

WKE

APRIL 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 = 220

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT

V OF GERMANTOWN-FOND DU LAC AVENUE
INTERSECTION WITH CTH G
STH 145
WASHINGTON COUNTY

STATE PROJECT NUMBER
2475-04-71

STATE PROJECT		FEDERAL PROJECT	
2475-04-71		PROJECT	CONTRACT
		WISC 2026181	1

PROJECT ID:

2475-04-71

COUNTY:

WASHINGTON



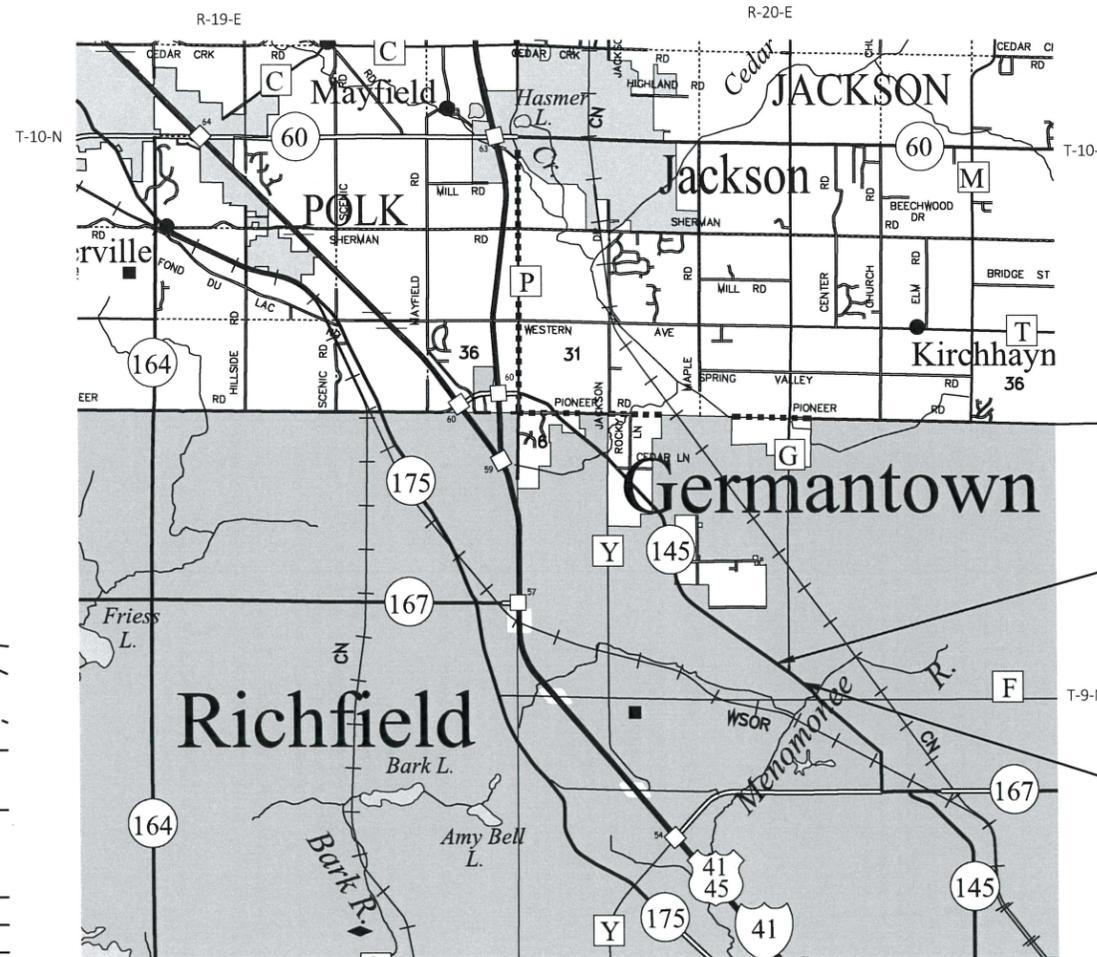
DESIGN DESIGNATION 2475-04-71

A.A.D.T. 2027 = 4600
A.A.D.T. 2047 = 5100
D.H.V. = 650
D.D. = 58/42
T. = 9.6 %
DESIGN SPEED = 50 MPH (BOTH STH 145 AND CTH G)
ESALS = 1,900,000

CONVENTIONAL SYMBOLS

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

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



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 0.279 MI

END PROJECT
STA 39+75 'NWB'
X= 377814.93
Y= 117535.08

BEGIN PROJECT
STA 25+00 'NWB'
X= 378992.66
Y= 116660.71

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WASHINGTON 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.

ORIGINAL PLANS PREPARED BY

AYRES

WISCONSIN PROFESSIONAL ENGINEER

KEVIN M. KUHLow
E-34276
MADISON WI

DATE: 12/17/2025

(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES ASSOCIATES
Designer	AYRES ASSOCIATES
Project Manager	MARTIN VILLACA
Regional Examiner	STEVE CHOJNACKI
Regional Supervisor	JOSH LEVEQUE

APPROVED FOR THE DEPARTMENT

DATE: 12/17/2025

Martin Villaca
(Signature)

E

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.

NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES WITHIN THE PROJECT LIMITS AT ALL TIMES.

THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING MOTORISTS AND PEDESTRIANS THAT MAY ENTER THE WORK ZONE FROM POSSIBLE HAZARDS.

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT MEETS AN EXISTING PAVED SURFACE. SAWCUTS SHALL BE NEATLY DELINEATED THROUGH THE ASPHALT/CONCRETE WITHOUT DAMAGING THE EXISTING PAVEMENT TO REMAIN. SAWCUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD.

EXACT DRIVEWAY LOCATIONS AND WIDTHS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER. CLEARING AND GRUBBING LIMITS TO BE MARKED BY THE ENGINEER.

EROSION CONTROL ITEMS SHOWN ARE AT SUGGESTED LOCATIONS AND THE EXACT LOCATIONS/DIMENSIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. MAINTAIN ALL EROSION CONTROL MEASURES UNTIL SUCH TIME THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

WETLANDS, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIAL NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOOD PLAINS, AND WATERWAYS. STOCKPILED SOIL SHALL IMMEDIATELY BE PROTECTED AGAINST EROSION WITH SILT FENCE, OR AS DIRECTED BY THE ENGINEER. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.

RE-TOPSOIL GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED IN THOSE AREAS. SEED, FERTILIZE, AND E-MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN SEVEN (7) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH/E-MAT WITHIN 24 HOURS.

DO NOT USE FERTILIZER WITHIN 20' OF WATERWAYS OR WETLAND AREAS. USE SEED MIXTURE NO. 40 FOR WETLAND AREAS AND WITHIN 20' OF WETLAND AREAS.

RESHAPE, RESTORE, AND FINISH ALL PREVIOUSLY GRASSED AREAS DISTURBED BY OPERATIONS OUTSIDE OF THE CONSTRUCTION LIMITS AT NO EXPENSE TO THE DEPARTMENT.

PROPERTY LINES AS SHOWN IN THE PLANS ARE APPROXIMATE.

BEARINGS SHOWN ON THIS PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

LIST OF STANDARD ABBREVIATIONS

ABUT	ABUTMENT
AEW	APRON ENDWALL
AGG	AGGREGATE
AH	AHEAD
ASPH	ASPHALT OR ASPHALTIC
BAD	BASE AGGREGATE DENSE
BK	BACK
BM	BENCHMARK
CABC	CRUSHED AGGREGATE BASE COURSE
CB	CATCH BASIN
CL or C/L	CENTER LINE
CONC	CONCRETE
CTH	COUNTY TRUNK HIGHWAY
C&G	CURB AND GUTTER
DWY	DRIVEWAY
EL or ELEV	ELEVATION
EBS	EXCAVATION BELOW SUBGRADE
HMA	HOT MIX ASPHALT
INL	INLET
INV	INVERT
LT	LEFT
MH	MANHOLE
MIS	METROPOLITAN INTERCEPTOR SEWER
PAVT	PAVEMENT
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
PCC	POINT OF COMPOUND CURVATURE
RL or R/L	REFERENCE LINE
R	RADIUS
RAB	ROUNDABOUT
REQD	REQUIRED
RT	RIGHT
R/W	RIGHT-OF-WAY
SE	SUPERELEVATION
SEC	SECTION
SDD	STANDARD DETAIL DRAWING
STH	STATE TRUNK HIGHWAY
STA	STATION
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
S/W	SIDEWALK
TLE	TEMPORARY LIMITED EASEMENT
VERT	VERTICAL
VC	VERTICAL CURVE
VCL	VERTICAL CURVE LENGTH
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY

PROJECT CONTACTS

DNR LIAISON
RYAN PAPPAS
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
DNR SERVICE CENTER
1027 W SAINT PAUL AVE
MILWAUKEE, WI 53233-2641
PHONE: (414) 750-7495
RYAN.PAPPAS@WISCONSIN.GOV

DESIGN PROJECT MANAGER
AYRES ASSOCIATES
KEVIN KUHLW, P.E.
5201 E TERRACE DR, STE 200
MADISON, WI 53718
PHONE: (608) 443-1200
KUHLWK@AYRESASSOCIATES.COM

WISDOT PROJECT MANAGER
MARTIN VILLACA, PE
141 NW BARSTOW STREET
WAUKESHA, WI 53188
PHONE: (262)-548-6456
MARTIN.VILLACA@DOT.WI.GOV

SEWRPC
SCOTT M. SCHMIDT, PE, PLS
900 LANG STREET
WEST BEND, WI 53090
PHONE: (262) 335-6881
SCOTT.SCHMIDT@CO.WASHINGTON.WI.US

UTILITIES CONTACTS

AT&T WISCONSIN - COMMUNICATION LINE
STEVE BURTC
220 WISCONSIN AVENUE
WAUKESHA, WI 53186
PHONE: (262) 506-2849
SB7561@ATT.COM

FLINT HILLS RESOURCES, LC - GAS/PETROLEUM
CODY NELSON
E 3660 SPRUCE ROAD
ELEVA, WI 54738
PHONE: (715) 286-0002
CODY.NELSON@FHR.COM

SPECTRUM - COMMUNICATION LINE
JON TRAMMELL
1320 N MLK DR
MILWAUKEE, WI 53210
PHONE: (262) 420-0564
JON.TRAMMELL@CHARTER.COM

WE ENERGIES - ELECTRICITY
JOE FELLEZ
W 149 N9100 LILLY ROAD
MENOMONEE FALLS, WI 53051
PHONE: (262) 502-6831
JOESPH.FELLEZ@WE-ENERGIES.COM

WE ENERGIES - GAS/PETROLEUM
JACOB HULBERT
500 S 116TH STREET
WEST ALLIS, WI 53214
PHONE: (262) 968-5718
JACOB.HULBERT@WE-ENERGIES.COM

WISDOT - STREET LIGHTING
ERIC PEREA
141 NW BARSTOW STREET
PO BOX 798
WAUKESHA, WI 53187
PHONE: (262) 574-5422
ERIC.PEREA@DOT.WI.GOV

SECTION 2 ORDER OF SHEETS

- GENERAL NOTES & CONTACTS
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- EROSION CONTROL
- STORM SEWER PLAN
- PERMANENT SIGNING PLAN
- LIGHTING PLAN
- PAVEMENT MARKING PLAN
- DETOUR PLAN
- ALIGNMENT DIAGRAM
- ALIGNMENT LAYOUT SURVEY CONTROL

* DENOTES NOT A MEMBER OF DIGGERS HOTLINE



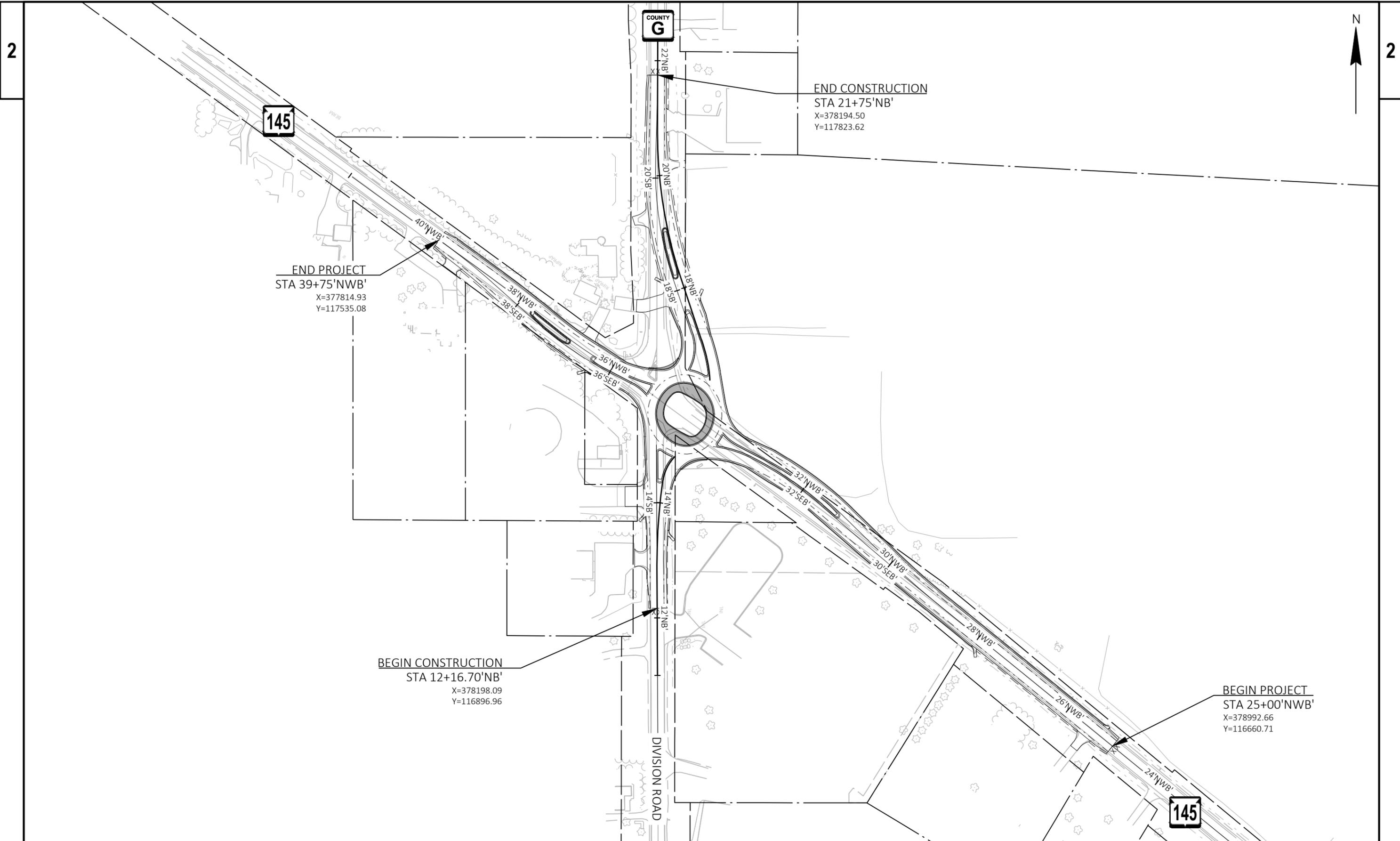
HMA PAVEMENT

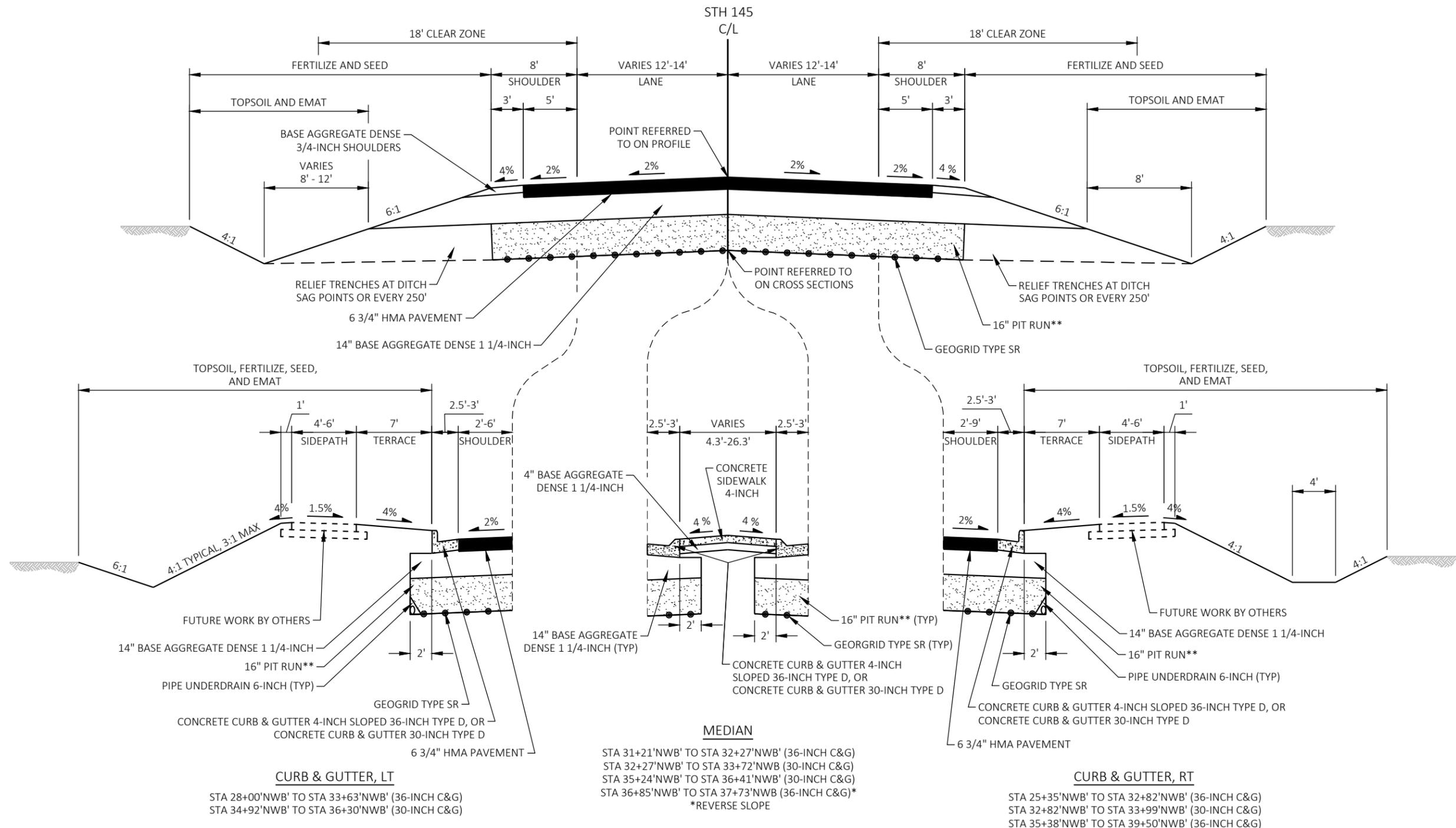
PAVEMENT COMPOSITION

DESIGNATOR
(SEE PLAN DETAILS)

- 6.75-INCH = 1.75" UPPER LAYER (4 MT 58-28 H)
- 2.25" MIDDLE LAYER (3 MT 58-28 S)
- 2.75" LOWER LAYER (3 MT 58-28 S)



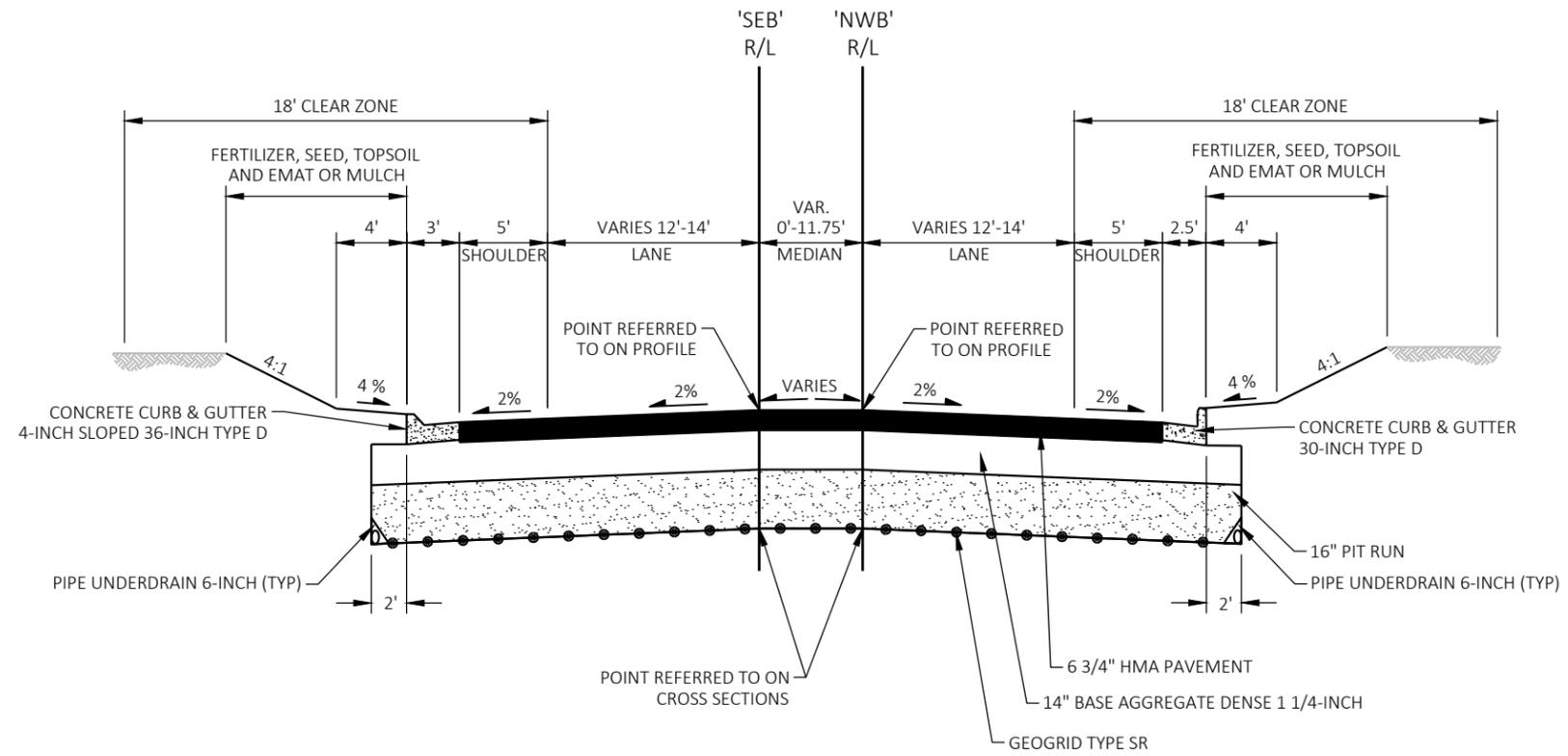




TYPICAL FINISHED SECTION - STH 145

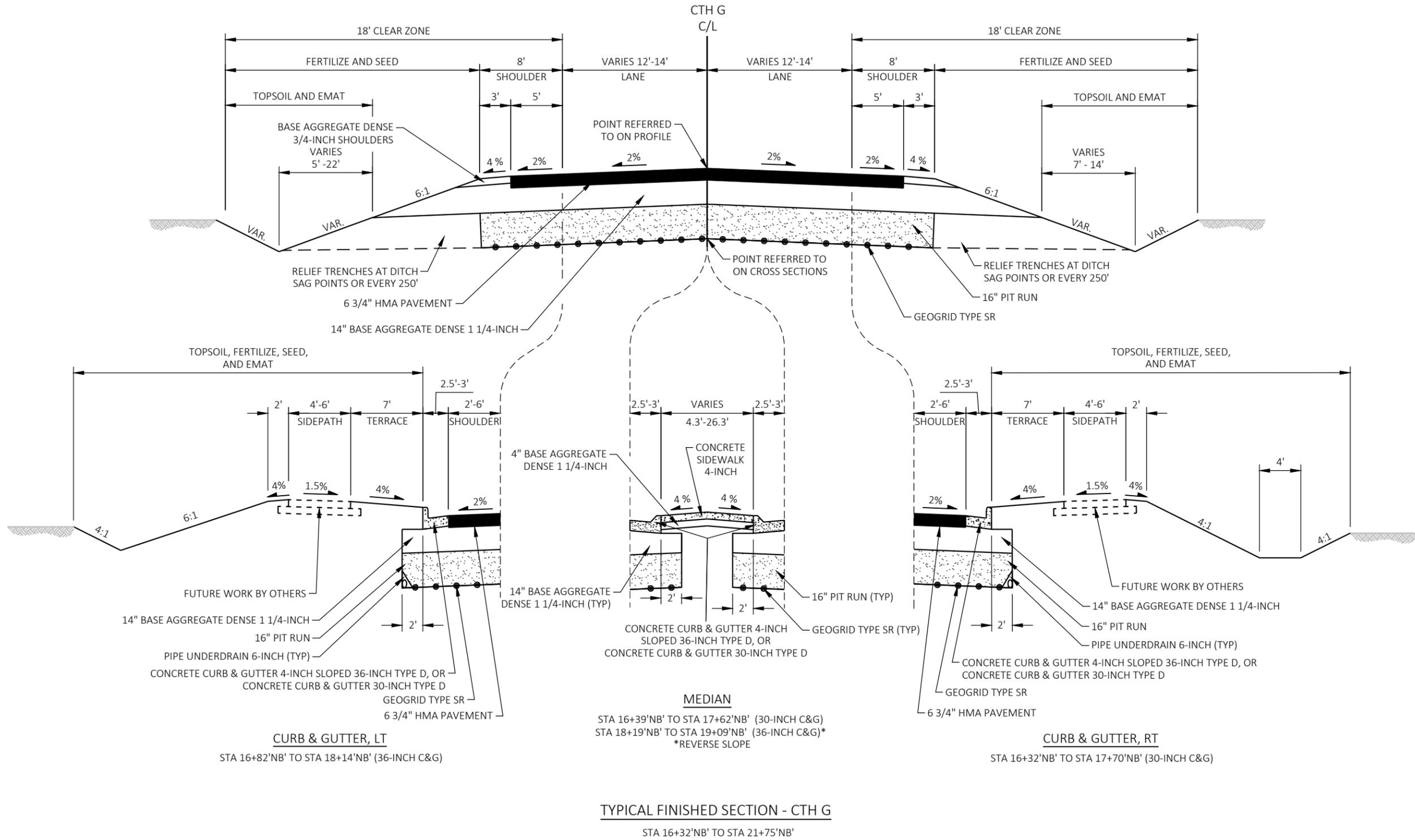
STA 26+00'NWB' TO STA 27+75'NWB'
 STA 29+75'NWB' TO STA 33+75'NWB'
 STA 35+21'NWB' TO STA 39+75'NWB'

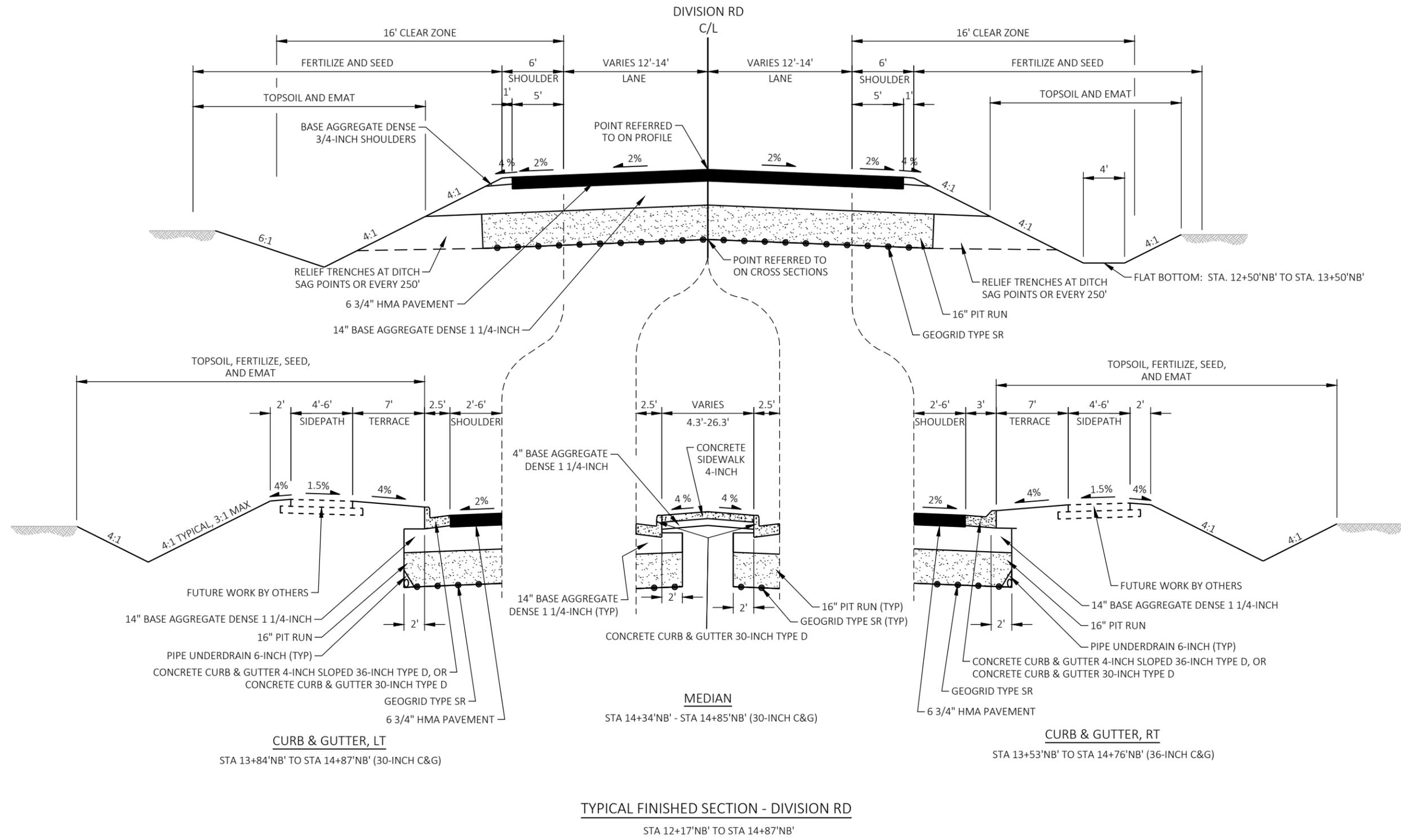
** ROCK MAY BE ENCOUNTERED AND REQUIRE EXCAVATION TO PROVIDE AT LEAST 6-INCHES OF BASE AGGREGATE DENSE 1 1/4". DO NOT EXCAVATE ROCK FOR INSTALLATION OF PIT RUN.

