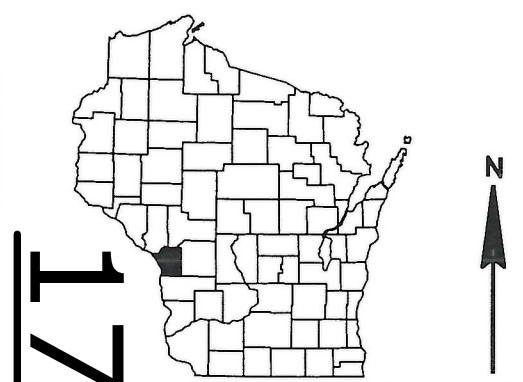


LAX
PROJECT ID: 5991-08-11
WITH: N/A
COUNTY: LA CROSSE

JANUARY 2026
ORDER OF SHEETS

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

TOTAL SHEETS = 314



DESIGN DESIGNATION		
A.A.D.T.	(2025)	= 8900
A.A.D.T.	(2045)	= 12500
D.H.V.		= 1400
D.D.		= 50/50
T.		= 6.2%
DESIGN SPEED		= 40/50 MPH
ESALS		= 1,100,000

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 35 - CTH SN (CTH OT)

STH 35 TO CTH SN

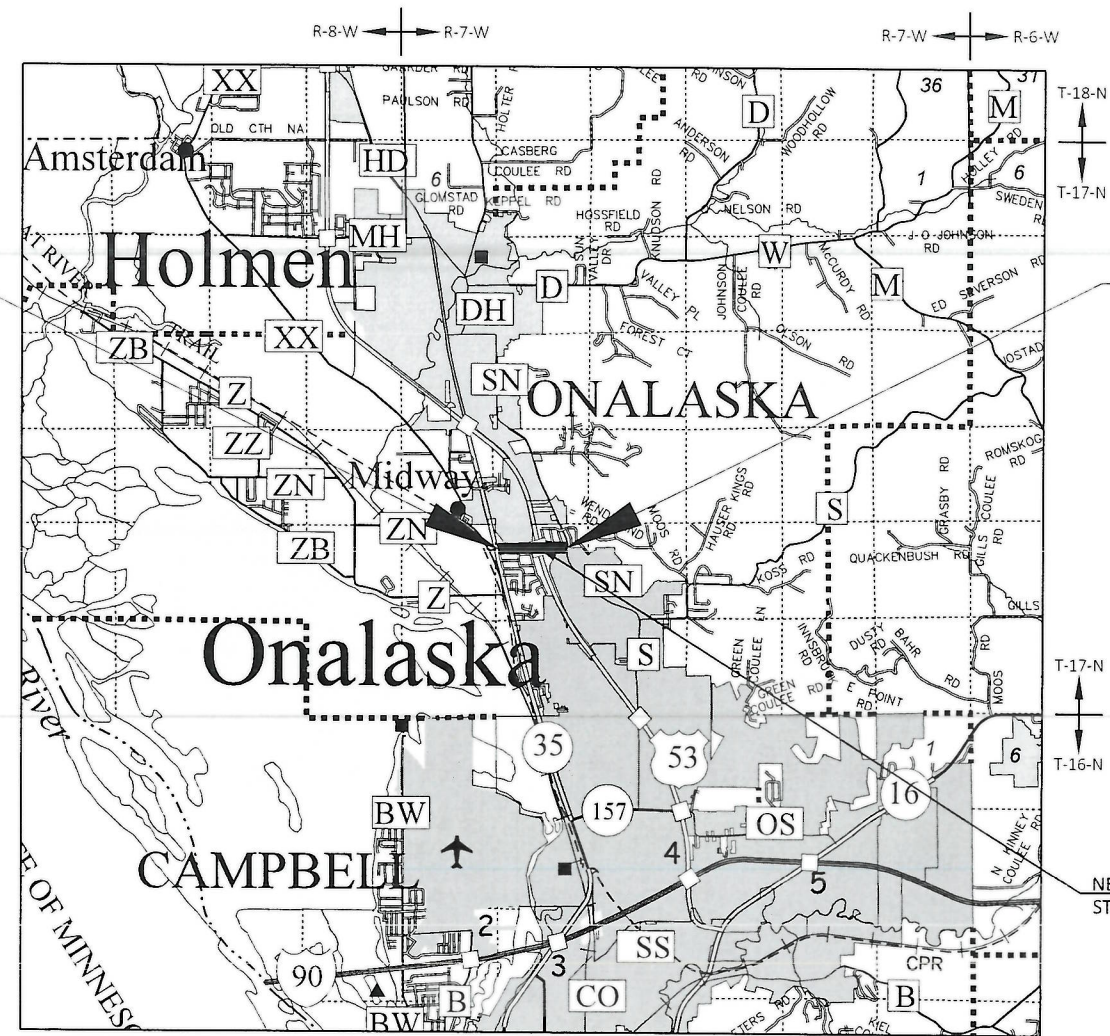
CTH OT

LA CROSSE COUNTY

STATE PROJECT NUMBER
5991-08-11

BEGIN PROJECT
STA 91+45.69 EB
Y = 172,111.04
X = 445,566.84

END PROJECT
STA 127+27.59 EB



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 0.636 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), LA CROSSE 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
5991-08-11	WISC 2026140	1

ACCEPTED FOR
LA CROSSE COUNTY
Date: 7-28-25
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY
AYRES
JEFFREY A. ABRAMSON
32337
Eau Claire
PROFESSIONAL ENGINEER
DATE: 7/28/2025
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREPARED BY
Surveyor: AYRES ASSOCIATES INC
Designer: AYRES ASSOCIATES INC
Project Manager: JOSH SCHOENMANN
Regional Examiner: REGIONAL EXAMINER
Regional Supervisor: KYLE HEMP

APPROVED FOR THE DEPARTMENT
DATE: 7/28/25
(Signature)

GENERAL NOTES

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

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

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

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

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER. MAINTAIN EROSION CONTROL MEASURES UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

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

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

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

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

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

SAWCUTS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

PRIOR TO PLACEMENT OF BEAM GUARD THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

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

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 11.08 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 8.20 ACRES

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- INTERSECTION DETAILS
- PAVING DETAILS
- EROSION CONTROL
- STORM SEWER PLAN
- PERMANENT SIGNING
- LIGHTING PLAN
- PAVEMENT MARKING
- ADVANCED WARNING SIGNING
- TRAFFIC CONTROL
- DETOURS
- ALIGNMENT DIAGRAM

UTILITIES

BRIGHTSPEED - COMMUNICATION LINE
333 NORTH FRONT STREET
LA CROSSE, WI 54601
ATTN: BRIAN STELPLUGH
MOBILE: 608-780-1238
brian.stelplugh@brightspeed.com

DAIRYLAND POWER COOPERATIVE - ELECTRICITY
3200 EAST AVENUE SOUTH
PO BOX 817
LA CROSSE, WI 54602-0817
ATTN: MIKE LYDON
PHONE: 608-787-1381
michael.lydon@dairylandpower.com

RIVERLAND ENERGY - ELECTRICITY
PO BOX 277
ARCADIA, WI 54612
ATTN: TIM HOLTAN
PHONE: 608-323-3381
tholtan@riverlandenergy.com

SPECTRUM - COMMUNICATION LINE
1228 12TH AVENUE SOUTH
ONALASKA, WI 54650
ATTN: PERRY MCCLELLAN
MOBILE: 608-317-6213
perry.mcclellan@charter.com

VILLAGE OF HOLMEM - WATER
421 SOUTH MAIN STREET
HOLMEN, WI 54636
ATTN: CHRIS DAHL
PHONE: 608-526-6322
MOBILE: 608-317-1296
cdahl@holmenwi.gov

XCEL ENERGY - ELECTRICITY
1400 WESTERN AVENUE
EAU CLAIRE, WI 54703
ATTN: JOHN KELSER
PHONE: 715-737-6020
john.kelser@xcelenergy.com

XCEL ENERGY - GAS/PETROLEUM
1400 WESTERN AVENUE
EAU CLAIRE, WI 54703
ATTN: JOHN KELSER
PHONE: 715-737-6020
john.kelser@xcelenergy.com

XCEL ENERGY - ELECTRICITY-TRANSMISSION
414 NICOLLET MALL
MINNEAPOLIS, MN 55401
ATTN: JOSH TOMLINSON
PHONE: 719-355-9126
joshua.tomlinson@xcelenergy.com



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

DESIGN CONTACT

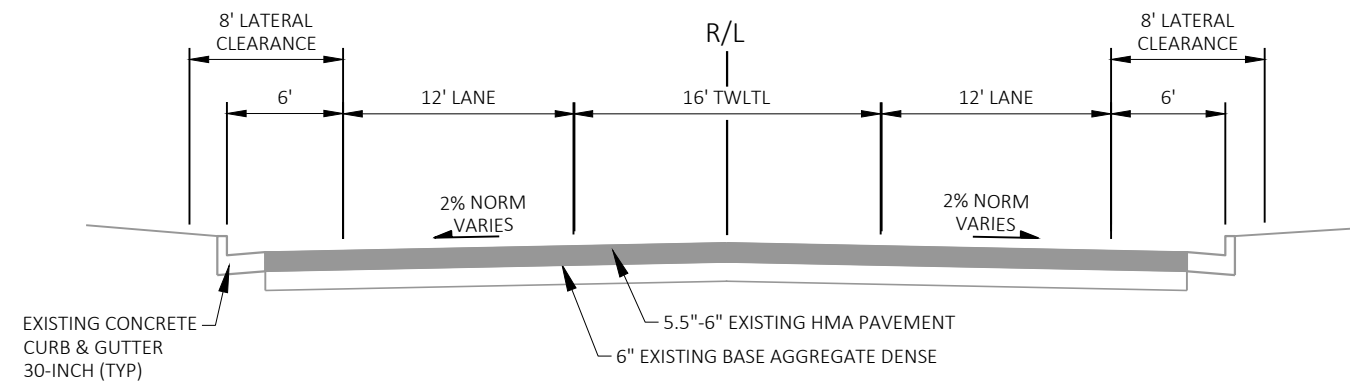
AYRES ASSOCIATES INC
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: JEFF ABRAMSON, PE
715-834-3161
abramsonj@ayresassociates.com

DNR AREA LIAISON

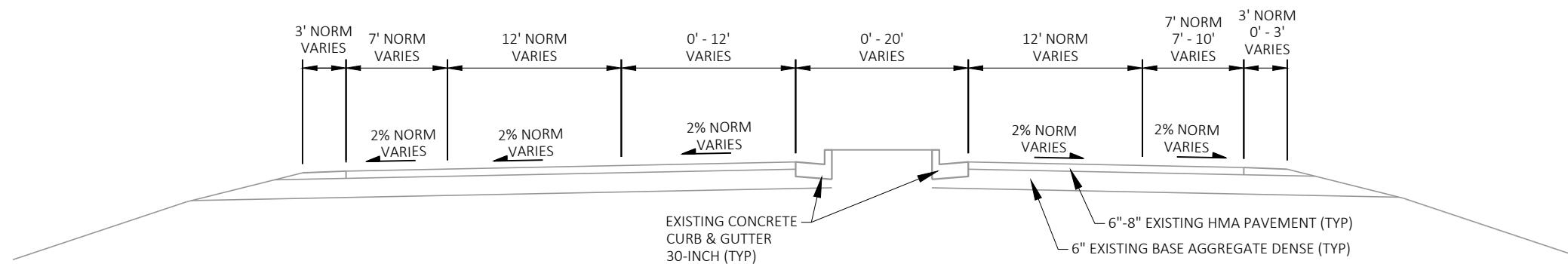
DNR SERVICE CENTER
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
ATTN: KAREN KALVELAGE
608-785-9115
karen.kalvelage@wisconsin.gov

COUNTY HIGHWAY COMMISSIONER

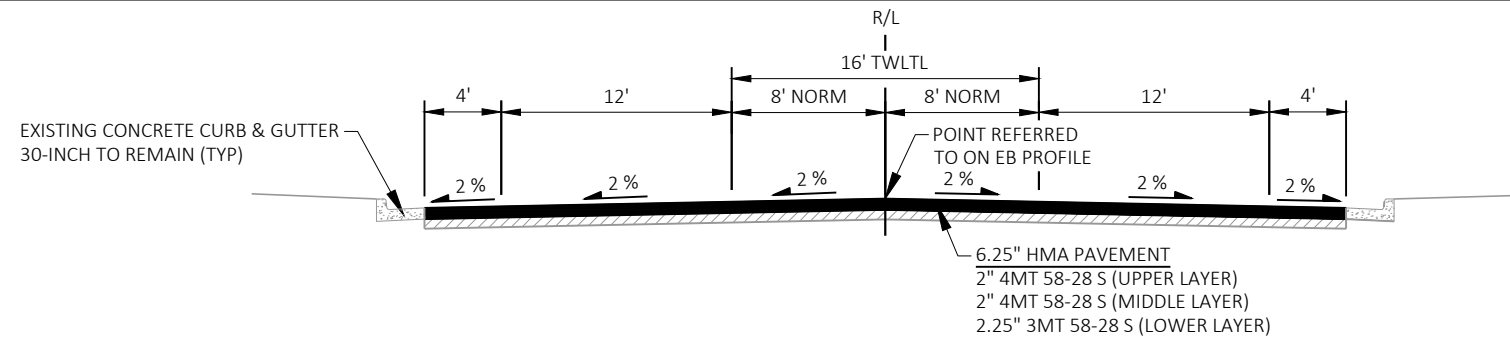
LA CROSSE COUNTY HIGHWAY COMMISSIONER
301 CARLSON ROAD
WEST SALEM, WI 54669
ATTN: JOE LANGENBERG
608-786-3810
jlangenberg@lacrossecounty.org



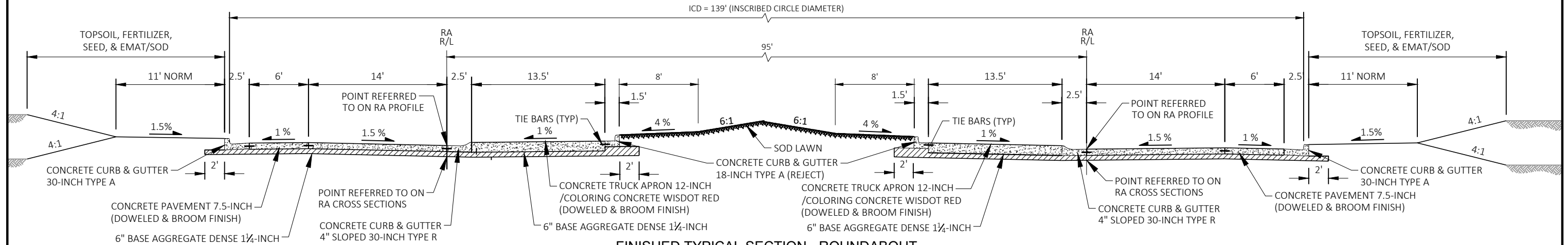
EXISTING TYPICAL SECTION CTH OT
STA 91+45.69 EB - STA 108+25 EB



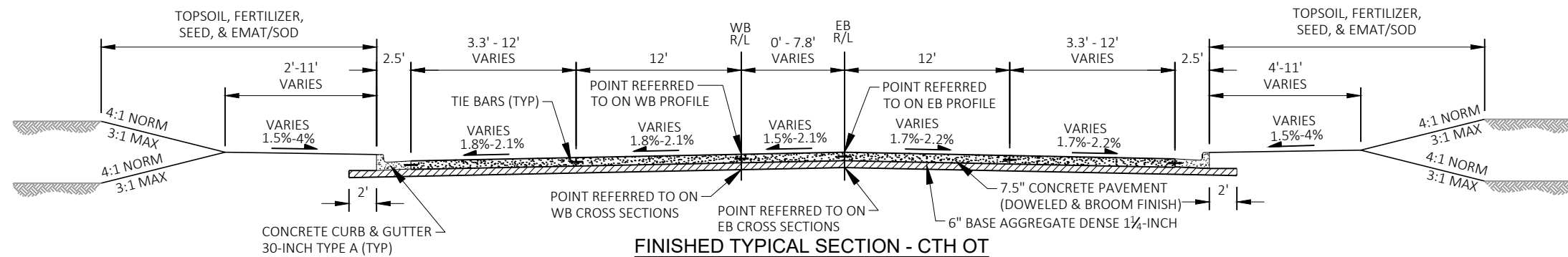
EXISTING TYPICAL SECTION CTH OT
STA 108+25 EB - STA 112+95 EB
STA 115+19 EB - STA 127+28 EB



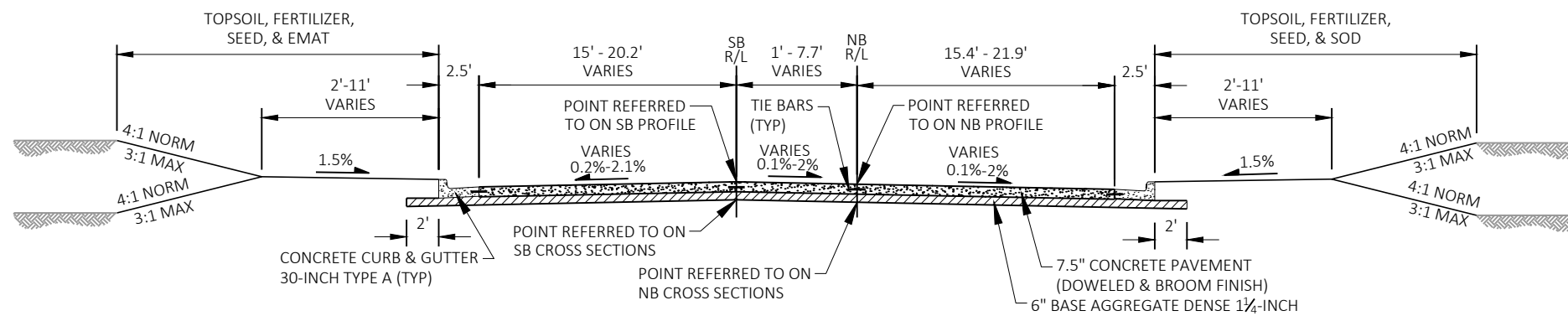
FINISHED TYPICAL SECTION - CTH OT
STA 91+45.69 EB - STA 100+75 EB



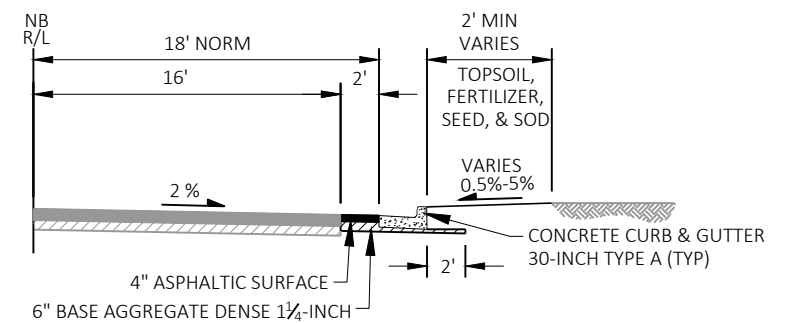
FINISHED TYPICAL SECTION - ROUNDABOUT
STA 10+00 RA - STA 12+98.45 RA



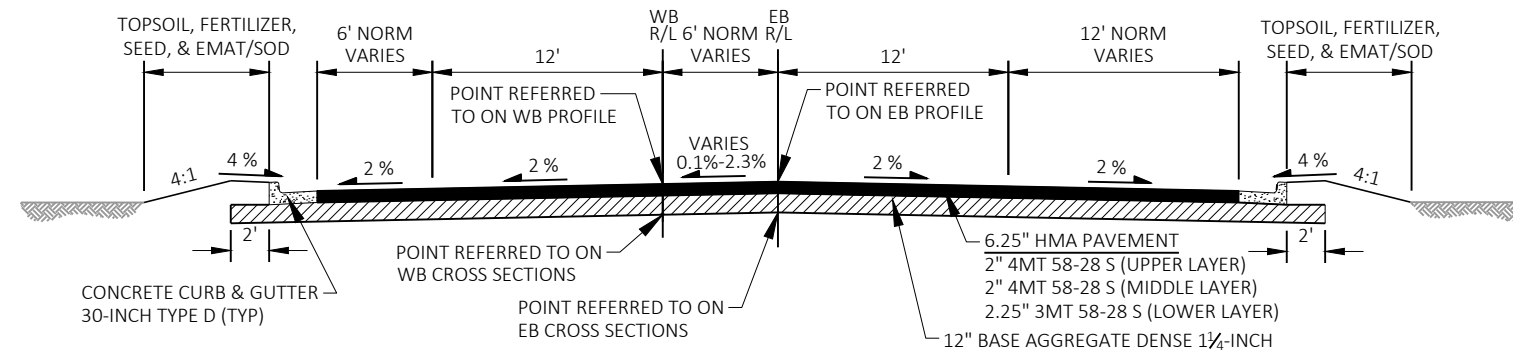
FINISHED TYPICAL SECTION - CTH OT
STA 100+75 EB - STA 101+98 EB
STA 103+91 EB - STA 104+07 EB



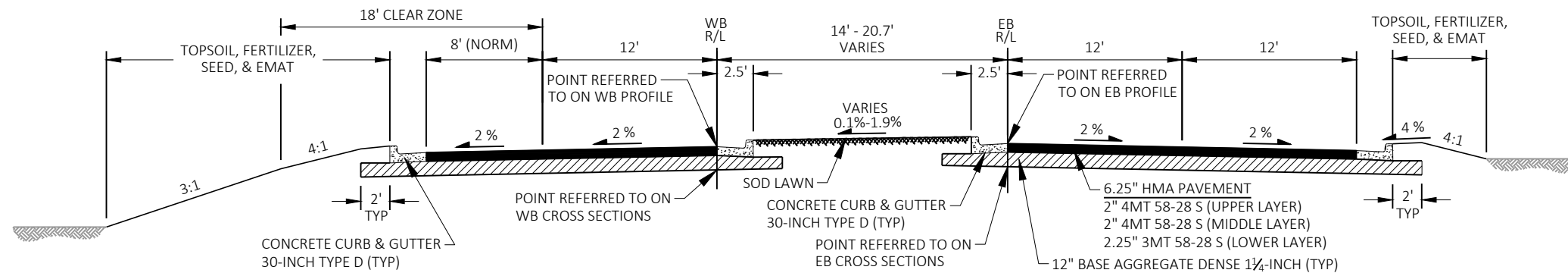
FINISHED TYPICAL SECTION - COMMERCE RD/CORPORATE DR
STA 30+50 NB - STA 31+25 NB
STA 40+57 NB - STA 40+65 NB



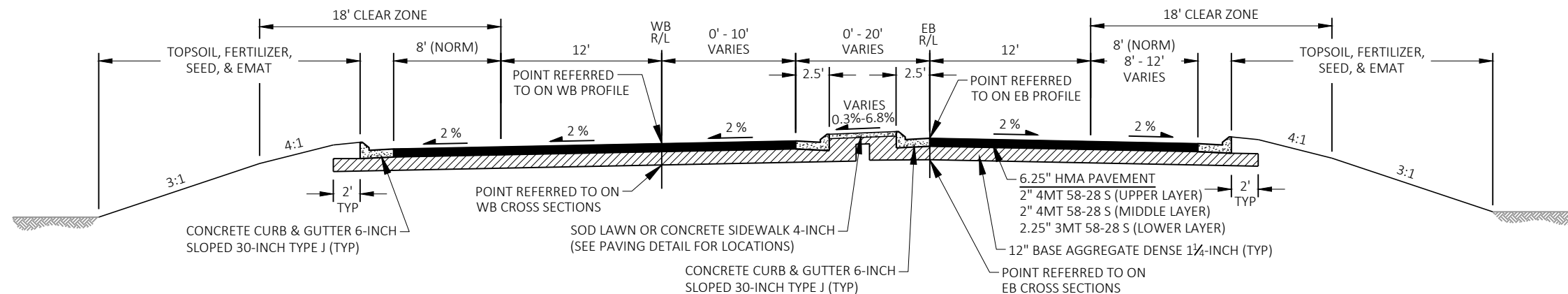
FINISHED TYPICAL SECTION - CORPORATE DR
STA 40+65 NB - STA 41+22 NB



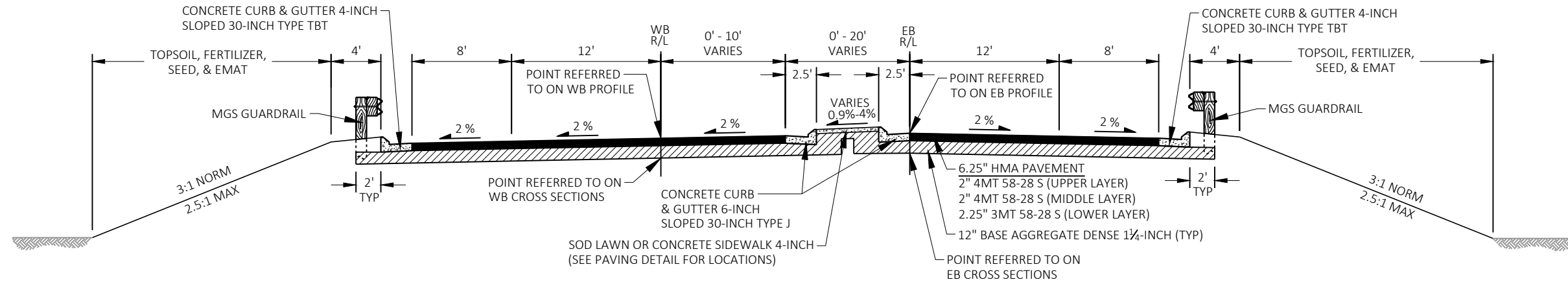
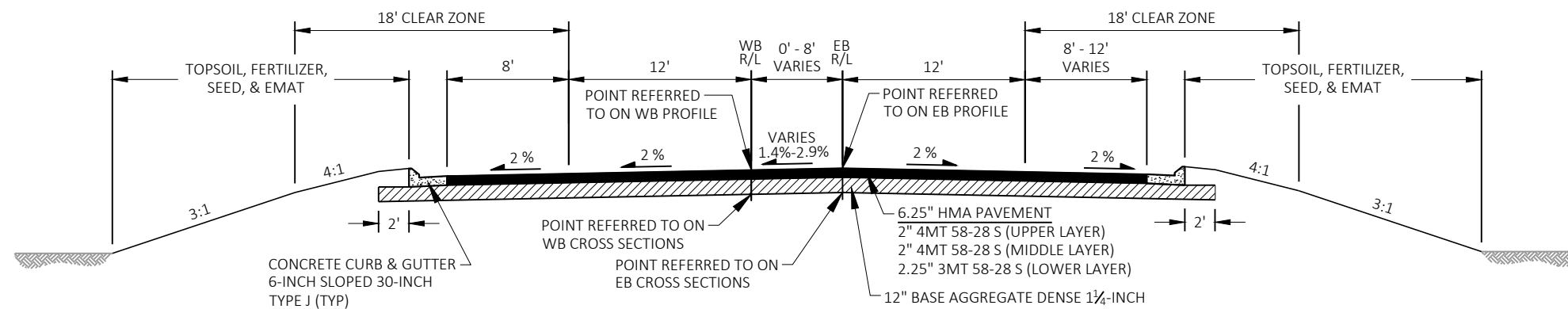
FINISHED TYPICAL SECTION - CTH OT
STA 104+07 EB - STA 108+34 EB



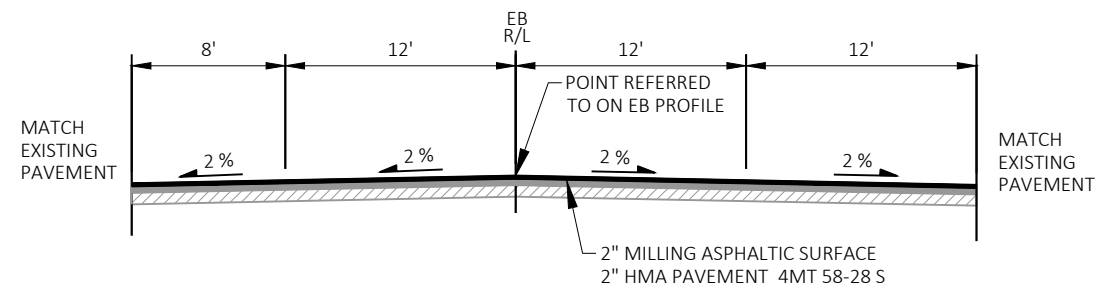
FINISHED TYPICAL SECTION - CTH OT
STA 108+34 EB - STA 110+53 EB



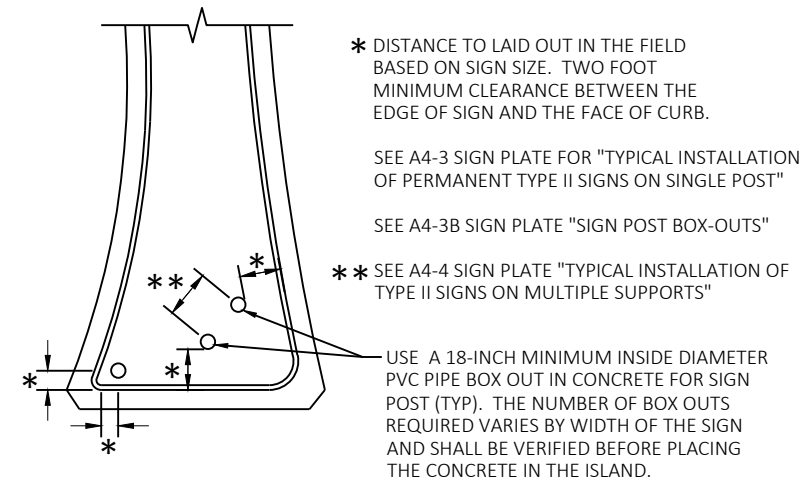
FINISHED TYPICAL SECTION - CTH OT
STA 110+53 EB - STA 111+84 EB
STA 116+25 EB - STA 124+27 EB

**FINISHED TYPICAL SECTION - CTH OT**STA 111+84 EB - STA 112+95 EB
STA 115+19 EB - STA 116+25 EB**FINISHED TYPICAL SECTION - CTH OT**

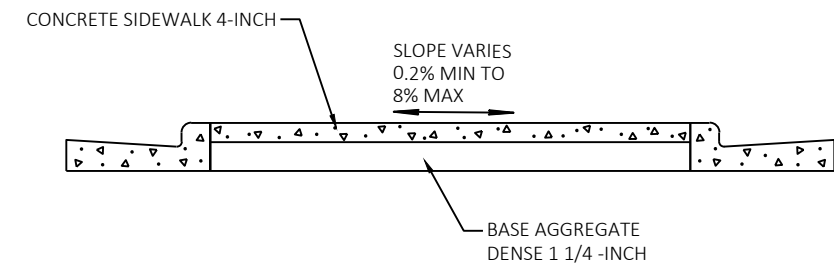
STA 124+27 EB - STA 126+74 EB

**FINISHED TYPICAL SECTION - CTH OT**

STA 126+74 EB - STA 127+28 EB

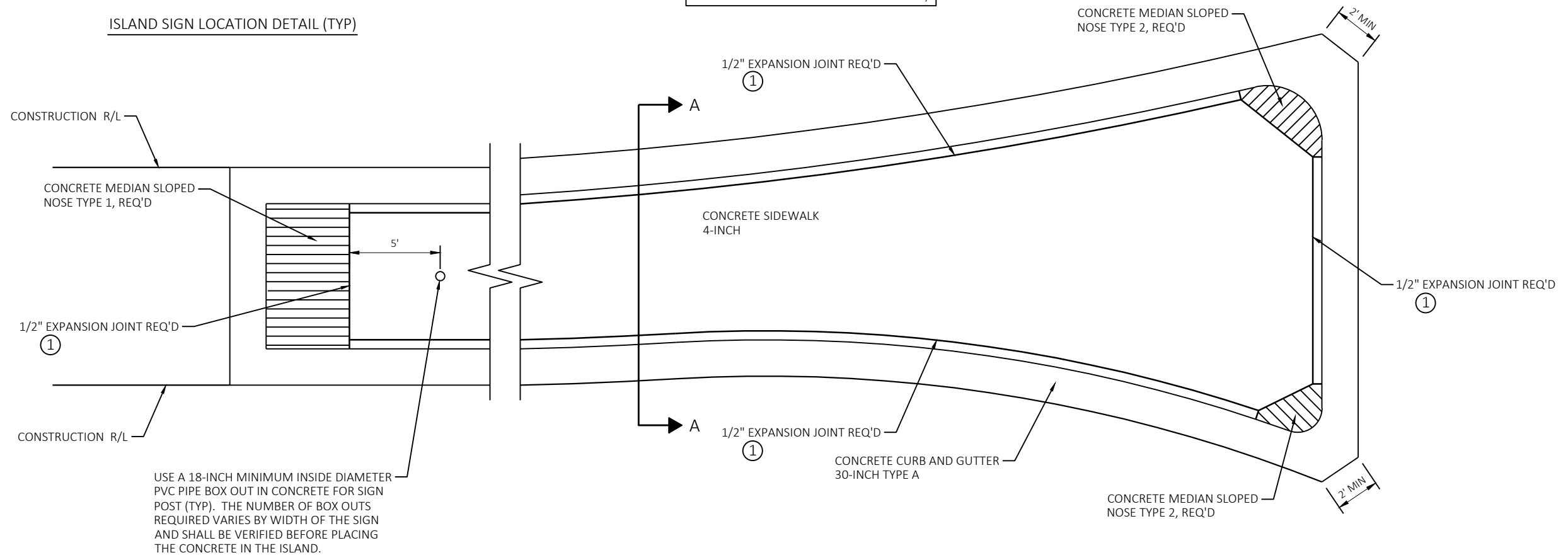


ISLAND SIGN LOCATION DETAIL (TYP)

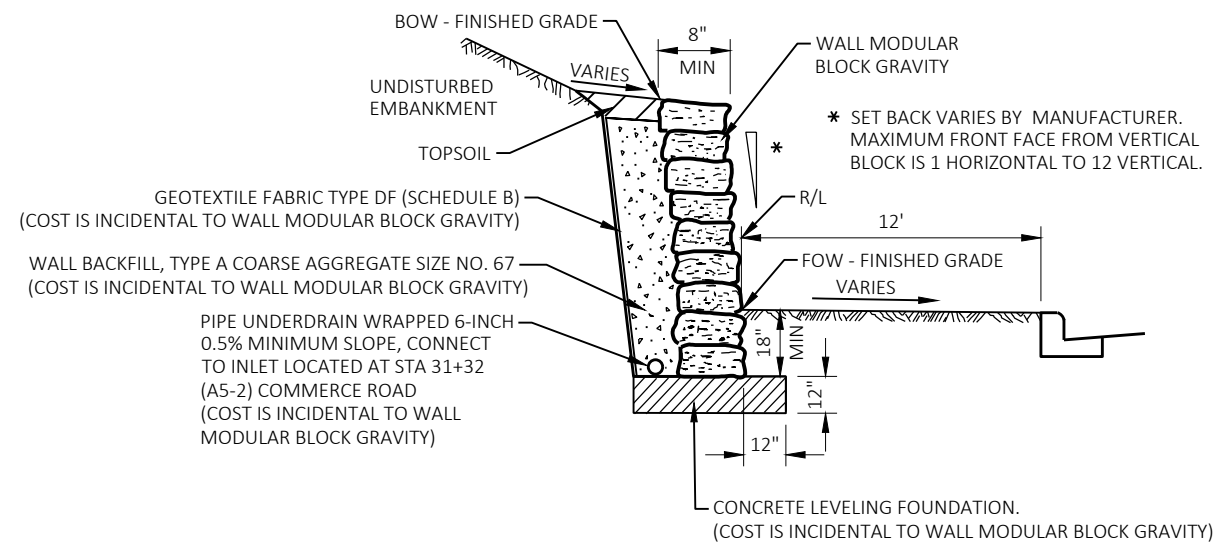


SECTION A-A

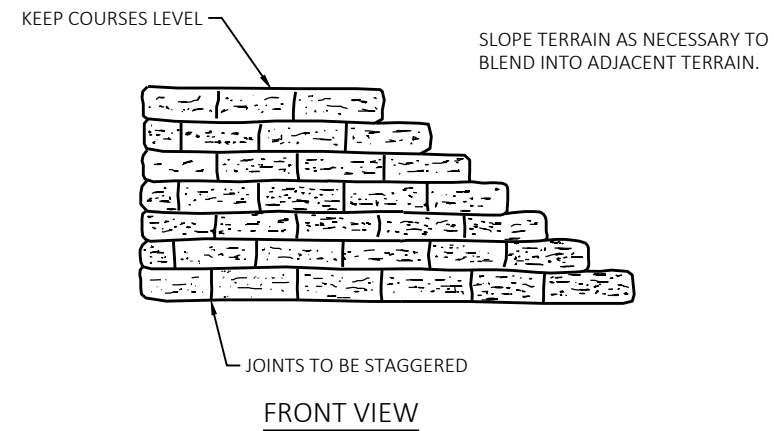
① EXPANSION MATERIAL TO BE 1" LONGER THAN ABUTTING MEDIAN CONCRETE THICKNESS. (i.e. 5" IN HEIGHT WHEN ADJACENT TO CONCRETE SIDEWALK 4-INCH)



CONCRETE SPLITTER ISLAND DETAIL WITHOUT CROSSWALK



SIDE VIEW



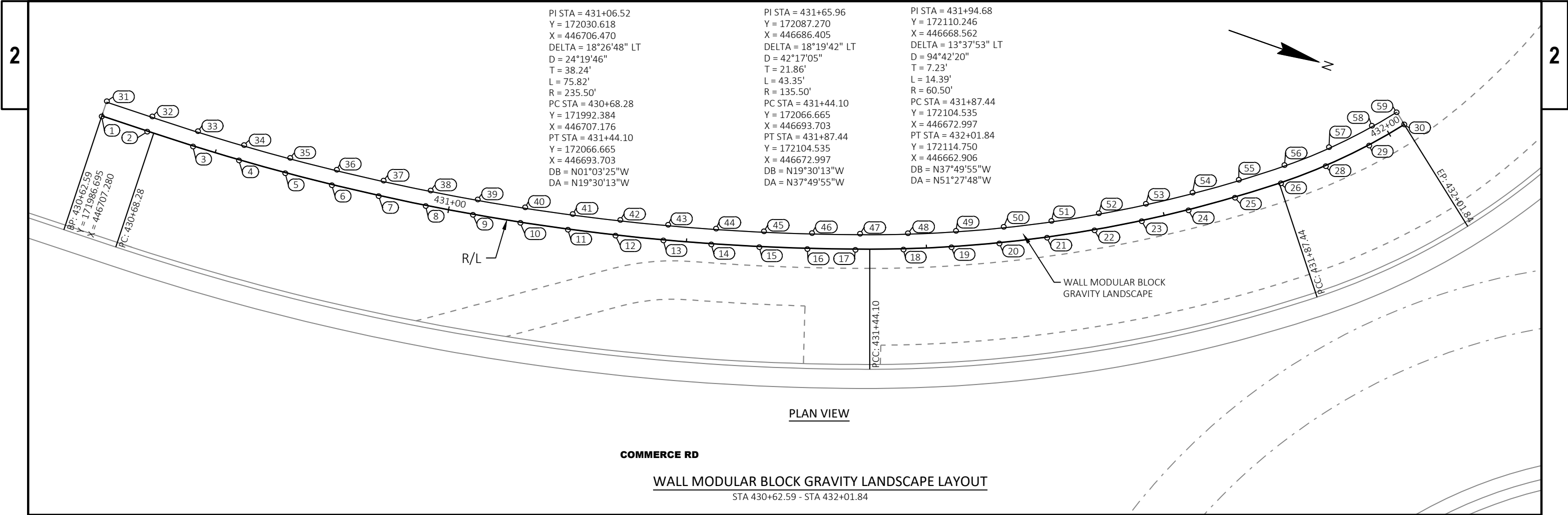
DESIGN DATA

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTH, WALL HEIGHTS AND DETAILS COMMON TO ANY WALL SYSTEMS SELECTED. THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS. WALL DETAIL IS NOT DRAWN TO SCALE.

FOW - FRONT OF WALL
BOW - BACK OF WALL

DETAIL FOR WALL MODULAR BLOCK GRAVITY LANDSCAPE

STA 430+62.59 - STA 432+01.84

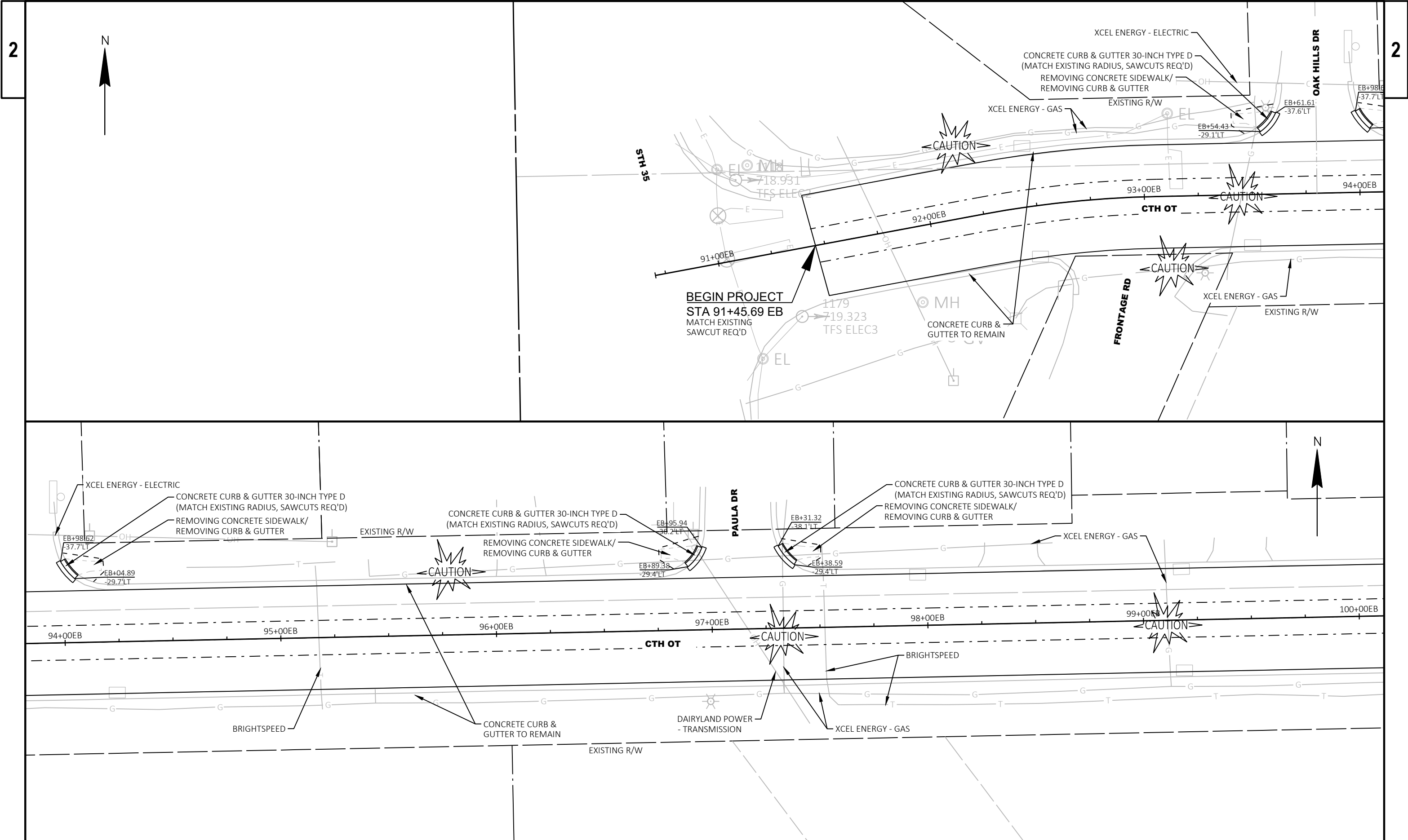


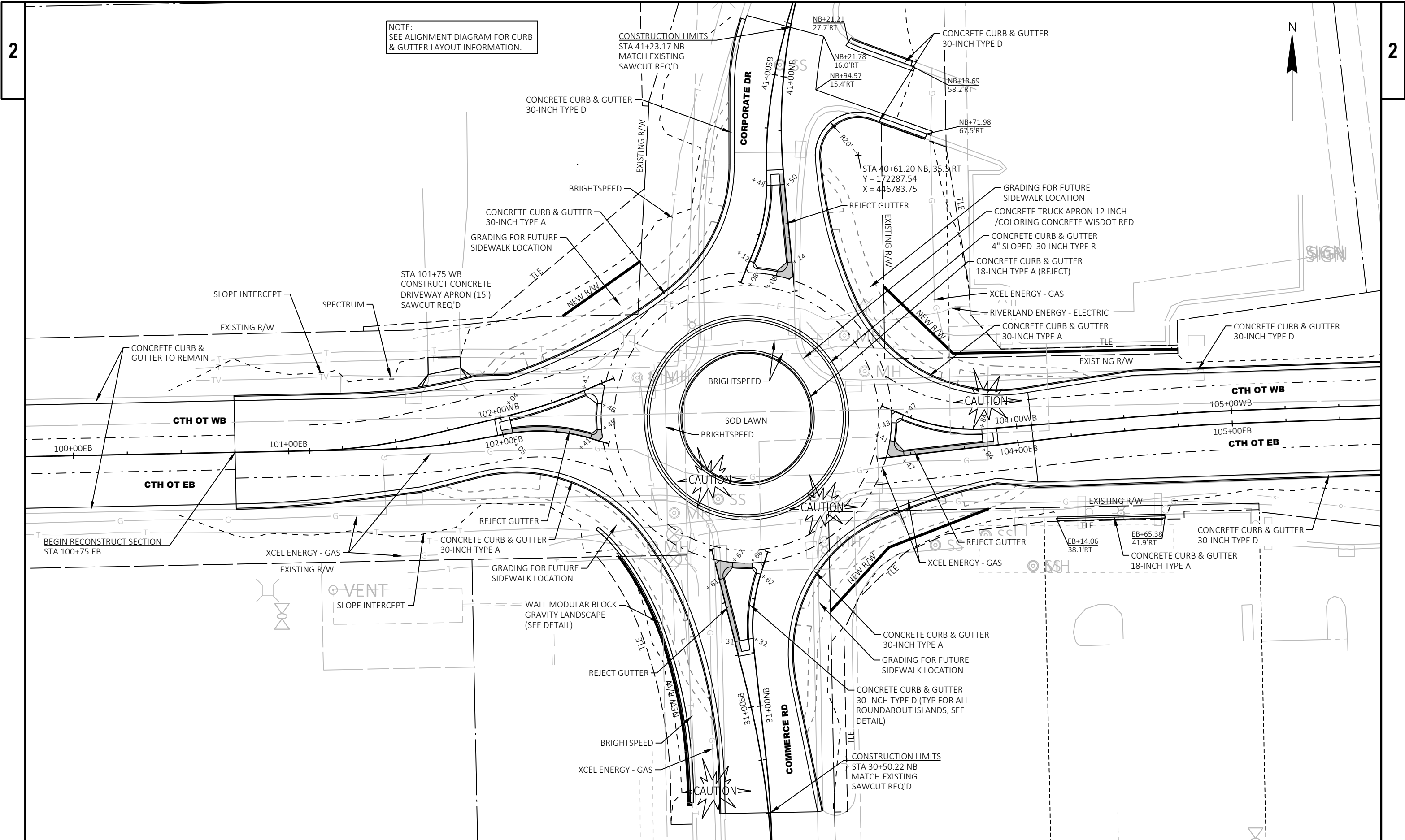
FRONT OF WALL - FINISHED GRADE				
POINT NUMBER	STATION	ELEVATION	NORTHING	EASTING
1	430+62.59	714.41	171986.70	446707.36
2	430+67.59	714.31	171991.70	446707.27
3	430+72.59	714.20	171996.70	446707.14
4	430+77.59	714.07	172001.69	446706.90
5	430+82.59	713.93	172006.68	446706.56
6	430+87.59	713.78	172011.66	446706.11
7	430+92.59	713.63	172016.63	446705.55
8	430+97.59	713.48	172021.59	446704.89
9	431+02.59	713.33	172026.53	446704.13
10	431+07.59	713.18	172031.46	446703.26
11	431+12.59	713.03	172036.37	446702.29
12	431+17.59	712.89	172041.25	446701.21
13	431+22.59	712.76	172046.11	446700.03
14	431+27.59	712.64	172050.94	446698.74
15	431+32.59	712.54	172055.75	446697.36

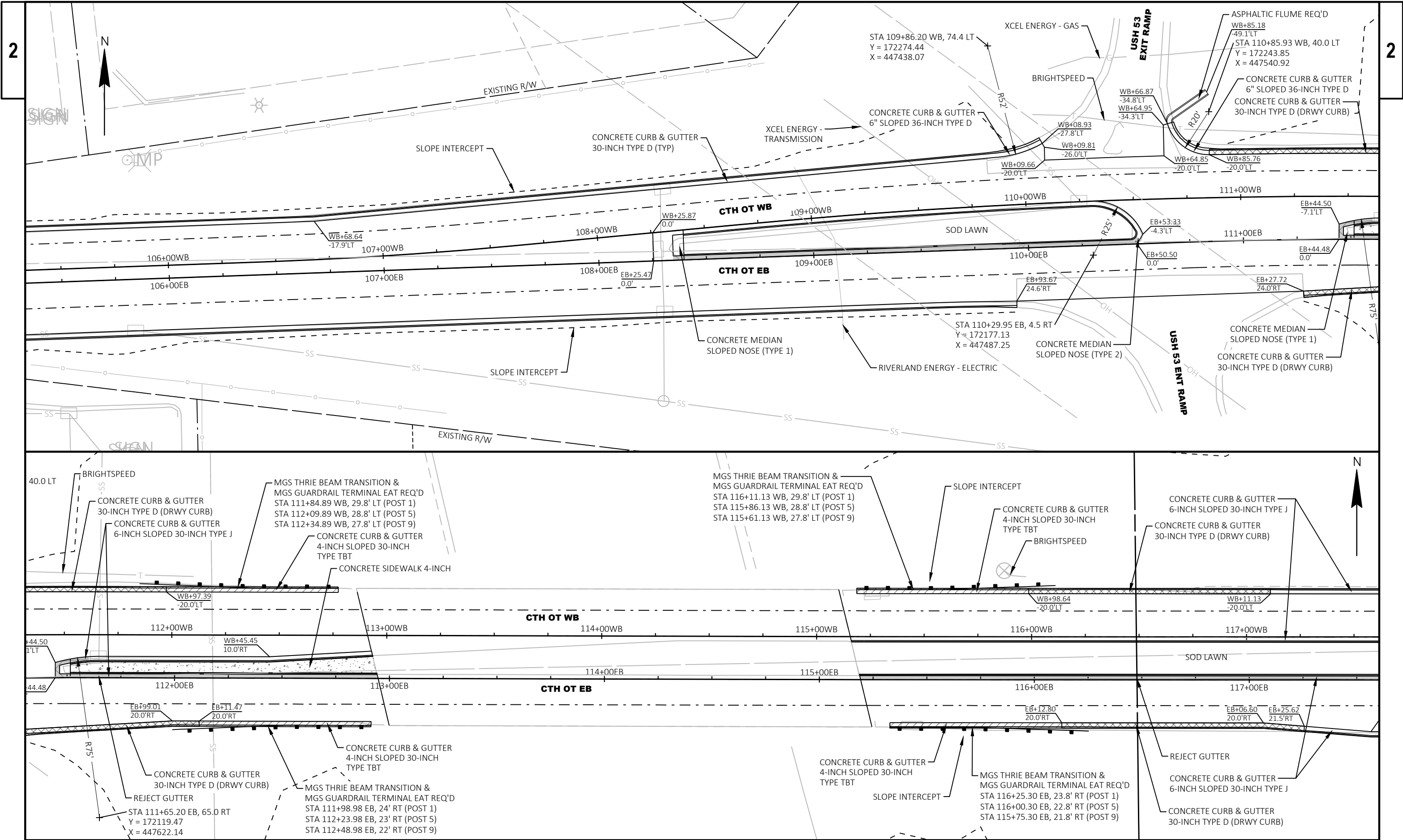
FRONT OF WALL - FINISHED GRADE				
POINT NUMBER	STATION	ELEVATION	NORTHING	EASTING
16	431+37.59	712.45	172060.52	446695.87
17	431+42.59	712.37	172065.27	446694.28
18	431+47.59	712.31	172069.97	446692.57
19	431+52.59	712.26	172074.61	446690.69
20	431+57.59	712.21	172079.17	446688.65
21	431+62.59	712.18	172083.66	446686.43
22	431+67.59	712.15	172088.06	446684.05
23	431+72.59	712.12	172092.37	446681.52
24	431+77.59	712.10	172096.58	446678.82
25	431+82.59	712.07	172100.69	446675.97
26	431+87.59	712.02	172104.70	446672.97
28	431+92.59	711.96	172108.51	446669.73
29	431+97.59	711.91	172112.05	446666.19
30	432+01.84	711.87	172114.75	446662.91

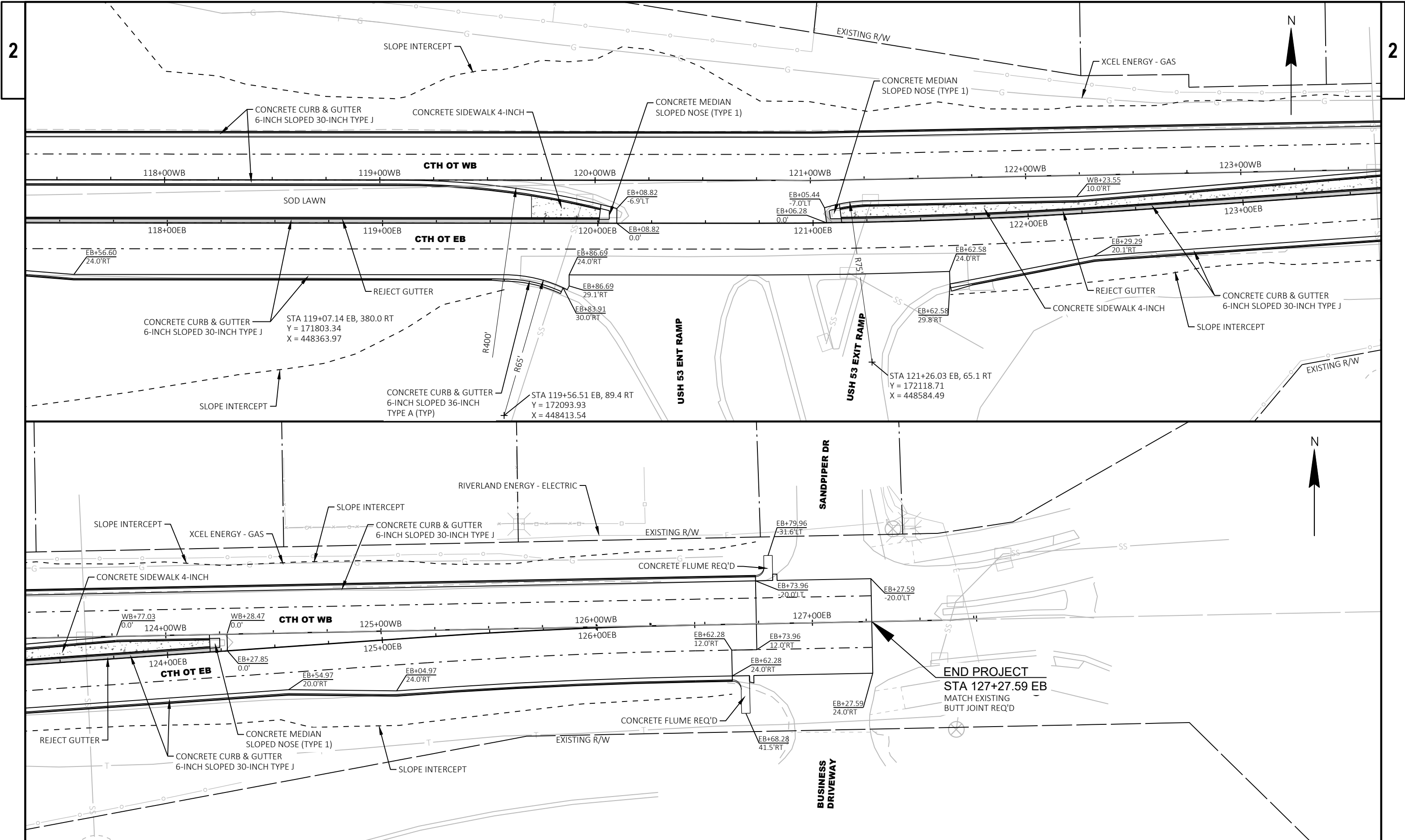
BACK OF WALL - FINISHED GRADE				
POINT NUMBER	STATION	ELEVATION	NORTHING	EASTING
31	430+62.59	716.66	171986.67	446705.68
32	430+67.59	716.60	171991.66	446705.59
33	430+72.62	716.53	171996.66	446705.46
34	430+77.65	716.46	172001.65	446705.22
35	430+82.68	716.39	172006.64	446704.87
36	430+87.71	716.33	172011.62	446704.42
37	430+92.75	716.29	172016.58	446703.87
38	430+97.78	716.28	172021.54	446703.20
39	431+02.81	716.30	172026.48	446702.44
40	431+07.84	716.33	172031.40	446701.56
41	431+12.87	716.39	172036.30	446700.58
42	431+17.91	716.45	172041.18	446699.50
43	431+22.94	716.51	172046.03	446698.31
44	431+27.97	716.57	172050.86	446697.02
45	431+33.00	716.53	172055.66	446695.63

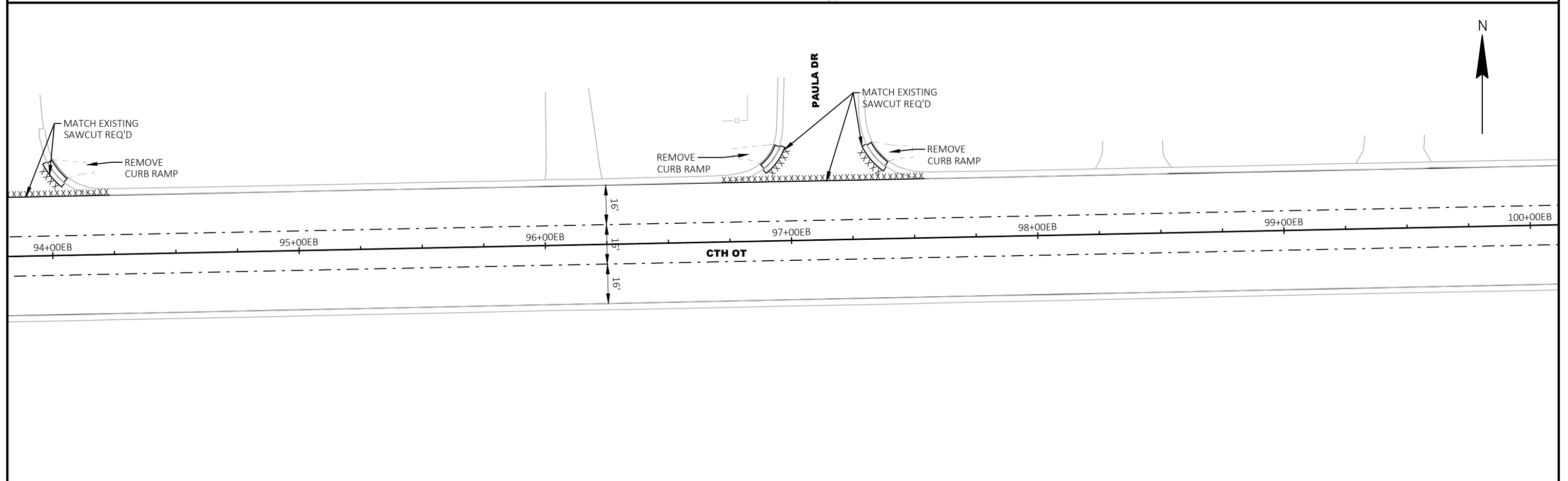
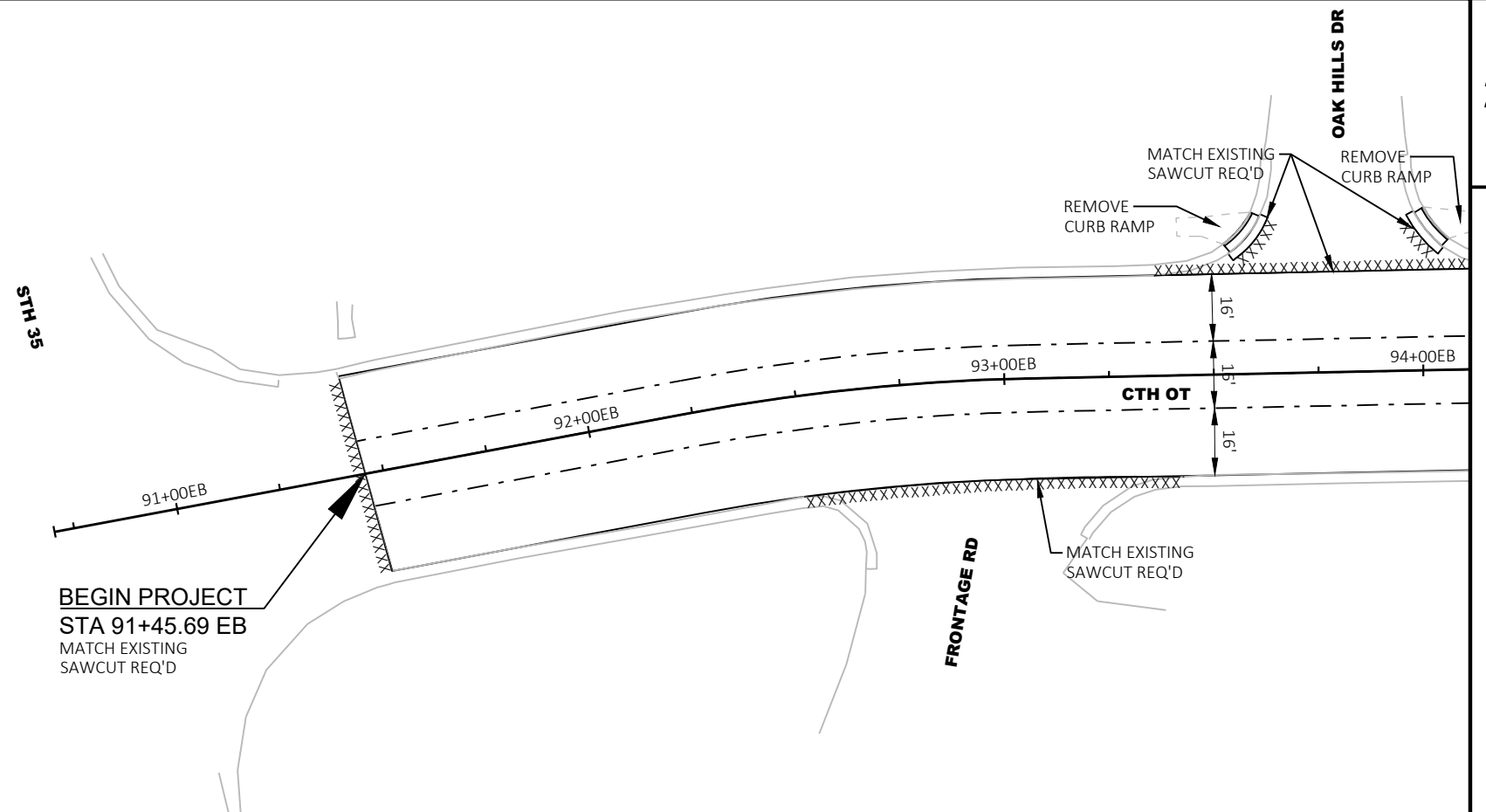
BACK OF WALL - FINISHED GRADE				
POINT NUMBER	STATION	ELEVATION	NORTHING	EASTING
46	431+38.03	716.44	172060.43	446694.13
47	431+43.07	716.37	172065.16	446692.54
48	431+48.12	716.30	172069.85	446690.81
49	431+53.17	716.25	172074.48	446688.92
50	431+58.23	716.20	172079.03	446686.86
51	431+63.29	716.17	172083.49	446684.62
52	431+68.34	716.13	172087.88	446682.22
53	431+73.40	715.89	172092.17	446679.66
54	431+78.45	715.54	172096.36	446676.95
55	431+83.51	715.20	172100.45	446674.07
56	431+88.58	714.61	172104.42	446671.05
57	431+93.71	713.97	172108.17	446667.75
58	431+98.84	713.36	172111.62	446664.15
59	432+01.84	713.02	172113.58	446661.97



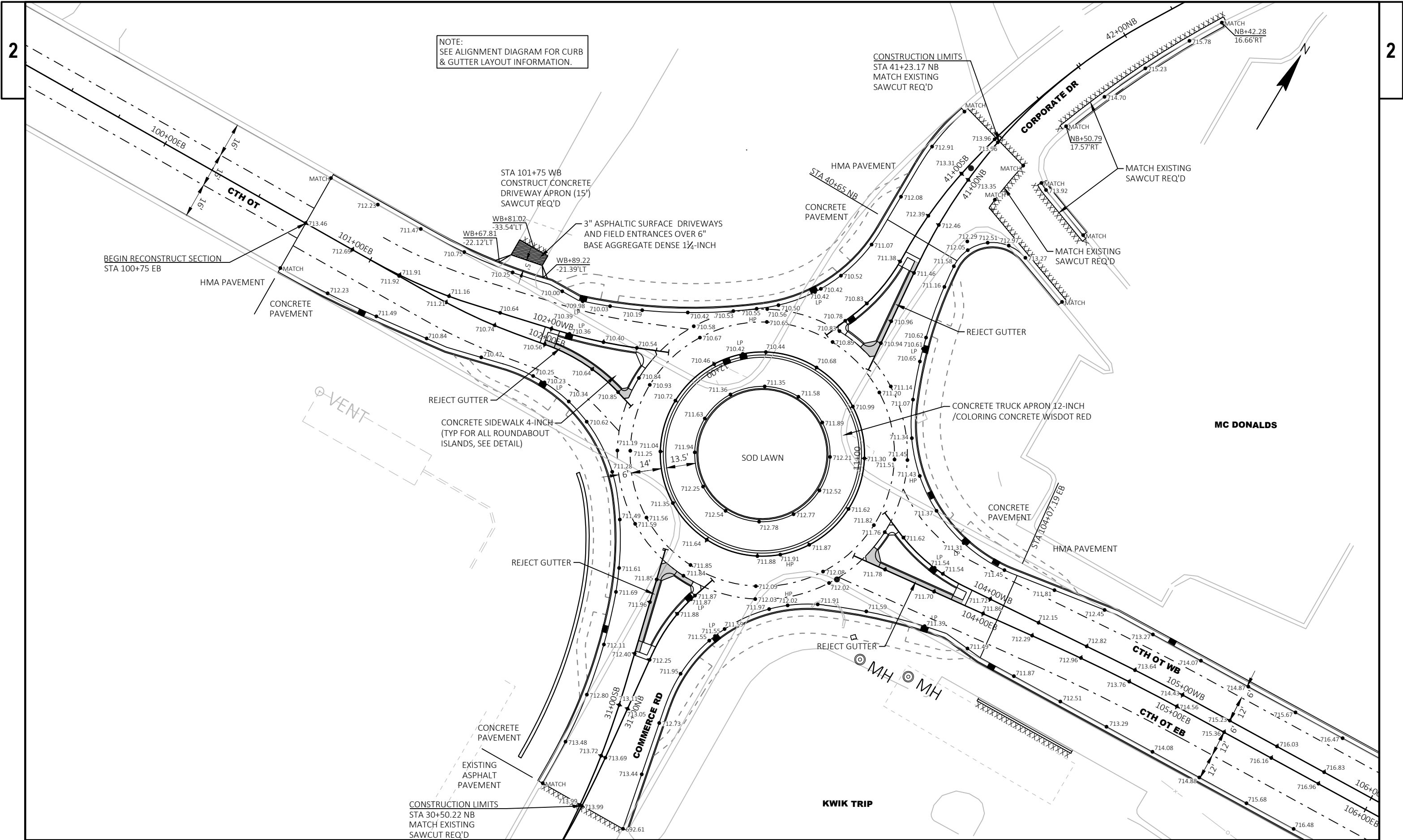








PROJECT NO: 5991-08-11	HWY: CTH OT	COUNTY: LA CROSSE	PAVING DETAIL	SHEET 14	E
------------------------	-------------	-------------------	---------------	----------	---



NOTE:
SEE ALIGNMENT DIAGRAM FOR CURB
& GUTTER LAYOUT INFORMATION.

CONSTRUCTION LIMITS
STA 41+23.17 NB
MATCH EXISTING
SAWCUT REQ'D

BEGIN RECONSTRUCT SECTION
STA 100+75 EB

STA 101+75 WB
CONSTRUCT CONCRETE
DRIVEWAY APRON (15')
SAWCUT REQ'D

3" ASPHALTIC SURFACE DRIVEWAYS
AND FIELD ENTRANCES OVER 6"
BASE AGGREGATE DENSE 1 1/4-INCH

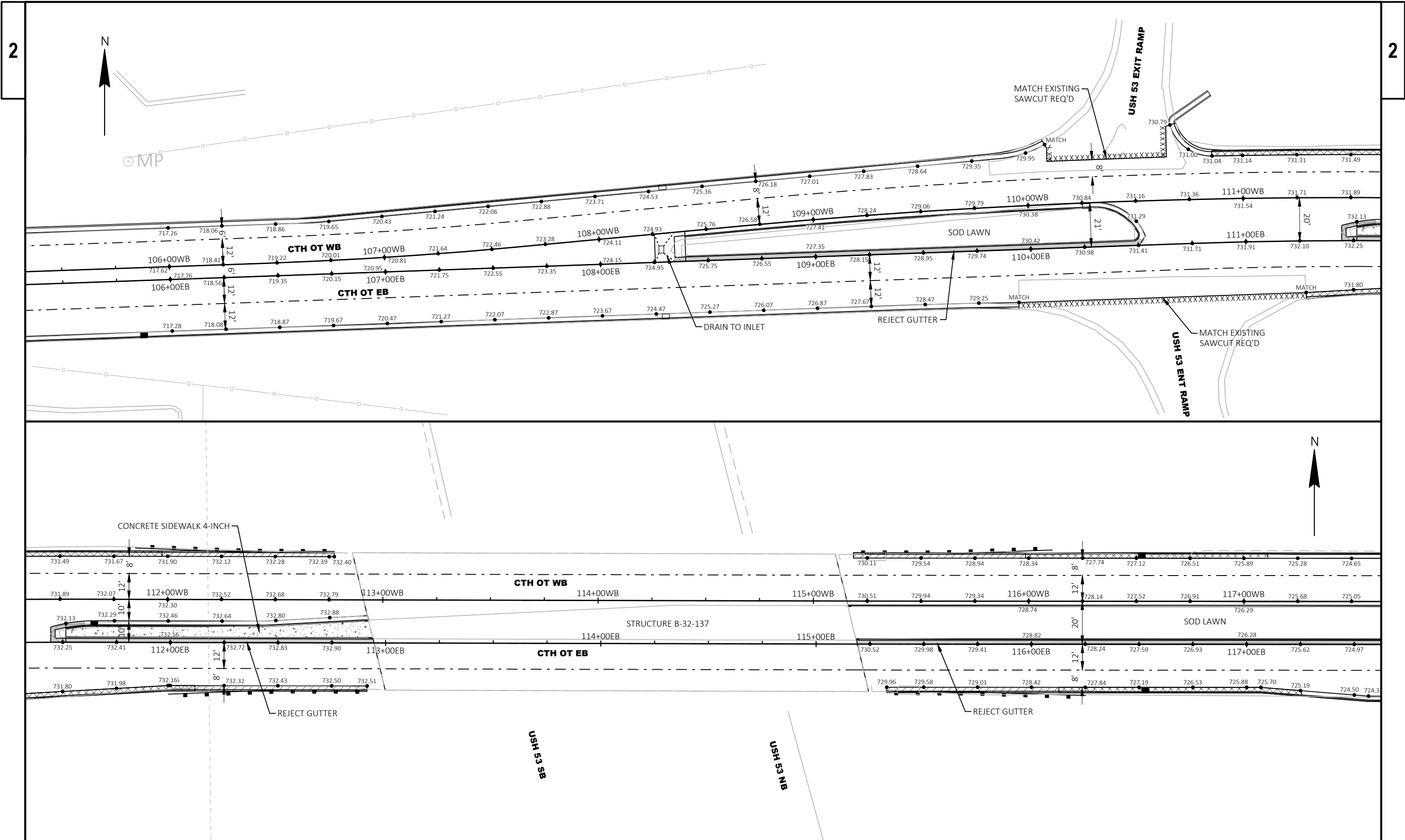
REJECT GUTTER
CONCRETE SIDEWALK 4-INCH
(TYP FOR ALL ROUNDABOUT
ISLANDS, SEE DETAIL)

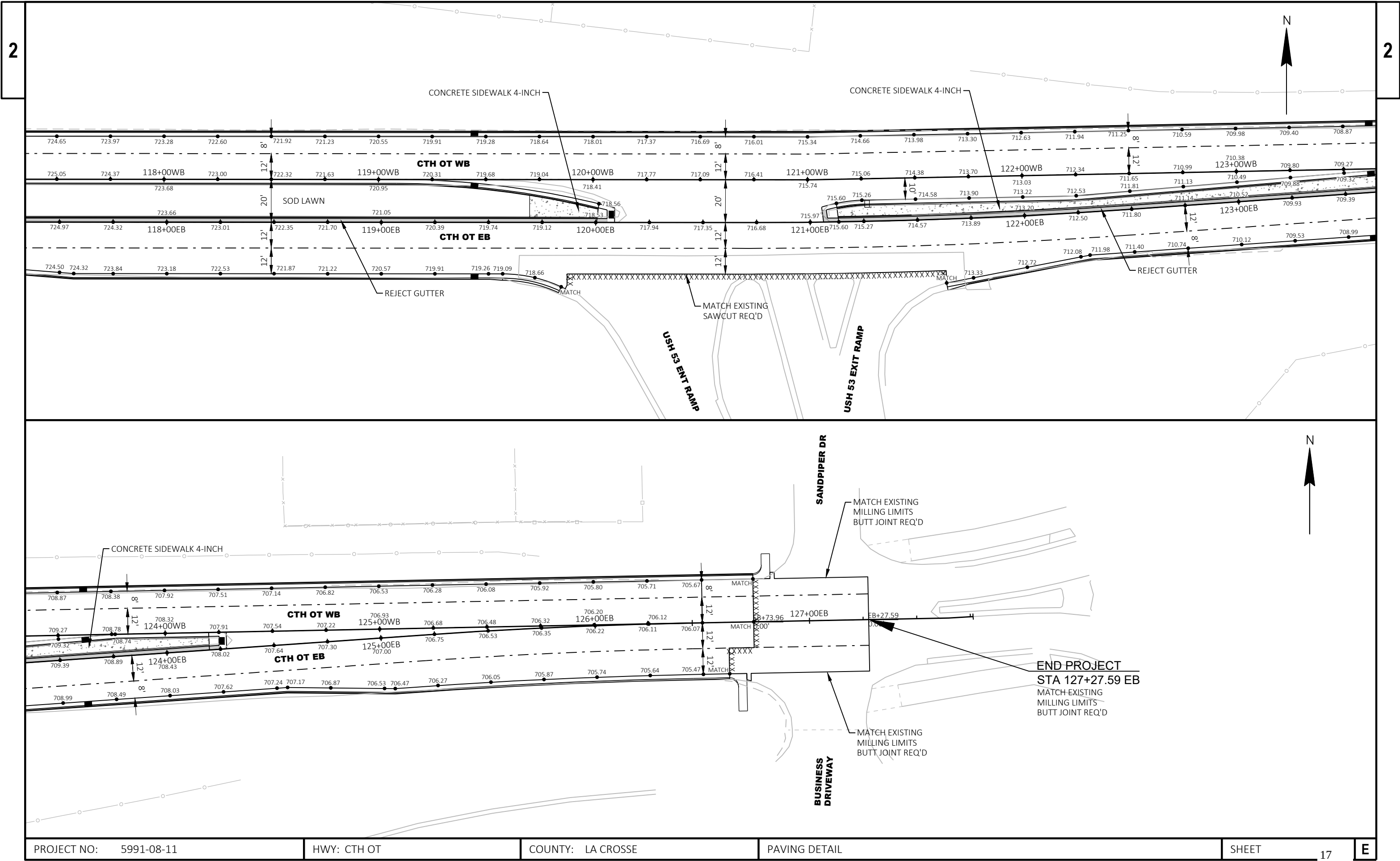
REJECT GUTTER

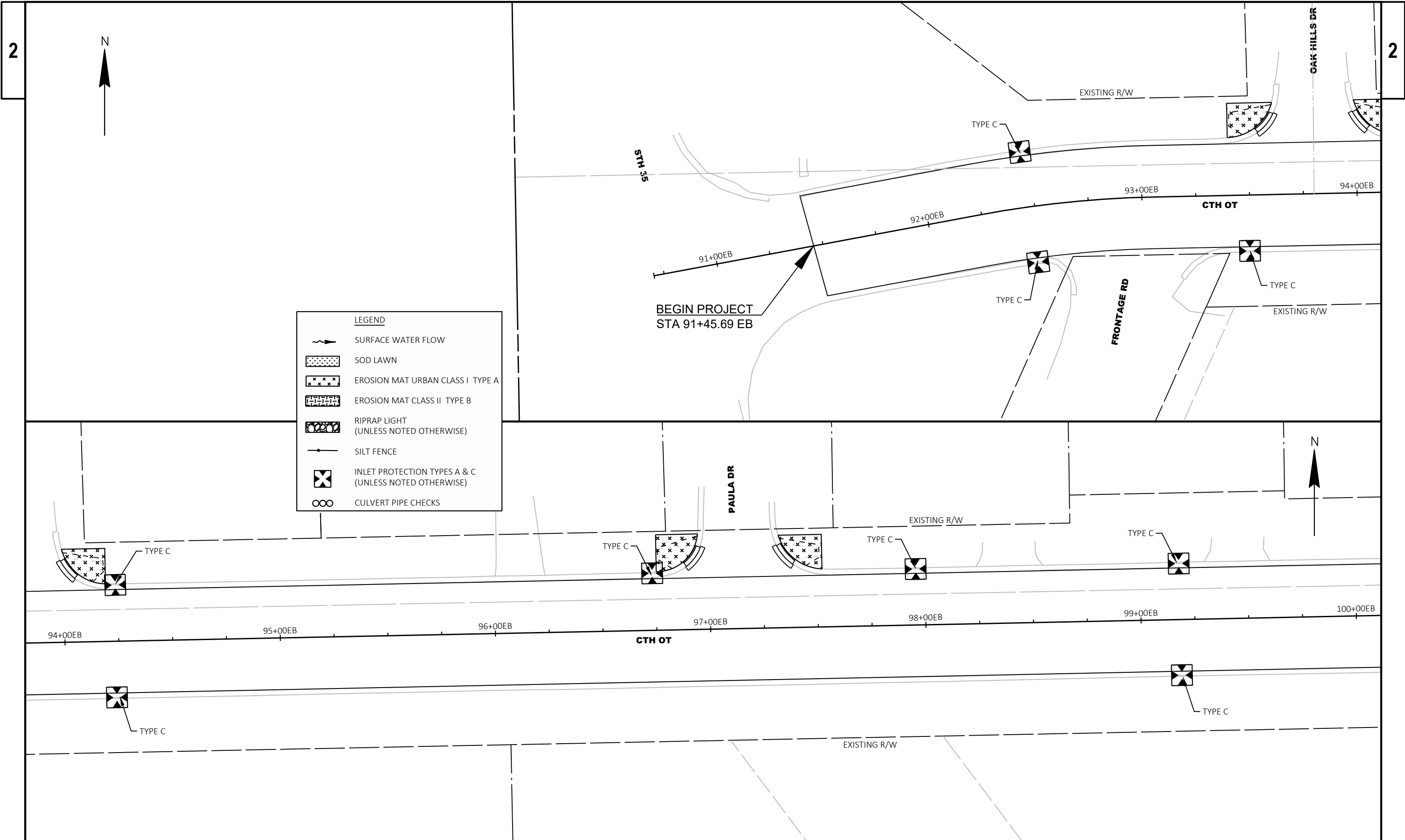
CONCRETE TRUCK APRON 12-INCH
/COLORING CONCRETE WISDOT RED

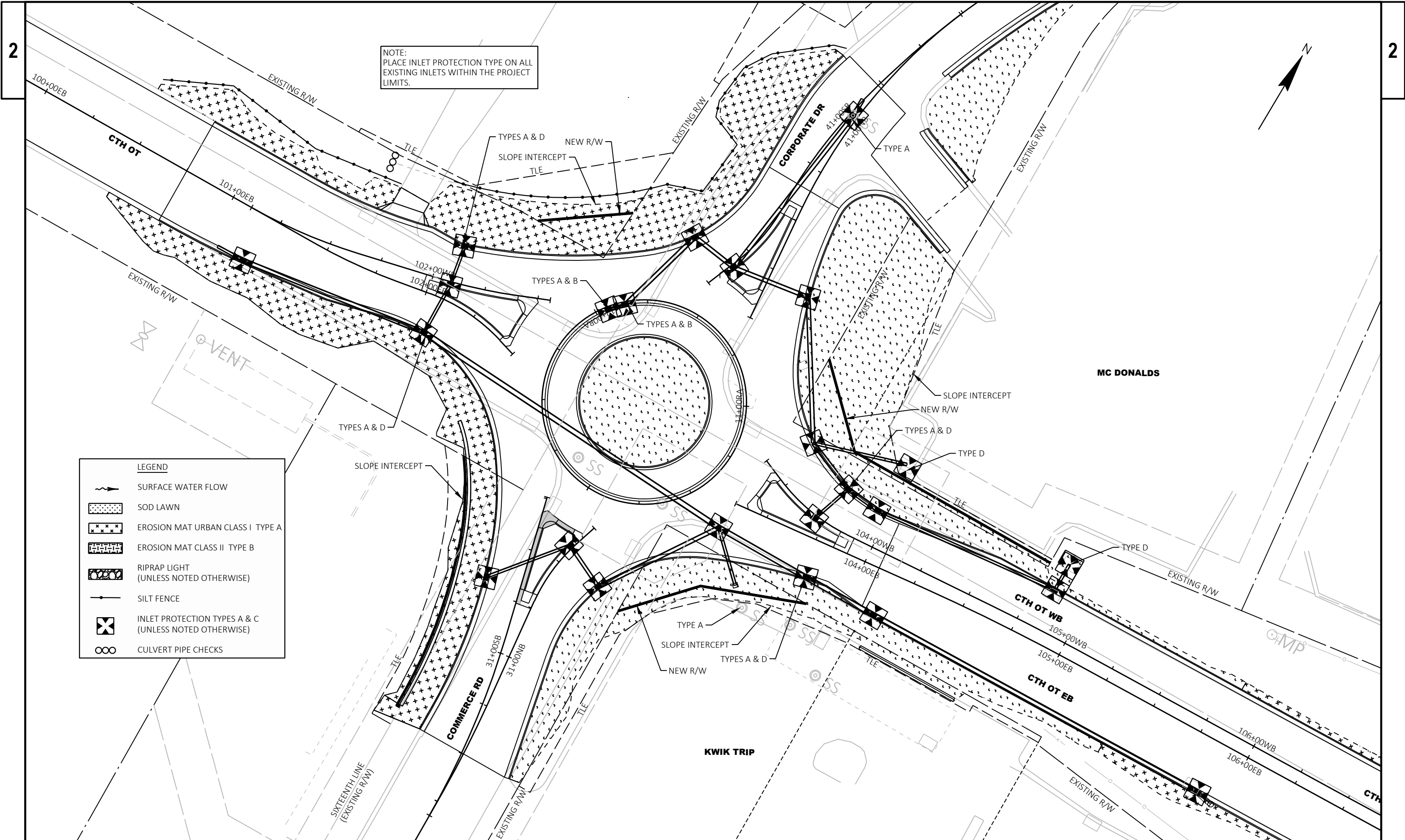
MC DONALDS

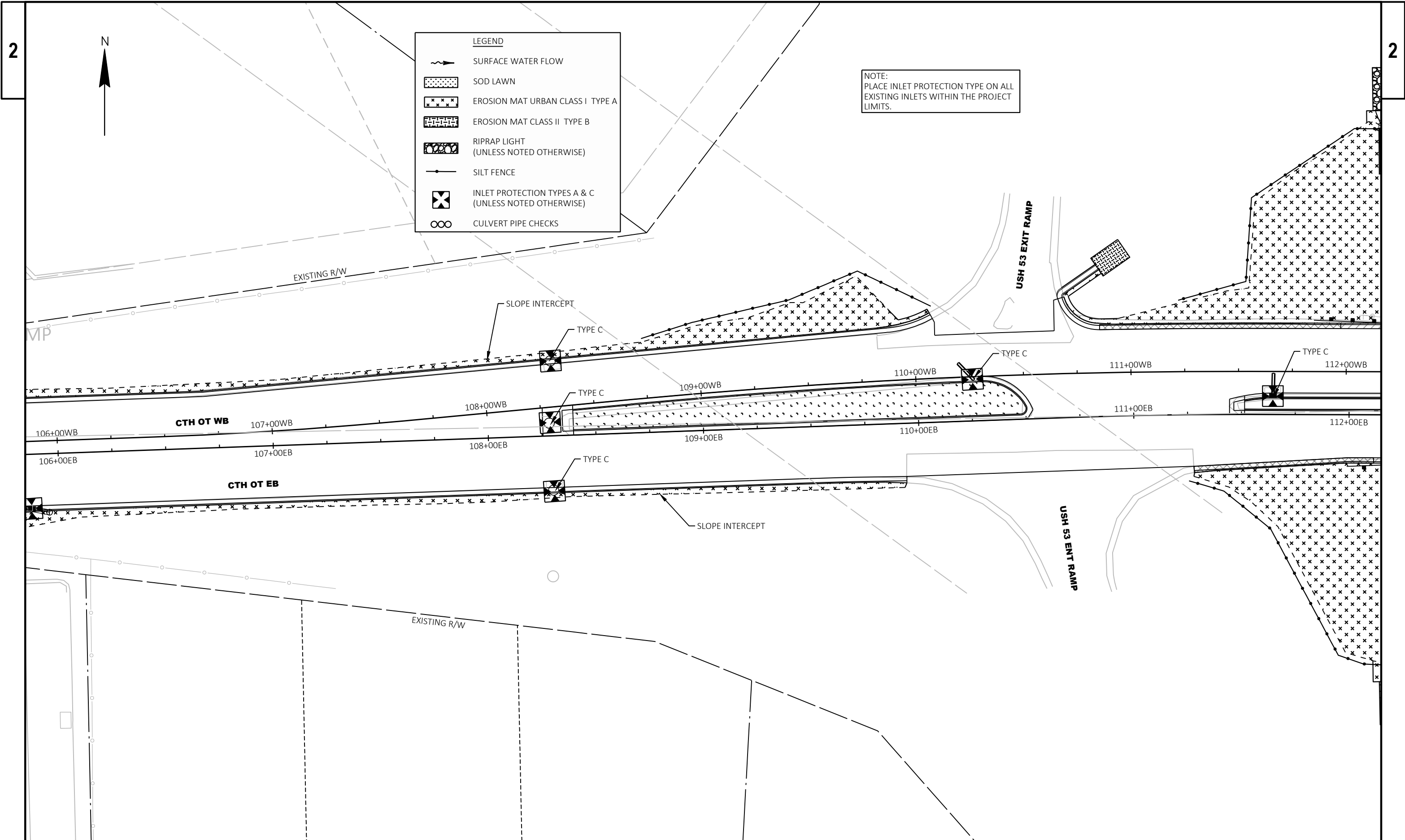
KWIK TRIP

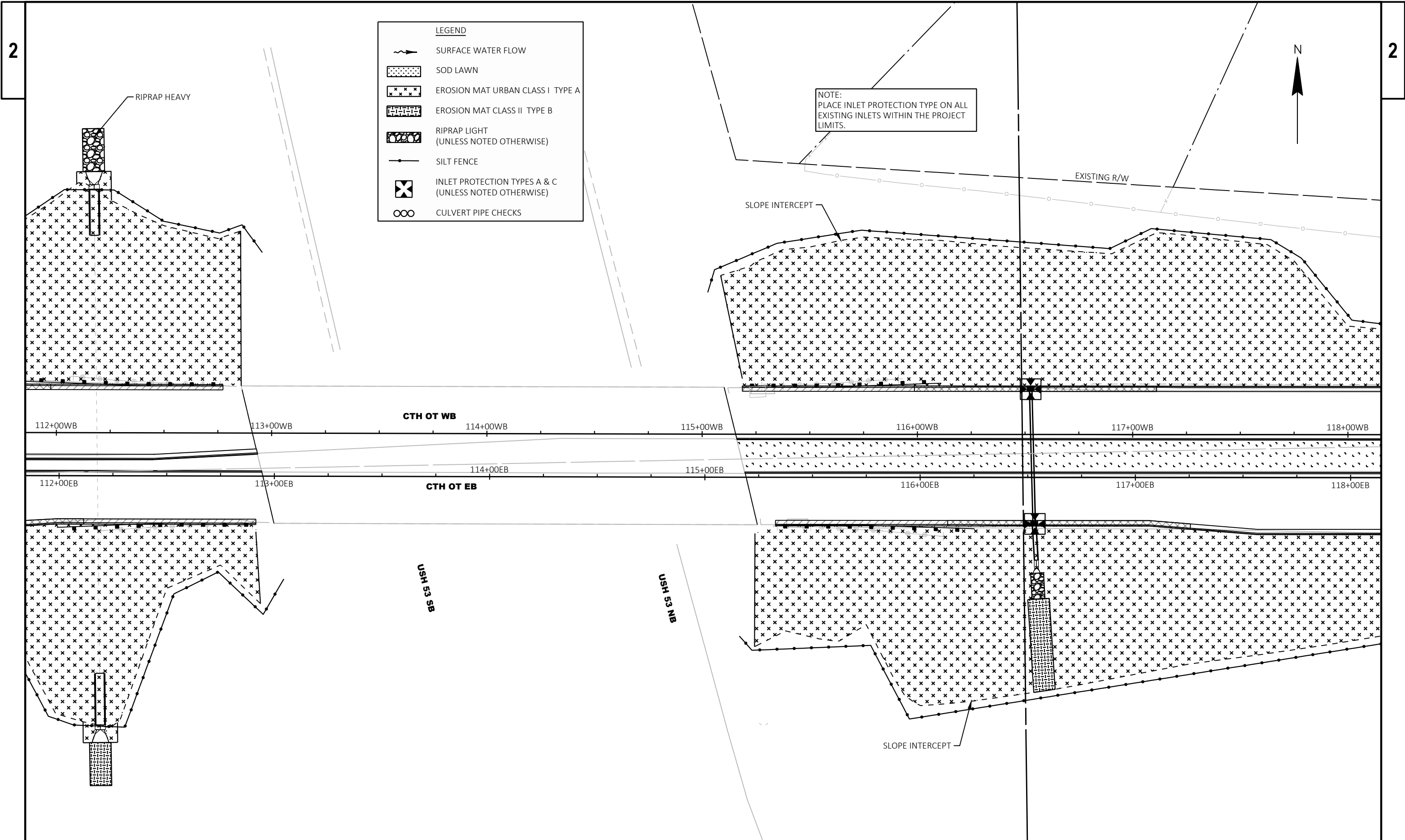


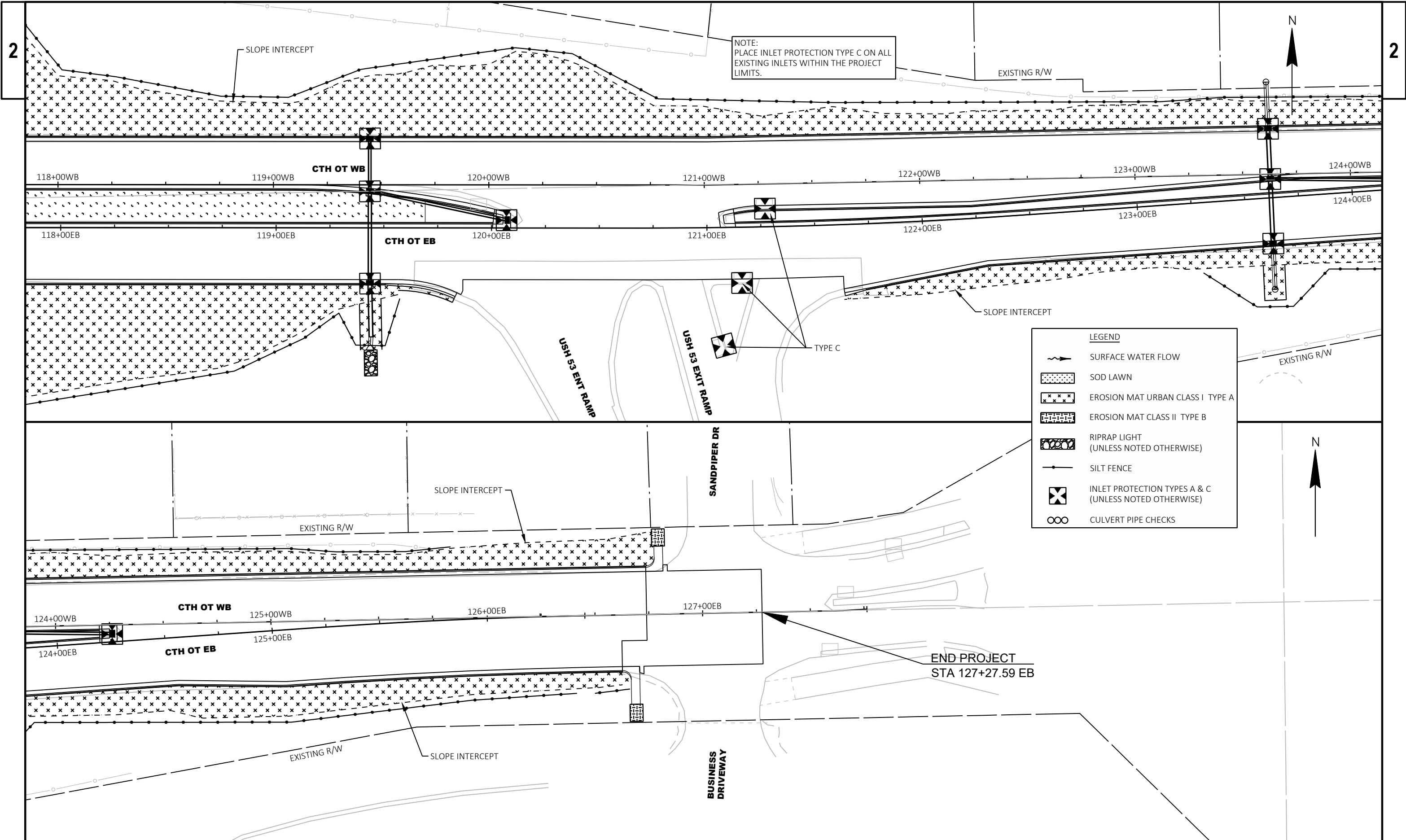


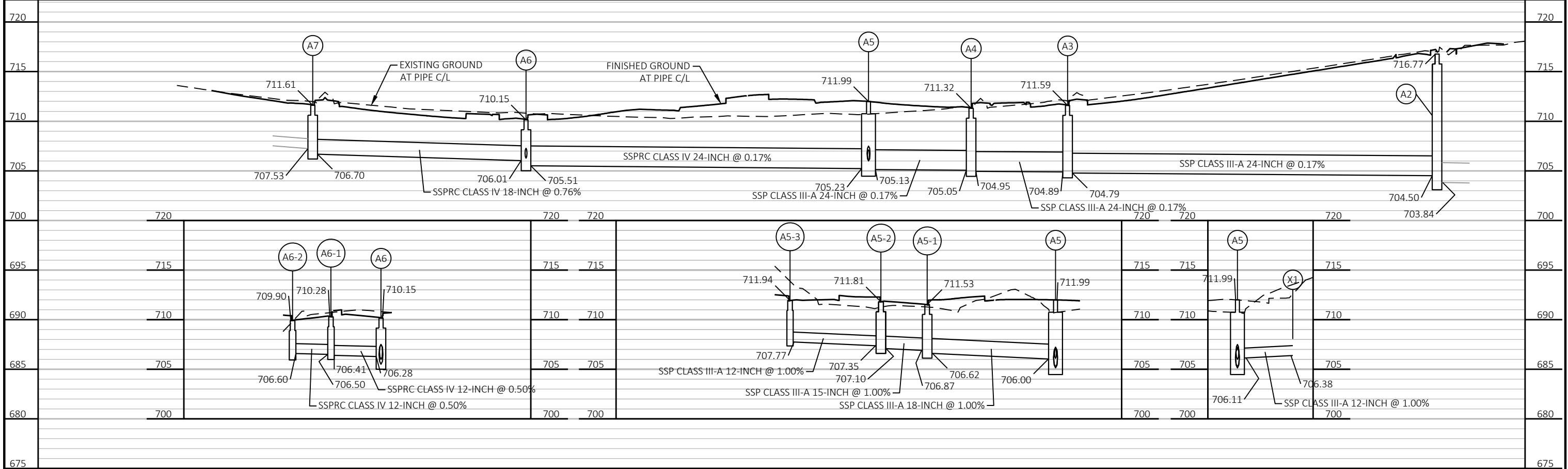
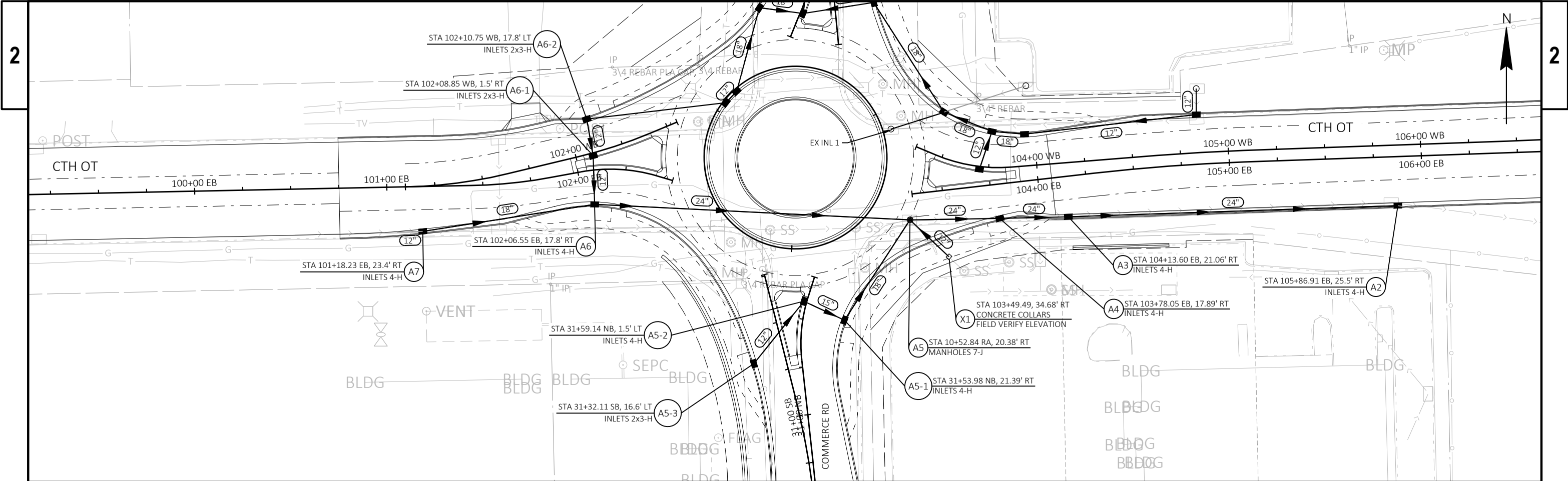


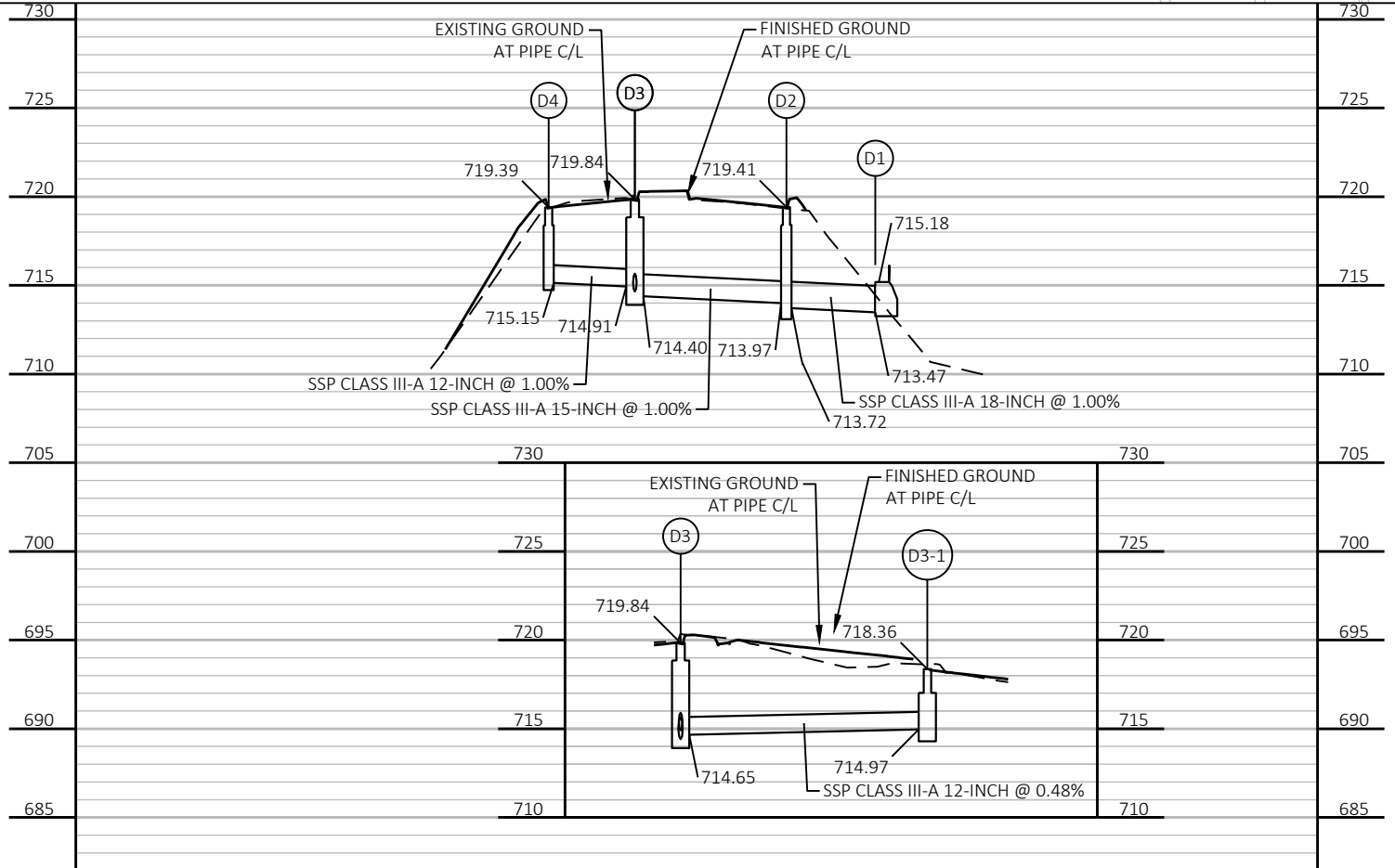
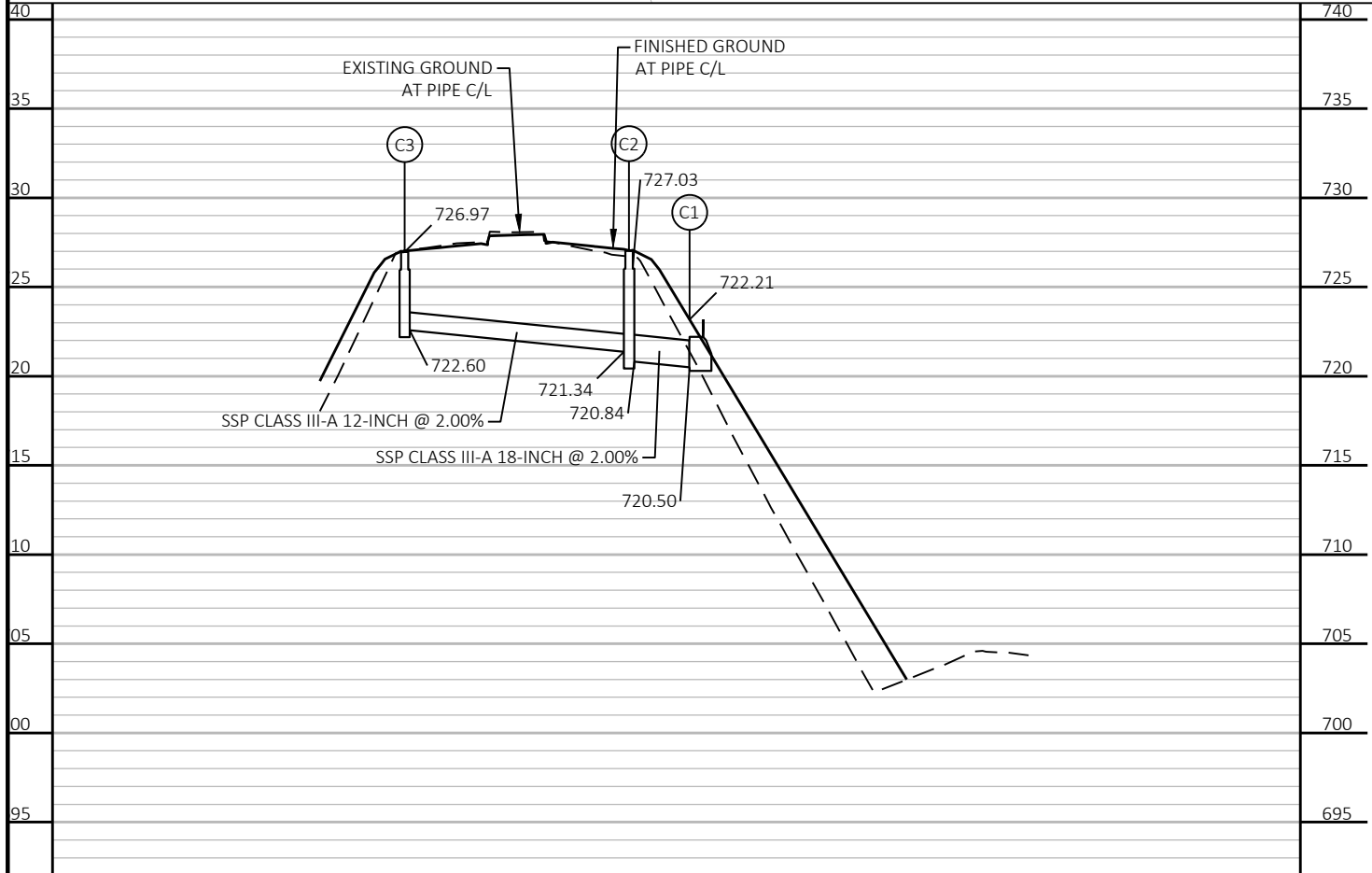
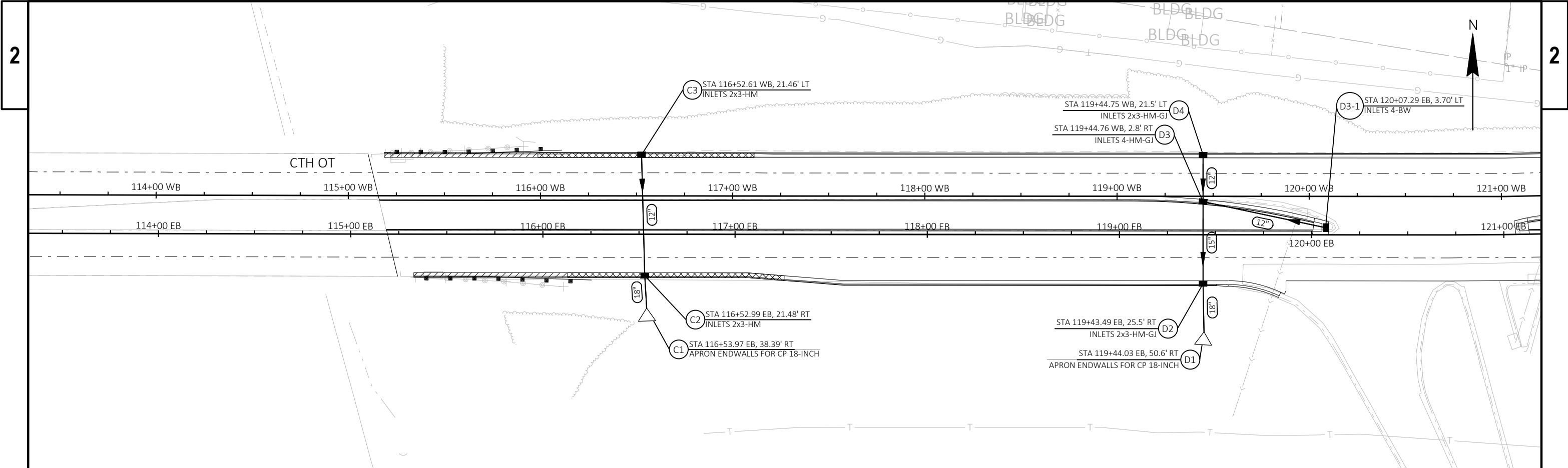


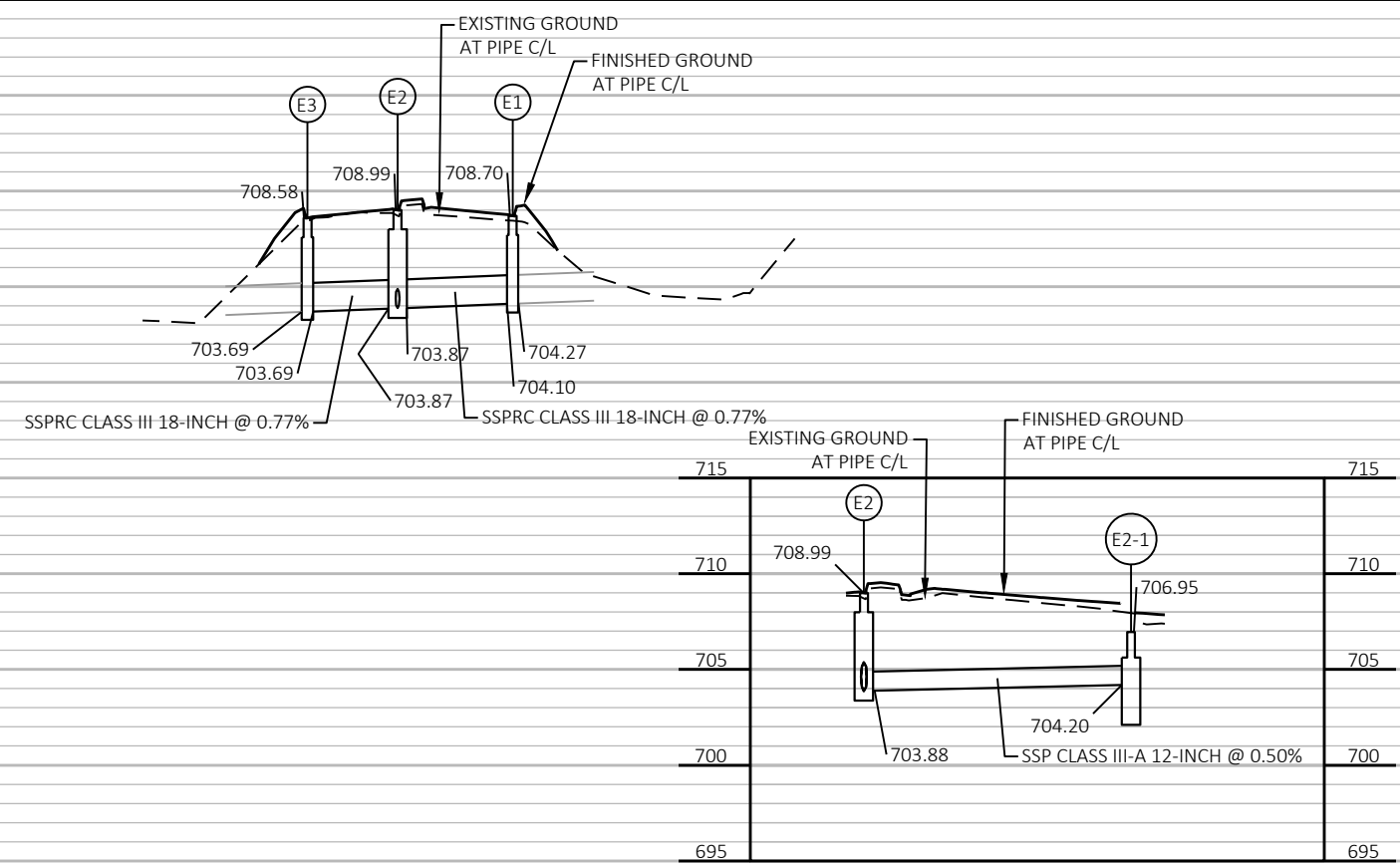
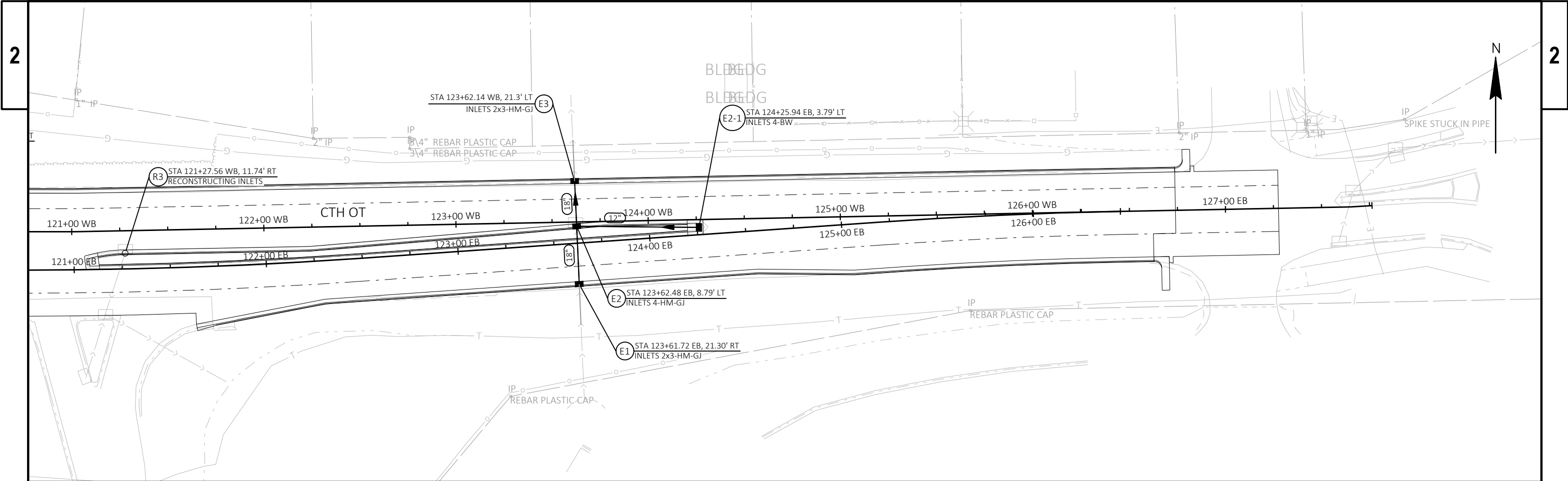


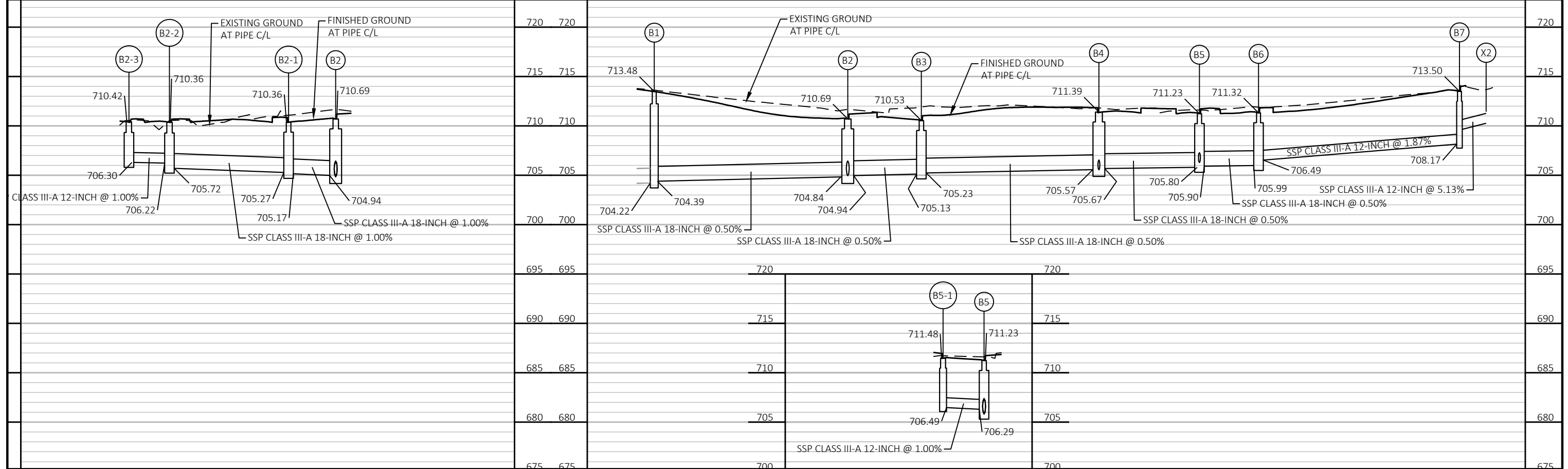
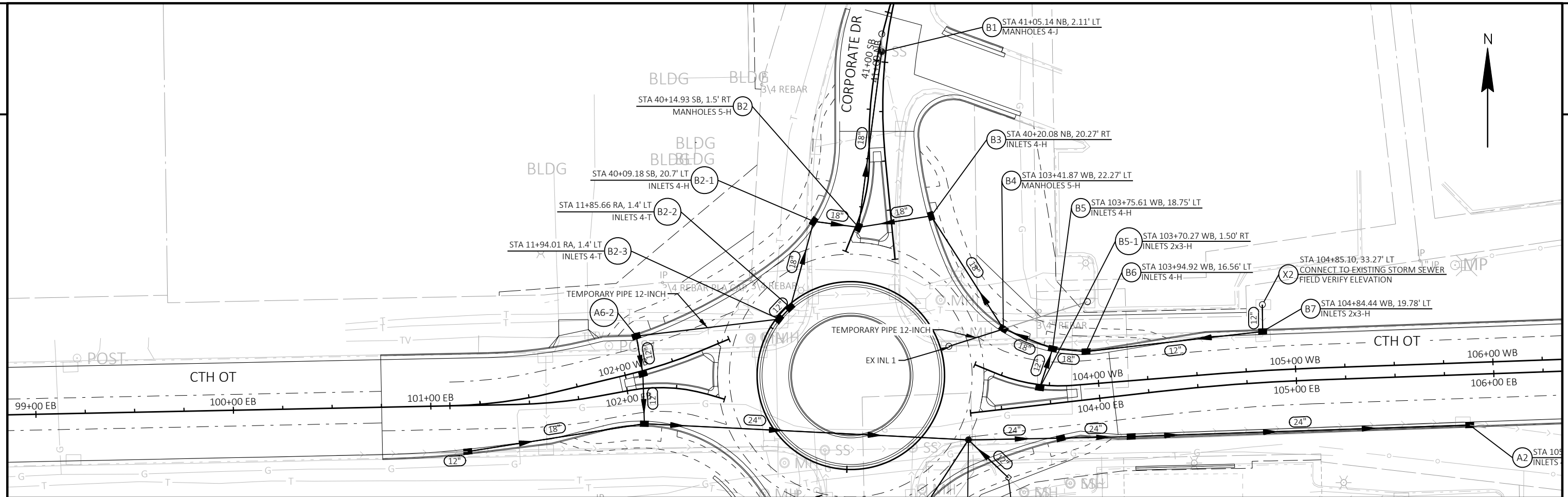


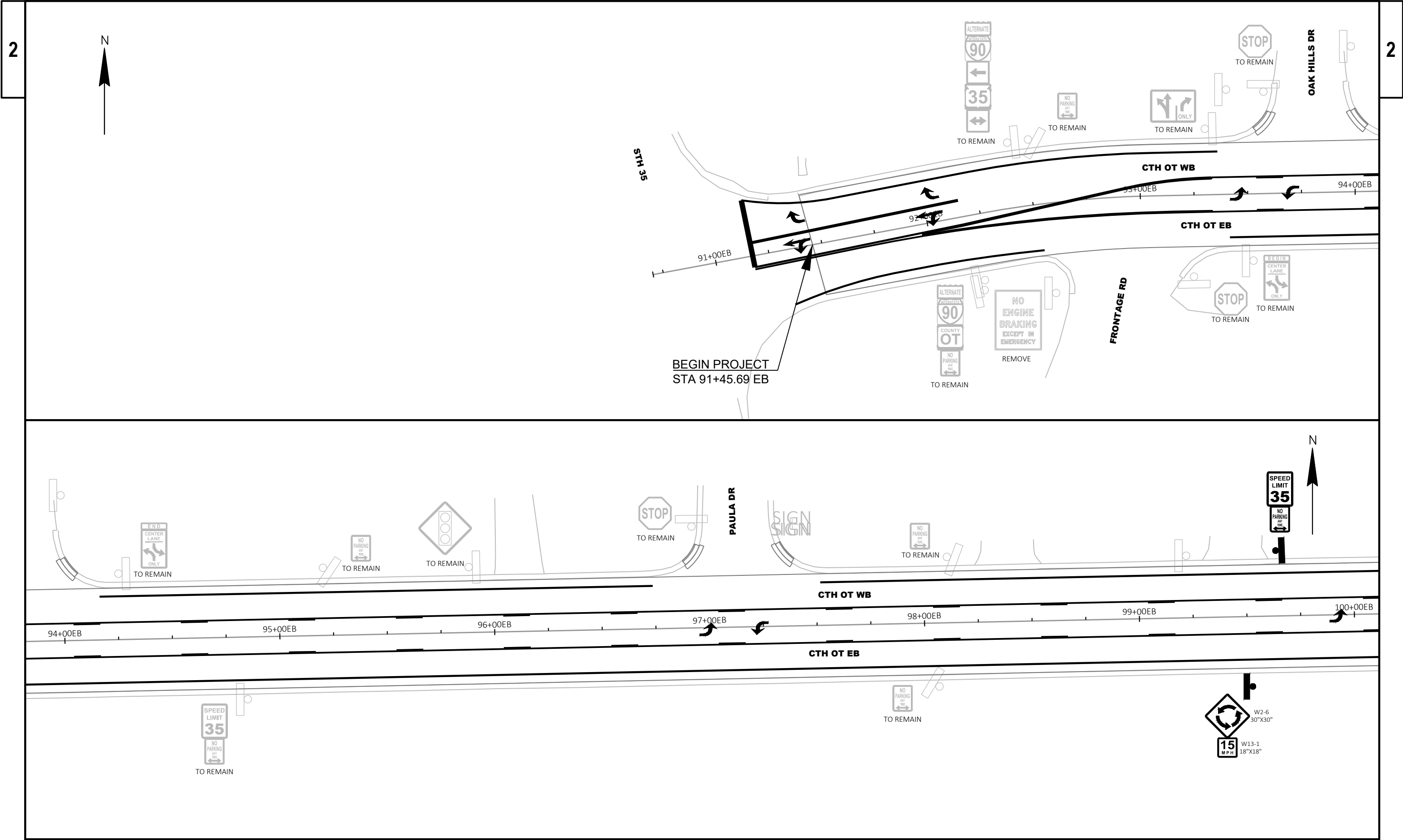




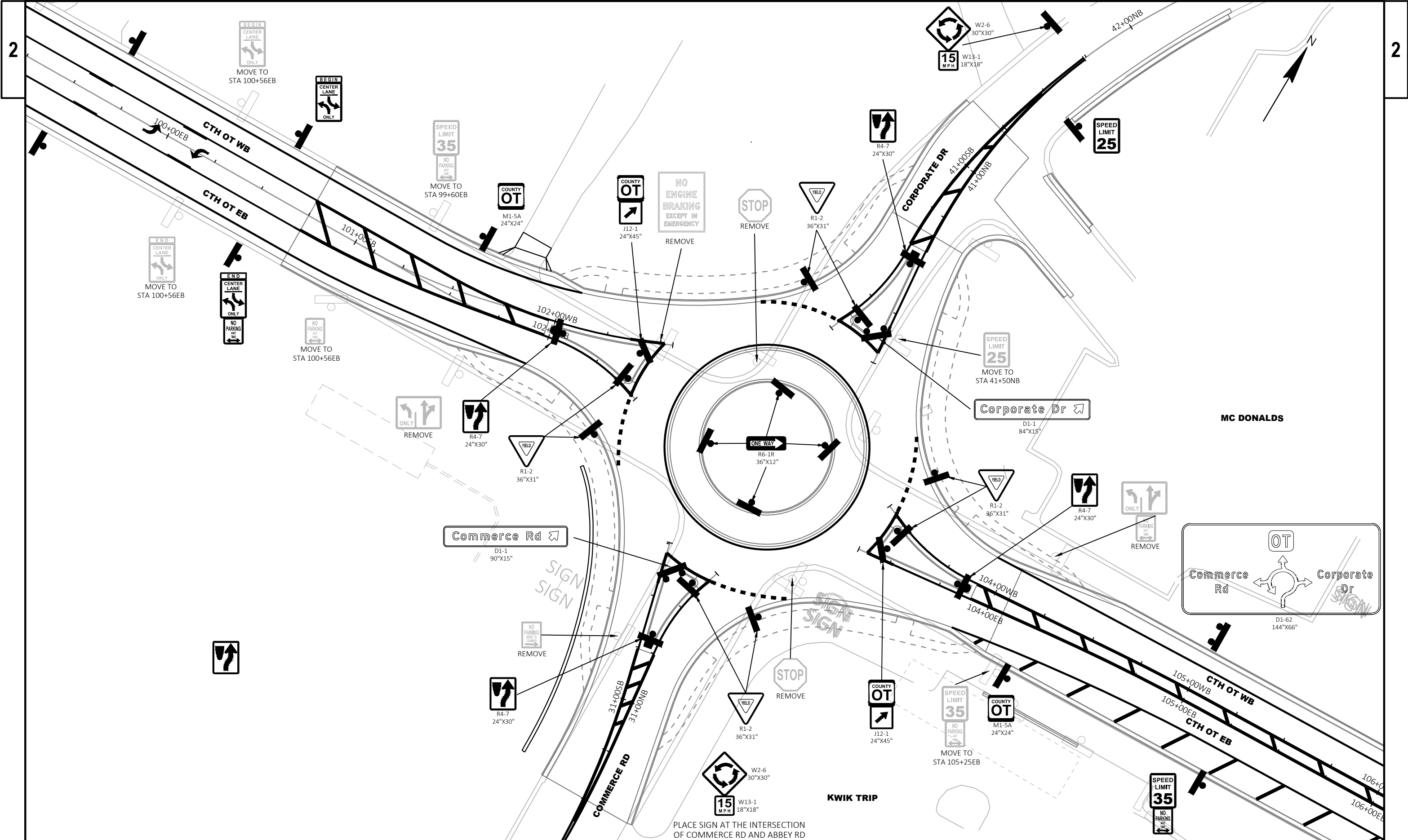


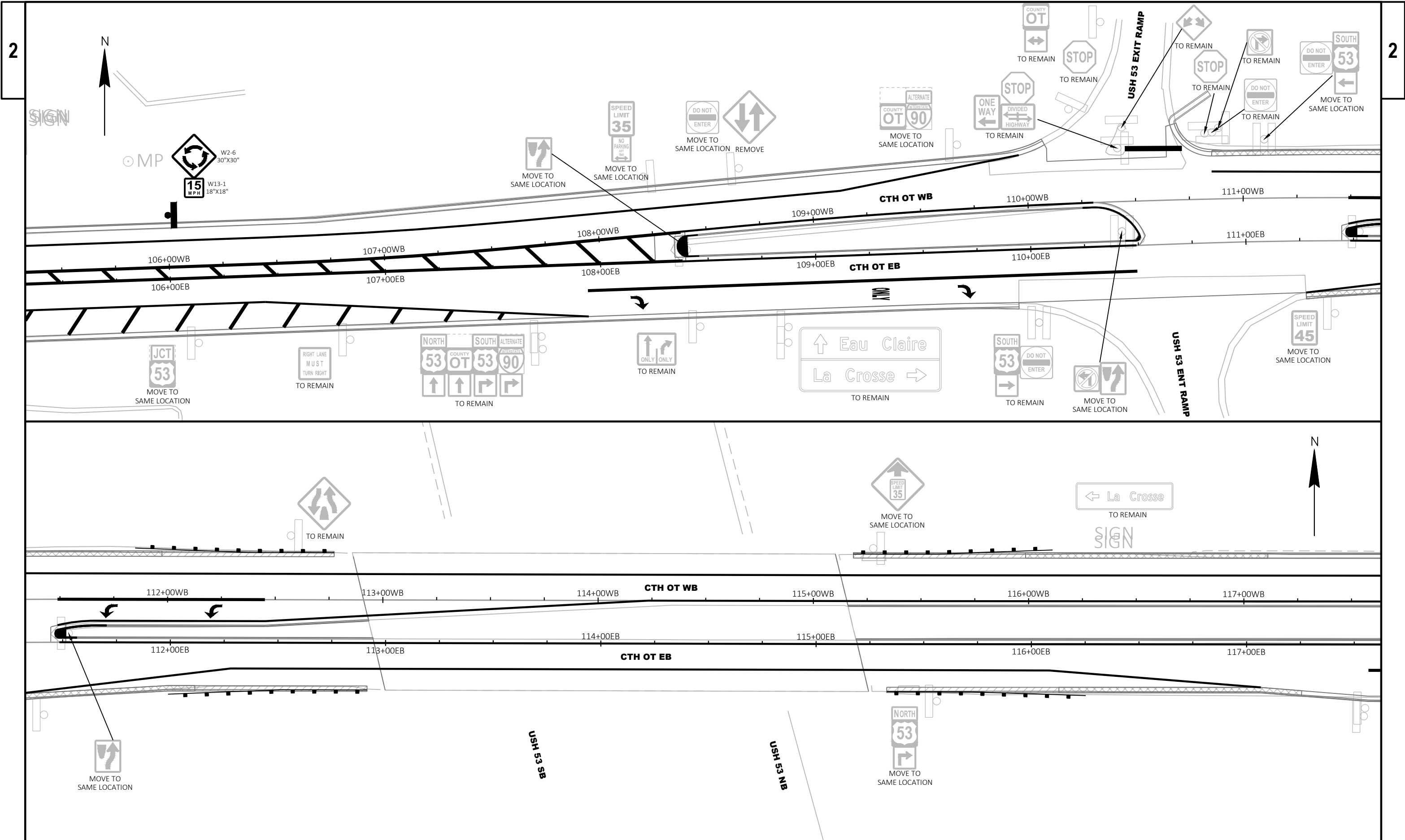




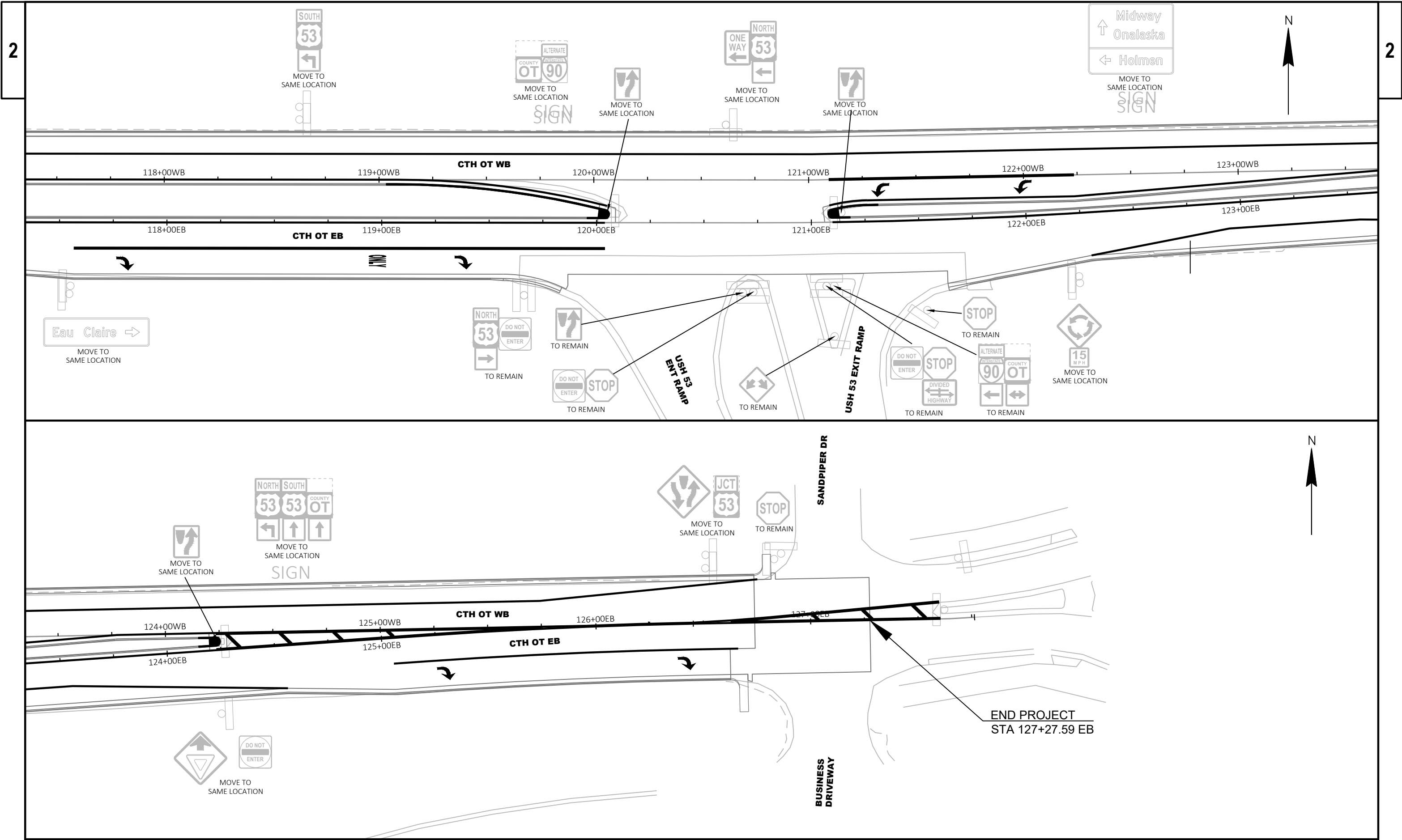


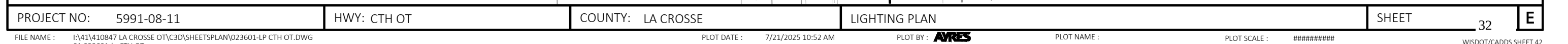
PROJECT NO: 5991-08-11	HWY: CTH OT	COUNTY: LA CROSSE	SIGNING	SHEET 28	E
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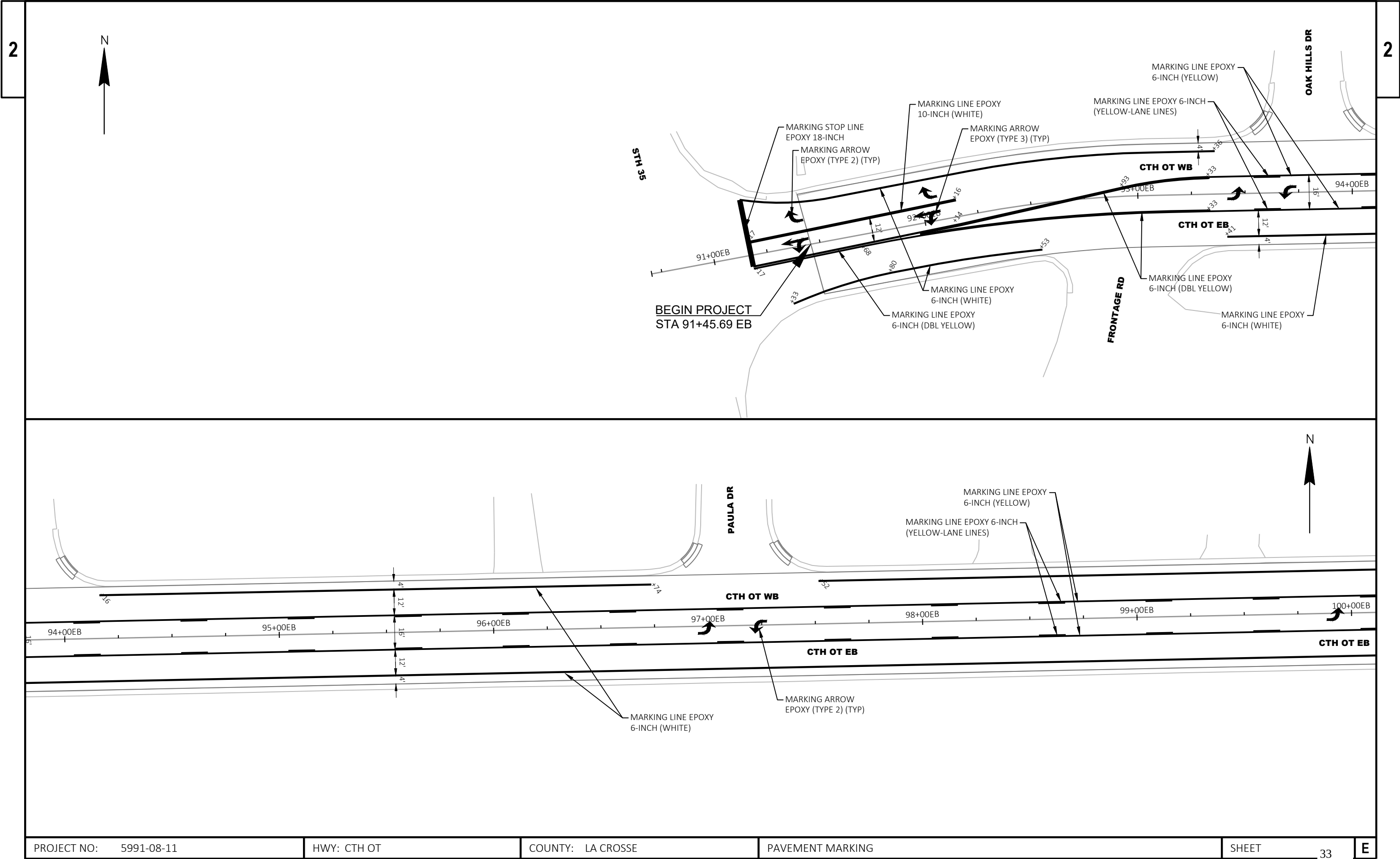


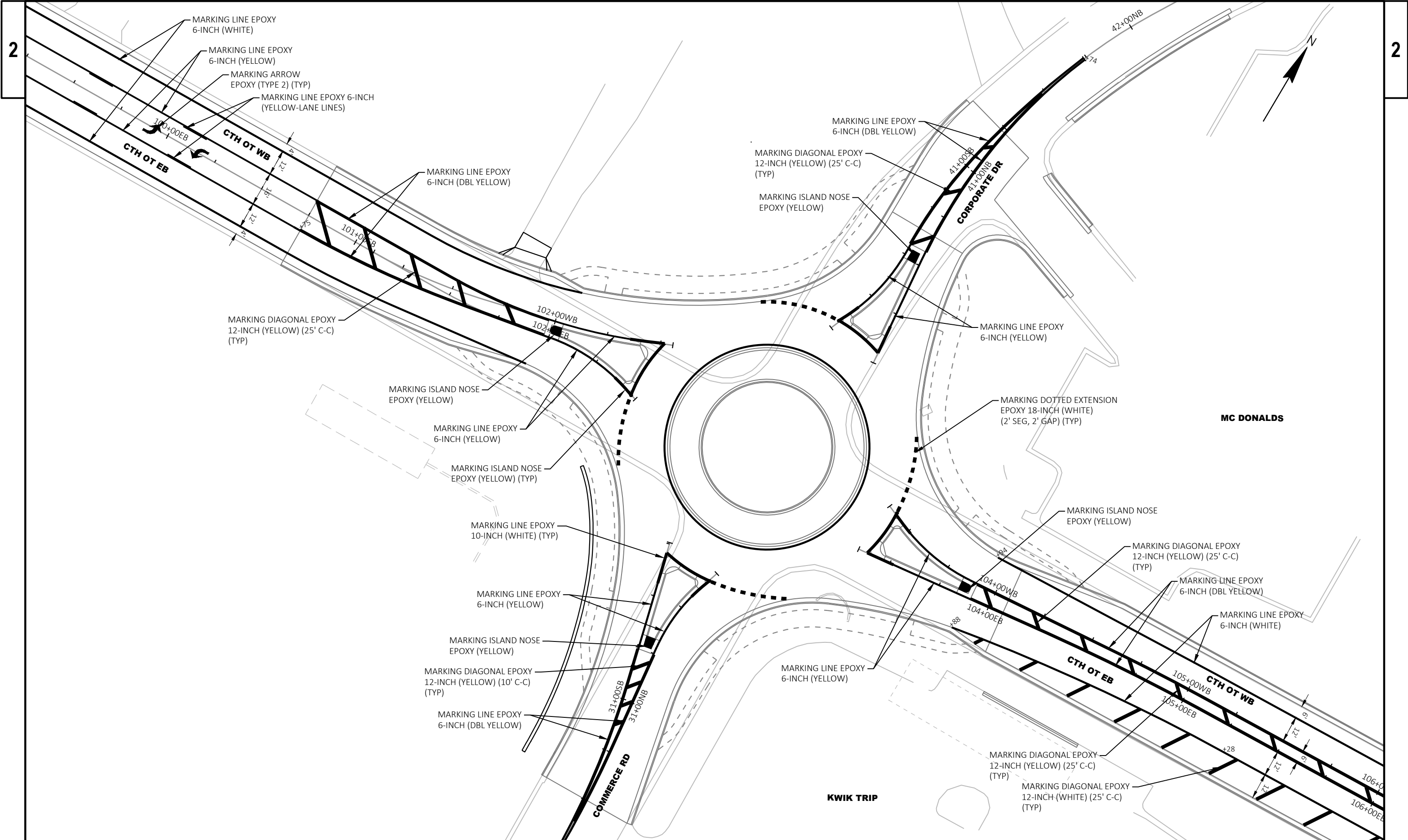


PROJECT NO: 5991-08-11	HWY: CTH OT	COUNTY: LA CROSSE	SIGNING	SHEET 30	E
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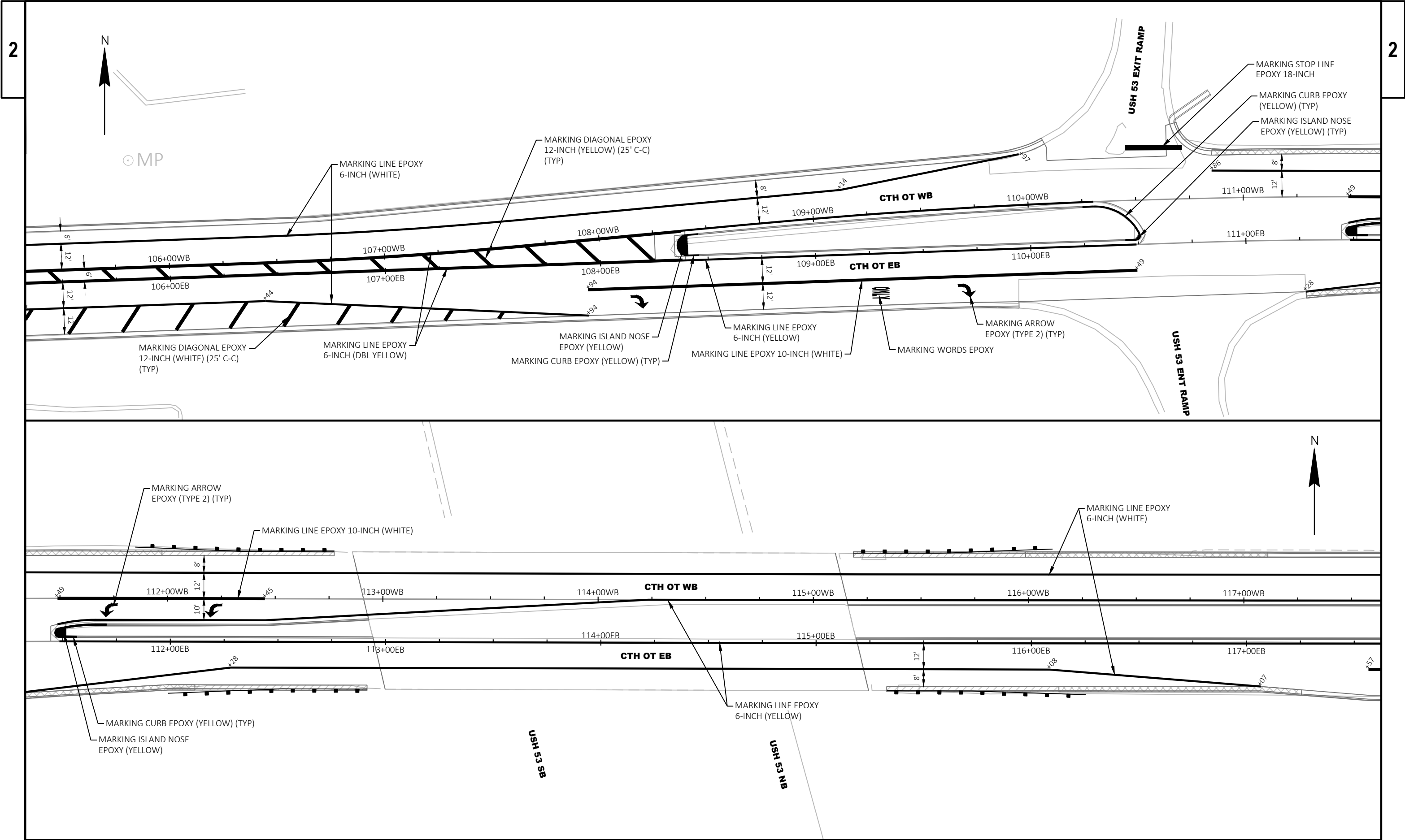


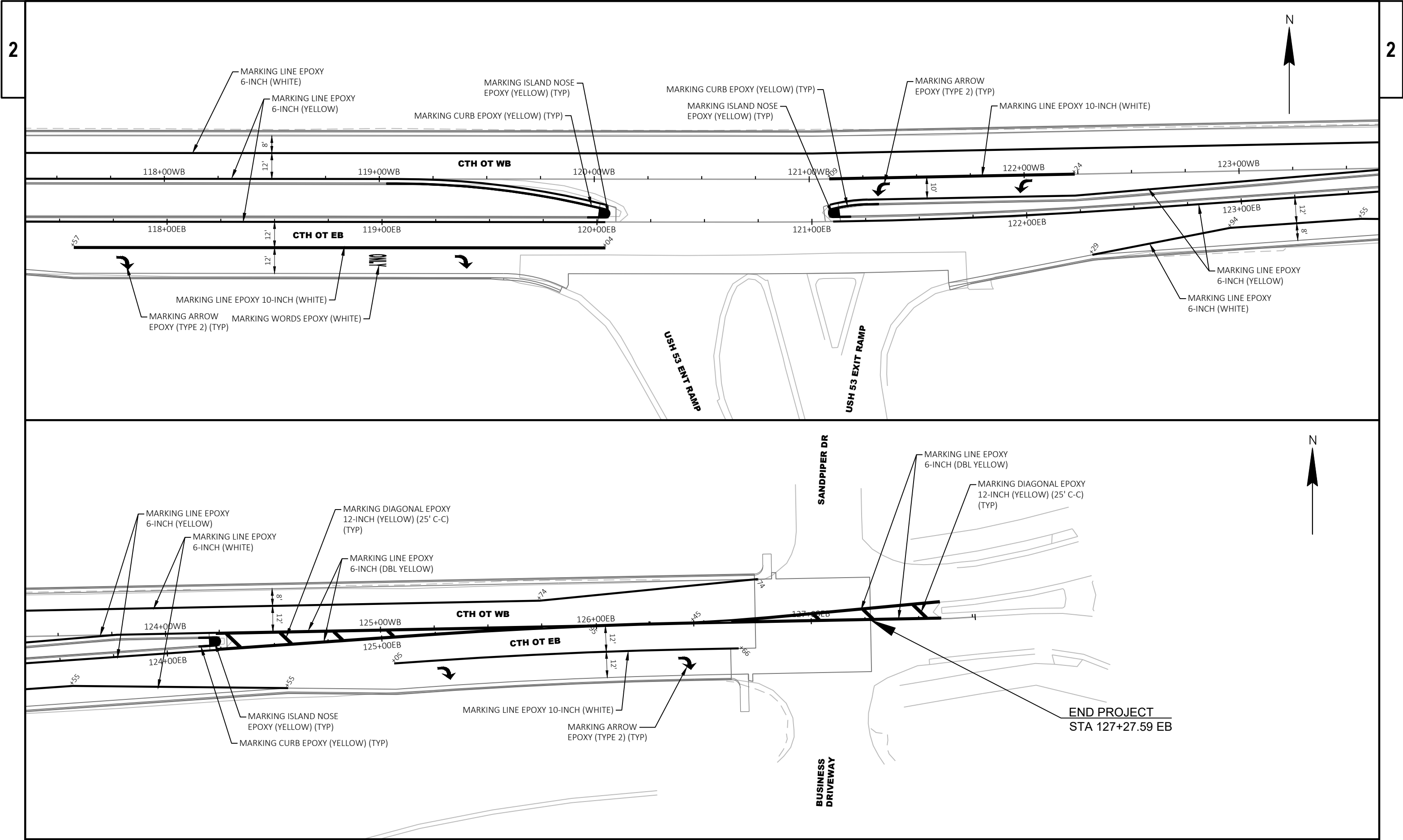


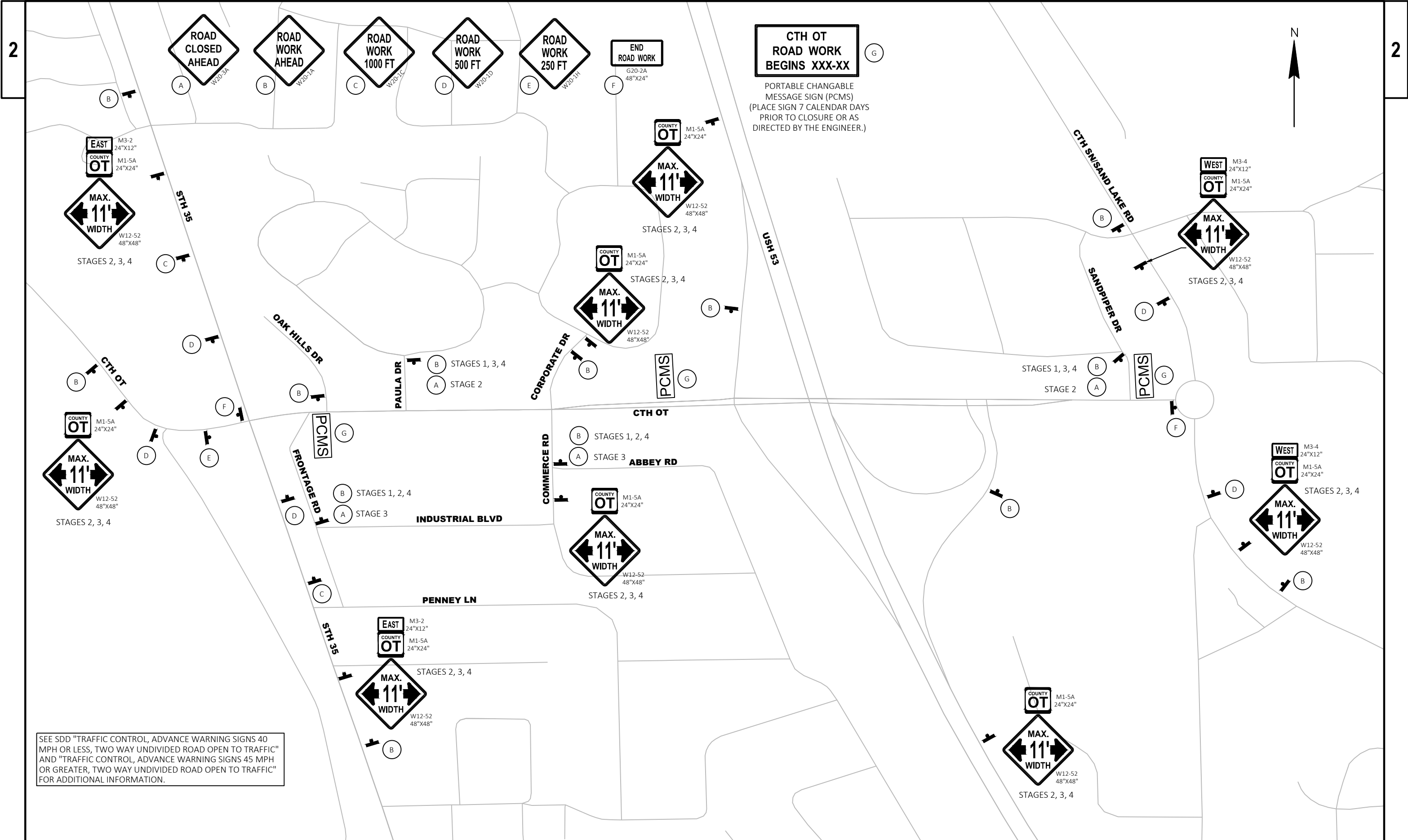




PROJECT NO: 5991-08-11	HWY: CTH OT	COUNTY: LA CROSSE	PAVEMENT MARKING	SHEET 34	E
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SEE SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 MPH OR LESS, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" AND "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" FOR ADDITIONAL INFORMATION.

GENERAL NOTES FOR TRAFFIC CONTROL

TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON CONTRACTOR METHODS OR SEQUENCE OF OPERATION.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD).

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL IN USE SHALL BE COVERED OR REMOVED AS NEEDED AND AS APPROVED BY THE ENGINEER. ADJUST SIGN SPACING TO AVOID CONFLICT WITH AND TO PROVIDE A MINIMUM SPACING OF 200 FEET TO EXISTING SIGNS.

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

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

REMOVE OR COVER ANY TEMPORARY OR EXISTING SIGNS THAT CONFLICT WITH "IN USE" TRAFFIC CONTROL.

WARNING LIGHTS SHALL NOT BE WORKING ON "COVERED" OR "DOWNED" SIGNS OR BARRICADES.

DURING HOURS OF DARKNESS, ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH TYPE "A" LIGHTS.

ALL TYPE III BARRICADES SHALL HAVE AN EQUIVALENT WIDTH OF 8 FEET.

REMOVE ALL EXISTING PAVEMENT MARKINGS CONFLICTING WITH THE TRAFFIC CONTROL OR NOT APPROPRIATE TO THE TRAVEL PATH FOR OPERATIONS IN PLACE FOR MORE THAN 4 CONTINUOUS DAYS.

FOR TEMPORARY PAVEMENT MARKINGS CALLED OUT AS PAINT/REMOVABLE TAPE THE INTENT IS TO USE REMOVABLE TAPE IN AREAS OF CONCRETE AND PAINT ELSEWHERE. THE ENGINEER MAY MODIFY THE LOCATIONS OF PAINT/REMOVABLE TAPE TO FIT FIELD CONDITIONS AND SAFETY CONCERNS.

SEE STANDARD SPECIFICATIONS 104.6.1.2.3 FOR ADDITIONAL REQUIREMENTS REGARDING DROP OFF AND HAZARD PROTECTION.

LEGEND

TRAFFIC DIRECTION

TRAFFIC CONTROL DRUMS WITH/WITHOUT TYPE C STEADY BURN LIGHT

TRAFFIC CONTROL BARRICADES WITH/WITHOUT SIGN

SIGN ON PERMANENT SUPPORT

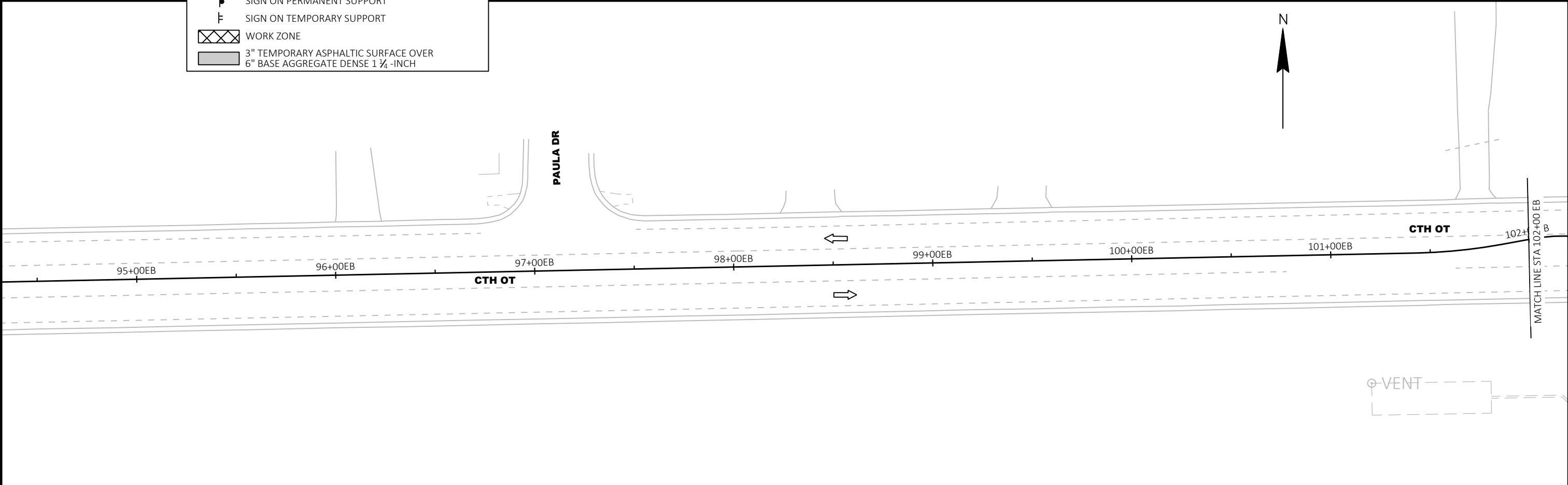
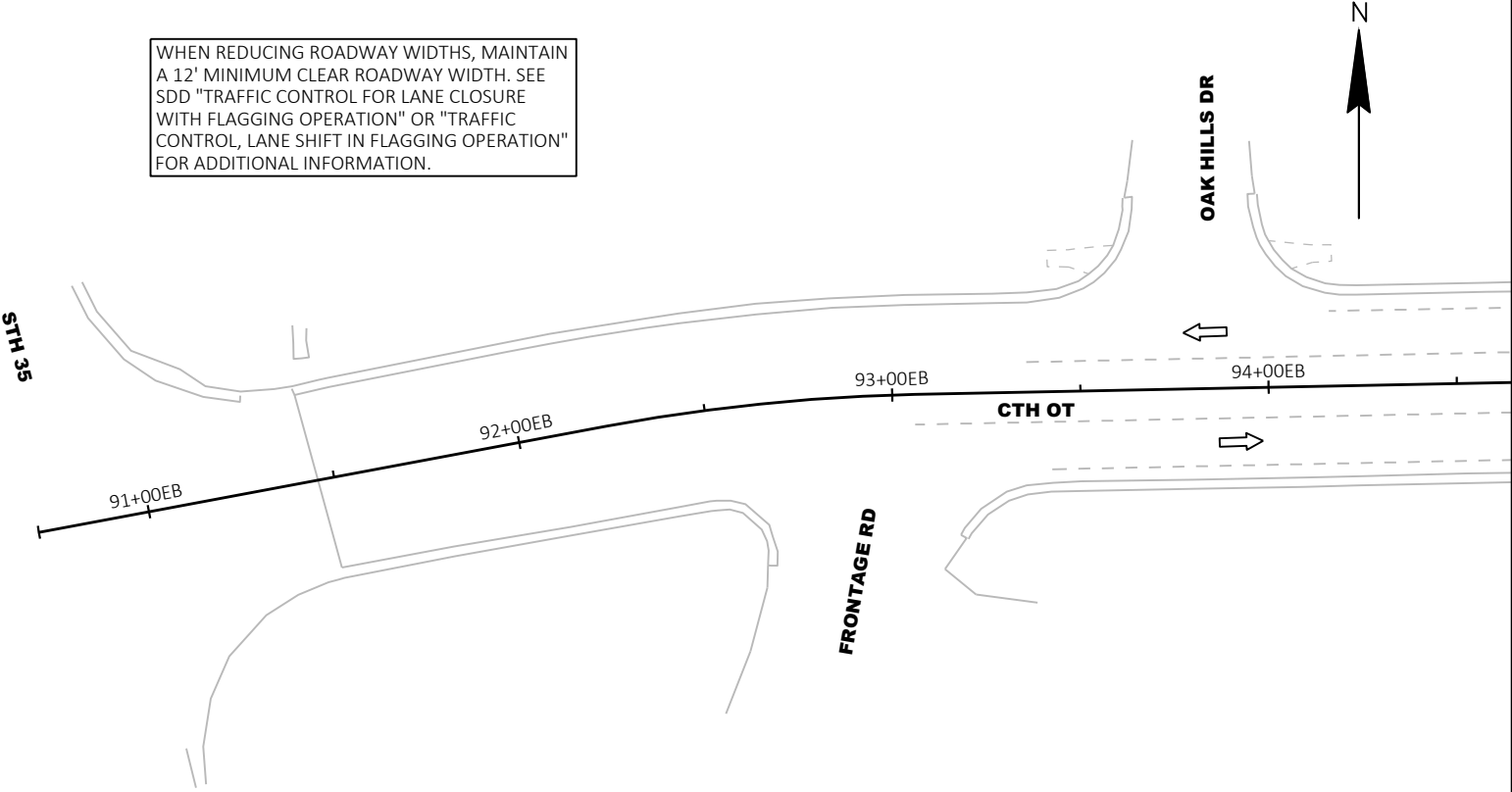
SIGN ON TEMPORARY SUPPORT

WORK ZONE

3" TEMPORARY ASPHALTIC SURFACE OVER 6" BASE AGGREGATE DENSE 1 1/4 -INCH

SEE "TRAFFIC CONTROL - ADVANCED WARNING SIGNS" FOR ADDITIONAL TRAFFIC CONTROL SIGNS.

WHEN REDUCING ROADWAY WIDTHS, MAINTAIN A 12' MINIMUM CLEAR ROADWAY WIDTH. SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION" OR "TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION" FOR ADDITIONAL INFORMATION.



