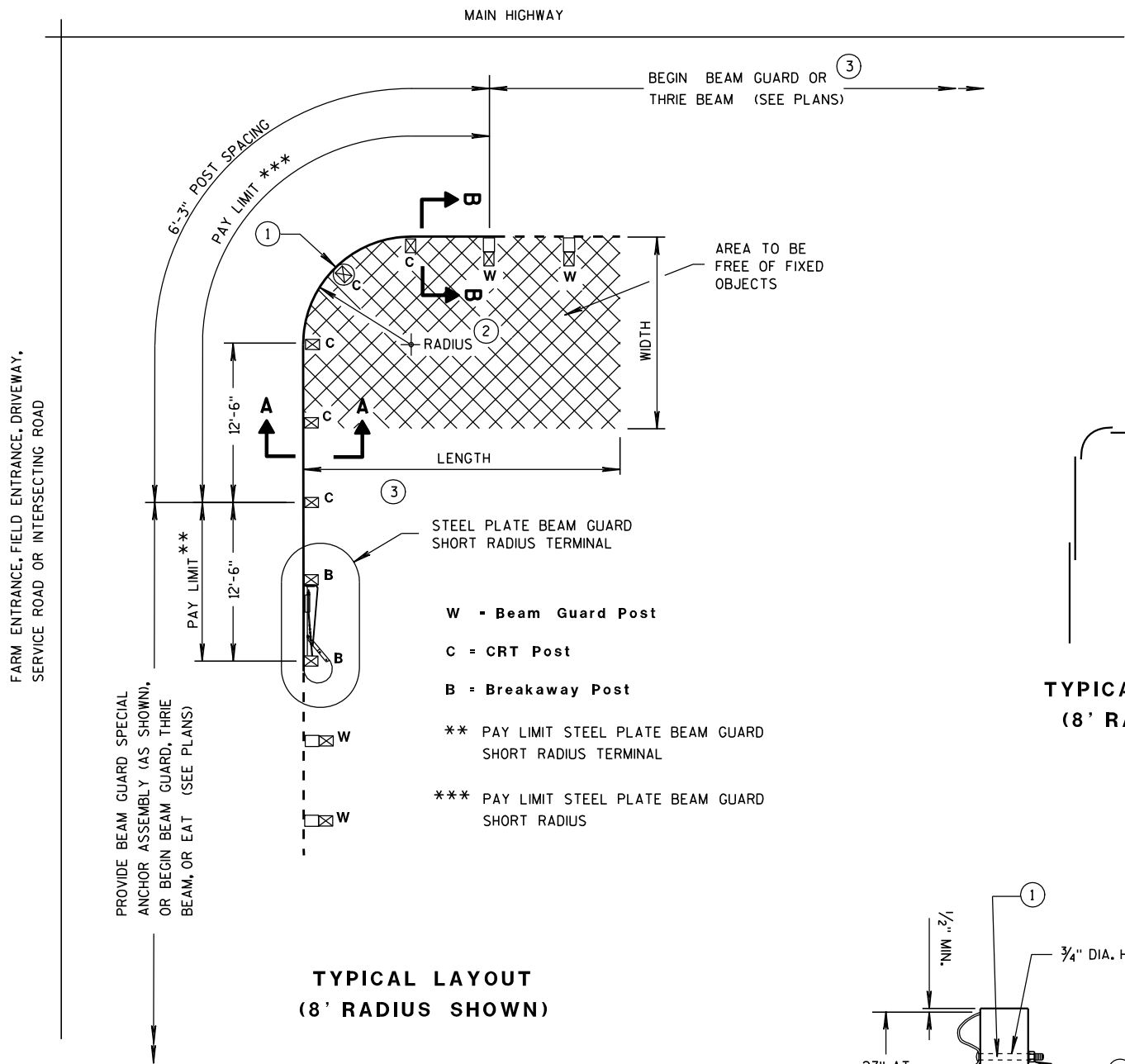
FRONT VIEW SIDE VIEW

E.A.T. MARKER POST

**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

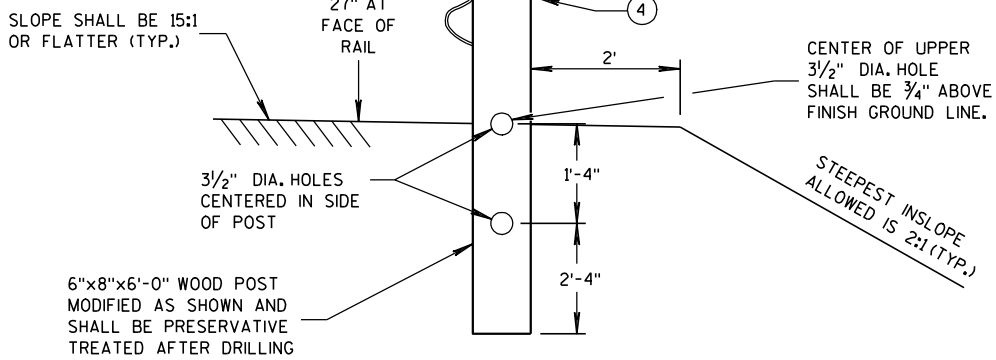
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 74 ENT
FHWA UNIT SUPERVISOR



TYPICAL LAYOUT
(8' RADIUS SHOWN)

- W - Beam Guard Post
C = CRT Post
B = Breakaway Post
** PAY LIMIT STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
*** PAY LIMIT STEEL PLATE BEAM GUARD SHORT RADIUS



SECTION A-A
(CRT POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2, UNLESS NOTED OTHERWISE.

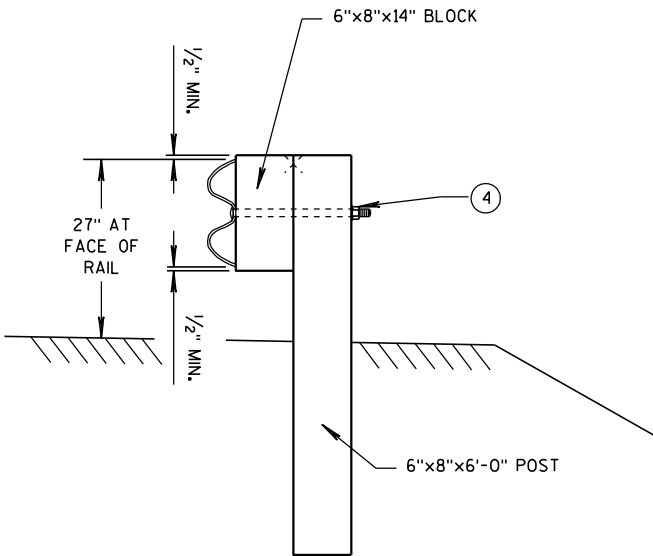
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- RADIUS FROM 8' - 36'. SEE PLAN.
- HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

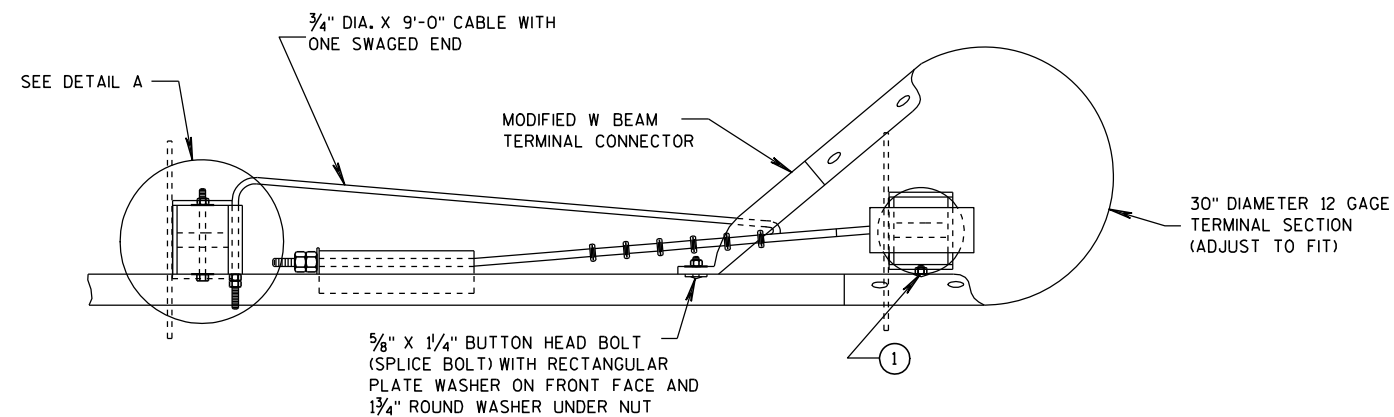
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



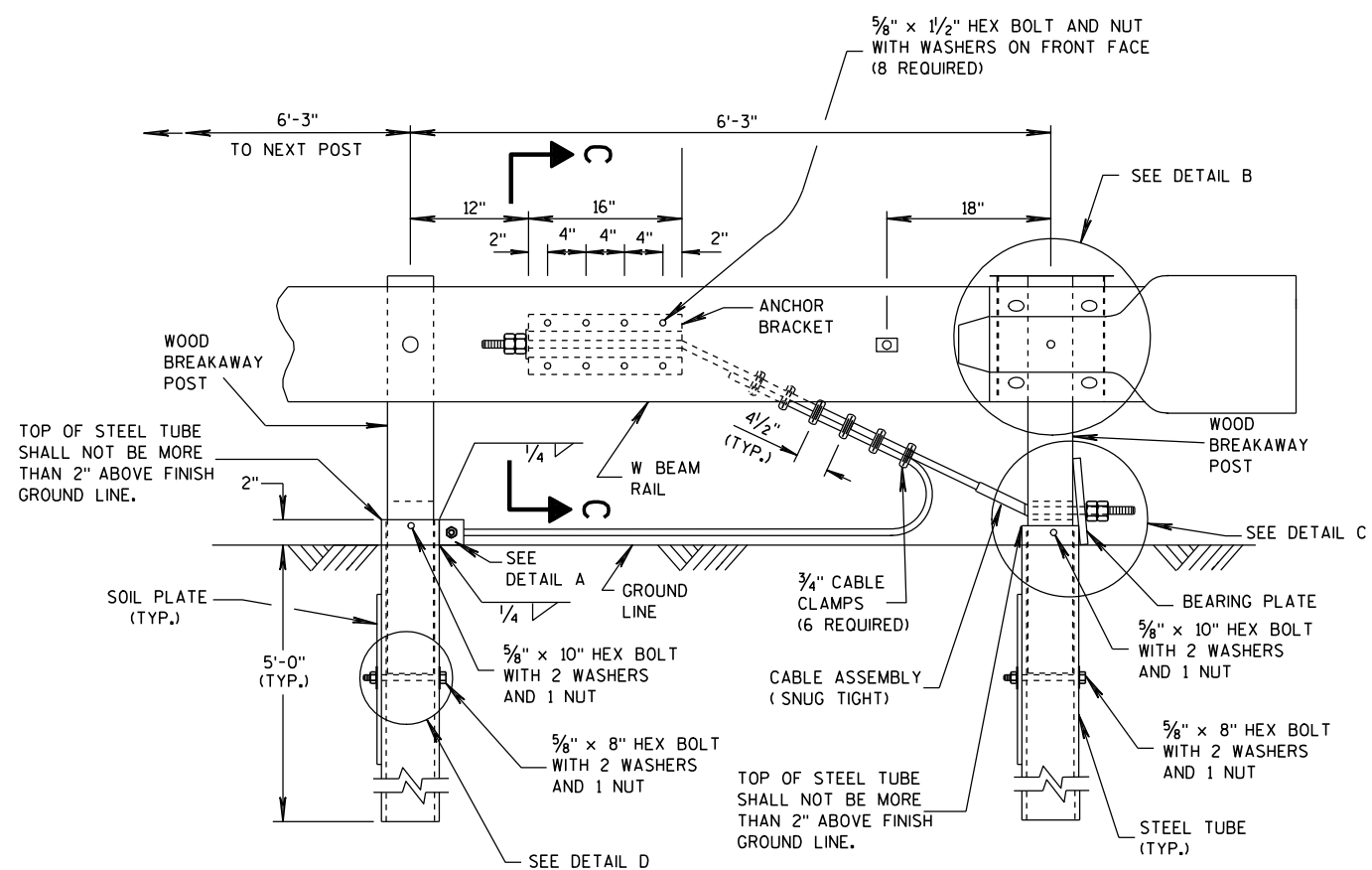
SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

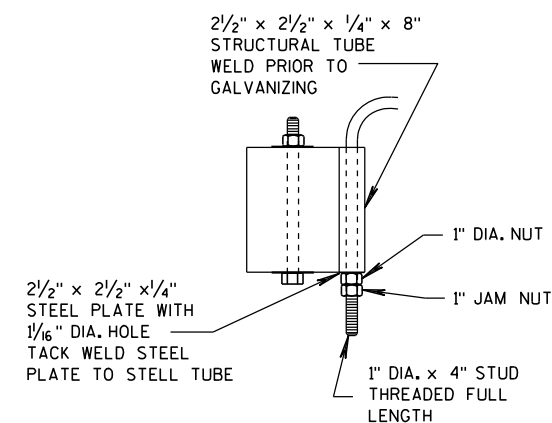


ELEVATION VIEW

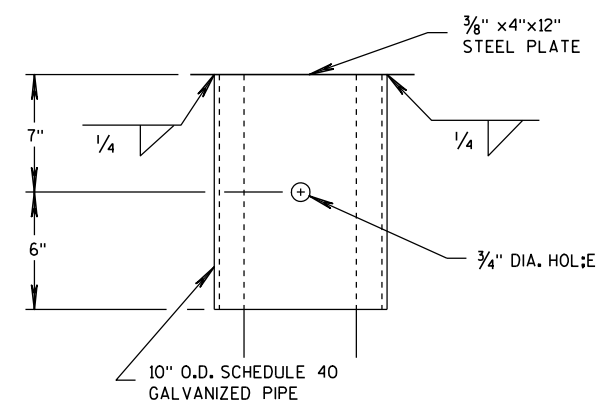
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

- 1 ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A 5/8" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.
- INSTALL GALVANIZED 3/4" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



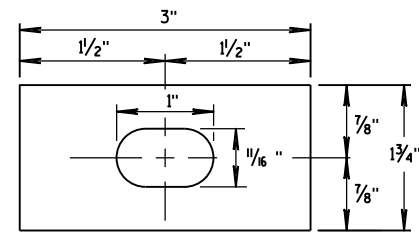
DETAIL A



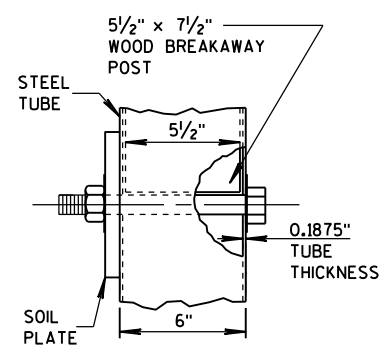
DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

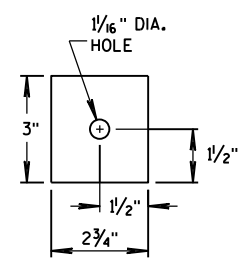
STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINALSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



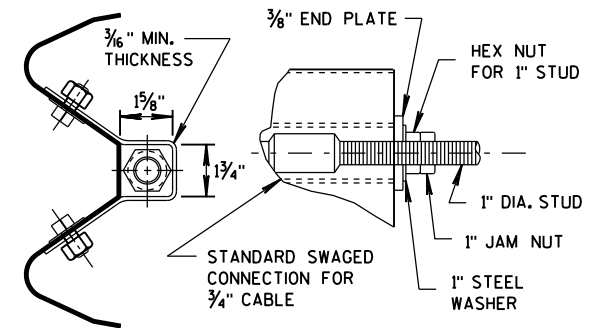
RECTANGULAR PLATE WASHER



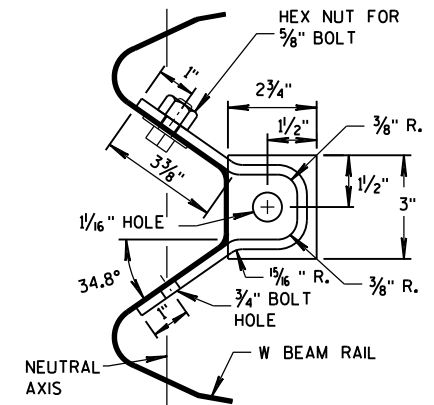
DETAIL D



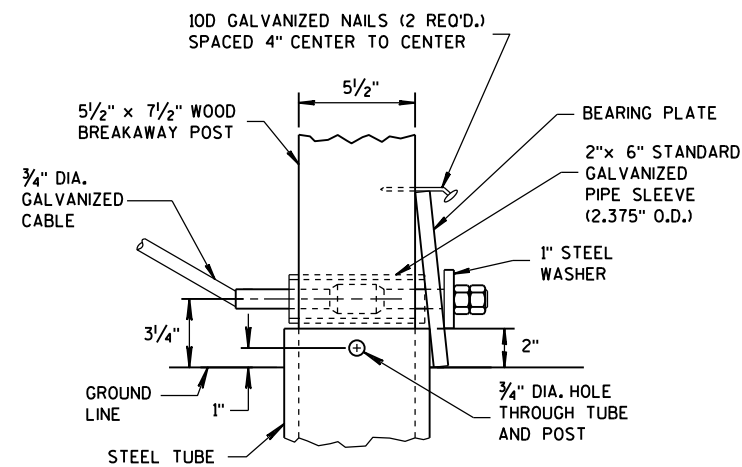
END PLATE



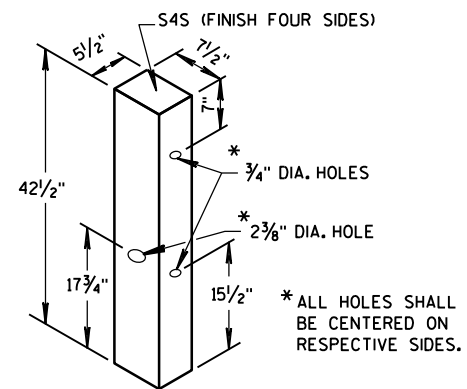
SECTION C-C
(END PLATE REMOVED)



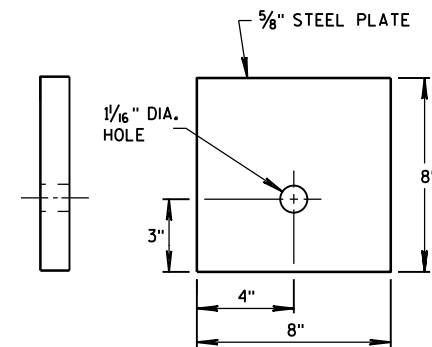
ANCHOR BRACKET



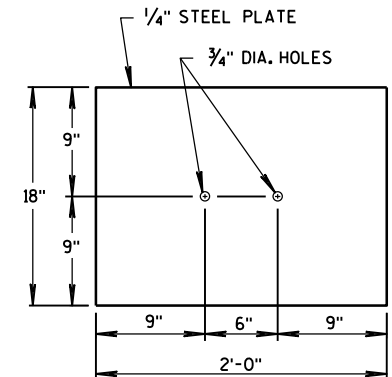
DETAIL C



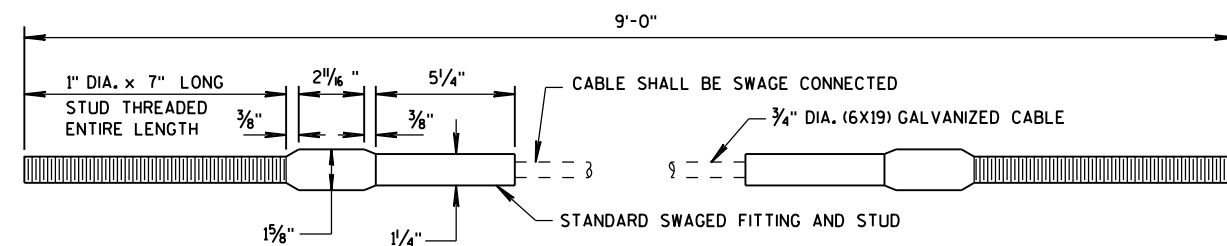
WOOD BREAKAWAY POST



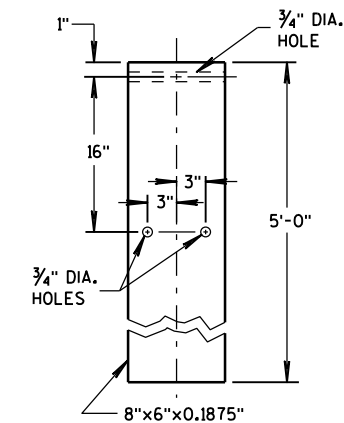
BEARING PLATE



SOIL PLATE



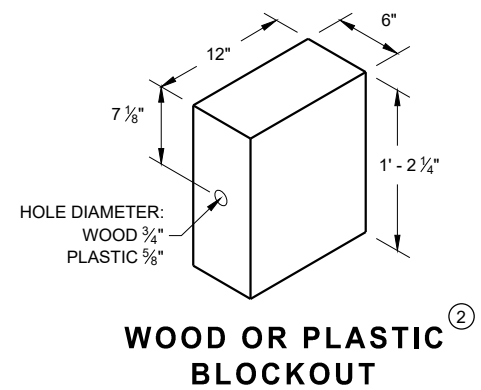
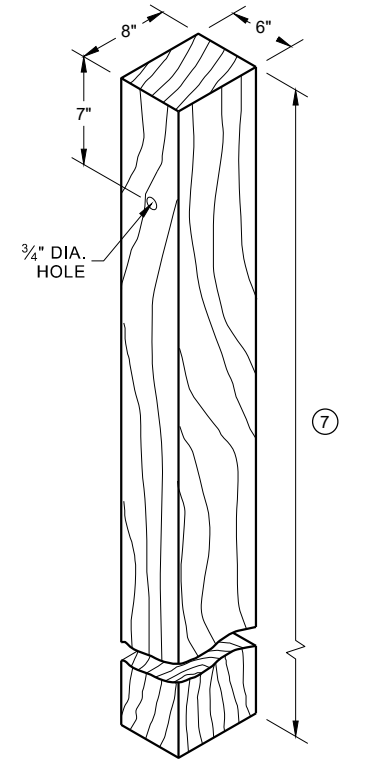
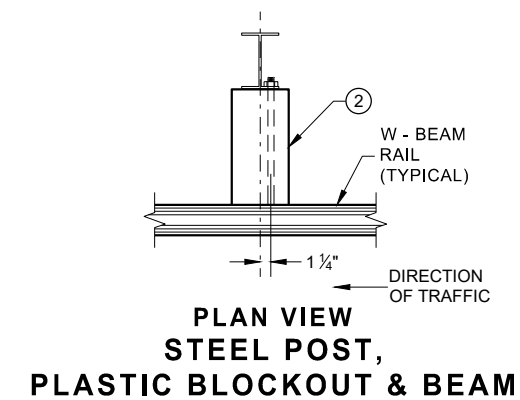
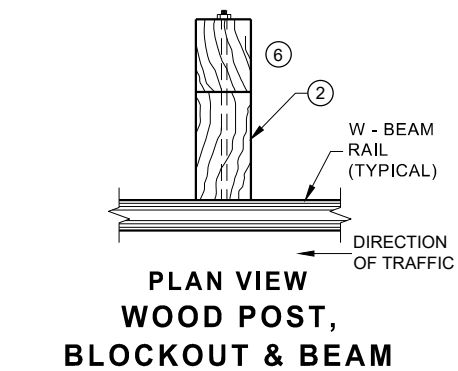
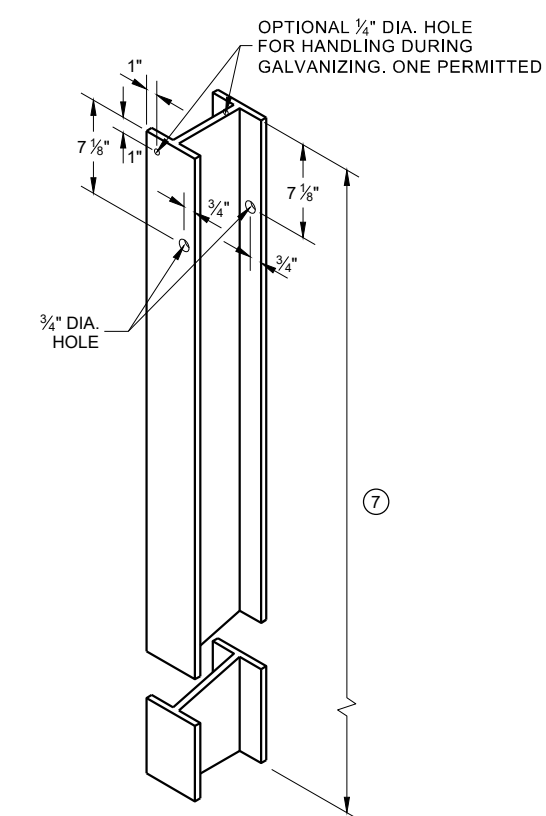
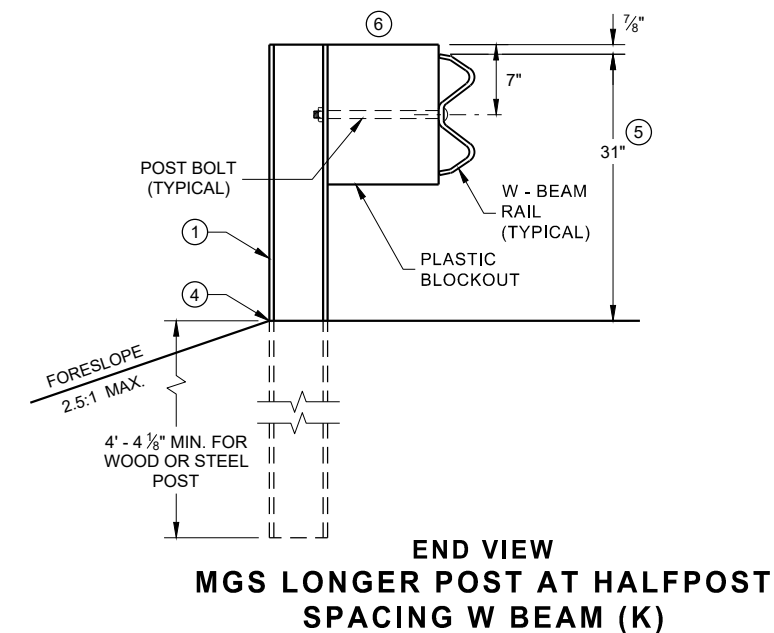
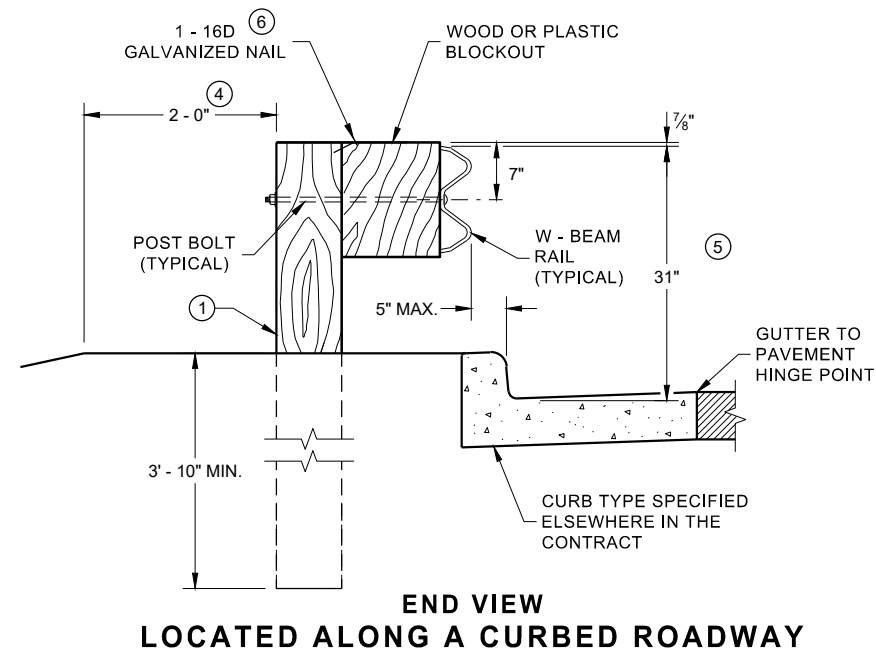
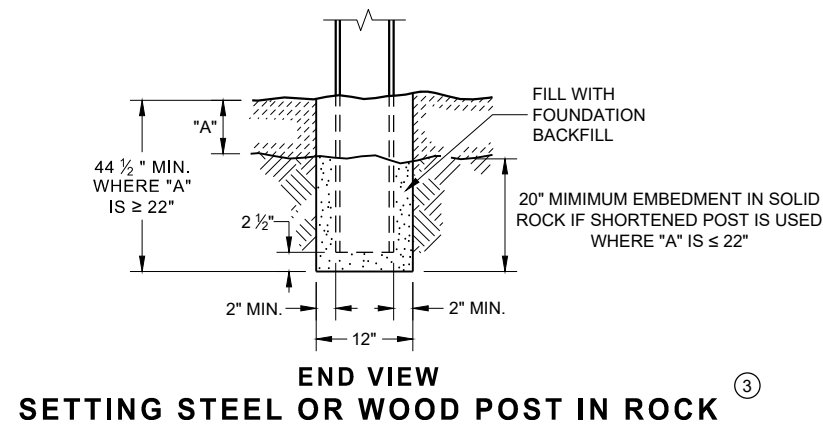
CABLE ASSEMBLY



STEEL TUBE

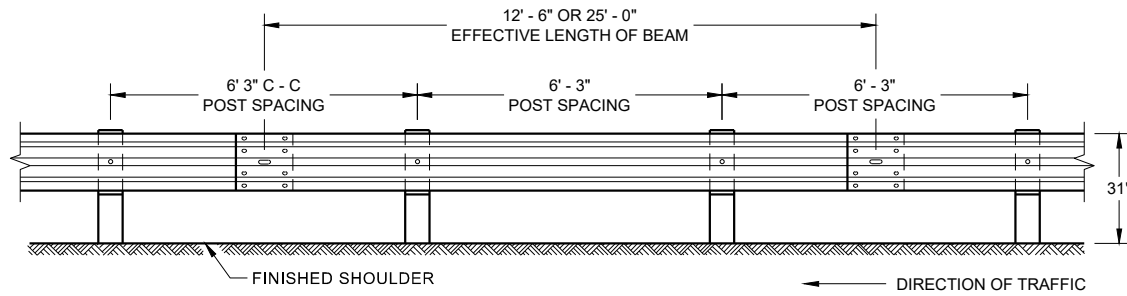
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>12/18/08</u> DATE	<u>/S/ Jerry H. Zogg</u> ROADWAY STANDARDS <u>77</u> INT ENGINEER

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

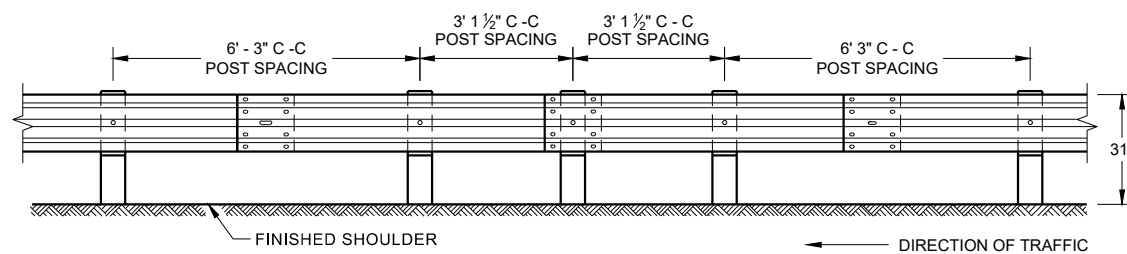


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

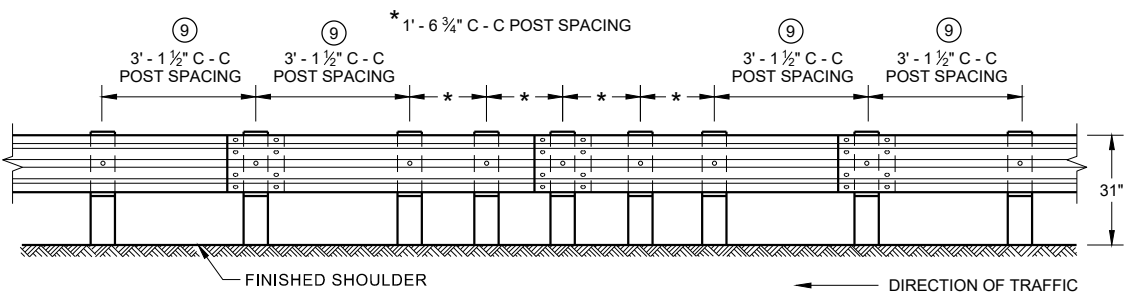
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 78



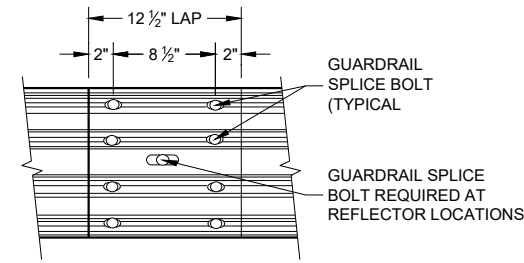
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



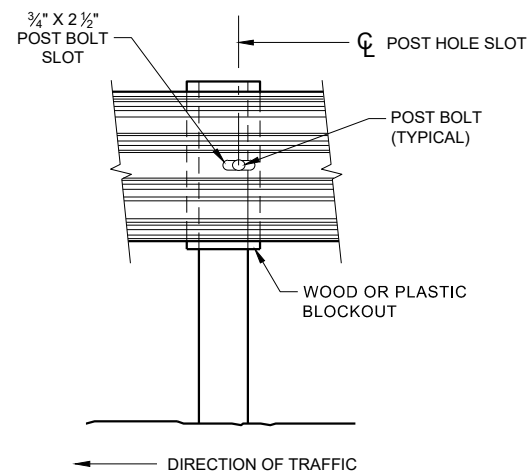
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



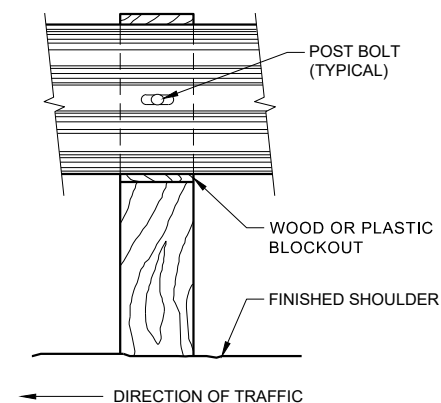
**FRONT VIEW
QUARTER POST SPACING (QS)**



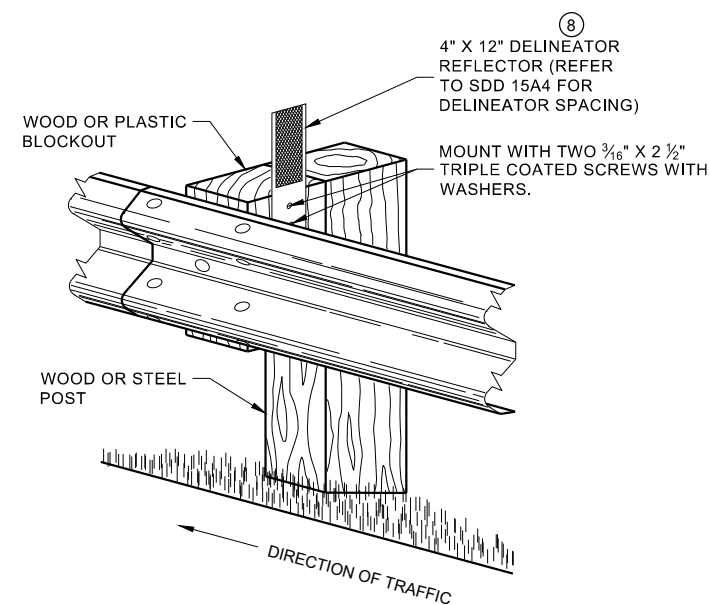
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



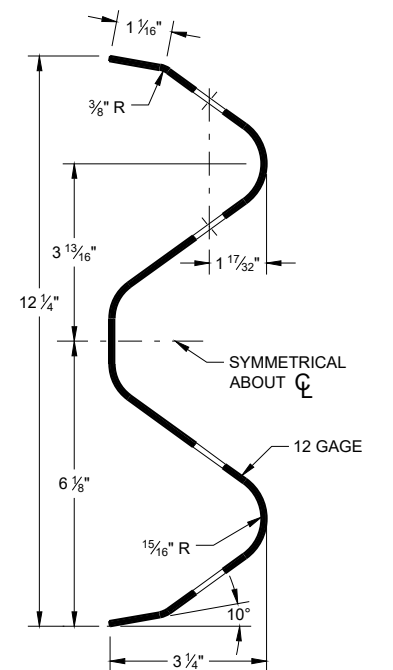
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

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

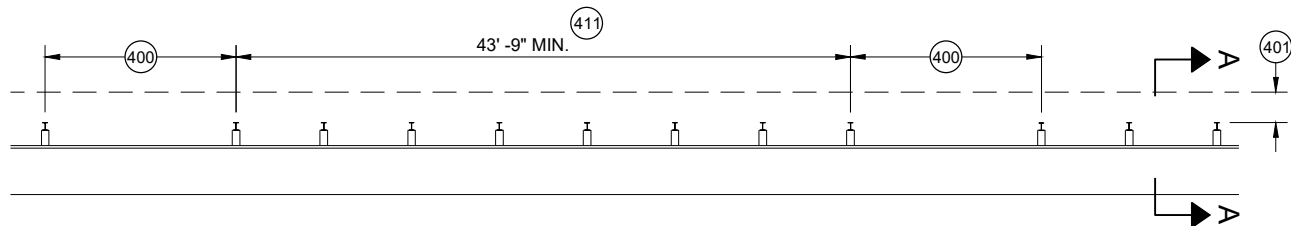
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



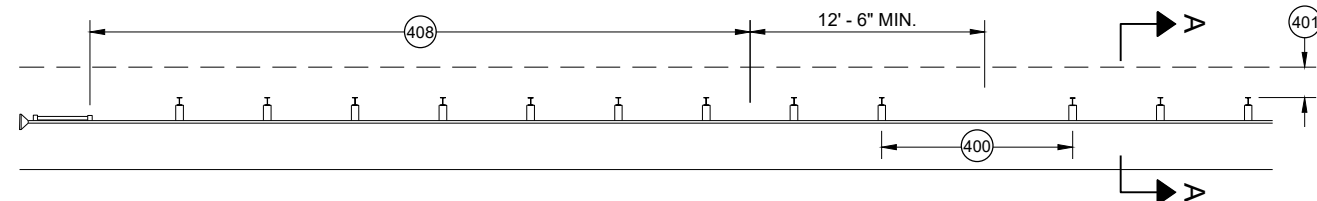
SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

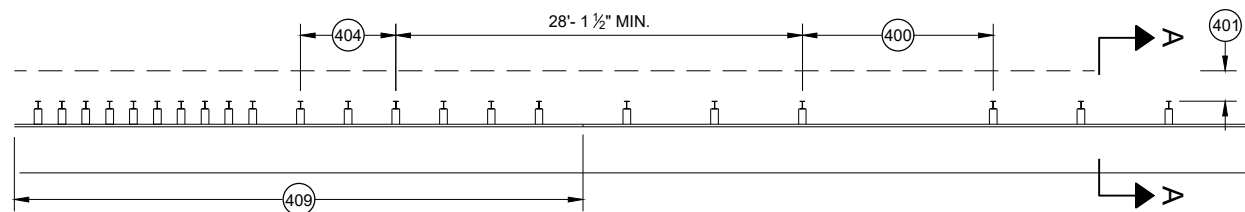
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 79



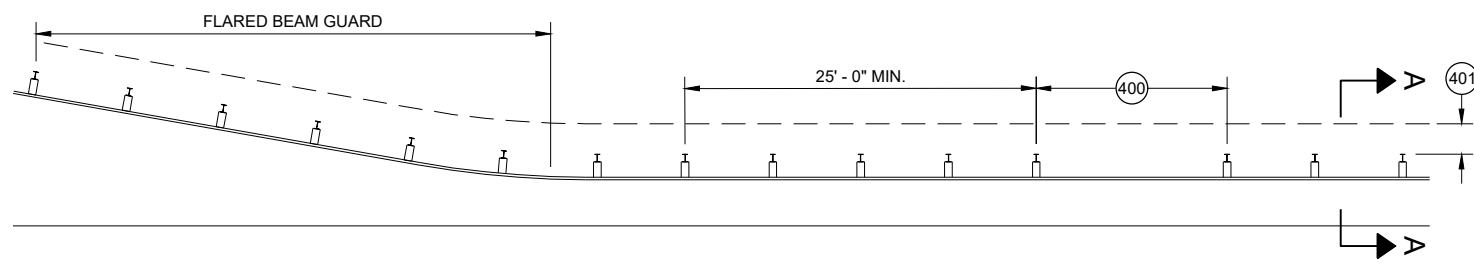
MISSING POST IN MGS GUARDRAIL



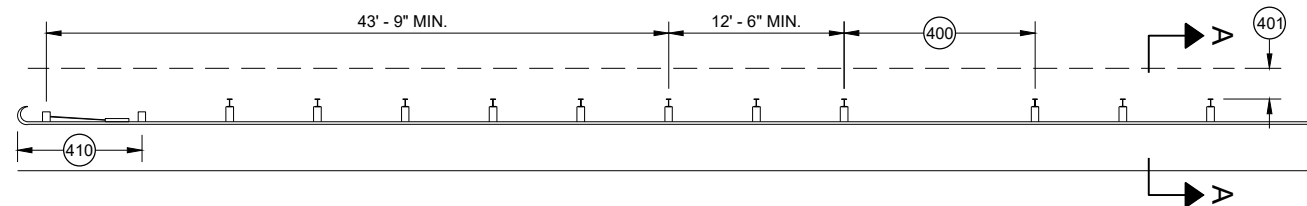
MISSING POST IN MGS GUARDRAIL NEAR EAT



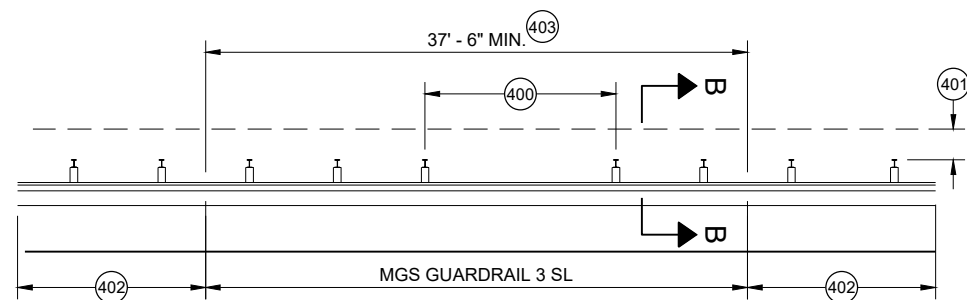
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

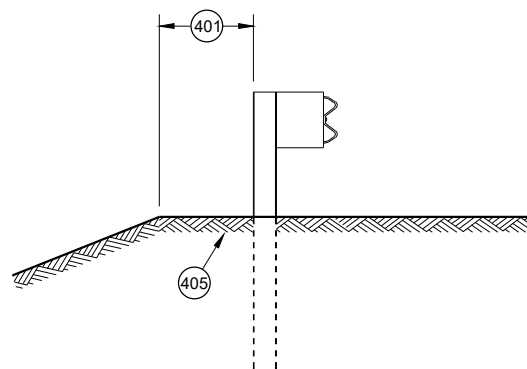


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

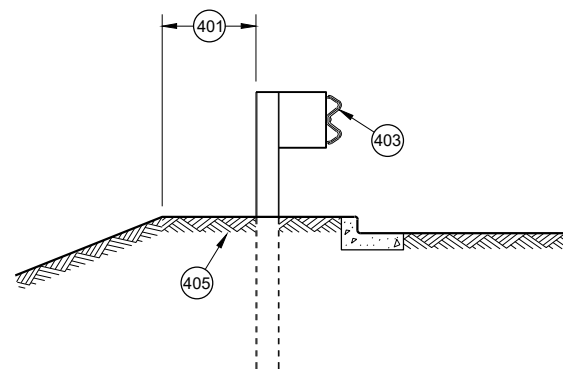


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

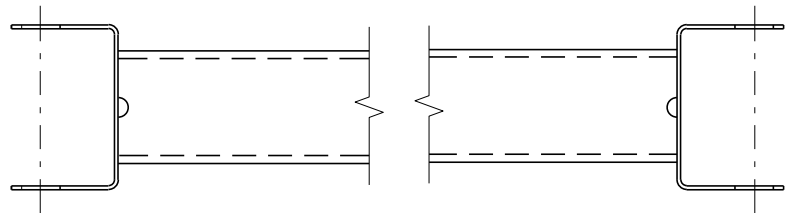
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

