

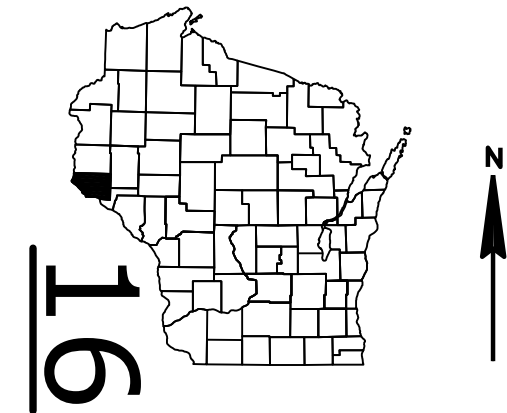
EAU PROJECT ID: 8070-03-70, 8070-03-71 WITH: NA COUNTY: PIERCE

OCTOBER 2024

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 = 302



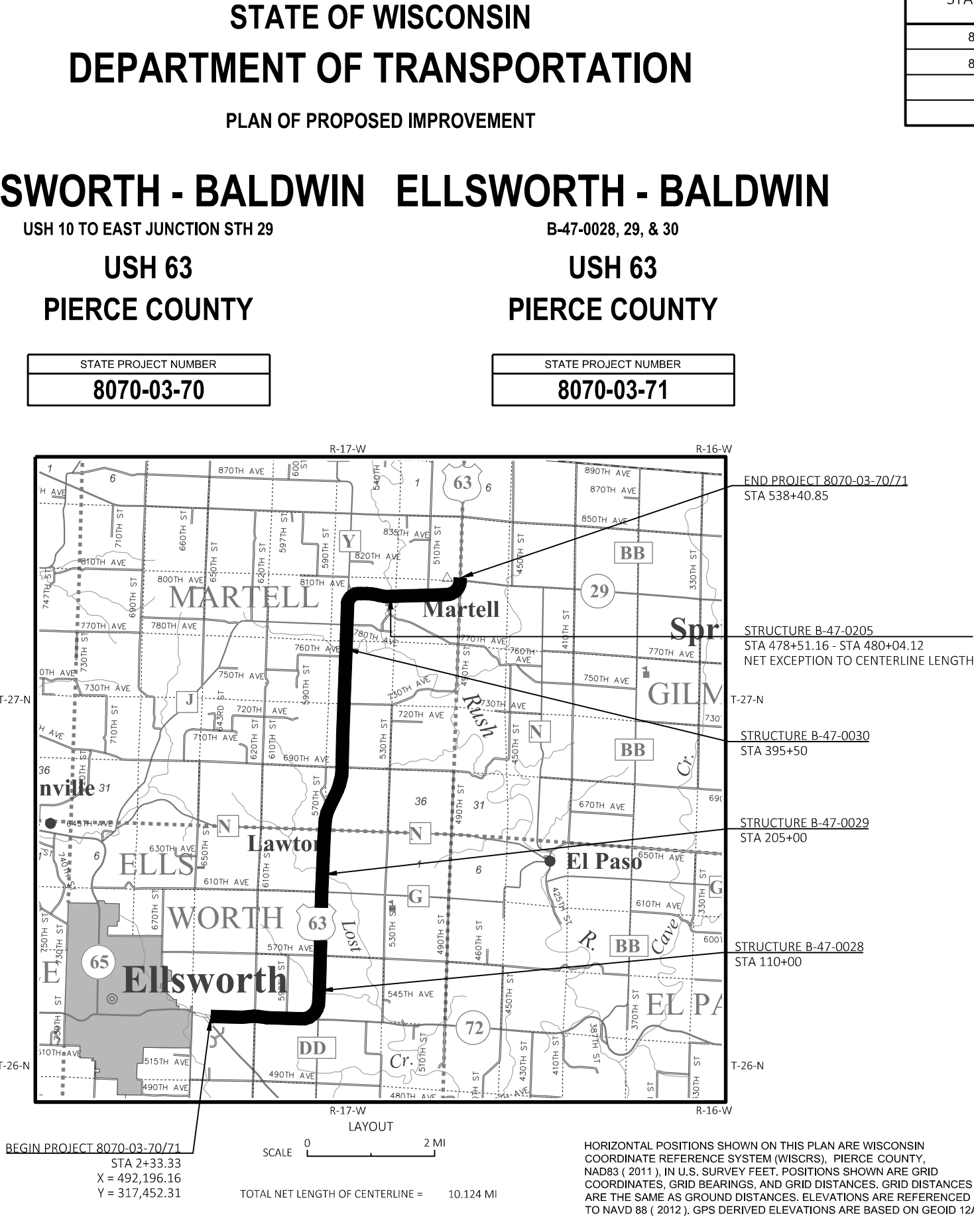
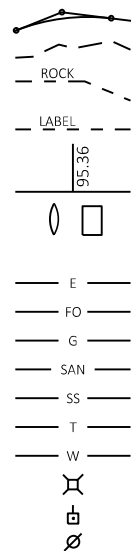
DESIGN DESIGNATION: USH 63

A.A.D.T.	(2022)	=	4650
A.A.D.T.	(2042)	=	4880
D.H.V.	(2022)	=	320
D.D.		=	60/40
T.		=	13.8%
DESIGN SPEED		=	60 MPH
ESALS		=	1,700,000

CONVENTIONAL SYMBOLS

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

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



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

ELLSWORTH - BALDWIN ELLSWORTH - BALDWIN

USH 10 TO EAST JUNCTION STH 29

B-47-0028, 29, & 30

USH 63 PIERCE COUNTY

USH 63 PIERCE COUNTY

STATE PROJECT NUMBER
8070-03-70

STATE PROJECT NUMBER
8070-03-71

TOTAL NET LENGTH OF CENTERLINE = 10.124 MI

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8070-03-70	WISC 2025015	1
8070-03-71	WISC 2025016	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	WISDOT NW REGION
Designer	WISDOT NW REGION
Project Manager	DANIEL RAMBO, PE
Regional Examiner	WISDOT NW REGION
Regional Supervisor	NICOLE PASSUELLO, PE
APPROVED FOR THE DEPARTMENT	
DATE: 8/7/2024	
	(Signature)

GENERAL NOTES

1.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
2.

CROSS DRAIN PIPE LOCATIONS AND ELEVATIONS AS SHOWN ON THE CROSS SECTION SHEETS ARE APPROXIMATE AND SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.
3.

SEED, INSTALL EROSION MAT, MULCH AND FERTILIZE ALL SALVAGED TOPSOILED AREAS WITHIN 7 WORKING DAYS AFTER GRADING WORK IS COMPLETED.
4.

DISTURBED AREAS SHALL BE FERTILIZED, SEEDED AND MULCHED OR FERTILIZED, SEEDED AND EROSION MATTED AS DIRECTED BY THE ENGINEER.
5.

EXACT LOCATION OF ALL DRIVEWAY ENTRANCES TO BE REVIEWED AND APPROVED BY THE ENGINEER.
6.

THE LOCATION 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. CONTACT DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO START OF WORK.
7.

STATIONING, DISTANCES, AND OFFSETS FOR SIGNS SHOWN IN THE PLANS ARE APPROXIMATE AND THE FINAL LOCATION OF SIGNS ARE TO BE DETERMINED BY THE ENGINEER.
8.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
9.

TACK COAT HAS BEEN ESTIMATED AT AN APPLICATION OF 0.07 GAL./S.Y. AND SHALL BE PLACED BETWEEN THE LAYERS OF ASPHALTIC PAVEMENT.
10.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.
11.

PROPOSED PAVEMENT MARKINGS SHOULD MATCH EXISTING PAVEMENT MARKINGS.
12.

EXISTING PERMANENT SIGNS TO REMAIN.
13.

UTILITY LOCATION MARKERS ON CROSS SECTIONS ARE FOR APPROXIMATE HORIZONTAL REFERENCE ONLY.
14.

FINAL PLACEMENT OF CONCRETE SURFACE DRAINS MUST MAINTAIN THE MINIMUM POST SEPARATION DISTANCES IN THE STANDARD DETAIL. THE PERPENDICULAR ORIENTATION IS TO BE USED FOR ALL CONCRETE SURFACE DRAINS.

ORDER OF SECTION 2 SHEETS

PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
TRAFFIC CONTROL
DETOUR ROUTE

STANDARD ABBREVIATIONS

AEW	APRON ENDWALLS
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
BLDG.	BUILDING
CBTP	CONCRETE BARRIER TEMPORARY PRECAST
CTR	CENTER
C/L	CENTERLINE
C.E.	COMMERCIAL ENTRANCE
CONC.	CONCRETE
CSW	CONCRETE SIDEWALK
CMCP	CORRUGATED METAL CULVERT PIPE
CP	CULVERT PIPE
CPCS	CULVERT PIPE CORRUGATED STEEL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CPT	CONSTRUCTION PERMIT
DMS	DYNAMIC MESSAGE SIGN
EAT	ENERGY ABSORBING TERMINAL
EB	EASTBOUND
ELEC	ELECTRIC
IE	INVERT ELEVATION
EX. OR EXIST	EXISTING
FO	FIBER OPTIC
F.E.	FIELD ENTRANCE
GAS	GAS
HMA	HOT MIX ASPHALT
HSE.	HOUSE
LHF	LEFT HAND FORWARD
MH	MANHOLE
MAX.	MAXIMUM
MIN.	MINIMUM
NOR.	NORMAL
NTS	NOT TO SCALE
PLE	PERMANENT LIMITED EASEMENT
P.E.	PRIVATE ENTRANCE
P.L.	PROPERTY LINE
PRW	PROPOSED RIGHT-OF-WAY
RAD OR R	RADIUS
R/L	REFERENCE LINE
REQ'D.	REQUIRED
RHF	RIGHT HAND FORWARD
RW	RIGHT-OF-WAY LINE
SAN	SANITARY SEWER
SHLD	SHOULDER
SW	SIDEWALK
SF	SQUARE FEET
SY	SQUARE YARD
S.D.D.	STANDARD DETAIL DRAWING
STA	STATION
SS	STORM SEWER
TEL	TELEPHONE
TLE	TEMPORARY LIMITED EASEMENT
TYP	TYPICAL
WAT	WATER
WB	WESTBOUND

DESIGN CONTACT

DEPARTMENT OF TRANSPORTATION
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718 W CLAIREMONT AVE
EAU CLAIRE, WI 54701
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DANIEL.RAMBO@DOT.WI.GOV

DNR CONTACT

DEPARTMENT OF NATURAL RESOURCES
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UTILITY CONTACTS

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MKNEGENDORF@LSWI.NET

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PO BOX 125
HAGER CITY, WI 54014
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CWHITCOMB@BEVCOMM.COM
MPETERSON@BEVCOMM.COM

DAIRYLAND POWER COOPERATIVE

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LA CROSSE, WI 54602
608-787-1381
MICHAEL.LYDON@DAIRYLANDPOWER.COM

MIDCO

GEORGE MARTINEZ
924 LAKE AVENUE
FAIRMONT, MN 56031
507-749-2000
GEORGEMARTINEZ@MIDCO.COM

NORTHERN NATURAL GAS COMPANY

JOHN DELASKE
4685 212TH ST W
FARMINGTON, MN 55024
402-530-3420
JOHN.DELASKE@NNGCO.COM

PIERCE PEPIN COOPERATIVE SERVICES

BRAD RISTOW
W 7725 US HWY 10
PO BOX 420
ELLSWORTH, WI 54011
715-273-2473
BRISTOW@PIERCEPEPIN.COOP

SPRING VALLEY TELEPHONE COMPANY, INC.

STEVE MAREK
S 131 MCKAY AVE
PO BOX 220
SPRING VALLEY, WI 54767
715-778-4433
SMAREK@SVTEL.NET

WE ENERGIES

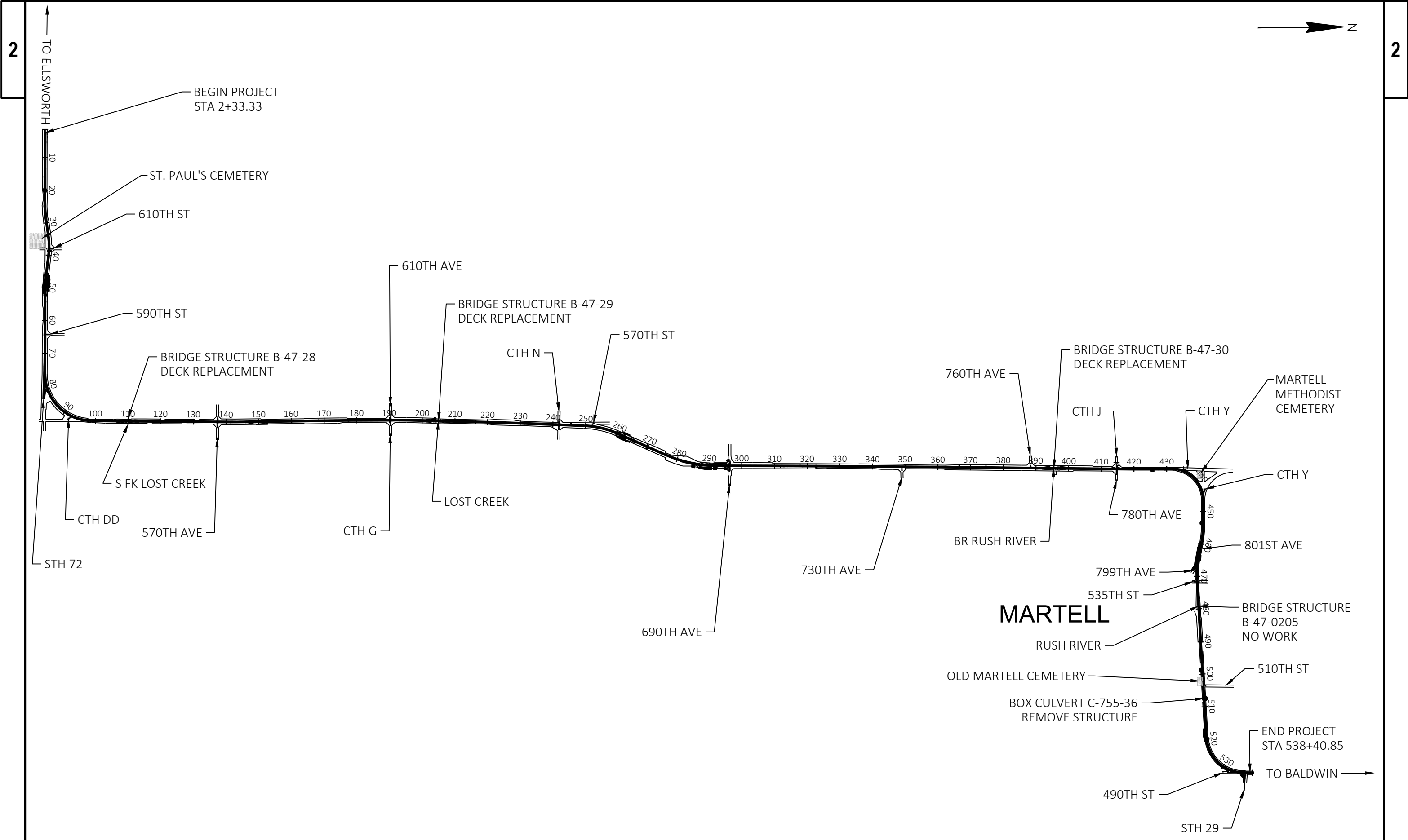
WE ENERGIES UTILITY COORDINATOR
500 S 116TH ST
WEST ALLIS, WI 53214
414-221-2738
WE-UTILITY-RELOCATIONS@WE-ENERGIES.COM

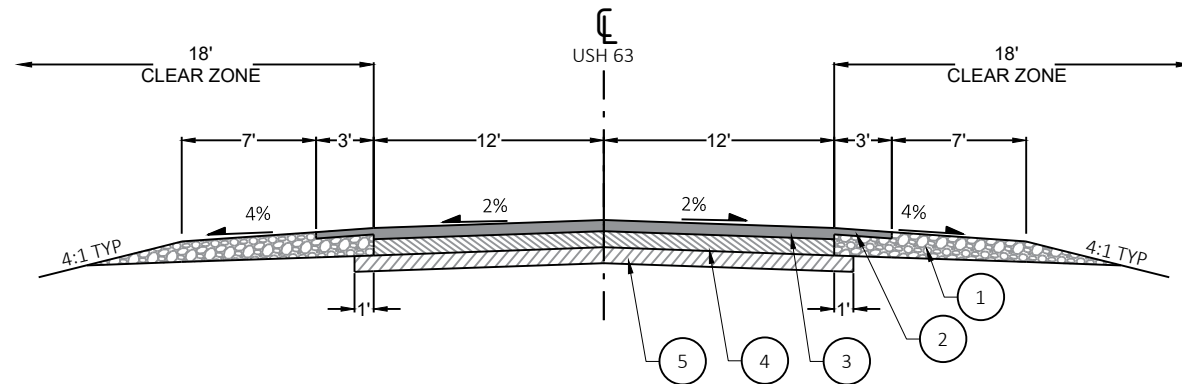
XCEL ENERGY

PAM TAYLOR
1414 W. HAMILTON AVE
PO BOX 8
EAU CLAIRE, WI 54702-0008
715-737-1306
PAMELA.L.TAYLOR@XCELENERGY.COM

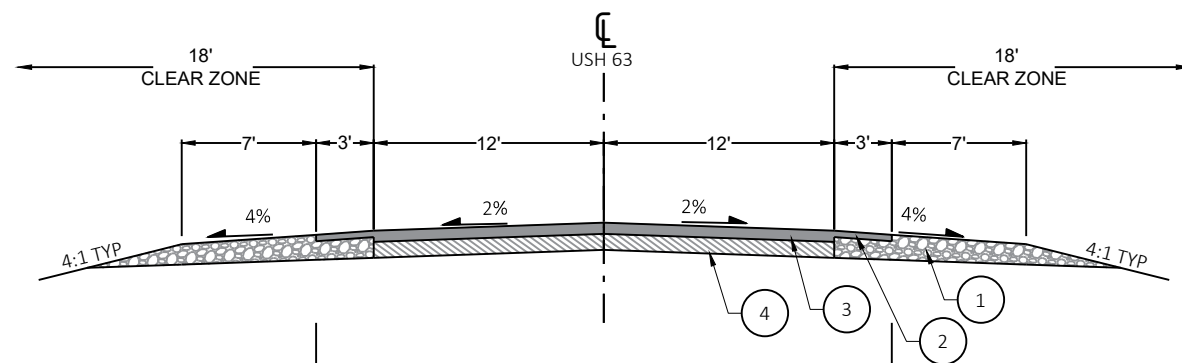


LOCATION	TOTAL DEPTH	LAYERS	GRADATION	TRAFFIC	BINDER	DESIGNATION	NOTE
USH 63	3.25-INCH	1.50" UPPER	5	MT	58-34	V	OVERLAY PAVEMENT
		1.75" LOWER	4	MT	58-34	V	
STH 72 INTERSECTION	4-INCH	1.50" UPPER	5	MT	58-34	V	OVERLAY PAVEMENT
		2.50" LOWER	4	MT	58-34	V	





EXISTING TYPICAL SECTION
STA 2+33.33 - STA 100+07



EXISTING TYPICAL SECTION
STA 100+07 - STA 430+69

PARTIAL EXISTING SECTION

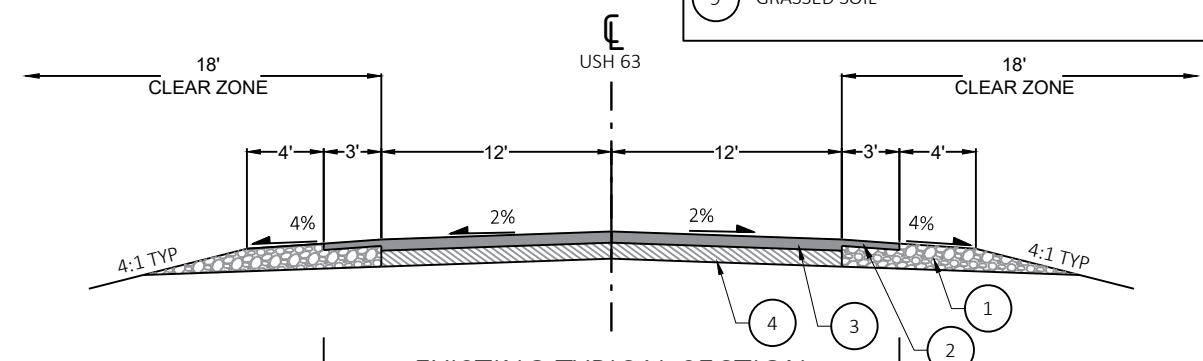
STA 108+30 - STA 109+50
STA 110+41 - STA 111+57
STA 203+64 - STA 204+59
STA 205+55 - STA 206+51
STA 260+37 - STA 266+18
STA 292+17 - STA 296+24
STA 393+90 - STA 395+10
STA 395+88 - STA 397+02

PARTIAL EXISTING SECTION

STA 108+39 - STA 109+50
STA 110+41 - STA 110+92
STA 146+29 - STA 151+60
STA 203+20 - STA 204+35
STA 205+31 - STA 206+71
STA 260+37 - STA 266+19
STA 292+17 - STA 296+23
STA 393+95 - STA 395+10
STA 395+88 - STA 397+08

EXISTING LEGEND

- 1 CRUSHED AGG BASE COURSE
- 2 2" PAVED SHOULDER, WARRANTED
- 3 3.5" ASPHALTIC PAVEMENT, WARRANTED
- 4 5" PULVERIZED & RELAYED ASPHALT AND BASE WITHOUT ADDED OIL
- 5 5" CEMENT STABILIZED BASE COURSE
- 6 BEAM GUARD
- 7 6" ASPHALTIC SURFACE
- 8 ASPHALTIC SURFACE
- 9 GRASSED SOIL



EXISTING TYPICAL SECTION
STA 430+69 - STA 538+40.85

PARTIAL EXISTING SECTION

STA 477+72 - STA 478+43
STA 480+12 - STA 480+81
STA 507+02 - STA 508+00

PARTIAL EXISTING SECTION

STA 461+72 - STA 464+79
STA 477+70 - STA 478+43
STA 480+12 - STA 483+97
STA 484+12 - STA 487+59
STA 507+09 - STA 507+99
STA 515+80 - STA 519+49

PARTIAL EXISTING SECTION

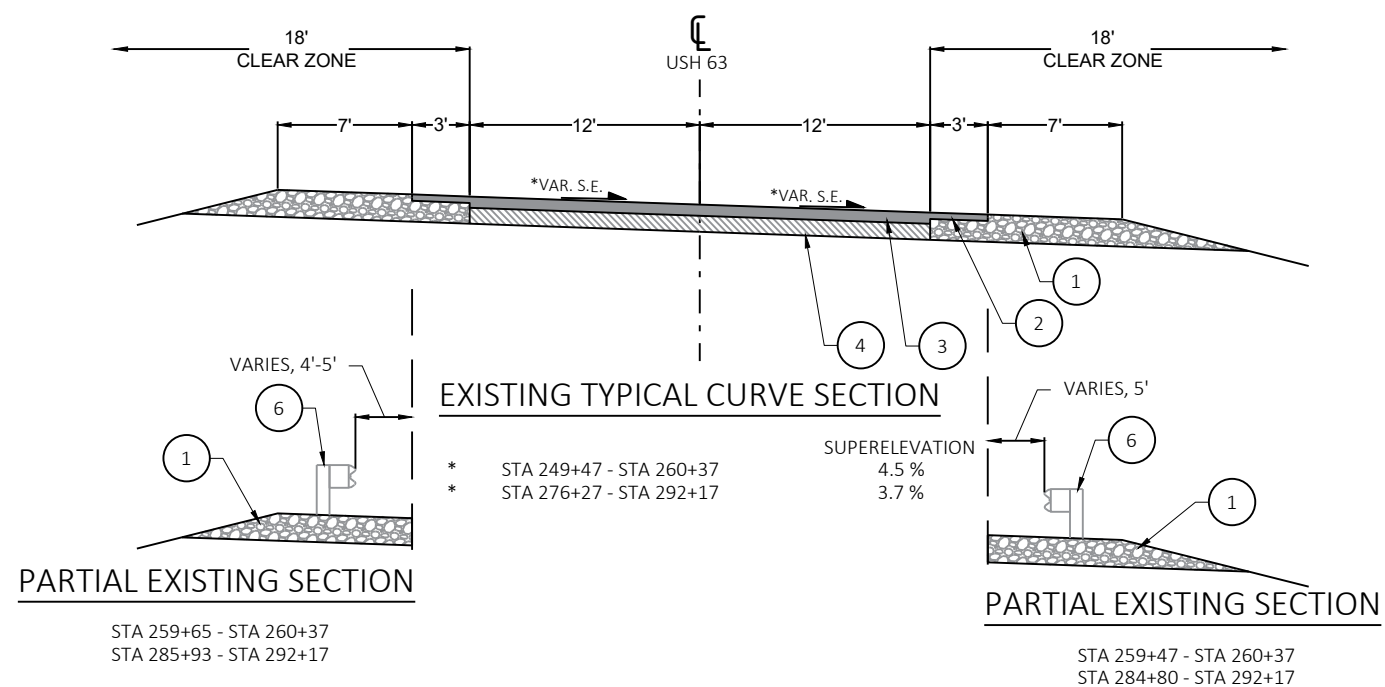
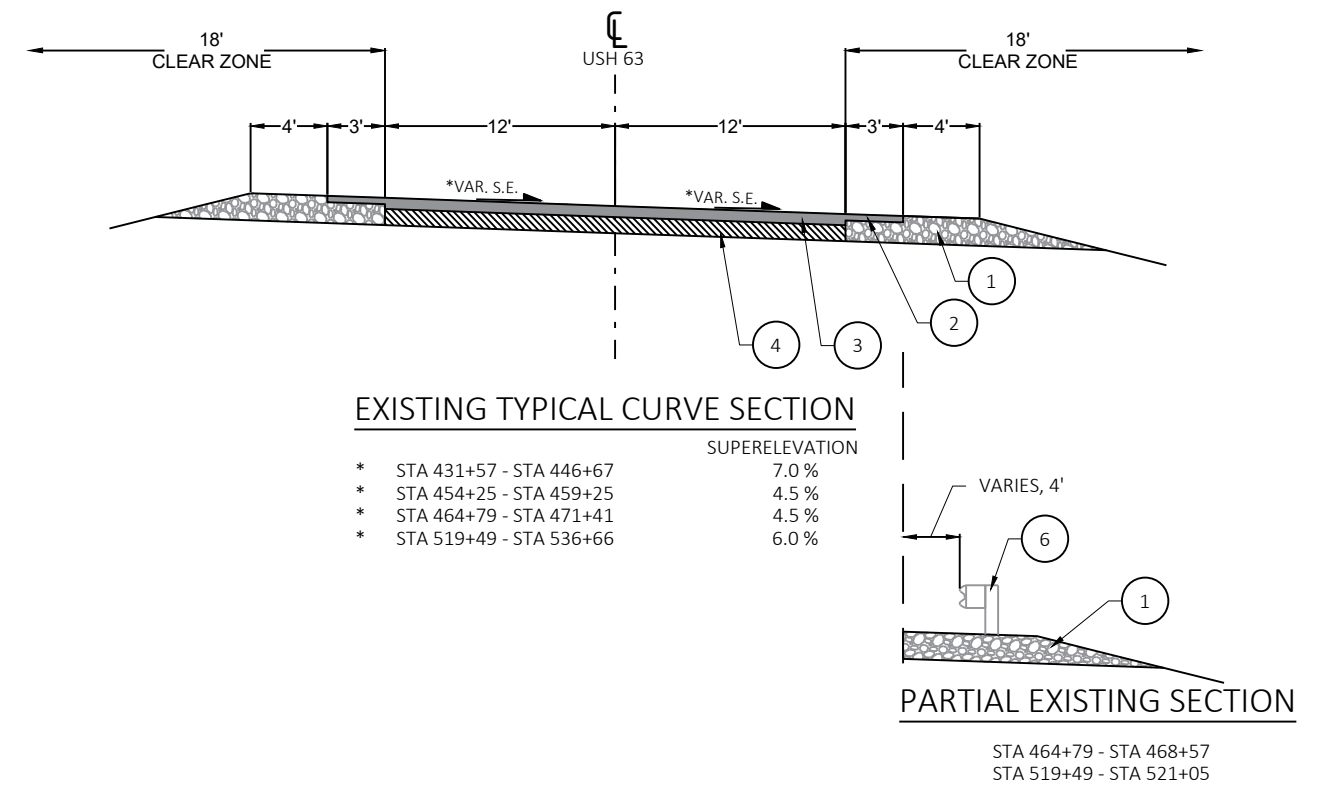
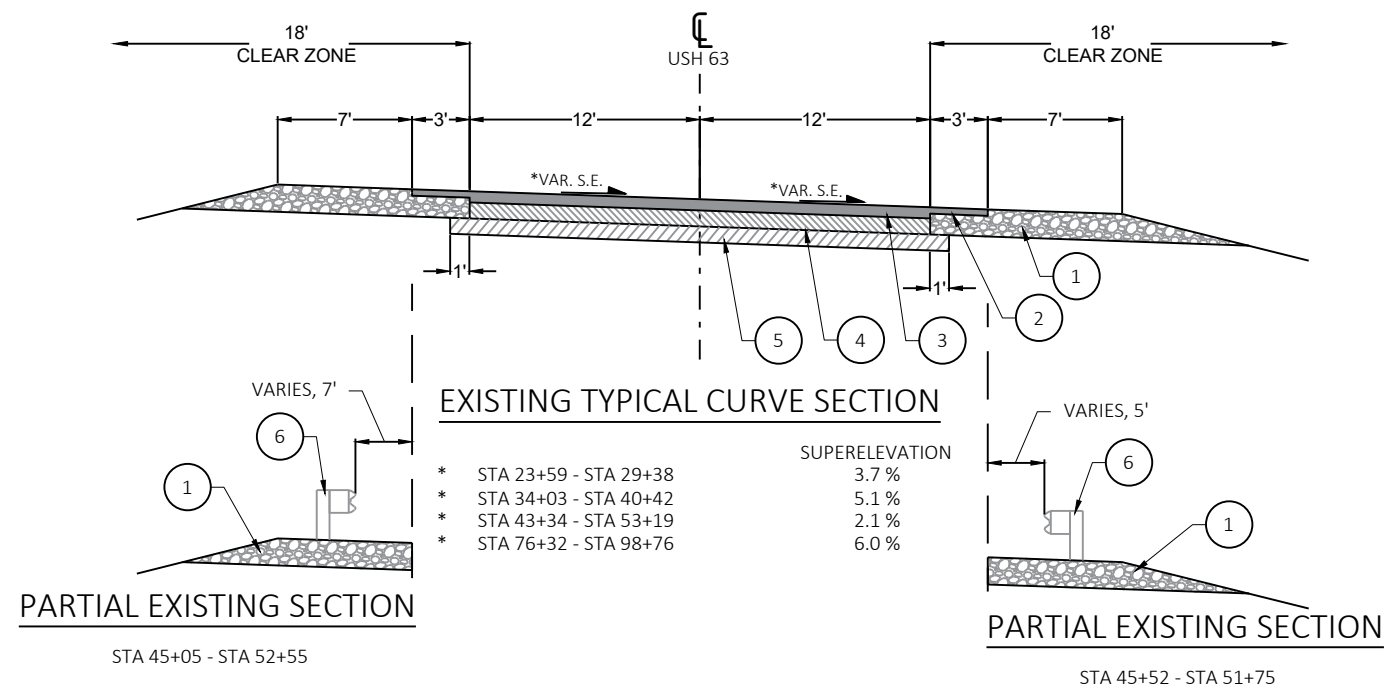
STA 477+72 - STA 478+43
STA 480+12 - STA 480+81

PARTIAL EXISTING SECTION

STA 477+70 - STA 478+43
STA 480+12 - STA 481+75

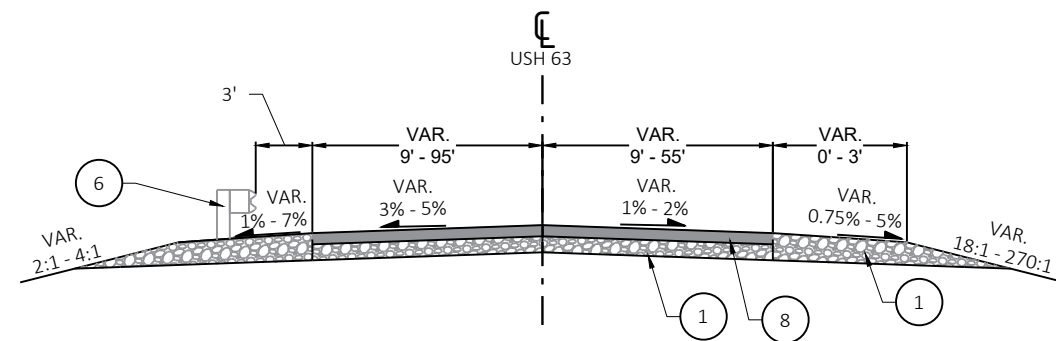
EXISTING LEGEND

- 1 CRUSHED AGG BASE COURSE
- 2 2" PAVED SHOULDER, WARRANTED
- 3 3.5" ASPHALTIC PAVEMENT, WARRANTED
- 4 5" PULVERIZED & RELAYED ASPHALT AND BASE WITHOUT ADDED OIL
- 5 5" CEMENT STABILIZED BASE COURSE
- 6 BEAM GUARD
- 7 6" ASPHALTIC SURFACE
- 8 ASPHALTIC SURFACE
- 9 GRASSED SOIL

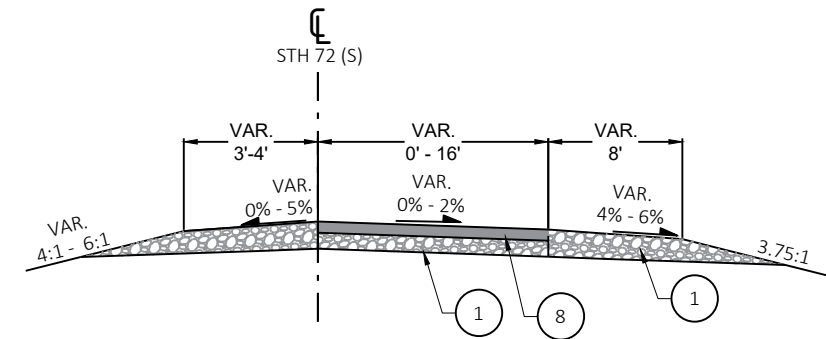


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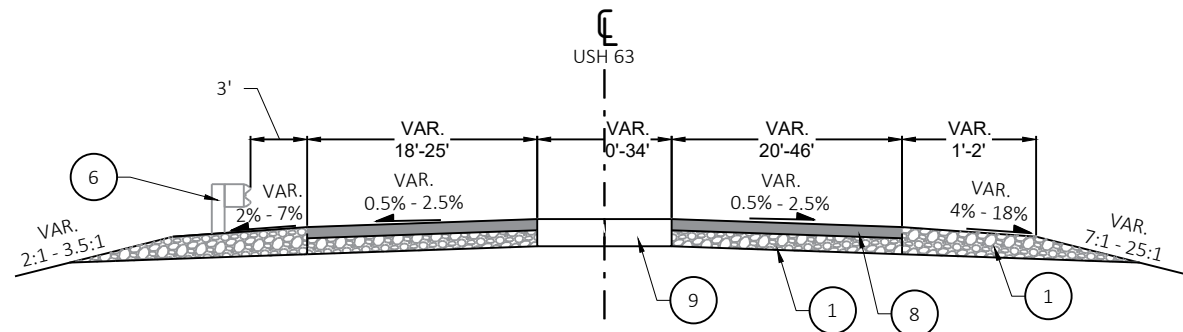
- 1 CRUSHED AGG BASE COURSE
- 2 2" PAVED SHOULDER, WARRANTED
- 3 3.5" ASPHALTIC PAVEMENT, WARRANTED
- 4 5" PULVERIZED & RELAYED ASPHALT AND BASE WITHOUT ADDED OIL
- 5 5" CEMENT STABILIZED BASE COURSE
- 6 BEAM GUARD
- 7 6" ASPHALTIC SURFACE
- 8 ASPHALTIC SURFACE
- 9 GRASSED SOIL



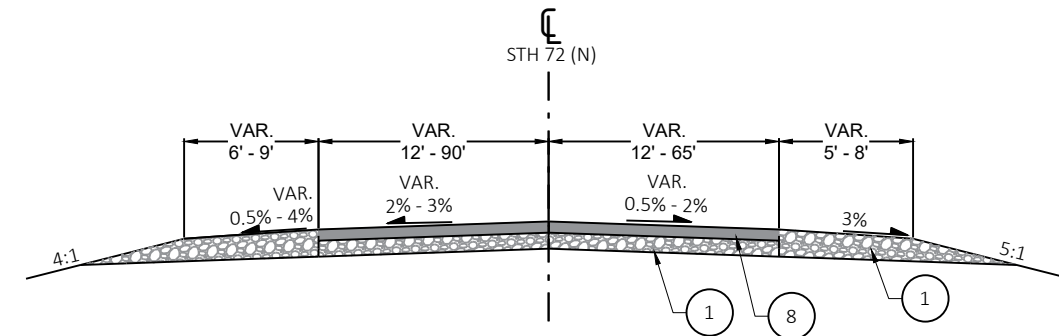
EXISTING TYPICAL SECTION
799TH AVE
STA 16000+24 - STA 16000+59
16000+95 - 16000+97



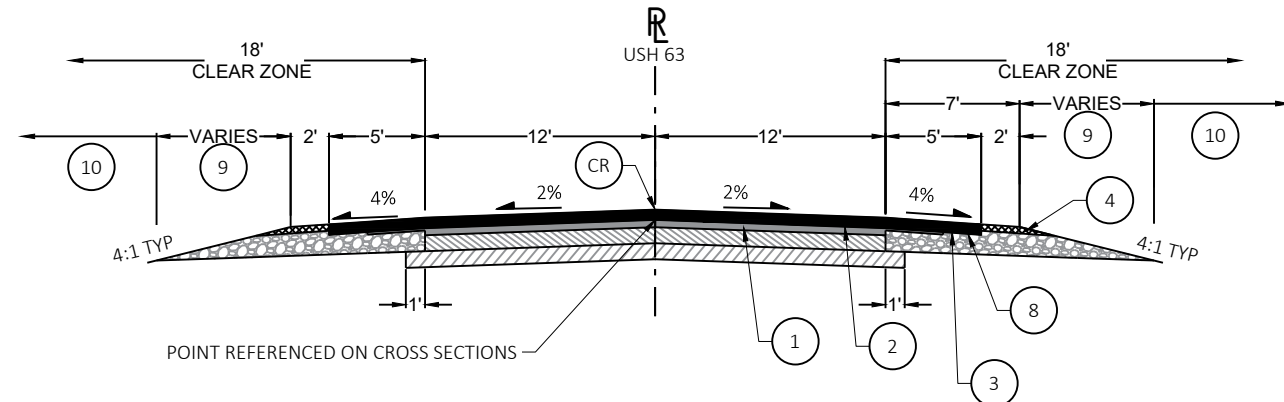
EXISTING TYPICAL SECTION
STH 72 (S)
STA 2500+00 - STA 2510+05



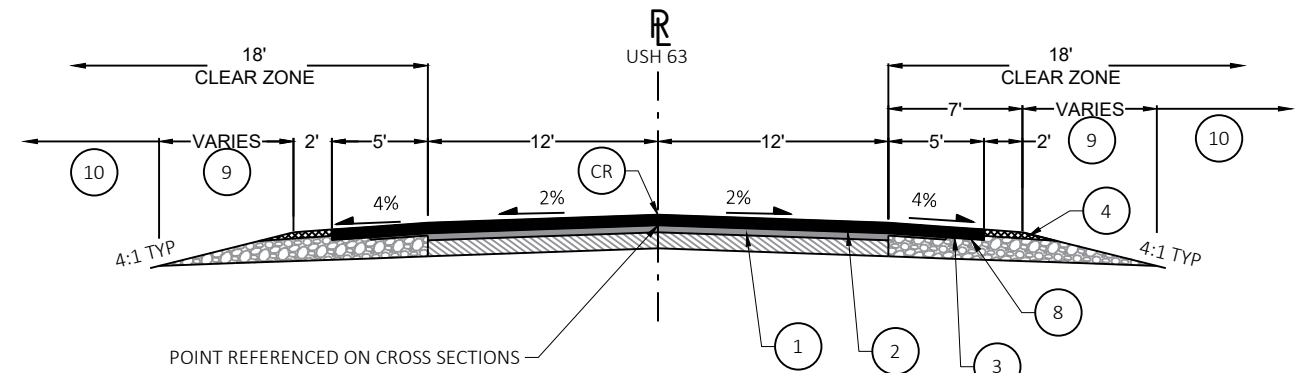
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799TH AVE
STA 16000+59 - STA 16000+95



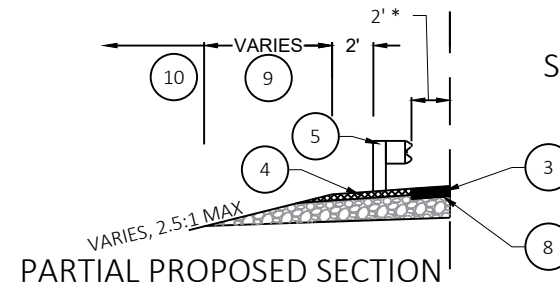
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STH 72 (N)
STA 3000+00 - STA 3002+60



PROPOSED TYPICAL SECTION
STA 2+33.33 - STA 100+07

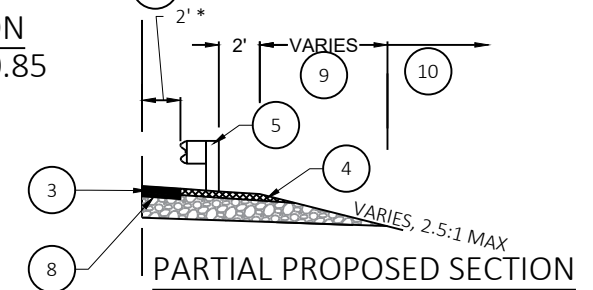


PROPOSED TYPICAL SECTION
STA 100+07.12 - STA 538+40.85

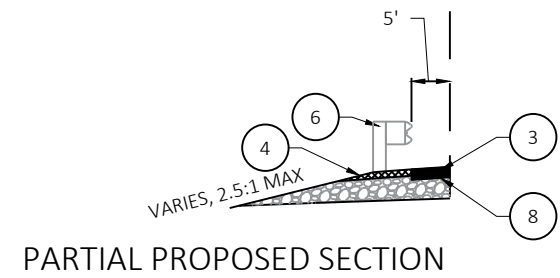


STA 108+35 - STA 109+50*
STA 110+41 - STA 112+19*
STA 203+76 - STA 204+59*
STA 205+55 - STA 207+33*
STA 292+17 - STA 296+23
STA 393+95 - STA 395+10*
STA 395+88 - STA 397+65*

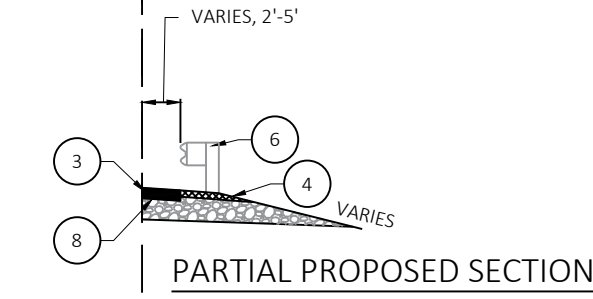
* BRIDGES B-47-28, 29, &30
ONLY HAVE 5' PAVED SHOULDER



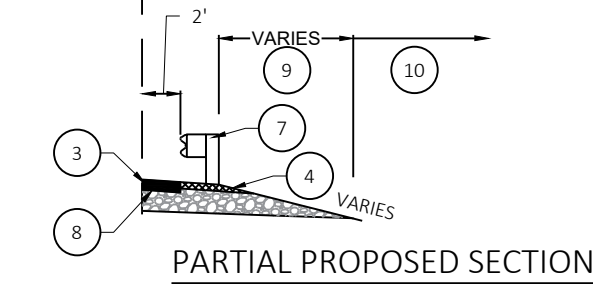
STA 107+73 - STA 109+50*
STA 110+41 - STA 110+86*
STA 202+57 - STA 204+34*
STA 205+30 - STA 206+45*
STA 292+17 - STA 296+24
STA 393+33 - STA 395+10*
STA 395+88 - STA 397+03*



STA 477+70 - STA 478+43
STA 480+12 - STA 480+80



STA 477+70 - STA 478+43
STA 480+12 - STA 483+97
STA 484+12 - STA 487+22



STA 487+22 - STA 488+22

PROPOSED LEGEND

- 1 EXISTING ASPHALTIC PAVEMENT
- 2 1.25 - INCH REMOVING ASPHALTIC SURFACE MILLING
- 3 3.25 - INCH HMA PAVEMENT
(1.5 - INCH 5 MT 58-34 V HMA PAVEMENT UPPER LAYER, 1.75 - INCH 4 MT 58-34 V HMA PAVEMENT LOWER LAYER)
- 4 BASE AGGREGATE DENSE, 0.75 - INCH
- 5 MGS BEAM GUARD
- 6 EXISTING CLASS A BEAM GUARD
- 7 CLASS A BEAM GUARD
- 8 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS (TYP)
- 9 SEEDING MIXTURE NO. 30 AND FERTILIZER TYPE B
- 10 SALVAGED TOPSOIL, SEEDING MIXTURE NO. 10, FERTILIZER TYPE B, AND MULCH WITH TACKIFIER
- 11 EXCAVATION COMMON, 18 - INCHES
- 12 6 - INCHES ASPHALTIC SURFACE
- 13 12 - INCHES BASE AGGREGATE DENSE, 1.25 - INCH
- CR CENTERLINE RUMBLE STRIPS

NOTE: ALL CROSS SECTION ELEVATIONS REFER TO DATUM SURFACE

PROJECT NO: 8070-03-70/71

HWY: USH 63

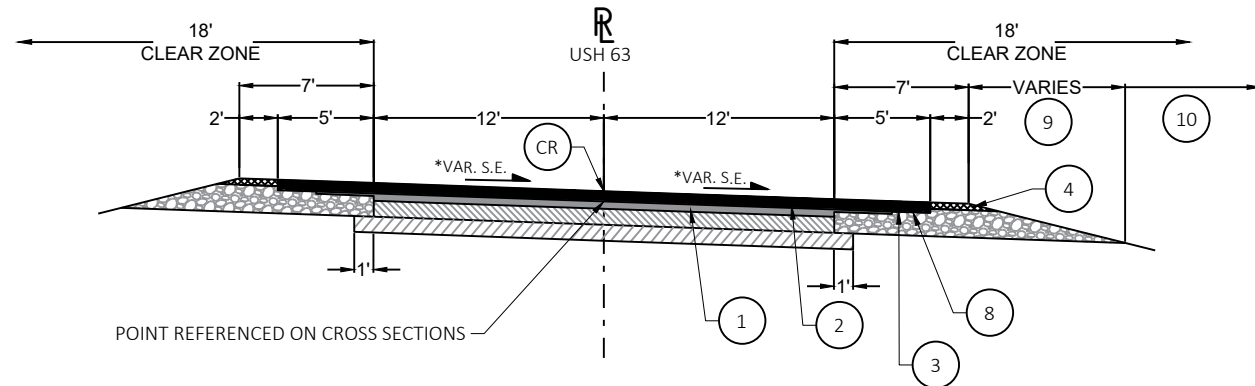
COUNTY: PIERCE

TYPICAL SECTIONS

SHEET

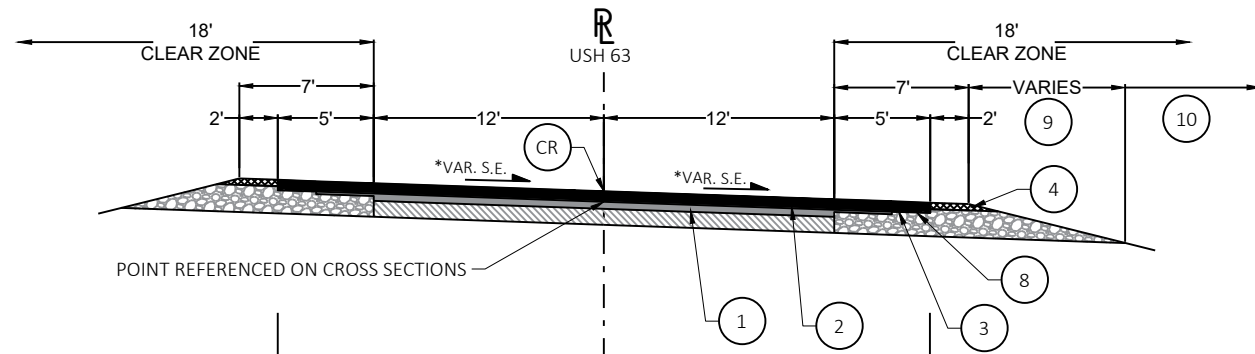
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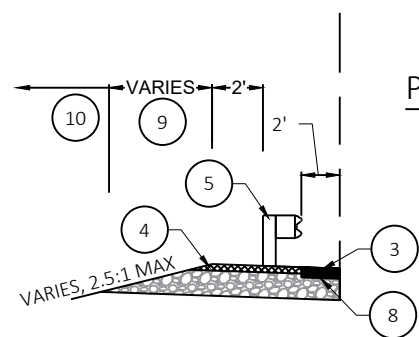
PROPOSED TYPICAL CURVE SECTION

	SUPERELEVATION
* STA 23+59 - STA 29+38	3.7 %
* STA 34+03 - STA 40+42	5.1 %
* STA 43+34 - STA 53+19	2.1 %
* STA 76+32 - STA 98+76	6.0 %



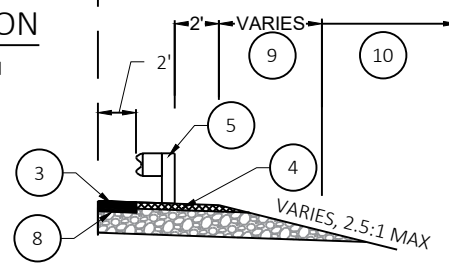
PROPOSED TYPICAL CURVE SECTION

	SUPERELEVATION
* STA 249+47 - STA 260+37	4.5 %
* STA 276+27 - STA 292+17	3.7 %
* STA 431+57 - STA 446+67	7.0 %
* STA 454+25 - STA 459+25	4.5 %
* STA 464+79 - STA 471+41	4.5 %
* STA 519+49 - STA 536+66	6.0 %



PARTIAL PROPOSED SECTION

STA 284+71 - STA 292+17

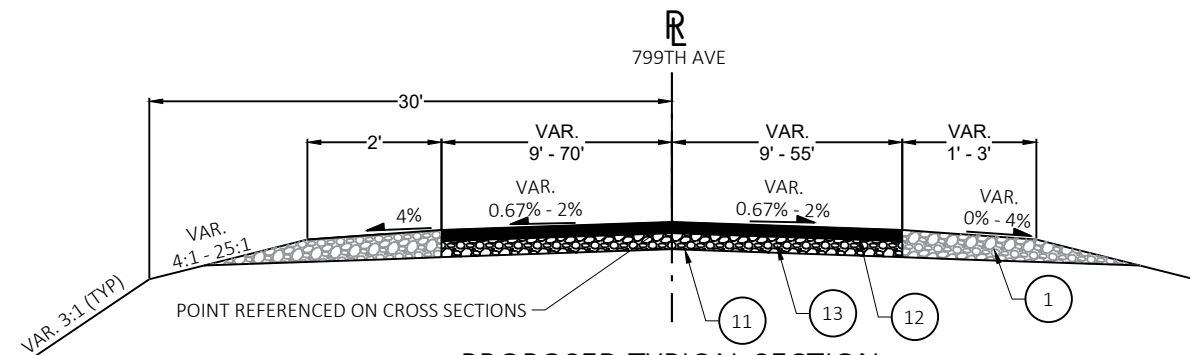


PARTIAL PROPOSED SECTION

STA 282+27 - STA 292+17

PROPOSED LEGEND

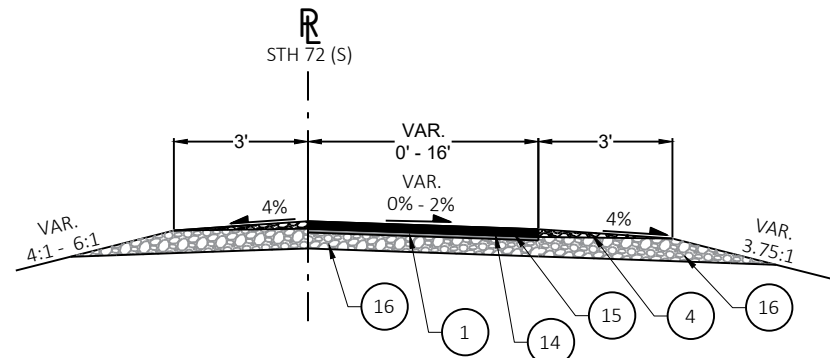
- 1 EXISTING ASPHALTIC PAVEMENT
- 2 1.25 - INCH REMOVING ASPHALTIC SURFACE MILLING
- 3 3.25 - INCH HMA PAVEMENT
(1.5 - INCH 5 MT 58-34 V HMA PAVEMENT UPPER LAYER, 1.75 - INCH 4 MT 58-34 V HMA PAVEMENT LOWER LAYER)
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- 12 6 - INCHES ASPHALTIC SURFACE
- 13 12 - INCHES BASE AGGREGATE DENSE, 1.25 - INCH
- CR CENTERLINE RUMBLE STRIPS



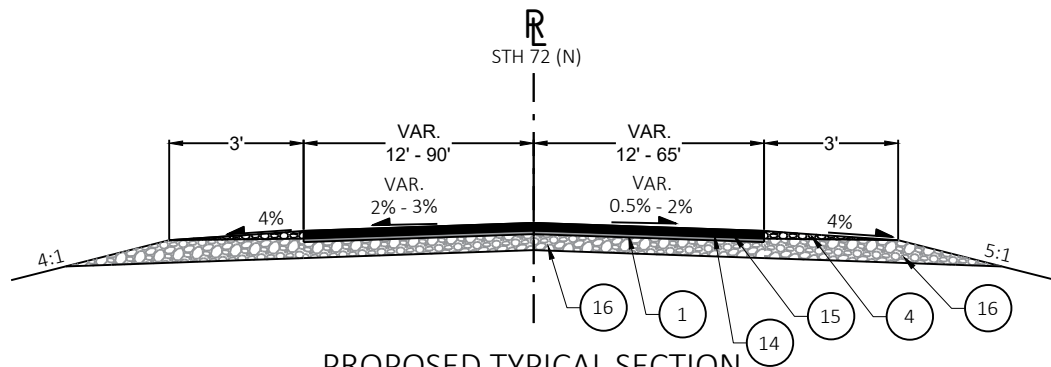
PROPOSED TYPICAL SECTION

799TH AVE
STA 16000+24 - 16000+97

NOTE: ALL CROSS SECTION ELEVATIONS REFER TO DATUM SURFACE



PROPOSED TYPICAL SECTION
STH 72 (S)
STA 2500+00 - STA 2510+05

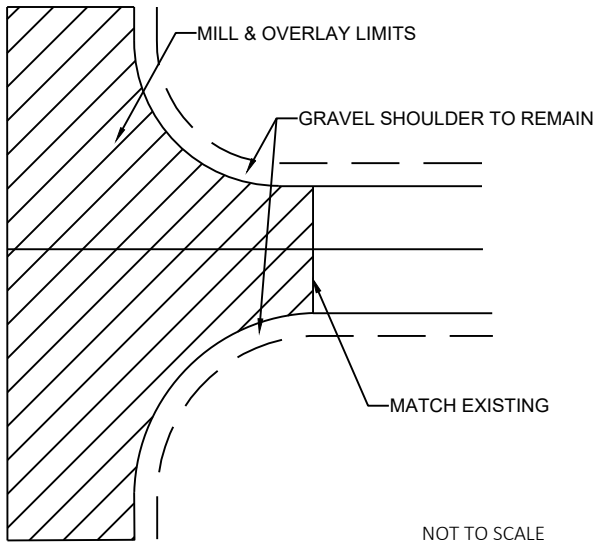


PROPOSED TYPICAL SECTION
STH 72 (N)
STA 3000+00 - STA 3002+60

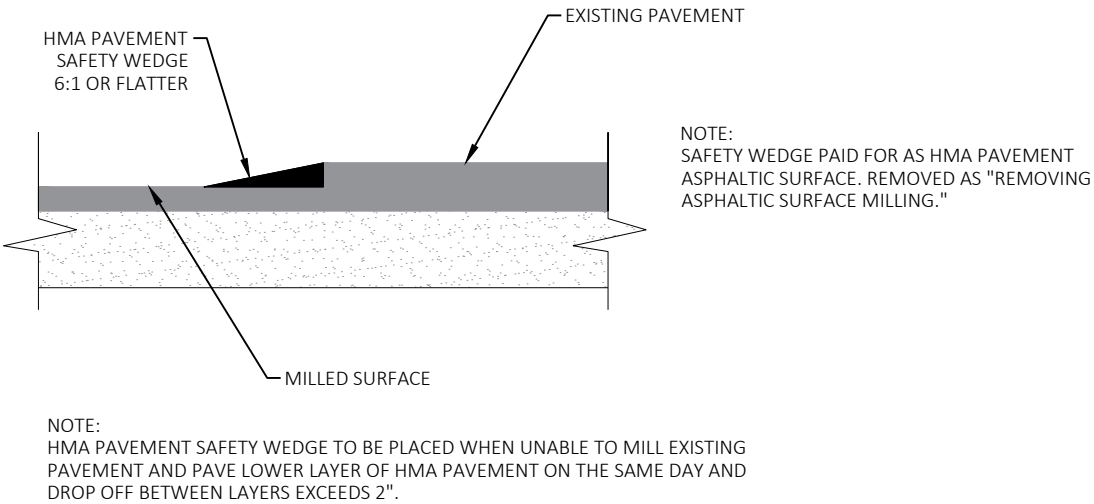
PROPOSED LEGEND

- 1 EXISTING ASPHALTIC PAVEMENT
- 2 1.25 - INCH REMOVING ASPHALTIC SURFACE MILLING
- 3 3.25 - INCH HMA PAVEMENT
(1.5 - INCH 5 MT 58-34 V HMA PAVEMENT UPPER LAYER, 1.75 - INCH 4 MT 58-34 V HMA PAVEMENT LOWER LAYER)
- 4 BASE AGGREGATE DENSE, 0.75 - INCH
- 5 MGS BEAM GUARD
- 6 EXISTING CLASS A BEAM GUARD
- 7 CLASS A BEAM GUARD
- 8 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
- 9 SEEDING MIXTURE NO. 30 AND FERTILIZER TYPE B
- 10 SALVAGED TOPSOIL, SEEDING MIXTURE NO. 10, FERTILIZER TYPE B, AND MULCH WITH TACKIFIER
- 11 EXCAVATION COMMON, 18 - INCHES
- 12 6 - INCHES ASPHALTIC SURFACE
- 13 12 - INCHES BASE AGGREGATE DENSE, 1.25 - INCH
- CR CENTERLINE RUMBLE STRIPS
- 14 4 - INCH REMOVING ASPHALTIC SURFACE MILLING
- 15 4 - INCH HMA (1.5 - INCH 5 MT 58-34V HMA UPPER, 2.5 - INCH 4 MT 58-34V HMA LOWER)
- 16 EXISTING CRUSHED AGGREGATE BASE COURSE

SIDE ROAD DETAIL
ASPHALTIC SHOULDERS



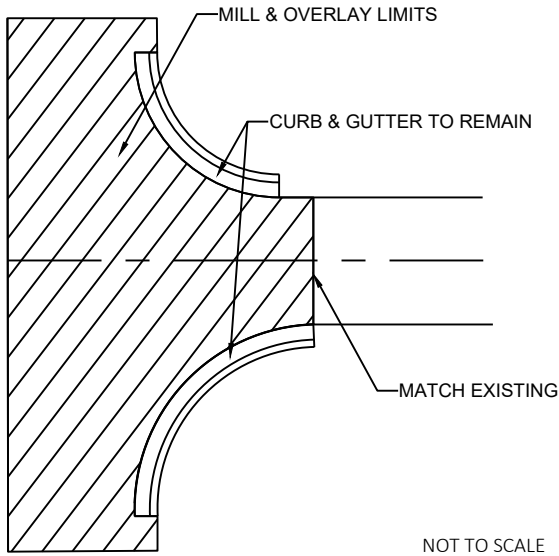
HMA PAVEMENT
SAFETY WEDGE



RUNOFF COEFFICIENT TABLE

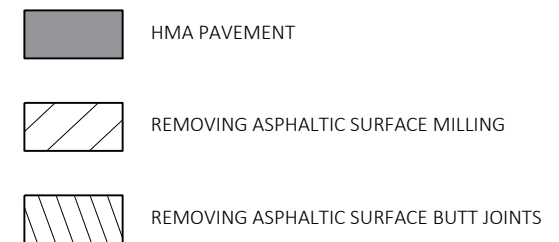
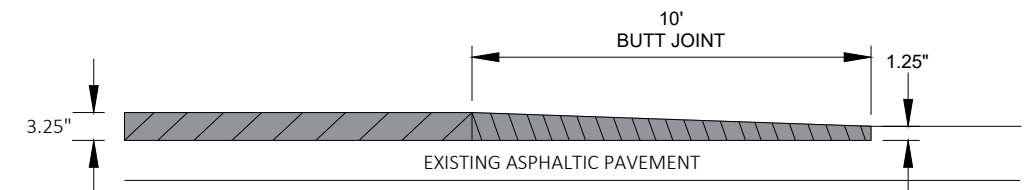
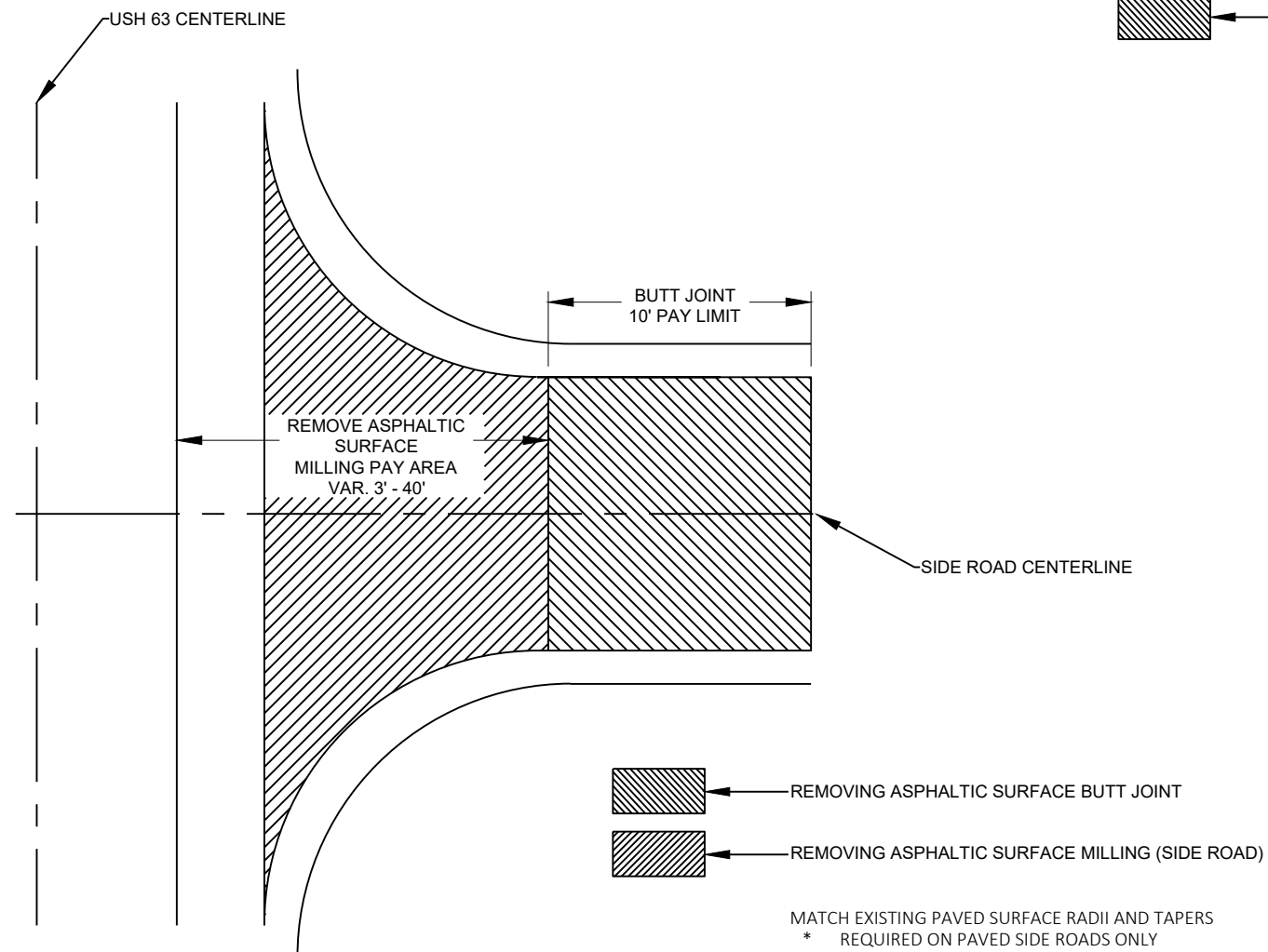
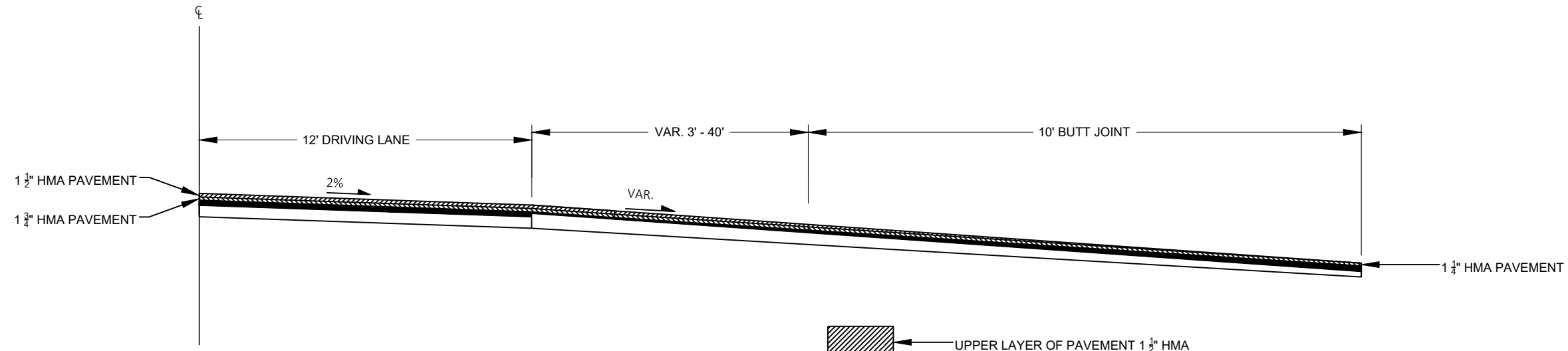
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34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

SIDE ROAD DETAIL
CURB & GUTTER TO REMAIN

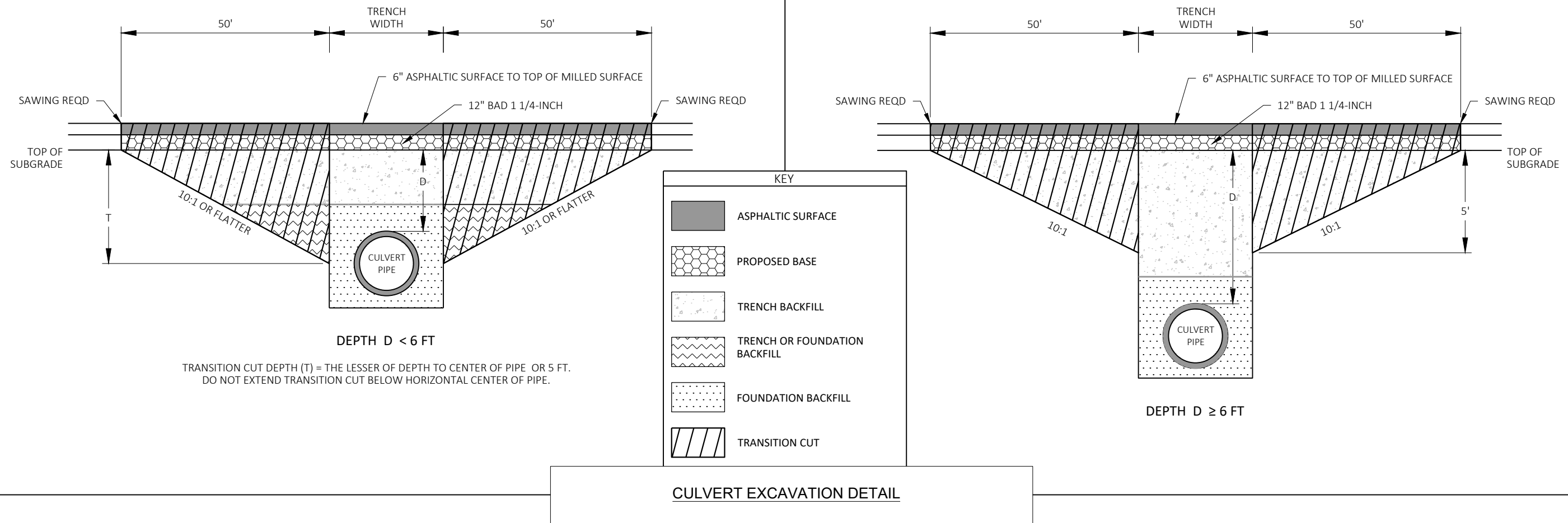


TOTAL PROJECT AREA = 178.53 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 9.68 ACRES

BUTT JOINT DETAILS



MAINLINE BUTT JOINT



NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.

TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.

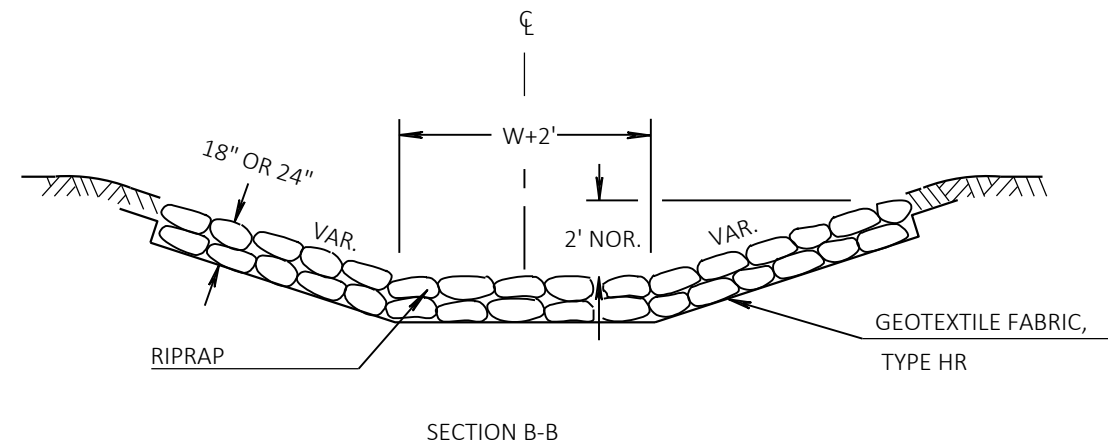
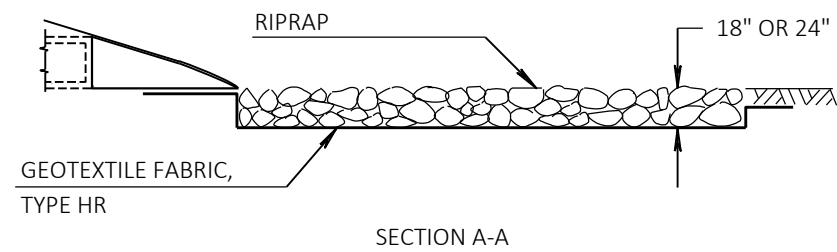
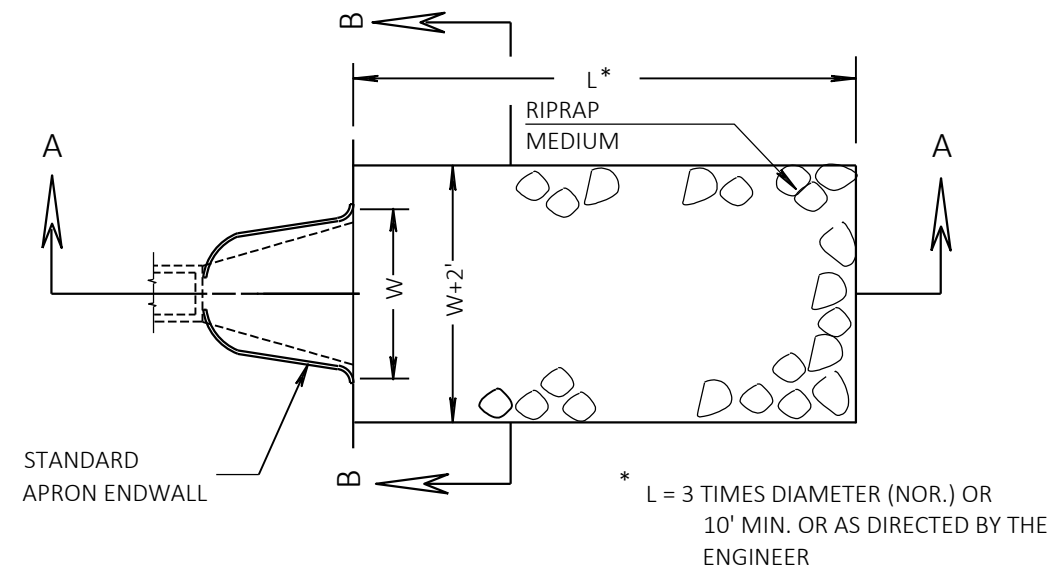
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.

PERFORM CULVERT PIPE INSTALLATION BEFORE MILLING AND PAVING.

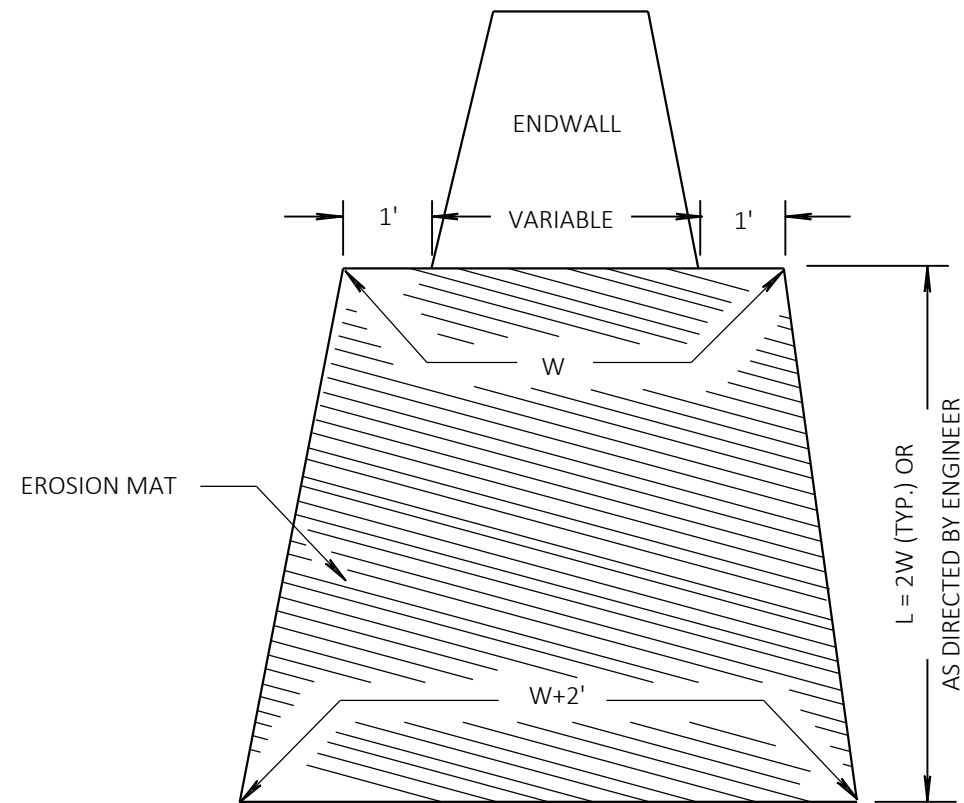
CULVERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
USH 63	20+02	2.5	42	
USH 63	38+58	2.8	36	
USH 63	49+54	15.2	36	
USH 63	130+06	1.3	30	
USH 63	261+98	15.1	54	
USH 63	270+07	8.4	30	
USH 63	295+06	17.0	42	
USH 63	435+58	3.5	24	
USH 63	507+50	2.2	36	C-755-36

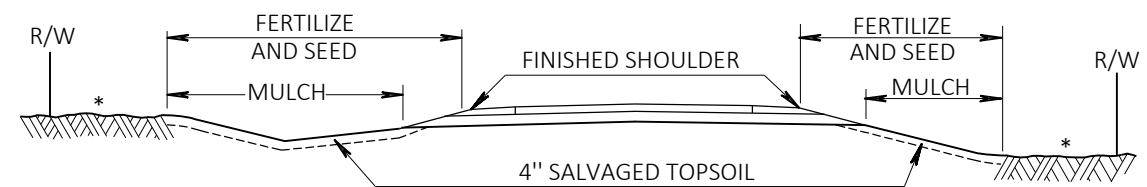
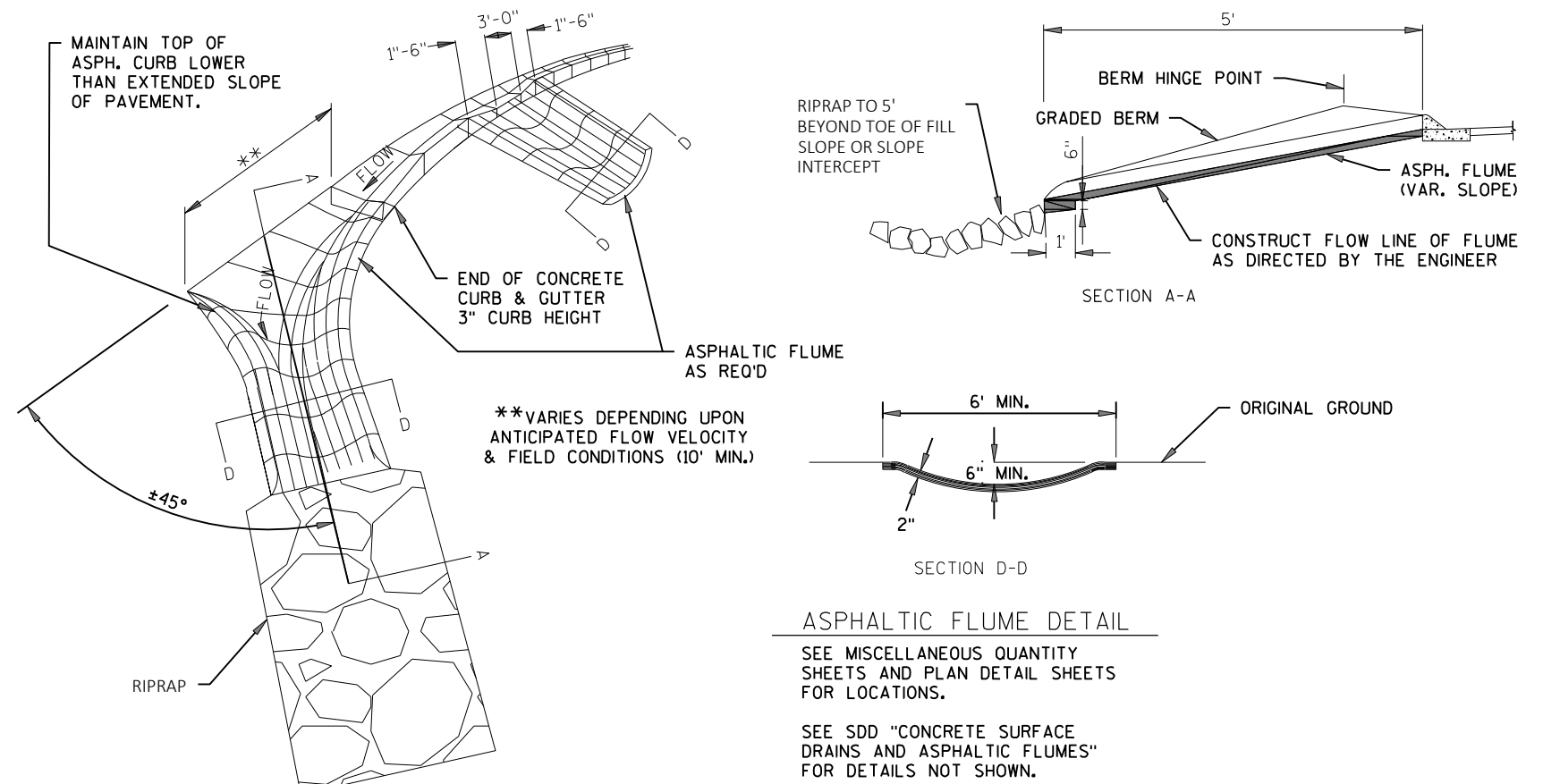
REVISED 01/2021



RIPRAP MEDIUM OR HEAVY AND GEOTEXTILE FABRIC DETAIL
AT APRON ENDWALL

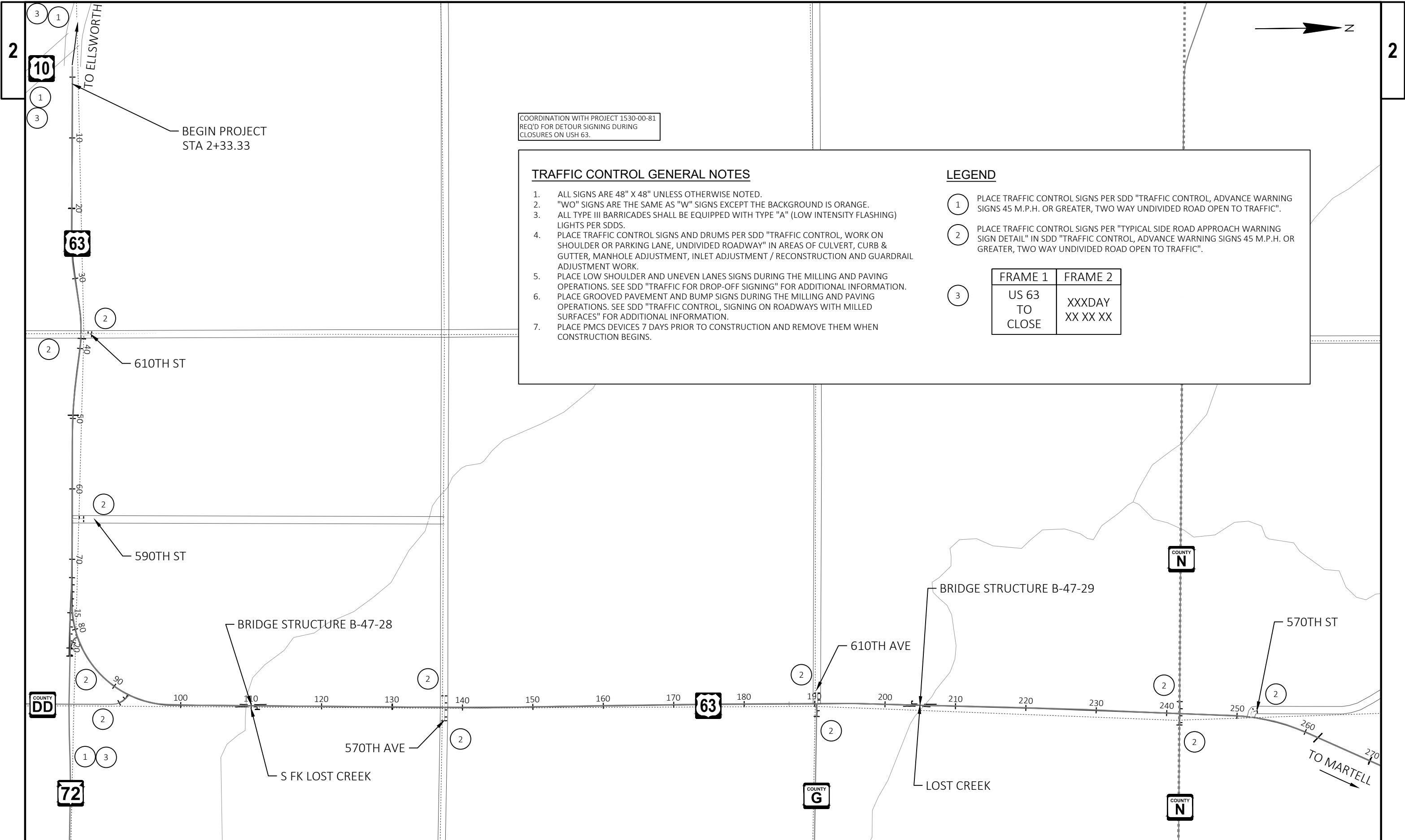


EROSION MAT TREATMENT AT CULVERTS



* DISTURBED AREAS TO BE FERTILIZED & SEEDED

DETAIL FOR FINISHING ITEMS



COORDINATION WITH PROJECT 1530-00-81
REQ'D FOR DETOUR SIGNING DURING
CLOSURES ON USH 63.

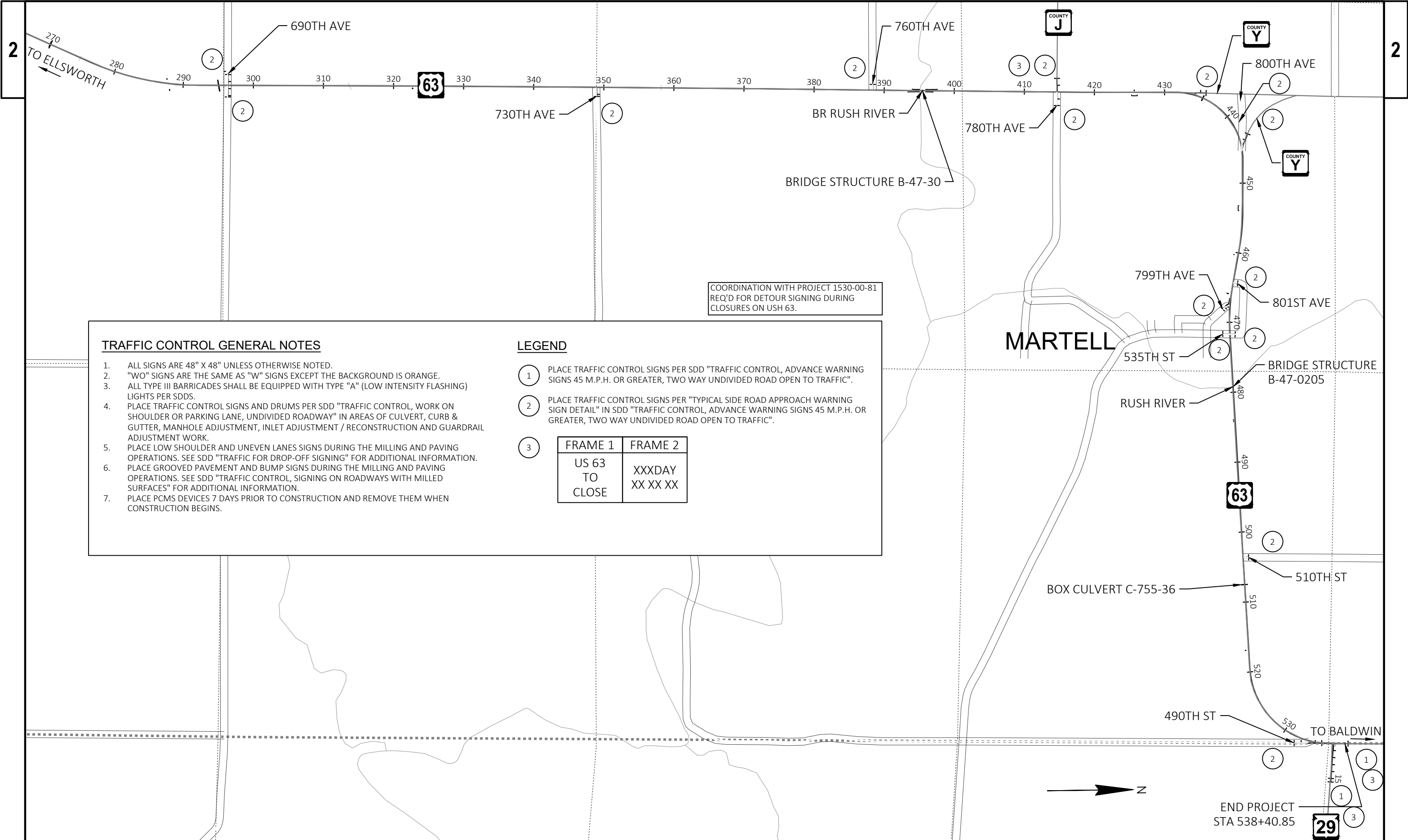
TRAFFIC CONTROL GENERAL NOTES

- 1. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- 2. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 3. ALL TYPE III BARRICADES SHALL BE EQUIPPED WITH TYPE "A" (LOW INTENSITY FLASHING) LIGHTS PER SDDS.
- 4. PLACE TRAFFIC CONTROL SIGNS AND DRUMS PER SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" IN AREAS OF CULVERT, CURB & GUTTER, MANHOLE ADJUSTMENT, INLET ADJUSTMENT / RECONSTRUCTION AND GUARDRAIL ADJUSTMENT WORK.
- 5. PLACE LOW SHOULDER AND UNEVEN LANES SIGNS DURING THE MILLING AND PAVING OPERATIONS. SEE SDD "TRAFFIC FOR DROP-OFF SIGNING" FOR ADDITIONAL INFORMATION.
- 6. PLACE GROOVED PAVEMENT AND BUMP SIGNS DURING THE MILLING AND PAVING OPERATIONS. SEE SDD "TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES" FOR ADDITIONAL INFORMATION.
- 7. PLACE PMCS DEVICES 7 DAYS PRIOR TO CONSTRUCTION AND REMOVE THEM WHEN CONSTRUCTION BEGINS.

LEGEND

- 1. PLACE TRAFFIC CONTROL SIGNS PER SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".
- 2. PLACE TRAFFIC CONTROL SIGNS PER "TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL" IN SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".

FRAME 1	FRAME 2
US 63 TO CLOSE	XXDAY XX XX XX



TRAFFIC CONTROL GENERAL NOTES

- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- ALL TYPE III BARRICADES SHALL BE EQUIPPED WITH TYPE "A" (LOW INTENSITY FLASHING) LIGHTS PER SDDS.
- PLACE TRAFFIC CONTROL SIGNS AND DRUMS PER SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" IN AREAS OF CULVERT, CURB & GUTTER, MANHOLE ADJUSTMENT, INLET ADJUSTMENT / RECONSTRUCTION AND GUARDRAIL ADJUSTMENT WORK.
- PLACE LOW SHOULDER AND UNEVEN LANES SIGNS DURING THE MILLING AND PAVING OPERATIONS. SEE SDD "TRAFFIC FOR DROP-OFF SIGNING" FOR ADDITIONAL INFORMATION.
- PLACE GROOVED PAVEMENT AND BUMP SIGNS DURING THE MILLING AND PAVING OPERATIONS. SEE SDD "TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES" FOR ADDITIONAL INFORMATION.
- PLACE PCMS DEVICES 7 DAYS PRIOR TO CONSTRUCTION AND REMOVE THEM WHEN CONSTRUCTION BEGINS.

LEGEND

1

PLACE TRAFFIC CONTROL SIGNS PER SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".

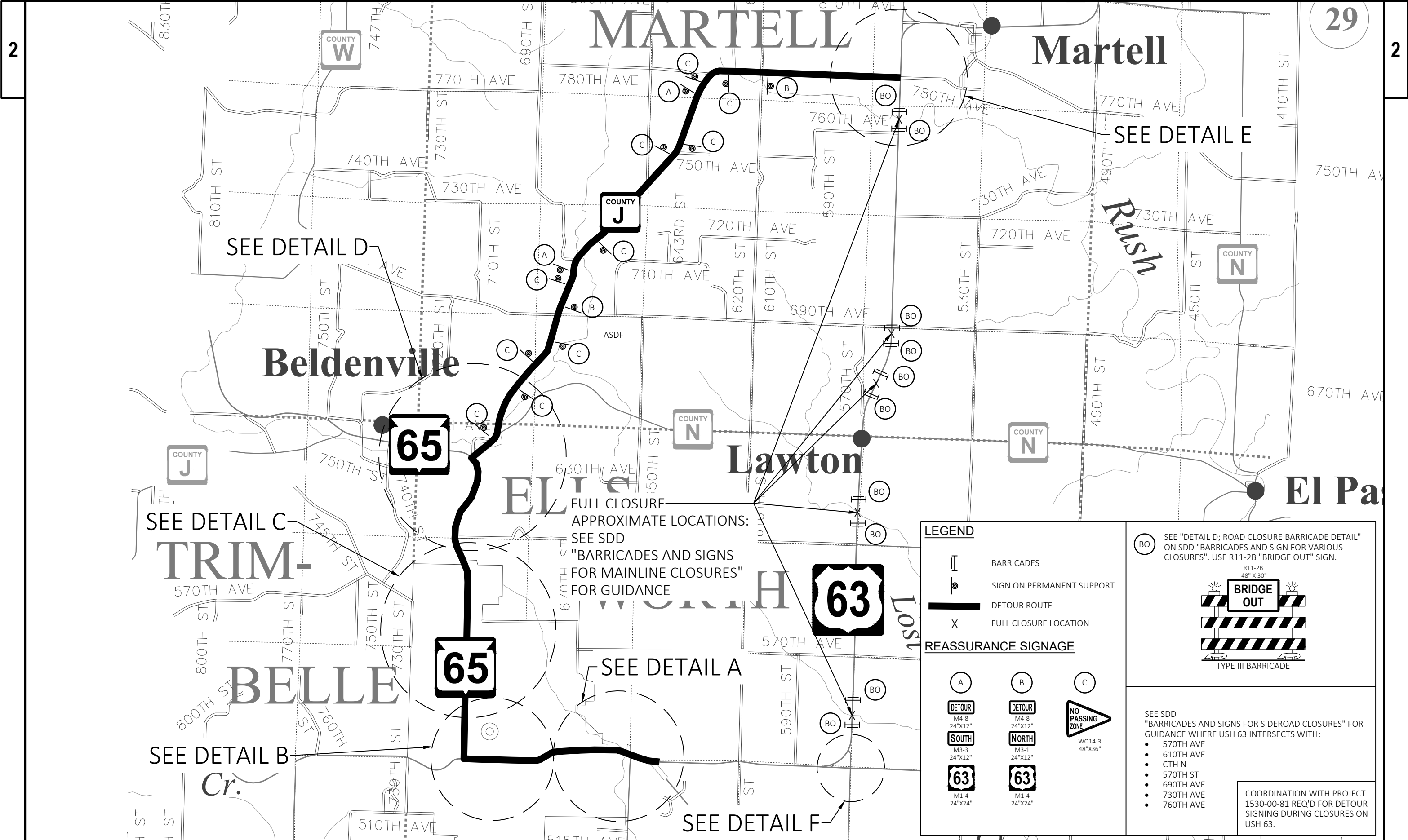
2

PLACE TRAFFIC CONTROL SIGNS PER "TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL" IN SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".

3

FRAME 1	FRAME 2
US 63 TO CLOSE	XXXDAY XX XX XX

COORDINATION WITH PROJECT 1530-00-81
REQ'D FOR DETOUR SIGNING DURING
CLOSURES ON USH 63.



LEGEND

BARRICADES

SIGN ON PERMANENT SUPPORT

DETOUR ROUTE

FULL CLOSURE LOCATION

REASSURANCE SIGNAGE

A	B	C
M4-8 24"X12"	M4-8 24"X12"	NO PASSING ZONE
SOUTH	NORTH	WO14-3 48"X36"
63	63	
M1-4 24"X24"	M1-4 24"X24"	

SEE "DETAIL D; ROAD CLOSURE BARRICADE DETAIL" ON SDD "BARRICADES AND SIGN FOR VARIOUS CLOSURES". USE R11-2B "BRIDGE OUT" SIGN.

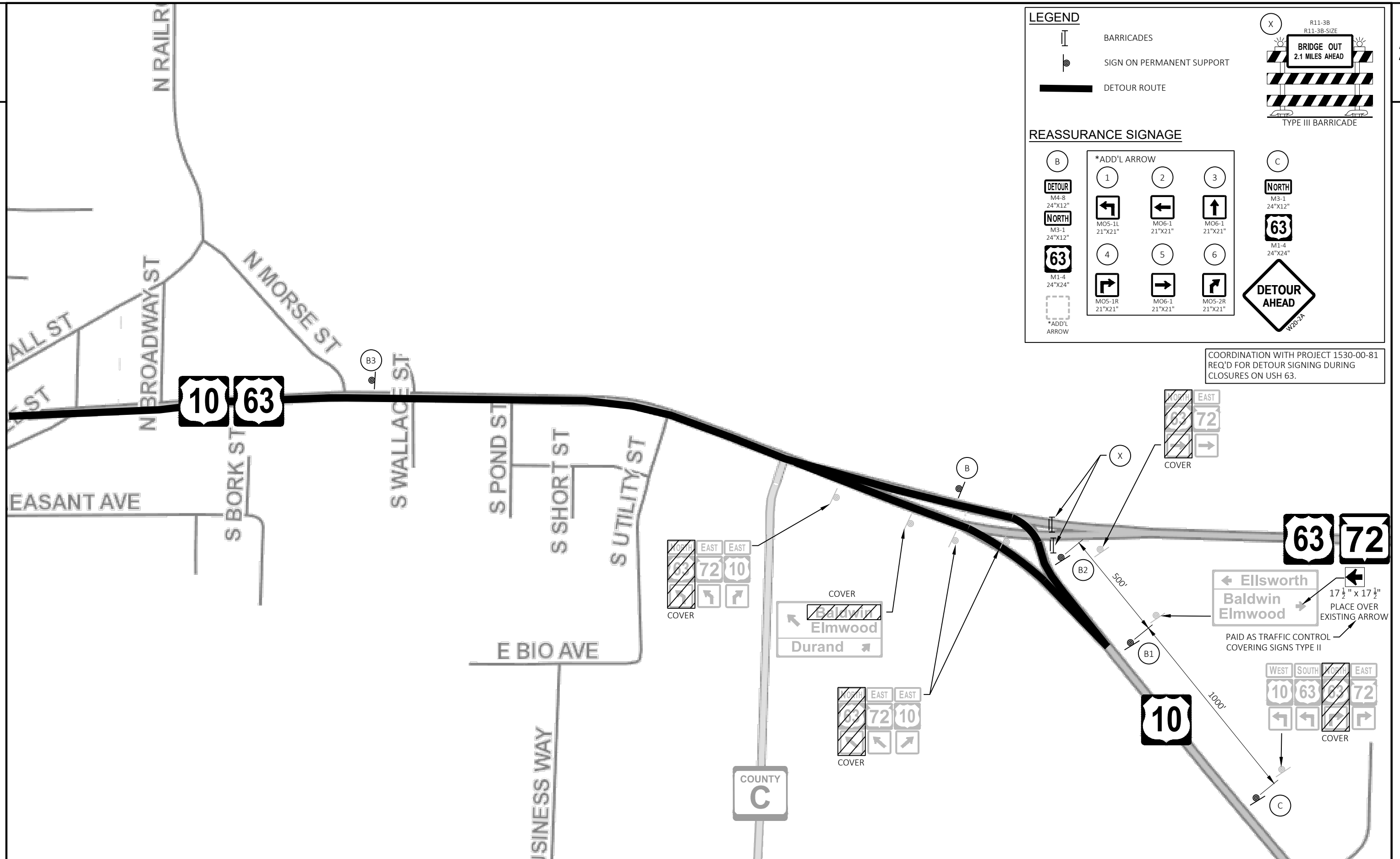
R11-2B
48" X 30"

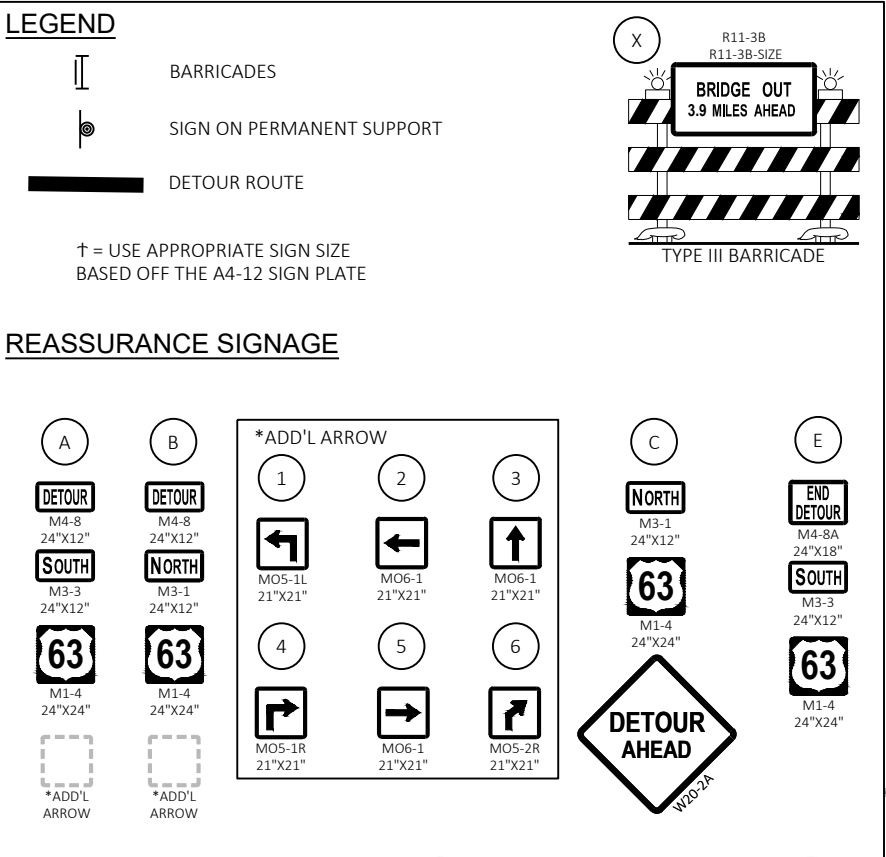
TYPE III BARRICADE

SEE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" FOR GUIDANCE WHERE USH 63 INTERSECTS WITH:

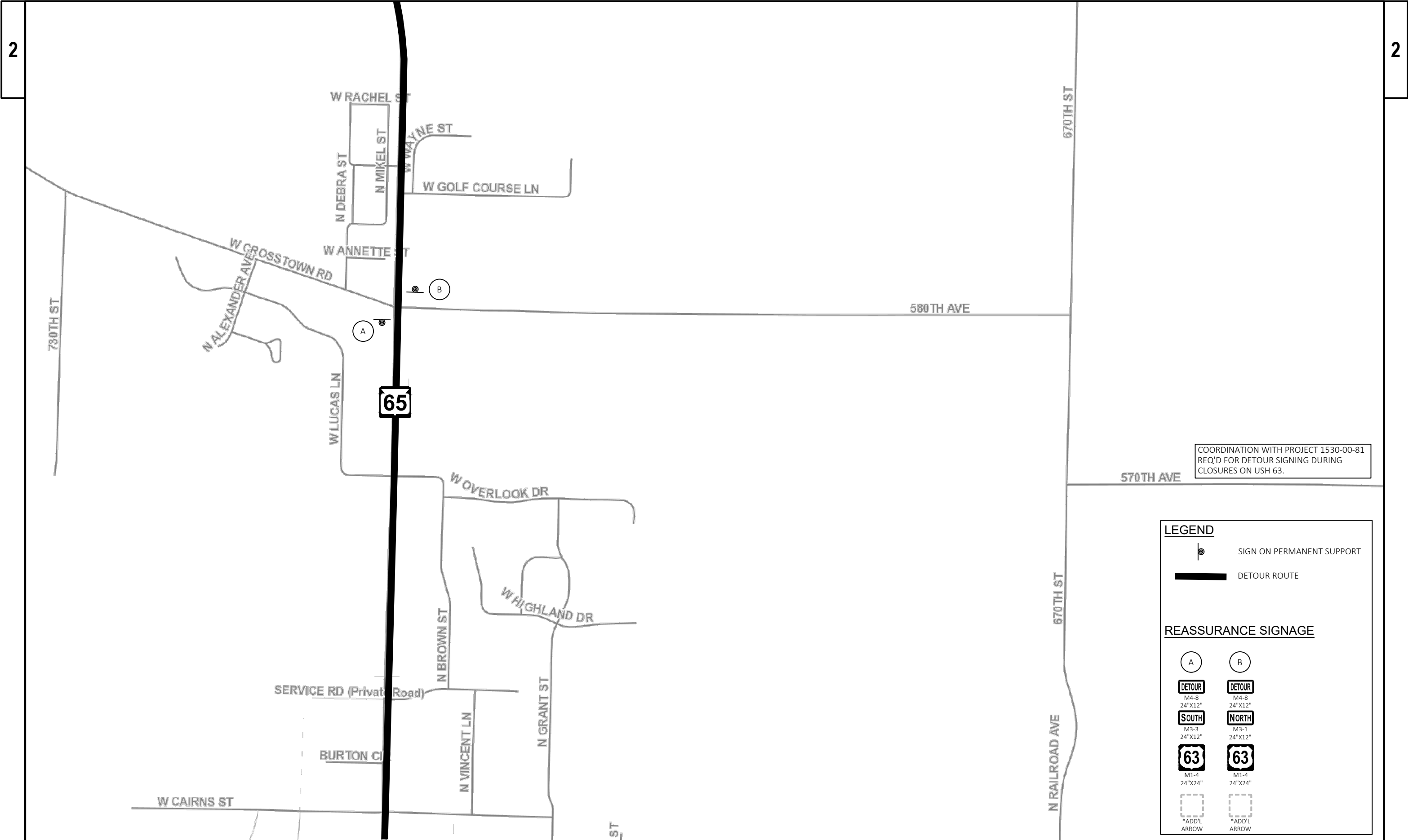
- 570TH AVE
- 610TH AVE
- CTH N
- 570TH ST
- 690TH AVE
- 730TH AVE
- 760TH AVE

COORDINATION WITH PROJECT 1530-00-81 REQ'D FOR DETOUR SIGNING DURING CLOSURES ON USH 63.





E SUNSET LN



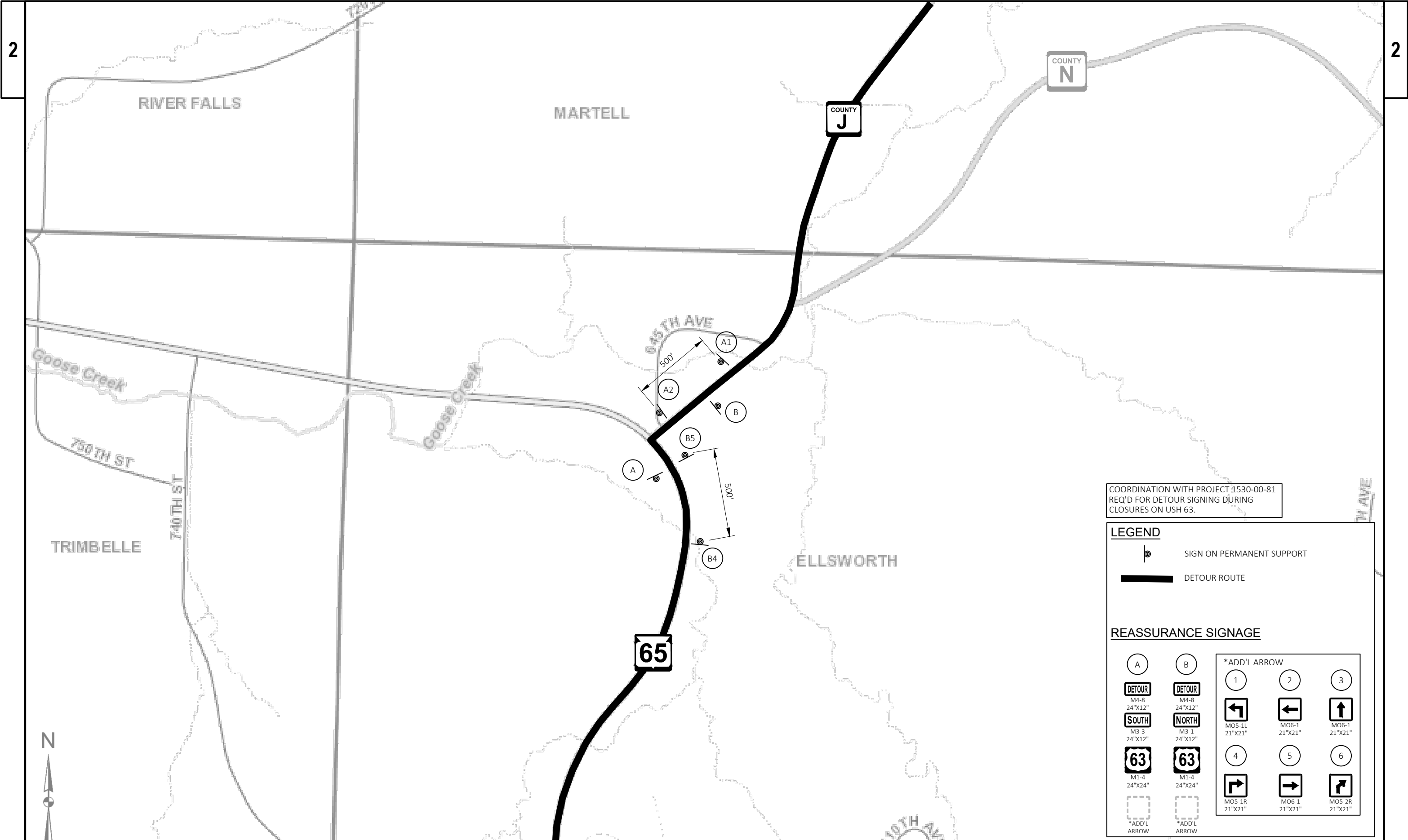
LEGEND

SIGN ON PERMANENT SUPPORT

DETOUR ROUTE

REASSURANCE SIGNAGE

A DETOUR M4-8 24"x12" SOUTH M3-3 24"x12" 63 M1-4 24"x24" *ADD'L ARROW	B DETOUR M4-8 24"x12" NORTH M3-1 24"x12" 63 M1-4 24"x24" *ADD'L ARROW
---	---



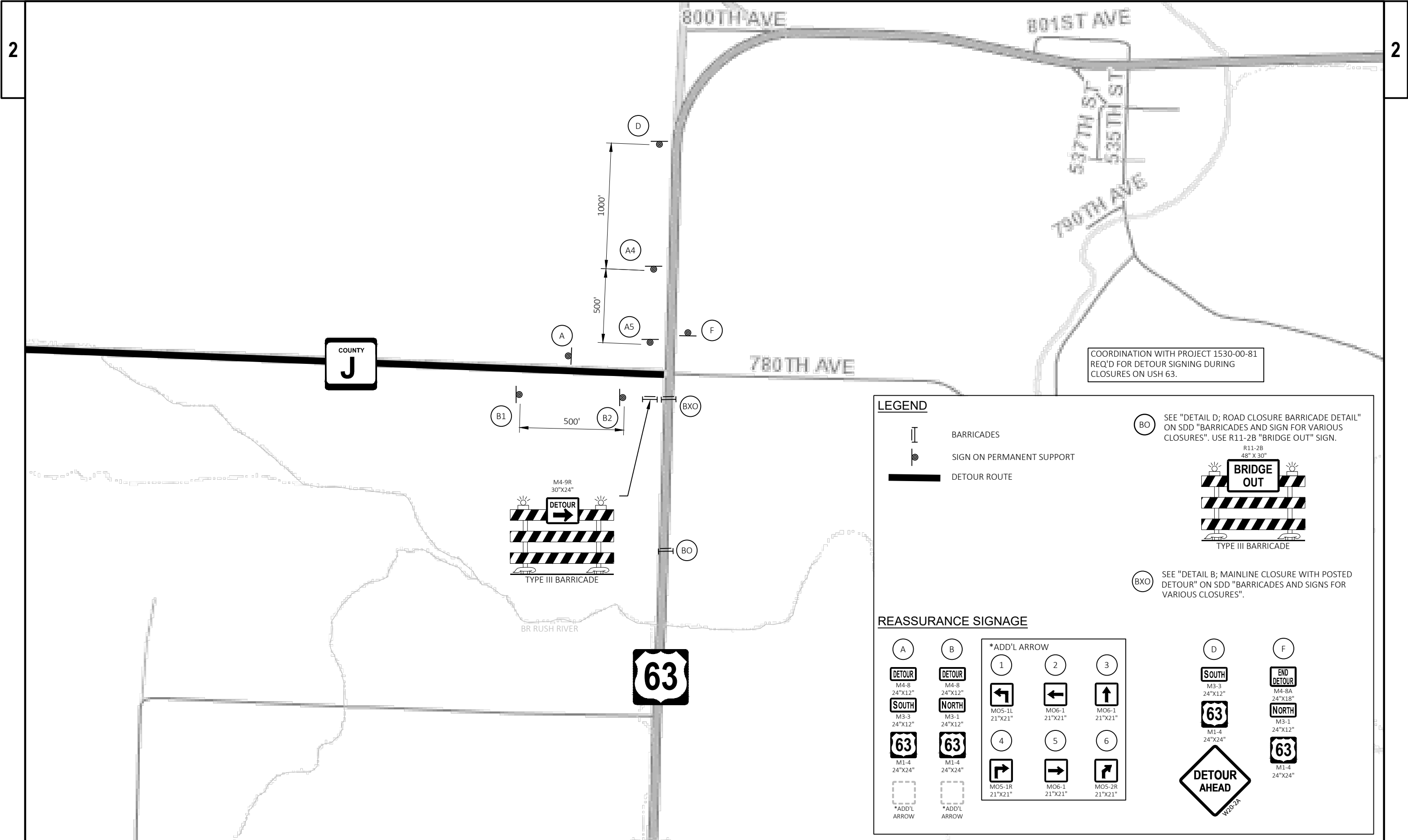
COORDINATION WITH PROJECT 1530-00-81
REQ'D FOR DETOUR SIGNING DURING
CLOSURES ON USH 63.

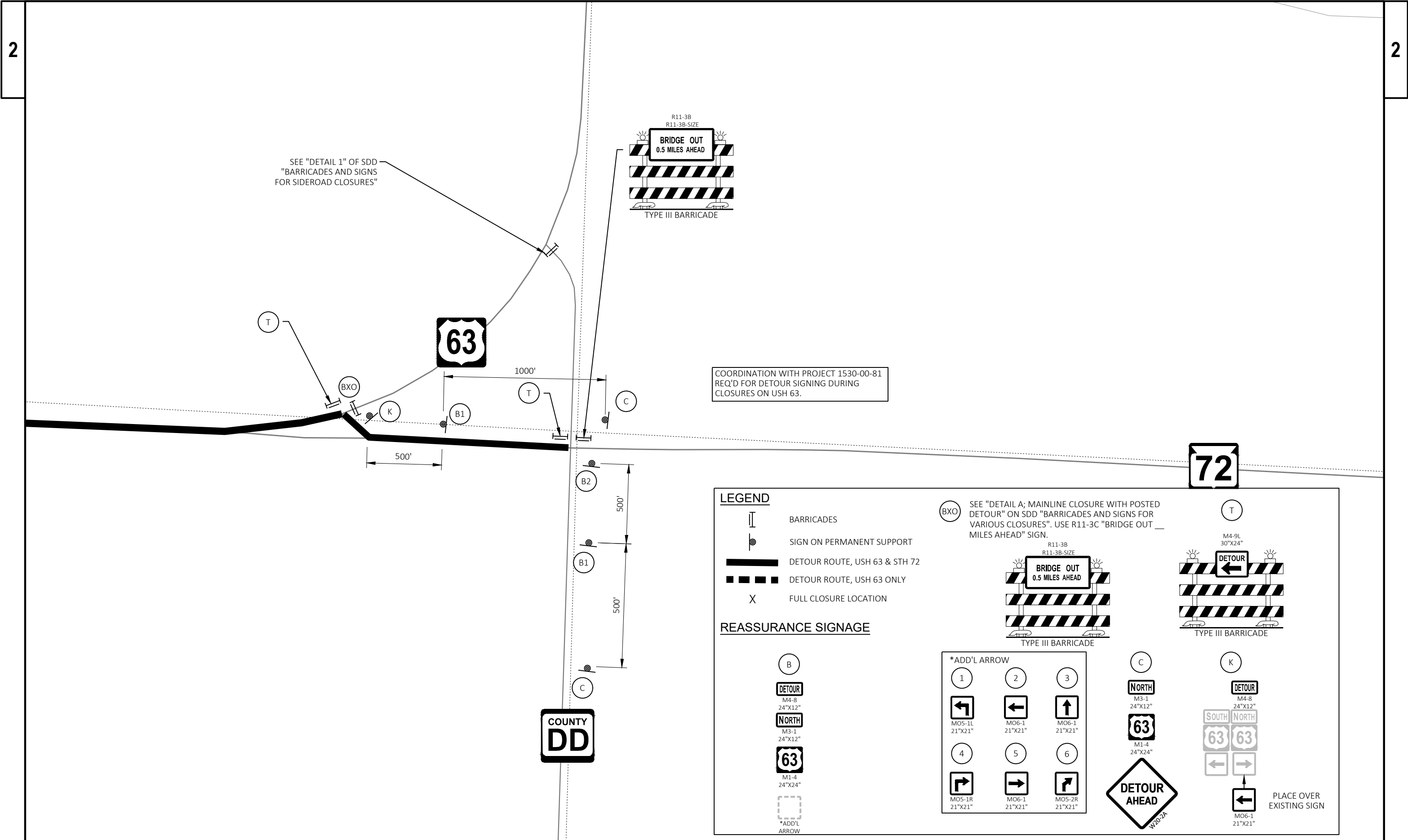
LEGEND

- SIGN ON PERMANENT SUPPORT
- DETOUR ROUTE

REASSURANCE SIGNAGE

		*ADD'L ARROW		

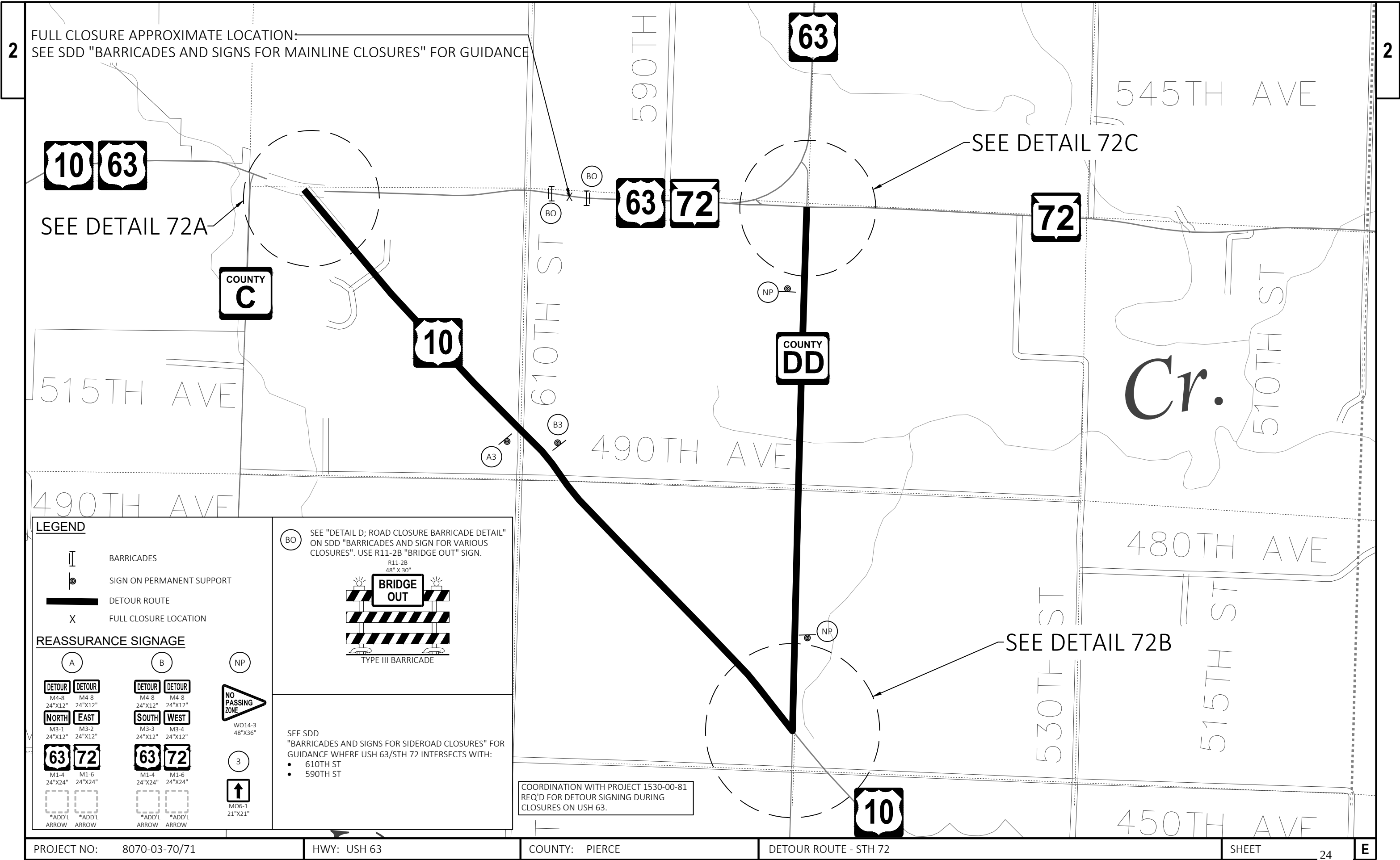


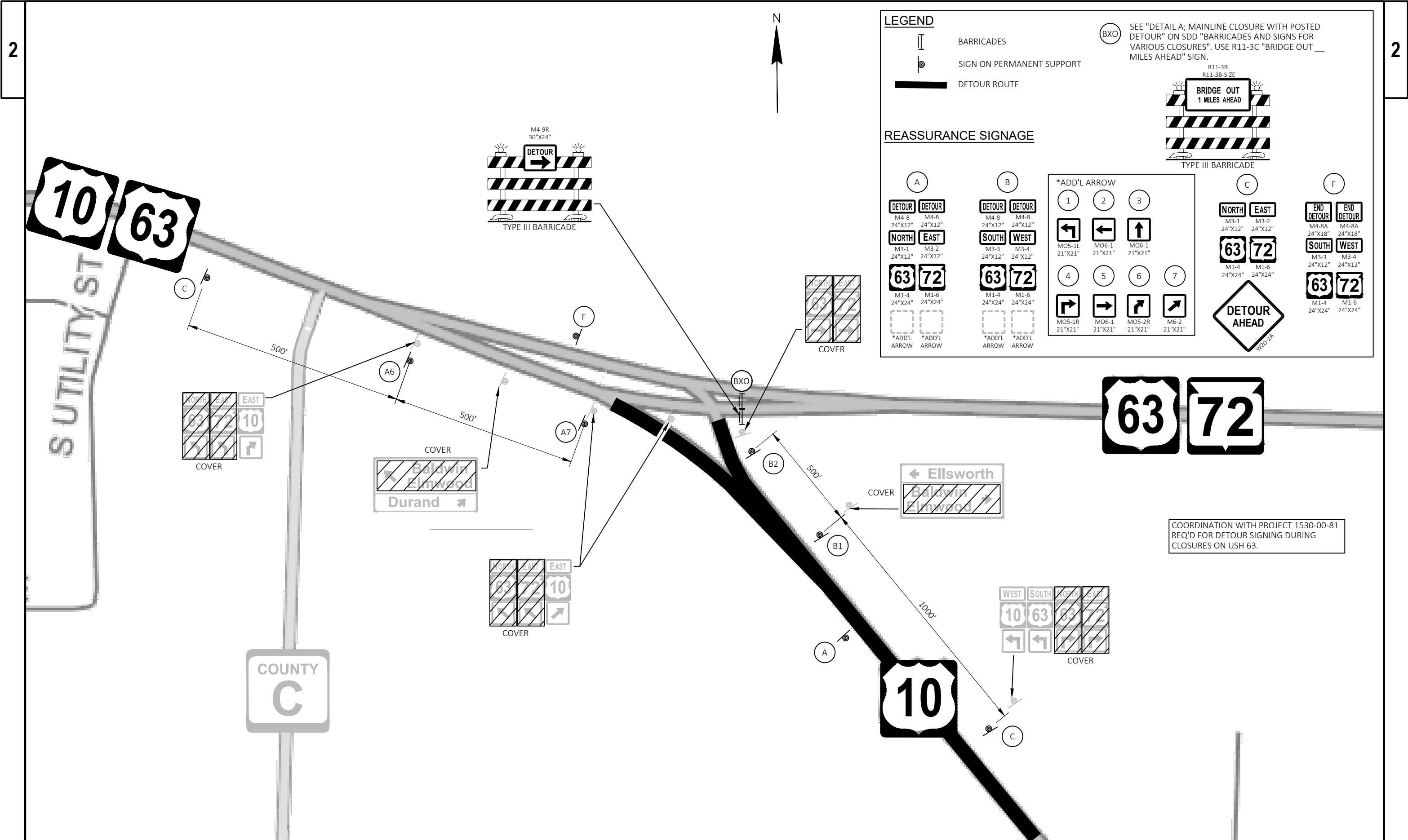


LEGEND

- BARRICADES
- SIGN ON PERMANENT SUPPORT
- DETOUR ROUTE, USH 63 & STH 72
- DETOUR ROUTE, USH 63 ONLY
- FULL CLOSURE LOCATION

REASSURANCE SIGNAGE





LEGEND
 BARRICADES
 SIGN ON PERMANENT SUPPORT
 DETOUR ROUTE

SEE "DETAIL A; MAINLINE CLOSURE WITH POSTED DETOUR" ON SDD "BARRICADES AND SIGNS FOR VARIOUS CLOSURES". USE R11-3C "BRIDGE OUT ___ MILES AHEAD" SIGN.

R11-3B
R11-3B-SIZE

TYPE III BARRICADE

REASSURANCE SIGNAGE

A

DETOUR	DETOUR
M4-8 24"x12"	M4-8 24"x12"
NORTH	EAST
M3-1 24"x12"	M3-2 24"x12"
63	72
M1-4 24"x24"	M1-6 24"x24"
*ADD'L ARROW	*ADD'L ARROW

B

DETOUR	DETOUR
M4-8 24"x12"	M4-8 24"x12"
SOUTH	WEST
M3-3 24"x12"	M3-4 24"x12"
63	72
M1-4 24"x24"	M1-6 24"x24"
*ADD'L ARROW	*ADD'L ARROW

*ADD'L ARROW

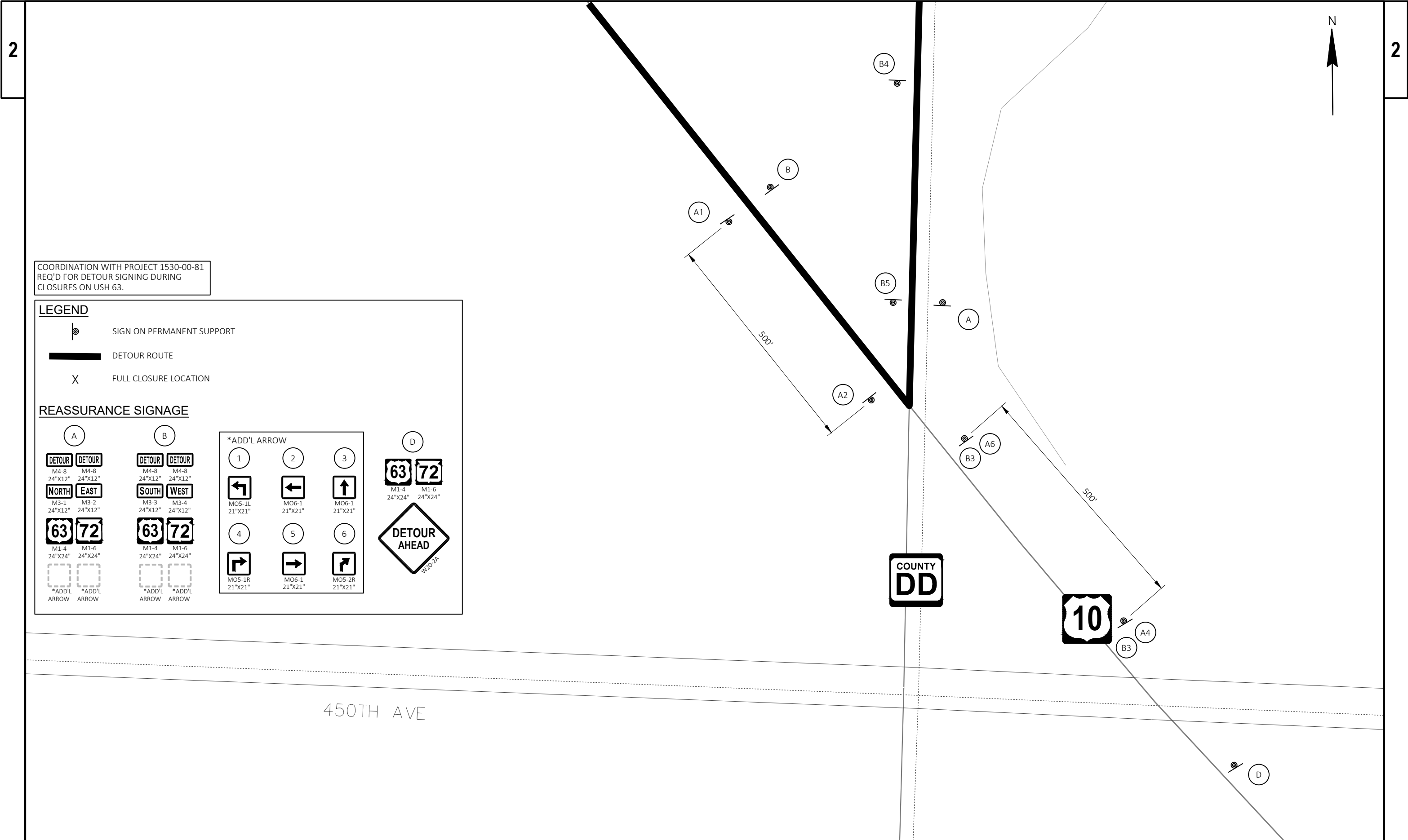
1	2	3
M05-1L 21"x21"	M06-1 21"x21"	M06-1 21"x21"
4	5	6
M05-1R 21"x21"	M06-1 21"x21"	M06-2 21"x21"

C

NORTH	EAST
M3-1 24"x12"	M3-2 24"x12"
63	72
M1-4 24"x24"	M1-6 24"x24"
DETOUR AHEAD W202A	

F

END DETOUR	END DETOUR
M4-8A 24"x18"	M4-8A 24"x18"
SOUTH	WEST
M3-3 24"x12"	M3-4 24"x12"
63	72
M1-4 24"x24"	M1-6 24"x24"



COORDINATION WITH PROJECT 1530-00-81
REQ'D FOR DETOUR SIGNING DURING
CLOSURES ON USH 63.

LEGEND

- SIGN ON PERMANENT SUPPORT
- DETOUR ROUTE
- FULL CLOSURE LOCATION

REASSURANCE SIGNAGE

A

DETOUR	DETOUR
M4-8	M4-8
24"x12"	24"x12"
NORTH	EAST
M3-1	M3-2
24"x12"	24"x12"
63	72
M1-4	M1-6
24"x24"	24"x24"
*ADD'L	*ADD'L
ARROW	ARROW

B

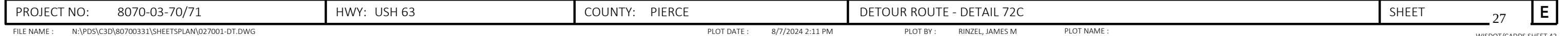
DETOUR	DETOUR
M4-8	M4-8
24"x12"	24"x12"
SOUTH	WEST
M3-3	M3-4
24"x12"	24"x12"
63	72
M1-4	M1-6
24"x24"	24"x24"
*ADD'L	*ADD'L
ARROW	ARROW

*ADD'L ARROW

1	2	3
MO5-1L	MO6-1	MO6-1
21"x21"	21"x21"	21"x21"
4	5	6
MO5-1R	MO6-1	MO5-2R
21"x21"	21"x21"	21"x21"

D

63	72
M1-4	M1-6
24"x24"	24"x24"
W20-2A	



Estimate Of Quantities

		8070-03-70		8070-03-71		
Line	Item	Item Description	Unit	Total	Qty	Qty
0002	201.0105	Clearing	STA	55.000	55.000	
0004	201.0205	Grubbing	STA	55.000	55.000	
0006	203.0100	Removing Small Pipe Culverts	EACH	11.000		11.000
0008	203.0220	Removing Structure (structure) 01. C-755-36	EACH	1.000		1.000
0010	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-47-28	EACH	1.000		1.000
0012	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 02. B-47-29	EACH	1.000		1.000
0014	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 03. B-47-30	EACH	1.000		1.000
0016	204.0110	Removing Asphaltic Surface	SY	187.000	187.000	
0018	204.0115	Removing Asphaltic Surface Butt Joints	SY	904.000	904.000	
0020	204.0120	Removing Asphaltic Surface Milling	SY	187,526.000	187,526.000	
0022	204.0150	Removing Curb & Gutter	LF	290.000	290.000	
0024	204.0155	Removing Concrete Sidewalk	SY	74.000	74.000	
0026	204.0165	Removing Guardrail	LF	6,570.000		6,570.000
0028	205.0100	Excavation Common	CY	6,545.000		6,545.000
0030	206.1001	Excavation for Structures Bridges (structure) 01. B-47-28	EACH	1.000		1.000
0032	206.1001	Excavation for Structures Bridges (structure) 02. B-47-29	EACH	1.000		1.000
0034	206.1001	Excavation for Structures Bridges (structure) 03. B-47-30	EACH	1.000		1.000
0036	208.0100	Borrow	CY	23,341.000		23,341.000
0038	210.1500	Backfill Structure Type A	TON	406.000		406.000
0040	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 8070-03-70	EACH	1.000	1.000	
0042	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	1,072.000	1,072.000	
0044	213.0100	Finishing Roadway (project) 01. 8070-03-70	EACH	1.000	1.000	
0046	305.0110	Base Aggregate Dense 3/4-Inch	TON	6,464.000	6,464.000	
0048	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	5,209.000		5,209.000
0050	415.0080	Concrete Pavement 8-Inch	SY	111.000		111.000
0052	415.0410	Concrete Pavement Approach Slab	SY	254.000		254.000
0054	416.0610	Drilled Tie Bars	EACH	120.000		120.000
0056	450.4000	HMA Cold Weather Paving	TON	9,730.000	9,730.000	
0058	455.0605	Tack Coat	GAL	28,197.000	28,197.000	
0060	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000	
0062	460.6644	HMA Pavement 4 MT 58-34 V	TON	21,001.000	21,001.000	
0064	460.6645	HMA Pavement 5 MT 58-34 V	TON	17,919.000	17,919.000	
0066	460.9000.S	Material Transfer Vehicle	EACH	1.000	1.000	
0068	465.0105	Asphaltic Surface	TON	2,011.000	2,011.000	
0070	465.0110	Asphaltic Surface Patching	TON	200.000	200.000	
0072	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	15.000	15.000	
0074	465.0315	Asphaltic Flumes	SY	4.000	4.000	
0076	465.0560	Asphaltic Rumble Strips, Centerline	LF	42,122.000	42,122.000	
0078	502.0100	Concrete Masonry Bridges	CY	389.000		389.000
0080	502.3200	Protective Surface Treatment	SY	823.000		823.000
0082	502.3210	Pigmented Surface Sealer	SY	264.000		264.000
0084	502.4205	Adhesive Anchors No. 5 Bar	EACH	120.000		120.000
0086	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	74,470.000		74,470.000
0088	506.0105	Structural Steel Carbon	LB	2,074.000		2,074.000
0090	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	30.000		30.000
0092	506.3020	Welded Stud Shear Connectors 7/8x7-Inch	EACH	1,104.000		1,104.000
0094	506.3025	Welded Stud Shear Connectors 7/8x8-Inch	EACH	276.000		276.000
0096	506.7050.S	Removing Bearings (structure) 01. B-47-28	EACH	10.000		10.000
0098	506.7050.S	Removing Bearings (structure) 02. B-47-29	EACH	10.000		10.000

Estimate Of Quantities

		8070-03-70	8070-03-71			
Line	Item	Item Description	Unit	Total	Qty	Qty
0100	506.7050.S	Removing Bearings (structure) 03. B-47-30	EACH	10.000		10.000
0102	516.0500	Rubberized Membrane Waterproofing	SY	102.000		102.000
0104	517.0901.S	Preparation and Coating of Top Flanges (structure) 01. B-47-28	EACH	1.000		1.000
0106	517.0901.S	Preparation and Coating of Top Flanges (structure) 02. B-47-29	EACH	1.000		1.000
0108	517.0901.S	Preparation and Coating of Top Flanges (structure) 03. B-47-30	EACH	1.000		1.000
0110	517.4001.S	Containment and Collection of Waste Materials (structure) 01. B-47-28	EACH	1.000		1.000
0112	517.4001.S	Containment and Collection of Waste Materials (structure) 02. B-47-29	EACH	1.000		1.000
0114	517.4001.S	Containment and Collection of Waste Materials (structure) 03. B-47-30	EACH	1.000		1.000
0116	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	5.000		5.000
0118	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	4.000		4.000
0120	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	53.000		53.000
0122	520.3624	Culvert Pipe Class III-B Non-metal 24-Inch	LF	72.000		72.000
0124	520.3630	Culvert Pipe Class III-B Non-metal 30-Inch	LF	103.000		103.000
0126	520.8700	Cleaning Culvert Pipes	EACH	4.000		4.000
0128	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	19.000		19.000
0130	521.1030	Apron Endwalls for Culvert Pipe Steel 30-Inch	EACH	4.000		4.000
0132	521.1036	Apron Endwalls for Culvert Pipe Steel 36-Inch	EACH	4.000		4.000
0134	521.1228	Apron Endwalls for Pipe Arch Steel 28x20-Inch	EACH	1.000		1.000
0136	521.1257	Apron Endwalls for Pipe Arch Steel 57x38-Inch	EACH	2.000		2.000
0138	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	56.000		56.000
0140	521.3130	Culvert Pipe Corrugated Steel 30-Inch	LF	8.000		8.000
0142	521.3728	Pipe Arch Corrugated Steel 28x20-Inch	LF	8.000		8.000
0144	522.0430	Culvert Pipe Reinforced Concrete Class IV 30-Inch	LF	64.000		64.000
0146	522.0436	Culvert Pipe Reinforced Concrete Class IV 36-Inch	LF	299.000		299.000
0148	522.0442	Culvert Pipe Reinforced Concrete Class IV 42-Inch	LF	218.000		218.000
0150	522.0454	Culvert Pipe Reinforced Concrete Class IV 54-Inch	LF	154.000		154.000
0152	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000		2.000
0154	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	5.000		5.000
0156	522.1042	Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	EACH	4.000		4.000
0158	522.1054	Apron Endwalls for Culvert Pipe Reinforced Concrete 54-Inch	EACH	2.000		2.000
0160	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	162.000	162.000	
0162	601.0576	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type J	LF	61.000	61.000	
0164	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	506.000		506.000
0166	602.0405	Concrete Sidewalk 4-Inch	SF	167.000	167.000	
0168	602.3010	Concrete Surface Drains	CY	13.000		13.000
0170	606.0200	Riprap Medium	CY	86.000		86.000
0172	606.0300	Riprap Heavy	CY	8.000		8.000
0174	611.2005	Manholes 5-FT Diameter	EACH	1.000		1.000
0176	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	12.000		12.000
0178	614.0200	Steel Thrie Beam Structure Approach	LF	21.000		21.000
0180	614.0305	Steel Plate Beam Guard Class A	LF	81.000		81.000
0182	614.0345	Steel Plate Beam Guard Short Radius	LF	12.500		12.500
0184	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000		1.000
0186	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000		1.000
0188	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	94.000		94.000
0190	614.0400	Adjusting Steel Plate Beam Guard	LF	910.000		910.000
0192	614.0515	Guardrail Stiffened LHW	LF	44.000		44.000
0194	614.0920	Salvaged Rail	LF	1,676.000		1,676.000
0196	614.0950	Replacing Guardrail Posts and Blocks	EACH	28.000		28.000

Estimate Of Quantities

				8070-03-70	8070-03-71
Line	Item	Item Description	Unit	Total	Qty
0198	614.2300	MGS Guardrail 3	LF	2,996.000	2,996.000
0200	614.2350	MGS Guardrail Short Radius	LF	146.500	146.500
0202	614.2500	MGS Thrie Beam Transition	LF	433.000	433.000
0204	614.2610	MGS Guardrail Terminal EAT	EACH	14.000	14.000
0206	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000
0208	618.0100	Maintenance and Repair of Haul Roads (project) 01. 8070-03-70	EACH	1.000	1.000
0210	619.1000	Mobilization	EACH	1.000	0.510
0212	624.0100	Water	MGAL	3.000	3.000
0214	625.0100	Topsoil	SY	12,118.000	12,118.000
0216	625.0500	Salvaged Topsoil	SY	40,394.000	40,394.000
0218	627.0200	Mulching	SY	34,389.000	34,389.000
0220	628.1504	Silt Fence	LF	15,489.000	15,489.000
0222	628.1520	Silt Fence Maintenance	LF	15,489.000	15,489.000
0224	628.1905	Mobilizations Erosion Control	EACH	15.000	15.000
0226	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0228	628.2002	Erosion Mat Class I Type A	SY	880.000	880.000
0230	628.2006	Erosion Mat Urban Class I Type A	SY	5,125.000	5,125.000
0232	628.7005	Inlet Protection Type A	EACH	1.000	1.000
0234	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0236	628.7555	Culvert Pipe Checks	EACH	49.000	49.000
0238	629.0210	Fertilizer Type B	CWT	28.000	28.000
0240	630.0110	Seeding Mixture No. 10	LB	545.000	545.000
0242	630.0130	Seeding Mixture No. 30	LB	85.000	85.000
0244	630.0200	Seeding Temporary	LB	1,218.000	1,218.000
0246	630.0500	Seed Water	MGAL	253.000	253.000
0248	633.0100	Delineator Posts Steel	EACH	12.000	12.000
0250	633.5200	Markers Culvert End	EACH	56.000	56.000
0252	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	1.000	1.000
0254	637.2230	Signs Type II Reflective F	SF	10.000	10.000
0256	638.2102	Moving Signs Type II	EACH	14.000	14.000
0258	638.4000	Moving Small Sign Supports	EACH	1.000	1.000
0260	642.5001	Field Office Type B	EACH	1.000	1.000
0262	643.0300	Traffic Control Drums	DAY	2,060.000	2,060.000
0264	643.0420	Traffic Control Barricades Type III	DAY	13,167.000	13,167.000
0266	643.0705	Traffic Control Warning Lights Type A	DAY	20,034.000	20,034.000
0268	643.0900	Traffic Control Signs	DAY	36,559.000	36,559.000
0270	643.0920	Traffic Control Covering Signs Type II	EACH	17.000	17.000
0272	643.1050	Traffic Control Signs PCMS	DAY	49.000	49.000
0274	643.3165	Temporary Marking Line Paint 6-Inch	LF	168,960.000	168,960.000
0276	643.5000	Traffic Control	EACH	1.000	1.000
0278	645.0120	Geotextile Type HR	SY	795.000	795.000
0280	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	163,536.000	163,536.000
0282	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	70.000	70.000
0284	646.6120	Marking Stop Line Epoxy 18-Inch	LF	33.000	33.000
0286	646.8220	Marking Island Nose Epoxy	EACH	2.000	2.000
0288	650.4500	Construction Staking Subgrade	LF	71.000	71.000
0290	650.5000	Construction Staking Base	LF	71.000	71.000
0292	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	729.000	223.000
0294	650.6000	Construction Staking Pipe Culverts	EACH	18.000	18.000
					506.000

Estimate Of Quantities

					8070-03-70	8070-03-71
Line	Item	Item Description	Unit	Total	Qty	Qty
0296	650.6501	Construction Staking Structure Layout (structure) 01. B-47-28	EACH	1.000		1.000
0298	650.6501	Construction Staking Structure Layout (structure) 02. B-47-29	EACH	1.000		1.000
0300	650.6501	Construction Staking Structure Layout (structure) 03. B-47-30	EACH	1.000		1.000
0302	650.8000	Construction Staking Resurfacing Reference	LF	53,608.000	53,608.000	
0304	650.9500	Construction Staking Sidewalk (project) 01. 8070-03-70	EACH	1.000	1.000	
0306	650.9911	Construction Staking Supplemental Control (project) 01. 8070-03-70	EACH	1.000	1.000	
0308	650.9911	Construction Staking Supplemental Control (project) 02. 8070-03-71	EACH	1.000		1.000
0310	650.9920	Construction Staking Slope Stakes	LF	7,051.000		7,051.000
0312	690.0150	Sawing Asphalt	LF	986.000	986.000	
0314	690.0250	Sawing Concrete	LF	14.000	14.000	
0316	715.0502	Incentive Strength Concrete Structures	DOL	2,334.000		2,334.000
0318	740.0440	Incentive IRI Ride	DOL	40,612.000	40,612.000	
0320	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. STA 110+00	EACH	1.000		1.000
0322	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 02. STA 205+00	EACH	1.000		1.000
0324	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 03. STA 395+50	EACH	1.000		1.000
0326	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,500.000	2,500.000	
0328	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	2,000.000	2,000.000	
0330	SPV.0055	Special 01. Incentive Density PWL HMA Pavement	DOL	25,955.000	25,955.000	
0332	SPV.0055	Special 02. Incentive Density Air Voids HMA Pavement	DOL	38,920.000	38,920.000	
0334	SPV.0055	Special 03. Incentive Density HMA Pavement Longitudinal Joints	DOL	21,440.000	21,440.000	
0336	SPV.0060	Special 01. Manhole Cover Beehive Grate	EACH	1.000		1.000
0338	SPV.0180	Special 01. Abutment Seat Cleaning and Sealing	SY	60.000		60.000
0340	SPV.0180	Special 02. Ditch Cleaning	SY	665.000		665.000

REMOVING SMALL PIPE CULVERTS 203.0100 <table><tr><th>STATION</th><th>LOCATION</th><th>EACH</th><th>REMARKS</th></tr><tr><td colspan="4">PROJECT 8070-03-71</td></tr><tr><td colspan="4">CATEGORY 0010</td></tr><tr><td>20+02</td><td>LT, RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td>38+58</td><td>LT, RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td>49+58</td><td>LT, RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td>110+79</td><td>RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td>130+08</td><td>LT, RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td>262+00</td><td>LT, RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td>270+12</td><td>LT, RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td>295+06</td><td>LT, RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td>322+73</td><td>RT</td><td>1</td><td>RT END TO BE REMOVED</td></tr><tr><td>425+73</td><td>LT</td><td>1</td><td>LT END TO BE REMOVED</td></tr><tr><td>435+65</td><td>LT, RT</td><td>1</td><td>ENTIRE PIPE TO BE REMOVED</td></tr><tr><td colspan="2">PROJECT 8070-03-71 TOTAL</td><td>11</td><td></td></tr></table>				STATION	LOCATION	EACH	REMARKS	PROJECT 8070-03-71				CATEGORY 0010				20+02	LT, RT	1	ENTIRE PIPE TO BE REMOVED	38+58	LT, RT	1	ENTIRE PIPE TO BE REMOVED	49+58	LT, RT	1	ENTIRE PIPE TO BE REMOVED	110+79	RT	1	ENTIRE PIPE TO BE REMOVED	130+08	LT, RT	1	ENTIRE PIPE TO BE REMOVED	262+00	LT, RT	1	ENTIRE PIPE TO BE REMOVED	270+12	LT, RT	1	ENTIRE PIPE TO BE REMOVED	295+06	LT, RT	1	ENTIRE PIPE TO BE REMOVED	322+73	RT	1	RT END TO BE REMOVED	425+73	LT	1	LT END TO BE REMOVED	435+65	LT, RT	1	ENTIRE PIPE TO BE REMOVED	PROJECT 8070-03-71 TOTAL		11	
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REMOVING STRUCTURE (C-755-36) 203.0220.01 <table><tr><th>STATION</th><th>LOCATION</th><th>EACH</th><th>REMARKS</th></tr><tr><td colspan="4">PROJECT 8070-03-71</td></tr><tr><td colspan="4">CATEGORY 0010</td></tr><tr><td>507+50</td><td>LT,RT</td><td>1</td><td>3.5'W X 6'H X 55'L RC BOX CULVERT</td></tr><tr><td colspan="2">PROJECT 8070-03-71 TOTAL</td><td>1</td><td></td></tr></table>				STATION	LOCATION	EACH	REMARKS	PROJECT 8070-03-71				CATEGORY 0010				507+50	LT,RT	1	3.5'W X 6'H X 55'L RC BOX CULVERT	PROJECT 8070-03-71 TOTAL		1																																									
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CLEARING AND GRUBBING 201.0105 CLEARING 201.0205 GRUBBING				
STATION TO STATION		LOCATION	STA	STA
PROJECT 8070-03-70				
CATEGORY 0010				
45+90	- 52+00	LT	6	6
147+40	- 152+00	RT	4	4
260+30	- 263+60	RT	3	3
260+19	- 265+66	LT	5	5
270+07		LT	1	1
270+07		RT	1	1
287+19	- 295+61	LT	8	8
286+50	- 295+80	RT	9	9
296+10	- 296+10	690TH AVE INT SE QUAD	2	2
453+58		RT	1	1
462+50	- 467+74	RT	5	5
468+20		RT	1	1
498+70	498+90	RT	1	1
507+00		LT	1	1
519+14	- 520+64	RT	2	2
527+70	- 532+80	LT	5	5
PROJECT 8070-03-70 TOTAL			55	55

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REMOVING ASPHALTIC SURFACE BUTT JOINTS 204.0115			
STATION	LOCATION	SY	REMARKS
PROJECT 8070-03-70			
CATEGORY 0010			
2+33	USH 63 PROJECT START	31	10' BUTT JOINT
37+97	610TH ST, RT	29	10' BUTT JOINT
37+97	610TH ST, LT	27	10' BUTT JOINT
64+29	590TH ST, LT	28	10' BUTT JOINT
82+61	STH 72, RT	37	10' BUTT JOINT
92+57	CTH DD, RT	33	10' BUTT JOINT
137+41	570TH AVE, LT	27	10' BUTT JOINT
137+41	570TH AVE, RT	28	10' BUTT JOINT
190+34	610TH AVE, LT	28	10' BUTT JOINT
190+34	610TH AVE, RT	34	10' BUTT JOINT
241+84	CTH N, LT	37	10' BUTT JOINT
241+84	CTH N, RT	35	10' BUTT JOINT
252+01	570TH ST, LT	30	10' BUTT JOINT
296+37	690TH AVE, LT	28	10' BUTT JOINT
296+37	690TH AVE, RT	30	10' BUTT JOINT
348+99	730TH AVE, RT	27	10' BUTT JOINT
388+34	760TH AVE, LT	26	10' BUTT JOINT
414+65	CTH J, LT	33	10' BUTT JOINT
414+65	780TH AVE, RT	27	10' BUTT JOINT
431+57	CTH Y (SOUTH), LT	31	10' BUTT JOINT
443+74	800TH AVE, LT	21	10' BUTT JOINT
446+67	CTH Y (EAST), LT	30	10' BUTT JOINT
471+68	535TH ST, RT	27	10' BUTT JOINT
478+25	B-47-0205 W END	44	10' BUTT JOINT
480+20	B-47-0205 E END	47	10' BUTT JOINT
535+56	490TH ST, RT	33	10' BUTT JOINT
537+25	STH 29, RT	45	10' BUTT JOINT
538+31	USH 63 PROJECT END	50	10' BUTT JOINT
PROJECT 8070-03-70 TOTAL		904	

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REMOVING ASPHALTIC SURFACE MILLING 204.0120				
STATION	TO STATION	LOCATION	SY	REMARKS
PROJECT 8070-03-70				
CATEGORY 0010				
2+43	- 19+49	MAINLINE	5,686	30' SWATH
20+56	- 38+18	MAINLINE	5,873	30' SWATH
39+08	- 49+01	MAINLINE	3,310	30' SWATH
50+07	- 109+45	MAINLINE	19,793	30' SWATH
110+47	- 129+78	MAINLINE	6,437	30' SWATH
130+33	- 204+32	MAINLINE	24,663	30' SWATH
205+58	- 261+40	MAINLINE	18,607	30' SWATH
262+56	- 269+87	MAINLINE	2,437	30' SWATH
270+60	- 294+52	MAINLINE	7,973	30' SWATH
295+60	- 395+04	MAINLINE	33,147	30' SWATH
395+93	- 435+05	MAINLINE	13,040	30' SWATH
436+11	- 478+25	MAINLINE	14,047	30' SWATH
480+30	- 506+97	MAINLINE	8,890	30' SWATH
508+03	- 538+31	MAINLINE	10,093	30' SWATH
24+65	- 25+01	RT	17	DRIVEWAY
36+47	- 40+92	610TH ST, RT	295	SIDE ROAD
35+92	- 39+48	610TH ST, LT	291	SIDE ROAD
54+04	- 54+48	LT	17	DRIVEWAY
63+17	- 64+97	590TH ST, LT	218	SIDE ROAD
70+76	- 82+17	STH 72, RT	2,486	SIDE ROAD
90+56	- 93+70	CTH DD, RT	548	SIDE ROAD
136+40	- 138+95	570TH AVE, LT	362	SIDE ROAD
135+72	- 138+46	570TH AVE, RT	312	SIDE ROAD
167+99	- 168+41	LT	16	DRIVEWAY
177+28	- 177+60	RT	17	DRIVEWAY
187+51	- 191+64	CTH G, RT	487	SIDE ROAD
CATEGORY 0010		SUBTOTAL	179,061	

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REMOVING ASPHALTIC SURFACE MILLING CONT.					
189+33	- 192+01	610TH AVE, LT	381	SIDE ROAD	
222+01	- 222+60	RT	16	DRIVEWAY	
231+02	- 231+41	RT	16	DRIVEWAY	
232+19	- 232+58	RT	16	DRIVEWAY	
239+75	- 243+19	CTH N, RT	466	SIDE ROAD	
240+07	- 243+44	CTH N, LT	543	SIDE ROAD	
250+73	- 253+26	570TH ST, LT	313	SIDE ROAD	
295+20	- 297+75	690TH AVE, LT	321	SIDE ROAD	
295+29	- 297+56	690TH AVE, RT	308	SIDE ROAD	
347+71	- 350+16	730TH AVE, RT	215	SIDE ROAD	
374+29	- 375+10	LT	37	DRIVEWAY	
387+46	- 389+74	760TH AVE, LT	207	SIDE ROAD	
412+49	- 417+40	CTH J, LT	524	SIDE ROAD	
413+32	- 416+16	780TH AVE, RT	335	SIDE ROAD	
428+98	- 429+82	RT	31	DRIVEWAY	
431+90	- 432+31	RT	17	DRIVEWAY	
431+95	- 435+05	CTH Y SOUTH, LT	327	SIDE ROAD	
443+57	- 446+14	CTH Y NORTH, LT	632	SIDE ROAD	
463+87	- 464+60	801ST AVE, LT	91	SIDE ROAD	
468+82	- 473+68	535TH ST, LT	310	SIDE ROAD	
468+36	- 472+34	535TH ST, RT	226	SIDE ROAD	
476+74	- 478+25	LT	104	BRIDGE APPROACH	
476+80	- 478+25	RT	88	BRIDGE APPROACH	
480+30	- 481+79	RT	101	BRIDGE APPROACH	
480+30	- 481+79	LT	95	BRIDGE APPROACH	
502+84	- 504+60	510TH ST, LT	212	SIDE ROAD	
531+44	- 538+31	490TH ST & STH 29, RT	1,727	SIDE ROADS	
535+47	- 538+30	LT	306	BY FORMER WAYSIDE	
2+43	- 538+31	LT, RT	500	UNDISTRIBUTED	
CATEGORY 0010		SUBTOTAL	8,465		
PROJECT 8070-03-70 TOTAL			187,526		

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REMOVING CURB & GUTTER				
STATION TO		STATION	LOCATION	REMARKS
PROJECT 8070-03-70			204.0150	
CATEGORY 0010			LF	
38+11	-	38+51	610TH ST INT SE QUAD	61
38+08	-	38+64	611TH ST INT NE QUAD	84
295+74	-	296+23	690TH AVE SE QUAD	73
295+87	-	296+24	690TH AVE SW QUAD	60
471+51	-	471+60	535TH ST NW QUAD	12
				FOR CURB RAMP REMOVAL
PROJECT 8070-03-70 TOTAL			290	

REMOVING CONCRETE SIDEWALK				
STATION TO		STATION	LOCATION	REMARKS
PROJECT 8070-03-70			204.0155	
CATEGORY 0010			SY	
470+29	-	471+57	LT	67
203+78	-	203+90	LT	7
				535TH ST NW QUAD
				B-47-29 SW QUAD DRAINAGE DITCH CONCRETE
PROJECT 8070-03-70 TOTAL			74	

PREPARE FOUNDATION FOR ASPHALTIC PAVING (8070-03-70)				
STATION TO		STATION	LOCATION	REMARKS
PROJECT 8070-03-70			211.0101	
CATEGORY 0010			EACH	
2+33	-	538+41	PROJECT LIMITS	1
PROJECT 8070-03-70 TOTAL			1	

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PROJECT 8070-03-71
CATEGORY 0010

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (2)	UNEXPANDED FILL	EXPANDED FILL (3)	MASS ORDINATE +/- (4)	WASTE	208.0100 BORROW	COMMENT
			CUT (1)				FACTOR 1.30				
DIVISION 1											
	19+49/20+56	MAINLINE	274	30	244	133	173	71	71	0	CULVERT REPLACEMENT TRANSITION CUT
	38+18/39+08	MAINLINE	907	25	882	771	1,002	-120	0	120	CULVERT REPLACEMENT TRANSITION CUT
	45+00/51+50	LT, RT	166	0	166	2,223	2,890	-2,724	0	2,724	GRADING
	49+01/50+07	MAINLINE	711	30	681	570	741	-60	0	60	CULVERT REPLACEMENT TRANSITION CUT
	106+49.77/113+37.94	LT, RT	88	0	88	295	384	-296	0	296	GRADING
	110+63/111+16	RT	98	0	98	98	127	-29	0	29	DRIVEWAY CULVERT REPLACEMENT TRANSITION CUT
	129+78/130+33	MAINLINE	230	15	215	160	208	8	8	0	CULVERT REPLACEMENT TRANSITION CUT
	147+00/152+50	RT	88	0	88	278	361	-273	0	273	GRADING
	201+34.41/208+53.77	LT, RT	100	0	100	533	693	-593	0	593	GRADING
	259+50/266+00	LT, RT	83	0	83	4,229	5,498	-5,415	0	5,415	GRADING
	261+40/262+56	MAINLINE	709	33	676	565	734	-58	0	58	CULVERT REPLACEMENT TRANSITION CUT
	269+87/270+60	MAINLINE	441	-24	465	391	509	-44	0	44	CULVERT REPLACEMENT TRANSITION CUT
	281+09.318/296+42.679	LT, RT	61	0	61	7,988	10,384	-10,323	0	10,323	GRADING
	294+52/295+60	MAINLINE	707	31	676	565	735	-58	0	58	CULVERT REPLACEMENT TRANSITION CUT
	391+97.923/399+01.678	LT, RT	87	0	87	578	751	-664	0	664	GRADING
	435+05/436+11	MAINLINE	723	30	693	582	756	-63	0	63	CULVERT REPLACEMENT TRANSITION CUT
	453+56/453+61	RT	6	0	6	6	8	-2	0	2	CULVERT OUTLET DRAINAGE
	459+48.638/468+71.266	RT	92	0	92	1,090	1,417	-1,325	0	1,325	GRADING
	467+82/468+86	RT	186	62	124	0	0	124	124	0	CUT EXISTING 799TH AVE PAVEMENT AND BASE
	487+22.149/489+00	RT	10	0	10	70	91	-81	0	81	GRADING
	506+57.205/508+04.813	LT	64	0	64	45	59	6	6	0	DITCH AND DITCH BACKSLOPE CUT
	506+97/508+03	MAINLINE	681	30	651	540	702	-51	0	51	CULVERT REPLACEMENT TRANSITION CUT
	515+50/521+00	RT	33	0	33	919	1,195	-1,162	0	1,162	GRADING
DIVISION 1 SUBTOTAL			6,545	262	6,282	22,628	29,416	-23,134	209	23,341	
GRAND TOTAL			6,545	262	6,282	22,628	29,416	-23,134	209	23,341	
TOTAL COMMON EXC			6,545								

NOTES:
(1) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(2) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(3) EXPANDED FILL FACTOR = 1.3 (EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR)
(4) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
(5) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS				
STATION TO		STATION	LOCATION	REMARKS
PROJECT 8070-03-70			211.0400	
CATEGORY 0010			STA	
2+33	-	538+41	LT	536
2+33	-	538+41	RT	536
PROJECT 8070-03-70 TOTAL			1,072	

FINISHING ROADWAY (8070-03-70)				
STATION TO		STATION	LOCATION	REMARKS
PROJECT 8070-03-70			213.0100	
CATEGORY 0010			EACH	
2+33	-	538+41	LT, RT	1
PROJECT 8070-03-70 TOTAL			1	

PROJECT NO: 8070-03-70/71

HWY: USH 63

COUNTY: PIERCE

MISCELLANEOUS QUANTITIES

SHEET

BASE AGGREGATE DENSE 3/4-INCH					
				305.0110	
STATION	TO	STATION	LOCATION	TON	REMARKS
PROJECT 8070-03-70					
CATEGORY 0010					
2+33	-	538+41	TANGENT SECTIONS	3,340	2' GRAVEL SHOULDERS
2+33	-	538+41	GRADING IMPROVEMENT AREAS	1,920	
-	-	-	DRIVEWAYS	704	8 TON PER RESIDENTIAL DRIVEWAY (TYP)
-	-	-	UNDISTRIBUTED	500	
PROJECT 8070-03-70 TOTAL				6,464	

BASE AGGREGATE DENSE 1 1/4-INCH					
				305.0120	
STATION	TO	STATION	LOCATION	TON	REMARKS
PROJECT 8070-03-71					
CATEGORY 0010					
19+49	-	20+56	MAINLINE	301	CULVERT REPLACEMENT
38+18	-	39+08	MAINLINE	380	CULVERT REPLACEMENT
45+00	-	51+50	LT, RT	96	GRADING AREA SHLD BASE
49+01	-	50+07	MAINLINE	299	CULVERT REPLACEMENT
106+50	-	113+38	LT, RT	153	GRADING AREA SHLD BASE
110+63	-	111+16	RT	30	CULVERT REPLACEMENT
129+78	-	130+33	MAINLINE	155	CULVERT REPLACEMENT
147+00	-	152+50	RT	41	GRADING AREA SHLD BASE
201+34	-	203+00	RT	61	GRADING AREA SHLD BASE
205+30	-	208+54	RT	52	GRADING AREA SHLD BASE
205+55	-	208+54	LT	89	GRADING AREA SHLD BASE
259+50	-	266+00	LT, RT	289	GRADING AREA SHLD BASE
261+40	-	262+56	MAINLINE	327	CULVERT REPLACEMENT
269+87	-	270+60	MAINLINE	204	CULVERT REPLACEMENT
281+09	-	282+77	RT	62	GRADING AREA SHLD BASE
283+50	-	285+21	LT	76	GRADING AREA SHLD BASE
285+50	-	296+05	RT	391	GRADING AREA SHLD BASE
287+00	-	296+05	LT	134	GRADING AREA SHLD BASE
294+52	-	295+60	MAINLINE	376	CULVERT REPLACEMENT
295+65	-	296+23	LT	91	690TH AVE WEST EAT GRADING
295+65	-	296+23	RT	94	690TH AVE EAST EAT GRADING
391+98	-	395+10	RT	69	GRADING AREA SHLD BASE
391+98	-	395+10	LT	139	GRADING AREA SHLD BASE
395+88	-	397+50	RT	48	GRADING AREA SHLD BASE
395+88	-	399+02	LT	116	GRADING AREA SHLD BASE
435+05	-	436+11	MAINLINE	303	CULVERT REPLACEMENT
461+50	-	468+40	RT	153	GRADING AREA SHLD BASE
467+82	-	468+86	RT	248	STING 799TH AVE PAVEMENT A
506+97	-	508+03	MAINLINE	298	CULVERT REPLACEMENT
516+50	-	521+00	RT	133	GRADING AREA SHLD BASE
PROJECT 8070-03-71 TOTAL				5,209	

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<u>CONCRETE PAVEMENT 8-INCH</u>					
415.0080					
STATION TO	STATION	LOCATION	SY	REMARKS	
PROJECT 8070-03-71					
CATEGORY 0010					
109+45	-	109+60	B-47-28, LT	8	PAVED SHOULDER
109+45	-	109+60	B-47-28, RT	8	PAVED SHOULDER
110+32	-	110+47	B-47-28, LT	8	PAVED SHOULDER
110+32	-	110+47	B-47-28, RT	8	PAVED SHOULDER
204+32	-	204+47	B-47-29, RT	7	PAVED SHOULDER
204+42	-	204+67	B-47-29, LT	15	PAVED SHOULDER
205+23	-	205+48	B-47-29, RT	15	PAVED SHOULDER
205+43	-	205+58	B-47-29, LT	7	PAVED SHOULDER
395+04	-	395+19	B-47-30, LT	8	PAVED SHOULDER
395+04	-	395+19	B-47-30, RT	8	PAVED SHOULDER
395+78	-	395+93	B-47-30, LT	8	PAVED SHOULDER
395+78	-	395+93	B-47-30, RT	8	PAVED SHOULDER
PROJECT 8070-03-71 TOTAL			111		

CONCRETE PAVEMENT APPROACH SLAB					
415.0410					
STATION TO	STATION	LOCATION	SY	REMARKS	
PROJECT 8070-03-71					
CATEGORY 0010					
109+45	-	109+60	B-47-28, SOUTH	40	DIMENSIONS PER SDD
110+32	-	110+47	B-47-28, NORTH	40	DIMENSIONS PER SDD
204+32	-	204+57	B-47-29, SOUTH	67	DIMENSIONS PER SDD
205+33	-	205+58	B-47-29, NORTH	67	DIMENSIONS PER SDD
395+04	-	395+19	B-47-30, SOUTH	40	DIMENSIONS PER SDD
395+78	-	395+93	B-47-30, NORTH	40	DIMENSIONS PER SDD
PROJECT 8070-03-71 TOTAL			254		

HMA COLD WEATHER PAVING				
450.4000				
STATION TO	STATION	LOCATION	TON	
PROJECT 8070-03-70				
CATEGORY 0010				
2+33	-	538+41	PROJECT LIMITS	9,730
PROJECT 8070-03-70 TOTAL			9,730	

TACK COAT					
455.0605					
STATION TO	STATION	LOCATION	GAL	REMARKS	
PROJECT 8070-03-70					
CATEGORY 0010					
2+33	-	109+44	MAINLINE	5,332	-
110+47	-	204+29	MAINLINE	4,670	-
205+61	-	395+03	MAINLINE	9,429	-
395+94	-	478+25	MAINLINE	4,097	-
480+30	-	538+41	MAINLINE	2,893	-
36+66	-	39+14	610TH ST, RT	44	SIDE ROAD
36+97	-	38+78	610TH ST, LT	44	SIDE ROAD
63+37	-	64+87	590TH ST, LT	30	SIDE ROAD
72+60	-	81+98	STH 72, RT	318	SIDE ROAD
91+10	-	93+52	CTH DD, RT	70	SIDE ROAD
107+53	-	109+01	B-47-28 SE QUAD	2	EXTRA PAVED SHLD
111+03	-	112+38	B-47-28 NW QUAD	2	EXTRA PAVED SHLD
136+61	-	138+66	570TH AVE, LT	45	SIDE ROAD
135+86	-	138+35	570TH AVE, RT	44	SIDE ROAD
188+34	-	191+50	CTH G, RT	61	SIDE ROAD
189+46	-	191+76	610TH AVE, LT	49	SIDE ROAD
202+41	-	203+72	B-47-29 SE QUAD	2	EXTRA PAVED SHLD
204+29	-	204+41	B-47-29 SW QUAD	0	PAVED SHLD
205+49	-	205+61	B-47-29 NE QUAD	0	PAVED SHLD
206+17	-	207+54	B-47-29 NW QUAD	2	EXTRA PAVED SHLD
240+28	-	242+94	CTH N, RT	57	SIDE ROAD
240+58	-	244+04	CTH N, LT	72	SIDE ROAD
250+94	-	253+16	570TH ST, LT	43	SIDE ROAD
284+44	-	297+28	690TH AVE, LT	79	SIDE ROAD PLUS EXTRA PAVED SHLD
282+11	-	297+40	690TH AVE, RT	84	SIDE ROAD PLUS EXTRA PAVED SHLD
347+98	-	349+96	730TH AVE, RT	27	SIDE ROAD
387+71	-	389+45	760TH AVE, LT	26	SIDE ROAD
393+13	-	394+61	B-47-30 SE QUAD	2	EXTRA PAVED SHLD
396+50	-	397+86	B-47-30 NW QUAD	2	EXTRA PAVED SHLD
413+18	-	416+55	CTH J, LT	62	SIDE ROAD
413+50	-	415+83	780TH AVE, RT	44	SIDE ROAD
431+95	-	435+15	CTH Y SOUTH, LT	50	SIDE ROAD
443+64	-	445+90	CTH Y NORTH, LT	88	SIDE ROAD
464+02	-	464+57	801ST AVE, LT	11	SIDE ROAD
466+68	-	469+03	799TH AVE	47	SIDE ROAD
469+00	-	473+19	535TH ST, LT	30	SIDE ROAD PLUS EXTRA PAVED SHLD
470+71	-	472+26	535TH ST, RT	24	SIDE ROAD
476+86	-	478+35	LT	11	BRIDGE APPROACH
476+99	-	478+35	RT	9	BRIDGE APPROACH
480+20	-	481+51	RT	8	BRIDGE APPROACH
480+20	-	481+62	LT	10	BRIDGE APPROACH
503+01	-	504+37	510TH ST, LT	24	SIDE ROAD
532+75	-	538+41	490TH ST & STH 29, RT	225	SIDE ROADS
534+98	-	538+41	LT	30	FORMER WAYSIDE
PROJECT 8070-03-70 TOTAL			28,197		

PWL AND INCENTIVE HMA				
460.0105.S				
HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS				
STATION TO	STATION	LOCATION	EACH	
PROJECT 8070-03-70				
CATEGORY 0010				
2+33	-	538+41	PROJECT	2
PROJECT 8070-03-70 TOTAL			2	

PWL MIXTURE USE TABLE								
THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE TO THIS PROJECT:								
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS (INCHES)	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							DENSITY ACCEPTANCE	MIXTURE ACCEPTANCE
12 FOOT DRIVING LANE	2+33 TO 538+41	UPPER LAYER	4 MT 58-34 V	5 MT 58-34 V	11,891	1.50	INCENTIVE DENSITY PWL	INCENTIVE AIR VOIDS HMA PAVEMENT SPV.0055.02
12 FOOT DRIVING LANE	2+33 TO 538+41	LOWER LAYER	MILLED SURFACE	4 MT 58-34 V	13,873	1.75	HMA PAVEMENT	
STH 72 INTERSECTION	72+60 TO 81+98	UPPER LAYER	4 MT 58-34 V	5 MT 58-34 V	191	1.50	SPV.0055.01	
PAVED SHOULDERS & AUX LANES	2+33 TO 538+41	UPPER LAYER	4 MT 58-34 V	5 MT 58-34 V	5,010	1.50	ACCEPTANCE TESTING FOR DEPARTMENT, NOT ELIGIBLE FOR INCENTIVE.	
PAVED SHOULDERS & AUX LANES	2+33 TO 538+41	LOWER LAYER	MILLED SURFACE	4 MT 58-34 V	5,846	1.75		
SIDE ROADS	VARIOUS	UPPER LAYER	4 MT 58-34 V	5 MT 58-34 V	826	1.50		
SIDE ROADS	VARIOUS	LOWER LAYER	MILLED SURFACE	4 MT 58-34 V	964	1.75		
STH 72 INTERSECTION	72+60 TO 81+98	LOWER LAYER	MILLED SURFACE	4 MT 58-34 V	318	2.50		

		HMA			
		460.6644 HMA PAVEMENT 4 MT 58-34 V	460.6645 HMA PAVEMENT 5 MT 58-34 V		
STATION TO	STATION	LOCATION	TON	TON	REMARKS
PROJECT 8070-03-70					
CATEGORY 0010					
2+33	- 109+45	MAINLINE	3,966	3,399	34' SWATH
110+47	- 204+32	MAINLINE	3,475	2,978	34' SWATH
205+58	- 395+04	MAINLINE	7,014	6,012	34' SWATH
395+93	- 478+25	MAINLINE	3,048	2,612	34' SWATH
480+30	- 538+41	MAINLINE	2,151	1,844	34' SWATH
36+66	- 39+14	610TH ST, RT	31	26	SIDE ROAD
36+97	- 38+78	610TH ST, LT	31	27	SIDE ROAD
63+37	- 64+87	590TH ST, LT	21	18	SIDE ROAD
72+60	- 81+98	STH 72, RT	318	191	SIDE ROAD
91+10	- 93+52	CTH DD, RT	49	42	SIDE ROAD
107+53	- 109+01	B-47-28 SE QUAD	3	2	EXTRA PAVED SHLD
111+03	- 112+38	B-47-28 NW QUAD	2	2	EXTRA PAVED SHLD
136+61	- 138+66	570TH AVE, LT	31	27	SIDE ROAD
135+86	- 138+35	570TH AVE, RT	31	26	SIDE ROAD
188+34	- 191+50	CTH G, RT	42	36	SIDE ROAD
189+46	- 191+76	610TH AVE, LT	34	29	SIDE ROAD
202+41	- 203+72	B-47-29 SE QUAD	3	2	EXTRA PAVED SHLD
204+29	- 204+41	B-47-29 SW QUAD	1	1	PAVED SHLD
205+49	- 205+61	B-47-29 NE QUAD	1	1	PAVED SHLD
206+17	- 207+54	B-47-29 NW QUAD	3	2	EXTRA PAVED SHLD
240+28	- 242+94	CTH N, RT	40	34	SIDE ROAD
240+58	- 244+04	CTH N, LT	50	43	SIDE ROAD
250+94	- 253+16	570TH ST, LT	30	26	SIDE ROAD
284+44	- 297+28	690TH AVE, LT	55	47	SIDE ROAD PLUS EXTRA PAVED SHLD
282+11	- 297+40	690TH AVE, RT	59	50	SIDE ROAD PLUS EXTRA PAVED SHLD
347+98	- 349+96	730TH AVE, RT	19	16	SIDE ROAD
387+71	- 389+45	760TH AVE, LT	18	16	SIDE ROAD
393+13	- 394+61	B-47-30 SE QUAD	3	2	EXTRA PAVED SHLD
396+50	- 397+86	B-47-30 NW QUAD	2	2	EXTRA PAVED SHLD
413+18	- 416+55	CTH J, LT	43	37	SIDE ROAD
413+50	- 415+83	780TH AVE, RT	31	26	SIDE ROAD
431+95	- 435+15	CTH Y SOUTH, LT	35	30	SIDE ROAD
443+64	- 445+90	CTH Y NORTH, LT	61	53	SIDE ROAD
464+02	- 464+57	801ST AVE, LT	7	6	SIDE ROAD
466+68	- 469+03	799TH AVE	33	28	SIDE ROAD
469+00	- 473+19	535TH ST, LT	21	18	SIDE ROAD PLUS EXTRA PAVED SHLD
470+71	- 472+26	535TH ST, RT	17	15	SIDE ROAD
476+86	- 478+35	LT	8	7	BRIDGE APPROACH
476+99	- 478+35	RT	6	5	BRIDGE APPROACH
480+20	- 481+51	RT	6	5	BRIDGE APPROACH
480+20	- 481+62	LT	7	6	BRIDGE APPROACH
503+01	- 504+37	510TH ST, LT	17	14	SIDE ROAD
532+75	- 538+41	490TH ST & STH 29, RT	157	135	SIDE ROADS
534+98	- 538+41	LT	21	18	FORMER WAYSIDE
PROJECT 8070-03-70 TOTAL			21,001	17,919	

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<u>MATERIAL TRANSFER VEHICLE</u>				460.9000.S.01
STATION	TO	STATION	LOCATION	EACH
PROJECT 8070-03-70				
CATEGORY 0010				
2+33	-	538+41	PROJECT LIMITS	1
PROJECT 8070-03-70 TOTAL				1

ASPHALTIC SURFACE					
465.0105					
STATION	TO	STATION	LOCATION	TON	REMARKS
PROJECT 8070-03-70					
CATEGORY 0010					
2+33	-	538+41	USH 63 LT & RT	500	LEVELING AND WEDGING, SHLD REPAIR
19+49	-	20+56	MAINLINE	164	CULVERT REPLACEMENT
38+18	-	39+08	MAINLINE	183	CULVERT REPLACEMENT
49+01	-	50+07	MAINLINE	163	CULVERT REPLACEMENT
129+78	-	130+33	MAINLINE	84	CULVERT REPLACEMENT
261+40	-	262+56	MAINLINE	178	CULVERT REPLACEMENT
269+87	-	270+60	MAINLINE	111	CULVERT REPLACEMENT
294+52	-	295+60	MAINLINE	191	CULVERT REPLACEMENT
435+05	-	436+11	MAINLINE	172	CULVERT REPLACEMENT
466+54	-	468+37	RT	125	799TH AVE, MARTELL, 6-INCHES, 2 LIFTS
506+97	-	508+03	MAINLINE	135	CULVERT REPLACEMENT
537+37	-	537+60	RT	6	AROUND PORK CHOP C&G
PROJECT 8070-03-70 TOTAL				2,011	

<u>ASPHALTIC FLUMES</u>				465.0315	
STATION	TO	STATION	LOCATION	SY	REMARKS
PROJECT 8070-03-70					
CATEGORY 0010					
478+28	-	478+34	LT, B-47-0205 NW QUAD	4	6' W X 6' L CENTERED BETWEEN POSTS 6 AND 7 FROM PARAPET
PROJECT 8070-03-70 TOTAL				<u>4</u>	

ASPHALTIC RUMBLE STRIPS, CENTERLINE				465.0475
STATION TO	STATION	LOCATION	LF	
PROJECT 8070-03-70				
CATEGORY 0010				
14+00	- 35+97	CENTERLINE	2,197	
39+97	- 62+30	CENTERLINE	2,233	
66+30	- 78+96	CENTERLINE	1,266	
82+96	- 90+57	CENTERLINE	761	
94+57	- 99+24	CENTERLINE	467	
103+54	- 109+20	CENTERLINE	566	
110+72	- 135+41	CENTERLINE	2,469	
139+41	- 176+43	CENTERLINE	3,702	
178+43	- 188+34	CENTERLINE	991	
192+34	- 204+07	CENTERLINE	1,173	
205+83	- 239+84	CENTERLINE	3,401	
243+84	- 250+01	CENTERLINE	617	
254+01	- 294+37	CENTERLINE	4,036	
298+37	- 346+99	CENTERLINE	4,862	
350+99	- 373+69	CENTERLINE	2,270	
375+69	- 386+34	CENTERLINE	1,065	
390+34	- 394+79	CENTERLINE	445	
396+18	- 399+92	CENTERLINE	374	
401+92	- 406+60	CENTERLINE	468	
408+60	- 412+65	CENTERLINE	405	
416+65	- 428+44	CENTERLINE	1,179	
433+57	- 442+50	CENTERLINE	893	
448+67	- 462+38	CENTERLINE	1,371	
480+45	- 501+61	CENTERLINE	2,116	
505+61	- 533+56	CENTERLINE	2,795	
PROJECT 8070-03-70 TOTAL				42,122

<u>CONTAINMENT AND COLLECTION OF WASTE MATERIALS</u>			517.4001.S.01	
STATION TO	STATION		EACH	REMARKS
PROJECT 8070-03-71				
CATEGORY 0020				
109+45	- 110+47		1	B-47-0028
CATEGORY 0020 SUBTOTAL			1	
PROJECT 8070-03-71			517.4001.S.02	
CATEGORY 0030			EACH	
204+32	- 205+58		1	B-47-0029
CATEGORY 0030 SUBTOTAL			1	
PROJECT 8070-03-71			517.4001.S.03	
CATEGORY 0030			EACH	
395+04	- 395+93		1	B-47-0030
CATEGORY 0040 SUBTOTAL			1	
PROJECT 8070-03-71 TOTAL			3	

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PROJECT NO: 8070-03-70/71	HWY: USH 63	COUNTY: PIERCE	MISCELLANEOUS QUANTITIES	SHEET 37	E
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CULVERT PIPE AND ENDWALLS																
INLET		OUTLET		APRON ENDWALLS FOR CULVERT PIPE		CULVERT PIPE CLASS III-A NON-METAL		CULVERT PIPE CLASS III-B NON-METAL		CLEANING CULVERT PIPES		APRON ENDWALLS FOR CULVERT PIPE STEEL			APRON ENDWALLS FOR PIPE ARCH STEEL	
STATION	OFFSET (FT)	STATION	OFFSET (FT)	STATION	LOCATION	24-INCH EACH	30-INCH EACH	24-INCH LF	24-INCH LF	30-INCH LF	EACH	24-INCH EACH	30-INCH EACH	36-INCH EACH	28X20-INCH EACH	57X38-INCH EACH
PROJECT 8070-03-71 CATEGORY 0010																
-	-	-	-	5+49	LT, RT	2	-	-	-	-	-	-	-	-	-	-
20+02	35.92 LT	20+02	38.88 RT	20+02	LT, RT	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	25+17	LT	-	1	-	-	-	-	-	-	-	-	-
38+58	31.79 RT	38+59	60.15 LT	38+58	LT, RT	-	-	-	-	-	-	-	-	-	-	-
49+58	67.85 RT	49+50	72.29 LT	49+54	LT, RT	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	58+13	LT	-	1	-	-	-	-	-	-	-	-	-
111+16	52.53 RT	110+63	51.48 RT	110+63	RT	2	-	53	-	-	-	-	-	-	-	-
-	-	-	-	119+56	LT, RT	-	-	-	-	-	-	-	-	-	-	-
130+06	27.97 RT	130+05	36.17 LT	130+06	LT, RT	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	190+81	LT, RT	-	-	-	-	-	1	-	-	-	-	-
203+78	56.00 LT	203+87	55.99 LT	203+78	LT	-	-	-	-	-	-	1	-	-	-	-
-	-	-	-	216+31	LT, RT	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	230+22	LT, RT	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	245+60	LT	-	-	-	-	-	-	-	-	-	-	-
262+24	71.02 LT	261+71	73.54 RT	261+98	LT, RT	-	-	-	-	-	-	-	-	-	-	-
270+07	53.33 LT	270+07	49.26 RT	270+07	LT, RT	-	2	-	-	103	-	-	-	-	-	-
-	-	-	-	274+72	LT, RT	-	-	-	-	-	-	-	2	-	-	-
288+11	81.61 RT	288+14	92.90 RT	287+82	RT	-	-	-	-	-	1	1	-	-	-	-
287+59	62.49 LT	287+61	57.24 LT	287+82	LT	-	-	-	-	-	-	1	-	-	-	-
294+94	67.51 LT	295+19	73.36 RT	295+06	LT, RT	-	-	-	-	-	-	-	-	-	-	-
296+04	199.71 LT	295+92	199.42 LT	295+92	LT	-	-	-	-	-	-	1	-	-	-	-
322+70	26.45 RT	322+70	34.45 RT	322+69	RT	-	-	-	-	-	-	2	-	-	-	-
-	-	-	-	340+76	LT, RT	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	358+19	LT, RT	-	-	-	-	-	-	2	-	-	-	-
-	-	-	-	366+51	LT, RT	-	-	-	-	-	-	2	-	-	-	-
-	-	-	-	382+38	LT	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	389+66	LT, RT	-	-	-	-	-	-	-	-	2	-	-
-	-	-	-	389+72	LT, RT	-	-	-	-	-	-	-	-	2	-	-
-	-	-	-	413+93	LT, RT	-	-	-	-	-	-	2	-	-	-	-
425+69	28.20 LT	425+69	20.21 LT	425+69	LT	-	-	-	-	-	-	-	-	-	1	-
435+60	39.65 LT	435+56	32.42 RT	435+58	LT, RT	1	-	-	72	-	-	-	-	-	-	-
-	-	-	-	453+58	RT	-	-	-	-	-	-	1	-	-	-	-
465+95	41.30 RT	465+95	47.61 RT	465+95	RT	-	-	-	-	-	1	-	2	-	-	-
-	-	-	-	494+56	LT, RT	-	-	-	-	-	-	2	-	-	-	-
-	-	-	-	498+80	LT, RT	-	-	-	-	-	1	2	-	-	-	-
507+50	31.21 LT	507+50	35.65 RT	507+50	LT, RT	-	-	-	-	-	-	-	-	-	-	-
516+89	39.90 RT	516+88	44.61 RT	516+89	RT	-	-	-	-	-	-	2	-	-	-	-
-	-	-	-	10+99	LT, RT	-	-	-	-	-	-	-	-	-	-	-
PROJECT 8070-03-71 TOTAL						5	4	53	72	103	4	19	4	4	1	2

NOTES: 1. CONCRETE WAS THE ASSUMED MATERIAL WHEN DESIGNING ALL LENGTHS OF PIPE AT LOCATIONS OF OPTIONAL PIPE MATERIAL.

3

3

CULVERT PIPE AND ENDWALLS CONT.																		
INLET		OUTLET				CULVERT PIPE CORRUGATED STEEL		PIPE ARCH CORRUGATED STEEL	CULVERT PIPE REINFORCED CONCRETE CLASS IV				APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE				MARKERS CULVERT END	CONSTRUCTION STAKING PIPE CULVERTS
STATION	OFFSET (FT)	STATION	OFFSET (FT)	STATION	SIZE (THICKNESS) LOCATION	24-INCH (0.064") LF	30-INCH (0.079") LF	28X20-INCH (0.064") LF	30-INCH LF	36-INCH LF	42-INCH LF	54-INCH LF	30-INCH EACH	36-INCH EACH	42-INCH EACH	54-INCH EACH	EACH	EACH
PROJECT 8070-03-71																		
CATEGORY 0010																		
-	-	-	-	5+49	LT, RT	-	-	-	-	-	-	-	-	-	-	-	1	-
20+02	35.92 LT	20+02	38.88 RT	20+02	LT, RT	-	-	-	-	-	75	-	-	-	2	-	2	1
-	-	-	-	25+17	LT	-	-	-	-	-	-	-	-	-	-	-	1	-
38+58	31.79 RT	38+59	60.15 LT	38+58	LT, RT	-	-	-	-	92	-	-	-	2	-	-	2	1
49+58	67.85 RT	49+50	72.29 LT	49+54	LT, RT	-	-	-	-	140	-	-	-	1	-	-	2	1
-	-	-	-	58+13	LT	-	-	-	-	-	-	-	-	-	-	-	2	-
111+16	52.53 RT	110+63	51.48 RT	110+63	RT	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	119+56	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	-
130+06	27.97 RT	130+05	36.17 LT	130+06	LT, RT	-	-	-	64	-	-	-	2	-	-	-	2	1
-	-	-	-	190+81	LT, RT	-	-	-	-	-	-	-	-	-	-	-	-	-
203+78	56.00 LT	203+87	55.99 LT	203+78	LT	10	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	216+31	LT, RT	-	-	-	-	-	-	-	-	-	-	-	1	-
-	-	-	-	230+22	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	-
-	-	-	-	245+60	LT	-	-	-	-	-	-	-	-	-	-	-	1	-
262+24	71.02 LT	261+71	73.54 RT	261+98	LT, RT	-	-	-	-	-	-	154	-	-	-	2	2	1
270+07	53.33 LT	270+07	49.26 RT	270+07	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	274+72	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	-
288+11	81.61 RT	288+14	92.90 RT	287+82	RT	12	-	-	-	-	-	-	-	-	-	-	1	1
287+59	62.49 LT	287+61	57.24 LT	287+82	LT	6	-	-	-	-	-	-	-	-	-	-	1	1
294+94	67.51 LT	295+19	73.36 RT	295+06	LT, RT	-	-	-	-	-	143	-	-	-	2	-	2	1
296+04	199.71 LT	295+92	199.42 LT	295+92	LT	12	-	-	-	-	-	-	-	-	-	-	1	1
322+70	26.45 RT	322+70	34.45 RT	322+69	RT	8	-	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	340+76	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	-
-	-	-	-	358+19	LT, RT	-	-	-	-	-	-	-	-	-	-	-	1	-
-	-	-	-	366+51	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	-
-	-	-	-	382+38	LT	-	-	-	-	-	-	-	-	-	-	-	1	-
-	-	-	-	389+66	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	-
-	-	-	-	389+72	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	-
-	-	-	-	413+93	LT, RT	-	-	-	-	-	-	-	-	-	-	-	1	-
425+69	28.20 LT	425+69	20.21 LT	425+69	LT	-	-	8	-	-	-	-	-	-	-	-	2	1
435+60	39.65 LT	435+56	32.42 RT	435+58	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	453+58	RT	-	-	-	-	-	-	-	-	-	-	-	1	-
465+95	41.30 RT	465+95	47.61 RT	465+95	RT	-	8	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	494+56	LT, RT	-	-	-	-	-	-	-	-	-	-	-	1	-
-	-	-	-	498+80	LT, RT	-	-	-	-	-	-	-	-	-	-	-	-	-
507+50	31.21 LT	507+50	35.65 RT	507+50	LT, RT	-	-	-	-	67	-	-	-	2	-	-	2	1
516+89	39.90 RT	516+88	44.61 RT	516+89	RT	8	-	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	10+99	LT, RT	-	-	-	-	-	-	-	-	-	-	-	2	-
PROJECT 8070-03-71 TOTAL						56	8	8	64	299	218	154	2	5	4	2	56	18
NOTES: 1. CONCRETE WAS THE ASSUMED MATERIAL WHEN DESIGNING ALL LENGTHS OF PIPE AT LOCATIONS OF OPTIONAL PIPE MATERIAL.																		