LEGEND	
	TRAFFIC DIRECTION
	TRAFFIC CONTROL DRUMS WITH/WITHOUT TYPE C STEADY BURN LIGHT
	TRAFFIC CONTROL BARRICADES WITH/WITHOUT SIGN
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	WORK ZONE
	3" TEMPORARY ASPHALTIC SURFACE OVER 6" BASE AGGREGATE DENSE 1 1/4 -INCH



COMMERCE RD

MATCH LINE STA 102+00 EB

CTH OT

102+00EB

104+00EB

105+00EB

CTH OT

MATCHLINE STA 105+50 EB

10' SPACING (TYP)

15' SPACING (TYP)

CORPORATE DR

PROJECT NO: 5991-08-11

HWY: CTH OT

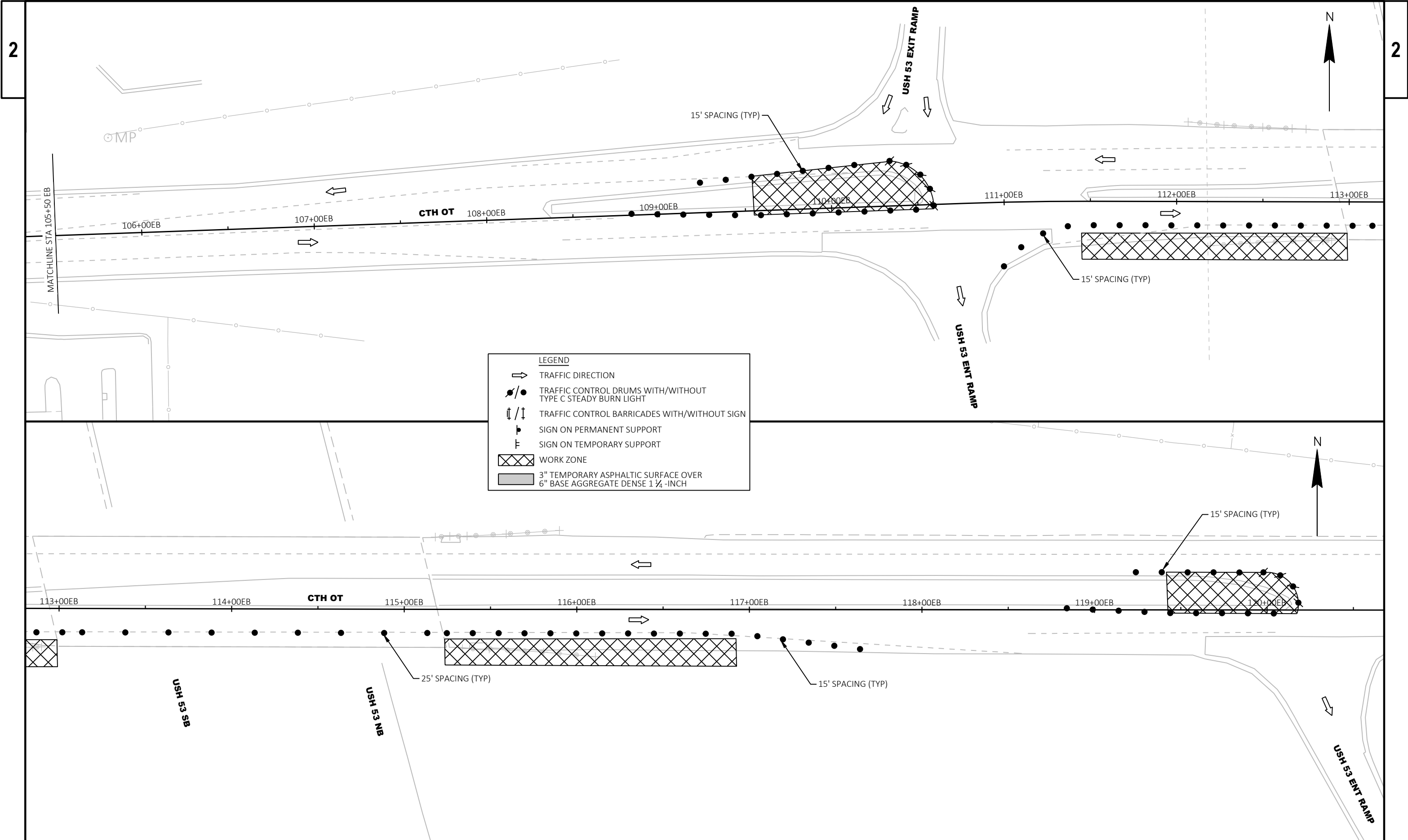
COUNTY: LA CROSSE

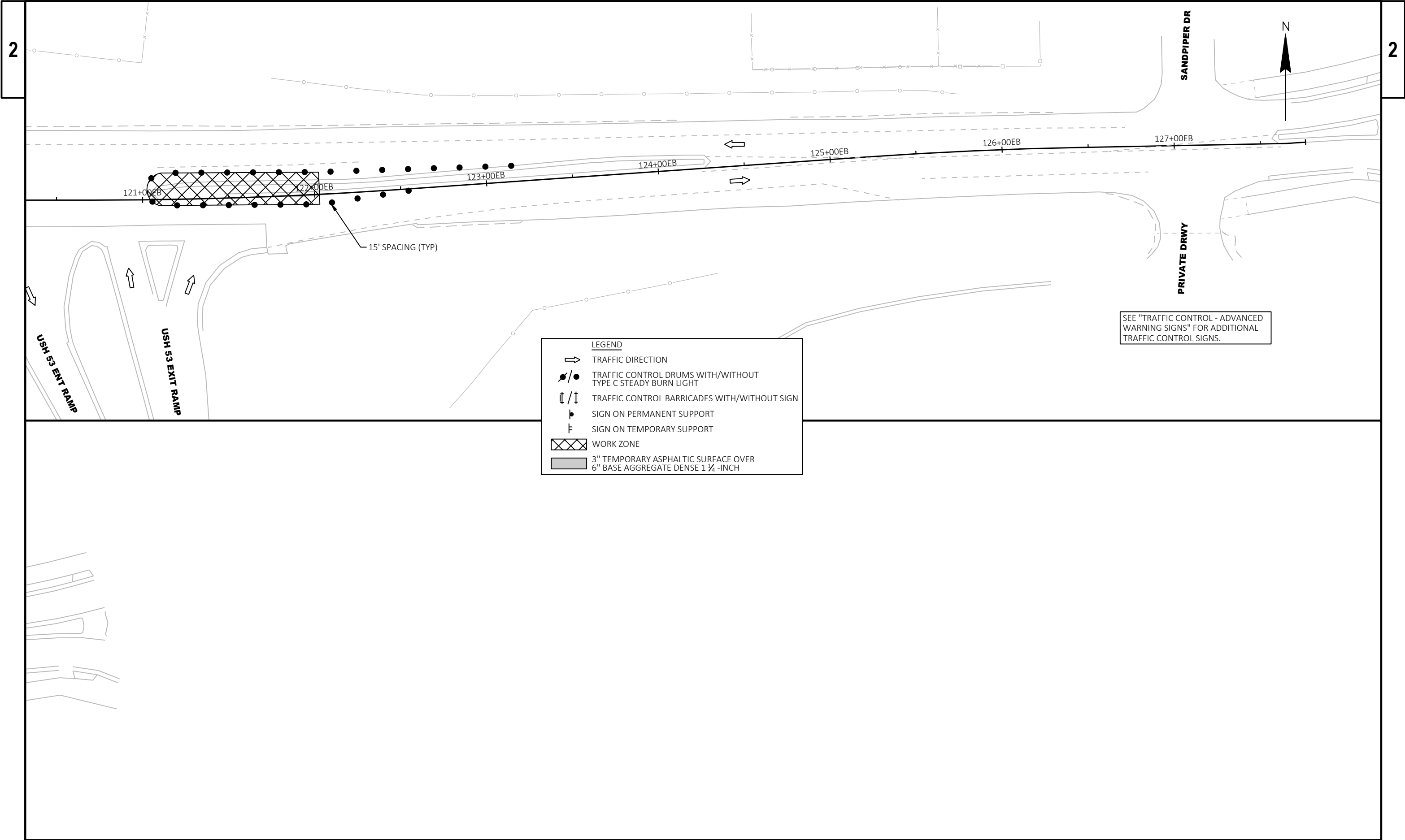
TRAFFIC CONTROL - STAGE 1

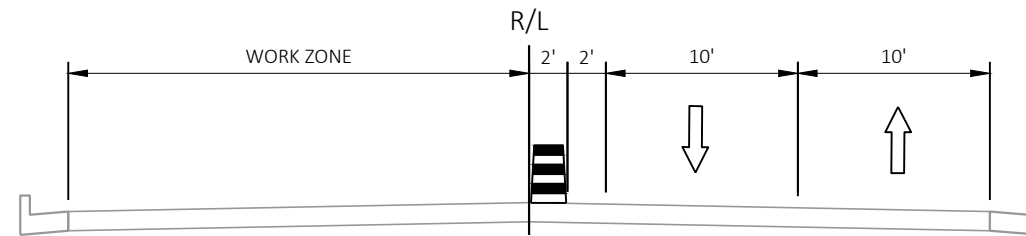
SHEET

39

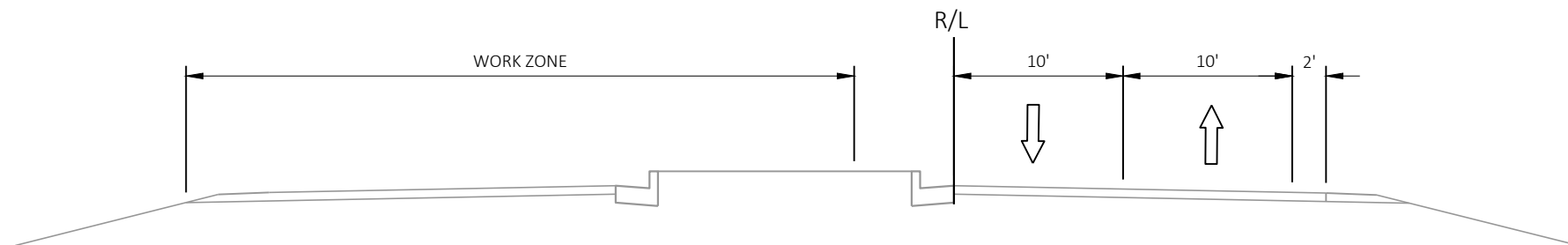
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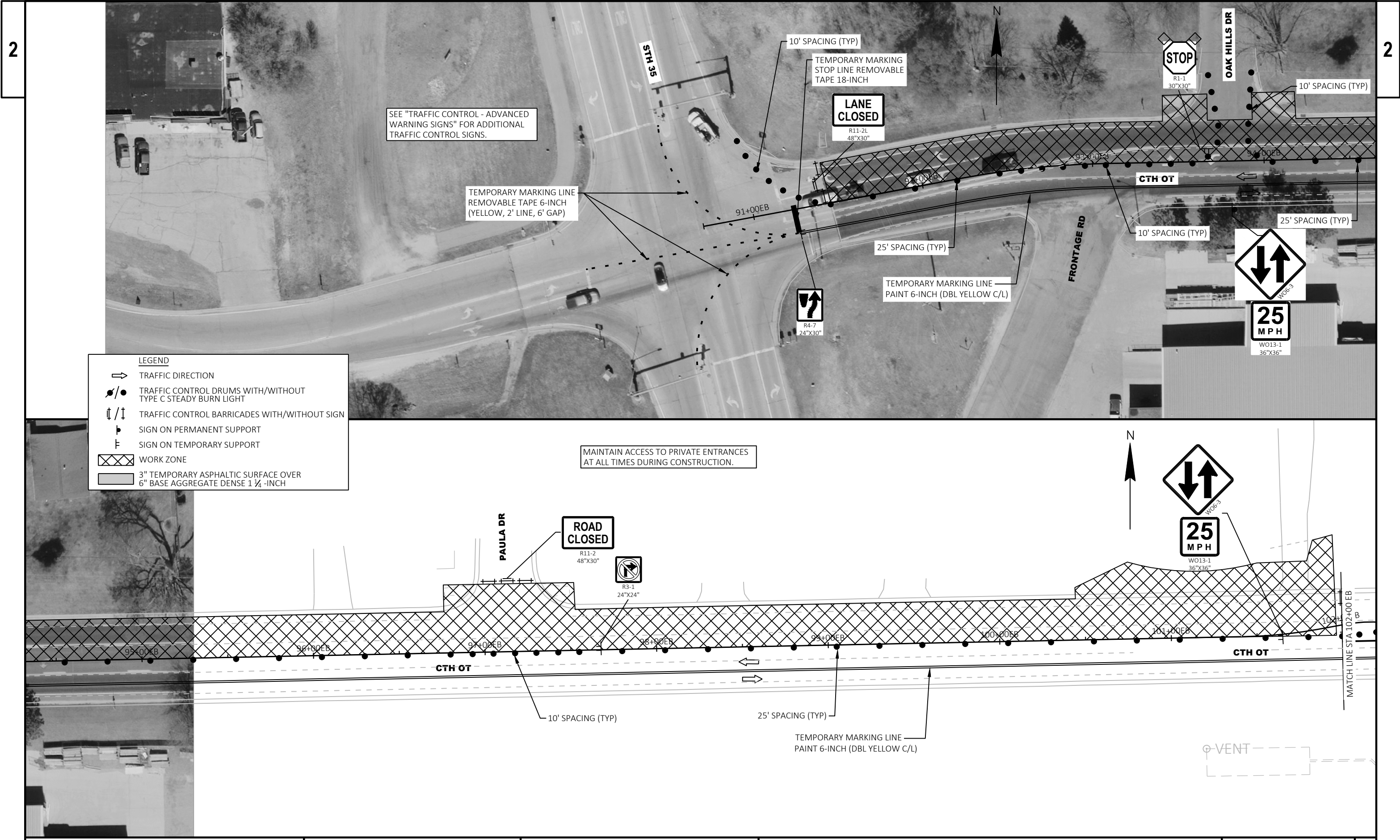


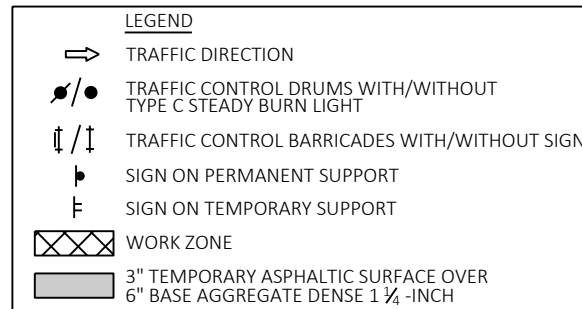


TYPICAL SECTION - STAGE 2A/2B
STH 35 TO COMMERCE RD/CORPORATE DR



TYPICAL SECTION - STAGE 2A/2B
COMMERCE RD/CORPORATE DR TO CTH SN





COMMERCE RD

TEMPORARY MARKING LINE
PAINT 6-INCH (WHITE)

25' SPACING (TYP)

TEMPORARY MARKING LINE
PAINT 6-INCH (DBL YELLOW C/L)

MATCHLINE STA 105+50 EB

MATCH LINE STA 102+00 EB

LANE
CLOSED
R11-2L
48"X30"

10' SPACING (TYP)

TEMPORARY MARKING LINE
PAINT 6-INCH (WHITE)TEMPORARY MARKING
STOP LINE PAINT 18-INCHTEMPORARY MARKING LINE
PAINT 6-INCH (DBL YELLOW C/L)

10' SPACING (TYP)

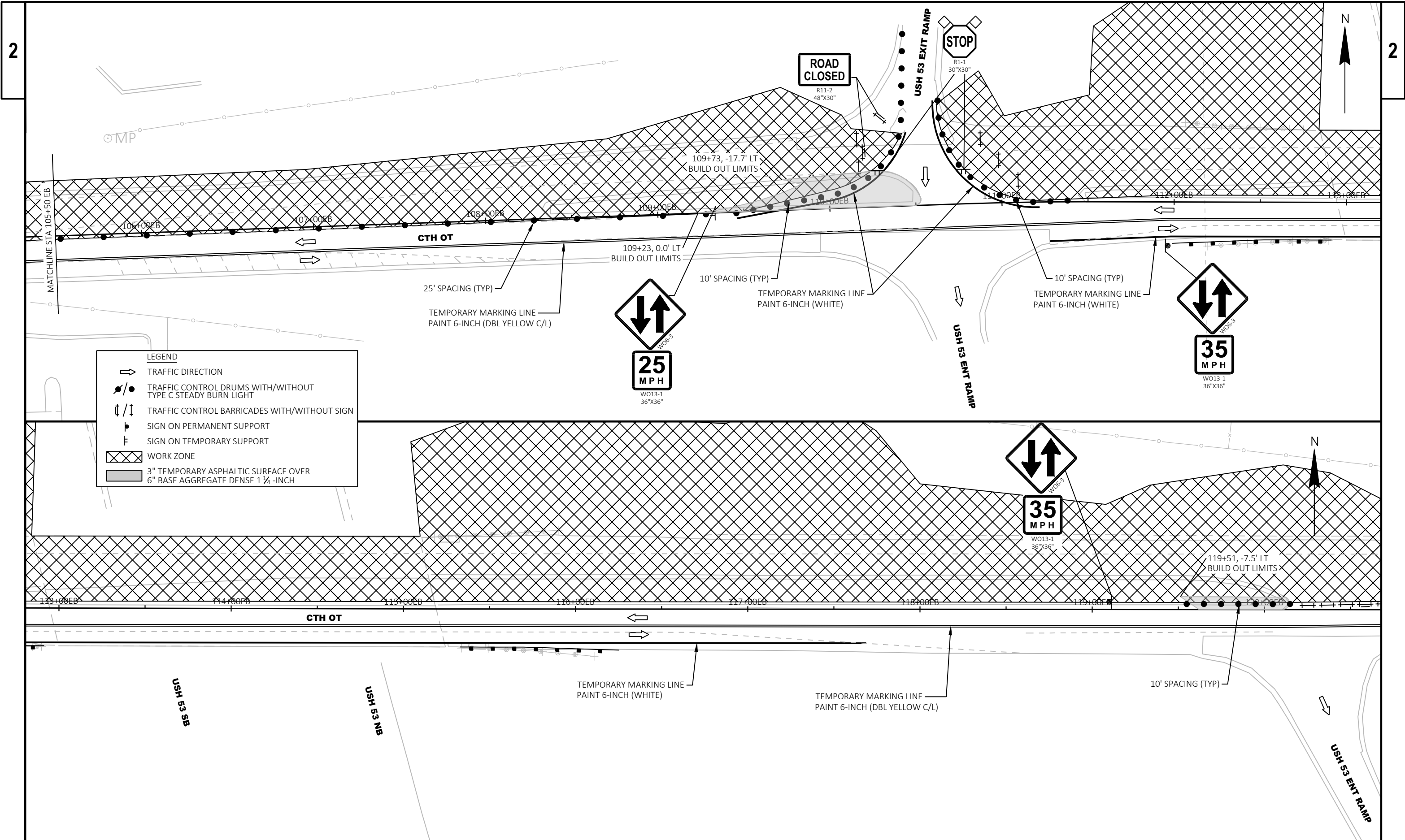
ROAD
CLOSED
R11-2
48"X30"

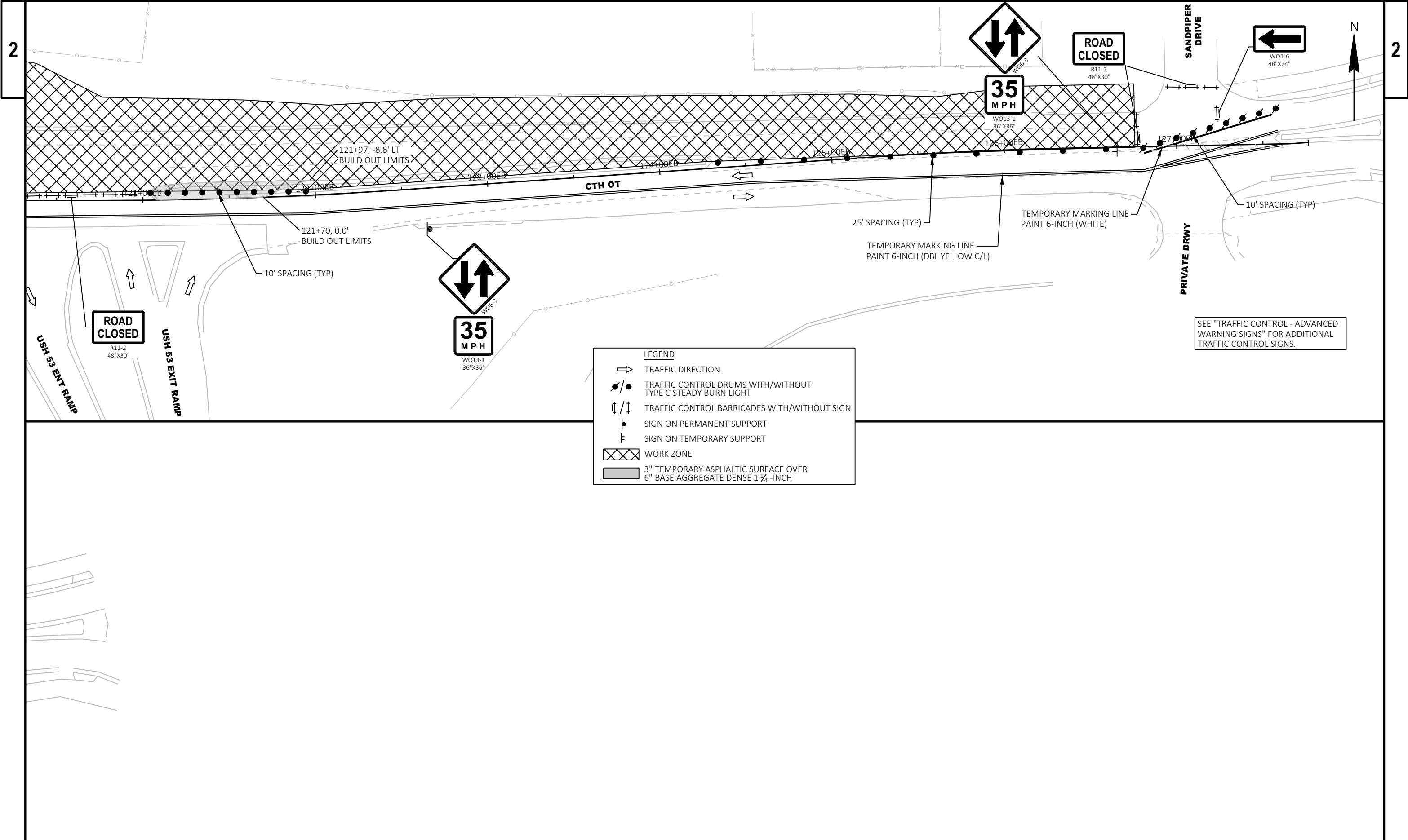
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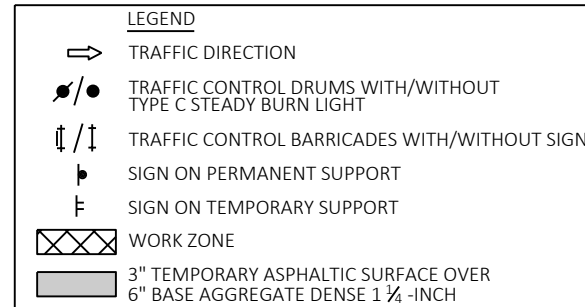
10' SPACING (TYP)

ROAD
CLOSED
R11-2
48"X30"5000+53, 0.0'
BUILD OUT LIMITS

CORPORATE DR





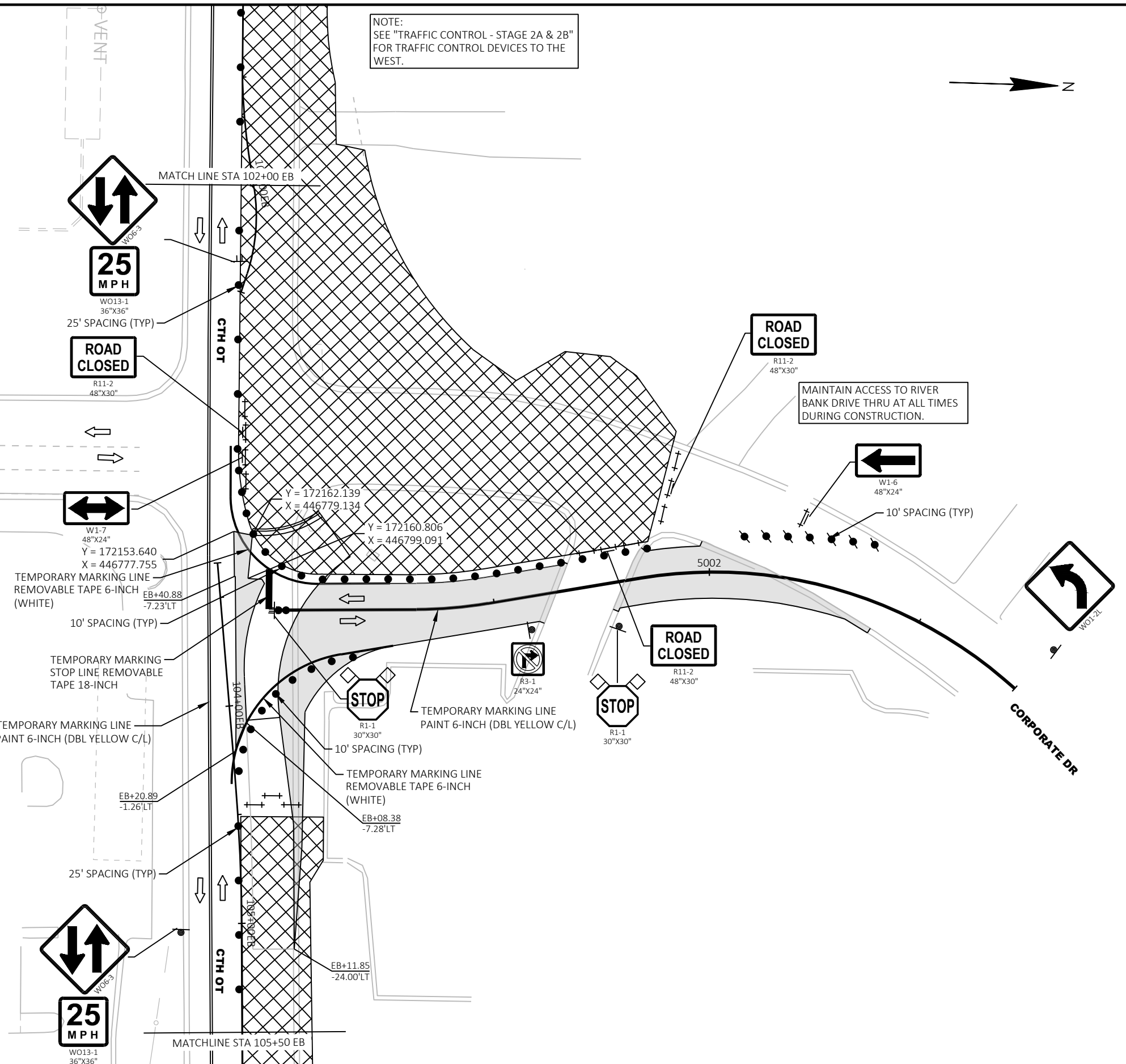


NOTE:
SEE "TRAFFIC CONTROL - STAGE 2A & 2B"
FOR TRAFFIC CONTROL DEVICES TO THE
WEST.



COMMERCE RD

SEE "TRAFFIC CONTROL - ADVANCED
WARNING SIGNS" FOR ADDITIONAL
TRAFFIC CONTROL SIGNS.



PROJECT NO: 5991-08-11

HWY: CTH OT

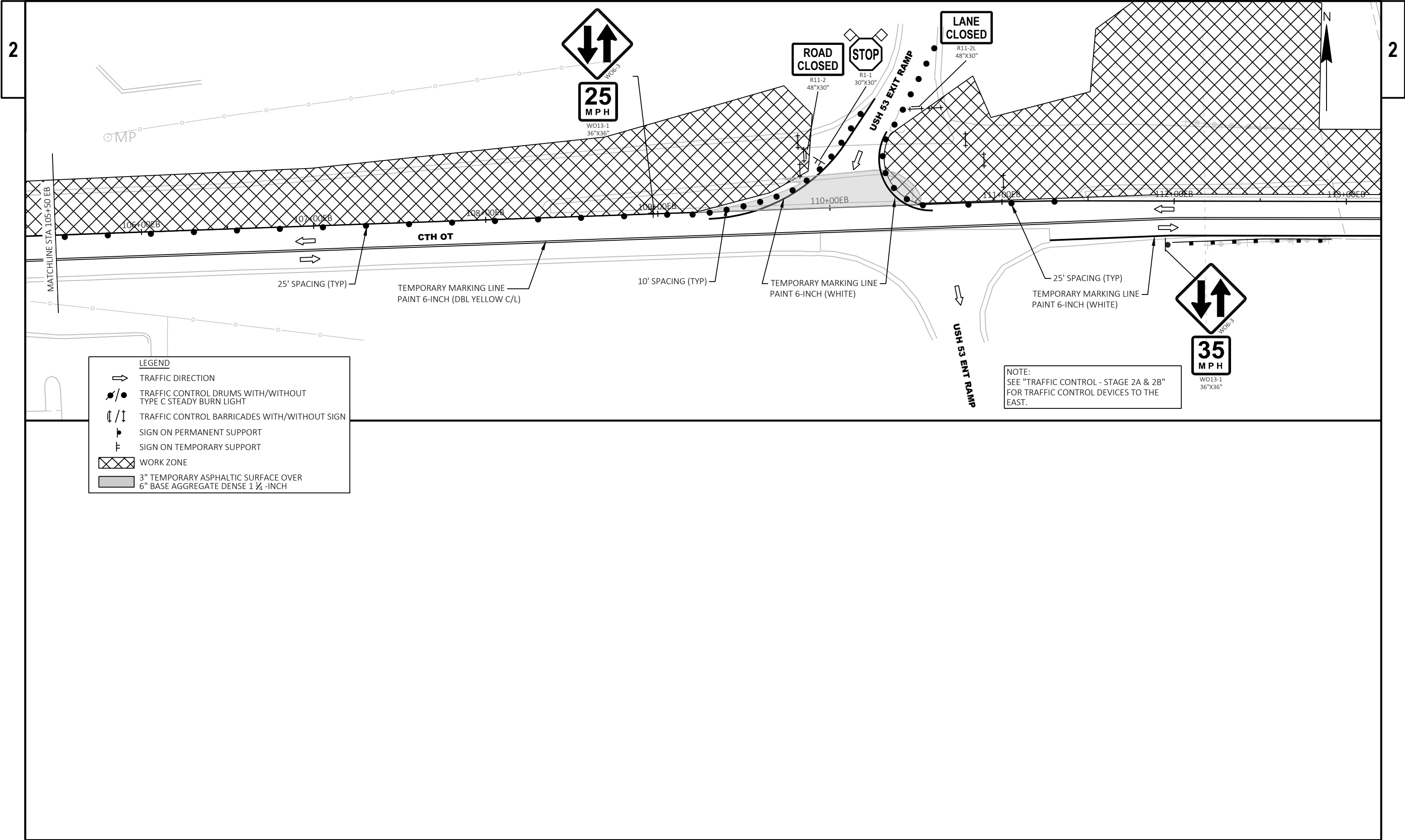
COUNTY: LA CROSSE

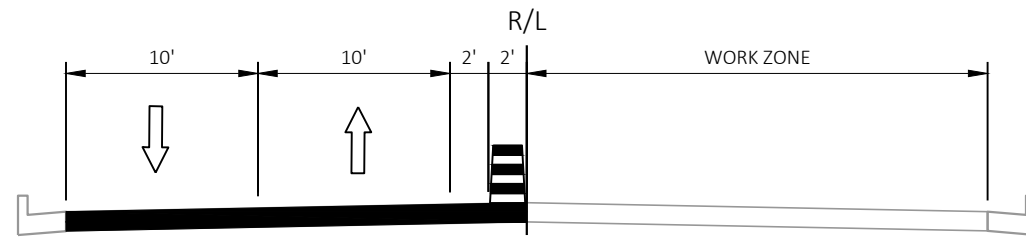
TRAFFIC CONTROL - STAGE 2B

SHEET

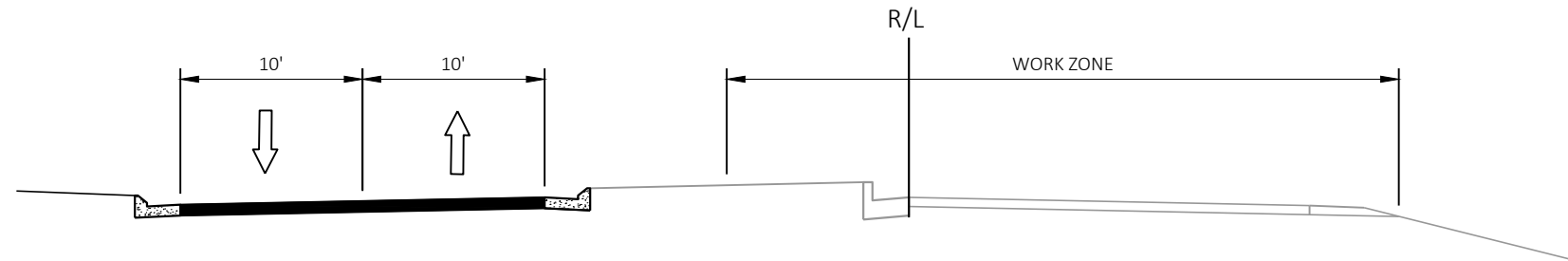
47

E

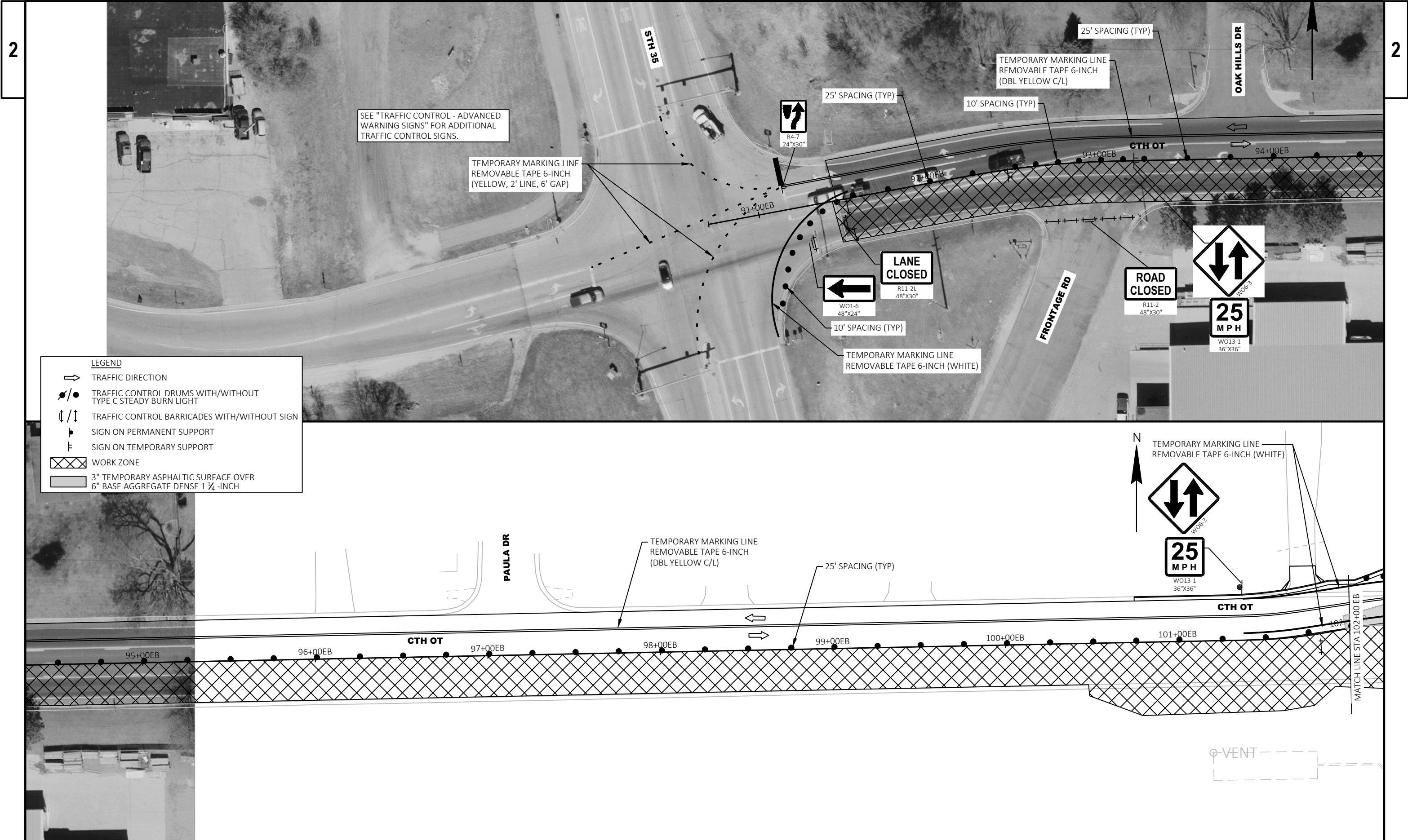


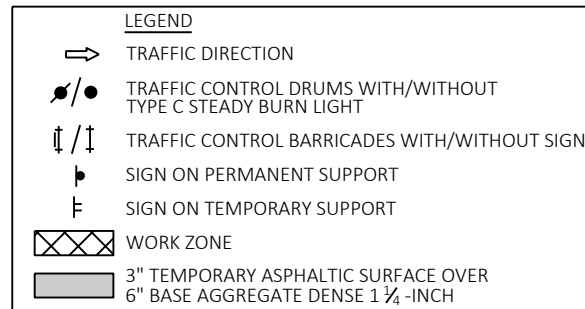


TYPICAL SECTION - STAGE 3A/3B
STH 35 TO COMMERCE RD/CORPORATE DR



TYPICAL SECTION - STAGE 3A/3B
COMMERCE RD/CORPORATE DR TO CTH SN





SEE "TRAFFIC CONTROL - ADVANCED WARNING SIGNS" FOR ADDITIONAL TRAFFIC CONTROL SIGNS.

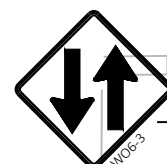
COMMERCE RD

TEMPORARY MARKING LINE PAINT 6-INCH (DBL YELLOW C/L)



TEMPORARY MARKING STOP LINE PAINT 18-INCH 10' SPACING (TYP)

10' SPACING (TYP)



25' SPACING (TYP)

MATCH LINE STA 102+00 EB

25' SPACING (TYP)

10' SPACING (TYP)

15'

CTH OT

MATCHLINE STA 105+50 EB

ROAD CLOSED

R11-2 48"X30"

10' SPACING (TYP)

TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)

TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (DBL YELLOW C/L)

TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (WHITE)

10' SPACING (TYP)

TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH



TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH (YELLOW)

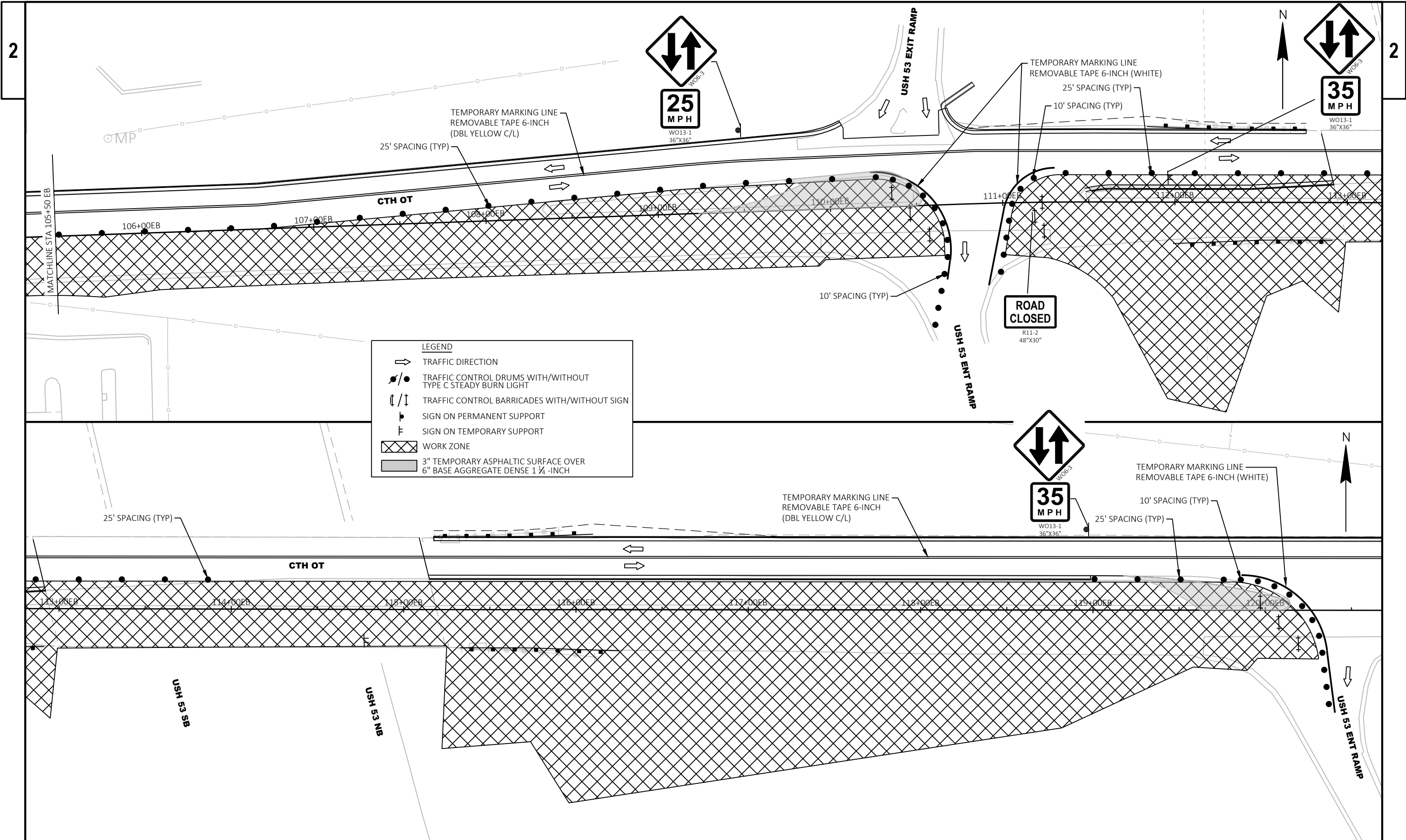


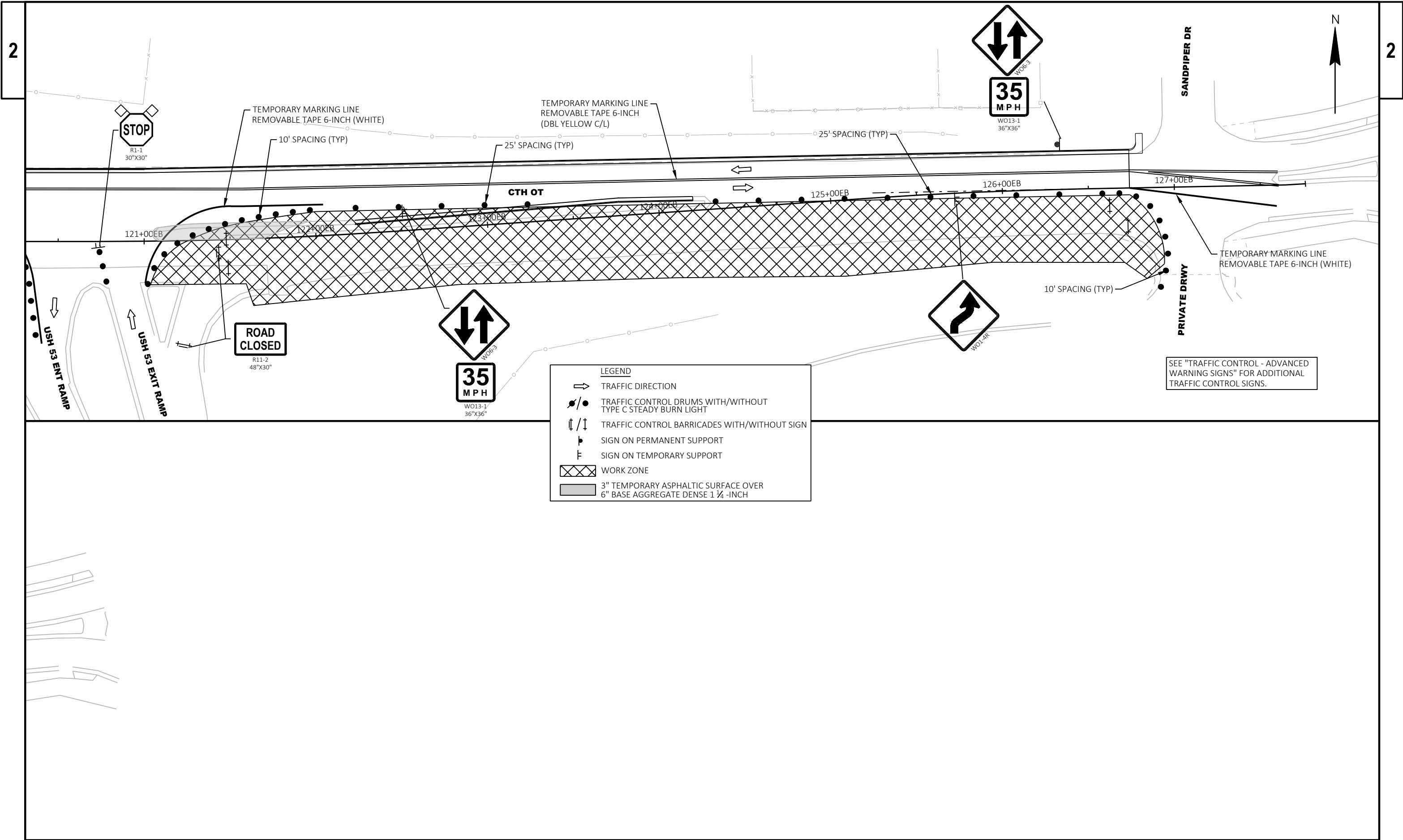
10' SPACING (TYP)

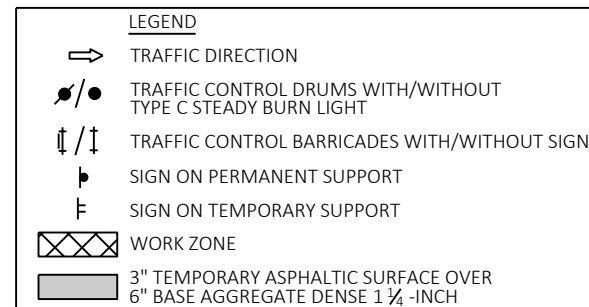
10' SPACING (TYP)

CORPORATE DR









NOTE:
SEE "TRAFFIC CONTROL - STAGE 3A, 3B & 3C"
FOR TRAFFIC CONTROL DEVICES TO THE WEST.



COMMERCE RD

CORPORATE DR

CTH OT

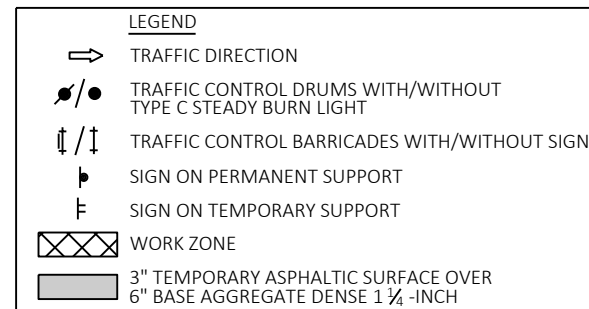
CTH OT

MATCH LINE STA 102+00 EB

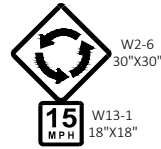
MATCHLINE STA 105+50 EB

SEE "TRAFFIC CONTROL - ADVANCED
WARNING SIGNS" FOR ADDITIONAL
TRAFFIC CONTROL SIGNS.

NOTE:
SEE "TRAFFIC CONTROL - STAGE 3A OR 3C" FOR
TRAFFIC CONTROL DEVICES TO THE EAST.



INSTALL TEMPORARY SIGN AT STA 99+50 EB



NOTE:
SEE "TRAFFIC CONTROL - STAGE 3A, 3B & 3C"
FOR TRAFFIC CONTROL DEVICES TO THE WEST.



COMMERCE RD

CORPORATE DR

CTH OT

CTH OT

MATCH LINE STA 102+00 EB

MATCHLINE STA 105+50 EB

SEE "TRAFFIC CONTROL - ADVANCED WARNING SIGNS" FOR ADDITIONAL TRAFFIC CONTROL SIGNS.

PROJECT NO: 5991-08-11

HWY: CTH OT

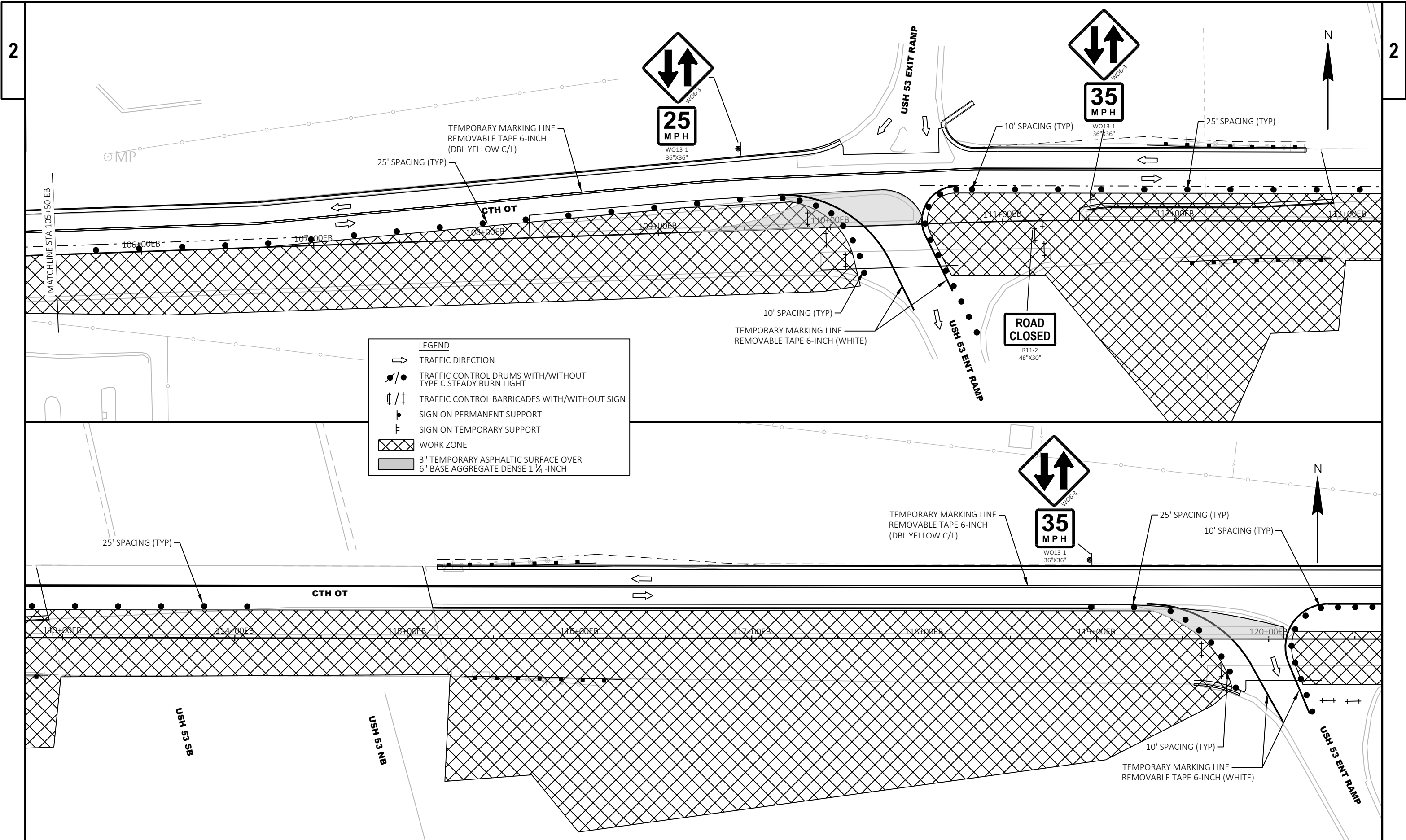
COUNTY: LA CROSSE

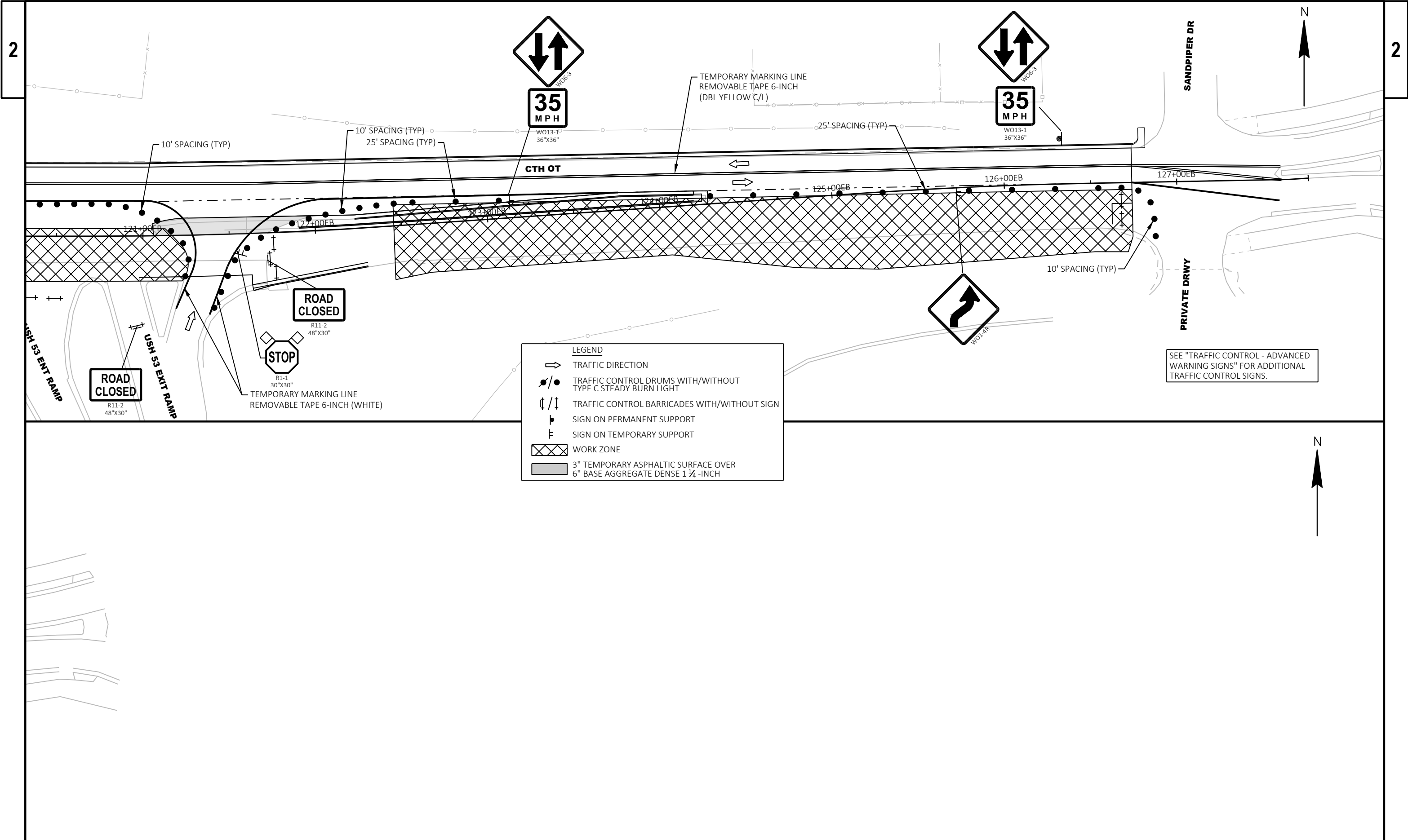
TRAFFIC CONTROL - STAGE 3C

SHEET

55

E



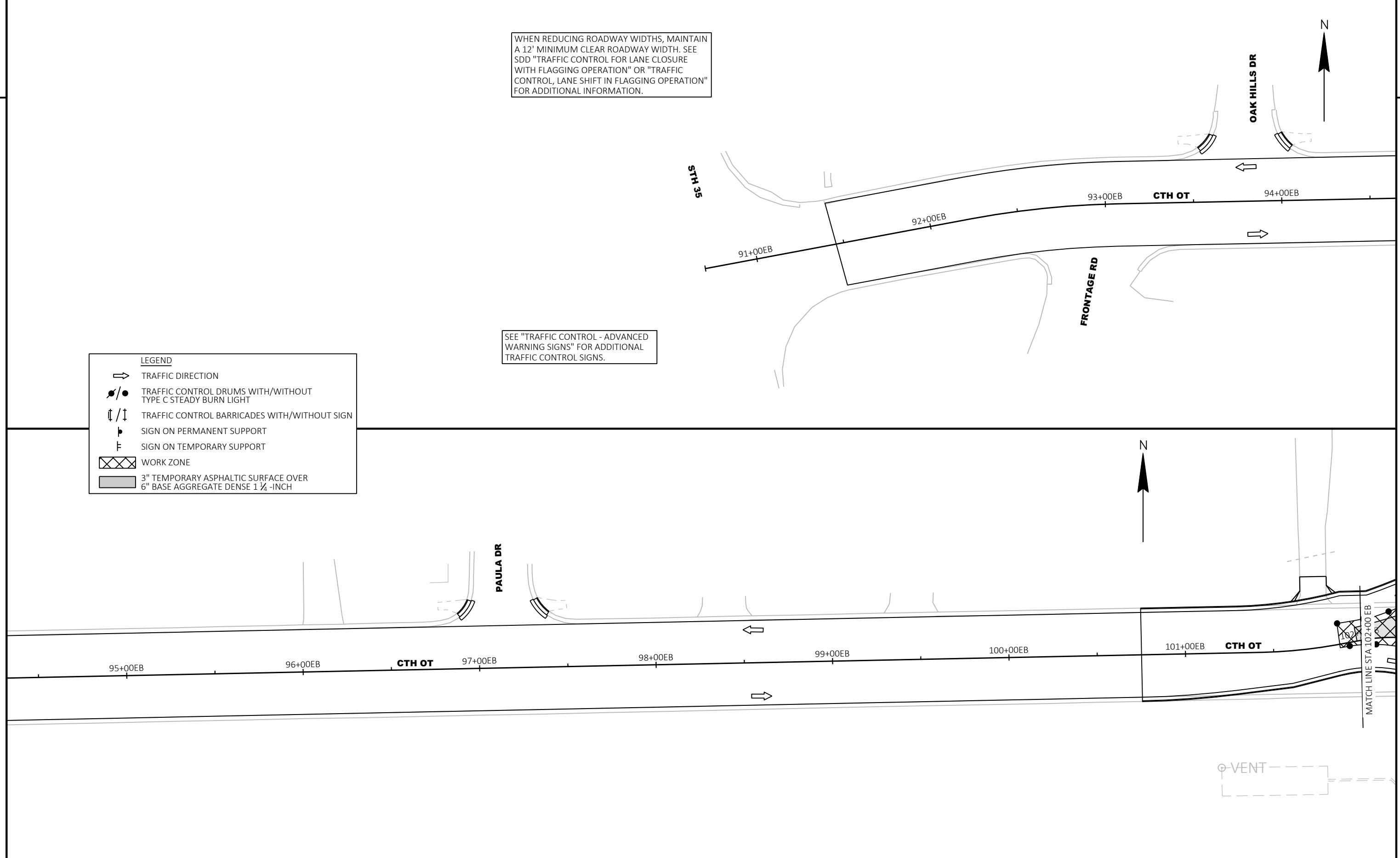
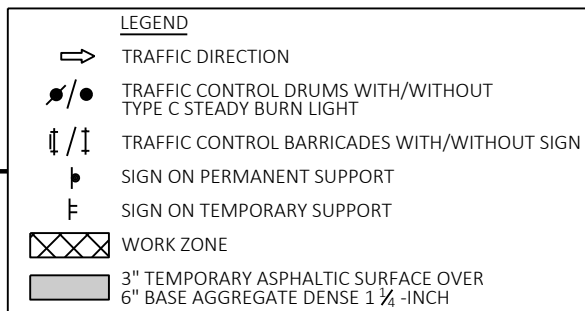


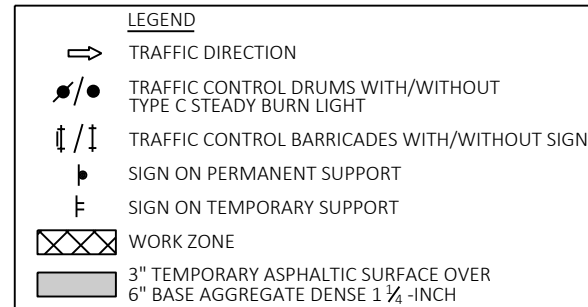
2

2 |

WHEN REDUCING ROADWAY WIDTHS, MAINTAIN A 12' MINIMUM CLEAR ROADWAY WIDTH. SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION" OR "TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION" FOR ADDITIONAL INFORMATION.

SEE "TRAFFIC CONTROL - ADVANCED WARNING SIGNS" FOR ADDITIONAL TRAFFIC CONTROL SIGNS.





WHEN REDUCING ROADWAY WIDTHS, MAINTAIN A 12' MINIMUM CLEAR ROADWAY WIDTH. SEE SDD "TRAFFIC CONTROL, FLAGGING OPERATION, ROUNDABOUT" OR "TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION" FOR ADDITIONAL INFORMATION.

SEE "TRAFFIC CONTROL - ADVANCED WARNING SIGNS" FOR ADDITIONAL TRAFFIC CONTROL SIGNS.

COMMERCE RD

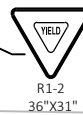
CORPORATE DR

MATCH LINE STA 102+00 EB

15' SPACING (TYP)

15' SPACING (TYP)

15' SPACING (TYP)



PLACE SIGN W/TEMP SUPPORT ON THE SIDE WHERE WORK IS NOT TAKING PLACE.

15' SPACING (TYP)

MATCHLINE STA 105+50 EB

PROJECT NO: 5991-08-11

HWY: CTH OT

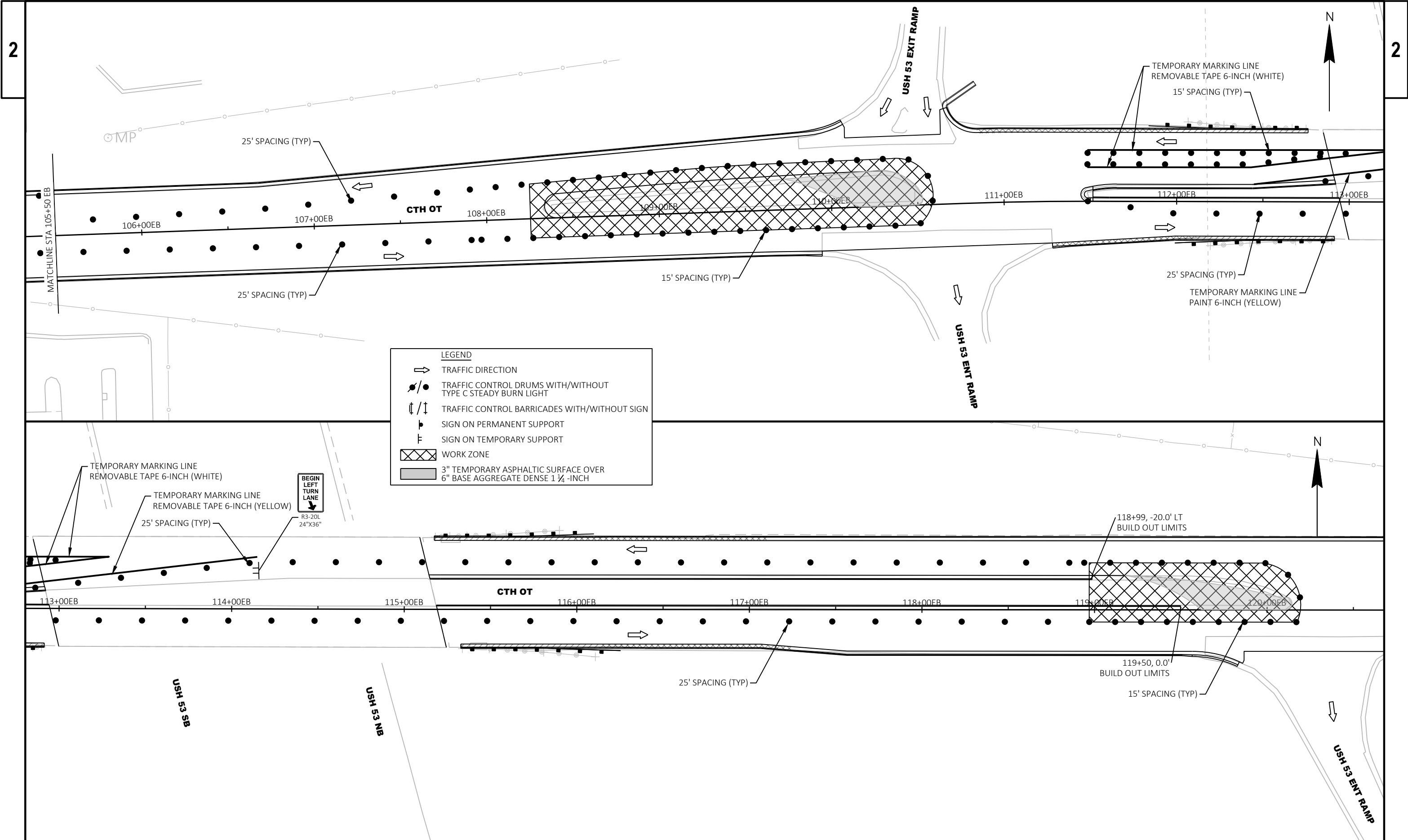
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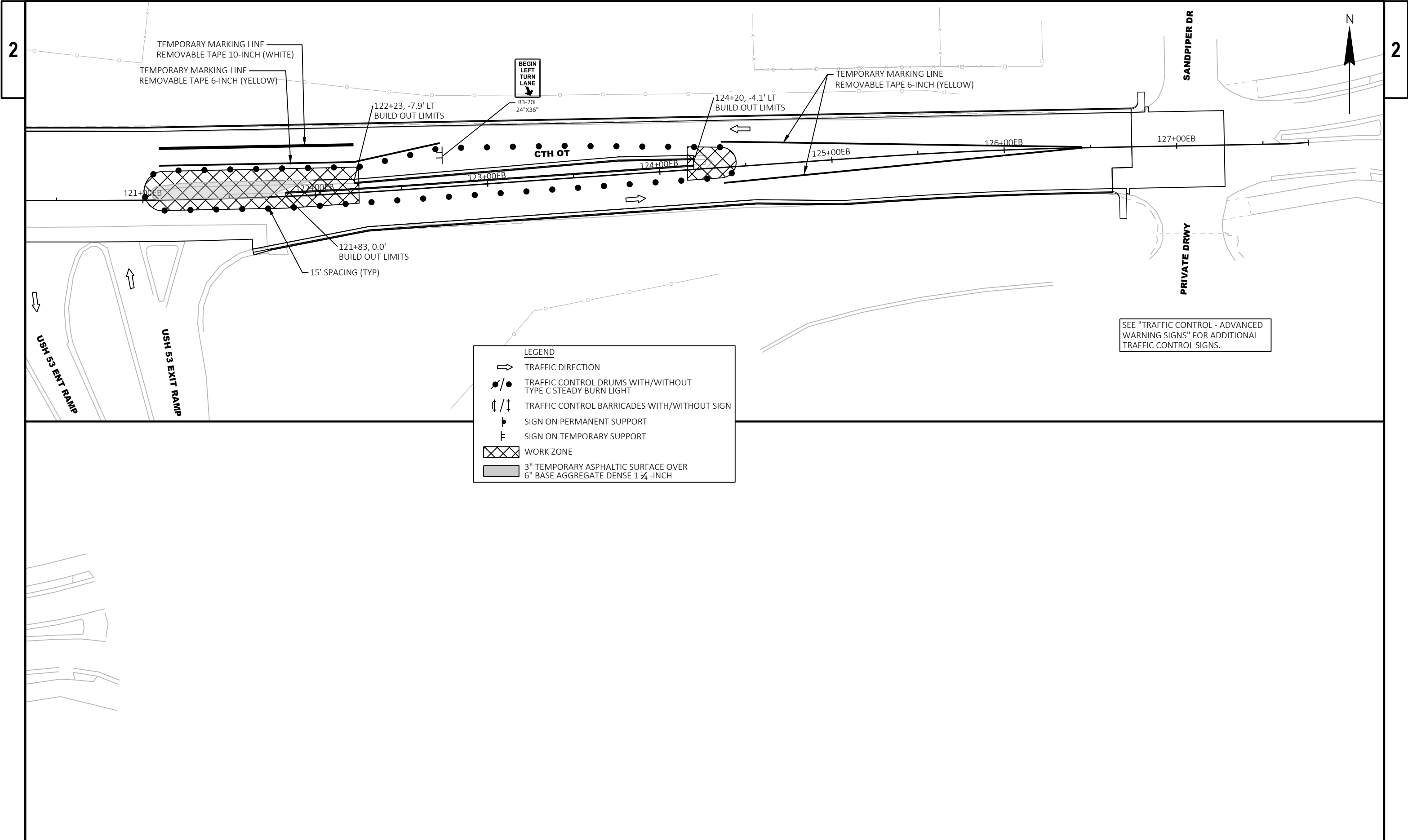
TRAFFIC CONTROL - STAGE 4

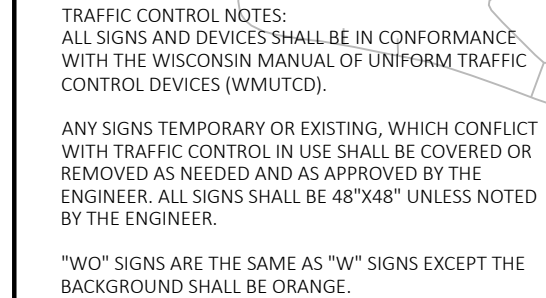
SHEET

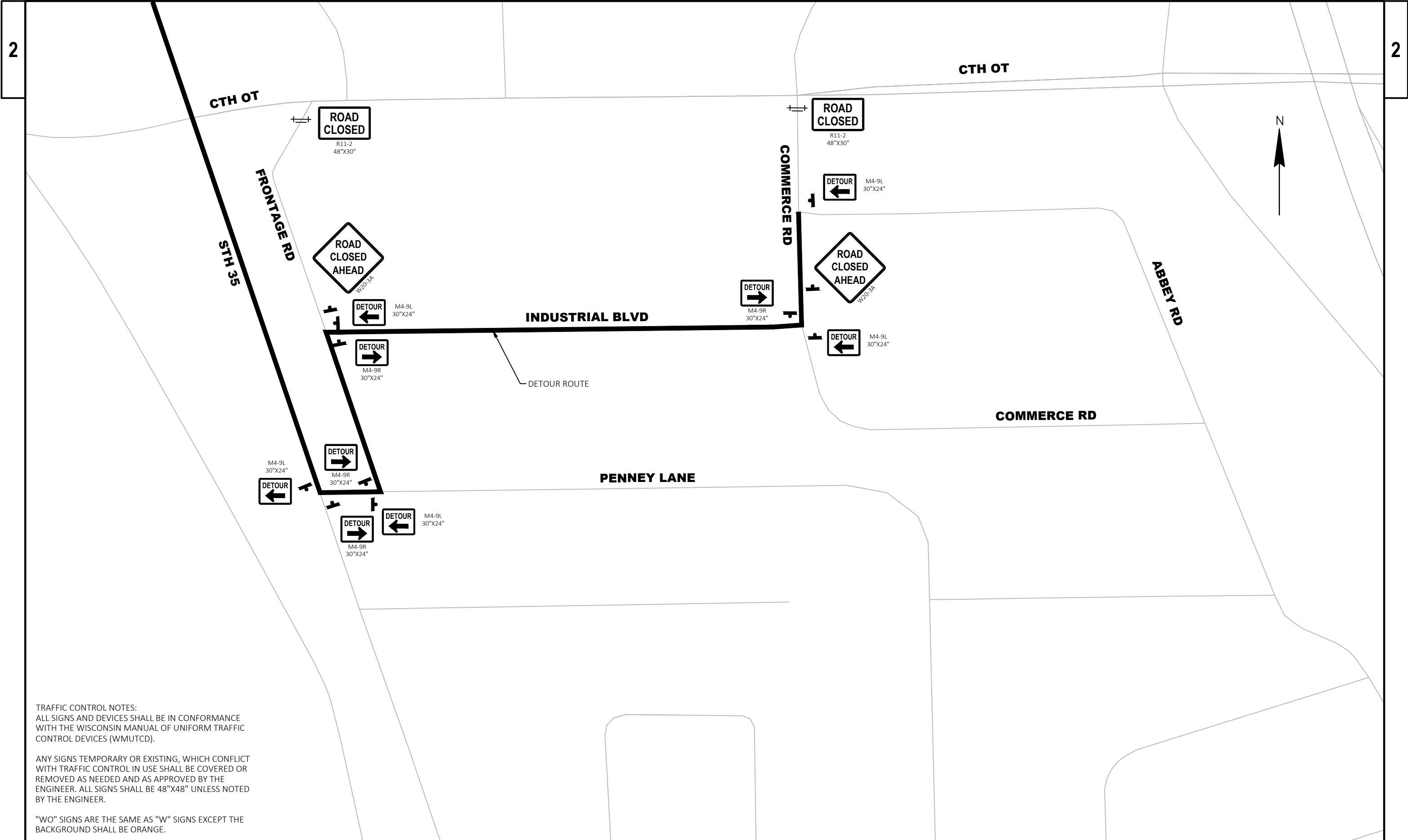
59

E





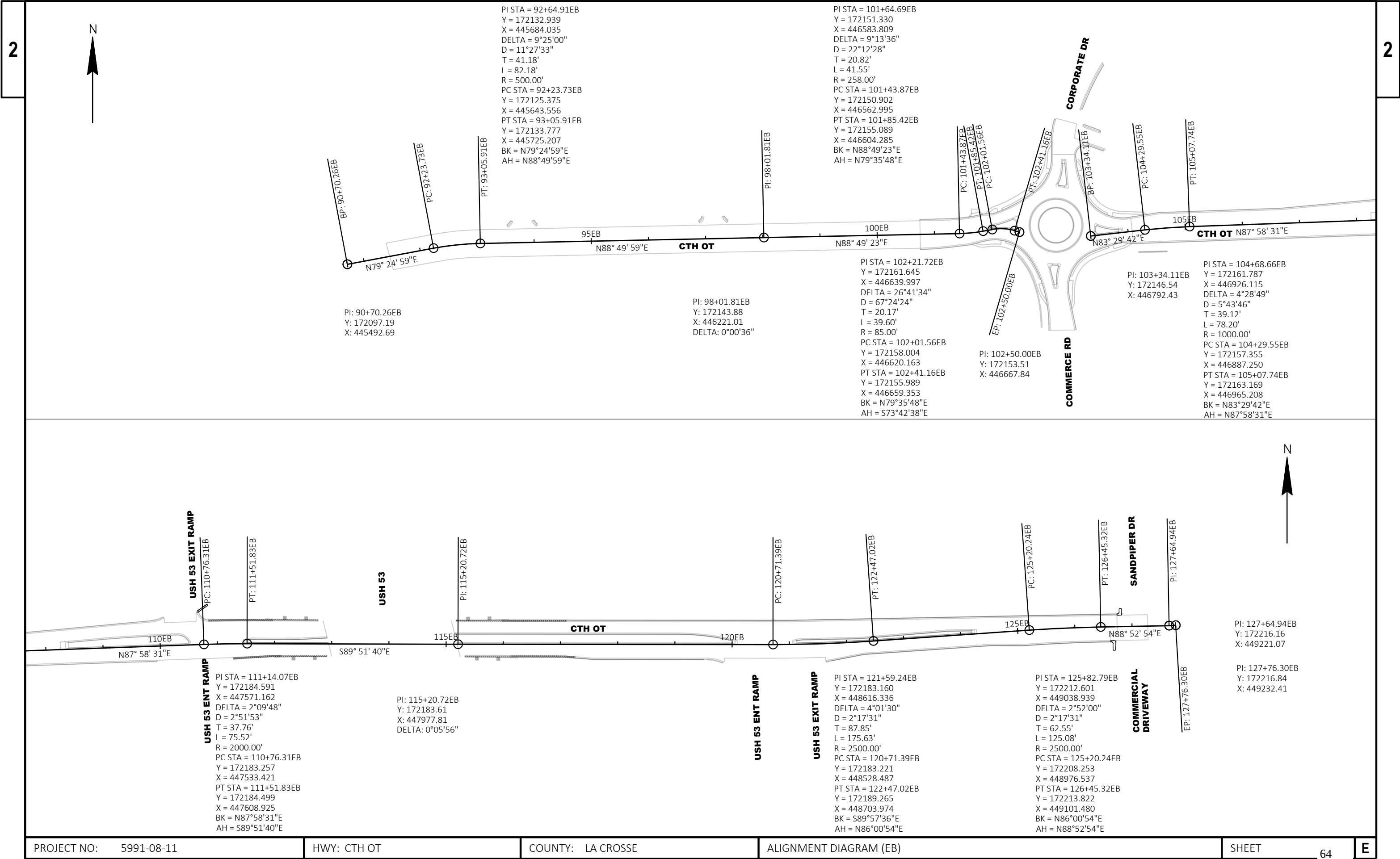


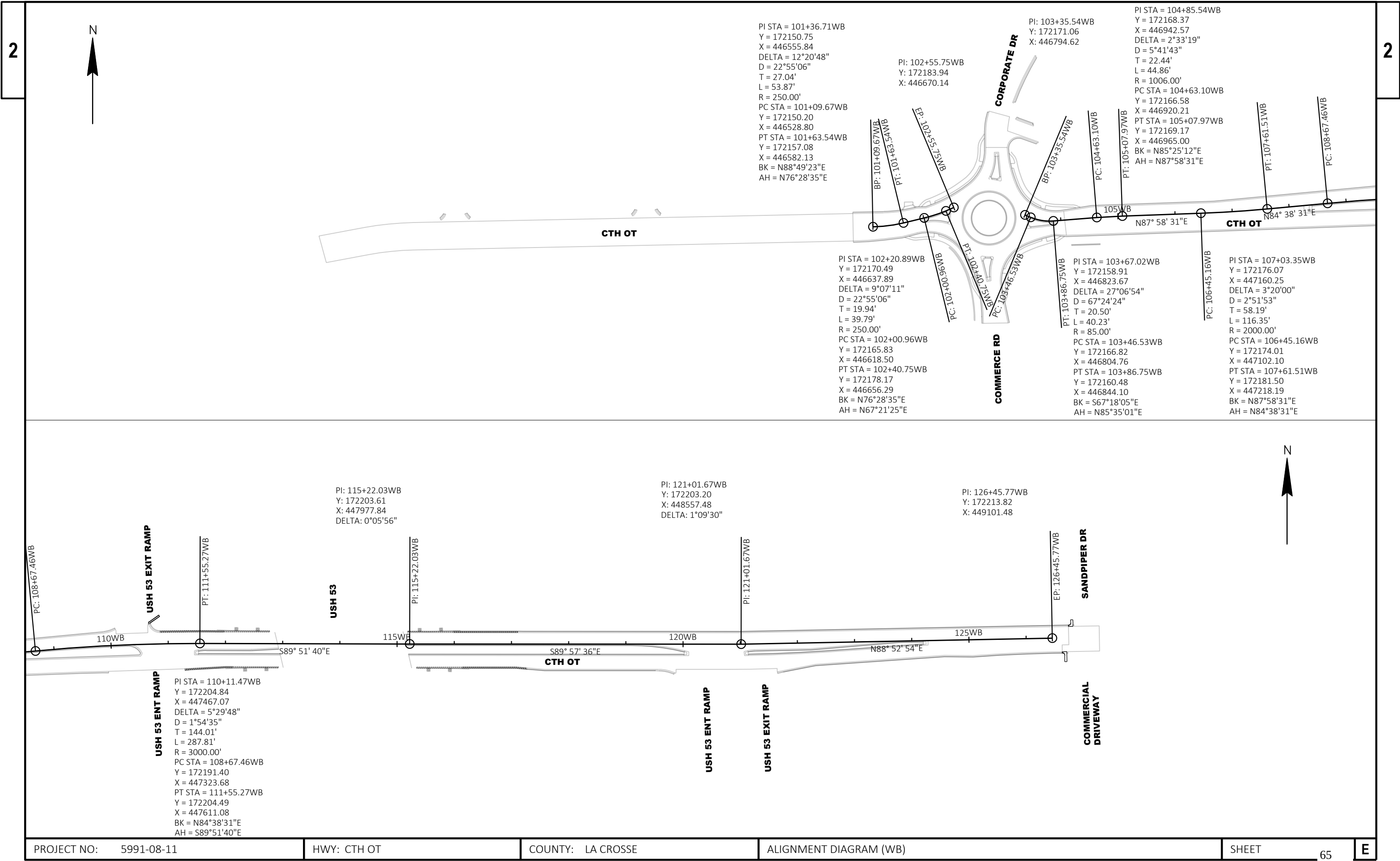


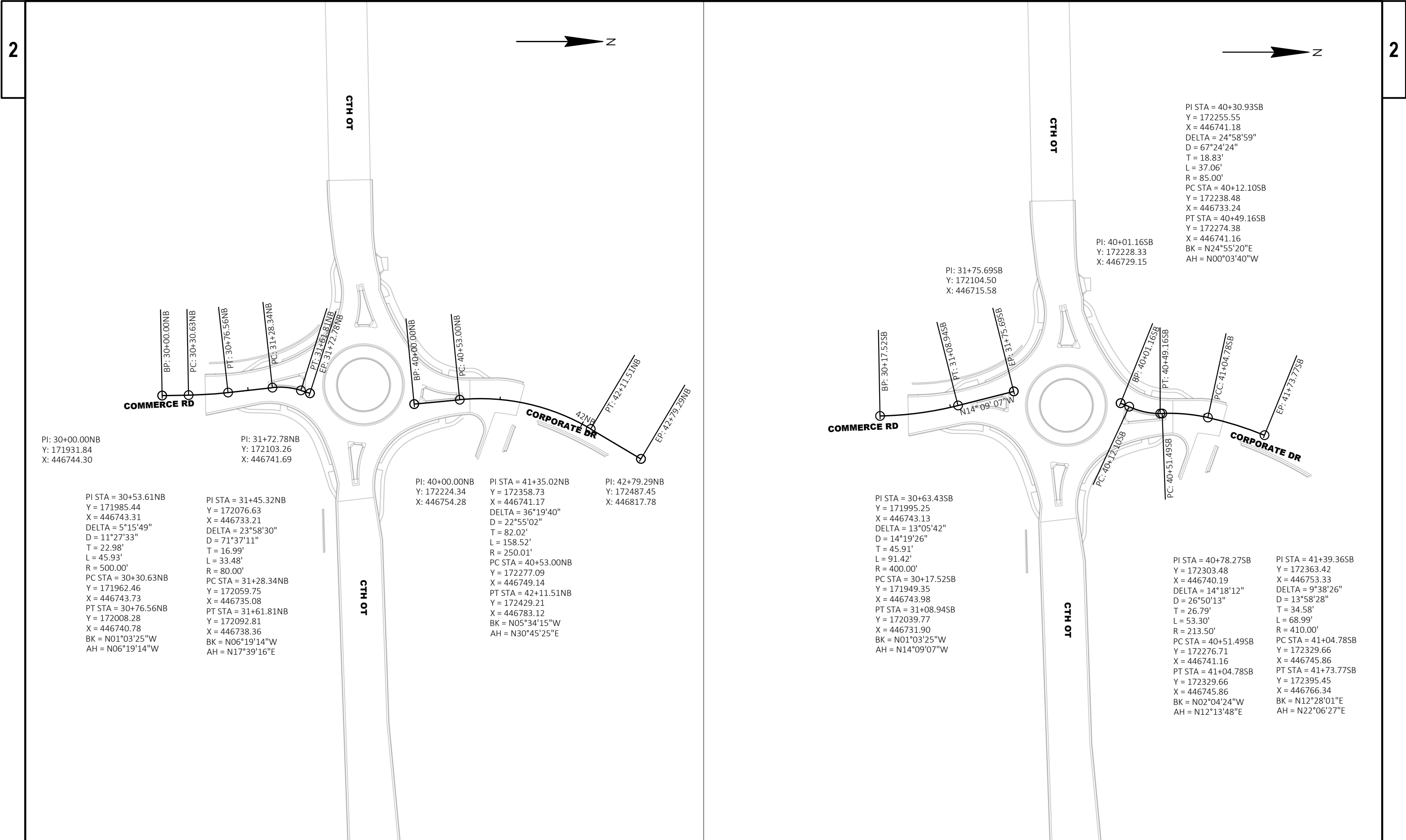
TRAFFIC CONTROL NOTES:
ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD).

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL IN USE SHALL BE COVERED OR REMOVED AS NEEDED AND AS APPROVED BY THE ENGINEER. ALL SIGNS SHALL BE 48"X48" UNLESS NOTED BY THE ENGINEER.

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

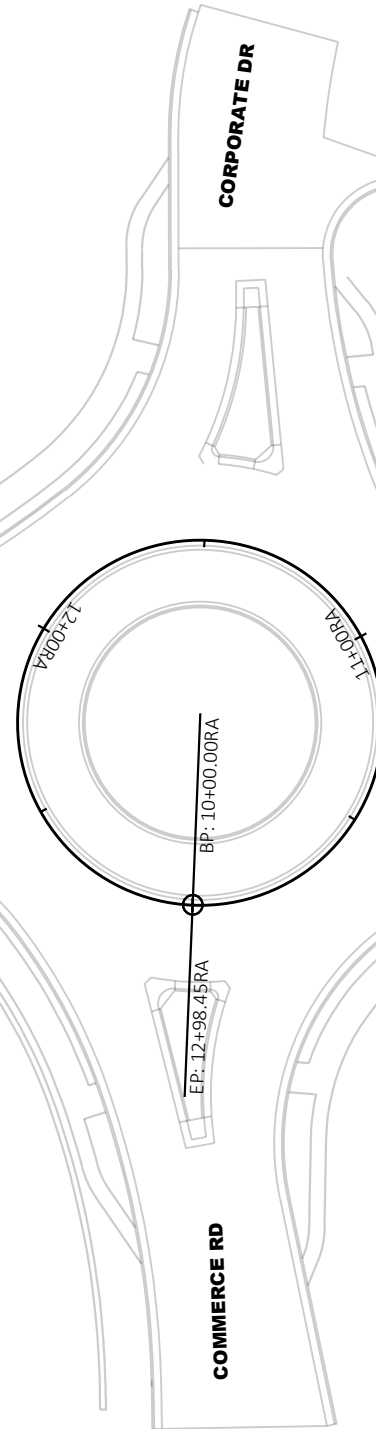








PI STA = 10+00.00RA
Y = 172118.01
X = 446729.82
DELTA = 359°59'45"
D = 120°37'22"
T = 0.00'
L = 298.45'
R = 47.50'
PC STA = 10+00.00RA
Y = 172118.01
X = 446729.82
PT STA = 12+98.45RA
Y = 172118.01
X = 446729.82



PI STA = 400+29.91NW
Y = 172175.21
X = 446577.64
DELTA = 13°51'47"
D = 23°17'27"
T = 29.91'
L = 59.52'
R = 246.00'
PC STA = 400+00.00NW
Y = 172174.59
X = 446547.74
PT STA = 400+59.52NW
Y = 172182.97
X = 446606.52
BK = N88°49'23"E
AH = N74°57'36"E

PI STA = 401+18.48NW
Y = 172197.18
X = 446663.23
DELTA = 19°53'25"
D = 22°55'06"
T = 43.83'
L = 86.79'
R = 250.00'
PC STA = 400+74.65NW
Y = 172183.34
X = 446621.64
PT STA = 401+61.43NW
Y = 172224.35
X = 446697.63
BK = N71°35'22"E
AH = N51°41'58"E

PI STA = 401+97.82NW
Y = 172246.90
X = 446726.19
DELTA = 51°45'37"
D = 76°23'40"
T = 36.39'
L = 67.75'
R = 75.00'
PC STA = 401+61.43NW
Y = 172224.35
X = 446697.63
PT STA = 402+29.19NW
Y = 172283.29
X = 446726.15
BK = N51°41'58"E
AH = N00°03'40"W

PI STA = 402+80.84NW
Y = 172334.94
X = 446726.09
DELTA = 18°40'53"
D = 57°17'45"
T = 16.45'
L = 32.61'
R = 100.00'
PC STA = 402+64.40NW
Y = 172318.50
X = 446726.11
PT STA = 402+97.00NW
Y = 172350.53
X = 446731.35
BK = N00°03'40"W
AH = N18°37'14"E

PI STA = 502+73.06NE
Y = 172314.69
X = 446761.66
DELTA = 16°20'28"
D = 28°38'52"
T = 28.72'
L = 57.04'
R = 200.00'
PC STA = 502+44.35NE
Y = 172286.05
X = 446763.80
PT STA = 503+01.39NE
Y = 172342.77
X = 446767.67
BK = N04°16'30"W
AH = N12°03'57"E

PI STA = 502+11.10NE
Y = 172252.26
X = 446766.33
DELTA = 19°13'51"
D = 28°38'52"
T = 33.88'
L = 67.13'
R = 200.00'
PC STA = 501+77.22NE
Y = 172221.19
X = 446779.84
PT STA = 502+44.35NE
Y = 172286.05
X = 446763.80
BK = N23°30'21"W
AH = N04°16'30"W

PI STA = 501+36.42NE
Y = 172167.80
X = 446803.06
DELTA = 75°38'37"
D = 76°23'40"
T = 58.22'
L = 99.02'
R = 75.00'
PC STA = 500+78.20NE
Y = 172177.06
X = 446860.55
PT STA = 501+77.22NE
Y = 172221.19
X = 446779.84
BK = S80°51'01"W
AH = N23°30'21"W

PI: 500+26.43NE
Y: 172185.29
X: 446911.65
DELTA: 7°07'30"

PI: 500+00.00NE
Y: 172186.22
X: 446938.07

PI: 498+98.50NE
Y: 172189.81
X: 447039.51

PI: 332+82.99SE
Y: 172135.69
X: 446867.22
DELTA: 7°07'30"

PI: 334+57.09SE
Y: 172141.84
X: 447041.21

PI: 399+36.76NW
Y: 172171.57
X: 446484.55

CTH OT

CTH OT

COMMERCE RD

CORPORATE DR

PI STA = 233+63.04SW
Y = 172126.04
X = 446521.43
DELTA = 5°55'36"
D = 11°06'14"
T = 26.71'
L = 53.37'
R = 516.00'
PC STA = 233+36.33SW
Y = 172129.35
X = 446547.94
PT STA = 233+89.70SW
Y = 172125.49
X = 446494.73
BK = S82°53'47"W
AH = S88°49'23"W

PI STA = 232+38.98SW
Y = 172152.53
X = 446654.09
DELTA = 66°51'08"
D = 76°23'39"
T = 49.50'
L = 87.51'
R = 75.00'
PC STA = 231+89.48SW
Y = 172113.43
X = 446684.45
PT STA = 232+76.99SW
Y = 172139.98
X = 446606.20
BK = N37°49'55"W
AH = S75°18'56"W

PI STA = 231+65.69SW
Y = 172094.32
X = 446699.29
DELTA = 18°19'42"
D = 38°11'50"
T = 24.20'
L = 47.98'
R = 150.00'
PC STA = 231+41.49SW
Y = 172071.51
X = 446707.37
PT STA = 231+89.48SW
Y = 172113.43
X = 446684.45
BK = N19°30'13"W
AH = N37°49'55"W

PI STA = 231+01.60SW
Y = 172033.24
X = 446720.92
DELTA = 18°26'48"
D = 22°55'06"
T = 40.60'
L = 80.49'
R = 250.00'
PC STA = 230+61.01SW
Y = 171992.65
X = 446721.67
PT STA = 231+41.49SW
Y = 172071.51
X = 446707.37
BK = N01°03'25"W
AH = N19°30'13"W

PI: 230+50.00SW
Y: 171982.65
X: 446721.88

PI: 330+50.00SE
Y: 171982.44
X: 446764.87

PI STA = 331+66.67SE
Y = 172096.68
X = 446741.19
DELTA = 77°25'24"
D = 81°51'04"
T = 56.10'
L = 94.59'
R = 70.00'
PC STA = 331+10.57SE
Y = 172041.75
X = 446752.57
PT STA = 332+05.16SE
Y = 172119.76
X = 446792.32
BK = N11°42'38"W
AH = N65°42'45"E

PI STA = 332+34.57SE
Y = 172131.86
X = 446819.14
DELTA = 13°25'17"
D = 22°55'06"
T = 29.42'
L = 58.56'
R = 250.00'
PC STA = 332+05.16SE
Y = 172119.76
X = 446792.32
PT STA = 332+63.72SE
Y = 172137.40
X = 446848.02
BK = N65°42'45"E
AH = N79°08'02"E

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Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	13.000	13.000
0004	201.0205	Grubbing	STA	13.000	13.000
0006	204.0100	Removing Concrete Pavement	SY	424.000	424.000
0008	204.0110	Removing Asphaltic Surface	SY	694.000	694.000
0010	204.0120	Removing Asphaltic Surface Milling	SY	278.000	278.000
0012	204.0150	Removing Curb & Gutter	LF	5,061.000	5,061.000
0014	204.0155	Removing Concrete Sidewalk	SY	36.000	36.000
0016	204.0165	Removing Guardrail	LF	290.000	290.000
0018	204.0190	Removing Surface Drains	EACH	2.000	2.000
0020	204.0210	Removing Manholes	EACH	6.000	6.000
0022	204.0220	Removing Inlets	EACH	15.000	15.000
0024	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	507.000	507.000
0026	204.0245	Removing Storm Sewer (size) 02. 15-Inch	LF	39.000	39.000
0028	204.0245	Removing Storm Sewer (size) 03. 18-Inch	LF	388.000	388.000
0030	204.0245	Removing Storm Sewer (size) 04. 24-Inch	LF	250.000	250.000
0032	205.0100	Excavation Common	CY	10,384.000	10,384.000
0034	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 5991-08-11	EACH	1.000	1.000
0036	213.0100	Finishing Roadway (project) 01. 5991-08-11	EACH	1.000	1.000
0038	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	11,580.000	11,580.000
0040	405.0100	Coloring Concrete WisDOT Red	CY	121.000	121.000
0042	415.0075	Concrete Pavement 7 1/2-Inch	SY	2,775.000	2,775.000
0044	415.2010	Concrete Truck Apron 12-inch	SY	361.000	361.000
0046	416.0610	Drilled Tie Bars	EACH	263.000	263.000
0048	416.0620	Drilled Dowel Bars	EACH	105.000	105.000
0050	455.0605	Tack Coat	GAL	1,641.000	1,641.000
0052	460.2000	Incentive Density HMA Pavement	DOL	3,650.000	3,650.000
0054	460.6223	HMA Pavement 3 MT 58-28 S	TON	2,042.000	2,042.000
0056	460.6224	HMA Pavement 4 MT 58-28 S	TON	3,659.000	3,659.000
0058	465.0105	Asphaltic Surface	TON	9.000	9.000
0060	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	2.000	2.000
0062	465.0125	Asphaltic Surface Temporary	TON	382.000	382.000
0064	465.0315	Asphaltic Flumes	SY	8.000	8.000
0066	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	2.000	2.000
0068	520.8000	Concrete Collars for Pipe	EACH	3.000	3.000
0070	522.1048	Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	EACH	2.000	2.000
0072	601.0405	Concrete Curb & Gutter 18-Inch Type A	LF	242.000	242.000
0074	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	1,347.000	1,347.000
0076	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	2,295.000	2,295.000
0078	601.0415	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J	LF	3,565.000	3,565.000
0080	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	73.000	73.000
0082	601.0581	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type R	LF	289.000	289.000
0084	601.0584	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type TBT	LF	320.000	320.000
0086	602.0405	Concrete Sidewalk 4-Inch	SF	3,569.000	3,569.000
0088	602.0810	Concrete Driveway 6-Inch	SY	12.000	12.000
0090	602.3010	Concrete Surface Drains	CY	0.700	0.700
0092	606.0100	Riprap Light	CY	6.000	6.000
0094	606.0300	Riprap Heavy	CY	11.000	11.000
0096	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	54.000	54.000
0098	608.0348	Storm Sewer Pipe Reinforced Concrete Class III 48-Inch	LF	45.000	45.000

Estimate Of Quantities

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Line	Item	Item Description	Unit	Total	Qty
0100	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	44.000	44.000
0102	608.0418	Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	LF	91.000	91.000
0104	608.0424	Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	LF	164.000	164.000
0106	608.3012	Storm Sewer Pipe Class III-A 12-Inch	LF	419.000	419.000
0108	608.3015	Storm Sewer Pipe Class III-A 15-Inch	LF	66.000	66.000
0110	608.3018	Storm Sewer Pipe Class III-A 18-Inch	LF	411.000	411.000
0112	608.3024	Storm Sewer Pipe Class III-A 24-Inch	LF	255.000	255.000
0114	611.0430	Reconstructing Inlets	EACH	5.000	5.000
0116	611.0530	Manhole Covers Type J	EACH	2.000	2.000
0118	611.0610	Inlet Covers Type BW	EACH	2.000	2.000
0120	611.0624	Inlet Covers Type H	EACH	18.000	18.000
0122	611.0627	Inlet Covers Type HM	EACH	2.000	2.000
0124	611.0630	Inlet Covers Type HM-GJ	EACH	7.000	7.000
0126	611.0652	Inlet Covers Type T	EACH	2.000	2.000
0128	611.2004	Manholes 4-FT Diameter	EACH	1.000	1.000
0130	611.2005	Manholes 5-FT Diameter	EACH	2.000	2.000
0132	611.2007	Manholes 7-FT Diameter	EACH	1.000	1.000
0134	611.3004	Inlets 4-FT Diameter	EACH	16.000	16.000
0136	611.3225	Inlets 2x2.5-FT	EACH	1.000	1.000
0138	611.3230	Inlets 2x3-FT	EACH	12.000	12.000
0140	611.8120.S	Cover Plates Temporary	EACH	10.000	10.000
0142	614.1100	MGS Guardrail Temporary Thrie Beam Transition	LF	78.000	78.000
0144	614.1200	MGS Guardrail Temporary Terminal EAT	EACH	2.000	2.000
0146	614.2500	MGS Thrie Beam Transition	LF	156.000	156.000
0148	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0150	619.1000	Mobilization	EACH	1.000	1.000
0152	620.0300	Concrete Median Sloped Nose	SF	930.000	930.000
0154	624.0100	Water	MGAL	231.000	231.000
0156	625.0100	Topsoil	SY	17,028.000	17,028.000
0158	628.1504	Silt Fence	LF	4,175.000	4,175.000
0160	628.1520	Silt Fence Maintenance	LF	4,175.000	4,175.000
0162	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0164	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0166	628.2006	Erosion Mat Urban Class I Type A	SY	13,730.000	13,730.000
0168	628.2023	Erosion Mat Class II Type B	SY	130.000	130.000
0170	628.7005	Inlet Protection Type A	EACH	44.000	44.000
0172	628.7010	Inlet Protection Type B	EACH	6.000	6.000
0174	628.7015	Inlet Protection Type C	EACH	77.000	77.000
0176	628.7020	Inlet Protection Type D	EACH	11.000	11.000
0178	628.7504	Temporary Ditch Checks	LF	24.000	24.000
0180	628.7555	Culvert Pipe Checks	EACH	4.000	4.000
0182	629.0210	Fertilizer Type B	CWT	10.700	10.700
0184	630.0120	Seeding Mixture No. 20	LB	459.400	459.400
0186	630.0140	Seeding Mixture No. 40	LB	95.400	95.400
0188	630.0200	Seeding Temporary	LB	312.000	312.000
0190	630.0500	Seed Water	MGAL	309.000	309.000
0192	631.0300	Sod Water	MGAL	85.000	85.000
0194	631.1000	Sod Lawn	SY	3,720.000	3,720.000
0196	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	24.000	24.000

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Line	Item	Item Description	Unit	Total	Qty
0198	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	5.000	5.000
0200	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0202	637.2210	Signs Type II Reflective H	SF	170.170	170.170
0204	637.2230	Signs Type II Reflective F	SF	34.000	34.000
0206	638.2102	Moving Signs Type II	EACH	29.000	29.000
0208	638.2602	Removing Signs Type II	EACH	8.000	8.000
0210	638.3000	Removing Small Sign Supports	EACH	9.000	9.000
0212	638.4000	Moving Small Sign Supports	EACH	32.000	32.000
0214	642.5201	Field Office Type C	EACH	1.000	1.000
0216	643.0300	Traffic Control Drums	DAY	52,767.000	52,767.000
0218	643.0420	Traffic Control Barricades Type III	DAY	7,575.000	7,575.000
0220	643.0705	Traffic Control Warning Lights Type A	DAY	4,360.000	4,360.000
0222	643.0715	Traffic Control Warning Lights Type C	DAY	6,840.000	6,840.000
0224	643.0900	Traffic Control Signs	DAY	23,740.000	23,740.000
0226	643.0920	Traffic Control Covering Signs Type II	EACH	10.000	10.000
0228	643.1050	Traffic Control Signs PCMS	DAY	21.000	21.000
0230	643.3165	Temporary Marking Line Paint 6-Inch	LF	9,974.000	9,974.000
0232	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	12,949.000	12,949.000
0234	643.3280	Temporary Marking Line Removable Tape 10-Inch	LF	113.000	113.000
0236	643.3805	Temporary Marking Stop Line Paint 18-Inch	LF	60.000	60.000
0238	643.3850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	124.000	124.000
0240	643.5000	Traffic Control	EACH	1.000	1.000
0242	645.0120	Geotextile Type HR	SY	33.000	33.000
0244	645.0130	Geotextile Type R	SY	24.000	24.000
0246	646.2020	Marking Line Epoxy 6-Inch	LF	15,134.000	15,134.000
0248	646.4020	Marking Line Epoxy 10-Inch	LF	1,182.000	1,182.000
0250	646.5020	Marking Arrow Epoxy	EACH	20.000	20.000
0252	646.5120	Marking Word Epoxy	EACH	2.000	2.000
0254	646.6120	Marking Stop Line Epoxy 18-Inch	LF	59.000	59.000
0256	646.6320	Marking Dotted Extension Epoxy 18-Inch	LF	80.000	80.000
0258	646.7120	Marking Diagonal Epoxy 12-Inch	LF	511.000	511.000
0260	646.8120	Marking Curb Epoxy	LF	210.000	210.000
0262	646.8220	Marking Island Nose Epoxy	EACH	10.000	10.000
0264	646.9000	Marking Removal Line 4-Inch	LF	7,237.000	7,237.000
0266	646.9100	Marking Removal Line 8-Inch	LF	740.000	740.000
0268	646.9200	Marking Removal Line Wide	LF	58.000	58.000
0270	646.9300	Marking Removal Special Marking	EACH	15.000	15.000
0272	650.4000	Construction Staking Storm Sewer	EACH	38.000	38.000
0274	650.4500	Construction Staking Subgrade	LF	2,773.000	2,773.000
0276	650.5000	Construction Staking Base	LF	3,287.000	3,287.000
0278	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	6,213.000	6,213.000
0280	650.6501	Construction Staking Structure Layout (structure) 01. Wall Modular Block Gravity Landscape (Sta 31+30)	EACH	1.000	1.000
0282	650.7000	Construction Staking Concrete Pavement	LF	774.000	774.000
0284	650.8501	Construction Staking Electrical Installations (project) 01. 5991-08-11	EACH	1.000	1.000
0286	650.9911	Construction Staking Supplemental Control (project) 01. 5991-08-11	EACH	1.000	1.000
0288	650.9920	Construction Staking Slope Stakes	LF	2,773.000	2,773.000
0290	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	986.000	986.000
0292	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	63.000	63.000

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Line	Item	Item Description	Unit	Total	Qty
0294	653.0164	Pull Boxes Non-Conductive 24x42-Inch	EACH	9.000	9.000
0296	654.0105	Concrete Bases Type 5	EACH	10.000	10.000
0298	654.0224	Concrete Control Cabinet Bases Type L24	EACH	1.000	1.000
0300	655.0610	Electrical Wire Lighting 12 AWG	LF	1,620.000	1,620.000
0302	655.0615	Electrical Wire Lighting 10 AWG	LF	4,500.000	4,500.000
0304	656.0201	Electrical Service Meter Breaker Pedestal (location) 01. LCC B	EACH	1.000	1.000
0306	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	10.000	10.000
0308	657.0322	Poles Type 5-Aluminum	EACH	10.000	10.000
0310	657.0615	Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT	EACH	10.000	10.000
0312	659.1115	Luminaires Utility LED A	EACH	10.000	10.000
0314	659.2124	Lighting Control Cabinets 120/240 24-Inch	EACH	1.000	1.000
0316	690.0150	Sawing Asphalt	LF	3,407.000	3,407.000
0318	690.0250	Sawing Concrete	LF	603.000	603.000
0320	740.0440	Incentive IRI Ride	DOL	2,500.000	2,500.000
0322	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0324	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,320.000	1,320.000
0326	SPV.0060	Special 01. Salvage and Reinstall Lighting Unit	EACH	1.000	1.000
0328	SPV.0060	Special 02. Connect To Existing Storm Sewer	EACH	1.000	1.000
0330	SPV.0060	Special 03. Abandon Temporary Pipe	EACH	2.000	2.000
0332	SPV.0060	Special 04. Temporary Storm Sewer Plug	EACH	2.000	2.000
0334	SPV.0060	Special 05. Temporary Inlet Cover	EACH	3.000	3.000
0336	SPV.0090	Special 01. Temporary Pipe 12-Inch	LF	102.000	102.000
0338	SPV.0165	Special 01. Wall Modular Block Gravity Landscape (Sta 31+30 LT)	SF	530.000	530.000

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CLEARING & GRUBBING

				201.0105 CLEARING STA	201.0205 GRUBBING STA
STATION	TO	STATION	LOCATION		
30+00 NB	-	32+00 NB	COMMERCE RD	2	2
103+00 EB	-	105+00 EB	CTH OT	2	2
111+00 EB	-	113+00 EB	CTH OT	2	2
115+00 EB	-	122+00 EB	CTH OT	7	7
TOTAL 0010				13	13

REMOVING CONCRETE PAVEMENT

				204.0100 REMOVING CONCRETE PAVEMENT SY
STATION	TO	STATION	LOCATION	
109+82 EB	-	110+72 EB	LT	70
109+75 EB	-	111+28 EB	RT	137
119+65 EB	-	121+72 EB	RT	217
TOTAL 0010				424

REMOVING ASPHALTIC SURFACE

				204.0110 REMOVING ASPHALTIC SURFACE SY
STATION	TO	STATION	LOCATION	
			OAK HILL DR	6
			PAULA DR	6
		101+81 WB	PE, LT	20
40+75 NB	-	42+55 NB	LT	32
		VARIOUS	TEMP ASPHALT	630
TOTAL 0010				694

REMOVING ASPHALTIC SURFACE MILLING

				204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	REMARKS
STATION	TO	STATION	LOCATION		
126+62 EB	-	127+28 EB	CTH OT	278	2" MILL
TOTAL 0010				278	

REMOVING CURB & GUTTER

				204.0150 REMOVING CURB & GUTTER LF
STATION	TO	STATION	LOCATION	
			OAK HILLS DR	LT/RT 20
			PAULA DR	LT/RT 20
100+75 EB	-	41+23 NB	LT	381
100+75 EB	-	30+51 NB	RT	359
41+23 NB		42+42 NB	RT	122
40+70 NB	-	110+06 EB	LT	877
30+49 NB	-	109+95 EB	RT	825
104+56 EB	-	105+01 EB	KWIK TRIP LOT	50
108+35 EB	-	110+51 EB	MEDIAN	444
111+45 EB	-	112+93 EB	MEDIAN	293
115+17 EB	-	120+13 EB	MEDIAN	993
119+64 EB	-	120+12 EB	LT (RAMP)	20
121+07 EB	-	124+29 EB	MEDIAN	648
121+64 EB	-	121+72 EB	RT (RAMP)	9

TOTAL 0010 5,061

REMOVING CONCRETE SIDEWALK

			204.0155 REMOVING CONCRETE SIDEWALK SY
STATION		LOCATION	
93+50 EB		LT, CURB RAMP	9
94+10 EB		LT, CURB RAMP	9
96+85 EB		LT, CURB RAMP	9
97+45 EB		LT, CURB RAMP	9

TOTAL 0010 36

REMOVING GUARDRAIL

				204.0165 REMOVING GUARDRAIL LF
STATION	TO	STATION	LOCATION	
112+07 EB	-	112+75 EB	LT	69
112+20 EB	-	112+92 EB	RT	72
115+18 EB	-	115+90 EB	LT	72
115+34 EB	-	116+11 EB	RT	77
TOTAL 0010				290

PREPARE FOUNDATION FOR ASPHALTIC PAVING

		211.0101.01 PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) (01. 5991-08-11) EACH
LOCATION		
PROJECT LIMITS		1
TOTAL 0010		1

FINISHING ROADWAY

		213.0100.01 FINISHING ROADWAY (PROJECT) (01. 5991-08-11) EACH
LOCATION		
PROJECT LIMITS		1
TOTAL 0010		1

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

3

REMOVING STORM SEWER STRUCTURES

STATION	LOCATION	204.0190	204.0210	204.0220
		REMOVING SURFACE DRAINS	REMOVING MANHOLES	REMOVING INLETS
		EACH	EACH	EACH
101+57 EB	26.2', RT	--	--	1
101+63 WB	20.6', LT	--	--	1
12+12 RA	0.5', RT	--	--	1
12+61 RA	7.9', RT	--	--	1
11+74 RA	2.2', LT	--	1	--
40+56 SB	29.4', LT	--	--	1
40+66 NB	11.2', RT	--	--	1
41+05 NB	2.3', LT	--	1	--
11+26 RA	1.4', RT	--	--	1
10+92 RA	5.1', RT	--	--	1
12+84 RA	7.5', LT	--	1	--
10+36 RA	0.6', RT	--	1	--
31+73 SB	3.7', RT	--	--	1
10+25 RA	22', RT	--	--	1
10+51 RA	21.4', RT	--	--	1
104+85 WB	19.8', LT	--	1	--
105+83 EB	26.3', RT	--	--	1
108+28 EB	65.3', RT	--	1	--
111+65 EB	7.5', LT	--	--	1
115+26 WB	22.3', LT	1	--	--
115+40 EB	22.6', RT	1	--	--
119+94 EB	8.5', LT	--	--	1
123+62 WB	2.7', RT	--	--	1
TOTAL 0010		2	6	15

REMOVING STORM SEWER

STATION	TO	STATION	LOCATION	204.0245.01	204.0245.02	204.0245.03	204.0245.04
				REMOVING STORM SEWER (SIZE) (01. 12-INCH)	REMOVING STORM SEWER (SIZE) (02. 15-INCH)	REMOVING STORM SEWER (SIZE) (03. 18-INCH)	REMOVING STORM SEWER (SIZE) (04. 24-INCH)
				LF	LF	LF	LF
101+18 EB	-	101+57 EB	RT	40	--	--	--
10+24 RA	-	10+35 RA	RT	25	--	--	--
103+40 WB	-	103+97 WB	LT	73	--	--	--
12+85 RA	-	12+91 RA	RT/LT	25	--	--	--
11+72 RA	-	12+11 RA	LT	37	--	--	--
104+84 WB	-	104+85 WB	LT	16	--	--	--
103+40 WB	-	104+84 WB	LT	159	--	--	--
11+28 RA	-	11+72 RA	LT	41	--	--	--
40+60 NB	-	40+65 NB	LT/RT	44	--	--	--
101+57 EB	-	101+60 EB	CTH OT	47	--	--	--
10+90 RA	-	11+28 RA	CTH OT	--	39	--	--
10+35 RA	-	10+53 RA	CTH OT	--	--	29	--
123+62 EB	-	123+63 EB	LT/RT	--	--	56	--
12+60 RA	-	12+85 RA	CTH OT	--	--	27	--
119+59 EB	-	119+93 EB	CTH OT	--	--	109	--
40+65 NB	-	41+05 NB	LT/RT	--	--	41	--
10+35 RA	-	12+85 RA	CTH OT	--	--	44	--
40+00 NB	-	40+65 NB	NB	--	--	82	--
103+34 EB	-	105+84 EB	CORPORATE DR	--	--	--	250
TOTAL 0010				507	39	388	250

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

BASE AGGREGATE DENSE 1 1/4-INCH

305.0120 BASE AGGREGATE DENSE 1 1/4-INCH					
STATION	TO	STATION	STAGE	LOCATION	TON
			1	TEMP CORPORATE DR	138
			1	WEST RAMP TERMINALS	32
			1	EAST RAMP TERMINALS	41
			2A	TEMP CORPORATE DR	96
			2A	MEDIAN	23
			2A	WEST RAMP TERMINALS	60
			2B	WEST SAFETY ISLAND	25
			2B	PARTIAL RAB INNER CIRCLE	78
			2B	PARTIAL EAST SAFETY ISLAND	12
			2B	EAST RAMP TERMINALS	17
			3A	PARTIAL RAB INNER CIRCLE	38
			3A	PARTIAL EAST SAFETY ISLAND	11
			3A	TEMP KWIK TRIP DRWY	31
			3A	EAST RAMP TERMINALS	23
93+54 EB	-	94+05 EB	--	Oak Hills Drive	4
96+86 EB	-	97+44 EB	---	Paula Drive	4
		101+75 WB	--	LT, DRWY APRON	6
100+75 EB	-	104+07 EB	--	ROUNDAABOUT	1,360
40+65 NB	-	41+22 NB	--	CORPORATE DR	250
104+07 EB	-	112+80 EB	--	CTH OT	4,080
115+30 EB	-	127+28 EB	--	CTH OT	5,251
TOTAL 0010					11,580

CONCRETE PAVEMENT

405.0100 415.0075 415.2010 COLORING CONCRETE CONCRETE CONCRETE PAVEMENT TRUCK APRON WISDOT RED 7 1/2-INCH 12-INCH					
STATION	TO	STATION	LOCATION	CY	SY
100+75 EB	-	104+07 EB	CTH OT ROUNDAABOUT	121	2,775
TOTAL 0010				121	2,775

DRILLED TIE BARS

416.0610 DRILLED TIE BARS EACH				
STATION	TO	STATION	LOCATION	
100+75 EB	-	104+07 EB	CTH OT ROUNDAABOUT	222
104+14 EB	-	104+68 EB	KWIK TRIP	21
			UNDISTRIBUTED	20
TOTAL 0010				263

DRILLED DOWEL BARS

416.0620 DRILLED DOWEL BARS EACH				
STATION	TO	STATION	LOCATION	
100+75 EB	-	104+07 EB	CTH OT ROUNDAABOUT	90
			UNDISTRIBUTED	15
TOTAL 0010				105

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

ASPHALT PAVEMENT ITEMS									MOBILIZATION									
				455.0605	460.6223	460.6224	465.0105	465.0120						619.1000				
				TACK	HMA	HMA	ASPHALTIC	ASPHALTIC						MOBILIZATION				
				COAT	PAVEMENT	PAVEMENT	SURFACE	AND FIELD						EACH				
STATION	TO	STATION	LOCATION	GAL	3 MT 58-28 S	4 MT 58-28 S	TON	ENTRANCES										
91+46 EB	-	100+75 EB	CTH OT	496	625	1,111	3	--										
		101+75 WB	DWY, LT	--	--	--	--	2										
			CORPORATE DR	28	35	62	6	--										
104+07 EB	-	112+80 EB	CTH OT	496	625	1,110	--	--										
115+30 EB	-	126+74 EB	CTH OT	601	757	1,345	--	--										
126+74 EB	-	127+27 EB	CTH OT	20	--	31	--	--										
TOTAL 0010				1,641	2,042	3,659	9	2										
									CONCRETE CURB & GUTTER									
						601.0405	601.0409	601.0411	601.0415	601.0557	601.0581	601.0584	650.5500					
						CONCRETE CURB	CONCRETE CURB	CONCRETE CURB	CONCRETE CURB	CONCRETE CURB	CONCRETE CURB	CONCRETE CURB &	CONSTRUCTION					
						& GUTTER	& GUTTER	& GUTTER	& GUTTER	& GUTTER	& GUTTER 4-INCH	GUTTER	STAKING CURB					
						18-INCH TYPE A	30-INCH TYPE A	30-INCH TYPE D	30-INCH TYPE J	36-INCH TYPE D	TYPE R	30-INCH TYPE TBT	CURB & GUTTER					
						LF	LF	LF	LF	LF	LF	LF	LF					

CONCRETE ITEMS

				602.0405 CONCRETE SIDEWALK 4-INCH SF	602.0810 CONCRETE DRIVEWAY 6-INCH SY	620.0300 CONCRETE MEDIAN SLOPED NOSE SF	NOSE TYPE
STATION	TO	STATION	LOCATION				
		101+75 EB	LT	--	12	--	
101+98 EB	-	103+55 EB	WEST ISLAND	362	--	133	1&2
31+24 NB	-	31+66 NB	SOUTH ISLAND	278	--	124	1&2
40+08 NB	-	40+57 NB	NORTH ISLAND	314	--	120	1&2
103+41 EB	-	103+91 EB	EAST ISLAND	299	--	118	1&2
		108+40 EB	MEDIAN ISLAND	--	--	186	1
		110+50 EB	MEDIAN ISLAND	--	--	19	2
111+45 EB	-	112+95 EB	MEDIAN ISLAND	770	--	51	1
119+70 EB	-	120+08 EB	MEDIAN ISLAND	220	--	63	1
121+06 EB	-	124+27 EB	MEDIAN ISLAND	1,326	--	116	1
TOTAL 0010				3,569	12	930	

MGS GUARDRAIL

				614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
STATION	TO	STATION	LOCATION		
111+85 WB	-	112+78 WB	LT	39	1
111+99 EB	-	112+92 EB	RT	39	1
115+19 WB	-	116+11 WB	LT	39	1
115+33 EB	-	116+26 EB	RT	39	1
TOTAL 0010				156	4

MGS GUARDRAIL TEMPORARY

				614.1100 MGS GUARDRAIL TEMPORARY THRIE BEAM TRANSITION LF	614.1200 MGS GUARDRAIL TEMPORARY TERMINAL EAT EACH
STATION	TO	STATION	LOCATION		
111+99 EB	-	112+92 EB	RT	39	1
115+33 EB	-	116+26 EB	RT	39	1
TOTAL 0010				78	2

EROSION CONTROL

				628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.2023 EROSION MAT CLASS II TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
STATION	TO	STATION	LOCATION						
100+45 EB	-	41+21 SB	LT	362	362	683	--	--	2
100+49 EB	-	30+50 SB	RT	--	--	592	--	--	--
105+38 EB	-	109+94 EB	RT	352	352	963	--	--	--
105+83 WB	-	110+07 WB	LT	144	144	263	--	--	--
110+69 WB	-	112+86 WB	LT	234	234	1,190	17	--	--
111+28 EB	-	112+91 EB	RT	285	285	836	23	--	--
115+19 WB		126+74 EB	LT	1,120	1,120	3,529	5	--	--
115+23 EB		119+82 EB	RT	501	501	2,509	48	--	--
121+63 EB		126+62 EB	RT	340	340	535	5	--	--
		UNDISTRIBUTED		837	837	2,630	32	24	2
TOTAL 0010				4,175	4,175	13,730	130	24	4

WATER

		624.0100 WATER MGAL
LOCATION		
DUST CONTROL		57
COMPACTION		174
TOTAL 0010		231

MOBILIZATIONS EROSION CONTROL

			628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
LOCATION				
PROJECT LIMITS			3	4
TOTAL 0010			3	4

FIELD OFFICE TYPE C

		642.5201 FIELD OFFICE TYPE C EACH
PROJECT		
5991-08-11		1
TOTAL 0010		1

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

INLET PROTECTION						
STATION	LOCATION	628.7005	628.7010	628.7015	628.7020	REMARKS
		INLET	INLET	INLET	INLET	
		PROTECTION	PROTECTION	PROTECTION	PROTECTION	
		TYPE A	TYPE B	TYPE C	TYPE D	
		EACH	EACH	EACH	EACH	
92+47 EB	LT/RT	--	--	2	--	
93+50 EB	RT	--	--	1	--	
94+24 EB	LT/RT	--	--	2	--	
96+73 EB	LT	--	--	1	--	
97+96 EB	LT	--	--	1	--	
99+18 EB	LT/RT	--	--	2	--	
101+18 EB	RT	1	--	1	--	
102+07 EB	RT	1	--	--	1	
102+09 EB	ISLAND	1	--	1	--	
102+11 WB	LT	1	--	--	1	
11+86 RA	LT	1	1	--	--	
11+94 RA	LT	1	--	--	1	
31+32 SB	LT	1	--	1	--	
31+54 NB	RT	1	--	1	--	
31+59 NB	ISLAND	1	--	1	--	
10+53 RA	KWIK TRIP	1	--	--	--	
40+09 SB	LT	1	--	1	--	
40+18 SB	ISLAND	1	--	1	--	
40+20 NB	RT	1	--	1	--	
41+05 NB	LT	1	--	--	--	
103+76 WB	LT	1	--	--	1	
103+70 WB	ISLAND	1	--	1	--	
103+78 EB	RT	1	--	--	1	
103+98 EB	KWIK TRIP	--	--	1	--	
103+95 WB	LT	1	--	1	--	
103+99 WB	MC DONALDS	--	--	--	1	
104+14 EB	RT	1	--	1	--	
104+85 WB	LT	1	--	1	--	
104+85 WB	MC DONALDS	--	--	--	1	
105+83 EB	RT	1	--	1	--	
108+28 EB	RT	1	--	--	--	
108+35 EB	RT	1	--	1	--	
108+36 EB	MEDIAN	1	--	1	--	
108+36 WB	LT	1	--	1	--	
110+27 WB	MEDIAN	--	--	1	--	
111+65 WB	MEDIAN	--	--	1	--	
116+53 WB	LT	1	--	1	--	
116+53 EB	RT	1	--	1	--	

~ CONTINUE ~

INLET PROTECTION ~ CONTINUED ~						
STATION	LOCATION	628.7005	628.7010	628.7015	628.7020	REMARKS
		INLET	INLET	INLET	INLET	
		PROTECTION	PROTECTION	PROTECTION	PROTECTION	
		TYPE A	TYPE B	TYPE C	TYPE D	
		EACH	EACH	EACH	EACH	
119+45 WB	LT	1	--	1	--	
119+45 WB	MEDIAN	1	--	1	--	
119+44 EB	RT	1	--	1	--	
120+09 EB	MEDIAN	1	--	1	--	
121+27 EB	MEDIAN	--	--	1	--	
121+07 EB	RAMP ISLAND	--	--	1	--	
121+16 EB	RAMP ISLAND	--	--	1	--	
123+62 EB	RT	1	--	1	--	
123+62 EB	MEDIAN	1	--	1	--	
123+62 WB	LT	1	--	1	--	
124+26 EB	LT	1	--	1	--	
	LT	--	--	--	1	
COVERING EXISTING INLETS		--	--	20	--	FROM 101+50 EB TO STA 120+00 EB
UNDISTRIBUTED		9	5	16	3	
TOTAL 0010		44	6	77	11	

RIPRAP & GEOTEXTILE					
STATION	LOCATION	606.0100	606.0300	645.0120	645.0130
		RIPRAP LIGHT	RIPRAP HEAVY	GEOTEXTILE	GEOTEXTILE
		TYPE HR	TYPE R	TYPE HR	TYPE R
		CY	CY	SY	SY
116+54 EB	RT	3	--	--	12
119+44 EB	RT	3	--	--	12
112+20 EB	LT	--	11	33	--
TOTAL 0010		6	11	33	24

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

RESTORATION ITEMS											
				625.0100	629.0210	630.0120	630.0140	630.0200	630.0500	631.0300	631.1000
				TOPSOIL SY	FERTILIZER	SEEDING	SEEDING	SEEDING	SEED WATER MGAL	SOD WATER	SOD LAWN
STATION	TO	STATION	LOCATION		TYPE B CWT	MIXTURE NO. 20 LB	MIXTURE NO. 40 LB	TEMPORARY LB		MGAL	SY
100+45 EB	-	41+21 SB	LT	683	0.5	--	30.7	--	16	--	--
100+49 EB	-	30+50 SB	RT	592	0.4	--	26.6	--	14	--	--
ROUNDABOUT				315	0.2	--	--	--	--	7	315
30+50 NB	-	105+38 EB	RT	536	0.4	--	--	--	--	12	536
				105+83 WB	LT	1,075	0.7	--	--	25	1,075
105+38 EB	-	109+94 EB	RT	963	0.6	43.3	--	26.0	22	--	--
105+83 WB	-	110+07 WB	LT	263	0.2	11.8	--	7.1	7	--	--
108+88 EB	-	110+51 EB	MEDIAN	306	0.2	--	--	--	--	7	306
110+69 WB	-	112+86 WB	LT	1,122	0.7	50.5	--	30.3	26	--	--
111+28 EB	-	112+91 EB	RT	789	0.5	35.5	--	21.3	18	--	--
115+15 EB	-	119+69 EB	MEDIAN	744	0.5	--	--	--	--	17	744
115+19 WB	-	126+74 EB	LT	3,200	2.0	144.0	3.6	85.0	72	--	--
115+23 EB	-	119+82 EB	RT	2,477	1.6	111.5	--	66.9	56	--	--
121+63 EB	-	126+62 EB	RT	537	0.4	3.5	21.5	12.9	12	--	--
UNDISTRIBUTED				3,426	1.8	59.3	13	63	66	17	744
TOTAL 0010				17,028	10.7	459.4	95.4	312.0	309	85	3,720

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

SIGNS TYPE II									
APPROX STATION	LOCATION	SIGN CODE	SIGN SIZE WxH (INCHES)	634.0614	634.0616	634.0618	637.2210	637.2230	MESSAGE
				POSTS WOOD 4X6-INCH X 14-FT EACH	POSTS WOOD 4X6-INCH X 16-FT EACH	POSTS WOOD 4X6-INCH X 18-FT EACH	SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	
99+50 EB	RT	W2-6	30X30	--	1	--	--	6.25	"15" (SHARES POST)
		W13-1	18X18	--	--	--	--	2.25	
100+50 EB	RT	--	--	--	1	--	--	--	"OT"
101+50 EB	LT	M1-5A	24X24	1	--	--	4.00	--	
102+05 EB	WEST SPLITTER ISLAND	R4-7	24X30	1	--	--	5.00	--	"OT", ARROW RT
102+35 EB	WEST SPLITTER ISLAND	J12-1	24X45	1	--	--	7.50	--	
102+40 EB	WEST SPLITTER ISLAND	R1-2	36X31	1	--	--	3.88	--	
102+50 EB	RT	R1-2	36X31	1	--	--	3.88	--	
INTERSECTION OF COMMERCE RD & ABBEY RD		W2-6	30X30	--	1	--	--	6.25	"15" (SHARES POST)
		W13-1	18X18	--	--	--	--	2.25	
31+30 NB	SOUTH SPLITTER ISLAND	R4-7	24X30	1	--	--	5.00	--	COMMERCE RD (ARROW)
31+60 NB	SOUTH SPLITTER ISLAND	D1-1	90X15	2	--	--	9.38	--	
31+60 NB	SOUTH SPLITTER ISLAND	R1-2	36X31	1	--	--	3.88	--	
31+75 NB	RT	R1-2	36X31	1	--	--	3.88	--	
INNER CIRCLE (NORTH)		R6-1R	36X12	1	--	--	3.00	--	
INNER CIRCLE (EAST)		R6-1R	36X12	1	--	--	3.00	--	
INNER CIRCLE (SOUTH)		R6-1R	36X12	1	--	--	3.00	--	
INNER CIRCLE (WEST)		R6-1R	36X12	1	--	--	3.00	--	
40+15 NB	NORTH SPLITTER ISLAND	D1-1	84X15	2	--	--	8.75	--	CORPORATE DR (ARROW)
40+15 NB	NORTH SPLITTER ISLAND	R1-2	36X31	1	--	--	3.88	--	
40+20 NB	LT	R1-2	36X31	1	--	--	3.88	--	
40+50 NB	NORTH SPLITTER ISLAND	R4-7	24X30	1	--	--	5.00	--	
41+70 NB	LT	W2-6	30X30	--	1	--	--	6.25	
		W13-1	18X18	--	--	--	--	2.25	"15" (SHARES POST)
103+45 EB	WEST SPLITTER ISLAND	J12-1	24X45	1	--	--	7.50	--	"OT", ARROW RT
103+45 EB	WEST SPLITTER ISLAND	R1-2	36X31	1	--	--	3.88	--	
103+50 EB	LT	R1-2	36X31	1	--	--	3.88	--	
103+85 EB	WEST SPLITTER ISLAND	R4-7	24X30	1	--	--	5.00	--	
104+25 EB	RT	M1-5A	24X24	1	--	--	4.00	--	"OT"
105+00 EB	LT	D1-62	144X66	--	--	2	66.00	--	
106+00 EB	LT	W2-6	30X30	--	1	--	--	6.25	
		W13-1	18X18	--	--	--	--	2.25	"15" (SHARES POST)
TOTAL 0010				24	5	2	170.17	34.00	

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

MOVING & REMOVING SIGNS TYPE II						
APPROX NEW STATION	EXISTING STATION	LOCATION	638.2102	638.2602	638.3000	638.4000
			MOVING SIGNS	REMOVING	REMOVING	MOVING SMALL
			TYPE II	SIGNS TYPE II	SMALL SIGN	SIGN SUPPORTS
			EACH	EACH	SUPPORTS	SIGN SUPPORTS
					EACH	EACH
--	92+55 EB	RT	--	1	1	--
100+50 EB	100+25 EB	RT	1	--	1	--
100+50 EB	101+05 EB	RT	1	--	1	--
101+25 EB	101+25 EB	LT	1	--	--	1
--	101+70 EB	RT	--	1	1	--
--	102+40 EB	LT	--	1	1	--
--	31+25 NB	LT	--	1	1	--
--	COMMERCE RD	RT	--	1	1	--
--	CORPORATE DR	LT	--	1	1	--
41+50 NB	40+15 NB	RT	1	--	--	1
105+00 EB	104+15 EB	RT	1	--	--	1
--	104+20 EB	LT	--	1	1	--
106+10 EB	106+10 EB	RT	1	--	--	1
108+20 EB	108+20 EB	LT	1	--	--	1
108+40 EB	108+40 EB	MEDIUM ISLAND	1	--	--	1
108+65 EB	108+65 EB	LT	1	1	--	1
109+70 EB	109+70 EB	LT	1	--	--	1
110+40 EB	110+40 EB	MEDIUM ISLAND	1	--	--	1
111+10 EB	111+10 EB	LT	1	--	--	1
111+40 EB	111+40 EB	RT	1	--	--	1
111+50 EB	111+50 EB	MEDIUM ISLAND	1	--	--	1
115+25 EB	115+25 EB	LT	1	--	--	1
115+50 EB	115+50 EB	RT	1	--	--	1
117+55 EB	117+55 EB	RT	1	--	--	2
118+62 EB	118+62 EB	LT	1	--	--	1
119+71 EB	119+71 EB	LT	1	--	--	2
120+05 EB	120+05 EB	MEDIAN ISLAND	1	--	--	1
120+60 EB	120+60 EB	LT	1	--	--	1
121+14 EB	121+14 EB	MEDIAN ISLAND	1	--	--	1
122+23 EB	122+23 EB	RT	1	--	--	2
122+45 EB	122+45 EB	LT	1	--	--	2
124+23 EB	124+23 EB	RT	1	--	--	1
124+24 EB	124+24 EB	MEDIAN ISLAND	1	--	--	1
124+58 EB	124+58 EB	LT	1	--	--	2
126+51 EB	126+51 EB	LT	1	--	--	1
126+51 EB	126+51 EB	LT	1	--	--	1

TOTAL 0010	29	8	9	32
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ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

TRAFFIC CONTROL

		643.0300		643.0420		643.0705		643.0715		643.0900	
		TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL SIGNS	
STAGE	CALENDAR DAYS	#	DAY	#	DAY	#	DAY	#	DAY	#	DAY
ADVANCED SIGNING	184	--	--	--	--	--	--	--	--	47	8648
STAGE 1	9	170	1,530	--	--	--	--	9	81	--	--
STAGE 2A/2B	83	218	18,094	34	2,822	42	3,486	15	1,245	33	2,739
STAGE 3A/3B/3C	83	241	20,003	39	3,237	--	--	50	4,150	34	2,822
STAGE 4	9	272	2,448	--	--	--	--	--	--	--	--
DETOUR	184	--	--	--	--	--	--	--	--	73	13,432
UNDISTRIBUTED			10,692		1,516		874		1,364		4,747
TOTAL 0010			52,767		7,575		4,360		6,840		23,740

MARKING REMOVAL

		646.9000		646.9100		646.9200		646.9300	
		MARKING REMOVAL LINE 4-INCH		MARKING REMOVAL LINE 8-INCH		MARKING REMOVAL LINE WIDE		MARKING REMOVAL SPECIAL MARKING	
STATION	TO	STATION	COLOR	LF	LF	LF	LF	LF	EACH
91+16 EB	-	INTERSECTION	WHITE	1,070	140	36		10	
91+16 EB	-	INTERSECTION	YELLOW	1,348	--	--		--	
		CORPORATE DR	WHITE	--	112	22		2	
		CORPORATE DR	YELLOW	218	--	--		--	
INTERSECTION	-	110+56 EB	WHITE	670	212	--		3	
INTERSECTION	-	110+56 EB	YELLOW	886	--	--		--	
111+26 EB	-	120+05 EB	WHITE	640	144	--		--	
111+26 EB	-	120+05 EB	YELLOW	871	--	--		--	
120+96 EB	-	127+62 EB	WHITE	401	132	--		--	
120+96 EB	-	127+62 EB	YELLOW	1,133	--	--		--	
TOTAL 0010				7,237	740	58		15	

TRAFFIC CONTROL SIGNS PCMS

		643.1050	
		TRAFFIC CONTROL SIGNS PCMS	
LOCATION	DAY	MESSAGE	
BETWEEN FRONTAGE RD & OAK HILLS DR, RT	7	CTH OT	
WEST OF USH 53 SB EXIT RAMP TERMINAL, LT	7	ROAD WORK	
EAST OF SANDPIPER DR, LT	7	BEGINS "DATE"	
TOTAL 0010		21	

TEMPORARY PAVEMENT MARKING

		643.3165	643.3180	643.3280	643.3805	643.3850
		TEMPORARY MARKING LINE PAINT 6-INCH	TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH	TEMPORARY MARKING LINE REMOVABLE TAPE 10-INCH	TEMPORARY MARKING STOP LINE PAINT 18-INCH	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH
STAGE	TYPE/COLOR	LF	LF	LF	LF	LF
STAGE 2A	EDGE LINE/WHITE	1,259	--	--	19	--
STAGE 2A	DBL CL/YELLOW	7,552	--	--	--	--
STAGE 2A	2' LINE, 6' GAP/YELLOW	--	89	--	--	--
STAGE 2B	EDGE LINE/WHITE	191	229	--	--	19
STAGE 2B	DBL CL/YELLOW	882	30	--	--	--
STAGE 3A	EDGE LINE/WHITE	--	1,424	--	41	53
STAGE 3A	DBL CL/YELLOW	90	8,010	--	--	--
STAGE 3A	2' LINE, 6' GAP/YELLOW	--	84	--	--	--
STAGE 3B	EDGE LINE/WHITE	--	155	--	--	26
STAGE 3B	DBL CL/YELLOW	--	80	--	--	--
STAGE 3C	EDGE LINE/WHITE	--	1,141	--	--	26
STAGE 3C	DBL CL/YELLOW	--	590	--	--	--
STAGE 4	EDGE LINE/WHITE	--	363	113	--	--
STAGE 4	EDGE LINE/YELLOW	--	754	--	--	--
TOTAL 0010		9,974	12,949	113	60	124

TRAFFIC CONTROL COVERING SIGNS TYPE II

		643.0920
		TRAFFIC CONTROL COVERING SIGNS TYPE II
LOCATION	EACH	
UNDISTRIBUTED	10	
TOTAL 0010		10

TRAFFIC CONTROL

		643.5000
		TRAFFIC CONTROL
LOCATION	EACH	
PROJECT LIMITS	1	
TOTAL 0010		1

ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

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PAVEMENT MARKING					646.2020	646.4020	646.6320	646.7120
					MARKING LINE	MARKING LINE	MARKING	MARKING
					EPOXY 6-INCH	EPOXY 10-INCH	EXTENSION	DIAGONAL
					LF	LF	EPOXY 18-INCH	EPOXY 12-INCH
STATION	TO	STATION	LOCATION	COLOR	LF	LF	LF	LF
91+17 EB	-	102+09 WB	EDGE LINE LT	WHITE	935	--	--	--
91+33 EB	-	101+40 EB	EDGE LINE RT	WHITE	920	--	--	--
91+17 EB	-	92+16 EB	CHANNELIZING	WHITE	--	100	--	--
91+17 EB	-	93+33 EB	CENTERLINE	DBL YELLOW	706	--	--	--
93+33 EB	-	100+72 EB	TWLTL	YELLOW	1,856	--	--	--
100+72 EB	-	102+36 EB	TWLTL	DBL YELLOW	569	--	--	82
		WEST RAB ISLAND	GORE LINE/DOTTED EDGE	WHITE	--	58	19	--
		NORTH RAB ISLAND	GORE LINE/DOTTED EDGE	WHITE	--	50	21	--
		SOUTH RAB ISLAND	GORE LINE/DOTTED EDGE	WHITE	--	50	20	--
		EAST RAB ISLAND	GORE LINE/DOTTED EDGE	WHITE	--	48	20	--
30+17 NB	-	31+57 NB	CENTERLINE	DBL YELLOW	450	--	--	26
40+19 NB	-	41+74 NB	CENTERLINE	DBL YELLOW	498	--	--	24
103+52 EB	-	110+49 EB	CENTERLINE	DBL YELLOW	2,273	--	--	158
103+88 EB	-	107+94 EB	EDGE LINE RT	WHITE	405	--	--	174
103+94 WB	-	109+98 WB	EDGE LINE LT	WHITE	605	--	--	--
107+94 EB	-	110+49 EB	CHANNELIZING	WHITE	--	256	--	--
110+86 WB	-	126+76 EB	EDGE LINE LT	WHITE	1,591	--	--	--
111+28 EB	-	117+07 EB	EDGE LINE RT	WHITE	580	--	--	--
111+49 WB	-	112+45 WB	CHANNELIZING	WHITE	--	97	--	--
111+49 EB	-	120+04 EB	MEDIAN EDGE LINE	YELLOW	1,715	--	--	--
117+57 EB	-	120+04 EB	CHANNELIZING	WHITE	--	248	--	--
121+10 WB	-	122+24 WB	CHANNELIZING	WHITE	--	114	--	--
121+10 EB	-	124+23 EB	MEDIAN EDGE LINE	YELLOW	628	--	--	--
122+29 EB	-	124+55 EB	EDGE LINE RT	WHITE	227	--	--	--
124+23 EB	-	127+61 EB	CENTERLINE	DBL YELLOW	1,176	--	--	47
125+05 EB		126+66 EB	CHANNELIZING	WHITE	--	161	--	--
TOTAL 0010					15,134	1,182	80	511

MARKING ARROWS & WORDS EPOXY				
		646.5020	646.5120	
		MARKING	MARKING WORD	
		ARROW EPOXY	EPOXY	
STATION	LOCATION	EACH	EACH	TYPE
91+45 EB	TURN LANES	2	--	2&3
92+08 EB	TURN LANES	2	--	2&3
93+58 EB	TWLTL	2	--	2
97+11 EB	TWLTL	2	--	2
100+03 EB	TWLTL	2	--	2
108+17 EB	RT TURN LANE	1	--	2
109+30 EB	RT TURN LANE	--	1	ONLY
109+70 EB	RT TURN LANE	1	--	2
111+72 WB	LT TURN LANE	1	--	2
112+22 WB	LT TURN LANE	1	--	2
117+80 EB	RT TURN LANE	1	--	2
118+98 EB	RT TURN LANE	--	1	ONLY
119+38 EB	RT TURN LANE	1	--	2
121+34 WB	LT TURN LANE	1	--	2
122+00 WB	LT TURN LANE	1	--	2
125+29 EB	RT TURN LANE	1	--	2
126+42 EB	RT TURN LANE	1	--	2
TOTAL 0010		20	2	

MARKING ISLAND NOSE AND CURB			
		646.8120	646.8220
		MARKING	MARKING
		CURB EPOXY	ISLAND NOSE
STATION	LOCATION	LF	EPOXY EACH
102+00 EB	WEST RAB ISLAND	--	1
40+50 NB	NORTH RAB ISLAND	--	1
31+25 NB	SOUTH RAB ISLAND	--	1
103+87 EB	EAST RAB ISLAND	--	1
108+40 EB	MEDIAN	10	1
110+50 EB	MEDIAN	37	1
111+52 EB	MEDIAN	24	1
120+01 EB	MEDIAN	105	1
121+12 EB	MEDIAN	24	1
124+20 EB	MEDIAN	10	1
TOTAL 0010		210	10

MARKING STOP LINE EPOXY 18-INCH		
		646.6120
		MARKING STOP
		LINE EPOXY
STATION	LOCATION	18-INCH LF
91+16 EB	CTH OT	32
110+58 WB	W USH 53 EXIT RAMP	27
TOTAL 0010		59

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

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CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.4500	650.5000	650.9920
				CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING SLOPE STAKES LF
91+45 EB	-	100+75 EB	CTH OT	--	930	--
100+75 EB	-	102+47 EB	WEST LEG	172	--	172
103+38 EB	-	104+07 EB	EAST LEG	69	--	69
30+50 NB	-	31+68 NB	SOUTH LEG	118	--	118
40+05 NB	-	41+22 NB	NORTH LEG	117	60	117
40+05 NB	-	41+22 NB	TEMP ROAD	200	200	200
104+07 EB	-	112+95 EB	CTH OT	888	888	888
115+19 EB	-	127+28 EB	CTH OT	1,209	1,209	1,209
TOTAL 0010				2,773	3,287	2,773

CONSTRUCTION STAKING CONCRETE PAVEMENT

STATION	TO	STATION	LOCATION	650.7000
				CONSTRUCTION STAKING CONCRETE PAVEMENT LF
100+75 EB	-	102+47 EB	WEST LEG	172
103+38 EB	-	104+07 EB	EAST LEG	69
30+50 NB	-	31+68 NB	SOUTH LEG	118
40+05 NB	-	41+22 NB	NORTH LEG	117
10+00 RA	-	12+98 RA	ROUNDAABOUT CIRCLE	298
TOTAL 0010				774

CONSTRUCTION STAKING STRUCTURE LAYOUT

650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. WALL MODULAR BLOCK GRAVITY LANDSCAPE (STA 31+30)		
STATION	LOCATION	EACH
31+30	LT	1
TOTAL 0010		1

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL

650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 5991-08-11)	
LOCATION	EACH
PROJECT LIMITS	1
TOTAL 0010	1

SAWING

				690.0150 SAWING ASPHALT	690.0250 SAWING CONCRETE
STATION	TO	STATION	LOCATION	LF	LF
91+46 EB	-	91+46 EB	BEGIN PROJECT	48	--
		111+45 EB	C/L CTH OT	2,245	18.0
			FRONTAGE RD	95	--
			OAK HILLS DR	117	10.0
			PAULA DR	120	10.0
		100+75 EB	CURB, LT/RT	--	5.0
		101+75 WB	DRWY, LT	15	--
		30+50 NB	COMMERCE RD	43	5.0
		41+23 NB	CORPORATE DR	143	7.5
			MCDONALDS	45	10.0
			KWIK TRIP	--	54.0
119+54 EB	-	121+83 EB	W USH 53 EXIT RAMP	--	94.0
			W USH 53 ENT RAMP	--	158.0
			CTH OT MEDIAN	273	10.0
			E USH 53 ENT & EXIT RAMPS	--	217.0
124+30 EB	-	126+74 EB	C/L CTH OT	263	4.0
TOTAL 0010				3,407	603

SALVAGE AND REINSTALL LIGHTING UNIT

SPV.0060.01 SPECIAL (01. SALVAGE AND REINSTALL LIGHTING UNIT)	
LOCATION	EACH
KWIK TRIP TEMP ACCESS	1
TOTAL 0010	1

WALL MODULAR BLOCK GRAVITY LANDSCAPE (STA 31+30)

SPV.0165.01 SPECIAL (01. WALL MODULAR BLOCK GRAVITY LANDSCAPE(STA 31+30))		
STATION	LOCATION	SF
31+30	SW QUAD CTH OT & COMMERCE RD	530
TOTAL 0010		530

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

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CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS

LOCATION	650.8501 EACH
PROJECT (5991-08-11)	1
TOTAL	1

CONDUIT RIGID NONMETALLIC SCHEDULE 40 AND ELECTRICAL WIRE LIGHTING

		652.0235 3-INCH	652.0225 2-INCH	655.0615 10 AWG
FROM	TO	LF	LF	LF
LCC A	LPB-1	30	-	100
LCC A	LPB-9	33	-	104
LPB-1	A1	-	42	200
A1	A2	-	71	316
A2	LPB-2	-	17	128
LPB 2	LPB 3	-	52	268
LPB 3	A3	-	115	492
LPB-3	A4	-	43	306
A4	A5	-	78	344
A5	LPB 4	-	7	-
LPB 4	LPB 5	-	50	-
LPB 5	A6	-	51	-
A6	A7	-	76	336
A7	LBP 6	-	10	100
LPB6	LPB7	-	54	276
LPB 7	A8	-	99	428
LPB 7	A9	-	49	342
A9	A10	-	93	404
A10	LPB 8	-	6	84
LPB 8	LPB-9	-	53	272
CONDUIT STUBS		-	20	-
TOTALS		63	986	4500

PULL BOXES NON-CONDUCTIVE 24X42-INCH

		653.0164 EACH
DESCRIPTION	STATION, OFFSET	
LPB-1	40+42.84 NB, 31.3' RT	1
LPB-2	104+00.95 WB, 21.0' L	1
LPB-3	103+86.47 EB, 21.5' R1	1
LPB-4	31+17.78 NB, 21.4' RT	1
LPB-5	31+23.38 SB, 20.9' LT	1
LPB-6	101+93.94 EB, 21.1' R1	1
LPB-7	101+96.73 WB, 25.7' L	1
LPB-8	40+55.40 SB, 21.0' LT	1
LPB-9	40+43.47 NB, 21.8' RT	1
TOTAL		9

CONCRETE BASES TYPE 5

		654.0105 EACH
DESCRIPTION	STATION, OFFSET	
A1	11+14.96 RA, 41.7' RT	1
A2	103+83.82 WB, 22.3' LT	1
A3	105+03.17 EB, 30.0' RT	1
A4	103+46.43 EB, 37.4' RT	1
A5	31+25.25 NB, 21.9' RT	1
A6	31+73.17 SB, 35.2' LT	1
A7	102+03.90 EB, 22.2' RT	1
A8	100+92.46 EB, 30.0' LT	1
A9	102+50.23 WB, 34.8' LT	1
A10	40+49.16 SB, 21.6' LT	1
TOTAL		10

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

3

LIGHTING CONTROL CABINET AND BASES

DESCRIPTION	STATION, OFFSET	CONCRETE CONTROL	ELECTRICAL SERVICE	LIGHTING CONTROL
		CABINET BASES	METER BREAKER	CABINETS 120/240
		TYPE L24	PEDESTAL (LCC B)	24-INCH
		654.0224	656.0201	659.2124
		EACH	EACH	EACH
LCC A	40+53.00 NB, 28.5' RT	1	1	1
TOTALS		1	1	1

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LIGHTING UNITS AND ELECTRICAL WIRE LIGHTING

DESCRIPTION	STATION, OFFSET	TRANSFORMER	POLES TYPE 5- ALUMINUM	LUMINAIRE ARMS	LUMINAIRES UTILITY LED A	ELECTRICAL WIRE LIGHTING 12 AWG
		BASES BREAKAWAY		SINGLE MEMBER		
		11 1/2-INCH BOLT		4 1/2-INCH CLAMP		
		CIRCLE		8-FT		
		657.0255	657.0322	657.0615	659.1115	655.0610
		EACH	EACH	LF	EACH	LF
A-1	11+14.96 RA, 41.7' RT	1	1	1	1	162
A-2	103+83.82 WB, 22.3' LT	1	1	1	1	162
A-3	105+03.17 EB, 30.0' RT	1	1	1	1	162
A-4	103+46.43 EB, 37.4' RT	1	1	1	1	162
A-5	31+25.25 NB, 21.9' RT	1	1	1	1	162
A-6	31+73.17 SB, 35.2' LT	1	1	1	1	162
A-7	102+03.90 EB, 22.2' RT	1	1	1	1	162
A-8	100+92.46 EB, 30.0' LT	1	1	1	1	162
A-9	102+50.23 WB, 34.8' LT	1	1	1	1	162
A-10	40+49.16 SB, 21.6' LT	1	1	1	1	162
TOTALS		10	10	10	10	1,620

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

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STORM SEWER PIPES															
				608.0318	608.0348	608.0412	608.0418	608.0424	608.3012	608.3015	608.3018	608.3024			
				STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 48-INCH	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH	STORM SEWER PIPE CLASS III-A 12-INCH	STORM SEWER PIPE CLASS III-A 15-INCH	STORM SEWER PIPE CLASS III-A 18-INCH	STORM SEWER PIPE CLASS III-A 24-INCH	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT
FROM	-	TO	LOCATION	LF	LF	LF	LF	LF	LF	LF	LF	LF			
A3	-	A2	CTH OT	-	-	-	-	-	-	-	-	172	704.79	704.50	0.0017
A4	-	A3	CTH OT	-	-	-	-	-	-	-	-	36	704.95	704.89	0.0017
A5	-	A4	CTH OT	-	-	-	-	-	-	-	-	47	705.13	705.05	0.0017
A5-1	-	A5	CTH OT	-	-	-	-	-	-	-	62	-	706.62	706.00	0.0100
A5-2	-	A5-1	CTH OT	-	-	-	-	-	-	23	-	-	707.10	706.87	0.0100
A5-3	-	A5-2	CTH OT	-	-	-	-	-	42	-	-	-	707.77	707.35	0.0100
A6	-	A5	CTH OT	-	-	-	-	164	-	-	-	-	705.51	705.23	0.0017
A6-1	-	A6	CTH OT	-	-	25	-	-	-	-	-	-	706.41	706.28	0.0050
A6-2	-	A6-1	CTH OT	-	-	19	-	-	-	-	-	-	706.60	706.50	0.0050
A7	-	A6	CTH OT	-	-	-	91	-	-	-	-	-	706.70	706.01	0.0076
B2	-	B1	CTH OT	-	-	-	-	-	-	-	90	-	704.84	704.39	0.0050
B2-1	-	B2	CTH OT	-	-	-	-	-	-	-	23	-	705.17	704.94	0.0100
B2-2	-	B2-1	CTH OT	-	-	-	-	-	-	-	45	-	705.72	705.27	0.0100
B2-3	-	B2-2	CTH OT	-	-	-	-	-	8	-	-	-	706.30	706.22	0.0100
B2	-	B3	CTH OT	-	-	-	-	-	-	-	37	-	705.13	704.94	0.0050
B4	-	B3	CTH OT	-	-	-	-	-	-	-	68	-	705.57	705.23	0.0050
B5	-	B4	CTH OT	-	-	-	-	-	-	-	27	-	705.80	705.67	0.0050
B5-1	-	B5	CTH OT	-	-	-	-	-	21	-	-	-	706.49	706.29	0.0100
B6	-	B5	CTH OT	-	-	-	-	-	-	-	17	-	705.99	705.90	0.0050
B7	-	B6	CTH OT	-	-	-	-	-	90	-	-	-	708.17	706.49	0.0187
C2	-	C1	CTH OT	-	-	-	-	-	-	-	17	-	720.84	720.50	0.0200
C3	-	C2	CTH OT	-	-	-	-	-	63	-	-	-	722.60	721.34	0.0200
D2	-	D1	CTH OT	-	-	-	-	-	-	-	25	-	713.72	713.47	0.0100
D3	-	D2	CTH OT	-	-	-	-	-	-	43	-	-	714.40	713.97	0.0100
D3-1	-	D3	CTH OT	-	-	-	-	-	65	-	-	-	714.97	714.65	0.0048
D4	-	D3	CTH OT	-	-	-	-	-	24	-	-	-	715.15	714.91	0.0100
E1	-	E2	CTH OT	30	-	-	-	-	-	-	-	-	704.10	703.87	0.0077
E2	-	E3	CTH OT	24	-	-	-	-	-	-	-	-	703.87	703.69	0.0077
E2-1	-	E2	CTH OT	-	-	-	-	-	64	-	-	-	704.20	703.88	0.0050
G2	-	G1	CTH OT	-	21	-	-	-	-	-	-	-	700.87	700.81	0.0030
G4	-	G3	CTH OT	-	24	-	-	-	-	-	-	-	701.59	701.52	0.0030
X1	-	A5	CTH OT	-	-	-	-	-	28	-	-	-	706.38	706.11	0.0100
X2	-	B7	CTH OT	-	-	-	-	-	14	-	-	-	710.26	709.57	0.0513
TOTALS				54	45	44	91	164	419	66	411	255			

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PROJECT NO: 5991-08-11

HWY: CTH OT

COUNTY: LA CROSSE

MISCELLANEOUS QUANTITIES

SHEET

E

STORM SEWER STRUCTURES																		
				611.0530	611.0610	611.0624	611.0627	611.0630	611.0652	611.2004	611.2005	611.2007	611.3004	611.3225	611.3230			
STRUCTURE	STATION	OFFSET*	LOCATION	MANHOLE	INLET	INLET	INLET	INLET COVERS TYPE HM-GJ	INLET	MANHOLES 4- FT DIAMETER	MANHOLES 5- FT DIAMETER	MANHOLES 7- FT DIAMETER	INLETS 4-FT DIAMETER	INLETS 2X2.5-FT	INLETS 2X3-FT	RIM** ELEVATION	INVERT*** ELEVATION	DEPTH**** FT
				COVERS TYPE J EACH	COVERS TYPE BW EACH	COVERS TYPE H EACH	COVERS TYPE HM EACH		COVERS TYPE T EACH									
A2	105+86.91	25.50' RT	EB	-	-	1	-	-	-	-	-	-	1	-	-	716.77	703.59	12.18
A3	104+13.60	21.06' RT	EB	-	-	1	-	-	-	-	-	-	1	-	-	711.59	704.79	6.05
A4	103+78.05	17.89' RT	EB	-	-	1	-	-	-	-	-	-	1	-	-	711.32	704.95	5.62
A5	10+52.84	20.38' RT	RA	1	-	-	-	-	-	-	-	1	-	-	-	711.99	705.13	5.88
A5-1	31+53.98	21.39' RT	NB	-	-	1	-	-	-	-	-	-	1	-	-	711.53	706.62	4.12
A5-2	31+59.14	1.50' LT	NB	-	-	1	-	-	-	-	-	-	1	-	-	711.81	707.10	3.89
A5-3	31+32.11	16.63' LT	SB	-	-	1	-	-	-	-	-	-	-	-	1	711.94	707.77	3.34
A6	102+06.55	17.77' RT	EB	-	-	1	-	-	-	-	-	-	1	-	-	710.15	705.51	3.89
A6-1	102+08.85	1.50' RT	WB	-	-	1	-	-	-	-	-	-	-	-	1	710.28	706.41	3.05
A6-2	102+10.75	17.79' LT	WB	-	-	1	-	-	-	-	-	-	-	-	1	709.90	706.34	2.56
A7	101+18.23	23.37' RT	EB	-	-	1	-	-	-	-	-	-	1	-	-	711.61	706.70	4.12
B1	41+05.14	2.11' LT	NB	1	-	-	-	-	-	1	-	-	-	-	-	713.48	704.22	8.18
B2	40+14.93	1.50' RT	SB	-	-	1	-	-	-	-	1	-	-	-	-	710.69	704.84	5.06
B2-1	40+09.18	20.65' LT	SB	-	-	1	-	-	-	-	-	-	1	-	-	710.36	705.17	4.39
B2-2	11+85.66	1.42' LT	RA	-	-	-	-	-	1	-	-	-	1	-	-	710.36	705.72	3.77
B2-3	11+94.01	1.42' LT	RA	-	-	-	-	-	1	-	-	-	-	1	-	710.38	706.30	3.16
B3	40+20.08	20.27' RT	NB	-	-	1	-	-	-	-	-	-	1	-	-	710.53	705.13	4.61
B4	103+41.87	22.27' LT	WB	-	-	1	-	-	-	-	1	-	-	-	-	711.39	705.57	5.03
B5	103+75.61	18.75' LT	WB	-	-	1	-	-	-	-	-	-	1	-	-	711.23	705.80	4.64
B5-1	103+70.27	1.50' RT	WB	-	-	1	-	-	-	-	-	-	-	-	1	711.48	706.49	4.15
B6	103+94.92	16.56' LT	WB	-	-	1	-	-	-	-	-	-	1	-	-	711.32	705.99	4.54
B7	104+84.44	19.78' LT	WB	-	-	1	-	-	-	-	-	-	-	-	1	713.50	708.17	4.49
C1	116+53.97	38.39' RT	EB	-	-	-	-	-	-	-	-	-	-	-	-	-	720.50	-
C2	116+52.99	21.48' RT	EB	-	-	-	1	-	-	-	-	-	-	-	1	727.03	720.84	5.39
C3	116+52.61	21.46' LT	WB	-	-	-	1	-	-	-	-	-	-	-	1	726.97	722.60	3.53
D1	119+44.03	50.58' RT	EB	-	-	-	-	-	-	-	-	-	-	-	-	-	713.47	-
D2	119+43.49	25.50' RT	EB	-	-	-	-	1	-	-	-	-	-	-	1	719.41	713.51	4.90
D3	119+44.76	2.80' RT	WB	-	-	-	-	1	-	-	-	-	1	-	-	719.84	714.40	4.63
D3-1	120+07.29	3.70' LT	EB	-	1	-	-	-	-	-	-	-	1	-	-	718.36	714.97	2.23
D4	119+44.75	21.50' LT	WB	-	-	-	-	1	-	-	-	-	-	-	1	719.39	715.15	3.41
E1	123+61.72	21.30' RT	EB	-	-	-	-	1	-	-	-	-	-	-	1	708.70	704.10	3.80
E2	123+62.48	8.79' LT	EB	-	-	-	-	1	-	-	-	-	1	-	-	708.99	703.87	4.33
E2-1	124+25.94	3.79' LT	EB	-	1	-	-	-	-	-	-	-	1	-	-	706.95	702.62	3.00
E3	123+62.14	21.30' LT	WB	-	-	-	-	1	-	-	-	-	-	-	1	708.58	703.69	4.11
G1	112+17.30	113.18' LT	WB	-	-	-	-	-	-	-	-	-	-	-	-	-	700.81	-
G2	112+17.60	91.70' LT	WB	-	-	-	-	-	-	-	-	-	-	-	-	-	700.87	-
G3	112+19.07	91.81' RT	EB	-	-	-	-	-	-	-	-	-	-	-	-	-	701.52	-
G4	112+19.40	115.81' RT	EB	-	-	-	-	-	-	-	-	-	-	-	-	-	701.59	-
R2	111+66.00	11.50' RT	WB	-	-	-	-	1	-	-	-	-	-	-	1	732.14	727.87	3.27
X1	103+49.49	34.68' RT	EB	-	-	-	-	-	-	-	-	-	-	-	-	-	706.38	-
TOTALS				2	2	18	2	7	2	1	2	1	16	1	12			

REMARKS:
*STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE
**RIM ELEV IS AT THE INLET COVER FLANGE LOCATION
***FOR STRUCTURES WITH SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE SUMP. FOR STRUCTURES WITHOUT SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE
****DEPTH = RIM ELEV - TOP OF STRUCTURE BASE ELEV - COVER HEIGHT - 6-INCH ADJUSTMENT RING HEIGHT

3

STORM SEWER STRUCTURES						
		520.8000	520.1018	522.1048	650.4000	
				APRON		
				ENDWALLS FOR		
				APRON	CULVERT PIPE	
		ENDWALLS FOR	REINFORCED	CONSTRUCTION		
		CULVERT PIPE	CONCRETE	STAKING STORM		
		18-INCH	48-INCH	SEWER		
		COLLARS FOR PIPE				
STATION	OFFSET*	LOCATION	EACH	EACH	EACH	EACH
105+86.91	25.50' RT	EB	-	-	-	1
104+13.60	21.06' RT	EB	-	-	-	1
103+78.05	17.89' RT	EB	-	-	-	1
10+52.84	20.38' RT	RA	-	-	-	1
31+53.98	21.39' RT	NB	-	-	-	1
31+59.14	1.50' LT	NB	-	-	-	1
31+32.11	16.63' LT	SB	-	-	-	1
102+06.55	17.77' RT	EB	-	-	-	1
102+08.85	1.50' RT	WB	-	-	-	1
102+10.75	17.79' LT	WB	-	-	-	1
101+18.23	23.37' RT	EB	-	-	-	1
41+05.14	2.11' LT	NB	-	-	-	1
40+14.93	1.50' RT	SB	-	-	-	1
40+09.18	20.65' LT	SB	-	-	-	1
11+85.66	1.42' LT	RA	-	-	-	1
11+94.01	1.42' LT	RA	-	-	-	1
40+20.08	20.27' RT	NB	-	-	-	1
103+41.87	22.27' LT	WB	-	-	-	1
103+75.61	18.75' LT	WB	-	-	-	1
103+70.27	1.50' RT	WB	-	-	-	1
103+94.92	16.56' LT	WB	-	-	-	1
104+84.44	19.78' LT	WB	-	-	-	1
116+53.97	38.39' RT	EB	-	1	-	1
116+52.99	21.48' RT	EB	-	-	-	1
116+52.61	21.46' LT	WB	-	-	-	1
119+44.03	50.58' RT	EB	-	1	-	1
119+43.49	25.50' RT	EB	-	-	-	1
119+44.76	2.80' RT	WB	-	-	-	1
120+07.29	3.70' LT	EB	-	-	-	1
119+44.75	21.50' LT	WB	-	-	-	1
123+61.72	21.30' RT	EB	-	-	-	1
123+62.48	8.79' LT	EB	-	-	-	1
124+25.94	3.79' LT	EB	-	-	-	1
123+62.14	21.30' LT	WB	-	-	-	1
112+17.30	113.18' LT	WB	-	-	1	1
112+17.60	91.70' LT	WB	1	-	-	-
112+19.07	91.81' RT	EB	1	-	-	-
112+19.40	115.81' RT	EB	-	-	1	1
111+66.00	11.50' RT	WB	-	-	-	1
103+49.49	34.68' RT	EB	1	-	-	1
TOTALS			3	2	2	38

REMARKS:
*STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE
**RIM ELEV IS AT THE INLET COVER FLANGE LOCATION

3

RECONSTRUCTING INLETS				
			611.0430	
	STATION	OFFSET	RIM ELEVATION	EACH
R1	110+26.94 WB	1.50 RT	730.79	1
R3	121+27.56 WB	11.74 RT	710.12	1
R4	108+29.42 EB	25.26 RT	724.56	1
R5	108+28.47 EB	5.9 LT	725.06	1
R6	108+31.61 WB	21.4 LT	724.70	1
TOTAL				5

CONNECT TO EXISTING STORM SEWER		
		SPV.0060.02
	STATION	OFFSET
104+85.10 W		EACH
	33.27 LT	1
TOTAL		1

<u>TEMPORARY STORM SEWER PLUG</u>	
	SPV.0060.04
	EACH
A6-2	1
B4	1
TOTAL	2

STORM STRUCTURE NOTES

STRUCTURE	STAGE	WORK	STAGE	WORK
A2	3A	INSTALL		
A3	3A	INSTALL		
A4	3A	INSTALL		
A5	3A	INSTALL, TEMPORARY CONNECTION TO EXISTING WEST INVERT UNTIL 3B PIPES ARE COMPLETE	3B	COMPLETE
A5-1	3B	INSTALL		
A5-2	3B	INSTALL		
A5-3	3B	INSTALL		
A6	3B	INSTALL		
A6-1	2B	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
A6-2	2B	INSTALL, TEMPORARY PIPE TO B2-3, PLUG SOUTH INVERT	4	COMPLETE
A7	3B	INSTALL		
B1	2B	INSTALL		
B2	2B	INSTALL		
B2-1	2B	INSTALL		
B2-2	2B	INSTALL, TEMPORARY INLET COVER	4	COMPLETE
B2-3	2B	INSTALL, TEMPORARY INLET COVER, TEMPORARY PIPE FROM A6-2	4	COMPLETE
B3	2A	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
B4	2A	INSTALL, TEMPORARY INLET COVER, PLUG NORTH INVERT, TEMPORARY PIPE TO EX INL 1	4	COMPLETE
B5	2A	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
B5-1	2A	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
B6	2A	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
B7	A2	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
C1	3	INSTALL		
C2	3	INSTALL		
C3	2	INSTALL W/NONPERMABLE FABRIC	3	COMPLETE
D1	3	INSTALL		
D2	3	INSTALL		
D3	2	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
D3-1	2	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
D4	2	INSTALL		
E1	3	INSTALL		
E2	2	INSTALL		
E2-1	2	INSTALL		
E3	2	INSTALL		
G1	2	INSTALL		
G2	2	INSTALL		
G3	3	INSTALL		
G4	3	INSTALL		
R1	2	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
R2	2	INSTALL		
R3	2	INSTALL, TEMPORARY COVER PLATE	4	COMPLETE
R4	3	INSTALL		
R5	2	INSTALL		
R6	2	INSTALL		

TEMPORARY COVER PLATE

	611.8120.S
	EACH
A6-1	1
B3	1
B5	1
B5-1	1
B6	1
B7	1
D3	1
D3-1	1
R1	1
R3	1
TOTAL	10

TEMPORARY INLET COVER

	SPV.0060.05
	EACH
B2-2	1
B2-3	1
B4	1
TOTAL	3

TEMPORARY PIPE 12-INCH

				SPV.0090.01
LOCATION	STAGE	INV 1	INV 2	LF
A6-2 TO B2-3	2B	706.60	706.30	72
B4 TO EX INL 1	2A	705.50	705.15	30
TOTAL				102

*FIELD VERIFY INVERT ELEVATIONS FOR TEMPORARY PIPE CONNECTIONS

ABANDON TEMPORARY PIPE

		SPV.0060.03
LOCATION	STAGE	EACH
A6-2 TO B2-3	4	1
B4 TO EX INL 1	4	1
TOTAL		2



LA CROSSE COUNTY HIGHWAY DEPARTMENT TRANSPORTATION PROJECT PLAT TITLE SHEET

5991-08-10

STH 35 - CTH SN (CTH OT)

STH 35 TO CTH SN

CTH OT
LA CROSSE COUNTY

4

CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER SYMBOL		R/W MONUMENT (TO BE SET)	•
QUARTER LINE	---	SECTION CORNER MONUMENT		NON-MONUMENTED R/W POINT	○
SIXTEENTH LINE	---	GEODETIC SURVEY MONUMENT		FOUND IRON PIN (1-INCH UNLESS NOTED)	IP
NEW REFERENCE LINE	---	SIXTEENTH CORNER MONUMENT		OFF-PREMISE SIGN	
NEW R/W LINE	---	SIGN		COMPENSABLE	
EXISTING R/W OR HE LINE	---			NON-COMPENSABLE	
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	---				
TO BE REMOVED	---				
CULVERT	---				
PARALLEL OFFSETS	---				

CONVENTIONAL ABBREVIATIONS

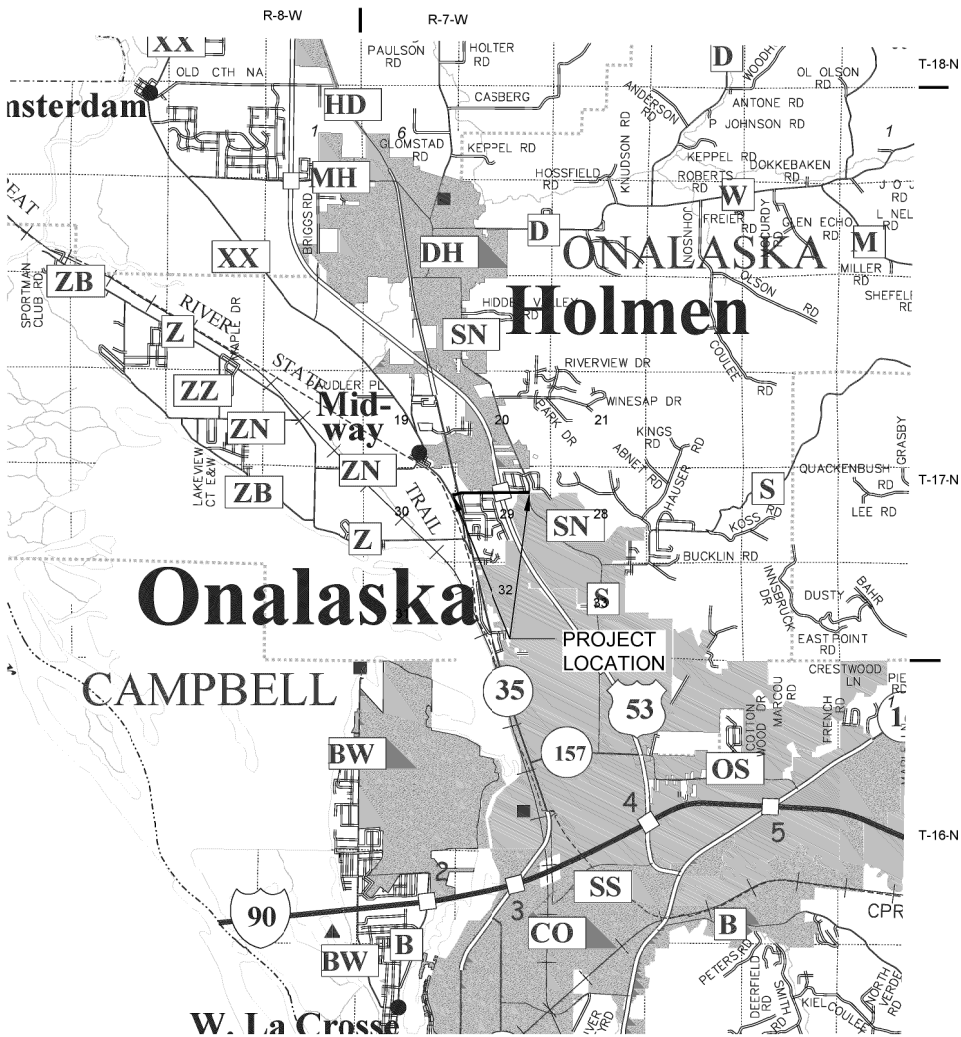
ACCESS RIGHTS	AR	POINT OF INTERSECTION	PI
ACRES	AC	PROPERTY LINE	PL
AHEAD	AH	RECORDED AS	(100')
ALUMINUM	ALUM	REEL / IMAGE	R/I
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RESTRICTIVE DEVELOPMENT	RDE
CENTERLINE	C/L	EASEMENT	
CERTIFIED SURVEY MAP	CSM	RIGHT	RT
CONCRETE	CONC	RIGHT 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	TLE
GAS VALVE	GV	EASEMENT	
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

W	WATER
G	GAS
T	TELEPHONE
OH	OVERHEAD
E	TRANSMISSION LINES
TV	ELECTRIC
FO	CABLE TELEVISION
SA	FIBER OPTIC
SS	SANITARY SEWER
SS	STORM SEWER



NOTES:

THE NOTES, CONVENTIONAL SIGNS, AND ABBREVIATIONS ARE ASSOCIATED WITH EACH TRANSPORTATION PROJECT PLAT FOR PROJECT 5991-08-10.

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

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

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.

FOUND MONUMENT INFORMATION SHOWN REPRESENTS TYPE AND LOCATION OF EXISTING MONUMENTS WITHOUT OPINION AS TO THEIR VALIDITY AND USE AS A PROPERTY CORNER.

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 FOR PROPERTIES BEING IMPACTED ARE DRAWN FROM DATA DERIVED FROM FILED/RECORDED 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.

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, CENTERLINE OF EXISTING PAVEMENTS AND/OR EXISTING OCCUPATIONAL LINES.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE LA CROSSE COUNTY HIGHWAY DEPARTMENT.

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

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

PROJECT NUMBER 5991-08-10 - 4. 01
SHEET 2-OF-2

TRANSPORTATION PROJECT PLAT NO: 5991-08-10-4.01 - EXTENSION SHEET

RELOCATION ORDER STH 35 TO CTH SN (CTH OT), LA CROSSE COUNTY

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R/W COURSE TABLE					
COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
100-101	S83°58'50"E	48.60'	111-112	N87°05'55"W	35.24'
101-102	S83°58'50"E	42.20'	112-113	S88°51'00"W	1.84'
102-103	S46°02'52"E	44.78'	113-114	N01°09'00"W	1.02'
103-104	N88°54'45"E	104.44'	114-115	SEE CURVE TABLE	
104-105	S01°10'40"E	34.89'	115-116	SEE CURVE TABLE	
105-106	S01°10'40"E	37.46'	116-117	SEE CURVE TABLE	
106-107	S88°51'00"W	89.19'	117-118	N13°10'58"W	53.19'
107-108	S68°52'06"W	49.94'	118-119	N13°10'58"W	61.46'
108-109	S42°25'32"W	40.09'	119-120	N54°43'06"E	44.48'
109-110	S01°09'00"E	93.40'	120-100	S83°58'50"E	22.69'
110-111	N87°05'55"W	30.92'			

R/W CURVE TABLE				
CURVE #	LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	23.87'	262.97'	N02°45'46"W	23.86'
C2	56.17'	233.00'	N12°26'14"W	56.03'
C3	40.82'	133.03'	N28°00'58"W	40.66'

FCUND MONUMENT TABLE			
POINT	Y	X	DESCRIPTION
5012	172099.528	446604.239	1" IRON PIPE
5013	172101.749	446704.311	¾" REBAR
5014	172212.469	446636.407	¾" REBAR
5015	172213.293	446681.312	¾" REBAR
5016	172312.757	446686.592	¾" REBAR
5017	172362.556	446709.358	1" IRON PIPE
5019	172193.429	446826.007	¾" REBAR
5020	172223.672	447019.865	1" IRON PIPE

R/W STATION & OFFSET TABLE		
POINT	STATION	OFFSET
100	40+16.32 CORP	47.63' LT
101	40+06.66 CORP	0.00'
102	113+19.10 OT	79.13' LT
103	113+47.61 OT	44.60' LT
104	114+51.58 OT	34.74' LT
105	114+48.34 OT	0.00'
106	114+44.86 OT	37.30' RT
107	113+56.06 OT	28.97' RT
108	113+07.74 OT	41.58' RT
109	201+16.76 COM	46.55' RT
110	200+30.17 COM	30.57' RT
111	200+34.62 COM	0.00'
112	200+40.61 COM	34.78' LT
113	200+40.81 COM	36.61' LT
114	200+41.92 COM	36.51' LT
115	200+67.94 COM	33.94' LT
116	112+25.95 OT	78.10' RT
117	111+97.55 OT	49.00' RT
118	111+70.97 OT	0.00'
119	111+58.18 OT	60.12' LT
120	40+20.83 CORP	69.87' LT

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
150	40+78.20 CORP	46.40' RT
151	40+62.99 CORP	76.28' RT
152	113+58.54 OT	73.62' LT
153	113+57.58 OT	61.74' LT
154	113+70.02 OT	44.07' LT
155	114+51.75 OT	36.63' LT
156	114+81.56 OT	40.57' RT
157	114+81.32 OT	43.56' RT
158	114+45.92 OT	40.41' RT
159	114+45.60 OT	43.89' RT
160	113+80.88 OT	37.83' RT
161	113+35.12 OT	38.50' RT
162	113+14.97 OT	44.81' RT
163	112+91.09 OT	63.45' RT
164	112+82.63 OT	77.69' RT
165	200+29.77 COM	36.56' RT

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
166	200+30.85 COM	35.56' LT
167	200+31.70 COM	45.53' LT
168	200+59.14 COM	42.79' LT
169	200+68.78 COM	41.91' LT
170	201+25.24 COM	40.86' LT
171	111+88.00 OT	52.00' RT
172	110+65.55 OT	55.10' LT
173	110+65.55 OT	57.10' LT
174	111+24.87 OT	60.17' LT
175	40+54.04 CORP	64.93' LT
176	40+84.56 CORP	61.69' LT
177	40+84.62 CORP	64.71' LT
178	41+24.82 CORP	71.30' LT
179	41+28.08 CORP	52.66' LT
180	40+86.56 CORP	61.64' LT

4

NOTES:

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

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 3.

TPP NUMBER 5991-08-10-4.01
SHEET 3 OF 3

TRANSPORTATION PROJECT PLAT NO: 5991-08-10-4.01

THAT PART OF LOT 1 OF CEDAR CREEK BUSINESS PARK LOCATED IN AND THAT PART OF THE NORTHEAST ¼ OF THE NORTHWEST ¼, AND THAT PART OF THE NORTHWEST ¼ OF THE NORTHWEST ¼, SECTION 29, T17N, R7W, VILLAGE OF HOLMEN, AND THAT PART OF LOTS 1 AND 2 OF THE COMMERCIAL QUARTER OF BLOCK 2, LOCATED IN THE SOUTHEAST ¼ OF THE NORTHWEST ¼, AND THAT PART OF THE SOUTHWEST ¼ OF THE NORTHWEST ¼, SECTION 29, T17N, R7W, CITY OF ONALASKA, LA CROSSE COUNTY, WISCONSIN.

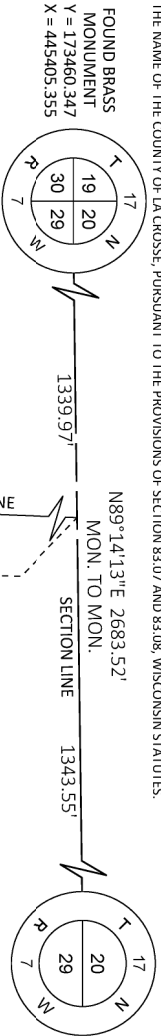
RELOCATION ORDER STH 35 TO CTH OT, LA CROSSE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE LA CROSSE COUNTY HIGHWAY DEPARTMENT DEMS 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 SECTIONS 83.07 AND 83.08, WISCONSIN STATUTES, THE LA CROSSE COUNTY

HIGHWAY DEPARTMENT HEREBY ORDERS THAT:

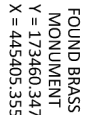
- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE HIGHWAY DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE COUNTY OF LA CROSSE, PURSUANT TO THE PROVISIONS OF SECTION 83.07 AND 83.08, WISCONSIN STATUTES.