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

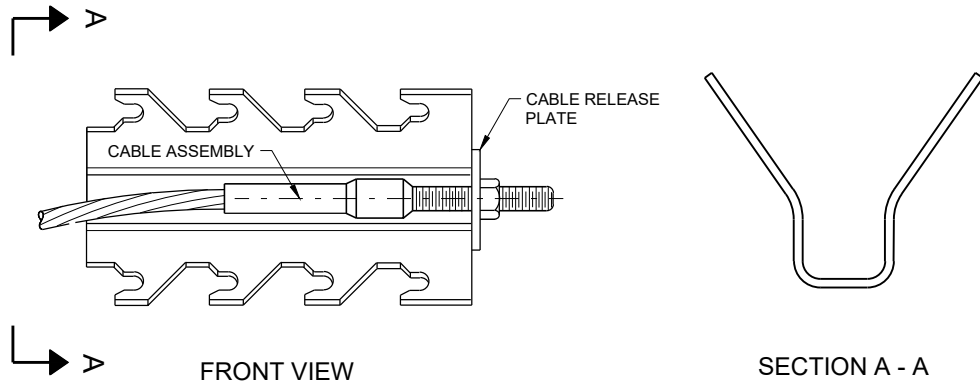


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 82

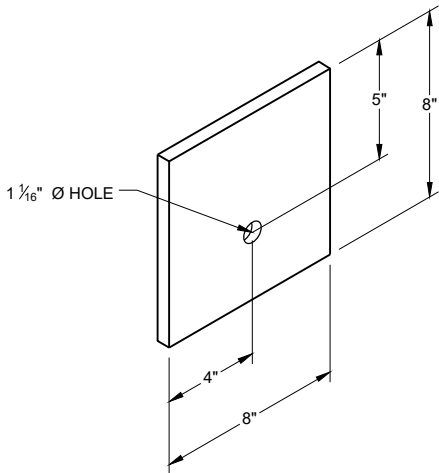


GENERIC GROUND STRUT⁹ ^E

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



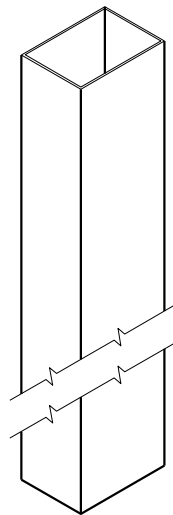
GENERIC ANCHOR CABLE BOX⁹ ^E



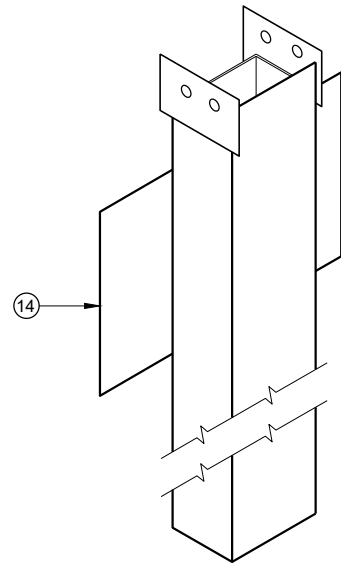
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

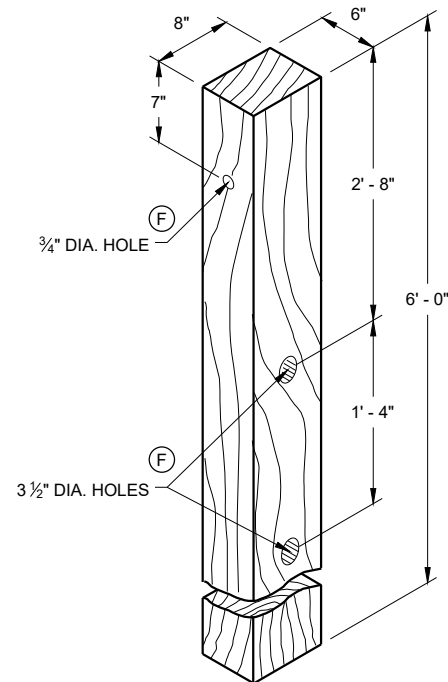
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



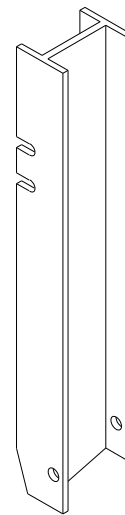
UPPER POST NO. 1 ⁽¹⁾ (E)



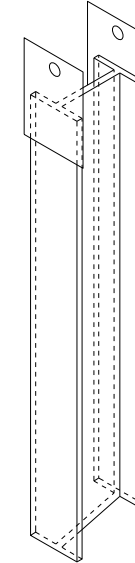
LOWER POST NO. 1 ⁽²⁾ (E)



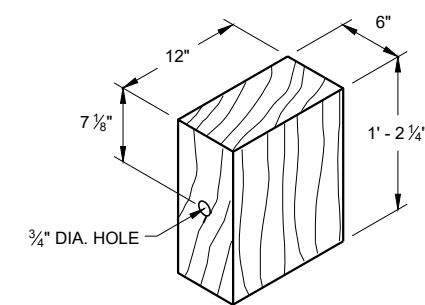
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



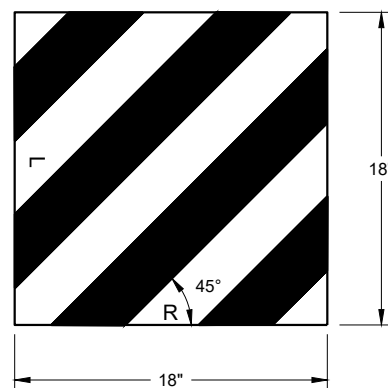
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



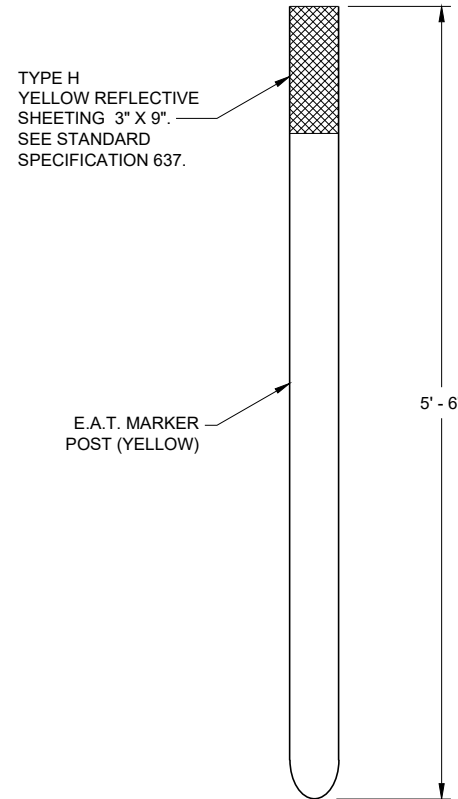
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

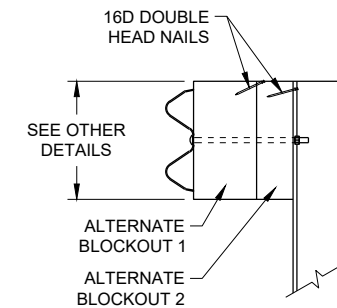


FRONT VIEW

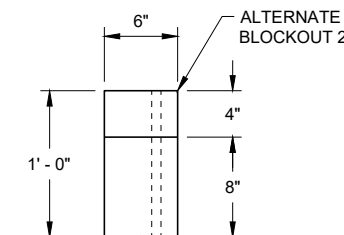


SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



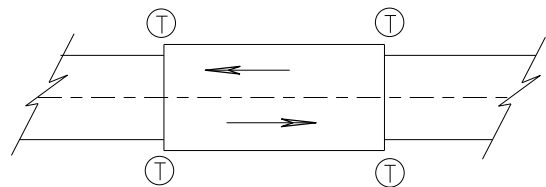
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

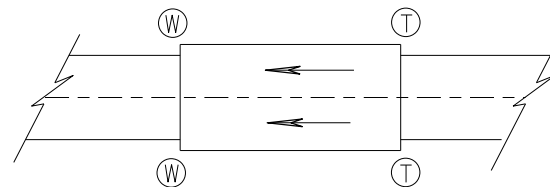
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
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FHWA 84



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

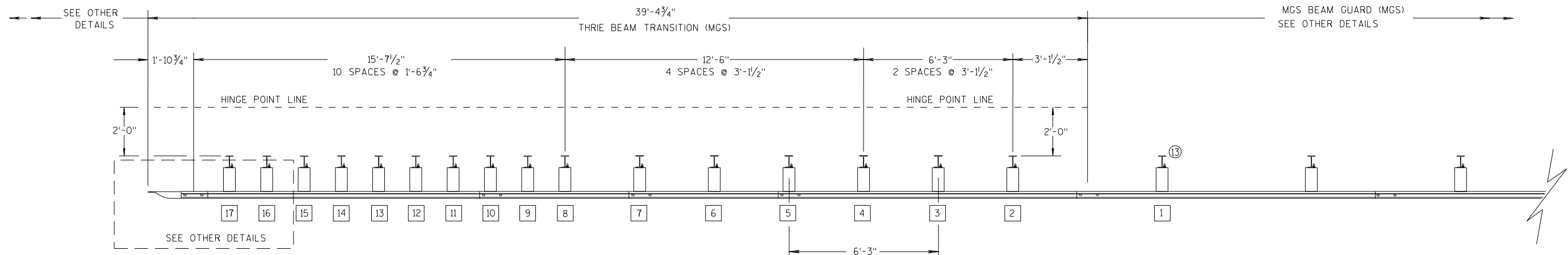
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

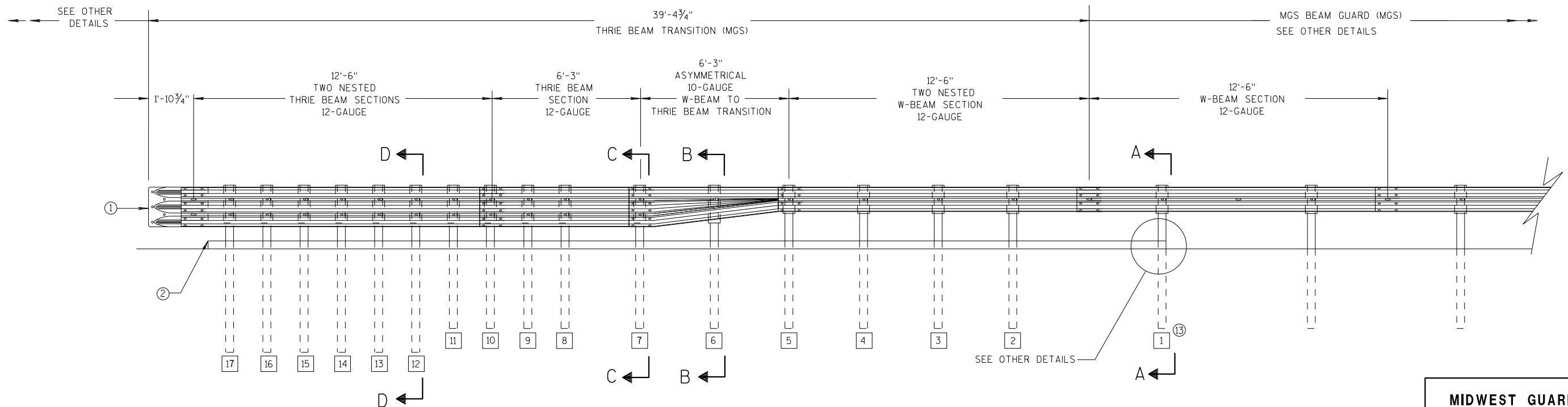
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

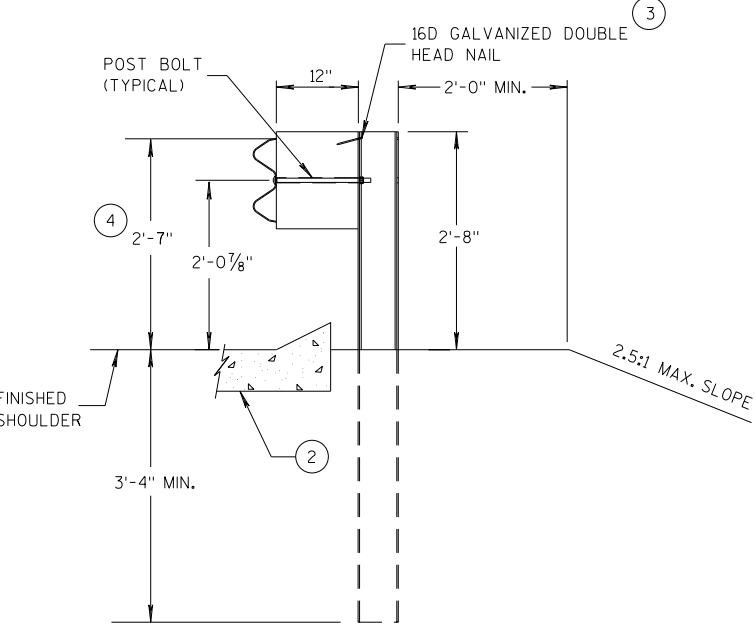
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

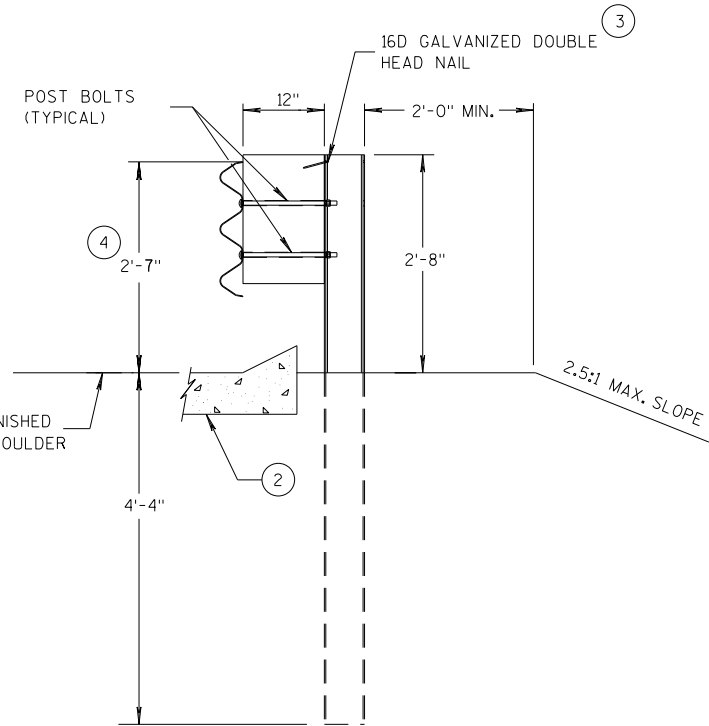
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 85

GENERAL NOTES

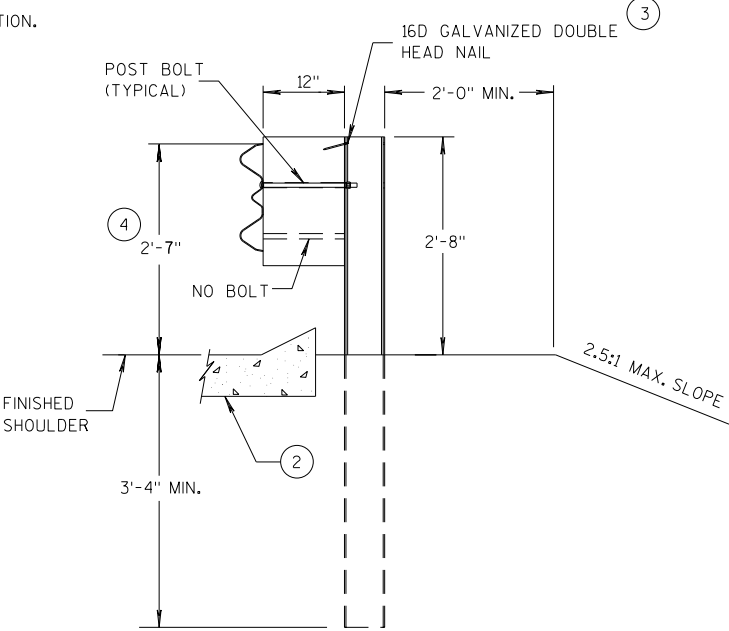
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



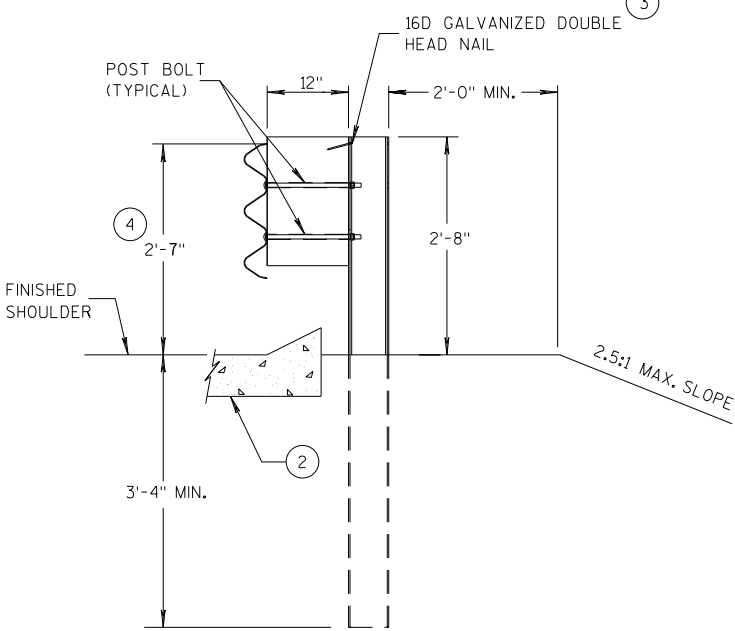
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

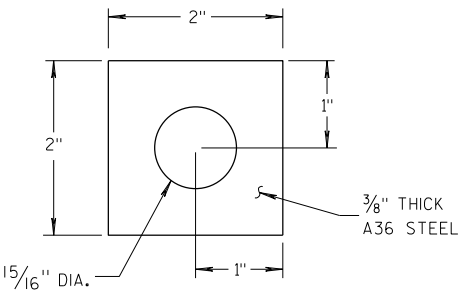
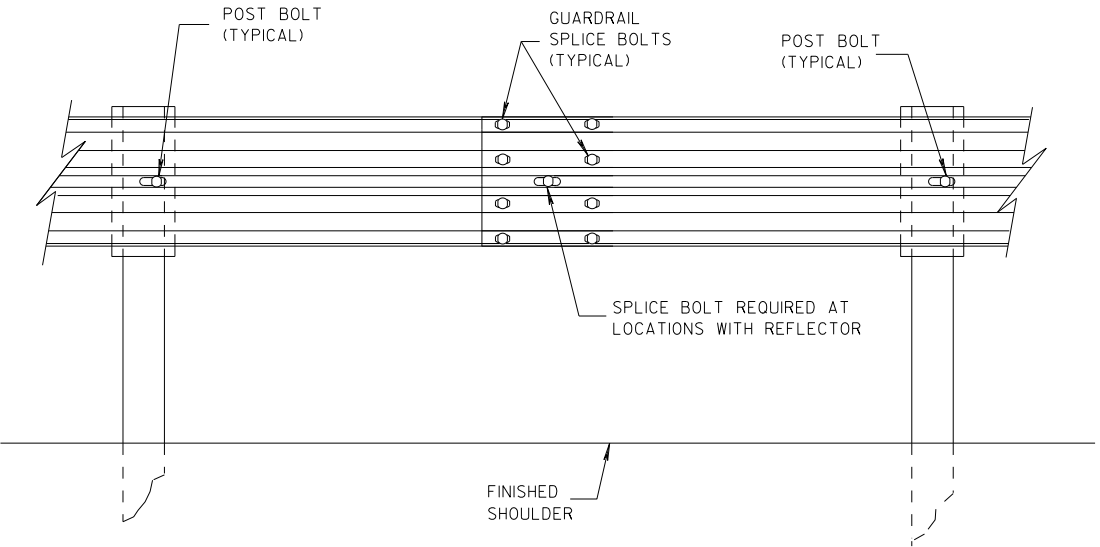
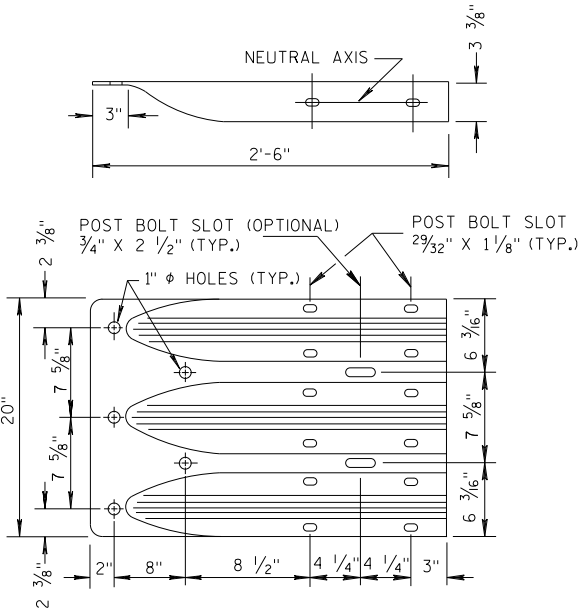


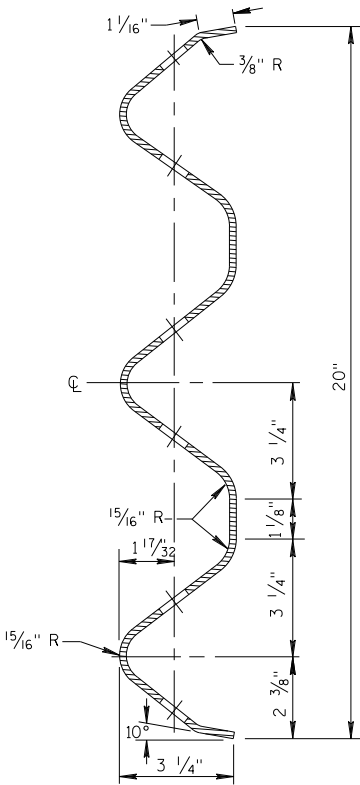
PLATE WASHER DETAIL



SPlice DETAIL



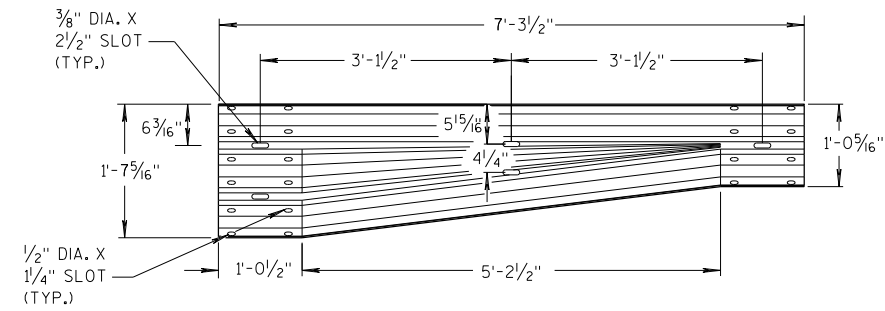
THRIE BEAM
TERMINAL CONNECTOR



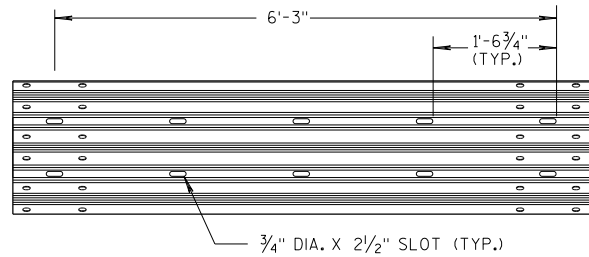
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

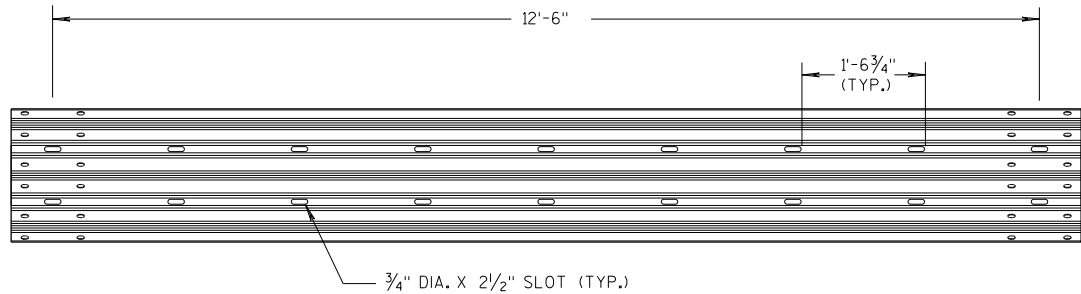
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



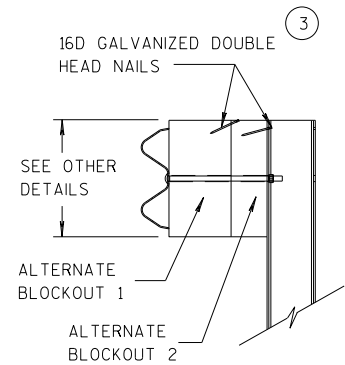
W-BEAM TO THRIE BEAM TRANSITION SECTION



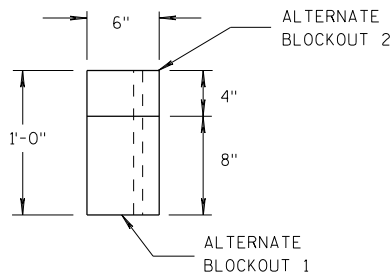
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

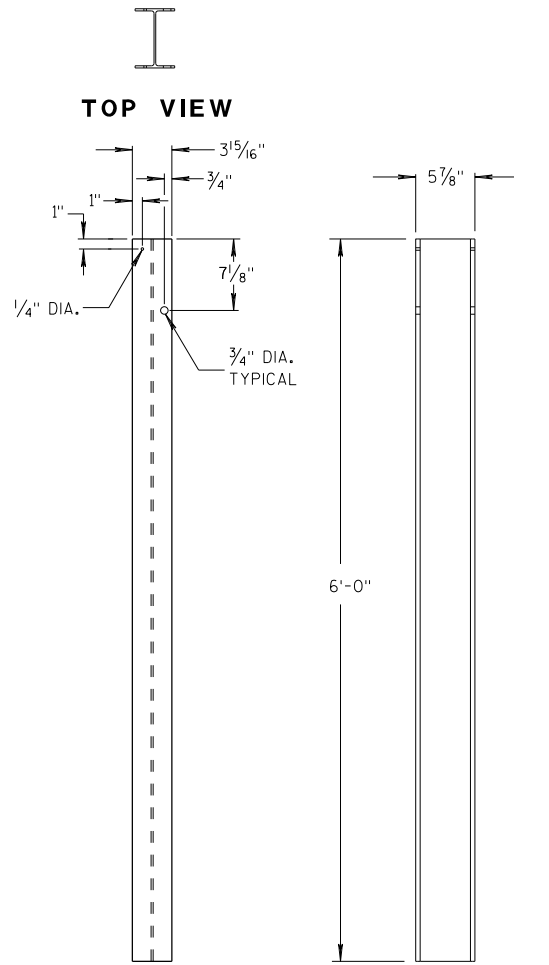


SIDE VIEW



TOP VIEW

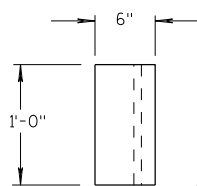
ALTERNATE WOOD BLOCKOUT DETAIL



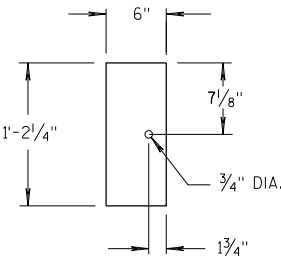
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

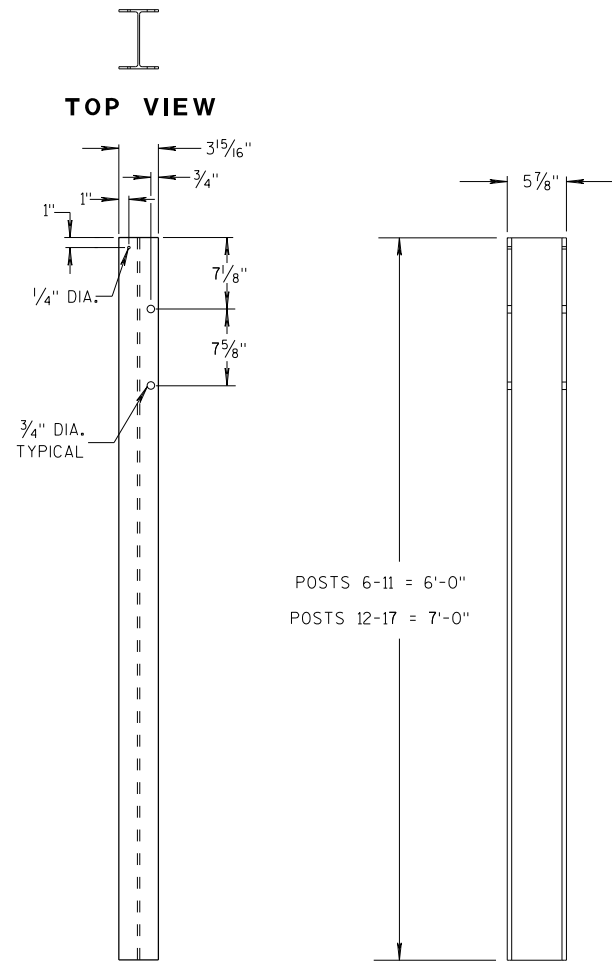


TOP VIEW



FRONT VIEW

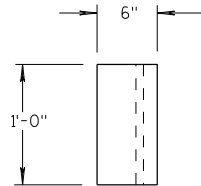
BLOCKOUT POSTS 1-5



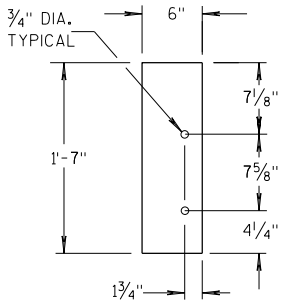
FRONT VIEW

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.

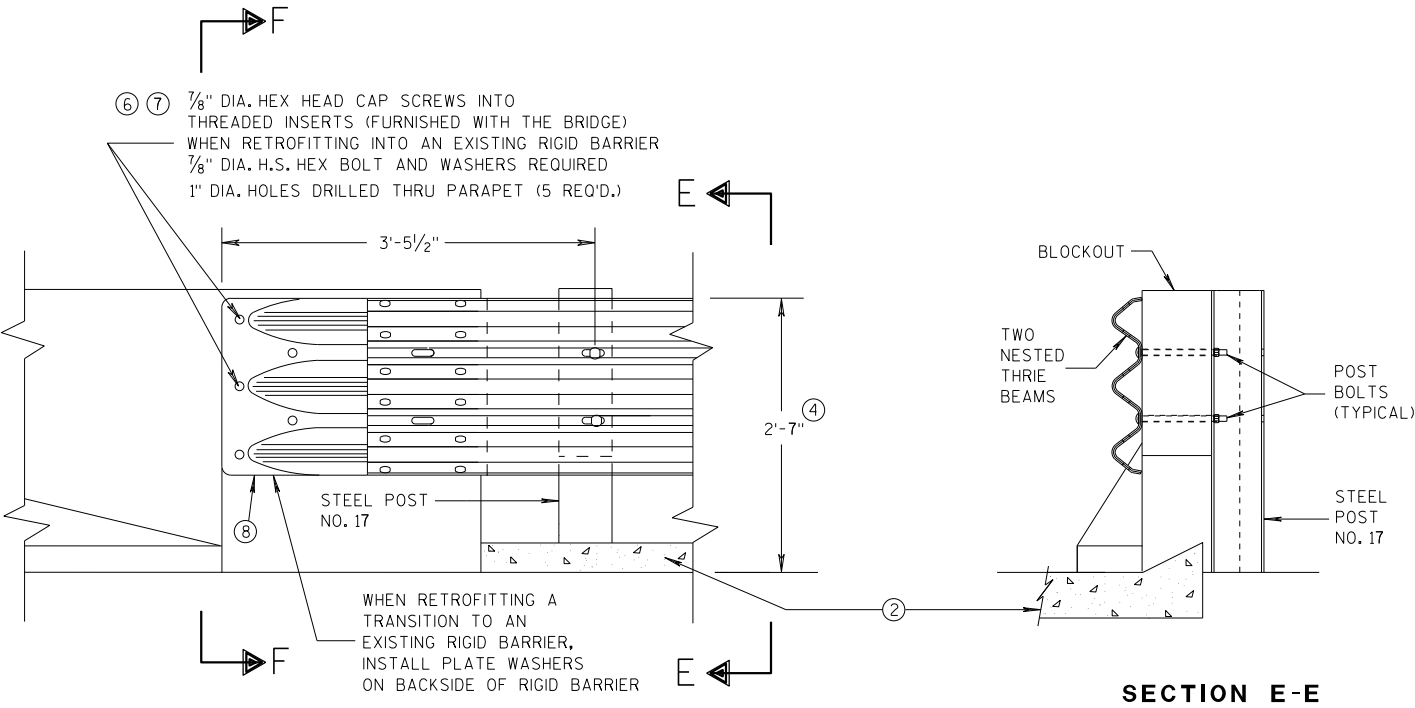
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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.

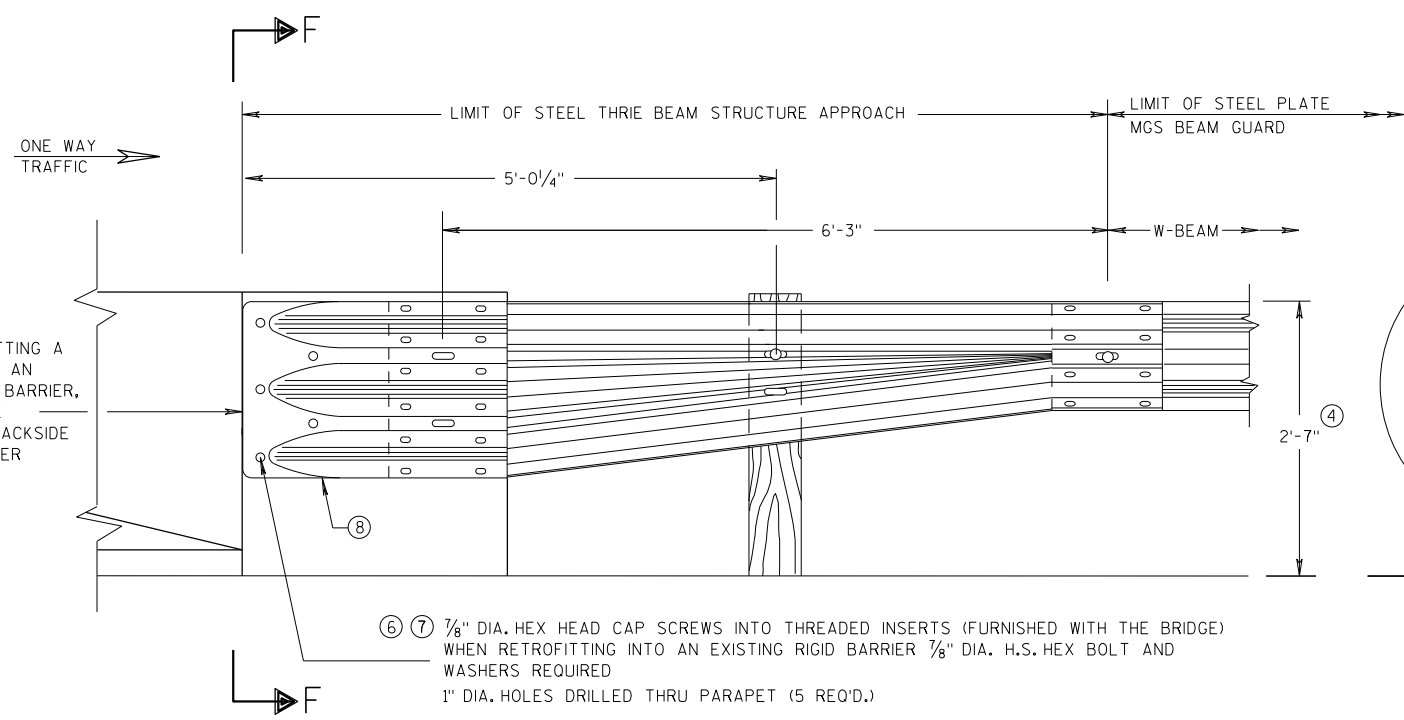
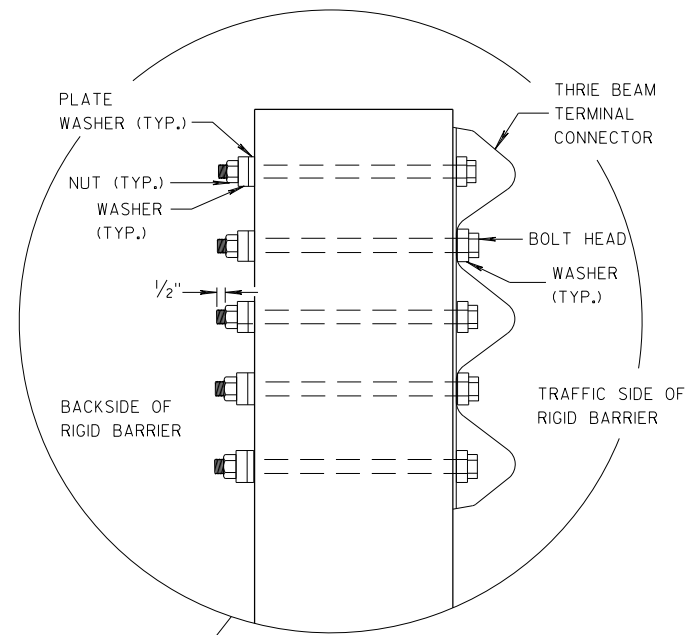
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

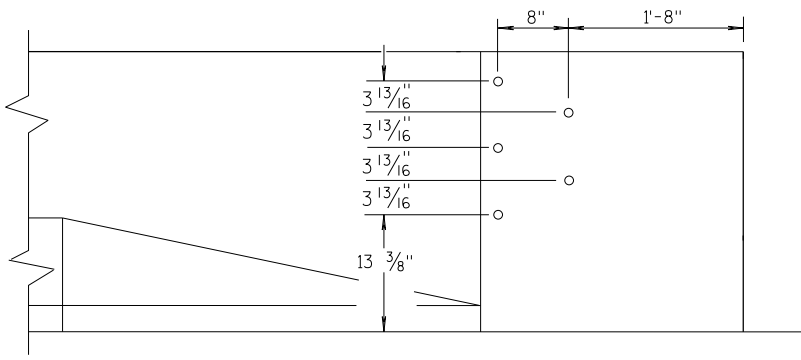


GENERAL NOTES

- 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".