CONCRETE SURFACE DRAINS

				416.0610	602.3010	601.0588
				DRILLED TIE	CONCRETE	CONCRETE CURB
				BARS	SURFACE	& GUTTER 4-INCH
				EACH	DRAINS	SLOPED 36-INCH
					CY	TYPE TBT
STATION	TO	STATION	LOCATION			LF
PROJECT 8070-03-71						
CATEGORY 0010						
109+07	-	109+50	LT, RT	-	-	86
109+19	-	-	LT, RT	-	2	-
109+50	-	109+60	LT, RT	20	-	-
110+32	-	110+42	LT, RT	20	-	-
110+42	-	110+88	LT	-	-	43
110+42	-	110+75	RT	-	-	33
110+63	-	-	RT	-	1	-
110+72	-	-	LT	-	1	-
203+90	-	204+33	RT	-	-	43
204+02	-	-	RT	-	1	-
204+17	-	204+60	LT	-	-	43
204+29	-	-	LT	-	1	-
204+33	-	204+43	RT	10	-	-
204+60	-	204+70	LT	10	-	-
205+20	-	205+30	RT	10	-	-
205+47	-	205+57	LT	10	-	-
205+30	-	205+73	RT	-	-	43
205+57	-	205+90	LT	-	-	43
205+60	-	-	RT	-	1	-
205+88	-	-	LT	-	1	-
394+66	-	395+09	LT, RT	-	-	86
394+79	-	-	LT, RT	-	3	-
395+09	-	395+19	LT, RT	20	-	-
395+78	-	395+88	LT, RT	20	-	-
395+88	-	396+41	LT, RT	-	-	86
396+18	-	-	LT, RT	-	2	-
PROJECT 8070-03-71 TOTAL				120	13	506

CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D

				601.0557	
STATION	TO	STATION	LOCATION	LF	REMARKS
PROJECT 8070-03-70					
CATEGORY 0010					
38+11	-	38+51	610TH ST INT SE QUAD	61	
38+08	-	38+64	610TH ST INT NE QUAD	84	
471+41	-	471+60	535TH ST INT NW QUAD	17	REPLACE C&G IN FRONT OF CURB RAMP AND 3.5' W OF INLET
PROJECT 8070-03-70 TOTAL				162	

CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE J

				601.0576	
STATION	TO	STATION	LOCATION	LF	REMARKS
PROJECT 8070-03-70					
CATEGORY 0010					
537+37	-	537+60	STH 29 INTERSECTION	61	STH 29 INTERSECTION PORK CHOP
PROJECT 8070-03-70 TOTAL				61	

CONCRETE SIDEWALK 4-INCH

				602.0405	
STATION	TO	STATION	LOCATION	SF	REMARKS
PROJECT 8070-03-70					
CATEGORY 0010					
537+40	-	537+58	STH 29 INT, NE QUAD	167	PORK CHOP ISLAND
PROJECT 8070-03-70 TOTAL				167	

RIPRAP						
			606.0200	606.0300	645.0120	
			RIPRAP	RIPRAP	GEOTEXTILE	
			MEDIUM	HEAVY	TYPE HR	
STATION TO	STATION	LOCATION	CY	CY	SY	REMARKS
PROJECT 8070-03-71						
CATEGORY 0010						
19+97	- 20+06	RT	6	-	60	RIPRAP AT CULVERT OUTLET; W+2=9, L=11
38+55	- 38+63	LT	5	-	60	RIPRAP AT CULVERT OUTLET; W+2=8, L=12
49+45	- 49+54	LT	7	-	69	RIPRAP AT CULVERT OUTLET; W+2=8, L=15
58+14	- 58+21	LT	5	-	57	RIPRAP AT CULVERT OUTLET; W+2=7, L=12, BREAK OFF EX. CONCRETE OUTLET PAN
109+19	- -	LT, RT	3	-	20	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
110+63	- -	RT	3	-	10	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
110+72	- -	LT	3	-	10	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
119+50	- 119+58	LT	3	-	45	RIPRAP AT CULVERT OUTLET; W+2=5, L=10
204+02	- -	RT	3	-	10	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
204+29	- -	LT	3	-	10	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
205+60	- -	RT	3	-	10	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
205+88	- -	LT	3	-	10	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
261+58	- 261+73	RT	8	-	75	RIPRAP AT CULVERT OUTLET; W+2=10, L=15
270+04	- 270+11	RT	6	-	66	RIPRAP AT CULVERT OUTLET; W+2=7, L=15
295+15	- 295+30	RT	14	-	105	RIPRAP AT CULVERT OUTLET; W+2=10, L=25
394+79	- -	LT, RT	3	-	20	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
396+18	- -	LT, RT	3	-	20	RIPRAP AT CONCRETE SURFACE DRAIN; W = 6', L = 8'
453+56	- 453+61	RT	3	-	45	RIPRAP AT CULVERT OUTLET; W+2=5, L=10
483+84	- 483+98	RT	-	8	21	SLOPE PROTECTION BEHIND GUARDRAIL RADIUS
516+85	- 516+91	RT	6	-	72	RIPRAP AT CULVERT OUTLET; W+2=6, L=18
PROJECT 8070-03-71 TOTAL			86	8	795	

MANHOLES 5-FT DIAMETER			
		611.2005	
STATION	LOCATION	EACH	REMARKS
PROJECT 8070-03-71			
CATEGORY 0010			
49+58	RT	1	PROVIDE PRECAST SLAB TOP WITH OPENING FORMED TO FIT SPV BEEHIVE GRATE FRAME
PROJECT			
8070-03-71 TOTAL		1	

GUARDRAIL																
204.0165614.0200614.0305614.0345614.0370614.0390614.0397614.0400614.0515614.0920614.0950																
REMOVINGSTEEL THRIE BEAMSTEEL PLATE BEAMSTEEL PLATE BEAM GUARDSTEEL PLATE BEAM GUARDSTEEL PLATE BEAM GUARDGUARDRAIL MOW STRIPADJUSTING STEEL PLATE BEAM GUARDGUARDRAIL STIFFENED LHWREPLACING GUARDRAIL POSTS AND BLOCKS																
STATION TO STATIONLOCATIONLFLFLFLFL EACH EACH SY LFLFL LF LF EACH																
REMARKS																
PROJECT 8070-03-71																
CATEGORY 0010																
45+05	-	52+55	LT	748	-	-	-	-	-	-	-	-	-	-	-	-
45+52	-	51+75	RT	-	-	-	-	-	-	-	-	-	-	625	-	-
108+30	-	109+58	LT	128	-	-	-	-	-	-	-	-	-	-	-	B-47-28 SW QUAD
108+39	-	109+58	RT	119	-	-	-	-	-	-	-	-	-	-	-	B-47-28 SE QUAD
110+34	-	111+57	LT	124	-	-	-	-	-	-	-	-	-	-	-	B-47-28 NW QUAD
110+34	-	110+92	RT	58	-	-	-	-	-	-	-	-	-	-	-	B-47-28 NE QUAD
110+39	-	110+59	RT	-	21	-	-	-	-	-	-	-	-	-	-	B-47-28 NE QUAD
110+59	-	110+72	RT	-	-	31	-	-	-	-	-	-	-	-	-	DISTANCE FROM THRIE BEAM TRANSITION TO BEGINNING OF SHORT RADIUS B-47-28 NE QUAD; 8' RADIUS, 5 CRT POSTS
110+72	-	110+86	RT	-	-	-	12.5	-	-	-	-	-	-	-	-	
110+86	-	-	RT	-	-	-	-	-	1	-	-	-	-	-	-	
146+30	-	151+60	RT	531	-	-	-	-	-	-	-	-	-	-	-	-
203+20	-	204+42	RT	122	-	-	-	-	-	-	-	-	-	-	-	B-47-29 SE QUAD
203+64	-	204+67	LT	103	-	-	-	-	-	-	-	-	-	-	-	B-47-29 SW QUAD
205+22	-	206+51	RT	129	-	-	-	-	-	-	-	-	-	-	-	B-47-29 NE QUAD
205+47	-	206+71	LT	124	-	-	-	-	-	-	-	-	-	-	-	B-47-29 NW QUAD
259+46	-	266+20	RT	673	-	-	-	-	-	-	-	-	-	-	-	-
259+64	-	266+18	LT	655	-	-	-	-	-	-	-	-	-	-	-	-
284+80	-	296+23	RT	1,175	-	-	-	-	-	-	-	-	-	-	-	-
285+94	-	296+23	LT	-	-	-	-	-	-	-	-	-	1,051	-	-	-
295+59	-	296+24	RT	-	-	-	-	-	-	53	-	-	-	-	-	690TH AVE INTERSECTION SE QUADRANT
295+80	-	296+24	LT	-	-	-	-	-	-	42	-	-	-	-	-	690TH AVE INTERSECTION SW QUADRANT
393+89	-	395+17	LT	128	-	-	-	-	-	-	-	-	-	-	-	B-47-30 SW QUAD
393+94	-	395+17	RT	123	-	-	-	-	-	-	-	-	-	-	-	B-47-30 SE QUAD
395+80	-	397+02	LT	121	-	-	-	-	-	-	-	-	-	-	-	B-47-30 NW QUAD
395+80	-	397+08	RT	128	-	-	-	-	-	-	-	-	-	-	-	B-47-30 NE QUAD
461+72	-	467+82	RT	633	-	-	-	-	-	-	-	-	-	-	-	-
477+70	-	478+43	LT	-	-	-	-	-	-	-	73	-	-	-	-	-
477+70	-	478+43	RT	-	-	-	-	-	-	-	73	-	-	-	-	-
480+12	-	480+80	LT	-	-	-	-	-	-	-	68	-	-	-	-	-
480+12	-	483+98	RT	-	-	-	-	-	-	-	386	-	-	-	18	-
483+57	-	483+98	RT	-	-	-	-	-	-	-	-	44	-	-	-	W RADIUS OF DRIVEWAY
484+12	-	487+22	RT	-	-	-	-	-	-	-	310	-	-	-	-	-
484+12	-	487+60	RT	-	-	-	-	-	-	-	-	-	-	-	10	-
487+22	-	487+72	RT	-	-	50	-	-	-	-	-	-	-	-	-	-
487+22	-	487+60	RT	38	-	-	-	-	-	-	-	-	-	-	-	-
487+72	-	488+22	RT	-	-	-	-	1	-	-	-	-	-	-	-	-
507+02	-	507+96	LT	91	-	-	-	-	-	-	-	-	-	-	-	-
507+09	-	507+99	RT	91	-	-	-	-	-	-	-	-	-	-	-	-
515+80	-	521+04	RT	528	-	-	-	-	-	-	-	-	-	-	-	-
PROJECT 8070-03-71 TOTAL				6,570	21	81	12.5	1	1	94	910	44	1,676	28		

GUARDRAIL CONT.									
		614.2300	614.2350	614.2500	614.2610	614.2630			
STATION	TO	STATION	LOCATION	MGS GUARDRAIL 3 LF	MGS GUARDRAIL SHORT RADIUS LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH	MGS GUARDRAIL SHORT RADIUS TERMINAL EACH	REMARKS
PROJECT 8070-03-71									
CATEGORY 0010									
107+73	-	108+26	RT	-	-	-	1	-	B-47-28 SE QUAD
108+26	-	109+13	RT	87	-	-	-	-	B-47-28 SE QUAD
108+35	-	108+88	LT	-	-	-	1	-	B-47-28 SW QUAD
108+88	-	109+13	LT	25	-	-	-	-	B-47-28 SW QUAD
109+13	-	109+53	LT	-	-	39	-	-	B-47-28 SW QUAD
109+13	-	109+53	RT	-	-	39	-	-	B-47-28 SE QUAD
110+39	-	110+78	LT	-	-	39	-	-	B-47-28 NW QUAD
110+78	-	111+66	LT	88	-	-	-	-	B-47-28 NW QUAD
111+66	-	112+19	LT	-	-	-	1	-	B-47-28 NW QUAD
202+57	-	203+10	RT	-	-	-	1	-	B-47-29 SE QUAD
203+63	-	203+97	RT	34	-	-	-	-	B-47-29 SE QUAD
203+77	-	-	LT	28	-	-	-	1	B-47-29 SW QUAD
203+77	-	203+85	LT	-	12.5	-	-	-	B-47-29 SW QUAD
203+85	-	204+22	LT	37	-	-	-	-	B-47-29 SW QUAD
203+96	-	204+35	RT	-	-	39	-	-	B-47-29 SE QUAD
204+23	-	204+62	LT	-	-	39	-	-	B-47-29 SW QUAD
205+28	-	205+67	RT	-	-	39	-	-	B-47-29 NE QUAD
205+55	-	205+94	LT	-	-	39	-	-	B-47-29 NW QUAD
205+67	-	205+92	RT	25	-	-	-	-	B-47-29 NE QUAD
205+92	-	206+79	LT	87	-	-	-	-	B-47-29 NW QUAD
205+92	-	206+45	RT	-	-	-	1	-	B-47-29 NE QUAD
206+79	-	207+33	LT	-	-	-	1	-	B-47-29 NW QUAD
282+27	-	282+80	RT	-	-	-	1	-	690TH AVE SE QUAD
282+80	-	295+68	RT	1,288	-	-	-	-	-
284+71	-	285+24	LT	-	-	-	1	-	690TH AVE SW QUAD
285+24	-	295+86	LT	1,062	-	-	-	-	-
295+68	-	296+23	RT	-	81.5	-	-	-	690TH AVE SE QUAD
295+86	-	296+23	LT	-	52.5	-	-	-	690TH AVE SW QUAD
296+21	-	296+23	LT	-	-	-	1	-	MAINLINE GUARDRAIL
296+21	-	296+24	RT	-	-	-	1	-	MAINLINE GUARDRAIL
296+23	-	296+24	RT	11	-	-	-	-	-
393+33	-	393+86	RT	-	-	-	1	-	B-47-30 SE QUAD
393+86	-	394+73	RT	87	-	-	-	-	B-47-29 SE QUAD
393+95	-	394+48	LT	-	-	-	1	-	B-47-30 SW QUAD
394+48	-	394+73	LT	25	-	-	-	-	B-47-29 SW QUAD
394+73	-	395+12	LT	-	-	39	-	-	B-47-30 SW QUAD
394+73	-	395+12	RT	-	-	39	-	-	B-47-30 SE QUAD
395+85	-	396+25	LT	-	-	39	-	-	B-47-30 NW QUAD
395+85	-	396+25	RT	-	-	39	-	-	B-47-30 NE QUAD
396+25	-	396+50	RT	25	-	-	-	-	B-47-29 NE QUAD
396+25	-	397+12	LT	87	-	-	-	-	B-47-29 NW QUAD
396+50	-	397+03	RT	-	-	-	1	-	B-47-30 NE QUAD
397+12	-	397+65	LT	-	-	-	1	-	B-47-30 NW QUAD
PROJECT 8070-03-71 TOTAL				2,996	146.5	433	14	1	

MAINTENANCE AND REPAIR OF HAUL ROADS (8070-03-70)	
	618.0100
LOCATION	EACH
PROJECT 8070-03-70	
CATEGORY 0010	
HAUL ROADS	1
PROJECT 8070-03-70 TOTAL	
	1

MOBILIZATION			619.1000	
STATION TO	STATION		EACH	REMARKS
PROJECT 8070-03-70				
CATEGORY 0010				
2+33	-	538+41	0.51	
PROJECT 8070-03-70 TOTAL			0.51	
PROJECT 8070-03-71				
CATEGORY 0010				
2+33	-	538+41	0.19	
CATEGORY 0010 SUBTOTAL			0.19	
PROJECT 8070-03-71				
CATEGORY 0020				
109+45	-	110+47	0.10	B-47-28
CATEGORY 0020 SUBTOTAL			0.10	
PROJECT 8070-03-71				
CATEGORY 0030				
204+32	-	205+58	0.10	B-47-29
CATEGORY 0030 SUBTOTAL			0.10	
PROJECT 8070-03-71				
CATEGORY 0040				
395+04	-	395+93	0.10	B-47-30
CATEGORY 0040 SUBTOTAL			0.10	
PROJECT 8070-03-71 TOTAL			0.49	
COMBINED PROJECT TOTAL			1	

WATER				624.0100	
STATION TO	STATION	LOCATION		MGAL	REMARKS
PROJECT 8070-03-71					
CATEGORY 0010					
2+33	-	538+41	LT, RT	3	WATER FOR BAD 1 1/4-INCH
PROJECT 8070-03-71 TOTAL				3	

3

FINISHING ITEMS														
		625.0100	625.0500	627.0200	628.2002	628.2006	629.0210	630.0110	630.0130	630.0200	630.0500			
			SALVAGED		EROSION	EROSION		SEEDING	SEEDING					
		TOPSOIL	TOPSOIL	MULCHING	MAT CLASS	MAT URBAN	FERTILIZER	MIXTURE	MIXTURE	SEEDING	SEED			
STATION TO	STATION	LOCATION	SY	SY	SY	CLASS I	TYPE A	TYPE B	NO. 10	NO. 30	TEMPORARY	WATER	REMARKS	
PROJECT 8070-03-71 CATEGORY 0010														
19+48	-	20+55	RT	25	84	84	-	-	0.1	1	1	4	1	CULVERT REPLACEMENT
19+50	-	20+55	LT	34	112	112	-	-	0.1	2	1	5	1	CULVERT REPLACEMENT
33+42	-	34+44	RT	34	114	-	113.56	-	0.1	2	-	3	1	DITCH CLEANING
38+14	-	39+07	LT	64	214	214	-	-	0.2	3	1	8	2	CULVERT REPLACEMENT
38+17	-	39+09	RT	21	69	69	-	-	0.1	1	1	3	1	CULVERT REPLACEMENT
44+95	-	51+55	LT	1,130	3,767	3,767	-	-	2.7	51	8	114	24	GRADING AND CULVERT REPLACEMENT
44+95	-	51+55	RT	694	2,314	2,314	-	-	1.7	31	7	73	15	GRADING AND CULVERT REPLACEMENT
81+44	-	83+15	LT	24	81	-	81.33	-	0.1	1	-	2	0.5	DITCH CLEANING
91+03	-	91+23	LT	7	22	-	22.22	-	0.0	0.3	-	1	0.1	DITCH CLEANING
106+45	-	109+64	LT	57	192	-	-	191.6	0.2	3	1	7	1	EAT GRADING
106+45	-	109+65	RT	115	384	-	-	384.0	0.3	5	1	13	3	EAT GRADING
110+28	-	113+43	LT	112	374	-	-	374.2	0.3	5	1	12	3	EAT GRADING
110+28	-	113+43	RT	132	438	-	-	438.3	0.3	6	1	14	3	SRT GRADING
129+78	-	130+33	LT	14	47	47	-	-	0.04	1	0.4	2	0.4	CULVERT REPLACEMENT
129+78	-	130+33	RT	5	18	18	-	-	0.03	0.2	0.4	1	0.2	CULVERT REPLACEMENT
146+95	-	152+55	RT	734	2,446	2,446	-	-	1.7	33	4	72	15	GRADING
190+71	-	190+91	LT	7	22	-	22.22	-	0.01	0.3	-	1	0.1	DITCH CLEANING
190+71	-	190+91	RT	7	22	-	22.22	-	0.01	0.3	-	1	0.1	DITCH CLEANING
201+29	-	204+64	LT	84	280	-	-	280.4	0.2	4	1	10	2	SRT GRADING
201+29	-	204+39	RT	135	451	-	-	450.8	0.3	6	1	14	3	EAT GRADING
205+25	-	208+59	RT	158	528	-	-	528.1	0.4	7	1	16	3	EAT GRADING
205+50	-	208+59	LT	183	611	-	-	610.8	0.5	8	3	21	4	EAT GRADING
216+17	-	216+45	LT	15	50	-	50.22	-	0.03	1	-	1	0.3	DITCH CLEANING
216+21	-	216+45	RT	10	33	-	33.11	-	0.02	0.4	-	1	0.2	DITCH CLEANING
230+12	-	230+32	LT	7	22	-	22.22	-	0.01	0.3	-	1	0.1	DITCH CLEANING
230+12	-	230+32	RT	7	22	-	22.22	-	0.01	0.3	-	1	0.1	DITCH CLEANING
245+45	-	245+73	LT	13	42	-	42.11	-	0.03	1	-	1	0.2	DITCH CLEANING
259+45	-	266+05	RT	1,115	3,718	3,718	-	-	2.5	50	5	108	22	GRADING AND CULVERT REPLACEMENT
259+45	-	266+05	LT	1,138	3,792	3,792	-	-	2.5	51	3	107	22	GRADING AND CULVERT REPLACEMENT
269+87	-	270+60	RT	34	112	112	-	-	0.1	2	0.5	4	1	CULVERT REPLACEMENT
269+87	-	270+60	LT	42	140	140	-	-	0.1	2	0.3	4	1	CULVERT REPLACEMENT
281+04	-	296+18	RT	2,340	7,799	7,799	-	-	5.1	105	6	220	46	GRADING AND CULVERT REPLACEMENT
281+04	-	296+27	LT	1,469	4,898	4,898	-	-	3.3	66	6	141	29	GRADING AND CULVERT REPLACEMENT
322+50	-	322+83	RT	20	66	66	-	-	0.1	1	0.3	2	0.5	CULVERT REPLACEMENT
366+39	-	366+65	RT	13	43	-	42.56	-	0.03	1	-	1	0.2	DITCH CLEANING
366+39	-	366+63	LT	10	34	-	34.00	-	0.02	0.5	-	1	0.2	DITCH CLEANING
391+93	-	395+15	LT	133	444	-	-	444.4	0.3	6	2	14	3	EAT GRADING
391+93	-	395+15	RT	147	489	-	-	488.9	0.4	7	2	16	3	EAT GRADING
395+72	-	399+07	LT	147	489	-	-	488.9	0.4	7	2	16	3	EAT GRADING
395+73	-	399+07	RT	133	444	-	-	444.4	0.3	6	2	14	3	EAT GRADING
413+79	-	414+08	LT	14	46	-	45.56	-	0.03	1	-	1	0.3	DITCH CLEANING
425+50	-	425+86	LT	4	15	15	-	-	0.02	0.2	0.2	1	0.1	CULVERT REPLACEMENT
425+56	-	425+81	LT, RT	10	35	-	34.78	-	0.02	0.5	-	1	0.2	DITCH CLEANING
435+07	-	436+08	LT	24	79	79	-	-	0.1	1	1	4	1	CULVERT REPLACEMENT
435+24	-	436+07	RT	19	65	65	-	-	0.1	1	1	3	1	CULVERT REPLACEMENT
459+44	-	468+67	RT	831	2,770	2,770	-	-	2.2	37	12	92	19	GRADING
487+17	-	489+11	RT	64	215	-	214.89	-	0.2	3	1	8	2	EAT GRADING
494+46	-	494+66	RT	8	27	-	26.67	-	0.02	0.4	-	1	0.1	DITCH CLEANING
498+70	-	498+90	RT	15	50	-	50.44	-	0.03	1	-	1	0.3	DITCH CLEANING
506+57	-	508+05	LT	105	350	350	-	-	0.2	5	1	11	2	CULVERT REPLACEMENT
506+75	-	508+06	RT	26	86	86	-	-	0.1	1	0.5	3	1	CULVERT REPLACEMENT
515+45	-	521+05	RT	429	1,428	1,428	-	-	1.0	19	3	43	9	GRADING
PROJECT 8070-03-71 TOTAL			12,118	40,394	34,389	880	5,125	28	545	85	1,218	253		

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MOBILIZATIONS EROSION CONTROL

		628.1905		
STATION	TO STATION	LOCATION	EACH	REMARKS
PROJECT 8070-03-71				
CATEGORY 0010				
2+33	-	538+41	PROJECT LIMITS	15
PROJECT 8070-03-71 TOTAL			15	

MOBILIZATIONS EMERGENCY EROSION CONTROL

		628.1910		
STATION	TO STATION	LOCATION	EACH	REMARKS
PROJECT 8070-03-71				
CATEGORY 0010				
2+33	-	538+41	LT, RT	6
			UNDISTRIBUTED	
PROJECT 8070-03-71 TOTAL			6	

INLET PROTECTION TYPE A

		628.7005		
STATION	TO STATION	LOCATION	EACH	REMARKS
PROJECT 8070-03-71				
CATEGORY 0010				
49+58	-	-	RT	1
			FOR BEEHIVE MANHOLE INLET	
PROJECT 8070-03-71 TOTAL			1	

TEMPORARY DITCH CHECKS

		628.7504		
STATION	TO STATION	LOCATION	LF	REMARKS
PROJECT 8070-03-71				
CATEGORY 0010				
2+33	-	538+41	PROJECT LIMITS	40
			UNDISTRIBUTED	
PROJECT 8070-03-71 TOTAL			TOTAL 0010	40

CULVERT PIPE CHECKS

		628.7555		
STATION	LOCATION	EACH		
PROJECT 8070-03-71				
CATEGORY 0010				
20+02	LT	6		
38+58	RT	5		
111+16	RT	4		
130+06	RT	5		
262+24	LT	7		
270+07	LT	5		
294+94	LT	6		
435+60	LT	5		
507+50	LT	6		
PROJECT 8070-03-71 TOTAL		49		

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SIGNS

		633.0100	634.0612	637.2230	638.2102	638.4000	
		DELINEATOR	POSTS WOOD				
		POSTS STEEL	4X6-INCH X 12-FT	SIGNS TYPE II REFLECTIVE F	MOVING SIGNS TYPE II	MOVING SMALL SIGN SUPPORTS	
STATION	LOCATION	EACH	EACH	SF	EACH	EACH	REMARKS
PROJECT 8070-03-70							
CATEGORY 0010							
110+00	B-47-28	4	-	2	4	-	MOVING 4 x W5-52, 4 NEW W5-53 TYPE II REFLECTIVE F*
205+00	B-47-29	4	-	2	4	-	MOVING 4 x W5-52, 4 NEW W5-53 TYPE II REFLECTIVE F*
395+50	B-47-30	4	-	2	4	-	MOVING 4 x W5-52, 4 NEW W5-53 TYPE II REFLECTIVE F*
537+42	RT	-	1	4	-	-	TRAFFIC ISLAND W12-1D, 24x24
537+44	RT	-	-	-	2	1	TRAFFIC ISLAND STOP SIGN
PROJECT 8070-03-70 TOTAL		12	1	10	14	1	

FIELD OFFICE TYPE B

		642.5001		
STATION	TO STATION	LOCATION	EACH	
PROJECT 8070-03-70				
CATEGORY 0010				
2+33	-	538+41	USH 63	1
PROJECT 8070-03-70 TOTAL			1	

PROJECT NO: 8070-03-70/71

HWY: USH 63

COUNTY: PIERCE

MISCELLANEOUS QUANTITIES

SHEET

45

E

TRAFFIC CONTROL				643.0300	643.0420	643.0705	643.0900	643.0920*	643.1050	643.5000	REMARKS
				TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC	TRAFFIC CONTROL	TRAFFIC	TRAFFIC	
				DRUMS	BARRICADES TYPE	WARNING LIGHTS	CONTROL	COVERING SIGNS	CONTROL	CONTROL	
STATION	TO	STATION	LOCATION	DAY	III	TYPE A	SIGNS	TYPE II	SIGNS PCMS	EACH	
PROJECT 8070-03-70											
CATEGORY 0010											
2+33	-	538+41	NB	-	-	-	-	-	7	1	PROJECT START
-	-	-	SB	-	-	-	-	-	7	-	PROJECT END
-	-	-	NB	-	-	-	-	-	7	-	PRIOR TO STH 72 DETOUR
-	-	-	SB	-	-	-	-	-	7	-	PRIOR TO STH 72 DETOUR
-	-	-	NB	-	-	-	-	-	7	-	USH 10 INTERSECTION PRIOR TO USH 63 DETOUR
-	-	-	SB	-	-	-	-	-	7	-	STH 29 INTERSECTION PRIOR TO USH 63 DETOUR
-	-	-	SB	-	-	-	-	-	7	-	CTH J INTERSECTION PRIOR TO USH 63 DETOUR
2+33	-	538+41	PROJECT LIMITS	-	-	-	9,464	-	-	-	SEE TRAFFIC CONTROL OVERVIEW SHEETS
-	-	-	USH 63 DETOUR	-	10,234	15,708	7,735	-	-	-	SEE DETOUR SHEET - USH 63
-	-	-	USH 63 DETOUR	-	238	476	2,380	6	-	-	SEE DETOUR SHEET - DETAIL 63A
-	-	-	USH 63 DETOUR	-	119	238	3,451	4	-	-	SEE DETOUR SHEET - DETAIL 63B
-	-	-	USH 63 DETOUR	-	-	-	714	-	-	-	SEE DETOUR SHEET - DETAIL 63C
-	-	-	USH 63 DETOUR	-	-	-	2,618	-	-	-	SEE DETOUR SHEET - DETAIL 63D
-	-	-	USH 63 DETOUR	-	833	1,190	3,332	-	-	-	SEE DETOUR SHEET - DETAIL 63E
-	-	-	USH 63 DETOUR	-	1,547	2,142	2,975	-	-	-	SEE DETOUR SHEET - DETAIL 63F
-	-	-	STH 72 DETOUR	-	140	168	280	-	-	-	SEE DETOUR SHEET - STH 72
-	-	-	STH 72 DETOUR	-	28	56	784	6	-	-	SEE DETOUR SHEET - DETAIL 72A
-	-	-	STH 72 DETOUR	-	-	-	1,106	-	-	-	SEE DETOUR SHEET - DETAIL 72B
-	-	-	STH 72 DETOUR	-	28	56	1,120	1	-	-	SEE DETOUR SHEET - DETAIL 72C
20+02	-	-	MAINLINE	11	-	-	-	-	-	-	CULVERT REPLACEMENT
33+42	-	34+44	RT	11	-	-	-	-	-	-	DITCH CLEANING
38+58	-	-	MAINLINE	11	-	-	-	-	-	-	CULVERT REPLACEMENT
49+54	-	-	LT, RT	238	-	-	-	-	-	-	SLOPE GRADING
81+44	-	83+15	LT	12	-	-	-	-	-	-	DITCH CLEANING
91+03	-	91+23	LT	11	-	-	-	-	-	-	DITCH CLEANING
106+50	-	113+50	LT, RT	96	-	-	-	-	-	-	SLOPE GRADING AND GUARDRAIL
130+06	-	-	LT, RT	11	-	-	-	-	-	-	CULVERT REPLACEMENT
147+00	-	152+50	RT	45	-	-	-	-	-	-	SLOPE GRADING
201+20	-	208+60	LT, RT	96	-	-	-	-	-	-	SLOPE GRADING AND GUARDRAIL
216+31	-	-	LT, RT	11	-	-	-	-	-	-	DITCH CLEANING
230+22	-	-	LT, RT	11	-	-	-	-	-	-	DITCH CLEANING
245+55	-	-	LT	11	-	-	-	-	-	-	DITCH CLEANING
259+40	-	2+66	LT, RT	252	-	-	-	-	-	-	SLOPE GRADING
270+07	-	-	LT, RT	11	-	-	-	-	-	-	CULVERT REPLACEMENT
281+00	-	296+30	LT, RT	483	-	-	-	-	-	-	SLOPE GRADING AND GUARDRAIL
322+69	-	-	RT	11	-	-	-	-	-	-	CULVERT REPLACEMENT
366+51	-	-	LT, RT	11	-	-	-	-	-	-	DITCH CLEANING
392+00	-	399+00	LT, RT	96	-	-	-	-	-	-	SLOPE GRADING AND GUARDRAIL
425+69	-	-	LT, RT	11	-	-	-	-	-	-	CULVERT REPLACEMENT AND DITCH CLEANING
435+58	-	-	LT, RT	11	-	-	-	-	-	-	CULVERT REPLACEMENT
453+58	-	-	RT	11	-	-	-	-	-	-	RIPRAP
459+40	-	468+60	RT	144	-	-	-	-	-	-	SLOPE GRADING
480+00	-	490+00	RT	39	-	-	-	-	-	-	DITCH CLEANING
494+56	-	-	RT	11	-	-	-	-	-	-	DITCH CLEANING
498+80	-	-	RT	11	-	-	-	-	-	-	DITCH CLEANING
507+50	-	-	LT, RT	33	-	-	-	-	-	-	CULVERT REPLACEMENT
515+50	-	521+00	RT	135	-	-	-	-	-	-	SLOPE GRADING
527+70	-	532+80	LT	15	-	-	-	-	-	-	CLEARING AND GRUBBING
2+33	-	538+41	UNDISTRIBUTED	200	-	-	600	-	-	-	EXTRA SIGNS TO ACCOUNT FOR DETOUR OVERLAP
PROJECT 8070-03-70 TOTAL				2,060	13,167	20,034	36,559	17	49	1	

*TRAFFIC CONTROL COVERING SIGNS TYPE II IS FOR ONE CYCLE

PAVEMENT MARKING

				643.3165	646.2040		646.4040	646.6120	646.8220				
				TEMPORARY MARKING LINE PAINT 6-INCH (YELLOW) LF	MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) LF	MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW) LF	MARKING LINE GROOVED WET REF EPOXY 10-INCH (WHITE) LF	MARKING STOP LINE EPOXY 18-INCH (WHITE) LF	MARKING ISLAND NOSE EPOXY (YELLOW) EACH	REMARKS			
STATION	TO	STATION	LOCATION										
PROJECT 8070-03-70													
CATEGORY 0010													
2+33	-	538+41	CENTERLINE	56,320	-	-	-	-	-	-	MILLED SURFACE		
2+33	-	538+41	CENTERLINE	56,320	-	-	-	-	-	-	LOWER HMA LAYER		
2+33	-	538+41	EDGELINES	-	107,216	-	-	-	-	-	UPPER HMA LAYER		
2+33	-	538+41	CENTERLINE PRE-RUMBLE	56,320	-	-	-	-	-	-	UPPER HMA LAYER, SAME DAY PLACEMENT REQ'D		
2+33	-	538+41	CENTERLINE POST-RUMBLE	-	-	56,320	-	-	-	-	UPPER HMA LAYER		
537+21	-	537+37	RT	-	-	-	-	16	-	-	STH 29 INTERSECTION LT TURN		
537+40	-	-	23' RT	-	-	-	-	-	1	-	STH 29 INTERSECTION PORK CHOP		
537+58	-	-	23' RT	-	-	-	-	-	1	-	STH 29 INTERSECTION PORK CHOP		
537+60	-	537+71	RT	-	-	-	-	17	-	-	STH 29 INTERSECTION RT TURN		
537+35	-	537+60	RT, STH 29 INTERSECTION	-	-	-	70	-	-	-	PORK CHOP ISLAND CHANNELIZING LINE		
PROJECT 8070-03-70 TOTAL				168,960	163,536	70	33	2					

SAWING ASPHALT					
		690.0150			
STATION	TO	STATION	LOCATION	LF	REMARKS
PROJECT 8070-03-70					
CATEGORY 0010					
19+49	-	--	MAINLINE	30	CULVERT REPLACEMENT
20+56	-	--	MAINLINE	31	CULVERT REPLACEMENT
38+06	-	38+20	MAINLINE	153	CULVERT REPLACEMENT
39+08	-	--	MAINLINE	34	CULVERT REPLACEMENT
49+01	-	--	MAINLINE	30	CULVERT REPLACEMENT
50+07	-	--	MAINLINE	30	CULVERT REPLACEMENT
109+45	-	--	B-47-0028, SOUTH END	32	PROVIDES 15' FOR CONCRETE PAVEMENT APPROACH SLAB
110+47	-	--	B-47-0028, NORTH END	31	PROVIDES 15' FOR CONCRETE PAVEMENT APPROACH SLAB
129+78	-	--	MAINLINE	30	CULVERT REPLACEMENT
130+33	-	--	MAINLINE	30	CULVERT REPLACEMENT
204+32	-	--	B-47-0029, SOUTH END	31	PROVIDES 15' FOR CONCRETE PAVEMENT APPROACH SLAB
205+58	-	--	B-47-0029, NORTH END	31	PROVIDES 15' FOR CONCRETE PAVEMENT APPROACH SLAB
261+40	-	--	MAINLINE	32	CULVERT REPLACEMENT
262+56	-	--	MAINLINE	32	CULVERT REPLACEMENT
269+87	-	--	MAINLINE	30	CULVERT REPLACEMENT
270+60	-	--	MAINLINE	30	CULVERT REPLACEMENT
294+52	-	--	MAINLINE	30	CULVERT REPLACEMENT
295+60	-	--	MAINLINE	39	CULVERT REPLACEMENT
395+04	-	--	B-47-0030, SOUTH END	30	PROVIDES 15' FOR CONCRETE PAVEMENT APPROACH SLAB
395+93	-	--	B-47-0030, NORTH END	31	PROVIDES 15' FOR CONCRETE PAVEMENT APPROACH SLAB
435+05	-	--	MAINLINE	30	CULVERT REPLACEMENT
436+11	-	--	MAINLINE	29	CULVERT REPLACEMENT
471+41	-	471+62	LT	33	535TH ST NW QUAD
506+97	-	--	MAINLINE	30	CULVERT REPLACEMENT
508+03	-	--	MAINLINE	30	CULVERT REPLACEMENT
537+35	-	537+62	RT	87	STH 29 INT. PORK CHOP
PROJECT 8070-03-70 TOTAL				986	

SAWING CONCRETE					
STATION TO STATION		LOCATION	LF	REMARKS	
PROJECT 8070-03-70					
CATEGORY 0010					
203+87	-	203+87	LT	8	B-47-29 SW QUAD DRAINAGE DITCH
471+51	-	471+60	LT	6	535TH ST, NW QUAD CURB RAMP
PROJECT 8070-03-70 TOTAL			14		

BIRD DETERRENT SYSTEM					
STATION		LOCATION	999.2000.S.01 INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM (STA 110+00) EACH	999.2000.S.02 INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM (STA 205+00) EACH	999.2000.S.03 INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM (STA 395+50) EACH
PROJECT 8070-03-71					
CATEGORY 0020					
110+00	-	B-47-28	1	-	-
CATEGORY 0020 TOTAL			1	0	0
CATEGORY 0030					
205+00	-	B-47-29	-	1	-
CATEGORY 0030 TOTAL			0	1	0
CATEGORY 0040					
395+50	-	B-47-30	-	-	1
CATEGORY 0040 TOTAL			0	0	1
PROJECT 8070-03-71 TOTAL			1	1	1

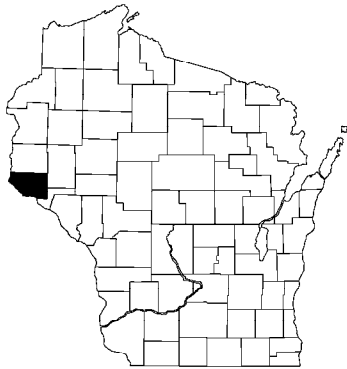
SPECIAL (MANHOLE COVER BEEHIVE GRATE)				
STATION		LOCATION	SPV.0060.01 EACH	REMARKS
PROJECT 8070-03-71				
CATEGORY 0010				
49+58	-	RT, DROP INLET COVER	1	NEENAH R-4349-D FRAME AND GRATE
PROJECT 8070-03-71 TOTAL			1	

SPECIAL (DITCH CLEANING)					
SPV.0180.02					
STATION	TO	STATION	LOCATION	SY	REMARKS
PROJECT 8070-03-71					
CATEGORY 0010					
33+42	-	34+44	RT	114	RESTORE DITCH TO FLOWLINE
81+44	-	83+15	LT	81	RESTORE DITCH TO FLOWLINE
91+03	-	91+23	LT	22	RESTORE TO INVERT OF PIPE
190+71	-	190+91	LT, RT	44	RESTORE TO INVERT OF PIPE
216+21	-	216+41	LT, RT	83	RESTORE TO INVERT OF PIPE
230+12	-	230+32	LT, RT	44	RESTORE TO INVERT OF PIPE
245+45	-	245+73	LT	42	RESTORE TO INVERT OF PIPE
366+38	-	366+65	LT, RT	77	RESTORE TO INVERT OF PIPE
413+79	-	414+08	LT	45	RESTORE TO INVERT OF PIPE
425+56	-	425+81	LT, RT	35	RESTORE TO INVERT OF PIPE
494+46	-	494+66	RT	27	RESTORE TO INVERT OF PIPE
498+70	-	498+90	RT	50	RESTORE TO INVERT OF PIPE
PROJECT 8070-03-71 TOTAL				665	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PROJECT PLAT TITLE SHEET
8070-03-20
ELLSWORTH - BALDWIN

USH 10 TO EAST JUNCTION STH 29

USH 63
PIERCE COUNTY



CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER SYMBOL		R/W MONUMENT (TO BE SET)	•
QUARTER LINE	---	SECTION CORNER MONUMENT		NON-MONUMENTED R/W POINT	o
SIXTEENTH LINE	---	GEODETIC SURVEY MONUMENT		FOUND IRON PIN (1-INCH UNLESS NOTED)	IP
NEW REFERENCE LINE	---	SIXTEENTH CORNER MONUMENT			
NEW R/W LINE	---	SIGN		OFF-PREMISE SIGN	
EXISTING R/W OR HE LINE	---				
PROPERTY LINE	---				
LOT, TIE & OTHER MINOR LINES	---				
SLOPE INTERCEPT	---				
CORPORATE LIMITS	---				
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)	---				
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)	---				
TEMPORARY LIMITED EASEMENT AREA	---				
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)	---				
TRANSMISSION STRUCTURES	---				
BUILDING	---				
BRIDGE	---				

CONVENTIONAL ABBREVIATIONS

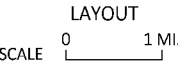
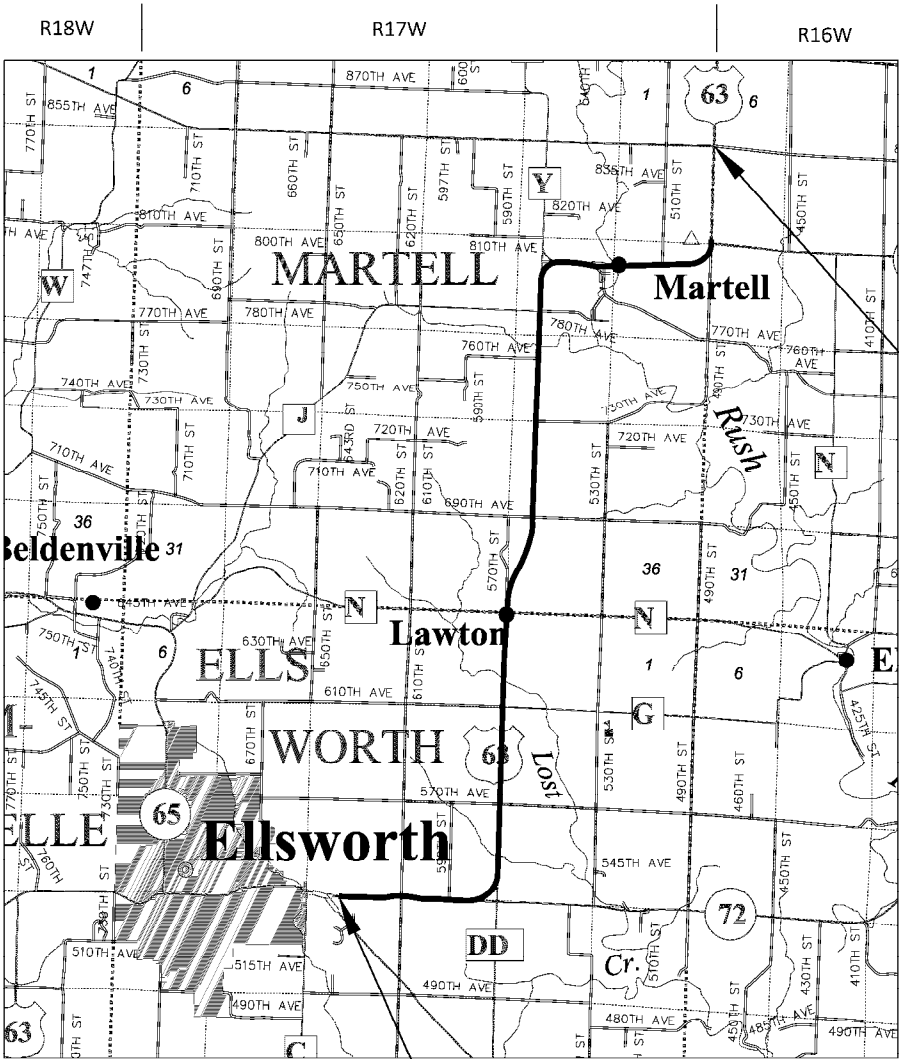
ACCESS RIGHTS	AR	POINT OF INTERSECTION	PI
ACRES	AC	PROPERTY LINE	PL
AHEAD	AH	RECORDED AS	(100')
ALUMINUM	ALUM	REEL / IMAGE	R/I
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RESTRICTIVE DEVELOPMENT	RDE
CENTERLINE	C/L	EASEMENT	
CERTIFIED SURVEY MAP	CSM	RIGHT	RT
CONCRETE	CONC	RIGHT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

CURVE DATA

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

CONVENTIONAL UTILITY SYMBOLS

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



THE NOTES, CONVENTIONAL SIGNS, AND ABBREVIATIONS ARE ASSOCIATED WITH EACH TRANSPORTATION PROJECT PLAT FOR PROJECT 8070-03-20

NOTES:

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

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

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

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

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

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

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

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN EAU CLAIRE.

PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

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

TRANSPORTATION PROJECT PLAT NO: 8070-03-20 - 4.01

THAT PART OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 15 AND PART OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 22, TOWNSHIP 26 NORTH, RANGE 17 WEST, TOWN OF ELLSWORTH, PIERCE COUNTY, WISCONSIN

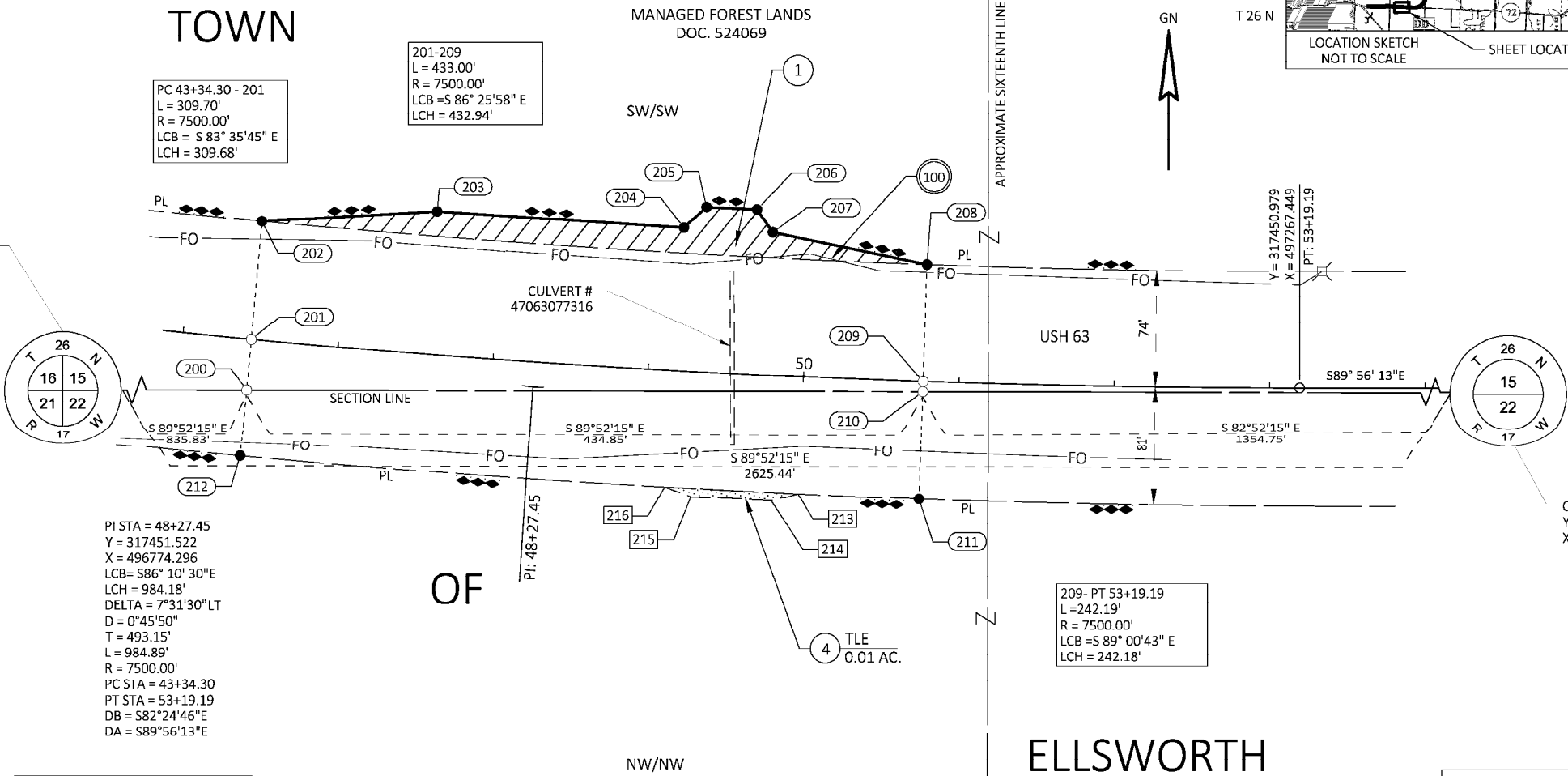
RELOCATION ORDER USH 63, ELLSWORTH - BALDWIN, USH 10 TO EAST JUNCTION STH 29, PEIRCE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

UTILITY EASEMENT TABLE			
UTILITY NUMBER	PARCEL (S)	RECORDING INFORMATION	UTILITY NAME
100	1	NO RECORDED EASEMENT	BEVCOMM
101	1	DOC. NO. 158857 VOL. A EASEMENTS, PG. 183 (BLANKET EASEMENT)	DAIRYLAND POWER COOPERATIVE
102	1	DOC. NO. 160933 VOL. B EASEMENTS, PG. 4 (BLANKET EASEMENT)	PIERCE - PEPIN COOPERATIVE SERVICES



FEE STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
200	46+44.00	32.60' RT	317449.626	496590.239
201	46+44.00	0.00'	317482.093	496593.205
202	46+44.00	75.37' LT	317557.148	496600.064
203	47+57.00	91.00' LT	317563.395	496712.725
204	49+18.00	91.00' LT	317553.013	496871.429
205	49+32.00	105.00' LT	317566.251	496885.977
206	49+65.00	105.00' LT	317564.608	496918.473
207	49+76.00	91.00' LT	317550.107	496928.651
208	50+77.00	74.78' LT	317529.894	497027.803
209	50+77.00	0.00'	317455.156	497025.307
210	50+77.00	6.51' RT	317448.646	497025.089
211	50+77.00	80.22' RT	317374.980	497022.628
212	46+44.00	79.63' RT	317402.791	496585.959

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
213	50+00.00	80.08' RT
214	49+83.00	85.00' RT
215	49+32.00	85.00' RT
216	49+15.00	79.95' RT

FEE COURSE TABLE		
COURSE	BEARING	DISTANCE
200 201	N05°13' 16" E	32.60'
201 202	N05°13' 16" E	75.37'
202 203	N86°49' 34" E	112.83'
203 204	S86°15' 25" E	159.04'
204 205	N47°41' 52" E	19.67'
205 206	S87°06' 18" E	32.54'
206 207	S35°03' 53" E	17.72'
207 208	S78°28' 38" E	101.19'
208 209	S01°54' 48" W	74.78'
209 210	S01°54' 48" W	6.51'
210 211	S01°54' 48" W	73.70'
211 212	SEE CURVE DATA	
212 200	N05°13' 16" E	47.03'

SCHEDULE OF LANDS & INTERESTS REQUIRED						
PARCEL NUMBER	OWNERS	INTERESTS REQUIRED	R/W NEW AC	R/W EXISTING AC	R/W TOTAL AC	TLE AC
1	JEFFREY J. HINES & MERRY C. HINES, LIFE ESTATE INTEREST; GARRET J. HINES, JUSTINE R. HINES, & COLLIN J. HINES, REMAINDER INTEREST	FEE	0.13	--	0.13	--
4	STEVEN A. BRAND	TLE	--	--	--	0.01

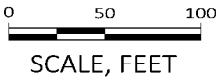
OWNER'S NAMES SHOWN FOR REFERENCE PURPOSES ONLY AND SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), PIERCE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"x24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN EAU CLAIRE.



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

SIGNATURE: *[Signature]* DATE: 10-6-2021

PRINT NAME: JASON L. CANCE

REGISTRATION NUMBER: S-2688

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NW REGION

SIGNATURE: *[Signature]* DATE: 10-6-2021

PRINT NAME: HEATHER L. DRESEL

51

TRANSPORTATION PROJECT PLAT NO: 8070-03-20 - 4.02

THAT PART OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 3, TOWNSHIP 26 NORTH, RANGE 17 WEST, TOWN OF ELLSWORTH, AND THAT PART OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 35, TOWNSHIP 27 NORTH, RANGE 17 WEST, TOWN OF MARTELL, ALL IN PIERCE COUNTY, WISCONSIN

RELOCATION ORDER USH 63, ELLSWORTH - BALDWIN, USH 10 TO EAST JUNCTION STH 29, PEIRCE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SCHEDULE OF LANDS & INTERESTS REQUIRED						
PARCEL NUMBER	OWNERS	INTERESTS REQUIRED	R/W NEW AC	R/W EXISTING AC	R/W TOTAL AC	TLE AC
3	CAROL A. GILBERSON	TLE	--	--	--	0.02
5	GLEN L. HANSON & LOURDES FLORES HANSON	FEE/TLE	0.10	--	0.10	0.12

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

FEE STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
226	260+47.00	0.00'	334997.702	501420.483
227	260+47.00	84.21' LT	335032.004	501343.572
228	261+59.00	84.28' LT	335134.320	501389.129
229	261+89.00	95.00' LT	335166.084	501391.560
230	263+22.00	95.00' LT	335287.552	501445.733
231	263+56.00	84.40' LT	335314.286	501469.262
232	263+56.00	0.00' RT	335279.908	501546.344
233	263+56.00	80.60' RT	335247.079	501619.954
234	262+23.00	80.68' RT	335125.579	501565.854
235	261+84.00	115.00' RT	335075.981	501581.313
236	261+33.00	115.00' RT	335029.404	501560.540
237	261+13.00	80.75' RT	335025.090	501521.111
238	260+47.00	80.79' RT	334964.797	501494.264

667233
PIERCE COUNTY
REGISTER OF DEEDS
JULIE HINIS

RECEIVED FOR RECORDING
11/22/2021 09:07 AM
RECORDING FEE: 25.00
PAGES: 1

** The above recording information verifies that this document has been electronically recorded and returned to the submitter. **

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 8070-03-20 - 4.02
AMENDMENT NO. _____

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 63 ESTABLISHED FROM PROJECT 5075(9)
EXISTING ACCESS CONTROL FOR USH 63 ESTABLISHED FROM PREVIOUS PROJECT 7210-01-29

0 50 100

SCALE, FEET

FND ALUM MONUMENT
Y = 335787.993
X = 501084.223

TOWN

TOWN

4

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 63 ESTABLISHED FROM PROJECT 5075(9)
EXISTING ACCESS CONTROL FOR USH 63 ESTABLISHED FROM PREVIOUS PROJECT 7210-01-29

FND ALUM MONUMENT
Y = 330673.220
X = 501044.880

STRUCTURE #
B-47-0029

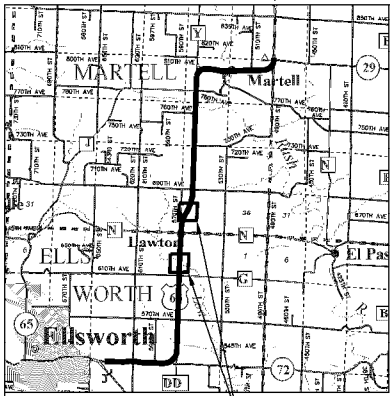
COURSE	FEE COURSE TABLE BEARING	DISTANCE
219-220	N89°55'55"W	61.46'
220-223	N01°29'53"E	51.41'
223-224	S88°32'11"E	61.24'
224-217	S88°32'11"E	2.74'
217-218	S01°27'49"W	49.85'
218-219	N89°55'55"W	2.57'

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
221	203+57.23	79.01' LT
222	203+93.00	81.00' LT

FEE STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
217	204+09.00	0.00'	329398.095	501019.486
218	203+59.15	0.00'	329348.260	501018.211
219	203+59.09	2.57' LT	329348.265	501015.645
220	203+57.59	64.01' LT	329348.338	500954.187
223	204+09.00	63.98' LT	329399.729	500955.531
224	204+09.00	2.74' LT	329398.165	501016.746

FND ALUM MONUMENT
Y = 328023.310
X = 500986.410

ELLSWORTH



LOCATION SKETCH NOT TO SCALE

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), PIERCE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"x24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN EAU CLAIRE.

REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2, IN DOCUMENT NO. 606060 FOR ADDITIONAL INFORMATION.

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
235	261+84.00	115.00' RT
236	261+33.00	115.00' RT
239	262+07.00	120.00' RT
240	261+20.00	120.00' RT

NW/SW

OF

PL

N 89°39'07" E

331.45'

PT: 260+36.85

Y = 334988.437

X = 501416.350

CURVE A

PI STA = 254+98.58

Y = 334484.662

X = 501191.672

LCB = N13°08'19"E

LCH = 1083.32'

DELTA = 21°47'46"R

D = 1°59'59"

T = 551.61'

L = 1089.88'

R = 2865.00'

PC STA = 249+46.98

PT STA = 260+36.85

DB = N02°14'26"E

DA = N24°02'11"E

FND ALUM MONUMENT

Y = 333171.595

X = 501100.117

FEE
0.04 AC.

CULVERT #
47063023031

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TRANSPORTATION PROJECT PLAT NO: 8070-03-20 - 4.03

THAT PART OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4, AND THAT PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 35 ALL IN TOWNSHIP 27 NORTH, RANGE 17 WEST, TOWN OF MARTELL, PIERCE COUNTY, WISCONSIN

RELOCATION ORDER USH 63, ELSWORTH - BALDWIN, USH 10 TO EAST JUNCTION 5TH 29, PIERCE COUNTY

TO PROPERLY ESTABLISH LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN IN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

- TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY REQUESTS THAT THE LANDS OR INTERESTS IN LANDS SHOWN ON THIS PLAT BE LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

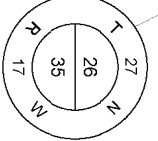
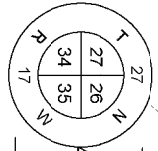
607079
PIERCE COUNTY
TILE LINES
RECEIVED FOR RECORDING
RECORDING FEE: 25.00
PAGES: 1

** The above recording information was electronically recorded and returned to the submitter. **

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER: 8070-03-20-4.03
AMENDMENT NO. __

TOWN

FIND MAG NAIL
Y = 338408.985
X = 501074.717



COMPUTED FORM TIES
Y = 338390.400
X = 503724.487

OWNERS NAMES SHOWN FOR REFERENCE PURPOSES ONLY AND SUBJECT TO CHANGE
PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

SCHEDULE OF LANDS & INTERESTS REQUIRED					
PARCEL NUMBER	OWNERS	INTERESTS REQUIRED	R/W NEW AC	R/W EXISTING AC	R/W TOTAL AC
7	STEVEN B. WILSON	FEE/TLE	002	--	0.02
8	NATHANIEL FORESTER	FEE/TLE	0.15	--	0.15

COURSE	BEARING	DISTANCE
245-246	S00° 24' 07"W	50.05'
246-247	S79° 38' 05"W	118.00'
247-248	S39° 11' 35"W	89.64'
248-249	S00° 12' 26"W	280.47'
249-250	SEE CURVE DATA	
250-251	S04° 26' 06"E	110.54'
251-252	S05° 09' 40"W	231.03'
252-253	S16° 49' 21"W	89.12'
253-254	N81° 57' 06"W	89.46'
254-255	N81° 57' 06"W	80.54'
255-256	SEE CURVE DATA	
256-257	N00° 12' 26"E	265.42'
257-258	N61° 41' 36"W	10.61'
258-259	N02° 43' 23"W	39.32'
259-260	N44° 41' 43"W	61.72'
260-261	N76° 02' 53"W	64.29'
261-262	N00° 24' 07"E	50.05'

MAP OF SURVEY
S-1871
BY ALLAN EMERSON
DATED 03/01

OF

NW/NW

NE/NW

TLE SLOPES
0.08 AC.

TLE SLOPES
0.03 AC.

FEE SLOPES
0.05 AC.

FEE STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
245	296+31.67	258.18 RT	338397.902	502654.861
246	295+81.62	258.00 RT	338347.850	502654.510
247	295+60.00	142.00 RT	338326.619	502538.438
248	294+95.00	89.36 RT	338261.796	502485.583
249	292+14.58	89.29 RT	337981.330	502484.568
250	291+05.00	89.32 RT	337869.206	502482.554
251	289+98.00	103.00 RT	337758.998	502491.102
252	287+73.00	103.00 RT	337528.901	502470.319
253	286+93.00	89.46 RT	337449.335	502446.462
254	286+93.00	0.00'	337461.860	502357.884
255	286+93.00	80.54' LT	337473.136	502277.297
256	292+14.53	80.71 LT	337981.945	502314.569
257	294+80.00	80.64 LT	338247.366	502315.530
258	294+85.00	90.00 LT	338252.397	502306.188
259	295+24.27	92.00 LT	338291.678	502304.320
260	295+68.00	135.55 LT	338335.549	502260.912
261	295+83.29	198.00 LT	338351.050	502198.518
262	296+33.34	197.82 LT	338401.101	502198.869
263	296+32.62	0.00'	338399.713	502396.682

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
264	294+48.00	89.35 RT
265	291+44.00	80.69 LT
266	291+63.00	91.00 LT

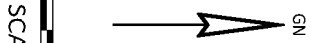
255-256
L = 510.52'
R = 3739.83'
LCB = N 04° 07'05" E
LCH = 510.13'

249-250
L = 112.15'
R = 3909.83'
LCB = S 01° 01'44" W
LCH = 112.15'

254 - PT 292+16.79
L = 523.79'
R = 3820.00'
LCB = N 04° 07'13" E
LCH = 523.38'

CURVE B
PI STA = 284+33.60
Y = 337177.348
X = 502392.584
LCB = N12° 06' 51"E
LCH = 1578.29'
DELTA = 23° 50' 40" LT
D = 130.00"
T = 806.54'
L = 1589.74'
R = 3820.00'
PC STA = 276+27.05
PT STA = 292+16.79
DB = N24° 02' 11"E
DA = N00° 11' 31"E

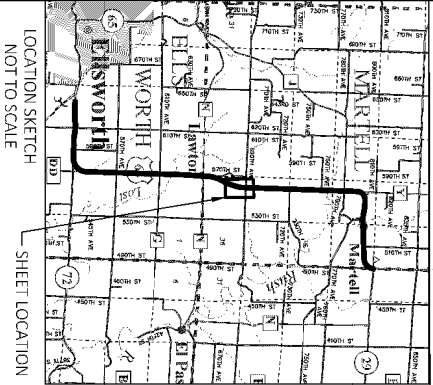
MARTELL



SCALE, FEET
0 50 100

R 17 W

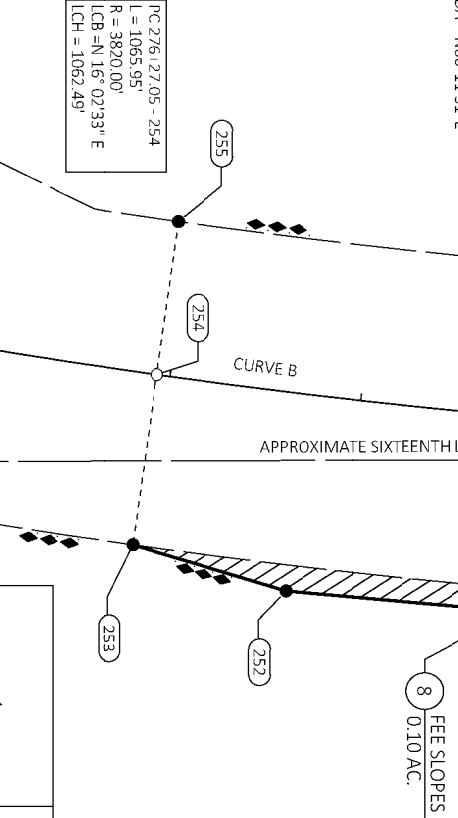
R 16 W



LOCATION SKETCH
NOT TO SCALE

PC 276+27.05 - 254
L = 1065.95'
R = 3820.00'
LCB = N 16° 02'33" E
LCH = 1062.49'

APPROXIMATE SIXTEENTH LINE



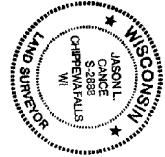
NOTES:

- POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), PIERCE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.
- ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"x24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.
- FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN EAU CLAIRE.

REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2, IN DOCUMENT NO. 606060 FOR ADDITIONAL INFORMATION.



10 N BRIDGE ST
CHIPPewa FALLS WI 54729



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

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 63 ESTABLISHED FROM PROJECT 807501
EXISTING HIGHWAY RIGHT-OF-WAY FOR 690TH AVE ESTABLISHED FROM PROJECT 807509
EXISTING ACCESS CONTROL FOR USH 63 ESTABLISHED FROM PREVIOUS PROJECT 7210-01-29

SIGNATURE: *Jason L. Lance* DATE: 11-10-2021
PRINT NAME: JASON L. LANCE
REGISTRATION NUMBER: S-2688
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NW REGION
SIGNATURE: *Heather L. Dresel* DATE: 11-11-2021
PRINT NAME: HEATHER L. DRESEL

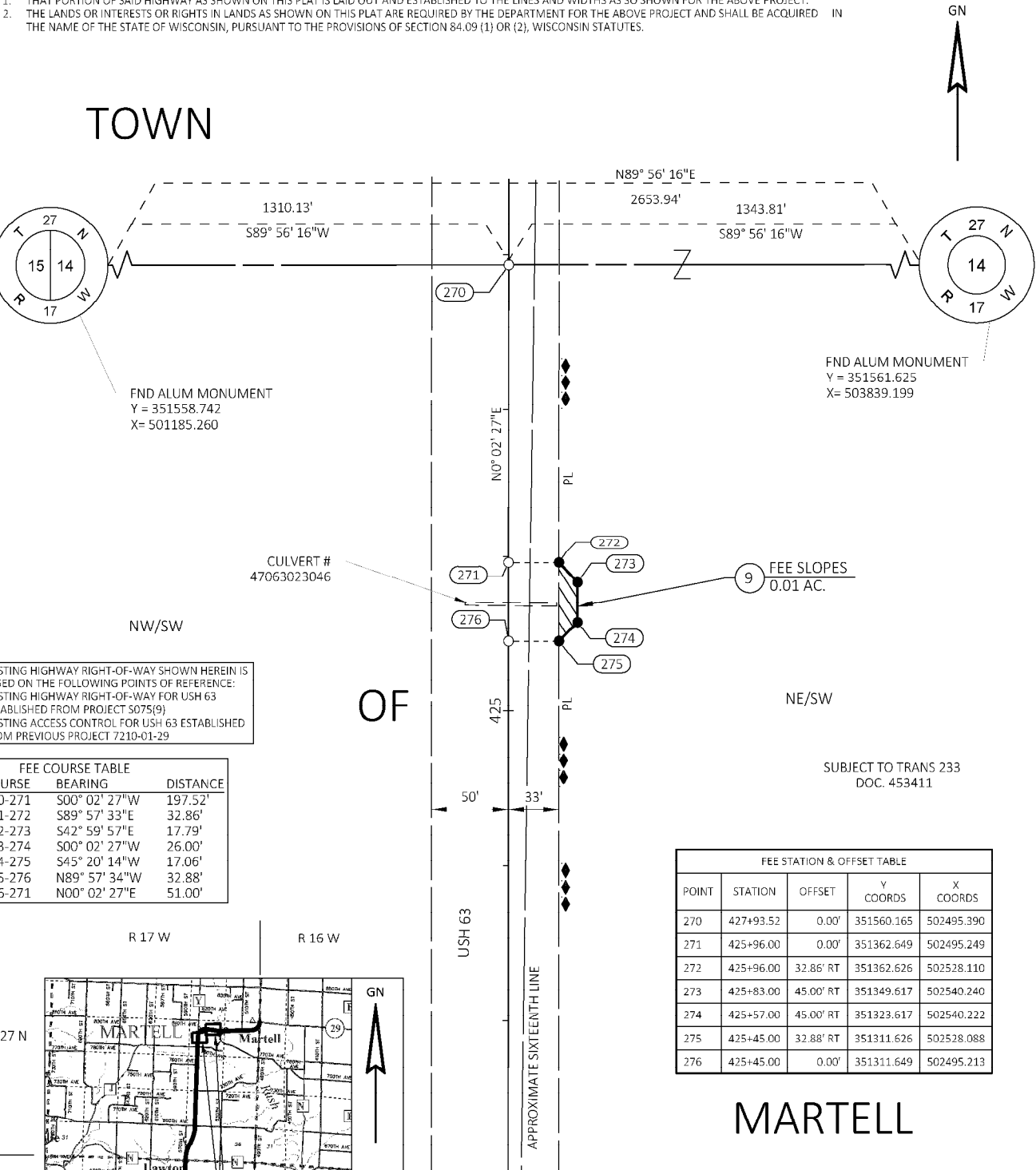
TRANSPORTATION PROJECT PLAT NO: 8070-03-20 - 4.04

THAT PART OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, AND THAT PART OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 14 TOWNSHIP 27 NORTH, RANGE 17 WEST, TOWN OF MARTELL, PIERCE COUNTY, WISCONSIN

RELOCATION ORDER USH 63, ELLSWORTH - BALDWIN, USH 10 TO EAST JUNCTION STH 29, PEIRCE COUNTY

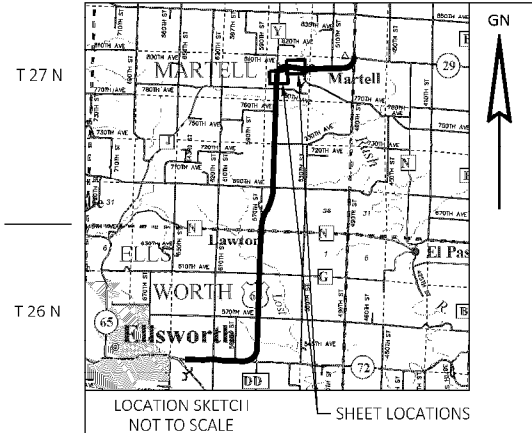
TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.



EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 63
ESTABLISHED FROM PROJECT S075(9)
EXISTING ACCESS CONTROL FOR USH 63 ESTABLISHED FROM PREVIOUS PROJECT 7210-01-29

COURSE	BEARING	DISTANCE
270-271	S00° 02' 27"W	197.52'
271-272	S89° 57' 33"E	32.86'
272-273	S42° 59' 57"E	17.79'
273-274	S00° 02' 27"W	26.00'
274-275	S45° 20' 14"W	17.06'
275-276	N89° 57' 34"W	32.88'
276-271	N00° 02' 27"E	51.00'



SCHEDULE OF LANDS & INTERESTS REQUIRED						
PARCEL NUMBER	OWNERS	INTERESTS REQUIRED	R/W NEW AC	R/W EXISTING AC	R/W TOTAL AC	TLE AC
9	WIFF FARMS, INC.	FEE	0.02	--	0.02	--

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

UTILITY EASEMENT TABLE			
UTILITY NUMBER	PARCEL (S)	RECORDING INFORMATION	UTILITY NAME
102	0	DOC NO. 161235 VOL. B EASEMENTS: PG. 101 (BLANKET EASEMENT)	PIERCE - PEPIN COOPERATIVE SERVICES

UTILITY INTERESTS REQUIRED		
UTILITY NUMBER	OWNER(S)	INTEREST REQUIRED
102	PIERCE - PEPIN COOPERATIVE SERVICES	RELEASE OF RIGHTS

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 63
ESTABLISHED FROM DIVISION JOB NO. 6348
EXISTING ACCESS CONTROL FOR USH 63 ESTABLISHED FROM PREVIOUS PROJECT 7210-01-29

CURVE C
PI STA = 456+75.49
Y = 352879.529
X = 504467.054
LCB= S84° 49' 04"E
LCH = 499.29'
DELTA = 9°59'52"RT
D = 1°59'59"
T = 250.60'
L = 499.92'
R = 2865.00'
PC STA = 454+24.89
PT STA = 459+24.81
DB = S89°49'00"E
DA = S79°49'08"E

COURSE	BEARING	DISTANCE
280-281	S89° 49' 00"E	259.70'
281-282	S89° 49' 00"E	70.00'
282-283	S00° 11' 00"W	48.13'
283-284	S65° 35' 16"W	16.50'
284-285	N89° 49' 00"W	40.00'
285-286	N65° 58' 10"W	16.40'
286-281	N00° 11' 00"E	48.37'

FEE STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
280	450+63.30	0.00' LT	352881.488	503854.871
281	453+23.00	0.00' LT	352880.657	504114.569
282	453+93.00	0.00' LT	352880.433	504184.569
283	453+93.00	48.13' RT	352832.300	504184.415
284	453+78.00	55.00' RT	352825.481	504169.393
285	453+38.00	55.00' RT	352825.609	504129.393
286	453+23.00	48.37' RT	352832.288	504114.415

NOTES:
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), PIERCE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"x24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.
FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN EAU CLAIRE.
REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2, IN DOCUMENT NO. 606060 FOR ADDITIONAL INFORMATION.



I, JASON L. CANCE, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT OF TRANSPORTATION NW REGION I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.
SIGNATURE: Jason L. Cance DATE: 11-18-2021
PRINT NAME: JASON L. CANCE
REGISTRATION NUMBER: S-2688
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NW REGION
SIGNATURE: Heather L. Dresel DATE: 11-18-2021
PRINT NAME: HEATHER L. DRESEL
54

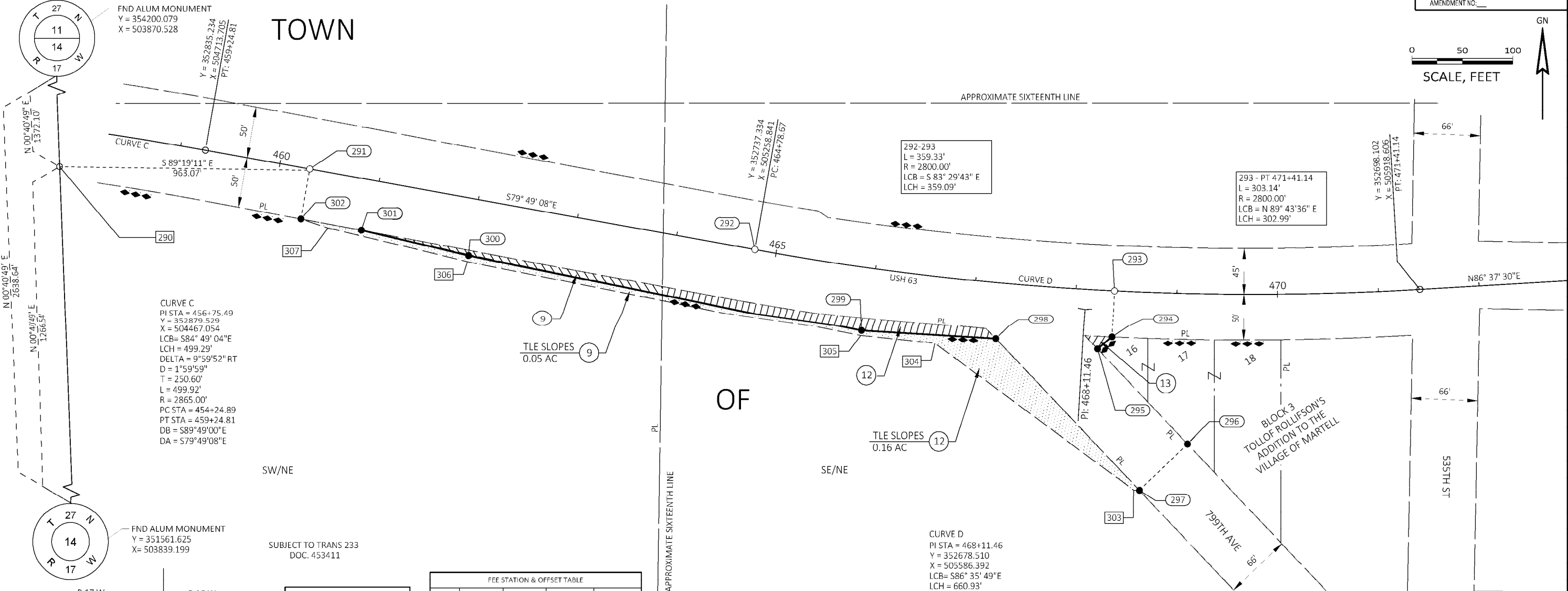
TRANSPORTATION PROJECT PLAT NO: 8070-03-20 - 4.05

THAT PART OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4, THAT PART OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 AND THAT PART OF LOT 16, BLOCK 3, TOLLOF OF ROLLIFSON'S ADDITION TO THE VILLAGE OF MARTELL LOCATED IN THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4, ALL IN SECTION 14, TOWNSHIP 27 NORTH, RANGE 17 WEST, TOWN OF MARTELL, PIERCE COUNTY, WISCONSIN

RELOCATION ORDER USH 63, ELLSWORTH - BALDWIN, USH 10 TO EAST JUNCTION 5TH 29, PIERCE COUNTY TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.



FEE COURSE TABLE		
COURSE	BEARING	DISTANCE
291-292	S79° 49' 08"E	448.67'
292-293	SEE CURVE DATA	
293-294	S02° 49' 41"W	50.34'
294-295	S50° 07' 01"W	18.62'
295-296	S43° 40' 27"E	129.23'
296-297	S46° 19' 33"W	66.00'
297-298	N43° 40' 27"W	206.47'
298-299	N86° 32' 23"W	133.37'
299-300	N78° 35' 28"W	397.84'
300-301	N76° 48' 04"W	109.15'
301-302	N79° 29' 23"W	61.00'
302-291	N10° 10' 52"E	49.90'

SCHEDULE OF LANDS & INTERESTS REQUIRED						
PARCEL NUMBER	OWNERS	INTERESTS REQUIRED	R/W NEW	R/W EXISTING	R/W TOTAL	TLE
9	WIFF FARMS, INC.	FEE/TLE	0.04 AC	--	0.04 AC	0.05 AC
12	SARAH J. WILSON	FEE/TLE	0.09 AC	--	0.09 AC	0.16 AC
13	DANIEL A. ANDERSON	FEE	170 SF	--	170 SF	--

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

607235
PIERCE COUNTY
REGISTER OF DEEDS
NO. 12- HTH-5
RECEIVED FOR RECORDING
11/22/2021 09:12 AM
RECORDING FEE: 75.00
PAGES: 1
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RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 8070-03-20 - 4.05
AMENDMENT NO.:

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 63 ESTABLISHED FROM DIVISION JOB NO. 6348
EXISTING HIGHWAY RIGHT-OF-WAY FOR 799TH AVE AND 535TH ST ESTABLISHED FROM TOLLOF ROLLIFSON'S ADDITION TO THE VILLAGE OF MARTELL
EXISTING ACCESS CONTROL FOR USH 63 ESTABLISHED FROM PREVIOUS PROJECT 7210-01-29

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), PIERCE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"x24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN EAU CLAIRE.

REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2, IN DOCUMENT NO. 606060 FOR ADDITIONAL INFORMATION.

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
303	468+65.00	200.00' RT
304	466+67.00	71.00' RT
305	465+95.00	72.00' RT
306	462+00.00	62.00' RT
307	460+58.00	54.00' RT

FEE STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
290	450+62.84	53.41' RT	352828.075	503854.237
291	460+30.00	0.00'	352816.641	504817.238
292	464+78.67	0.00'	352737.334	505258.841
293	468+38.00	0.00'	352696.656	505615.615
294	468+38.00	50.34' RT	352646.380	505613.131
295	468+24.62	63.00' RT	352634.441	505598.843
296	469+13.93	153.01' RT	352540.967	505688.088
297	468+70.33	200.00' RT	352495.390	505640.352
298	467+25.25	60.00' RT	352644.726	505497.772
299	465+95.00	67.00' RT	352652.776	505364.642
300	462+00.00	56.00' RT	352731.473	504974.662
301	460+91.00	50.25' RT	352756.396	504868.394
302	460+30.00	49.90' RT	352767.523	504808.417



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



SIGNATURE: *Jason L. Cance* DATE: 11-18-2021
PRINT NAME: JASON L. CANCE
REGISTRATION NUMBER: S-2688

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NW REGION
SIGNATURE: *Heather L. Dresel* DATE: 11-18-2021
PRINT NAME: HEATHER L. DRESEL 55

TRANSPORTATION PROJECT PLAT NO: 8070-03-20 - 4.06

THAT PART OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4, THAT PART OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4, AND THAT PART OF LOT 1 CSM, VOLUME 4, PAGE 23, DOCUMENT NO. 337229 LOCATED IN THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 ALL IN SECTION 13 TOWNSHIP 27 NORTH, RANGE 17 WEST, TOWN OF MARTELL, PIERCE COUNTY, WISCONSIN

RELOCATION ORDER USH 63, ELLSWORTH - BALDWIN, USH 10 TO EAST JUNCTION STH 29, PEIRCE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

COURSE	BEARING	DISTANCE
310-124	S86° 30' 57"W	59.07'
124-311	S86° 38' 26"W	389.07'
311-312	S03° 21' 34"E	49.11'
312-313	S48° 13' 35"W	19.14'
313-314	S86° 38' 26"W	40.00'
314-315	N51° 03' 47"W	17.58'
315-316	N03° 21' 34"W	49.17'
316-311	N86° 38' 26"E	68.00'

CULVERT #
47063023051

POINT	STATION	OFFSET	Y COORDS	X COORDS
124	450+62.84	53.41' RT	352883.852	509076.076
310	503+63.14	0.00'	352887.442	509135.033
311	499+15.00	0.00'	352861.053	508687.673
312	499+15.00	49.11' RT	352812.032	508690.551
313	499+00.00	61.00' RT	352799.279	508676.274
314	498+60.00	61.00' RT	352796.935	508636.342
315	498+47.00	49.17' RT	352807.980	508622.672
316	498+47.00	0.00'	352857.068	508619.790
317	507+05.00	0.00'	352908.218	509476.263
318	507+05.00	50.80' LT	352958.929	509473.176
322	508+06.00	50.69' LT	352964.947	509573.996
323	508+06.00	0.00'	352914.356	509577.077
324	508+06.00	49.31' RT	352865.132	509580.074
328	507+05.00	49.20' RT	352859.113	509479.253

FND ALUM MONUMENT
Y = 351553.954
X = 509122.609

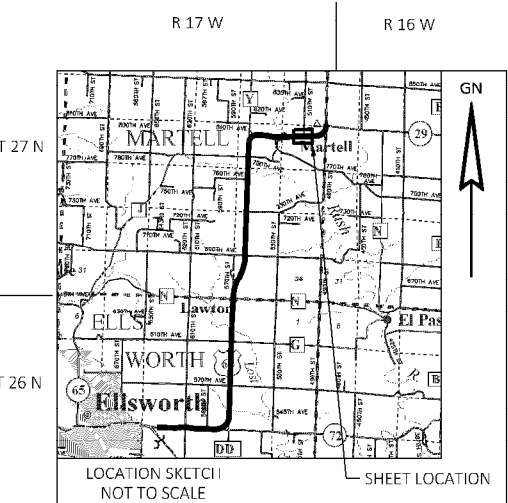
POINT	STATION	OFFSET
319	507+25.00	50.78' LT
320	507+42.00	64.00' LT
321	507+88.00	64.00' LT
325	507+94.00	49.30' RT
326	507+85.00	58.00' RT
327	507+15.00	58.00' RT

COURSE	BEARING	DISTANCE
310-317	N86° 30' 57"E	341.86'
317-318	N03° 29' 03"W	50.80'
318-322	N86° 35' 02"E	101.00'
322-323	S03° 29' 03"E	50.69'
323-324	S03° 29' 03"E	49.31'
324-328	S86° 35' 02"W	101.00'
328-317	N03° 29' 03"W	49.20'

UTILITY NUMBER	OWNER(S)	INTEREST REQUIRED
102	PIERCE - PEPIN COOPERATIVE SERVICES	RELEASE OF RIGHTS
103	BALDWIN TELECOM INC.	RELEASE OF RIGHTS

PARCEL NUMBER	OWNERS	INTERESTS REQUIRED	R/W NEW AC	R/W EXISTING AC	R/W TOTAL AC	TLE AC
14	TERRY G. FALDE & NOREEN K. FALDE	FEE	0.01	0.07	0.08	--
15	TERRY G. FALDE & NOREEN K. FALDE AND LOWELL S. FALDE & JODIE J. FALDE	TLE	--	--	--	0.02
16	RODGER J. & MARY R. MADLAND	TLE	--	--	--	0.02

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



EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE: EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 63 ESTABLISHED FROM DIVISION JOB NO. 6348, CSM VOL. 4, PG. 23, AND CSM VOL. 2, PG. 198 EXISTING HIGHWAY RIGHT-OF-WAY FOR S10TH ST ESTABLISHED FROM CSM VOL. 4, PG. 23, AND CSM VOL. 2, PG. 198 EXISTING ACCESS CONTROL FOR USH 63 ESTABLISHED FROM PREVIOUS PROJECT 7210-01-29

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), PIERCE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"x24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT. FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN EAU CLAIRE. REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2, IN DOCUMENT NO. 606060 FOR ADDITIONAL INFORMATION.

MARTELL



10 N BRIDGE ST
CHIPPEWA FALLS WI 54729



SIGNATURE: *Jason L. Cance* DATE: 11-18-2021
PRINT NAME: JASON L. CANCE
REGISTRATION NUMBER: S-2688

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE DEPARTMENT OF TRANSPORTATION NW REGION
SIGNATURE: *Heather L. Dresel* DATE: 11-18-2021
PRINT NAME: HEATHER L. DRESEL 56

UTILITY NUMBER	PARCEL (S)	RECORDING INFORMATION	UTILITY NAME
102	15,16	DOC. NO. 160672 VOL. A EASEMENTS PG. 559 (BLANKET EASEMENT) DOC. NO. 162582 VOL. C EASEMENTS, PG. 10 (AMBIGUOUS EASEMENT)	PIERCE - PEPIN COOPERATIVE SERVICES
	16	DOC. NO. 162582 VOL. C EASEMENTS, PG. 10 (AMBIGUOUS EASEMENT)	
103	14	DOC. NO. 268378 VOL. 114, PG. 735-736 (BLANKET EASEMENT)	BALDWIN TELECOM INC.

607236
PIERCE COUNTY
REGISTER OF DEEDS
JUL 17, 2021
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PAGES: 1

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RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 8070-03-20 - 4.06
AMENDMENT NO. _____

0 50 100
SCALE, FEET

TRANSPORTATION PROJECT PLAT NO: 8070-03-20 - 4.07

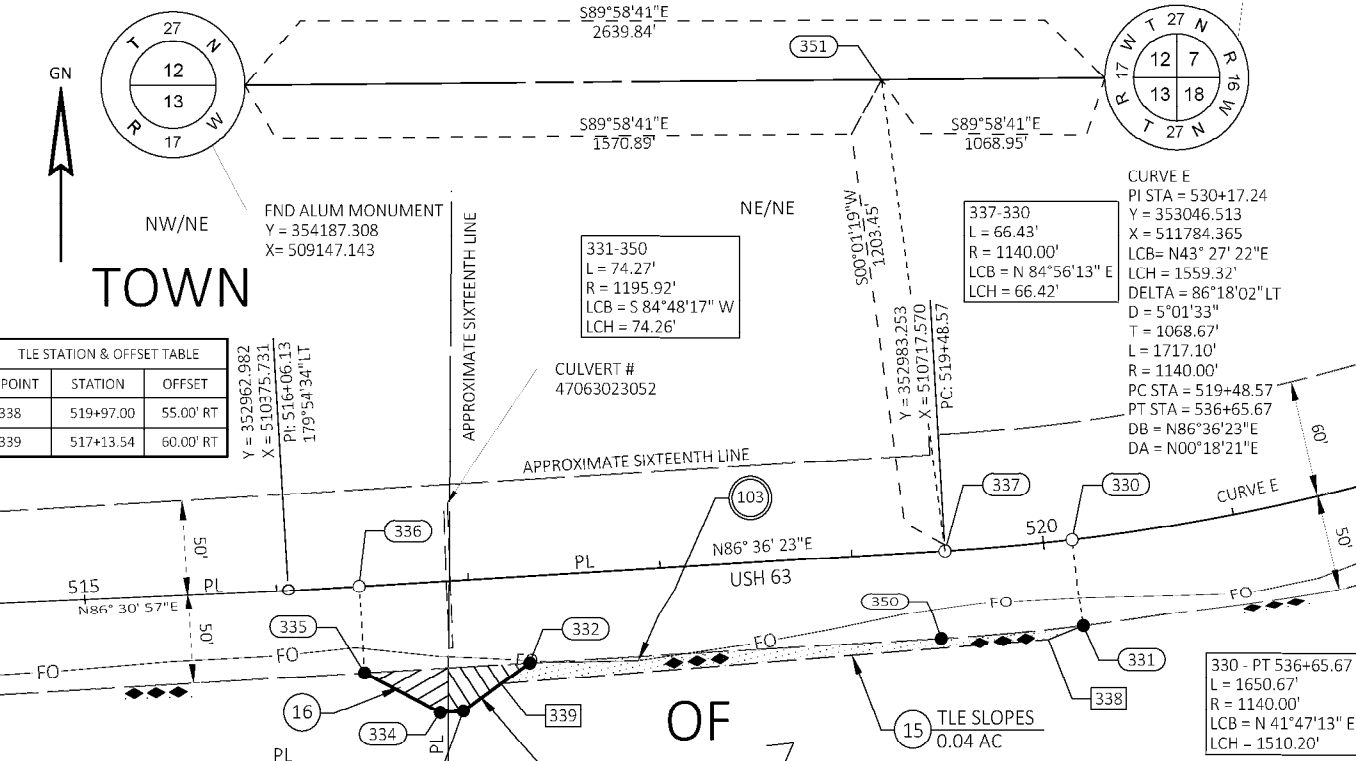
THAT PART OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4, AND THAT PART OF THE NORTHWEST 1/4 OF THE NORTHEAST 1/4, OF SECTION 13, TOWNSHIP 27 NORTH, RANGE 17 WEST, TOWN OF MARTELL, AND THAT PART OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4, OF SECTION 18, TOWNSHIP 27 NORTH, RANGE 16 WEST, TOWN OF GILMAN, ALL IN PIERCE COUNTY, WISCONSIN

RELOCATION ORDER USH 63, ELLSWORTH - BALDWIN, USH 10 TO EAST JUNCTION STH 29, PEIRCE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.



SW/NE SE/NE

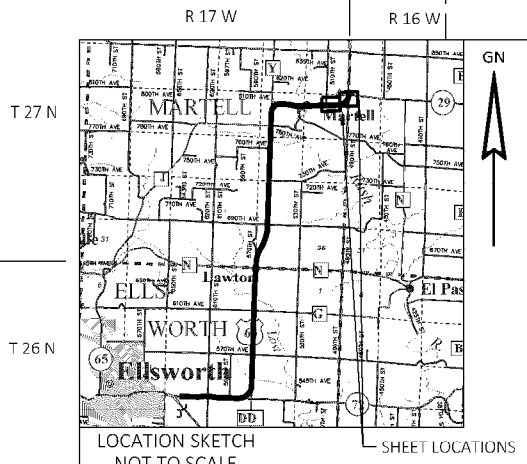
FEE COURSE TABLE			
COURSE	BEARING	DISTANCE	
330-331	S06° 43' 56" E	49.82'	
331-350	SEE CURVE DATA		
350-332	S86° 35' 02" W	214.64'	
332-333	S54° 16' 37" W	42.60'	
333-334	S86° 36' 23" W	12.00'	
334-335	N62° 32' 20" W	44.36'	
335-336	N03° 18' 04" W	50.25'	
336-337	N86° 36' 23" E	305.57'	
337-330	SEE CURVE DATA		

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 63 ESTABLISHED FROM DIVISION JOB NO. 6348
EXISTING ACCESS CONTROL FOR USH 63 ESTABLISHED FROM PREVIOUS PROJECT 7210-01-29

UTILITY EASEMENT TABLE			
UTILITY NUMBER	PARCEL(S)	RECORDING INFORMATION	UTILITY NAME
100	15	NO RECORDED EASEMENT	BEVCOMM
102	15,16	DOC. NO. 160672 VOL. A EASEMENTS PG. 559 (BLANKET EASEMENT) DOC. NO. 162582 VOL. C EASEMENTS, PG. 10 (AMBIGUOUS EASEMENT)	PIERCE - PEPIN COOPERATIVE SERVICES
103	15	NO RECORDED EASEMENT	BALDWIN TELECOM INC

FEE STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
330	0+00.00	0.00'	352989.114	510783.729
331	0+00.00	0.00'	352939.642	510789.569
332	517+29.00	50.22' RT	352920.127	510501.355
333	516+93.00	73.00' RT	352895.252	510466.767
334	516+81.00	73.00' RT	352894.542	510454.788
335	516+42.92	50.25' RT	352914.998	510415.427
336	516+43.00	0.00'	352965.164	510412.533
337	519+48.57	0.00'	352983.253	510717.570
350	519+43.64	50.13' RT	352932.917	510715.612

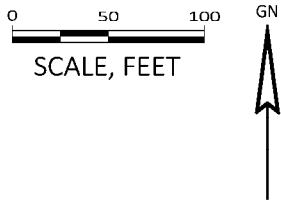
UTILITY INTERESTS REQUIRED		
UTILITY NUMBER	OWNER(S)	INTEREST REQUIRED
100	BEVCOMM	RELEASE OF RIGHTS
102	PIERCE - PEPIN COOPERATIVE SERVICES	RELEASE OF RIGHTS
103	BALDWIN TELECOM INC	RELEASE OF RIGHTS



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APPRAISAL PLAT DATE : 09/24/2021

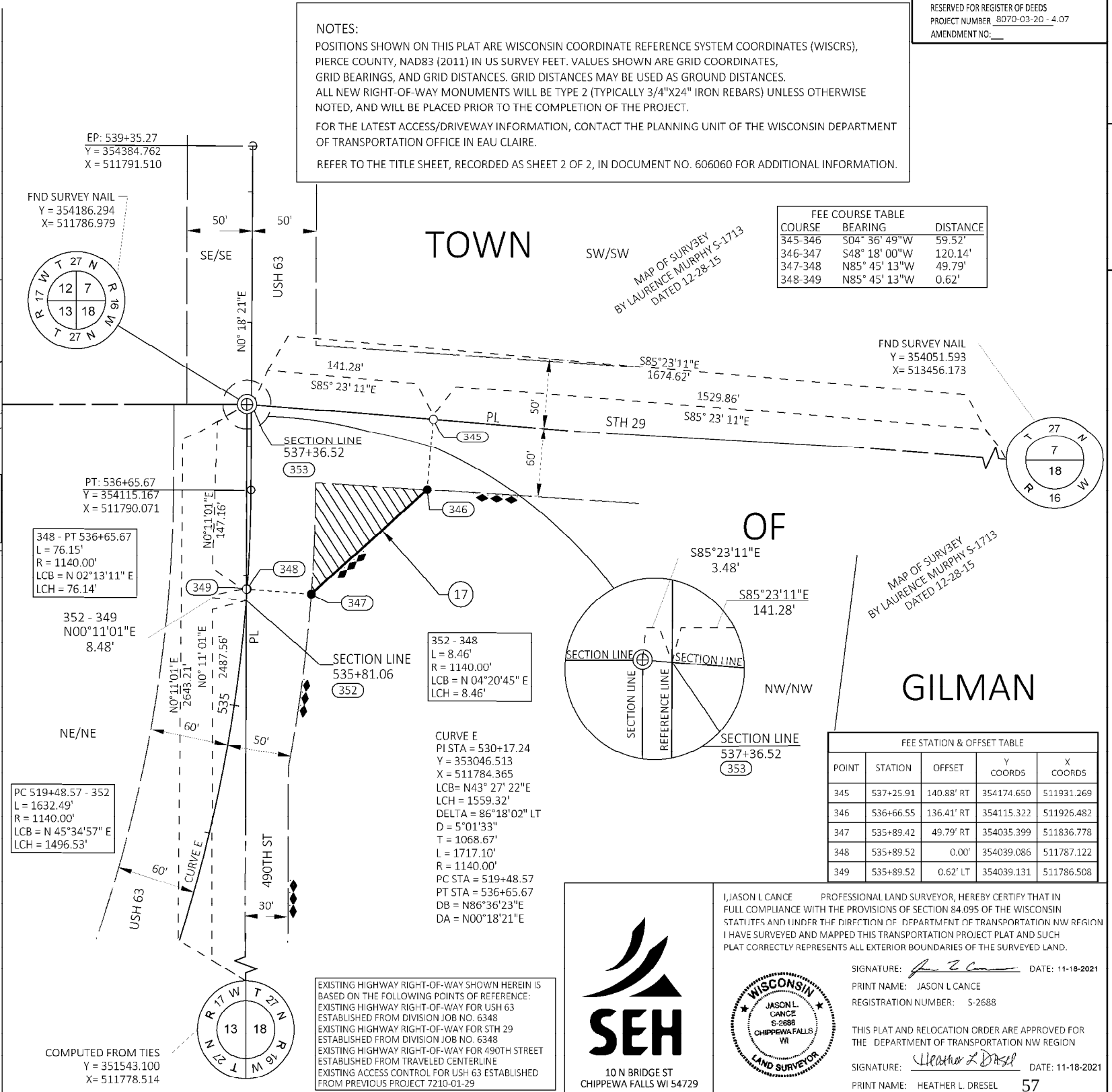
SCHEDULE OF LANDS & INTERESTS REQUIRED						
PARCEL NUMBER	OWNERS	INTERESTS REQUIRED	R/W NEW AC	R/W EXISTING AC	R/W TOTAL AC	TLE AC
15	TERRY G. FALDE & NOREEN K. FALDE AND LOWELL S. FALDE & JODIE J. FALDE	FEE/TLE	0.01	0.38	0.39	0.04
16	RODGER J. & MARY R. MADLAND	FEE	0.01	0.05	0.06	--
17	JAY M. ANDERSON & VICKIE ANDERSON	FEE	0.08	0.30	0.38	--

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



607237
PIERCE COUNTY
REGISTER OF DEEDS
JULIE HINIS
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PROJECT NUMBER 8070-03-20 - 4.07
AMENDMENT NO.:



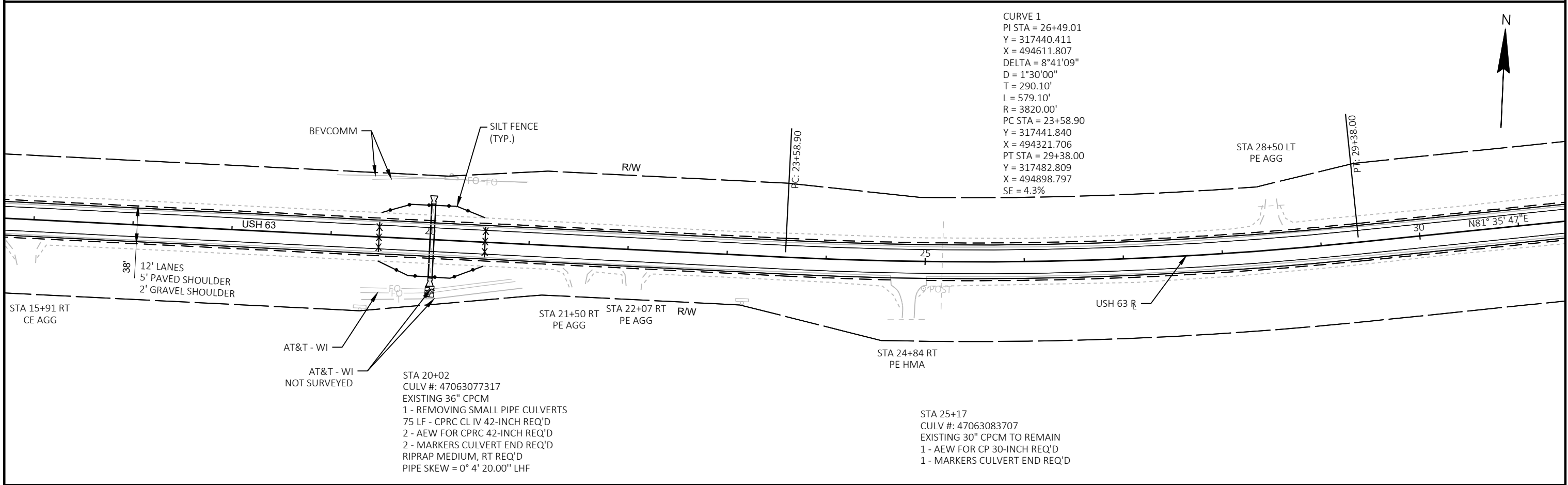
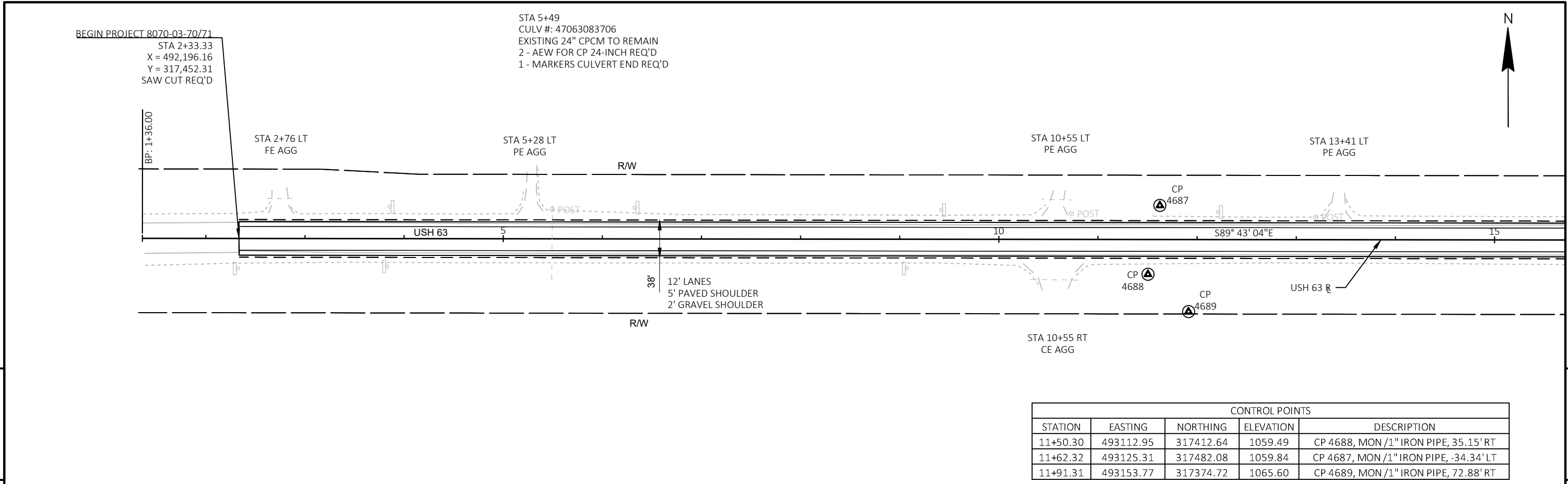
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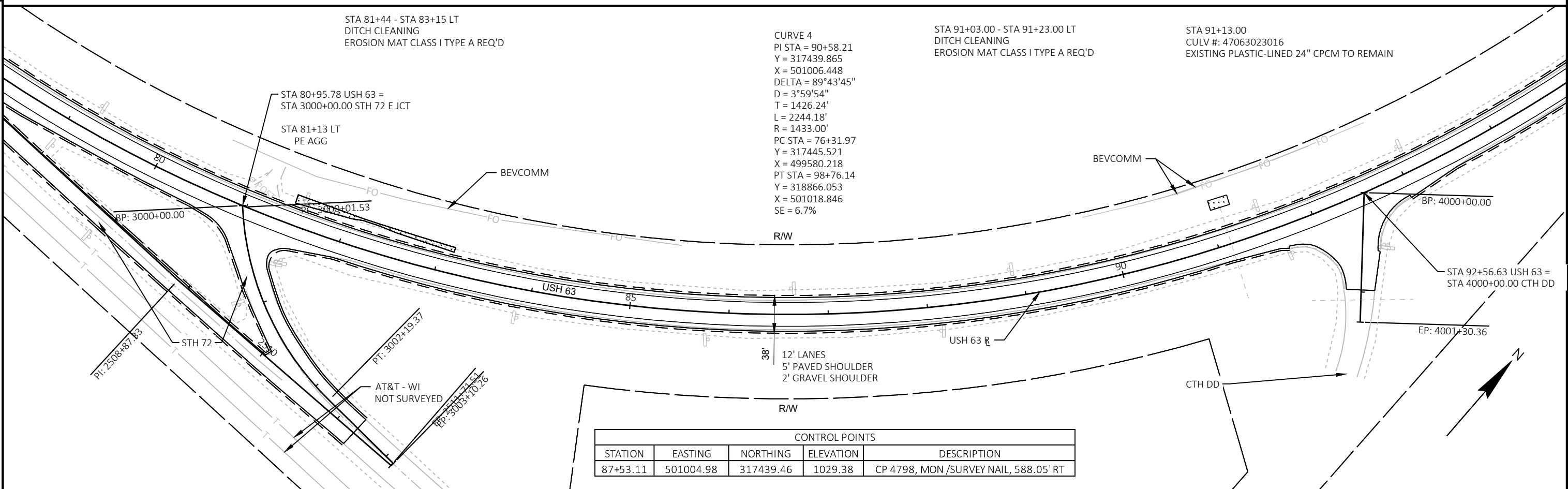
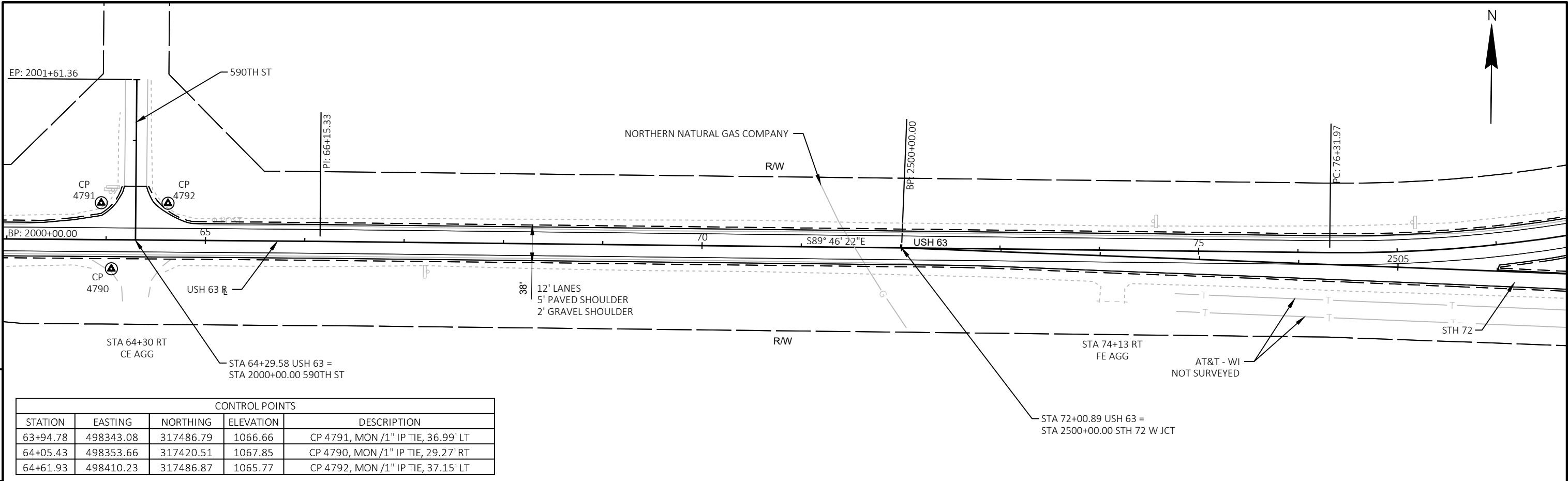
PLOT BY : NICK ENGH

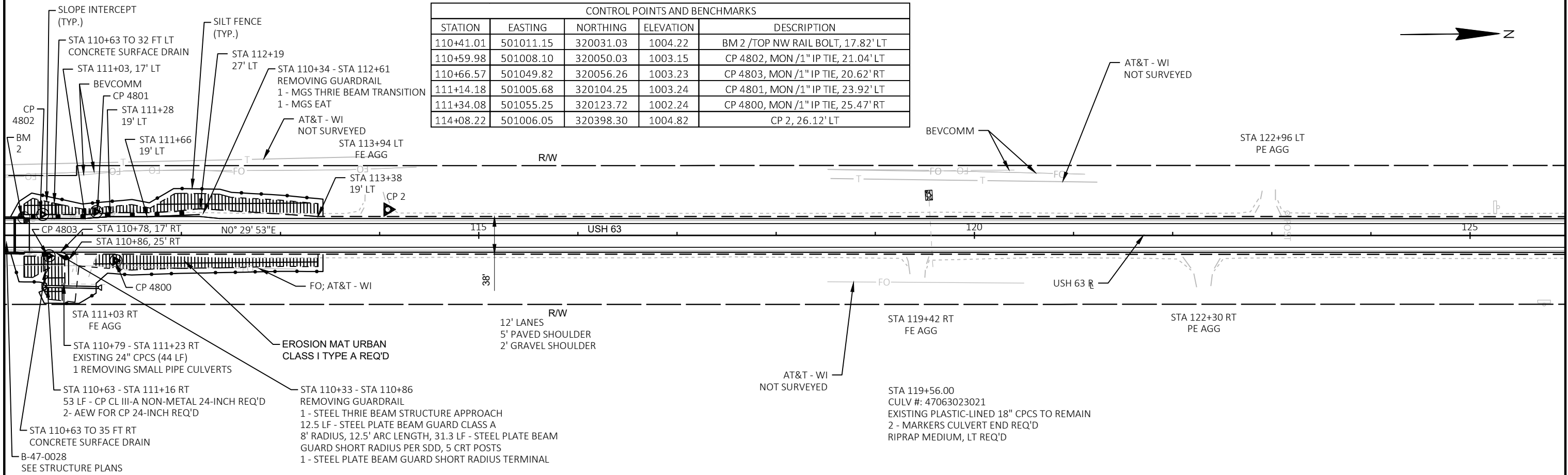
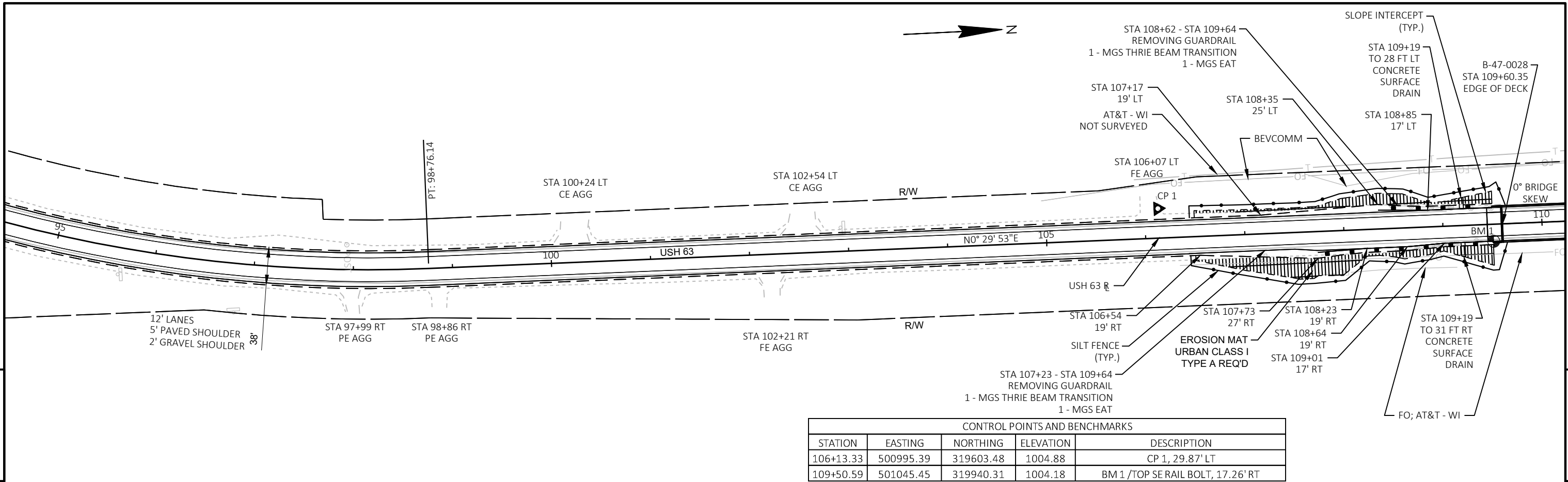
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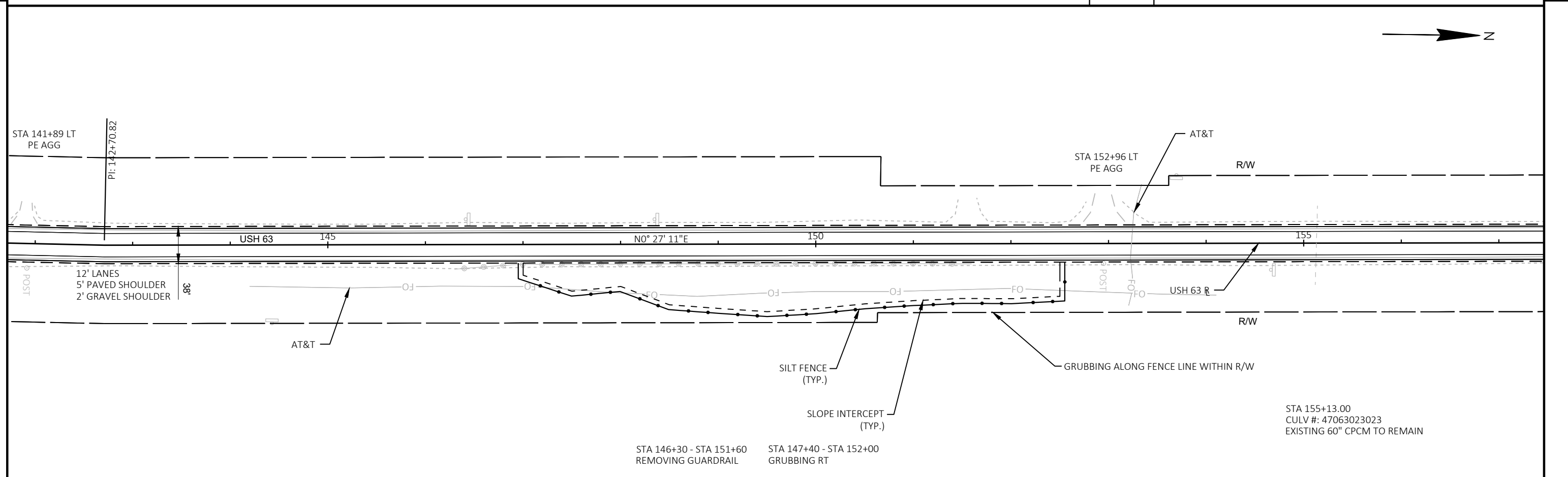
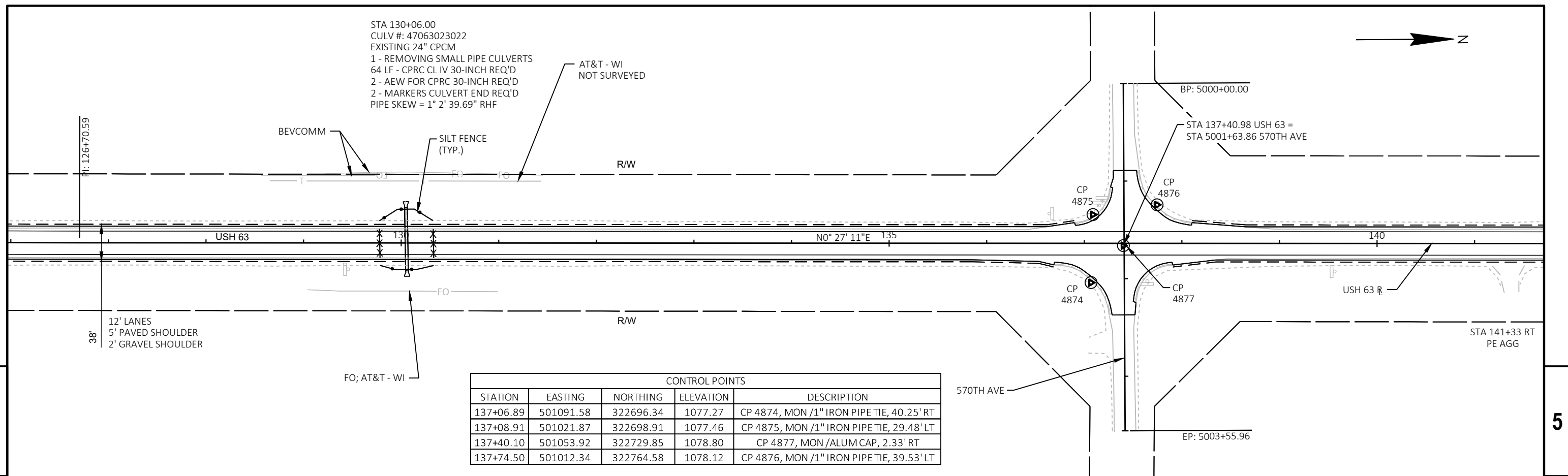
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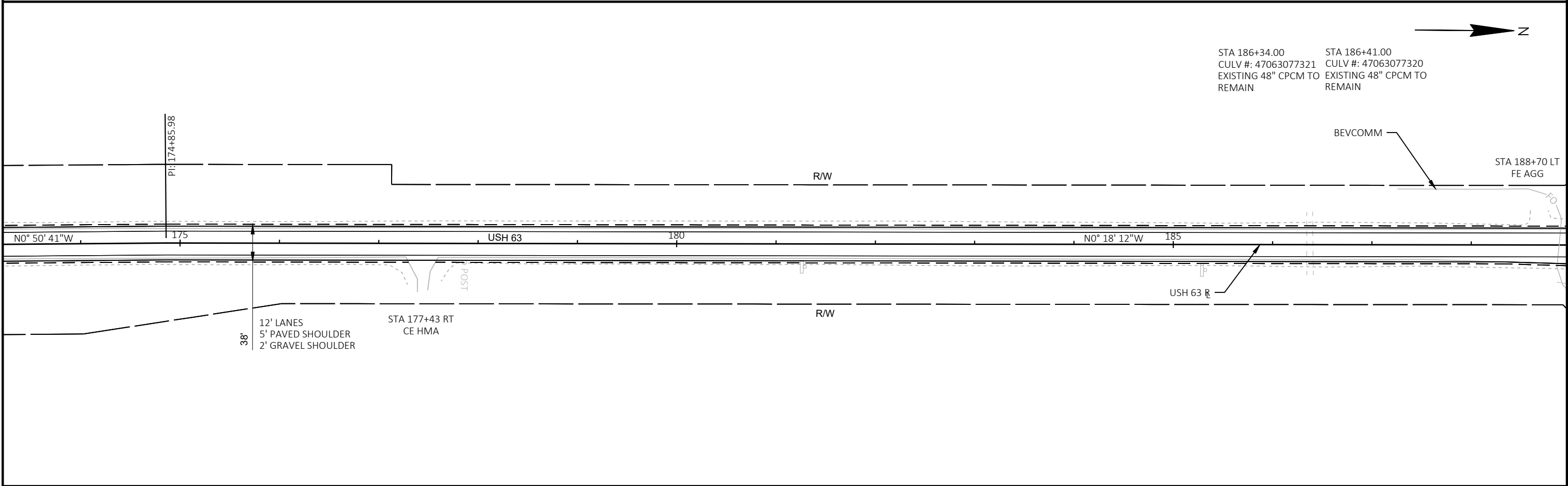
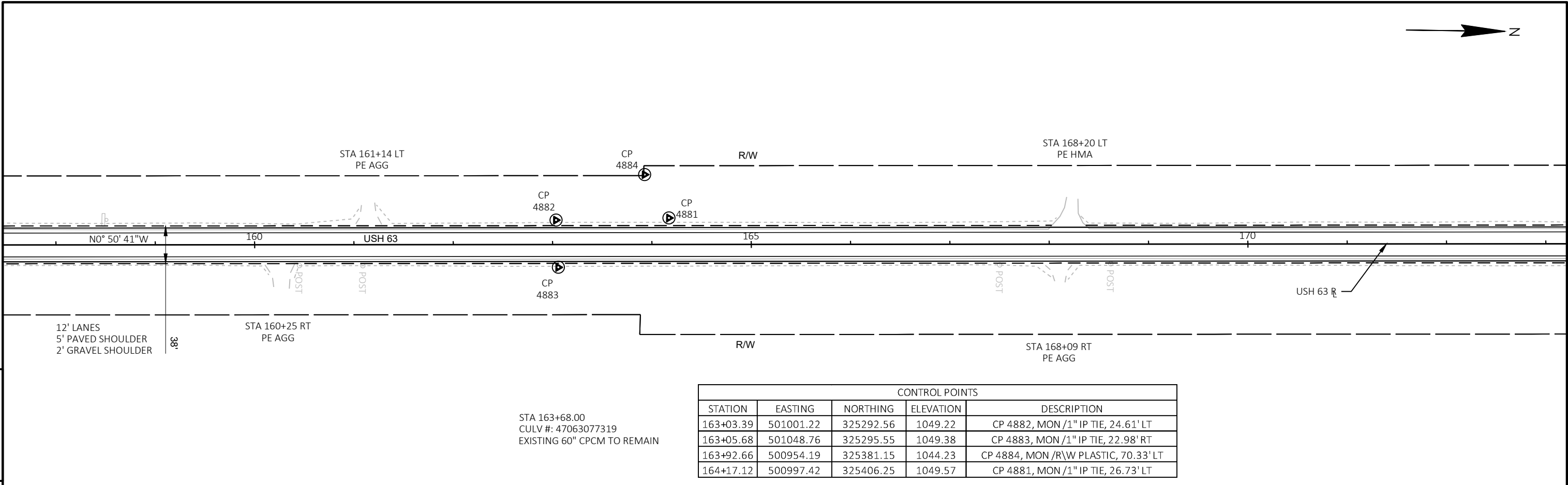
8070-03-20 4.07





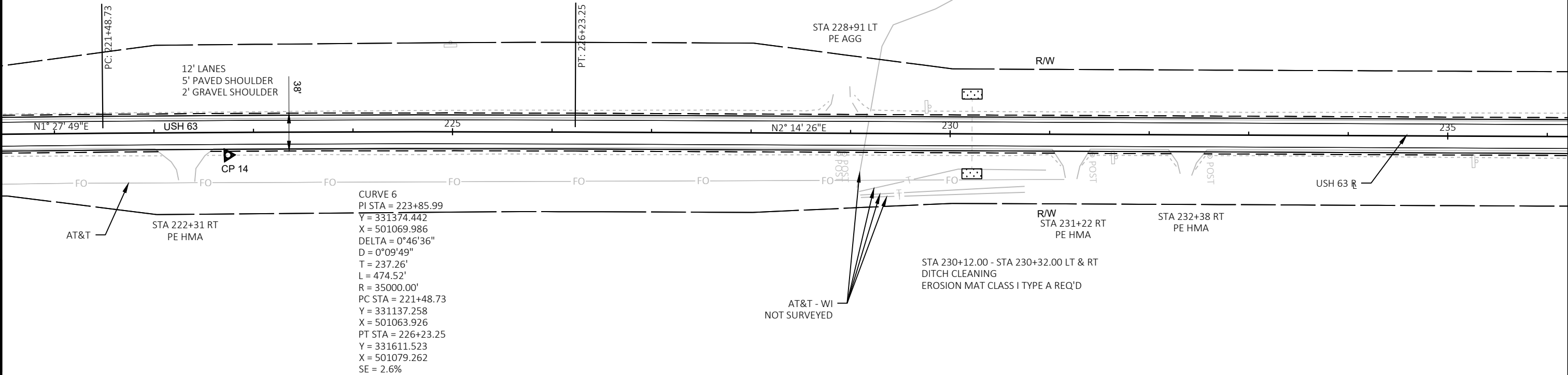






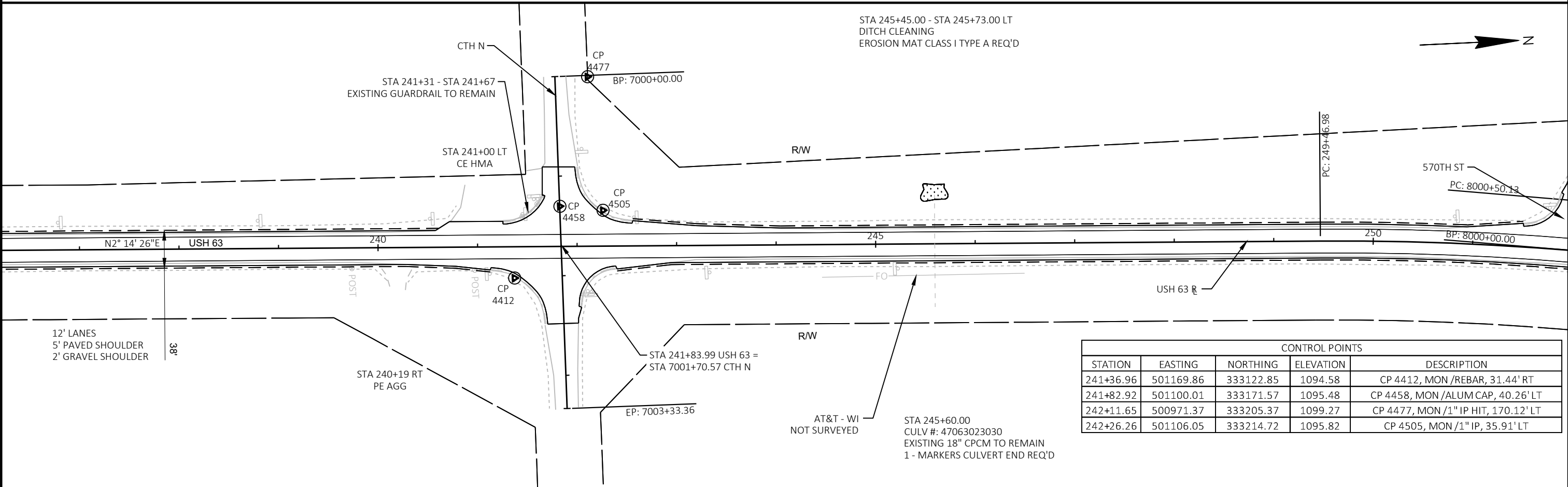
CONTROL POINTS				
STATION	EASTING	NORTHING	ELEVATION	DESCRIPTION
222+74.23	501090.30	331262.05	1051.99	CP 14, 22.95' RT

STA 230+22.00
CULV #: 47063023029
EXISTING 30" CPCM TO REMAIN
2 - MARKERS CULVERT END REQ'D



CURVE 6
PI STA = 223+85.99
Y = 331374.442
X = 501069.986
DELTA = 0°46'36"
D = 0°09'49"
T = 237.26'
L = 474.52'
R = 35000.00'
PC STA = 221+48.73
Y = 331137.258
X = 501063.926
PT STA = 226+23.25
Y = 331611.523
X = 501079.262
SE = 2.6%

STA 245+45.00 - STA 245+73.00 LT
DITCH CLEANING
EROSION MAT CLASS I TYPE A REQ'D



STA 241+31 - STA 241+67
EXISTING GUARDRAIL TO REMAIN

STA 241+00 LT
CE HMA

STA 241+83.99 USH 63 =
STA 7001+70.57 CTH N

CONTROL POINTS				
STATION	EASTING	NORTHING	ELEVATION	DESCRIPTION
241+36.96	501169.86	333122.85	1094.58	CP 4412, MON /REBAR, 31.44' RT
241+82.92	501100.01	333171.57	1095.48	CP 4458, MON /ALUM CAP, 40.26' LT
242+11.65	500971.37	333205.37	1099.27	CP 4477, MON /1" IP HIT, 170.12' LT
242+26.26	501106.05	333214.72	1095.82	CP 4505, MON /1" IP, 35.91' LT

STA 245+60.00
CULV #: 47063023030
EXISTING 18" CPCM TO REMAIN
1 - MARKERS CULVERT END REQ'D

PROJECT NO: 8070-03-70/71

HWY: USH 63

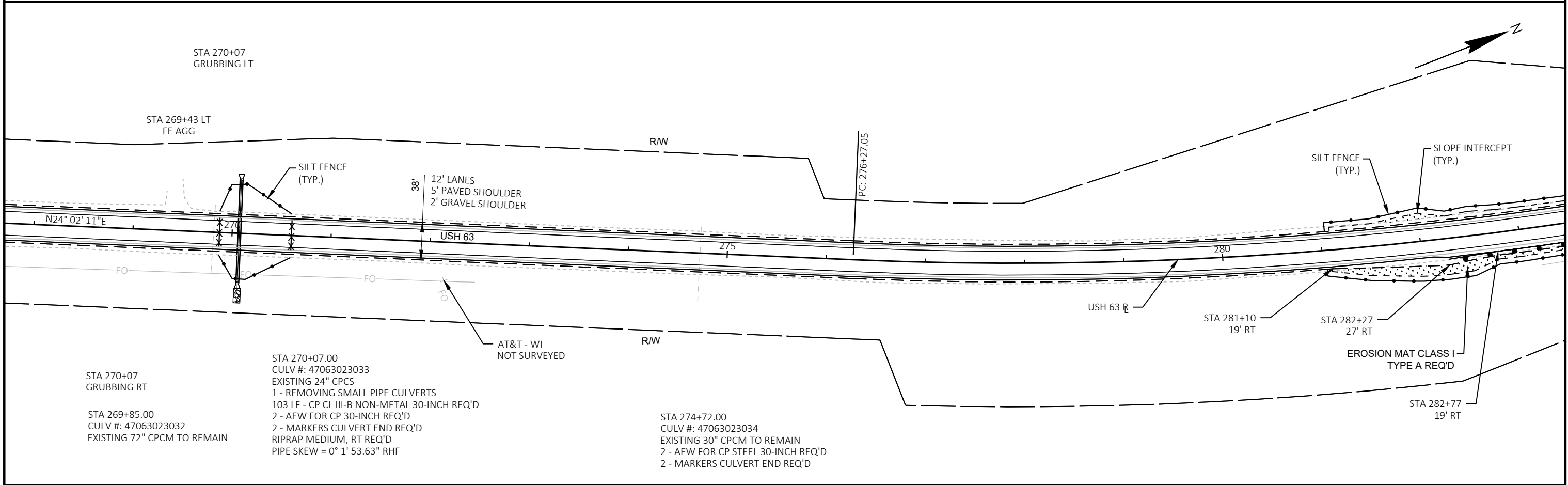
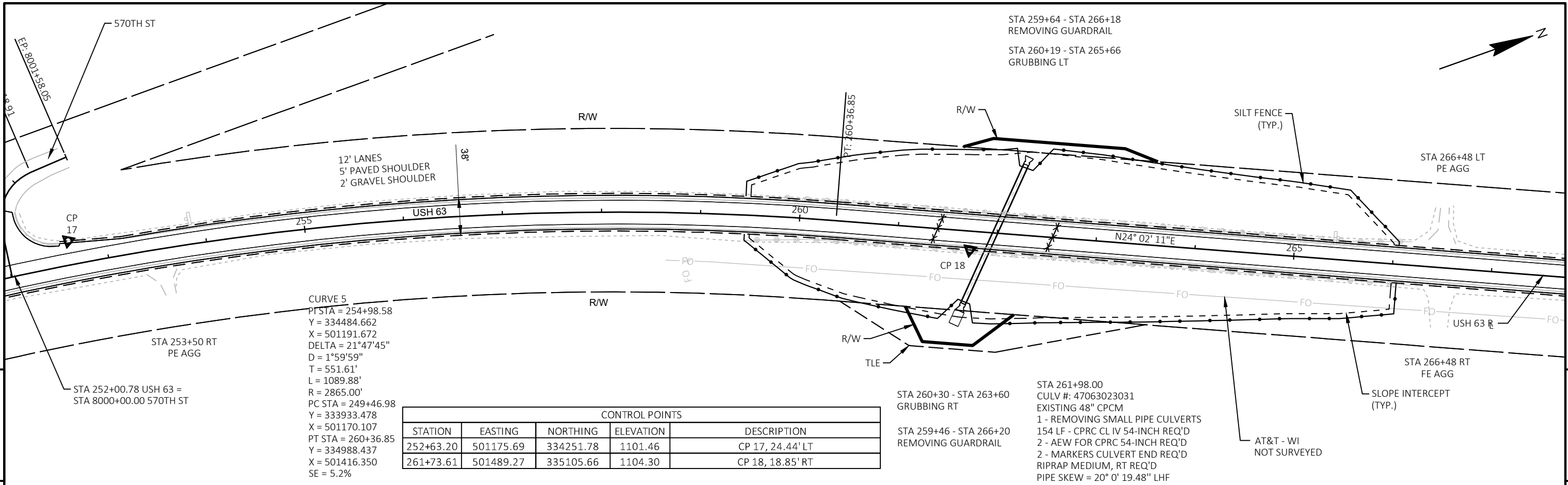
COUNTY: PIERCE

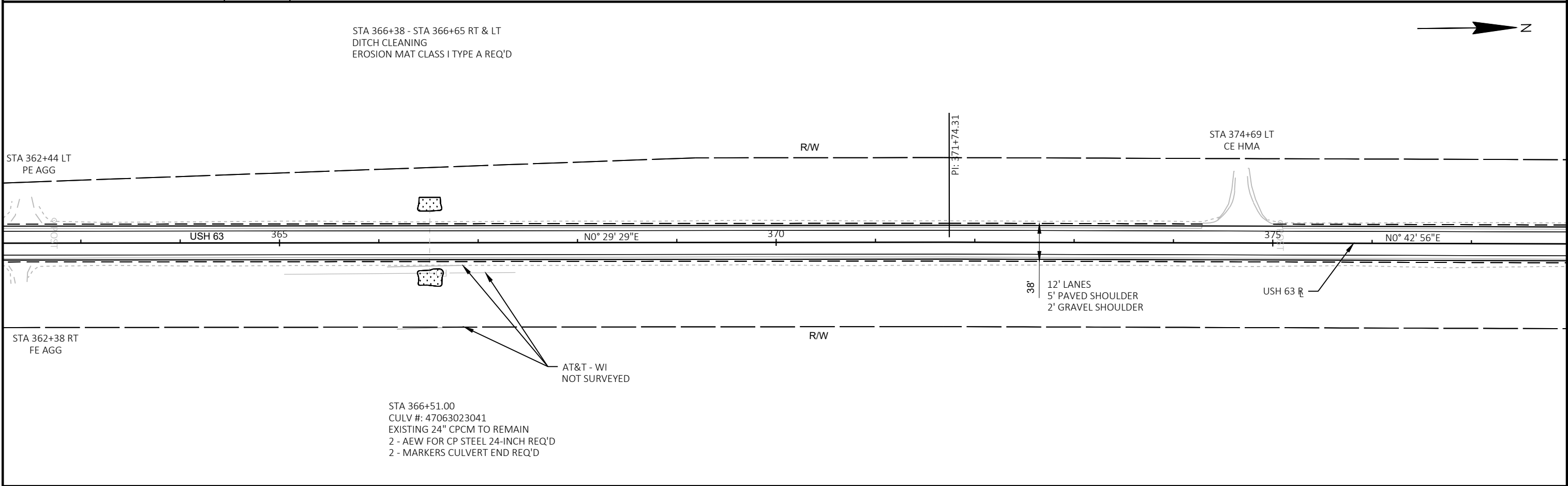
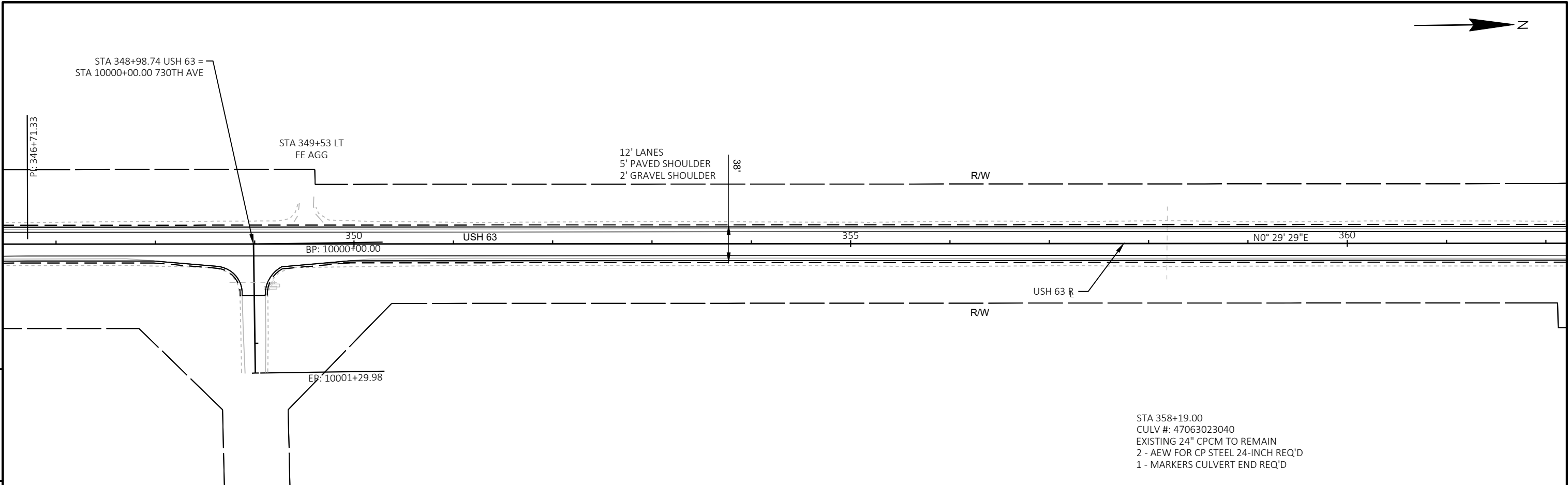
PLAN DETAILS

SHEET

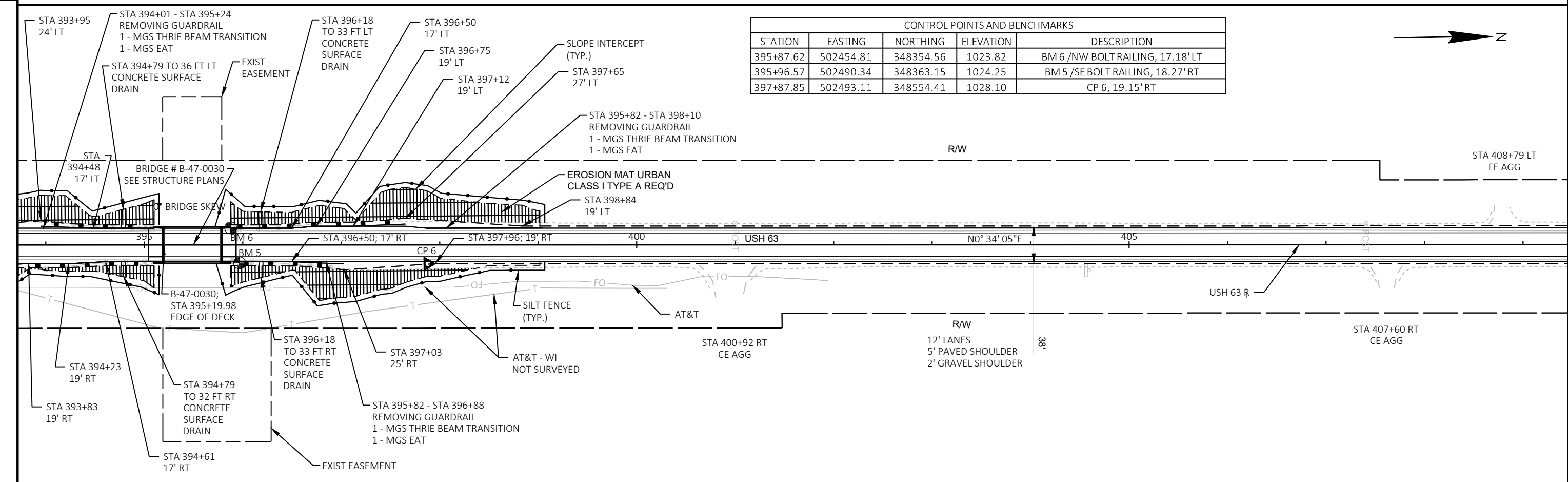
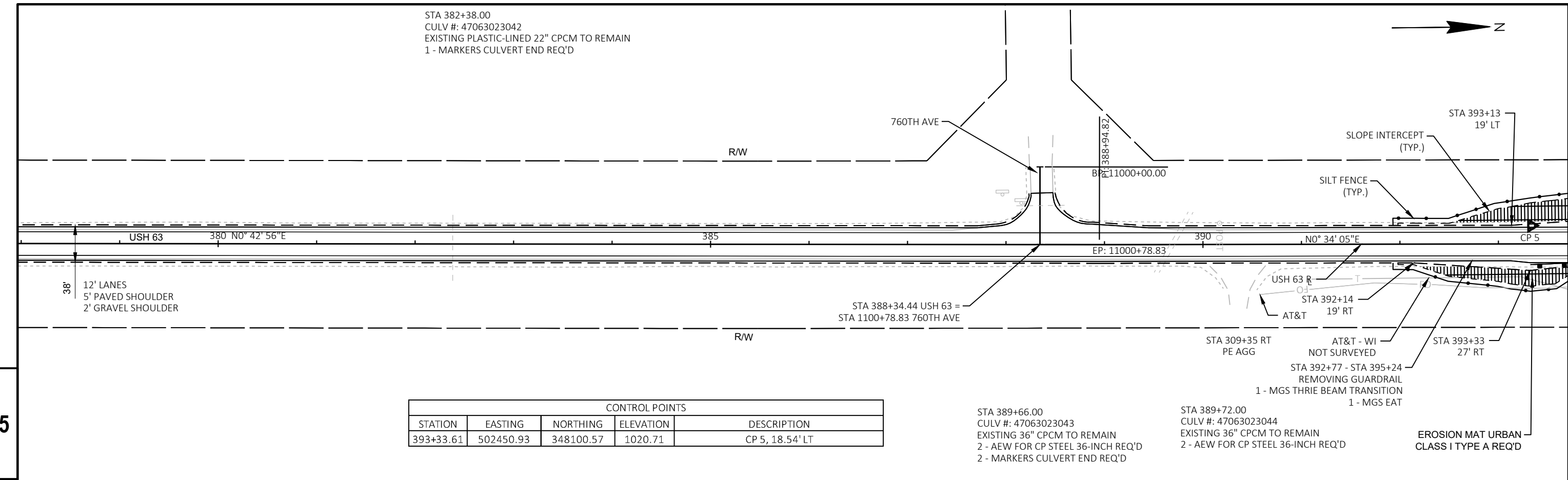
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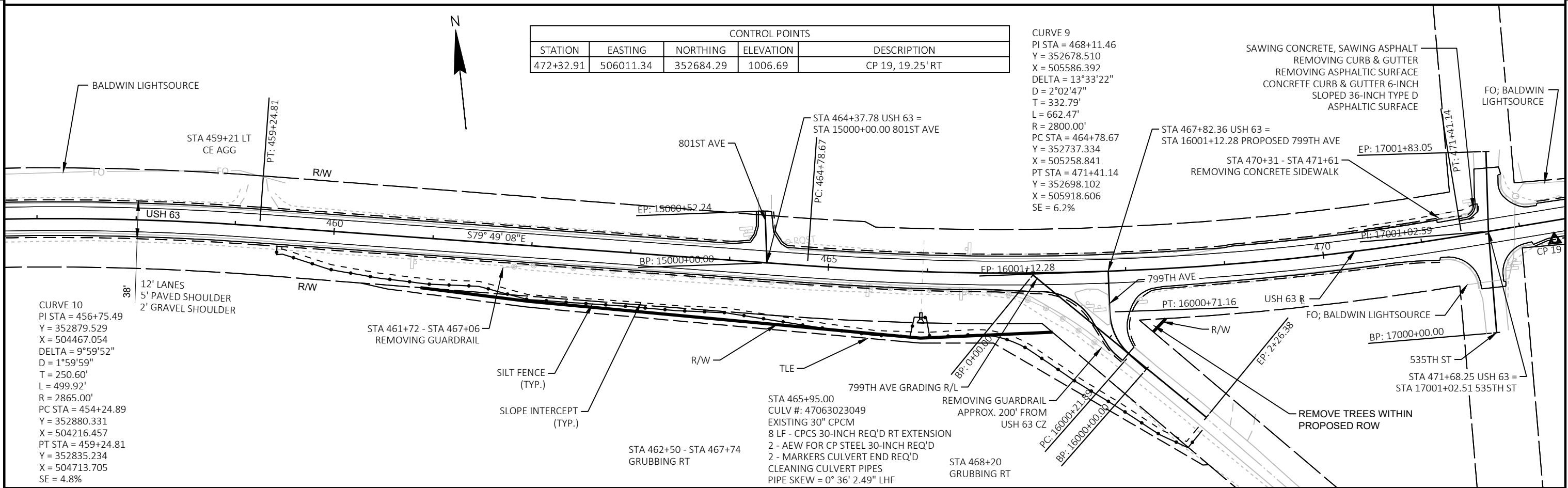
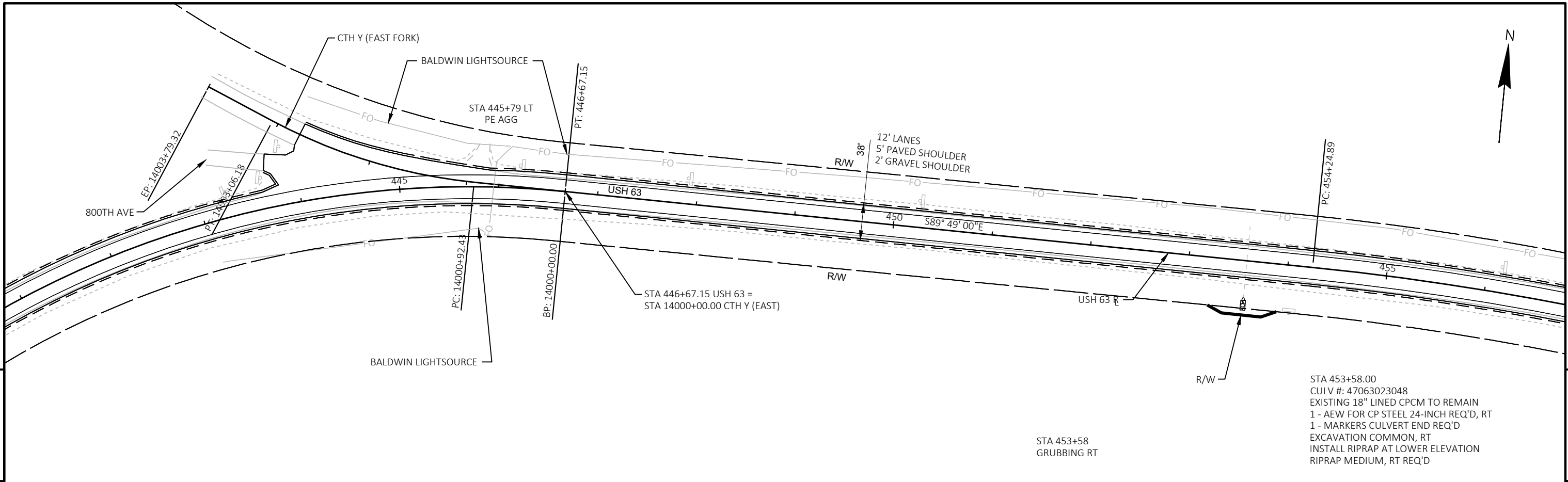
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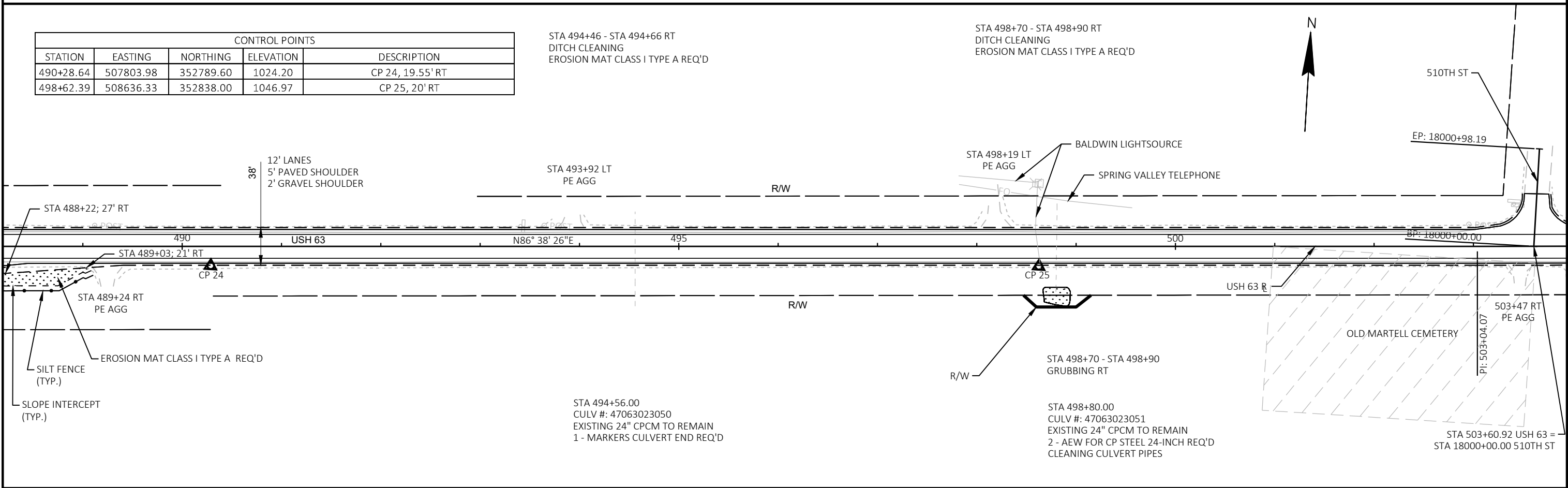
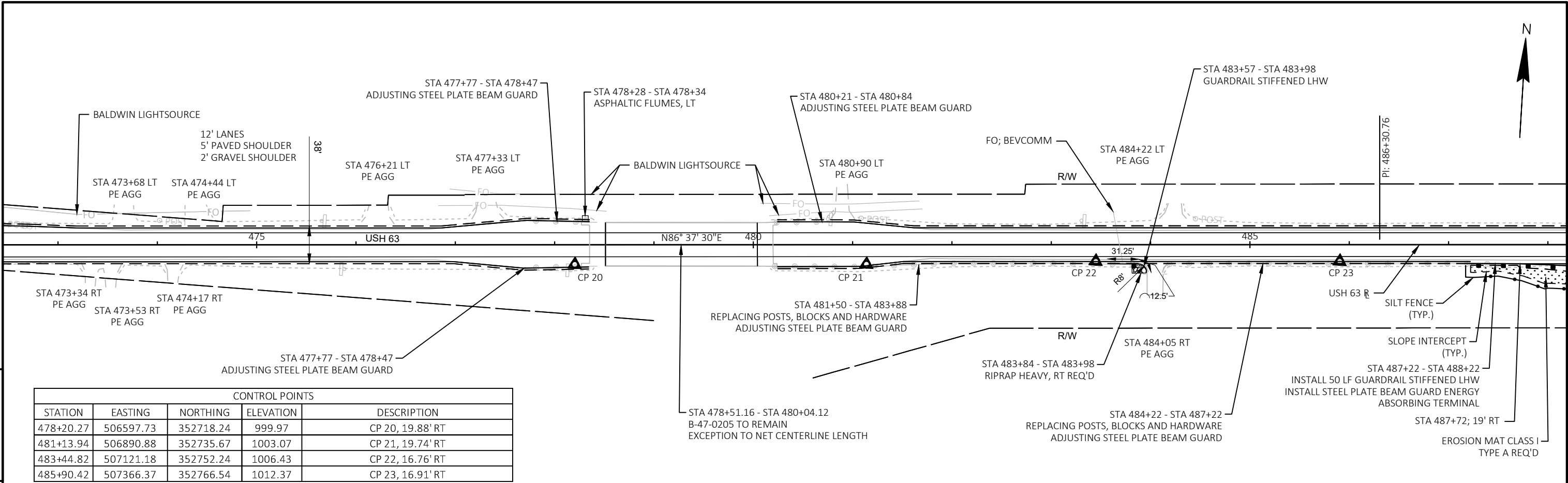


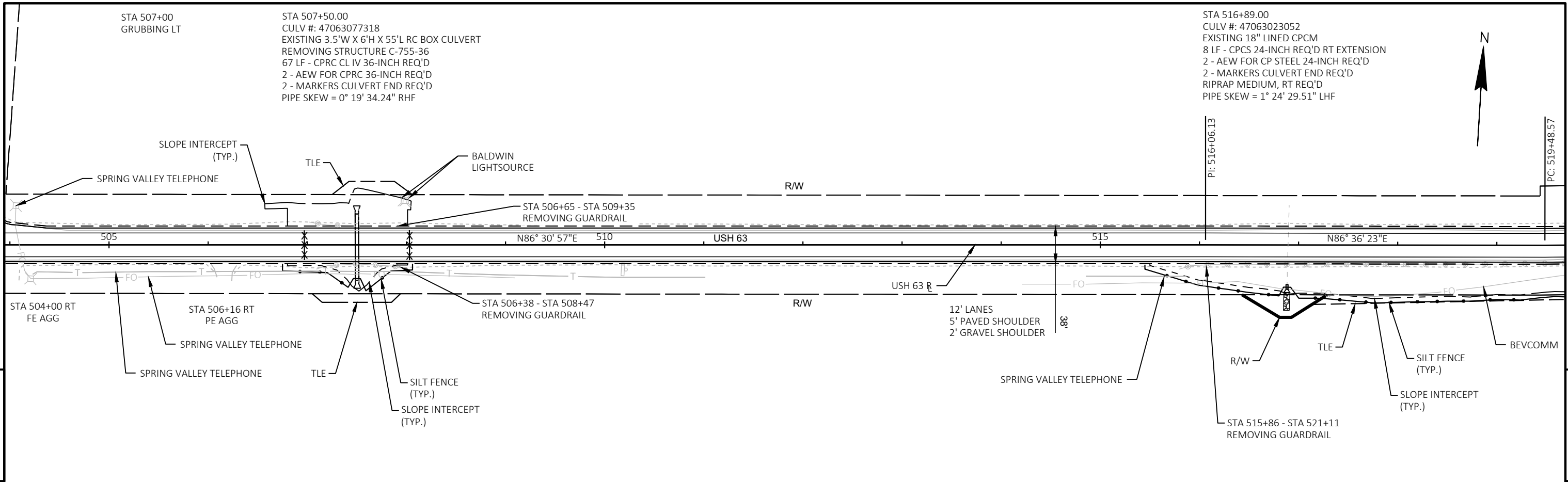


PROJECT NO: 8070-03-70/71	HWY: USH 63	COUNTY: PIERCE	PLAN DETAILS	SHEET 69	E
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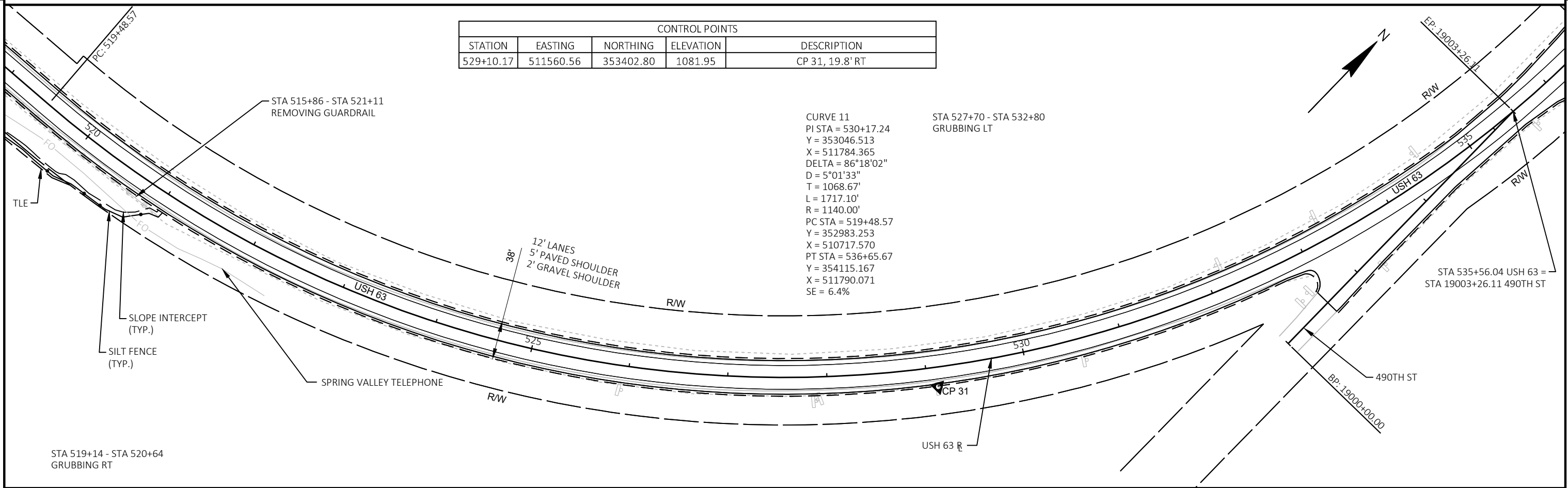








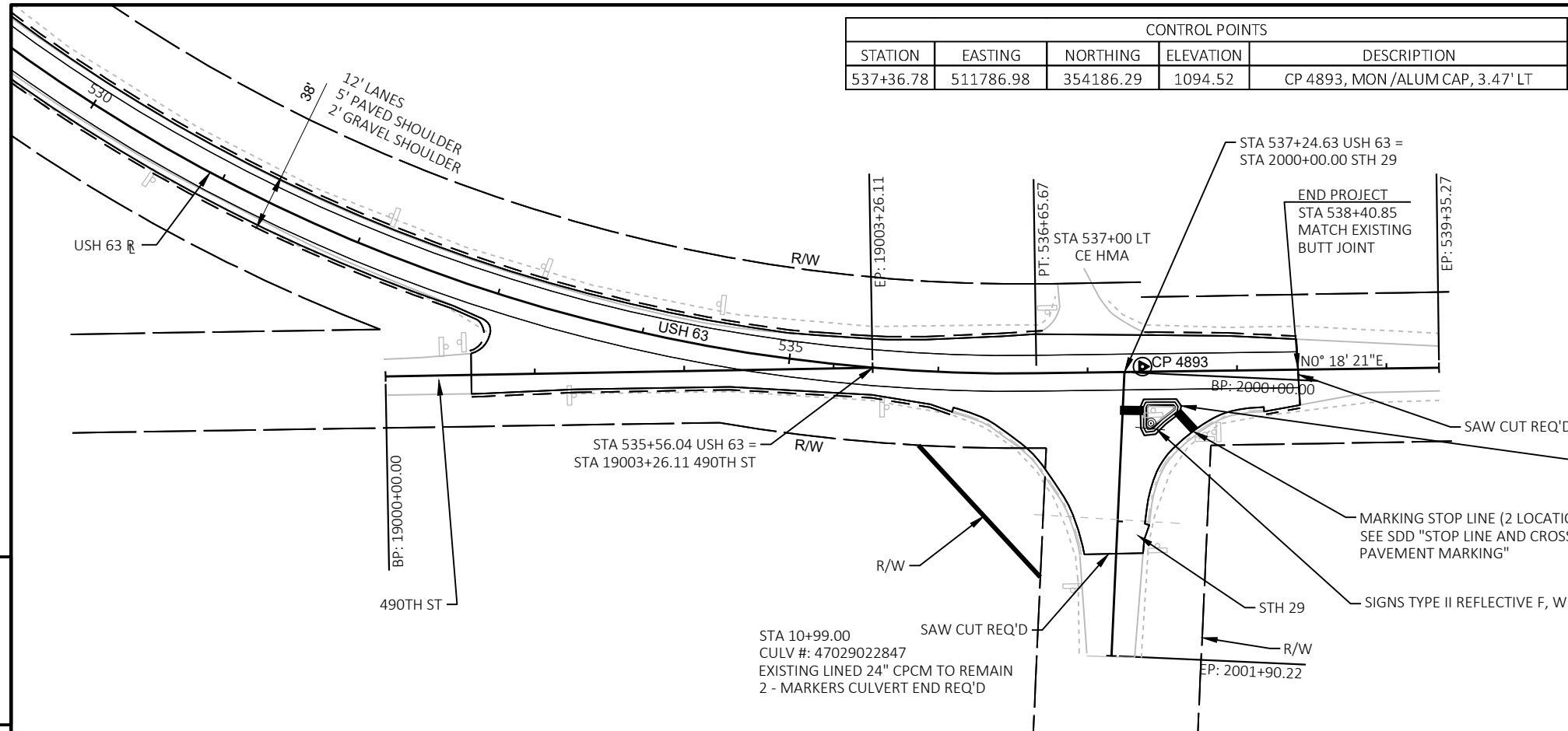
CONTROL POINTS				
STATION	EASTING	NORTHING	ELEVATION	DESCRIPTION
529+10.17	511560.56	353402.80	1081.95	CP 31, 19.8' RT



CONTROL POINTS				
STATION	EASTING	NORTHING	ELEVATION	DESCRIPTION
537+36.78	511786.98	354186.29	1094.52	CP 4893, MON /ALUM CAP, 3.47' LT



5



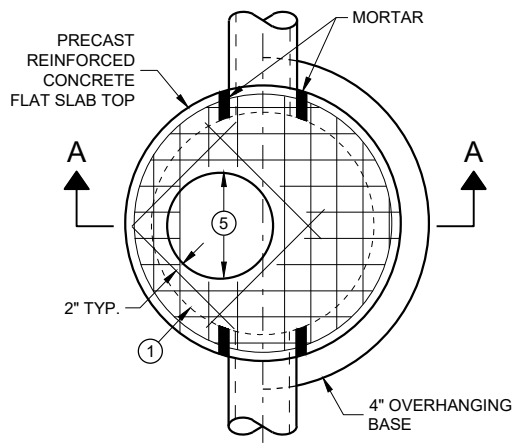
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Standard Detail Drawing List

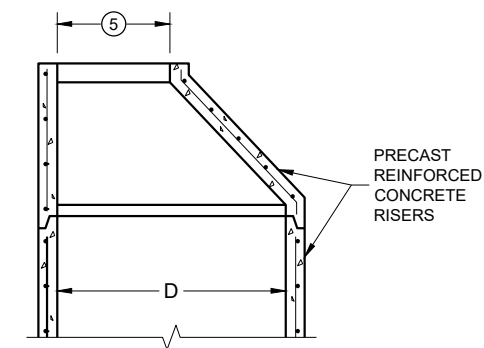
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08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-14A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
12A03-10	NAME PLATE (STRUCTURES)
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
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
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-12A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-12B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
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
14B28-04A	GUARDRAIL MOW STRIP
14B28-04B	GUARDRAIL MOW STRIP
14B29-01	SAFETY EDGE
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)
14B53-02A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-02I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

Standard Detail Drawing List

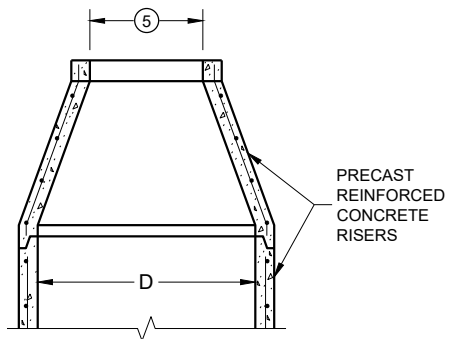
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C18-08B	MEDIAN ISLAND MARKING MEDIAN ISLAND NOSE
15C18-08C	MEDIAN PAVEMENT MARKINGS DOUBLE ARROW WARNING SIGN PLACEMENT
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL



PLAN VIEW
CIRCULAR OPENING



OPTIONAL PRECAST
REINFORCED CONCRETE
ECCENTRIC TOP



OPTIONAL PRECAST
REINFORCED CONCRETE
CONCENTRIC TOP

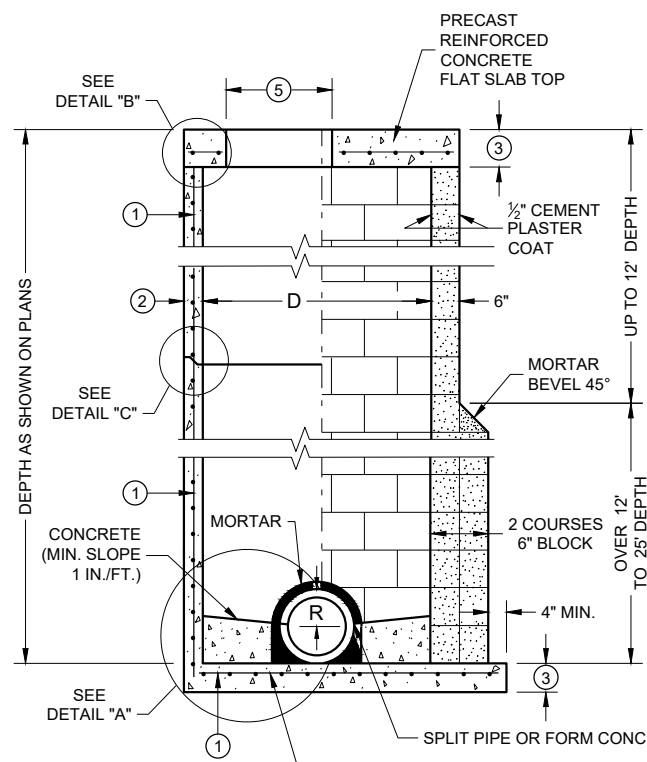
MANHOLE COVER OPENING MATRIX

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

PIPE MATRIX

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

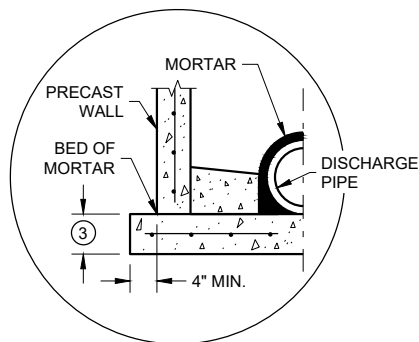
* A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES. SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.



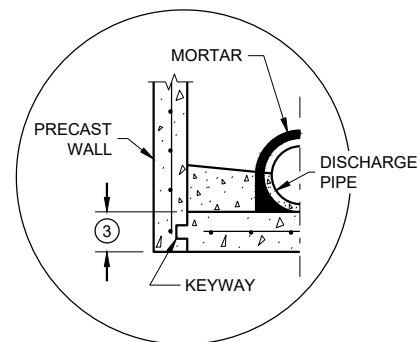
SECTION A - A

PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE ①

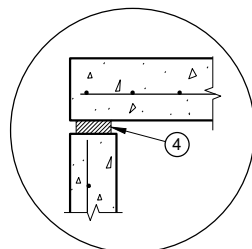


SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

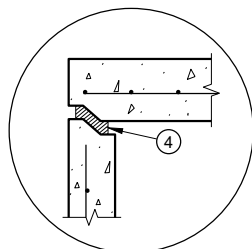


PRECAST REINFORCED CONCRETE
WITH INTEGRAL BASE OPTION

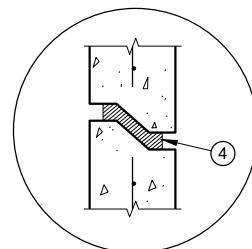
DETAIL "A"



TOP WITH PLAIN
END JOINT



TOP WITH TONGUE
AND GROOVE JOINT



RISER WITH TONGUE
AND GROOVE JOINT

DETAIL "B"

DETAIL "C"

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

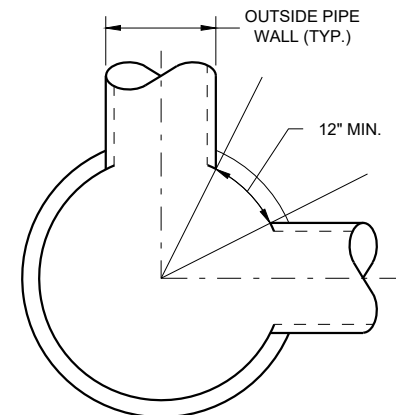
PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

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

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

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

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

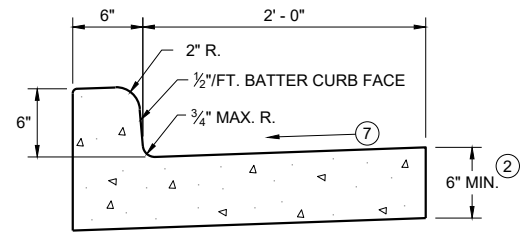


MINIMUM HORIZONTAL
PIPE SEPARATION

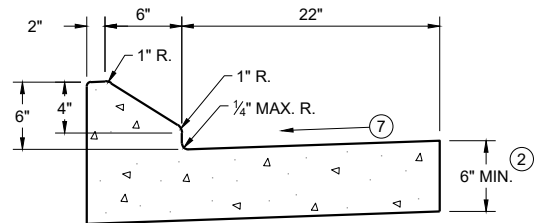
MANHOLES, 3-FT, 4-FT
5-FT, 6-FT, 7-FT, 8-FT, 9-FT
AND 10-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

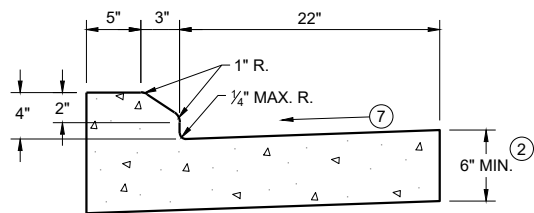
APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE 78
ENGINEER
FHWA



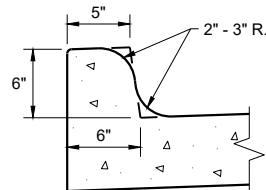
TYPES A^① & D



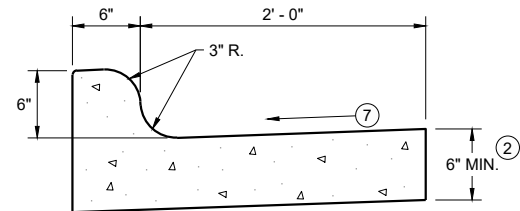
6" SLOPED CURB TYPES G^① & J



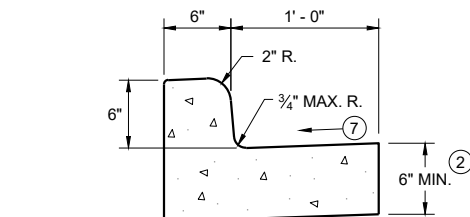
4" SLOPED CURB TYPES G^① & J



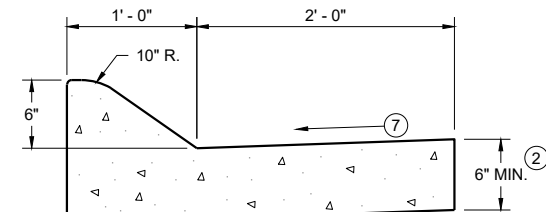
TYPES K^① & L
(OPTIONAL CURB SHAPE)



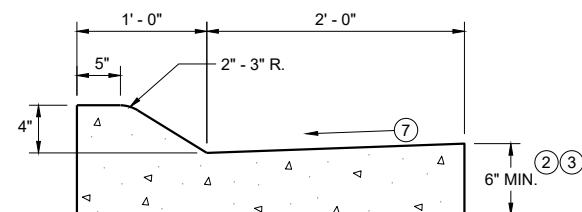
TYPES K^① & L
CONCRETE CURB AND GUTTER 30"



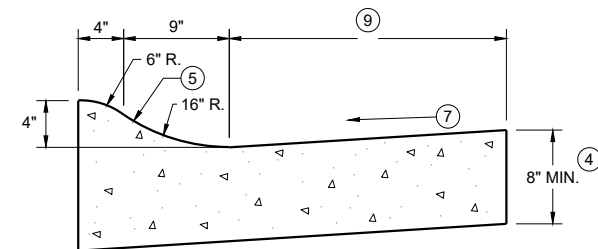
TYPES A^① & D
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D

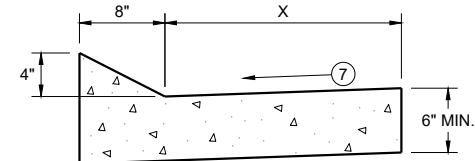


4" SLOPED CURB TYPES A^① & D
CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

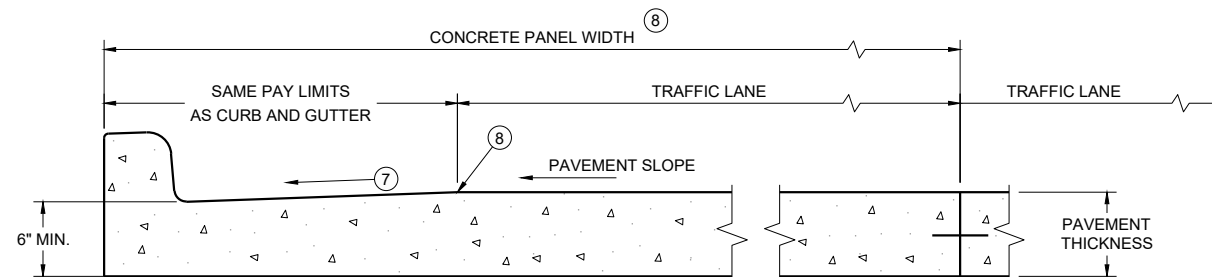
TBT & TBTT	X
30"	22"
36"	28"



TYPES TBT & TBTT^①
CONCRETE CURB AND GUTTER

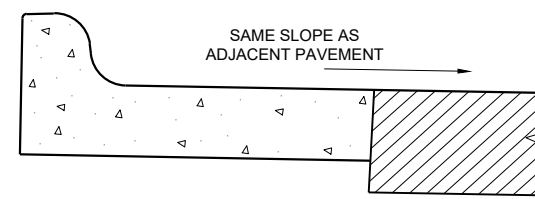
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

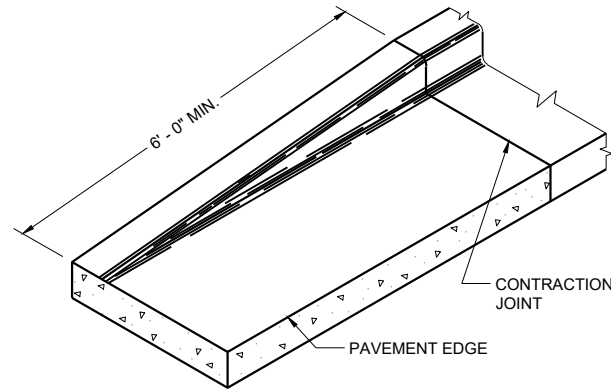
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

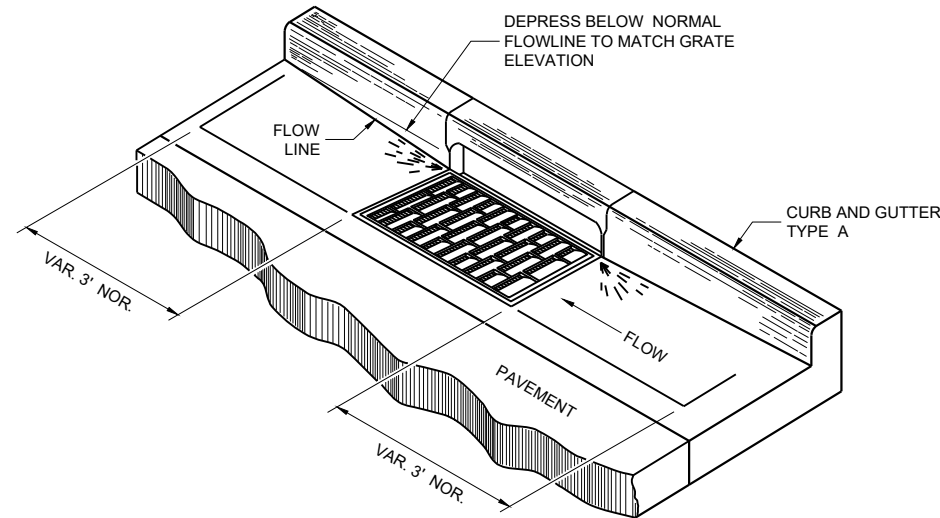
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH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

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

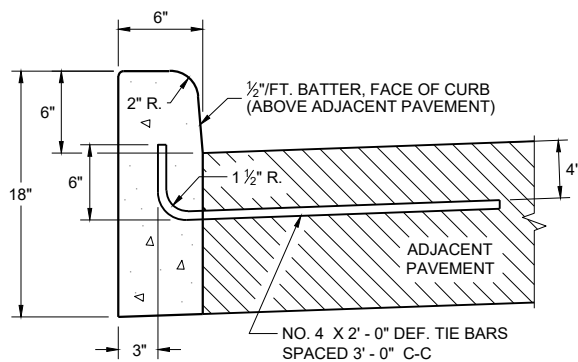


END SECTION CURB AND GUTTER

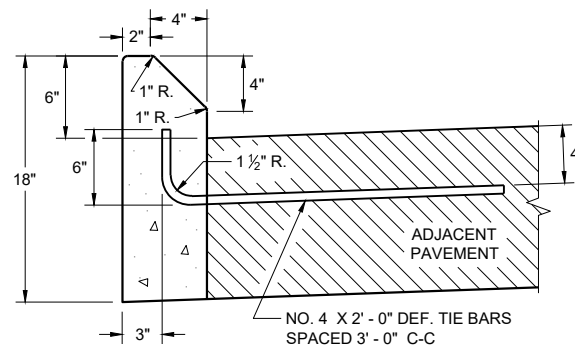


DETAIL OF CURB AND GUTTER AT INLETS

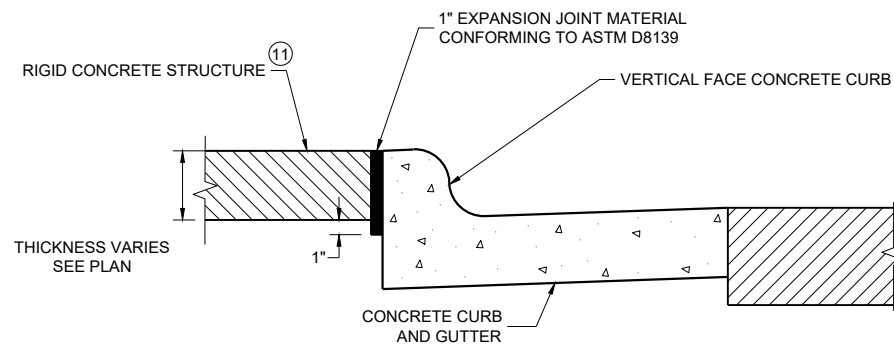
(TYPICAL H INLET COVER SHOWN)



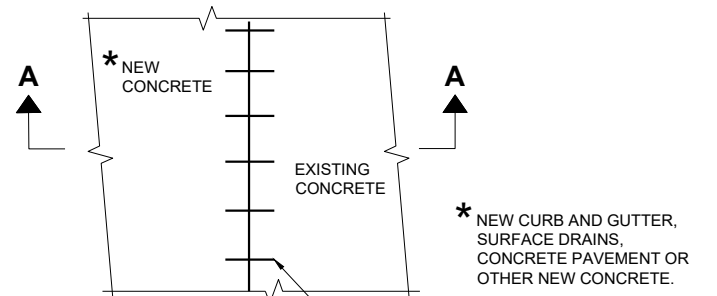
TYPES A^① & D



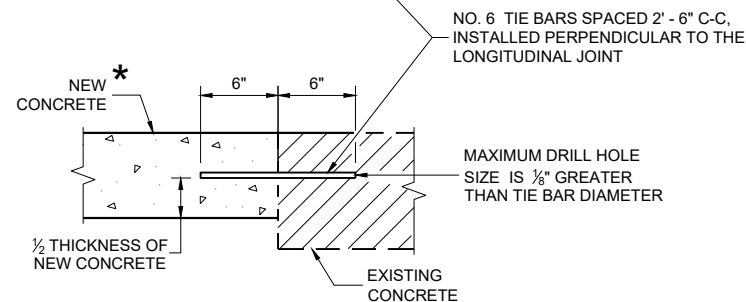
TYPES G^① & J
CONCRETE CURB



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



PLAN VIEW



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

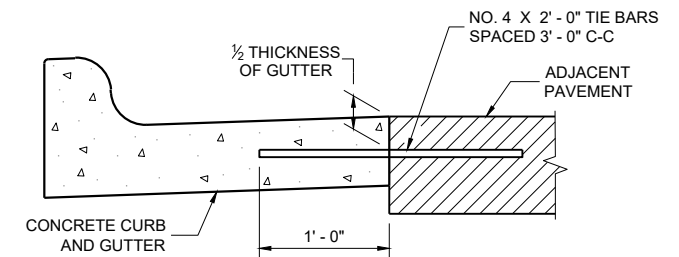
GENERAL NOTES

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

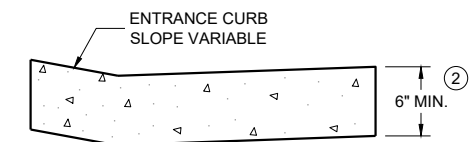
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

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



TYPICAL TIE BAR LOCATION^①



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

CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

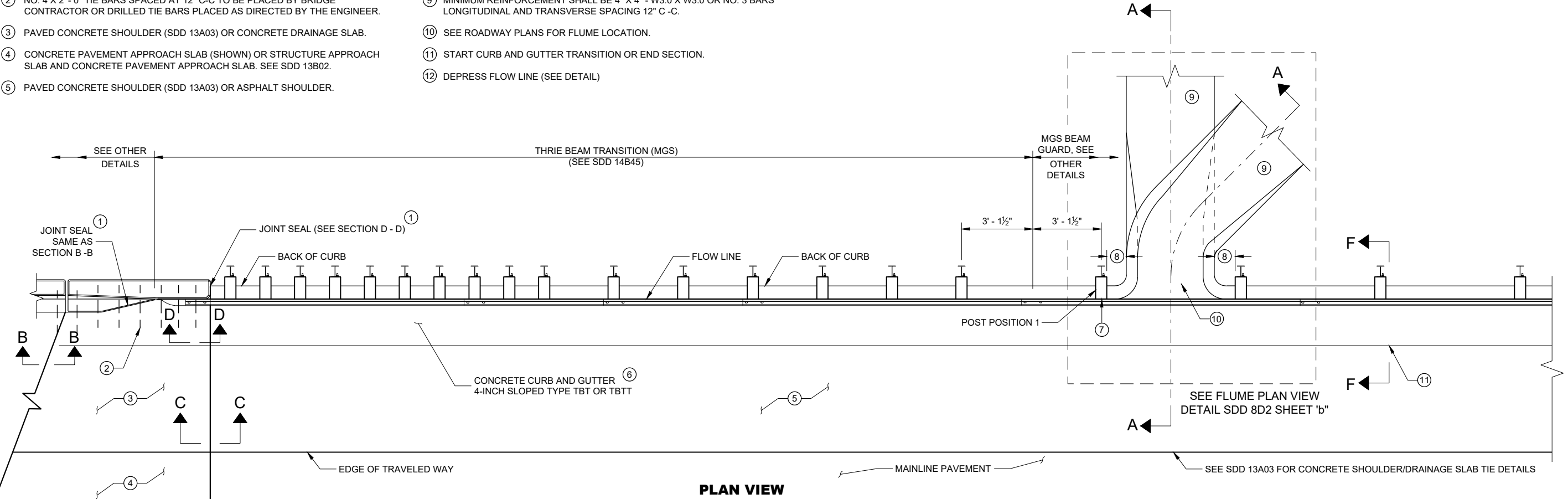
GENERAL NOTES

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

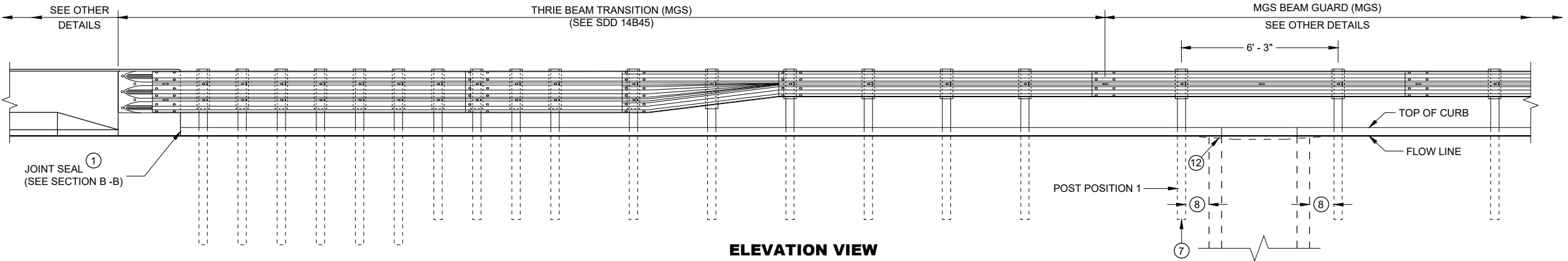
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

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



PLAN VIEW

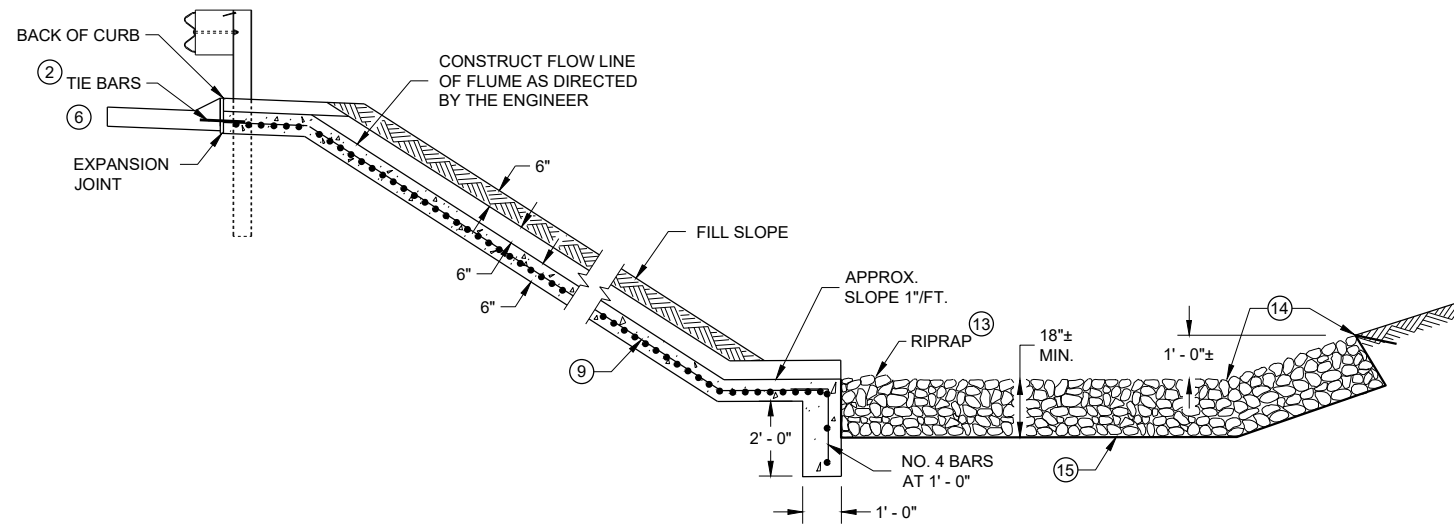


ELEVATION VIEW

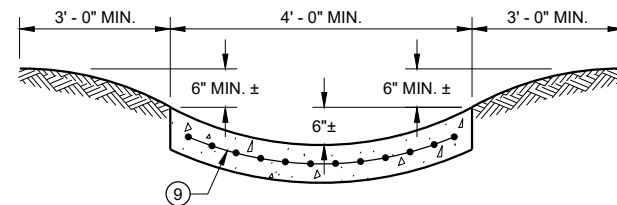
CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

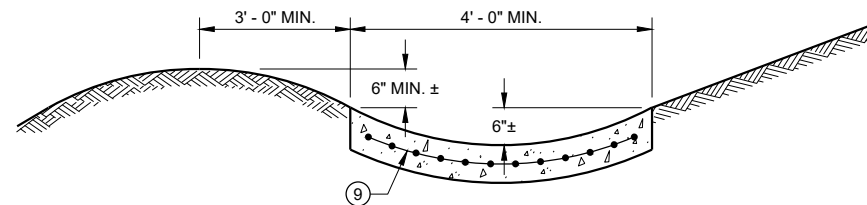
81



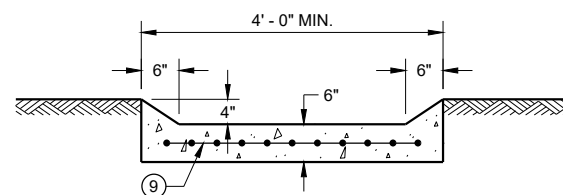
SECTION A - A



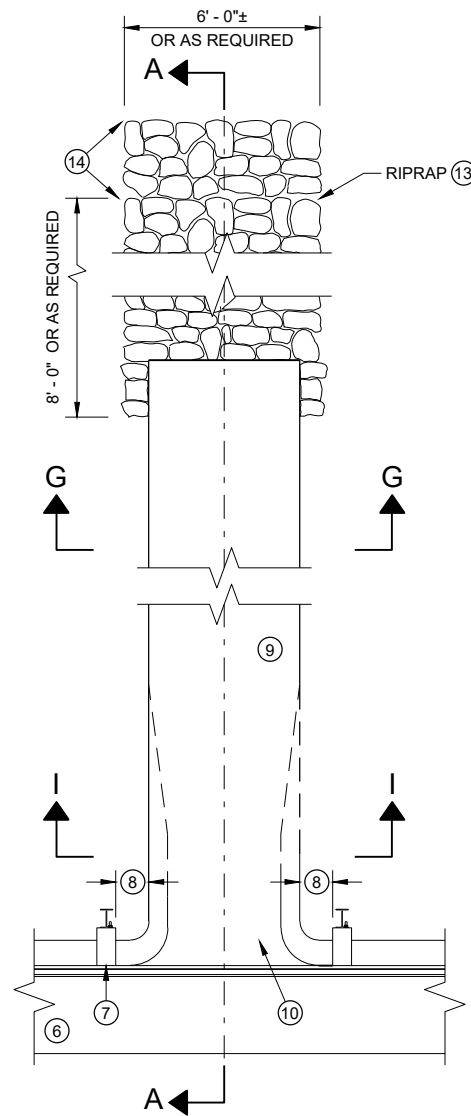
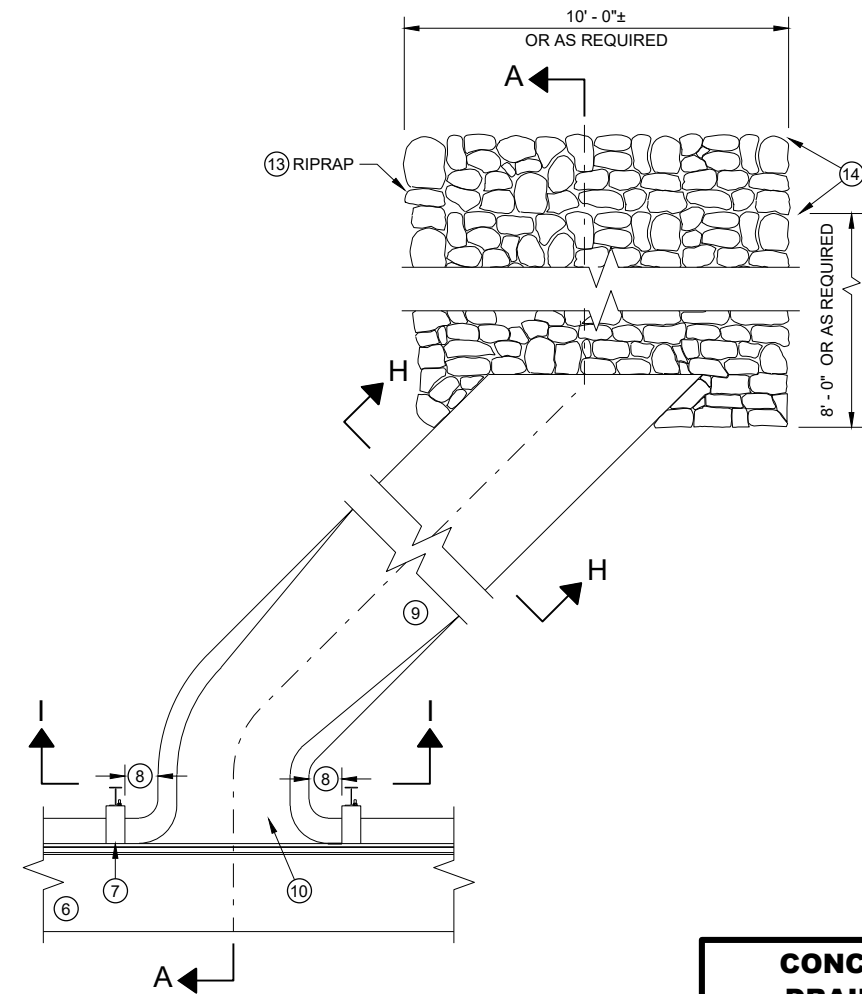
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW
PERPENDICULAR FLUMEPLAN VIEW
SKEWED FLUME

GENERAL NOTES

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

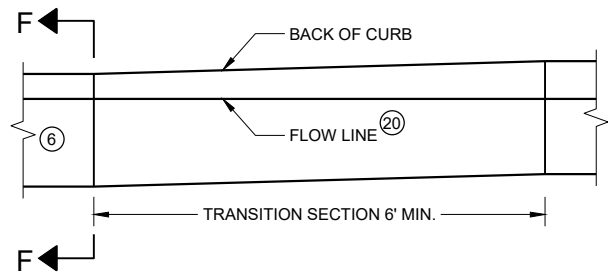
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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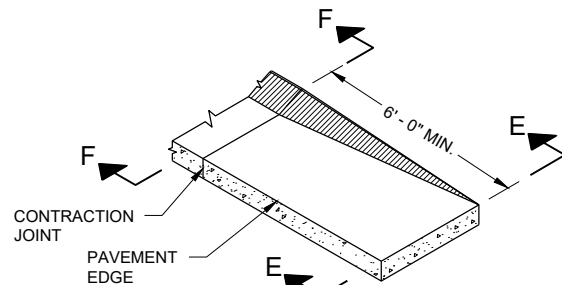
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY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

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

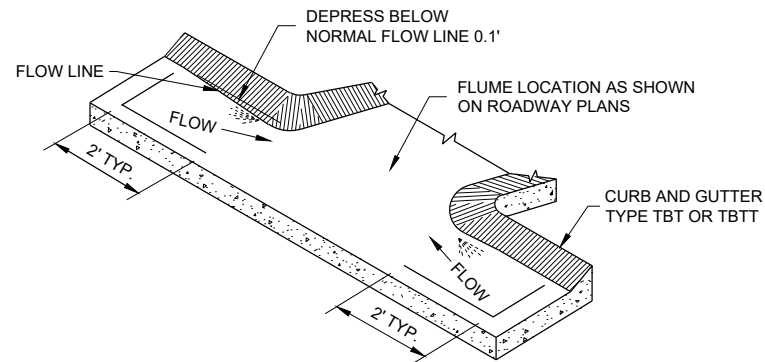
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 82



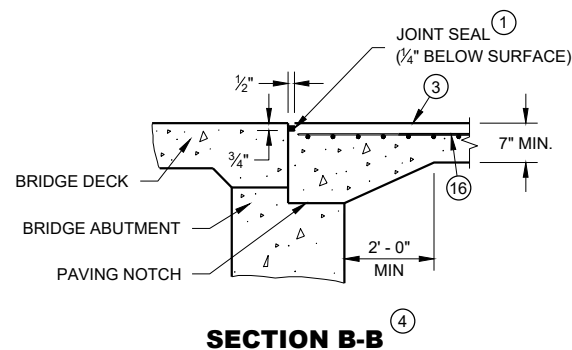
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



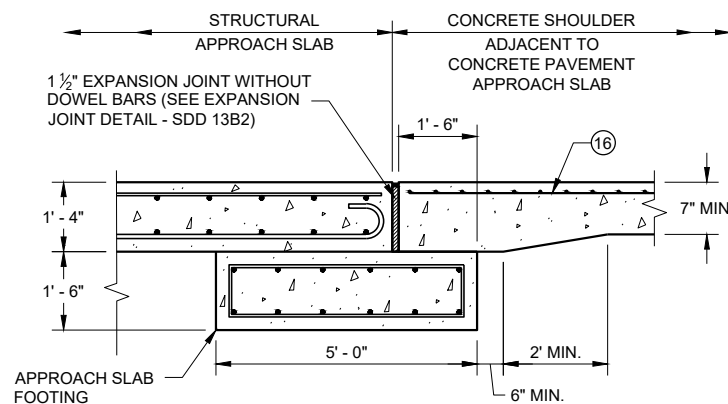
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



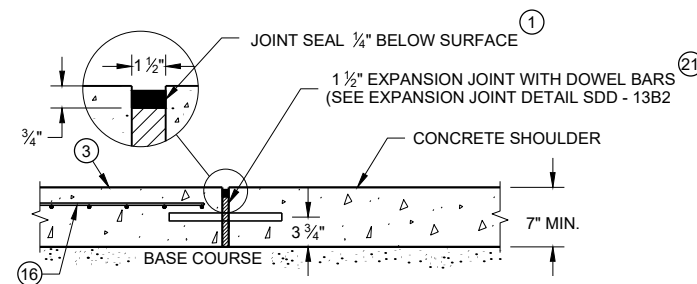
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



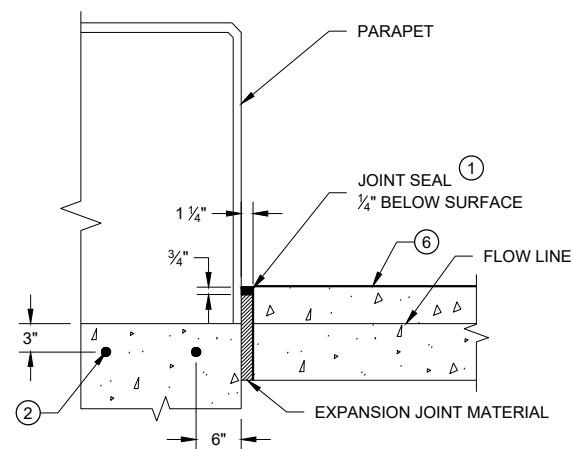
SECTION B-B



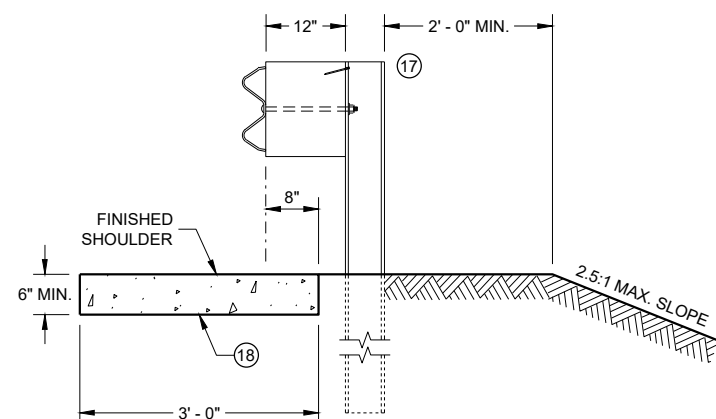
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



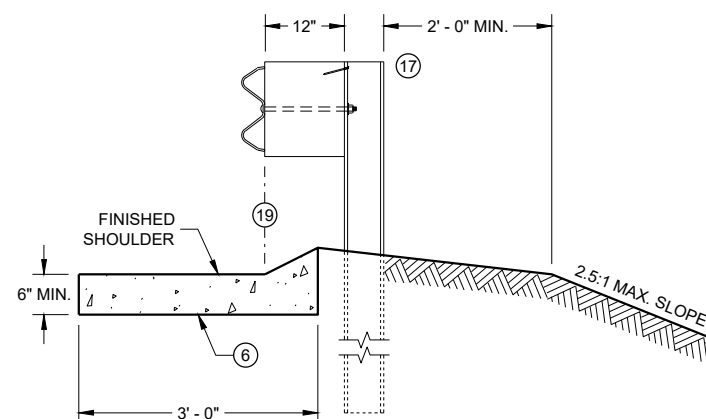
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

GENERAL NOTES

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

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

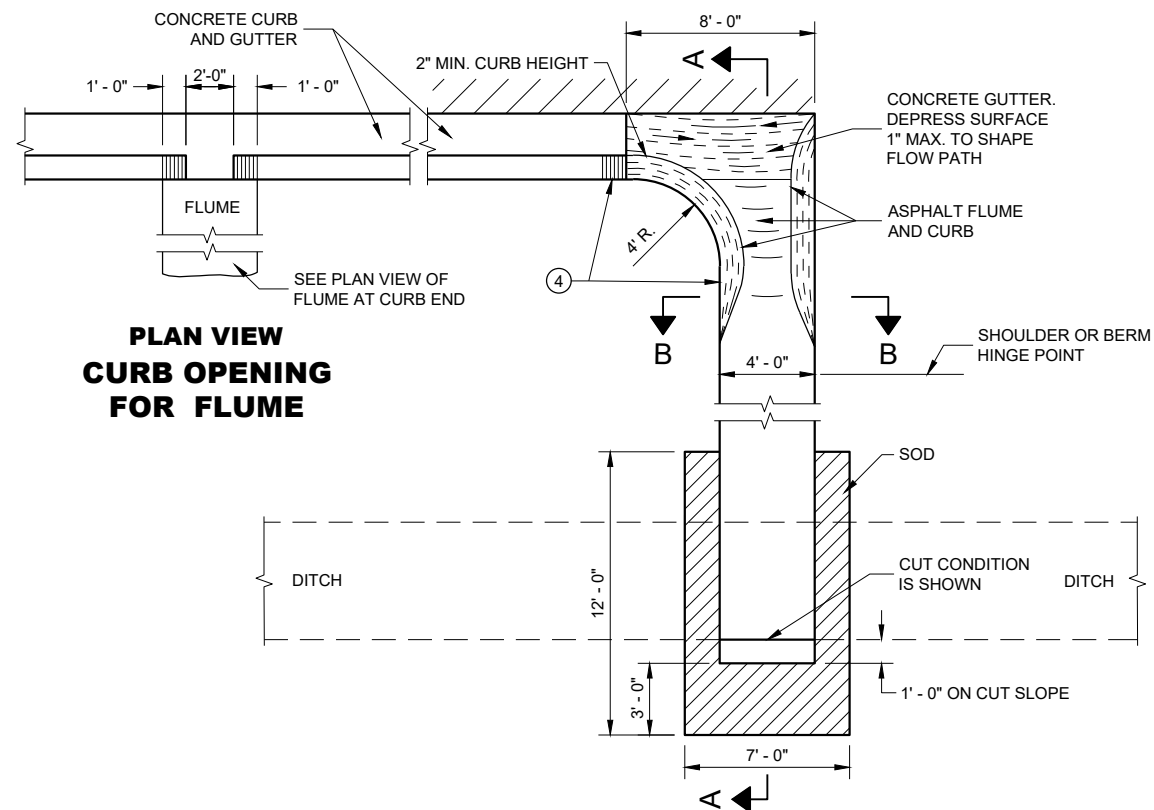
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- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)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

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

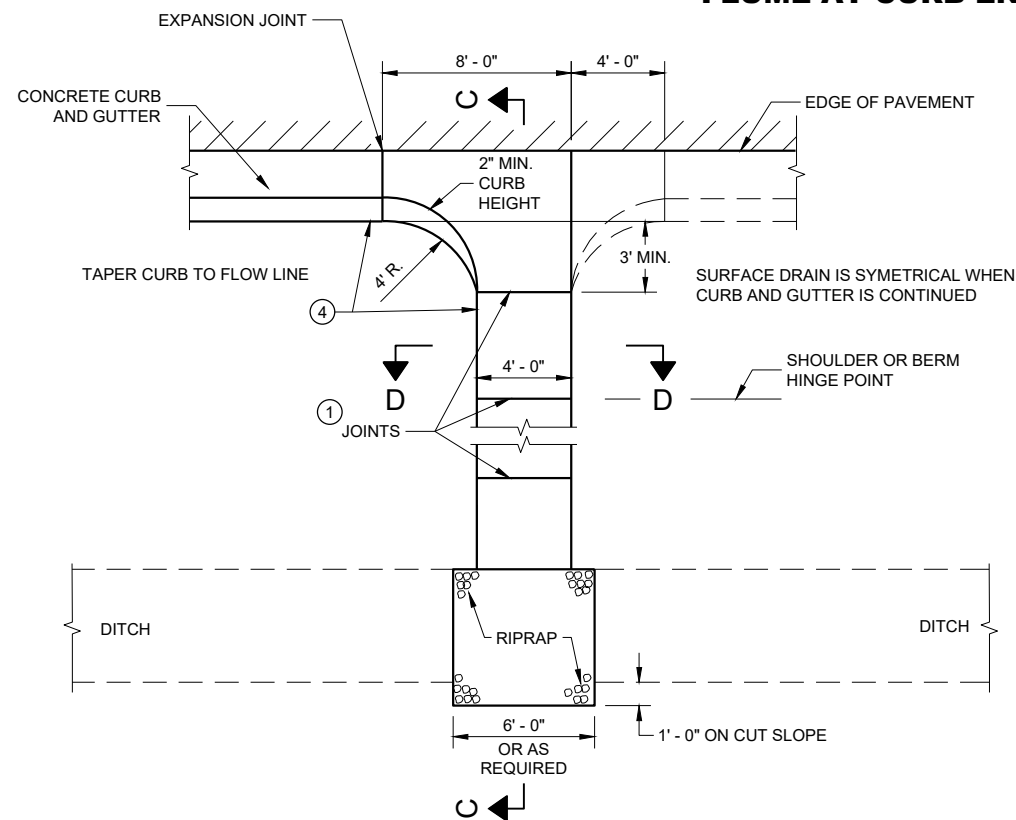
APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE 83
ENGINEER
FHWA

ASPHALTIC FLUME



**PLAN VIEW
CURB OPENING
FOR FLUME**

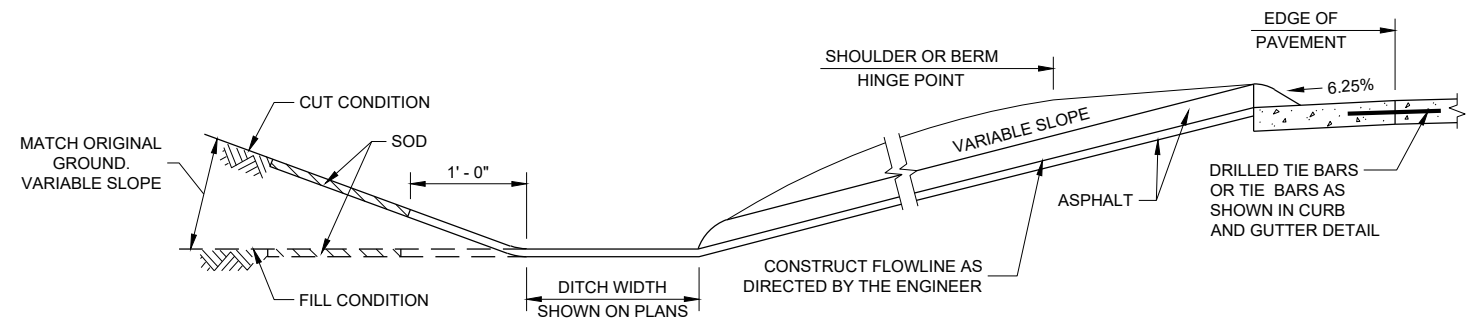
PLAN VIEW
FLUME AT CURB END



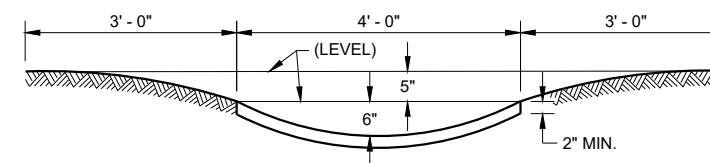
PLAN VIEW
CONCRETE SURFACE DRAIN

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

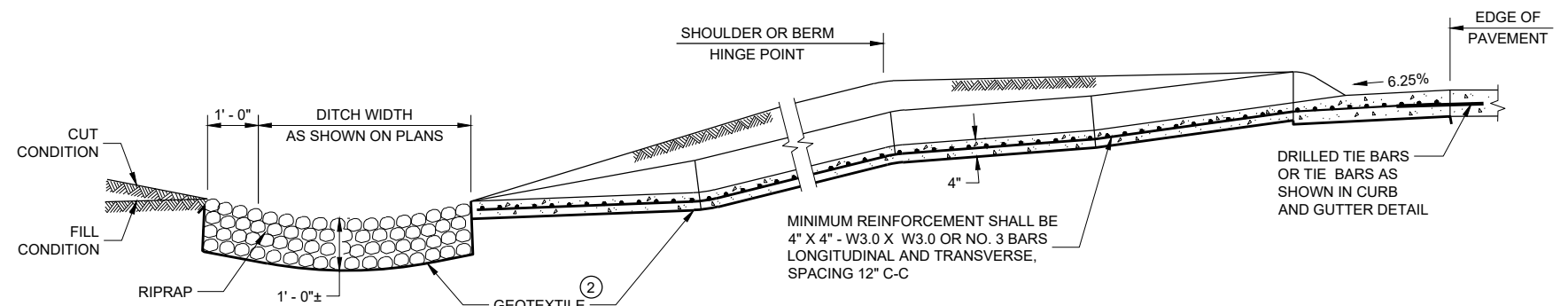
- ① JOINTS SHALL BE $\frac{1}{8}$ " TO $\frac{1}{4}$ " WIDE BY $\frac{1}{2}$ " DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ④ ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



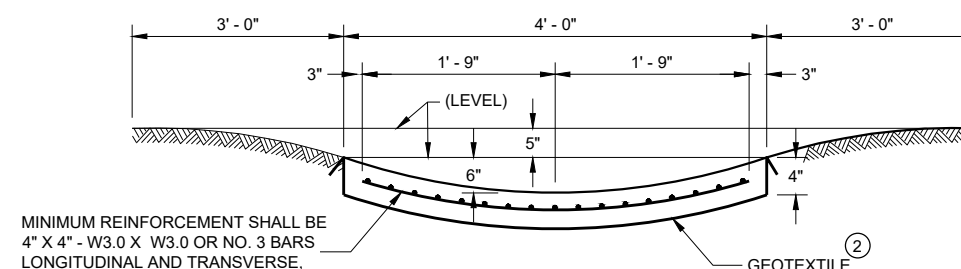
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

APPROVED
May 2023
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

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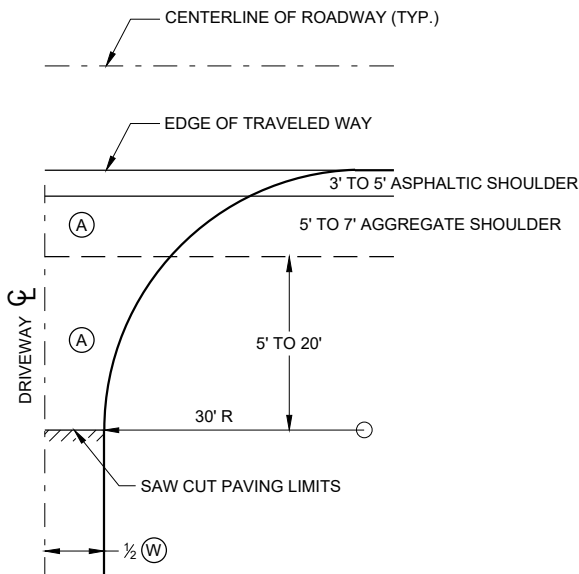
FHWA

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SDD 08D04 - 07

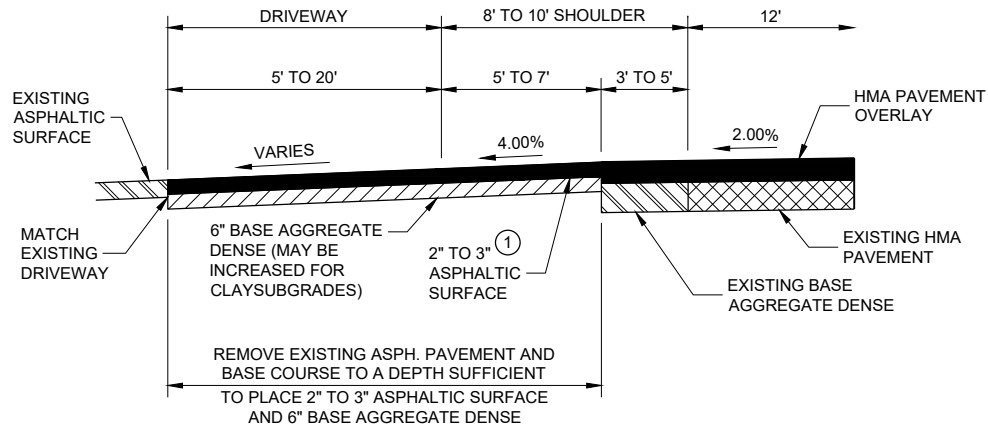
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SDD 08D04 - 07

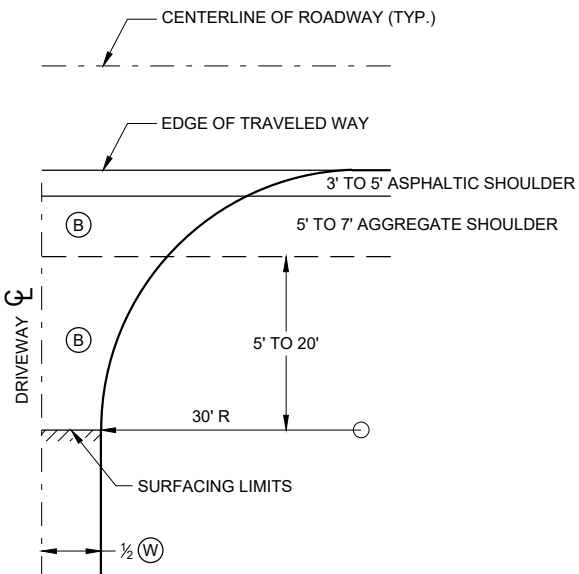


- (A) : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- (B) : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- (W) : DRIVEWAY WIDTH 16' MIN. - 24' MAX.