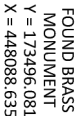
RECEIVED FOR REGISTER OF DEEDS
PROJECT NUMBER 5991-08-10-4.01
SHEET 1 OF 3

1830042
LACROSSE COUNTY
REGISTER OF DEEDS
ROBERT L. KADRYNAS
RECORDED ON
02/11/2025 10:28 AM
VOLUME: 18PCAB PAGE: 128B

VILLAGE
LOT 1 CSM
V 7 P 58
DOC NO. 1158132



FOUND BRASS
MONUMENT
Y = 173460.347
X = 445405.355

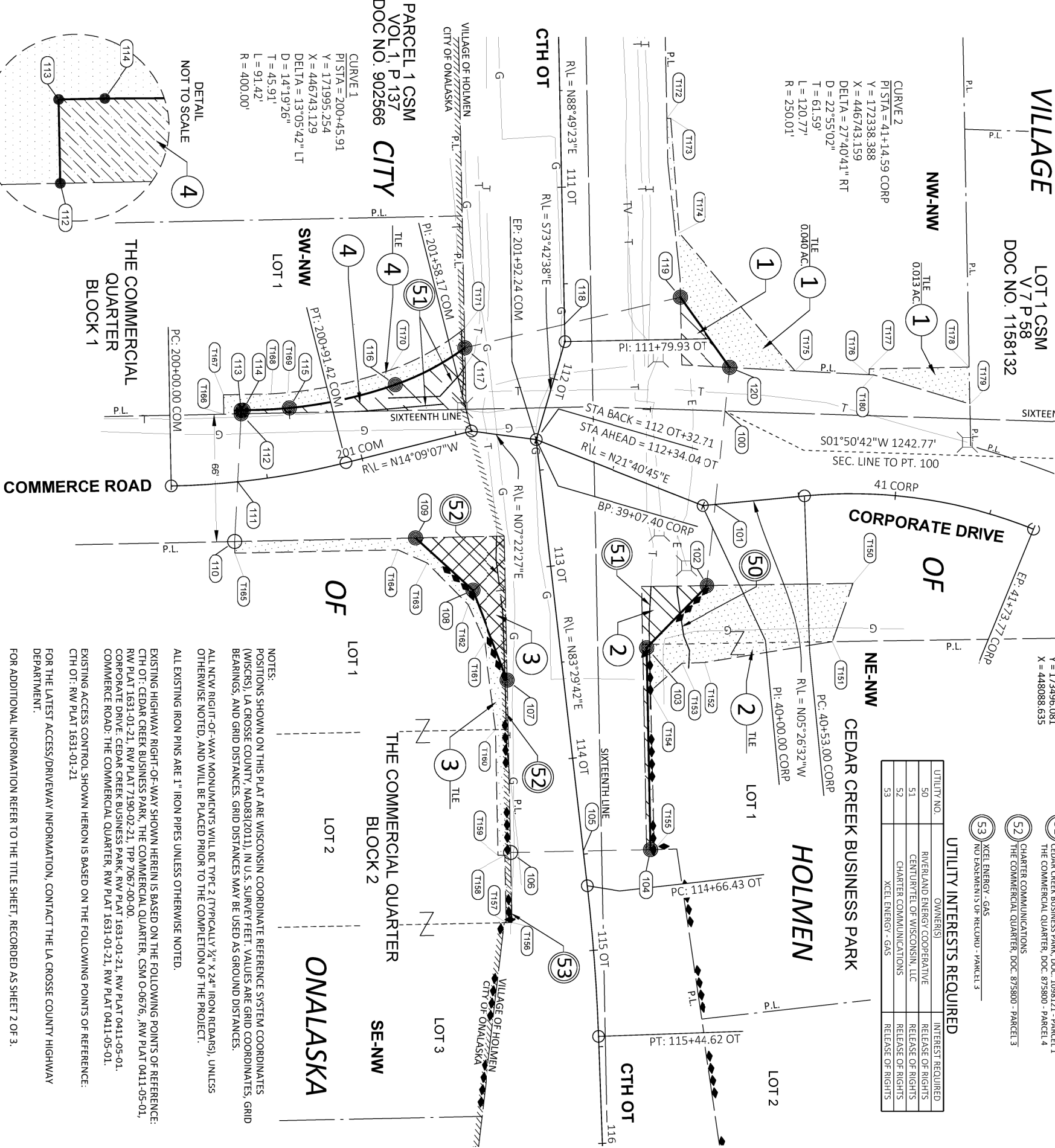


FOUND BRASS
MONUMENT
Y = 173496.081
X = 448088.635

UTILITY NO.	OWNER(S)	INTEREST REQUIRED
50	RIVERLAND ENERGY COOPERATIVE	RELEASE OF RIGHTS
51	CENTURYTEL OF WISCONSIN, LLC	RELEASE OF RIGHTS
52	CHARTER COMMUNICATIONS	RELEASE OF RIGHTS
53	XCEL ENERGY - GAS	RELEASE OF RIGHTS

UTILITY INTERESTS REQUIRED

- 50 RIVERLAND ENERGY COOPERATIVE
CEDAR CREEK BUSINESS PARK, DOC. 1098121 - PARCEL 1
- 51 CENTURYTEL OF WISCONSIN, LLC
CEDAR CREEK BUSINESS PARK, DOC. 1098121 - PARCEL 1
THE COMMERCIAL QUARTER, DOC. 875800 - PARCEL 4
- 52 CHARTER COMMUNICATIONS
THE COMMERCIAL QUARTER, DOC. 875800 - PARCEL 3
- 53 XCEL ENERGY - GAS
RU FASHMENTS OF RECORD - PARCEL 3



PARCEL 1 CSM
VOL 1, P 137
DOC NO. 902566
CITY

CURVE 1
PI STA = 200+45.91
Y = 171995.254
X = 446743.129
DELTA = 13°05'42" LT
D = 14°19'26"
T = 45.91'
L = 91.42'
R = 400.00'

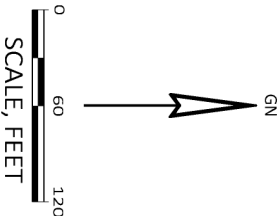
THE COMMERCIAL
QUARTER
BLOCK 1

SCHEDULE OF LANDS AND INTERESTS REQUIRED

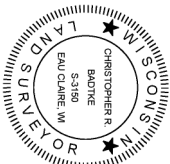
PARCEL NO.	OWNER(S)	INTERESTS REQUIRED	R/W (ACRES)		
			NEW	EXISTING	TOTAL
1	RIVER HOLDING COMPANY	FEE & TLE	0.010	----	0.010
2	GOLDEN ARCH LIMITED PARTNERSHIP	FEE & TLE	0.018	----	0.018
3	KT REAL ESTATE HOLDINGS, LLC	FEE & TLE	0.029	----	0.029
4	TOWN OF ONALASKA	FEE & TLE	0.028	----	0.028

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

THE PURPOSE OF ALL TLES IS FOR GRADING, UNLESS NOTED.



AYRES



SIGNATURE: *Christopher R. Badtke* DATE: 02/10/2025
PRINT NAME: CHRISTOPHER R. BADTKE
REGISTRATION NUMBER: 5-3150
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE LA CROSSE COUNTY HIGHWAY DEPARTMENT.
SIGNATURE: *Joe Langenberg* DATE: 2-11-25
PRINT NAME: JOE LANGENBERG

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
BM#50	93+57 EB	719.98	40.1' LT, LPOL BASE BOLT, Y=172174.90, X=445775.86
BM#51	11+76 RA	711.01	2.2' RT, LPOL BASE BOLT, Y=172208.41, X=446706.63

UTILITIES ARE IDENTIFIED ON THE INTERSECTION DETAILS.



CONTROL POINT 1

STA 92+28.78 EB, -31.1 LT
Y = 172156.94
X = 445643.11
120D SPIKE
ELEV = 718.74

CONTROL POINT 2

STA 99+36.37 EB, 30.1 RT
Y = 172116.54
X = 446356.16
120D SPIKE
ELEV = 718.01

BEGIN PROJECT
STA 91+45.69 EB

Y = 172111.04
X = 445566.84
MATCH EXISTING
SAWCUT REQ'D

FRONTAGE RD
OAK HILLS DR
PAULA DR
CTH OT

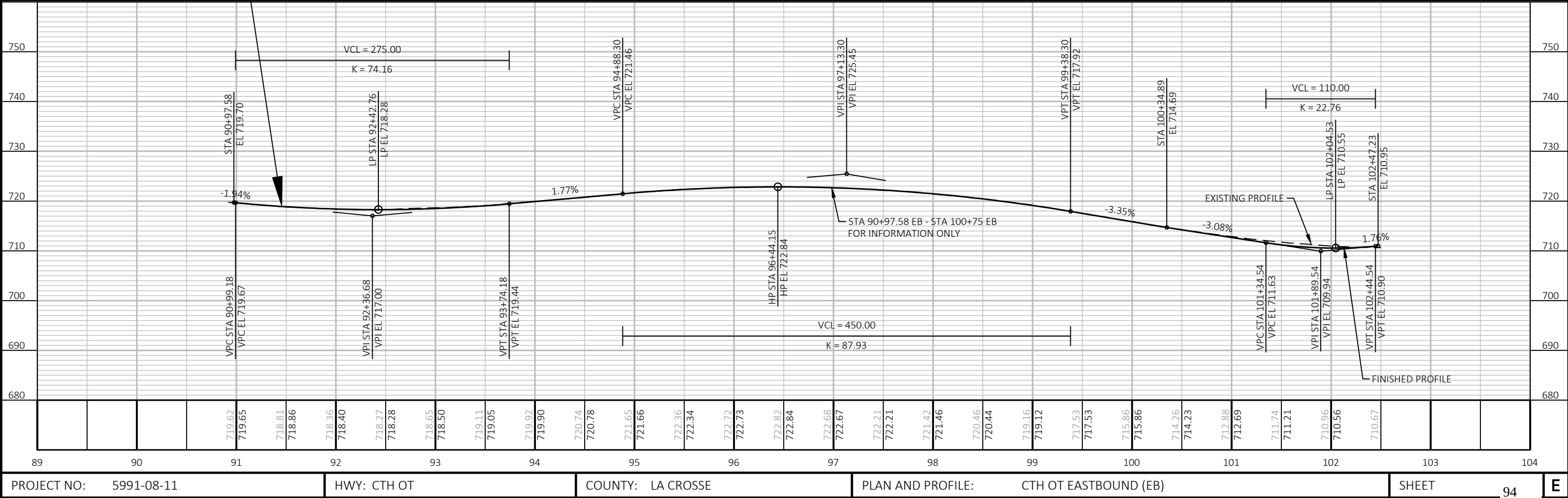
SLOPE INTERCEPT

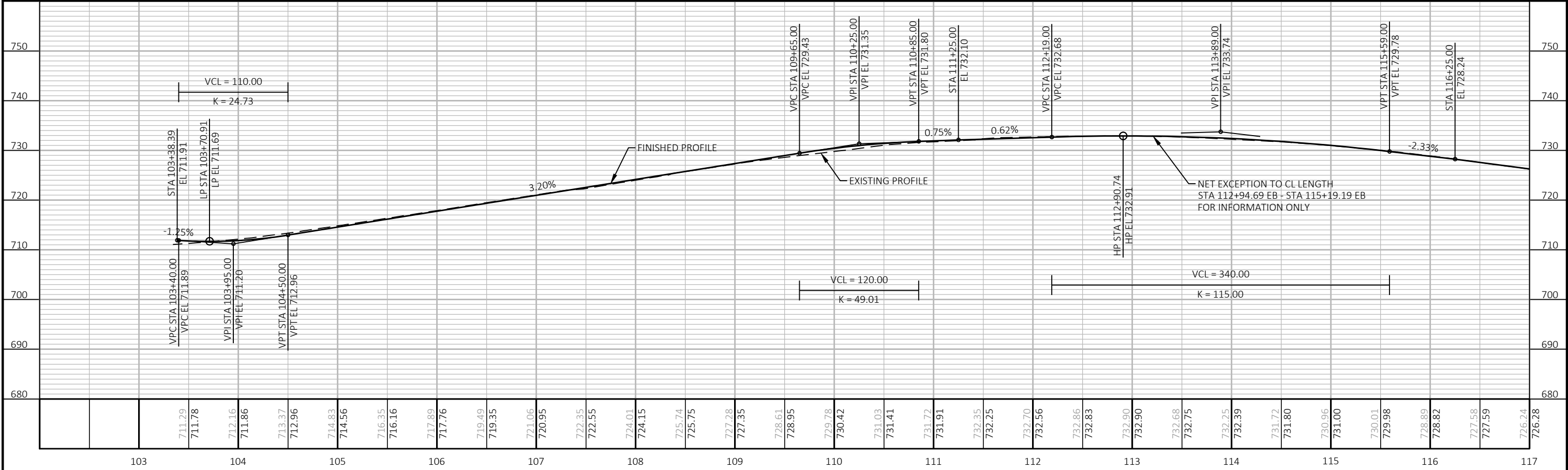
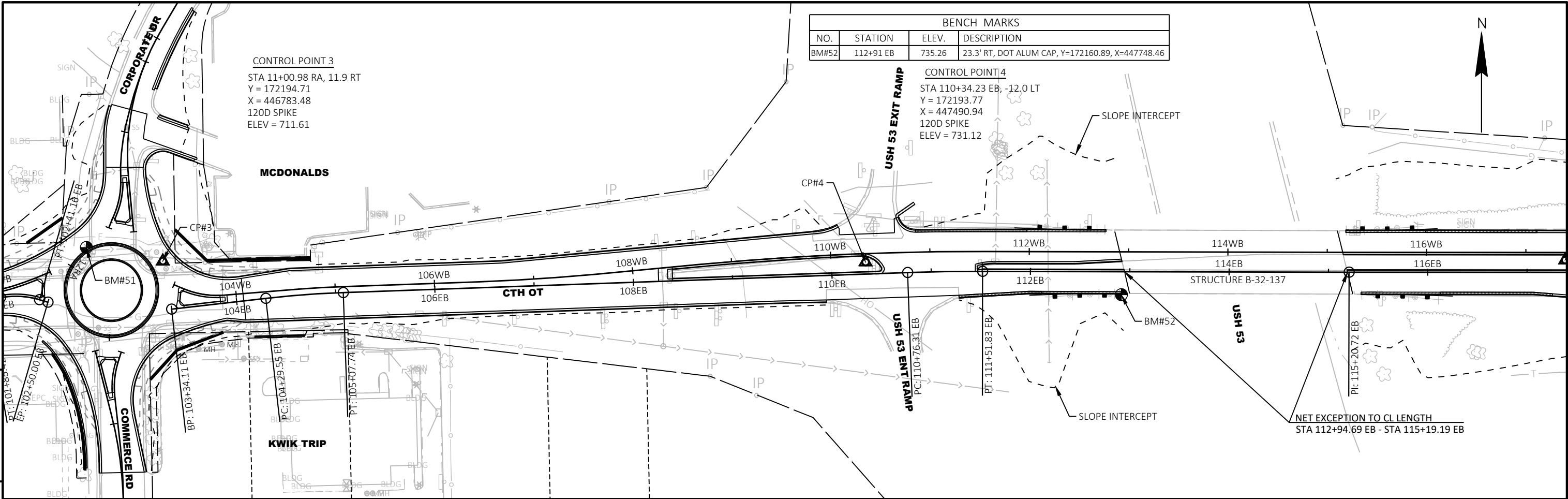
SLOPE INTERCEPT

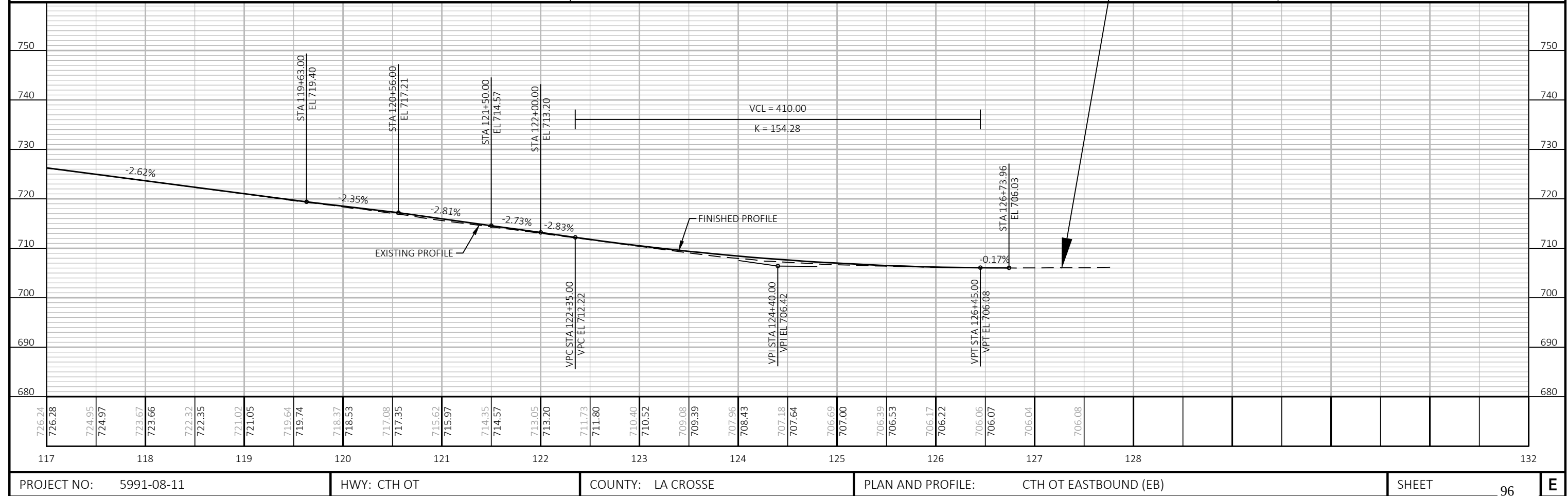
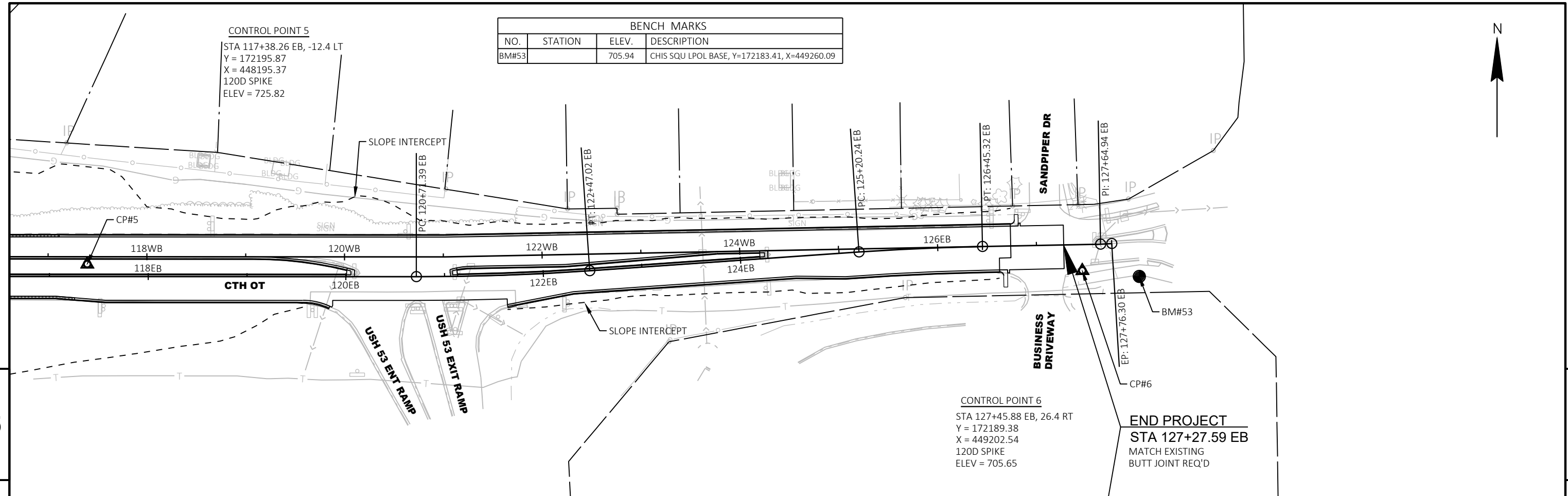
COMMERCE RD
CORPORATE DR

5

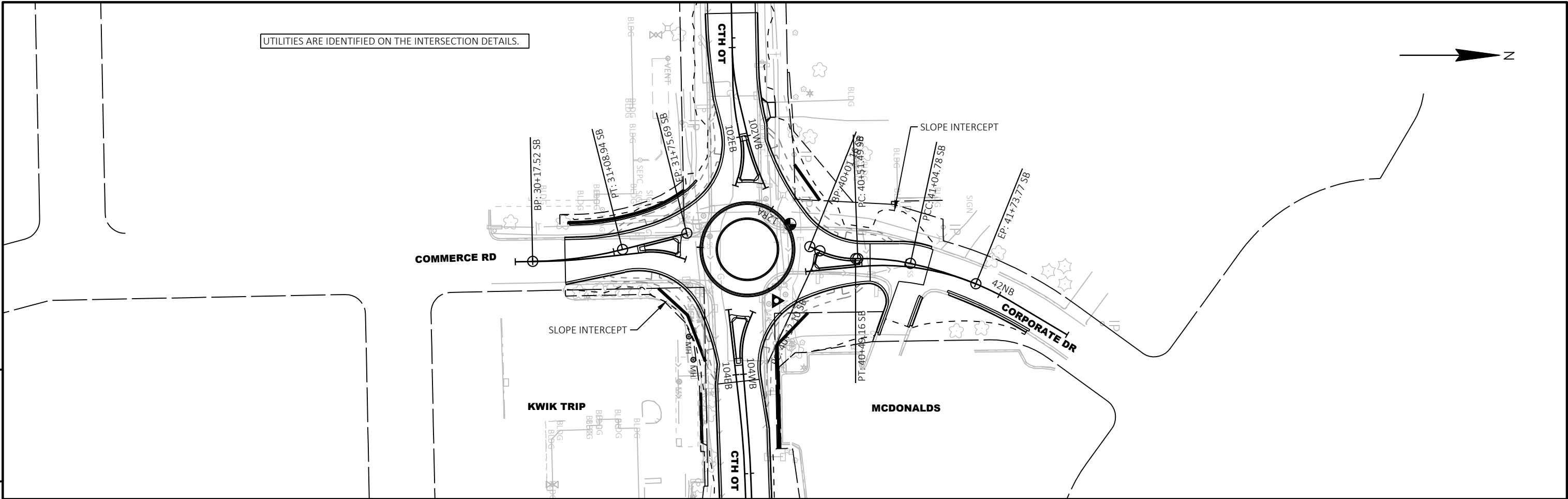
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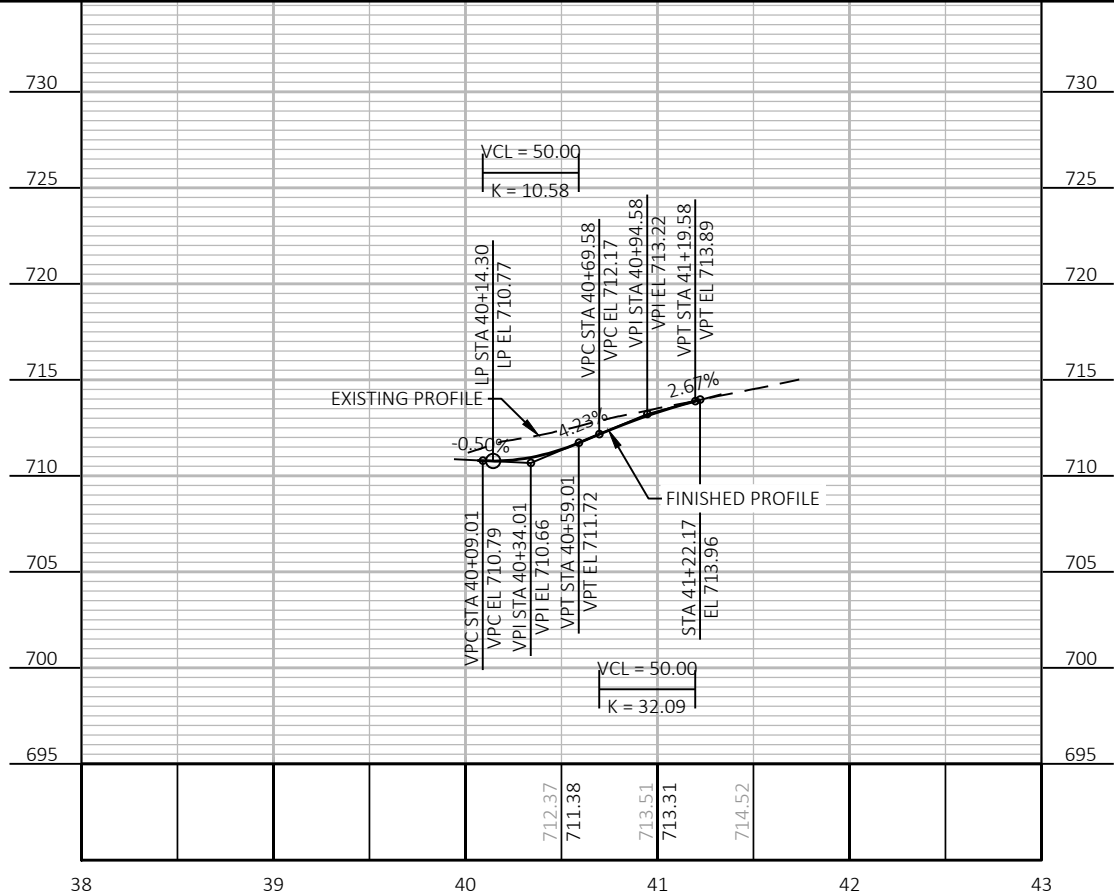
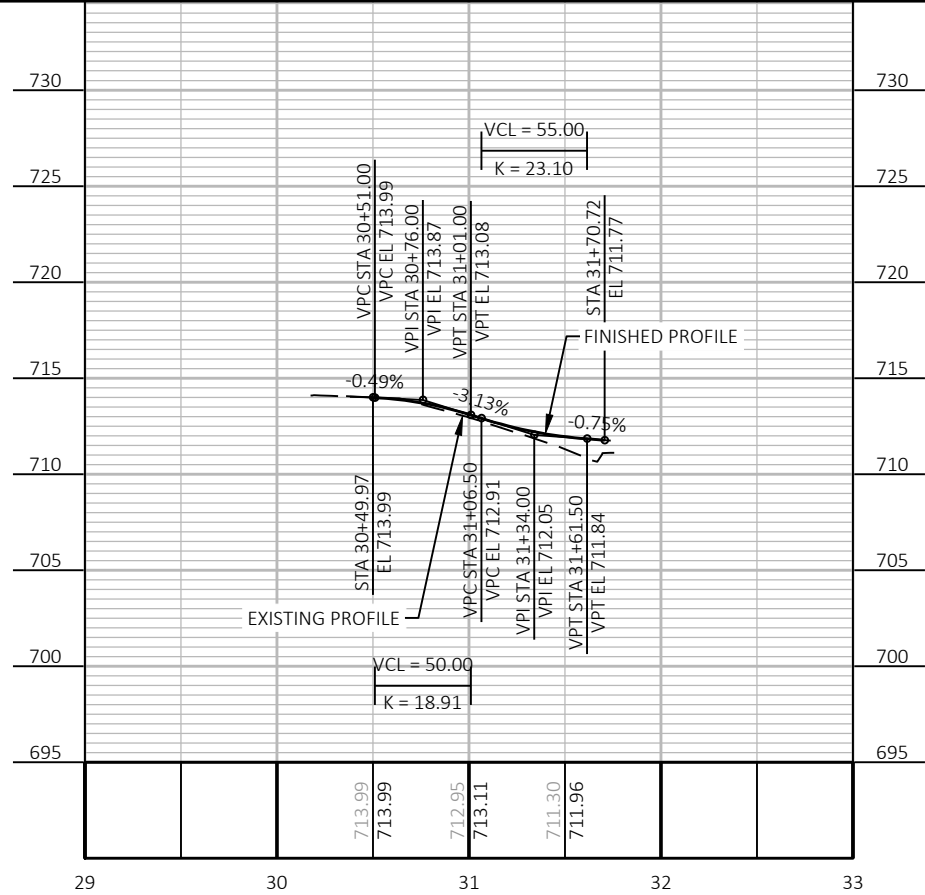


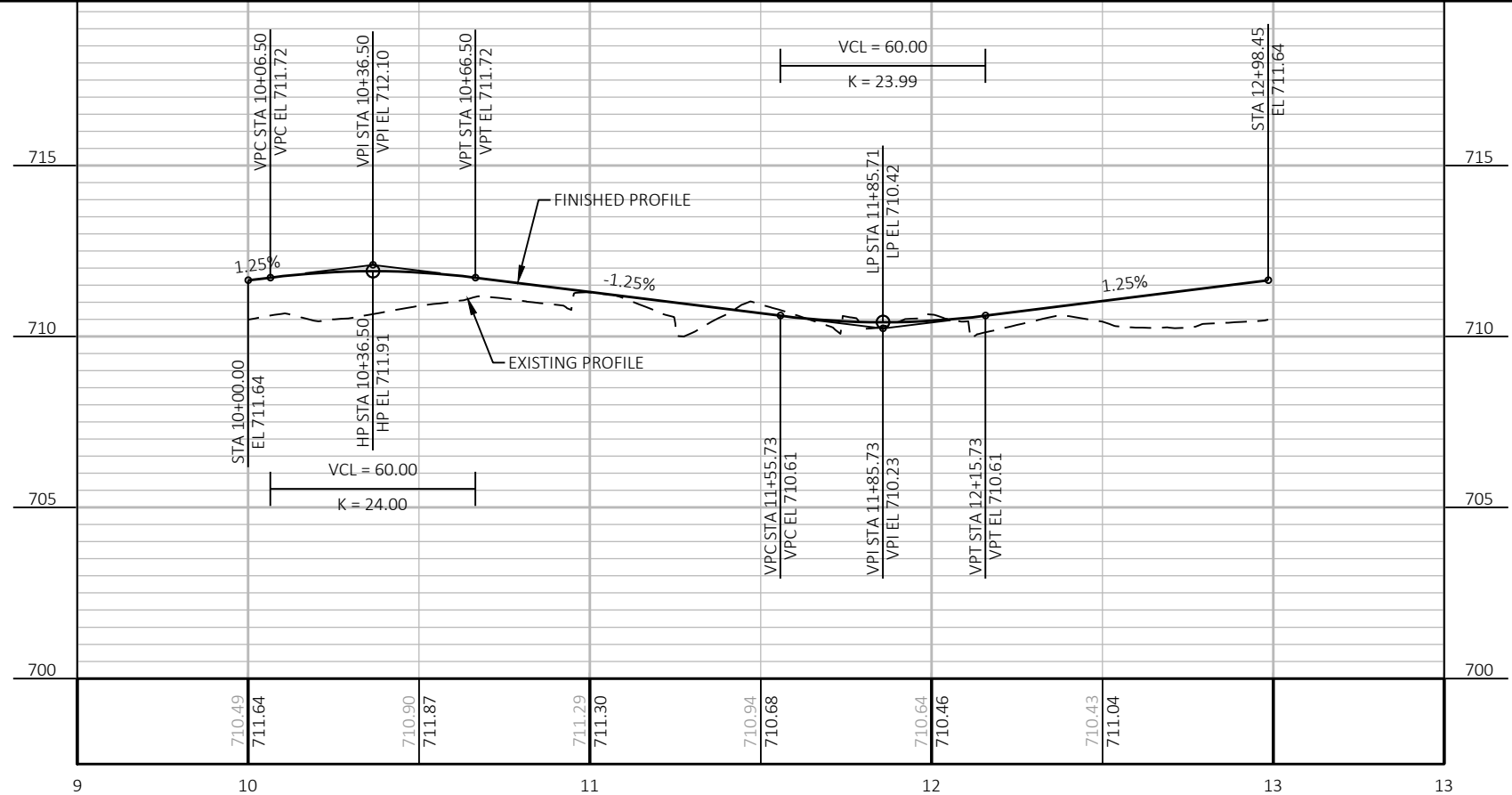
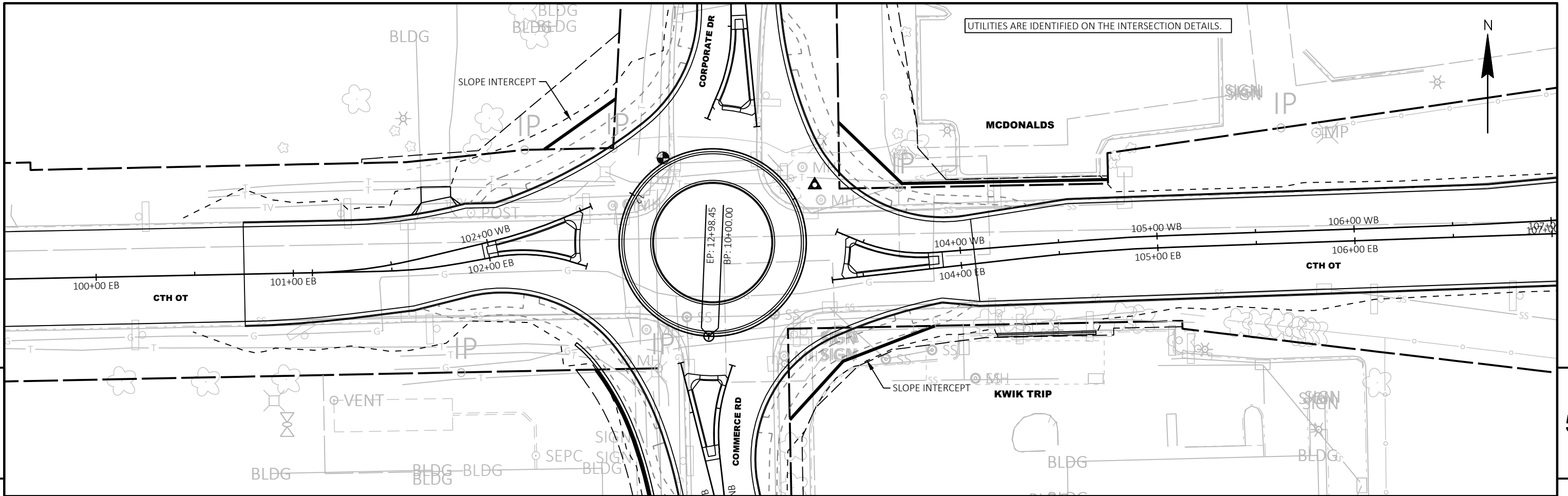


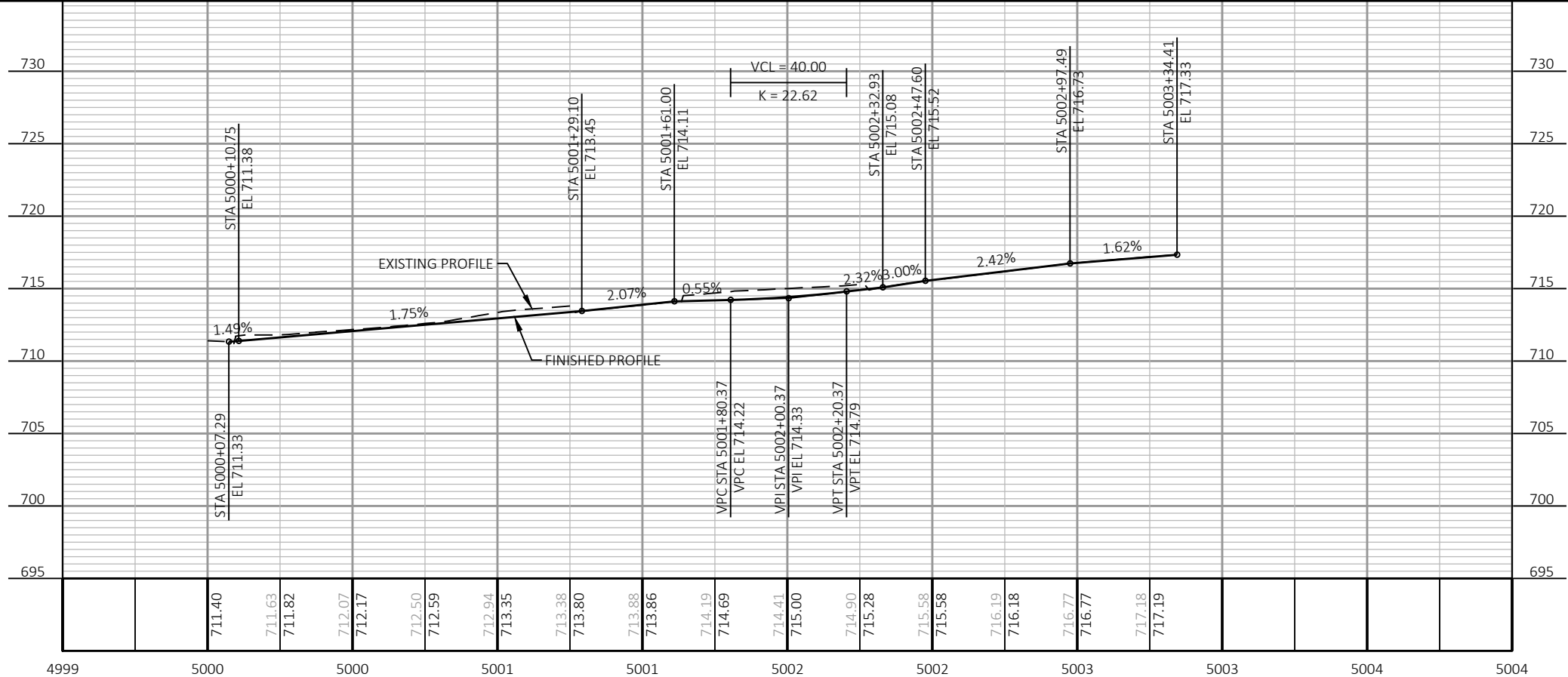
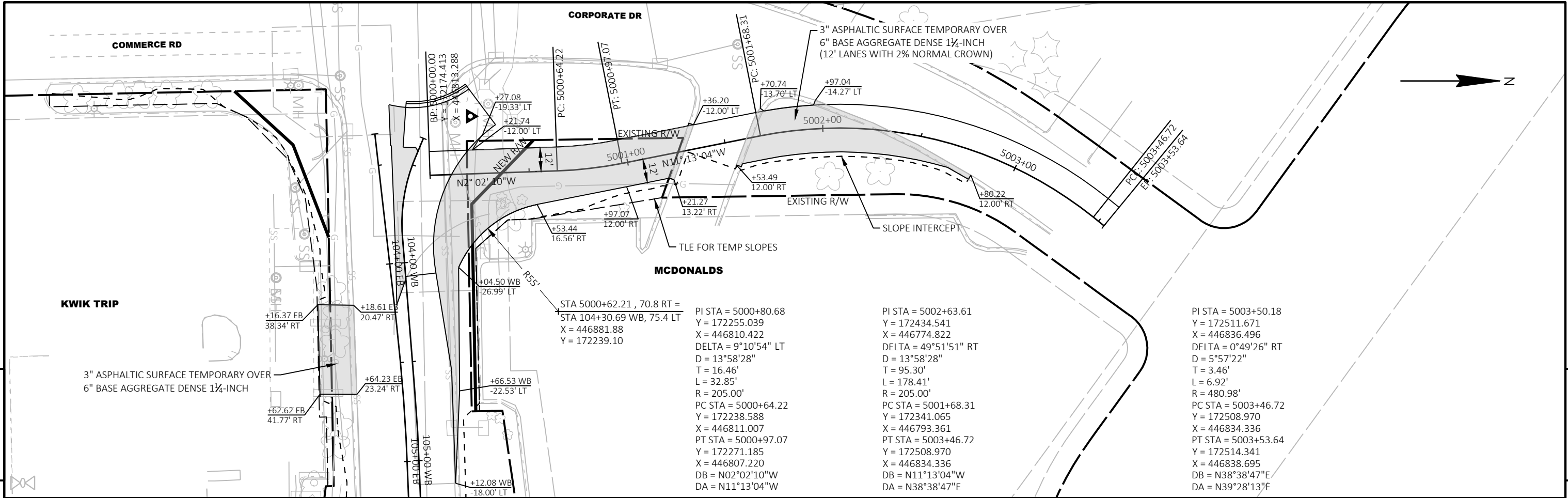
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5





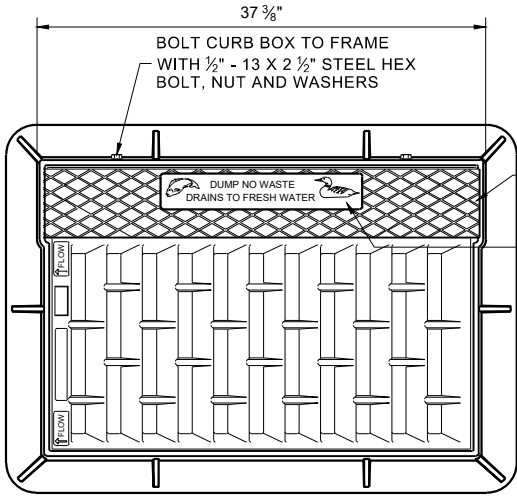


Standard Detail Drawing List

08A05-22A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-22B	INLET COVERS TYPE B, B-A, C, MS, MS-A, DW & WM
08A05-22C	INLET COVERS TYPE F, HM, HM-S, S, T, HM-GJ & HM-GJ-S
08A05-22E	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-04	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08C06-03	INLETS 3-FT AND 4-FT DIAMETER
08C07-03	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT, 2.5X3-FT & 2X3.5-FT
08D01-24A	CONCRETE CURB & GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D18-05	DRIVEWAY AND SIDEWALK RAMPS TYPES X & Y
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B16-03	PULL BOX NON-CONDUCTIVE
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C14-03	CONCRETE CONTROL CABINET BASE, TYPE L
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D04-03	LIGHTING CONTROL CABINET 120/240 VOLT
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
11B02-02	CONCRETE MEDIAN NOSE
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-11	URBAN DOWELED CONCRETE PAVEMENT
13C18-08A	CONCRETE PAVEMENT JOINTING
13C18-08B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-08C	CONCRETE PAVEMENT JOINT TYPES
13C18-08D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
13C18-08E	CONCRETE PAVEMENT JOINTING AND STEEL REINFORCEMENT IN ROUNDABOUTS
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-09F	ADVANCED WIDTH RESTRICTION SIGNING
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-16B	PAVEMENT MARKING WORDS
15C07-16C	PAVEMENT MARKING ARROWS
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-24B	TEMPORARY LONGITUDINAL PAVEMENT MARKING

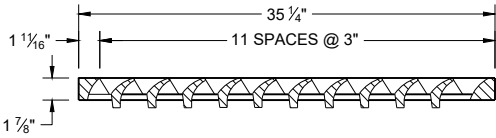
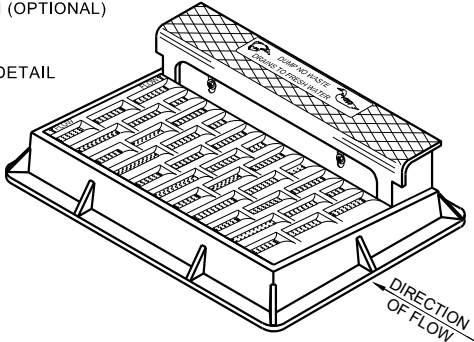
Standard Detail Drawing List

15C08-24C	PAVEMENT MARKING (TURN LANES)
15C08-24D	PAVEMENT MARKING (TURN LANES)
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C18-09A	MEDIAN ISLAND PAVEMENT MARKINGS
15C18-09B	PAVEMENT MARKINGS, MEDIAN ISLAND NOSE
15C18-09C	MEDIAN PAVEMENT MARKINGS DOUBLE ARROW WARNING SIGN PLACEMENT
15C19-10A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-05	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D06-06	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D12-15A	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD
15D37-03	TRAFFIC CONTROL, 2-LANE ROUNDABOUT
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

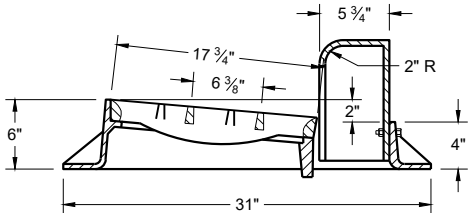
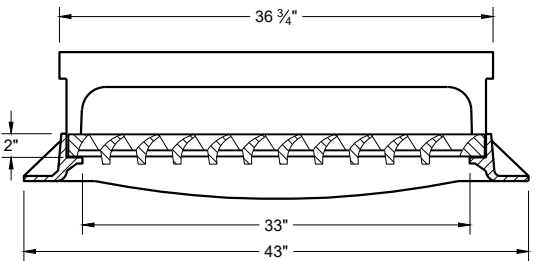
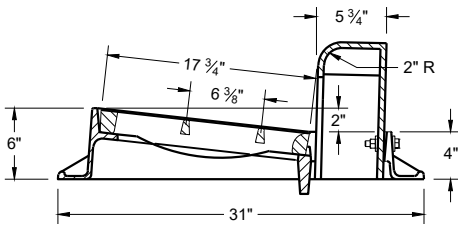
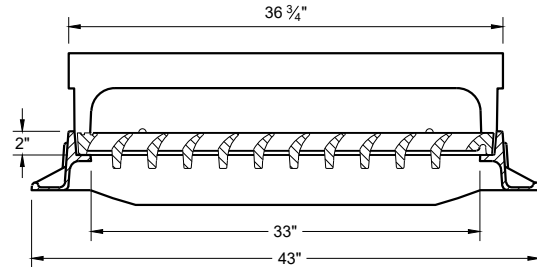


NOTE: EITHER CASTING IS ACCEPTABLE

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

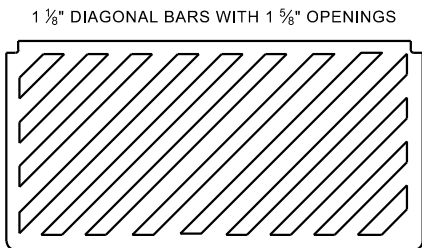


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

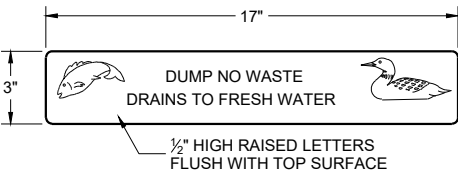


TYPE "H"

NOTE: EITHER CASTING IS ACCEPTABLE



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



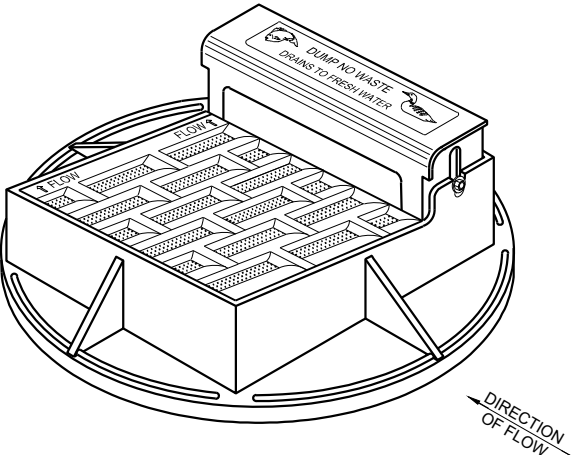
LOGO DETAIL

GENERAL NOTES

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

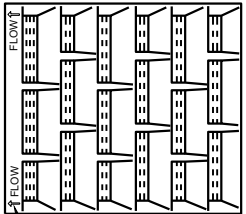
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

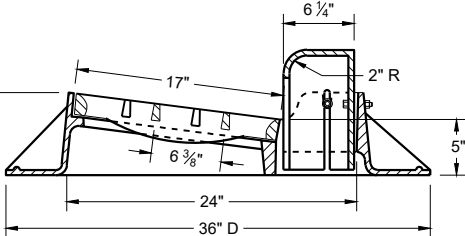
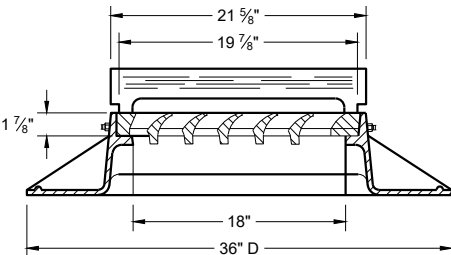
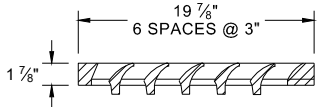


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

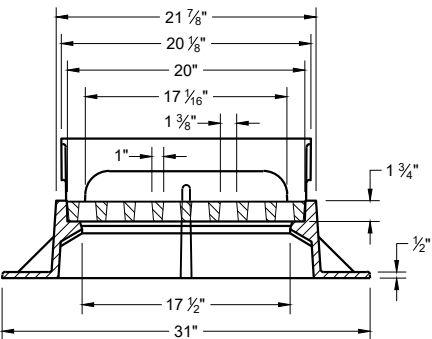
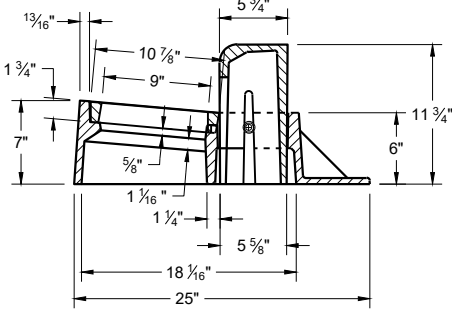
NOTE: EITHER CASTING IS ACCEPTABLE



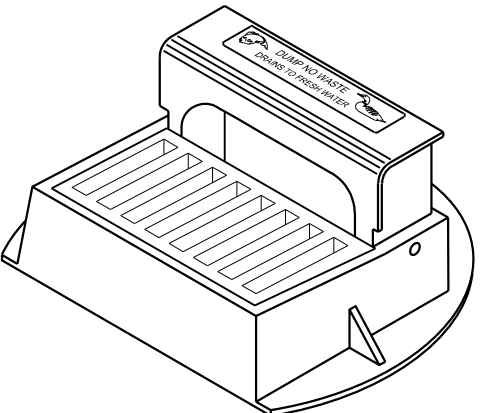
DIRECTION OF FLOW ARROWS



TYPE "A"



TYPE "Z"

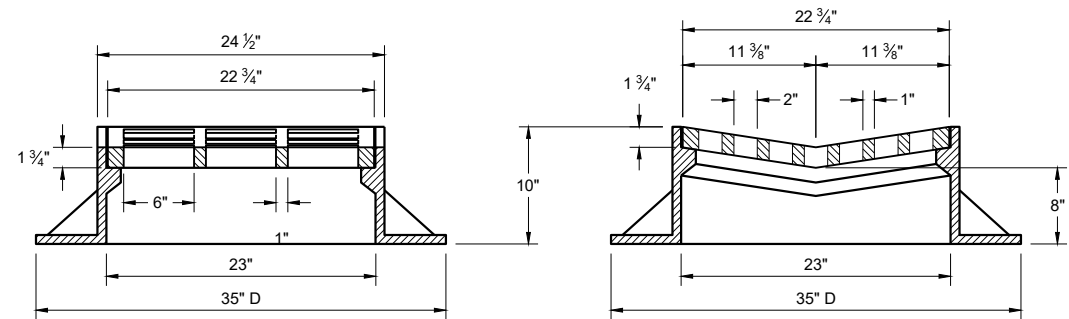


**INLET COVERS
TYPES A, H, A-S, H-S AND Z**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

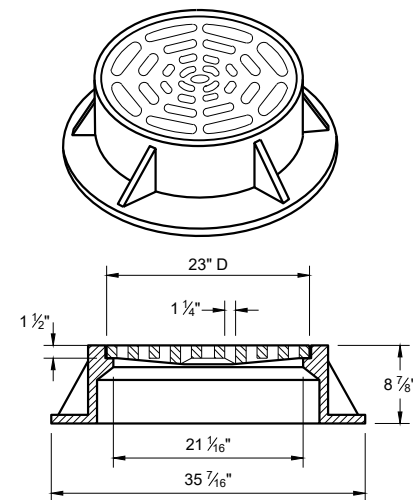
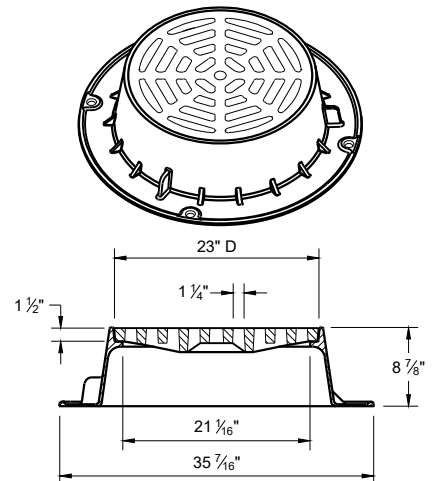
FHWA



TYPE "B"

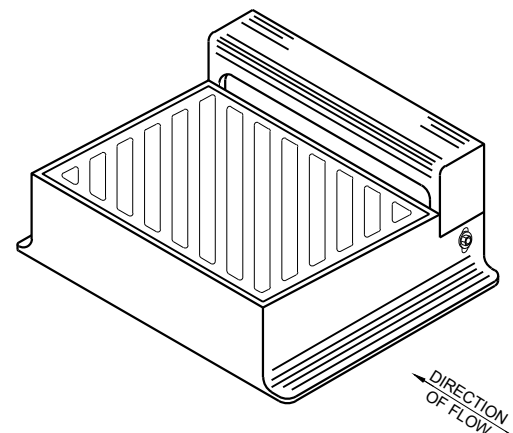
**ALTERNATIVE GRATE FOR
TYPE "B" COVER**

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

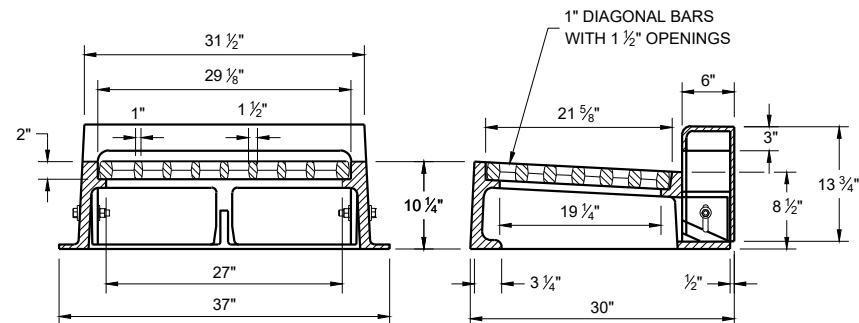


TYPE "C"

NOTE: EITHER CASTING IS ACCEPTABLE



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



TYPE "WM"

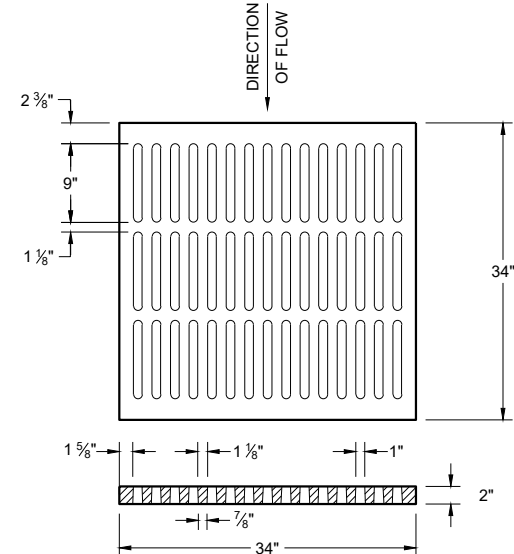
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

GENERAL NOTES

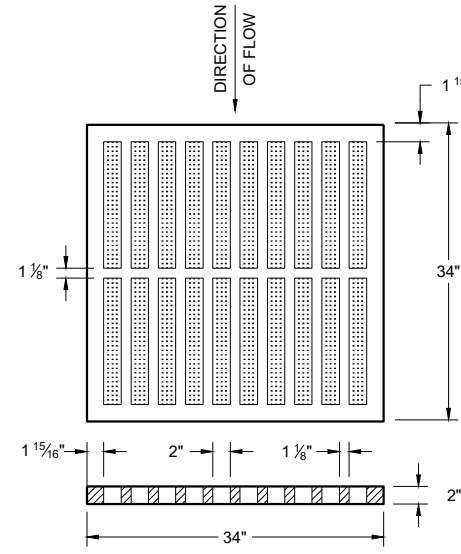
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

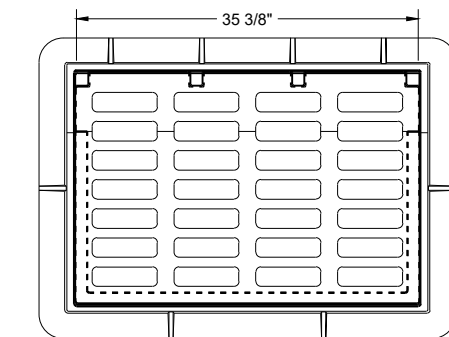
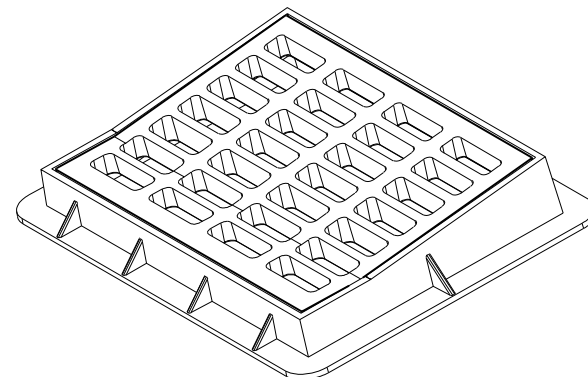
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



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

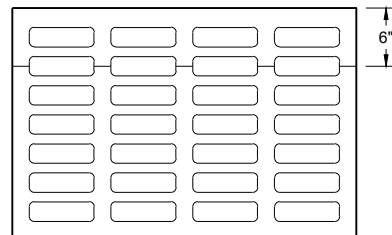


TYPE "MS"
USE ON FREEWAYS AND EXPRESSWAYS
**NOTED AS TYPE MS ON THE
DRAINAGE TABLE**



TYPE "DW"

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



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

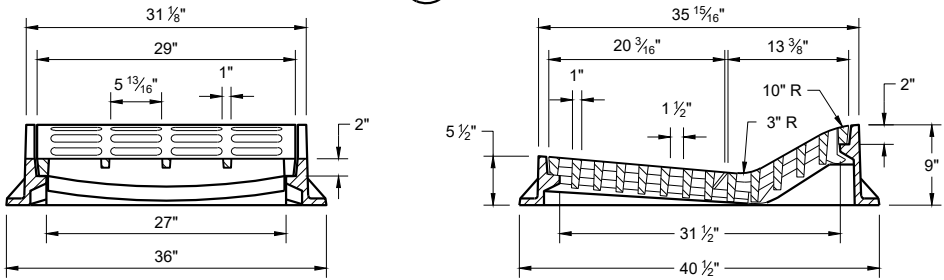
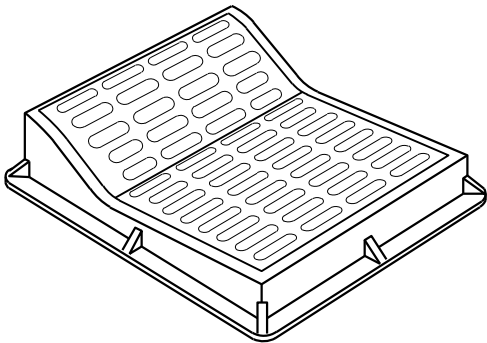
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

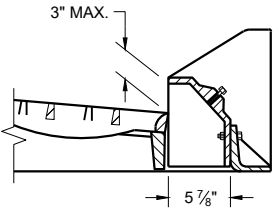
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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



TYPE "F"

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

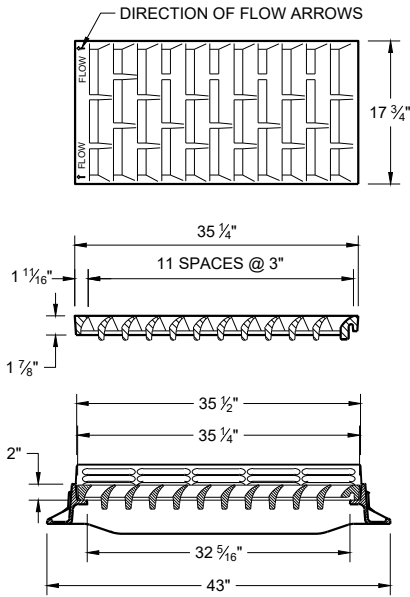


ALTERNATIVE CURB BOX
FOR TYPE "HM" COVER

USE WITH TYPES "G" AND "J" CONCRETE CURB AND GUTTER, 30 INCH
NOTED AS TYP "HM-GJ" ON DRAINAGE TABLE

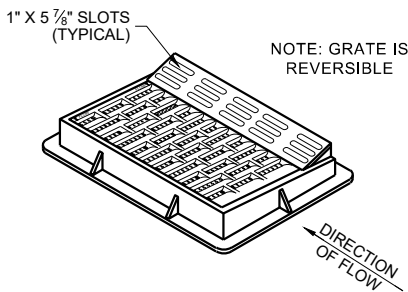
NOTE:
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.

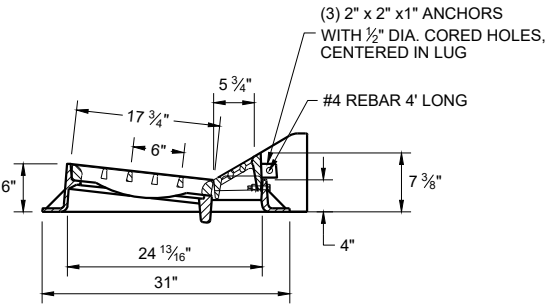


TYPE "HM"

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

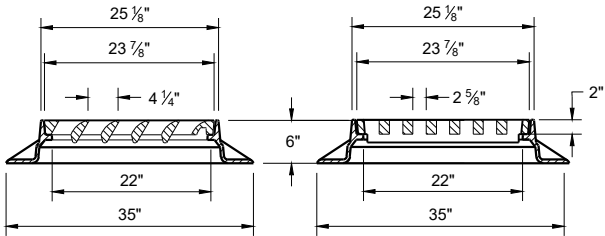
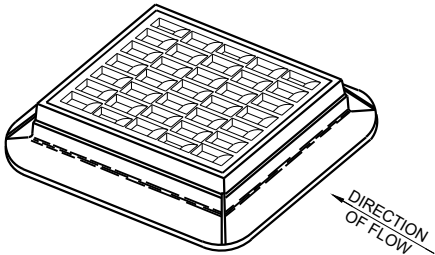


NOTE: GRATE IS REVERSIBLE

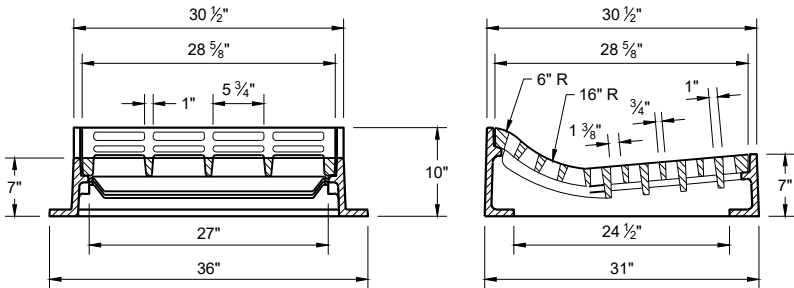
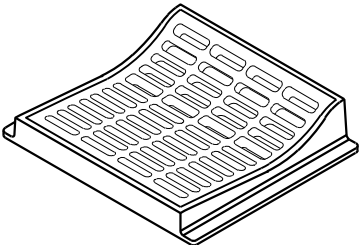


NOTE:
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.



TYPE "S"



TYPE "T"

USE WITH TYPES "R" AND "T" CONCRETE CURB AND GUTTER, 36"

INLET COVERS
TYPES F, HM, HM-S, S, T,
HM-GJ AND HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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February 2025
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

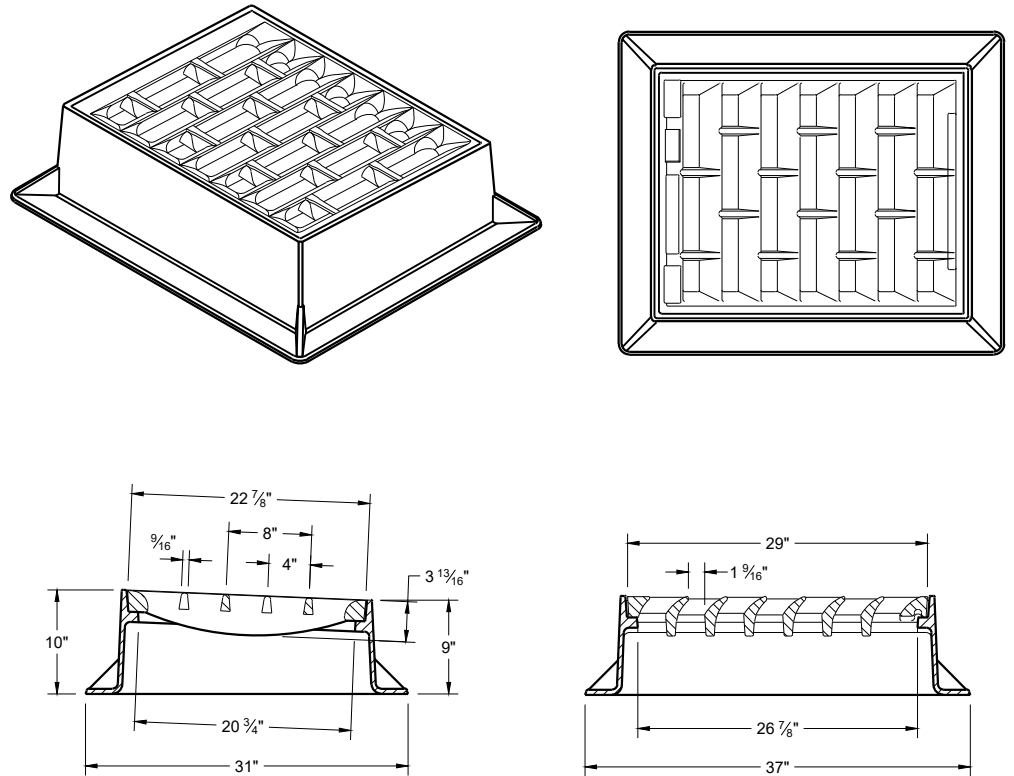
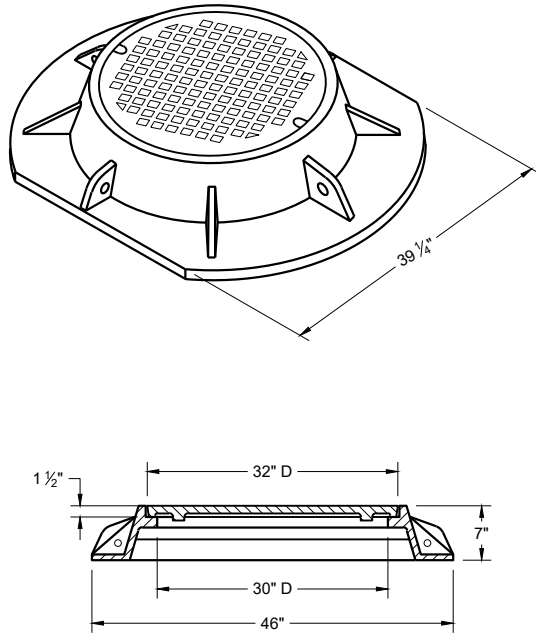
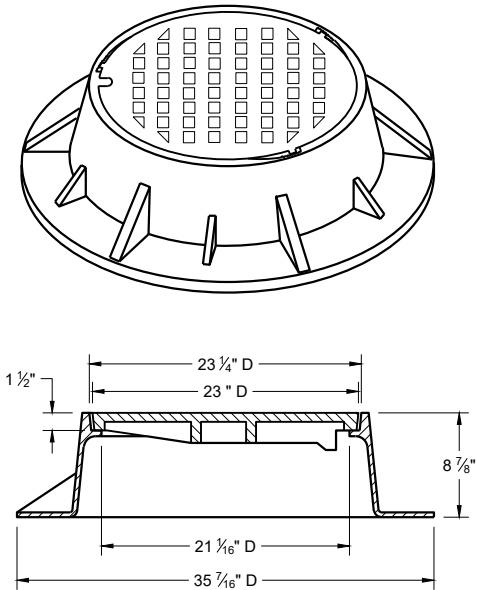
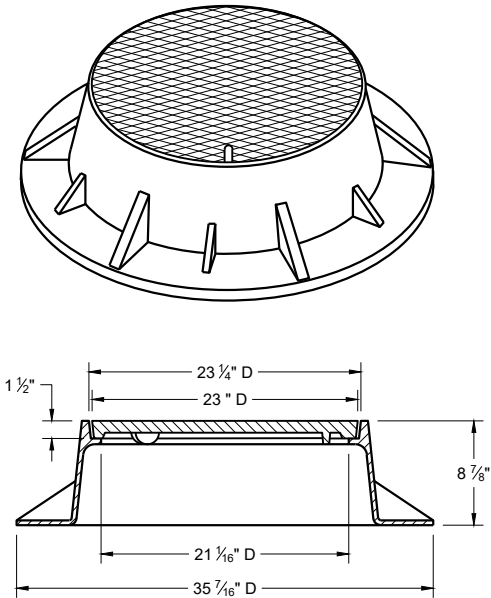
FHWA

GENERAL NOTES

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

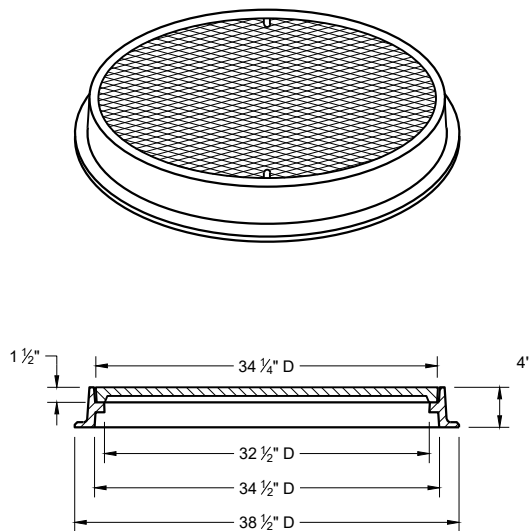
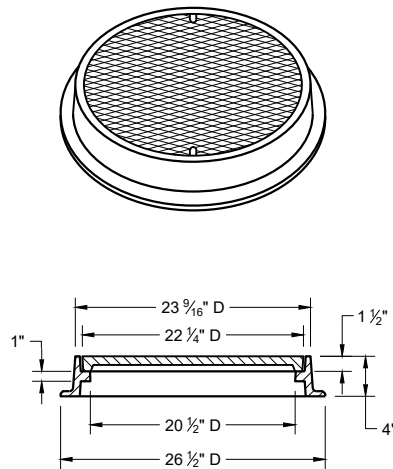
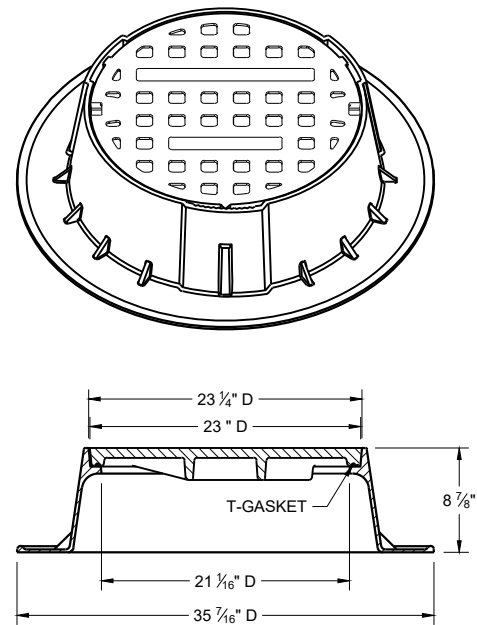
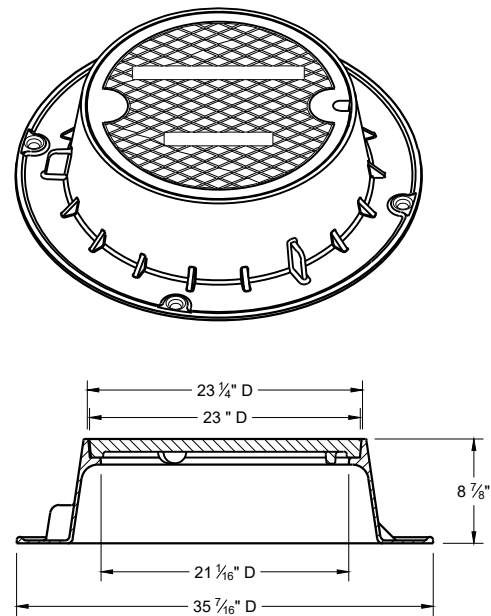
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



TYPE "K"

INLET COVER TYPE "BW"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

TYPE "J" SPECIAL

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

NOTE: EITHER CASTING IS ACCEPTABLE

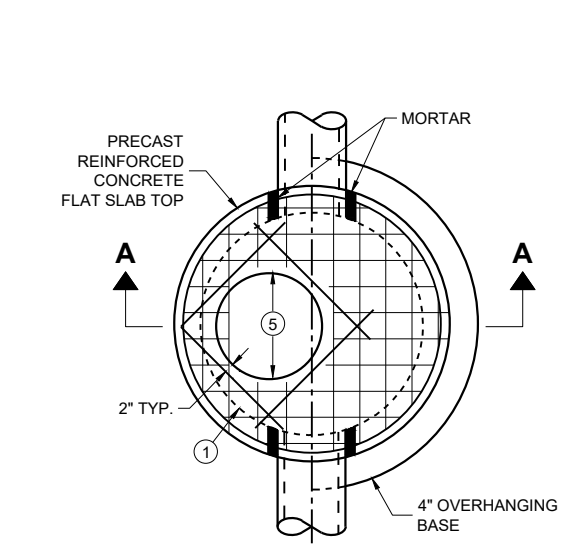
TYPE "L"

TYPE "M"

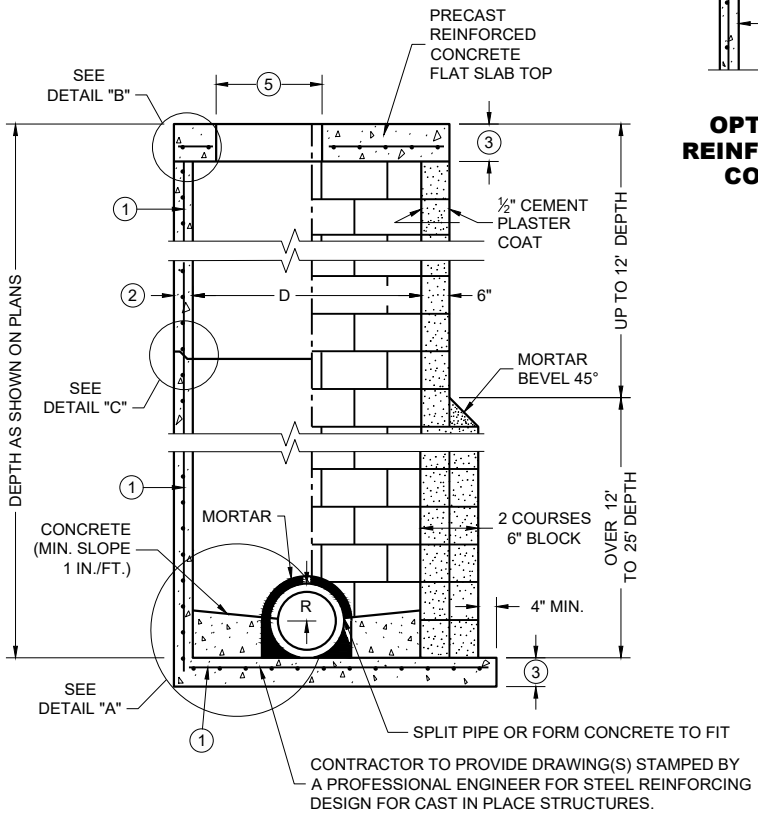
INLET COVERS TYPES BW
MANHOLE COVERS TYPES K,
J, J-S, L, AND M

STATE OF WISCONSIN
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February 2025 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



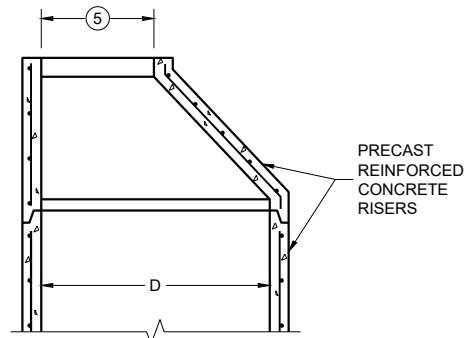
PLAN VIEW
CIRCULAR OPENING



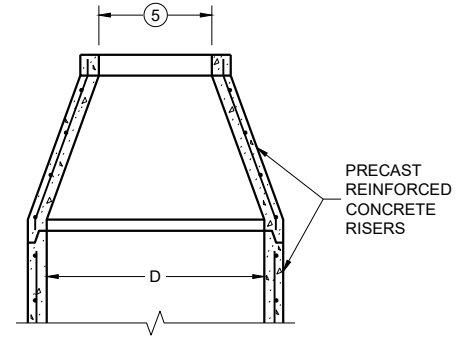
SECTION A - A

PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

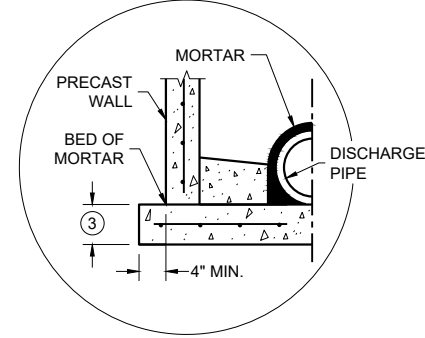
CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE ①



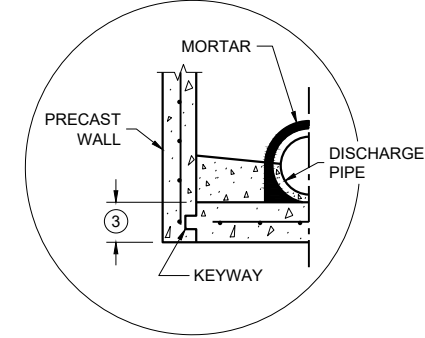
OPTIONAL PRECAST
REINFORCED CONCRETE
ECCENTRIC TOP



OPTIONAL PRECAST
REINFORCED CONCRETE
CONCENTRIC TOP

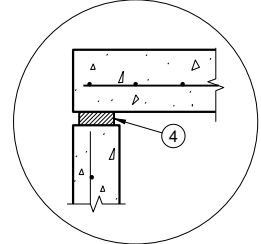


SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

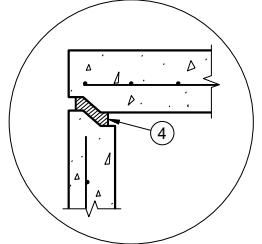


PRECAST REINFORCED CONCRETE
WITH INTEGRAL BASE OPTION

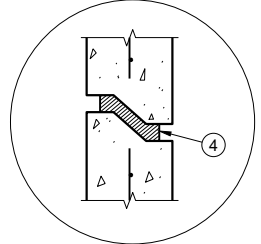
DETAIL "A"



TOP WITH PLAIN
END JOINT



TOP WITH TONGUE
AND GROOVE JOINT



RISER WITH TONGUE
AND GROOVE JOINT

DETAIL "B"

DETAIL "C"

MANHOLE COVER OPENING MATRIX

MANHOLE COVER OPENING SIZE (FT.) ⑤	C	ALL JS	K	L	M
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

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

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

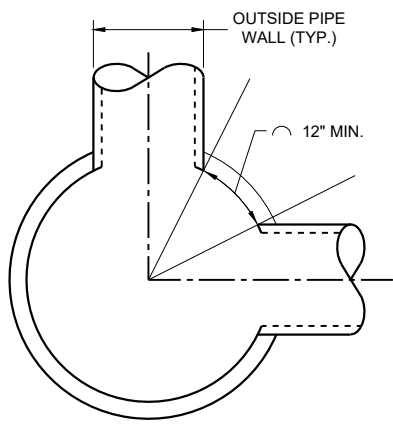
PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

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

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

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

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



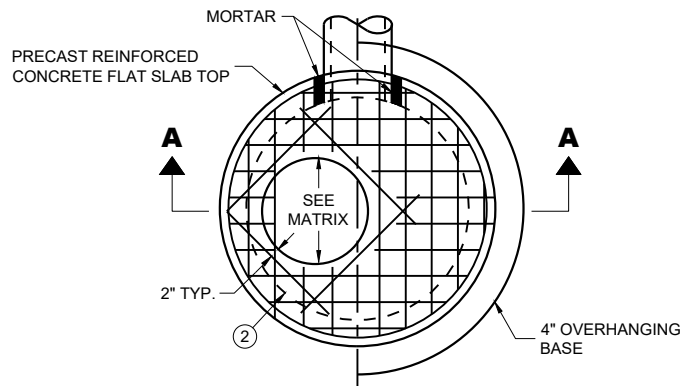
MINIMUM HORIZONTAL
PIPE SEPARATION

DETAIL "D"

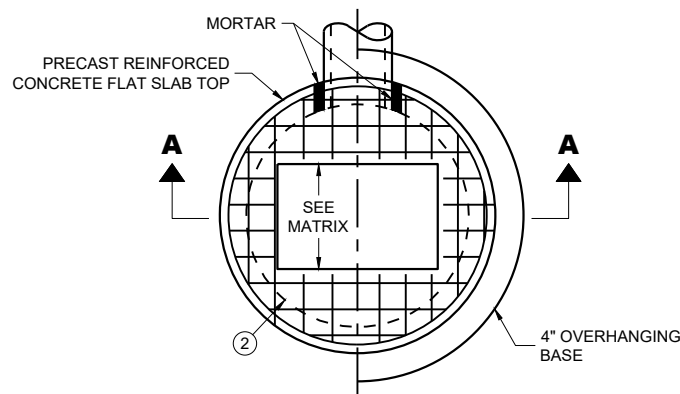
MANHOLES, 3-FT, 4-FT
5-FT, 6-FT, 7-FT, 8-FT, 9-FT
AND 10-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

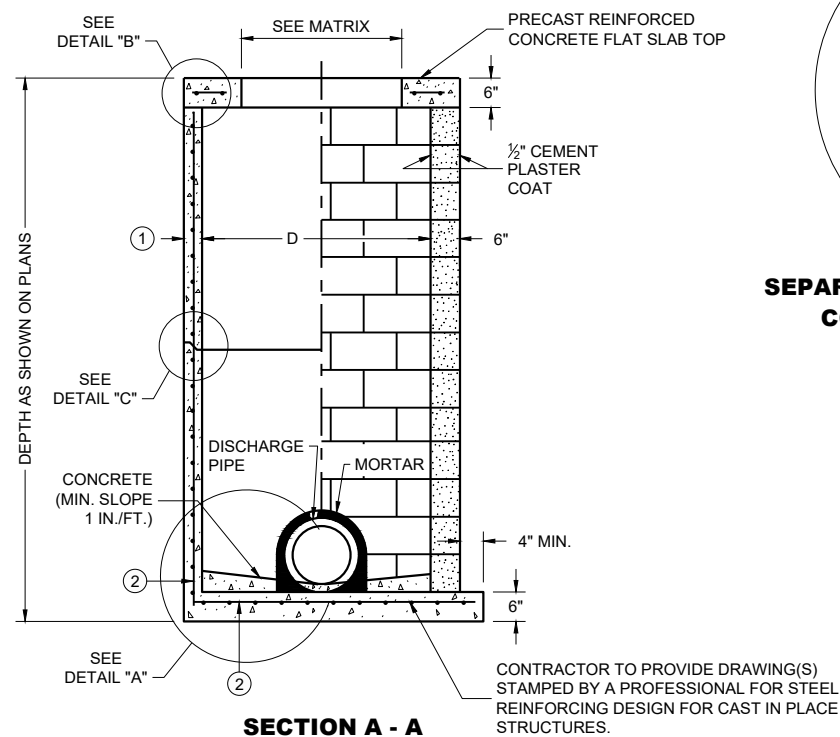
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR



PLAN VIEW CIRCULAR OPENING



PLAN VIEW RECTANGULAR OPENING



SECTION A - A

PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE ②

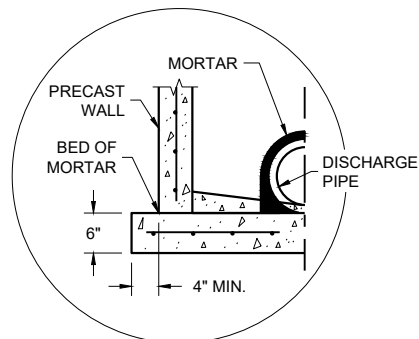
CIRCULAR INLETS WITH FLAT TOP

CATCH BASIN COVER OPENING MATRIX

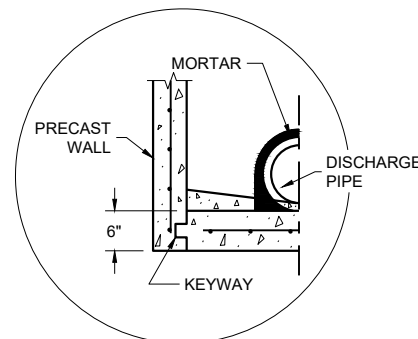
INLET SIZE	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V V-B	WM	Z
	OPENING SIZE (FT.)											
3-FT	2 DIA.				X							X
	2 X 2	X	X					X		X		
4-FT	2 DIA.				X							X
	2 X 2	X	X					X		X		
	2 X 2.5			X				X	X	X	X	
	2 X 3						X					
	2.5 X 3					X						

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

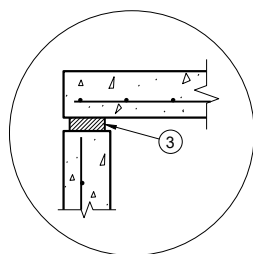


SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

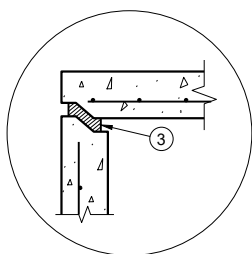


PRECAST REINFORCED CONCRETE
WITH INTEGRAL BASE OPTION

DETAIL "A"

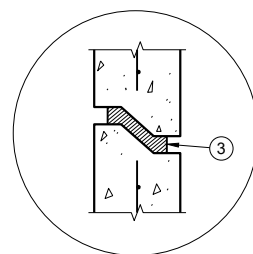


TOP WITH PLAIN
END JOINT



TOP WITH TONGUE
AND GROOVE JOINT

DETAIL "B"



RISER WITH TONGUE
AND GROOVE JOINT

DETAIL "C"

INLETS 3-FT AND 4-FT DIAMETER

GENERAL NOTES

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

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

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

ALL 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.

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

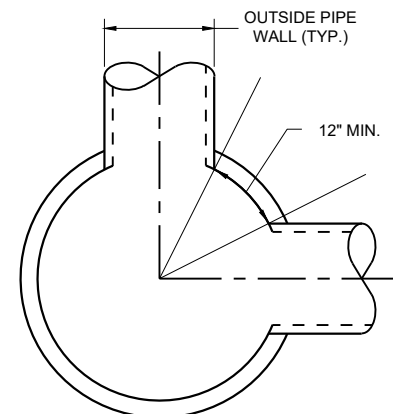
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

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 MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT DIAMETER AND 5 INCHES FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST INLETS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFORMING TO ASTM C443.

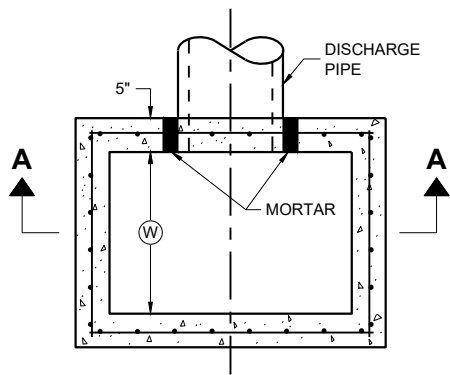


MINIMUM HORIZONTAL PIPE
SEPARATION
DETAIL "D"

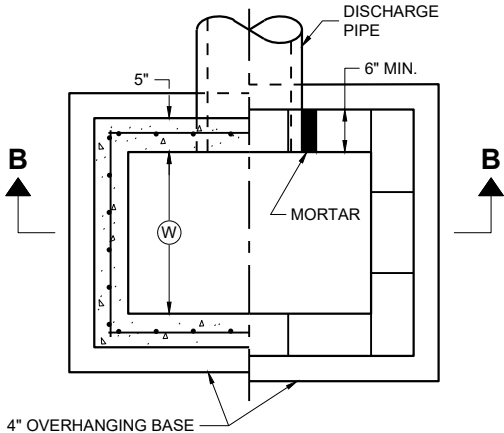
INLETS 3-FT
AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

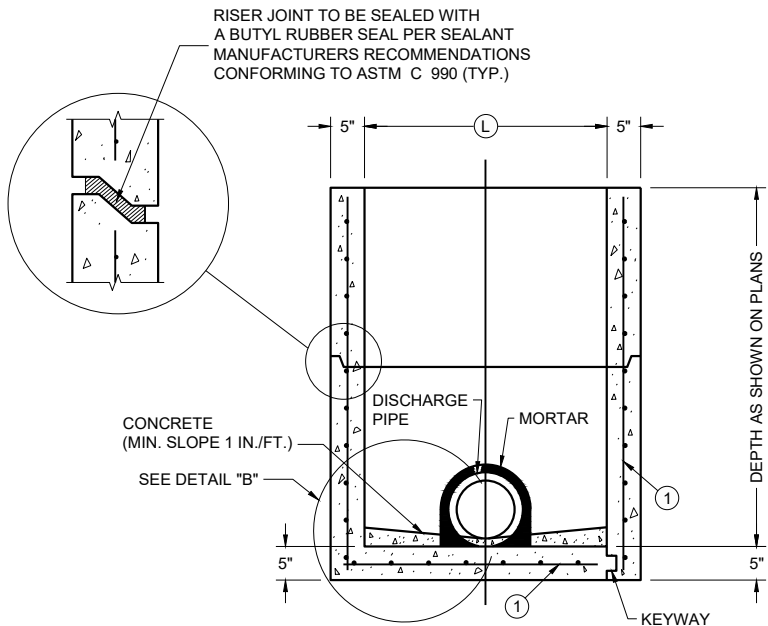
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
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PLAN VIEW



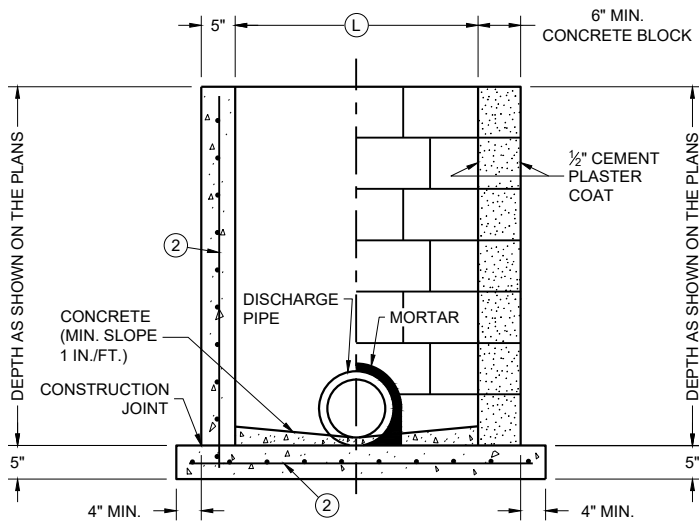
PLAN VIEW



PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

PRECAST REINFORCED
CONCRETE WITH
INTEGRAL BASE

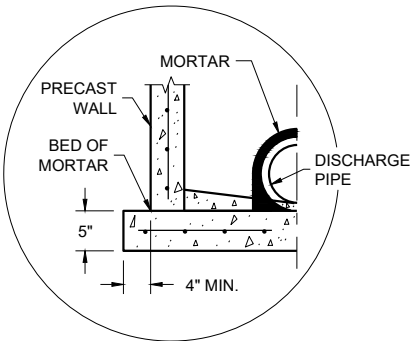
SECTION A - A



CAST IN PLACE
REINFORCED
CONCRETE

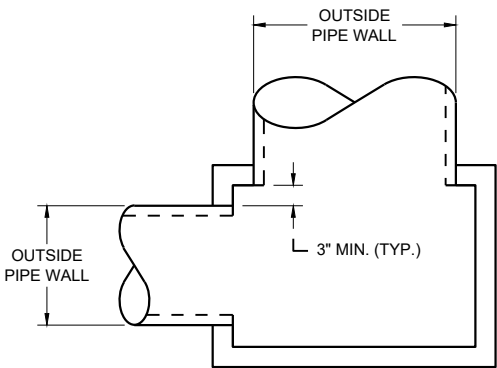
CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE ①

SECTION B - B



SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "B"



DETAIL "A"

INLETS 2 X 2-FT, 2 X 2.5-FT, 2 X 3-FT, 2.5 X 3-FT AND 2X3.5-FT

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

CATCH BASIN COVER MATRIX

INLET SIZE	WIDTH (W) (FT.)	LENGTH (L) (FT.)	INLET COVER TYPE									
			ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM	V V-B
2 X 2-FT	2	2	X	X				X				
2 X 2.5-FT	2	2.5			X			X	X	X	X	
2 X 3-FT	2	3					X					
2.5 X 3-FT	2.5	3				X						
2 X 3.5-FT	2	3.5										X

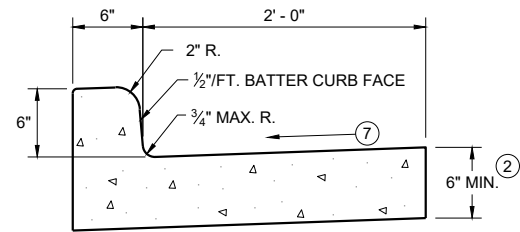
PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	WIDTH (IN)	LENGTH (IN)
2 X 2-FT	12	12
2 X 2.5-FT	12	18
2 X 3-FT	12	24
2.5 X 3-FT	18	24
2 X 3.5-FT	12	30

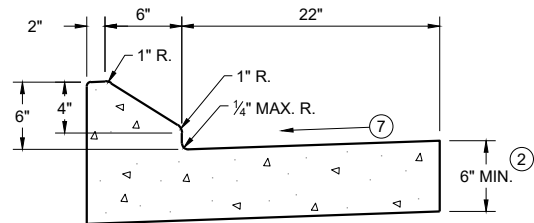
INLETS 2 X 2-FT, 2 X 2.5-FT,
2 X 3-FT, 2.5 X 3-FT
AND 2 X 3.5-FT

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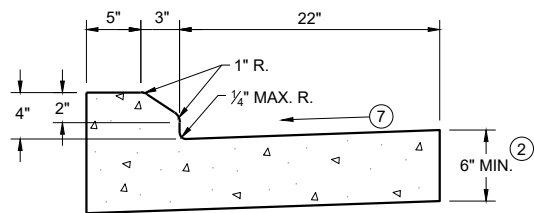
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



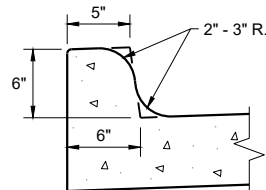
TYPES A^① & D



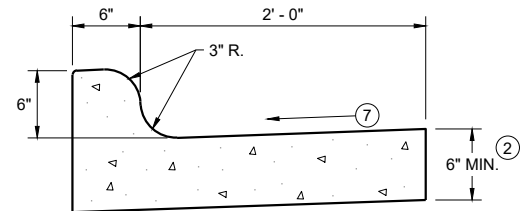
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

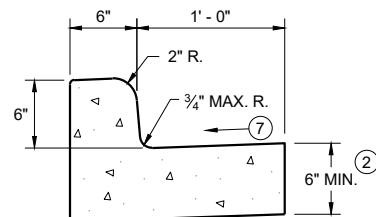


TYPES K^① & L
(OPTIONAL CURB SHAPE)



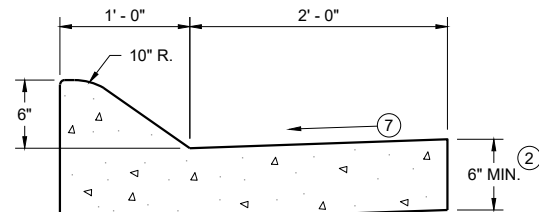
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

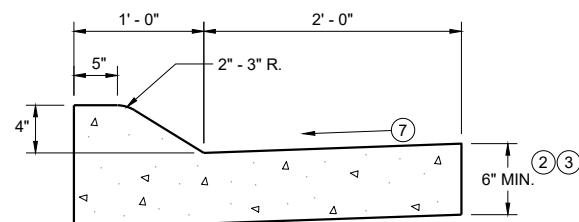


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

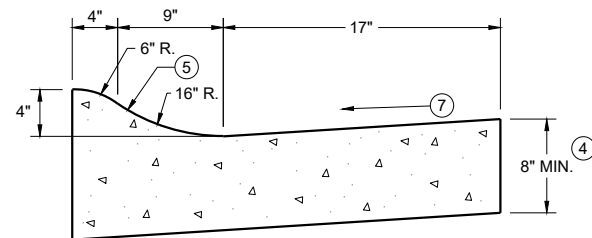


6" SLOPED CURB TYPES A^① & D



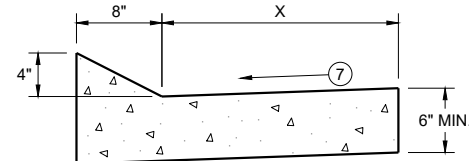
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



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

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

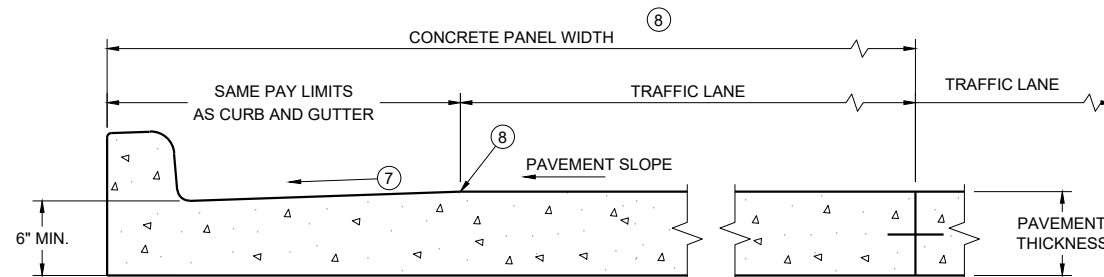


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

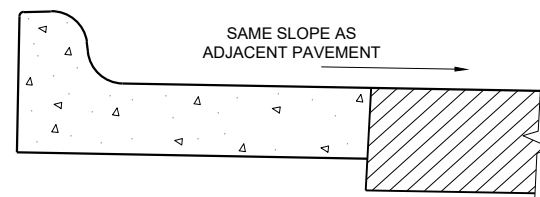
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

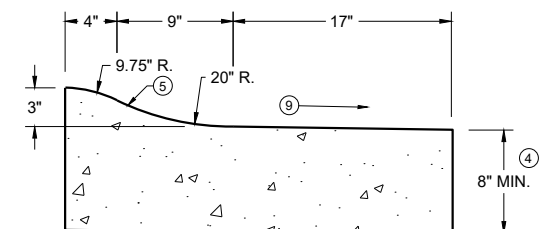


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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



3" SLOPED CURB TYPES R^① & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
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GENERAL NOTES

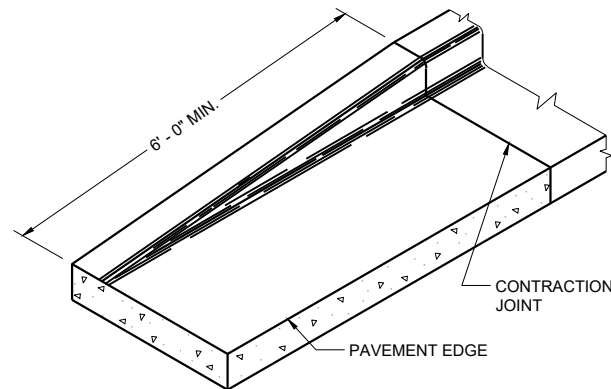
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

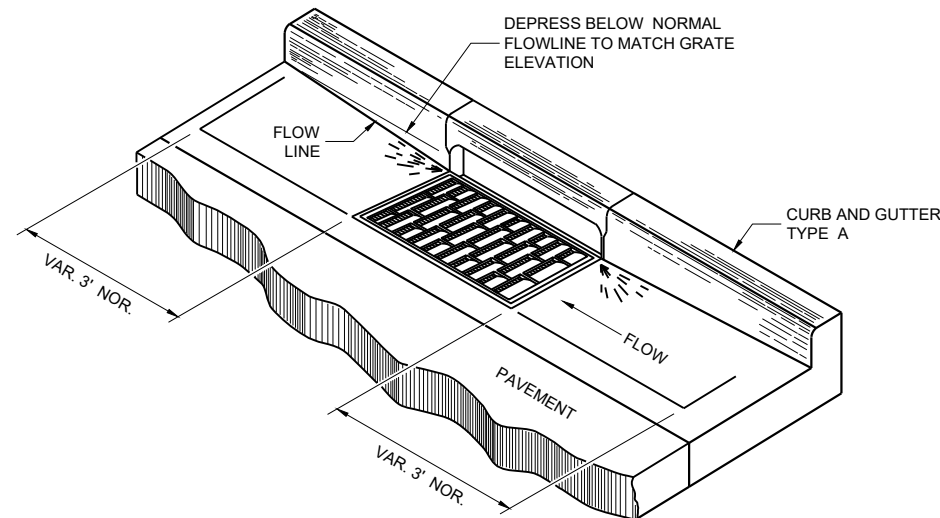
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

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

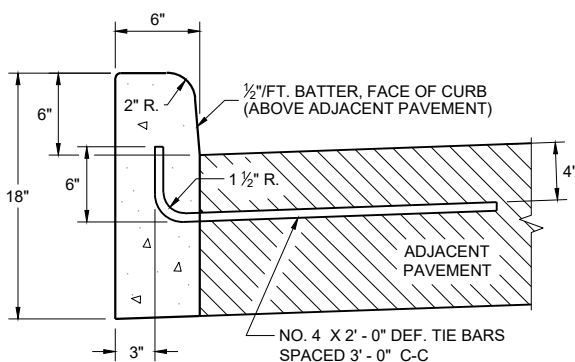


END SECTION CURB AND GUTTER

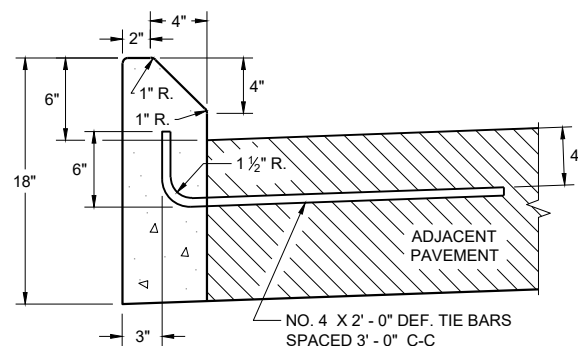


DETAIL OF CURB AND GUTTER AT INLETS

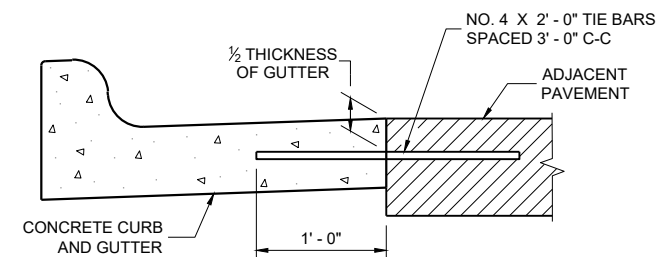
(TYPICAL H INLET COVER SHOWN)



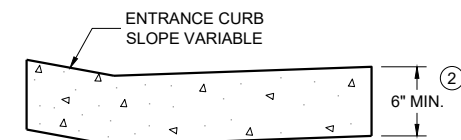
TYPES A^① & D



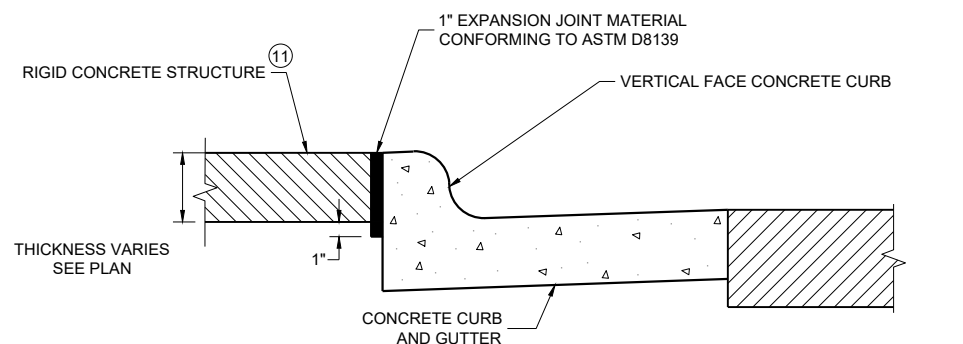
**TYPES G^① & J
CONCRETE CURB**



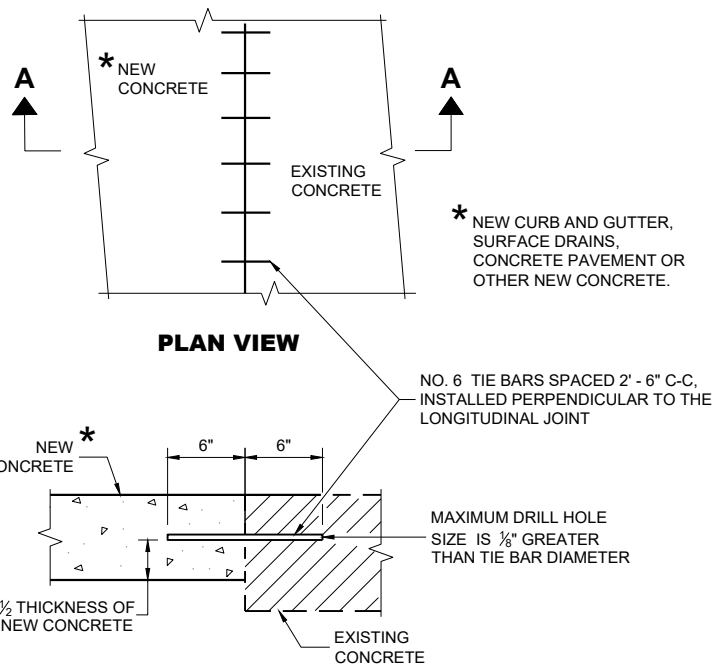
TYPICAL TIE BAR LOCATION^①



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



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



**SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT**

GENERAL NOTES

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

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

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

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

6

SDD 08D01-24b

6

SDD 08D01-24b

**CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS**

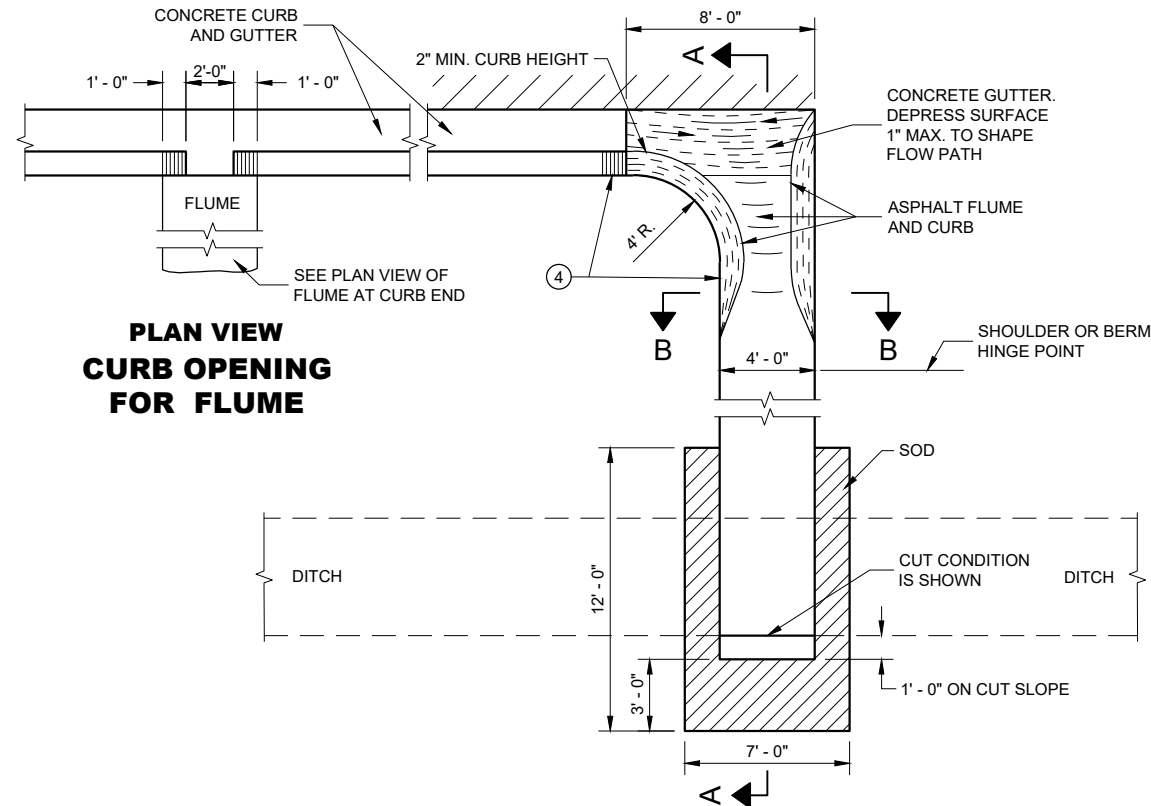
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

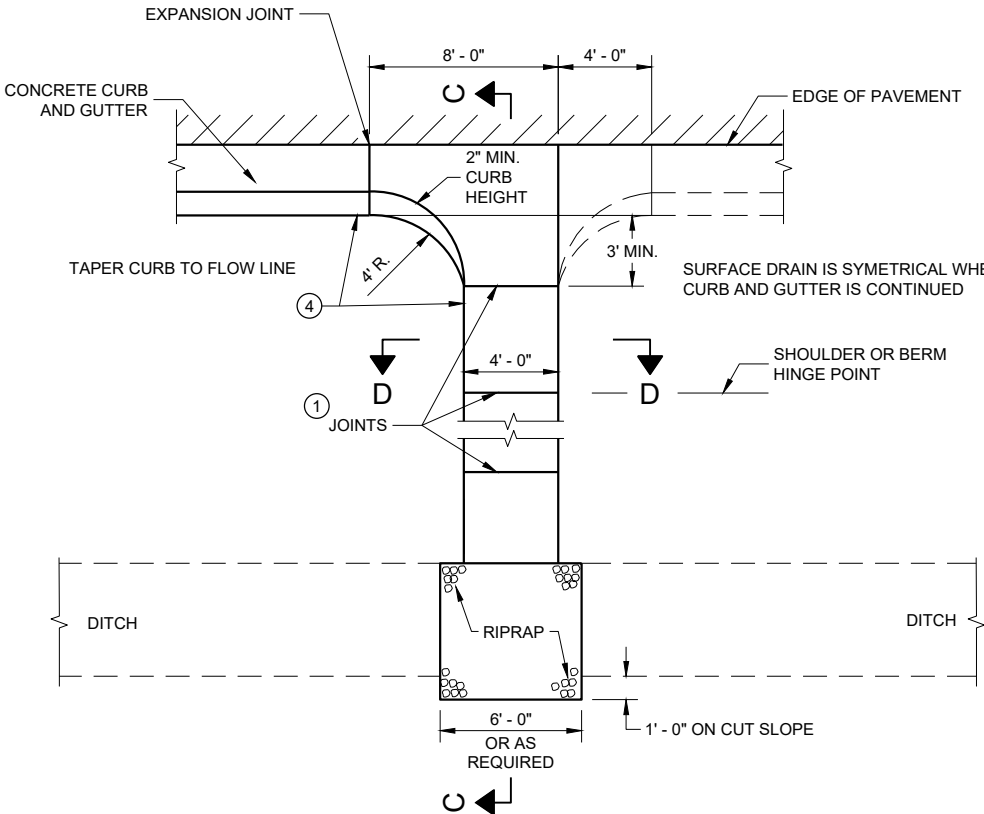
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



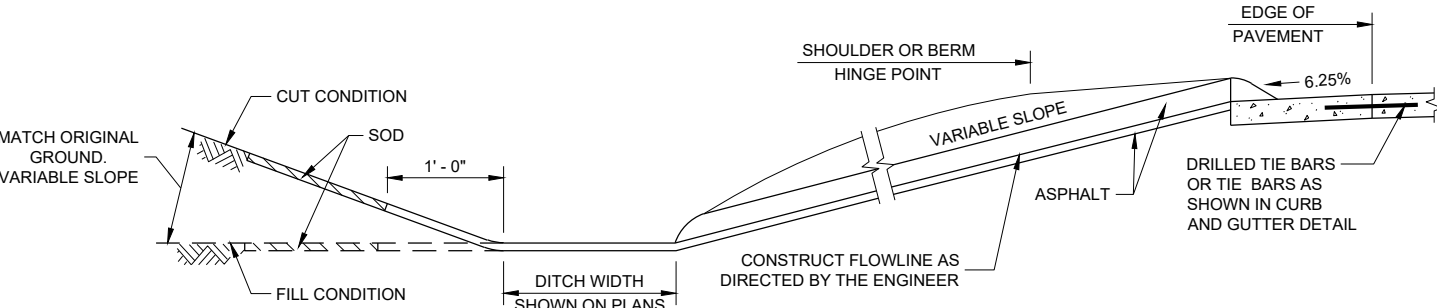
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

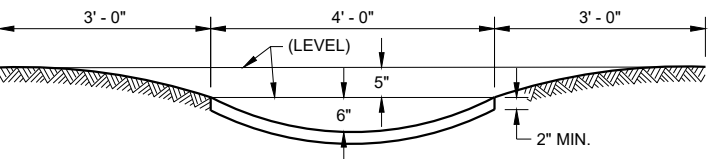
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

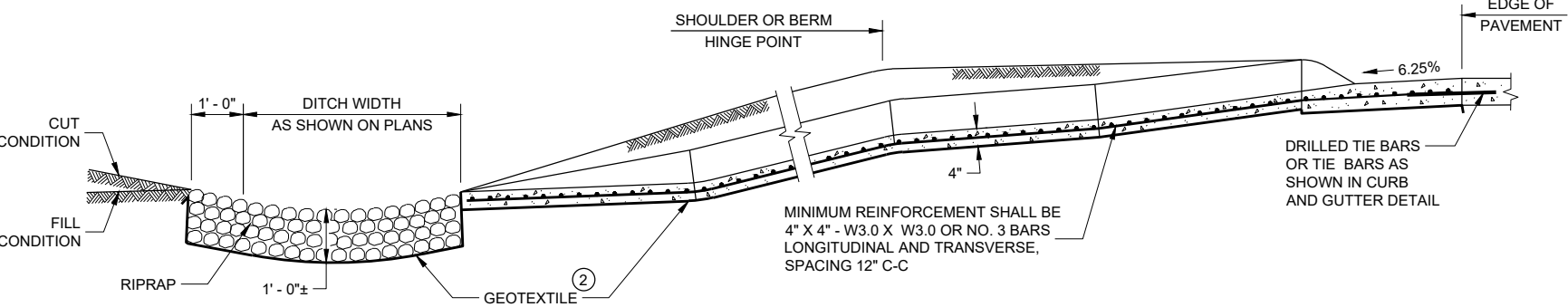
- ① JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- 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.



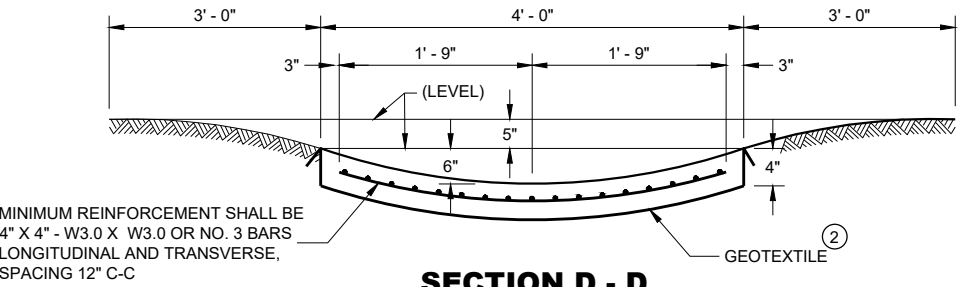
SECTION A - A



SECTION B - B



SECTION C - C



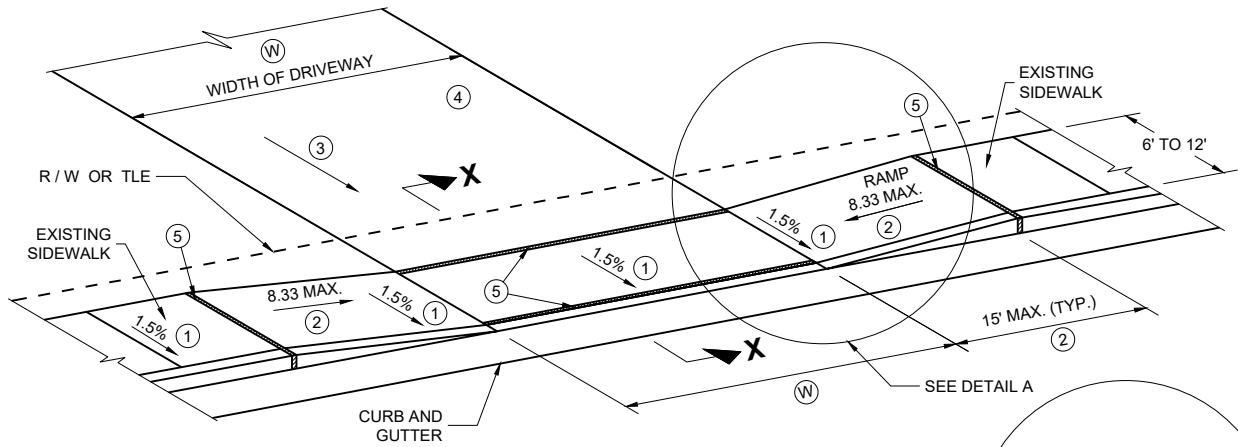
SECTION D - D

CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

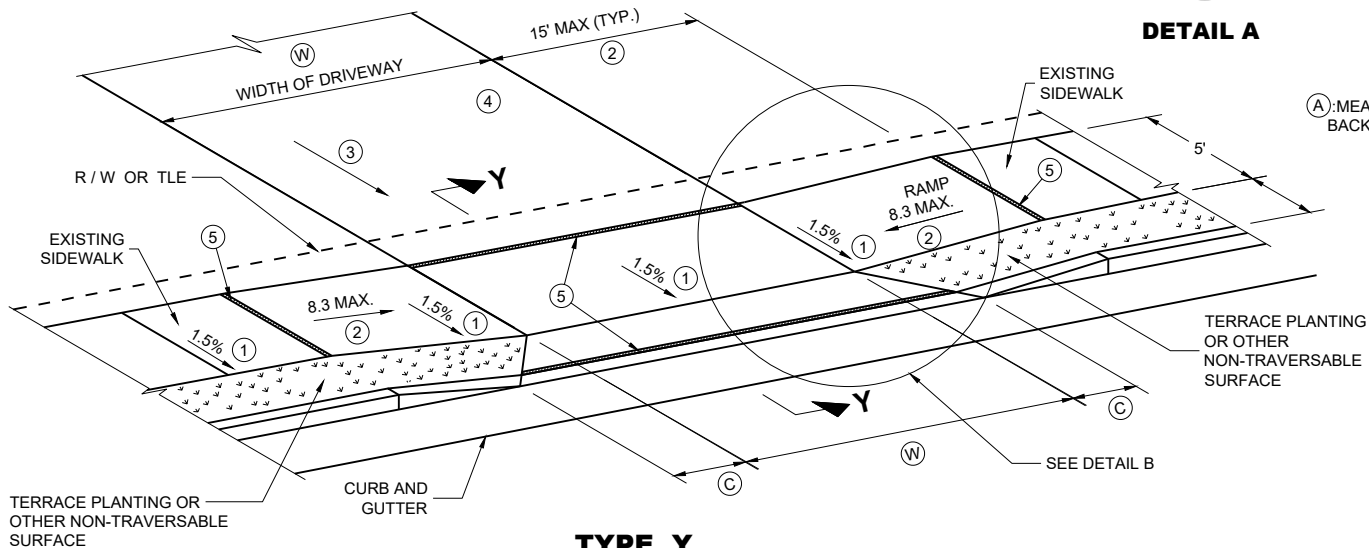
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
114

FHWA



TYPE X
SIDEWALK ABUTS CURB AND GUTTER
TERRACE VARIES 0 TO 3 FEET



TYPE Y
SIDEWALK WITH NARROWER TERRACE
TERRACE VARIES 4 TO 6 FEET

GENERAL NOTES

PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

(W) IS SHOWN ON PLAN AND PROFILE SHEETS.

OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.

① CONSTRUCTION TOLERANCE OF 0.5%± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.1%.

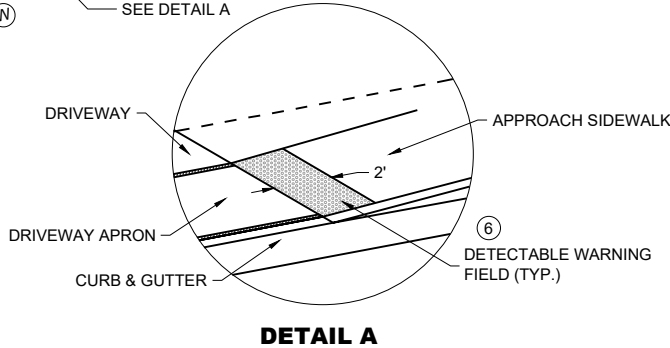
② THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY. SLOPE SIDEWALK RAMP TOWARD APRON AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

③ **DRIVEWAY SLOPES: DESIRABLE MAXIMUM**
10.5% UP AWAY FROM SIDEWALK (SAG)
8.5% DOWN AWAY FROM SIDEWALK (CREST)
ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG

④ **DRIVEWAY TYPES**
* 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
* 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
* 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES.)

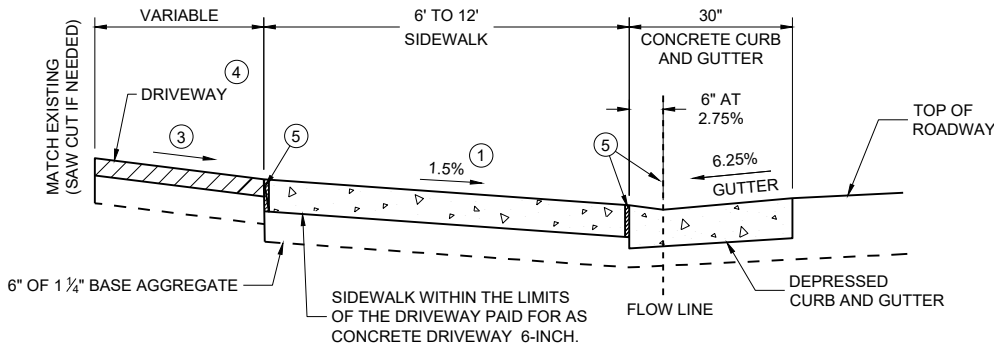
⑤ 1/2" EXPANSION JOINT FILLER

⑥ DETECTABLE WARNING FIELDS ARE REQUIRED WHEN A PEDESTRIAN CIRCULATION ROUTE CROSSES A DRIVEWAY THAT IS TRAFFIC SIGNAL, STOP, OR YIELD SIGN CONTROLLED. DETECTABLE WARNING FIELDS TO BE 2 FT DEEP AND EXTEND THE WIDTH OF THE PEDESTRIAN CIRCULATION ROUTE.



DETAIL A

(A): MEASURE FROM BACK OF CURB

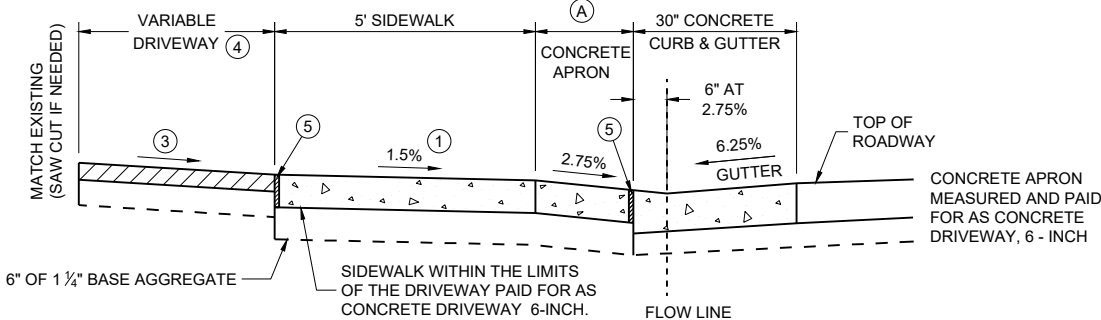


SECTION X - X

(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)
16' MIN. - 35' MAX. COMMERCIAL (CE)

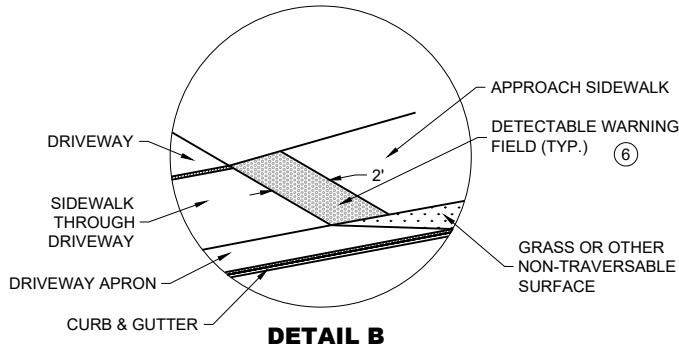
TABLE Y

(A) FEET	(C) FEET
3.5'	2.0'
4.5'	3.0'
5.5'	3.5'

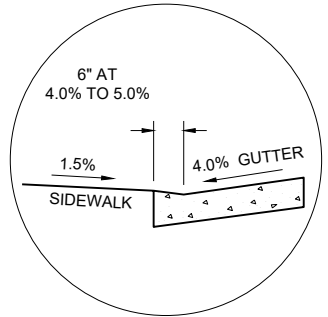


NOTE: SIDEWALK MAY BE DEPRESSED IN DRIVEWAY AREAS

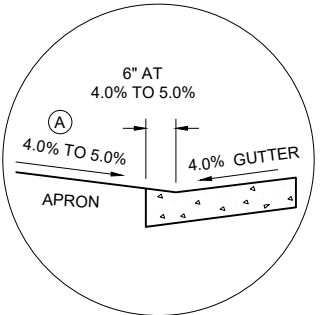
SECTION Y - Y
DRIVEWAY DETAIL WITH CONCRETE CURB AND GUTTER
(URBAN AND SUBURBAN)



DETAIL B



SECTION X - X
4% GUTTER SLOPE



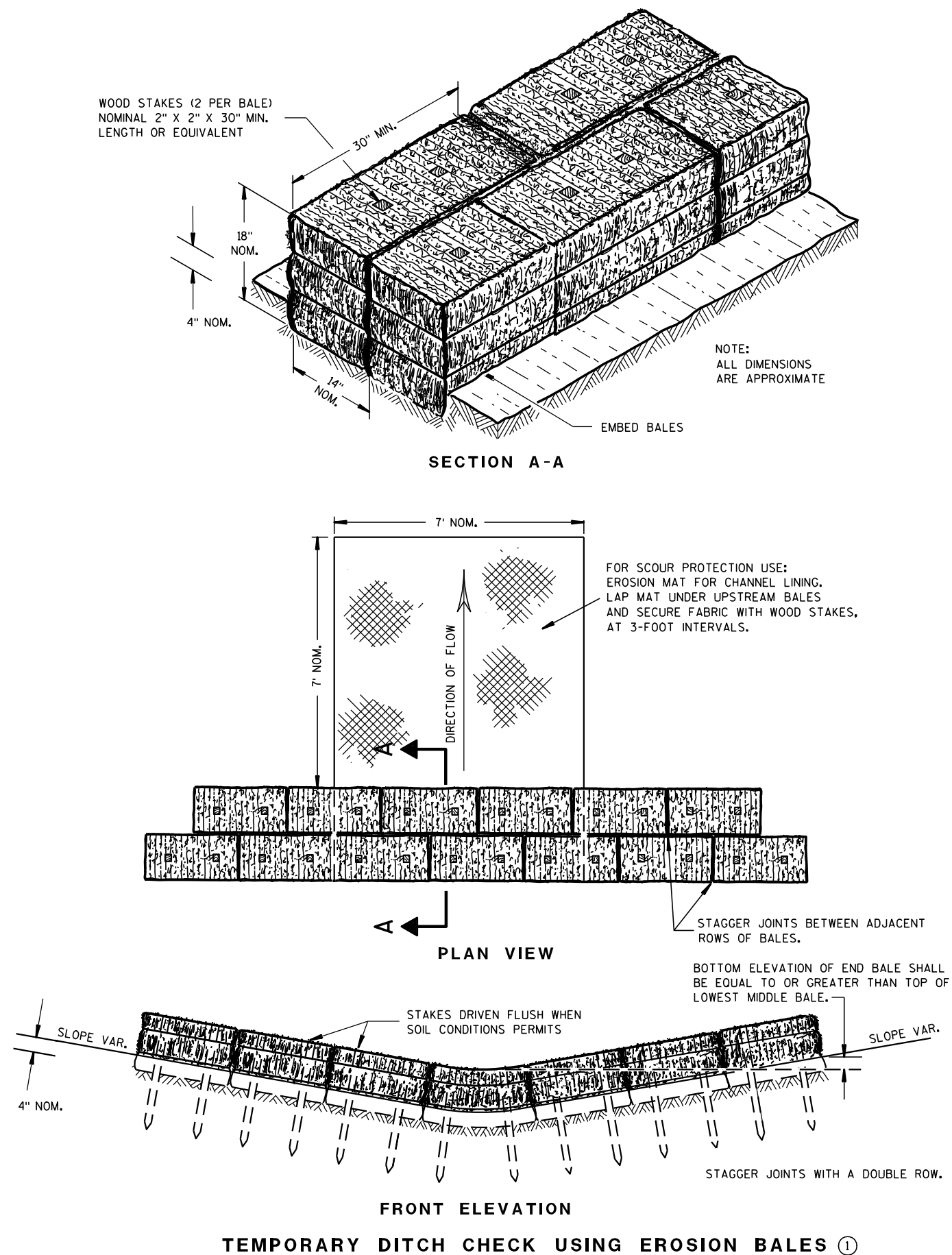
SECTION Y - Y
4% GUTTER SLOPE

DRIVEWAY AND SIDEWALK RAMPS
TYPES X AND Y

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Rodney Taylor
DATE

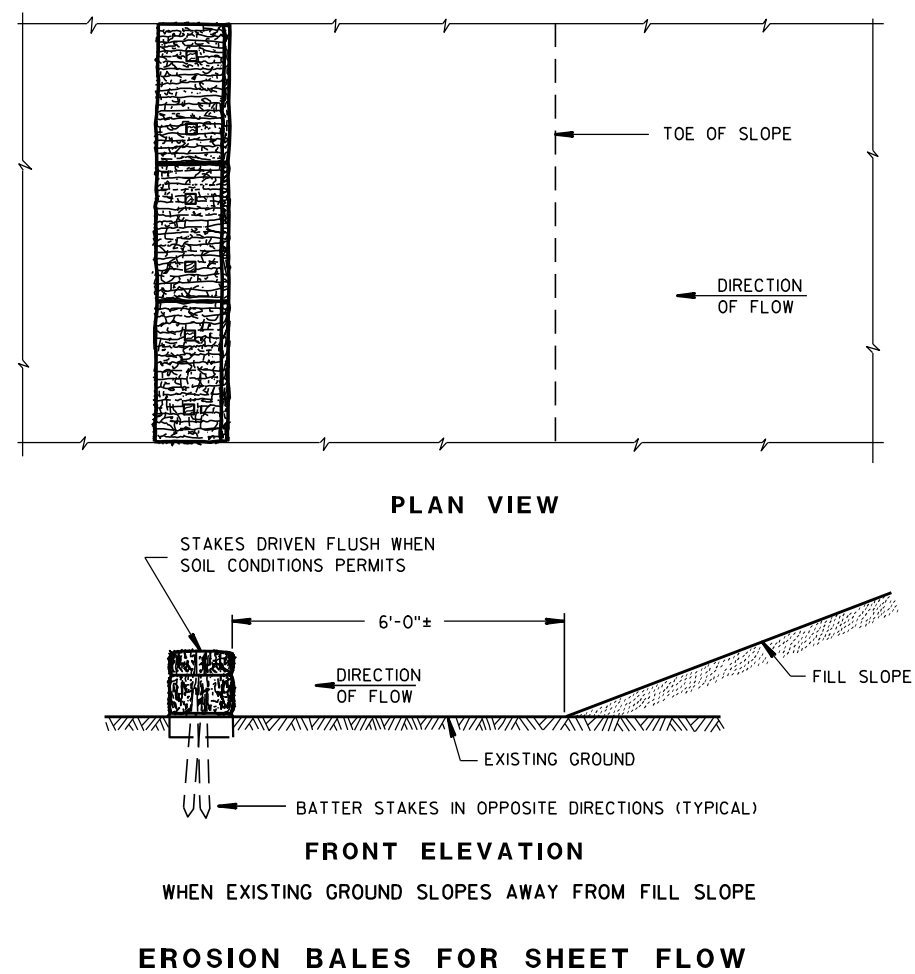
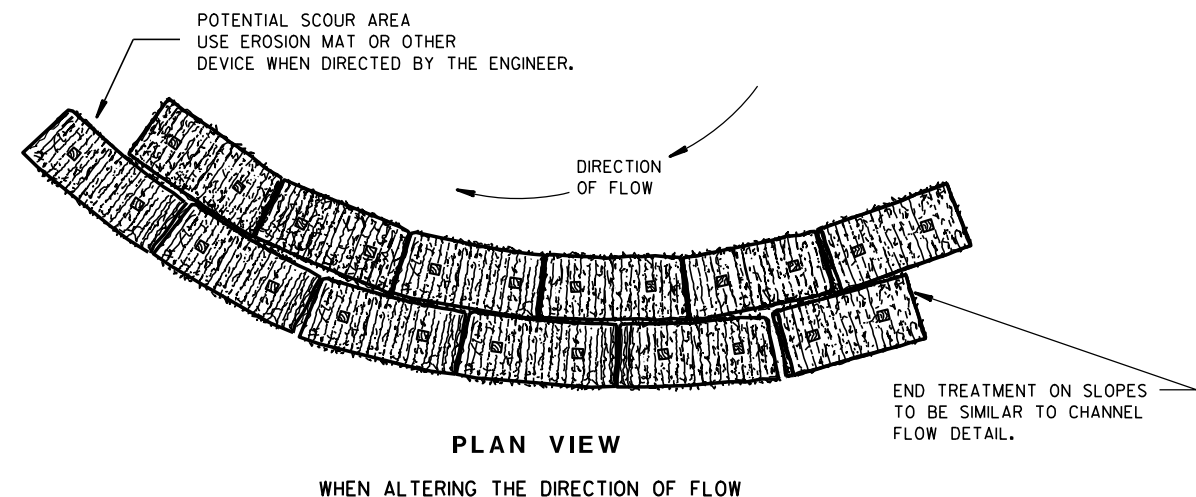
FHWA



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE/S/ Beth Conn
CHIEF ROADWAY DEVELOPER 116 ENGINEER

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.

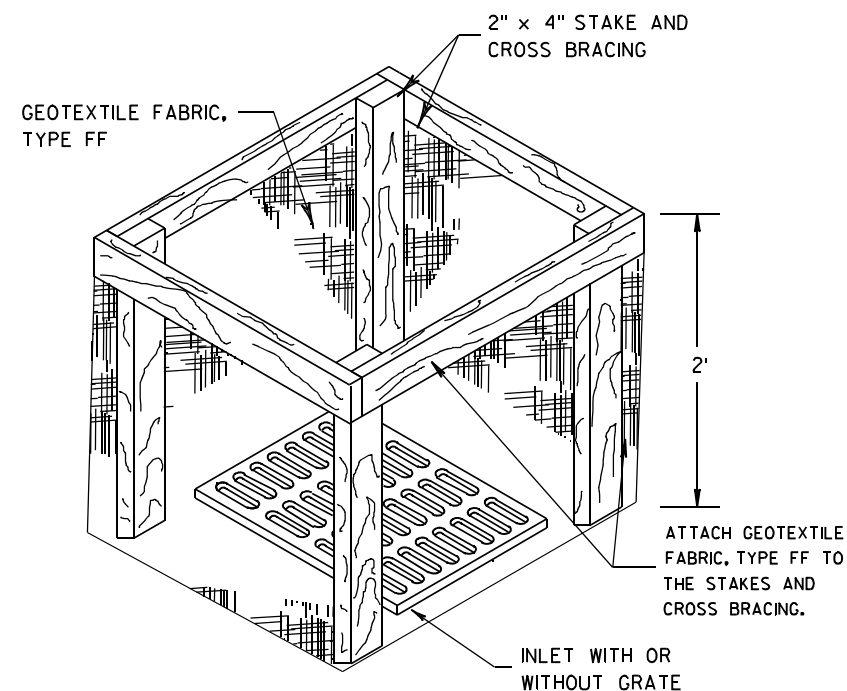
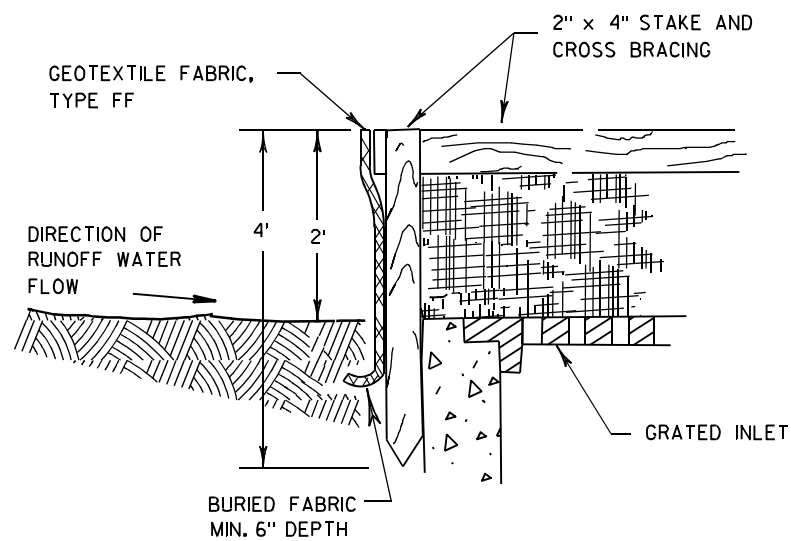


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Connolly
DATE CHIEF ROADWAY DEVELOPMENT 117 JINEER

FHWA



INLET PROTECTION, TYPE A

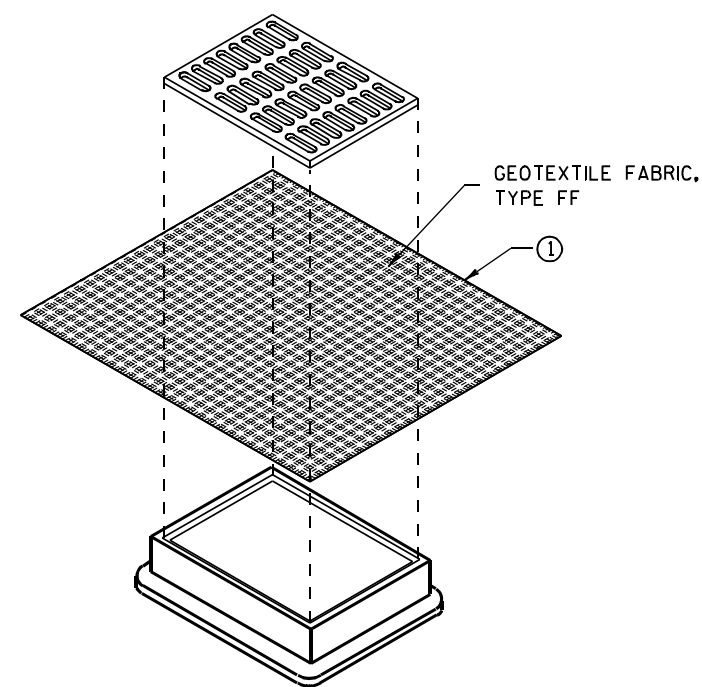
GENERAL NOTES

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

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

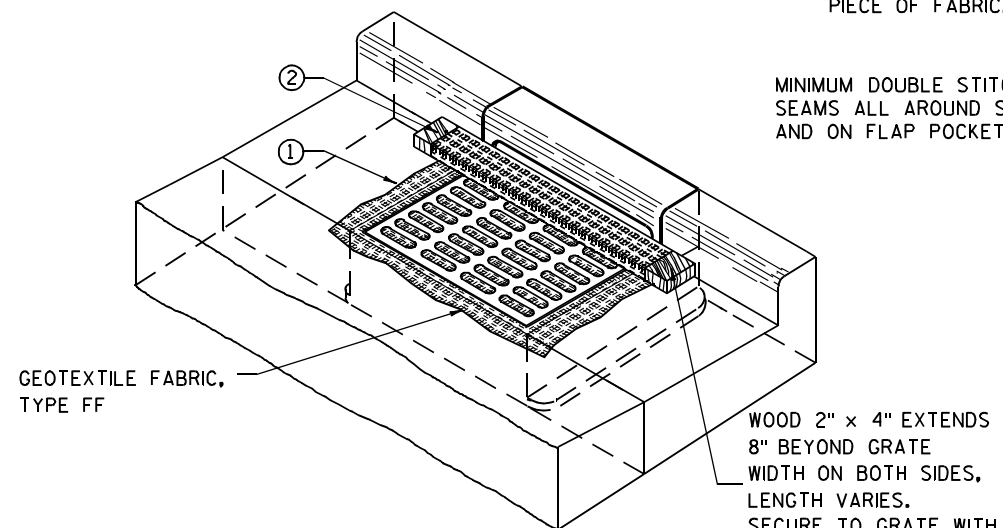
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

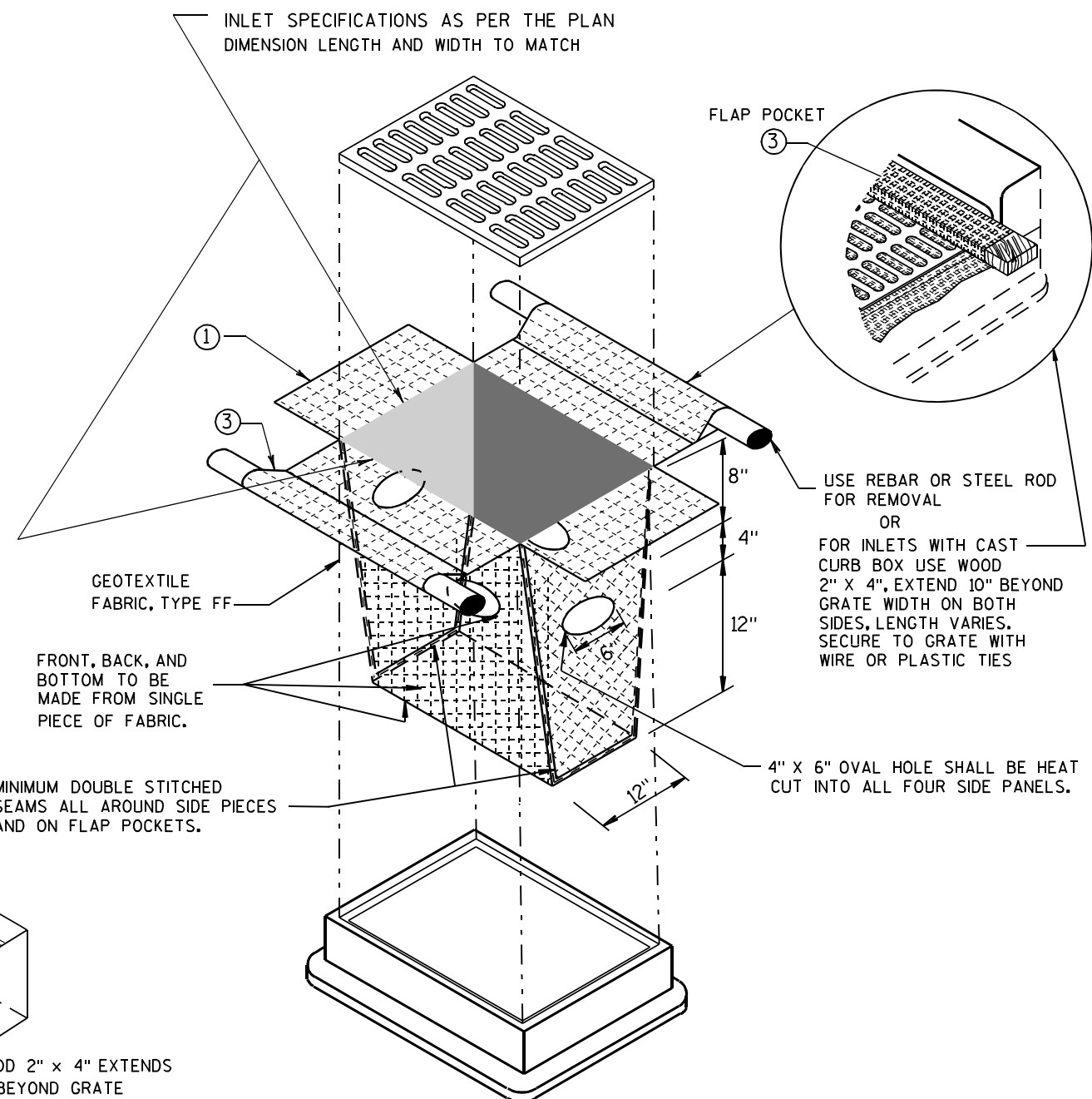
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

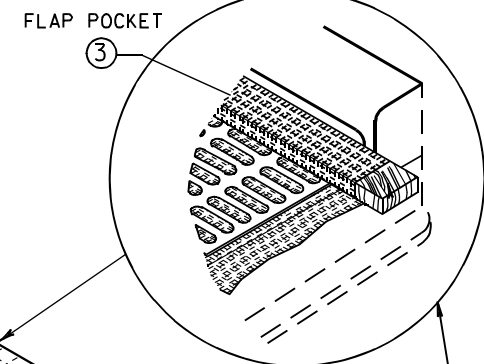
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

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



INLET PROTECTION, TYPE D

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



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

4" X 6" OVAL HOLE SHALL BE HEAT CUT INTO ALL FOUR SIDE PANELS.

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

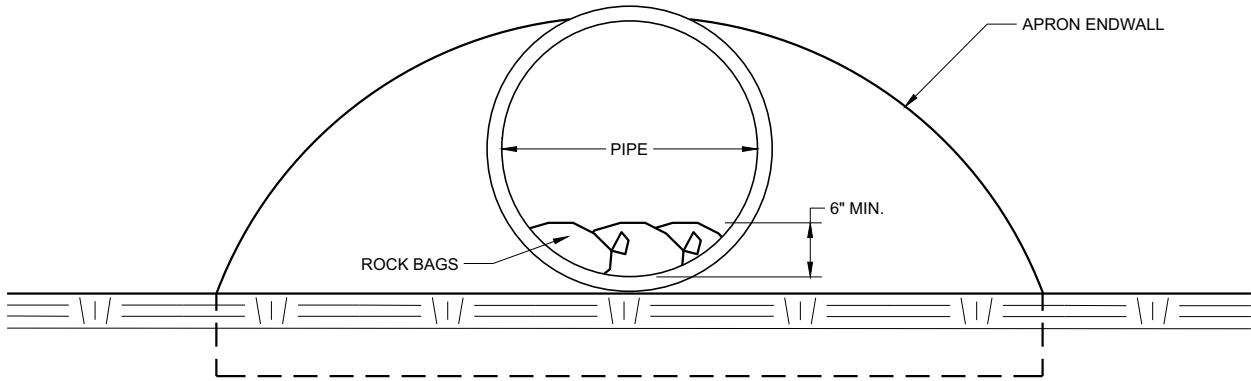
FRONT, BACK, AND BOTTOM TO BE MADE FROM SINGLE PIECE OF FABRIC.

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

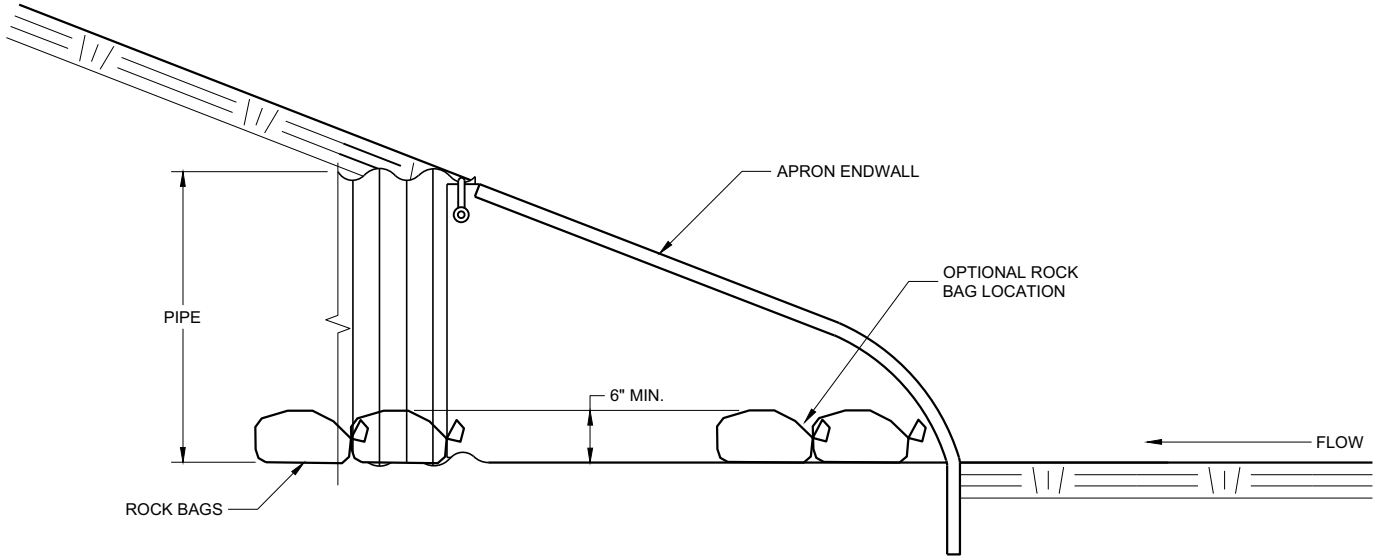
**INLET PROTECTION
TYPE A, B, C, AND D**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
10/16/02 /S/ Beth Connolly
DATE 118
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



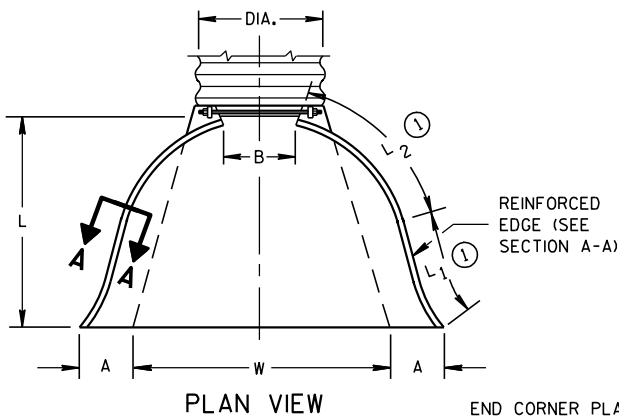
SIDE VIEW

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 119
FHWA	

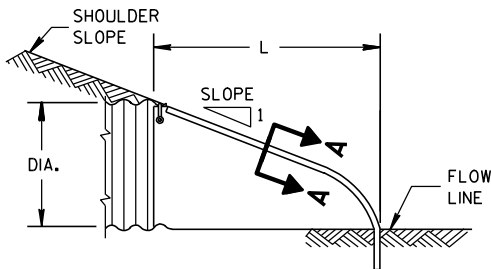
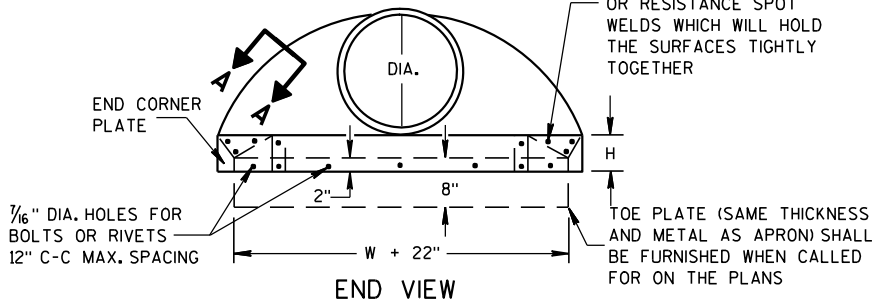
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1		1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1		1 Pc.
18	.064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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



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

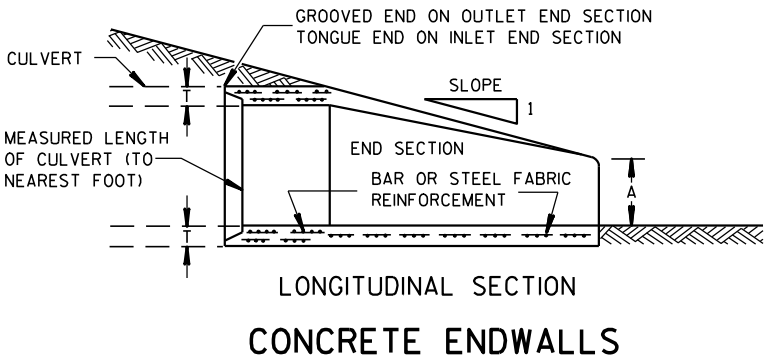
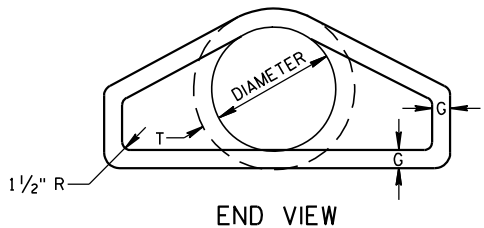
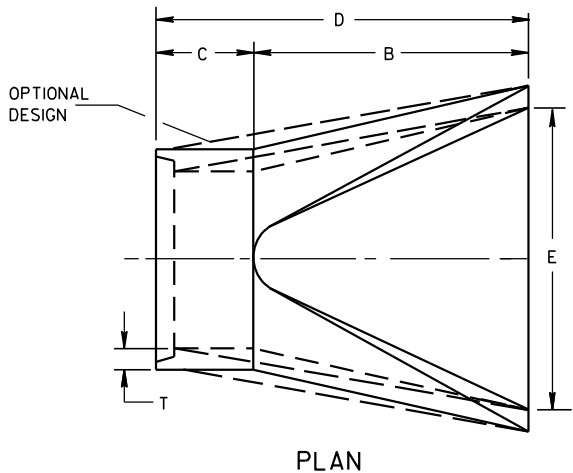
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

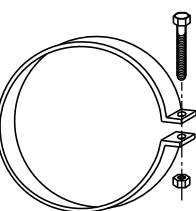
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9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

* MINIMUM
** MAXIMUM

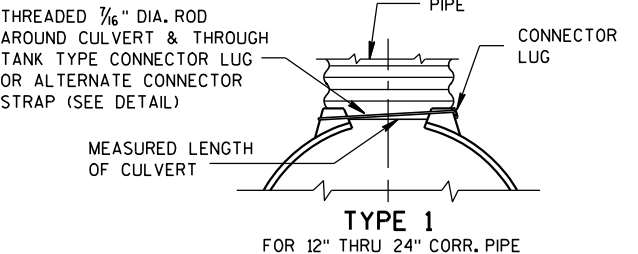


LONGITUDINAL SECTION
CONCRETE ENDWALLS

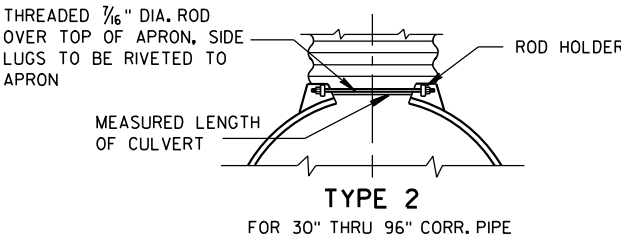
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



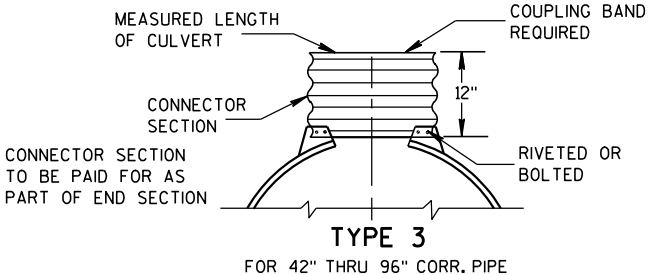
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



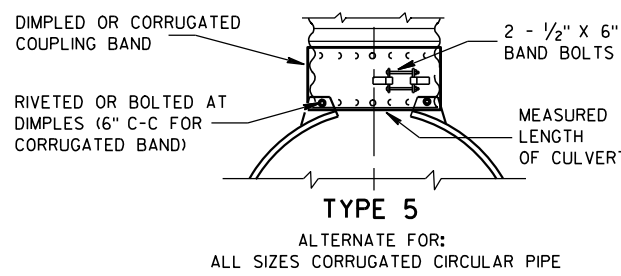
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

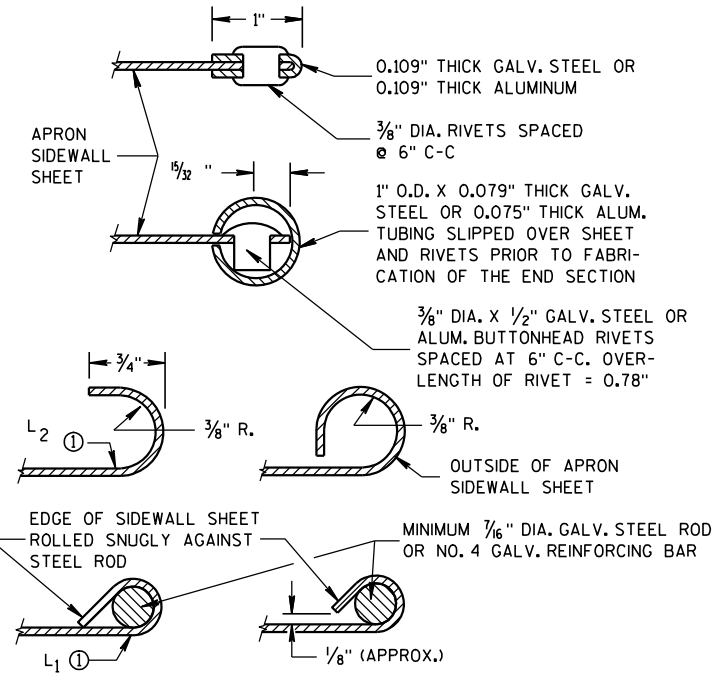
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

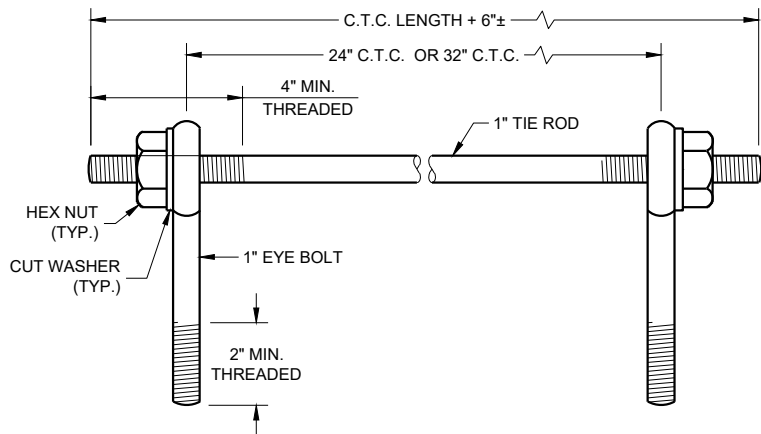
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

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

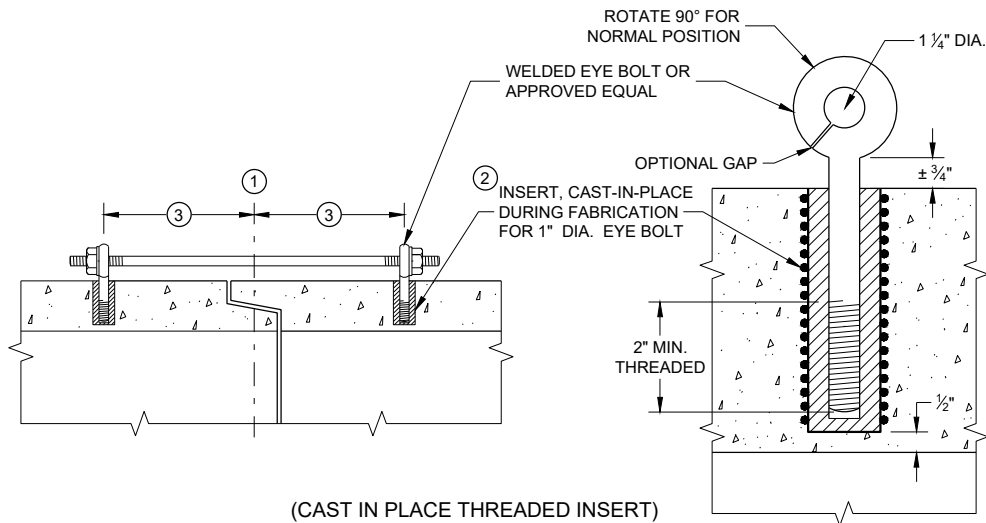
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinehart CHIEF ROADWAY DEVELOP	120	NEER
FHWA			



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

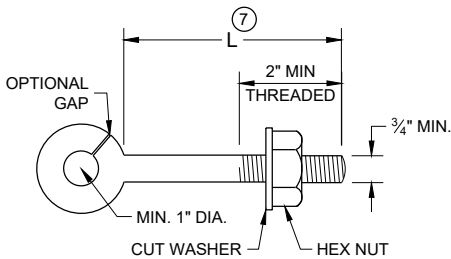
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

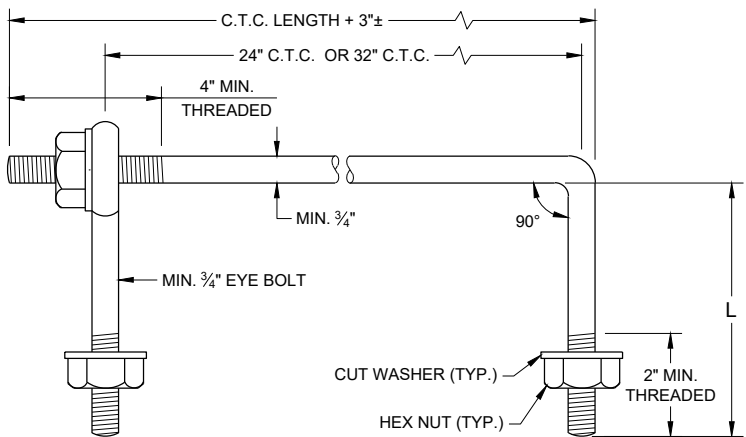
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

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

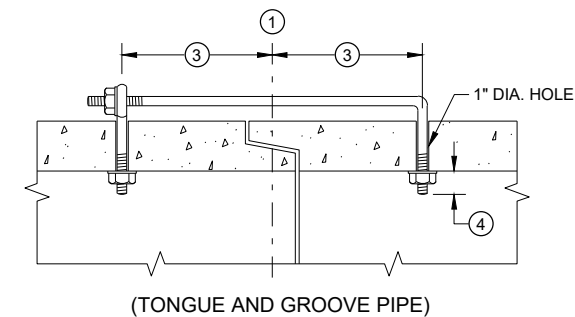


EYE BOLT 7

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



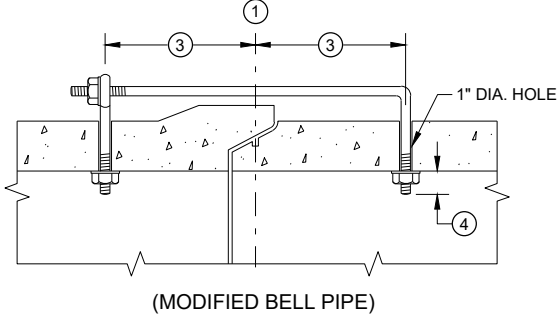
EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)

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

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

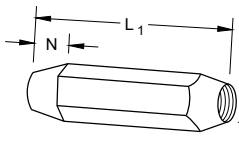


(MODIFIED BELL PIPE)

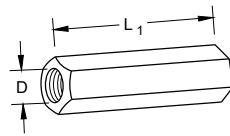
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES

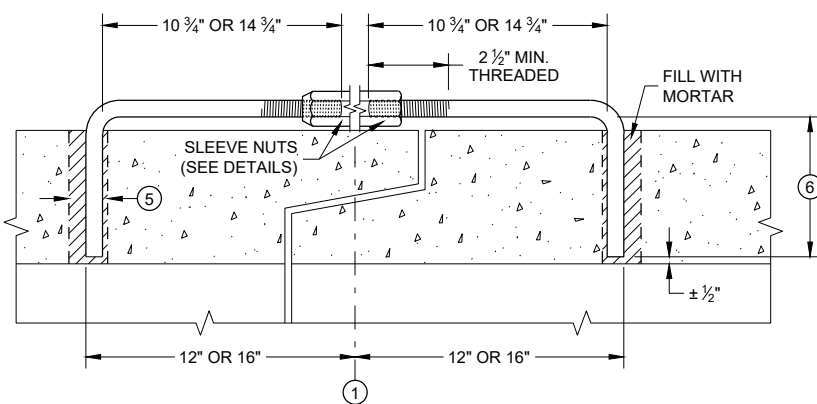


TAPERED



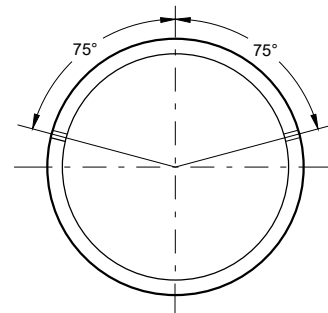
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



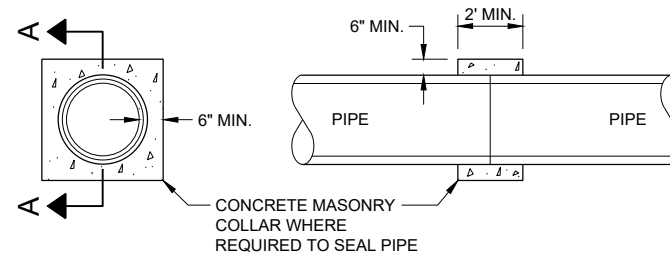
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION

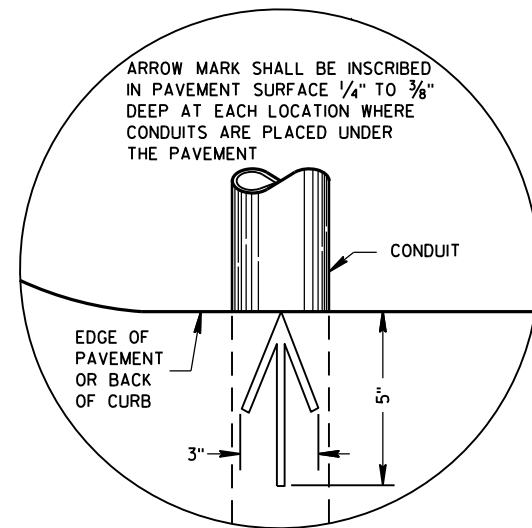


SECTION A - A
CONCRETE COLLAR DETAIL

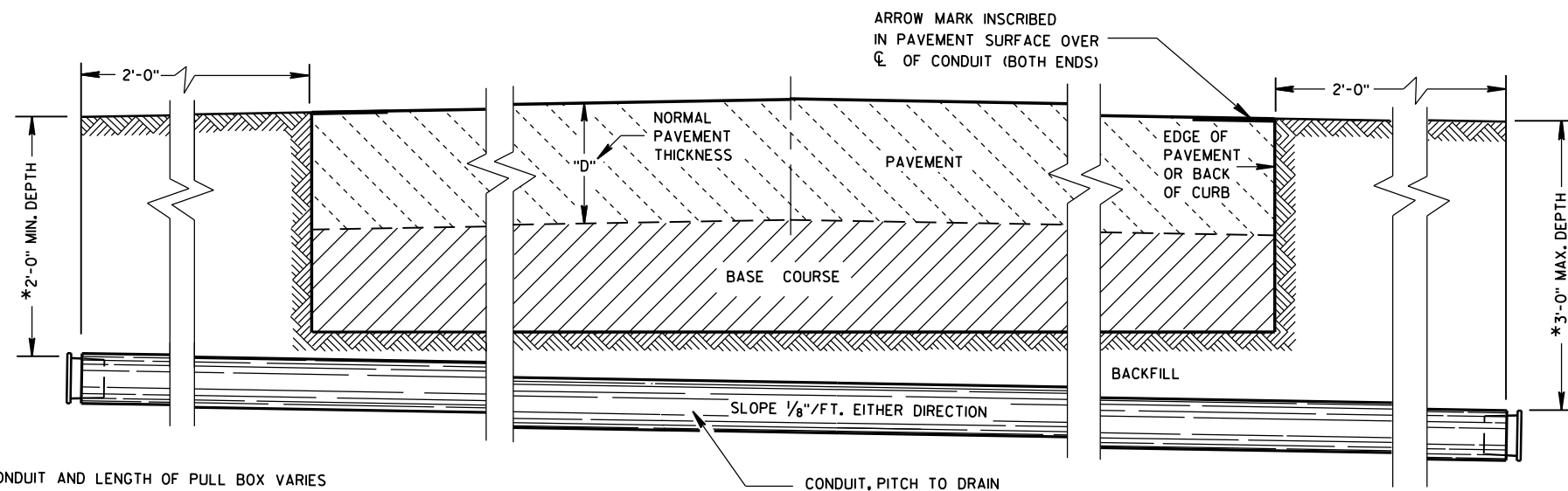
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 121
FHWA



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

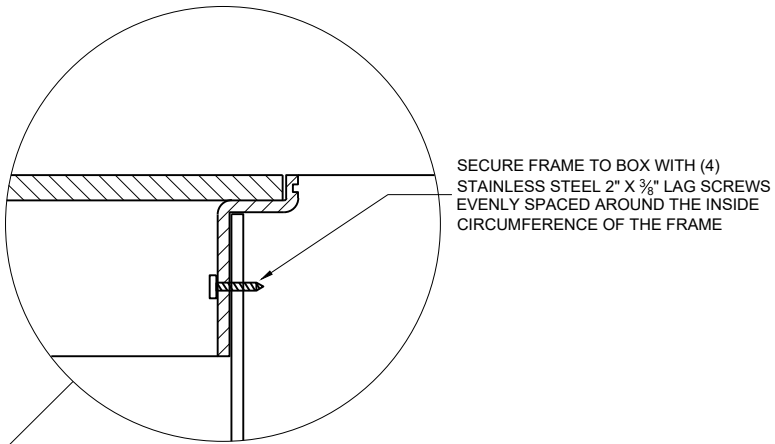
CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 122
FHWA

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

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



NOTCH FOR PAVEMENT ADHESION

DO NOT SECURE FRAME TO BOX.
ALLOW FRAME ADHESION TO SIDEWALK
FOR UNIFORM COVER/PAVEMENT
VERTICAL MOVEMENT.

NON-CONDUCTIVE FRAME AND COVER

ELECTRIC

B

FINAL GRADE

2" PVC PIPE CAP ON BOTH ENDS WITH 7 OR 8 1/4" HOLES DRILLED IN EACH END. INSTALL BELOW ALL OTHER PIPES.

2" DRAIN DUCT TO DITCH OR SEWER WHEN SPECIFIED

NO. 2 COARSE AGGREGATE (SEE SECTION 501 OF THE STANDARD SPECIFICATIONS)

INSTALL ELECTRICAL END BELLS ON ALL NON-METALLIC CONDUIT BEFORE INSTALLATION OF WIRE AND/OR CABLE. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CUT OPENINGS AS REQUIRED IN THE FIELD

ALL CONDUIT PITCHED TO DRAIN TO PULL BOXES

6" MIN. (TYP.)

6"

3"

A

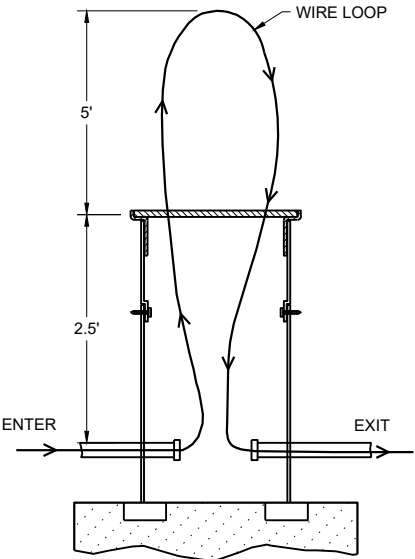
D

C

12"

NO. 2 COARSE AGGREGATE
(SEE SECTION 501 OF THE
STANDARD SPECIFICATIONS)

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



PULL BOXES NON-CONDUCTIVE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>November 2024</u> DATE	<u>/S/ Ahmet Demirbilek</u> STATE ELECTRICAL ENGINEER

FORM

4" MAX

6" MAX.