SECTION F-F



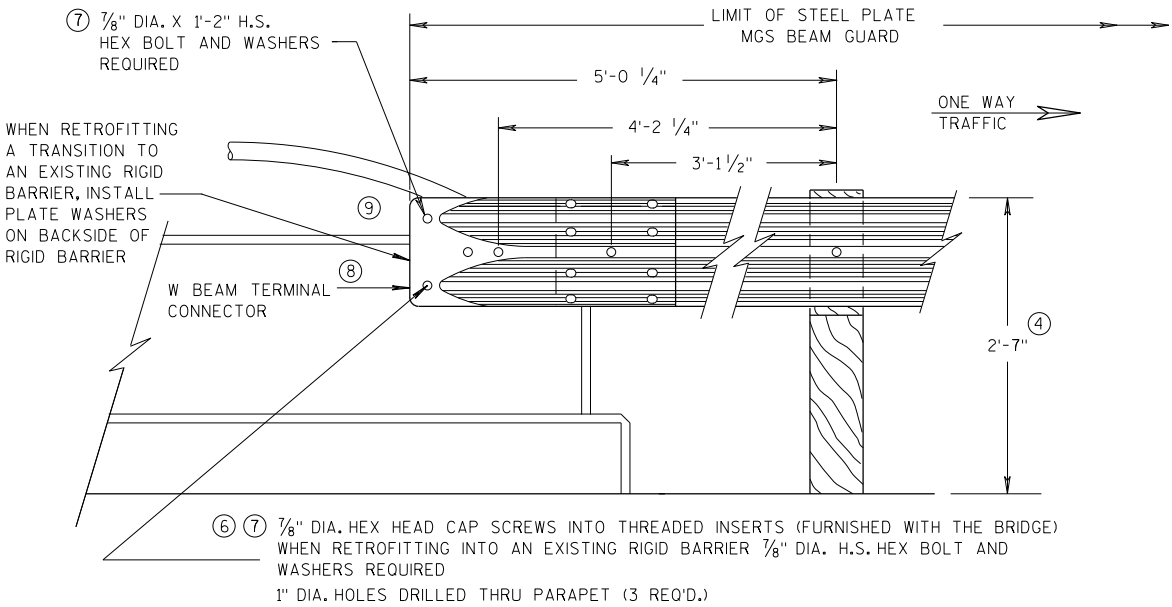
DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	88	NT	

GENERAL NOTES

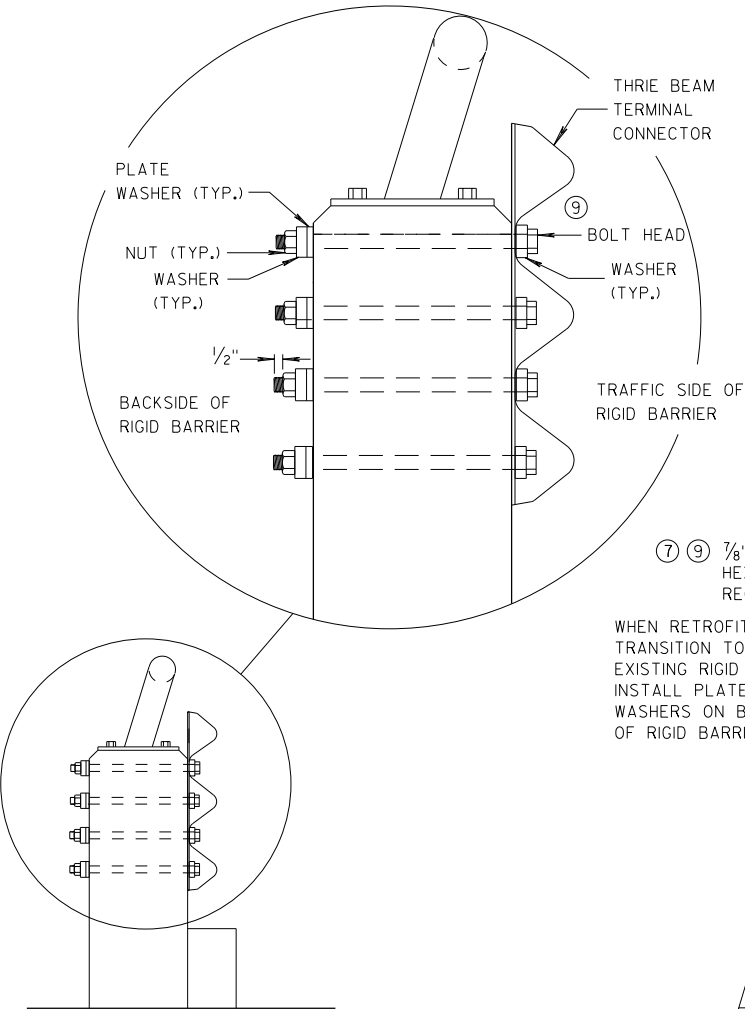
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ②
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④
- TOLERANCE FOR TOP OF BEAM IS ± 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".
- ⑨
- BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

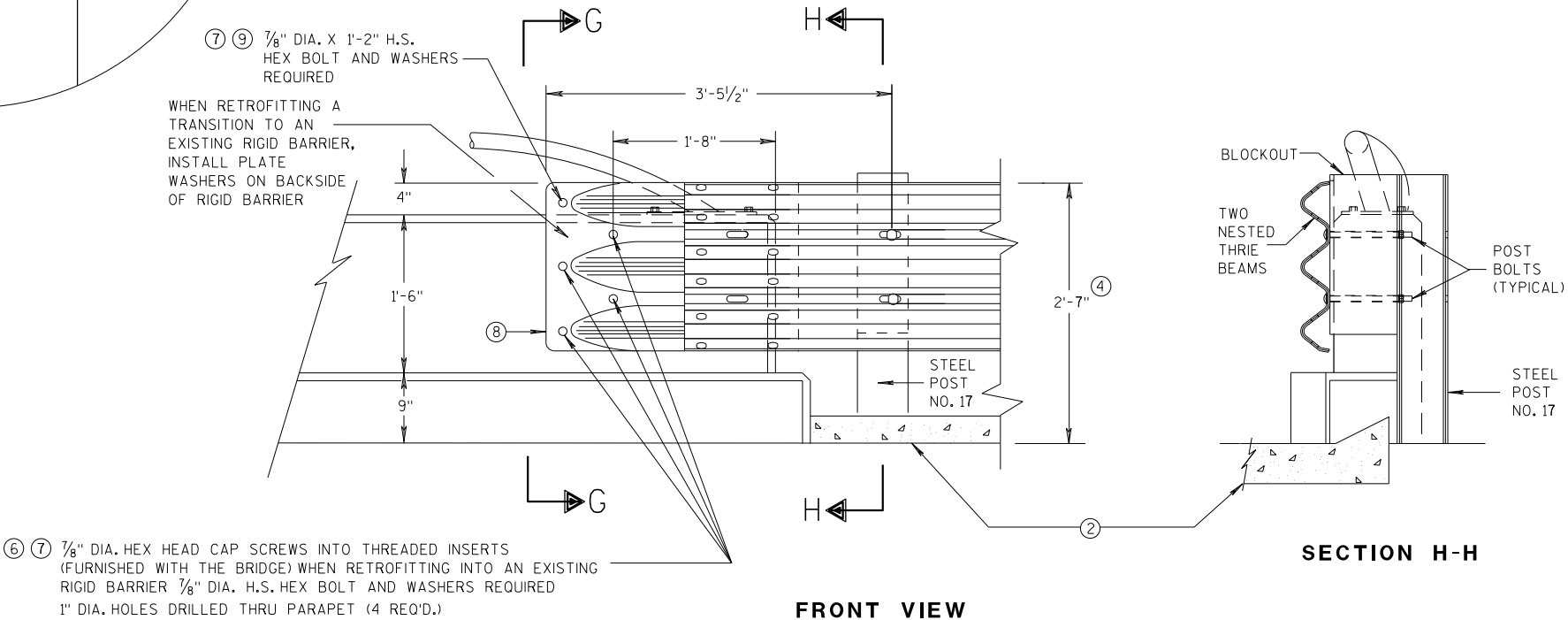


FRONT VIEW

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



SECTION G-G



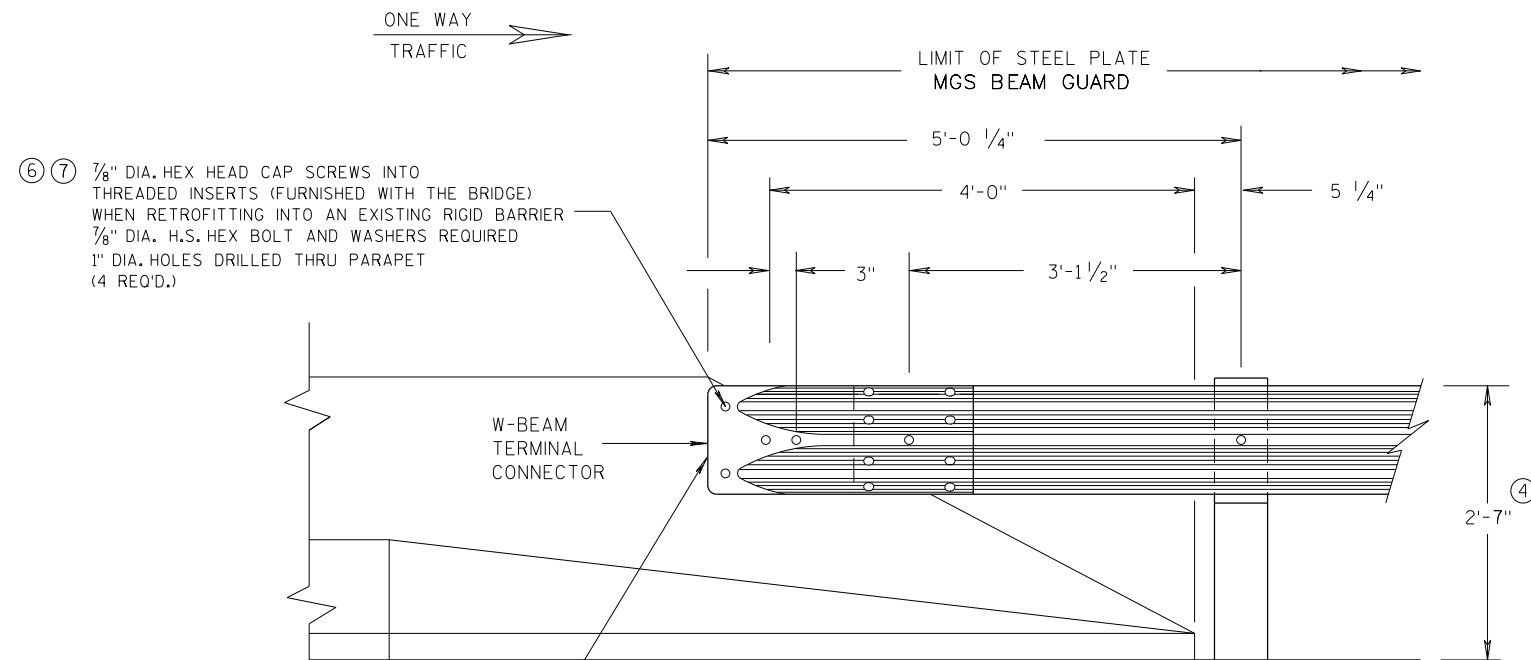
FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

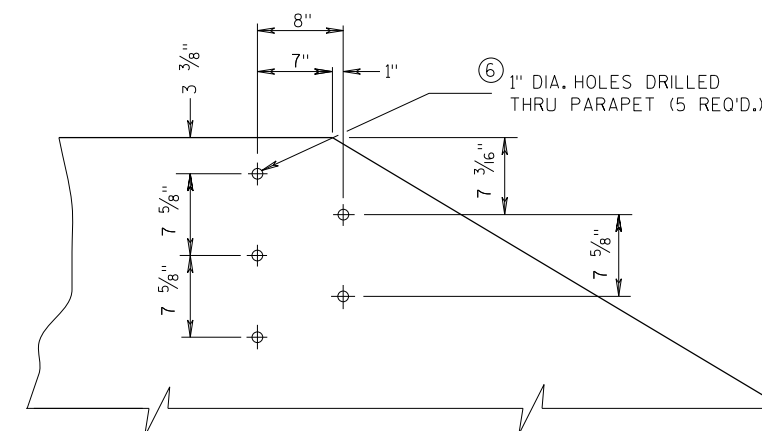
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07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 89



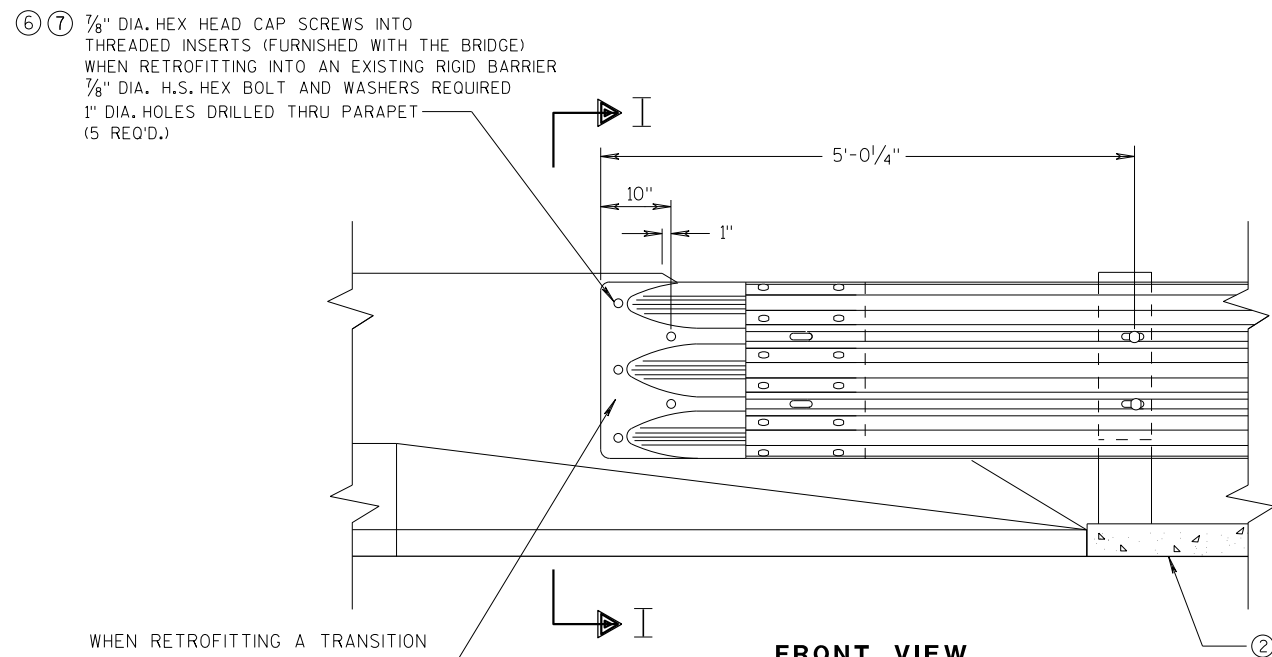
WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL PLATE WASHERS ON BACKSIDE OF RIGID BARRIER.

FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)



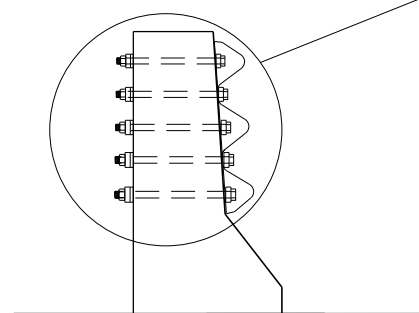
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



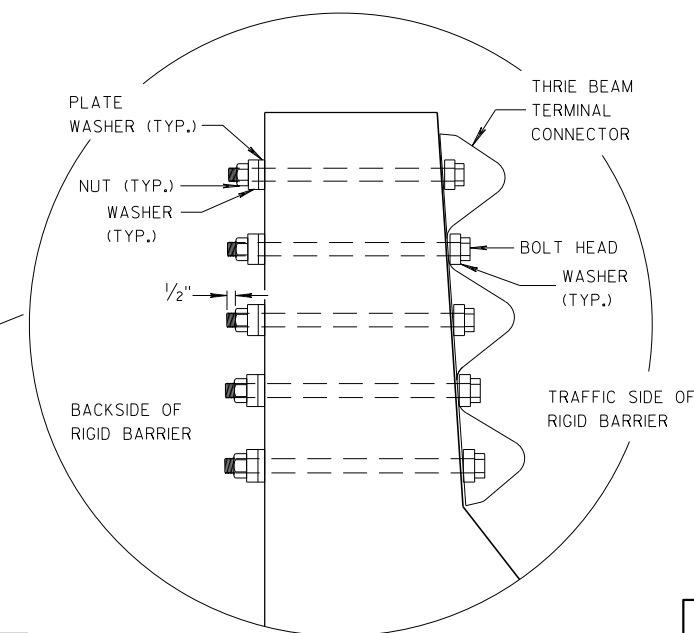
WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL PLATE WASHERS ON BACKSIDE OF RIGID BARRIER.

FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



SECTION I-I



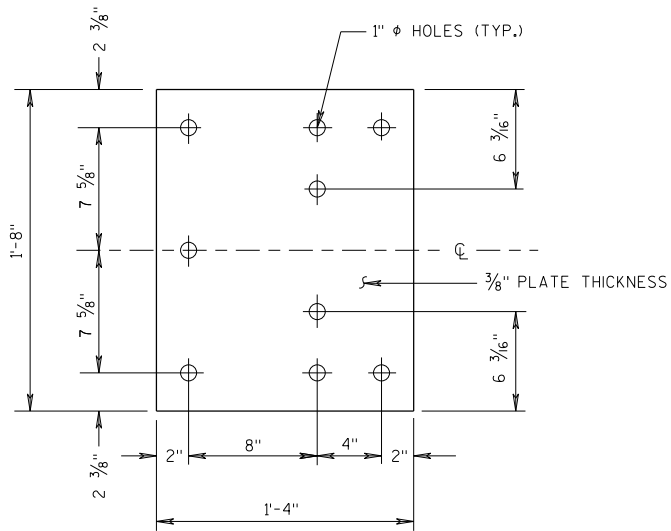
GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

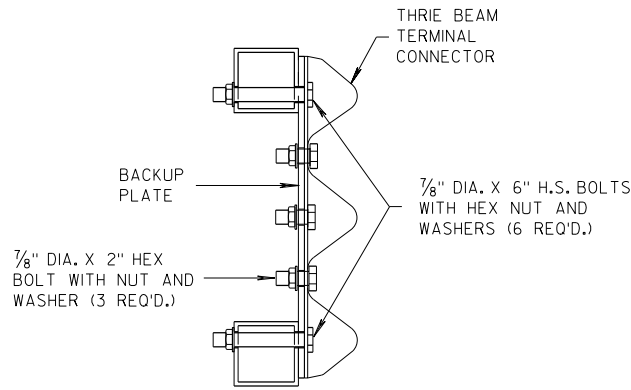
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

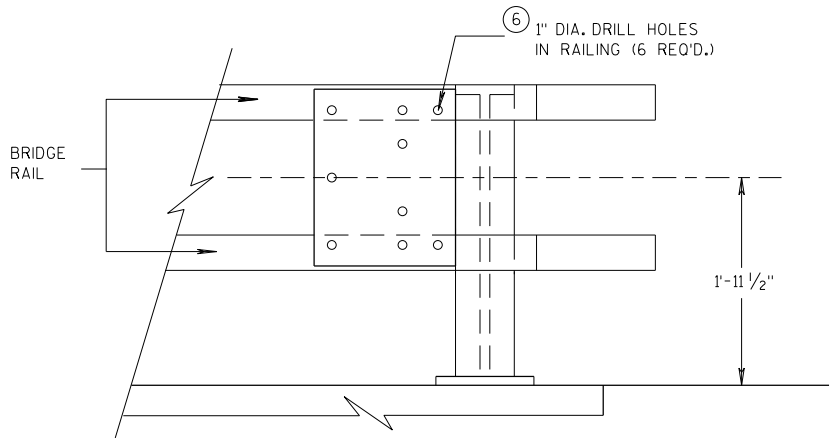
APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
FHWA



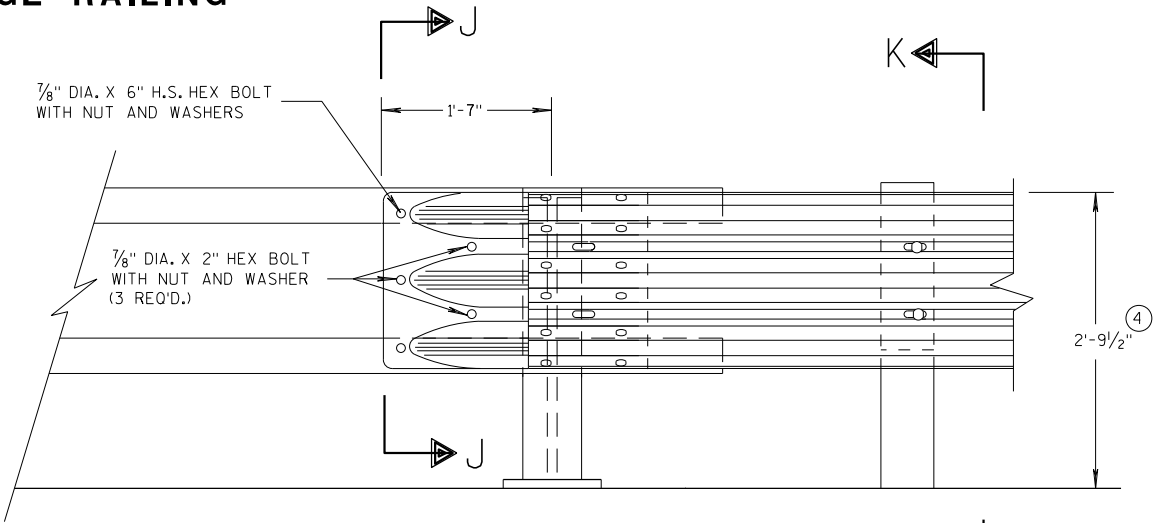
BACK-UP PLATE DETAIL



SECTION J-J

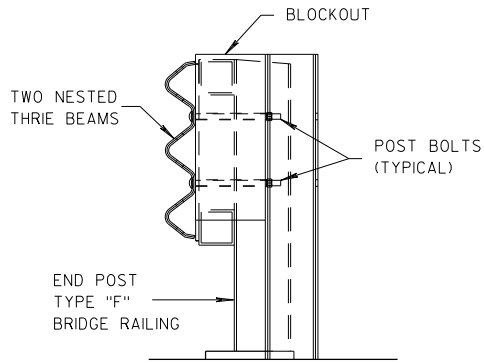


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

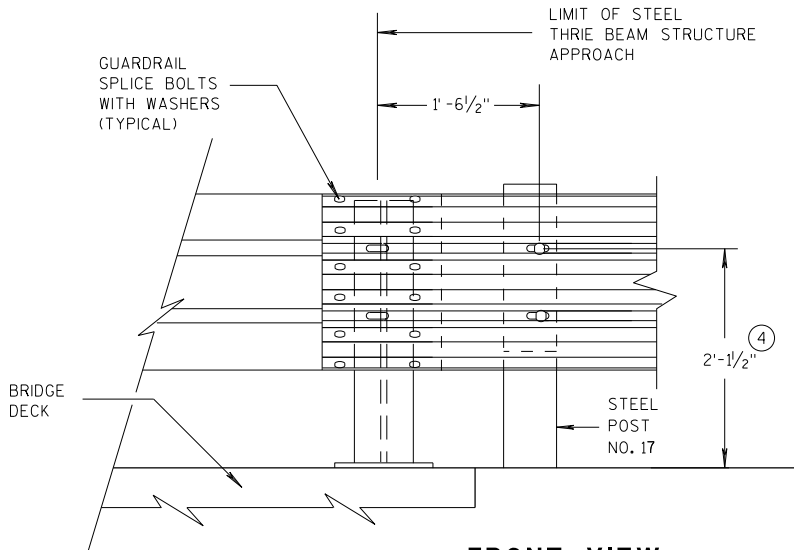
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



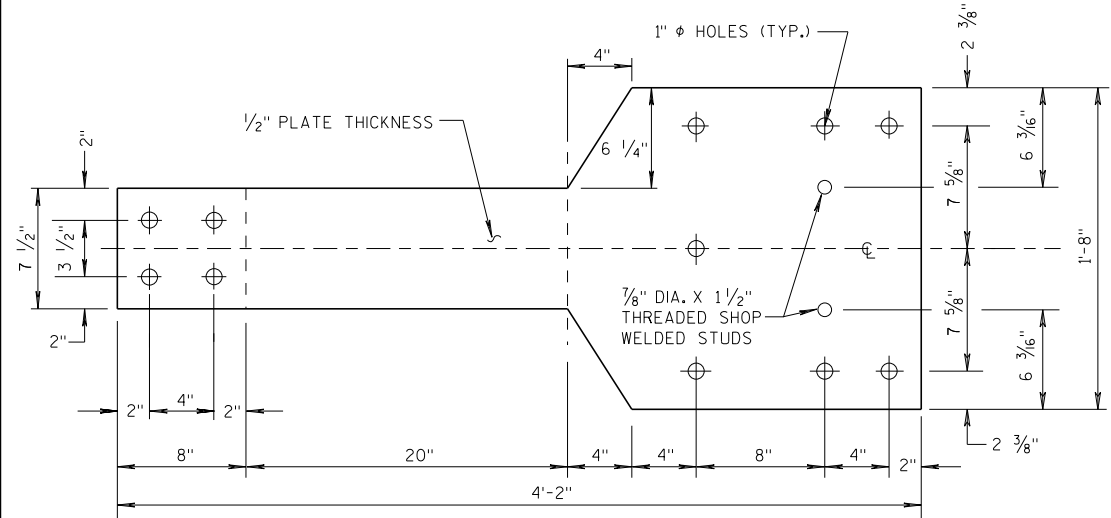
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

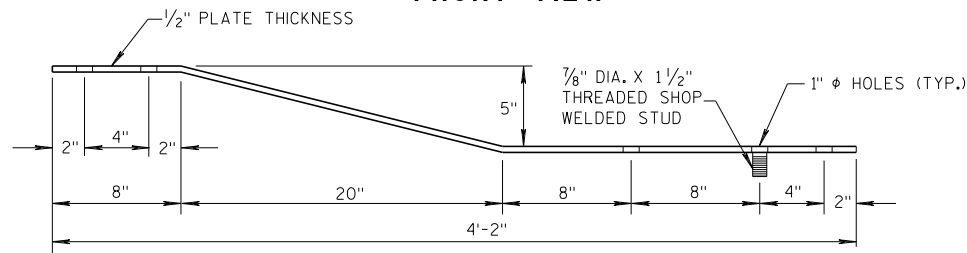
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor 91 ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
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GENERAL NOTES

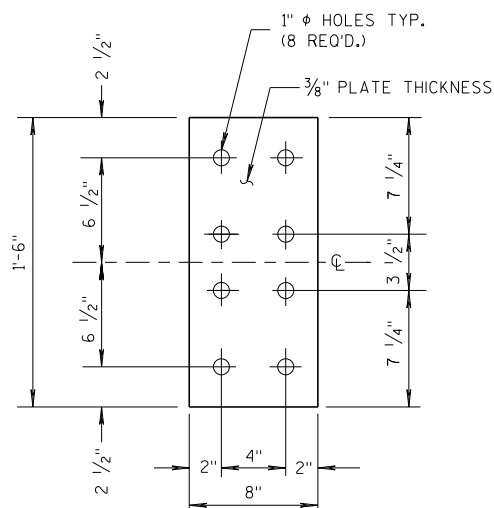
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

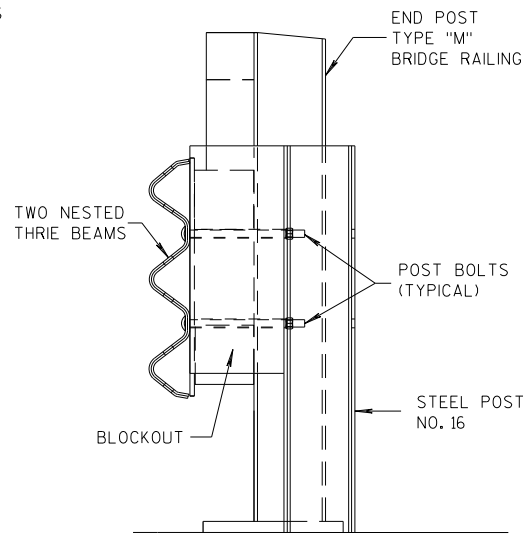


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

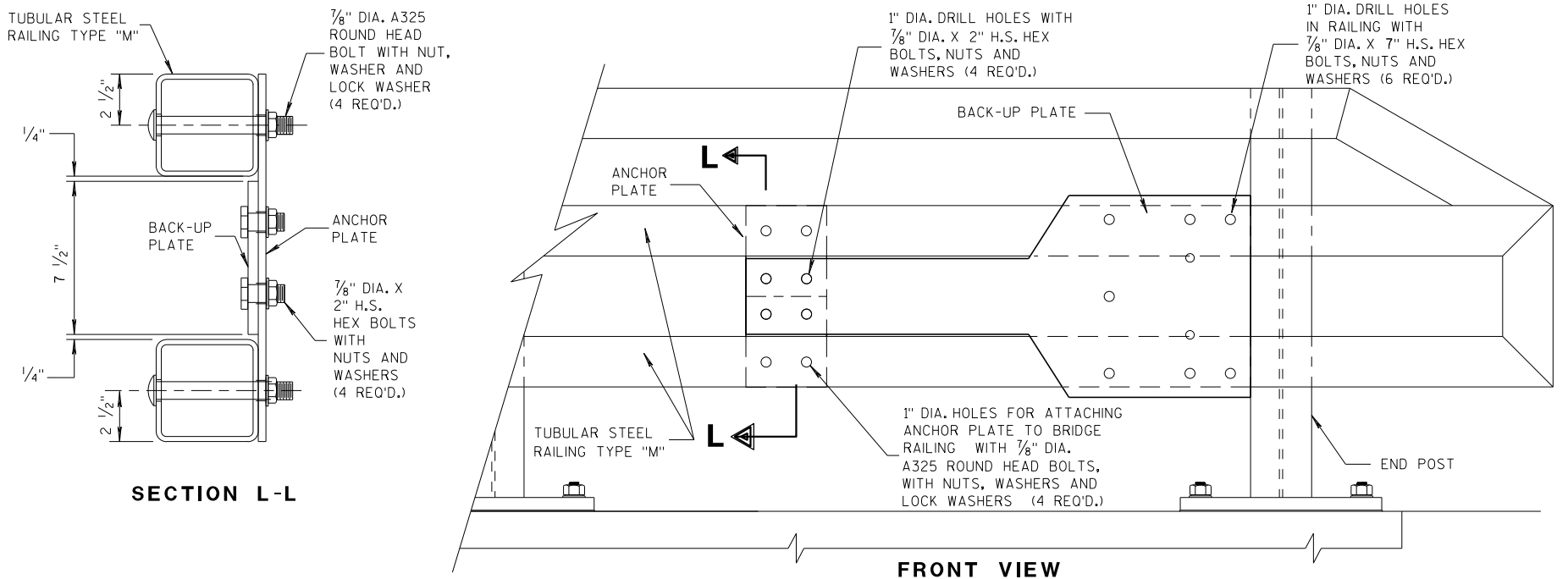


FRONT VIEW

ANCHOR
PLATE DETAIL,
TYPE "M"



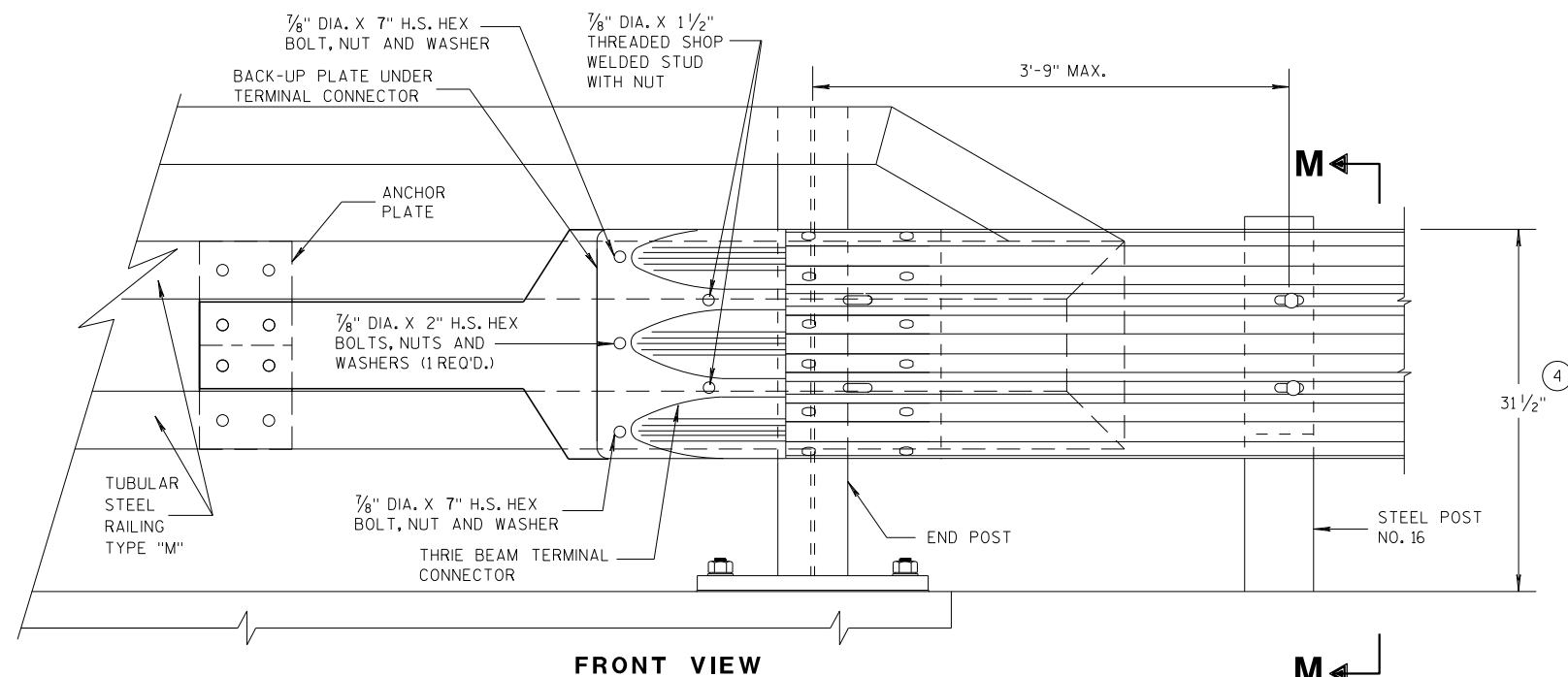
SECTION M-M



SECTION L-L

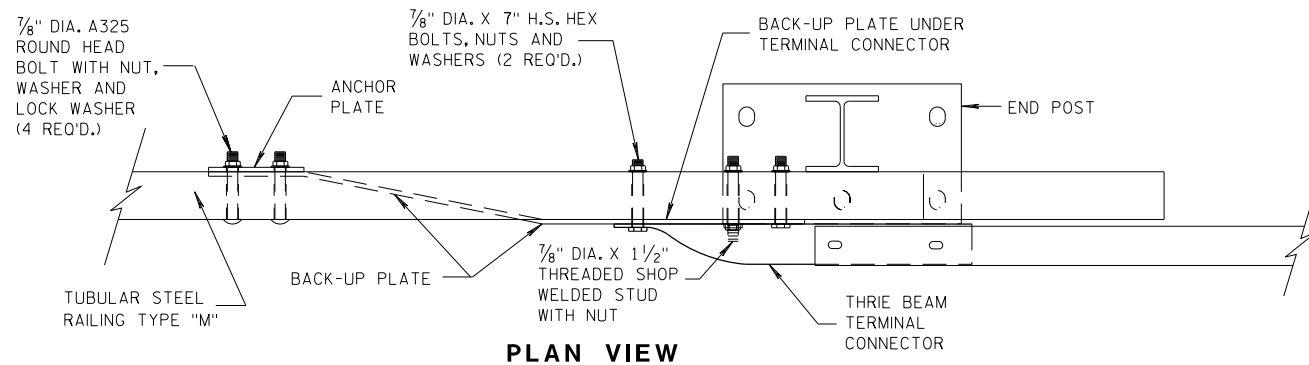
FRONT VIEW

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



FRONT VIEW

M



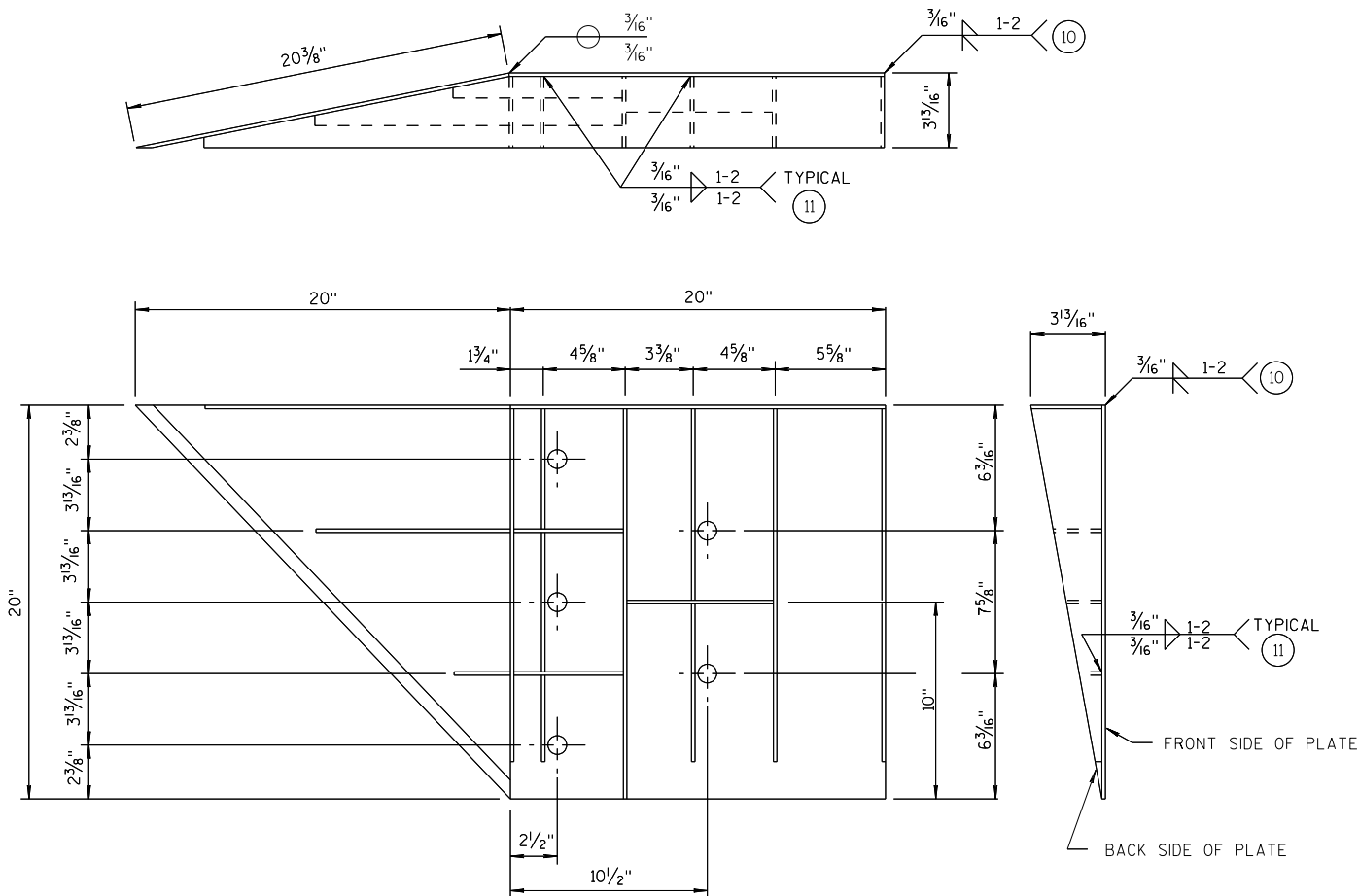
PLAN VIEW

THREE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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WELDING INSTRUCTION

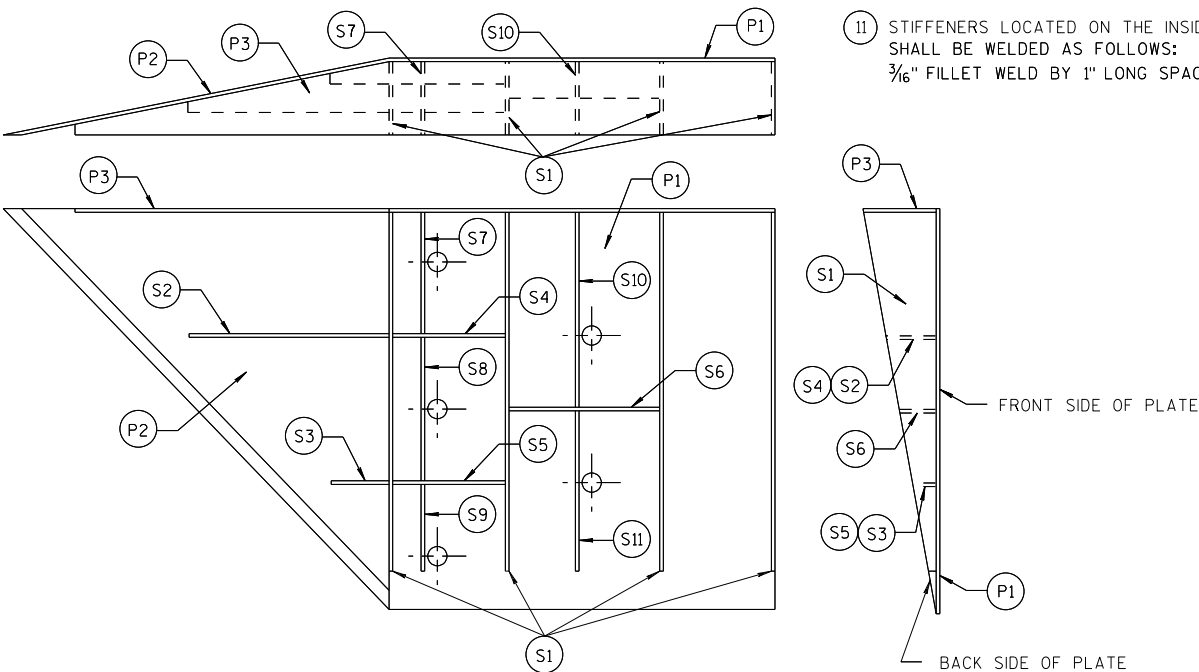
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

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

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)



GENERAL NOTES

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

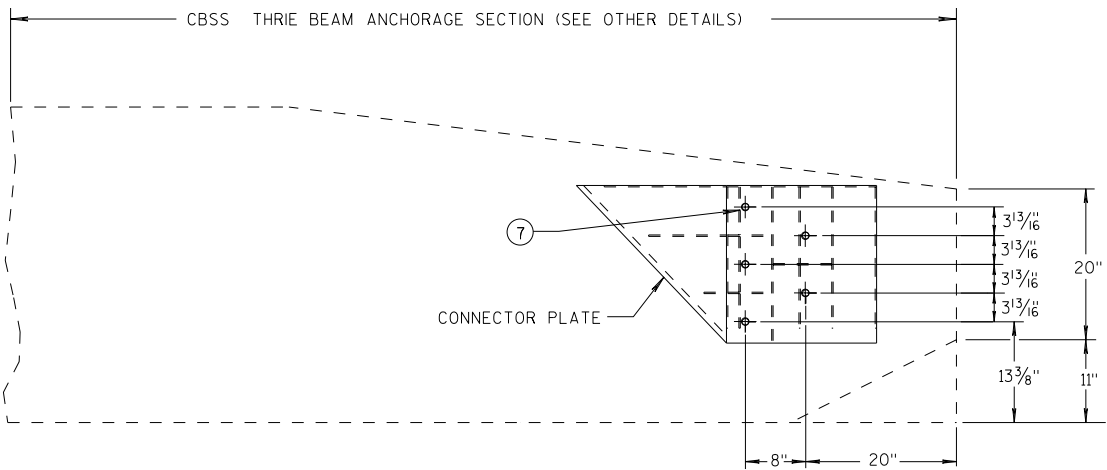
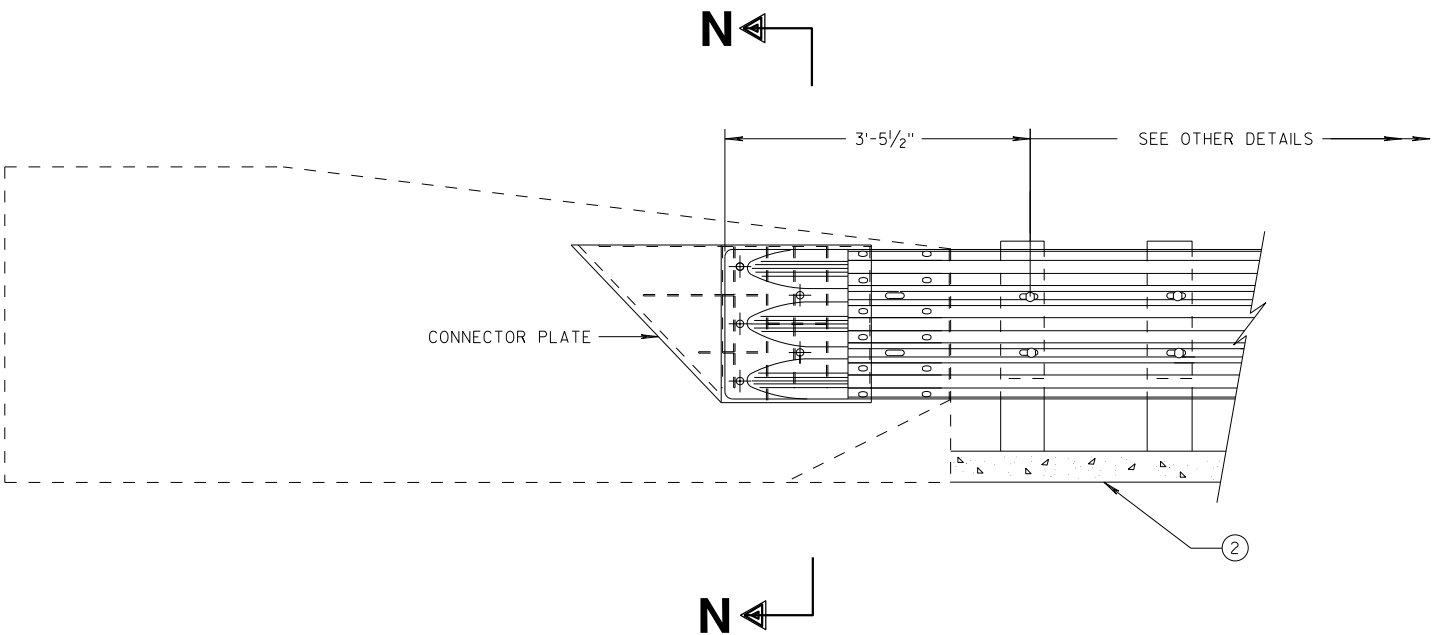
- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
193
ENT
FHWA

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



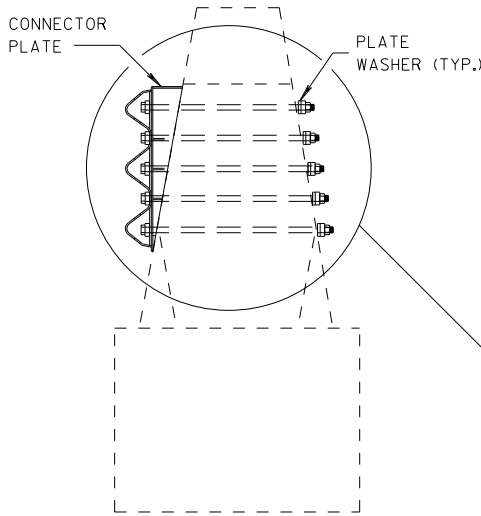
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

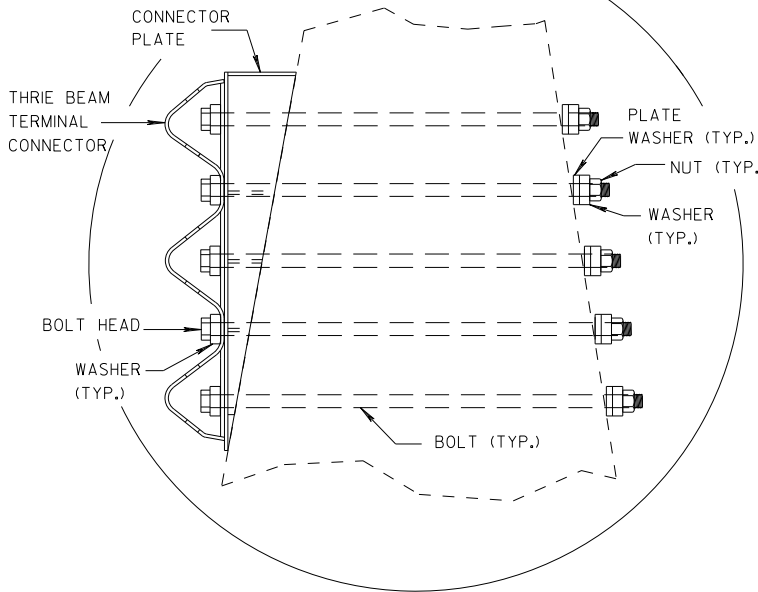
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTION 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.