PLAN VIEW
HALF SECTION

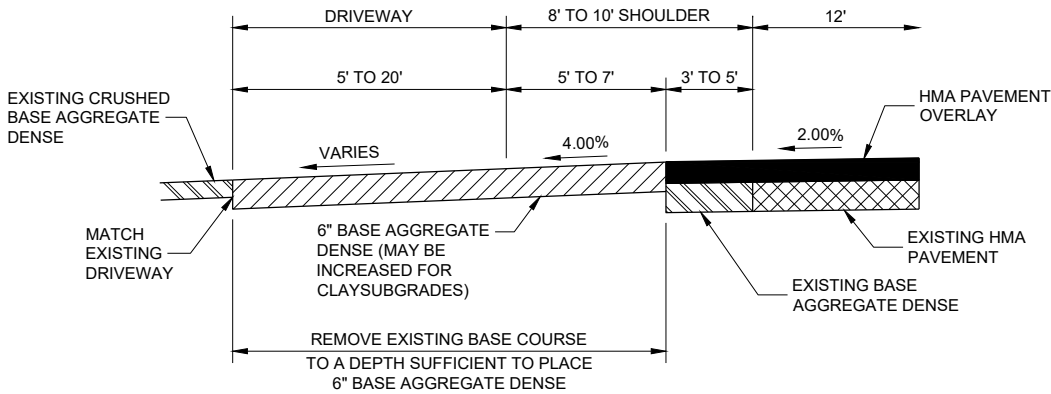


PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS



- (B) : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- (C) : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- (W) : DRIVEWAY WIDTH 16' MIN. - 24' MAX.

PLAN VIEW
HALF SECTION



PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

GENERAL NOTES

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

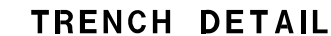
DRIVEWAYS WITHOUT CURB
AND GUTTER RESURFACING
PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 85
FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 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

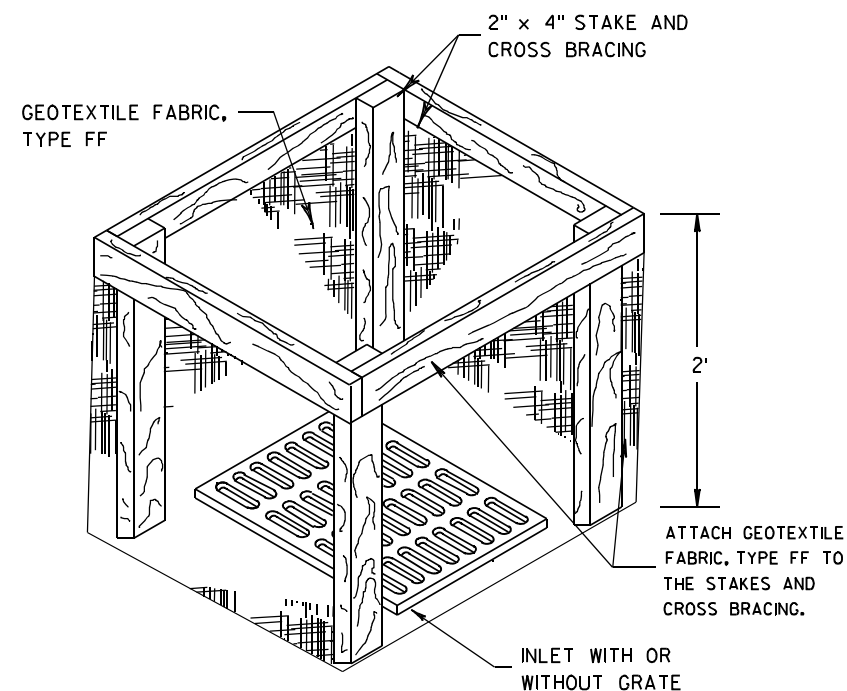
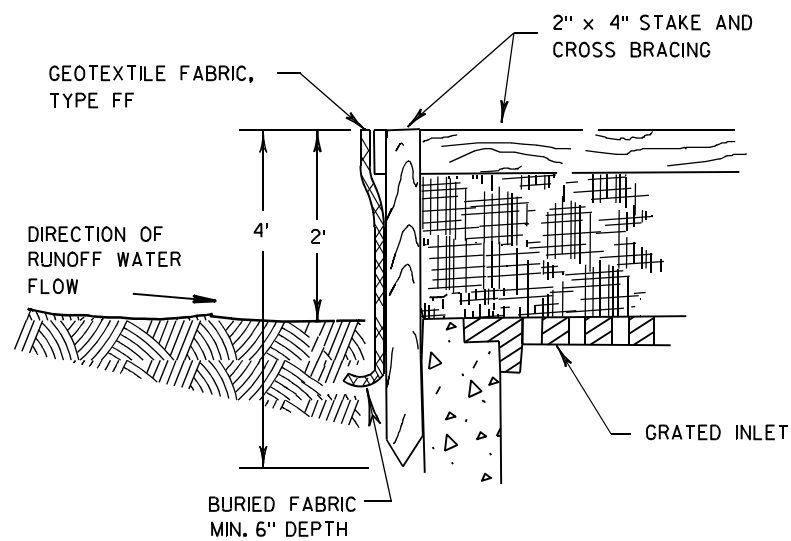
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4-29-05
DATE

/S/ Beth Cannata
CHIEF ROADWAY DEVELOPMENT

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ENGINEER

FHWA



INLET PROTECTION, TYPE A

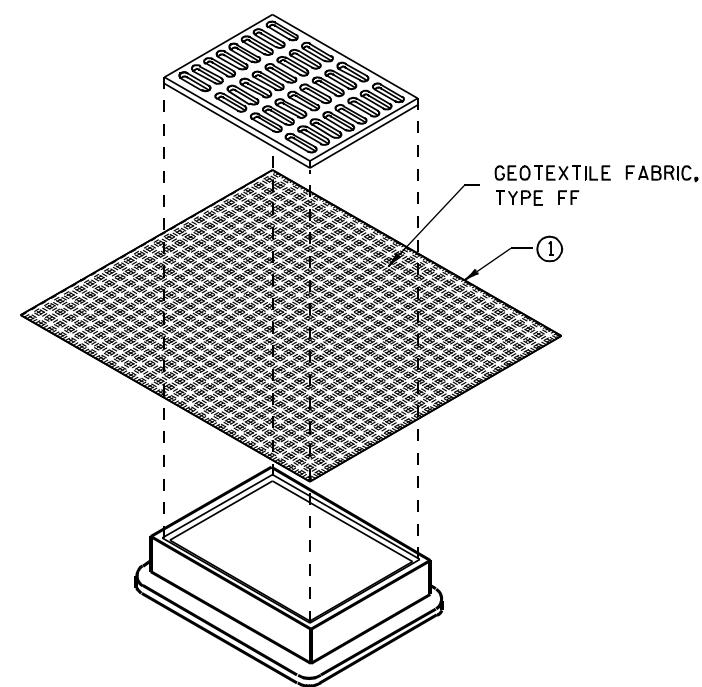
GENERAL NOTES

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

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

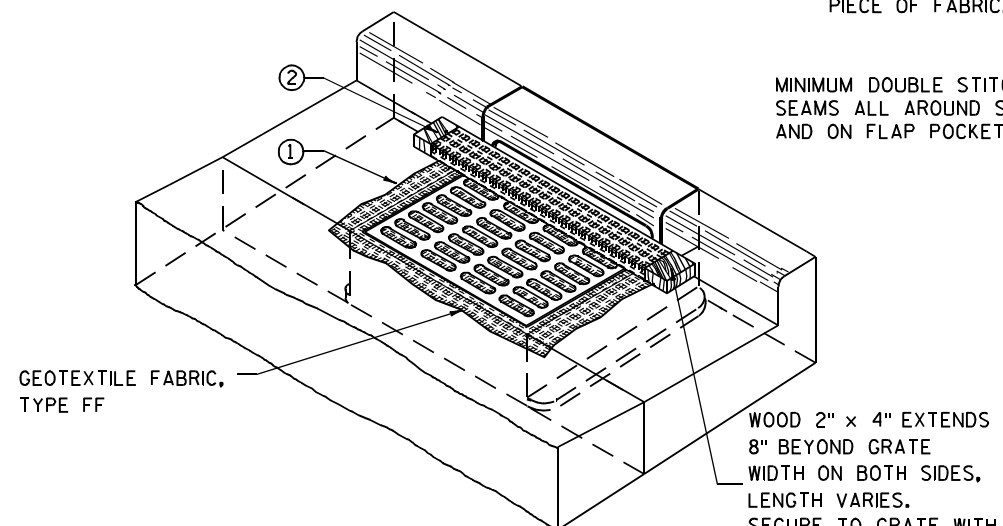
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

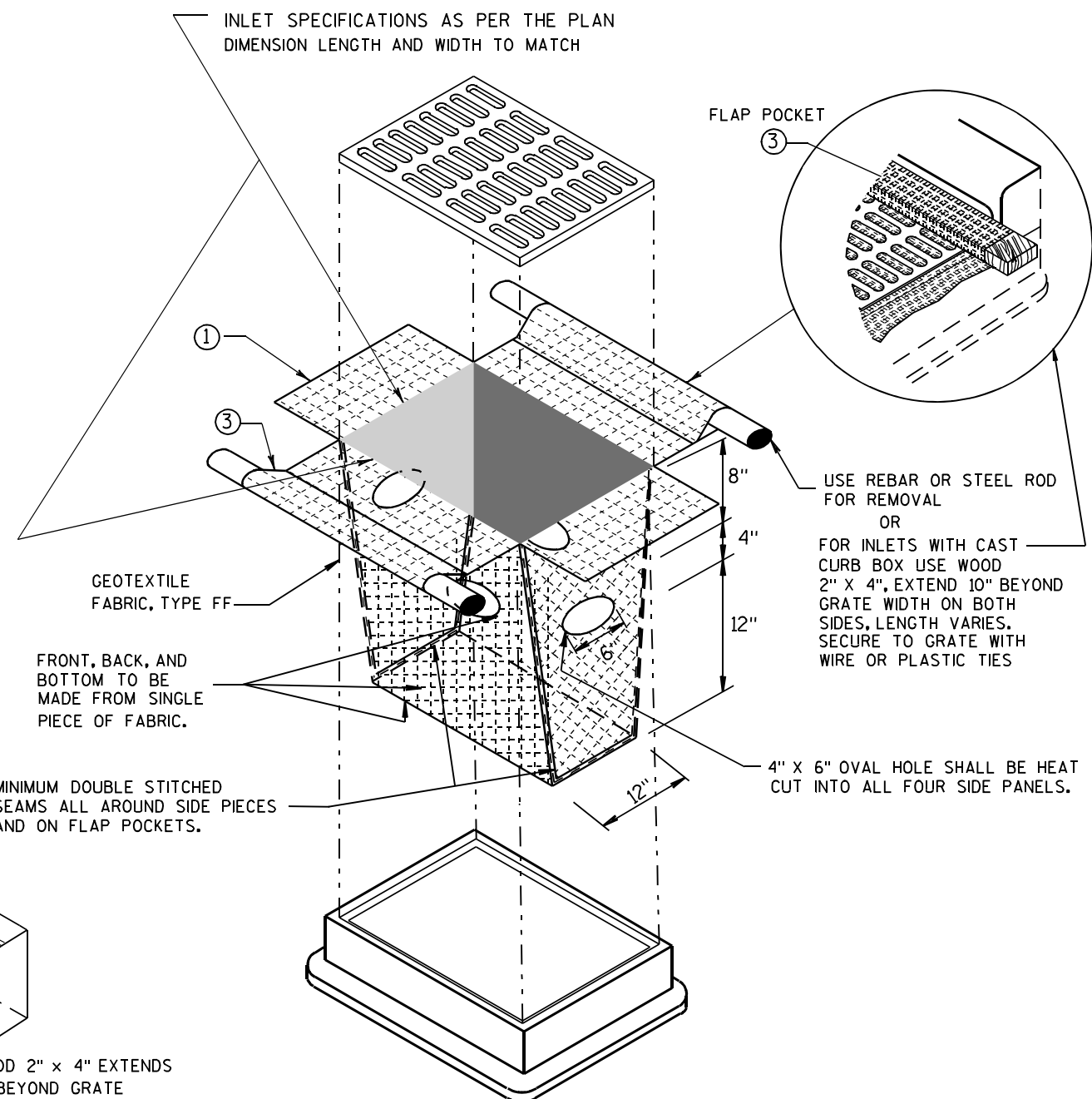
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



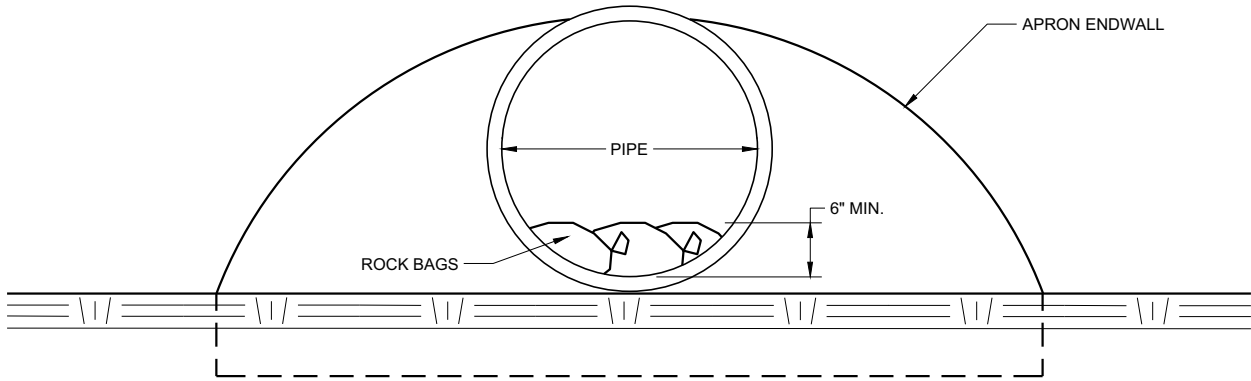
INLET PROTECTION, TYPE D

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

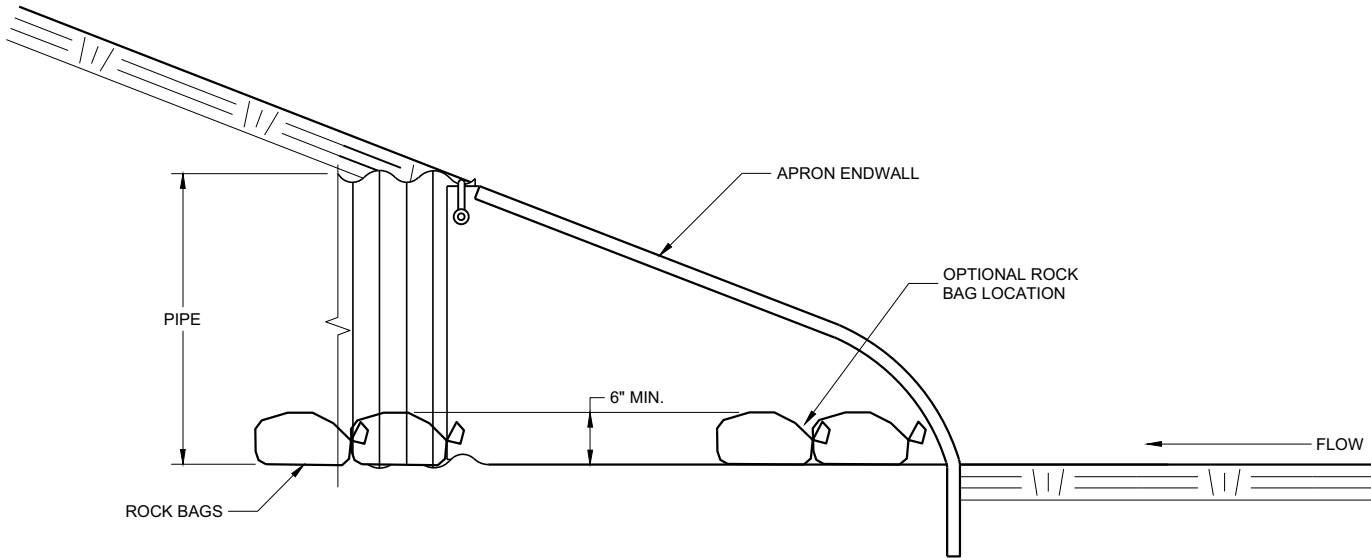
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 87
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



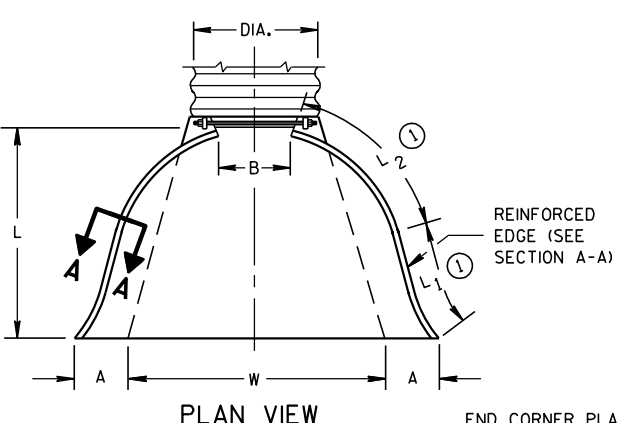
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

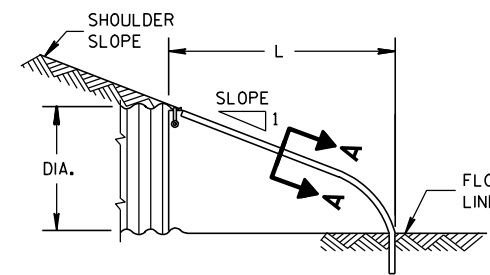
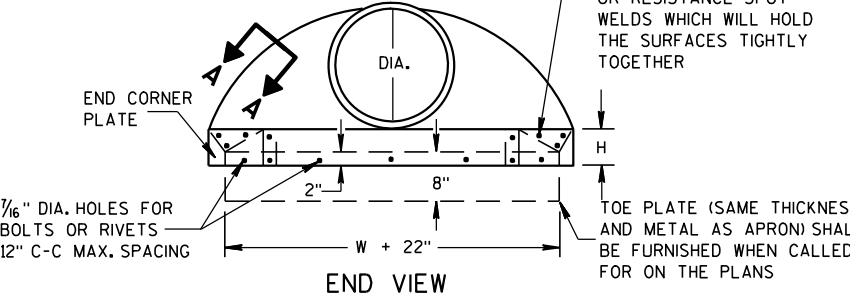
CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 88
FHWA	

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



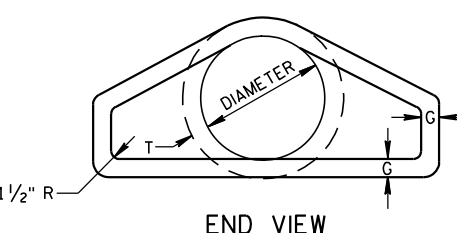
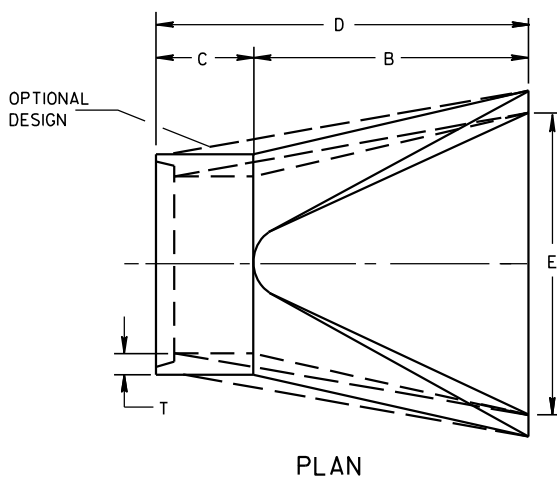
END CORNER PLATES MAY
BE FASTENED TO APRON
PROPER BY BOLTS, RIVETS,
OR RESISTANCE SPOT
WELDS WHICH WILL HOLD
THE SURFACES TIGHTLY
TOGETHER



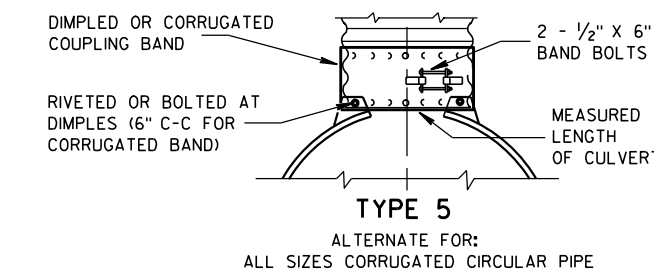
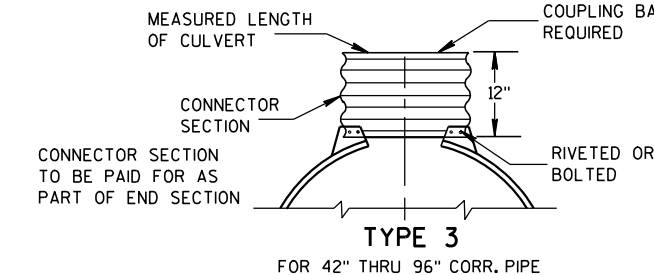
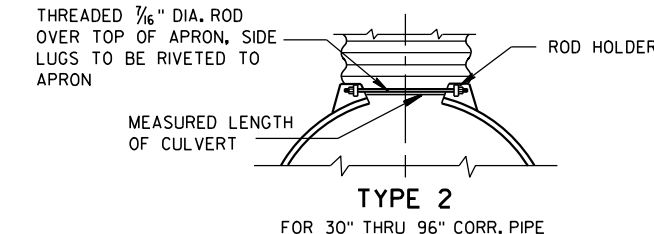
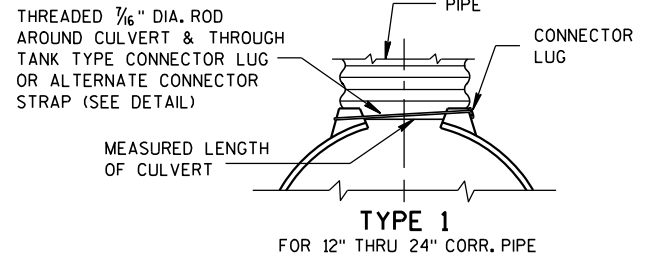
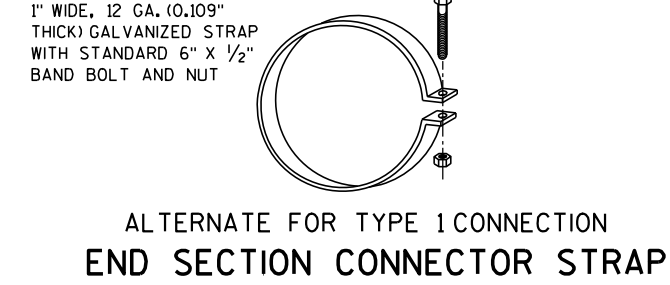
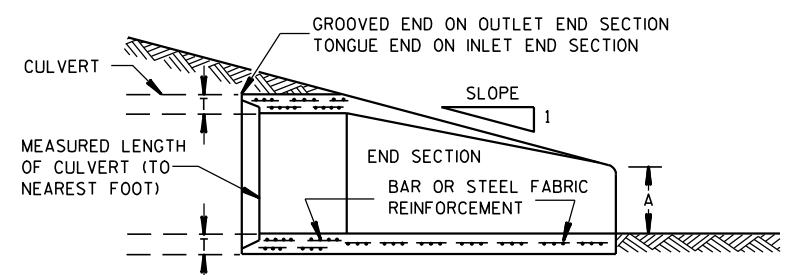
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ² / ₂	9	27	46	73	36	2 ² / 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 4- ^{**} / ₃₅	^{**} / ₉₈ 4- ^{**} / ₁₀₀	90	5 ¹ / ₂	2 ⁵ / ₅ to 1
60	6	^{**} / ₃₀ - ^{**} / ₃₅	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	^{**} / ₂₄ - ^{**} / ₃₀	^{**} / ₇₂ - ^{**} / ₇₈	^{**} / ₂₁ - ^{**} / ₂₇	99	102	5 ¹ / ₂	2 to 1
72	7	^{**} / ₂₄ - ^{**} / ₃₆	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	^{**} / ₂₄ - ^{**} / ₃₆	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

* MINIMUM
** MAXIMUM



LONGITUDINAL SECTION
CONCRETE ENDWALLS



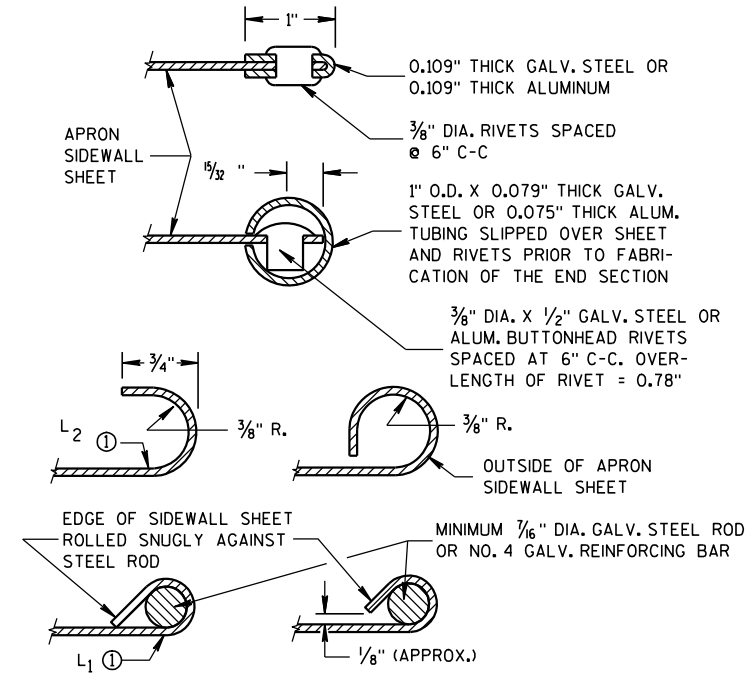
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

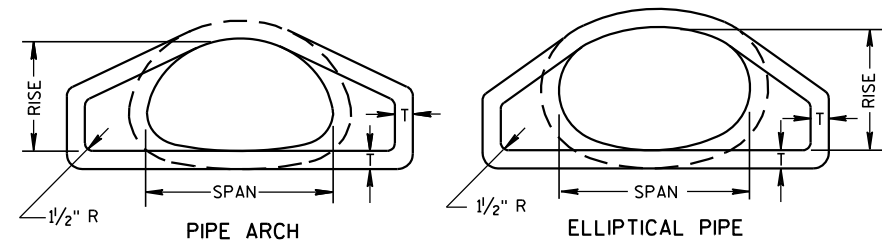
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

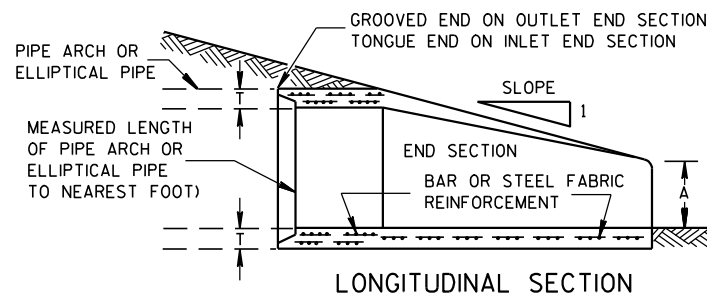
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOP 89
NEER
FHWA

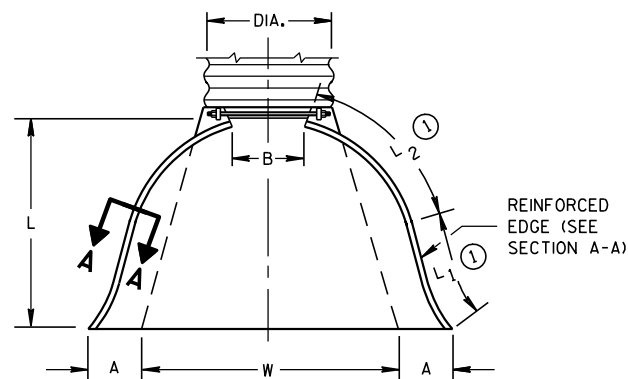


END VIEW



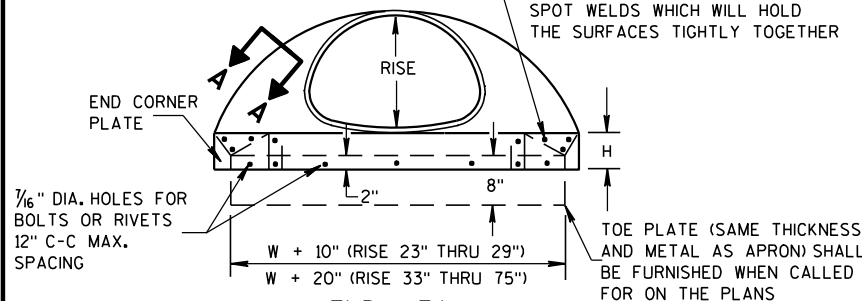
LONGITUDINAL SECTION

CONCRETE ENDWALLS

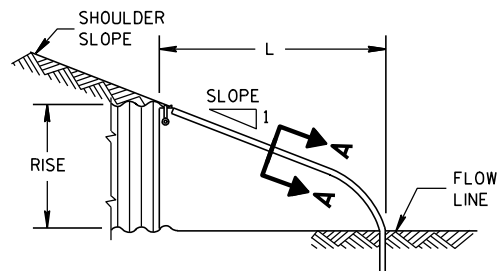


PLAN VIEW

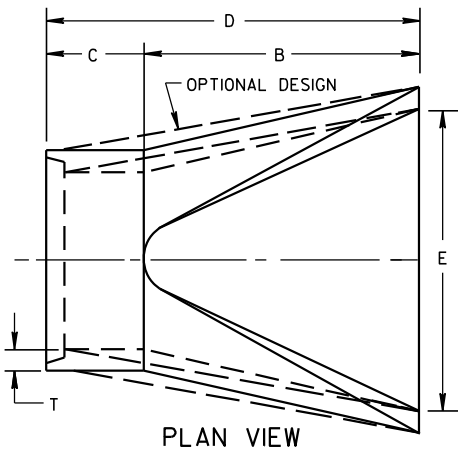
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



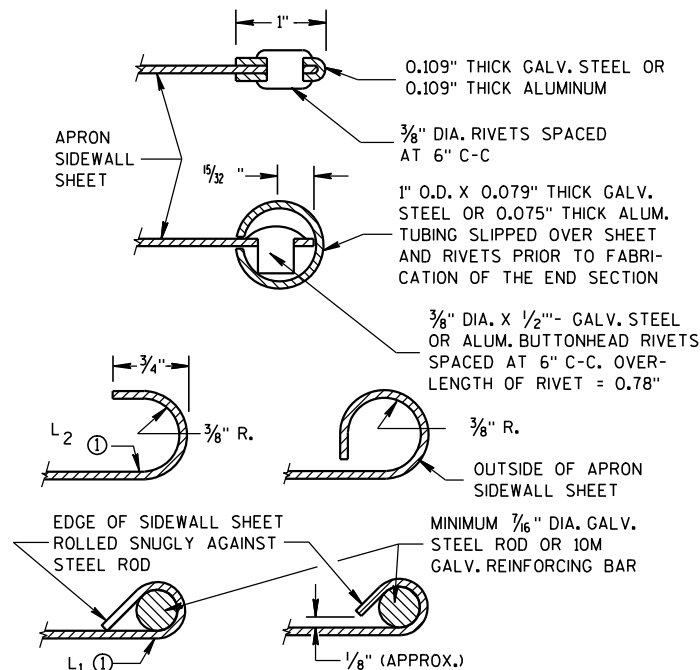
END VIEW



SIDE ELEVATION
METAL ENDWALLS



PLAN VIEW



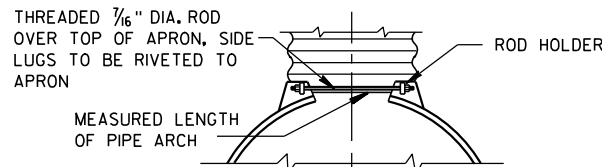
SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1/2")	L1 ①	L2 ①	W (±2")		
					(±1")	(MAX.)	(±1")	(±1/2")	①	①	(±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1/2")	L1 ①	L2 ①	W (±2")		
					(±1")	(MAX.)	(±1")	(±1/2")	①	①	(±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

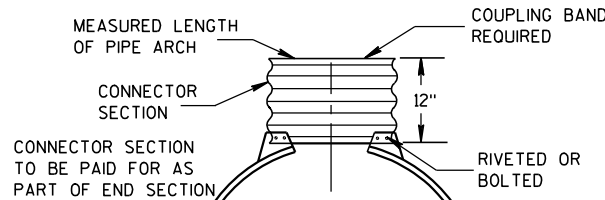
NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



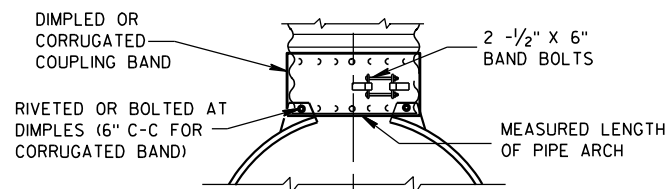
TYPE 2

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



TYPE 3

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



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHES

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

CONNECTION DETAILS

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

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

**NOMINAL SIZE

GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

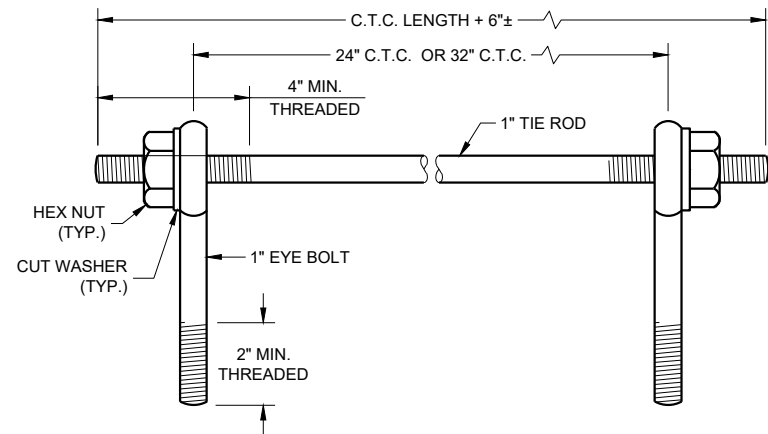
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE

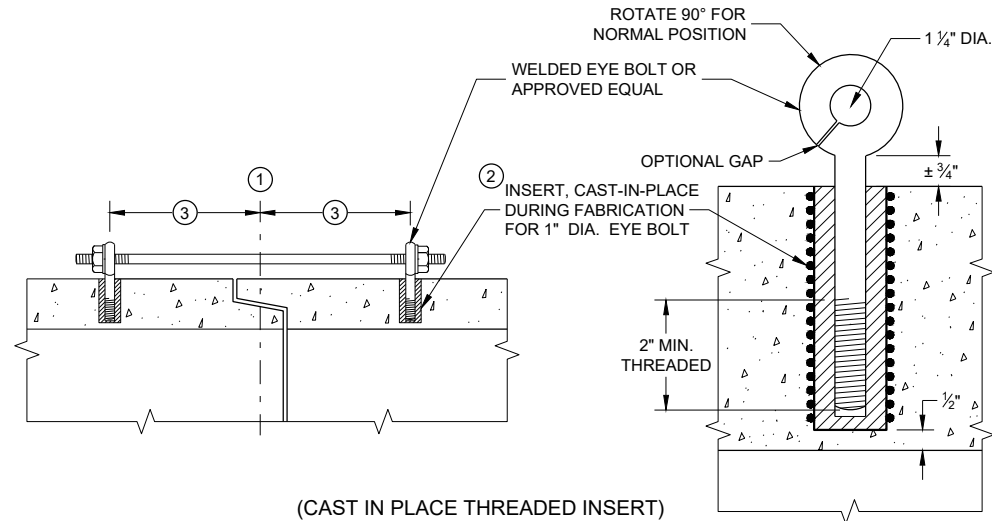
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

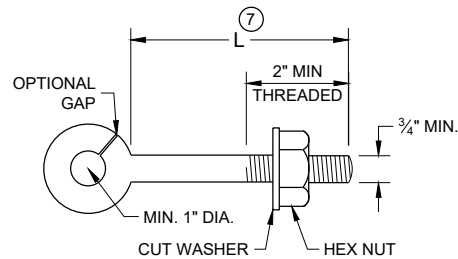
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

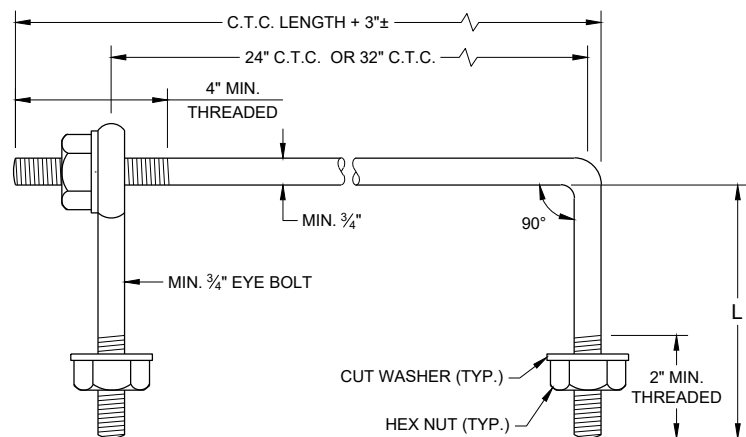
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

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

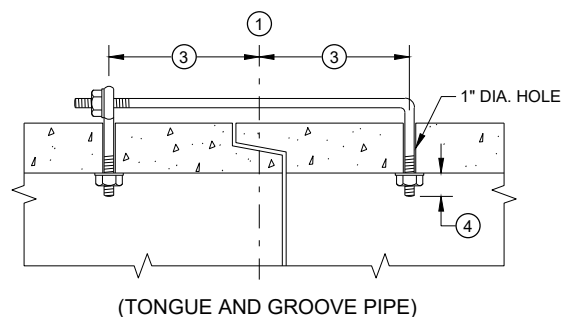


EYE BOLT 7

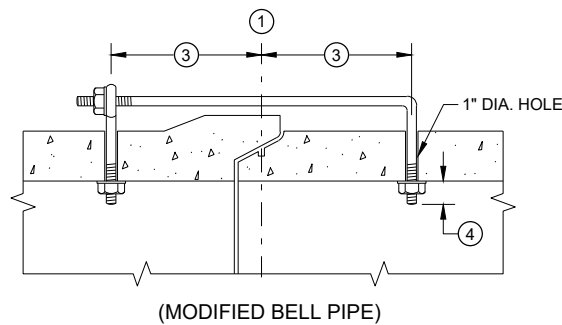
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

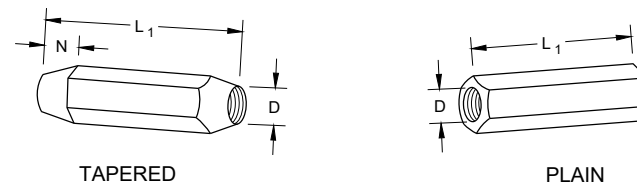
LONGITUDINAL SECTION
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

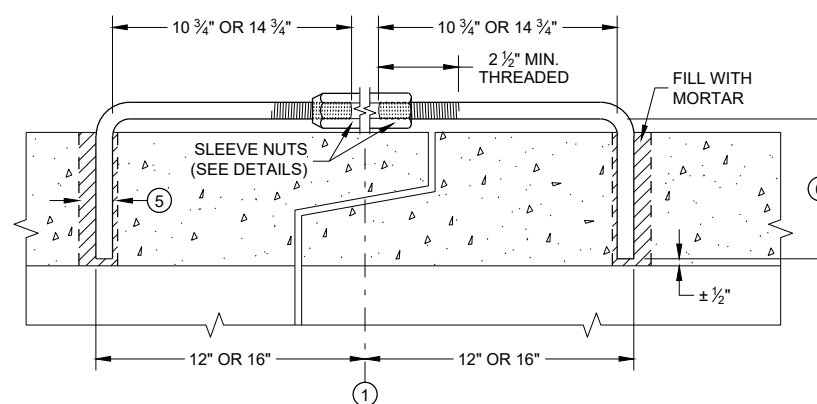
DIMENSIONS SHOWN ARE IN INCHES



TAPERED

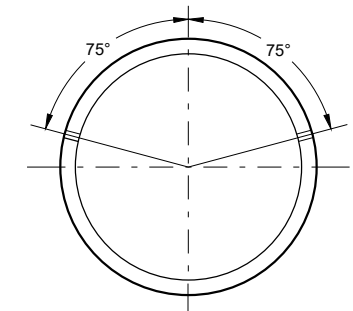
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



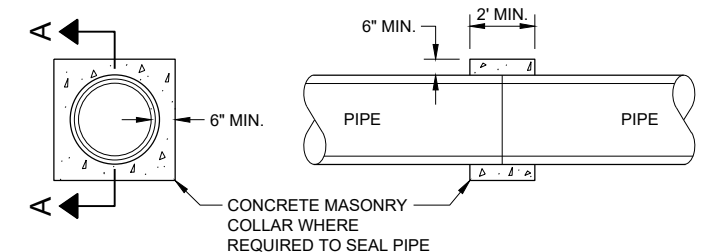
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION

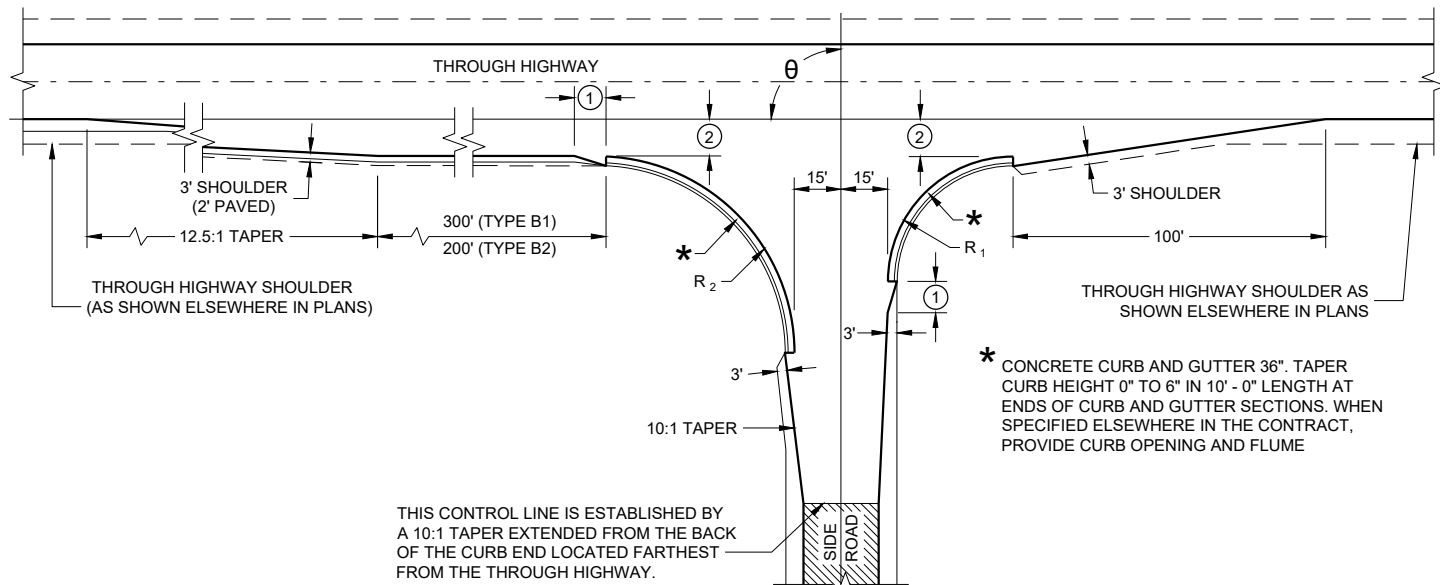


SECTION A - A
CONCRETE COLLAR DETAIL

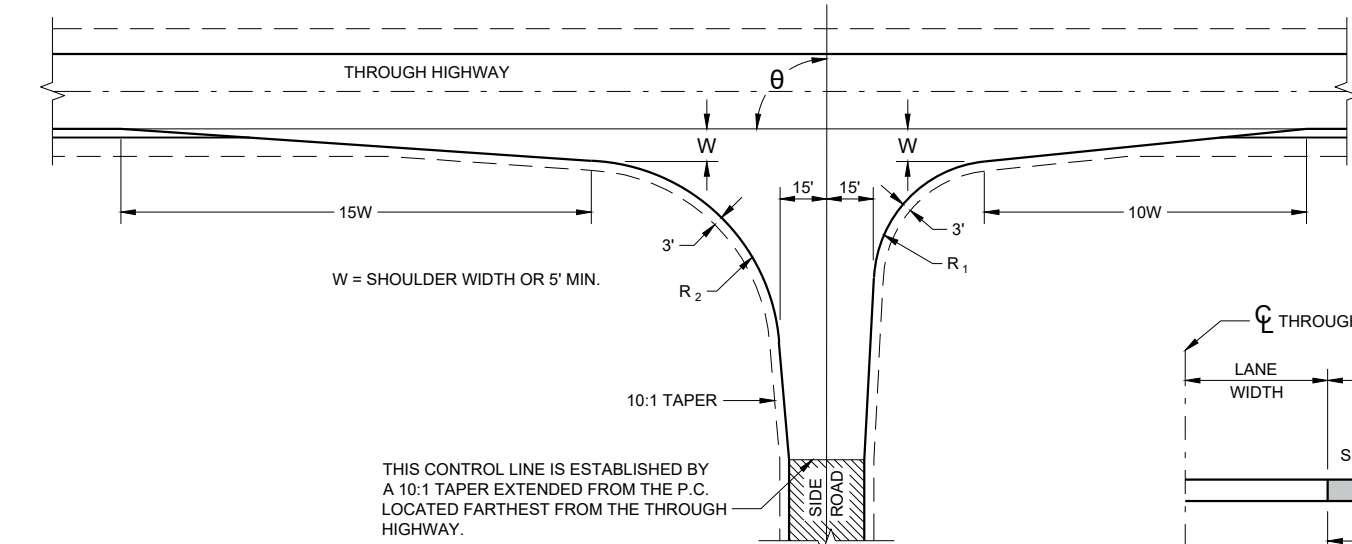
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

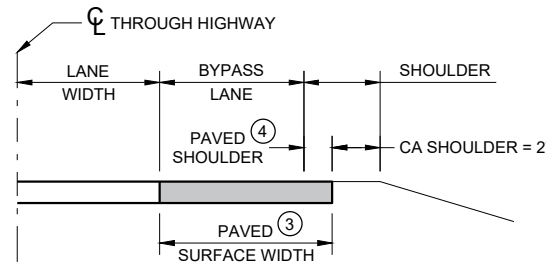
APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



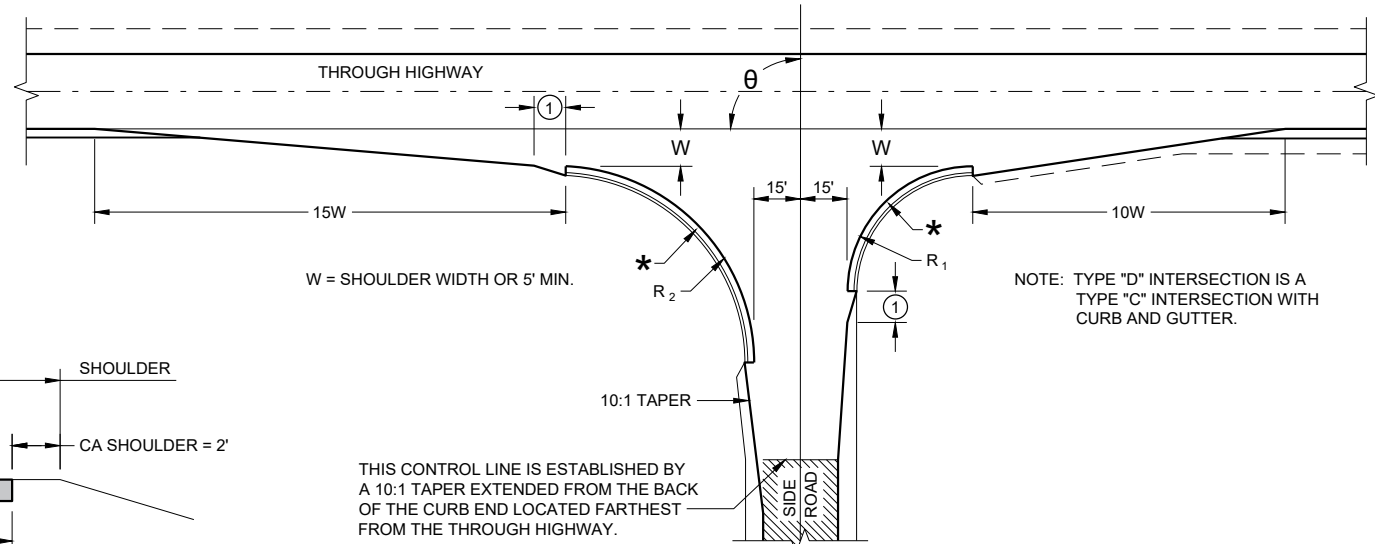
TYPE "B1" AND "B2"



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.

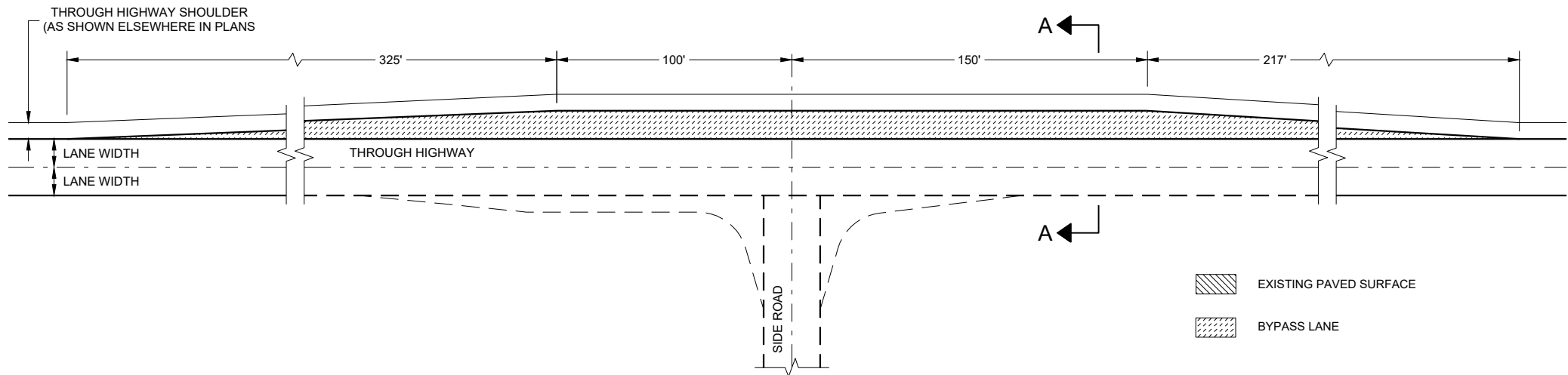
SIDE ROAD SURFACING NOTE

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.

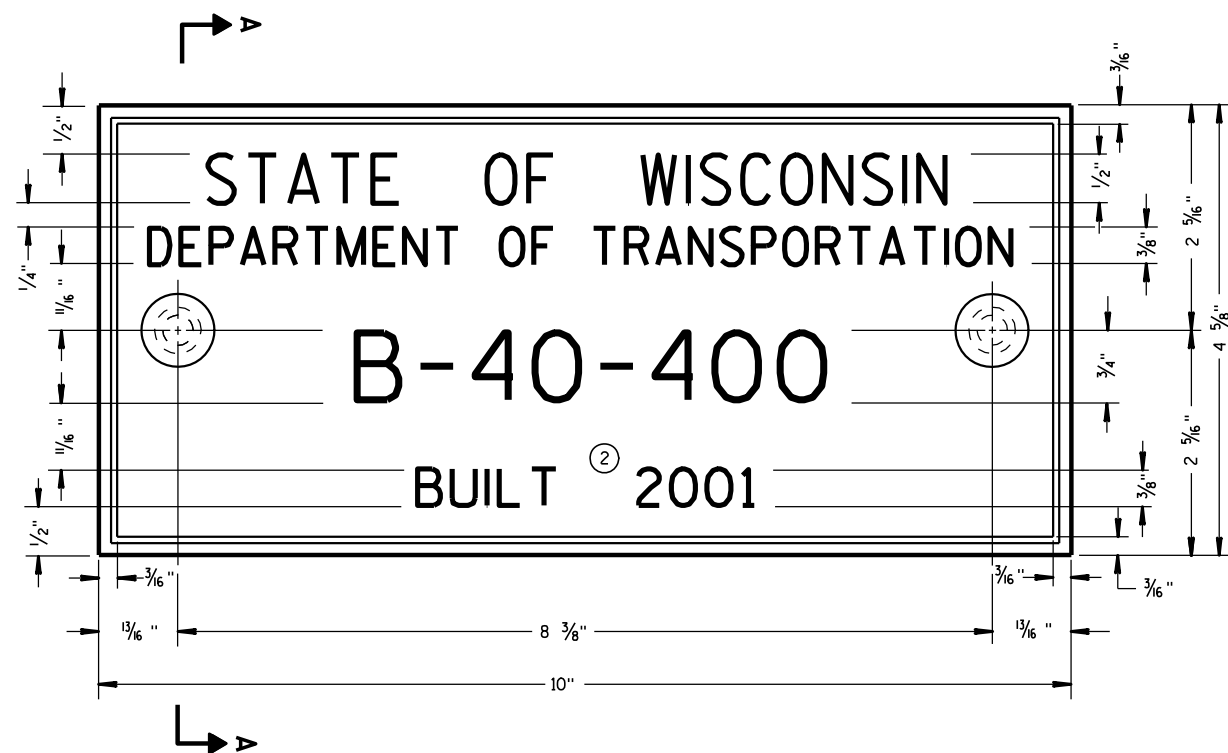
- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.
** 10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
- ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH
- PC CONCRETE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



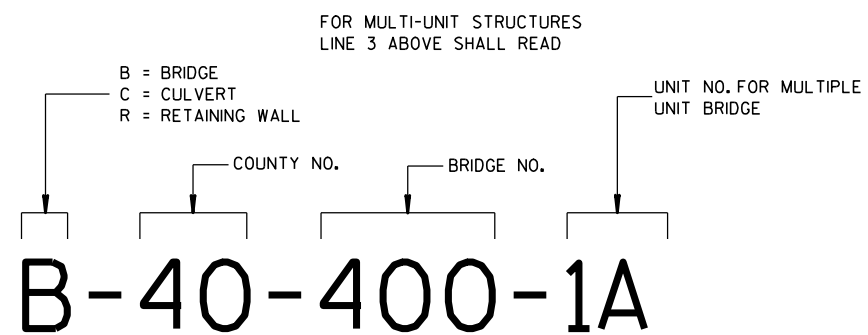
TEE INTERSECTION BYPASS LANE DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



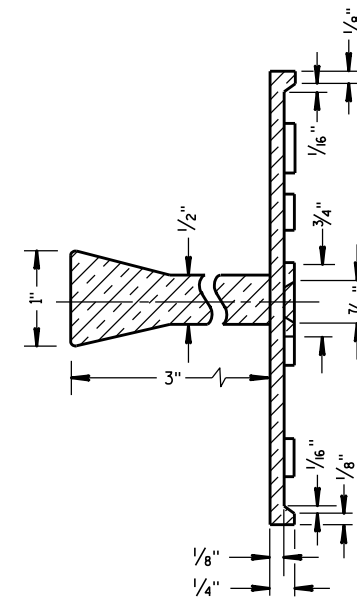
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

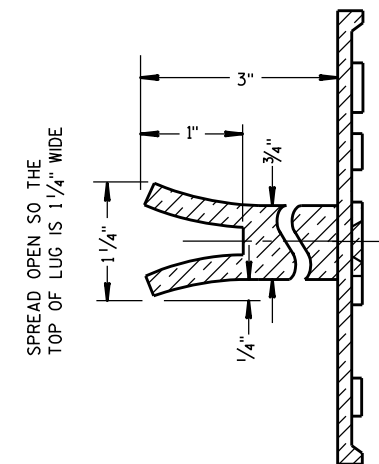
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

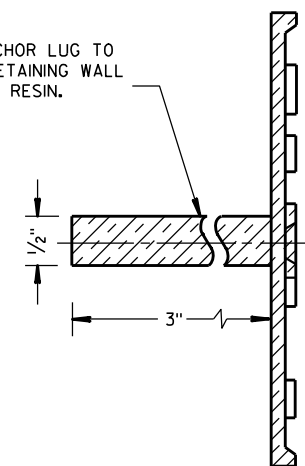


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

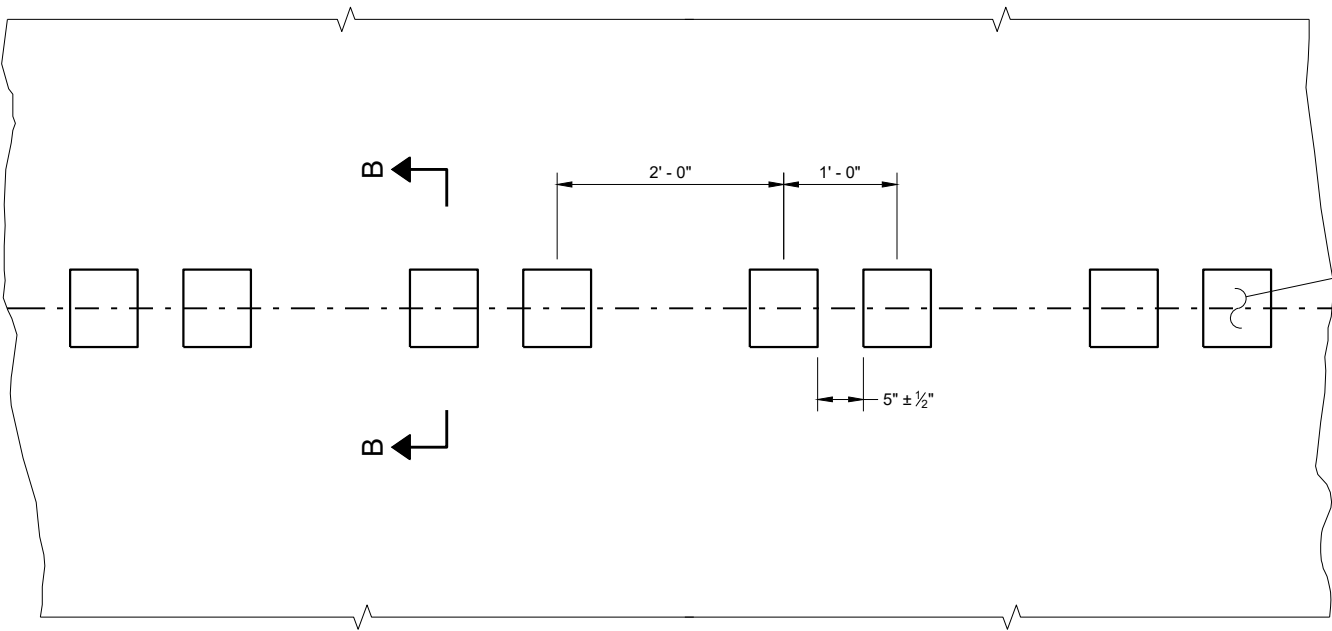
DATE

3/26/10

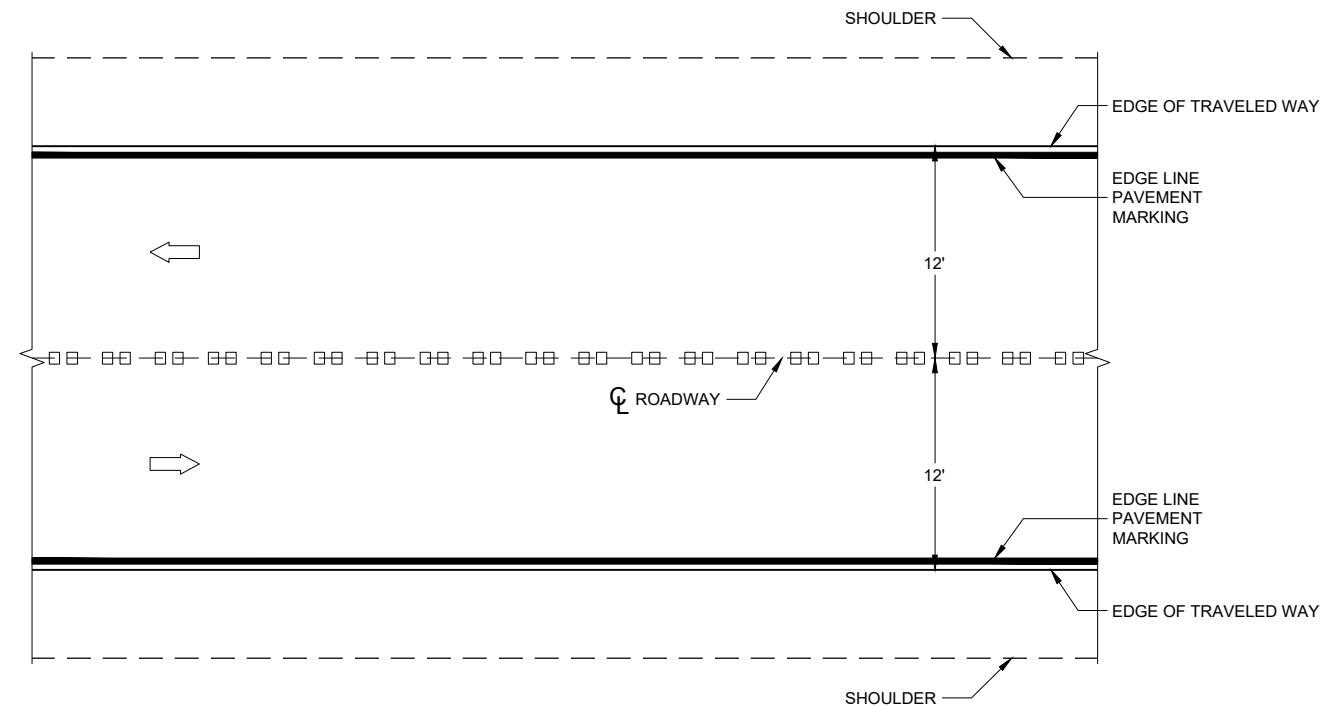
FHWA

/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER

JEER

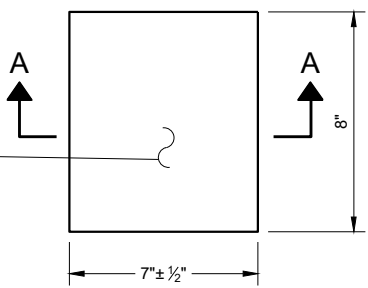


PLAN DETAIL VIEW

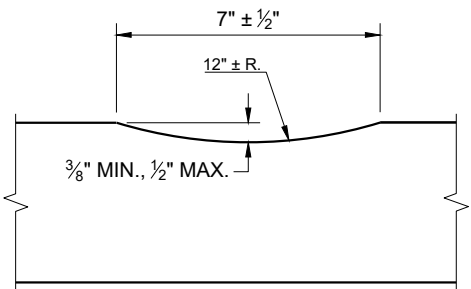


PLAN VIEW

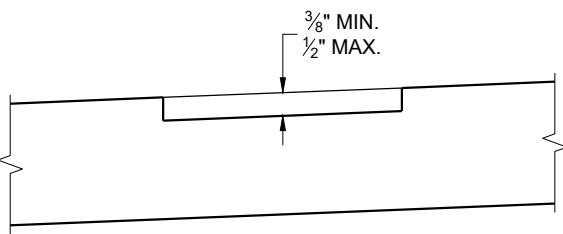
CENTERLINE RUMBLE STRIPS - ASPHALT



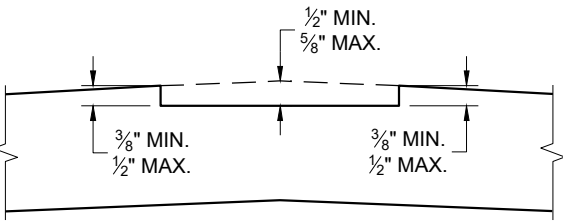
PLAN VIEW
(SINGLE GROOVE)



SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY

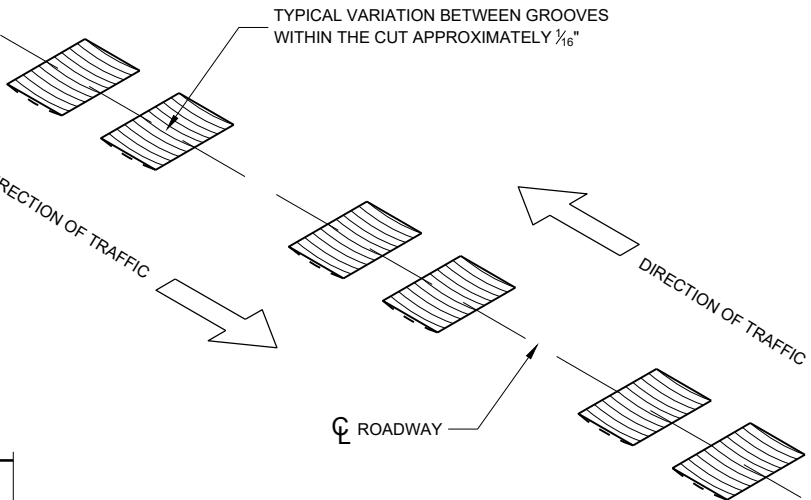


SECTION B - B
CROWNED ROADWAY

GENERAL NOTES

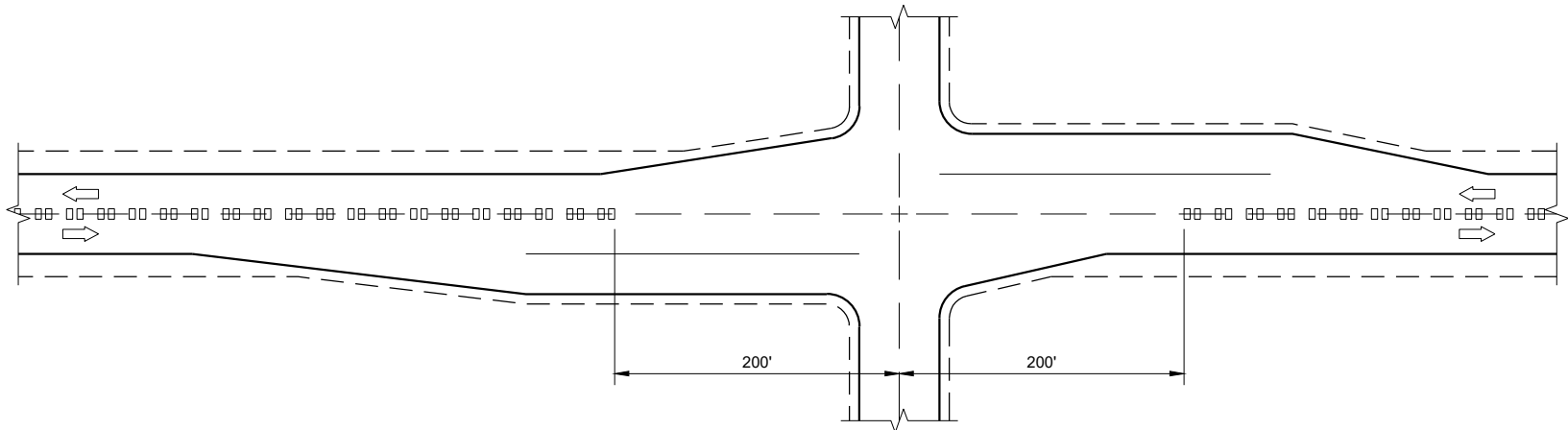
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

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

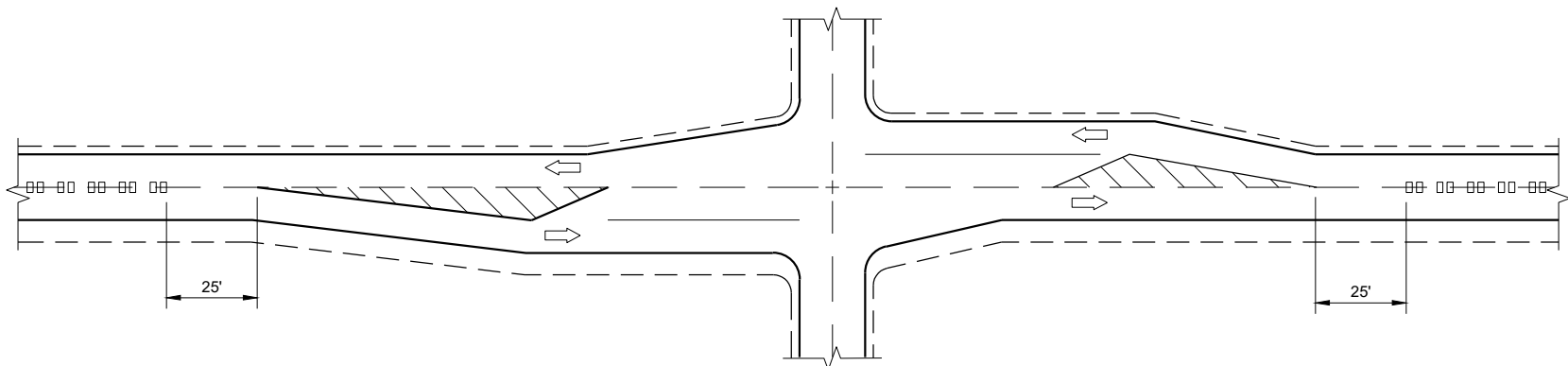


CENTERLINE RUMBLE STRIPS - ASPHALT

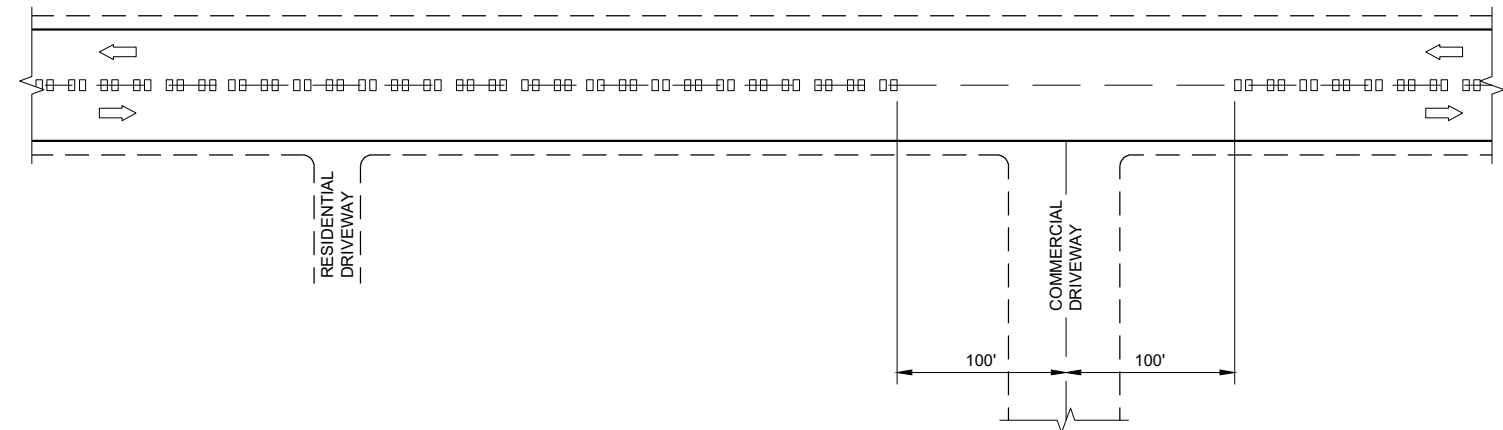
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



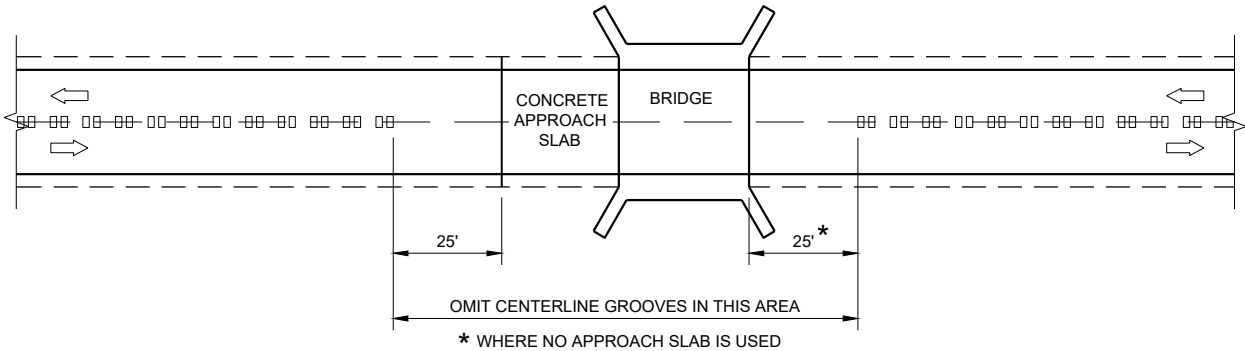
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



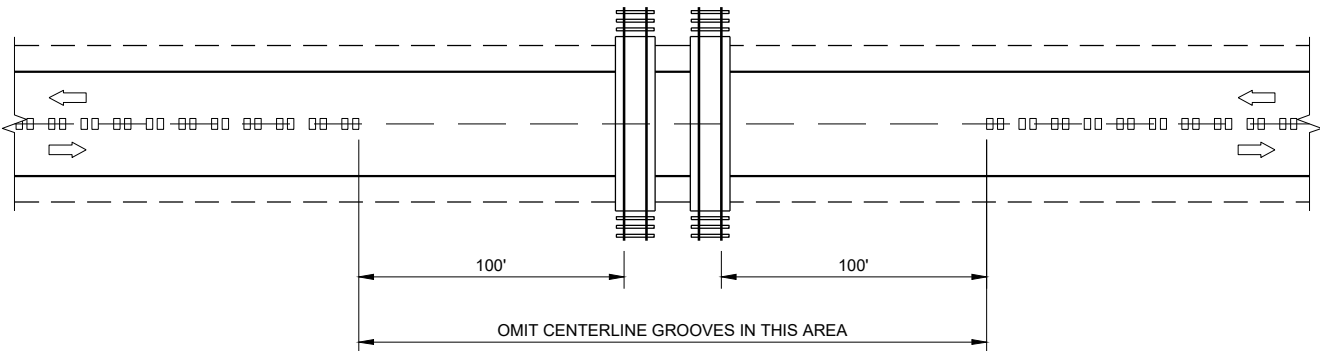
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES

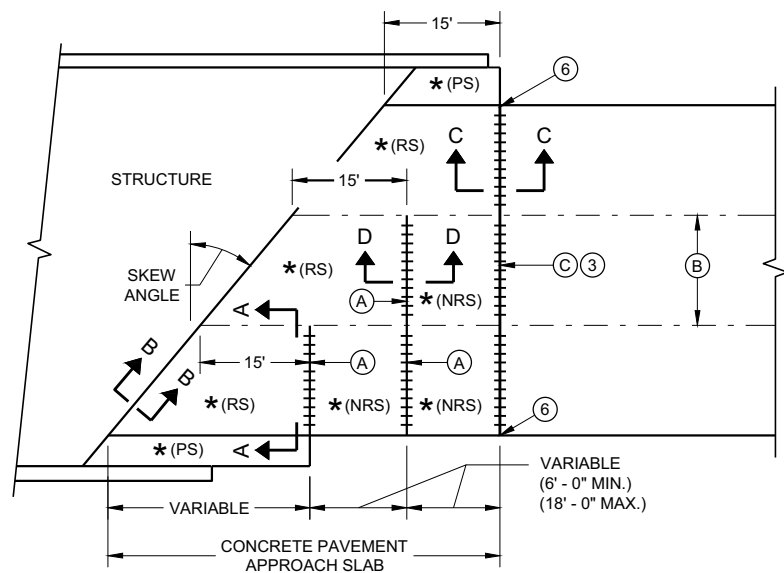


CENTERLINE GROOVES AT RAILROADS

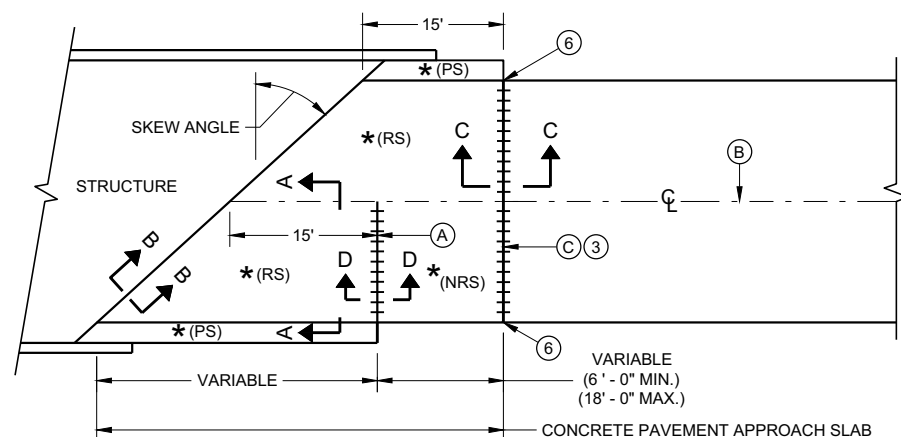
CENTER LINE
RUMBLE STRIPS -
INTERSECTIONS, DRIVEWAYS,
BRIDGES, RAIL ROADS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

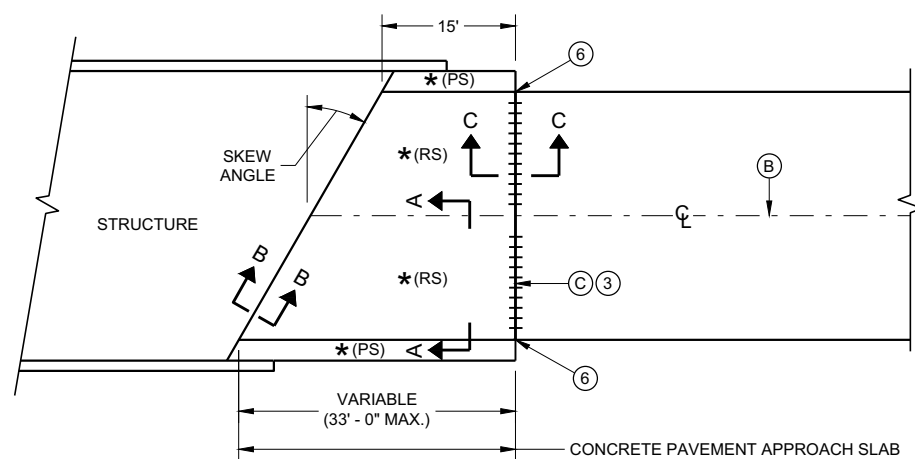
APPROVED
May 2023
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT ENGINEER
95
FHWA



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



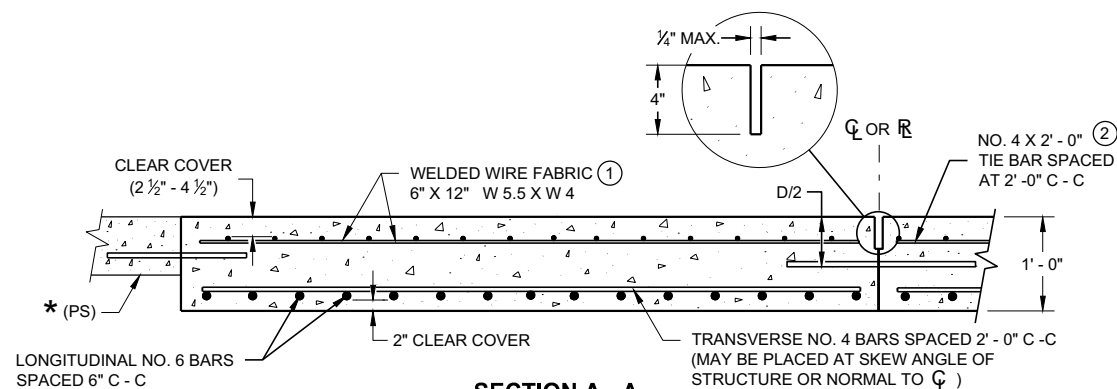
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



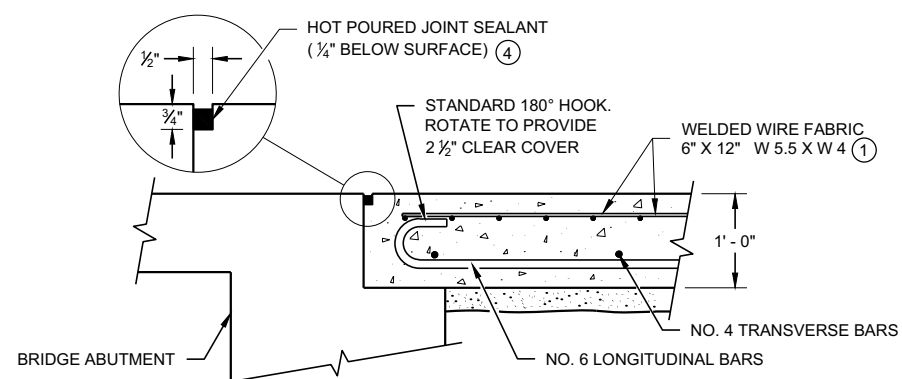
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

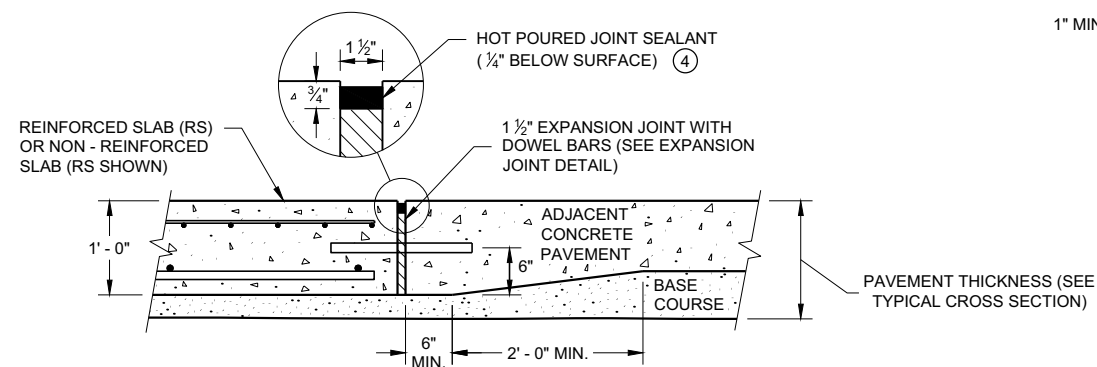
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



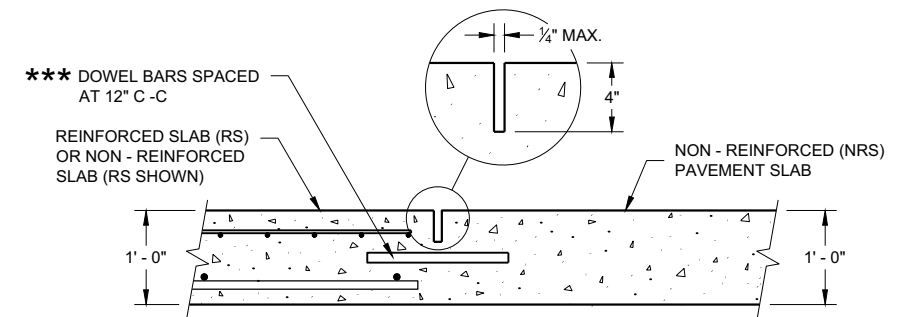
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

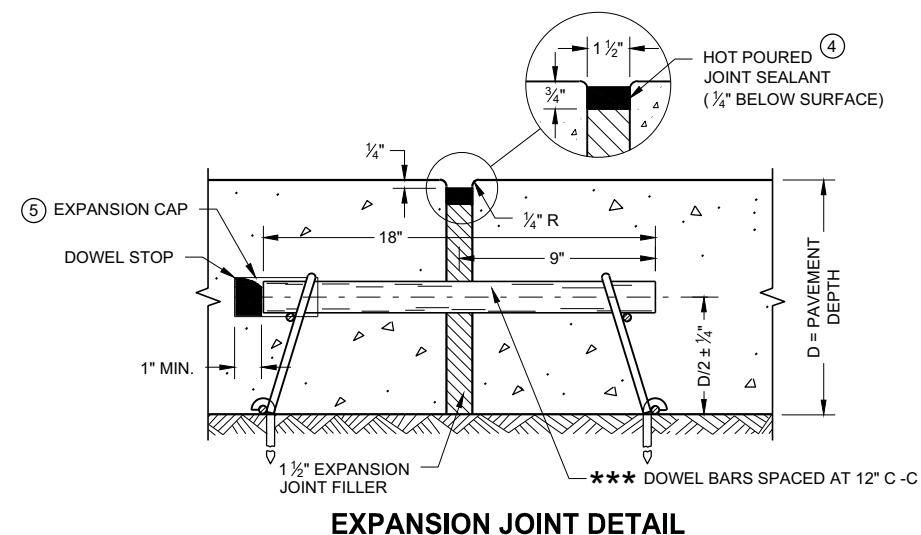
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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



**SECTION D - D
CONTRACTION JOINT**

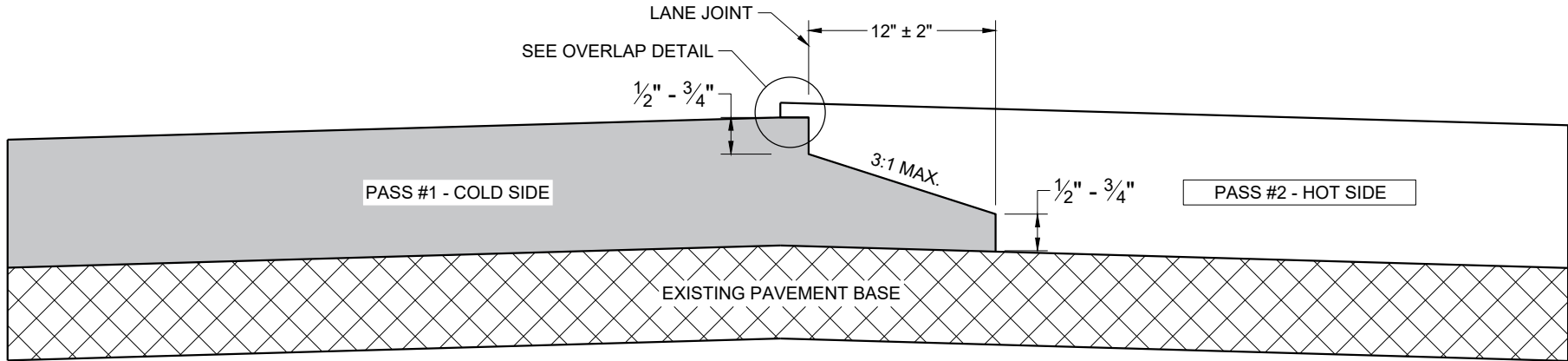


EXPANSION JOINT DETAIL

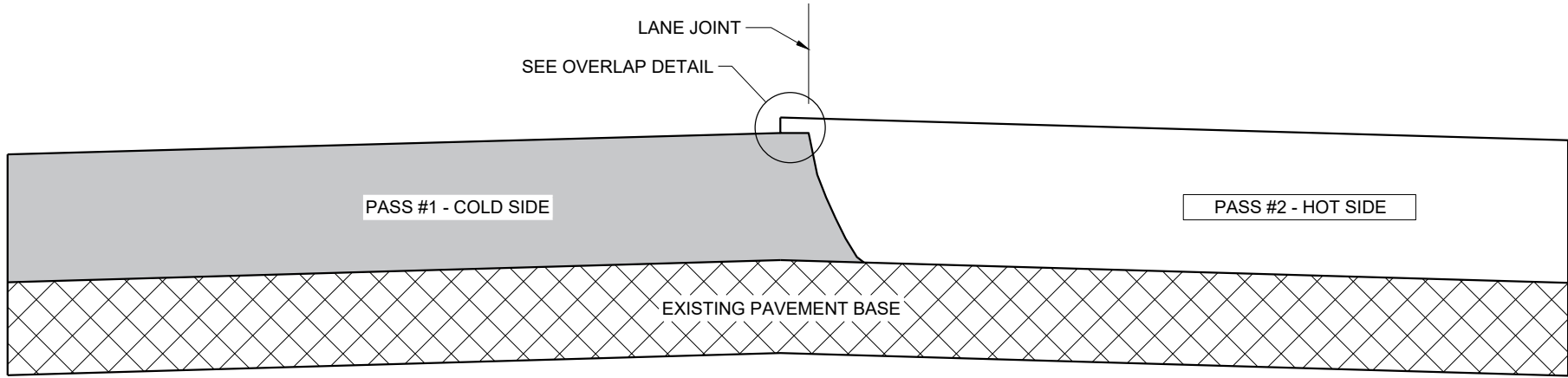
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

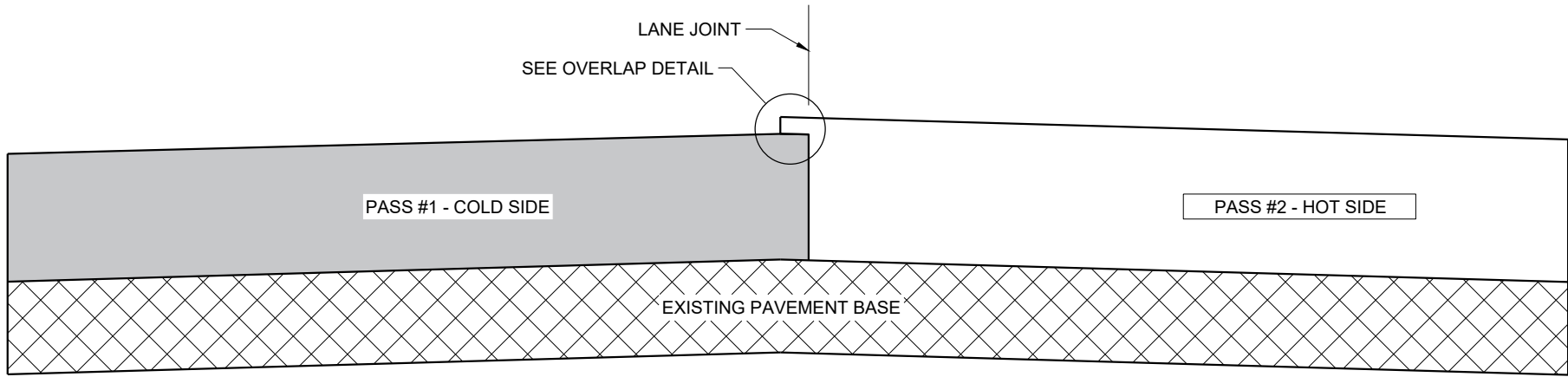
APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR 96
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

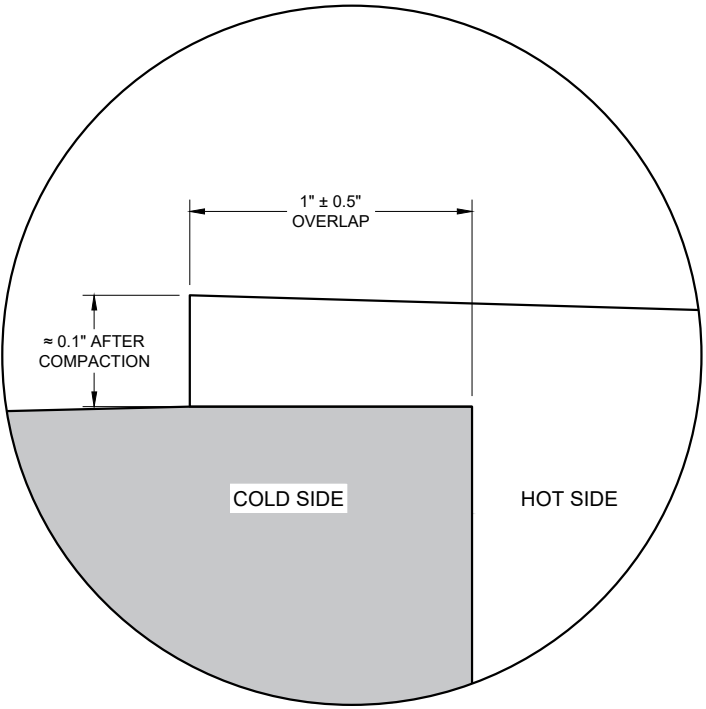
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 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

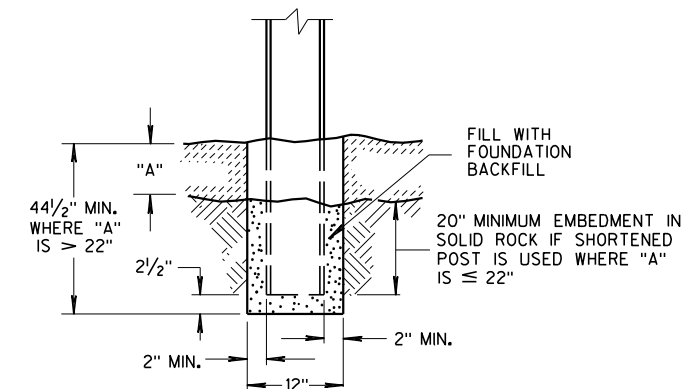
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 97

FHWA

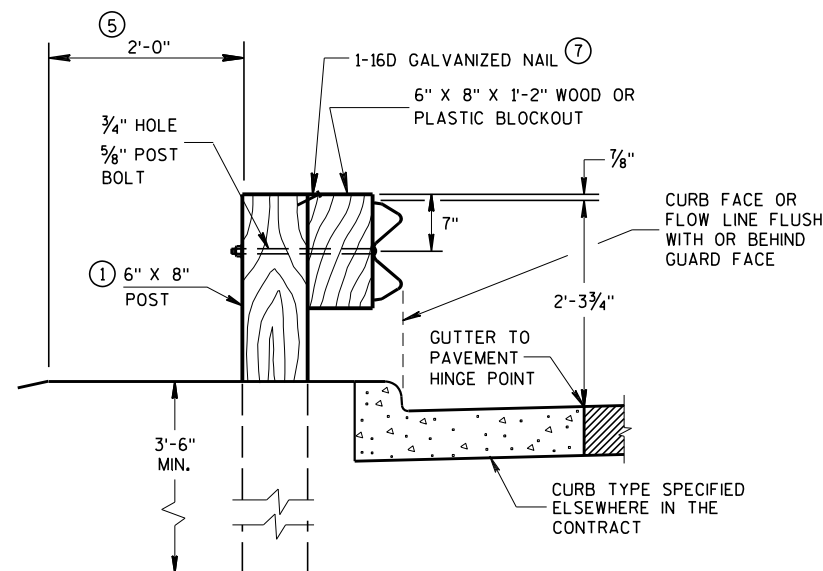
GENERAL NOTES

- W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" 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 POSTS 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 DAMAGED SPELTER 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 HINGE 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 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE 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.

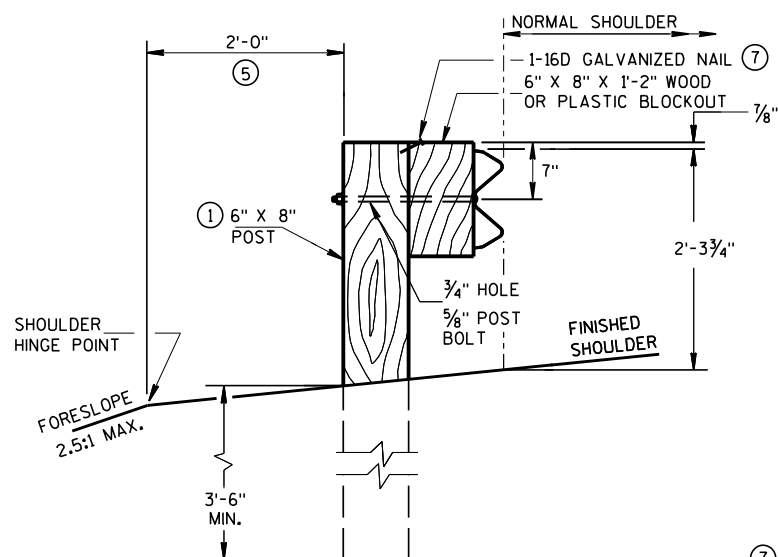
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



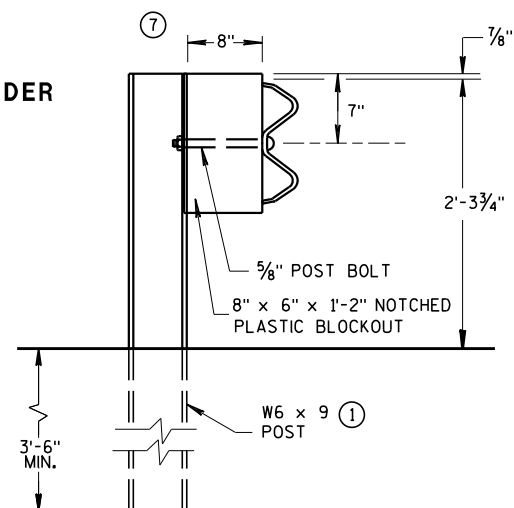
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



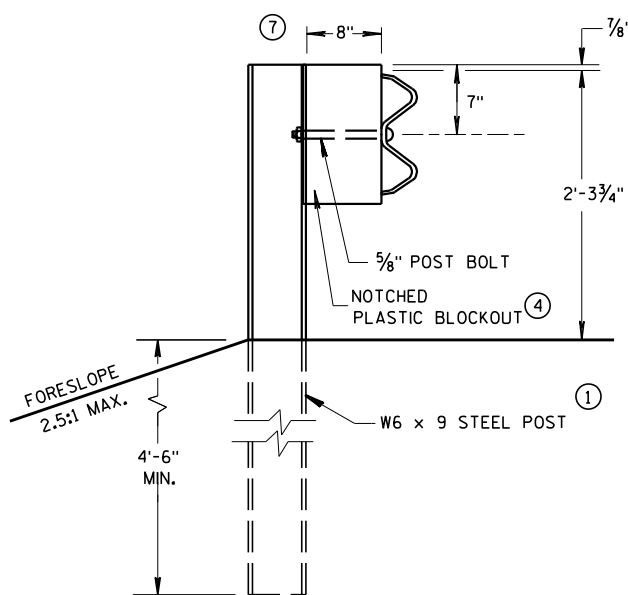
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION

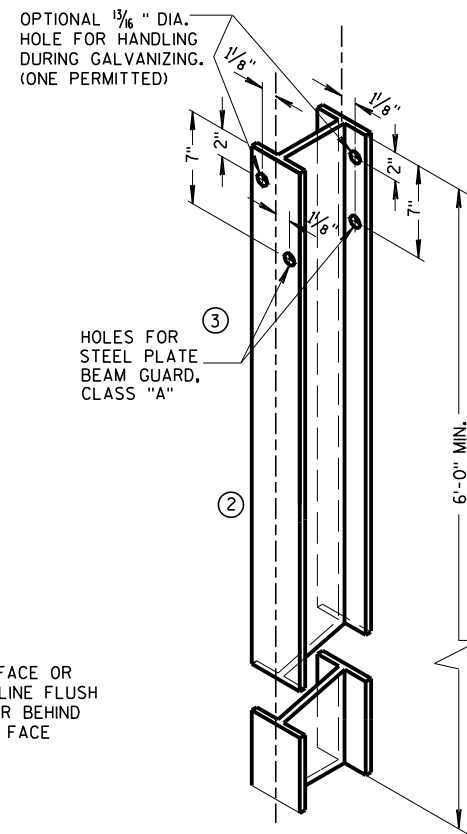


END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



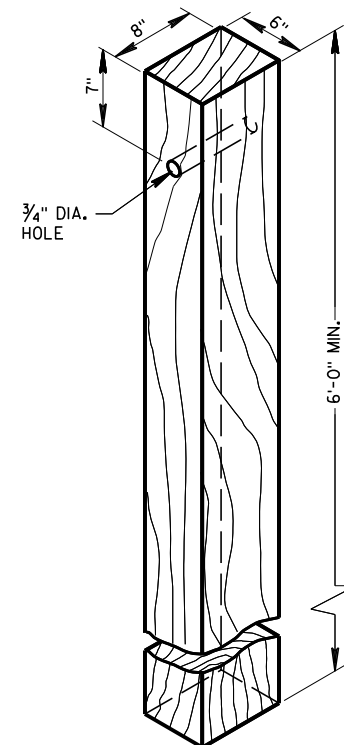
END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

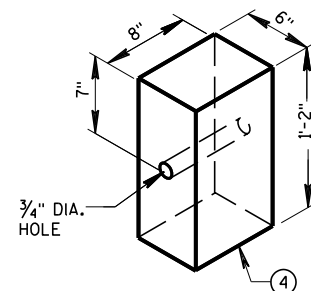


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①

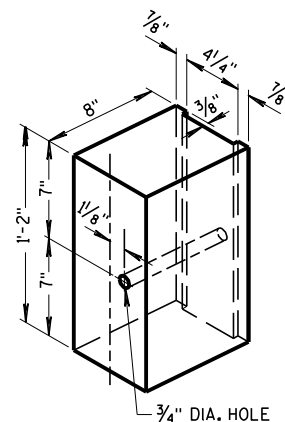
ALL HOLES 1/8" DIAMETER EXCEPT AS NOTED



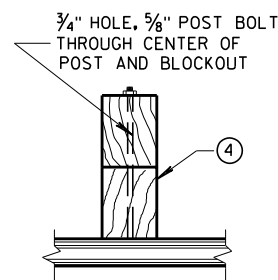
WOOD POST
(6"X8") NOMINAL



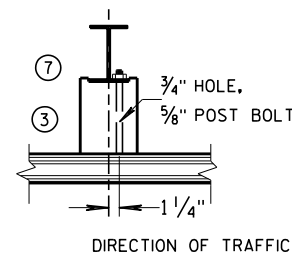
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS ①



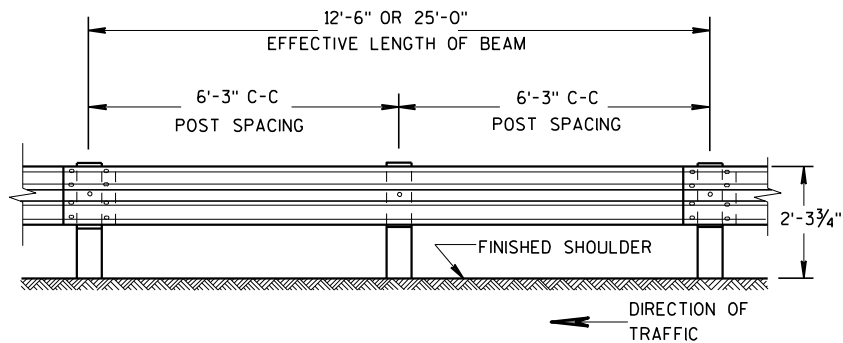
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

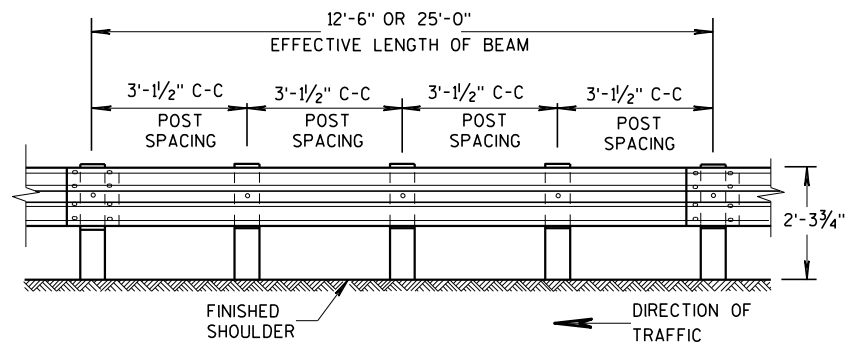
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



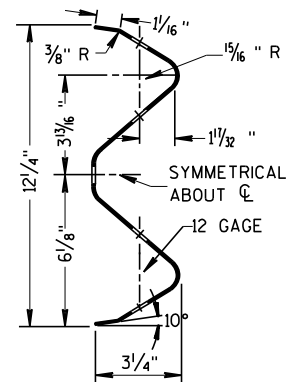
FRONT VIEW

POST SPACING STANDARD INSTALLATION

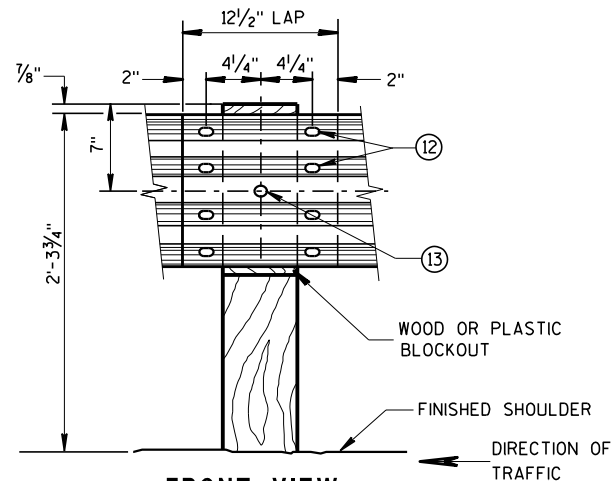


FRONT VIEW

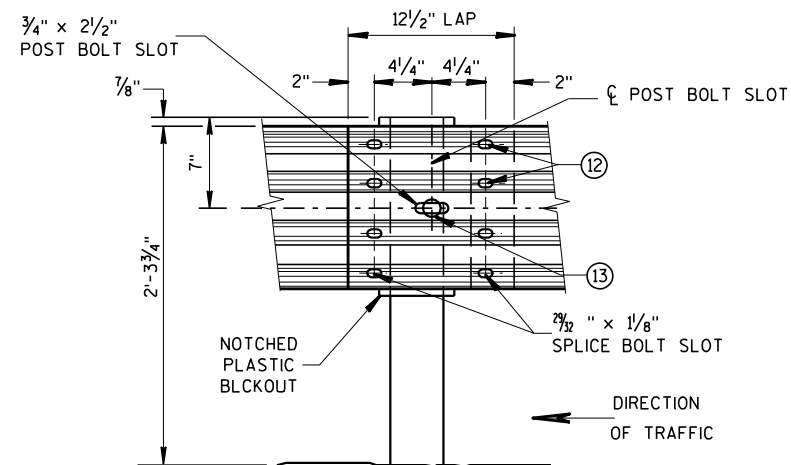
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

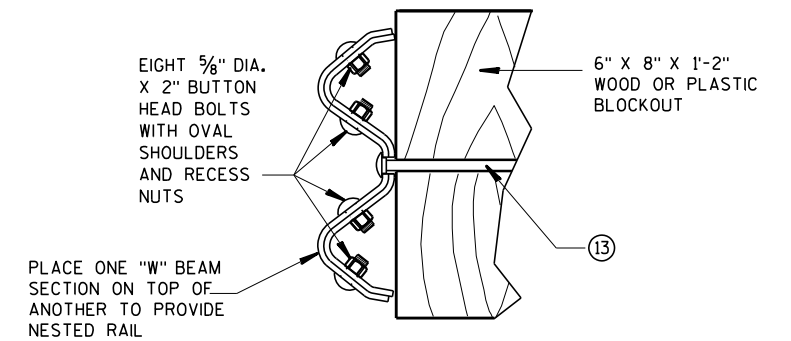


FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPlicing DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

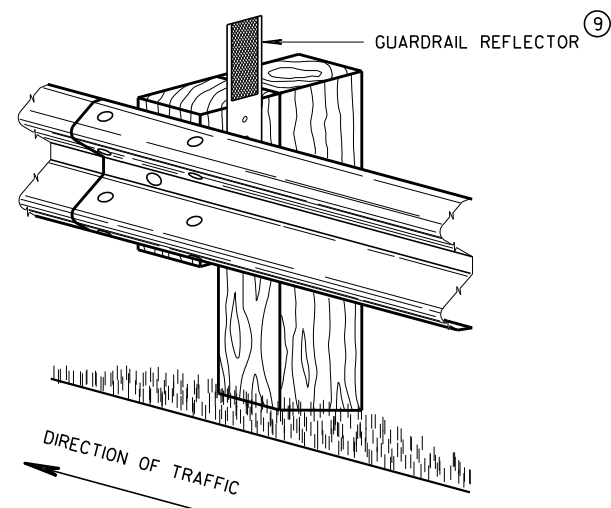
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.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



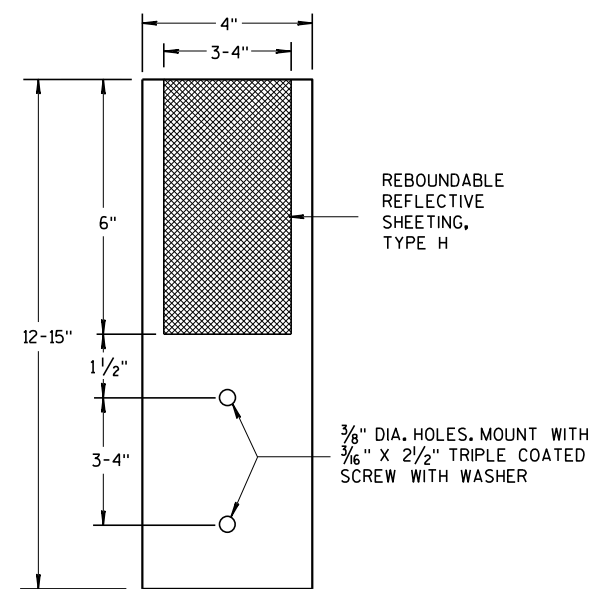
NESTED W BEAM (NW)

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

* USE DOUBLE SIDED WHITE GUARDRAIL 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.



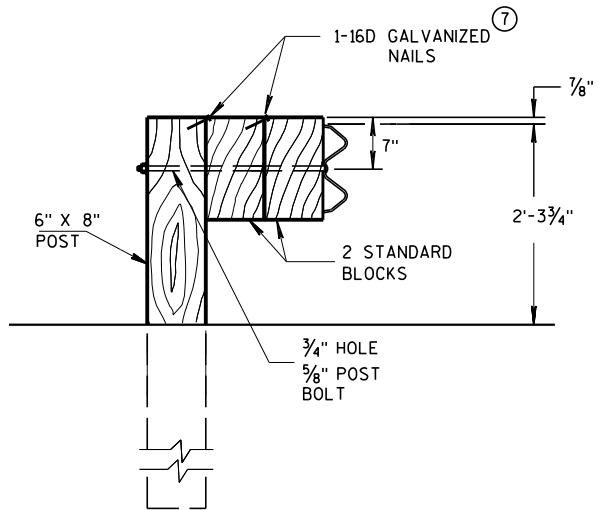
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

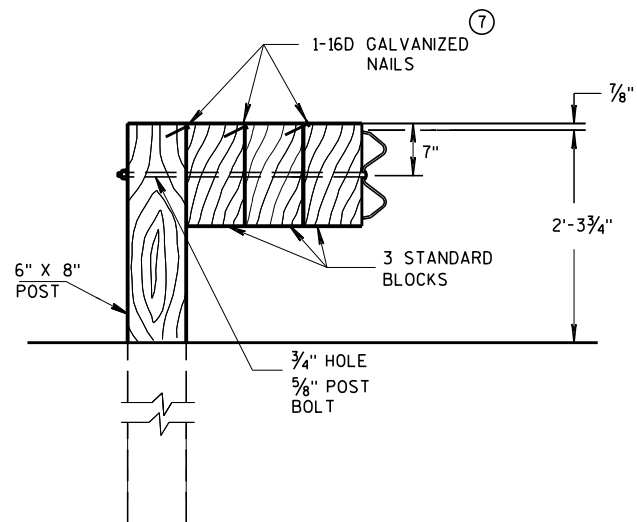
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCO⁹⁹
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

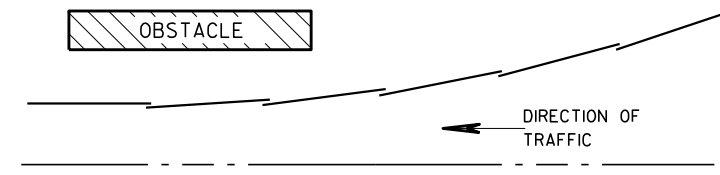


DETAIL FOR TRIPLE BLOCKS

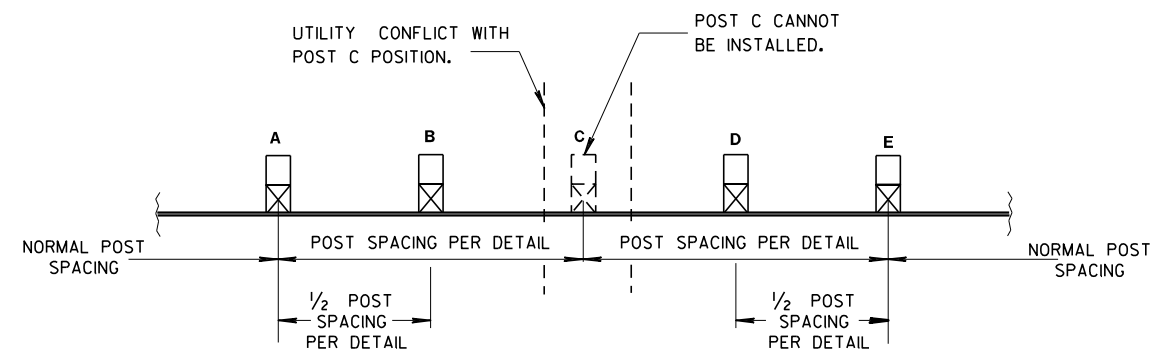
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

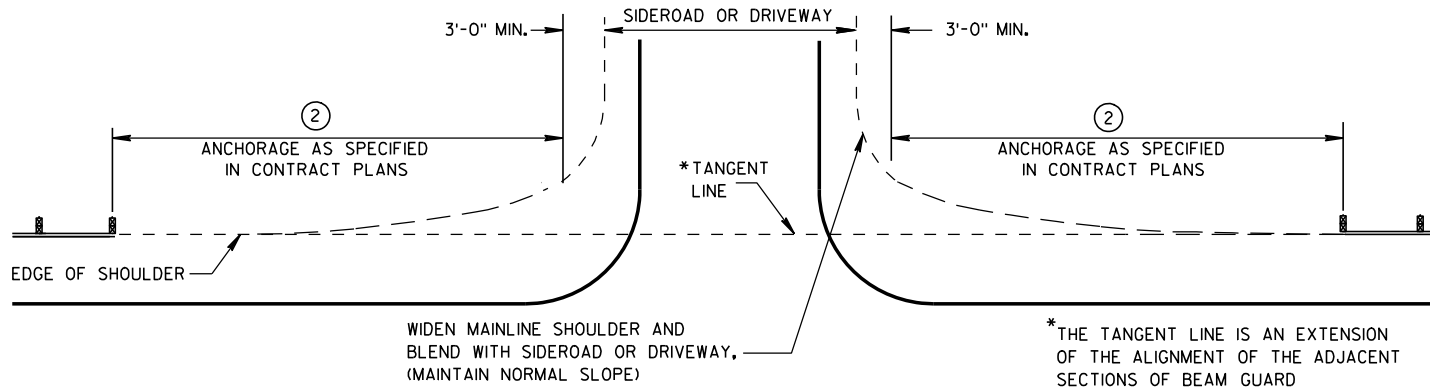


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

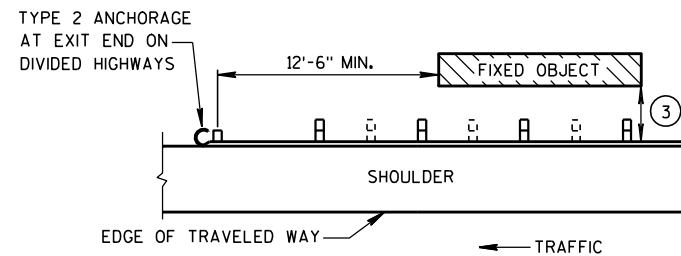
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

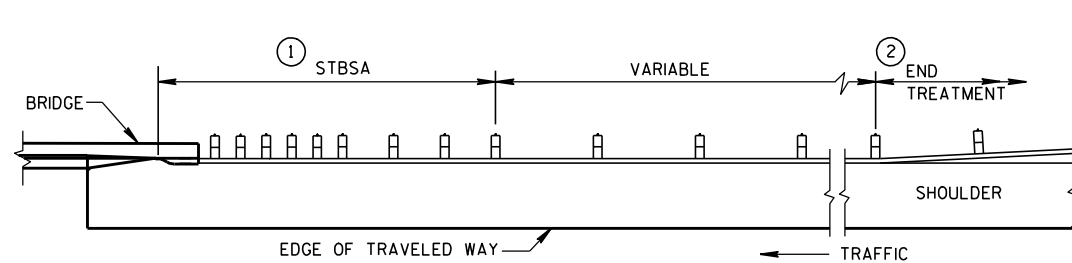
APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 100 UNIT SUPERVISOR
FHWA



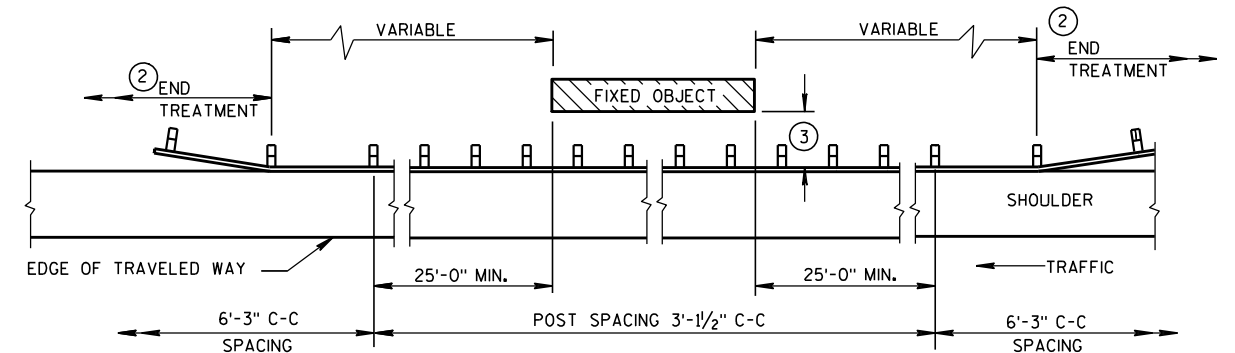
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES

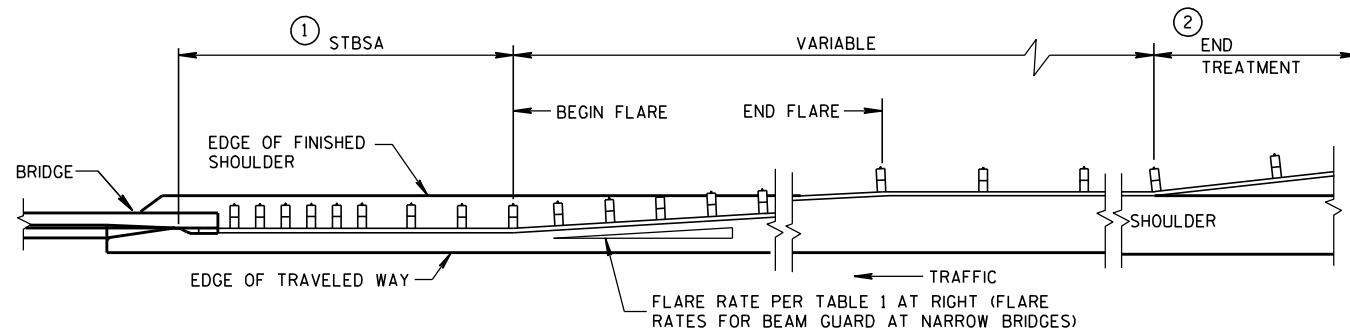


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-21-07

DATE

FHWA

/s/ Jerry H. Zoon

ROADWAY STANDARDS (101

ENGINEER

INT

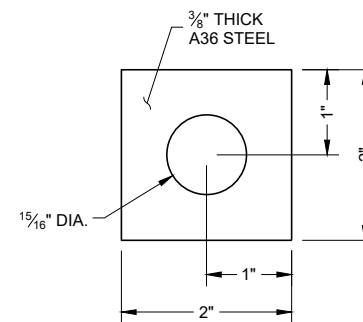
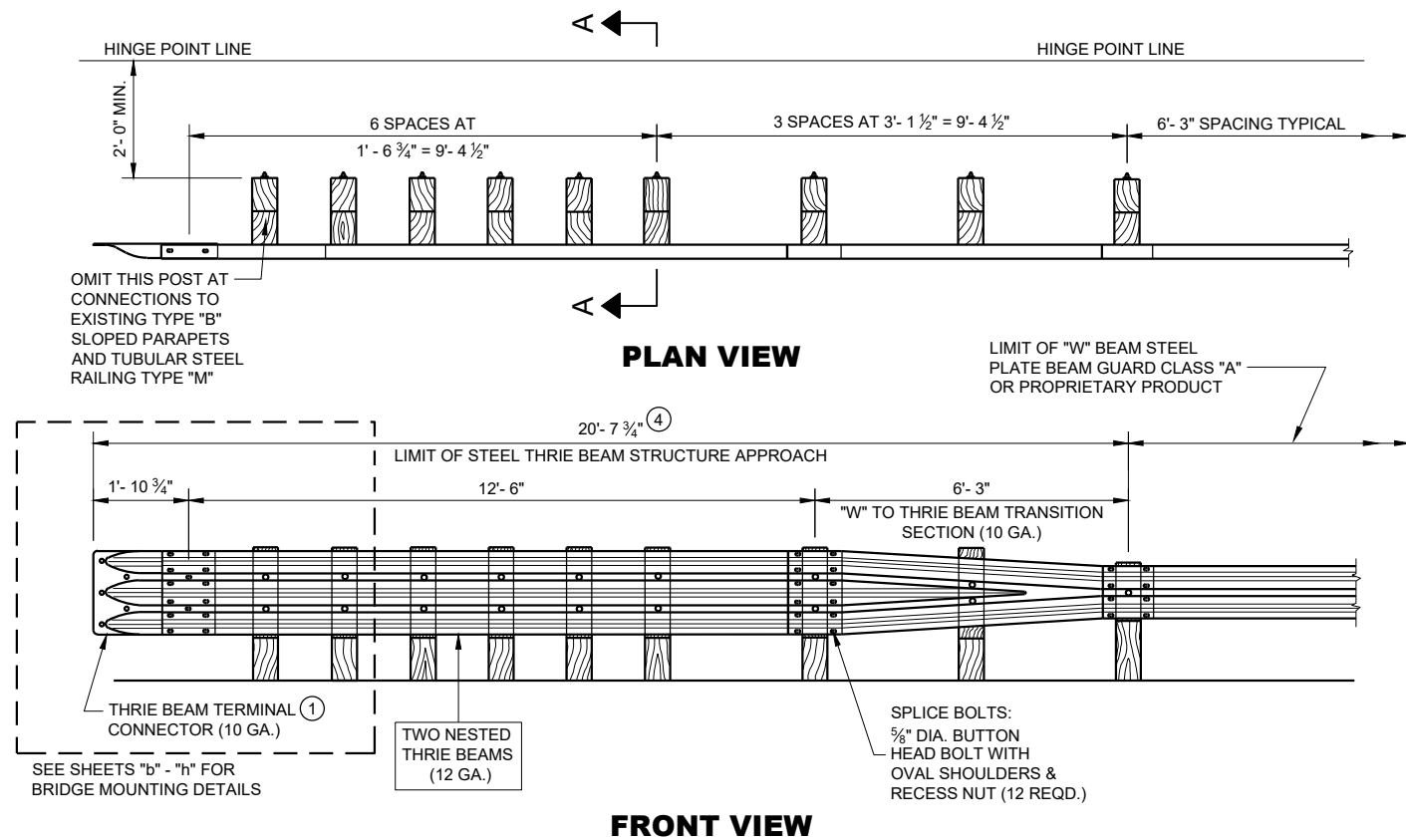


PLATE WASHER DETAIL

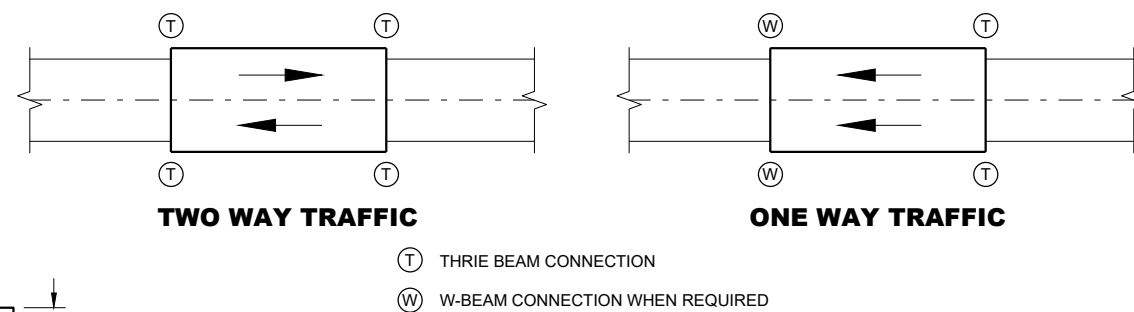
GENERAL NOTES

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

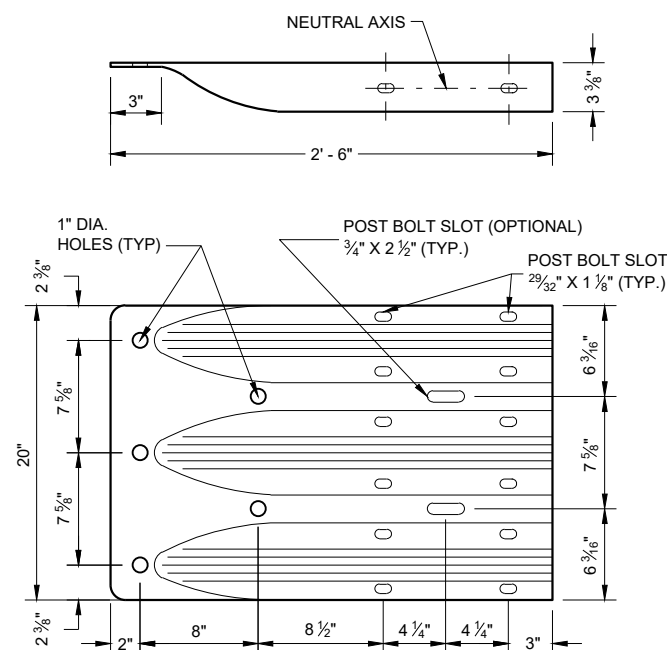
DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

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

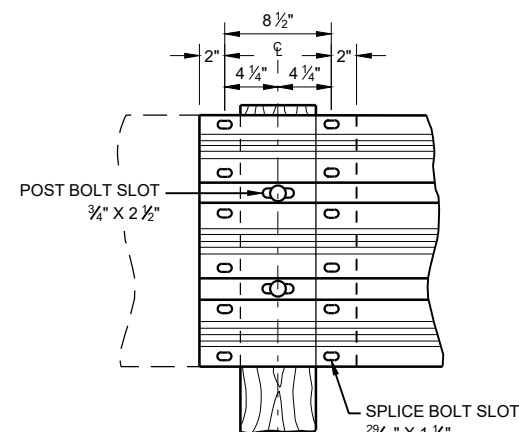
- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0".
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY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



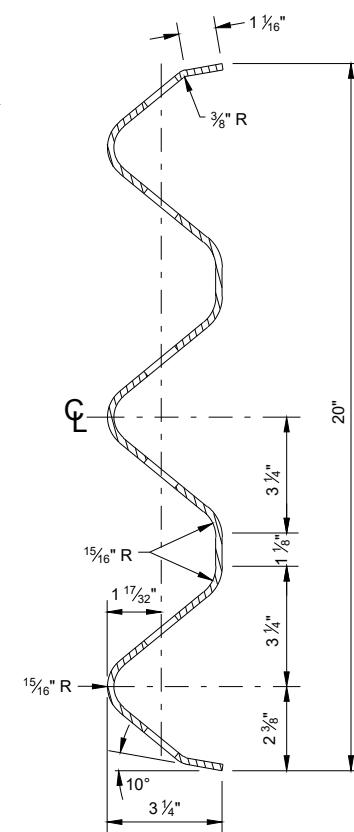
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



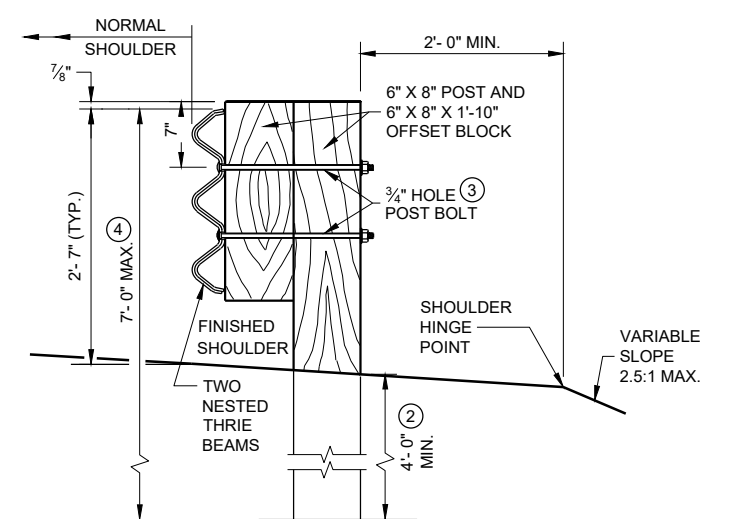
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU BEAM RAIL ELEMENT



SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH

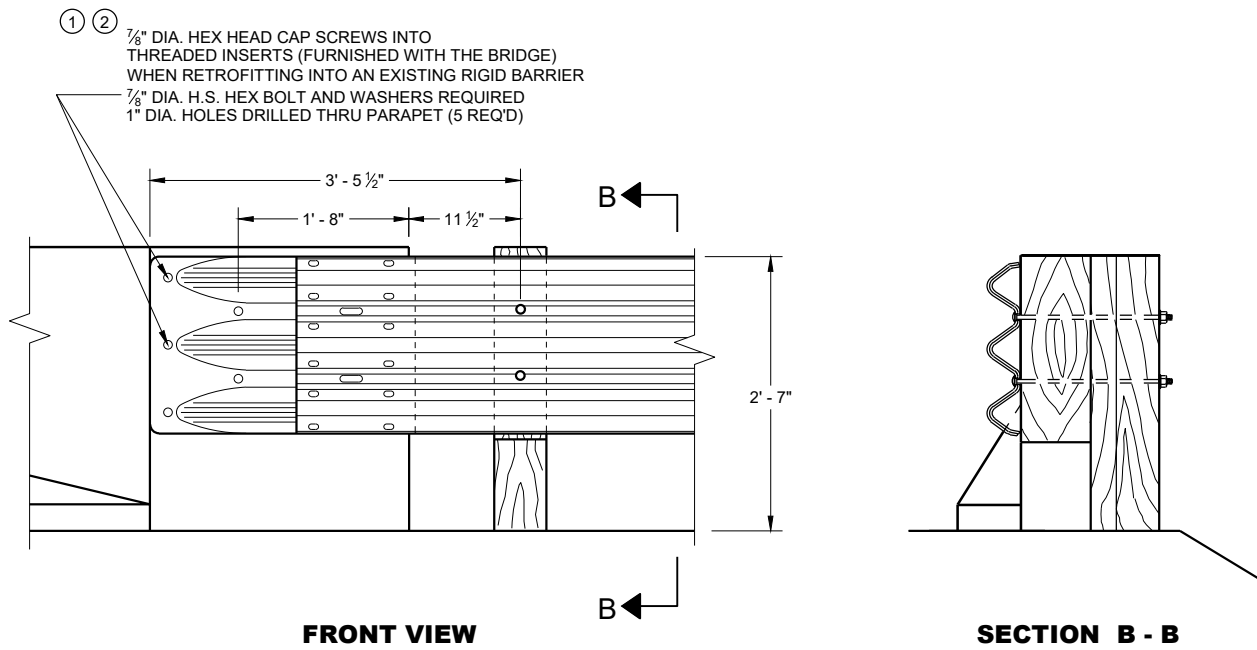
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

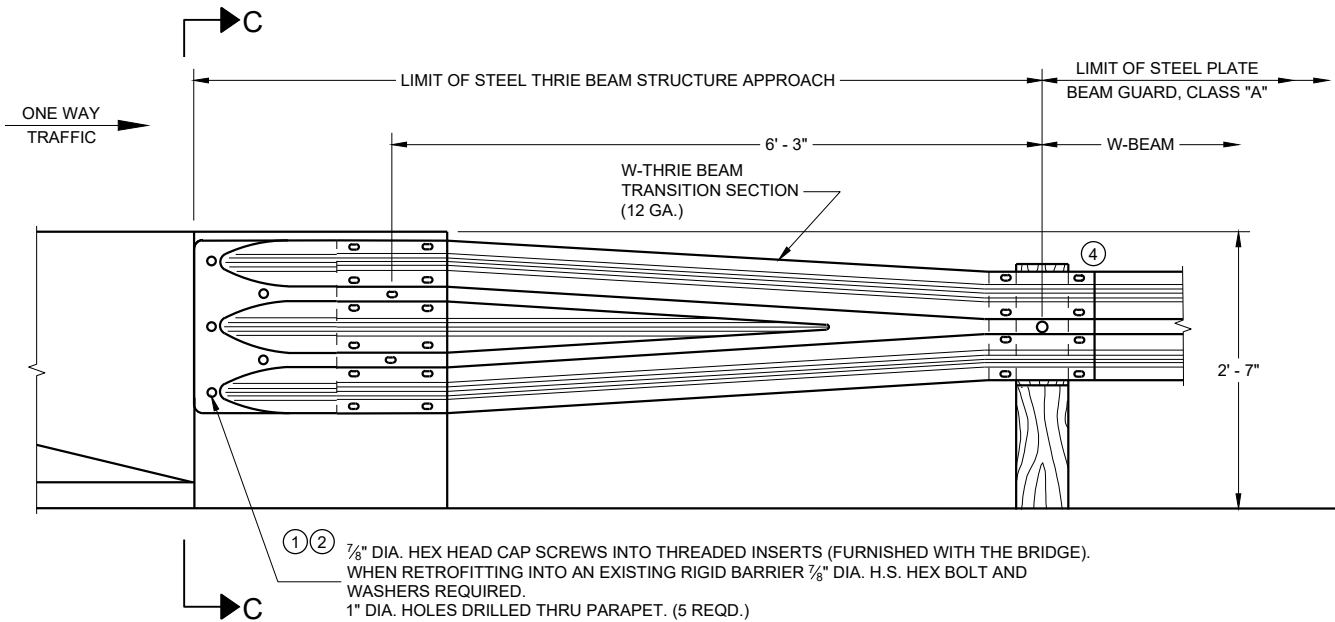
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

102

FHWA



**THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS**



FRONT VIEW

**W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS**

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGE)

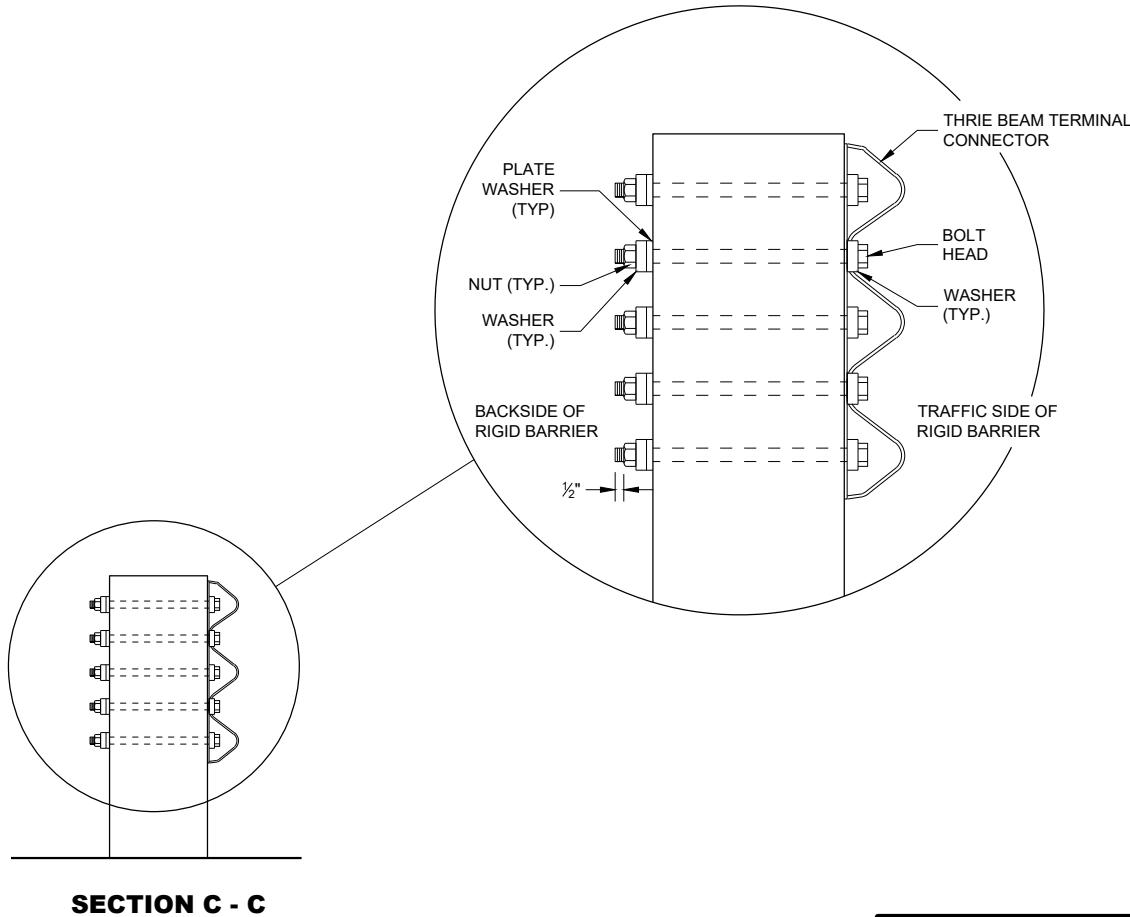
GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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



**STEEL THRIE BEAM STRUCTURE
APPROACH, CONNECTION TO
SQUARE END PARAPETS**

STATE OF WISCONSIN
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APPROVED
November 2022
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

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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

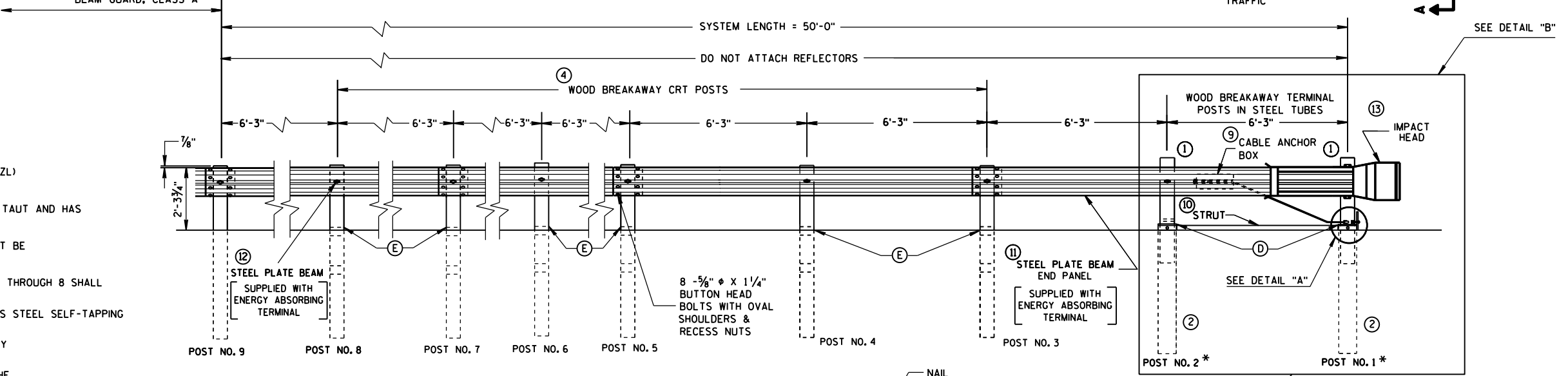
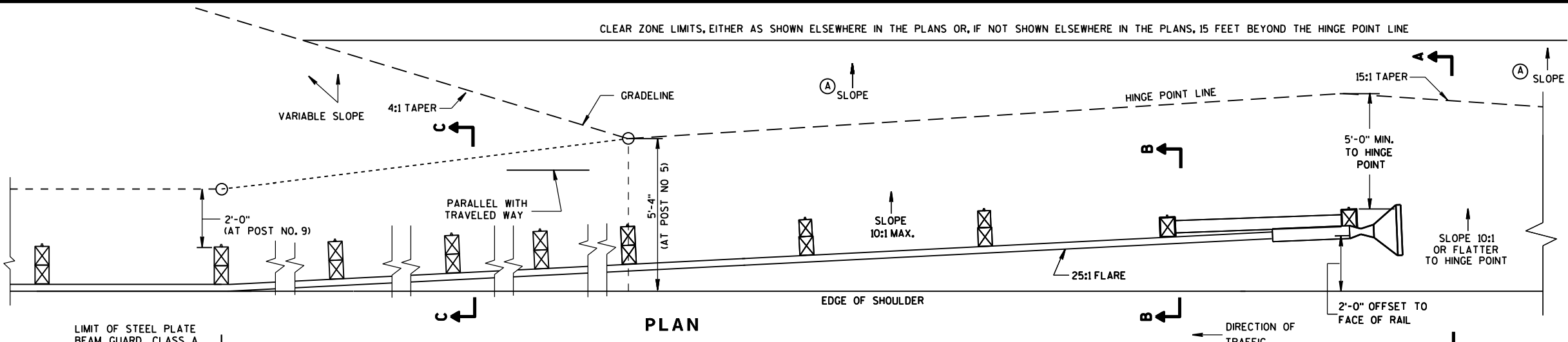
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (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.

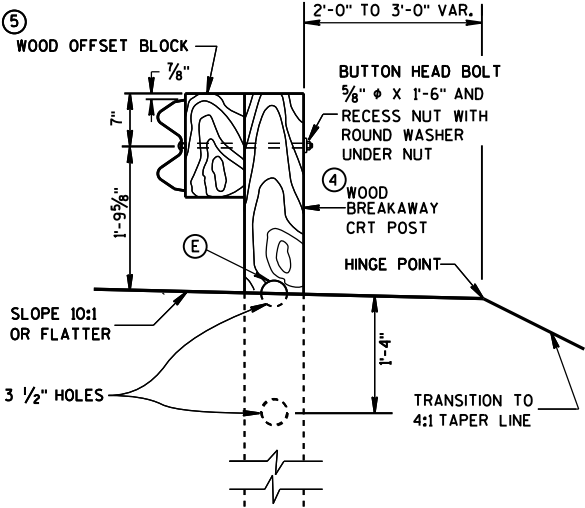
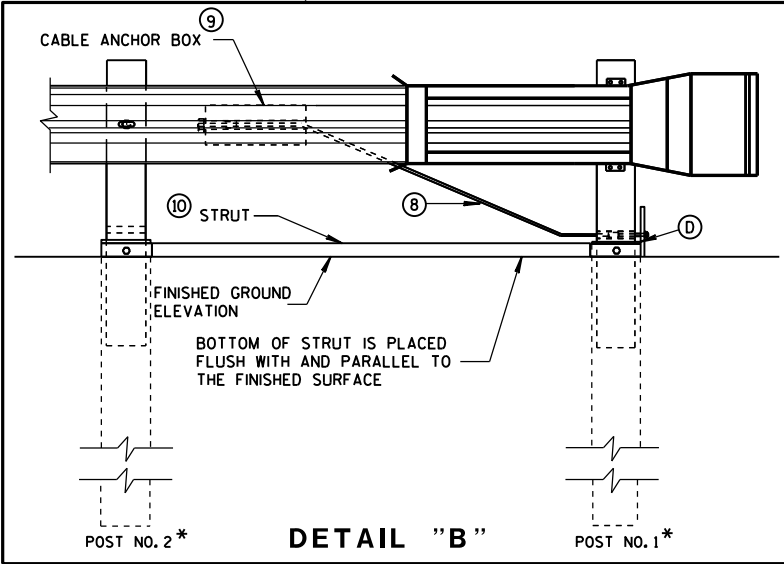
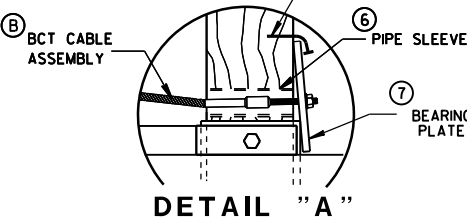
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

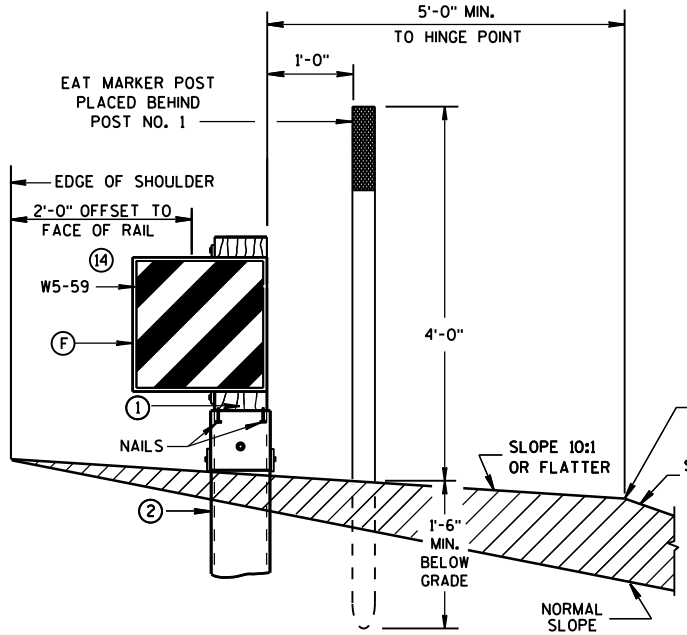
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



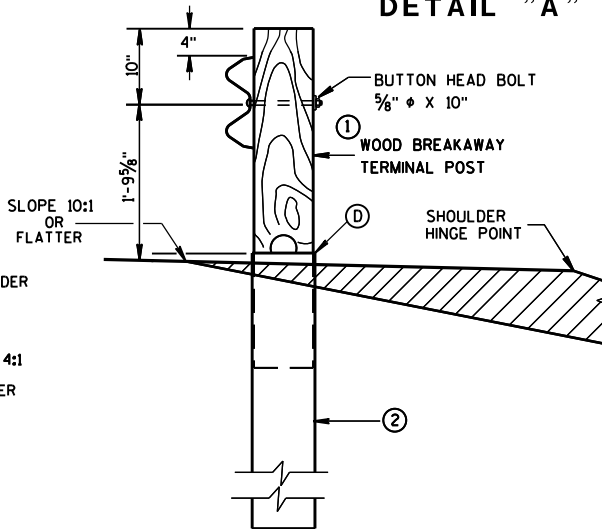
ELEVATION



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



SECTION A-A
TYPICAL AT POST NO. 1*

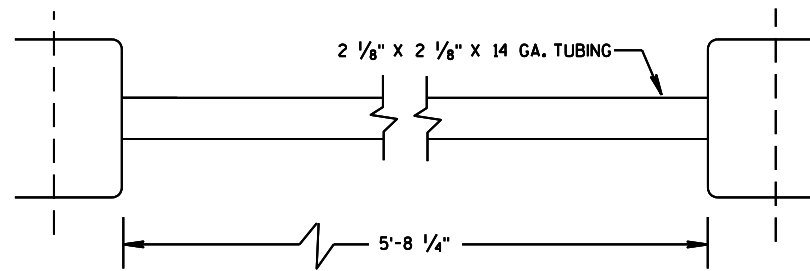


SECTION B-B
TYPICAL AT POST NO. 2*

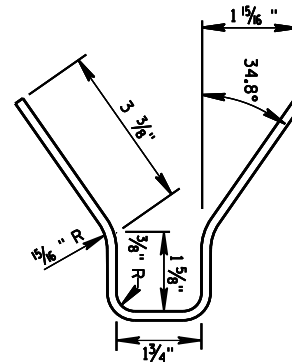
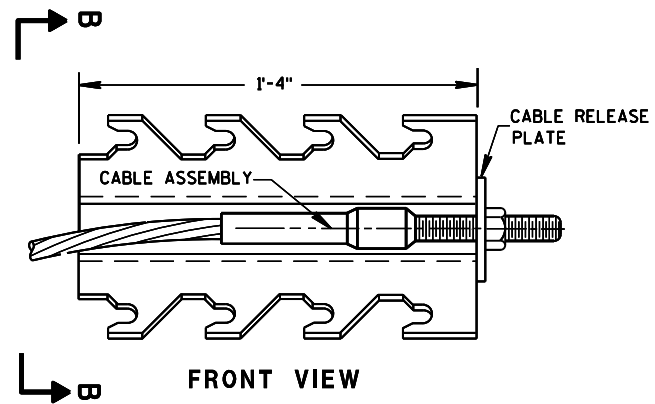
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

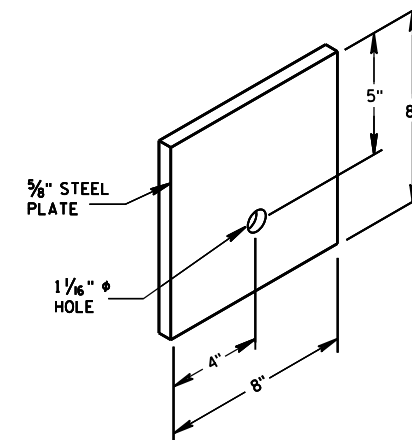
104



⑩ STRUT DETAIL



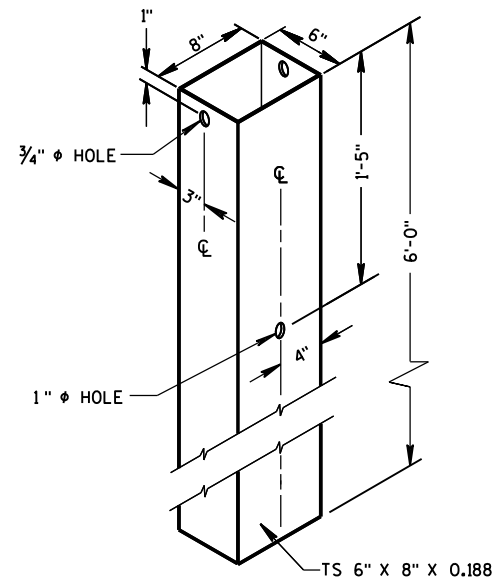
⑨ CABLE ANCHOR BOX



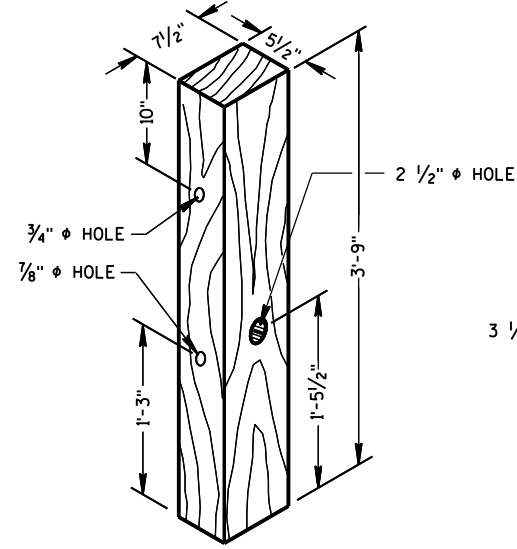
⑦ STEEL BEARING PLATE

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

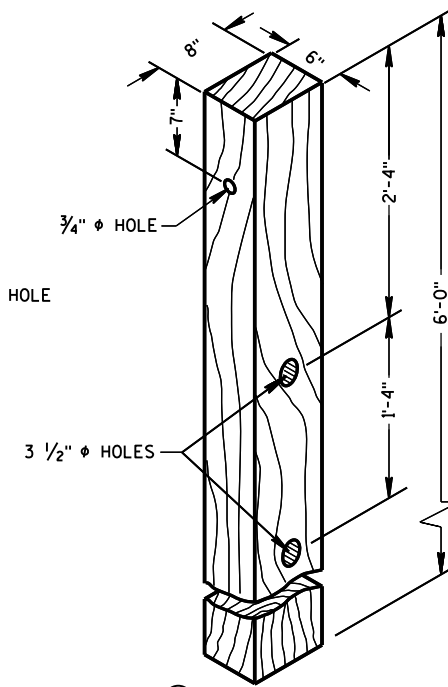
STATE OF WISCONSIN
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② **72" STEEL TUBE**
(POSTS NO. 1-2)



① **TERMINAL POST**

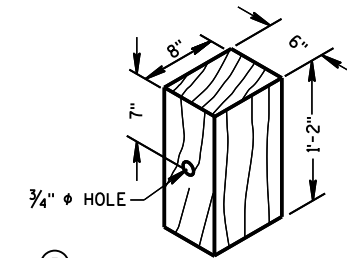


④ **CRT POST**
(POSTS NO'S 5-8)

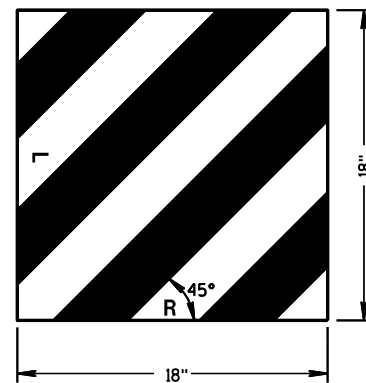
WOOD BREAKAWAY POSTS

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.



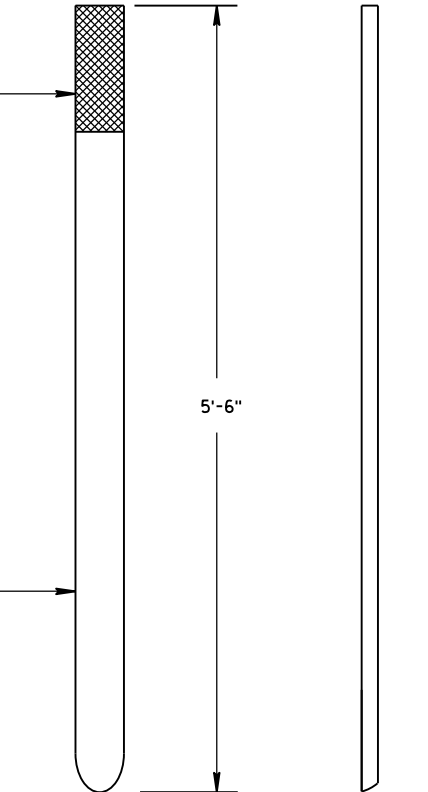
⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



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

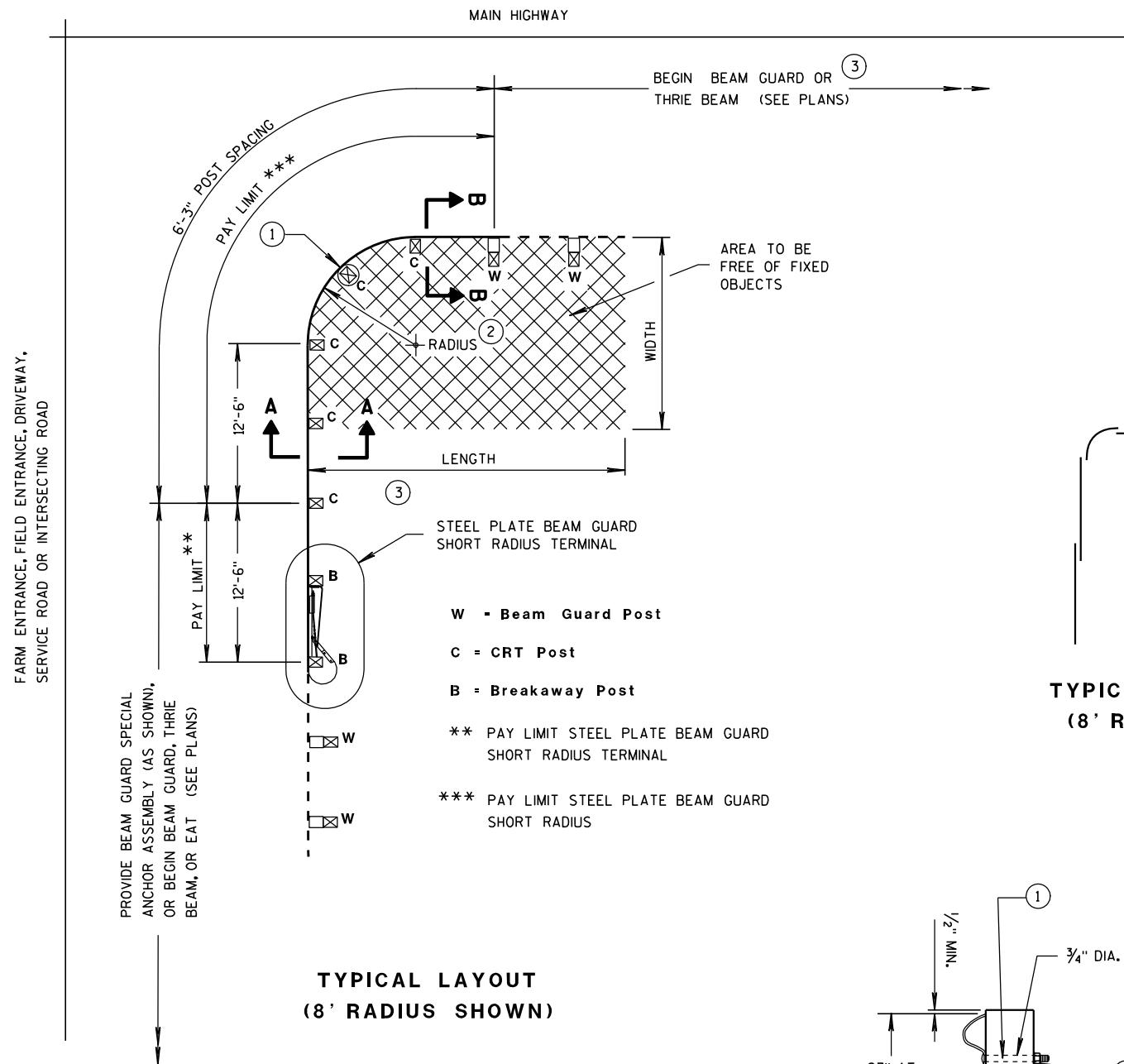


E.A.T. MARKER POST

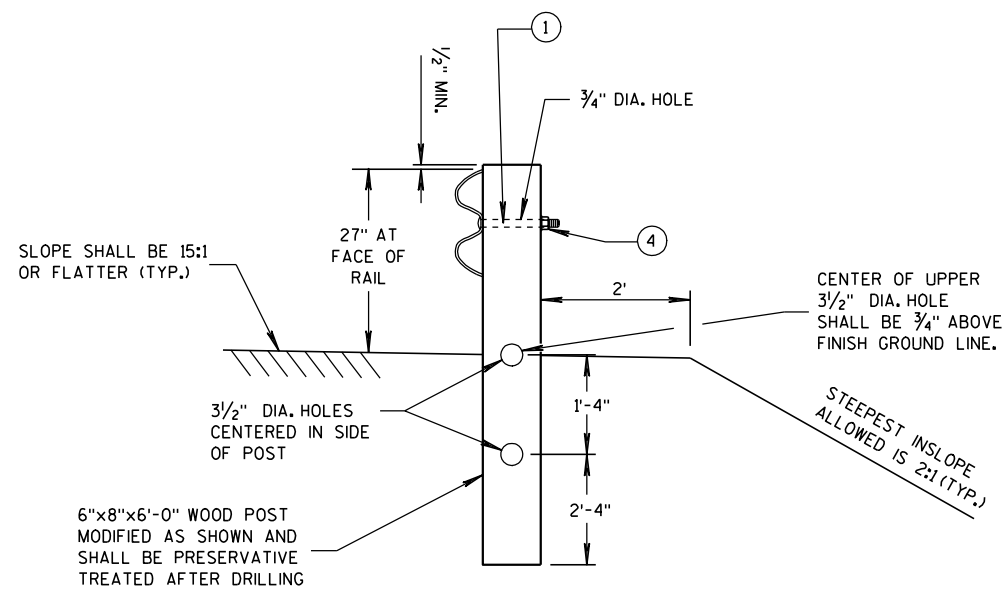
**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 106 ENT
FHWA UNIT SUPERVISOR



TYPICAL LAYOUT
(8' RADIUS SHOWN)



SECTION A-A
(CRT POST)

TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

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.