FORM

FORMING SHALL BE REMOVED AFTER CONCRETE HAS SET

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

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

TYPE 5 & 6

APPROVED
May 2019
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI 124

FHWA

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

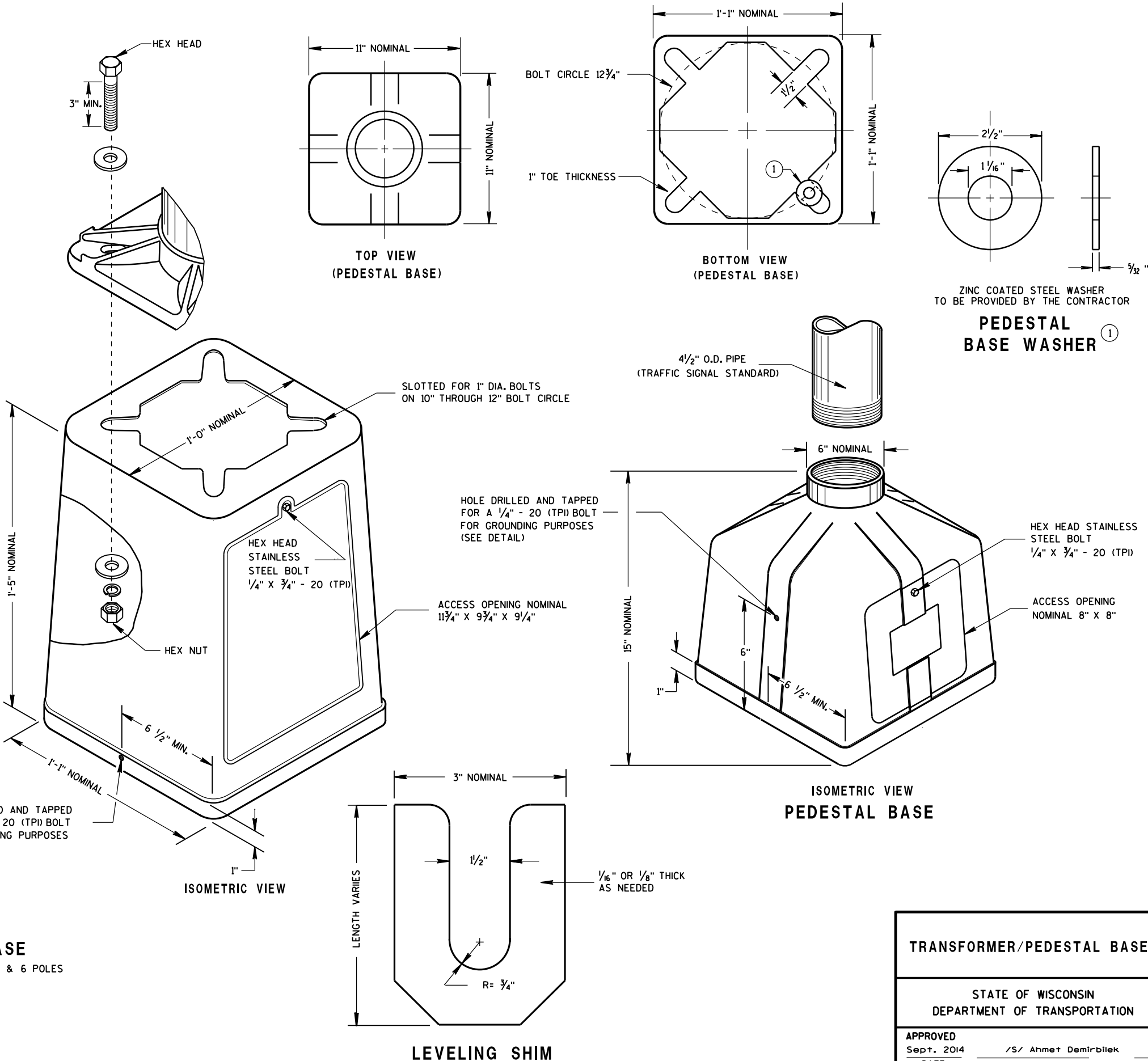
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

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

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

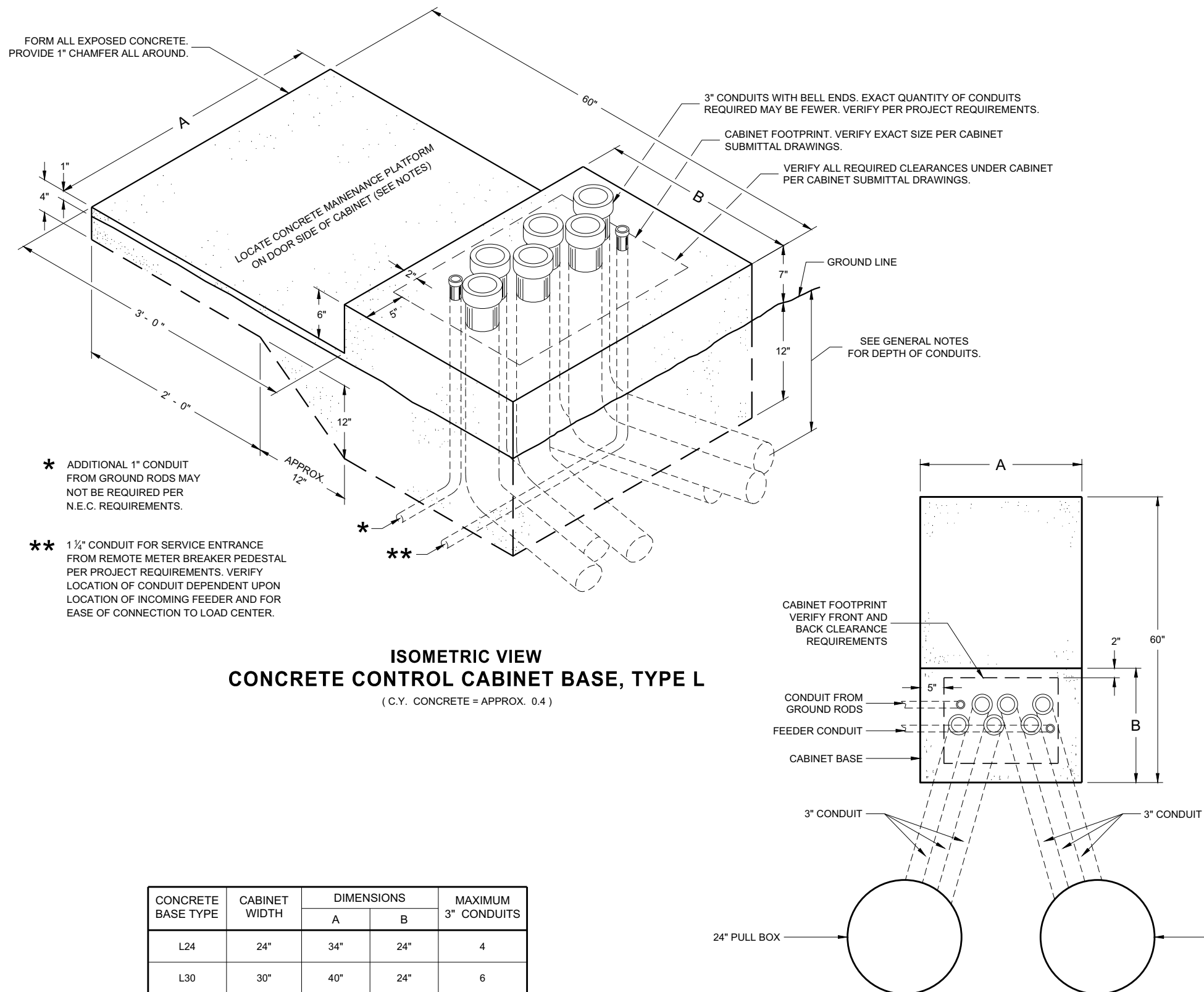
THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 125
FHWA



**PLAN VIEW
CONCRETE CONTROL CABINET BASE, TYPE L**

GENERAL NOTES

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

INSTALL FOUR STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET BASES. THE ANCHORS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

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

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT EQUALS 6 TIMES THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NON - METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

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

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6 INCHES MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

CONDUIT EXITING THE CONCRETE BASE SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

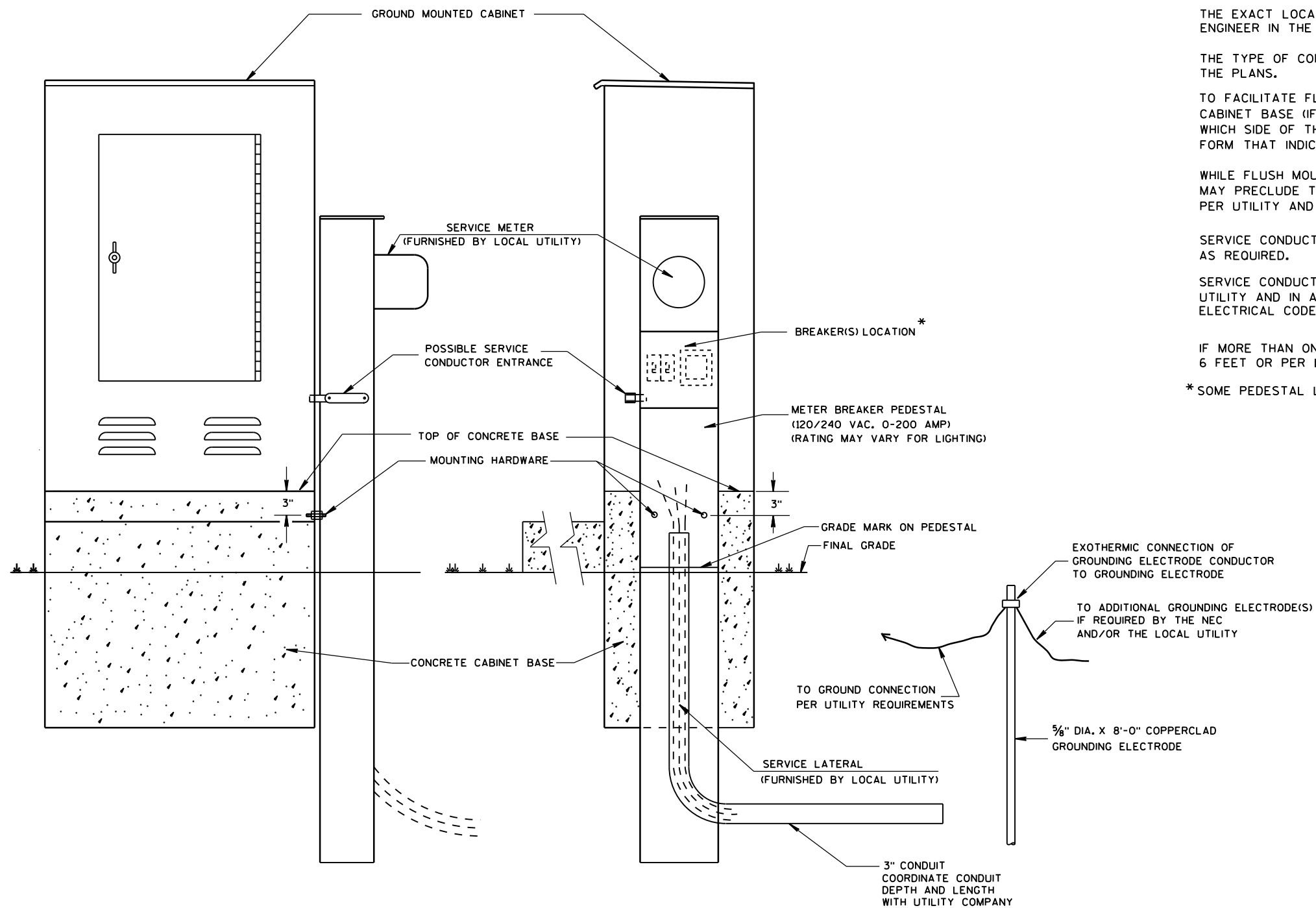
CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6 INCH MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

CONCRETE CONTROL CABINET BASE, TYPE L

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 126
FHWA



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH, THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION
(METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

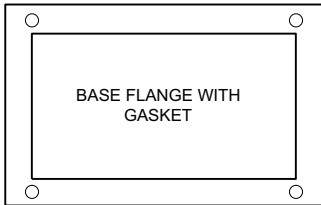
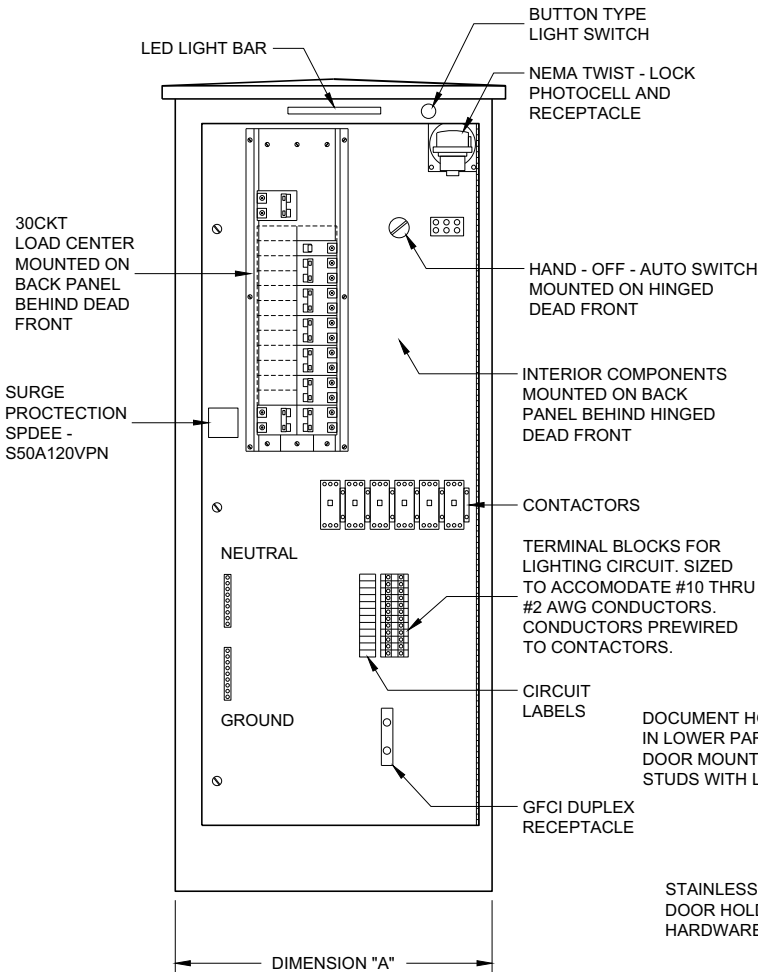
DATE

FHWA

/S/ Ahmet Demirbilek

STATE ELECTRICAL 127

FRONT INTERIOR ELEVATION



LIGHTING CONTROL CABINET

SIDE VIEW

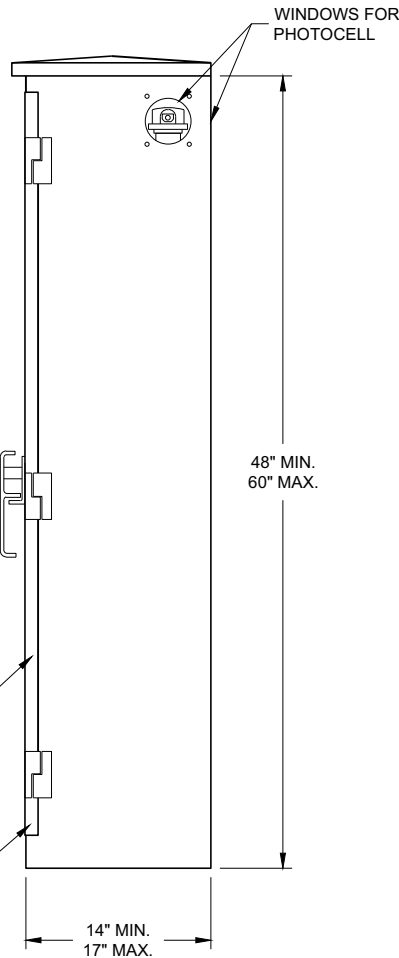
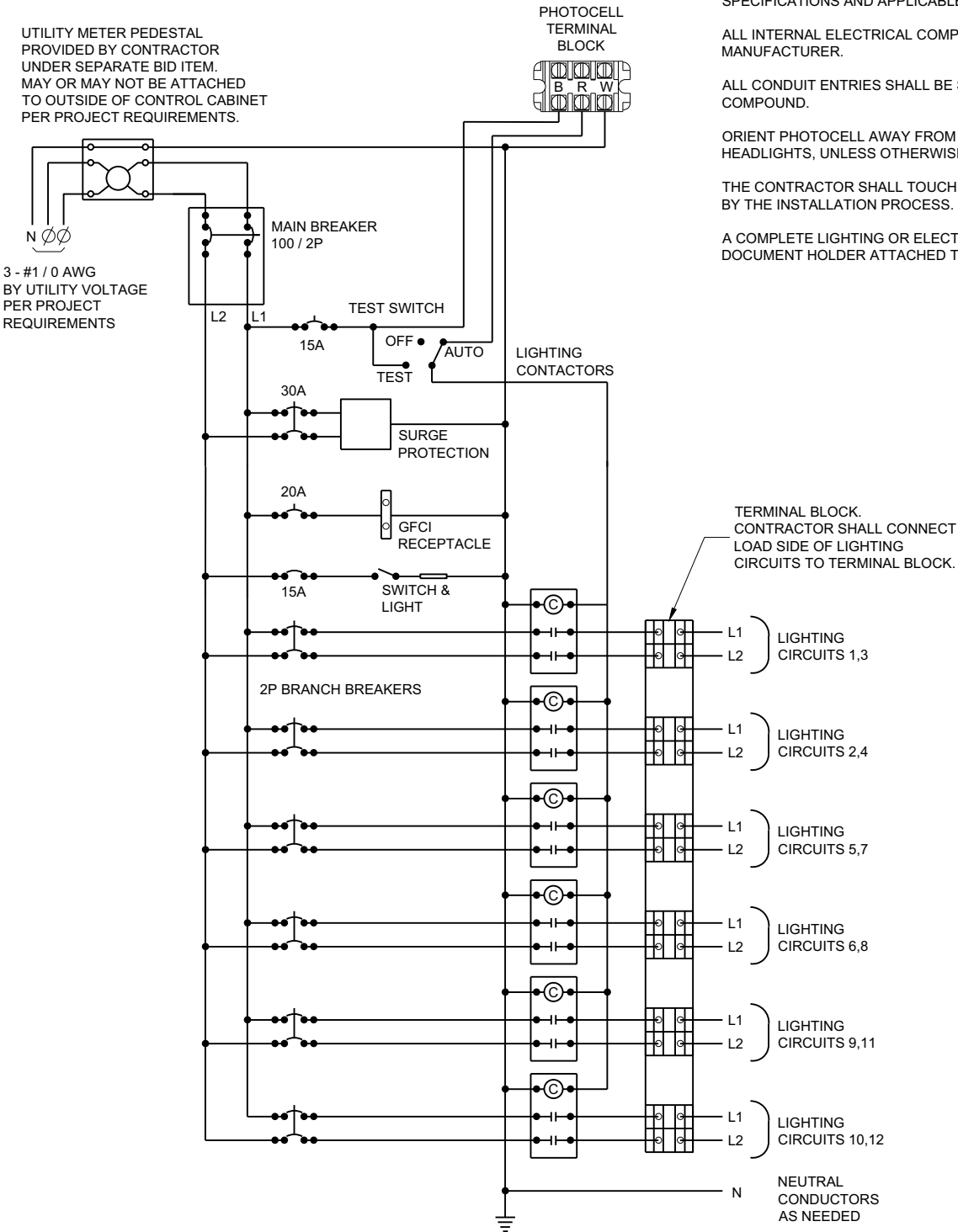


TABLE OF DIMENSIONS (INCHES)		
CONCRETE BASE TYPE	CABINET WIDTH	DIMENSION "A"
L24	24"	24"
L30	30"	30"

UTILITY METER PEDESTAL PROVIDED BY CONTRACTOR UNDER SEPARATE BID ITEM. MAY OR MAY NOT BE ATTACHED TO OUTSIDE OF CONTROL CABINET PER PROJECT REQUIREMENTS.



CONTROL CABINET SCHEMATIC

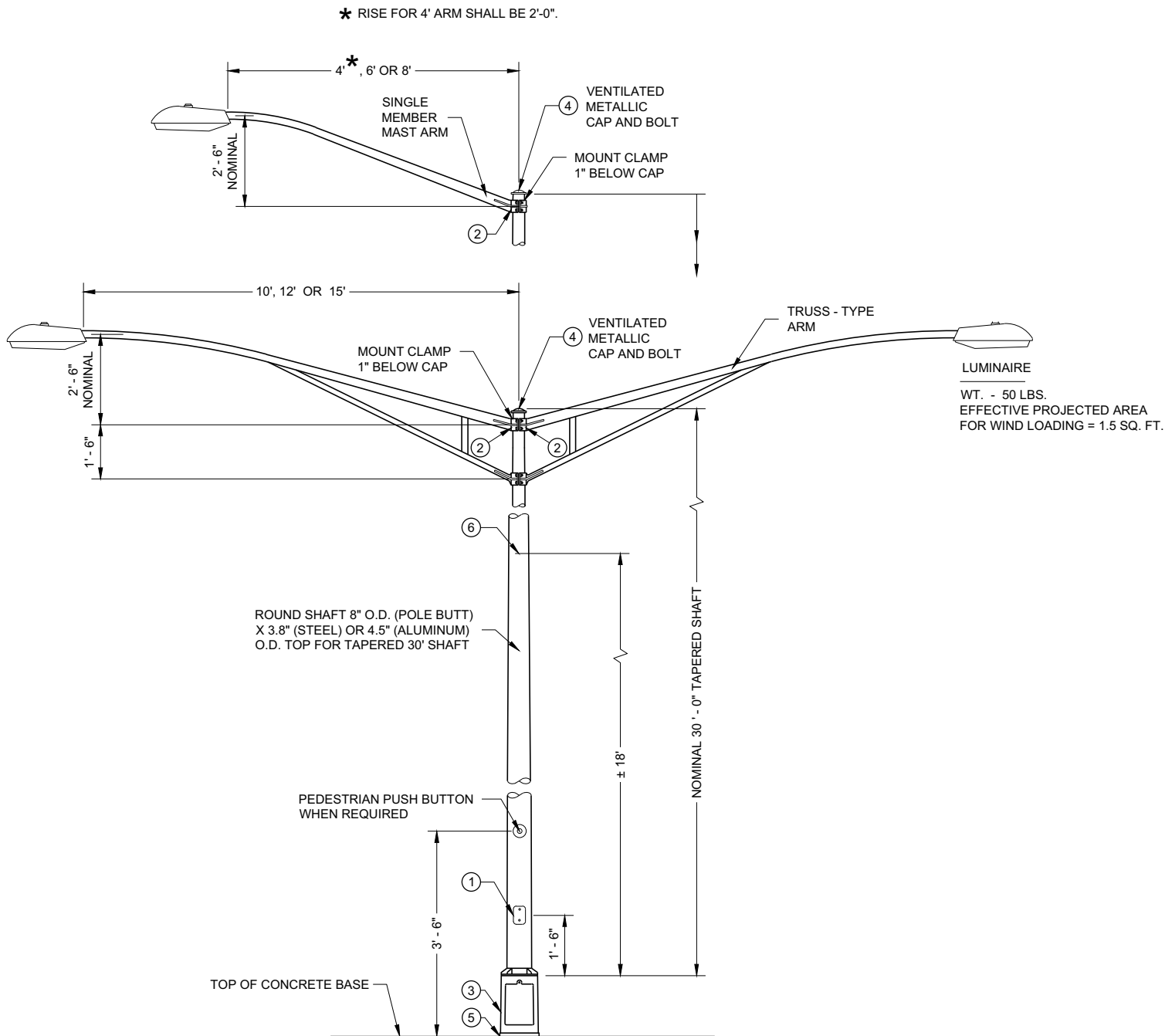
GENERAL NOTES

- 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.
- ALL INTERNAL ELECTRICAL COMPONENTS WILL BE PRE - WIRED BY THE CABINET MANUFACTURER.
- ALL CONDUIT ENTRIES SHALL BE SEALED WITH AN APPROPRIATE DUCT SEALING COMPOUND.
- ORIENT PHOTOCELL AWAY FROM AMBIENT LIGHT SOURCES AND ONCOMING TRAFFIC HEADLIGHTS, UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISION.
- THE CONTRACTOR SHALL TOUCH UP ANY DAMAGE TO THE ANODIZED FINISH CAUSED BY THE INSTALLATION PROCESS. COLOR MATCH PAINT SHALL BE USED.
- A COMPLETE LIGHTING OR ELECTRICAL PLAN SHALL BE SECURELY PLACED IN THE DOCUMENT HOLDER ATTACHED TO THE DOOR.

LIGHTING CONTROL CABINET
120 / 240 VOLT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGI 128
FHWA



**TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY**

GENERAL NOTES

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

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

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

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

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

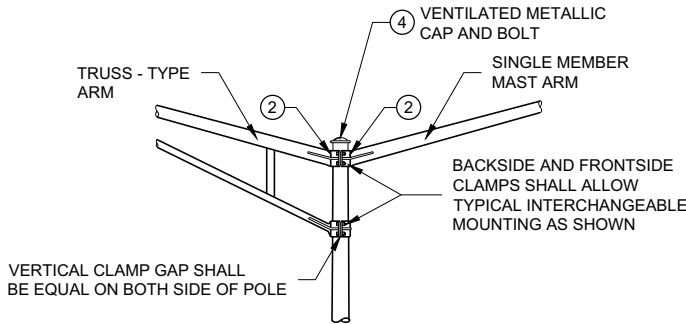
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

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

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

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

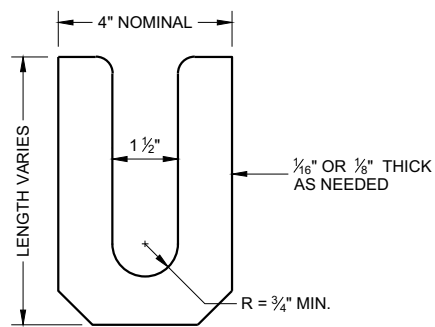
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 3/4" X 3/4" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.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



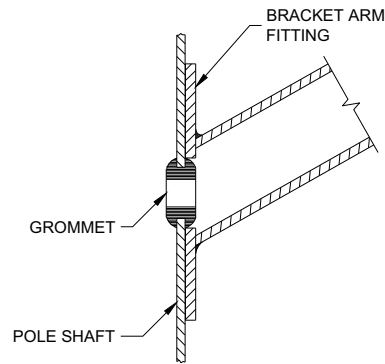
INTERCHANGEABLE MOUNTING DETAIL

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

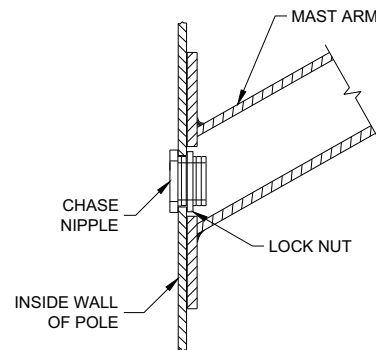
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 129



LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



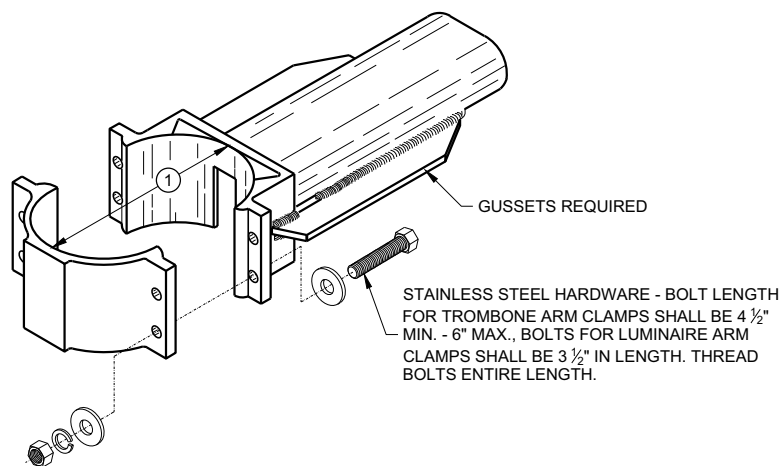
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

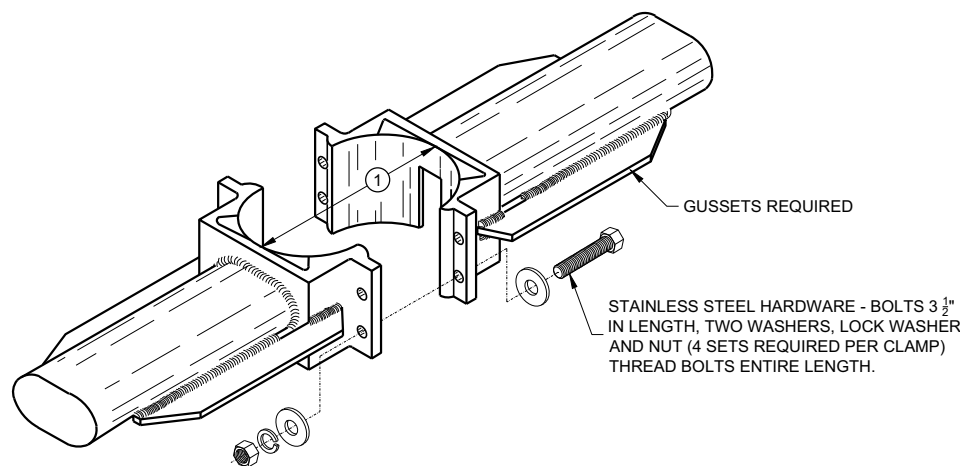
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

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

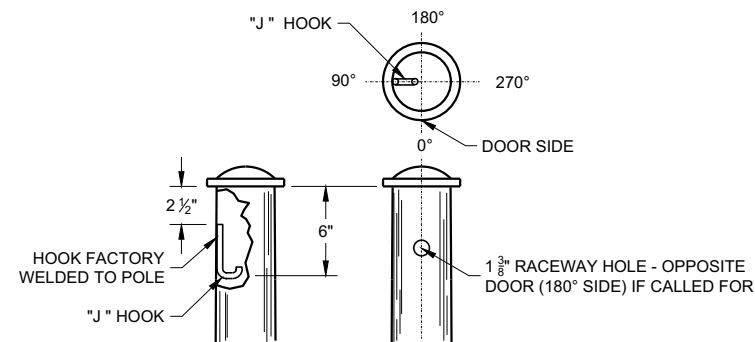
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



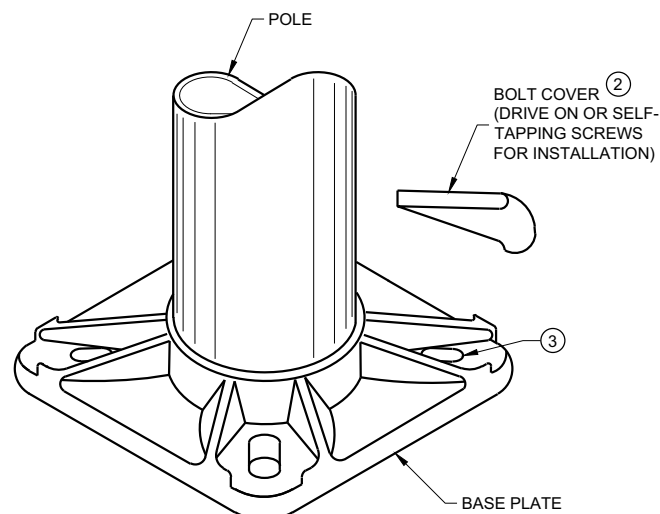
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



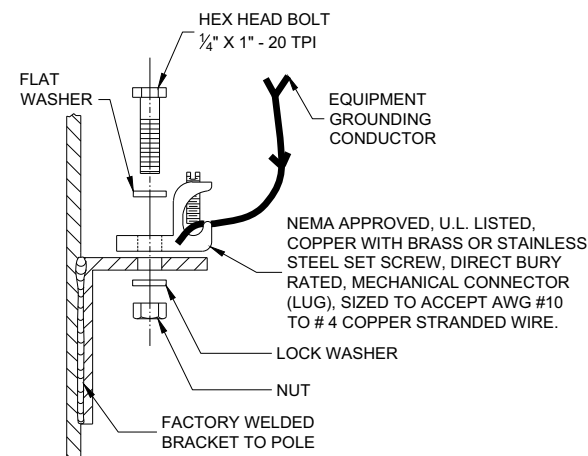
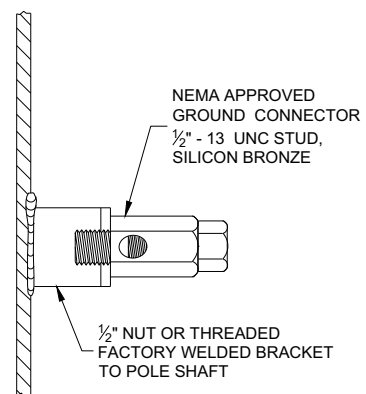
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



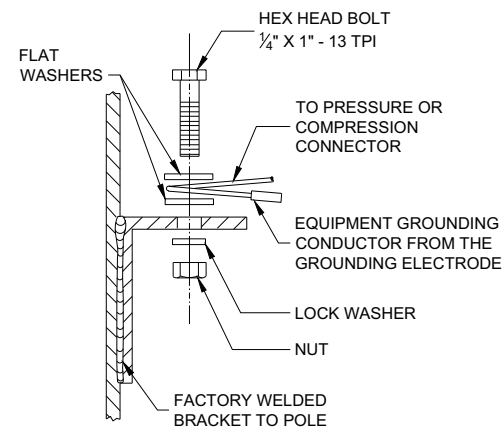
TYPICAL "J" HOOK LOCATION



BASE PLATE



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



HARDWARE DETAILS FOR POLE MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

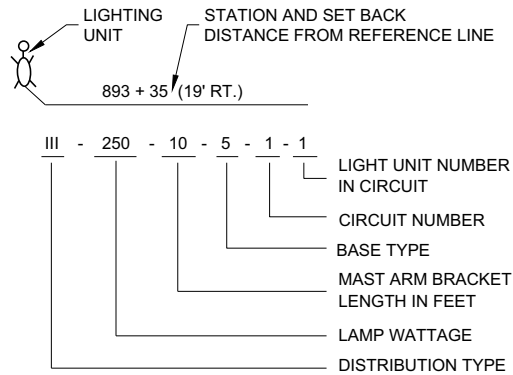
APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 130
FHWA

GENERAL NOTES

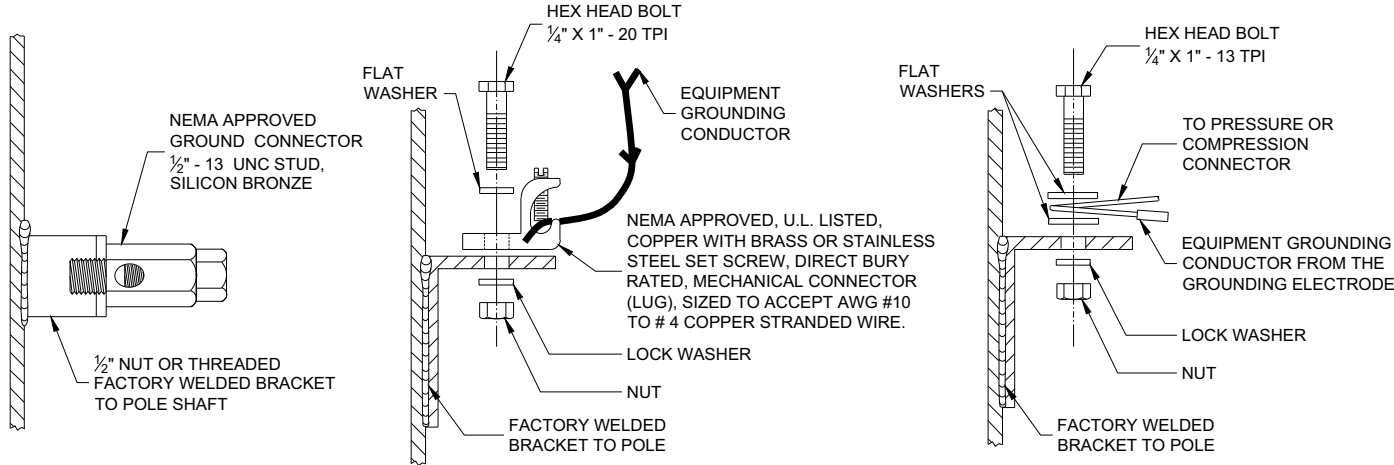
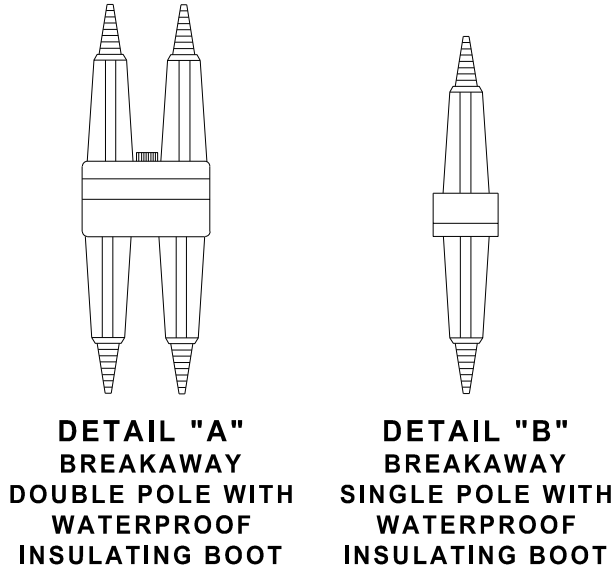
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

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

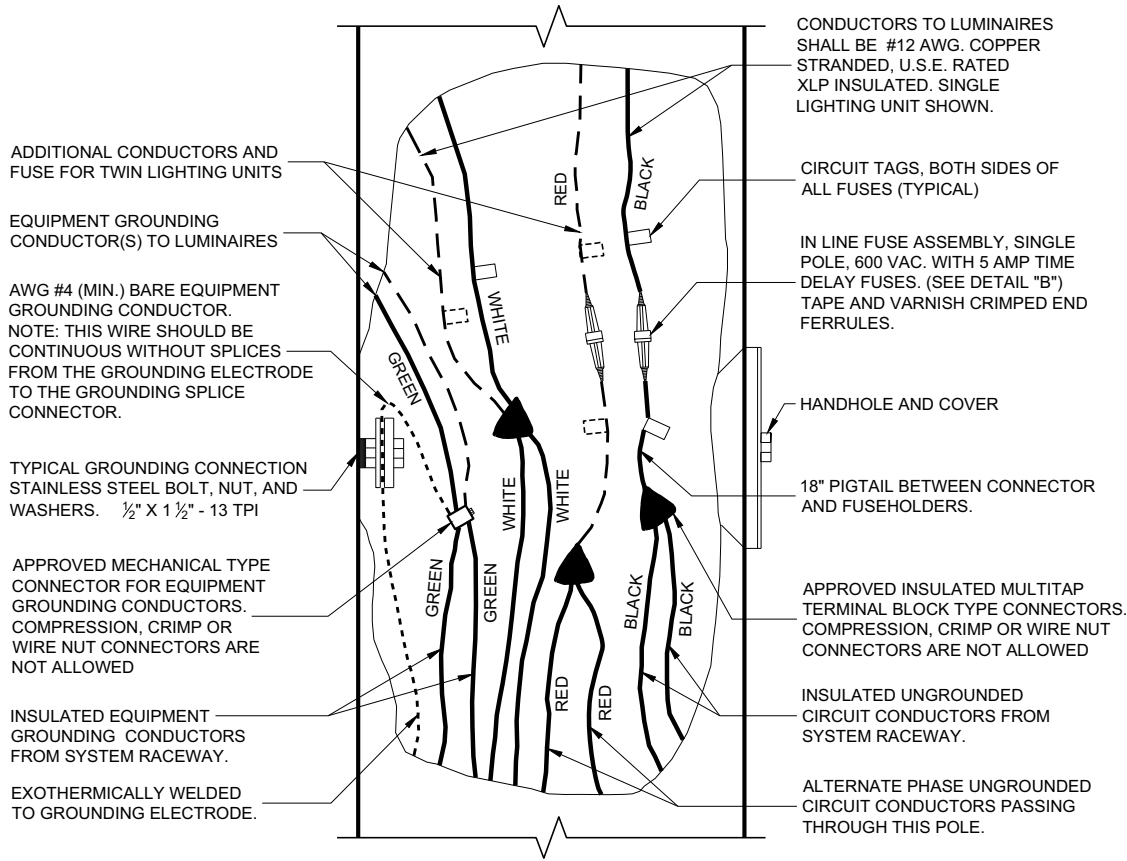


LIGHTING UNIT CODE
(TYPICAL)

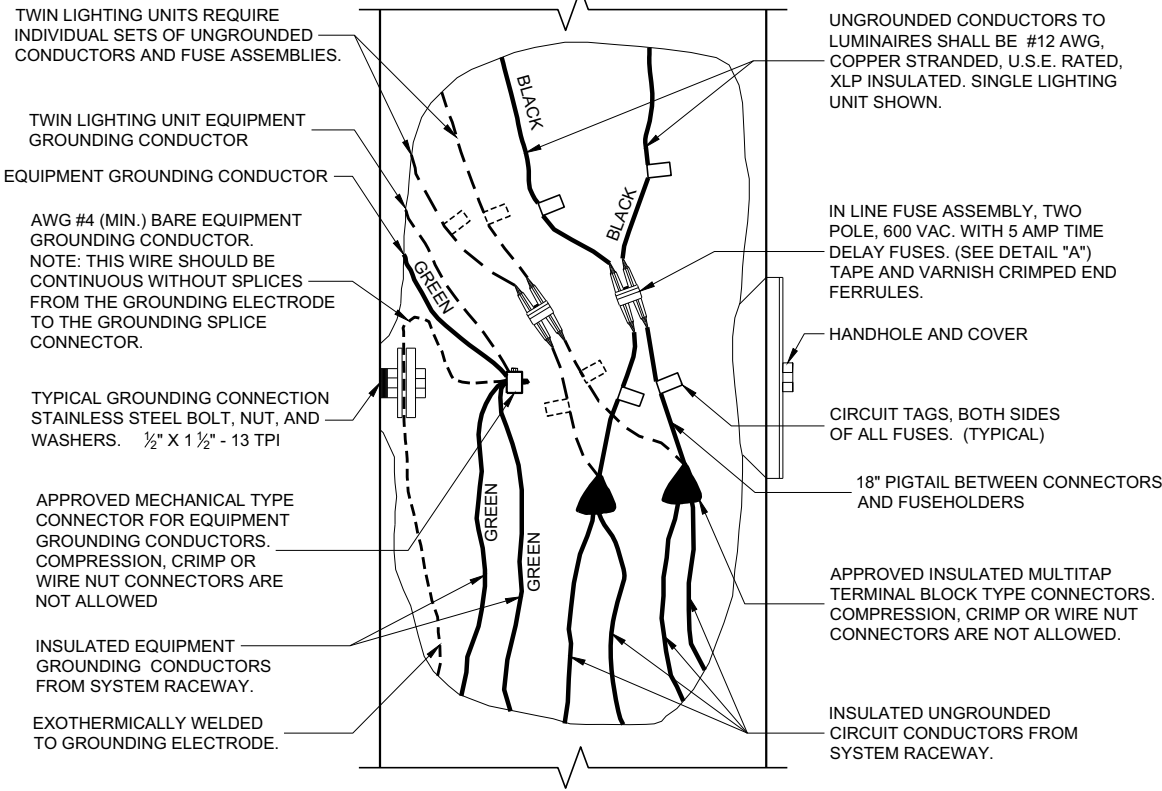


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

6



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



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

NON - FREEWAY LIGHTING UNIT
POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

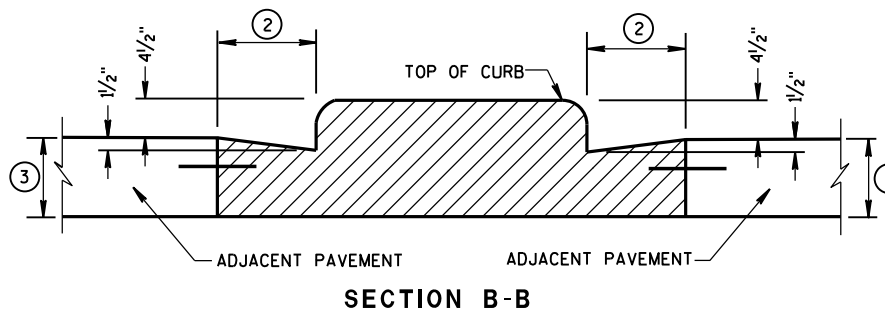
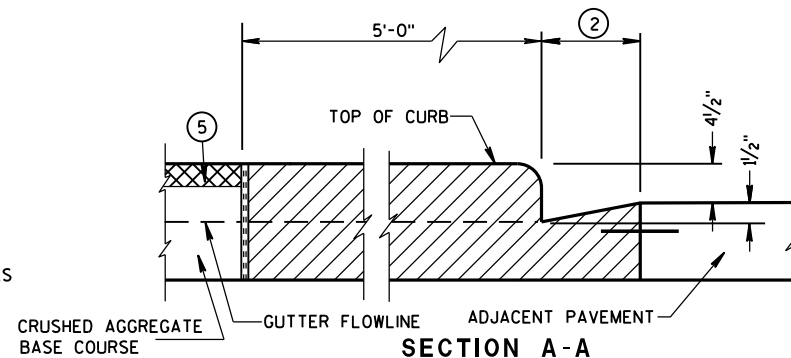
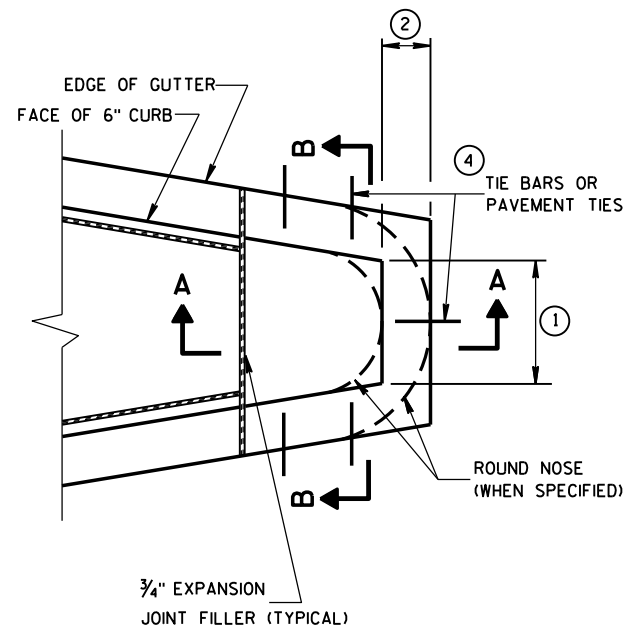
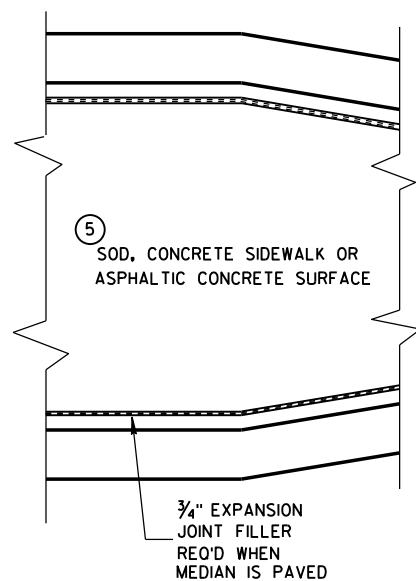
APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 131

FHWA

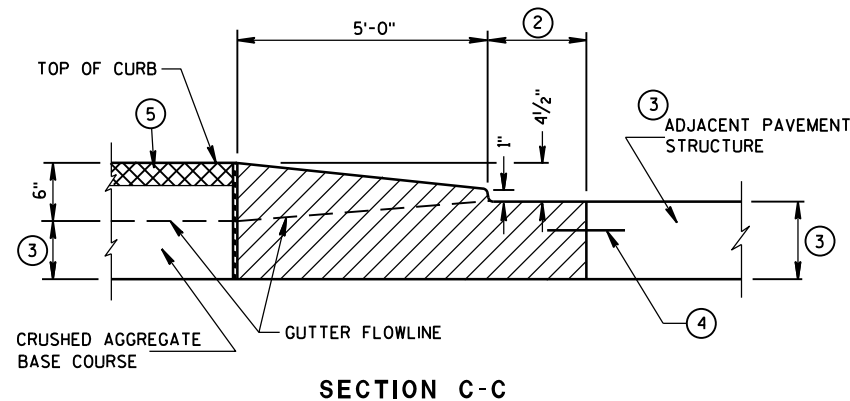
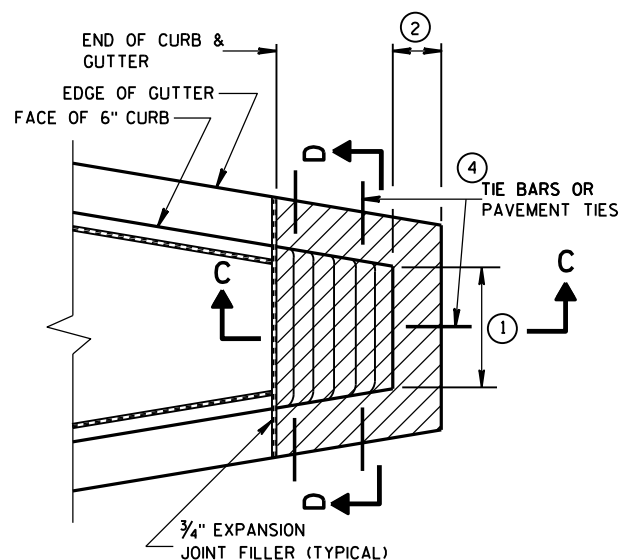
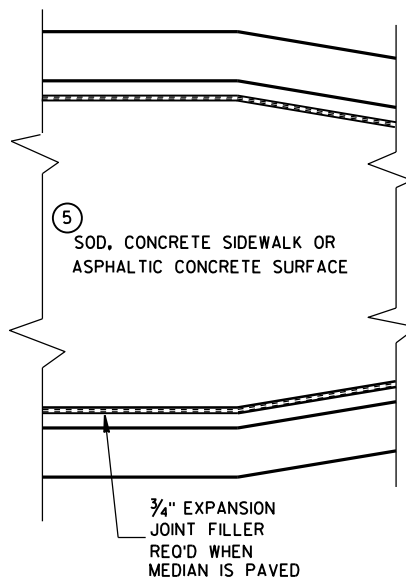
SDD 09E03 - 06

SDD 09E03 - 06

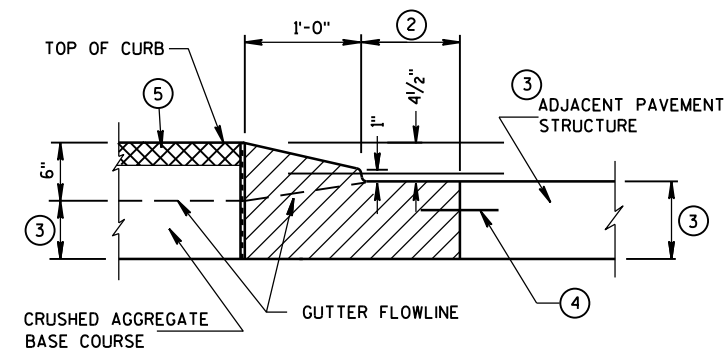
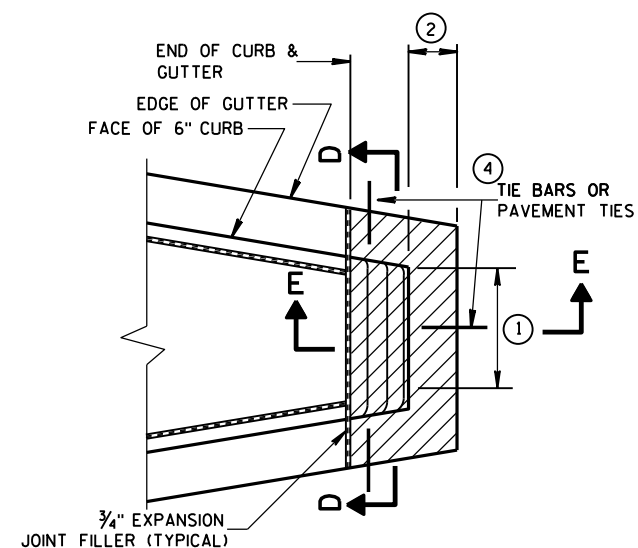
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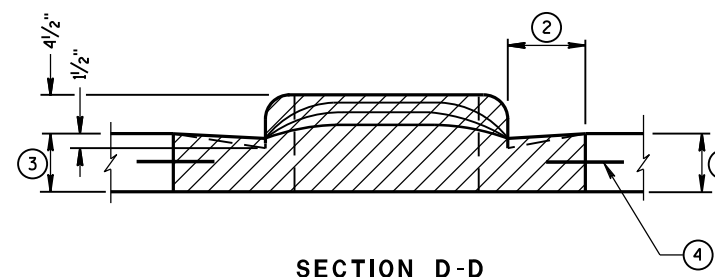
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



GENERAL NOTES

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

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

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

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

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

CONCRETE MEDIAN NOSE

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DEPARTMENT OF TRANSPORTATION

APPROVED

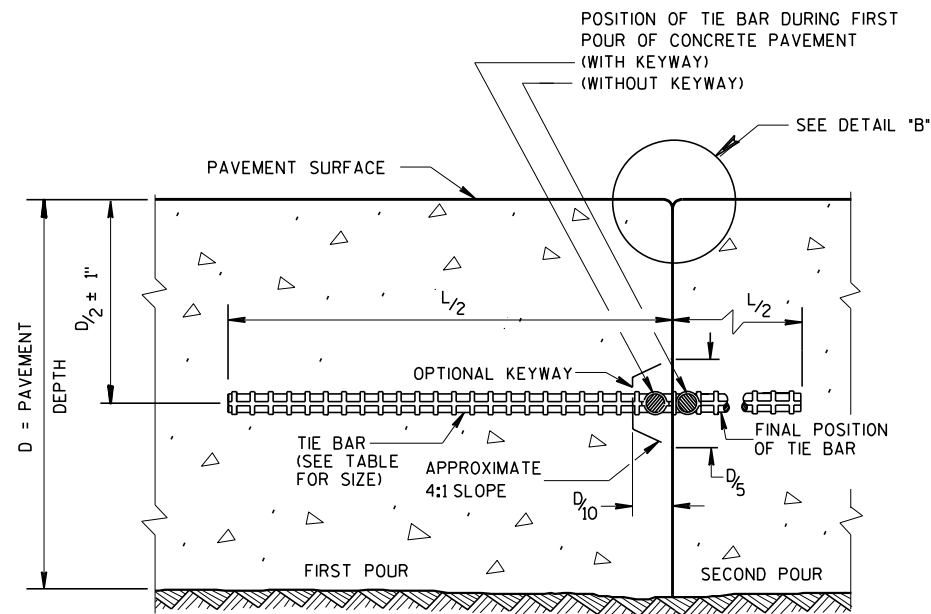
6/8/2006

DATE

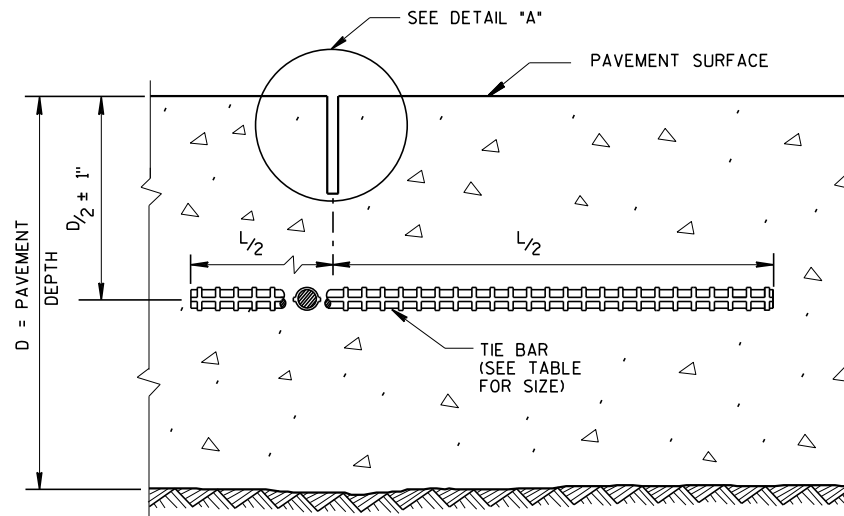
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS & 132
ENGINEER

4T



CONSTRUCTION JOINT



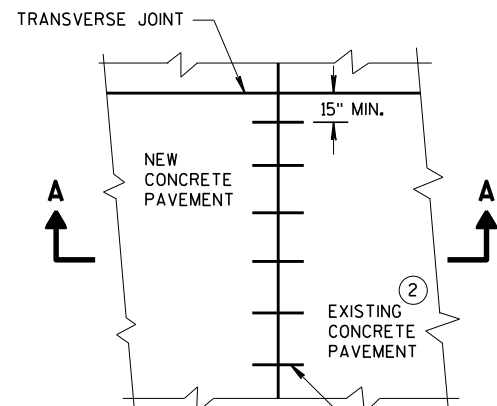
SAWED JOINT

GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

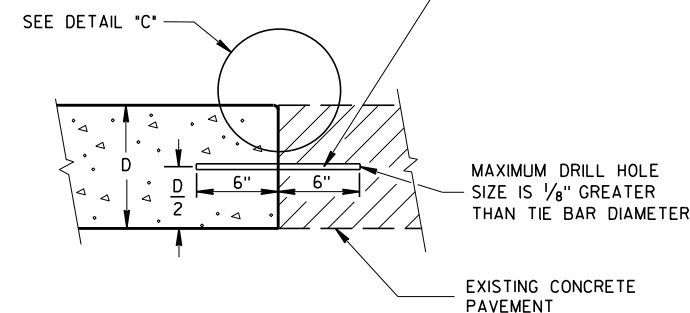
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

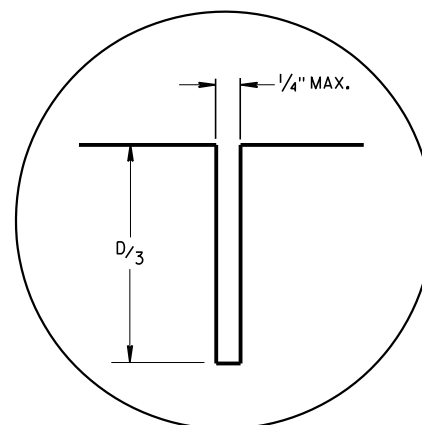


PLAN VIEW

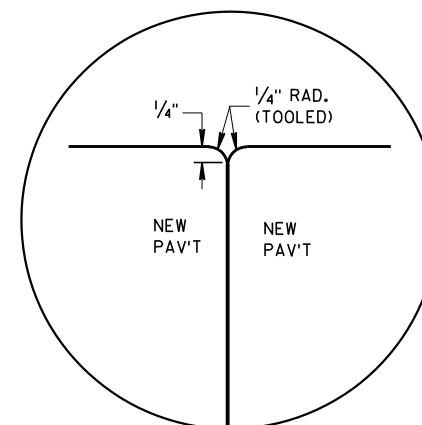
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



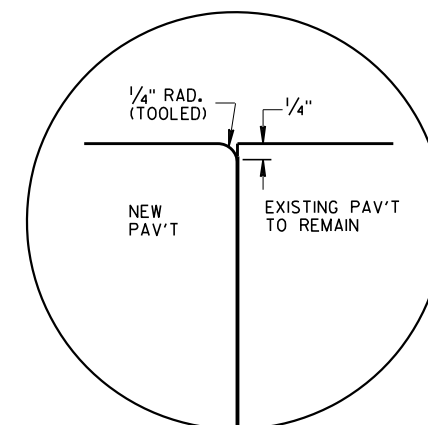
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



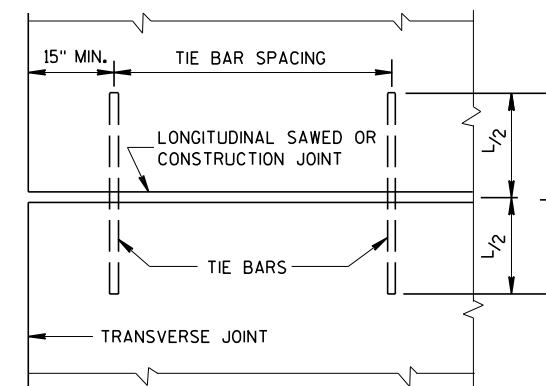
DETAIL "C"

TIE BAR TABLE

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

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

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

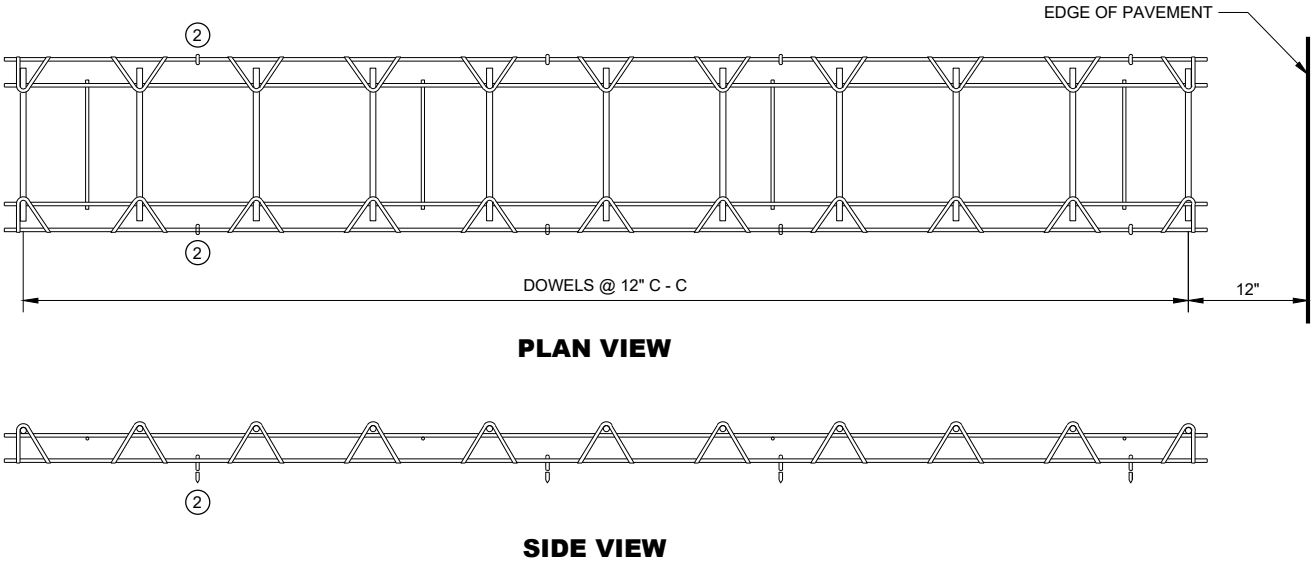


PLAN VIEW
SHOWING LOCATION OF TIE BARS

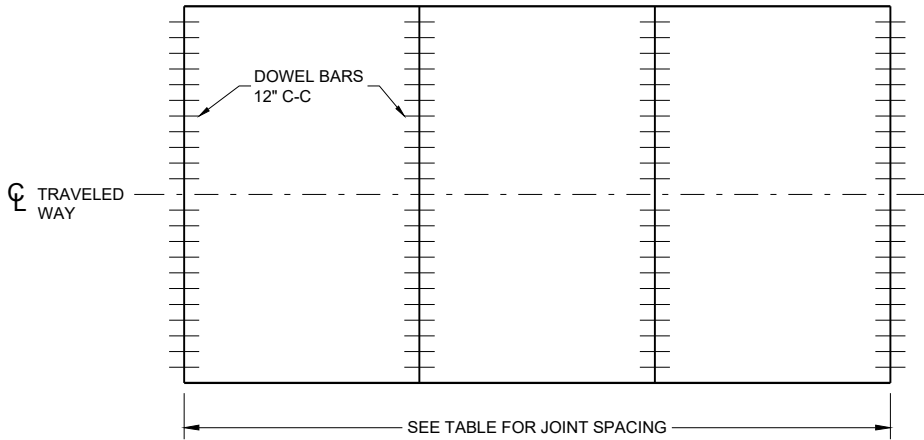
CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

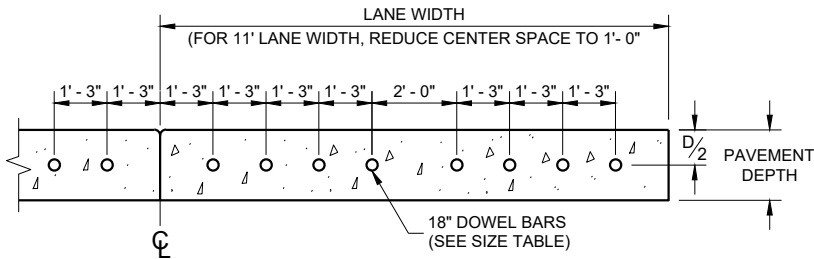
APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPE 133
FHWA



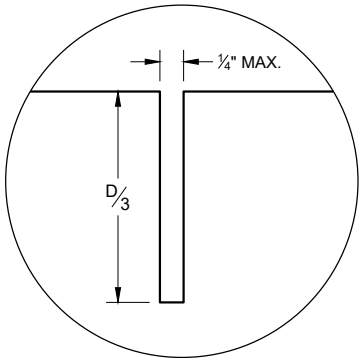
CONTRACTION JOINT DOWEL ASSEMBLY 1



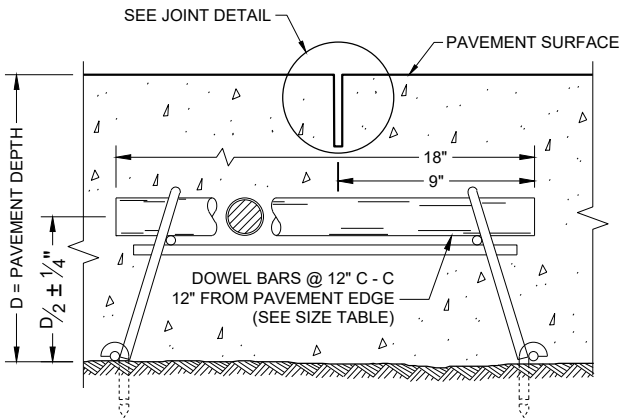
CONTRACTION JOINT LOCATIONS



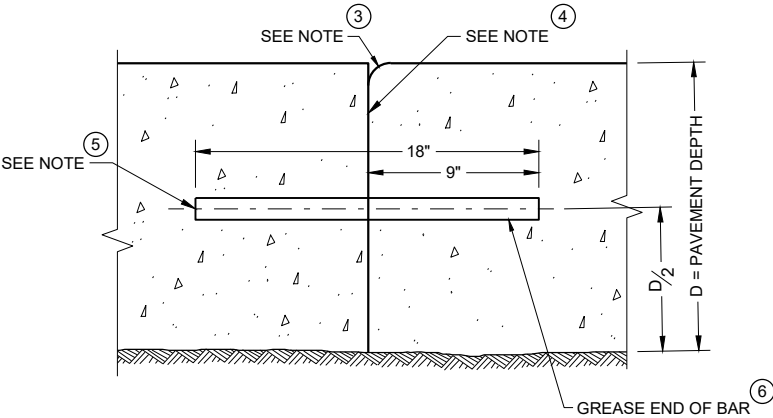
DRILLED DOWEL BAR CONSTRUCTION JOINT 7



JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT

GENERAL NOTES

CONTRACTION JOINTS

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

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

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

CONSTRUCTION JOINTS

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

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

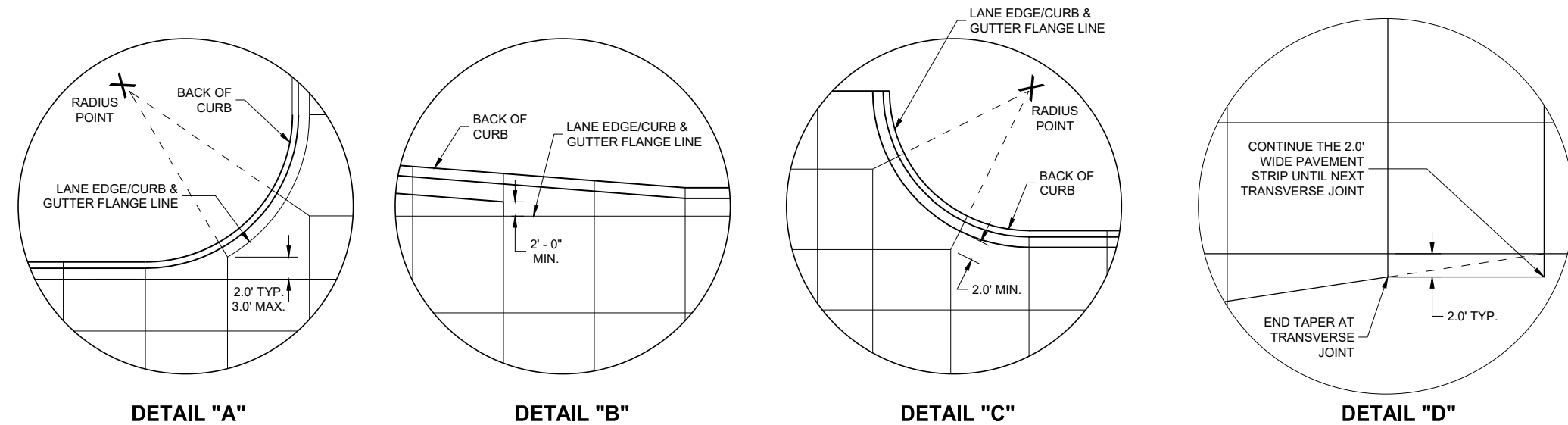
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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

URBAN DOWELED CONCRETE PAVEMENT

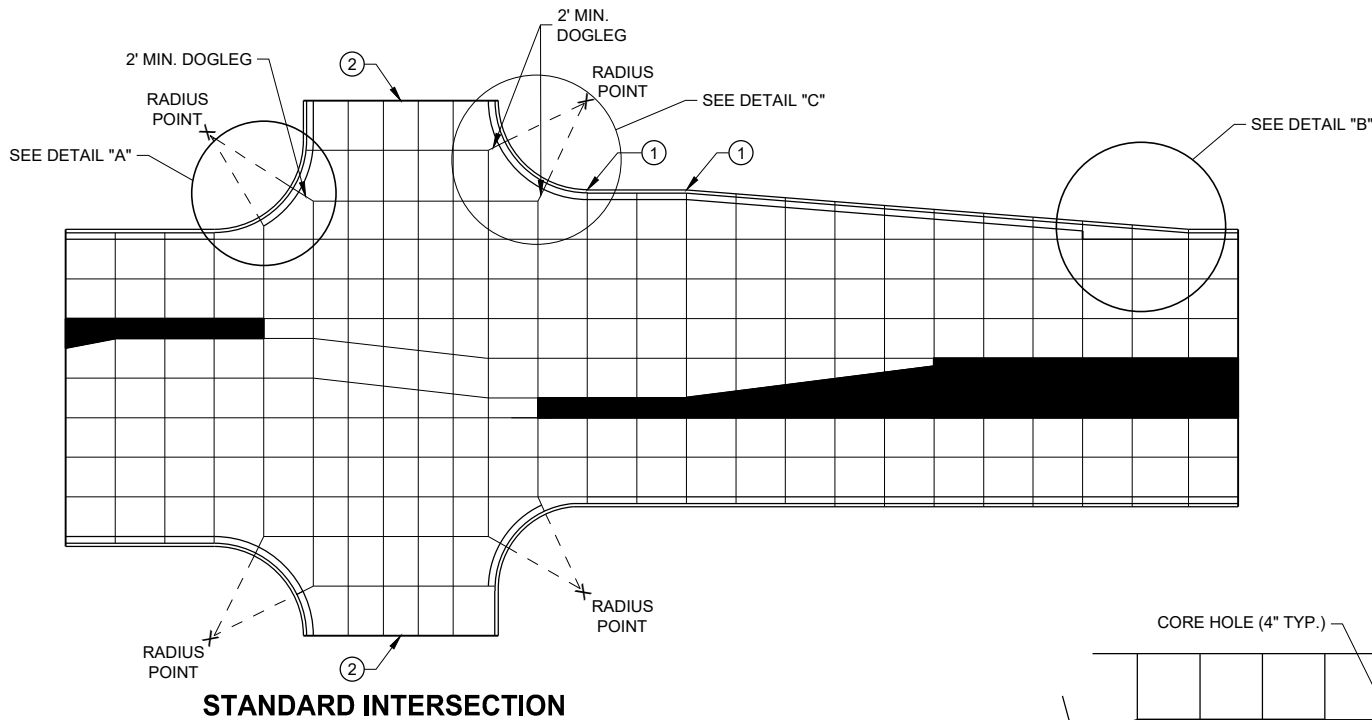
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 134
FHWA



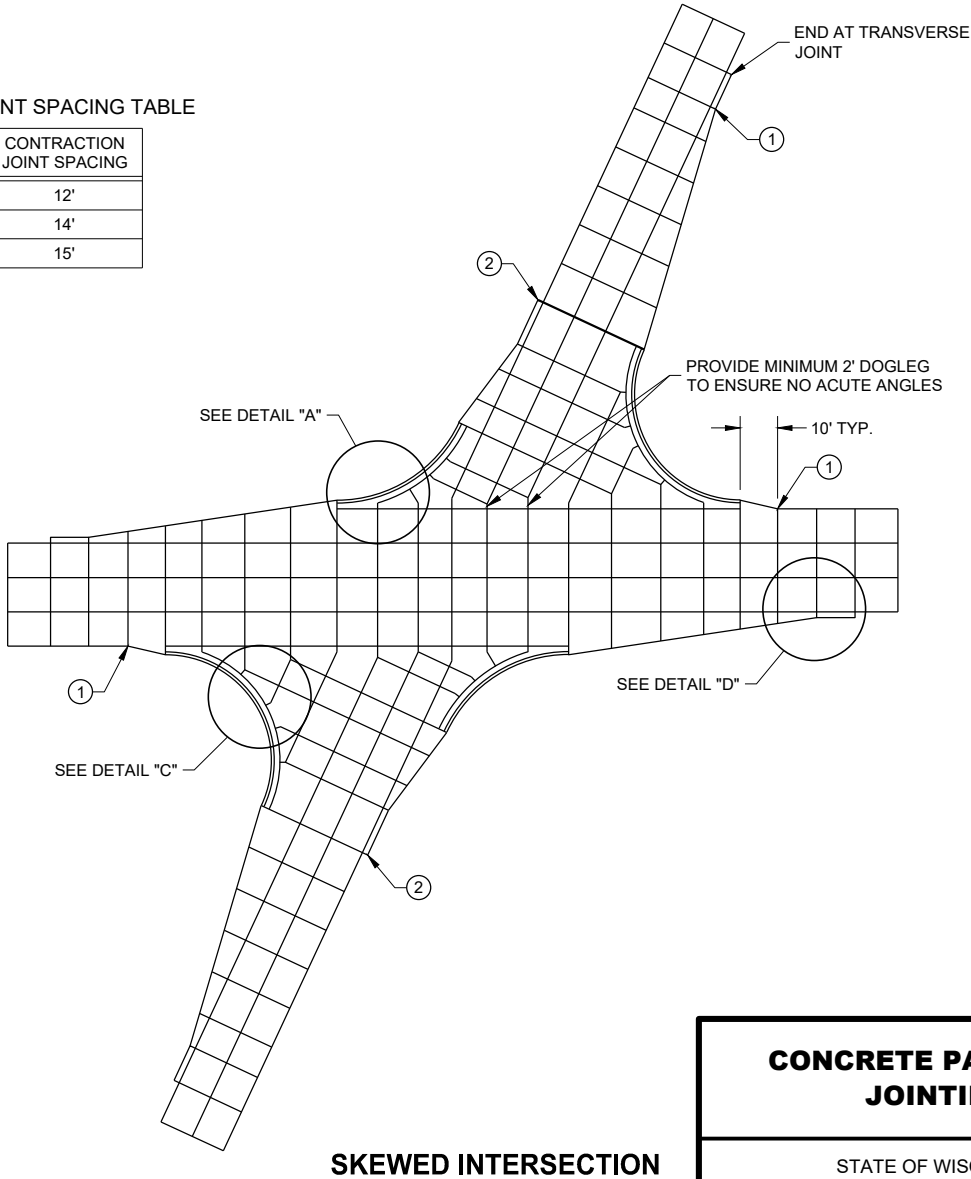
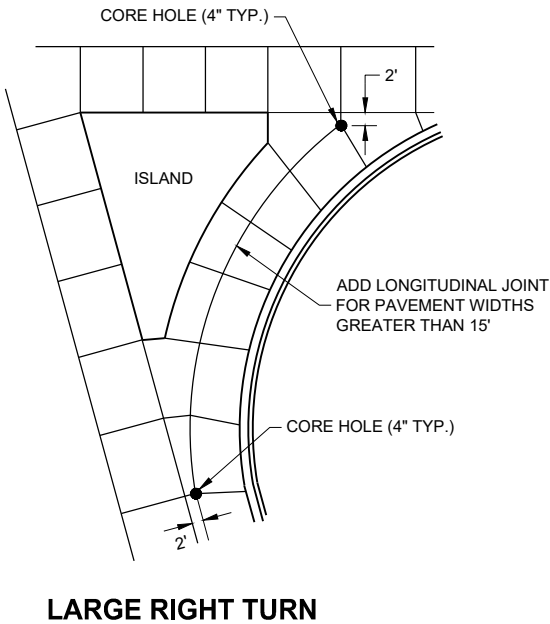
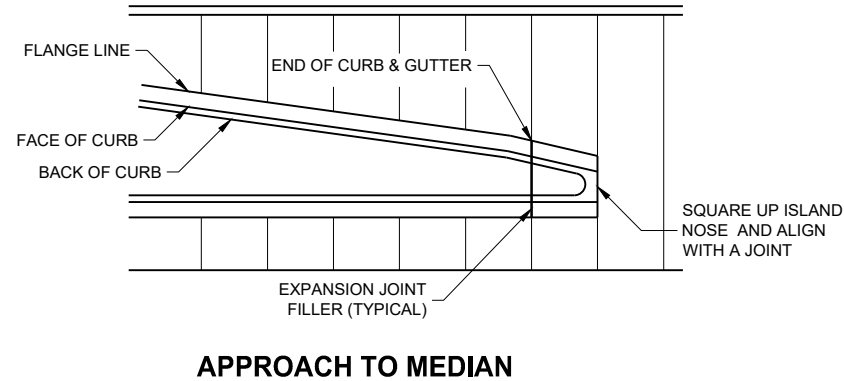
GENERAL NOTES

- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.
- AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.
- SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.
- AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- 1 PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
 - 2 CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
 - 3 THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'

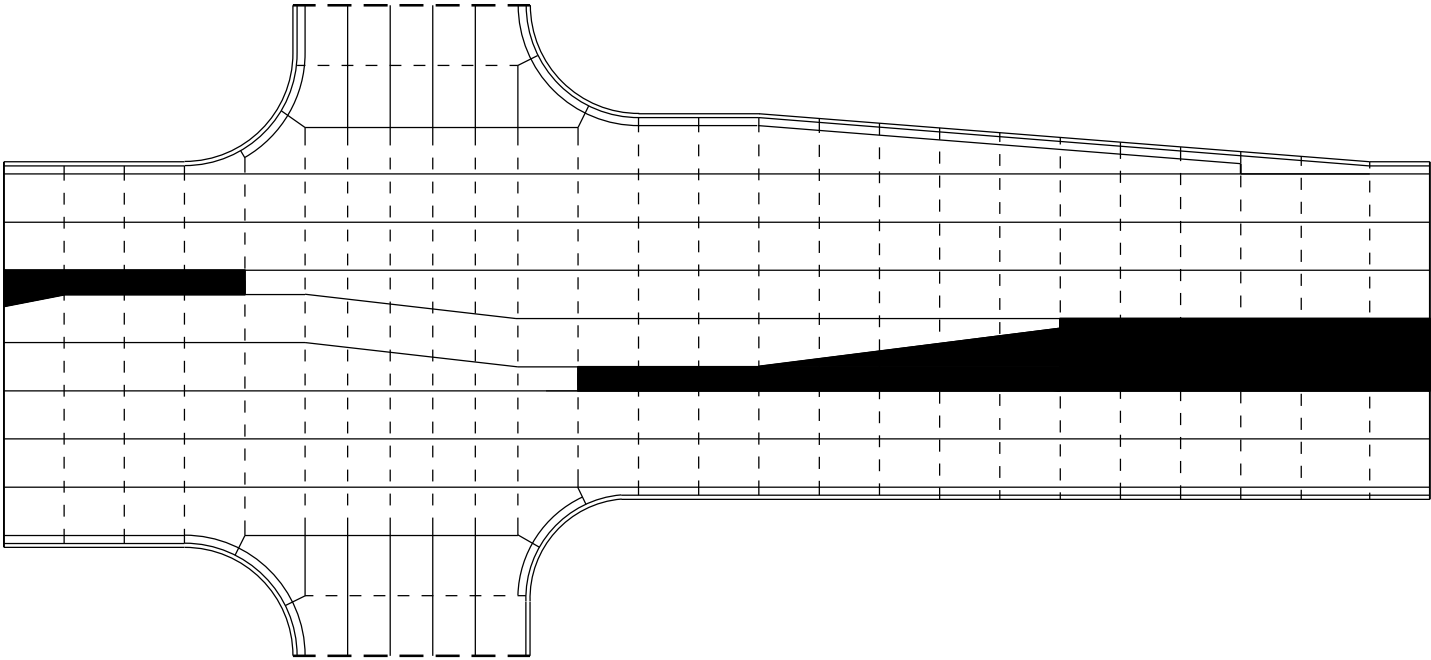


CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

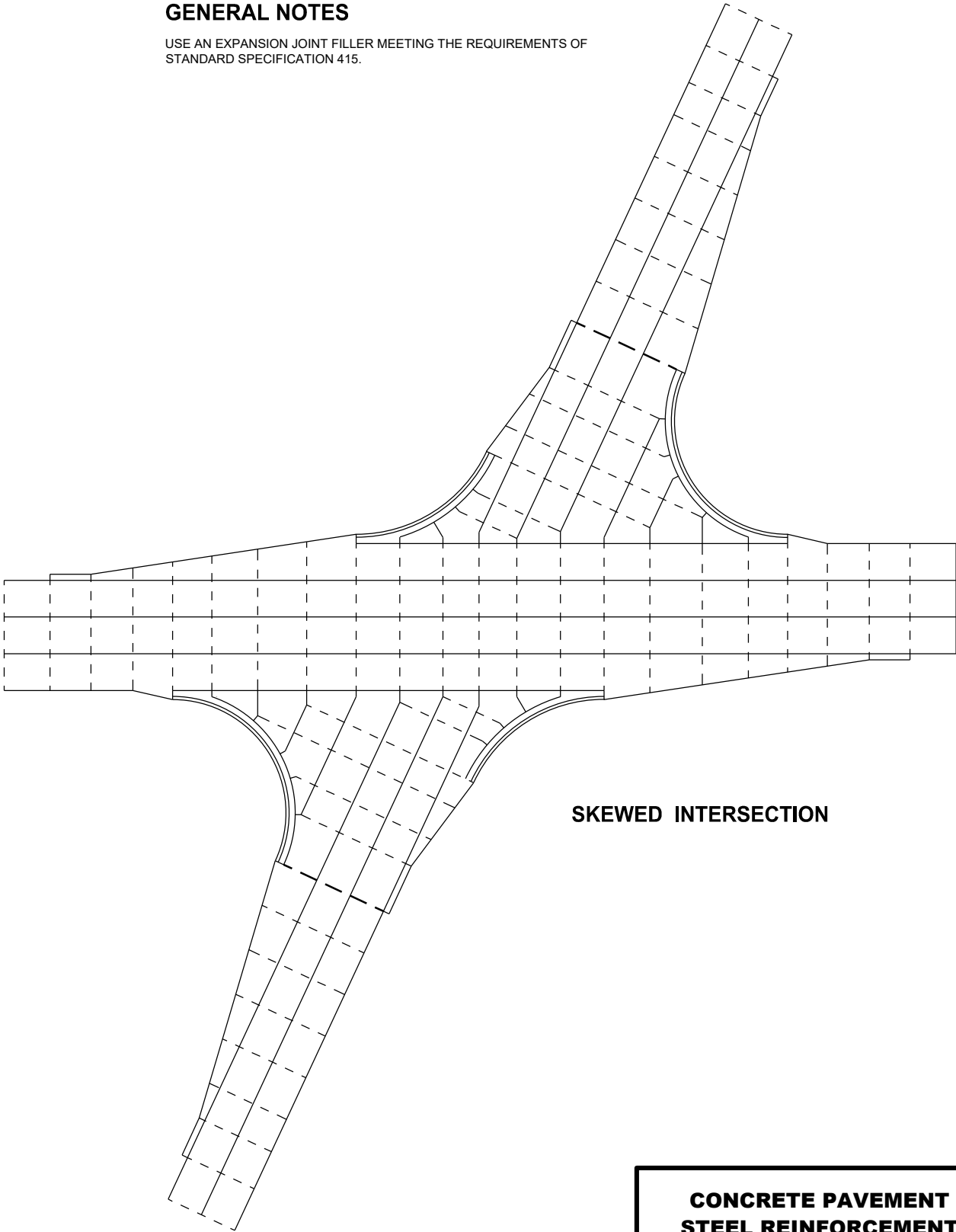
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

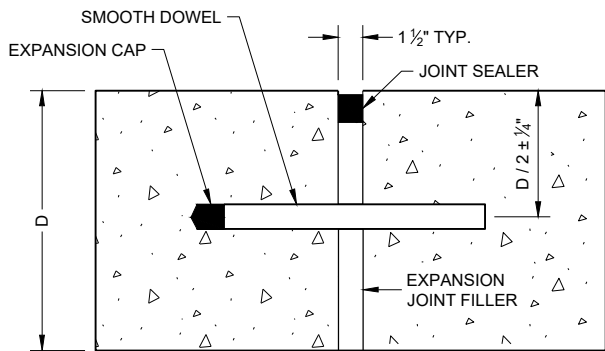
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



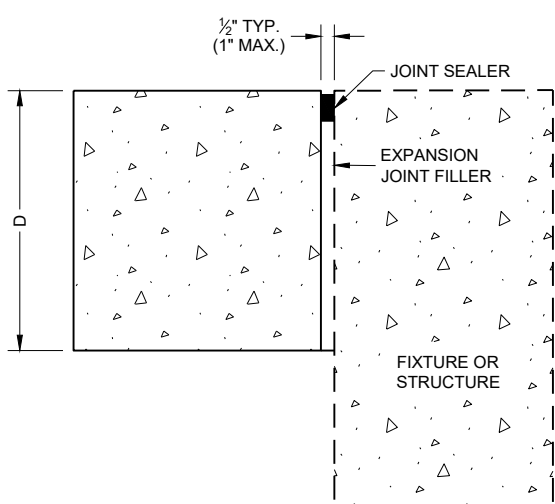
SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 136

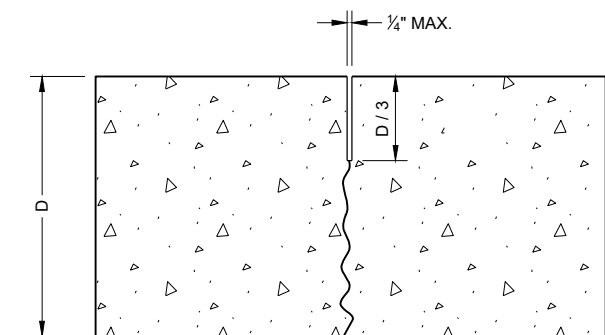


DOWELED TRANSVERSE ①

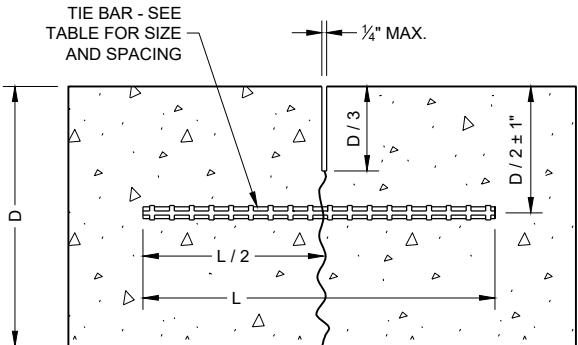


UNTIED - LONGITUDINAL

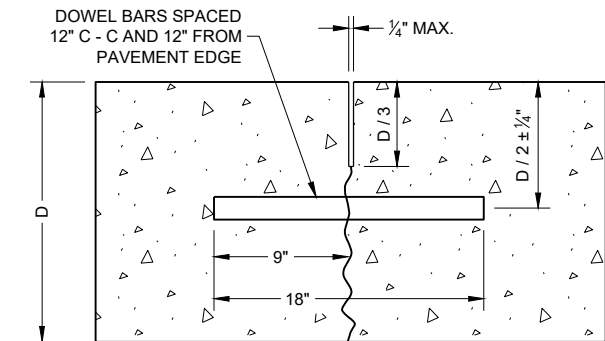
EXPANSION JOINTS



UNDOWELED TRANSVERSE



TIED LONGITUDINAL



DOWELED TRANSVERSE

CONTRACTION JOINTS ②

TIE BAR TABLE

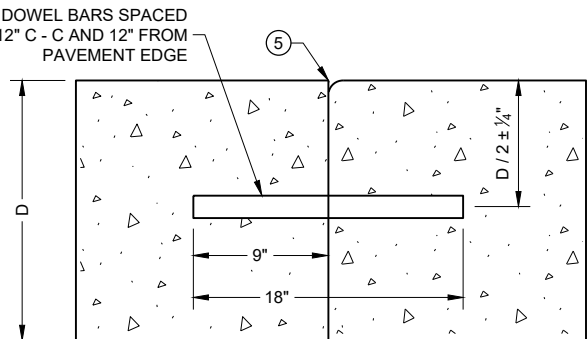
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

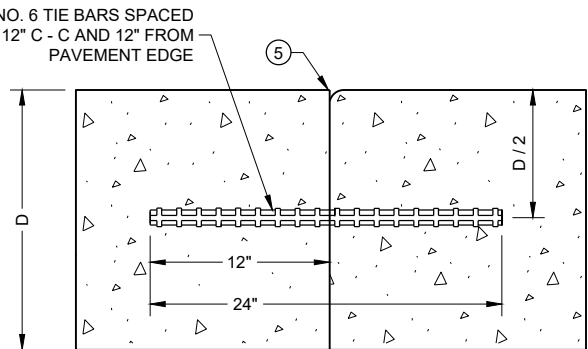
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

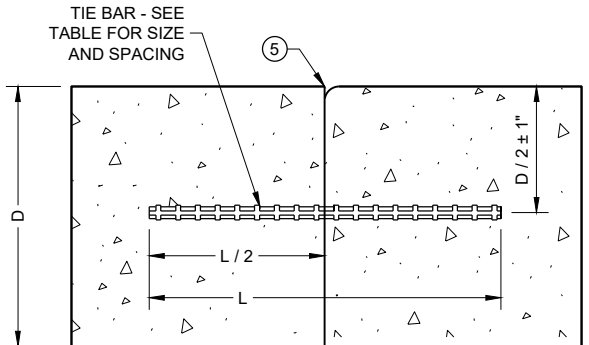
- ① USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- ② SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
- ③ LOCATE CONSTRUCTION JOINTS A MINIMUM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



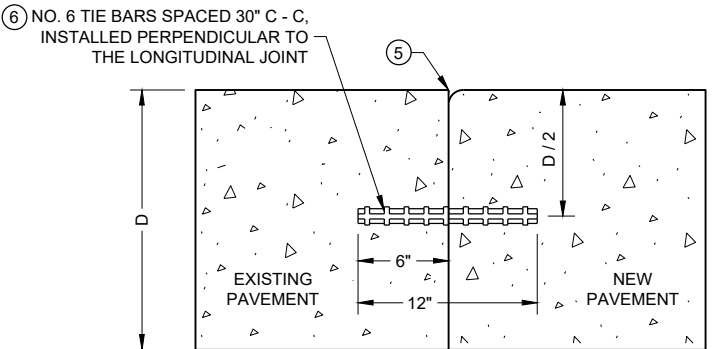
DOWELED TRANSVERSE ③



TIED TRANSVERSE ③
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL

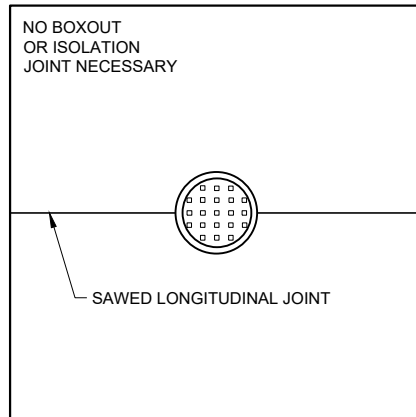


TIED LONGITUDINAL TO EXISTING

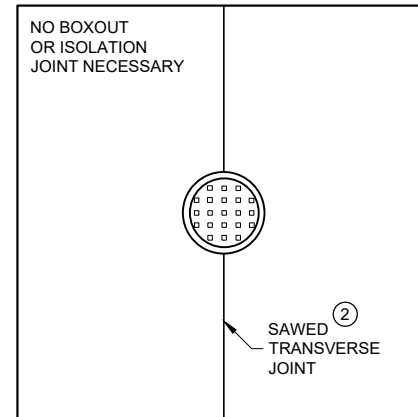
CONSTRUCTION JOINTS ④

**CONCRETE PAVEMENT
JOINT TYPES**

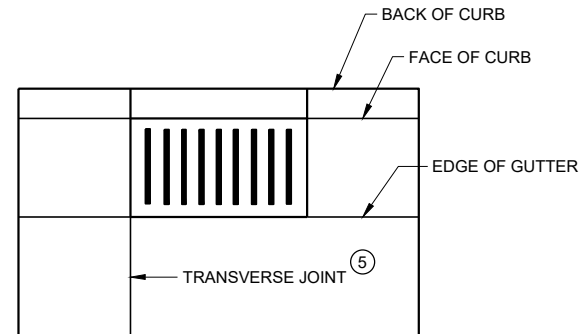
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 137



MANHOLE WITH
LONGITUDINAL JOINT



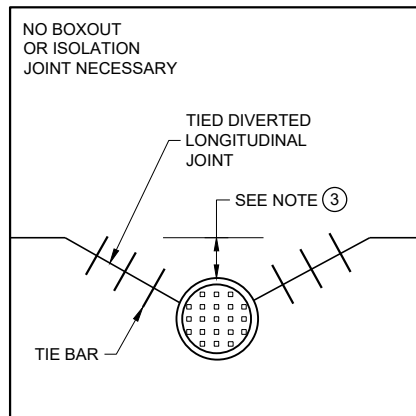
MANHOLE WITH
TRANSVERSE JOINT



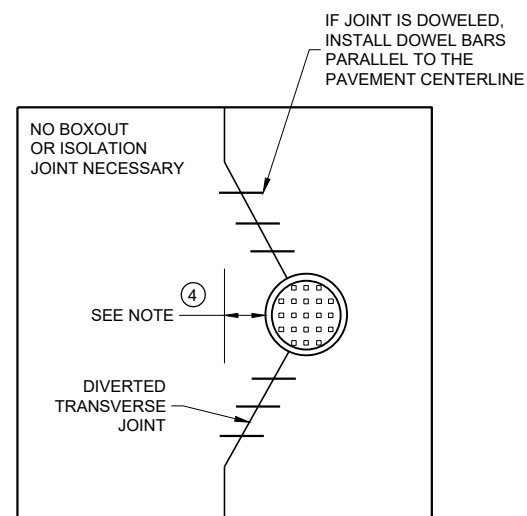
INLET WITH
TRANSVERSE JOINT

GENERAL NOTES

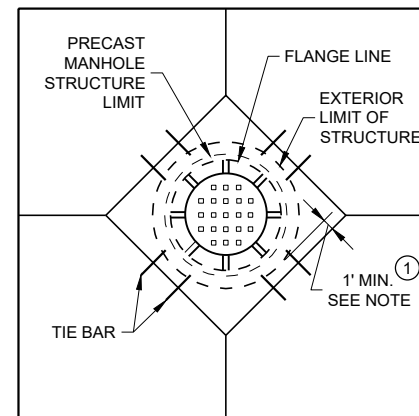
- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE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



MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT



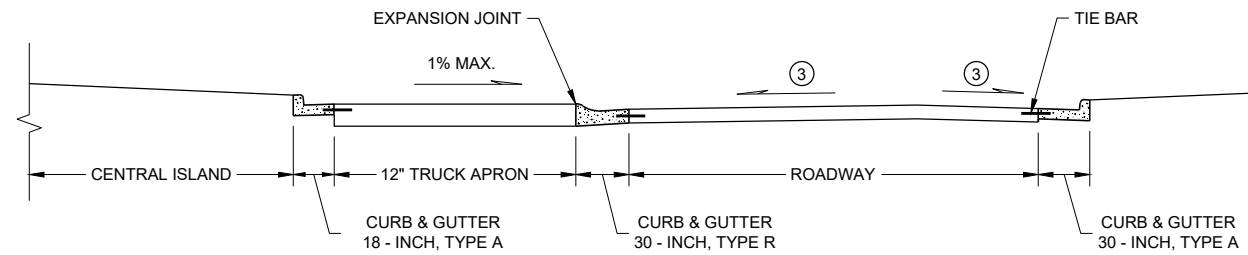
DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

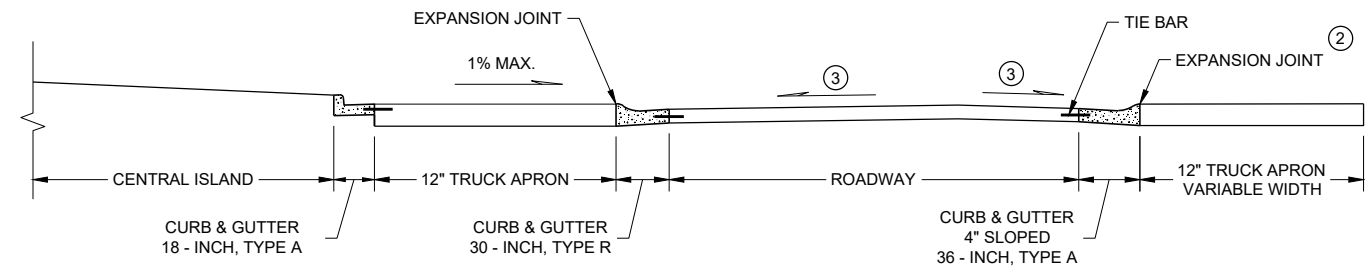
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 138

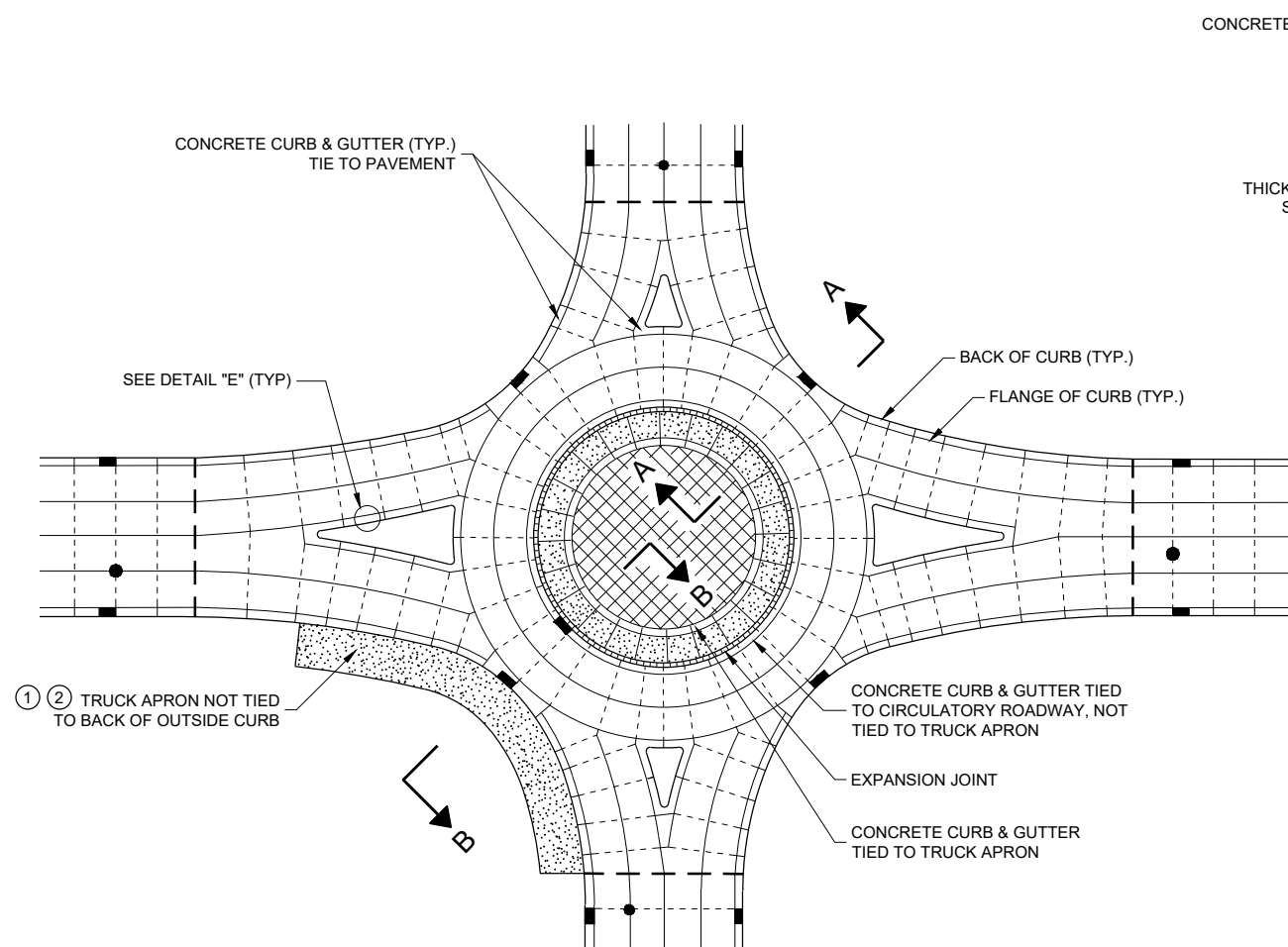
FHWA



SECTION A - A



SECTION B - B

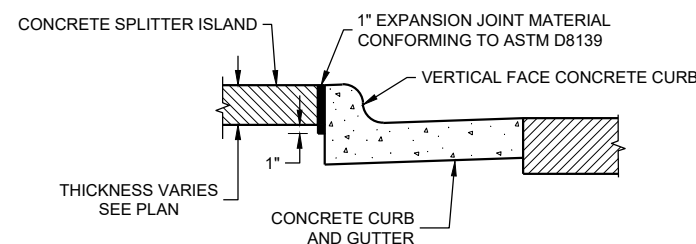


ISOLATED CIRCLE JOINT LAYOUT FOR ROUNDABOUTS

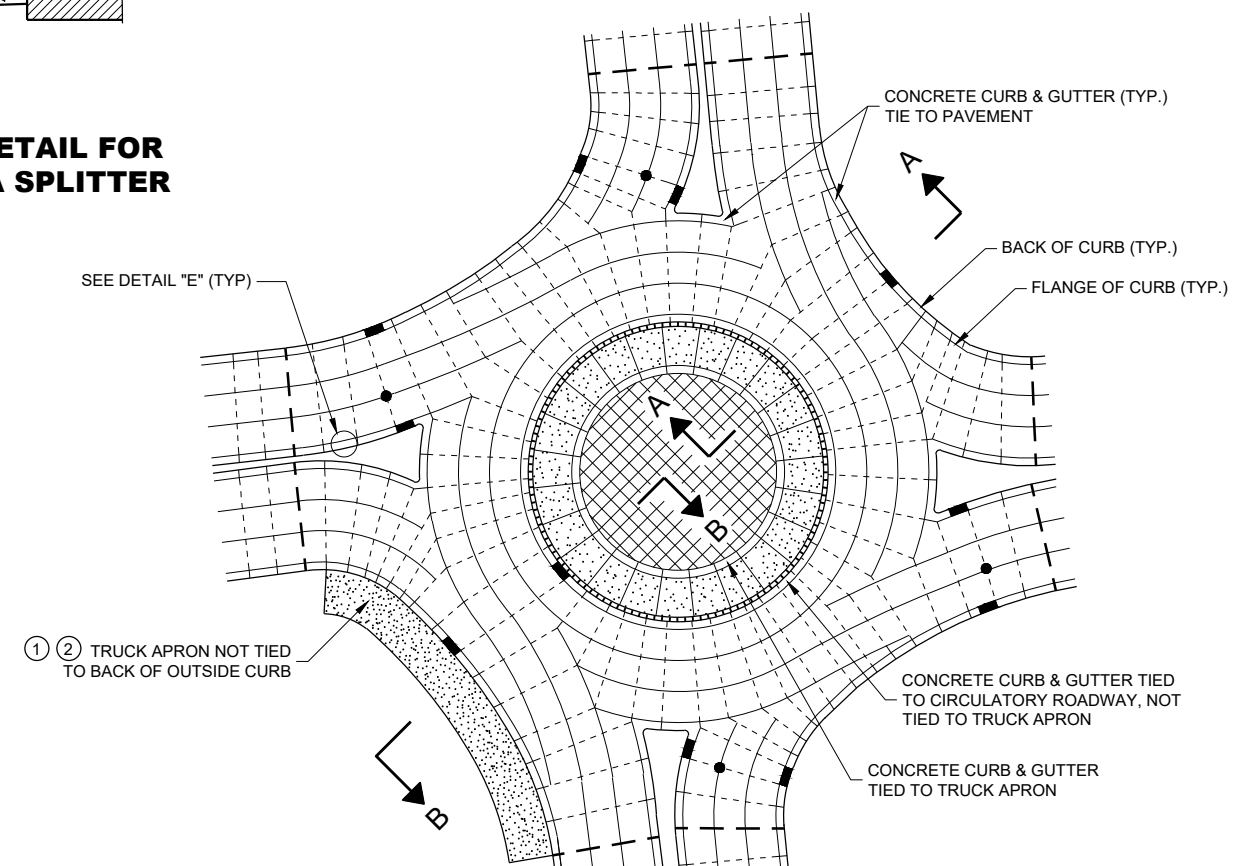
GENERAL NOTES

MAXIMUM JOINT SPACING IS IN ACCORDANCE WITH THE TABLE SHOWN ON SDD 13C18 - SHEET "a"
 USE EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.
 DO NOT DOWEL OR TIE THE TRUCK APRON TRANSVERSE JOINTS.

- ① DESIGNER DETERMINES SIZE AND LOCATION(S) OF TRUCK APRON TO ACCOMMODATE TRACKING OF OVERSIZE / OVERWEIGHT VEHICLES.
- ② TIE THE OUTSIDE TRUCK APRON TO THE BACK SIDE OF CURB ONLY WHEN ENTIRE TRUCK APRON IS LESS THAN 3 FEET.
- ③ CONFORM TO PLAN CONSTRUCTION DETAILS FOR CIRCULATORY ROADWAY CROSS SLOPE.



**DETAIL 'E'
EXPANSION JOINT DETAIL FOR
VERTICAL CURB AT A SPLITTER
ISLAND**



PINWHEEL JOINT LAYOUT FOR ROUNDABOUTS

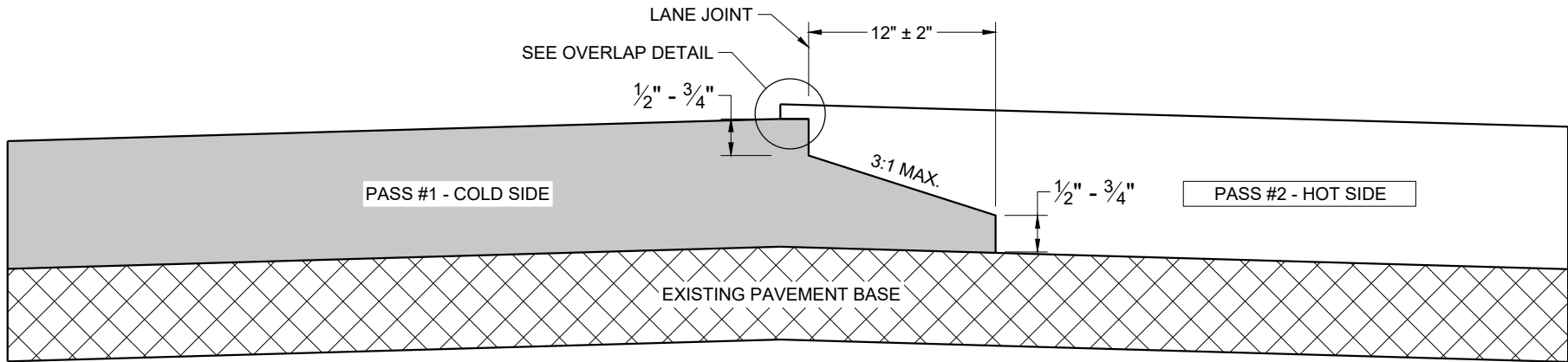
LEGEND

- DOWELED JOINT
- TIED JOINT
- ===== EXPANSION JOINT
- — — — — POTENTIAL DOWELED EXPANSION JOINT
- [Pattern] TRUCK APRON
- [Pattern] CENTRAL ISLAND
- ● UTILITY STRUCTURES

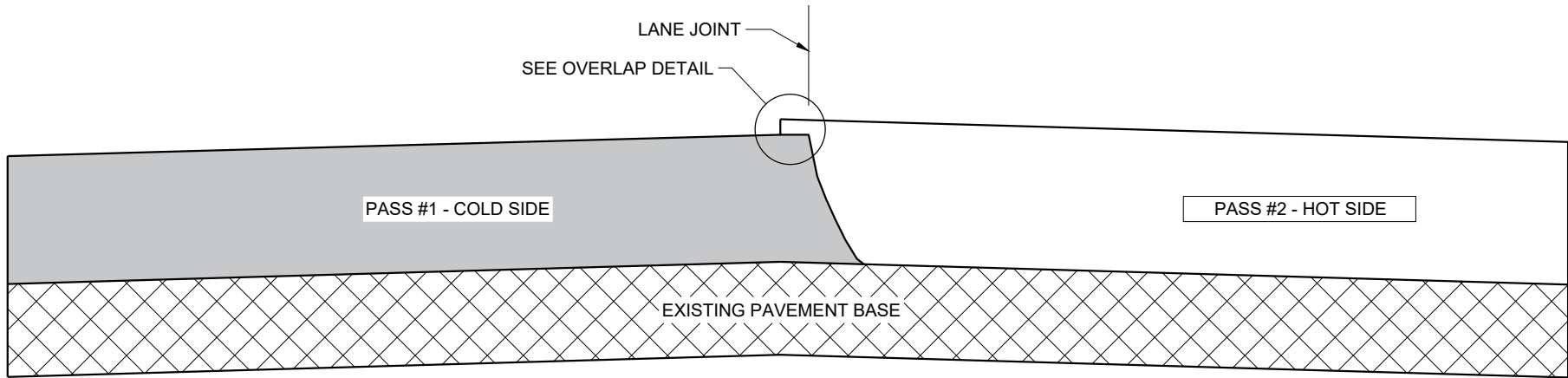
**CONCRETE PAVEMENT JOINTING
AND STEEL REINFORCEMENT
IN ROUNDABOUTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

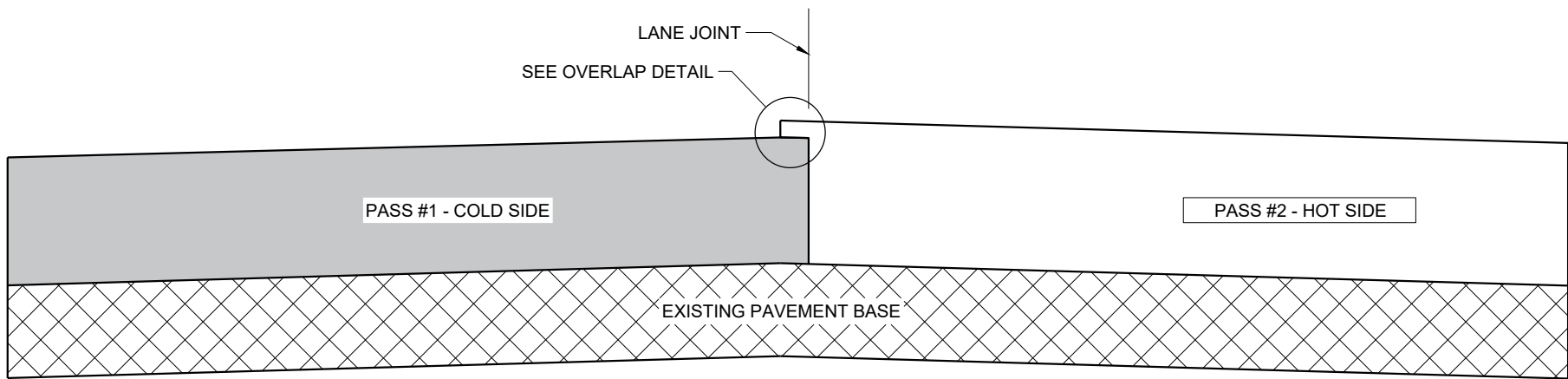
APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE DATE PAVEMENT SUPERVISOR 139
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

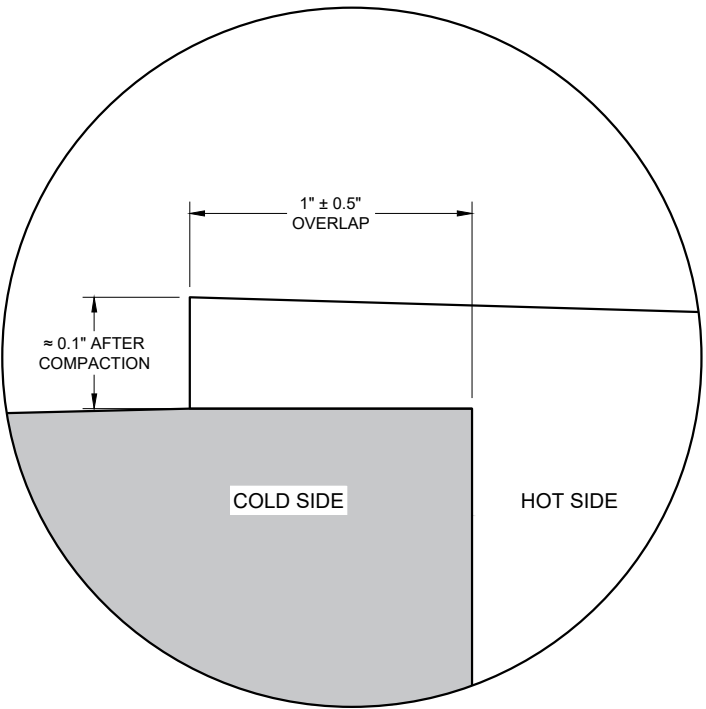
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

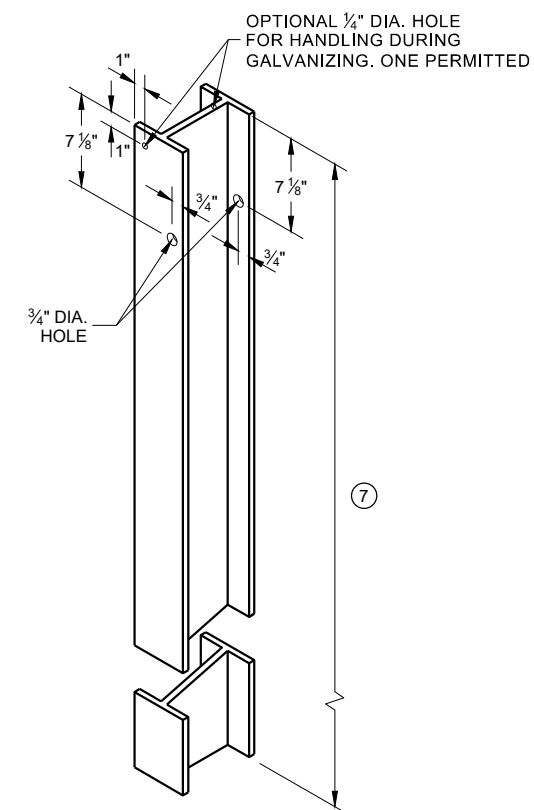
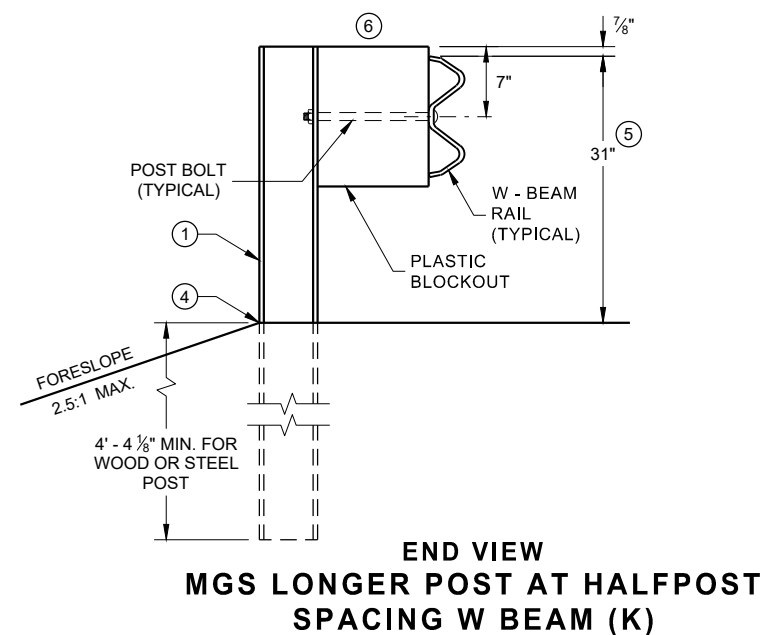
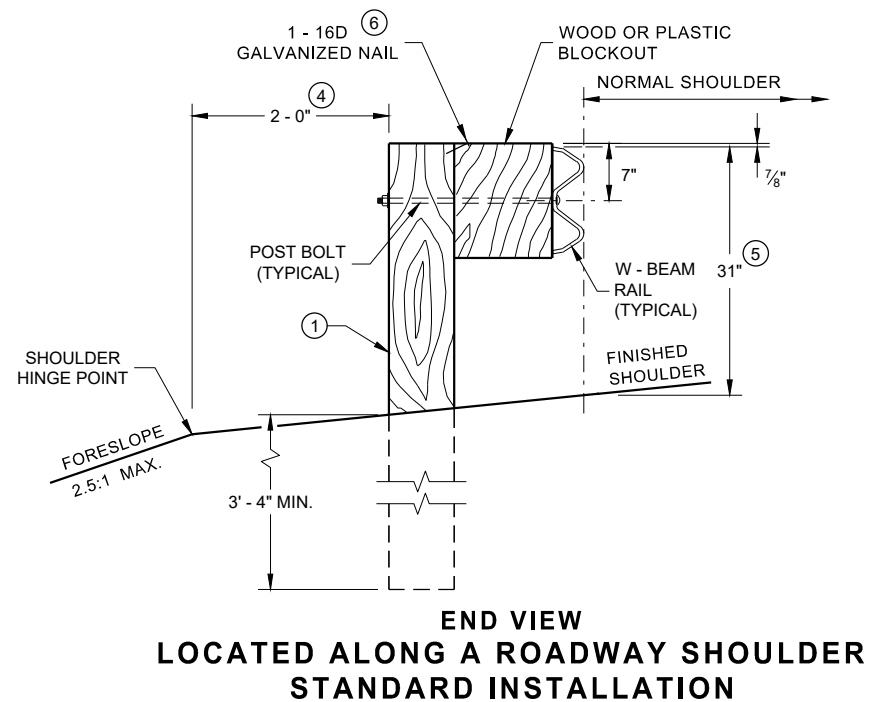
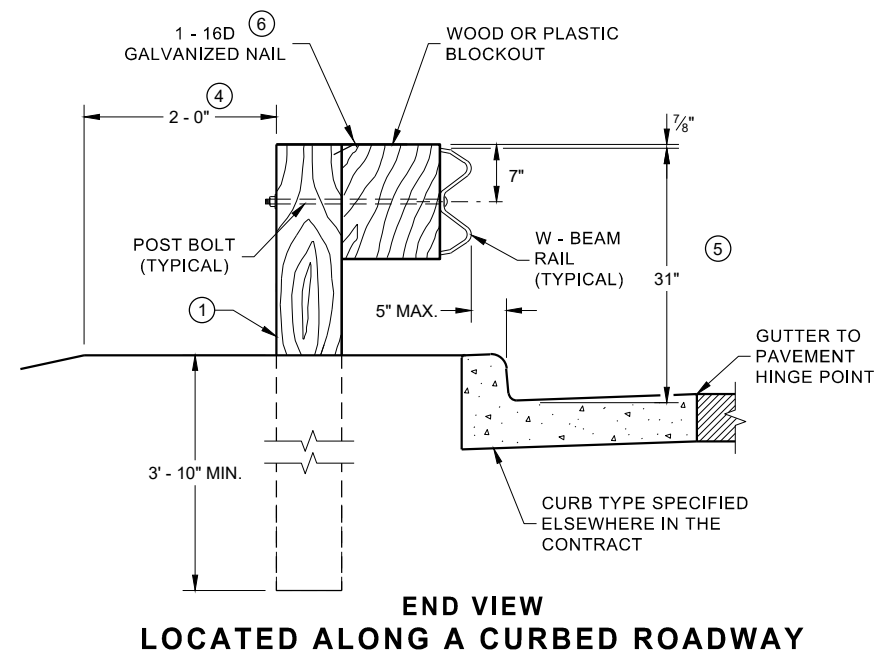
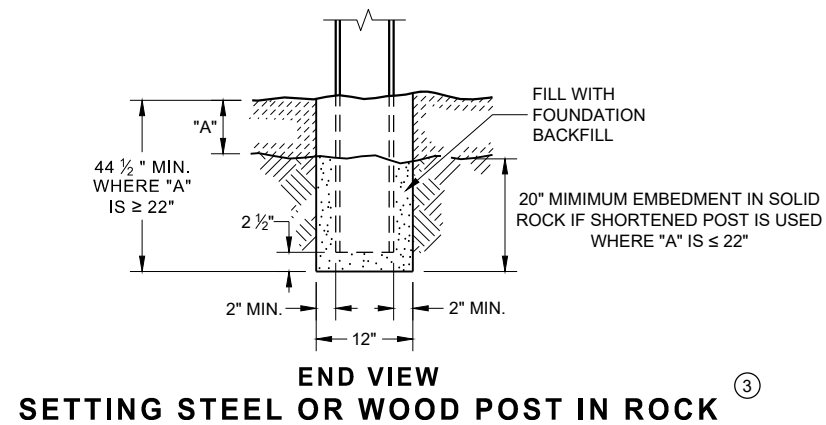
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

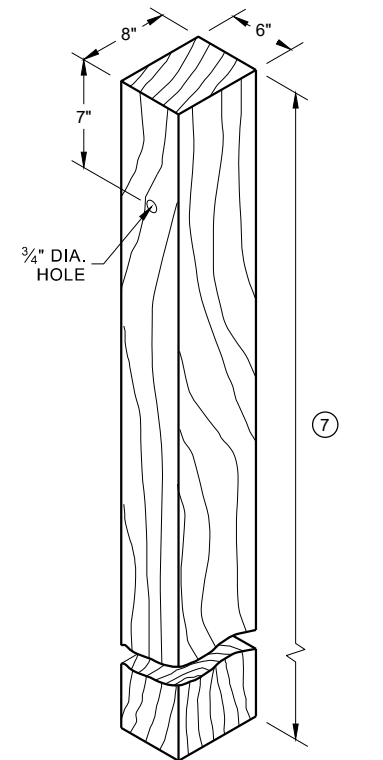
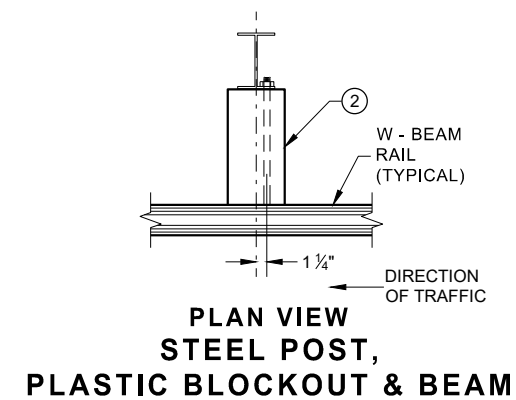
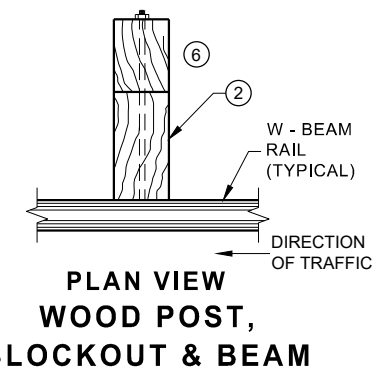
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 140

FHWA

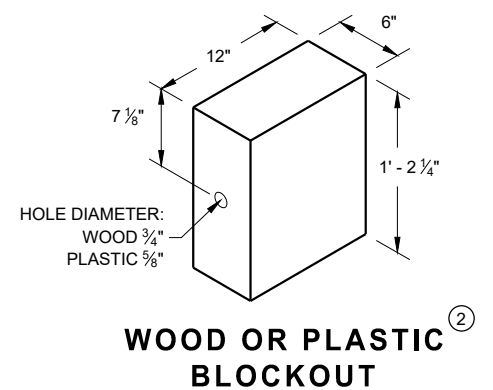
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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



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

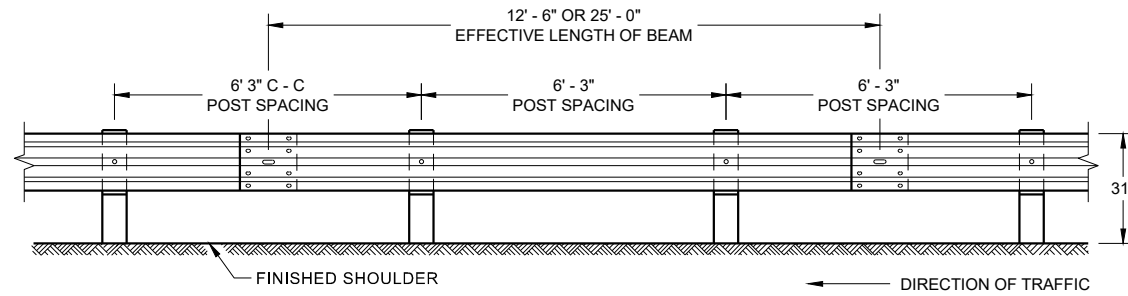


WOOD POST (6" X 8") NOMINAL ^①

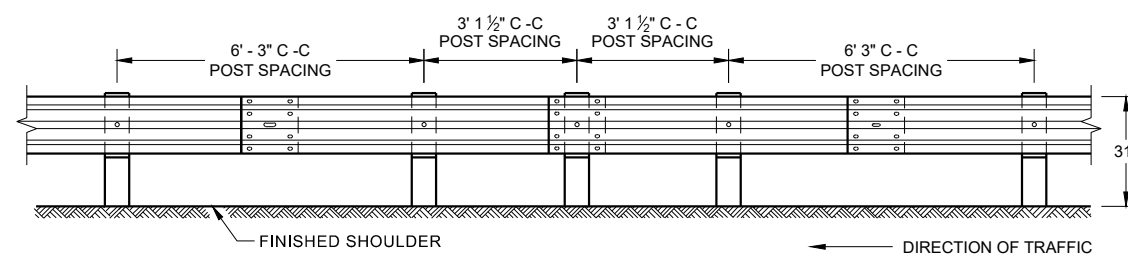


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

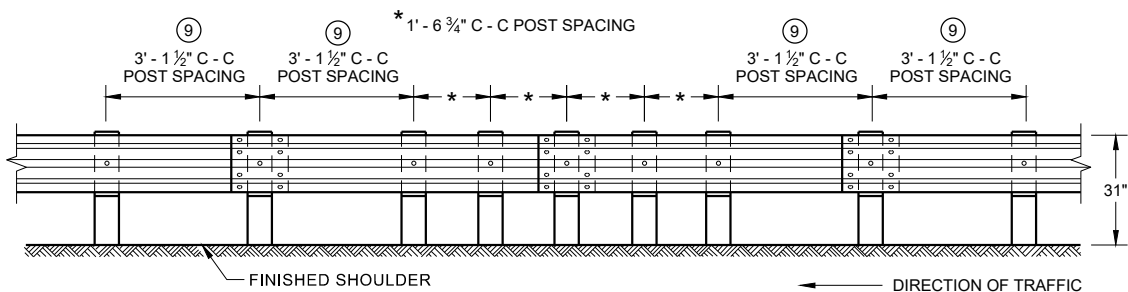
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 141



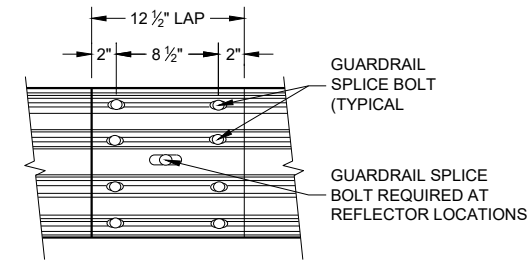
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



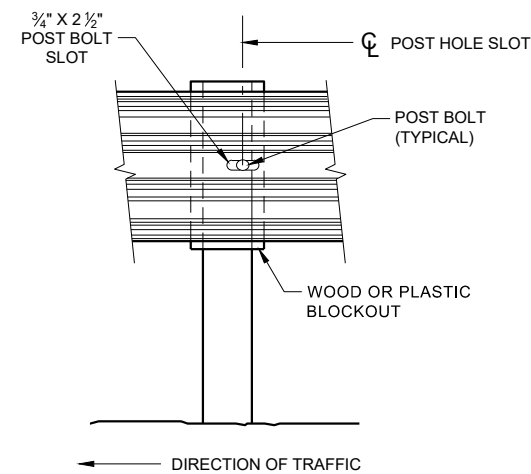
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



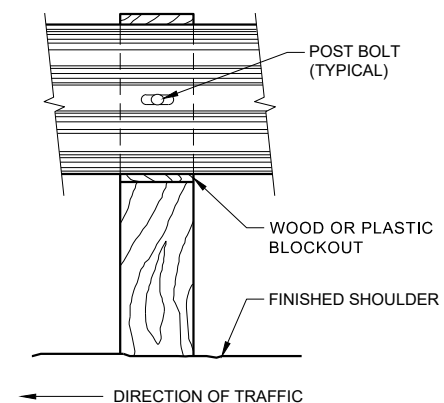
**FRONT VIEW
QUARTER POST SPACING (QS)**



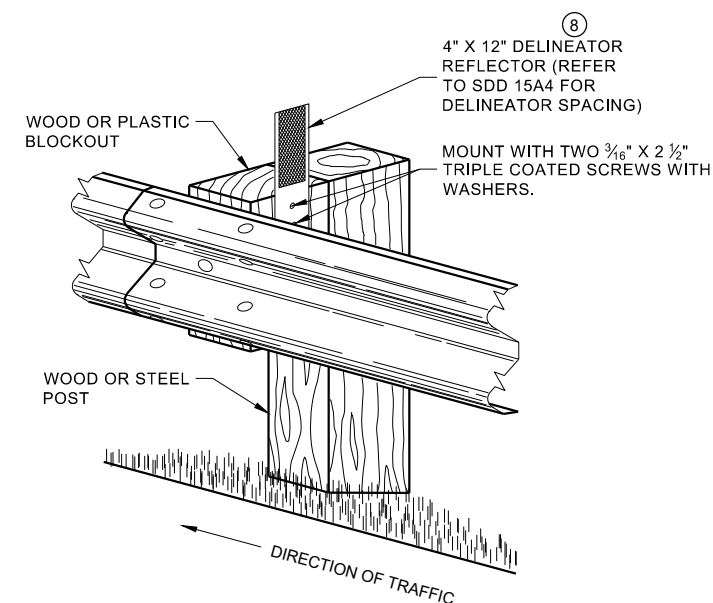
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



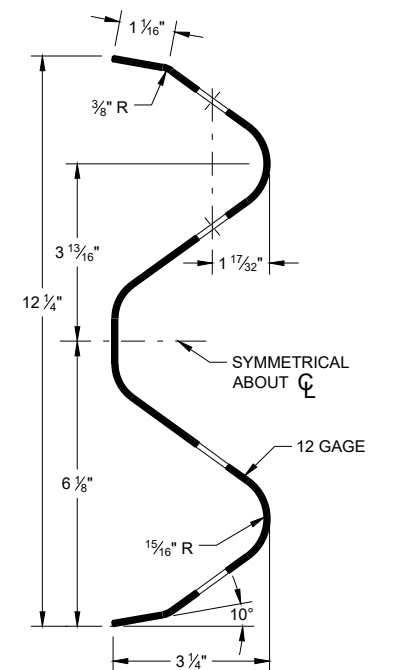
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

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

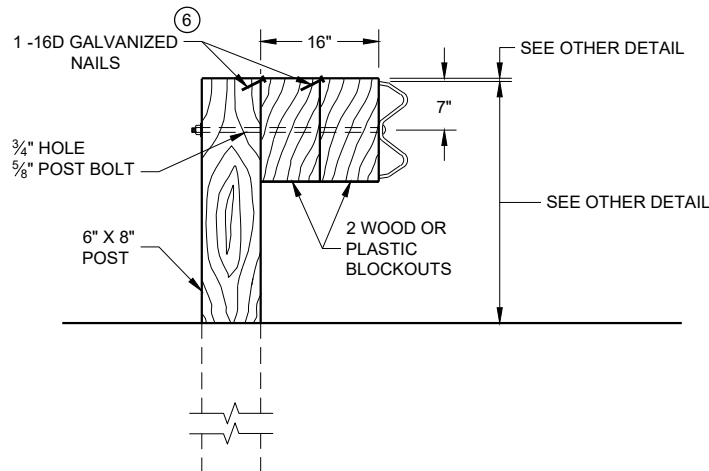
GUARD RAIL SPLICE BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

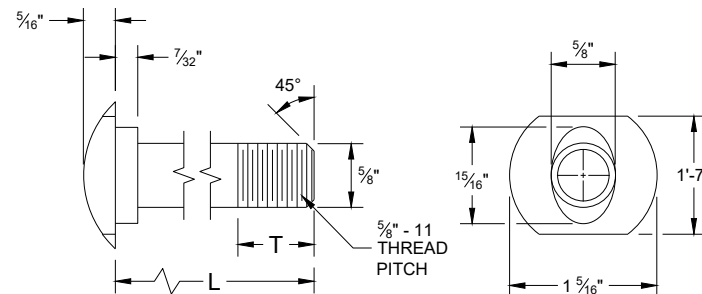
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 142



DETAIL FOR 16" BLOCKOUT DEPTH

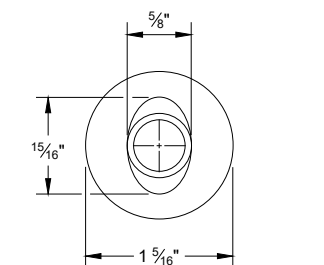
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

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

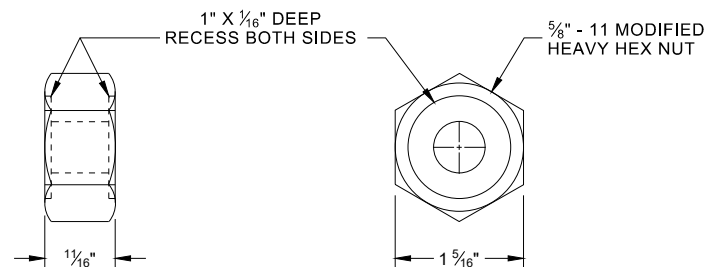


POST BOLT TABLE

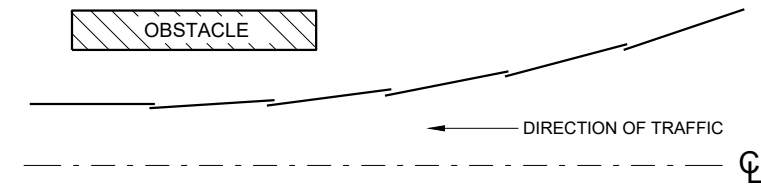
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



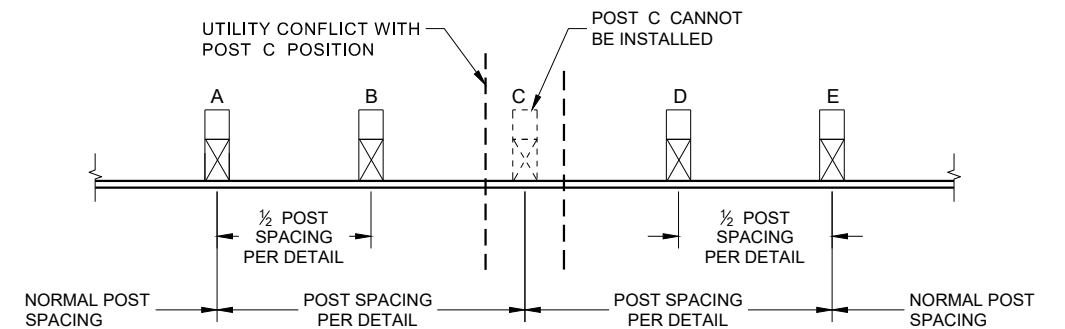
ALTERNATE BOLT HEAD



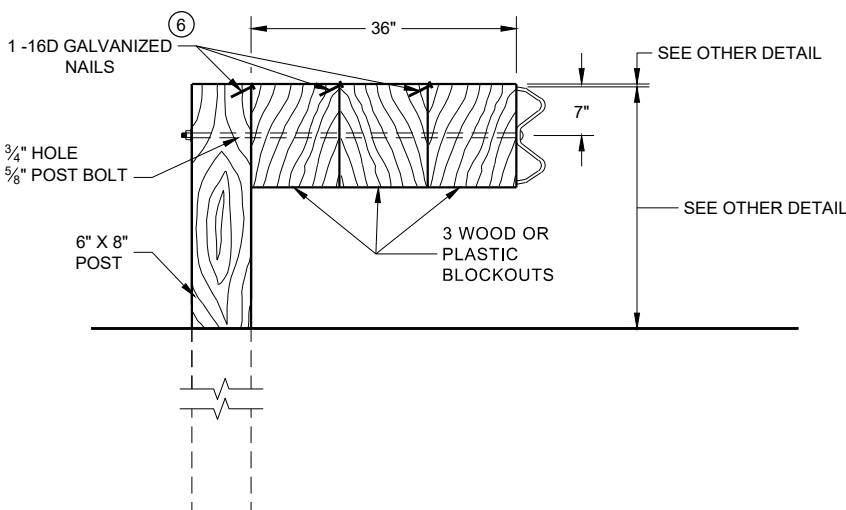
POST BOLT, SPLICE BOLT
AND RECESS NUT



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION

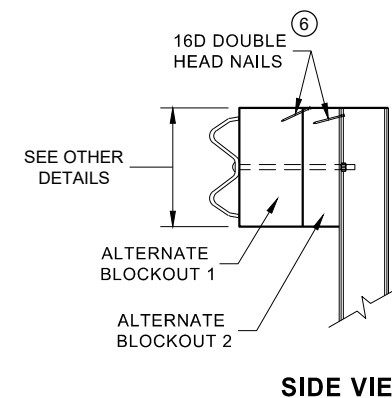


DETAIL FOR 36" BLOCKOUT DEPTH

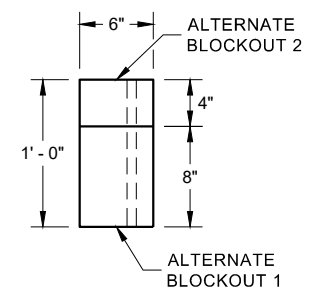
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

- 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.

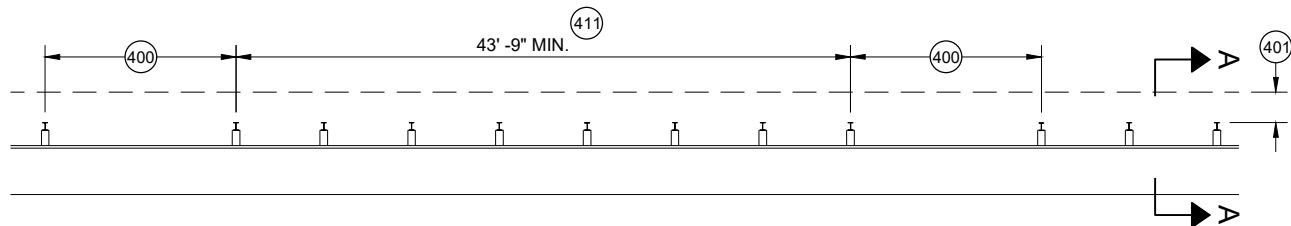


ALTERNATE WOOD
BLOCKOUT DETAIL

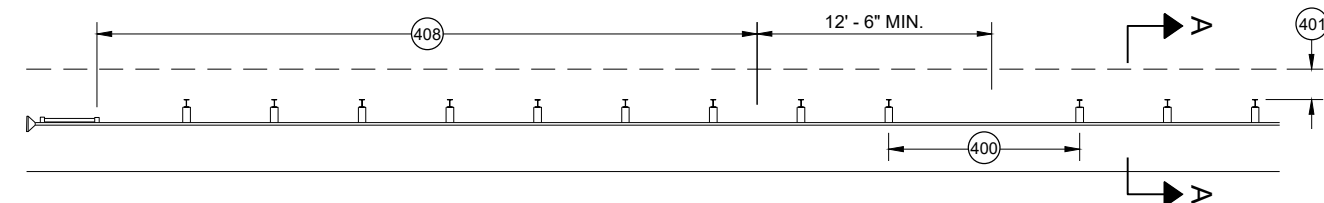


MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

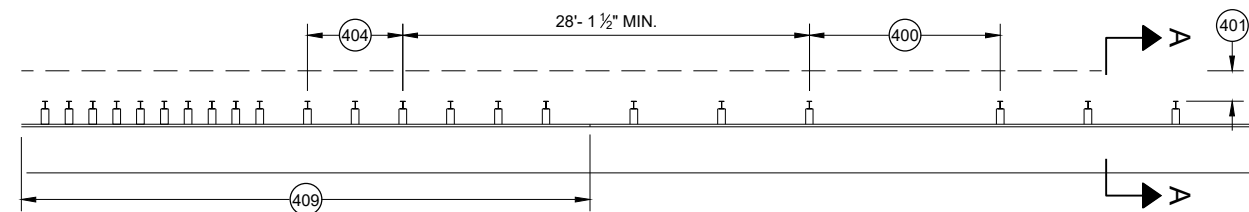
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 143



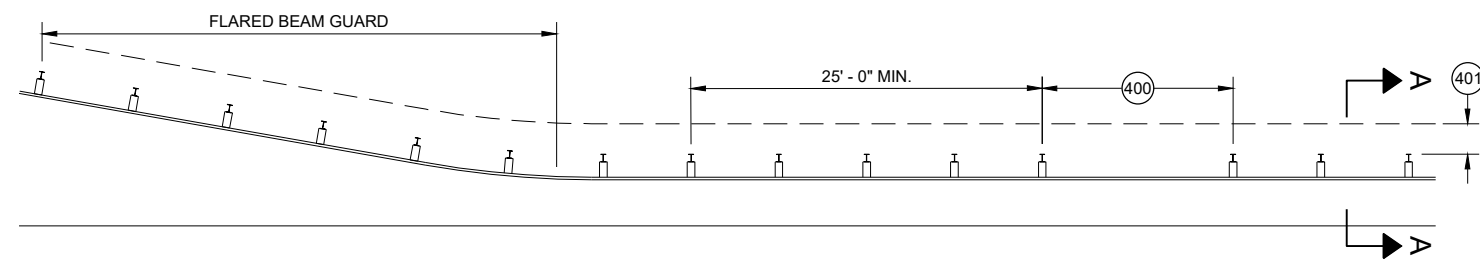
MISSING POST IN MGS GUARDRAIL



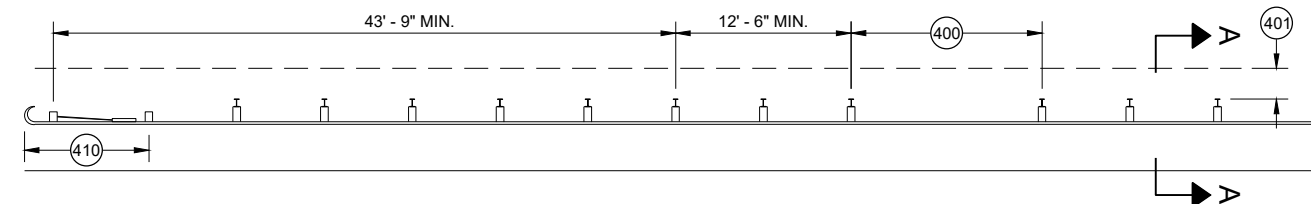
MISSING POST IN MGS GUARDRAIL NEAR EAT



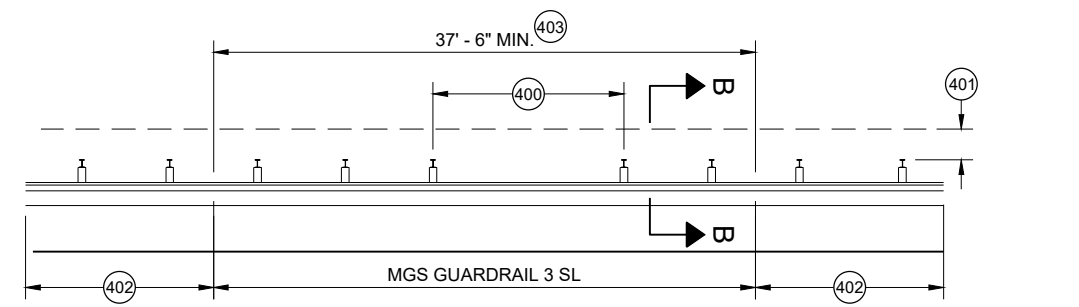
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

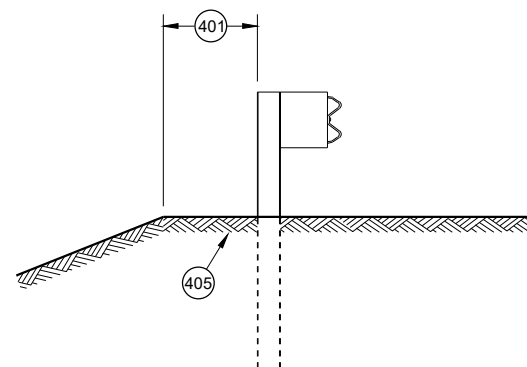


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

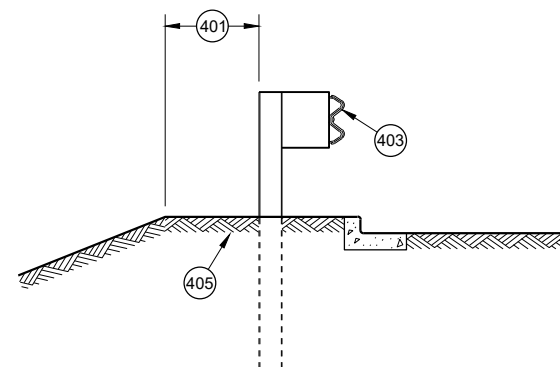


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

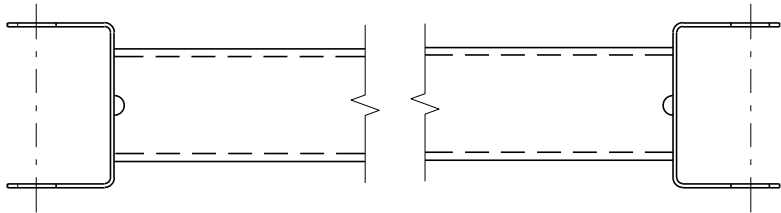
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

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

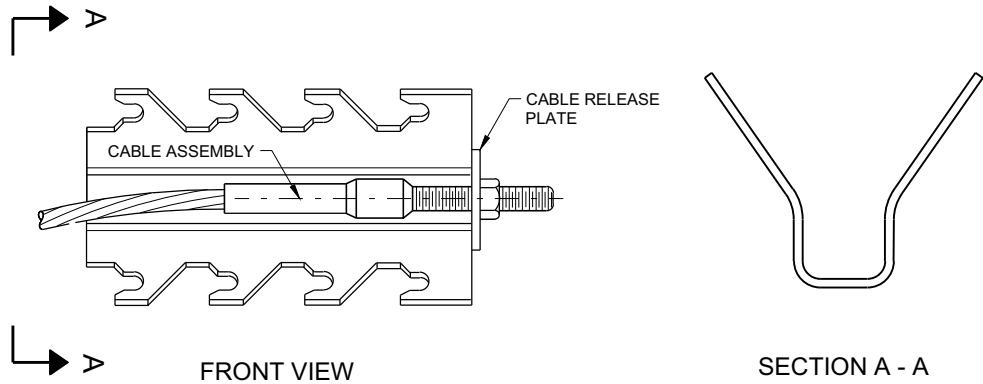


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 145

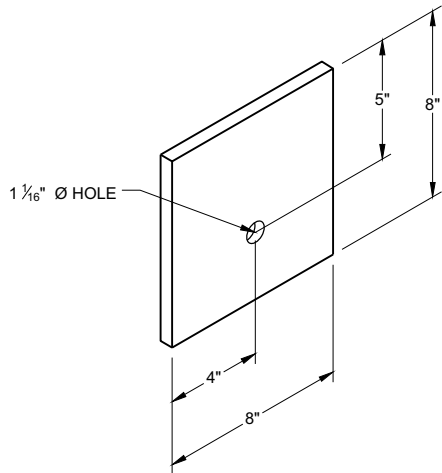


GENERIC GROUND STRUT⁹ E

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



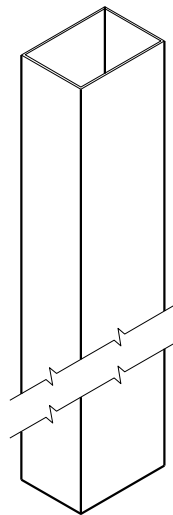
GENERIC ANCHOR CABLE BOX⁹ E



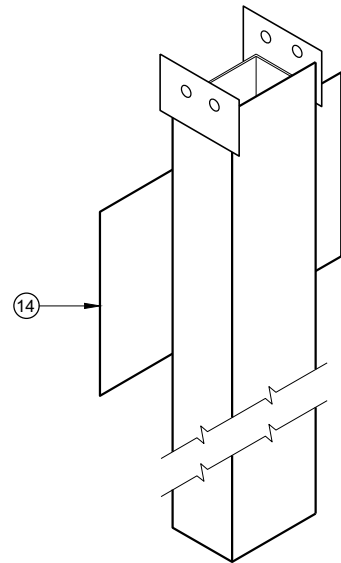
BEARING PLATE⁶ E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

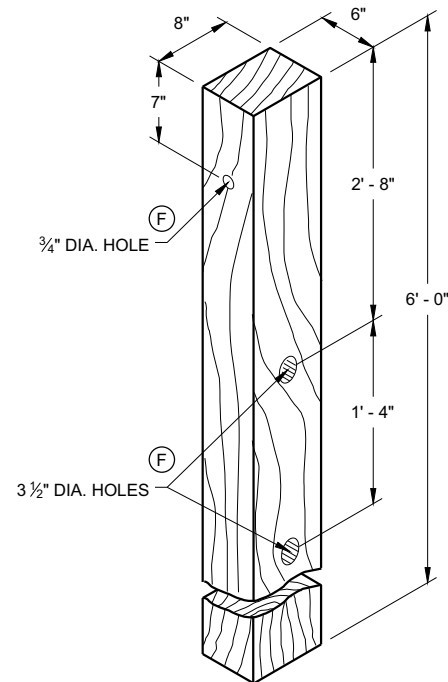
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 146



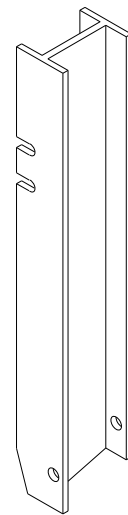
UPPER POST NO. 1 ⁽¹⁾ (E)



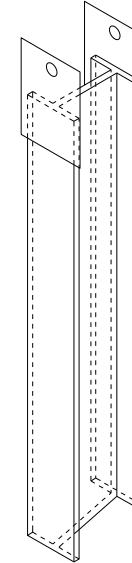
LOWER POST NO. 1 ⁽²⁾ (E)



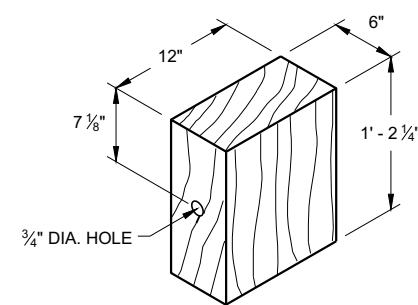
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



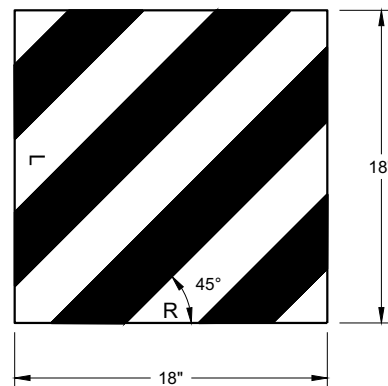
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



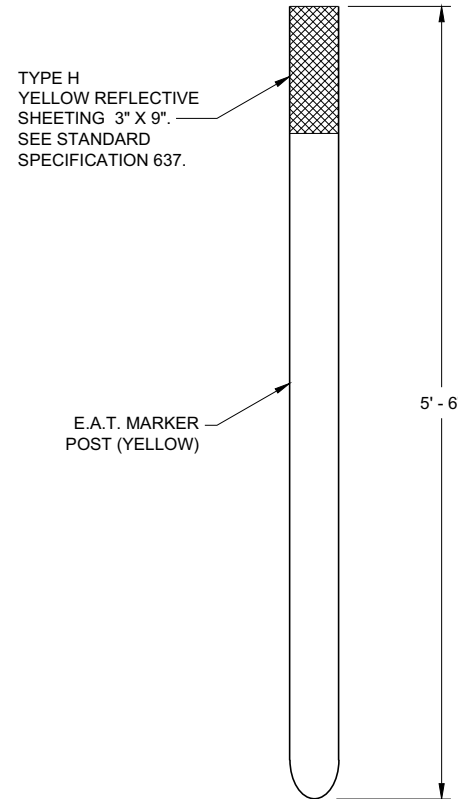
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



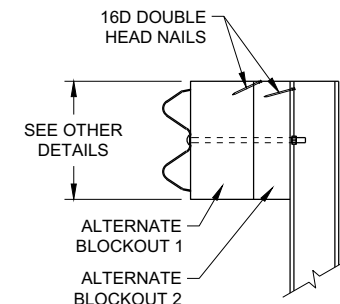
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



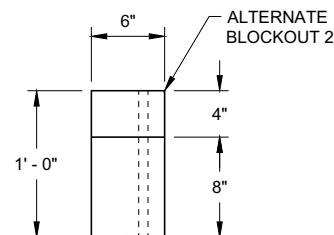
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW
SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



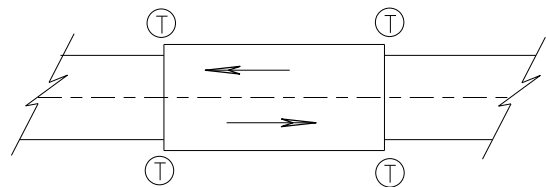
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

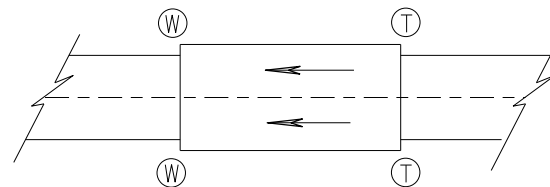
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
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/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
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FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

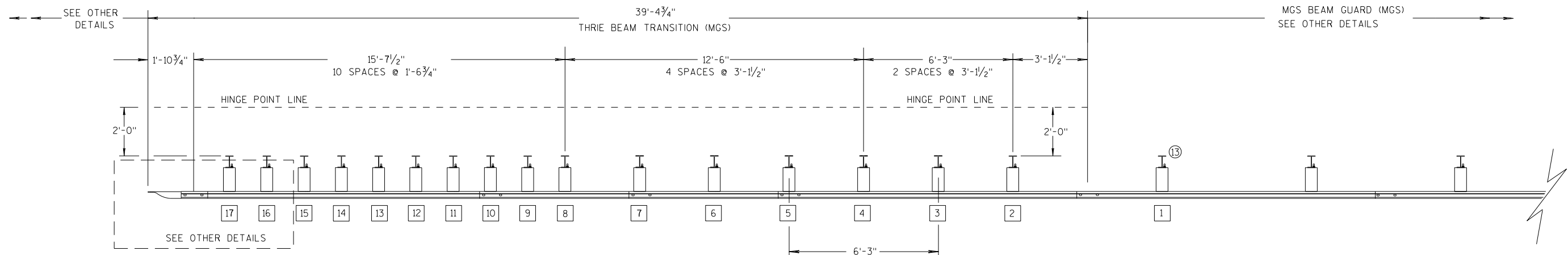
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

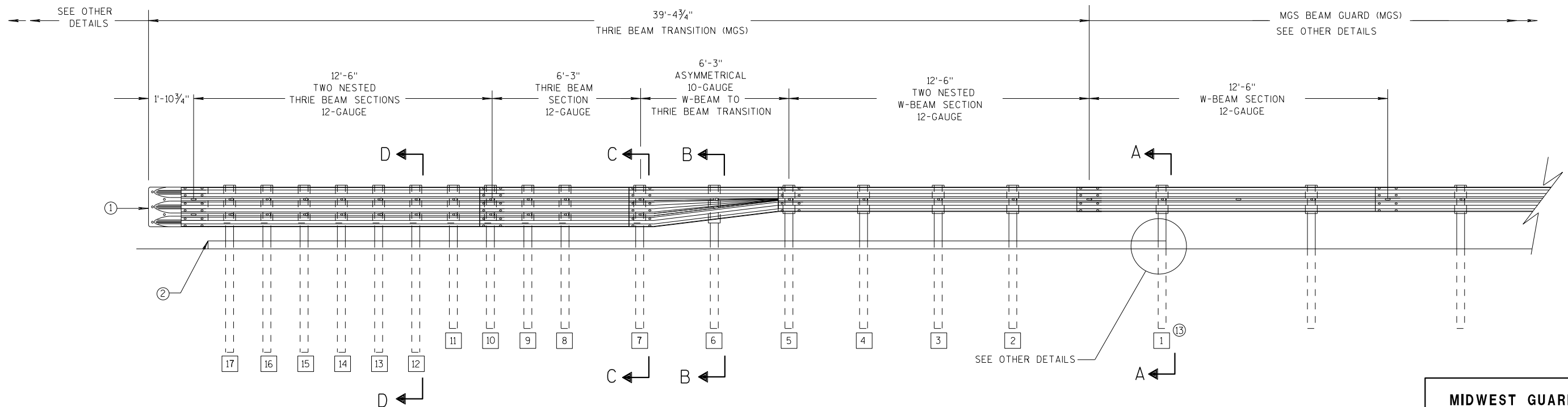
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

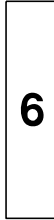
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

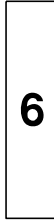
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 148

6

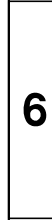
- S.D.D. 14 B 45-5b**

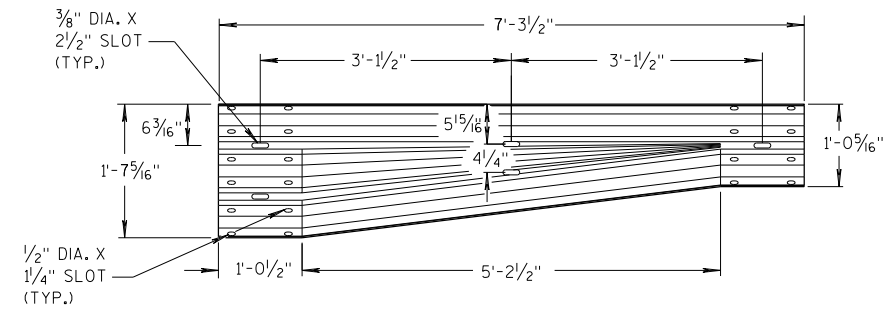


S.D.D. 14 B 45-5b

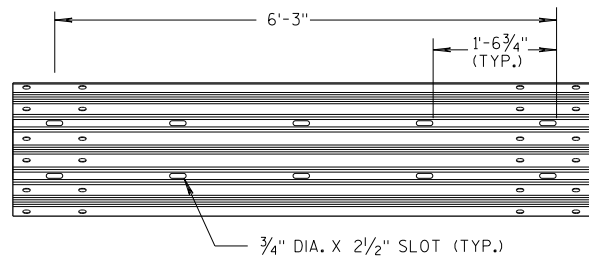


S.D.D. 14 B 45-5b

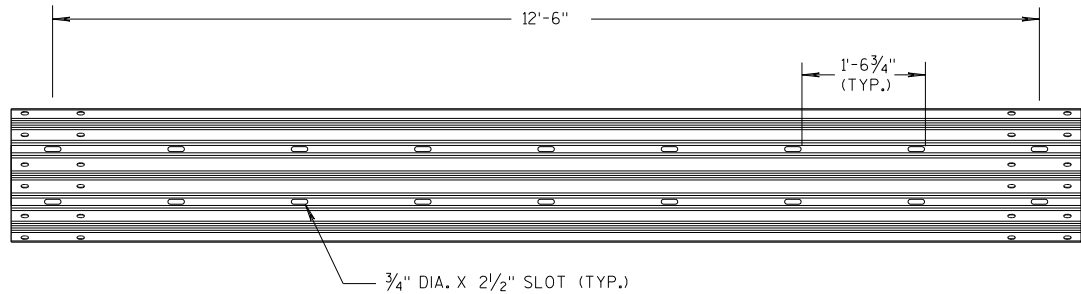




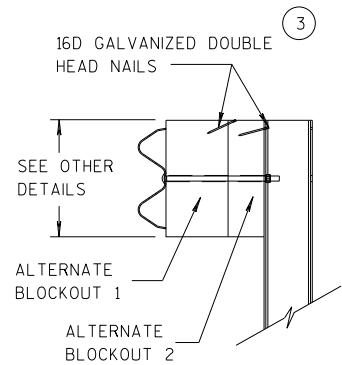
W-BEAM TO THRIE BEAM TRANSITION SECTION



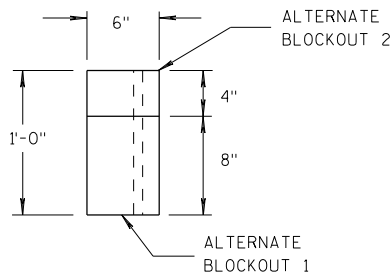
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

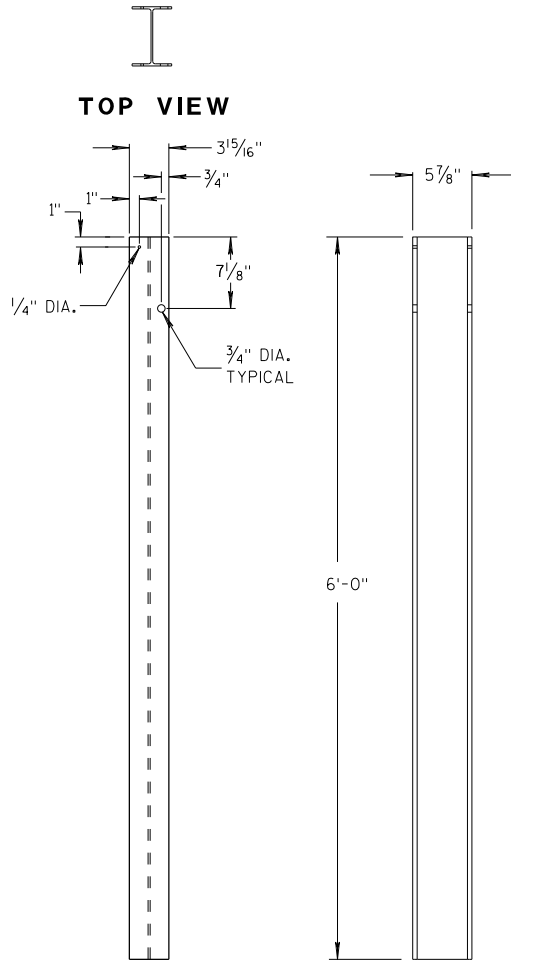


SIDE VIEW



TOP VIEW

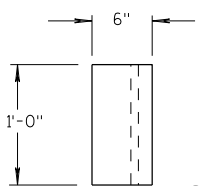
ALTERNATE WOOD BLOCKOUT DETAIL



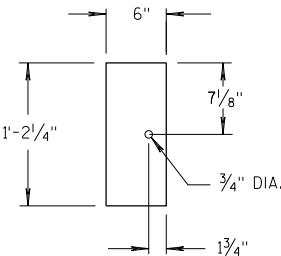
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

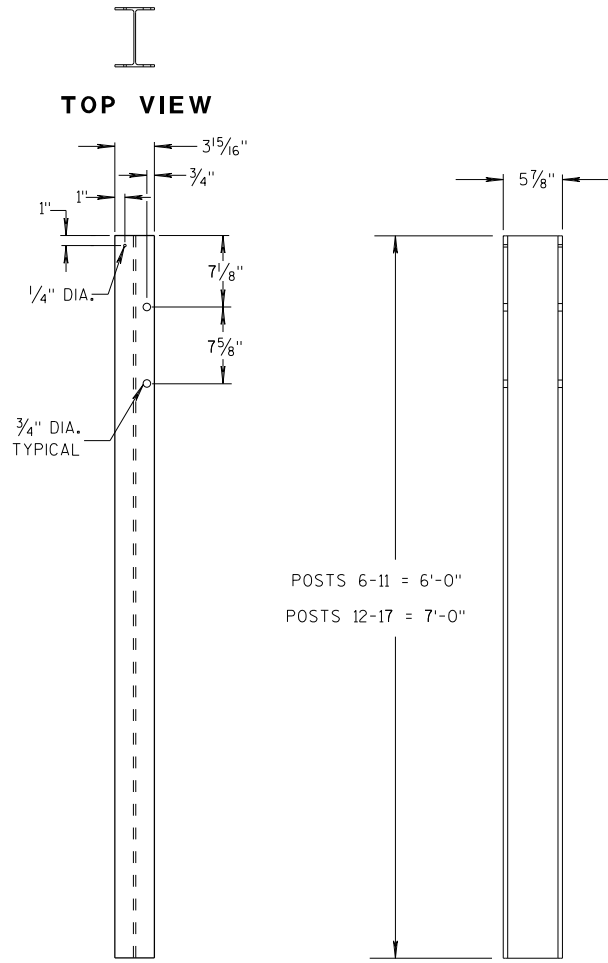


TOP VIEW



FRONT VIEW

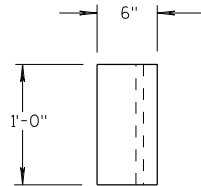
BLOCKOUT POSTS 1-5



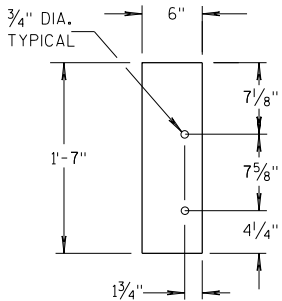
FRONT VIEW

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.

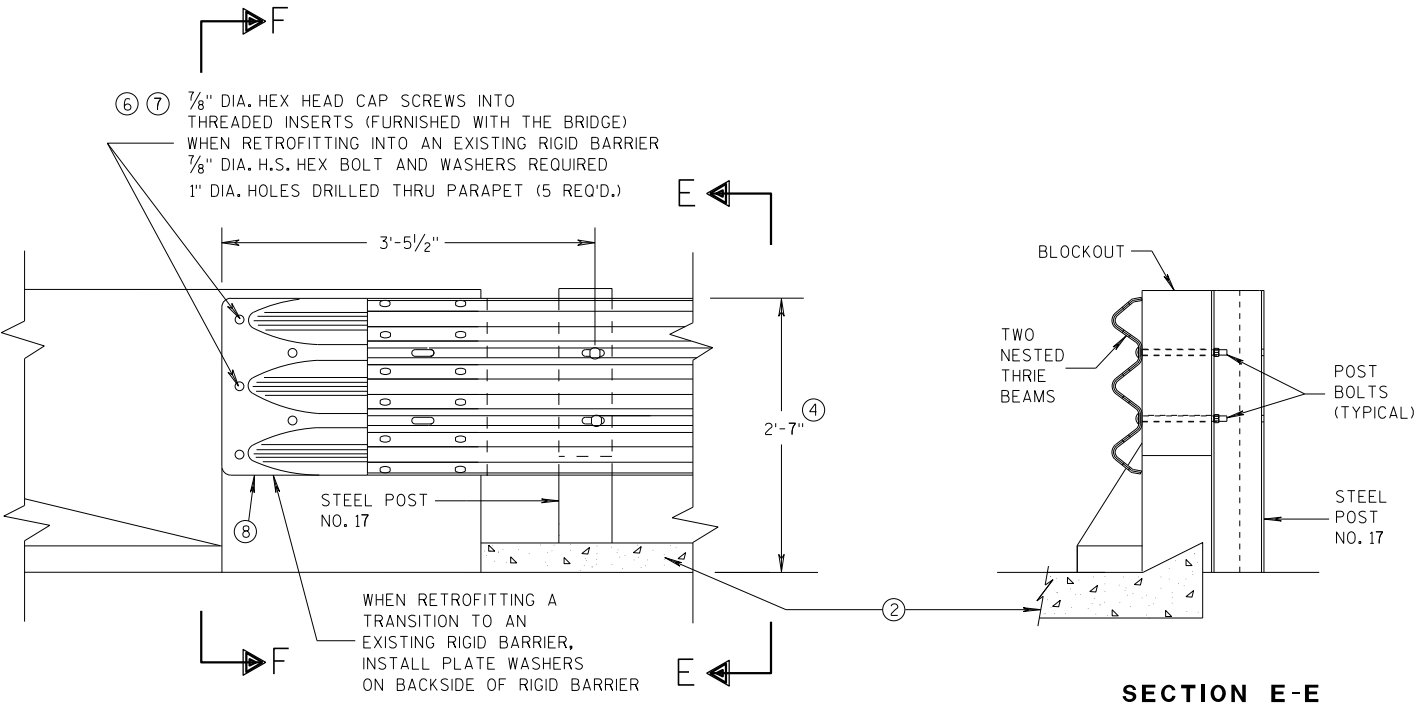
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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.