SECTION N-N



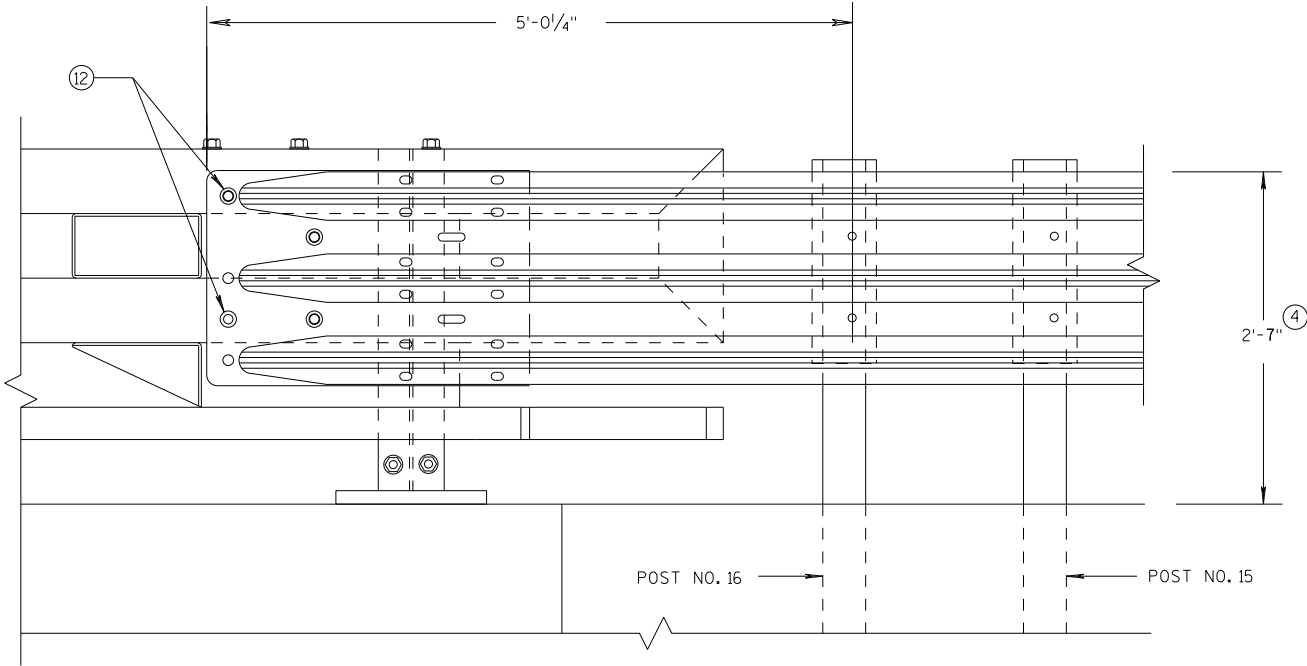
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

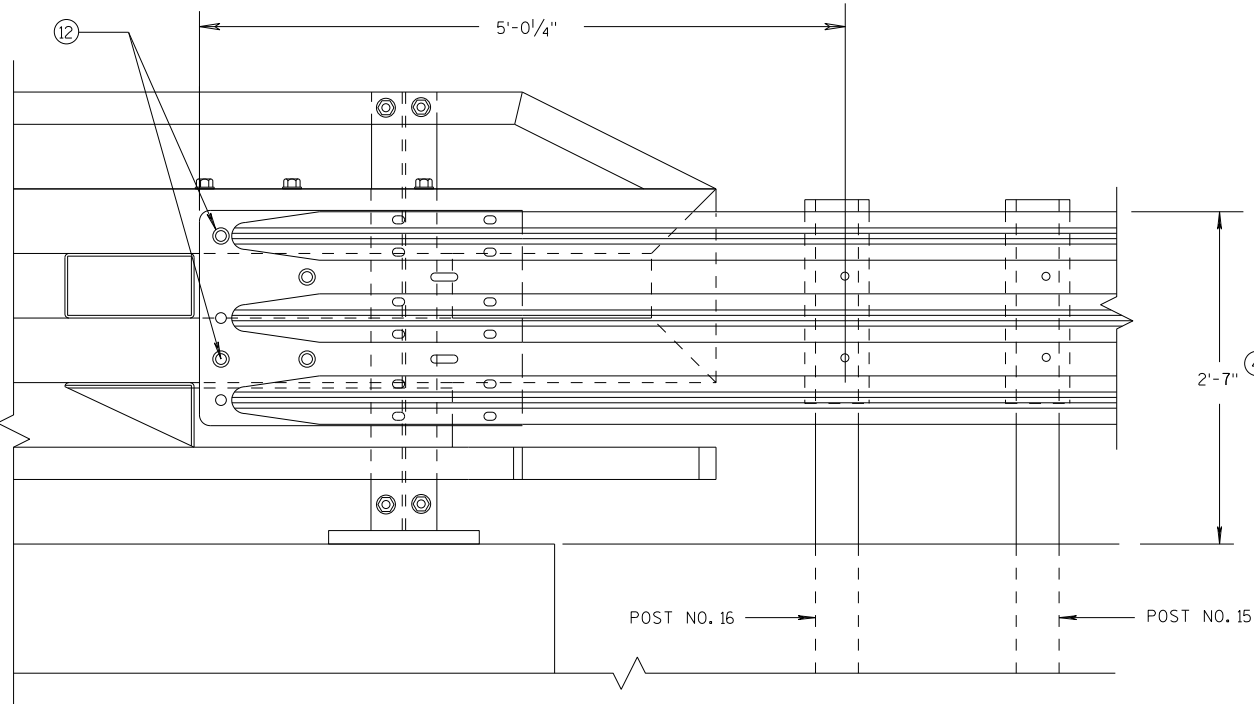
APPROVED
DATE 7/2018
ROADWAY STANDARDS DISTRICT SUPERVISOR /S/ Rodney Taylor
FHWA UNIT SUPERVISOR 94

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

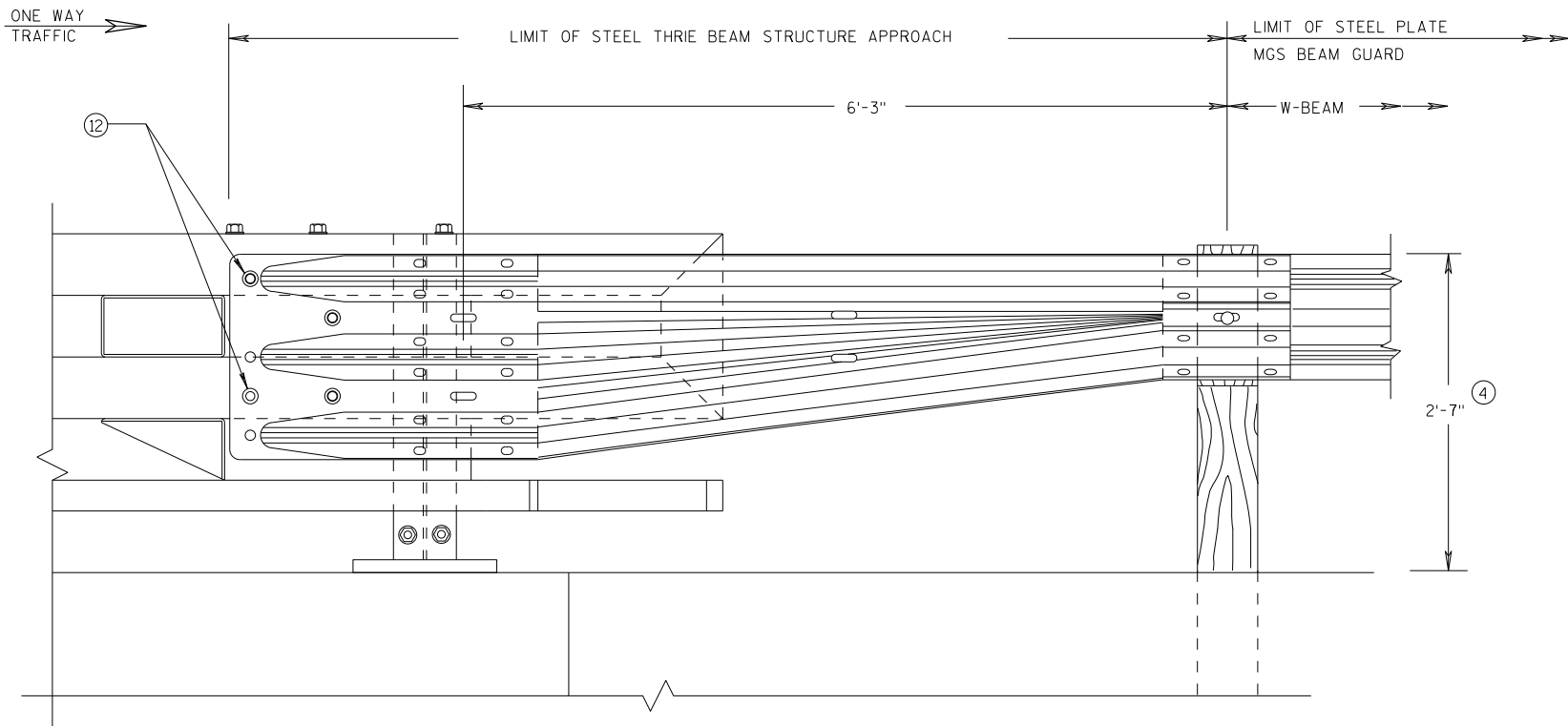


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	/S/ Rodney Taylor
DATE	7/2018
FHWA	ROADWAY STANDARDS C 95 UNIT SUPERVISOR NT



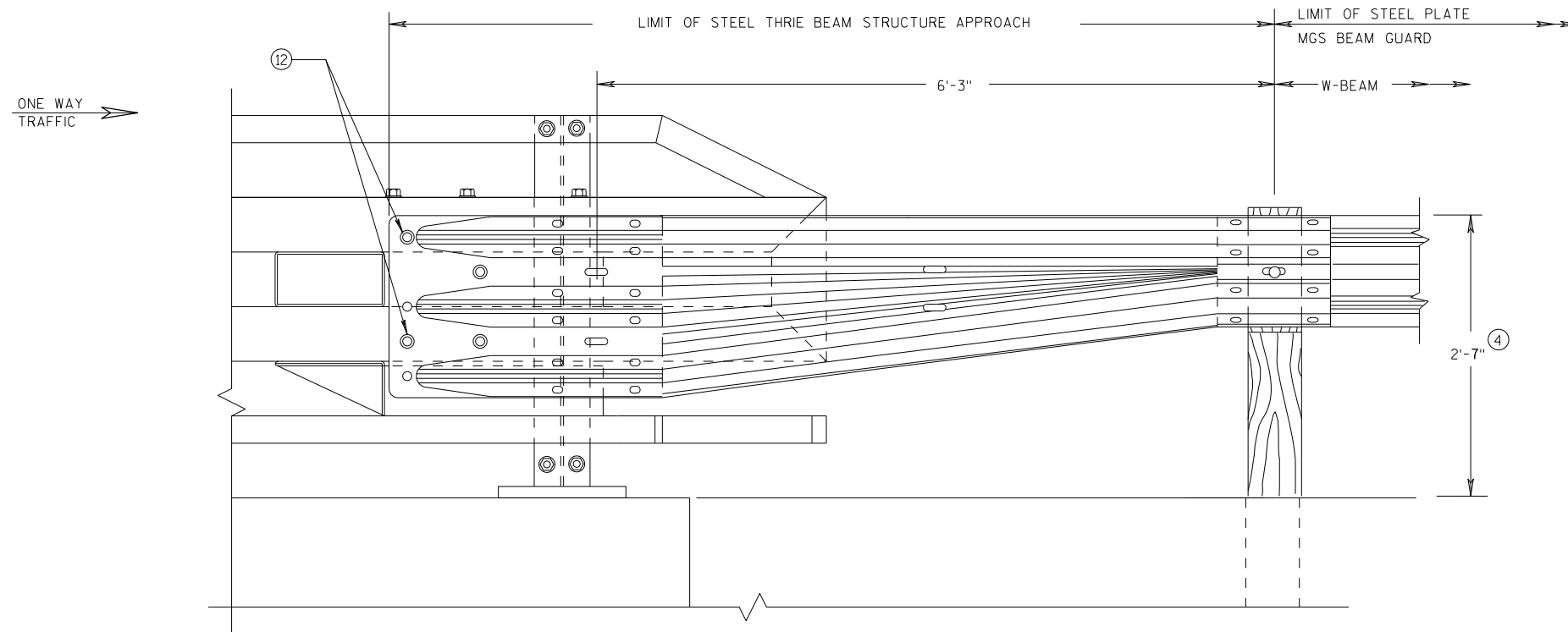
GENERAL NOTES

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

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.

FRONT VIEW

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



FRONT VIEW

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

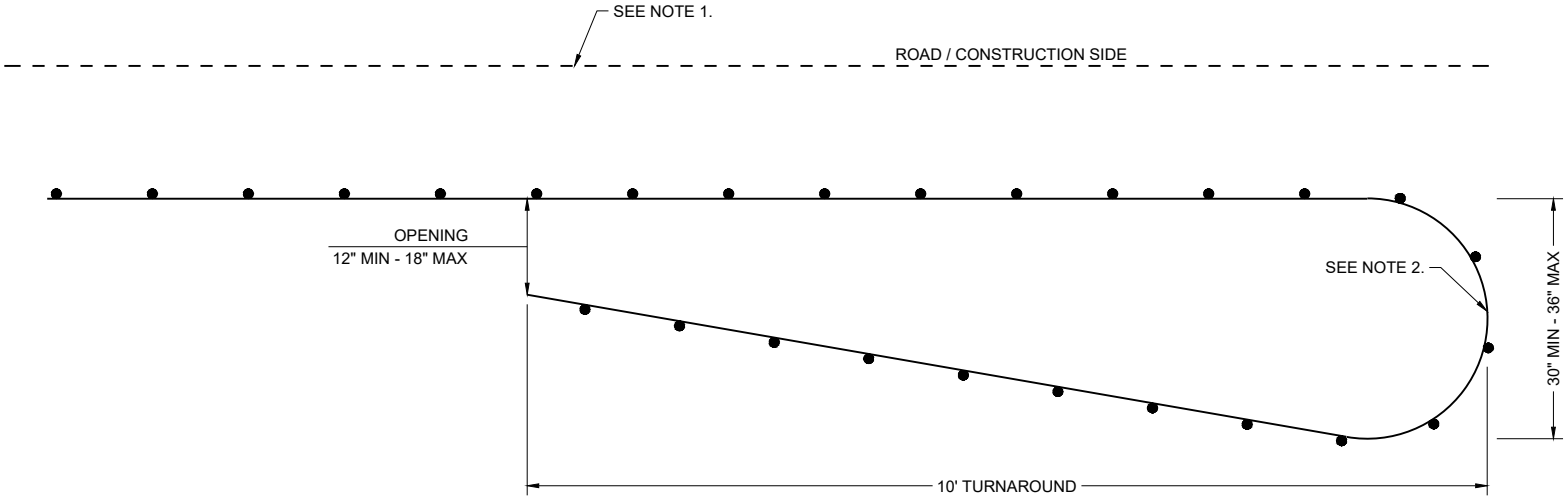
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS C 96
UNIT SUPERVISOR

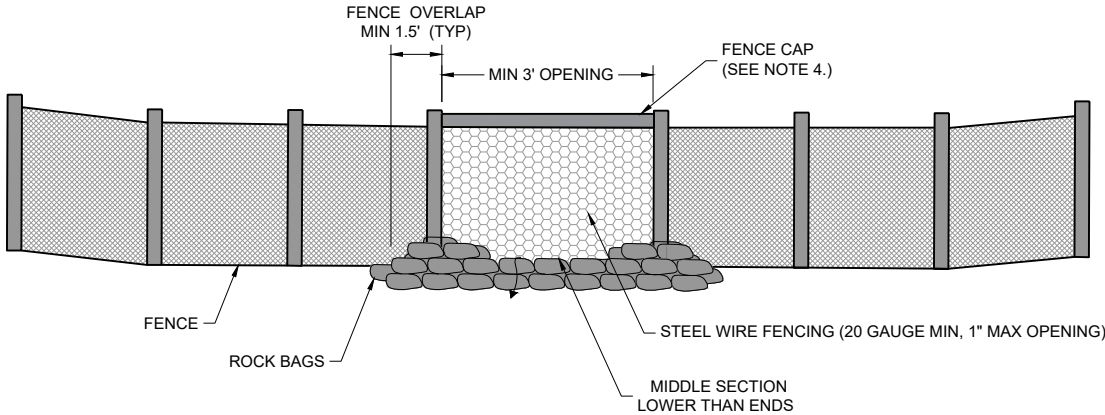
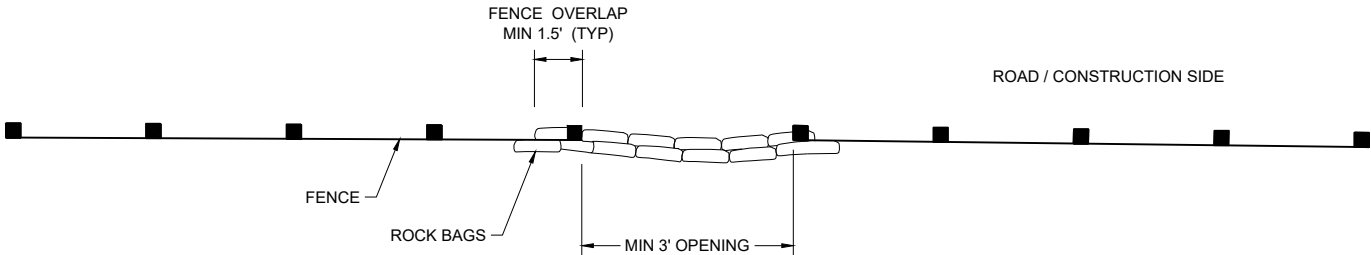
NT

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. COMMERCIALLY 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.

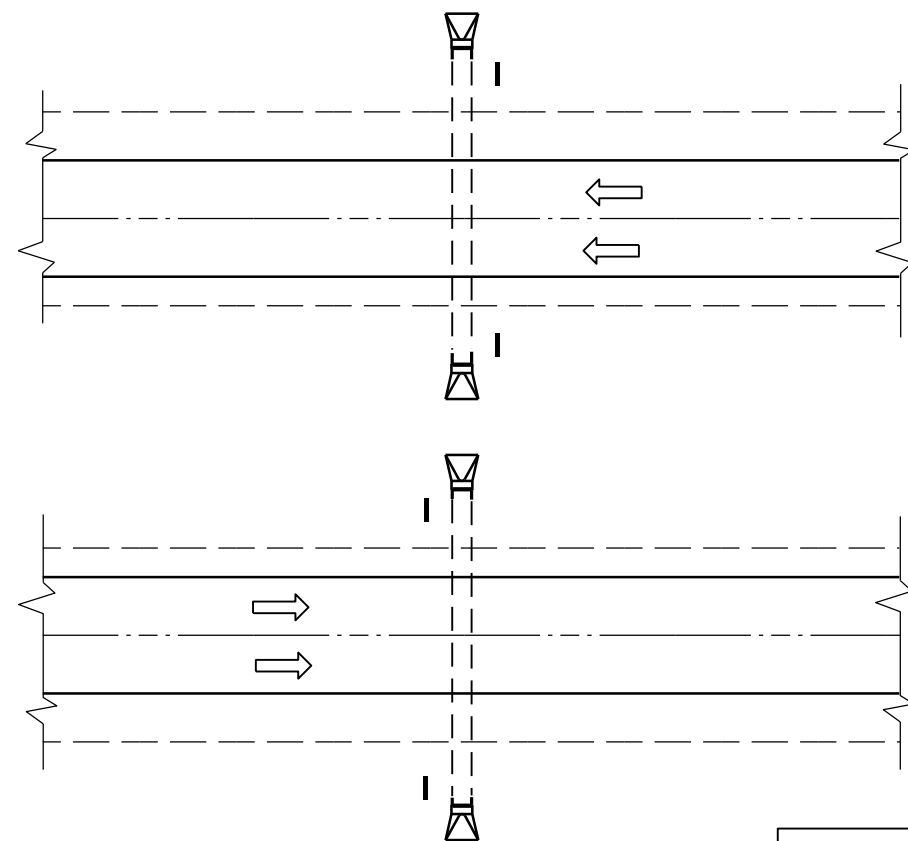


PLAN VIEW
CLIMBING TURTLE EXCLUSION FENCE DETAIL

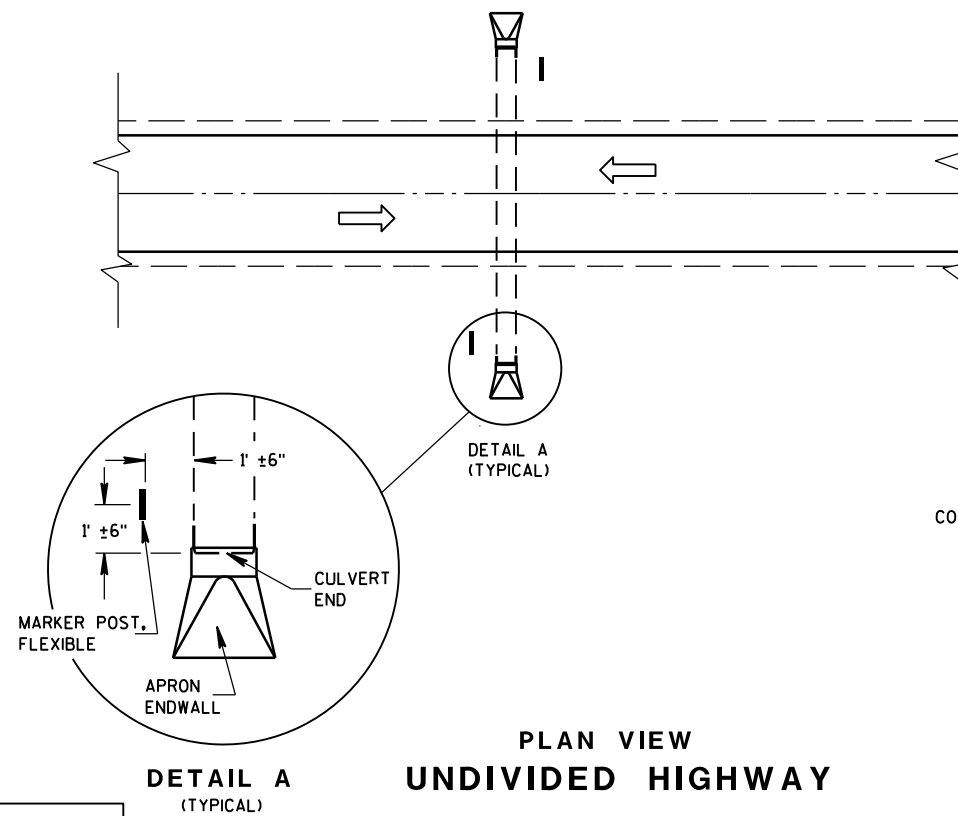


FRONT VIEW
CLIMBING TURTLE FENCE RELIEF DETAIL

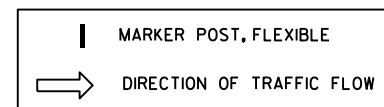
TURTLE EXCLUSION FENCE CLIMBING TURTLE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED AUGUST 2025 DATE	/S/ ALYSSA BARRETTE CHIEF STATEWIDE ENVIRONMENTAL SERVICES BUREAU OF TECHNICAL SER
FHWA 97	



PLAN VIEW
DIVIDED HIGHWAY



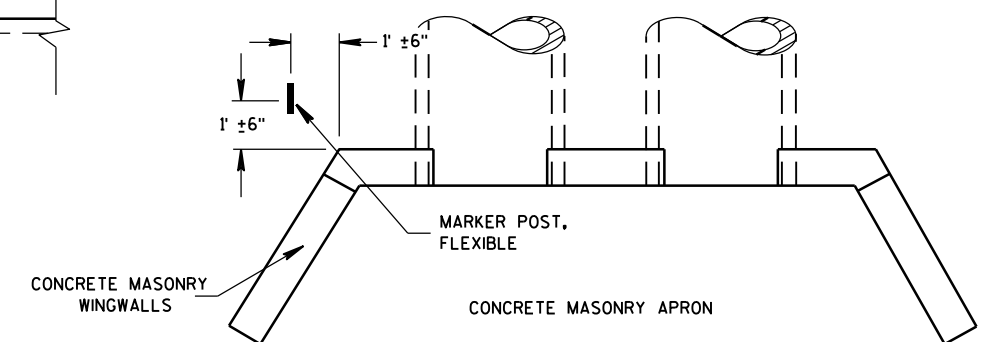
PLAN VIEW
UNDIVIDED HIGHWAY



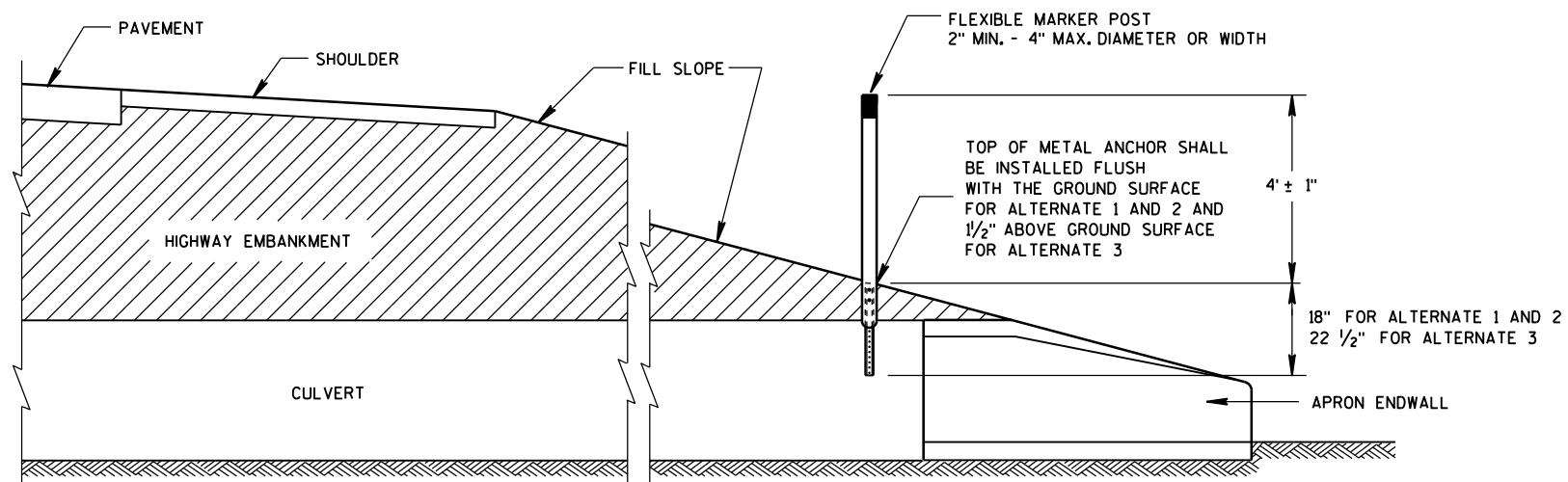
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



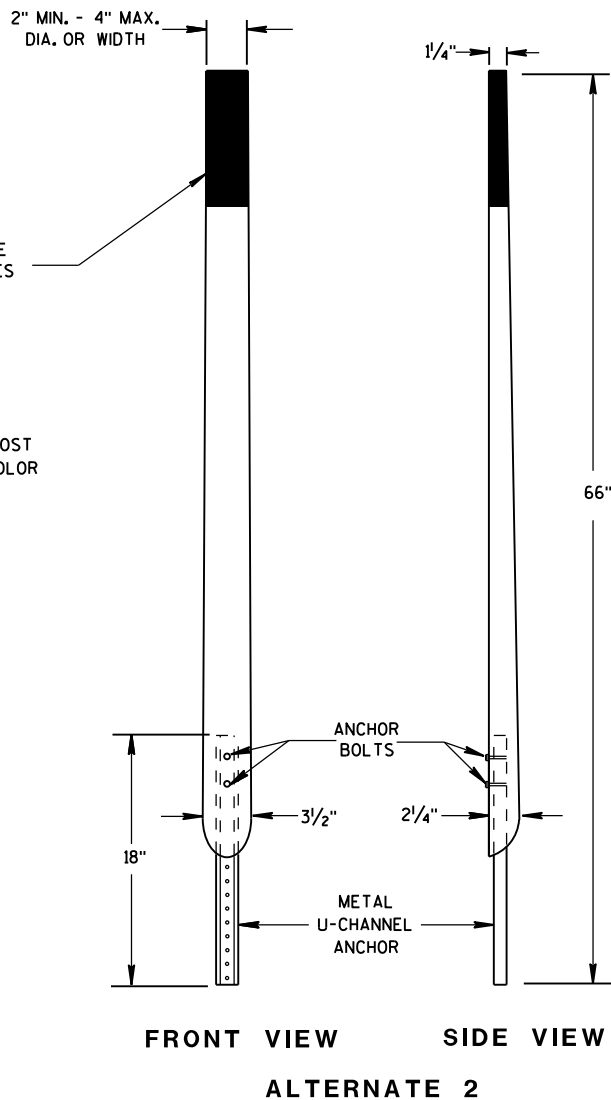
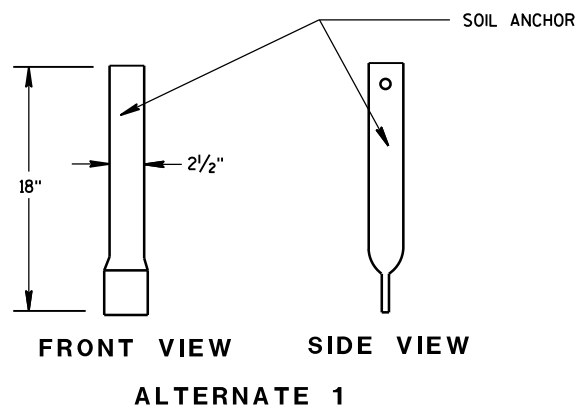
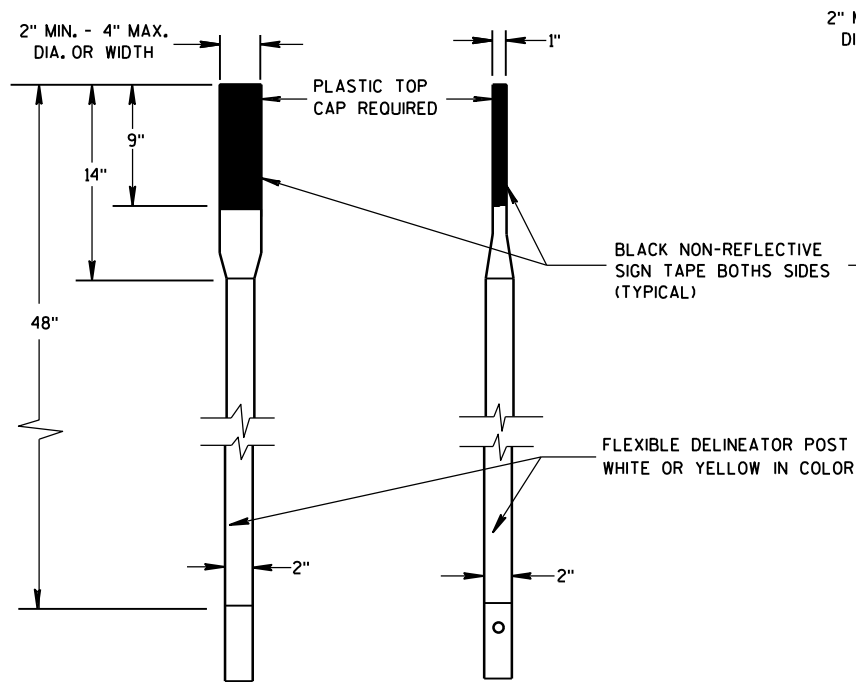
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



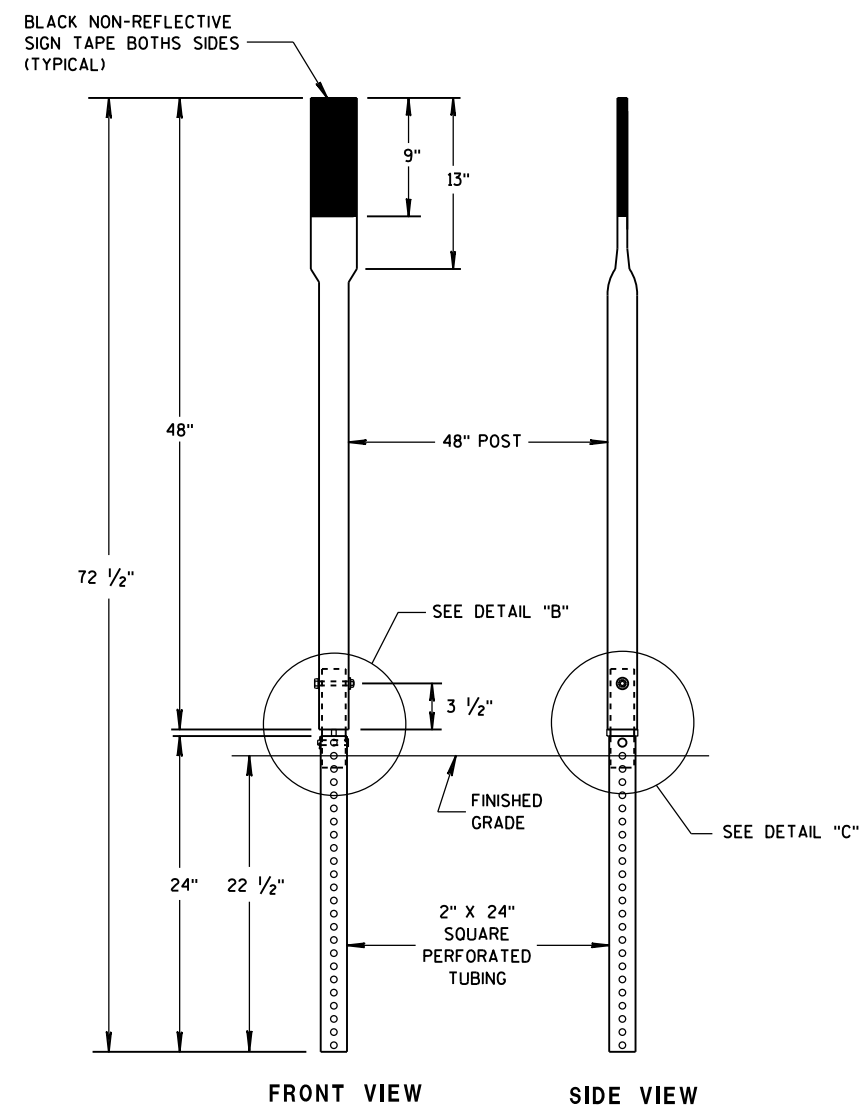
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

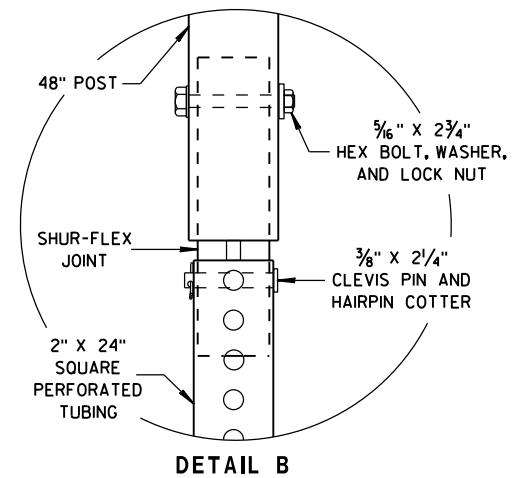
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



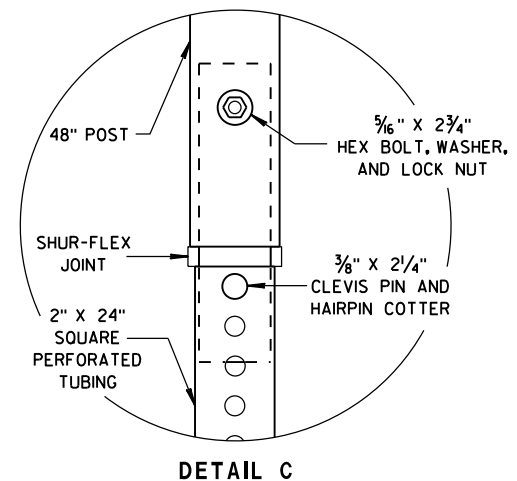
FLEXIBLE MARKER POSTS



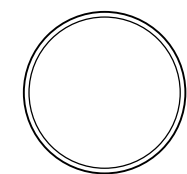
FLEXIBLE MARKER POSTS



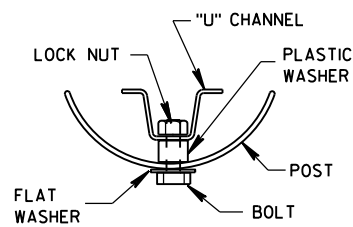
DETAIL B



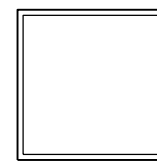
DETAIL C



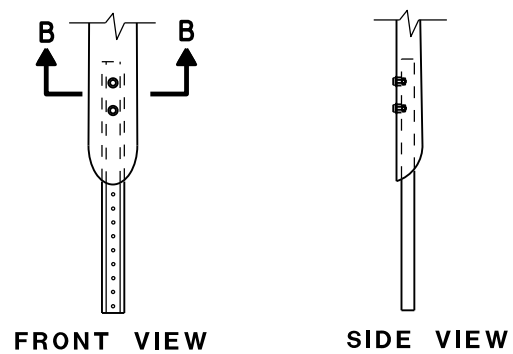
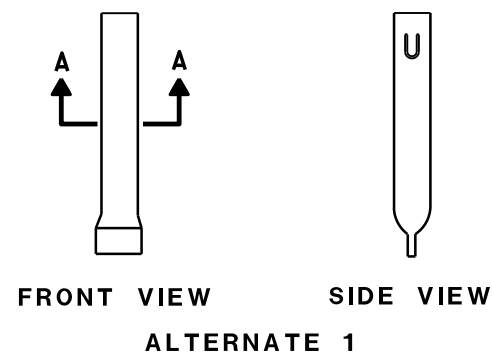
SECTION A-A



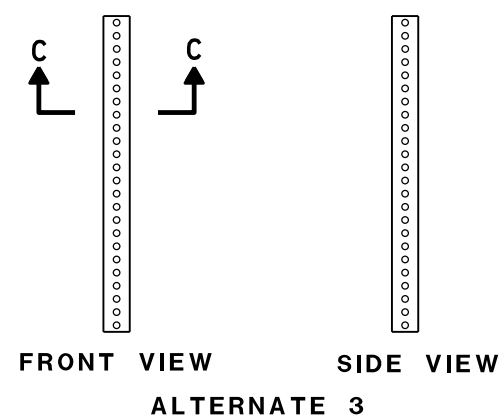
SECTION B-B



SECTION C-C



FLEXIBLE MARKER POST ANCHORS



FLEXIBLE MARKER POSTS

FLEXIBLE MARKER POST
FOR CULVERT ENDSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/2012

DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

IGN

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.