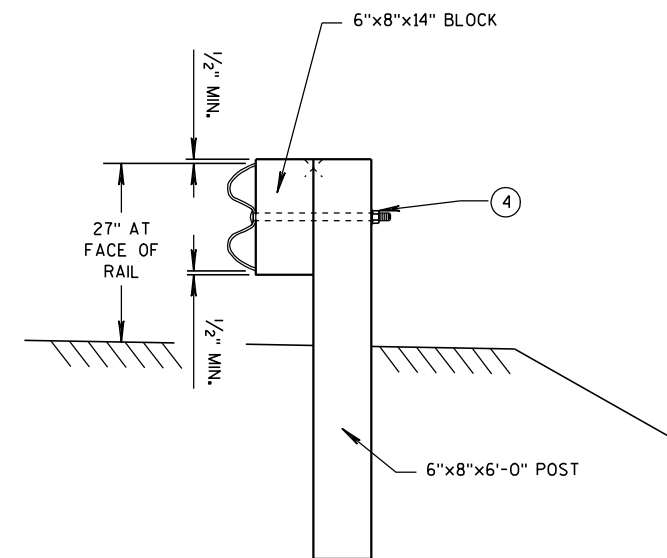
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- 1 ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- 2 RADIUS FROM 8' - 36'. SEE PLAN.
- 3 HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- 4 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'

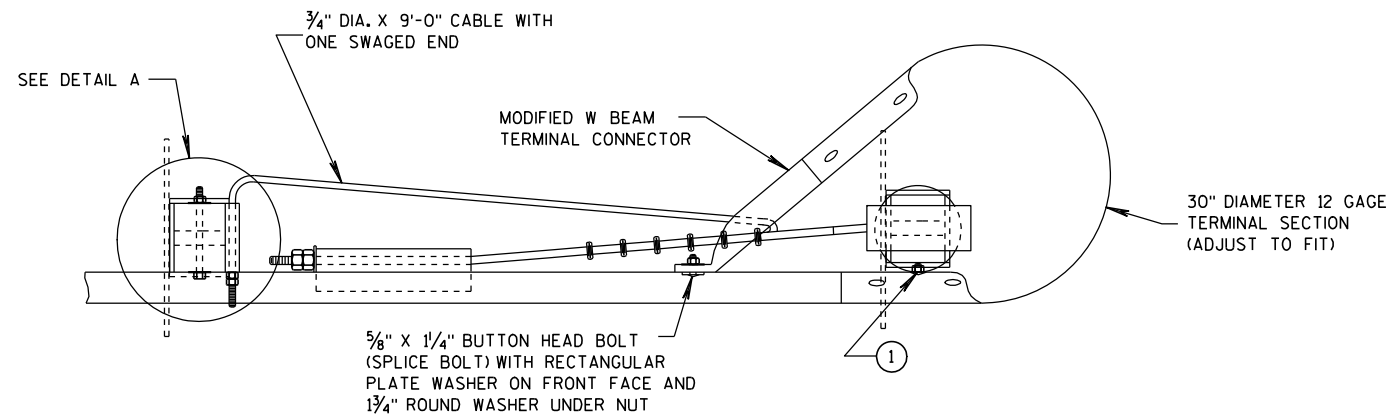
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



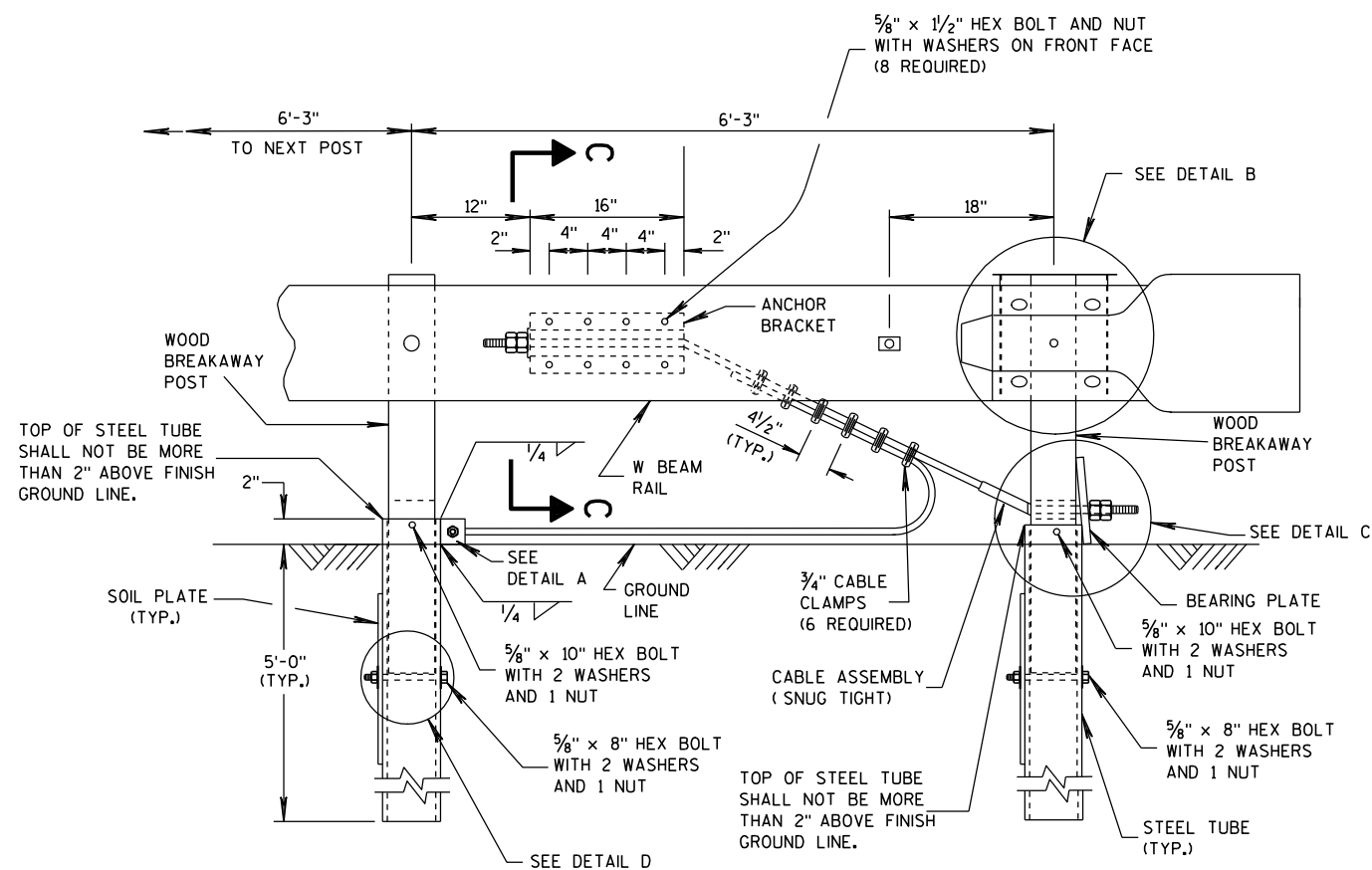
SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

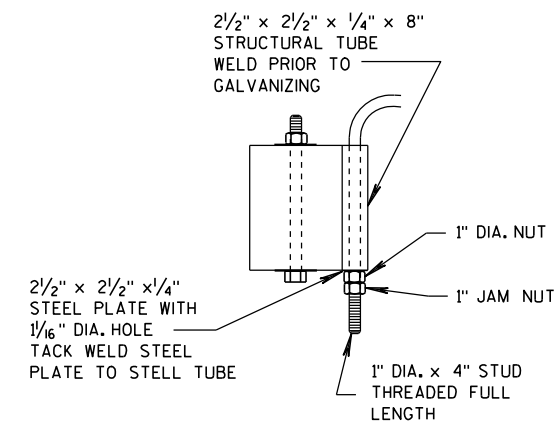


ELEVATION VIEW

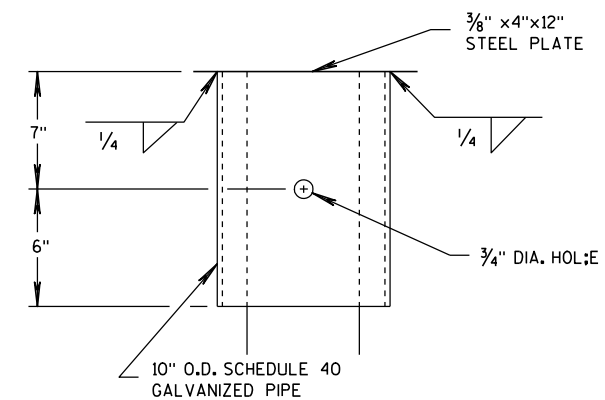
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

- 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

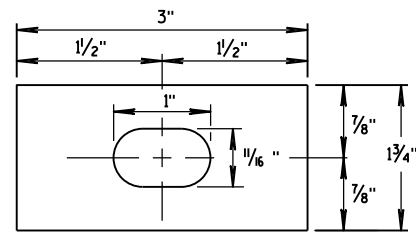


DETAIL B

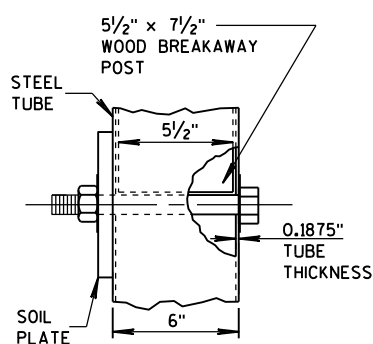
(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

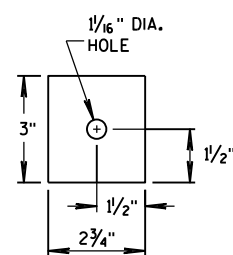
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



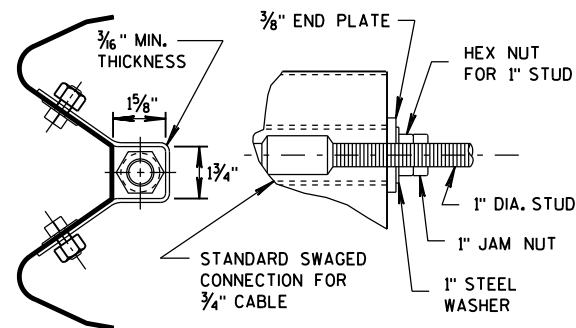
**RECTANGULAR
PLATE WASHER**



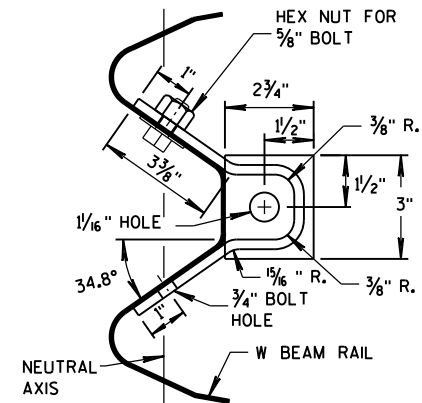
DETAIL D



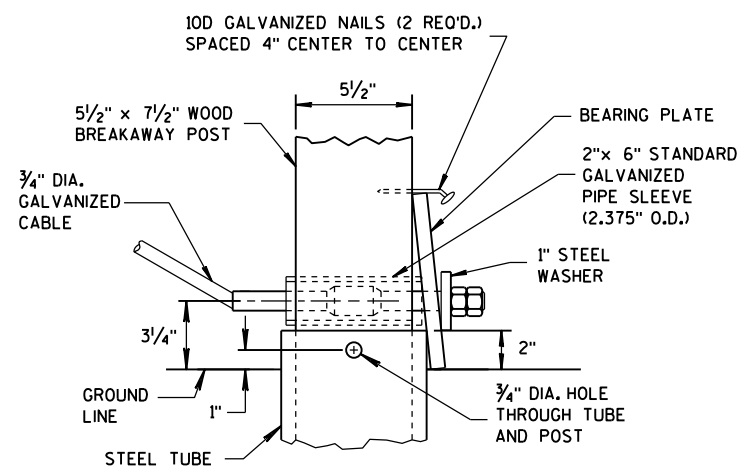
END PLATE



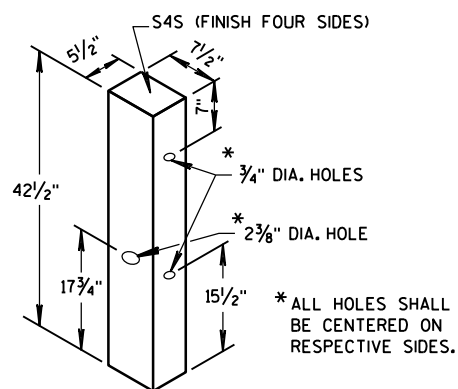
**SECTION C-C
(END PLATE REMOVED)**



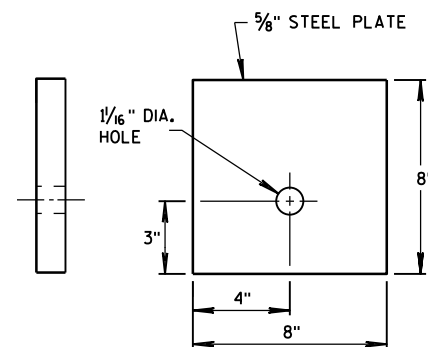
ANCHOR BRACKET



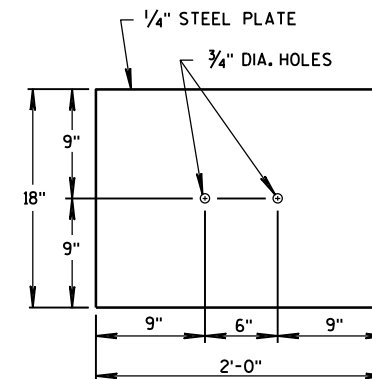
DETAIL C



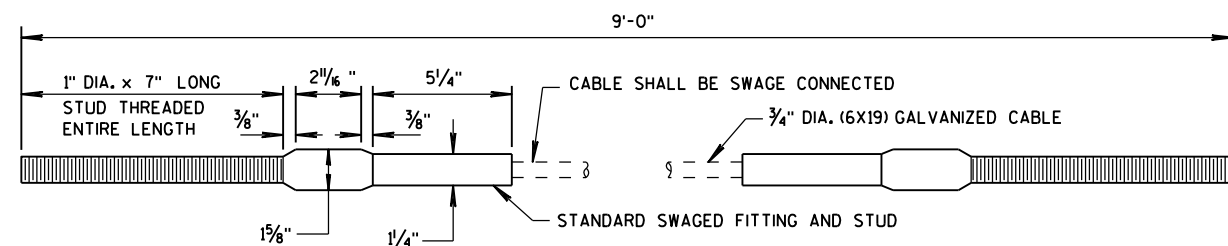
WOOD BREAKAWAY POST



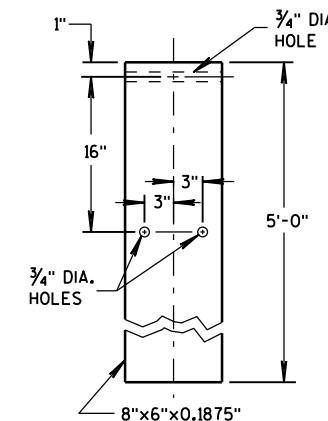
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY



STEEL TUBE

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/18/08

DATE

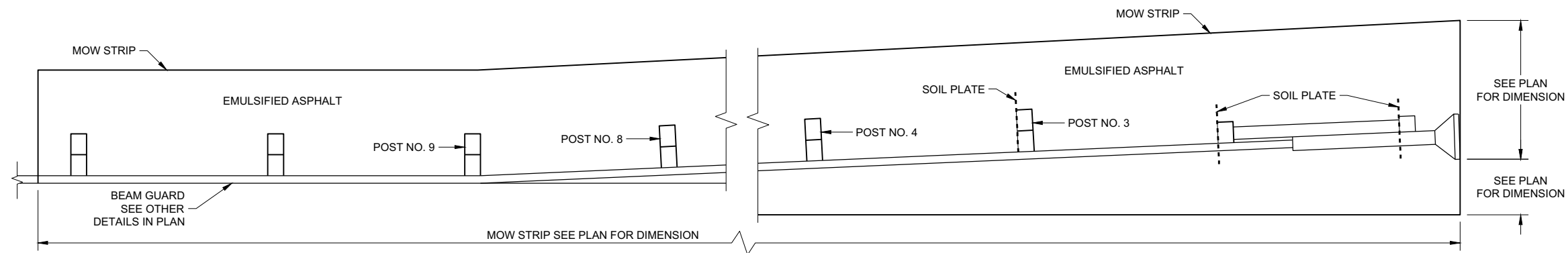
FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

109

NT

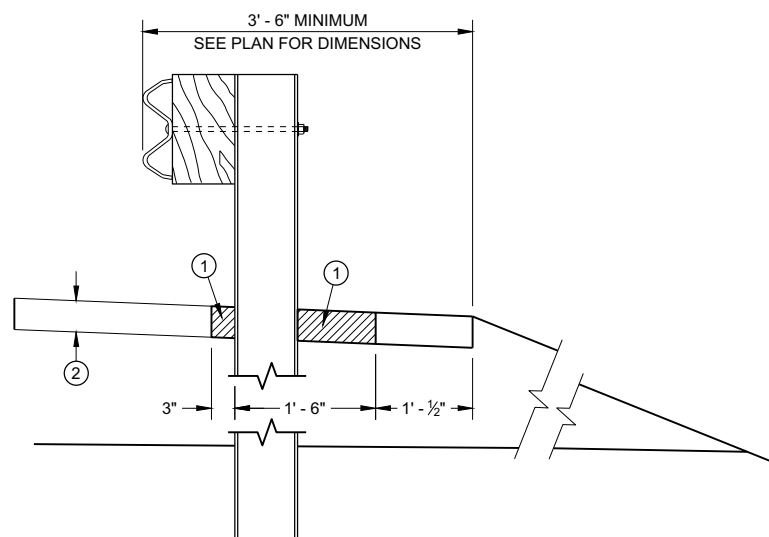


PLAN VIEW
MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL

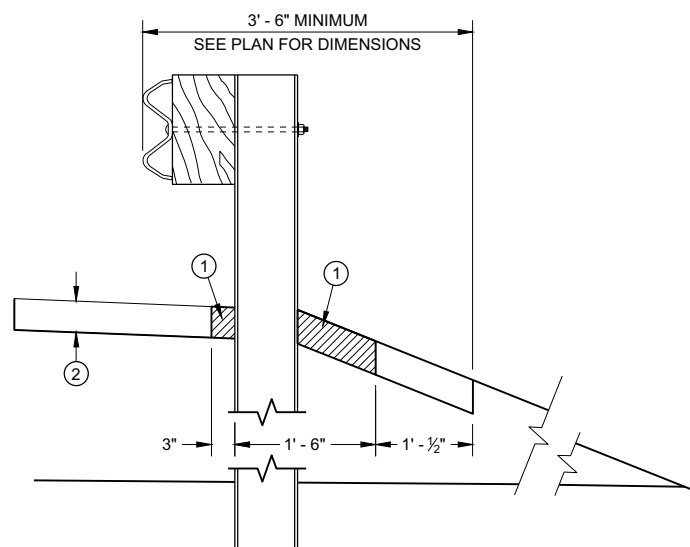
GENERAL NOTES

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

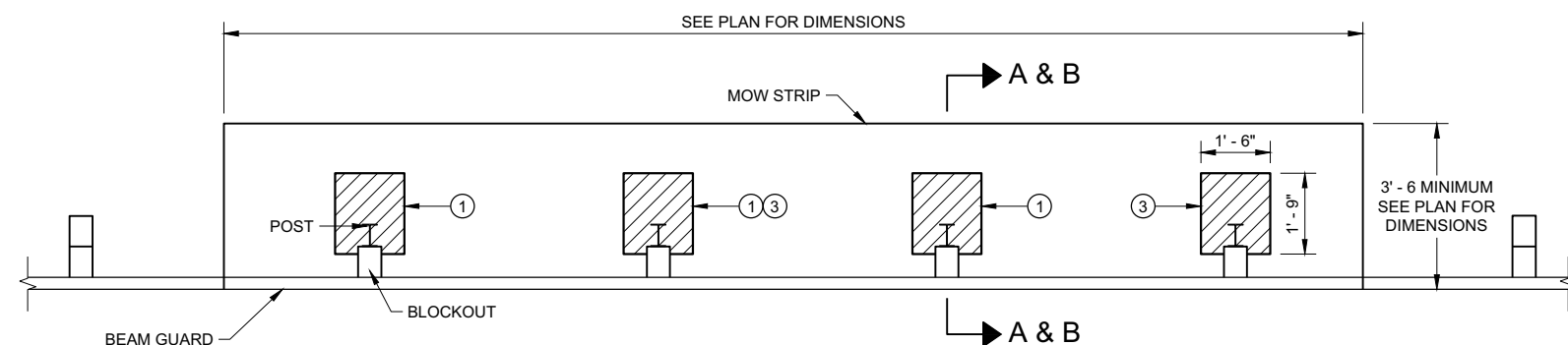
- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)



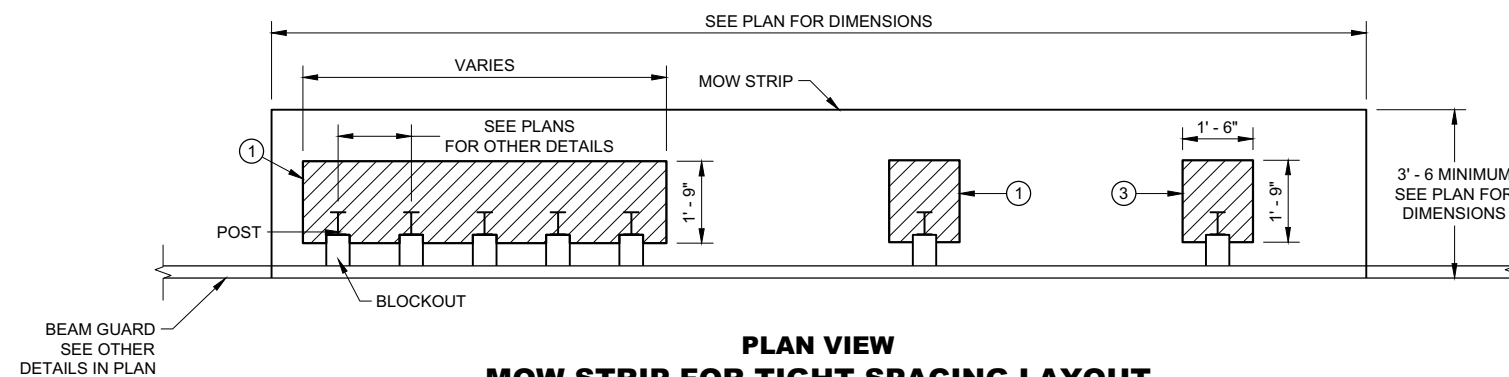
SECTION A - A



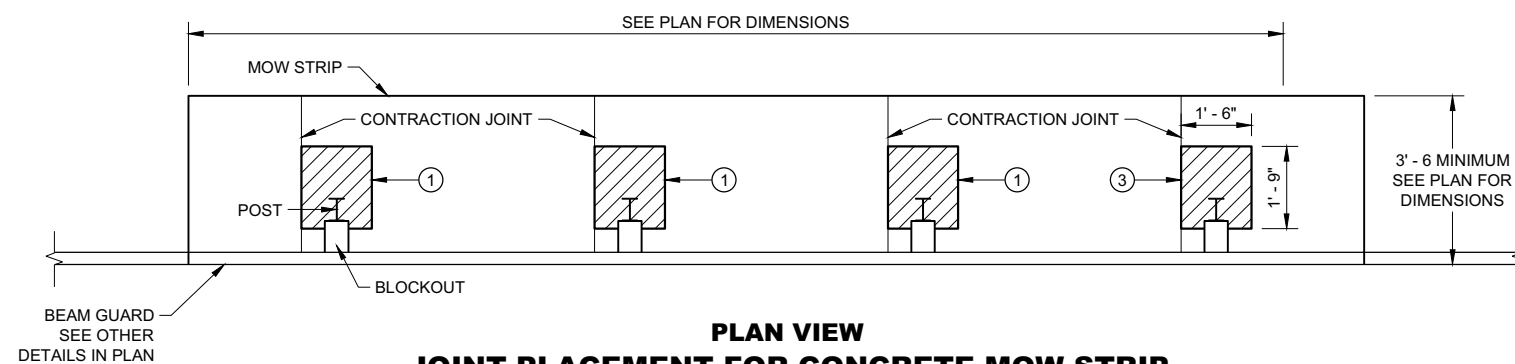
SECTION B - B



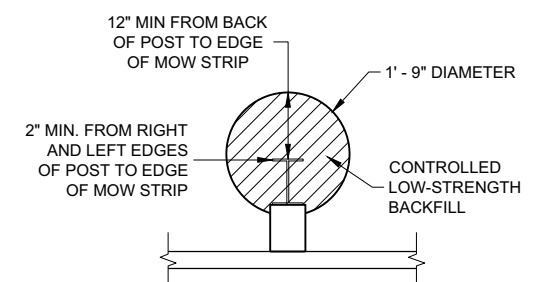
PLAN VIEW
MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



PLAN VIEW
MOW STRIP FOR TIGHT SPACING LAYOUT



PLAN VIEW
JOINT PLACEMENT FOR CONCRETE MOW STRIP



ALTERNATIVE HMA
MOW STRIP DESIGN

GUARDRAIL MOW STRIP

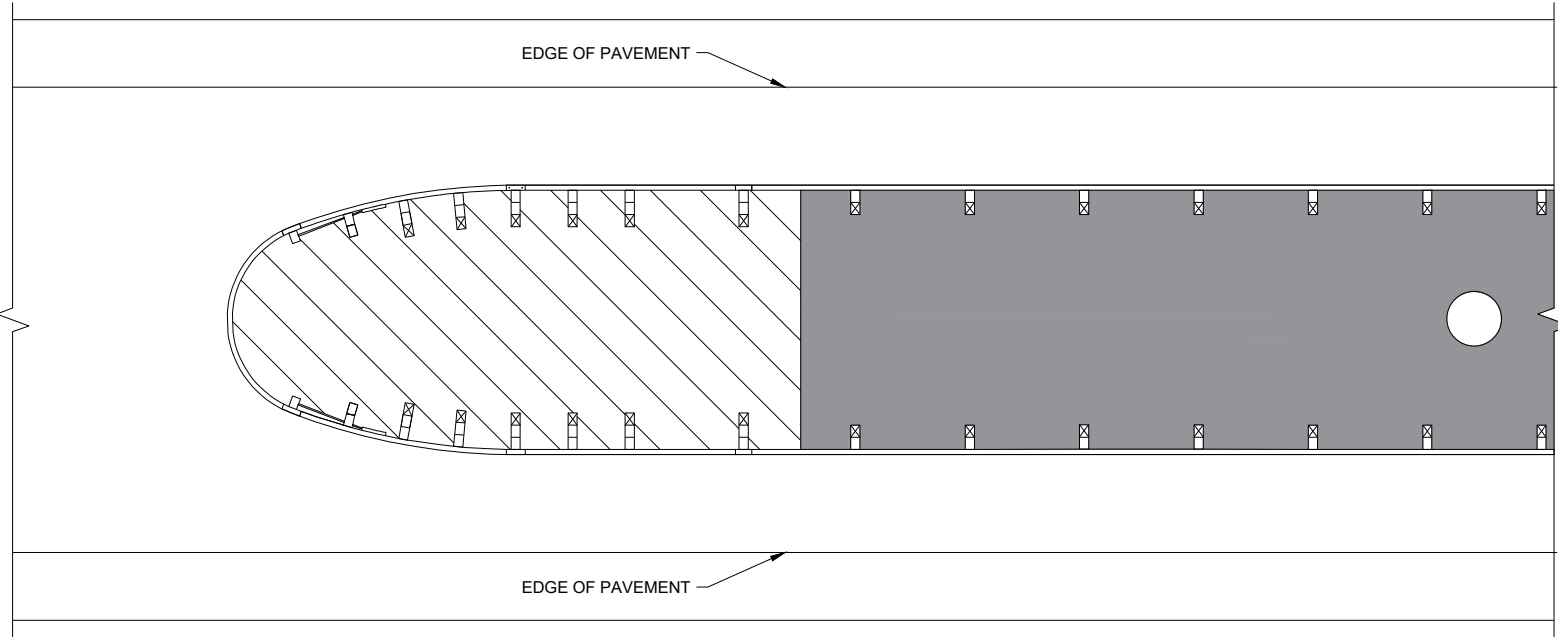
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 110

LEGEND

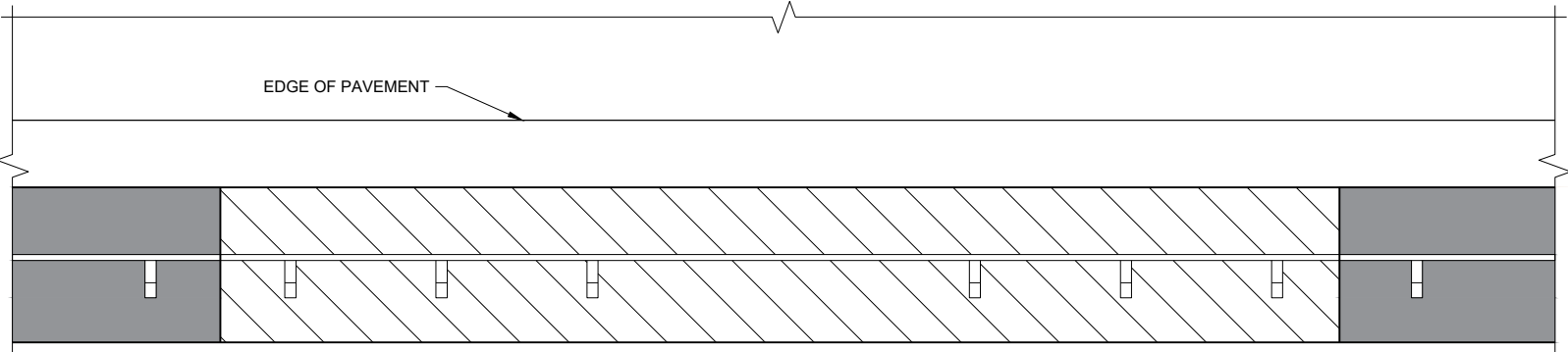
- CONCRETE, ASPHALT, OR EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)
- EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

GENERAL NOTES

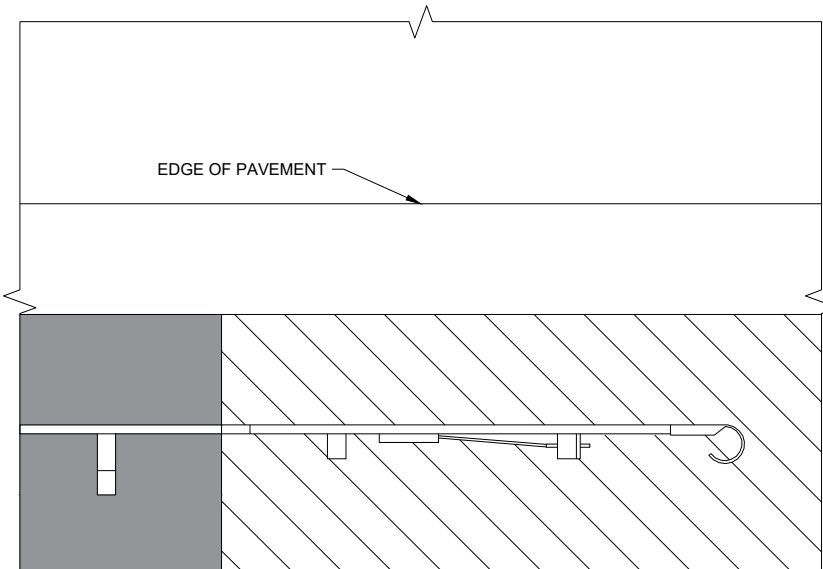
EXISTING THRIE BEAM BULLNOSES MAY HAVE WOOD POSTS. NEW THRIE BEAM BULLNOSE WILL HAVE STEEL POSTS.



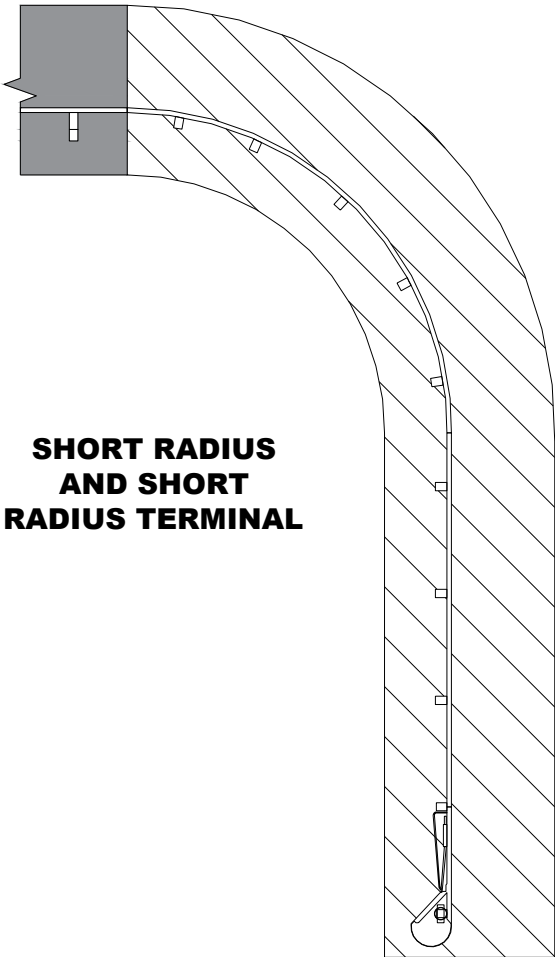
THRIE BEAM BULLNOSE



LONG - SPAN



TYPE 2 TERMINAL



SHORT RADIUS
AND SHORT
RADIUS TERMINAL

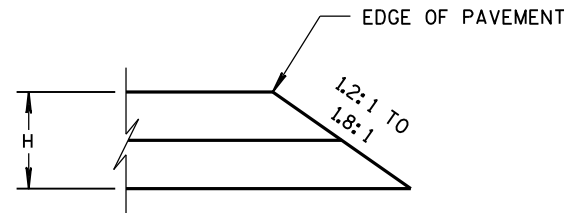
GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

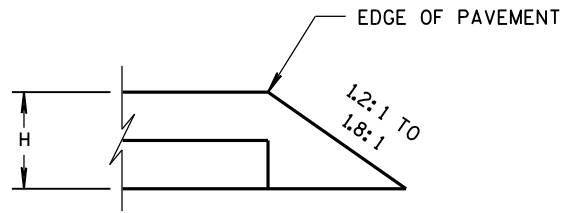
APPROVED
August 2020
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

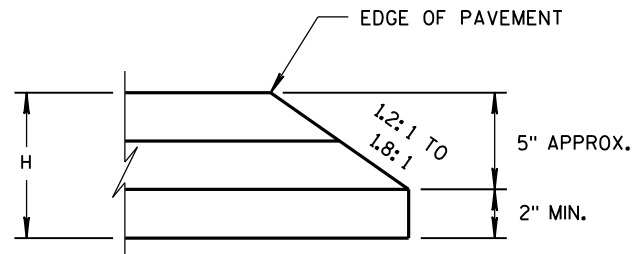
111



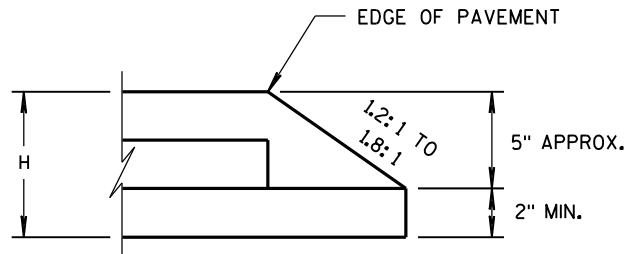
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

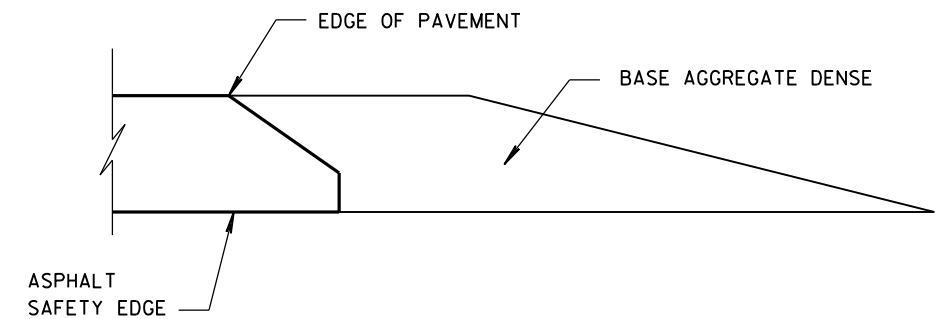


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

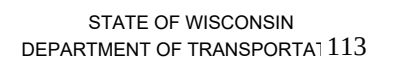
FHWA

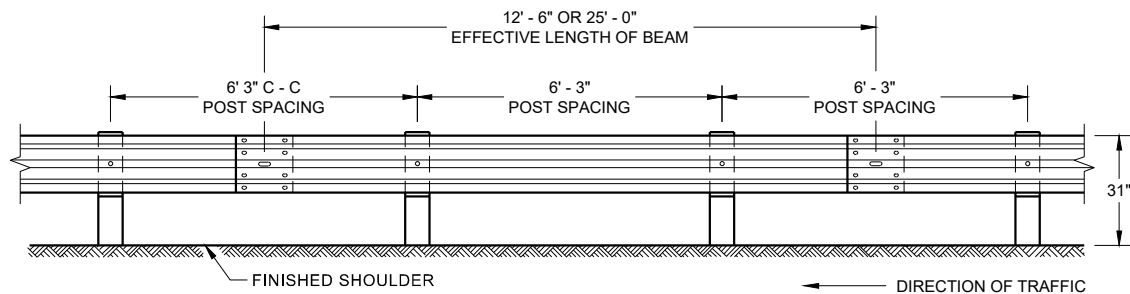
/s/ Jerry H. Zoga
ROADWAY STANDARDS
ENGINEER

112

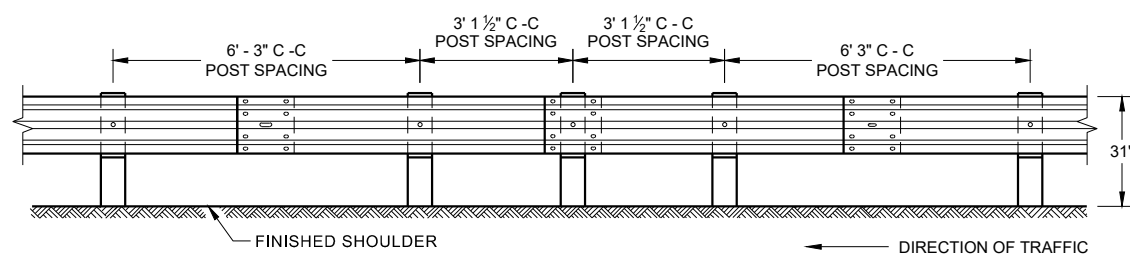
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- 6

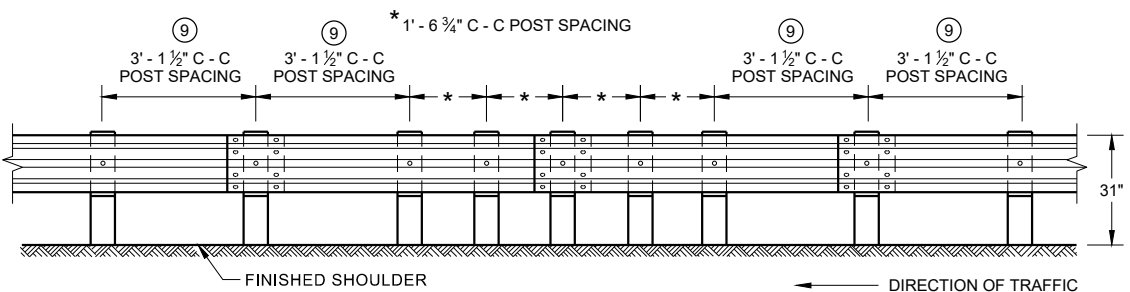




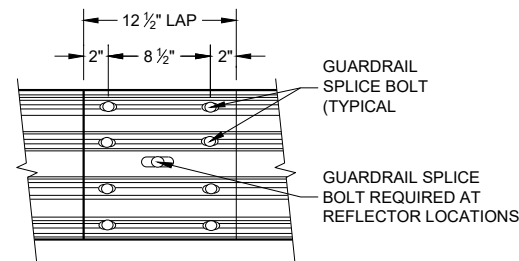
FRONT VIEW
POST SPACING STANDARD INSTALLATION



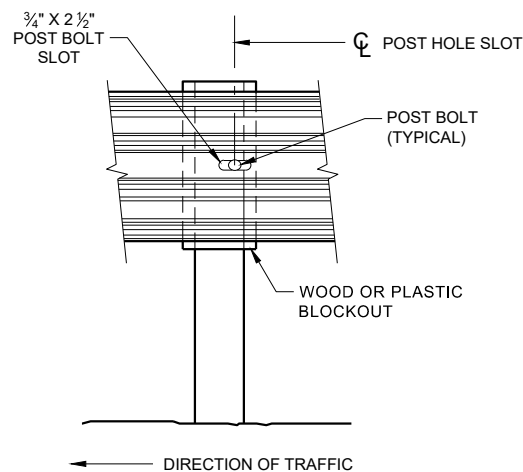
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



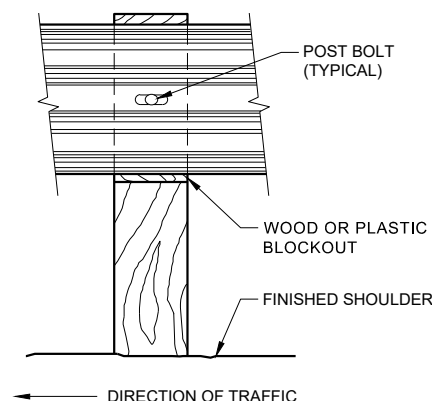
FRONT VIEW
QUARTER POST SPACING (QS)



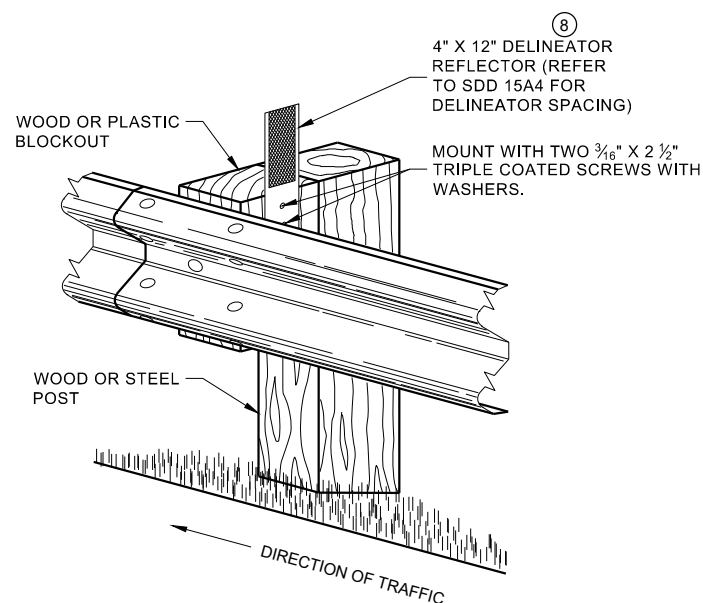
FRONT VIEW
MID-SPAN BEAM SPLICE



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



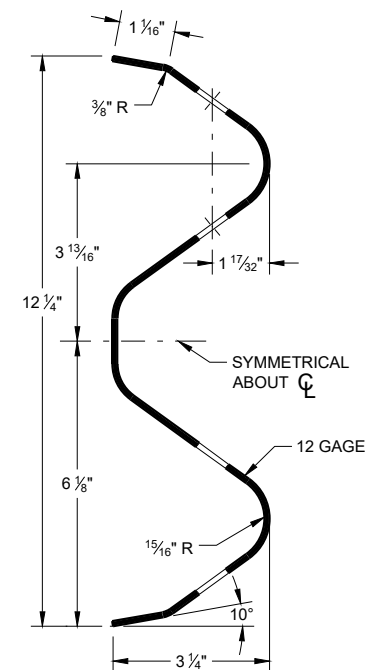
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

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.

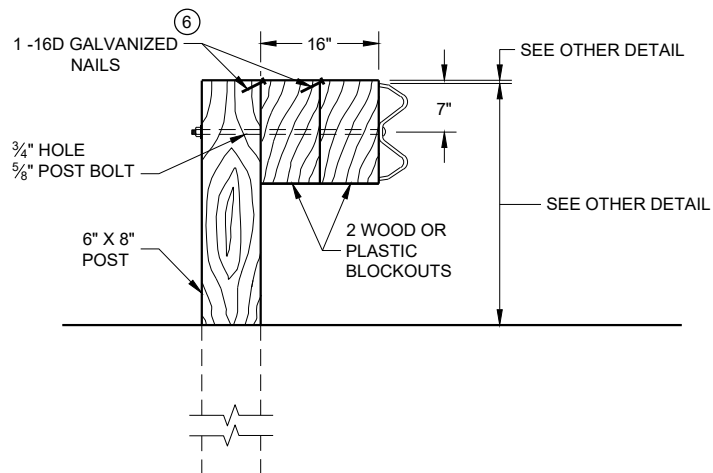
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

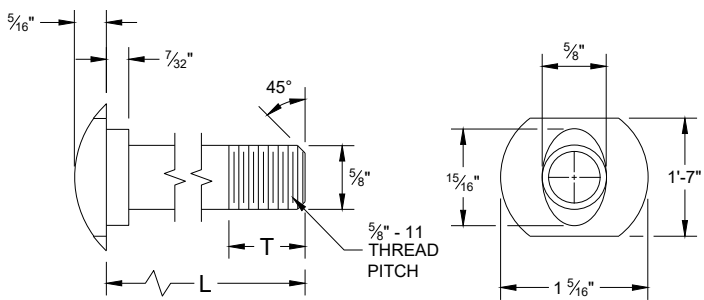
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 114



DETAIL FOR 16" BLOCKOUT DEPTH

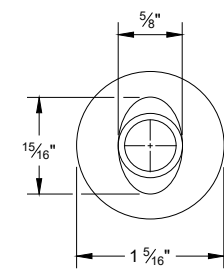
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

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

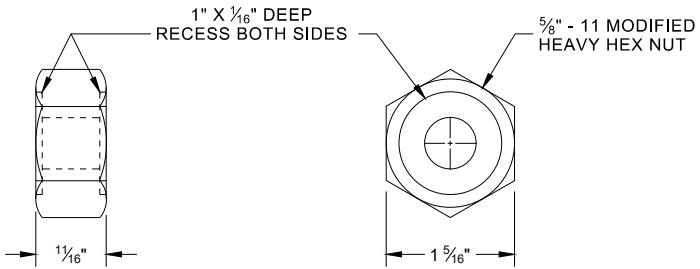


POST BOLT TABLE

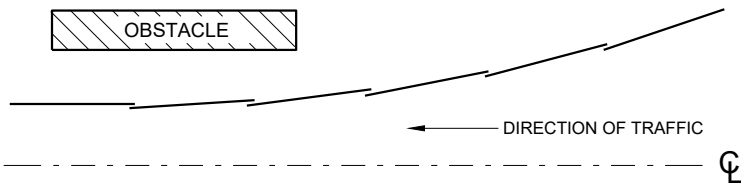
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



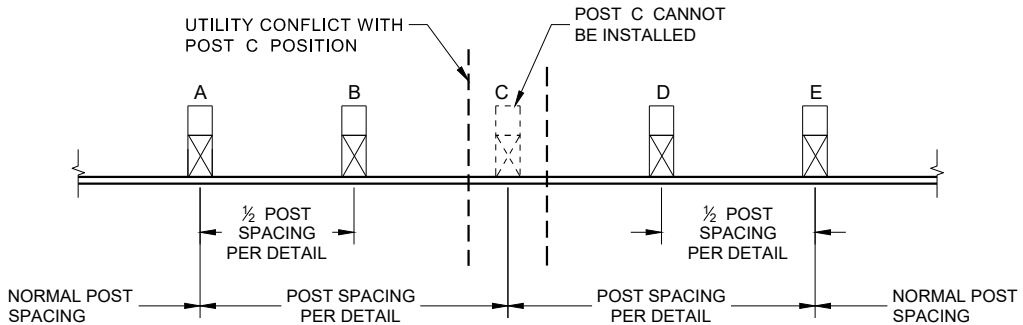
ALTERNATE BOLT HEAD



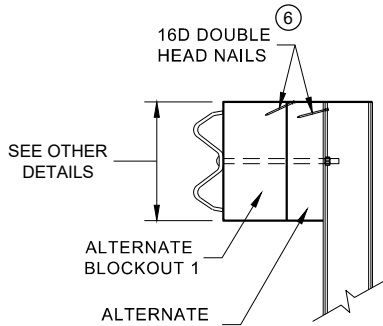
POST BOLT, SPLICE BOLT AND RECESS NUT



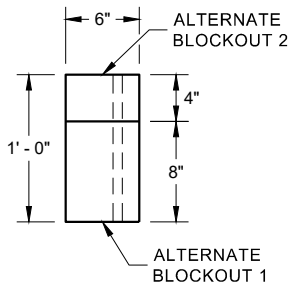
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

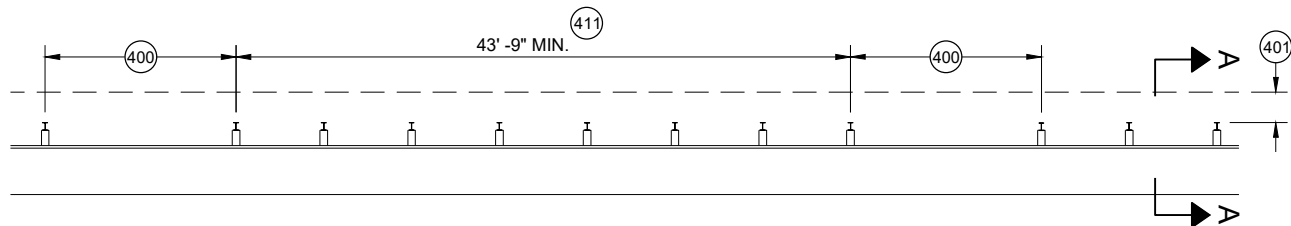
ALTERNATE WOOD
BLOCKOUT DETAIL

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

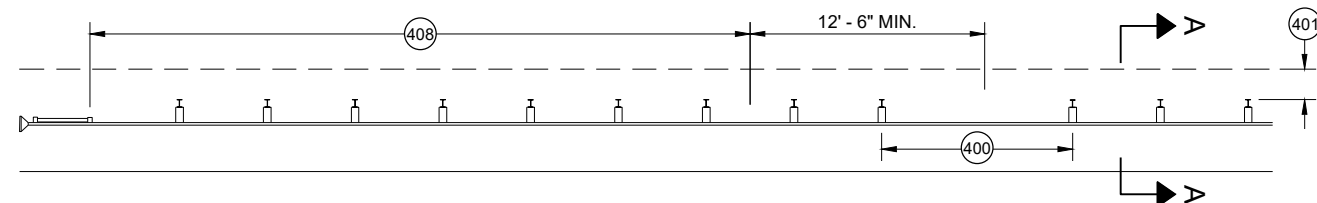
6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

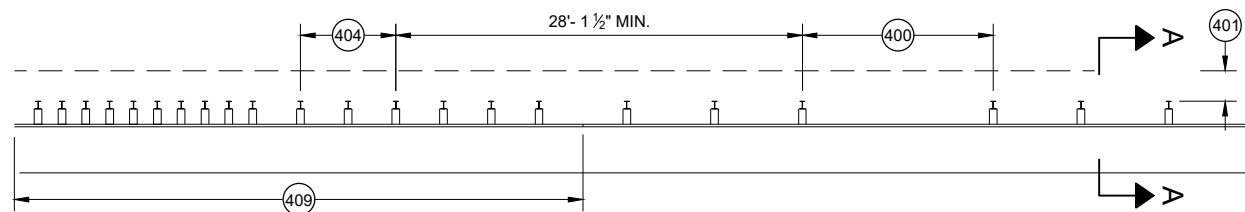
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



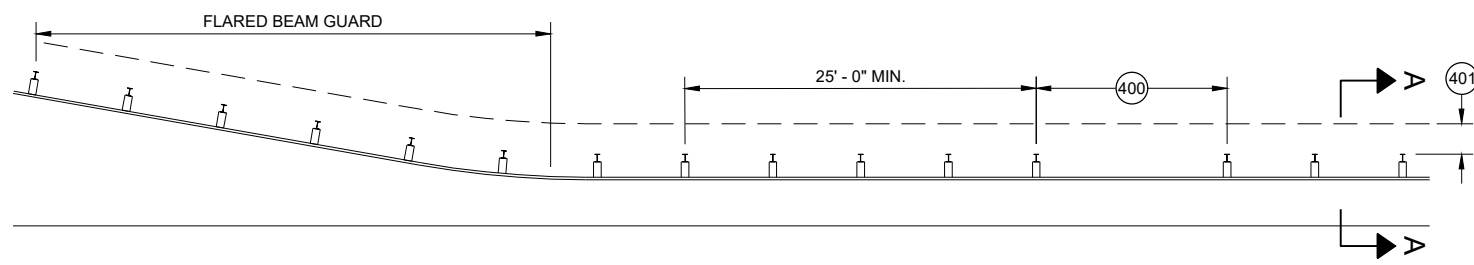
MISSING POST IN MGS GUARDRAIL



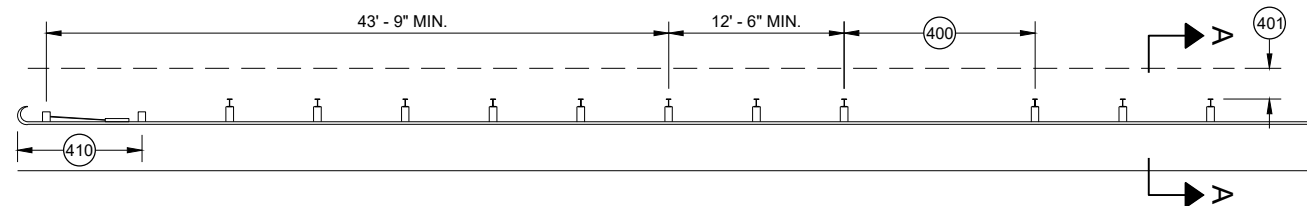
MISSING POST IN MGS GUARDRAIL NEAR EAT



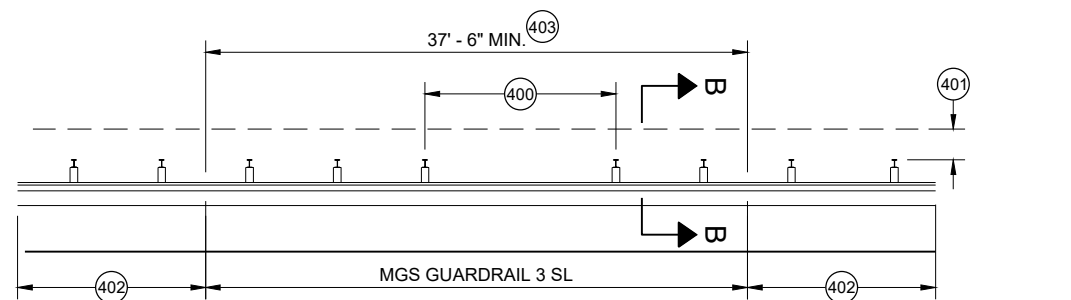
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

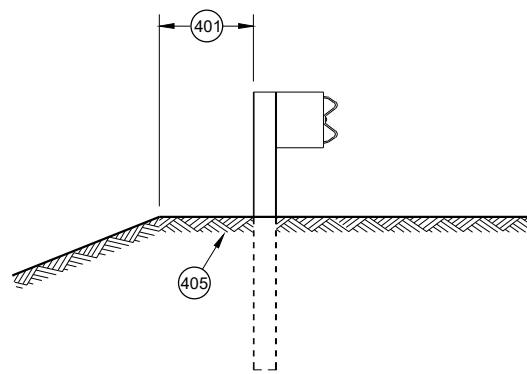


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

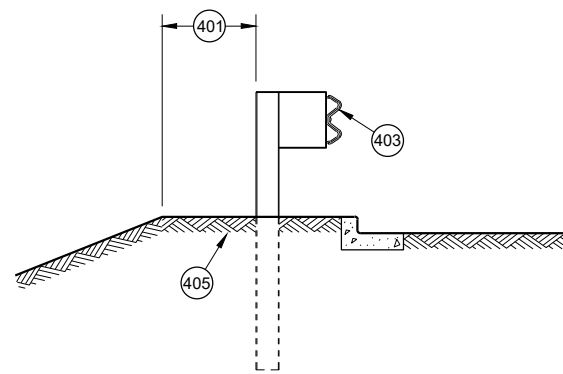


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

116

GENERAL NOTES

- (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.

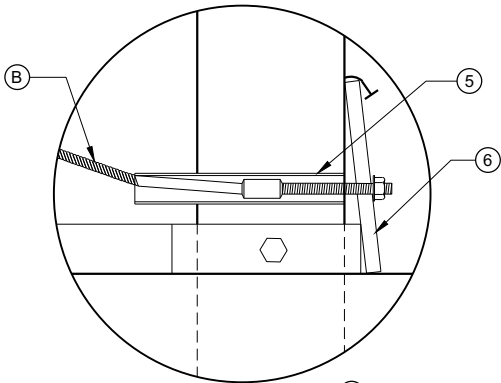
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

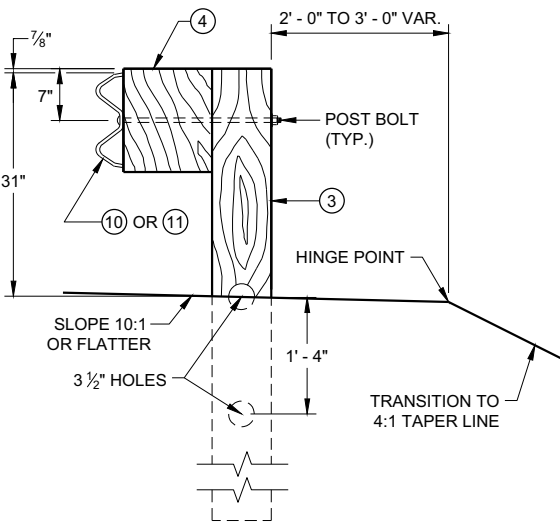
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

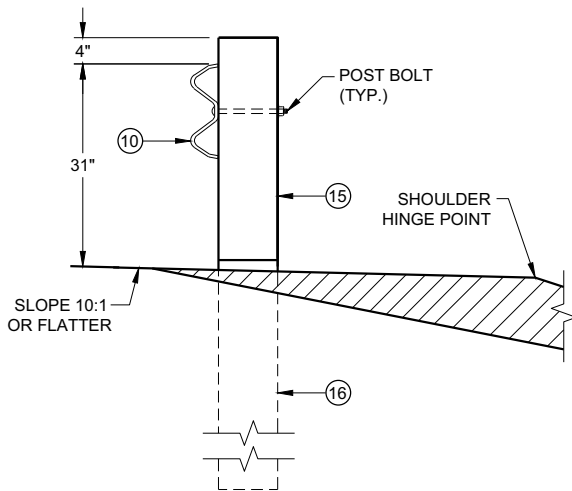
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



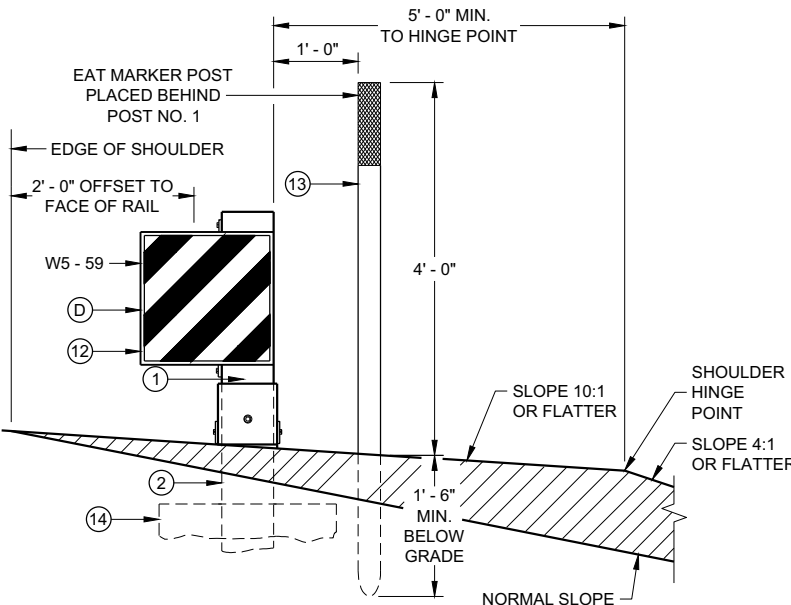
DETAIL "A"



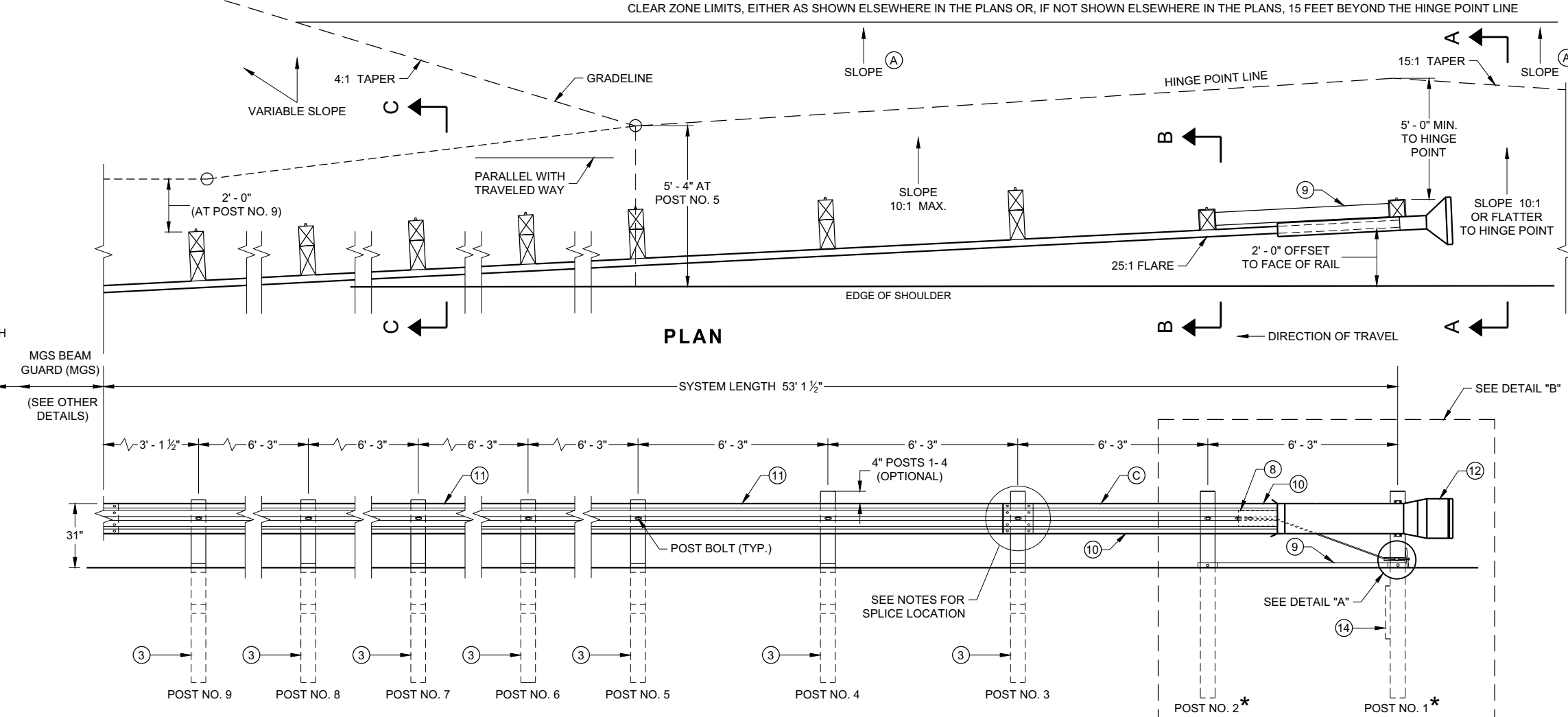
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

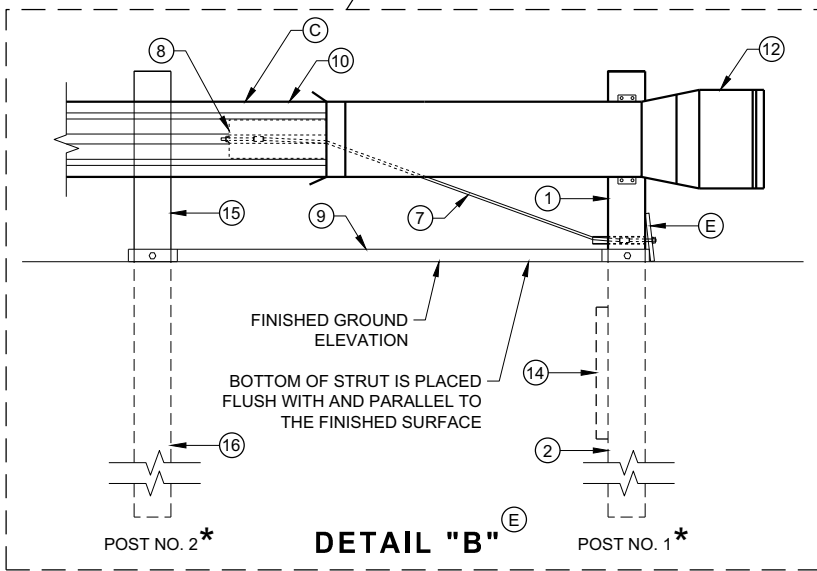


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

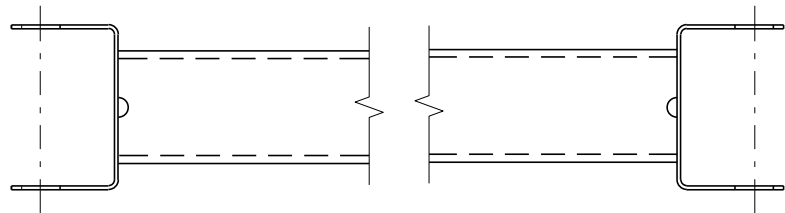
ELEVATION



DETAIL "B"

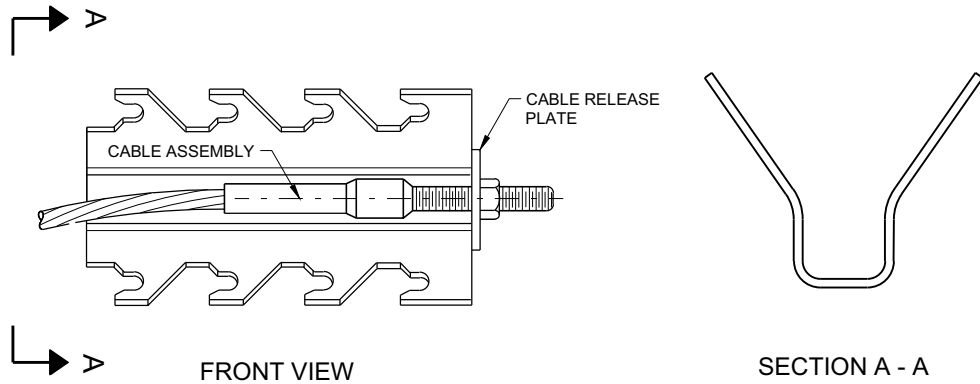
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

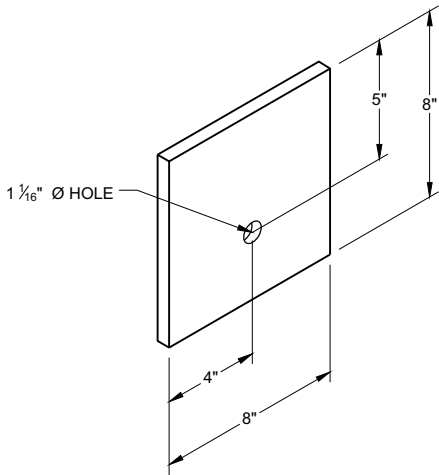


GENERIC GROUND STRUT⁹ ^E

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



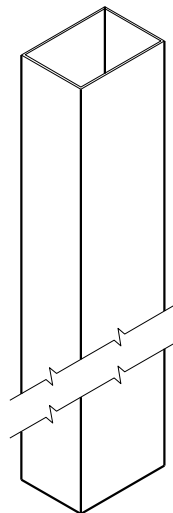
GENERIC ANCHOR CABLE BOX⁹ ^E



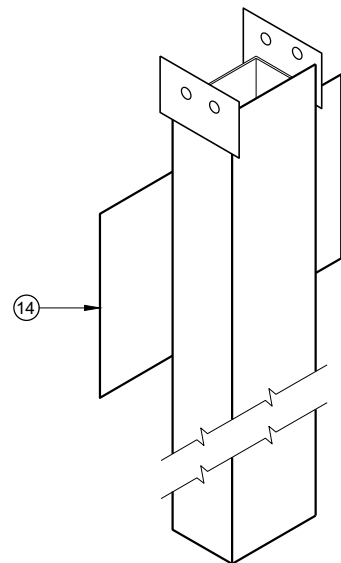
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

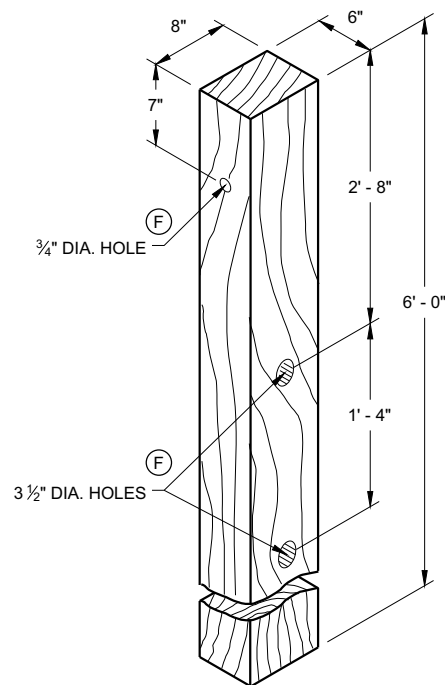
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 118



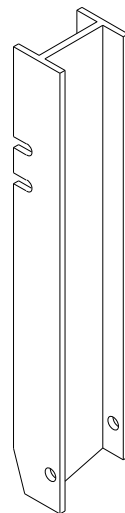
UPPER POST NO. 1 ⁽¹⁾ (E)



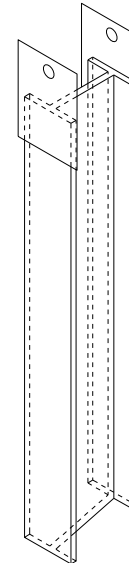
LOWER POST NO. 1 ⁽²⁾ (E)



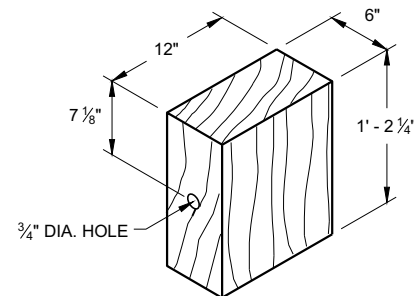
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



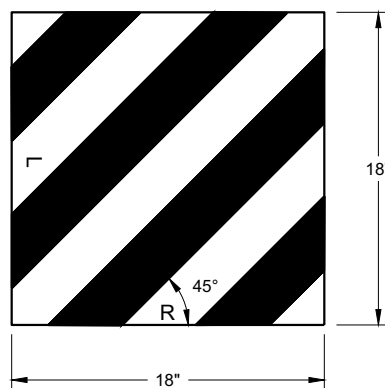
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



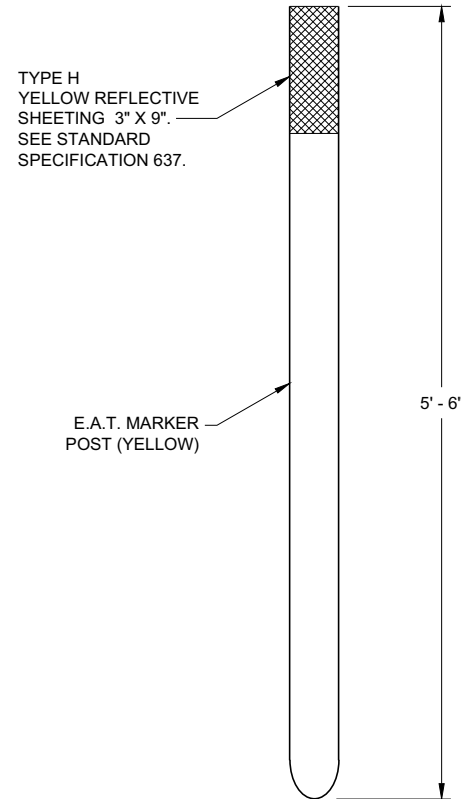
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



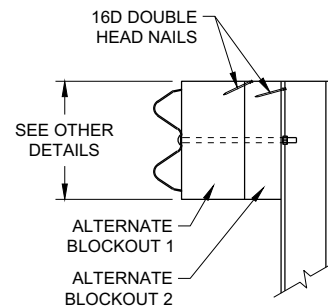
REFLECTIVE SHEETING DETAIL ^(E)



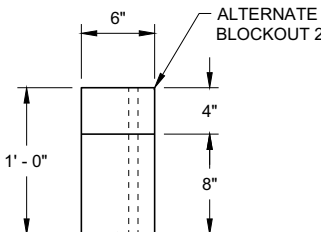
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

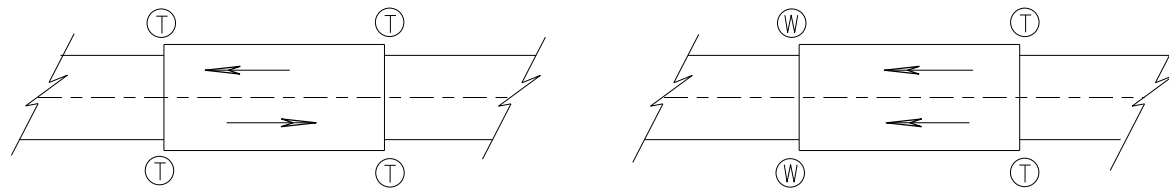
ALTERNATE WOOD
BLOCKOUT DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

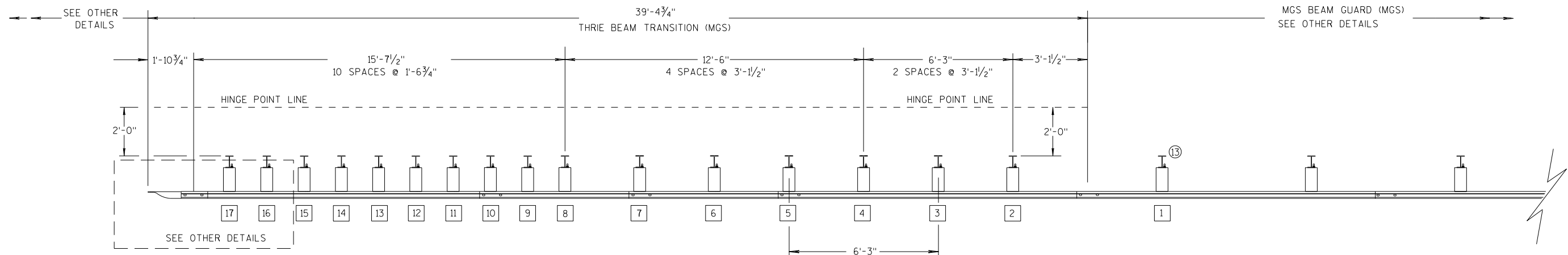
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

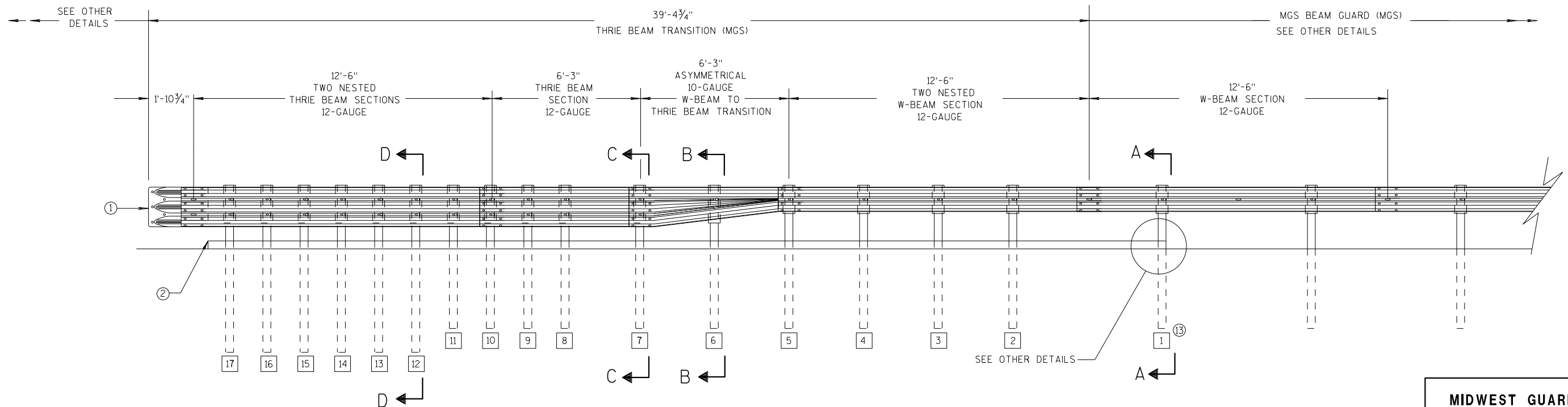
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

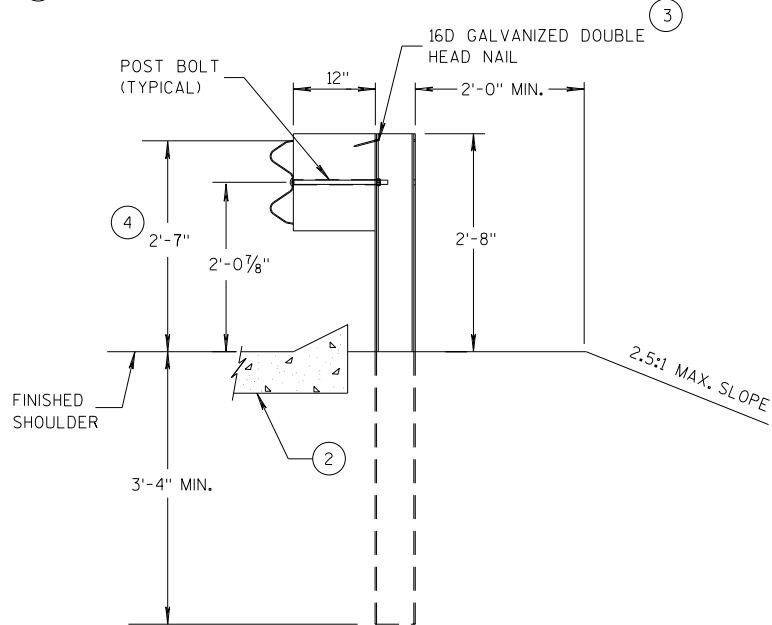
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

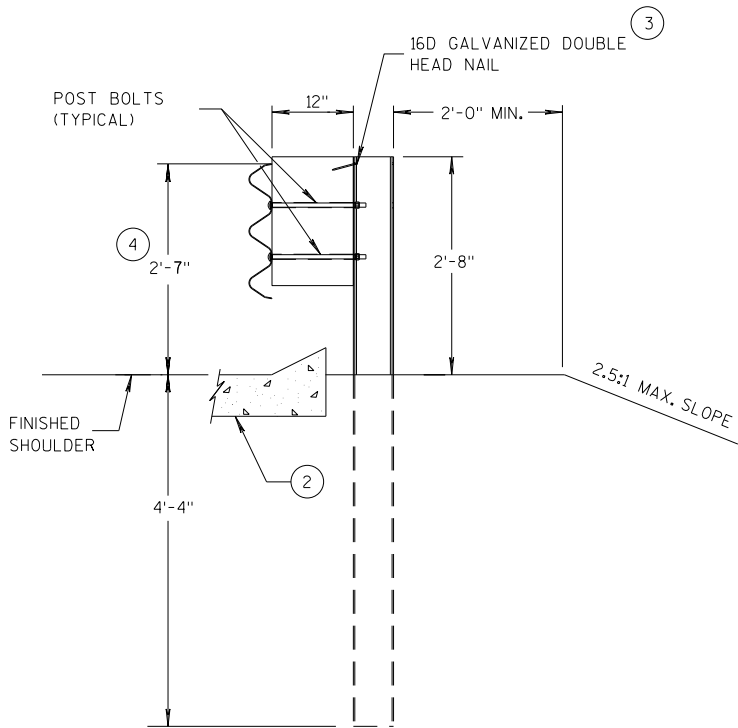
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 120

GENERAL NOTES

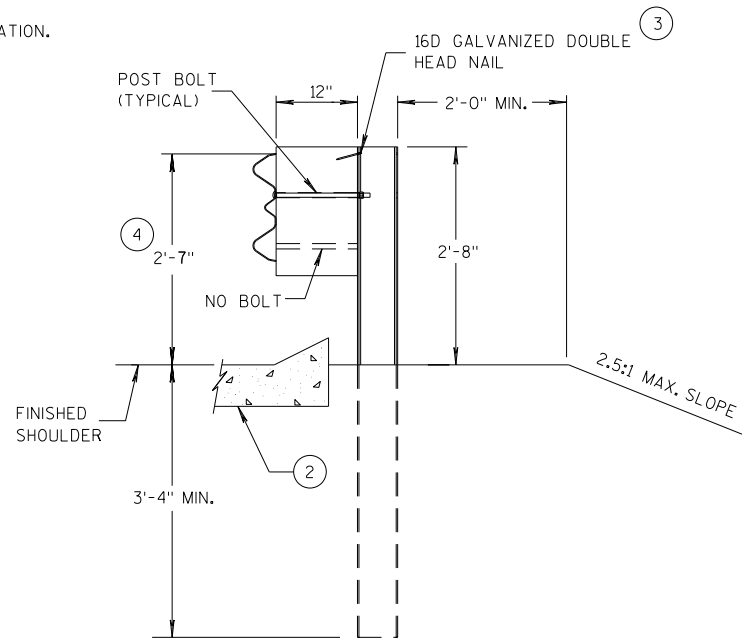
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



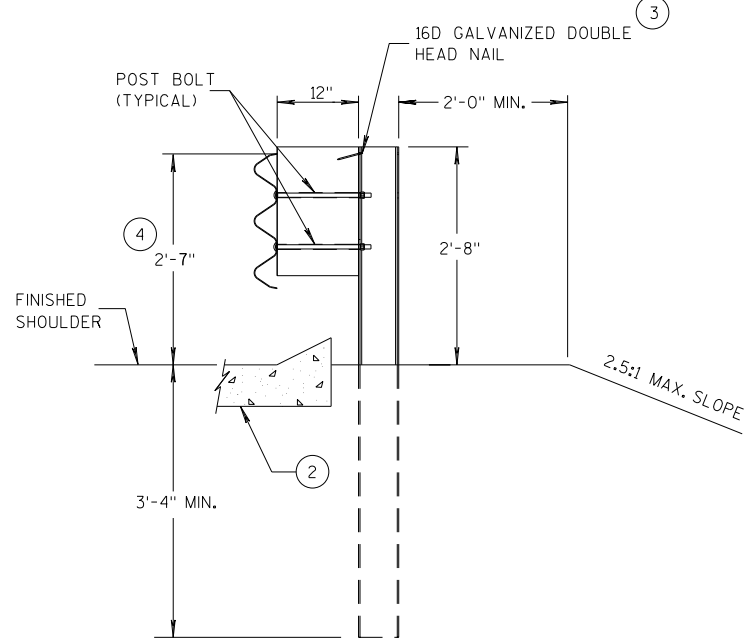
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

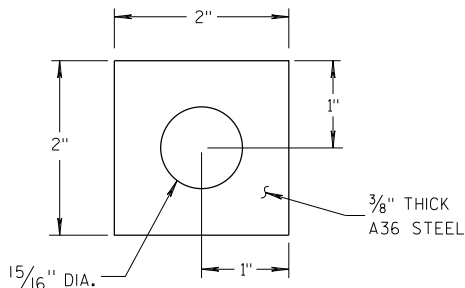
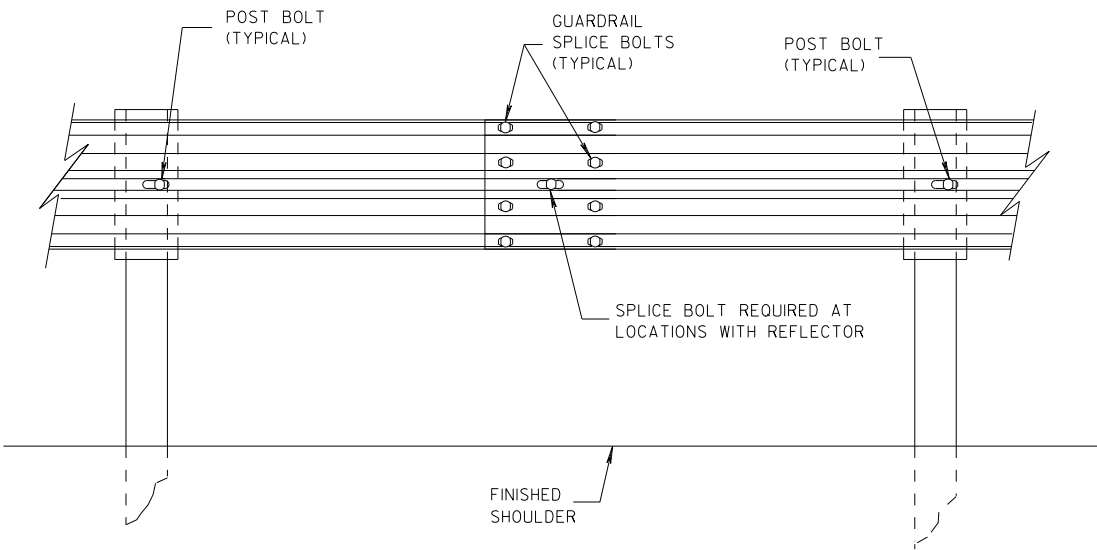
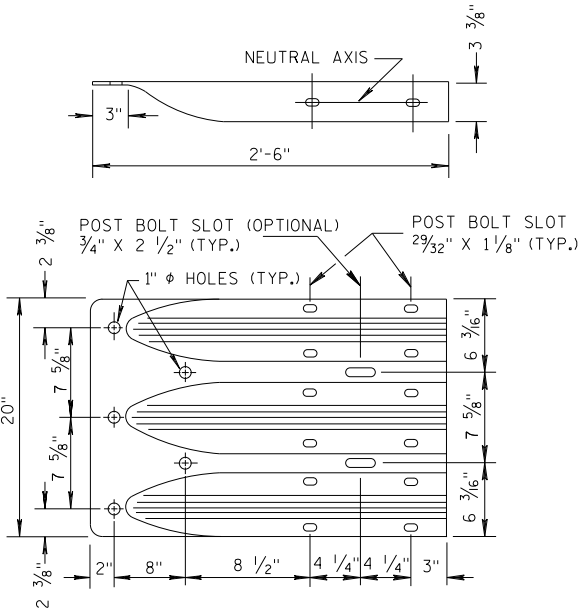


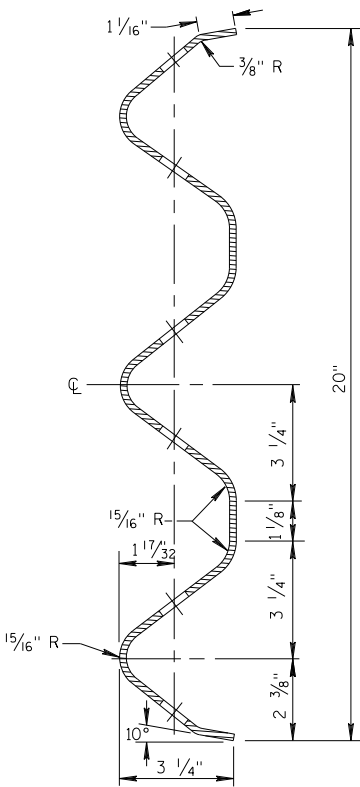
PLATE WASHER DETAIL



SPlice DETAIL



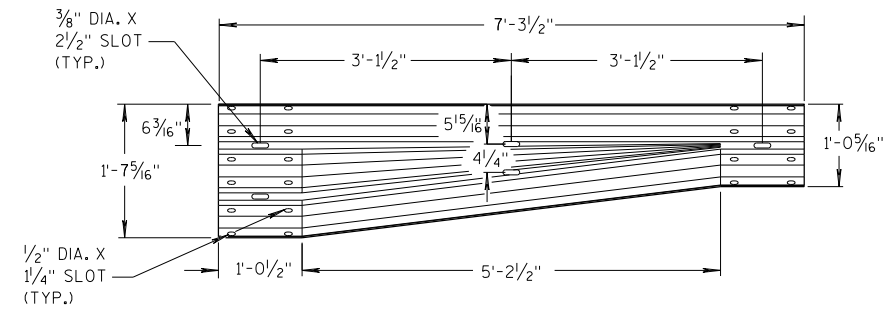
THRIE BEAM
TERMINAL CONNECTOR



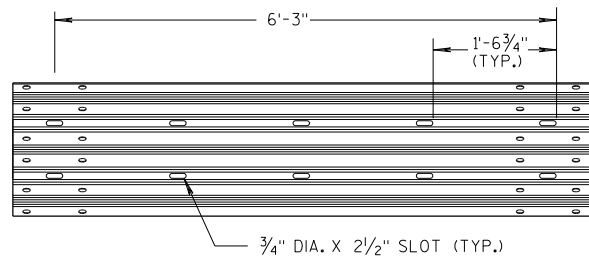
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

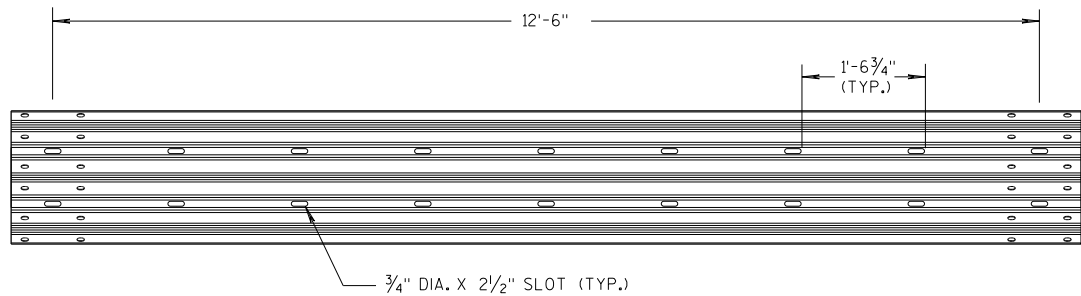
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



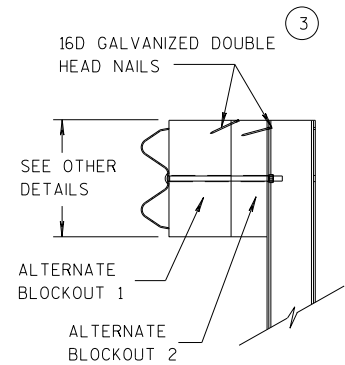
W-BEAM TO THRIE BEAM TRANSITION SECTION



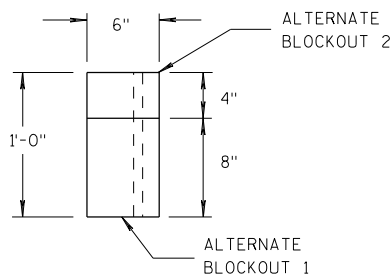
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

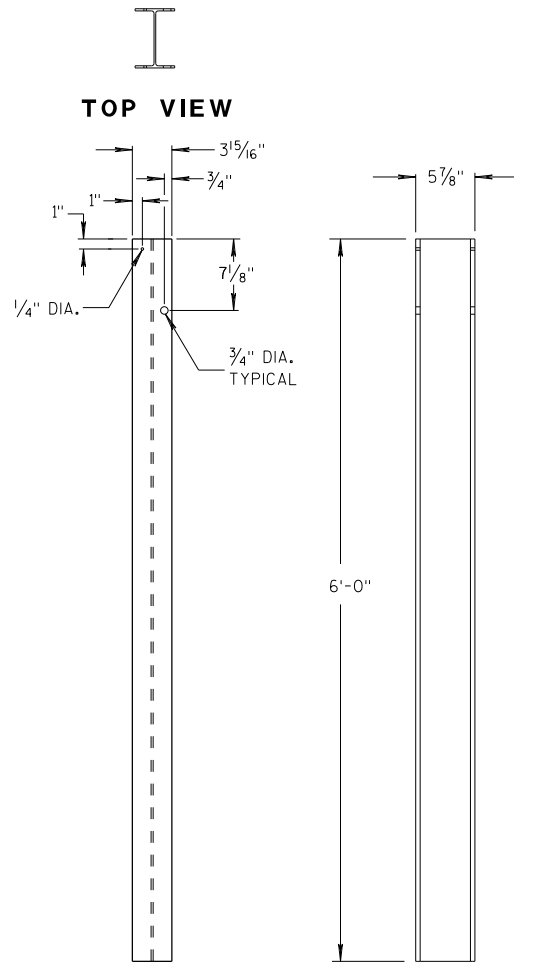


SIDE VIEW



TOP VIEW

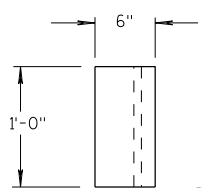
ALTERNATE WOOD BLOCKOUT DETAIL



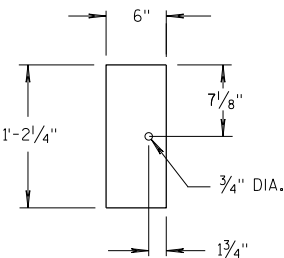
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

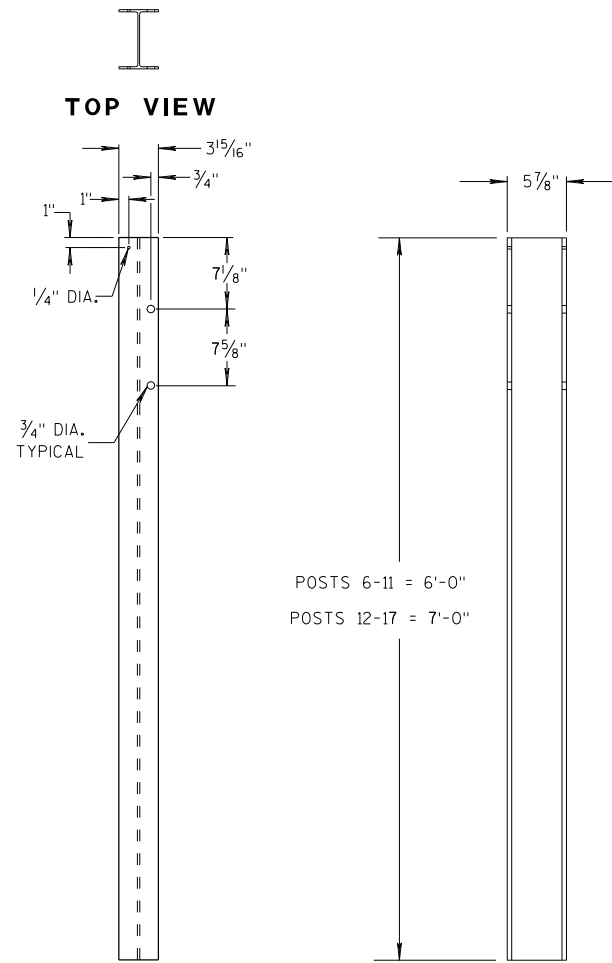


TOP VIEW



FRONT VIEW

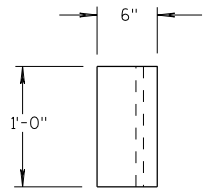
BLOCKOUT POSTS 1-5



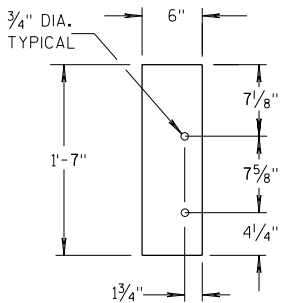
FRONT VIEW

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.

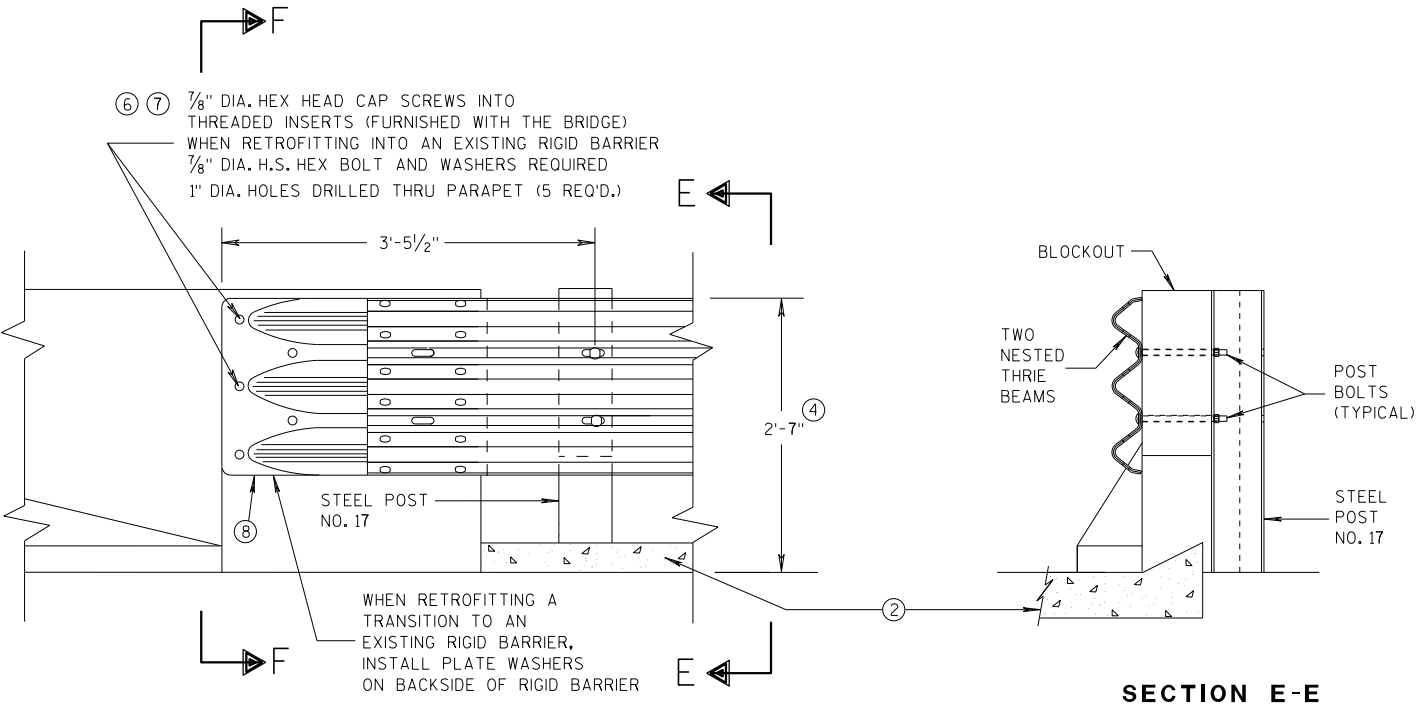
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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.

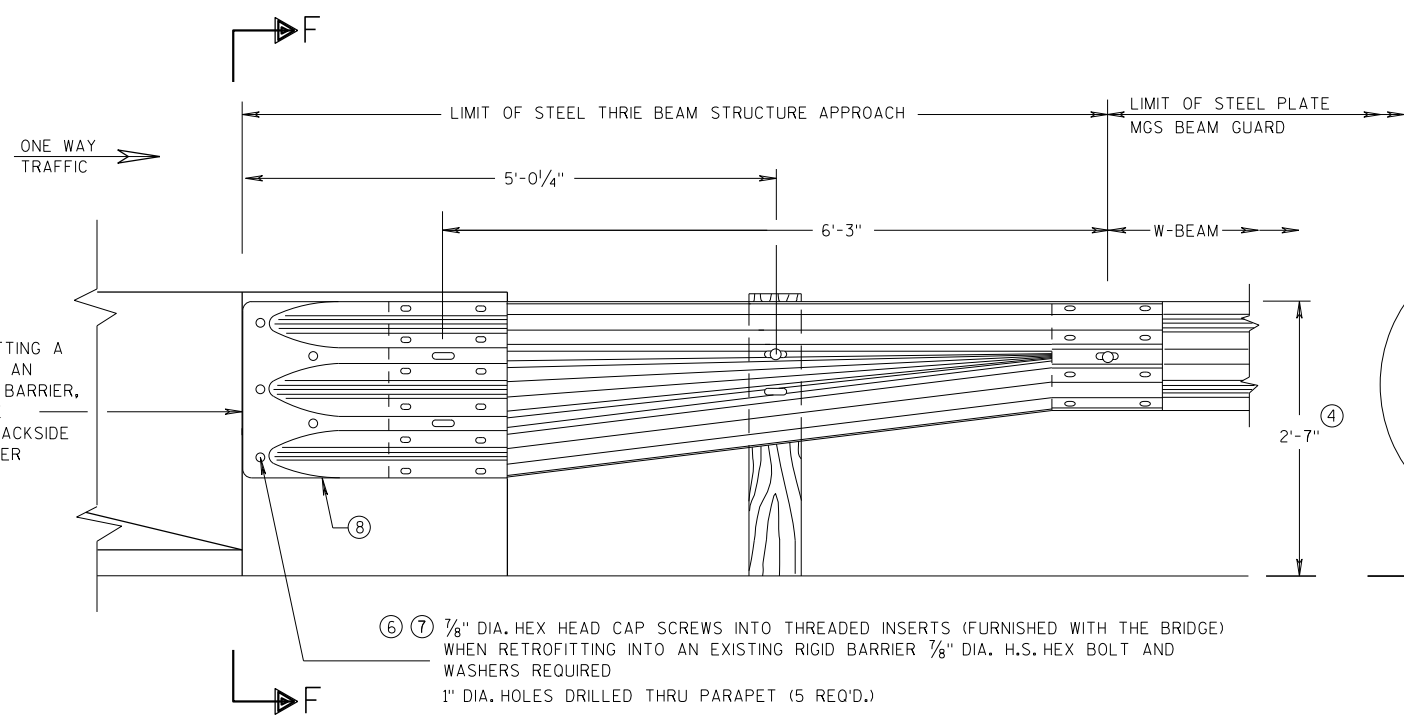
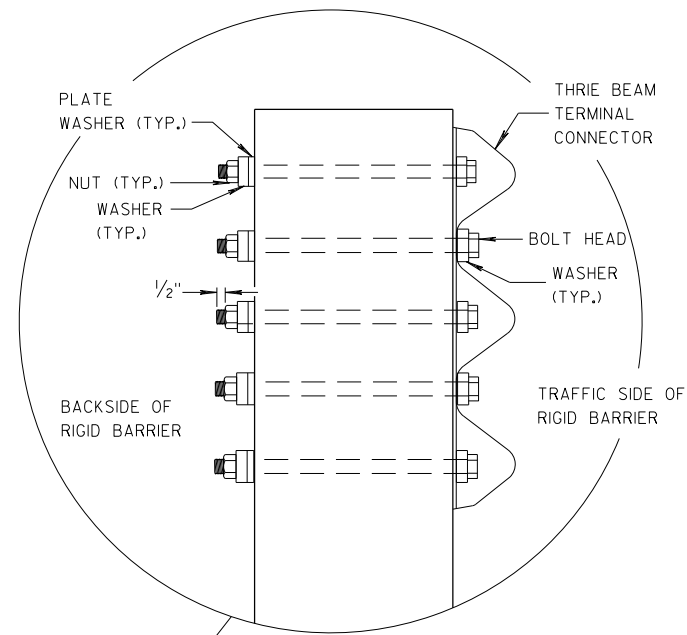
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

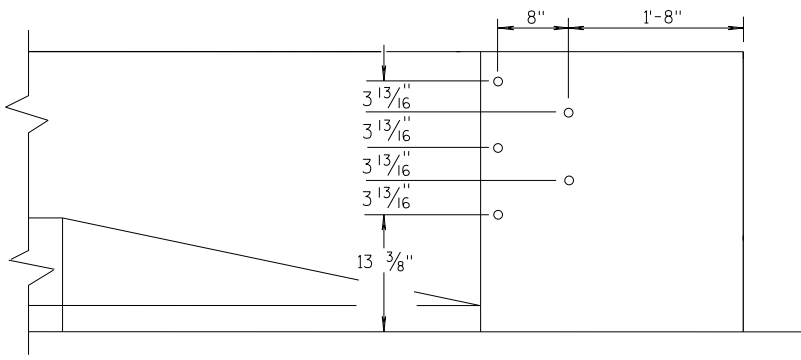


GENERAL NOTES

- 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".

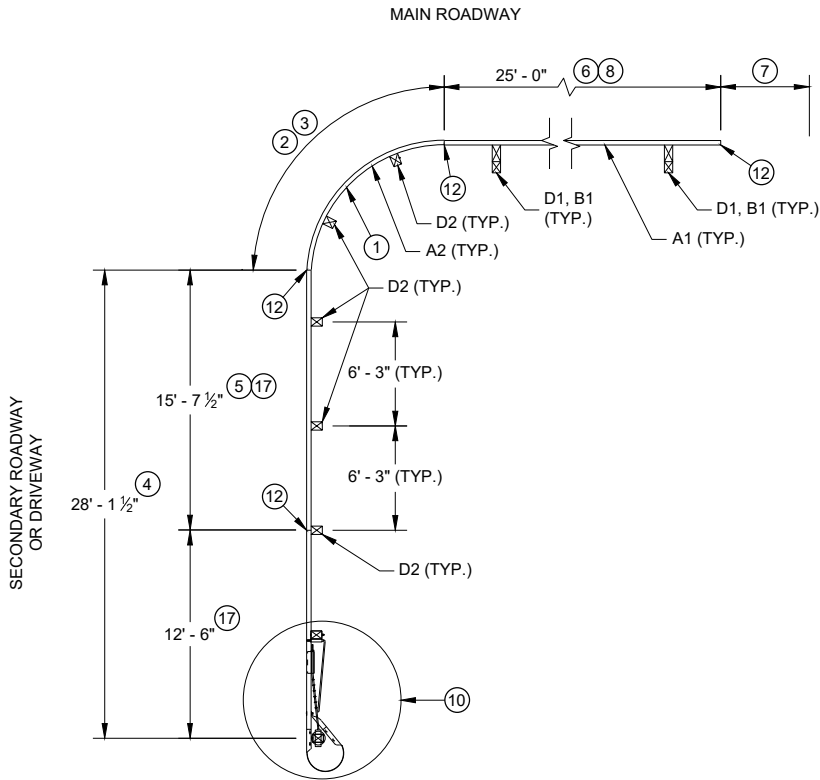


SECTION F-F

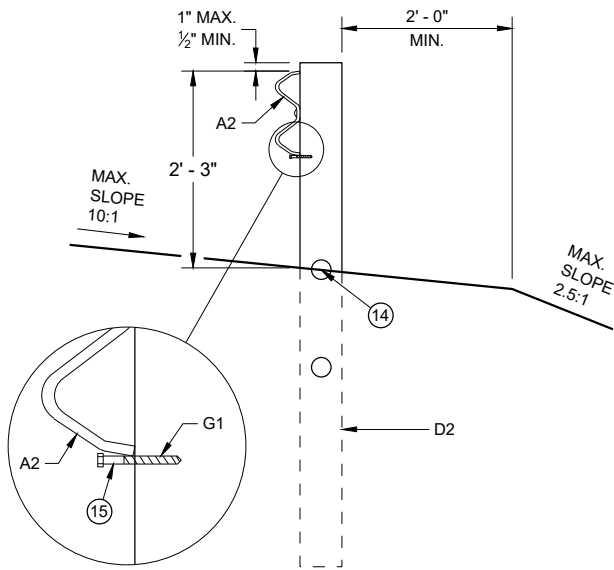


DRILL HOLE LOCATION

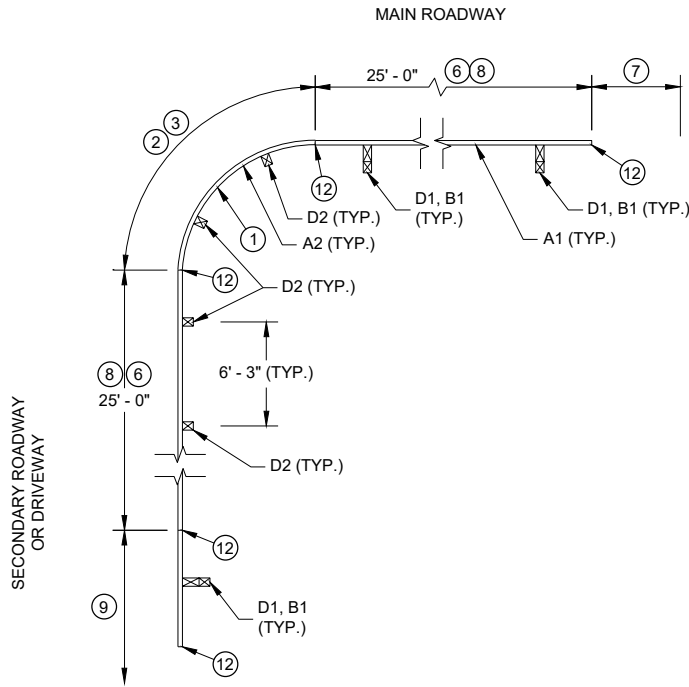
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	123	NT	



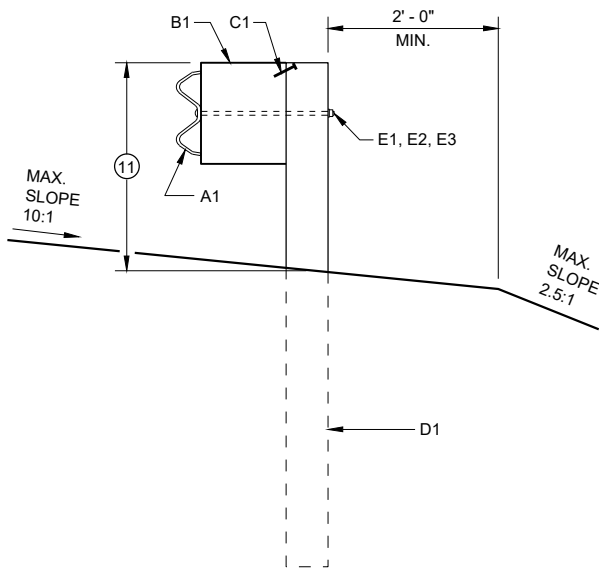
PLAN VIEW
SHORT RADIUS BEAM GUARD WITH
SHORT RADIUS TERMINAL ON
SECONDARY ROAD OR DRIVEWAY



CONTROLLED RELEASE
TERMINAL POST (CRT) IN RADIUS



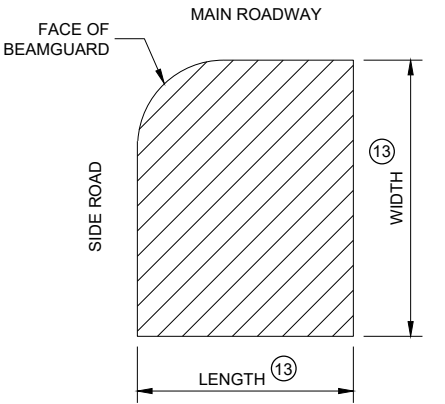
PLAN VIEW
SHORT RADIUS BEAM GUARD WITH
EAT, ADDITIONAL BEAM GUARD
OR
TRANSITION TO RIGID BARRIER ON
SECONDARY ROAD OR DRIVEWAY



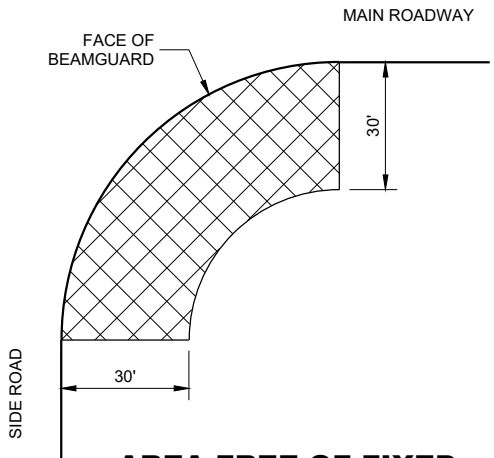
BEAM GUARD POSTS
IN HEIGHT TRANSITION

TABLE FOR RADIUS OF 32' AND LESS

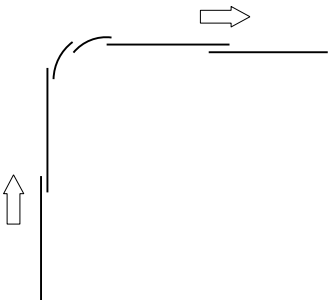
RADIUS (FT)	LENGTH (FT)	WIDTH (FT)
8	25	15
16	30	15
24	40	20
32	50	30



AREA FREE OF FIXED
OBJECTS FOR RADIUS
32' AND LESS



AREA FREE OF FIXED
OBJECTS FOR RADIUS
GREATER THAN 32'



LAP SPLICE DETAIL

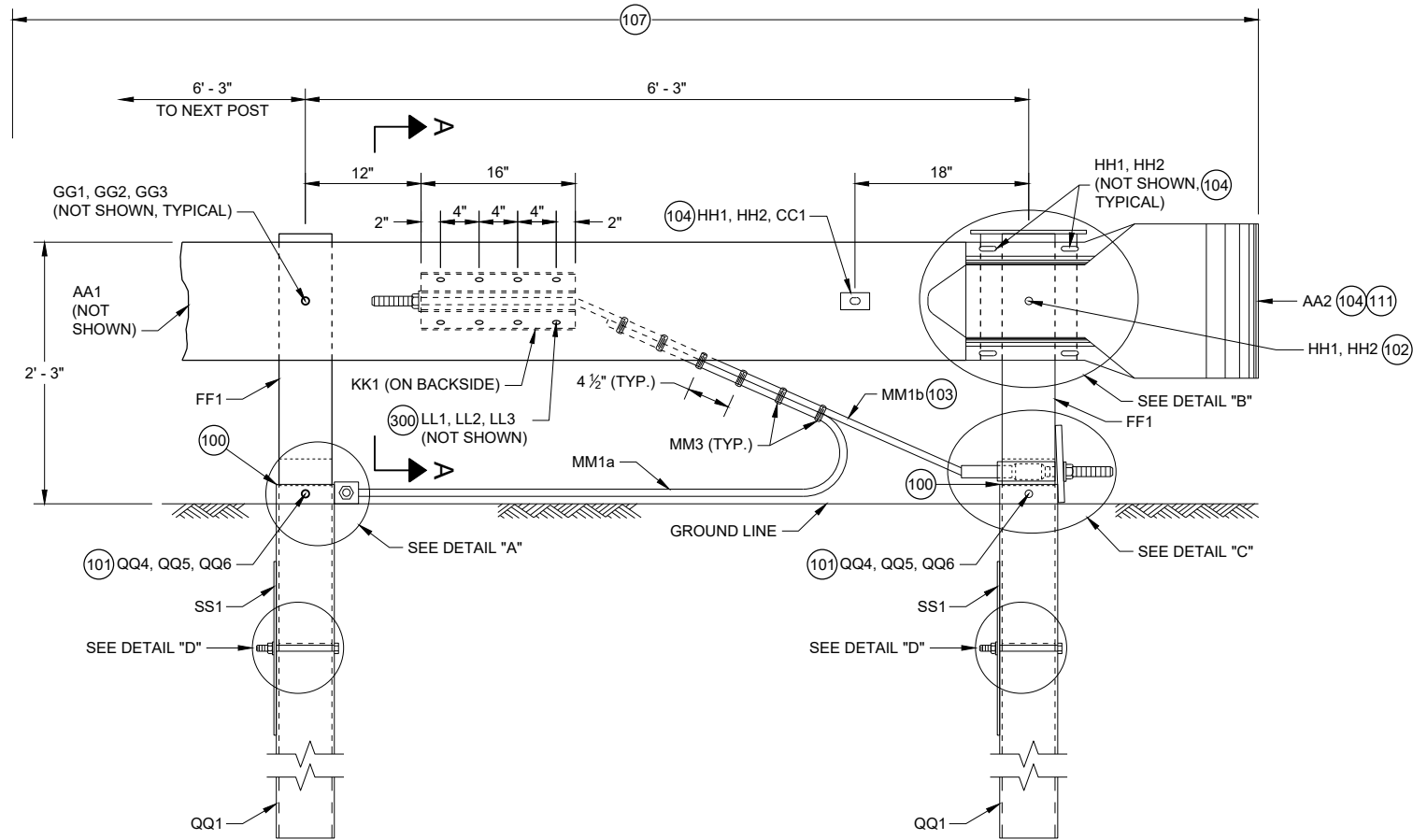
GENERAL NOTES

- SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.
- SEE SDD 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.
- GALVANIZE PARTS AFTER FABRICATION.
- WELDING TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI / AWS D1.1.
- UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.
- UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERTICAL.
- ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUT.
- UNLESS NOTED OTHERWISE, CUT OR PROVIDE BOLTS THAT ARE 1/4" TO 1/2" BEYOND THE NUT.
- DRAWINGS ARE NOT TO SCALE.

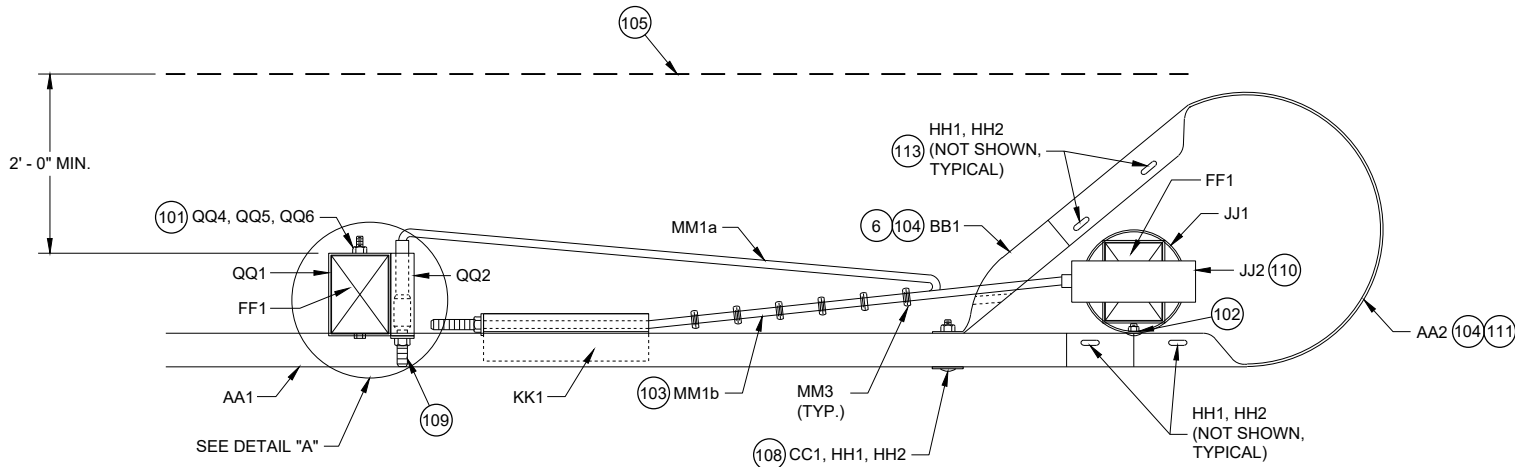
- (1) RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
- (2) CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6' - 3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE (CRT) POSTS.
- (3) WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAIL IS RESTED ON TOP OF LAG SCREW.
- (4) MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID WITH BEAM GUARD ITEM.
- (5) ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
- (6) MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TO TRANSITION TO RIGID BARRIER. ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
- (7) BEAM GUARD, EAT, OR TRANSITION TO RIGID BARRIER. SEE PLAN.
- (8) TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
- (9) ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
- (10) SHORT RADIUS TERMINAL (SEE OTHER DETAILS).
- (11) HEIGHT VARIES. SEE NOTE (8) AND (8).
- (12) BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRES PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
- (13) SEE TABLE FOR VALUES.
- (14) MAXIMUM HEIGHT FOR CENTER OF HOLE IS 3/4" ABOVE FINISHED GROUND ±1".
- (15) DRILL POST 1 5/64" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
- (16) SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
- (17) TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL (CRT).

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



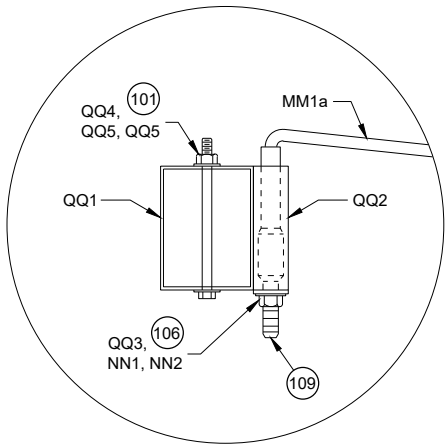
**PROFILE VIEW
SHORT RADIUS TERMINAL**



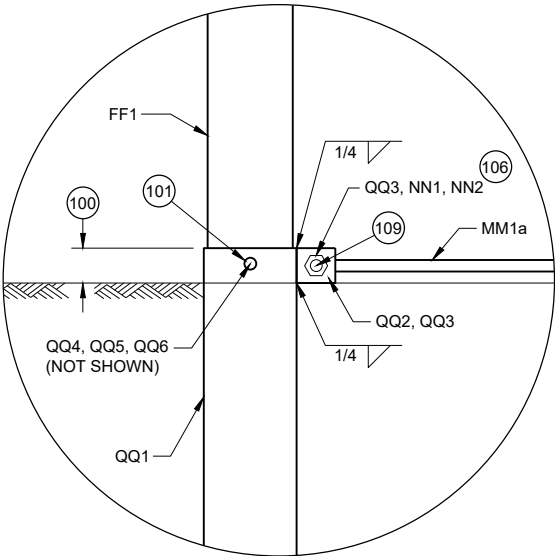
**TOP VIEW
SHORT RADIUS TERMINAL**

GENERAL NOTES

- (100) TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.
- (101) WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.
- (102) SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL "B".
- (103) CABLE IS TAUT.
- (104) ADJUST AA2 AND BB1 TO FIT.
- (105) BREAK POINT OF SHOULDER.
- (106) TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL "A" PROFILE VIEW.
- (107) PAY LIMIT FOR BEAM GUARD.
- (108) SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.
- (109) CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS 1/2" TOLERANCE). DEBURR AFTER CUTTING.
- (110) SEE STEEL PIPE ASSEMBLY DETAILS.
- (111) ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.
- (112) FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.
- (113) FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



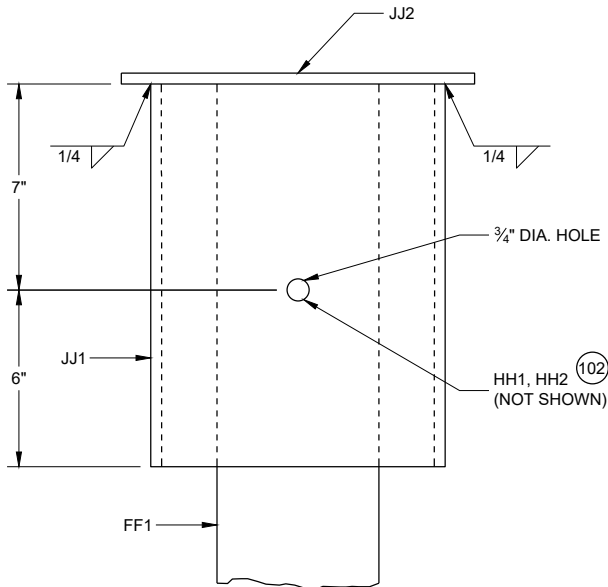
**TOP VIEW
DETAIL "A"
(WOOD BREAKAWAY AND BEAM
GUARD RAIL POSTS NOT SHOWN)**



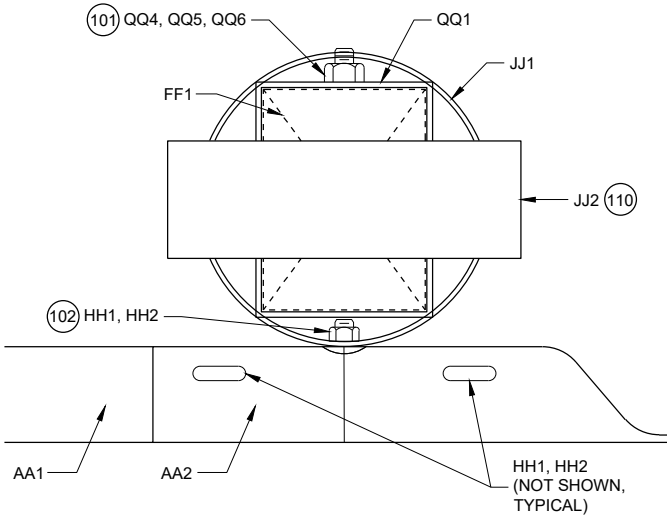
**PROFILE VIEW
DETAIL "A"**

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

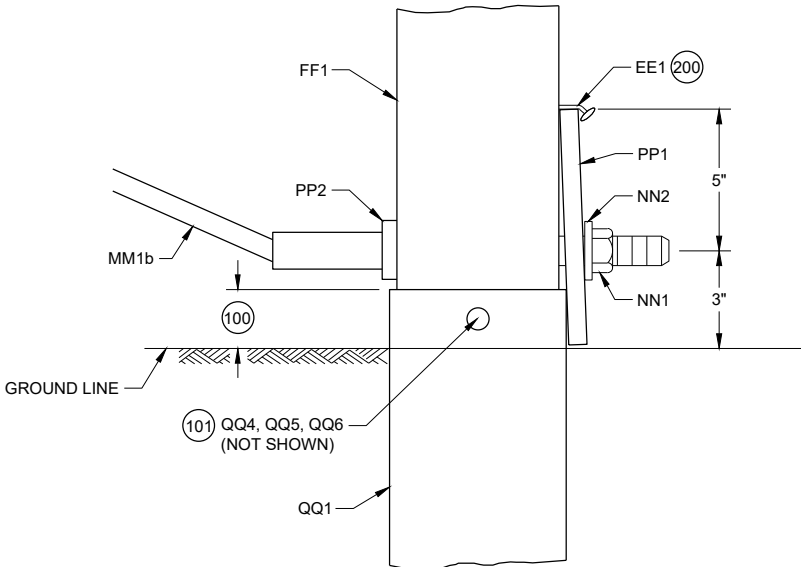
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 125



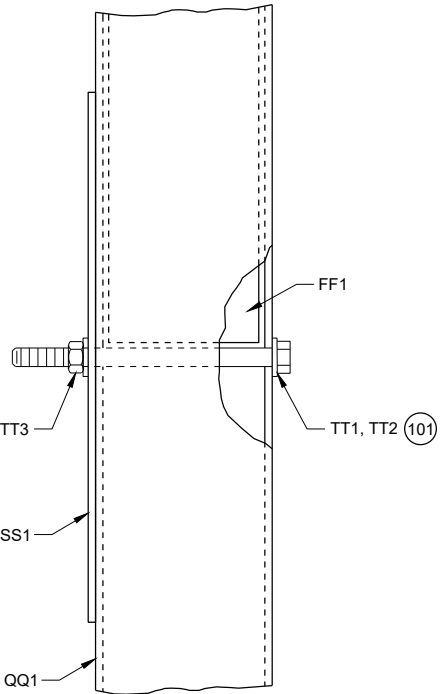
**PROFILE VIEW
DETAIL "B"
STEEL PIPE ASSEMBLY
(BEAM GUARD AND W BEAM
END SECTION NOT SHOWN)**



**PLAN VIEW
DETAIL "B"
STEEL PIPE ASSEMBLY**



**PROFILE VIEW
DETAIL "C"**



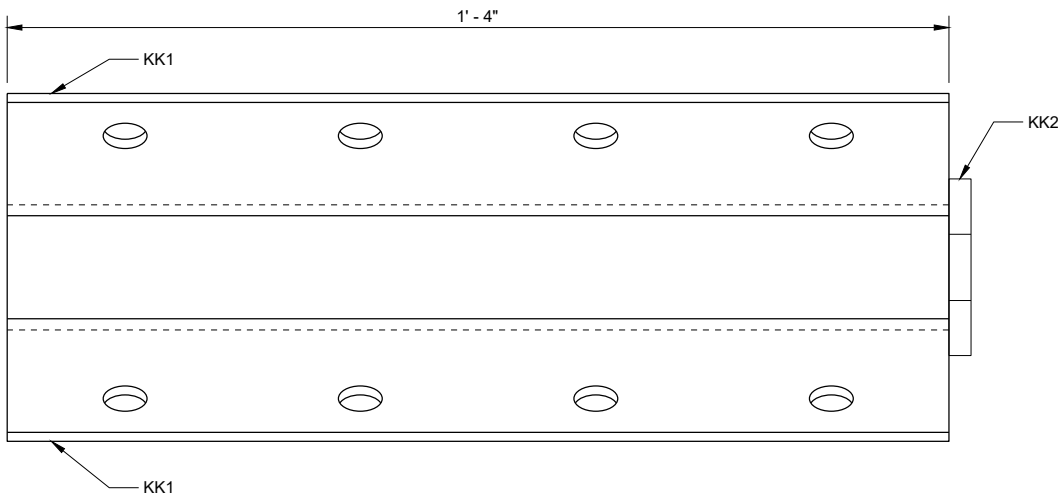
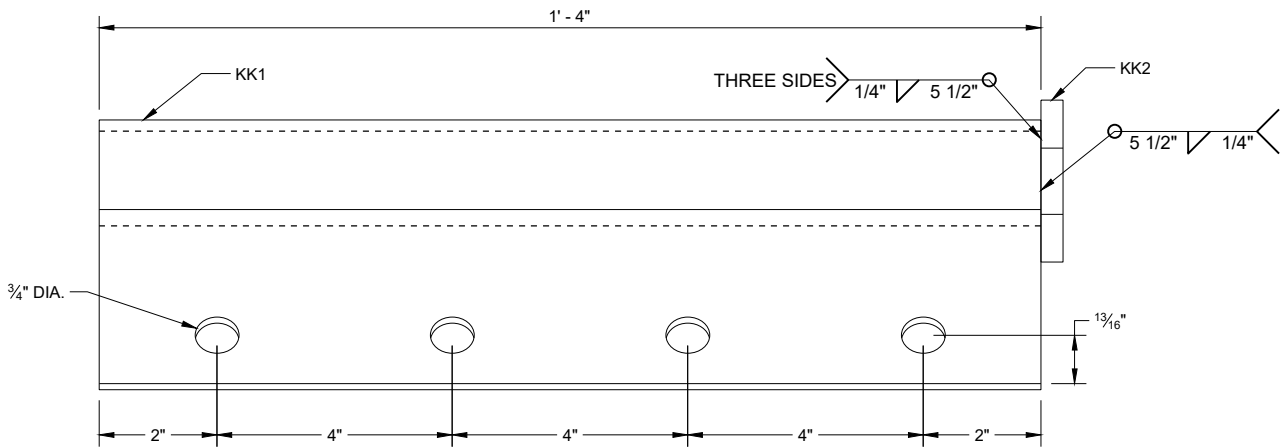
**PROFILE VIEW
DETAIL "D"**

GENERAL NOTES

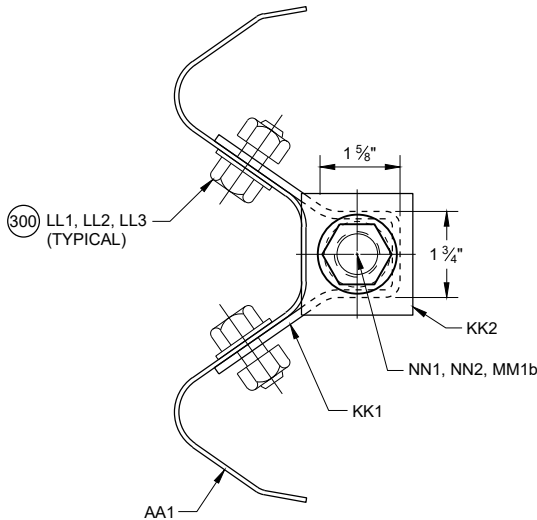
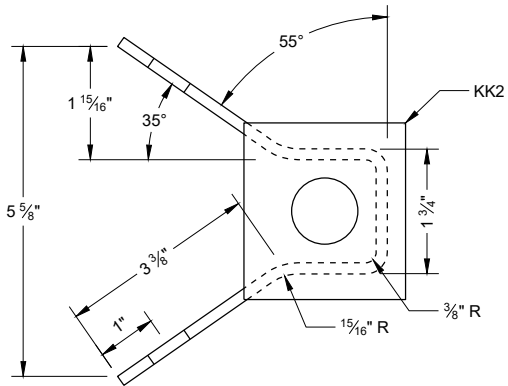
(200) TWO (2) NAILS SPACED 4 INCHES CENTER TO CENTER.

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 126



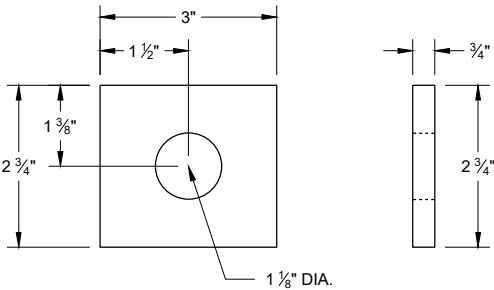
ANCHOR BRACKET (KK1, KK2)



SECTION A - A

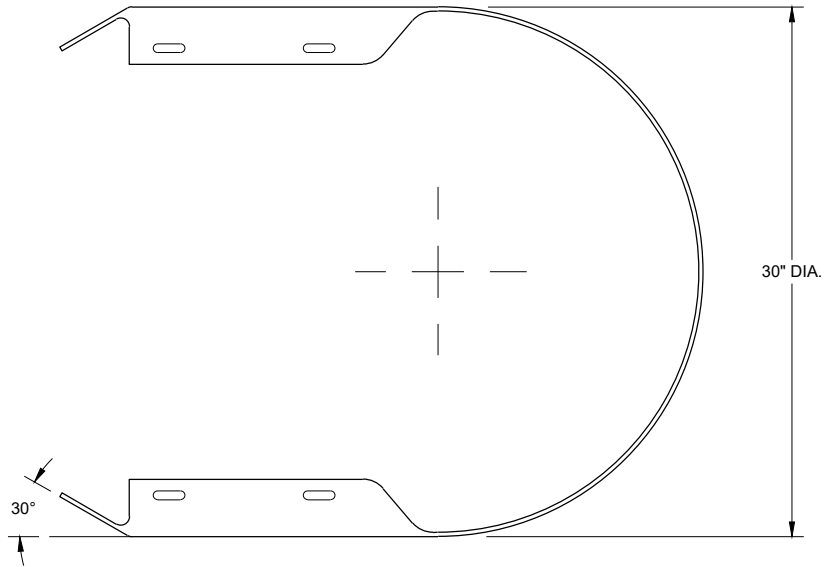
300 WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT (8) LL1 AND LL3 REQUIRED. SIXTEEN (16) LL2 REQUIRED.

ANCHOR BRACKET BEARING PLATE (KK2)

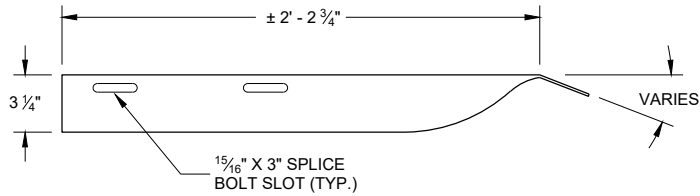


SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

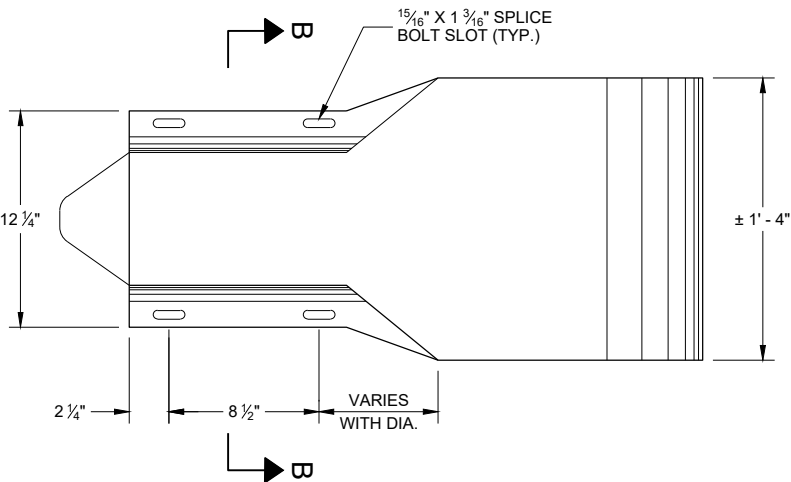
STATE OF WISCONSIN
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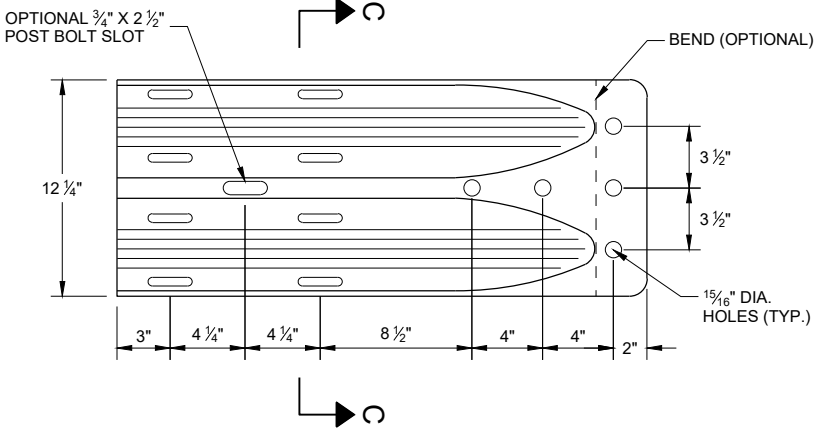
TOP VIEW



TOP VIEW



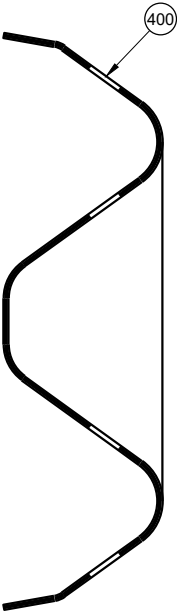
PROFILE VIEW
W BEAM
END SECTION BUFFER (AA2)



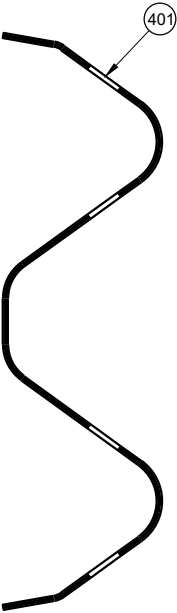
PROFILE VIEW
W BEAM
TERMINAL CONNECTOR (BB1)

GENERAL NOTES

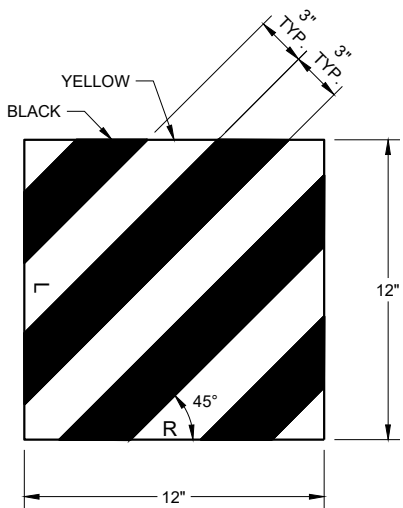
- (400) CROSS SECTION OF PART IS TO FIT OVER AA1 .
- (401) CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1 .



SECTION B -B



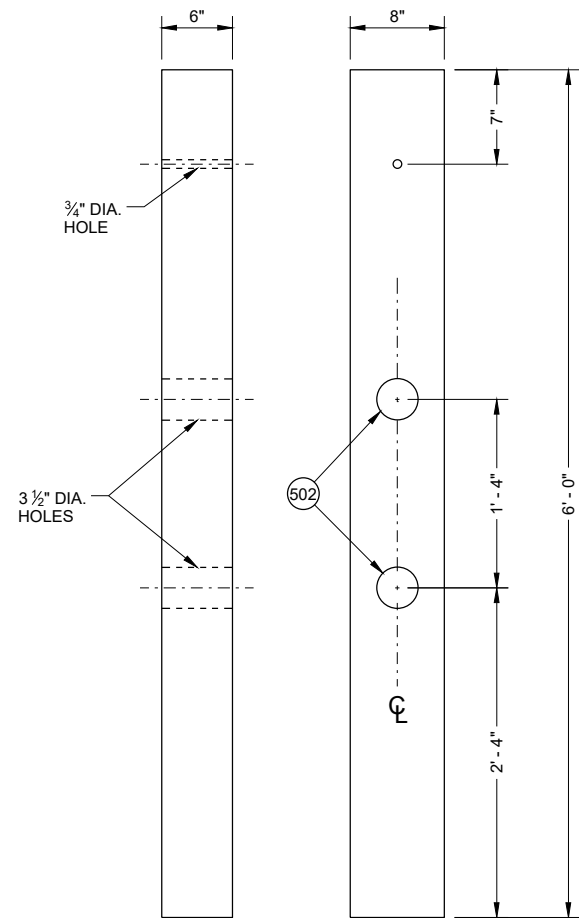
SECTION C -C



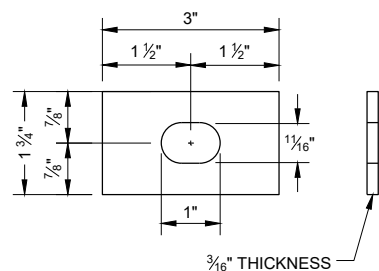
REFLECTIVE SHEETING (UU1, UU2)

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

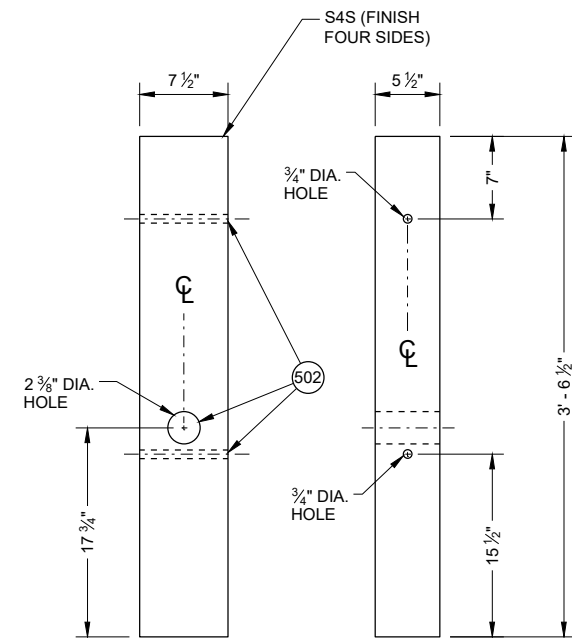
STATE OF WISCONSIN
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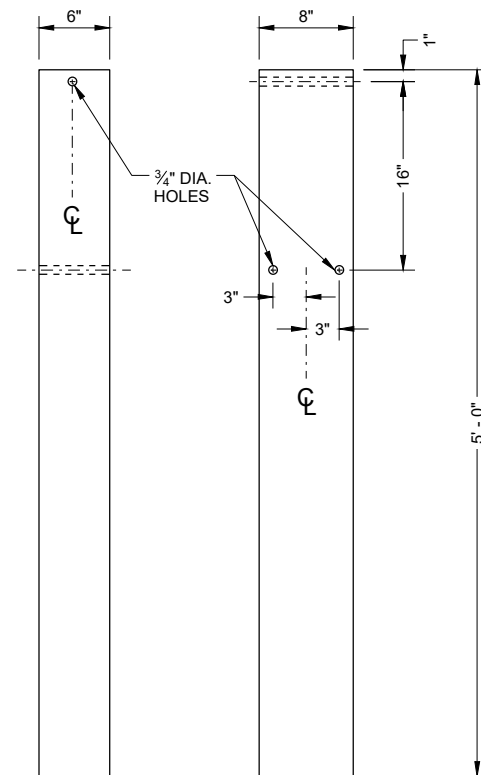
FRONT VIEW SIDE VIEW
CONTROLLED RELEASE POST (CRT) (DD2)



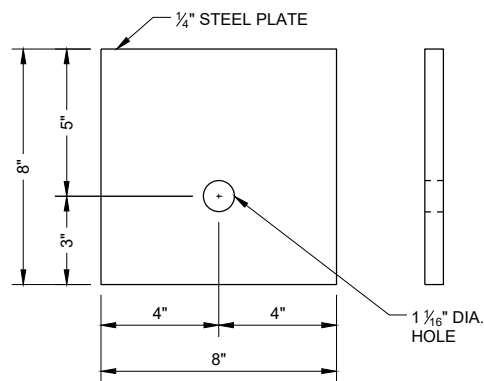
RECTANGULAR PLATE WASHER (CC1)



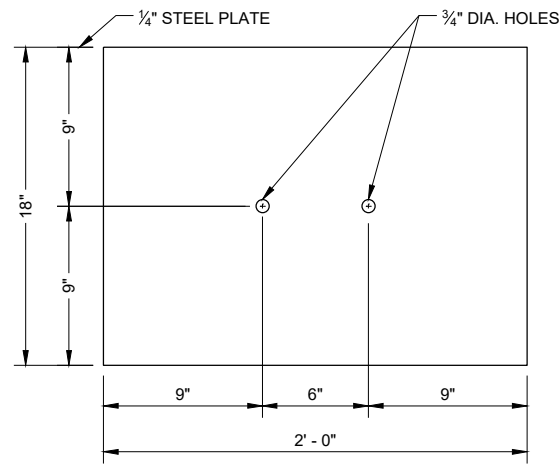
FRONT VIEW SIDE VIEW
WOOD BREAKAWAY POST (FF1)



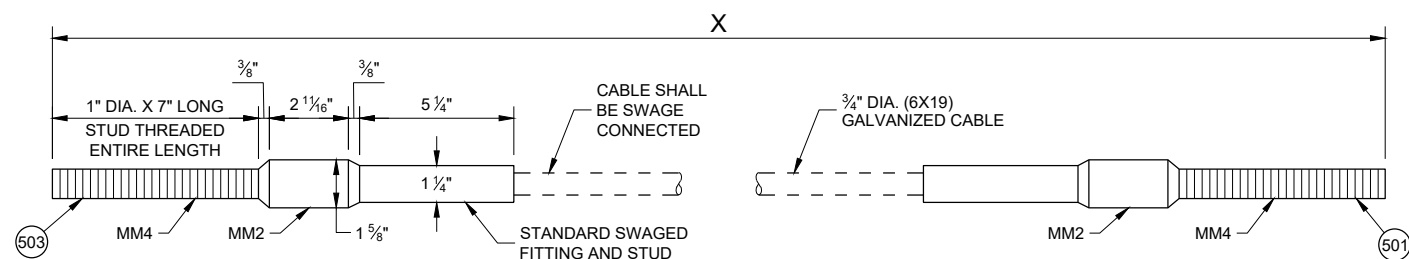
FRONT VIEW SIDE VIEW
FOUNDATION TUBE (QQ1) (500)



BEARING PLATE (PP1)



SOIL PLATE (SS1)



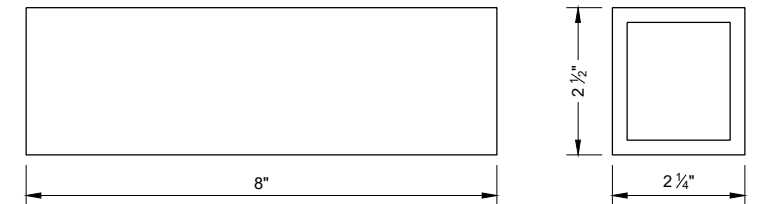
CABLE ASSEMBLY (MM1a, MM1b)

"X" LENGTH

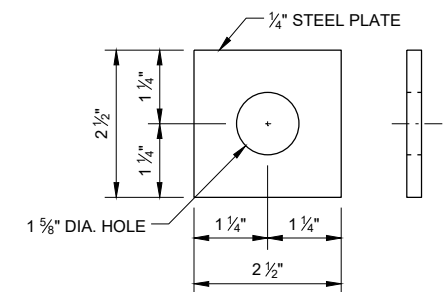
MM1b	9' - 0"
MM1b	6' - 8"

GENERAL NOTES

- (500) SEE DETAIL "D" FOR LOCATION AND ATTACHMENT OF SS1.
- (501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.
- (502) LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.
- (503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).



FOUNDATION TUBE - ANCHOR CABLE TUBE (QQ2)



ANCHOR CABLE TUBE END PLATE (QQ3)

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 129

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL THE RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
E3	POST BOLT - NUT	AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
G1	LAG SCREW	ASTM A308 GRADE A ASTM A153 CLASS D	1/2" DIA. 6" LONG
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
		APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
GG2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	3/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 130

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	3/8" DIA. SEE 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	3/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	3/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 3/8" X 4" X 1' - 0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	3/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	3/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	3/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	3/4"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
NN2	ANCHOR CABLE - NUT - WASHER	UNC	1" DIA.
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

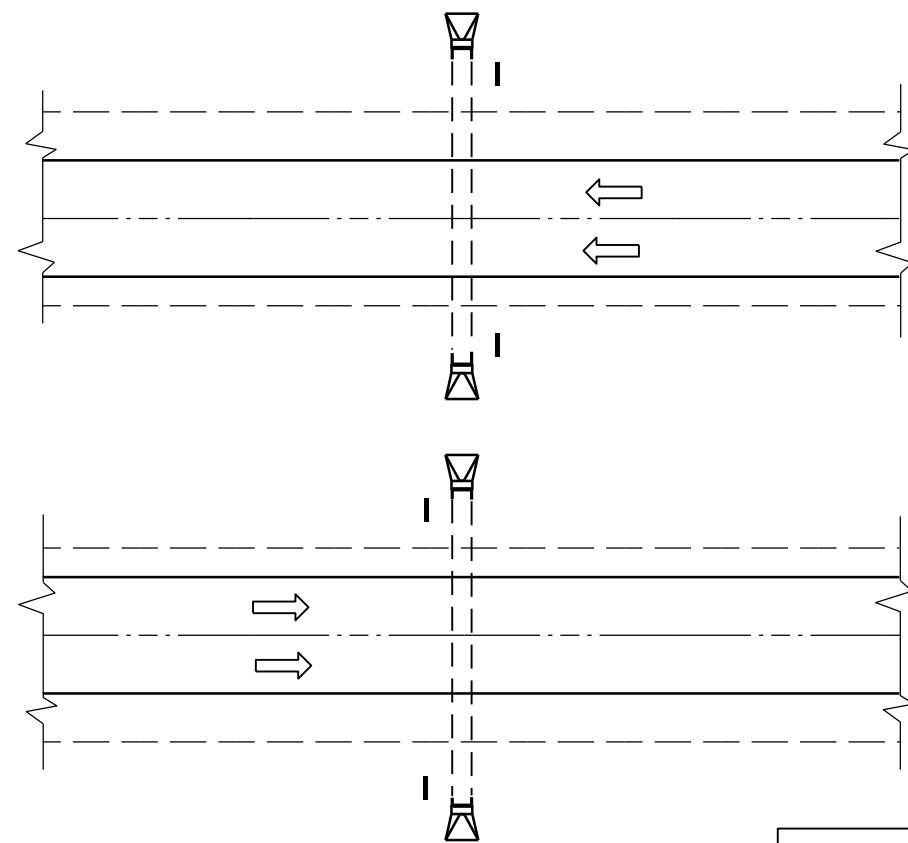
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
PP1	BEARING PLATE AT POST	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X $\frac{3}{16}$ "
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 $\frac{1}{2}$ " X 2 $\frac{1}{4}$ " X $\frac{1}{4}$ " X 8"
		GALV. AASHTO M111 / ASTM A123	
QQ3	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 $\frac{1}{2}$ " X 2 $\frac{1}{2}$ " X $\frac{1}{4}$ "
		GALV. AASHTO M111 / ASTM A123	
QQ4	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	$\frac{5}{8}$ DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
QQ5	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{5}{8}$ DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
QQ6	GROUND STRUT AND YOKE - NUT	HEAVY HEX	$\frac{5}{8}$ DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
SS1	SOIL PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	$\frac{5}{8}$ DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{5}{8}$ DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	$\frac{5}{8}$ DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING. SHEETING TYPE FOR MARKER.
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

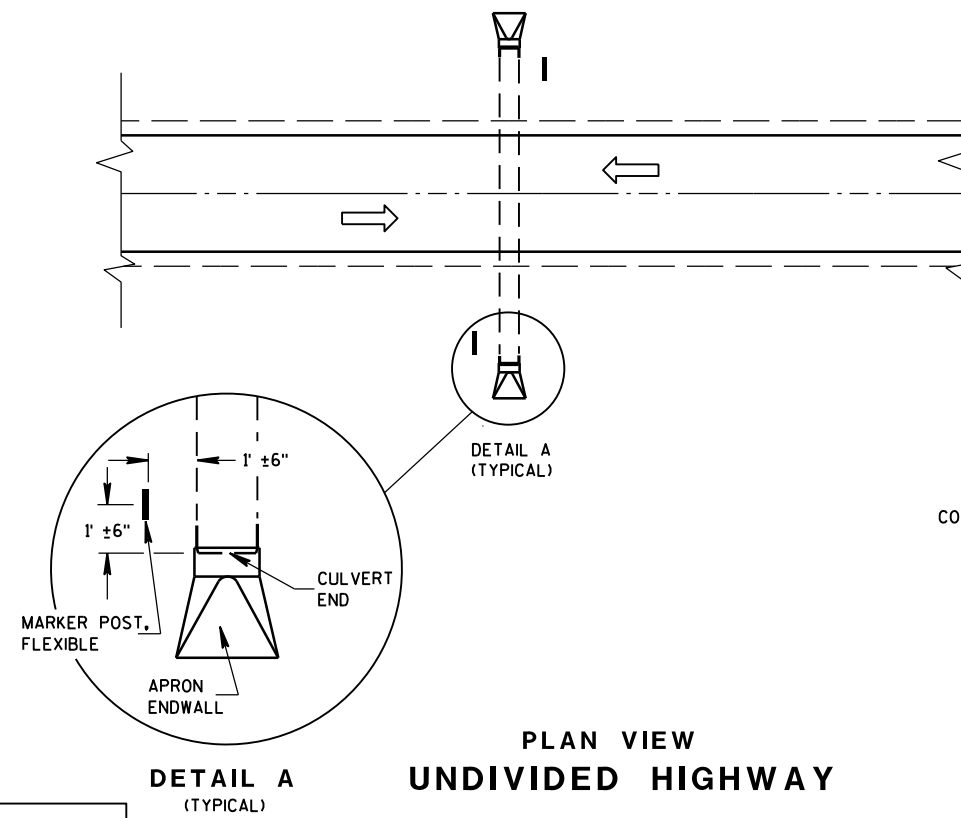
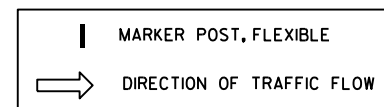
SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE ENGINEER 132
FHWA



PLAN VIEW
DIVIDED HIGHWAY

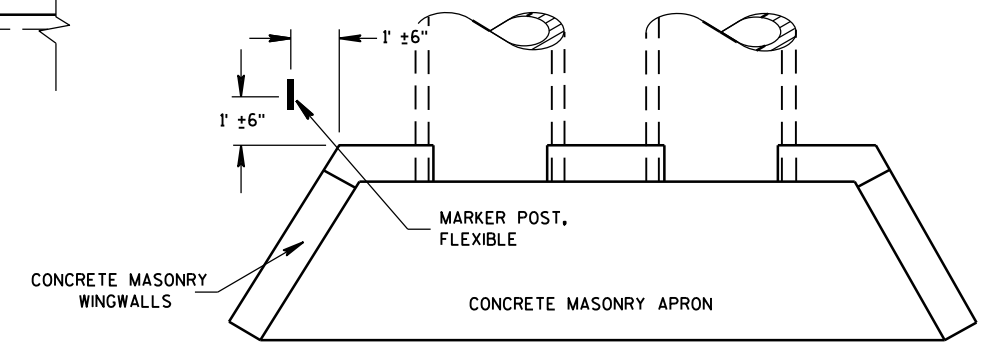


PLAN VIEW
UNDIVIDED HIGHWAY

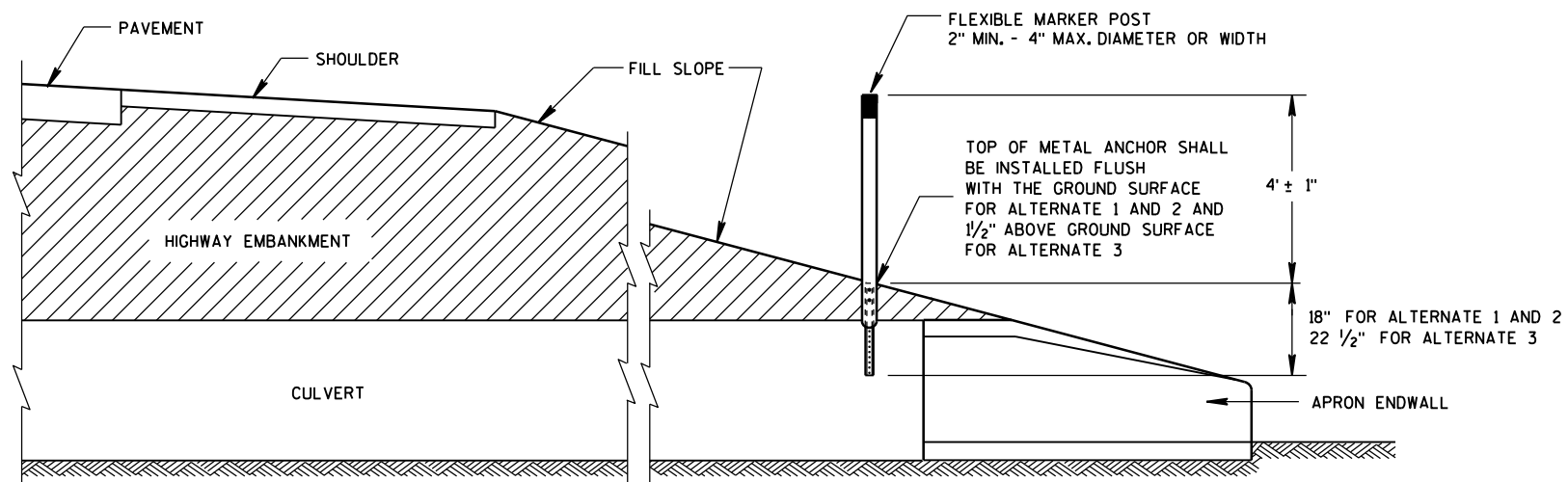
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



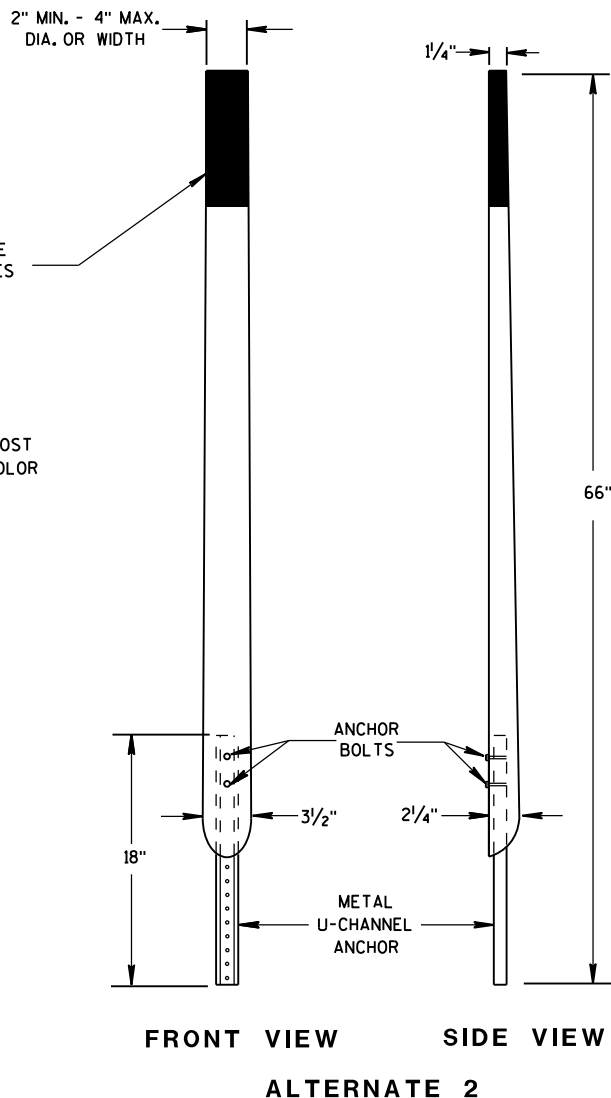
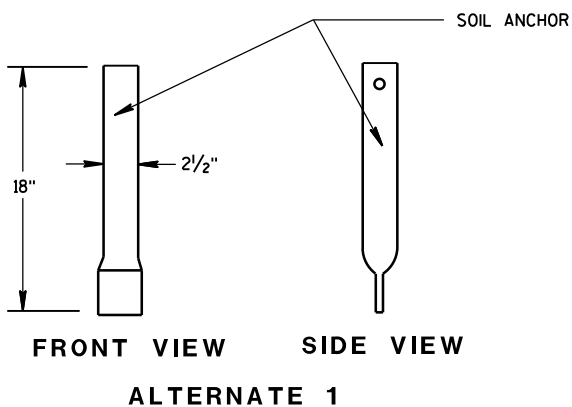
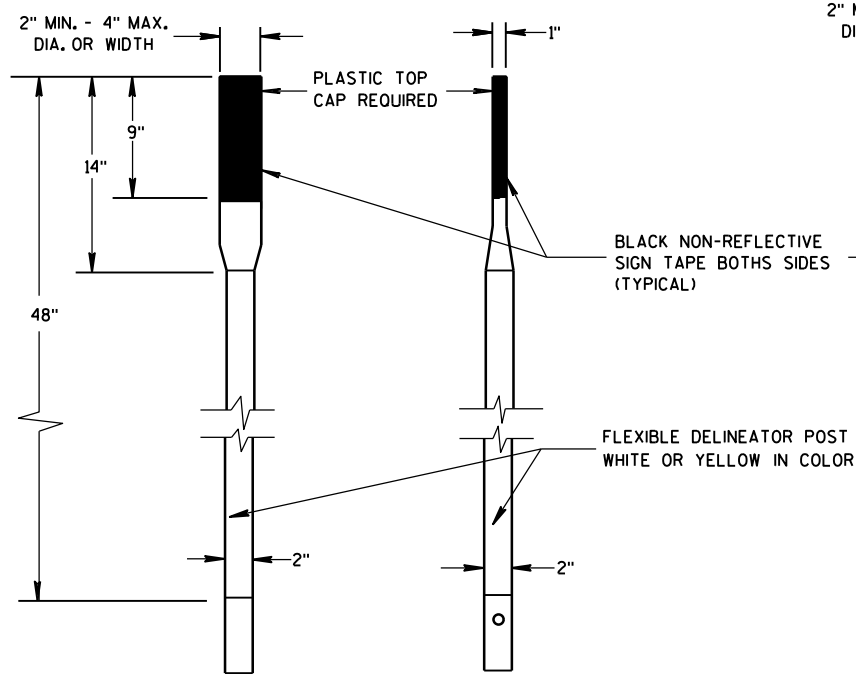
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



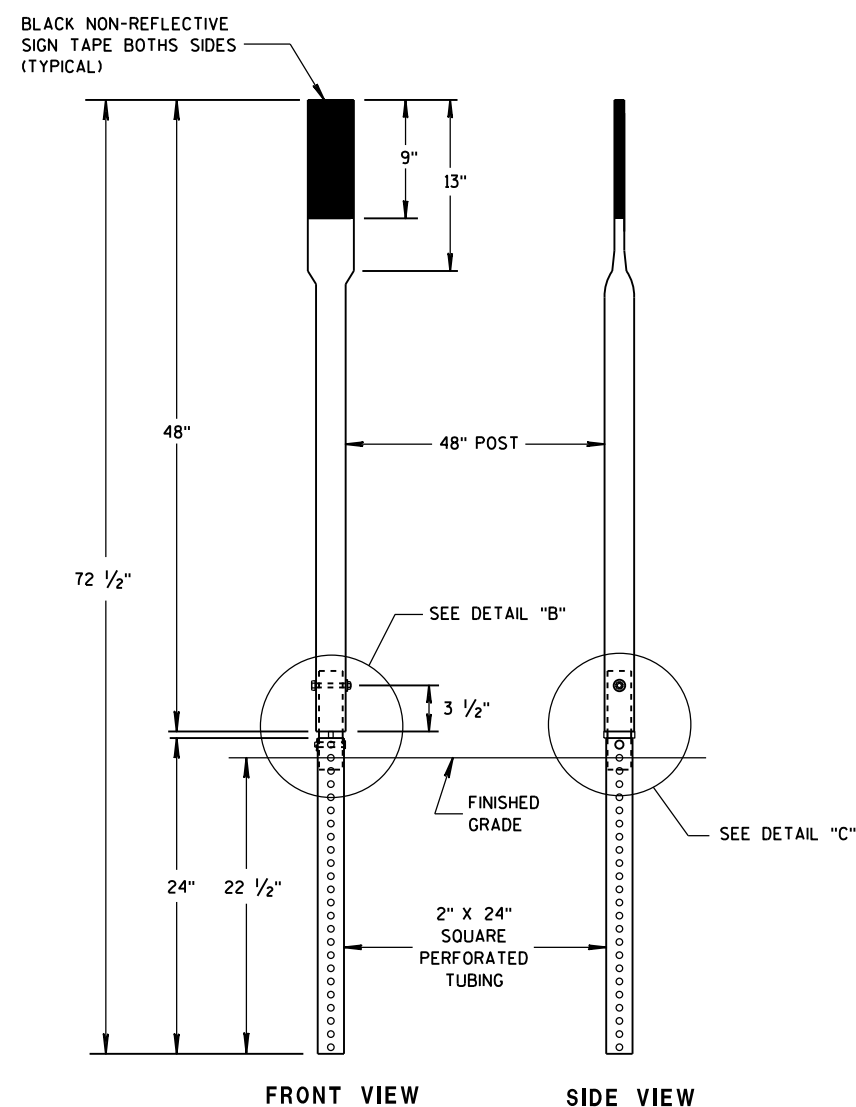
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

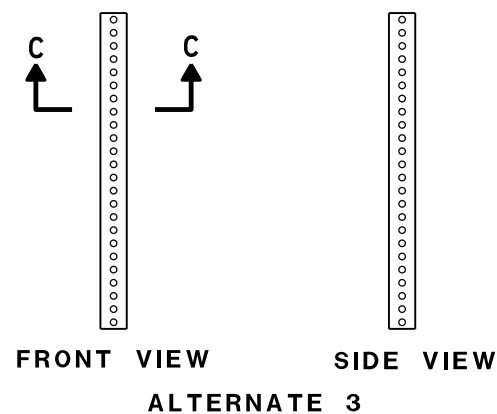
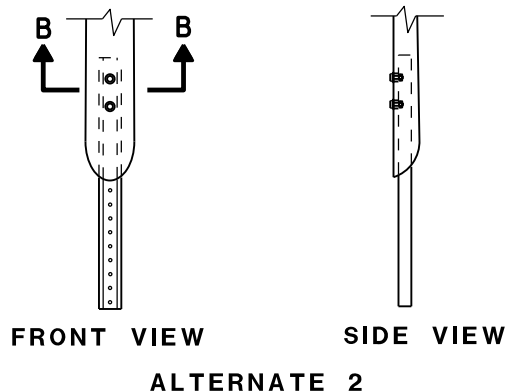
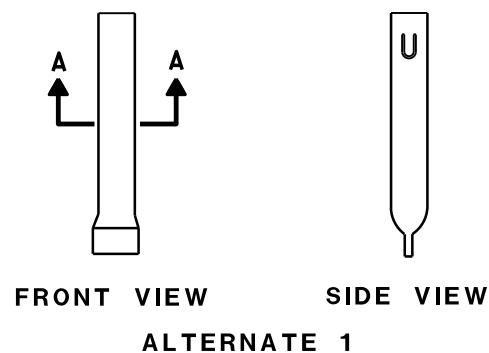
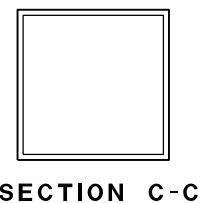
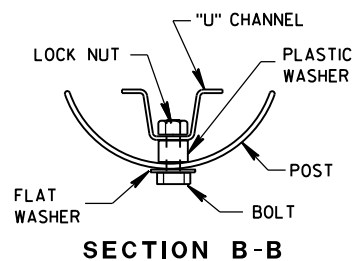
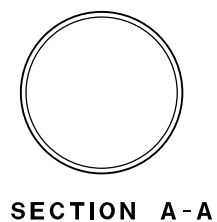
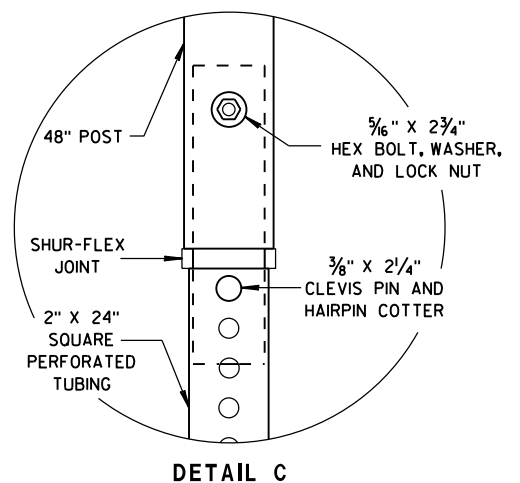
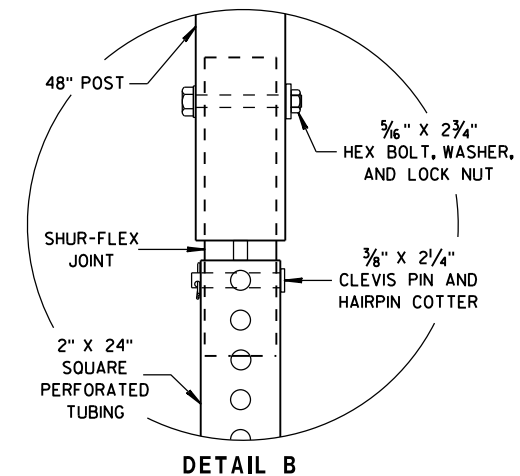
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 133



FLEXIBLE MARKER POSTS

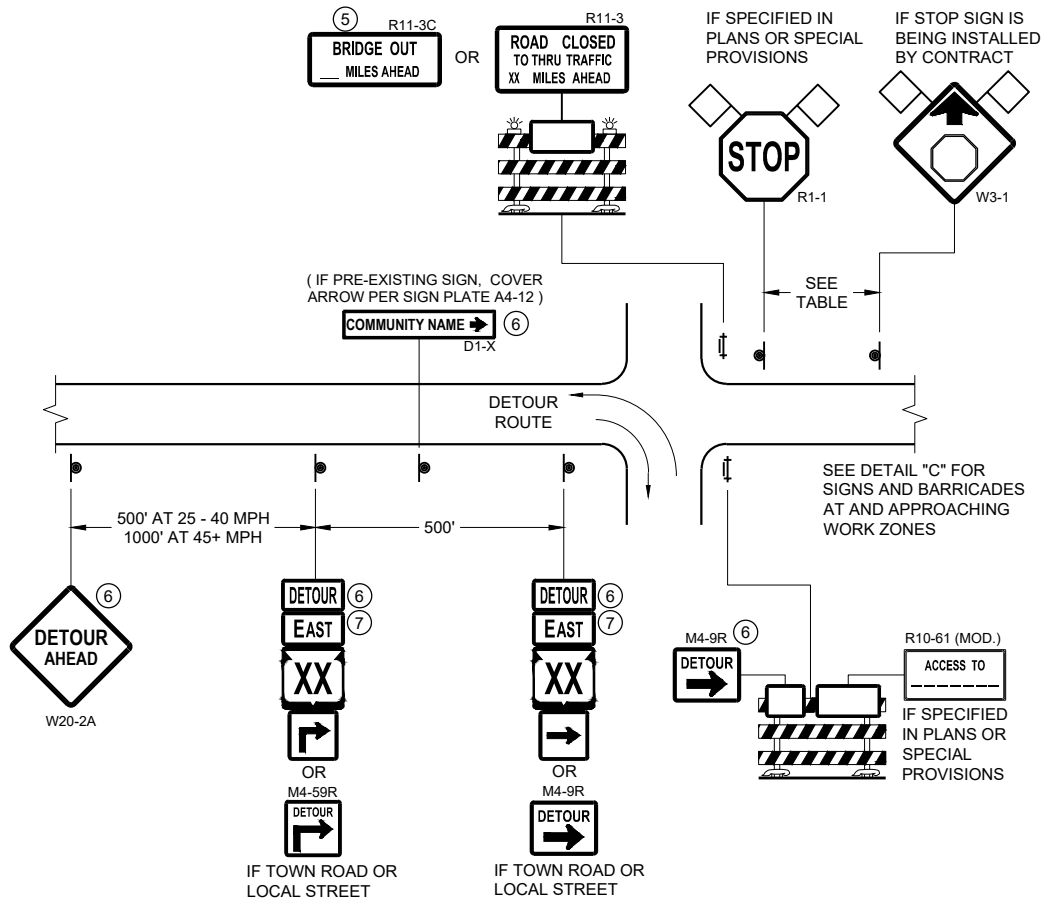


ALTERNATE 3

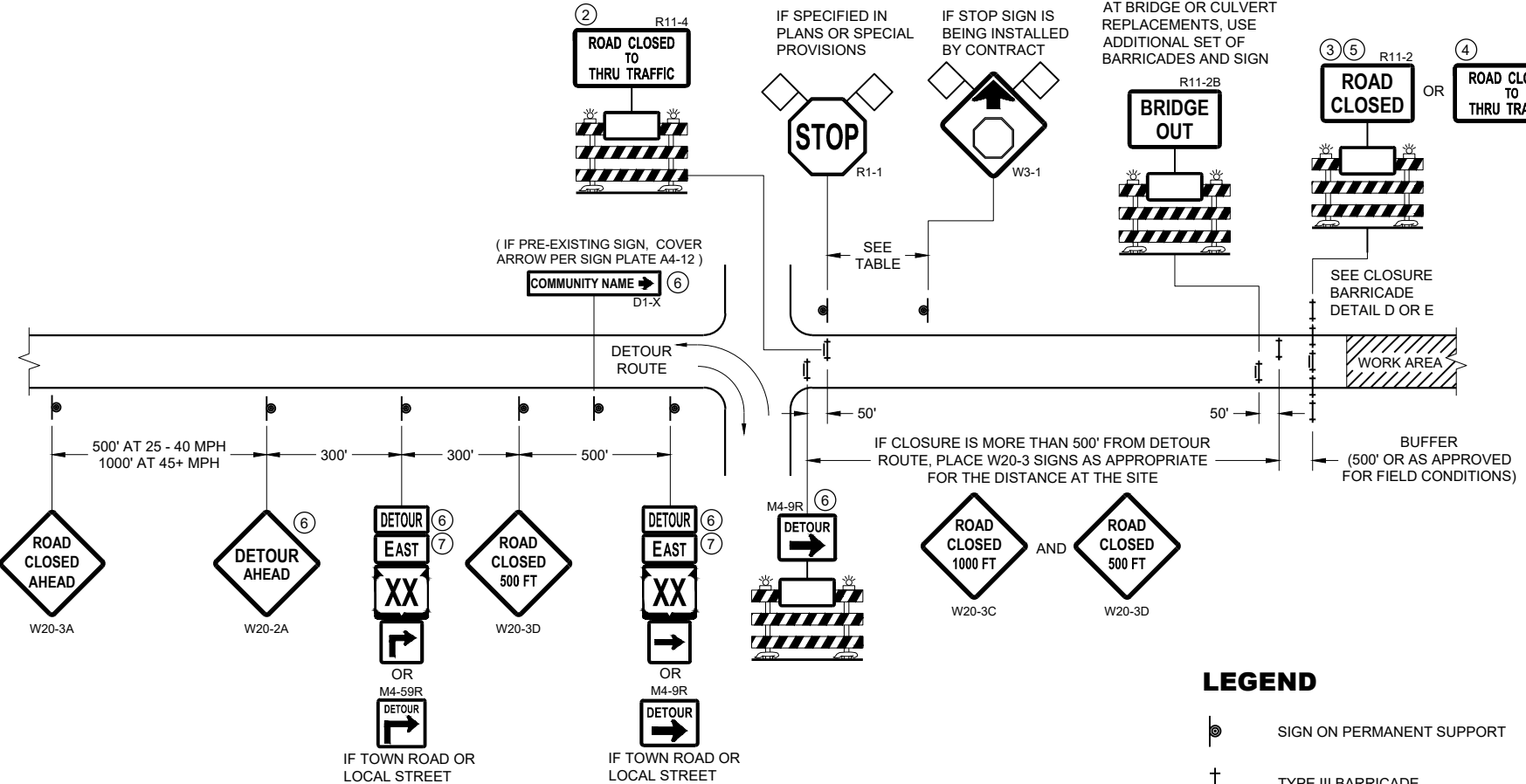


FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 134 IGN
FHWA	



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



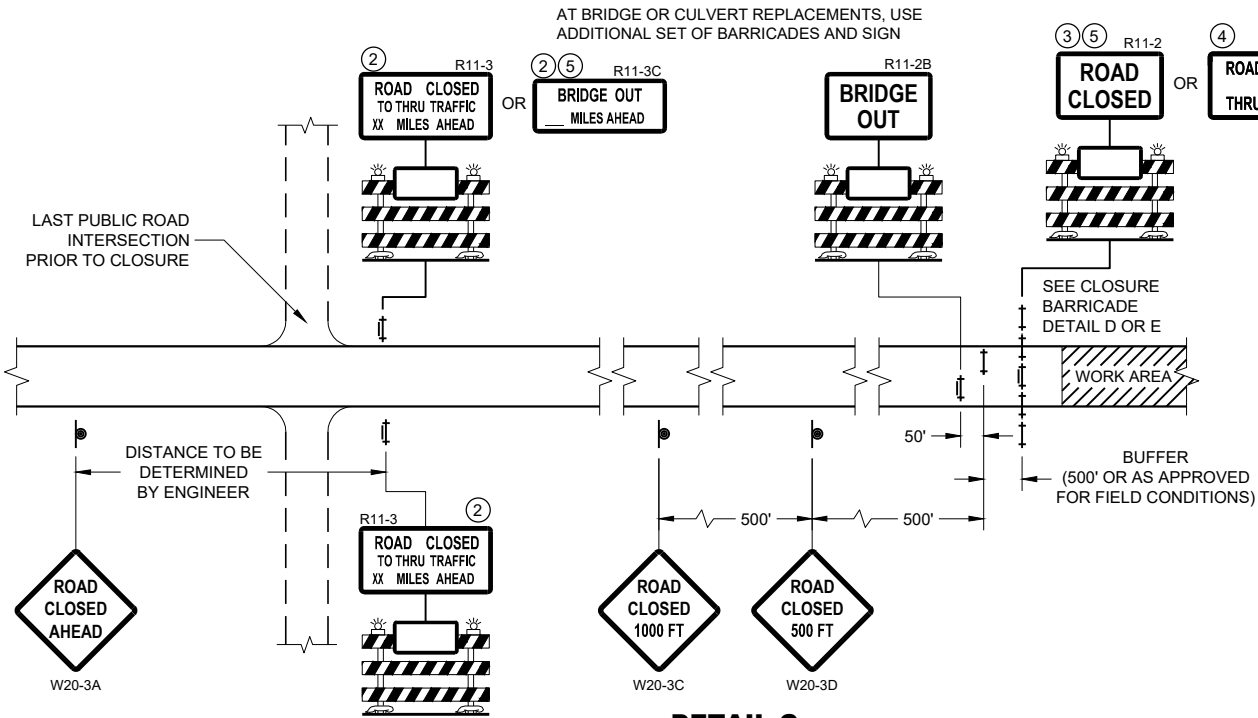
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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

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

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

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



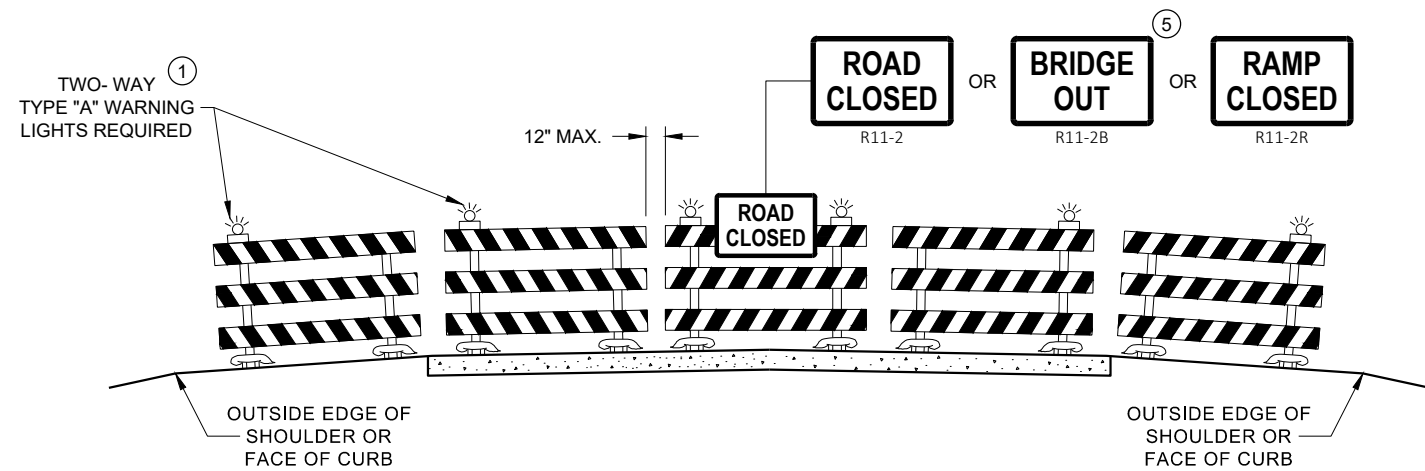
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

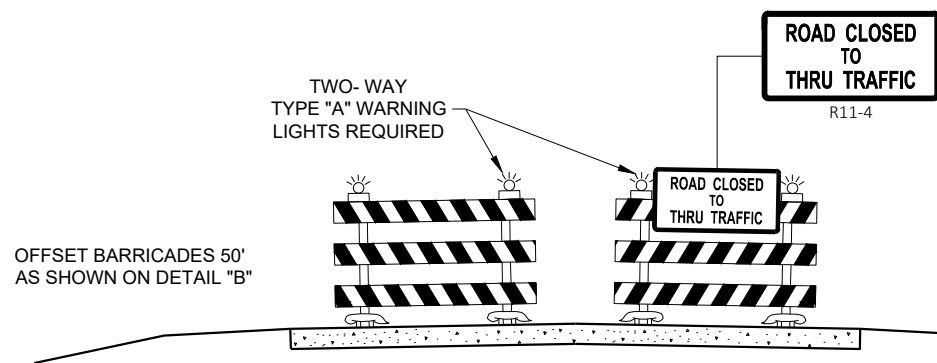
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 135

FHWA



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

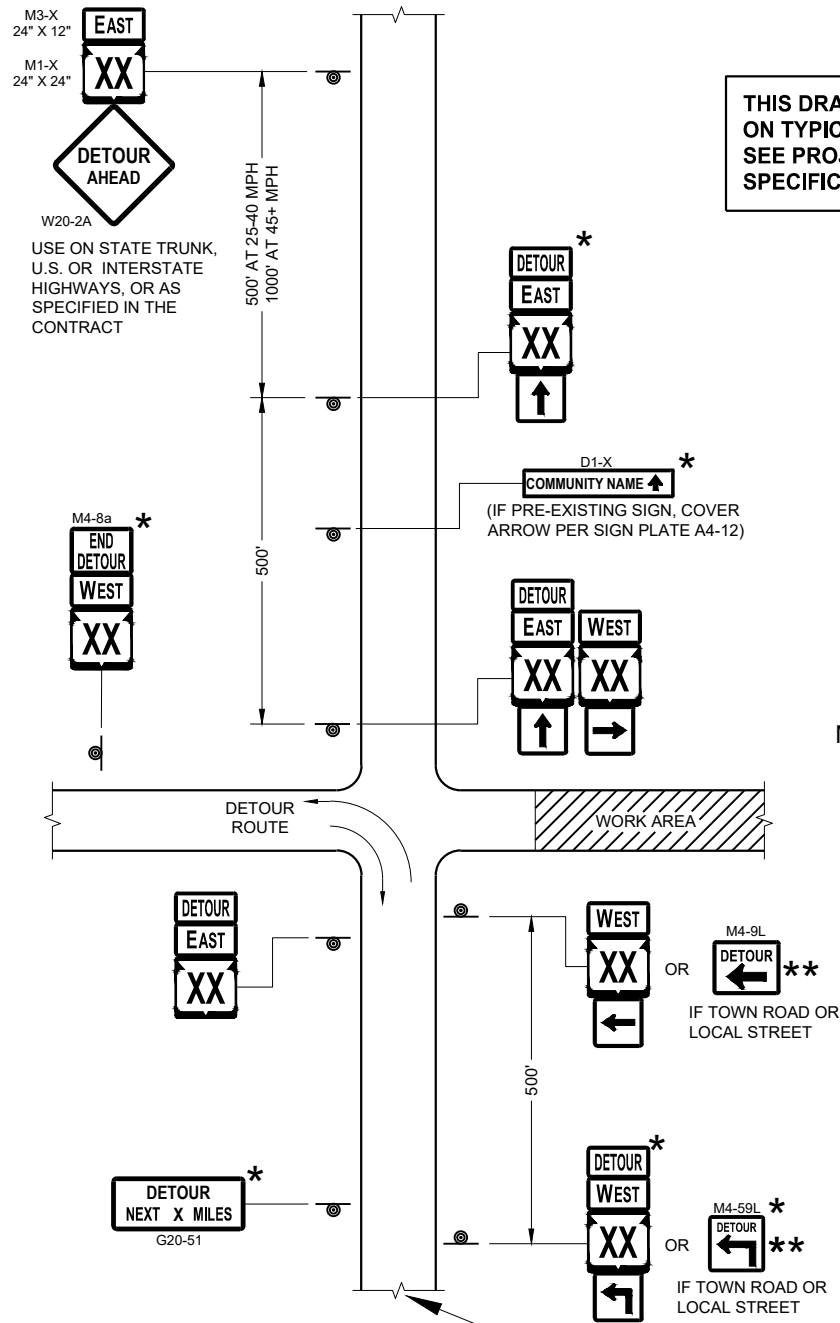
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 136

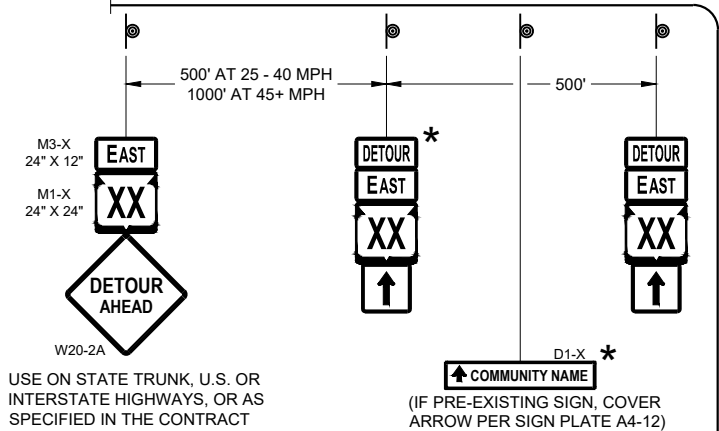
FHWA



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

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

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST M4 - 8
- DETOUR WEST M3 - X
- DETOUR AHEAD M1 - 4 OR M1 - 6 OR M1 - 5A
- DETOUR NEXT X MILES M05 - 1 OR M06 - 1 OR M06 - 1

GENERAL NOTES

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

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

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

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

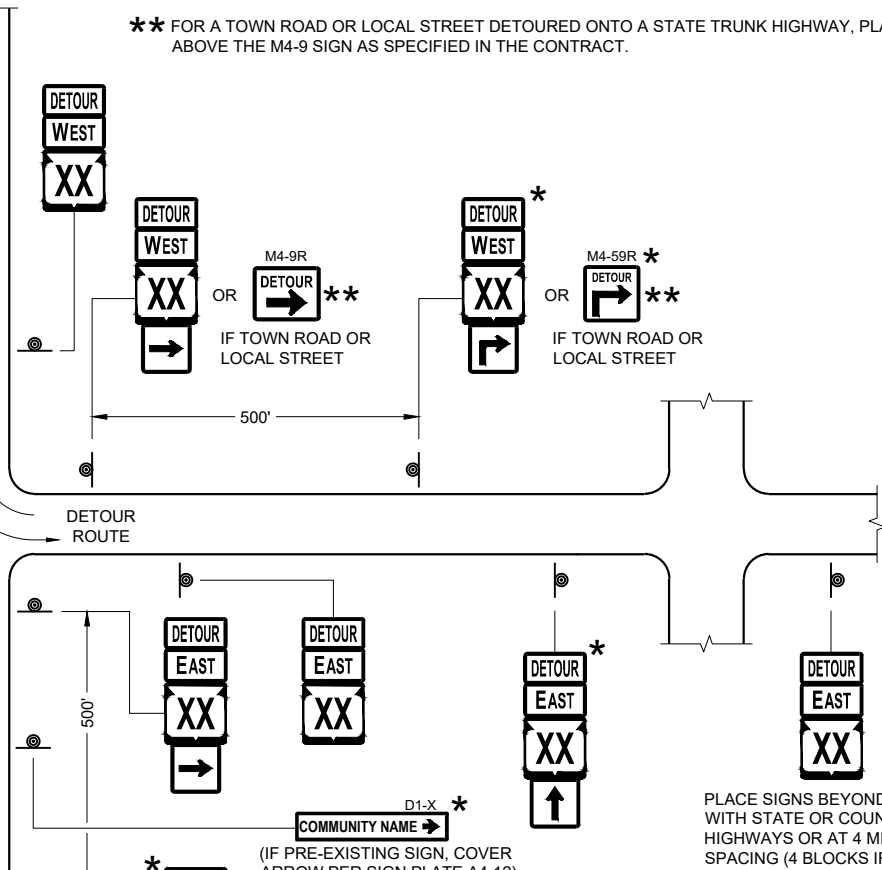
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

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



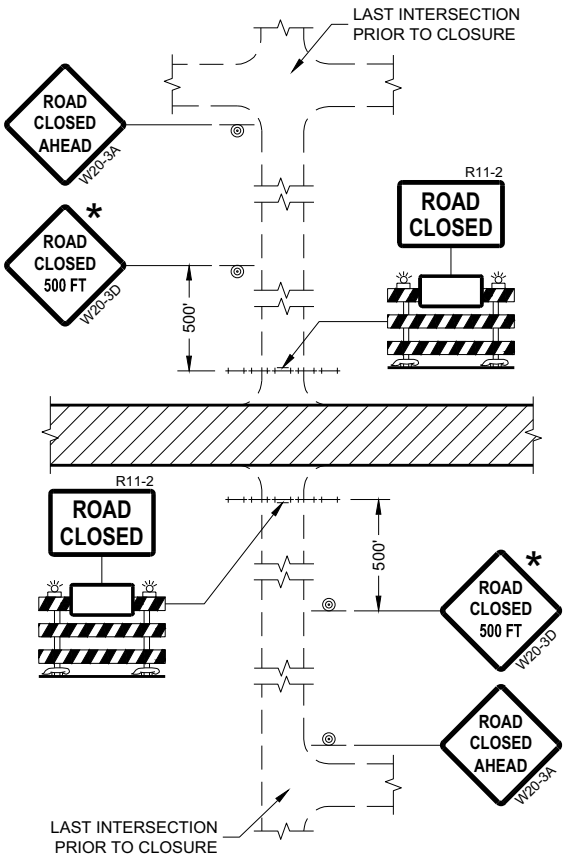
PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

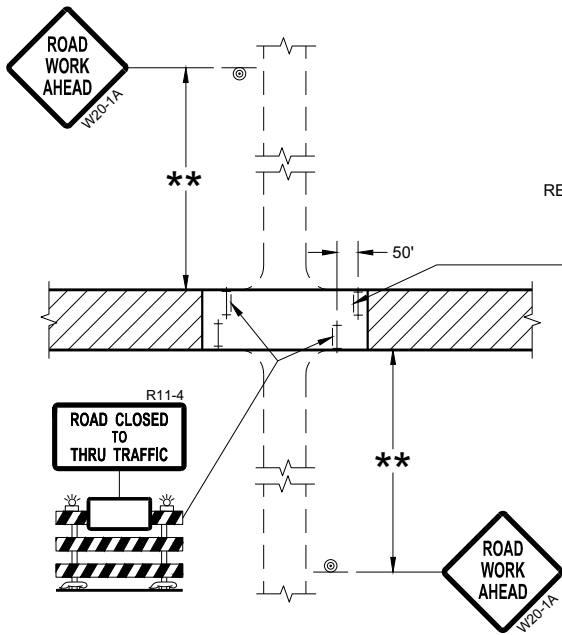
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 137

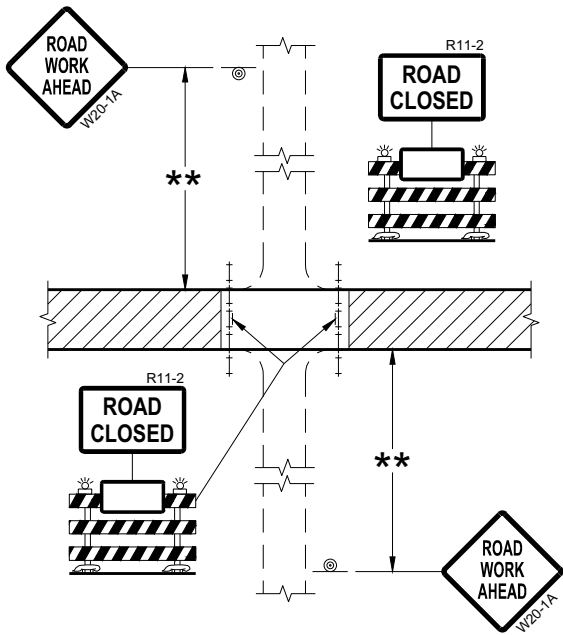
FHWA



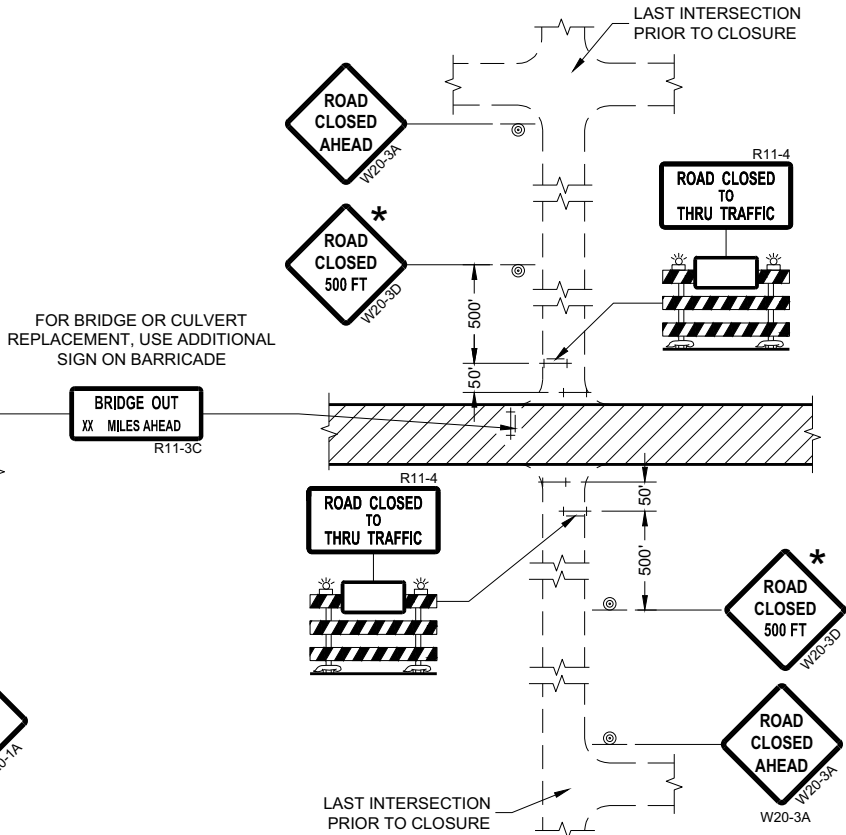
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

- * OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- ** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

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

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 138

FHWA

GENERAL NOTES

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

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

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

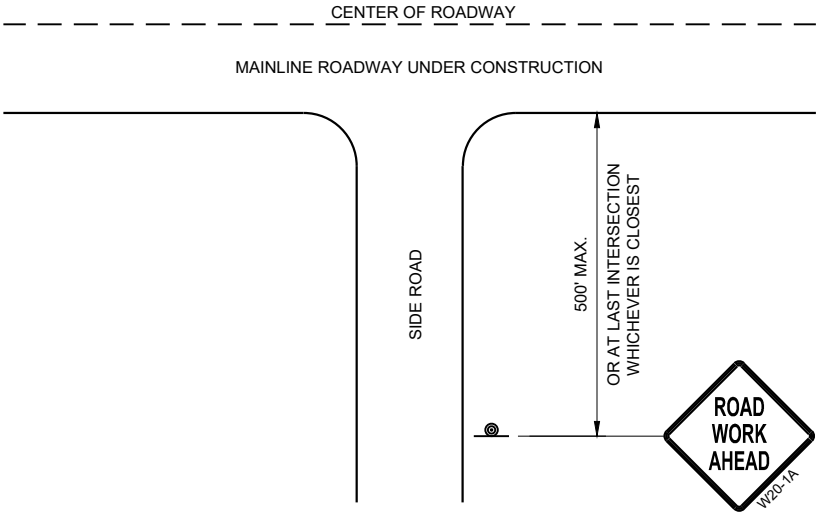
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

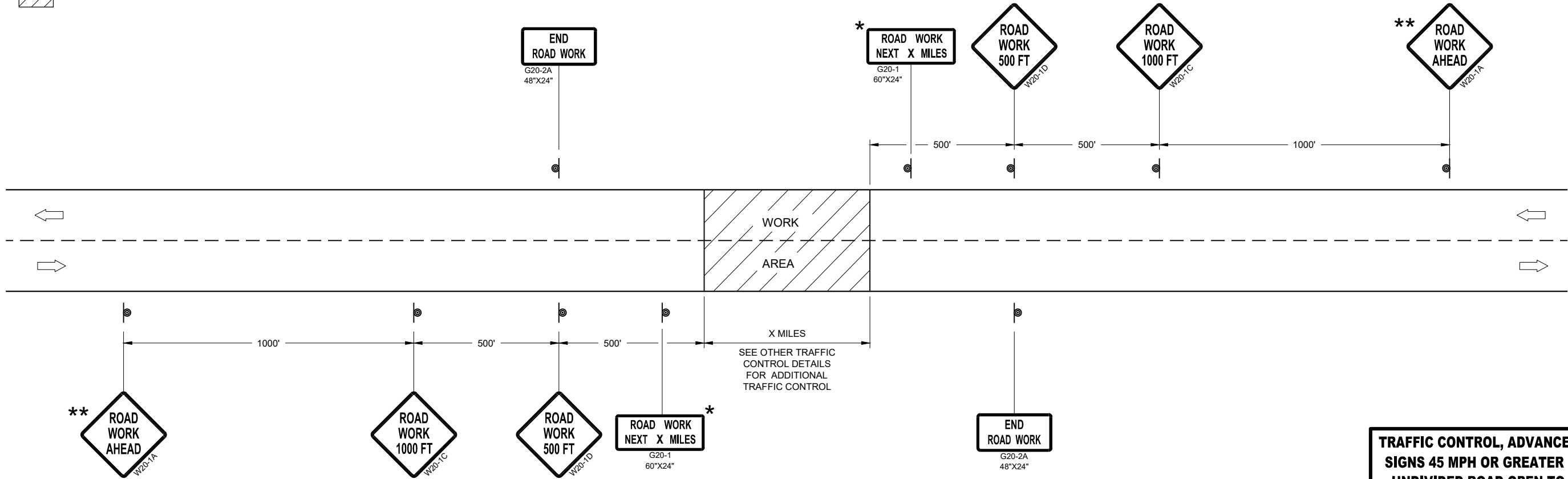
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

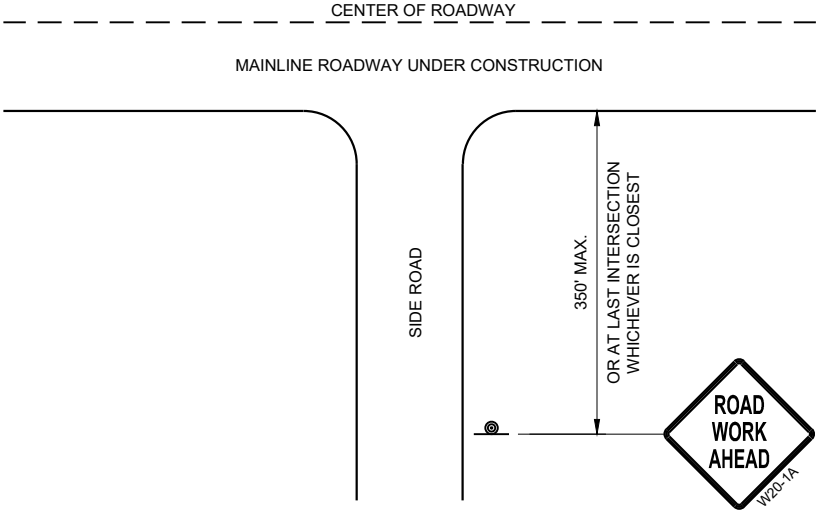
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

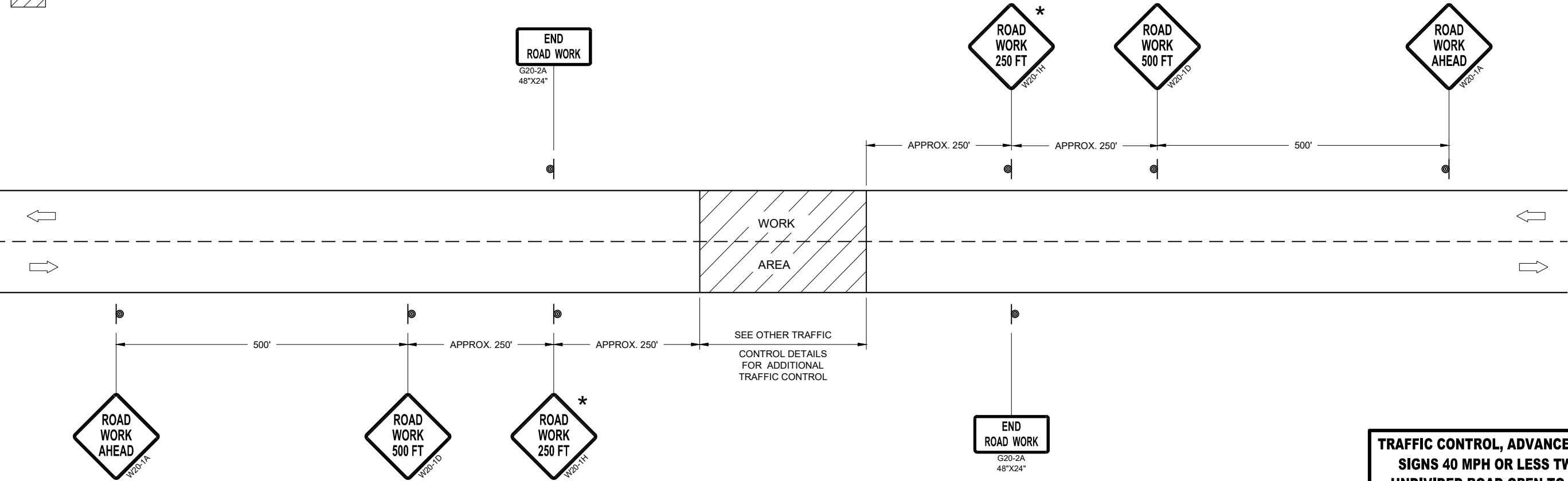
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

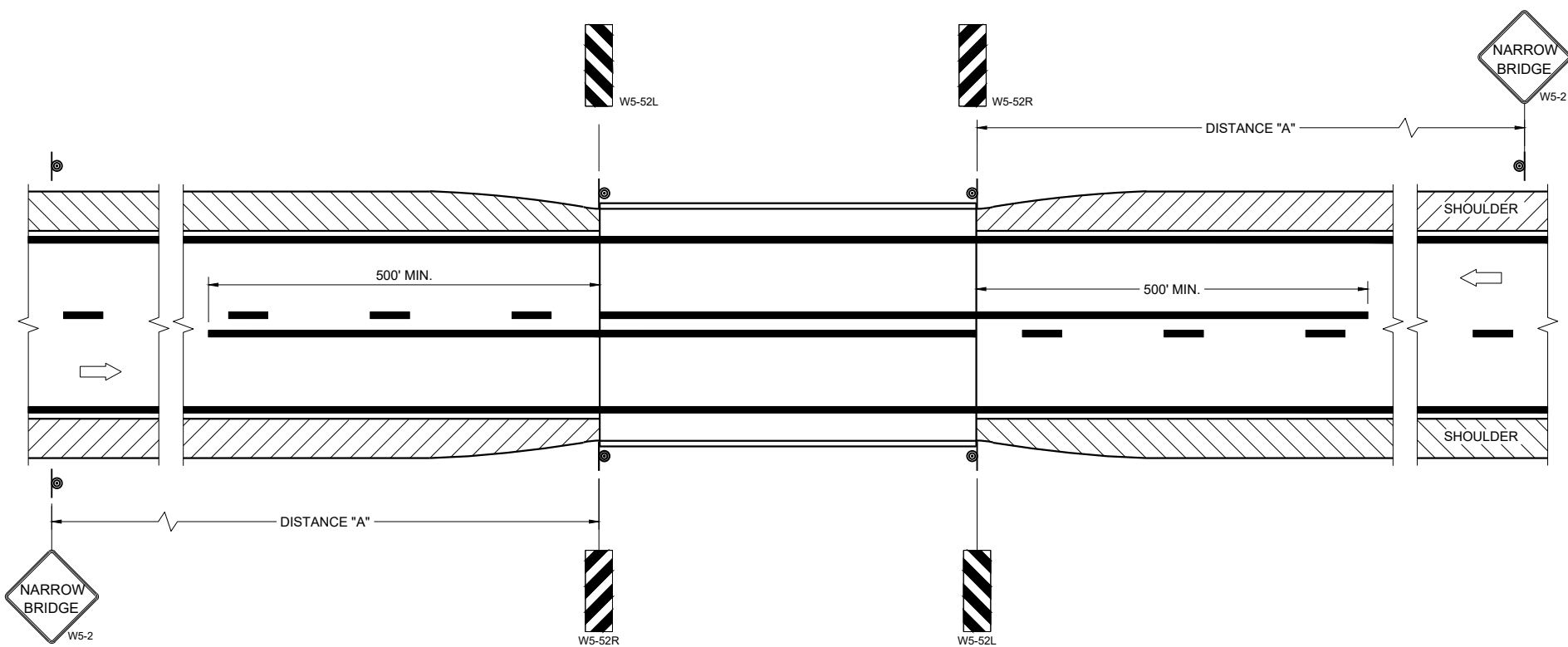


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

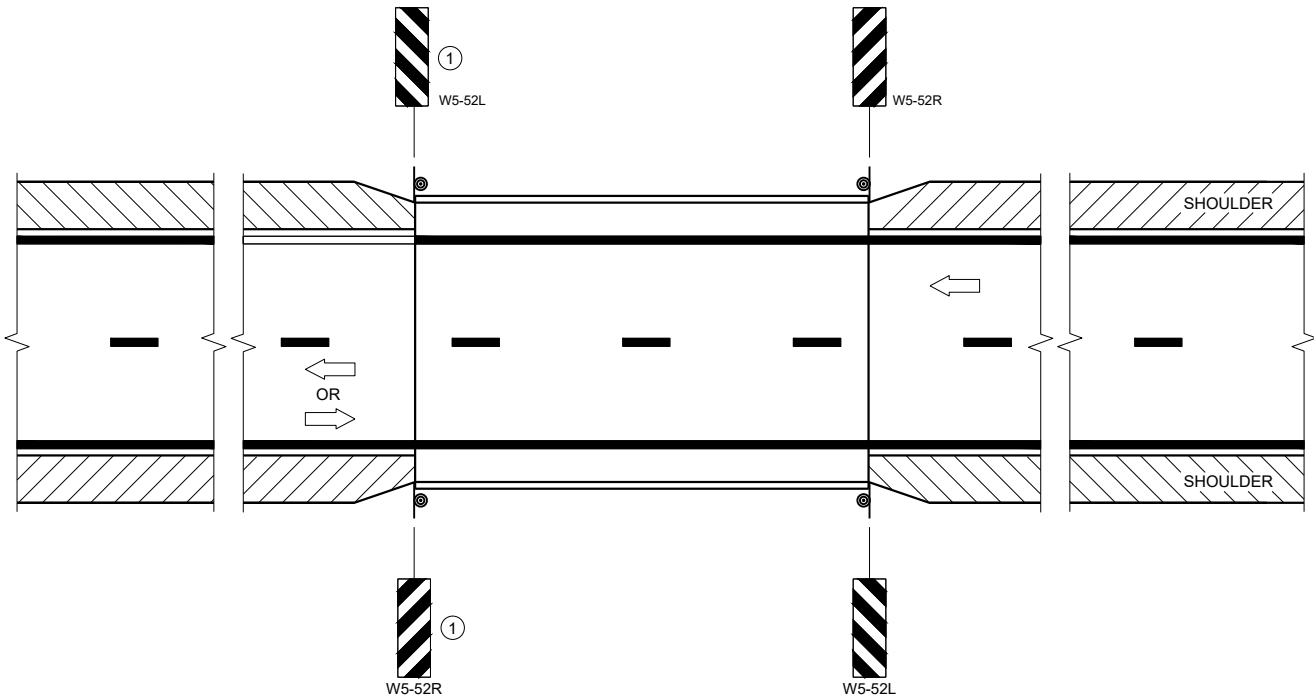
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 40 MPH OR LESS TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 140
FHWA



SITUATION 1
WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



SITUATION 2
WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET

GENERAL NOTES

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

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

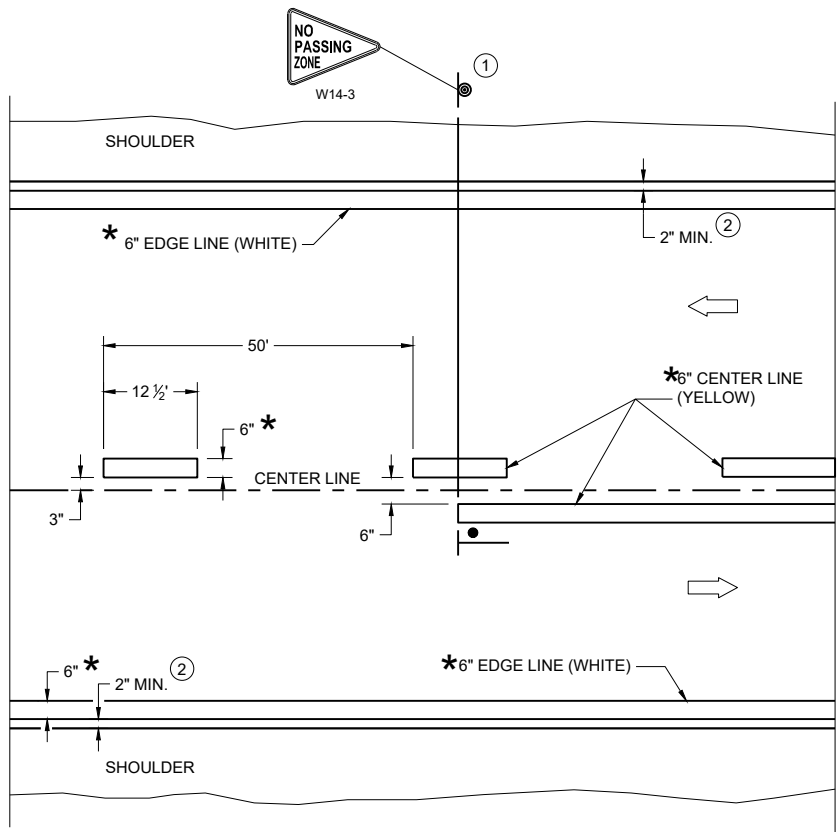
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

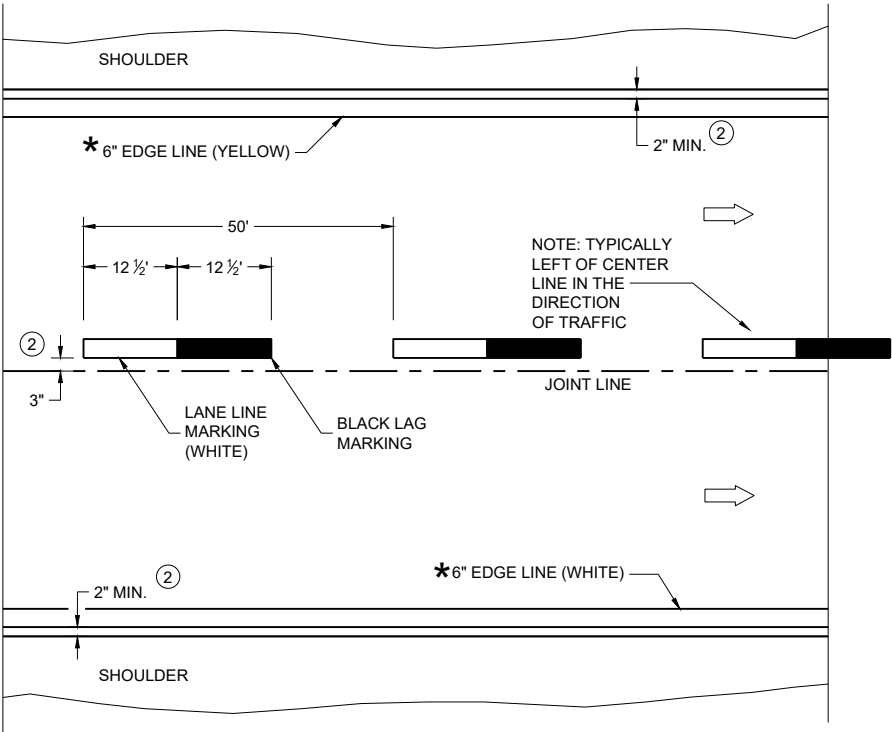
APPROVED
May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA 141



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

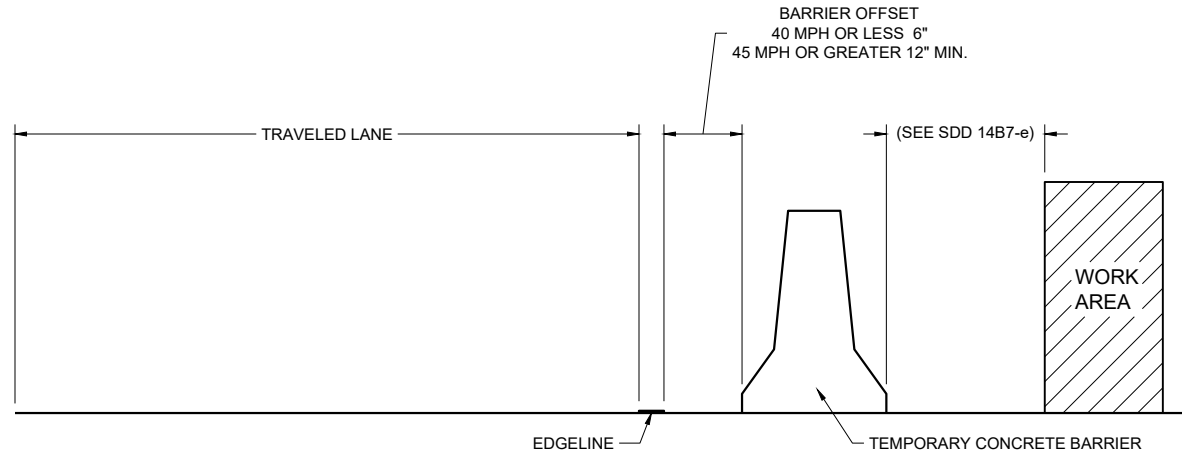
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL
PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer

FHWA 142



TEMPORARY BARRIER OFFSET FROM EDGE LINE

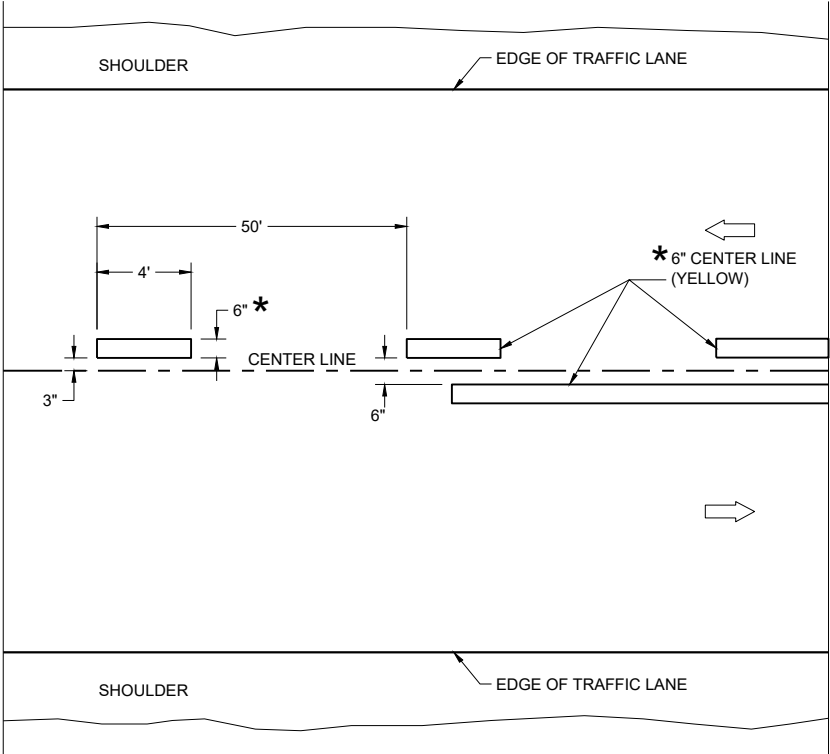
GENERAL NOTES

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

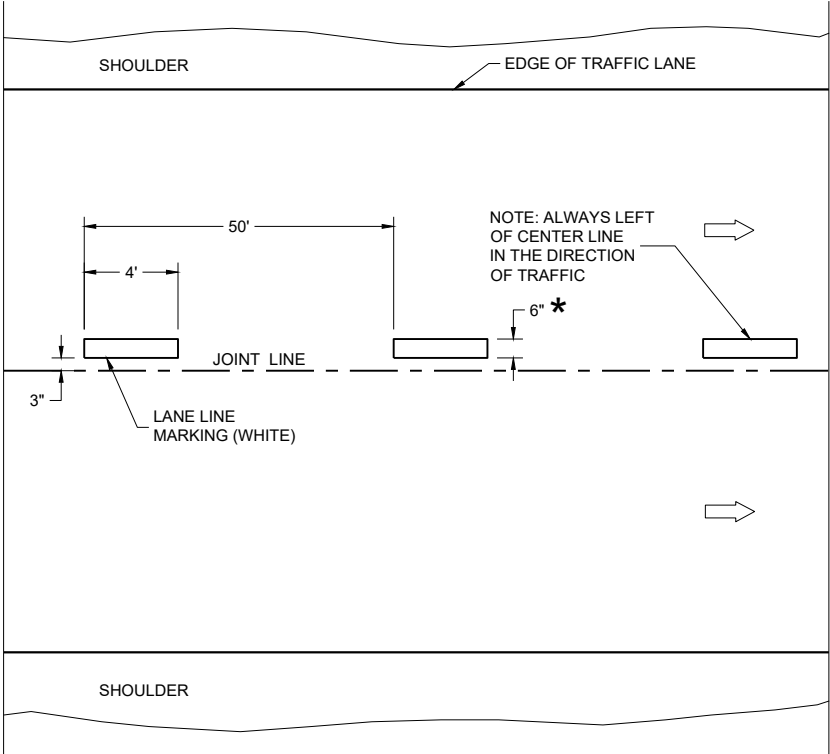
LEGEND

DIRECTION OF TRAFFIC

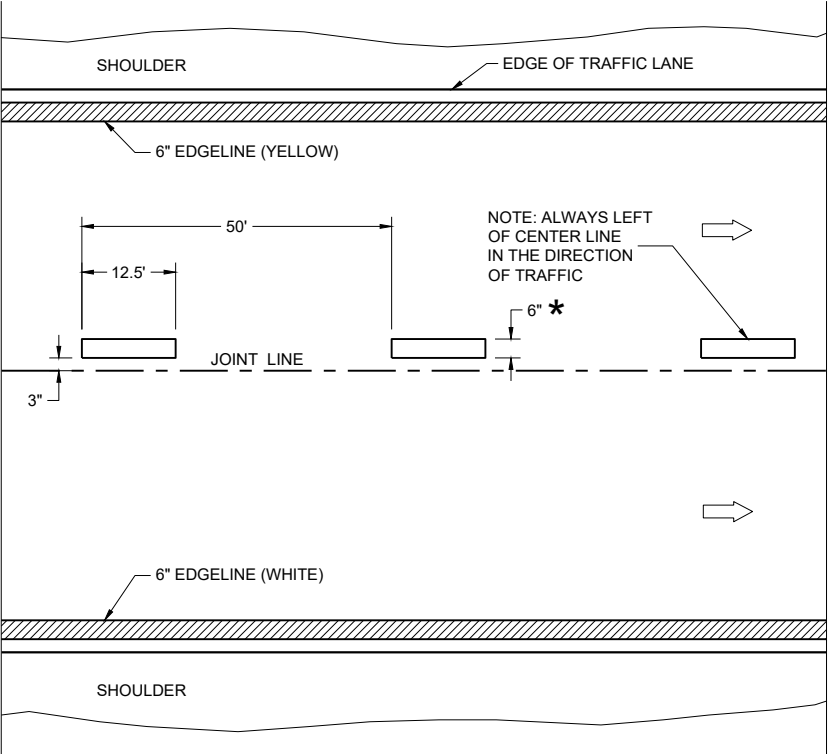
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



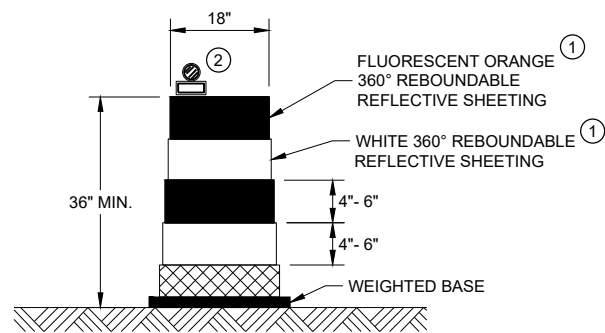
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

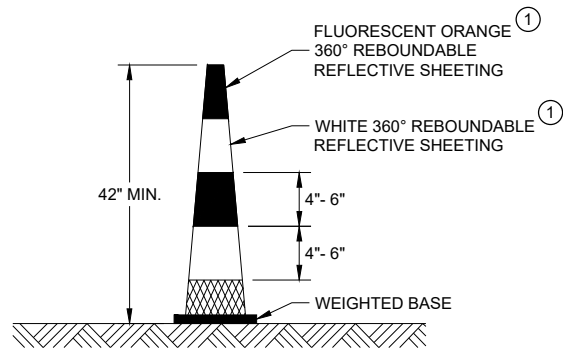
TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	



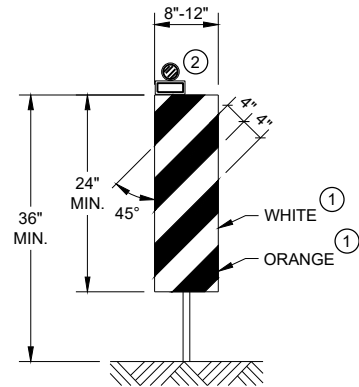
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



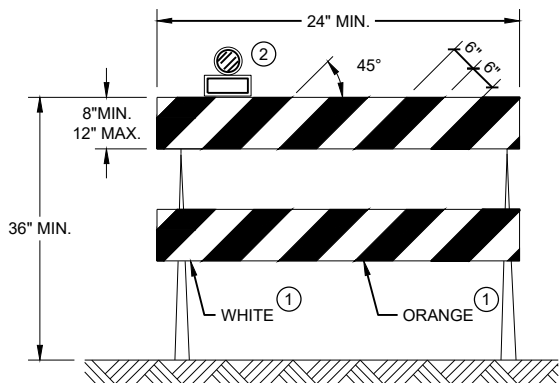
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



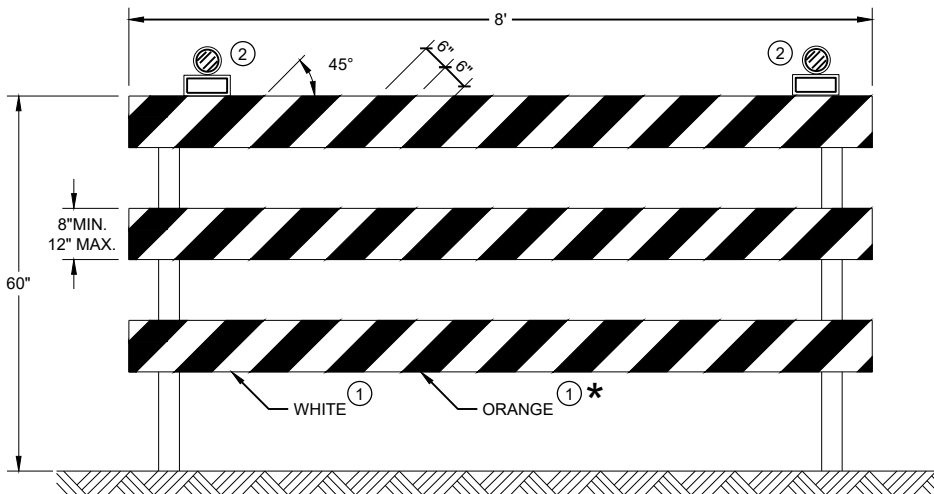
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 144
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

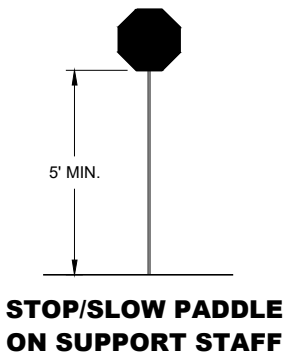
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- 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.