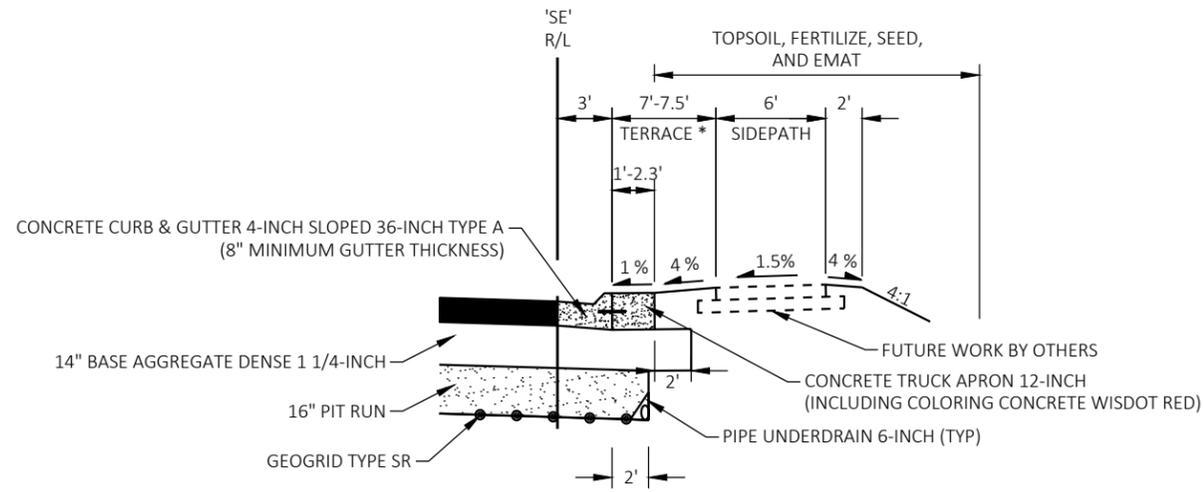


TYPICAL FINISHED SECTION - STH 145

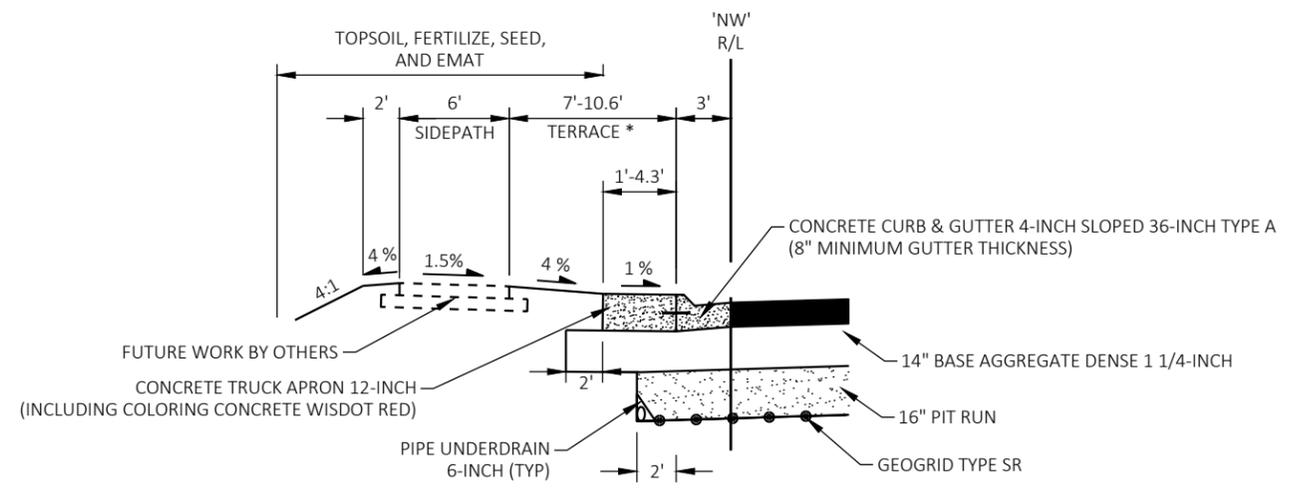
STA 27+75'NWB' TO STA 29+75'NWB'
STA 28+75'SEB' TO STA 32+75'SEB'



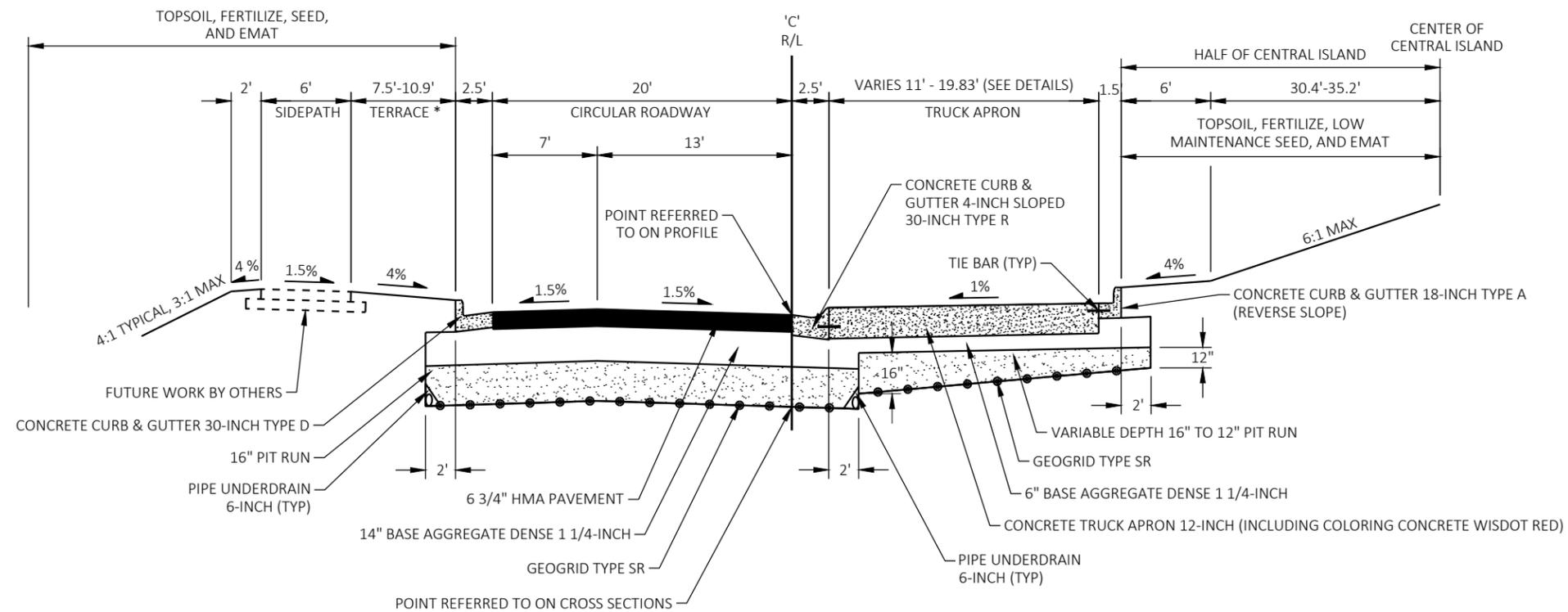




TYPICAL FINISHED SECTION - TRUCK APRON 'SEB'
 STA 101+10.27'SE' TO STA 101+66.33'SE'



TYPICAL FINISHED SECTION - TRUCK APRON 'NWB'
 STA 301+28.77'NW' TO STA 301+91.56'NW'

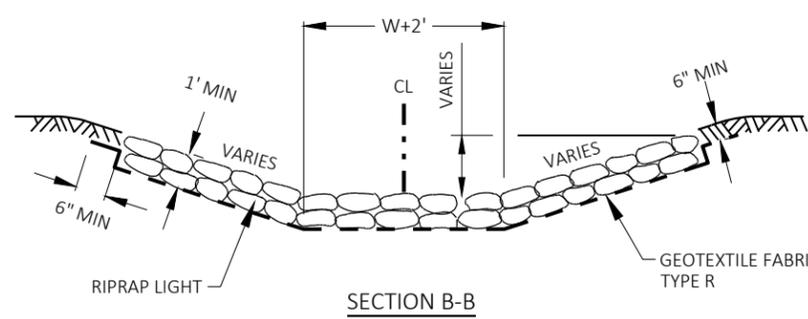
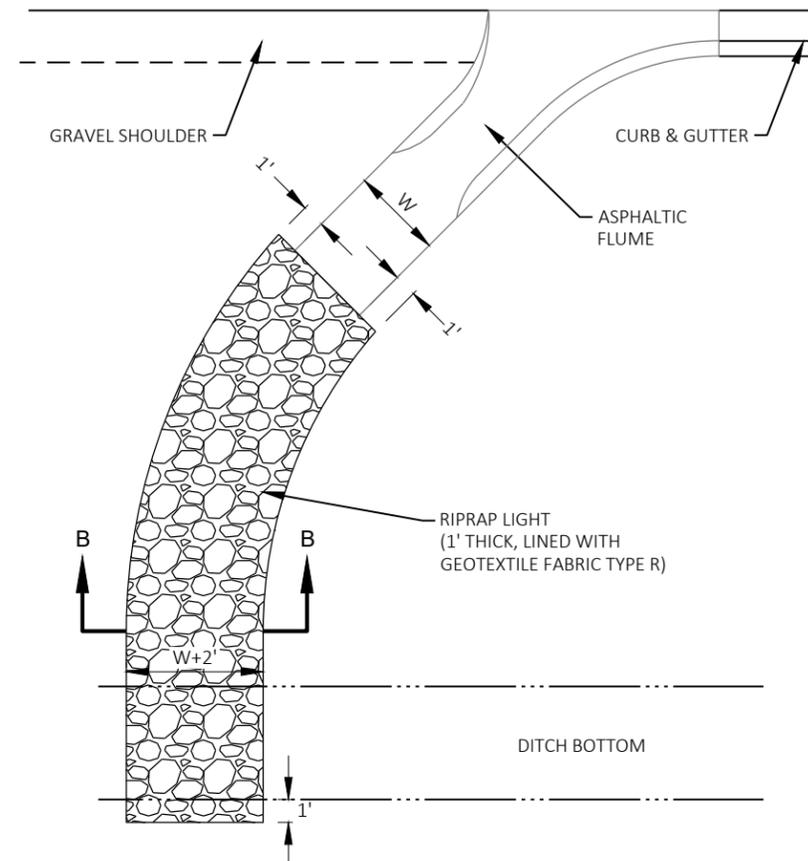


TYPICAL FINISHED HALF-SECTION - ROUNDABOUT
 * CONSTRUCT TERRACE WITH TOPSOIL, FERTILIZER, SEED AND EMAT.

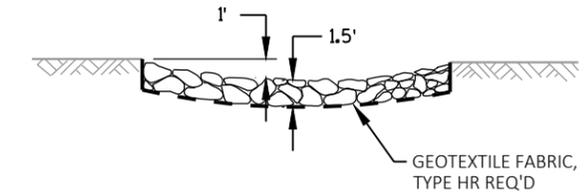
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER									
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
SIDE SLOPE-TURF			.25			.27			.28			.30
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 = 5.35 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 3.35 ACRES

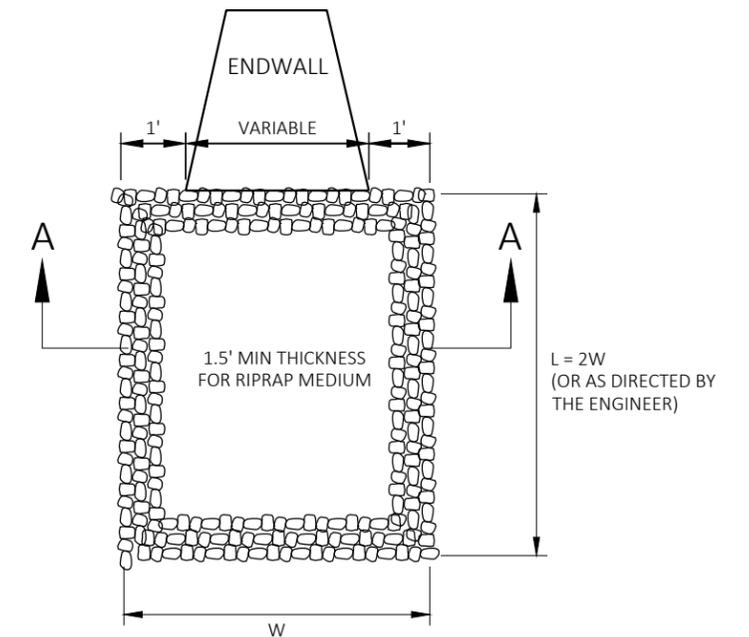
RUNOFF COEFFICIENT TABLE



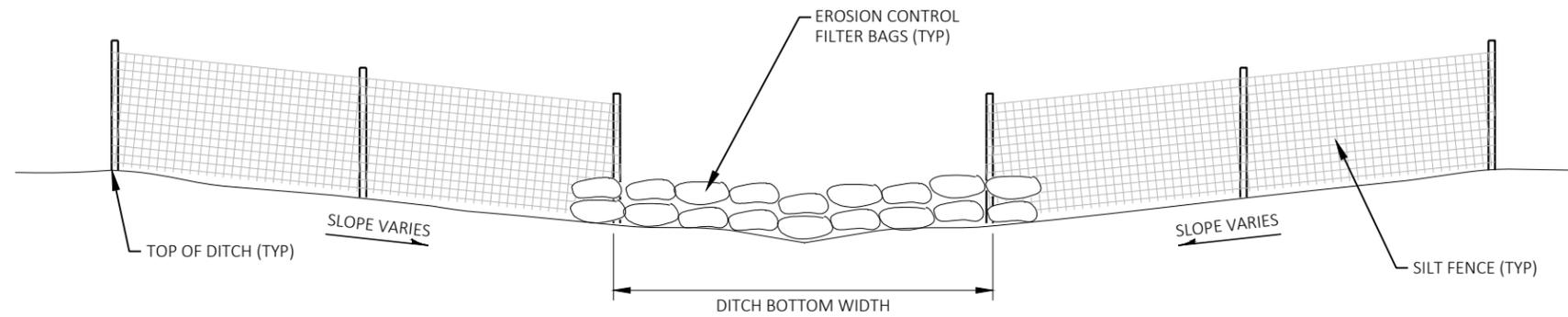
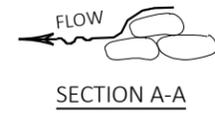
DETAIL FOR RIPRAP LIGHT AT ASPHALTIC FLUMES



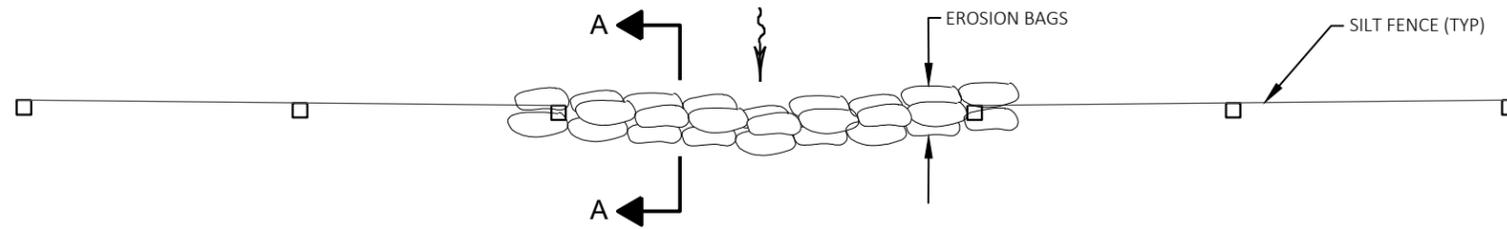
SECTION A-A



DETAIL FOR RIPRAP MEDIUM TREATMENT AT STORM SEWER OUTFALLS



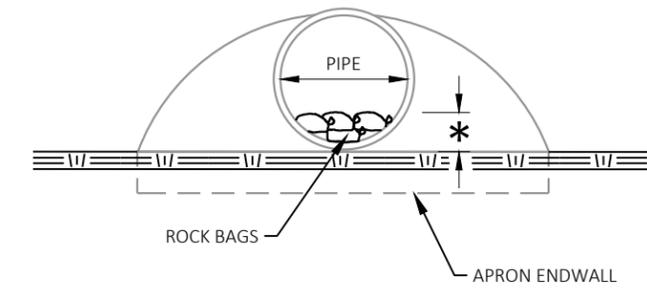
SECTION



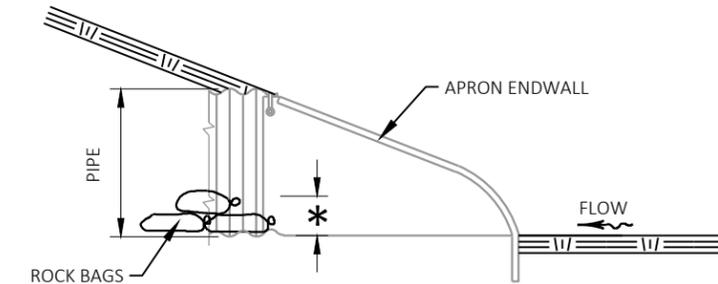
PLAN

SILT FENCE RELIEF DETAIL
PAID FOR AS ROCK BAGS

ESTIMATED BAG SIZE = 18" X 12" X 6"	
PIPE SIZE	ESTIMATED NO. OF BAGS
12"	1
15"	2
18"	2
21"	3
14" X 23"	3
24"	3
27"	4
30"	5
19" X 30"	5
36"	7
24" X 38"	8
42"	8
29" X 45"	10
48"	10
34" X 53"	10
38" X 60"	13
60"	13
66"	15
53" X 83"	19

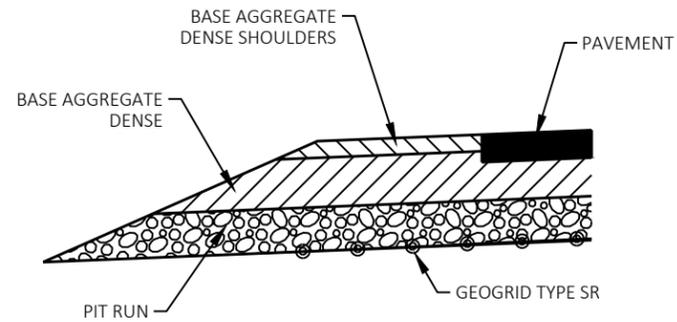


END VIEW

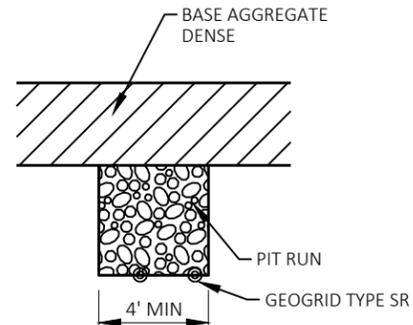


SIDE VIEW

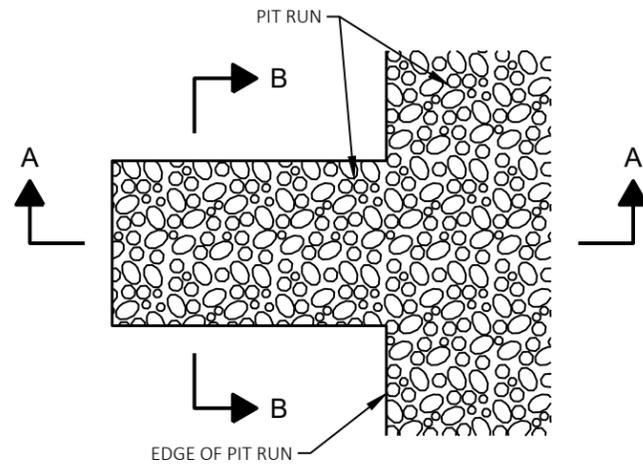
DETAIL FOR CULVERT PIPE CHECK
* - PLACE AT 1/3 PIPE DIAMETER, 6" MINIMUM, OR AS DIRECTED BY THE ENGINEER



SECTION A-A

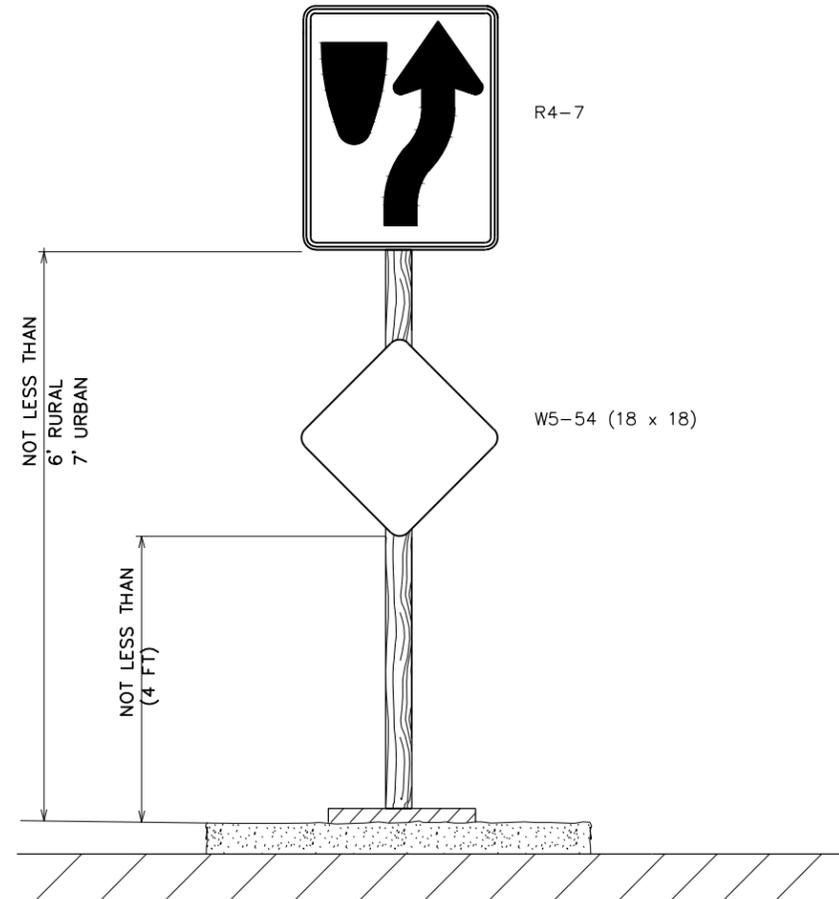


SECTION B-B

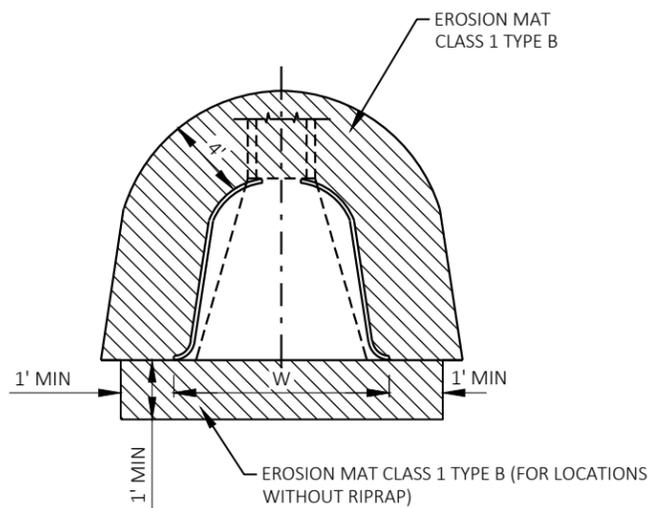


DETAIL FOR RELIEF TRENCHES

TRENCHES ARE TO BE CONSTRUCTED AT LEAST EVERY 250' AND AT EACH SAG VERTICAL CURVE IN THE PROFILE. LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER. EXCAVATION REQUIRED TO CONSTRUCT RELIEF TRENCHES SHALL BE CONSIDERED INCIDENTAL TO THE ITEM "PIT RUN".

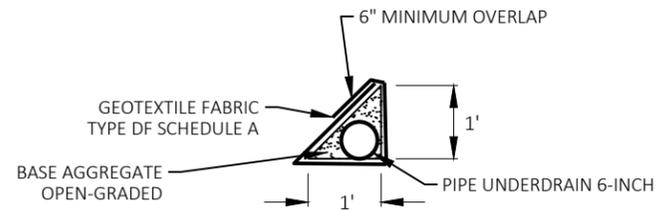


TYPICAL INSTALLATION FOR TRANSITION TO DIVIDED HIGHWAY OR OTHER SPECIAL NEEDS AREAS

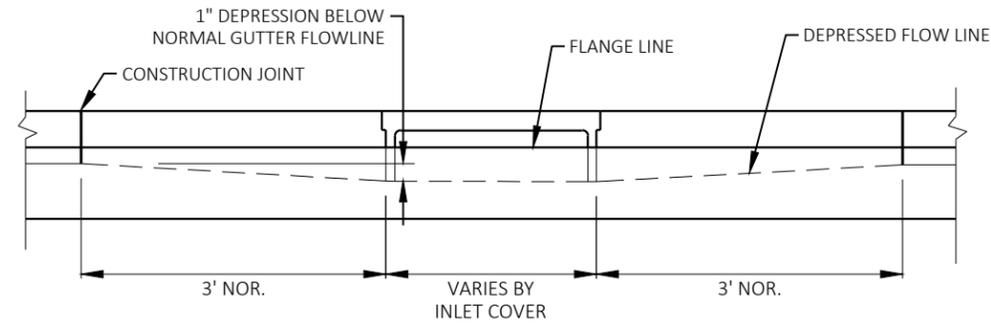


EROSION MAT AT APRON ENDWALLS

(SEE EROSION CONTROL PLANS FOR APPROXIMATE LOCATIONS)

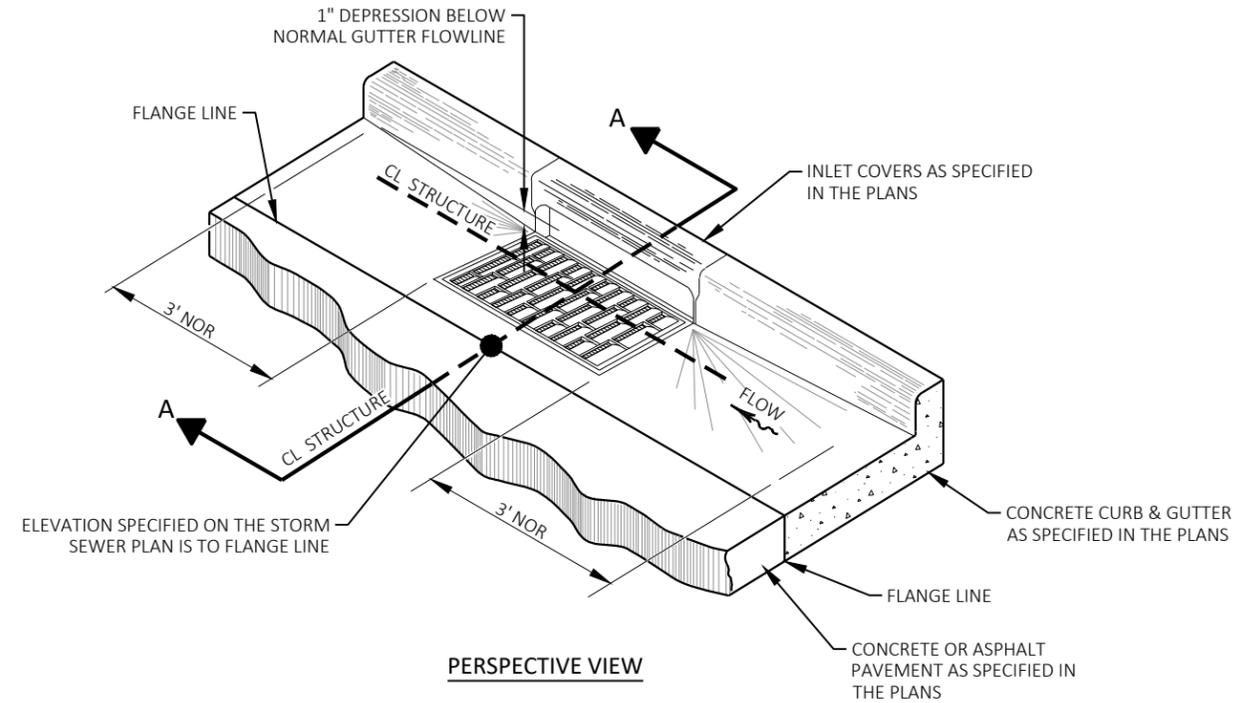


PIPE UNDERDRAIN TRENCH DETAIL

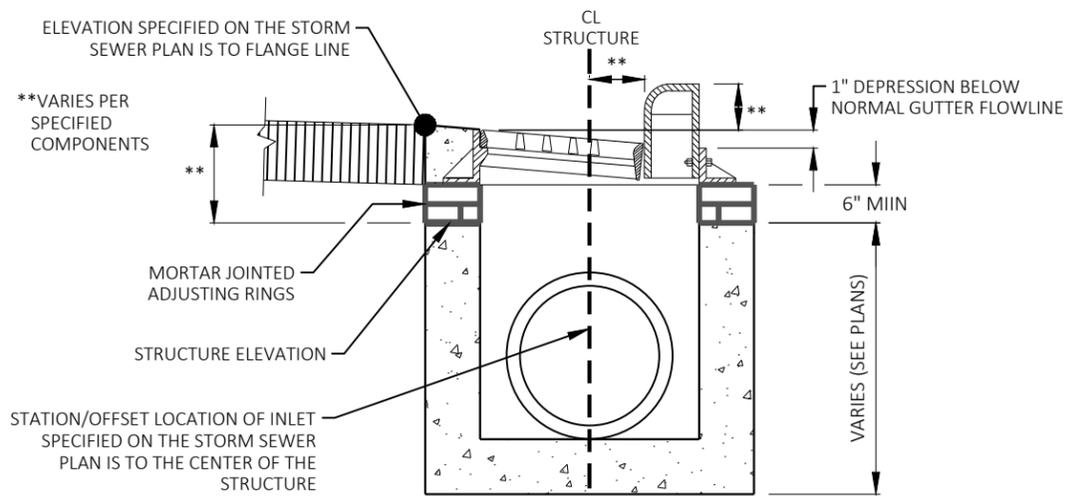


ELEVATION VIEW AT FLANGE LINE

(GRATE AND CURB DETAILS OMITTED FOR DRAWING CLARITY)



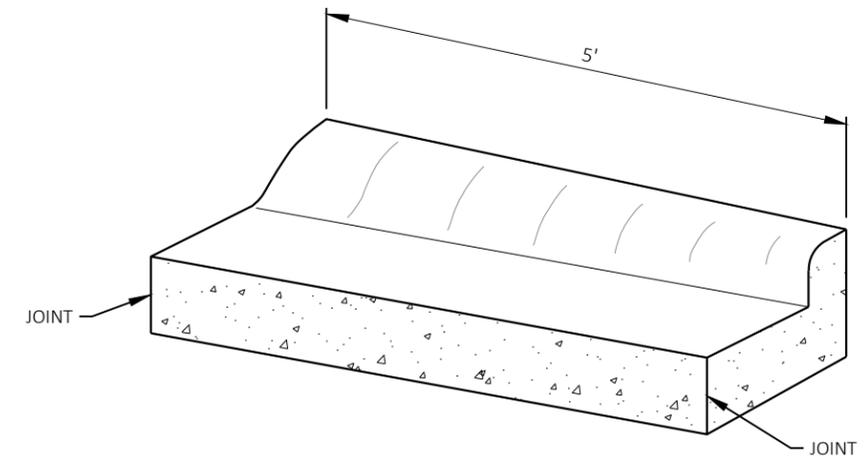
PERSPECTIVE VIEW



SECTION A-A

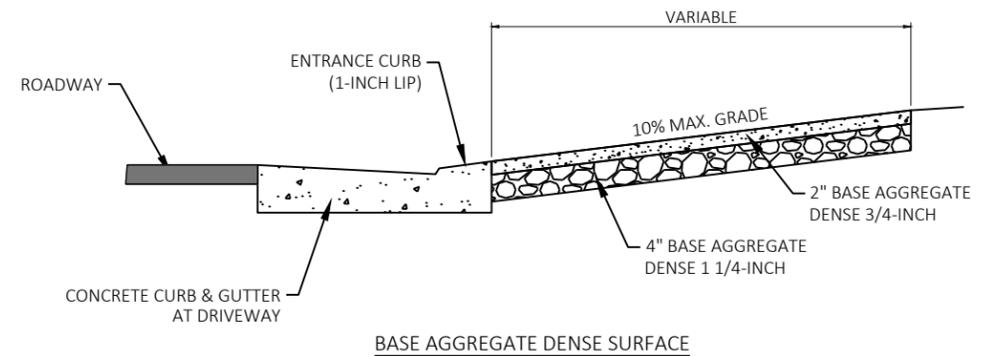
DETAIL OF CURB AND GUTTER AT INLETS

NOTE:
INLET COVER - TYPE H AND CONCRETE CURB AND GUTTER 30-INCH SHOWN FOR DETAIL ILLUSTRATION ONLY. GUTTER PAN DEPRESSION IS SIMILAR FOR OTHER CURB AND GUTTER /INLET COMBINATIONS