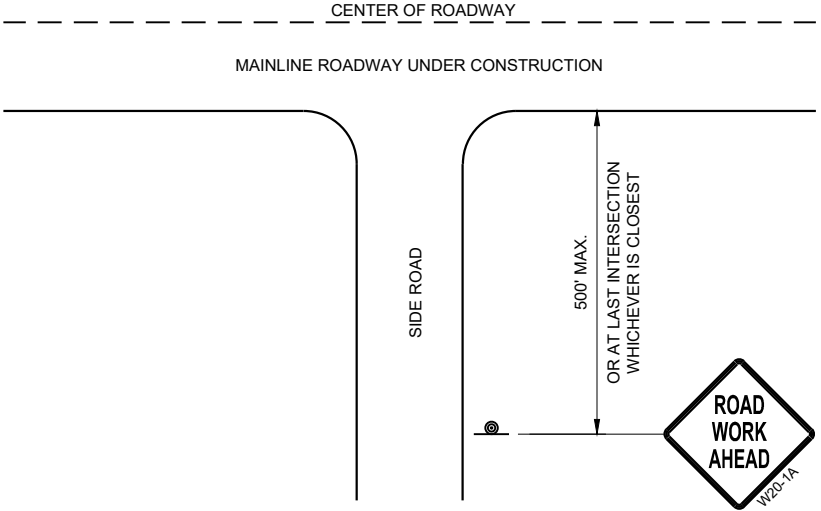
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

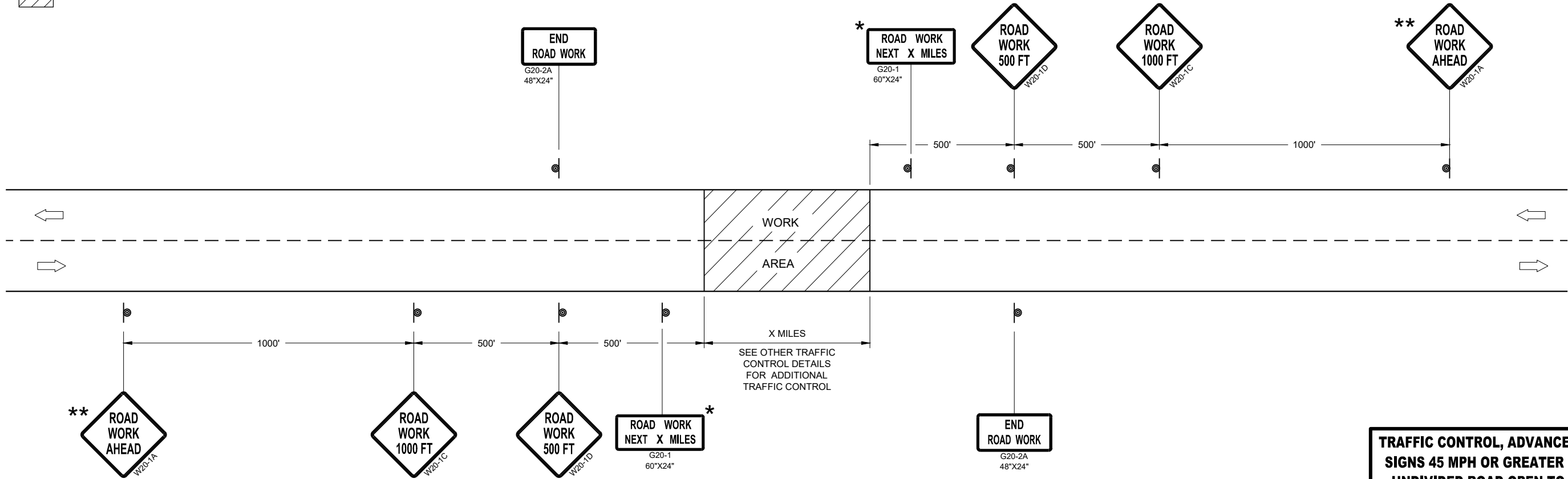
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



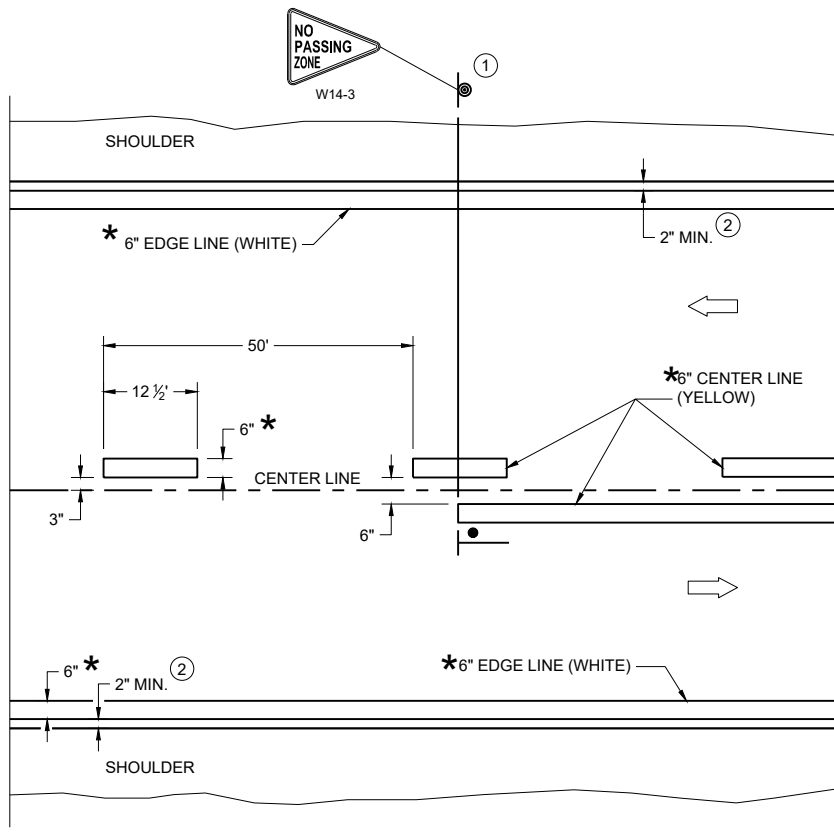
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

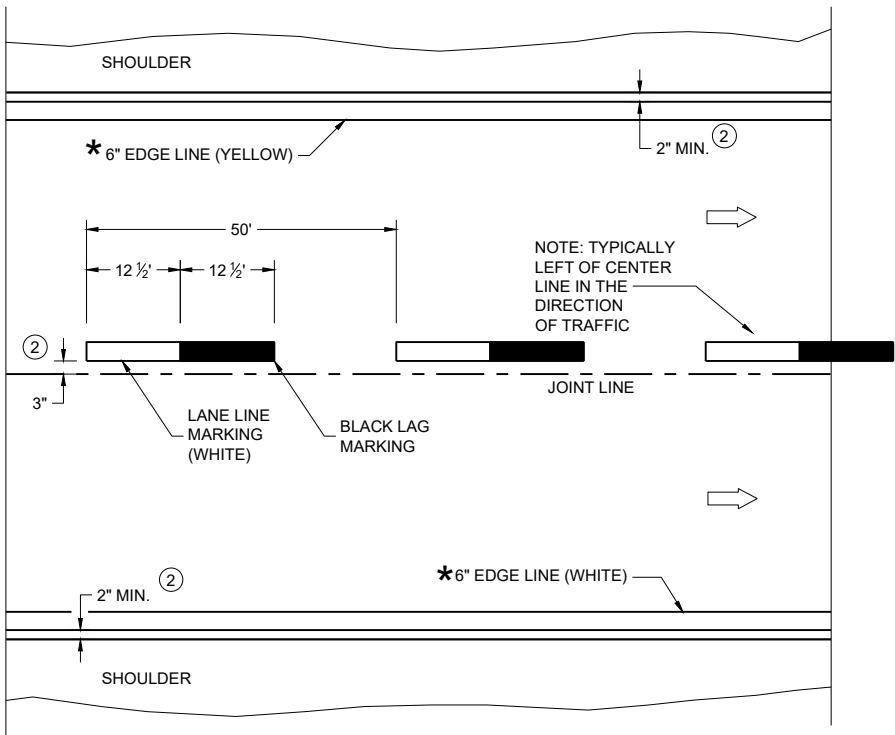
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 100

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

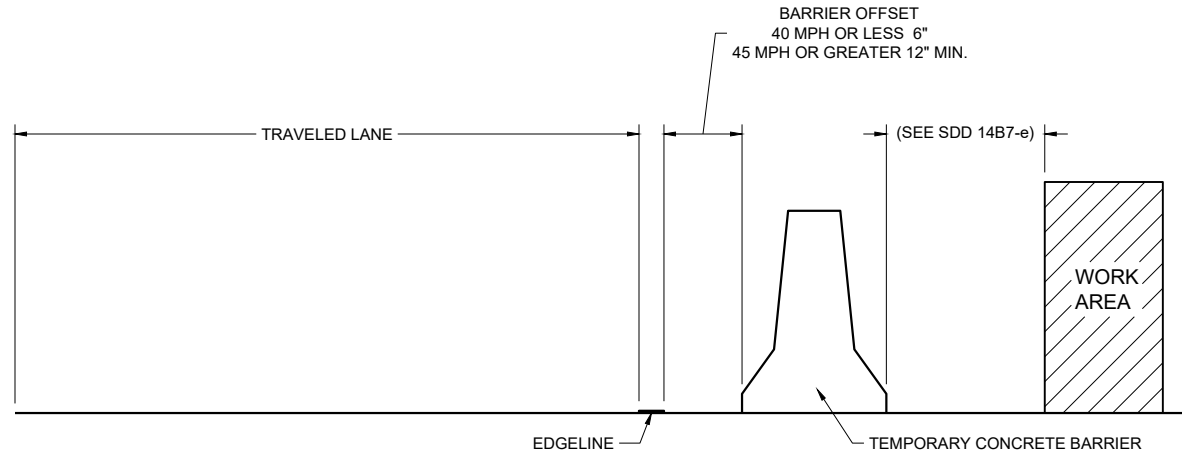
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

LEGEND

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

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA 101	



TEMPORARY BARRIER OFFSET FROM EDGE LINE

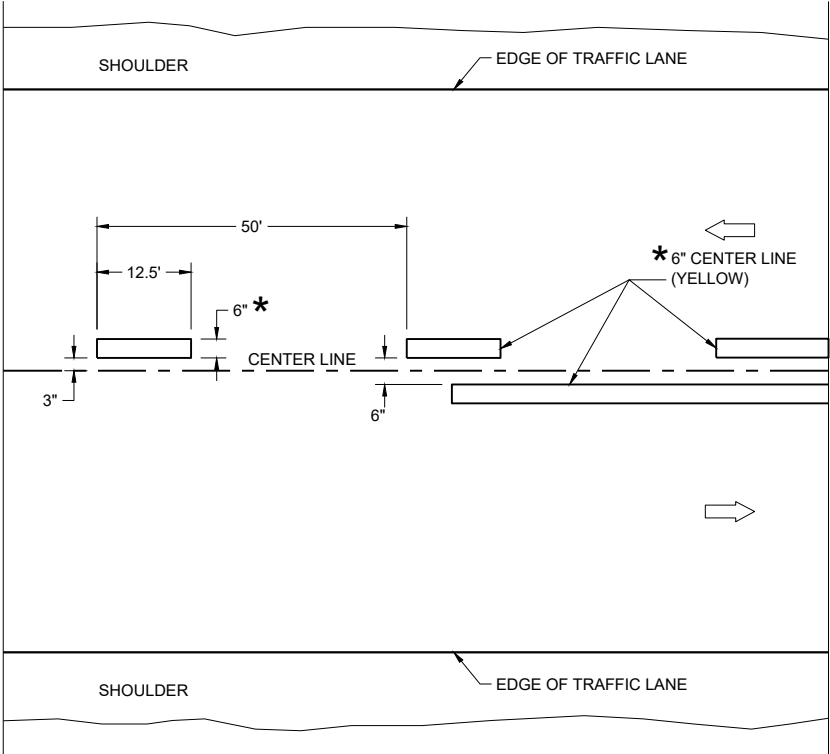
GENERAL NOTES

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

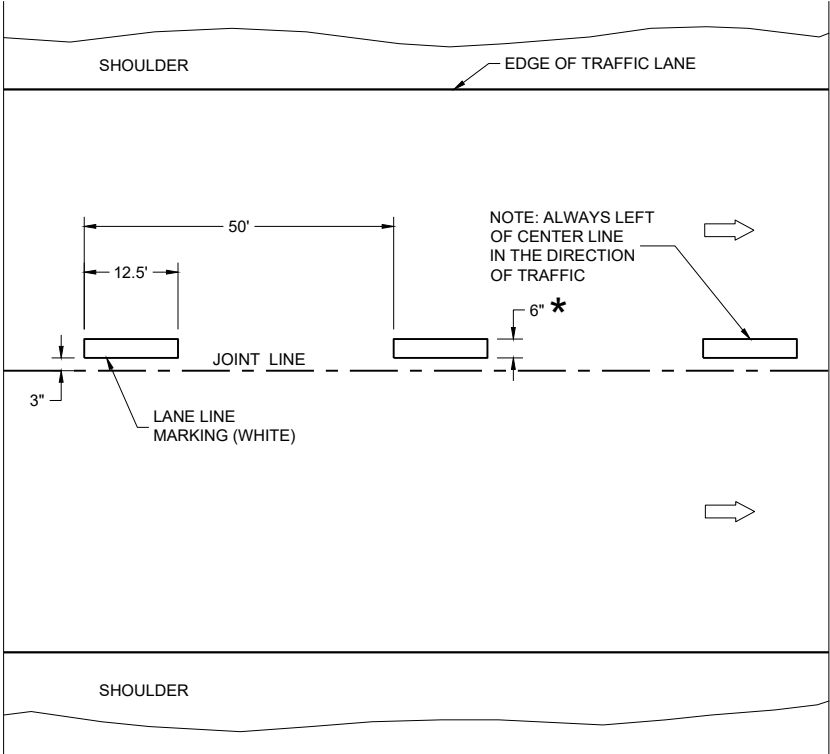
LEGEND

DIRECTION OF TRAFFIC

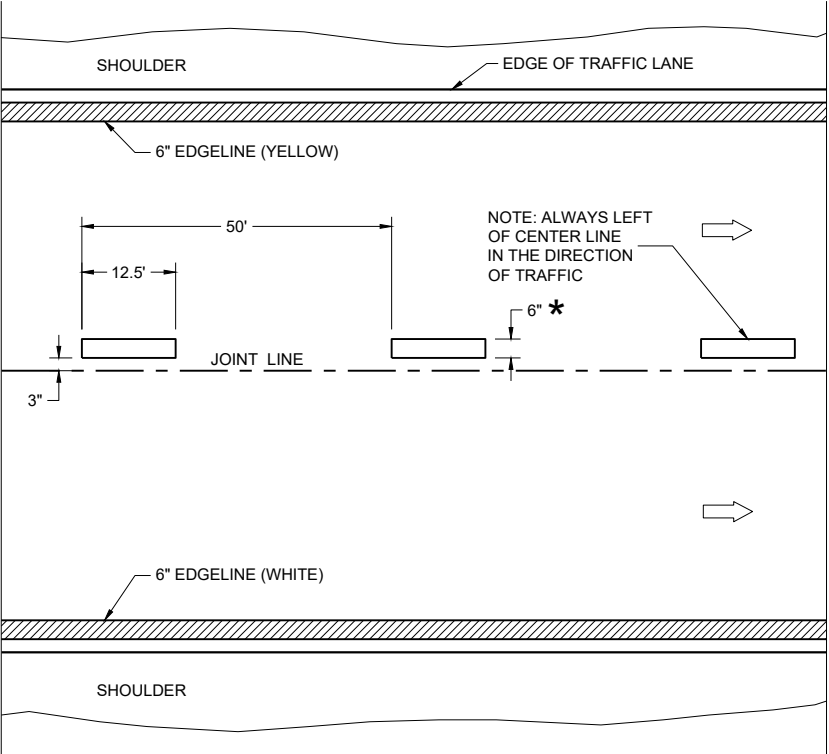
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC

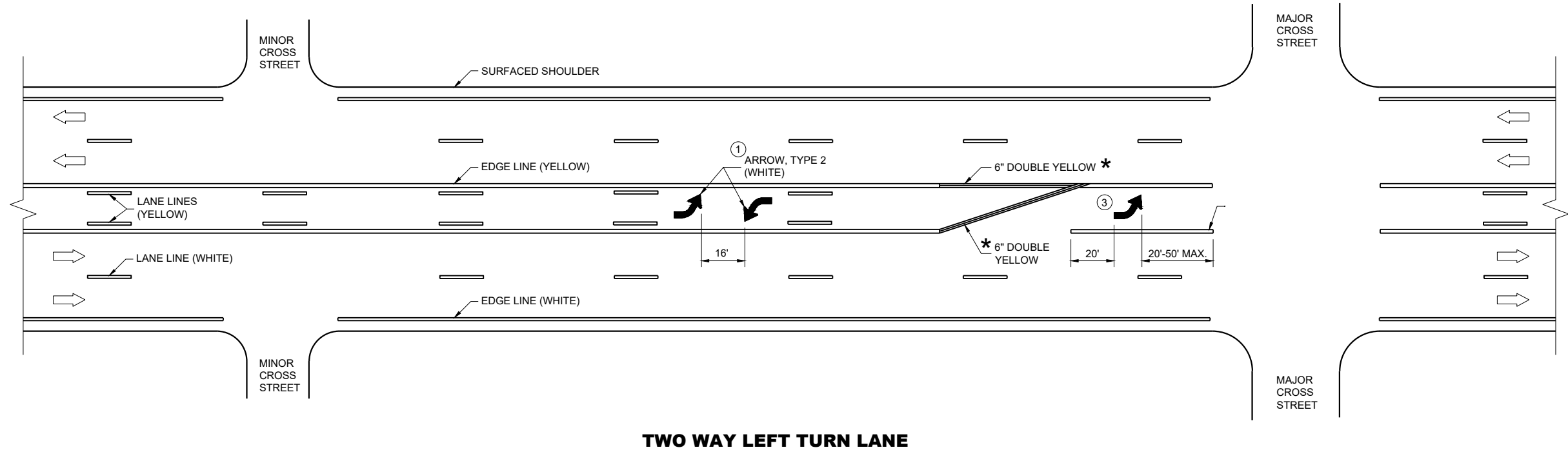


FREEWAYS AND EXPRESSWAYS

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

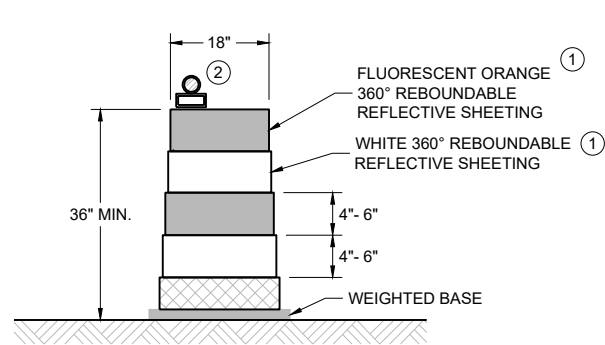


GENERAL NOTES

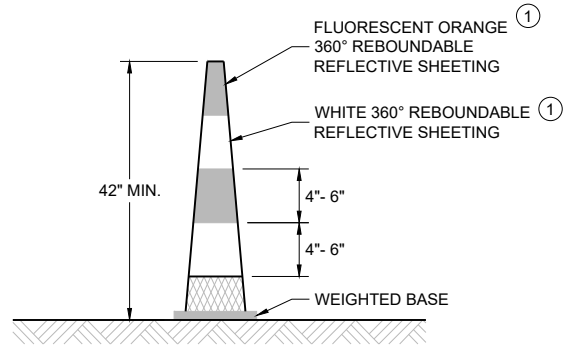
- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 10" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

➡ DIRECTION OF TRAFFIC

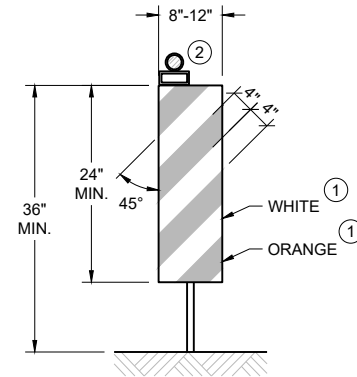
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



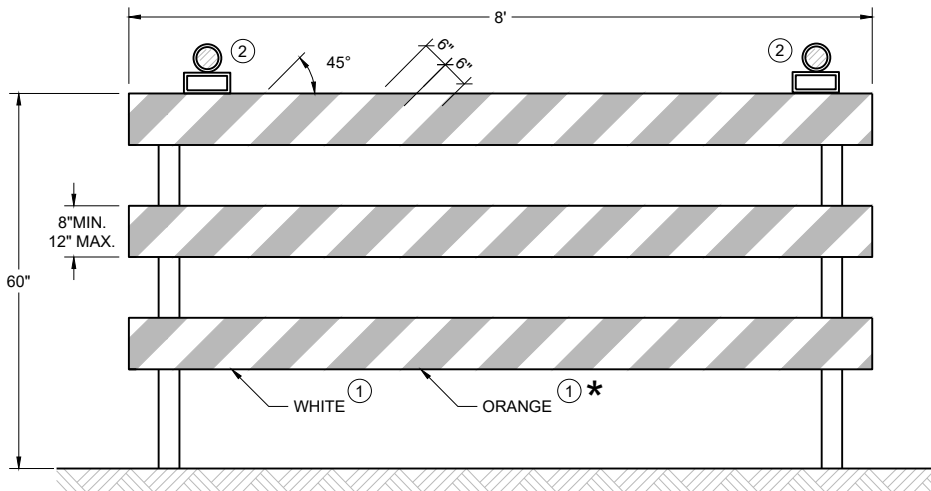
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



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

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

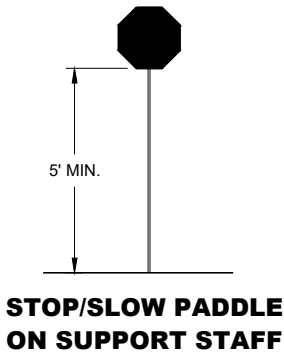
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

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

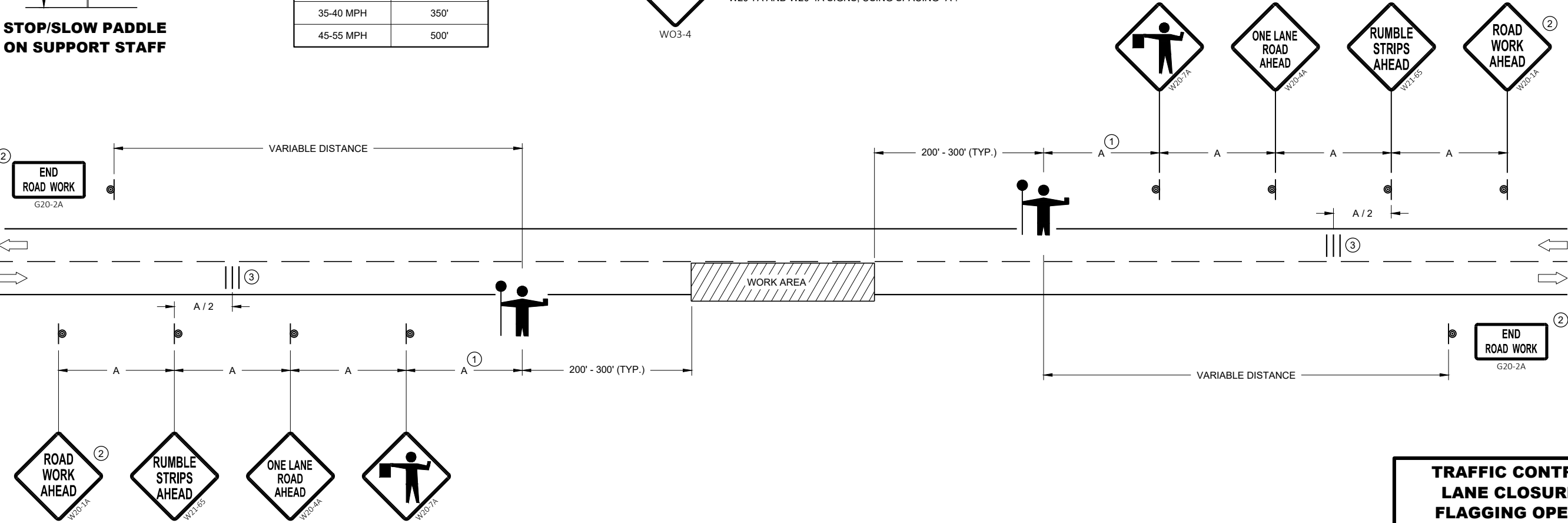


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 105
FHWA	

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

SIGN ON TEMPORARY SUPPORT
- 

DIRECTION OF TRAFFIC

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH

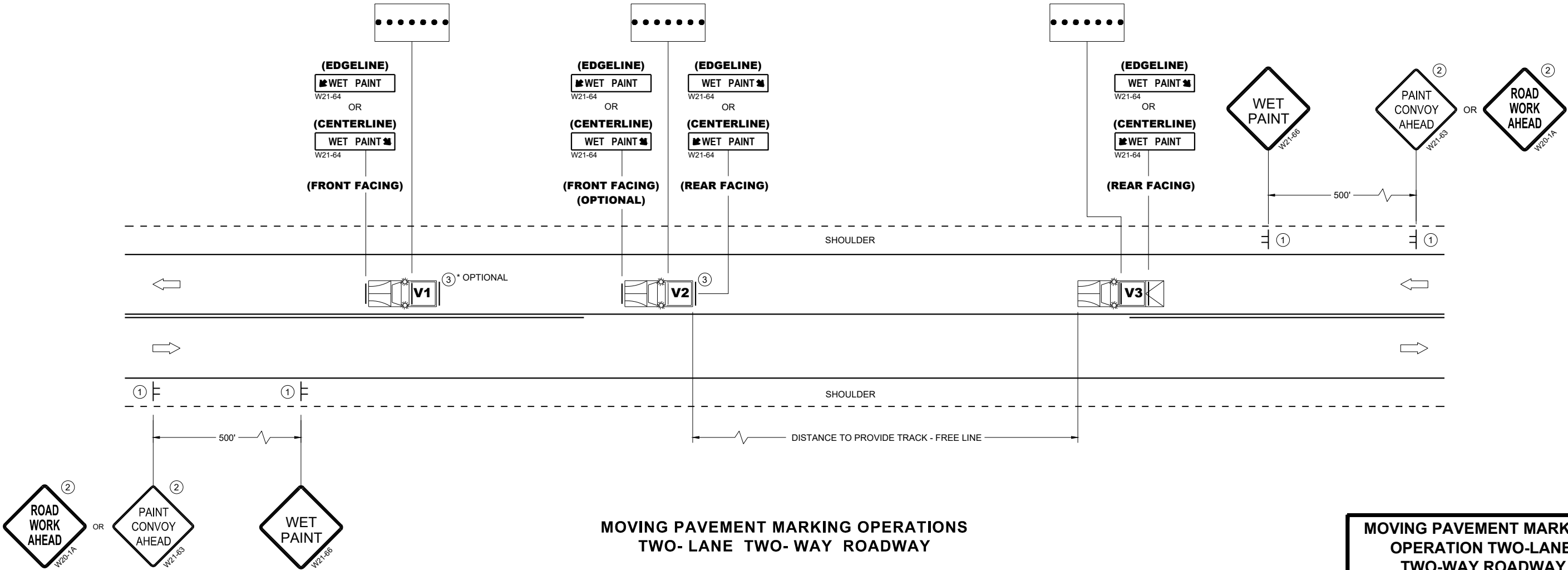
WORKERS SHALL NOT PERFORM WORK FROM ANY SHADOW OR PROTECTION VEHICLES.

UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY MAJOR INTERSECTION.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.

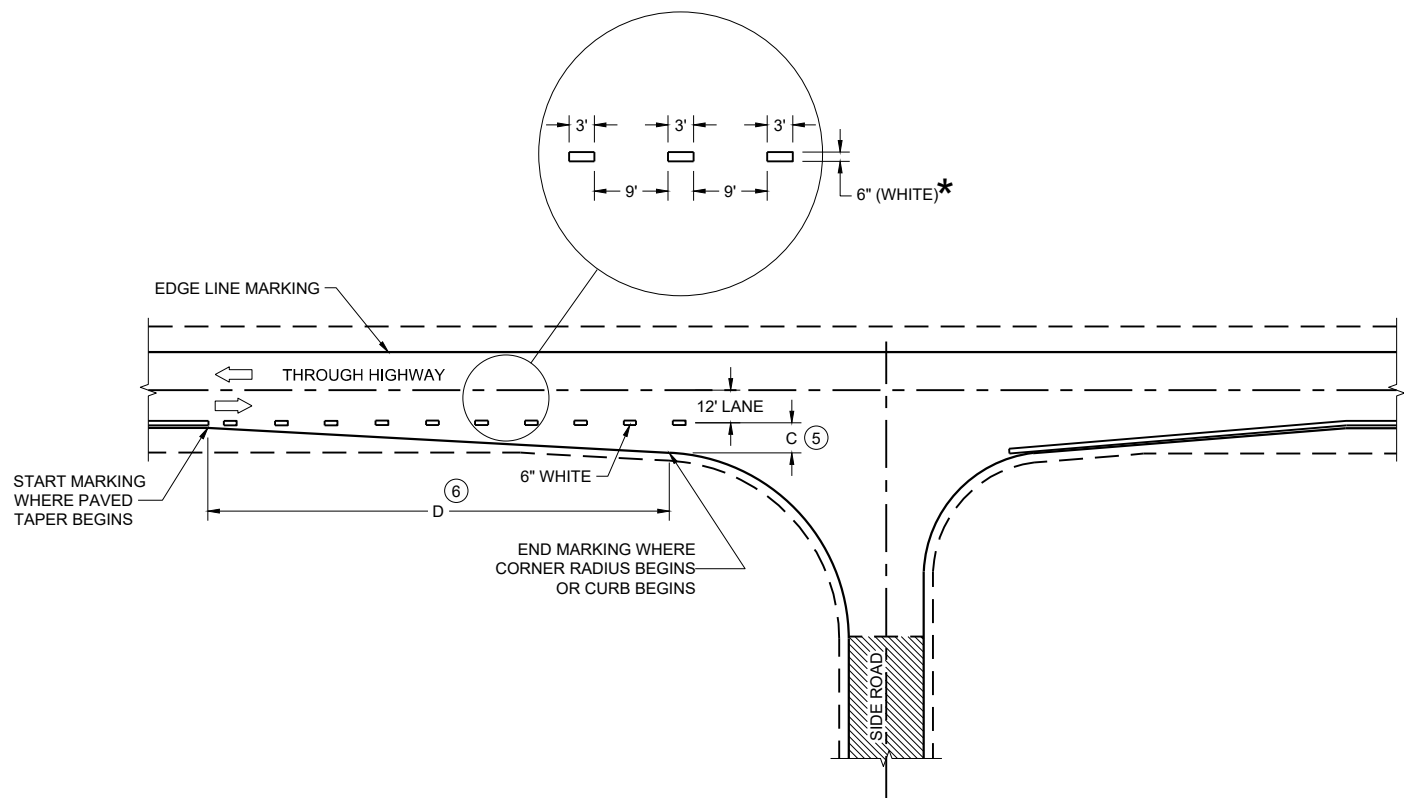


MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

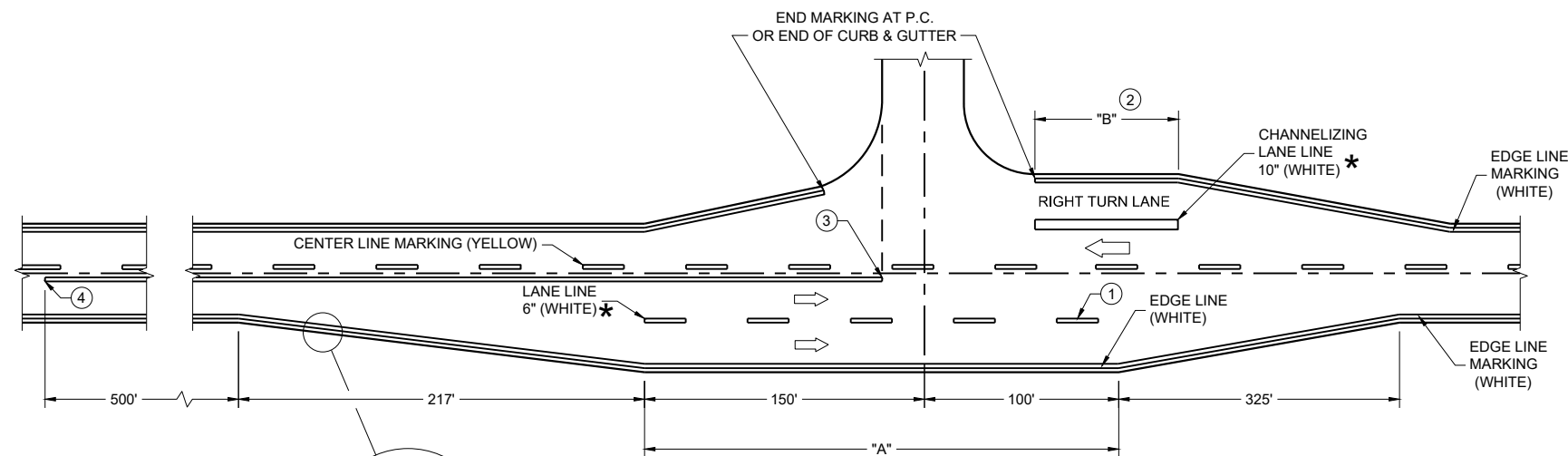
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE STATE ELECTRICAL ENGINEER

FHWA 106



MINOR INTERSECTION



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

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

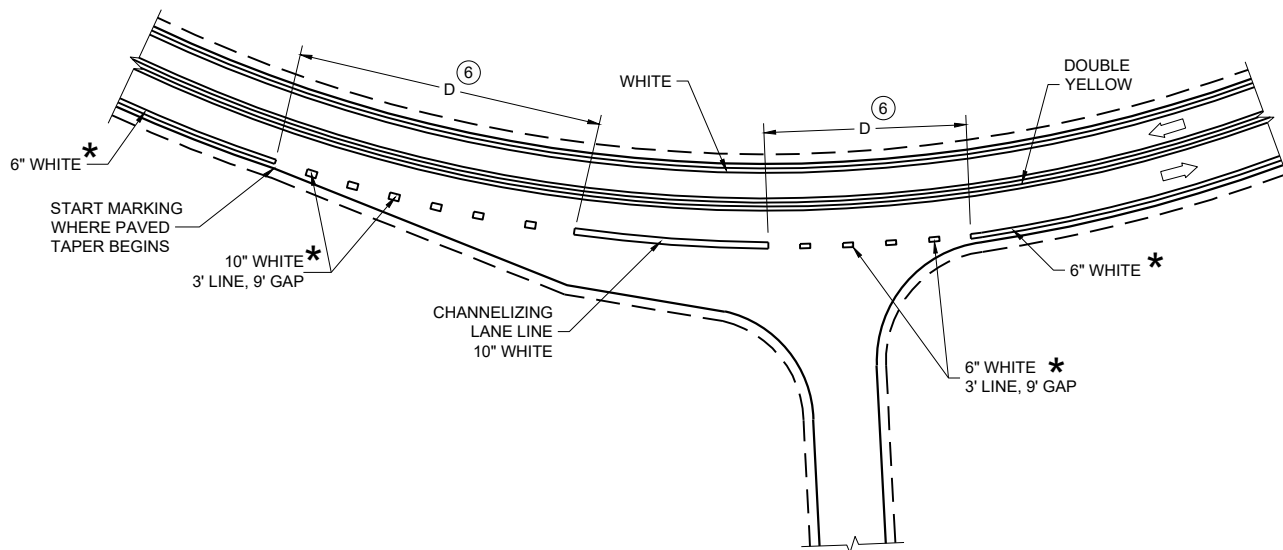
GENERAL NOTES

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

LEGEND

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

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

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

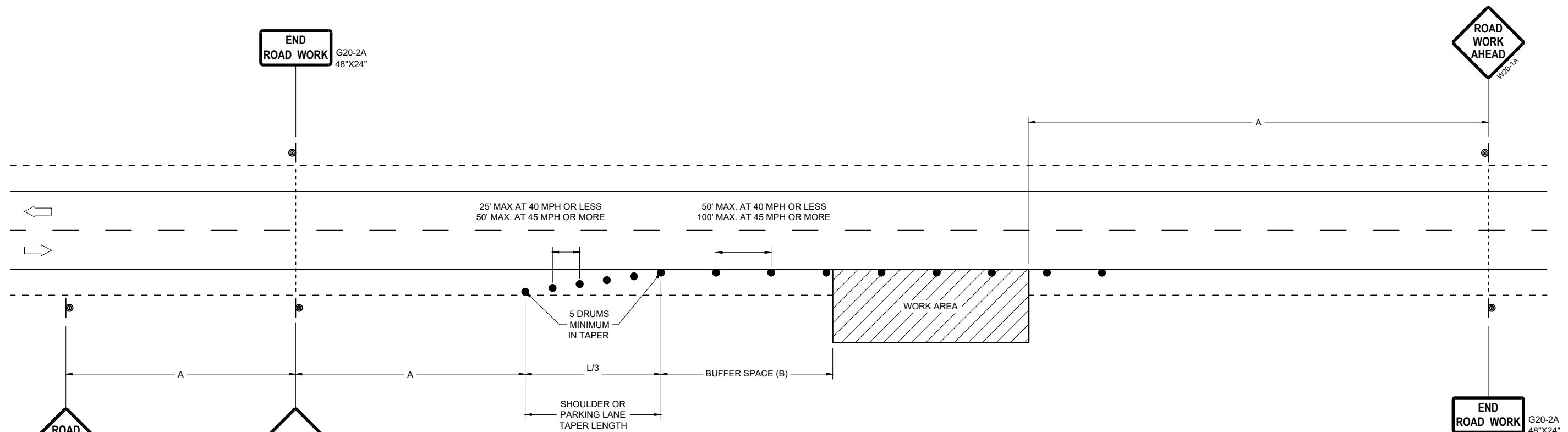
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

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



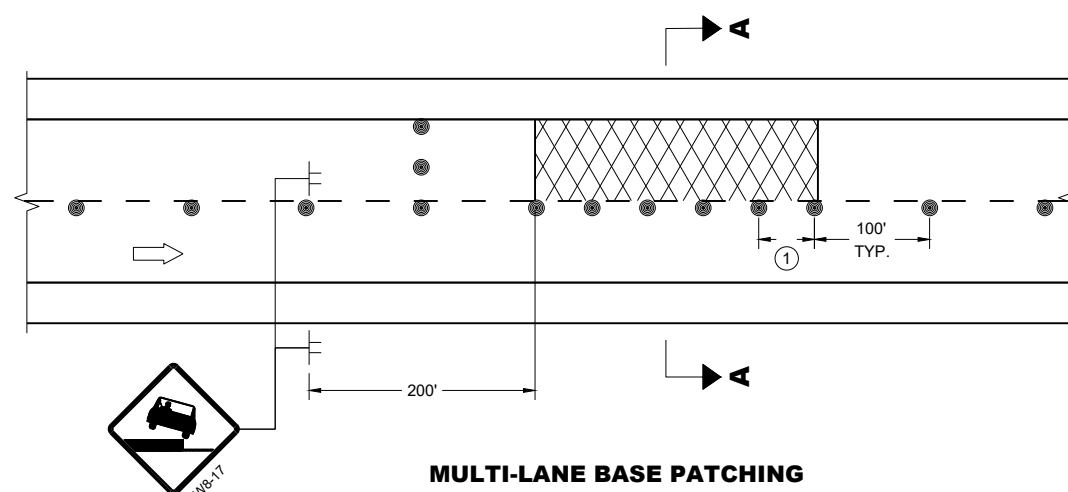
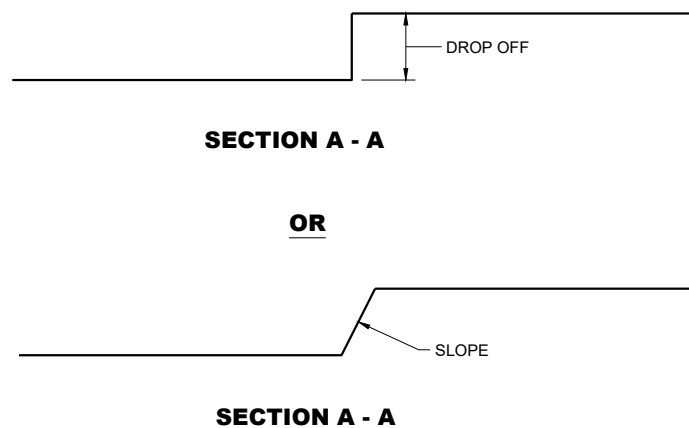
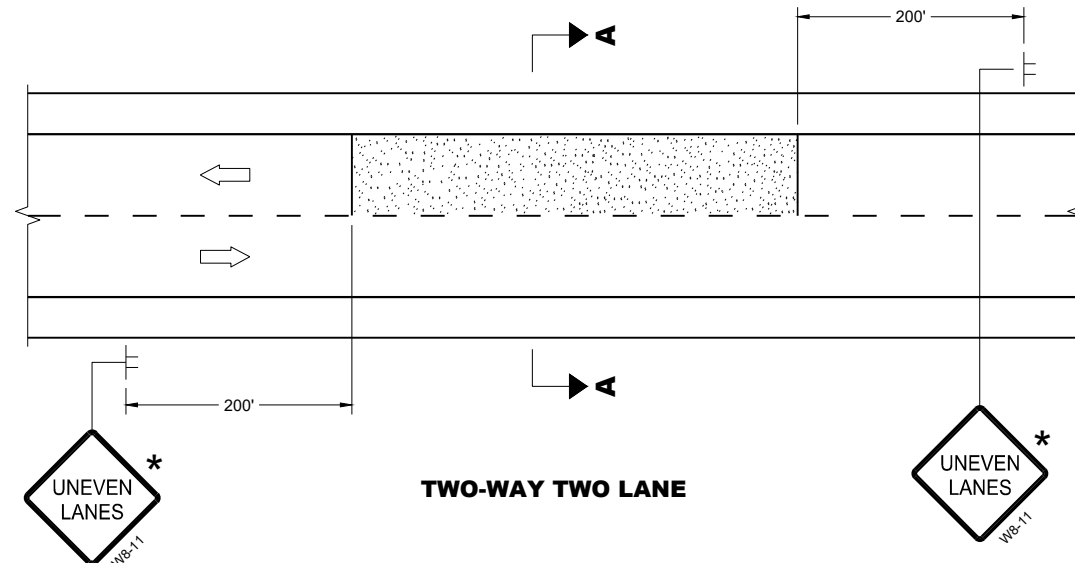
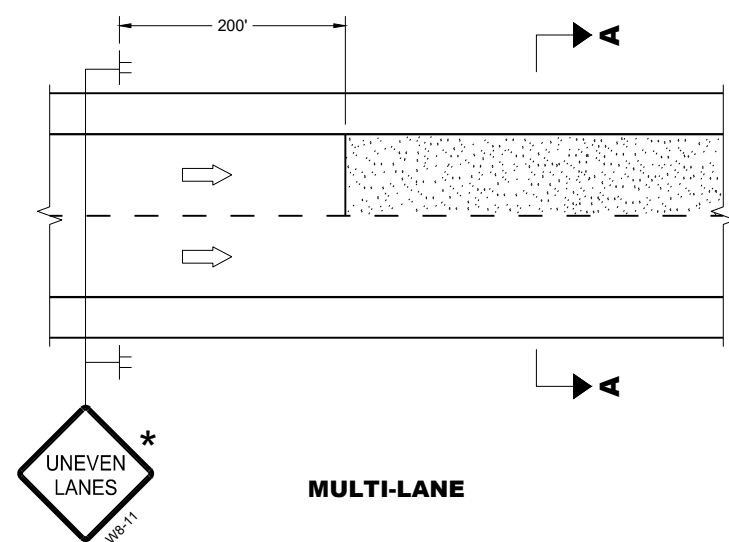
POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3						BUFFER SPACE (B) FEET
		W, LATERAL OFFSET (FT)						
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	155
30	200'	15	20	25	30	35	40	200
35	350'	20	27	34	40	47	54	250
40	350'	26	35	44	53	62	70	305
45	500'	45	59	74	89	104	119	360
50	500'	50	66	83	99	116	132	425
55	500'	54	73	91	109	127	145	495

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025
DATE

/S/ ANDREW HEIDTKE
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER



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.

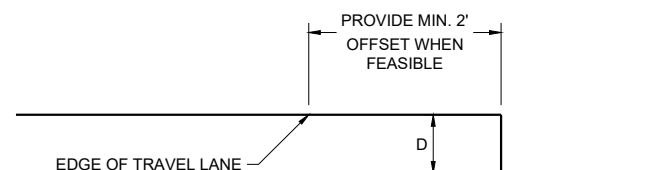
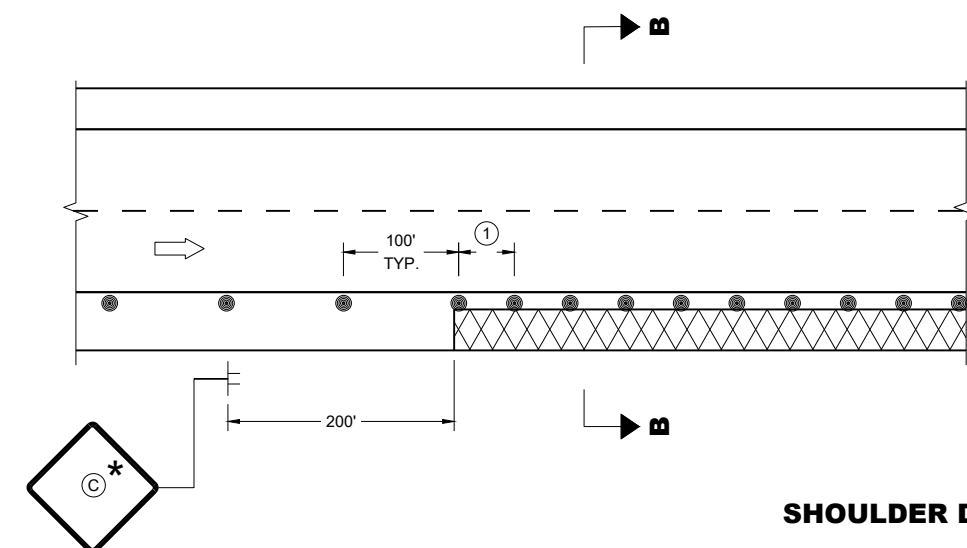
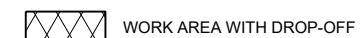
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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 (C)
< 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

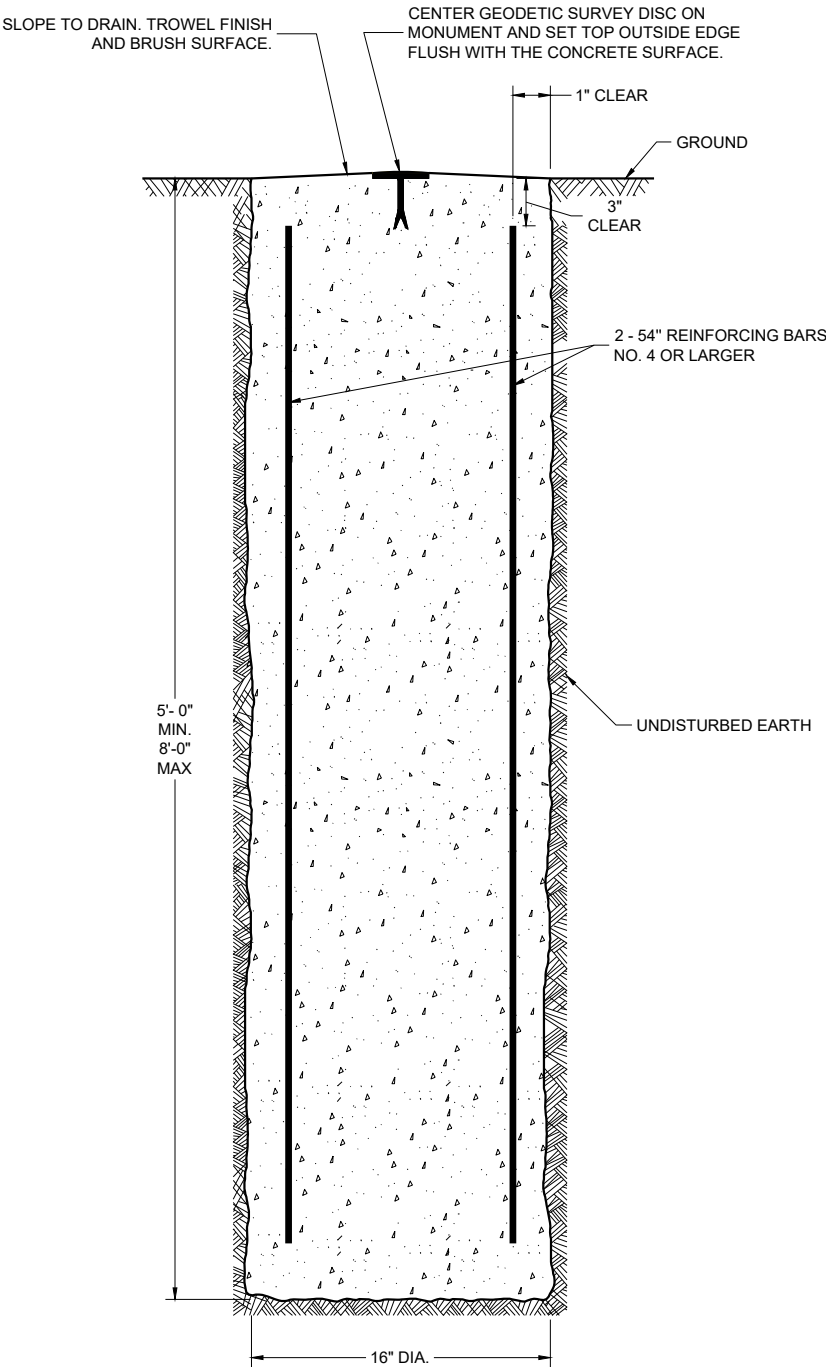
— 109

6

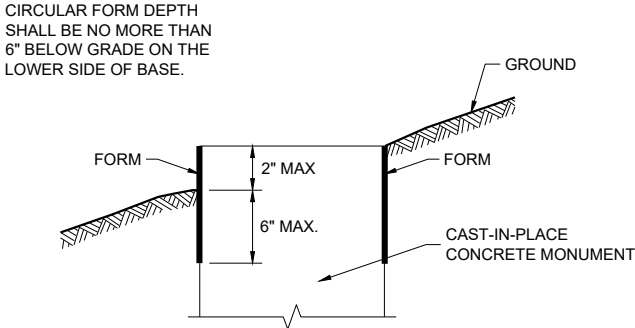
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SDD 15D39-03

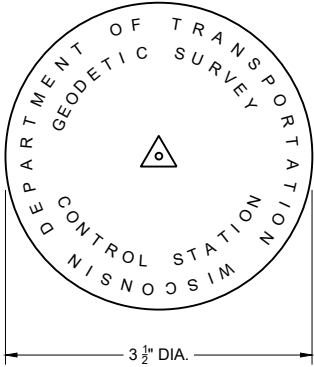
SDD 15D39-03



**CAST-IN-PLACE
CONCRETE MONUMENT**



FORMING DETAIL



GEODETIC SURVEY DISC
FURNISHED BY WISDOT

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.