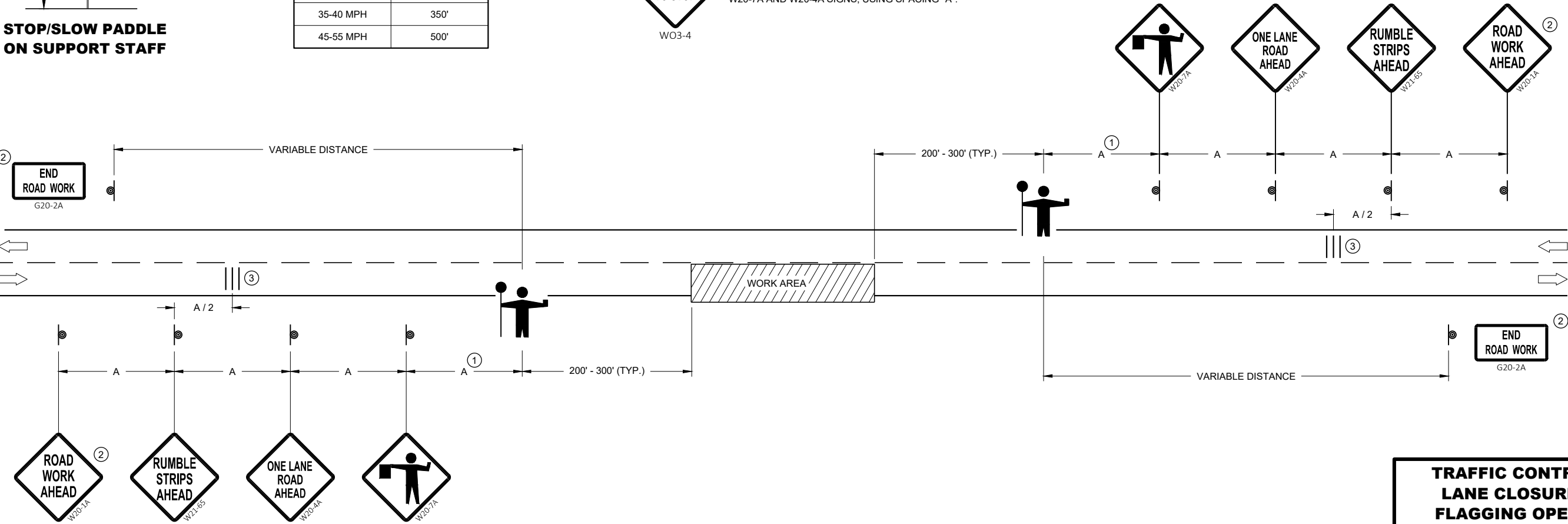


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

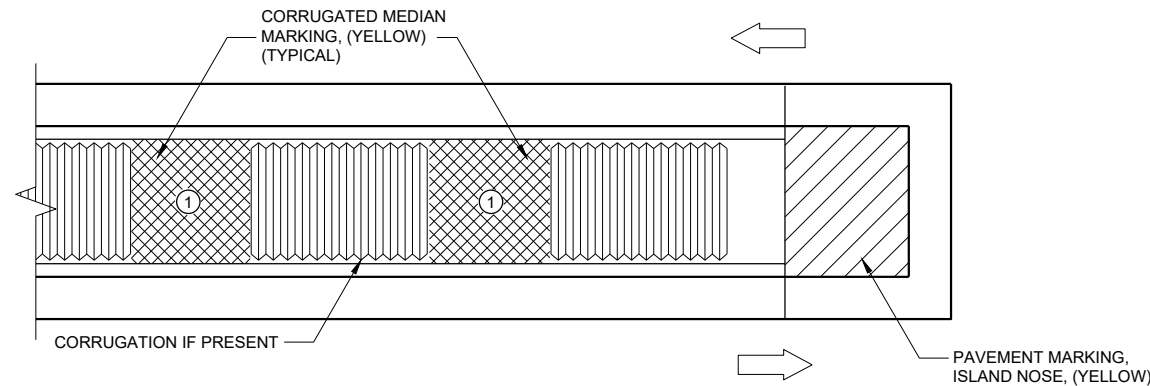
SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



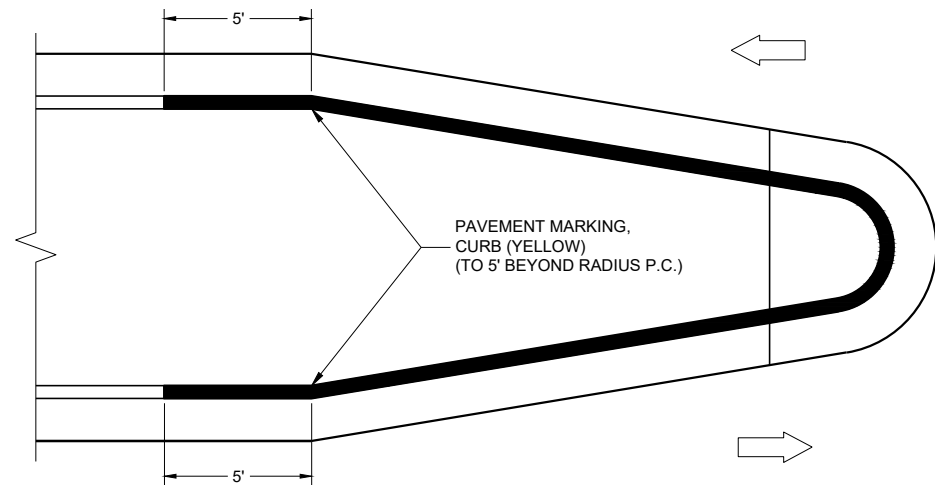
USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



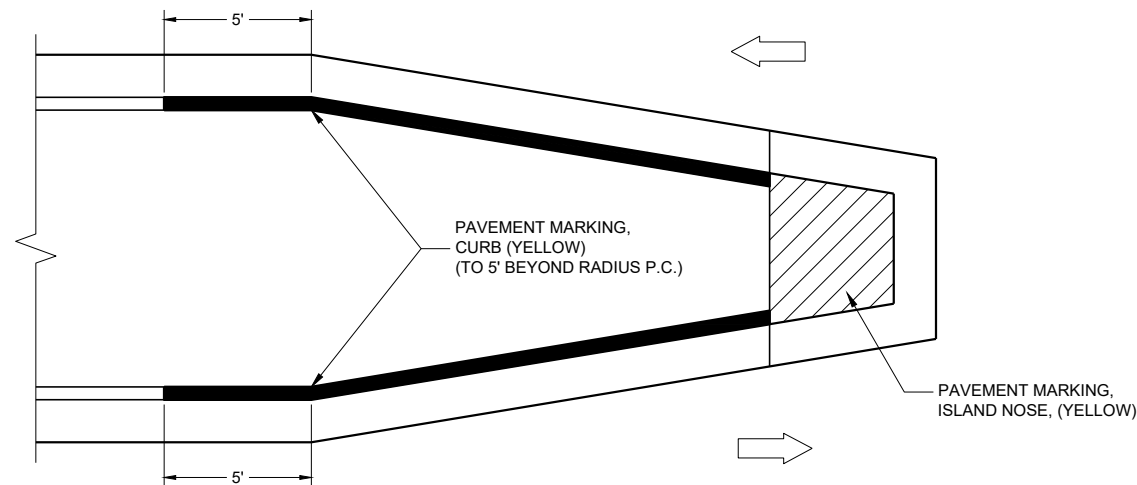
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 145
FHWA	



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES

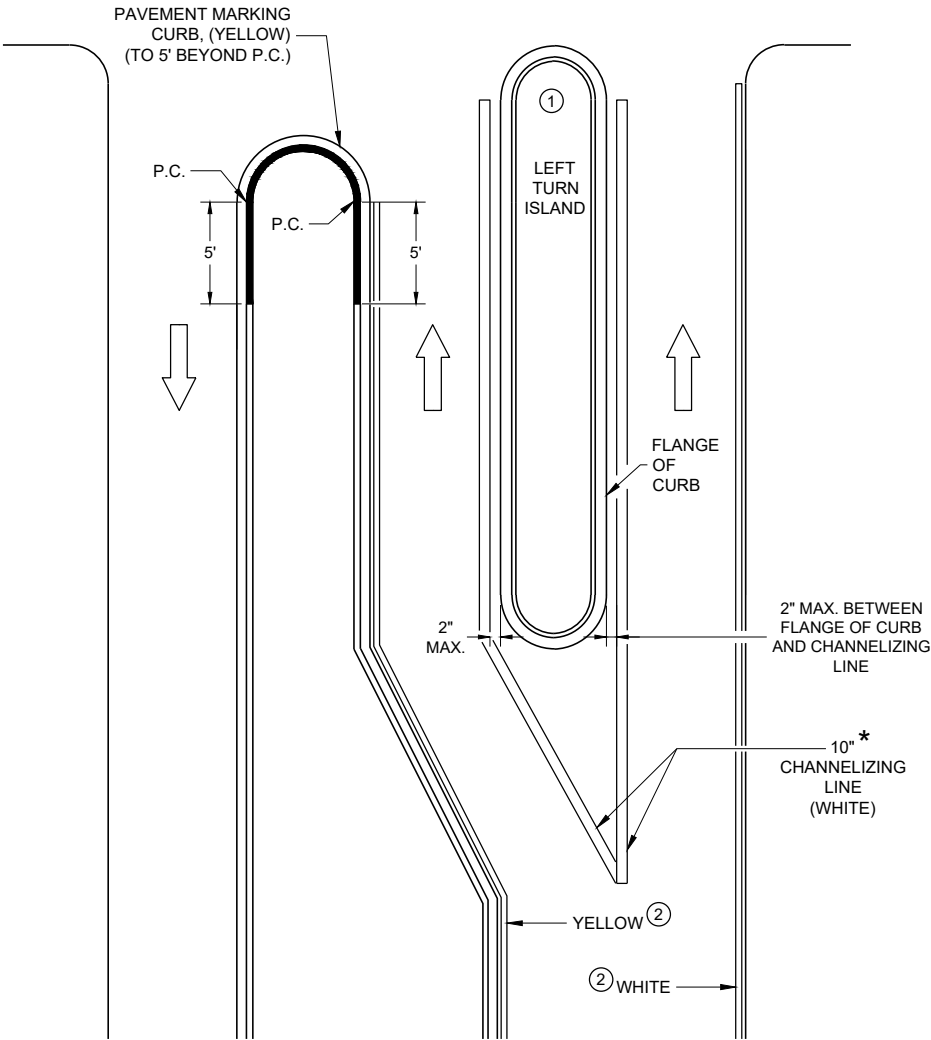
WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

- ① APPLY PAVEMENT MARKING TO THE FLAT PORTION OF CORRUGATED MEDIAN.

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

PAVEMENT MARKINGS, MEDIAN ISLAND NOSE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	146

REQUIREMENTS FOR EDGE LINES		
POSTED SPEED	IS THERE CONTINUOUS LIGHTING?	
	YES	NO
≤ 30 MPH	NO	OPTIONAL
35 OR 40 MPH	OPTIONAL	RECOMMENDED
≥ 45 MPH	RECOMMENDED	REQUIRED



* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

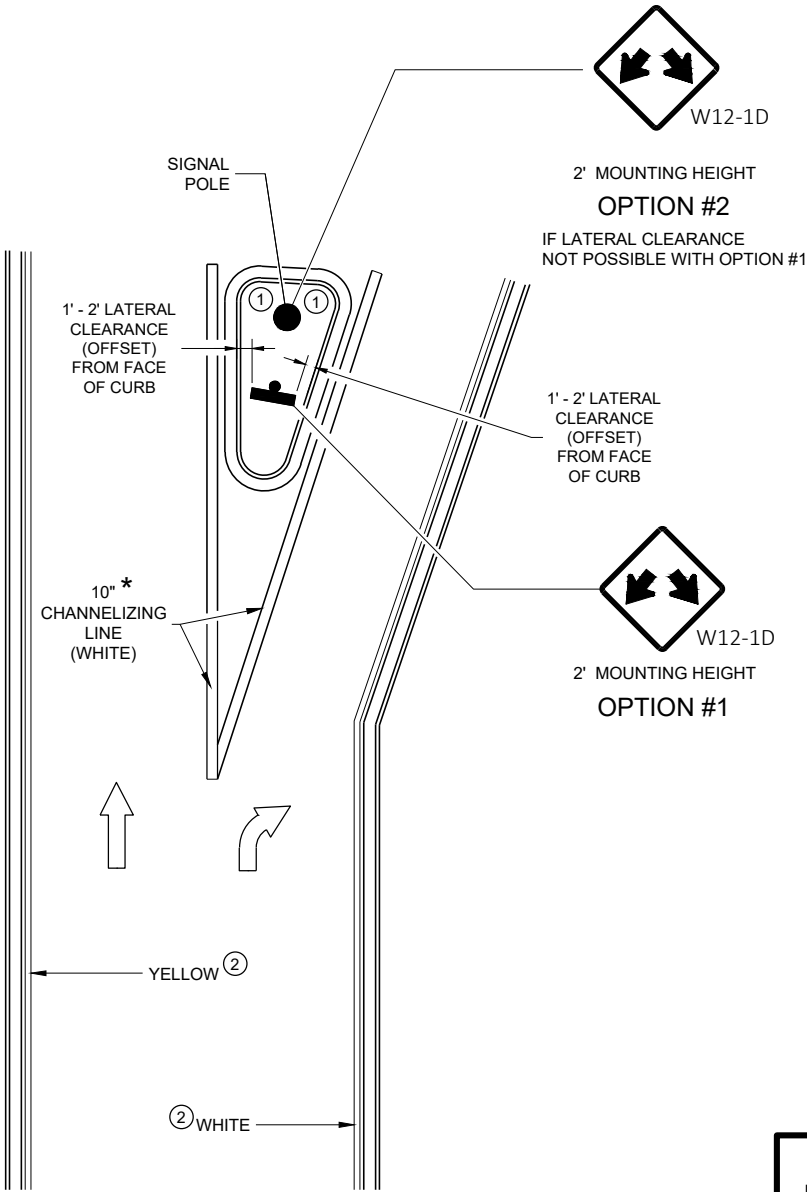
LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.

- ① MARK CURB NOSES YELLOW.
- ② MARK ACCORDING TO TABLE.

➡ DIRECTION OF TRAVEL



RIGHT TURN ISLAND

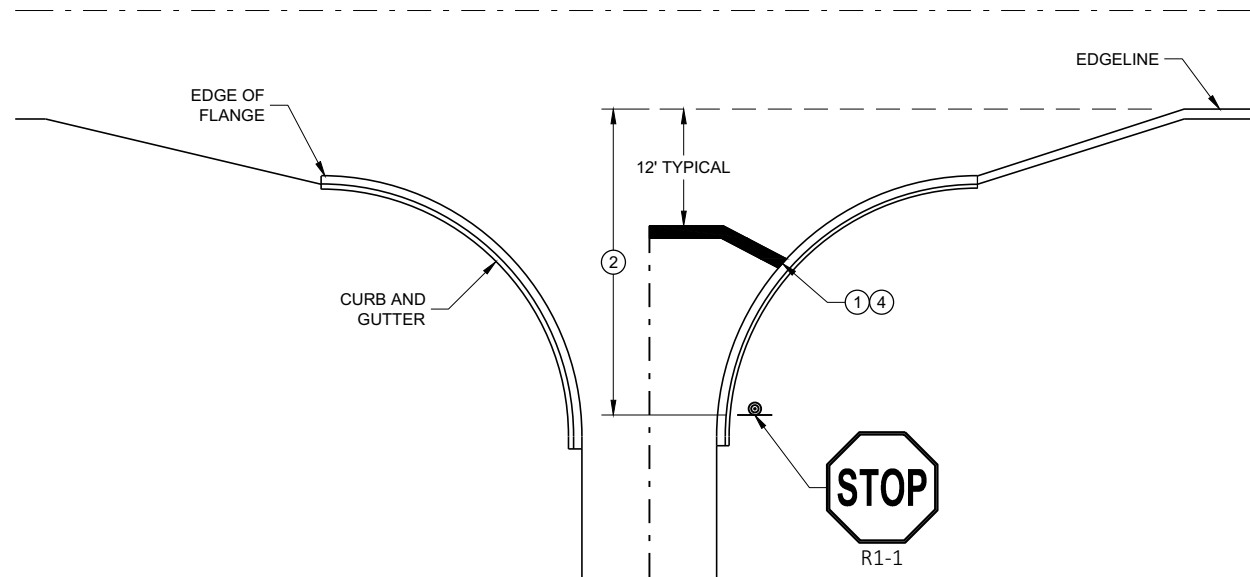
MEDIAN PAVEMENT MARKINGS, DOUBLE ARROW WARNING SIGN PLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

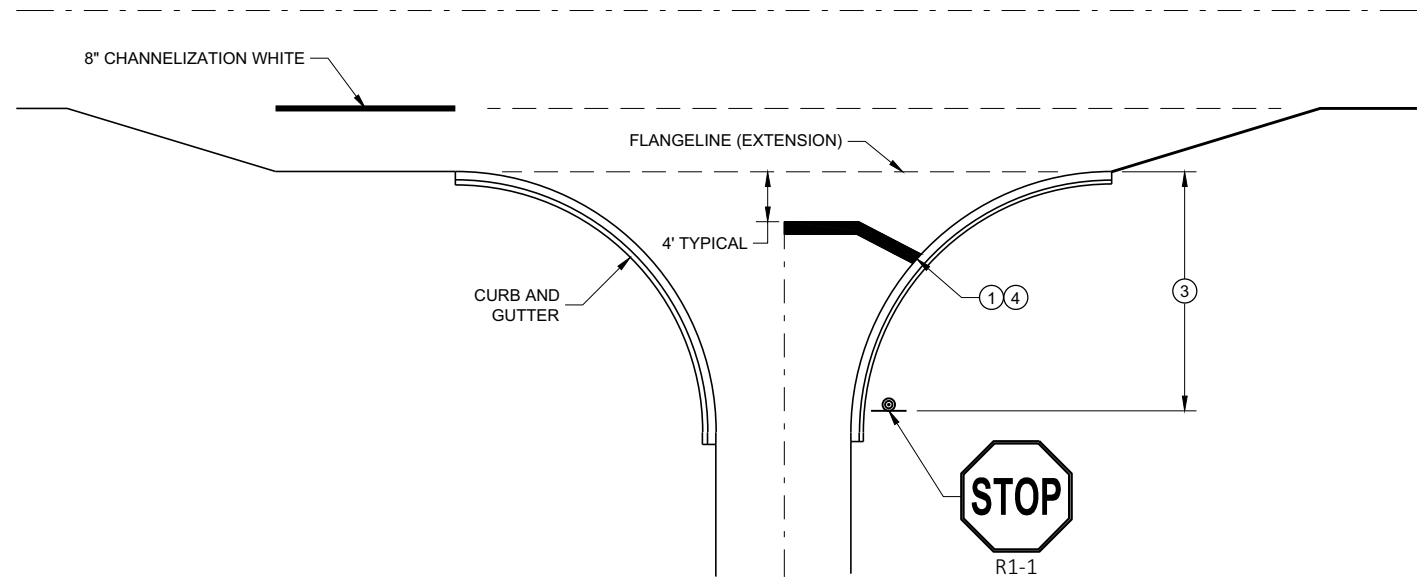
APPROVED
May 2023
DATE

/S/ Jeannie Silver
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

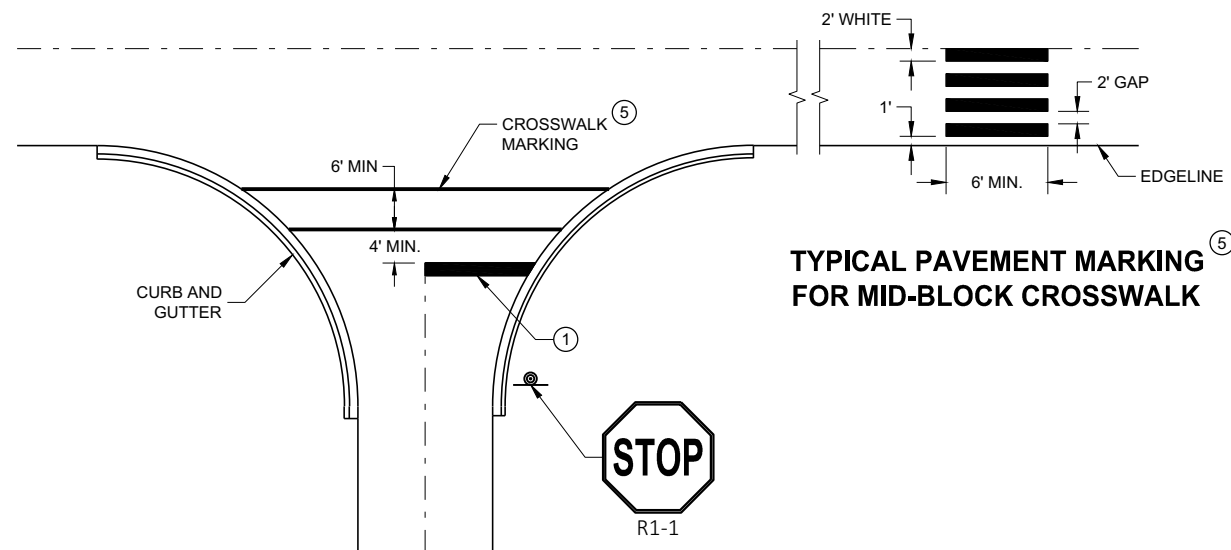
FHWA



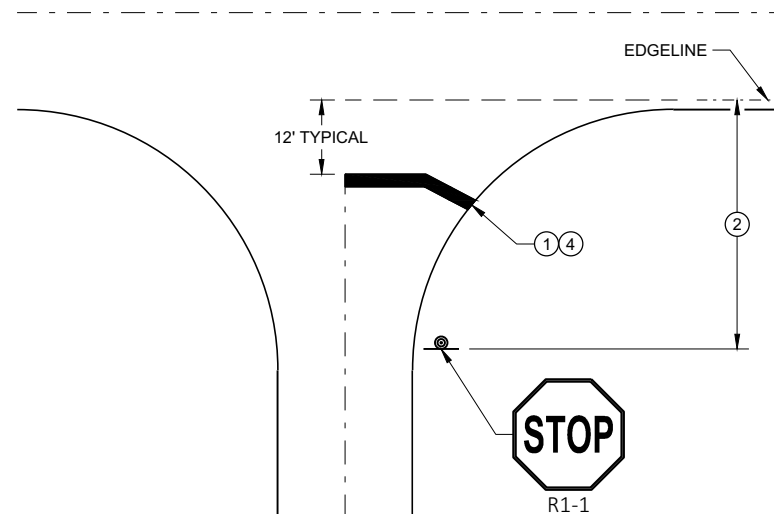
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

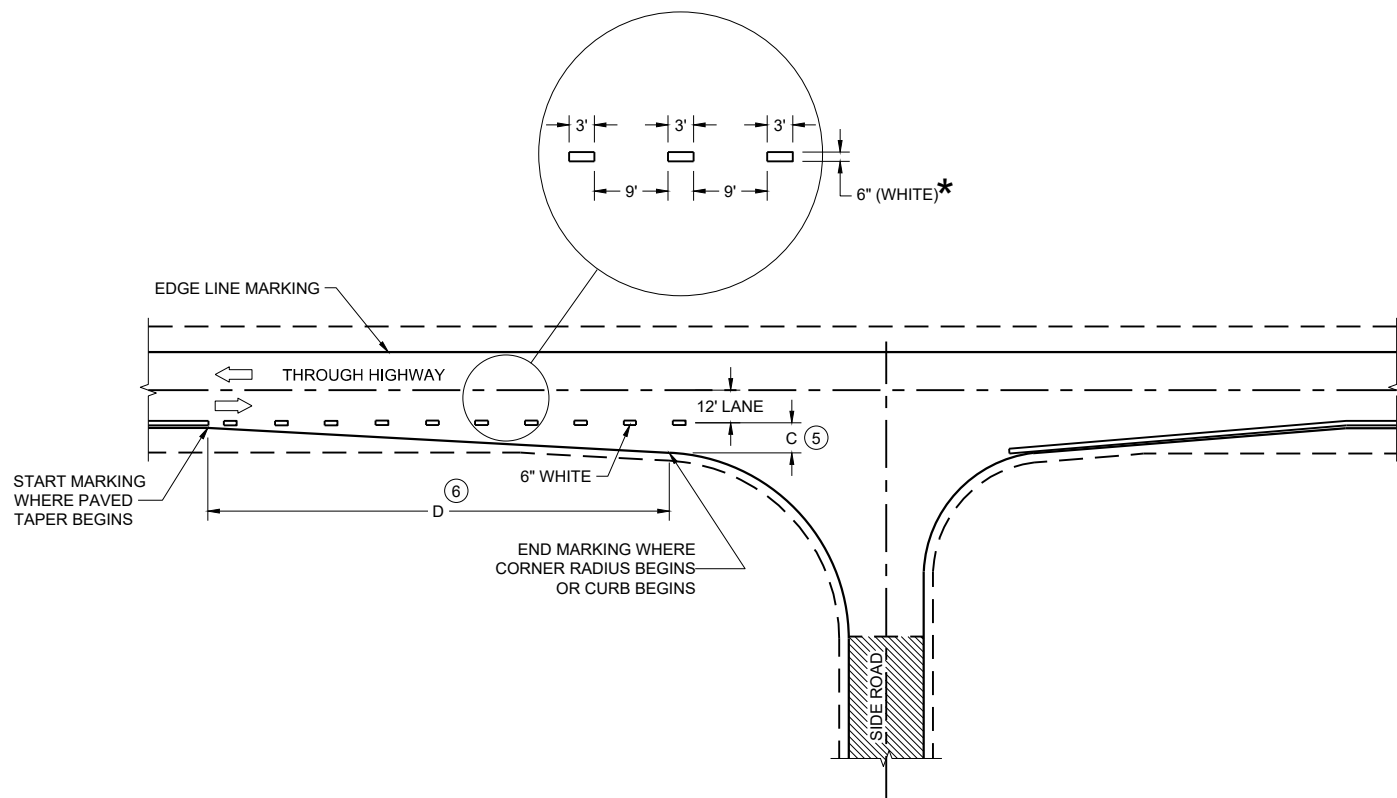
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

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

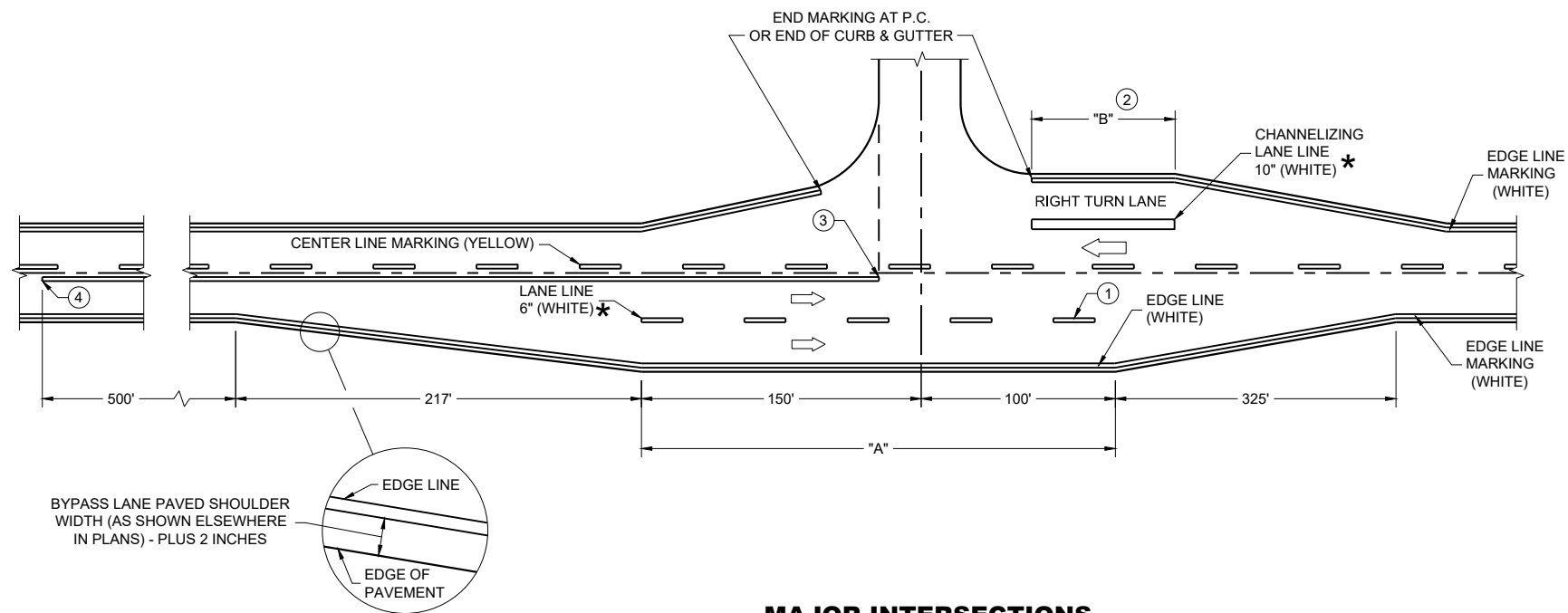
STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 148
FHWA



MINOR INTERSECTION



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

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

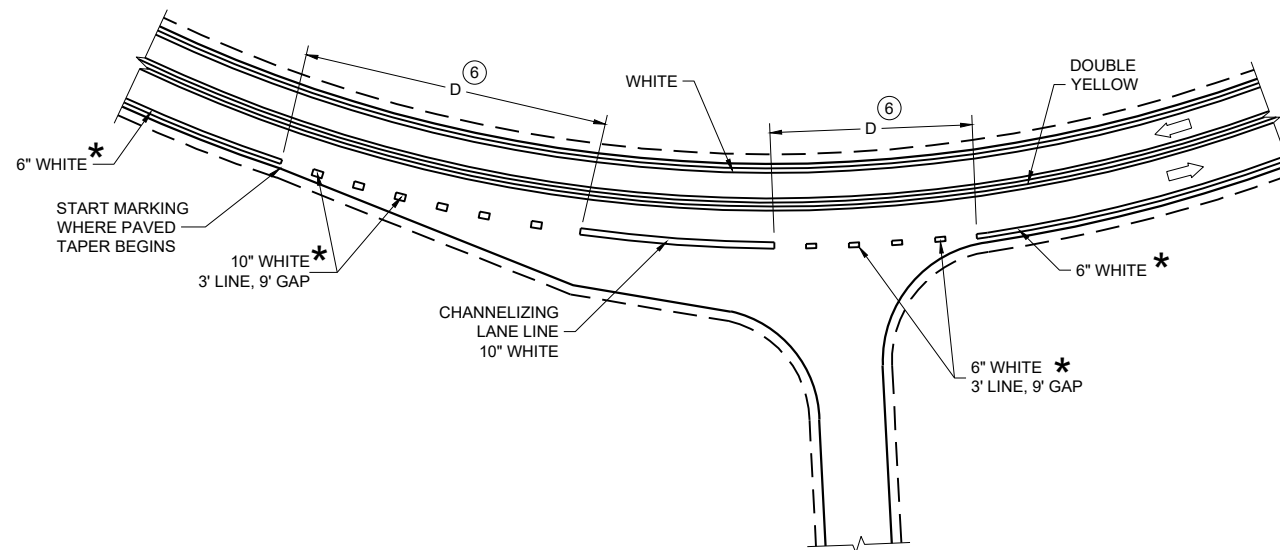
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

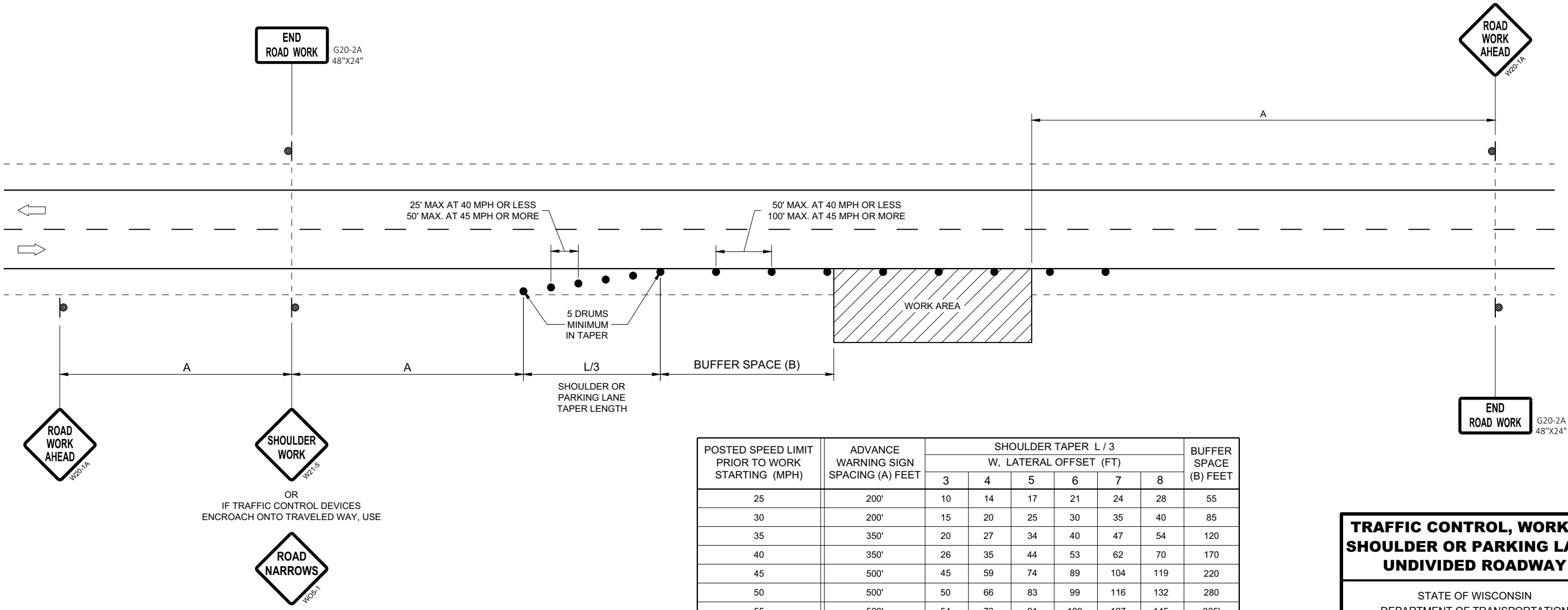
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

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SDD 15D28 - 04



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

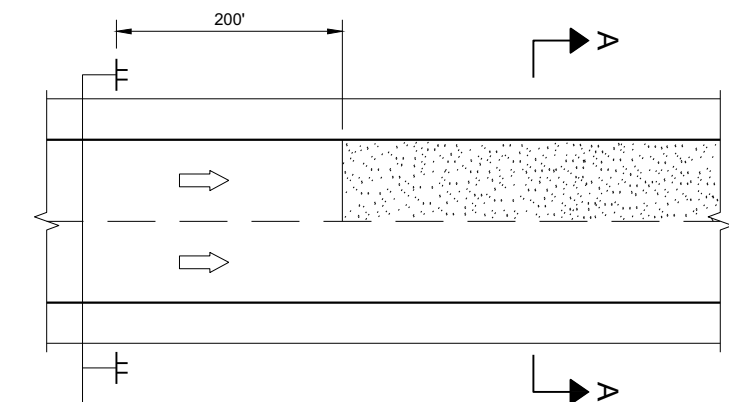
TRAFFIC CONTROL, WORK ON
SHOULDER OR PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

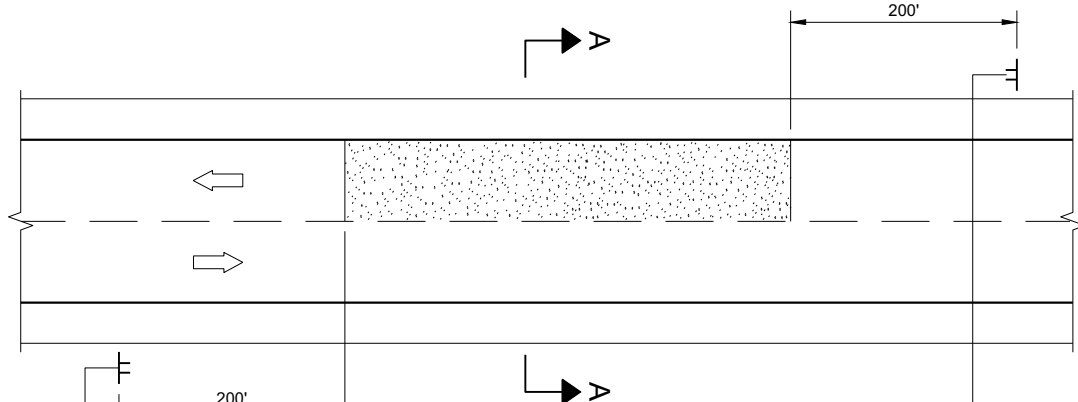
APPROVED
May 2020 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE T SAFETY ENGINEER 150
FHWA

6

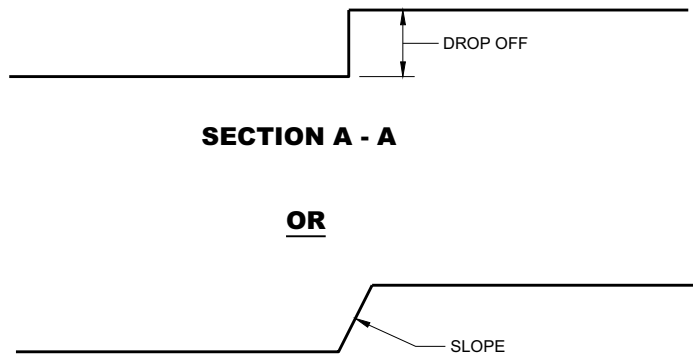
SDD 15D28 - 04



MULTI-LANE



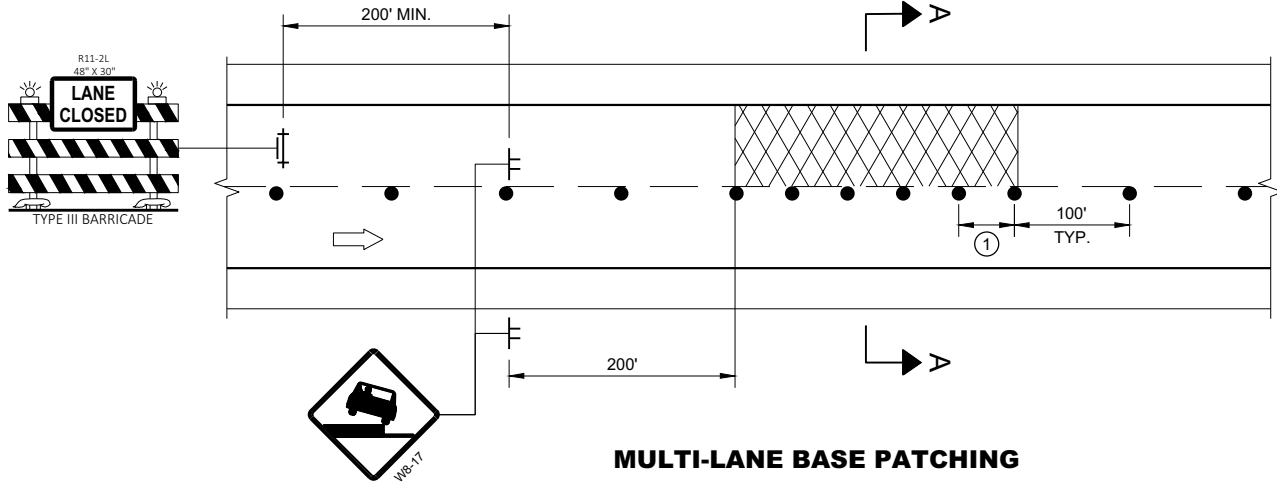
TWO-WAY TWO LANE



SECTION A - A

OR

SECTION A - A



MULTI-LANE BASE PATCHING

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.

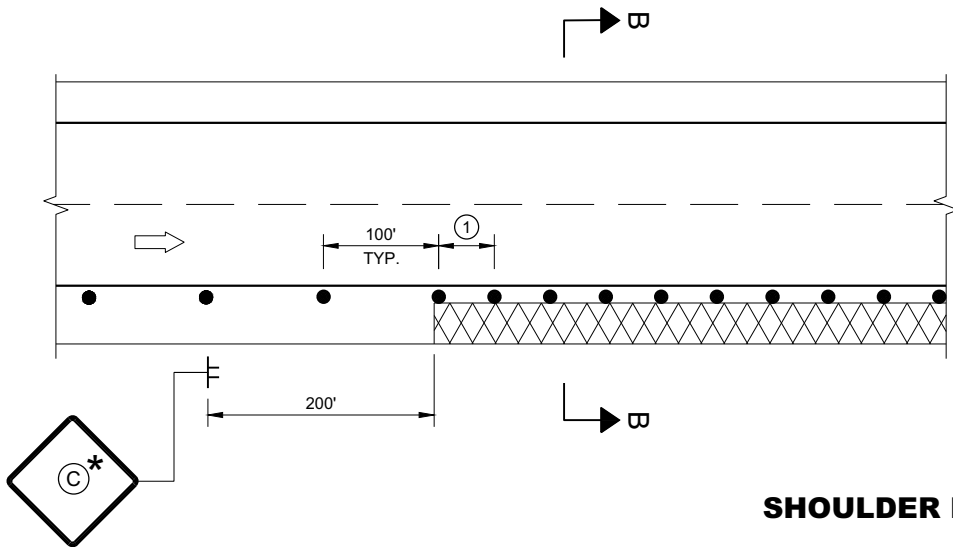
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

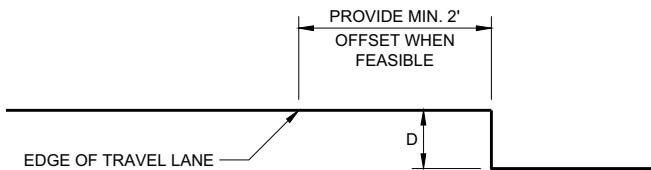
① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP - OFF WB-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
March 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER 151

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

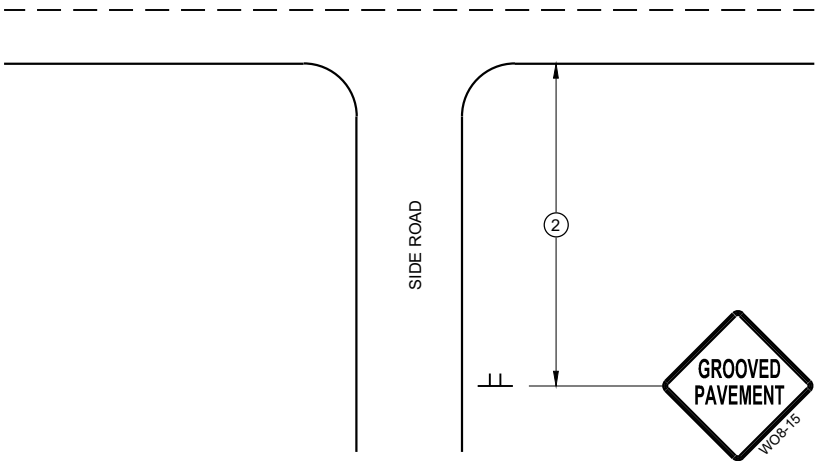
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

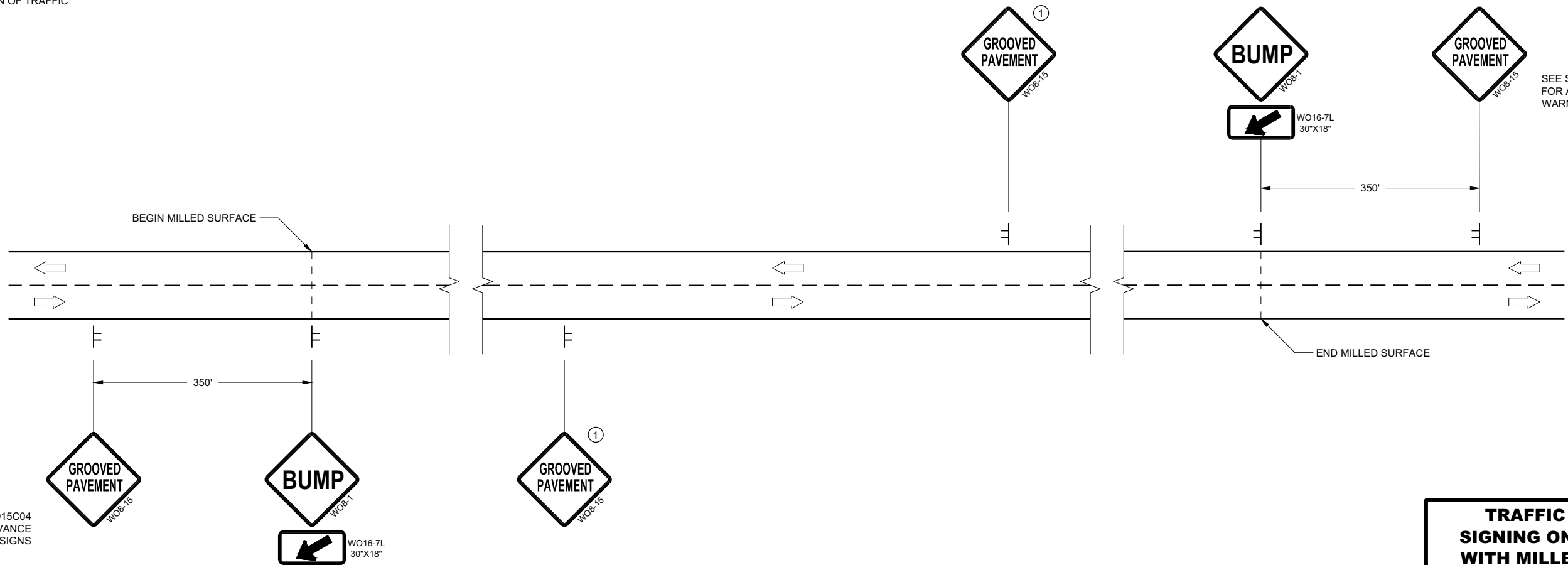
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 152

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

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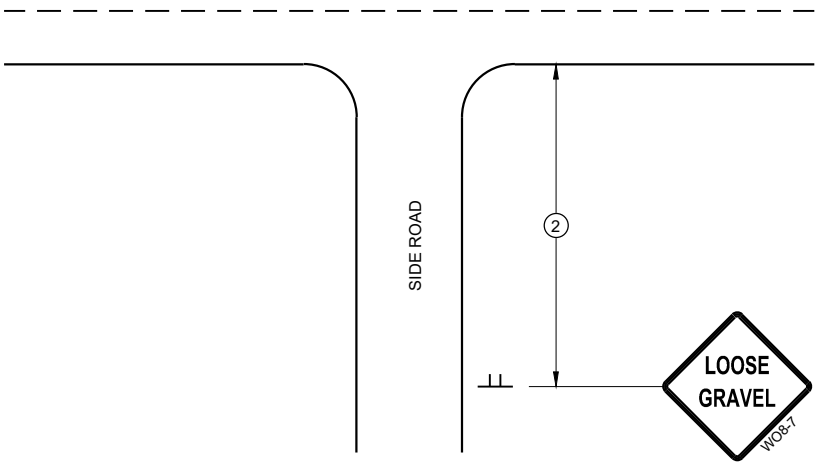
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

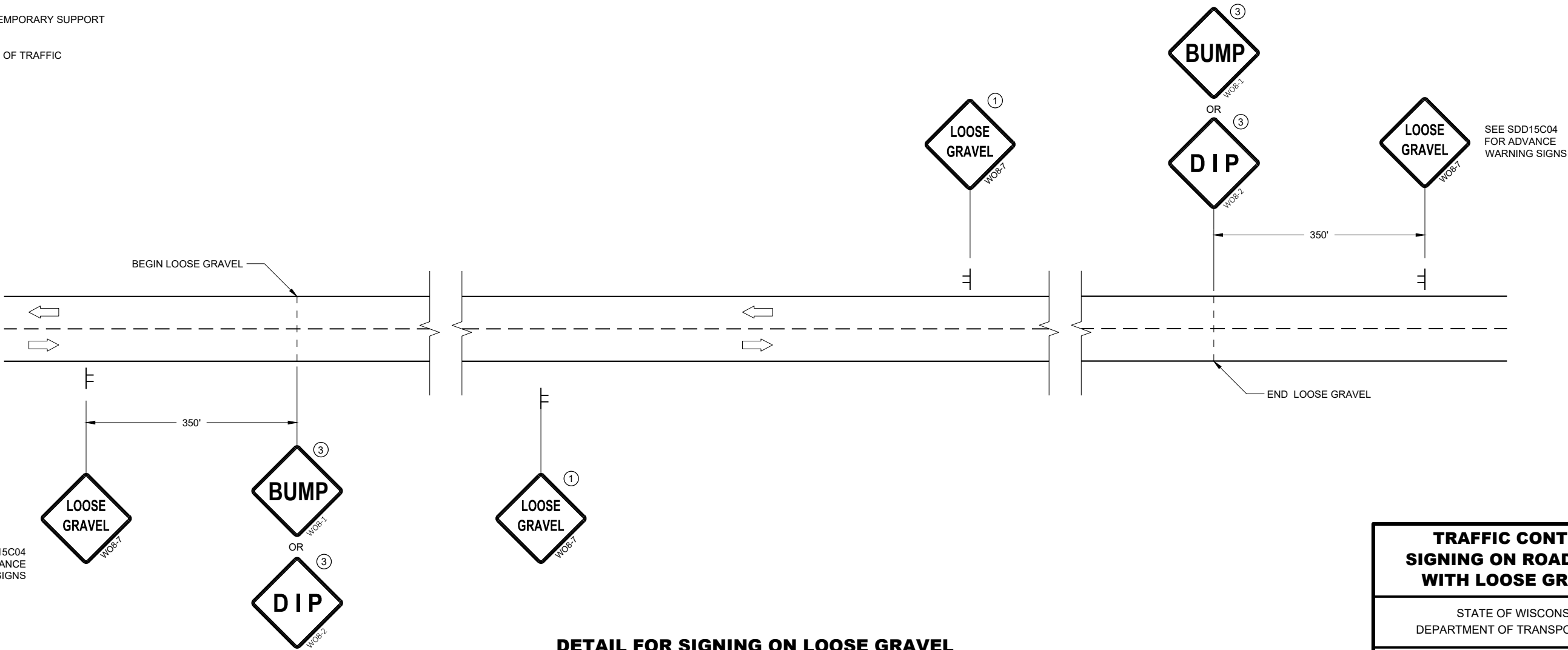
- 1 PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- 2 PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.
- 3 ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



DETAIL FOR SIGNING ON LOOSE GRAVEL
OR CHIP SEALED SURFACES

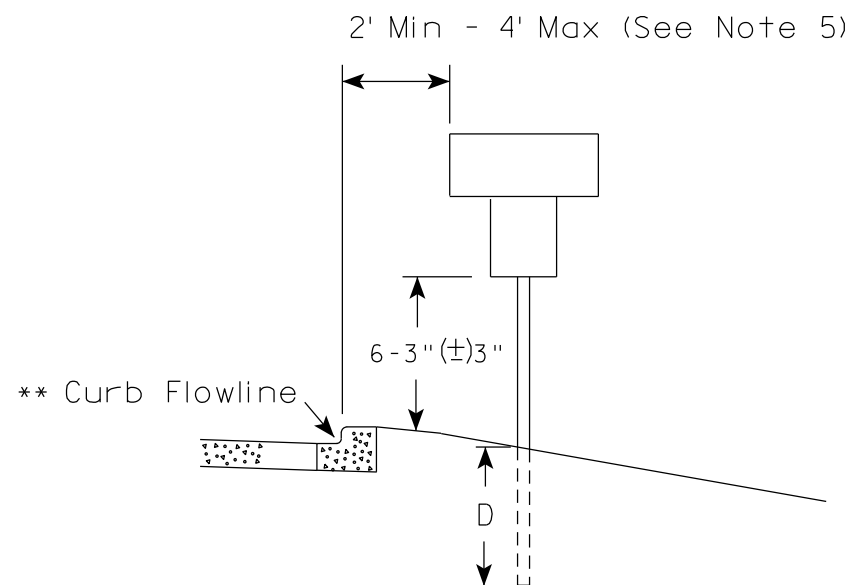
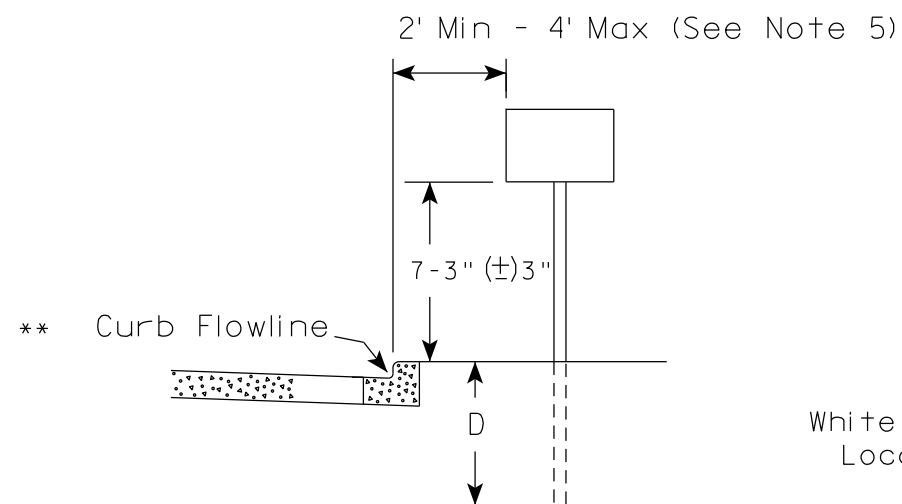
TRAFFIC CONTROL
SIGNING ON ROADWAYS
WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 153

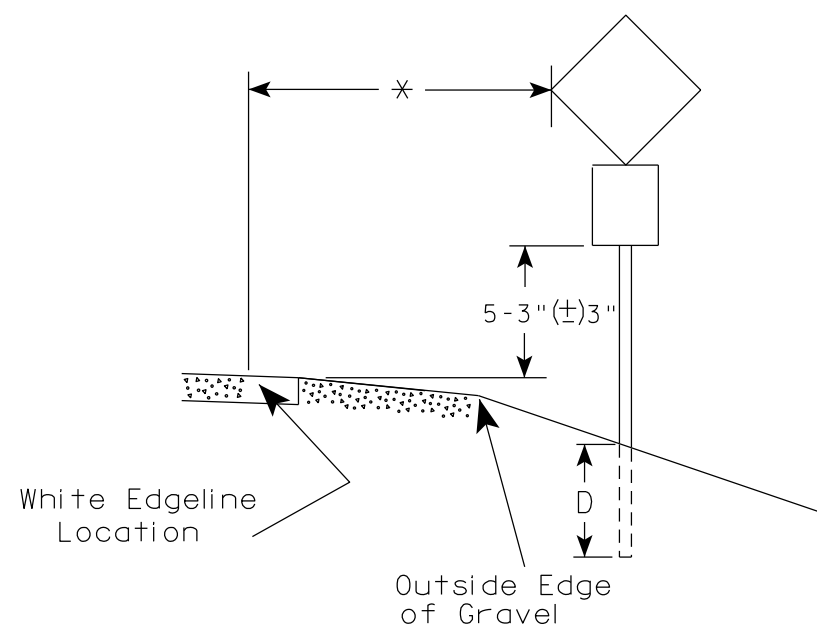
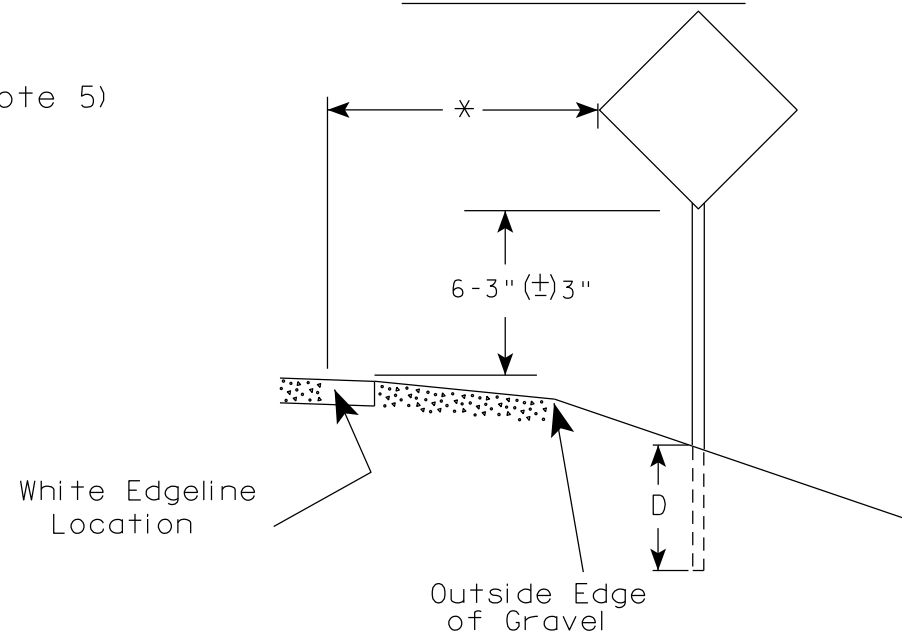
FHWA

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 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".
- For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 12/6/23

PLATE NO. A4-3.23

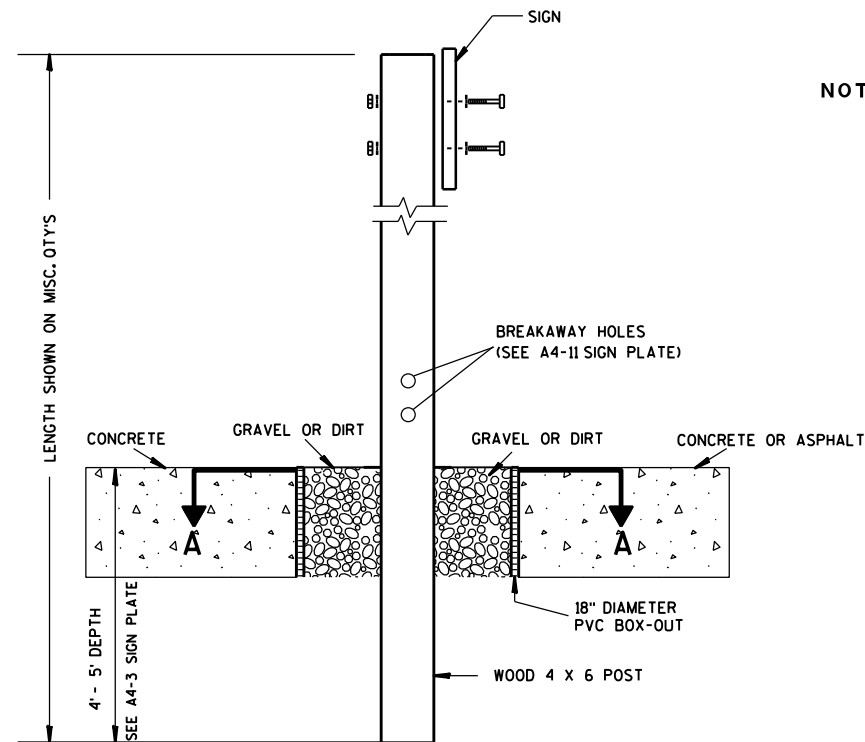
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 154

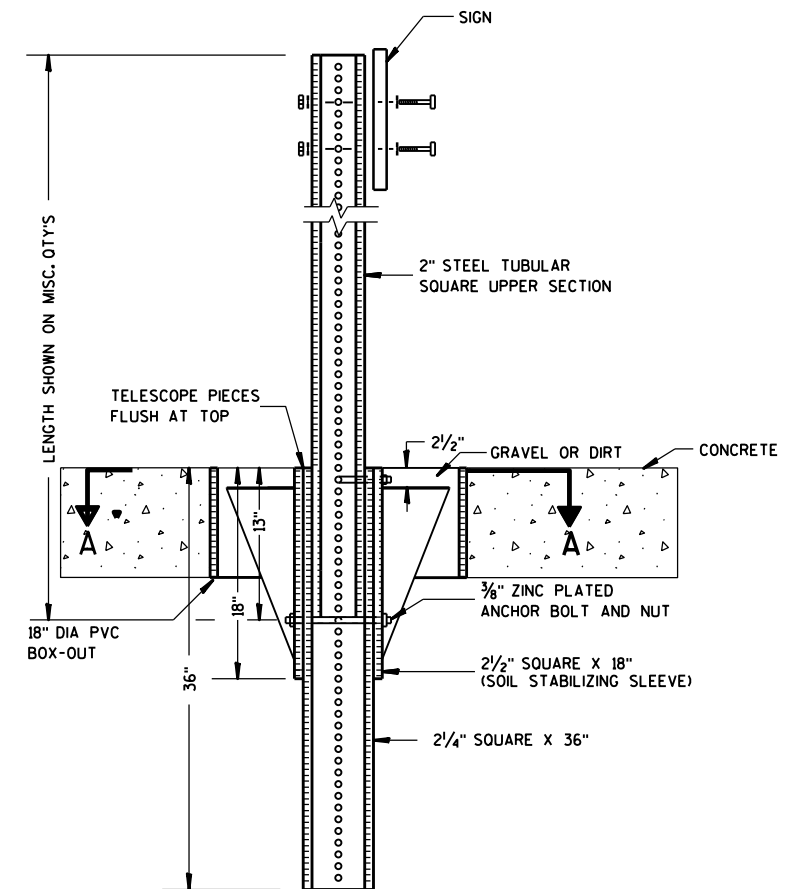
E



ELEVATION VIEW

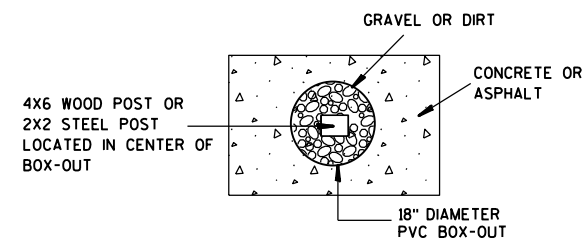
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 155 A4-3B.1

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

GENERAL NOTES

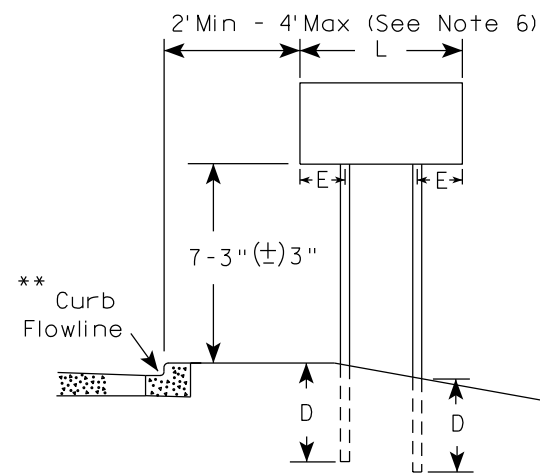
- 1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- 2. See tables below for required number of posts.
- 3. For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- 4. The (±) tolerance for mounting height 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.

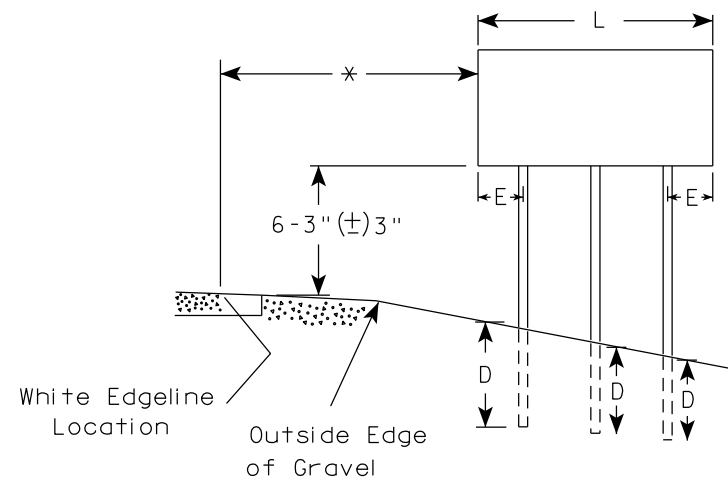
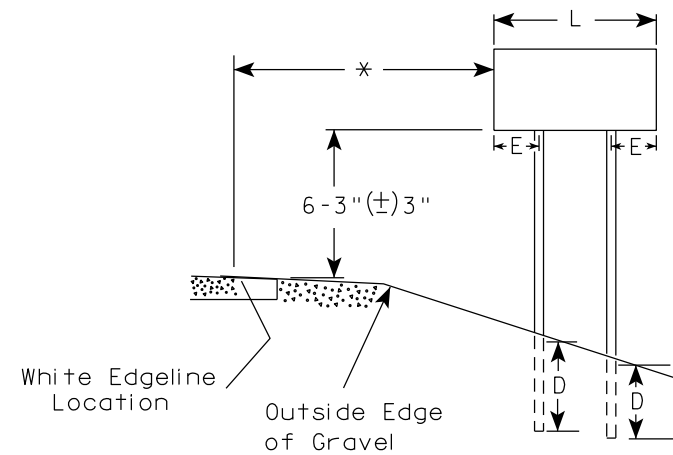
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs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

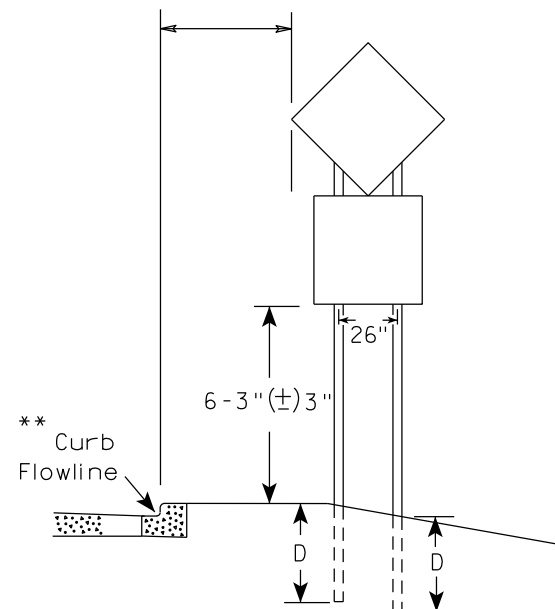
URBAN AREA



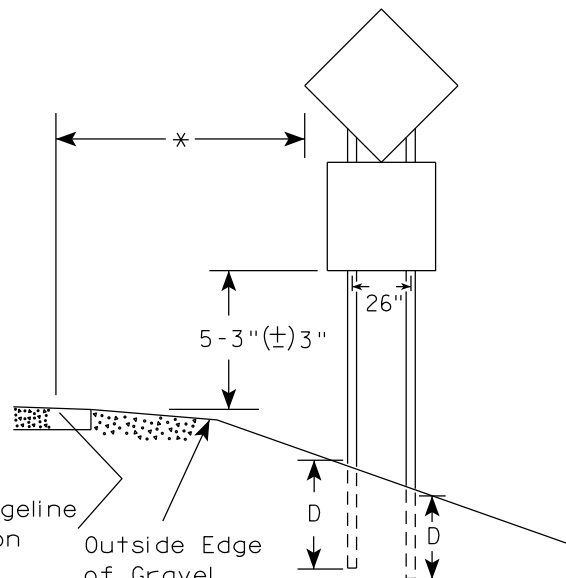
RURAL AREA (See Note 3)



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

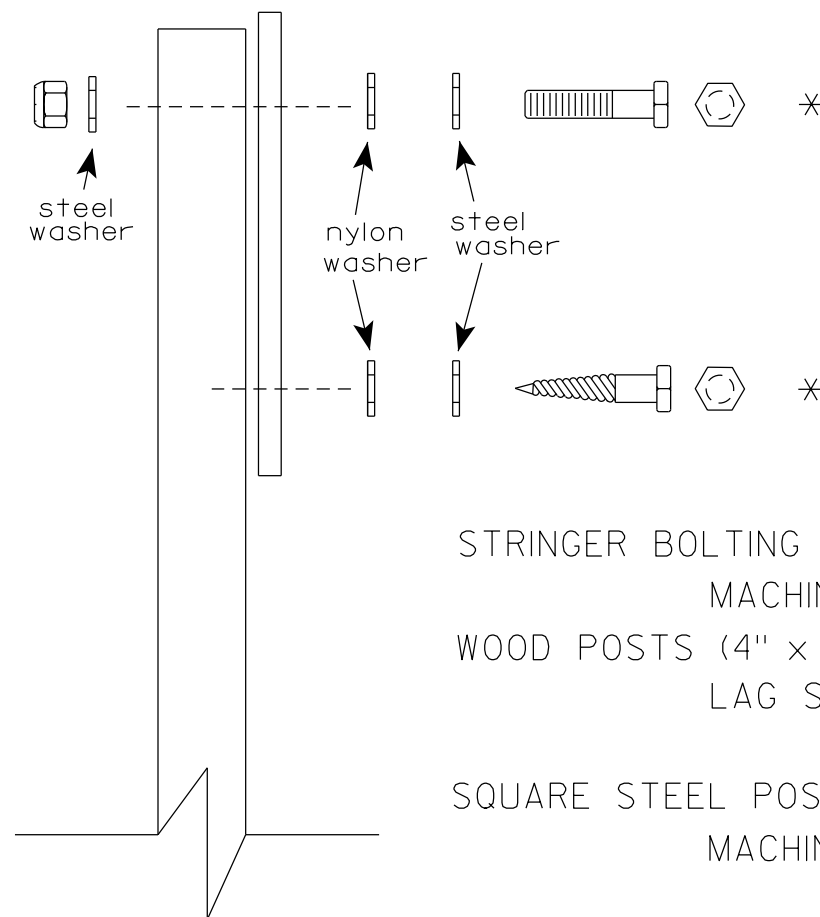
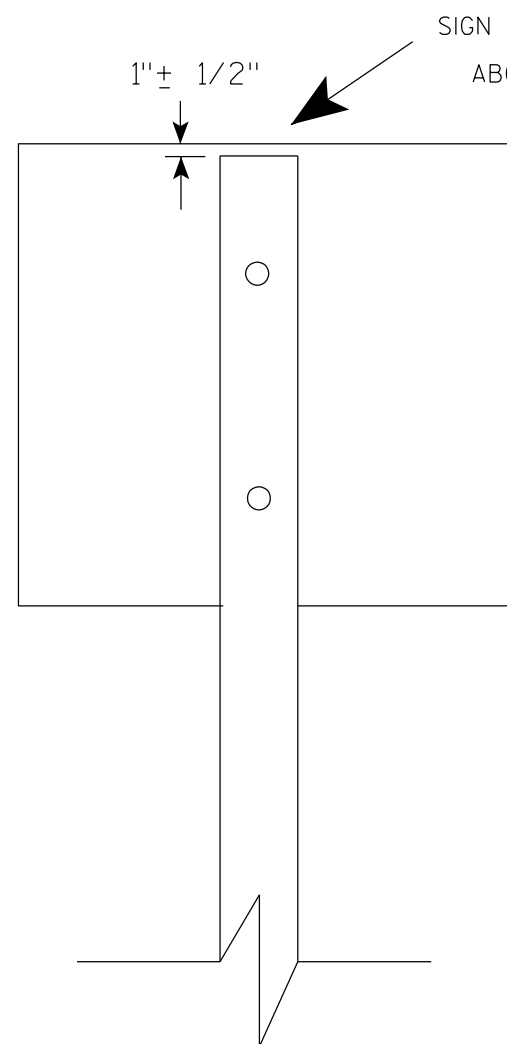
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 12/6/23	PLATE NO. A4-4.16



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.

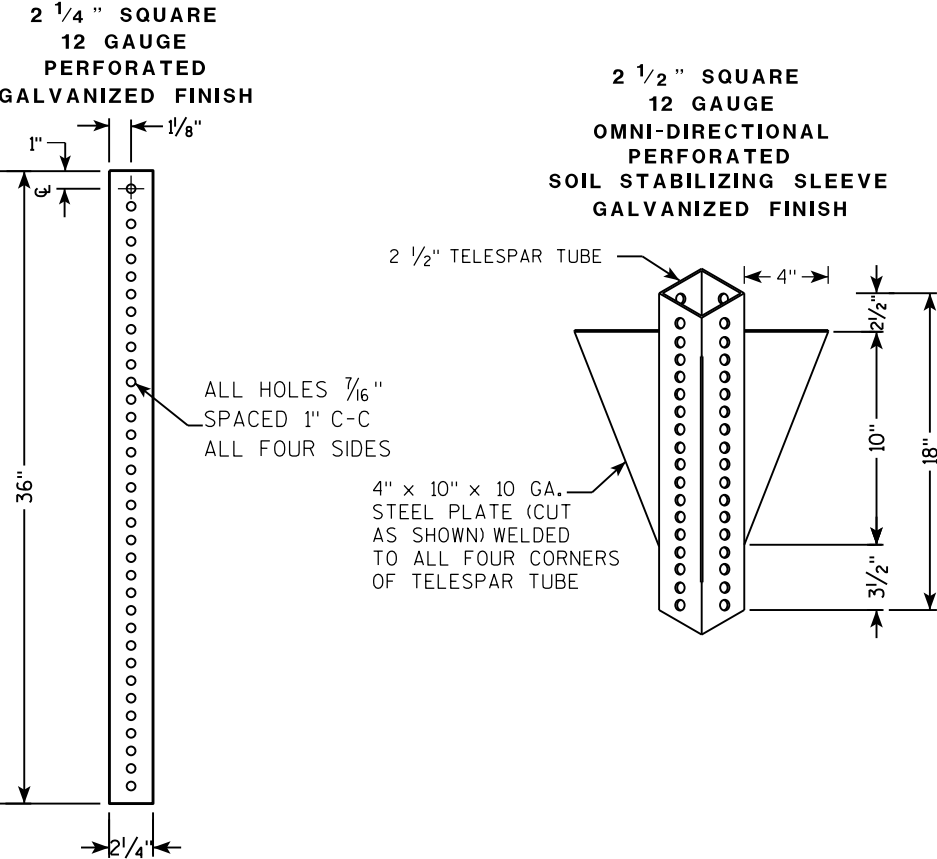
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

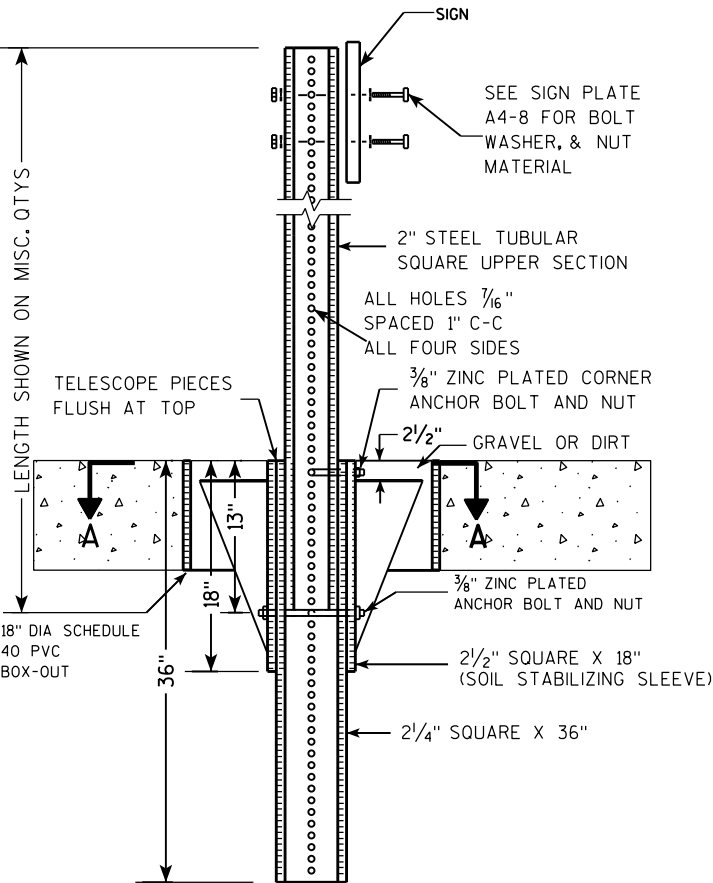
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

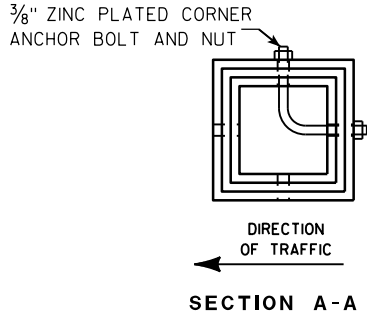
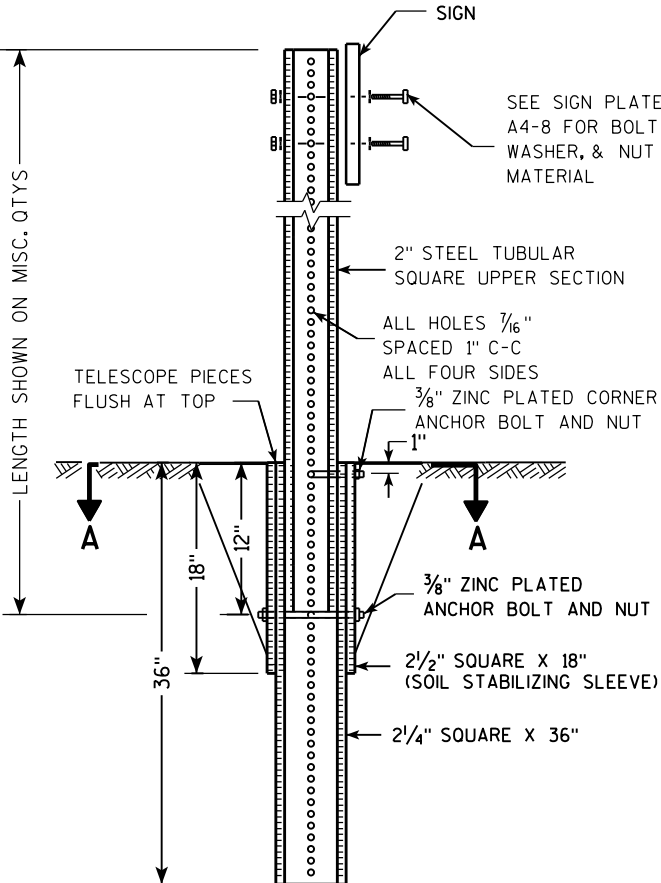
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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).

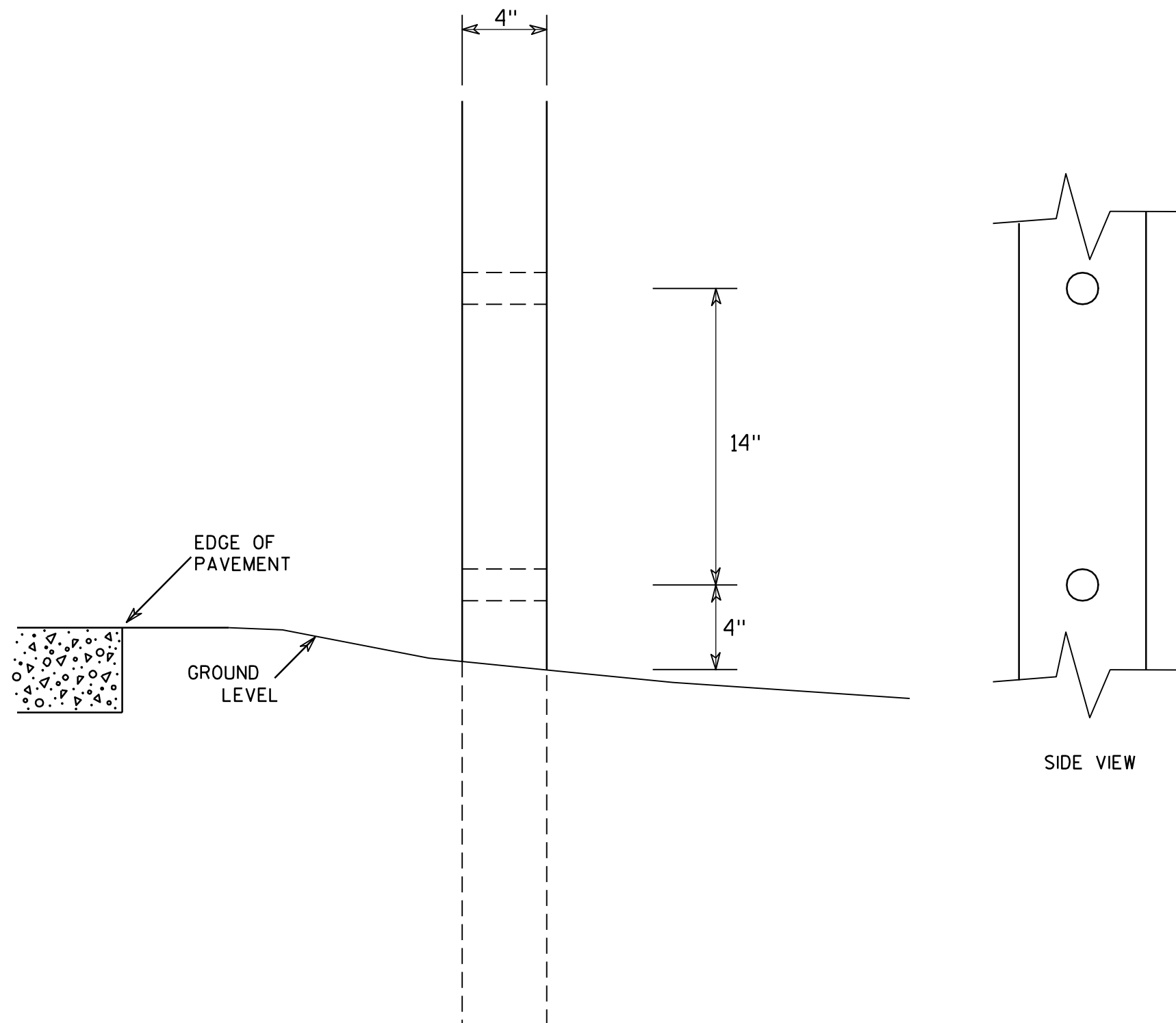
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 158 14-9.9

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

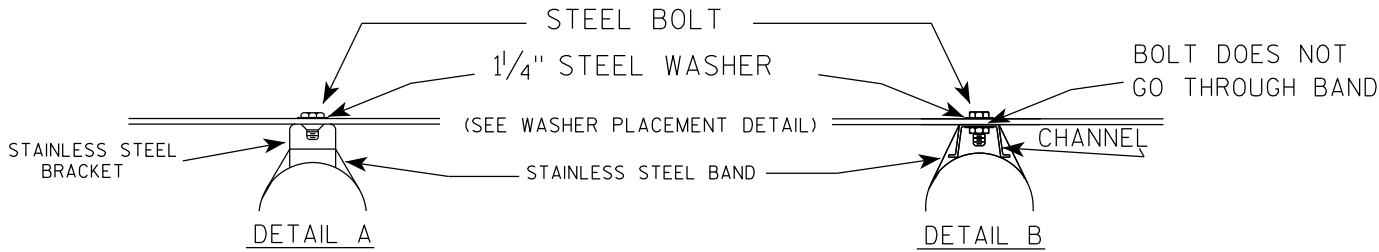
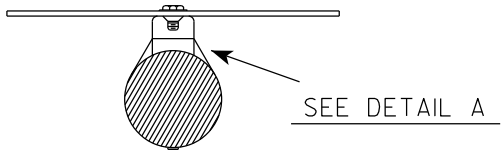
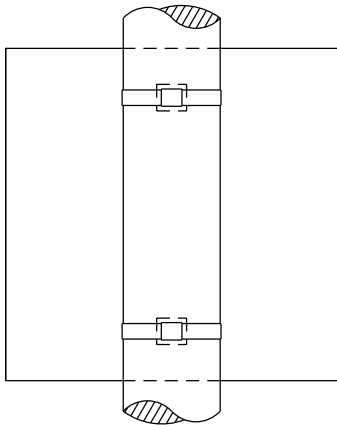
COUNTY:

SHEET NO: 159

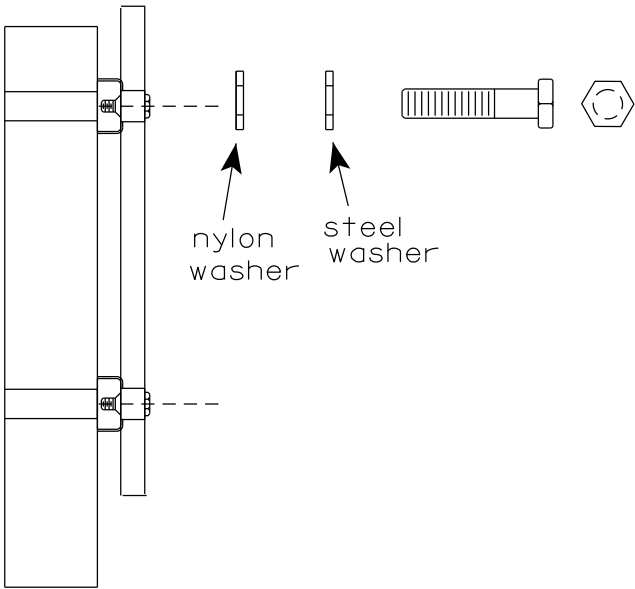
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

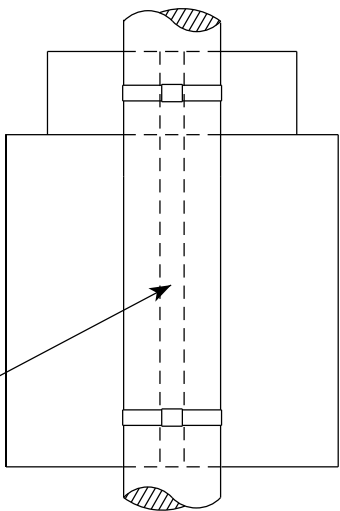


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

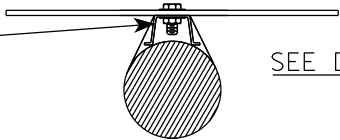
GENERAL NOTES

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



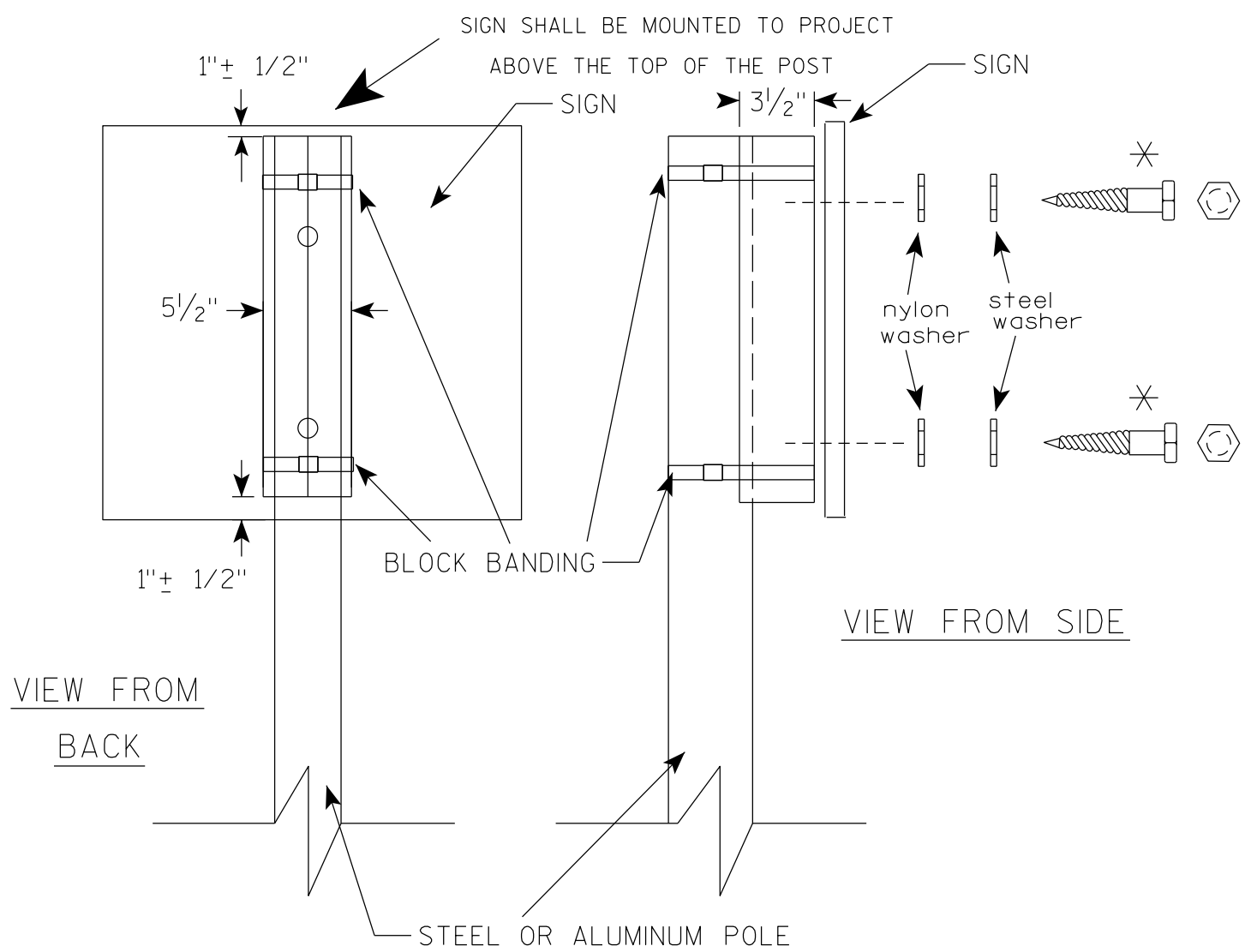
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

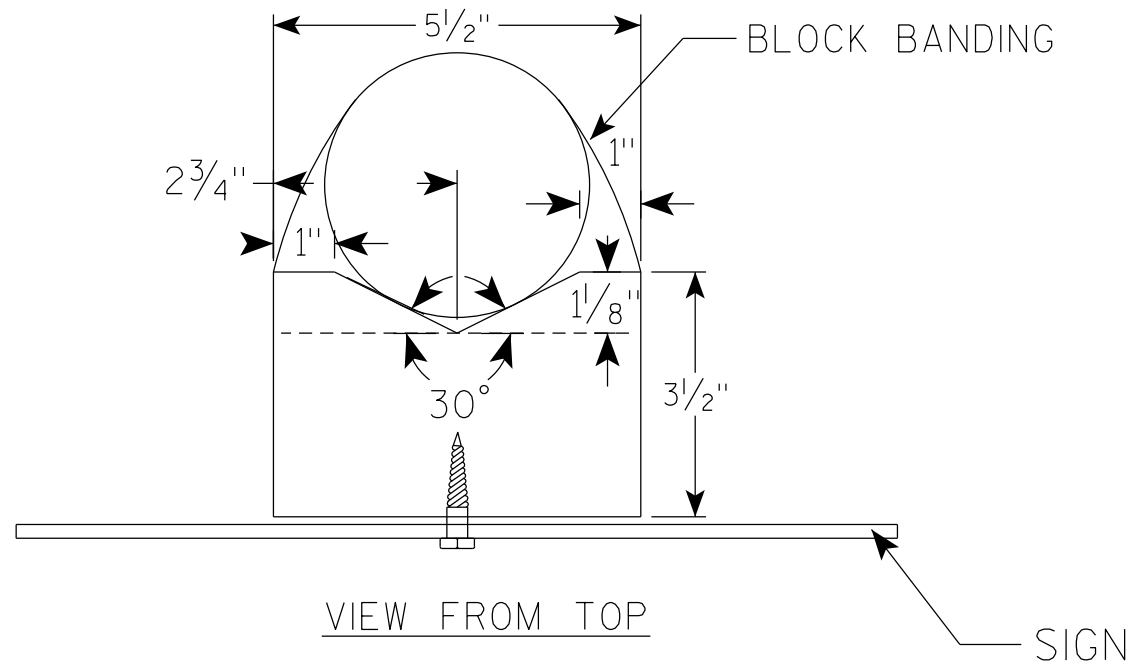
WISCONSIN DEPT OF TRANSPORTATION

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

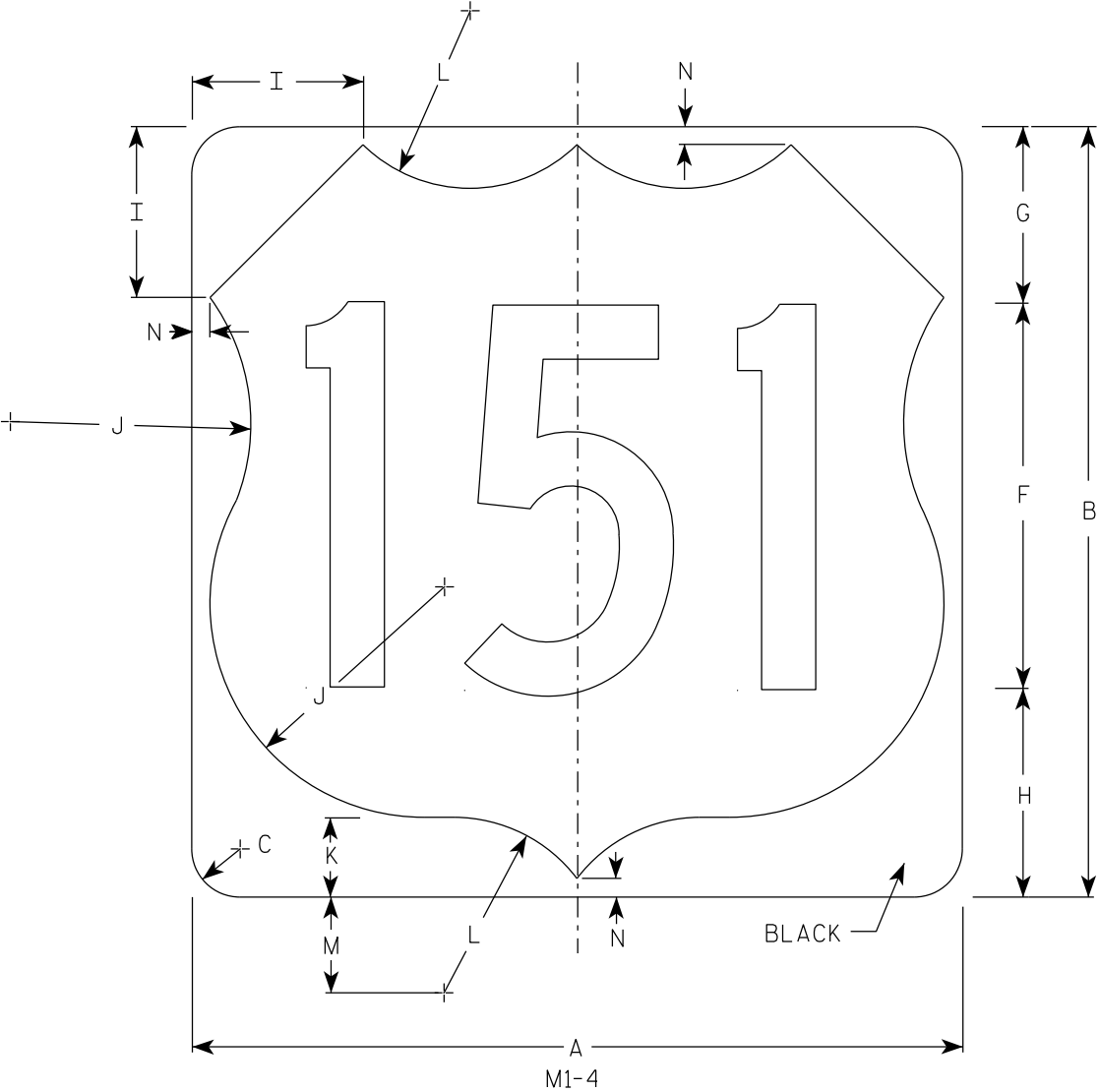
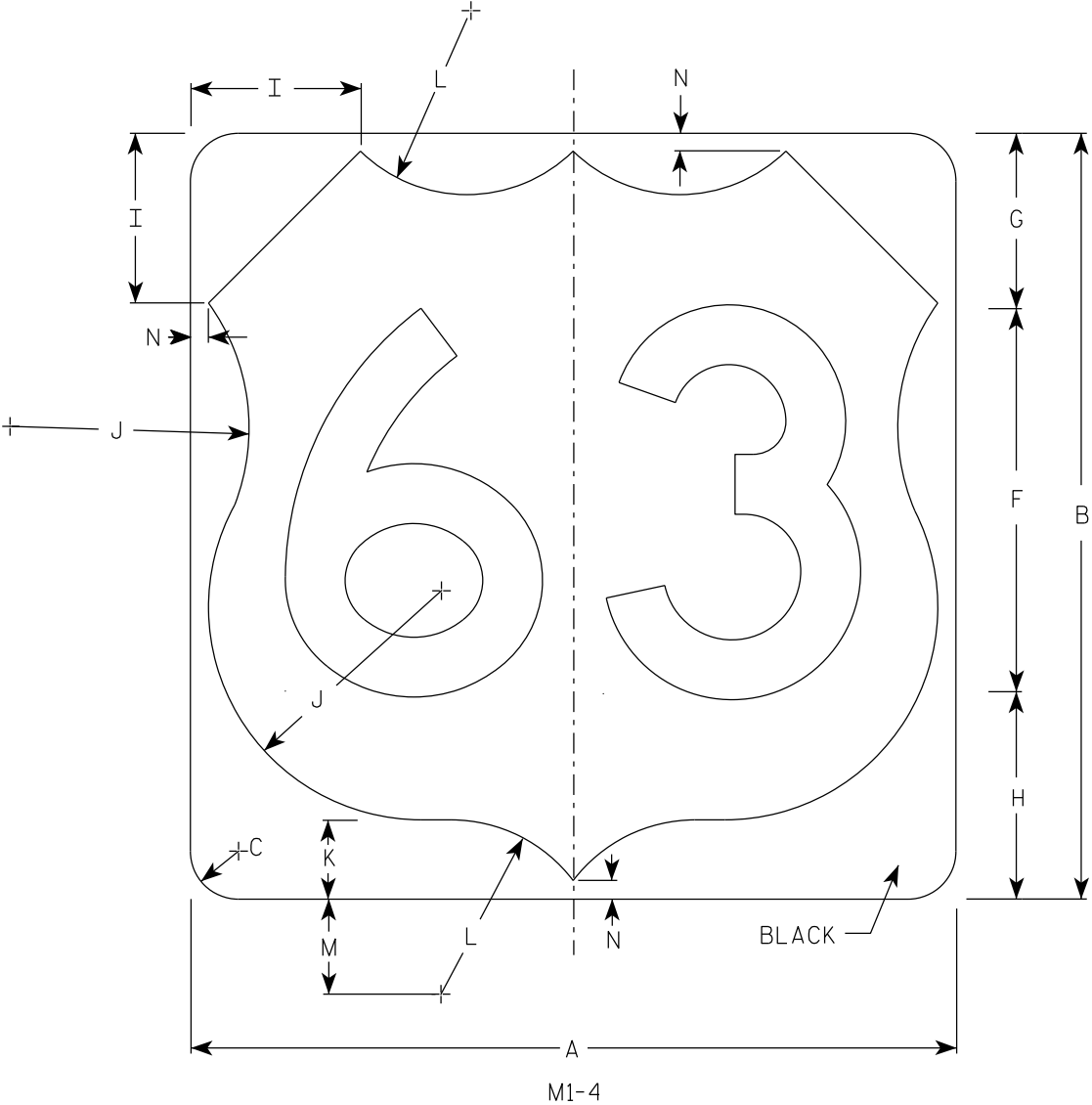
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO: 161

E

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D except 3 number signs Series C

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

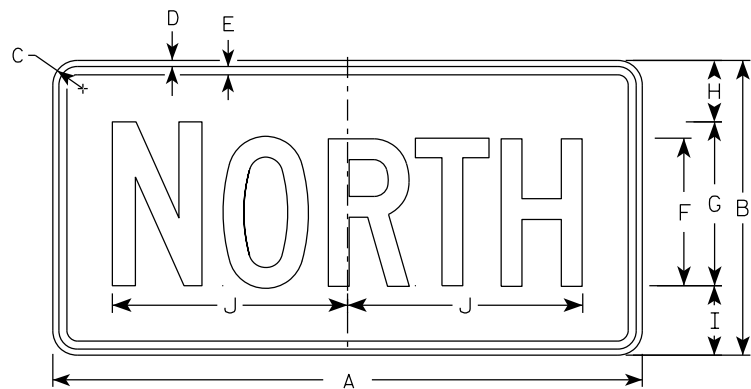
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

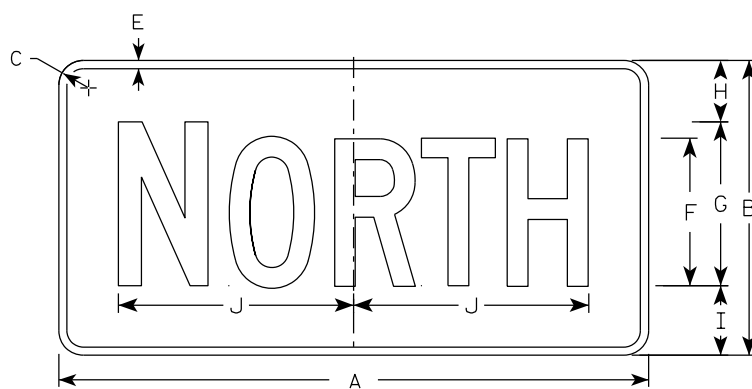
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 12/20/22 PLATE NO. M1-4.11

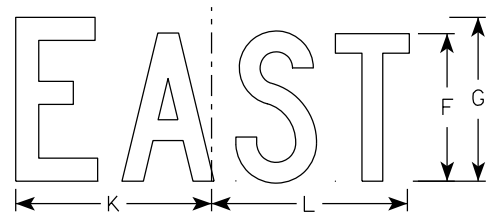
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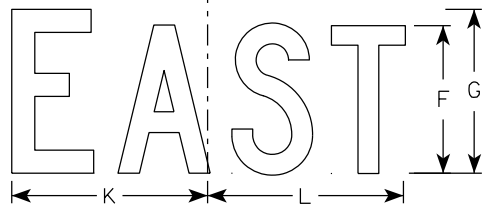
M3-1
MM3-1
MP3-1



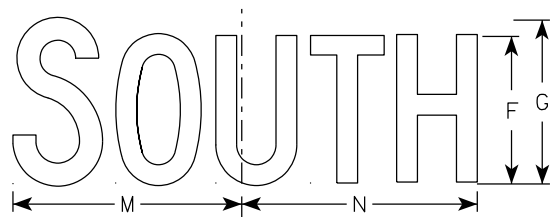
MB3-1
MK3-1
MN3-1



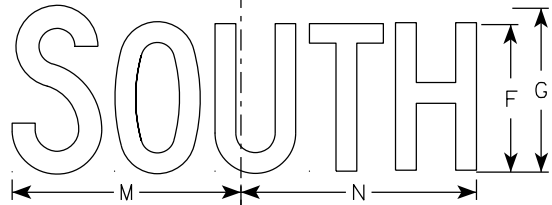
M3-2
MM3-2
MP3-2



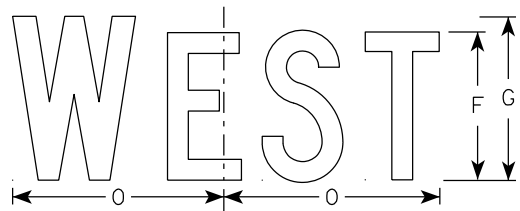
MB3-2
MK3-2
MN3-2



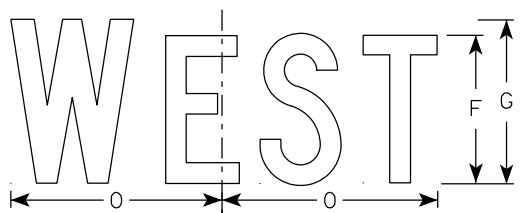
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

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

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

STANDARD SIGNS M3-1 THRU M3-4 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15

PROJECT NO: HWY: COUNTY: SHEET NO: 163 E

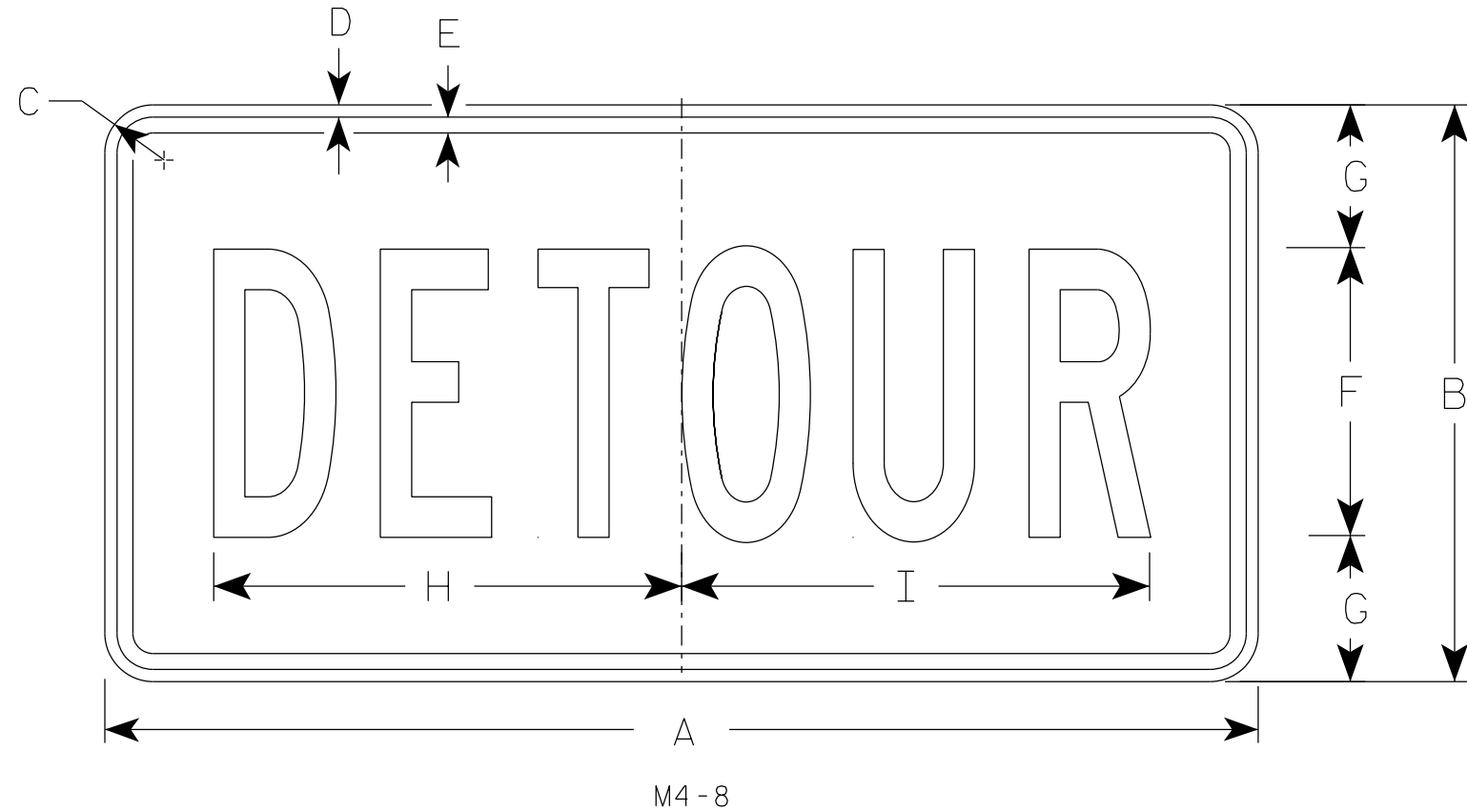
FILE NAME : C:\CAEfiles\Projects\tr_stdplate-M31.dgn PLOT DATE : 8-FEB 2023 11:00 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : \$\$.....plotscale.....\$\$WISDOT/CADDs SHEET 42

7

7

NOTES

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



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

STANDARD SIGN

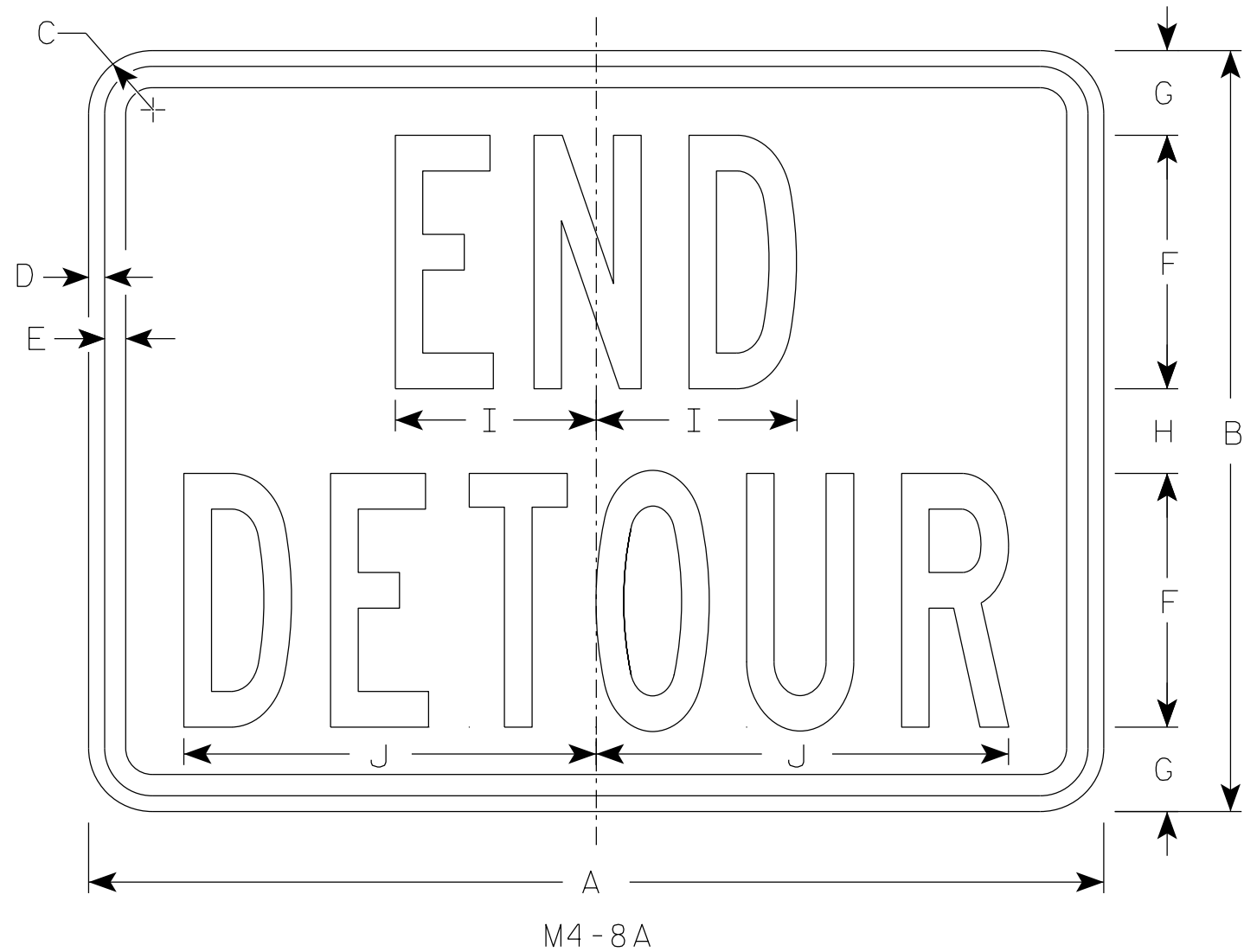
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

7



NOTES

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

7

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

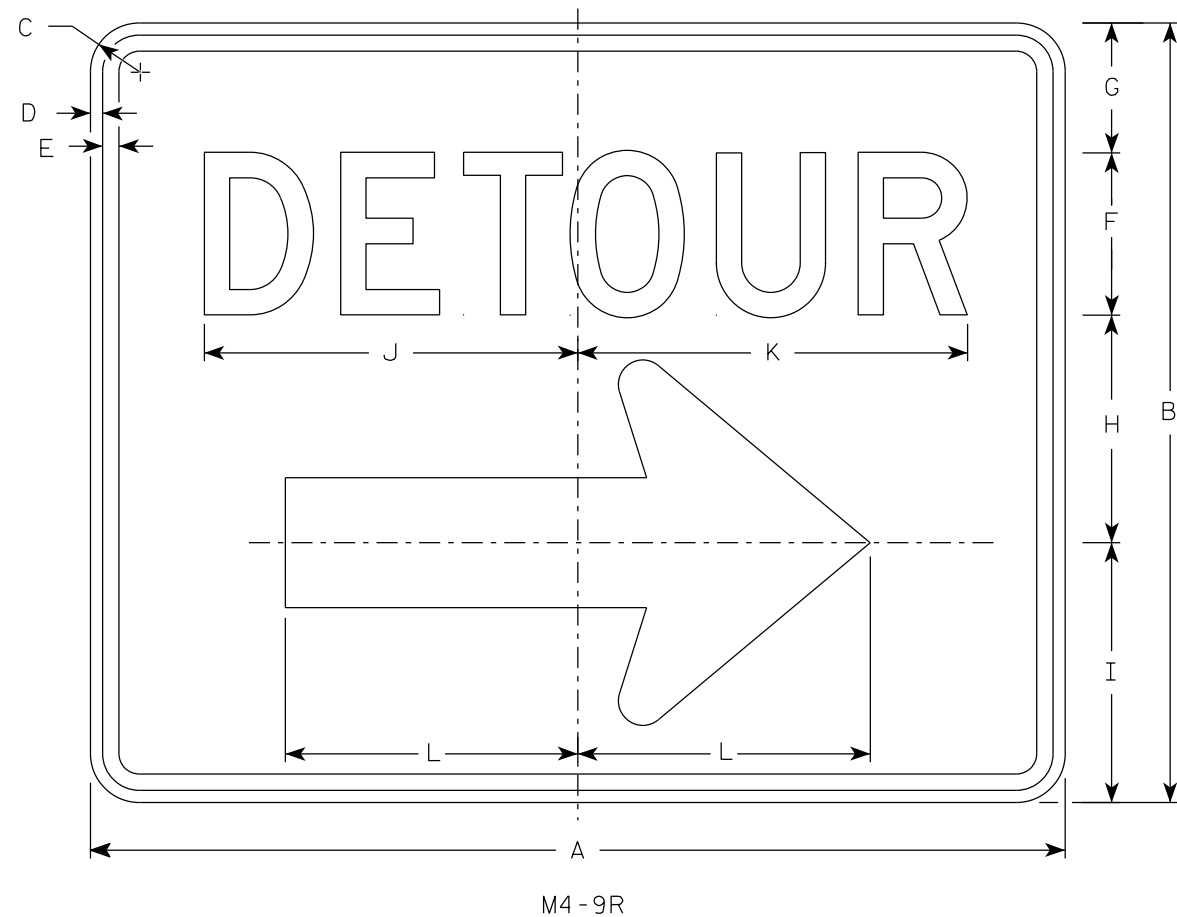
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

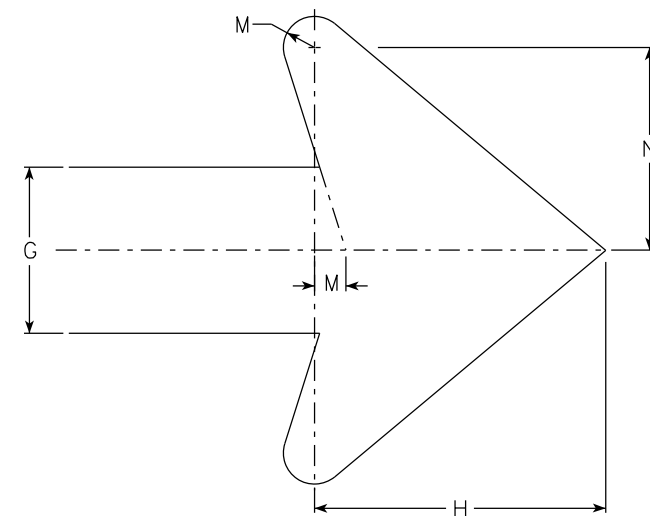
DATE 2/9/2023 PLATE NO. M4-8A.4

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 165		E
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NOTES

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



Arrow Detail

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

STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9R.6

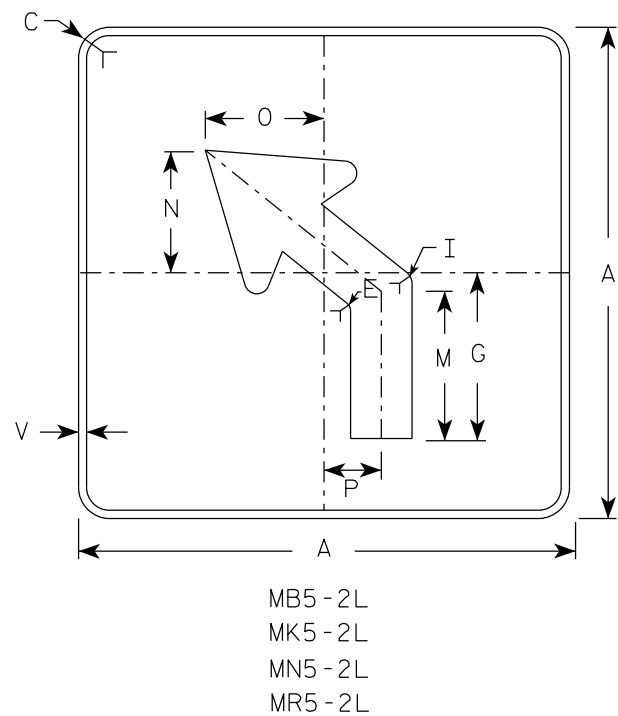
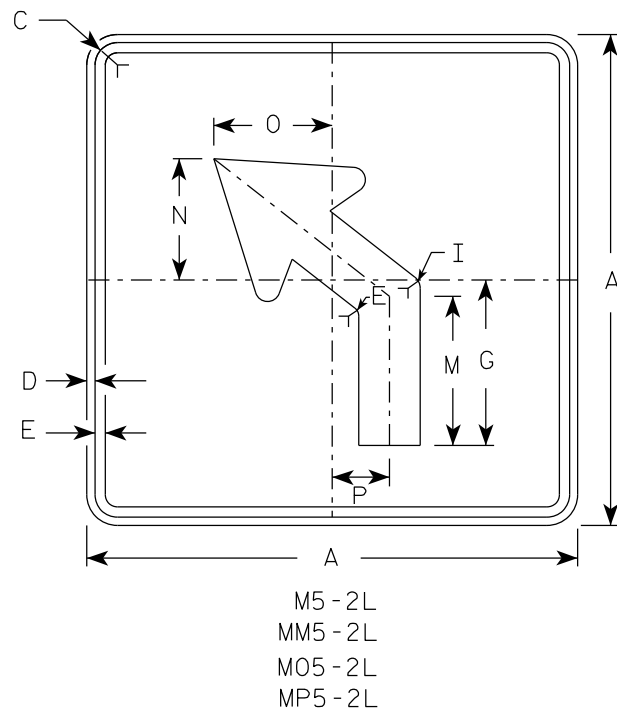
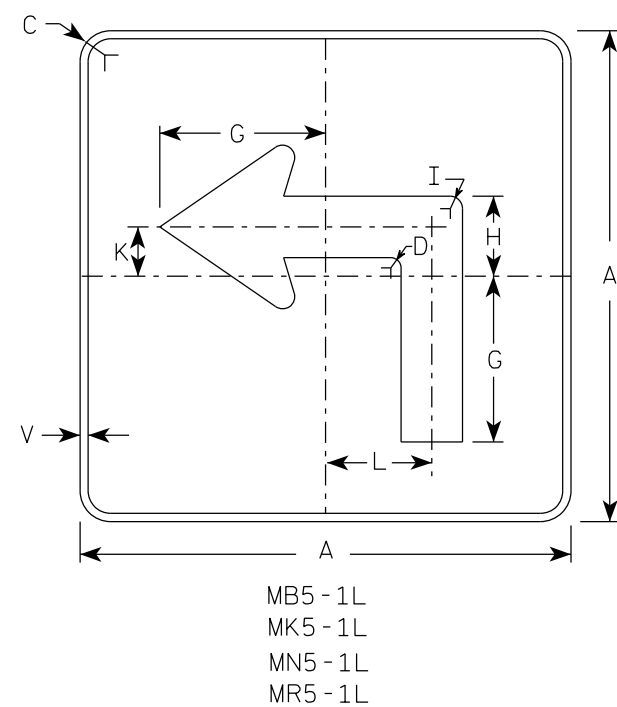
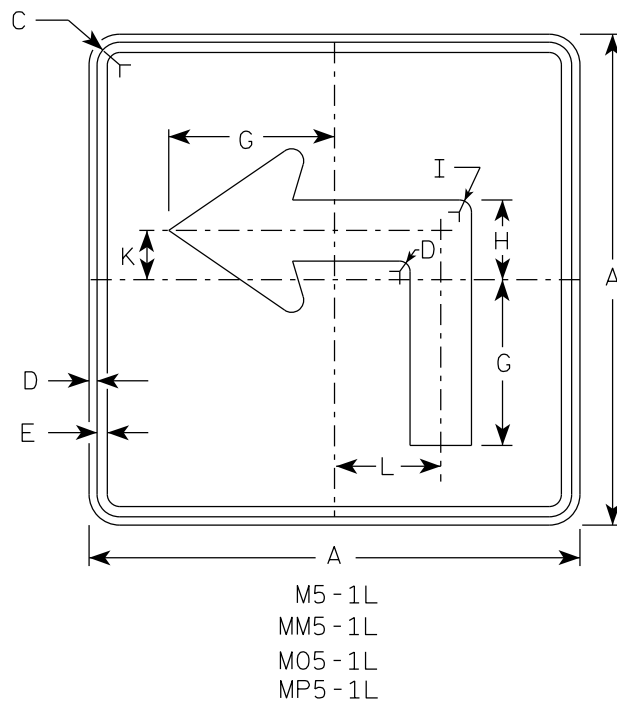
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

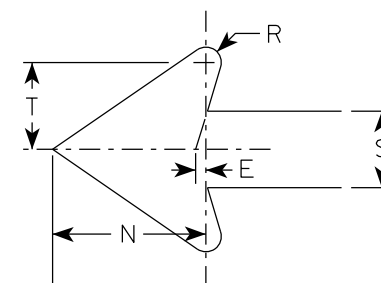
E



NOTES

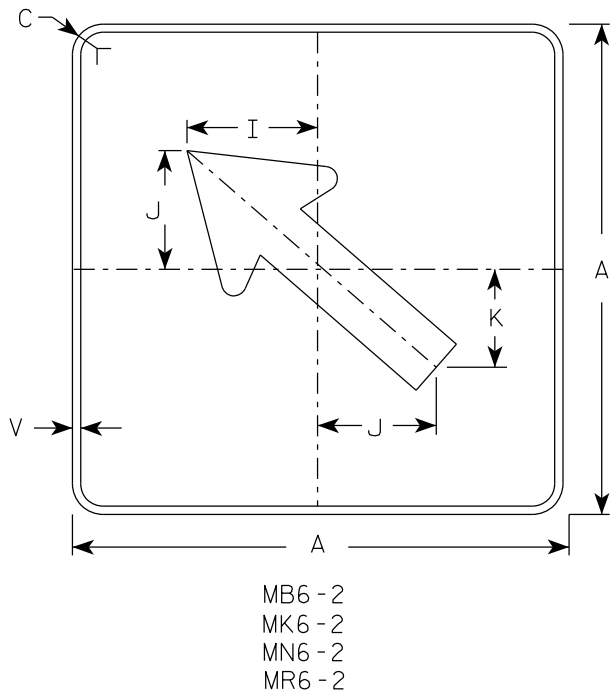
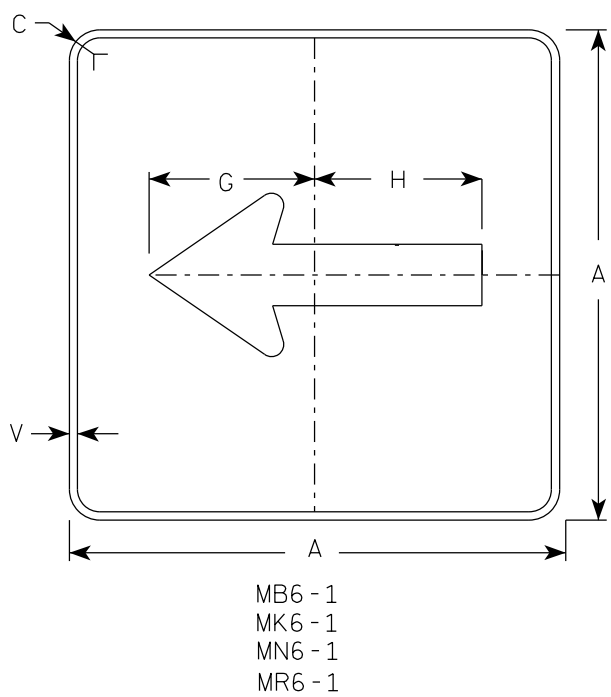
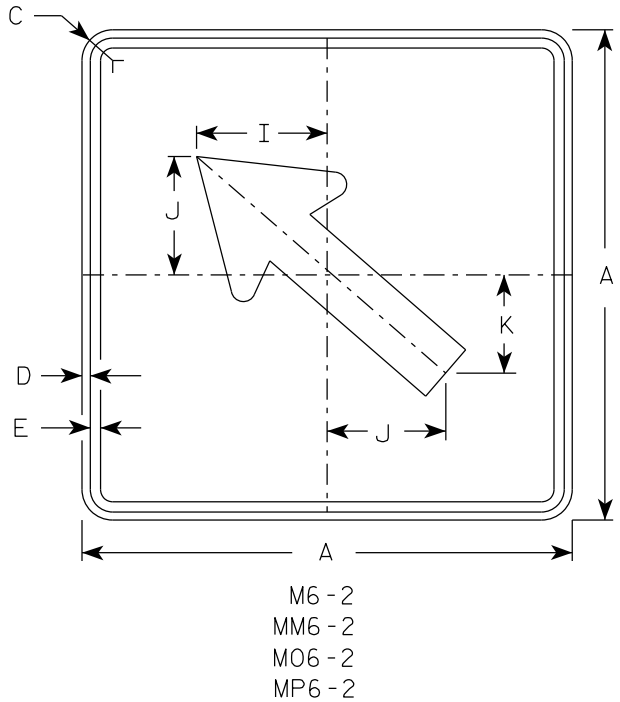
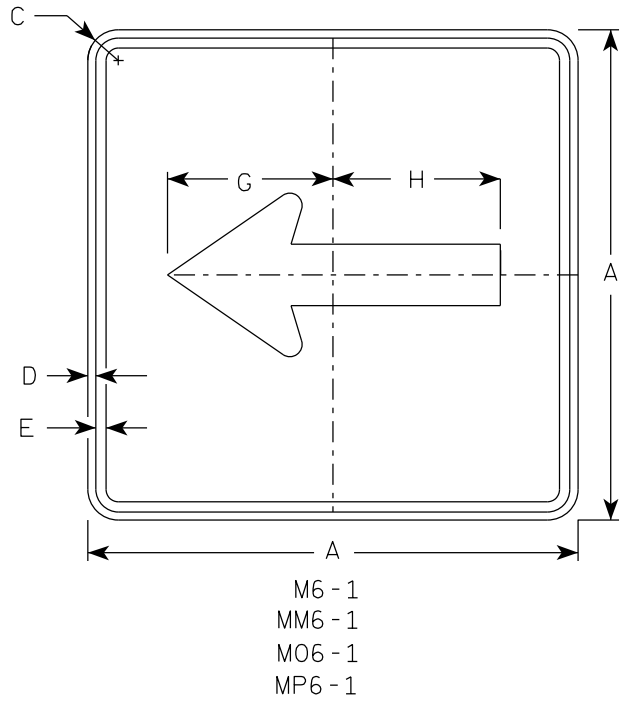
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|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

ARROW DETAIL

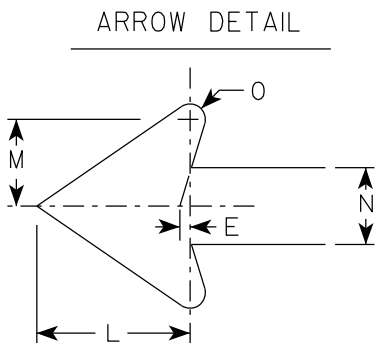


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2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

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 167	E
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- NOTES
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow



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

PROJECT NO:

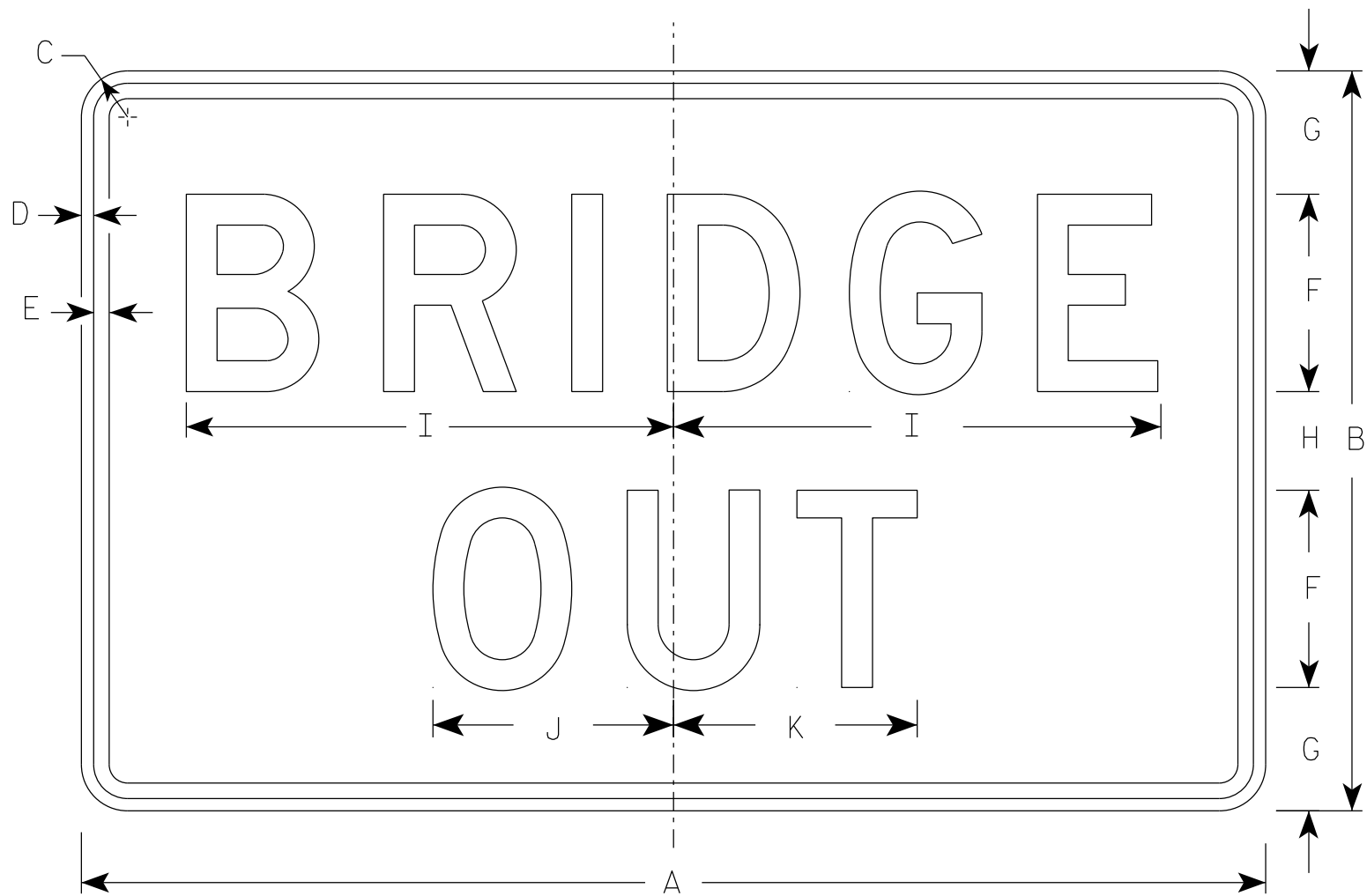
HWY:

COUNTY:

SHEET NO: 168

E

7



R11-2B

NOTES

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

7

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

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

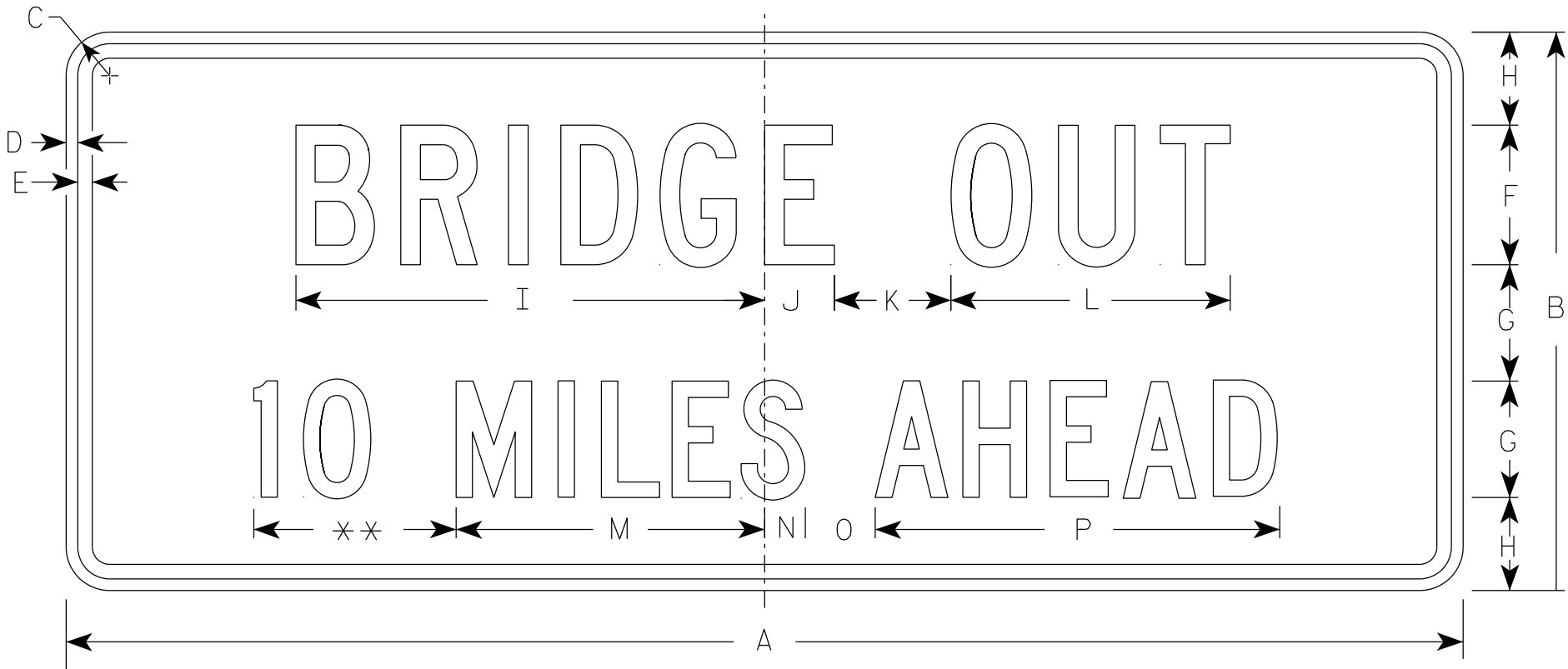
DATE 2/5/24 PLATE NO. R11-2B.3

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

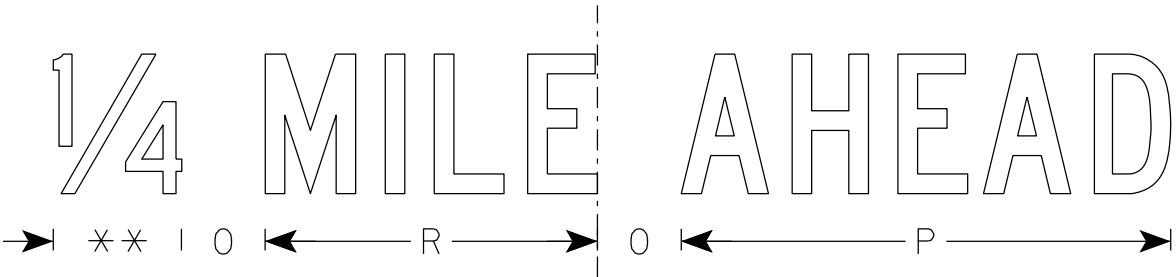
Background - White

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



R11-3C

** See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 1/2	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

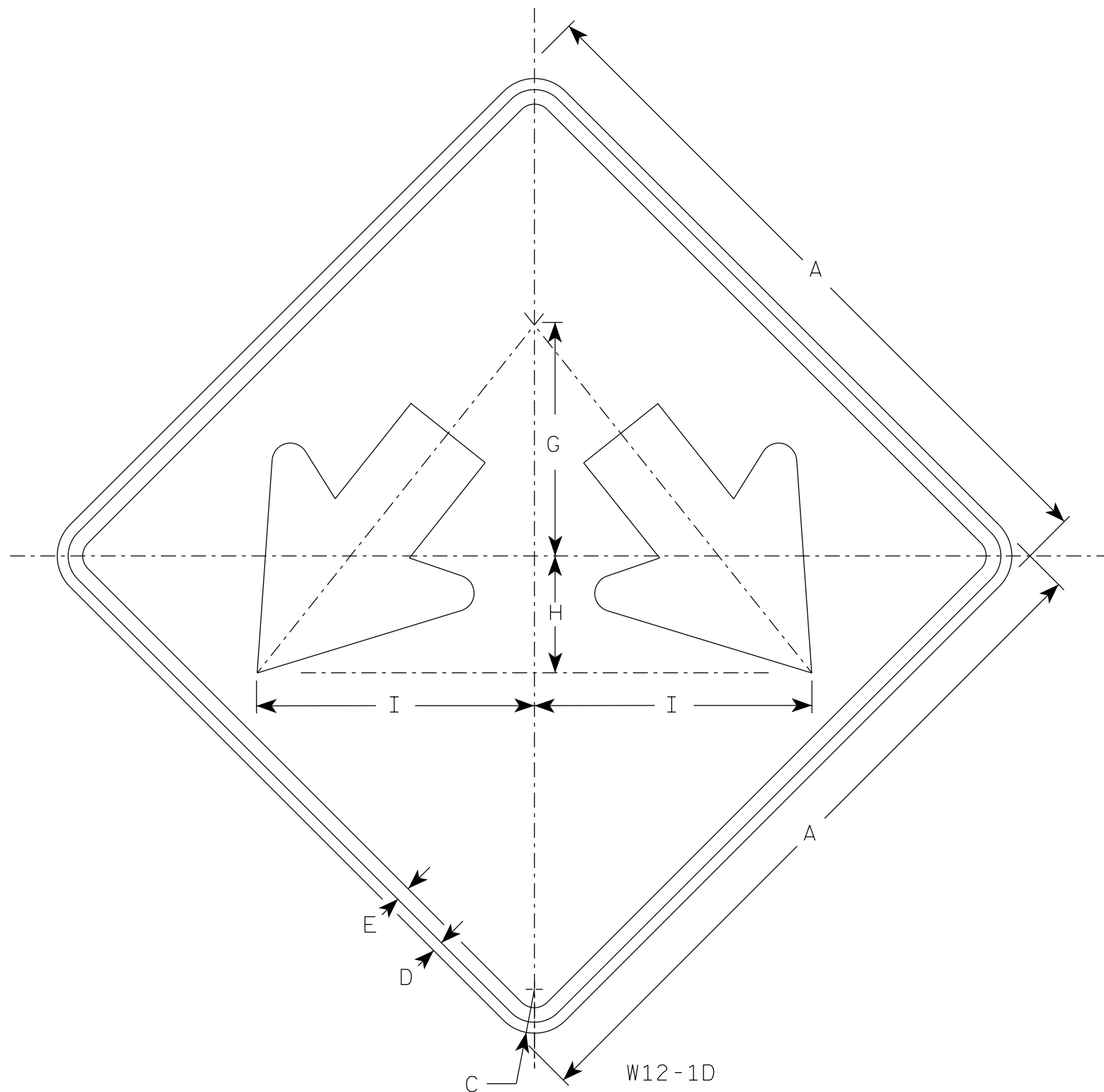
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-3C.4

PROJECT NO:

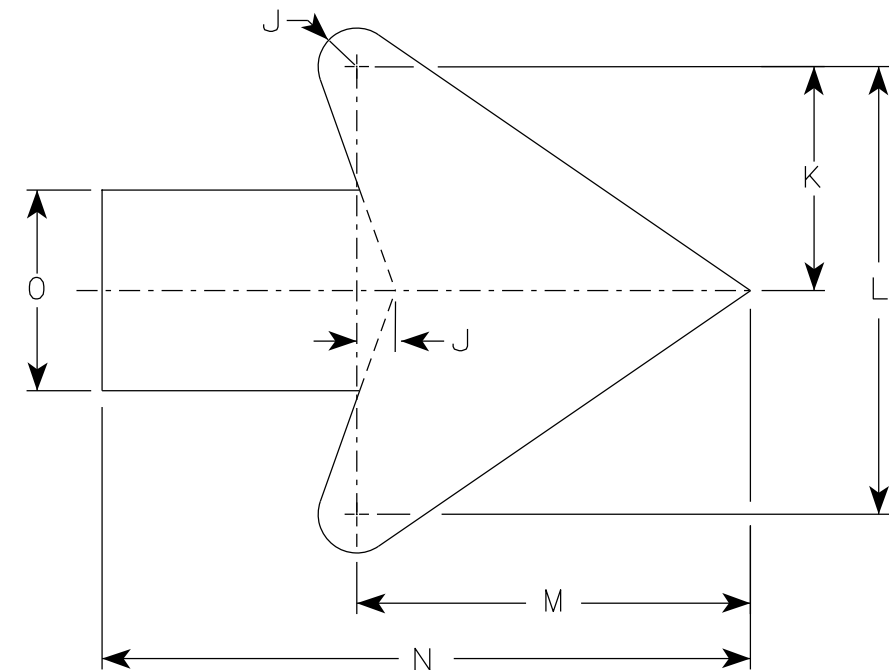
SHEET NO: 170

E



NOTES

- ```
1. Sign is Type II - Type F Reflective
2. Color:
 Background - Yellow
 Message - Black
```

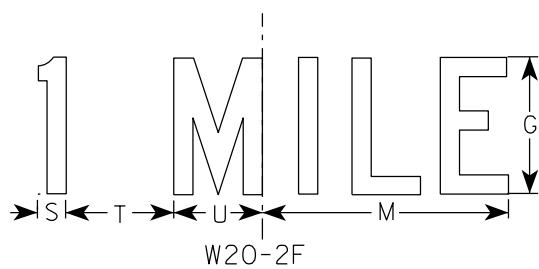
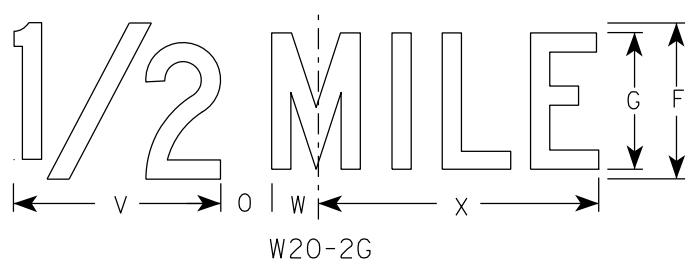
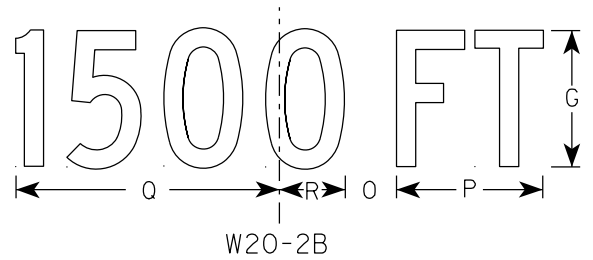
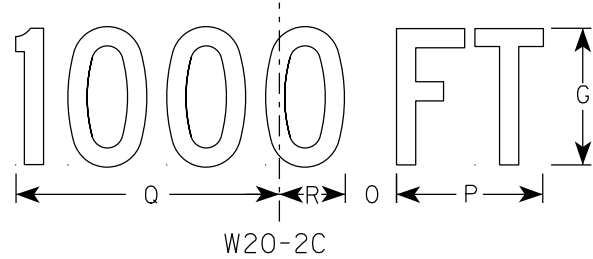
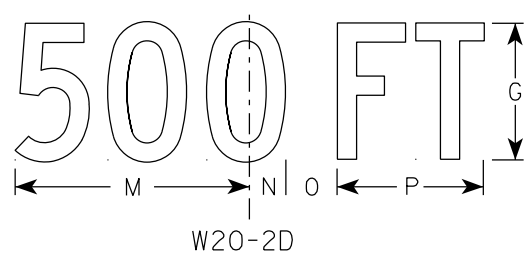
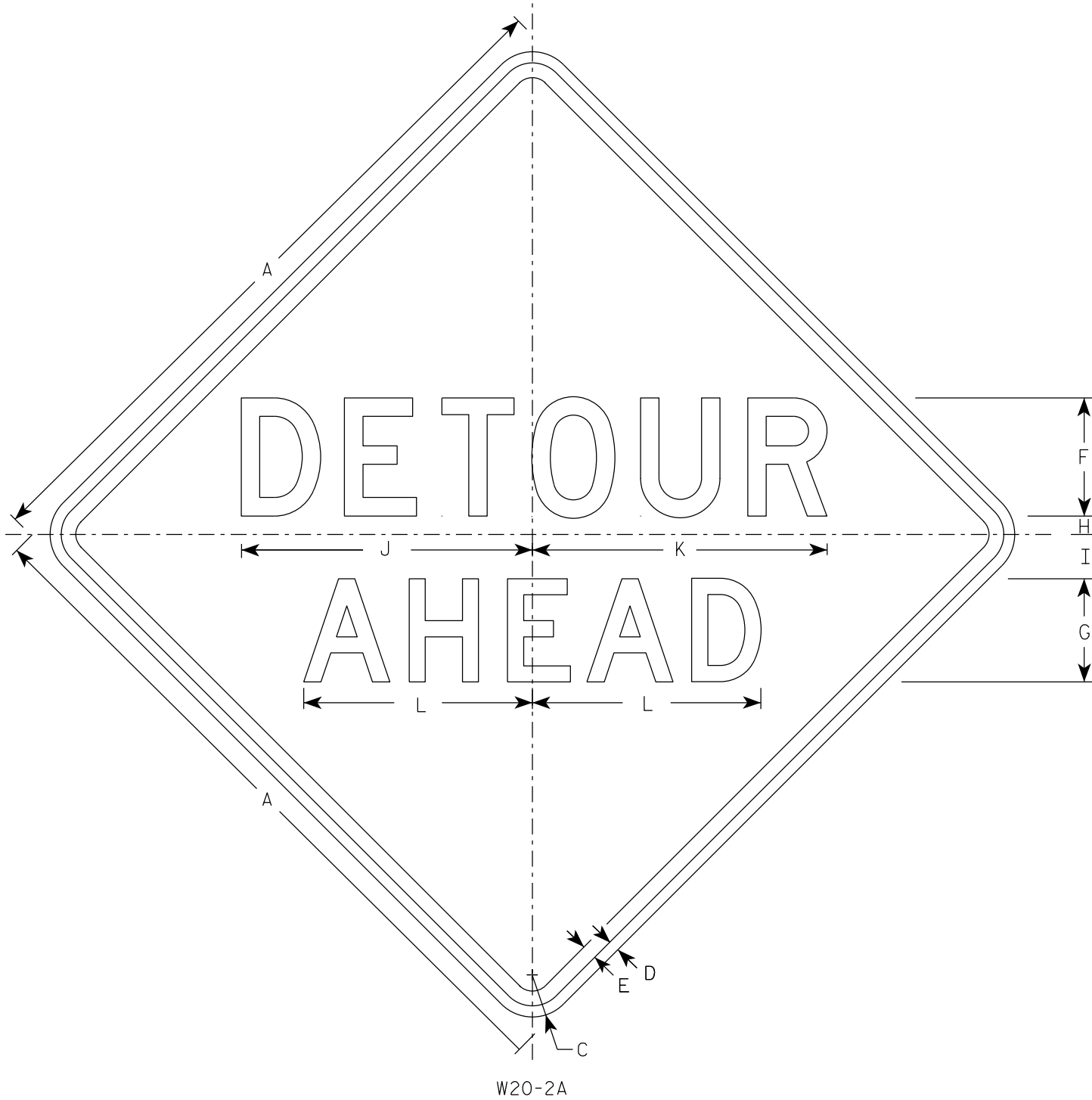


### Arrow Detail

[illegible]

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN                    |                                                       |
| W12-1D                           |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <u>Matthew R. Rauch</u><br>for State Traffic Engineer |
| DATE <u>11/30/2023</u>           | PLATE NO. <u>W12-1D.16</u>                            |

|             |      |         |  |               |          |
|-------------|------|---------|--|---------------|----------|
| PROJECT NO: | HWY: | COUNTY: |  | SHEET NO: 171 | <b>E</b> |
|-------------|------|---------|--|---------------|----------|



NOTES

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

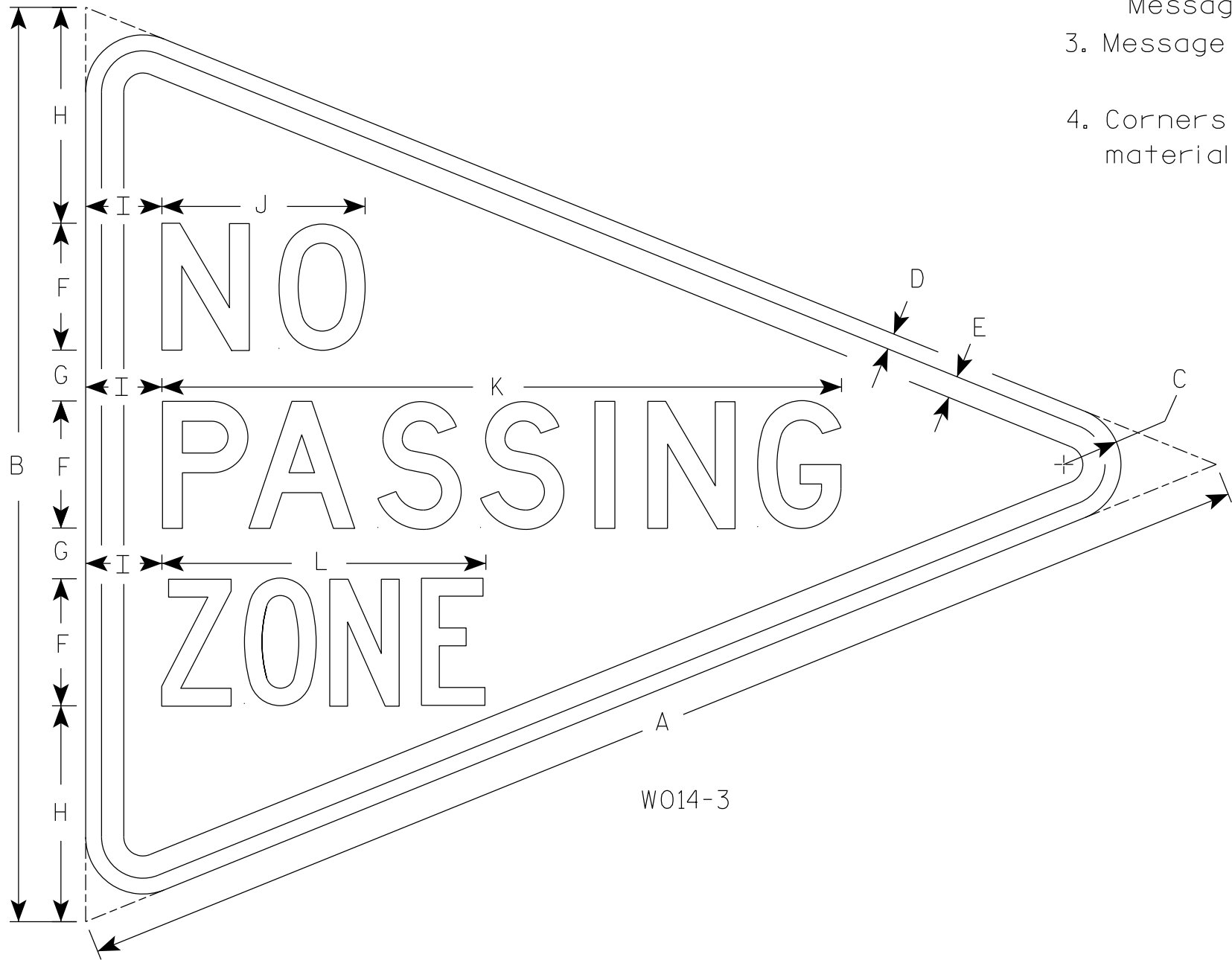
| SIZE | A  | B | C     | D   | E   | F | G | H     | I     | J      | K  | L      | M  | N     | O     | P     | Q      | R     | S     | T     | U     | v      | w     | X      | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|---|-------|-------|--------|----|--------|----|-------|-------|-------|--------|-------|-------|-------|-------|---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

|                                     |                                                       |
|-------------------------------------|-------------------------------------------------------|
| STANDARD SIGN<br>W20-2A,B,C,D,F & G |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION    |                                                       |
| APPROVED                            | <i>Matthew R. Rauch</i><br>For State Traffic Engineer |
| DATE 1/10/2024                      | PLATE NO. W20-2.7                                     |

|             |      |         |               |   |
|-------------|------|---------|---------------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: 172 | E |
|-------------|------|---------|---------------|---|

NOTES

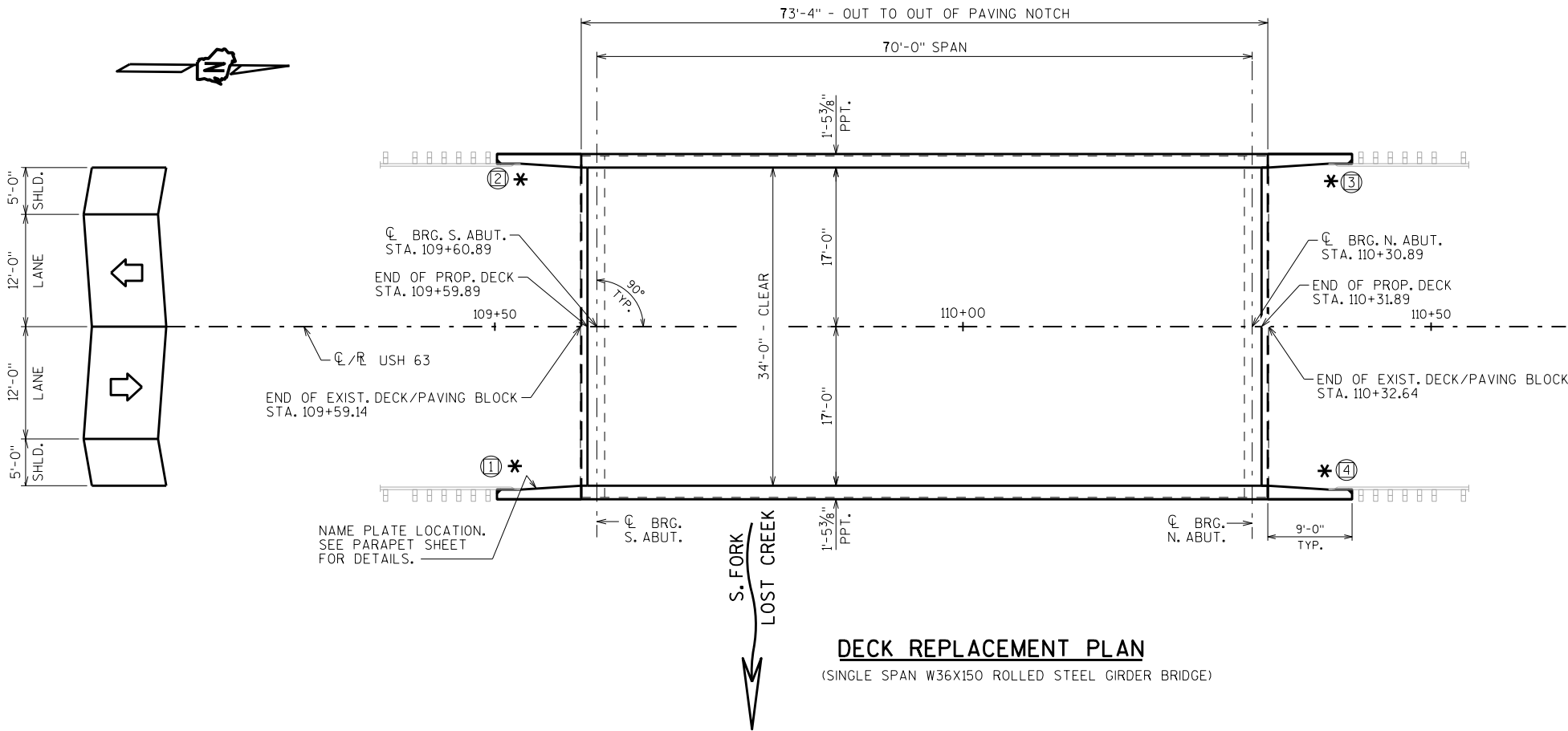
- 1. Sign is Type II- Type F Reflective
- 2. Color:  
Background - Orange  
Message - Black
- 3. Message Series - Lines 1 and 2 are Series D.  
Line 3 is series C.
- 4. Corners and borders shall be rounded on all base materials for this sign.



| SIZE | A  | B  | C     | D   | E   | F | G | H     | I | J | K      | L      | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|-------|---|---|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 48 | 36 | 2 1/4 | 5/8 | 7/8 | 5 | 2 | 8 1/2 | 3 | 8 | 26 3/4 | 12 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.56            |
| 2M   |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 3    |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 4    |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

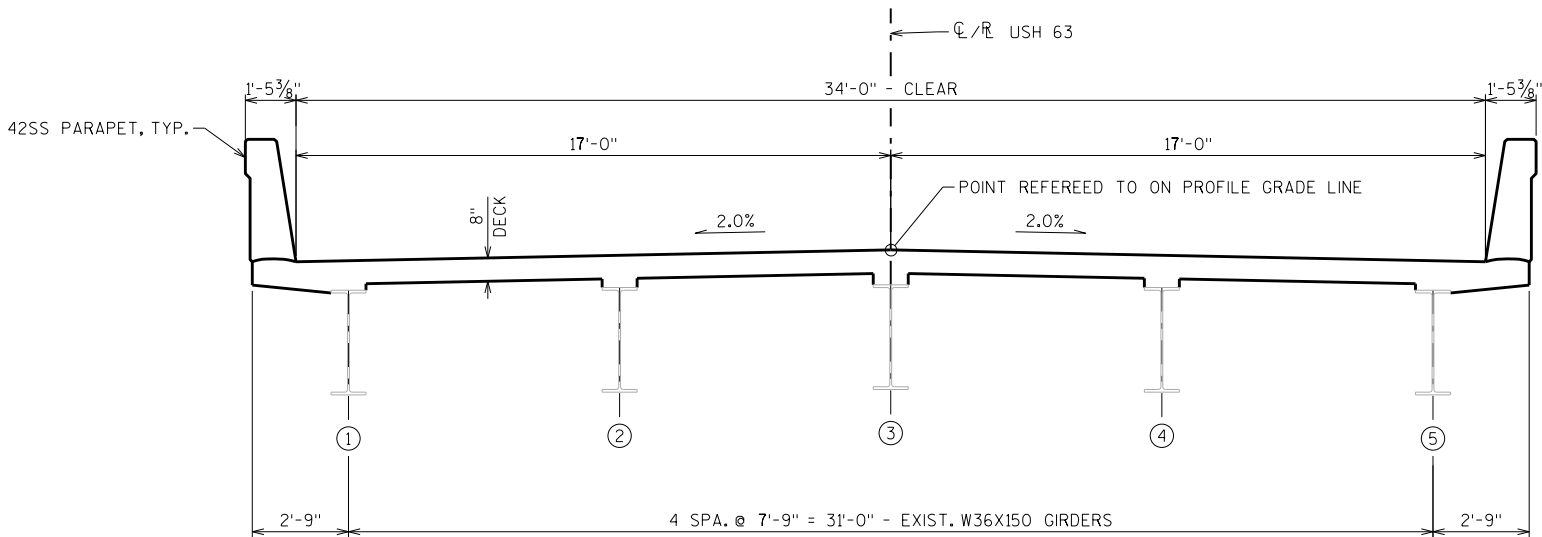
\* PROVIDE FOR THRIE BEAM  
GUARD RAIL ATTACHMENT. AT  
UNUSED ANCHOR ASSEMBLIES  
CAULK HOLES SHUT WITH  
"100% SILICONE CAULK".

Ⓢ INDICATES WING NUMBER



**DECK REPLACEMENT PLAN**

(SINGLE SPAN W36X150 ROLLED STEEL GIRDER BRIDGE)



**PROPOSED SECTION THRU BRIDGE**

(LOOKING NORTH)

Ⓢ INDICATES GIRDER NUMBER

**DESIGN DATA**

**LIVE LOAD:**

INVENTORY RATING: HS-16  
OPERATING RATING: HS- 26  
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 210 (KIPS)

**MATERIAL PROPERTIES:**

CONCRETE MASONRY: \_\_\_\_\_ f'c = 4,000 P.S.I.

BAR STEEL REINFORCEMENT:  
GRADE 60 \_\_\_\_\_ fy = 60,000 P.S.I.

STRUCTURAL STEEL CARBON  
GRADE 36 \_\_\_\_\_ fy = 36,000 P.S.I.

**TRAFFIC VOLUME**

**FEATURE ON (USH 63)**

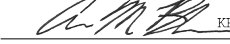
ADT = 6200 (2037)  
R.D.S. = 55 M.P.H.

**STRUCTURE DESIGN CONTACTS:**

CHRISTOPHER DOLL (608) 266-3229  
KYLE BUSCH (608) 267-0465

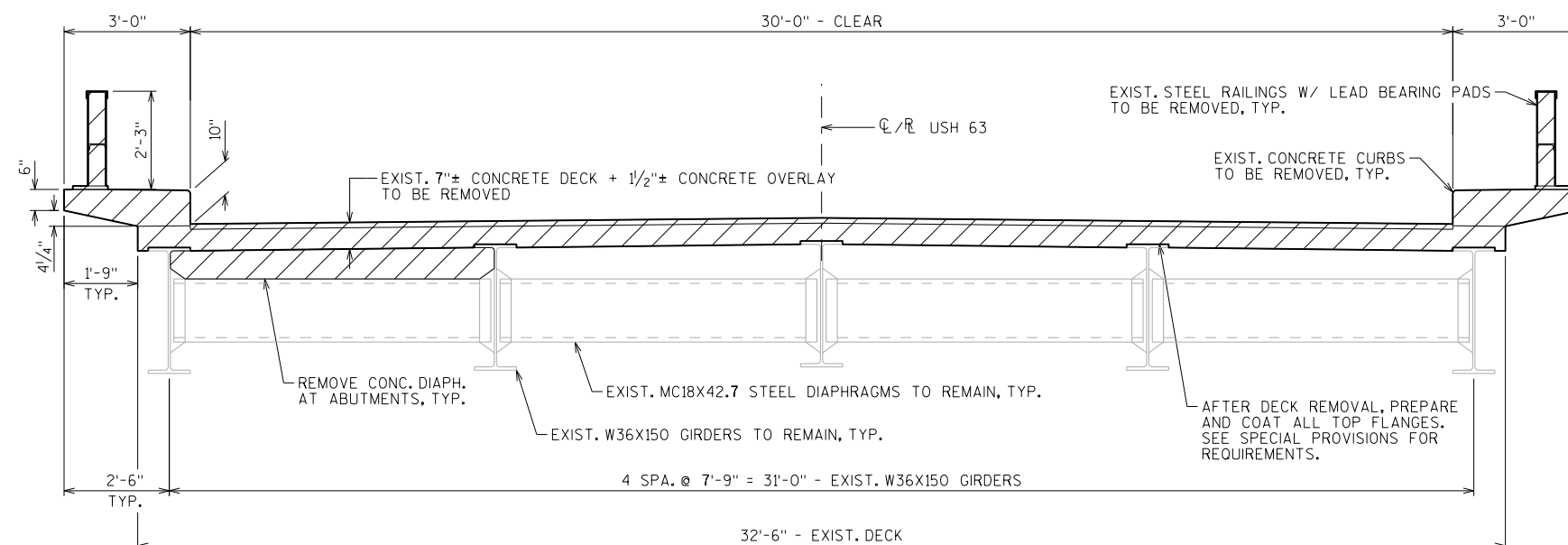
**LIST OF DRAWINGS**

1. GENERAL PLAN - DECK REPLACEMENT
2. NOTES & QUANTITIES
3. REMOVAL DETAILS AT ABUTMENTS
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. BEARING DETAILS
9. SHEAR STUDS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. SINGLE SLOPE PARAPET 42SS

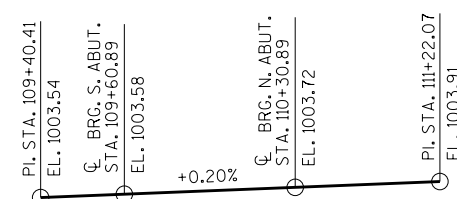
|                                                                                                                                                     |        |                |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------|---------------|
| NO.                                                                                                                                                 | DATE   | REVISION       | BY            |
|                                                                |        |                |               |
| ACCEPTED  KHB 4/28/23<br>CHIEF STRUCTURES DESIGN ENGINEER DATE |        |                |               |
| STRUCTURE B-47-28                                                                                                                                   |        |                |               |
| USH 63 OVER S. FORK LOST CREEK                                                                                                                      |        |                |               |
| COUNTY                                                                                                                                              | PIERCE | TOWN           | ELLSWORTH     |
| DESIGN SPEC. REHABILITATION-N/A                                                                                                                     |        |                |               |
| DESIGNED BY                                                                                                                                         | CAD    | DESIGNED CK'D. | ARC           |
| DRAWN BY                                                                                                                                            | WWR    | PLANS CK'D.    | ARC           |
| GENERAL PLAN-<br>DECK REPLACEMENT                                                                                                                   |        |                | SHEET 1 OF 12 |
|                                                                                                                                                     |        |                | 174           |

| BID ITEM NUMBER | BID ITEMS                                               | UNIT | SUPER. | SOUTH ABUT. | NORTH ABUT. | TOTALS         |
|-----------------|---------------------------------------------------------|------|--------|-------------|-------------|----------------|
| 203.0260        | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-47-28 | EACH | —      | —           | —           | 1              |
| 206.1001        | EXCAVATION FOR STRUCTURES BRIDGES B-47-28               | EACH | —      | —           | —           | 1              |
| 210.1500        | BACKFILL STRUCTURE TYPE A                               | TON  | —      | 65          | 65          | 130            |
| 502.0100        | CONCRETE MASONRY BRIDGES                                | CY   | 111.3  | 10.5        | 10.5        | 132            |
| 502.3200        | PROTECTIVE SURFACE TREATMENT                            | SY   | 285    | —           | —           | 285            |
| 502.3210        | PIGMENTED SURFACE SEALER                                | SY   | 72     | 9           | 9           | 90             |
| 502.4205        | ADHESIVE ANCHORS NO. 5 BAR                              | EACH | —      | 20          | 20          | 40             |
| 505.0600        | BAR STEEL REINFORCEMENT HS COATED STRUCTURES            | LB   | 21,800 | 1430        | 1440        | 24,670         |
| 506.0105        | STRUCTURAL STEEL CARBON                                 | LB   | —      | 332         | 332         | 664            |
| 506.2605        | BEARING PADS ELASTOMERIC NON-LAMINATED                  | EACH | —      | 5           | 5           | 10             |
| 506.3020        | WELDED STUD SHEAR CONNECTORS 7/8X7-INCH                 | EACH | 576    | —           | —           | 576            |
| 506.3025        | WELDED STUD SHEAR CONNECTORS 7/8X8-INCH                 | EACH | 144    | —           | —           | 144            |
| 506.7050.S      | REMOVING BEARINGS B-47-28                               | EACH | —      | 5           | 5           | 10             |
| 516.0500        | RUBBERIZED MEMBRANE WATERPROOFING                       | SY   | —      | 16          | 16          | 32             |
| 517.0901.S      | PREPARATION AND COATING OF TOP FLANGES B-47-28          | EACH | —      | —           | —           | 1              |
| 614.0150        | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD            | EACH | —      | 2           | 2           | 4              |
| SPV.0180        | ABUTMENT SEAT CLEANING AND SEALING                      | SY   | —      | 9           | 9           | 18             |
|                 | NON-BID ITEMS                                           |      |        |             |             |                |
|                 | FILLER                                                  | SIZE | —      | —           | —           | 1/2", 3/4", 1" |
|                 | POLYSTYRENE                                             | SIZE |        |             |             | 1"             |

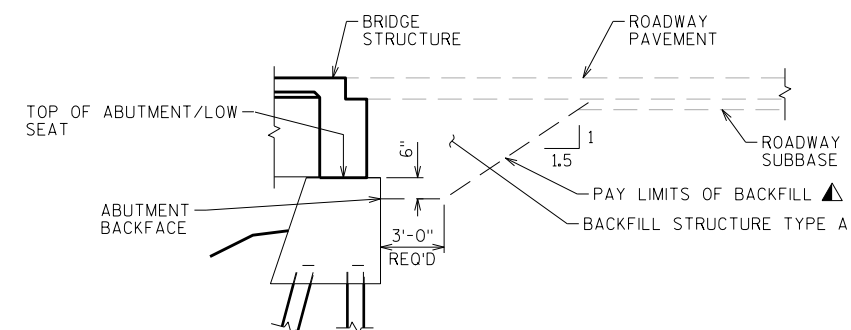
THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1960.



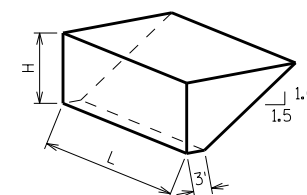
NOTE: ALL REMOVAL SHOWN TO BE INCLUDED IN BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-47-28"



PROPOSED PROFILE GRADE LINE - USH 63

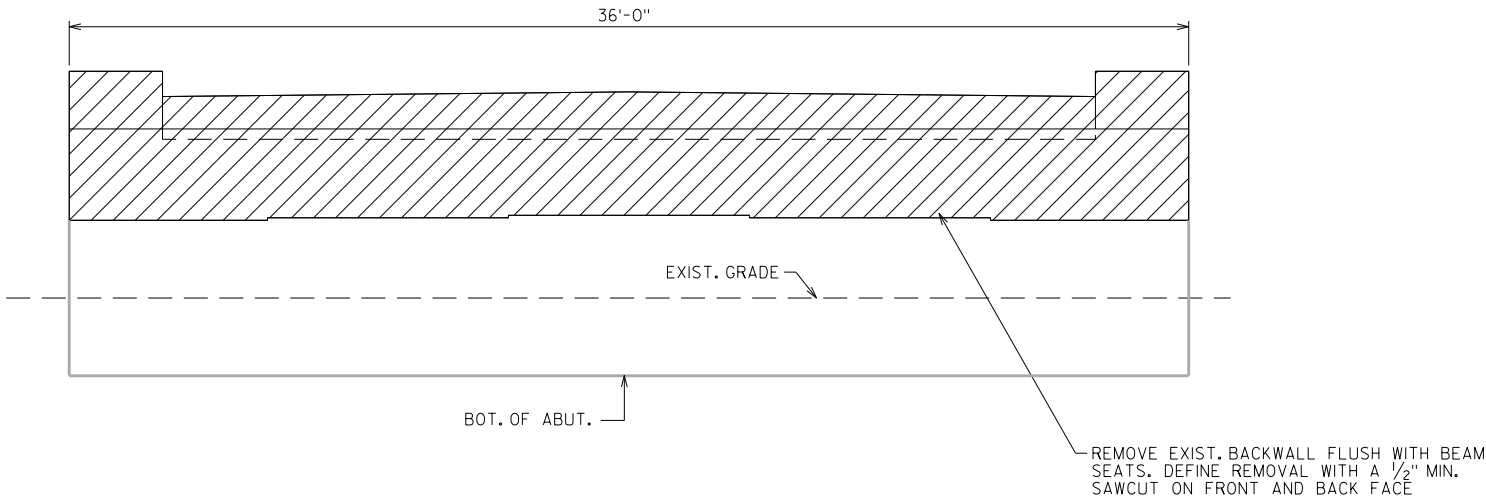


▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.