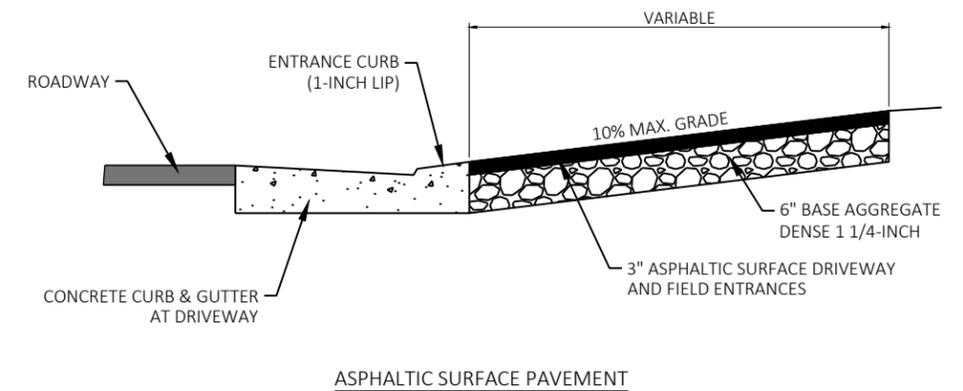


CURB TRANSITION DETAIL

CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TO CONCRETE CURB & GUTTER 30-INCH (TO BE MEASURED AND PAID FOR AS CONCRETE CURB & GUTTER 36-INCH)

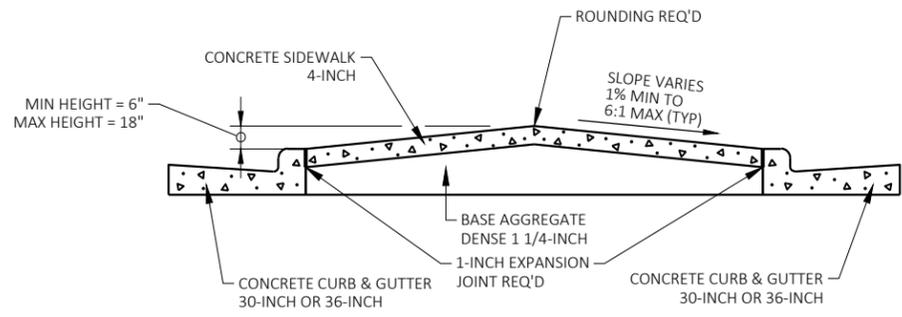


BASE AGGREGATE DENSE SURFACE

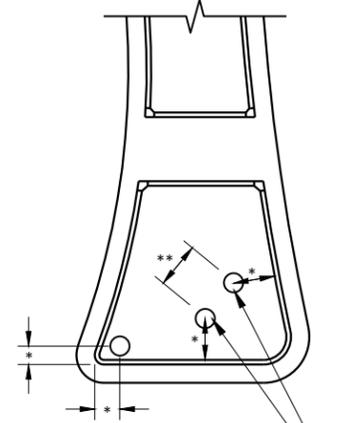


ASPHALTIC SURFACE PAVEMENT

DETAIL FOR ENTRANCES WITH CURB & GUTTER



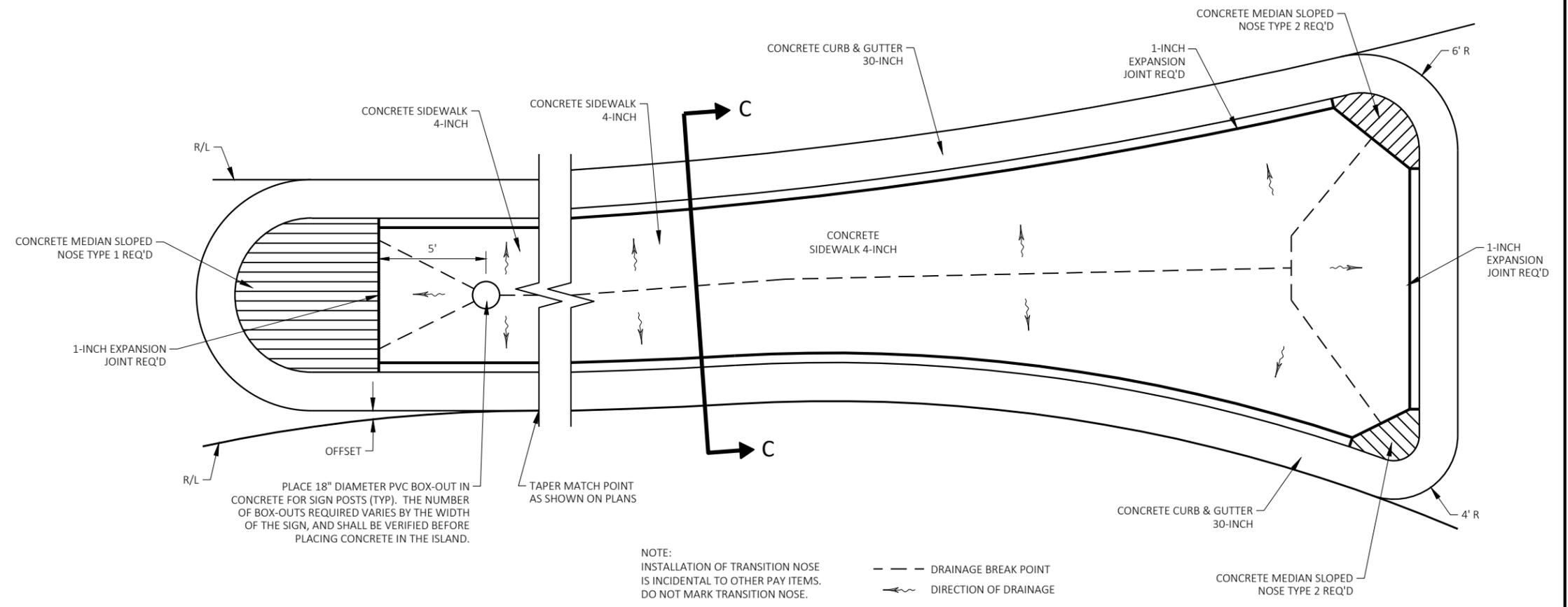
SECTION C-C



-LACE 18" DIAMETER PVC BOX-OUT IN CONCRETE FOR SIGN POSTS (TYP). THE NUMBER OF BOX-OUTS REQUIRED VARIES BY THE WIDTH OF THE SIGN, AND SHALL BE VERIFIED BEFORE PLACING CONCRETE IN THE ISLAND.

ISLAND SIGN LOCATION DETAIL (TYP)

- * DISTANCE TO BE LAID OUT IN THE FIELD BASED ON SIGN SIZE. TWO FOOT MINIMUM CLEARANCE BETWEEN THE EDGE OF SIGN AND THE FACE OF CURB.
- ** SEE A4-4 SIGN PLATE FOR POST SPACING REQUIREMENTS.

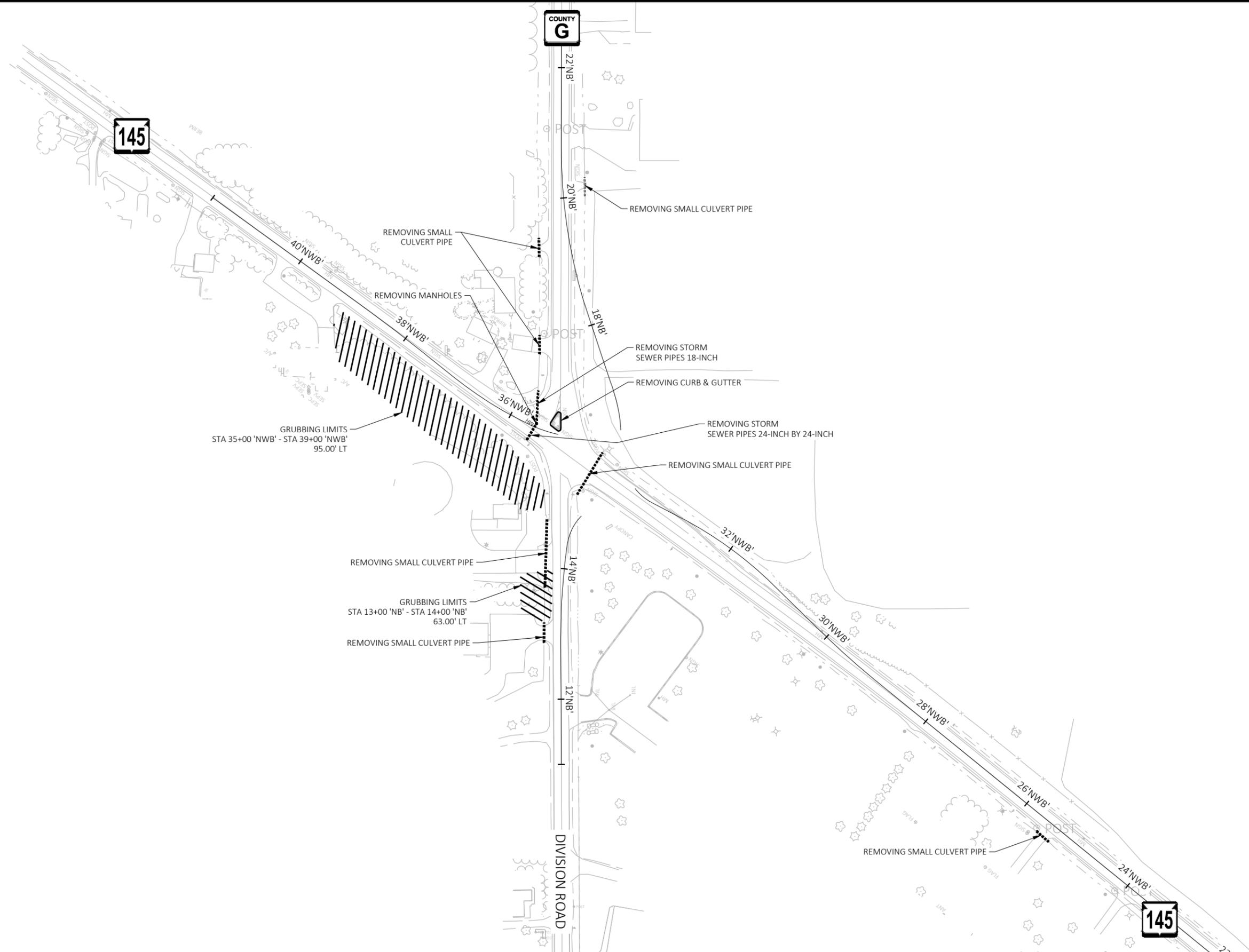


SPLITTER ISLAND DETAIL

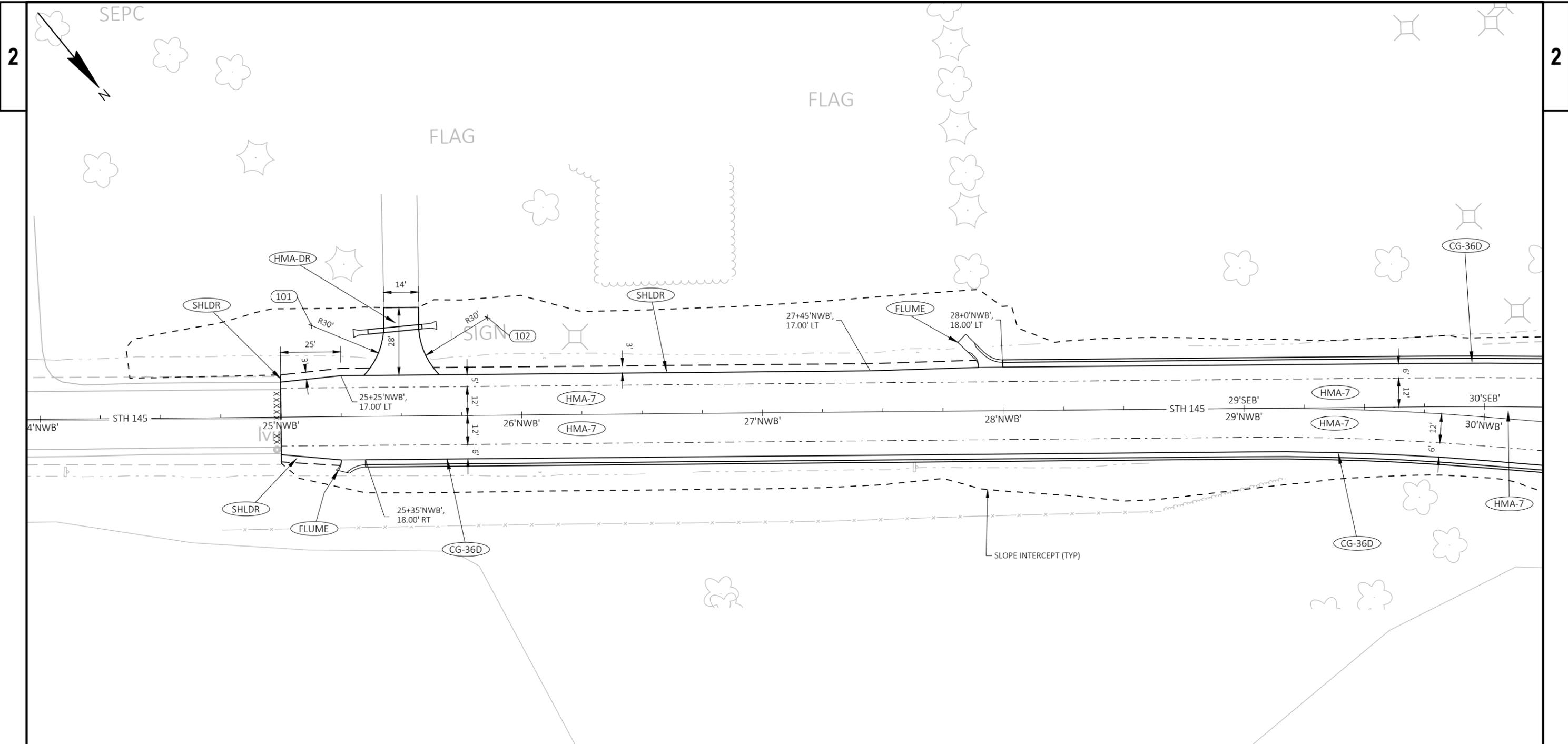
NOT TO SCALE

NOTE:
INSTALLATION OF TRANSITION NOSE IS INCIDENTAL TO OTHER PAY ITEMS. DO NOT MARK TRANSITION NOSE.

--- DRAINAGE BREAK POINT
--- DIRECTION OF DRAINAGE



PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	REMOVAL PLAN	SHEET 15	E
------------------------	--------------	--------------------	--------------	----------	---



PAVING LEGEND

- | | |
|---|---|
| (SHLDR) BASE AGGREGATE DENSE 3/4-INCH (SHOULDERS) | (CG-30R) CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE R |
| (FIELD) 2-INCH BASE AGGREGATE DENSE 3/4-INCH OVER 4-INCH BASE AGGREGATE DENSE 1 1/4-INCH (FIELD ENTRANCE) | (CG-36D) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D |
| (HMA-7) 6 3/4-INCH HMA PAVEMENT | (CG-36DR) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D (REVERSE SLOPE) |
| (HMA-DR) ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (3-INCH) | (CG-36A) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A |
| (CONC-12) CONCRETE TRUCK APRON 12-INCH (RED) | (NOSE-1) CONCRETE MEDIAN SLOPE NOSE TYPE 1 |
| (CG-18AR) CONCRETE CURB & GUTTER 18-INCH TYPE A (REVERSE SLOPE) | (NOSE-2) CONCRETE MEDIAN SLOPE NOSE TYPE 2 |
| (CG-30D) CONCRETE CURB & GUTTER 30-INCH TYPE D | (WALK-4) CONCRETE SIDEWALK 4-INCH |
| | (FLUME) ASPHALTIC FLUME |

STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORD	X COORD
101	25+13.03 'NWB'	37.85' LT	116639.39	378958.78
102	25+86.17 'NWB'	40.56' LT	116683.12	378900.10

PROJECT NO: 2475-04-71

HWY: STH 145

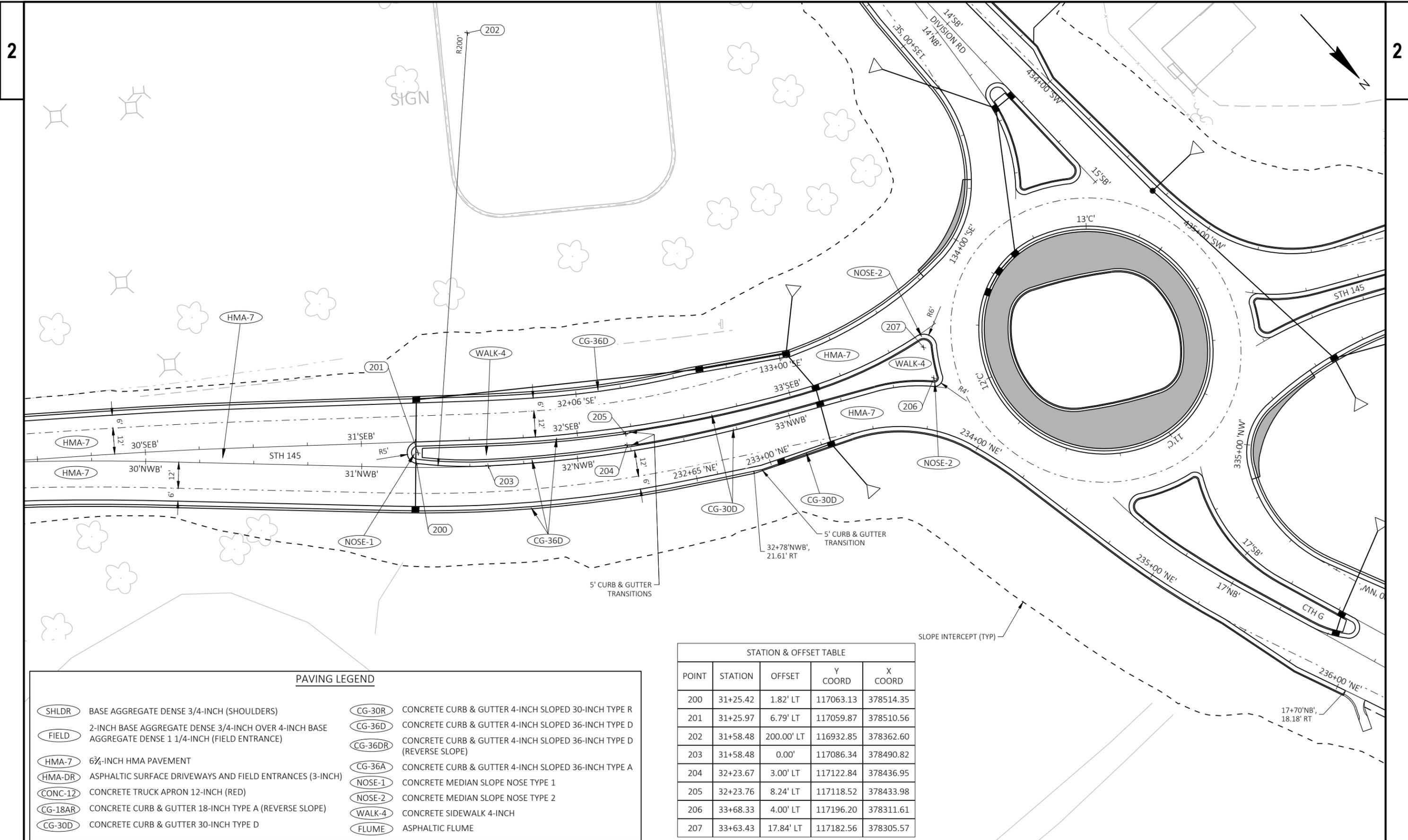
COUNTY: WASHINGTON

PLAN DETAILS

SHEET

16

E

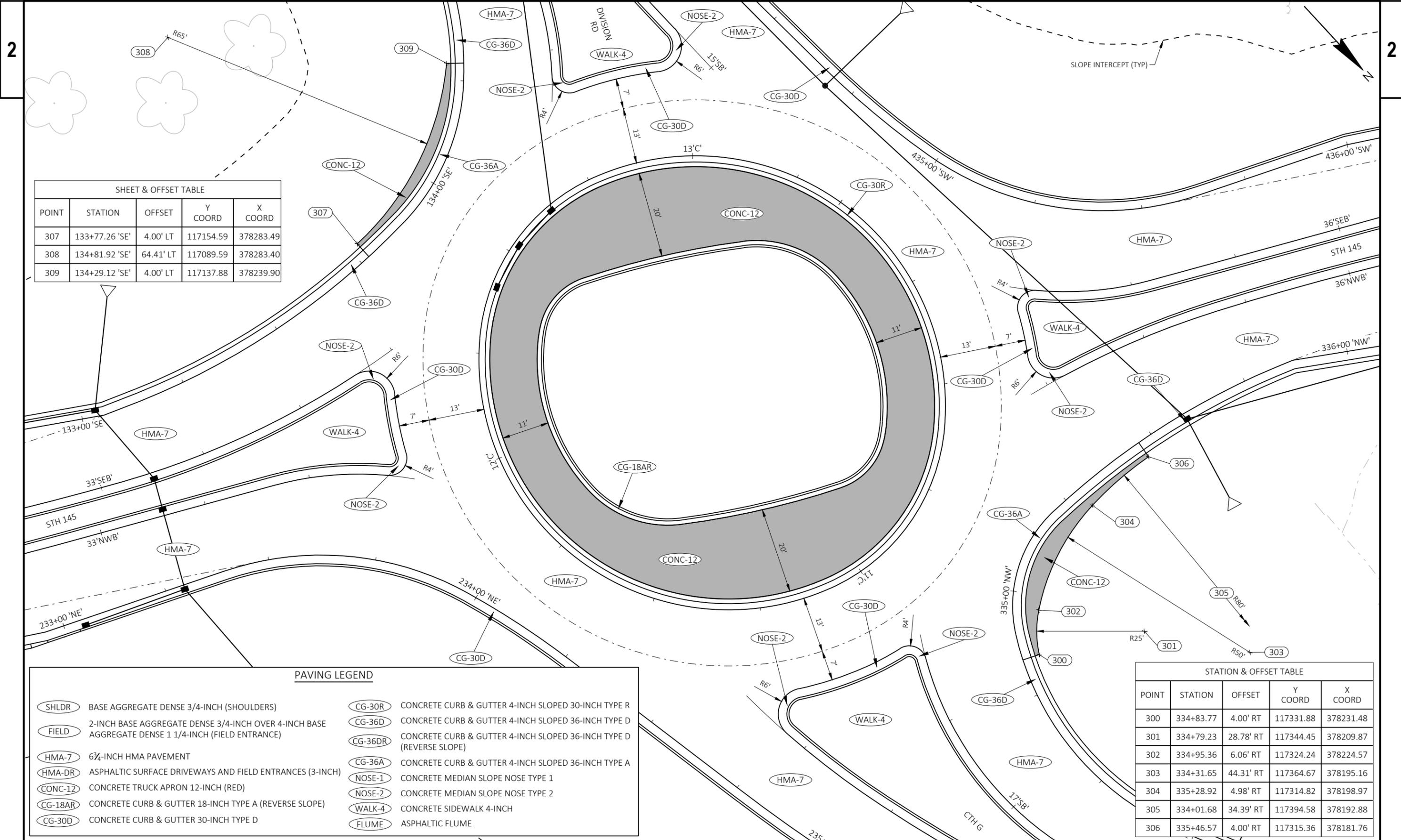


PAVING LEGEND

- | | |
|---|---|
| (SHLDR) BASE AGGREGATE DENSE 3/4-INCH (SHOULDERS) | (CG-30R) CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE R |
| (FIELD) 2-INCH BASE AGGREGATE DENSE 3/4-INCH OVER 4-INCH BASE AGGREGATE DENSE 1 1/4-INCH (FIELD ENTRANCE) | (CG-36D) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D |
| (HMA-7) 6 3/4-INCH HMA PAVEMENT | (CG-36DR) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D (REVERSE SLOPE) |
| (HMA-DR) ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (3-INCH) | (CG-36A) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A |
| (CONC-12) CONCRETE TRUCK APRON 12-INCH (RED) | (NOSE-1) CONCRETE MEDIAN SLOPE NOSE TYPE 1 |
| (CG-18AR) CONCRETE CURB & GUTTER 18-INCH TYPE A (REVERSE SLOPE) | (NOSE-2) CONCRETE MEDIAN SLOPE NOSE TYPE 2 |
| (CG-30D) CONCRETE CURB & GUTTER 30-INCH TYPE D | (WALK-4) CONCRETE SIDEWALK 4-INCH |
| | (FLUME) ASPHALTIC FLUME |

STATION & OFFSET TABLE

POINT	STATION	OFFSET	Y COORD	X COORD
200	31+25.42	1.82' LT	117063.13	378514.35
201	31+25.97	6.79' LT	117059.87	378510.56
202	31+58.48	200.00' LT	116932.85	378362.60
203	31+58.48	0.00'	117086.34	378490.82
204	32+23.67	3.00' LT	117122.84	378436.95
205	32+23.76	8.24' LT	117118.52	378433.98
206	33+68.33	4.00' LT	117196.20	378311.61
207	33+63.43	17.84' LT	117182.56	378305.57

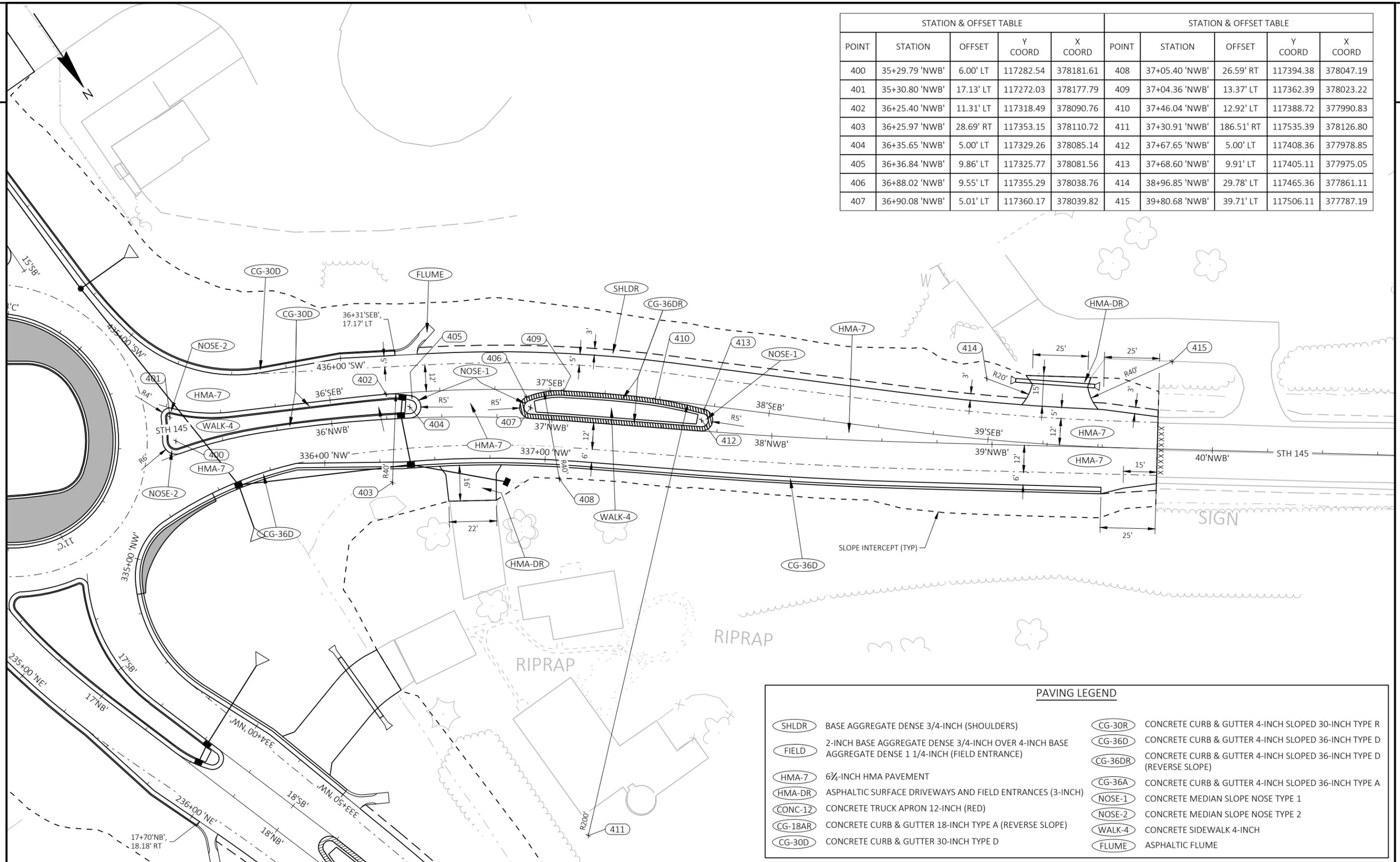


SHEET & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORD	X COORD
307	133+77.26 'SE'	4.00' LT	117154.59	378283.49
308	134+81.92 'SE'	64.41' LT	117089.59	378283.40
309	134+29.12 'SE'	4.00' LT	117137.88	378239.90

PAVING LEGEND			
(SHLDR)	BASE AGGREGATE DENSE 3/4-INCH (SHOULDERS)	(CG-30R)	CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE R
(FIELD)	2-INCH BASE AGGREGATE DENSE 3/4-INCH OVER 4-INCH BASE AGGREGATE DENSE 1 1/4-INCH (FIELD ENTRANCE)	(CG-36D)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D
(HMA-7)	6 3/4-INCH HMA PAVEMENT	(CG-36DR)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D (REVERSE SLOPE)
(HMA-DR)	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (3-INCH)	(CG-36A)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A
(CONC-12)	CONCRETE TRUCK APRON 12-INCH (RED)	(NOSE-1)	CONCRETE MEDIAN SLOPE NOSE TYPE 1
(CG-18AR)	CONCRETE CURB & GUTTER 18-INCH TYPE A (REVERSE SLOPE)	(NOSE-2)	CONCRETE MEDIAN SLOPE NOSE TYPE 2
(CG-30D)	CONCRETE CURB & GUTTER 30-INCH TYPE D	(WALK-4)	CONCRETE SIDEWALK 4-INCH
		(FLUME)	ASPHALTIC FLUME

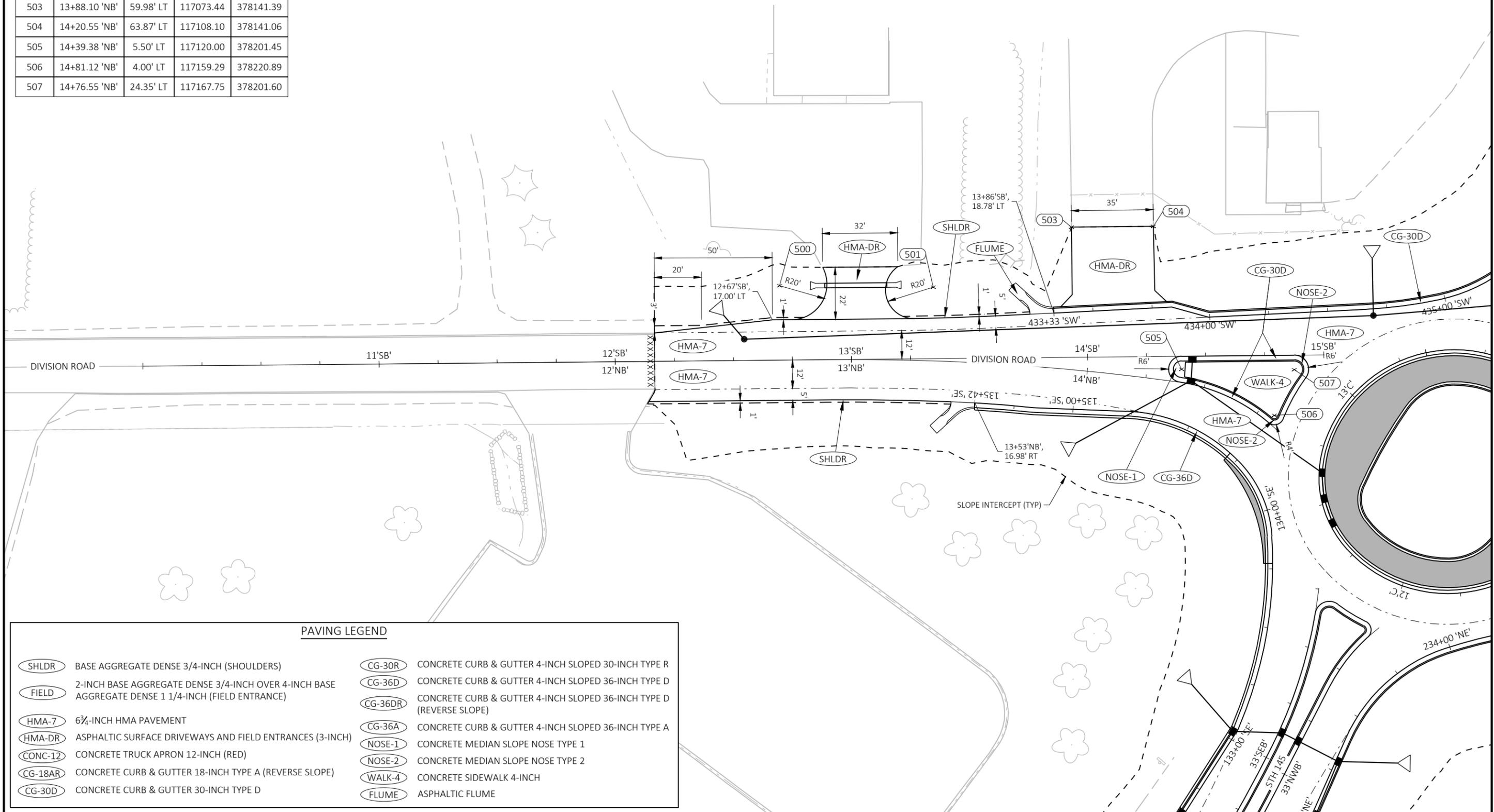
STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORD	X COORD
300	334+83.77	4.00' RT	117331.88	378231.48
301	334+79.23	28.78' RT	117344.45	378209.87
302	334+95.36	6.06' RT	117324.24	378224.57
303	334+31.65	44.31' RT	117364.67	378195.16
304	335+28.92	4.98' RT	117314.82	378198.97
305	334+01.68	34.39' RT	117394.58	378192.88
306	335+46.57	4.00' RT	117315.36	378181.76