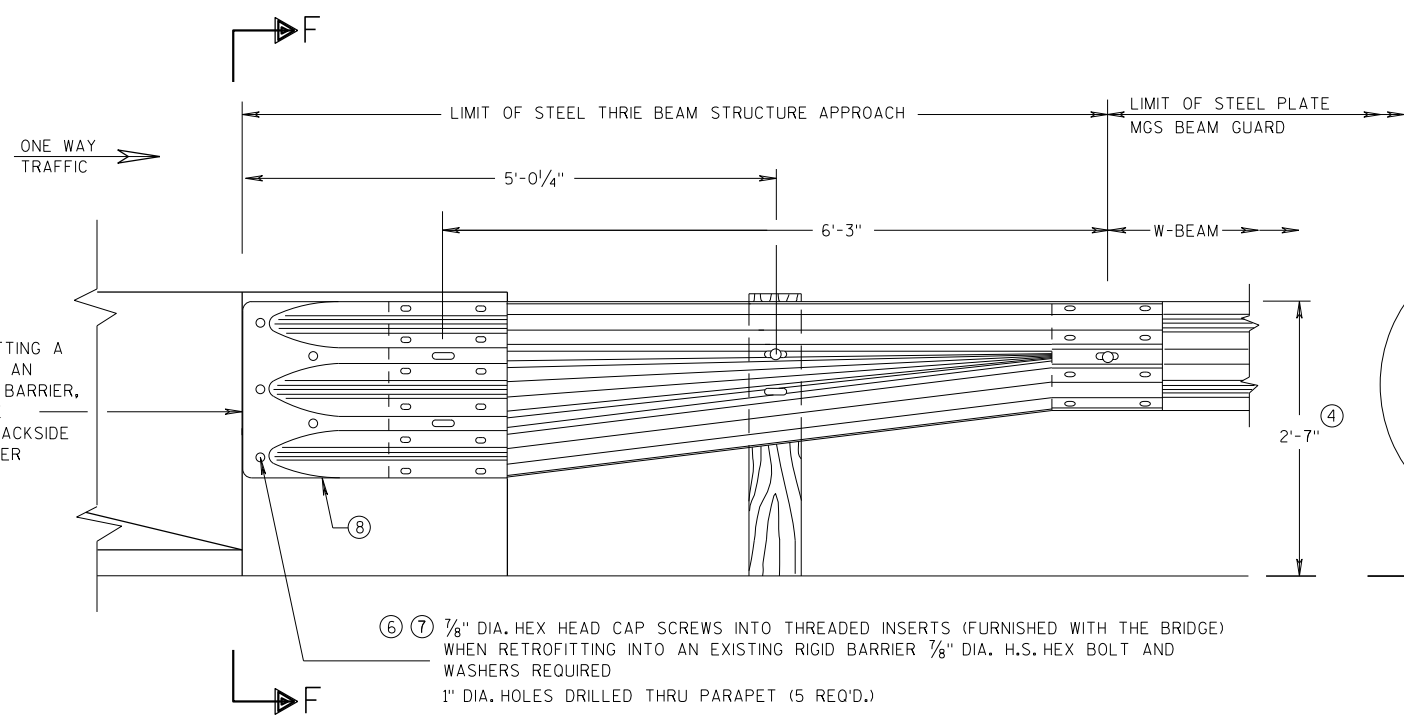
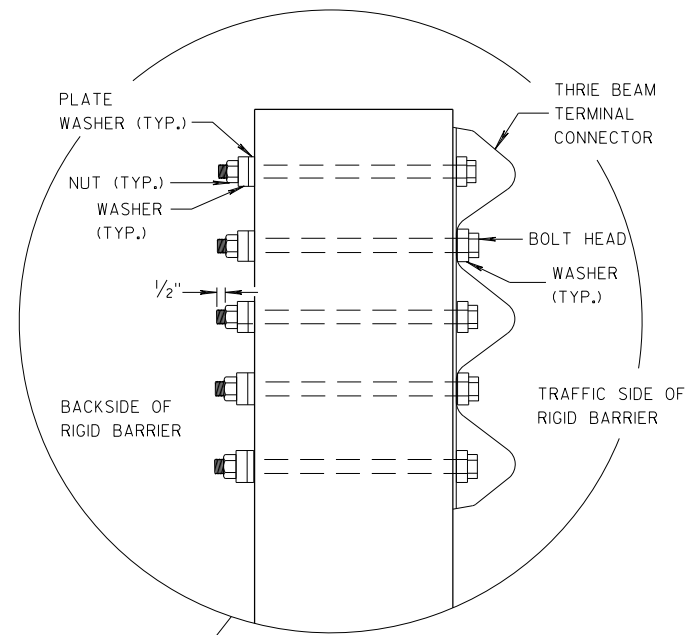
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

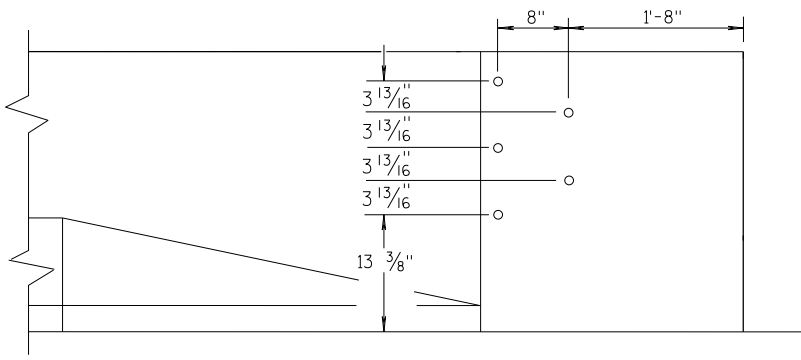


GENERAL NOTES

- 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



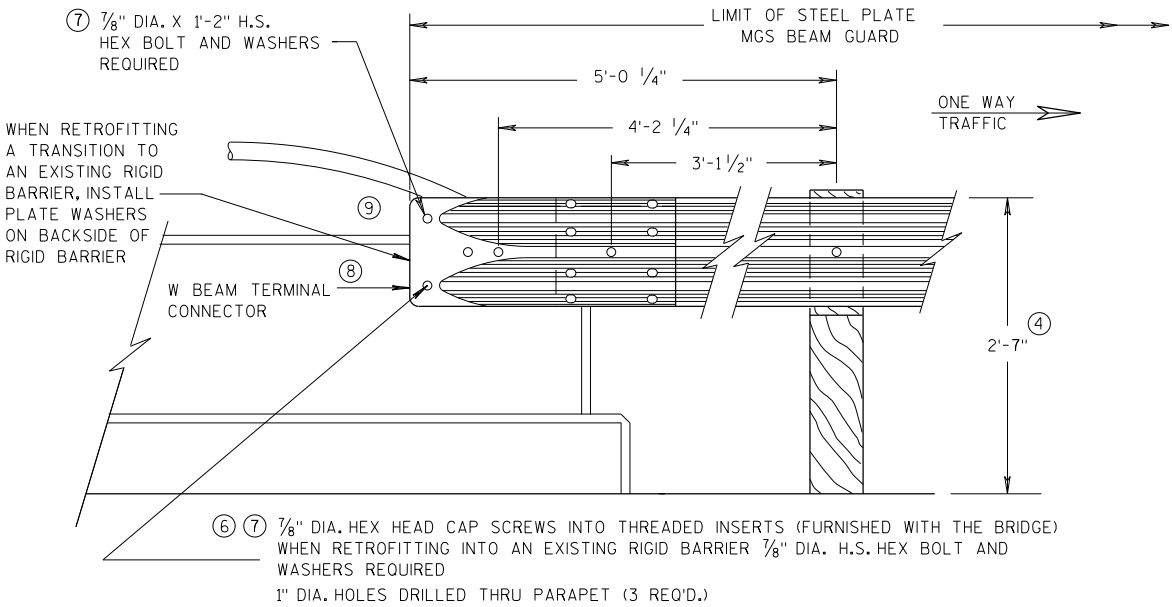
DRILL HOLE LOCATION

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	151	NT	

GENERAL NOTES

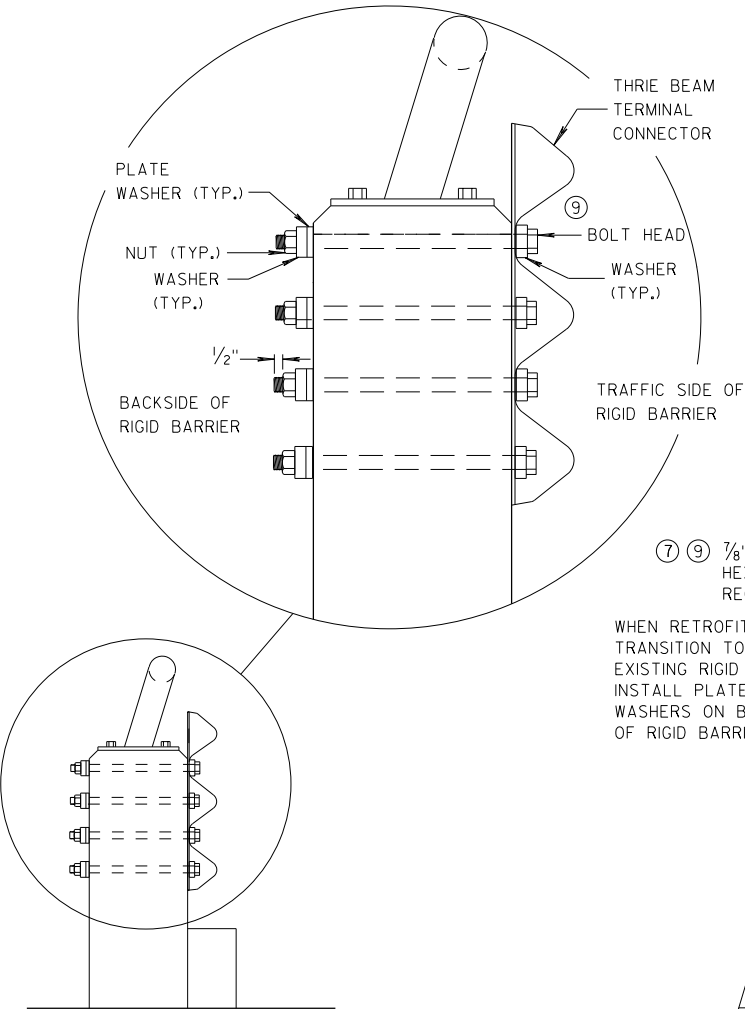
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{32}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}"$.
- BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

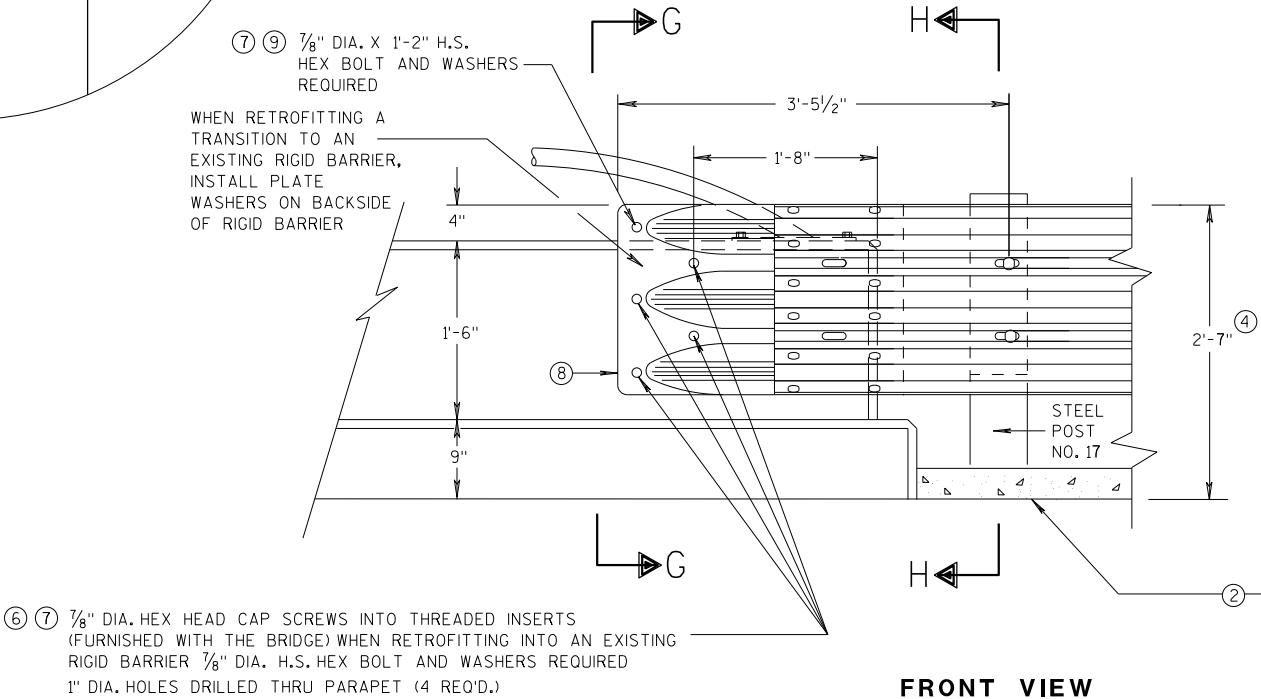


FRONT VIEW

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

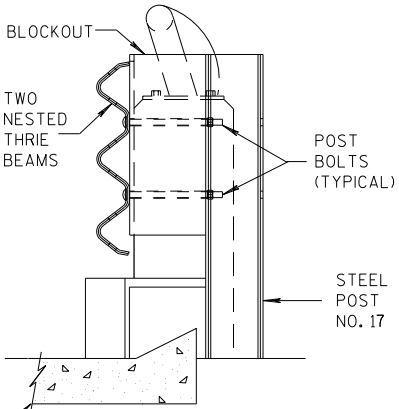


SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

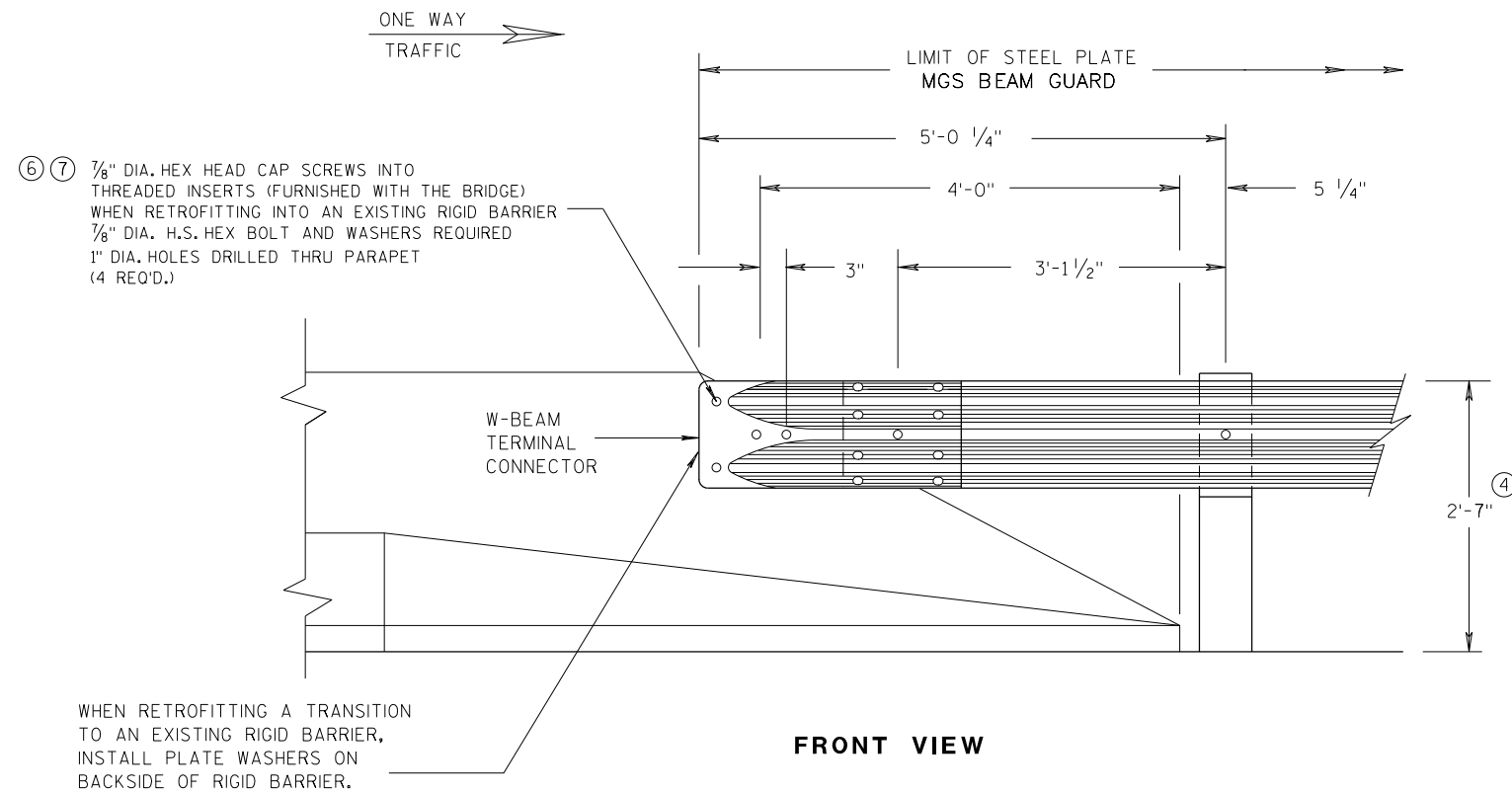


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

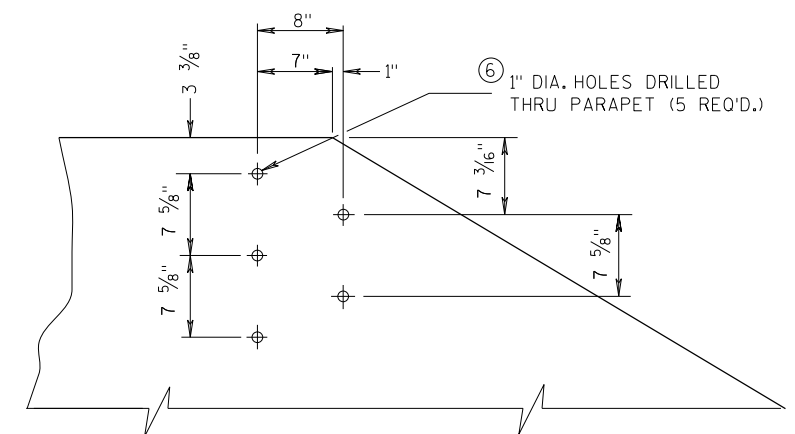
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07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 152



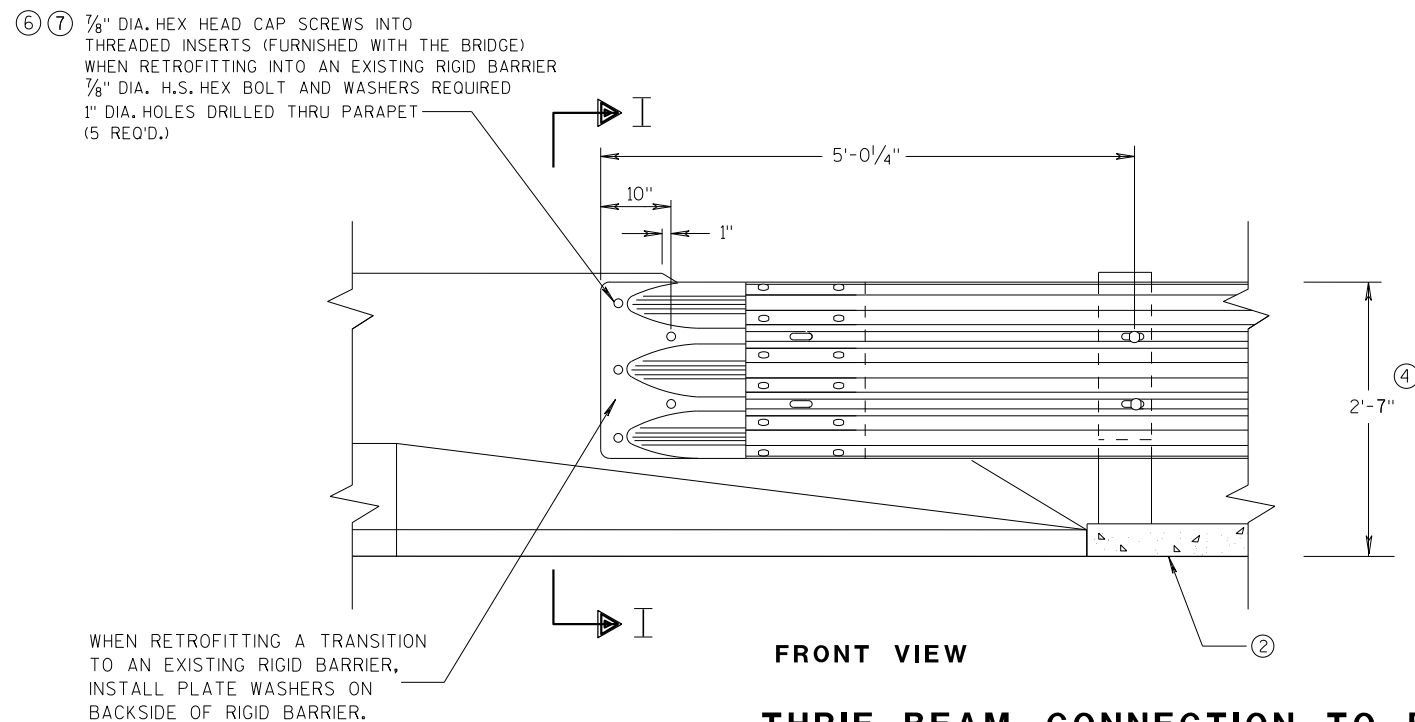
**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS**
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

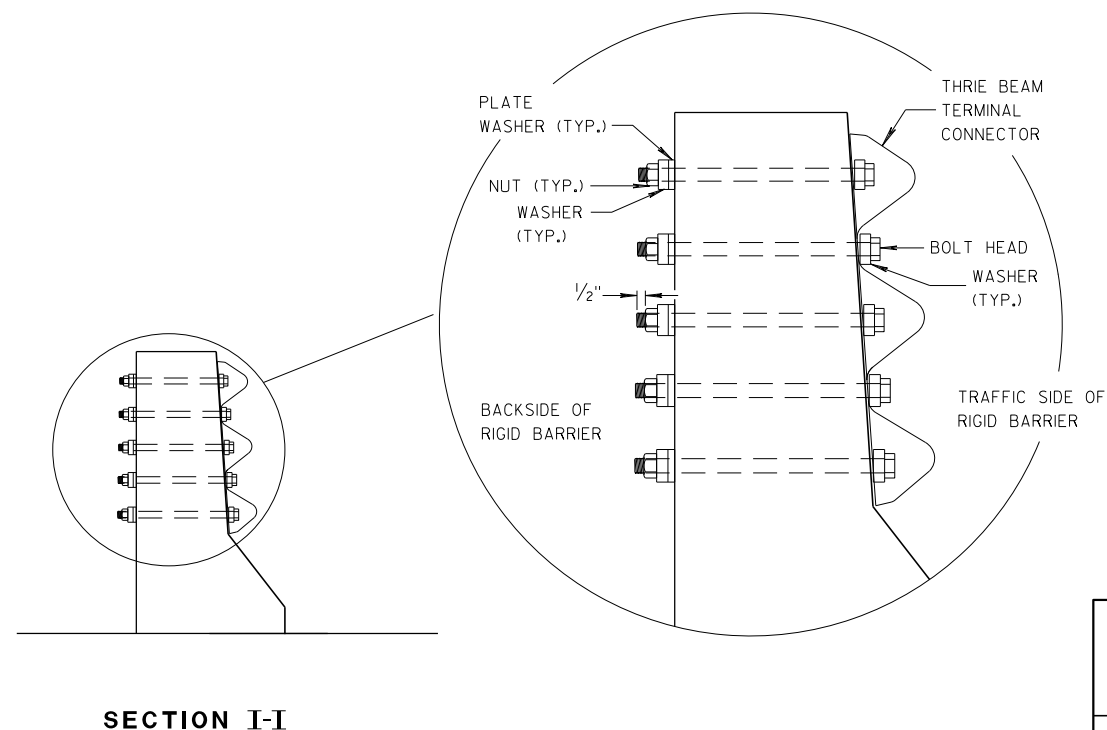
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH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



**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**



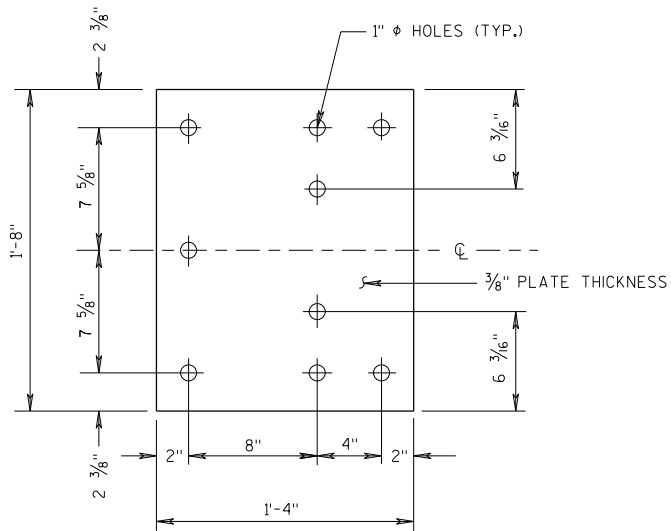
**THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS**



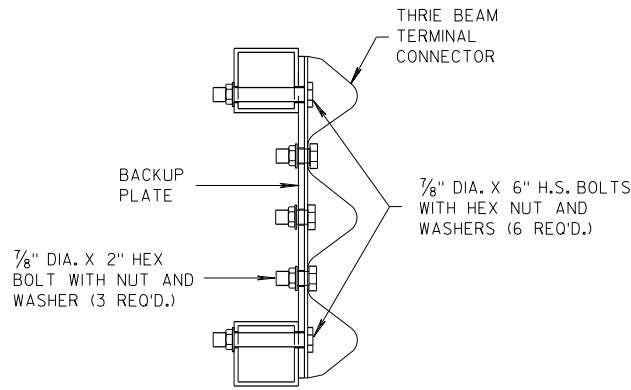
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

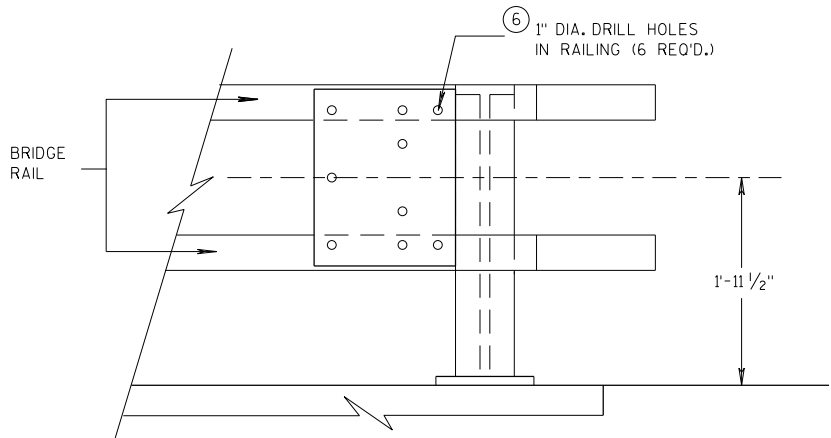
APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR 153
FHWA



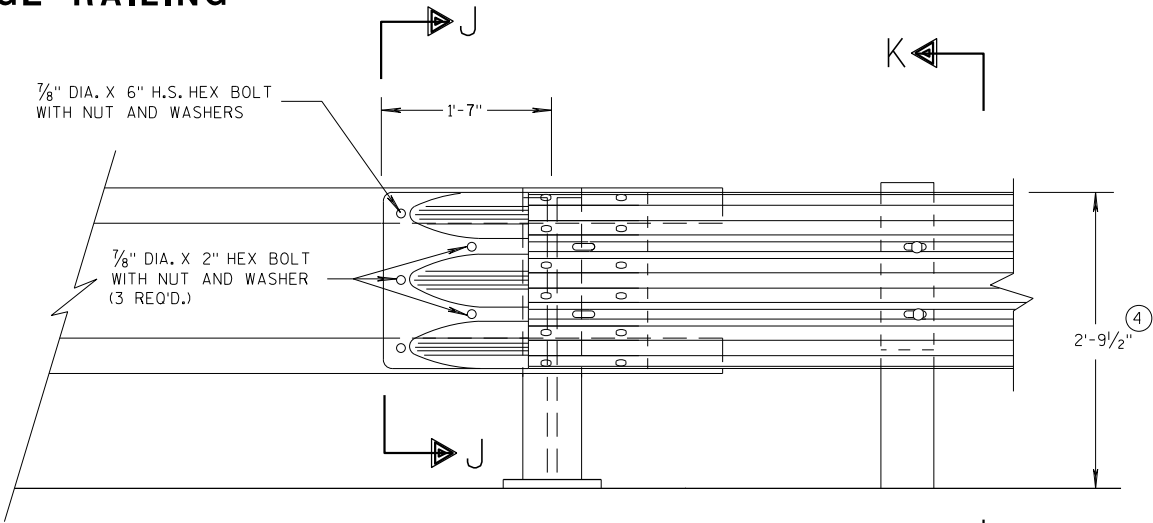
BACK-UP PLATE DETAIL



SECTION J-J

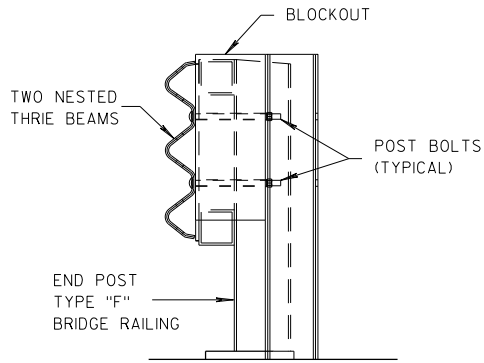


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

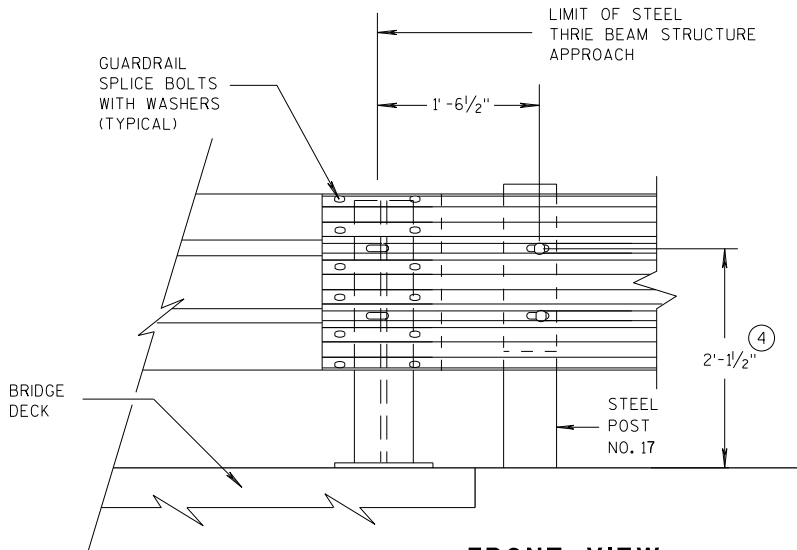
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR	154
FHWA		

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



6



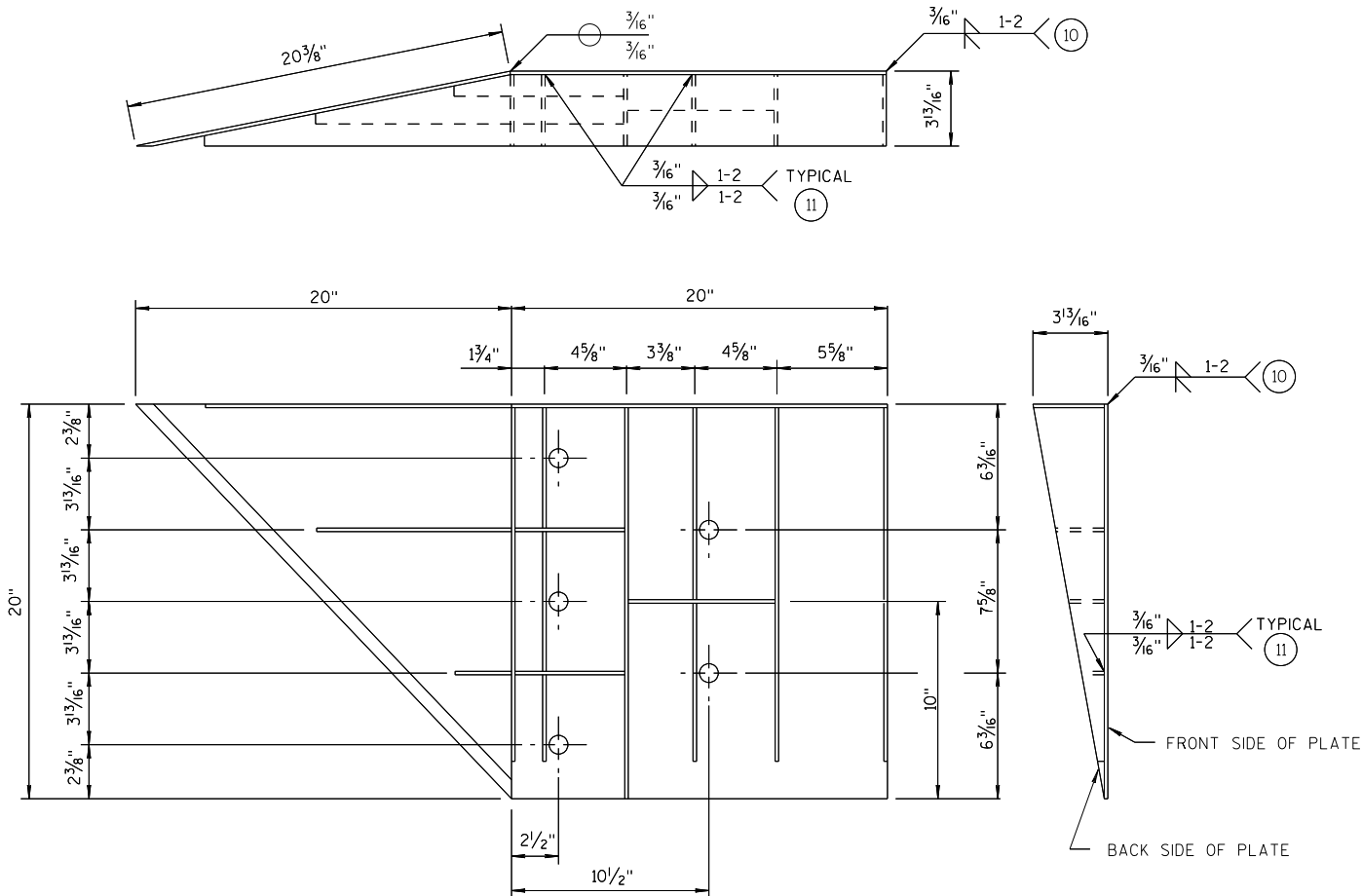
SECTION M-M



FRONT VIEW



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<u>07/2018</u>	<u>/S/ Rodney Taylor</u>	
DATE	ROADWAY STANDARDS	155 ENT
FHWA	UNIT SUPERVISOR	

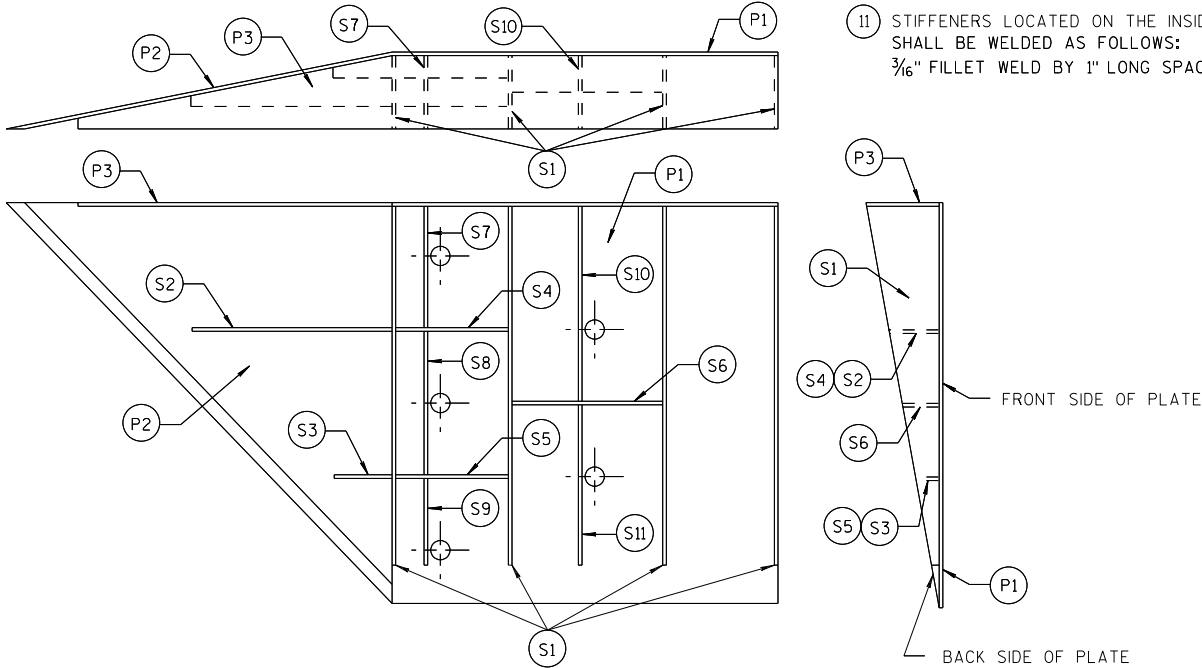


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

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

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



GENERAL NOTES

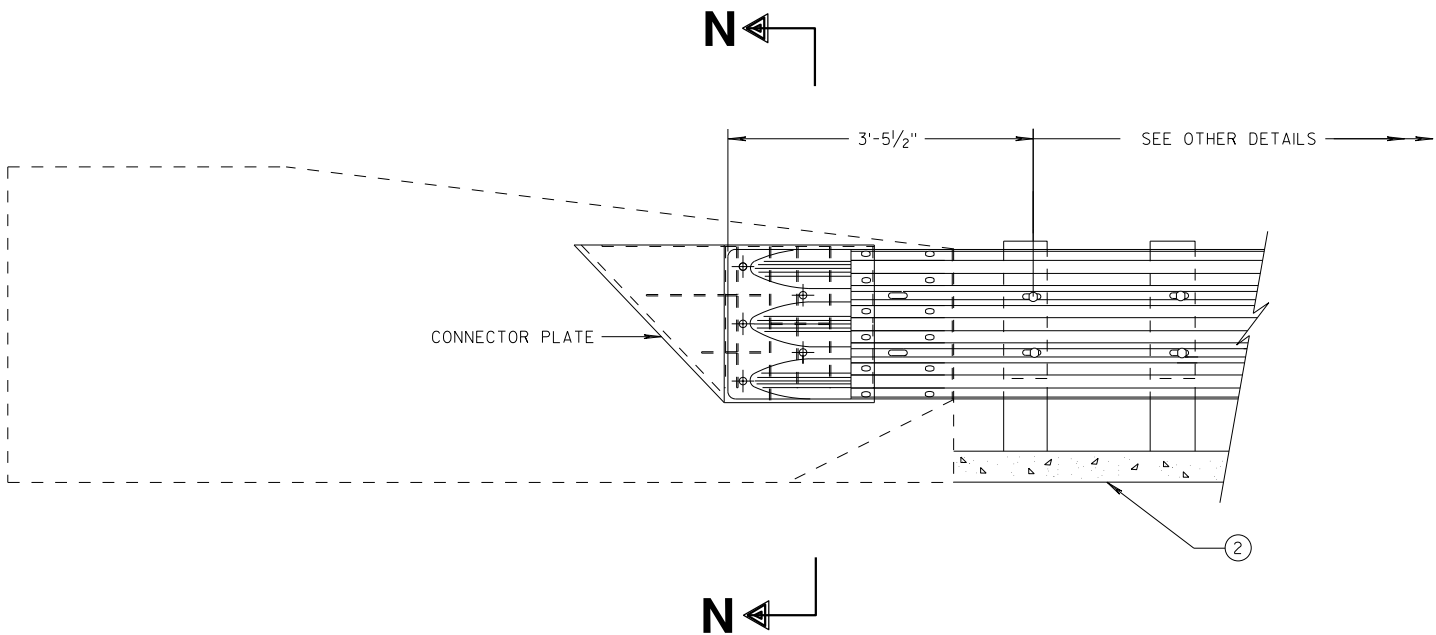
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR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

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

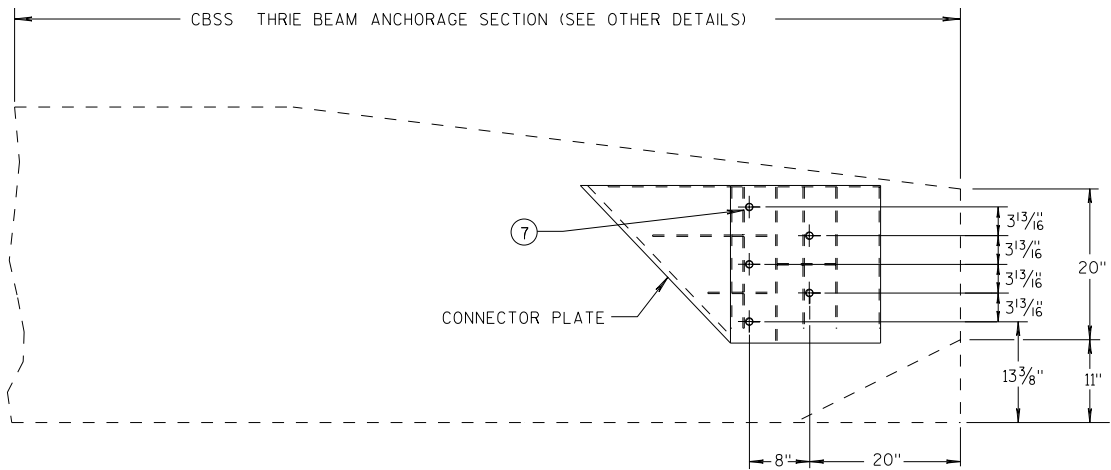
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
156
FHWA



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



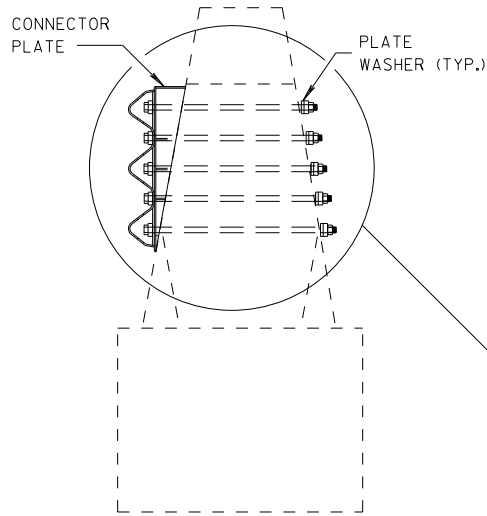
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

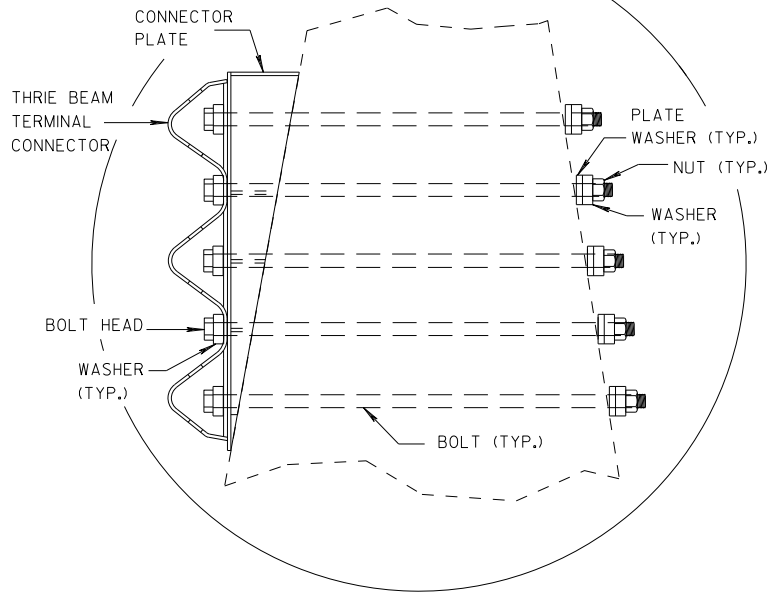
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



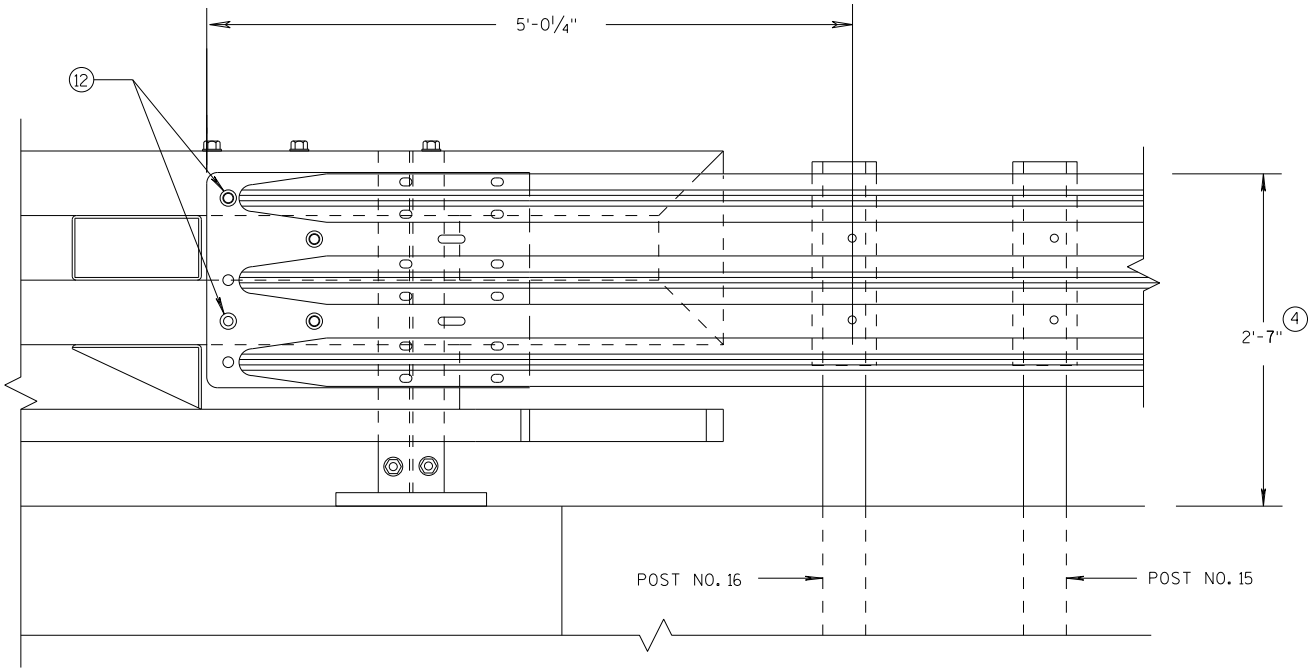
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

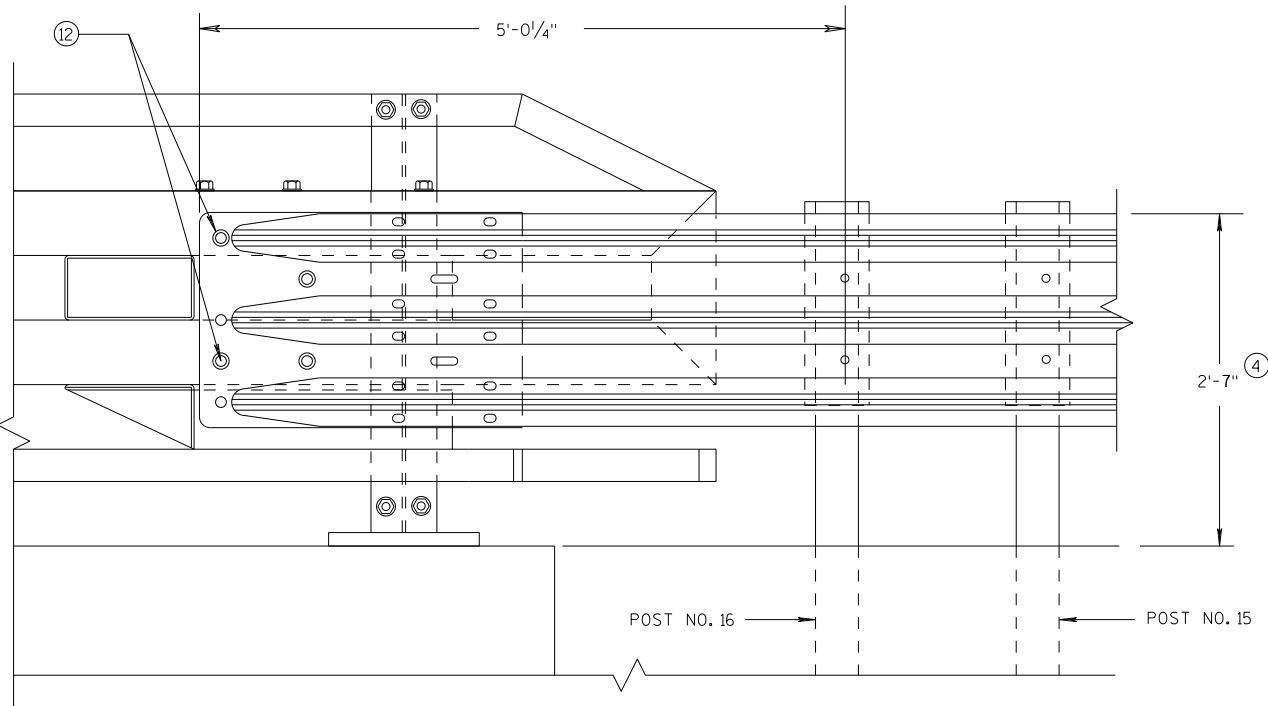
APPROVED
DATE 7/2018
ROADWAY STANDARDS DIVISION
UNIT SUPERVISOR /S/ Rodney Taylor
157
FHWA

GENERAL NOTES

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



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

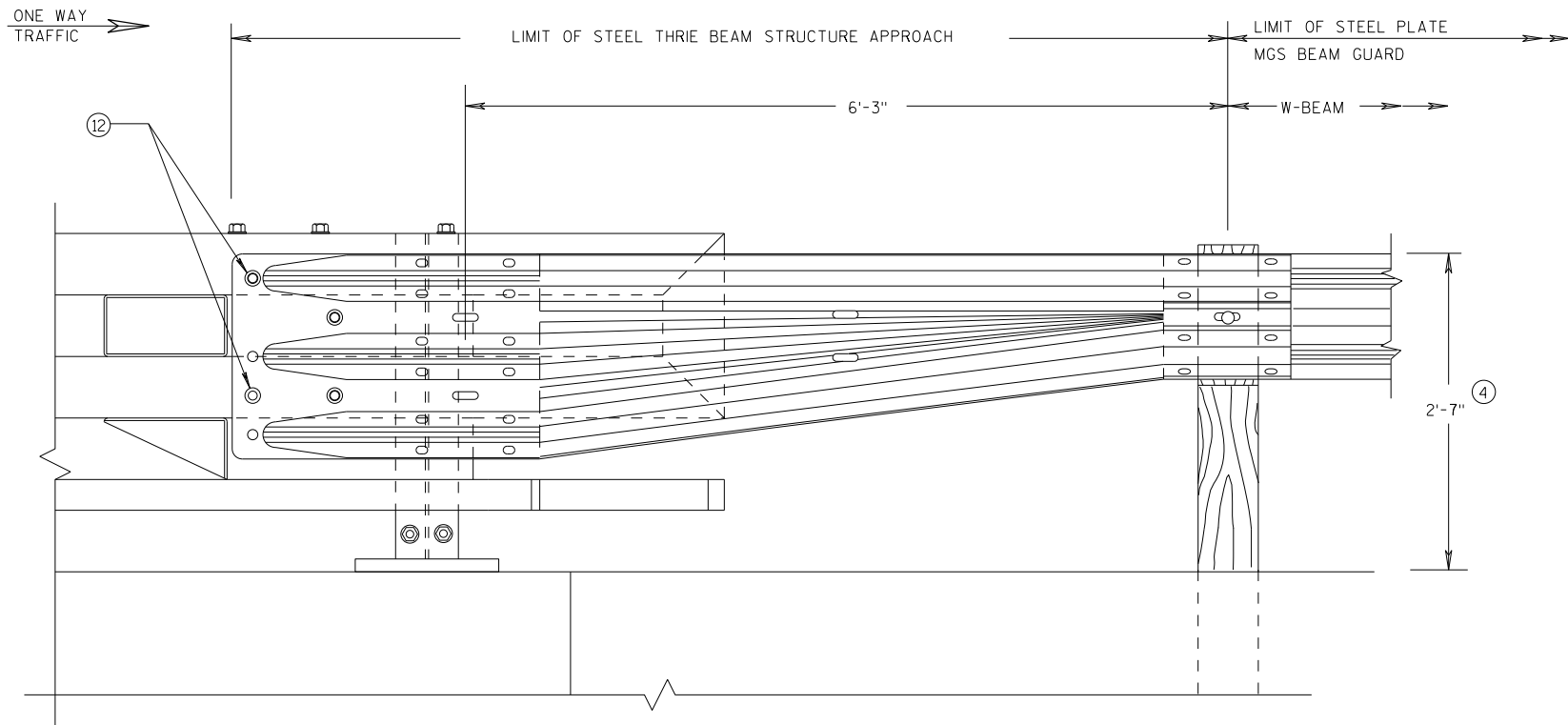


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 7/2018 /S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR 158 NT
FHWA



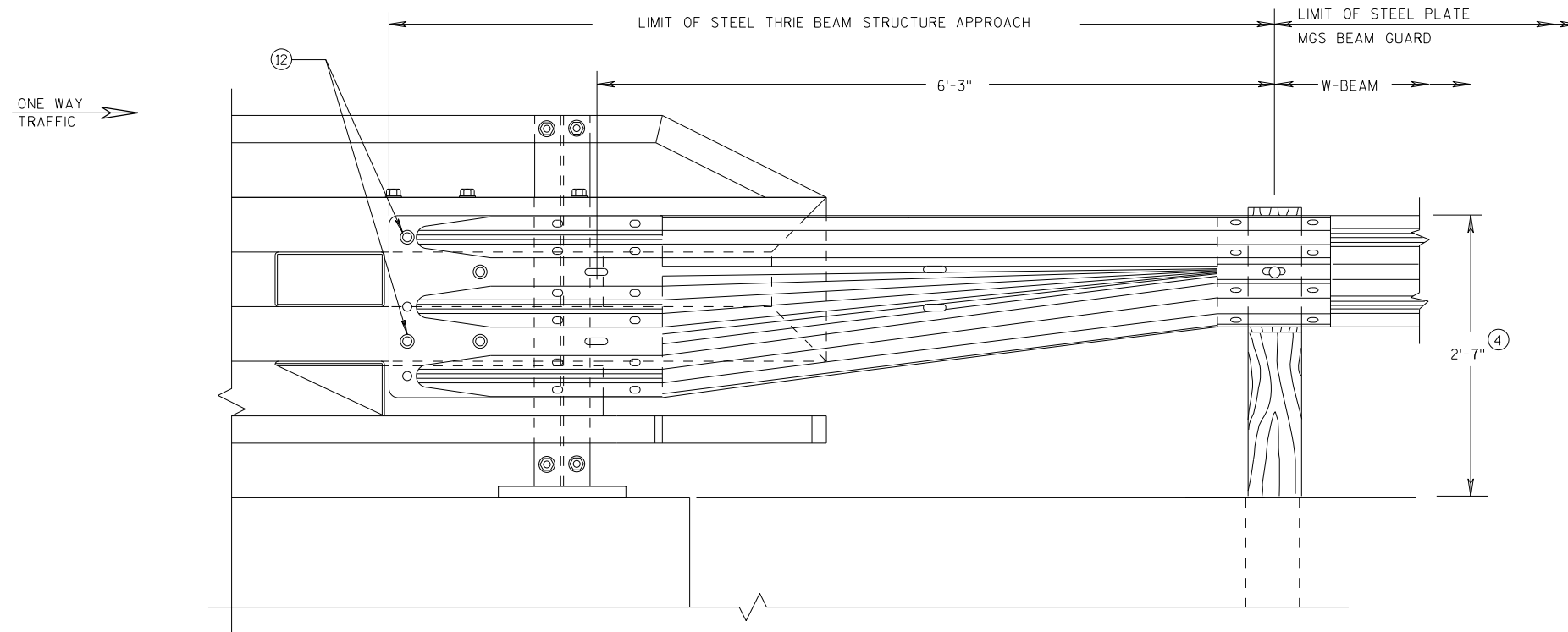
GENERAL NOTES

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

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

FRONT VIEW

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



FRONT VIEW

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

DATE

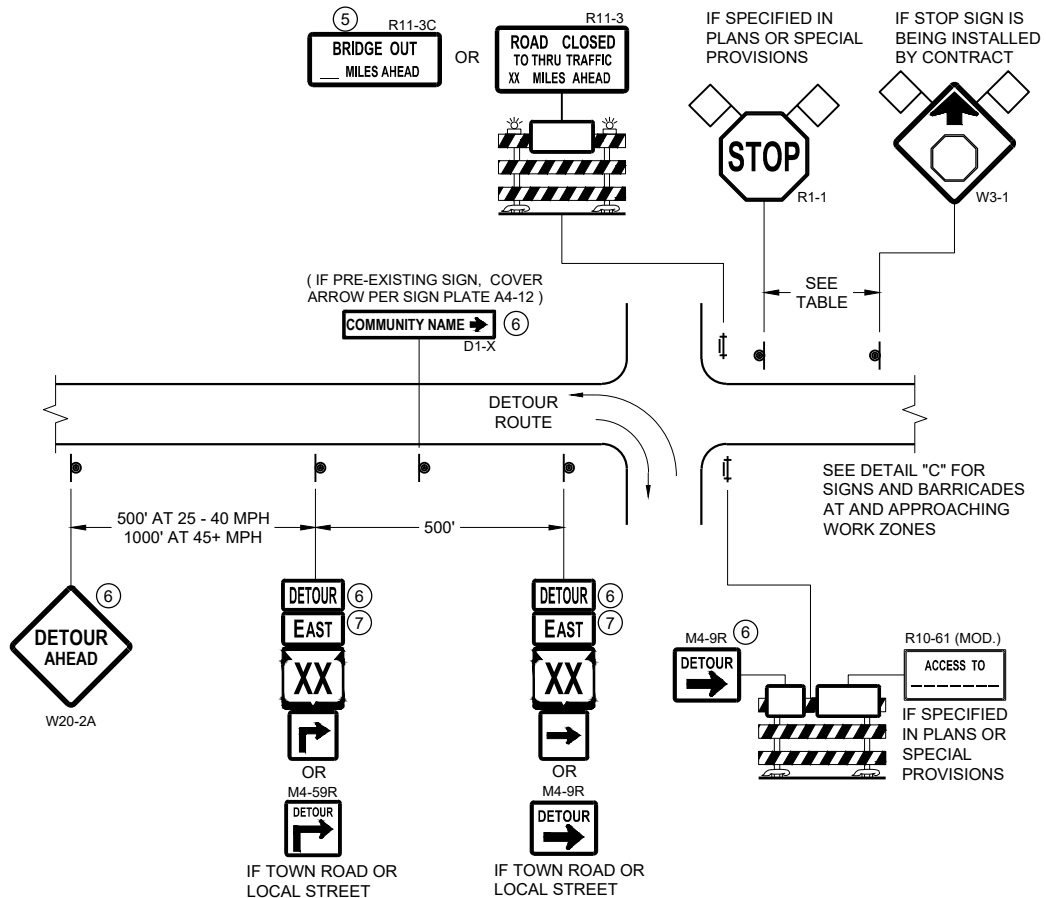
FHWA

/S/ Rodney Taylor

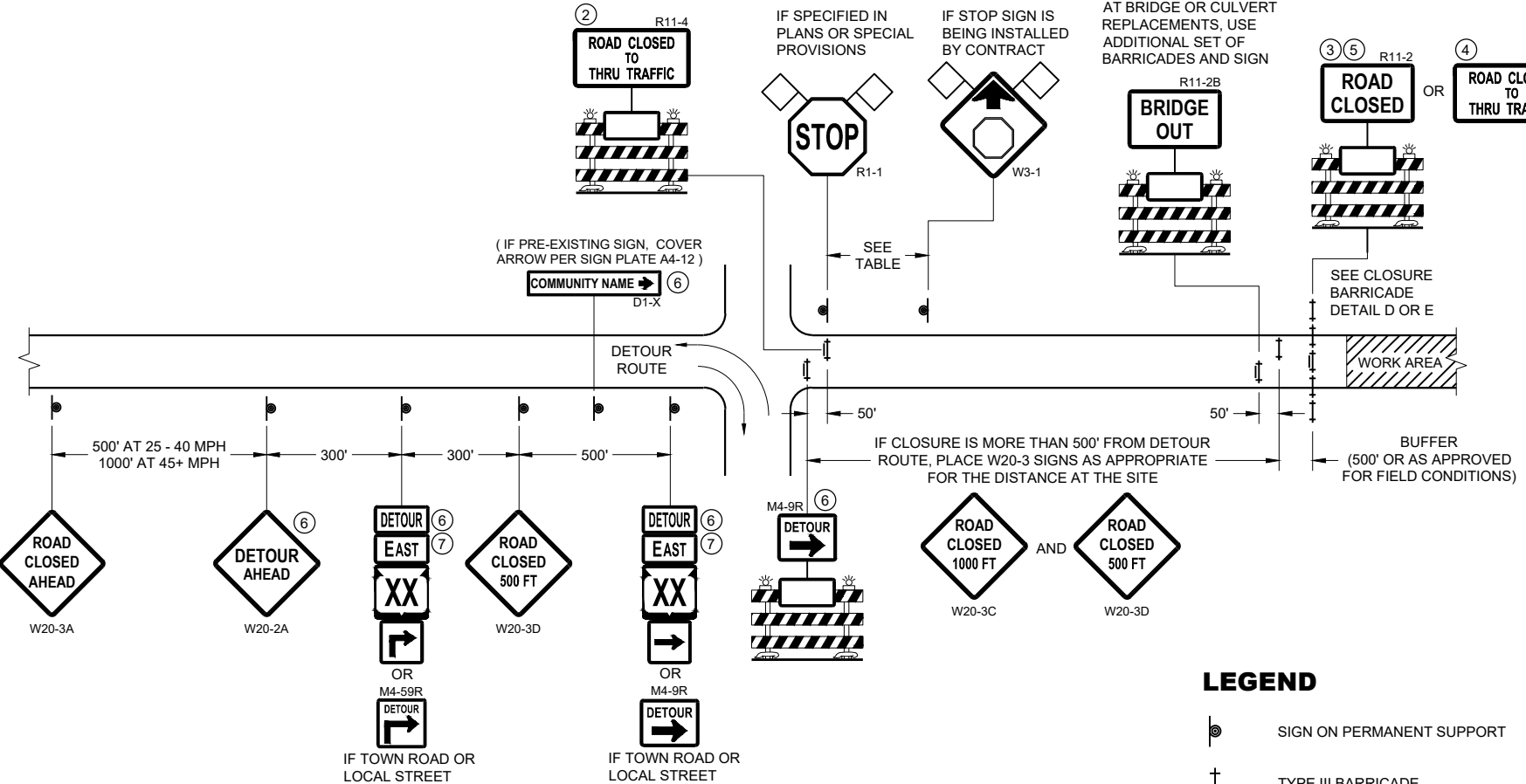
ROADWAY STANDARDS C 159

UNIT SUPERVISOR

S.D.D. 14 B 45-5L



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



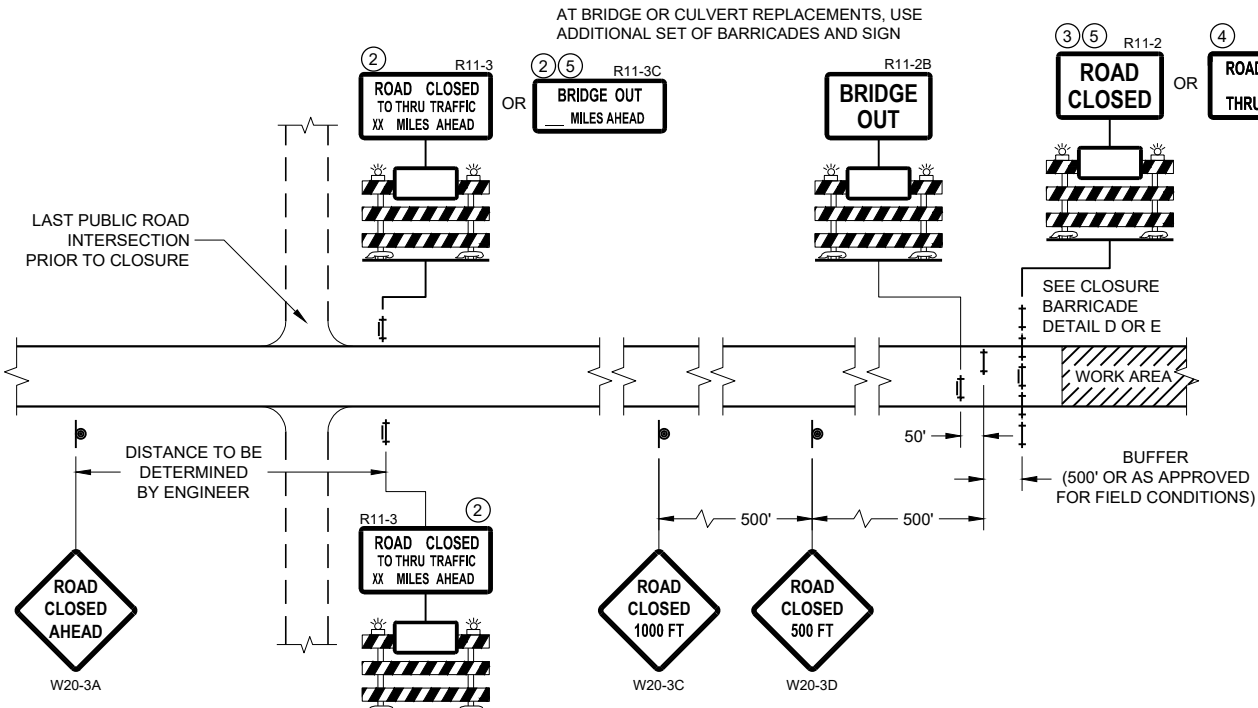
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

- 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 X 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



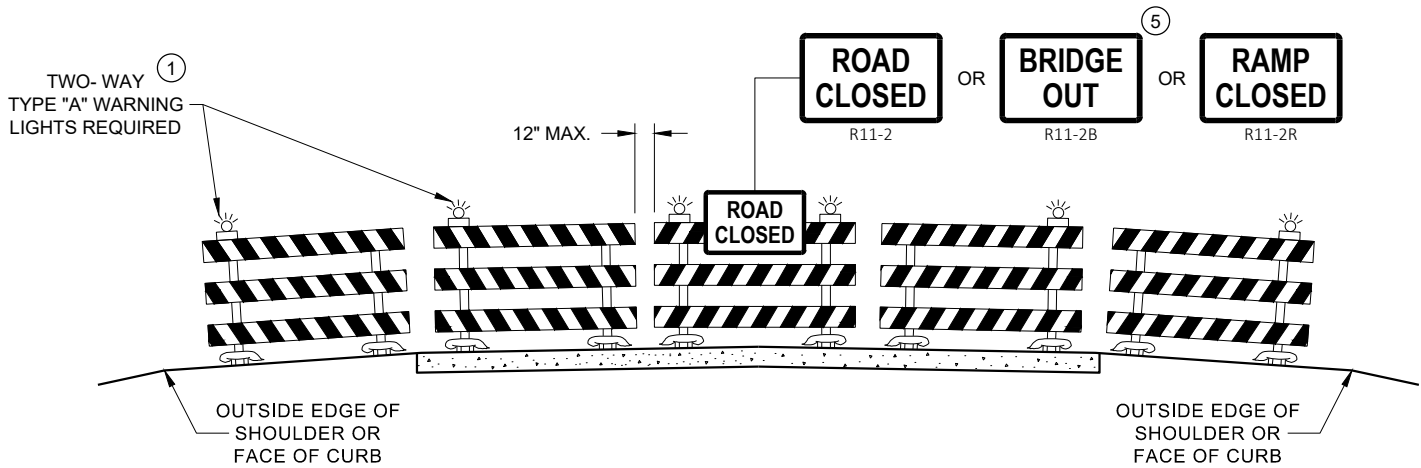
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

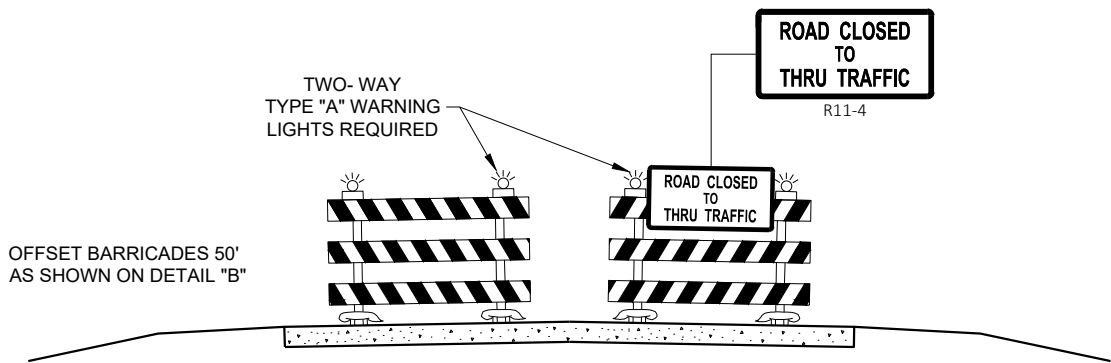
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 160

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"

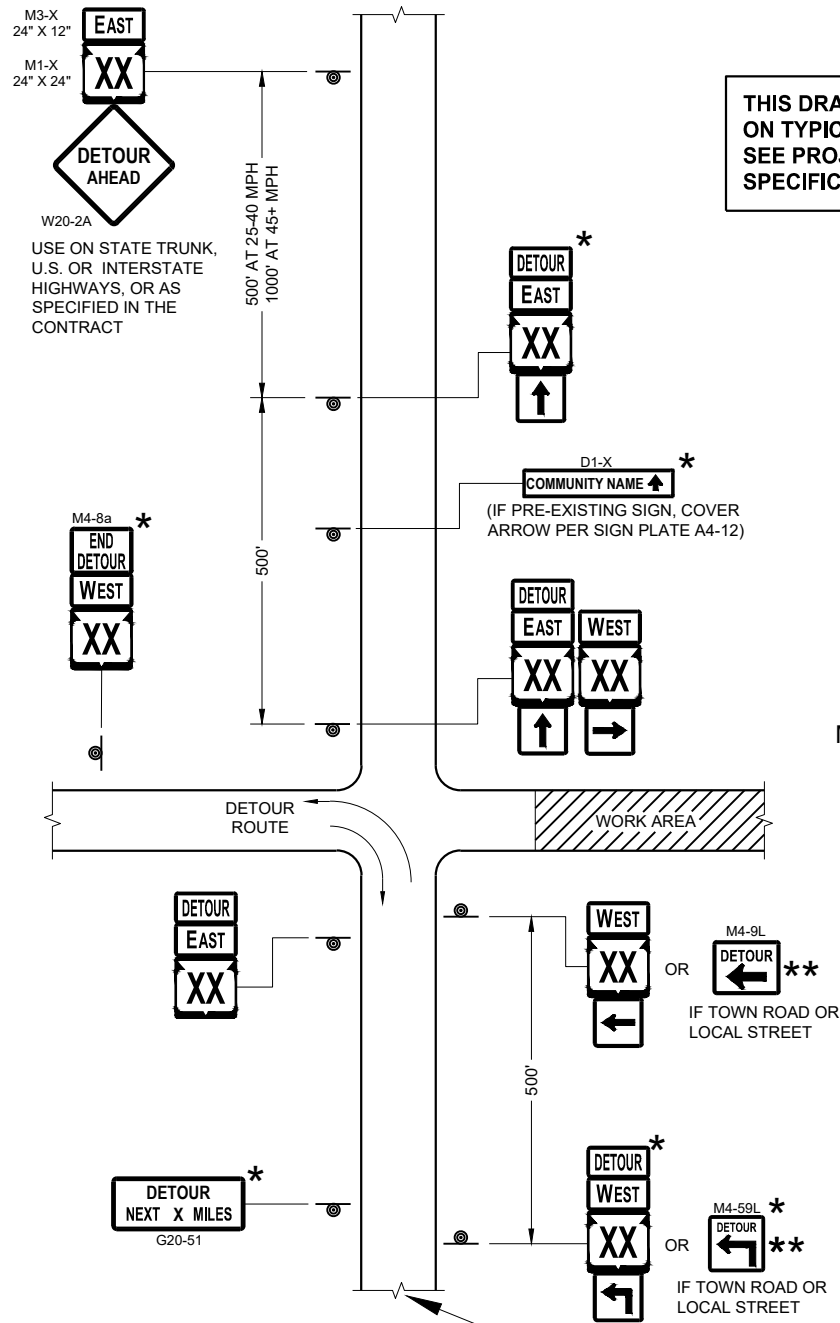
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS 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 161

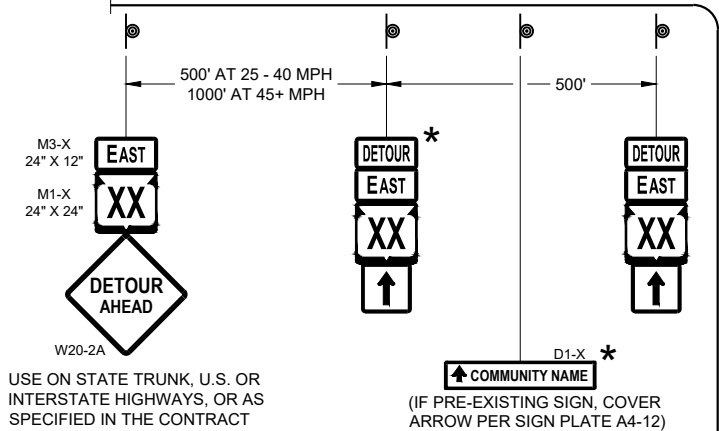
FHWA



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.

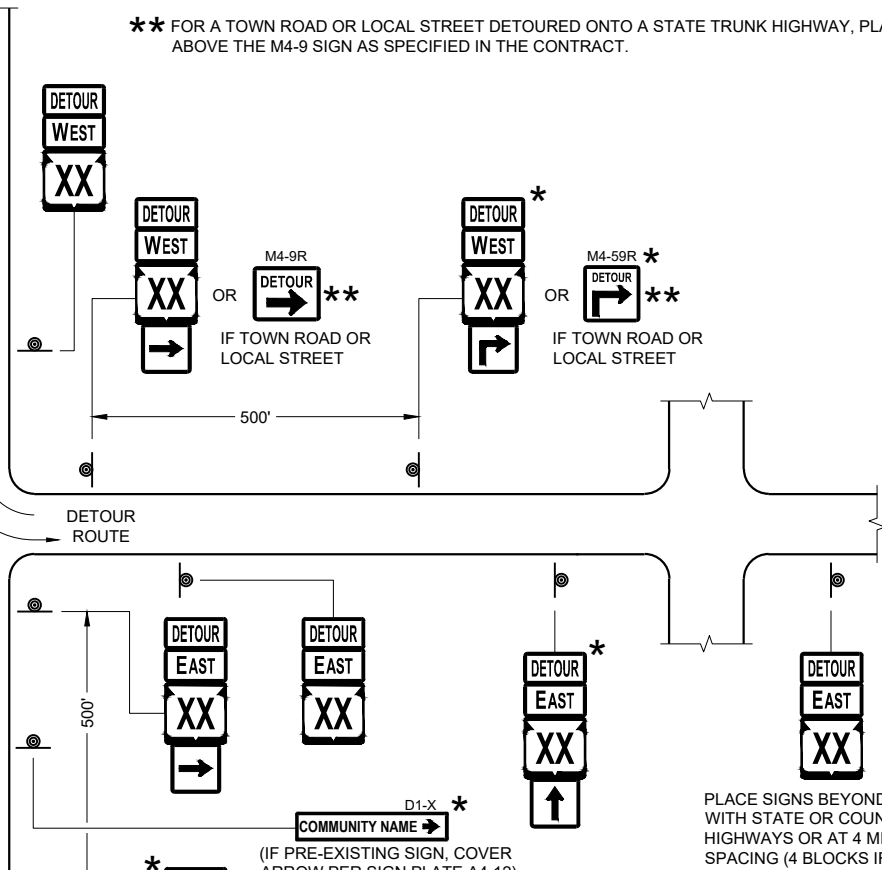
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

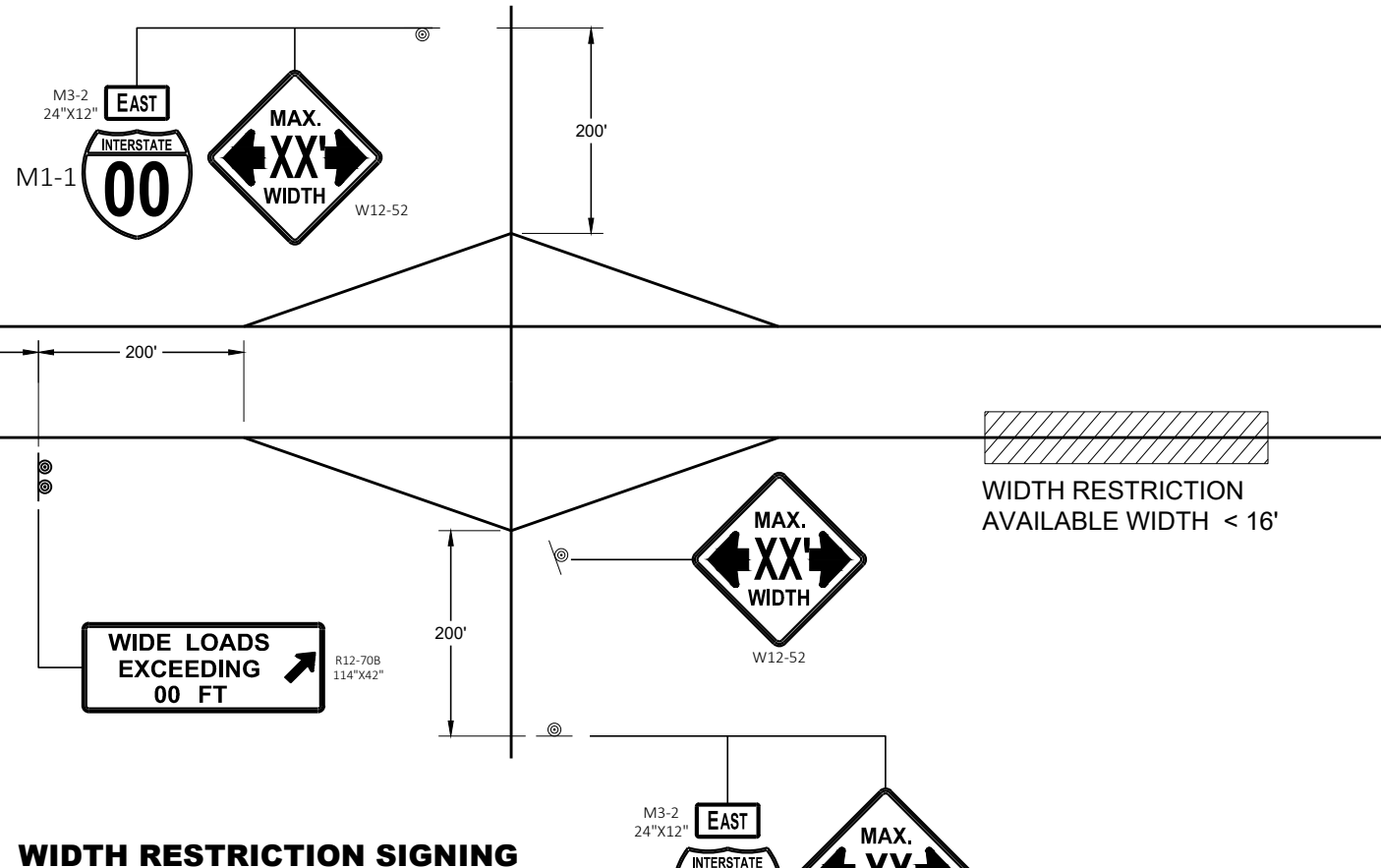
SIGN SIZES SHALL BE AS FOLLOWS:

- 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.

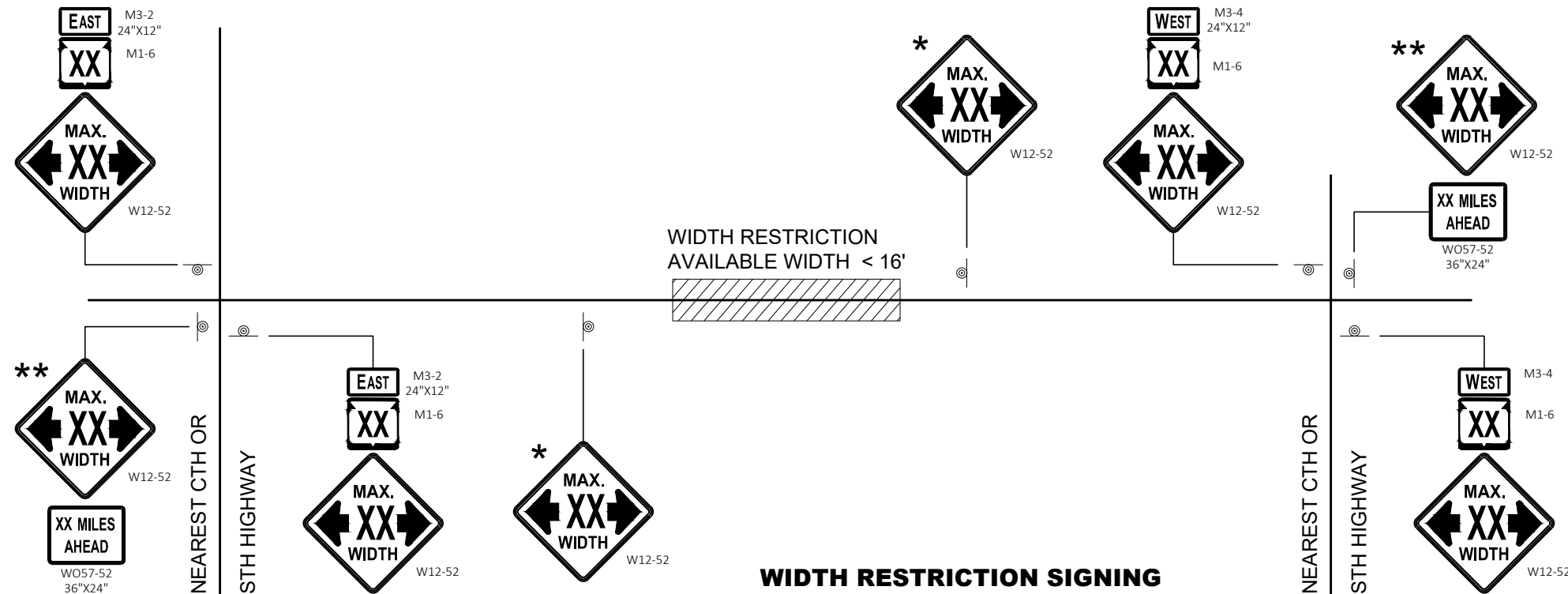
- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 162
FHWA	



WIDTH RESTRICTION SIGNING



WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

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

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

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

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

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

WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

- * PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.
- ** SIGN SHALL BE VISIBLE FROM ROADWAY.
- *** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.

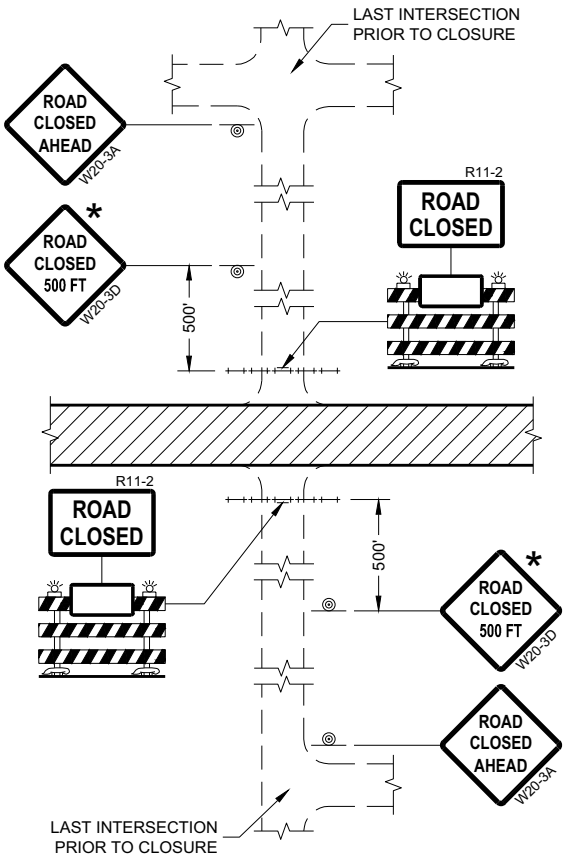


WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH

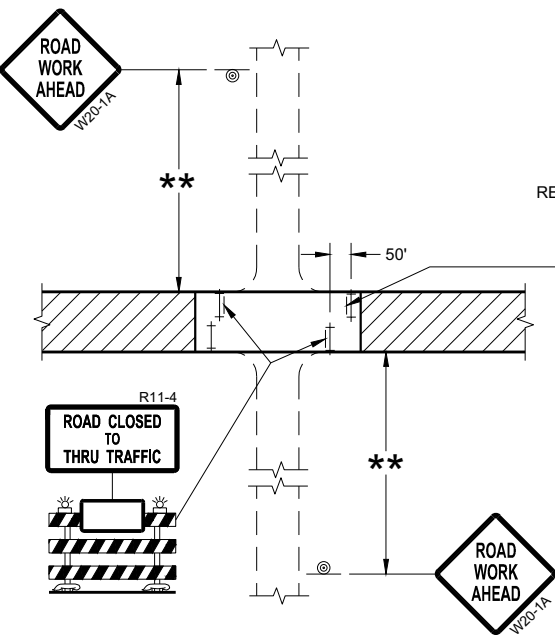
ADVANCED WIDTH
RESTRICTION SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

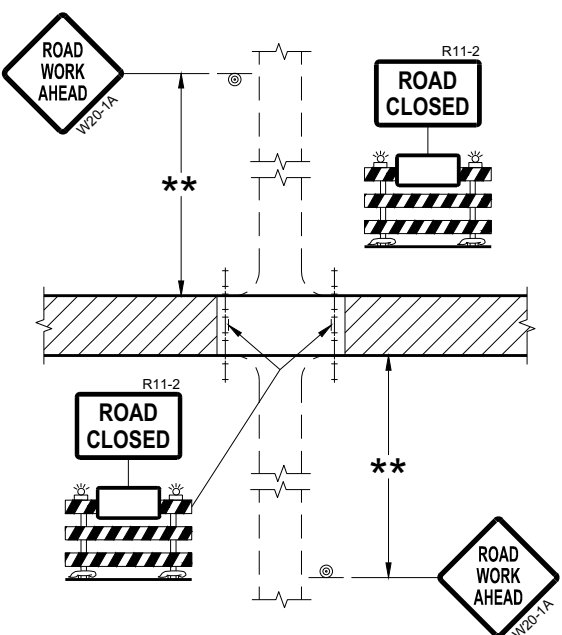
APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 163
FHWA



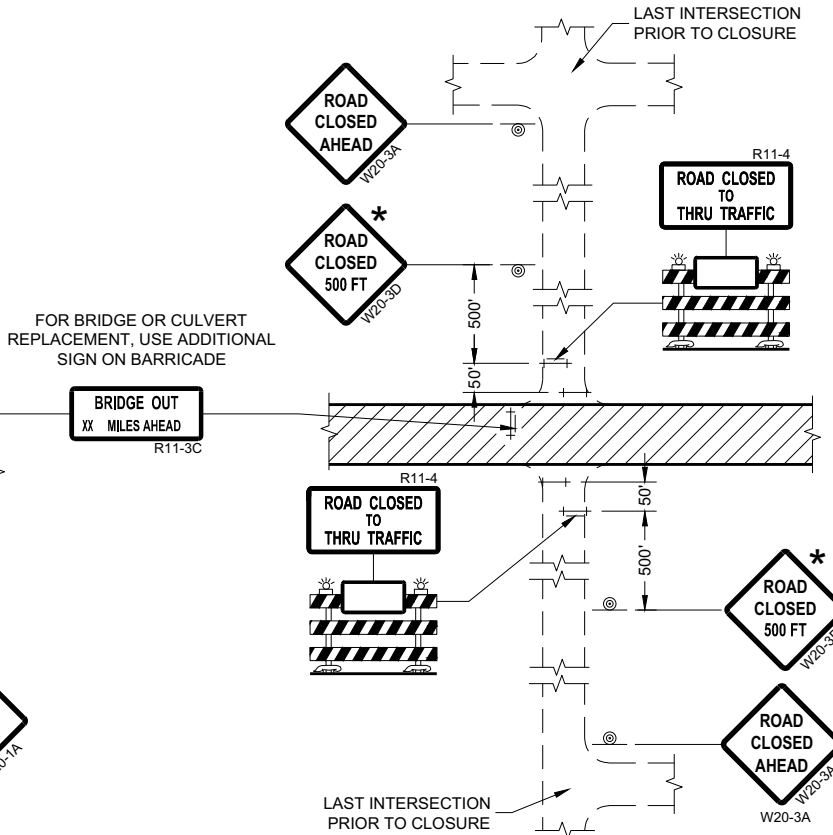
DETAIL 1
(NO ACCESS TO PROJECT)



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 164

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.

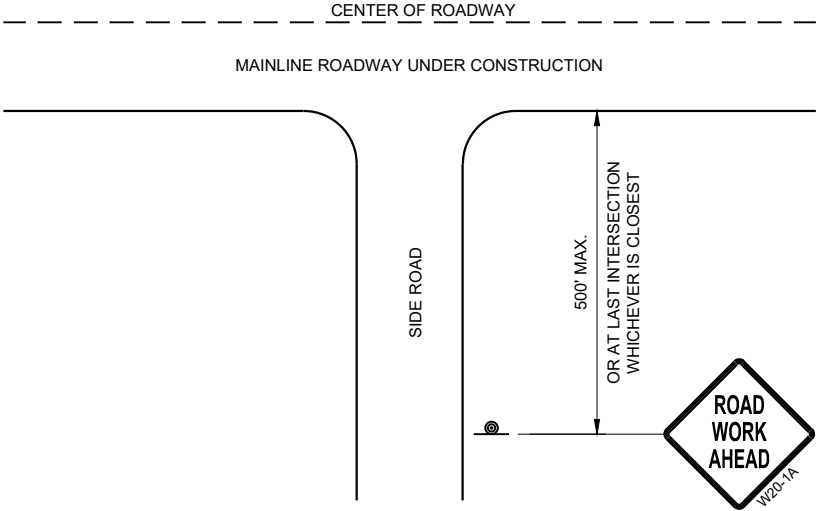
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IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

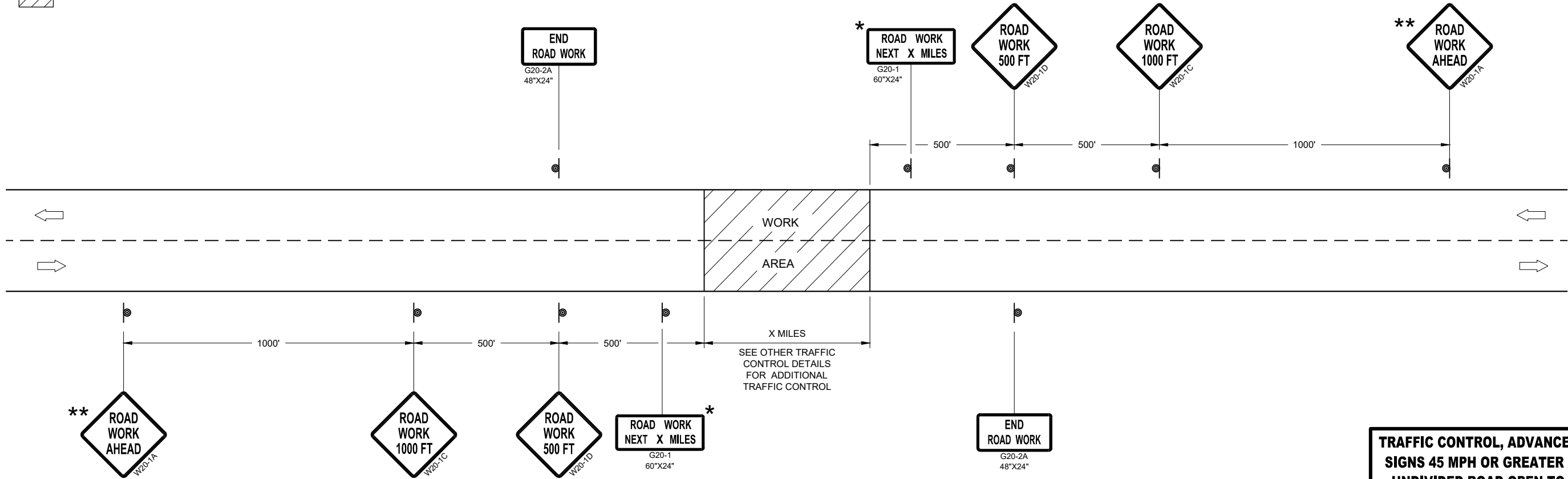
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

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 165

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.

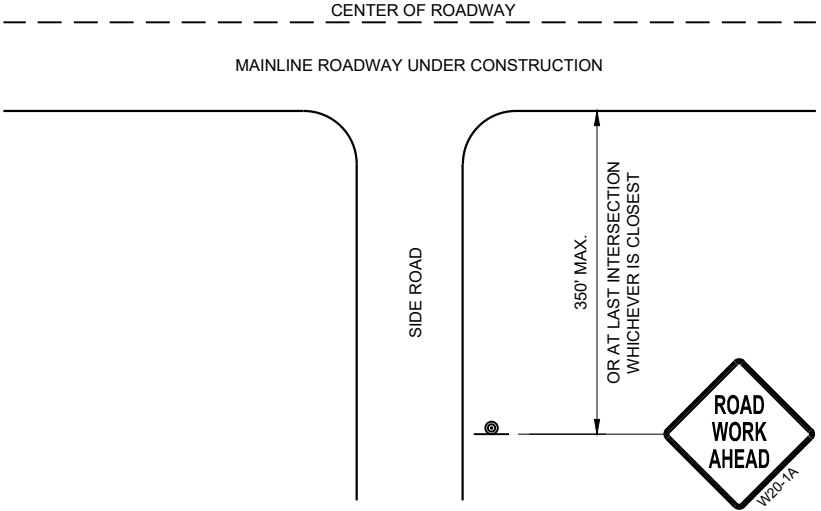
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

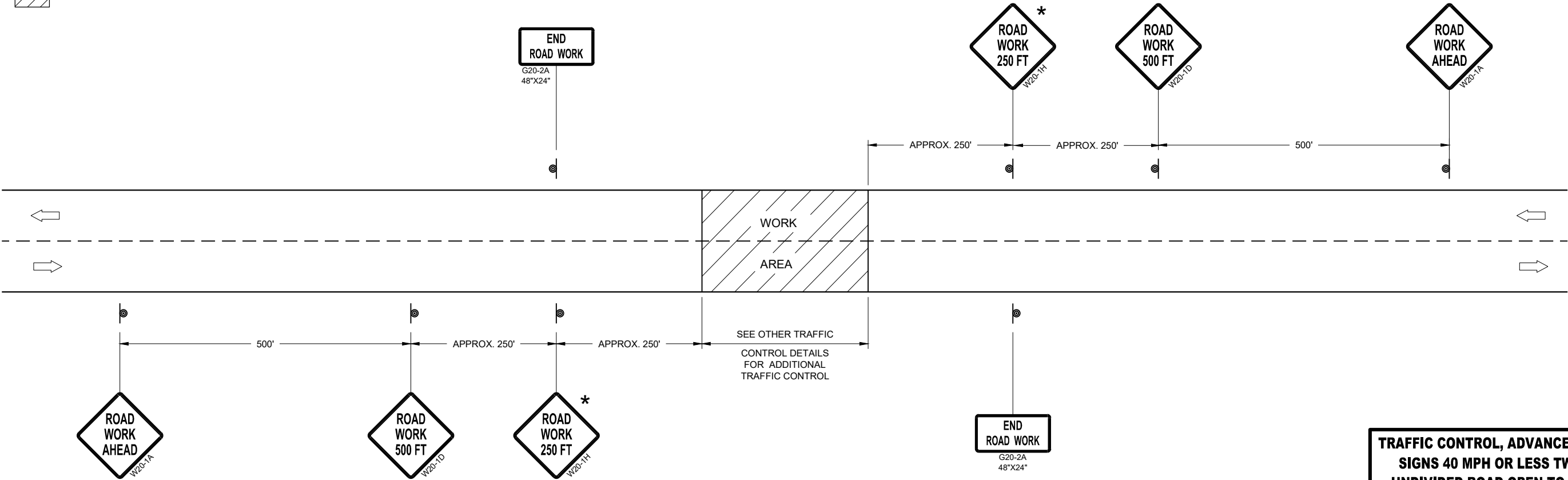
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL



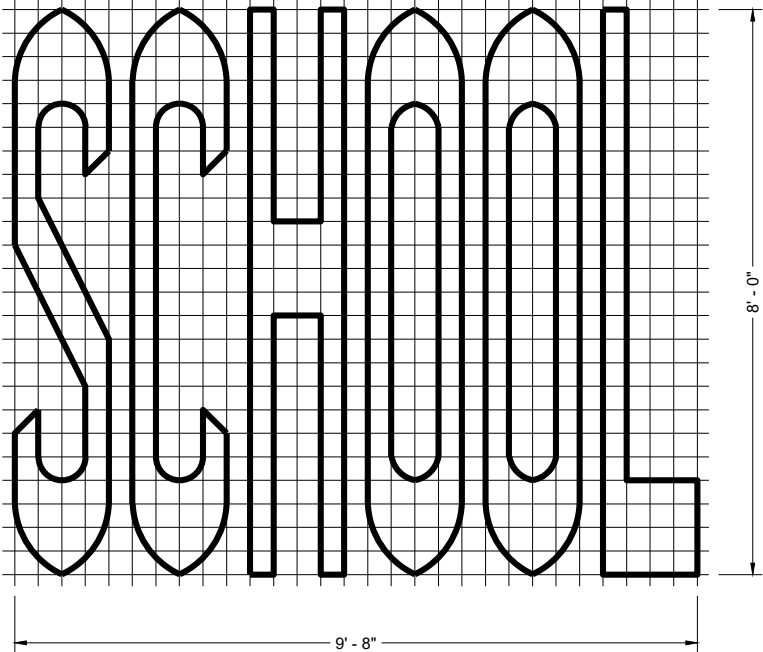
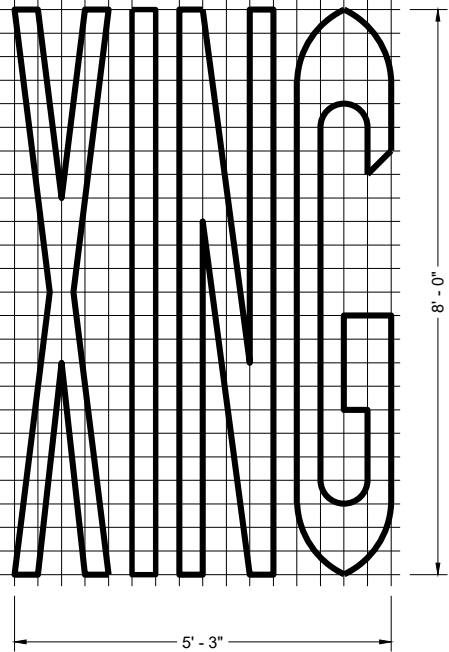
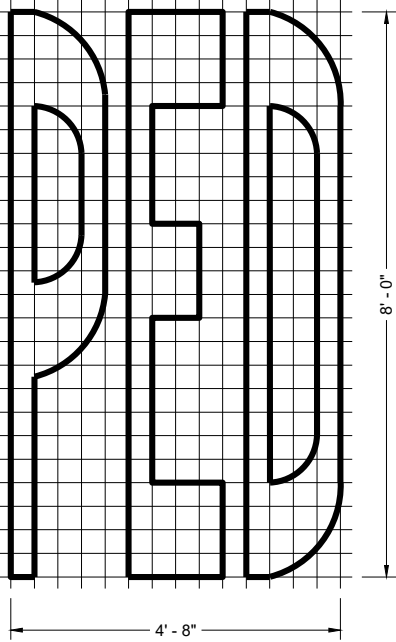
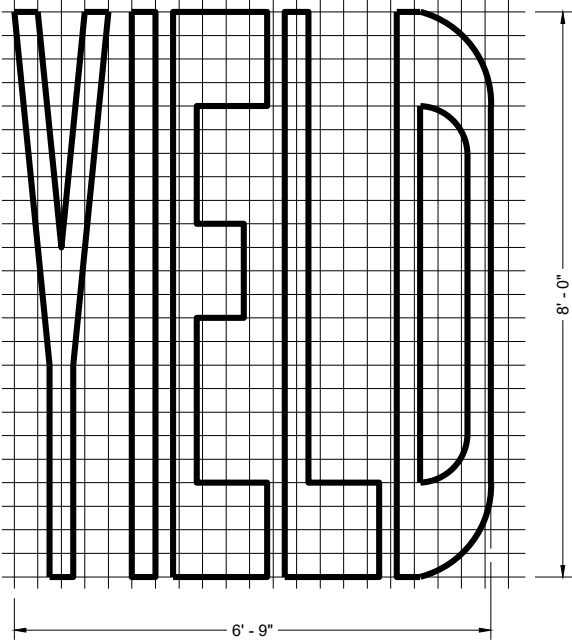
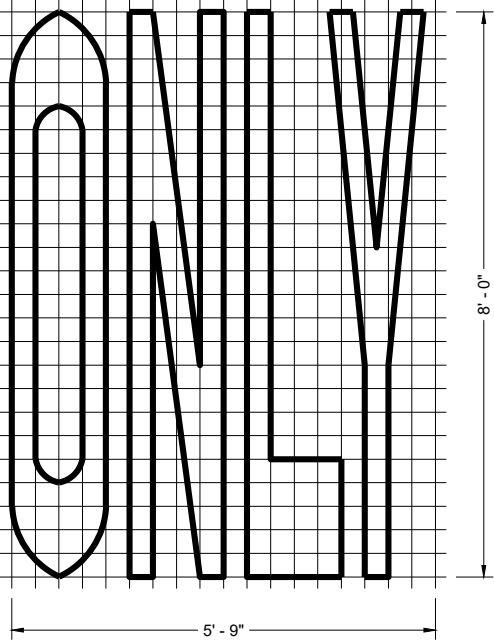
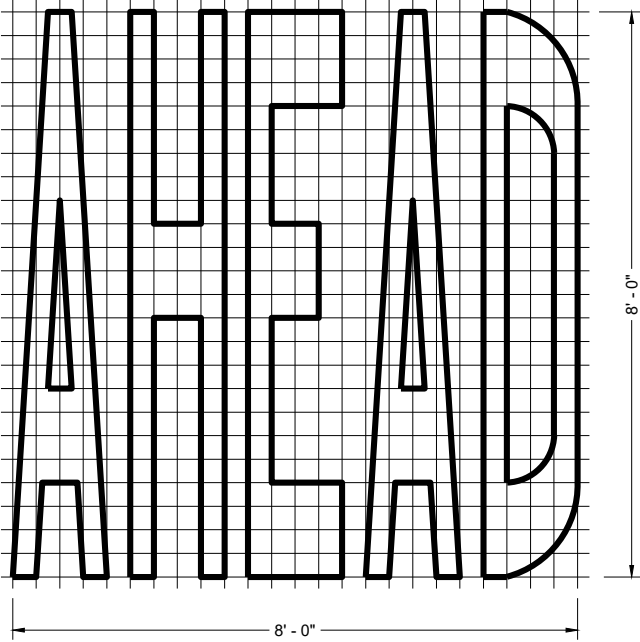
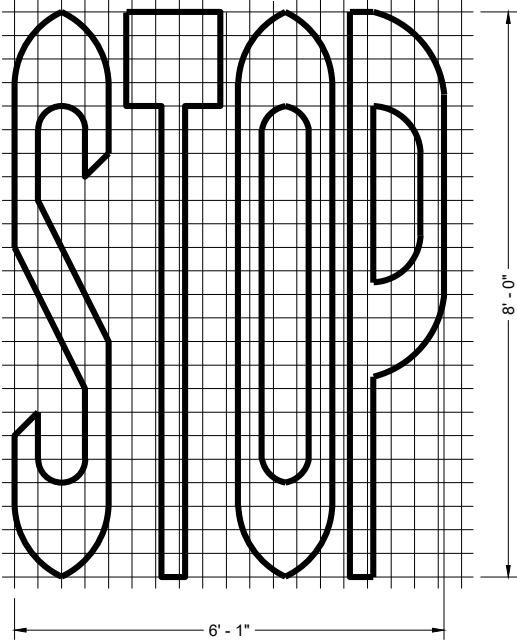
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

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

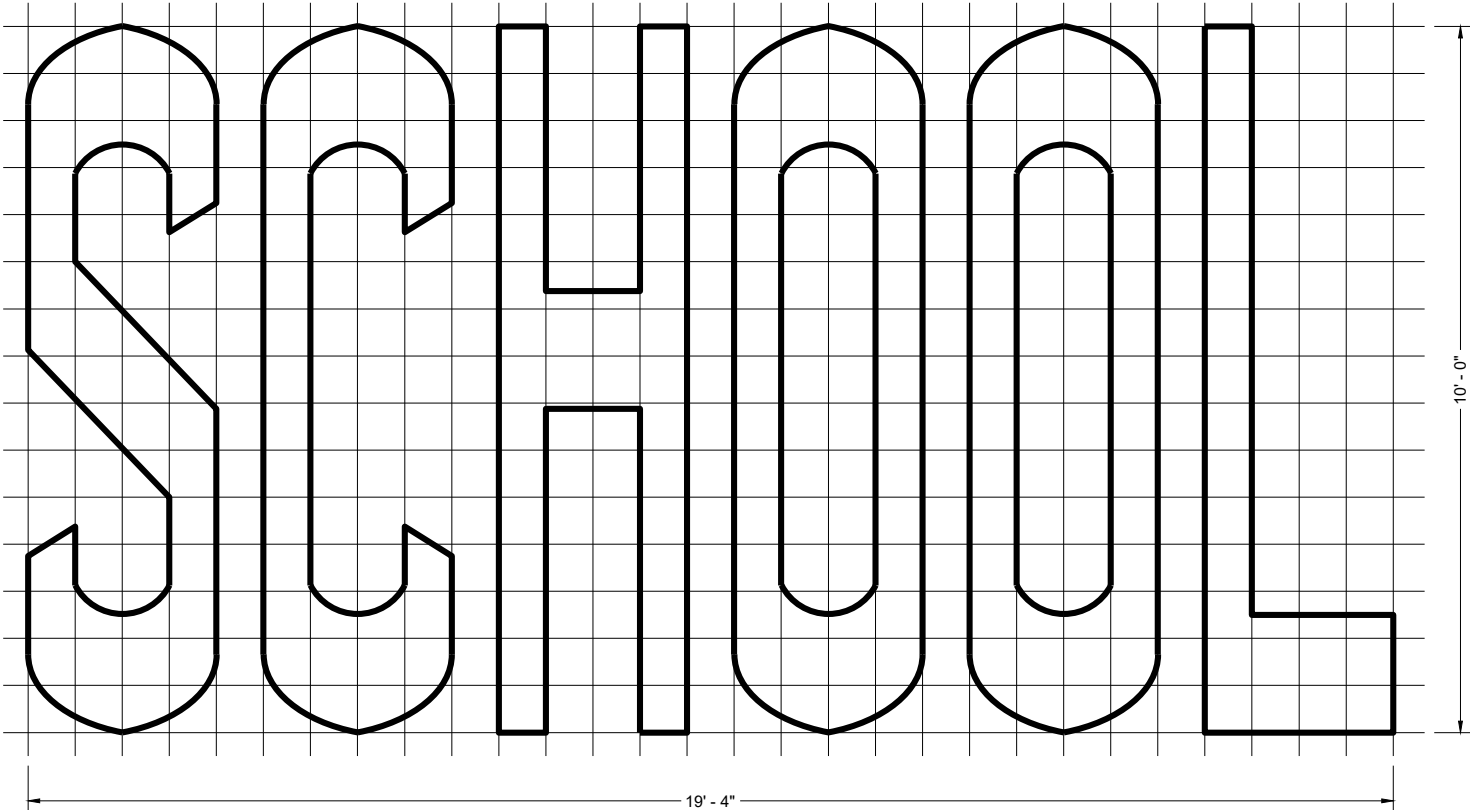
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 166

FHWA



SINGLE LANE

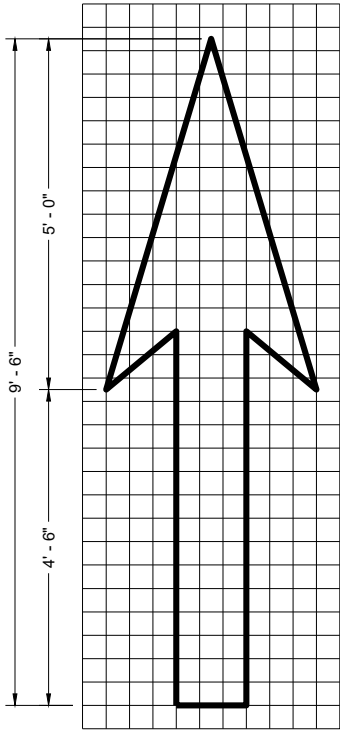


TWO - LANE

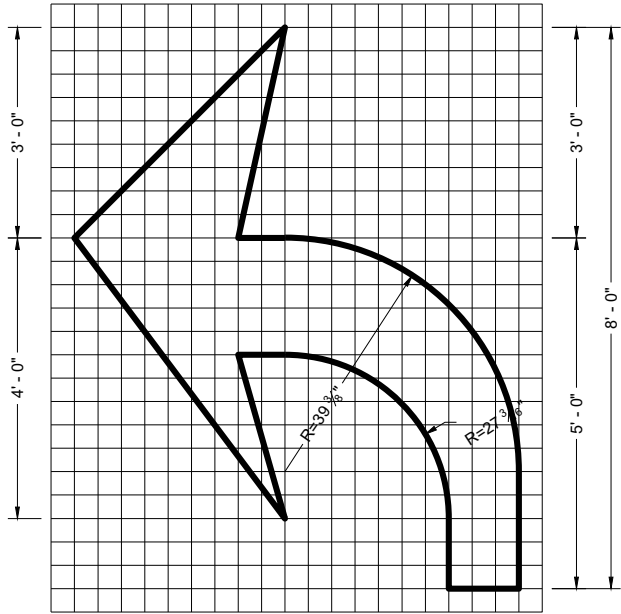
GENERAL NOTES

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

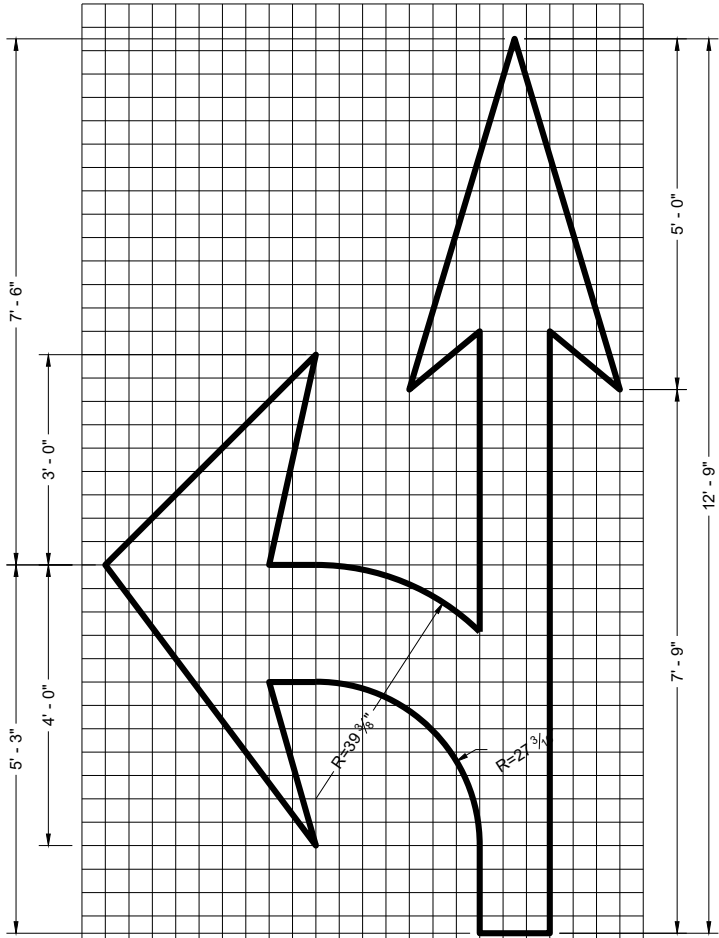
PAVEMENT MARKING WORDS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2024 DATE	/S/ Jeannie Silver STATE SIGNING AND MARKING ENGINEER
FHWA	167



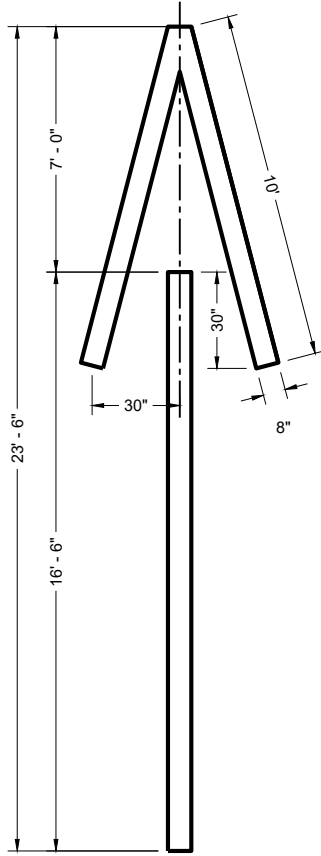
TYPE 1



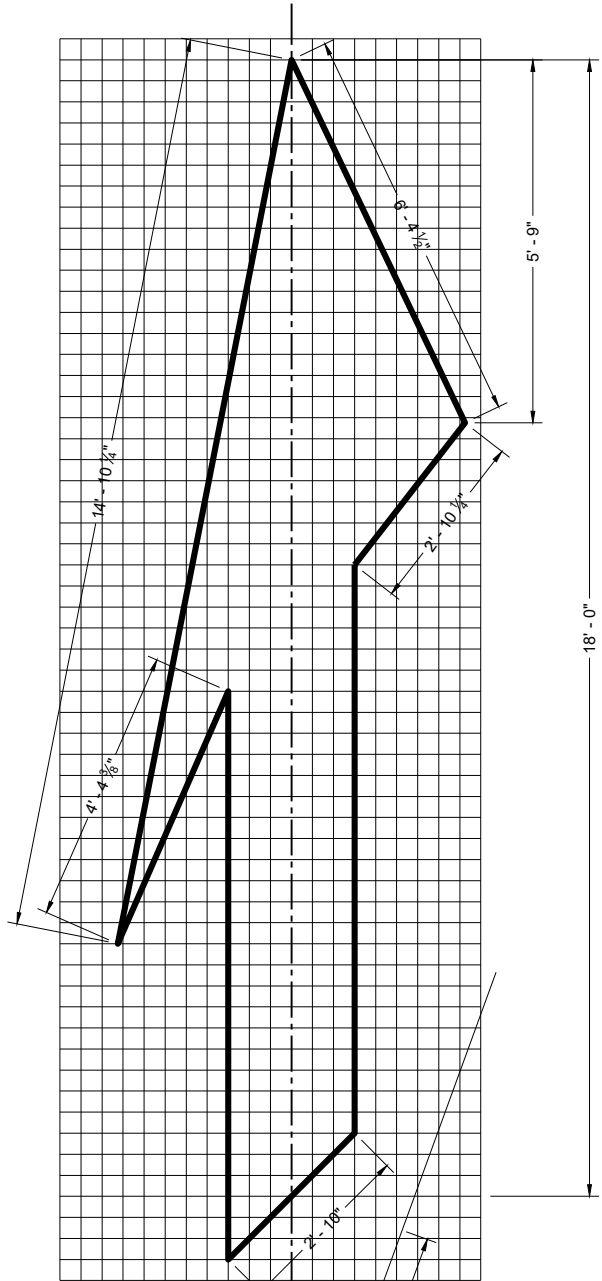
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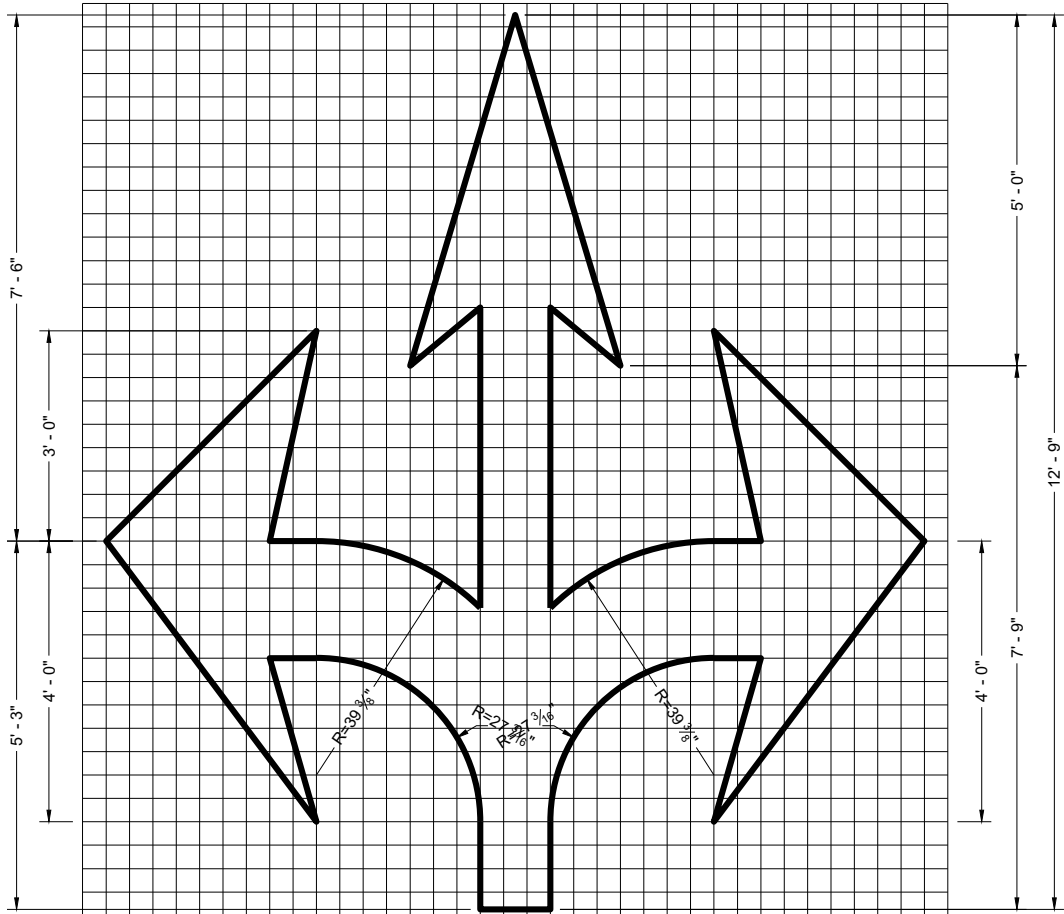
TYPE 3



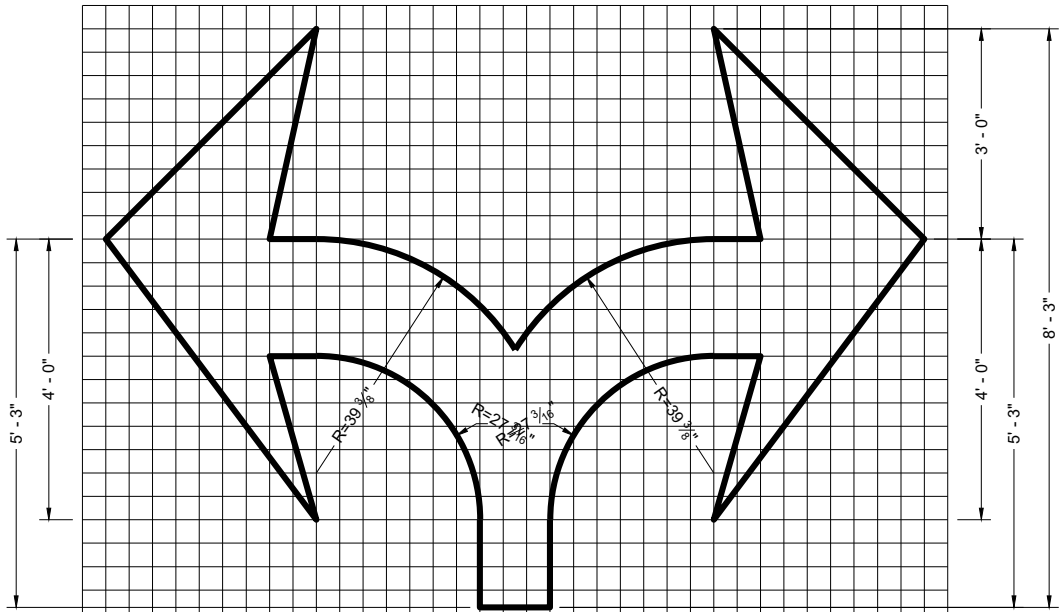
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

GENERAL NOTES

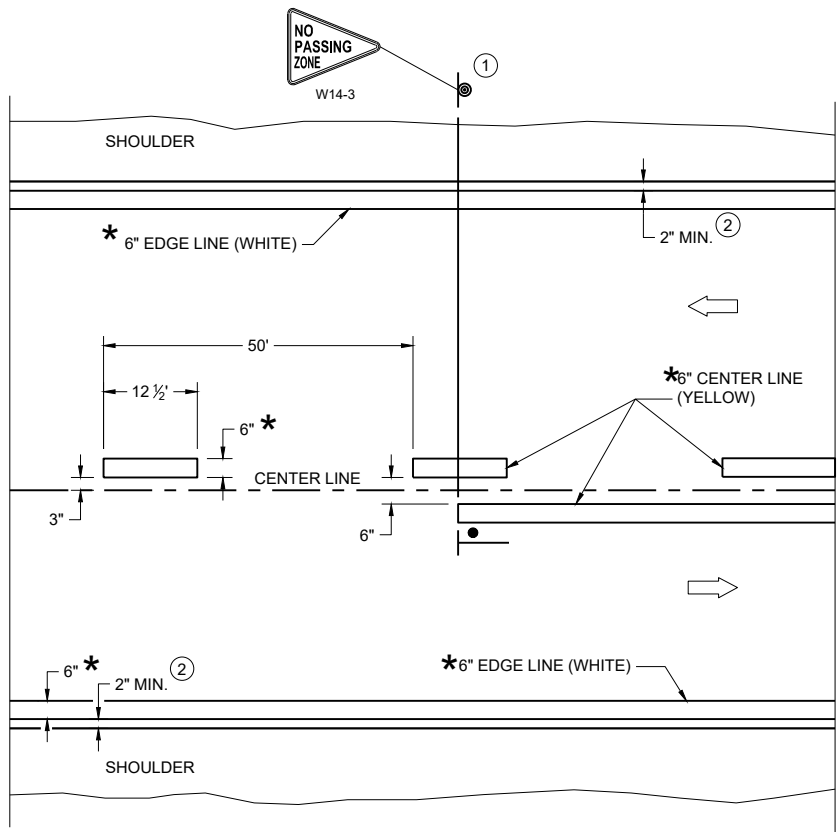
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING ARROWS

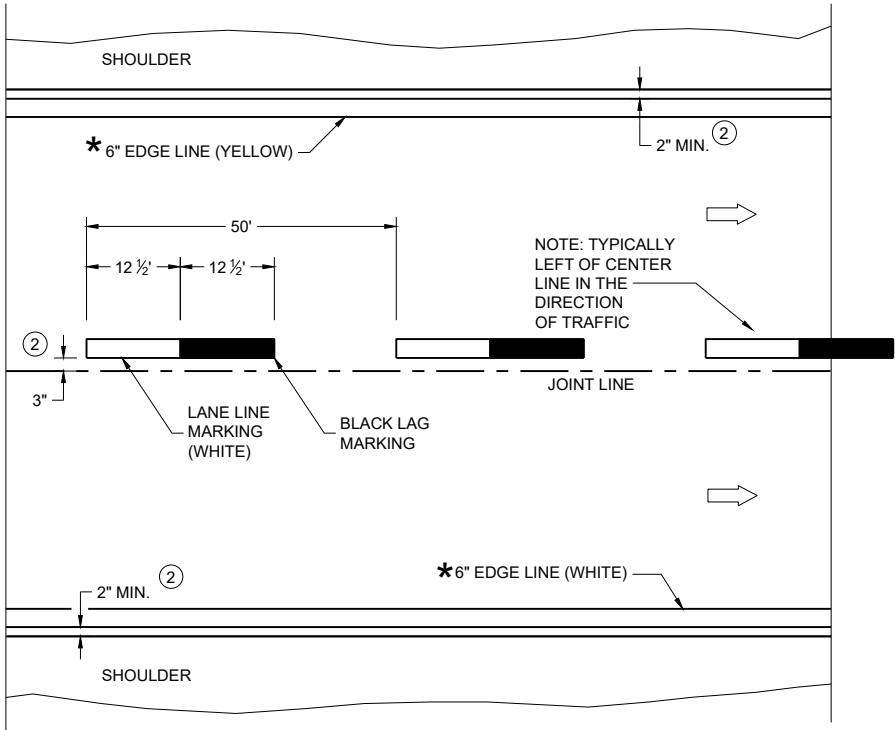
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 /S/ Jeannie Silver
DATE STATE SIGNING AND MARKING ENGINEER

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

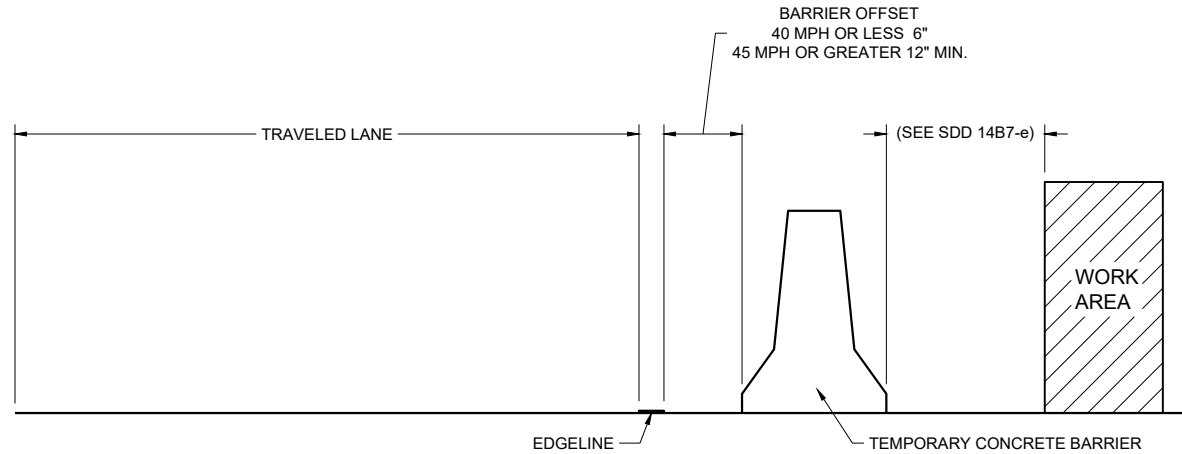
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

LEGEND

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

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA 169	



TEMPORARY BARRIER OFFSET FROM EDGE LINE

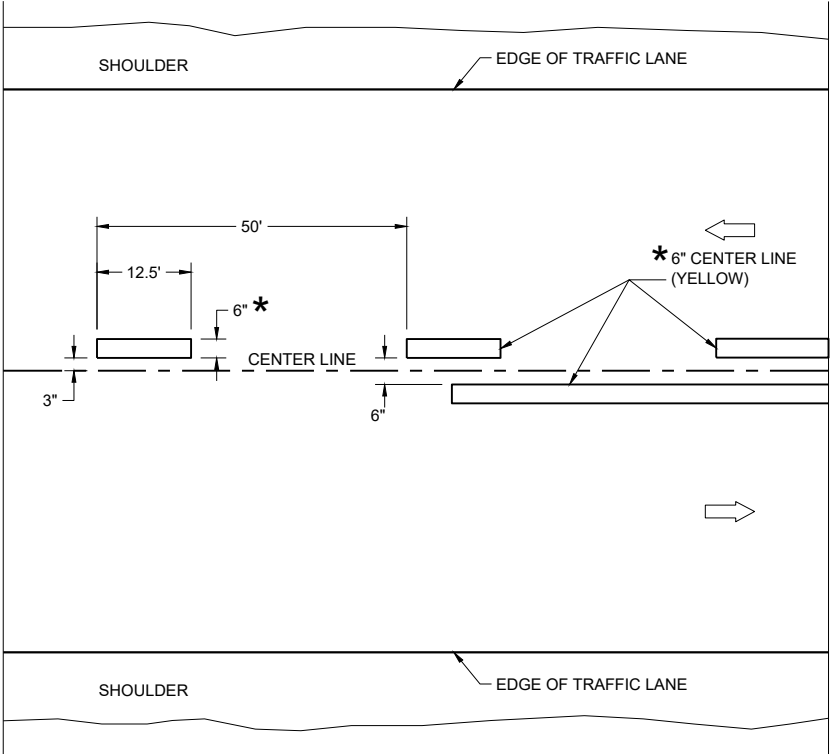
GENERAL NOTES

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

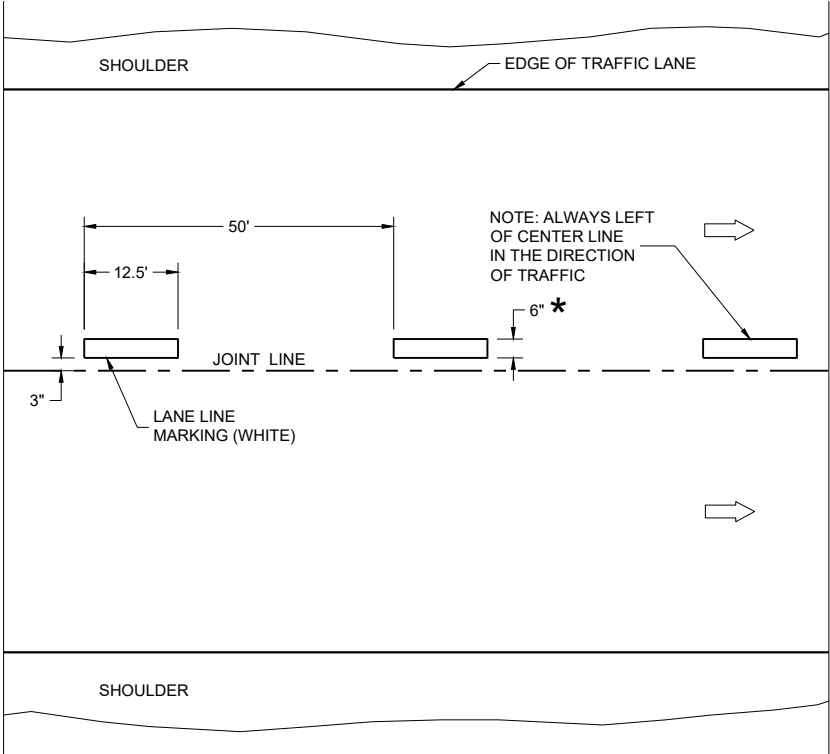
LEGEND

DIRECTION OF TRAFFIC

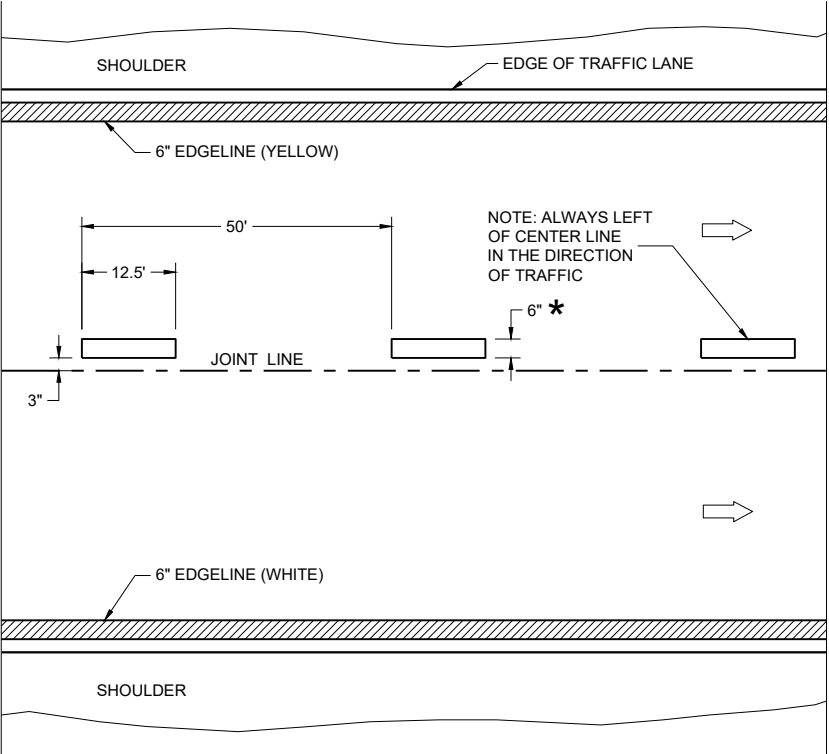
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



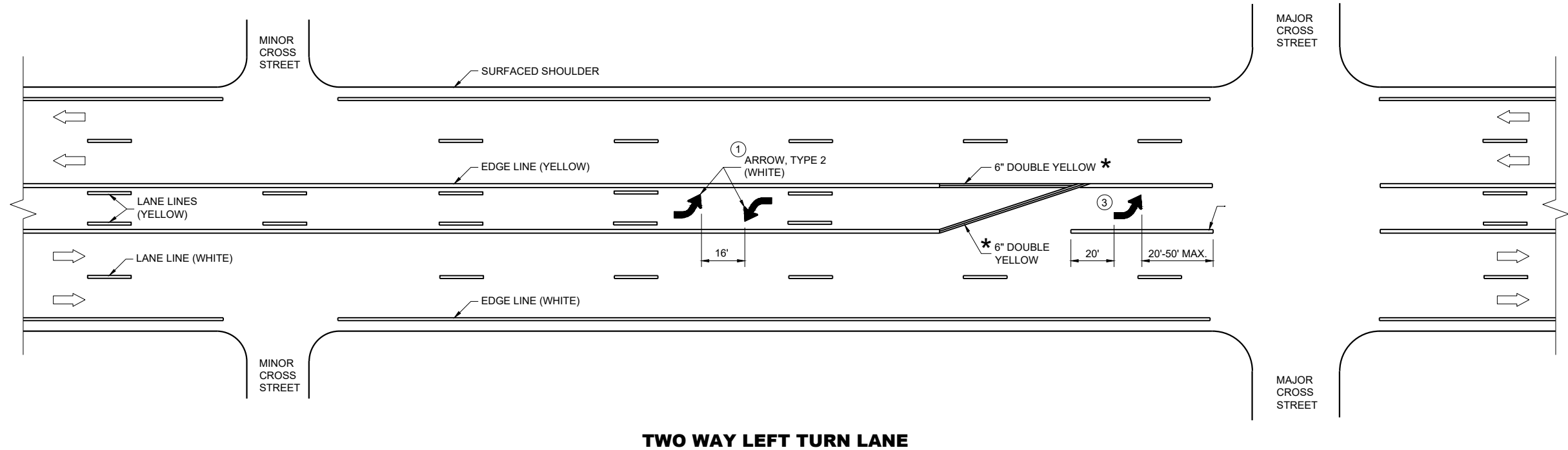
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

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



GENERAL NOTES

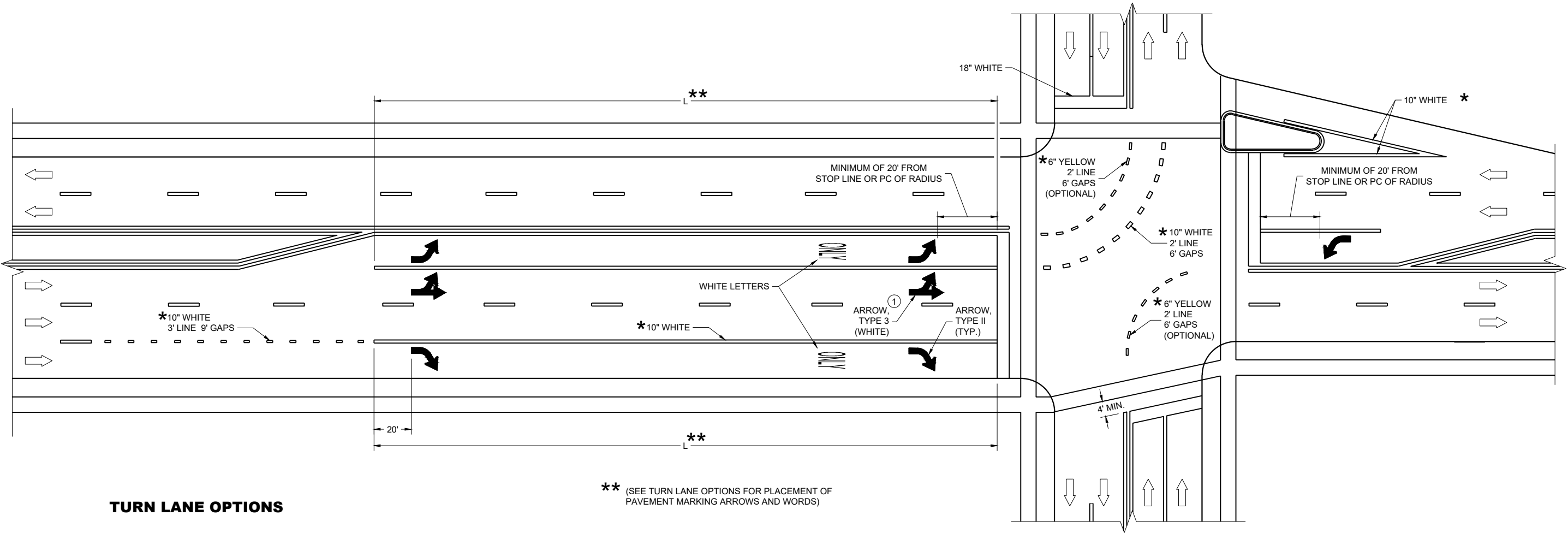
- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 10" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

➡ DIRECTION OF TRAFFIC

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

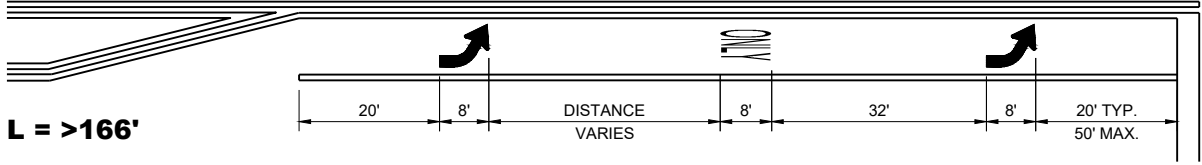
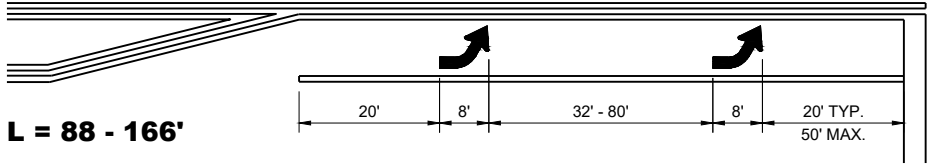
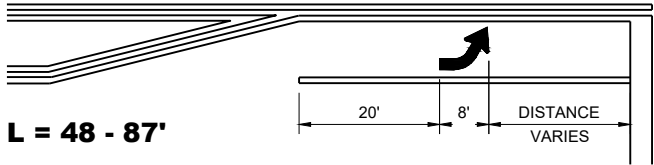
**PAVEMENT MARKING
(TURN LANES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TURN LANE OPTIONS

LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

GENERAL NOTES

① QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

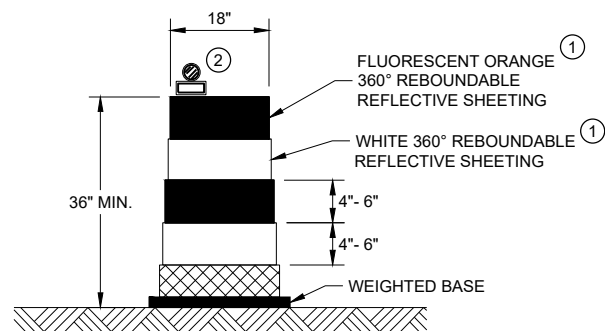
➡ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

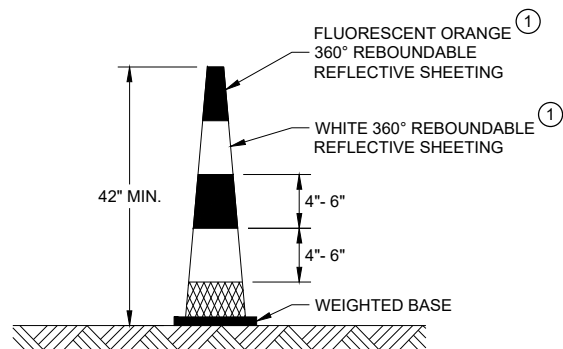
PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



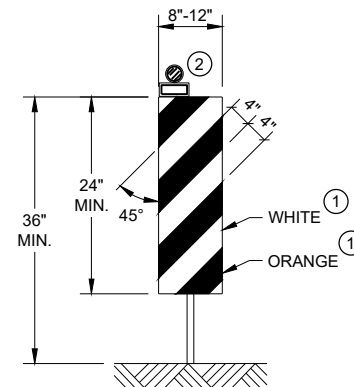
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



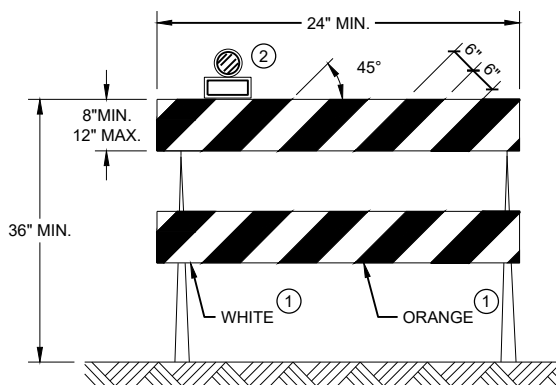
42" CONE

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



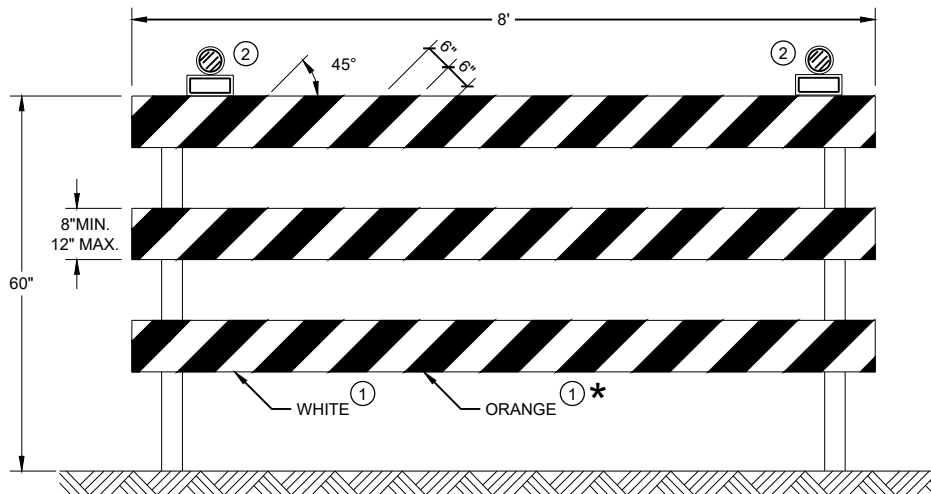
VERTICAL PANEL

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 173
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

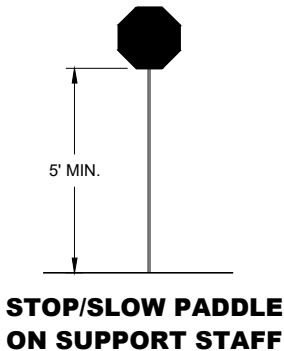
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- 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.

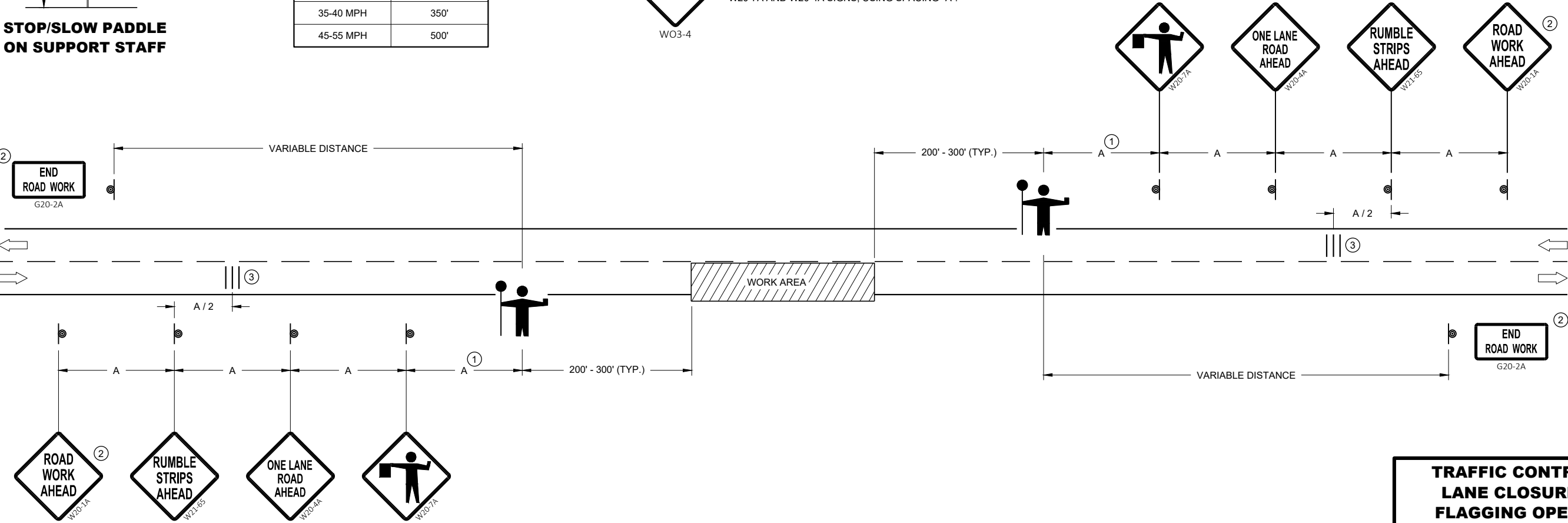


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

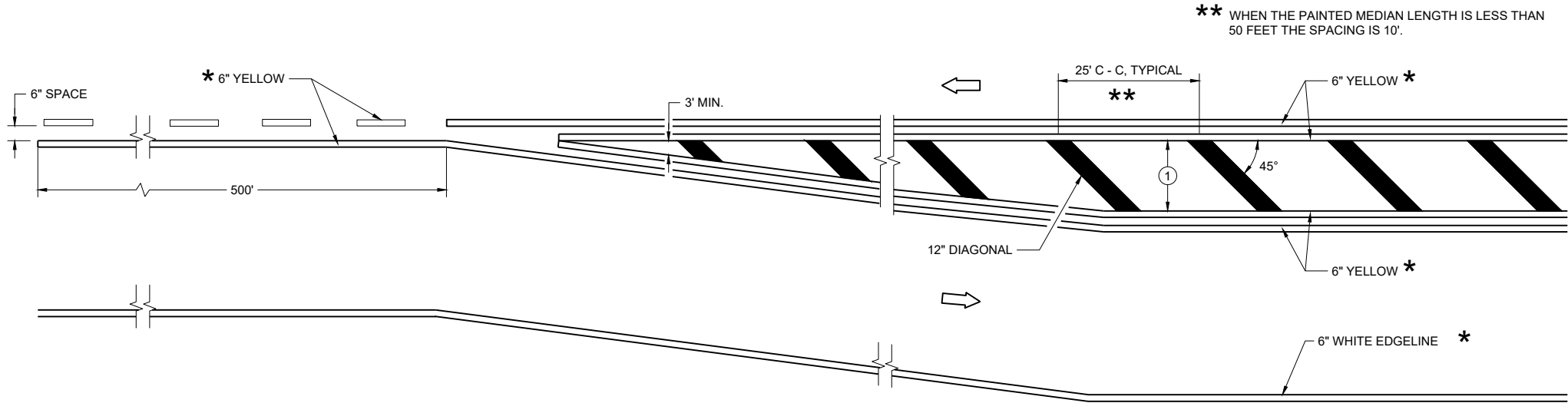
SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



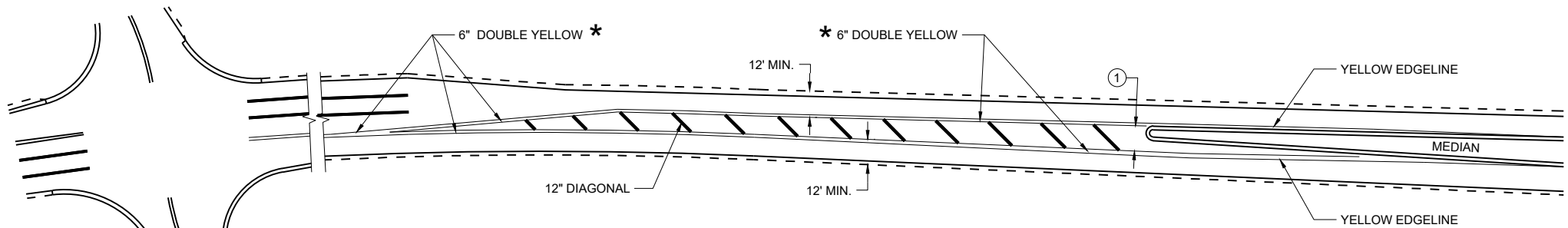
USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



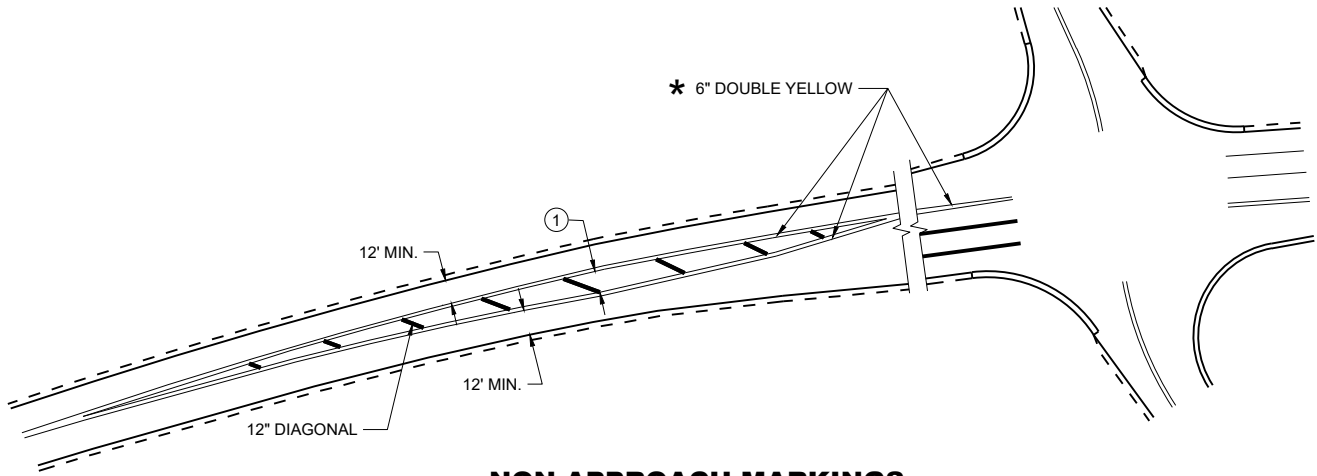
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 174
FHWA	



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

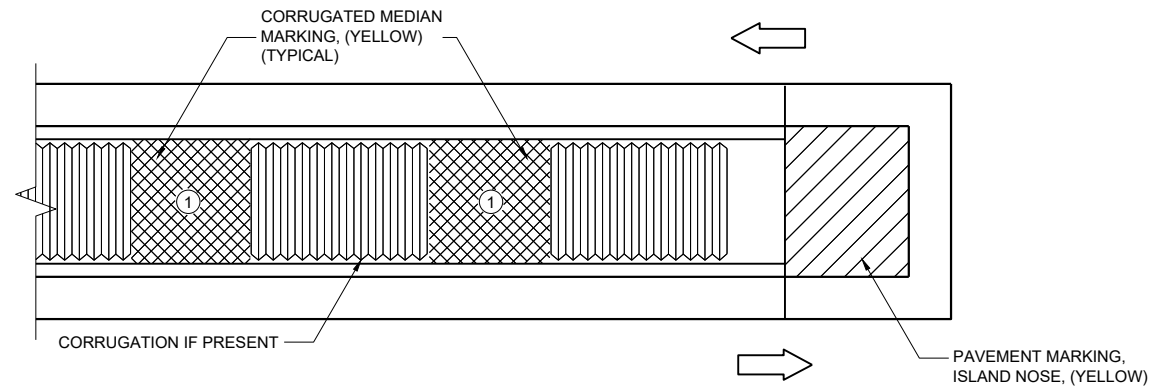
GENERAL NOTES

- ① DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT THE WIDEST POINT. OMIT DIAGONALS IF WIDTH IS LESS THAN 4 FEET.

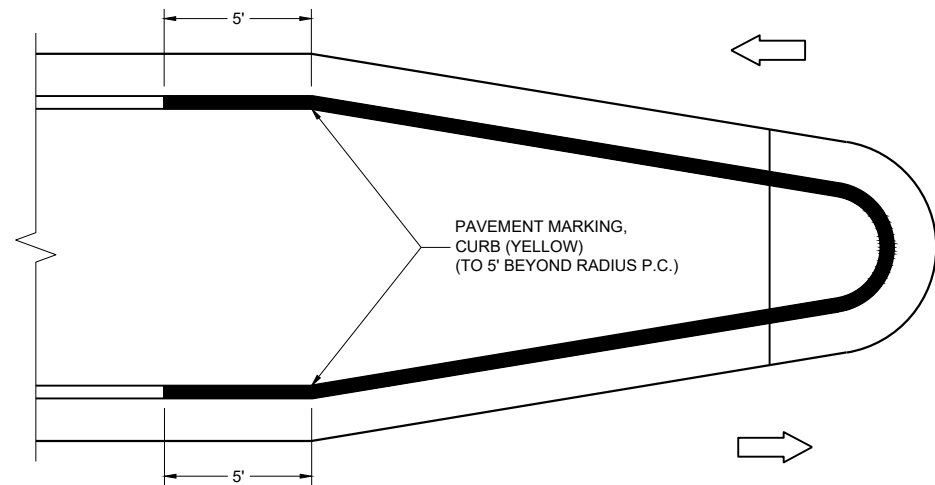
DIRECTION OF TRAVEL

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

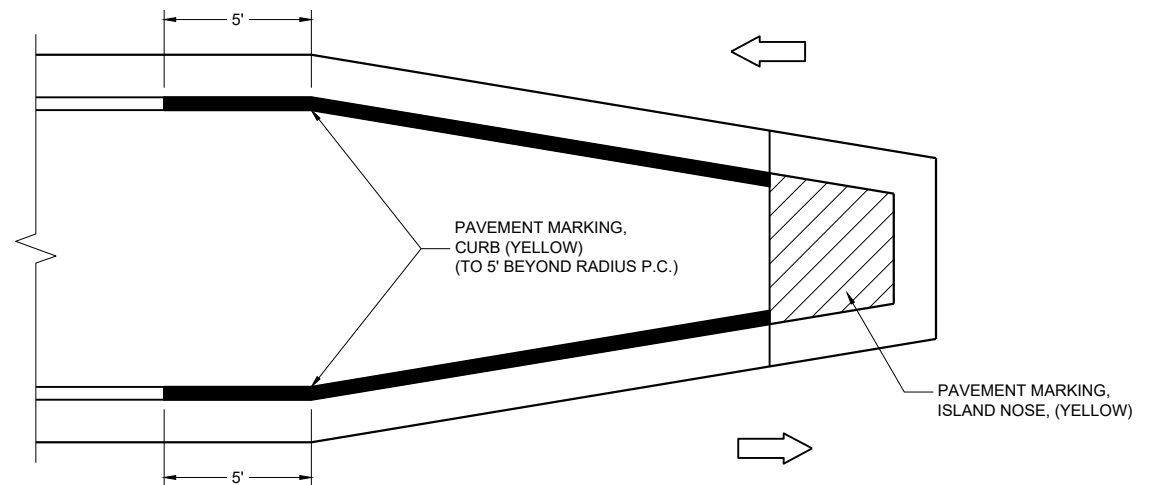
MEDIAN ISLAND PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	175



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

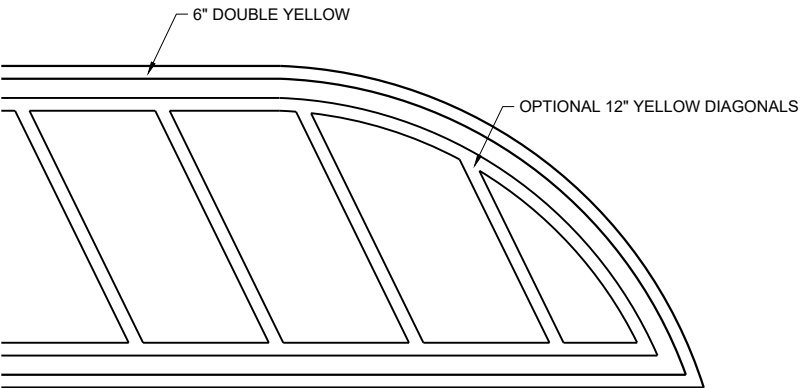
**TYPICAL PLACEMENT OF
PAVEMENT MARKING ON MEDIAN ISLANDS**

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



FLUSH MEDIAN ISLAND NOSE

**PAVEMENT MARKINGS,
MEDIAN ISLAND NOSE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2024 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer

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

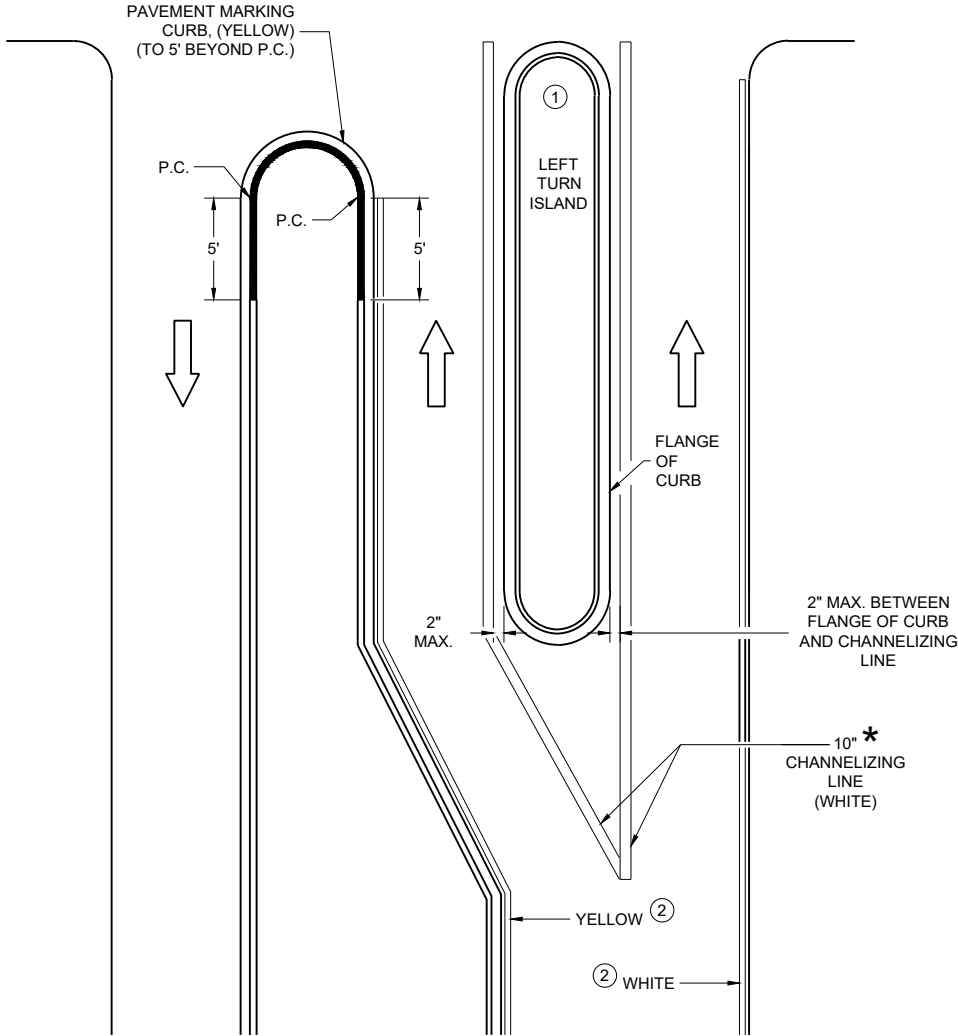
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

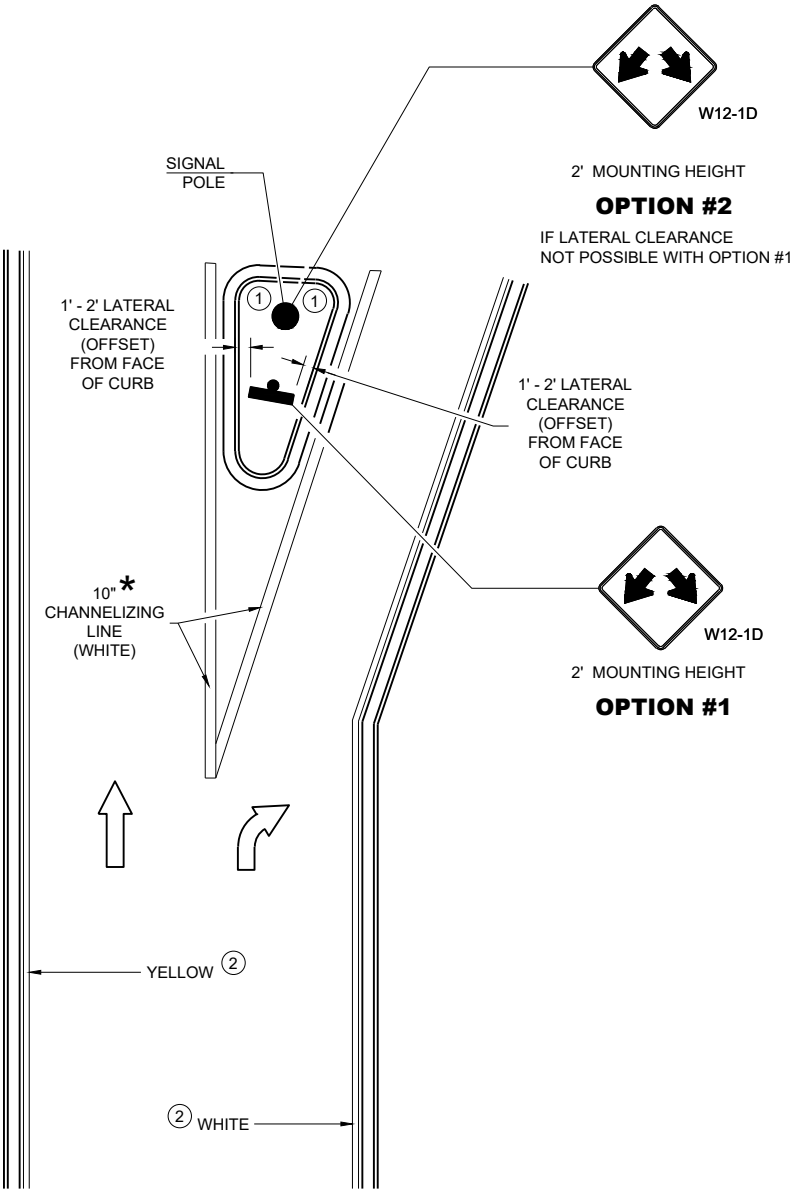
APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.

- ① MARK CURB NOSES YELLOW.
- ② MARK ACCORDING TO TABLE.
- ③ CHEVRON MAY BE OMITTED IF LESS THAN 4" WIDE

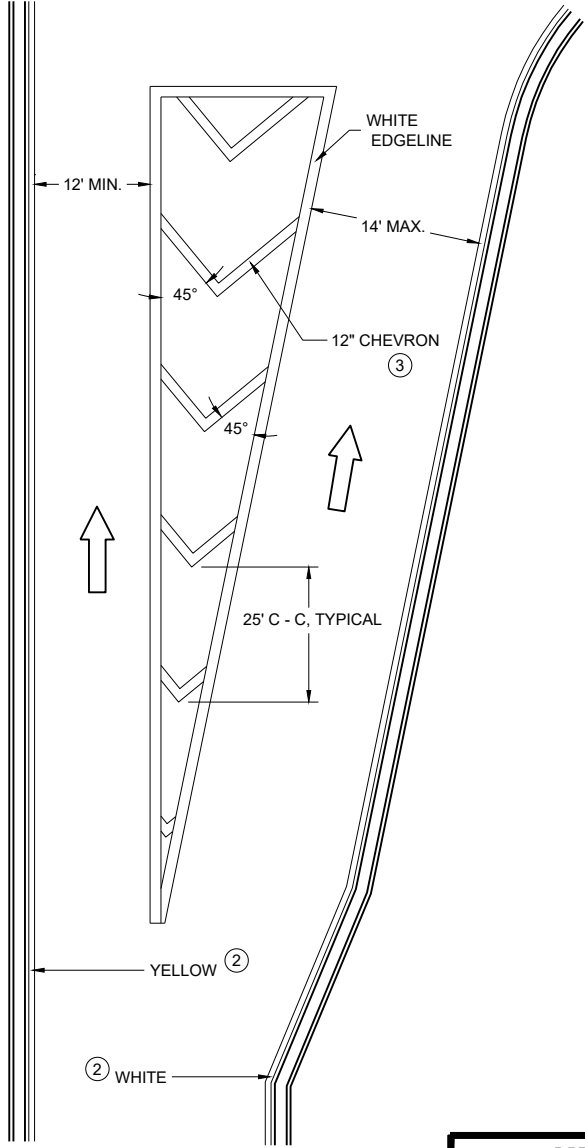
➡ DIRECTION OF TRAVEL



LEFT TURN & MEDIAN ISLAND



RIGHT TURN ISLAND



TURN LANE DETAIL

MEDIAN PAVEMENT MARKINGS, DOUBLE ARROW WARNING SIGN PLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2024 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer

FHWA 177

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

SIGN ON TEMPORARY SUPPORT
- 

DIRECTION OF TRAFFIC

GENERAL NOTES

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

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

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

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

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

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

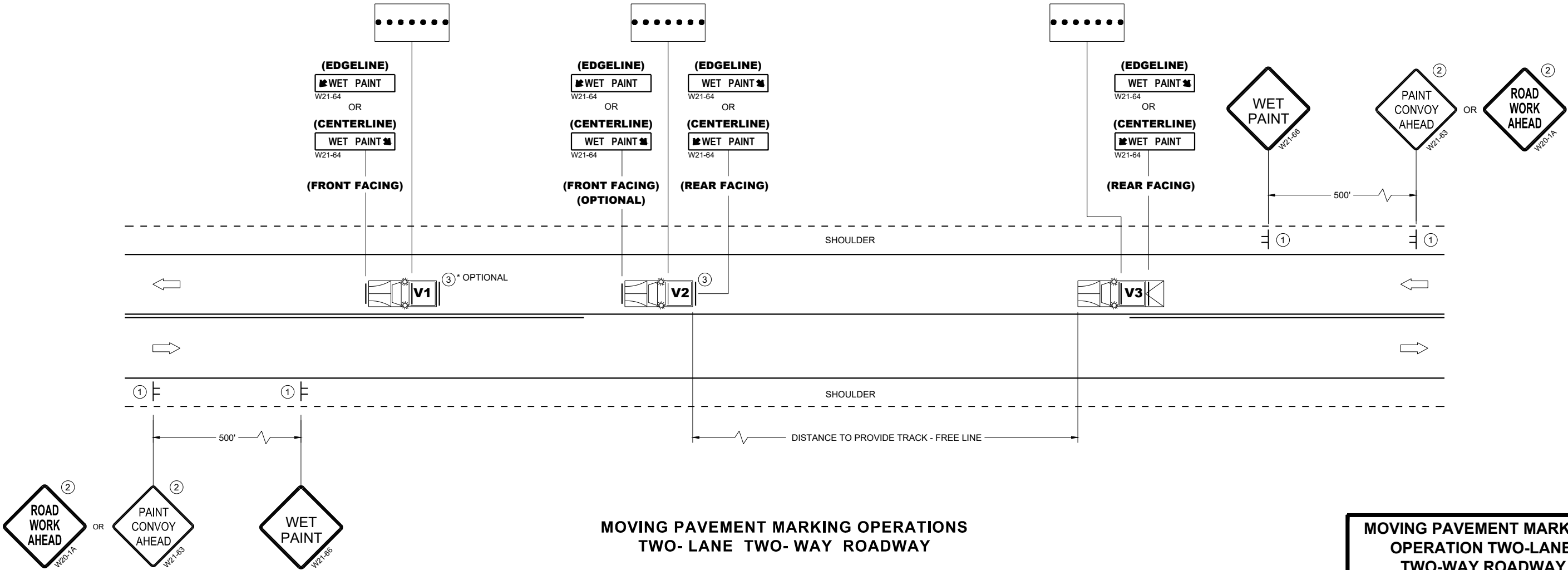
WORKERS SHALL NOT PERFORM WORK FROM ANY SHADOW OR PROTECTION VEHICLES.

UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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

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

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



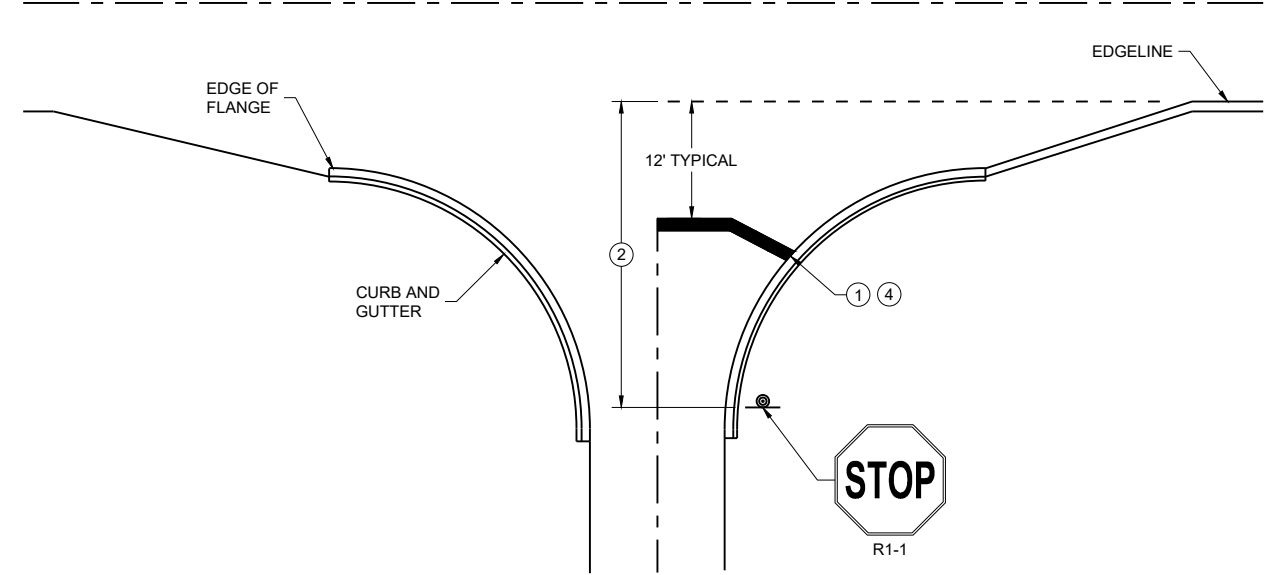
MOVING PAVEMENT MARKING OPERATIONS
TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

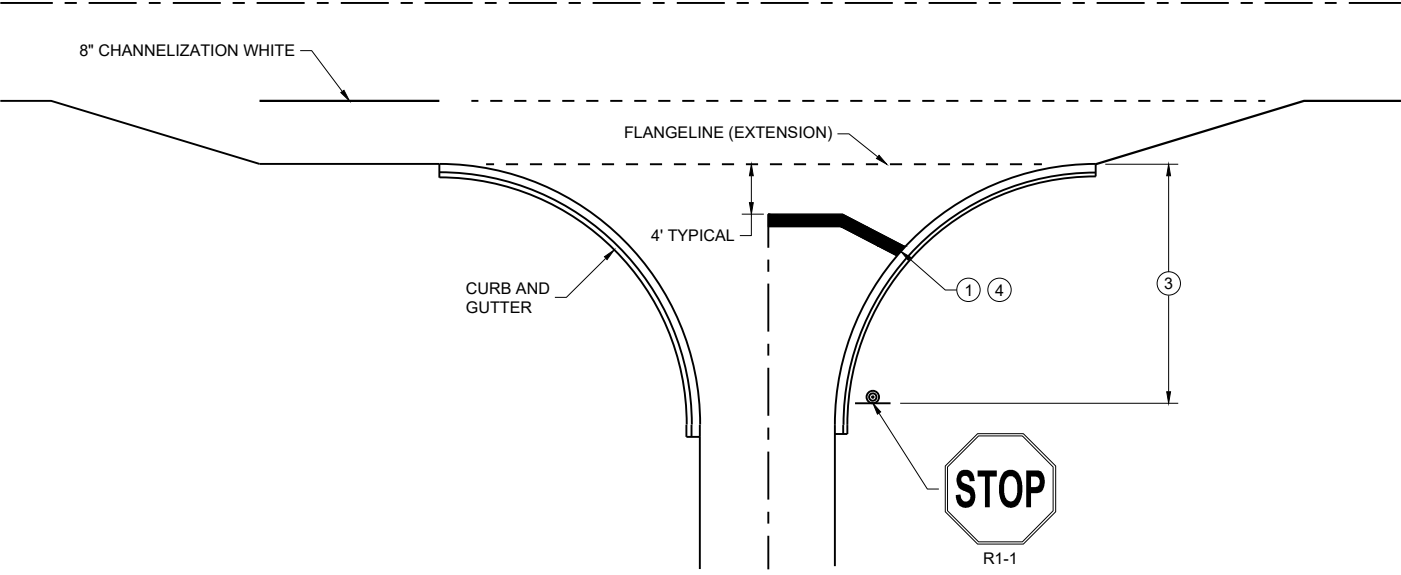
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

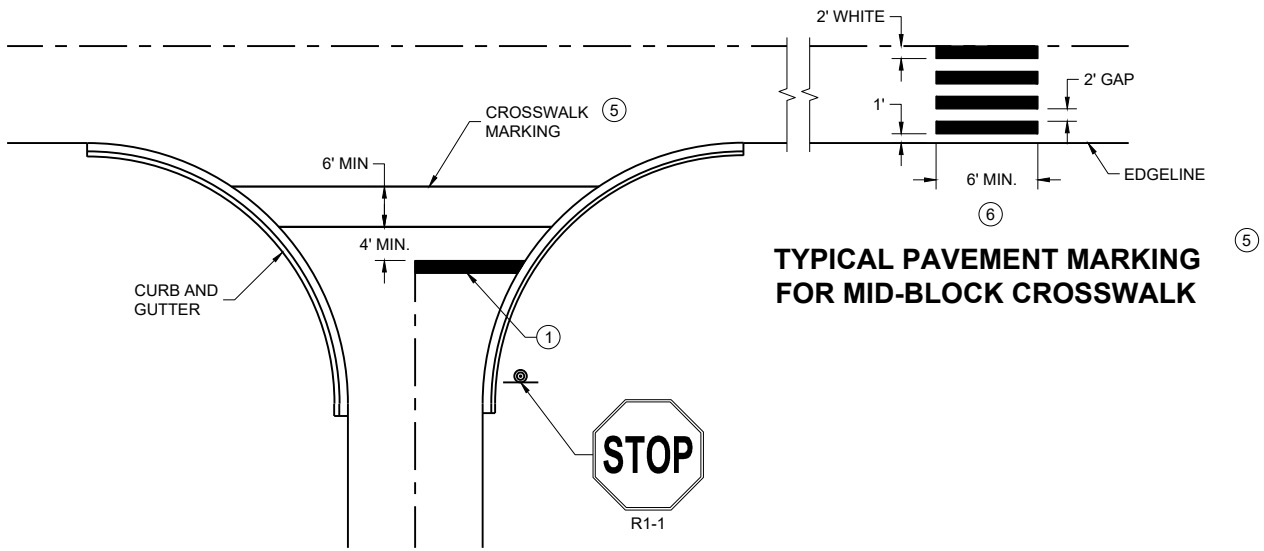
FHWA



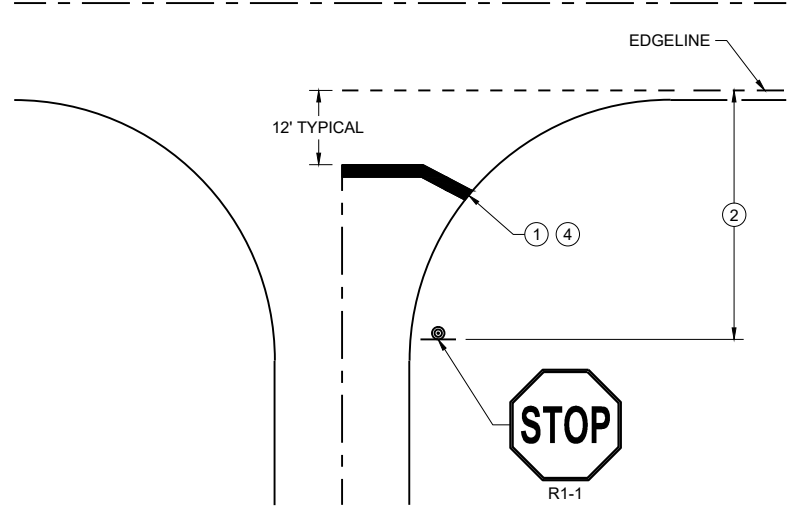
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS 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 EDGELINE LOCATION.

- 1 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- 2 NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- 3 NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
- 4 MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- 5 LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES.
- 6 POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS

STOP LINE AND CROSSWALK PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2024 DATE	/S/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

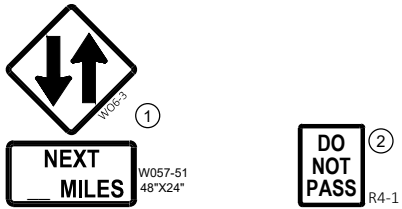
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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

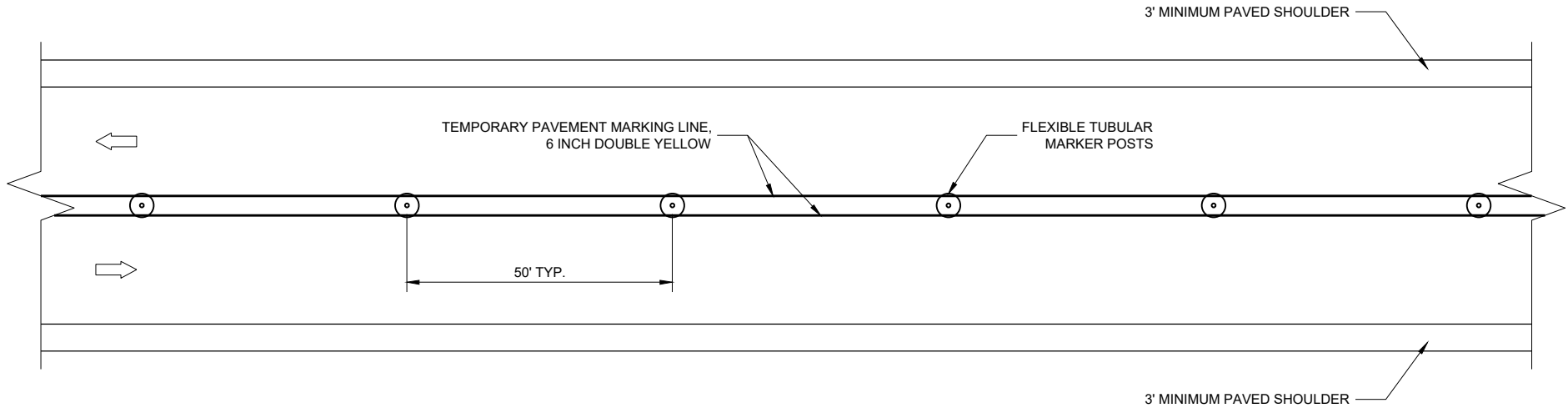
THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS.

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

COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING LINE, 6 INCH DOUBLE YELLOW.



- ① THE WO6-3 AND WO57-51 SHALL BE LOCATED 200 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND / OR 500 FEET BEYOND ANY SIDE ROAD. THE R4-1 SHALL BE LOCATED 1000 FEET BEYOND THE WO6-3 AND THE WO57-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN THE SIGNS.
- ② CONVENTIONAL: 24" X 30"
FREEWAY AND EXPRESSWAY: 36" X 48"



TWO LANE, TWO WAY OPERATION

TRAFFIC CONTROL
TWO LANE TWO WAY
OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 180

FHWA

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

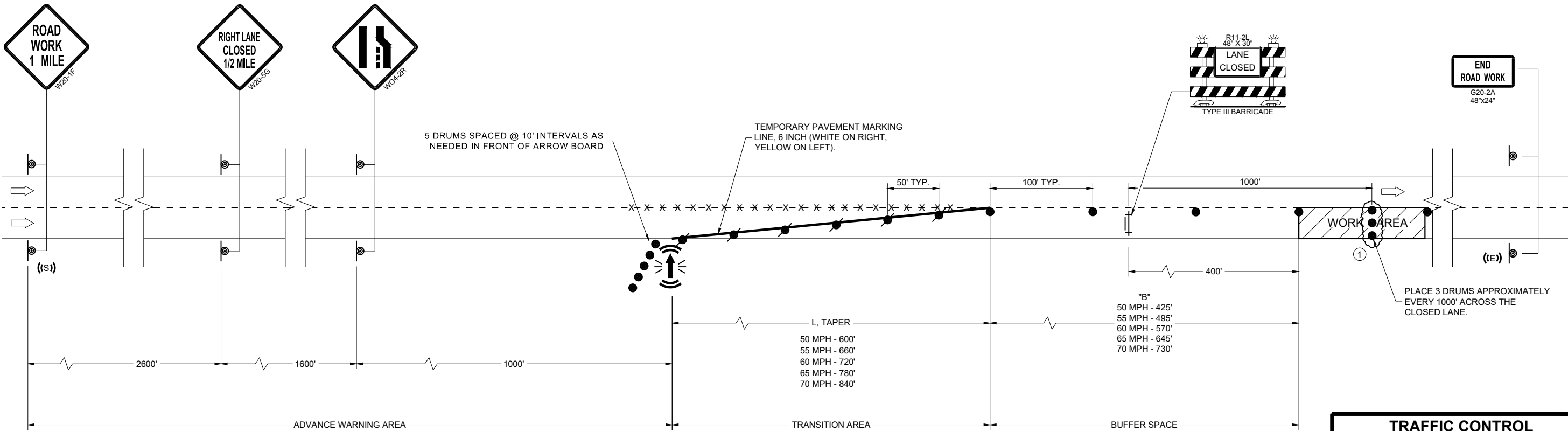
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

① DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER

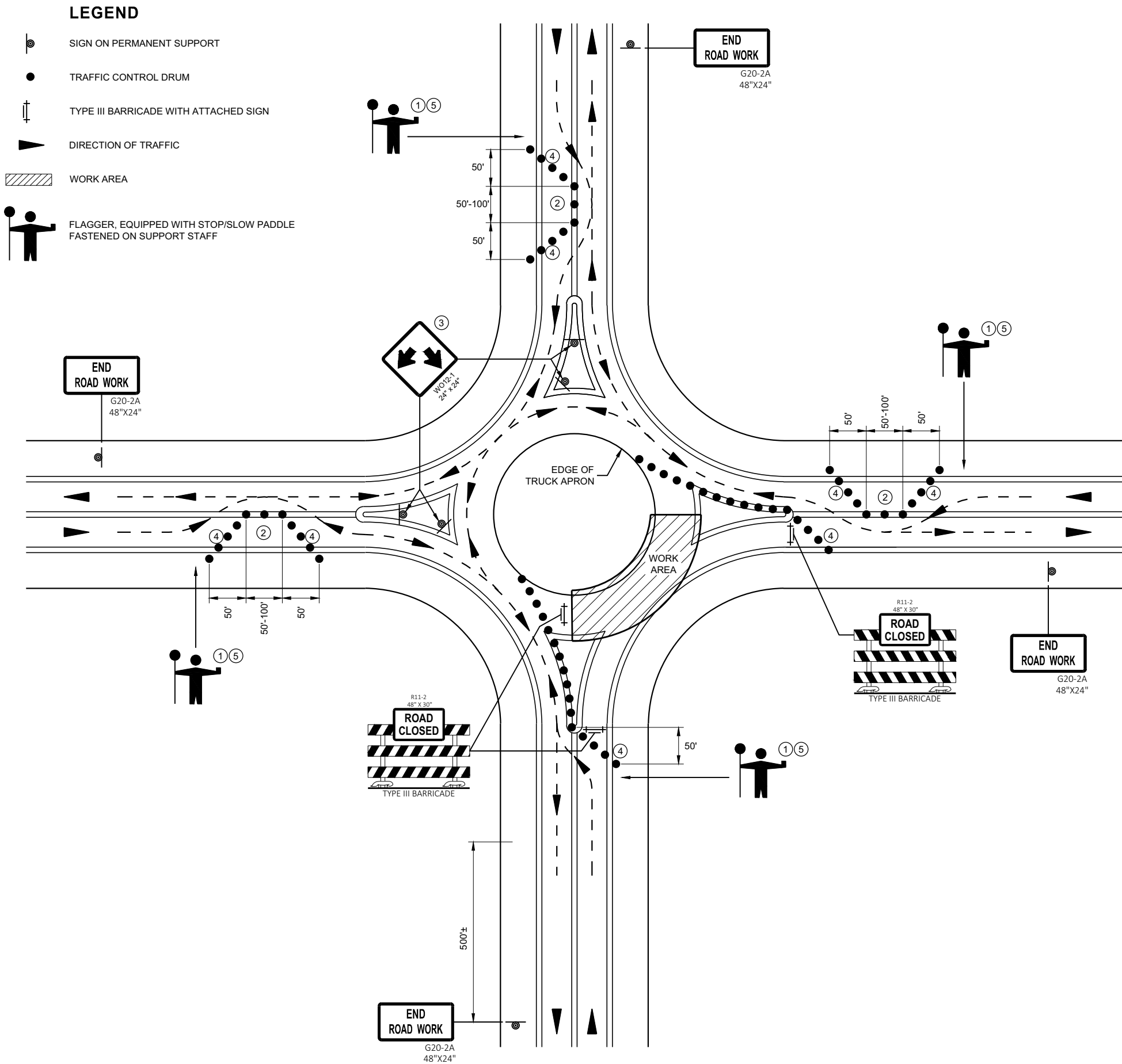


TRAFFIC CONTROL
LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA



GENERAL NOTES

ALL SIGNS ARE 48"X48" BLACK ON ORANGE UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 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.

ONLY ONE QUADRANT OF TRAFFIC SHALL BE RELEASED AT A TIME.

FLAGGERS SHALL CONTROL TRAFFIC ON ALL APPROACHES OF THE ONE-LANE ROUNDABOUT. ONE FLAGGER SHALL BE DESIGNATED LEAD FLAGGER.

NIGHT TIME WORK REQUIRES ADDITIONAL LIGHTING AT FLAGGER STATION(S).

- ① FLAGGERS SHALL BE IN DIRECT RADIO CONTACT AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.
- ② ADJUST CHANNELIZING DEVICES TO ACCOMMODATE FOR TURNING RADIUS OF LARGE VEHICLES AS DIRECTED BY THE ENGINEER.
- ③ GUIDE SIGN WITH ROAD NAMES MAY BE USED IN LIEU OF THE DOUBLE ARROW (WO12-1) SIGN.
- ④ THE TWO- WAY TAPER SHOULD BE 50 FEET USING 5 EQUALLY SPACED DRUMS.
- ⑤ FOLLOW SDD 15C12 FOR FLAGGING AND ADVANCE WARNING.

RECOMMENDED REDUCED DRUM SPACING WITHIN ROUNDABOUT

MPH	DRUM SPACING (FT)
0-40	25
45-55	50

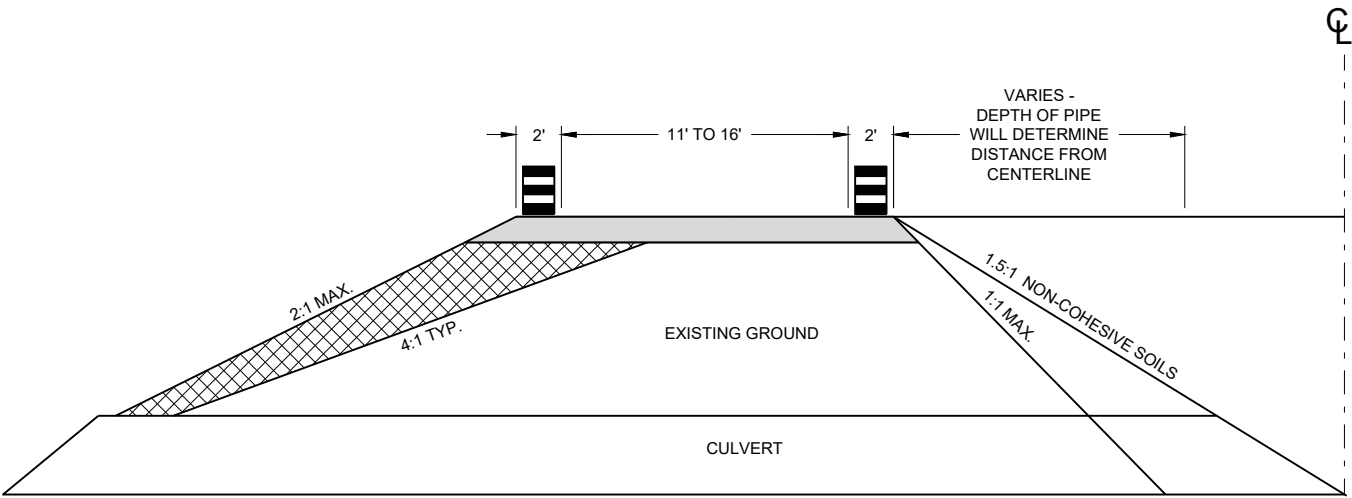
**TRAFFIC CONTROL,
FLAGGING OPERATION,
ROUNDABOUT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T
SAFETY ENGINEER 182

FHWA



CROSS SECTION

GENERAL NOTES

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.
USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.

ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

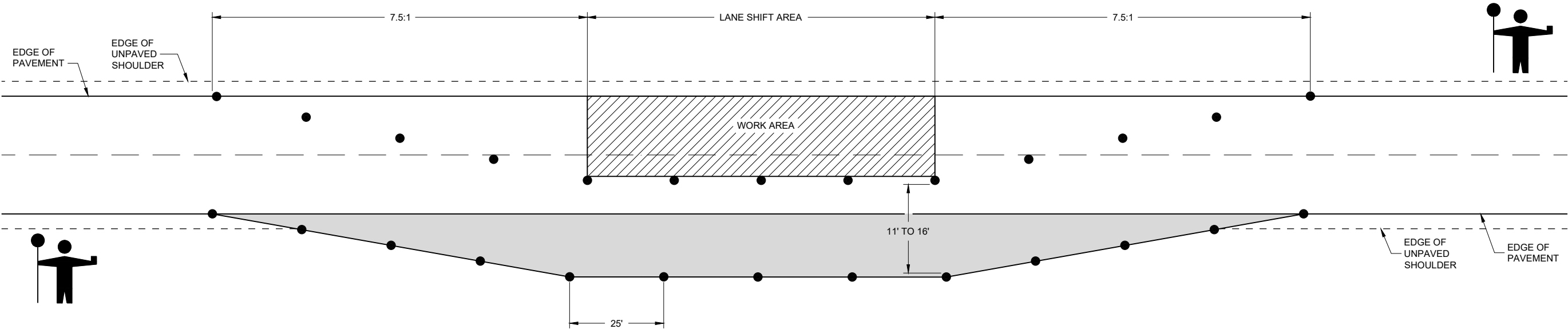
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

LEGEND

- DRUM WITHOUT WARNING LIGHT
- 6" BASE AGGREGATE DENSE 1 1/4" - INCIDENTAL TO LANE SHIFT ITEM
- FILL - INCIDENTAL TO LANE SHIFT ITEM
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL,
TEMPORARY LANE SHIFT
DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 183

FHWA

LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

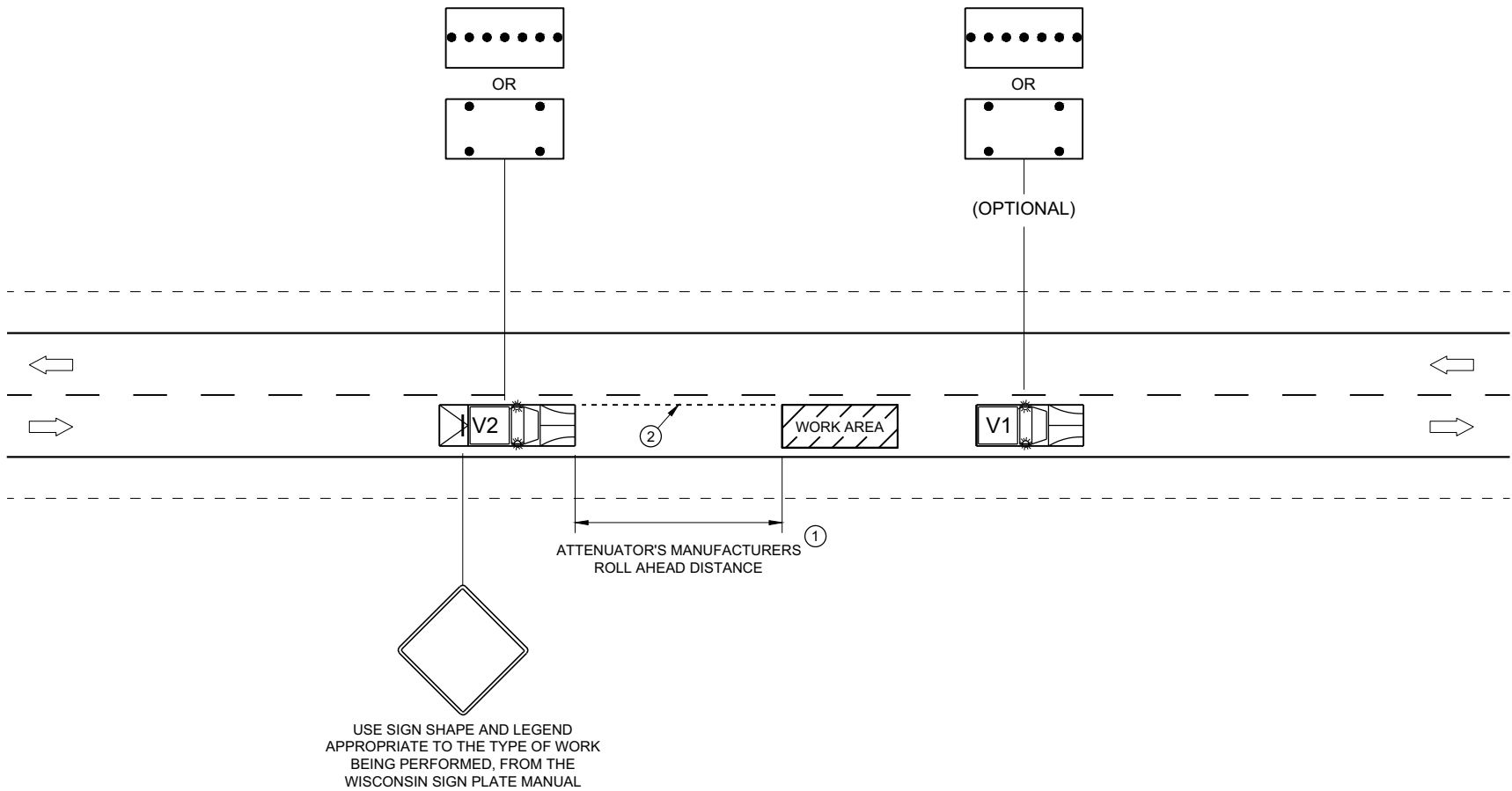
POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

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

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

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

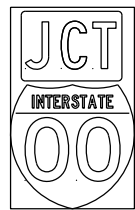


TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY

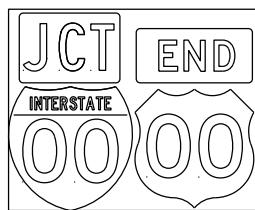
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE T SAFETY ENGINEER 184
FHWA

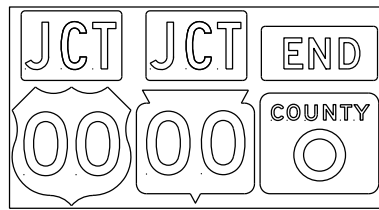
TYPICAL ASSEMBLIES



J1-1



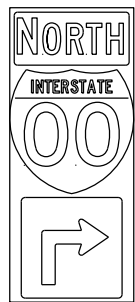
J1-2



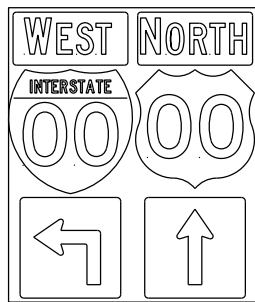
J1-3



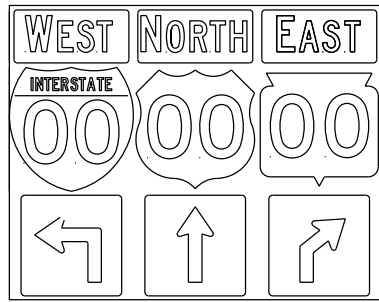
JR1-1



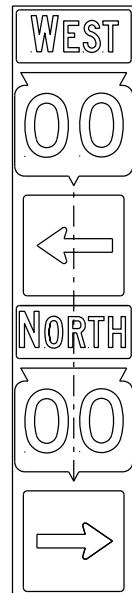
J2-1



J2-2

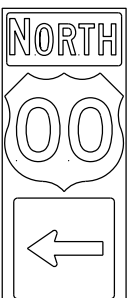


J2-3

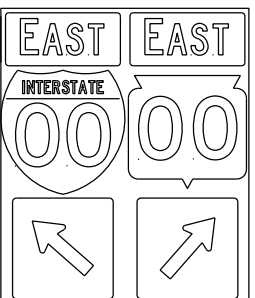


JV

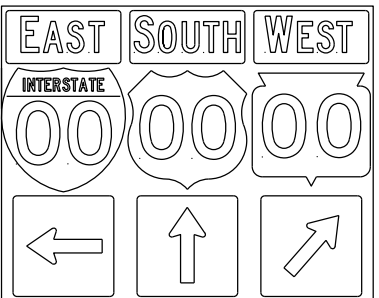
(Typical Vertical J-Assembly
See Note 10 and 11)



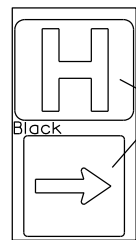
J3-1



J3-2



J3-3



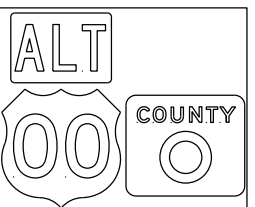
JH-1

Blue Background

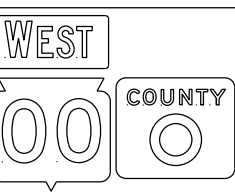
Black



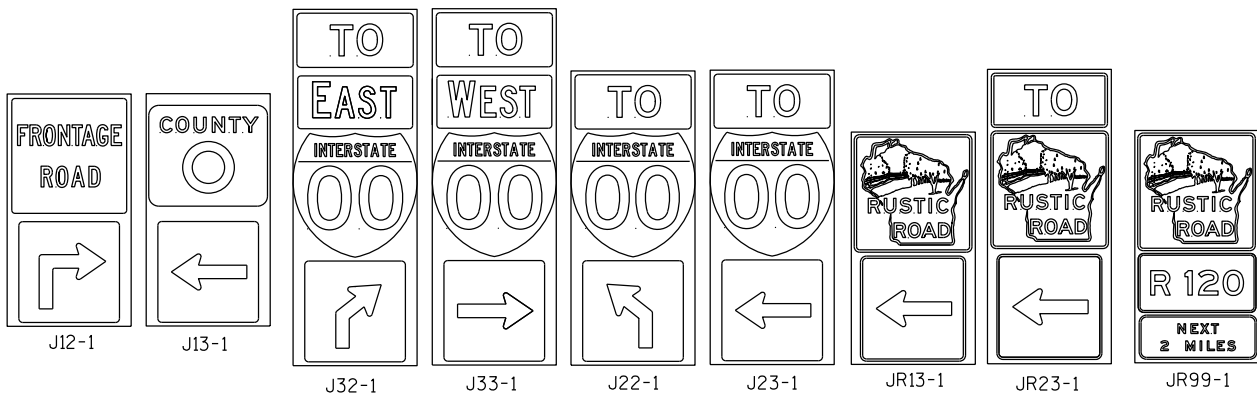
J4-1



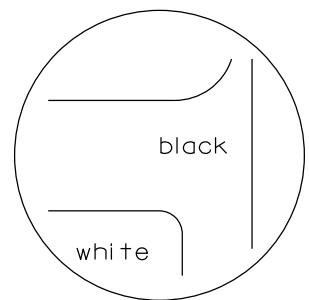
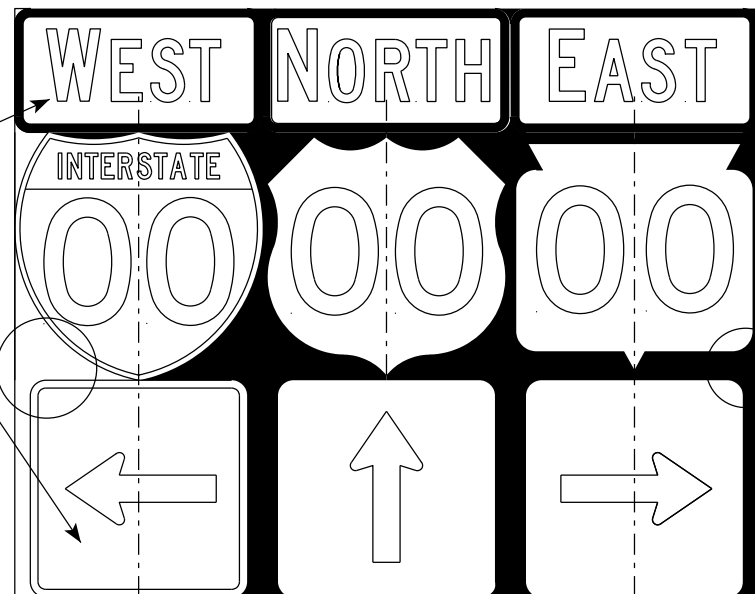
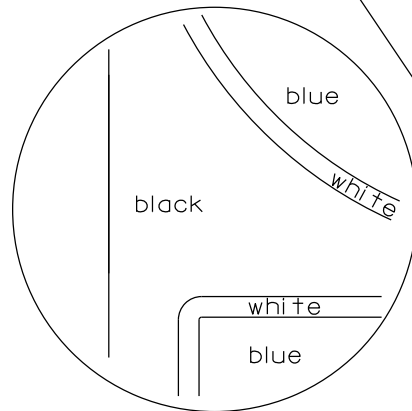
J4-2



J4-2



blue background
with interstate



black background

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

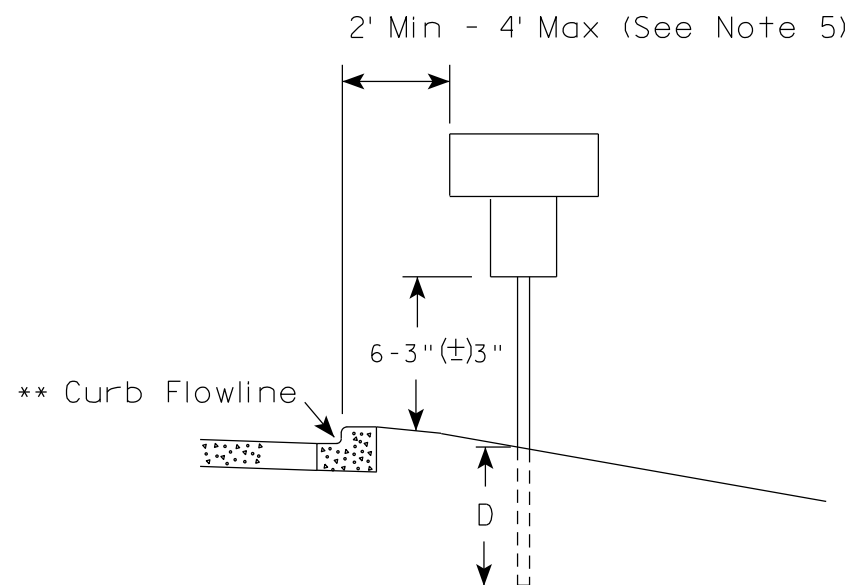
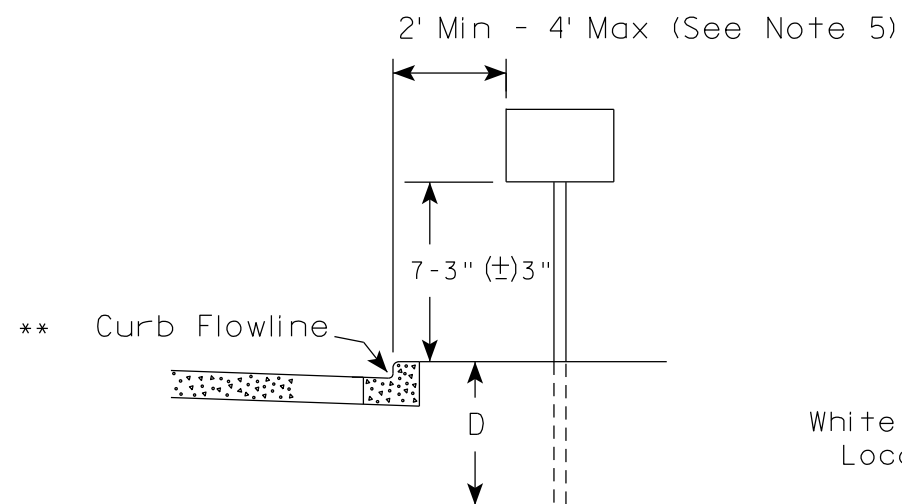
DATE 6/7/23 PLATE NO. A2-1S.10

PROJECT NO:

SHEET NO: 185

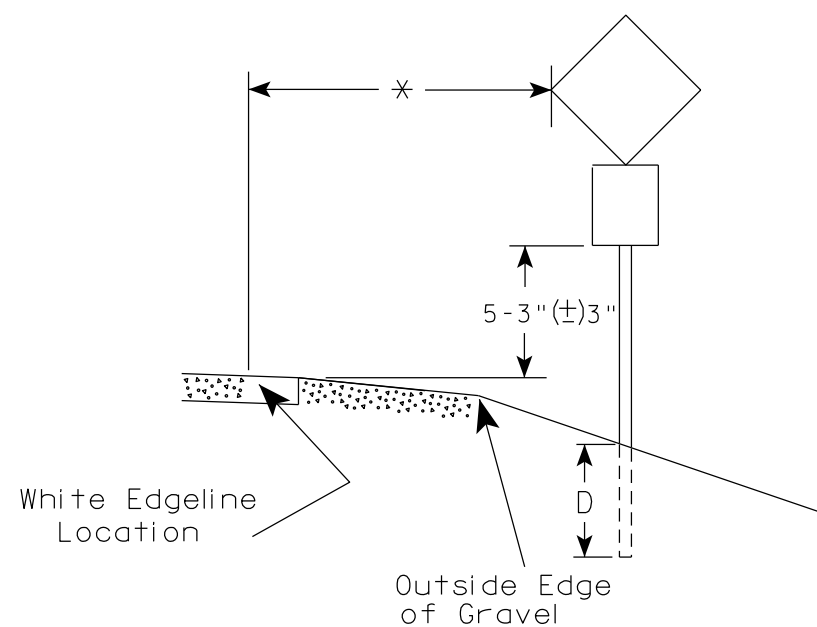
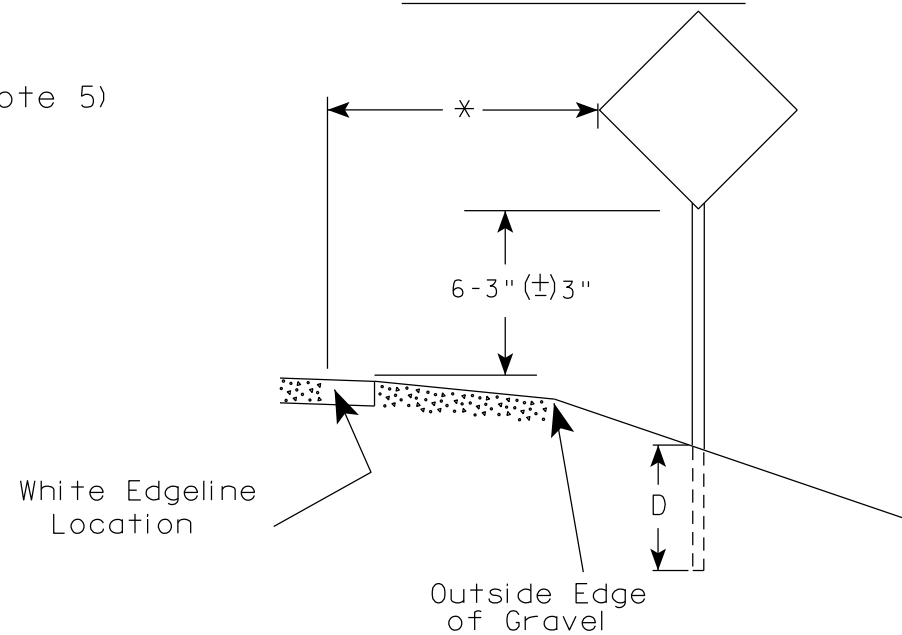
E

URBAN AREA



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

RURAL AREA (See Note 2)



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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

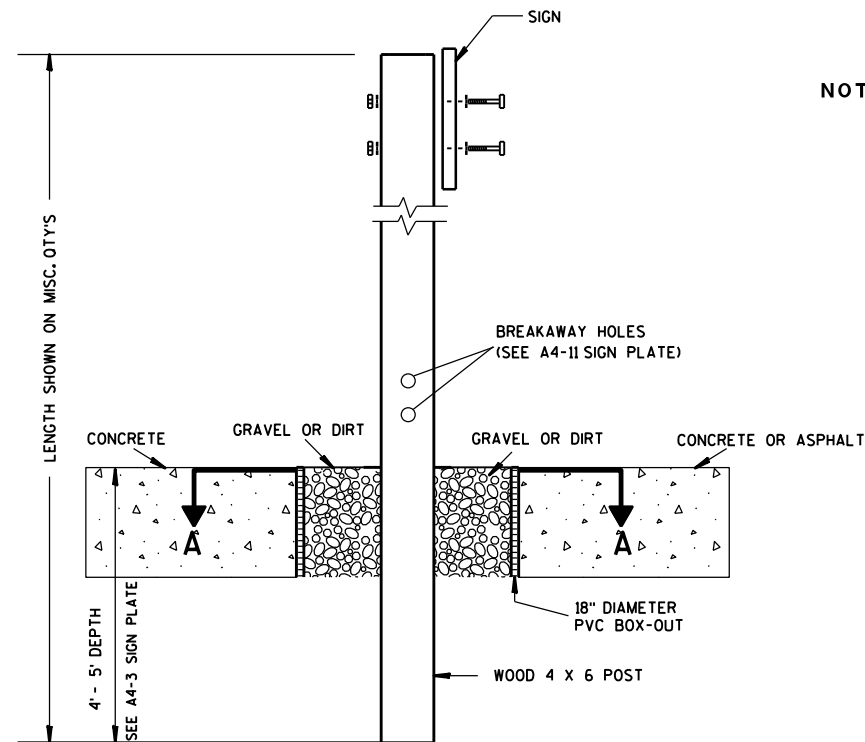
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

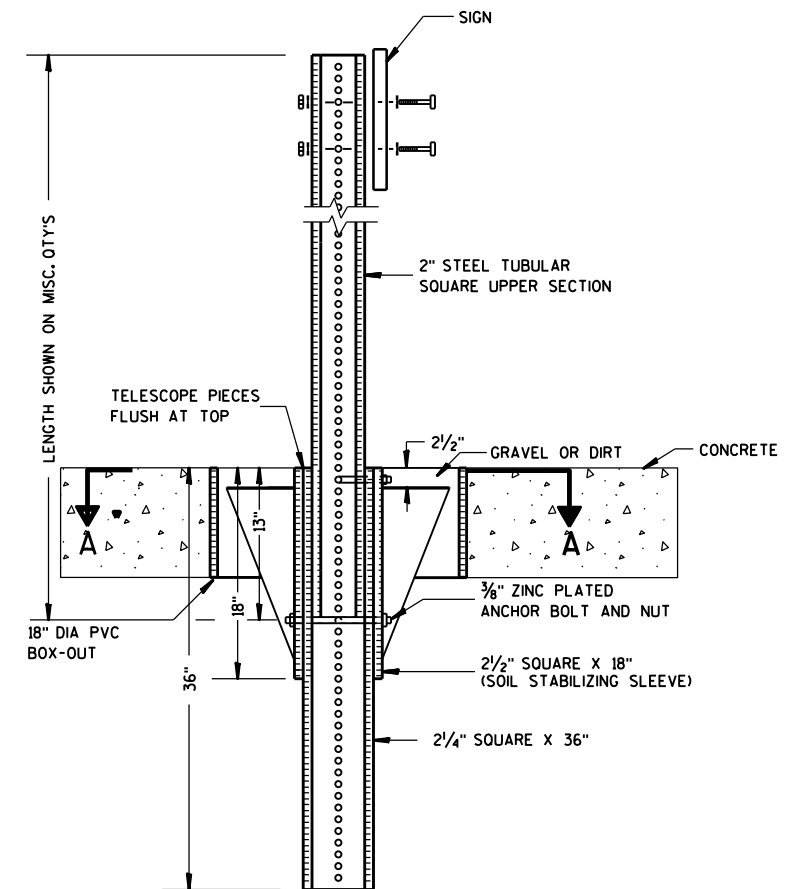
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

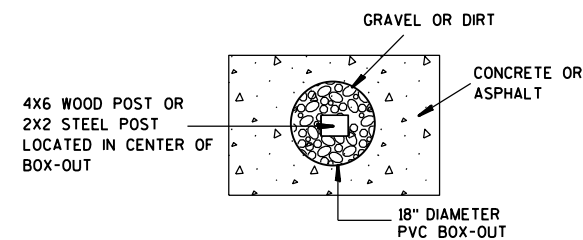
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 187 A4-3B.1

PROJECT NO:

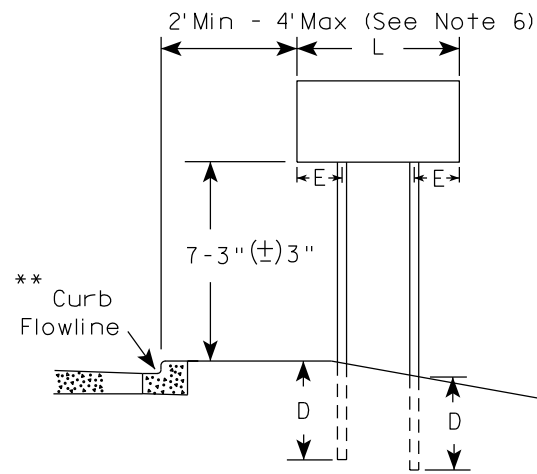
HWY:

COUNTY:

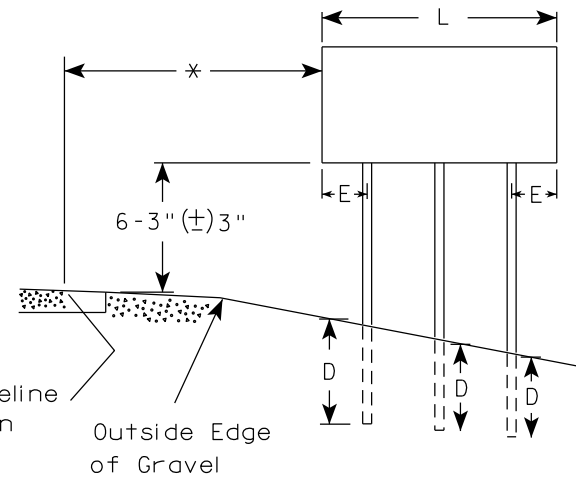
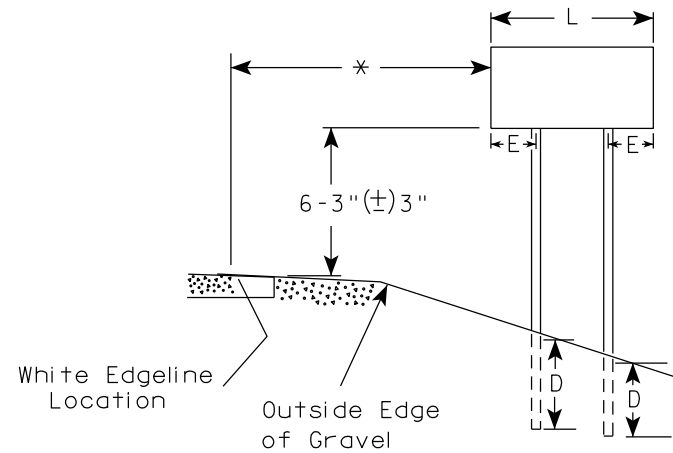
SHEET NO:

E

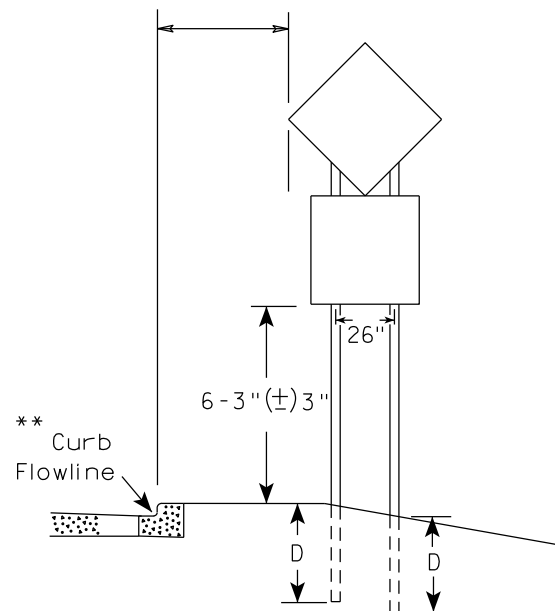
URBAN AREA



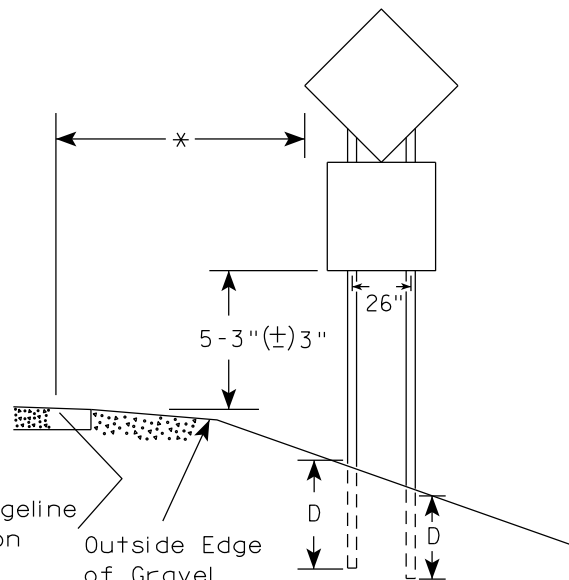
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

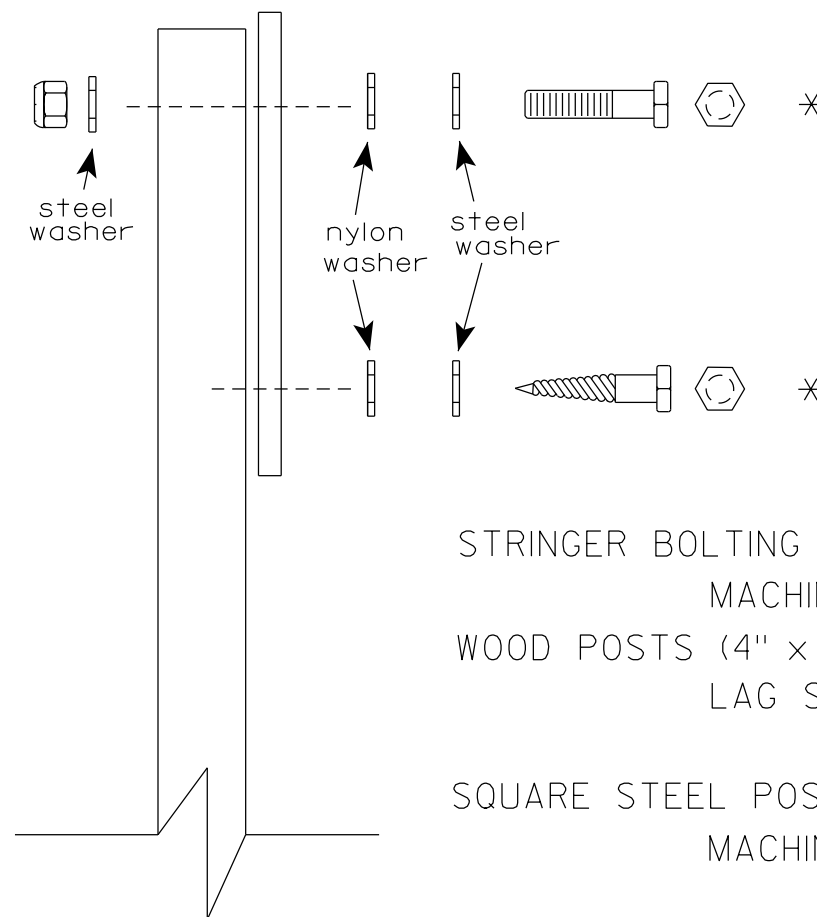
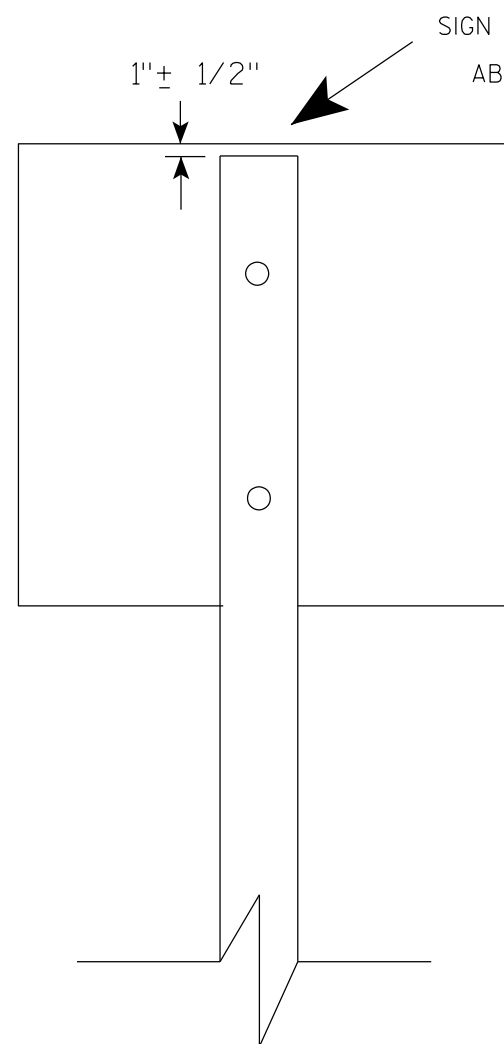
GENERAL NOTES

- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".

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

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

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

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

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

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

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

Diagram illustrating a vertical assembly with dimensions and labels:

- Top section: 2 1/2" TELESPEAR TUBE
- Top width: 4"
- Top section height: 2 1/2"
- Main section height: 10"
- Bottom section height: 1 1/2"
- Total height: 14"
- Labels on the left:
 - 1/16"
 - C
 - DOES
- Label for the main section: 4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELESPEAR TUBE

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

18" DIA SCHEDULE 40 PVC BOX-OUT

36"

18"

13"

2 1/2"

2 1/4" SQUARE X 36"

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

3/8" ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES

3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- Dimensions:**
 - Overall height: LENGTH SHOWN ON MISC. QTY'S
 - Section A-A: 36" (total), 18" (upper), 12" (lower)
 - Section B-B: 1"
- Components:**
 - SIGN
 - SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 - 2" STEEL TUBULAR SQUARE UPPER SECTION
 - ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES
 - $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
 - TELESCOPE PIECES FLUSH AT TOP
 - $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
 - 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 - 2 1/4" SQUARE X 36"

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT

DIRECTION
OF TRAFFIC

SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 190 14-9.9

PROJECT NO:

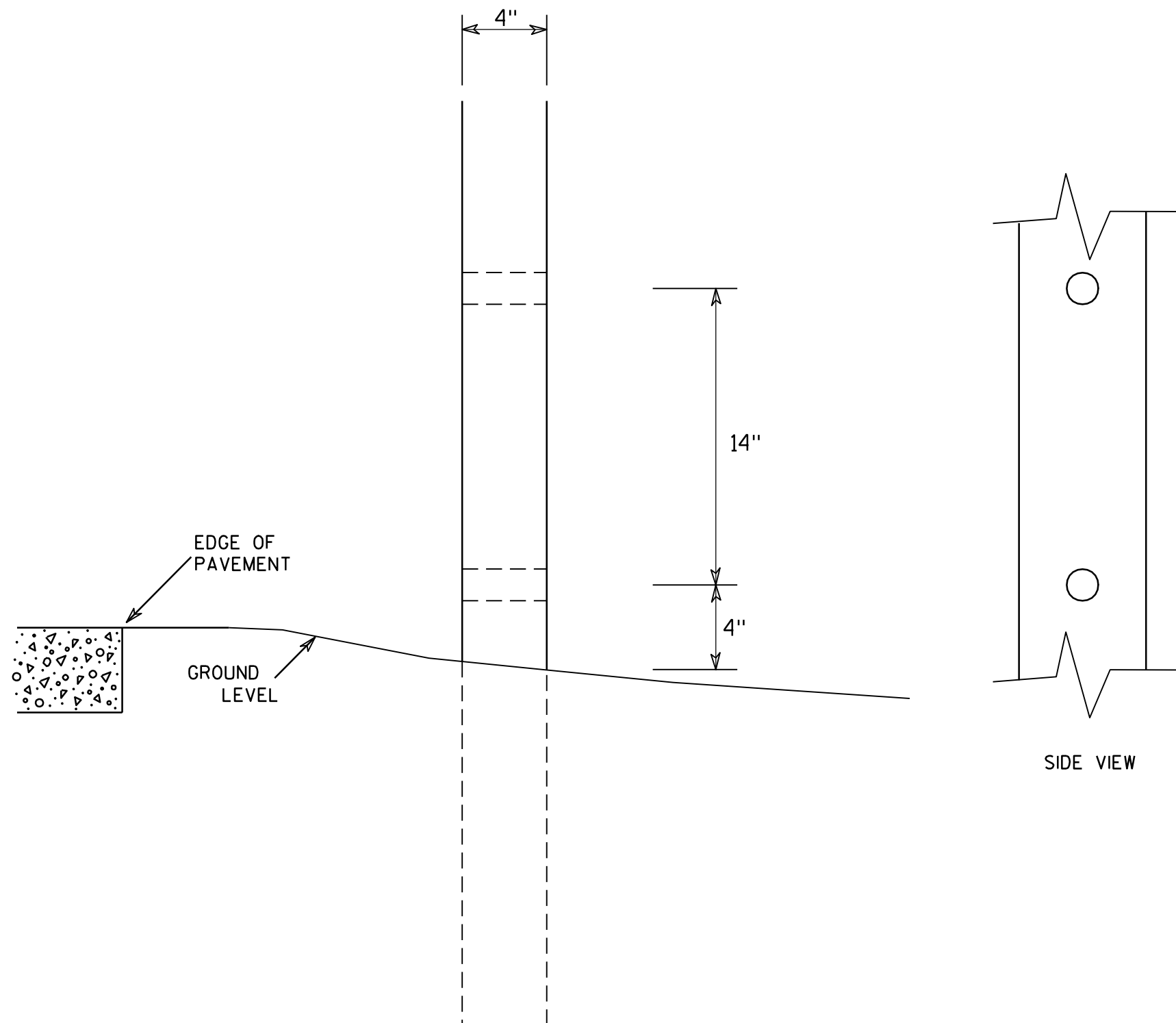
HWY:

COUNTY:

SHEET NO:

E

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

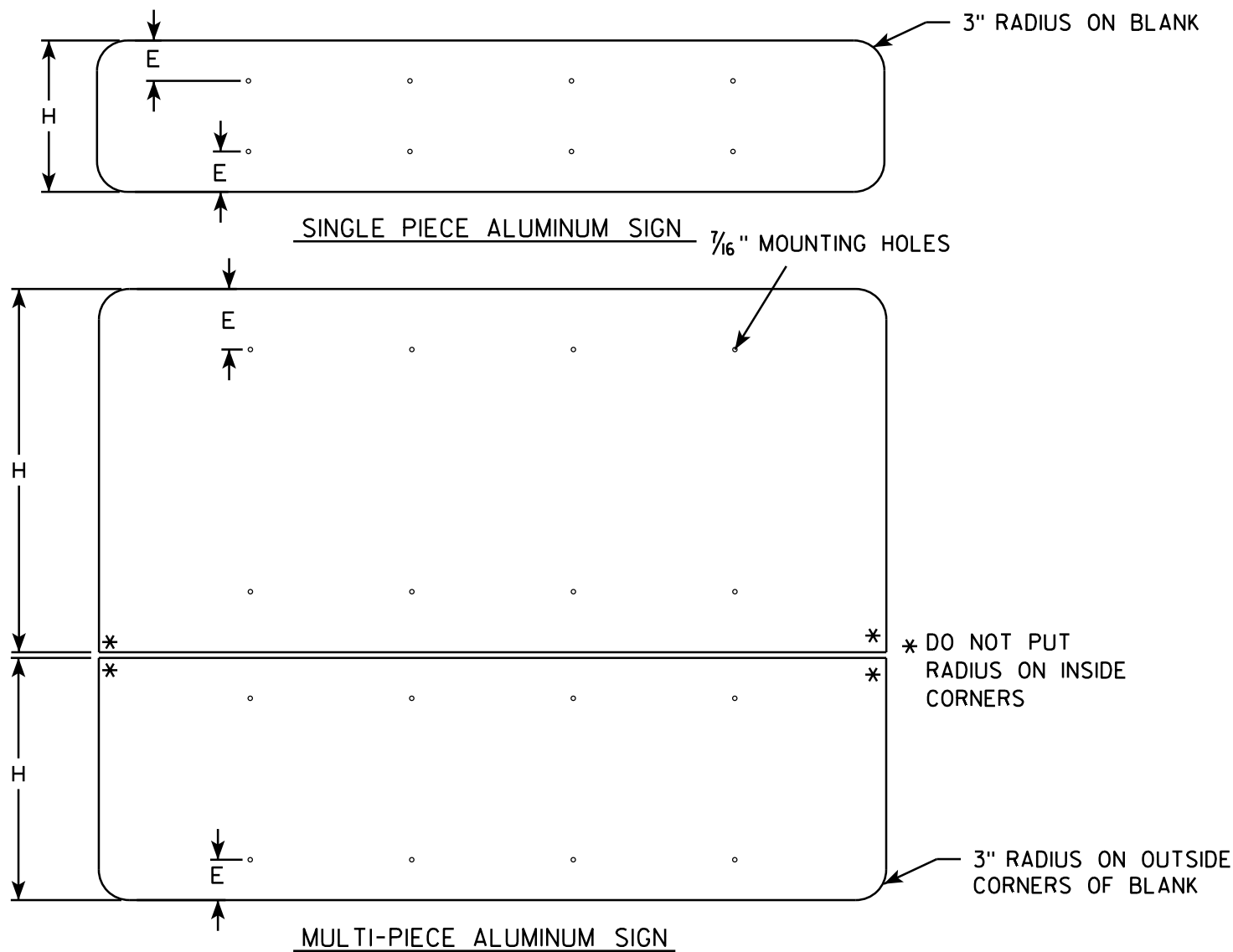
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 191

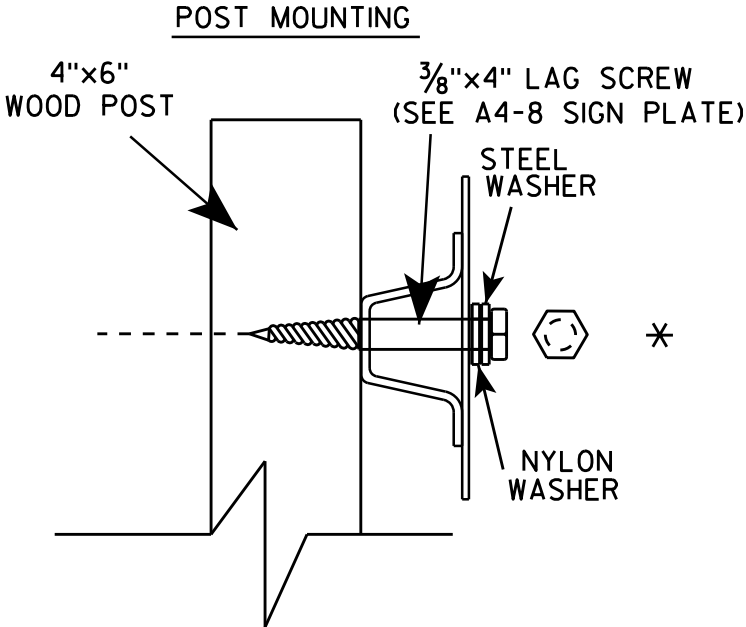
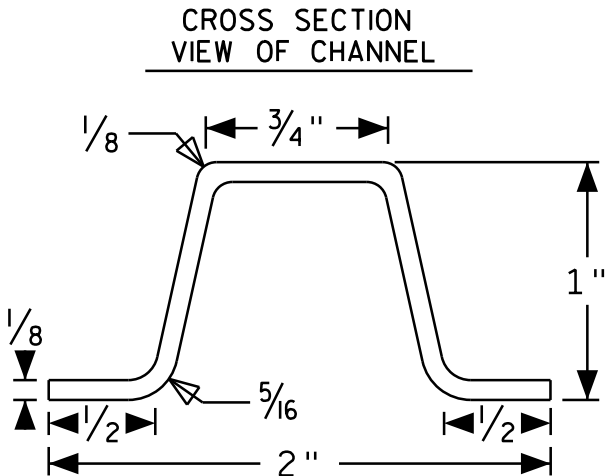
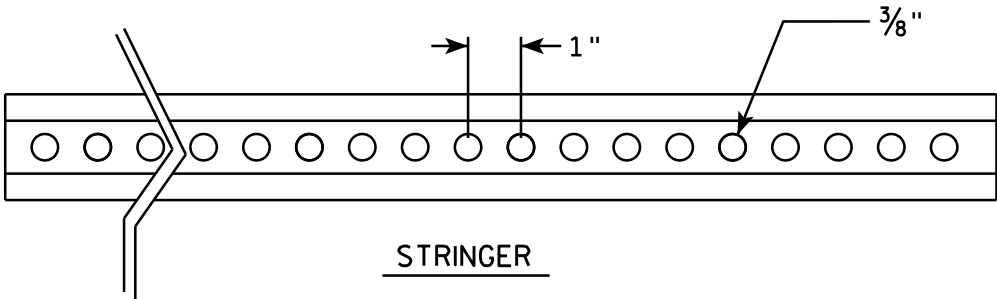
E



GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 1/2"	33 1/2"	50 1/2"	67 1/2"
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 1/2"	38 1/2"	57 1/2"	76 1/2"
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 1/2"	43 1/2"	64 1/2"	85 1/2"
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"



SIGN STRINGER
MOUNTING REQUIREMENTS

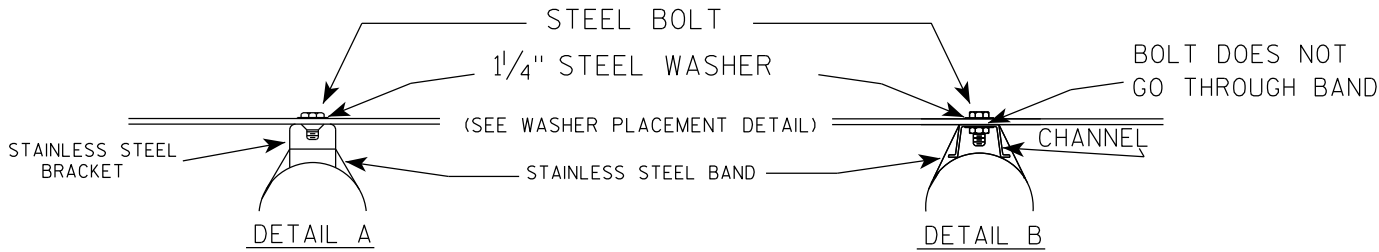
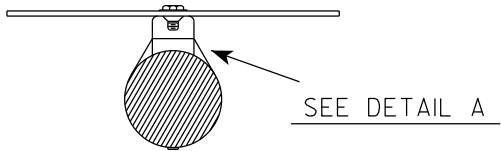
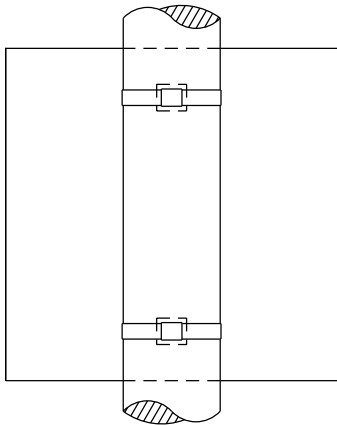
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

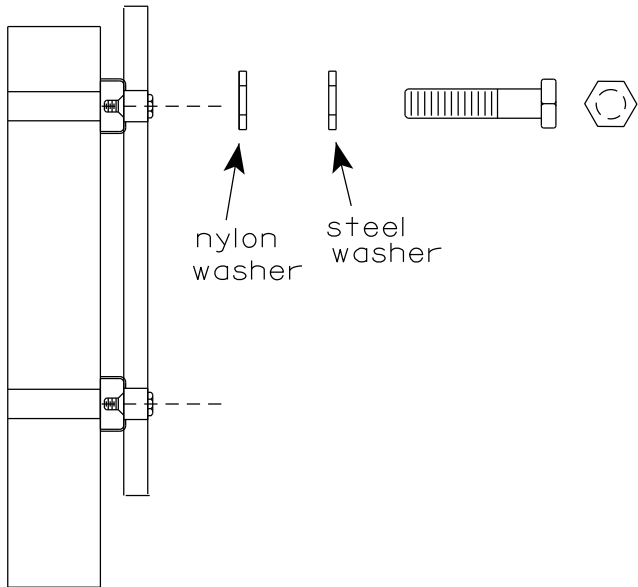
DATE 4/26/16 PLATE No A4-18.1
192

BANDING

SINGLE SIGN



WASHER PLACEMENT

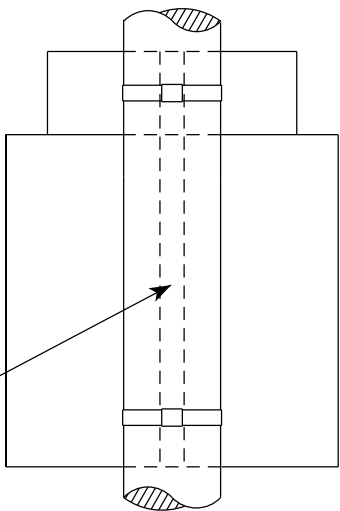


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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



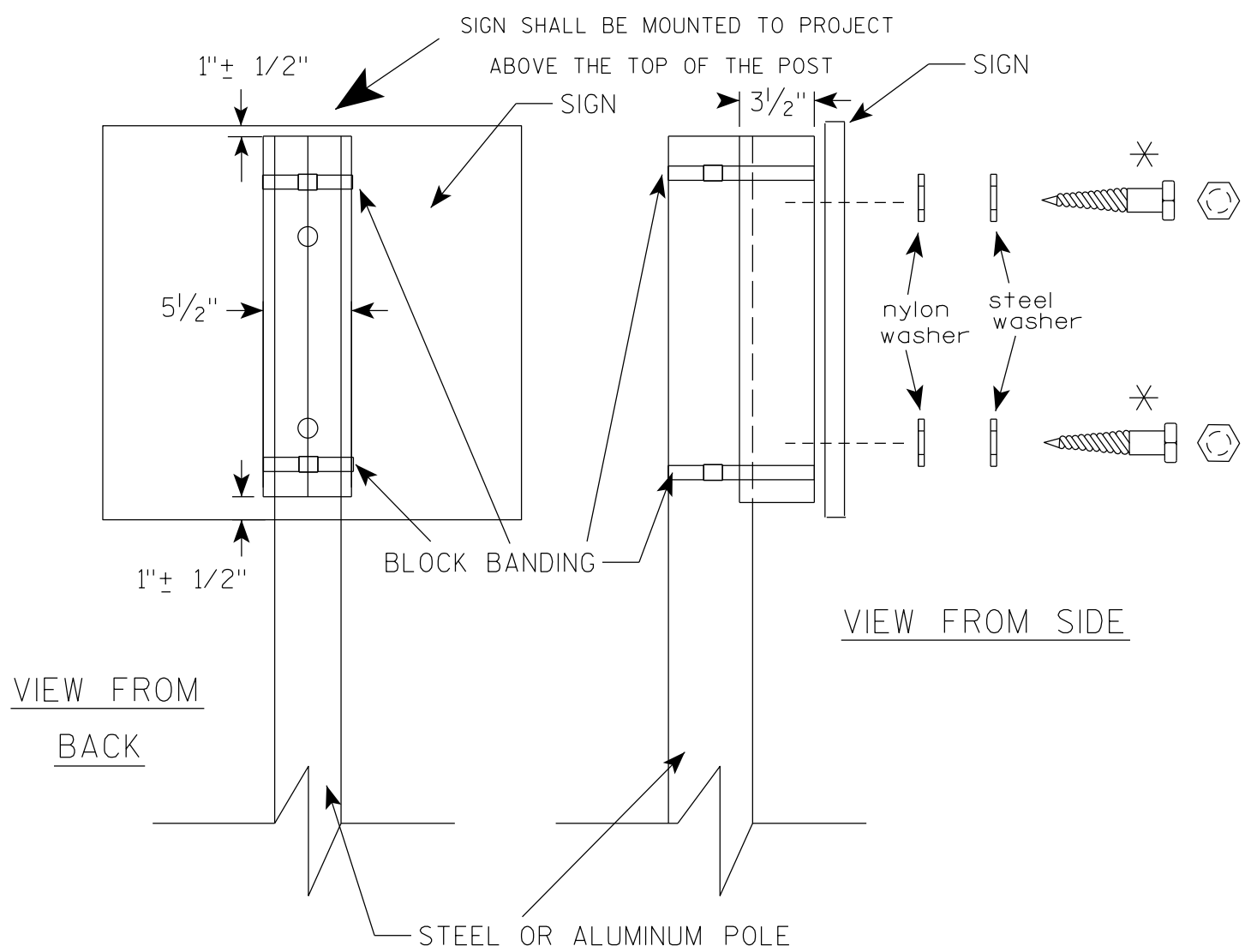
SEE DETAIL B

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

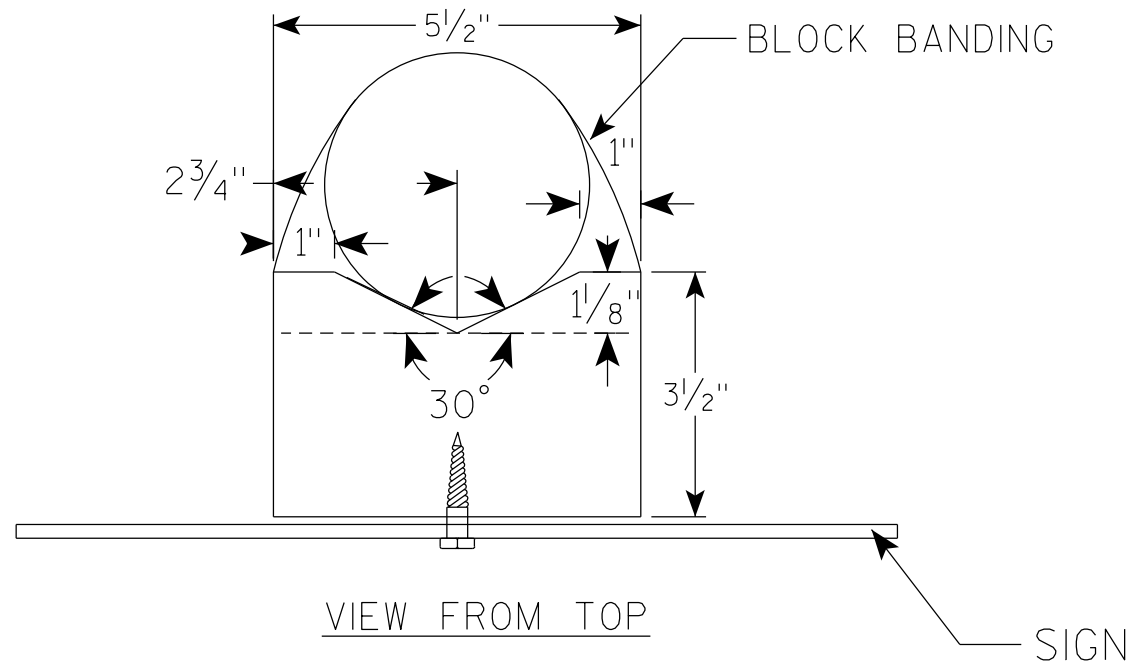
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

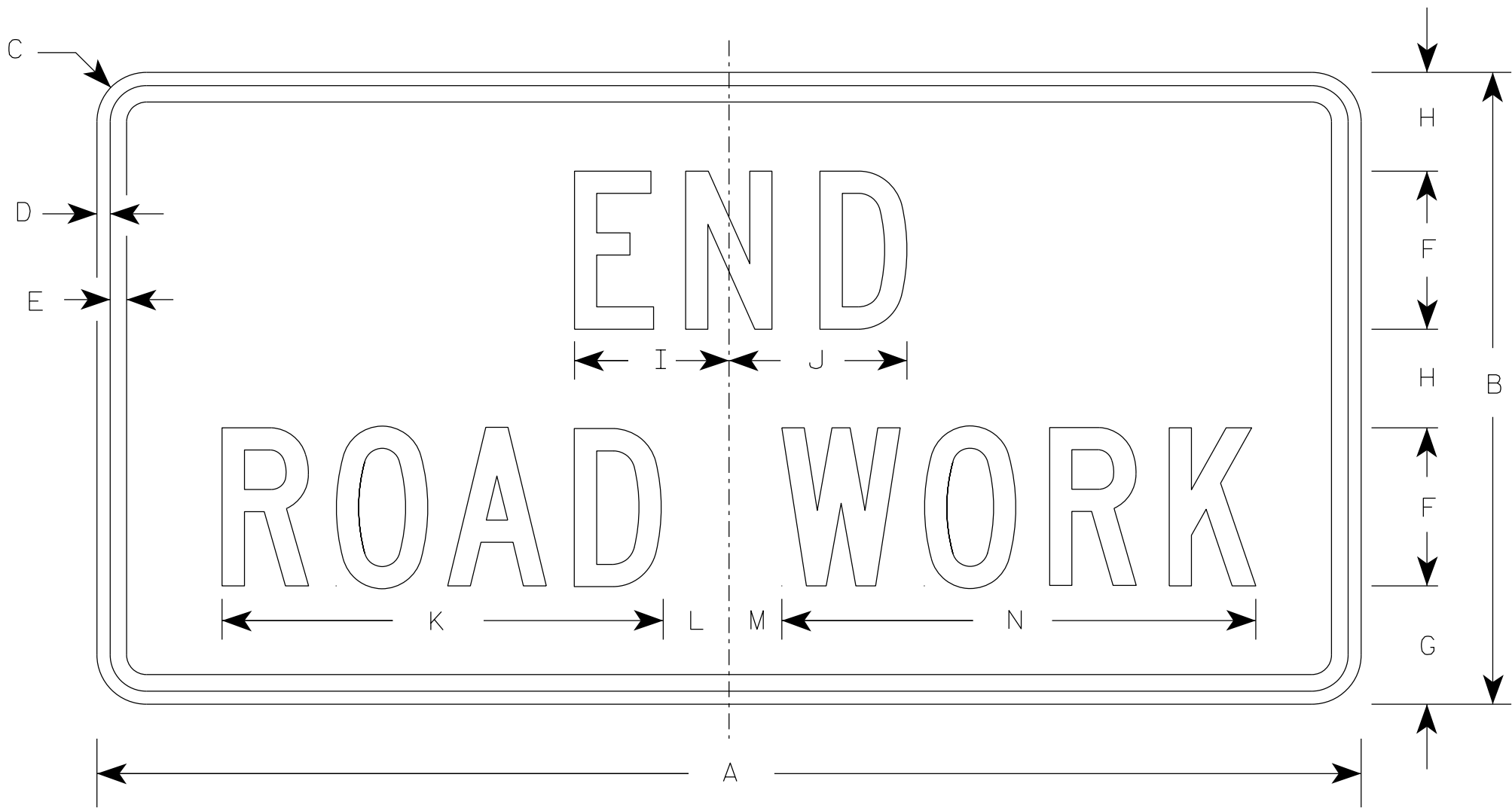
PROJECT NO:

SHEET NO: 194

E

NOTES

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



G20-2A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

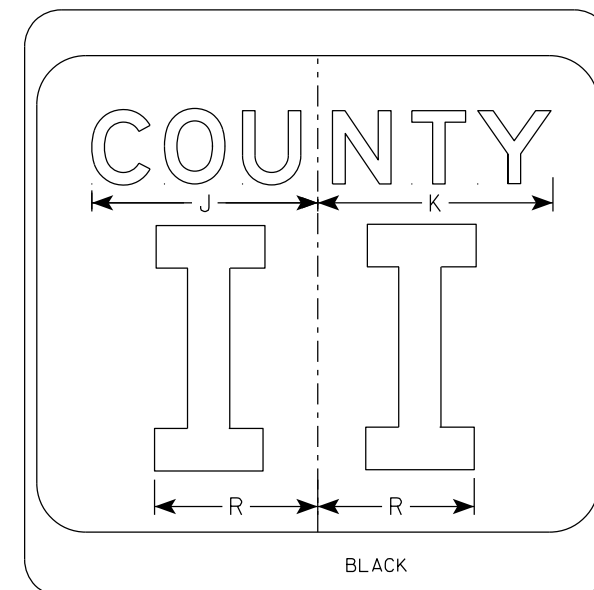
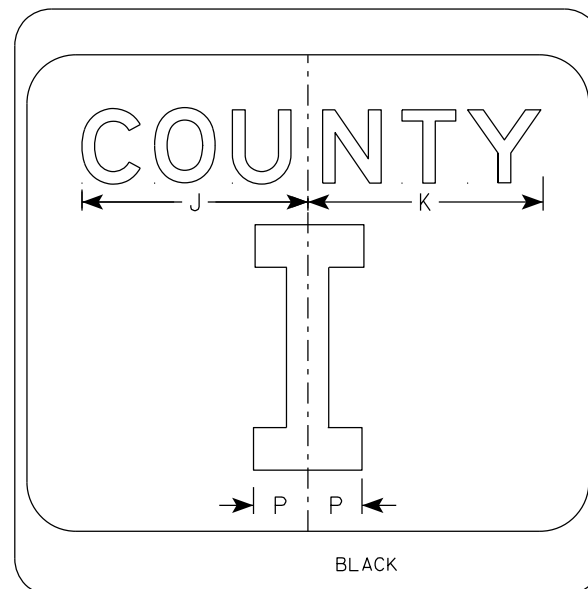
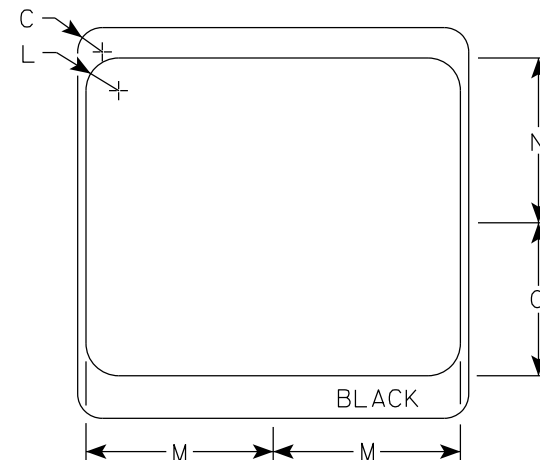
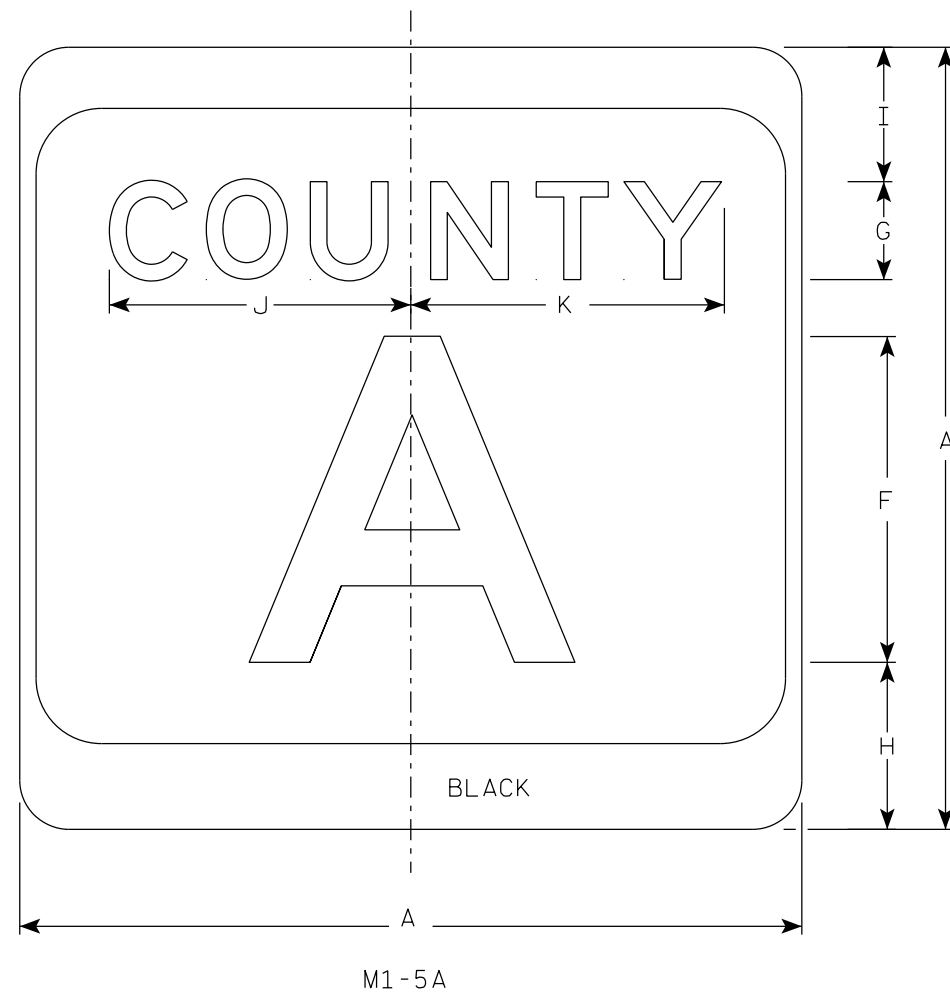
STANDARD SIGN

G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-2A.10



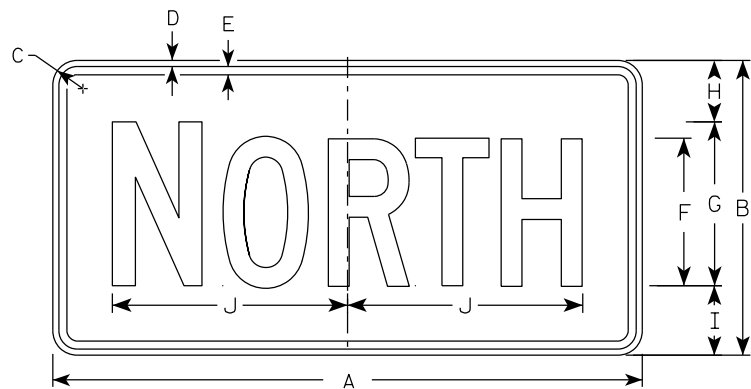
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White & Black
Message - Black
3. Message Series - see Note 4
4. Message Series E for 1 letter.
Message Series D for 2 letters unless
message is too big then Series C.
Message Series C for 3 letters unless
message is too big then Series B.
5. Substitute appropriate letters & optically
center to achieve proper balance.

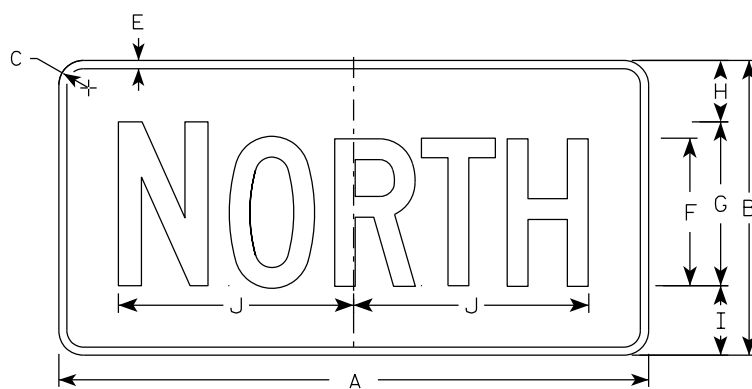
[illegible]

CTH MARKER	
M1-5A FOR ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew R Rauch</u> For State Traffic Engineer
DATE 11/8/2022	PLATE NO. M1-5A.9

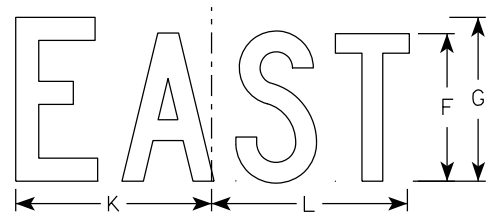
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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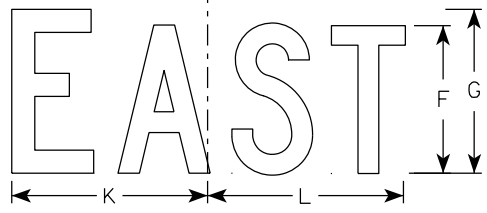
M3-1
MM3-1
MP3-1



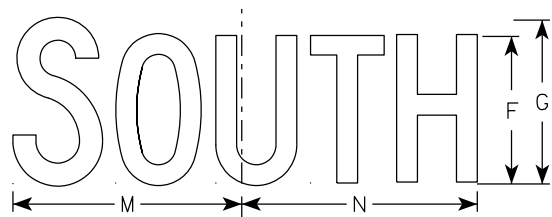
MB3-1
MK3-1
MN3-1



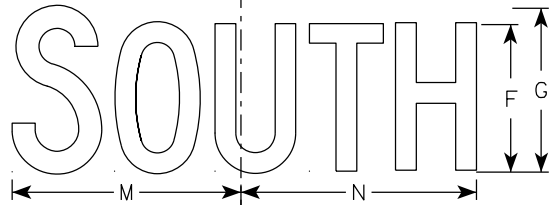
M3-2
MM3-2
MP3-2



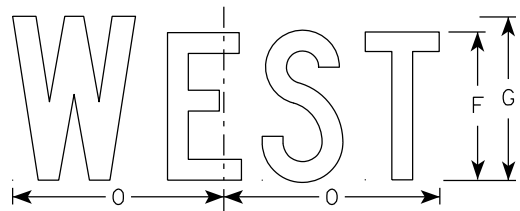
MB3-2
MK3-2
MN3-2



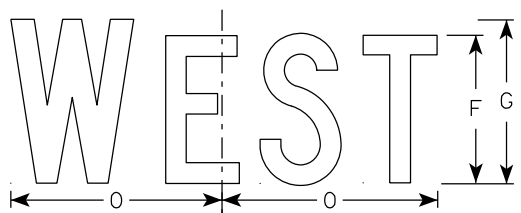
M3-3
MM3-3
MP3-3



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.

7

7

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 197	E
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7

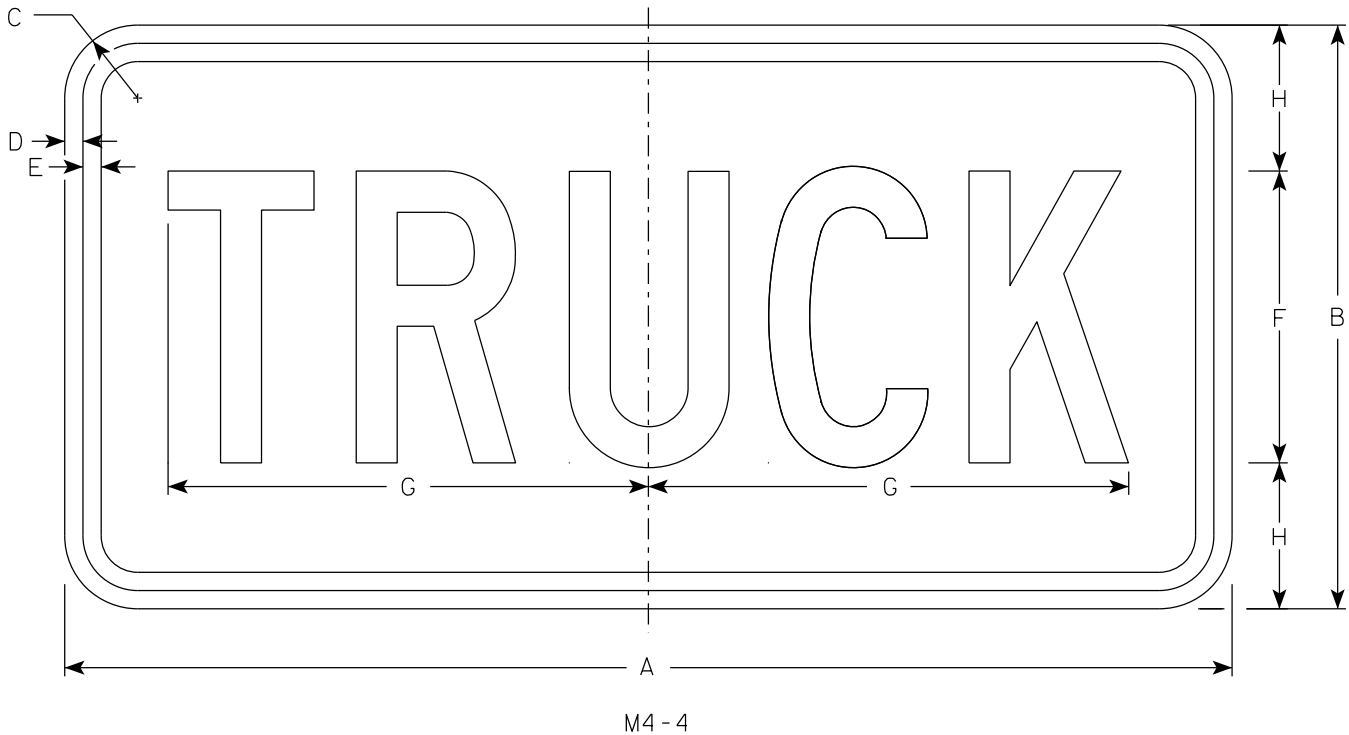
7

NOTES

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

Background - White

Message - Black
3. Message 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	12	1 1/2	3/8	3/8	6	9 7/8	3																			2.0
2M	24	12	1 1/2	3/8	3/8	6	9 7/8	3																			2.0
3	36	18	1 1/2	3/8	1/2	9	15 5/8	4 1/2																			4.5
4	36	18	1 1/2	3/8	1/2	9	15 5/8	4 1/2																			4.5
5	36	18	1 1/2	3/8	1/2	9	15 5/8	4 1/2																			4.5

STANDARD SIGN

M4 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

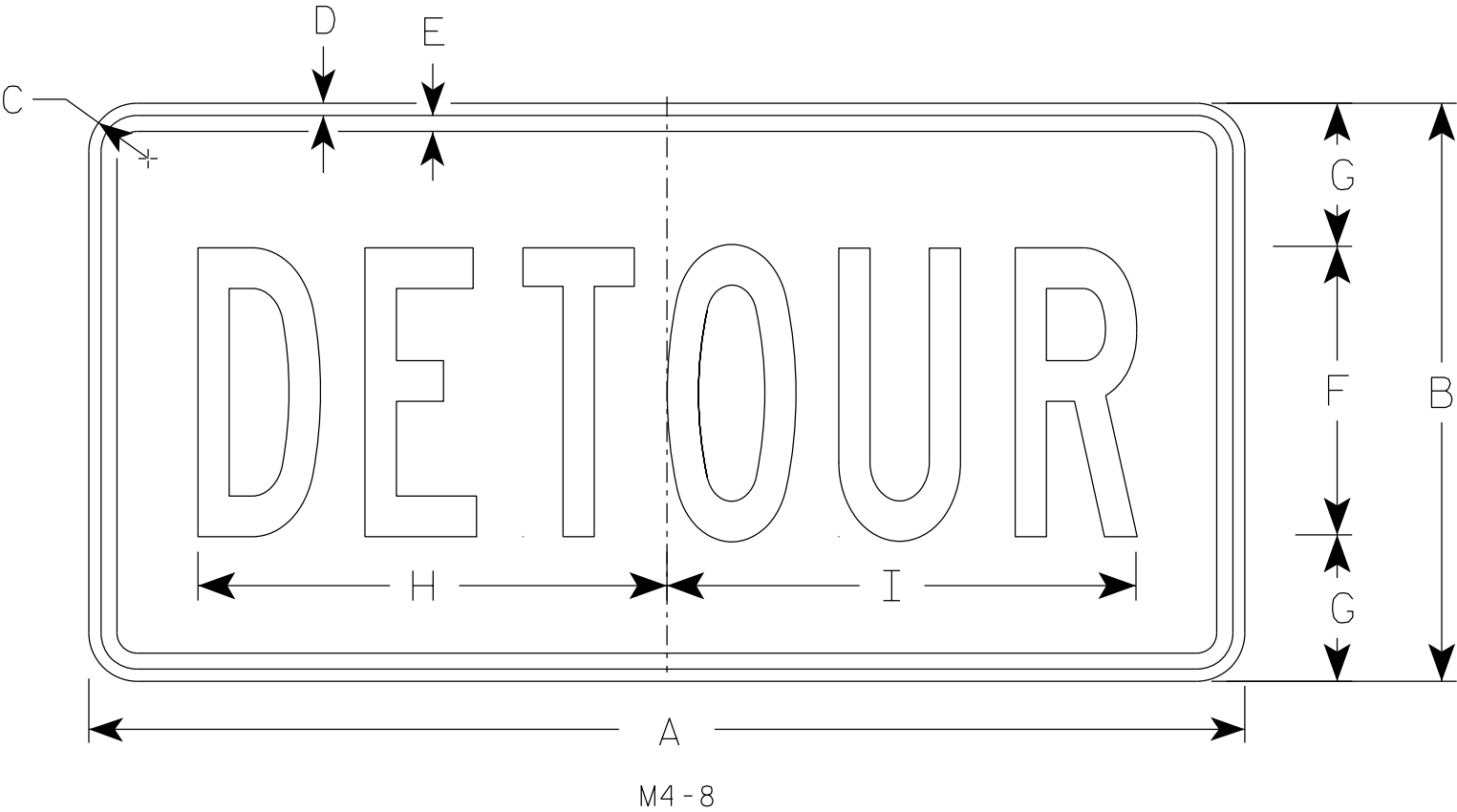
DATE 11/21/2022 PLATE NO. M4-4.4

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

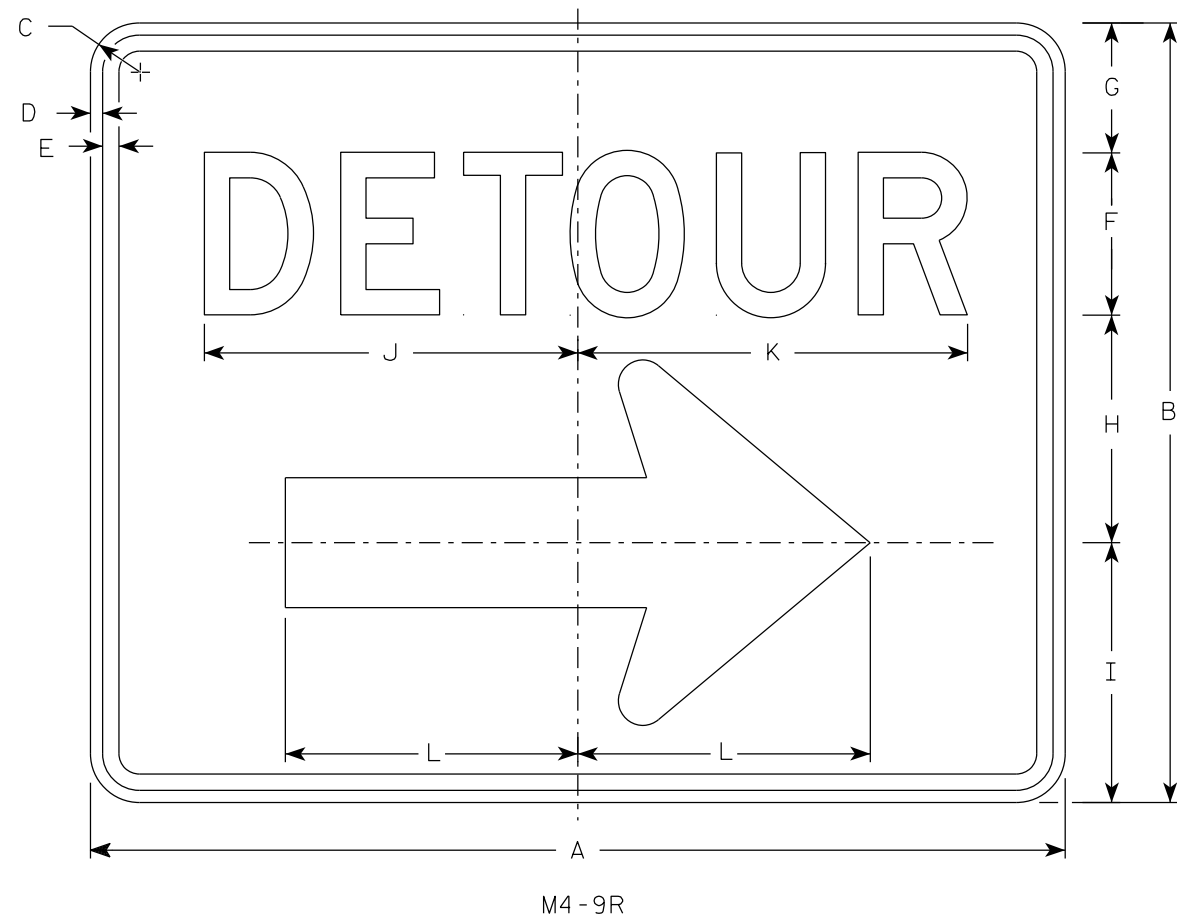
STANDARD SIGN

M4-8

WISCONSIN DEPT OF TRANSPORTATION

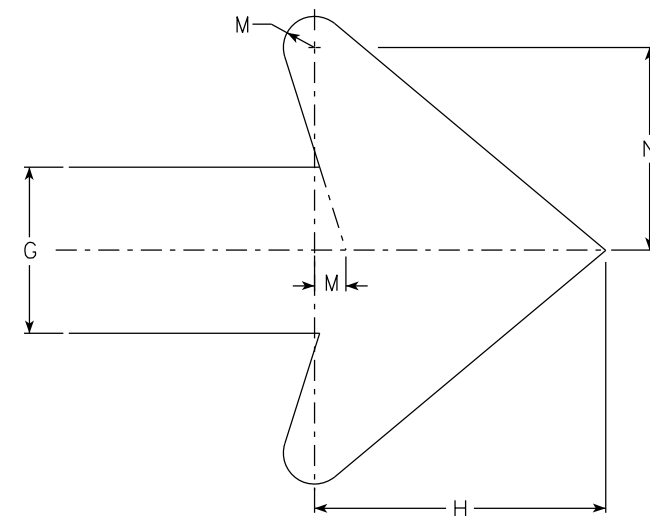
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

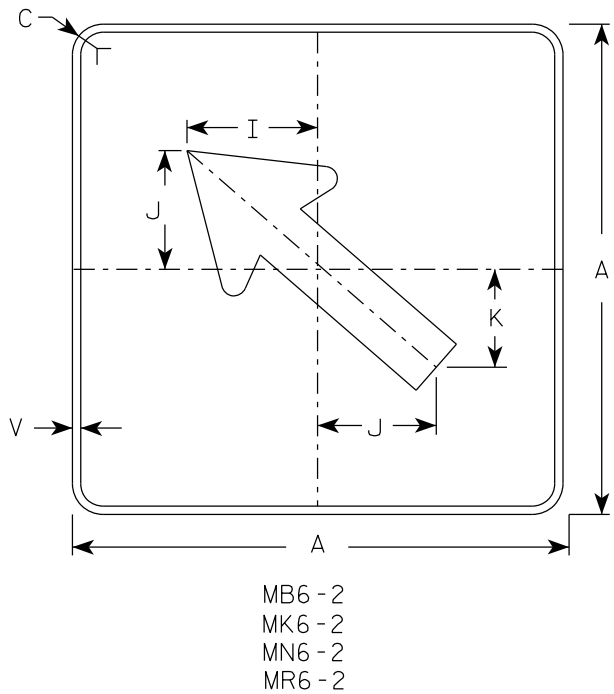
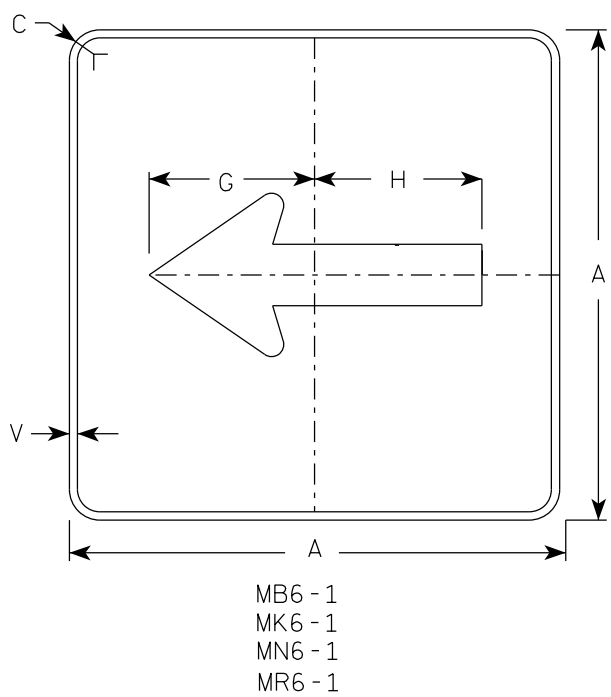
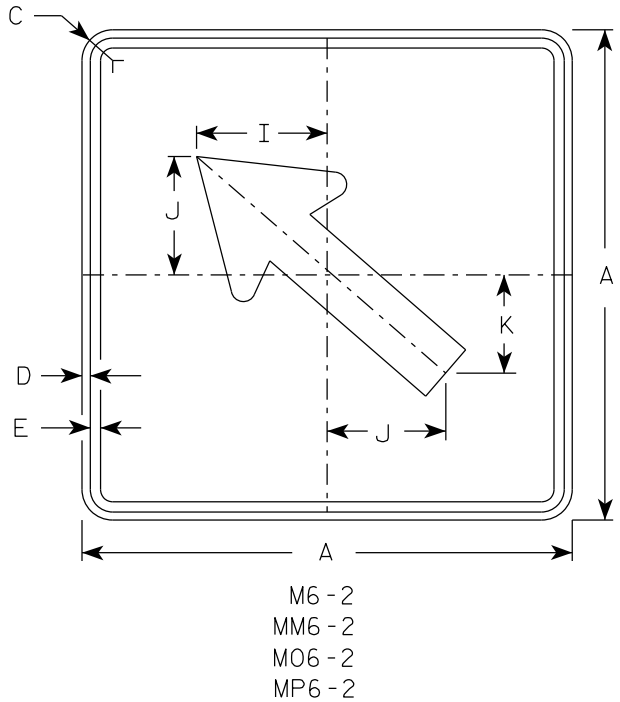
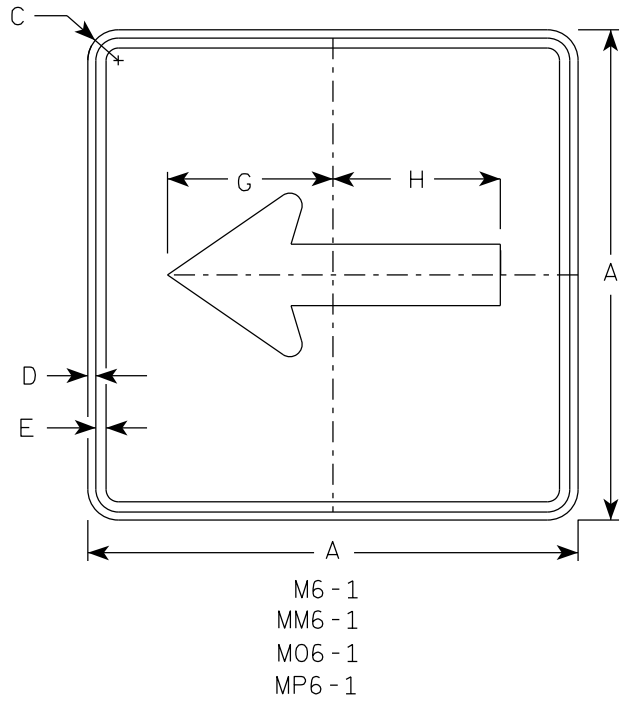
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

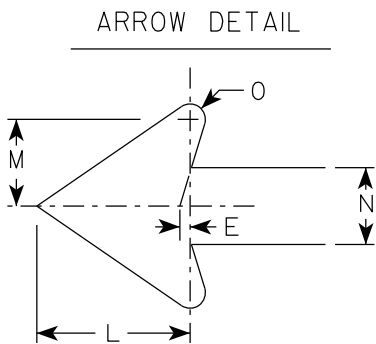
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO: HWY: COUNTY: SHEET NO: 200 E

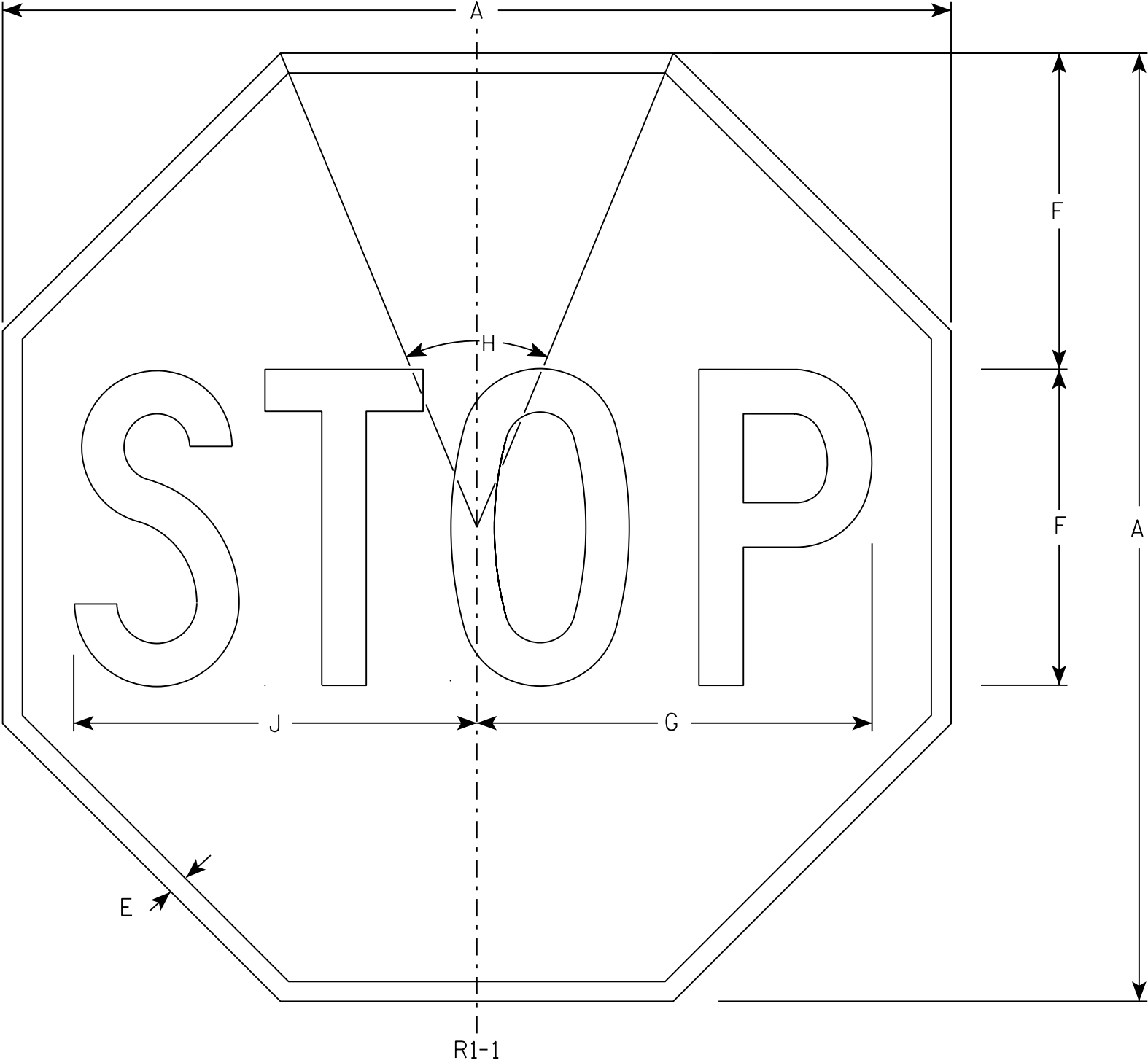


- NOTES
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-1 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

7



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Red
Message - White
- 3. Message Series - C

7

R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN

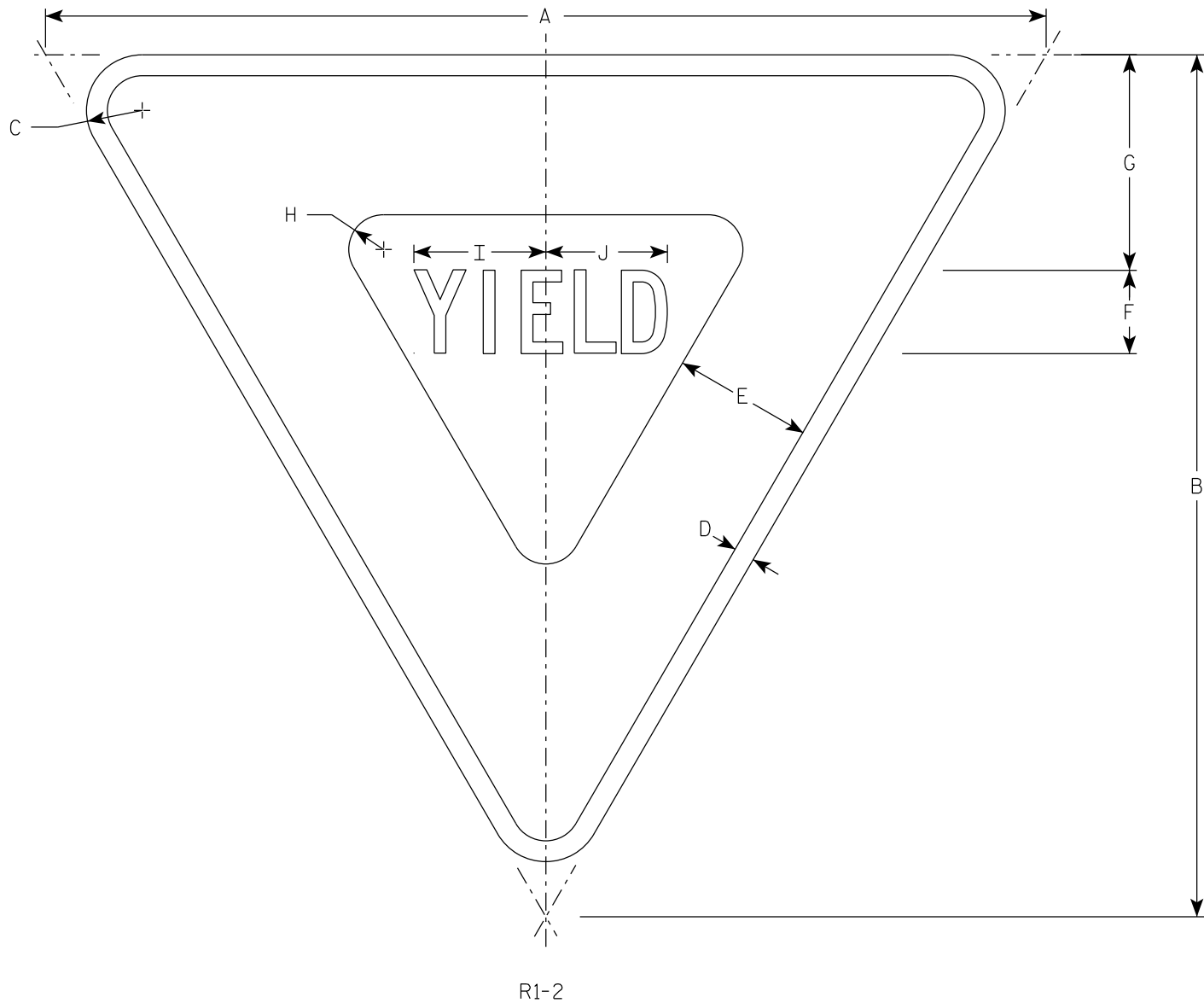
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - See note 4
- 3. Message Series - C
- 4. The border strip and word message are reflectorized red.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	2	5⁄8	4	2 1⁄2	6 3⁄8	7⁄8	4	3 5⁄8																	2.71
2S	36	31	2	3⁄4	5	3	7 3⁄4	1 1⁄4	4 3⁄4	4 3⁄8																	3.88
2M	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
3	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
4	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
5	60	52	3	1 1⁄2	8	5	13	2 1⁄2	7 7⁄8	7 1⁄4																	10.83
6																											
7	18	15 1⁄2	1	3⁄8	2 1⁄2	1 1⁄2	3 7⁄8	5⁄8	2 3⁄8	2 1⁄4																	0.97

PROJECT NO:

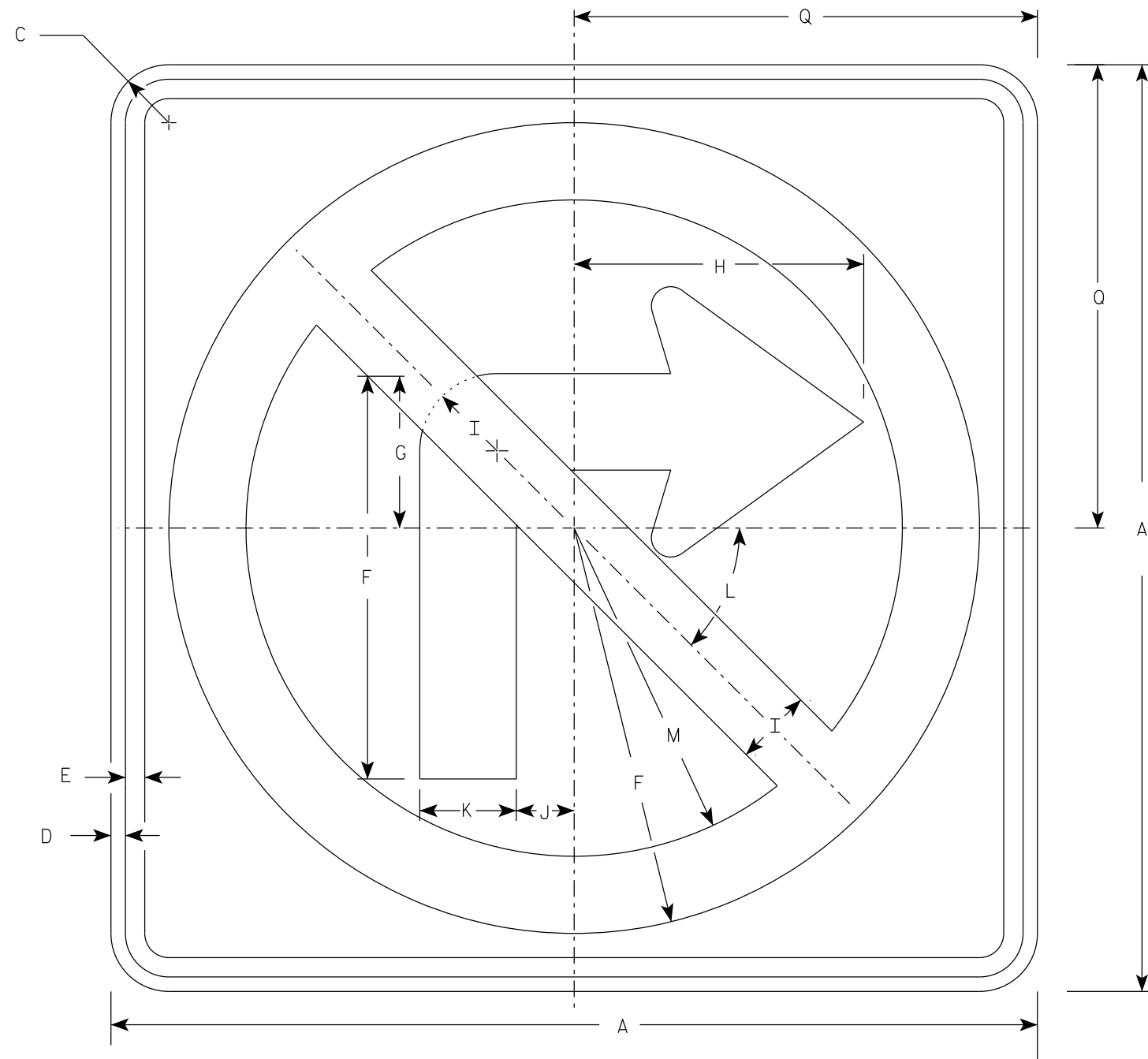
HWY:

COUNTY:

SHEET NO: 203

E

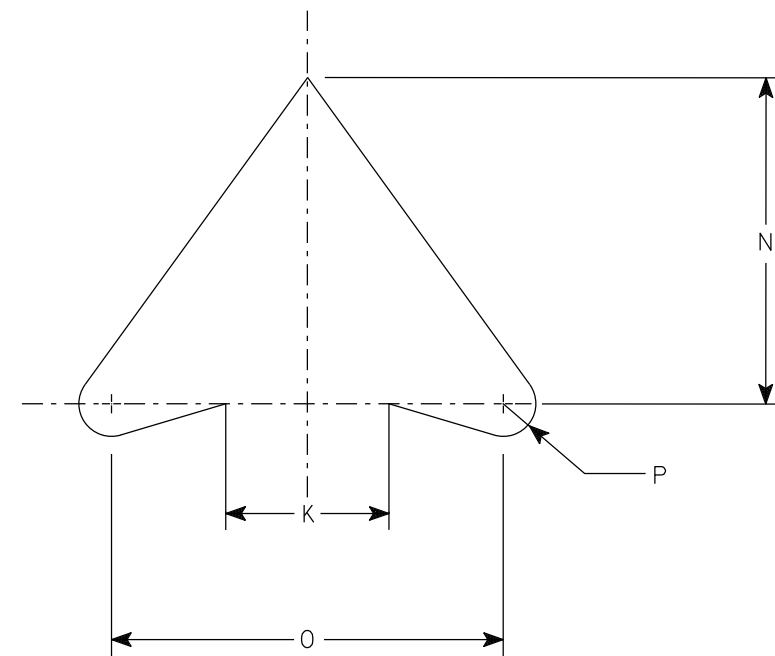
7



R3-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - See note 3
3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

STANDARD SIGN
R3-1

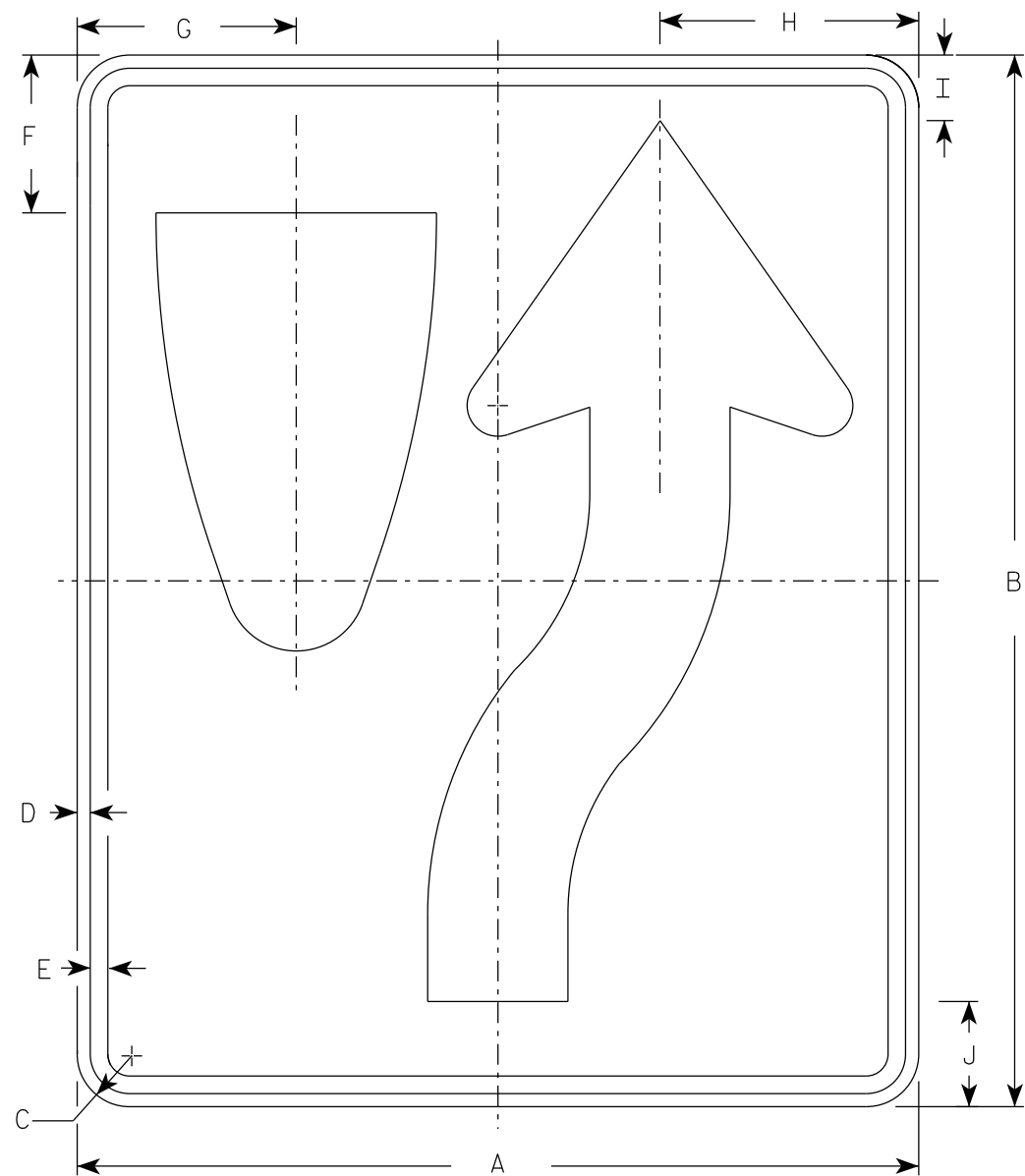
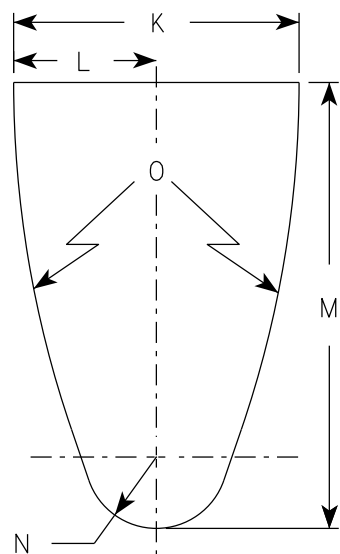
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P. Rauch
for State Traffic Engineer

DATE 2/2/23 PLATE NO. R3-1.6

7

DIVIDER DETAIL

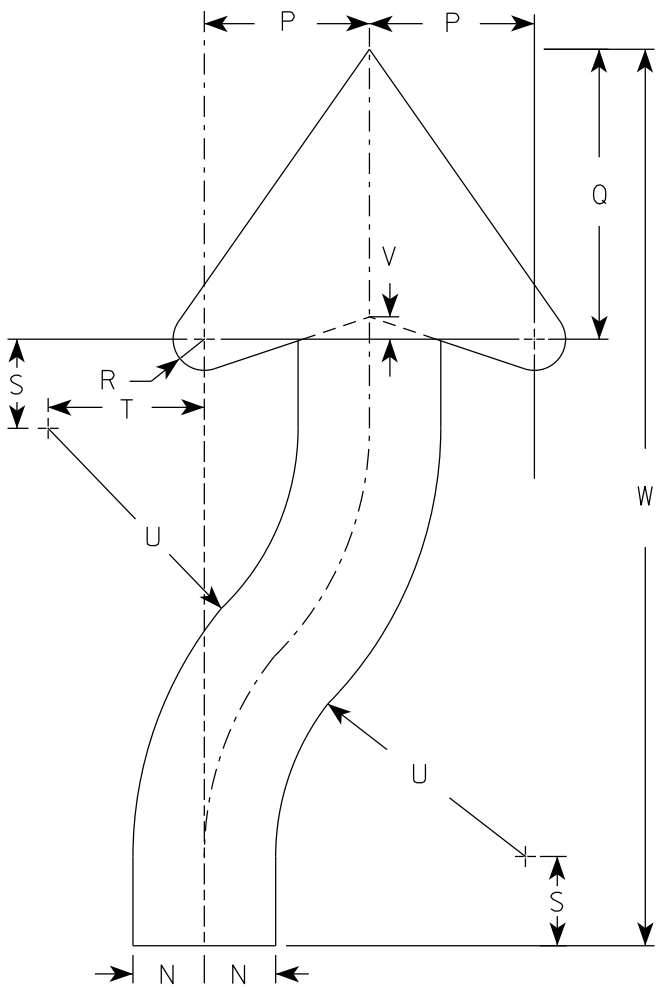


R4-7

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. R4-8 is the same as R4-7 except Legend 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	18	24	1 1/2	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/2	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/2	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 7/8	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 7/8	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	3	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

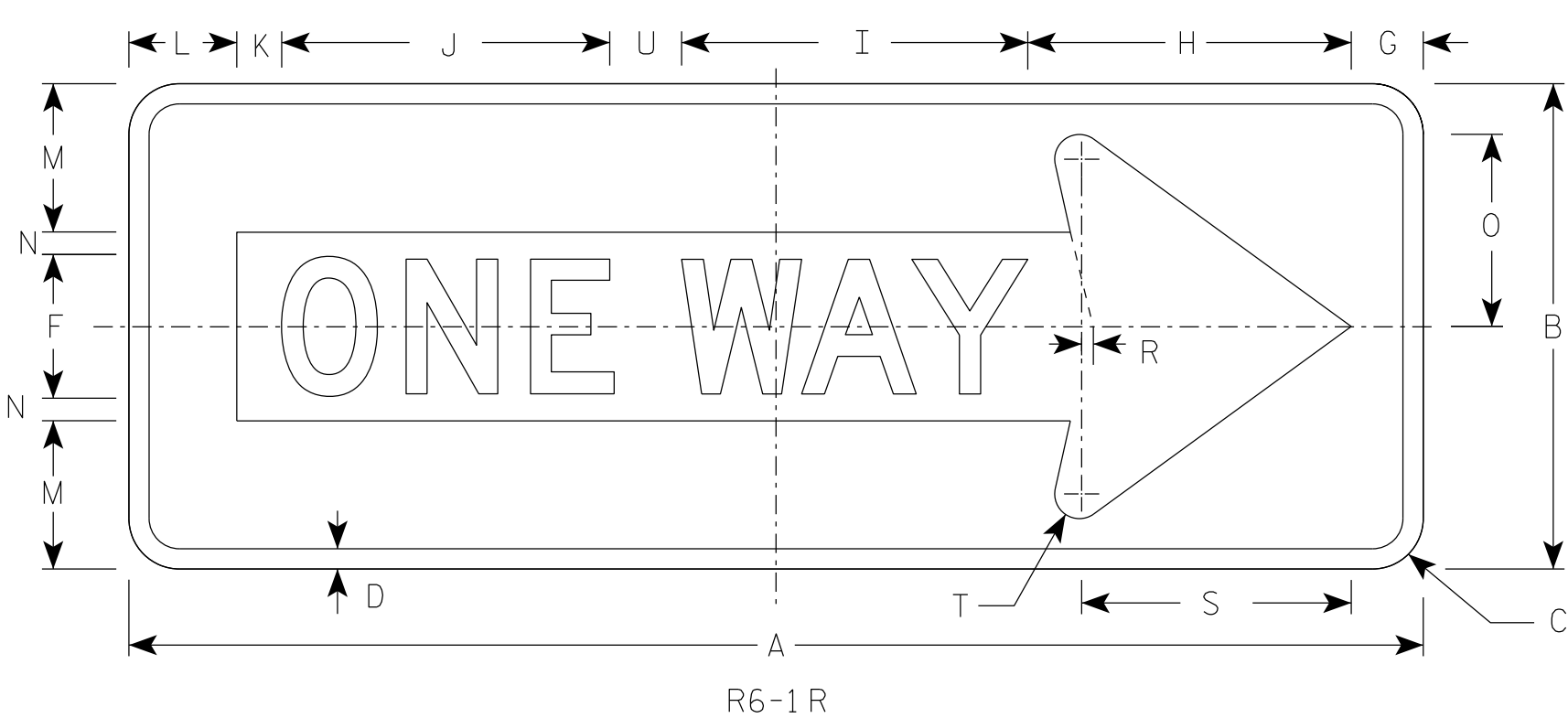
PROJECT NO:

HWY:

COUNTY:

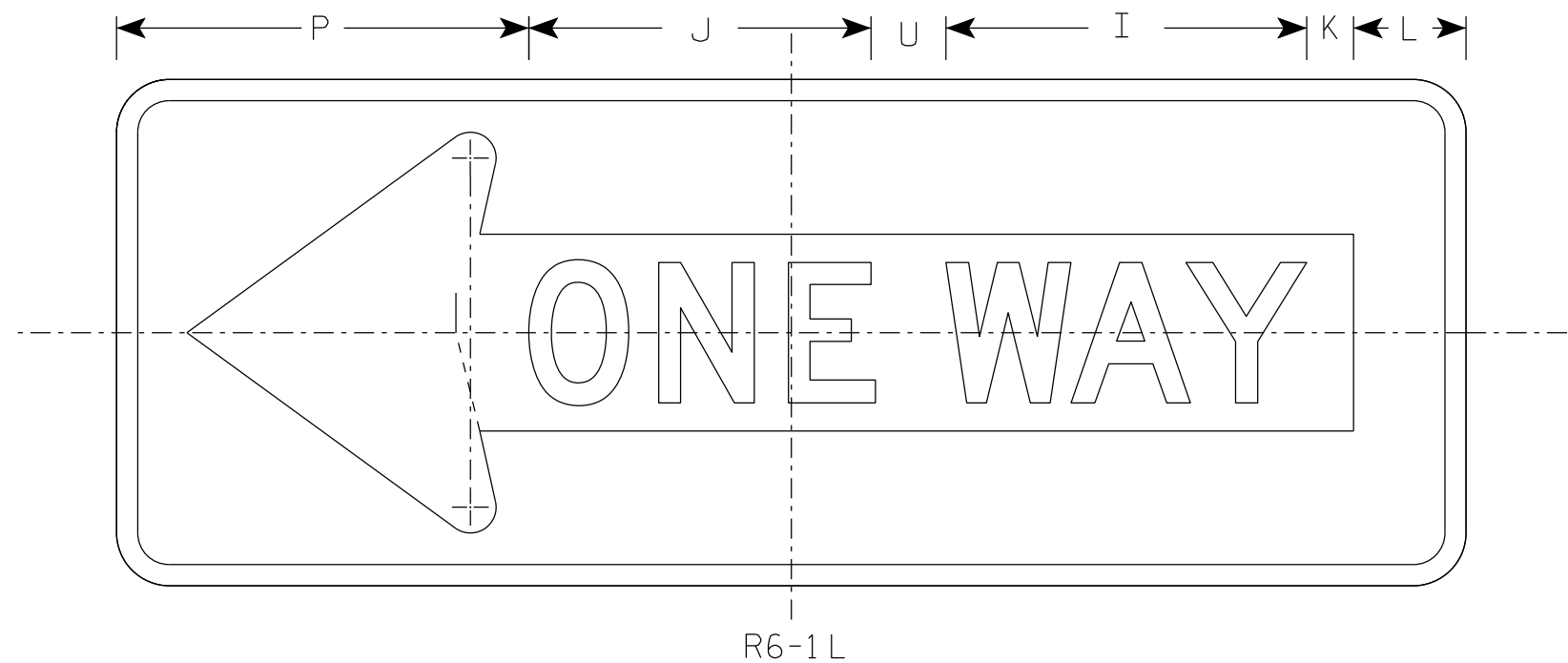
SHEET NO: 205

E



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - Black
Message - Black Legend & White Arrow & Border
3. Message Series - D



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36	12	1 1/2	1/2		4	2	7 1/2	9 5/8	9 1/8	1 1/4	3	3 3/8	5/8	4 3/8	11		3/8	7 1/2	3/4	2						3.0
2M	48	18	1 7/8	3/4		5	2 1/2	11	13	12 1/4	2 3/4	3 1/2	5 1/2	1	7 1/8	13 1/2		1/2	10 1/8	7/8	3						6.0
3	48	18	1 7/8	3/4		5	2 1/2	11	13	12 1/4	2 3/4	3 1/2	5 1/2	1	7 1/8	13 1/2		1/2	10 1/8	7/8	3						6.0
4	48	18	1 7/8	3/4		5	2 1/2	11	13	12 1/4	2 3/4	3 1/2	5 1/2	1	7 1/8	13 1/2		1/2	10 1/8	7/8	3						6.0
5																											

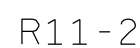
STANDARD SIGN R6-1 L&R

WISCONSIN DEPT OF TRANSPORTATION

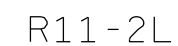
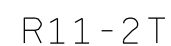
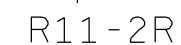
APPROVED Matthew R. Rauch
for State Traffic Engineer

DATE 4/7/2025 PLATE NO. R6-1.5

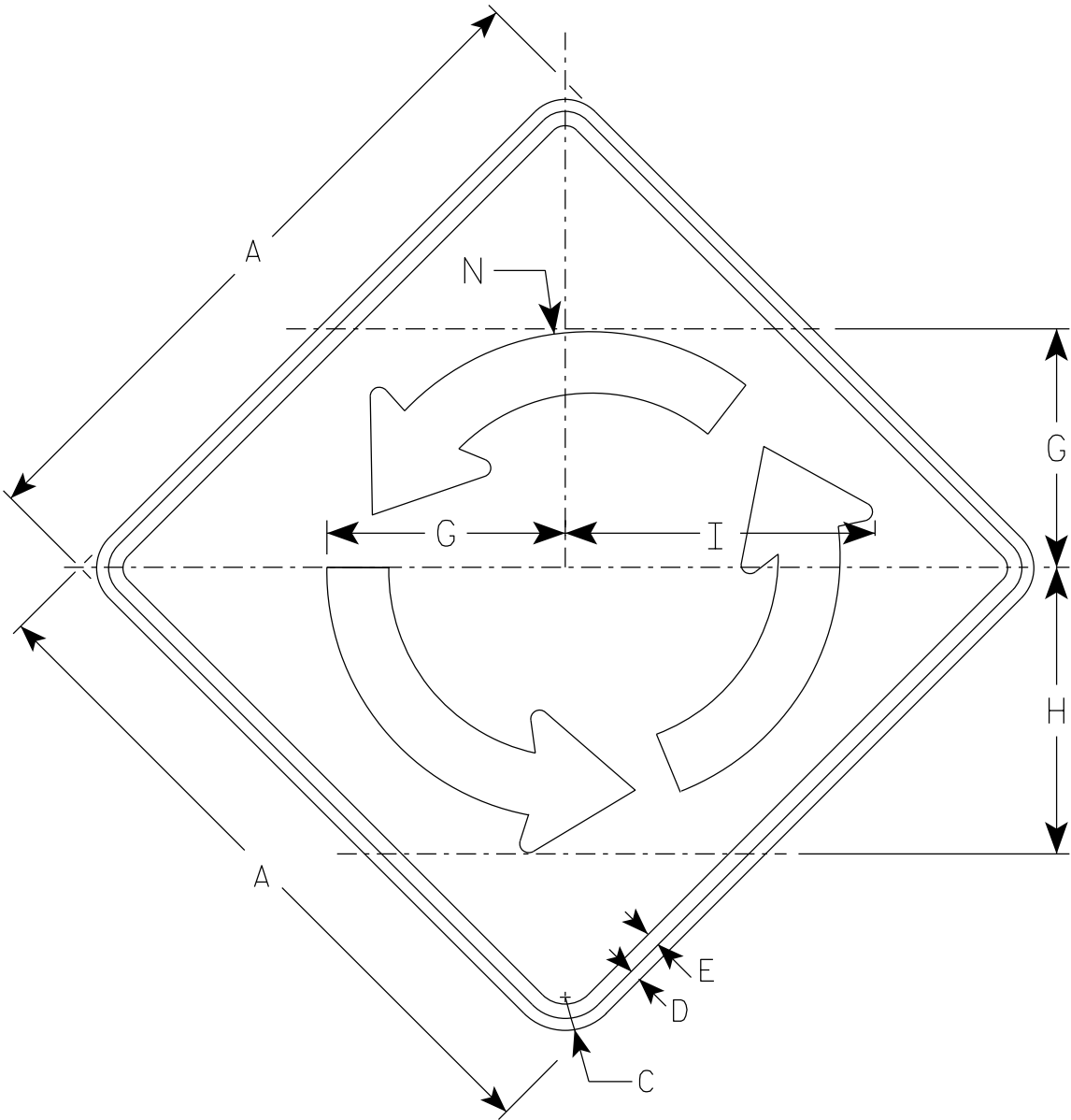
PROJECT NO: SHEET NO: 206 **E**



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



STANDARD SIGN	
R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew P. Rauch</u> for State Traffic Engineer
DATE <u>2/5/24</u>	PLATE NO. <u>R11-2.12</u>

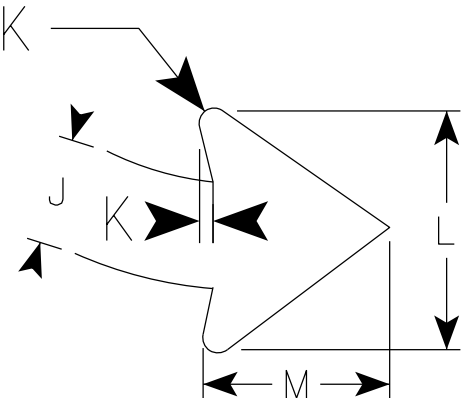


W2-6

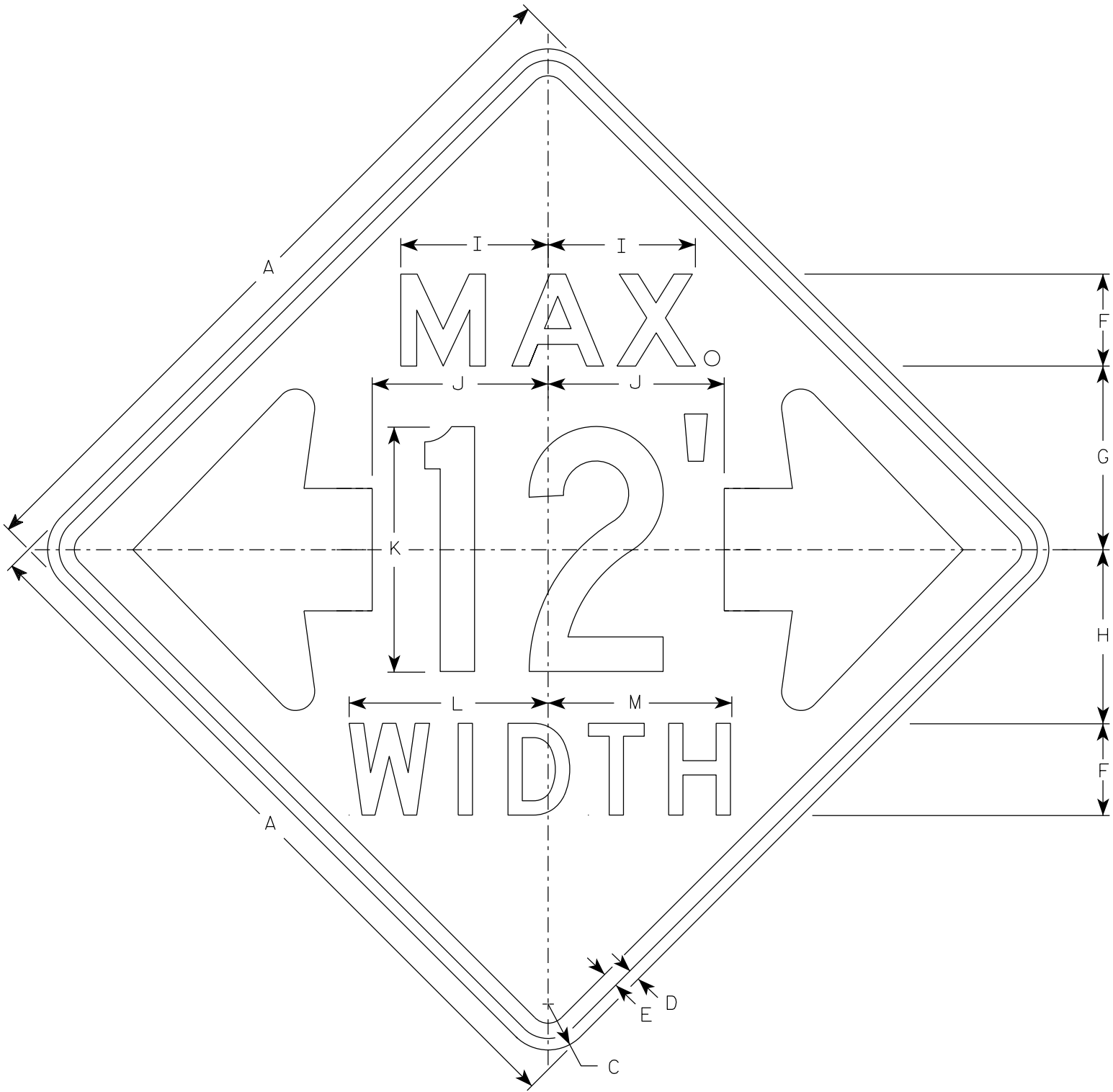
NOTES

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

Arrow Detail

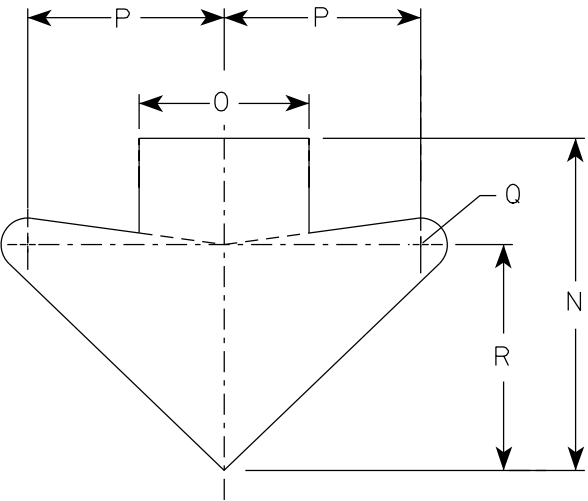


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Area sq. ft.
1																									
2S	30		1 7/8	1/2	5/8		10 3/8	12 1/2	13 1/2	2 3/4	3/8	6	4 3/4	11 1/8											6.25
2M	30		1 7/8	1/2	5/8		10 3/8	12 1/2	13 1/2	2 3/4	3/8	6	4 3/4	11 1/8											6.25
3	36		2 1/4	5/8	3/4		12 1/2	15	16 1/4	3 1/4	1/2	7 3/8	5 3/4	13 3/8											9.00
4	48		3	3/4	1		16 5/8	20	16 1/4	4 3/8	5/8	9 3/4	7 5/8	17 7/8											16.0
5																									



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - See note 5
- 4. The top line is series E, the numerals are series C, and the bottom line is series D.
- 5. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		3	¾	1	6	12	11 ⅜	9 ⅝	11 ½	16	13	12	15 ⅝	8	9 ¼	1 ¼	10 ⅝									16.0
2M	48		3	¾	1	6	12	11 ⅜	9 ⅝	11 ½	16	13	12	15 ⅝	8	9 ¼	1 ¼	10 ⅝									16.0
3																											
4																											
5																											

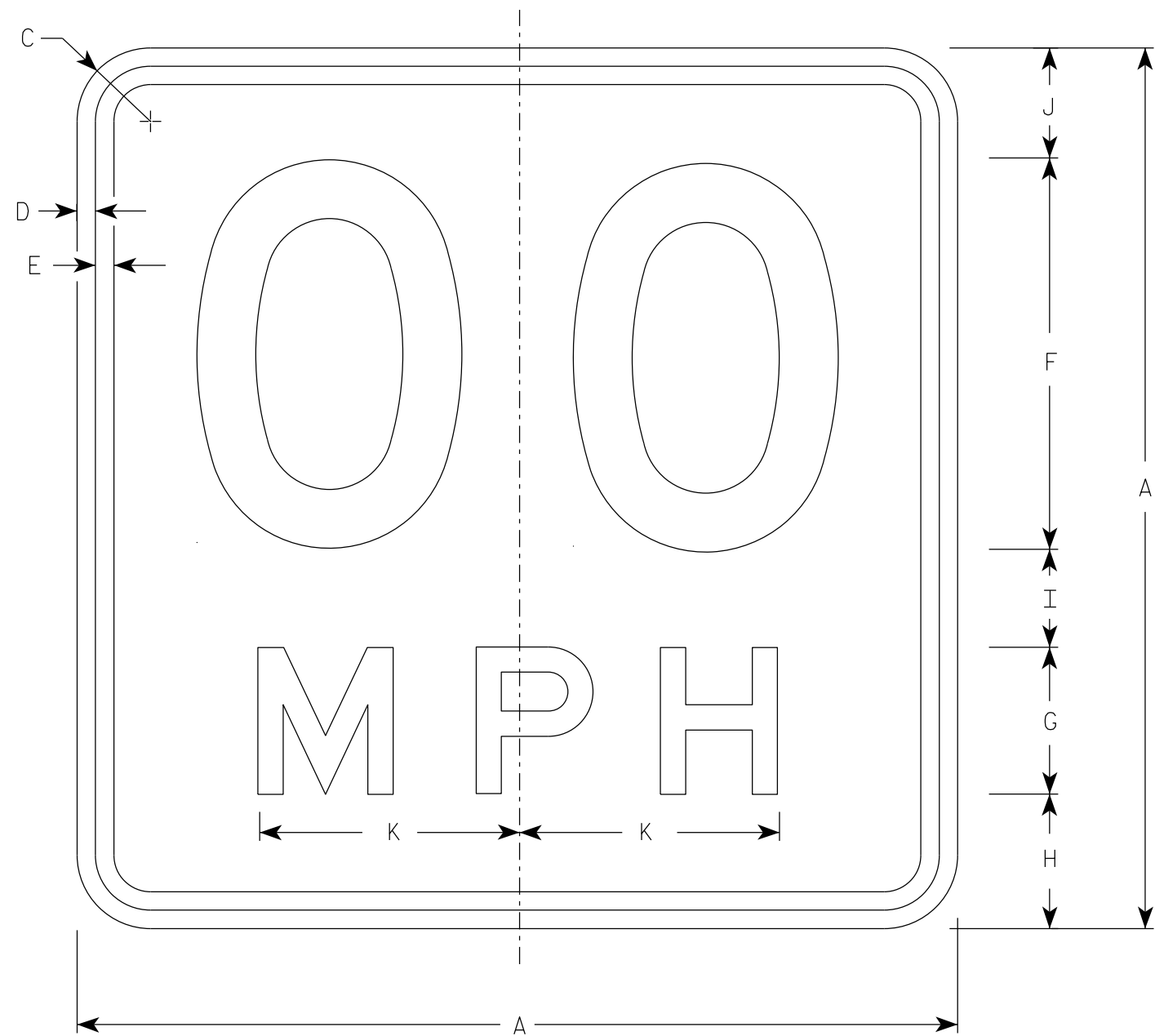
STANDARD SIGN

W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/10/2024 PLATE NO. W12-52.8



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Yellow
Message - Black
3. Message Series - See Note 5
4. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
5. Line 1 is Series D
Line 2 is Series E

W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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.
✱ 2S	1	18		1 1/2	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	2	18		1 1/2	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
✱ 2M	3	18		1 1/2	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	4	24		1 1/2	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8															4.00
	5	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00
	6	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00

STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 1/8/2024 PLATE NO. W13-1.17

PROJECT NO:

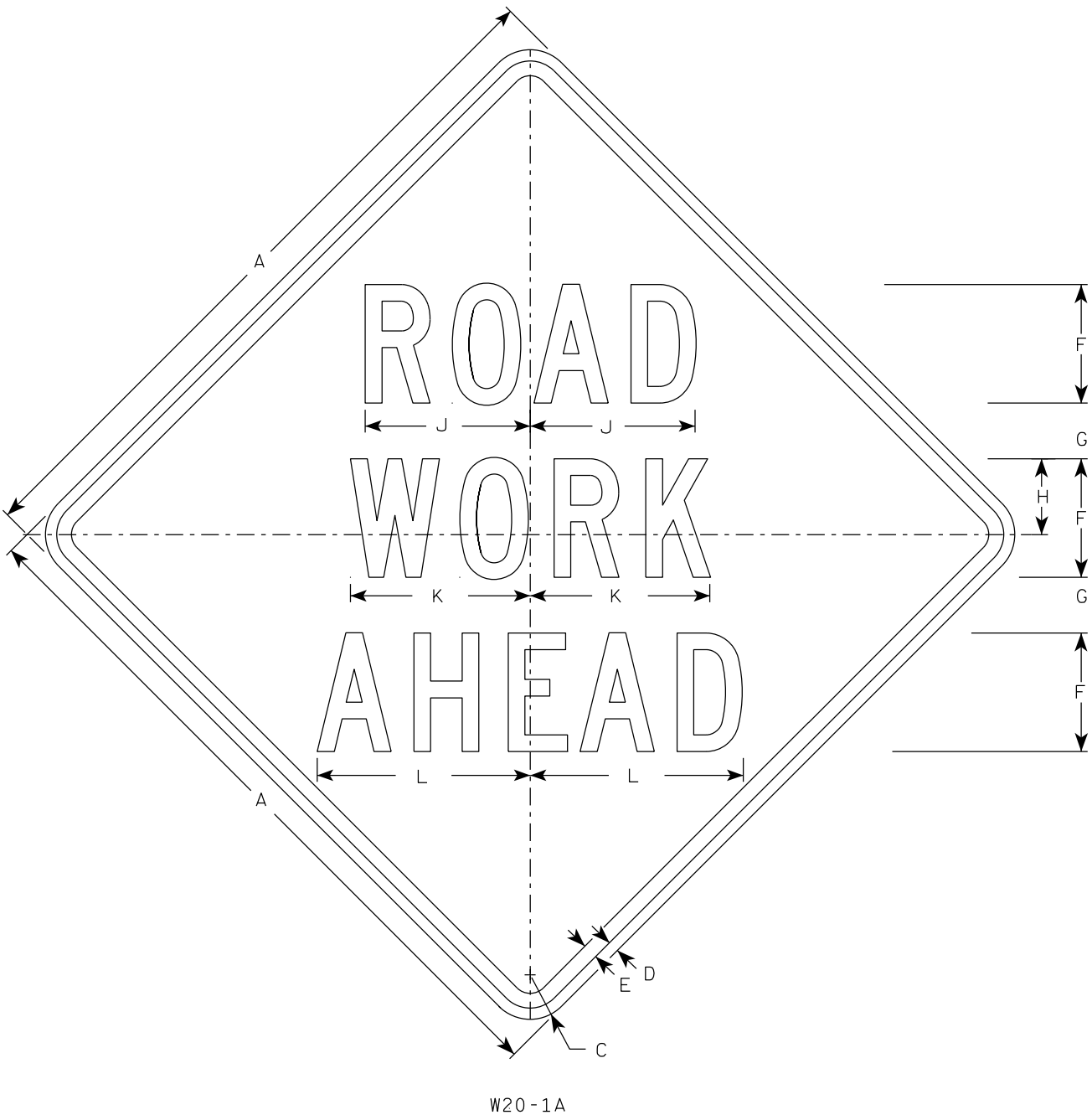
HWY:

COUNTY:

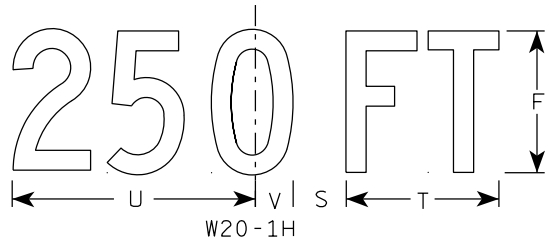
SHEET NO:

210

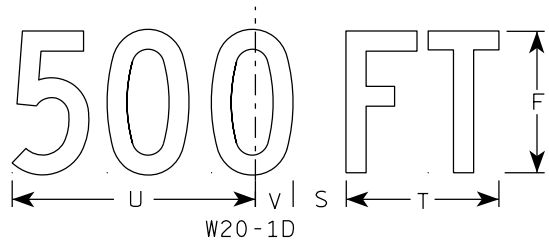
E



W20-1A



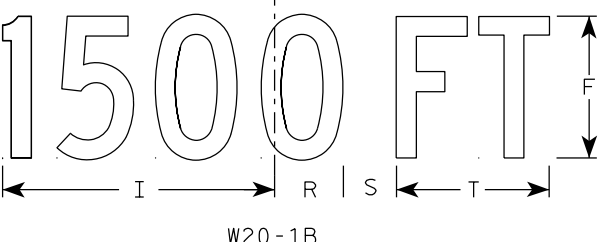
W20-1H



W20-1D

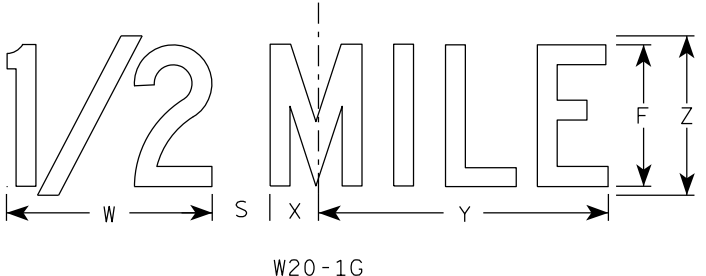


W20-1C

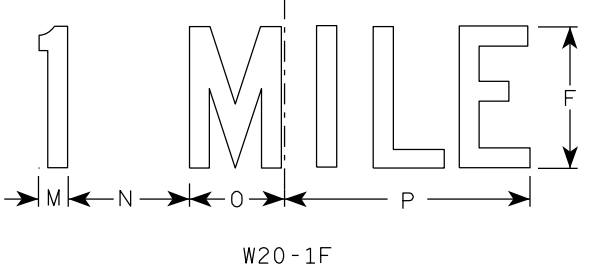


W20-1B

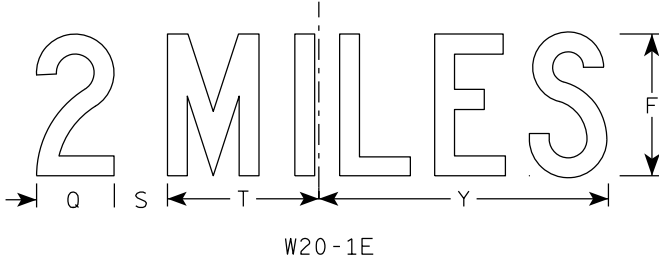
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G

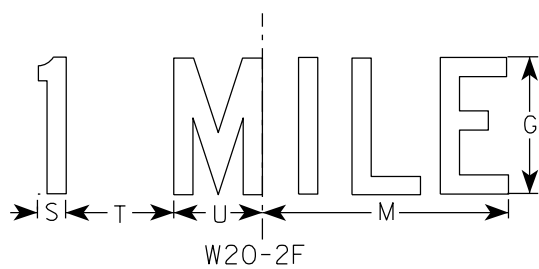
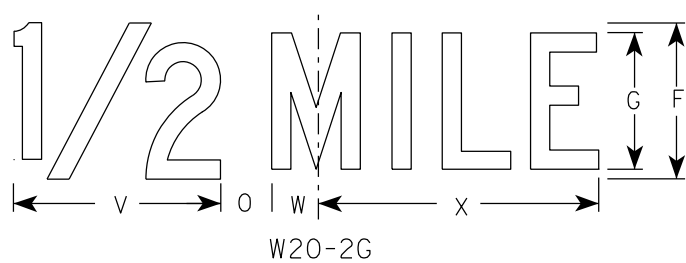
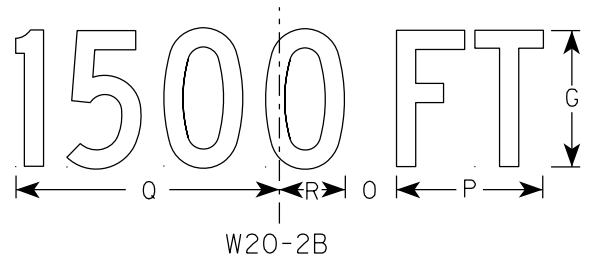
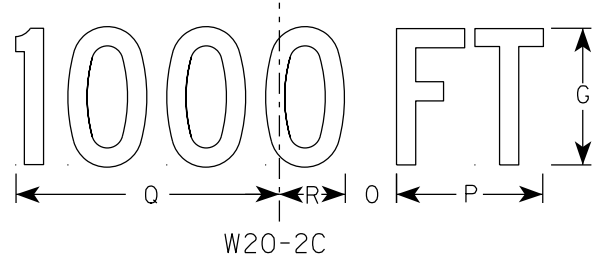
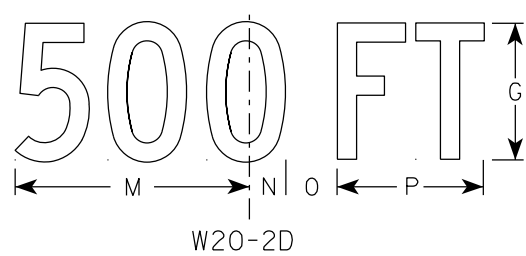
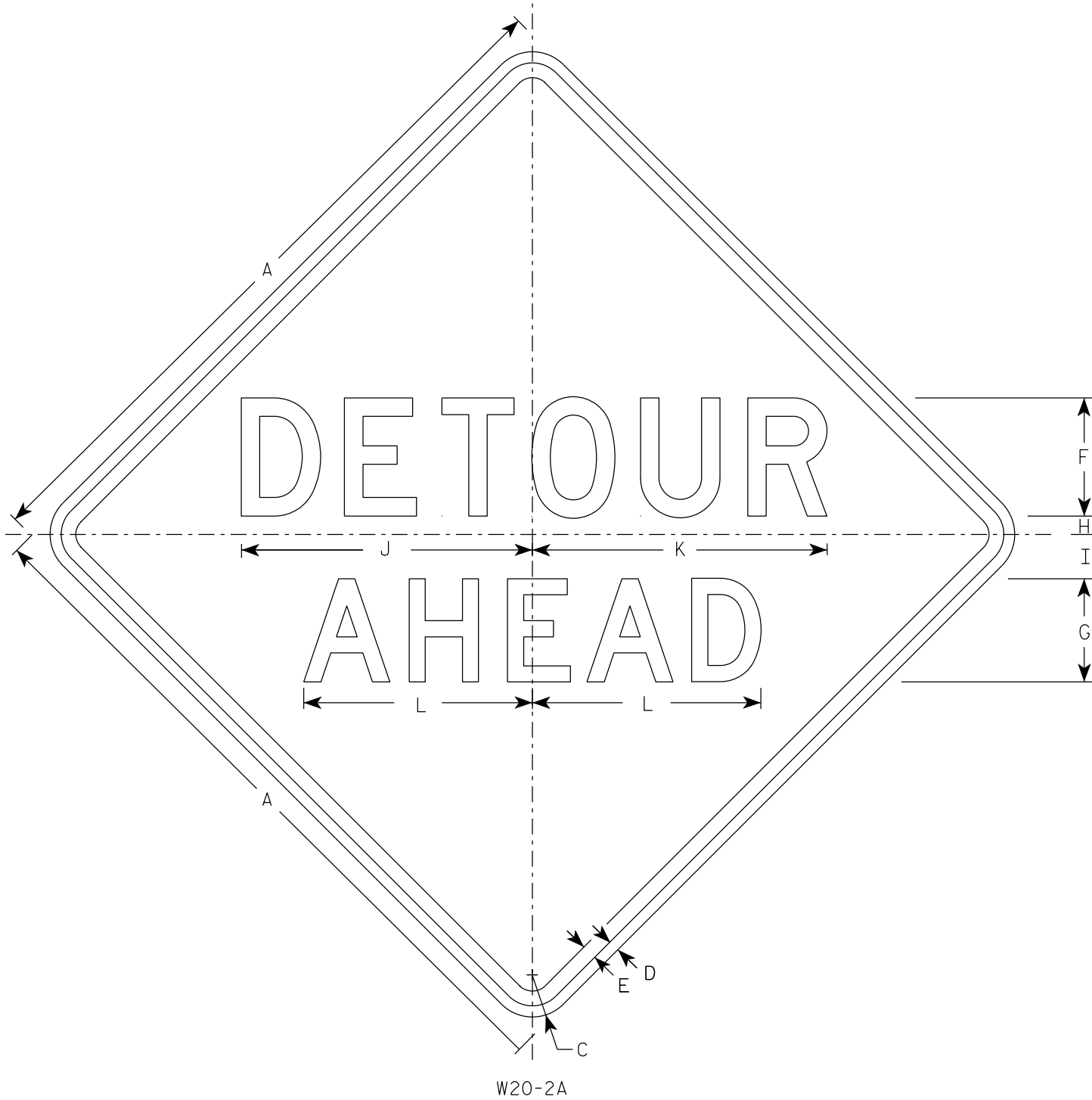


W20-1F



W20-1E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0



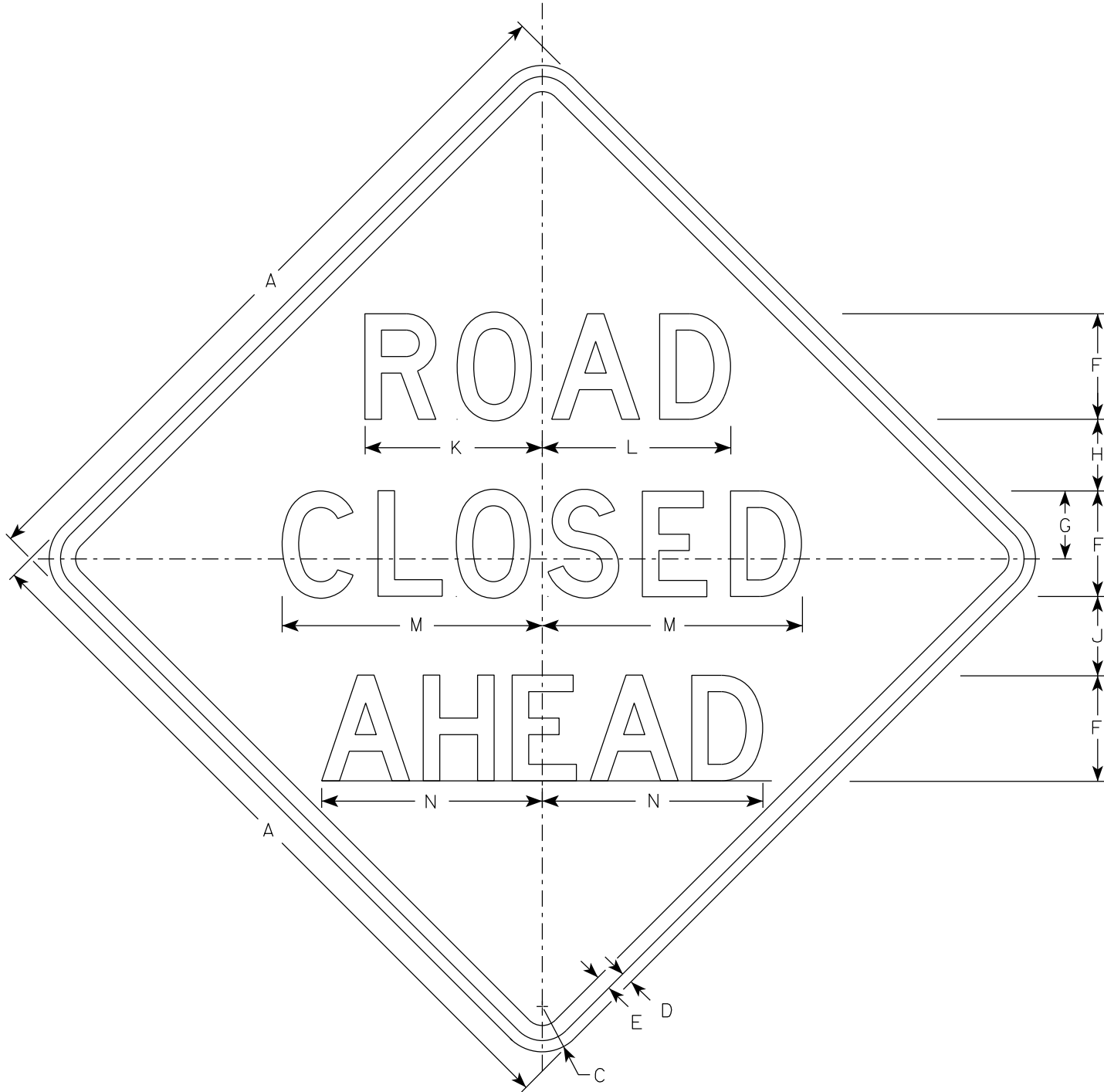
NOTES

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

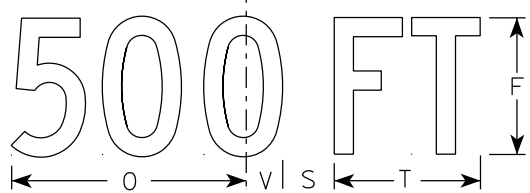
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	w	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			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 W20-2A,B,C,D,F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 1/10/2024	PLATE NO. W20-2.7

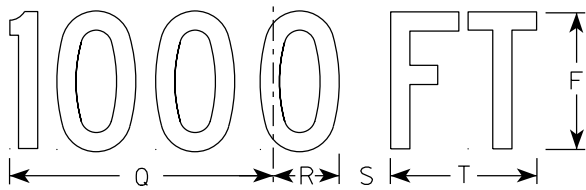
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 212	E
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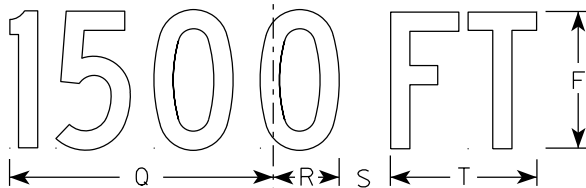
W20-3A



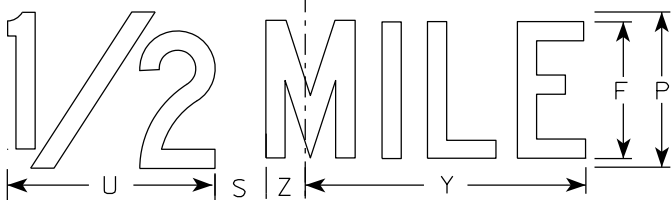
W20-3D



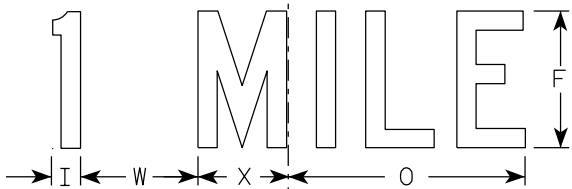
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

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

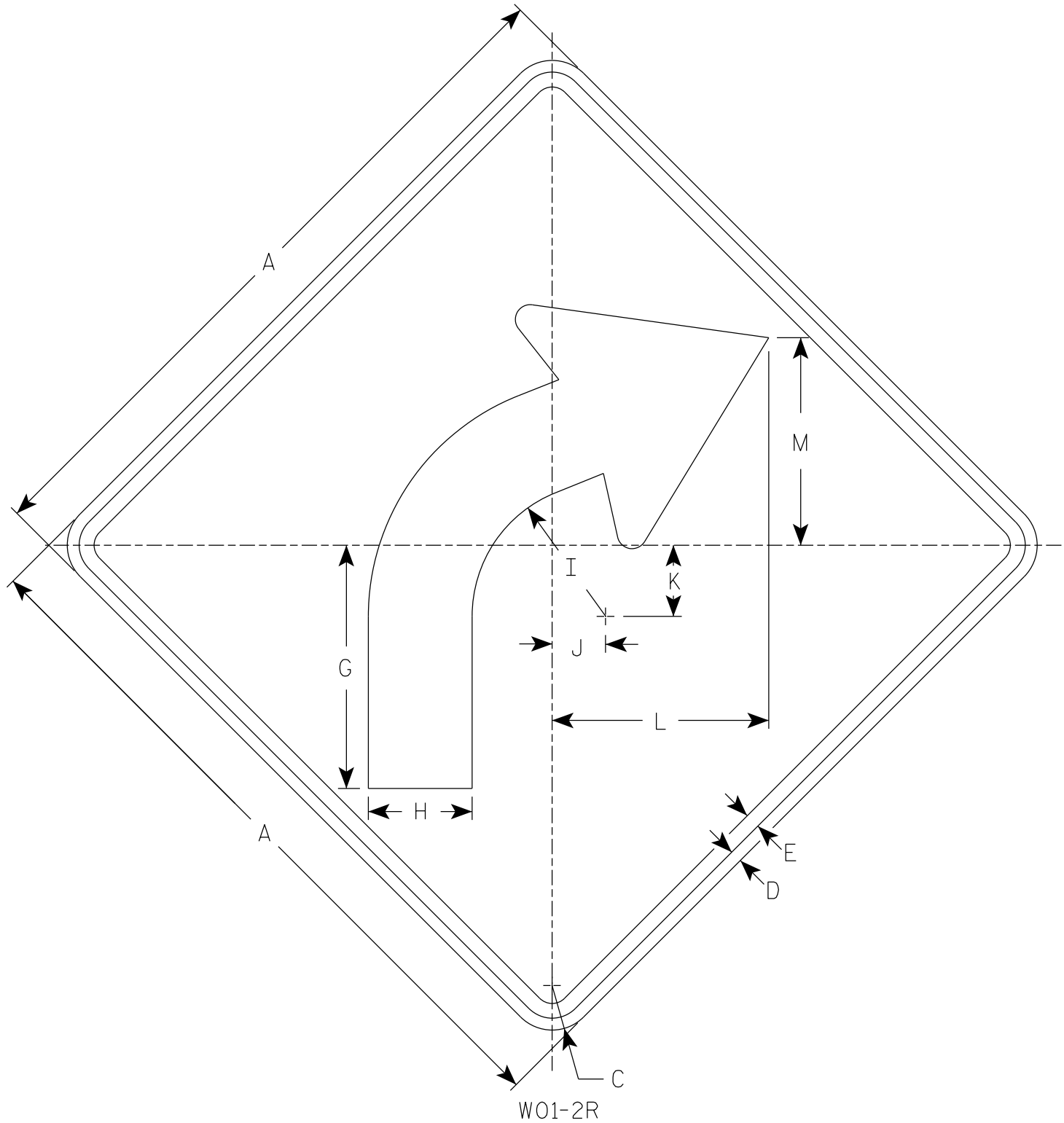
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