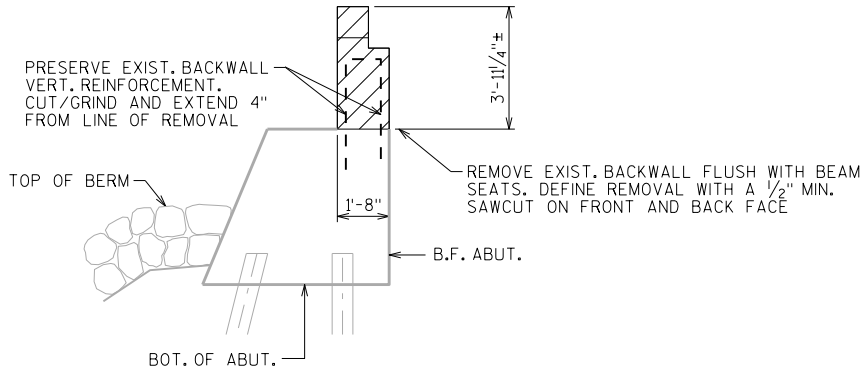
L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)  
H = AVERAGE ABUTMENT FILL HEIGHT (FT)  
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS  
AND 1.00 FOR TON BID ITEMS)  
 $V_{CF} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H)$   
 $V_{CY} = V_{CF}(EF)/27$   
 $V_{TON} = V_{CY}(2.0)$

|                                                                                        |      |          |                |
|----------------------------------------------------------------------------------------|------|----------|----------------|
| NO.                                                                                    | DATE | REVISION | BY             |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br><b>STRUCTURES DESIGN SECTION</b> |      |          |                |
| <b>STRUCTURE B-47-28</b>                                                               |      |          |                |
| DRAWN BY                                                                               |      | WWR      | PLANS CKD. ARC |
| <b>NOTES &amp;<br/>QUANTITIES</b>                                                      |      | SHEET 2  |                |
|                                                                                        |      | 175      |                |

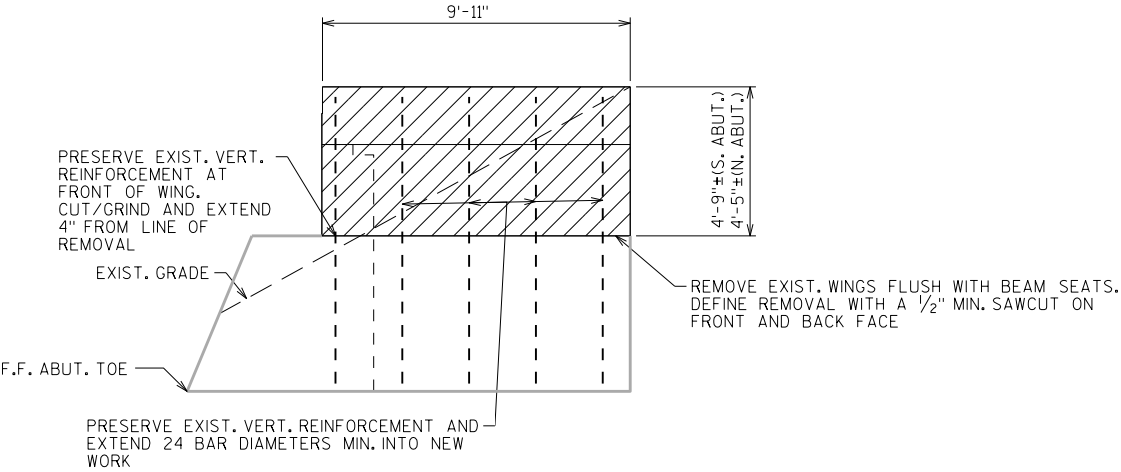


**ABUTMENT REMOVAL ELEVATION**

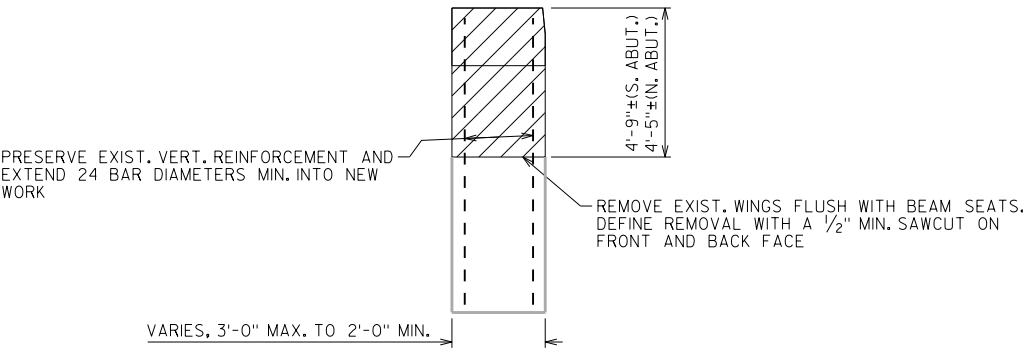
LOOKING AT F.F. ABUT.



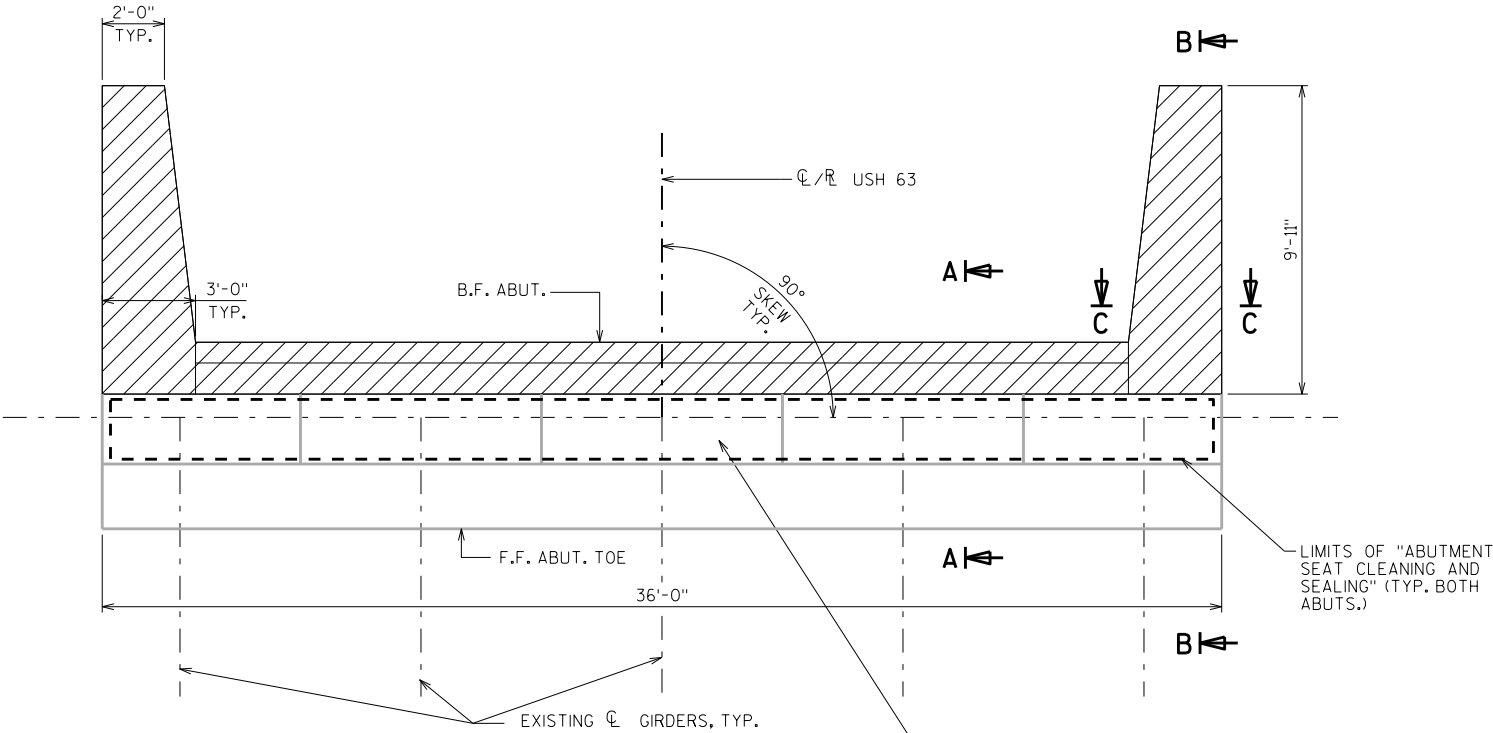
**SECTION A-A - THRU ABUTMENT/BACKWALL**



**SECTION B-B - WING REMOVAL ELEVATION**



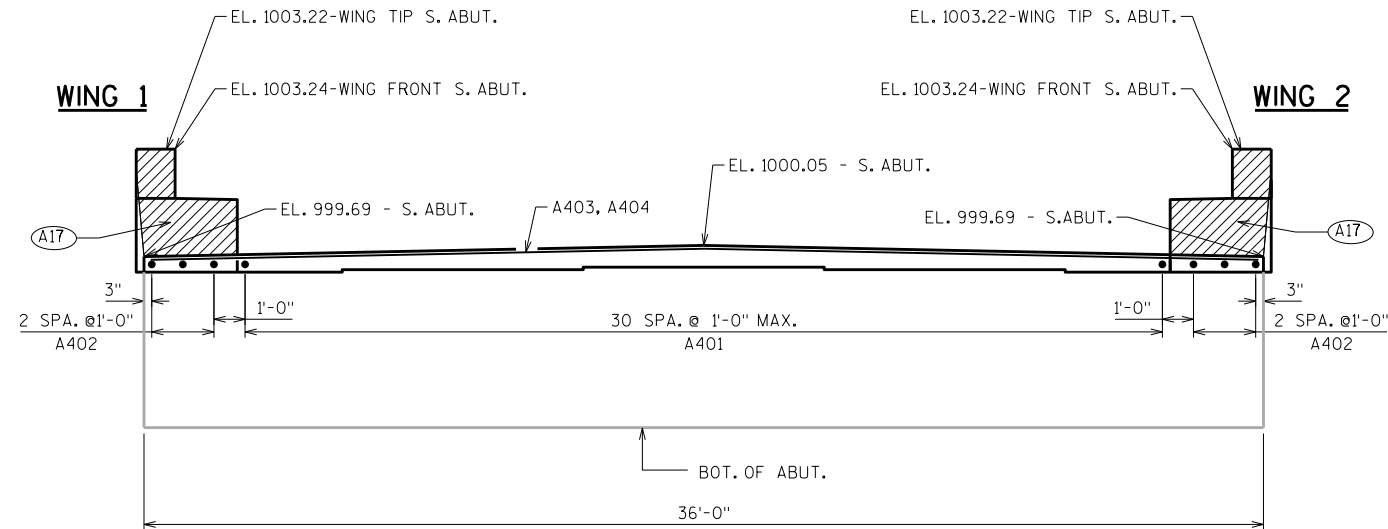
**SECTION C-C - THRU WING**



**ABUTMENT REMOVAL PLAN**

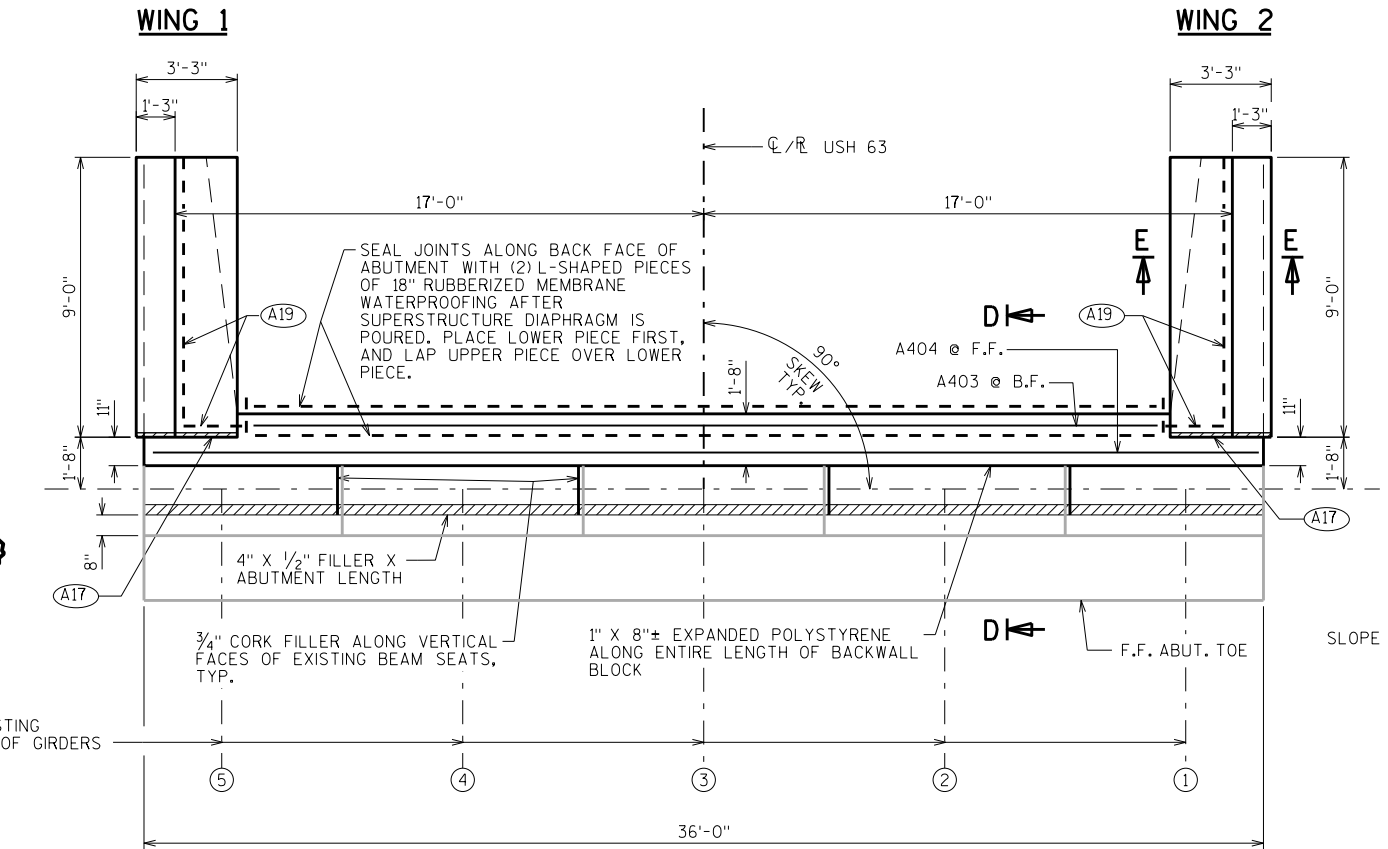
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| NO.                                                                             | DATE | REVISION | BY                  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                     |
| STRUCTURE B-47-28                                                               |      |          |                     |
|                                                                                 |      | DRAWN BY | WWR PLANS CK'D. ARC |
| REMOVAL DETAILS<br>AT ABUTMENTS                                                 |      | SHEET 3  |                     |
|                                                                                 |      | 176      |                     |



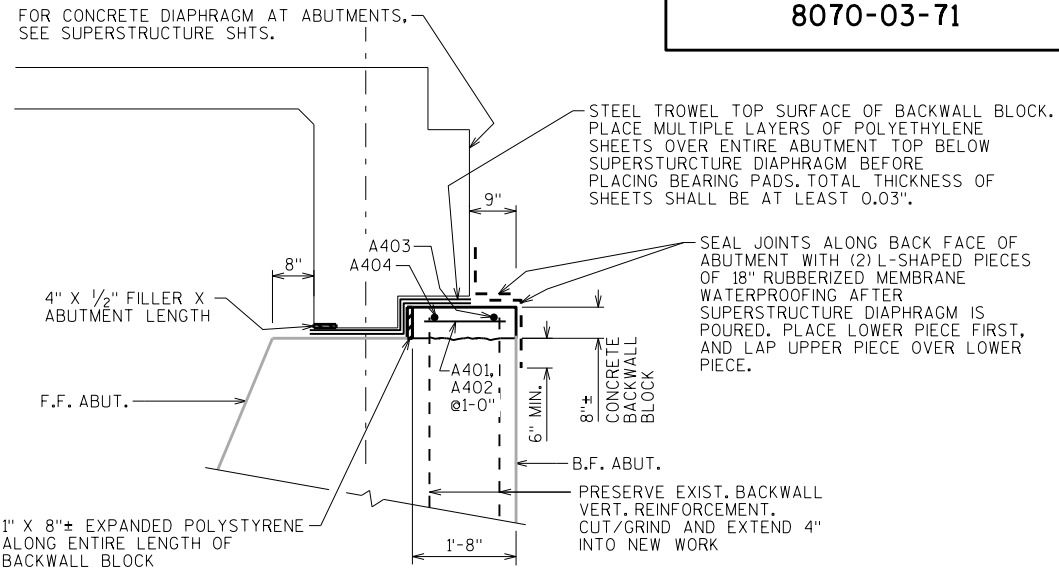


**ABUTMENT ELEVATION**

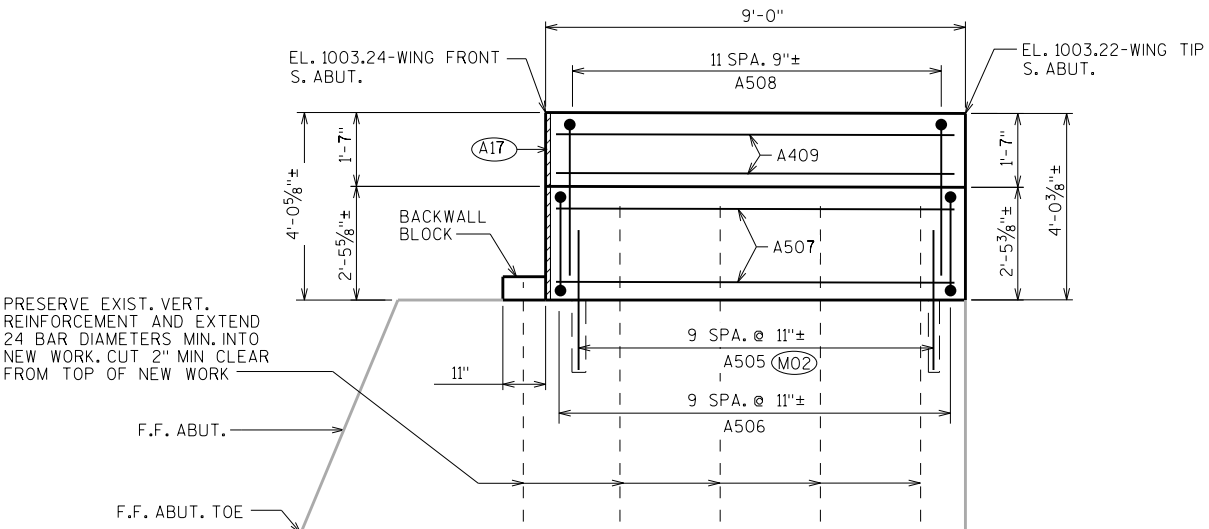
(SHOWING NEW BACKWALL BLOCK AND WING TOPS)  
LOOKING AT F.F. ABUT.



**ABUTMENT PLAN**

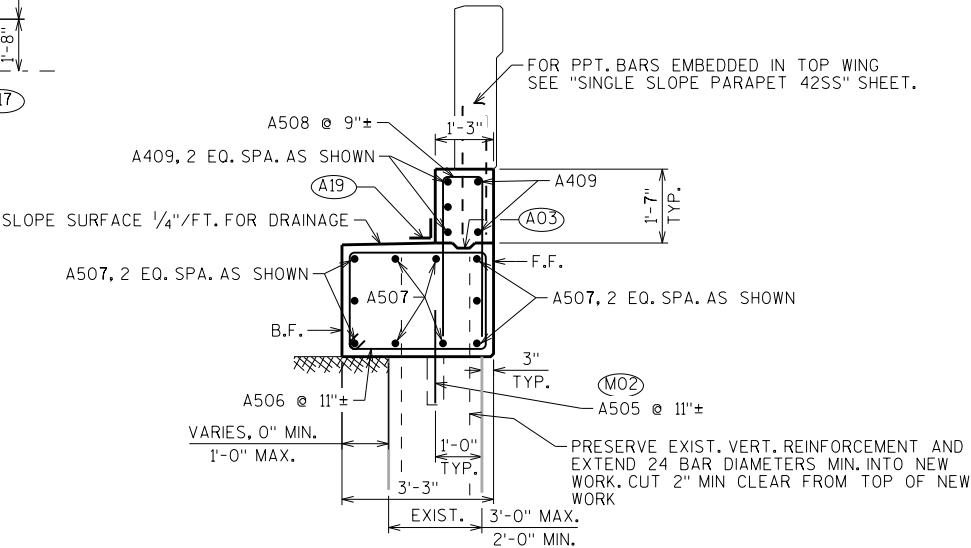


**SECTION D-D - THRU ABUTMENT SEAT**



**SOUTH ABUT. - WING F.F. ELEVATION**

WING 2 SHOWN, WING 1 SIMILAR



**SECTION E-E - THRU WING**

WING 2 SHOWN, WING 1 SIMILAR

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY  
BEVELED 2 x 6. (18" RMW @ B.F. & 3/4"  
"V" GROOVE @ F.F. IF JOINT IS USED).
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING.  
SEAL ALL HORIZ. AND VERT. JOINTS AT BACKFACE  
OF ABUTMENT AND WINGS.
- (MO2) ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN  
CONCRETE. MINIMUM EDGE DISTANCE = 3 3/4".
- (A17) 1" FILLER (INCLUDED IN WING LENGTH); SEAL  
ALL EXPOSED HORIZ. & VERT. SURFACES OF  
FILLER WITH NON-STAINING GRAY NON-BITUMINOUS  
JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW  
SURFACE OF CONCRETE). EXTEND SEALER 3"  
BELOW GUTTER LINE AT INSIDE FACE.

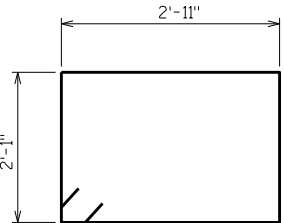
| NO.                                                                             | DATE | REVISION | BY              |
|---------------------------------------------------------------------------------|------|----------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-28                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| SOUTH ABUTMENT                                                                  |      |          | SHEET 4         |
|                                                                                 |      |          | 177             |

BILL OF BARS

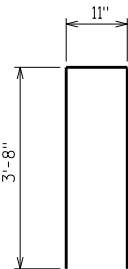
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

| BAR MARK | CONT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION                      |
|----------|------|------------|--------|------|------------|-------------------------------|
| A401     | X    | 31         | 1'-4"  |      |            | BEAM SEAT-HORIZ-BOT.          |
| A402     | X    | 6          | 0'-7"  |      |            | BEAM SEAT-HORIZ.-BOT. @ WINGS |
| A403     | X    | 1          | 29'-8" |      |            | BEAM SEAT-LONGIT. TOP @ B.F.  |
| A404     | X    | 1          | 35'-8" |      |            | BEAM SEAT-LONGIT. TOP @ F.F.  |
| A505     | X    | 20         | 2'-0"  |      |            | LOWER WING-VERT. DOWEL        |
| A506     | X    | 20         | 10'-8" | X    |            | LOWER WING-VERT. STIRRUP      |
| A507     | X    | 20         | 8'-7"  |      |            | LOWER WING-HORIZ.             |
| A508     | X    | 24         | 8'-0"  | X    |            | LOWER/UPPER WING-VERT.        |
| A409     | X    | 10         | 8'-7"  |      |            | UPPER WING-HORIZ.             |

M02



A506

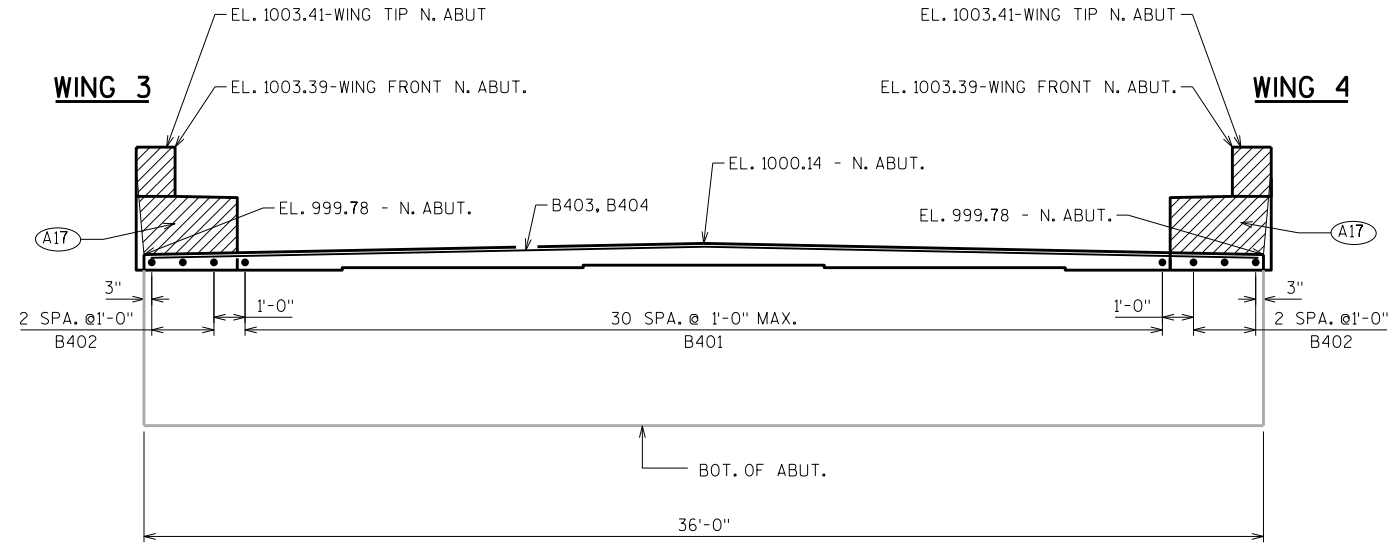


A508

M02 ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE = 3¾".

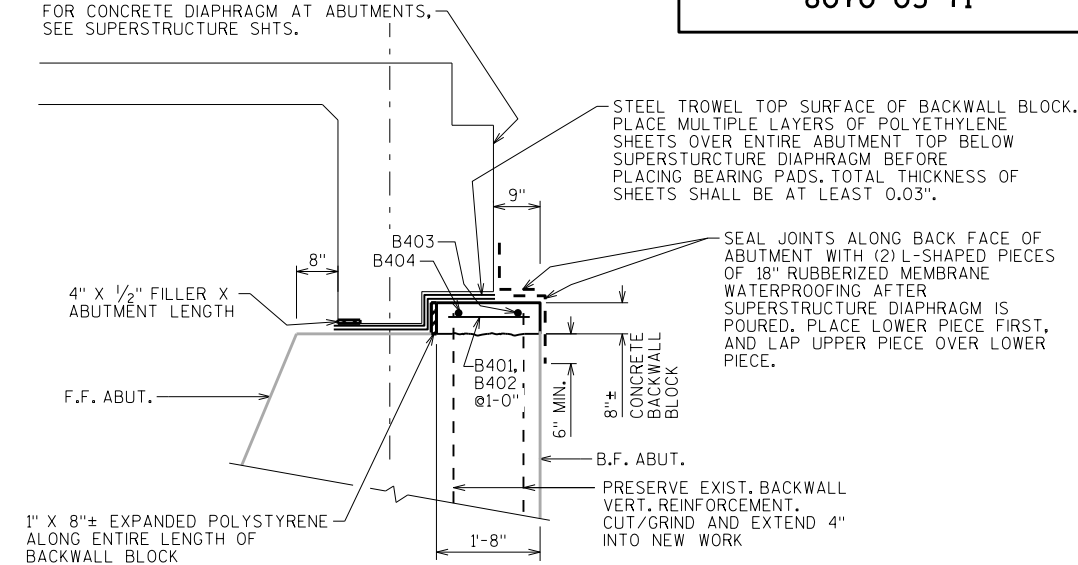
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| NO.                                                                             | DATE | REVISION        | BY      |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |         |
| STRUCTURE B-47-28                                                               |      |                 |         |
| DRAWN BY WWR                                                                    |      | PLANS CK'D. ARC |         |
| SOUTH ABUTMENT DETAILS                                                          |      |                 | SHEET 5 |
|                                                                                 |      |                 | 178     |



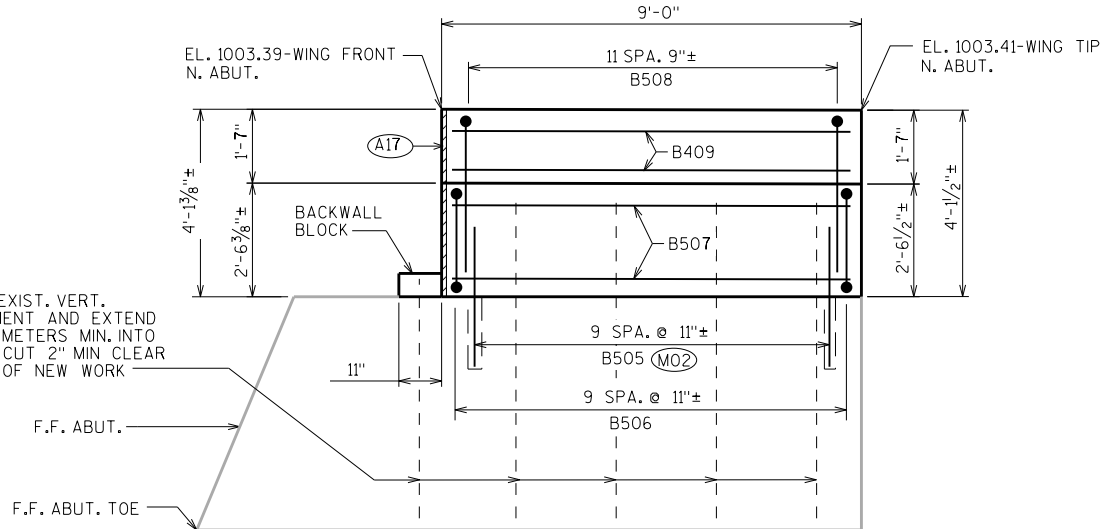


**ABUTMENT ELEVATION**

(SHOWING NEW BACKWALL BLOCK AND WING TOPS)  
LOOKING AT F.F. ABUT.

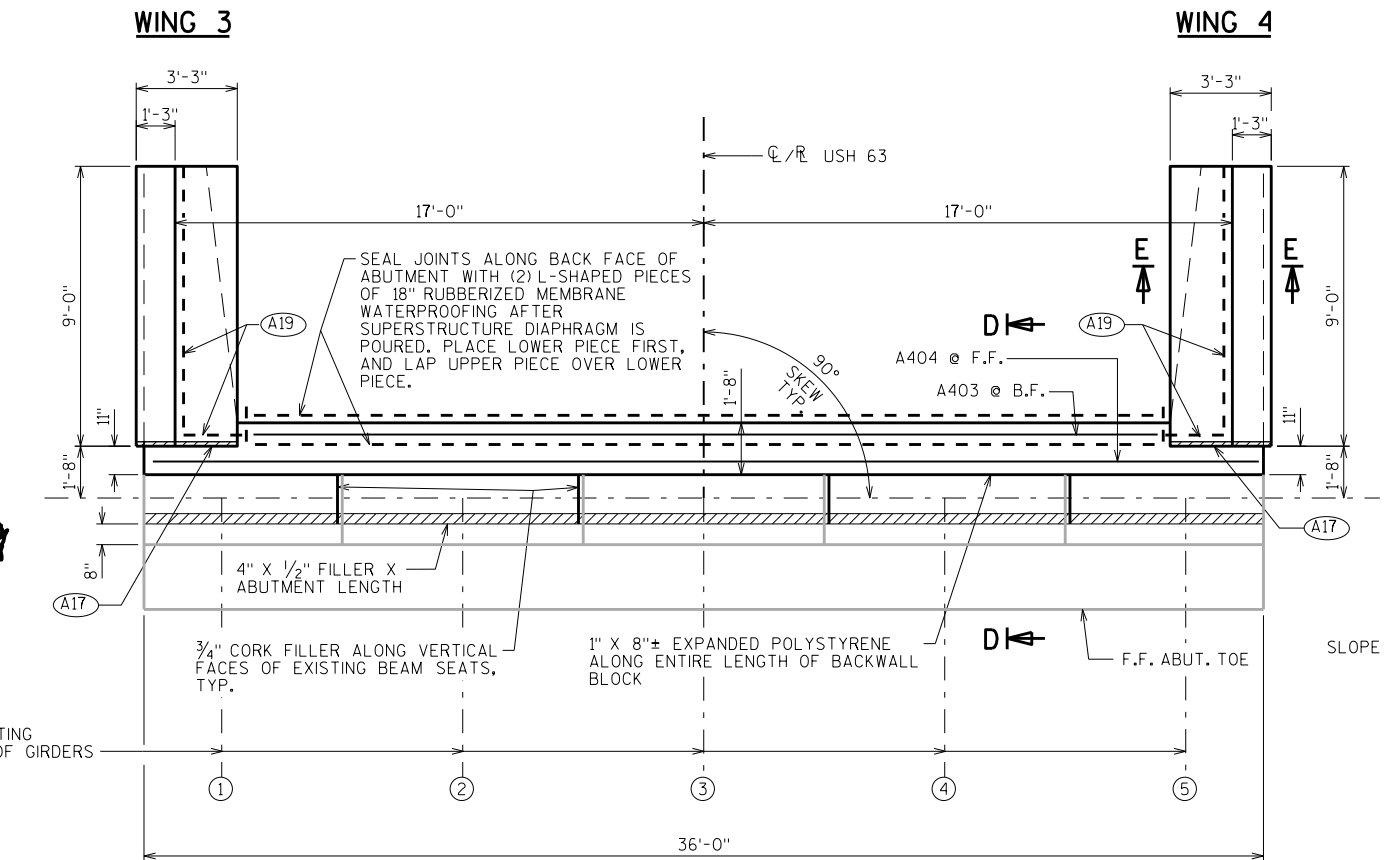


**SECTION D-D - THRU ABUTMENT SEAT**

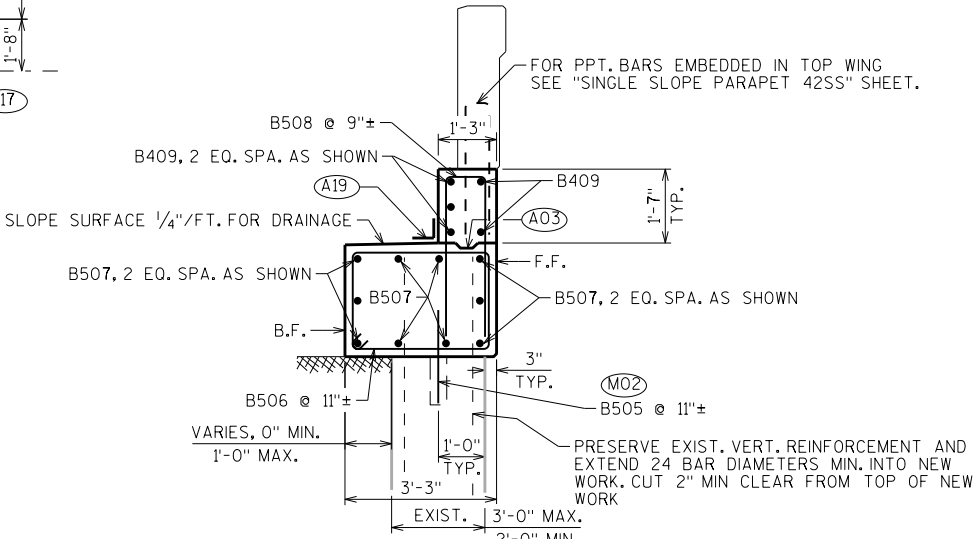


**NORTH ABUT. - WING F.F. ELEVATION**

WING 4 SHOWN, WING 3 SIMILAR



**ABUTMENT PLAN**



**SECTION E-E - THRU WING**

WING 4 SHOWN, WING 3 SIMILAR

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS AT BACKFACE OF ABUTMENT AND WINGS.
- (MO2) ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE = 3 3/4".
- (A17) 1" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

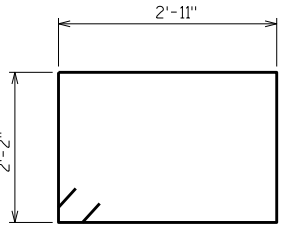
| NO.                                                                             | DATE | REVISION        | BY |
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| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |    |
| STRUCTURE B-47-28                                                               |      |                 |    |
| DRAWN BY WWR                                                                    |      | PLANS CK'D. ARC |    |
| NORTH ABUTMENT                                                                  |      | SHEET 6         |    |
|                                                                                 |      | 179             |    |

BILL OF BARS

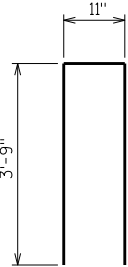
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

| BAR MARK | CONT | NO. REQ'D. | LENGTH  | BENT | BAR SERIES | LOCATION                      |
|----------|------|------------|---------|------|------------|-------------------------------|
| B401     | X    | 31         | 1'-4"   |      |            | BEAM SEAT-HORIZ-BOT.          |
| B402     | X    | 6          | 0'-7"   |      |            | BEAM SEAT-HORIZ.-BOT. @ WINGS |
| B403     | X    | 1          | 29'-8"  |      |            | BEAM SEAT-LONGIT. TOP @ B.F.  |
| B404     | X    | 1          | 35'-8"  |      |            | BEAM SEAT-LONGIT. TOP @ F.F.  |
| B505     | X    | 20         | 2'-0"   |      |            | LOWER WING-VERT. DOWEL        |
| B506     | X    | 20         | 10'-10" | X    |            | LOWER WING-VERT. STIRRUP      |
| B507     | X    | 20         | 8'-7"   |      |            | LOWER WING-HORIZ.             |
| B508     | X    | 24         | 8'-2"   | X    |            | LOWER/UPPER WING-VERT.        |
| B409     | X    | 10         | 8'-7"   |      |            | UPPER WING-HORIZ.             |

M02



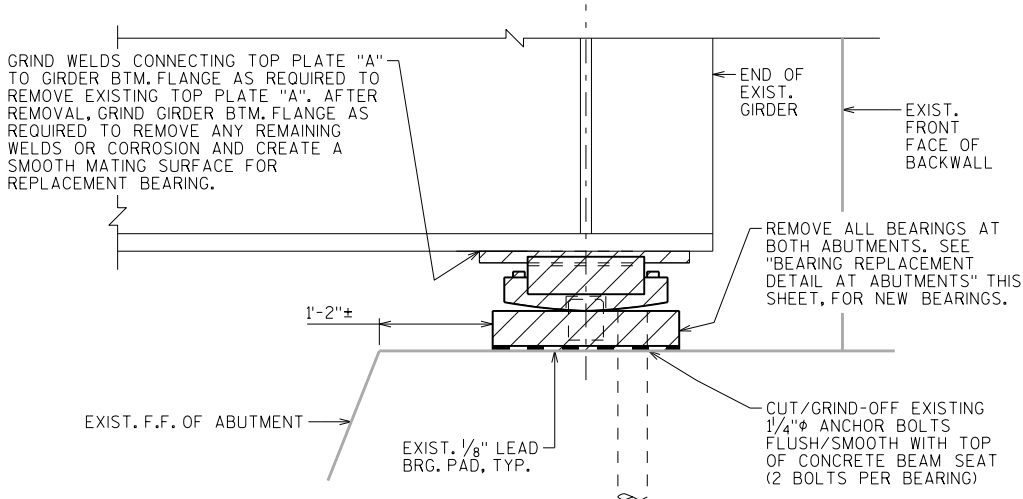
B506



B508

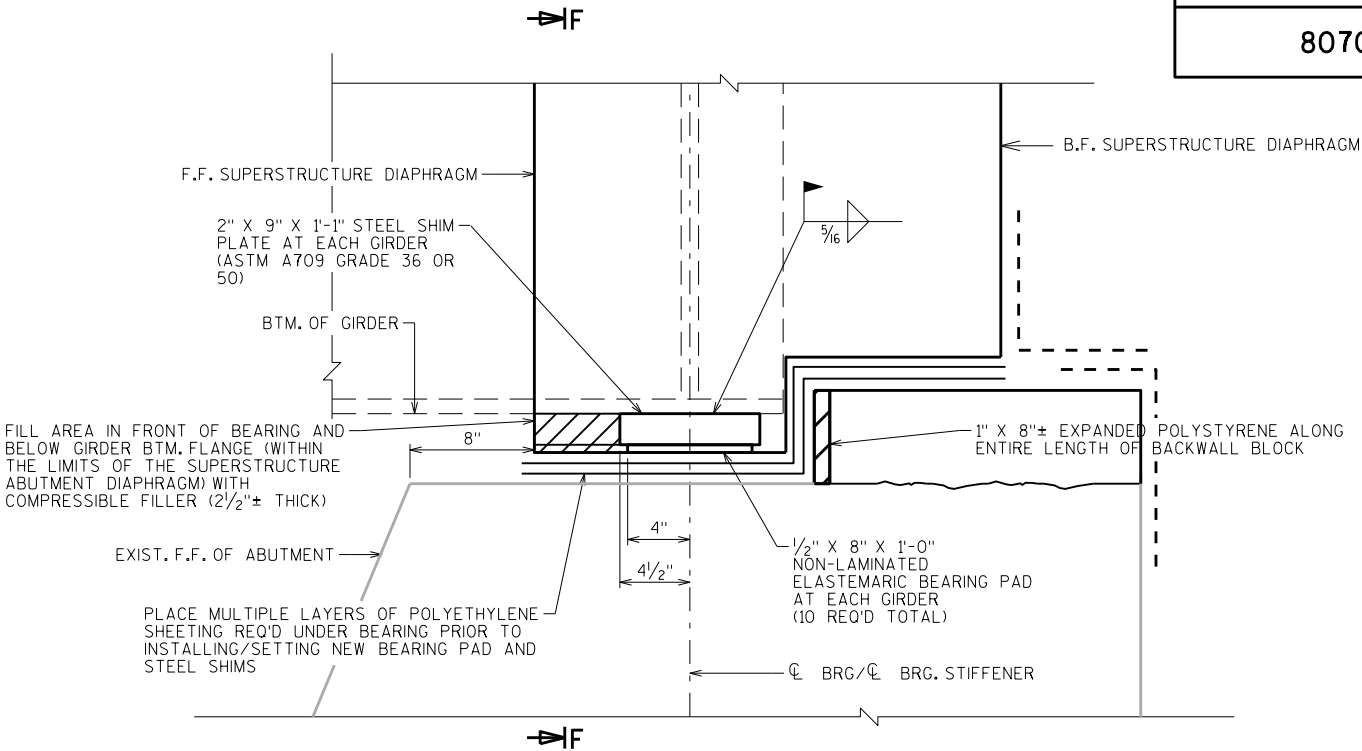
M02 ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE = 3¾".

|                                                                                 |      |          |                 |
|---------------------------------------------------------------------------------|------|----------|-----------------|
|                                                                                 |      |          |                 |
| NO.                                                                             | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-28                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| NORTH ABUTMENT DETAILS                                                          |      |          | SHEET 7         |
|                                                                                 |      |          | 180             |



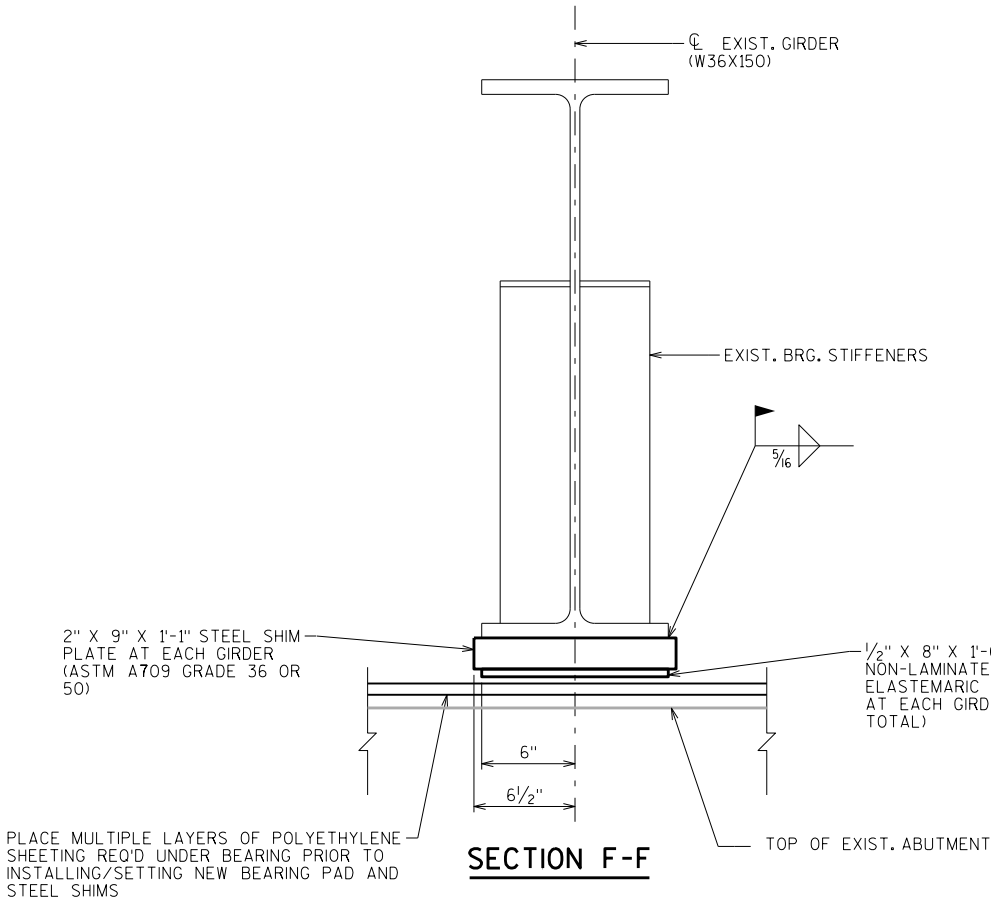
BEARING REMOVAL DETAIL AT ABUTMENTS

NOTE:  
REMOVAL AND DISPOSAL OF EXISTING BEARINGS AS SHOWN, INCLUDING LIFTING OF THE BRIDGE AS REQUIRED TO REMOVE AND REPLACE THE BEARINGS, SHALL BE INCLUDED IN BID ITEM "REMOVING BEARINGS B-47-28".



BEARING REPLACEMENT DETAIL AT ABUTMENTS

NOTE:  
PROPOSED TOTAL BEARING HEIGHT IS LESS THAN EXISTING BEARING HEIGHT (2 1/2" PROPOSED VS. 4 1/4" EXIST. @ S. ABUT & 3 3/8" EXIST. @ N. ABUT.)  
ENSURE GIRDER LIFTING DEVICE WILL ALLOW FOR THIS DIFFERENCE.  
AT EACH ABUTMENT, ALL GIRDERS SHALL BE LIFTED AND LOWERED SIMULTANEOUSLY.



SECTION F-F

REPLACEMENT BEARING NOTES

STEEL SHIM PLATES TO BE PAID FOR UNDER "STRUCTURAL STEEL CARBON" BID ITEM.

NON-LAMINATED BEARING PADS TO BE PAID FOR UNDER "BEARING PADS ELASTOMERIC NON-LAMINATED" BID ITEM.

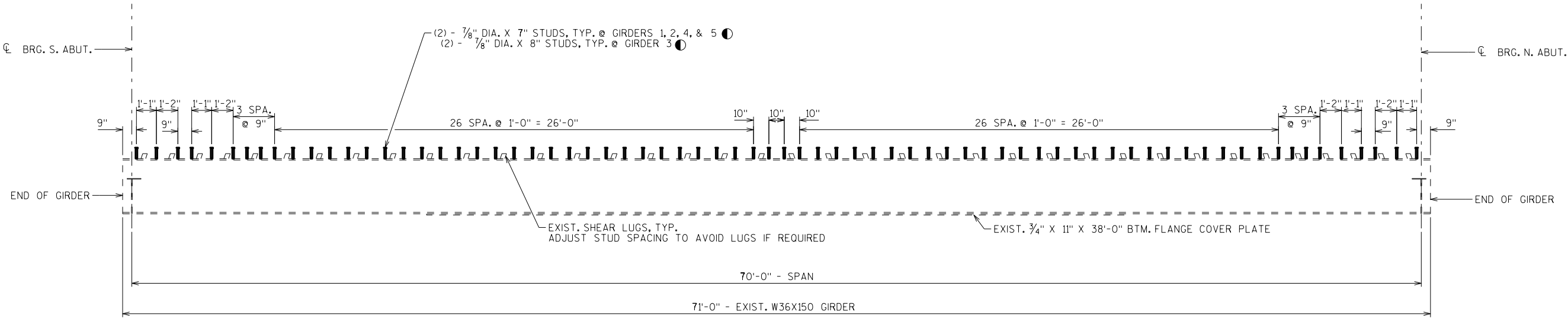
AFTER FABRICATION, SHIM PLATES SHALL RECEIVE A SHOP BLAST CLEANING CONFORMING TO SSPC-SP 10 AND BE PAINTED WITH ONE COAT OF ZINC-RICH PRIMER. SHOP PAINTING/PRIMING SHALL BE CONSIDERED INCIDENTAL TO BID-ITEM "STRUCTURAL STEEL CARBON". MASK AREAS THAT REQUIRE FIELD WELDING.

PLATE STEEL SHALL CONFORM TO ASTM A709 GRADE 36 OR 50.

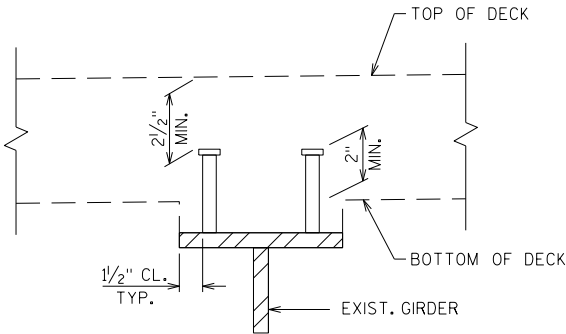
ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

|                                                                                 |      |             |         |                    |
|---------------------------------------------------------------------------------|------|-------------|---------|--------------------|
| NO.                                                                             | DATE | REVISION    |         | BY                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |             |         |                    |
| STRUCTURE B-47-28                                                               |      |             |         |                    |
|                                                                                 |      | DRAWN<br>BY | WWR     | PLANS<br>CK'D. ARC |
| BEARING<br>DETAILS                                                              |      |             | SHEET 8 |                    |
|                                                                                 |      |             | 181     |                    |



**SHEAR STUD SPACING**  
SPACING TYPICAL AT ALL GIRDERS



**SHEAR CONN. DETAILS**

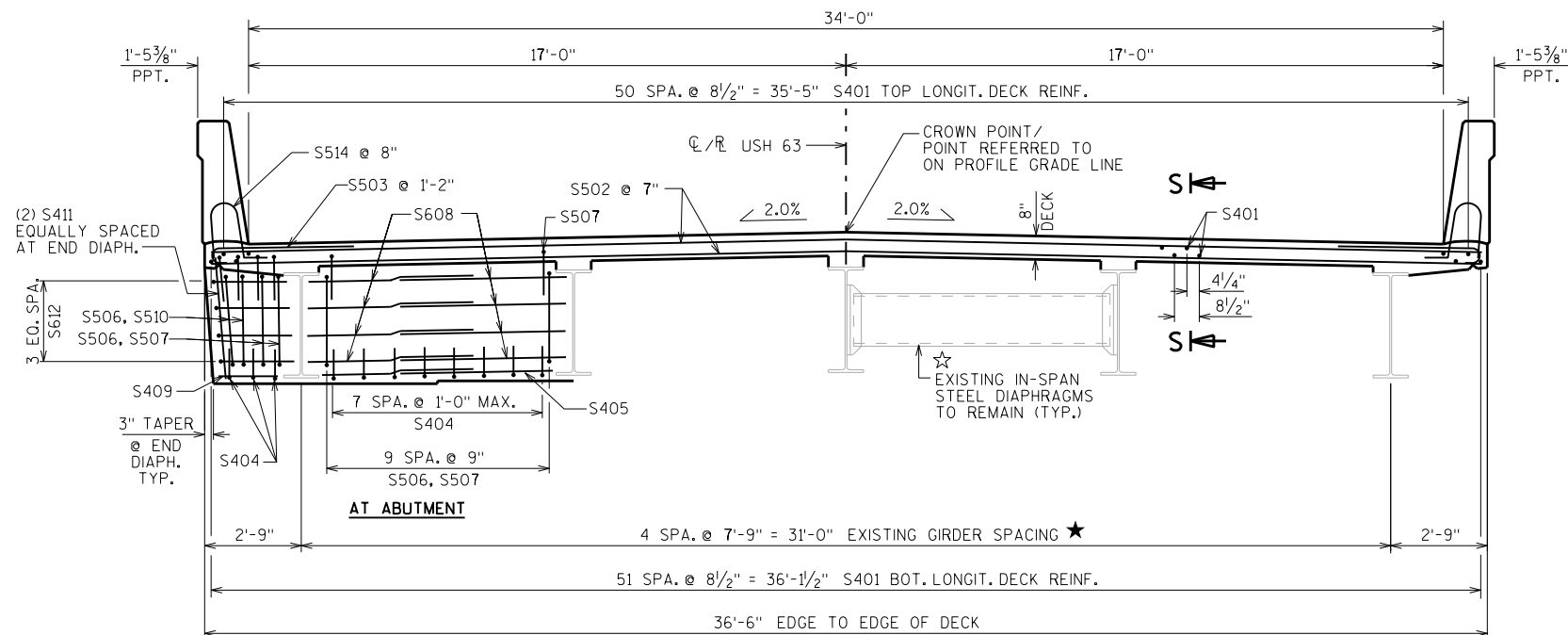
NOTE: USE TWO FIELD WELDED 7/8" DIA. X 7" LONG STUDS AT GIRDERS 1, 2, 4, & 5  
USE TWO FIELD WELDED 7/8" DIA. X 8" LONG STUDS AT GIRDER 3.  
PROVIDE A MIN. OF 1 1/2" CL. FROM THE FLANGE EDGE.  
USE DIFFERENT LENGTH STUDS IF 2 1/2" MIN. CLEARANCE OR 2" EXTENSION CRITERIA IS VIOLATED.

|                                                                                 |      |                 |    |
|---------------------------------------------------------------------------------|------|-----------------|----|
|                                                                                 |      |                 |    |
| NO.                                                                             | DATE | REVISION        | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |    |
| STRUCTURE B-47-28                                                               |      |                 |    |
| DRAWN BY WWR                                                                    |      | PLANS CK'D. ARC |    |
| SHEAR STUDS                                                                     |      | SHEET 9         |    |
|                                                                                 |      | 182             |    |

- ☆ EXISTING STRUT MC18X42.7  
★ EXISTING STRINGER W36X150

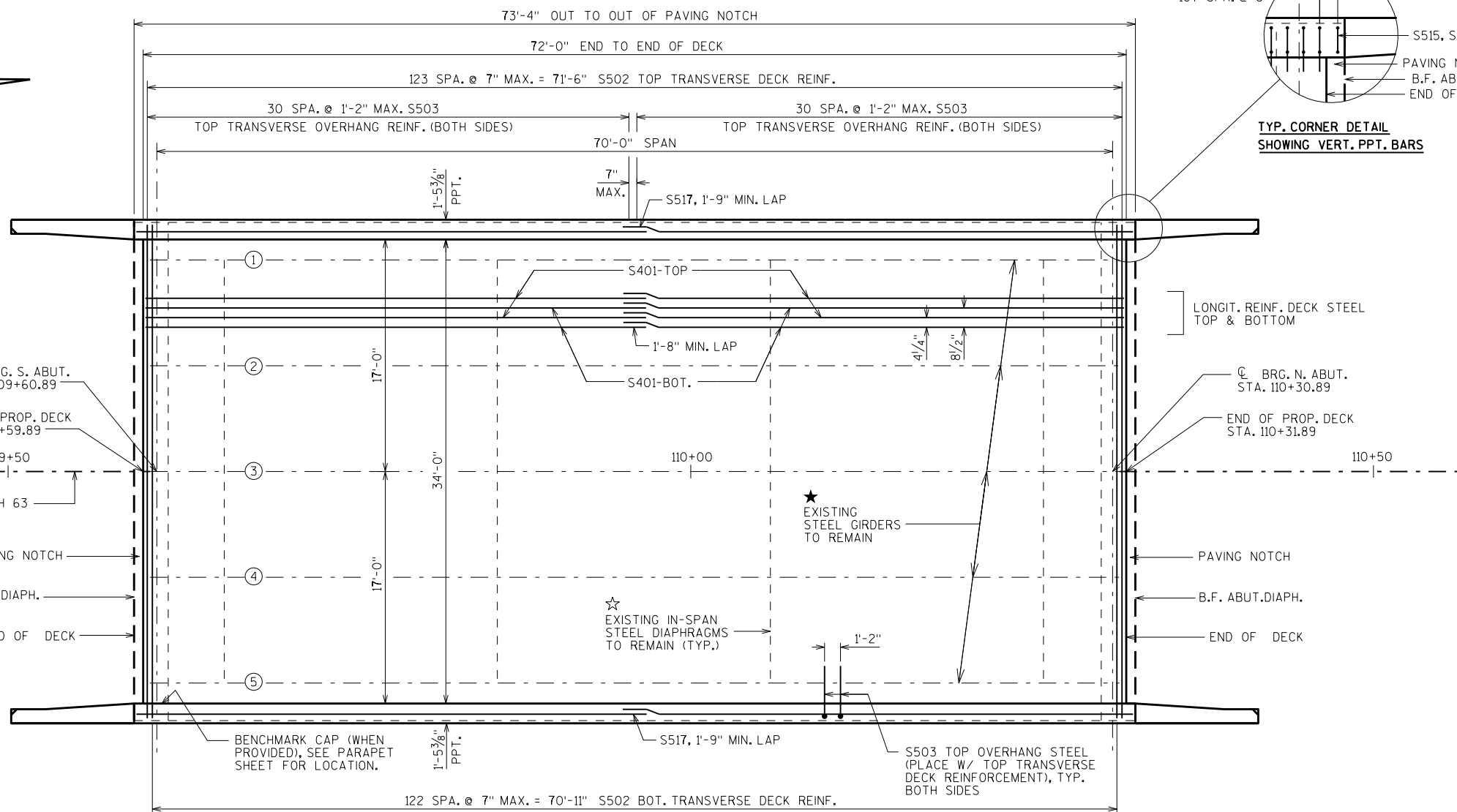
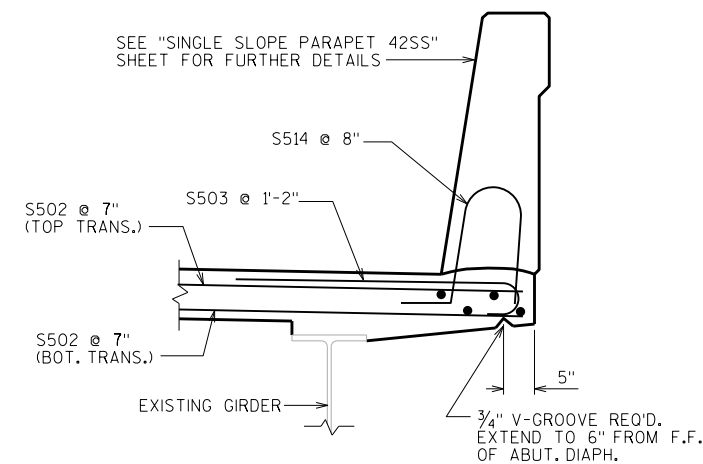
STATE PROJECT NUMBER

8070-03-71

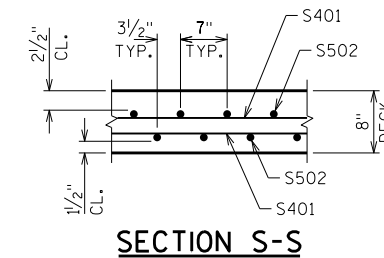
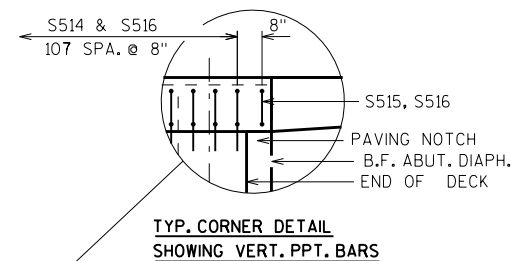


TYPICAL SECTION THRU DECK

TYPICAL SECTION @ DECK OVERHANG



DECK REPLACEMENT PLAN

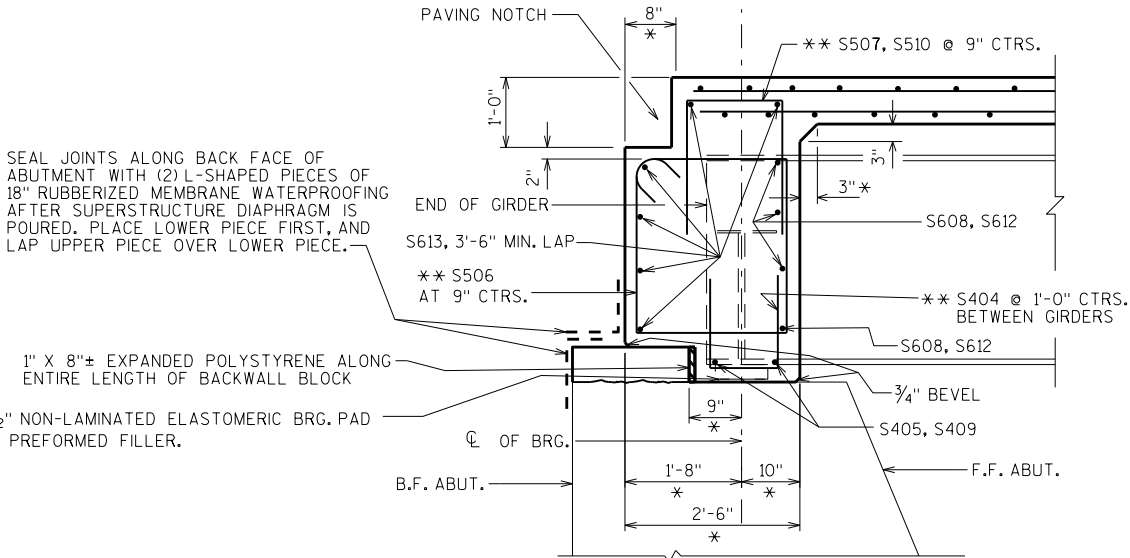


8

8

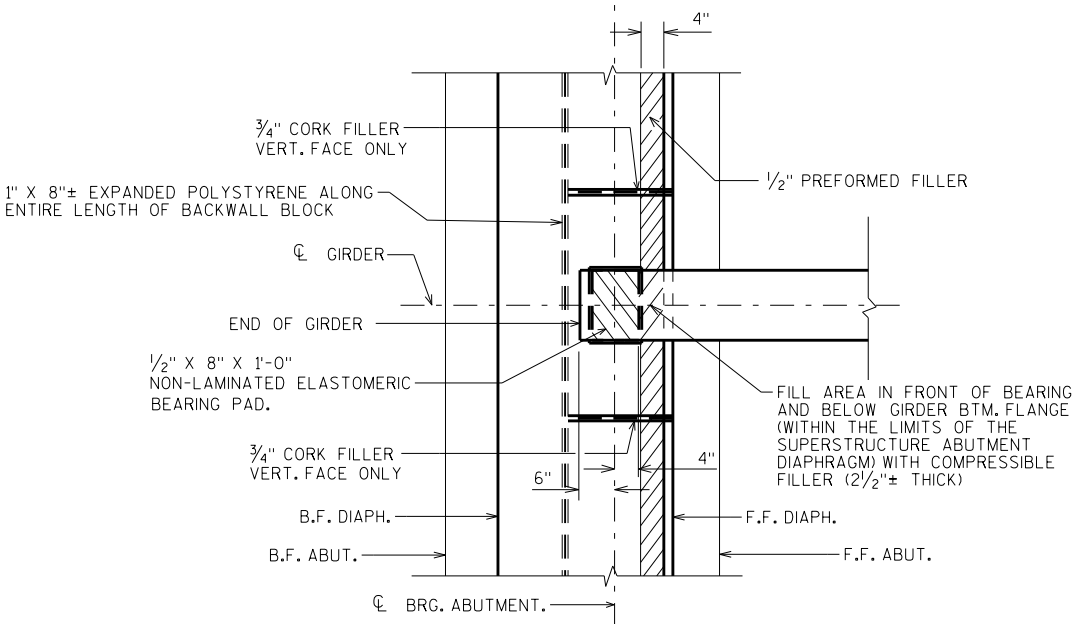
| NO.                                                                             | DATE | REVISION | BY              |
|---------------------------------------------------------------------------------|------|----------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-28                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| SUPERSTRUCTURE                                                                  |      | SHEET 10 |                 |
|                                                                                 |      | 183      |                 |

SCALE = 5.00



\* DIMENSION IS TAKEN NORMAL TO CL SUBSTRUCTURE UNITS.  
\*\* BARS PLACED PARALLEL TO GIRDERS  
SPACING PERPENDICULAR TO CL GIRDERS

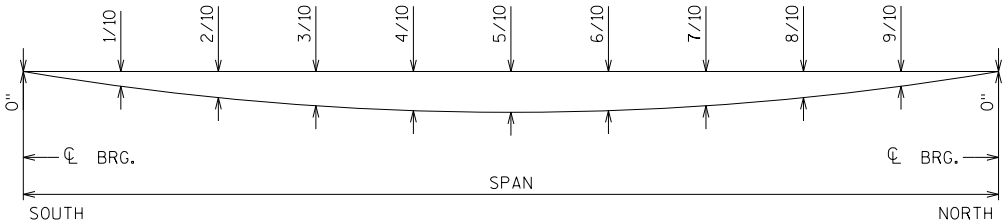
PART LONGIT. SECTION



BEARING PAD DETAIL

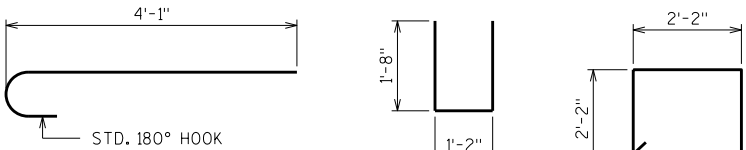
TOP OF DECK ELEVATIONS

|                | CL. BRG. S. ABUT. | 1/10    | 2/10    | 3/10    | 4/10    | 5/10    | 6/10    | 7/10    | 8/10    | 9/10    | CL. BRG. N. ABUT. |
|----------------|-------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| W. E.O.D.      | 1003.24           | 1003.25 | 1003.27 | 1003.28 | 1003.30 | 1003.31 | 1003.32 | 1003.34 | 1003.35 | 1003.37 | 1003.38           |
| GIRD. 1        | 1003.27           | 1003.28 | 1003.30 | 1003.31 | 1003.33 | 1003.34 | 1003.35 | 1003.37 | 1003.38 | 1003.40 | 1003.41           |
| GIRD. 2        | 1003.43           | 1003.44 | 1003.45 | 1003.47 | 1003.48 | 1003.50 | 1003.51 | 1003.52 | 1003.54 | 1003.55 | 1003.57           |
| GIRD. 3/PGL/CL | 1003.58           | 1003.59 | 1003.61 | 1003.62 | 1003.64 | 1003.65 | 1003.66 | 1003.68 | 1003.69 | 1003.71 | 1003.72           |
| GIRD. 4        | 1003.43           | 1003.44 | 1003.45 | 1003.47 | 1003.48 | 1003.50 | 1003.51 | 1003.52 | 1003.54 | 1003.55 | 1003.57           |
| GIRD. 5        | 1003.27           | 1003.28 | 1003.30 | 1003.31 | 1003.33 | 1003.34 | 1003.35 | 1003.37 | 1003.38 | 1003.40 | 1003.41           |
| E. E.O.D.      | 1003.24           | 1003.25 | 1003.27 | 1003.28 | 1003.30 | 1003.31 | 1003.32 | 1003.34 | 1003.35 | 1003.37 | 1003.38           |

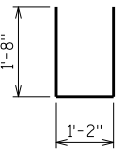


| SPAN |            | 1/10 | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 |
|------|------------|------|------|------|------|------|------|------|------|------|
| 1    | CONC. ONLY | 0.5  | 1.0  | 1.3  | 1.5  | 1.6  | 1.5  | 1.3  | 1.0  | 0.5  |

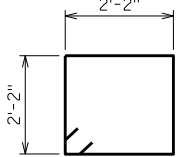
SHOWING DEADLOAD DEFLECTION ONLY.  
DEFLECTIONS ARE GIVEN TO NEAREST 0.1 INCH.  
1/10 POINTS ARE ALONG CL OF THE GIRDER.



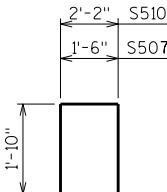
S503



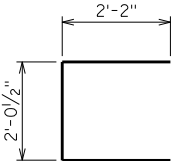
S404



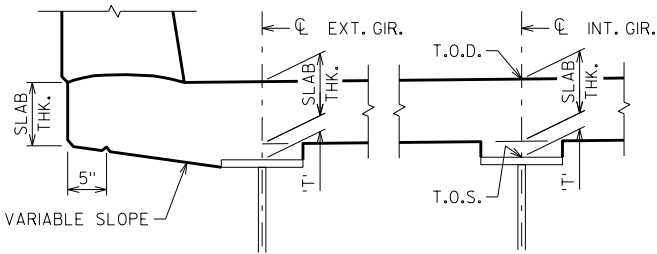
S506



S507, S510



S612



CONCRETE HAUNCH DETAILS

TO DETERMINE 'T': AFTER DECK IS REMOVED & BEARINGS REPLACED,  
ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF  
COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT CENTERLINE OF  
BEARINGS, AND AT 0.1 POINTS.

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

- SLAB THICKNESS (8")

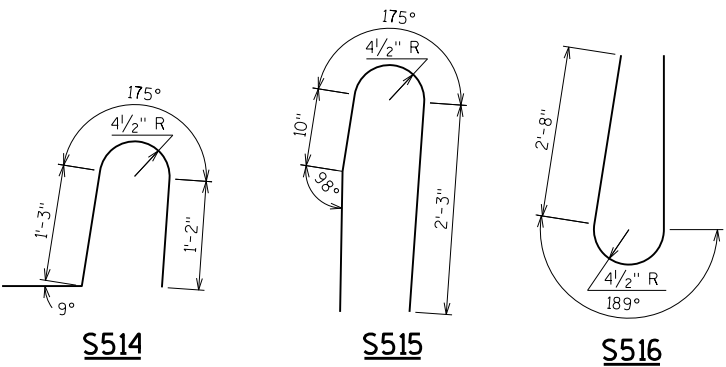
= 'T' VALUE FOR SETTING HAUNCH

NOTE: AN AVERAGE HAUNCH ('T') OF 3.2" WAS USED IN THE QUANTITY  
"CONCRETE MASONRY BRIDGES".

BILL OF BARS

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

| BAR MARK | COAT | NO. REQ'D. | LENGTH  | BENT | BAR SERIES | LOCATION                      |
|----------|------|------------|---------|------|------------|-------------------------------|
| S401     | X    | 206        | 36'-8"  |      |            | DECK-LONGIT. TOP & BOT.       |
| S502     | X    | 247        | 36'-2"  |      |            | DECK-TRANSVERSE TOP & BOT.    |
| S503     | X    | 124        | 4'-8"   | X    |            | DECK-TRANSVERSE OVERHANG      |
| S404     | X    | 76         | 4'-4"   | X    |            | ABUT. DIAPH.-VERT. U-BAR-BOT. |
| S405     | X    | 16         | 3'-11"  |      |            | ABUT. DIAPH.-HORIZ.-BOT.      |
| S506     | X    | 96         | 9'-4"   | X    |            | ABUT. DIAPH.-VERT. STIRRUP    |
| S507     | X    | 88         | 4'-11"  | X    |            | ABUT. DIAPH.-VERT. U-BAR      |
| S608     | X    | 64         | 4'-9"   |      |            | ABUT. DIAPH.-HORIZ.           |
| S409     | X    | 8          | 1'-8"   |      |            | ABUT. DIAPH.-HORIZ. END-BOT.  |
| S510     | X    | 8          | 5'-7"   | X    |            | ABUT. DIAPH.-VERT. U-BAR      |
| S411     | X    | 8          | 3'-8"   |      |            | ABUT. DIAPH.-VERT.-END        |
| S612     | X    | 16         | 6'-0"   | X    |            | ABUT. DIAPH.-HORIZ. U-BAR     |
| S613     | X    | 24         | 19'-10" |      |            | ABUT. DIAPH.-HORIZ.-B.F.      |
| S514     | X    | 216        | 4'-5"   | X    |            | DECK/PPT.-VERT.               |
| S515     | X    | 4          | 5'-10"  | X    |            | DECK/PPT.-VERT. @ PAV. NOTCH  |
| S516     | X    | 220        | 6'-8"   | X    |            | PPT.-VERT.                    |
| S517     | X    | 32         | 37'-5"  |      |            | PPT.-HORIZ.                   |
|          |      |            |         |      |            |                               |
|          |      |            |         |      |            |                               |
|          |      |            |         |      |            |                               |



S514

S515

S516

| NO.                                                                             | DATE | REVISION | BY             |
|---------------------------------------------------------------------------------|------|----------|----------------|
|                                                                                 |      |          |                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                |
| STRUCTURE B-47-28                                                               |      |          |                |
| DRAWN BY                                                                        |      | WWR      | PLANS CKD. ARC |
| SUPERSTRUCTURE DETAILS                                                          |      | SHEET 11 |                |
|                                                                                 |      | 184      |                |



BILL OF BARS

FOR ABUTMENT PARAPETS

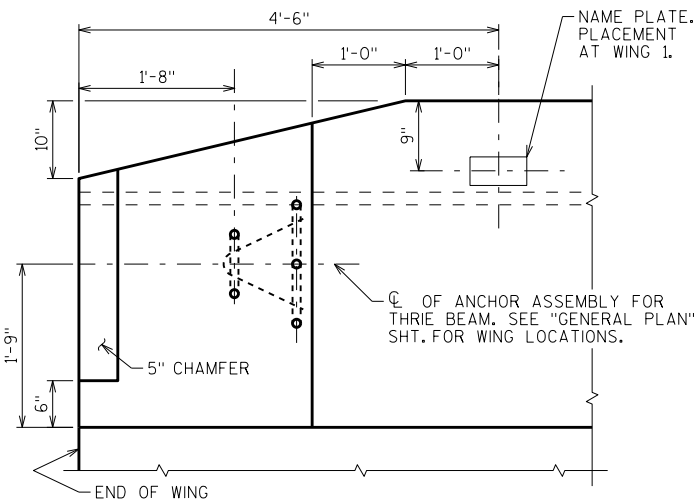
| BAR MARK | COUNT | S. ABUT. | N. ABUT. | LENGTH | BENT | BAR SERIES | LOCATION       |
|----------|-------|----------|----------|--------|------|------------|----------------|
| R501     | X     | 2        | 2        | 5'-10" | X    |            | PARAPET VERT.  |
| R502     | X     | 2        | 2        | 6'-8"  | X    |            | PARAPET VERT.  |
| R503     | X     | 24       | 24       | 3'-0"  | X    |            | PARAPET VERT.  |
| R504     | X     | 34       | 34       | 5'-7"  | X    |            | PARAPET VERT.  |
| R505     | X     | 10       | 10       | 6'-5"  | X    |            | PARAPET VERT.  |
| R506     | X     | 12       | 12       | 6'-6"  | X    |            | PARAPET VERT.  |
| R507     | X     | 2        | 2        | 8'-7"  | X    |            | PARAPET HORIZ. |
| R508     | X     | 10       | 10       | 8'-7"  |      |            | PARAPET HORIZ. |
| R509     | X     | 12       | 12       | 5'-5"  | X    | ▲          | PARAPET VERT.  |
| R510     | X     | 4        | 4        | 8'-7"  | X    |            | PARAPET HORIZ. |

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

BAR SERIES TABLE

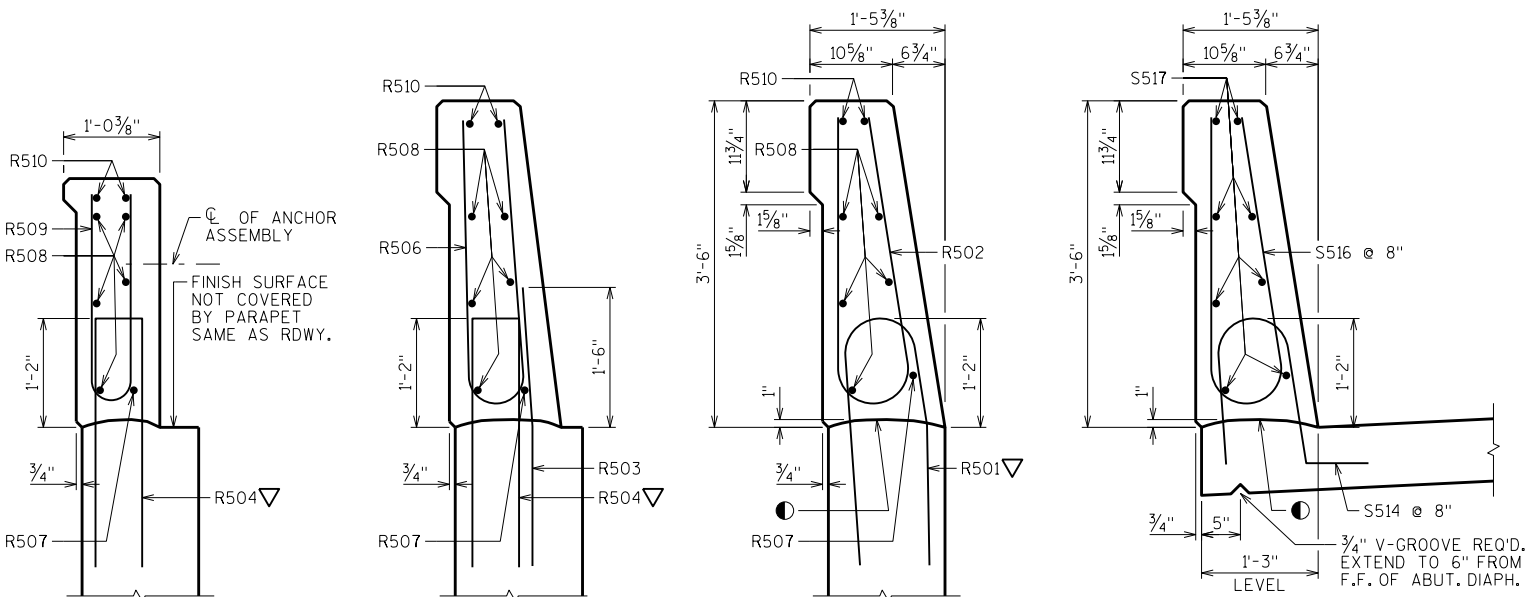
| BAR MARK | NO. REQ'D     | LENGTH         |
|----------|---------------|----------------|
| R509     | 4 SERIES OF 6 | 4'-9" TO 6'-1" |

BUNDLE AND TAG EACH SERIES SEPARATELY.



PARAPET END TREATMENT DETAIL

LOOKING AT INSIDE FACE OF PARAPET

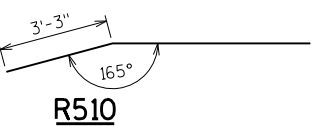
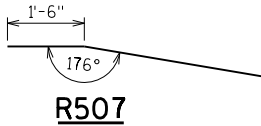
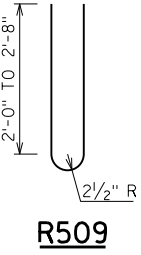
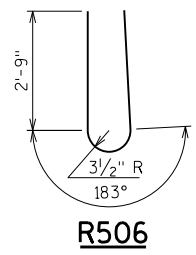
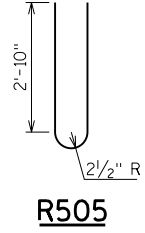
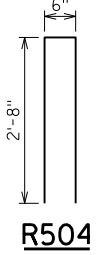
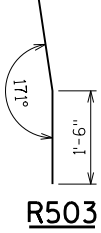
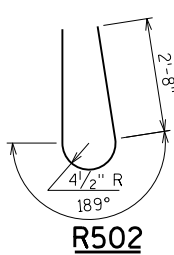
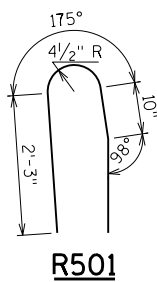
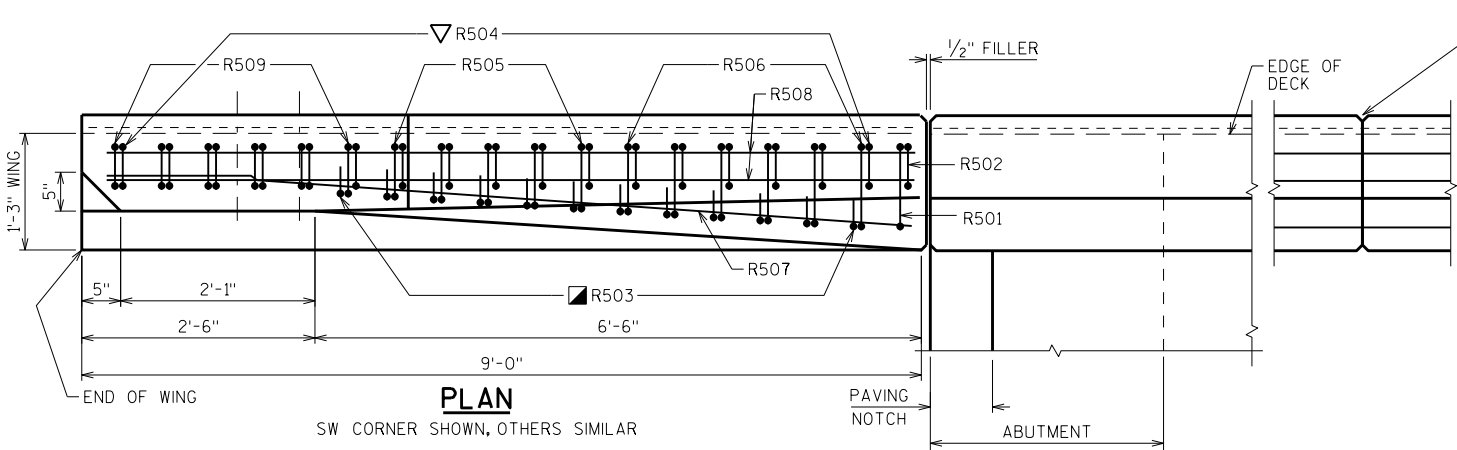


SECTION A-A

SECTION B-B

SECTION C-C

SECTION THRU PARAPET ON DECK

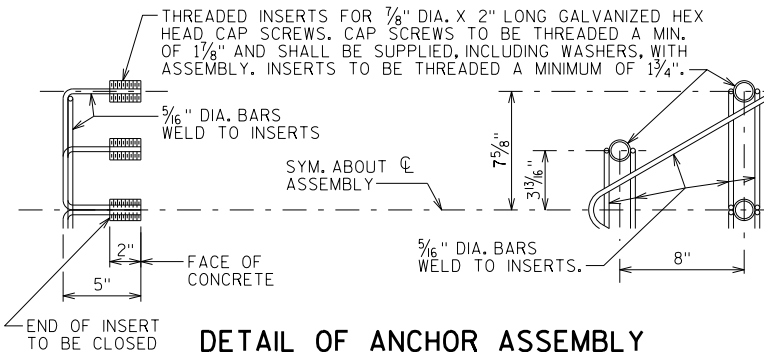


● CONST. JOINT - STRIKE OFF AS SHOWN

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

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

■ BENCH MARK CAP (WHEN SUPPLIED). ATTACH TO TOP OF PARAPET NEAR WING 1, SE CORNER OF BRIDGE.



DETAIL OF ANCHOR ASSEMBLY

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

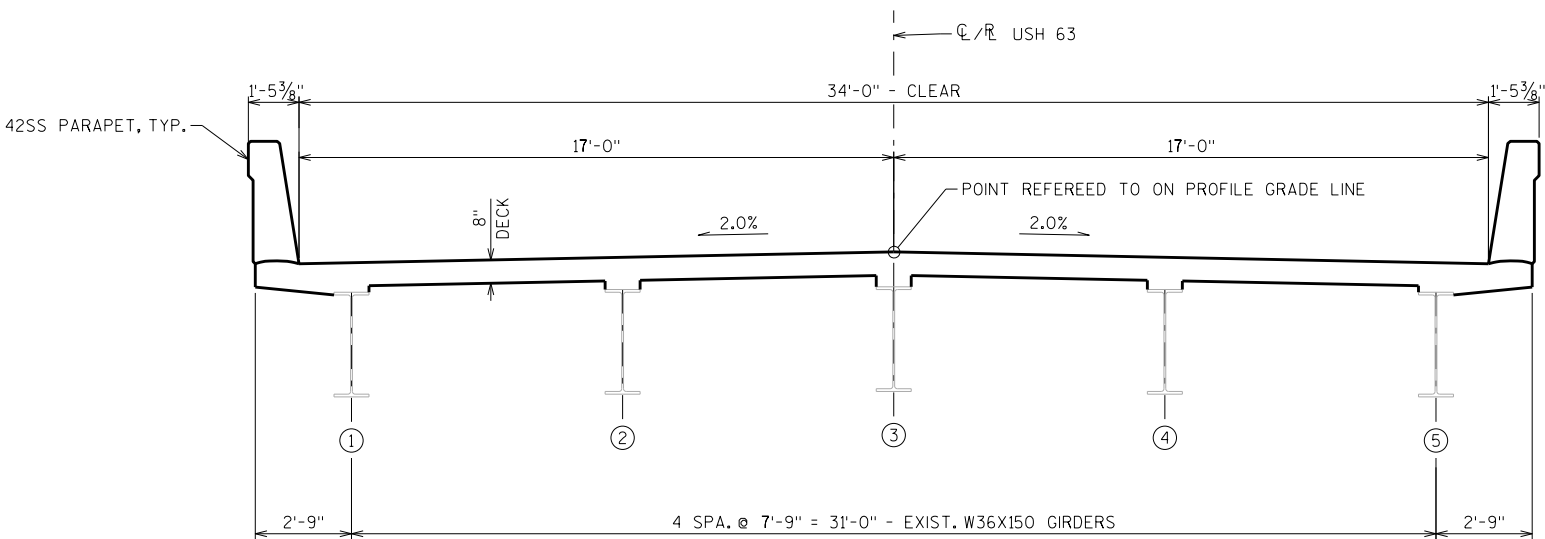
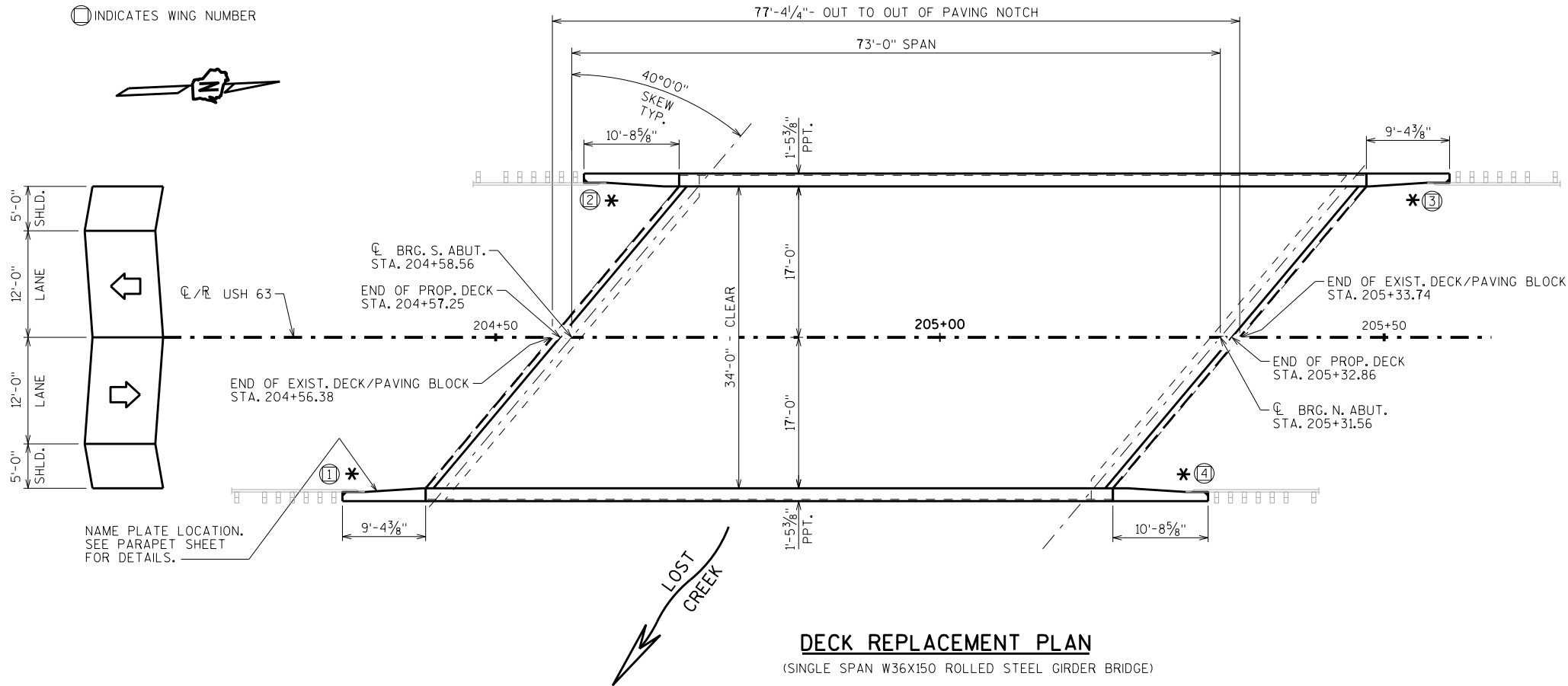
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

| NO.                                                                             | DATE | REVISION | BY             |
|---------------------------------------------------------------------------------|------|----------|----------------|
|                                                                                 |      |          |                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                |
| STRUCTURE B-47-28                                                               |      |          |                |
| DRAWN BY                                                                        |      | WWR      | PLANS CKD. ARC |
| SINGLE SLOPE<br>PARAPET 42SS                                                    |      | SHEET 12 |                |
|                                                                                 |      | 185      |                |



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

Ⓢ INDICATES WING NUMBER



PROPOSED SECTION THRU BRIDGE

(LOOKING NORTH)

Ⓢ INDICATES GIRDER NUMBER

DESIGN DATA

**LIVE LOAD:**  
INVENTORY RATING: HS-15  
OPERATING RATING: HS- 25  
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 200 (KIPS)

**MATERIAL PROPERTIES:**  
CONCRETE MASONRY:  $f'c = 4,000$  P.S.I.  
BAR STEEL REINFORCEMENT:  $f_y = 60,000$  P.S.I.  
STRUCTURAL STEEL CARBON:  $f_y = 36,000$  P.S.I.

TRAFFIC VOLUME

**FEATURE ON (USH 63)**  
ADT = 6200 (2037)  
R.D.S. = 55 M.P.H.

**STRUCTURE DESIGN CONTACTS:**  
CHRISTOPHER DOLL (608) 266-3229  
KYLE BUSCH (608) 267-0465

LIST OF DRAWINGS

1. GENERAL PLAN - DECK REPLACEMENT
2. NOTES & QUANTITIES
3. REMOVAL DETAILS
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. BEARING DETAILS
9. HAT BAR DETAILS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. SINGLE SLOPE PARAPET 42SS

|                                                                |        |                |               |
|----------------------------------------------------------------|--------|----------------|---------------|
| NO.                                                            | DATE   | REVISION       | BY            |
|                                                                |        |                |               |
| ACCEPTED  KHB 4/28/23<br>CHIEF STRUCTURES DESIGN ENGINEER DATE |        |                |               |
| STRUCTURE B-47-29                                              |        |                |               |
| USH 63 OVER LOST CREEK                                         |        |                |               |
| COUNTY                                                         | PIERCE | TOWN           | ELLSWORTH     |
| DESIGN SPEC. REHABILITATION-N/A                                |        |                |               |
| DESIGNED BY                                                    | CAD    | DESIGNED CK'D. | ARC           |
| DRWN BY                                                        | WWR    | PLANS CK'D.    | ARC           |
| GENERAL PLAN-DECK REPLACEMENT                                  |        |                | SHEET 1 OF 12 |
|                                                                |        |                | 186           |



TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS                                               | UNIT | SUPER. | SOUTH ABUT. | NORTH ABUT. | TOTALS         |
|-----------------|---------------------------------------------------------|------|--------|-------------|-------------|----------------|
| 203.0260        | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-47-29 | EACH | —      | —           | —           | 1              |
| 206.1001        | EXCAVATION FOR STRUCTURES BRIDGES B-47-29               | EACH | —      | —           | —           | 1              |
| 210.1500        | BACKFILL STRUCTURE TYPE A                               | TON  | —      | 85          | 85          | 170            |
| 502.0100        | CONCRETE MASONRY BRIDGES                                | CY   | 122.2  | 11.9        | 11.9        | 146            |
| 502.3200        | PROTECTIVE SURFACE TREATMENT                            | SY   | 302    | —           | —           | 302            |
| 502.3210        | PIGMENTED SURFACE SEALER                                | SY   | 76     | 10          | 10          | 96             |
| 502.4205        | ADHESIVE ANCHORS NO. 5 BAR                              | EACH | —      | 20          | 20          | 40             |
| 505.0600        | BAR STEEL REINFORCEMENT HS COATED STRUCTURES            | LB   | 24,470 | 1530        | 1600        | 27,600         |
| 506.0105        | STRUCTURAL STEEL CARBON                                 | LB   | —      | 335         | 335         | 670            |
| 506.2605        | BEARING PADS ELASTOMERIC NON-LAMINATED                  | EACH | —      | 5           | 5           | 10             |
| 506.7050.S      | REMOVING BEARINGS B-47-29                               | EACH | —      | 5           | 5           | 10             |
| 516.0500        | RUBBERIZED MEMBRANE WATERPROOFING                       | SY   | —      | 19          | 20          | 39             |
| 517.0901.S      | PREPARATION AND COATING OF TOP FLANGES B-47-29          | EACH | —      | —           | —           | 1              |
| 614.0150        | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD            | EACH | —      | 2           | 2           | 4              |
| SPV.0180        | ABUTMENT SEAT CLEANING AND SEALING                      | SY   | —      | 12          | 12          | 24             |
| NON-BID ITEMS   |                                                         |      |        |             |             |                |
|                 | FILLER                                                  | SIZE | —      | —           | —           | 1/2", 3/4", 1" |
|                 | POLYSTYRENE                                             | SIZE | —      | —           | —           | 1"             |

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-47-29" SHALL BE THE EXISTING GROUNDLINE, WHERE EXISTING HEAVY RIPRAP IS REMOVED IN FRONT OF WINGS DURING EXCAVATION, RE-USE AND REPLACE RIPRAP DURING BACKFILL OPERATIONS.

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

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

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

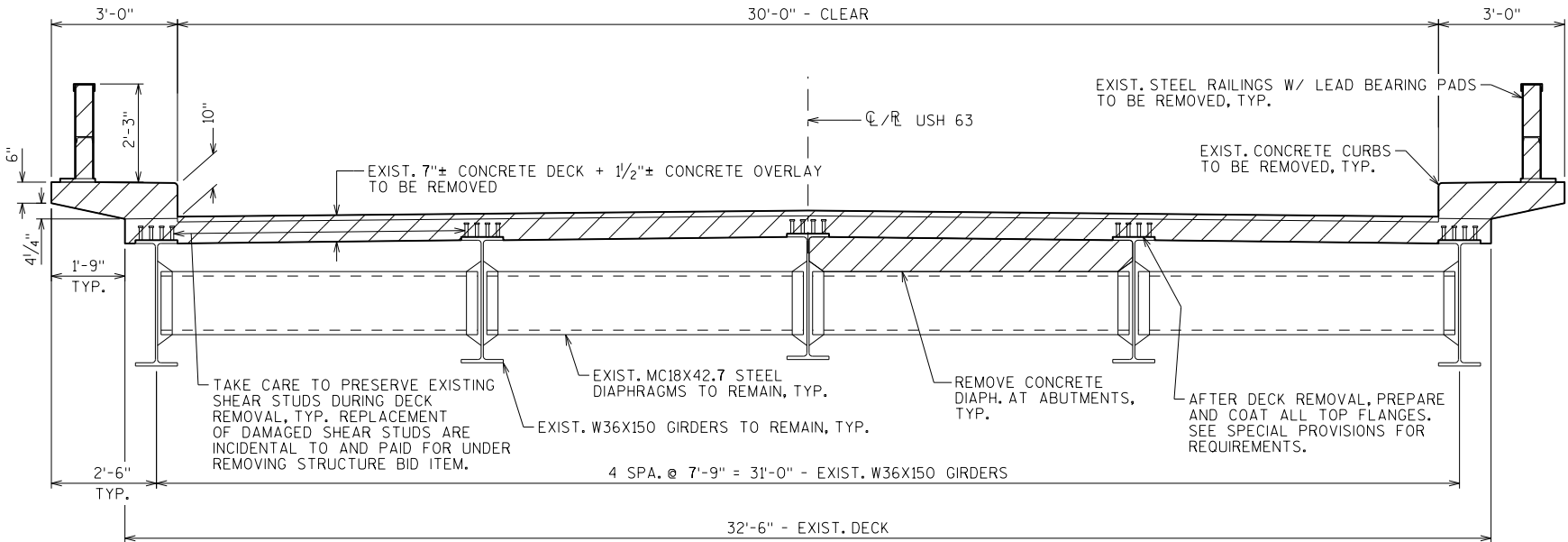
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.

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

THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE HAUNCH OF 3.2 INCHES.

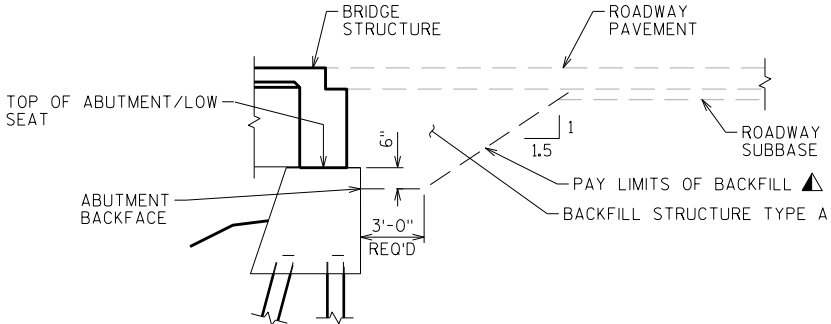
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1960.



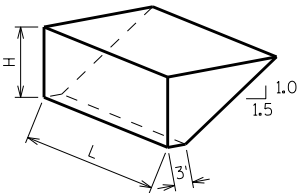
EXISTING SECTION THRU BRIDGE - SHOWING REMOVAL

NOTE: ALL REMOVAL SHOWN TO BE INCLUDED IN BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-47-29"



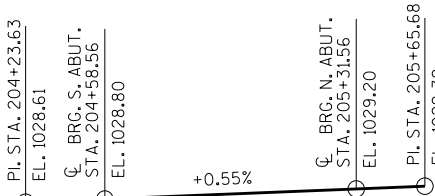
TYPICAL SECTION THRU ABUTMENT

BACKFILL PAY LIMITS, BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

L = OUT. TO OUT. OF ABUTMENT, INCLUDING WINGS (FT)  
H = AVERAGE ABUTMENT FILL HEIGHT (FT)  
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)  
 $V_{CF} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H)$   
 $V_{CY} = V_{CF} (EF) / 27$   
 $V_{TON} = V_{CY} (2.0)$

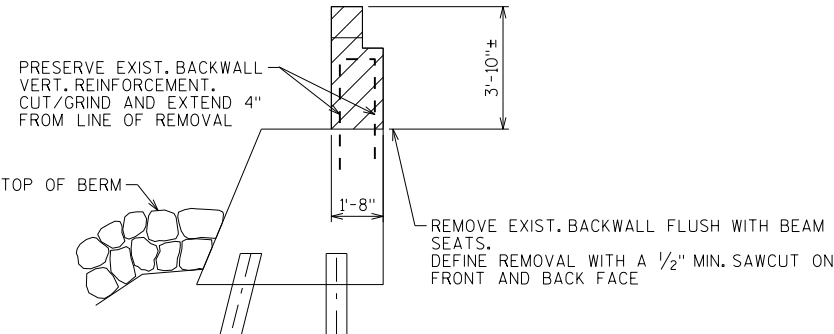
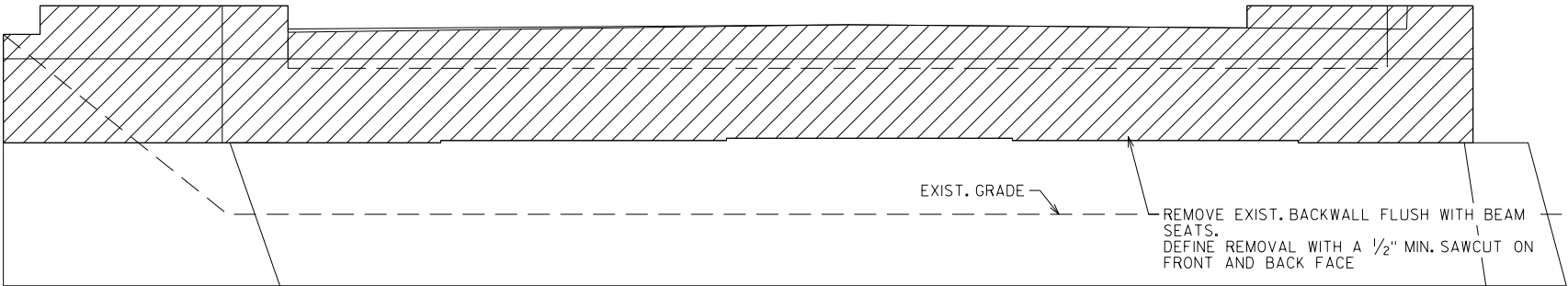


PROPOSED PROFILE GRADE LINE - USH 63

STATE PROJECT NUMBER

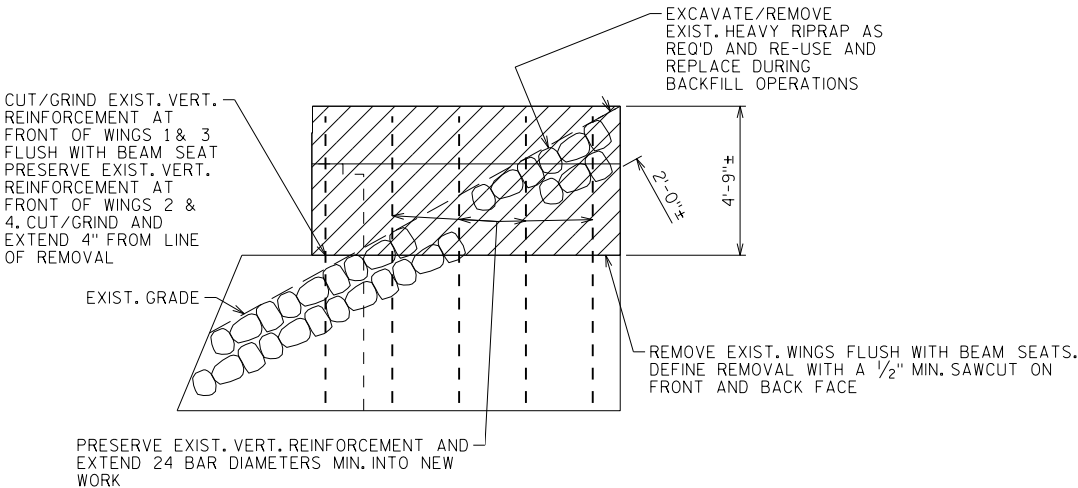
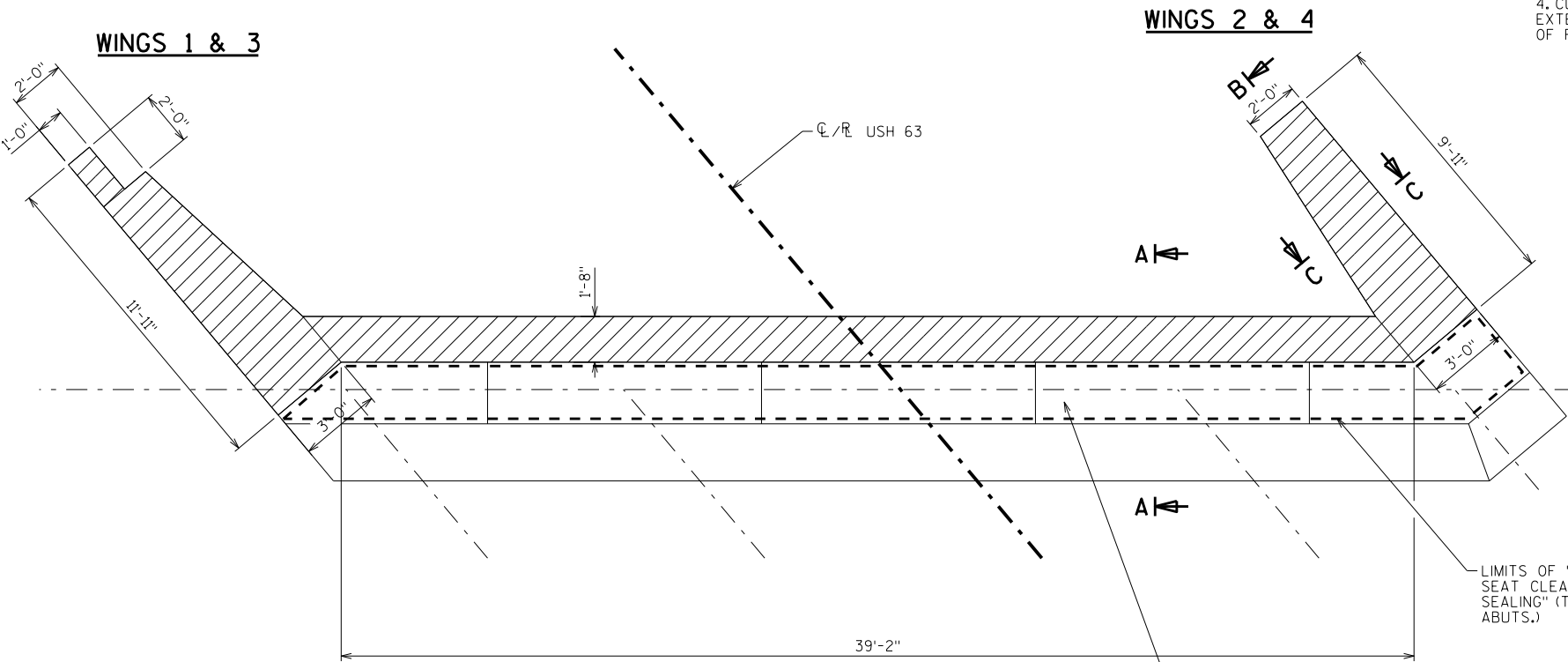
8070-03-71

|                                                                                 |  |                 |
|---------------------------------------------------------------------------------|--|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |  |                 |
| STRUCTURE B-47-29                                                               |  |                 |
| DRAWN BY WWR                                                                    |  | PLANS CK'D. ARC |
| NOTES & QUANTITIES                                                              |  | SHEET 2         |
|                                                                                 |  | 187             |

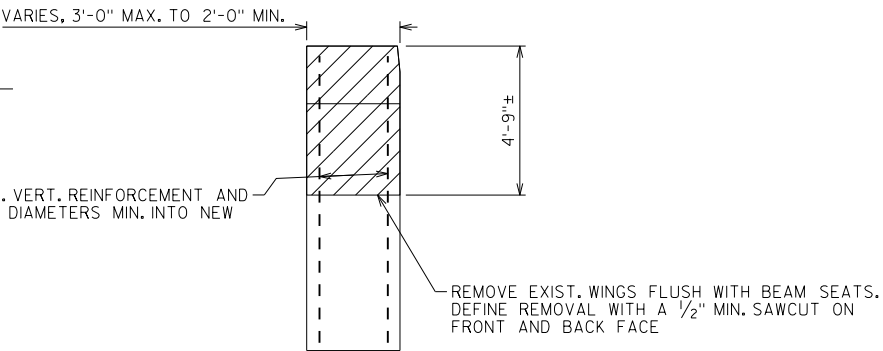


SECTION A-A - THRU ABUTMENT/BACKWALL

ABUTMENT REMOVAL ELEVATION



SECTION B-B - WING REMOVAL ELEVATION



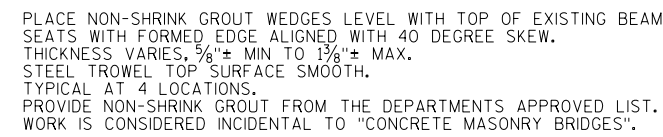
SECTION C-C - THRU WING

ABUTMENT REMOVAL PLAN

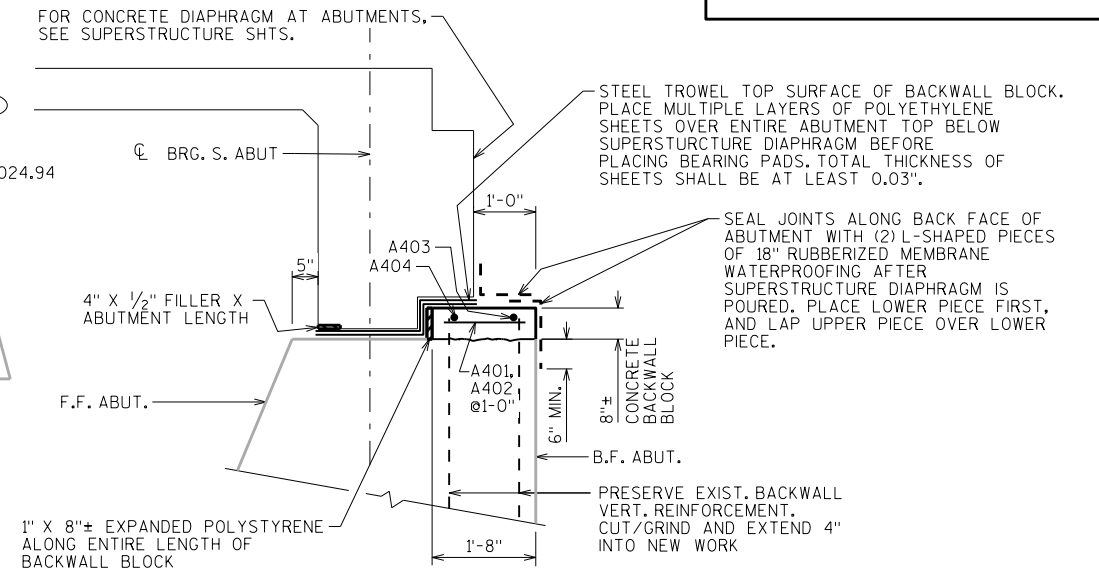
AFTER REMOVAL IS COMPLETE, CLEAN ENTIRE ABUTMENT SEAT PER "ABUTMENT SEAT CLEANING AND SEALING". SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

LIMITS OF "ABUTMENT SEAT CLEANING AND SEALING" (TYP. BOTH ABUTS.)

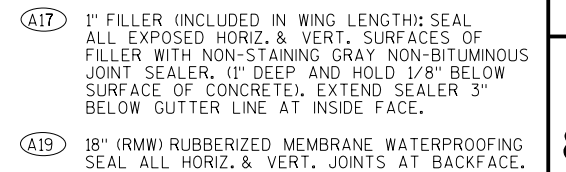
|                                                                                 |      |          |                 |
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| NO.                                                                             | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-29                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| REMOVAL DETAILS                                                                 |      | SHEET 3  |                 |
|                                                                                 |      | 188      |                 |



SOUTH ABUTMENT ELEVATION



SECTION D-D - THRU ABUTMENT SEAT



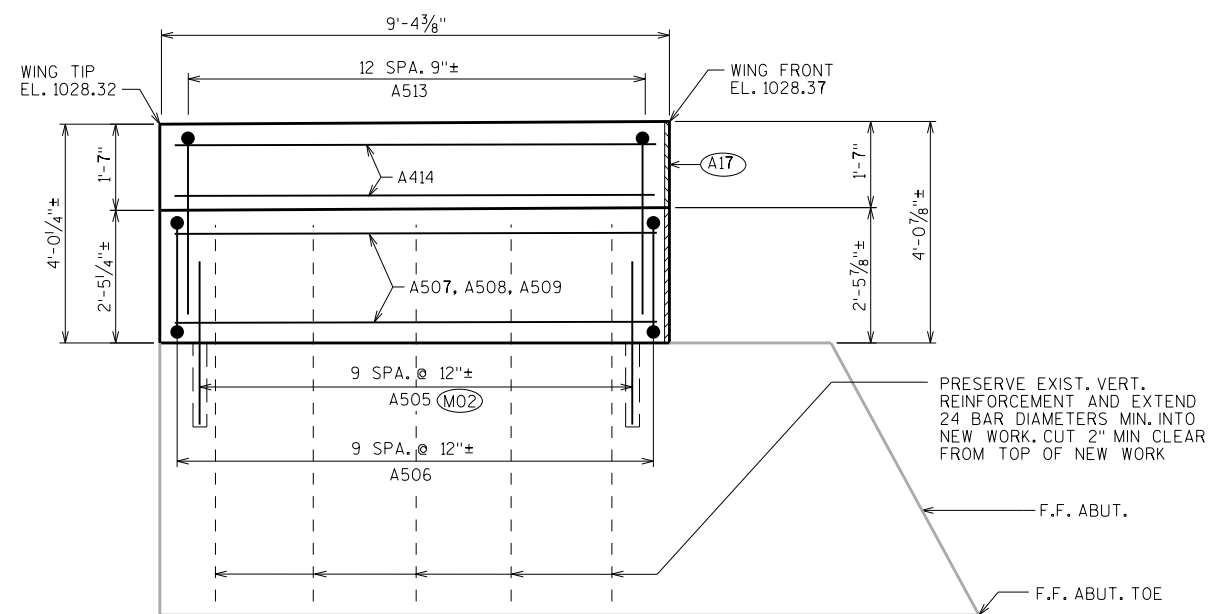
SOUTH ABUTMENT PLAN

PLACE NON-SHRINK GROUT WEDGES LEVEL WITH TOP OF EXISTING BEAM SEATS WITH ARMED EDGE ALIGNED WITH 40 DEGREE SKEW. THICKNESS VARIES,  $\frac{7}{8}$ " MIN. TO  $1\frac{3}{8}$ " MAX. STEEL TROWEL TOP SURFACE SMOOTH. TYPICAL AT 4 LOCATIONS. PROVIDE NON-SHRINK GROUT FROM THE DEPARTMENT'S APPROVED LIST. WORK IS CONSIDERED INCIDENTAL TO "CONCRETE MASONRY BRIDGES". PLACE AFTER BACKWALL BLOCK HAS BEEN POURED.

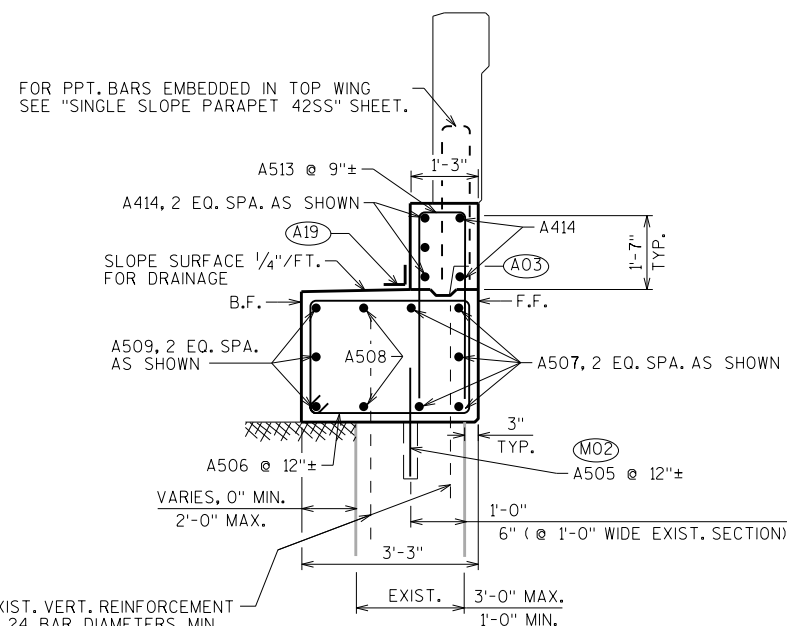
|                                                                                        |      |             |                           |
|----------------------------------------------------------------------------------------|------|-------------|---------------------------|
|                                                                                        |      |             |                           |
| NO.                                                                                    | DATE | REVISION    | BY                        |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br><b>STRUCTURES DESIGN SECTION</b> |      |             |                           |
| <b>STRUCTURE B-47-29</b>                                                               |      |             |                           |
|                                                                                        |      | DRAWN<br>BY | PLANS<br>CK'D. <b>ARC</b> |
| <b>SOUTH ABUTMENT</b>                                                                  |      | SHEET 4     |                           |
|                                                                                        |      | 189         |                           |

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

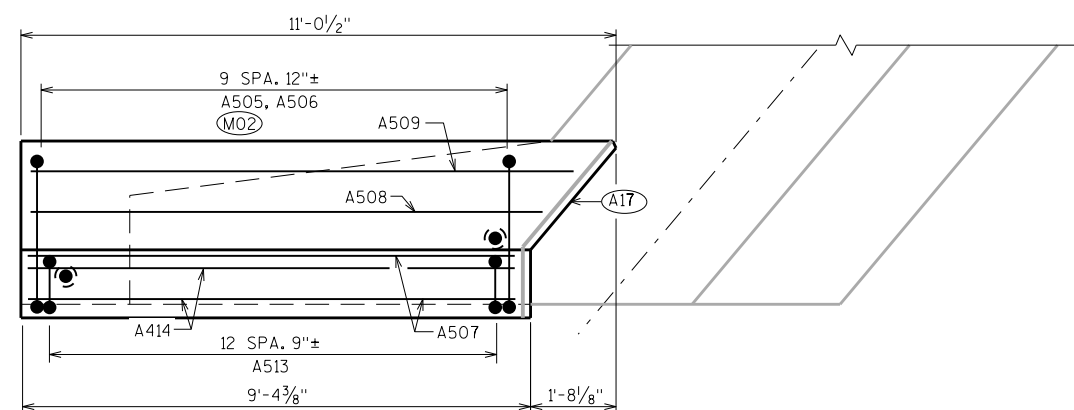
| BAR<br>MARK | COAT | NO.<br>REQ'D. | LENGTH  | BELT | BAR<br>SERIES | LOCATION                      |
|-------------|------|---------------|---------|------|---------------|-------------------------------|
| A401        | X    | 39            | 1'-4"   |      |               | BEAM SEAT-HORIZ-BOT.          |
| A402        | X    | 7             | 0'-4"   |      |               | BEAM SEAT-HORIZ.-BOT. @ WINGS |
| A403        | X    | 1             | 38'-8"  |      |               | BEAM SEAT-LONGIT. TOP @ B.F.  |
| A404        | X    | 21            | 43'-10" |      |               | BEAM SEAT-LONGIT. TOP @ F.F.  |
| A505        | X    | 20            | 2'-0"   |      |               | LOWER WING-VERT. DOWEL        |
| A506        | X    | 21            | 10'-7"  | X    |               | LOWER WING-VERT. STIRRUP      |
| A507        | X    | 5             | 8'-11"  |      |               | LOWER WING-HORIZ.-WING 1      |
| A508        | X    | 2             | 9'-6"   |      |               | LOWER WING-HORIZ.-WING 1      |
| A509        | X    | 3             | 10'-2"  |      |               | LOWER WING-HORIZ.-WING 1      |
| A510        | X    | 5             | 10'-3"  |      |               | LOWER WING-HORIZ.-WING 2      |
| A511        | X    | 2             | 9'-6"   |      |               | LOWER WING-HORIZ.-WING 2      |
| A512        | X    | 3             | 8'-8"   |      |               | LOWER WING-HORIZ.-WING 2      |
| A513        | X    | 28            | 8'-0"   | X    |               | LOWER/UPPER WING-VERT.        |
| A414        | X    | 5             | 8'-11"  |      |               | UPPER WING-HORIZ.-WING 1      |
| A415        | X    | 5             | 10'-3"  |      |               | UPPER WING-HORIZ.-WING 2      |



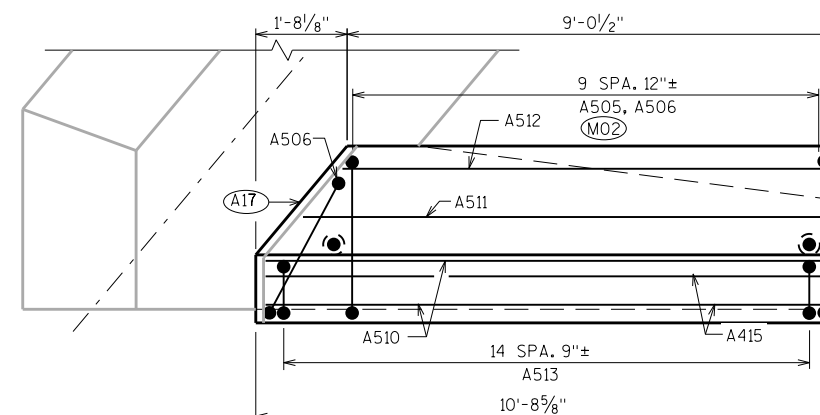
## WING 1 ELEVATION



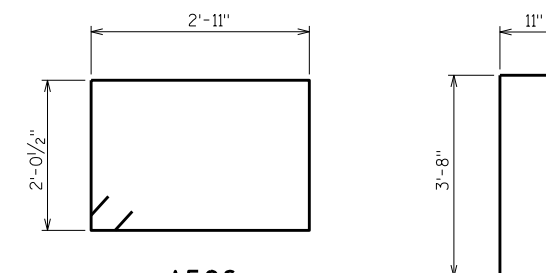
SECTION THRU WING 1



WING 1 PLAN

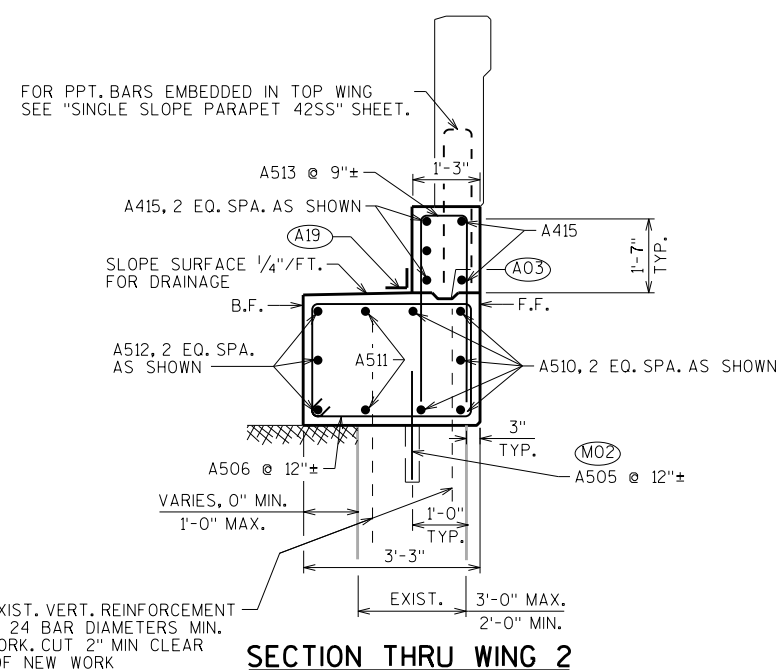


WING 2 PLAN

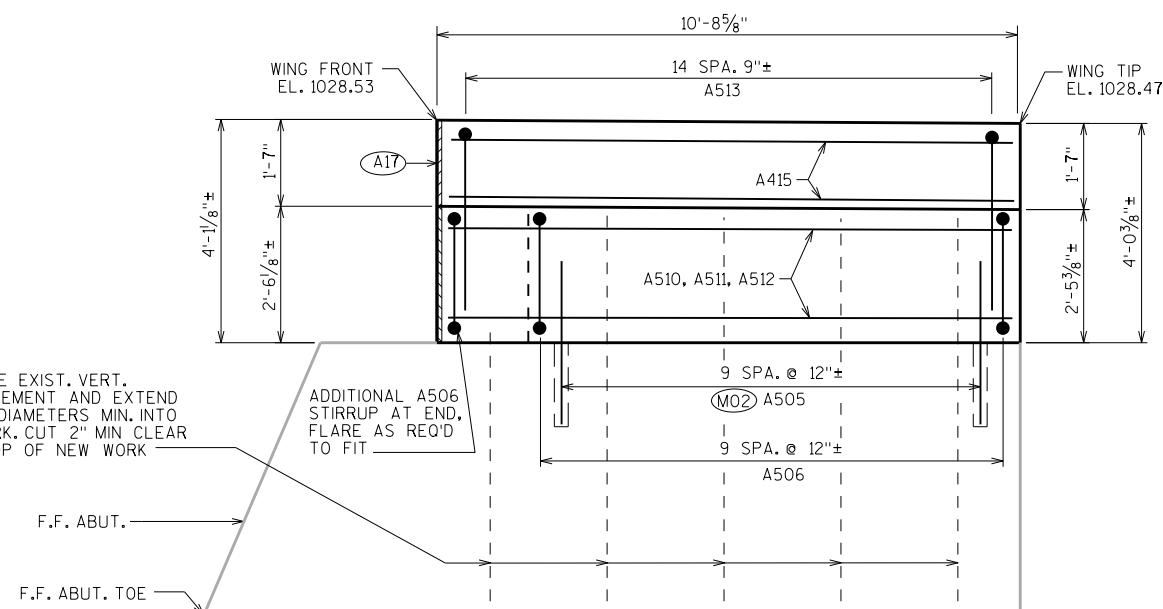


A506

A513



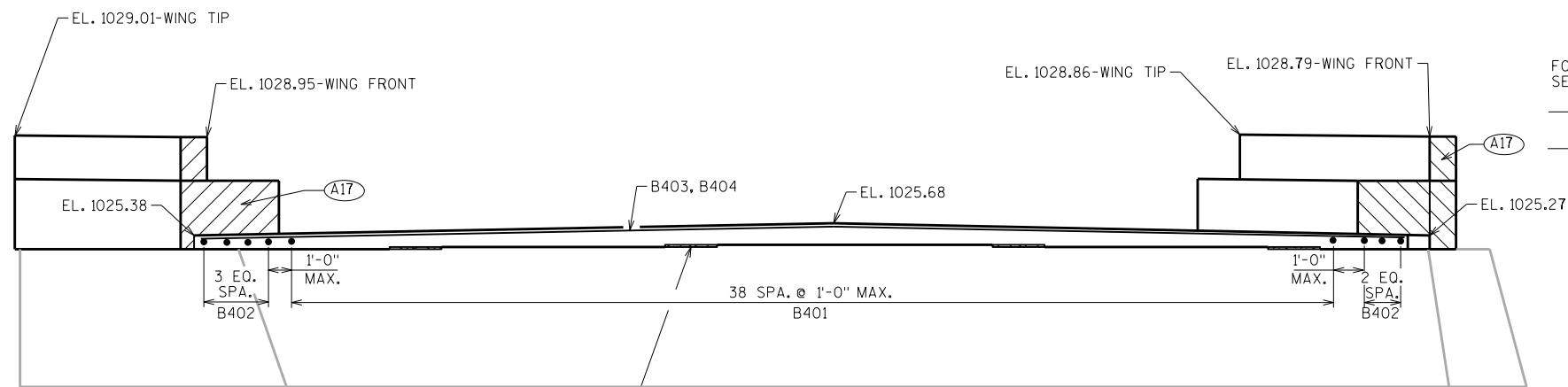
SECTION THRU WING 2



WING 2 ELEVATION

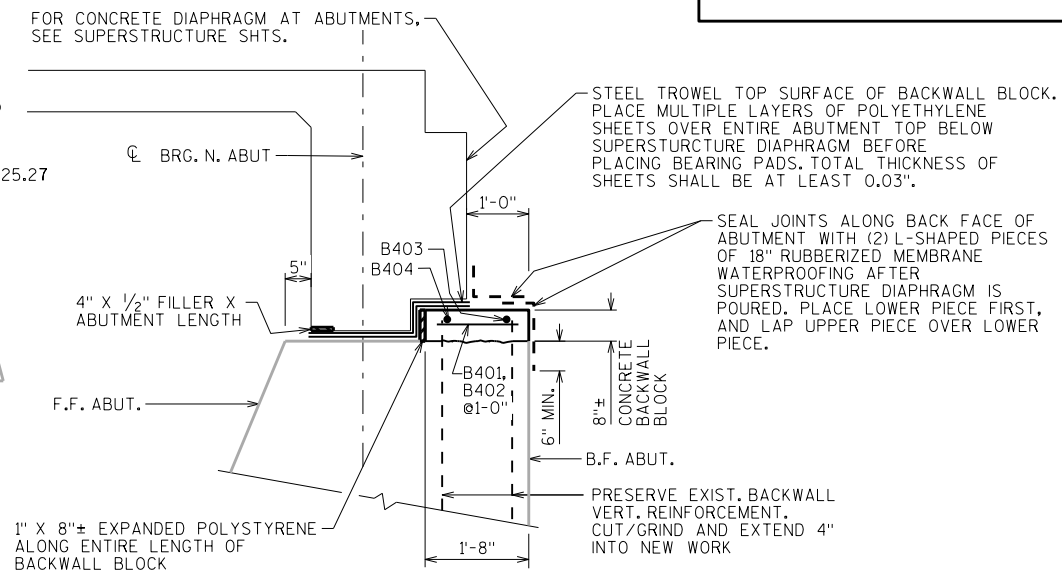
- (M02) ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE =  $3\frac{3}{4}$ ".
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A17) 1" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

|                                                                                 |      |          |                                                   |
|---------------------------------------------------------------------------------|------|----------|---------------------------------------------------|
| NO.                                                                             | DATE | REVISION | BY                                                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                                                   |
| STRUCTURE B-47-29                                                               |      |          |                                                   |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. <span style="color: blue;">ARC</span> |
| SOUTH ABUTMENT<br>DETAILS                                                       |      | SHEET 5  |                                                   |
|                                                                                 |      | 190      |                                                   |

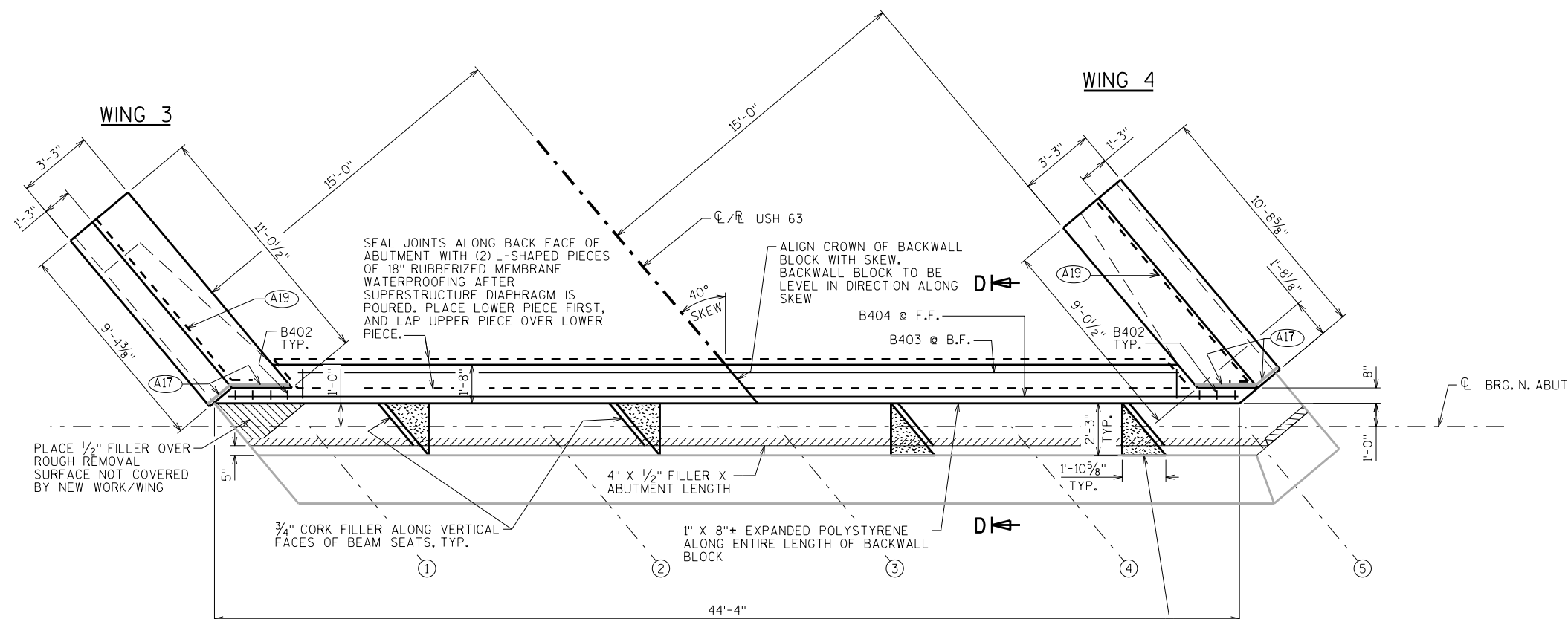


PLACE NON-SHRINK GROUT WEDGES LEVEL WITH TOP OF EXISTING BEAM SEATS WITH FORMED EDGE ALIGNED WITH 40 DEGREE SKEW. THICKNESS VARIES,  $\frac{5}{8}$ " ± MIN TO  $1\frac{3}{8}$ " ± MAX. STEEL TROWEL TOP SURFACE SMOOTH. TYPICAL AT 4 LOCATIONS. PROVIDE NON-SHRINK GROUT FROM THE DEPARTMENTS APPROVED LIST. WORK IS CONSIDERED INCIDENTAL TO "CONCRETE MASONRY BRIDGES".

NORTH ABUTMENT ELEVATION



SECTION D-D - THRU ABUTMENT SEAT



NORTH ABUTMENT PLAN

PLACE NON-SHRINK GROUT WEDGES LEVEL WITH TOP OF EXISTING BEAM SEATS WITH FORMED EDGE ALIGNED WITH 40 DEGREE SKEW. THICKNESS VARIES,  $\frac{5}{8}$ " ± MIN TO  $1\frac{3}{8}$ " ± MAX. STEEL TROWEL TOP SURFACE SMOOTH. TYPICAL AT 4 LOCATIONS. PROVIDE NON-SHRINK GROUT FROM THE DEPARTMENT'S APPROVED LIST. WORK IS CONSIDERED INCIDENTAL TO "CONCRETE MASONRY BRIDGES". PLACE AFTER BACKWALL BLOCK HAS BEEN POURED.

- (A17) 1" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

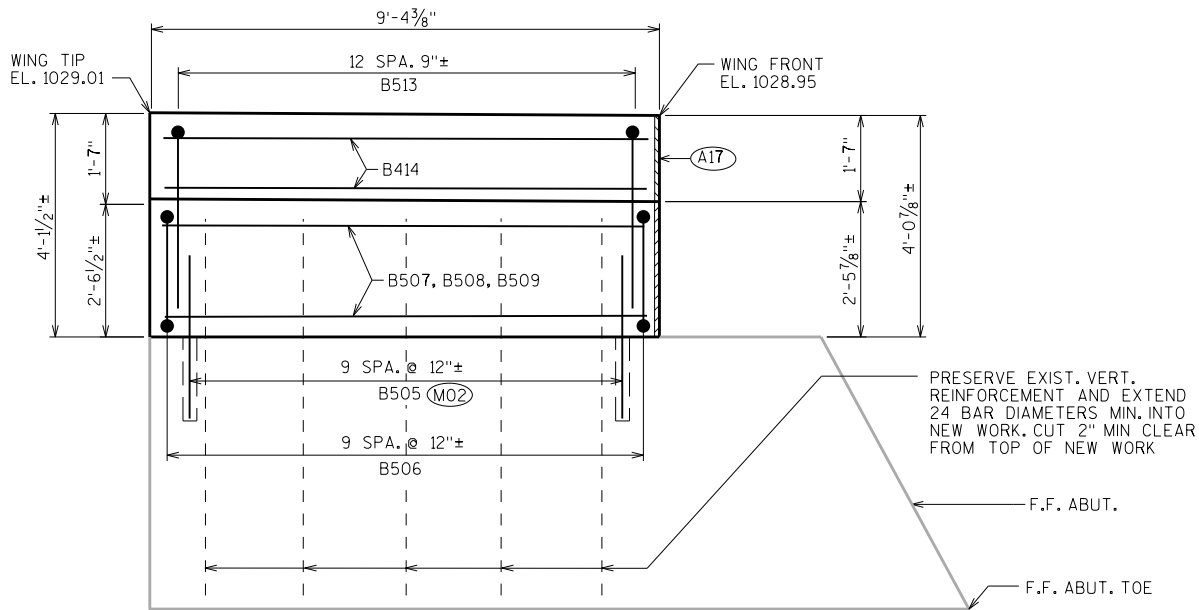
| NO.                                                                             | DATE | REVISION | BY              |
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|                                                                                 |      |          |                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-29                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| NORTH ABUTMENT                                                                  |      | SHEET 6  |                 |
|                                                                                 |      | 191      |                 |



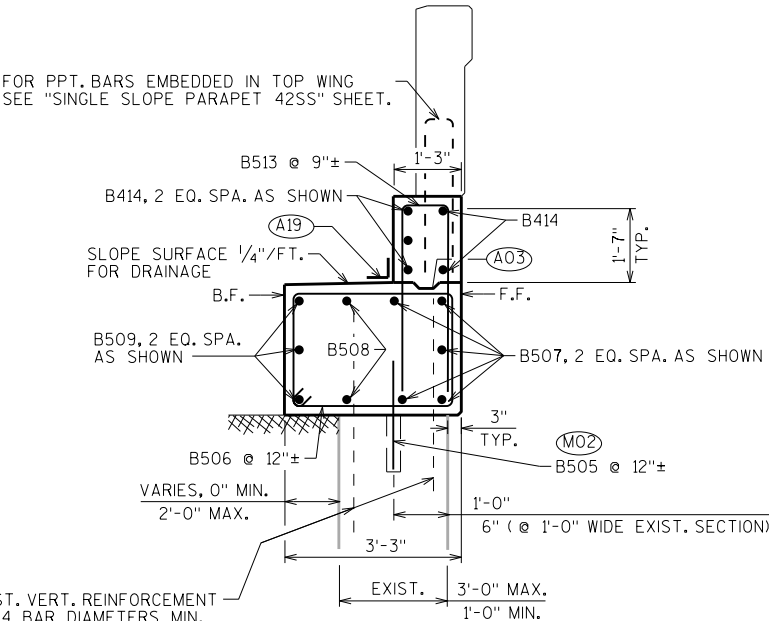
BILL OF BARS

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

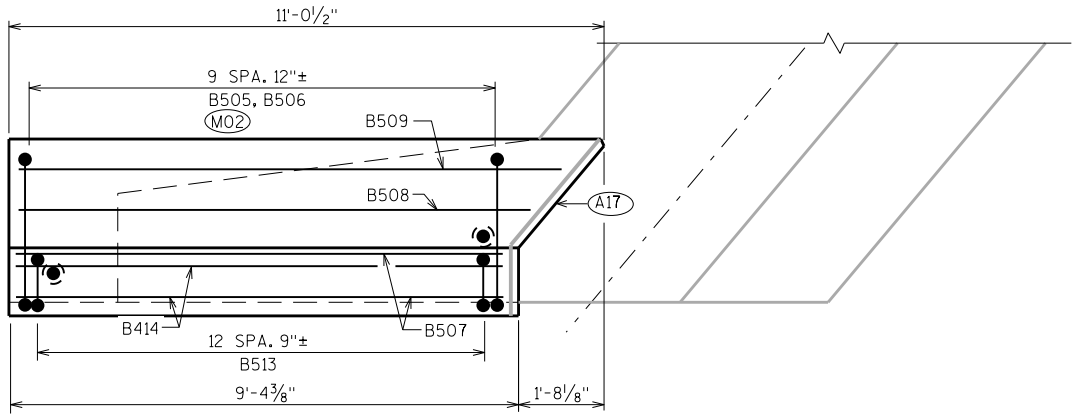
| BAR MARK | COAT | NO. REQ'D. | LENGTH  | BENT | BAR SERIES | LOCATION                      |
|----------|------|------------|---------|------|------------|-------------------------------|
| B401     | X    | 39         | 1'-4"   |      |            | BEAM SEAT-HORIZ.-BOT.         |
| B402     | X    | 7          | 0'-4"   |      |            | BEAM SEAT-HORIZ.-BOT. @ WINGS |
| B403     | X    | 1          | 38'-8"  |      |            | BEAM SEAT-LONGIT. TOP @ B.F.  |
| B404     | X    | 1          | 43'-10" |      |            | BEAM SEAT-LONGIT. TOP @ F.F.  |
| B505     | X    | 20         | 2'-0"   |      |            | LOWER WING-VERT. DOWEL        |
| B506     | X    | 21         | 10'-6"  | X    |            | LOWER WING-VERT. STIRRUP      |
| B507     | X    | 5          | 8'-11"  |      |            | LOWER WING-HORIZ.-WING 3      |
| B508     | X    | 2          | 9'-6"   |      |            | LOWER WING-HORIZ.-WING 3      |
| B509     | X    | 3          | 10'-2"  |      |            | LOWER WING-HORIZ.-WING 3      |
| B510     | X    | 5          | 10'-3"  |      |            | LOWER WING-HORIZ.-WING 4      |
| B511     | X    | 2          | 9'-6"   |      |            | LOWER WING-HORIZ.-WING 4      |
| B512     | X    | 3          | 8'-8"   |      |            | LOWER WING-HORIZ.-WING 4      |
| B513     | X    | 28         | 8'-0"   | X    |            | LOWER/UPPER WING-VERT.        |
| B414     | X    | 5          | 8'-11"  |      |            | UPPER WING-HORIZ.-WING 3      |
| B415     | X    | 5          | 10'-3"  |      |            | UPPER WING-HORIZ.-WING 4      |



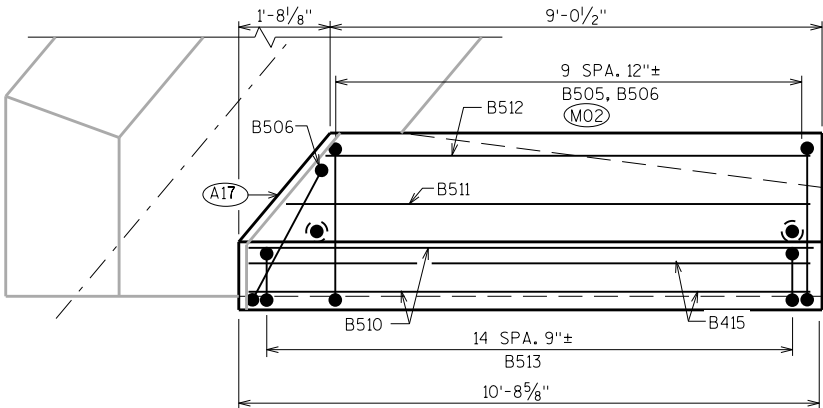
WING 3 ELEVATION



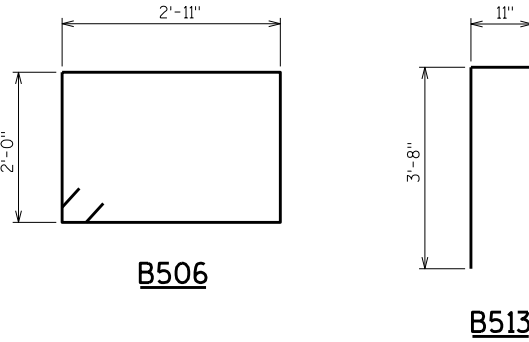
SECTION THRU WING 3



WING 3 PLAN

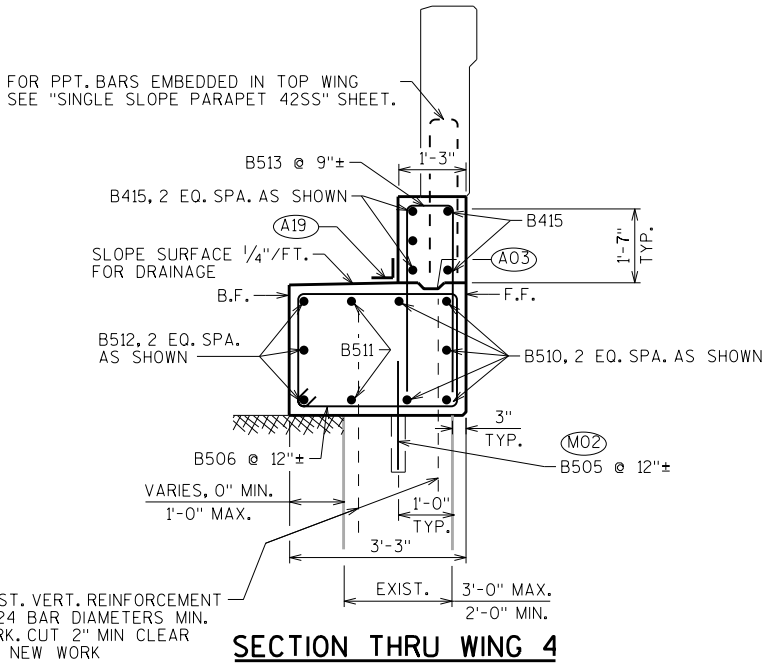


WING 4 PLAN

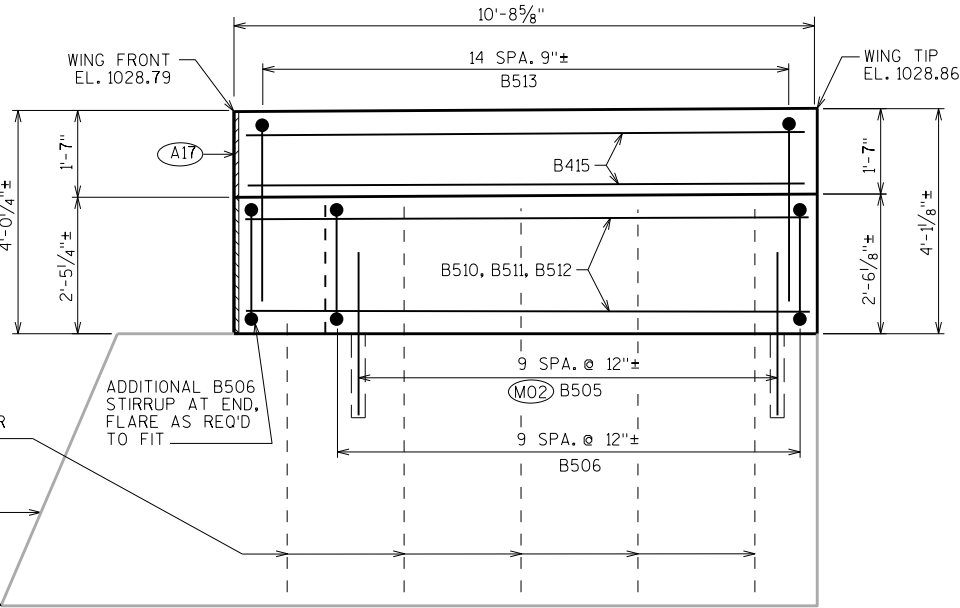


B506

B513



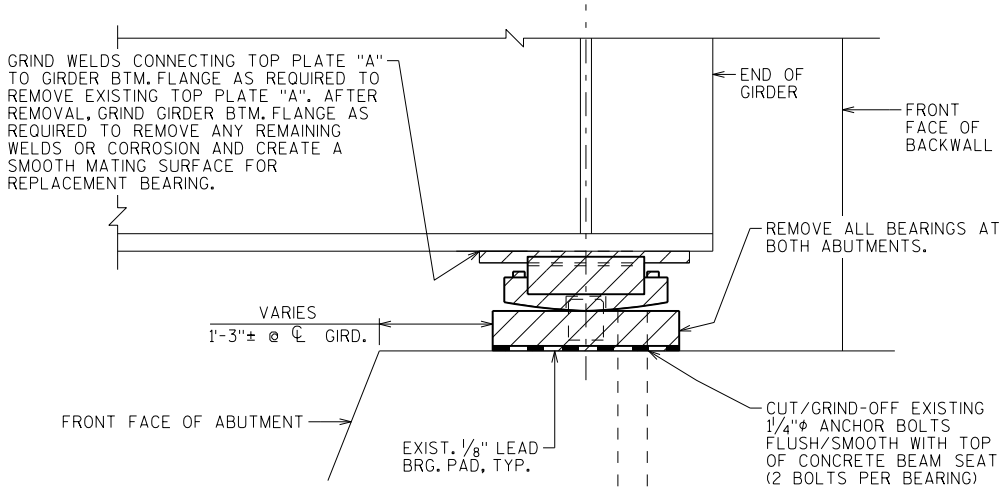
SECTION THRU WING 4



WING 4 ELEVATION

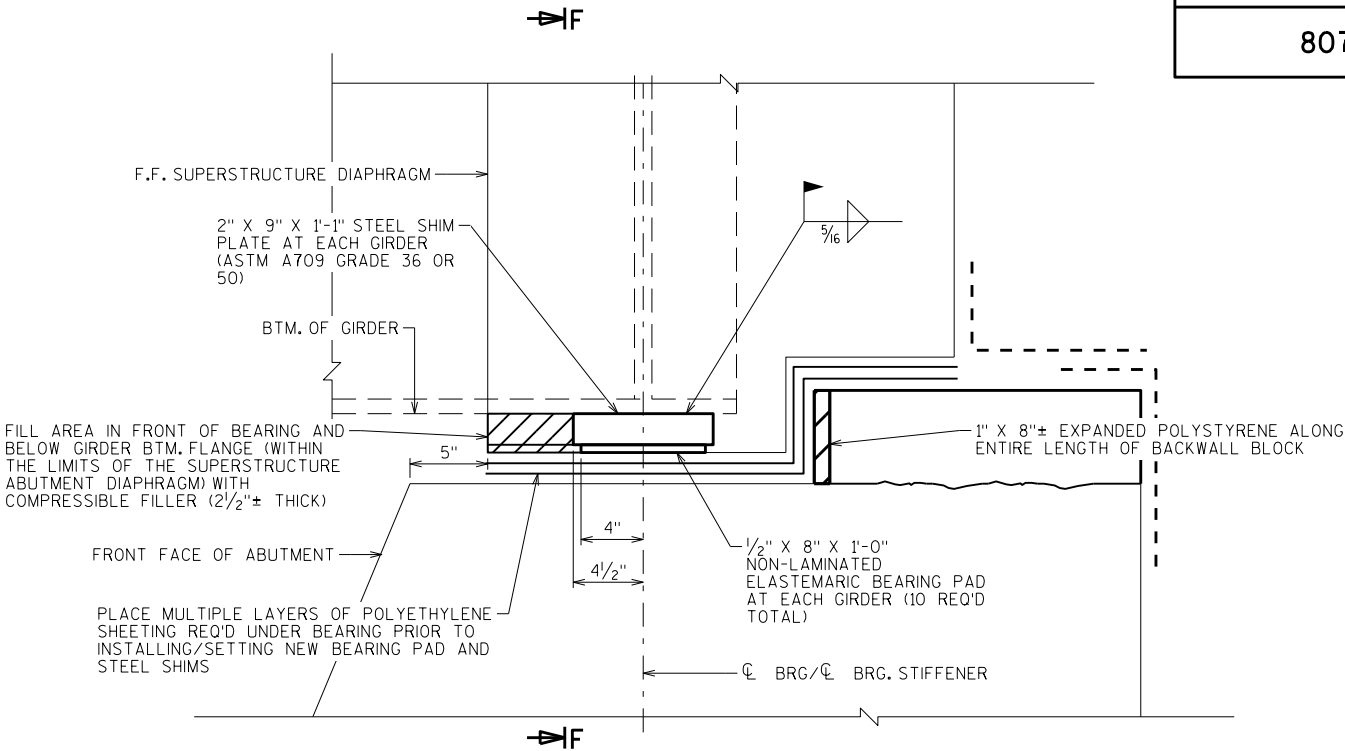
- (M02) ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE = 3 3/4".
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A17) 1" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

| NO.                                                                             | DATE | REVISION | BY              |
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|                                                                                 |      |          |                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-29                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| NORTH ABUTMENT DETAILS                                                          |      |          | SHEET 7         |
|                                                                                 |      |          | 192             |



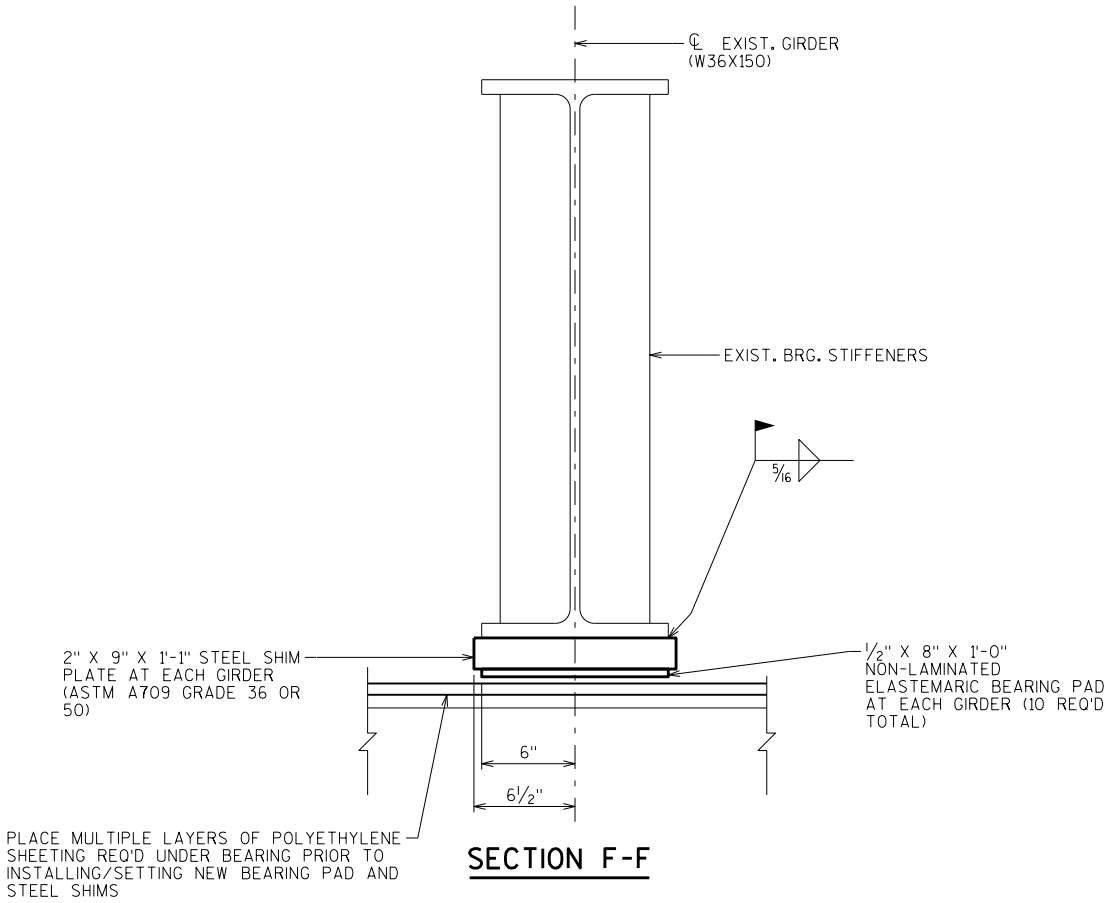
**BEARING REMOVAL DETAIL AT ABUTMENTS**

NOTE:  
REMOVAL AND DISPOSAL OF EXISTING BEARINGS AS SHOWN, INCLUDING LIFTING OF THE BRIDGE AS REQUIRED TO REMOVE AND REPLACE THE BEARINGS, SHALL BE INCLUDED IN BID ITEM "REMOVING BEARINGS B-47-29".



**BEARING REPLACEMENT DETAIL AT ABUTMENTS**

NOTE:  
PROPOSED TOTAL BEARING HEIGHT IS LESS THAN EXISTING BEARING HEIGHT (2 1/2" PROPOSED VS. 4 1/4" EXIST. @ S. ABUT & 3 3/8" EXIST. @ N. ABUT.)  
ENSURE GIRDER LIFTING DEVICE WILL ALLOW FOR THIS DIFFERENCE.  
AT EACH ABUTMENT, ALL GIRDERS SHALL BE LIFTED AND LOWERED SIMULTANEOUSLY.



**SECTION F-F**

**REPLACEMENT BEARING NOTES**

STEEL SHIM PLATES TO BE PAID FOR UNDER "STRUCTURAL STEEL CARBON" BID ITEM.

NON-LAMINATED BEARING PADS TO BE PAID FOR UNDER "BEARING PADS ELASTOMERIC NON-LAMINATED" BID ITEM.

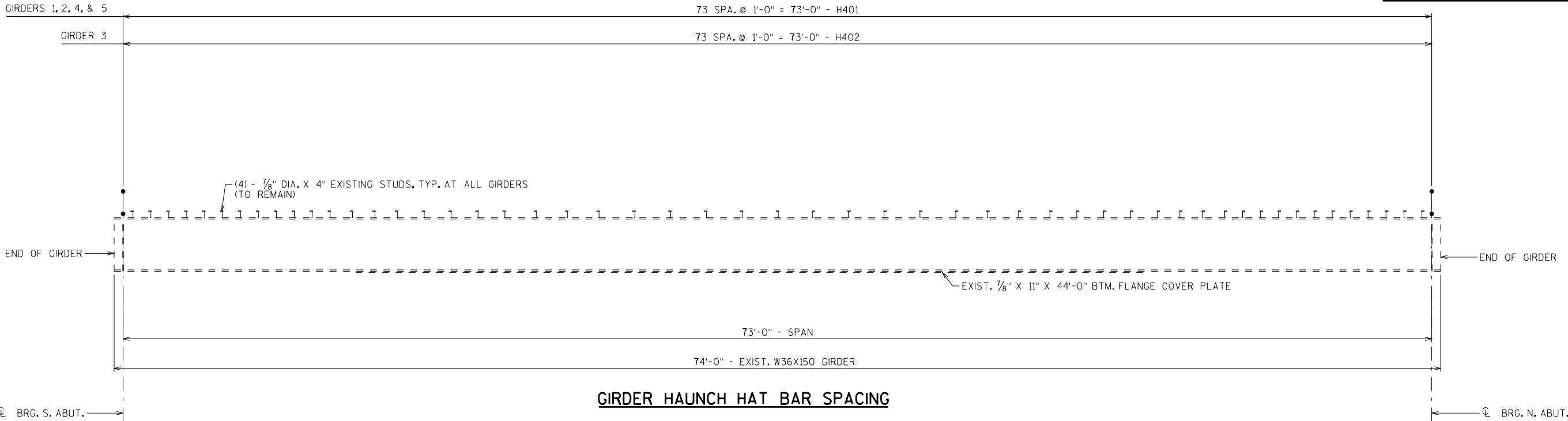
AFTER FABRICATION, SHIM PLATES SHALL RECEIVE A SHOP BLAST CLEANING CONFORMING TO SSPC-SP 10 AND BE PAINTED WITH ONE COAT OF ZINC-RICH PRIMER. SHOP PAINTING/PRIMING SHALL BE CONSIDERED INCIDENTAL TO BID-ITEM "STRUCTURAL STEEL CARBON". MASK AREAS THAT REQUIRE FIELD WELDING.

PLATE STEEL SHALL CONFORM TO ASTM A709 GRADE 36 OR 50.

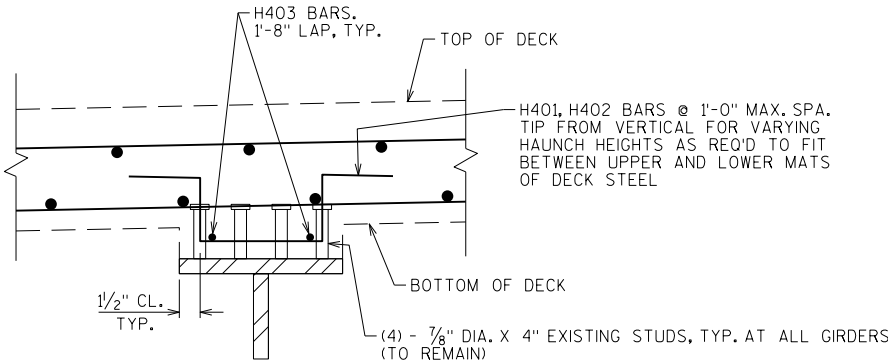
ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

|                                                                                 |      |          |                 |
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| NO.                                                                             | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-29                                                               |      |          |                 |
|                                                                                 |      | DRAWN BY | PLANS CK'D. ARC |
|                                                                                 |      | WWR      |                 |
| BEARING DETAILS                                                                 |      | SHEET 8  |                 |
|                                                                                 |      | 193      |                 |



GIRDER HAUNCH HAT BAR SPACING



GIRDER HAUNCH/HAT BAR DETAIL

|                                                                                 |      |          |             |     |
|---------------------------------------------------------------------------------|------|----------|-------------|-----|
| NO.                                                                             | DATE | REVISION |             | BY  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |             |     |
| STRUCTURE B-47-29                                                               |      |          |             |     |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. | ARC |
| HAT BAR DETAILS                                                                 |      |          | SHEET 9     |     |
|                                                                                 |      |          | 194         |     |



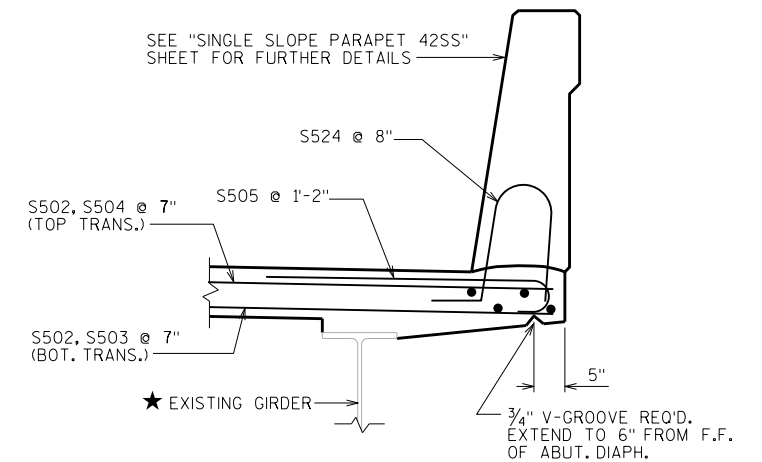


Diagram illustrating the cross-section of a bridge deck with dimensions and labels:

- 8" (Total width of the top flange)
- 8" (Width of the top flange on the left side)
- 8" (Width of the top flange on the right side)
- $4\frac{1}{8}"$  (Width of the top flange on the right side, excluding the piling notch)
- S527, S525 (Labels for the vertical reinforcement bars)
- PAVING NOTCH (Label for the notch in the deck)
- END OF DECK (Label for the end of the deck)
- B.F. ABUT. DIAPH. (Label for the bridge abutment diaphragm)

**77'-4 1/4" OUT TO OUT OF PAVING MCH**

**75'-7 3/8" END TO END OF DECK**

**73'-0" SPAN**

**48 SPA. @ 7" = 28'-0" S504 TOP TRANS. DECK REINF. (1 OF 2 SERIES)**

**80 SPA. @ 7" = 46'-8" S502 TOP TRANSVERSE DECK REINF.**

**48 SPA. @ 7" = 28'-0" S504 TOP TRANS. DECK REINF. (2 OF 2 SERIES)**

**7" 1'-5 3/8" PPT. 7" S526, 1'-9" MIN. LAP 7"**

**40° SKEW TYP.**

**CL BRG. S. ABUT. STA. 204+58.56**

**END OF PROP. DECK STA. 204+57.25**

**CL/R USH 63**

**204+50**

**205+00**

**205+50**

**EXISTING STEEL GIRDERS TO REMAIN**

**EXISTING IN-SPAN STEEL DIAPHRAGMS TO REMAIN (TYP.)**

**END OF PROP. DECK STA. 205+32.86**

**CL BRG. N. ABUT. STA. 205+31.56**

**PLAN OF END DIAPH. (SHOWING SW & NE CORNER BARS)**

**CL GIRDER**

**END OF DECK**

**B.F. DIAPH.**

**F.F. DIAPH.**

**S406, S514, S515**

**S406, S514, S516**

**S618**

**S417**

**BENCHMARK CAP (WHEN PROVIDED), SEE PARAPET SHEET FOR LOCATION.**

**7" S526, 1'-9" MIN. LAP 1'-5 3/8" PPT. 7"**

**S505 TOP OVERHANG STEEL (PLACE W/ TOP TRANSVERSE DECK REINFORCEMENT), TYP. BOTH SIDES**

**1'-2"**

**48 SPA. @ 7" = 28'-0" S503 BOT. TRANS. DECK REINF. (1 OF 2 SERIES)**

**79 SPA. @ 7" = 46'-1" S502 BOT. TRANSVERSE DECK REINF.**

**48 SPA. @ 7" = 28'-0" S503 BOT. TRANS. DECK REINF. (2 OF 2 SERIES)**

**7" 7" 7"**

**PLAN OF END DIAPH. (SHOWING SE & NW CORNER BARS)**

**END OF DECK**

**B.F. DIAPH.**

**F.F. DIAPH.**

**CL GIRDER**

**S623**

**S406, S520, S522**

**S417**

**DECK REPLACEMENT PLAN**

**NO. DATE**

**DEF. STRUC**

**STRUCT**

**SUPERS**

|                                                                                        |      |                 |                    |
|----------------------------------------------------------------------------------------|------|-----------------|--------------------|
|                                                                                        |      |                 |                    |
| NO.                                                                                    | DATE | REVISION        | BY                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br><b>STRUCTURES DESIGN SECTION</b> |      |                 |                    |
| <b>STRUCTURE B-47-29</b>                                                               |      |                 |                    |
|                                                                                        |      | DRAWN BY<br>WWR | PLANS CK'D.<br>ARC |
| <b>SUPERSTRUCTURE</b>                                                                  |      | SHEET 10        |                    |
|                                                                                        |      | 195             |                    |

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

BAR SERIES TABLE

| BAR MARK | NO. REQ'D.    | LENGTH          |
|----------|---------------|-----------------|
| S503     | 2 SERIES OF 2 | 1'-4" TO 34'-8" |
| S504     | 2 SERIES OF 2 | 1'-0" TO 34'-4" |

BUNDLE AND TAG EACH SERIES SEPARATELY.

DEFLECTION DIAGRAM

| SPAN |            | 1/10 | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 |
|------|------------|------|------|------|------|------|------|------|------|------|
| 1    | CONC. ONLY | 0.6  | 1.1  | 1.5  | 1.7  | 1.8  | 1.7  | 1.5  | 1.1  | 0.6  |

SHOWING DEADLOAD DEFLECTION ONLY. DEFLECTIONS ARE GIVEN TO NEAREST 0.1 INCH. 1/10 POINTS ARE ALONG CL OF THE GIRDER.

BILL OF BARS

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

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION                               |
|----------|------|------------|--------|------|------------|----------------------------------------|
| S401     | X    | 206        | 38'-6" |      |            | DECK-LONGIT. TOP & BOT.                |
| S502     | X    | 161        | 36'-2" |      |            | DECK-TRANSVERSE TOP & BOT.             |
| S503     | X    | 98         | 18'-0" | ▲    |            | DECK-TRANSVERSE BOT.                   |
| S504     | X    | 98         | 17'-8" | ▲    |            | DECK-TRANSVERSE TOP                    |
| S505     | X    | 128        | 4'-8"  | X    |            | DECK-TRANSVERSE OVERHANG               |
| S406     | X    | 76         | 5'-0"  | X    |            | ABUT. DIAPH.-VERT. U-BAR-BOT.          |
| S407     | X    | 16         | 4'-11" |      |            | ABUT. DIAPH.-HORIZ.-BOT.               |
| S508     | X    | 168        | 6'-3"  | X    |            | ABUT. DIAPH.-VERT. STIRRUP             |
| S509     | X    | 84         | 5'-4"  | X    |            | ABUT. DIAPH.-VERT. U-BAR               |
| S610     | X    | 64         | 5'-10" |      |            | ABUT. DIAPH.-HORIZ.                    |
| S611     | X    | 24         | 25'-0" |      |            | ABUT. DIAPH.-HORIZ.-B.F.               |
| S412     | X    | 4          | 2'-1"  |      |            | ABUT. DIAPH.-HORIZ.-BOT.-SE & NW       |
| S413     | X    | 4          | 1'-8"  |      |            | ABUT. DIAPH.-HORIZ.-BOT.-SW & NE       |
| S514     | X    | 4          | 8'-8"  | X    |            | ABUT. DIAPH.-VERT. STIRRUP-END-SW & NE |
| S515     | X    | 2          | 4'-5"  | X    |            | ABUT. DIAPH.-VERT. U-BAR-END-SW & NE   |
| S516     | X    | 2          | 5'-3"  | X    |            | ABUT. DIAPH.-VERT. U-BAR-END-SW & NE   |
| S417     | X    | 12         | 3'-8"  |      |            | ABUT. DIAPH.-VERT.-END                 |
| S618     | X    | 8          | 5'-3"  | X    |            | ABUT. DIAPH.-HORIZ. U-BAR-SW & NE      |
| S519     | X    | 2          | 9'-10" | X    |            | ABUT. DIAPH.-VERT. STIRRUP-END-SW & NE |
| S520     | X    | 2          | 10'-0" | X    |            | ABUT. DIAPH.-VERT. STIRRUP-END-SE & NW |
| S521     | X    | 2          | 4'-11" | X    |            | ABUT. DIAPH.-VERT. U-BAR-END-SW & NE   |
| S522     | X    | 2          | 5'-11" | X    |            | ABUT. DIAPH.-VERT. U-BAR-END-SE & NW   |
| S623     | X    | 8          | 6'-9"  | X    |            | ABUT. DIAPH.-HORIZ. U-BAR-SE & NW      |
| S524     | X    | 224        | 4'-5"  | X    |            | DECK/PPT.-VERT.                        |
| S525     | X    | 232        | 6'-8"  | X    |            | PPT.-VERT.                             |
| S526     | X    | 32         | 39'-5" |      |            | PPT.-HORIZ.                            |
| S527     | X    | 8          | 5'-10" | X    |            | DECK/PPT.-VERT. @ PAV. NOTCH           |
| H401     | X    | 296        | 2'-9"  | X    |            | GIRS. 1,2,4,5 TOP @ HAT BARS-VERT.     |
| H402     | X    | 74         | 2'-11" | X    |            | GIR. 3 TOP @ HAT BARS-VERT.            |
| H403     | X    | 20         | 37'-5" |      |            | GIRDER TOP @ HAT BARS-HORIZ.           |

PART LONGIT. SECTION

\* DIMENSION IS TAKEN NORMAL TO CL SUBSTRUCTURE UNITS.  
\*\* BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO CL GIRDERS

BEARING PAD DETAIL

TOP OF DECK ELEVATIONS

|                | CL. BRG. S. ABUT. | 1/10    | 2/10    | 3/10    | 4/10    | 5/10    | 6/10    | 7/10    | 8/10    | 9/10    | CL. BRG. N. ABUT. |
|----------------|-------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| W. GUTTER      | 1028.54           | 1028.58 | 1028.62 | 1028.66 | 1028.70 | 1028.74 | 1028.78 | 1028.82 | 1028.86 | 1028.90 | 1028.94           |
| GIRD. 1        | 1028.56           | 1028.60 | 1028.64 | 1028.68 | 1028.72 | 1028.76 | 1028.80 | 1028.84 | 1028.88 | 1028.92 | 1028.96           |
| GIRD. 2        | 1028.68           | 1028.72 | 1028.76 | 1028.80 | 1028.84 | 1028.88 | 1028.92 | 1028.96 | 1029.00 | 1029.04 | 1029.08           |
| GIRD. 3/PGL/CL | 1028.80           | 1028.84 | 1028.88 | 1028.92 | 1028.96 | 1029.00 | 1029.04 | 1029.08 | 1029.12 | 1029.16 | 1029.20           |
| GIRD. 4        | 1028.61           | 1028.65 | 1028.69 | 1028.73 | 1028.77 | 1028.81 | 1028.85 | 1028.89 | 1028.93 | 1028.97 | 1029.01           |
| GIRD. 5        | 1028.42           | 1028.46 | 1028.50 | 1028.54 | 1028.58 | 1028.62 | 1028.66 | 1028.70 | 1028.74 | 1028.78 | 1028.82           |
| E. GUTTER      | 1028.38           | 1028.42 | 1028.46 | 1028.50 | 1028.54 | 1028.58 | 1028.62 | 1028.66 | 1028.70 | 1028.74 | 1028.78           |

CONCRETE HAUNCH DETAILS

TO DETERMINE 'T': AFTER DECK IS REMOVED & BEARINGS REPLACED, ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT CENTERLINE OF BEARINGS, AND AT 0.1 POINTS.

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

- SLAB THICKNESS (8")  
= 'T' VALUE FOR SETTING HAUNCH

NOTE: AN AVERAGE HAUNCH ('T') OF 3.2" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

H401, H402

| NO.                                                                             | DATE | REVISION       | BY |
|---------------------------------------------------------------------------------|------|----------------|----|
|                                                                                 |      |                |    |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                |    |
| STRUCTURE B-47-29                                                               |      |                |    |
| DRAWN BY WWR                                                                    |      | PLANS CKD. ARC |    |
| SUPERSTRUCTURE DETAILS                                                          |      | SHEET 11       |    |
|                                                                                 |      | 196            |    |

BILL OF BARS

FOR ABUTMENT PARAPETS

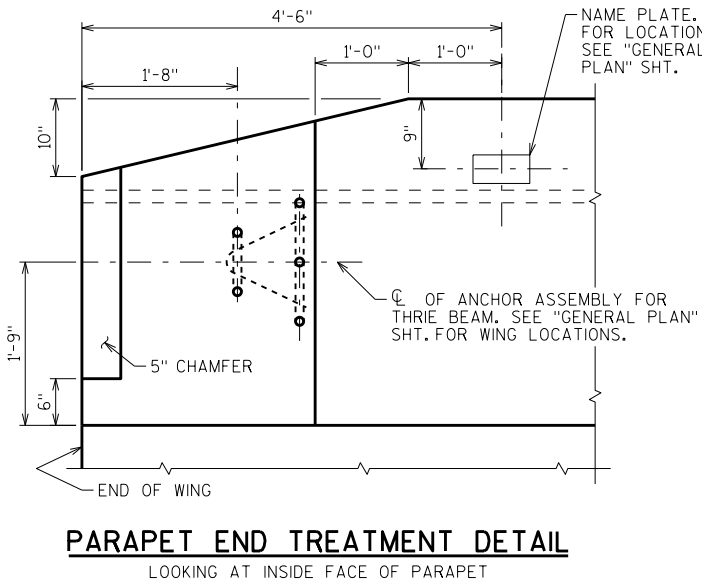
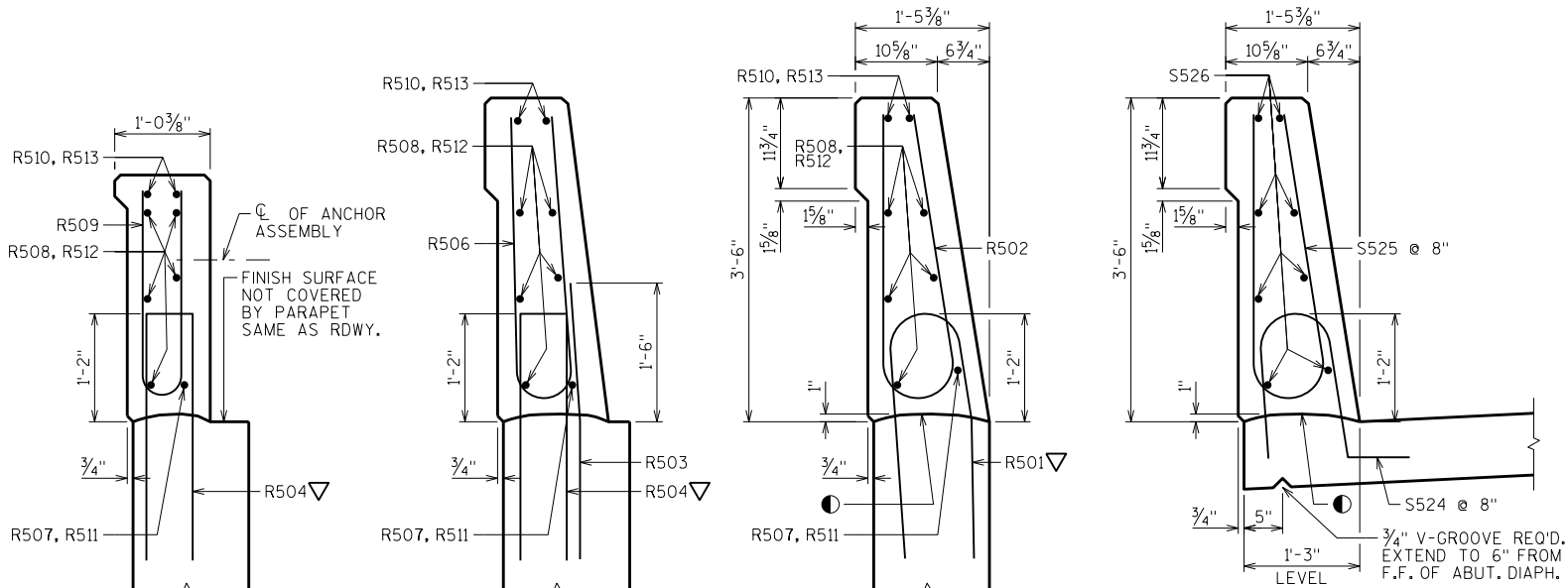
| BAR MARK | COUNT | WINGS 1 & 3 | WINGS 2 & 4 | LENGTH | BENT | BAR SERIES | LOCATION       |
|----------|-------|-------------|-------------|--------|------|------------|----------------|
| R501     | X     | 4           | 8           | 5'-10" | X    |            | PARAPET VERT.  |
| R502     | X     | 4           | 8           | 6'-8"  | X    |            | PARAPET VERT.  |
| R503     | X     | 24          | 24          | 3'-0"  | X    |            | PARAPET VERT.  |
| R504     | X     | 34          | 34          | 5'-7"  | X    |            | PARAPET VERT.  |
| R505     | X     | 10          | 10          | 6'-5"  | X    |            | PARAPET VERT.  |
| R506     | X     | 12          | 12          | 6'-6"  | X    |            | PARAPET VERT.  |
| R507     | X     | 2           | —           | 8'-11" | X    |            | PARAPET HORIZ. |
| R508     | X     | 10          | —           | 8'-11" | X    |            | PARAPET HORIZ. |
| R509     | X     | 12          | 12          | 5'-5"  | X    | ▲          | PARAPET VERT.  |
| R510     | X     | 2           | —           | 8'-11" | X    |            | PARAPET HORIZ. |
| R511     | X     | —           | 2           | 10'-3" | X    |            | PARAPET HORIZ. |
| R512     | X     | —           | 10          | 10'-3" |      |            | PARAPET HORIZ. |
| R513     | X     | —           | 2           | 10'-3" | X    |            | PARAPET HORIZ. |

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

BAR SERIES TABLE

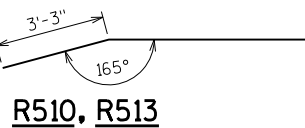
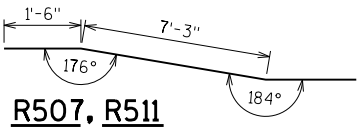
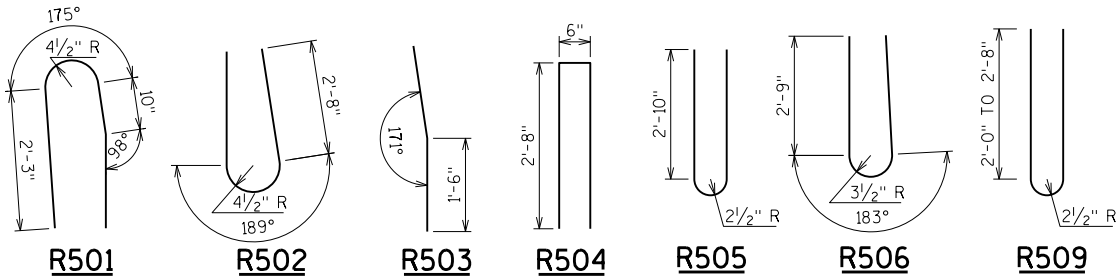
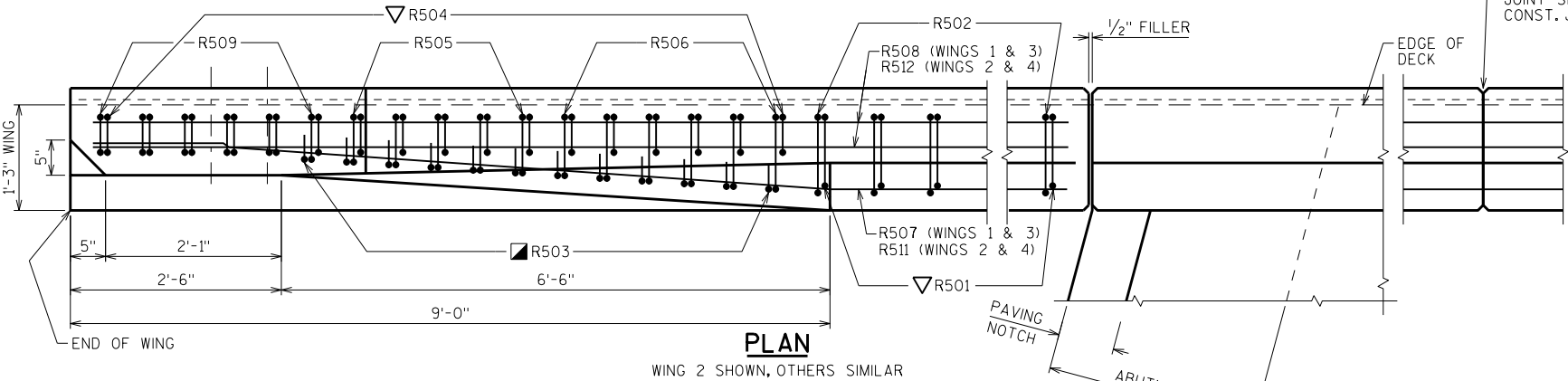
| BAR MARK | NO. REQ'D     | LENGTH         |
|----------|---------------|----------------|
| R509     | 4 SERIES OF 6 | 4'-9" TO 6'-1" |

BUNDLE AND TAG EACH SERIES SEPARATELY.



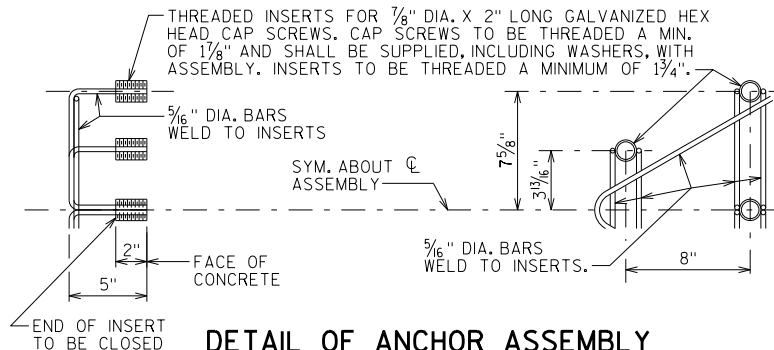
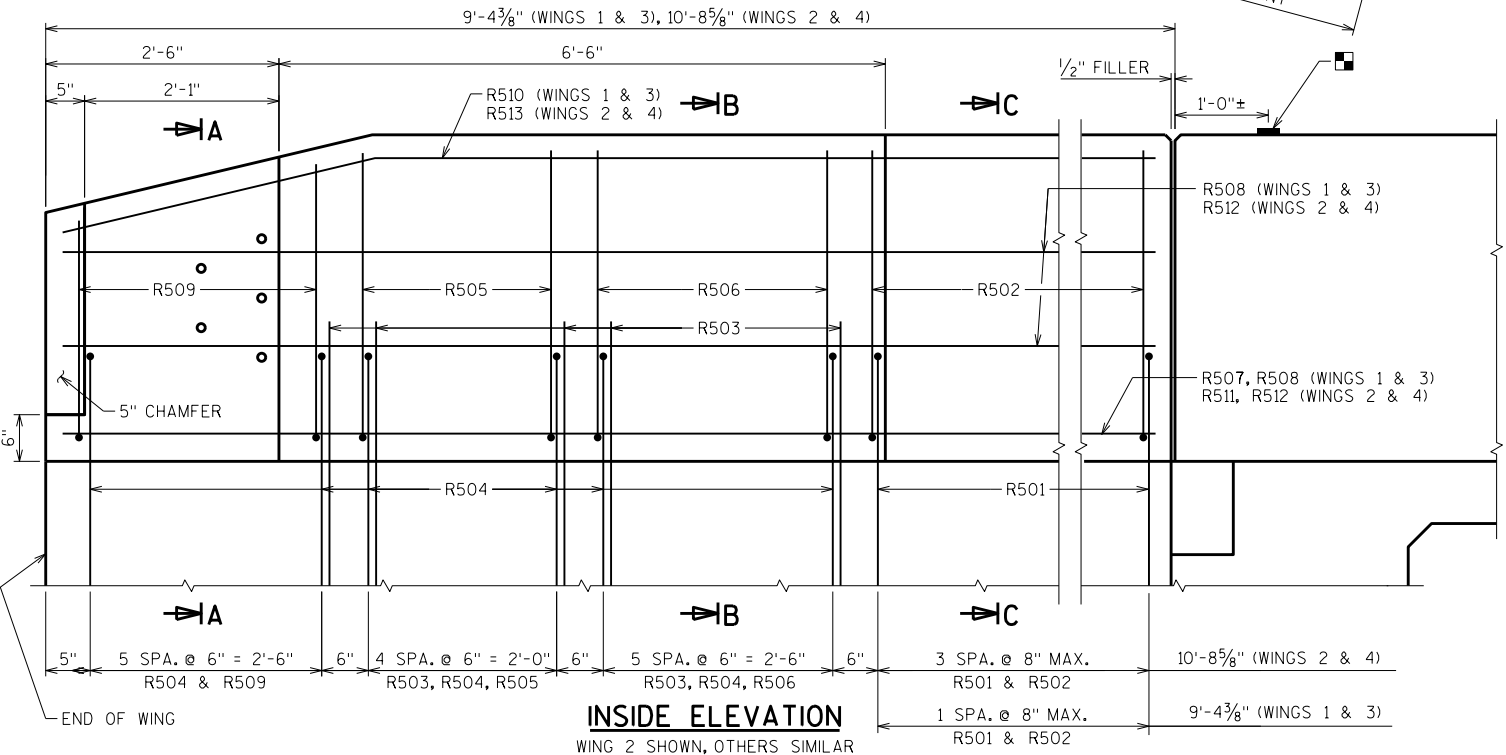
PARAPET END TREATMENT DETAIL  
LOOKING AT INSIDE FACE OF PARAPET

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



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

- CONST. JOINT - STRIKE OFF AS SHOWN
- R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- ▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



DETAIL OF ANCHOR ASSEMBLY

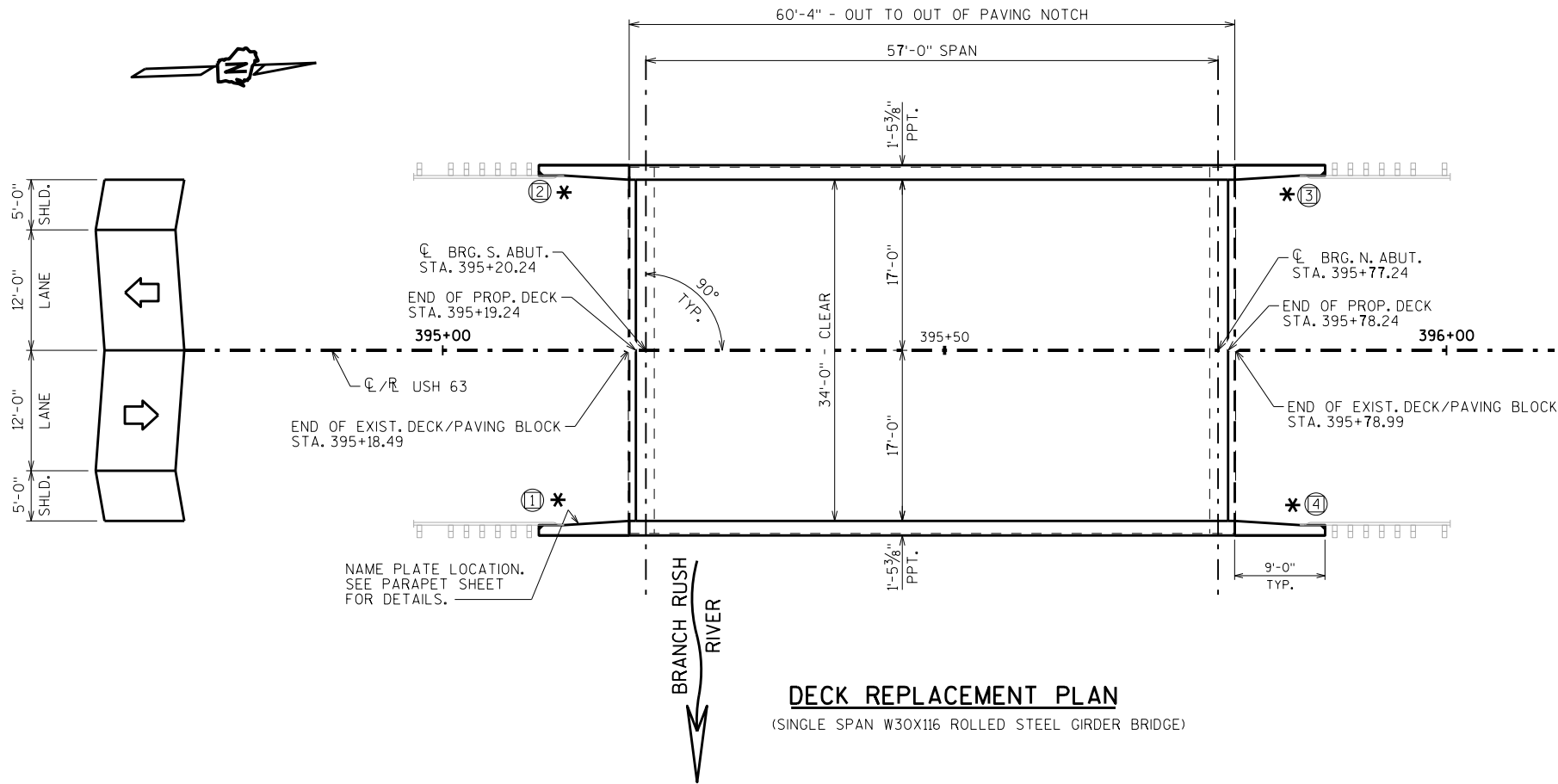
NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

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

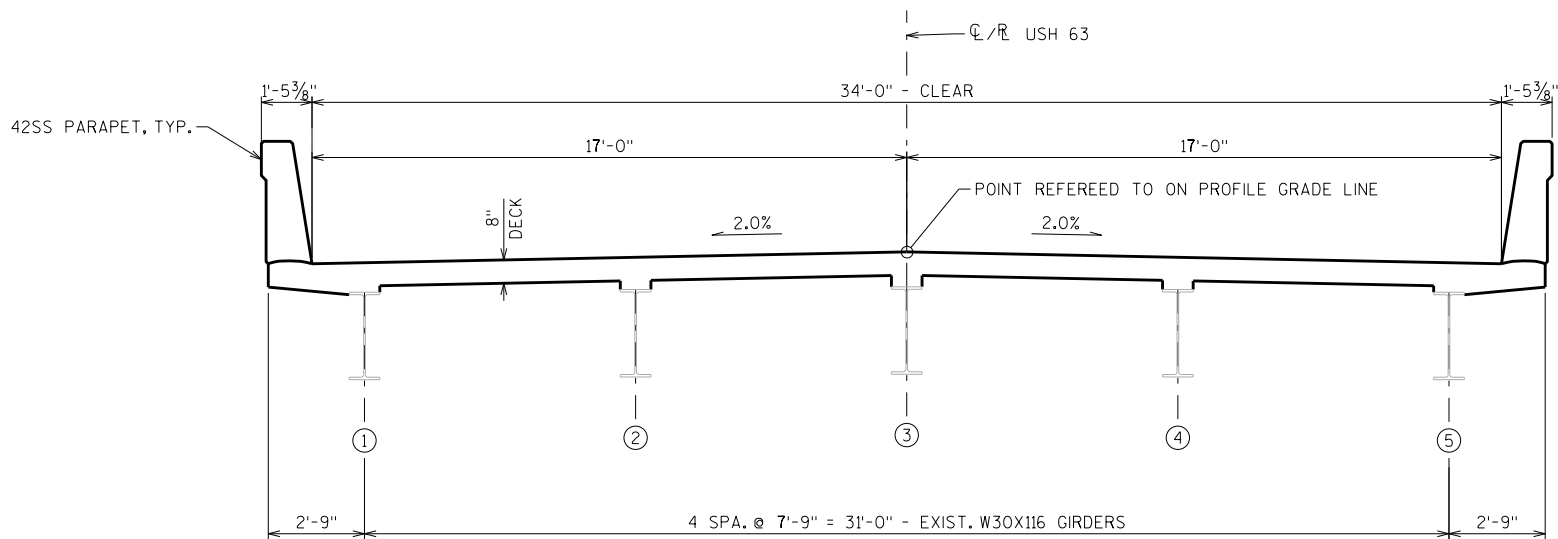
| NO.                                                                             | DATE | REVISION        | BY             |
|---------------------------------------------------------------------------------|------|-----------------|----------------|
|                                                                                 |      |                 |                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |                |
| STRUCTURE B-47-29                                                               |      |                 |                |
| DRAWN BY                                                                        |      | WWR             | PLANS CKD. ARC |
| SINGLE SLOPE<br>PARAPET 42SS                                                    |      | SHEET 12<br>197 |                |

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

Ⓢ INDICATES WING NUMBER



**DECK REPLACEMENT PLAN**  
(SINGLE SPAN W30X116 ROLLED STEEL GIRDER BRIDGE)



**PROPOSED SECTION THRU BRIDGE**

(LOOKING NORTH)  
Ⓢ INDICATES GIRDER NUMBER

**DESIGN DATA**

**LIVE LOAD:**  
INVENTORY RATING: HS-15  
OPERATING RATING: HS- 25  
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 190 (KIPS)

**MATERIAL PROPERTIES:**  
CONCRETE MASONRY: \_\_\_\_\_ f'c = 4,000 P.S.I.  
BAR STEEL REINFORCEMENT: \_\_\_\_\_ fy = 60,000 P.S.I.  
GRADE 60  
STRUCTURAL STEEL CARBON \_\_\_\_\_ fy = 36,000 P.S.I.  
GRADE 36

**TRAFFIC VOLUME**

**FEATURE ON (USH 63)**  
ADT = 6200 (2037)  
R.D.S. = 55 M.P.H.

**STRUCTURE DESIGN CONTACTS:**  
CHRISTOPHER DOLL (608) 266-3229  
KYLE BUSCH (608) 267-0465

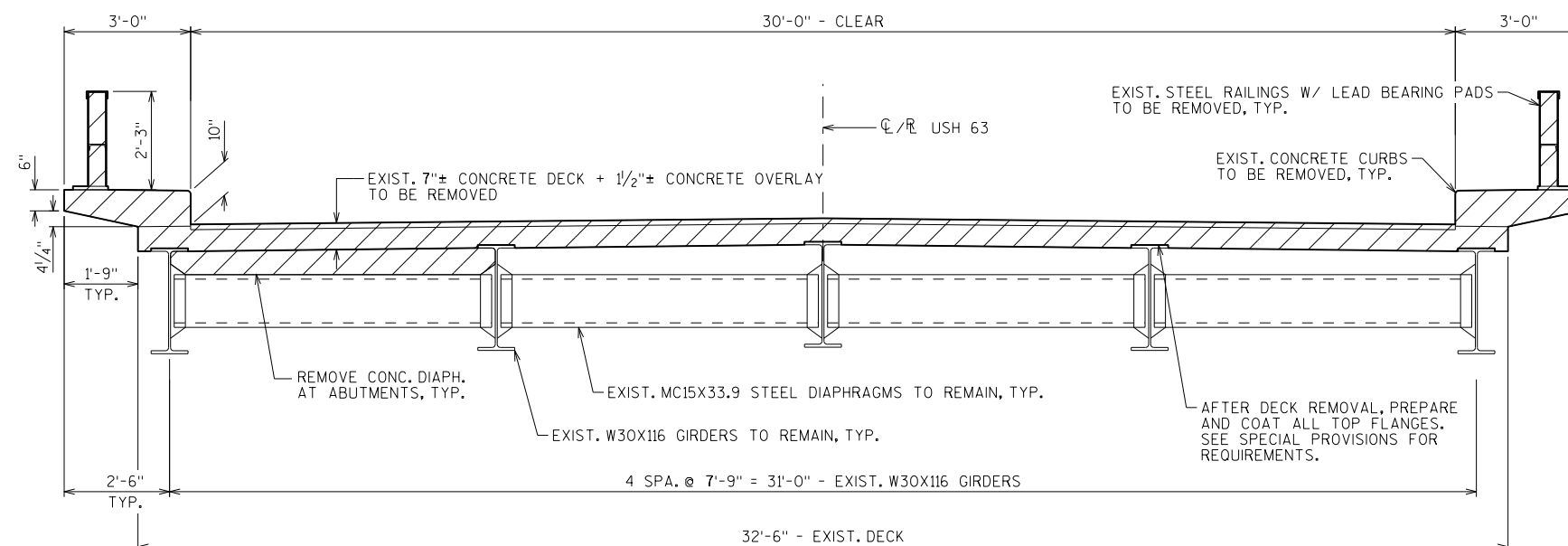
**LIST OF DRAWINGS**

1. GENERAL PLAN - DECK REPLACEMENT
2. NOTES & QUANTITIES
3. REMOVAL DETAILS AT ABUTMENTS
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. BEARING DETAILS
9. SHEAR STUDS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. SINGLE SLOPE PARAPET 42SS

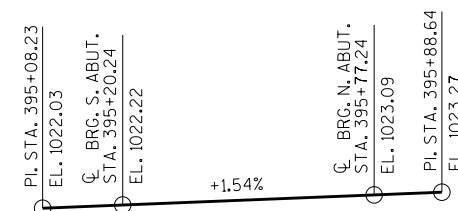
|                                                                                                                   |        |                |               |
|-------------------------------------------------------------------------------------------------------------------|--------|----------------|---------------|
| NO.                                                                                                               | DATE   | REVISION       | BY            |
|  <b>BUREAU OF STRUCTURES</b> |        |                |               |
| ACCEPTED                                                                                                          |        | KHB 4/28/23    |               |
| CHIEF STRUCTURES DESIGN ENGINEER                                                                                  |        | DATE           |               |
| <b>STRUCTURE B-47-30</b>                                                                                          |        |                |               |
| USH 63 OVER BRANCH RUSH RIVER                                                                                     |        |                |               |
| COUNTY                                                                                                            | PIERCE | TOWN           | MARTELL       |
| DESIGN SPEC. REHABILITATION-N/A                                                                                   |        |                |               |
| DESIGNED BY                                                                                                       | CAD    | DESIGNED CK'D. | ARC           |
| DRAWN BY                                                                                                          | WWR    | PLANS CK'D.    | ARC           |
| <b>GENERAL PLAN-DECK REPLACEMENT</b>                                                                              |        |                | SHEET 1 OF 12 |
|                                                                                                                   |        |                | 198           |

| BID ITEM NUMBER | BID ITEMS                                               | UNIT | SUPER. | SOUTH ABUT. | NORTH ABUT. | TOTALS         |
|-----------------|---------------------------------------------------------|------|--------|-------------|-------------|----------------|
| 203.0260        | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-47-30 | EACH | —      | —           | —           | 1              |
| 206.1001        | EXCAVATION FOR STRUCTURES BRIDGES B-47-30               | EACH | —      | —           | —           | 1              |
| 210.1500        | BACKFILL STRUCTURE TYPE A                               | TON  | —      | 53          | 53          | 106            |
| 502.0100        | CONCRETE MASONRY BRIDGES                                | CY   | 91.5   | 9.7         | 9.7         | 111            |
| 502.3200        | PROTECTIVE SURFACE TREATMENT                            | SY   | 236    | —           | —           | 236            |
| 502.3210        | PIGMENTED SURFACE SEALER                                | SY   | 60     | 9           | 9           | 78             |
| 502.4205        | ADHESIVE ANCHORS NO.5 BAR                               | EACH | —      | 20          | 20          | 40             |
| 505.0600        | BAR STEEL REINFORCEMENT HS COATED STRUCTURES            | LB   | 19,430 | 1380        | 1390        | 22,200         |
| 506.0105        | STRUCTURAL STEEL CARBON                                 | LB   | —      | 370         | 370         | 740            |
| 506.2605        | BEARING PADS ELASTOMERIC NON-LAMINATED                  | EACH | —      | 5           | 5           | 10             |
| 506.3020        | WELDED STUD SHEAR CONNECTORS 7/8X7-INCH                 | EACH | 528    | —           | —           | 528            |
| 506.3025        | WELDED STUD SHEAR CONNECTORS 7/8X8-INCH                 | EACH | 132    | —           | —           | 132            |
| 506.7050.S      | REMOVING BEARINGS B-47-30                               | EACH | —      | 5           | 5           | 10             |
| 516.0500        | RUBBERIZED MEMBRANE WATERPROOFING                       | SY   | —      | 15          | 16          | 31             |
| 517.0901.S      | PREPARATION AND COATING OF TOP FLANGES B-47-30          | EACH | —      | —           | —           | 1              |
| 614.0150        | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD            | EACH | —      | 2           | 2           | 4              |
| SPV.0180        | ABUTMENT SEAT CLEANING AND SEALING                      | SY   | —      | 9           | 9           | 18             |
|                 | NON-BID ITEMS                                           |      |        |             |             |                |
|                 | FILLER                                                  | SIZE | —      | —           | —           | 1/2", 3/4", 1" |
|                 | POLYSTYRENE                                             | SIZE |        |             |             | 1"             |

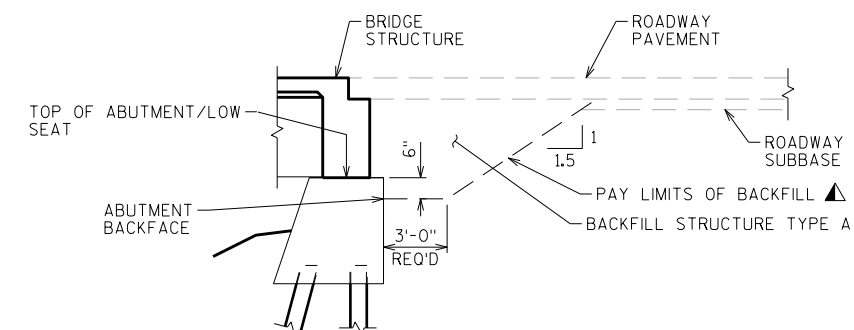
THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1960.