STATION & OFFSET TABLE					STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORD	X COORD	POINT	STATION	OFFSET	Y COORD	X COORD
400	35+29.79 'NWB'	6.00' LT	117282.54	378181.61	408	37+05.40 'NWB'	26.59' RT	117394.38	378047.19
401	35+30.80 'NWB'	17.13' LT	117272.03	378177.79	409	37+04.36 'NWB'	13.37' LT	117362.39	378023.22
402	36+25.40 'NWB'	11.31' LT	117318.49	378090.76	410	37+46.04 'NWB'	12.92' LT	117388.72	377990.83
403	36+25.97 'NWB'	28.69' RT	117353.15	378110.72	411	37+30.91 'NWB'	186.51' RT	117535.39	378126.80
404	36+35.65 'NWB'	5.00' LT	117329.26	378085.14	412	37+67.65 'NWB'	5.00' LT	117408.36	377978.85
405	36+36.84 'NWB'	9.86' LT	117325.77	378081.56	413	37+68.60 'NWB'	9.91' LT	117405.11	377975.05
406	36+88.02 'NWB'	9.55' LT	117355.29	378038.76	414	38+96.85 'NWB'	29.78' LT	117465.36	377861.11
407	36+90.08 'NWB'	5.01' LT	117360.17	378039.82	415	39+80.68 'NWB'	39.71' LT	117506.11	377787.19



PAVING LEGEND	
(SHLDR)	BASE AGGREGATE DENSE 3/4-INCH (SHOULDERS)
(FIELD)	2-INCH BASE AGGREGATE DENSE 3/4-INCH OVER 4-INCH BASE AGGREGATE DENSE 1 1/4-INCH (FIELD ENTRANCE)
(HMA-7)	6 3/4-INCH HMA PAVEMENT
(HMA-DR)	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (3-INCH)
(CONC-12)	CONCRETE TRUCK APRON 12-INCH (RED)
(CG-18AR)	CONCRETE CURB & GUTTER 18-INCH TYPE A (REVERSE SLOPE)
(CG-30D)	CONCRETE CURB & GUTTER 30-INCH TYPE D
(CG-30R)	CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE R
(CG-36D)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D
(CG-36DR)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D (REVERSE SLOPE)
(CG-36A)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A
(NOSE-1)	CONCRETE MEDIAN SLOPE NOSE TYPE 1
(NOSE-2)	CONCRETE MEDIAN SLOPE NOSE TYPE 2
(WALK-4)	CONCRETE SIDEWALK 4-INCH
(FLUME)	ASPHALTIC FLUME

STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORD	X COORD
500	12+69.90 'NB'	31.42' LT	116949.84	378166.16
501	13+33.63 'NB'	31.15' LT	117014.89	378166.75
503	13+88.10 'NB'	59.98' LT	117073.44	378141.39
504	14+20.55 'NB'	63.87' LT	117108.10	378141.06
505	14+39.38 'NB'	5.50' LT	117120.00	378201.45
506	14+81.12 'NB'	4.00' LT	117159.29	378220.89
507	14+76.55 'NB'	24.35' LT	117167.75	378201.60



PAVING LEGEND

- | | |
|---|---|
| (SHLDR) BASE AGGREGATE DENSE 3/4-INCH (SHOULDERS) | (CG-30R) CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE R |
| (FIELD) 2-INCH BASE AGGREGATE DENSE 3/4-INCH OVER 4-INCH BASE AGGREGATE DENSE 1 1/4-INCH (FIELD ENTRANCE) | (CG-36D) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D |
| (HMA-7) 6 3/4-INCH HMA PAVEMENT | (CG-36DR) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D (REVERSE SLOPE) |
| (HMA-DR) ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (3-INCH) | (CG-36A) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A |
| (CONC-12) CONCRETE TRUCK APRON 12-INCH (RED) | (NOSE-1) CONCRETE MEDIAN SLOPE NOSE TYPE 1 |
| (CG-18AR) CONCRETE CURB & GUTTER 18-INCH TYPE A (REVERSE SLOPE) | (NOSE-2) CONCRETE MEDIAN SLOPE NOSE TYPE 2 |
| (CG-30D) CONCRETE CURB & GUTTER 30-INCH TYPE D | (WALK-4) CONCRETE SIDEWALK 4-INCH |
| | (FLUME) ASPHALTIC FLUME |

PROJECT NO: 2475-04-71

HWY: STH 145

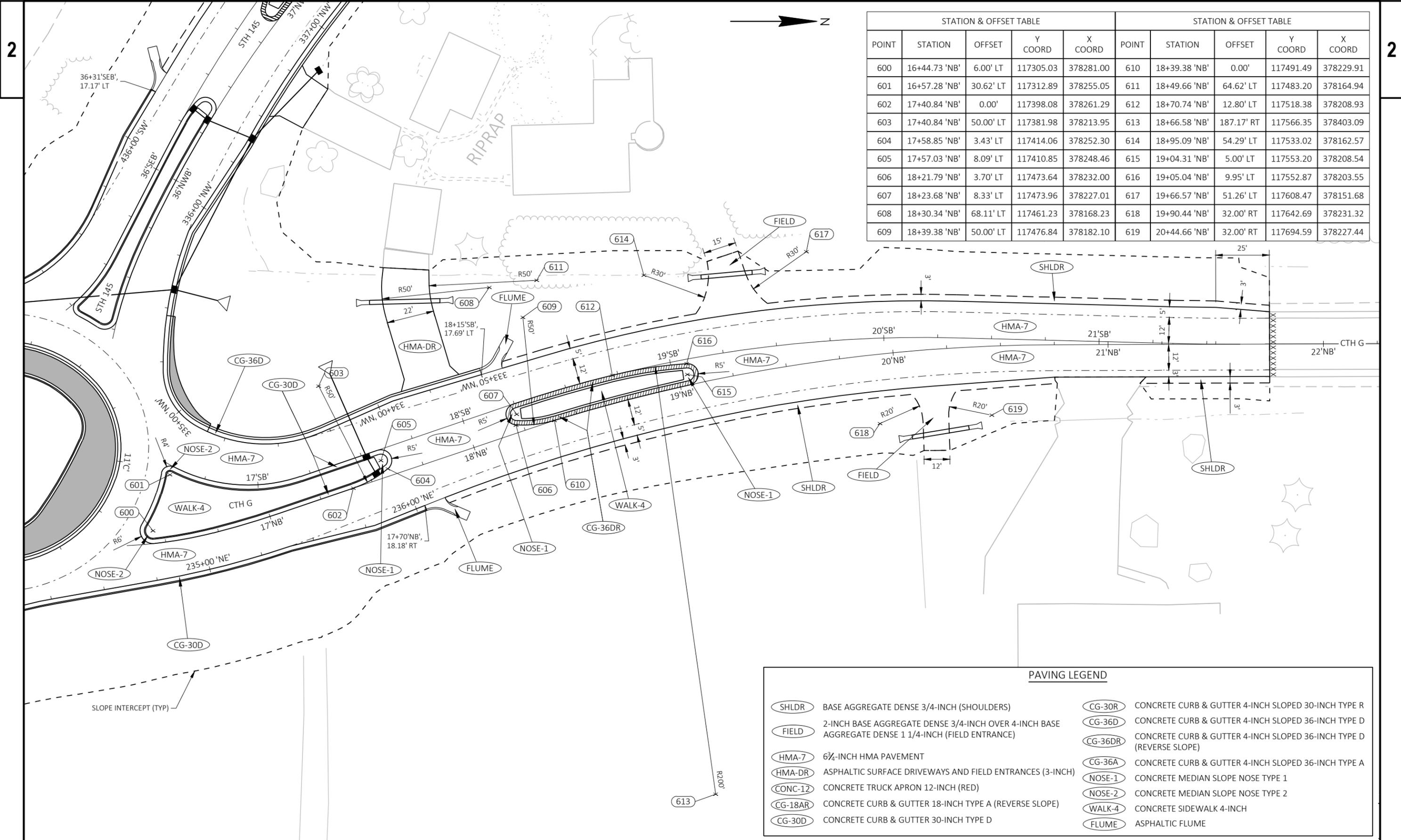
COUNTY: WASHINGTON

PLAN DETAILS

SHEET

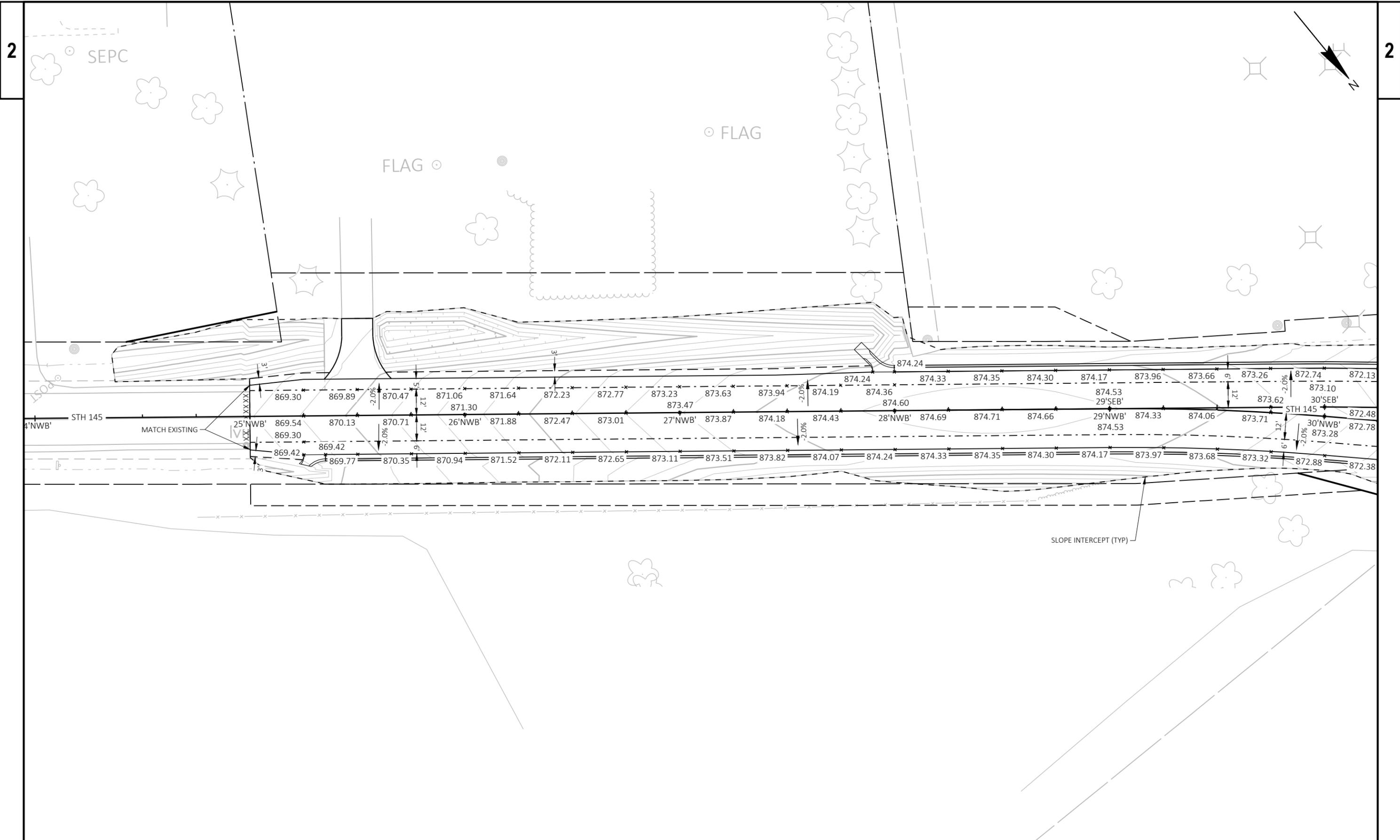
20

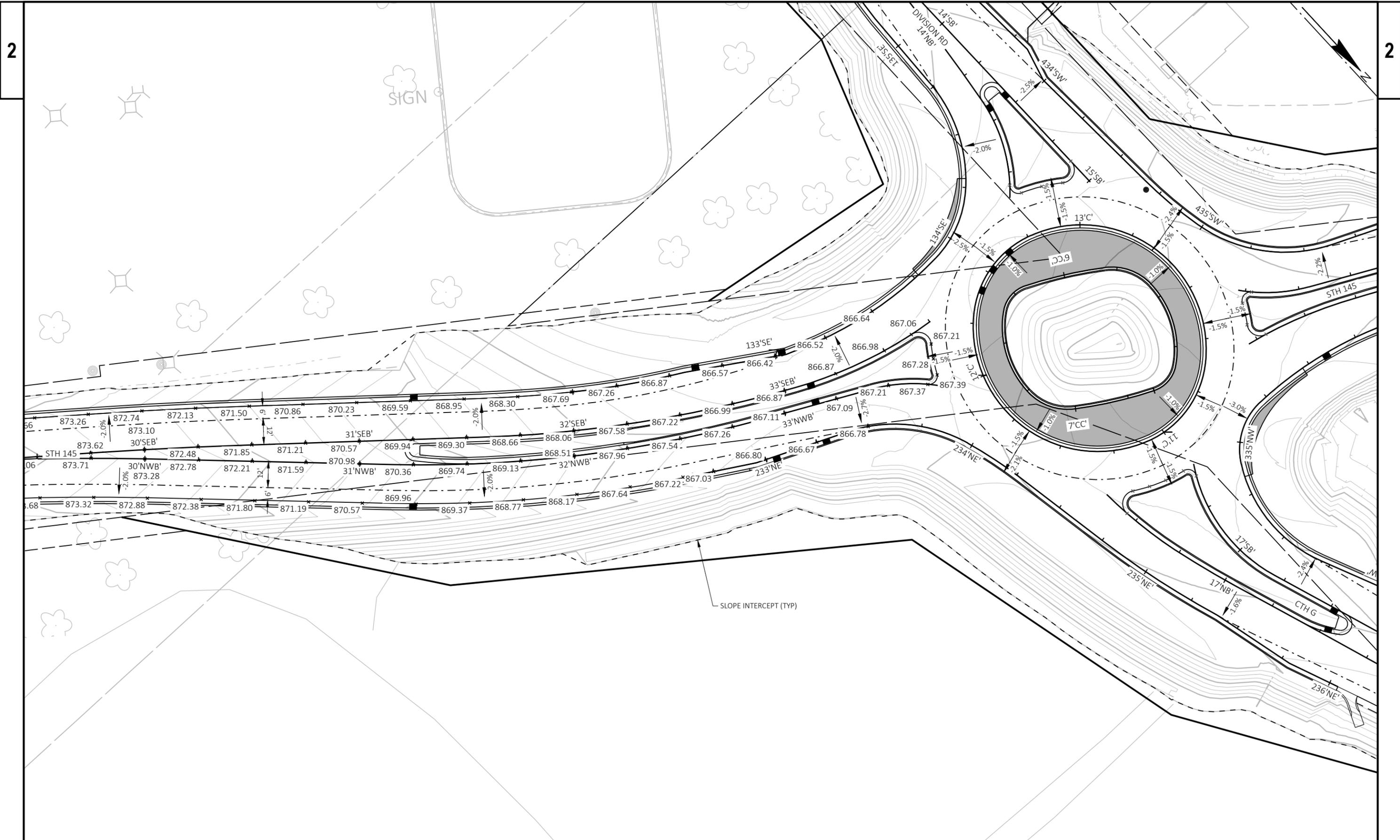
E



STATION & OFFSET TABLE					STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORD	X COORD	POINT	STATION	OFFSET	Y COORD	X COORD
600	16+44.73 'NB'	6.00' LT	117305.03	378281.00	610	18+39.38 'NB'	0.00'	117491.49	378229.91
601	16+57.28 'NB'	30.62' LT	117312.89	378255.05	611	18+49.66 'NB'	64.62' LT	117483.20	378164.94
602	17+40.84 'NB'	0.00'	117398.08	378261.29	612	18+70.74 'NB'	12.80' LT	117518.38	378208.93
603	17+40.84 'NB'	50.00' LT	117381.98	378213.95	613	18+66.58 'NB'	187.17' RT	117566.35	378403.09
604	17+58.85 'NB'	3.43' LT	117414.06	378252.30	614	18+95.09 'NB'	54.29' LT	117533.02	378162.57
605	17+57.03 'NB'	8.09' LT	117410.85	378248.46	615	19+04.31 'NB'	5.00' LT	117553.20	378208.54
606	18+21.79 'NB'	3.70' LT	117473.64	378232.00	616	19+05.04 'NB'	9.95' LT	117552.87	378203.55
607	18+23.68 'NB'	8.33' LT	117473.96	378227.01	617	19+66.57 'NB'	51.26' LT	117608.47	378151.68
608	18+30.34 'NB'	68.11' LT	117461.23	378168.23	618	19+90.44 'NB'	32.00' RT	117642.69	378231.32
609	18+39.38 'NB'	50.00' LT	117476.84	378182.10	619	20+44.66 'NB'	32.00' RT	117694.59	378227.44

PAVING LEGEND	
(SHLDR)	BASE AGGREGATE DENSE 3/4-INCH (SHOULDERS)
(FIELD)	2-INCH BASE AGGREGATE DENSE 3/4-INCH OVER 4-INCH BASE AGGREGATE DENSE 1 1/4-INCH (FIELD ENTRANCE)
(HMA-7)	6 3/4-INCH HMA PAVEMENT
(HMA-DR)	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (3-INCH)
(CONC-12)	CONCRETE TRUCK APRON 12-INCH (RED)
(CG-18AR)	CONCRETE CURB & GUTTER 18-INCH TYPE A (REVERSE SLOPE)
(CG-30D)	CONCRETE CURB & GUTTER 30-INCH TYPE D
(CG-30R)	CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE R
(CG-36D)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D
(CG-36DR)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D (REVERSE SLOPE)
(CG-36A)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A
(NOSE-1)	CONCRETE MEDIAN SLOPE NOSE TYPE 1
(NOSE-2)	CONCRETE MEDIAN SLOPE NOSE TYPE 2
(WALK-4)	CONCRETE SIDEWALK 4-INCH
(FLUME)	ASPHALTIC FLUME





PROJECT NO: 2475-04-71

HWY: STH 145

COUNTY: WASHINGTON

PAVING GRADES

SHEET

23

E

FILE NAME : I:\49\49074100 STH_145_&_CTHG\C3D\SHEETSPLAN\021202-PD (PAVING GRADES).DWG
LAYOUT NAME - 02

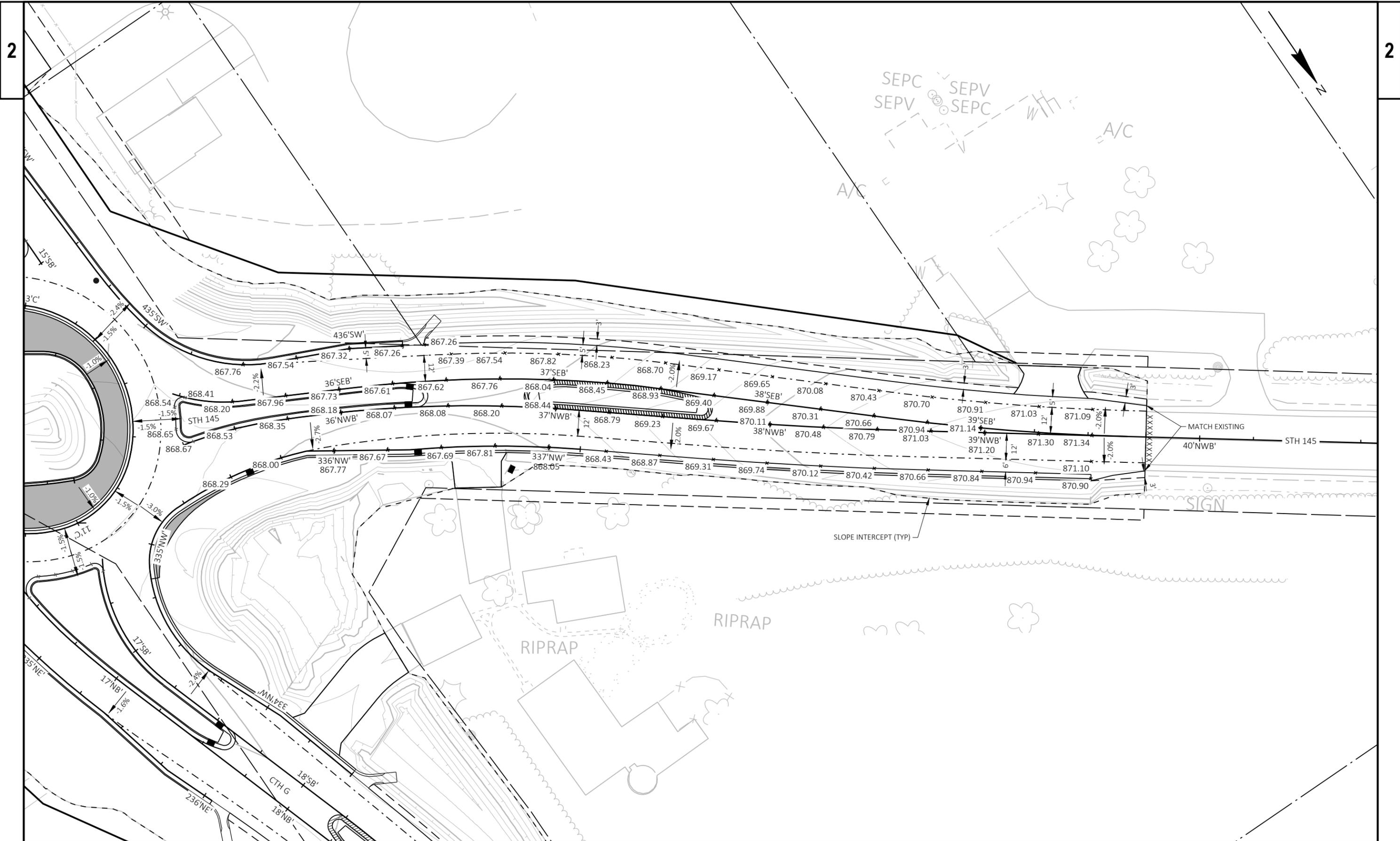
PLOT DATE : 10/24/2025 9:05 AM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

PLOT SCALE : 1 IN=40 FT

WISDOT/CADD SHEET 42



PROJECT NO: 2475-04-71

HWY: STH 145

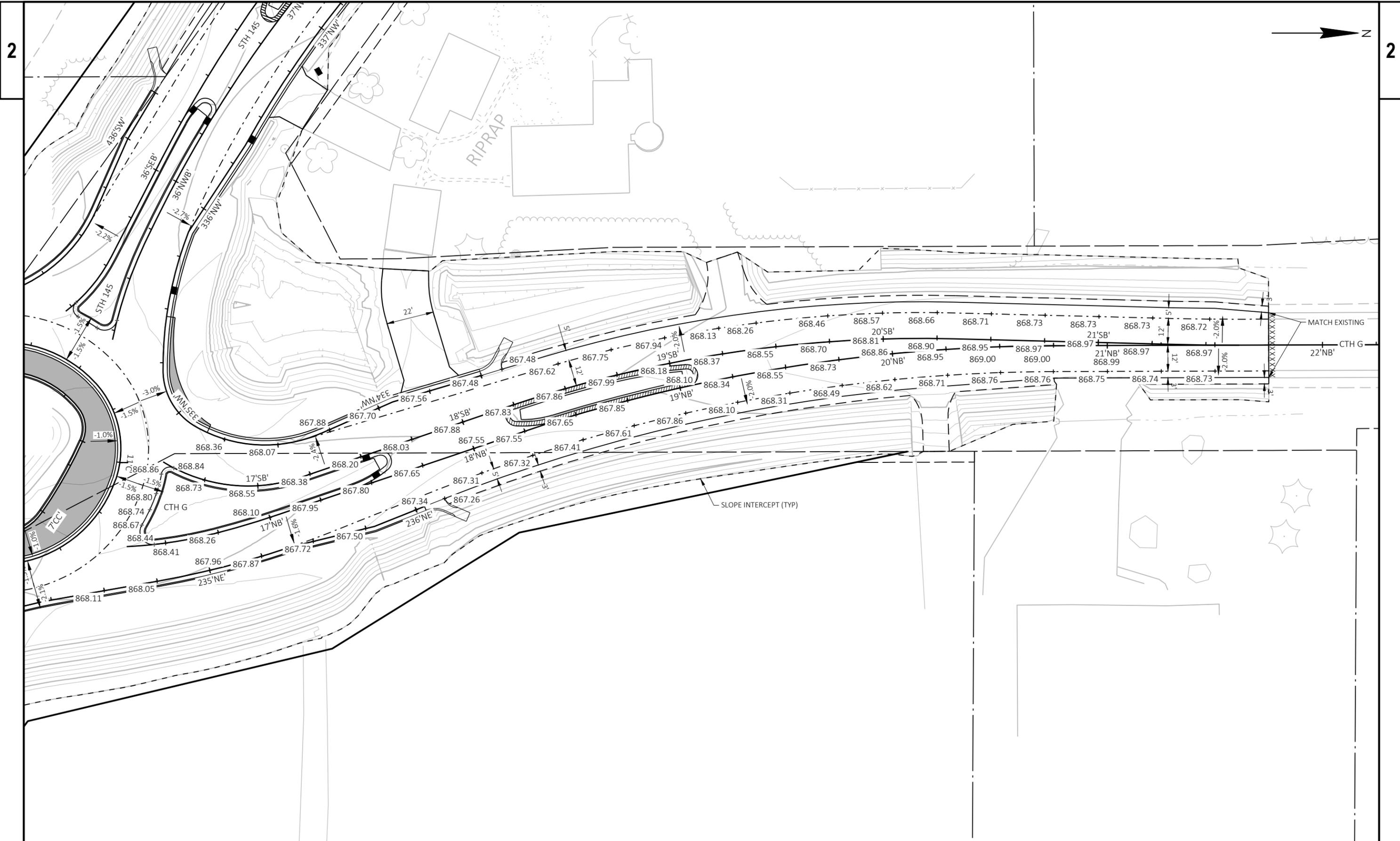
COUNTY: WASHINGTON

PAVING GRADES

SHEET

25

E



PROJECT NO: 2475-04-71

HWY: STH 145

COUNTY: WASHINGTON

PAVING GRADES

SHEET

27

E

FILE NAME : I:\49\49074100_STH_145_&_CTHG\C3D\SHEETSPLAN\021202-PD (PAVING GRADES).DWG
LAYOUT NAME - 06

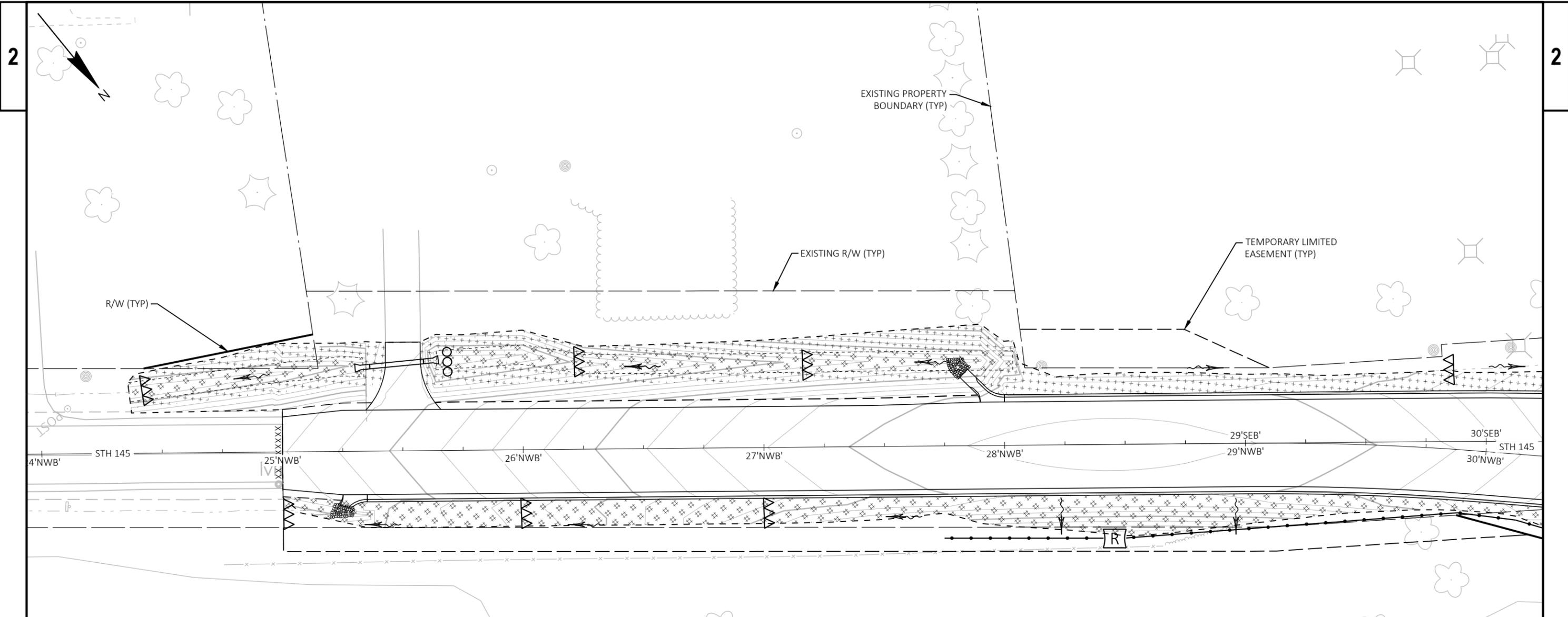
PLOT DATE : 10/24/2025 9:06 AM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

PLOT SCALE : 1 IN=40 FT

WISDOT/CADD SHEET 42



EROSION CONTROL LEGEND

	SLOPE INTERCEPT
	SURFACE WATER FLOW
	SILT FENCE
	EROSION MAT CLASS I, TYPE B
	EROSION MAT CLASS I URBAN, TYPE B
	SEEDING NO MOW FESCUE AND EROSION MAT CLASS I TYPE A
	INLET PROTECTION
	INLET PROTECTION TYPE
	TEMPORARY DITCH CHECK
	CULVERT PIPE CHECK
	RIPRAP LIGHT
	RIPRAP MEDIUM
	SILT FENCE RELIEF

NOTE: ALL AREAS OF EXPOSED SOIL NOT COVERED BY EROSION MAT SHALL BE MULCHED.