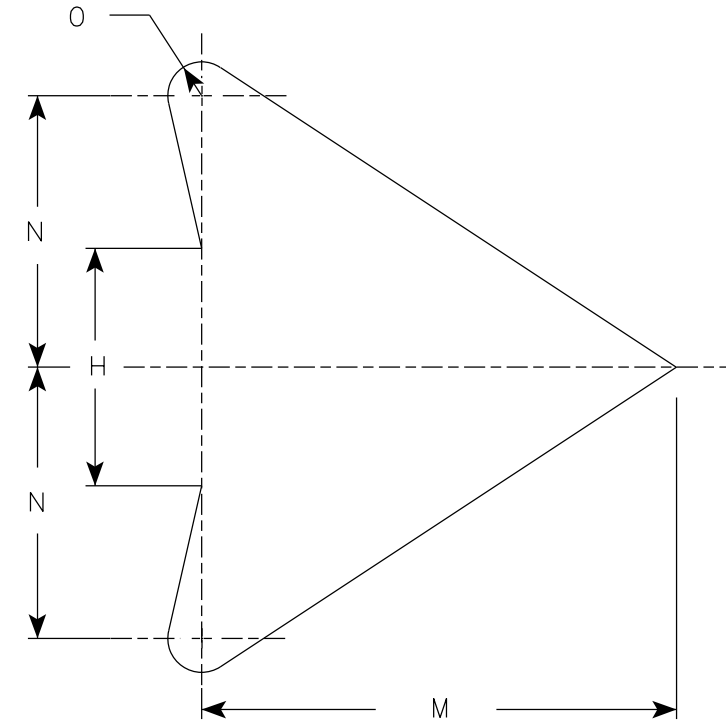
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-3.8



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-2L is the same as W01-2R except the arrow is reversed along the vertical centerline.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												4.0
2S	48		3	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0
2M	48		3	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0
3	48		3	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0
4	48		3	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0
5	48		3	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

STANDARD SIGN W01-2

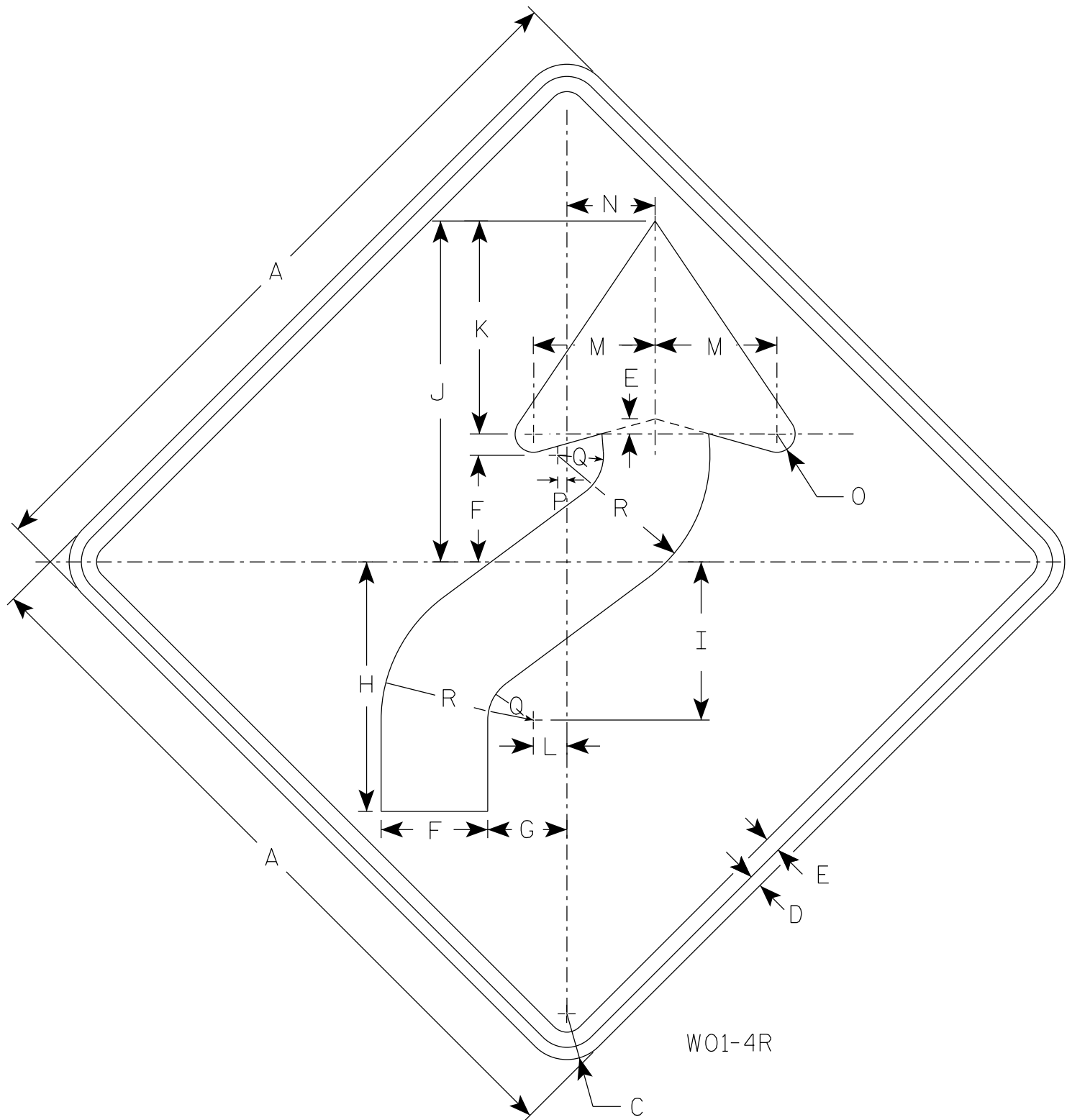
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-2.2

PROJECT NO: HWY: COUNTY: SHEET NO: 214 E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W012.dgn PLOT DATE : 24-JAN 2024 10:17 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : \$\$.....plotscale.....\$\$ WISDOT/CADDs SHEET 42



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

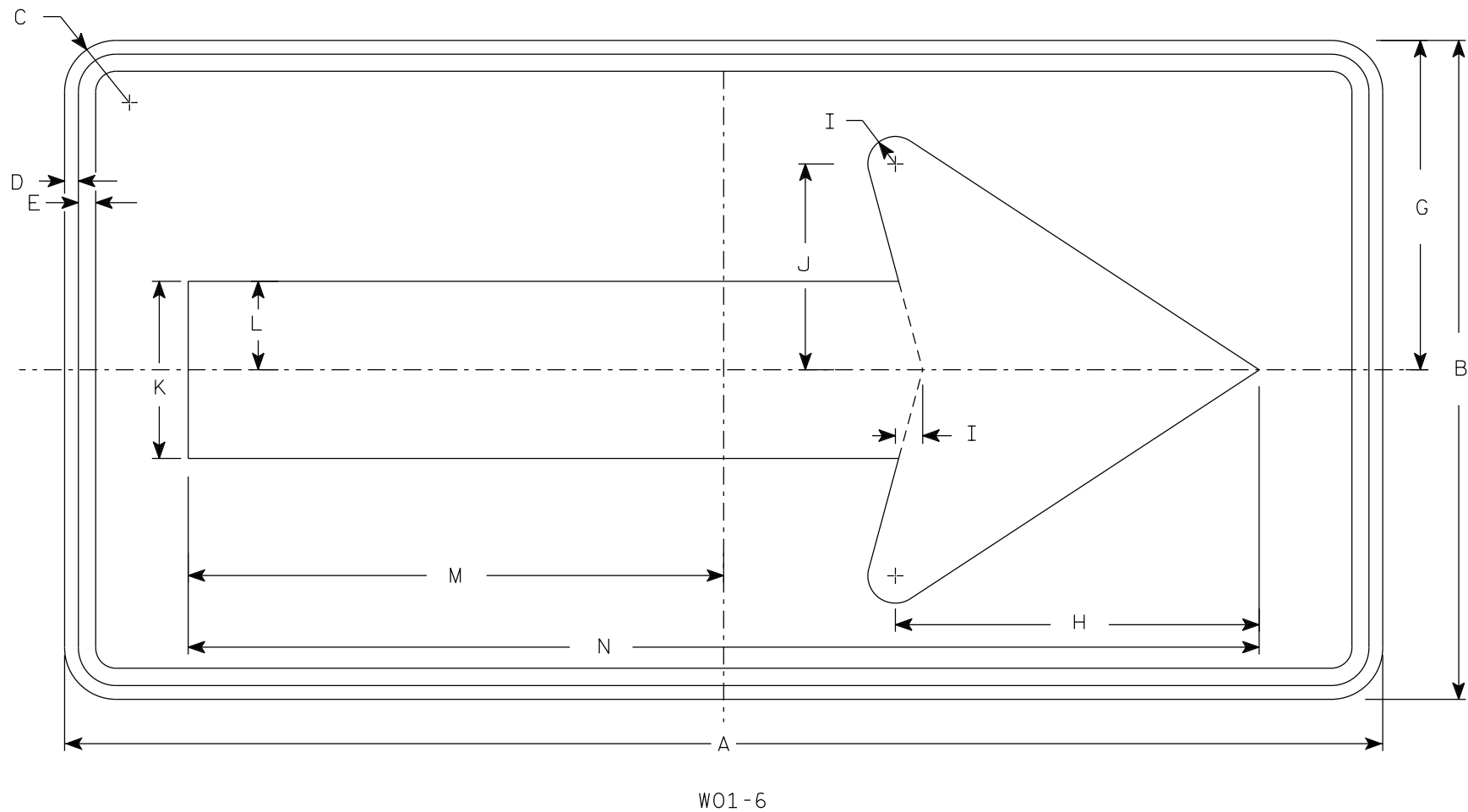
STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-4.2

7



NOTES

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

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	24	1 7⁄8	1⁄2	5⁄8		12	13 1⁄4	1	7 1⁄2	6 1⁄2	3 1⁄4	19 1⁄2	39													8.0
2M	48	24	1 7⁄8	1⁄2	5⁄8		12	13 1⁄4	1	7 1⁄2	6 1⁄2	3 1⁄4	19 1⁄2	39													8.0
3	60	30	1 7⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5
4	60	30	1 7⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5
5	60	30	1 7⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5

STANDARD SIGN

W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

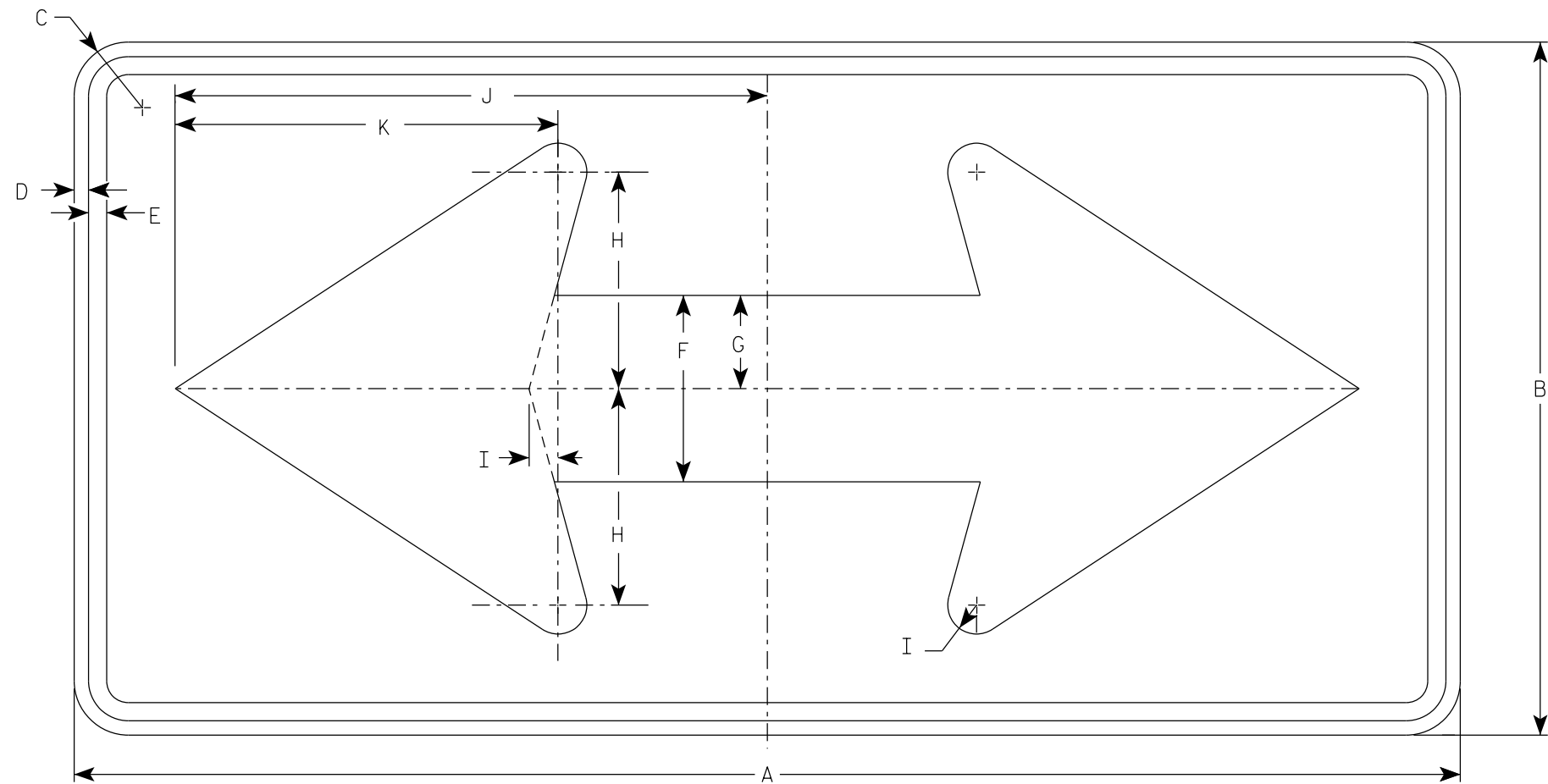
Matthew R. Rauch

for State Traffic Engineer

DATE 1/24/2024

PLATE NO. W01-6.2

7



W01-7

NOTES

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

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	24	1 7/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 7/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 7/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 7/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	60	30	1 7/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5

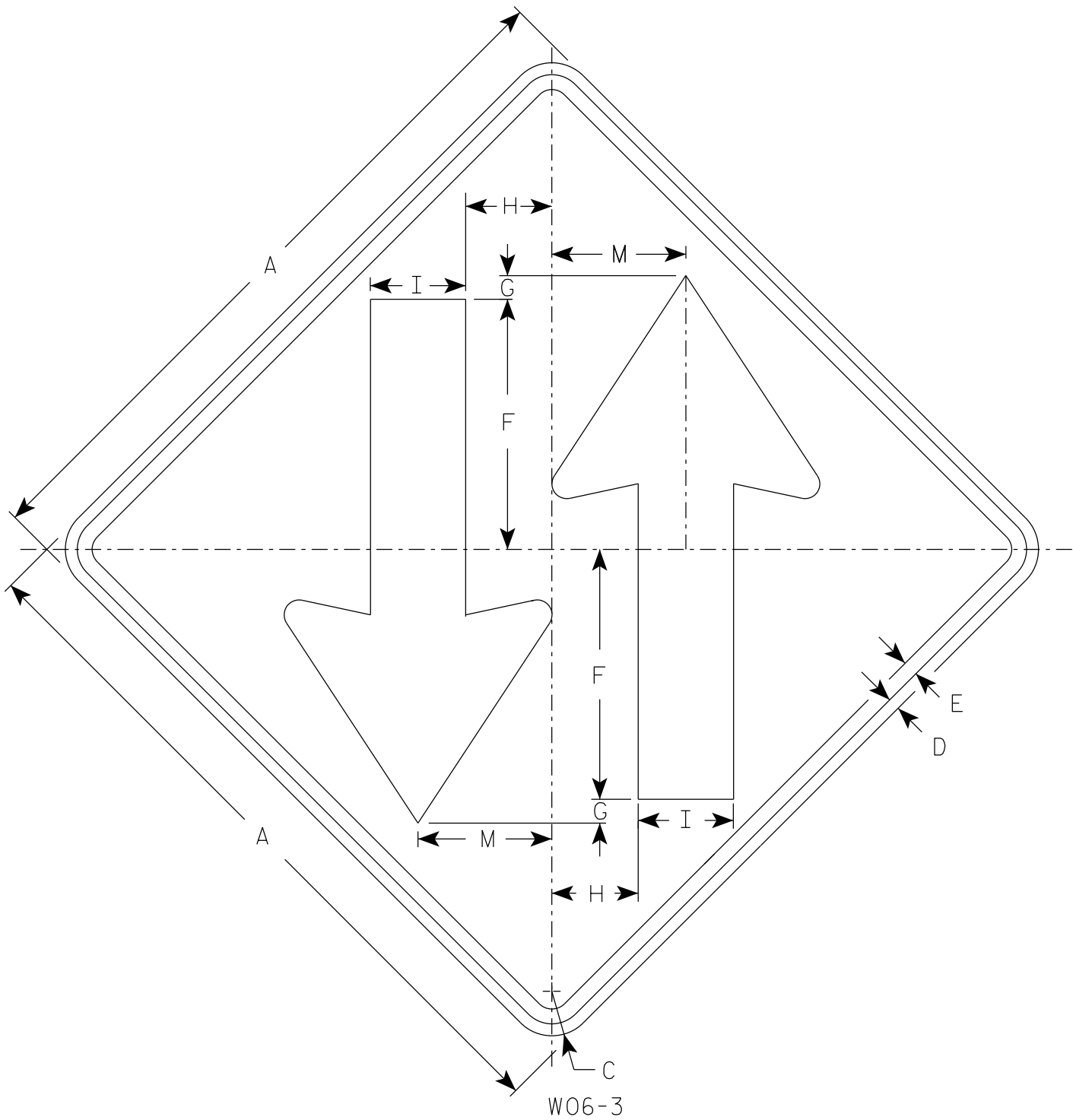
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 217

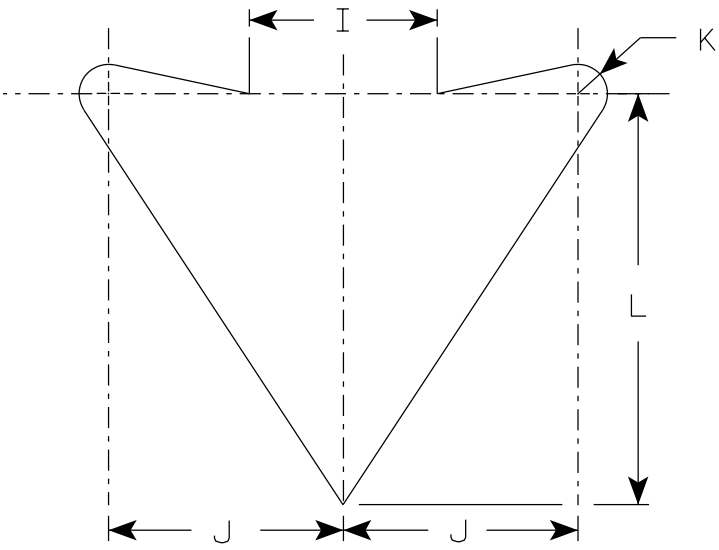
E



W06-3

NOTES

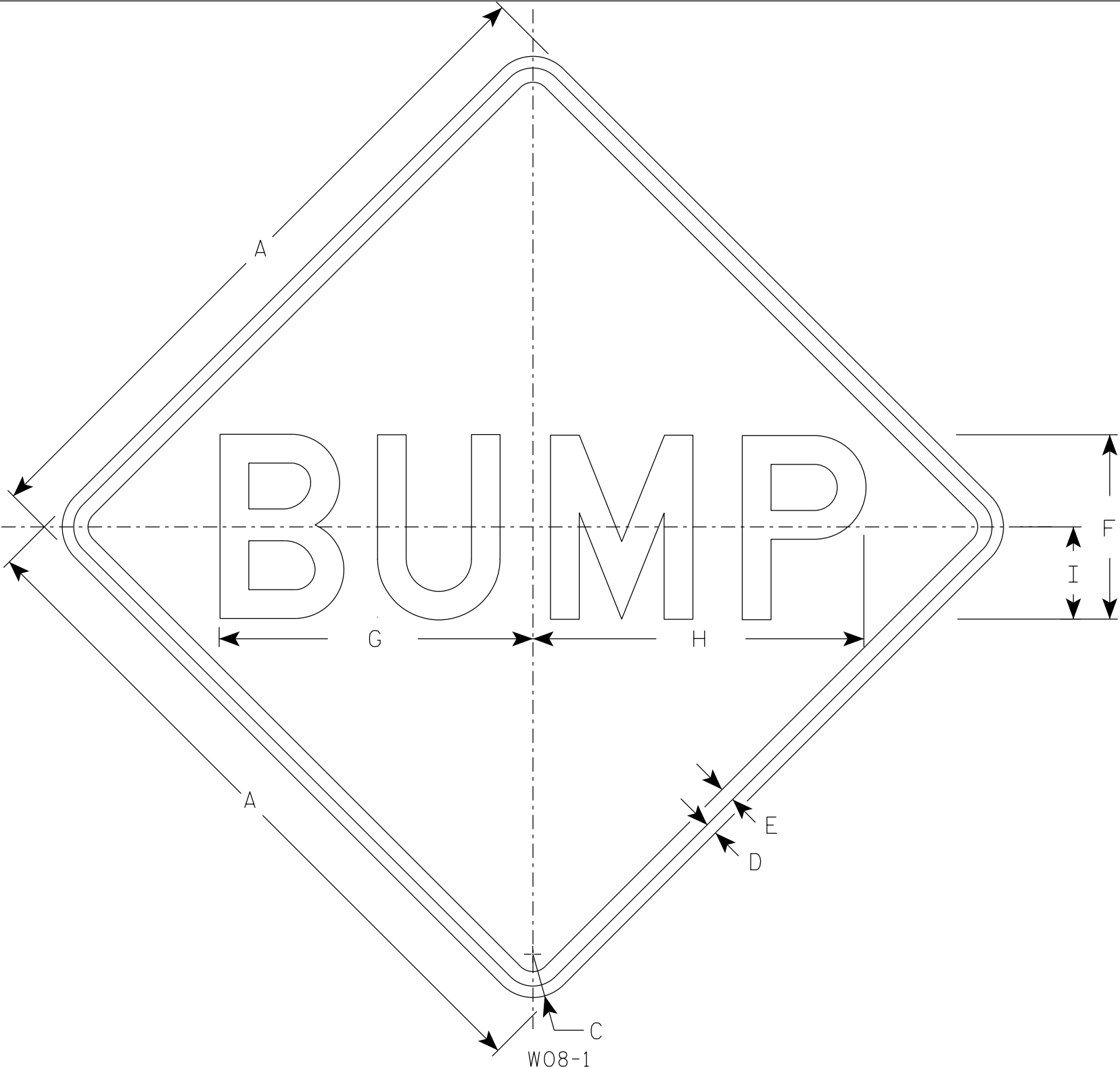
- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	12	1	4 1/4	5	6	3/4	10 1/2	6 3/4														9.0
2S	48		3	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
2M	48		3	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
3	48		3	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
4	48		3	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
5	48		3	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0

7



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.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	10	16 7/8	17 7/8	5																		9.0
2S	48		3	3/4	1	12	20 3/8	21 5/8	6																		16.0
2M	48		3	3/4	1	12	20 3/8	21 5/8	6																		16.0
3	48		3	3/4	1	12	20 3/8	21 5/8	6																		16.0
4	48		3	3/4	1	12	20 3/8	21 5/8	6																		16.0
5	48		3	3/4	1	12	20 3/8	21 5/8	6																		16.0

STANDARD SIGN
W08-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/30/2024 PLATE NO. W08-1.2

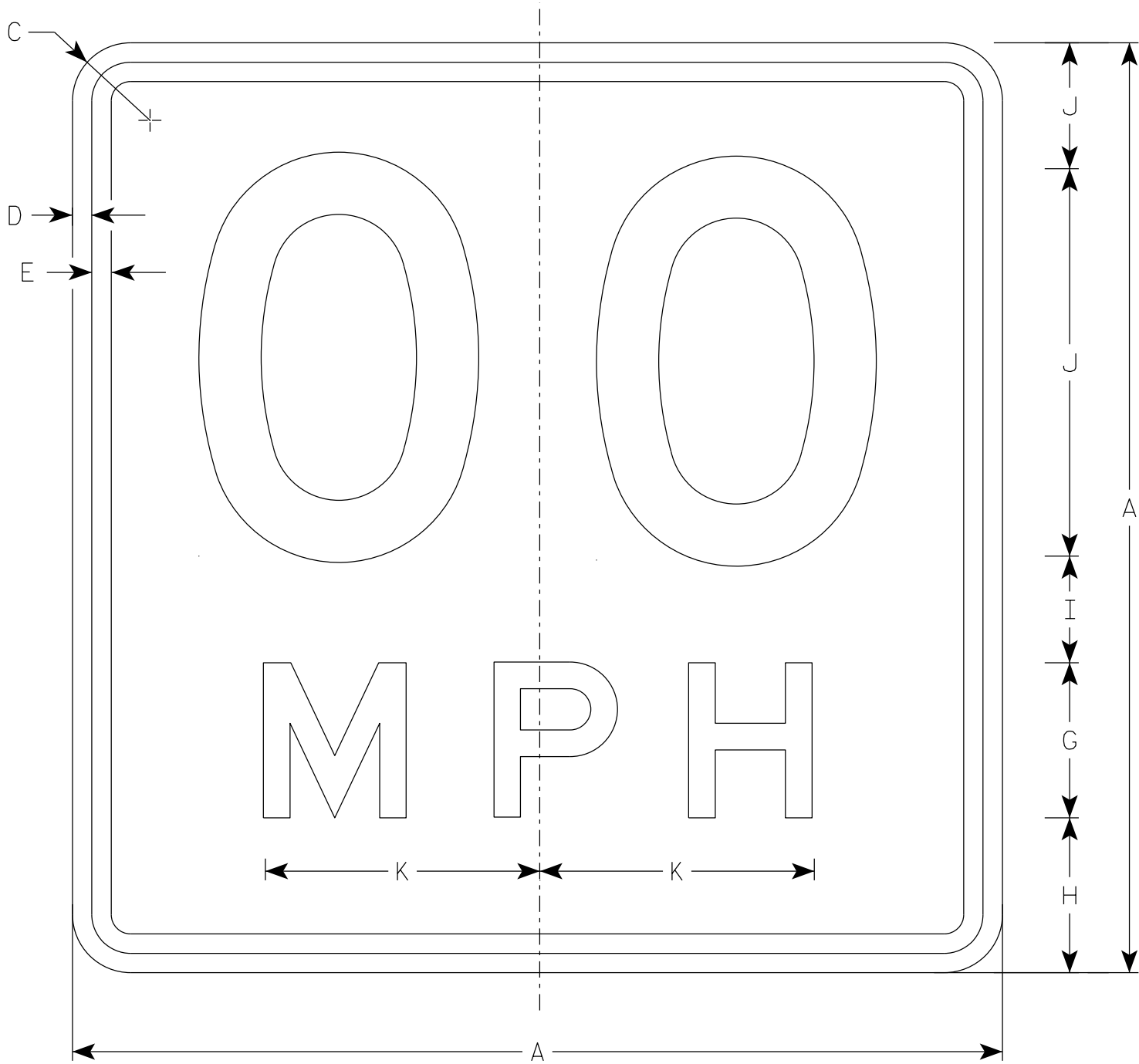
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 219

E



W013-1

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - See Note 6
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
- 6. Line 1 is Series D
Line 2 is Series E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10	4	4	2 3/4	3 1/4	7 1/8																4.0
2S	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
2M	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
3	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
4	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
5	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0

STANDARD SIGN

W013-1

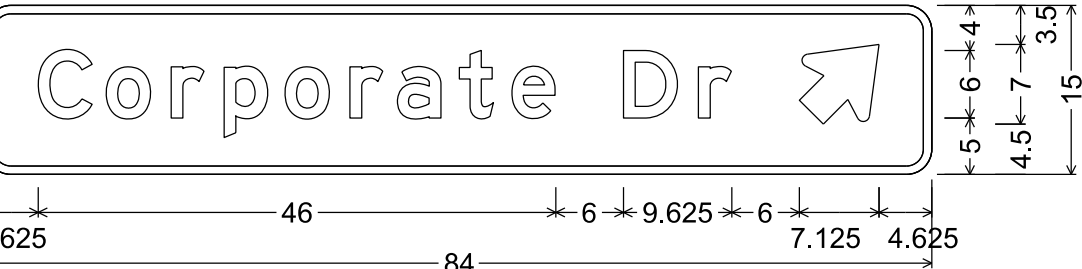
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/1/2024 PLATE NO. W013-1.2



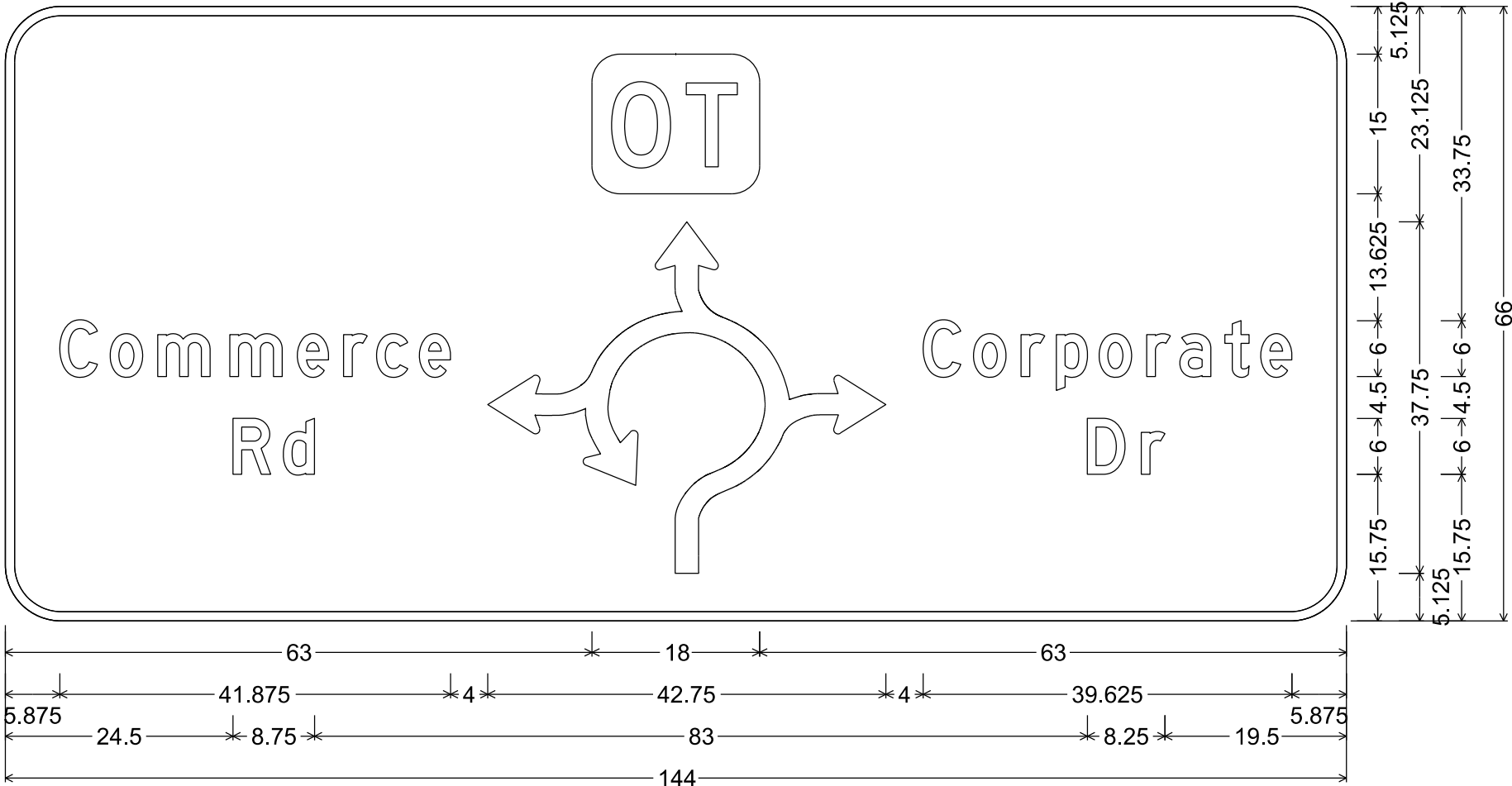
D1-1; 2.250" Radius, 0.750" Border



D1-1; 2.250" Radius, 0.750" Border

NOTES

1. Signs are Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E or as noted



D1-62; 6.000" Radius, 1.000" Border
"Commerce", D; "Rd", D; "Corporate", D; "Dr", D

7

7

STA 91+45 - STA 100+75										
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
								1.00	1.30	
91+45	0.00	24.20	20.00	0.00	0	0	0	0	0	0
92+00	55.23	25.42	20.00	0.00	51	41	0	51	0	10
92+50	50.00	26.78	20.00	0.00	48	37	0	99	0	21
93+00	50.00	27.99	20.00	0.00	51	37	0	150	0	35
93+50	50.00	26.19	20.00	0.00	50	37	0	200	0	48
94+00	50.00	24.90	20.00	0.00	47	37	0	247	0	58
94+50	50.00	23.36	20.00	0.00	45	37	0	292	0	66
95+00	50.00	24.47	20.00	0.00	44	37	0	336	0	73
95+50	50.00	25.53	20.00	0.00	46	37	0	382	0	82
96+00	50.00	24.54	20.00	0.00	46	37	0	428	0	91
96+50	50.00	24.45	20.00	0.00	45	37	0	473	0	99
97+00	50.00	24.83	20.00	0.00	46	37	0	519	0	108
97+50	50.00	25.76	20.00	0.00	47	37	0	566	0	118
98+00	50.00	24.65	20.00	0.00	47	37	0	613	0	128
98+50	50.00	26.23	20.00	0.00	47	37	0	660	0	138
99+00	50.00	26.93	20.00	0.00	49	37	0	709	0	150
99+50	50.00	25.72	20.00	0.00	49	37	0	758	0	162
100+00	50.00	25.74	20.00	0.00	48	37	0	806	0	173
100+50	50.00	26.53	20.00	0.00	48	37	0	854	0	184
100+75	25.00	27.78	20.00	0.00	25	19	0	879	0	190

STA 105+75 - CTH OT/COMMERCE RD/CORPORATE DR INTERSECTION

STATION	INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)	
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	MASS ORDINATE
				1.00	
100+73 - 105+75	2,600	819	770	2,600	780

NOTE - THE EARTHWORK VOLUME FOR THE ROUNDABOUT AND ADJACENT LEGS WAS COMPUTED USING SURFACE TO SURFACE COMPARISON.

CORPORATE DR - TEMPORARY										
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
								1.00	1.30	
5000+11	0.00	92.41	2.00	0.00	0	0	0	0	0	0
5000+50	38.46	49.49	2.00	0.00	101	3	0	101	0	98
5001+00	50.00	43.18	2.00	0.00	86	4	0	187	0	180
5001+22	22.14	20.38	2.00	0.00	26	2	0	213	0	204
5001+68	0.00	22.66	2.00	0.00	0	0	0	213	0	204
5002+00	32.05	47.71	2.00	0.00	42	2	0	255	0	244
5002+50	50.00	11.92	2.00	0.00	55	4	0	310	0	295
5002+78	28.37	0.51	2.00	0.00	7	2	0	317	0	300

CORPORATE DR - TEMPORARY (REMOVAL)

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
								1.00	1.30	
5000+11	0.00	70.19	35.09	66.23	0	0	0	0	0	0
5000+50	38.46	40.22	20.11	31.95	79	39	70	79	91	-51
5001+00	50.00	33.00	16.50	30.31	68	34	58	147	166	-92
5001+22	22.14	16.50	8.25	14.38	20	10	18	167	190	-106
5001+68	0.00	16.50	8.25	16.09	0	0	0	167	190	-106
5002+00	32.05	33.00	16.50	34.55	29	15	30	196	229	-131
5002+50	50.00	9.88	4.94	7.94	40	20	39	236	280	-162
5002+78	28.37	0.52	0.26	0.32	5	3	4	241	285	-165

STA 105+75 - STA 112+85 WB

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE	FILL	CUT	SALVAGED/UNUSABLE	FILL	CUT	EXPANDED FILL	MASS ORDNATE
			PAVEMENT MATERIAL			PAVEMENT MATERIAL			1.001.30	
105+75	0.00	47.28	13.00	0.00	0	0	0	0	0	0
106+00	25.00	46.96	13.00	0.00	44	12	0	44	0	32
106+50	50.00	45.88	13.00	0.07	86	24	0	130	0	94
107+00	50.00	47.61	13.00	0.15	87	24	0	217	0	157
107+50	50.00	47.69	13.00	0.00	88	24	0	305	0	221
108+00	50.00	49.15	13.00	0.04	90	24	0	395	0	287
108+50	50.00	36.63	13.00	3.26	79	24	3	474	4	338
109+00	50.00	32.56	13.00	7.25	64	24	10	538	17	365
109+50	50.00	32.39	13.00	13.87	60	24	20	598	43	375
110+00	50.00	32.17	13.00	10.34	60	24	22	658	72	383
110+50	50.00	48.53	13.00	1.05	75	24	11	733	86	419
111+00	50.00	72.33	13.00	0.00	112	24	1	845	87	506
111+50	50.00	72.31	13.00	1.67	134	24	2	979	90	613
111+85	34.90	66.67	13.00	139.81	90	17	91	1,069	208	568
112+10	24.98	67.75	13.00	255.48	62	12	183	1,131	446	380
112+38	28.12	61.64	13.00	34.22	67	14	151	1,198	642	237
112+85	47.51	0.00	13.00	0.00	54	23	30	1,252	681	229

STA 105+75 - STA 112+91 EB

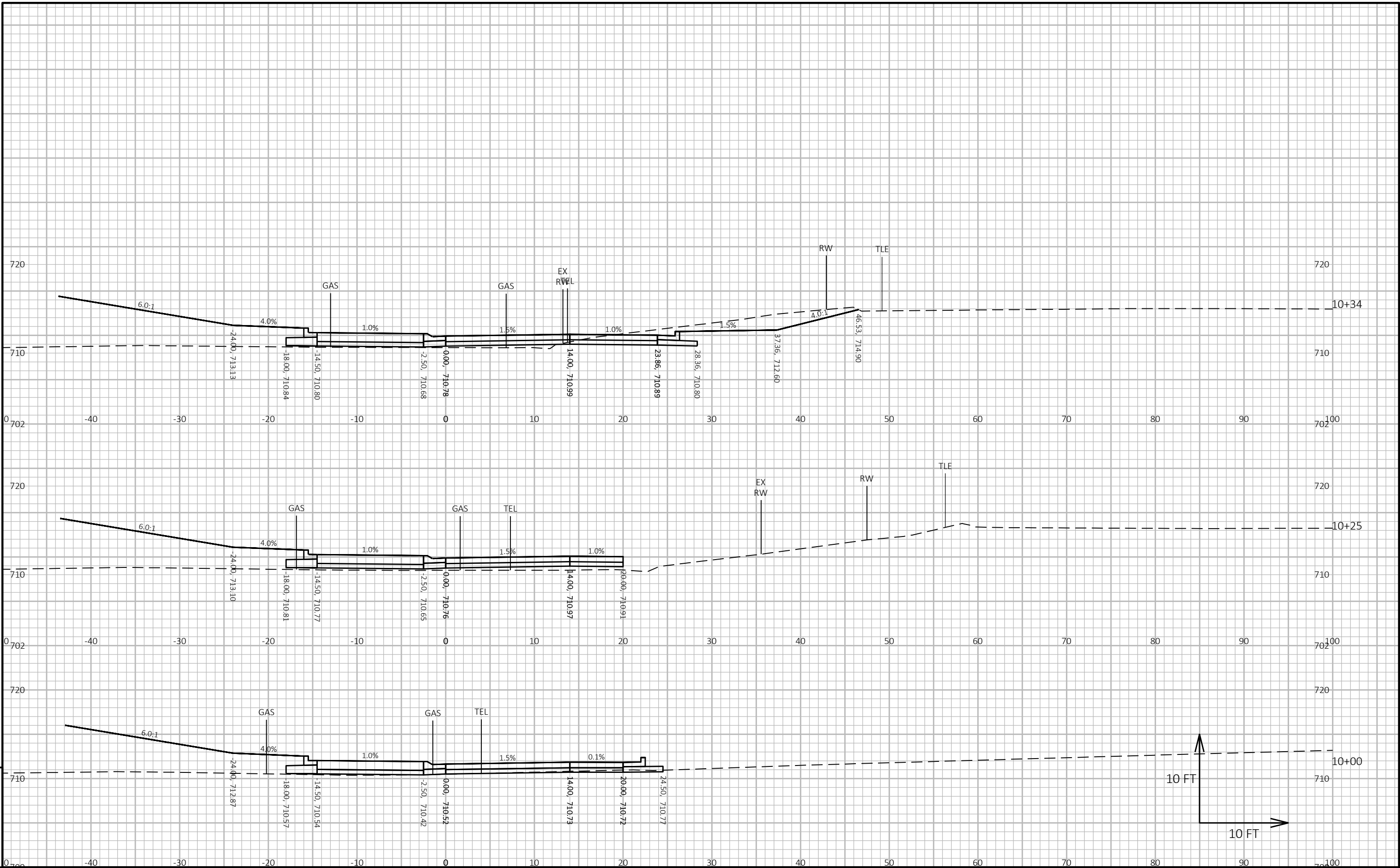
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE	FILL	CUT	SALVAGED/UNUSABLE	FILL	CUT	EXPANDED FILL	MASS ORDNATE
			PAVEMENT MATERIAL			PAVEMENT MATERIAL			1.001.30	
105+75	0.00	49.38	13.00	0.04	0	0	0	0	0	0
106+00	25.00	48.71	13.00	0.25	45	12	0	45	0	33
106+50	50.00	48.20	13.00	0.00	90	24	0	135	0	99
107+00	50.00	47.90	13.00	0.03	89	24	0	224	0	164
107+50	50.00	41.71	13.00	0.06	83	24	0	307	0	223
108+00	50.00	42.25	13.00	0.15	78	24	0	385	0	277
108+50	50.00	50.07	13.00	0.00	85	24	0	470	0	338
109+00	50.00	48.24	13.00	0.03	91	24	0	561	0	405
109+50	50.00	44.70	13.00	0.01	86	24	0	647	0	467
110+00	50.00	36.63	13.00	0.00	75	24	0	722	0	518
110+50	50.00	33.25	13.00	0.00	65	24	0	787	0	559
111+00	50.00	34.75	13.00	0.00	63	24	0	850	0	598
111+50	50.00	49.58	13.00	2.40	78	24	2	928	3	649
111+99	48.98	47.01	13.00	189.94	88	24	174	1,016	229	487
112+24	24.98	43.47	13.00	316.18	42	12	234	1,058	533	213
112+52	28.11	43.52	13.00	14.56	45	14	172	1,103	757	20
112+75	22.93	44.02	13.00	10.58	37	11	11	1,140	771	32
112+91	15.74	44.56	13.00	29.61	26	8	12	1,166	787	35

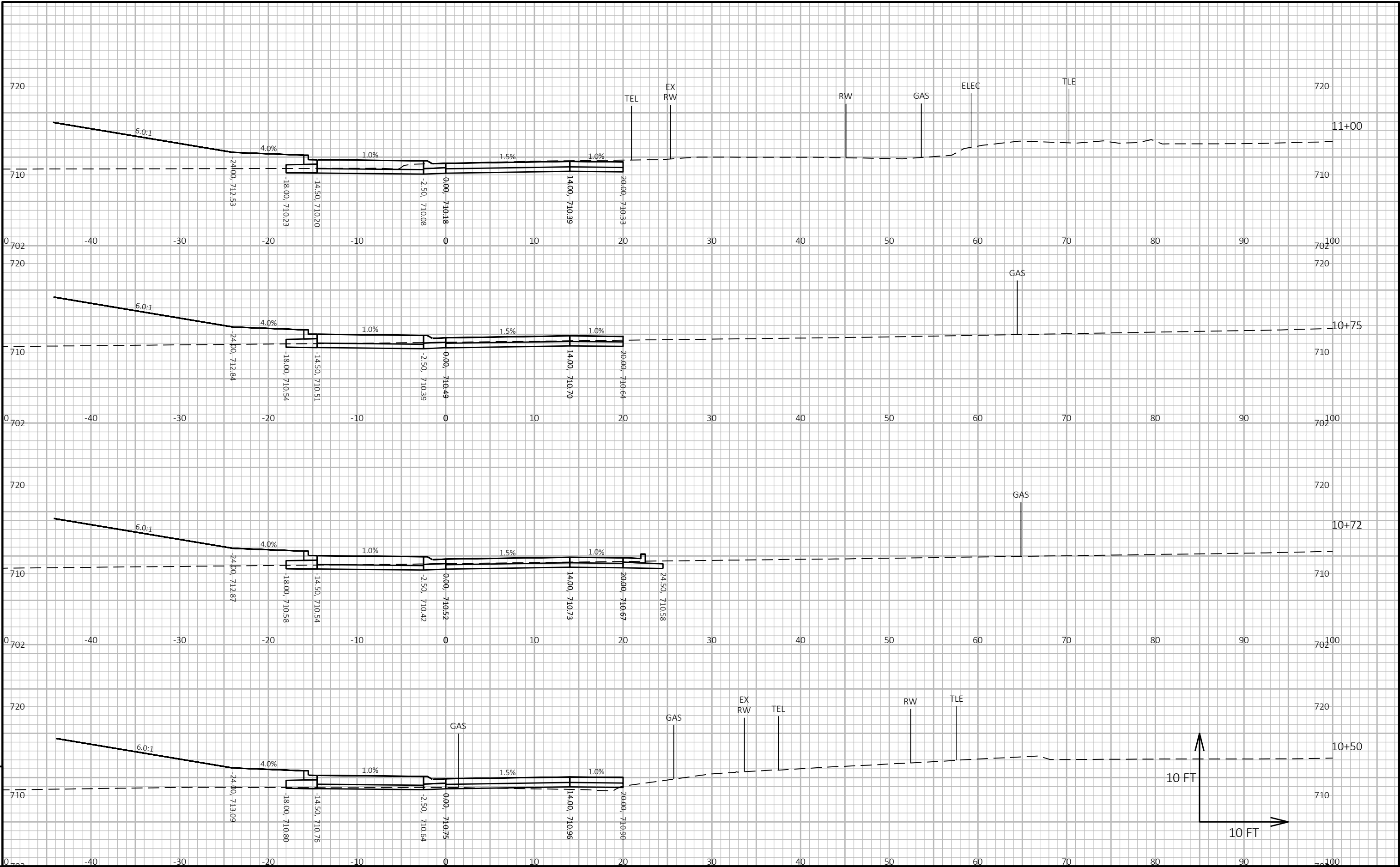
STA 115+58 - STA 126+25 WB

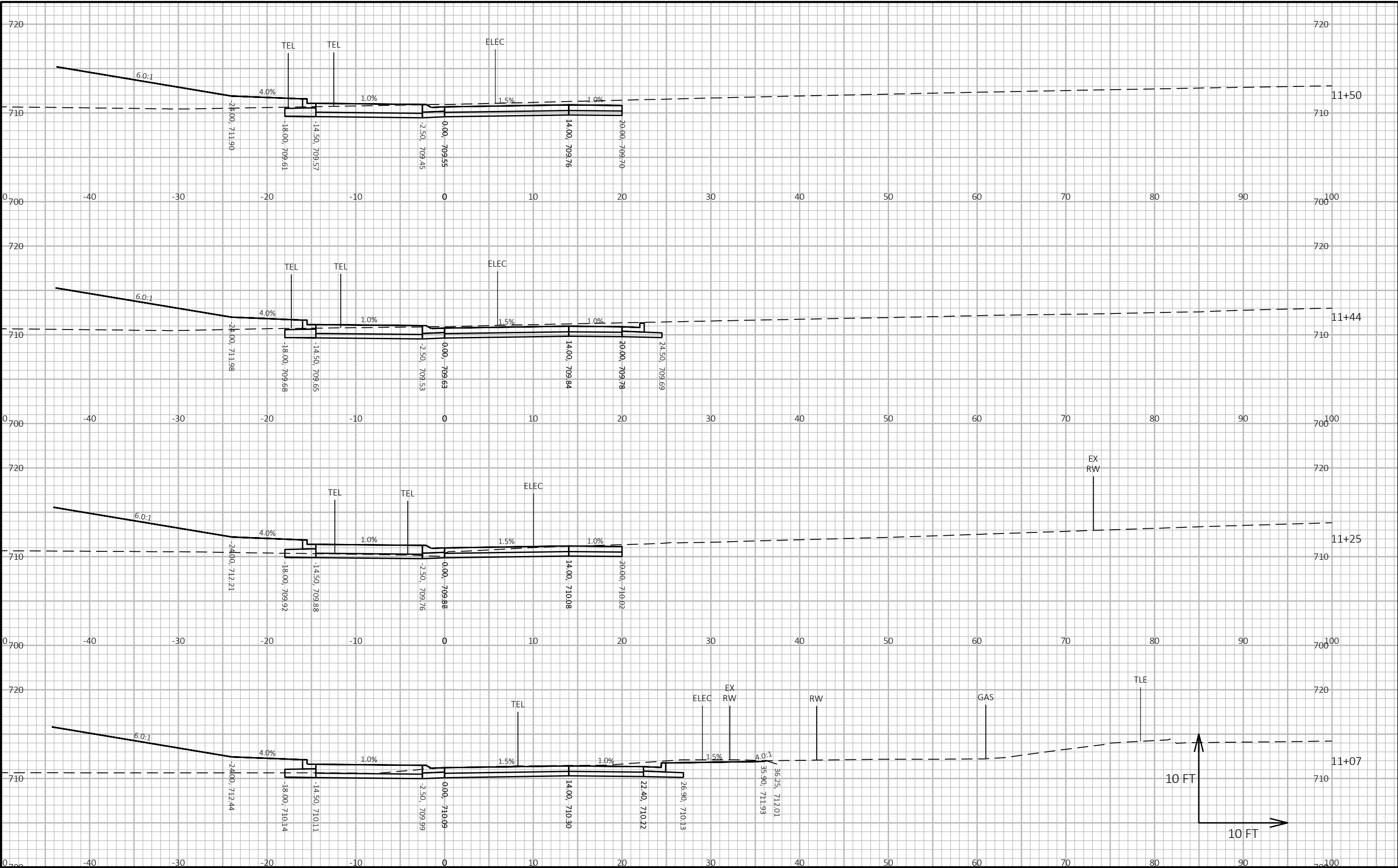
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE	FILL	CUT	SALVAGED/UNUSABLE	FILL	CUT	EXPANDED FILL	MASS ORDNATE
			PAVEMENT MATERIAL			PAVEMENT MATERIAL			1.001.30	
115+58	0.00	54.11	13.00	59.94	0	0	0	0	0	0
115+86	28.17	52.32	13.00	3.87	56	14	33	56	43	-1
116+11	24.95	49.00	13.00	112.48	47	12	54	103	113	-36
116+50	38.87	49.77	13.00	92.45	71	19	148	174	306	-177
117+00	50.00	43.33	13.00	41.32	86	24	124	260	467	-276
117+50	50.00	42.62	13.00	62.93	80	24	97	340	593	-346
118+00	50.00	44.69	13.00	13.62	81	24	71	421	685	-381
118+50	50.00	44.41	13.00	10.23	82	24	22	503	714	-352
119+00	50.00	45.99	13.00	6.23	84	24	15	587	733	-311
119+50	50.00	52.30	13.00	16.39	91	24	21	678	761	-272
120+00	50.00	59.84	13.00	24.56	104	24	38	782	810	-241
120+50	50.00	66.71	13.00	10.20	117	24	32	899	852	-190
121+00	50.00	67.56	13.00	3.06	124	24	12	1,023	867	-105
121+50	50.00	58.57	13.00	4.08	117	24	7	1,140	876	-21
122+00	50.00	60.18	13.00	2.54	110	24	6	1,250	884	57
122+50	50.00	58.57	13.00	2.42	110	24	5	1,360	891	137
123+00	50.00	55.91	13.00	3.41	106	24	5	1,466	897	212
123+50	50.00	47.51	13.00	5.94	96	24	9	1,562	909	272
124+00	50.00	36.33	13.00	6.02	78	24	11	1,640	923	312
124+50	50.00	36.20	13.00	4.15	67	24	9	1,707	935	343
125+00	50.00	36.48	13.00	3.82	67	24	7	1,774	944	377
125+50	50.00	38.53	13.00	1.23	69	24	5	1,843	950	416
126+00	50.00	36.44	13.00	3.62	69	24	4	1,912	956	456
126+25	25.00	35.09	13.00	5.30	33	12	4	1,945	961	471

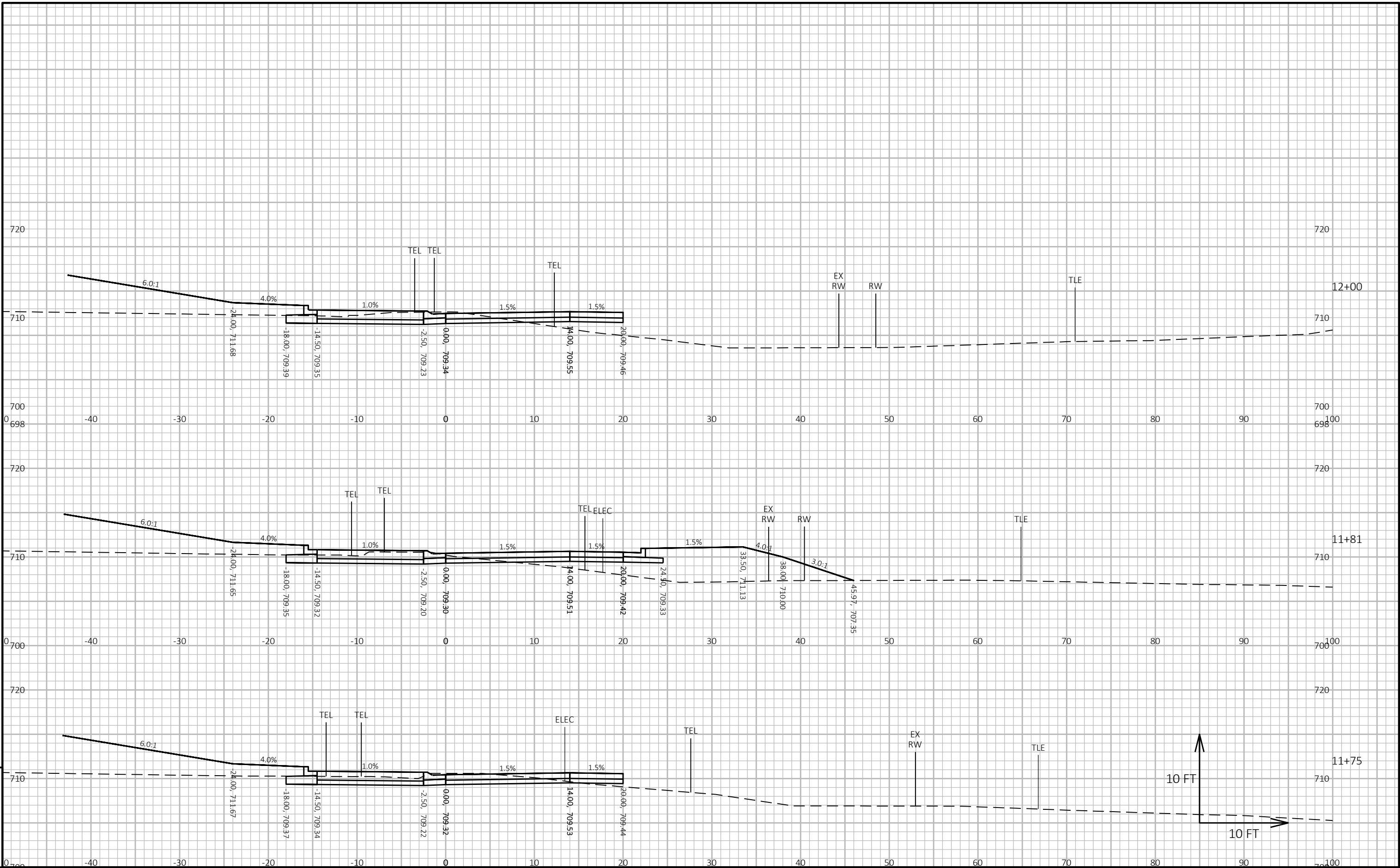
STA 115+38 - 126+74 EB

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE	FILL	CUT	SALVAGED/UNUSABLE	FILL	CUT	EXPANDED FILL	MASS ORDNATE
			PAVEMENT MATERIAL			PAVEMENT MATERIAL			1.001.30	
115+38	0.00	43.56	13.00	41.70	0	0	0	0	0	0
115+50	12.00	45.70	13.00	27.01	20	6	15	20	20	-6
115+72	22.00	46.10	13.00	17.07	37	11	18	57	43	-3
116+00	28.31	43.91	13.00	181.84	47	14	104	104	178	-105
116+25	24.99	40.64	13.00	224.89	39	12	188	143	423	-323
116+50	24.70	39.28	13.00	188.59	37	12	189	180	668	-543
117+00	50.00	41.89	13.00	120.91	75	24	287	255	1,041	-865
117+50	50.00	49.44	13.00	117.92	85	24	221	340	1,329	-1,092
118+00	50.00	51.00	13.00	66.11	93	24	170	433	1,550	-1,244
118+50	50.00	50.33	13.00	39.72	94	24	98	527	1,677	-1,301
119+00	50.00	50.27	13.00	11.68	93	24	48	620	1,739	-1,294
119+50	50.00	49.09	13.00	0.32	92	24	11	712	1,754	-1,241
120+00	50.00	41.54	13.00	0.00	84	24	0	796	1,754	-1,181
120+50	50.00	31.62	13.00	0.00	68	24	0	864	1,754	-1,137
121+00	50.00	30.84	13.00	0.00	58	24	0	922	1,754	-1,103
121+50	50.00	40.11	13.00	0.00	66	24	0	988	1,754	-1,061
122+00	50.00	46.44	13.00	2.32	80	24	2	1,068	1,756	-1,007
122+50	50.00	40.64	13.00	2.92	81	24	5	1,149	1,763	-957
123+00	50.00	41.15	13.00	1.20	76	24	4	1,225	1,768	-910
123+50	50.00	37.93	13.00	1.52	73	24	3	1,298	1,772	-865
124+00	50.00	32.33	13.00	3.81	65	24	5	1,363	1,778	-830
124+50	50.00	26.35	13.00	4.95	54	24	8	1,417	1,789	-811
125+00	50.00	31.26	13.00	12.08	53	24	16	1,470	1,810	-803
125+50	50.00	37.07	13.00	6.76	63	24	17	1,533	1,832	-786
126+00	50.00	40.84	13.00	2.92	72	24	9	1,605	1,843	-749
126+50	50.00	77.99	13.00	8.19	110	24	10	1,715	1,856	-676
126+74	23.96	66.69	13.00	0.00	64	12	4	1,779	1,862	-630

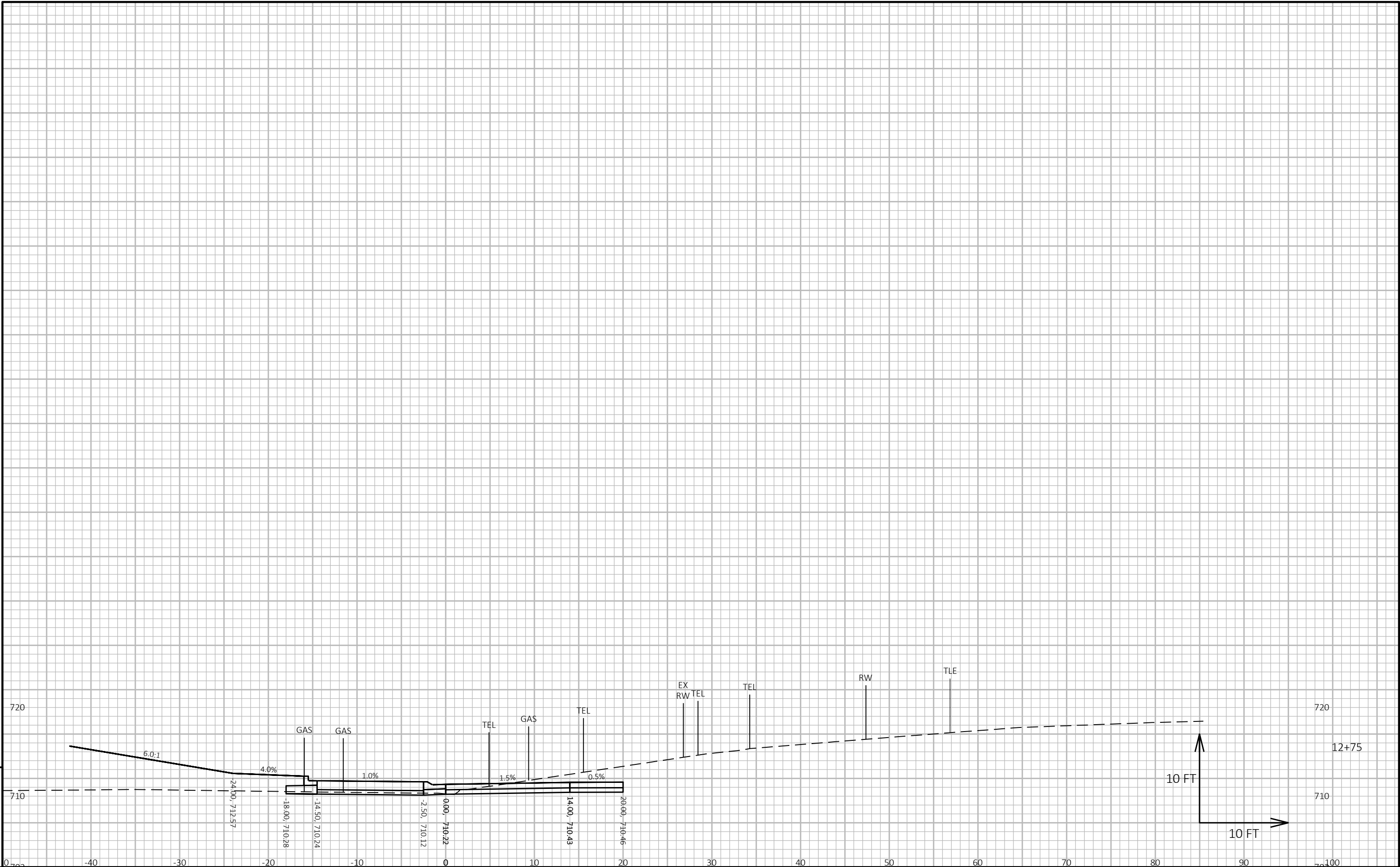




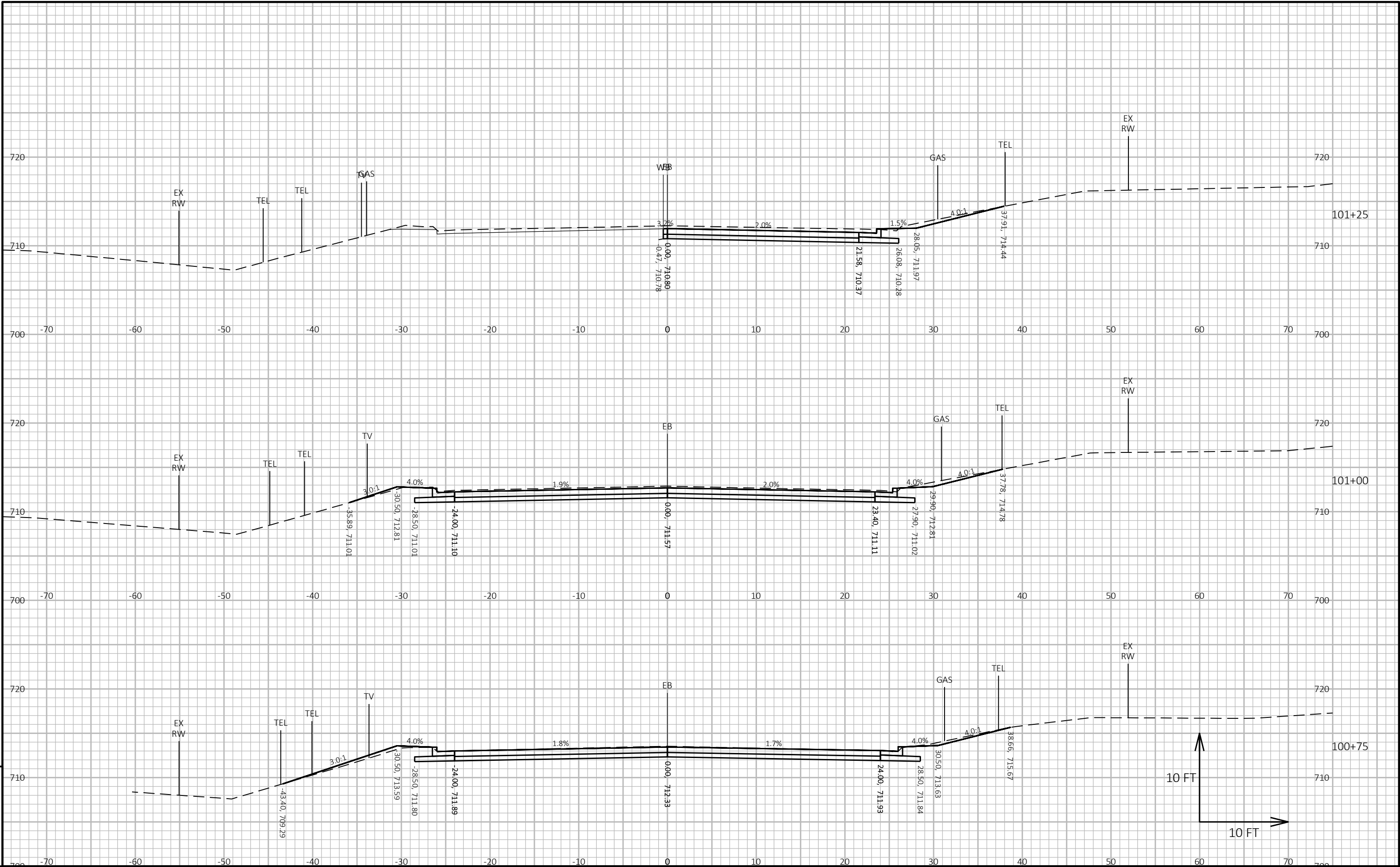


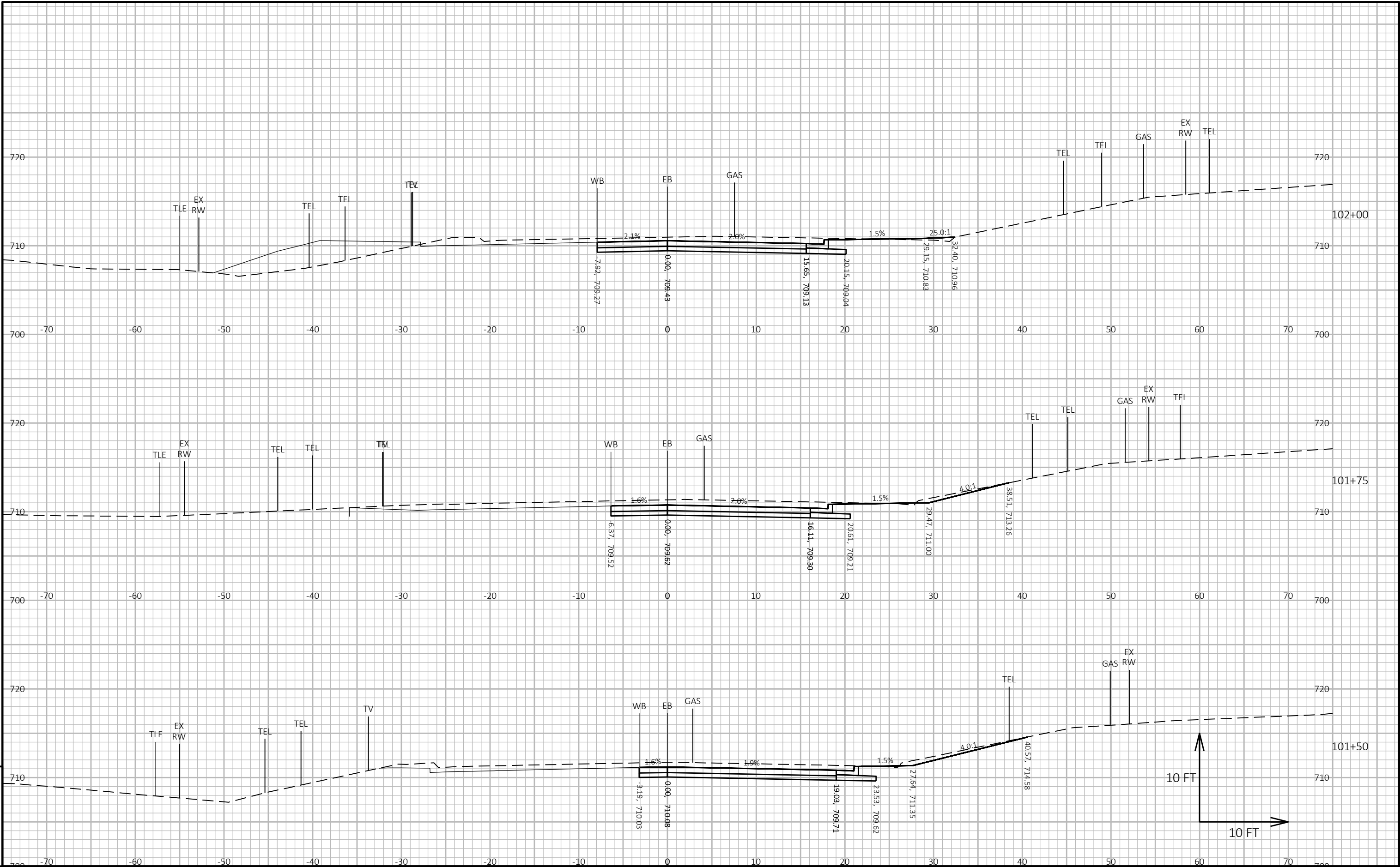


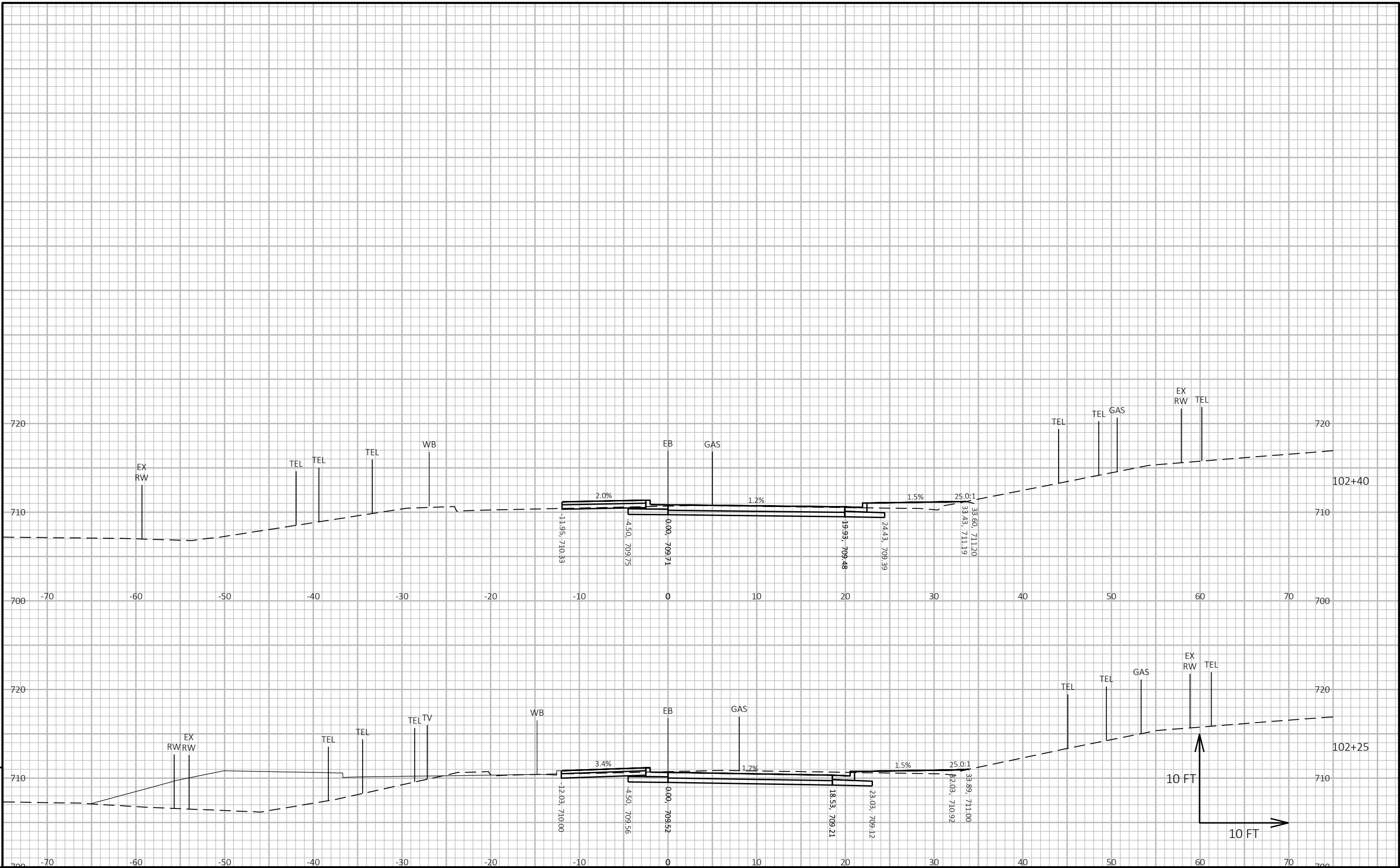
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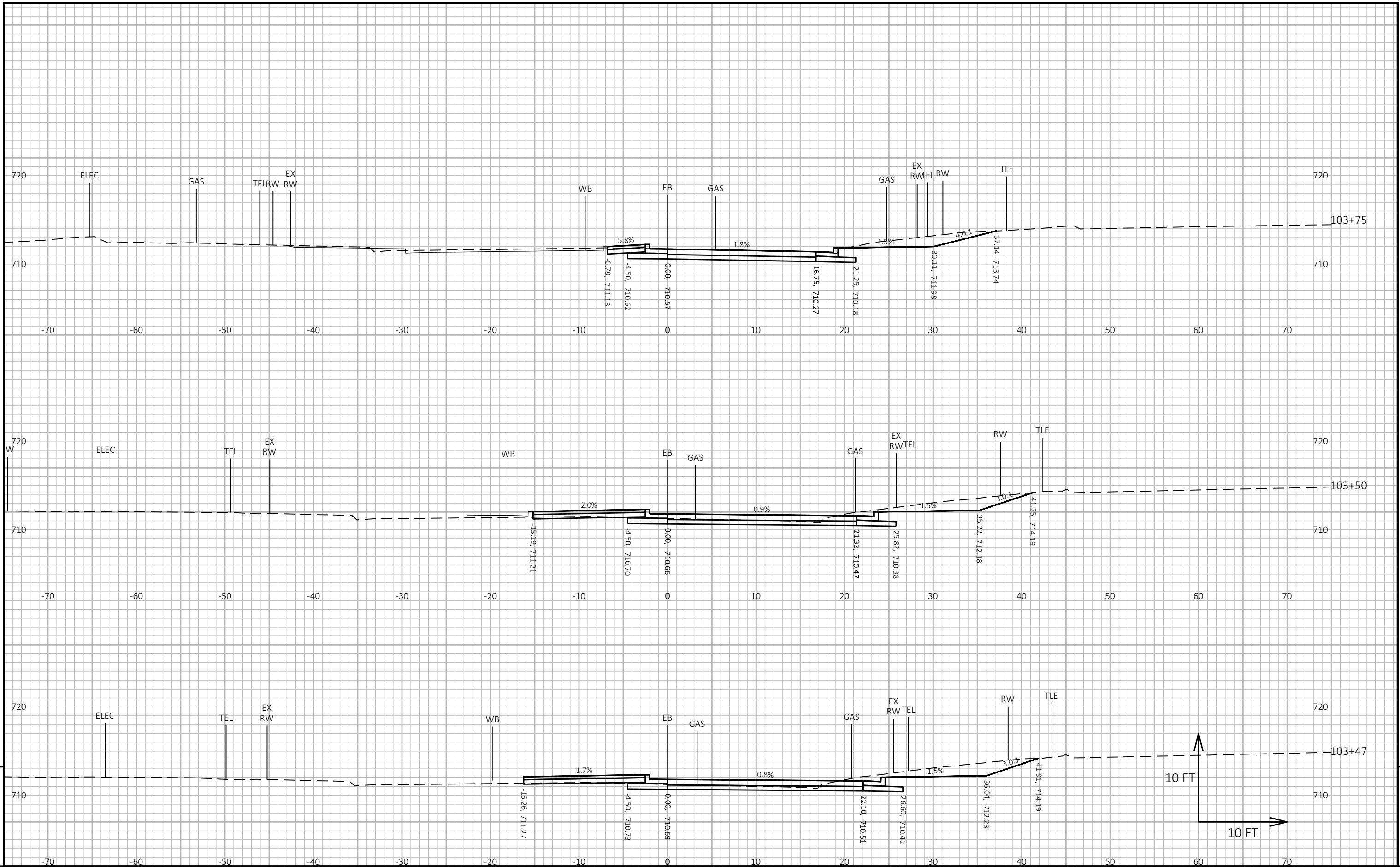


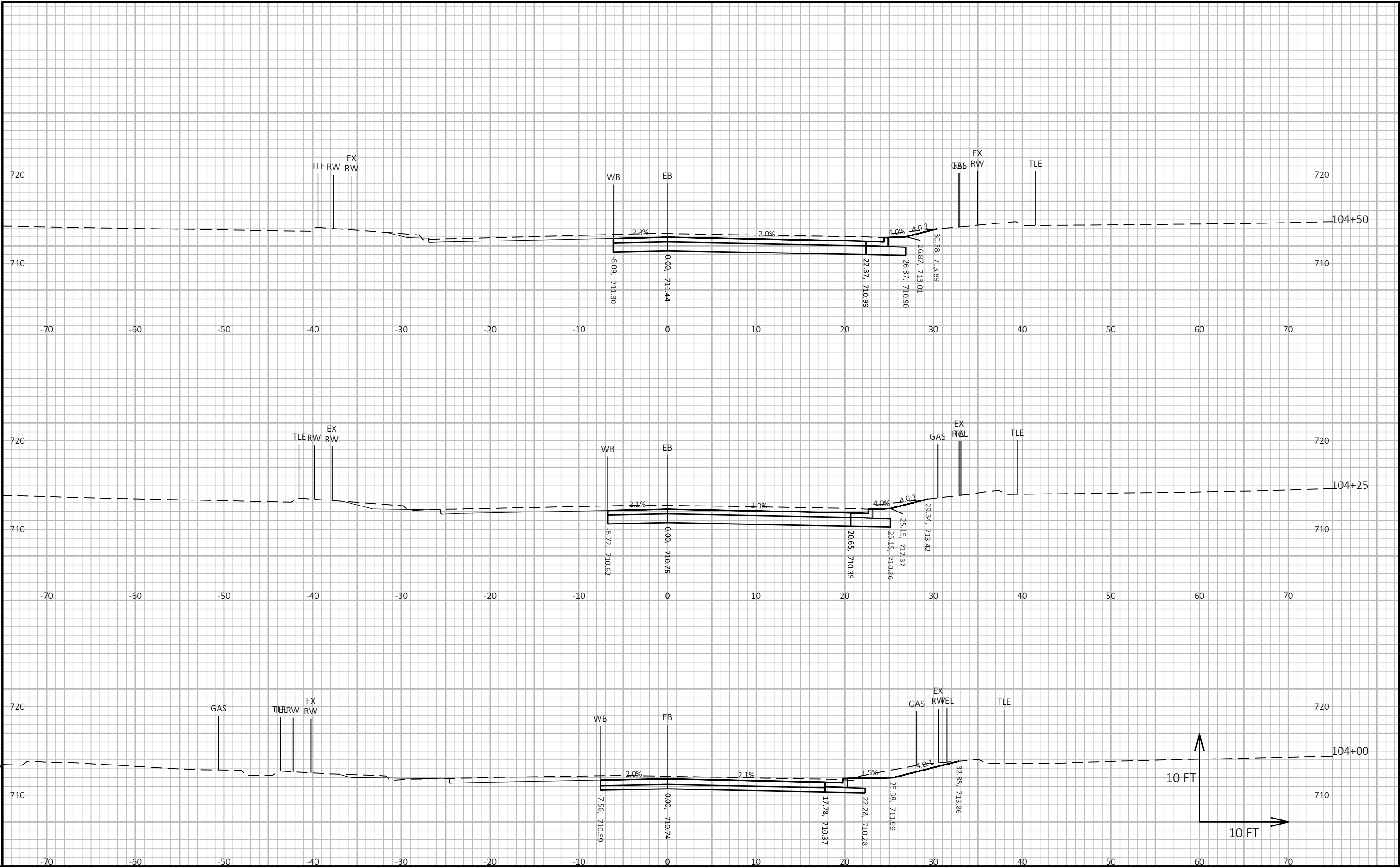
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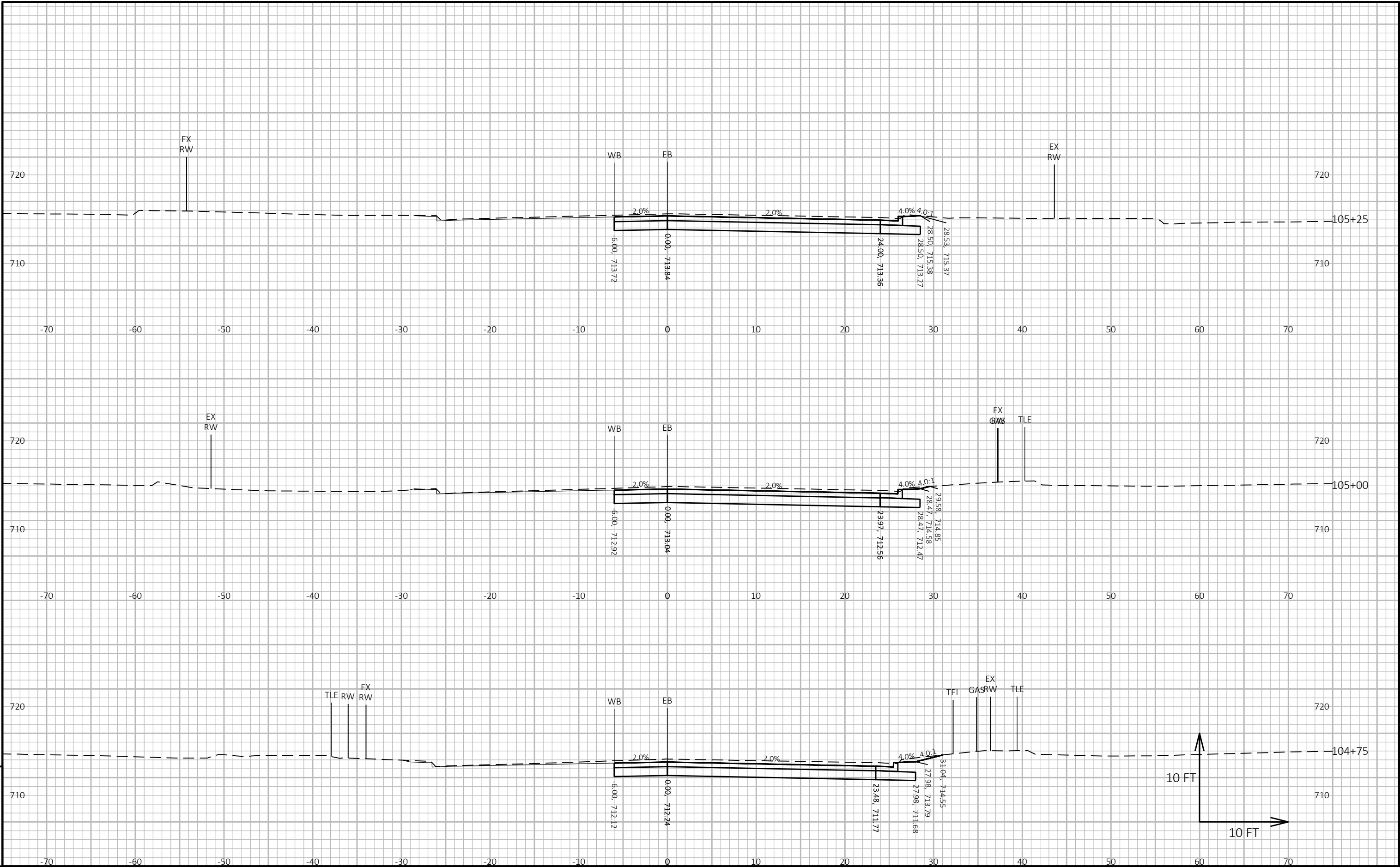


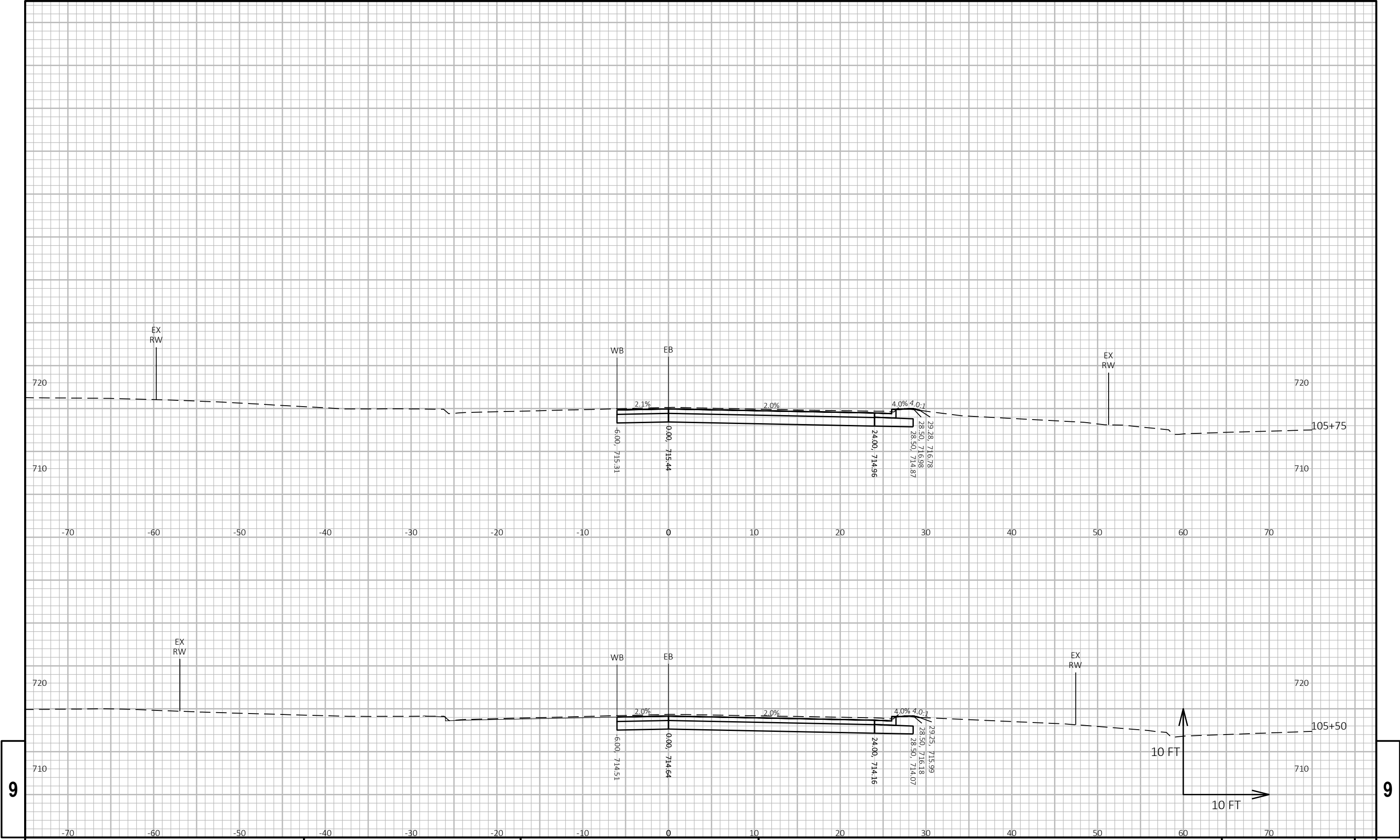






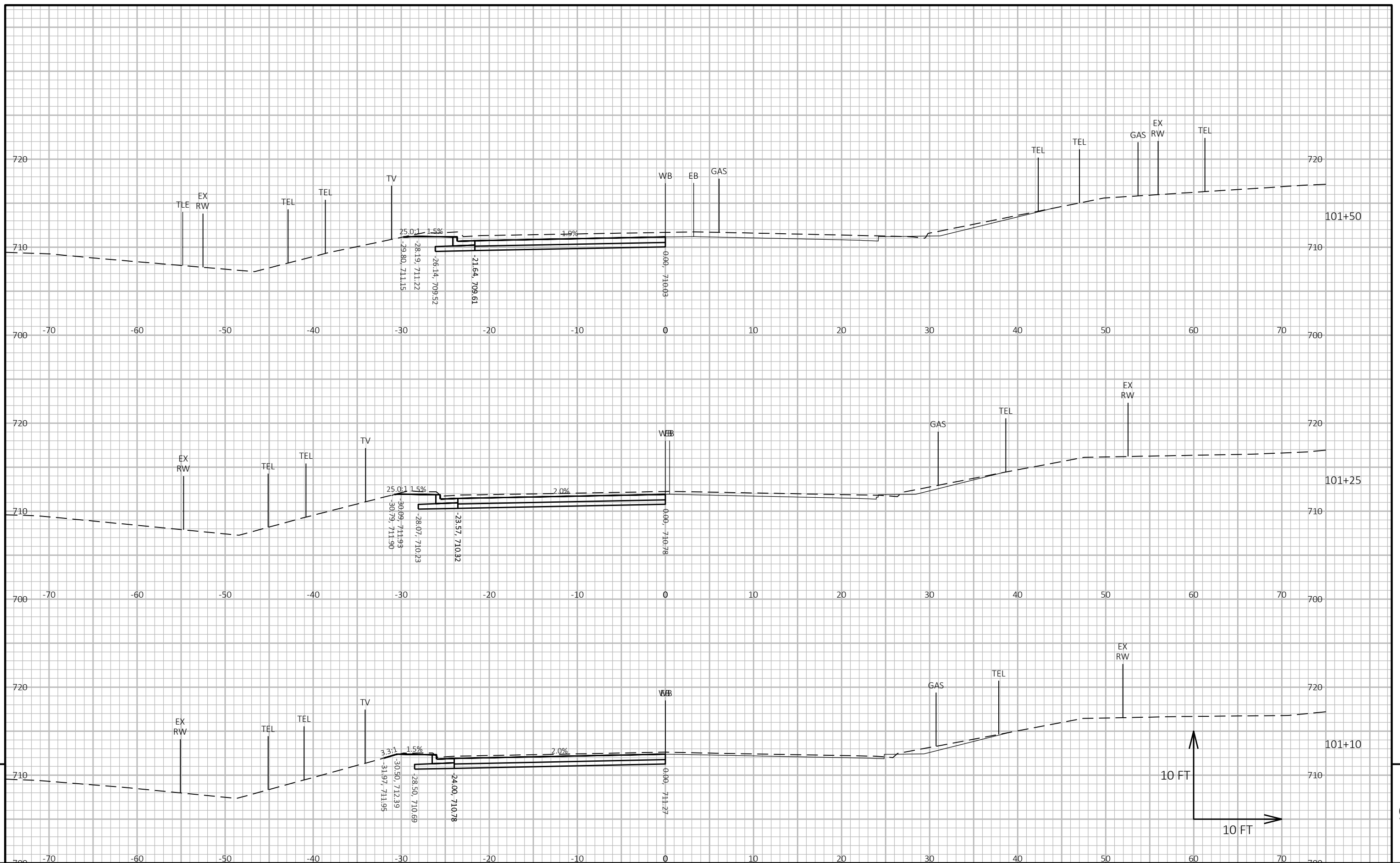






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PROJECT NO:	5991-08-11
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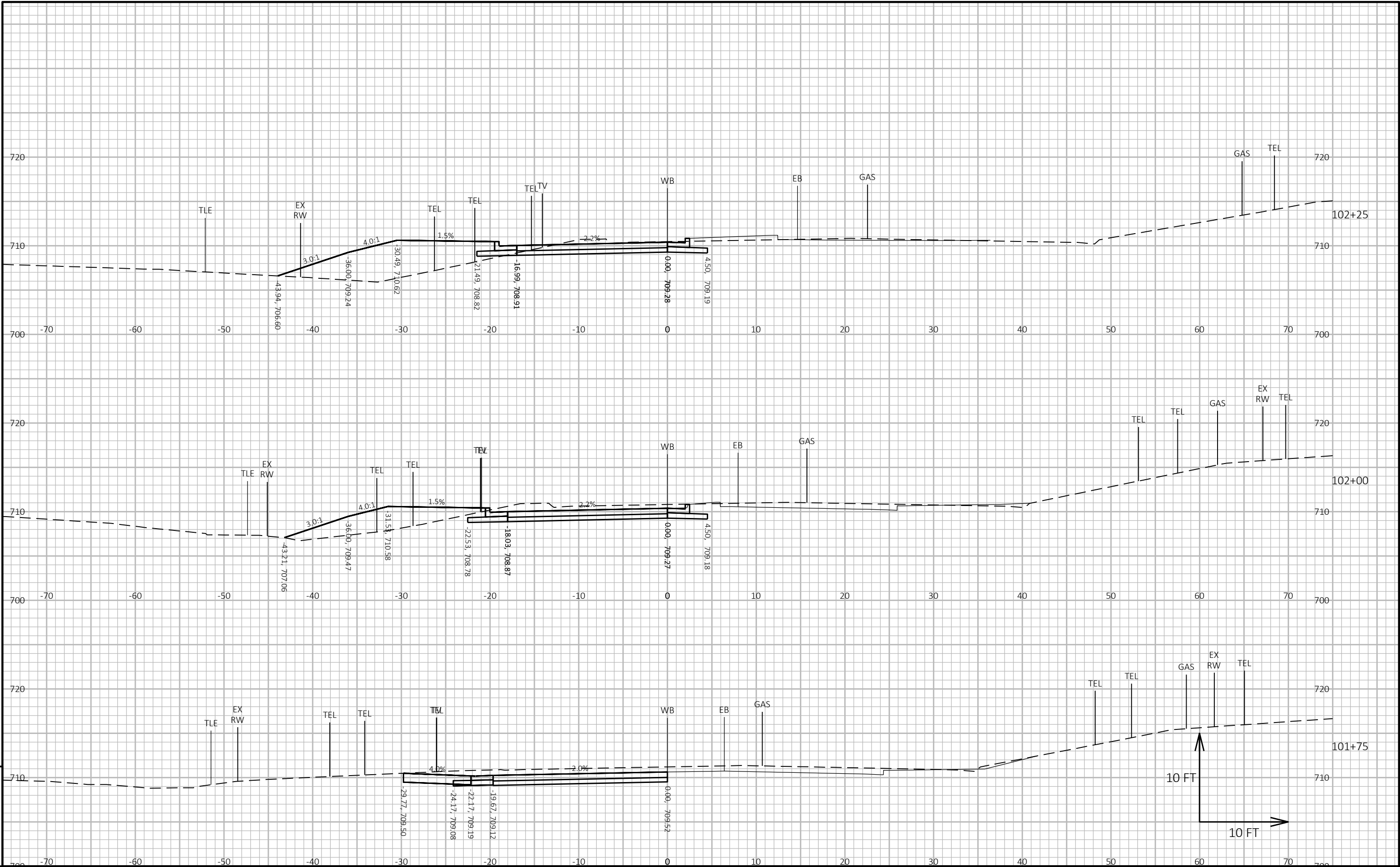
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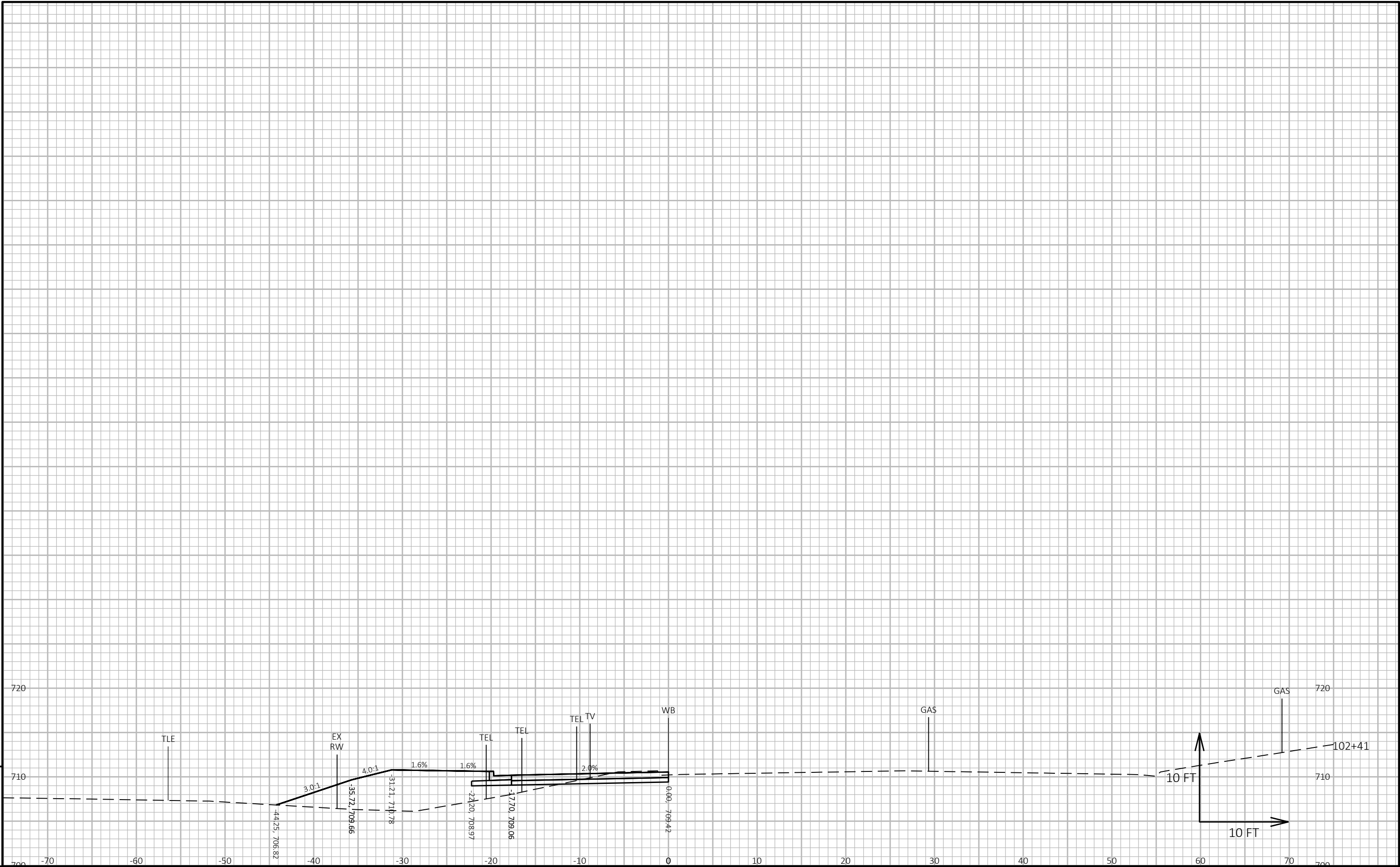
COUNTY: LA CROSSE

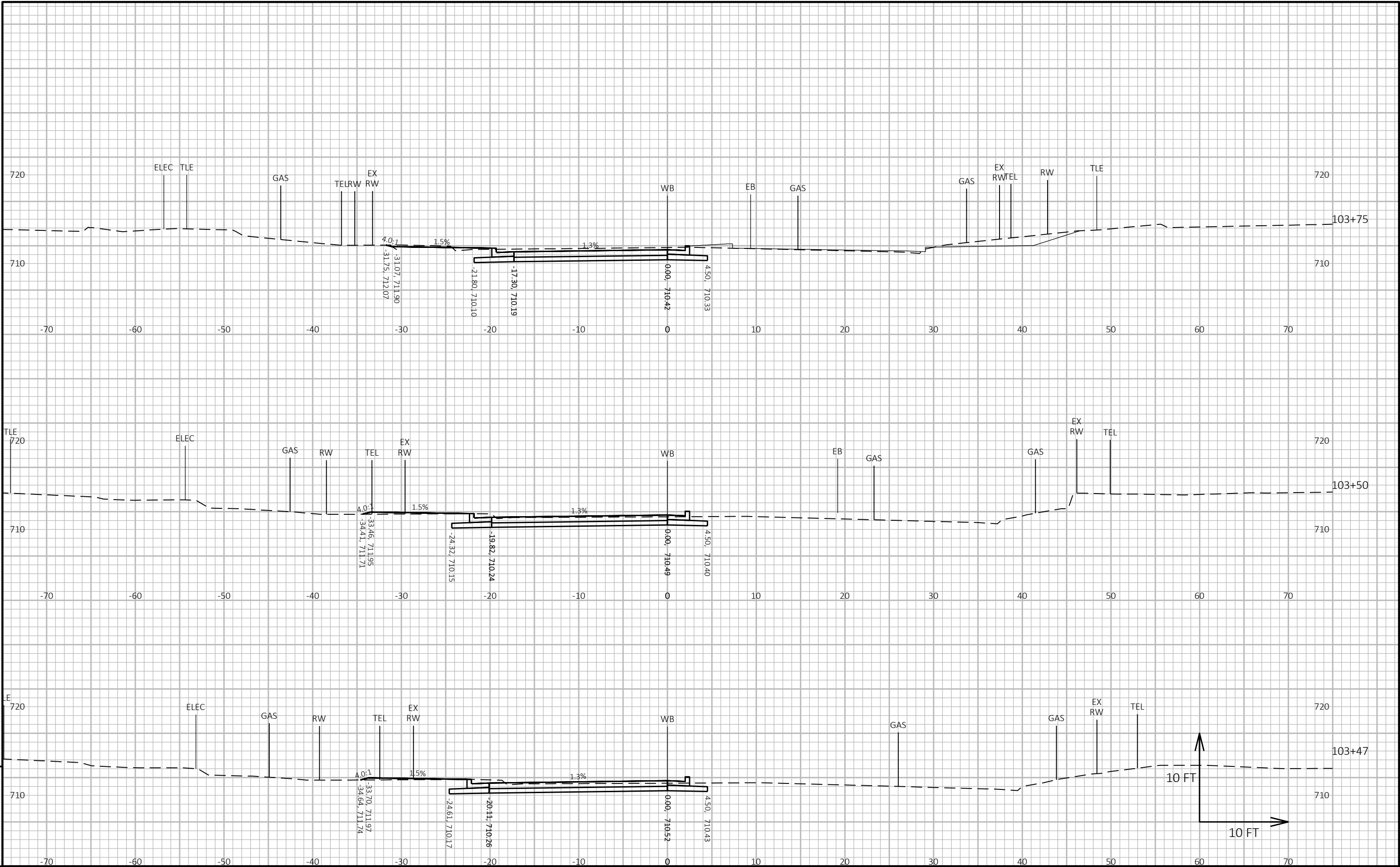
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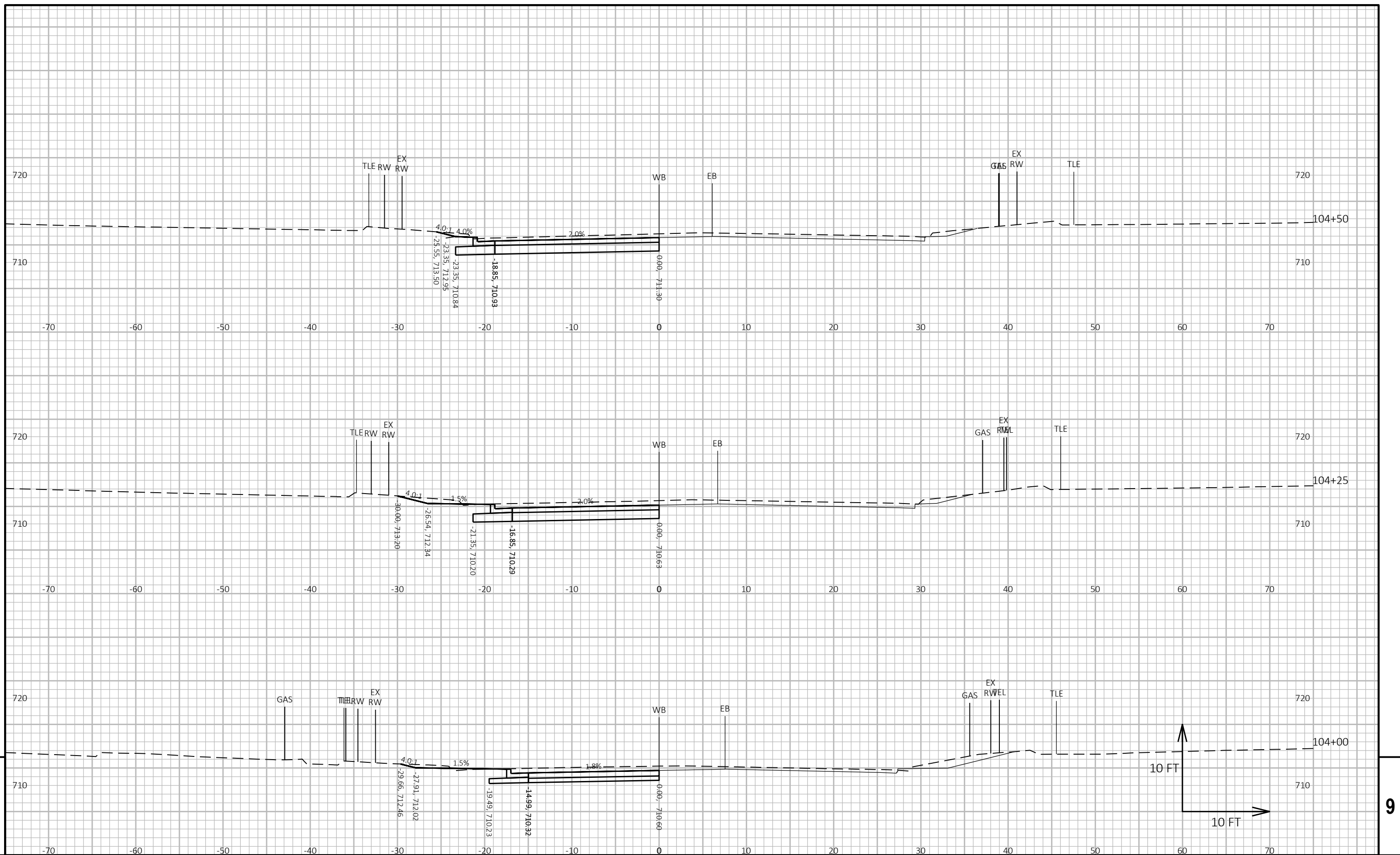
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PROJECT NO:	5991-08-11
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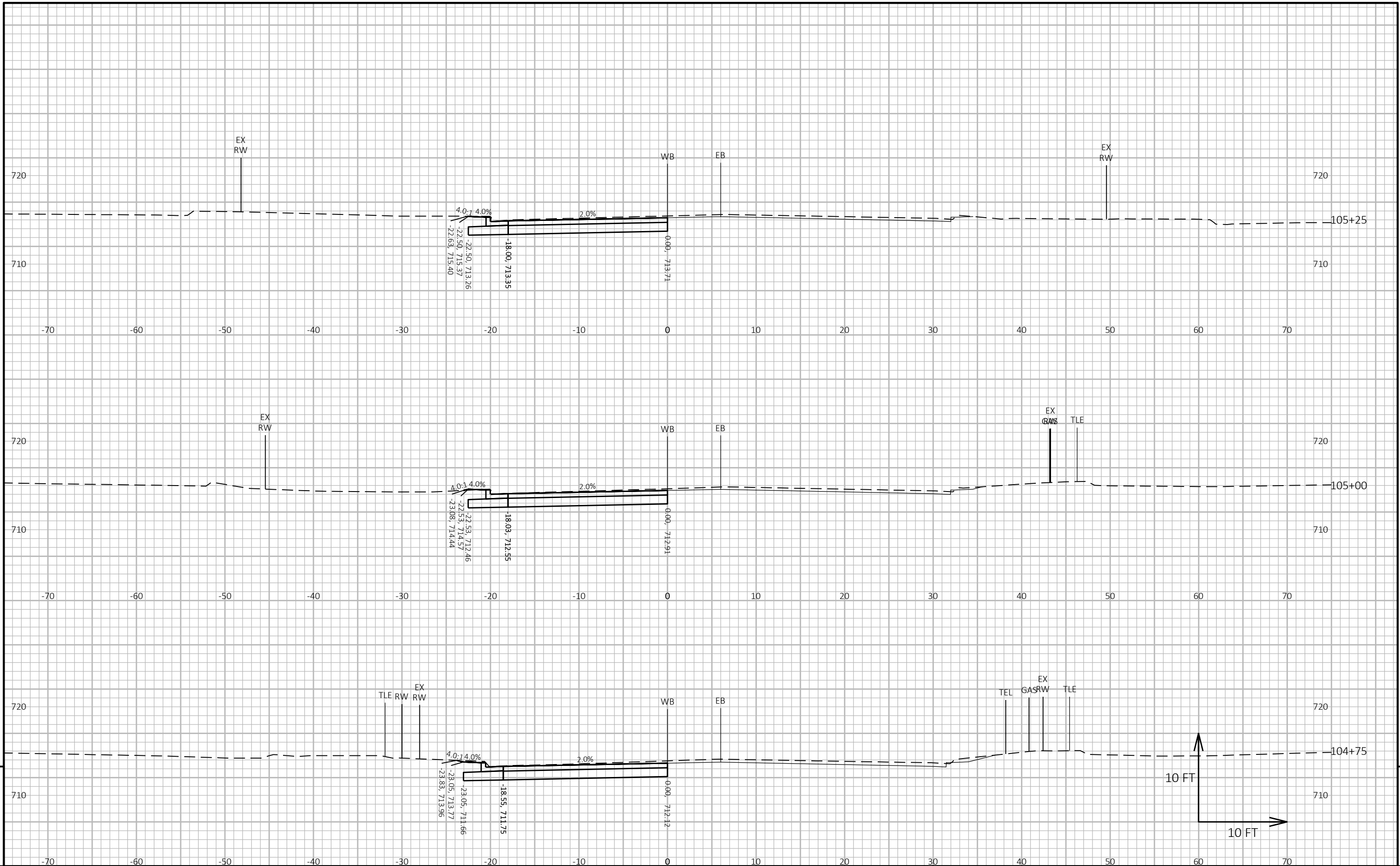
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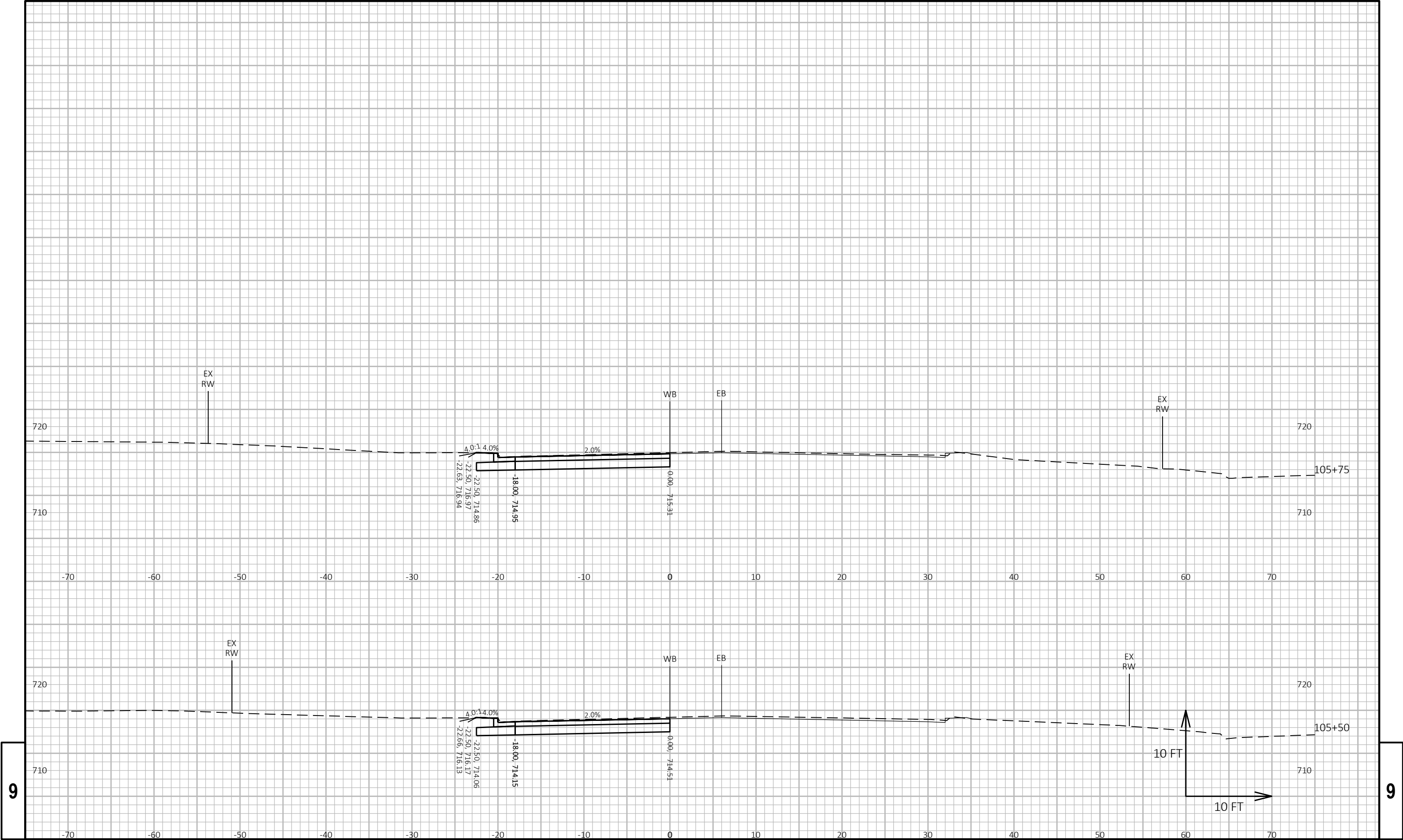
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CROSS SECTIONS:	ROUNDABOUT - WB
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SHEET
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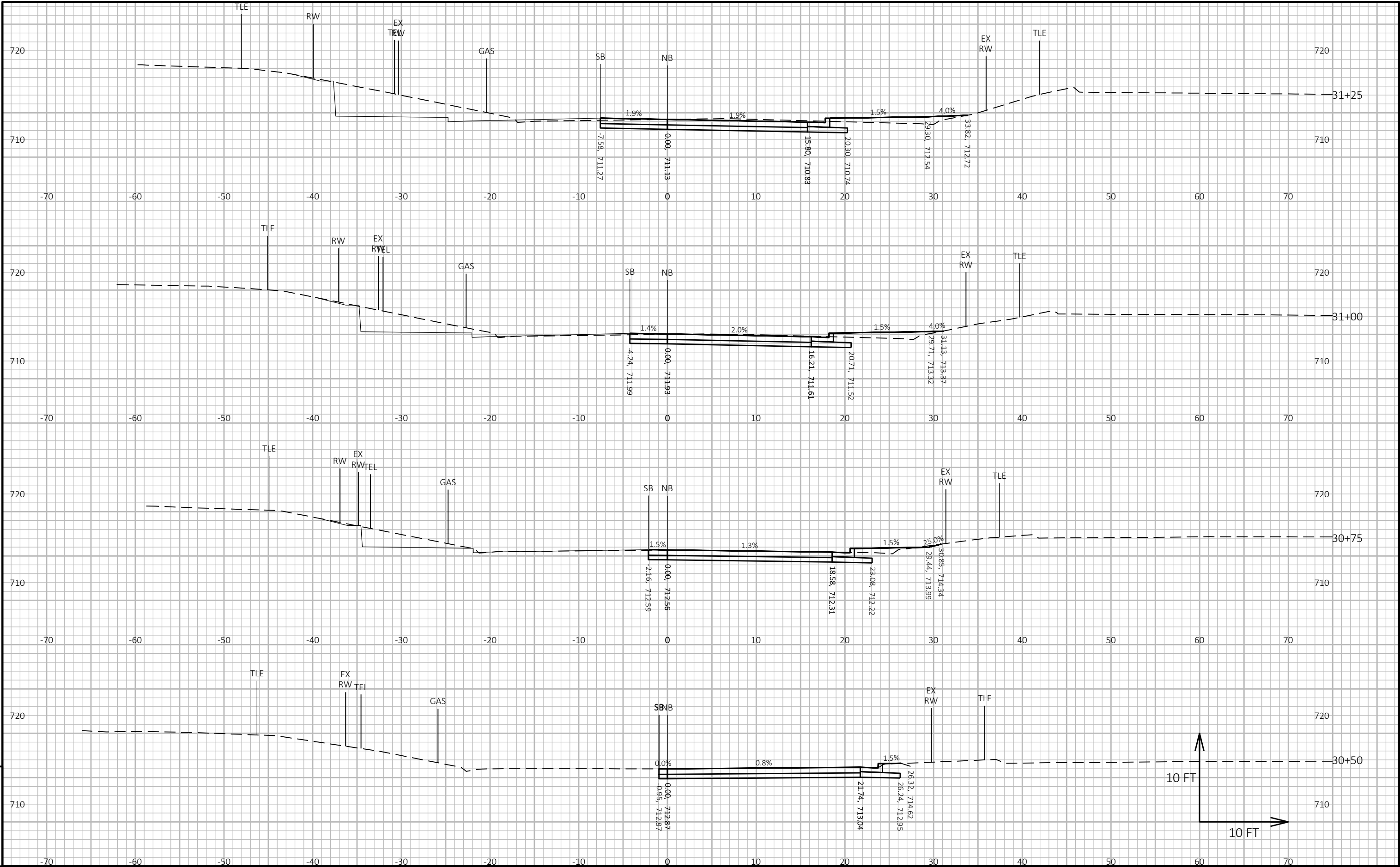
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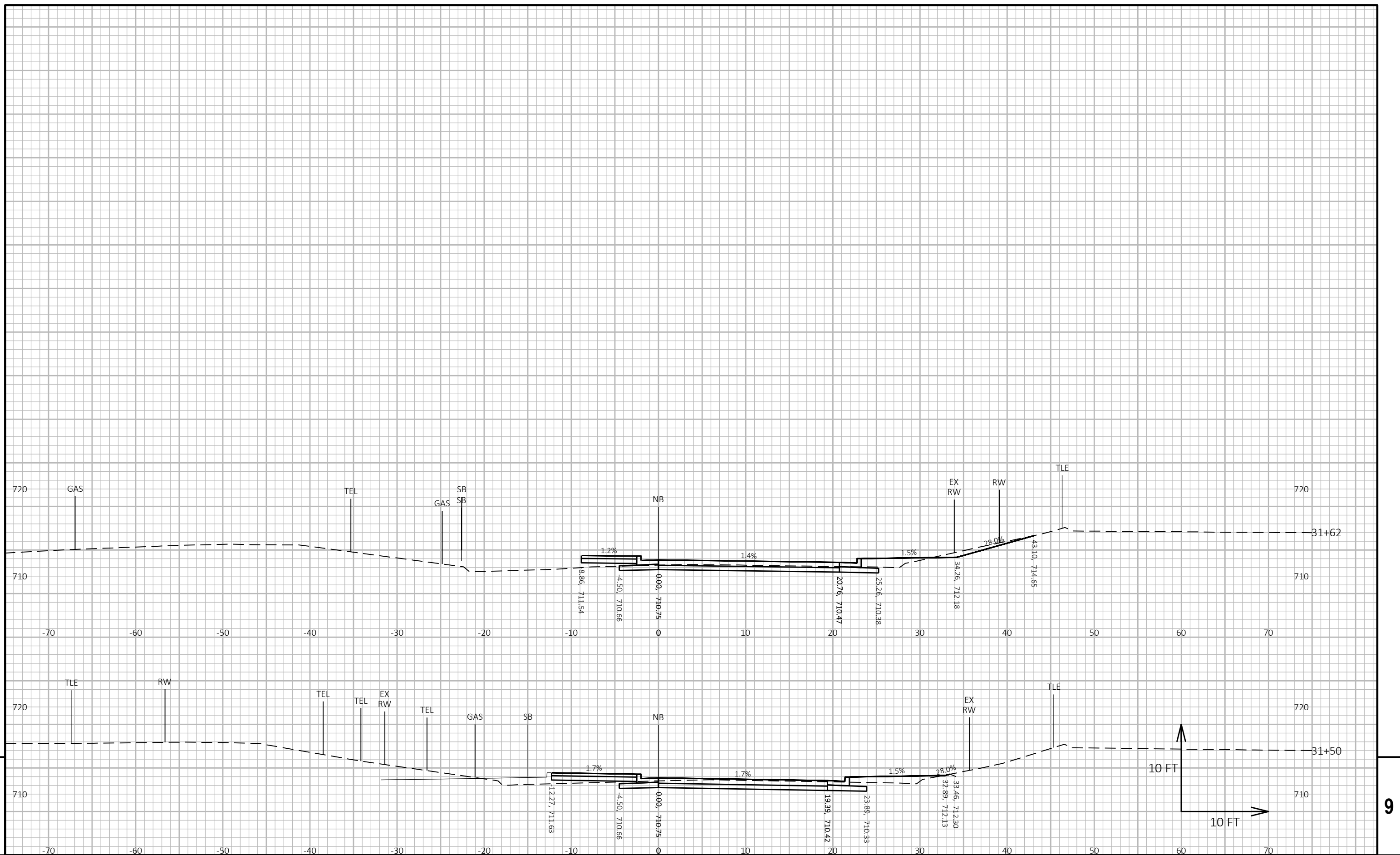


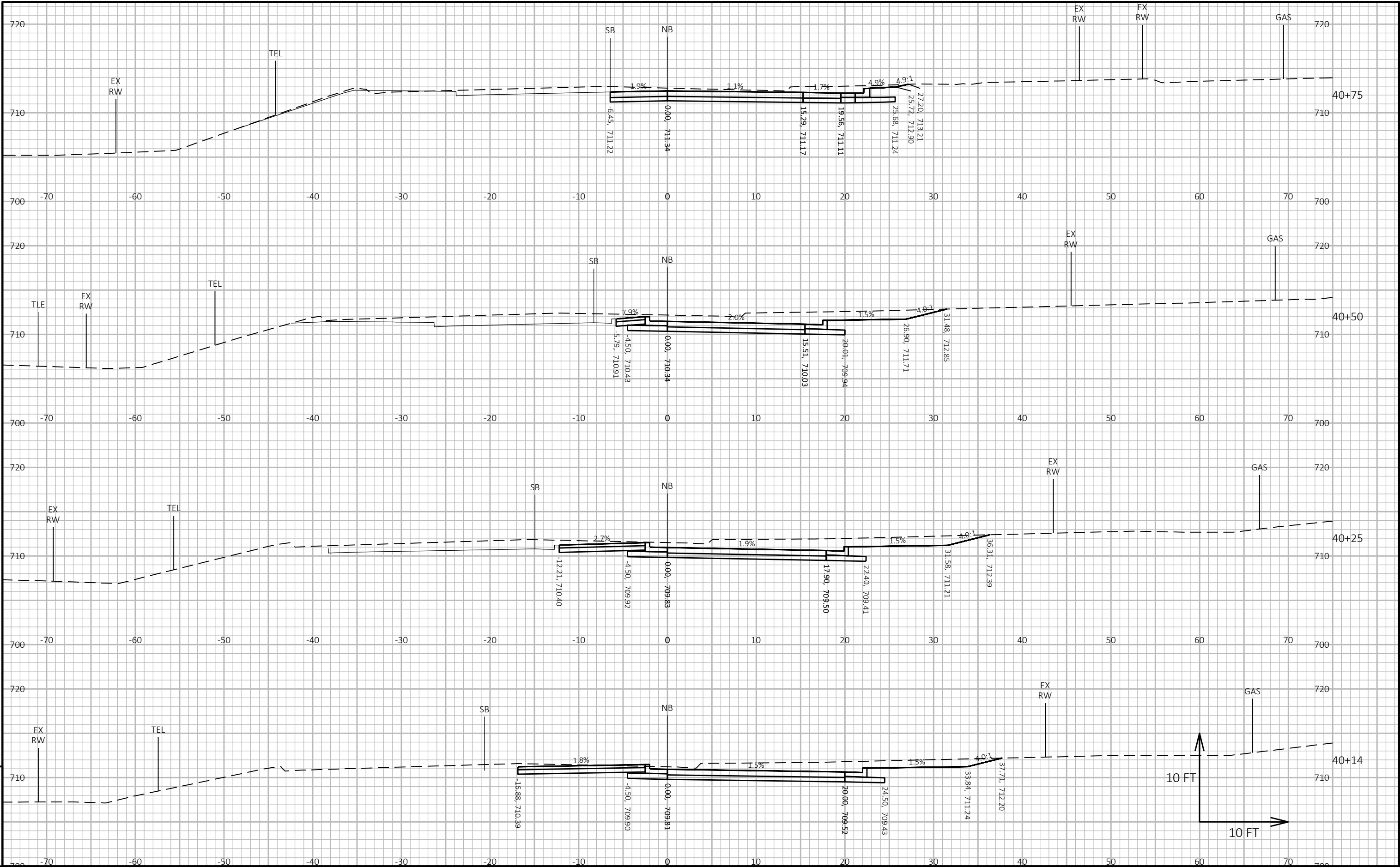


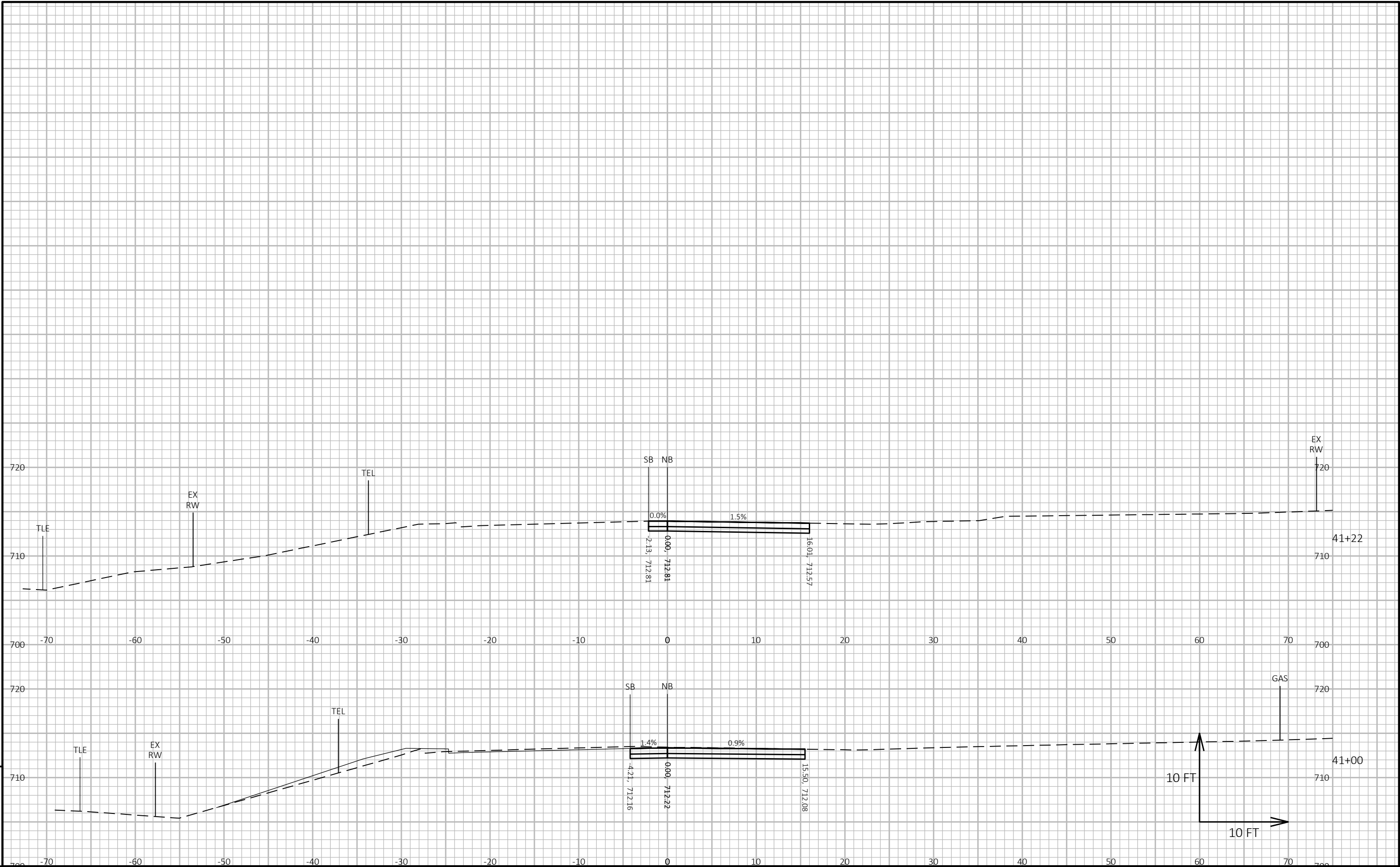
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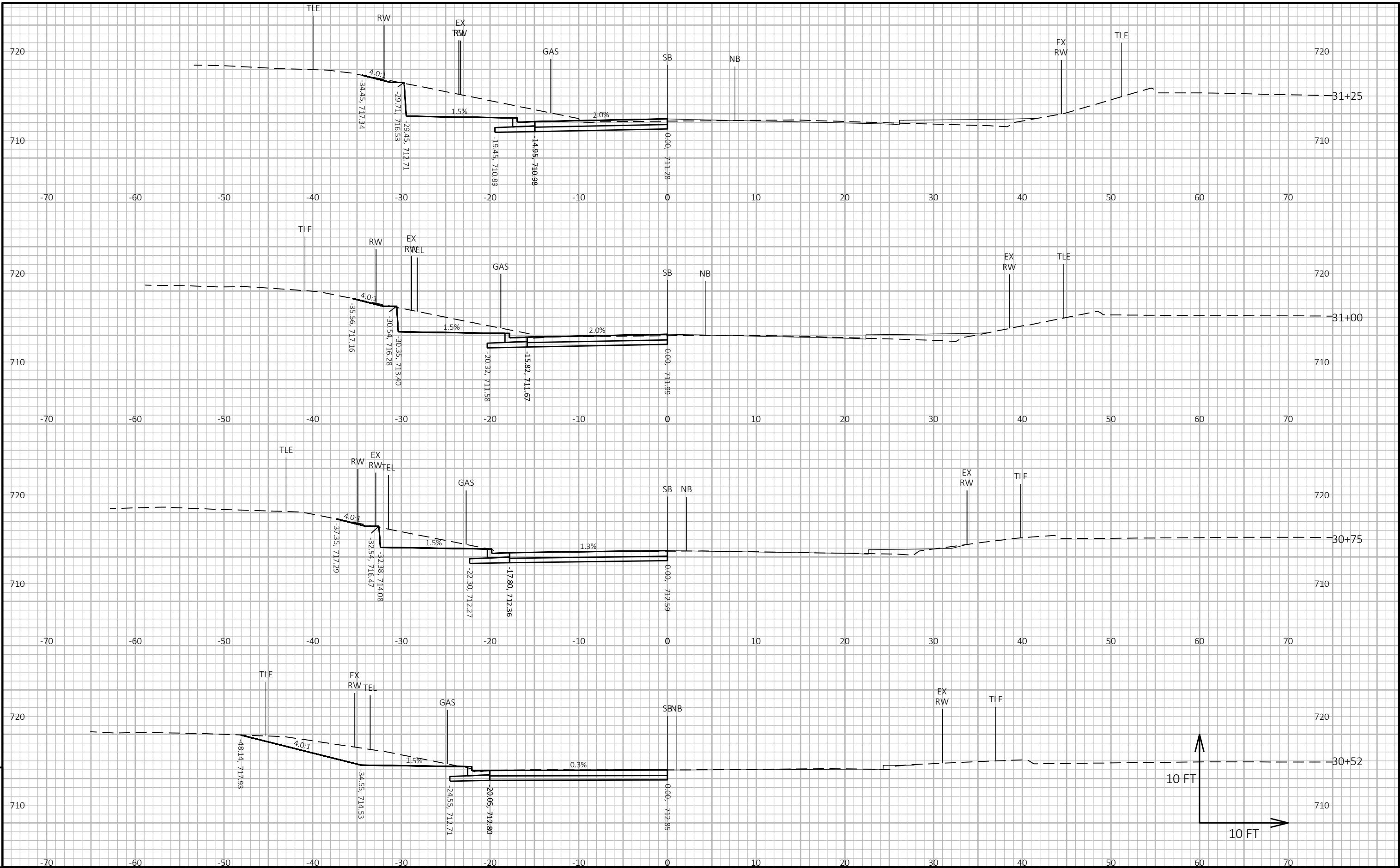
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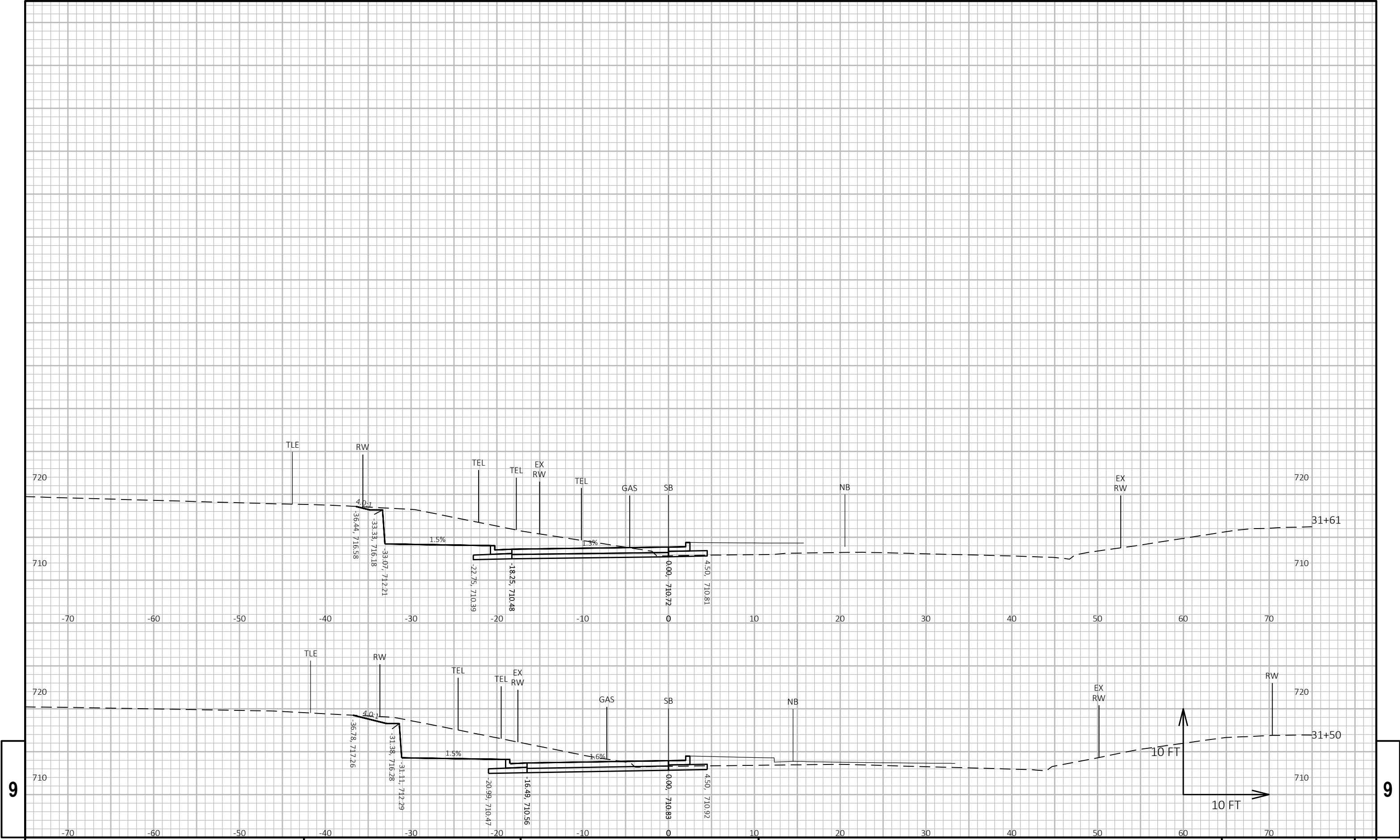






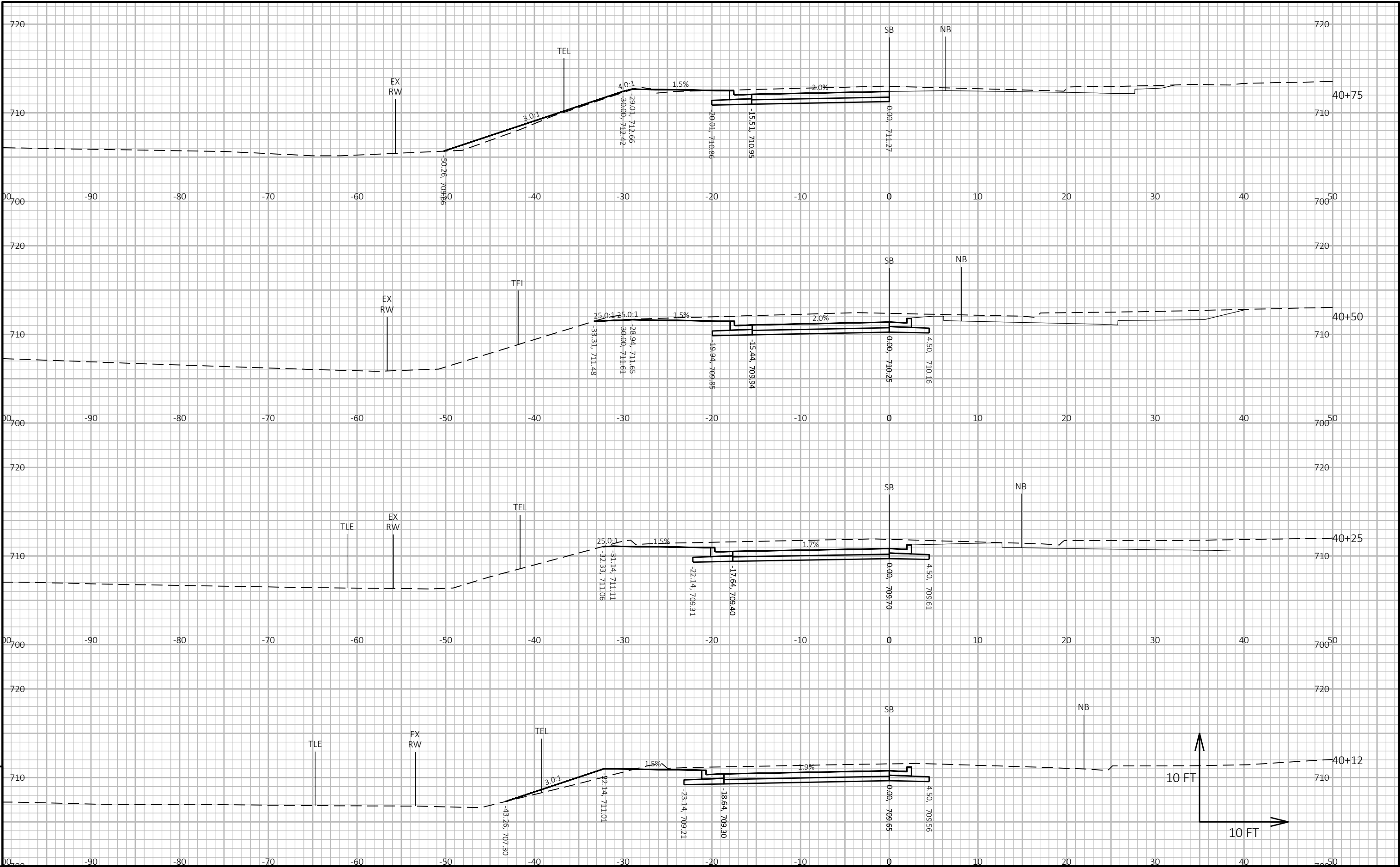


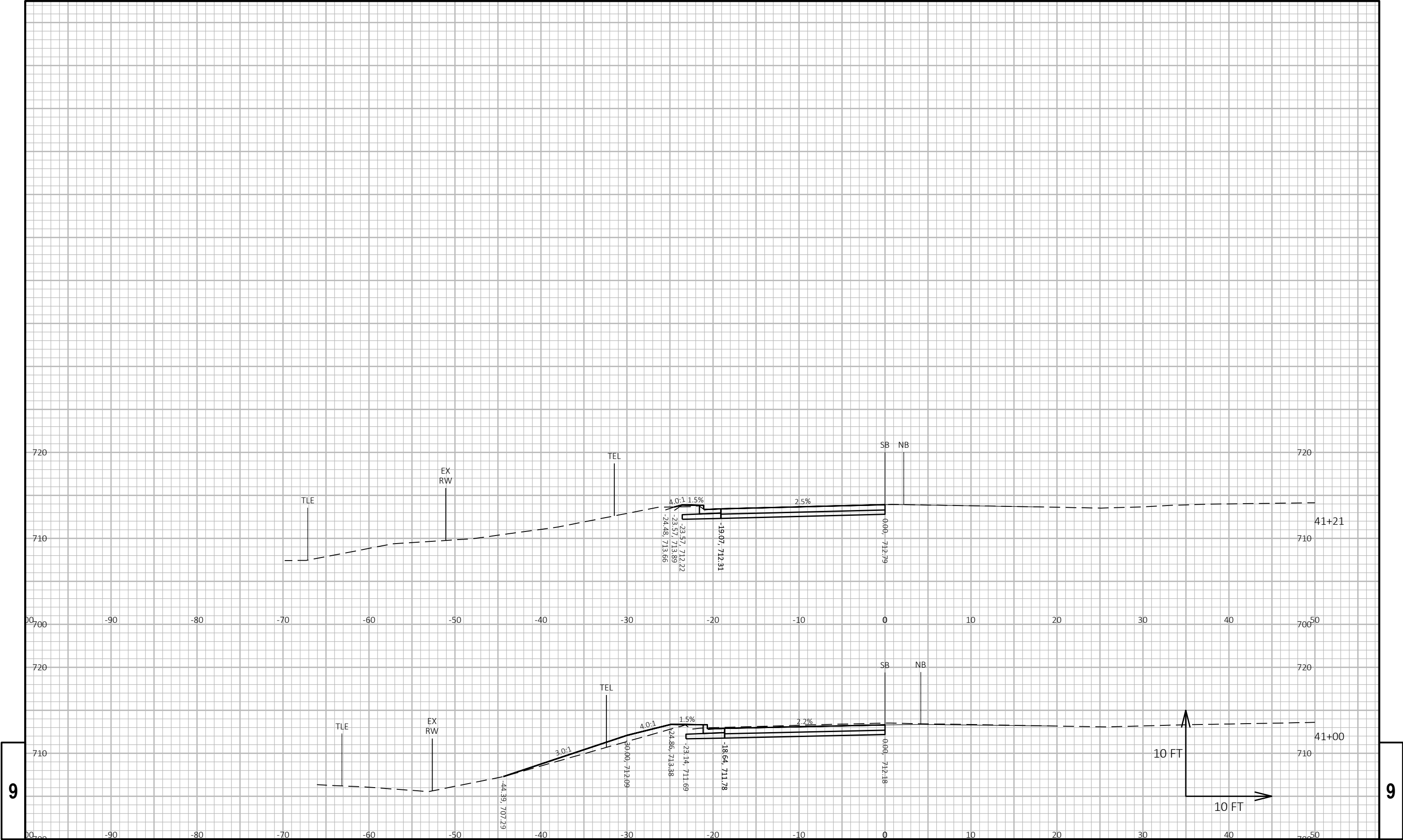


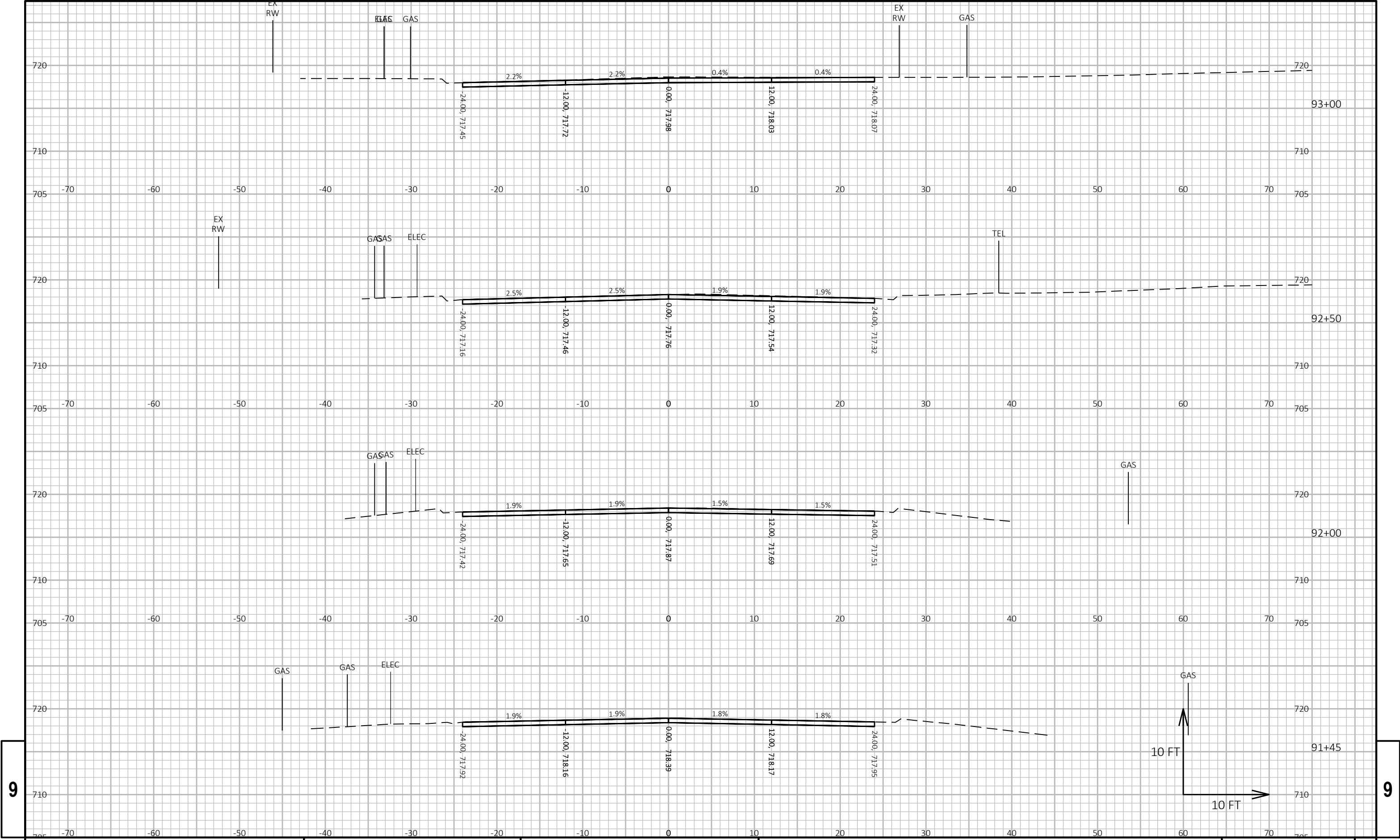


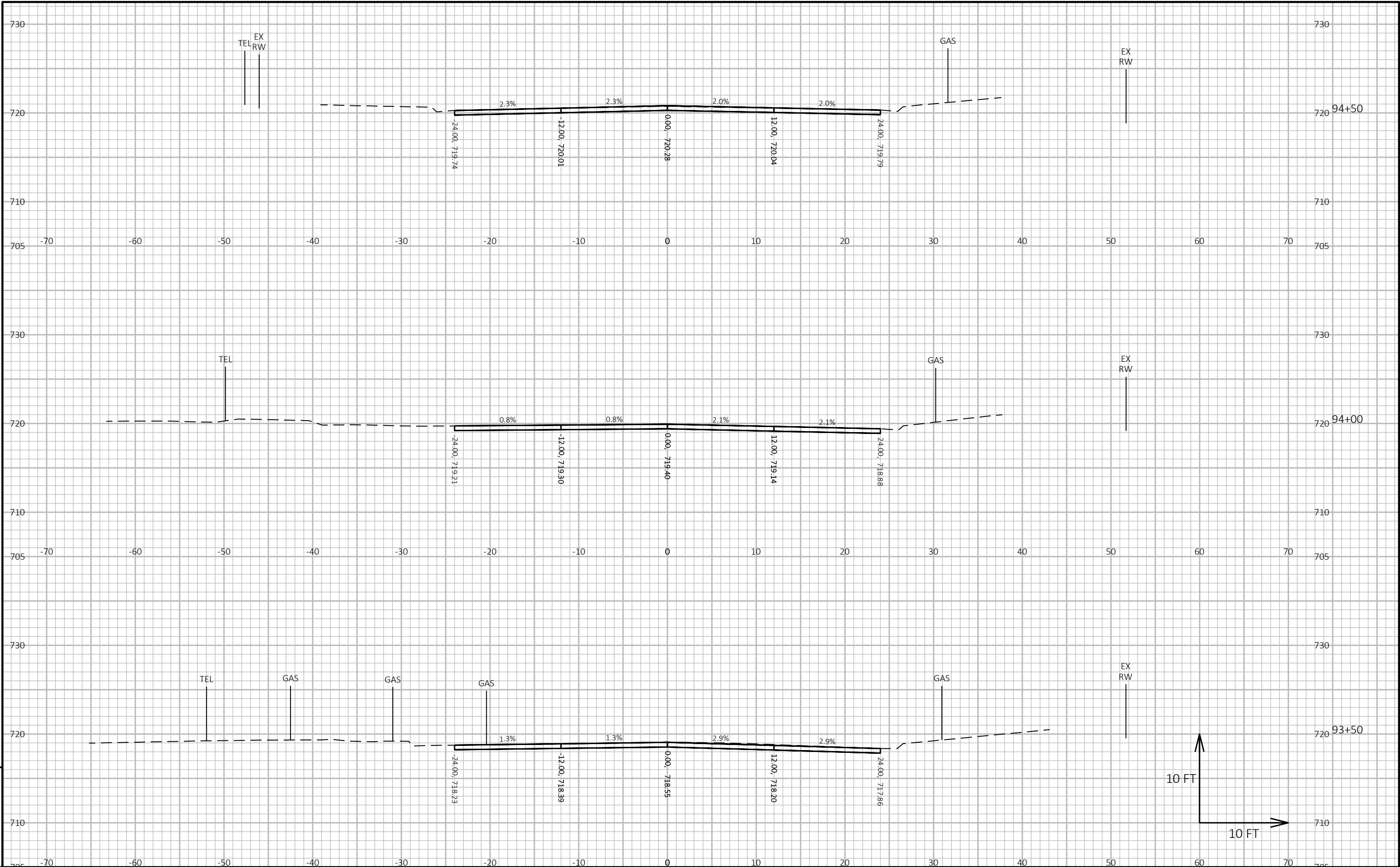
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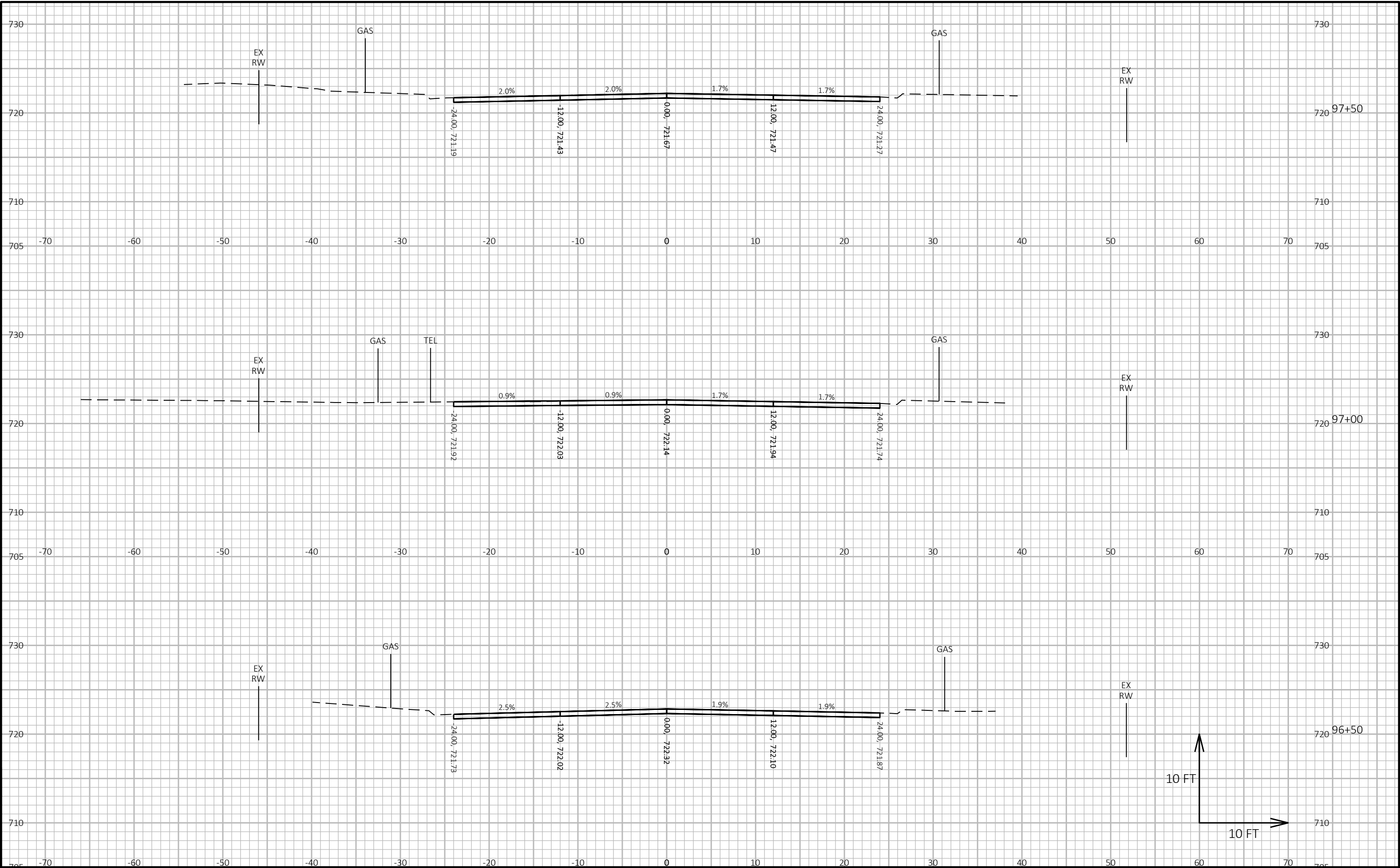
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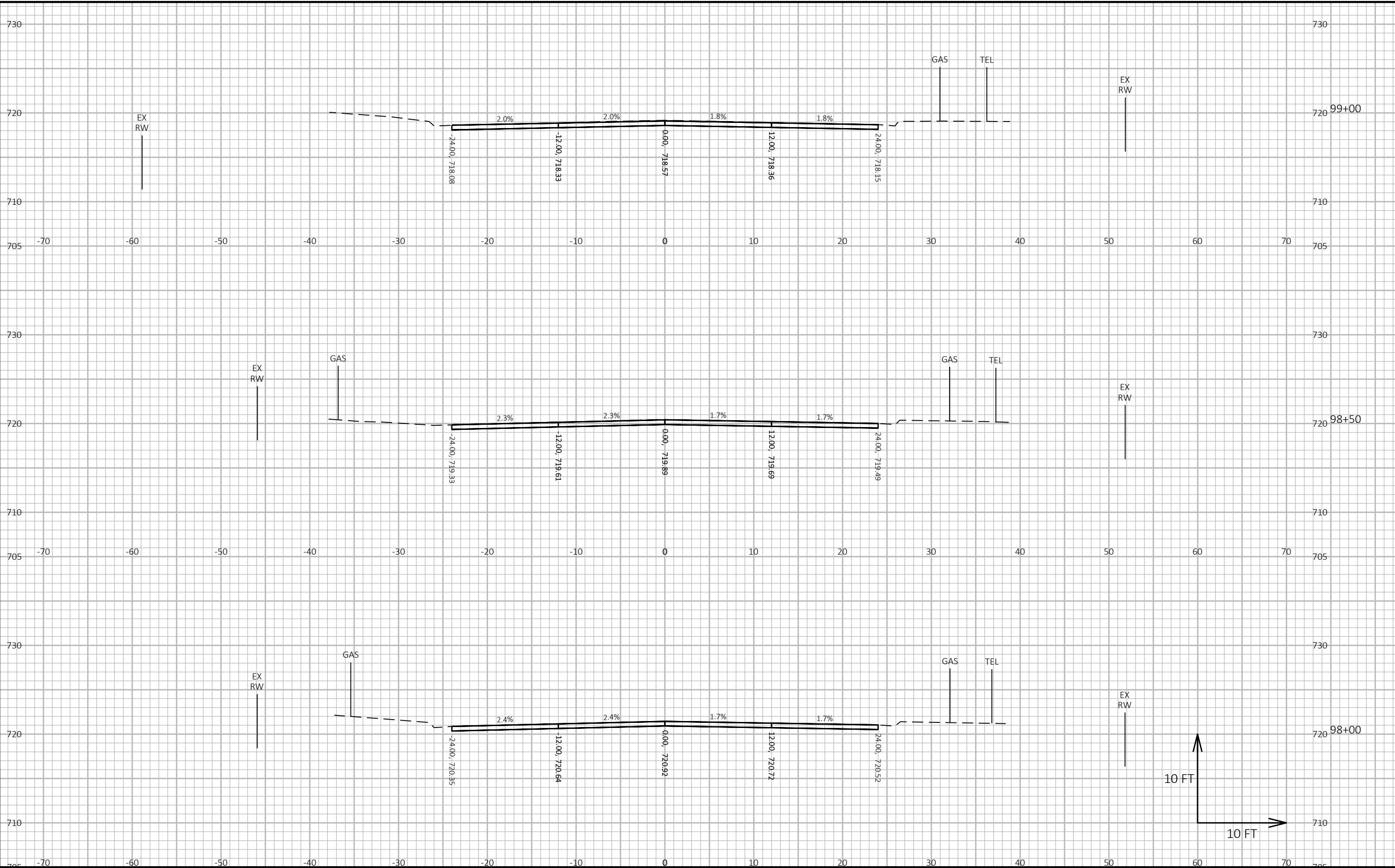


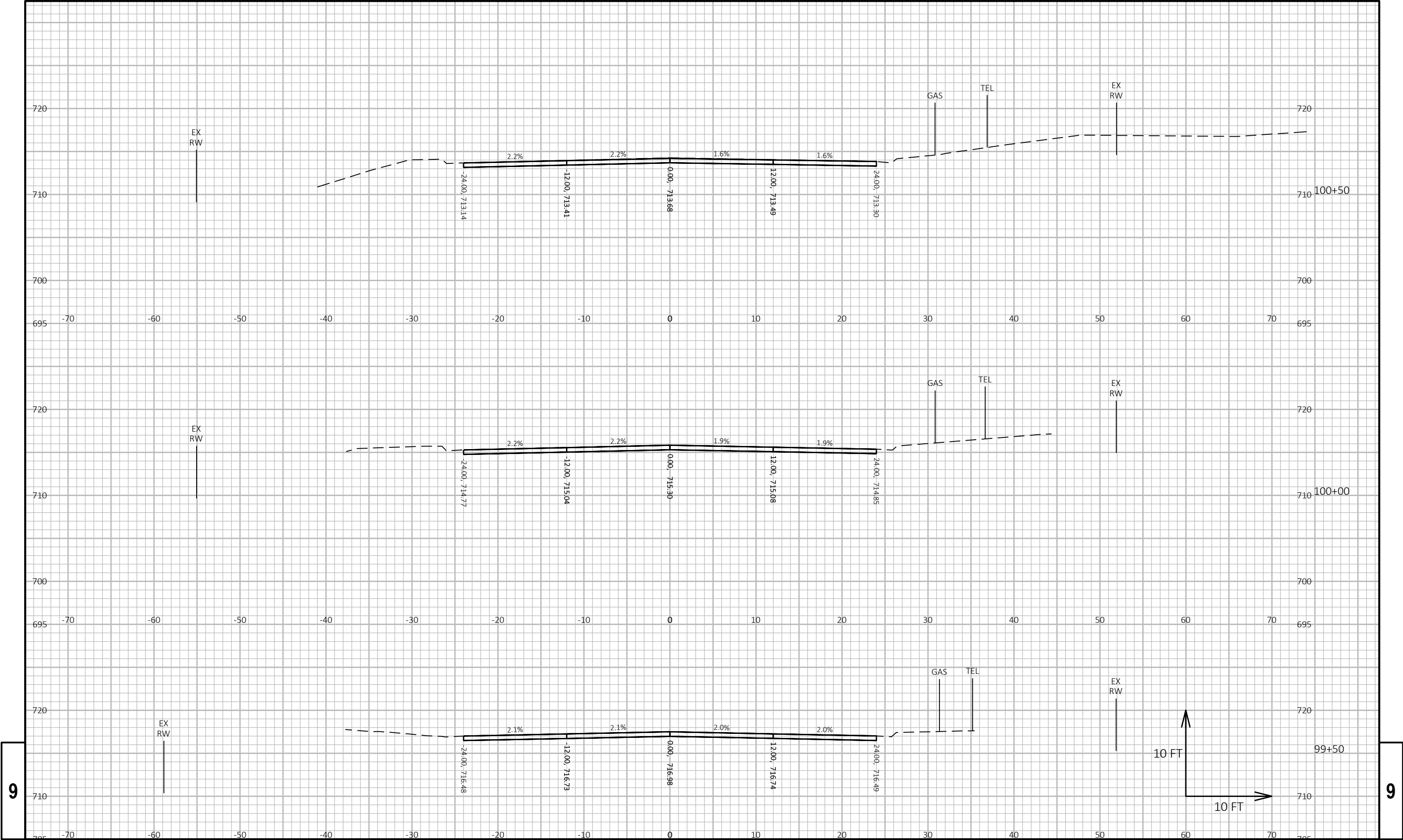








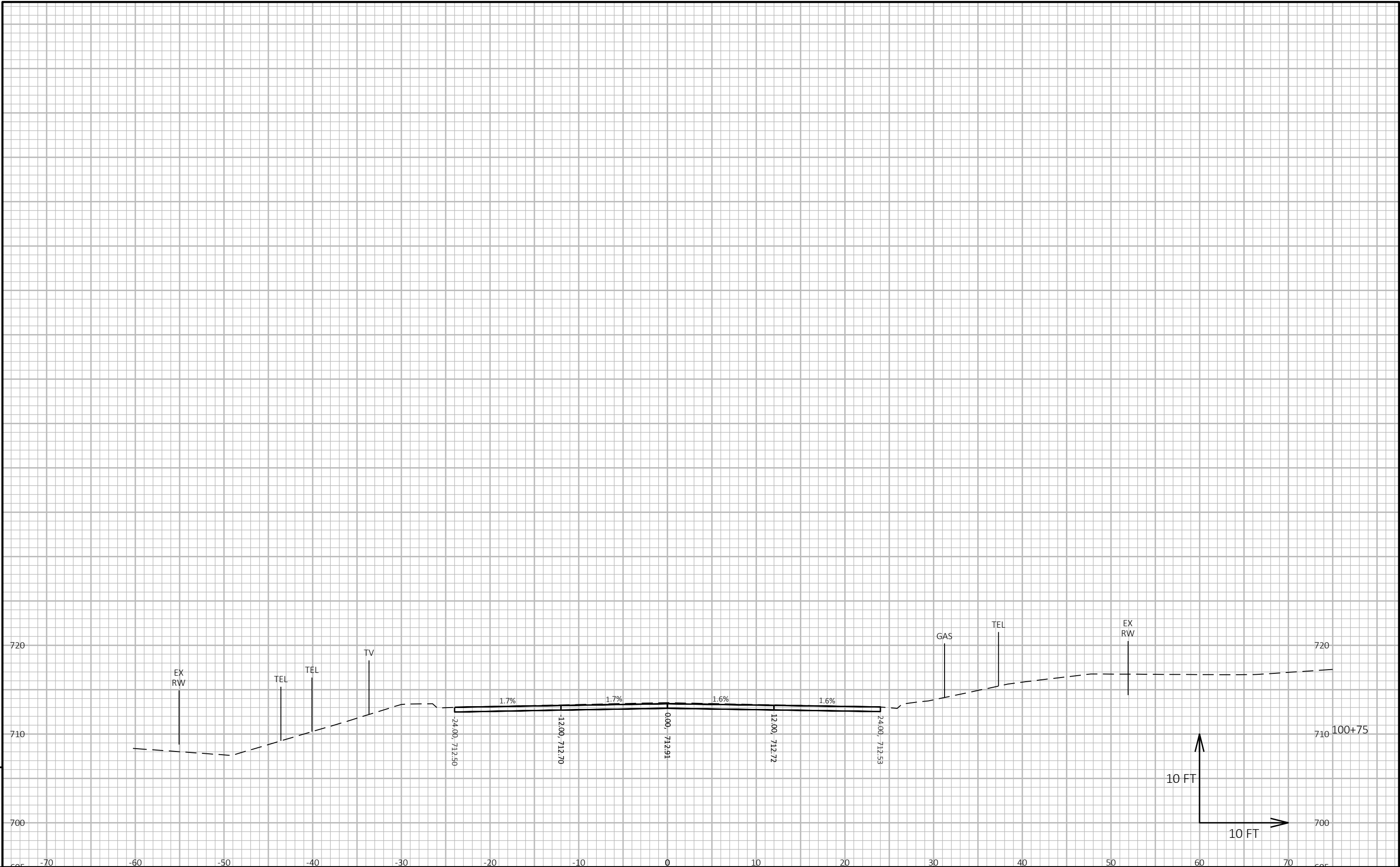




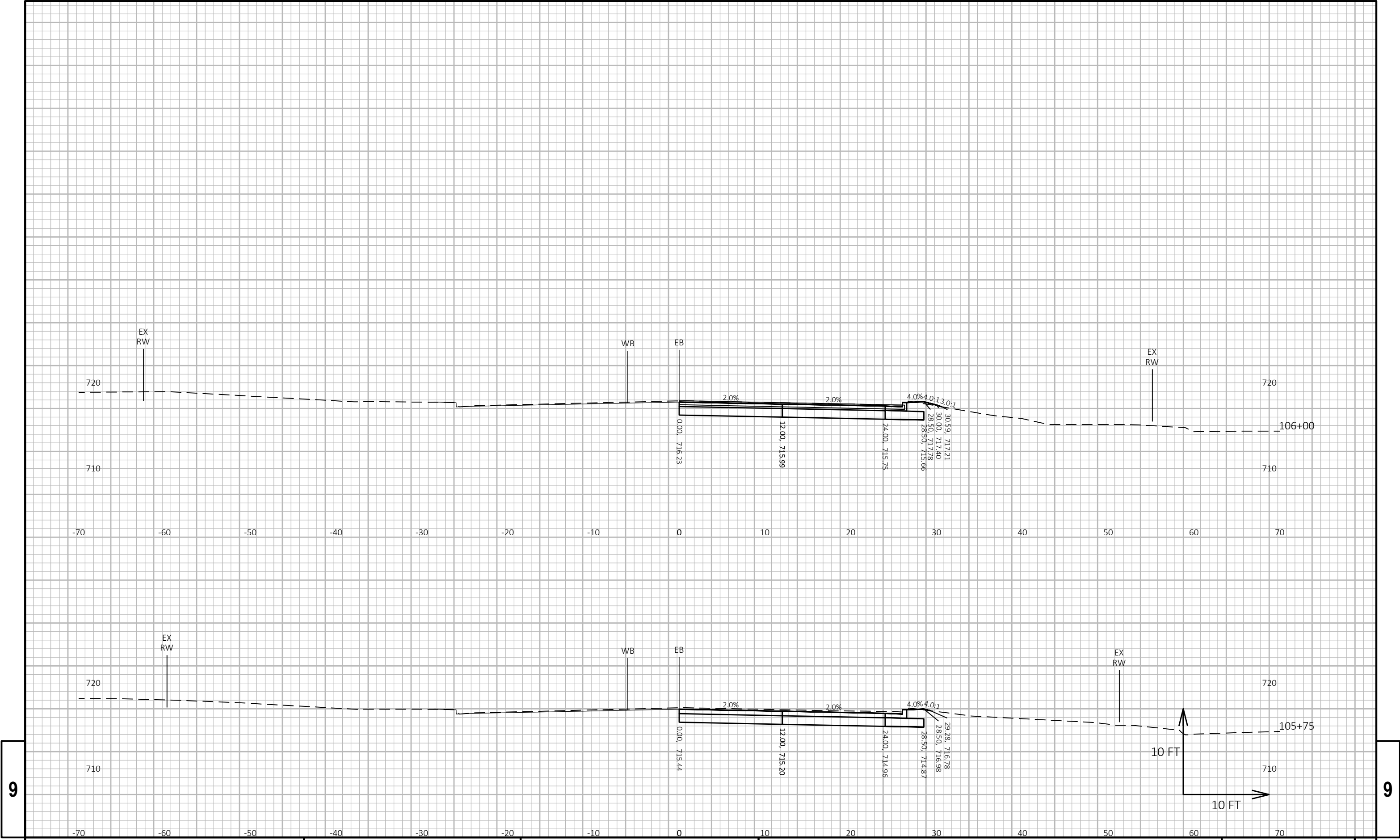
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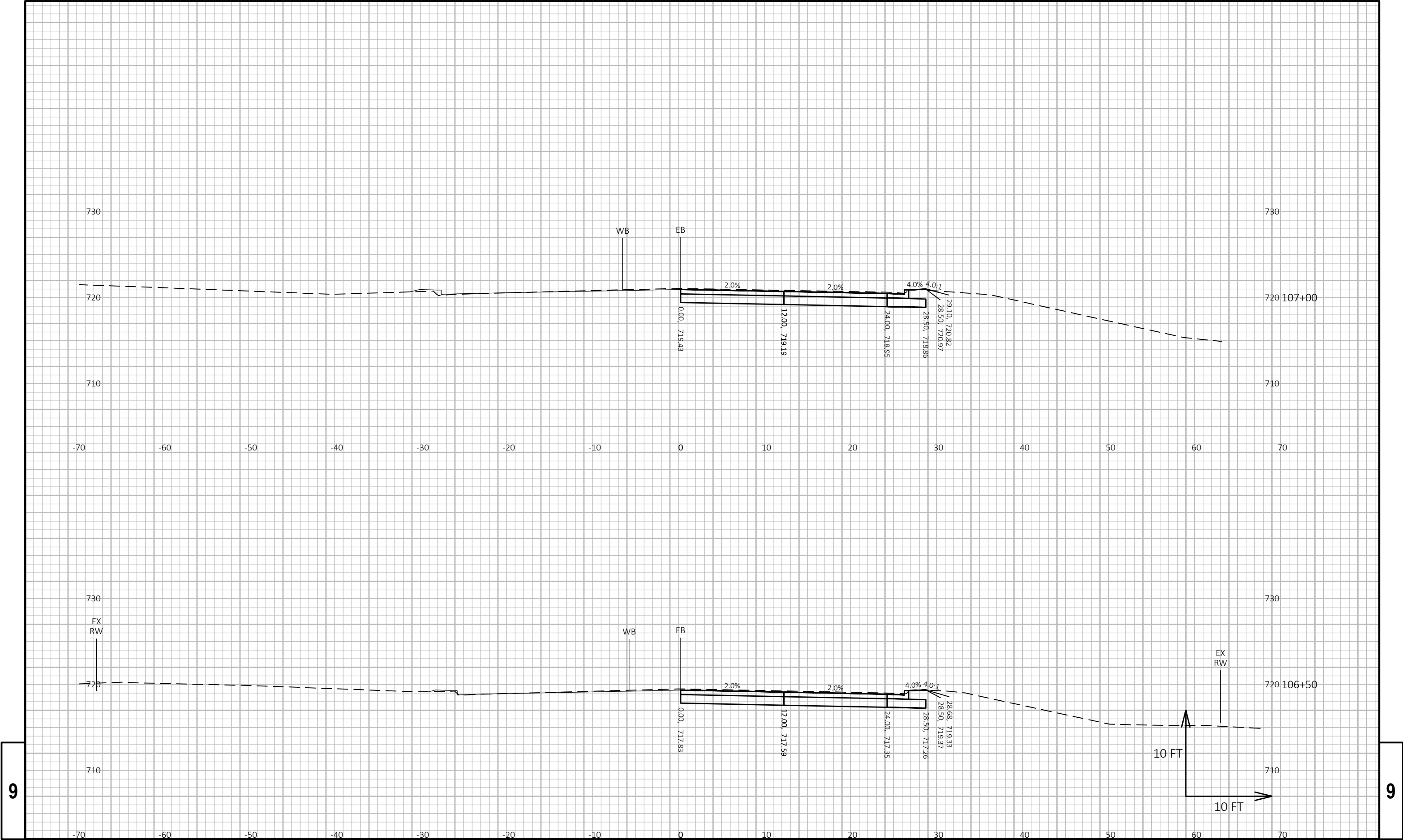