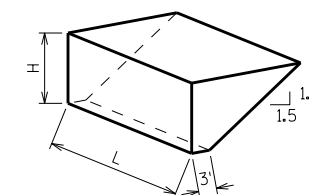
NOTE: ALL REMOVAL SHOWN TO BE INCLUDED IN BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-47-30"



## PROPOSED PROFILE GRADE LINE - USH 63



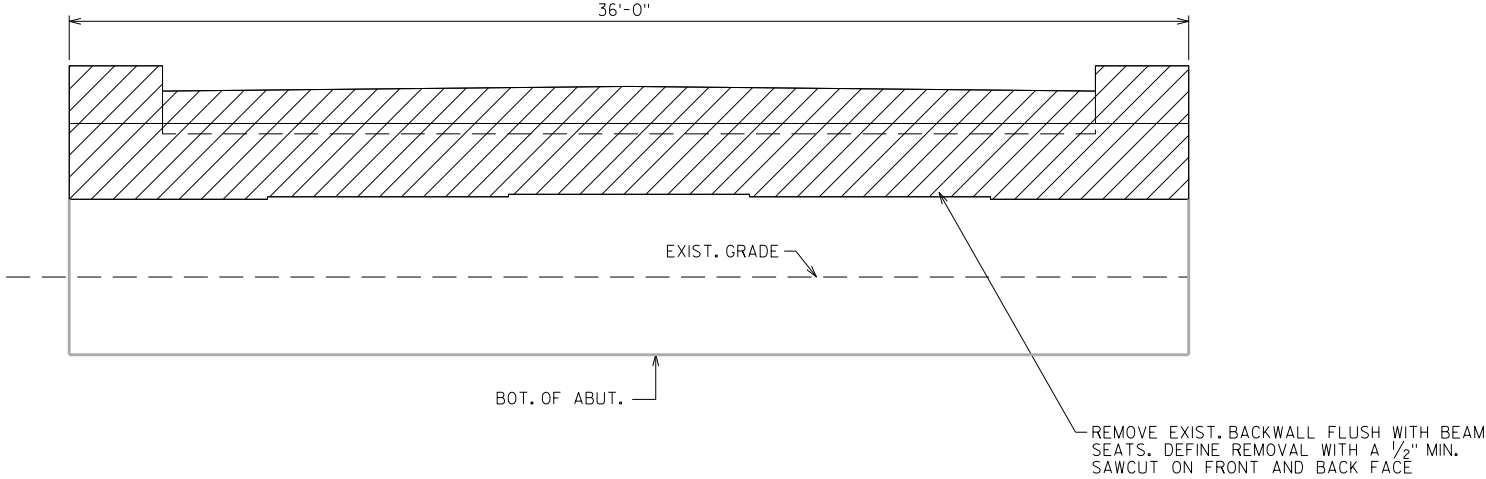
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.



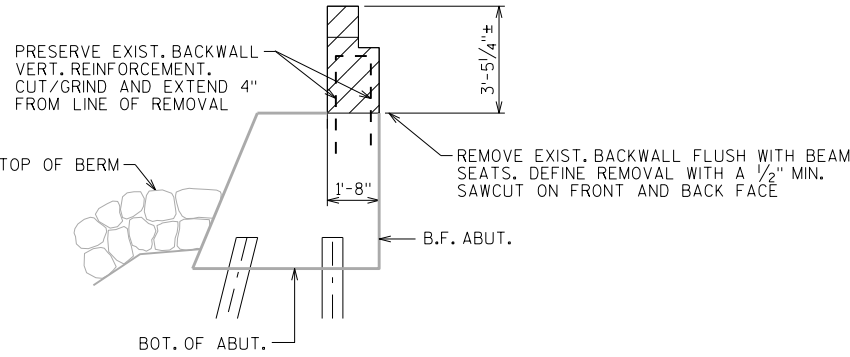
L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)  
H = AVERAGE ABUTMENT FILL HEIGHT (FT)  
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS  
AND 1.00 FOR TON BID ITEMS)  
 $V_{CF} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H)$   
 $V_{CY} = V_{CF}(EF)/27$   
 $V_{TON} = V_{CY}(2.0)$

|                                                                                        |      |          |                       |
|----------------------------------------------------------------------------------------|------|----------|-----------------------|
| NO.                                                                                    | DATE | REVISION | BY                    |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br><b>STRUCTURES DESIGN SECTION</b> |      |          |                       |
| <b>STRUCTURE B-47-30</b>                                                               |      |          |                       |
|                                                                                        |      | DRAWN BY | PLANS CKD. <b>ARC</b> |
| <b>NOTES &amp;<br/>QUANTITIES</b>                                                      |      | WWR      | SHEET 2               |
|                                                                                        |      | 199      |                       |

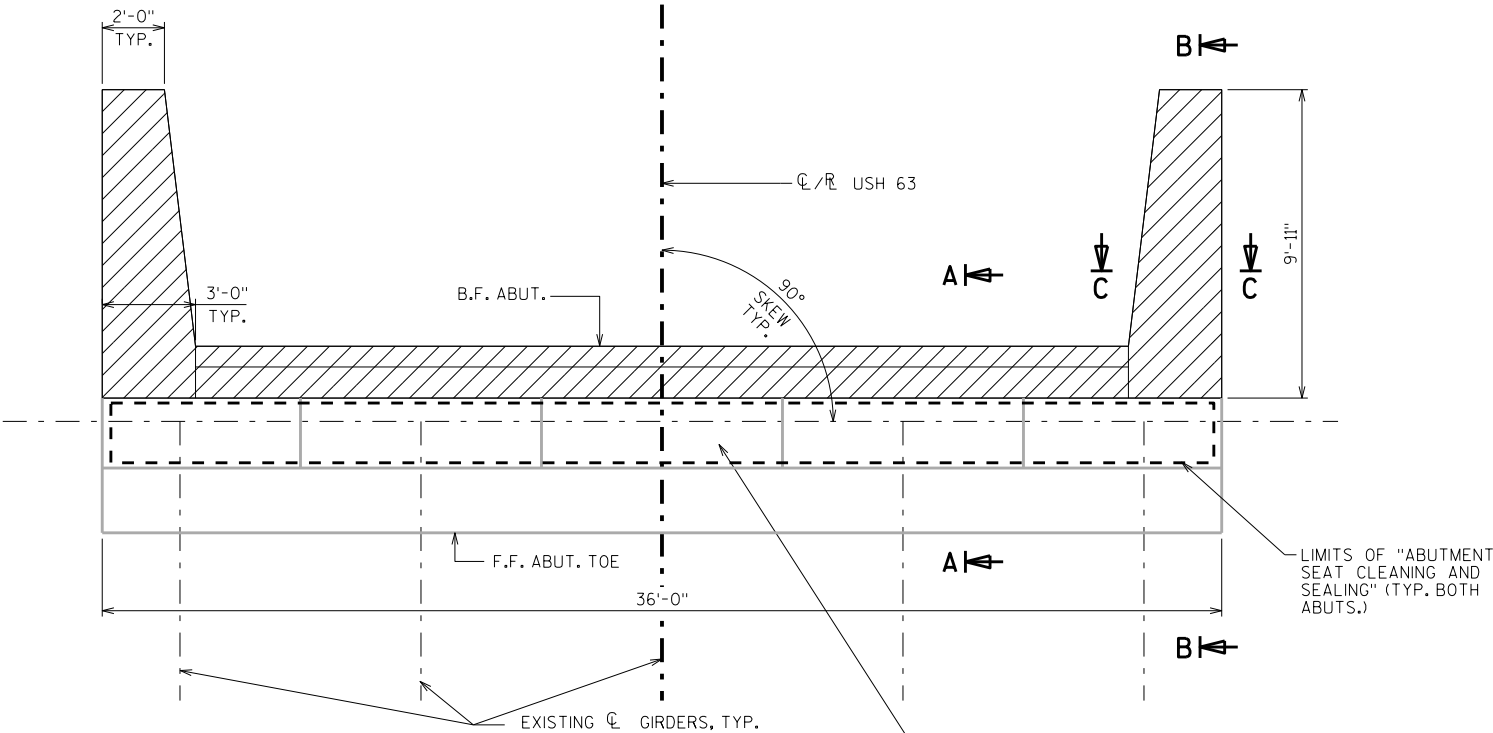




**ABUTMENT REMOVAL ELEVATION**  
LOOKING AT F.F. ABUT.

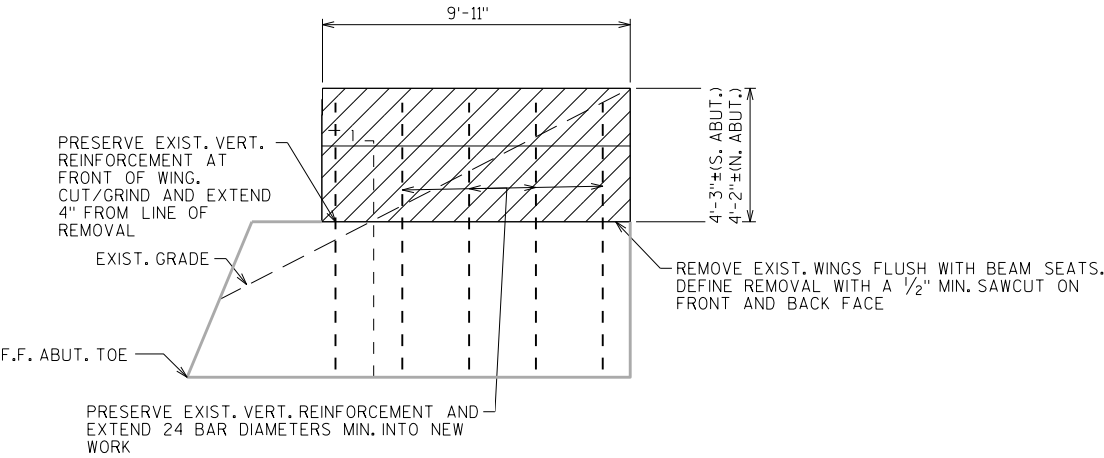


**SECTION A-A - THRU ABUTMENT/BACKWALL**

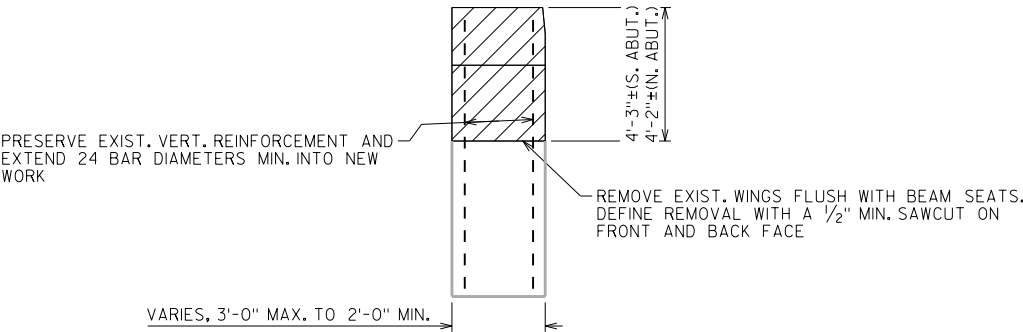


**ABUTMENT REMOVAL PLAN**

AFTER REMOVAL IS COMPLETE, CLEAN ENTIRE ABUTMENT SEAT PER "ABUTMENT SEAT CLEANING AND SEALING". SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

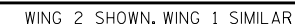


**SECTION B-B - WING REMOVAL ELEVATION**



**SECTION C-C - THRU WING**

|                                                                                 |      |          |             |     |
|---------------------------------------------------------------------------------|------|----------|-------------|-----|
| NO.                                                                             | DATE | REVISION |             | BY  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |             |     |
| STRUCTURE B-47-30                                                               |      |          |             |     |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. | ARC |
| REMOVAL DETAILS<br>AT ABUTMENTS                                                 |      |          | SHEET 3     |     |
|                                                                                 |      |          | 200         |     |



WING 2 SHOWN, WING 1 SIMILAR

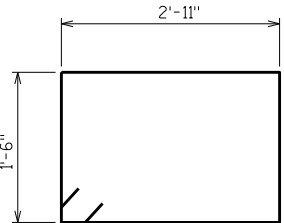
- |                                                                                        |      |          |          |         |                 |
|----------------------------------------------------------------------------------------|------|----------|----------|---------|-----------------|
|                                                                                        |      |          |          |         |                 |
| NO.                                                                                    | DATE | REVISION |          |         | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br><b>STRUCTURES DESIGN SECTION</b> |      |          |          |         |                 |
| <b>STRUCTURE B-47-30</b>                                                               |      |          |          |         |                 |
|                                                                                        |      |          | DRAWN BY | WWR     | PLANS CK'D. ARC |
| <b>SOUTH ABUTMENT</b>                                                                  |      |          |          | SHEET 4 |                 |
|                                                                                        |      |          |          | 201     |                 |

BILL OF BARS

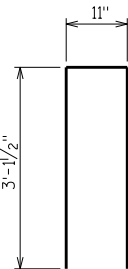
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

| BAR MARK | CONT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION                      |
|----------|------|------------|--------|------|------------|-------------------------------|
| A401     | X    | 31         | 1'-4"  |      |            | BEAM SEAT-HORIZ-BOT.          |
| A402     | X    | 6          | 0'-7"  |      |            | BEAM SEAT-HORIZ.-BOT. @ WINGS |
| A403     | X    | 1          | 29'-8" |      |            | BEAM SEAT-LONGIT. TOP @ B.F.  |
| A404     | X    | 1          | 35'-8" |      |            | BEAM SEAT-LONGIT. TOP @ F.F.  |
| A505     | X    | 20         | 2'-0"  |      |            | LOWER WING-VERT. DOWEL        |
| A506     | X    | 20         | 9'-6"  | X    |            | LOWER WING-VERT. STIRRUP      |
| A507     | X    | 20         | 8'-7"  |      |            | LOWER WING-HORIZ.             |
| A508     | X    | 24         | 6'-11" | X    |            | LOWER/UPPER WING-VERT.        |
| A409     | X    | 10         | 8'-7"  |      |            | UPPER WING-HORIZ.             |

M02



A506

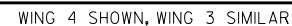


A508

M02 ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE = 3 3/4".

|                                                                                 |      |          |                 |
|---------------------------------------------------------------------------------|------|----------|-----------------|
|                                                                                 |      |          |                 |
| NO.                                                                             | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-30                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| SOUTH ABUTMENT<br>DETAILS                                                       |      | SHEET 5  |                 |
|                                                                                 |      | 202      |                 |





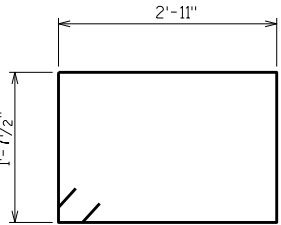
- 203

BILL OF BARS

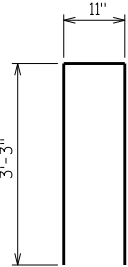
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

| BAR MARK | CONT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION                      |
|----------|------|------------|--------|------|------------|-------------------------------|
| B401     | X    | 31         | 1'-4"  |      |            | BEAM SEAT-HORIZ-BOT.          |
| B402     | X    | 6          | 0'-7"  |      |            | BEAM SEAT-HORIZ.-BOT. @ WINGS |
| B403     | X    | 1          | 29'-8" |      |            | BEAM SEAT-LONGIT. TOP @ B.F.  |
| B404     | X    | 1          | 35'-8" |      |            | BEAM SEAT-LONGIT. TOP @ F.F.  |
| B505     | X    | 20         | 2'-0"  |      |            | LOWER WING-VERT. DOWEL        |
| B506     | X    | 20         | 9'-9"  | X    |            | LOWER WING-VERT. STIRRUP      |
| B507     | X    | 20         | 8'-7"  |      |            | LOWER WING-HORIZ.             |
| B508     | X    | 24         | 7'-2"  | X    |            | LOWER/UPPER WING-VERT.        |
| B409     | X    | 10         | 8'-7"  |      |            | UPPER WING-HORIZ.             |

M02



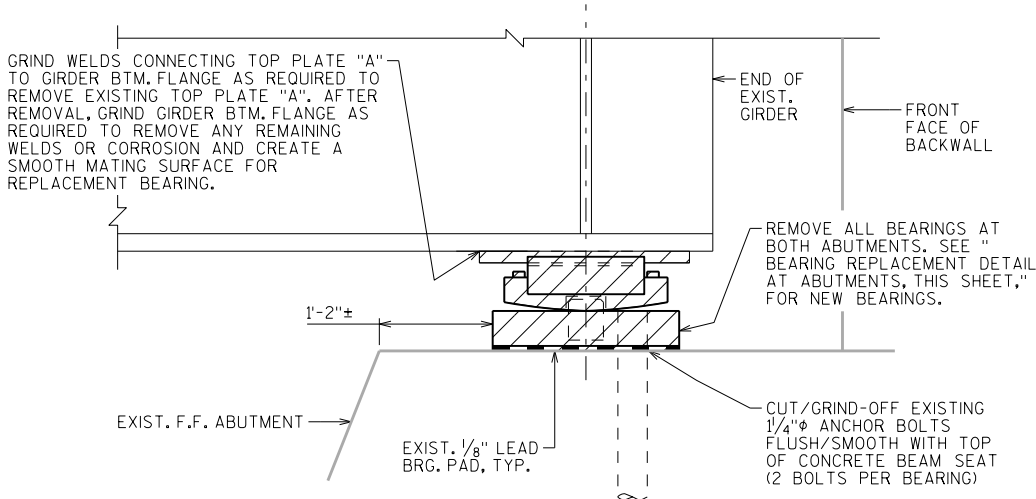
B506



B508

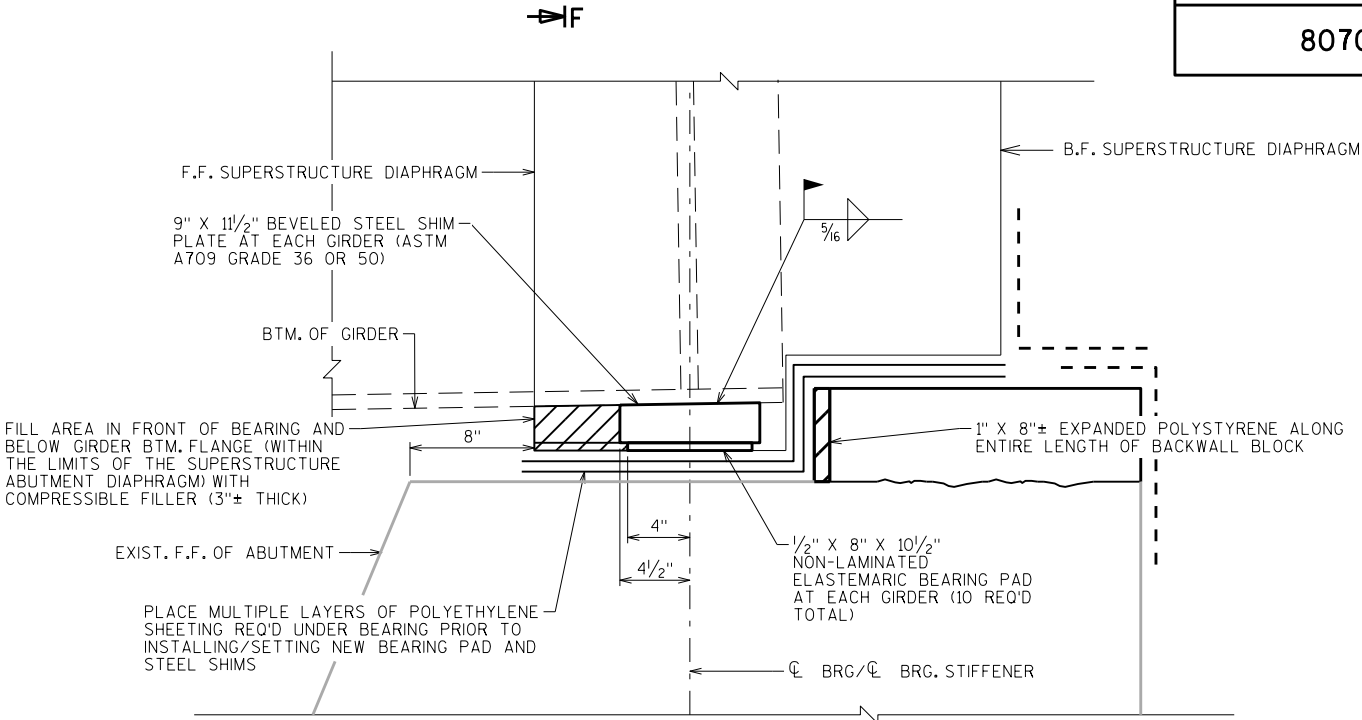
M02 ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE = 3 3/4".

|                                                                                 |      |          |                 |
|---------------------------------------------------------------------------------|------|----------|-----------------|
|                                                                                 |      |          |                 |
| NO.                                                                             | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-30                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| NORTH ABUTMENT<br>DETAILS                                                       |      |          | SHEET 7         |
|                                                                                 |      |          | 204             |



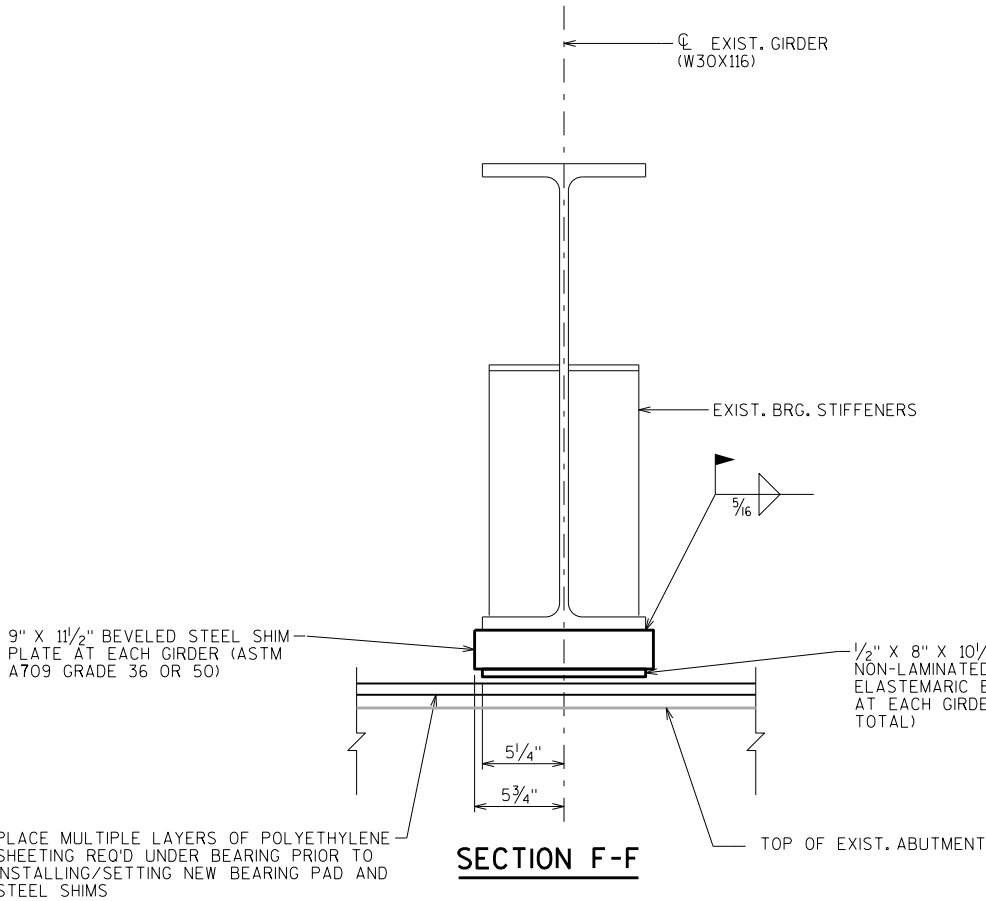
BEARING REMOVAL DETAIL AT ABUTMENTS

NOTE:  
REMOVAL AND DISPOSAL OF EXISTING BEARINGS AS SHOWN, INCLUDING LIFTING OF THE BRIDGE AS REQUIRED TO REMOVE AND REPLACE THE BEARINGS, SHALL BE INCLUDED IN BID ITEM "REMOVING BEARINGS B-47-30".

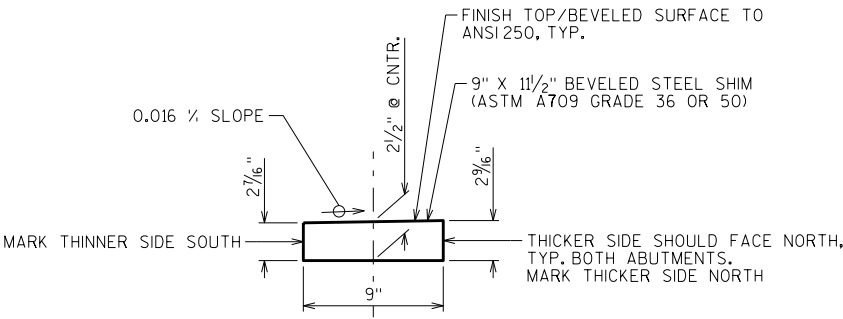


BEARING REPLACEMENT DETAIL AT ABUTMENTS

NOTE:  
PROPOSED TOTAL BEARING HEIGHT IS LESS THAN EXISTING BEARING HEIGHT (3" PROPOSED VS. 4 1/4" EXIST. @ S. ABUT & 3 3/8" EXIST. @ N. ABUT.)  
ENSURE GIRDER LIFTING DEVICE WILL ALLOW FOR THIS DIFFERENCE.  
AT EACH ABUTMENT, ALL GIRDERS SHALL BE LIFTED AND LOWERED SIMULTANEOUSLY.



SECTION F-F



BEVELED SHIM PLATE DETAIL

(10 REQ'D TOTAL)

REPLACEMENT BEARING NOTES

STEEL SHIM PLATES TO BE PAID FOR UNDER "STRUCTURAL STEEL CARBON" BID ITEM.

NON-LAMINATED BEARING PADS TO BE PAID FOR UNDER "BEARING PADS ELASTOMERIC NON-LAMINATED" BID ITEM.

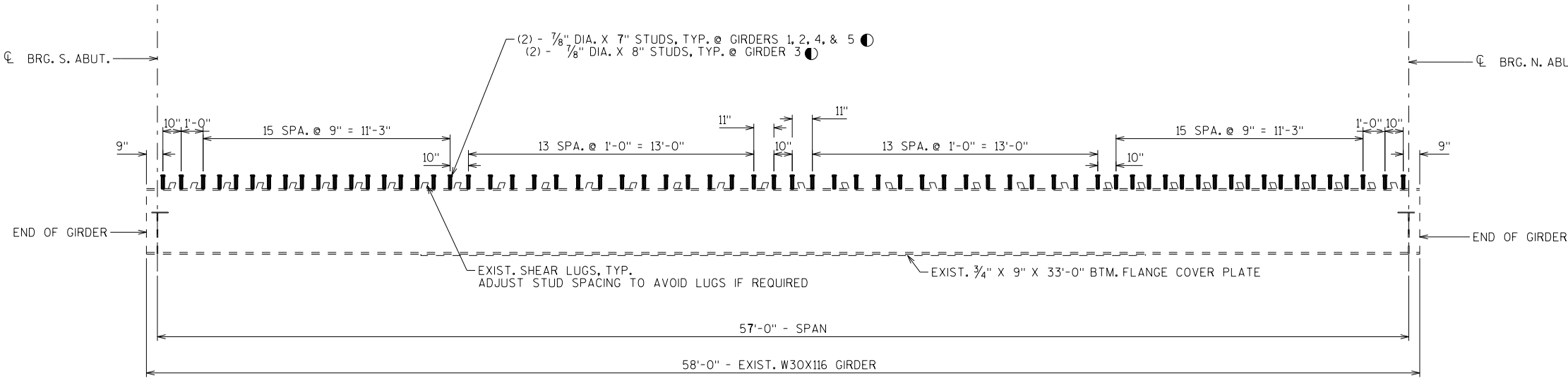
AFTER FABRICATION, SHIM PLATES SHALL RECEIVE A SHOP BLAST CLEANING CONFORMING TO SSPC-SP 10 AND BE PAINTED WITH ONE COAT OF ZINC-RICH PRIMER. SHOP PAINTING/PRIMING SHALL BE CONSIDERED INCIDENTAL TO BID-ITEM "STRUCTURAL STEEL CARBON". MASK AREAS THAT REQUIRE FIELD WELDING.

PLATE STEEL SHALL CONFORM TO ASTM A709 GRADE 36 OR 50.

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

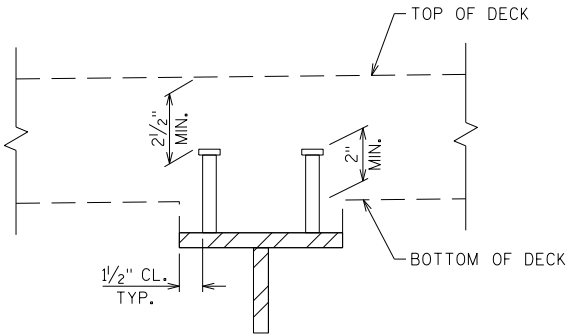
ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

|                                                                                 |      |          |                 |
|---------------------------------------------------------------------------------|------|----------|-----------------|
|                                                                                 |      |          |                 |
| NO.                                                                             | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-30                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| BEARING DETAILS                                                                 |      |          | SHEET 8         |
|                                                                                 |      |          | 205             |



**SHEAR STUD SPACING**

SPACING TYPICAL AT ALL GIRDERS



**SHEAR CONN. DETAILS**

NOTE: USE TWO FIELD WELDED 7/8" DIA. X 7" LONG STUDS AT GIRDERS 1, 2, 4, & 5

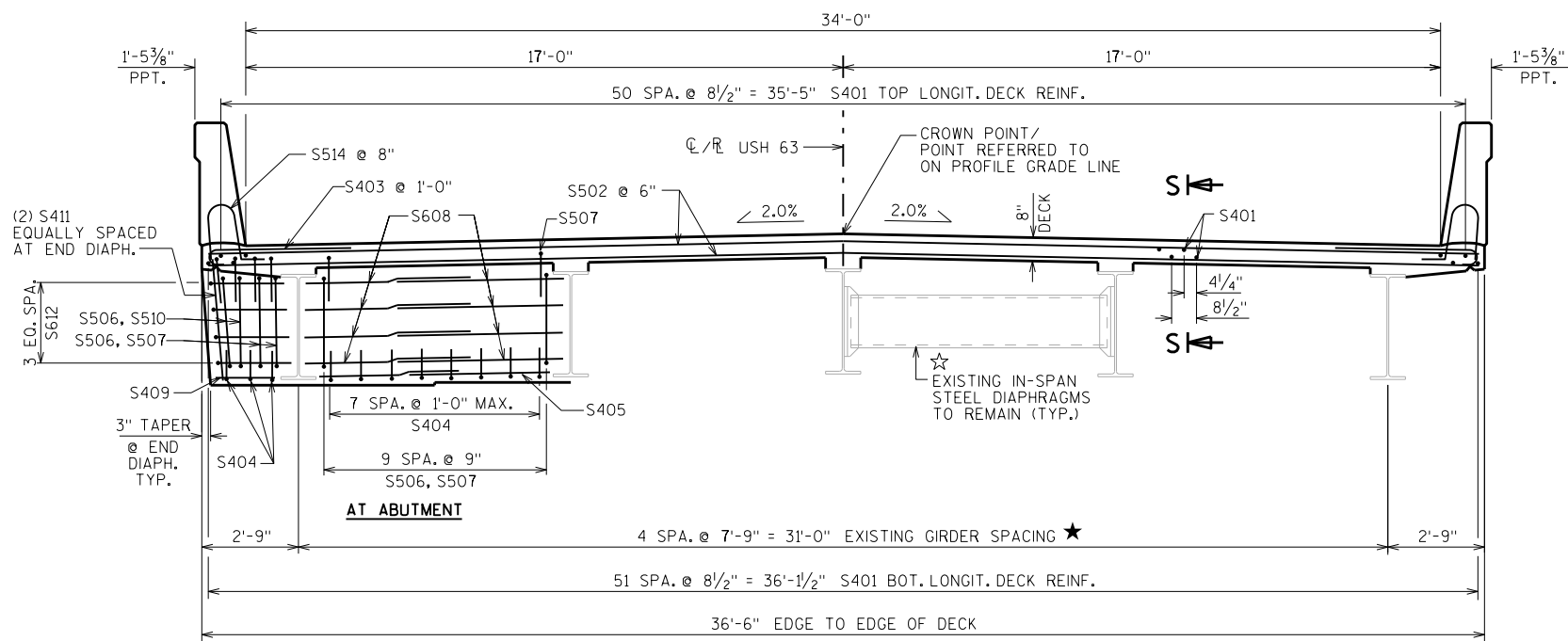
USE TWO FIELD WELDED 7/8" DIA. X 8" LONG STUDS AT GIRDER 3.

PROVIDE A MIN. OF 1 1/2" CL. FROM THE FLANGE EDGE.

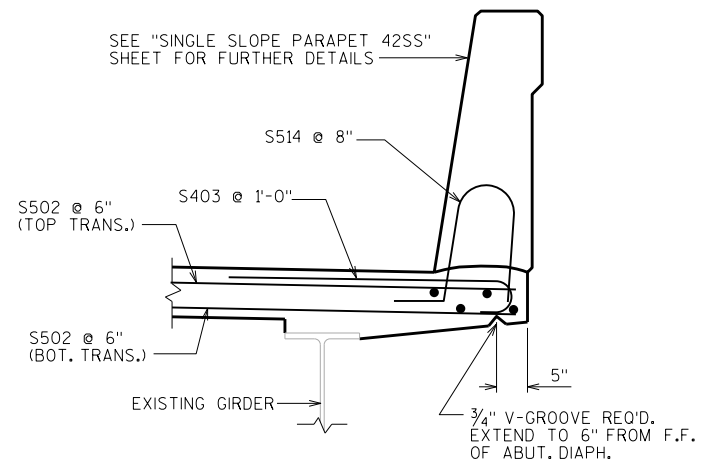
USE DIFFERENT LENGTH STUDS IF 2 1/2" MIN. CLEARANCE OR 2" EXTENSION CRITERIA IS VIOLATED.

|                                                                                 |      |              |                 |
|---------------------------------------------------------------------------------|------|--------------|-----------------|
|                                                                                 |      |              |                 |
| NO.                                                                             | DATE | REVISION     | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |              |                 |
| STRUCTURE B-47-30                                                               |      |              |                 |
|                                                                                 |      | DRAWN BY WWR | PLANS CK'D. ARC |
| SHEAR STUDS                                                                     |      | SHEET 9      |                 |
|                                                                                 |      | 206          |                 |

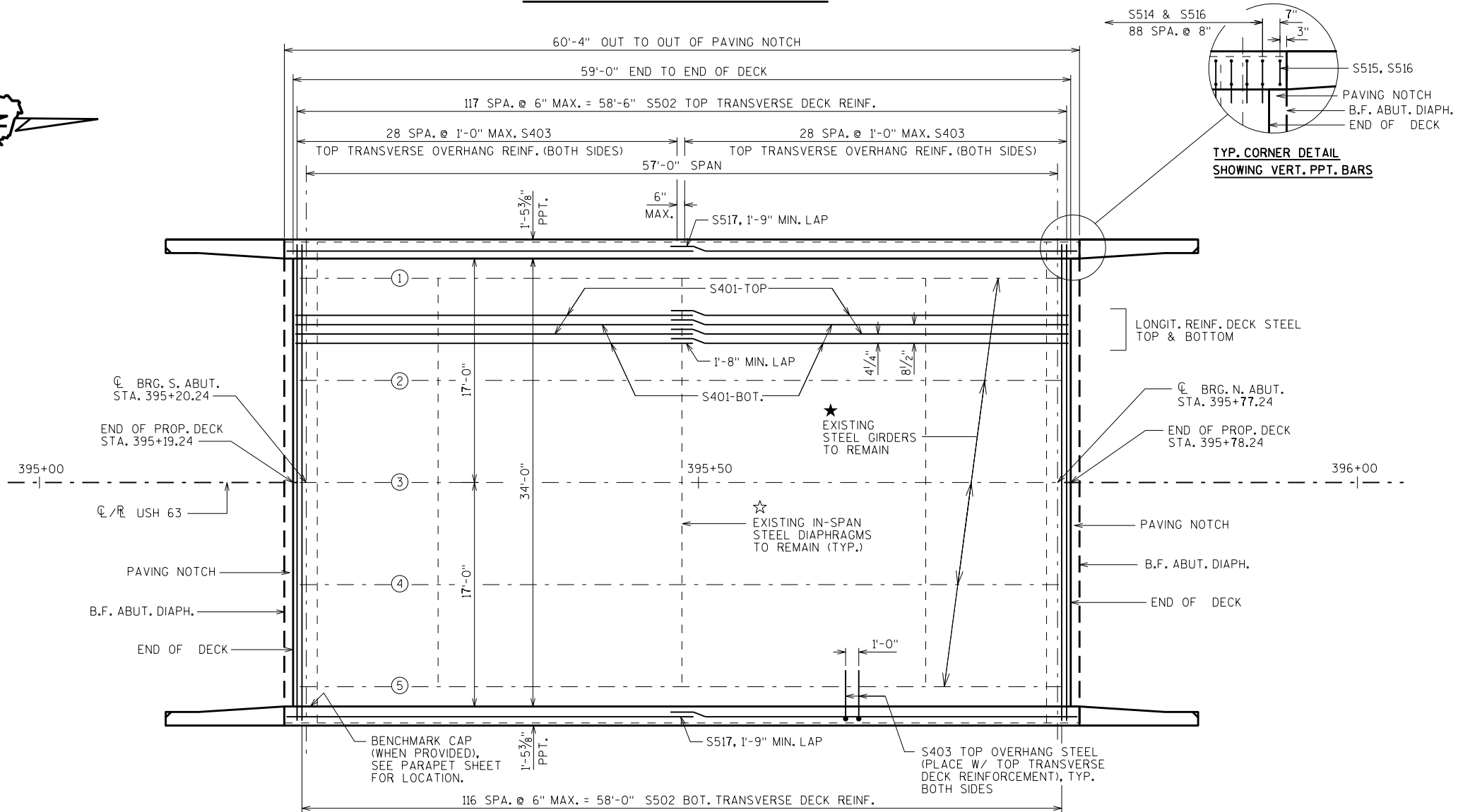
☆ EXISTING STRUT C15X33.9  
★ EXISTING STRINGER W30X116



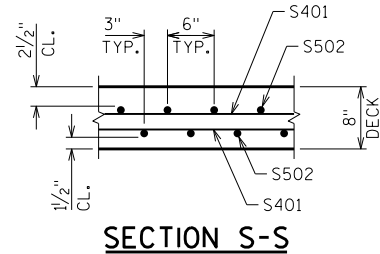
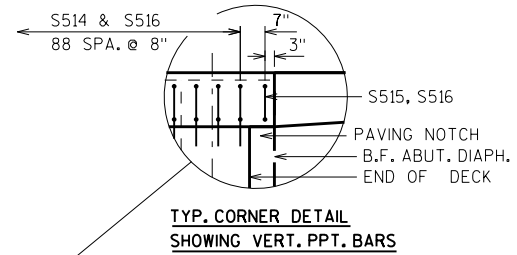
TYPICAL SECTION THRU DECK



TYPICAL SECTION @ DECK OVERHANG

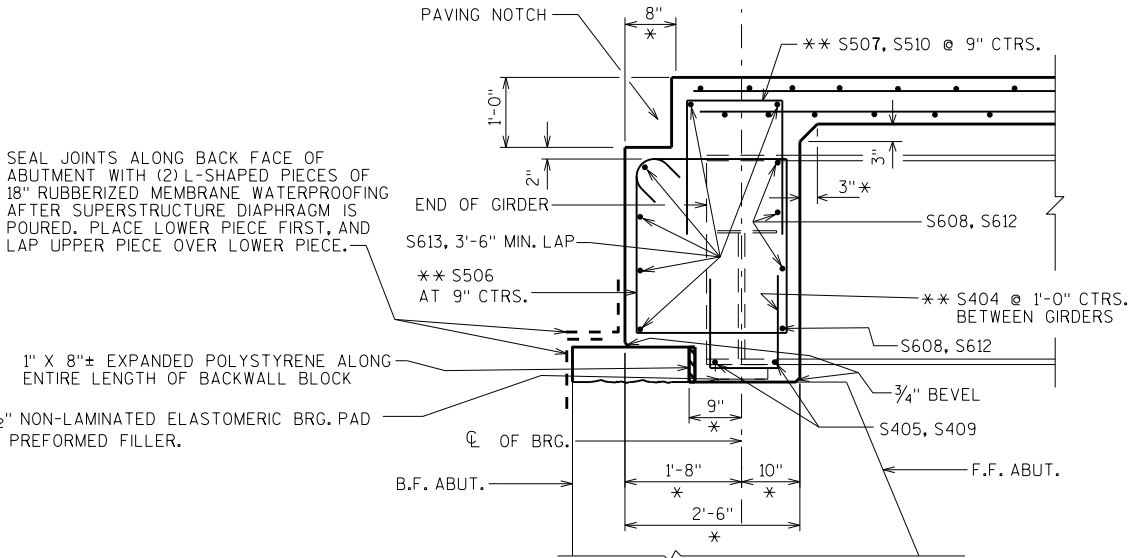


DECK REPLACEMENT PLAN



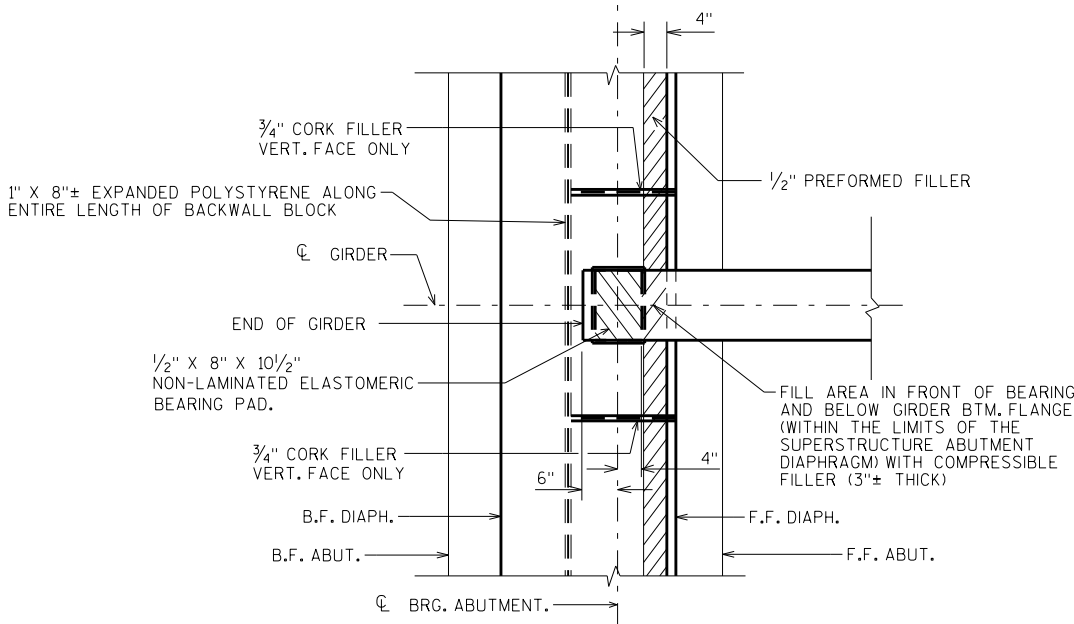
|                                                                                 |      |          |                 |
|---------------------------------------------------------------------------------|------|----------|-----------------|
| NO.                                                                             | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-47-30                                                               |      |          |                 |
| DRAWN BY                                                                        |      | WWR      | PLANS CK'D. ARC |
| SUPERSTRUCTURE                                                                  |      | SHEET 10 |                 |
|                                                                                 |      | 207      |                 |

SCALE = 5.00

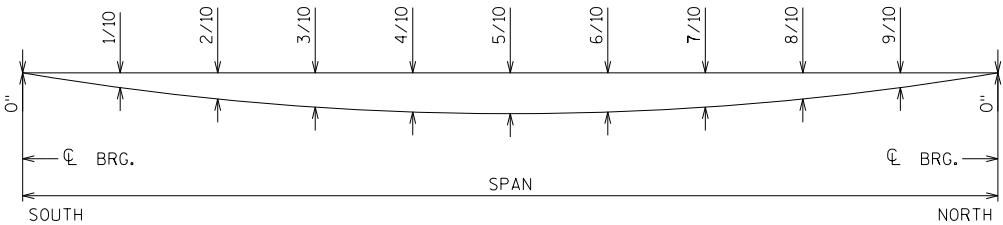


\* DIMENSION IS TAKEN NORMAL TO  $\phi$  SUBSTRUCTURE UNITS.  
\*\* BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO  $\phi$  GIRDERS

PART LONGIT. SECTION



BEARING PAD DETAIL



DEFLECTION DIAGRAM

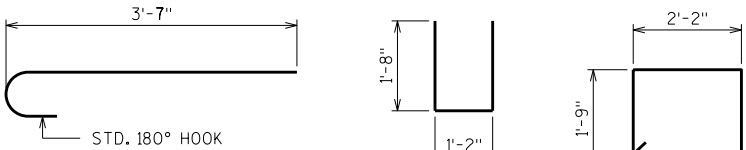
| SPAN |            | 1/10 | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 |
|------|------------|------|------|------|------|------|------|------|------|------|
| 1    | CONC. ONLY | 0.4  | 0.7  | 1.0  | 1.1  | 1.2  | 1.1  | 1.0  | 0.7  | 0.4  |

SHOWING DEADLOAD DEFLECTION ONLY.  
DEFLECTIONS ARE GIVEN TO NEAREST 0.1 INCH.  
1/10 POINTS ARE ALONG  $\phi$  OF THE GIRDER.

BILL OF BARS

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

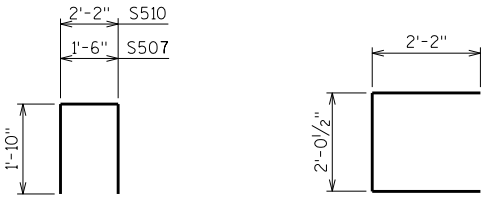
| BAR MARK | COAT | NO. REQ'D. | LENGTH  | BENT | BAR SERIES | LOCATION                      |
|----------|------|------------|---------|------|------------|-------------------------------|
| S401     | X    | 206        | 30'-2"  |      |            | DECK-LONGIT. TOP & BOT.       |
| S502     | X    | 235        | 36'-2"  |      |            | DECK-TRANSVERSE TOP & BOT.    |
| S403     | X    | 116        | 4'-1"   | X    |            | DECK-TRANSVERSE OVERHANG      |
| S404     | X    | 76         | 4'-4"   | X    |            | ABUT. DIAPH.-VERT. U-BAR-BOT. |
| S405     | X    | 16         | 4'-0"   |      |            | ABUT. DIAPH.-HORIZ.-BOT.      |
| S506     | X    | 96         | 8'-6"   | X    |            | ABUT. DIAPH.-VERT. STIRRUP    |
| S507     | X    | 88         | 4'-11"  | X    |            | ABUT. DIAPH.-VERT. U-BAR      |
| S608     | X    | 64         | 4'-9"   |      |            | ABUT. DIAPH.-HORIZ.           |
| S409     | X    | 8          | 1'-8"   |      |            | ABUT. DIAPH.-HORIZ. END-BOT.  |
| S510     | X    | 8          | 5'-7"   | X    |            | ABUT. DIAPH.-VERT. U-BAR      |
| S411     | X    | 8          | 3'-3"   |      |            | ABUT. DIAPH.-VERT.-END        |
| S612     | X    | 16         | 6'-0"   | X    |            | ABUT. DIAPH.-HORIZ. U-BAR     |
| S613     | X    | 24         | 19'-10" |      |            | ABUT. DIAPH.-HORIZ.-B.F.      |
| S514     | X    | 178        | 4'-5"   | X    |            | DECK/PPT.-VERT.               |
| S515     | X    | 4          | 5'-10"  | X    |            | DECK/PPT.-VERT. @ PAV. NOTCH  |
| S516     | X    | 182        | 6'-8"   | X    |            | PPT.-VERT.                    |
| S517     | X    | 32         | 30'-11" |      |            | PPT.-HORIZ.                   |
|          |      |            |         |      |            |                               |
|          |      |            |         |      |            |                               |
|          |      |            |         |      |            |                               |



S403

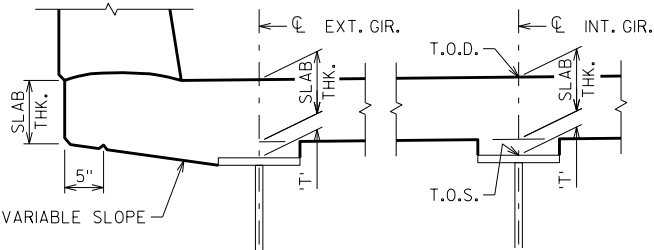
S404

S506



S507, S510

S612



CONCRETE HAUNCH DETAILS

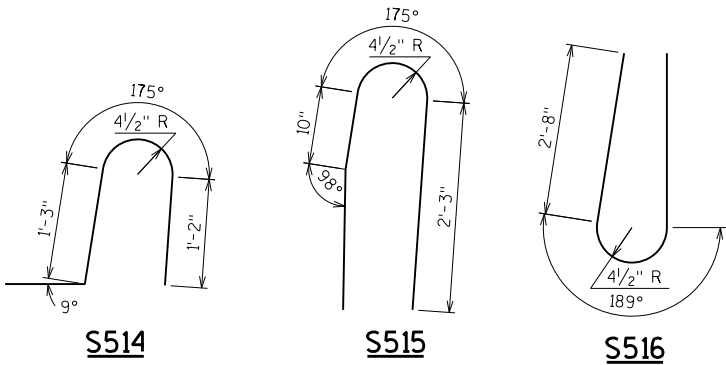
TO DETERMINE 'T': AFTER DECK IS REMOVED & BEARINGS REPLACED, ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT CENTERLINE OF BEARINGS, AND AT 0.1 POINTS.

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

- SLAB THICKNESS (8")

= 'T' VALUE FOR SETTING HAUNCH

NOTE: AN AVERAGE HAUNCH ('T') OF 4.2" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



S514

S515

S516

TOP OF DECK ELEVATIONS

|                | CL. BRG. S. ABUT. | 1/10    | 2/10    | 3/10    | 4/10    | 5/10    | 6/10    | 7/10    | 8/10    | 9/10    | CL. BRG. N. ABUT. |
|----------------|-------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| W. E.O.D.      | 1021.88           | 1021.97 | 1022.05 | 1022.14 | 1022.23 | 1022.32 | 1022.40 | 1022.49 | 1022.58 | 1022.66 | 1022.75           |
| GIRD. 1        | 1021.91           | 1022.00 | 1022.08 | 1022.17 | 1022.26 | 1022.35 | 1022.43 | 1022.52 | 1022.61 | 1022.69 | 1022.78           |
| GIRD. 2        | 1022.07           | 1022.15 | 1022.24 | 1022.33 | 1022.41 | 1022.50 | 1022.59 | 1022.67 | 1022.76 | 1022.85 | 1022.94           |
| GIRD. 3/PGL/CL | 1022.22           | 1022.31 | 1022.39 | 1022.48 | 1022.57 | 1022.66 | 1022.74 | 1022.83 | 1022.92 | 1023.00 | 1023.09           |
| GIRD. 4        | 1022.07           | 1022.15 | 1022.24 | 1022.33 | 1022.41 | 1022.50 | 1022.59 | 1022.67 | 1022.76 | 1022.85 | 1022.94           |
| GIRD. 5        | 1021.91           | 1022.00 | 1022.08 | 1022.17 | 1022.26 | 1022.35 | 1022.43 | 1022.52 | 1022.61 | 1022.69 | 1022.78           |
| E. E.O.D.      | 1021.88           | 1021.97 | 1022.05 | 1022.14 | 1022.23 | 1022.32 | 1022.40 | 1022.49 | 1022.58 | 1022.66 | 1022.75           |

| NO.                                                                             | DATE | REVISION | BY             |
|---------------------------------------------------------------------------------|------|----------|----------------|
|                                                                                 |      |          |                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                |
| STRUCTURE B-47-30                                                               |      |          |                |
| DRAWN BY                                                                        |      | WWR      | PLANS CKD. ARC |
| SUPERSTRUCTURE DETAILS                                                          |      | SHEET 11 |                |
|                                                                                 |      | 208      |                |







| STATION | RFAL<br>STATION | DISTANCE | ARFA (SF) |        | INCRFMFNTAL<br>VOL (CY)<br>(UNADJUSTFD) |      | CUMULATIVE VOL (CY) |                  |                  |
|---------|-----------------|----------|-----------|--------|-----------------------------------------|------|---------------------|------------------|------------------|
|         |                 |          | CUT       | FILL   | CUT                                     | FILL | CUT                 | EXPANDED<br>FILL | MASS<br>ORDINATE |
|         |                 |          |           |        |                                         |      |                     |                  |                  |
| 45+00   | 4500.00         | 0.00     | 4.99      | 1.94   | 0                                       | 0    | 0                   | 0                | 0                |
| 45+50   | 4550.00         | 50.00    | 8.11      | 13.95  | 12                                      | 15   | 12                  | 20               | -8               |
| 46+00   | 4600.00         | 50.00    | 6.84      | 40.20  | 14                                      | 50   | 26                  | 85               | -59              |
| 46+50   | 4650.00         | 50.00    | 6.68      | 56.28  | 13                                      | 89   | 39                  | 200              | -161             |
| 47+00   | 4700.00         | 50.00    | 6.20      | 104.83 | 12                                      | 149  | 51                  | 394              | -343             |
| 47+50   | 4750.00         | 50.00    | 5.47      | 145.95 | 11                                      | 232  | 62                  | 696              | -634             |
| 48+00   | 4800.00         | 50.00    | 5.68      | 163.00 | 10                                      | 286  | 72                  | 1,067            | -995             |
| 48+50   | 4850.00         | 50.00    | 6.08      | 159.13 | 11                                      | 298  | 83                  | 1,455            | -1,372           |
| 49+00   | 4900.00         | 50.00    | 7.09      | 161.36 | 12                                      | 297  | 95                  | 1,841            | -1,746           |
| 49+50   | 4950.00         | 50.00    | 10.95     | 168.00 | 17                                      | 305  | 112                 | 2,237            | -2,125           |
| 50+00   | 5000.00         | 50.00    | 6.53      | 69.45  | 16                                      | 220  | 128                 | 2,523            | -2,395           |
| 50+50   | 5050.00         | 50.00    | 5.70      | 89.62  | 11                                      | 147  | 139                 | 2,714            | -2,575           |
| 51+00   | 5100.00         | 50.00    | 7.30      | 27.11  | 12                                      | 108  | 151                 | 2,855            | -2,704           |
| 51+50   | 5150.00         | 50.00    | 8.77      | 2.06   | 15                                      | 27   | 166                 | 2,890            | -2,724           |

| STATION | REAL<br>STATION | DISTANCE | AREA (SE) |       | INCREMENTAL<br>VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                  |                  |
|---------|-----------------|----------|-----------|-------|-----------------------------------------|------|---------------------|------------------|------------------|
|         |                 |          | CUT       | EILL  | CUT                                     | EILL | CUT                 | EXPANDED<br>EILL | MASS<br>ORDINATE |
|         |                 |          |           |       |                                         |      |                     |                  |                  |
| 147+00  | 14700.00        | 0.00     | 3.75      | 0.15  | 0                                       | 0    | 0                   | 0                | 0                |
| 147+50  | 14750.00        | 50.00    | 3.62      | 3.36  | 7                                       | 3    | 7                   | 4                | 3                |
| 148+00  | 14800.00        | 50.00    | 4.87      | 1.62  | 8                                       | 5    | 15                  | 10               | 5                |
| 148+50  | 14850.00        | 50.00    | 5.20      | 13.31 | 9                                       | 14   | 24                  | 29               | -5               |
| 149+00  | 14900.00        | 50.00    | 4.54      | 21.46 | 9                                       | 32   | 33                  | 70               | -37              |
| 149+50  | 14950.00        | 50.00    | 4.50      | 31.46 | 8                                       | 49   | 41                  | 134              | -93              |
| 150+00  | 15000.00        | 50.00    | 4.31      | 22.52 | 8                                       | 50   | 49                  | 199              | -150             |
| 150+50  | 15050.00        | 50.00    | 4.43      | 10.36 | 8                                       | 30   | 57                  | 238              | -181             |
| 151+00  | 15100.00        | 50.00    | 3.39      | 12.81 | 7                                       | 21   | 64                  | 265              | -201             |
| 151+50  | 15150.00        | 50.00    | 2.21      | 15.37 | 5                                       | 26   | 69                  | 299              | -230             |
| 152+00  | 15200.00        | 50.00    | 6.08      | 15.13 | 8                                       | 28   | 77                  | 335              | -258             |
| 152+50  | 15250.00        | 50.00    | 6.02      | 6.67  | 11                                      | 20   | 88                  | 361              | -273             |

| STATION    | REAL<br>STATION | DISTANCE | AREA (SE) |        | INCREMENTAL<br>VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                  |                  |
|------------|-----------------|----------|-----------|--------|-----------------------------------------|------|---------------------|------------------|------------------|
|            |                 |          | CUT       | EILL   | CUT                                     | EILL | CUT                 | EXPANDED<br>EILL | MASS<br>ORDINATE |
|            |                 |          |           |        |                                         |      |                     |                  |                  |
| 106+49.77  | 10649.77        | 0.00     | 6.52      | 0.05   | 0                                       | 0    | 0                   | 0                | 0                |
| 106+50     | 10650.00        | 0.23     | 6.52      | 0.05   | 0                                       | 0    | 0                   | 0                | 0                |
| 107+00     | 10700.00        | 50.00    | 5.23      | 2.23   | 11                                      | 2    | 11                  | 3                | 8                |
| 107+50     | 10750.00        | 50.00    | 4.64      | 7.78   | 9                                       | 9    | 20                  | 14               | 6                |
| 108+00     | 10800.00        | 50.00    | 4.29      | 6.66   | 8                                       | 13   | 28                  | 31               | -3               |
| 108+50     | 10850.00        | 50.00    | 2.18      | 2.50   | 6                                       | 8    | 34                  | 42               | -8               |
| 109+00     | 10900.00        | 50.00    | 2.30      | 2.90   | 4                                       | 5    | 38                  | 48               | -10              |
| 109+50     | 10950.00        | 50.00    | 0.65      | 42.68  | 3                                       | 42   | 41                  | 103              | -62              |
| 109+50.295 | 10950.30        | 0.30     | 0.61      | 45.46  | 0                                       | 0    | 41                  | 103              | -62              |
| 110+41.226 | 11041.23        | 90.93    | 0.00      | 0.01   | 1                                       | 77   | 42                  | 203              | -161             |
| 110+50     | 11050.00        | 8.77     | 4.08      | 9.48   | 1                                       | 2    | 43                  | 205              | -162             |
| 110+60.282 | 11060.28        | 10.28    | 6.94      | 8.82   | 2                                       | 3    | 45                  | 209              | -164             |
| 110+65     | 11065.00        | 4.72     | 5.51      | 46.12  | 1                                       | 5    | 46                  | 216              | -170             |
| 110+70     | 11070.00        | 5.00     | 4.28      | 111.53 | 1                                       | 15   | 47                  | 235              | -188             |
| 110+75     | 11075.00        | 5.00     | 3.14      | 135.99 | 1                                       | 23   | 48                  | 265              | -217             |
| 110+80     | 11080.00        | 5.00     | 3.44      | 94.93  | 1                                       | 21   | 49                  | 293              | -244             |
| 110+85     | 11085.00        | 5.00     | 4.39      | 47.23  | 1                                       | 13   | 50                  | 309              | -259             |
| 110+90     | 11090.00        | 5.00     | 4.85      | 10.81  | 1                                       | 5    | 51                  | 316              | -265             |
| 110+95     | 11095.00        | 5.00     | 6.89      | 5.03   | 1                                       | 1    | 52                  | 317              | -265             |
| 110+96.787 | 11096.79        | 1.79     | 4.13      | 3.63   | 0                                       | 0    | 52                  | 317              | -265             |
| 111+00     | 11100.00        | 3.21     | 5.28      | 2.91   | 1                                       | 0    | 53                  | 317              | -264             |
| 111+50     | 11150.00        | 50.00    | 3.39      | 2.41   | 8                                       | 5    | 61                  | 324              | -263             |
| 112+00     | 11200.00        | 50.00    | 3.50      | 9.56   | 6                                       | 11   | 67                  | 338              | -271             |
| 112+50     | 11250.00        | 50.00    | 4.40      | 9.04   | 7                                       | 17   | 74                  | 360              | -286             |
| 113+00     | 11300.00        | 50.00    | 4.09      | 5.34   | 8                                       | 13   | 82                  | 377              | -295             |
| 113+37.94  | 11337.94        | 37.94    | 4.35      | 1.41   | 6                                       | 5    | 88                  | 384              | -296             |

| STATION    | REAL<br>STATION | DISTANCE | AREA (SF) |        | INCREMENTAL<br>VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                  |                  |
|------------|-----------------|----------|-----------|--------|-----------------------------------------|------|---------------------|------------------|------------------|
|            |                 |          | CUT       | EILL   | CUT                                     | EILL | CUT                 | EXPANDED<br>FILL | MASS<br>ORDINATE |
|            |                 |          |           |        |                                         |      |                     |                  |                  |
| 201+34.41  | 20134.41        | 0.00     | 3.52      | 15.43  | 0                                       | 0    | 0                   | 0                | 0                |
| 201+50     | 20150.00        | 15.59    | 3.77      | 10.95  | 2                                       | 8    | 2                   | 10               | -8               |
| 202+00     | 20200.00        | 50.00    | 3.48      | 22.91  | 7                                       | 31   | 9                   | 51               | -42              |
| 202+50     | 20250.00        | 50.00    | 3.55      | 25.76  | 7                                       | 45   | 16                  | 109              | -93              |
| 203+00     | 20300.00        | 50.00    | 3.53      | 1.69   | 7                                       | 25   | 23                  | 142              | -119             |
| 203+50     | 20350.00        | 50.00    | 5.23      | 0.01   | 8                                       | 2    | 31                  | 144              | -113             |
| 203+55.707 | 20355.71        | 5.71     | 16.60     | 0.04   | 2                                       | 0    | 33                  | 144              | -111             |
| 203+60     | 20360.00        | 4.29     | 9.25      | 0.15   | 2                                       | 0    | 35                  | 144              | -109             |
| 203+65     | 20365.00        | 5.00     | 5.86      | 9.79   | 1                                       | 1    | 36                  | 146              | -110             |
| 203+70     | 20370.00        | 5.00     | 5.86      | 39.79  | 1                                       | 5    | 37                  | 152              | -115             |
| 203+75     | 20375.00        | 5.00     | 5.78      | 85.27  | 1                                       | 12   | 38                  | 168              | -130             |
| 203+80     | 20380.00        | 5.00     | 5.49      | 129.32 | 1                                       | 20   | 39                  | 194              | -155             |
| 203+85     | 20385.00        | 5.00     | 6.79      | 54.39  | 1                                       | 17   | 40                  | 216              | -176             |
| 203+90     | 20390.00        | 5.00     | 6.97      | 6.32   | 1                                       | 6    | 41                  | 224              | -183             |
| 203+91.898 | 20391.90        | 1.90     | 6.96      | 0.52   | 0                                       | 0    | 41                  | 224              | -183             |
| 204+00     | 20400.00        | 8.10     | 6.93      | 0.45   | 2                                       | 0    | 43                  | 224              | -181             |
| 204+34.172 | 20434.17        | 34.17    | 4.58      | 49.80  | 7                                       | 32   | 50                  | 265              | -215             |
| 204+50     | 20450.00        | 15.83    | 1.20      | 3.84   | 2                                       | 16   | 52                  | 286              | -234             |
| 204+59.102 | 20459.10        | 9.10     | 0.00      | 4.66   | 0                                       | 1    | 52                  | 287              | -235             |
| 205+30.212 | 20530.21        | 71.11    | 0.00      | 13.36  | 0                                       | 24   | 52                  | 319              | -267             |
| 205+50     | 20550.00        | 19.79    | 3.04      | 2.08   | 1                                       | 6    | 53                  | 326              | -273             |
| 205+55.216 | 20555.22        | 5.22     | 3.86      | 32.39  | 1                                       | 3    | 54                  | 330              | -276             |
| 206+00     | 20600.00        | 44.78    | 3.62      | 3.86   | 6                                       | 30   | 60                  | 369              | -309             |
| 206+50     | 20650.00        | 50.00    | 3.43      | 26.08  | 7                                       | 28   | 67                  | 406              | -339             |
| 207+00     | 20700.00        | 50.00    | 3.69      | 32.23  | 7                                       | 54   | 74                  | 476              | -402             |
| 207+50     | 20750.00        | 50.00    | 4.76      | 40.08  | 8                                       | 67   | 82                  | 563              | -481             |
| 208+00     | 20800.00        | 50.00    | 4.60      | 26.02  | 9                                       | 61   | 91                  | 642              | -551             |
| 208+50     | 20850.00        | 50.00    | 4.44      | 13.44  | 8                                       | 37   | 99                  | 690              | -591             |
| 208+53.77  | 20853.77        | 3.77     | 4.47      | 18.92  | 1                                       | 2    | 100                 | 693              | -593             |



| STATION | REAL STATION | DISTANCE | AREA (SF) |        | INCREMENTAL VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                       |                  |
|---------|--------------|----------|-----------|--------|--------------------------------------|------|---------------------|-----------------------|------------------|
|         |              |          | CUT       | FILL   | CUT                                  | FILL | CUT<br>1.00         | EXPANDED FILL<br>1.30 | MASS<br>ORDINATE |
| 259+50  | 25950.00     | 0.00     | 2.84      | 4.10   | 0                                    | 0    | 0                   | 0                     | 0                |
| 260+00  | 26000.00     | 50.00    | 5.14      | 24.38  | 7                                    | 26   | 7                   | 34                    | -27              |
| 260+50  | 26050.00     | 50.00    | 2.61      | 104.58 | 7                                    | 119  | 14                  | 189                   | -175             |
| 261+00  | 26100.00     | 50.00    | 3.00      | 200.07 | 5                                    | 282  | 19                  | 555                   | -536             |
| 261+50  | 26150.00     | 50.00    | 3.26      | 283.37 | 6                                    | 448  | 25                  | 1,138                 | -1,113           |
| 262+00  | 26200.00     | 50.00    | 3.41      | 332.12 | 6                                    | 570  | 31                  | 1,879                 | -1,848           |
| 262+50  | 26250.00     | 50.00    | 3.05      | 307.45 | 6                                    | 592  | 37                  | 2,648                 | -2,611           |
| 263+00  | 26300.00     | 50.00    | 3.10      | 259.49 | 6                                    | 525  | 43                  | 3,331                 | -3,288           |
| 263+50  | 26350.00     | 50.00    | 3.09      | 231.39 | 6                                    | 455  | 49                  | 3,922                 | -3,873           |
| 264+00  | 26400.00     | 50.00    | 3.06      | 199.48 | 6                                    | 399  | 55                  | 4,441                 | -4,386           |
| 264+50  | 26450.00     | 50.00    | 3.28      | 170.61 | 6                                    | 343  | 61                  | 4,887                 | -4,826           |
| 265+00  | 26500.00     | 50.00    | 3.39      | 110.76 | 6                                    | 261  | 67                  | 5,226                 | -5,159           |
| 265+50  | 26550.00     | 50.00    | 3.86      | 57.05  | 7                                    | 155  | 74                  | 5,428                 | -5,354           |
| 266+00  | 26600.00     | 50.00    | 6.20      | 0.88   | 9                                    | 54   | 83                  | 5,498                 | -5,415           |

| STATION    | REAL STATION | DISTANCE | AREA (SF) |         | INCREMENTAL VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                       |                  |
|------------|--------------|----------|-----------|---------|--------------------------------------|------|---------------------|-----------------------|------------------|
|            |              |          | CUT       | FILL    | CUT                                  | FILL | CUT<br>1.00         | EXPANDED FILL<br>1.30 | MASS<br>ORDINATE |
| 281+09.318 | 28109.32     | 0.00     | 0.35      | 1.32    | 0                                    | 0    | 0                   | 0                     | 0                |
| 281+50     | 28150.00     | 40.68    | 0.11      | 3.12    | 0                                    | 3    | 0                   | 4                     | -4               |
| 282+00     | 28200.00     | 50.00    | 0.06      | 11.59   | 0                                    | 14   | 0                   | 22                    | -22              |
| 282+27.018 | 28227.02     | 27.02    | 0.03      | 16.54   | 0                                    | 14   | 0                   | 40                    | -40              |
| 282+50     | 28250.00     | 22.98    | 0.05      | 11.23   | 0                                    | 12   | 0                   | 56                    | -56              |
| 282+76.717 | 28276.72     | 26.72    | 0.08      | 4.26    | 0                                    | 8    | 0                   | 66                    | -66              |
| 283+00     | 28300.00     | 23.28    | 0.04      | 4.01    | 0                                    | 4    | 0                   | 72                    | -72              |
| 283+50     | 28350.00     | 50.00    | 0.61      | 1.90    | 1                                    | 5    | 1                   | 78                    | -77              |
| 283+51.834 | 28351.83     | 1.83     | 0.65      | 2.02    | 0                                    | 0    | 1                   | 78                    | -77              |
| 284+00     | 28400.00     | 48.17    | 0.91      | 4.95    | 1                                    | 6    | 2                   | 86                    | -84              |
| 284+50     | 28450.00     | 50.00    | 0.45      | 7.80    | 1                                    | 12   | 3                   | 101                   | -98              |
| 285+00     | 28500.00     | 50.00    | 0.02      | 10.00   | 0                                    | 16   | 3                   | 122                   | -119             |
| 285+20.996 | 28521.00     | 21.00    | 0.02      | 7.78    | 0                                    | 7    | 3                   | 131                   | -128             |
| 285+50     | 28550.00     | 29.00    | 0.00      | 6.34    | 0                                    | 8    | 3                   | 142                   | -139             |
| 286+00     | 28600.00     | 50.00    | 0.05      | 20.75   | 0                                    | 25   | 3                   | 174                   | -171             |
| 286+50     | 28650.00     | 50.00    | 0.04      | 73.41   | 0                                    | 87   | 3                   | 287                   | -284             |
| 287+00     | 28700.00     | 50.00    | 0.05      | 131.32  | 0                                    | 190  | 3                   | 534                   | -531             |
| 287+50     | 28750.00     | 50.00    | 0.03      | 222.06  | 0                                    | 327  | 3                   | 959                   | -956             |
| 287+60.777 | 28760.78     | 10.78    | 0.00      | 232.92  | 0                                    | 91   | 3                   | 1,078                 | -1,075           |
| 288+00     | 28800.00     | 39.22    | 0.04      | 178.03  | 0                                    | 298  | 3                   | 1,465                 | -1,462           |
| 288+50     | 28850.00     | 50.00    | 0.06      | 199.72  | 0                                    | 350  | 3                   | 1,920                 | -1,917           |
| 289+00     | 28900.00     | 50.00    | 0.02      | 212.55  | 0                                    | 382  | 3                   | 2,417                 | -2,414           |
| 289+50     | 28950.00     | 50.00    | 0.07      | 198.34  | 0                                    | 380  | 3                   | 2,911                 | -2,908           |
| 290+00     | 29000.00     | 50.00    | 0.13      | 197.85  | 0                                    | 367  | 3                   | 3,388                 | -3,385           |
| 290+50     | 29050.00     | 50.00    | 0.36      | 190.91  | 0                                    | 360  | 3                   | 3,856                 | -3,853           |
| 291+00     | 29100.00     | 50.00    | 0.39      | 149.48  | 1                                    | 315  | 4                   | 4,265                 | -4,261           |
| 291+50     | 29150.00     | 50.00    | 0.42      | 123.74  | 1                                    | 253  | 5                   | 4,594                 | -4,589           |
| 292+00     | 29200.00     | 50.00    | 0.18      | 101.36  | 1                                    | 208  | 6                   | 4,865                 | -4,859           |
| 292+50     | 29250.00     | 50.00    | 0.38      | 128.04  | 1                                    | 212  | 7                   | 5,140                 | -5,133           |
| 293+00     | 29300.00     | 50.00    | 0.66      | 112.10  | 1                                    | 222  | 8                   | 5,429                 | -5,421           |
| 293+50     | 29350.00     | 50.00    | 1.11      | 154.71  | 2                                    | 247  | 10                  | 5,750                 | -5,740           |
| 294+00     | 29400.00     | 50.00    | 1.42      | 188.73  | 2                                    | 318  | 12                  | 6,163                 | -6,151           |
| 294+50     | 29450.00     | 50.00    | 1.13      | 205.91  | 2                                    | 365  | 14                  | 6,638                 | -6,624           |
| 294+92.963 | 29492.96     | 42.96    | 0.66      | 221.82  | 1                                    | 340  | 15                  | 7,080                 | -7,065           |
| 295+00     | 29500.00     | 7.04     | 0.74      | 198.08  | 0                                    | 55   | 15                  | 7,151                 | -7,136           |
| 295+20.373 | 29520.37     | 20.37    | 1.26      | 232.90  | 1                                    | 163  | 16                  | 7,363                 | -7,347           |
| 295+50     | 29550.00     | 29.63    | 1.21      | 204.75  | 1                                    | 240  | 17                  | 7,675                 | -7,658           |
| 295+65.043 | 29565.04     | 15.04    | 2.22      | 186.51  | 1                                    | 109  | 18                  | 7,817                 | -7,799           |
| 295+70     | 29570.00     | 4.96     | 3.12      | 247.21  | 0                                    | 40   | 18                  | 7,869                 | -7,851           |
| 295+75     | 29575.00     | 5.00     | 4.72      | 422.03  | 1                                    | 62   | 19                  | 7,950                 | -7,931           |
| 295+80     | 29580.00     | 5.00     | 5.76      | 686.49  | 1                                    | 103  | 20                  | 8,083                 | -8,063           |
| 295+85     | 29585.00     | 5.00     | 6.60      | 977.84  | 1                                    | 154  | 21                  | 8,284                 | -8,263           |
| 295+90     | 29590.00     | 5.00     | 8.20      | 1263.36 | 1                                    | 208  | 22                  | 8,554                 | -8,532           |
| 295+95     | 29595.00     | 5.00     | 10.55     | 1486.38 | 2                                    | 255  | 24                  | 8,886                 | -8,862           |
| 296+00     | 29600.00     | 5.00     | 14.79     | 1584.67 | 2                                    | 284  | 26                  | 9,255                 | -9,229           |
| 296+05     | 29605.00     | 5.00     | 19.07     | 1447.75 | 3                                    | 281  | 29                  | 9,620                 | -9,591           |
| 296+10     | 29610.00     | 5.00     | 13.91     | 1175.71 | 3                                    | 243  | 32                  | 9,936                 | -9,904           |
| 296+15     | 29615.00     | 5.00     | 15.90     | 866.65  | 3                                    | 189  | 35                  | 10,182                | -10,147          |
| 296+20     | 29620.00     | 5.00     | 30.48     | 408.29  | 4                                    | 118  | 39                  | 10,335                | -10,296          |
| 296+25     | 29625.00     | 5.00     | 104.17    | 0.62    | 12                                   | 38   | 51                  | 10,384                | -10,333          |
| 296+30     | 29630.00     | 5.00     | 0.00      | 0.00    | 10                                   | 0    | 61                  | 10,384                | -10,323          |
| 296+35     | 29635.00     | 5.00     | 0.00      | 0.00    | 0                                    | 0    | 61                  | 10,384                | -10,323          |
| 296+40     | 29640.00     | 5.00     | 0.00      | 0.00    | 0                                    | 0    | 61                  | 10,384                | -10,323          |
| 296+42.679 | 29642.68     | 2.68     | 0.00      | 0.00    | 0                                    | 0    | 61                  | 10,384                | -10,323          |

| STATION    | REAL<br>STATION | DISTANCE | AREA (SE) |       | INCREMENTAL<br>VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                          |                  |
|------------|-----------------|----------|-----------|-------|-----------------------------------------|------|---------------------|--------------------------|------------------|
|            |                 |          | CUT       | FILL  | CUT                                     | FILL | CUT<br>1.00         | EXPANDED<br>FILL<br>1.30 | MASS<br>ORDINATE |
| 391+97.923 | 39197.92        | 0.00     | 2.19      | 0.62  | 0                                       | 0    | 0                   | 0                        | 0                |
| 392+00     | 39200.00        | 2.08     | 2.19      | 0.63  | 0                                       | 0    | 0                   | 0                        | 0                |
| 392+14.067 | 39214.07        | 14.07    | 2.19      | 0.68  | 1                                       | 0    | 1                   | 0                        | 1                |
| 392+25     | 39225.00        | 10.93    | 2.65      | 0.82  | 1                                       | 0    | 2                   | 0                        | 2                |
| 392+50     | 39250.00        | 25.00    | 2.02      | 2.94  | 2                                       | 2    | 4                   | 3                        | 1                |
| 392+75     | 39275.00        | 25.00    | 0.60      | 8.48  | 1                                       | 5    | 5                   | 9                        | -4               |
| 393+00     | 39300.00        | 25.00    | 5.11      | 7.34  | 3                                       | 7    | 8                   | 18                       | -10              |
| 393+13.467 | 39313.47        | 13.47    | 4.22      | 12.26 | 2                                       | 5    | 10                  | 25                       | -15              |
| 393+25     | 39325.00        | 11.53    | 3.01      | 20.21 | 2                                       | 7    | 12                  | 34                       | -22              |
| 393+32.505 | 39332.51        | 7.51     | 2.56      | 26.24 | 1                                       | 6    | 13                  | 42                       | -29              |
| 393+50     | 39350.00        | 17.49    | 2.66      | 25.23 | 2                                       | 17   | 15                  | 64                       | -49              |
| 393+57.485 | 39357.49        | 7.49     | 2.69      | 25.41 | 1                                       | 7    | 16                  | 73                       | -57              |
| 393+75     | 39375.00        | 17.51    | 2.21      | 17.92 | 2                                       | 14   | 18                  | 91                       | -73              |
| 393+82.465 | 39382.47        | 7.47     | 2.59      | 18.39 | 1                                       | 5    | 19                  | 98                       | -79              |
| 393+94.977 | 39394.98        | 12.51    | 2.53      | 25.01 | 1                                       | 10   | 20                  | 111                      | -91              |
| 394+00     | 39400.00        | 5.02     | 2.48      | 24.85 | 0                                       | 5    | 20                  | 117                      | -97              |
| 394+19.957 | 39419.96        | 19.96    | 2.62      | 18.57 | 2                                       | 16   | 22                  | 138                      | -116             |
| 394+25     | 39425.00        | 5.04     | 1.79      | 12.47 | 0                                       | 3    | 22                  | 142                      | -120             |
| 394+44.94  | 39444.94        | 19.94    | 2.84      | 3.73  | 2                                       | 6    | 24                  | 150                      | -126             |
| 394+50     | 39450.00        | 5.06     | 2.86      | 3.80  | 1                                       | 1    | 25                  | 151                      | -126             |
| 394+75     | 39475.00        | 25.00    | 8.98      | 2.70  | 5                                       | 3    | 30                  | 155                      | -125             |
| 395+00     | 39500.00        | 25.00    | 3.74      | 17.16 | 6                                       | 9    | 36                  | 166                      | -130             |
| 395+09.956 | 39509.96        | 9.96     | 6.14      | 48.07 | 2                                       | 12   | 38                  | 182                      | -144             |
| 395+87.701 | 39587.70        | 77.75    | 4.72      | 63.04 | 16                                      | 160  | 54                  | 390                      | -336             |
| 396+00     | 39600.00        | 12.30    | 2.40      | 14.15 | 2                                       | 18   | 56                  | 413                      | -357             |
| 396+25     | 39625.00        | 25.00    | 2.94      | 3.73  | 2                                       | 8    | 58                  | 424                      | -366             |
| 396+50     | 39650.00        | 25.00    | 2.27      | 2.39  | 2                                       | 3    | 60                  | 428                      | -368             |
| 396+52.771 | 39652.77        | 2.77     | 2.33      | 3.37  | 0                                       | 0    | 60                  | 428                      | -368             |
| 396+75     | 39675.00        | 22.23    | 1.86      | 25.21 | 2                                       | 12   | 62                  | 443                      | -381             |
| 396+77.744 | 39677.74        | 2.74     | 2.01      | 31.65 | 0                                       | 3    | 62                  | 447                      | -385             |
| 397+00     | 39700.00        | 22.26    | 1.99      | 38.36 | 2                                       | 29   | 64                  | 485                      | -421             |
| 397+02.724 | 39702.72        | 2.72     | 2.00      | 40.58 | 0                                       | 4    | 64                  | 490                      | -426             |
| 397+15.19  | 39715.19        | 12.47    | 2.13      | 38.65 | 1                                       | 18   | 65                  | 514                      | -449             |
| 397+25     | 39725.00        | 9.81     | 2.18      | 30.43 | 1                                       | 13   | 66                  | 530                      | -464             |
| 397+40.17  | 39740.17        | 15.17    | 2.10      | 42.12 | 1                                       | 20   | 67                  | 556                      | -489             |
| 397+50     | 39750.00        | 9.83     | 2.34      | 50.29 | 1                                       | 17   | 68                  | 579                      | -511             |
| 397+65.15  | 39765.15        | 15.15    | 3.01      | 58.02 | 2                                       | 30   | 70                  | 618                      | -548             |
| 397+75     | 39775.00        | 9.85     | 4.22      | 48.05 | 1                                       | 19   | 71                  | 642                      | -571             |
| 397+86.397 | 39786.40        | 11.40    | 4.56      | 33.01 | 2                                       | 17   | 73                  | 664                      | -591             |
| 398+00     | 39800.00        | 13.60    | 5.38      | 26.38 | 3                                       | 15   | 76                  | 684                      | -608             |
| 398+25     | 39825.00        | 25.00    | 3.47      | 18.44 | 4                                       | 21   | 80                  | 711                      | -631             |
| 398+50     | 39850.00        | 25.00    | 2.03      | 11.22 | 3                                       | 14   | 83                  | 729                      | -646             |
| 398+75     | 39875.00        | 25.00    | 1.95      | 10.45 | 2                                       | 10   | 85                  | 742                      | -657             |
| 398+83.625 | 39883.63        | 8.63     | 2.04      | 9.90  | 1                                       | 3    | 86                  | 746                      | -660             |
| 399+00     | 39900.00        | 16.37    | 2.05      | 2.95  | 1                                       | 4    | 87                  | 751                      | -664             |
| 399+01.678 | 39901.68        | 1.68     | 2.06      | 2.80  | 0                                       | 0    | 87                  | 751                      | -664             |

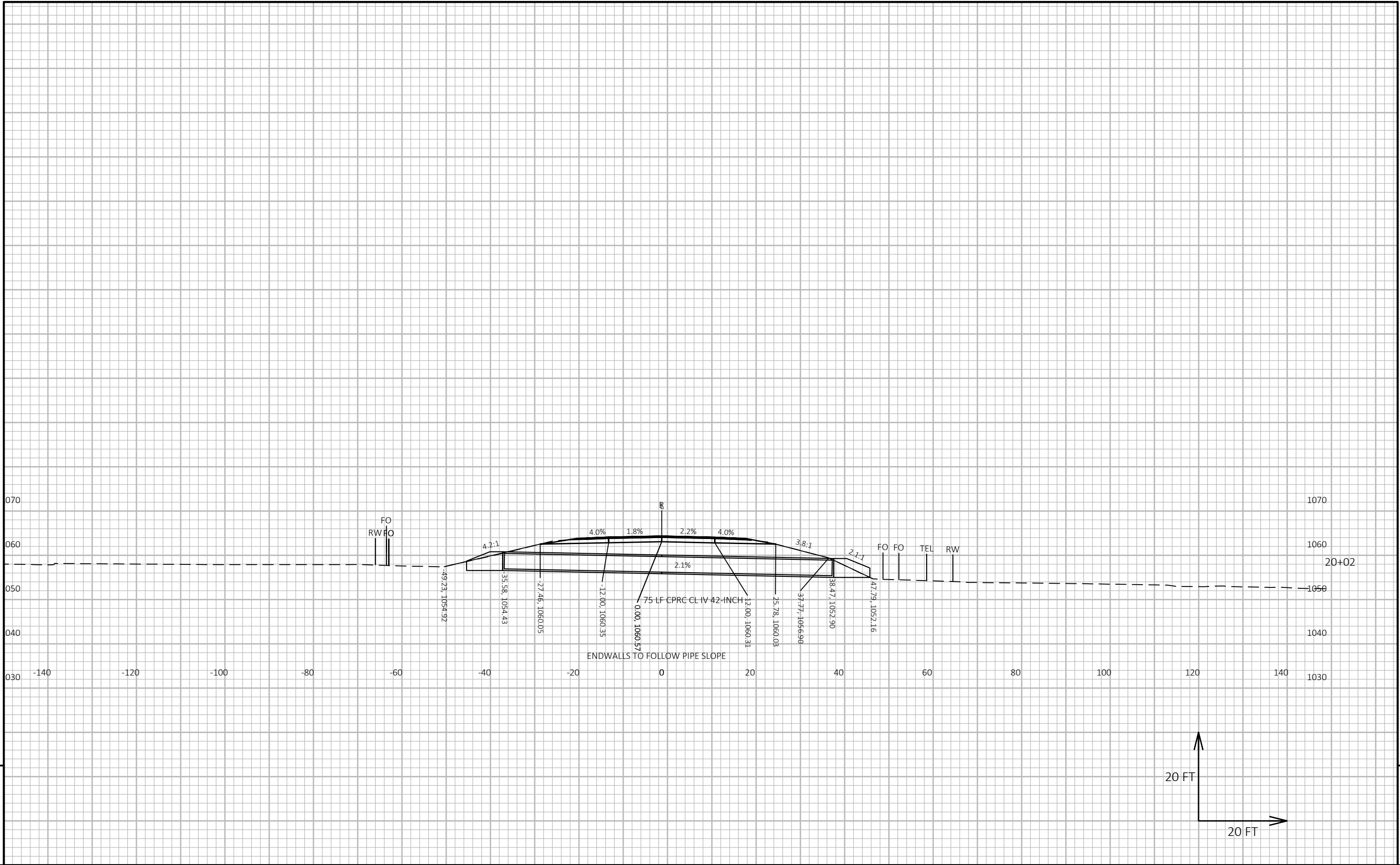
| STATION    | REAL STATION | DISTANCE | AREA (SF) |        | INCREMENTAL VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                       |                  |
|------------|--------------|----------|-----------|--------|--------------------------------------|------|---------------------|-----------------------|------------------|
|            |              |          | CUT       | FILL   | CUT                                  | FILL | CUT<br>1.00         | EXPANDED FILL<br>1.30 | MASS<br>ORDINATE |
| 459+48.638 | 45948.64     | 0.00     | 1.10      | 0.81   | 0                                    | 0    | 0                   | 0                     | 0                |
| 459+50     | 45950.00     | 1.36     | 1.52      | 0.57   | 0                                    | 0    | 0                   | 0                     | 0                |
| 459+75     | 45975.00     | 25.00    | 3.09      | 0.37   | 2                                    | 0    | 2                   | 0                     | 2                |
| 460+00     | 46000.00     | 25.00    | 1.80      | 3.06   | 2                                    | 2    | 4                   | 3                     | 1                |
| 460+25     | 46025.00     | 25.00    | 2.21      | 4.50   | 2                                    | 4    | 6                   | 8                     | -2               |
| 460+50     | 46050.00     | 25.00    | 2.21      | 5.38   | 2                                    | 5    | 8                   | 14                    | -6               |
| 460+75     | 46075.00     | 25.00    | 2.96      | 5.84   | 2                                    | 5    | 10                  | 21                    | -11              |
| 461+00     | 46100.00     | 25.00    | 3.38      | 3.89   | 3                                    | 5    | 13                  | 27                    | -14              |
| 461+25     | 46125.00     | 25.00    | 3.24      | 3.42   | 3                                    | 3    | 16                  | 31                    | -15              |
| 461+50     | 46150.00     | 25.00    | 2.32      | 3.19   | 3                                    | 3    | 19                  | 35                    | -16              |
| 461+75     | 46175.00     | 25.00    | 3.10      | 2.59   | 3                                    | 3    | 22                  | 39                    | -17              |
| 462+00     | 46200.00     | 25.00    | 1.99      | 3.71   | 2                                    | 3    | 24                  | 43                    | -19              |
| 462+25     | 46225.00     | 25.00    | 1.77      | 15.31  | 2                                    | 9    | 26                  | 55                    | -29              |
| 462+50     | 46250.00     | 25.00    | 1.78      | 21.26  | 2                                    | 17   | 28                  | 77                    | -49              |
| 462+75     | 46275.00     | 25.00    | 1.56      | 22.33  | 2                                    | 20   | 30                  | 103                   | -73              |
| 463+00     | 46300.00     | 25.00    | 1.89      | 20.84  | 2                                    | 20   | 32                  | 129                   | -97              |
| 463+25     | 46325.00     | 25.00    | 2.06      | 22.69  | 2                                    | 20   | 34                  | 155                   | -121             |
| 463+50     | 46350.00     | 25.00    | 1.81      | 22.63  | 2                                    | 21   | 36                  | 182                   | -146             |
| 463+75     | 46375.00     | 25.00    | 1.56      | 18.69  | 2                                    | 19   | 38                  | 207                   | -169             |
| 464+00     | 46400.00     | 25.00    | 1.95      | 16.12  | 2                                    | 16   | 40                  | 228                   | -188             |
| 464+25     | 46425.00     | 25.00    | 1.74      | 23.19  | 2                                    | 18   | 42                  | 251                   | -209             |
| 464+50     | 46450.00     | 25.00    | 1.48      | 29.85  | 1                                    | 25   | 43                  | 283                   | -240             |
| 464+75     | 46475.00     | 25.00    | 1.80      | 35.14  | 2                                    | 30   | 45                  | 322                   | -277             |
| 465+00     | 46500.00     | 25.00    | 1.22      | 47.39  | 1                                    | 38   | 46                  | 372                   | -326             |
| 465+50     | 46550.00     | 50.00    | 0.00      | 100.12 | 1                                    | 137  | 47                  | 550                   | -503             |
| 466+00     | 46600.00     | 50.00    | 2.17      | 100.60 | 2                                    | 186  | 49                  | 792                   | -743             |
| 466+50     | 46650.00     | 50.00    | 2.05      | 58.98  | 4                                    | 148  | 53                  | 984                   | -931             |
| 466+74.452 | 46674.45     | 24.45    | 5.49      | 6.69   | 3                                    | 30   | 56                  | 1,023                 | -967             |
| 466+80     | 46680.00     | 5.55     | 7.54      | 5.89   | 1                                    | 1    | 57                  | 1,024                 | -967             |
| 466+85     | 46685.00     | 5.00     | 9.68      | 13.09  | 2                                    | 2    | 59                  | 1,027                 | -968             |
| 466+90     | 46690.00     | 5.00     | 11.92     | 22.90  | 2                                    | 3    | 61                  | 1,031                 | -970             |
| 466+95     | 46695.00     | 5.00     | 13.67     | 33.77  | 2                                    | 5    | 63                  | 1,037                 | -974             |
| 467+00     | 46700.00     | 5.00     | 14.56     | 47.15  | 3                                    | 7    | 66                  | 1,047                 | -981             |
| 467+05     | 46705.00     | 5.00     | 8.20      | 63.61  | 2                                    | 10   | 68                  | 1,060                 | -992             |
| 467+10     | 46710.00     | 5.00     | 6.82      | 69.05  | 1                                    | 12   | 69                  | 1,075                 | -1,006           |

| STATION    | REAL STATION | DISTANCE | AREA (5F) |       | INCREMENTAL VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                       |                  |
|------------|--------------|----------|-----------|-------|--------------------------------------|------|---------------------|-----------------------|------------------|
|            |              |          | CUT       | FILL  | CUT                                  | FILL | CUT<br>1.00         | EXPANDED FILL<br>1.30 | MA55<br>ORDINATE |
| 467+15     | 46715.00     | 5.00     | 5.38      | 66.44 | 1                                    | 13   | 70                  | 1,092                 | -1,022           |
| 467+20     | 46720.00     | 5.00     | 4.52      | 66.50 | 1                                    | 12   | 71                  | 1,108                 | -1,037           |
| 467+25     | 46725.00     | 5.00     | 3.33      | 68.33 | 1                                    | 12   | 72                  | 1,123                 | -1,051           |
| 467+30     | 46730.00     | 5.00     | 2.37      | 70.61 | 1                                    | 13   | 73                  | 1,140                 | -1,067           |
| 467+35     | 46735.00     | 5.00     | 1.77      | 72.57 | 0                                    | 13   | 73                  | 1,157                 | -1,084           |
| 467+40     | 46740.00     | 5.00     | 1.97      | 72.64 | 0                                    | 13   | 73                  | 1,174                 | -1,101           |
| 467+45     | 46745.00     | 5.00     | 2.10      | 71.43 | 0                                    | 13   | 73                  | 1,191                 | -1,118           |
| 467+50     | 46750.00     | 5.00     | 2.10      | 73.32 | 0                                    | 13   | 73                  | 1,208                 | -1,135           |
| 467+55     | 46755.00     | 5.00     | 2.62      | 75.68 | 0                                    | 14   | 73                  | 1,226                 | -1,153           |
| 467+60     | 46760.00     | 5.00     | 2.66      | 73.99 | 0                                    | 14   | 73                  | 1,244                 | -1,171           |
| 467+65     | 46765.00     | 5.00     | 3.01      | 68.80 | 1                                    | 13   | 74                  | 1,261                 | -1,187           |
| 467+70     | 46770.00     | 5.00     | 3.41      | 62.07 | 1                                    | 12   | 75                  | 1,277                 | -1,202           |
| 467+75     | 46775.00     | 5.00     | 3.41      | 58.41 | 1                                    | 11   | 76                  | 1,291                 | -1,215           |
| 467+80     | 46780.00     | 5.00     | 3.39      | 62.44 | 1                                    | 11   | 77                  | 1,305                 | -1,228           |
| 467+85     | 46785.00     | 5.00     | 3.66      | 66.50 | 1                                    | 12   | 78                  | 1,321                 | -1,243           |
| 467+90     | 46790.00     | 5.00     | 4.03      | 62.26 | 1                                    | 12   | 79                  | 1,336                 | -1,257           |
| 467+95     | 46795.00     | 5.00     | 4.38      | 57.63 | 1                                    | 11   | 80                  | 1,351                 | -1,271           |
| 468+00     | 46800.00     | 5.00     | 4.65      | 52.87 | 1                                    | 10   | 81                  | 1,364                 | -1,283           |
| 468+05     | 46805.00     | 5.00     | 4.60      | 47.95 | 1                                    | 9    | 82                  | 1,375                 | -1,293           |
| 468+10     | 46810.00     | 5.00     | 4.24      | 42.51 | 1                                    | 8    | 83                  | 1,386                 | -1,303           |
| 468+15     | 46815.00     | 5.00     | 3.68      | 36.10 | 1                                    | 7    | 84                  | 1,395                 | -1,311           |
| 468+20     | 46820.00     | 5.00     | 3.25      | 28.70 | 1                                    | 6    | 85                  | 1,403                 | -1,318           |
| 468+25     | 46825.00     | 5.00     | 2.94      | 20.31 | 1                                    | 5    | 86                  | 1,409                 | -1,323           |
| 468+30     | 46830.00     | 5.00     | 3.05      | 11.40 | 1                                    | 3    | 87                  | 1,413                 | -1,326           |
| 468+35     | 46835.00     | 5.00     | 3.07      | 4.40  | 1                                    | 1    | 88                  | 1,414                 | -1,326           |
| 468+40     | 46840.00     | 5.00     | 3.68      | 1.74  | 1                                    | 1    | 89                  | 1,416                 | -1,327           |
| 468+45     | 46845.00     | 5.00     | 4.04      | 1.74  | 1                                    | 0    | 90                  | 1,416                 | -1,326           |
| 468+50     | 46850.00     | 5.00     | 4.09      | 2.51  | 1                                    | 0    | 91                  | 1,416                 | -1,325           |
| 468+55     | 46855.00     | 5.00     | 3.06      | 3.11  | 1                                    | 1    | 92                  | 1,417                 | -1,325           |
| 468+60     | 46860.00     | 5.00     | 2.25      | 0.00  | 0                                    | 0    | 92                  | 1,417                 | -1,325           |
| 468+65     | 46865.00     | 5.00     | 0.00      | 0.00  | 0                                    | 0    | 92                  | 1,417                 | -1,325           |
| 468+70     | 46870.00     | 5.00     | 0.00      | 0.00  | 0                                    | 0    | 92                  | 1,417                 | -1,325           |
| 468+71.266 | 46871.27     | 1.27     | 0.00      | 0.00  | 0                                    | 0    | 92                  | 1,417                 | -1,325           |

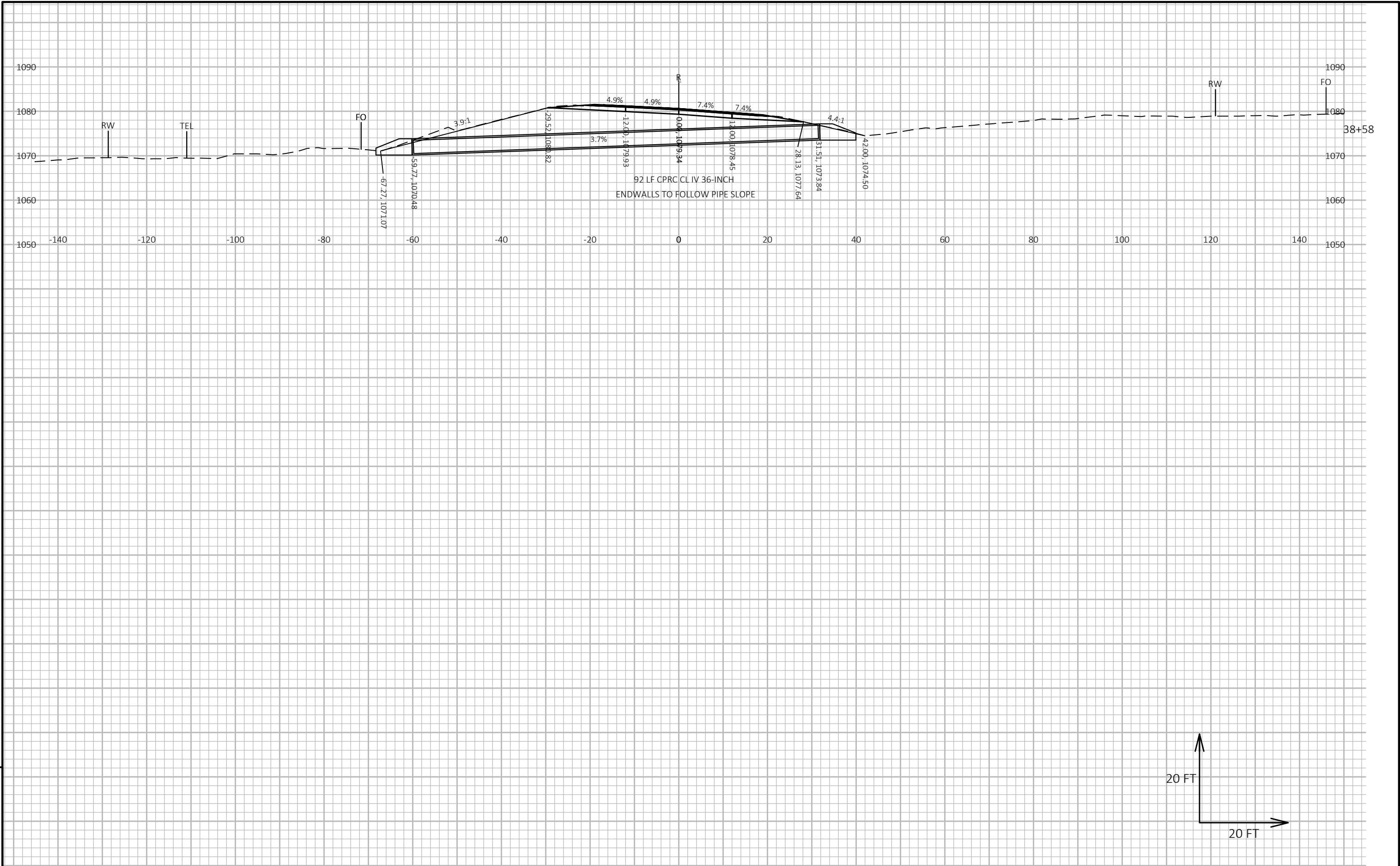
| STATION    | REAL STATION | DISTANCE | AREA (SF) |       | INCREMENTAL VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                          |                  |
|------------|--------------|----------|-----------|-------|--------------------------------------|------|---------------------|--------------------------|------------------|
|            |              |          | CUT       | FILL  | CUT                                  | FILL | CUT<br>1.00         | EXPANDED<br>FILL<br>1.30 | MASS<br>ORDINATE |
| 487+22.149 | 48722.15     | 0.00     | 1.60      | 2.51  | 0                                    | 0    | 0                   | 0                        | 0                |
| 487+25     | 48725.00     | 2.85     | 1.61      | 2.48  | 0                                    | 0    | 0                   | 0                        | 0                |
| 487+40     | 48740.00     | 15.00    | 1.62      | 1.88  | 1                                    | 1    | 1                   | 1                        | 0                |
| 487+50     | 48750.00     | 10.00    | 1.64      | 1.32  | 1                                    | 1    | 2                   | 3                        | -1               |
| 487+60     | 48760.00     | 10.00    | 1.65      | 2.10  | 1                                    | 1    | 3                   | 4                        | -1               |
| 487+75     | 48775.00     | 15.00    | 1.68      | 5.46  | 1                                    | 2    | 4                   | 7                        | -3               |
| 487+80     | 48780.00     | 5.00     | 1.68      | 6.84  | 0                                    | 1    | 4                   | 8                        | -4               |
| 487+97.166 | 48797.17     | 17.17    | 1.69      | 13.44 | 1                                    | 6    | 5                   | 16                       | -11              |
| 488+00     | 48800.00     | 2.83     | 1.71      | 13.99 | 0                                    | 1    | 5                   | 17                       | -12              |
| 488+20     | 48820.00     | 20.00    | 1.76      | 19.22 | 1                                    | 12   | 6                   | 33                       | -27              |
| 488+22.152 | 48822.15     | 2.15     | 1.76      | 19.87 | 0                                    | 2    | 6                   | 35                       | -29              |
| 488+40     | 48840.00     | 17.85    | 1.76      | 18.81 | 1                                    | 13   | 7                   | 52                       | -45              |
| 488+60     | 48860.00     | 20.00    | 1.74      | 17.39 | 1                                    | 13   | 8                   | 69                       | -61              |
| 488+75     | 48875.00     | 15.00    | 1.72      | 16.14 | 1                                    | 9    | 9                   | 81                       | -72              |
| 488+80     | 48880.00     | 5.00     | 1.73      | 13.06 | 0                                    | 3    | 9                   | 85                       | -76              |
| 489+00     | 48900.00     | 20.00    | 1.75      | 0.55  | 1                                    | 5    | 10                  | 91                       | -81              |

| STATION    | REAL STATION | DISTANCE | AREA (SF) |        | INCREMENTAL VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                          |                  |
|------------|--------------|----------|-----------|--------|--------------------------------------|------|---------------------|--------------------------|------------------|
|            |              |          | CUT       | FILL   | CUT                                  | FILL | CUT<br>1.00         | EXPANDED<br>FILL<br>1.30 | MASS<br>ORDINATE |
| 506+57.205 | 50657.20     | 0.00     | 0.00      | 0.00   | 0                                    | 0    | 0                   | 0                        | 0                |
| 506+60     | 50660.00     | 2.80     | 0.88      | 0.00   | 0                                    | 0    | 0                   | 0                        | 0                |
| 506+65     | 50665.00     | 5.00     | 1.22      | 0.00   | 0                                    | 0    | 0                   | 0                        | 0                |
| 506+70     | 50670.00     | 5.00     | 1.68      | 0.00   | 0                                    | 0    | 0                   | 0                        | 0                |
| 506+75     | 50675.00     | 5.00     | 2.27      | 0.00   | 0                                    | 0    | 0                   | 0                        | 0                |
| 506+80     | 50680.00     | 5.00     | 6.66      | 2.76   | 1                                    | 0    | 1                   | 0                        | 1                |
| 506+85     | 50685.00     | 5.00     | 5.76      | 3.91   | 1                                    | 1    | 2                   | 1                        | 1                |
| 506+90     | 50690.00     | 5.00     | 5.09      | 5.04   | 1                                    | 1    | 3                   | 3                        | 0                |
| 506+95     | 50695.00     | 5.00     | 4.68      | 5.56   | 1                                    | 1    | 4                   | 4                        | 0                |
| 507+00     | 50700.00     | 5.00     | 4.32      | 5.32   | 1                                    | 1    | 5                   | 5                        | 0                |
| 507+05     | 50705.00     | 5.00     | 4.31      | 4.02   | 1                                    | 1    | 6                   | 7                        | -1               |
| 507+10     | 50710.00     | 5.00     | 4.16      | 3.57   | 1                                    | 1    | 7                   | 8                        | -1               |
| 507+15     | 50715.00     | 5.00     | 3.90      | 4.59   | 1                                    | 1    | 8                   | 9                        | -1               |
| 507+20     | 50720.00     | 5.00     | 3.87      | 6.16   | 1                                    | 1    | 9                   | 10                       | -1               |
| 507+25     | 50725.00     | 5.00     | 3.81      | 7.31   | 1                                    | 1    | 10                  | 12                       | -2               |
| 507+30     | 50730.00     | 5.00     | 3.51      | 8.26   | 1                                    | 1    | 11                  | 13                       | -2               |
| 507+35     | 50735.00     | 5.00     | 4.30      | 8.59   | 1                                    | 2    | 12                  | 16                       | -4               |
| 507+40     | 50740.00     | 5.00     | 3.94      | 11.35  | 1                                    | 2    | 13                  | 18                       | -5               |
| 507+45     | 50745.00     | 5.00     | 6.42      | 34.72  | 1                                    | 4    | 14                  | 23                       | -9               |
| 507+47.557 | 50747.56     | 2.56     | 13.52     | 53.59  | 1                                    | 4    | 15                  | 29                       | -14              |
| 507+50     | 50750.00     | 2.44     | 21.87     | 124.75 | 2                                    | 8    | 17                  | 39                       | -22              |
| 507+52.172 | 50752.17     | 2.17     | 25.52     | 45.67  | 2                                    | 7    | 19                  | 48                       | -29              |
| 507+55     | 50755.00     | 2.83     | 32.08     | 28.08  | 3                                    | 4    | 22                  | 53                       | -31              |
| 507+60     | 50760.00     | 5.00     | 38.38     | 7.92   | 7                                    | 3    | 29                  | 57                       | -28              |
| 507+65     | 50765.00     | 5.00     | 35.30     | 2.80   | 7                                    | 1    | 36                  | 59                       | -23              |
| 507+70     | 50770.00     | 5.00     | 29.65     | 1.00   | 6                                    | 0    | 42                  | 59                       | -17              |
| 507+75     | 50775.00     | 5.00     | 26.89     | 0.19   | 5                                    | 0    | 47                  | 59                       | -12              |
| 507+80     | 50780.00     | 5.00     | 21.37     | 0.63   | 4                                    | 0    | 51                  | 59                       | -8               |
| 507+85     | 50785.00     | 5.00     | 17.24     | 0.93   | 4                                    | 0    | 55                  | 59                       | -4               |
| 507+90     | 50790.00     | 5.00     | 14.85     | 1.00   | 3                                    | 0    | 58                  | 59                       | -1               |
| 507+95     | 50795.00     | 5.00     | 12.52     | 0.61   | 3                                    | 0    | 61                  | 59                       | 3                |
| 508+00     | 50800.00     | 5.00     | 9.48      | 0.91   | 2                                    | 0    | 63                  | 59                       | 5                |
| 508+01.209 | 50801.21     | 1.21     | 8.74      | 0.99   | 0                                    | 0    | 63                  | 59                       | 5                |
| 508+04.813 | 50804.81     | 3.60     | 0.00      | 0.00   | 1                                    | 0    | 64                  | 59                       | 6                |

| STATION    | REAL STATION | DISTANCE | AREA (5E) |       | INCREMENTAL VOL (CY)<br>(UNADJUSTED) |      | CUMULATIVE VOL (CY) |                          |                  |
|------------|--------------|----------|-----------|-------|--------------------------------------|------|---------------------|--------------------------|------------------|
|            |              |          | CUT       | EILL  | CUT                                  | EILL | CUT<br>1.00         | EXPANDED<br>EILL<br>1.30 | MASS<br>ORDINATE |
| 515+50     | 51550.00     | 0.00     | 1.49      | 0.44  | 0                                    | 0    | 0                   | 0                        | 0                |
| 515+60     | 51560.00     | 10.00    | 1.82      | 0.37  | 1                                    | 0    | 1                   | 0                        | 1                |
| 515+80     | 51580.00     | 20.00    | 3.11      | 0.18  | 2                                    | 0    | 3                   | 0                        | 3                |
| 516+00     | 51600.00     | 20.00    | 2.93      | 1.22  | 2                                    | 1    | 5                   | 1                        | 4                |
| 516+06.191 | 51606.19     | 6.19     | 2.79      | 3.19  | 1                                    | 1    | 6                   | 3                        | 3                |
| 516+20     | 51620.00     | 13.81    | 2.36      | 10.60 | 1                                    | 4    | 7                   | 8                        | -1               |
| 516+40     | 51640.00     | 20.00    | 2.05      | 19.10 | 2                                    | 11   | 9                   | 22                       | -13              |
| 516+60     | 51660.00     | 20.00    | 1.66      | 31.83 | 1                                    | 19   | 10                  | 47                       | -37              |
| 516+80     | 51680.00     | 20.00    | 1.66      | 50.45 | 1                                    | 30   | 11                  | 86                       | -75              |
| 516+88.495 | 51688.50     | 8.50     | 1.69      | 54.55 | 1                                    | 17   | 12                  | 108                      | -96              |
| 517+00     | 51700.00     | 11.50    | 1.74      | 46.74 | 1                                    | 22   | 13                  | 137                      | -124             |
| 517+20     | 51720.00     | 20.00    | 1.10      | 54.10 | 1                                    | 37   | 14                  | 185                      | -171             |
| 517+40     | 51740.00     | 20.00    | 0.79      | 63.98 | 1                                    | 44   | 15                  | 242                      | -227             |
| 517+60     | 51760.00     | 20.00    | 0.95      | 77.51 | 1                                    | 52   | 16                  | 309                      | -293             |
| 517+74.54  | 51774.54     | 14.54    | 1.75      | 89.05 | 1                                    | 45   | 17                  | 368                      | -351             |
| 517+80     | 51780.00     | 5.46     | 1.76      | 89.06 | 0                                    | 18   | 17                  | 391                      | -374             |
| 518+00     | 51800.00     | 20.00    | 1.72      | 81.50 | 1                                    | 63   | 18                  | 473                      | -455             |
| 518+20     | 51820.00     | 20.00    | 1.39      | 77.67 | 1                                    | 59   | 19                  | 550                      | -531             |
| 518+40     | 51840.00     | 20.00    | 1.45      | 74.52 | 1                                    | 56   | 20                  | 623                      | -603             |
| 518+50     | 51850.00     | 10.00    | 1.61      | 73.42 | 1                                    | 27   | 21                  | 658                      | -637             |
| 518+60     | 51860.00     | 10.00    | 1.56      | 73.49 | 1                                    | 27   | 22                  | 693                      | -671             |
| 518+73.859 | 51873.86     | 13.86    | 1.78      | 73.47 | 1                                    | 38   | 23                  | 742                      | -719             |
| 518+75.237 | 51875.24     | 1.38     | 1.78      | 72.68 | 0                                    | 4    | 23                  | 748                      | -725             |
| 518+80     | 51880.00     | 4.76     | 1.79      | 71.24 | 0                                    | 13   | 23                  | 764                      | -741             |
| 519+00     | 51900.00     | 20.00    | 1.70      | 65.60 | 1                                    | 51   | 24                  | 831                      | -807             |
| 519+20     | 51920.00     | 20.00    | 1.65      | 61.81 | 1                                    | 47   | 25                  | 892                      | -867             |
| 519+23.855 | 51923.85     | 3.85     | 1.62      | 61.29 | 0                                    | 9    | 25                  | 904                      | -879             |
| 519+40     | 51940.00     | 16.15    | 1.58      | 57.40 | 1                                    | 35   | 26                  | 949                      | -923             |
| 519+60     | 51960.00     | 20.00    | 1.46      | 52.40 | 1                                    | 41   | 27                  | 1,002                    | -975             |
| 519+80     | 51980.00     | 20.00    | 1.33      | 49.88 | 1                                    | 38   | 28                  | 1,052                    | -1,024           |
| 520+00     | 52000.00     | 20.00    | 1.23      | 44.43 | 1                                    | 35   | 29                  | 1,097                    | -1,068           |
| 520+05.809 | 52005.81     | 5.81     | 1.21      | 40.75 | 0                                    | 9    | 29                  | 1,109                    | -1,080           |
| 520+15.348 | 52015.35     | 9.54     | 1.22      | 37.96 | 0                                    | 14   | 29                  | 1,127                    | -1,098           |
| 520+20     | 52020.00     | 4.65     | 1.25      | 36.31 | 0                                    | 6    | 29                  | 1,135                    | -1,106           |
| 520+34.427 | 52034.43     | 14.43    | 1.30      | 30.00 | 1                                    | 18   | 30                  | 1,158                    | -1,128           |
| 520+40     | 52040.00     | 5.57     | 1.32      | 26.93 | 0                                    | 6    | 30                  | 1,166                    | -1,136           |
| 520+60     | 52060.00     | 20.00    | 1.50      | 14.79 | 1                                    | 15   | 31                  | 1,186                    | -1,155           |
| 520+64.939 | 52064.94     | 4.94     | 1.53      | 11.46 | 0                                    | 2    | 31                  | 1,188                    | -1,157           |
| 520+72.585 | 52072.58     | 7.65     | 1.56      | 6.45  | 0                                    | 3    | 31                  | 1,192                    | -1,161           |
| 520+80     | 52080.00     | 7.42     | 1.91      | 2.97  | 0                                    | 1    | 31                  | 1,193                    | -1,162           |
| 520+82.124 | 52082.12     | 2.12     | 2.20      | 2.38  | 0                                    | 0    | 31                  | 1,193                    | -1,162           |
| 520+91.664 | 52091.66     | 9.54     | 1.63      | 1.57  | 1                                    | 1    | 32                  | 1,195                    | -1,163           |
| 521+00     | 52100.00     | 8.34     | 1.65      | 0.92  | 1                                    | 0    | 33                  | 1,195                    | -1,162           |

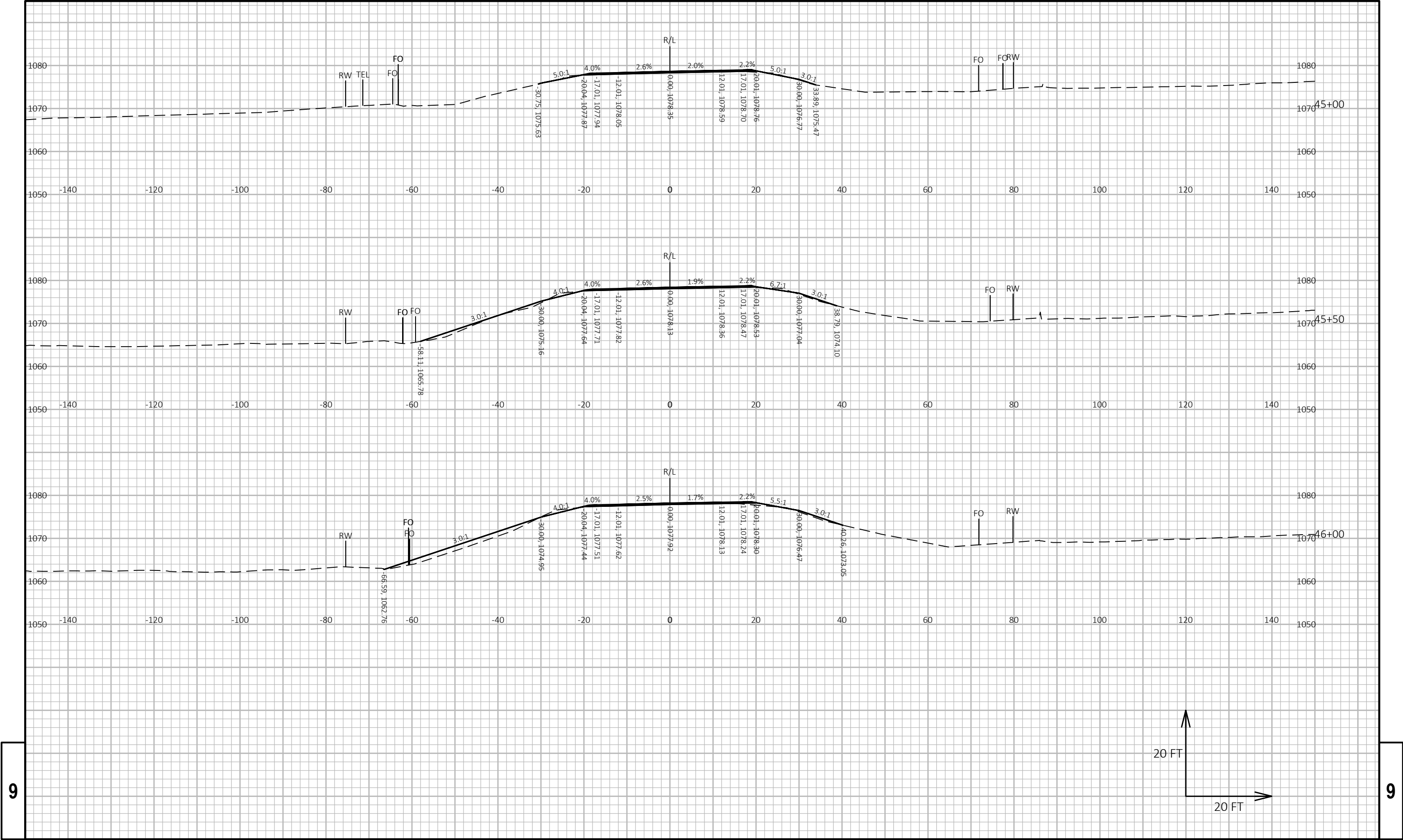






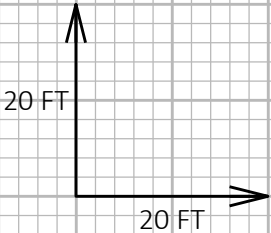
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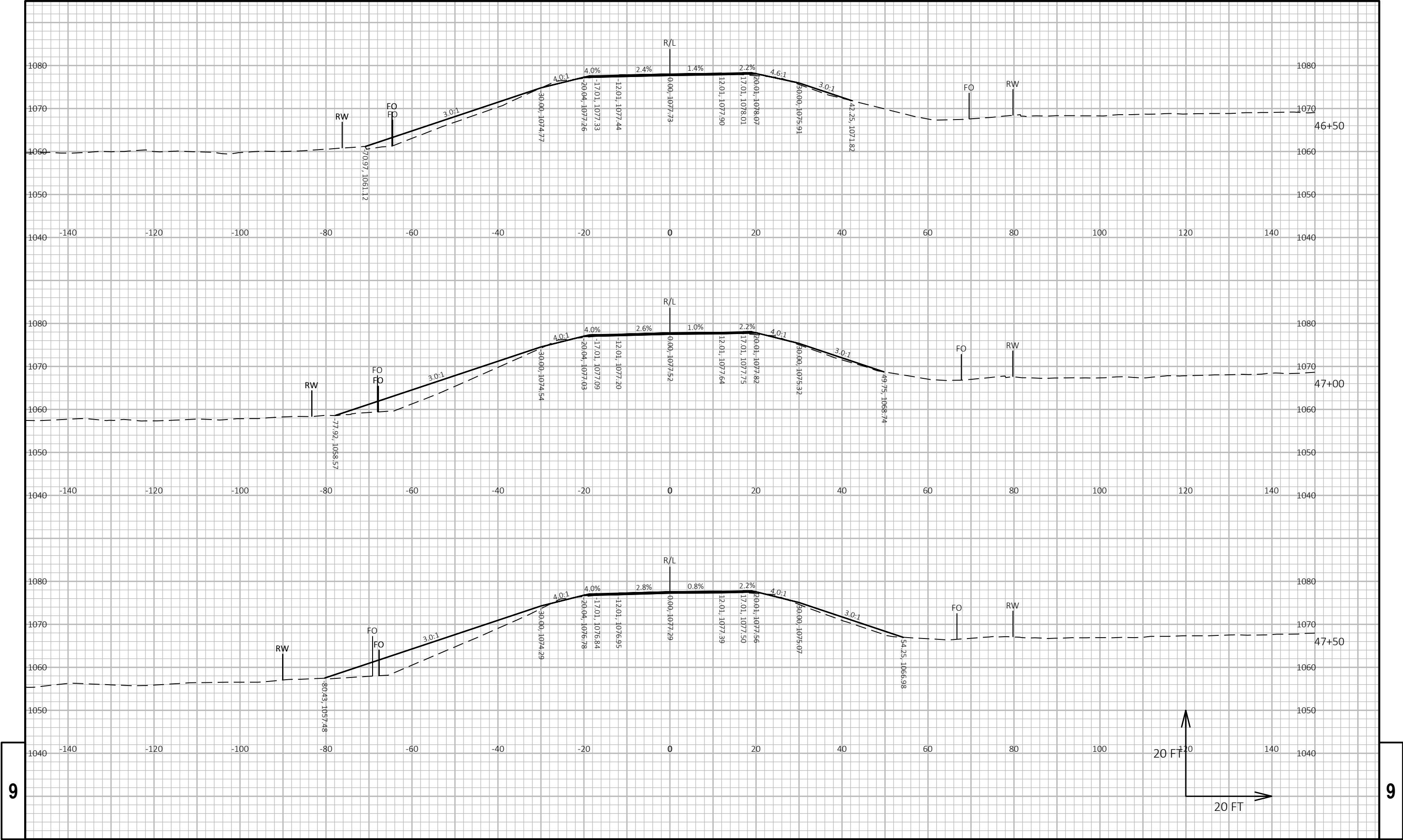


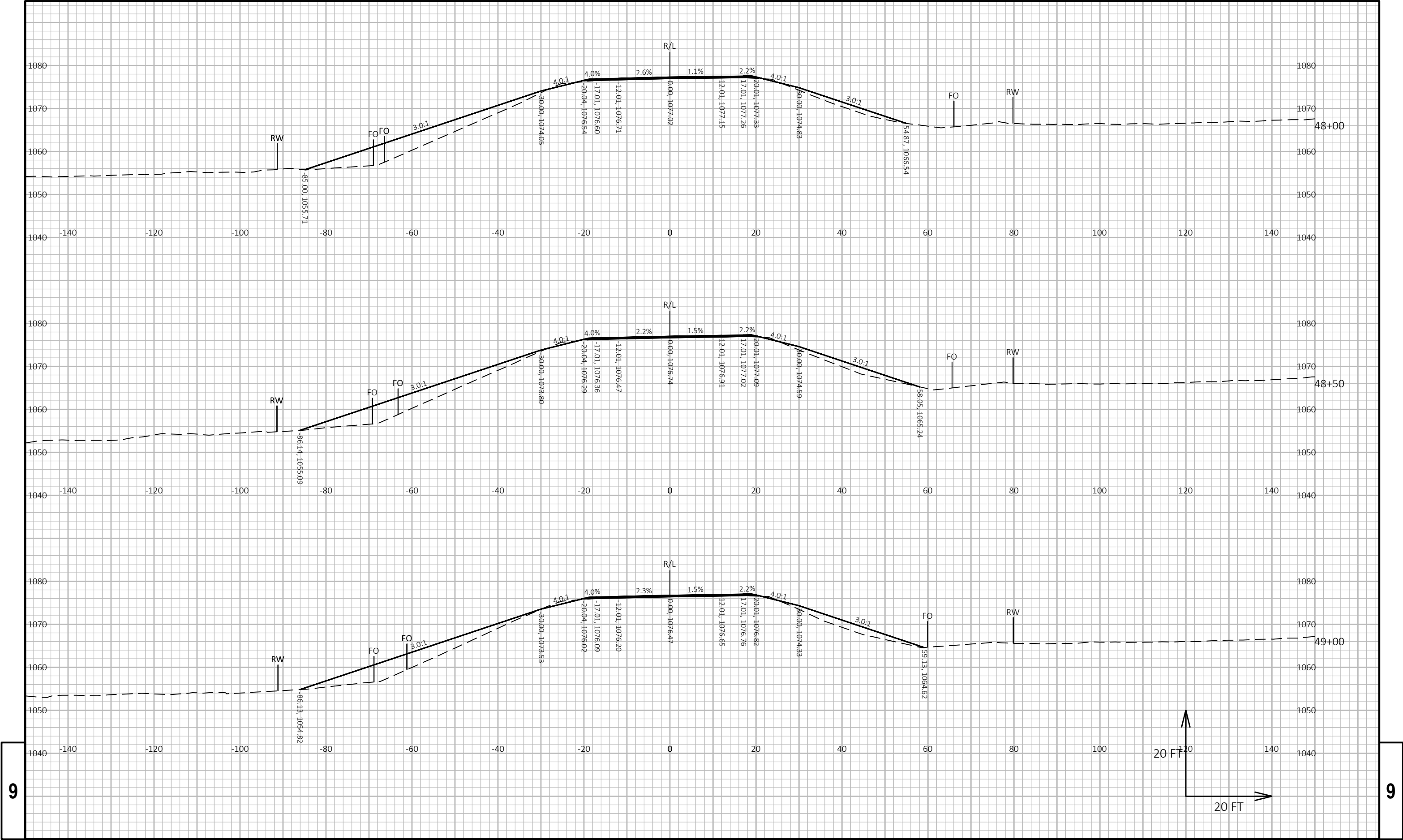
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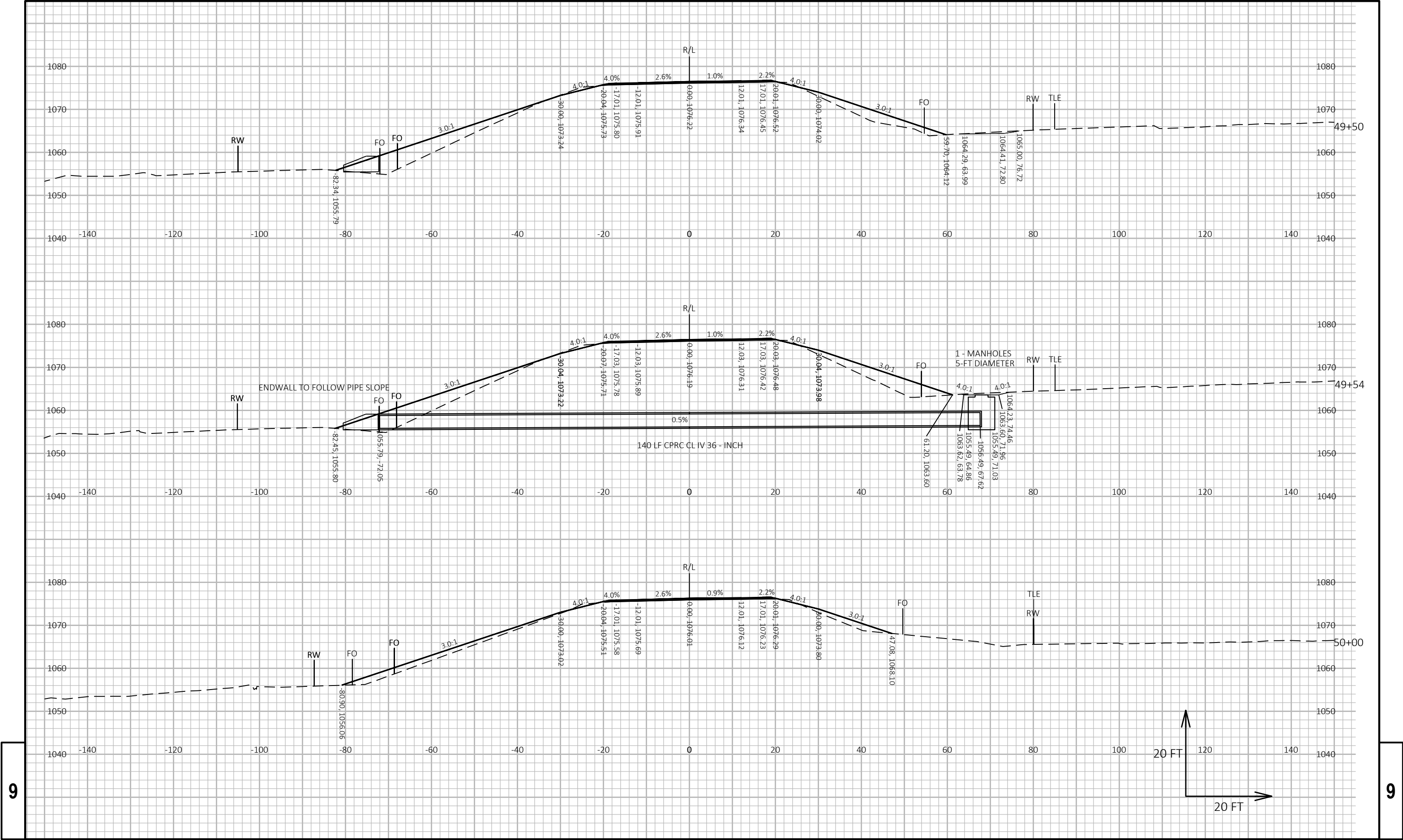
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PROJECT NO: 8070-03-70/71

HWY: USH 63

COUNTY: PIERCE

CROSS SECTIONS: USH 63

SHEET 221

E

FILE NAME : N:\PDS\C3D\80700331\SHEETPLAN\80700331-STA 45 XS.DWG  
LAYOUT NAME - 04

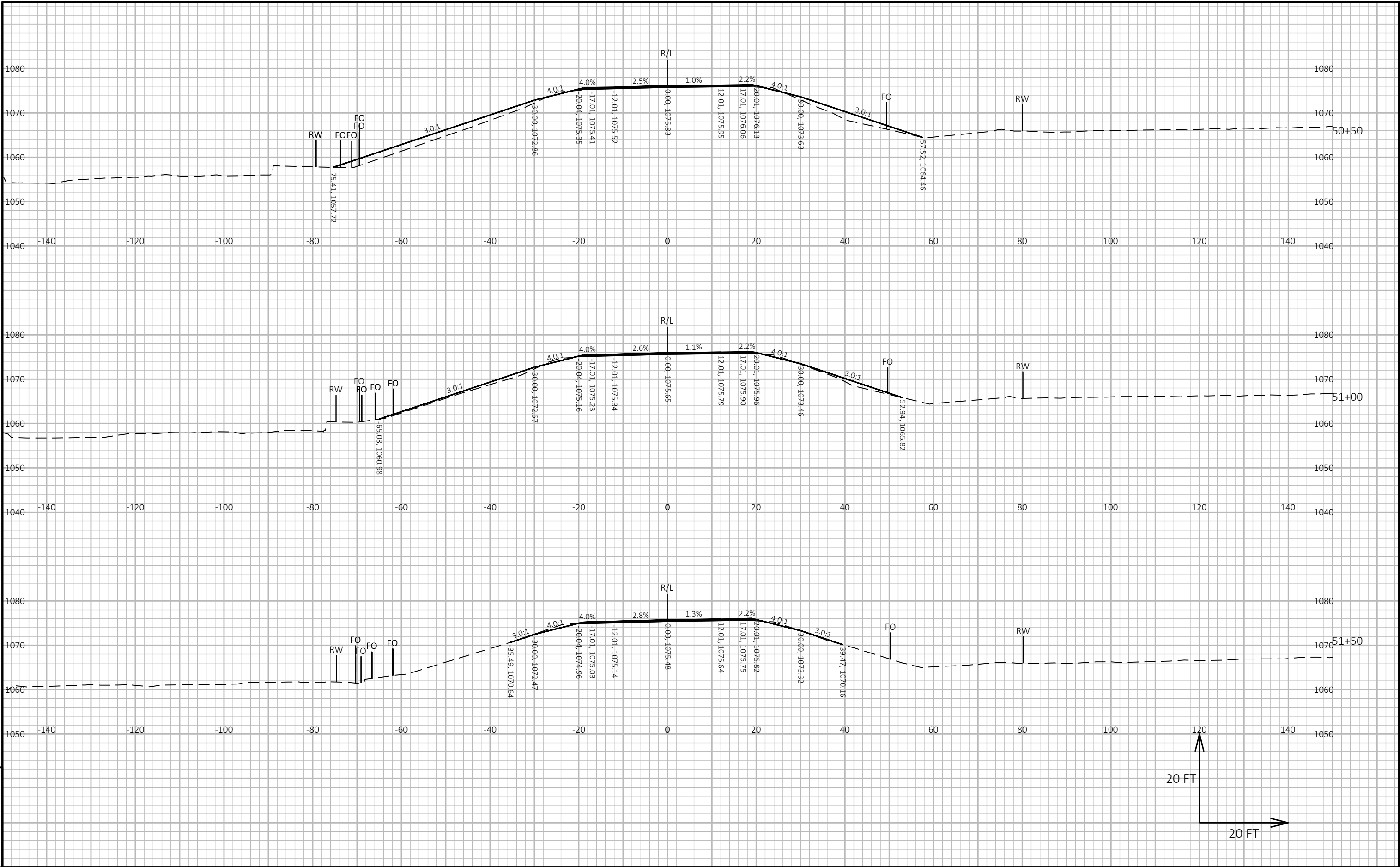
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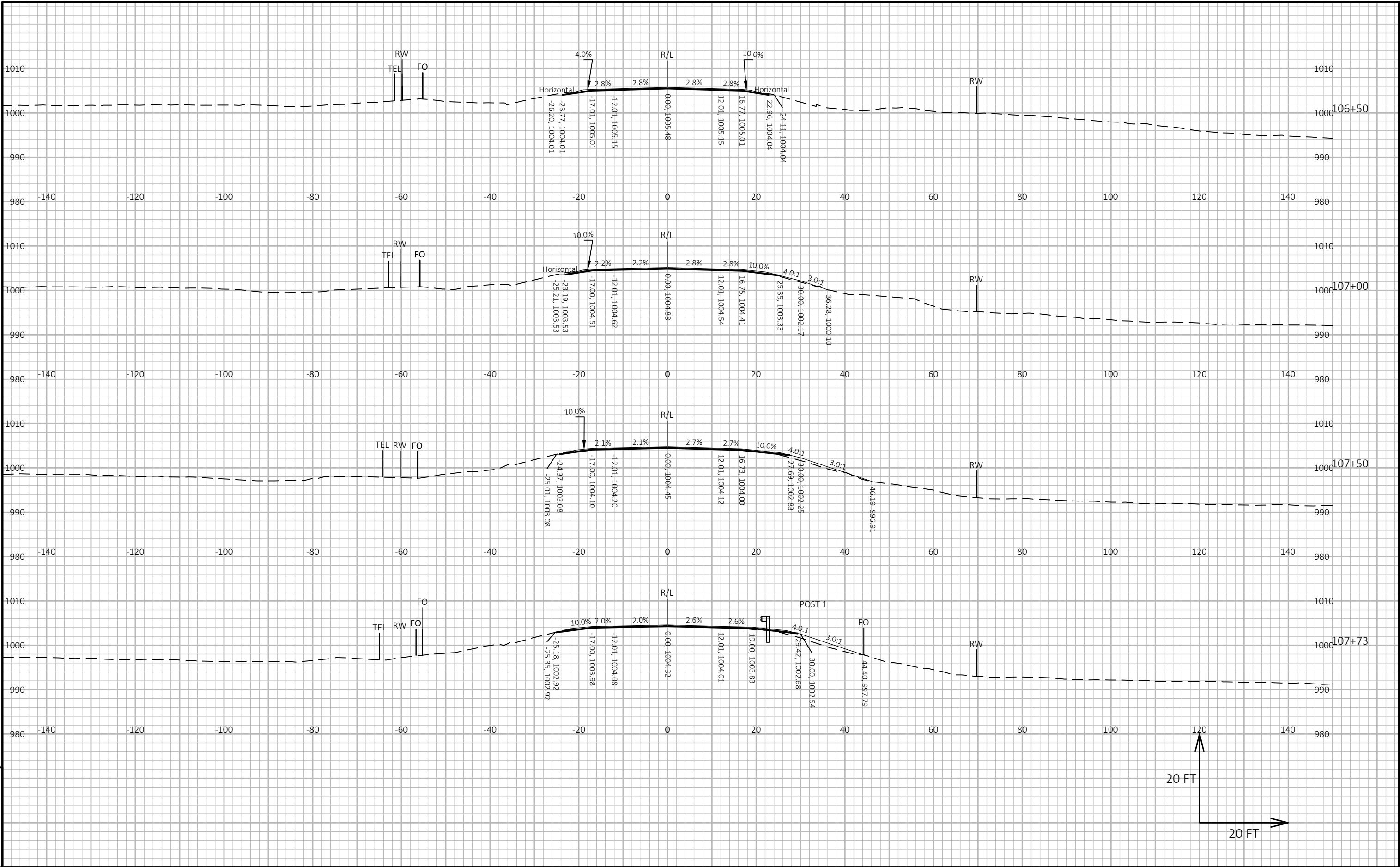
PLOT BY : RINZEL, JAMES M

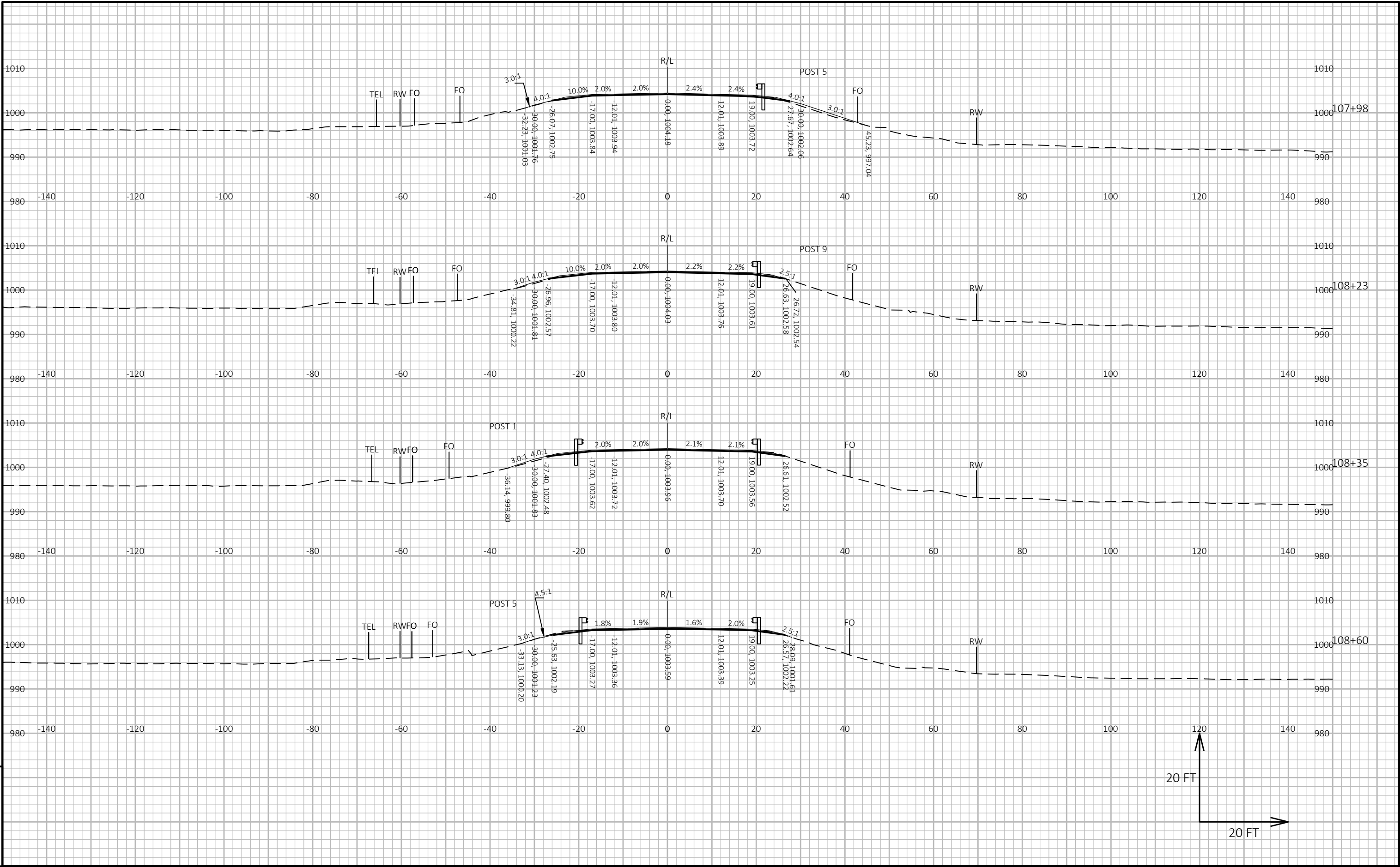
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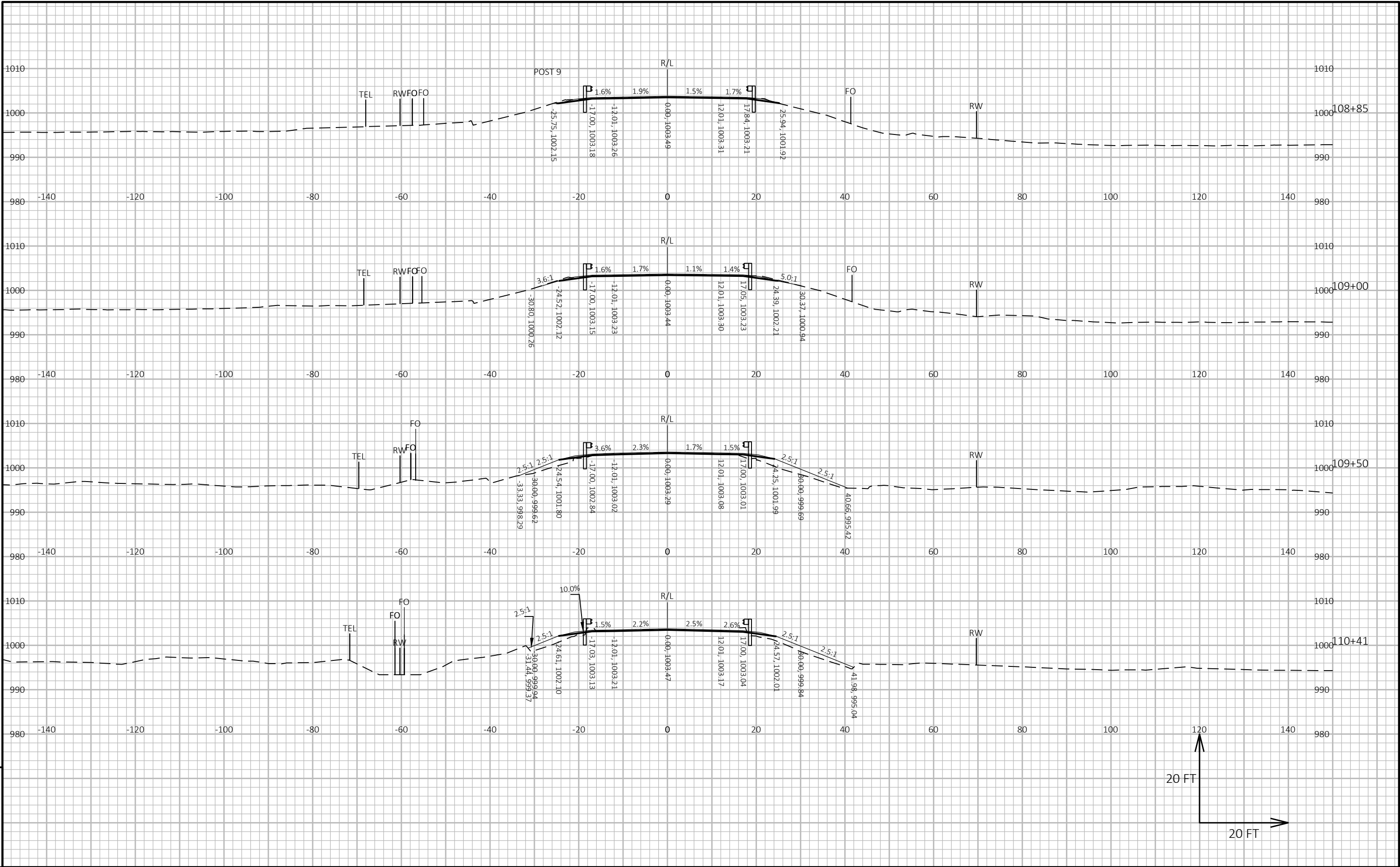
WISDOT/CADDs SHEET 49





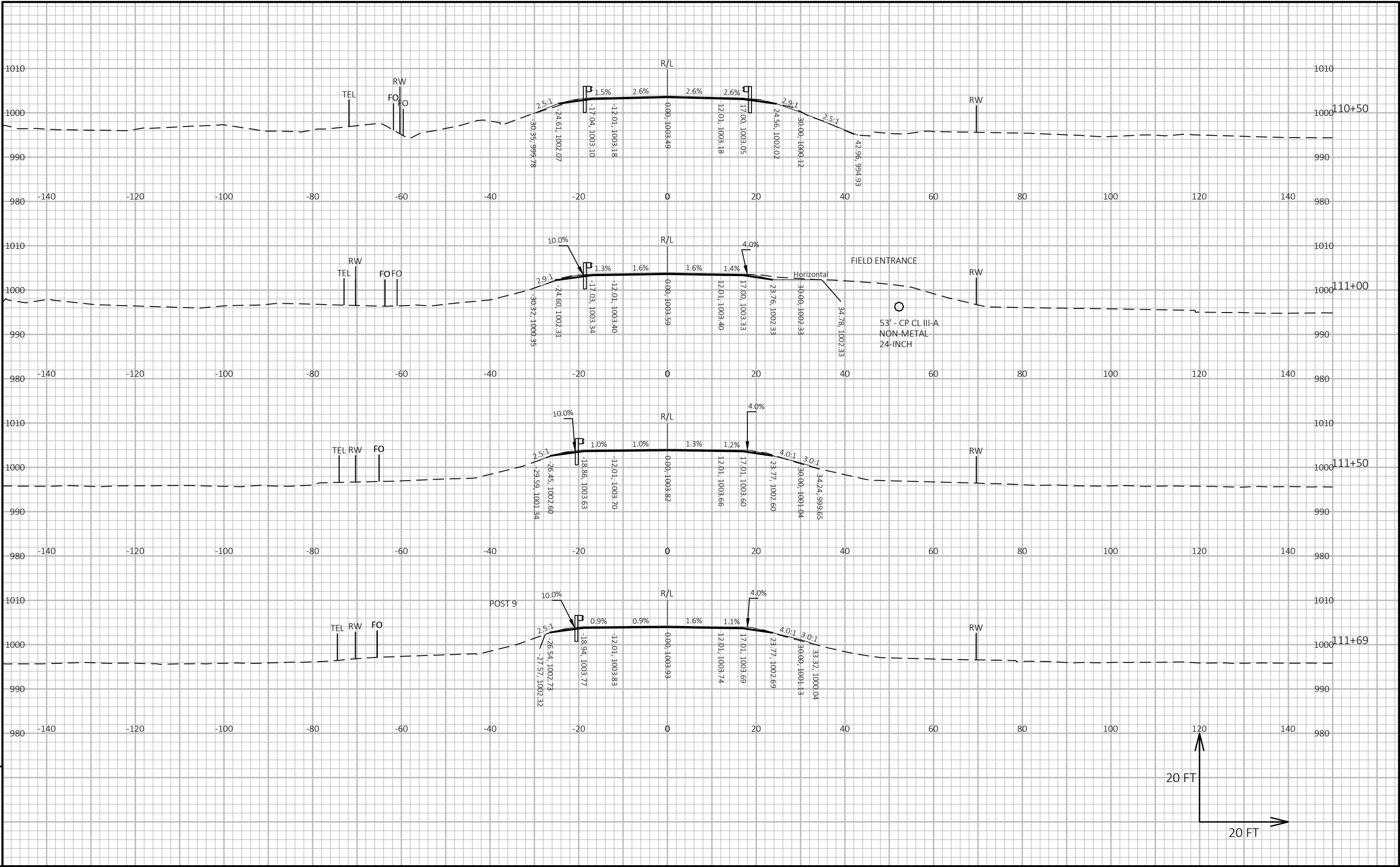




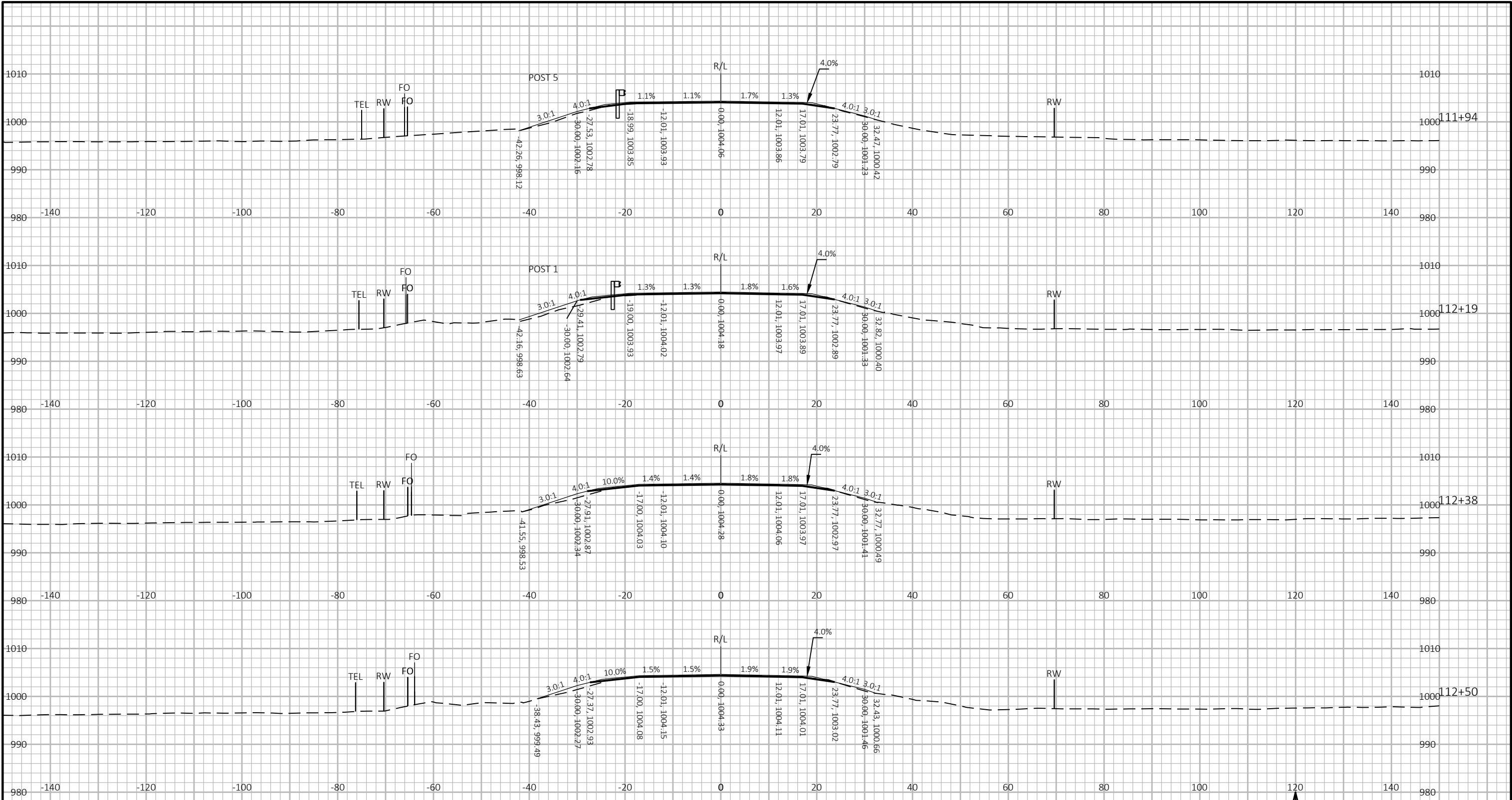


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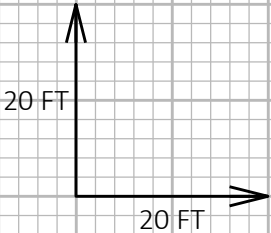
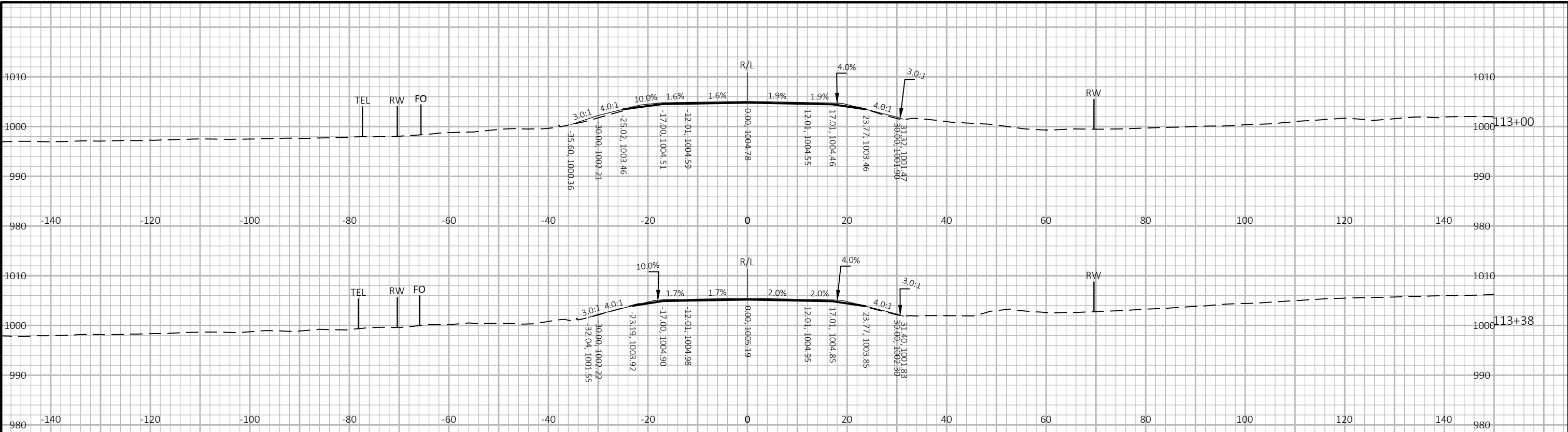




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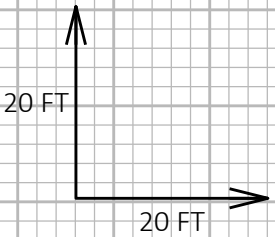
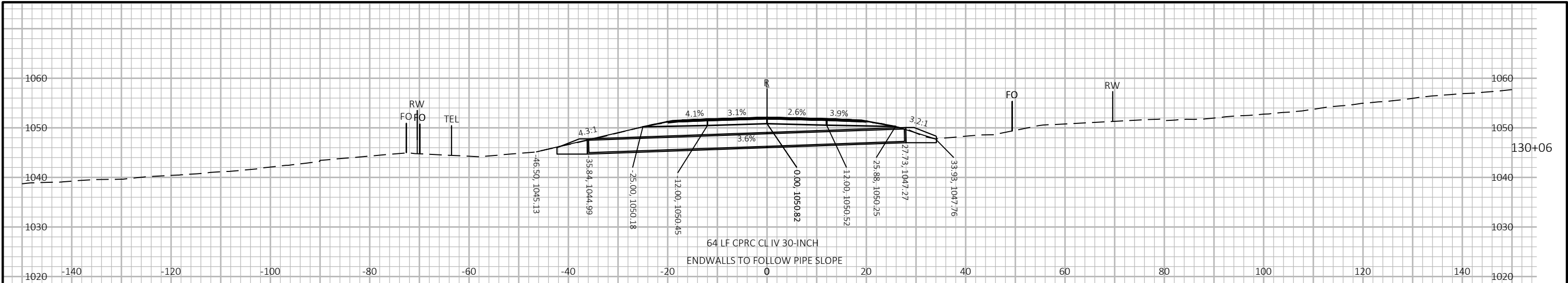
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|---------------------------|-------------|----------------|------------------------|-----------|---|
| PROJECT NO: 8070-03-70/71 | HWY: USH 63 | COUNTY: PIERCE | CROSS SECTIONS: USH 63 | SHEET 227 | E |
|---------------------------|-------------|----------------|------------------------|-----------|---|



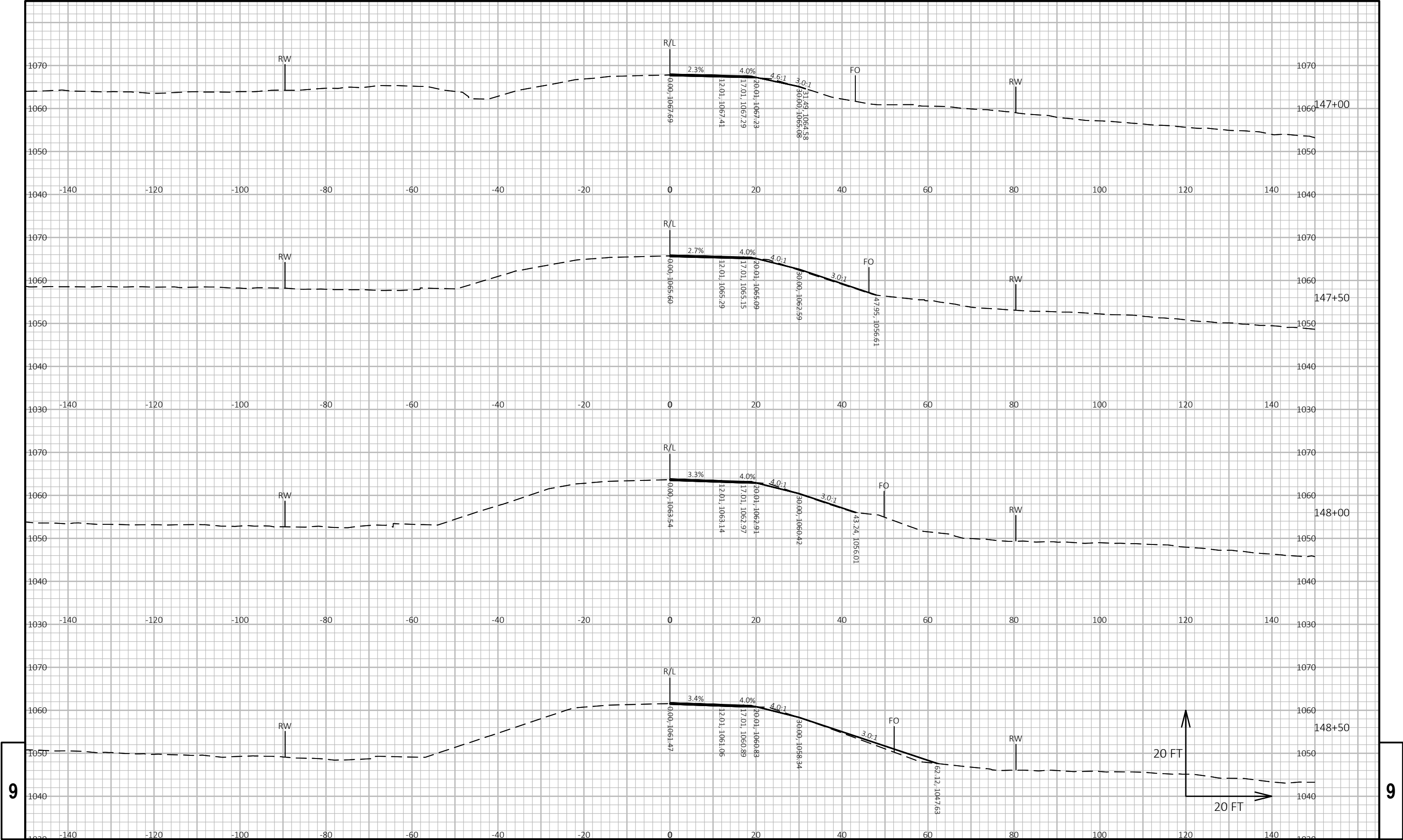
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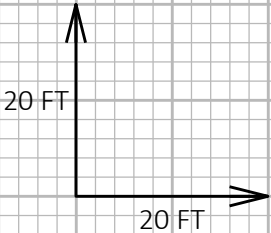
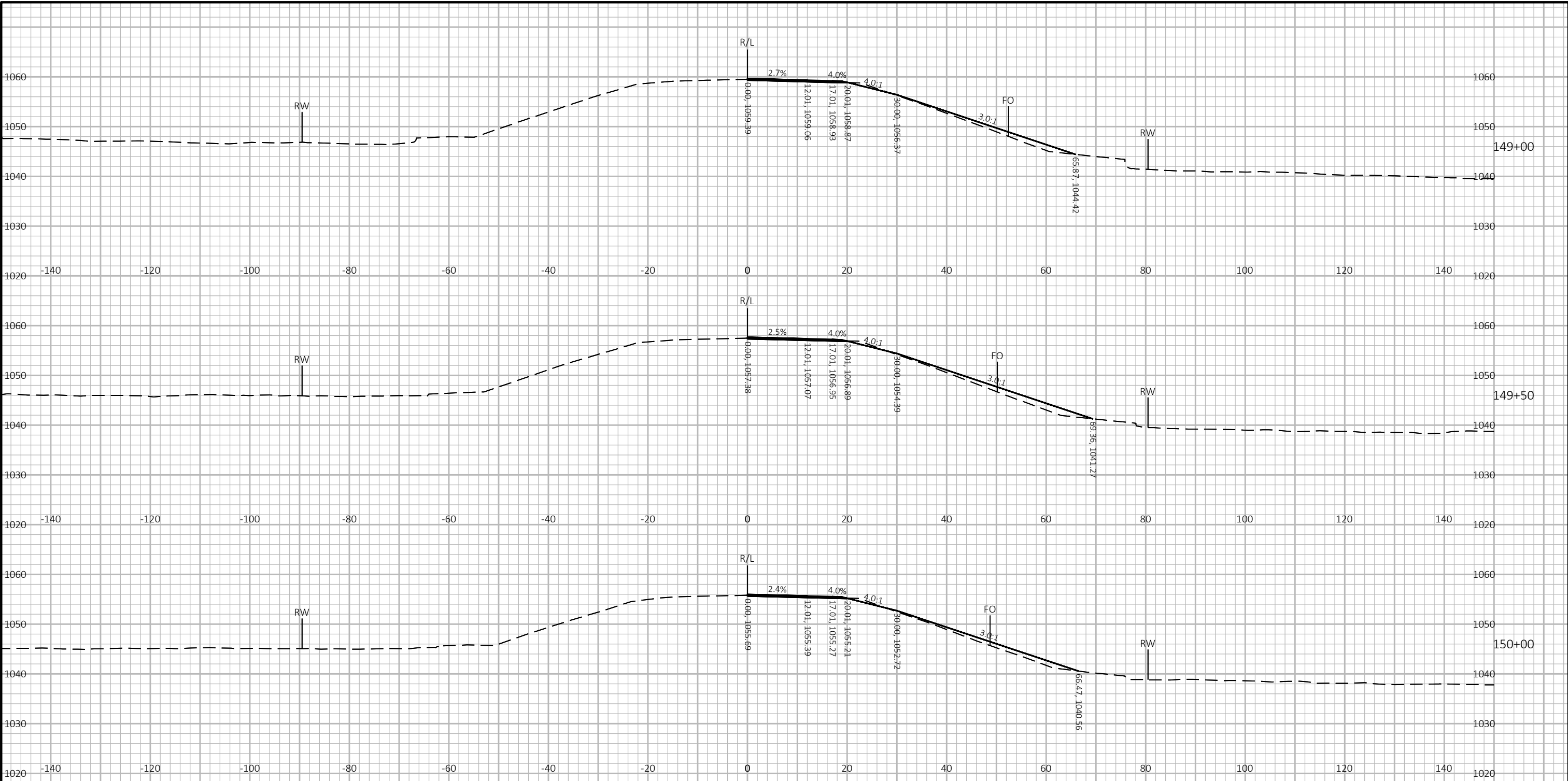
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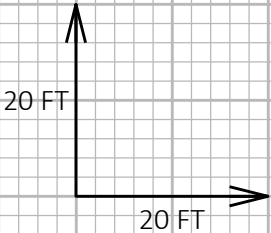
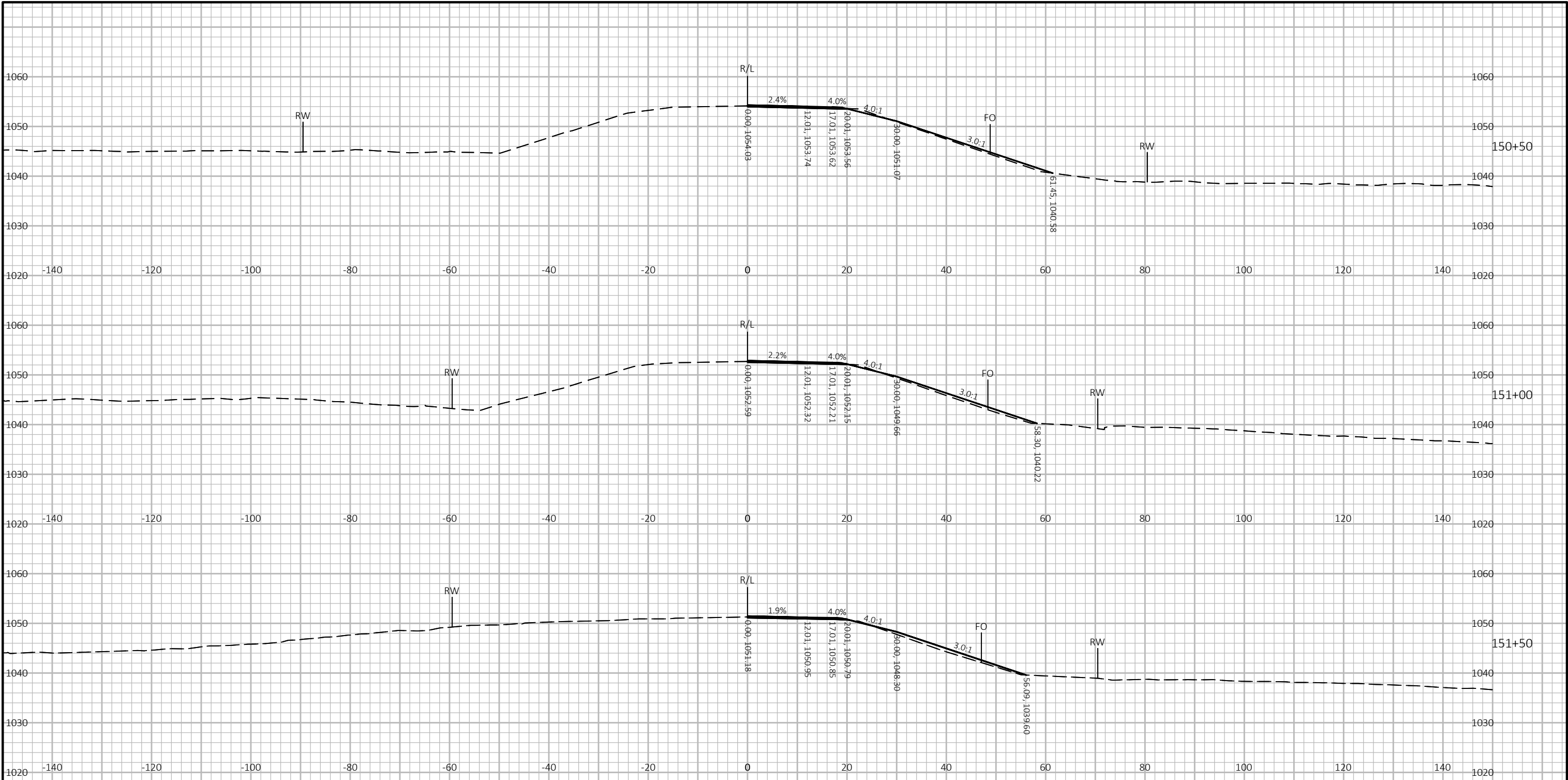
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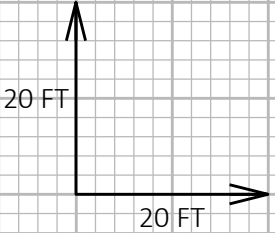
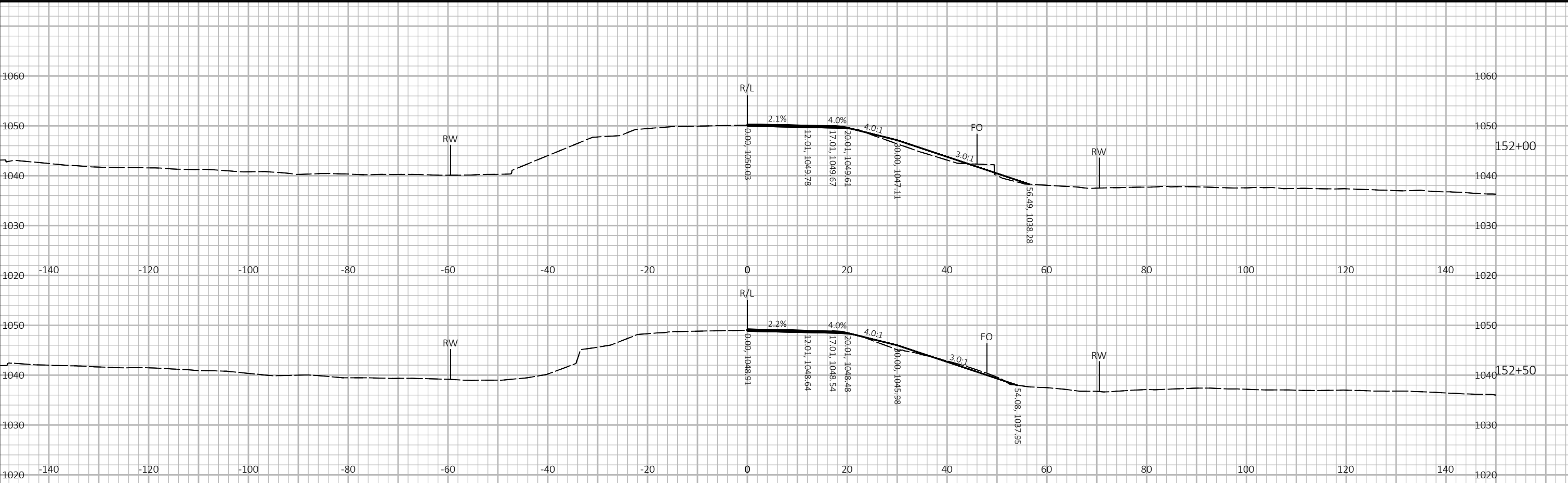
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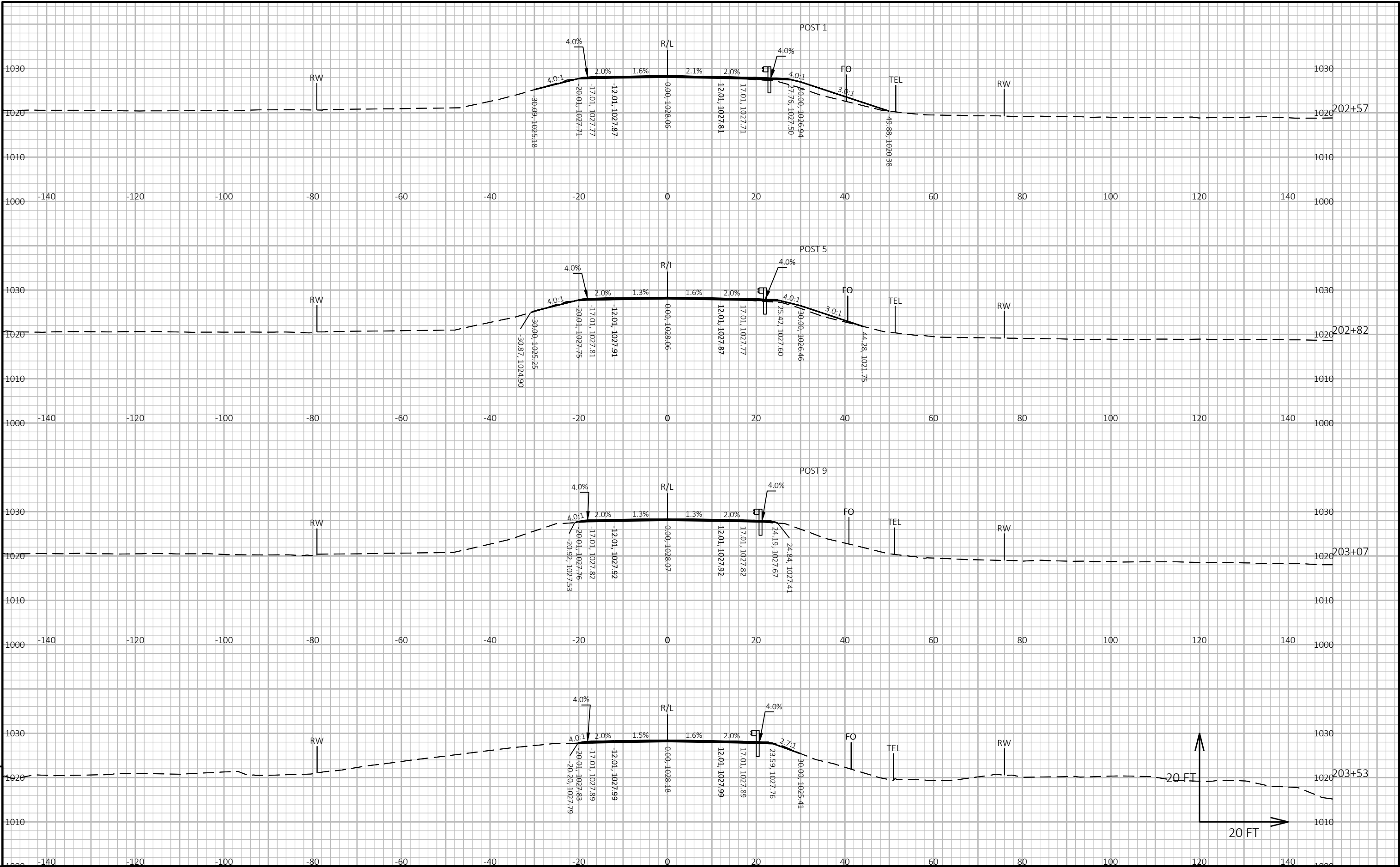




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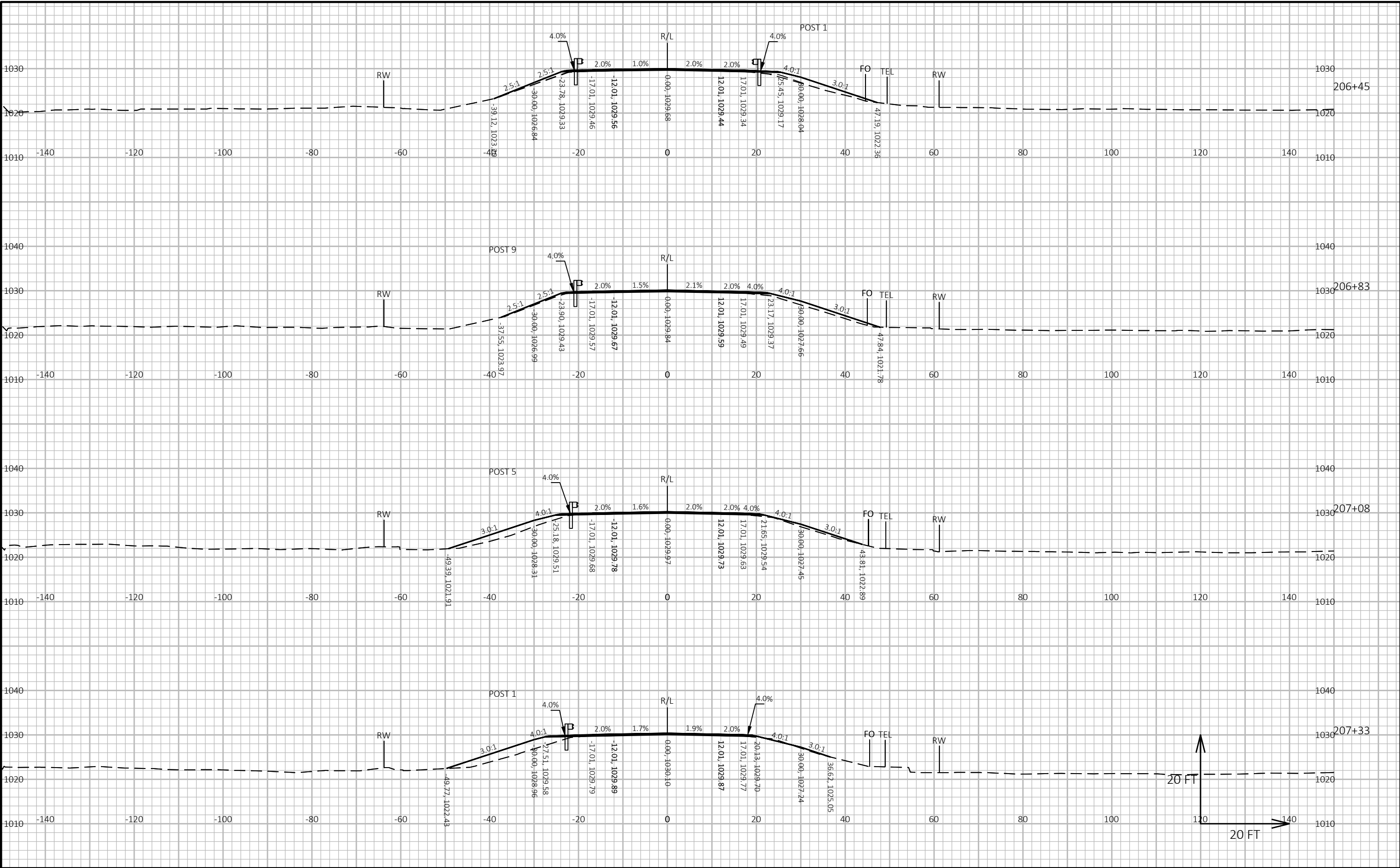