PROJECT NO: 2475-04-71

HWY: STH 145

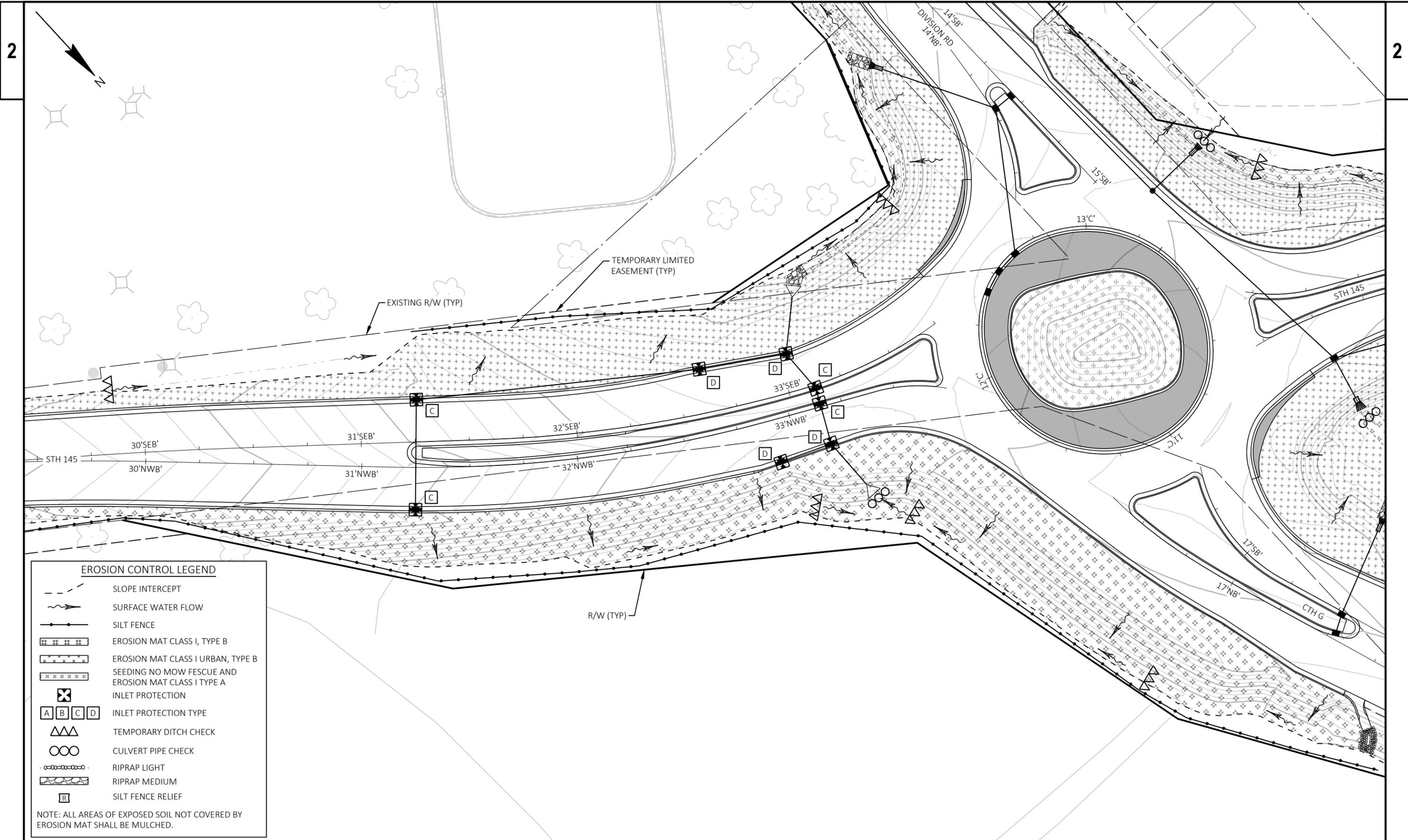
COUNTY: WASHINGTON

EROSION CONTROL

SHEET

28

E



PROJECT NO: 2475-04-71

HWY: STH 145

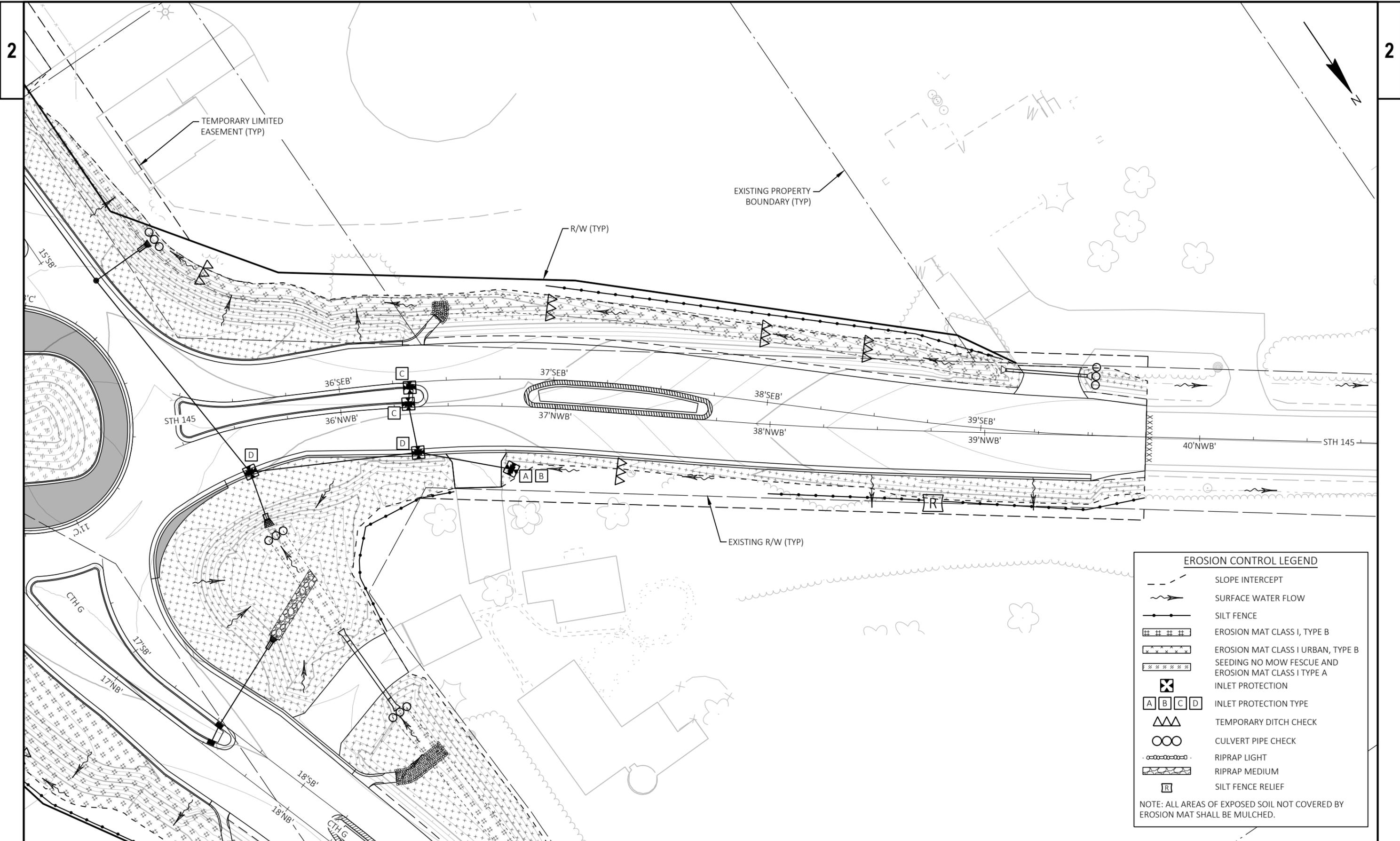
COUNTY: WASHINGTON

EROSION CONTROL

SHEET

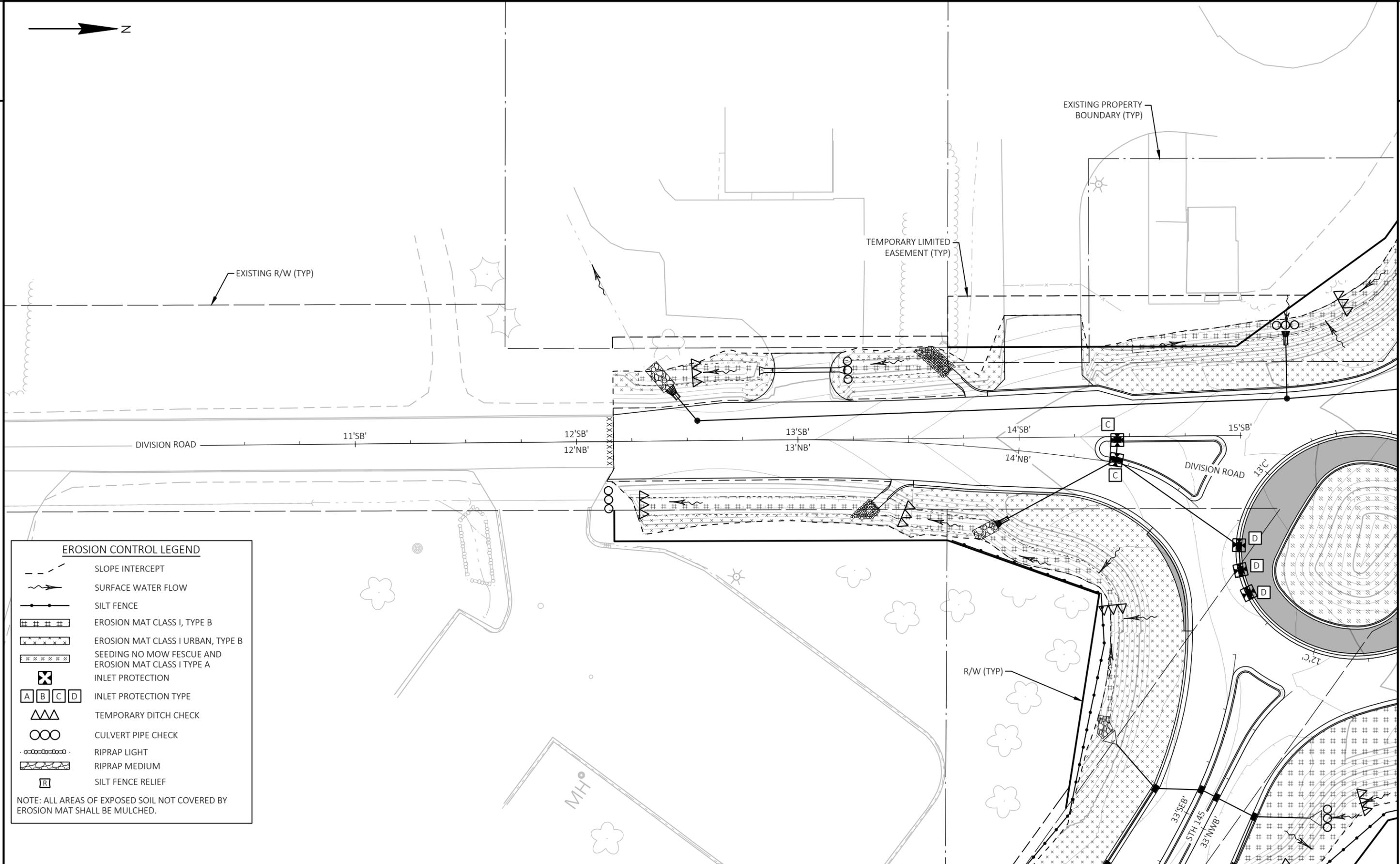
29

E



EROSION CONTROL LEGEND	
	SLOPE INTERCEPT
	SURFACE WATER FLOW
	SILT FENCE
	EROSION MAT CLASS I, TYPE B
	EROSION MAT CLASS I URBAN, TYPE B
	SEEDING NO MOW FESCUE AND EROSION MAT CLASS I TYPE A
	INLET PROTECTION
	INLET PROTECTION TYPE
	TEMPORARY DITCH CHECK
	CULVERT PIPE CHECK
	RIPRAP LIGHT
	RIPRAP MEDIUM
	SILT FENCE RELIEF

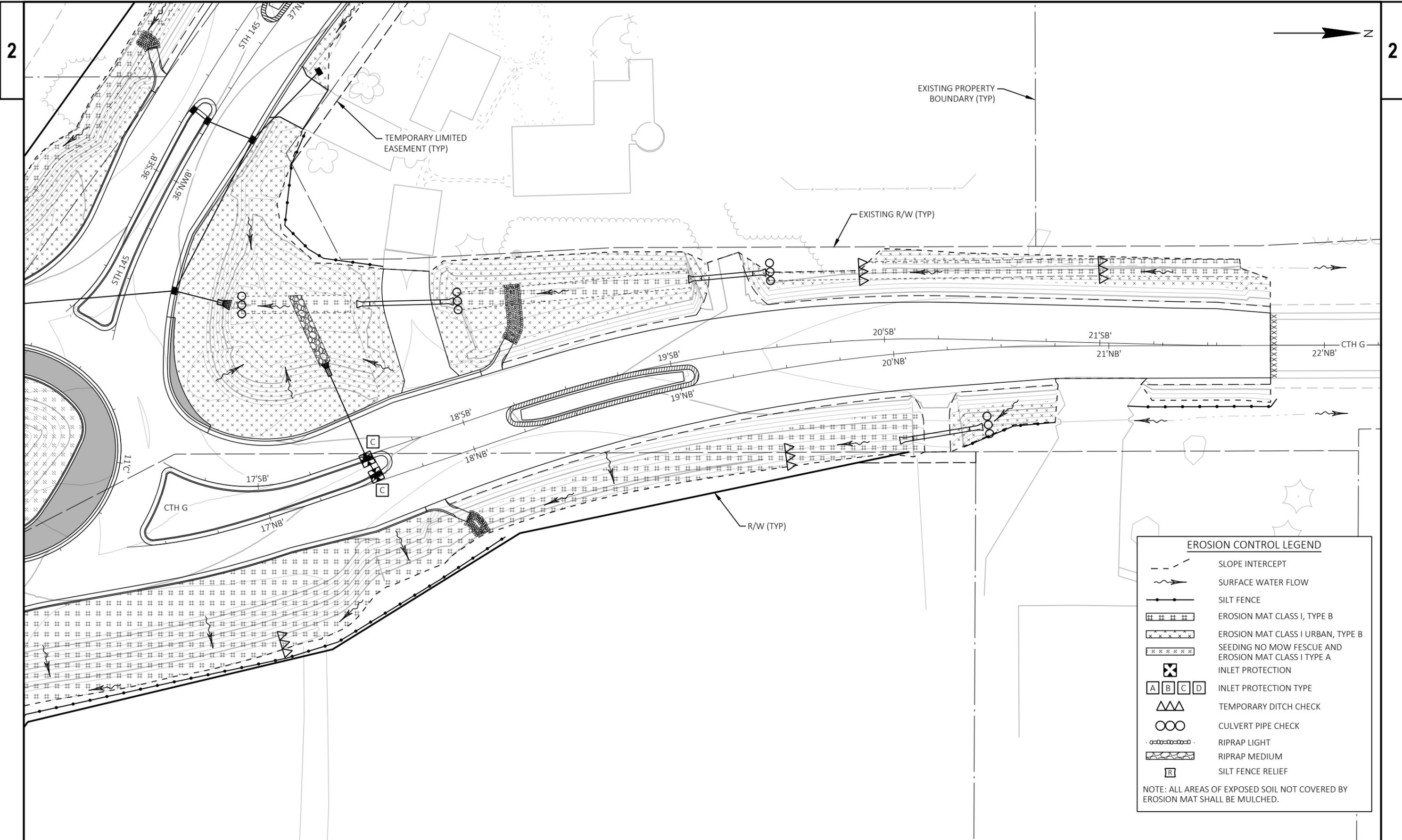
NOTE: ALL AREAS OF EXPOSED SOIL NOT COVERED BY EROSION MAT SHALL BE MULCHED.



EROSION CONTROL LEGEND

- SLOPE INTERCEPT
- SURFACE WATER FLOW
- SILT FENCE
- EROSION MAT CLASS I, TYPE B
- EROSION MAT CLASS I URBAN, TYPE B
- SEEDING NO MOW FESCUE AND EROSION MAT CLASS I TYPE A
- INLET PROTECTION
- INLET PROTECTION TYPE
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- RIPRAP LIGHT
- RIPRAP MEDIUM
- SILT FENCE RELIEF

NOTE: ALL AREAS OF EXPOSED SOIL NOT COVERED BY EROSION MAT SHALL BE MULCHED.



EROSION CONTROL LEGEND	
	SLOPE INTERCEPT
	SURFACE WATER FLOW
	SILT FENCE
	EROSION MAT CLASS I, TYPE B
	EROSION MAT CLASS I URBAN, TYPE B
	SEEDING NO MOW FESCUE AND EROSION MAT CLASS I TYPE A
	INLET PROTECTION
	INLET PROTECTION TYPE
	TEMPORARY DITCH CHECK
	CULVERT PIPE CHECK
	RIPRAP LIGHT
	RIPRAP MEDIUM
	SILT FENCE RELIEF

NOTE: ALL AREAS OF EXPOSED SOIL NOT COVERED BY EROSION MAT SHALL BE MULCHED.

PROJECT NO: 2475-04-71

HWY: STH 145

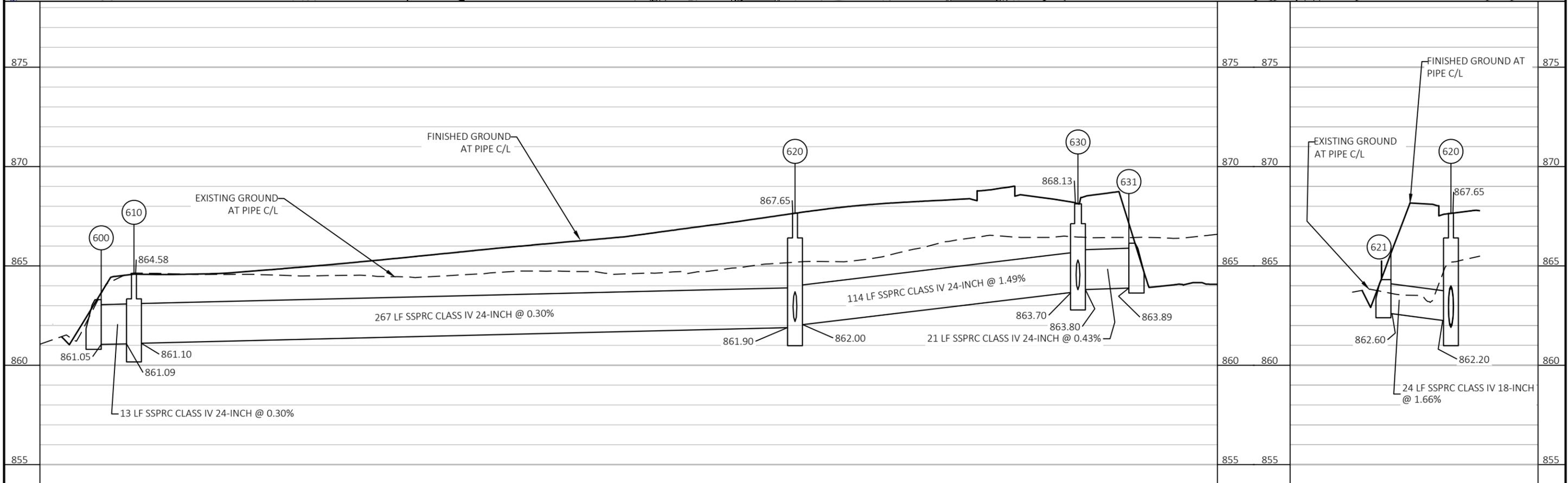
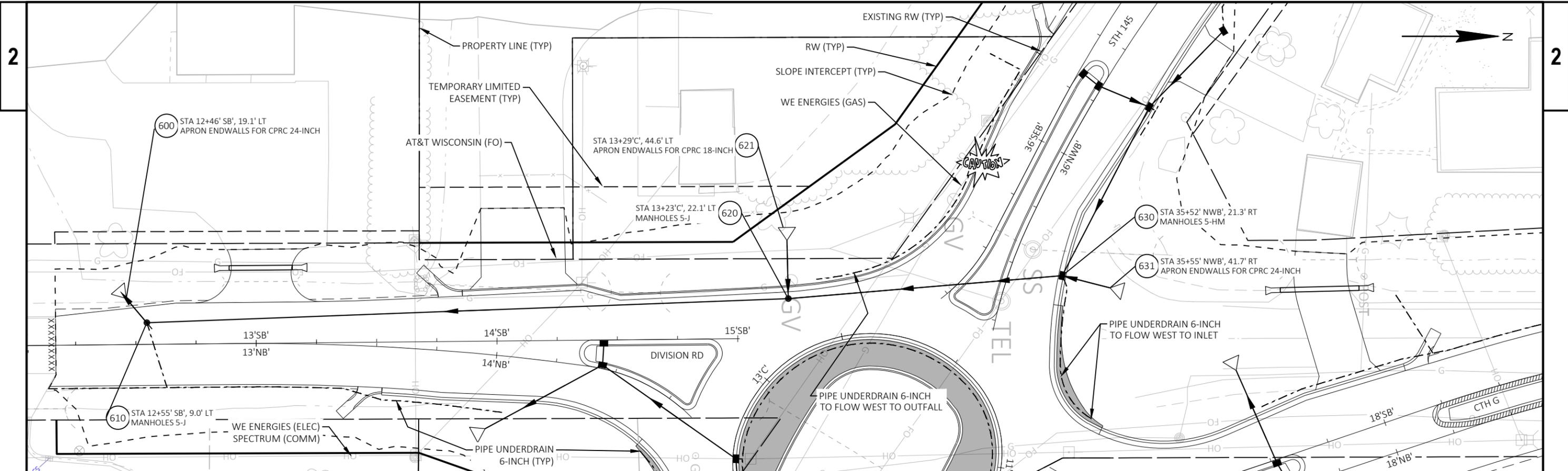
COUNTY: WASHINGTON

EROSION CONTROL

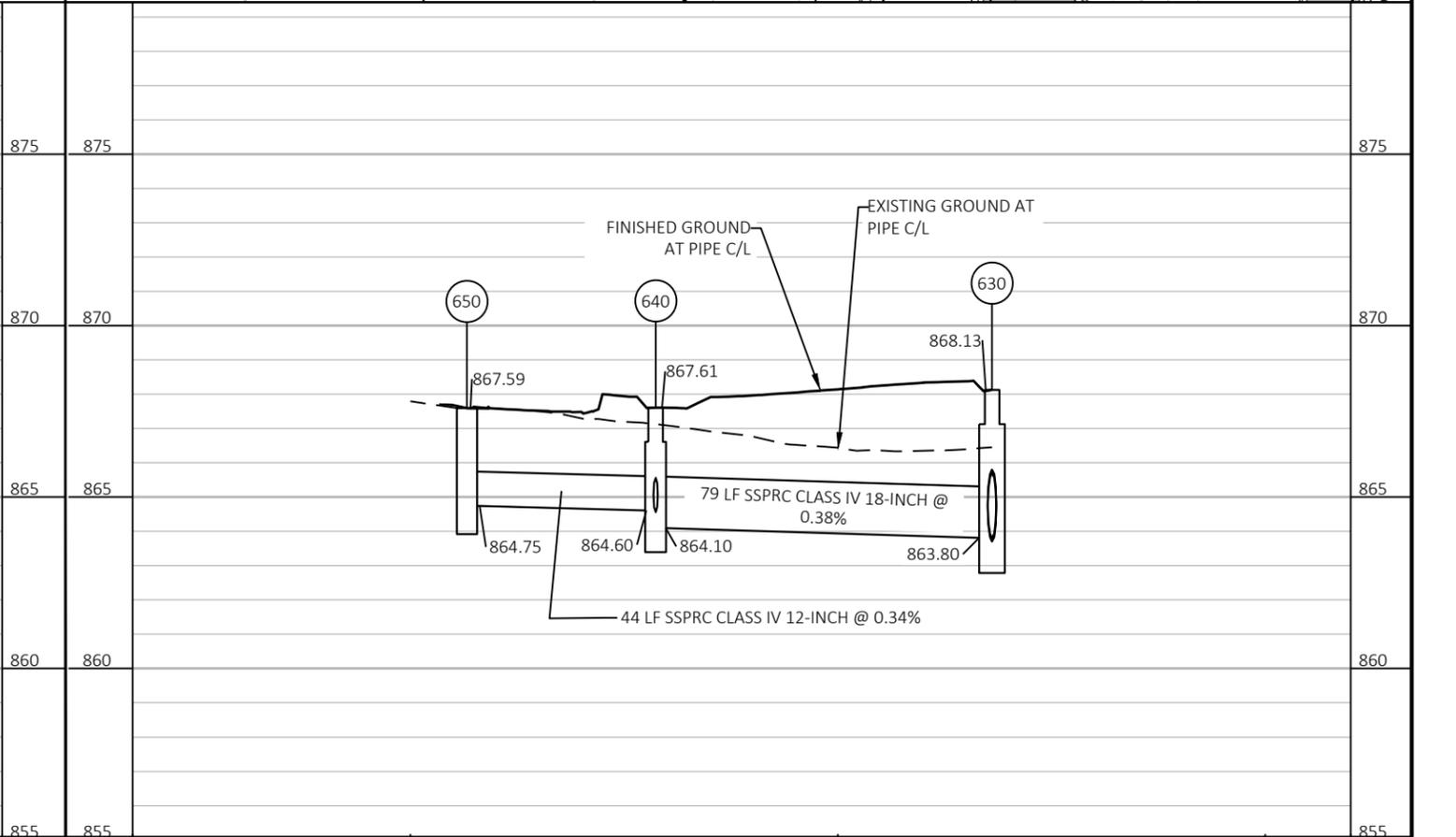
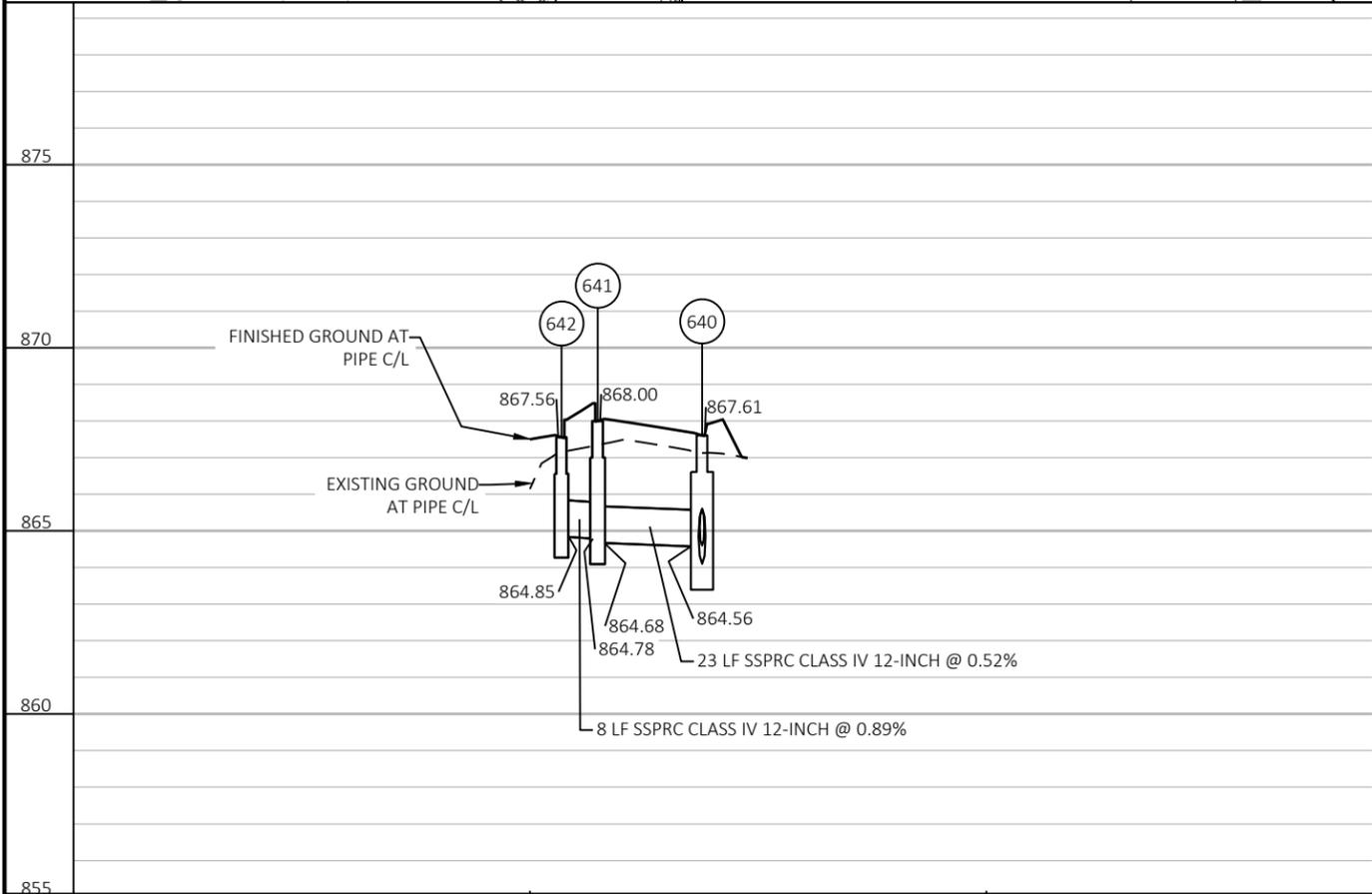
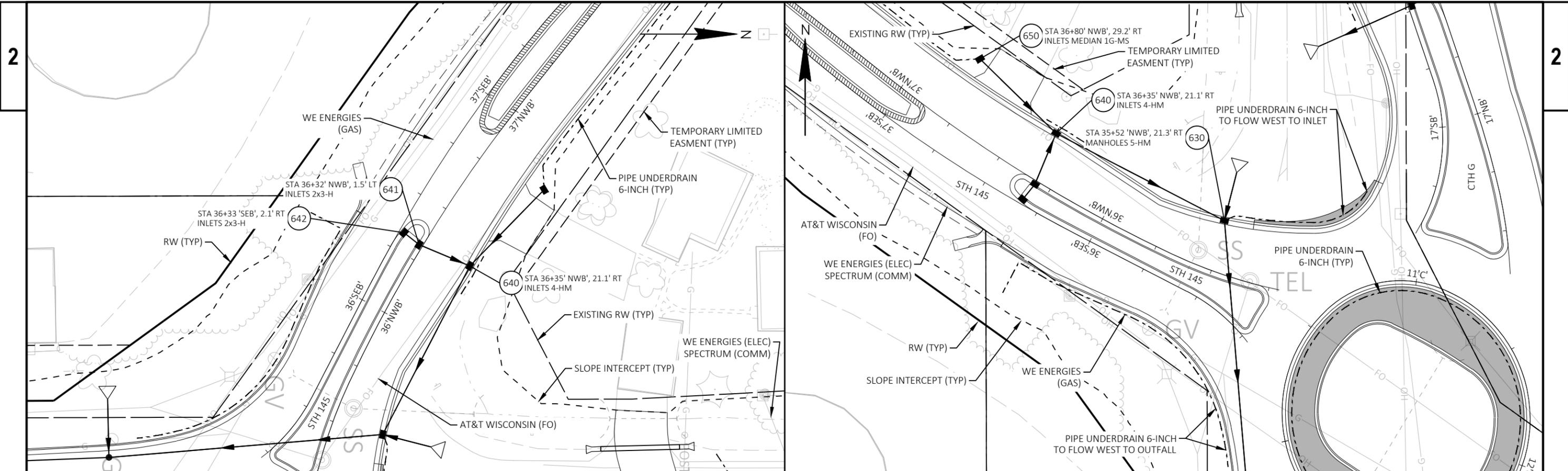
SHEET