SURVEY MONUMENT SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

IF A SURVEY MONUMENT 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.

**GEODETIC SURVEY
MONUMENT**

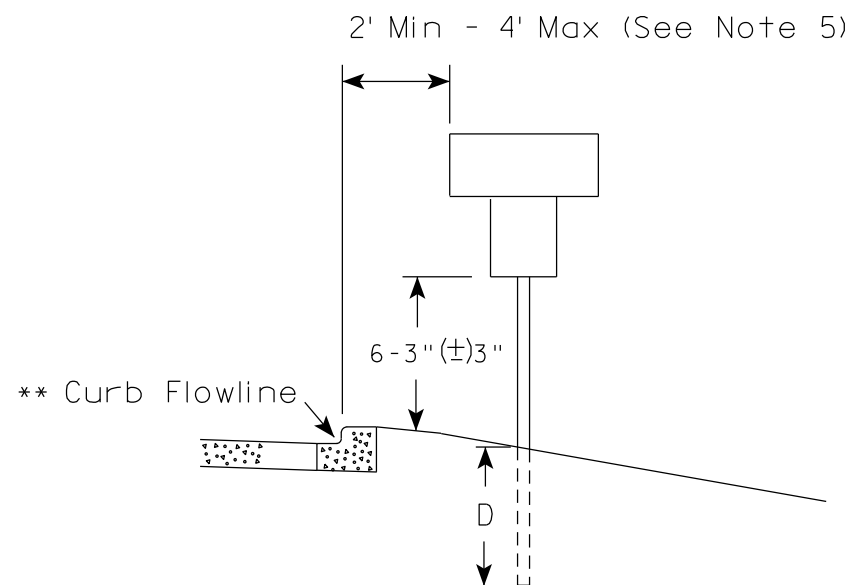
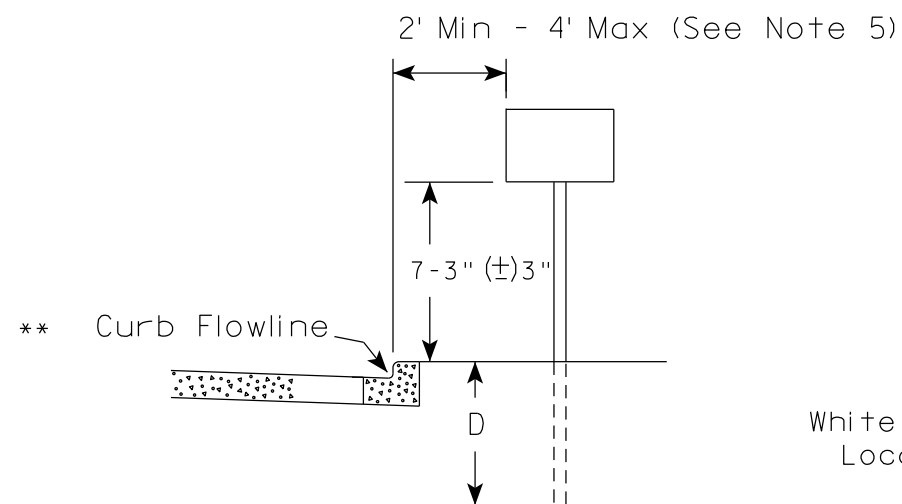
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2025
DATE

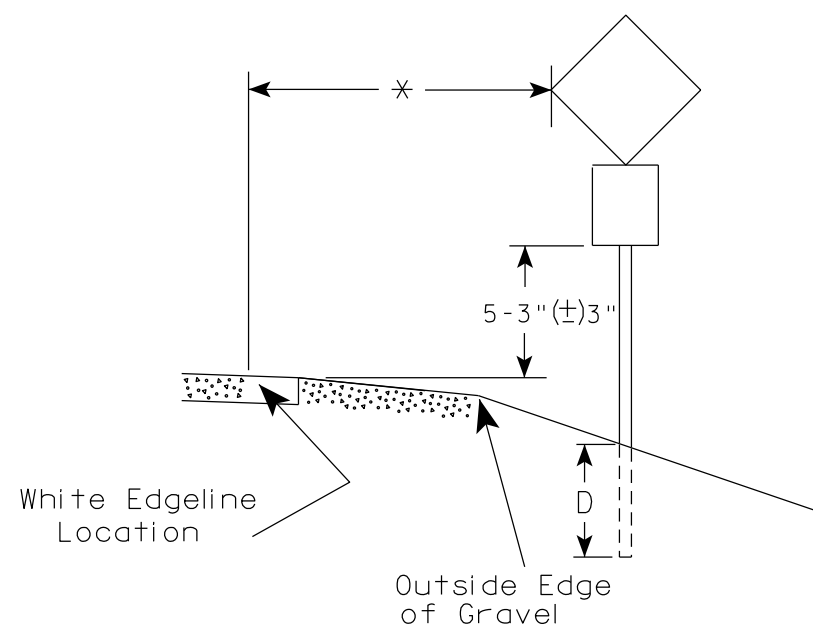
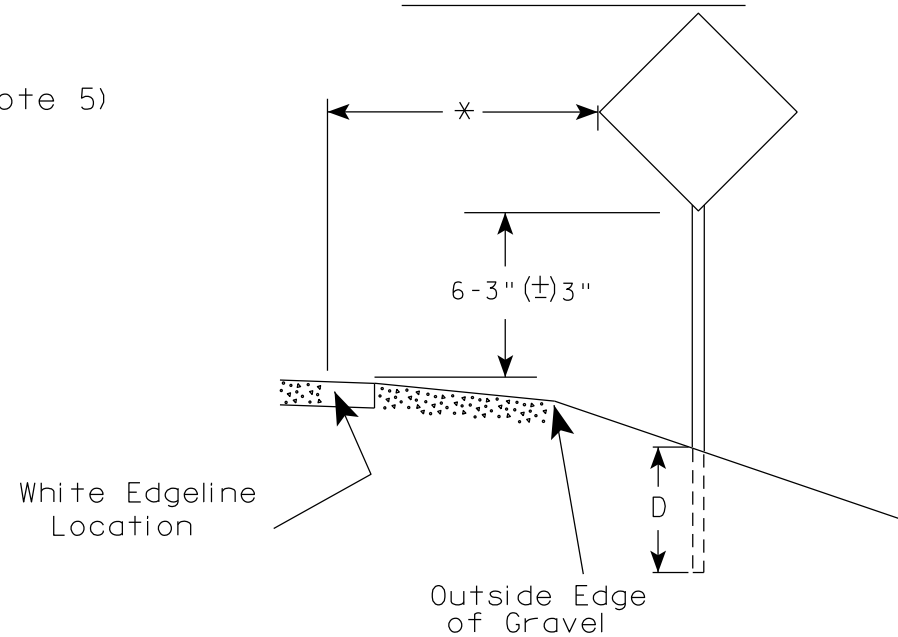
/S/ DAVID J. LAYTON
CHIEF SURVEY AND MAPPING ENGINEER

FHWA

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

PROJECT NO:

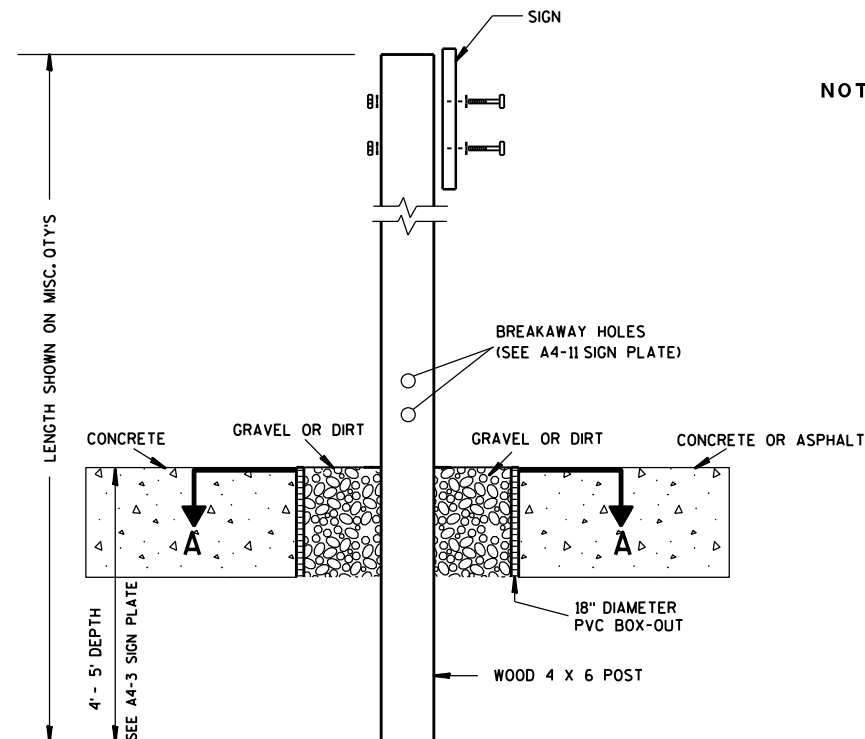
HWY:

COUNTY:

SHEET NO:

111

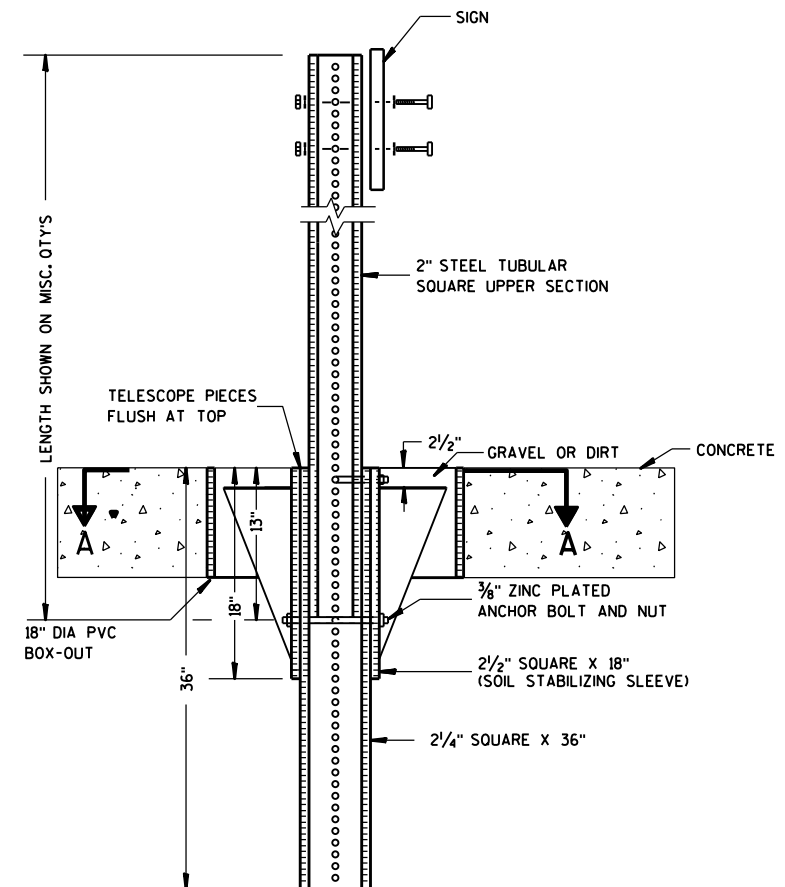
E



ELEVATION VIEW

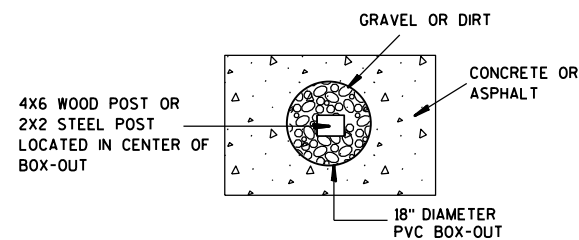
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 112 A4-3B.1

PROJECT NO:

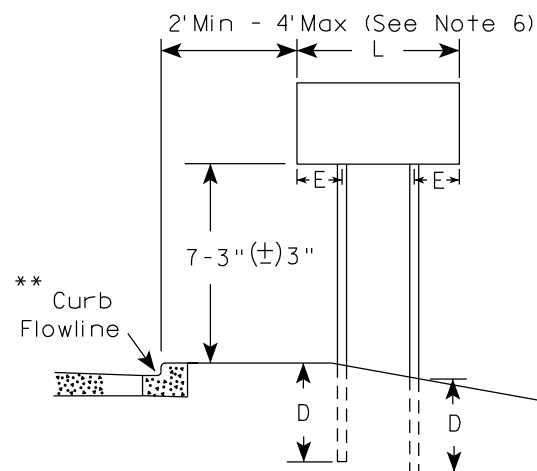
HWY:

COUNTY:

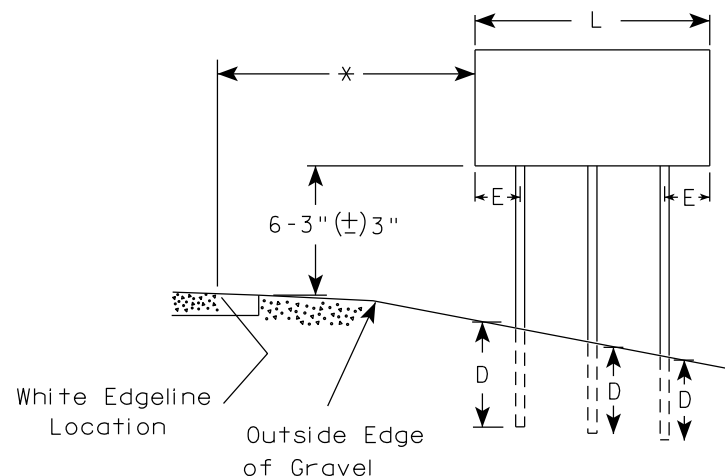
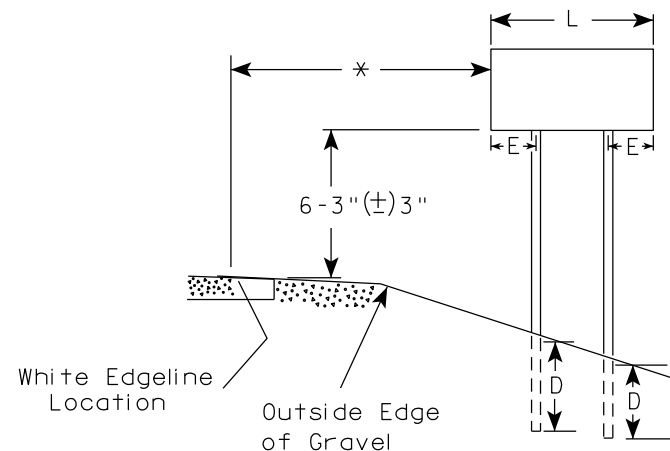
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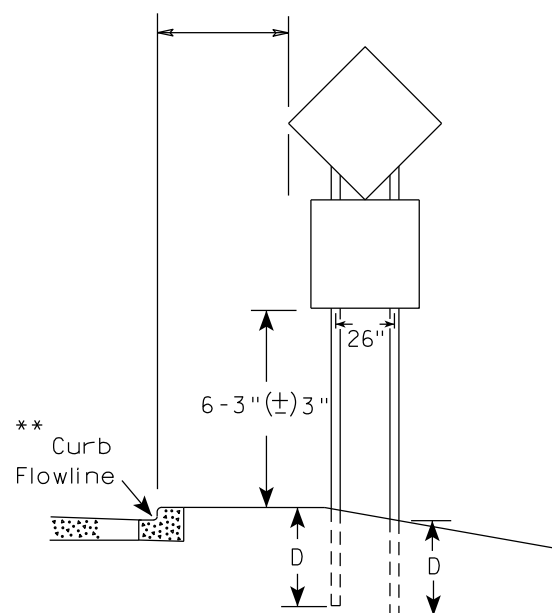
URBAN AREA



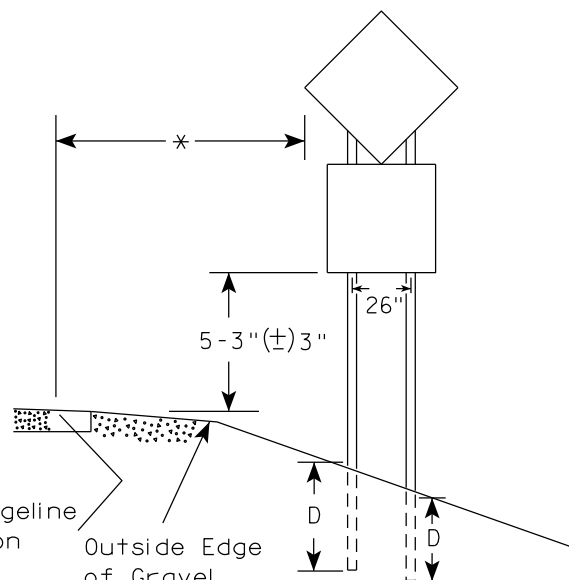
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

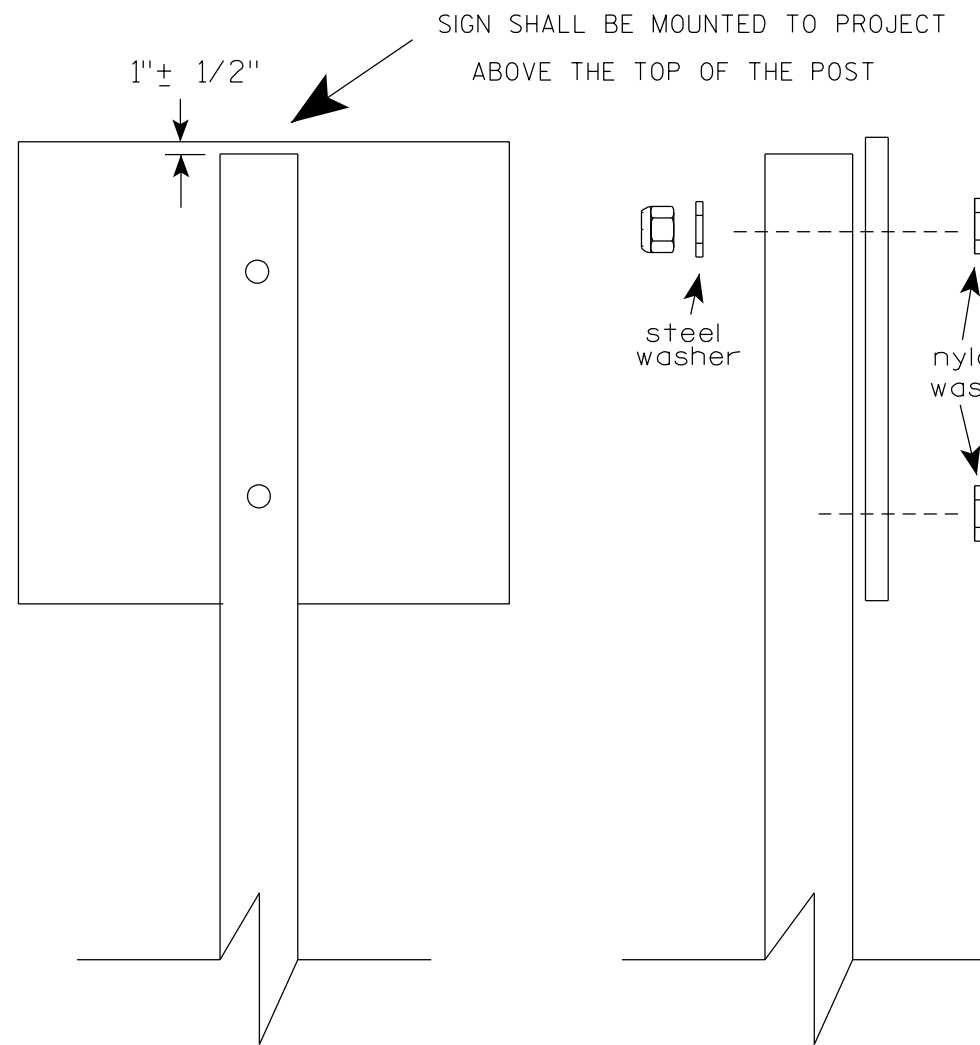
GENERAL NOTES

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.



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.

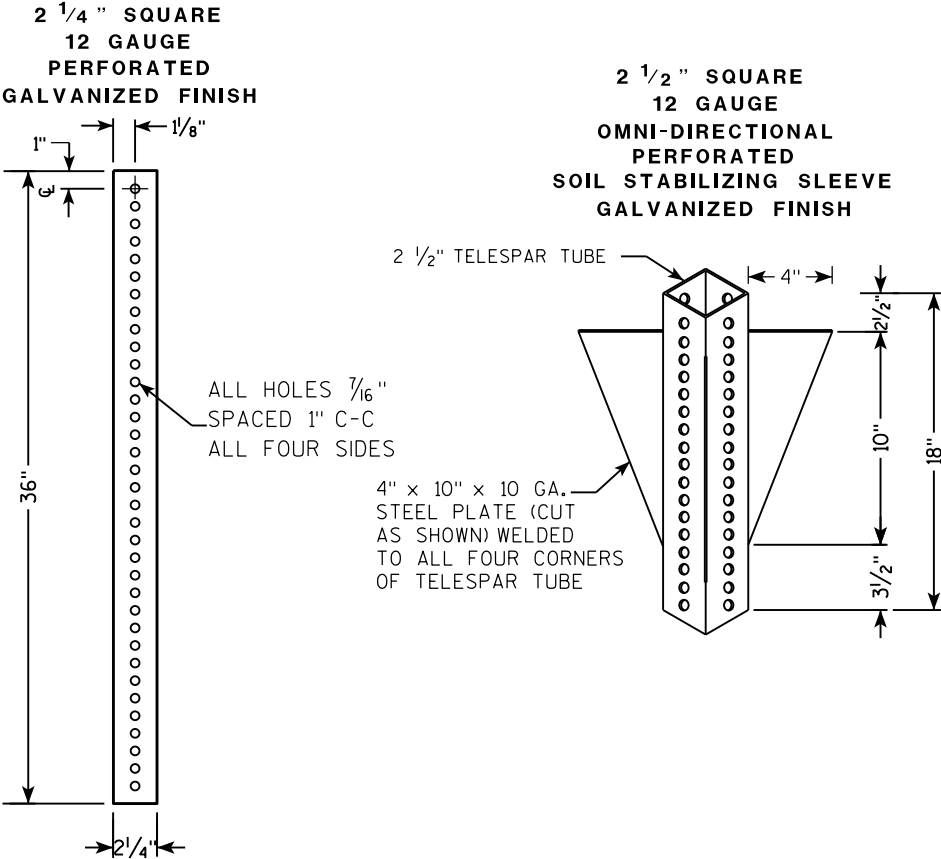
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

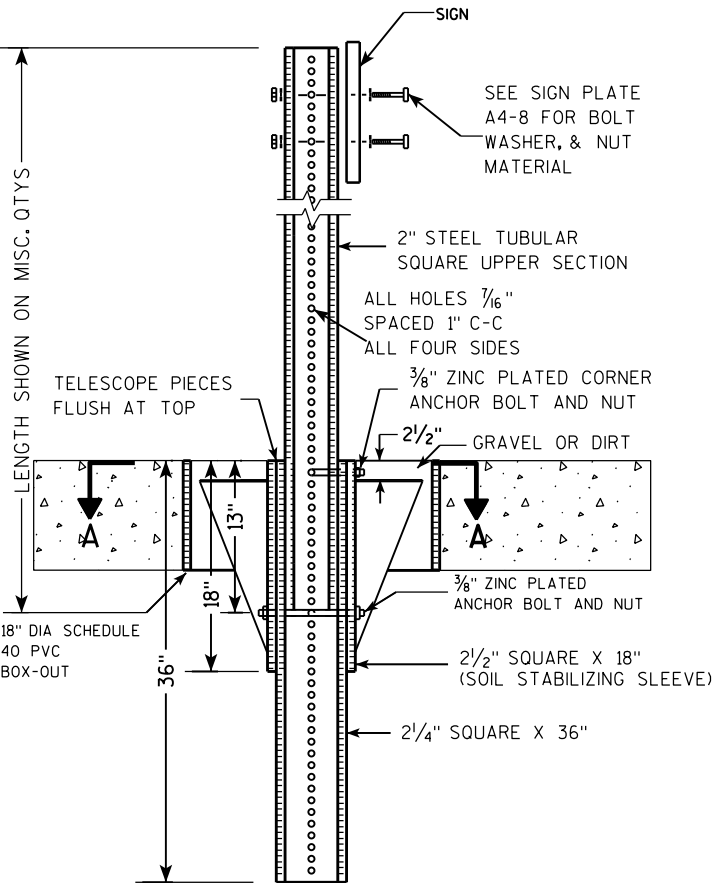
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

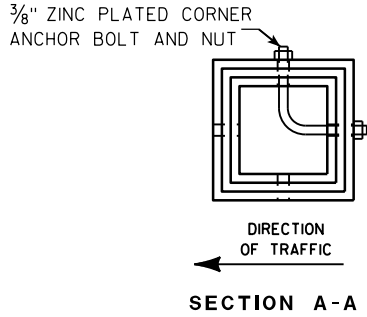
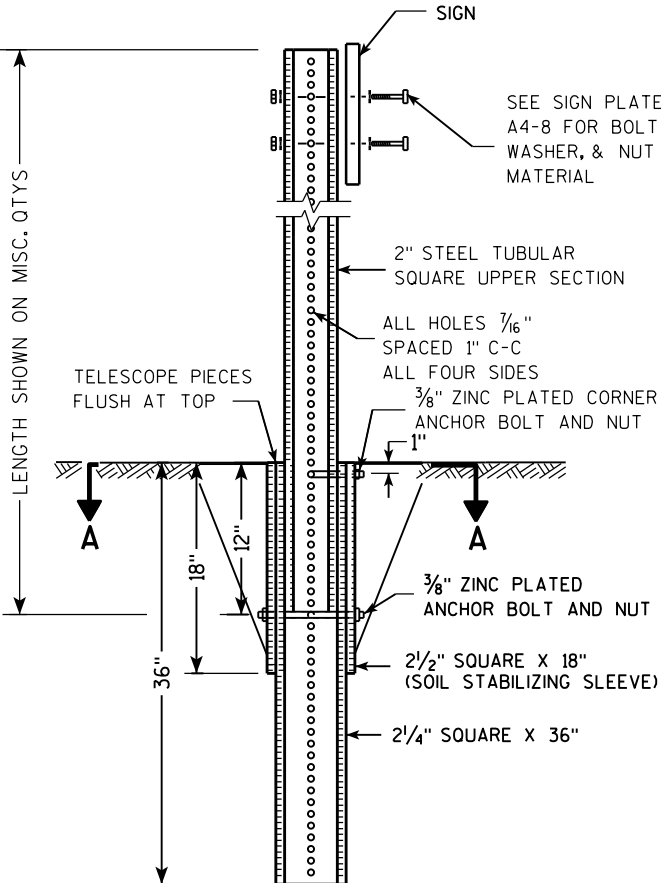
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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

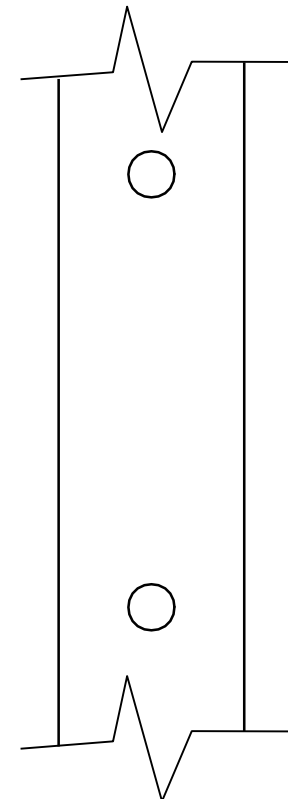
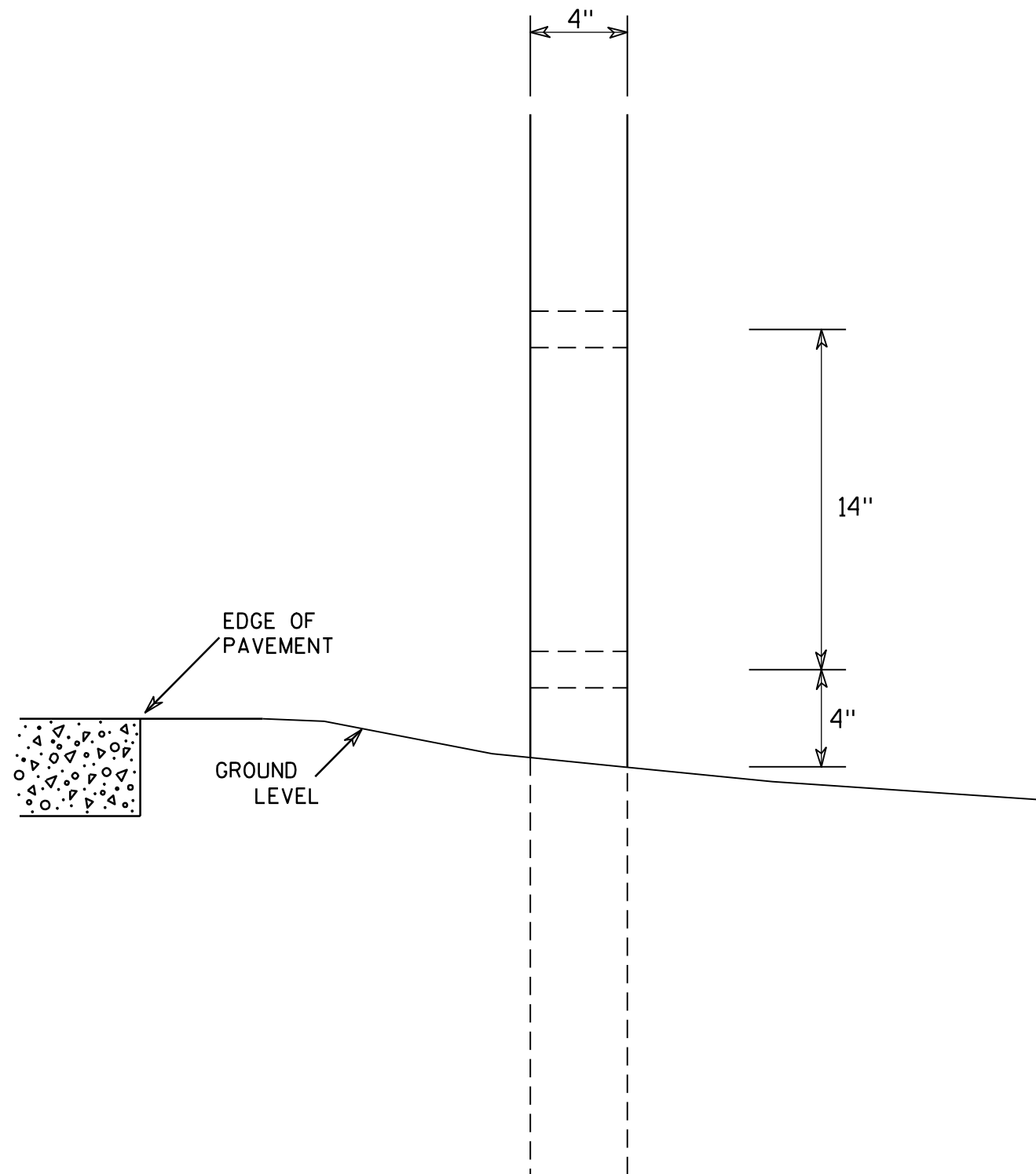
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 115 14-9.9



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

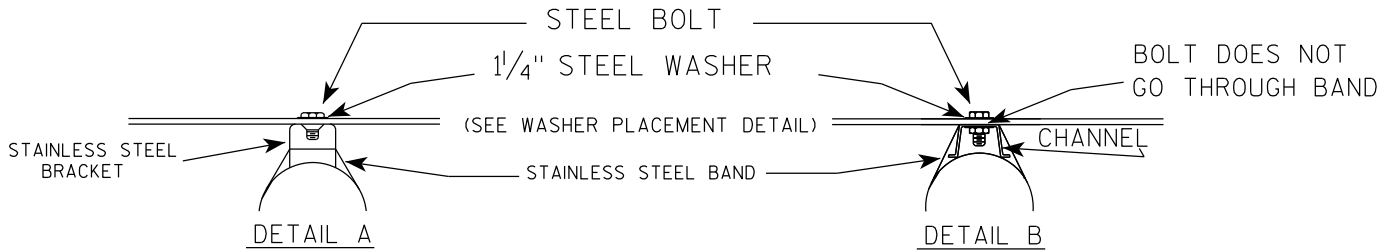
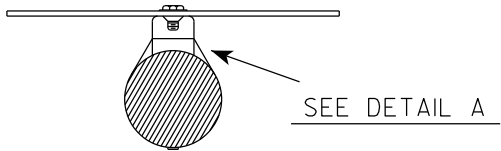
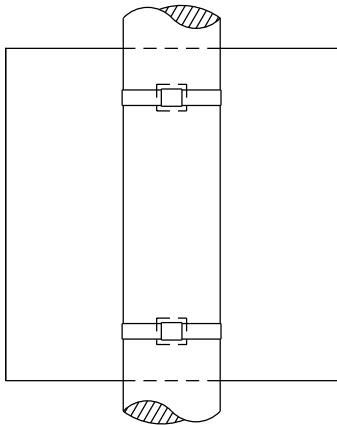
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SHEET NO: 116

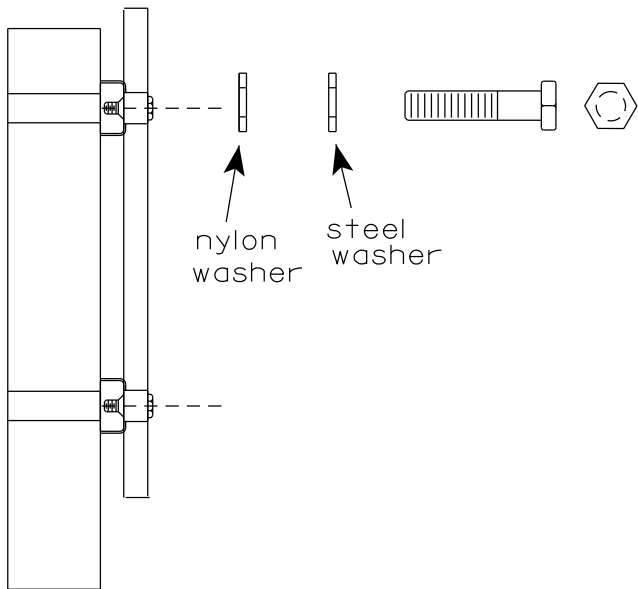
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

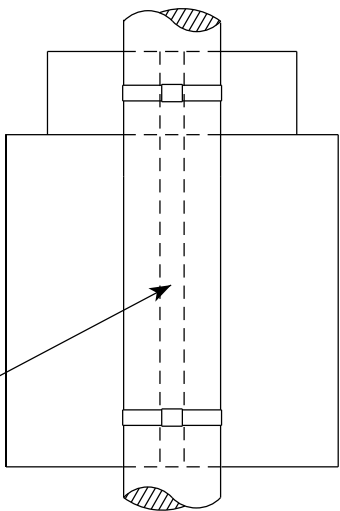


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

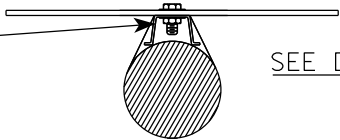
GENERAL NOTES

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



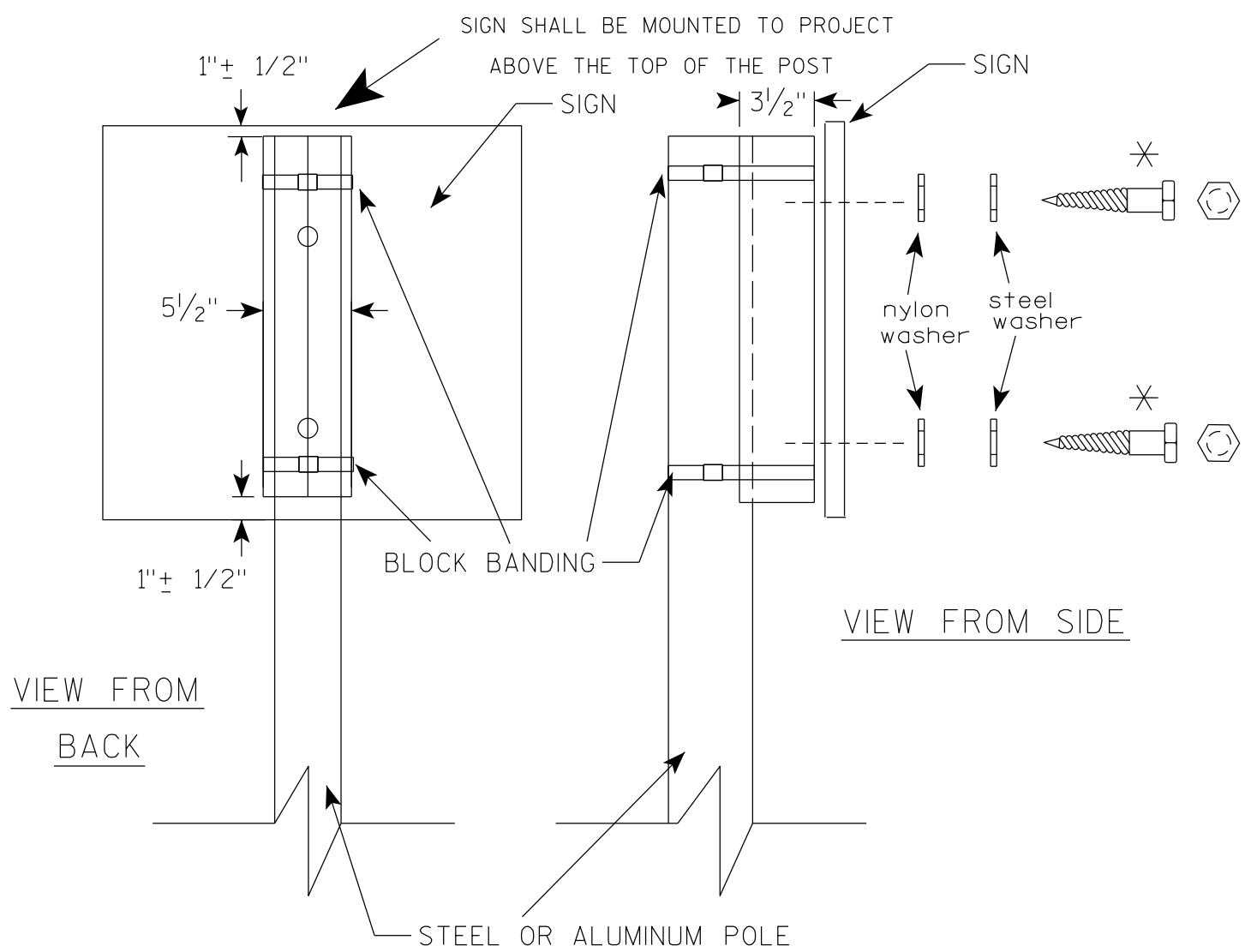
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

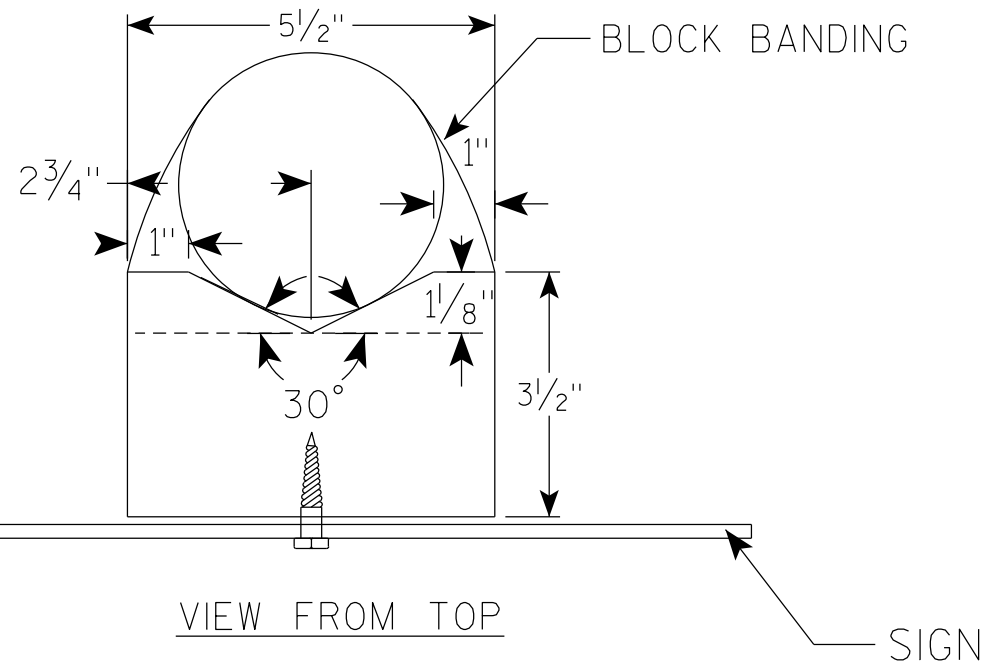
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