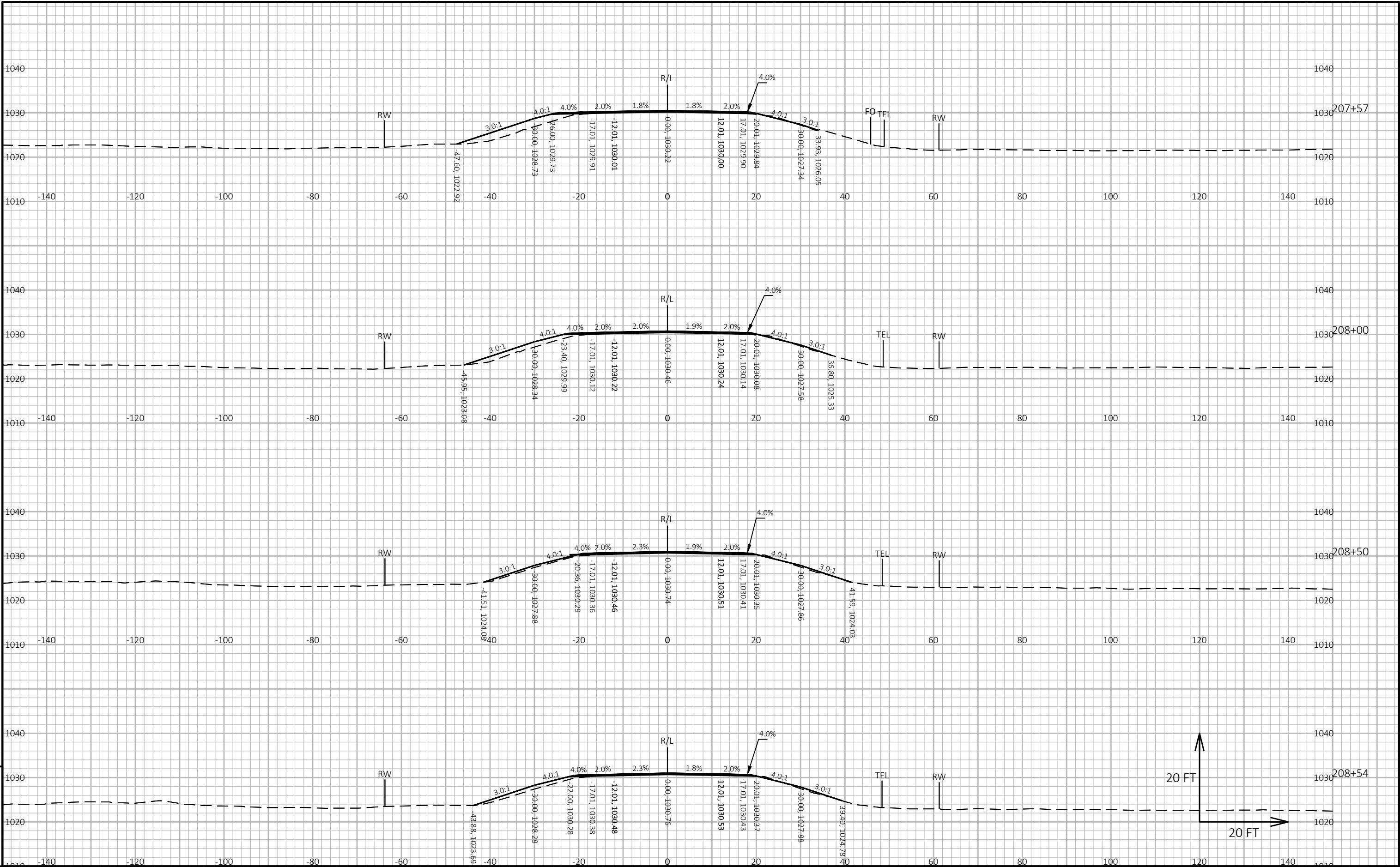


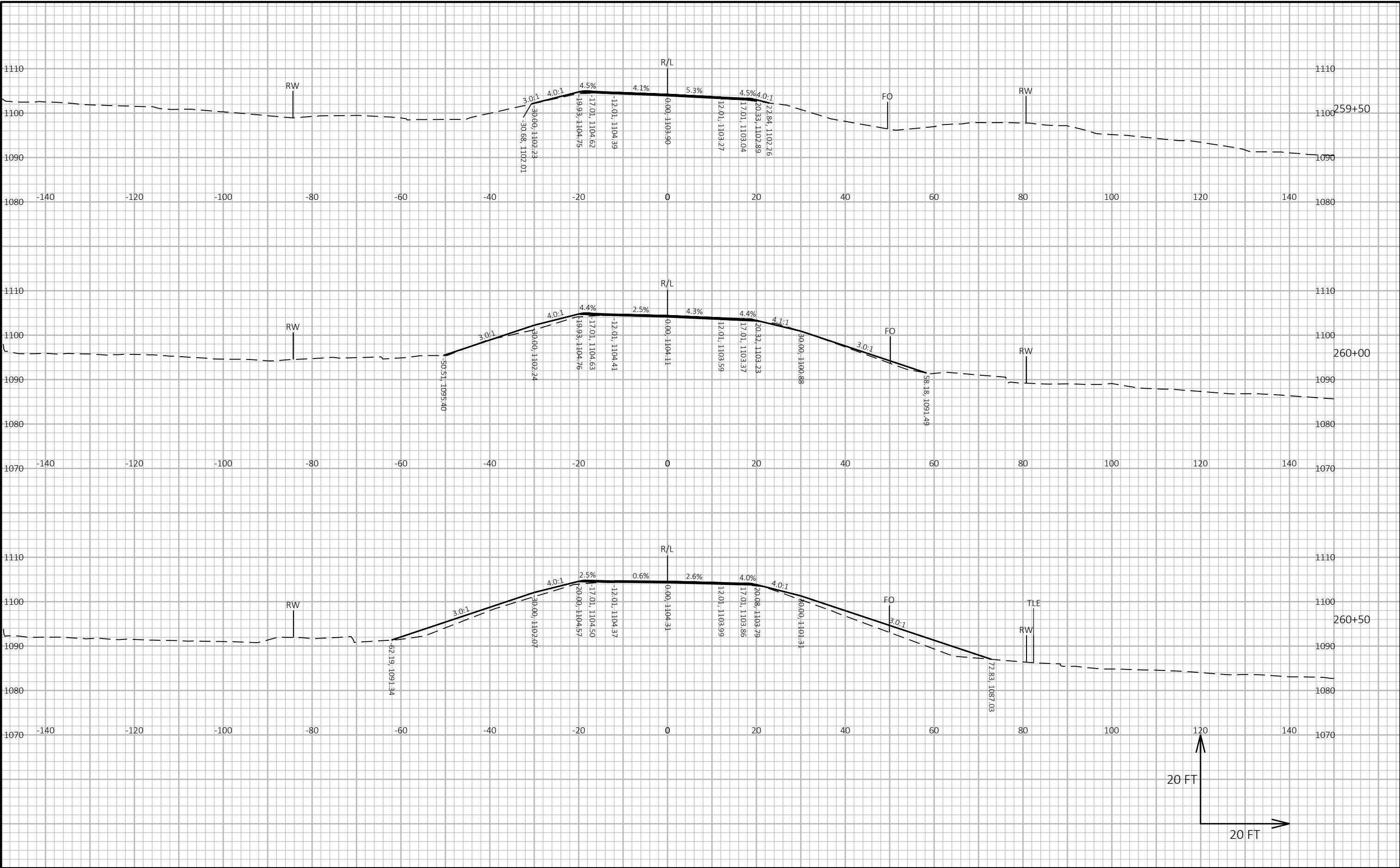


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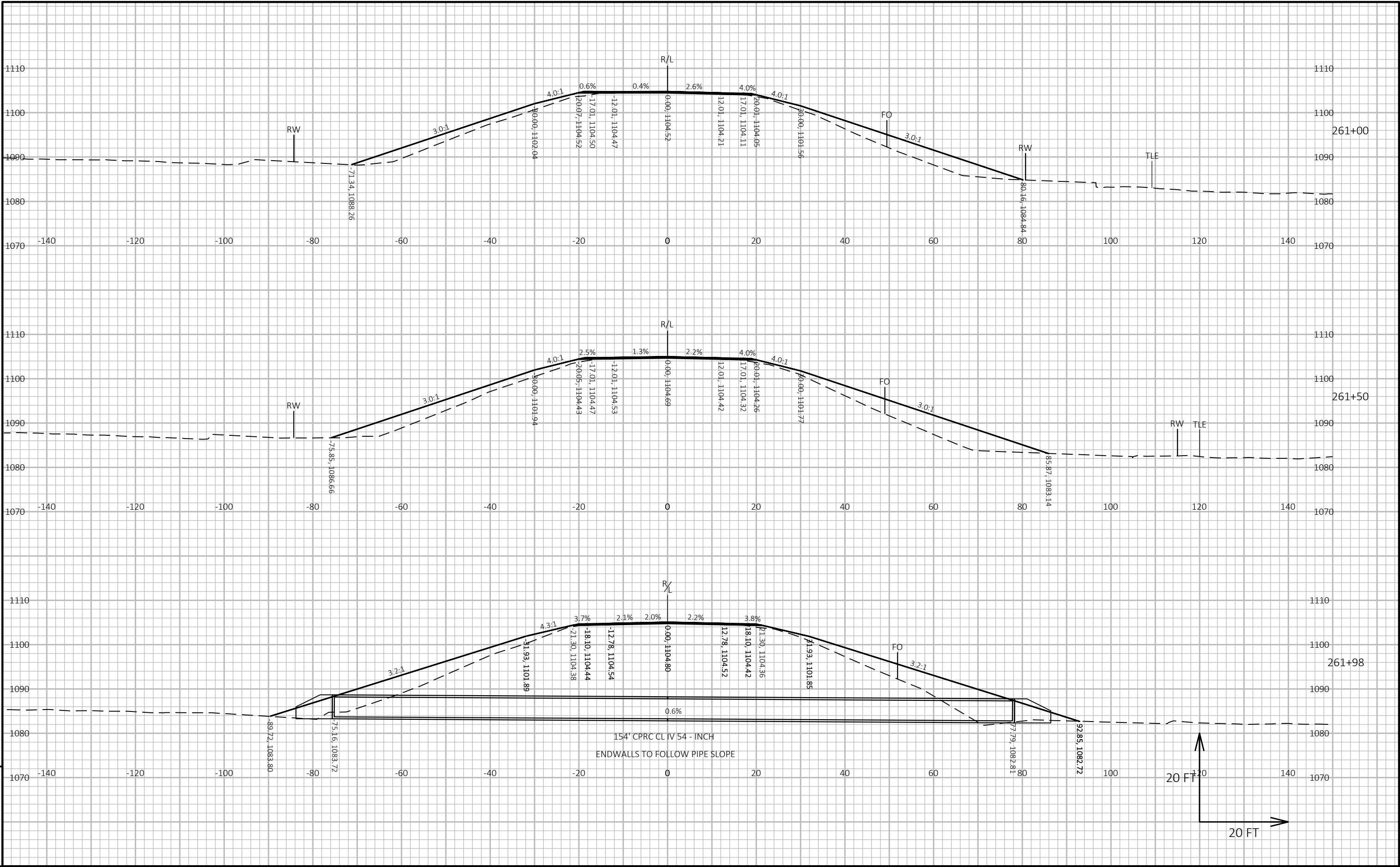
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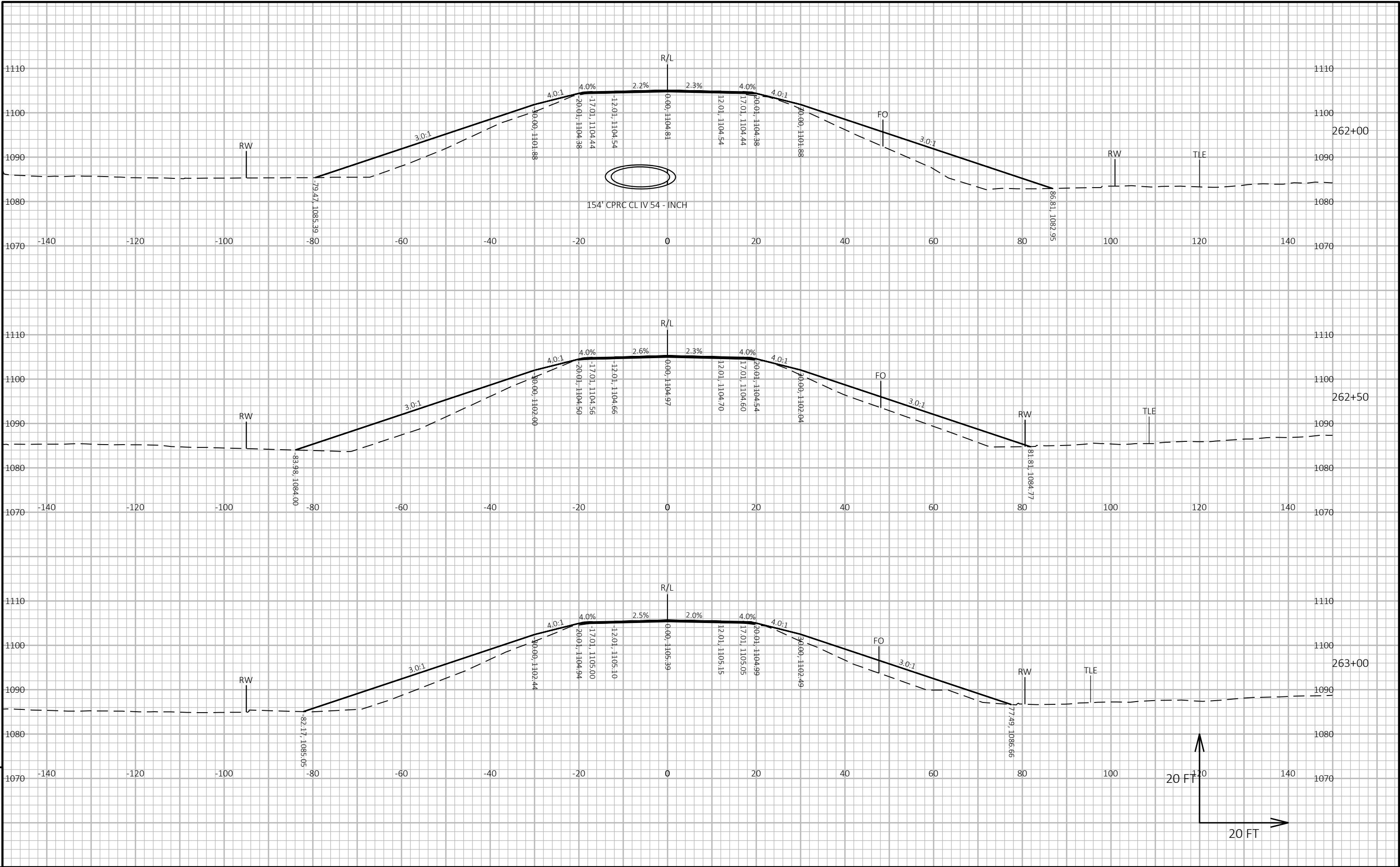




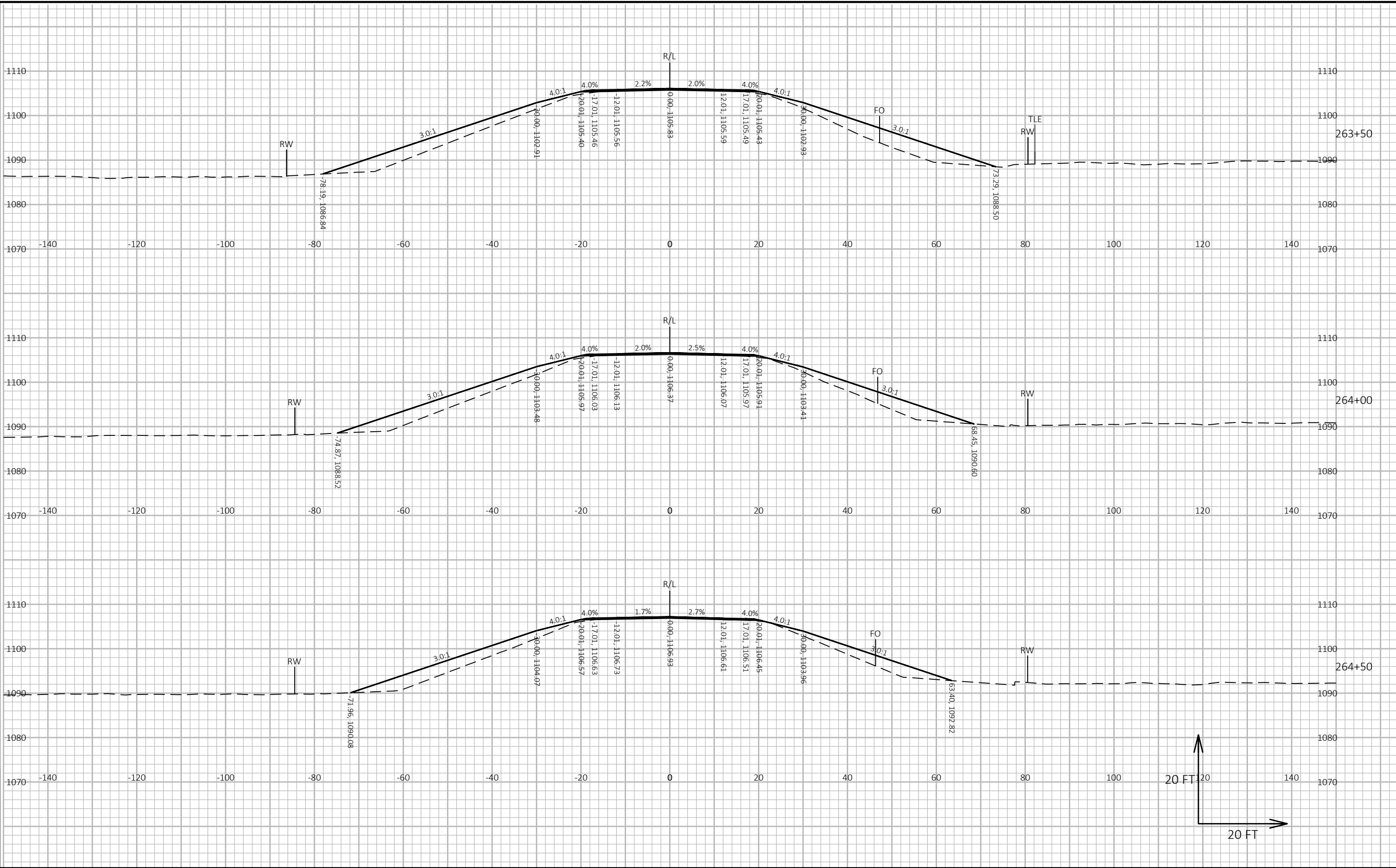








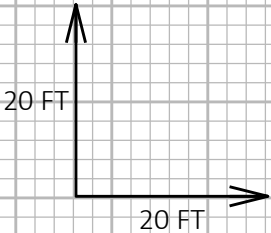
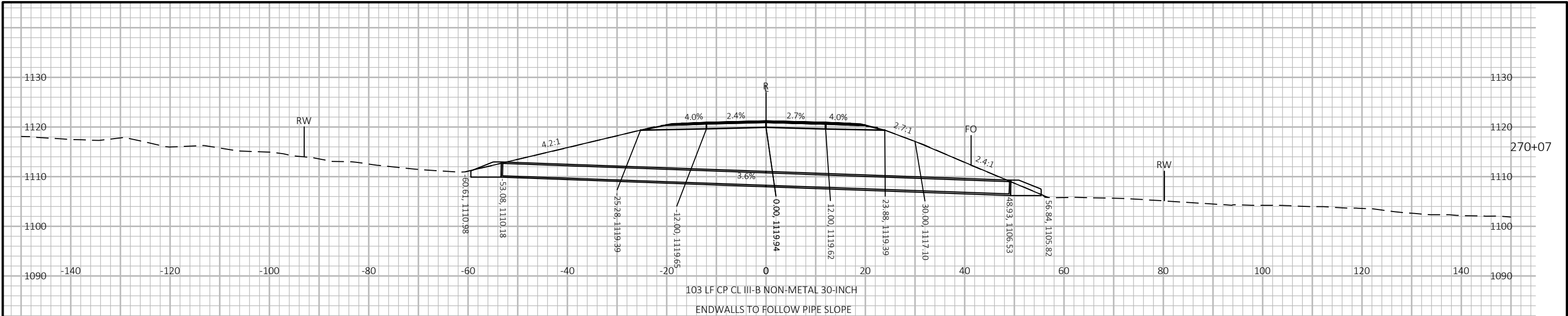




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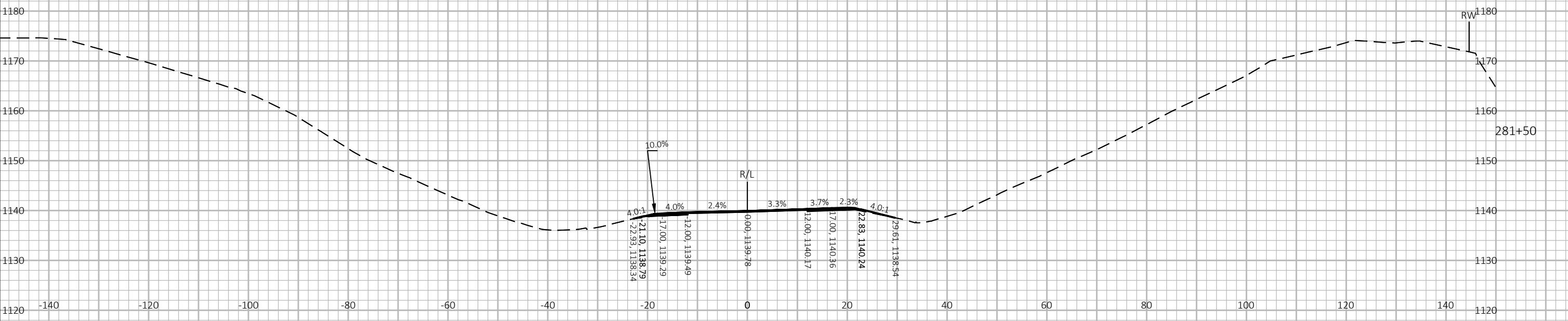
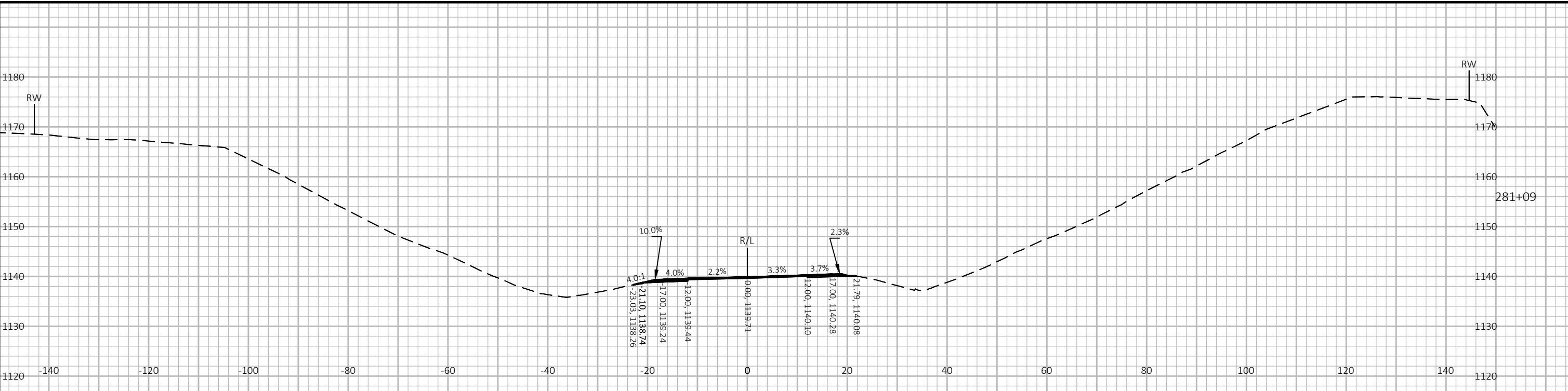
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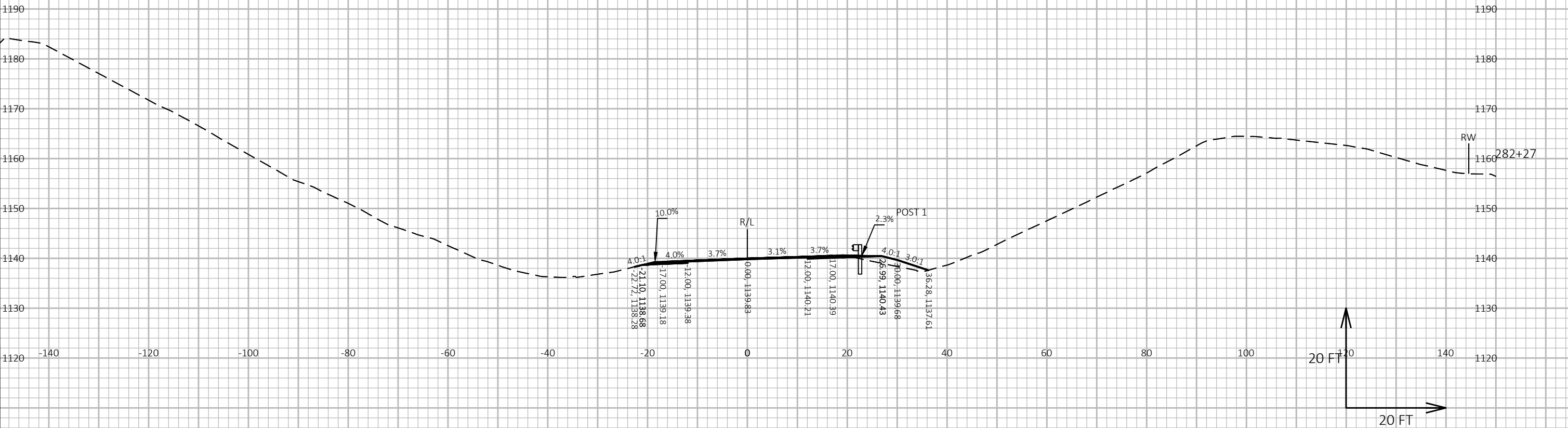
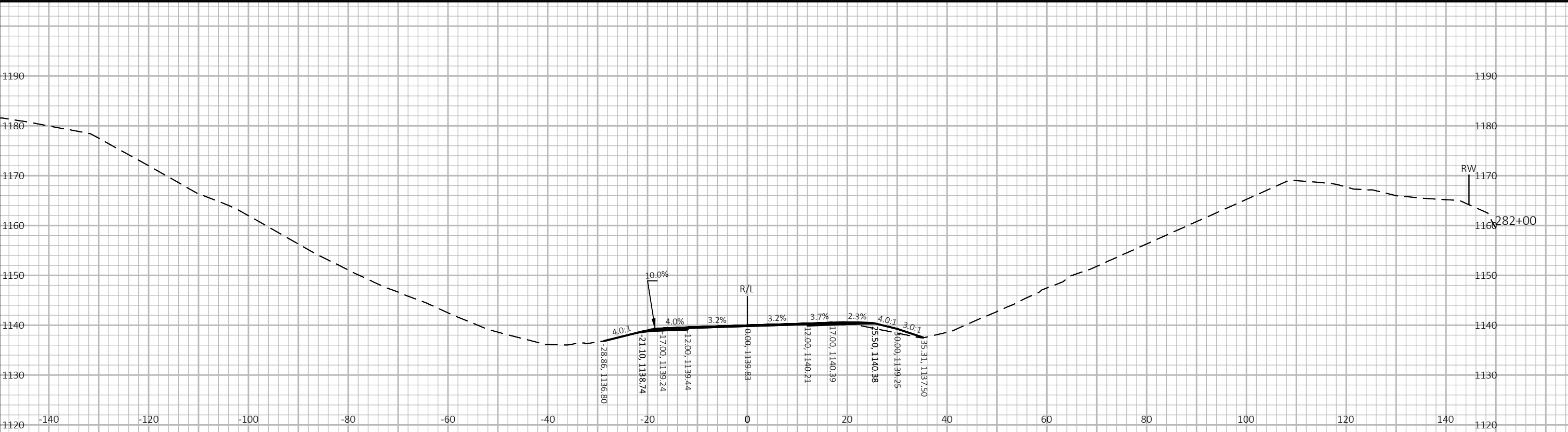


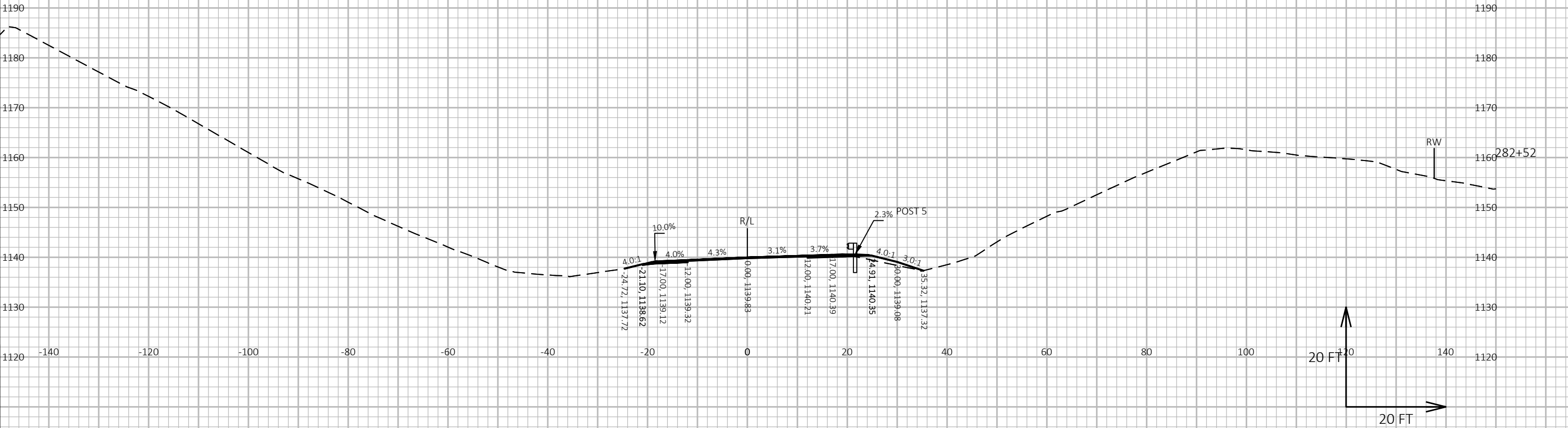
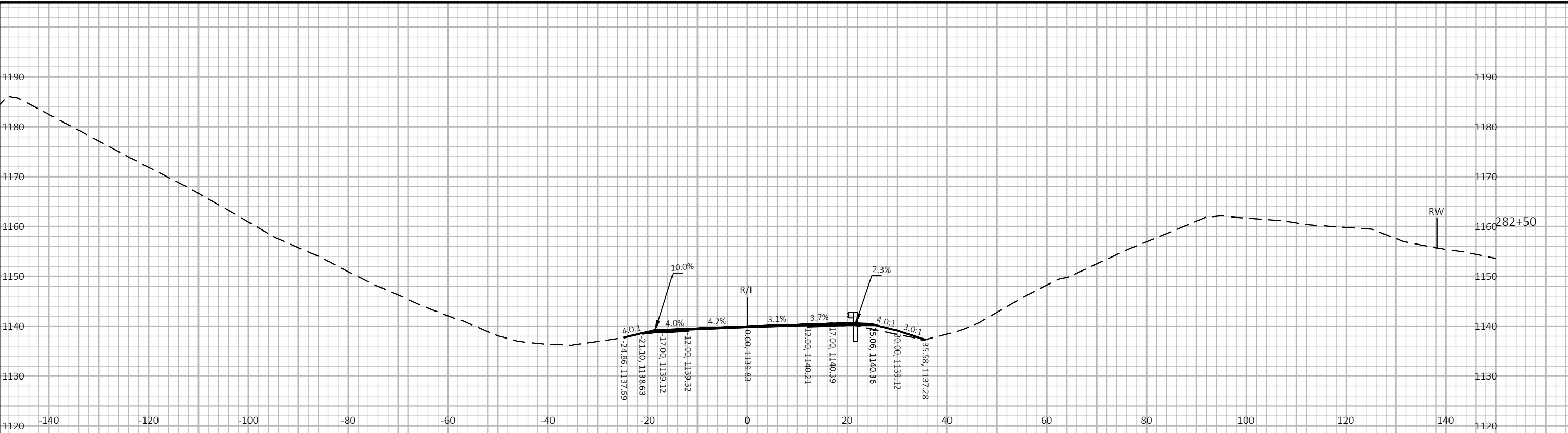


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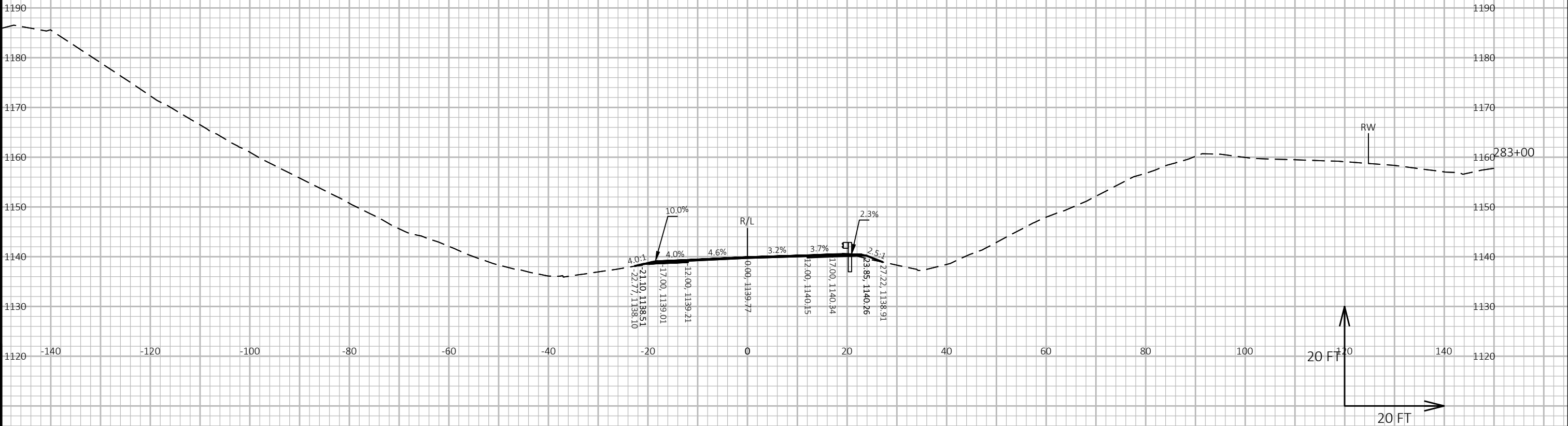
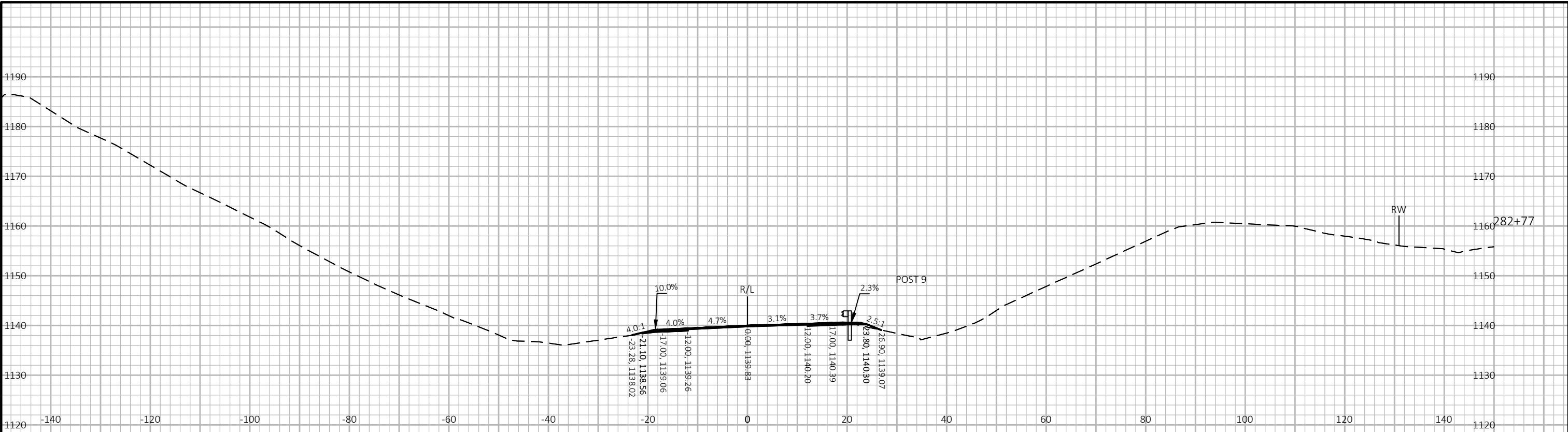
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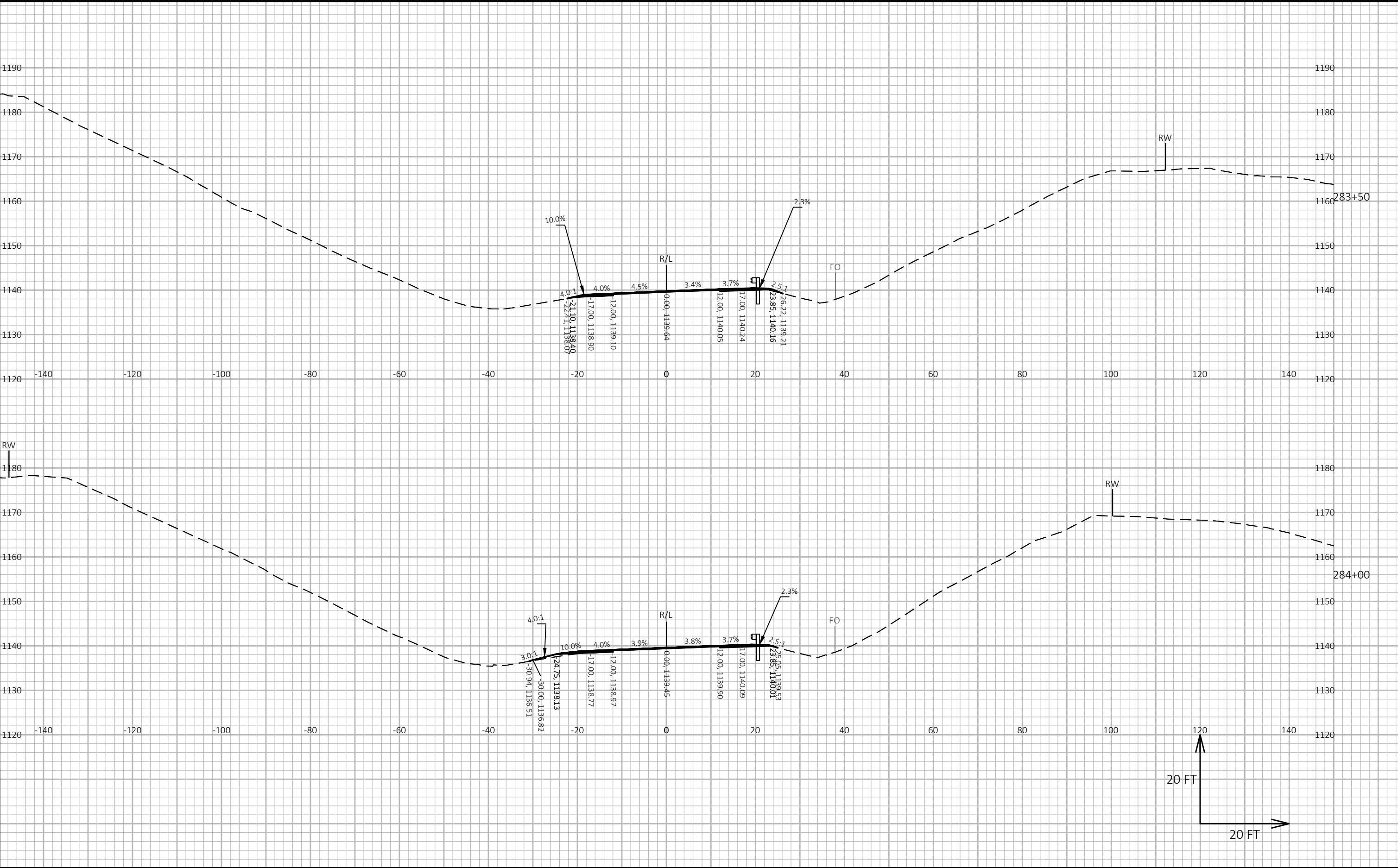




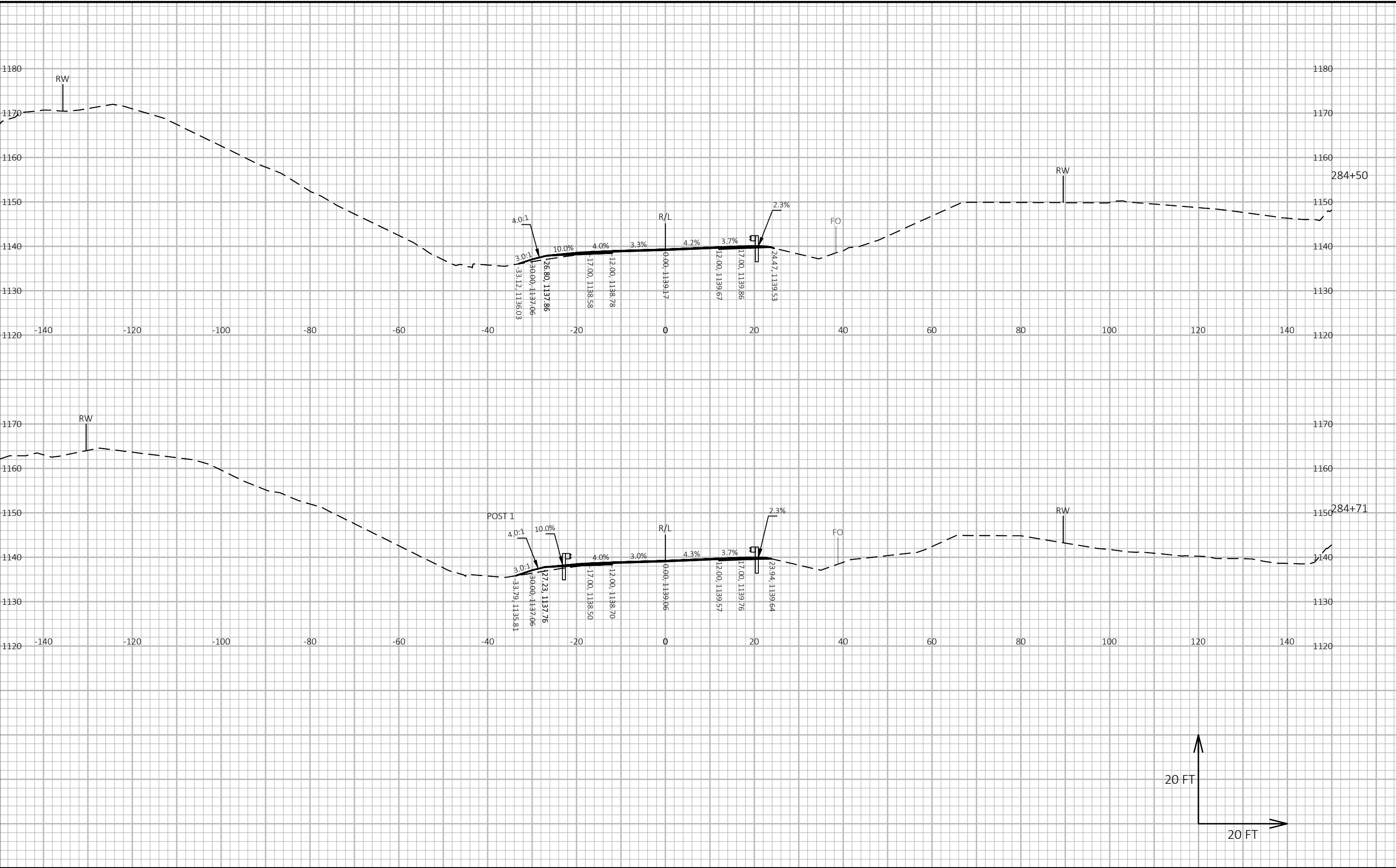


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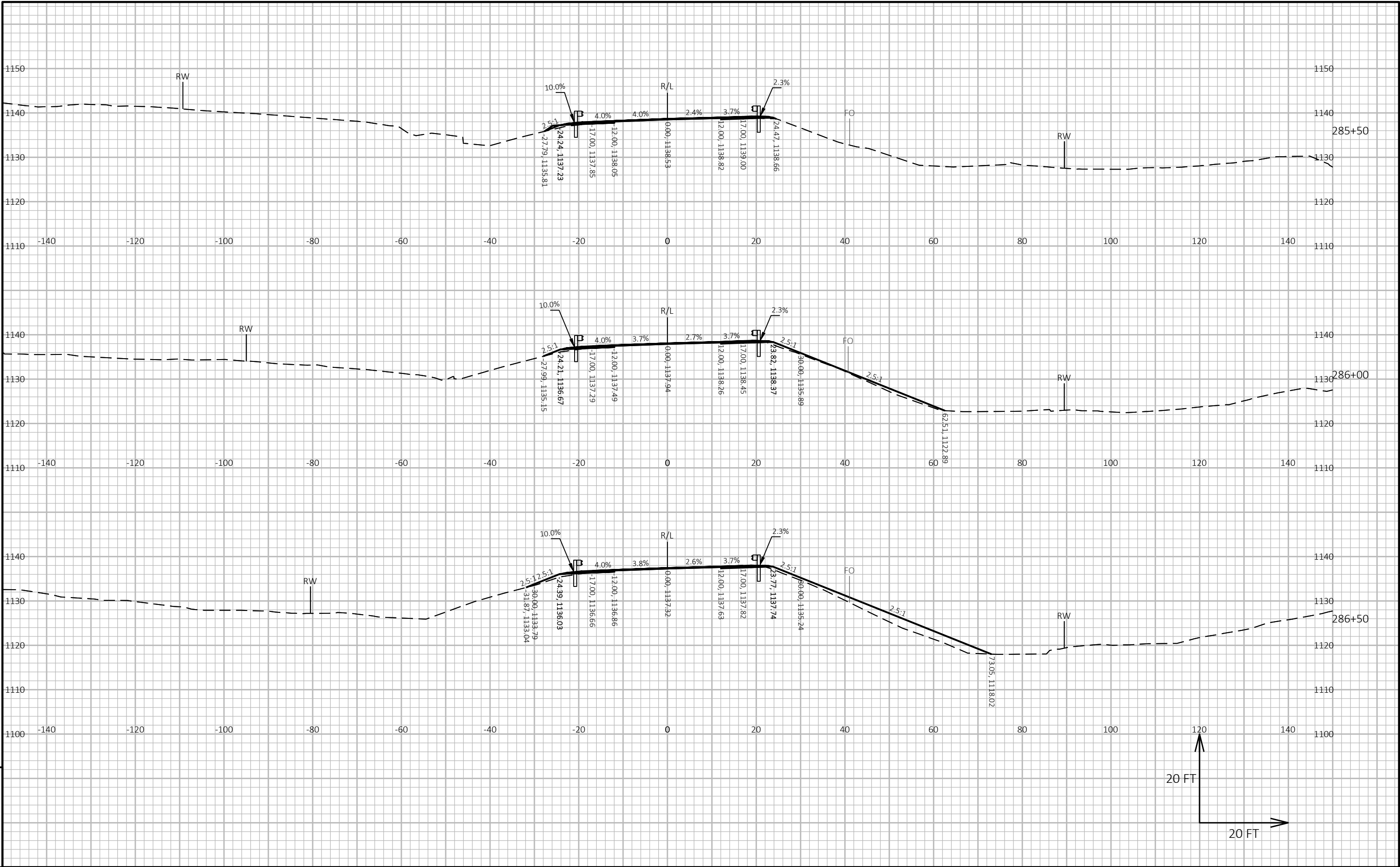
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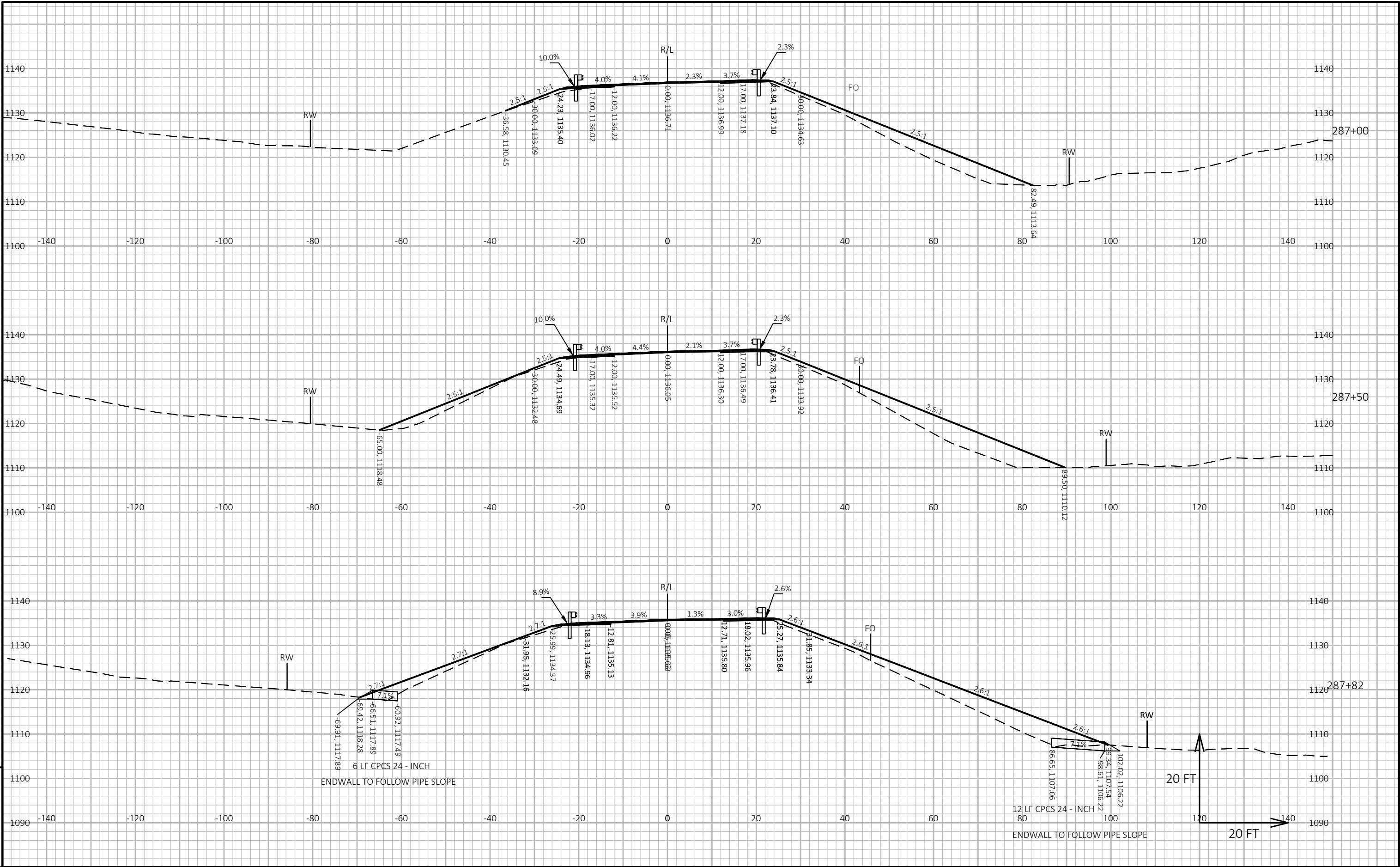


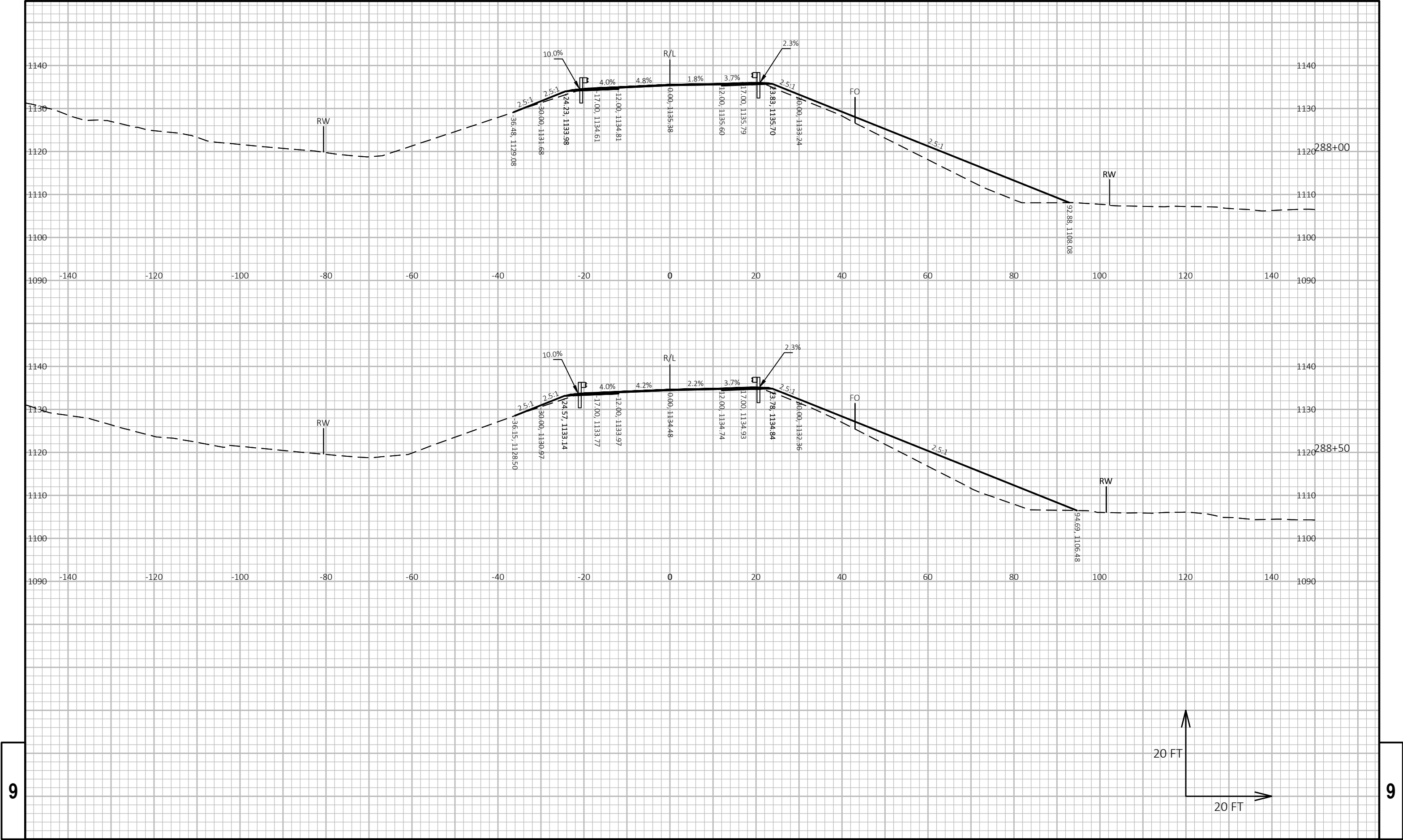










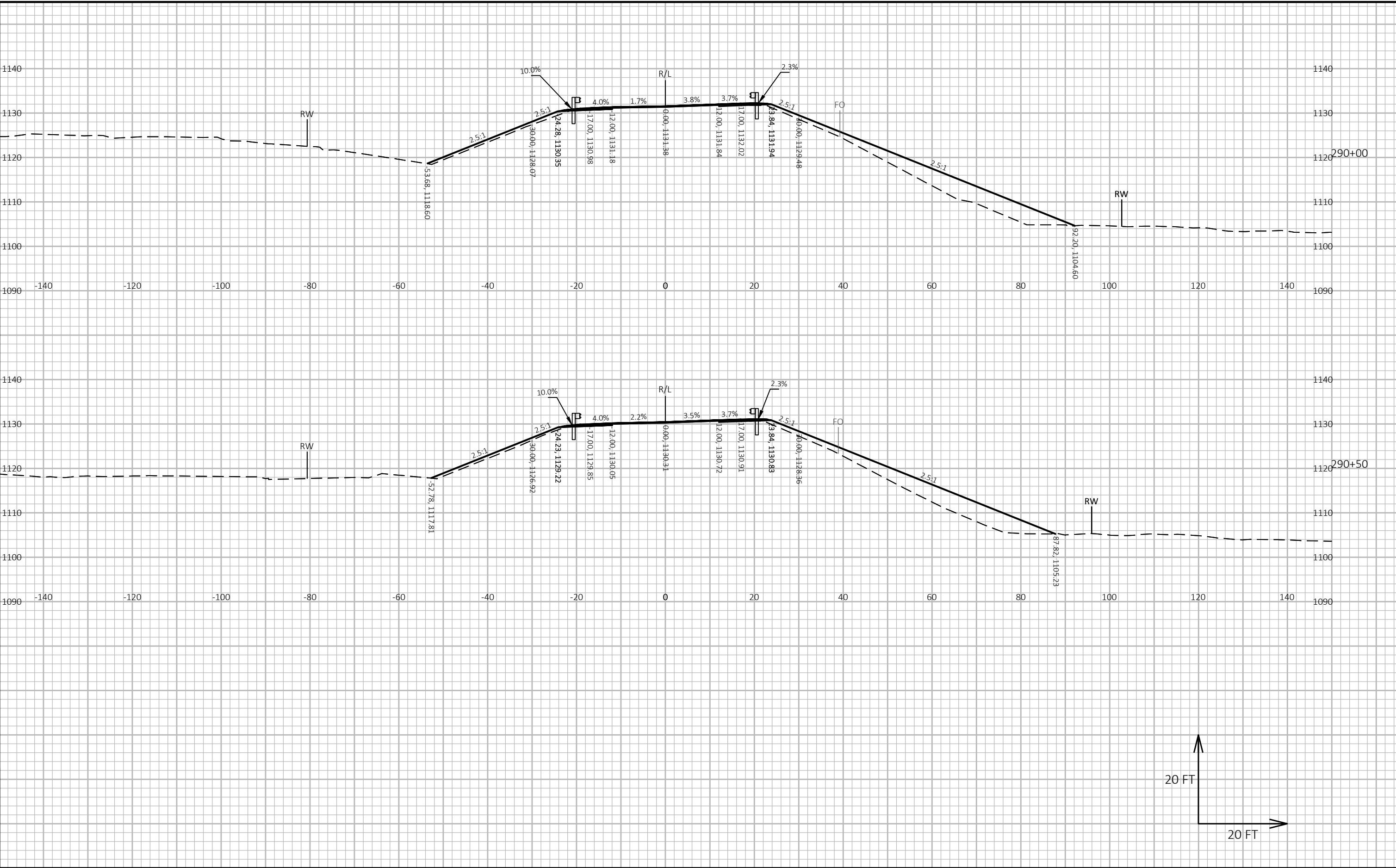


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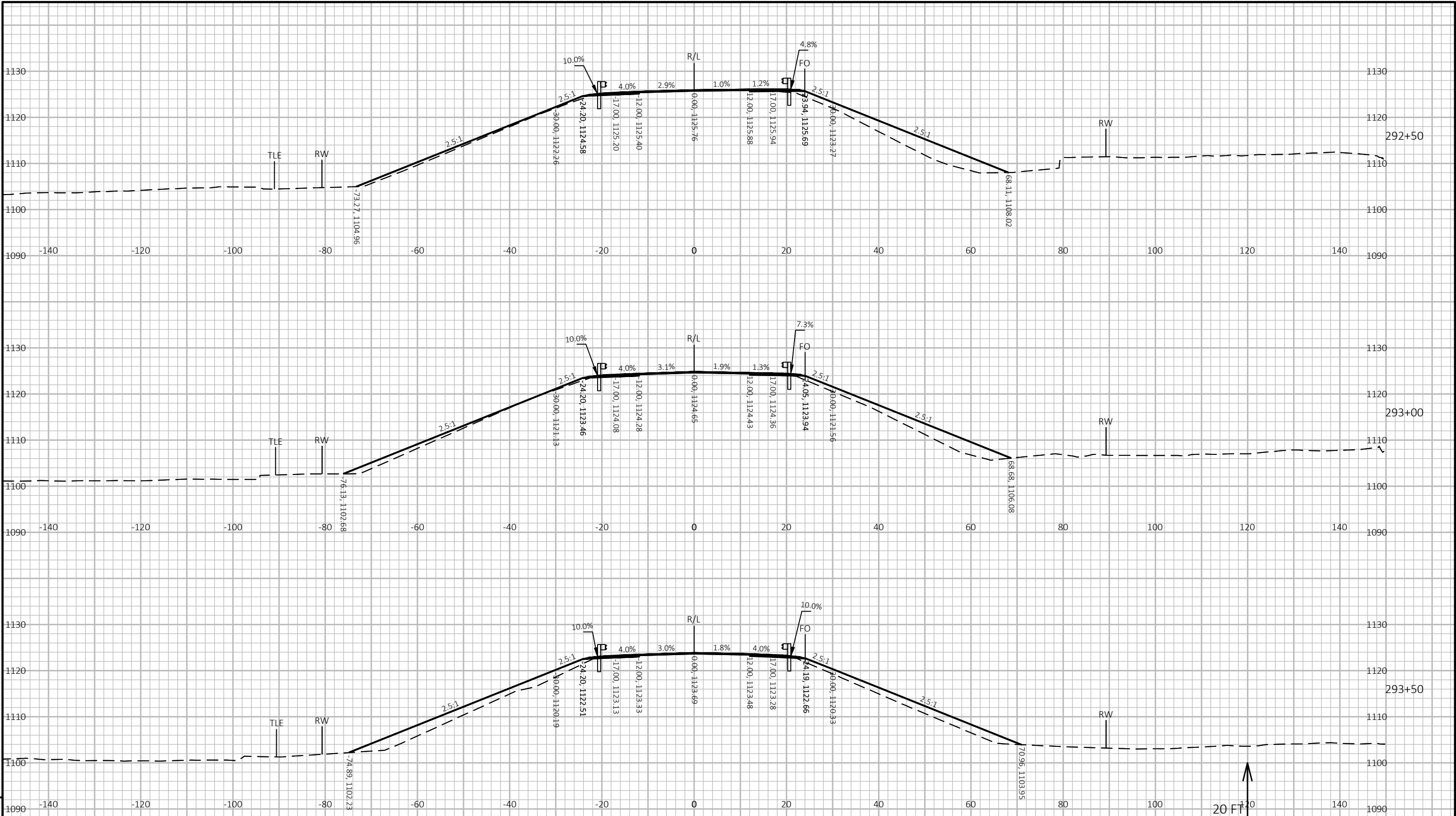


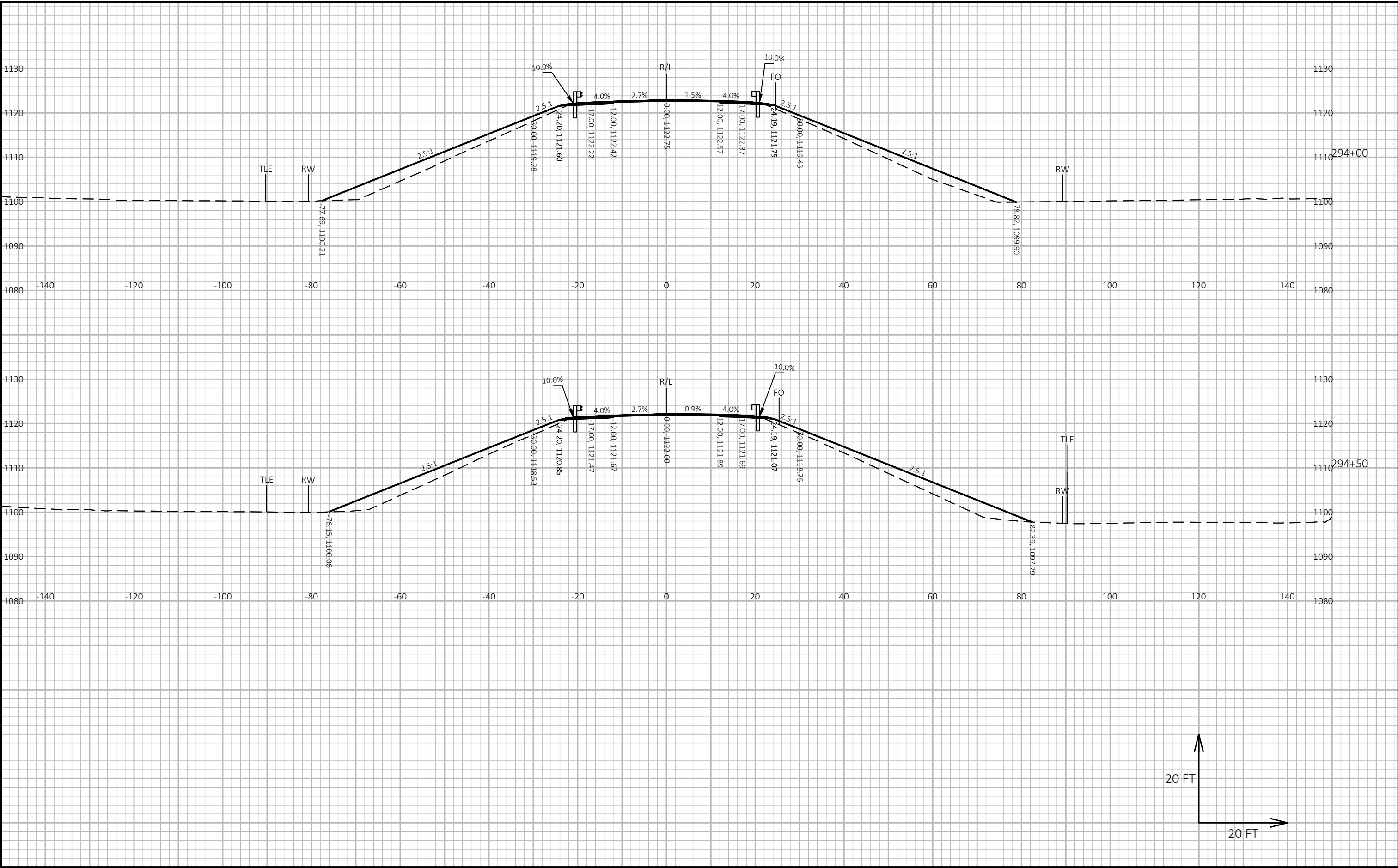






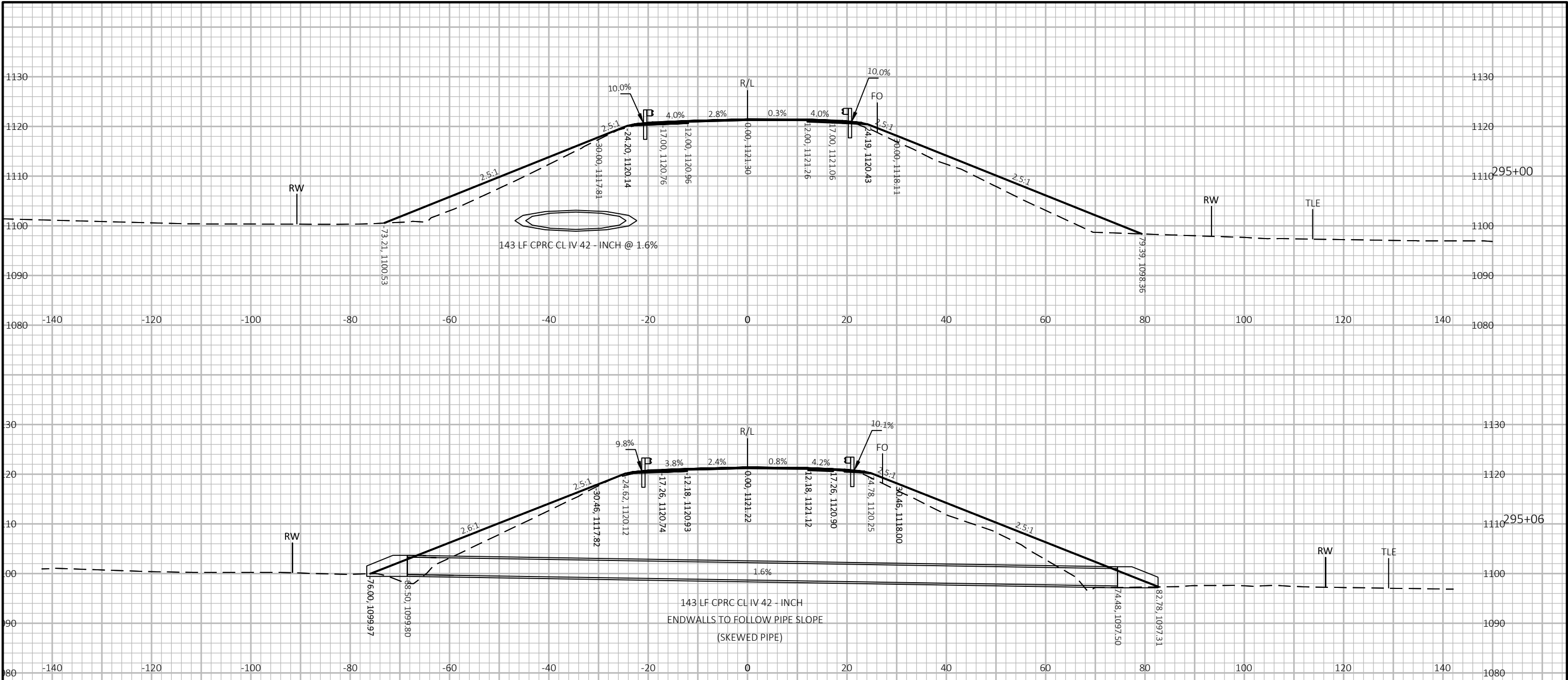


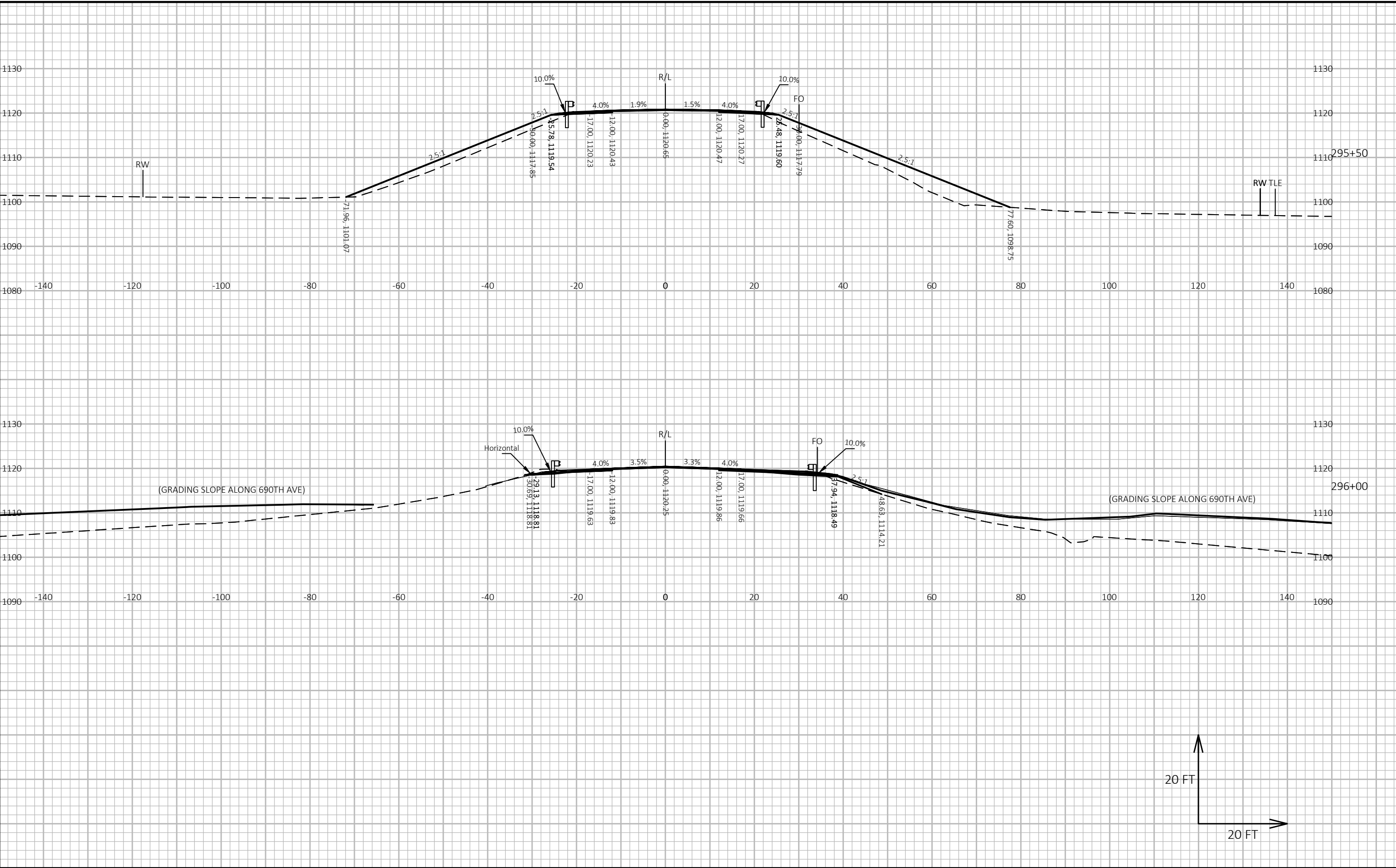


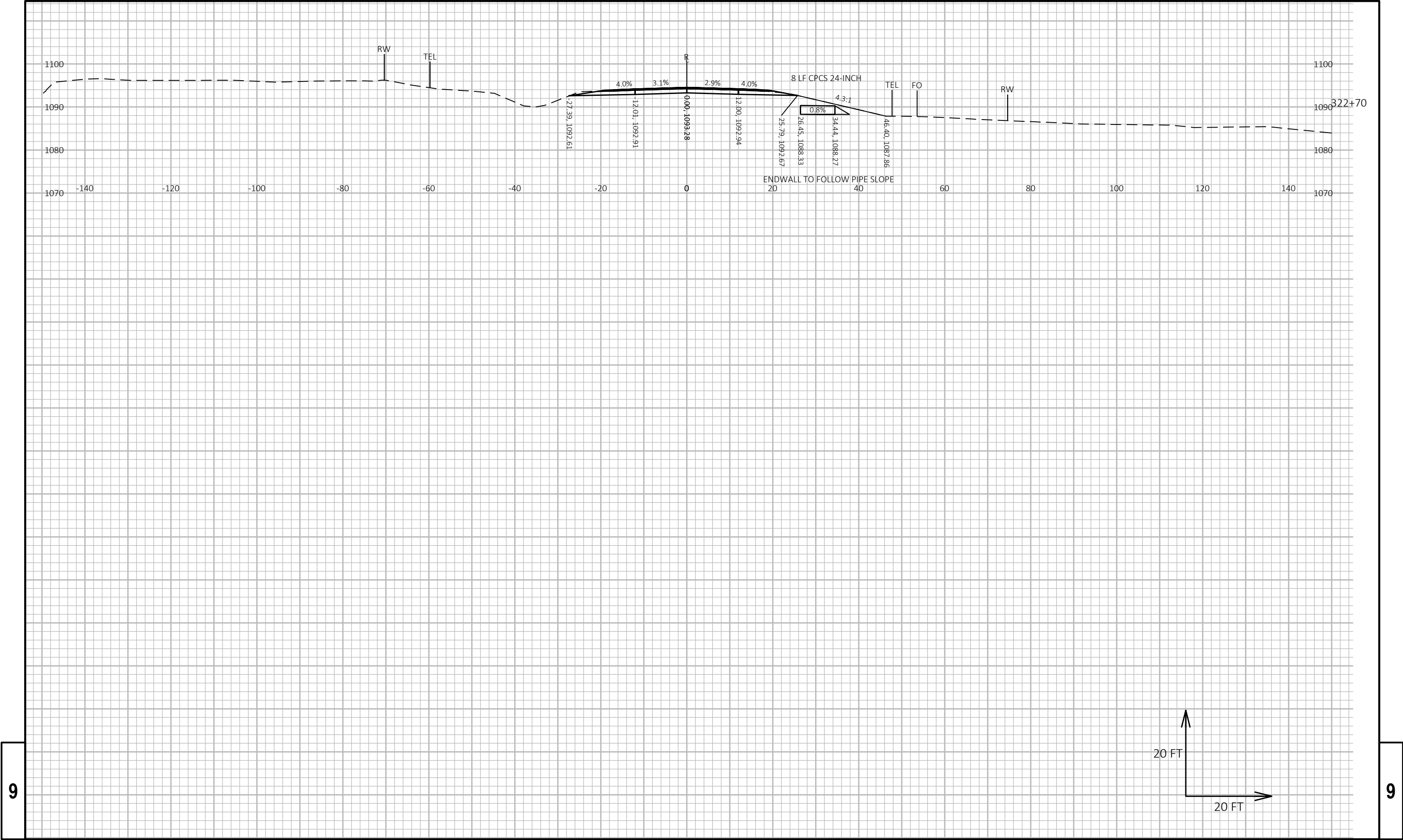


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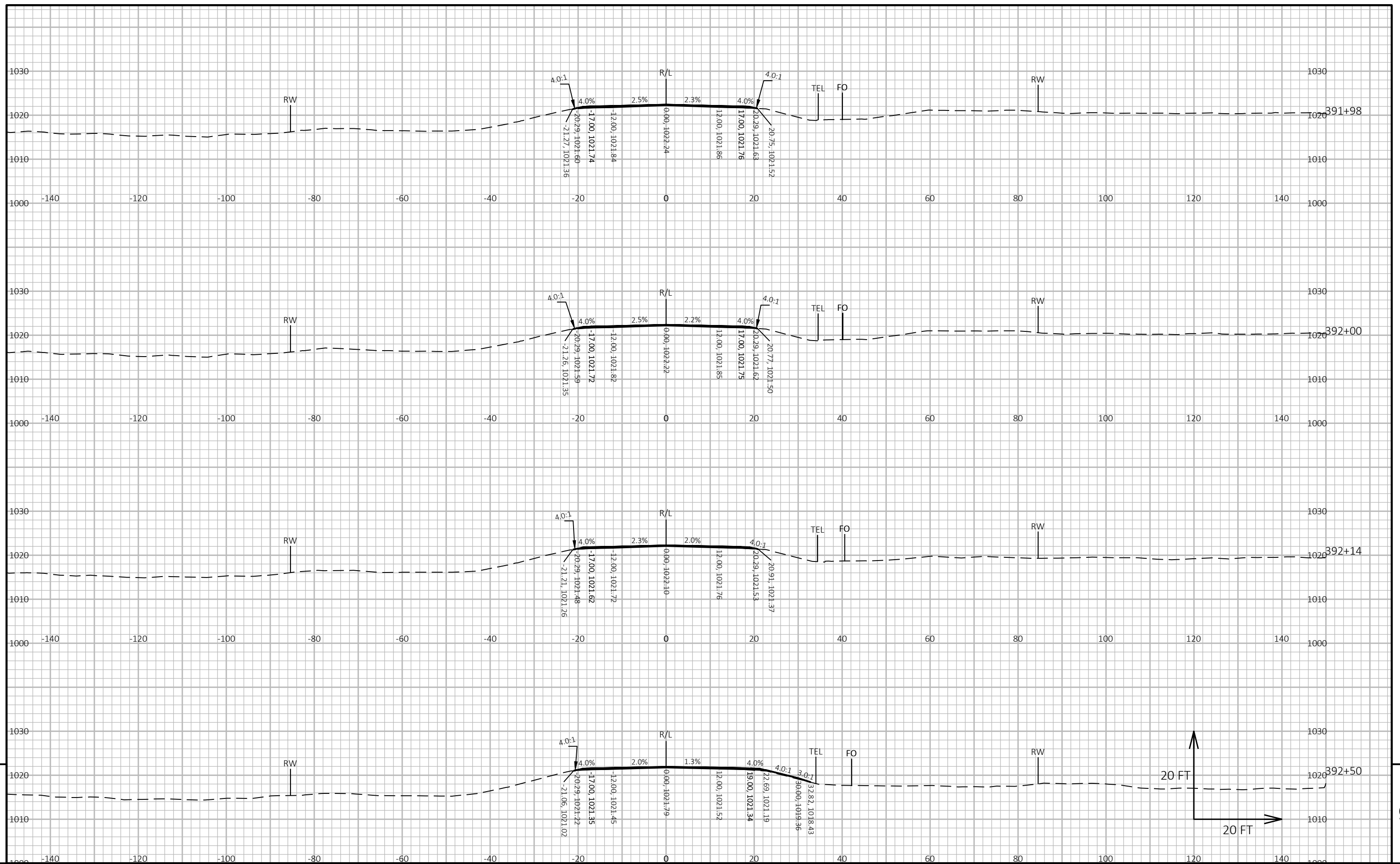




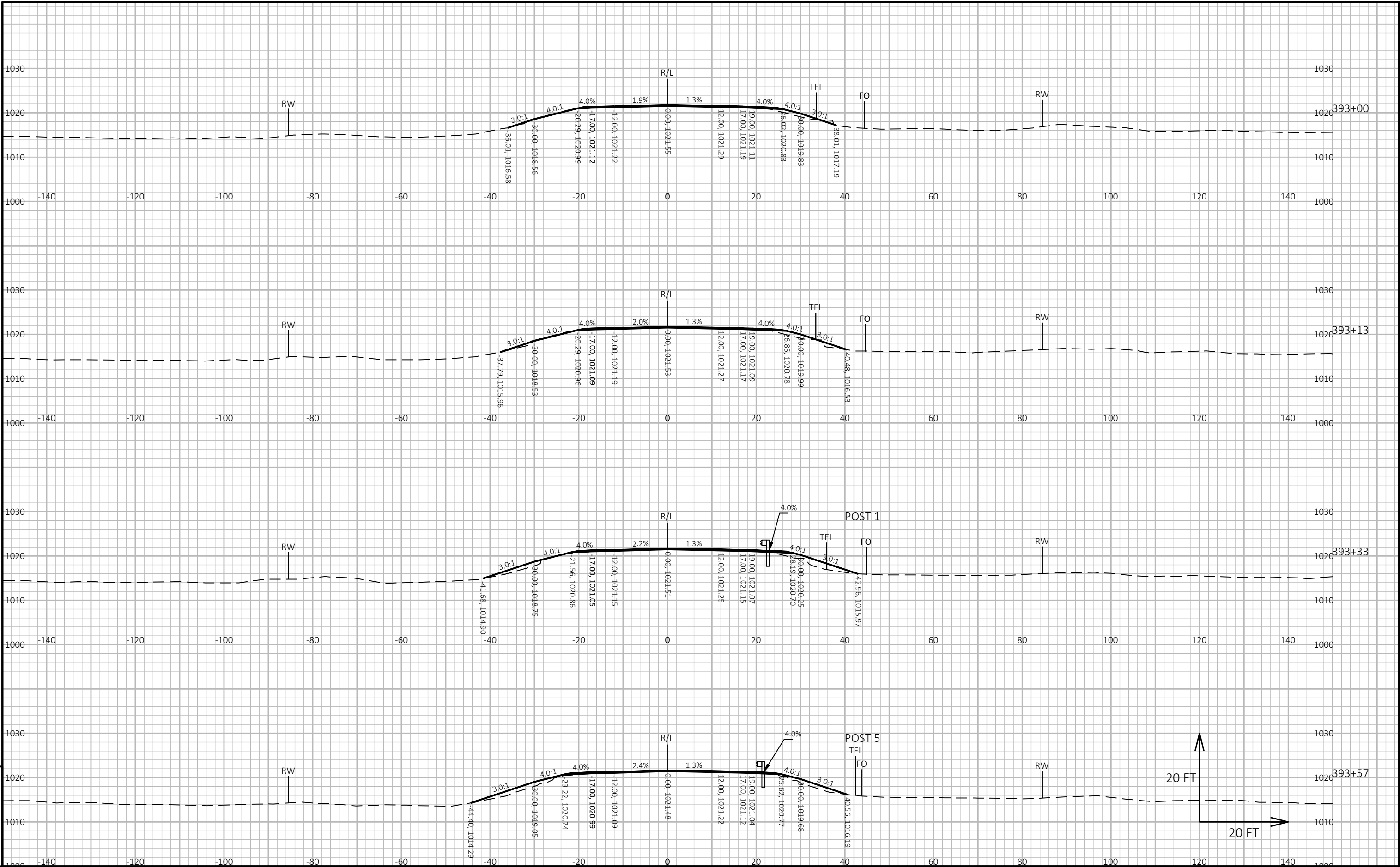
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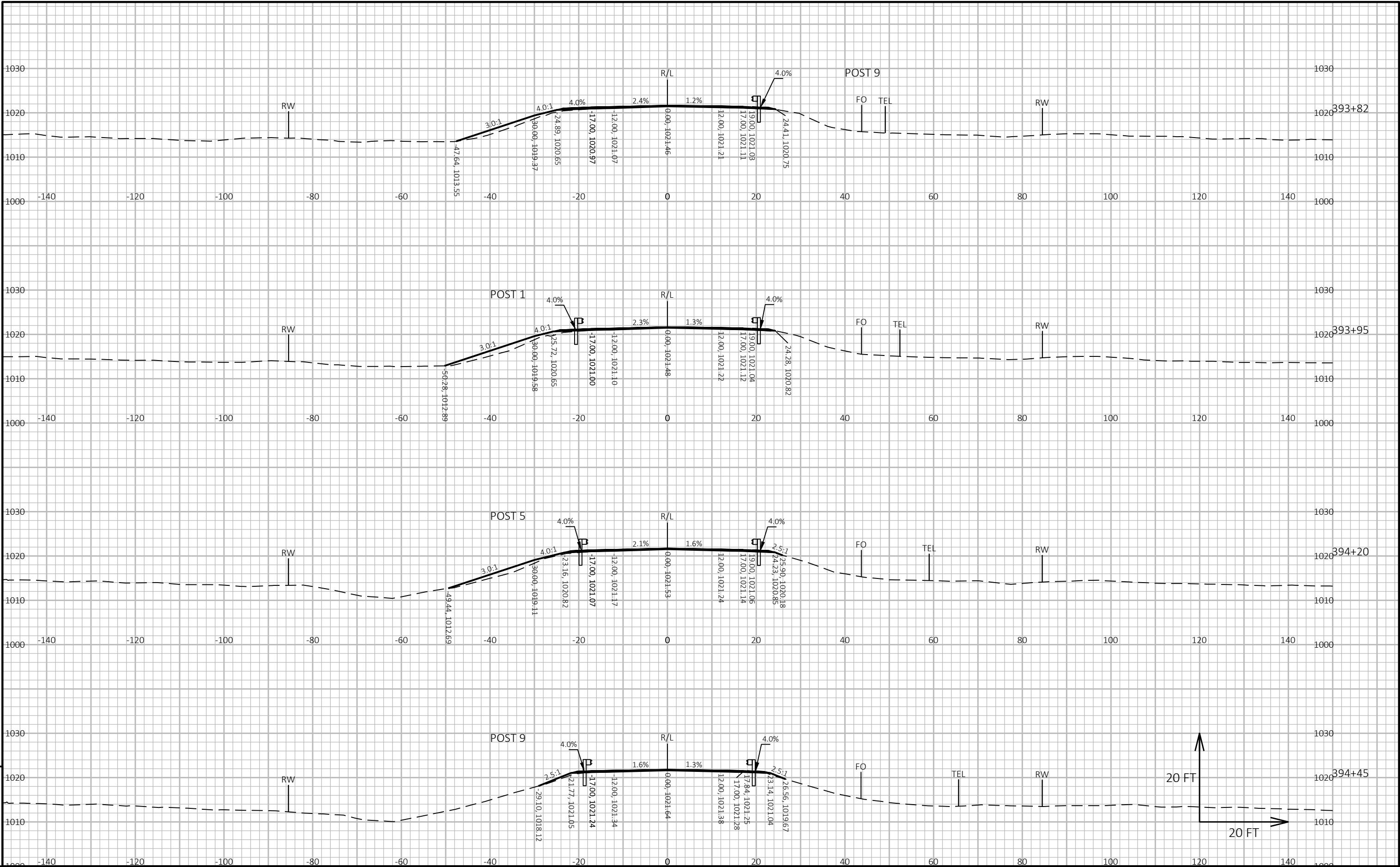
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|---------------------------|-------------|----------------|------------------------|-----------|---|
| PROJECT NO: 8070-03-70/71 | HWY: USH 63 | COUNTY: PIERCE | CROSS SECTIONS: USH 63 | SHEET 263 | E |
|---------------------------|-------------|----------------|------------------------|-----------|---|

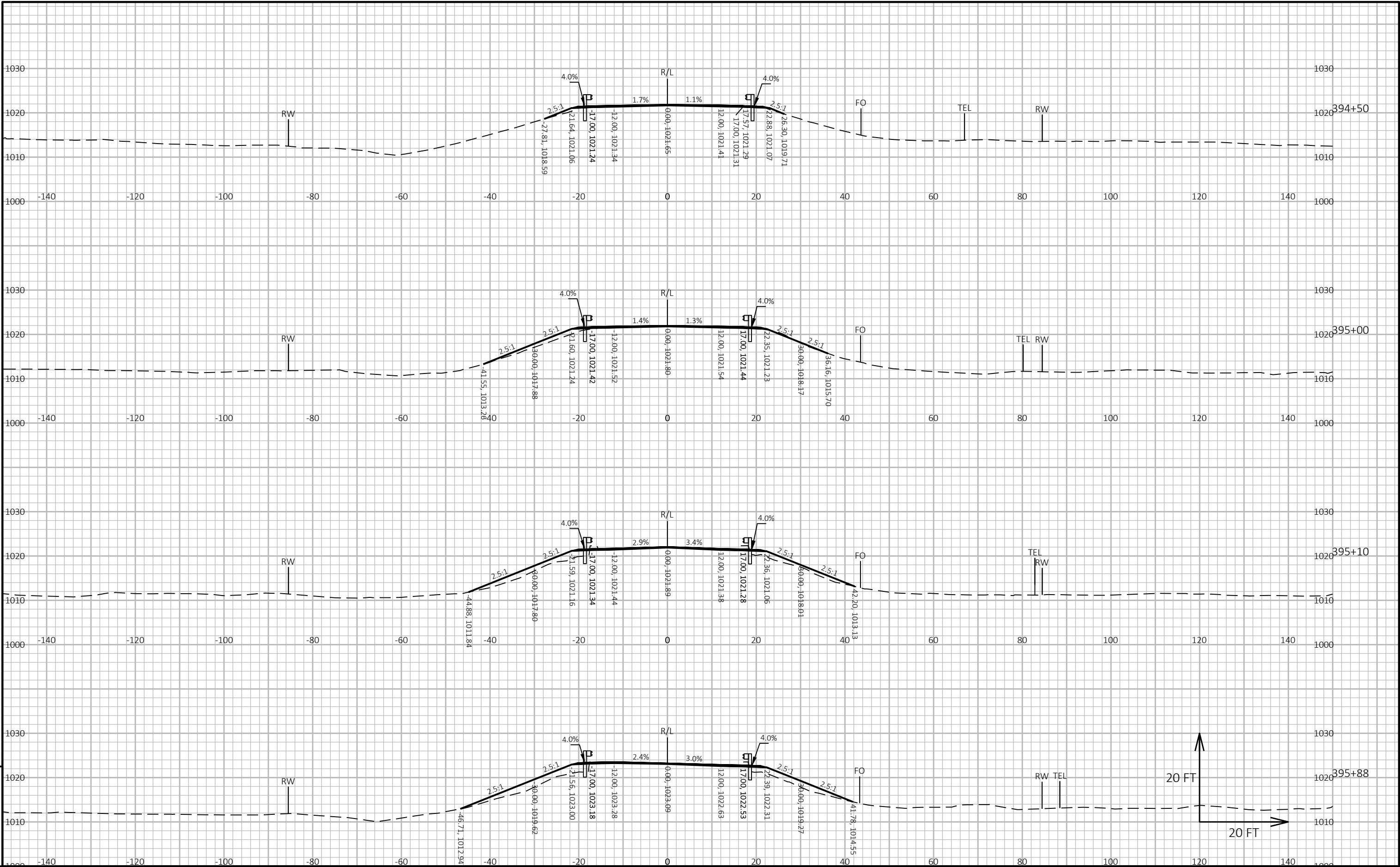


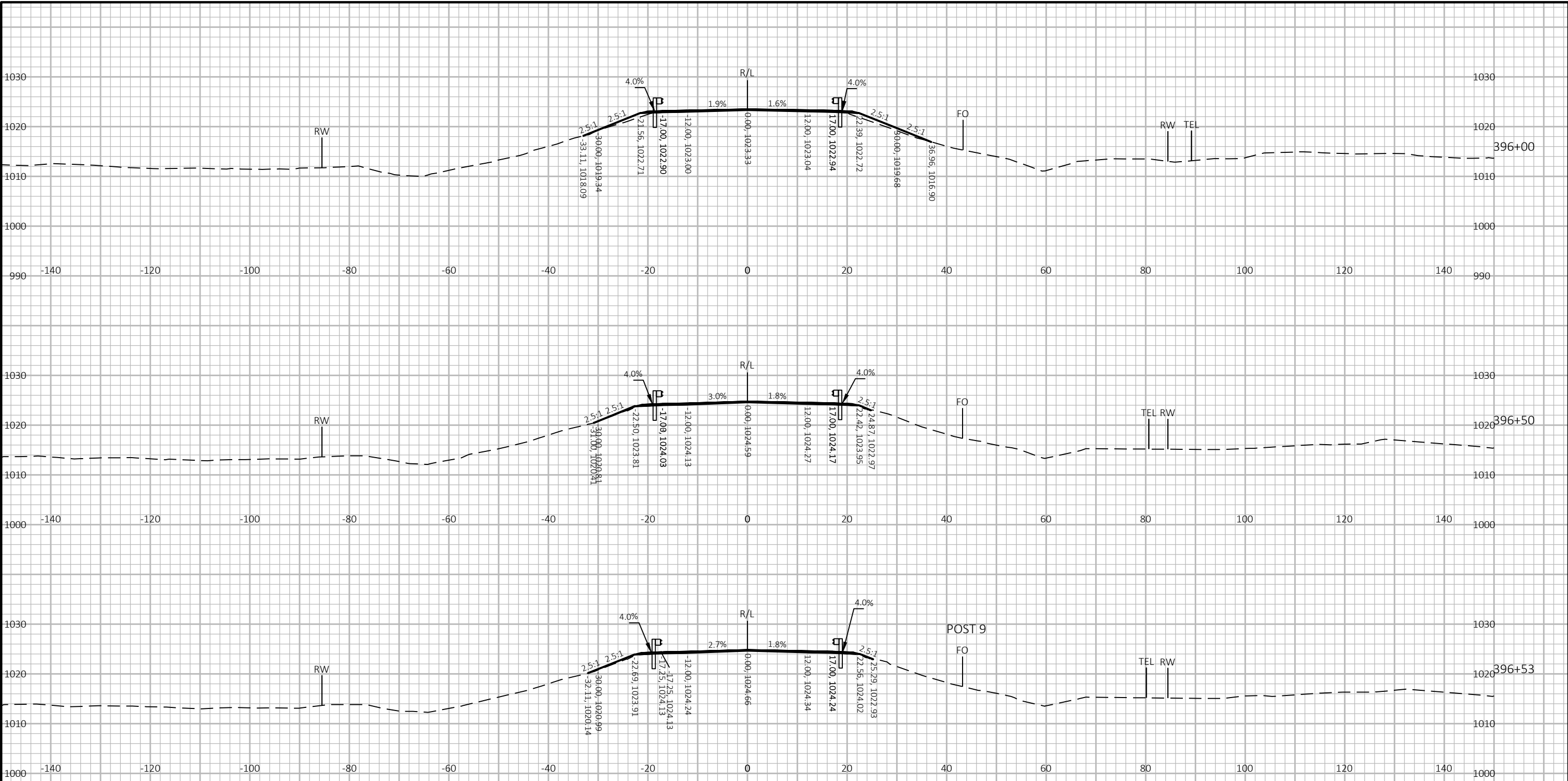










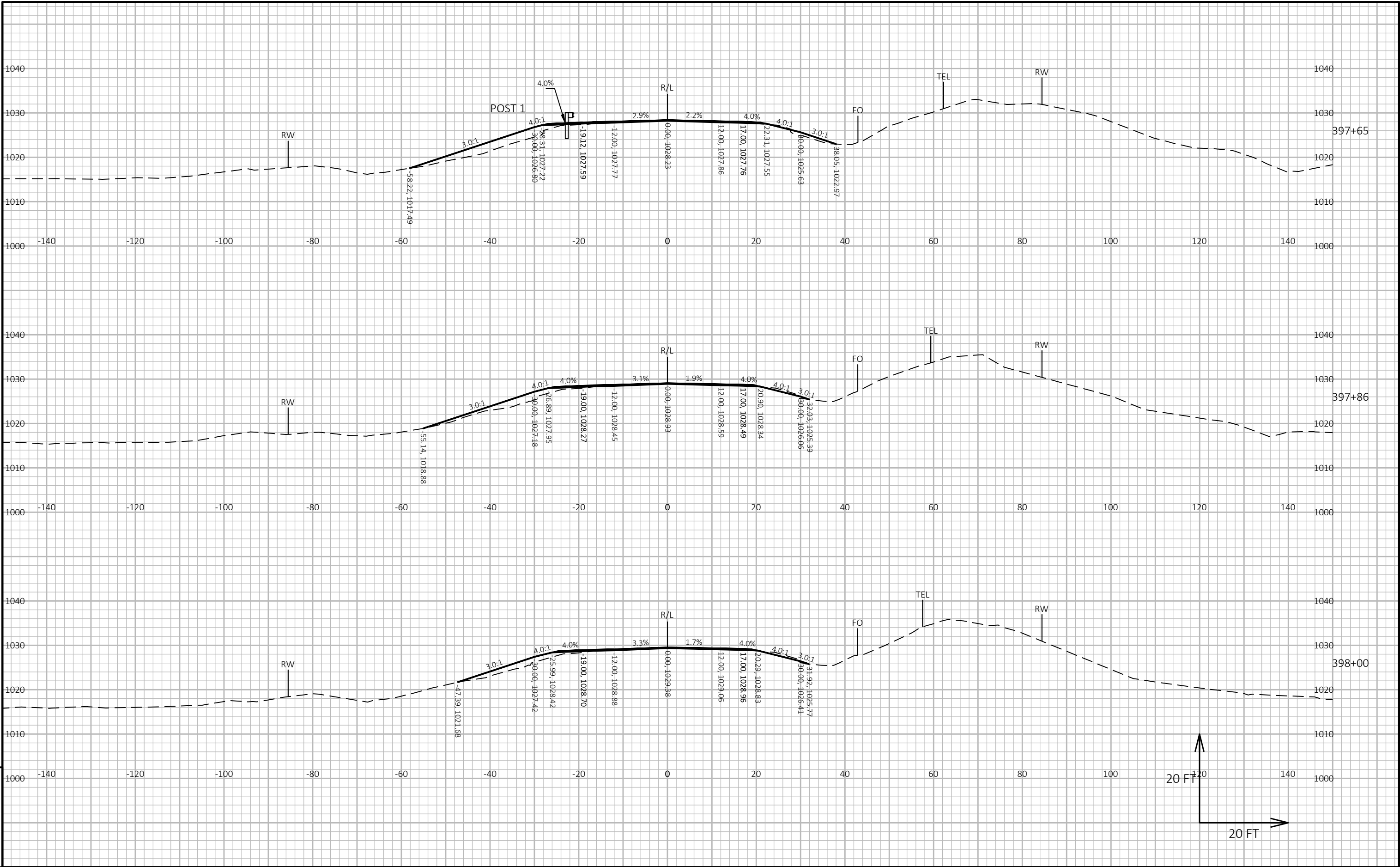


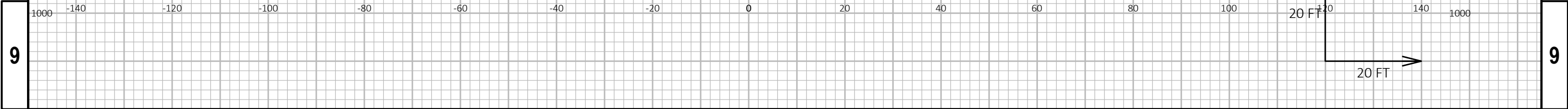
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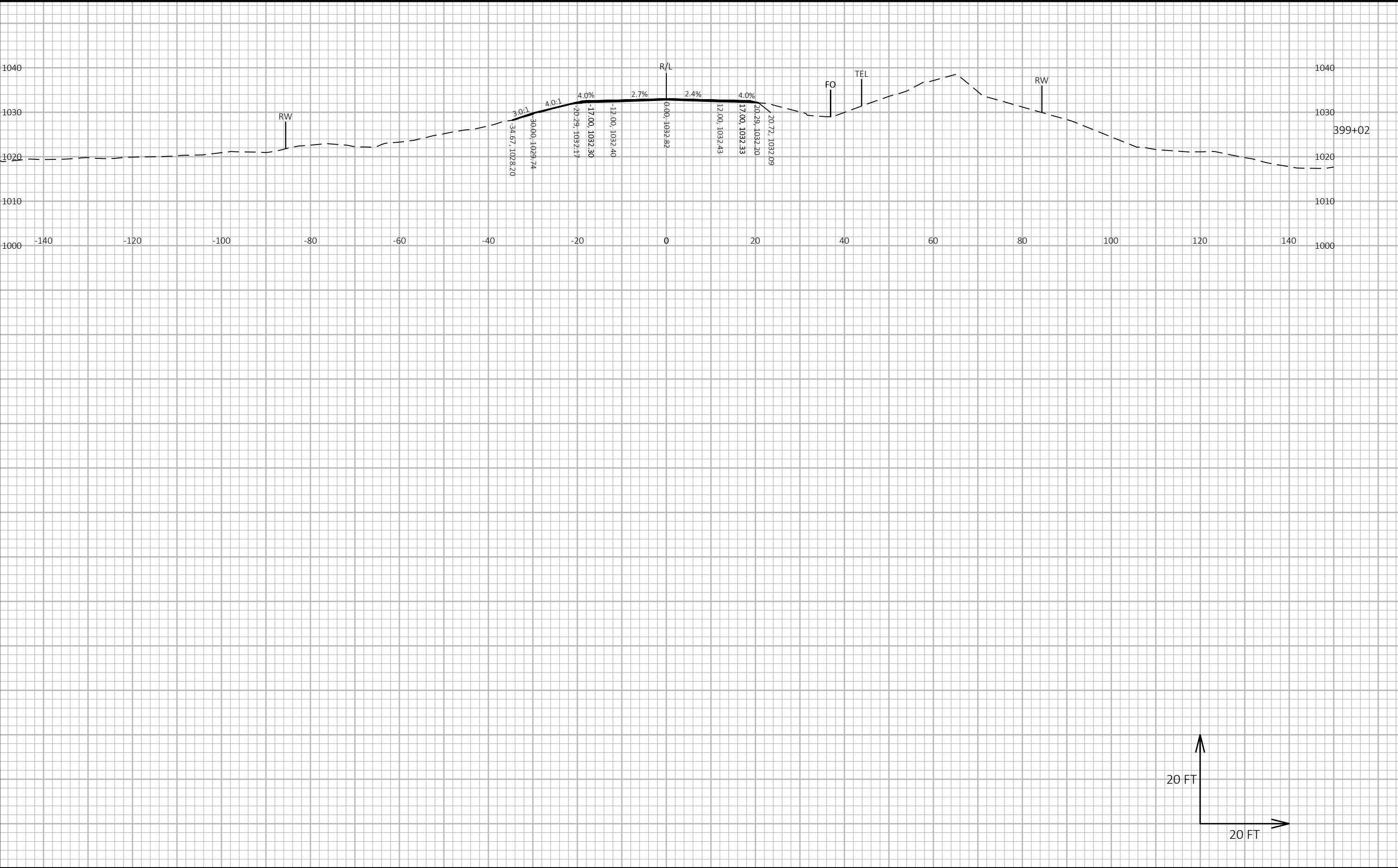
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| PROJECT NO: 8070-03-70/71 | HWY: USH 63 | COUNTY: PIERCE | CROSS SECTIONS: USH 63 | SHEET 268 | E |
|---------------------------|-------------|----------------|------------------------|-----------|---|





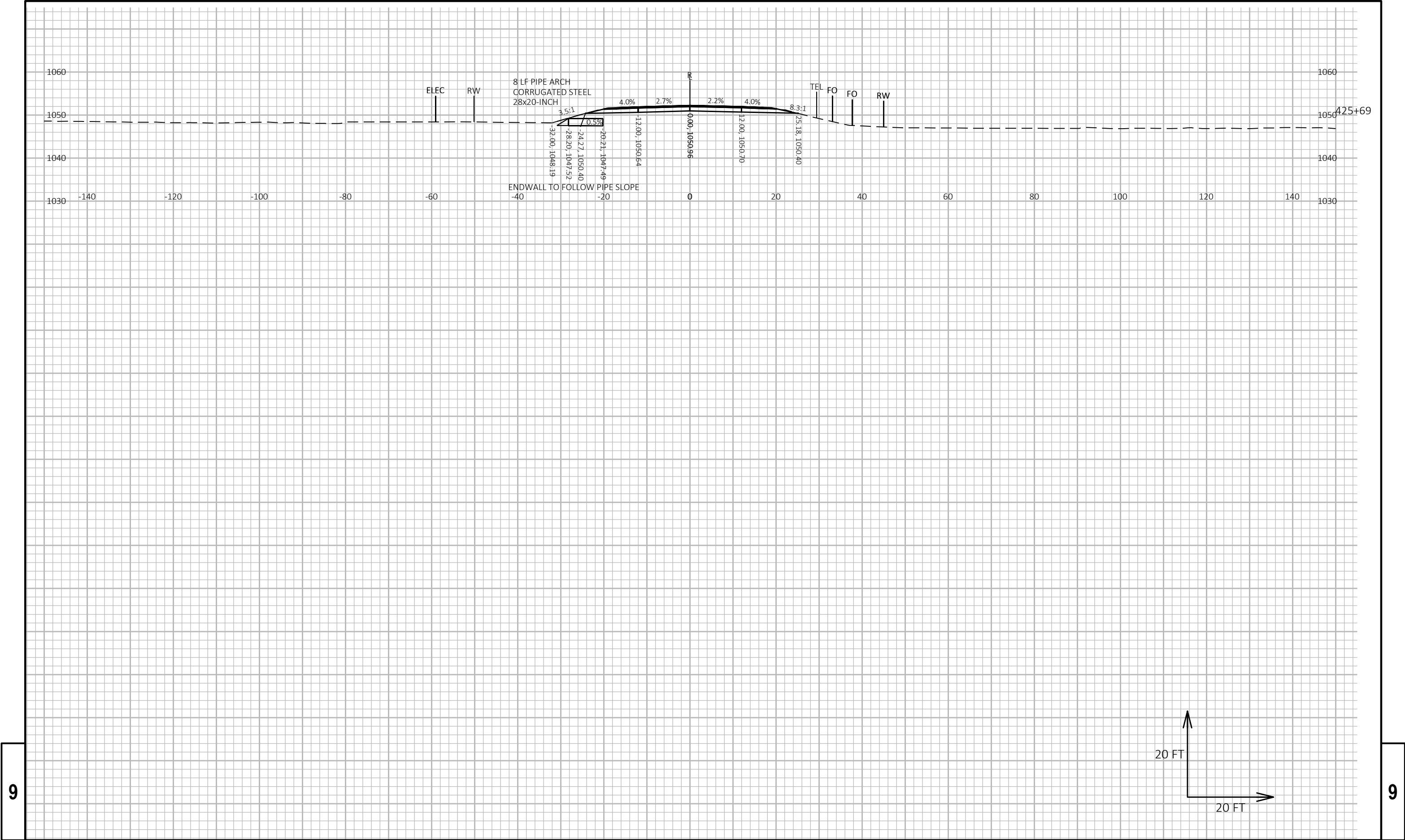




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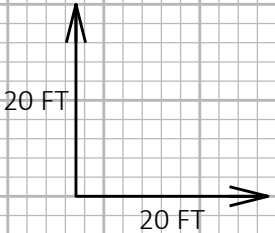
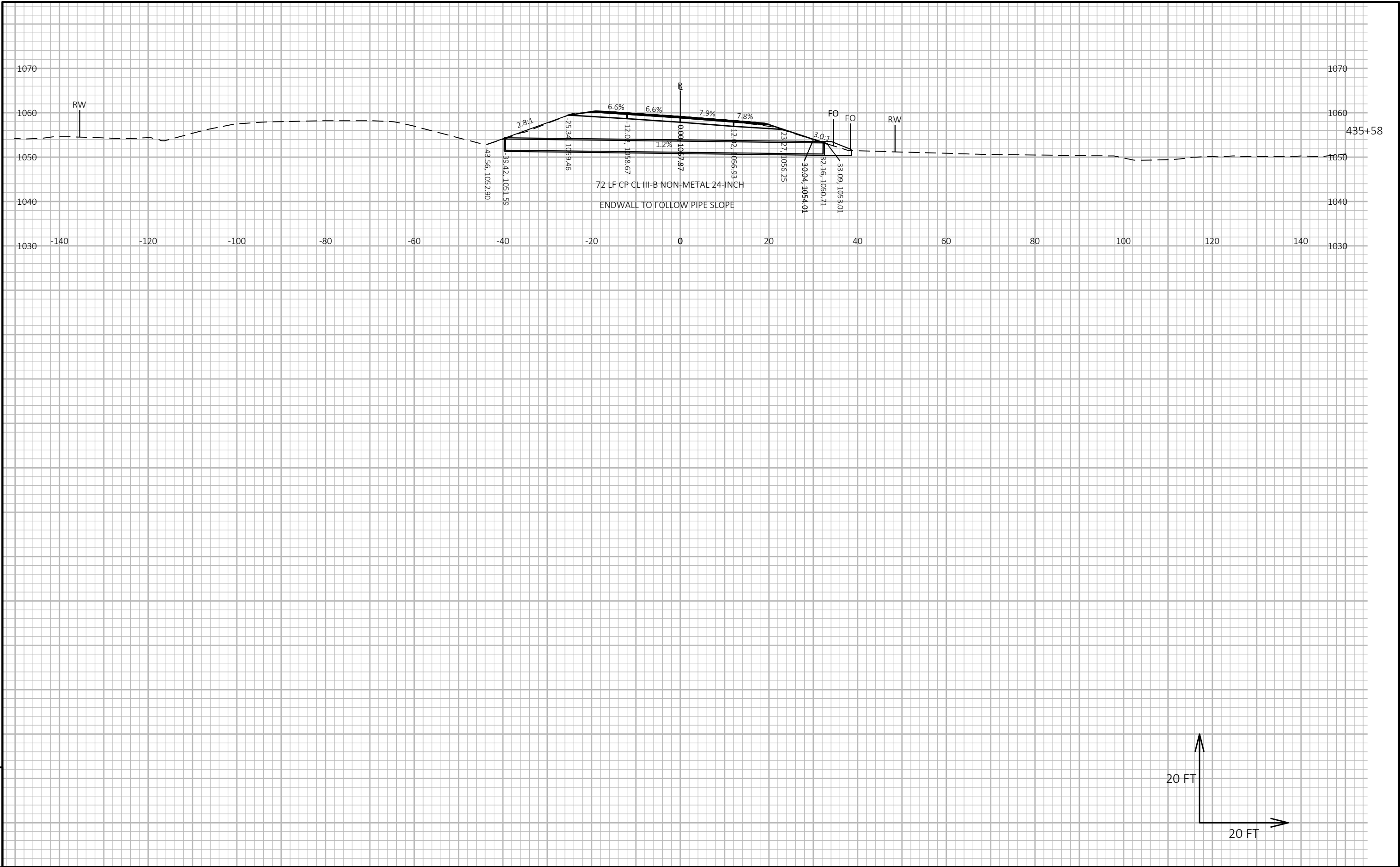
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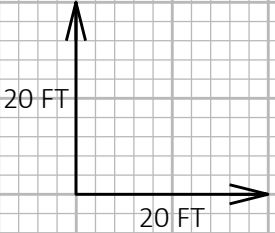
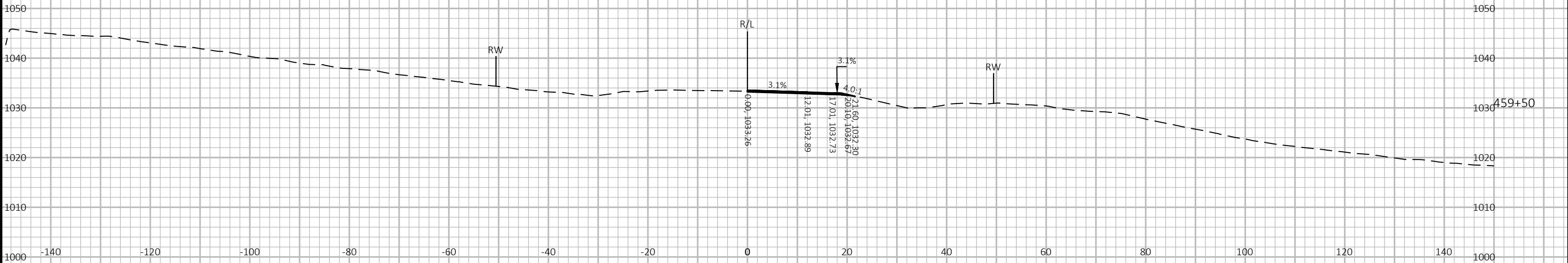
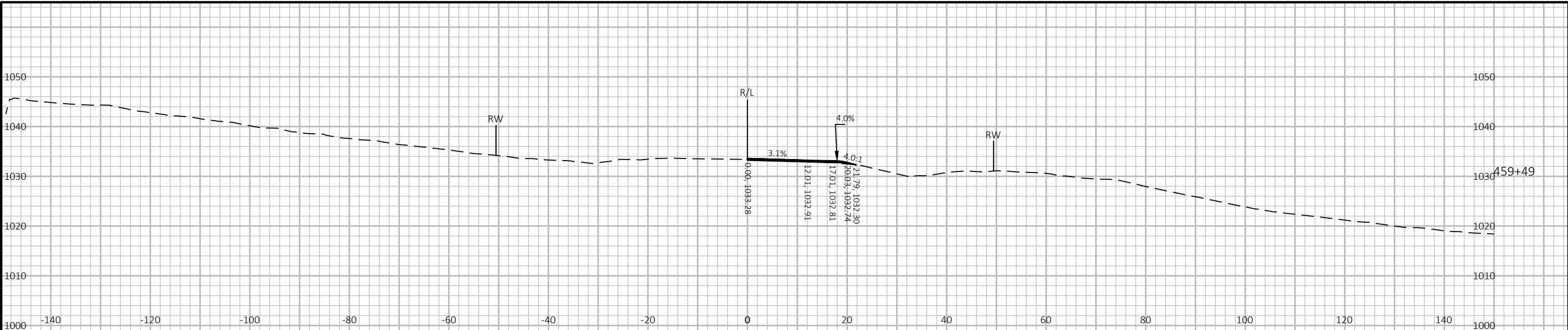


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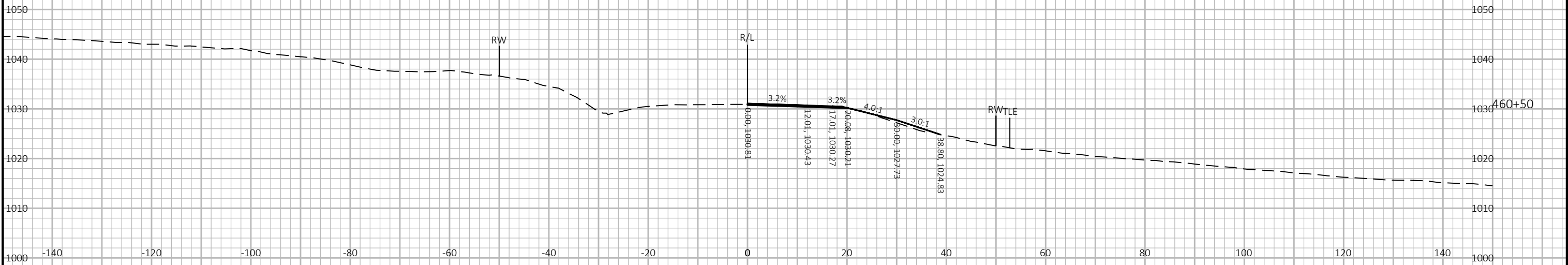
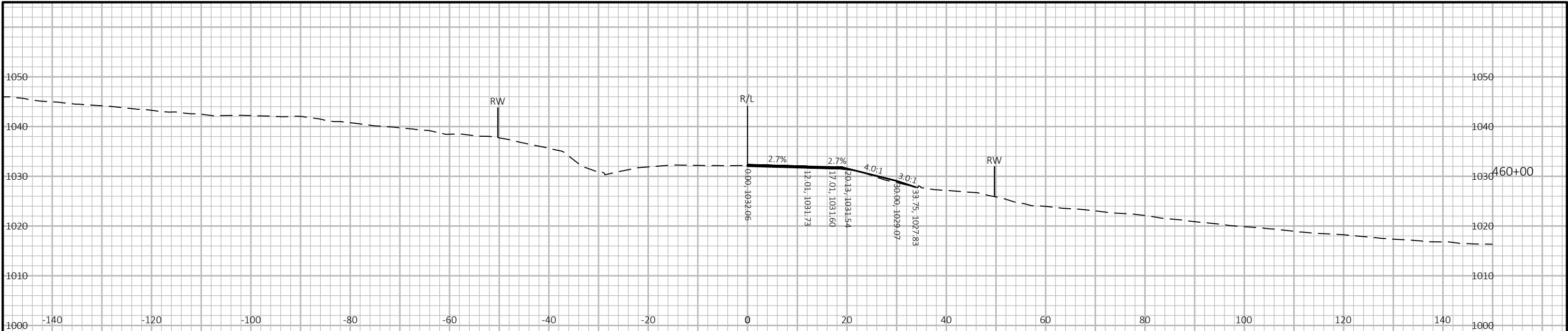






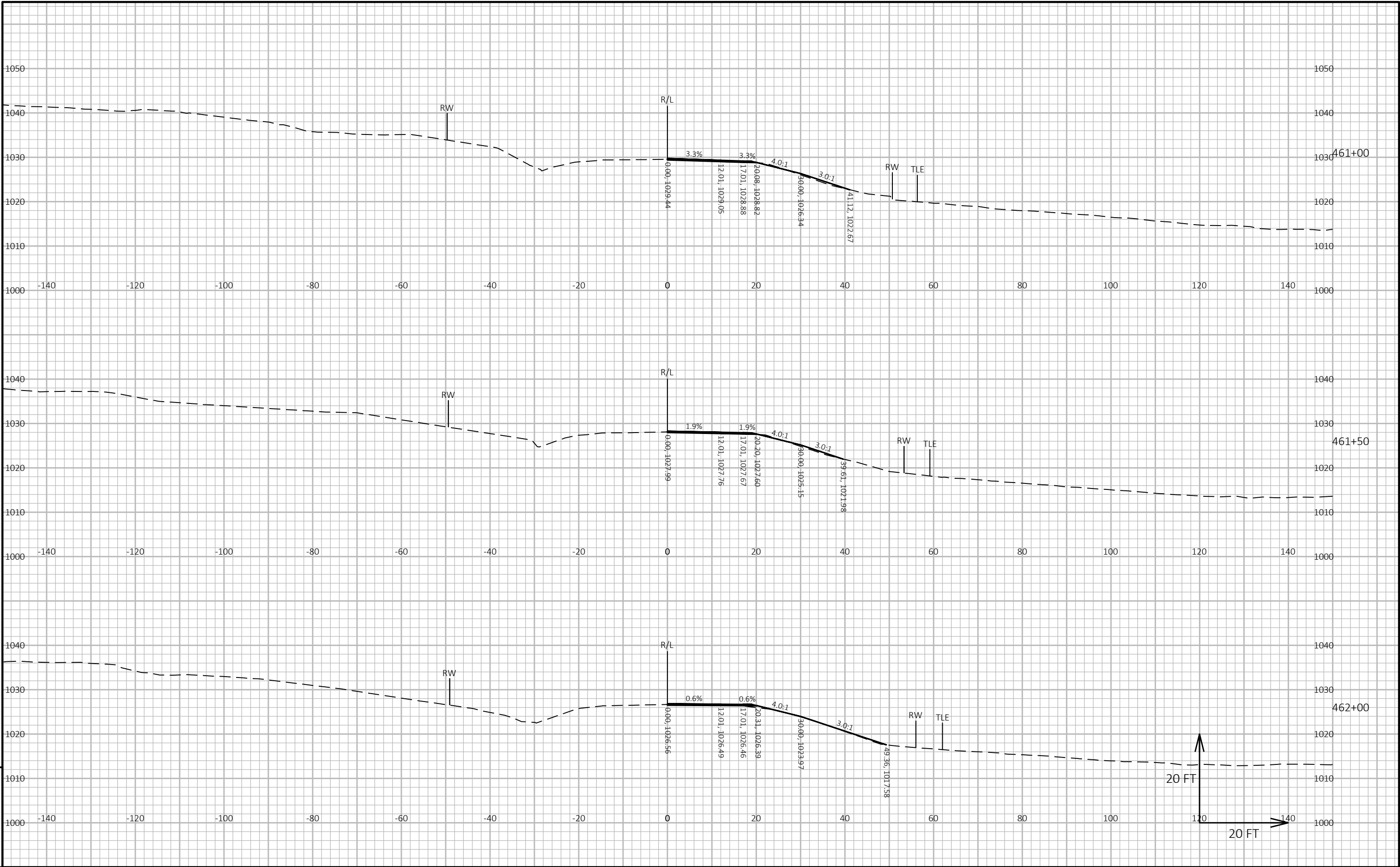
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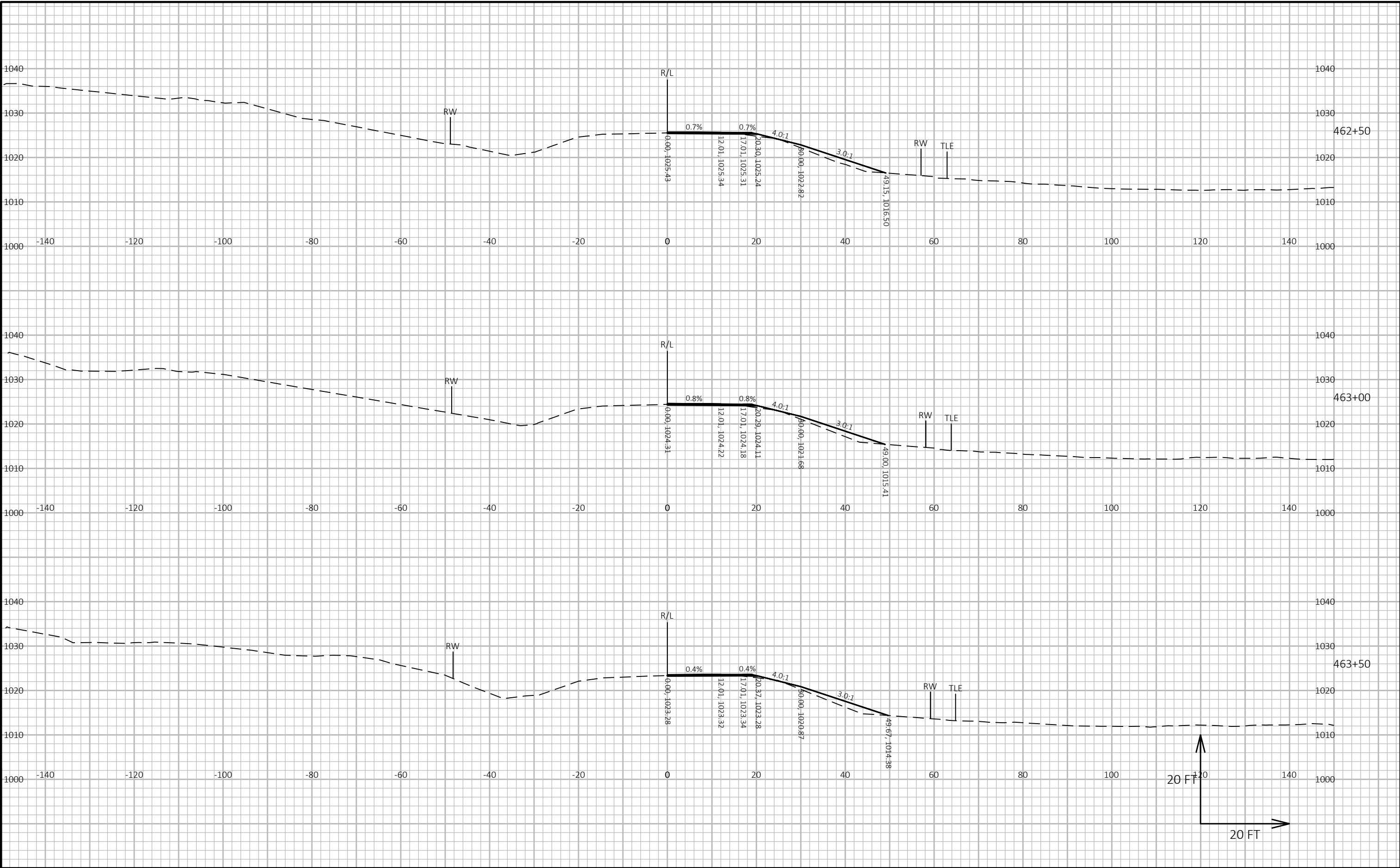
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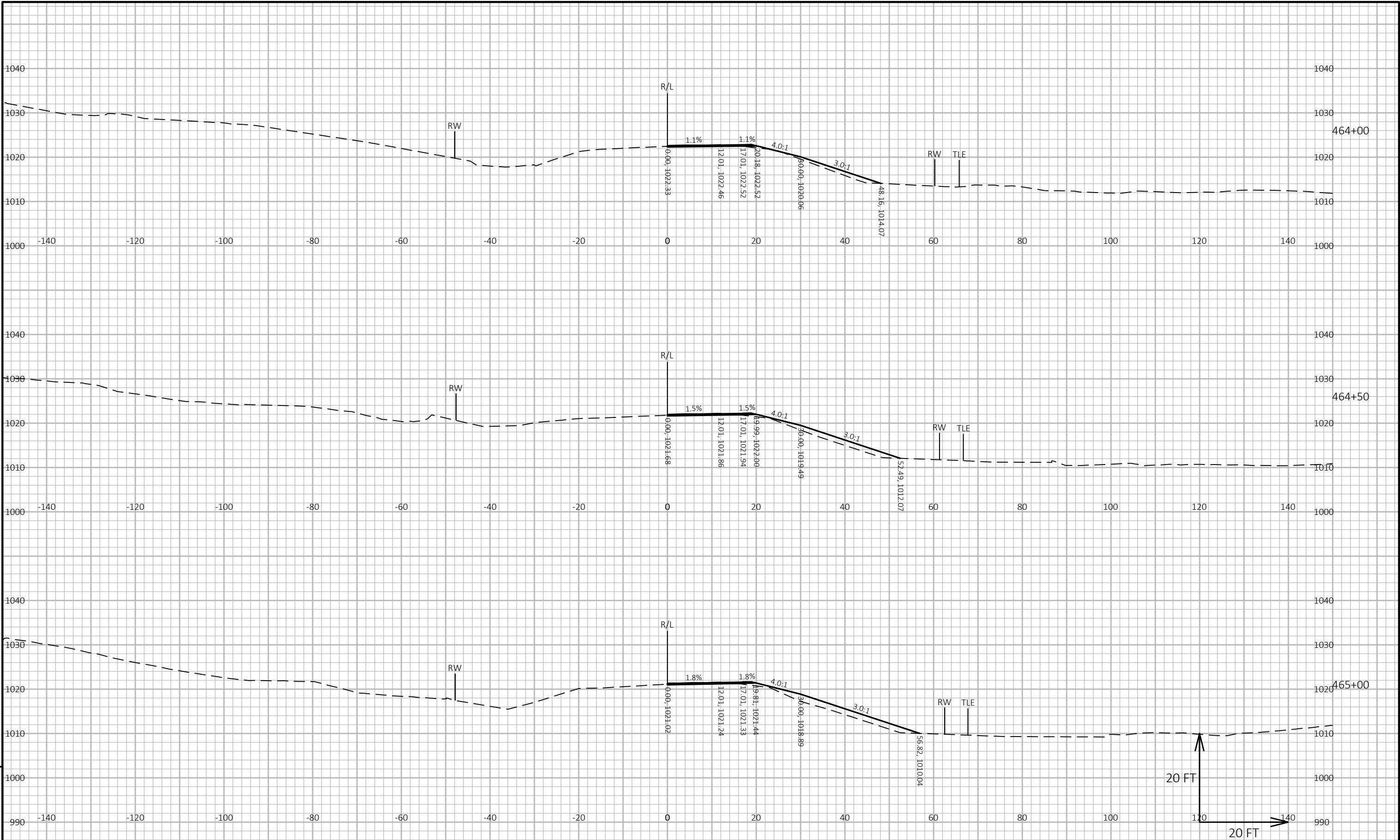


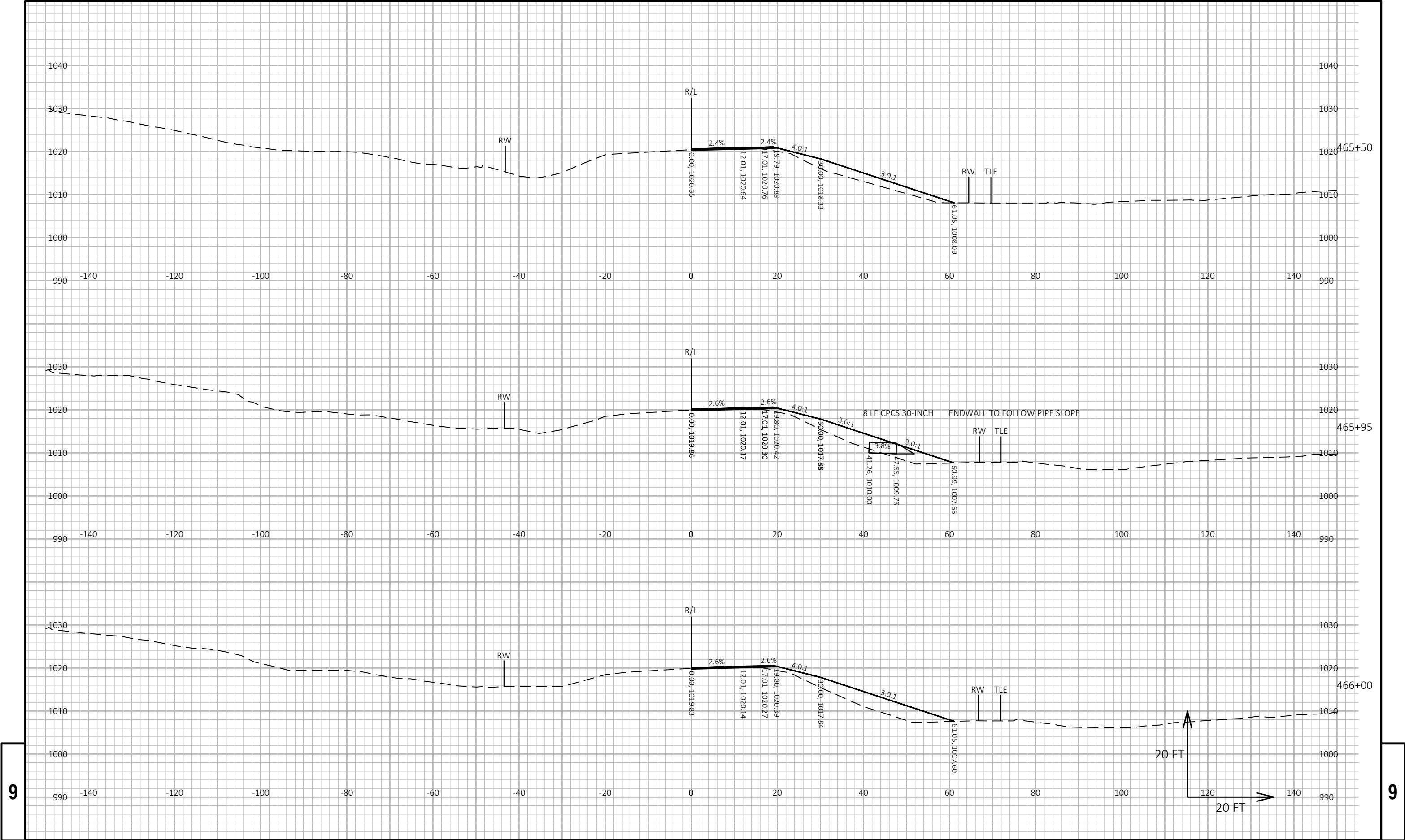
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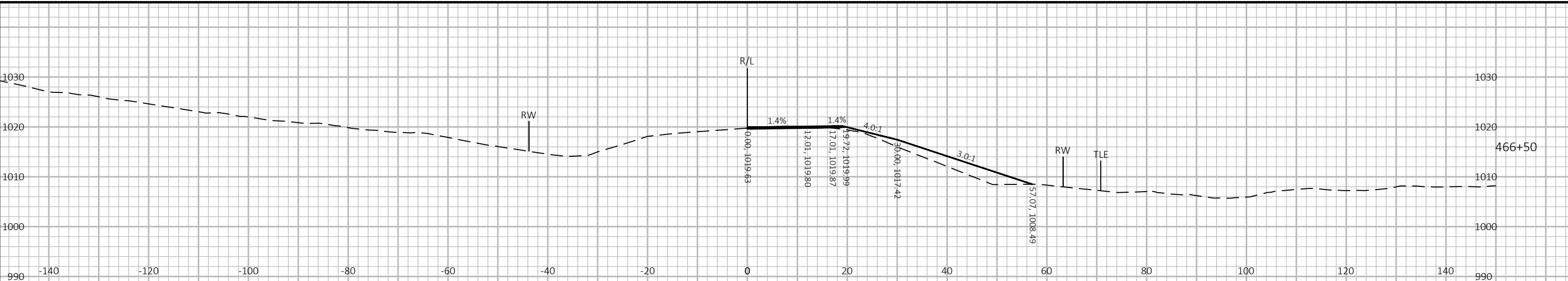




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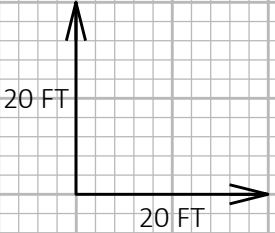
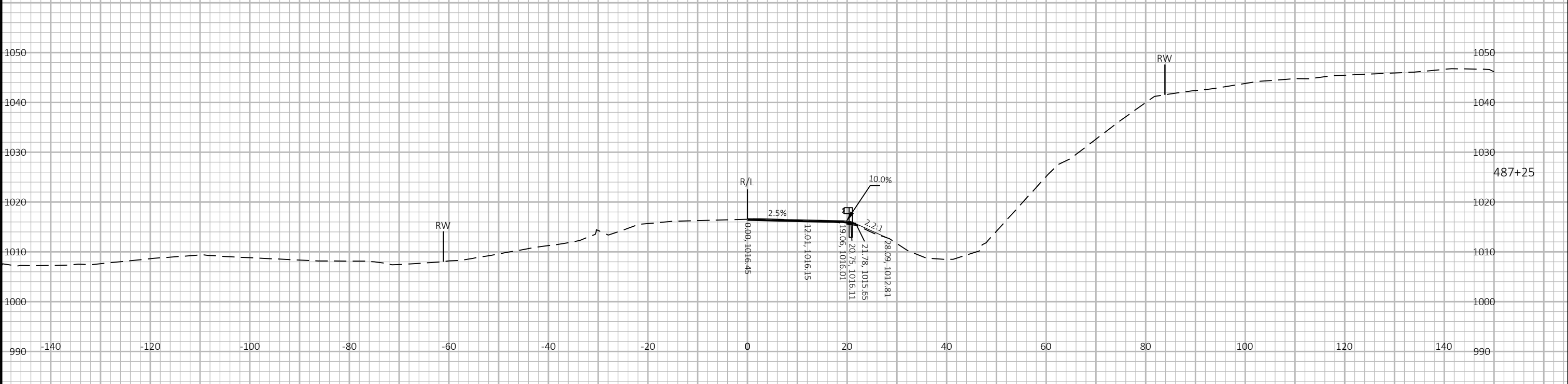
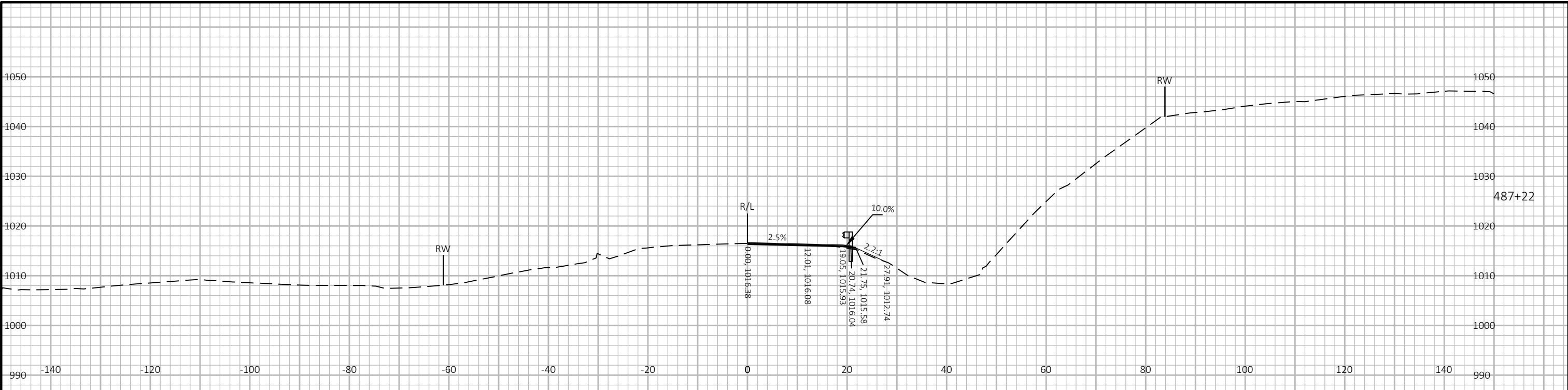
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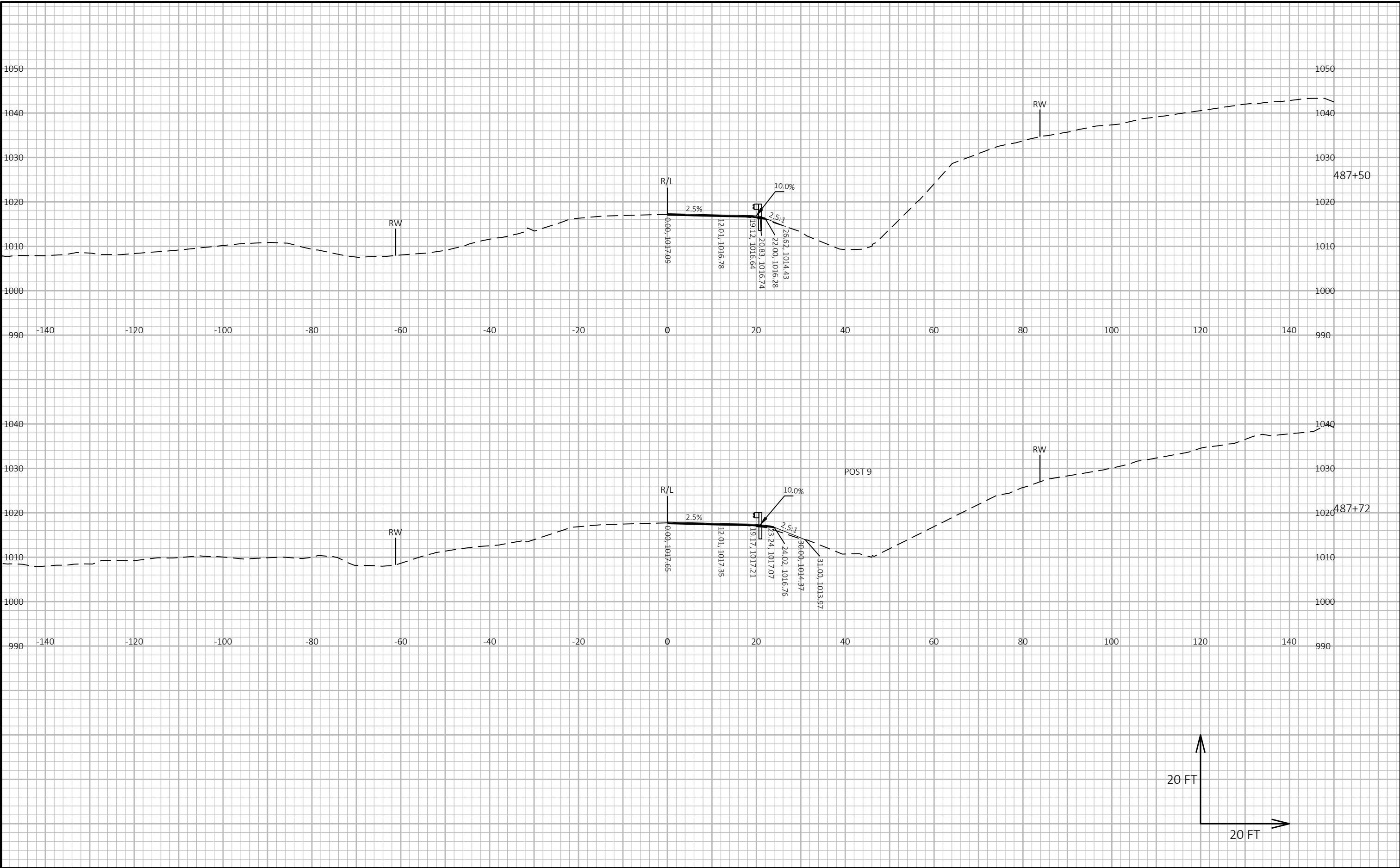
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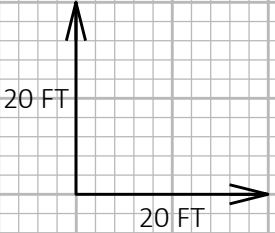
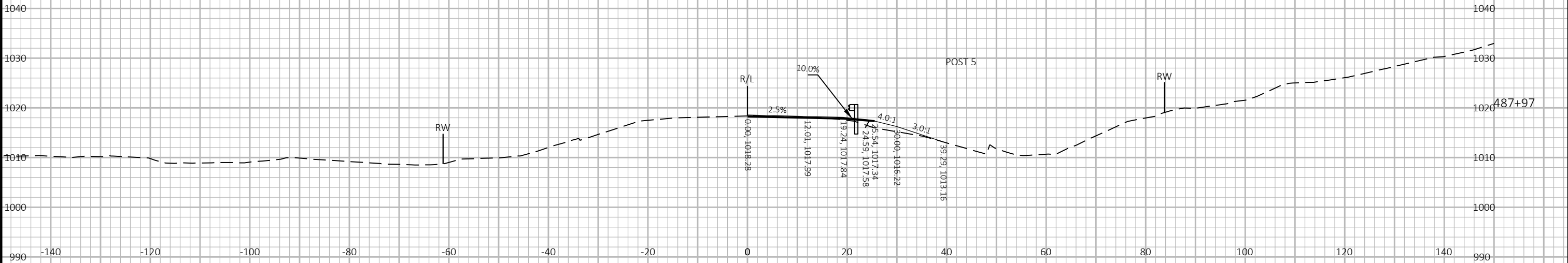
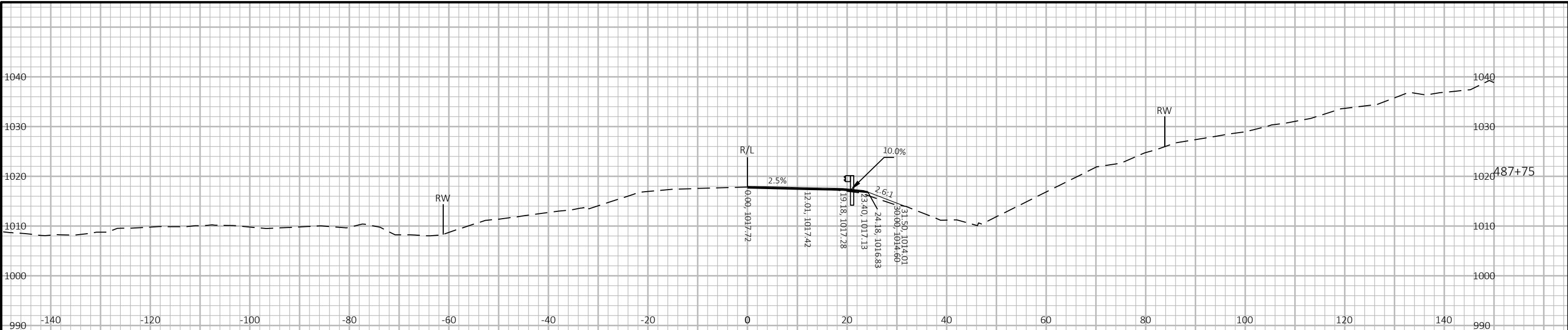
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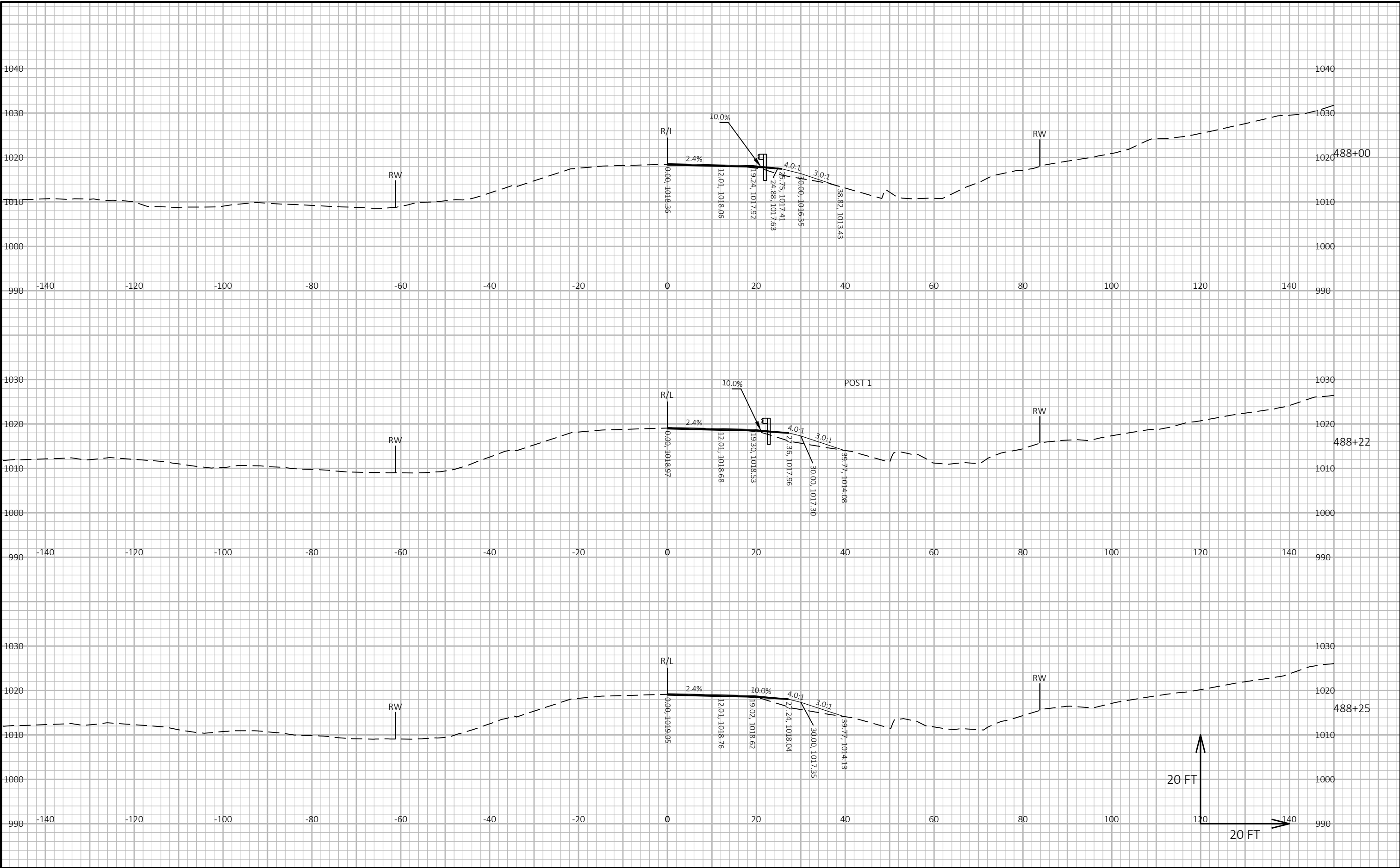
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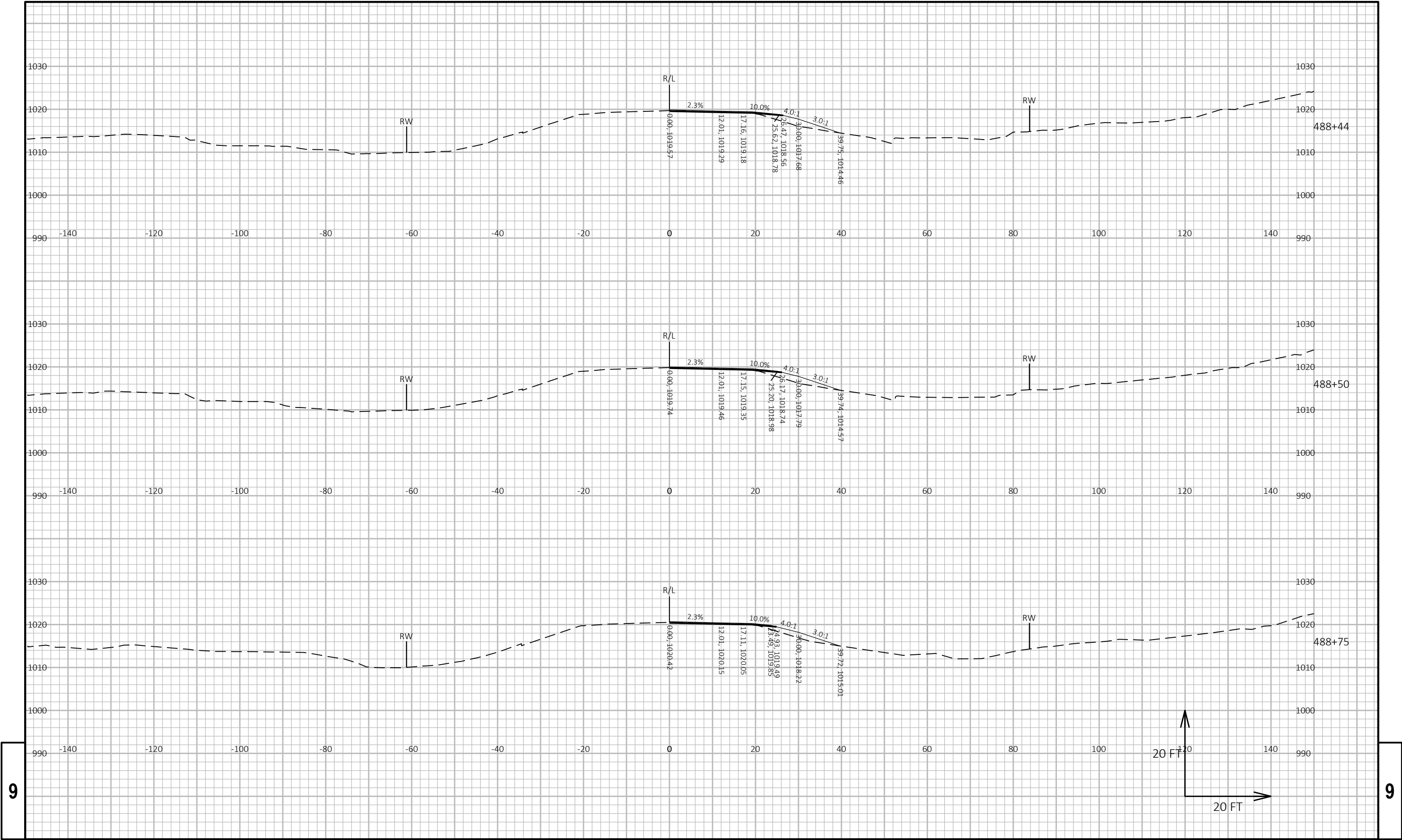
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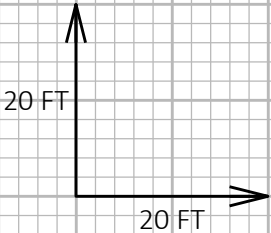
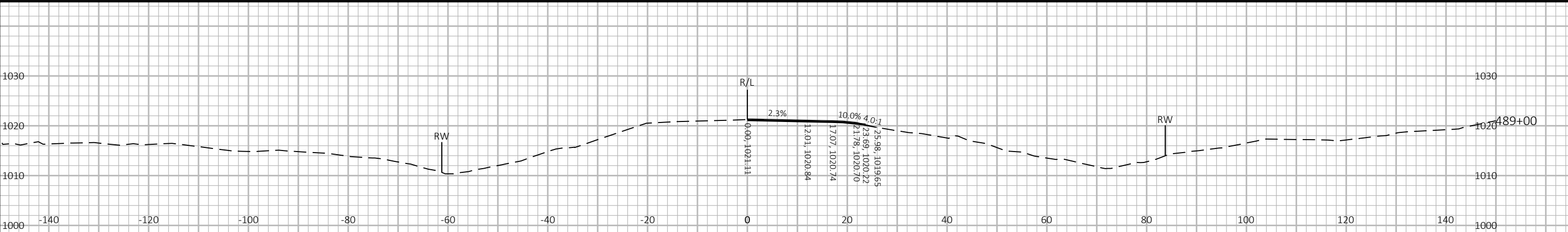


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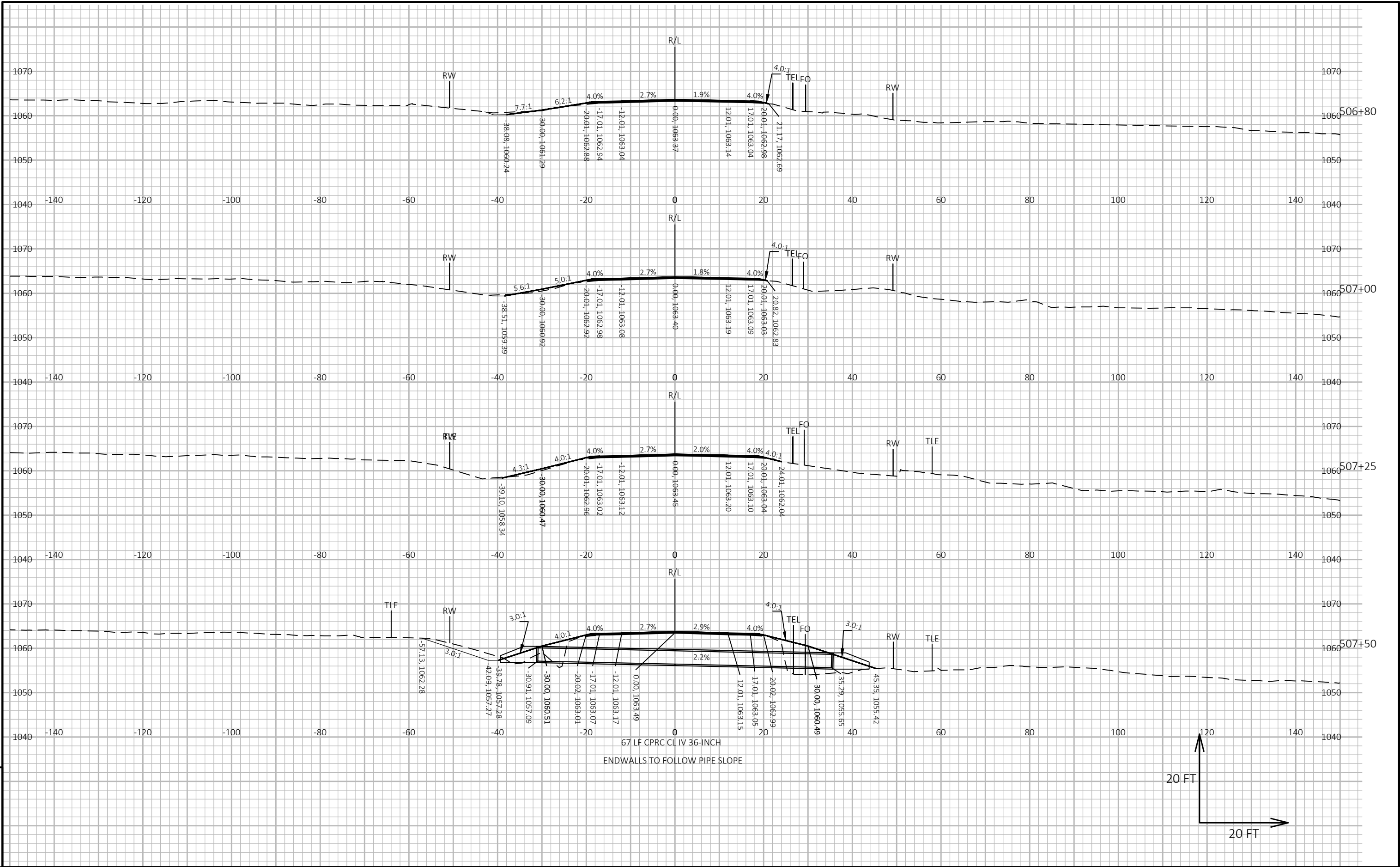






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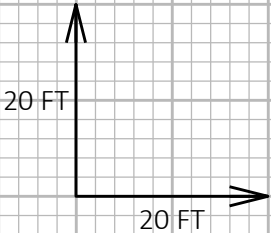
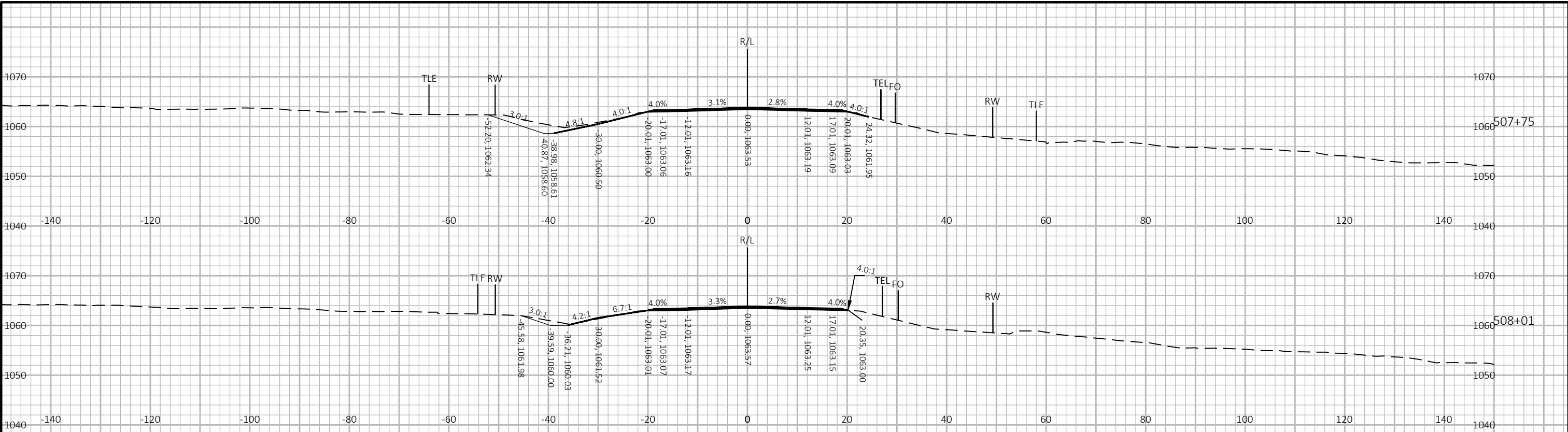


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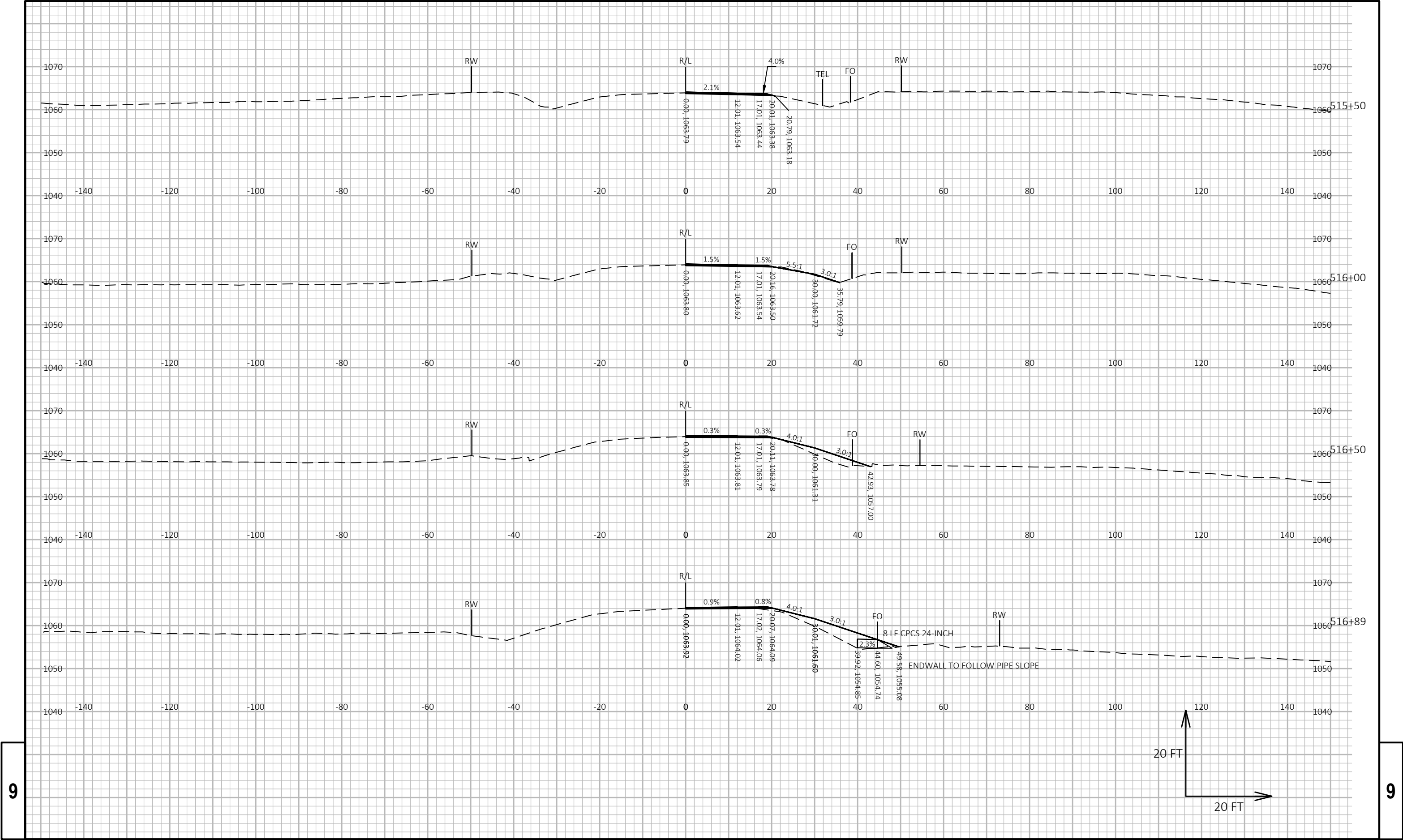
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| PROJECT NO: 8070-03-70/71 | HWY: USH 63 | COUNTY: PIERCE | CROSS SECTIONS: USH 63 | SHEET 288 | E |
|---------------------------|-------------|----------------|------------------------|-----------|---|





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PROJECT NO: 8070-03-70/71

HWY: USH 63

COUNTY: PIERCE

CROSS SECTIONS: USH 63

SHEET 290

E

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LAYOUT NAME - 01

PLOT DATE : 5/13/2024 1:12 PM

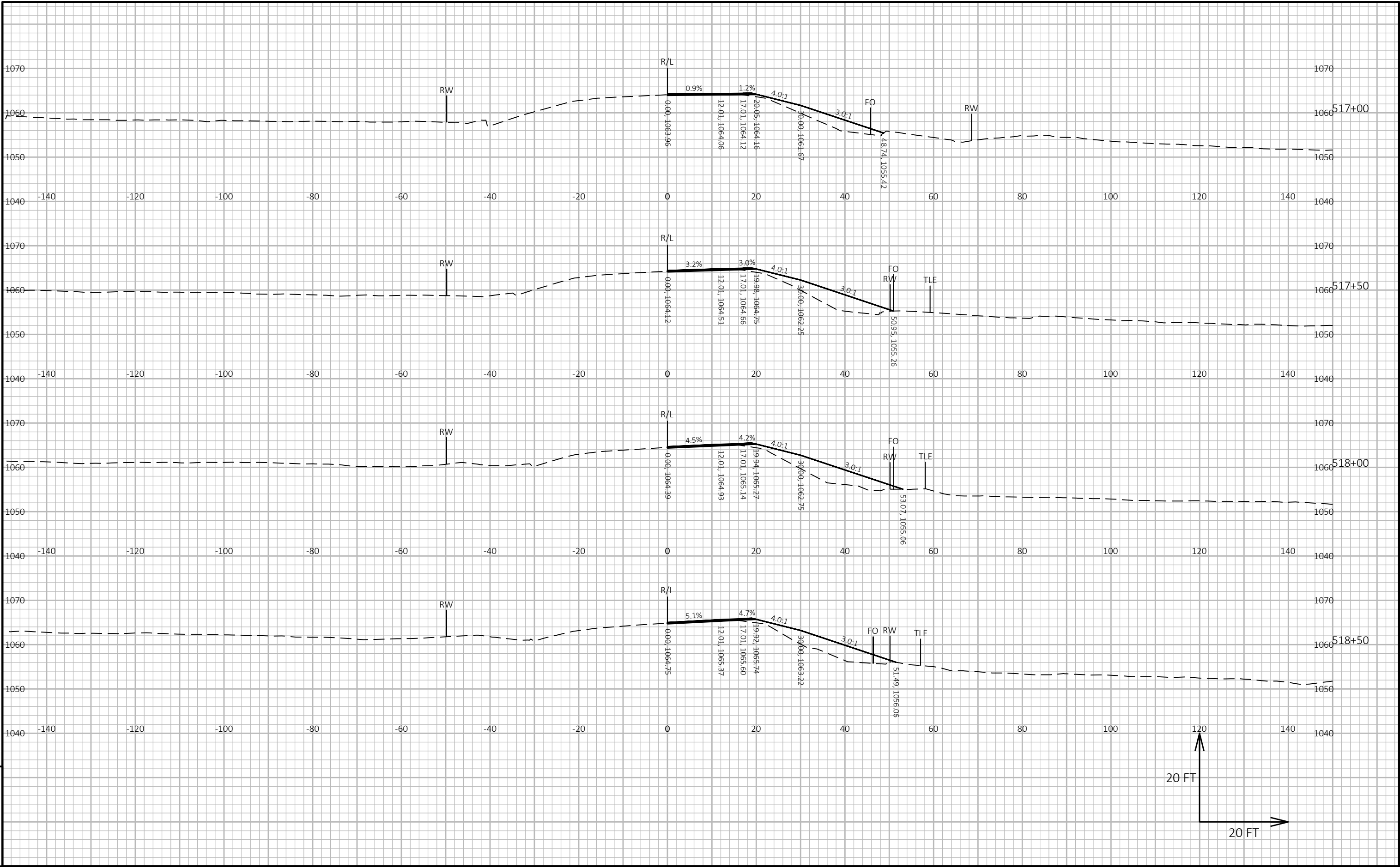
PLOT BY : RINZEL, JAMES M

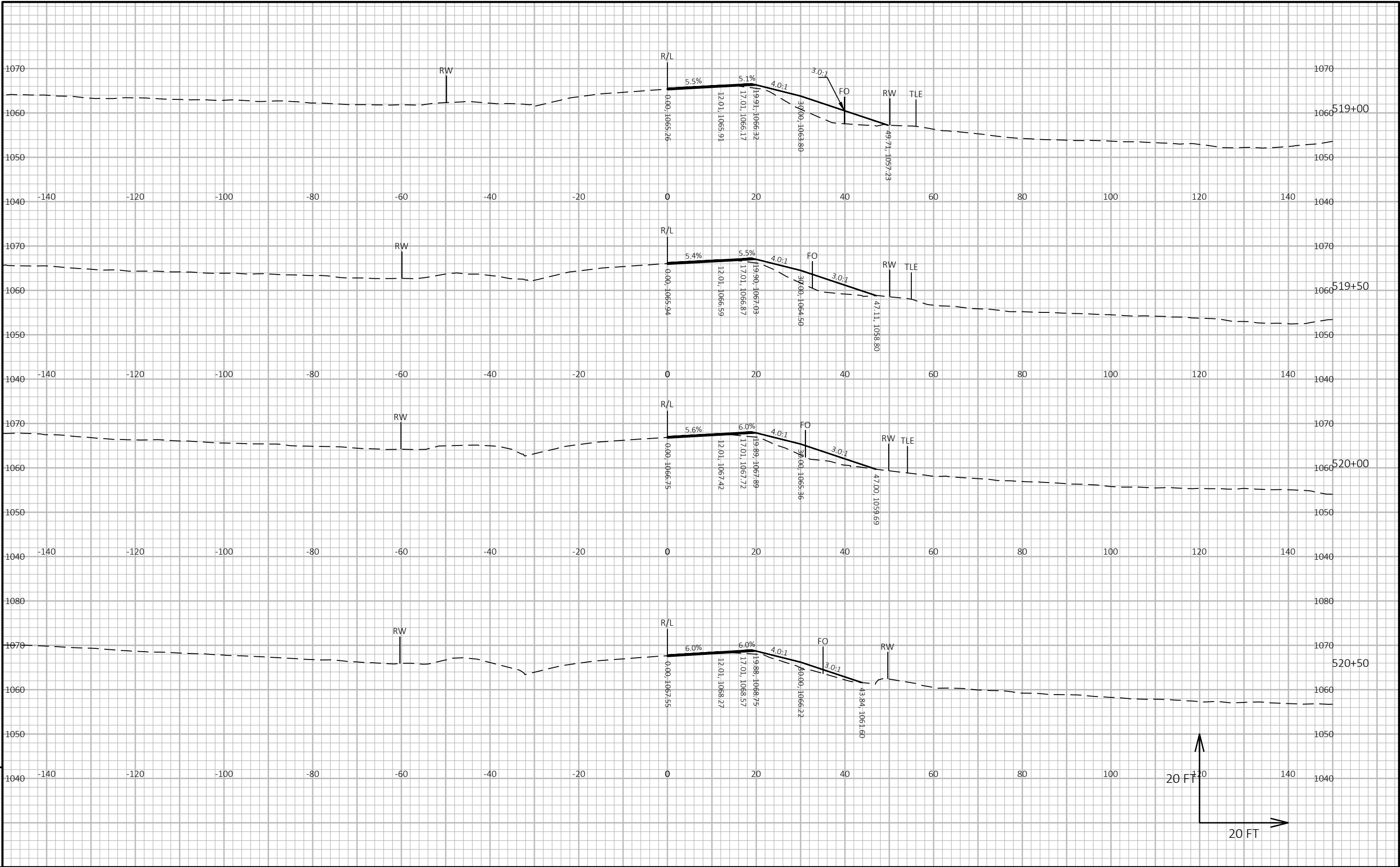
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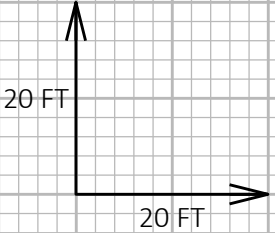
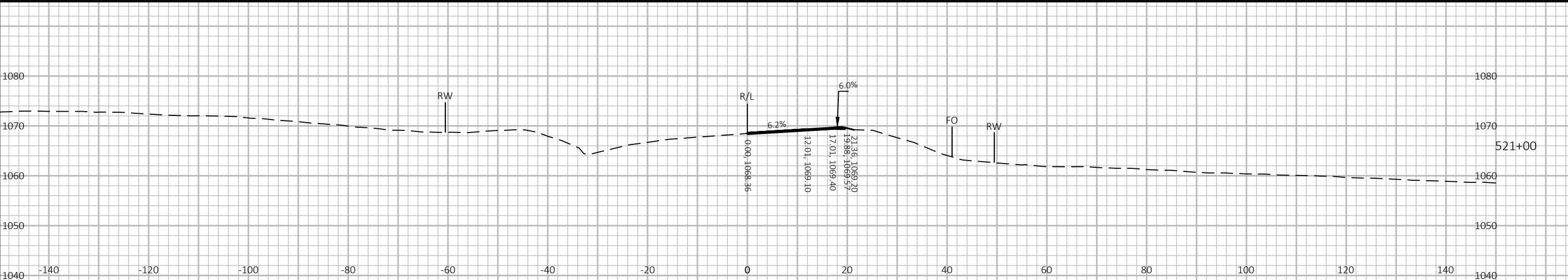
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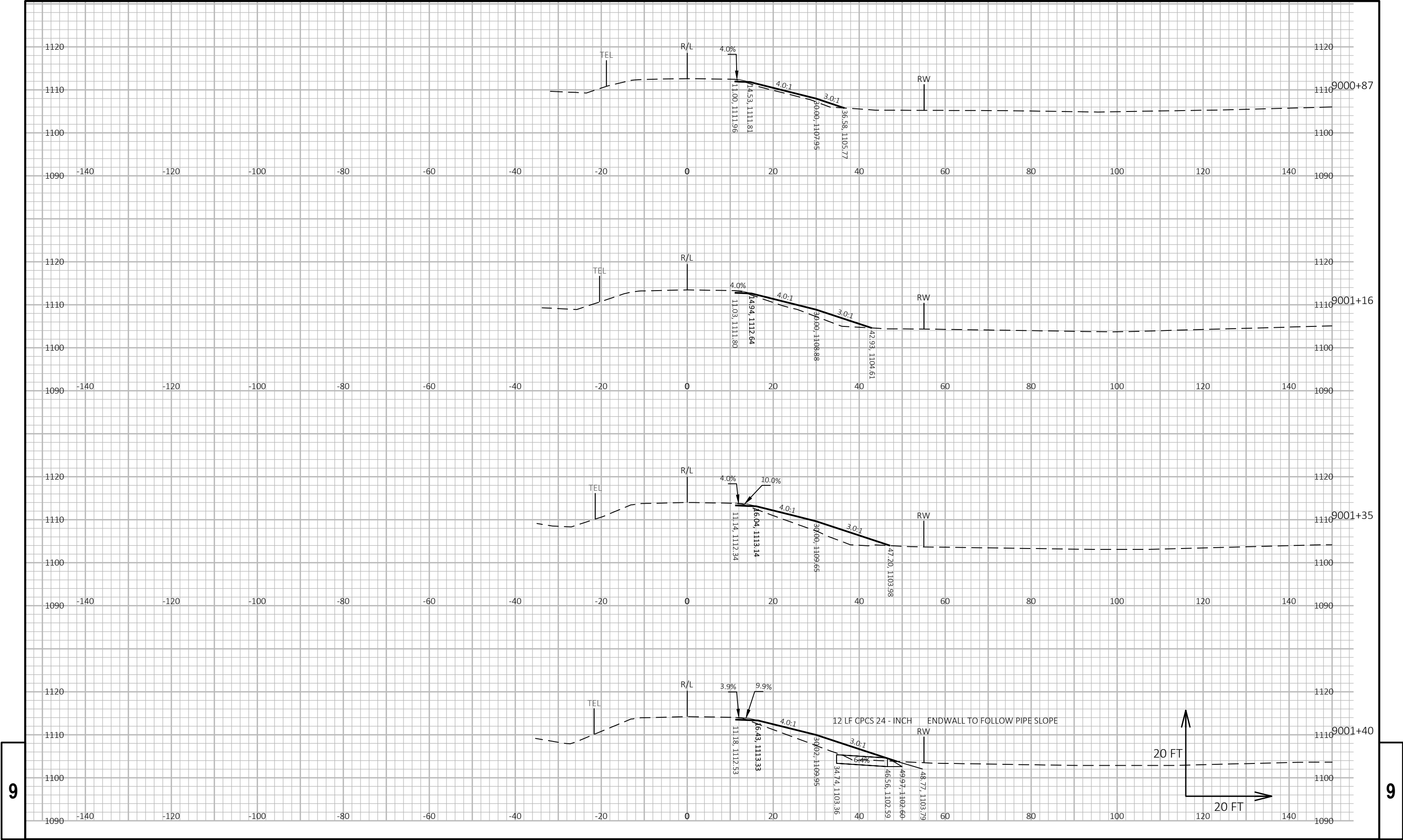
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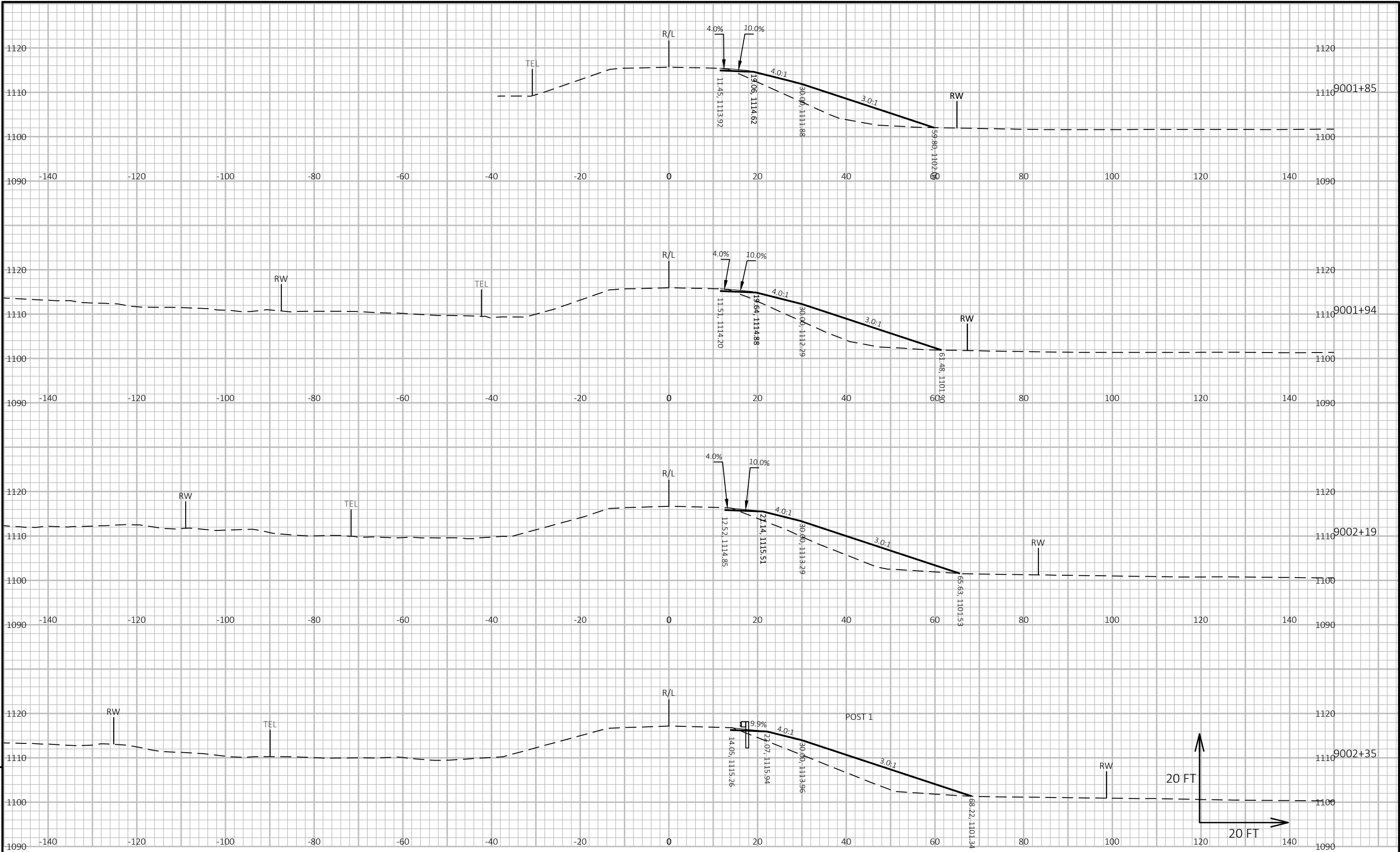


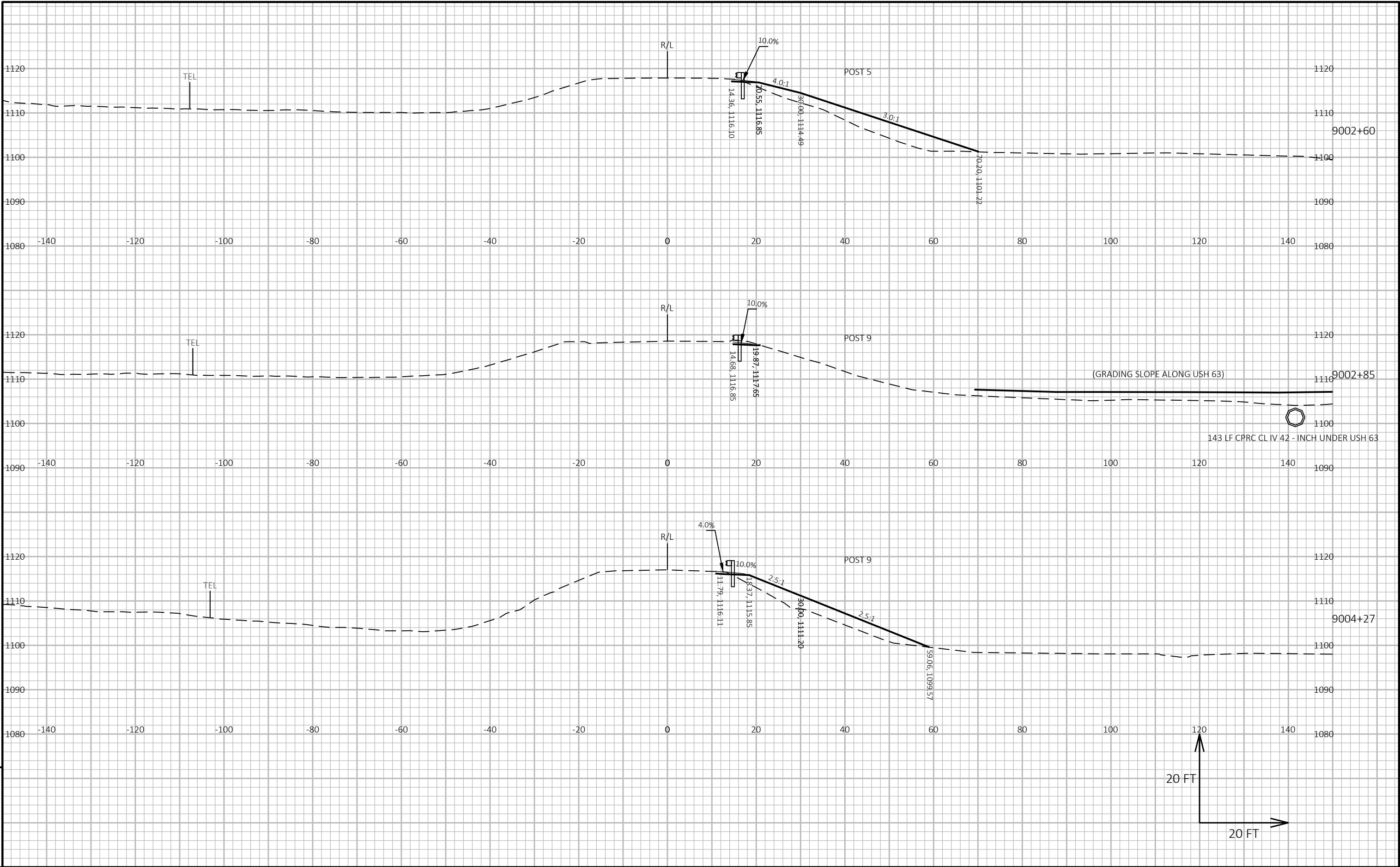




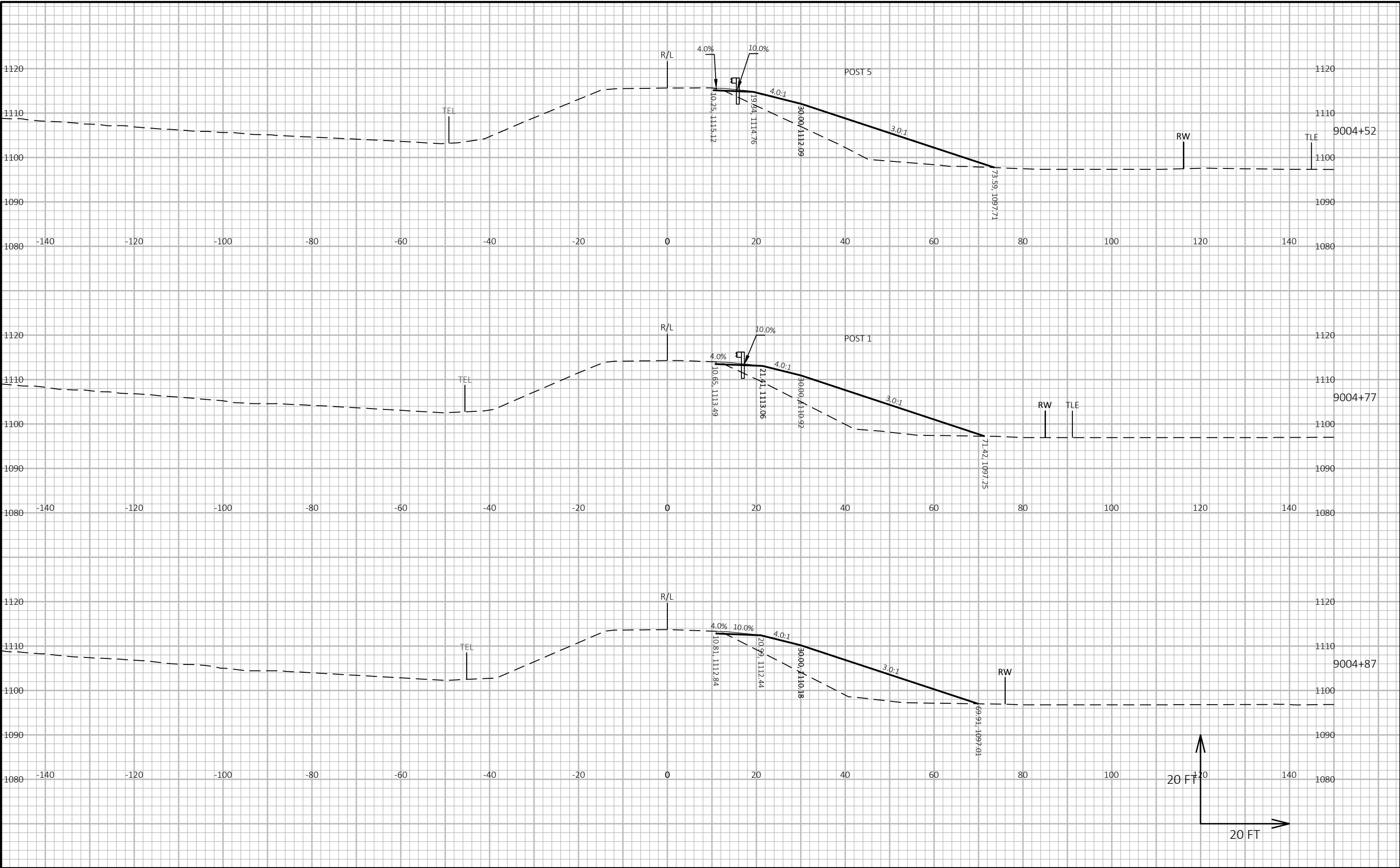


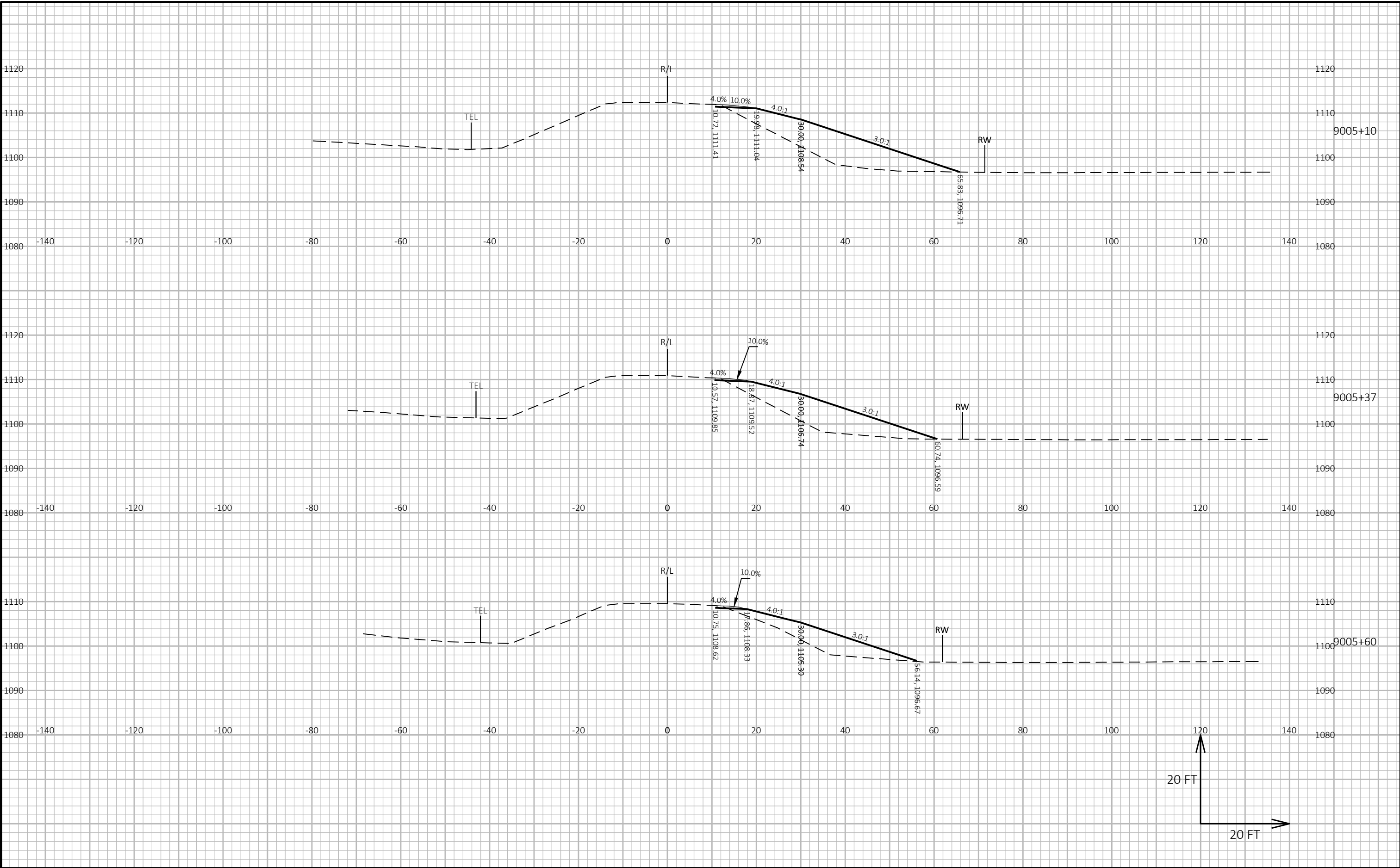




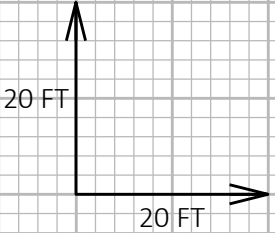
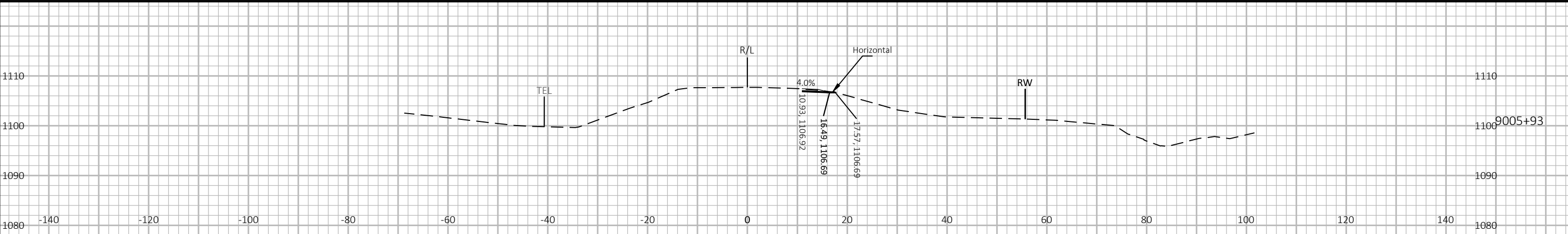






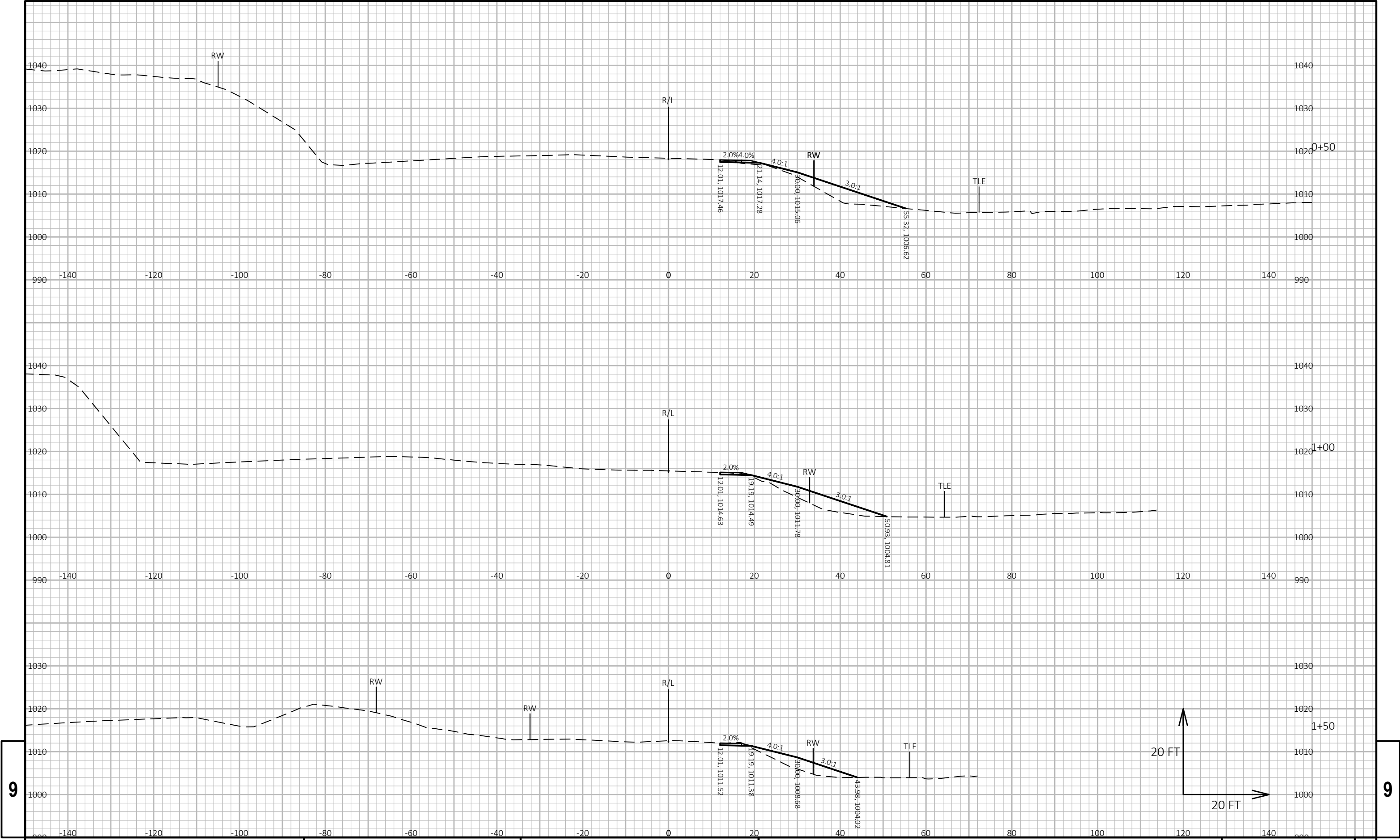


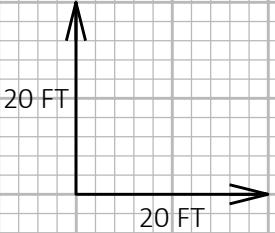
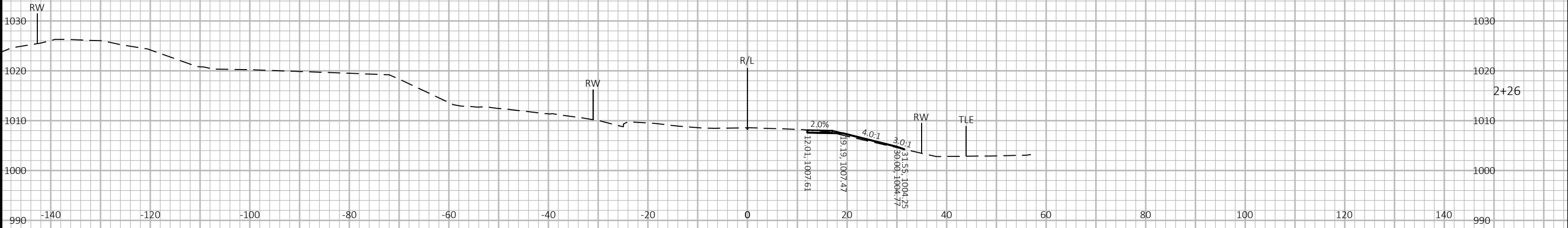
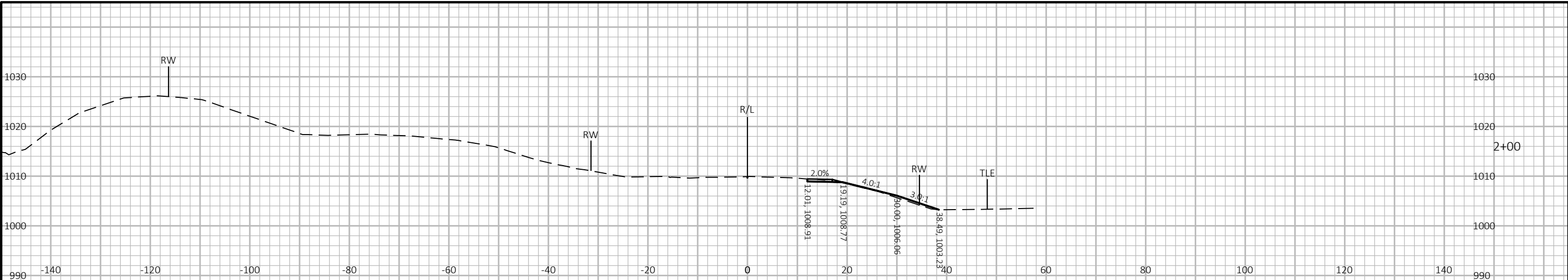




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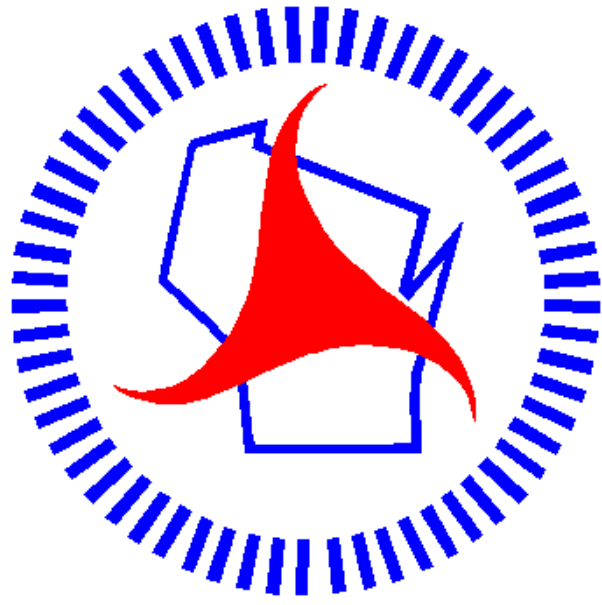
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## ***Wisconsin Department of Transportation***

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