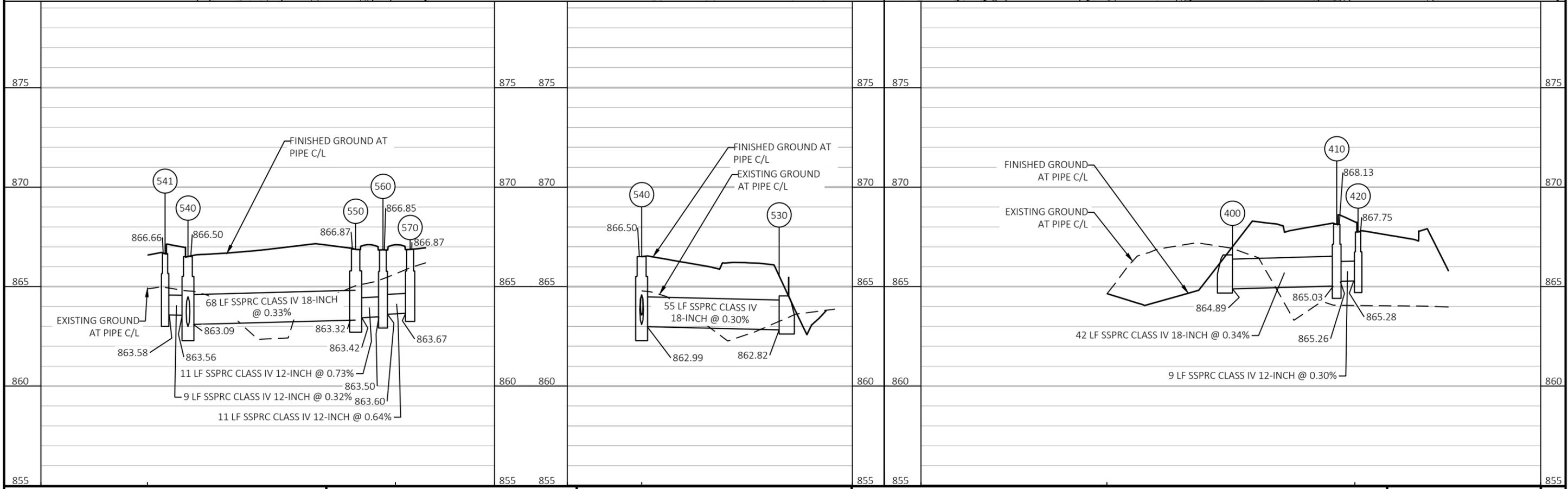
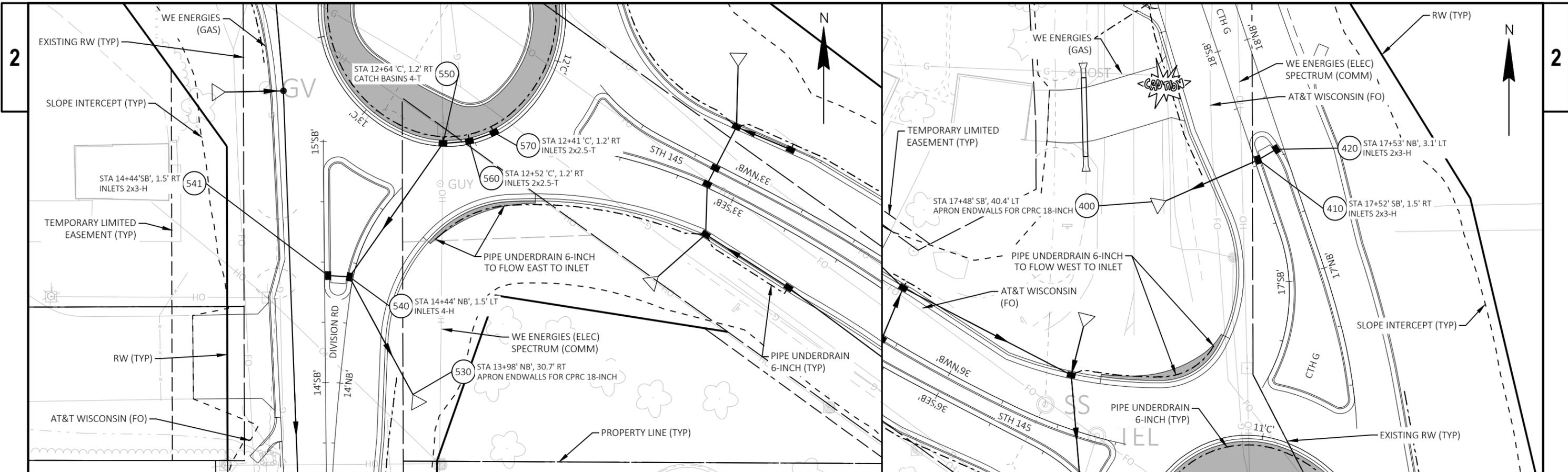
32

E

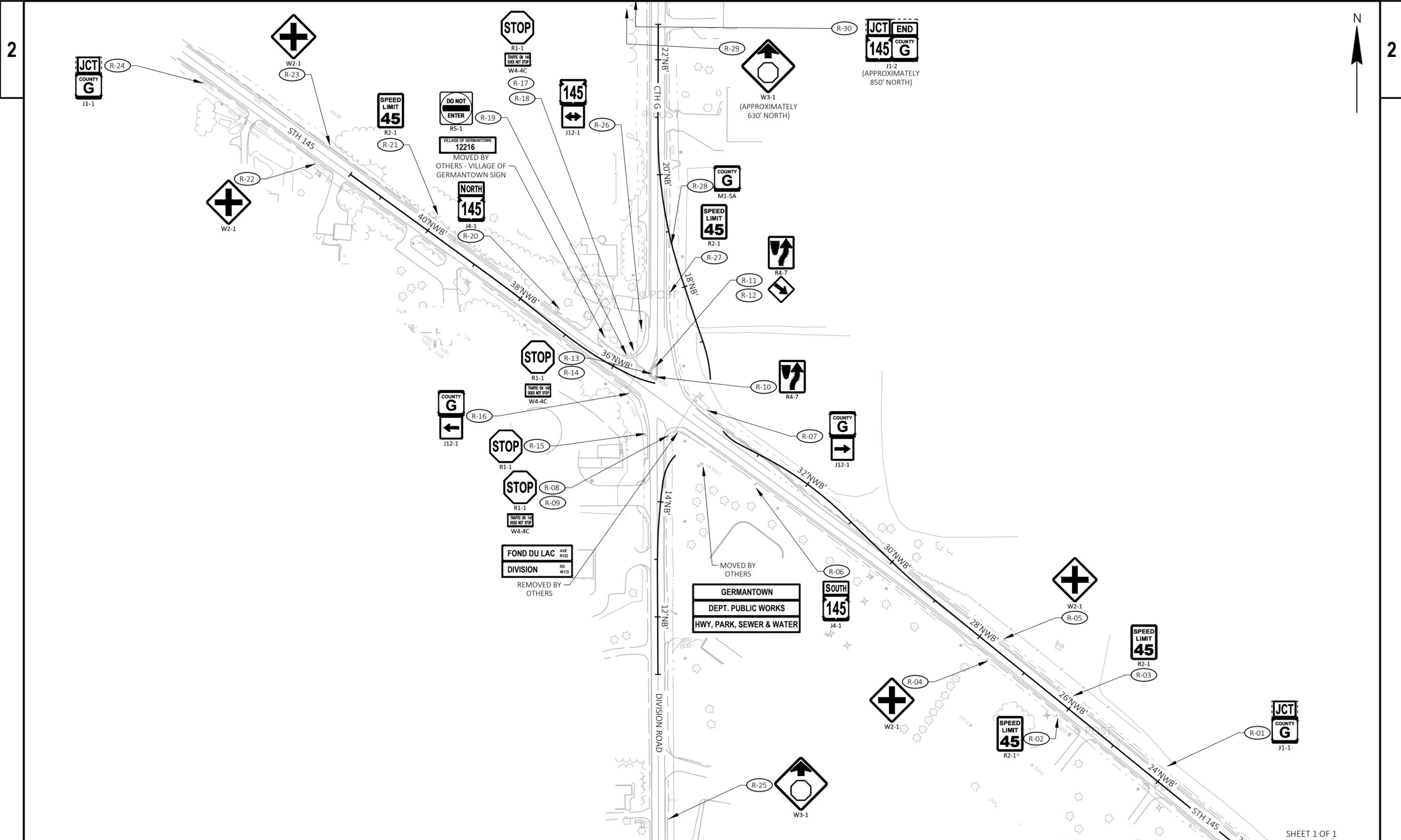


PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	STORM SEWER	SHEET 34	E
------------------------	--------------	--------------------	-------------	----------	---





PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON STORM SEWER SHEET 36 E



SIGNING NOTES

TYPE II ALUMINUM SIGNS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE COUNTY SIGN SHOP. CONTACT THE FOLLOWING INDIVIDUAL AT THE SIGN SHOP FOR DISTRIBUTION COUNTY LOCATION.

SIGNING COORDINATOR	COUNTY(S)	PHONE #
BREE JOHNS-KONKEL	MILWAUKEE, RACINE, OZAUKEE, WASHINGTON	414-750-2814
CHUCK SALDIVAR	KENOSHA, WALWORTH, WAUKESHA	414-750-1682

SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4) THE REGIONAL SIGN SHOP (GENERAL PHONE # 414-266-1164) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

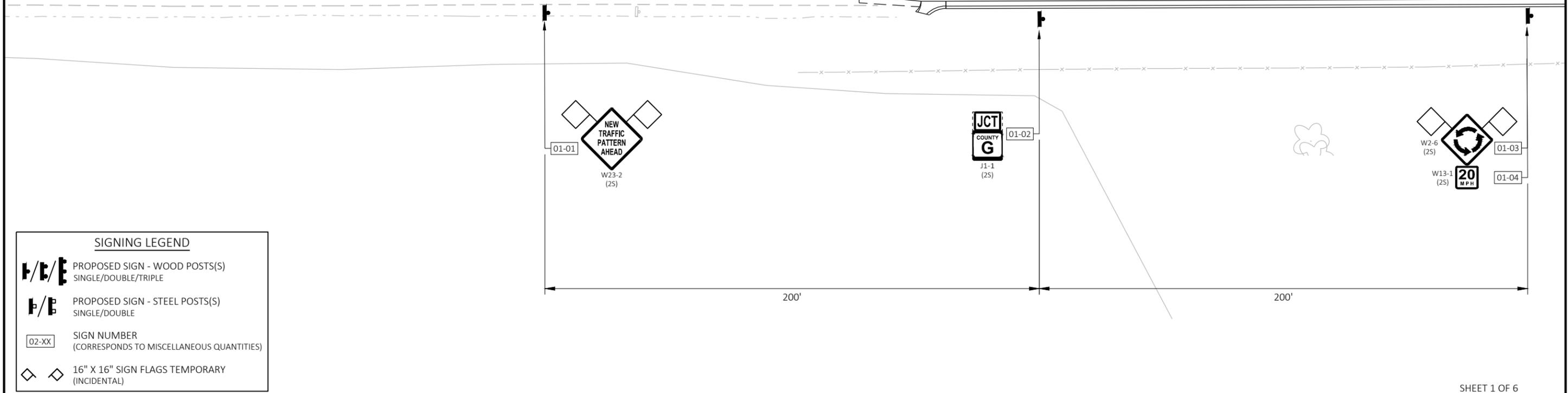
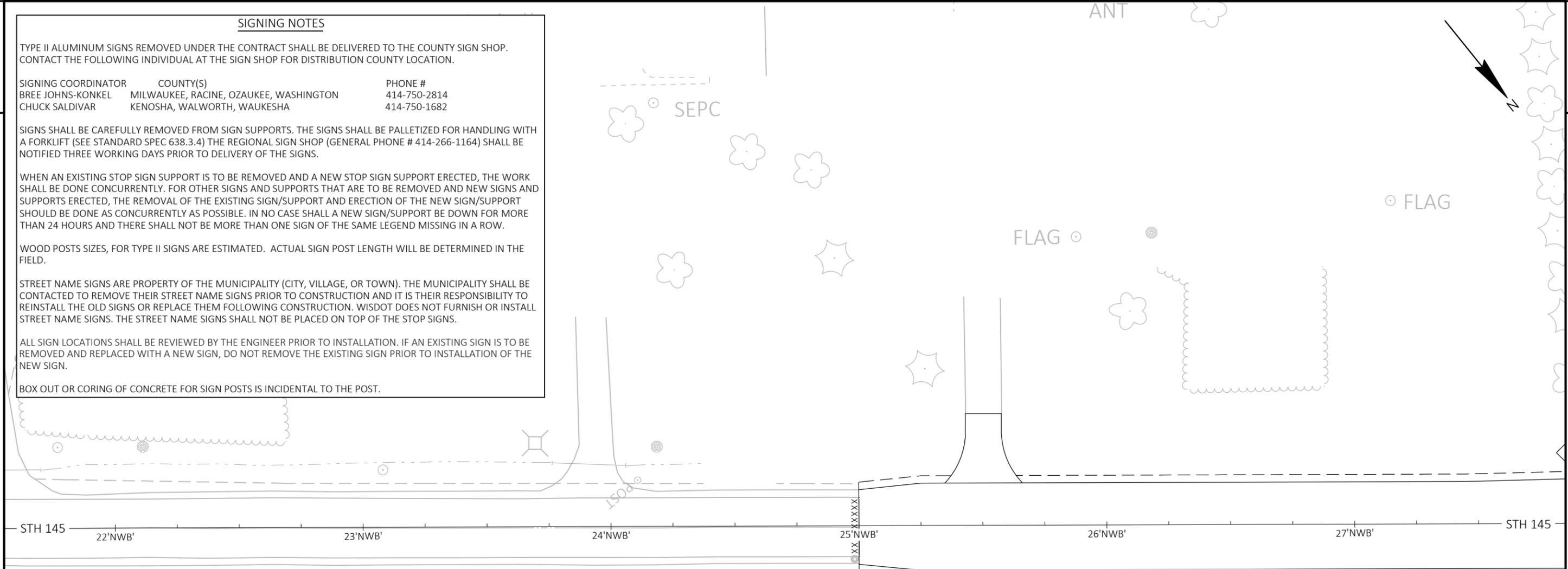
WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A NEW SIGN/SUPPORT BE DOWN FOR MORE THAN 24 HOURS AND THERE SHALL NOT BE MORE THAN ONE SIGN OF THE SAME LEGEND MISSING IN A ROW.

WOOD POSTS SIZES, FOR TYPE II SIGNS ARE ESTIMATED. ACTUAL SIGN POST LENGTH WILL BE DETERMINED IN THE FIELD.

STREET NAME SIGNS ARE PROPERTY OF THE MUNICIPALITY (CITY, VILLAGE, OR TOWN). THE MUNICIPALITY SHALL BE CONTACTED TO REMOVE THEIR STREET NAME SIGNS PRIOR TO CONSTRUCTION AND IT IS THEIR RESPONSIBILITY TO REINSTALL THE OLD SIGNS OR REPLACE THEM FOLLOWING CONSTRUCTION. WISDOT DOES NOT FURNISH OR INSTALL STREET NAME SIGNS. THE STREET NAME SIGNS SHALL NOT BE PLACED ON TOP OF THE STOP SIGNS.

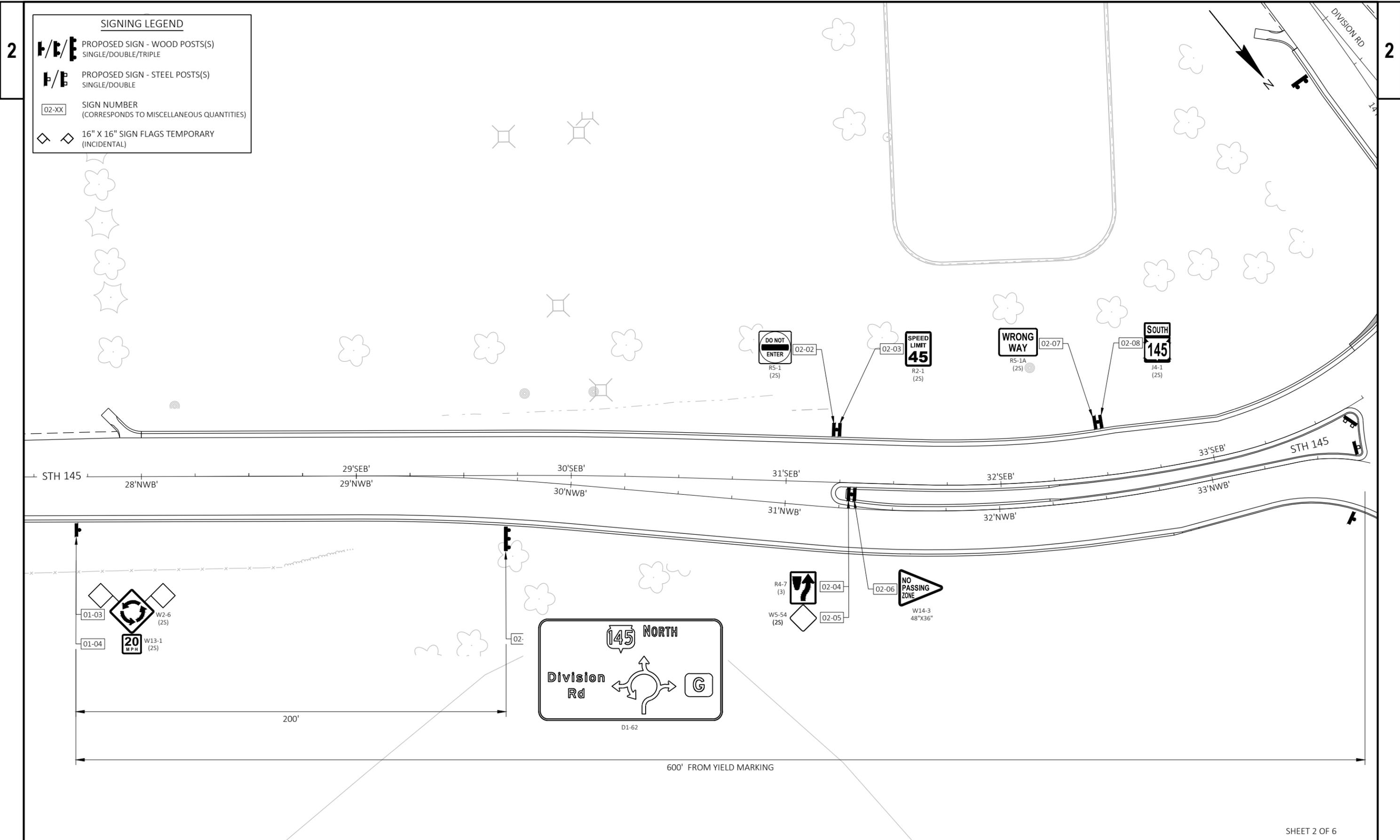
ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION. IF AN EXISTING SIGN IS TO BE REMOVED AND REPLACED WITH A NEW SIGN, DO NOT REMOVE THE EXISTING SIGN PRIOR TO INSTALLATION OF THE NEW SIGN.

BOX OUT OR CORING OF CONCRETE FOR SIGN POSTS IS INCIDENTAL TO THE POST.



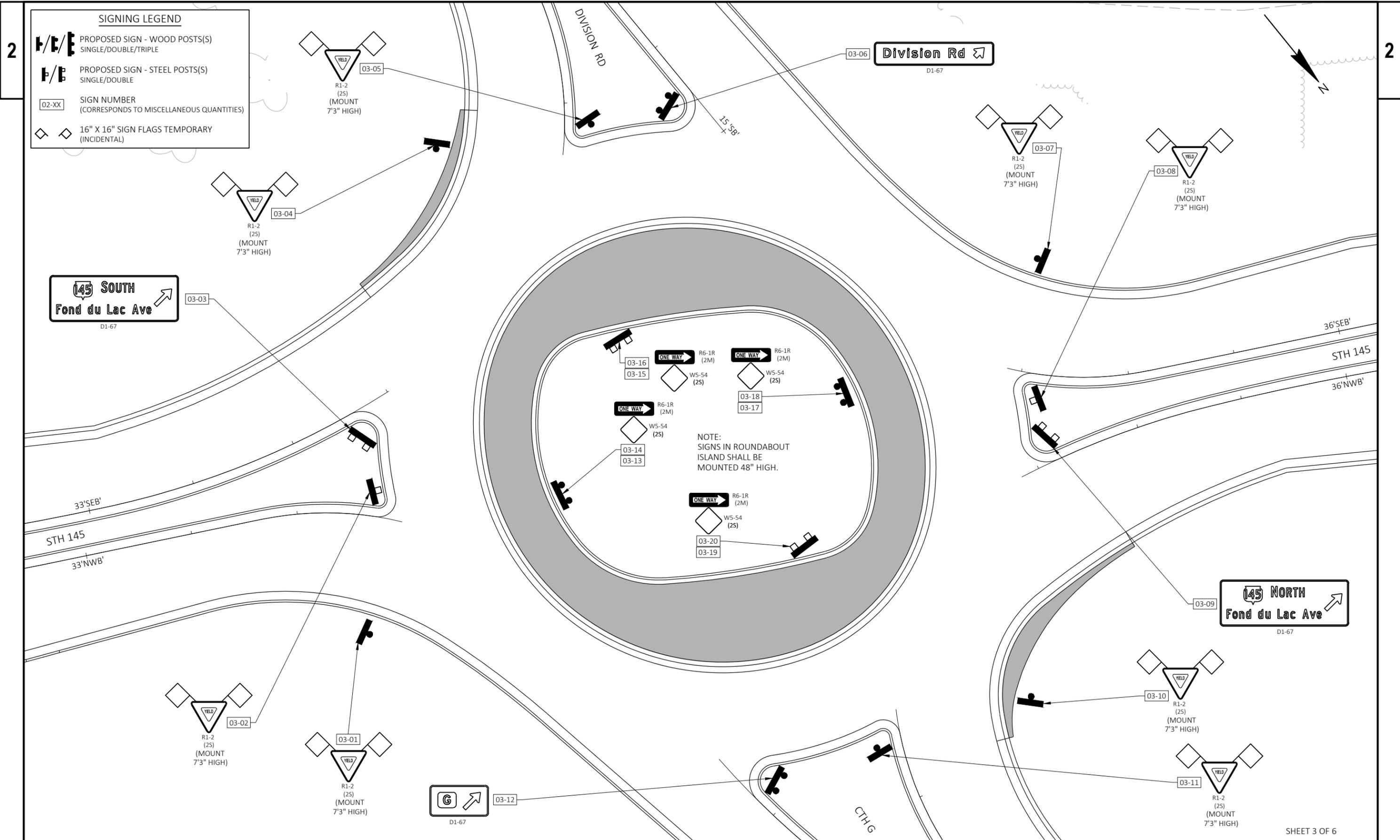
SIGNING LEGEND

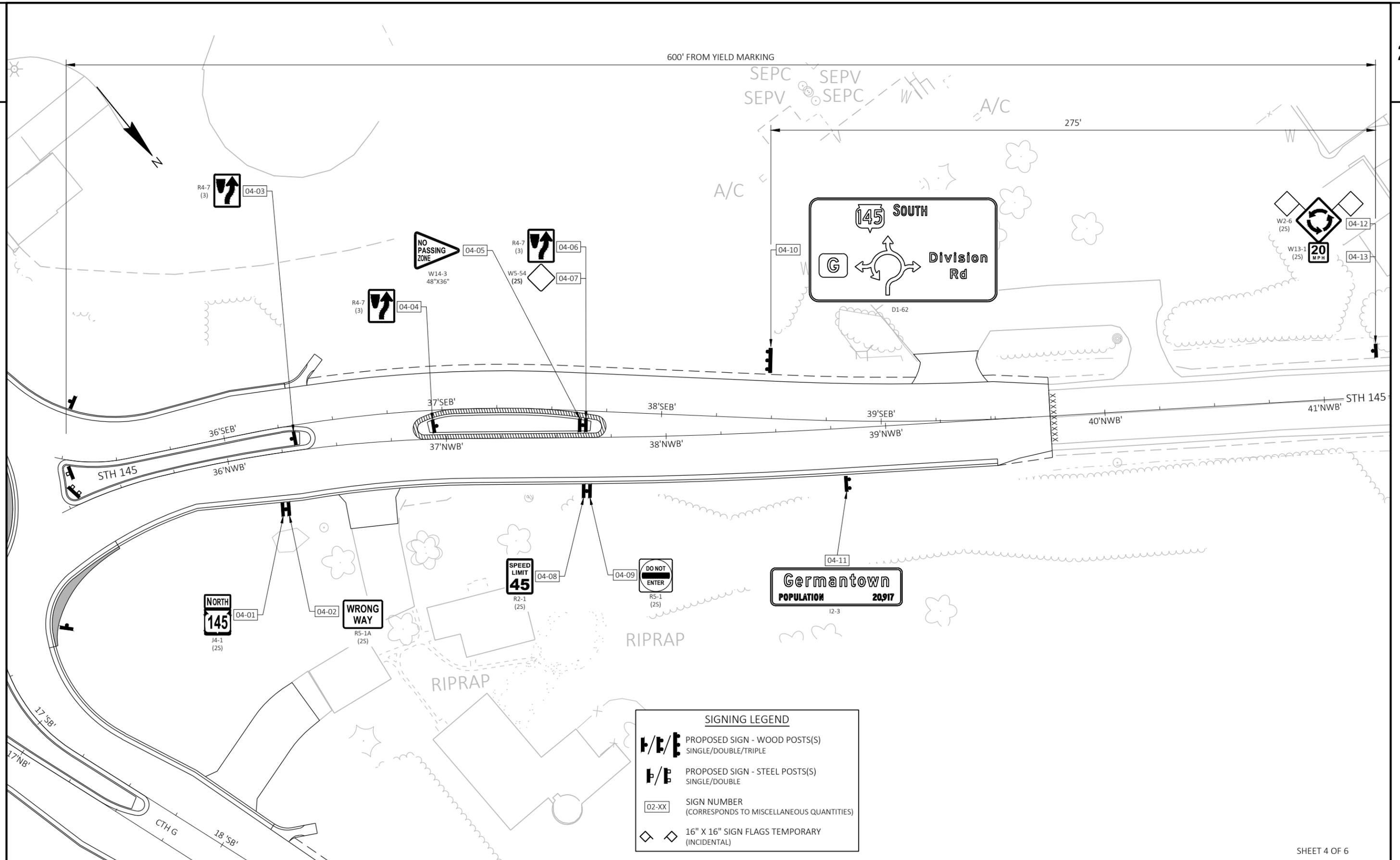
- PROPOSED SIGN - WOOD POSTS(S)
SINGLE/DOUBLE/TRIPLE
- PROPOSED SIGN - STEEL POSTS(S)
SINGLE/DOUBLE
- SIGN NUMBER
(CORRESPONDS TO MISCELLANEOUS QUANTITIES)
- 16" X 16" SIGN FLAGS TEMPORARY
(INCIDENTAL)



SIGNING LEGEND

	PROPOSED SIGN - WOOD POSTS(S) SINGLE/DOUBLE/TRIPLE
	PROPOSED SIGN - STEEL POSTS(S) SINGLE/DOUBLE
	SIGN NUMBER (CORRESPONDS TO MISCELLANEOUS QUANTITIES)
	16" X 16" SIGN FLAGS TEMPORARY (INCIDENTAL)

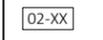


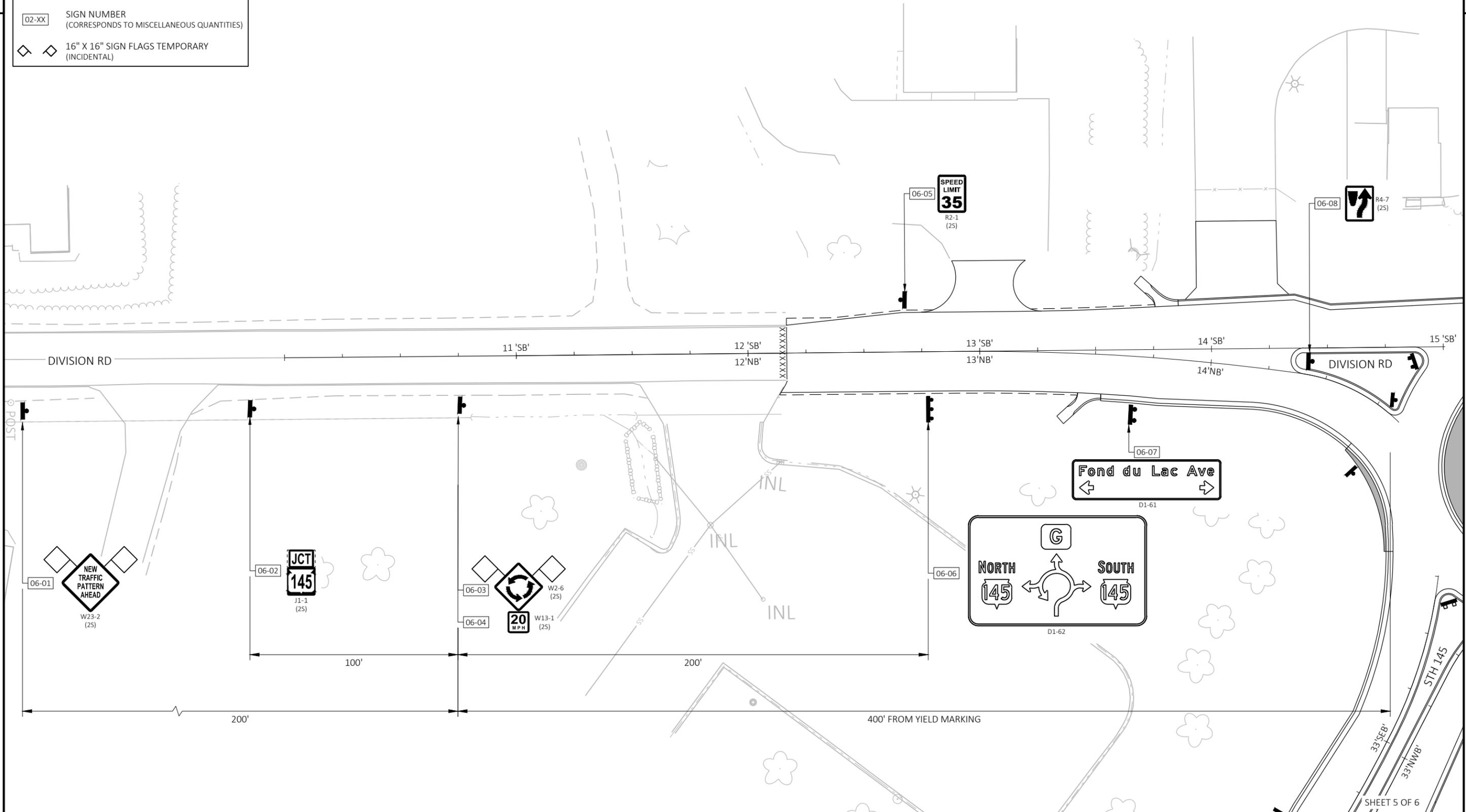


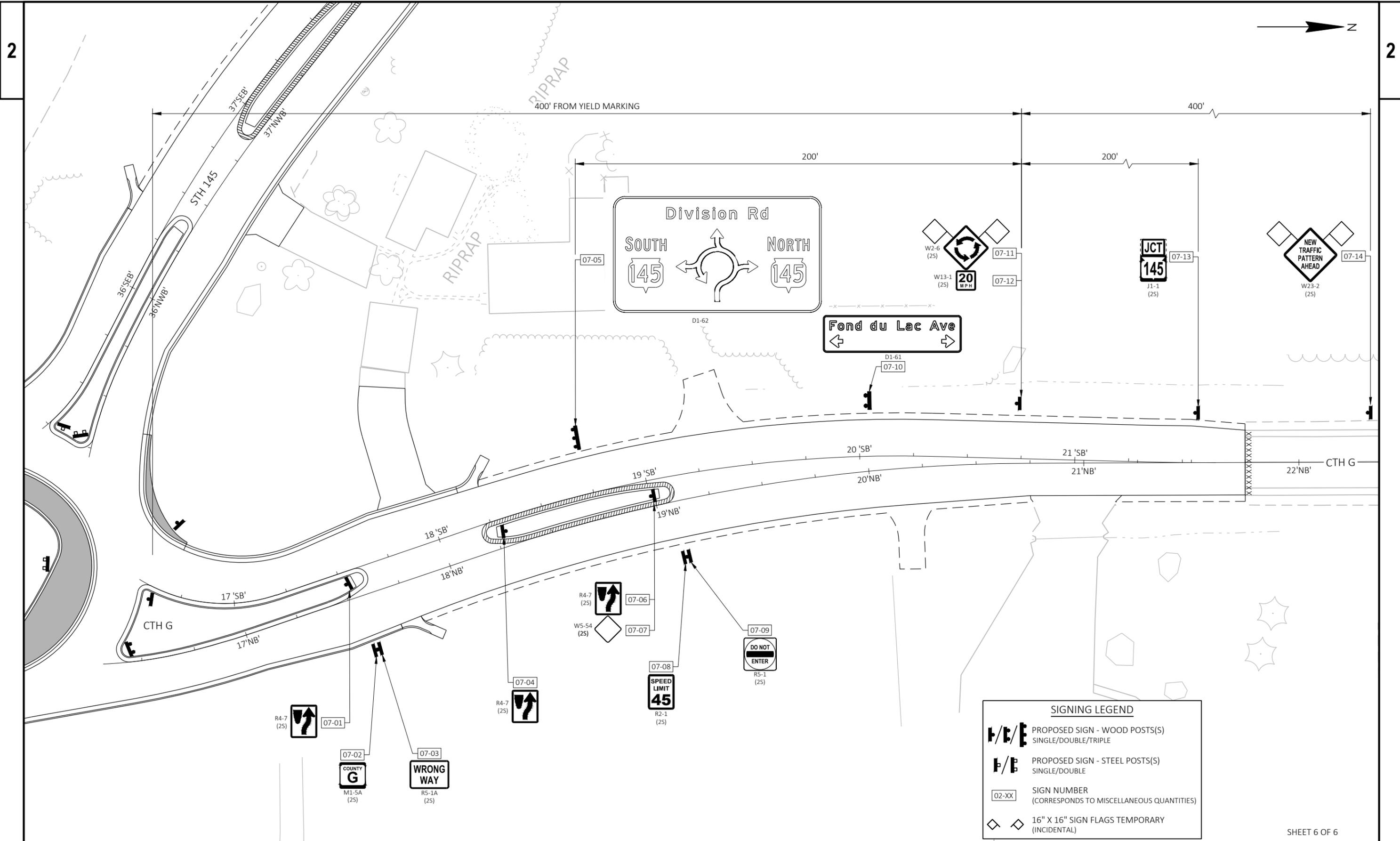
SIGNING LEGEND

- F/E/E** PROPOSED SIGN - WOOD POSTS(S)
SINGLE/DOUBLE/TRIPLE
- F/E** PROPOSED SIGN - STEEL POSTS(S)
SINGLE/DOUBLE
- 02-XX** SIGN NUMBER
(CORRESPONDS TO MISCELLANEOUS QUANTITIES)
- ◇ ◇** 16" X 16" SIGN FLAGS TEMPORARY
(INCIDENTAL)