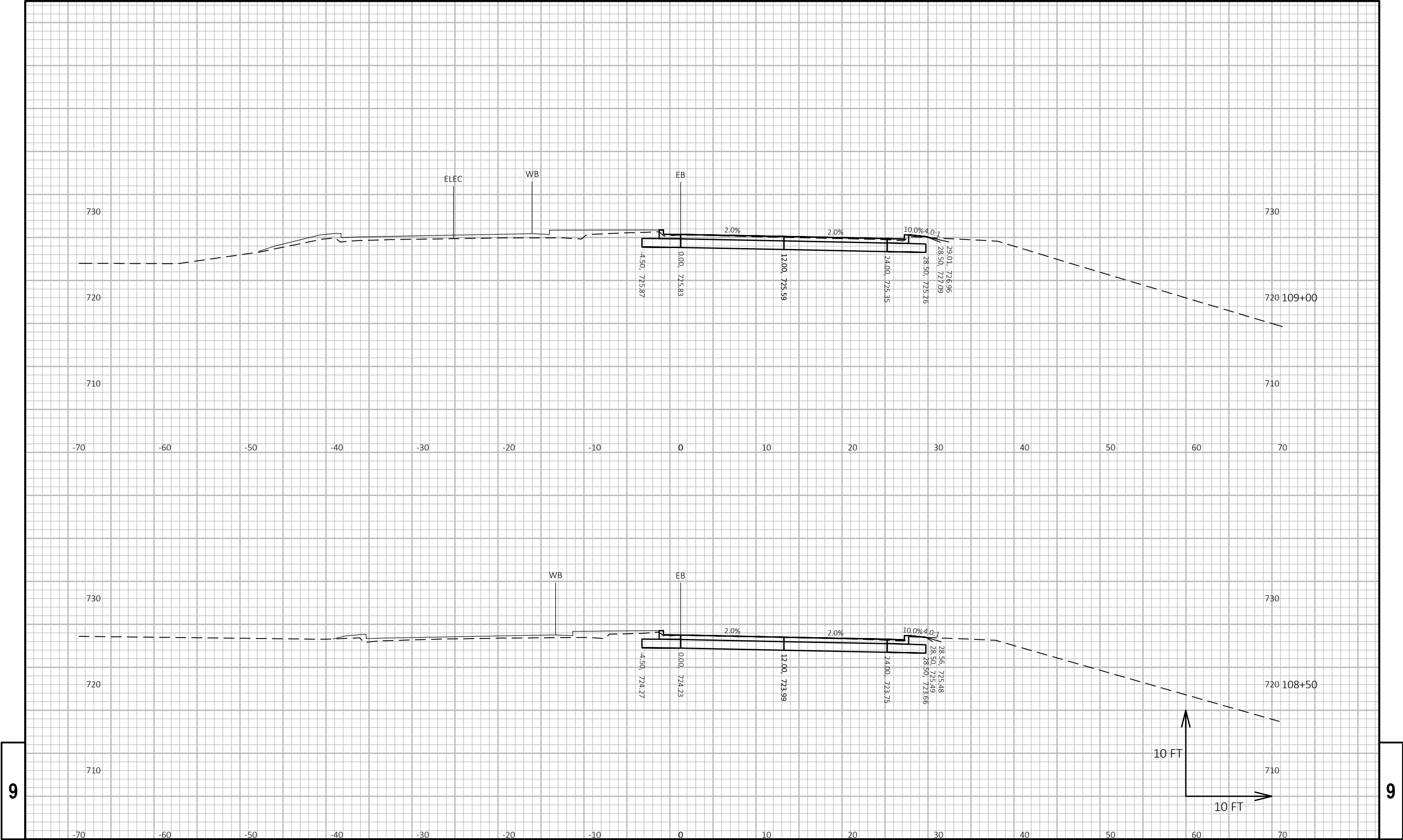
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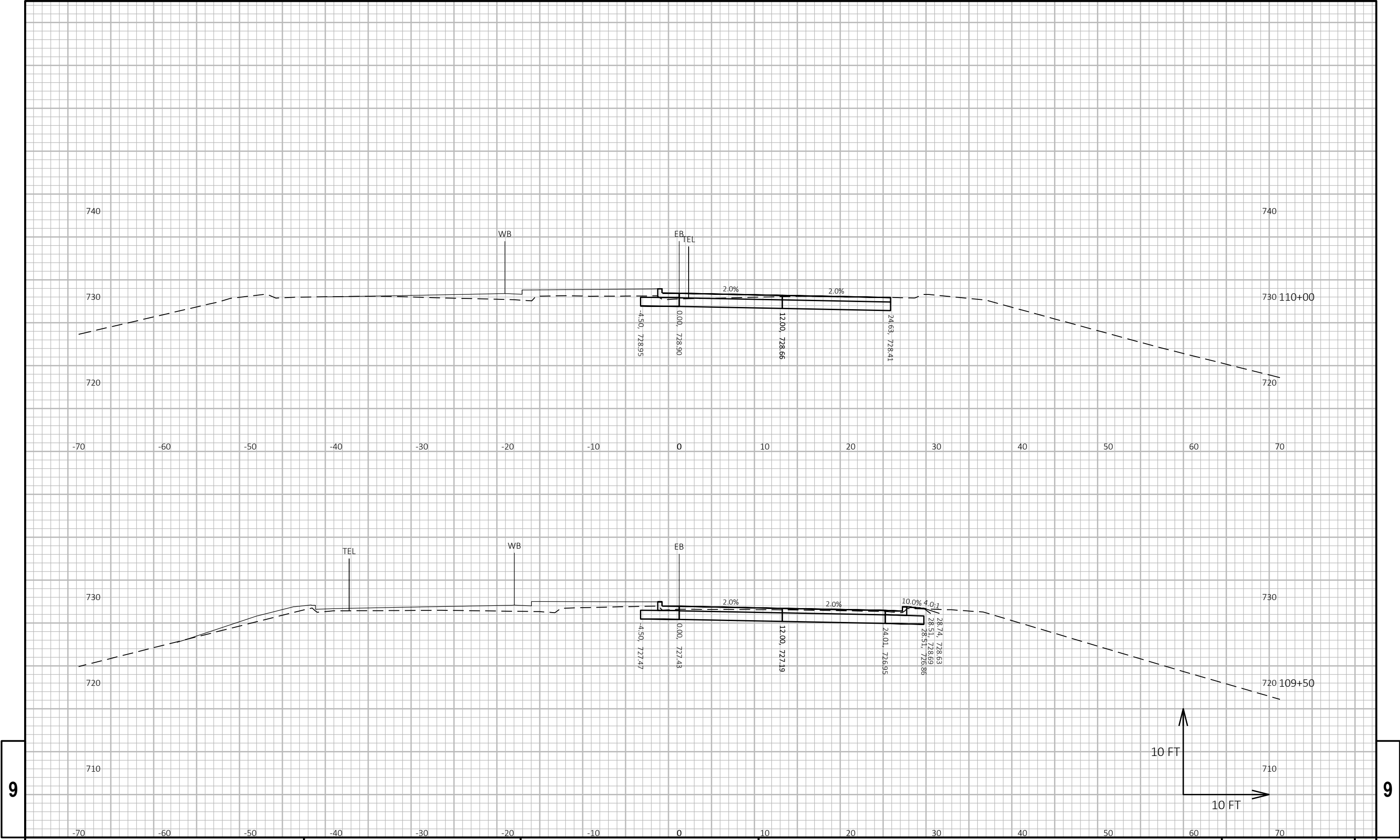
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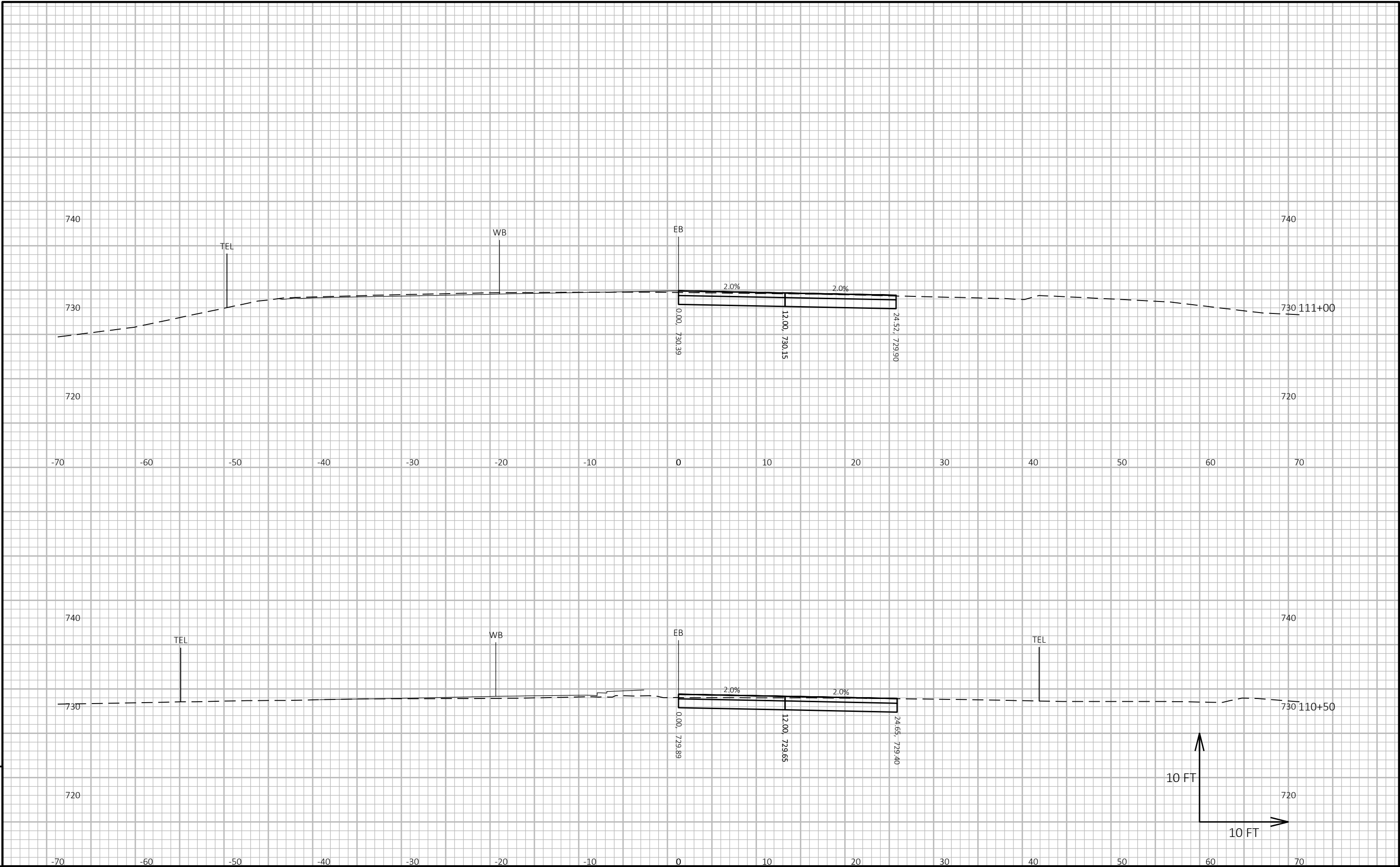




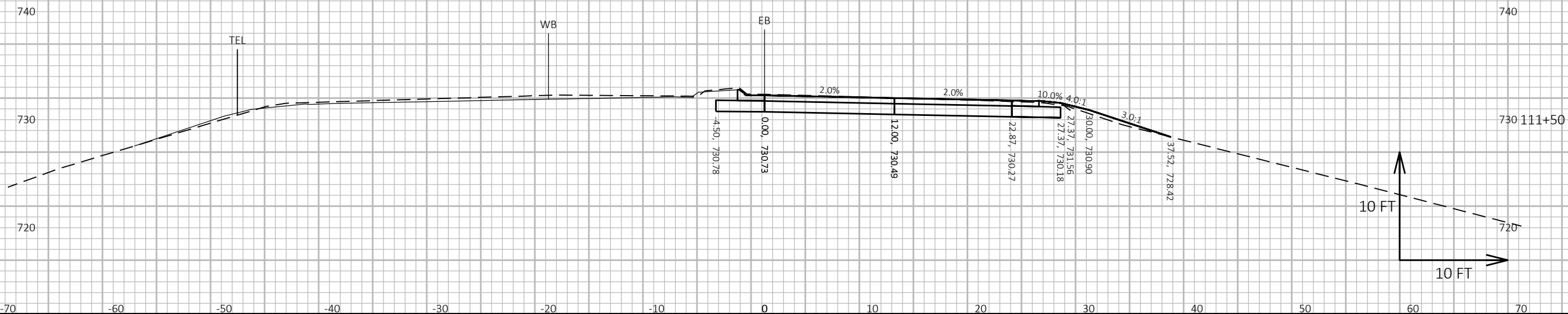
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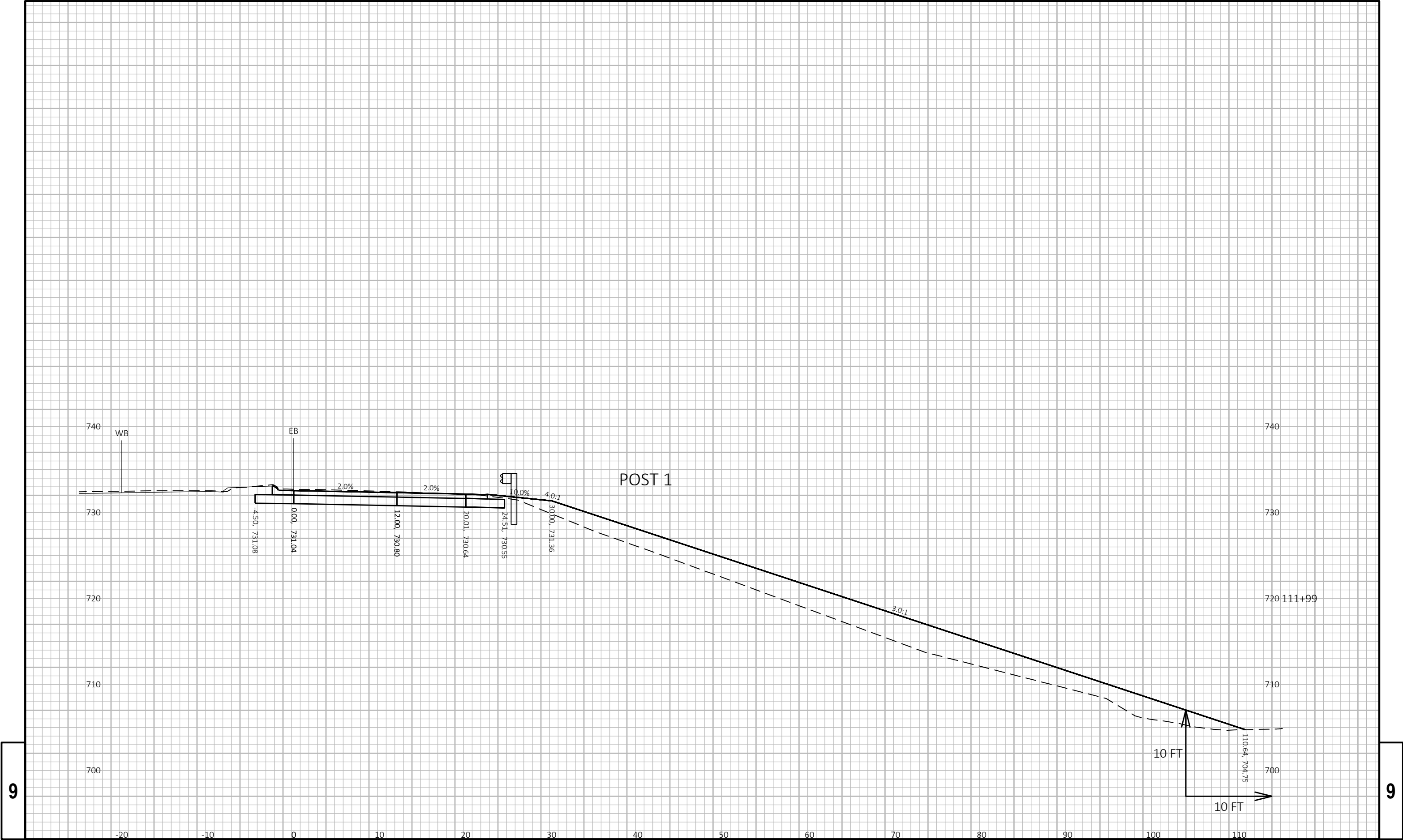




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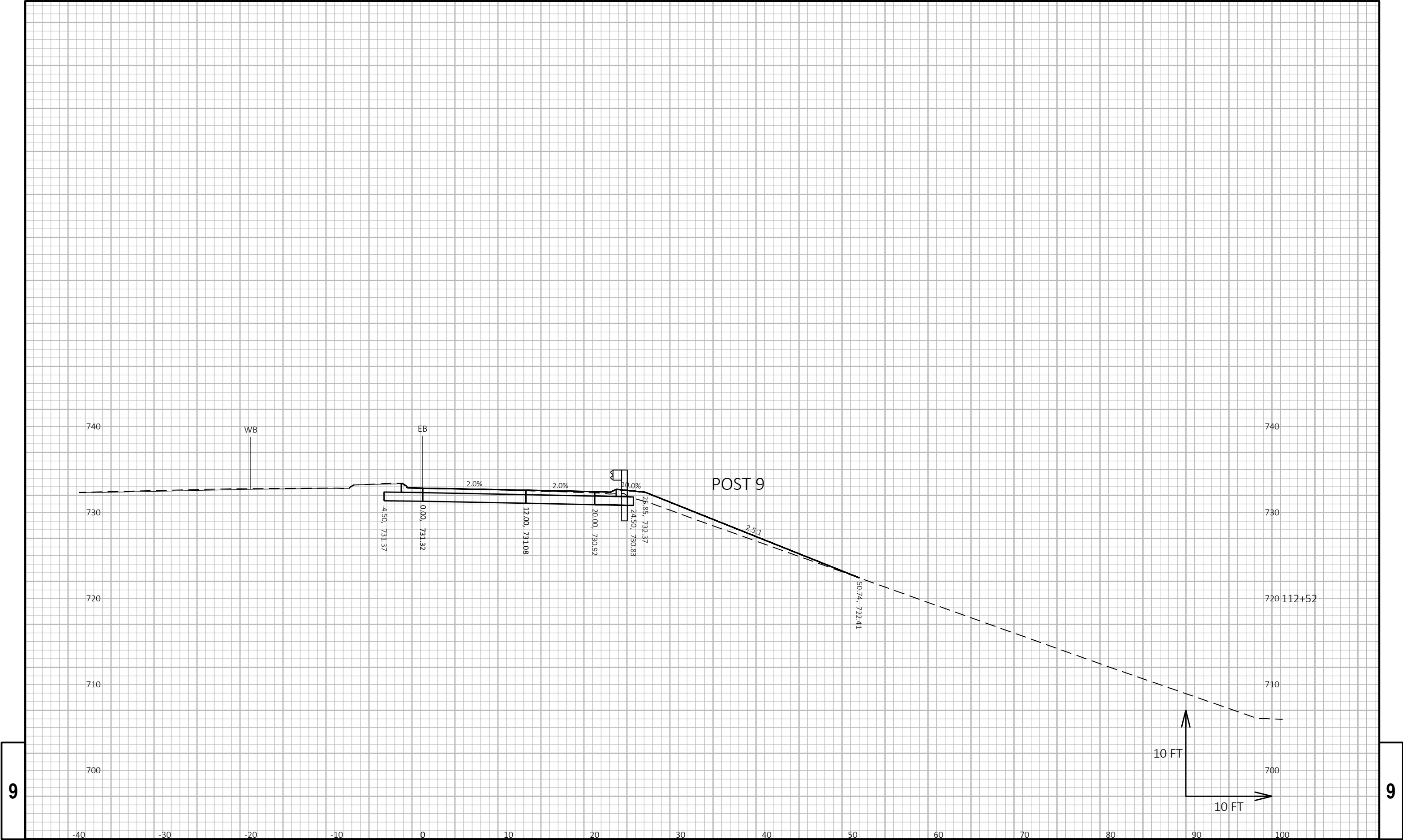
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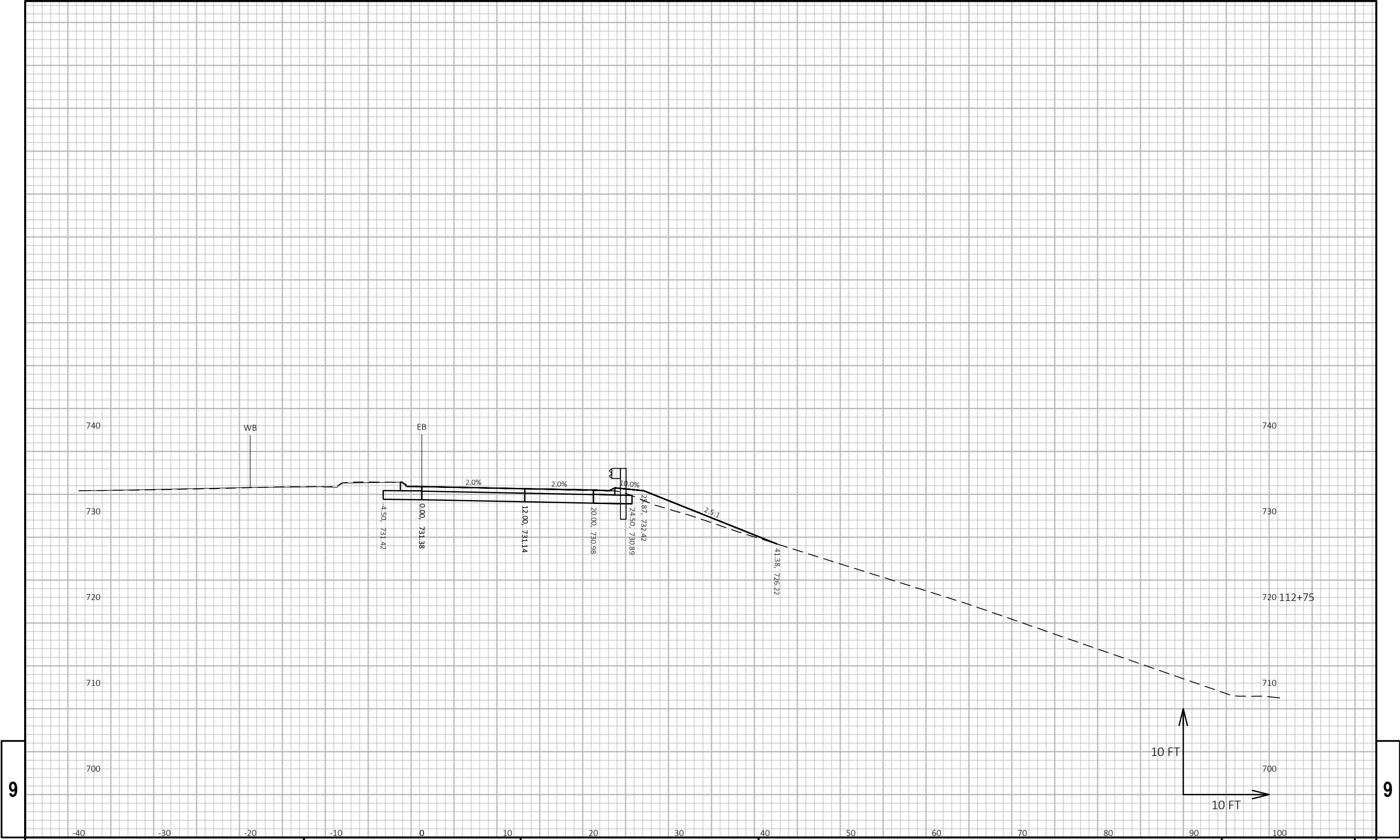


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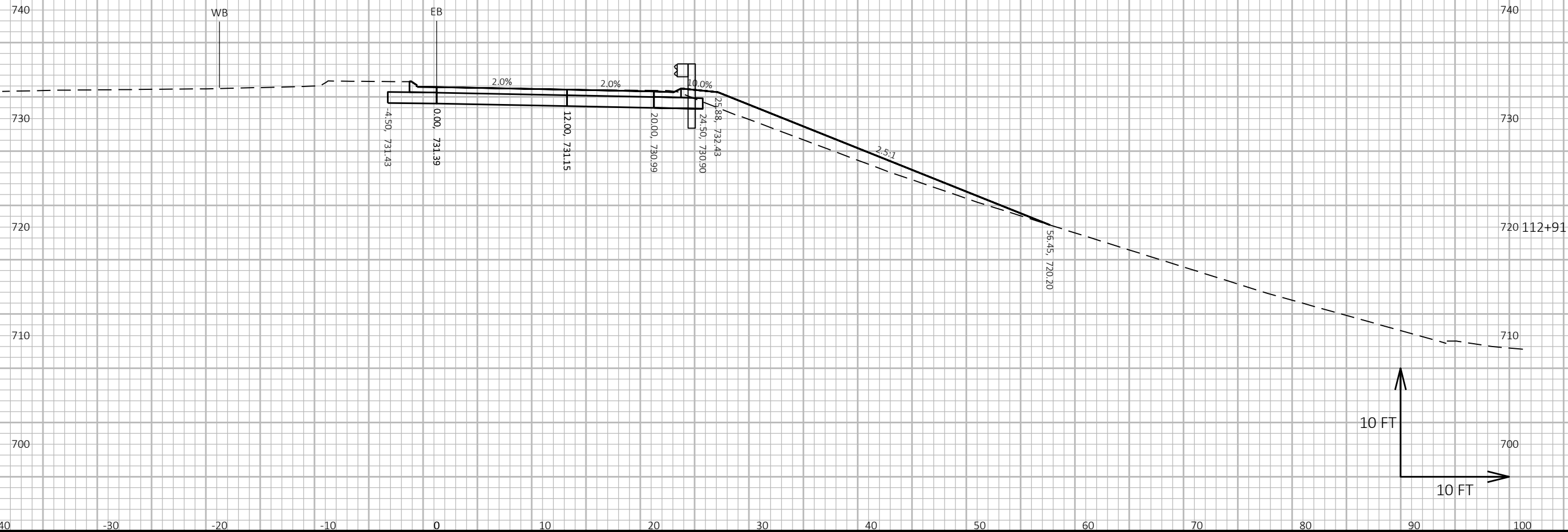
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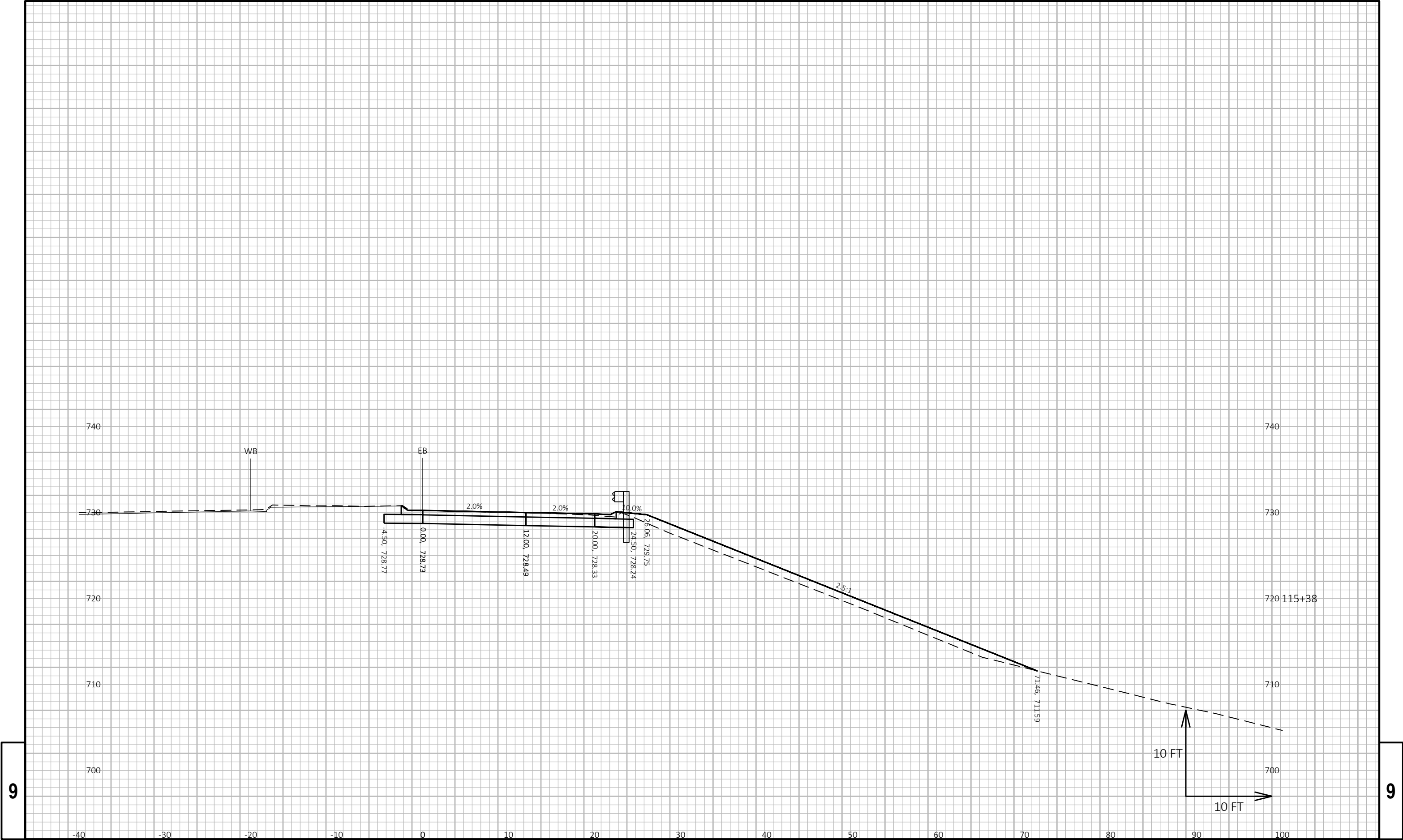
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BRIDGE B-32-137



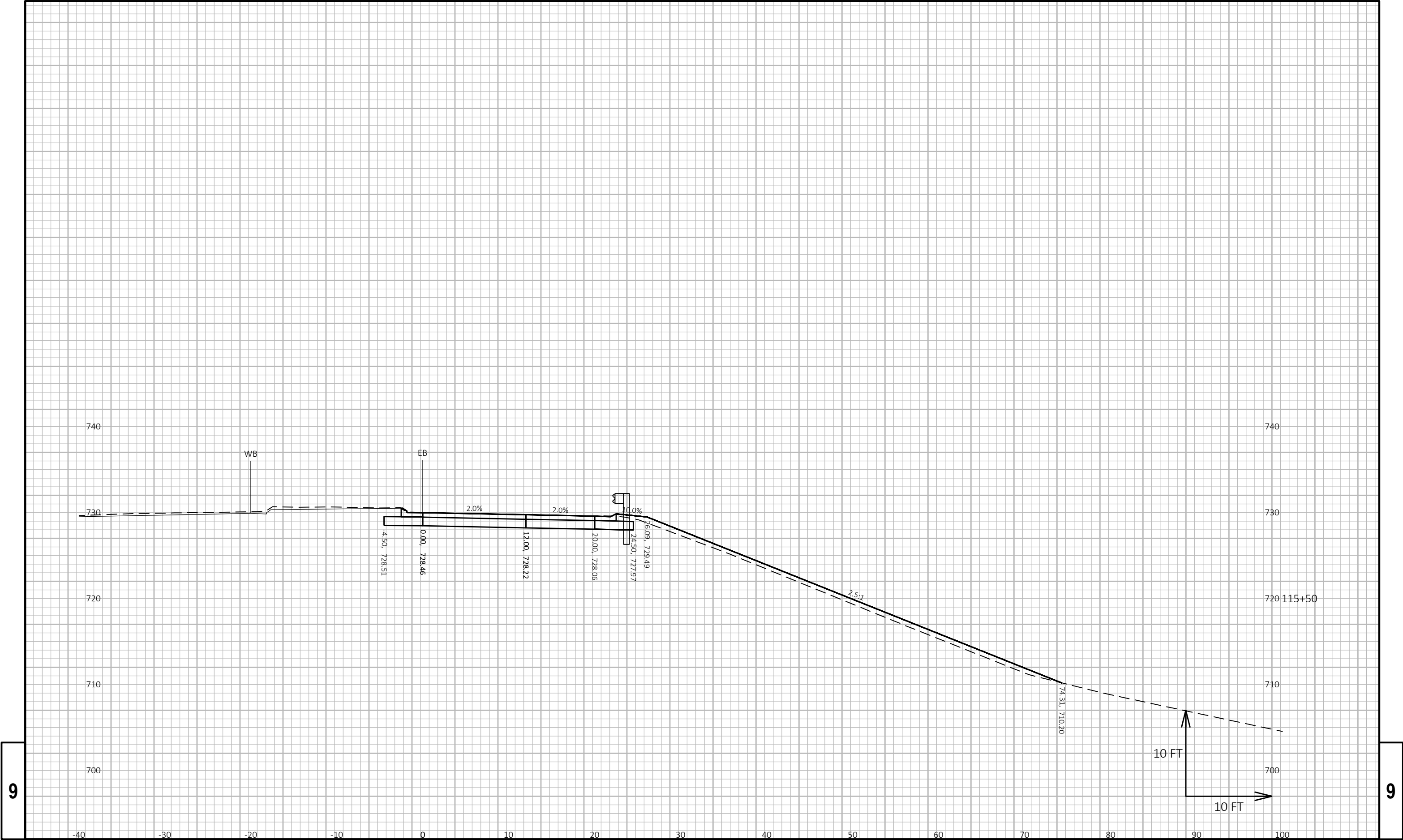
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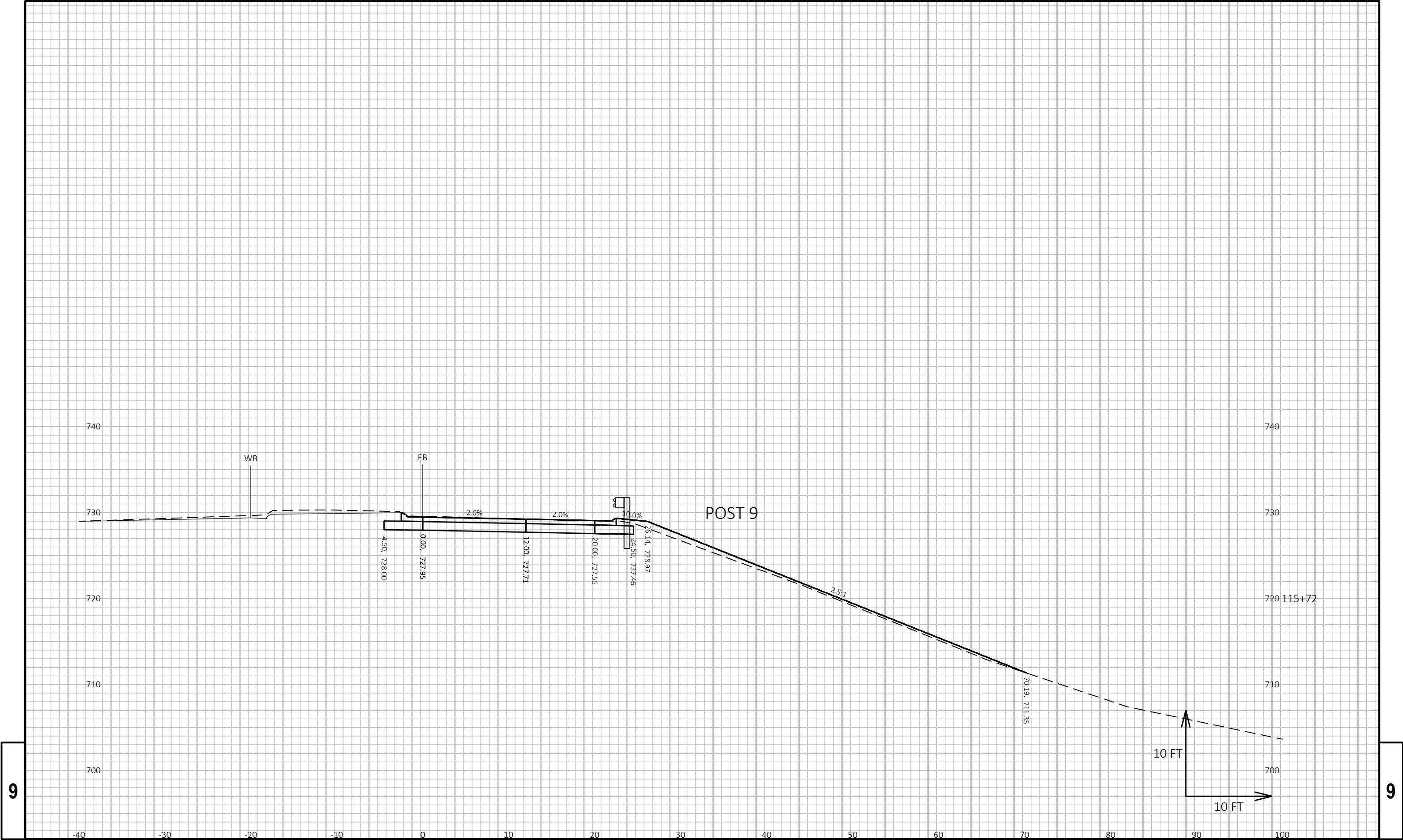
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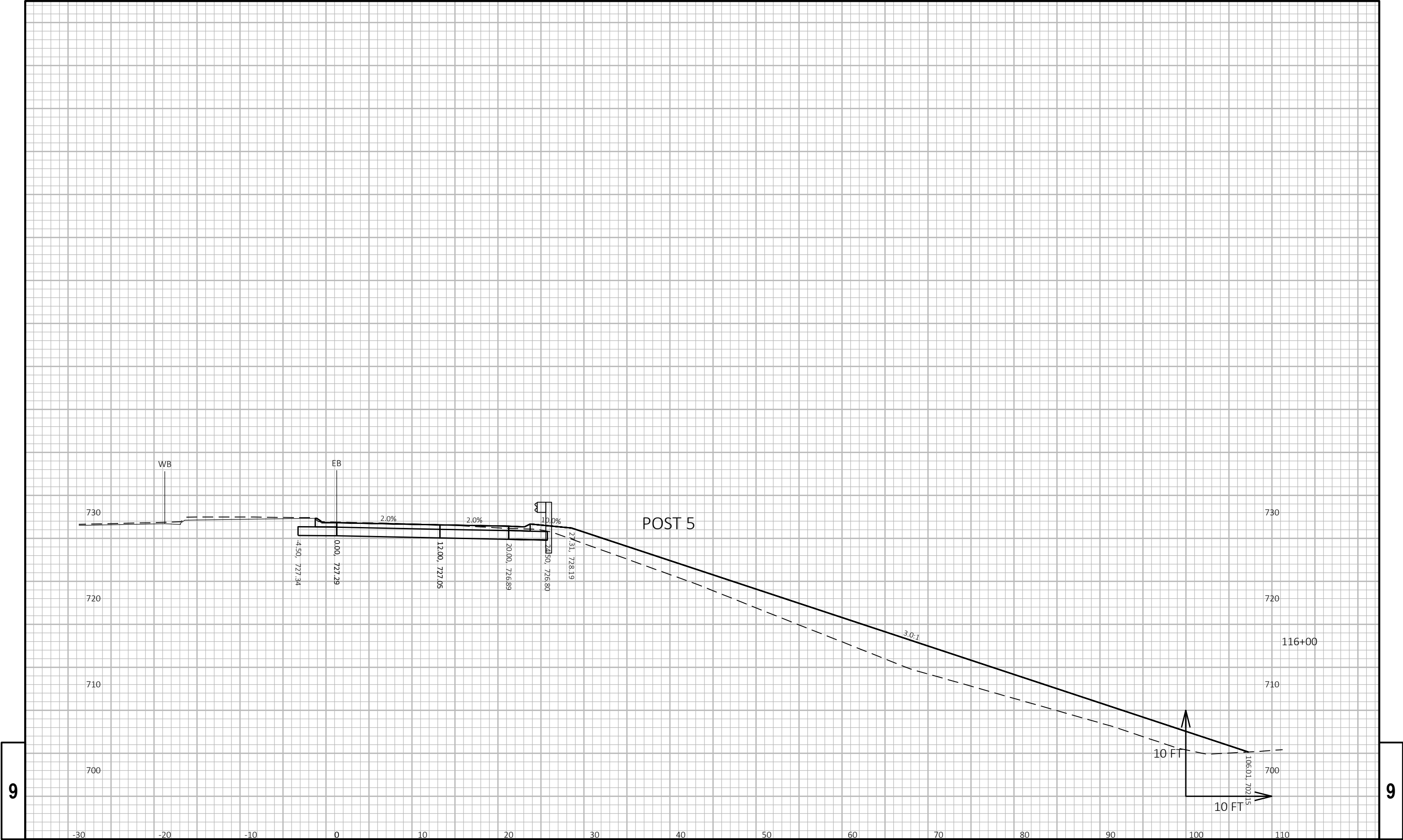
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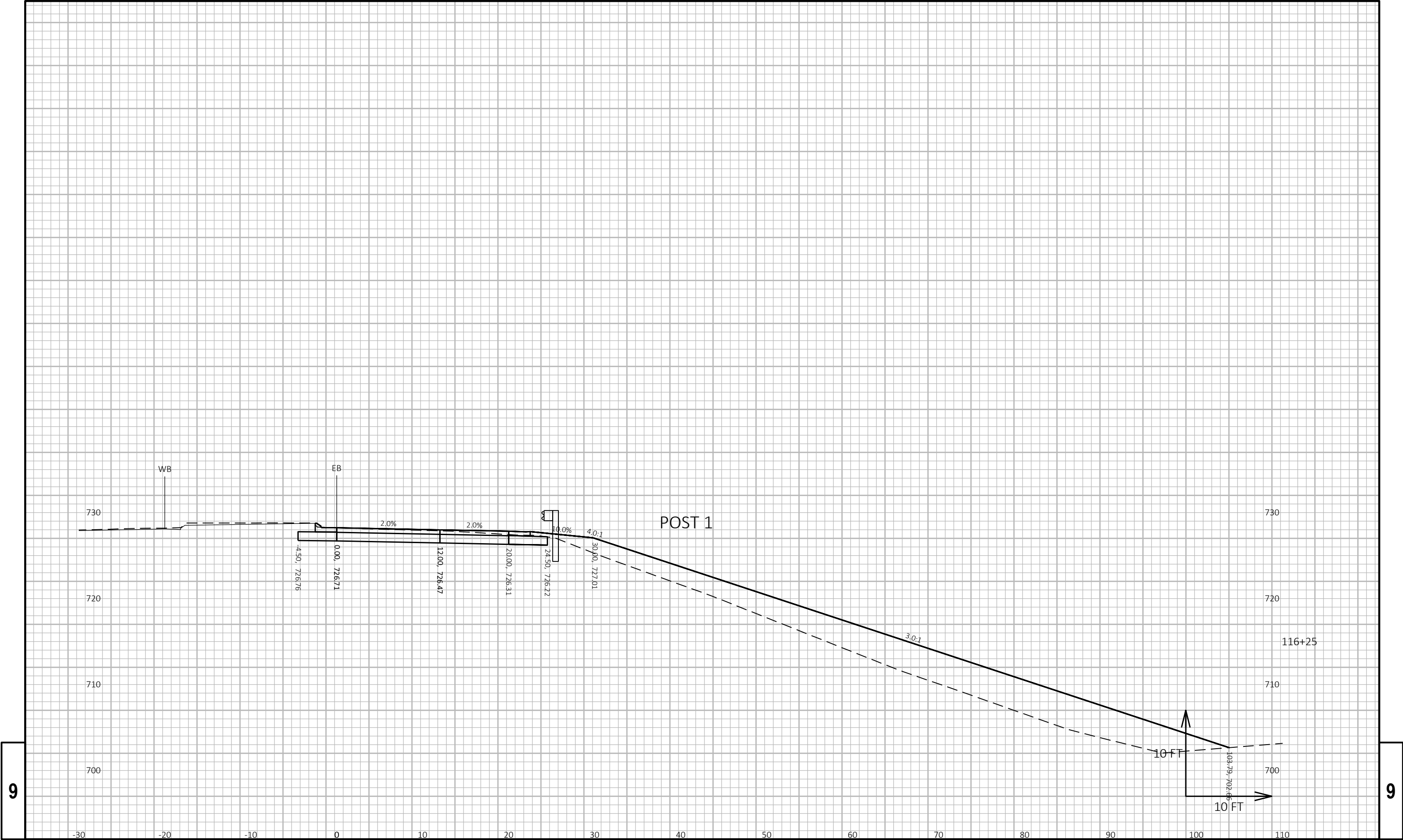
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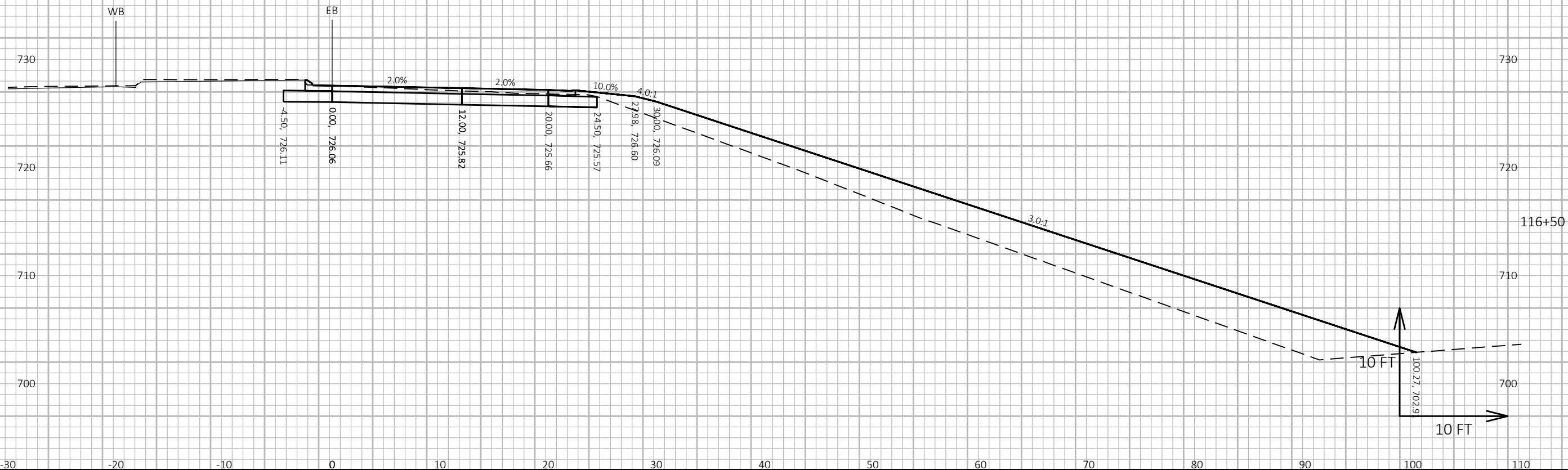
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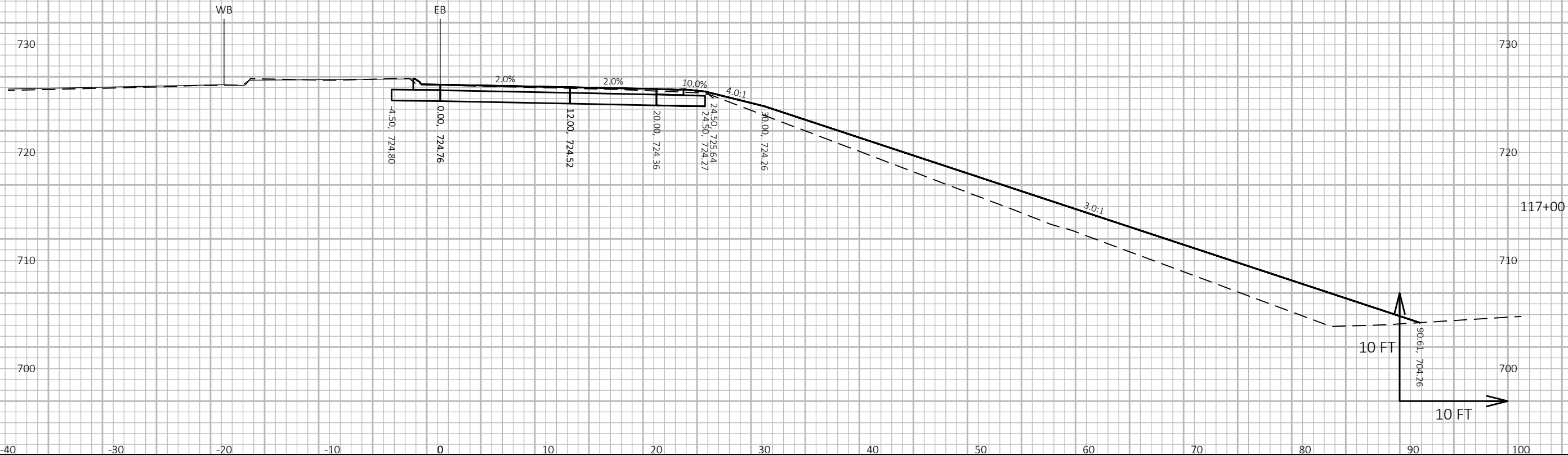
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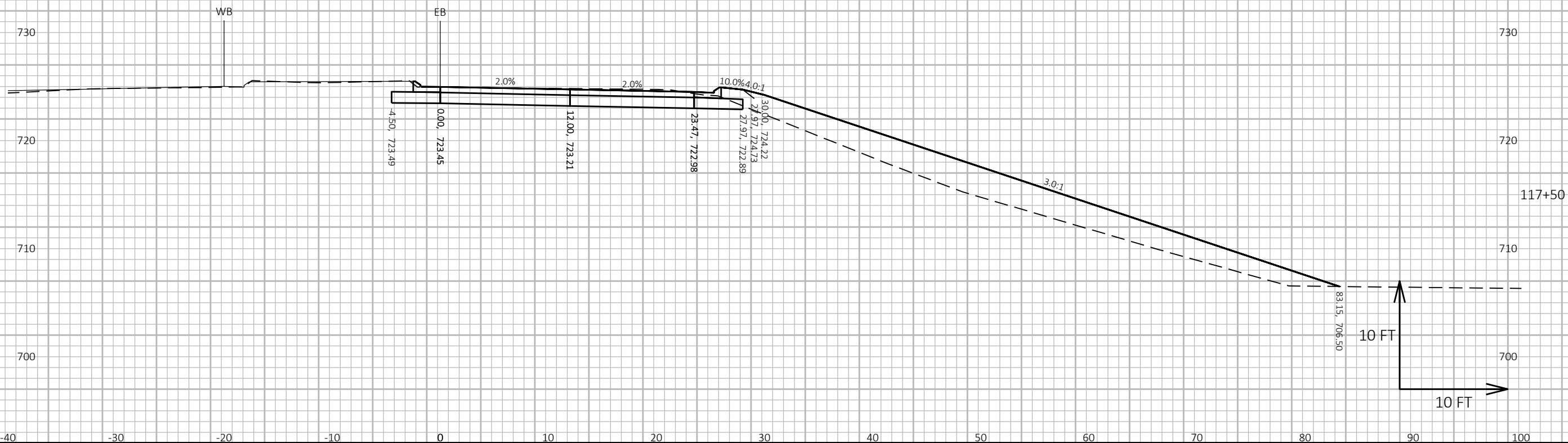
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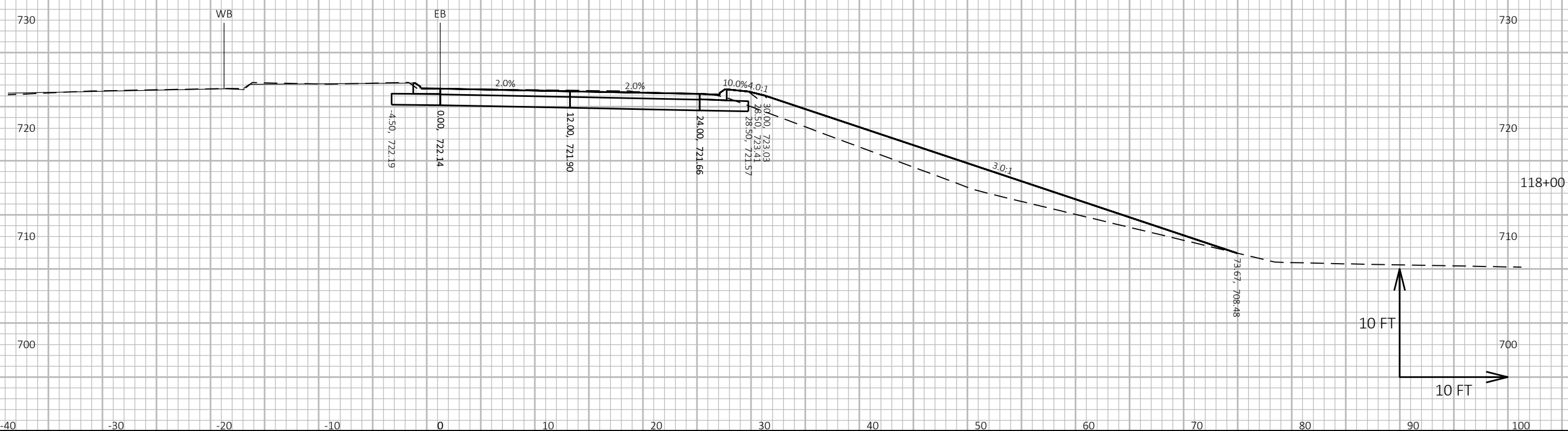
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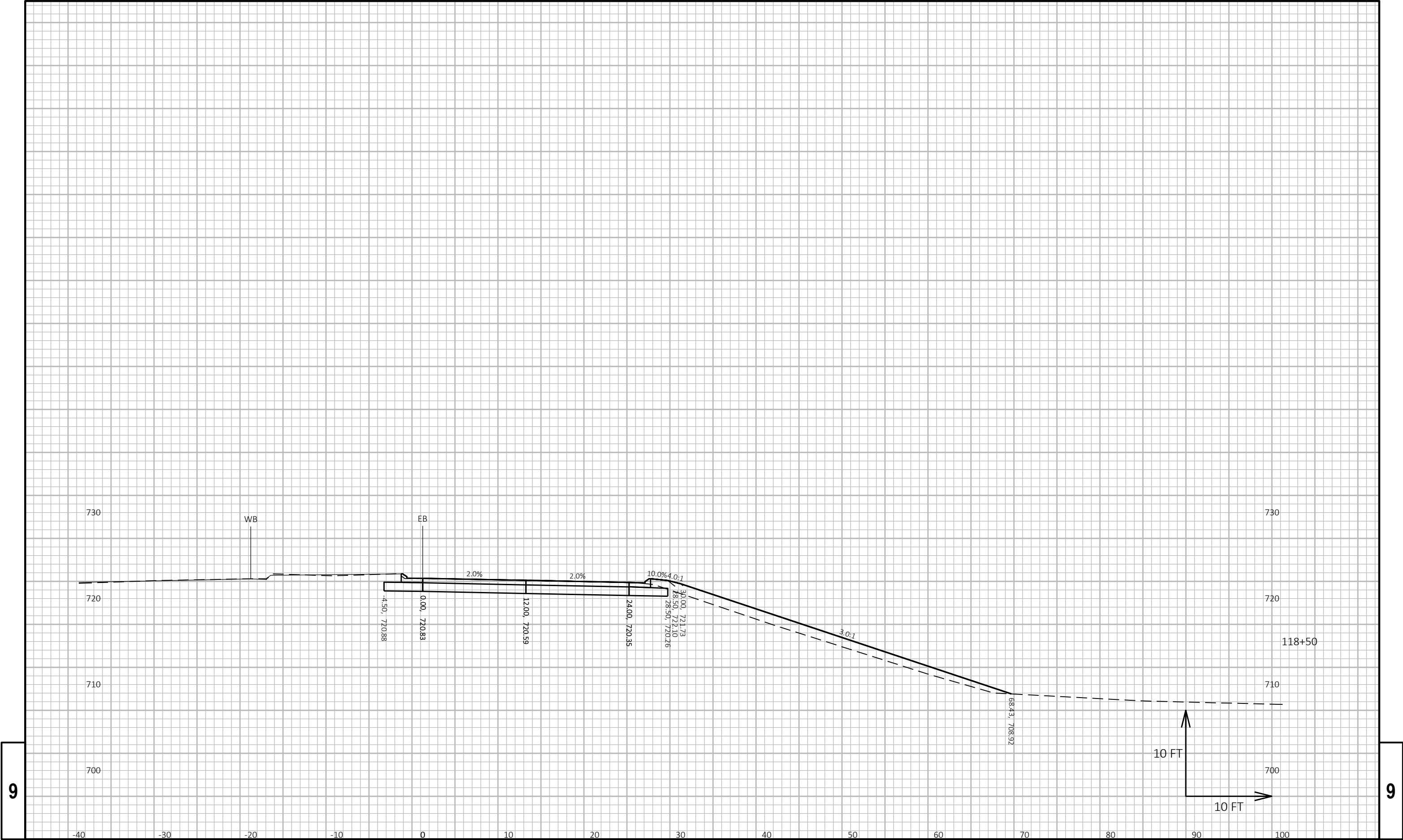


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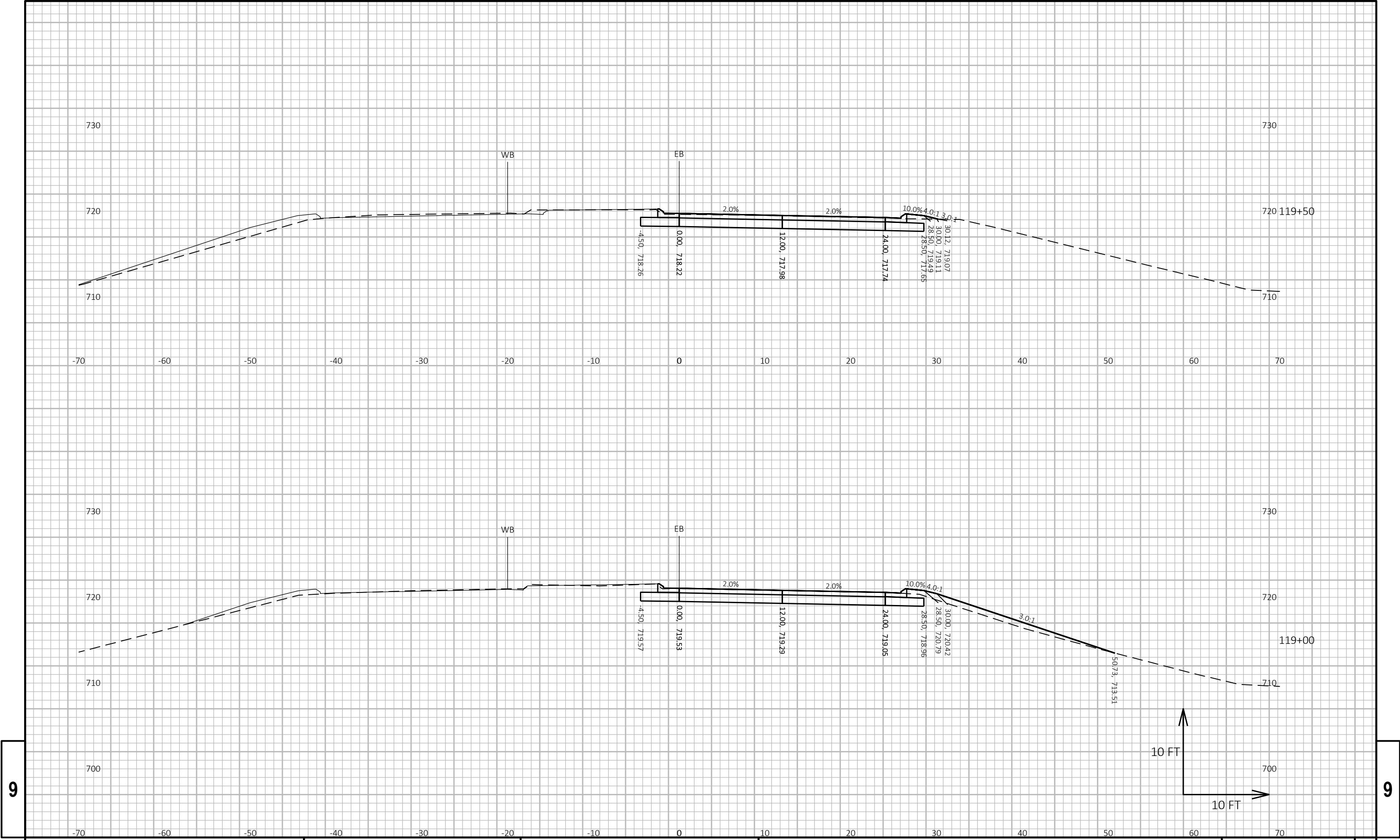


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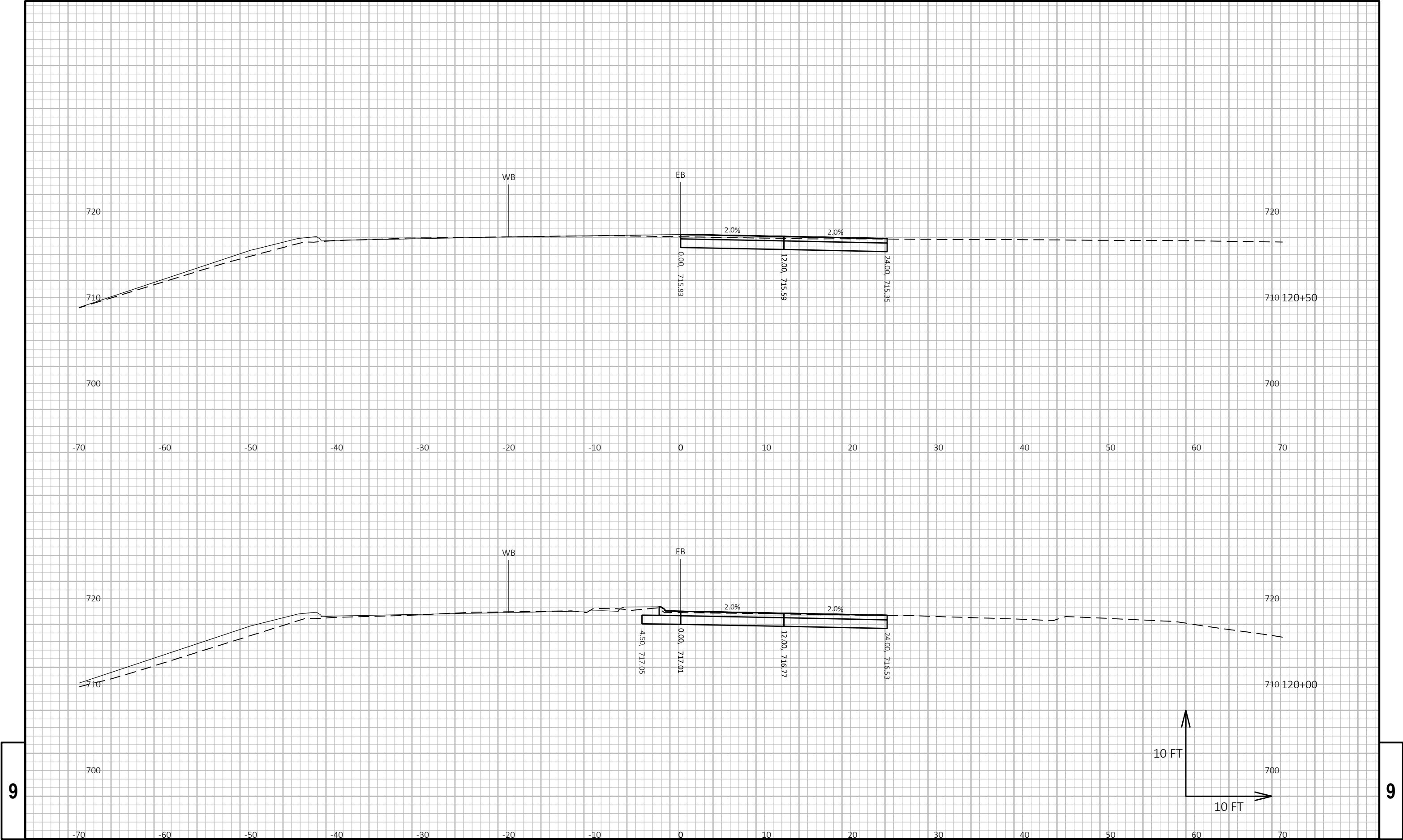
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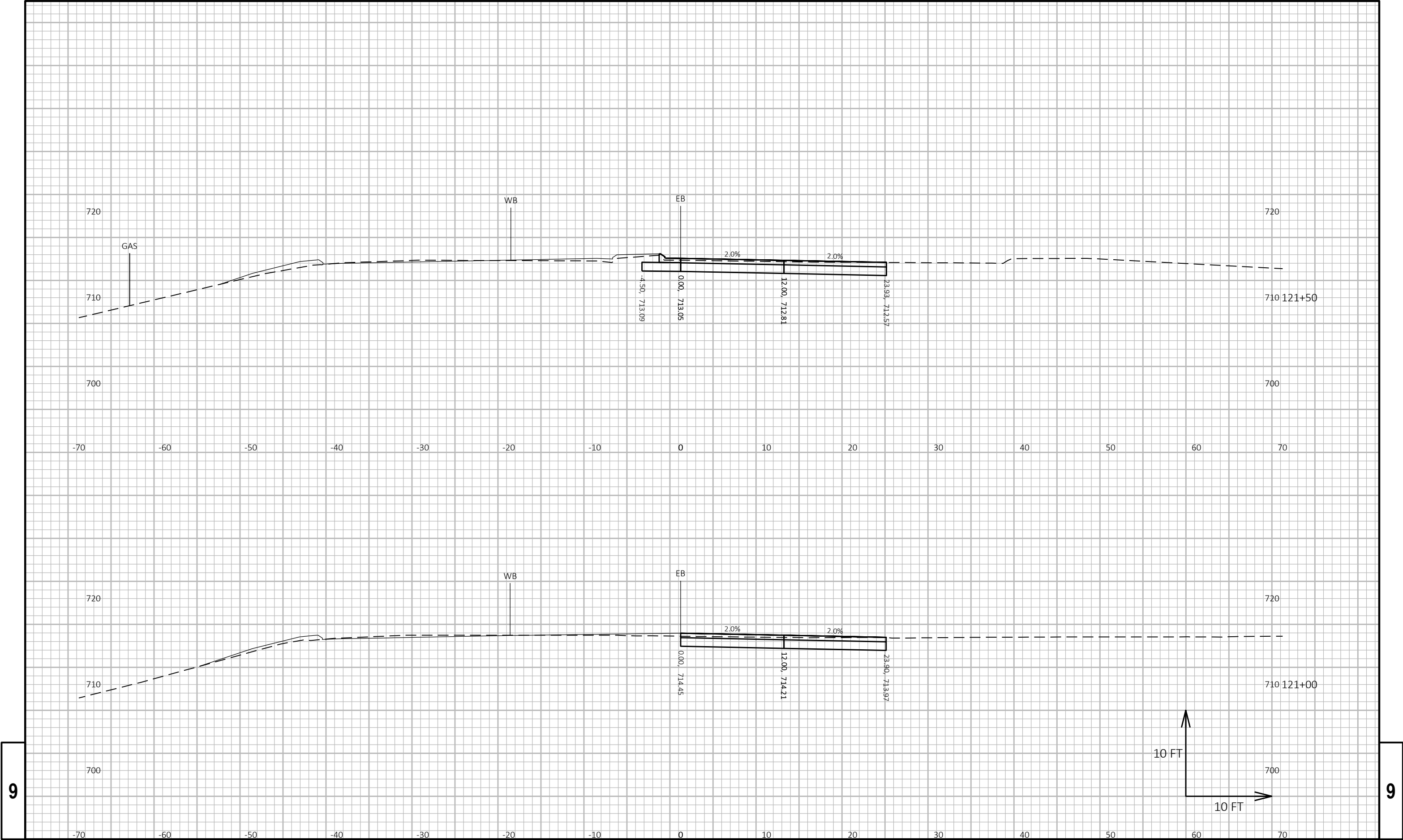
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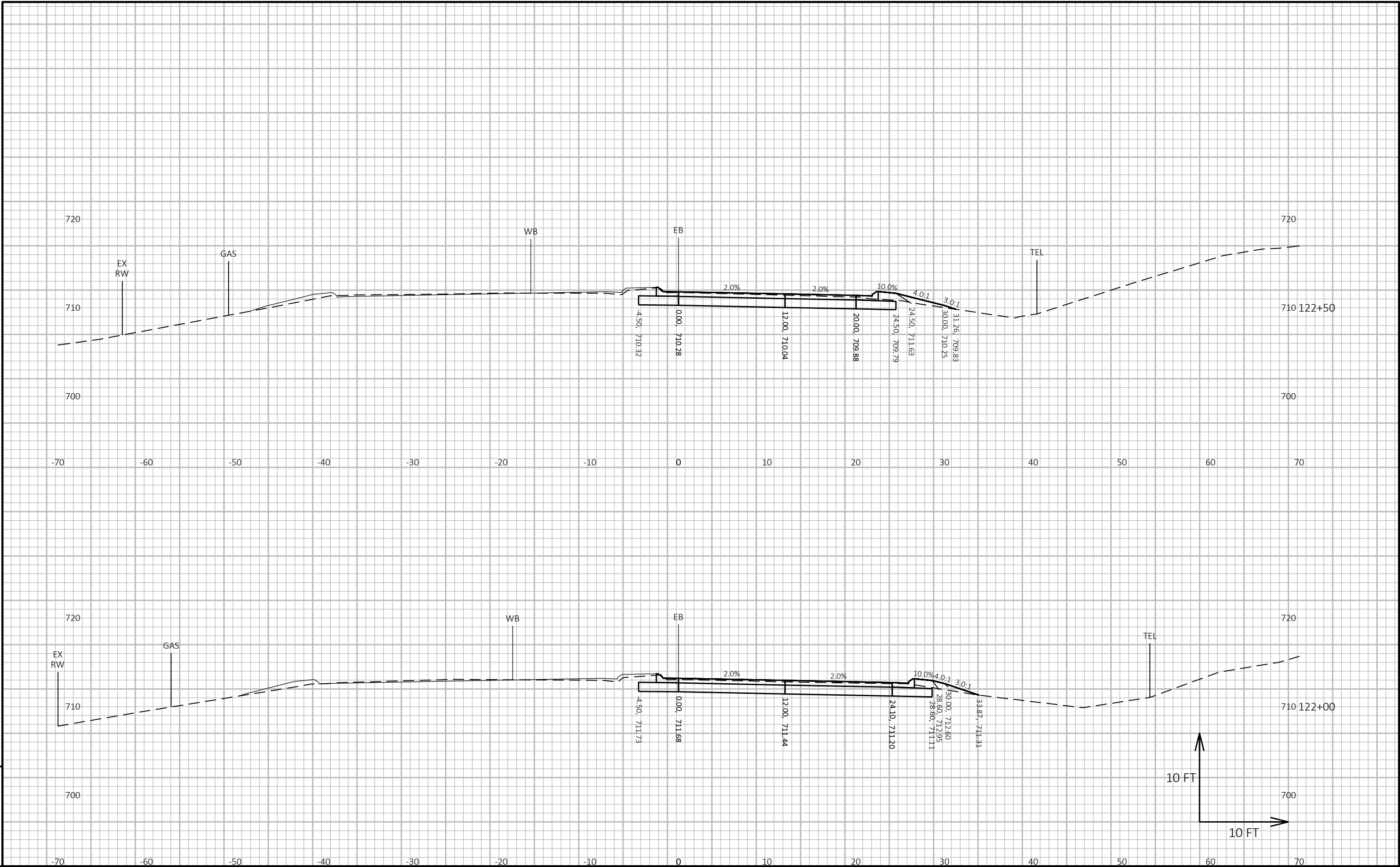
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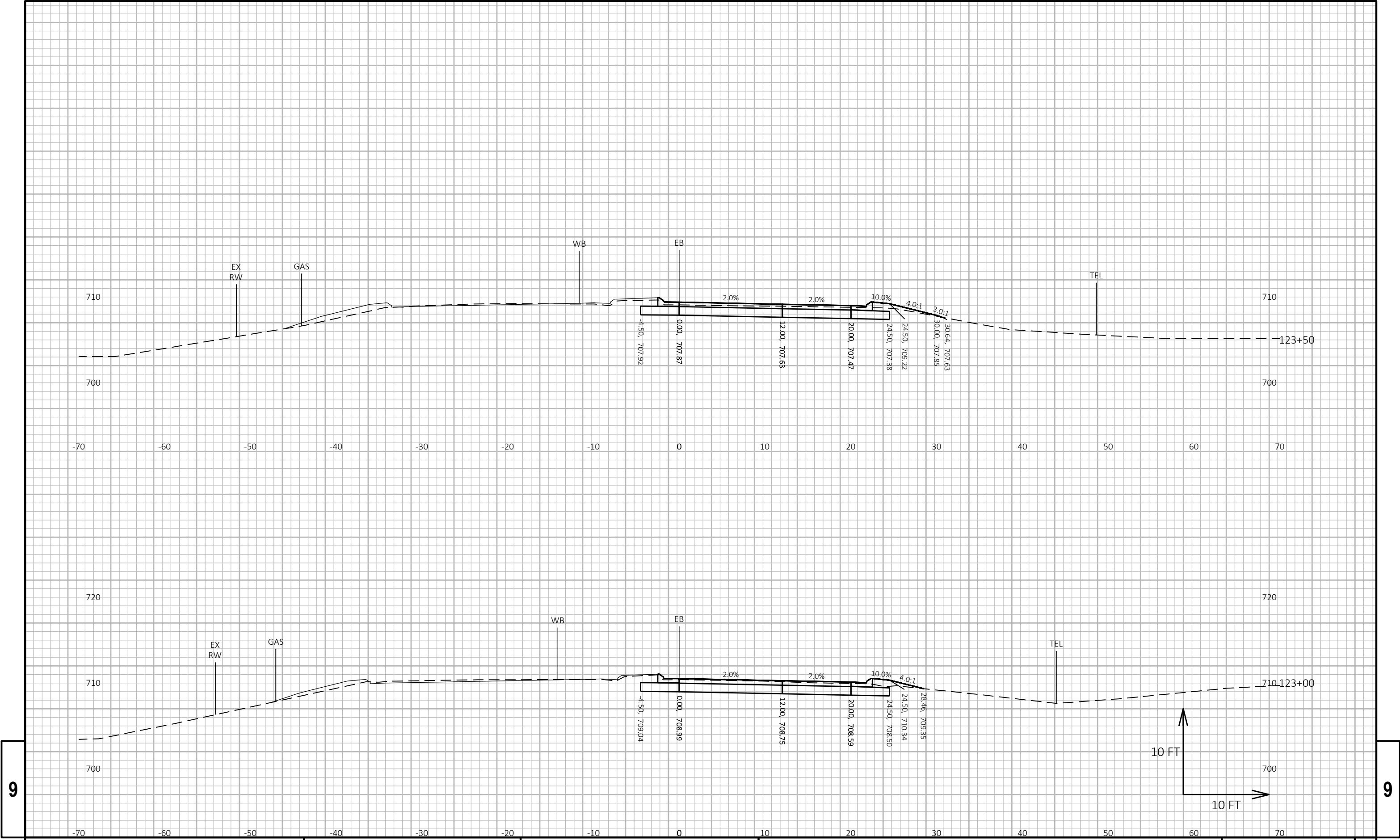
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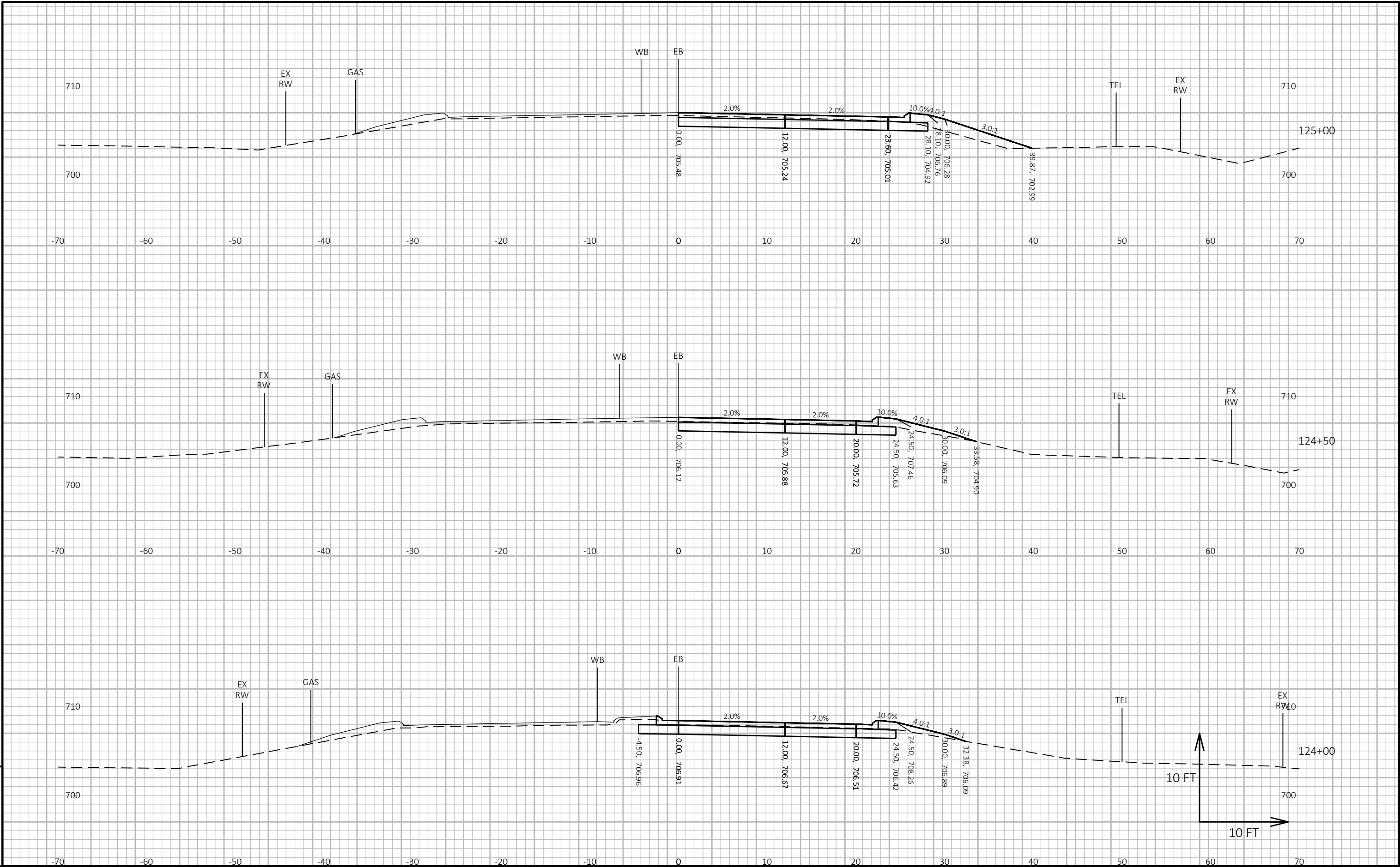


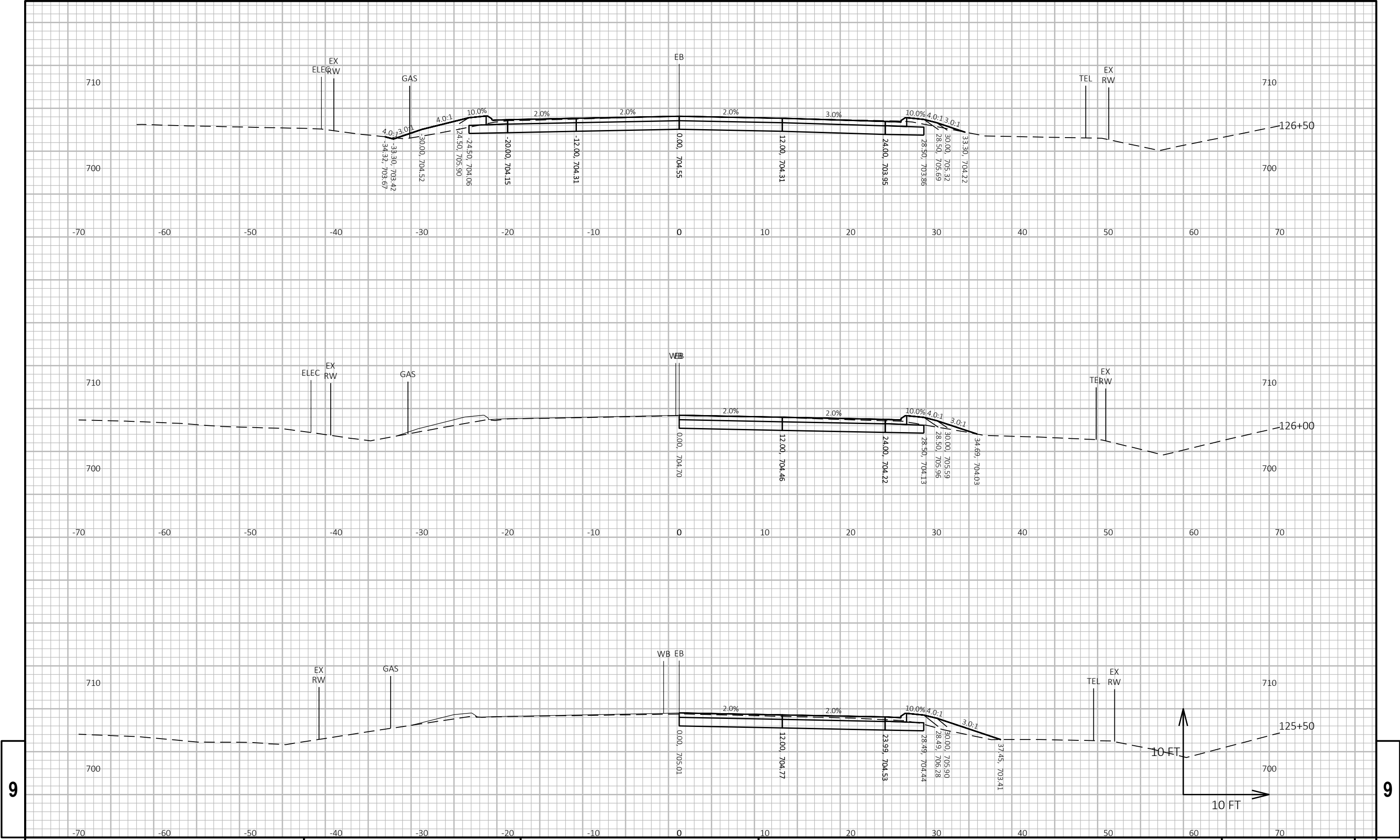
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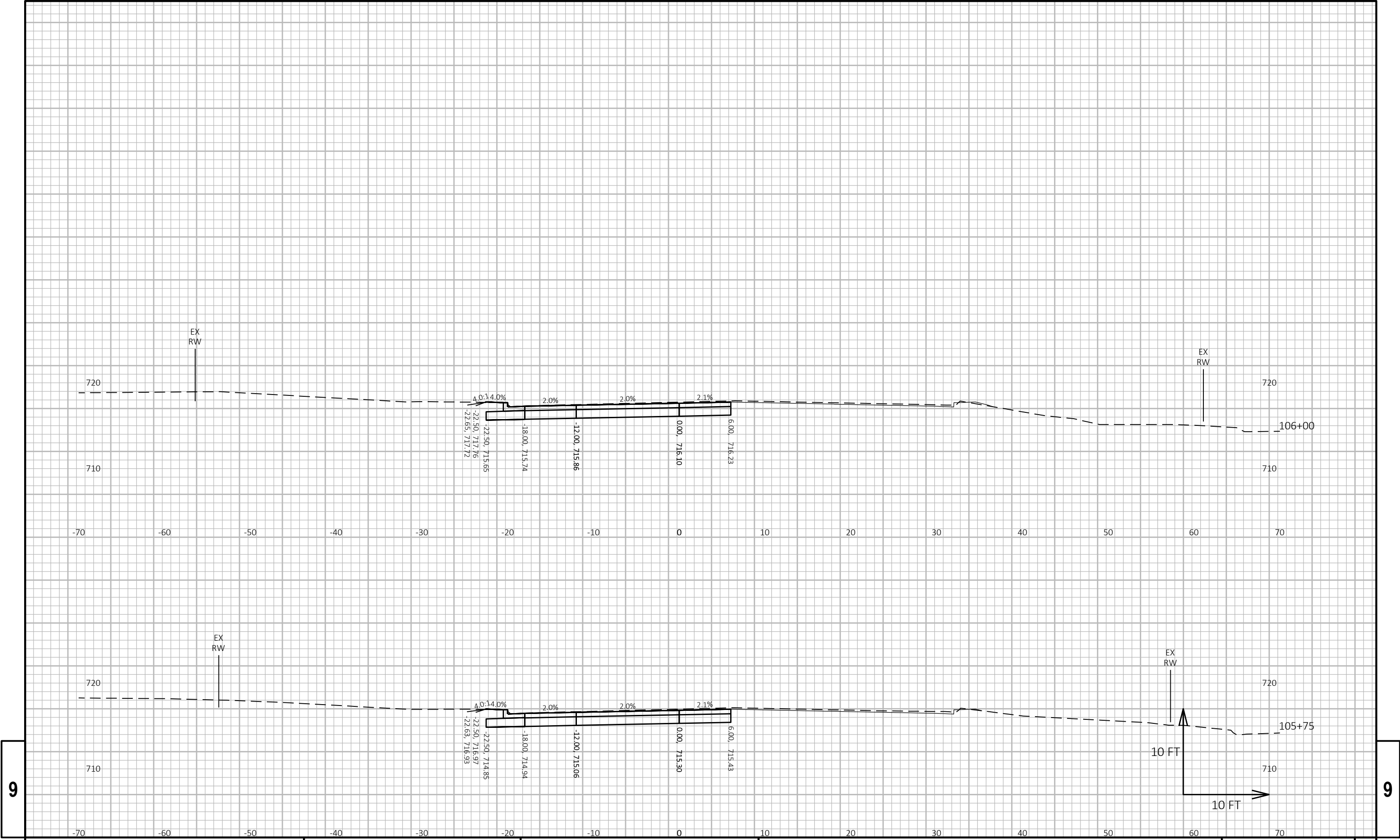
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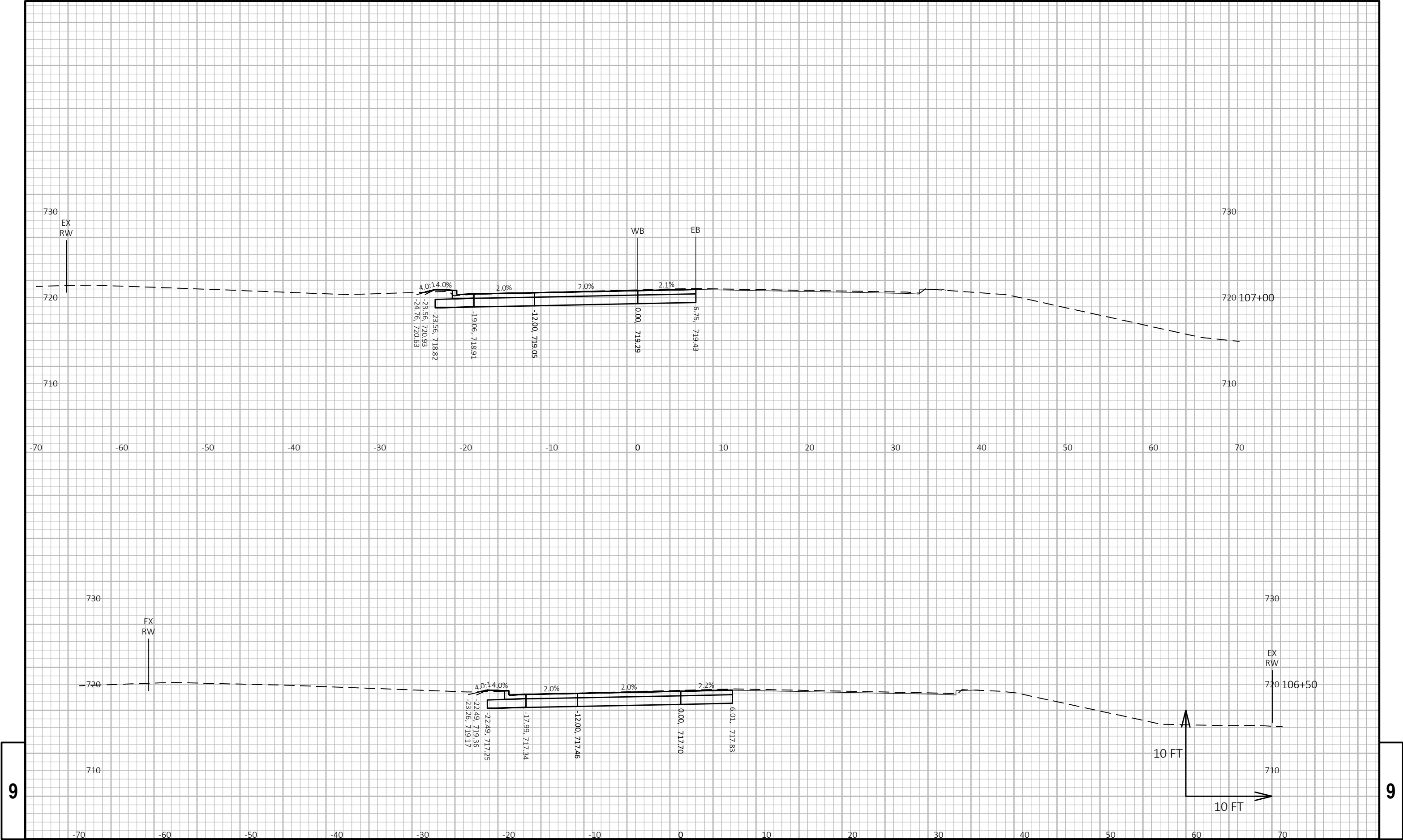


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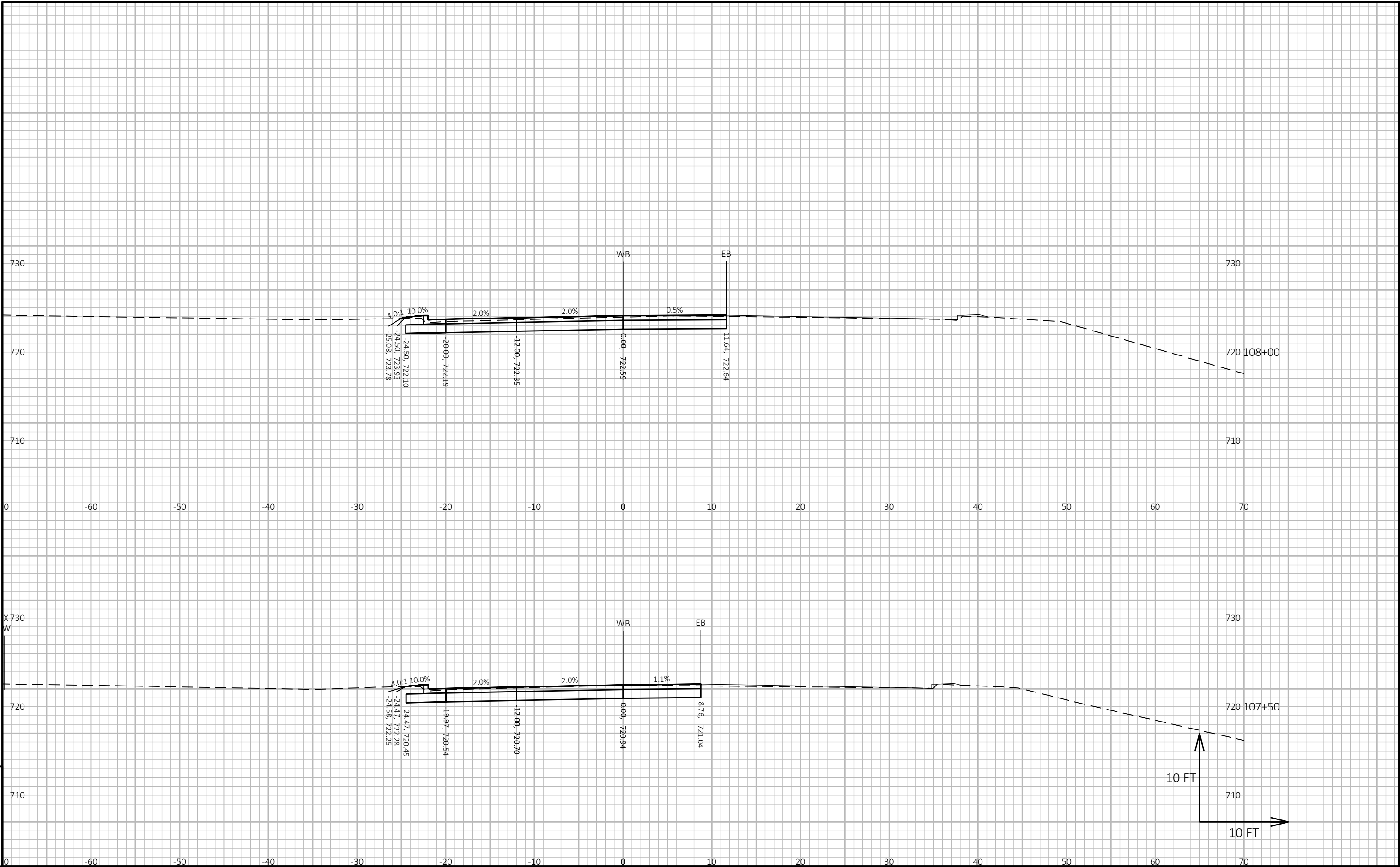
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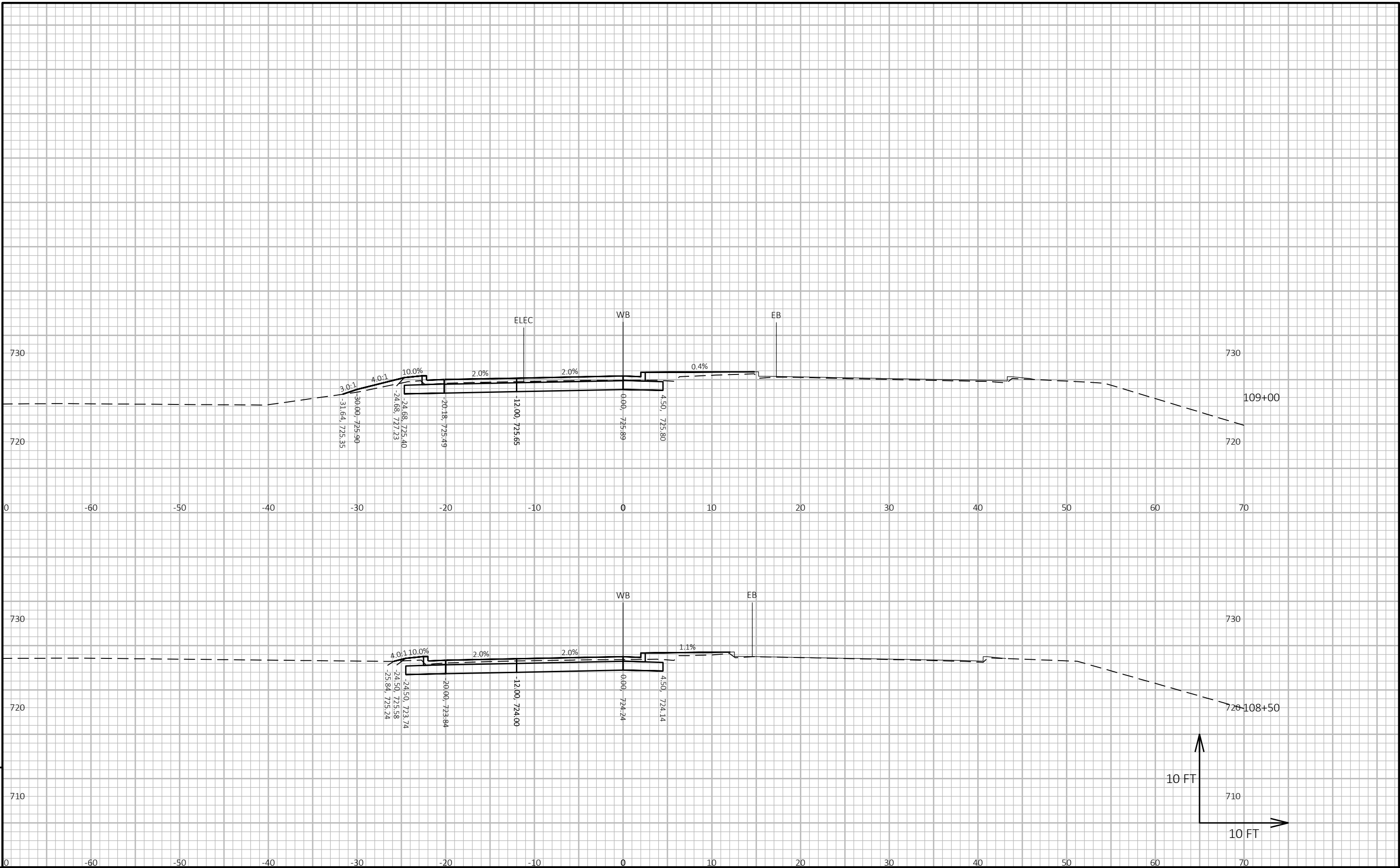
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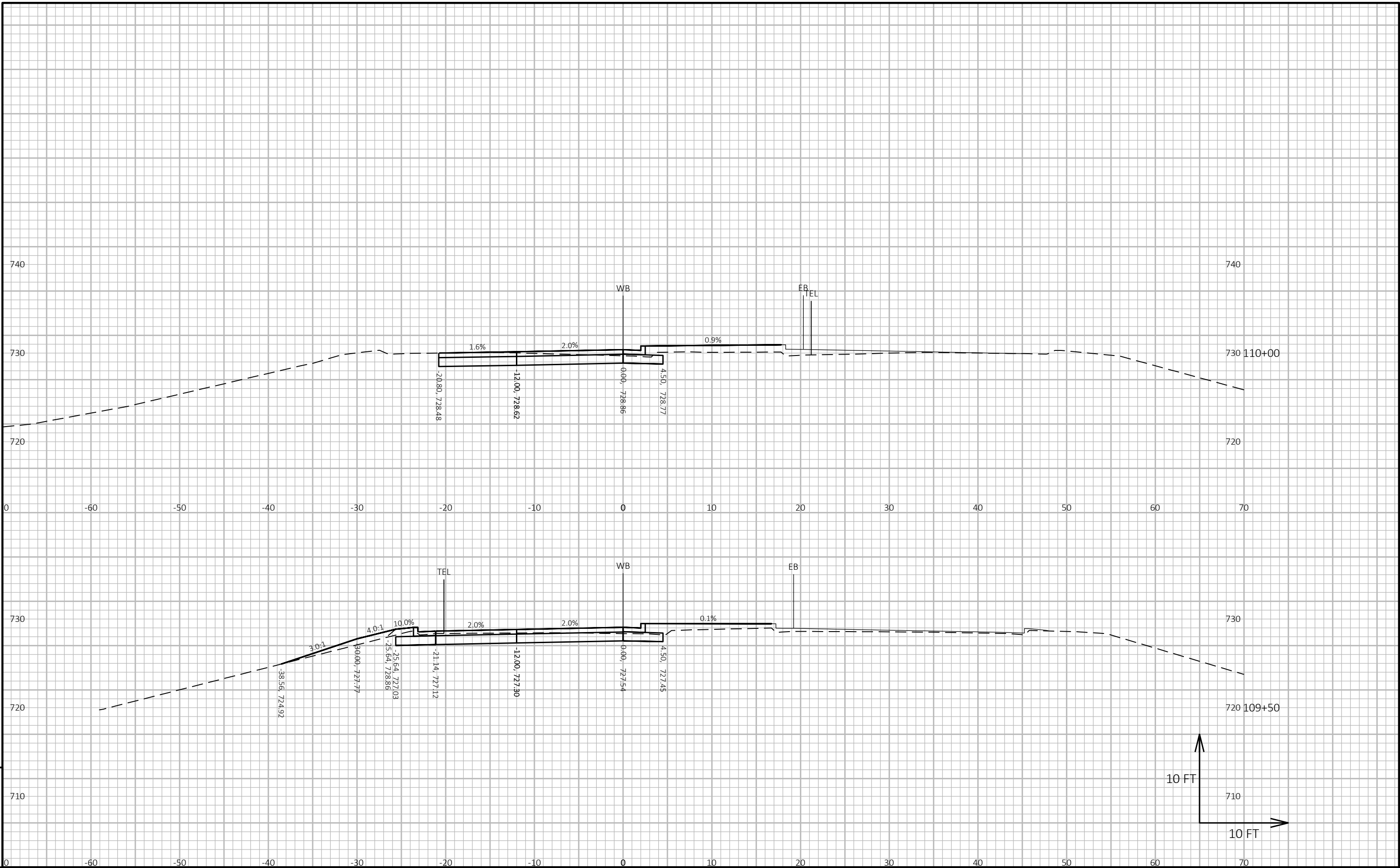


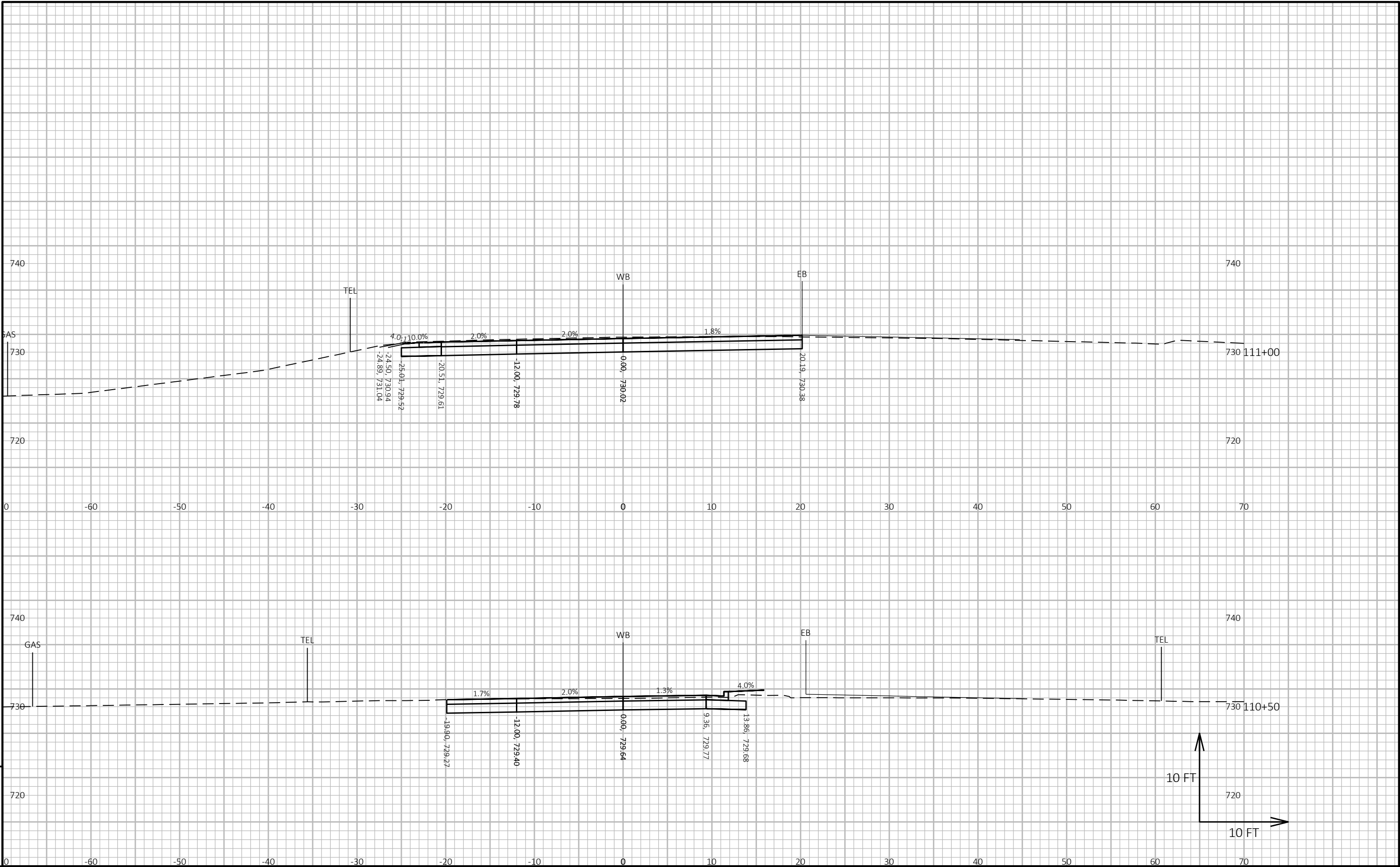
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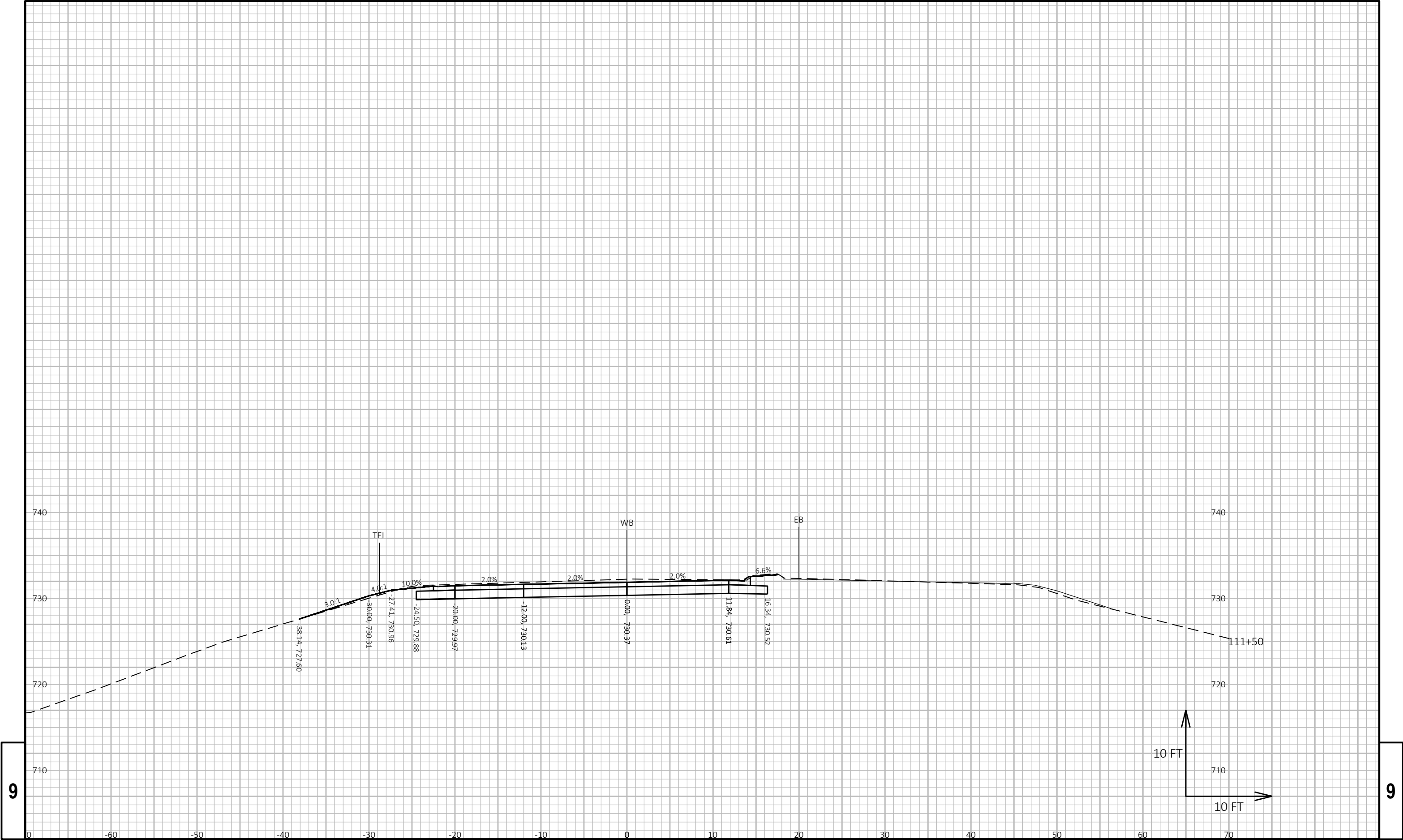
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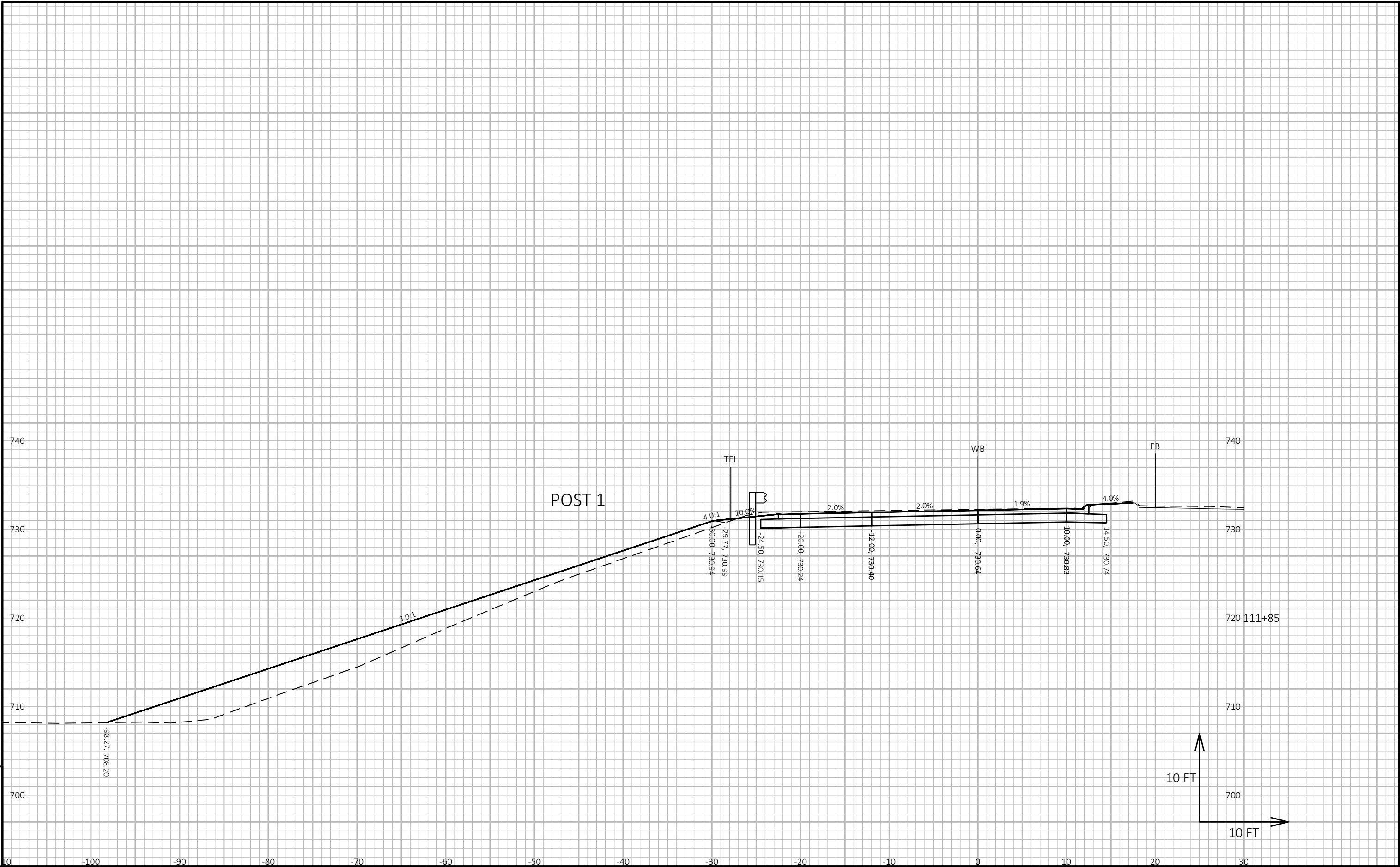


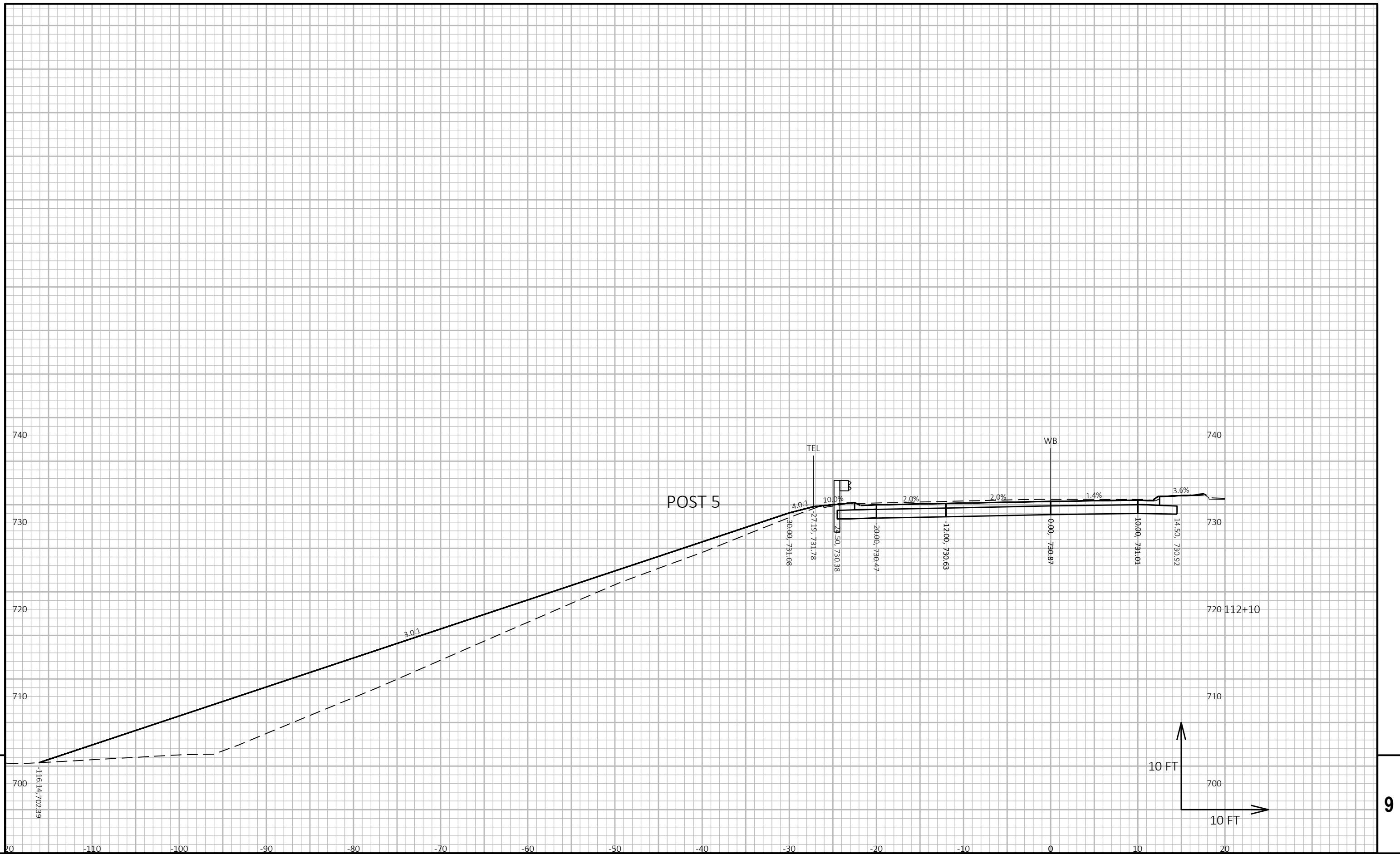
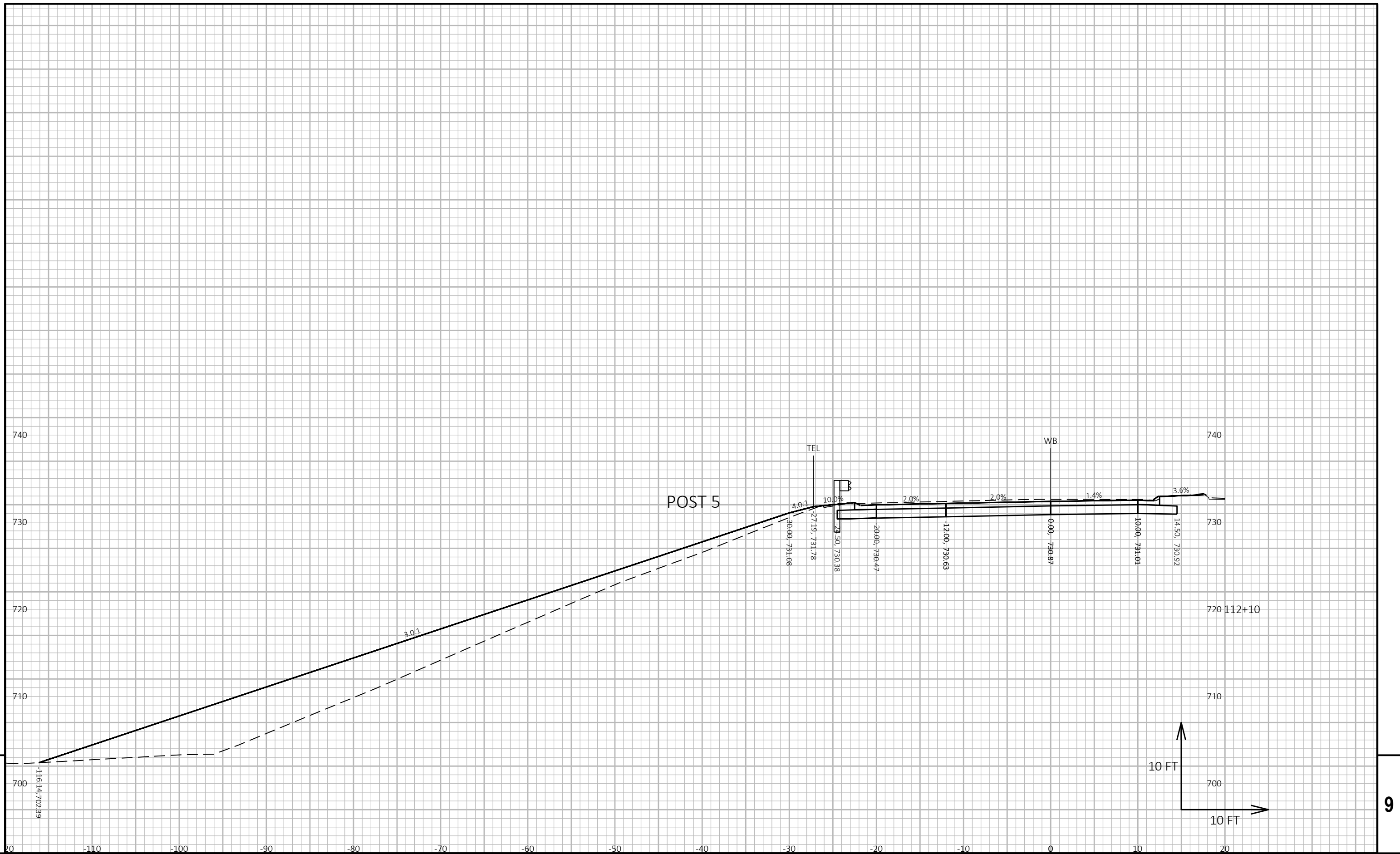




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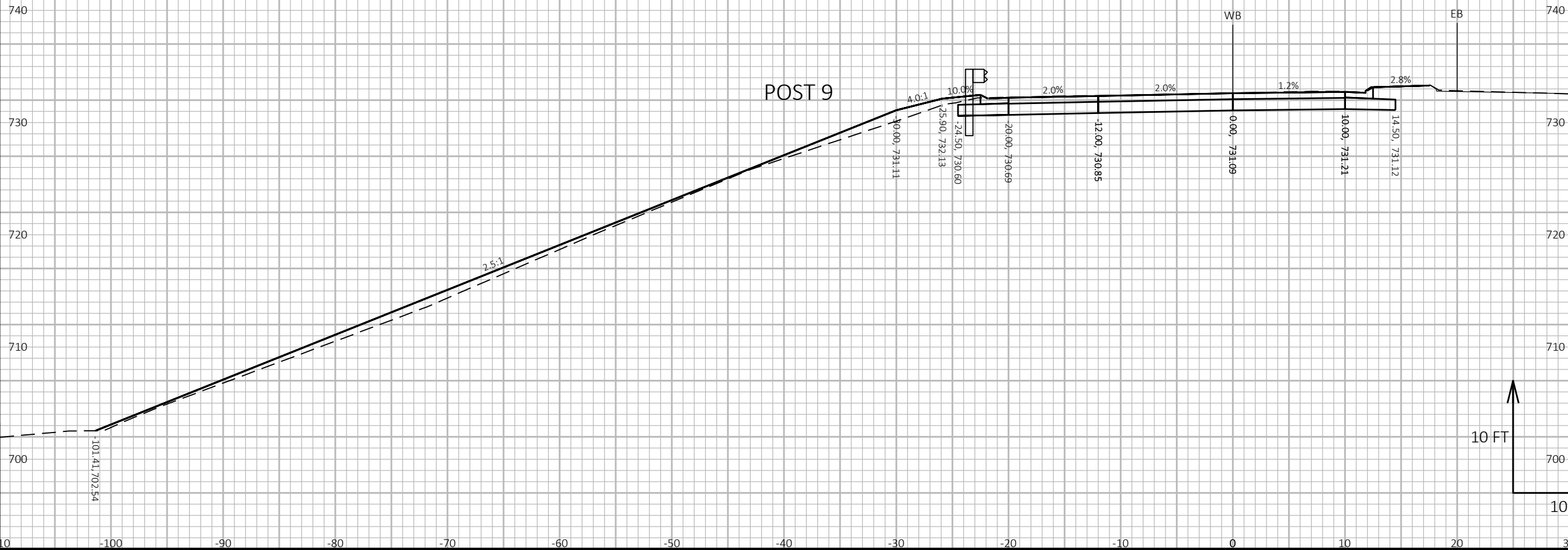


PROJECT NO: 5991-08-11	HWY: CTH OT	COUNTY: LA CROSSE	CROSS SECTIONS: CTH OT WB	SHEET 297	E
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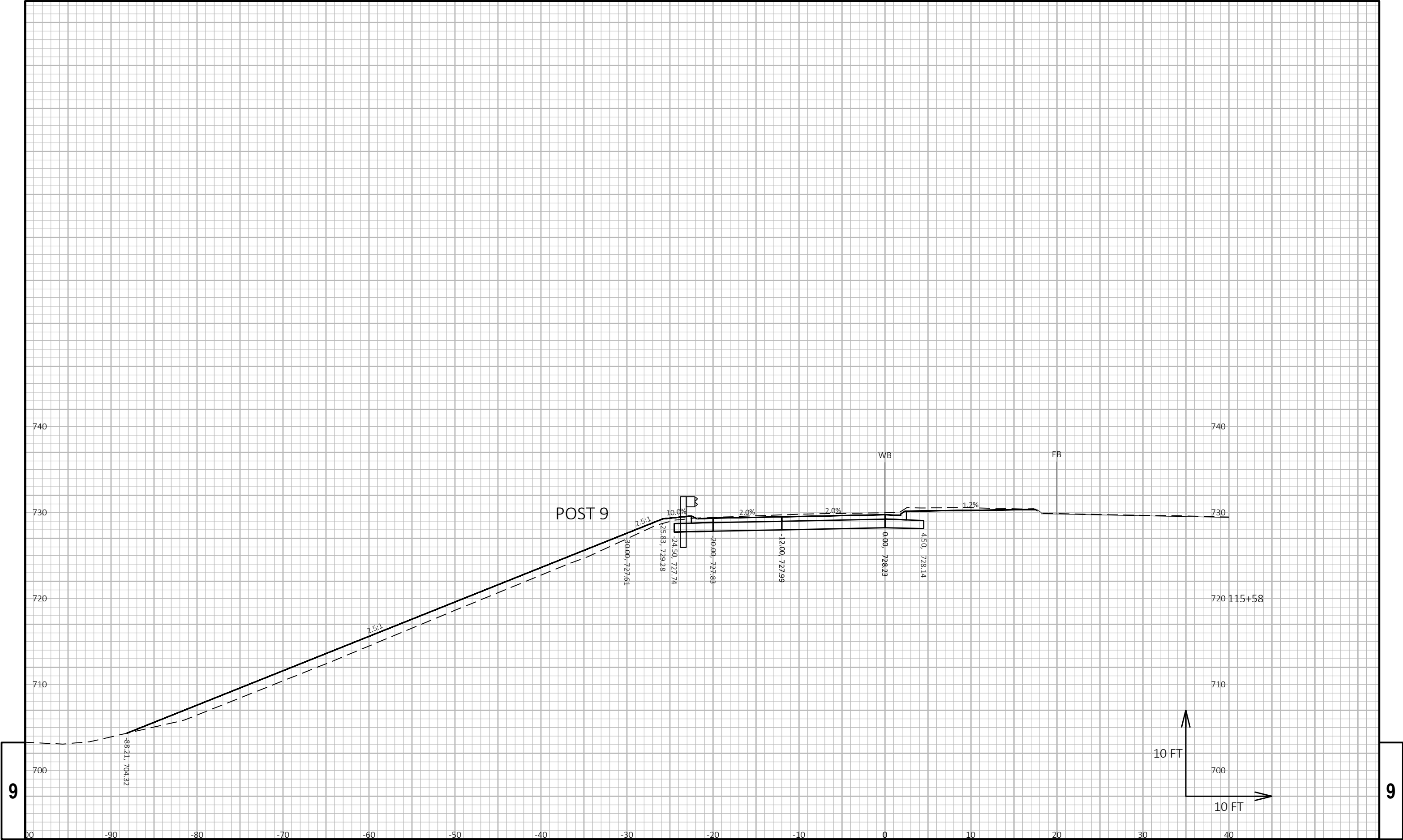
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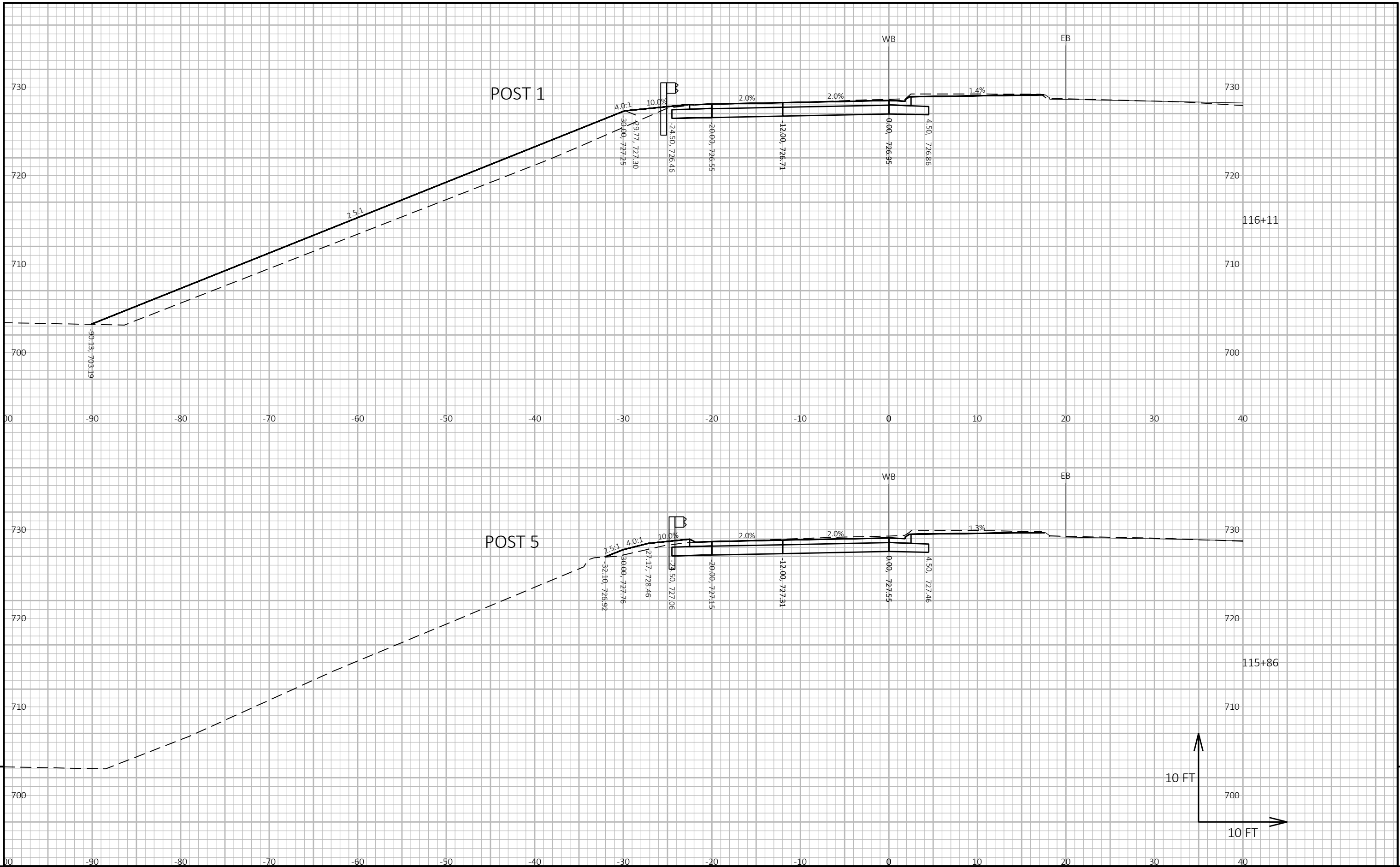
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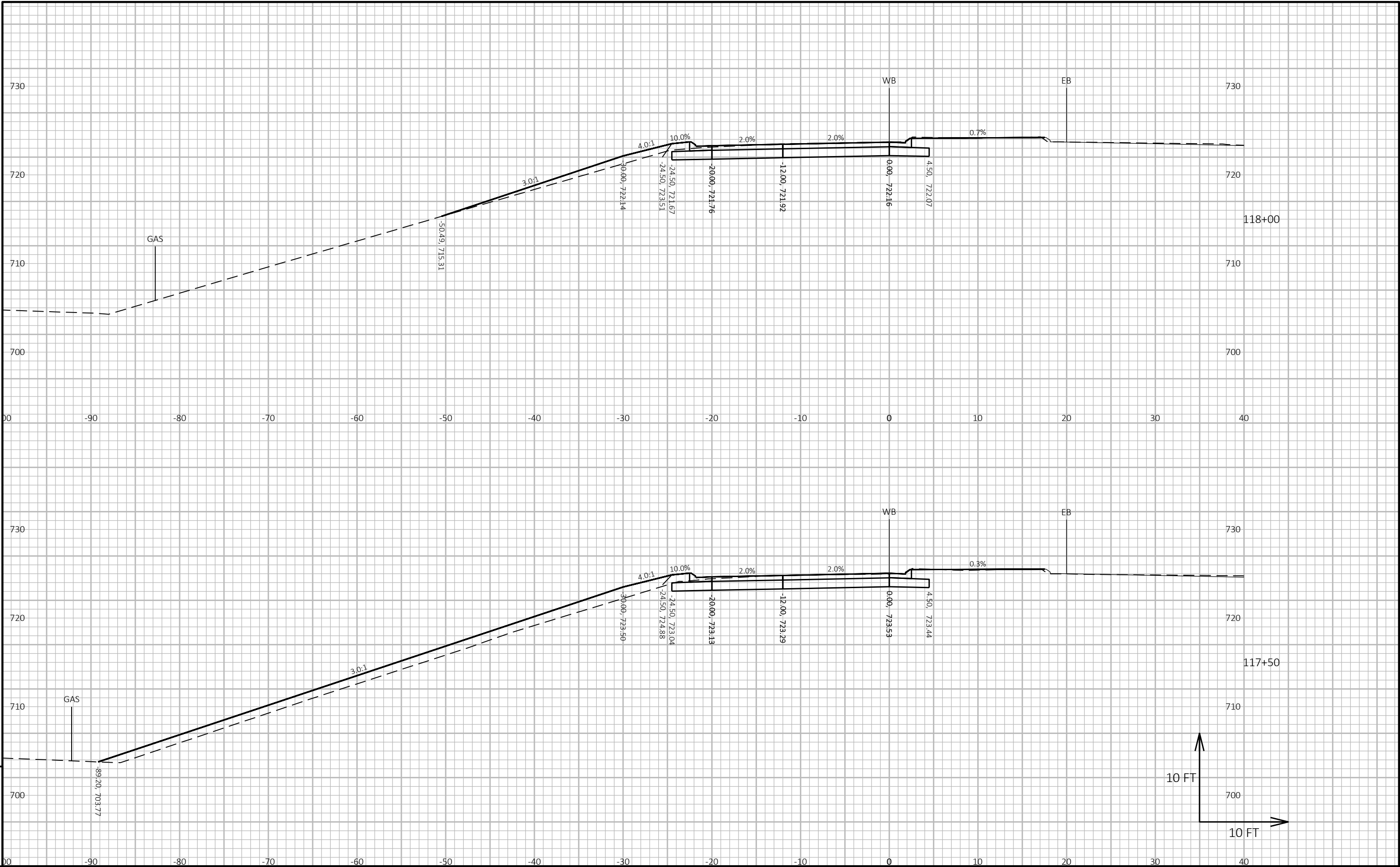


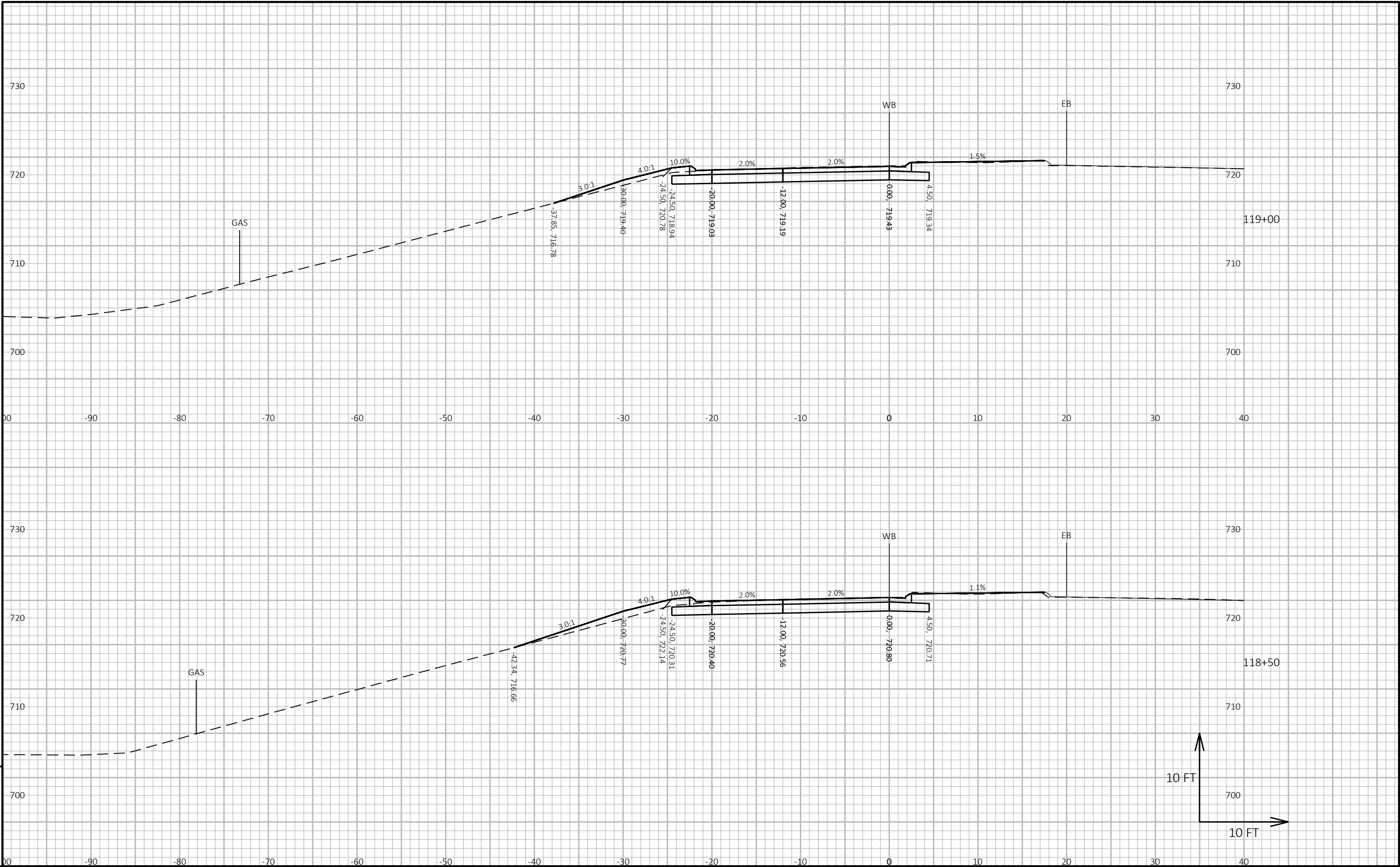
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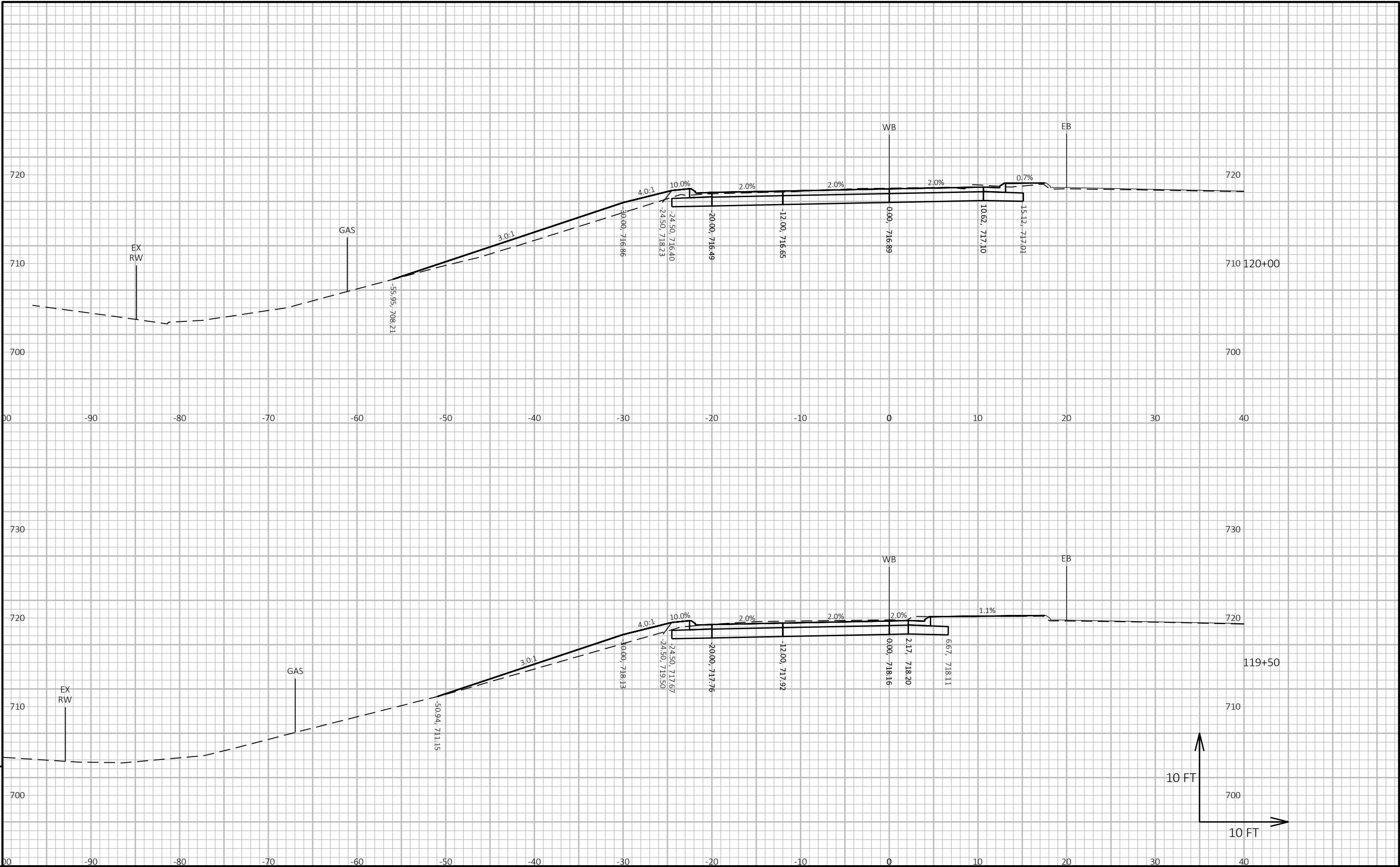
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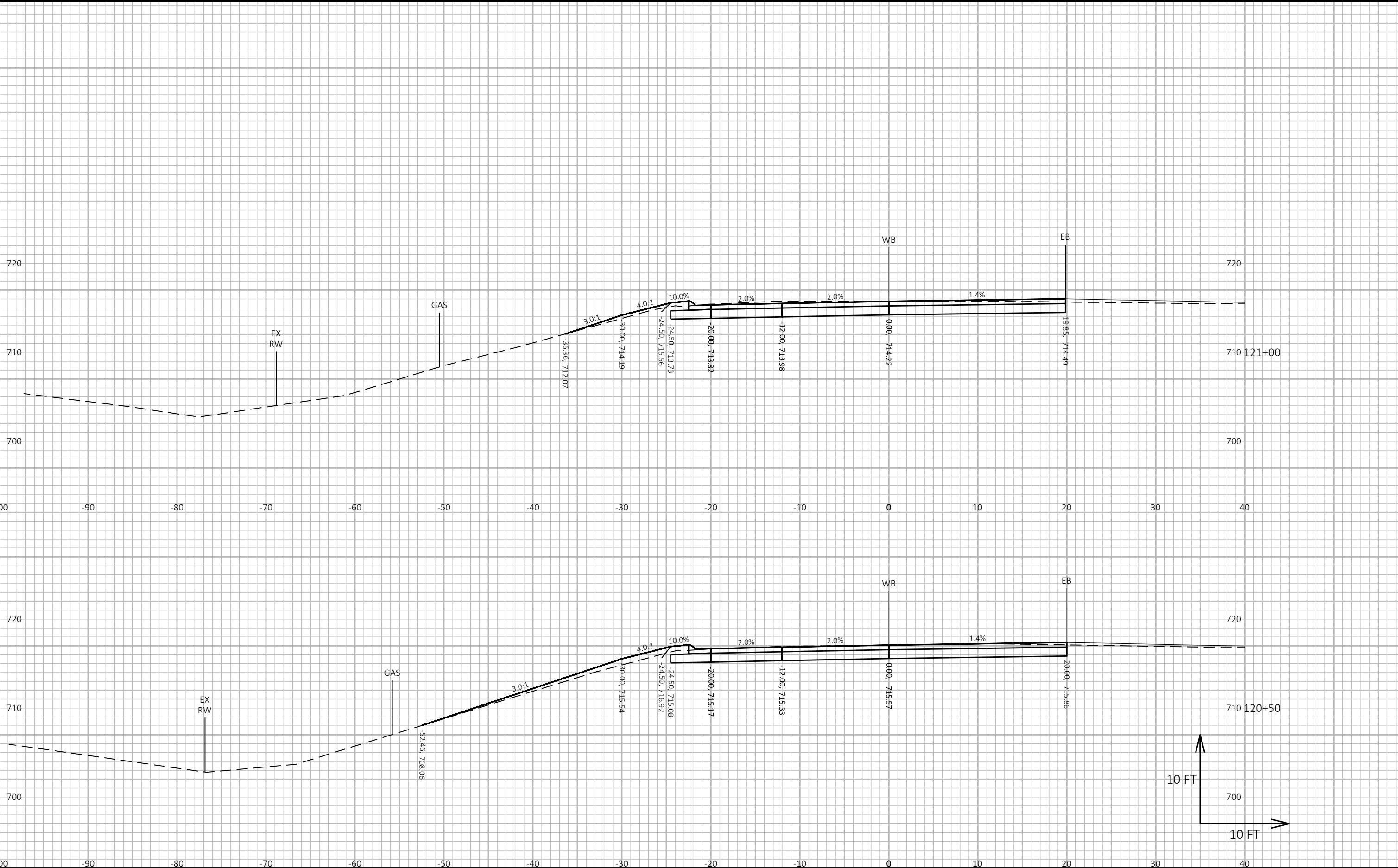


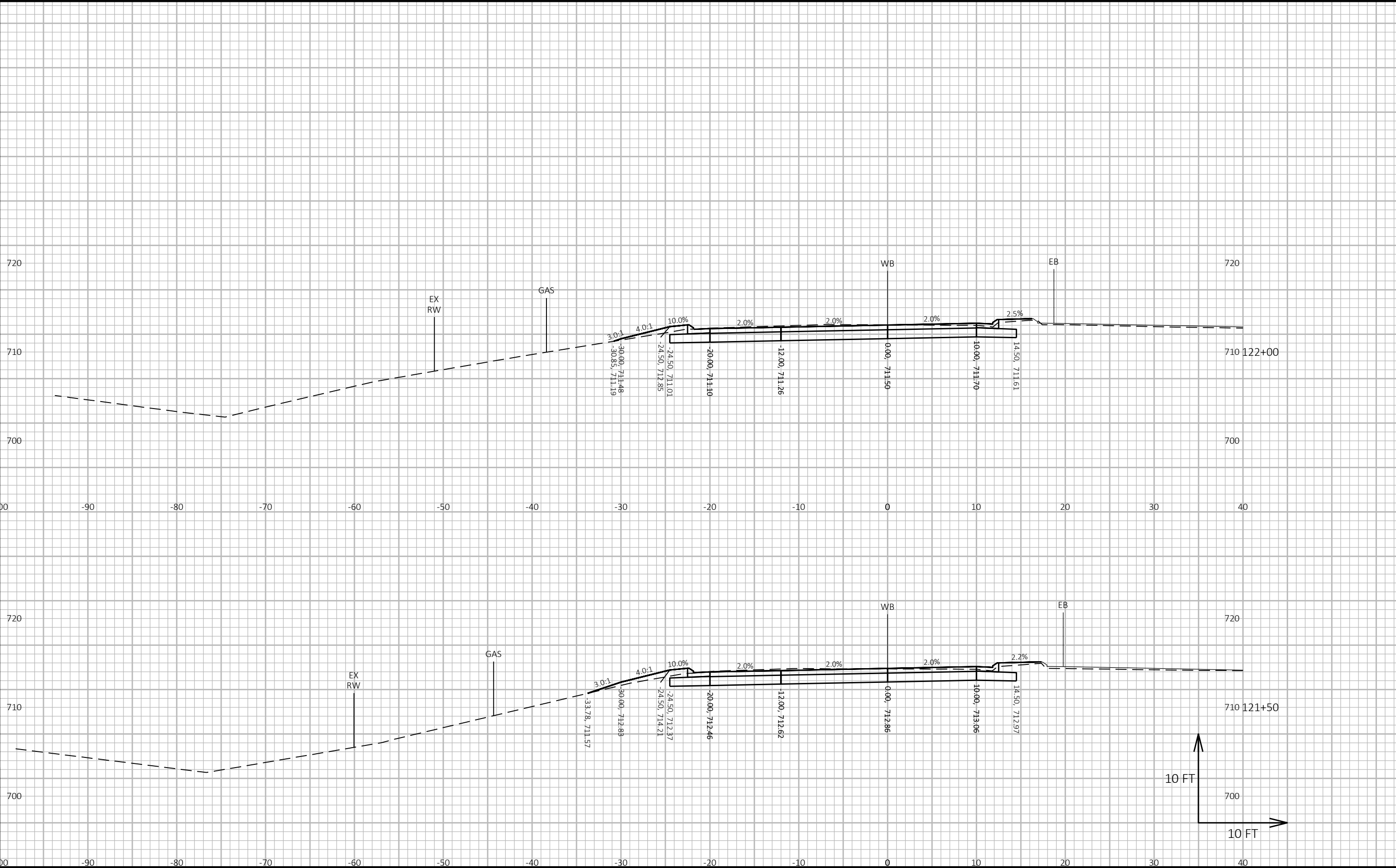


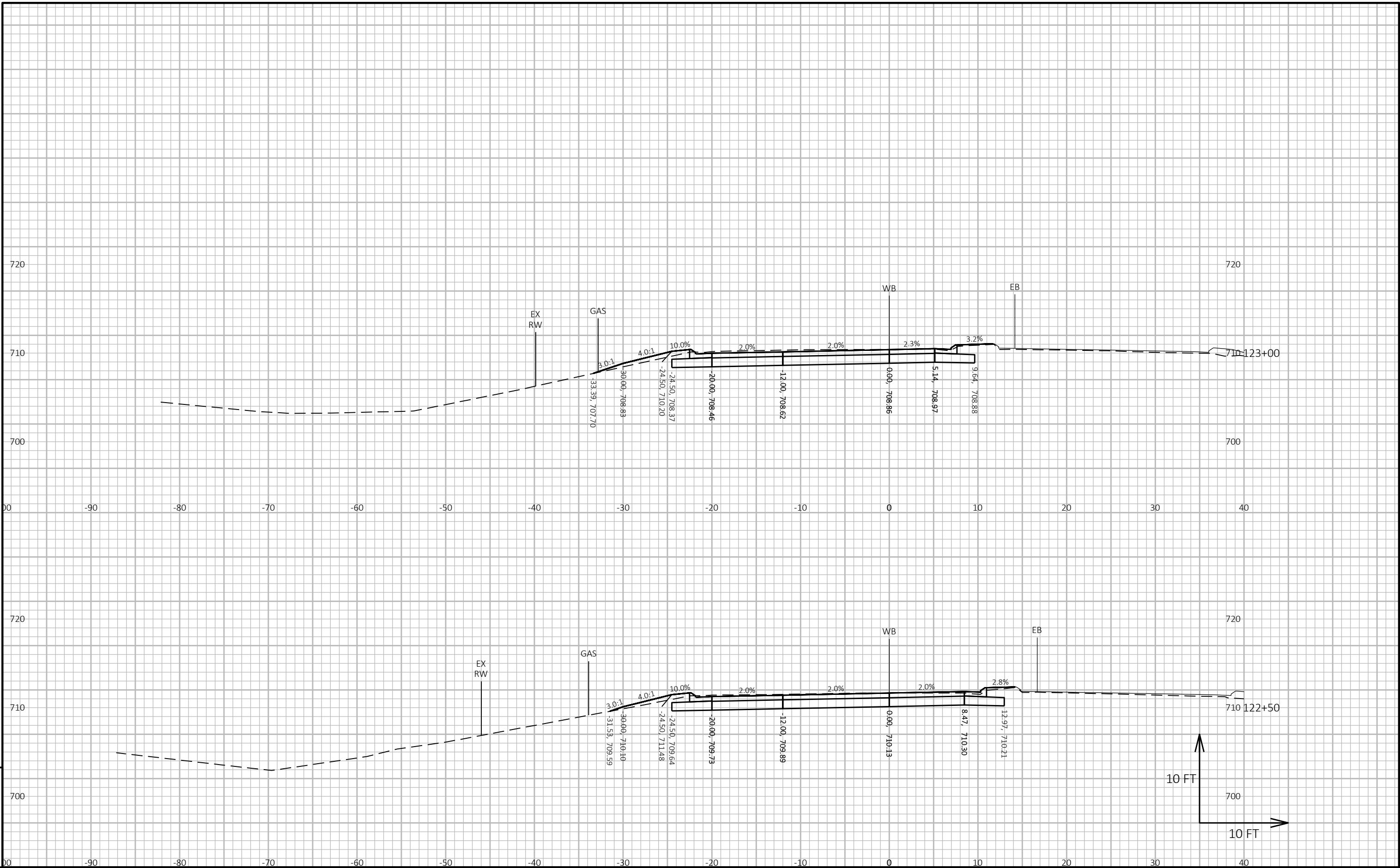


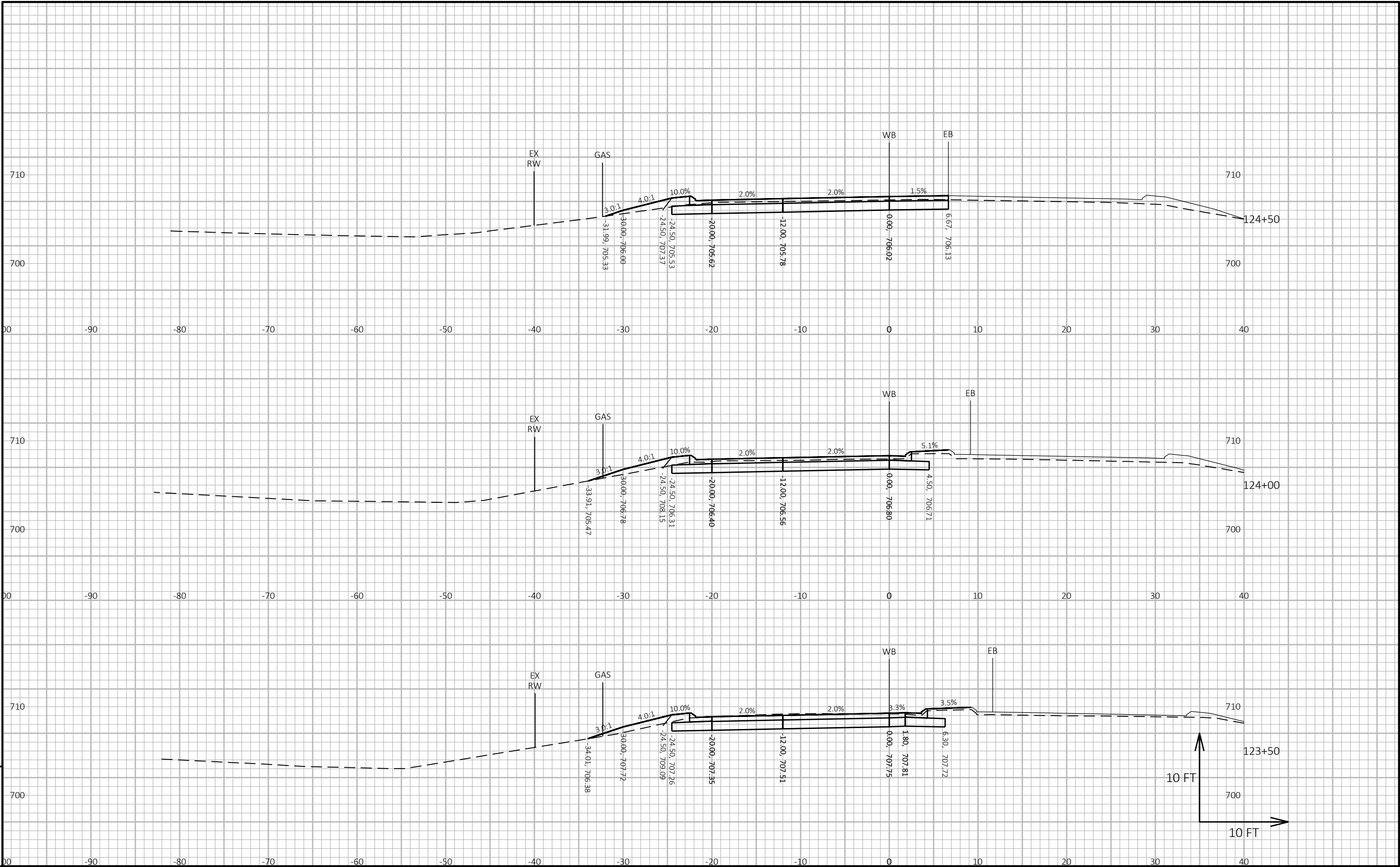


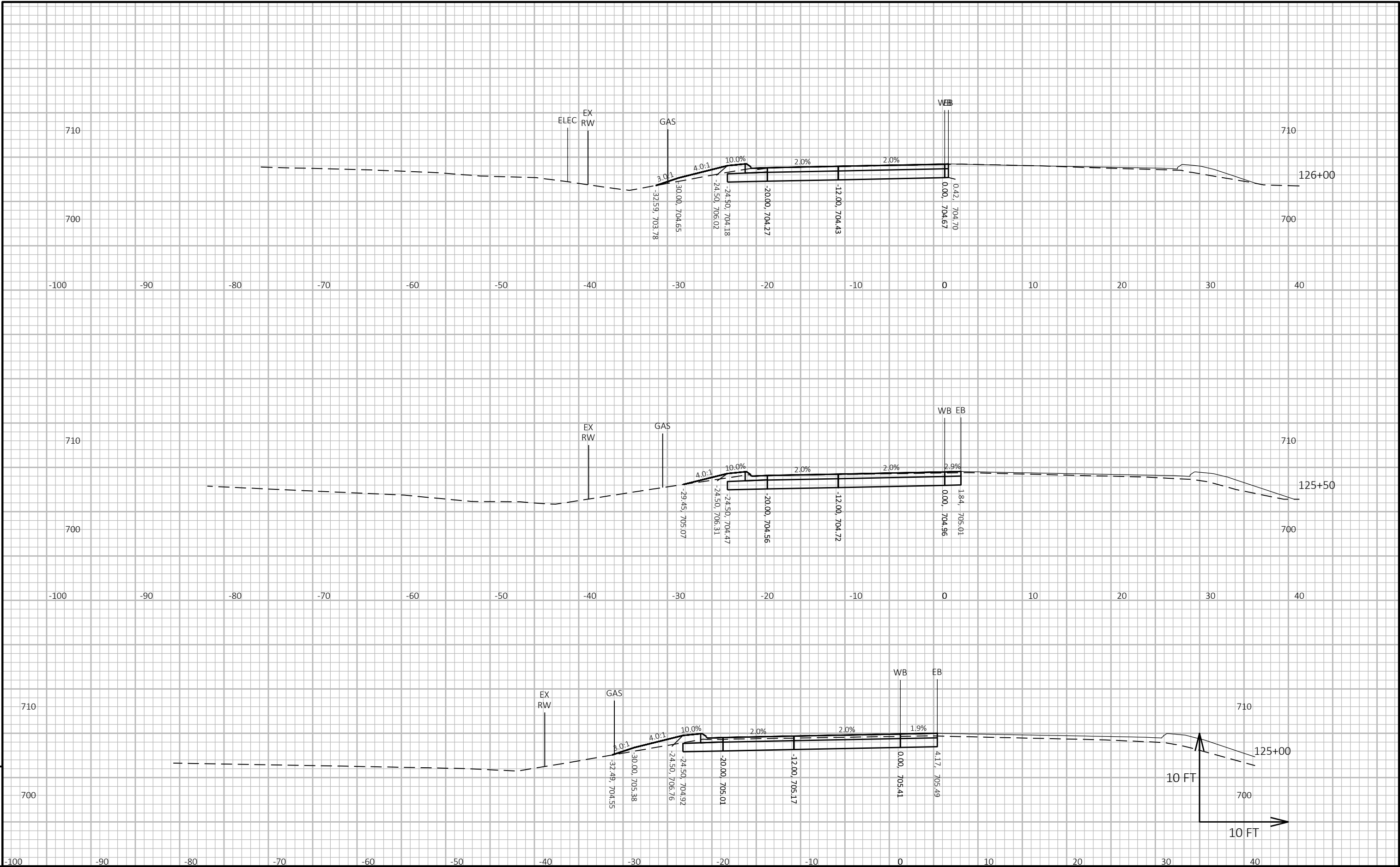




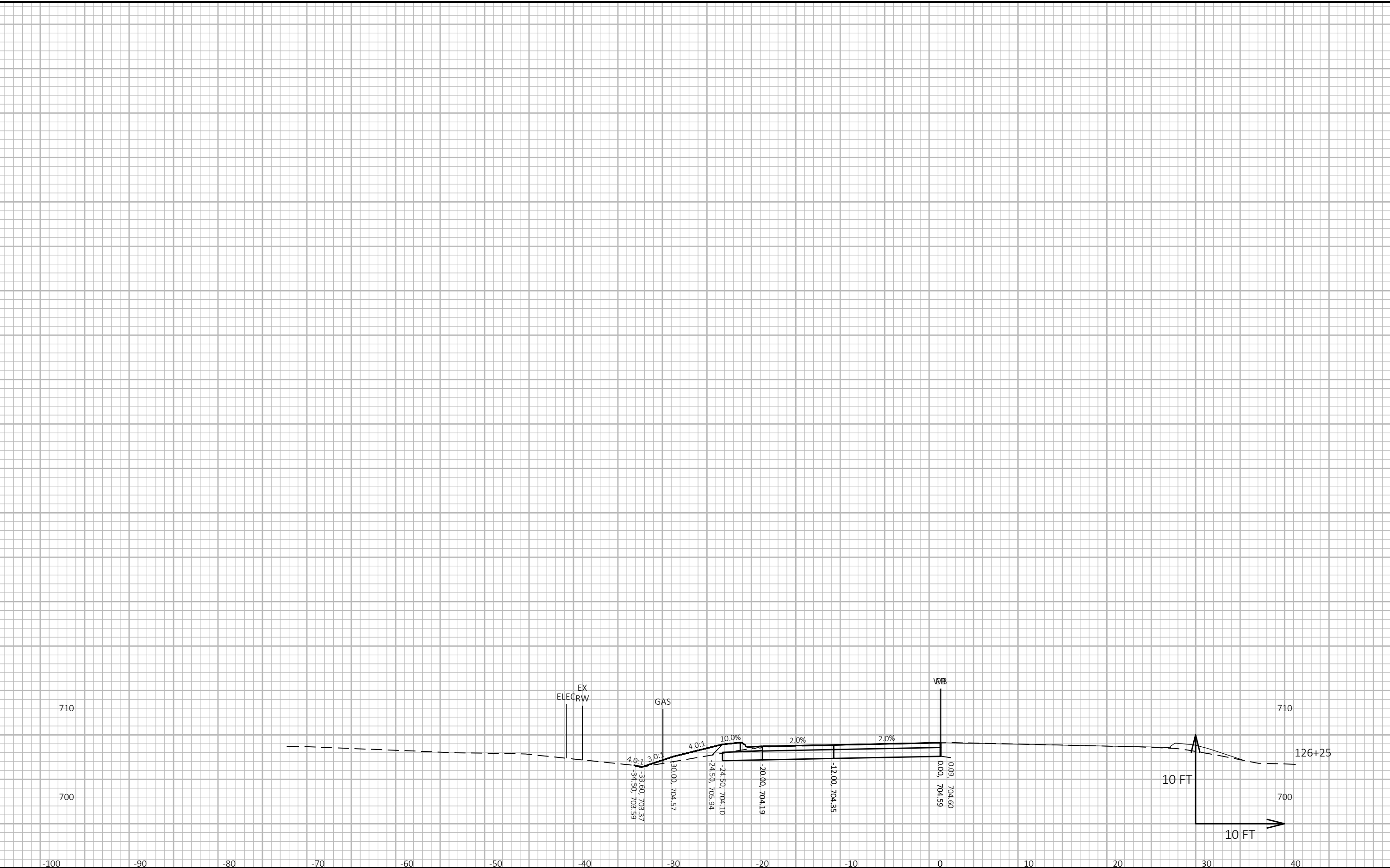




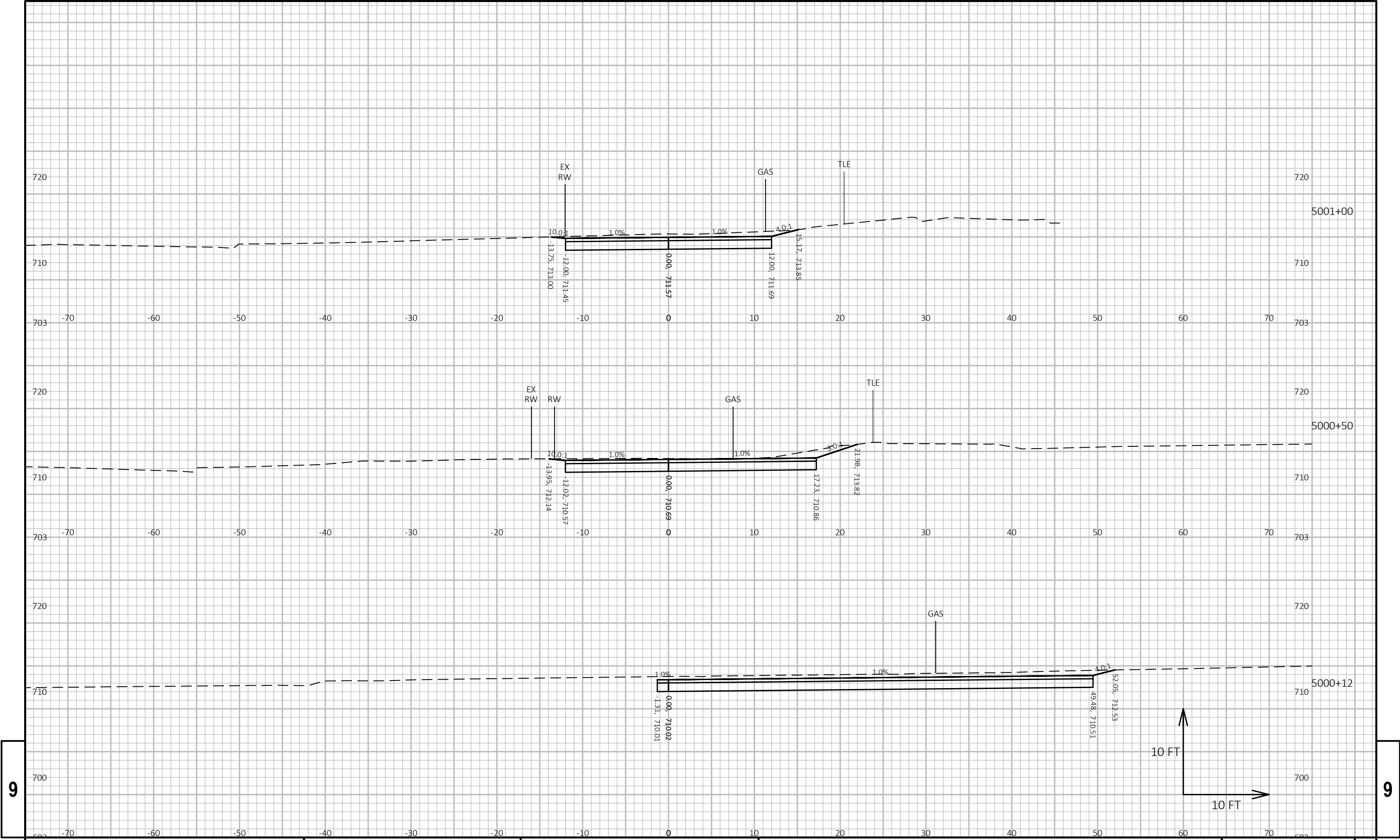




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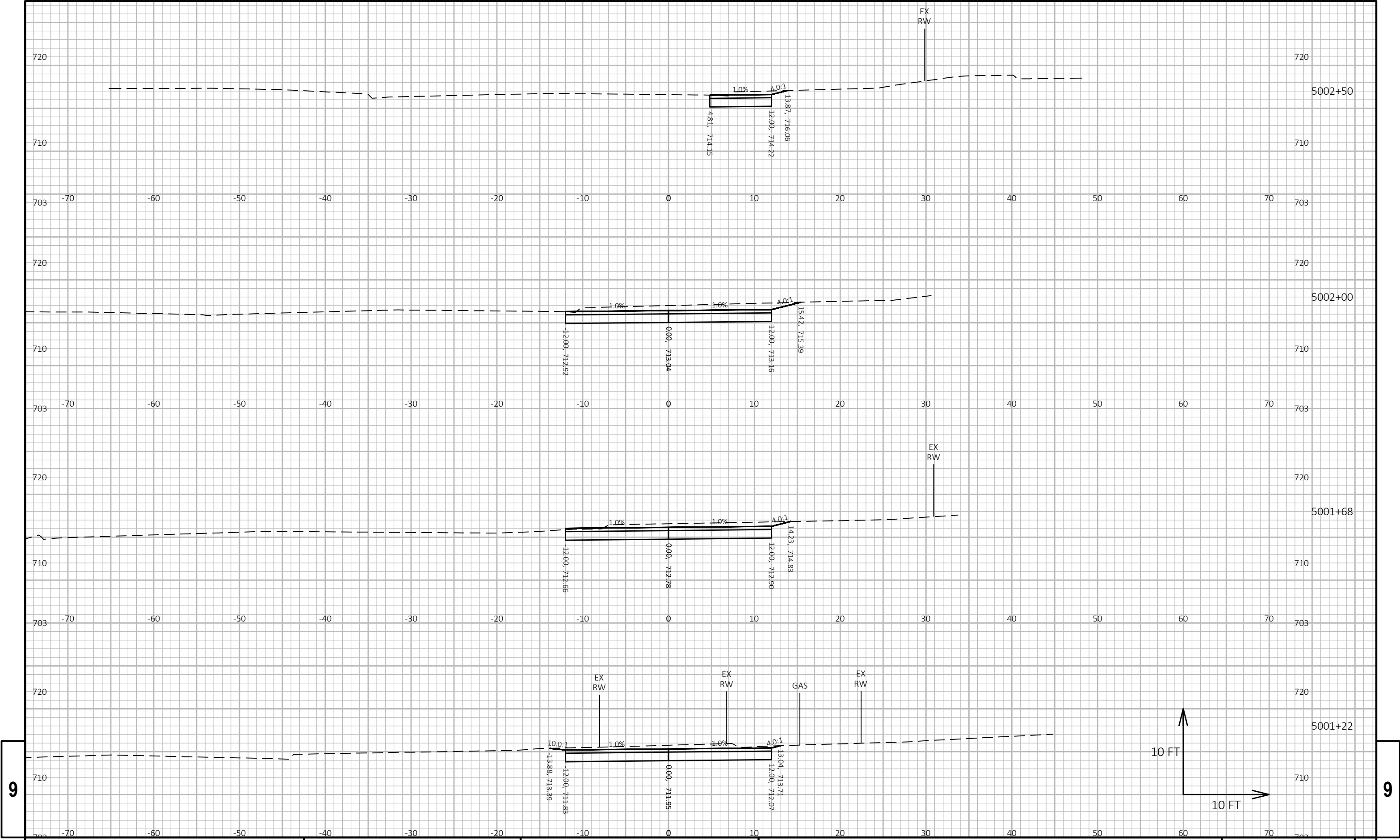


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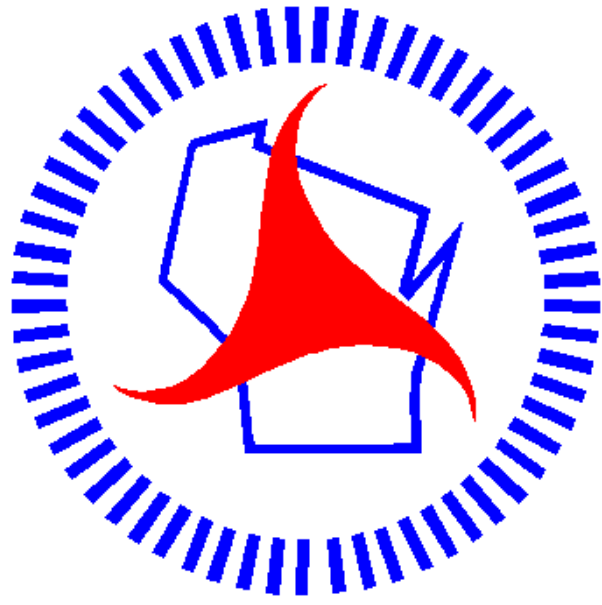
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Notes



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