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

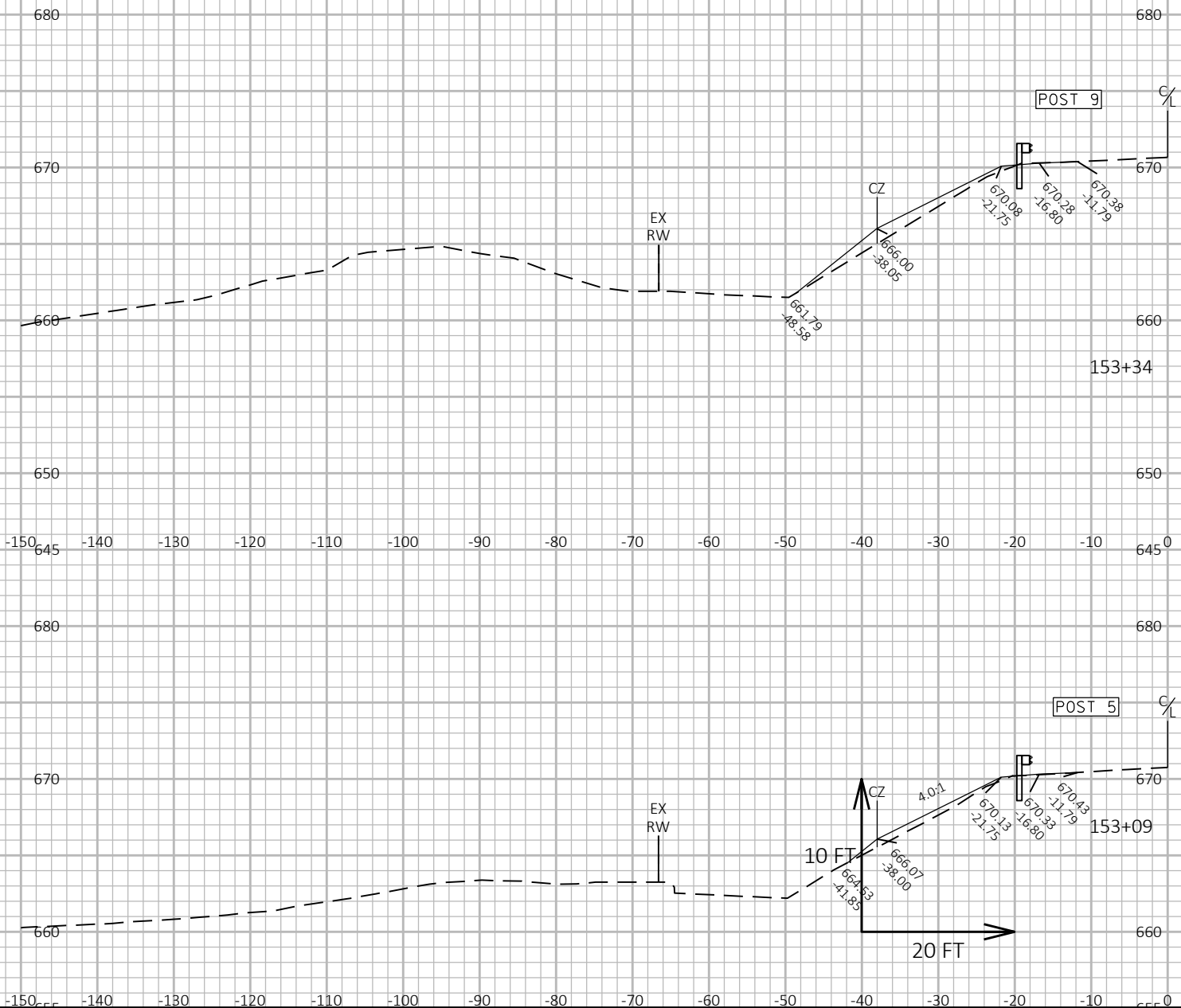
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

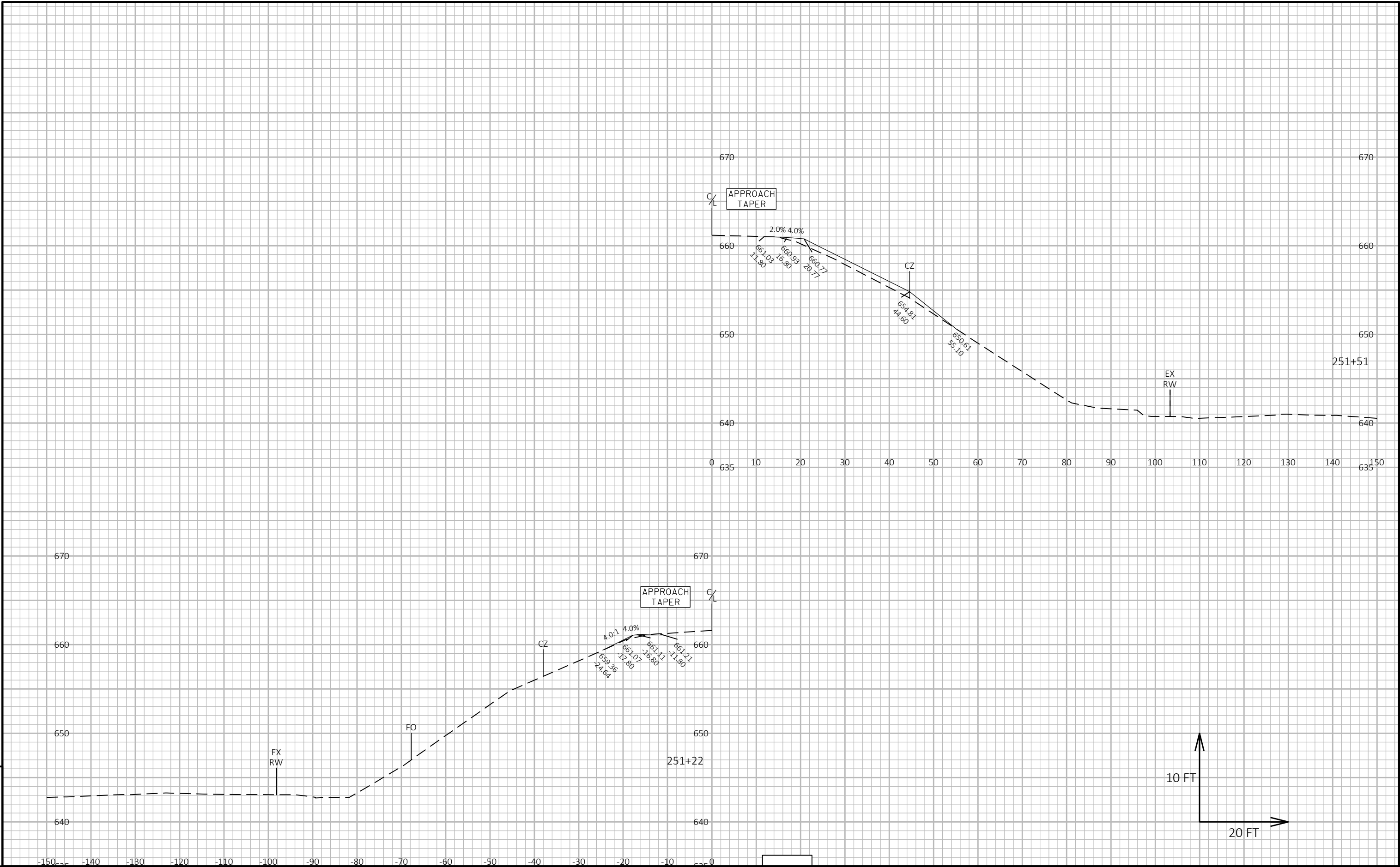
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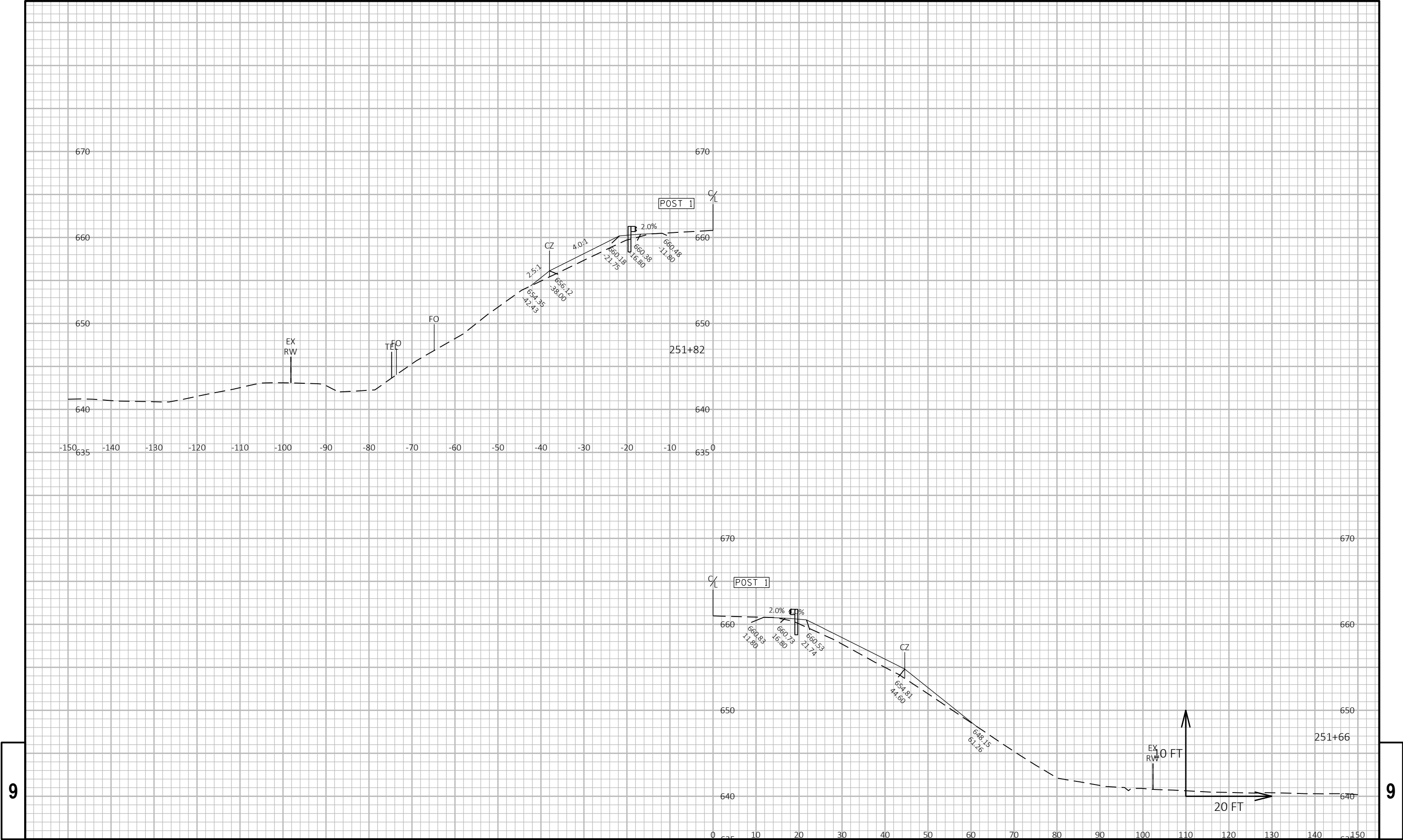
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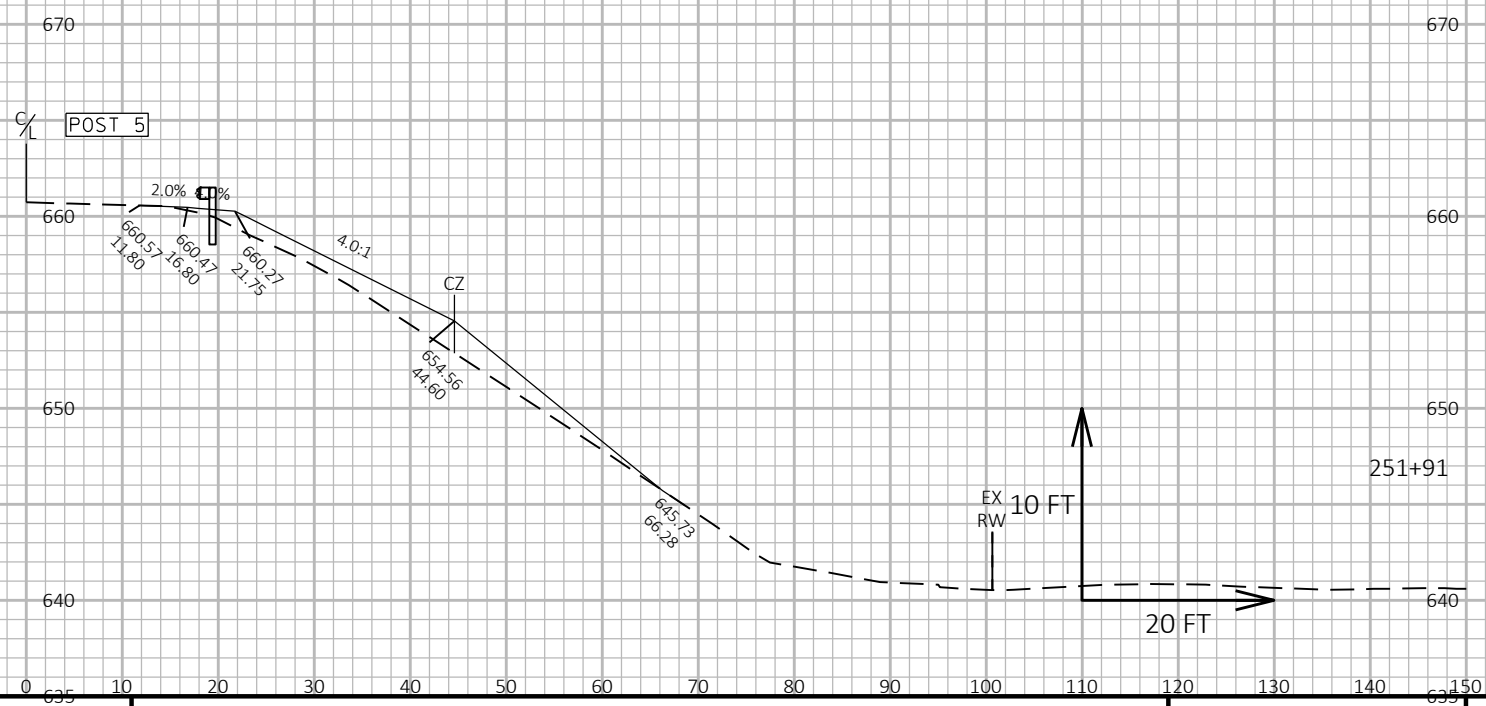
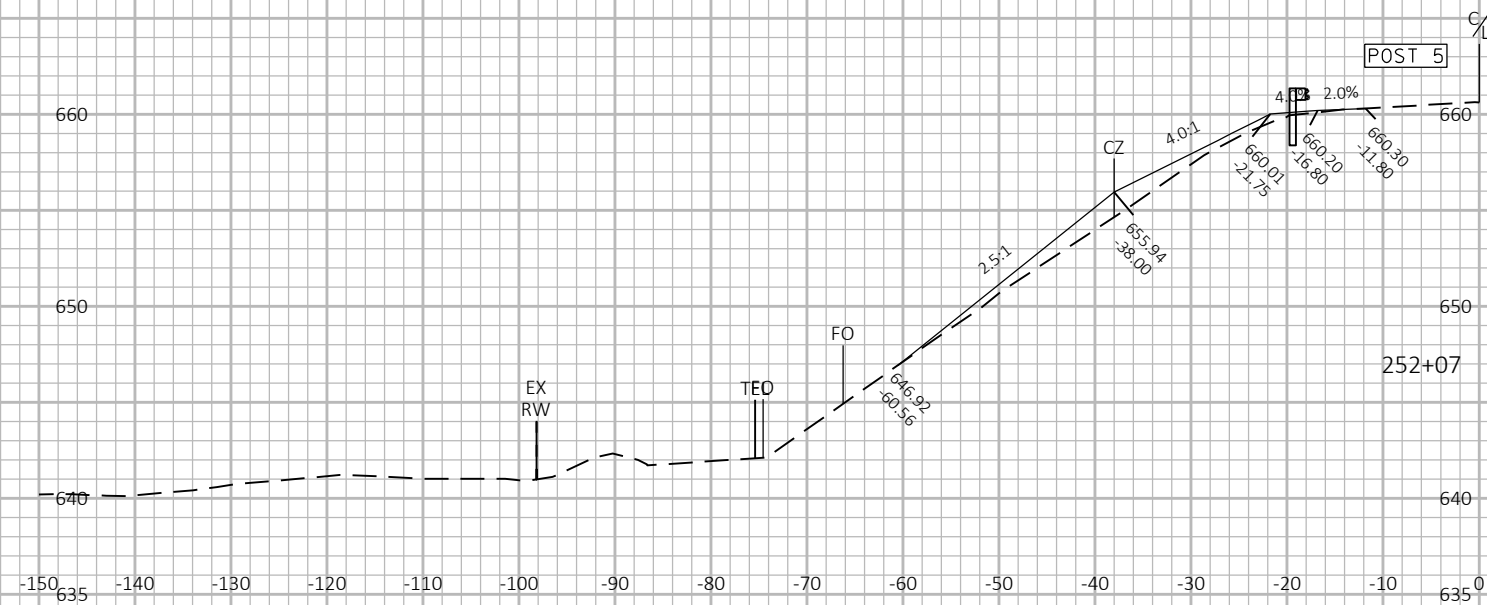
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PROJECT NO:	5180-00-73
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HWY: STH 60

COUNTY: CRAWFORD

CROSS SECTIONS:	CROSS SECTIONS
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SHEET 122

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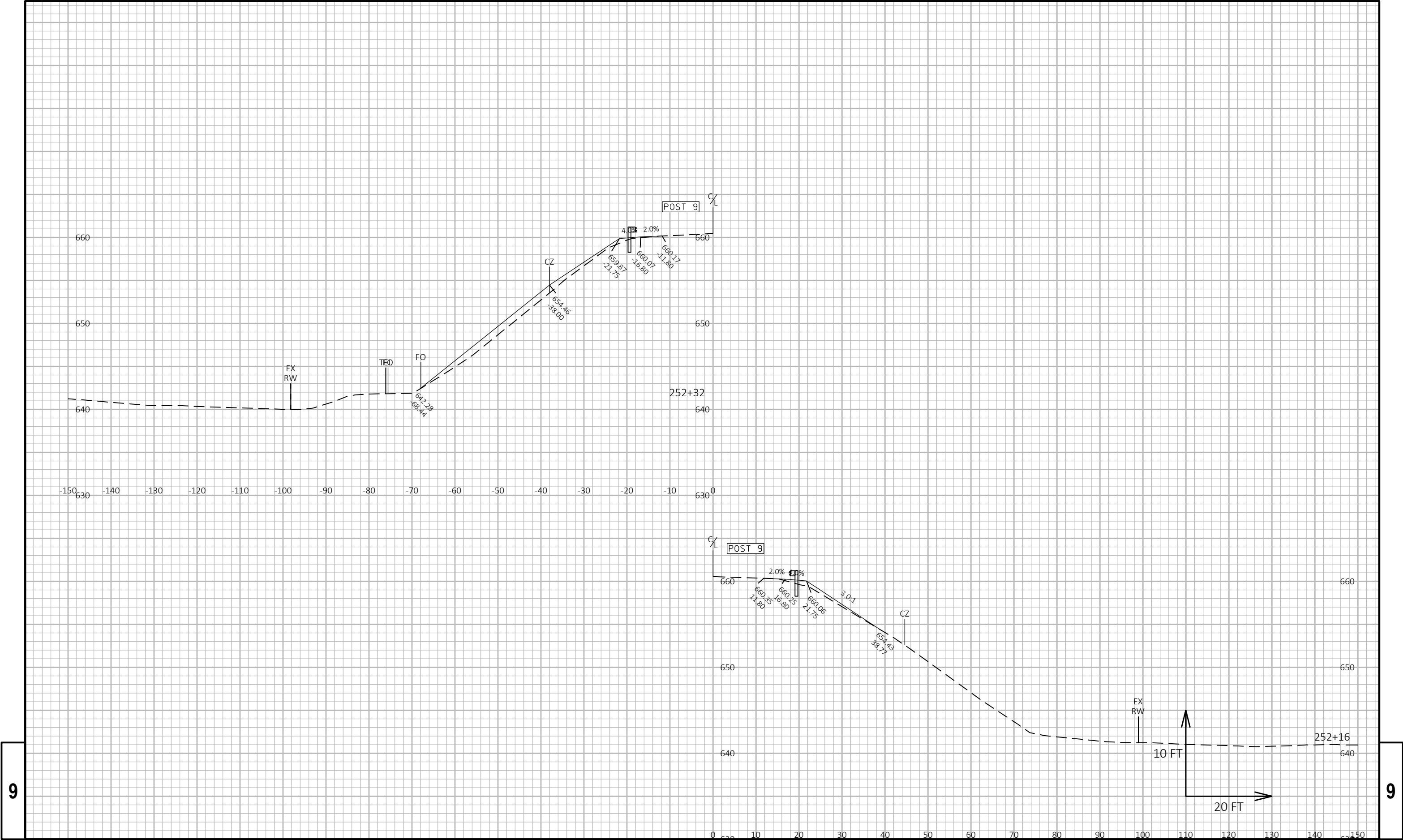
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PLOT BY : KLUDY, KATHLEEN M

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 5180-00-73

HWY: STH 60

COUNTY: CRAWFORD

CROSS SECTIONS: CROSS SECTIONS

SHEET

123

E

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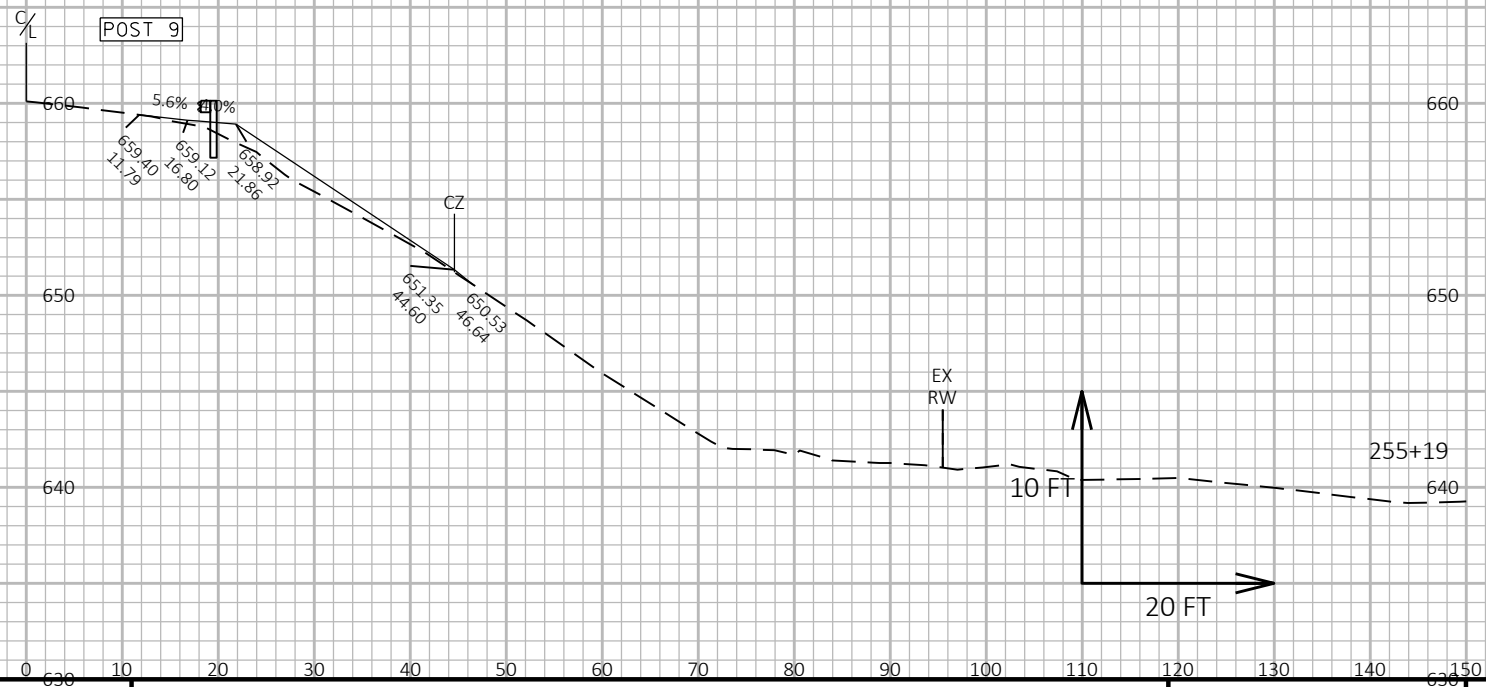
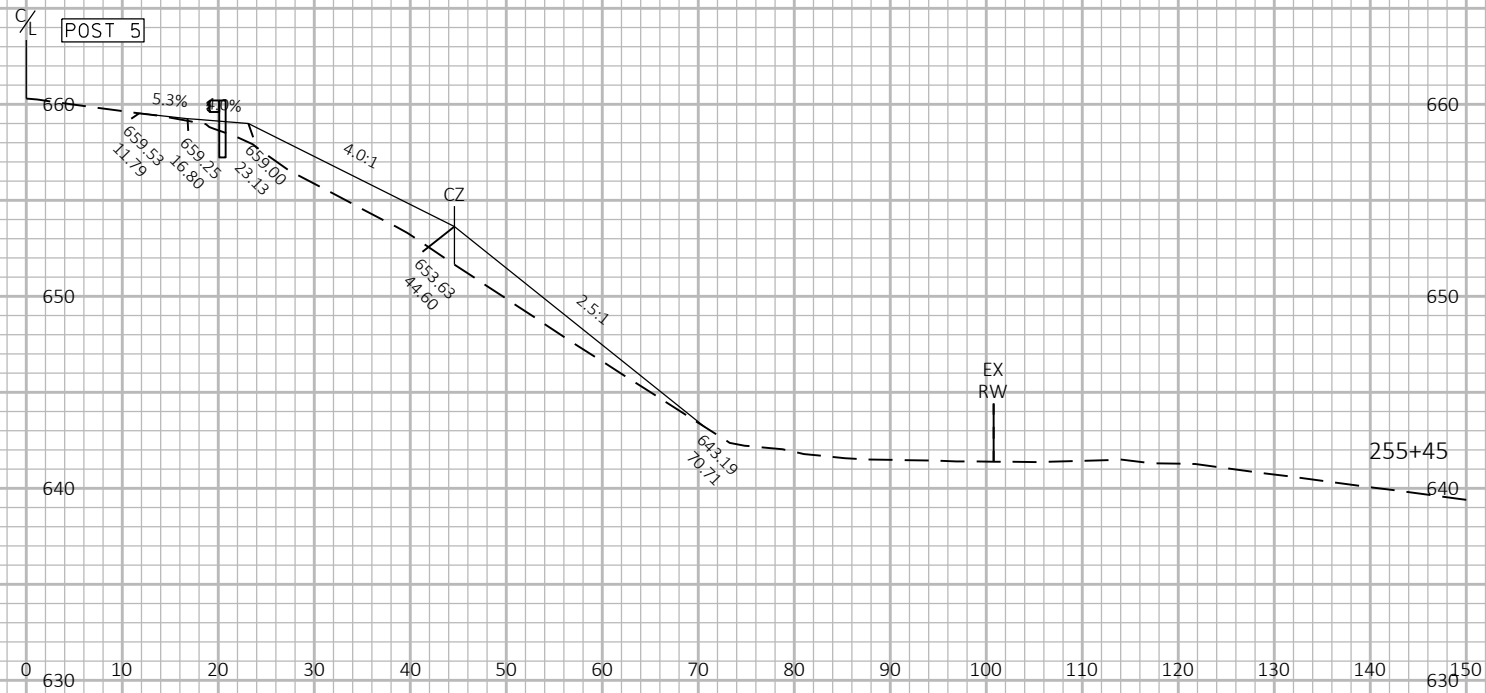
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PLOT NAME :

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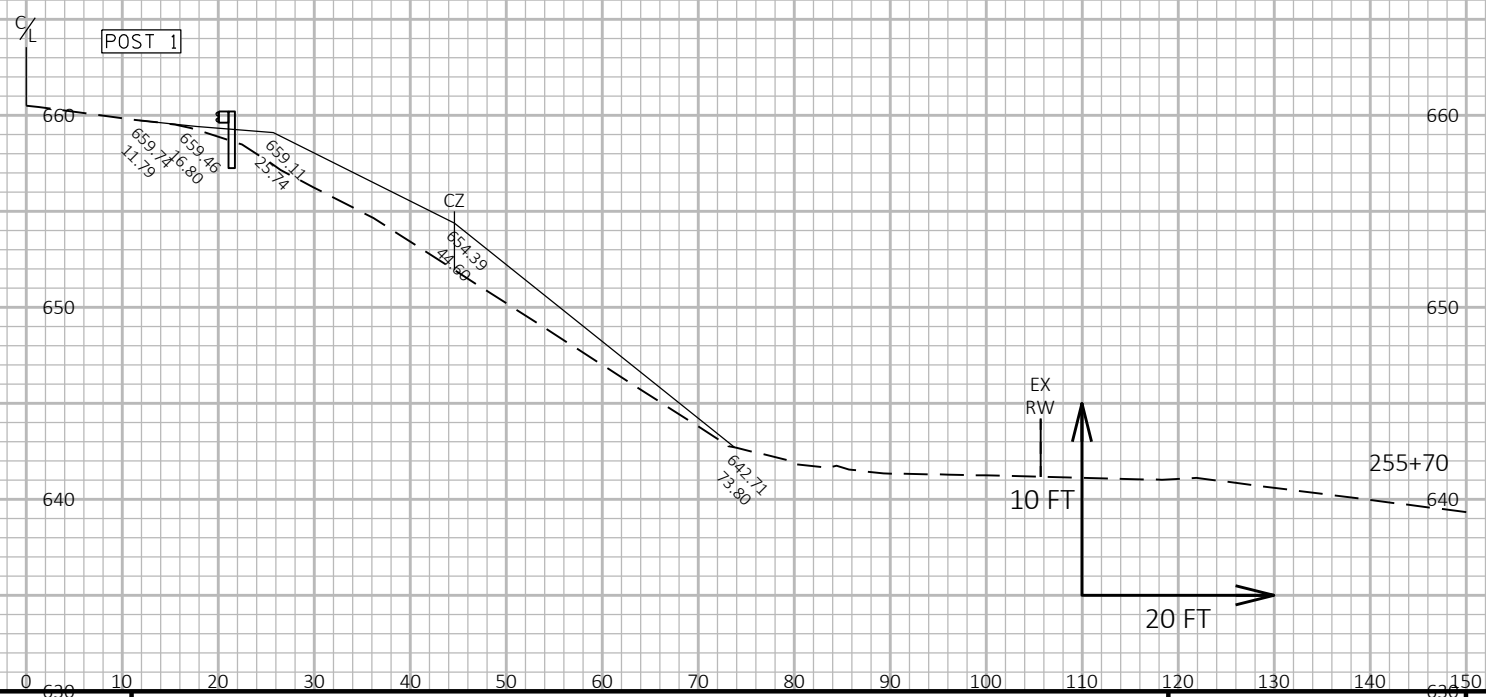
WISDOT/CADDs SHEET 49

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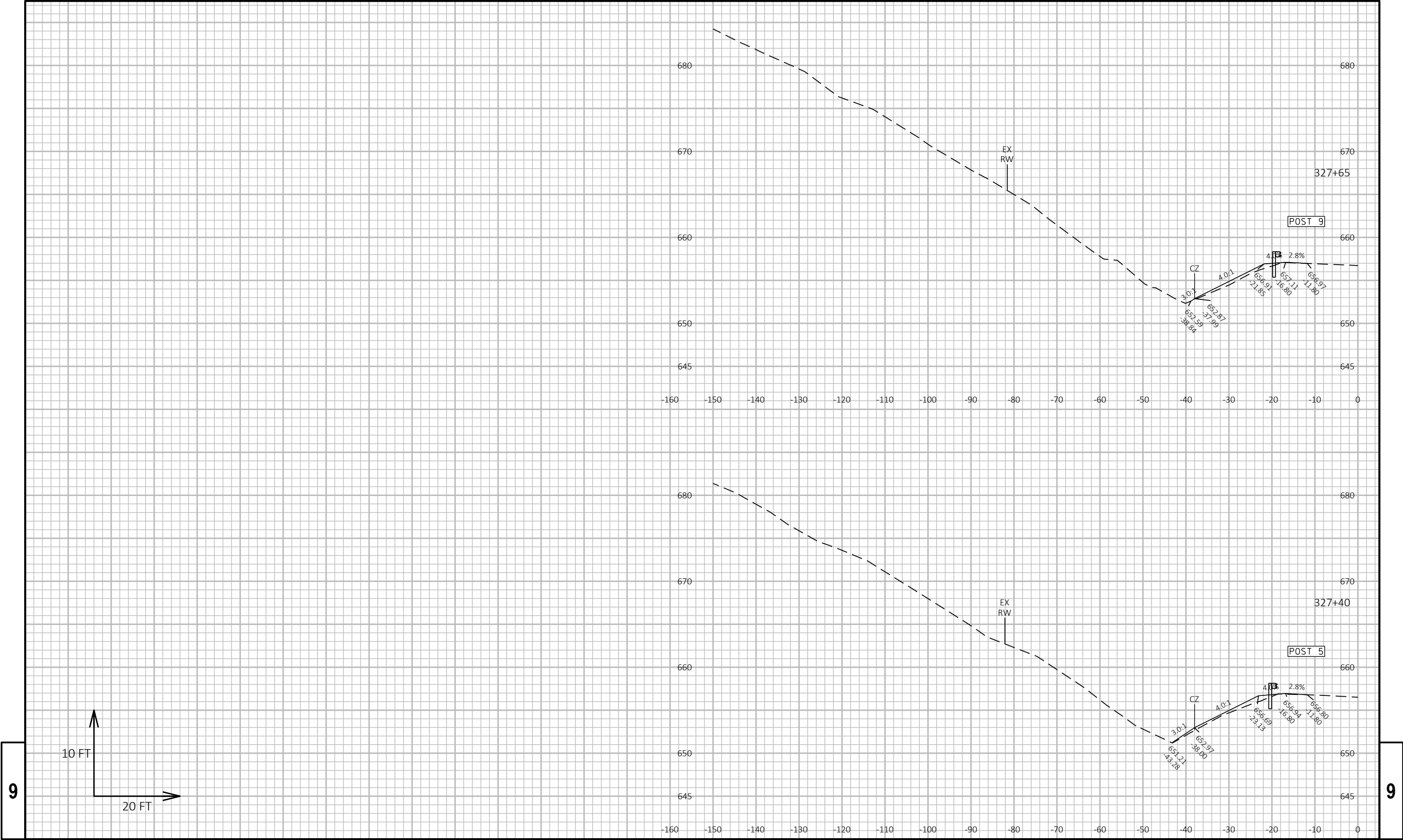


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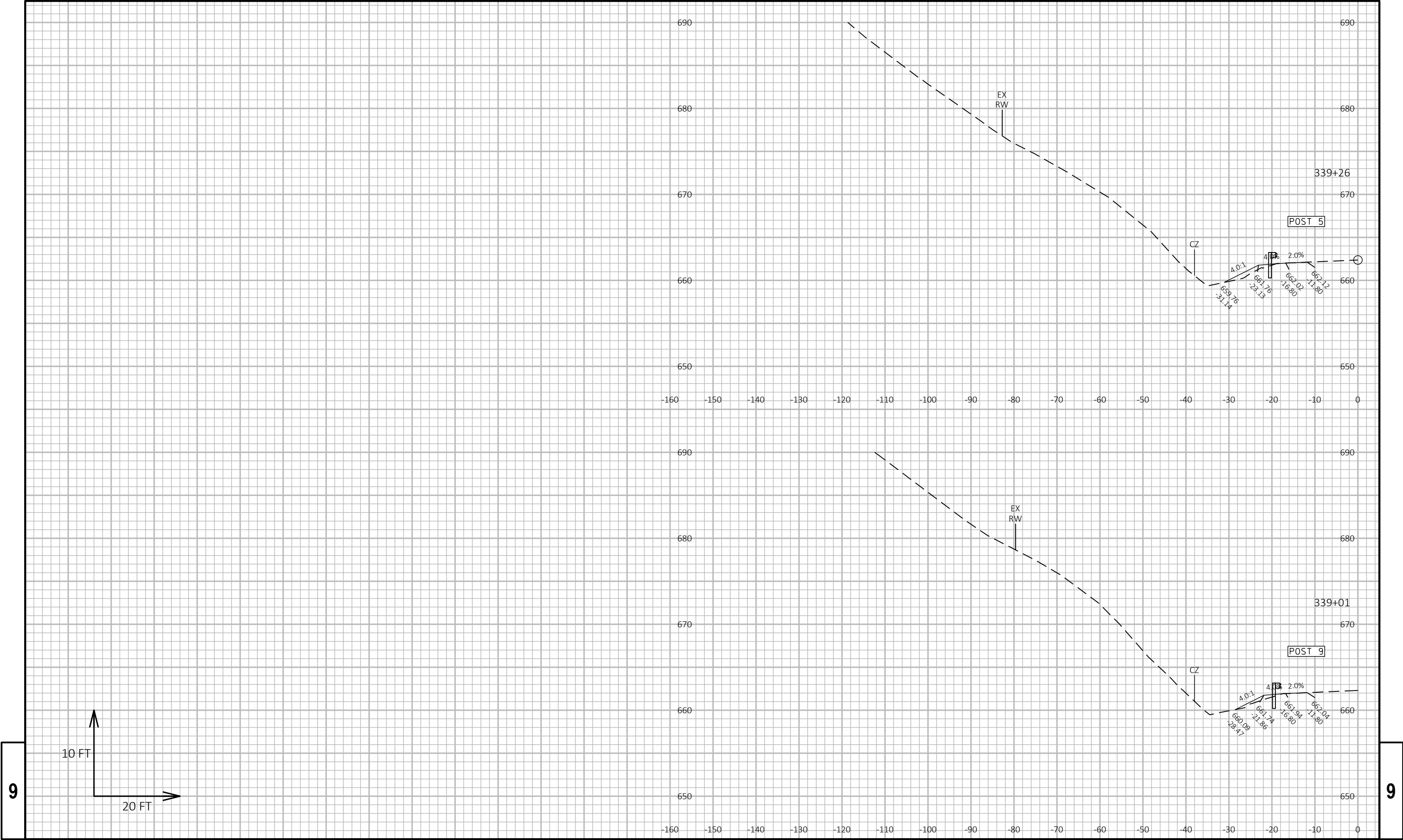


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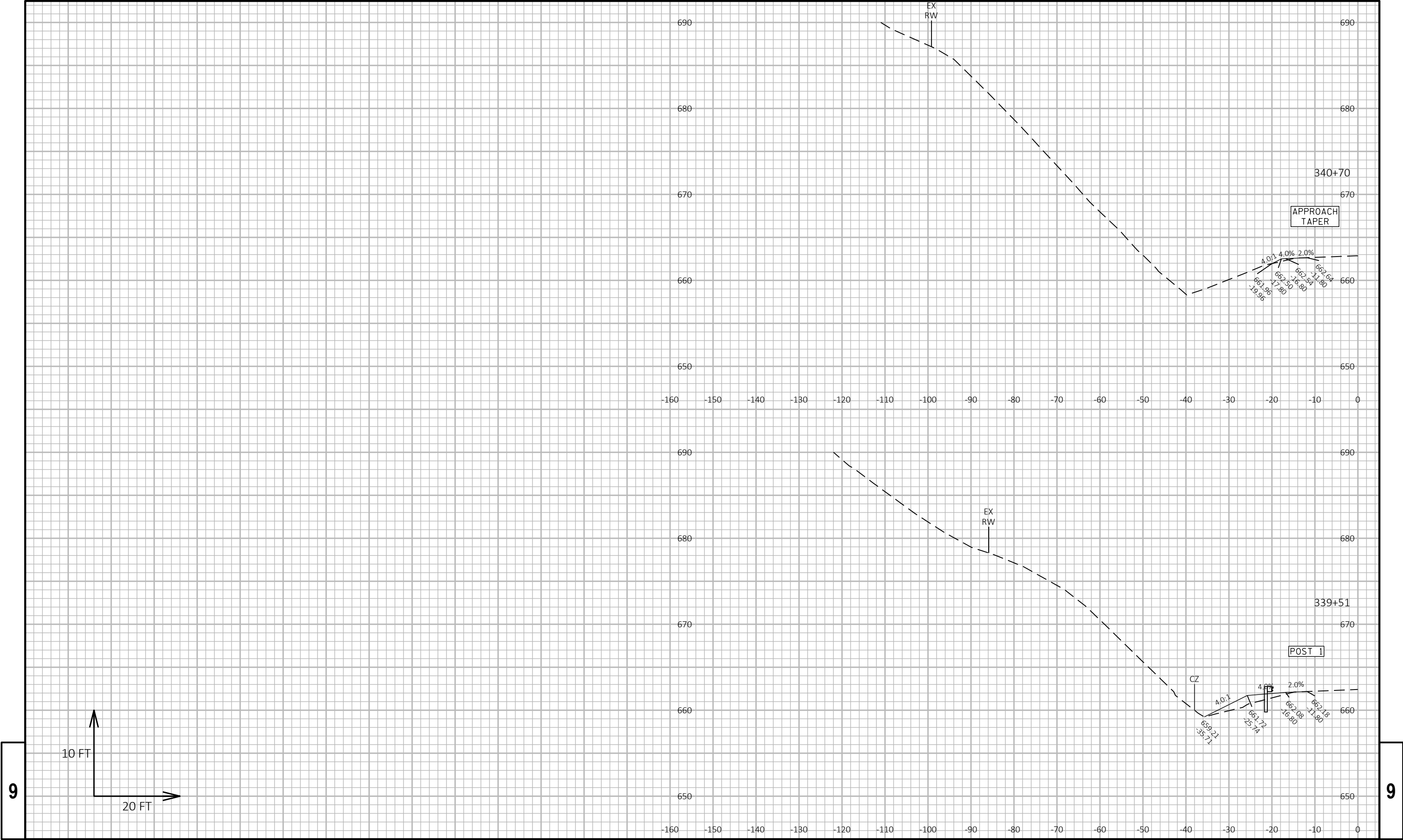
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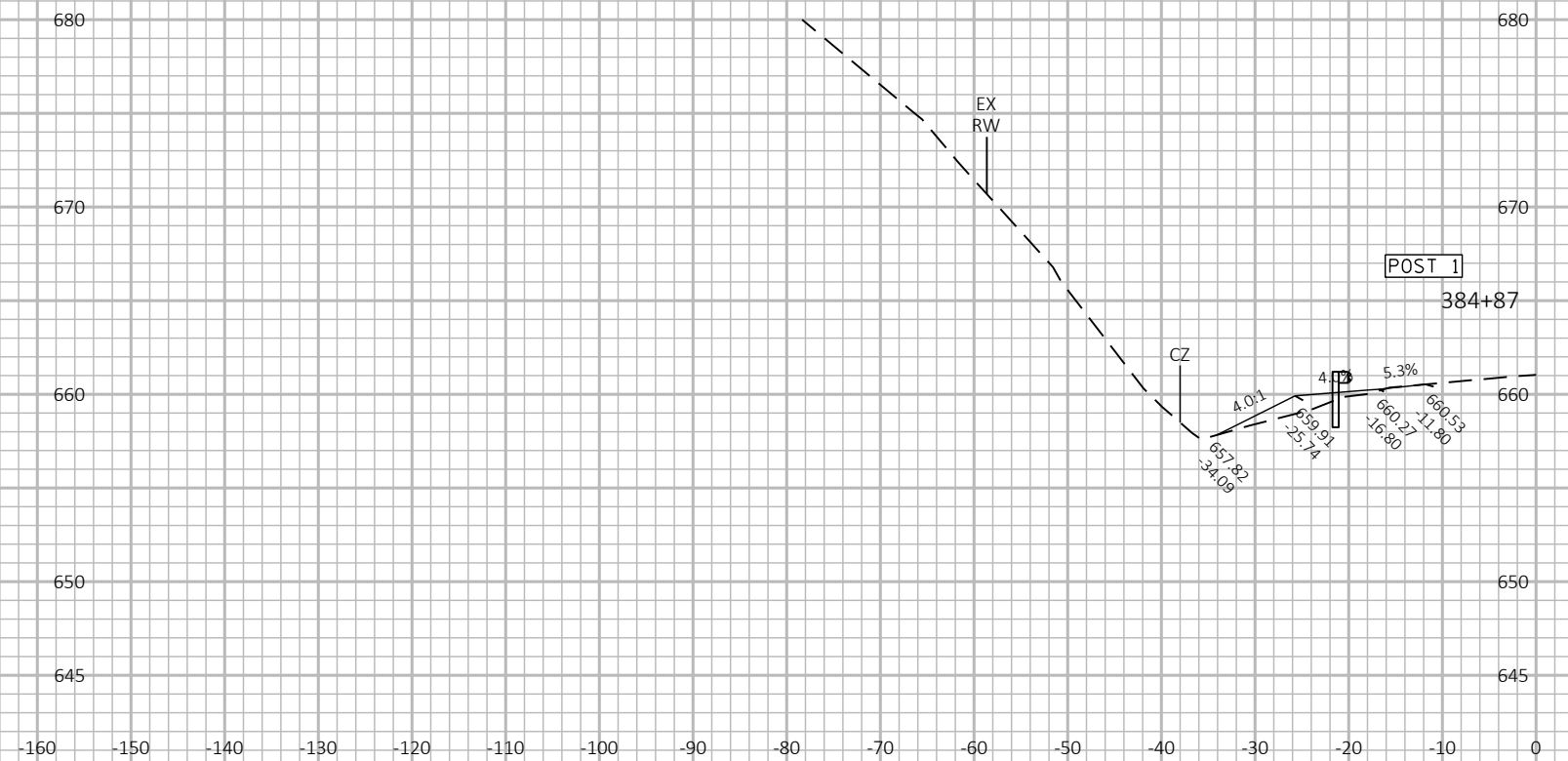
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PROJECT NO:	5180-00-73
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HWY: STH 60