SIGNING LEGEND

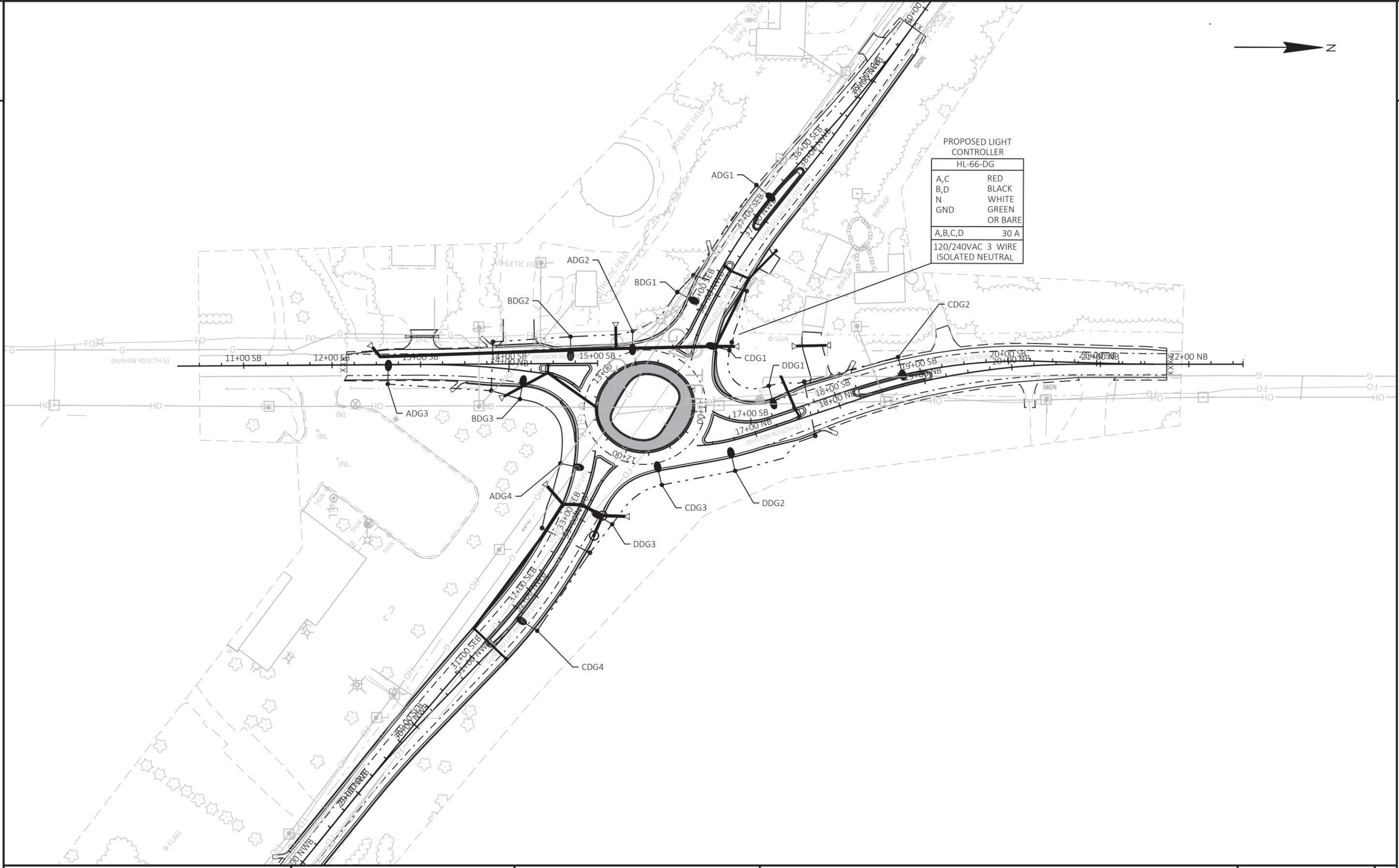
-  PROPOSED SIGN - WOOD POSTS(S)
SINGLE/DOUBLE/TRIPLE
-  PROPOSED SIGN - STEEL POSTS(S)
SINGLE/DOUBLE
-  SIGN NUMBER
(CORRESPONDS TO MISCELLANEOUS QUANTITIES)
-  16" X 16" SIGN FLAGS TEMPORARY
(INCIDENTAL)

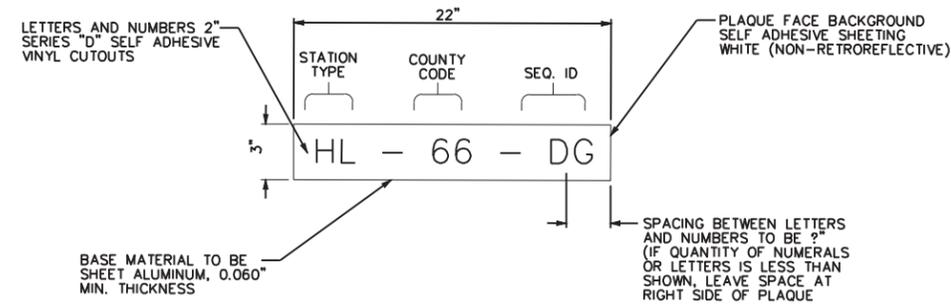




SIGNING LEGEND	
	PROPOSED SIGN - WOOD POSTS(S) SINGLE/DOUBLE/TRIPLE
	PROPOSED SIGN - STEEL POSTS(S) SINGLE/DOUBLE
	SIGN NUMBER (CORRESPONDS TO MISCELLANEOUS QUANTITIES)
	16" X 16" SIGN FLAGS TEMPORARY (INCIDENTAL)

SHEET 6 OF 6





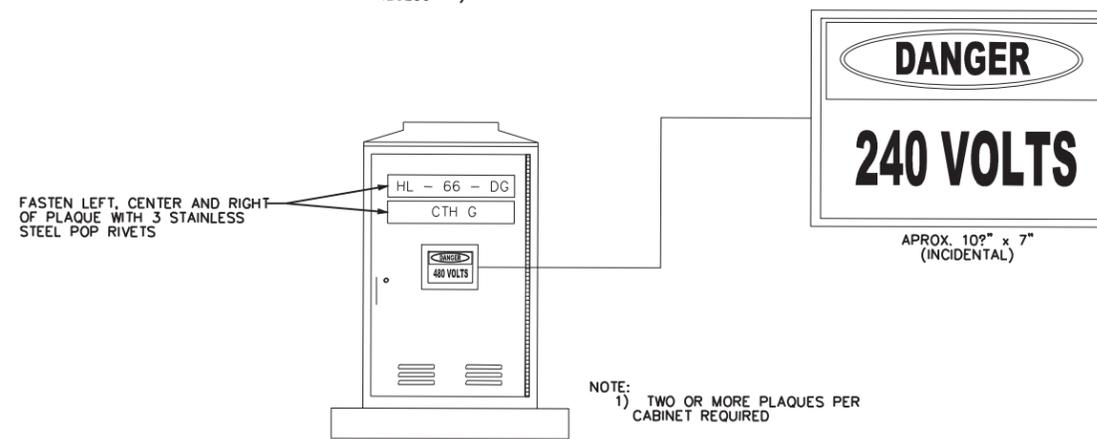
DISTRIBUTION CENTER IDENTIFICATION PLAQUE

STH 145

MNEMONIC
(SEE MISCELLANEOUS QUANTITIES)
(NUMBER OF CHARACTERS VARIES
THIRD PLAQUE MAY BE
NECESSARY)

GENERAL NOTE:

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



DISTRIBUTION CENTER IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS
(TYPICAL ALL CONTROL CABINETS)

GENERAL NOTES

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

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATION SHALL BE AS SHOWN ON THE PLANS.

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

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

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

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

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

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

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

THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

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

- ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2 OF THE STANDARD SPECIFICATIONS.

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

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

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

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

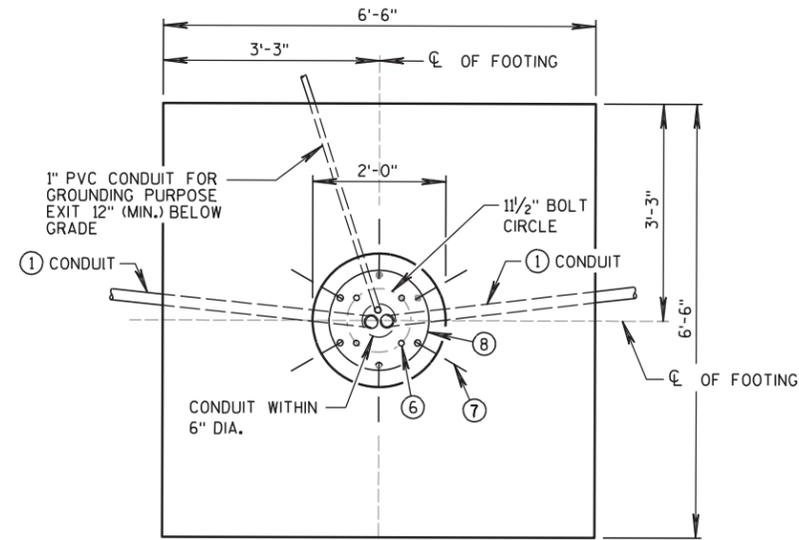
USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

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

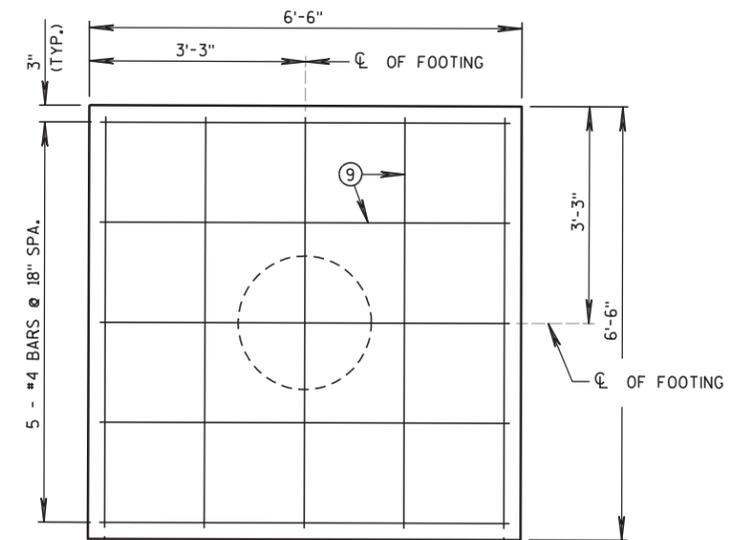
THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

- ① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVEL 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 THE WRITTEN APPROVAL OF THE ENGINEER.
- ⑥ (4) 1" DIA. X 2'-3" ANCHOR RODS. SEE ANCHOR ROD ASSEMBLY DETAIL.
- ⑦ (6) NO.6 X 3'-4" BAR STEEL REINFORCEMENT WITH 1'-0" LEG. SEE BAR BEND DETAIL.
- ⑧ (4) NO.4 X 3'-3" BAR STEEL REINFORCEMENT @ 1'-0" C-C MAX. SEE HOOP DETAIL.
- ⑨ (10) NO.4 X 6'-2" BAR STEEL REINFORCEMENT. SPACE AS SHOWN.

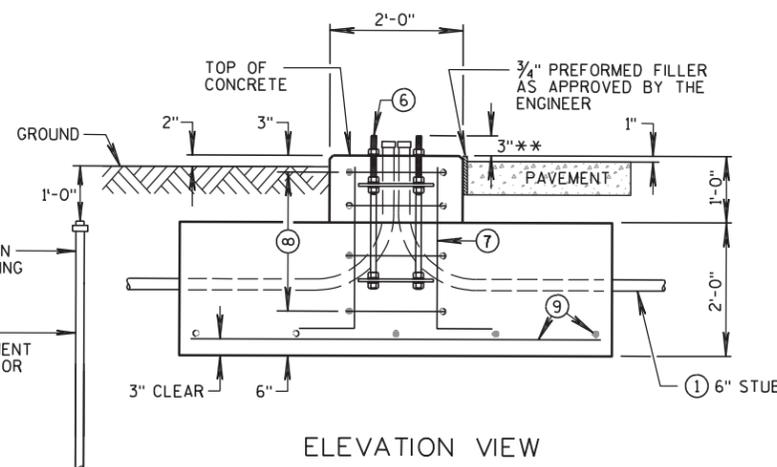
CONCRETE MASONRY _____ $f_c=3,500$ p.s.i.
 HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 _____ $f_y=60,000$ p.s.i.
 TEMPLATES, ASTM A36 GRADE 36 _____ $f_y=36,000$ p.s.i.



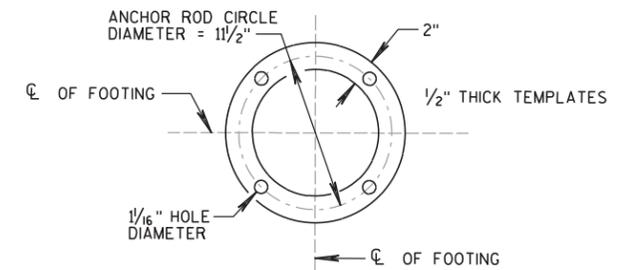
PLAN VIEW



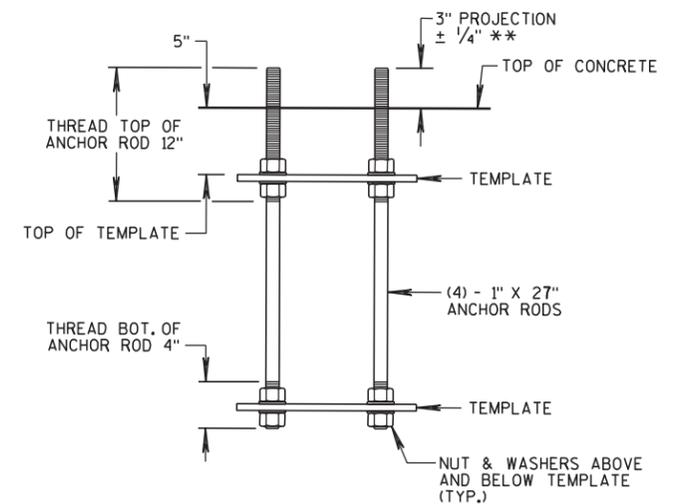
PLAN VIEW - FOOTING REINF.



ELEVATION VIEW



TOP AND BOTTOM TEMPLATES

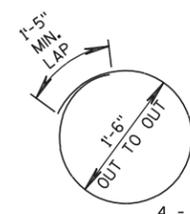


ANCHOR BOLT ASSEMBLY DETAIL

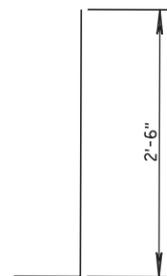
** ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED & REPLACED AT THE CONTRACTOR'S EXPENSE. FOR NON-BREAKAWAY INSTALLATIONS, A 4 1/2" ANCHOR ROD PROJECTION IS REQUIRED, WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

QUANTITY REQUIREMENTS (EA. FOOTING)

CUBIC YARDS OF CONCRETE	3.25
LBS. OF BAR STEEL	80



HOOP DETAIL



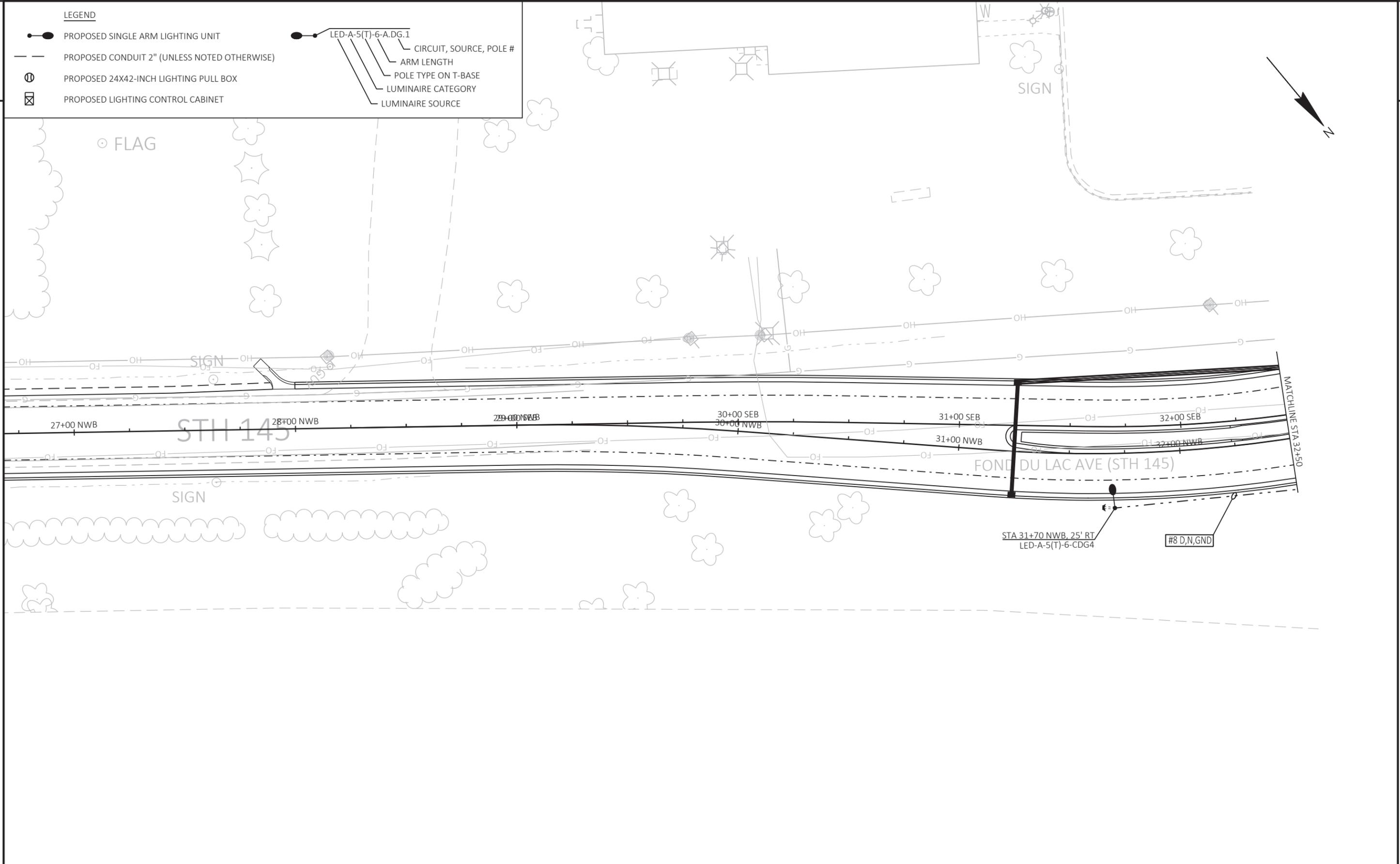
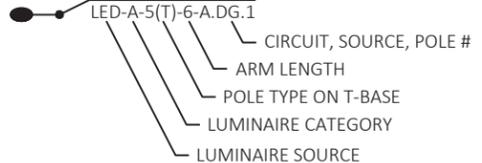
BAR BEND DETAIL

2

2

LEGEND

- PROPOSED SINGLE ARM LIGHTING UNIT
- PROPOSED CONDUIT 2" (UNLESS NOTED OTHERWISE)
- ⊕ PROPOSED 24X42-INCH LIGHTING PULL BOX
- ⊠ PROPOSED LIGHTING CONTROL CABINET



PROJECT NO: 2475-04-01

HWY: STH 145

COUNTY: WASHINGTON

PROPOSED LIGHTING PLAN

SHEET

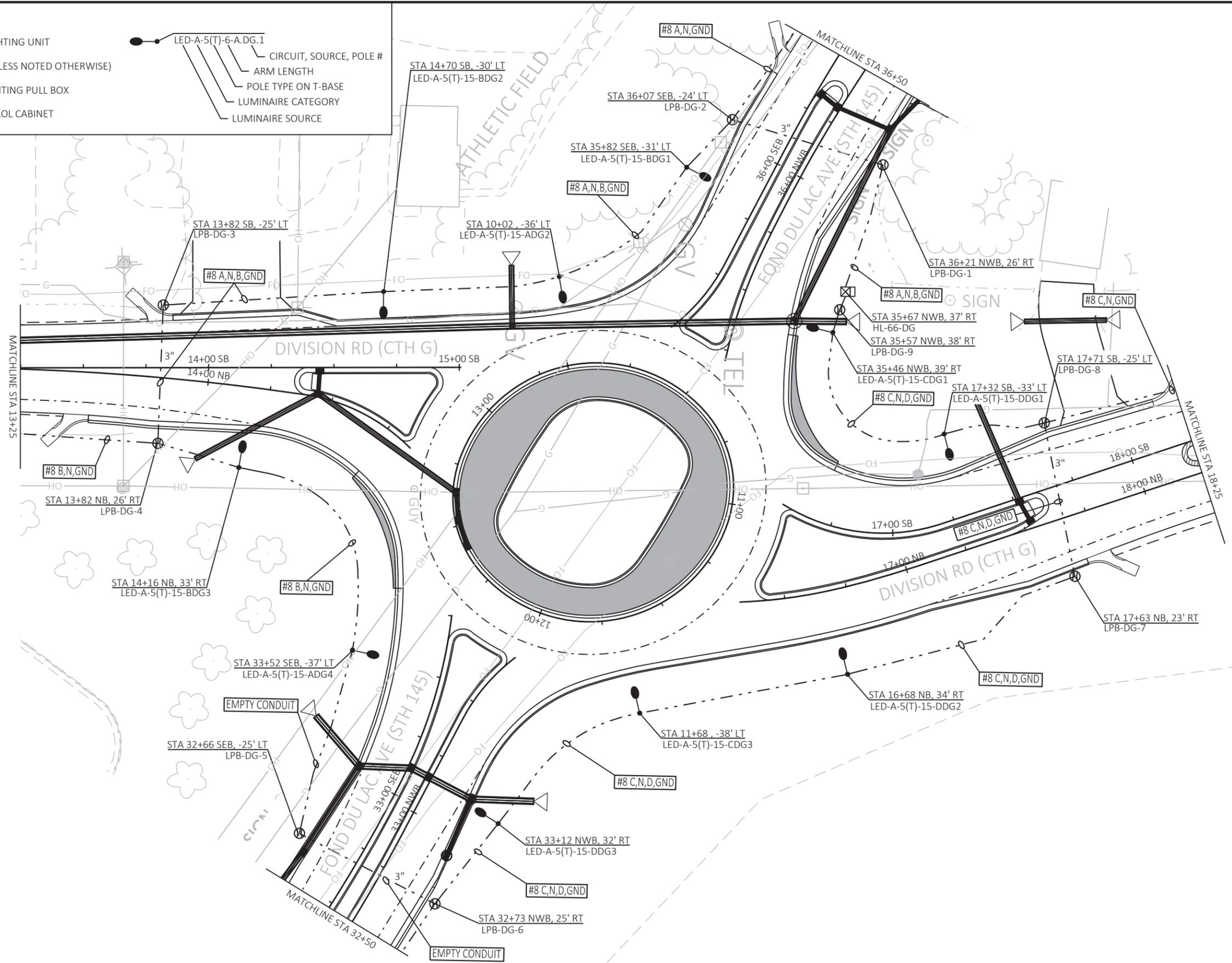
47

E

LEGEND

- PROPOSED SINGLE ARM LIGHTING UNIT
- PROPOSED CONDUIT 2" (UNLESS NOTED OTHERWISE)
- ⊕ PROPOSED 24X42-INCH LIGHTING PULL BOX
- ⊠ PROPOSED LIGHTING CONTROL CABINET

- LED-A-5(T)-6-A.DG.1
- CIRCUIT, SOURCE, POLE #
- ARM LENGTH
- POLE TYPE ON T-BASE
- LUMINAIRE CATEGORY
- LUMINAIRE SOURCE

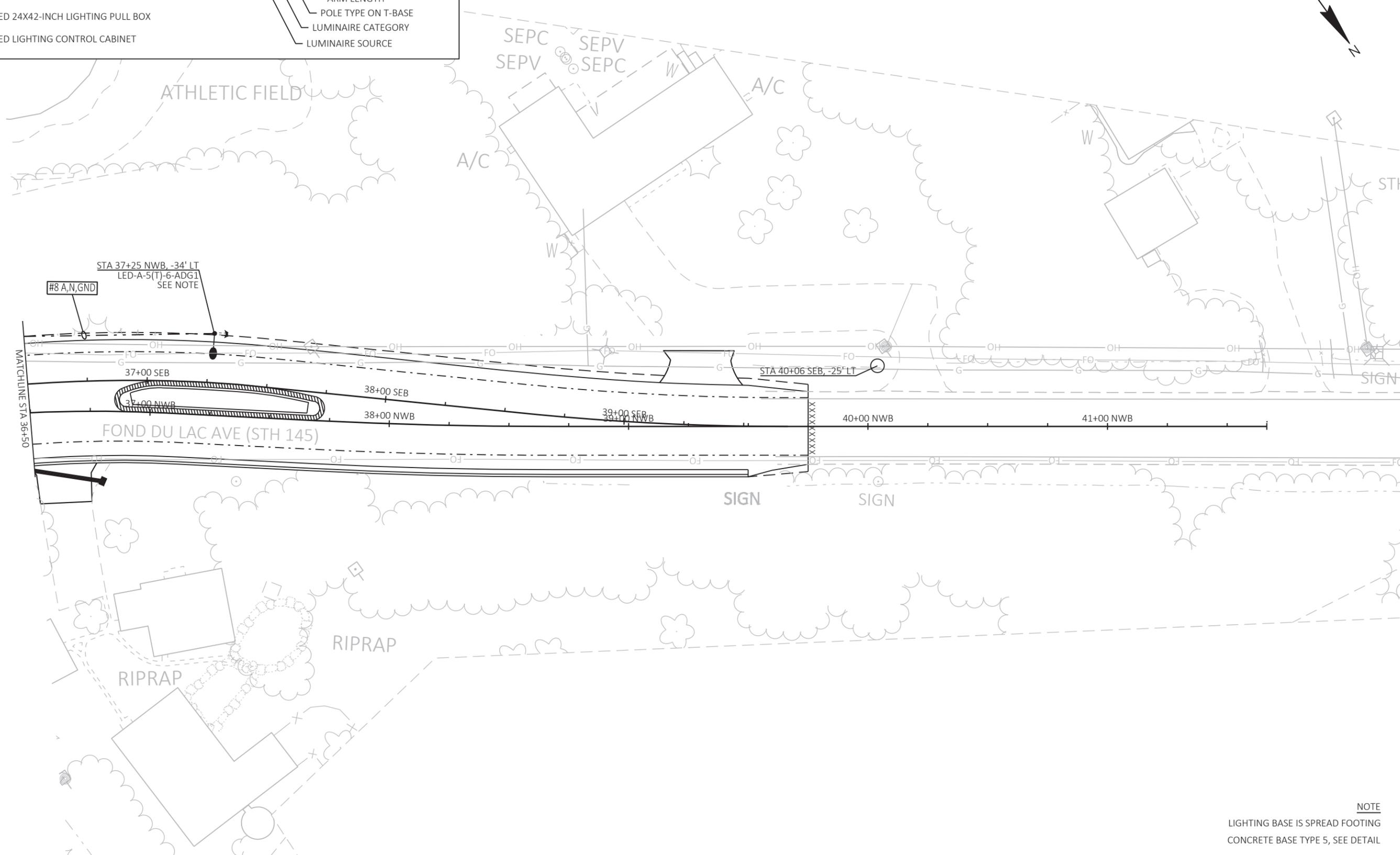


2

2

LEGEND

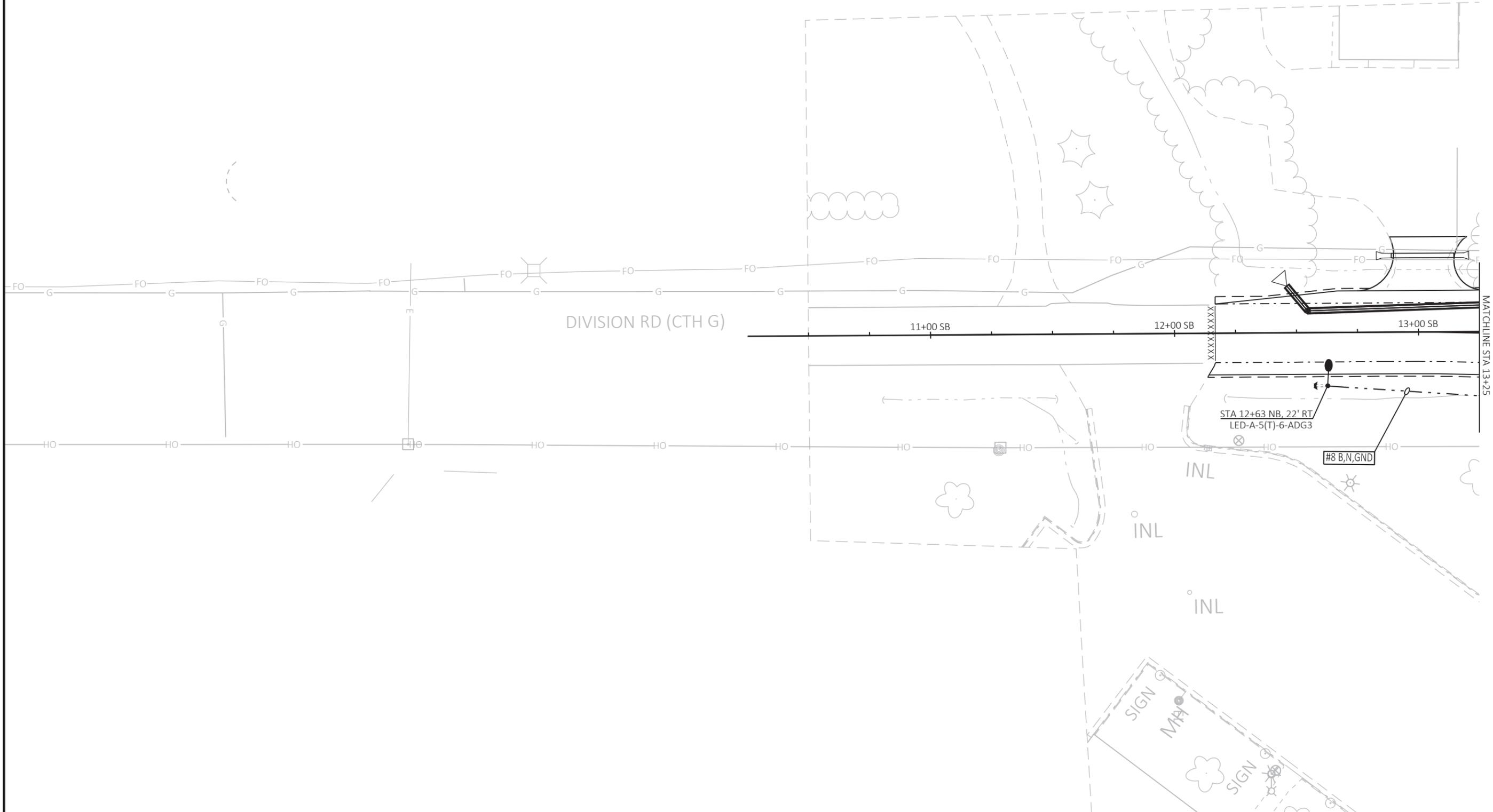
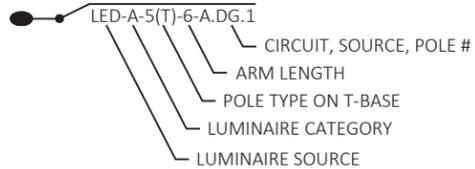
- PROPOSED SINGLE ARM LIGHTING UNIT
- PROPOSED CONDUIT 2" (UNLESS NOTED OTHERWISE)
- ⊕ PROPOSED 24X42-INCH LIGHTING PULL BOX
- ☒ PROPOSED LIGHTING CONTROL CABINET
- LED-A-5(T)-6-A.DG.1
- CIRCUIT, SOURCE, POLE #
- ARM LENGTH
- POLE TYPE ON T-BASE
- LUMINAIRE CATEGORY
- LUMINAIRE SOURCE