COUNTY: CRAWFORD

CROSS SECTIONS: STH 60

SHEET 130

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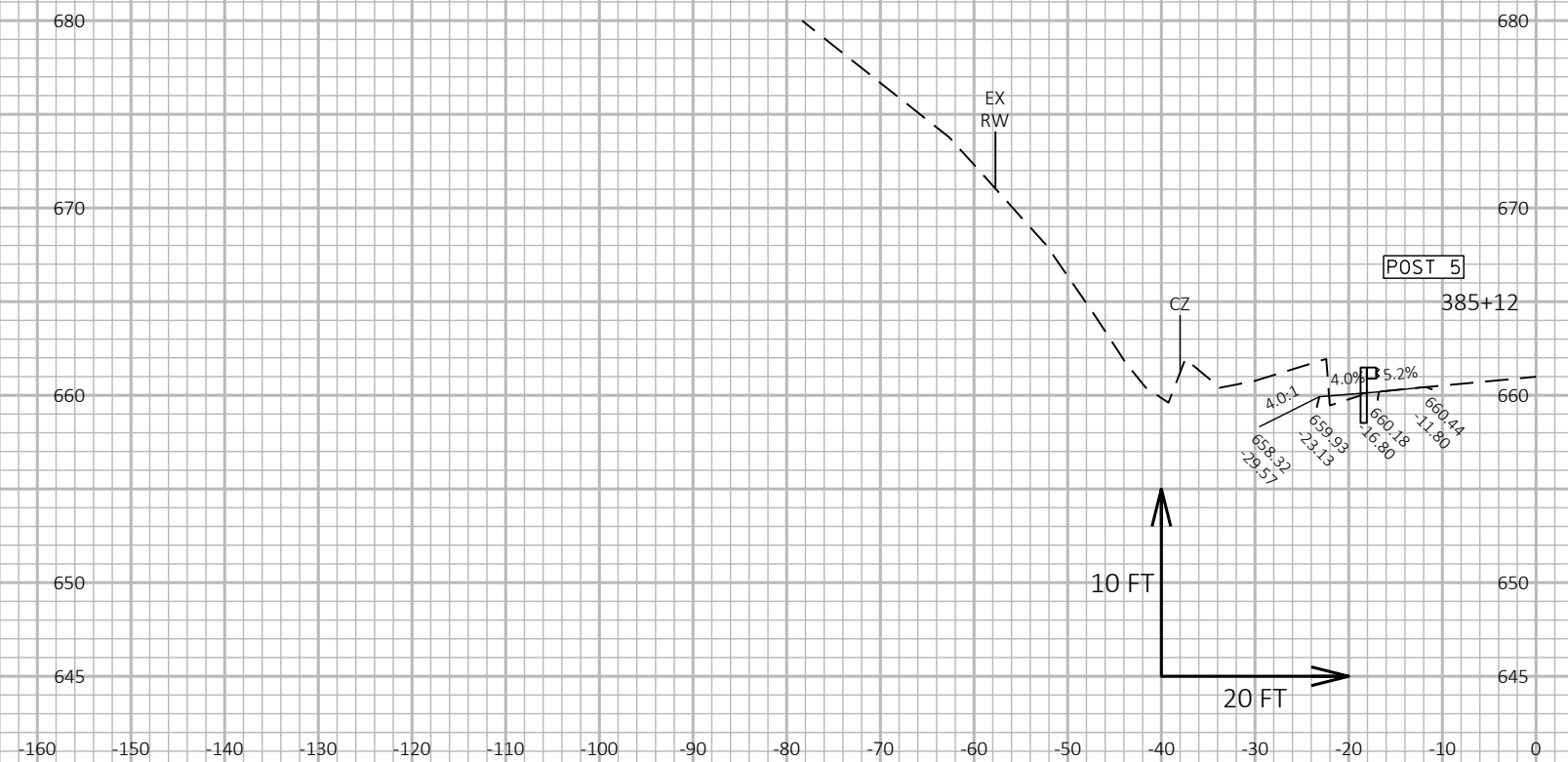
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PLOT BY : KLU DY, KATHLEEN M

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDs SHEET 49



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PROJECT NO:	5180-00-73
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HWY: STH 60

COUNTY: CRAWFORD

CROSS SECTIONS: STH 60

SHEET 131

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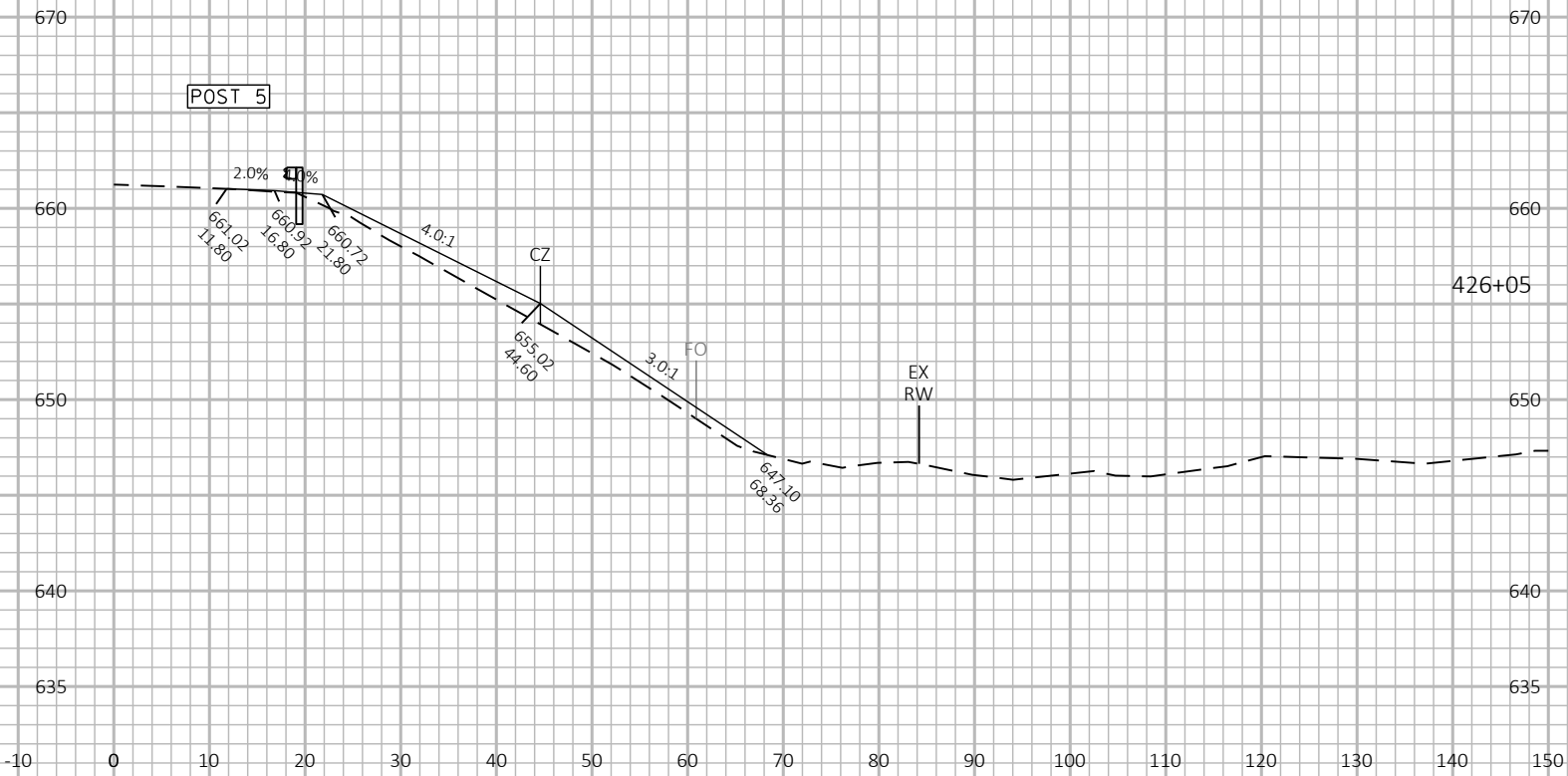
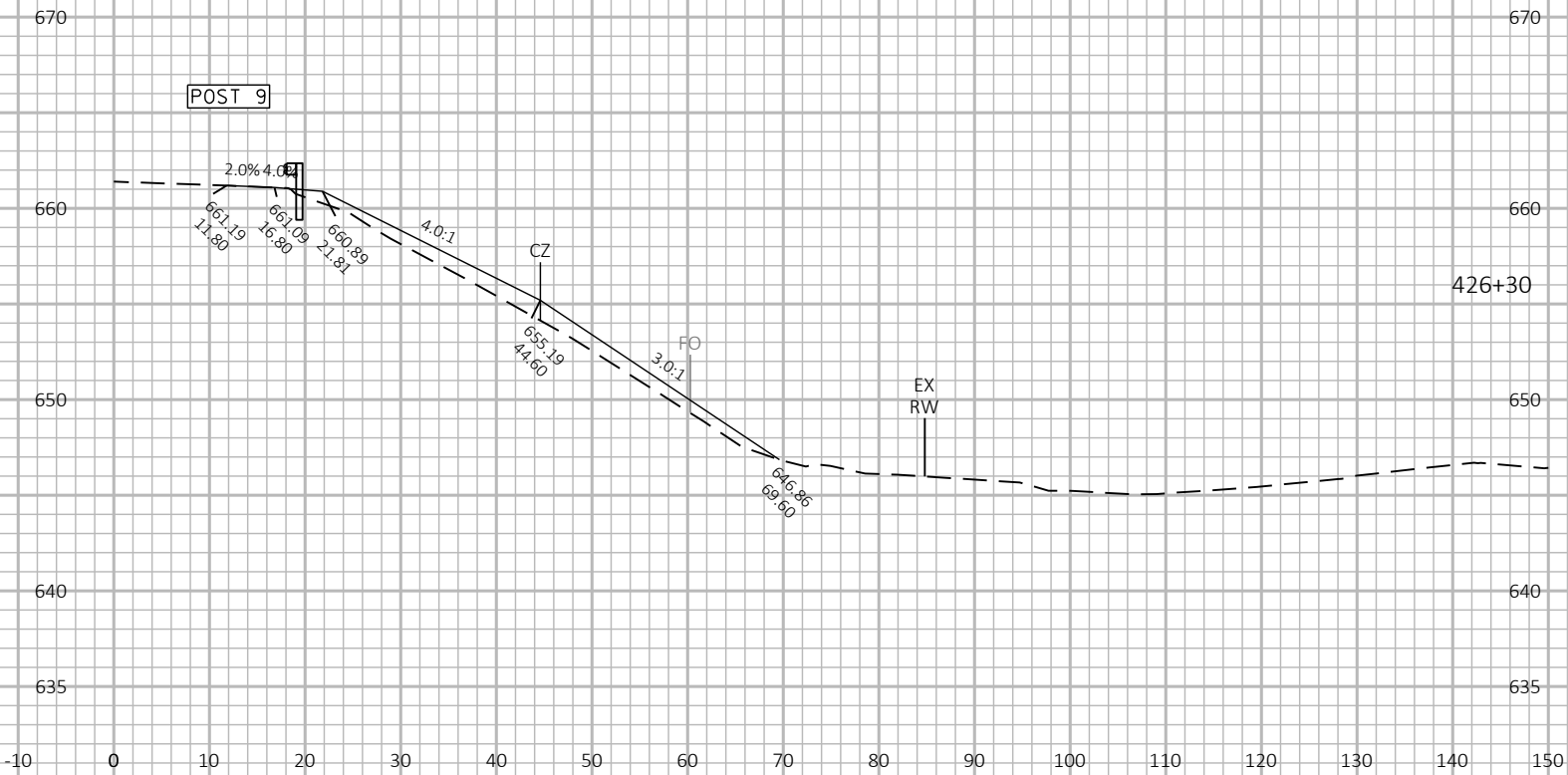
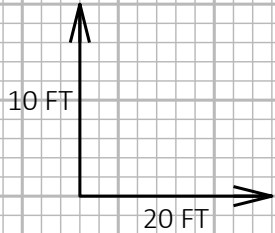
WISDOT/CADDS SHEET 49



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PROJECT NO: 5180-00-73

HWY: STH 60

COUNTY: CRAWFORD

CROSS SECTIONS: STH 60

SHEET 133

E

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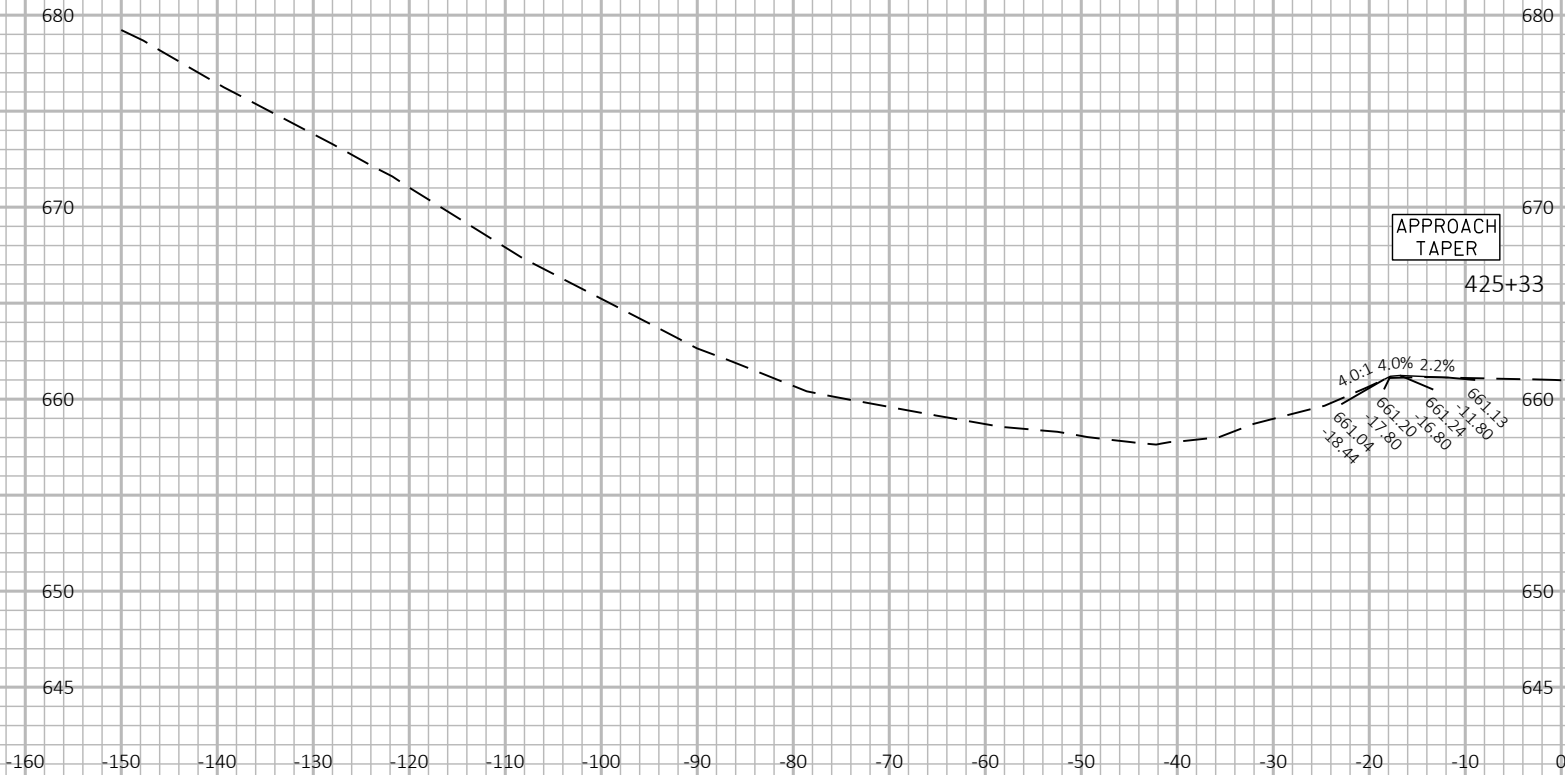
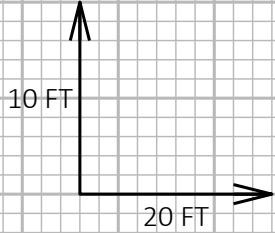
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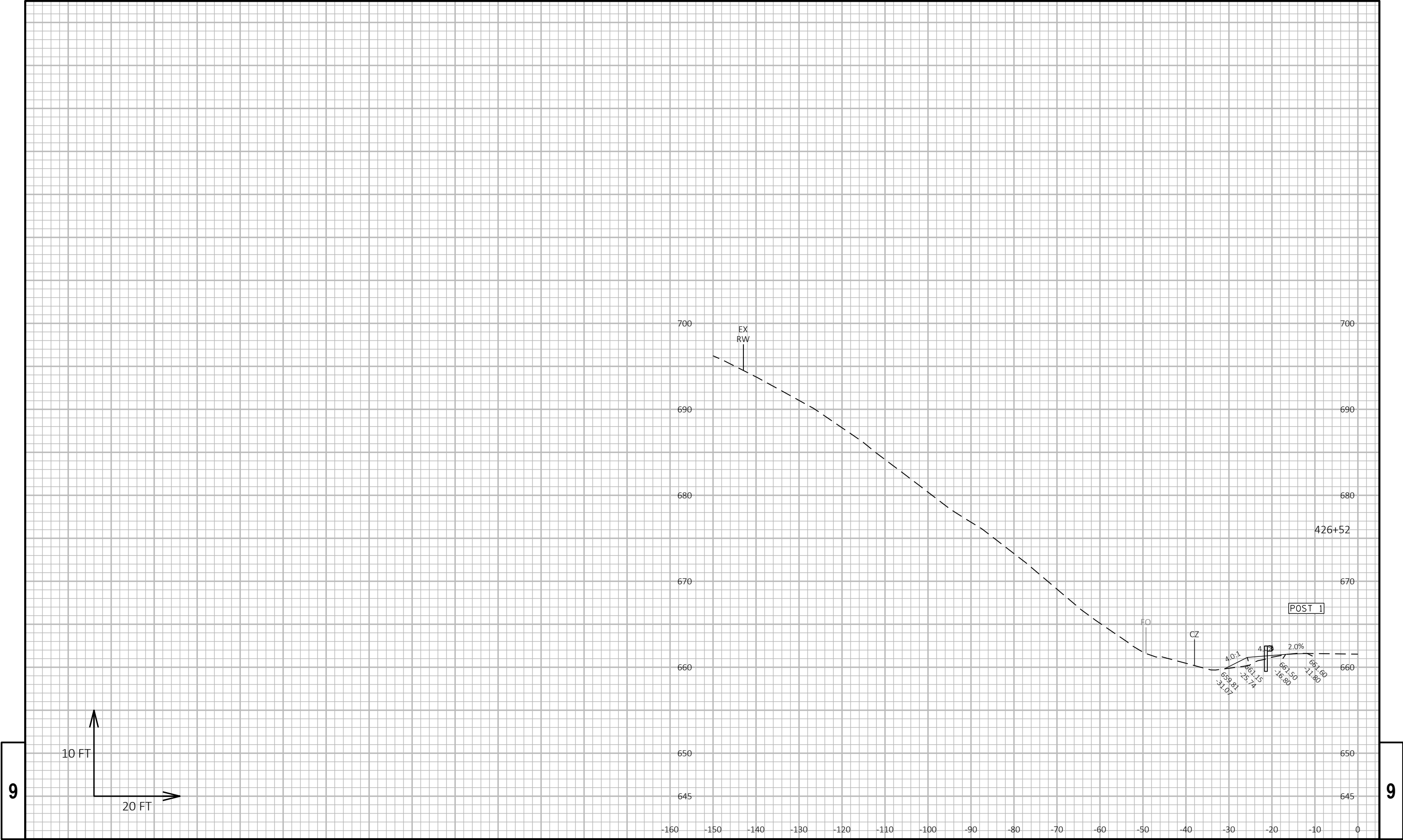
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PLOT NAME :

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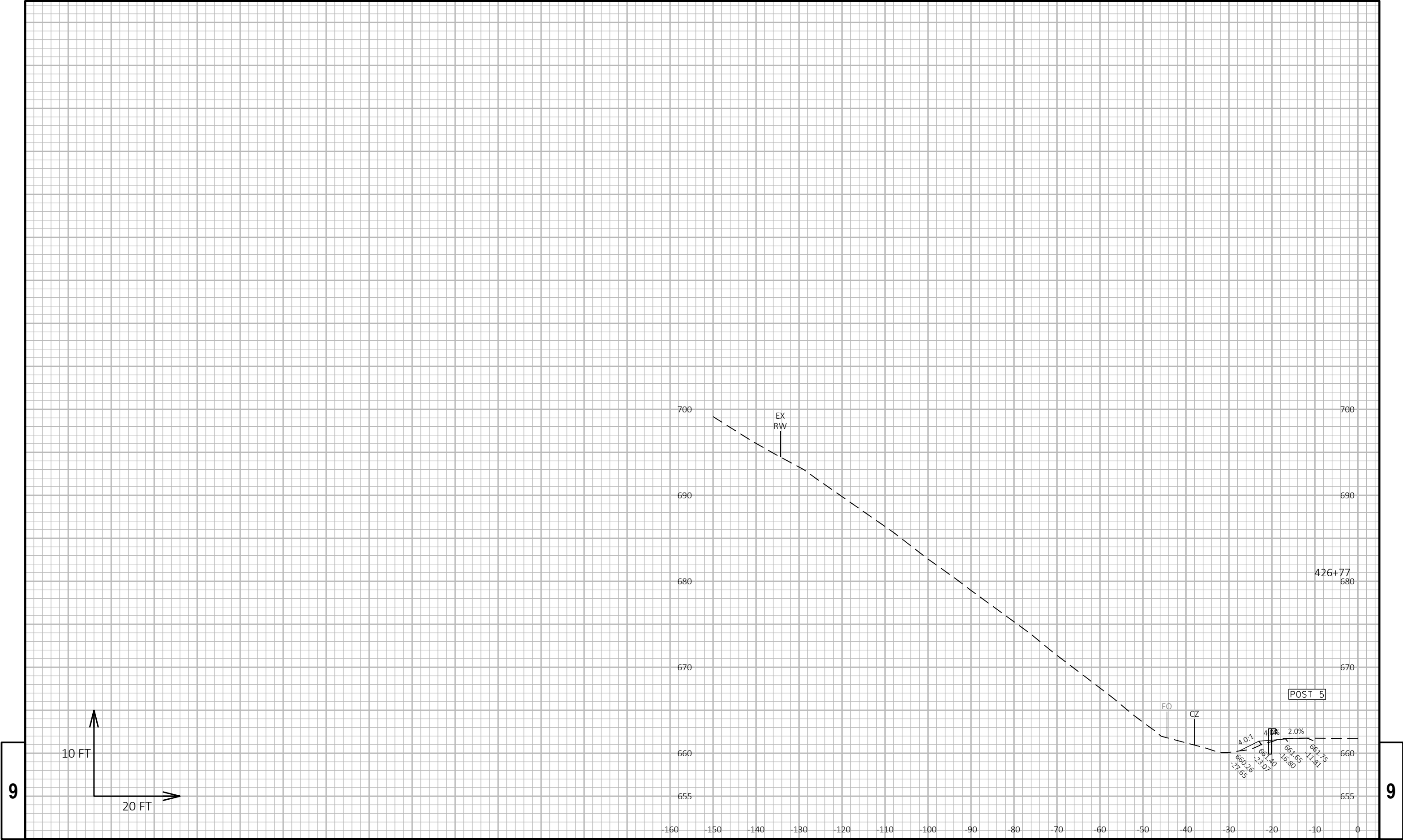
WISDOT/CADDs SHEET 49





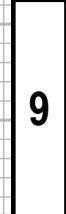
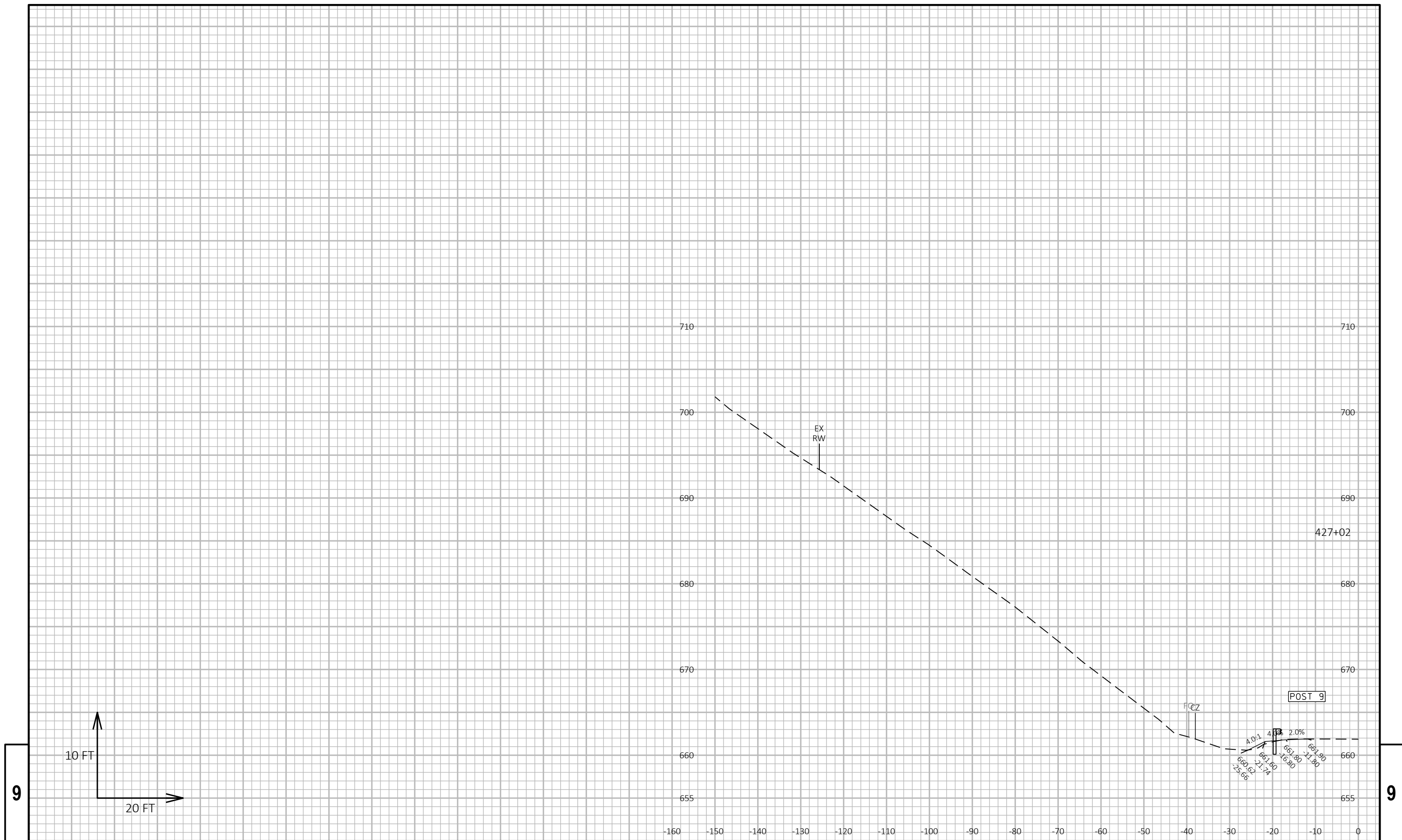
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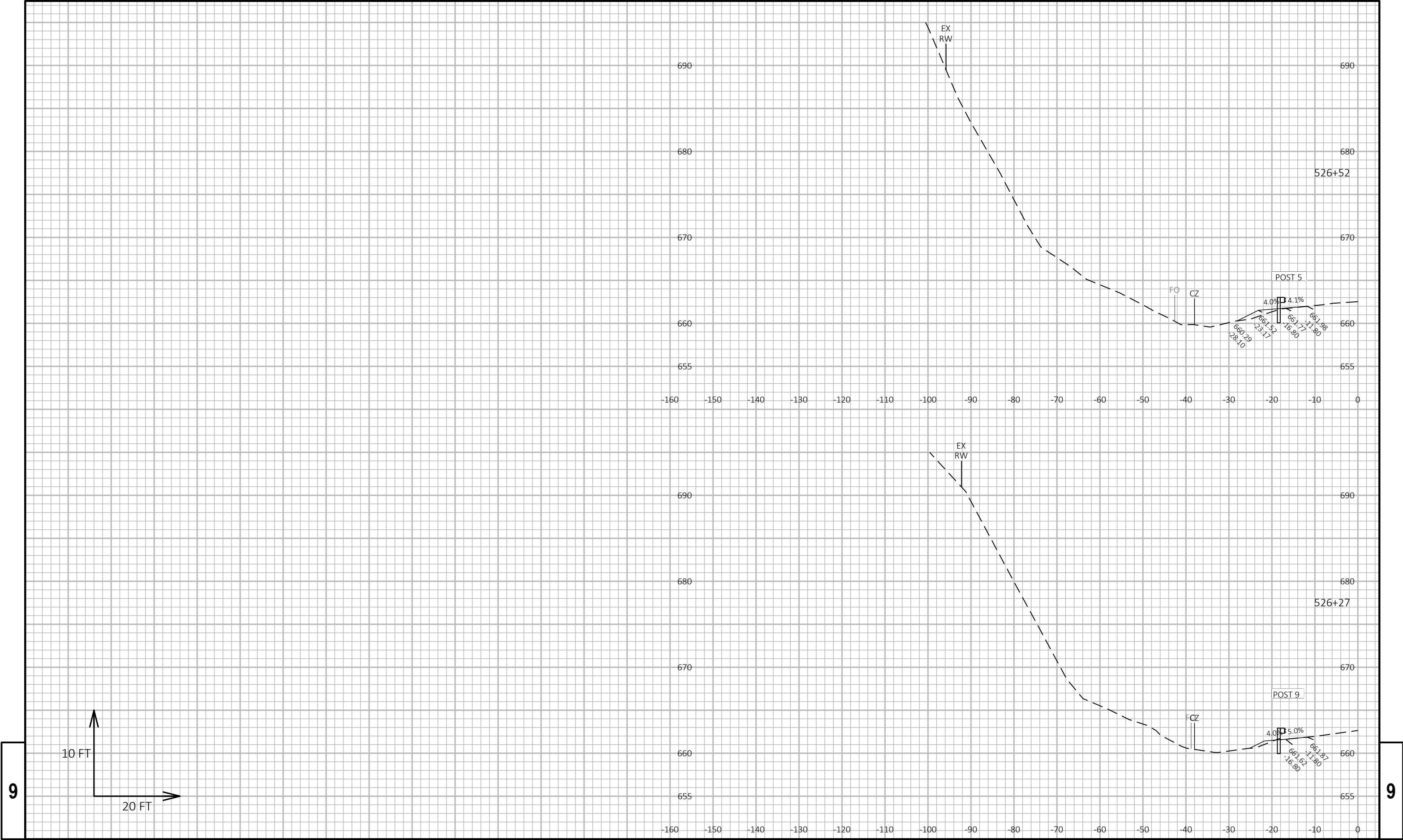
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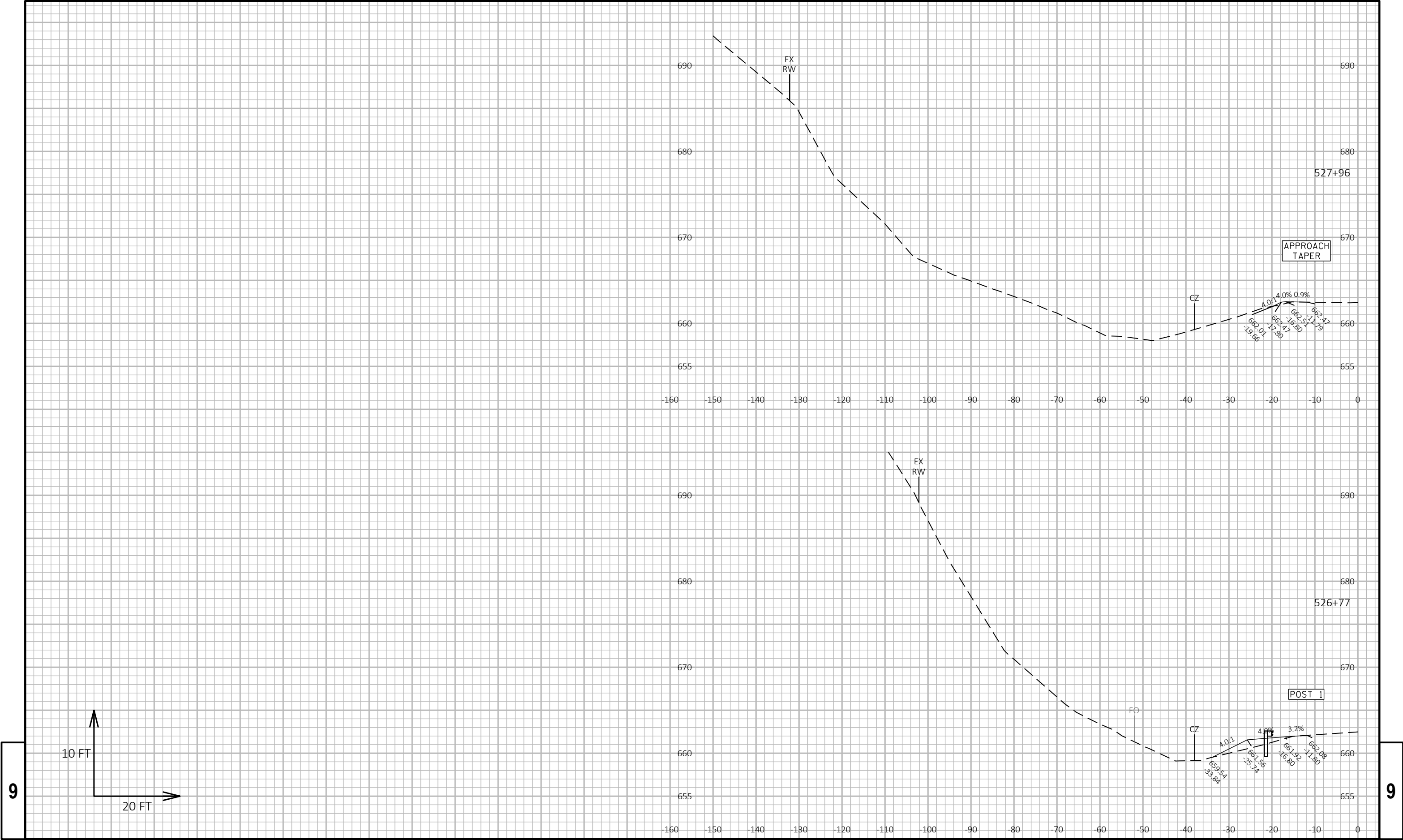
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PROJECT NO: 5180-00-73

HWY: STH 60

COUNTY: CRAWFORD

CROSS SECTIONS: STH 60

SHEET 141

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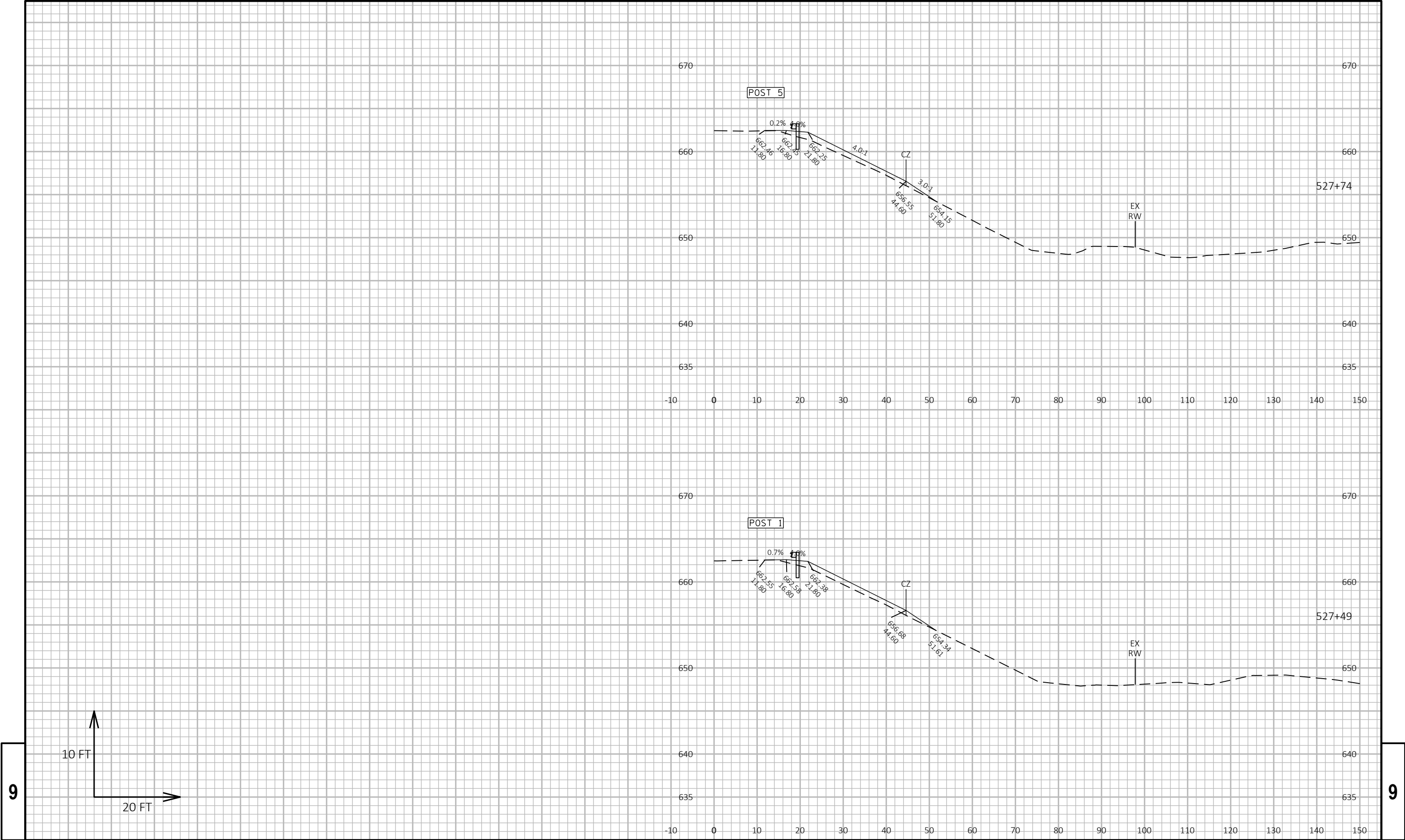
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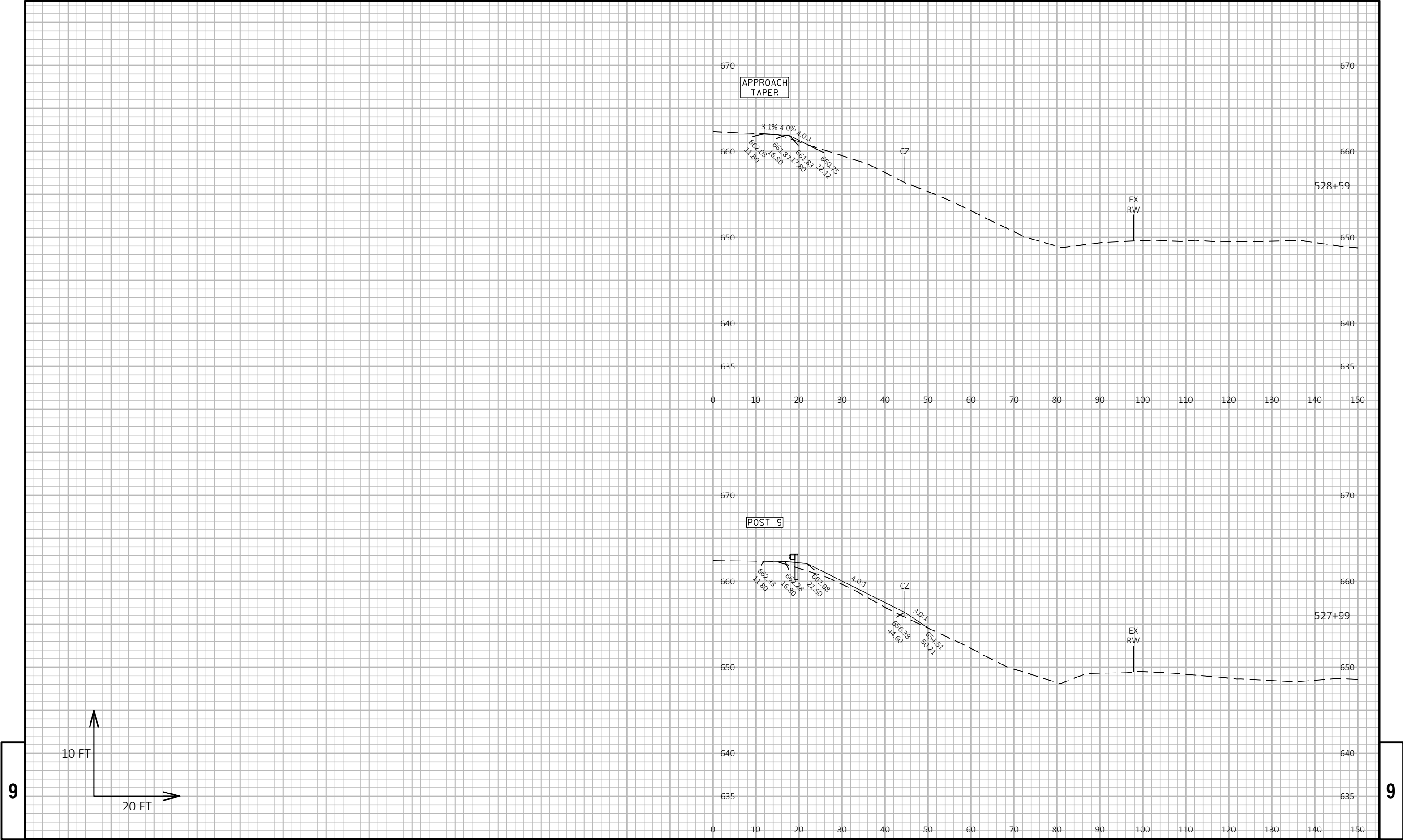
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PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

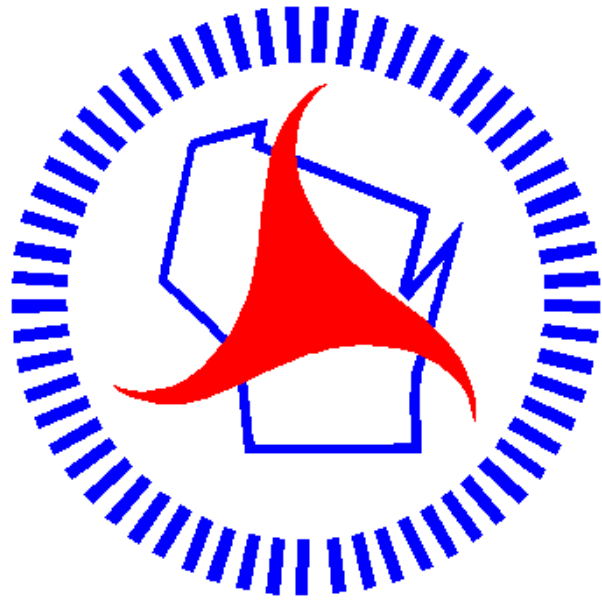
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