NOTE
 LIGHTING BASE IS SPREAD FOOTING
 CONCRETE BASE TYPE 5, SEE DETAIL

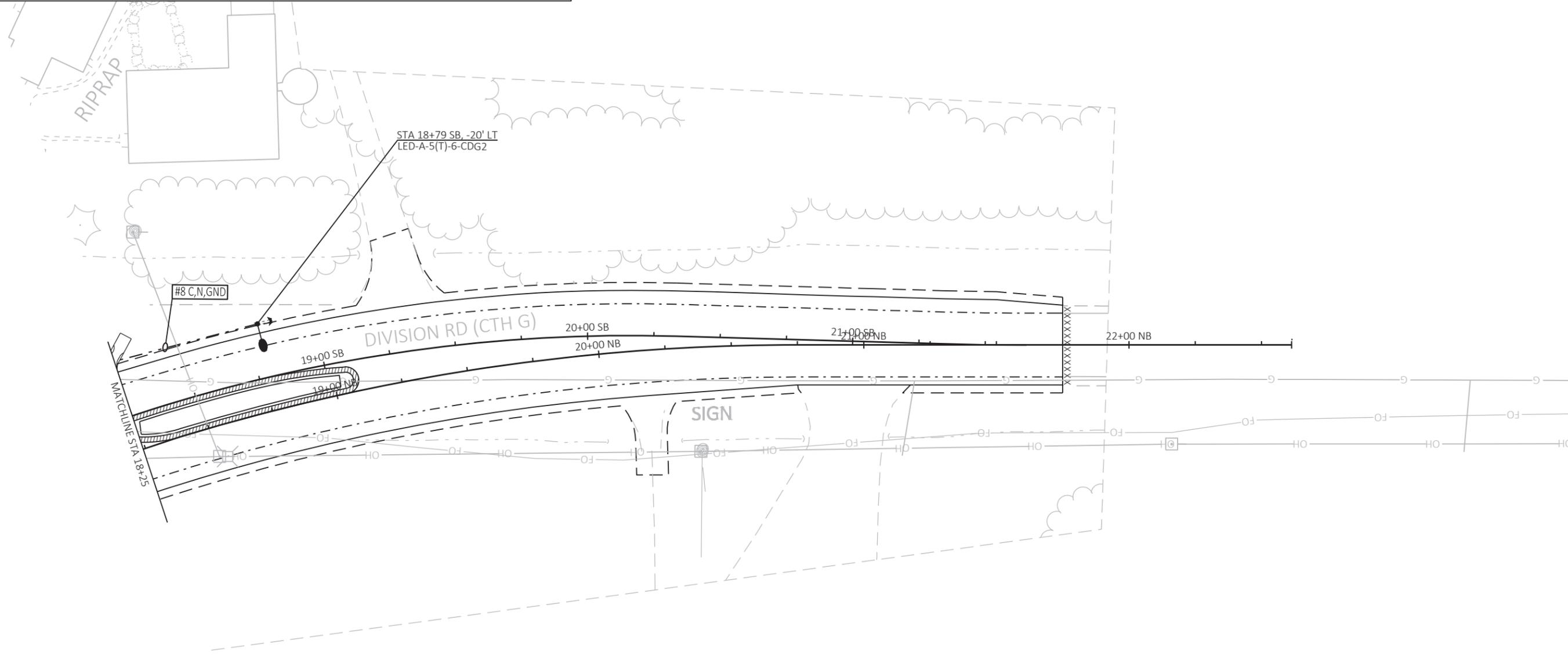
LEGEND

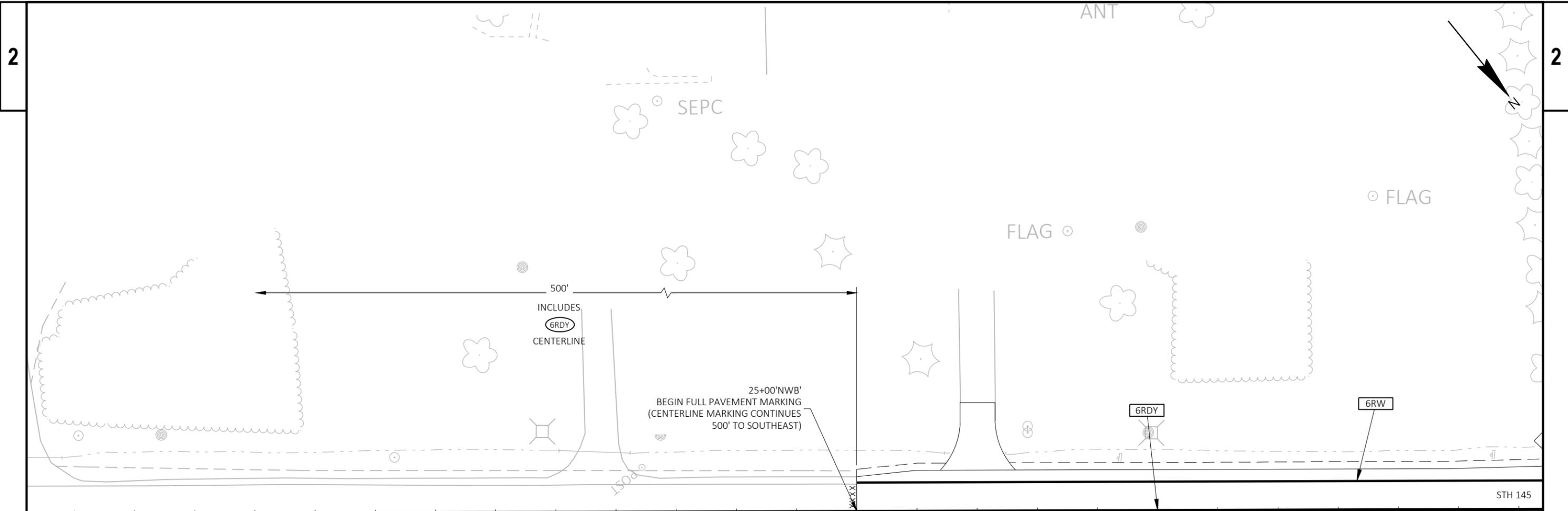
- PROPOSED SINGLE ARM LIGHTING UNIT
- PROPOSED CONDUIT 2" (UNLESS NOTED OTHERWISE)
- ⊕ PROPOSED 24X42-INCH LIGHTING PULL BOX
- ⊠ PROPOSED LIGHTING CONTROL CABINET



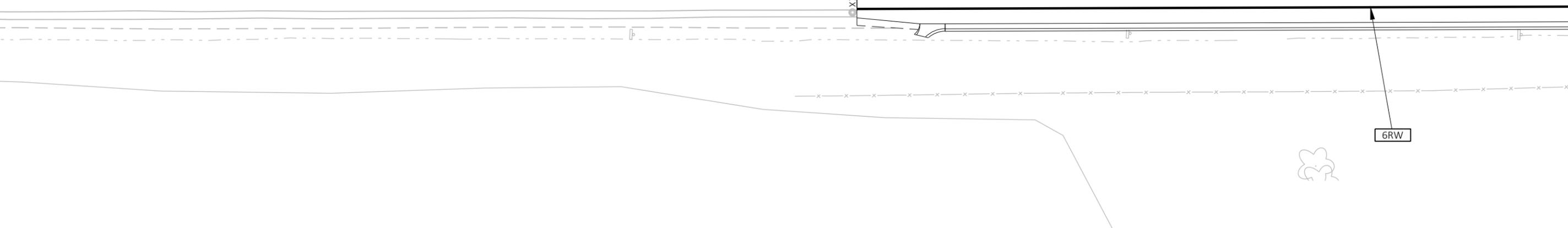
LEGEND

- PROPOSED SINGLE ARM LIGHTING UNIT
 - PROPOSED CONDUIT 2" (UNLESS NOTED OTHERWISE)
 - ⊕ PROPOSED 24X42-INCH LIGHTING PULL BOX
 - ⊠ PROPOSED LIGHTING CONTROL CABINET
-
- LED-A-5(T)-6-A.DG.1 — CIRCUIT, SOURCE, POLE #
 - ARM LENGTH
 - POLE TYPE ON T-BASE
 - LUMINAIRE CATEGORY
 - LUMINAIRE SOURCE





STH 145 22'NWB' 23'NWB' 24'NWB' 25'NWB' 26'NWB' 27'NWB' STH 145

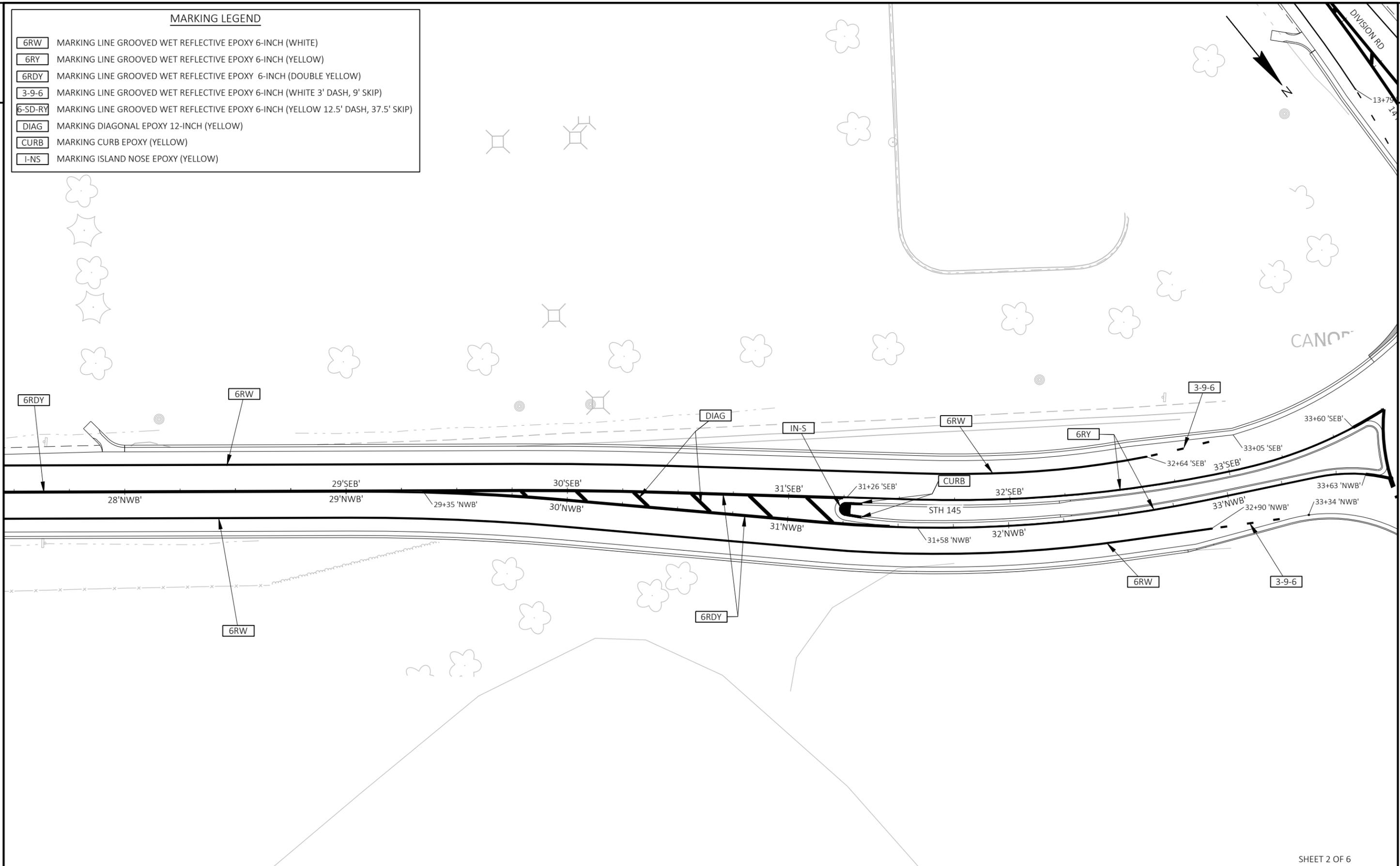


MARKING LEGEND	
6RW	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
6RY	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
6RDY	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (DOUBLE YELLOW)
3-9-6	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE 3' DASH, 9' SKIP)
6-SD-RY	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW 12.5' DASH, 37.5' SKIP)
DIAG	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
CURB	MARKING CURB EPOXY (YELLOW)
I-NS	MARKING ISLAND NOSE EPOXY (YELLOW)

SHEET 1 OF 6

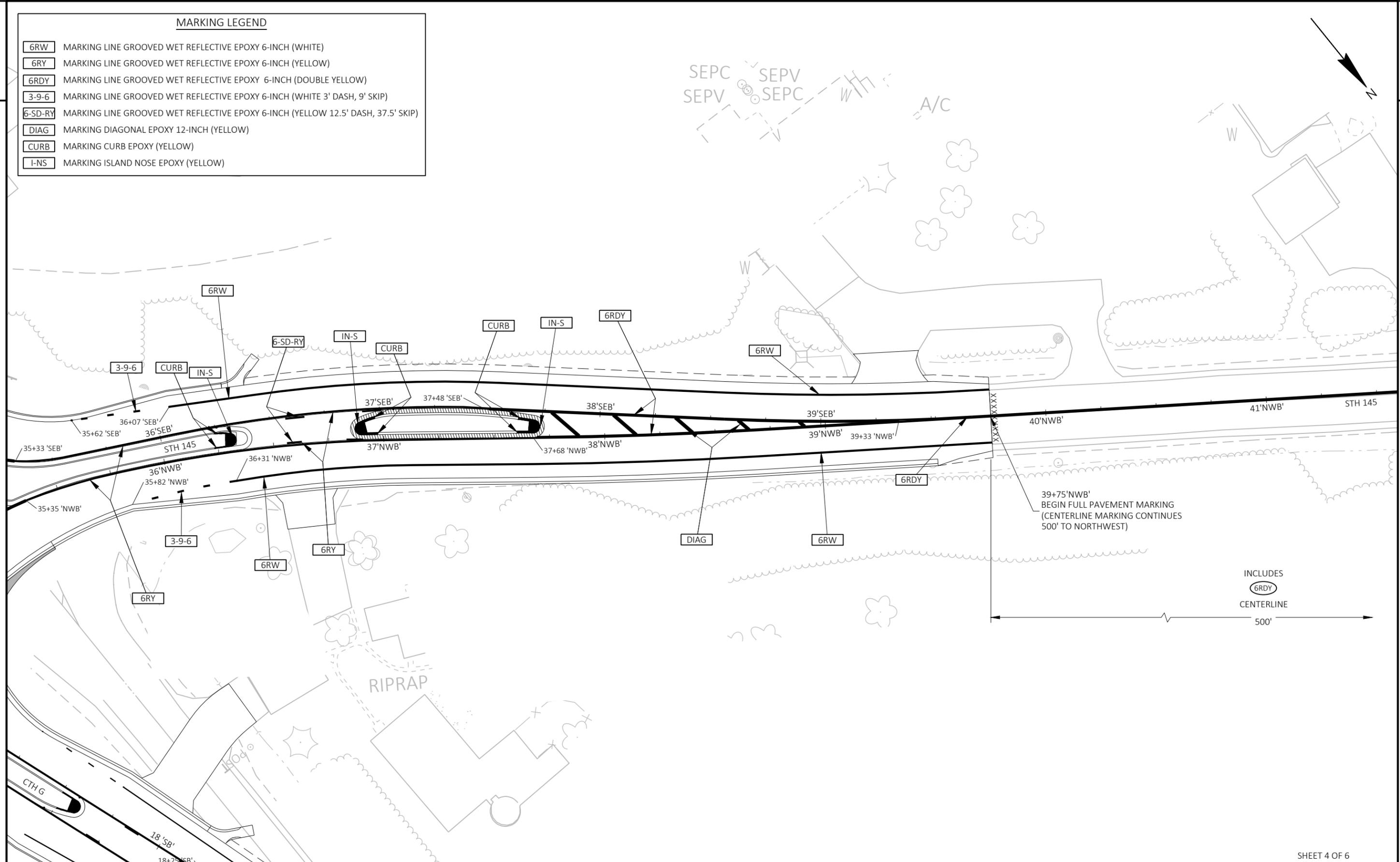
MARKING LEGEND

6RW	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
6RY	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
6RDY	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (DOUBLE YELLOW)
3-9-6	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE 3' DASH, 9' SKIP)
6-SD-RY	MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW 12.5' DASH, 37.5' SKIP)
DIAG	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
CURB	MARKING CURB EPOXY (YELLOW)
I-NS	MARKING ISLAND NOSE EPOXY (YELLOW)



MARKING LEGEND

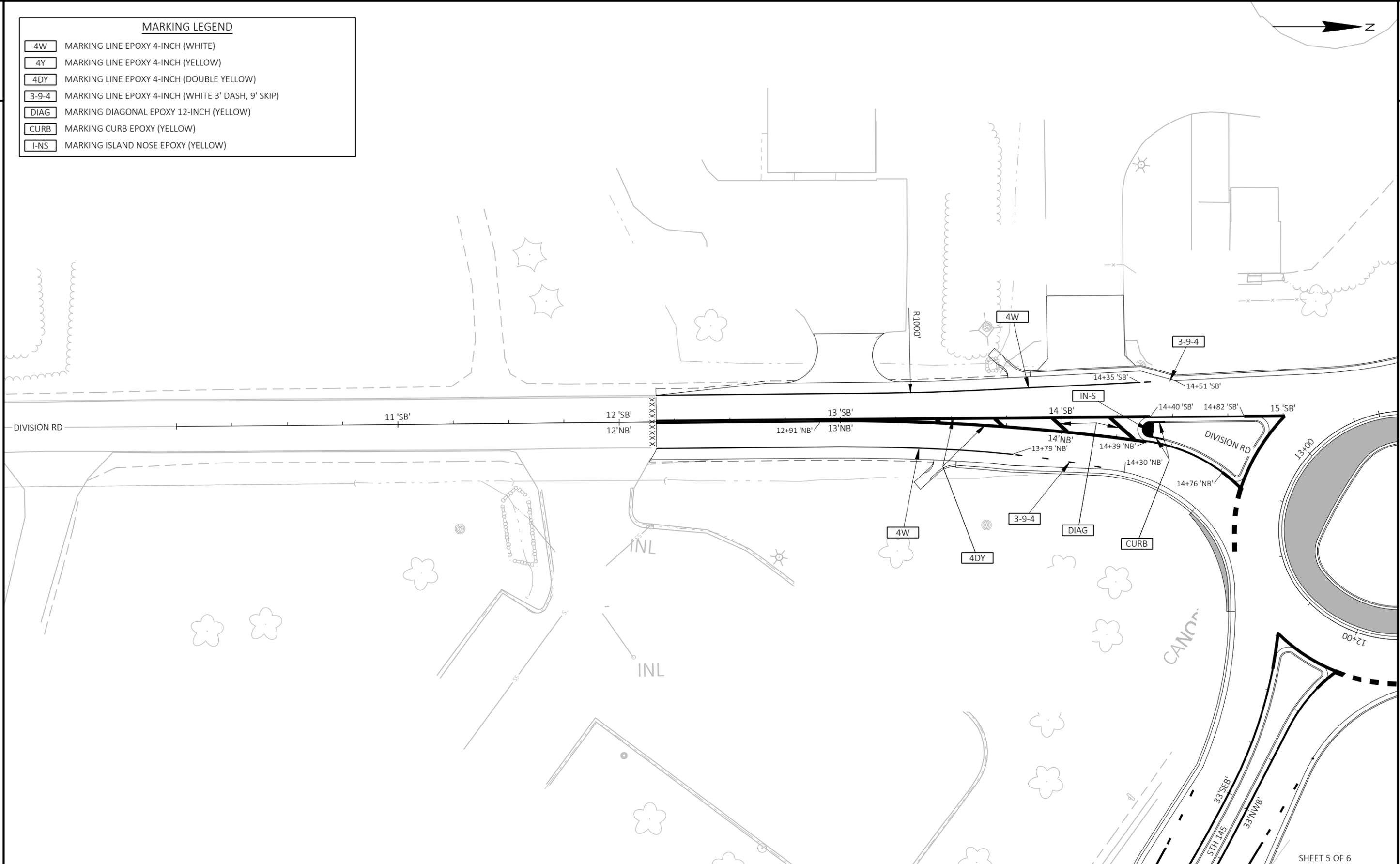
- 6RW MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
- 6RY MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
- 6RDY MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (DOUBLE YELLOW)
- 3-9-6 MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE 3' DASH, 9' SKIP)
- 6-SD-RY MARKING LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW 12.5' DASH, 37.5' SKIP)
- DIAG MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
- CURB MARKING CURB EPOXY (YELLOW)
- I-NS MARKING ISLAND NOSE EPOXY (YELLOW)

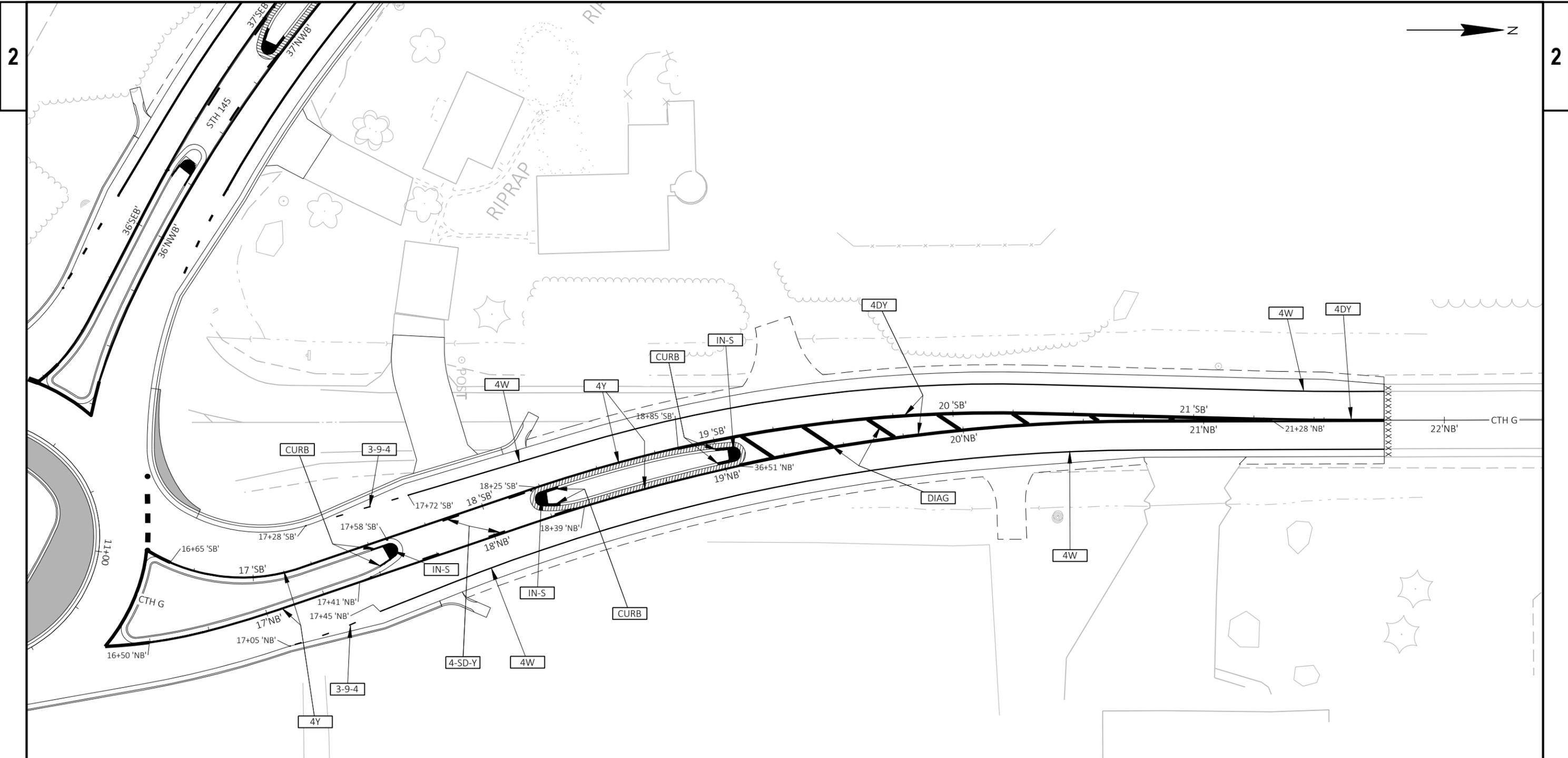


INCLUDES
6RDY
 CENTERLINE
 500'

MARKING LEGEND

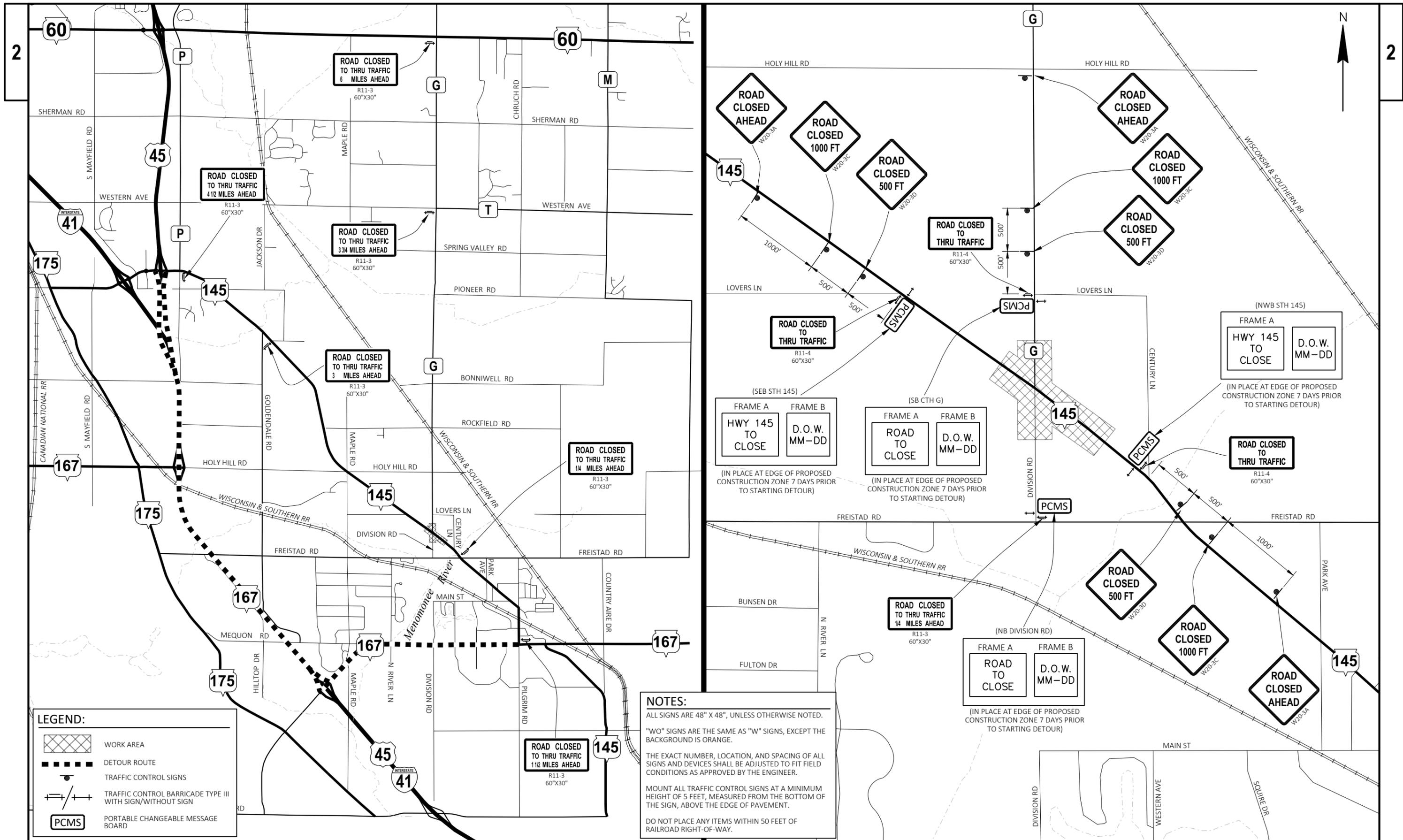
- 4W MARKING LINE EPOXY 4-INCH (WHITE)
- 4Y MARKING LINE EPOXY 4-INCH (YELLOW)
- 4DY MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 3-9-4 MARKING LINE EPOXY 4-INCH (WHITE 3' DASH, 9' SKIP)
- DIAG MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
- CURB MARKING CURB EPOXY (YELLOW)
- I-NS MARKING ISLAND NOSE EPOXY (YELLOW)





MARKING LEGEND

4W	MARKING LINE EPOXY 4-INCH (WHITE)
4Y	MARKING LINE EPOXY 4-INCH (YELLOW)
4DY	MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
3-9-4	MARKING LINE EPOXY 4-INCH (WHITE 3' DASH, 9' SKIP)
4-SD-Y	MARKING LINE EPOXY 4-INCH (YELLOW 12.5' DASH, 37.5' SKIP)
DIAG	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
CURB	MARKING CURB EPOXY (YELLOW)
I-NS	MARKING ISLAND NOSE EPOXY (YELLOW)



LEGEND:

- WORK AREA
- DETOUR ROUTE
- TRAFFIC CONTROL SIGNS
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN/WITHOUT SIGN
- PORTABLE CHANGEABLE MESSAGE BOARD

NOTES:

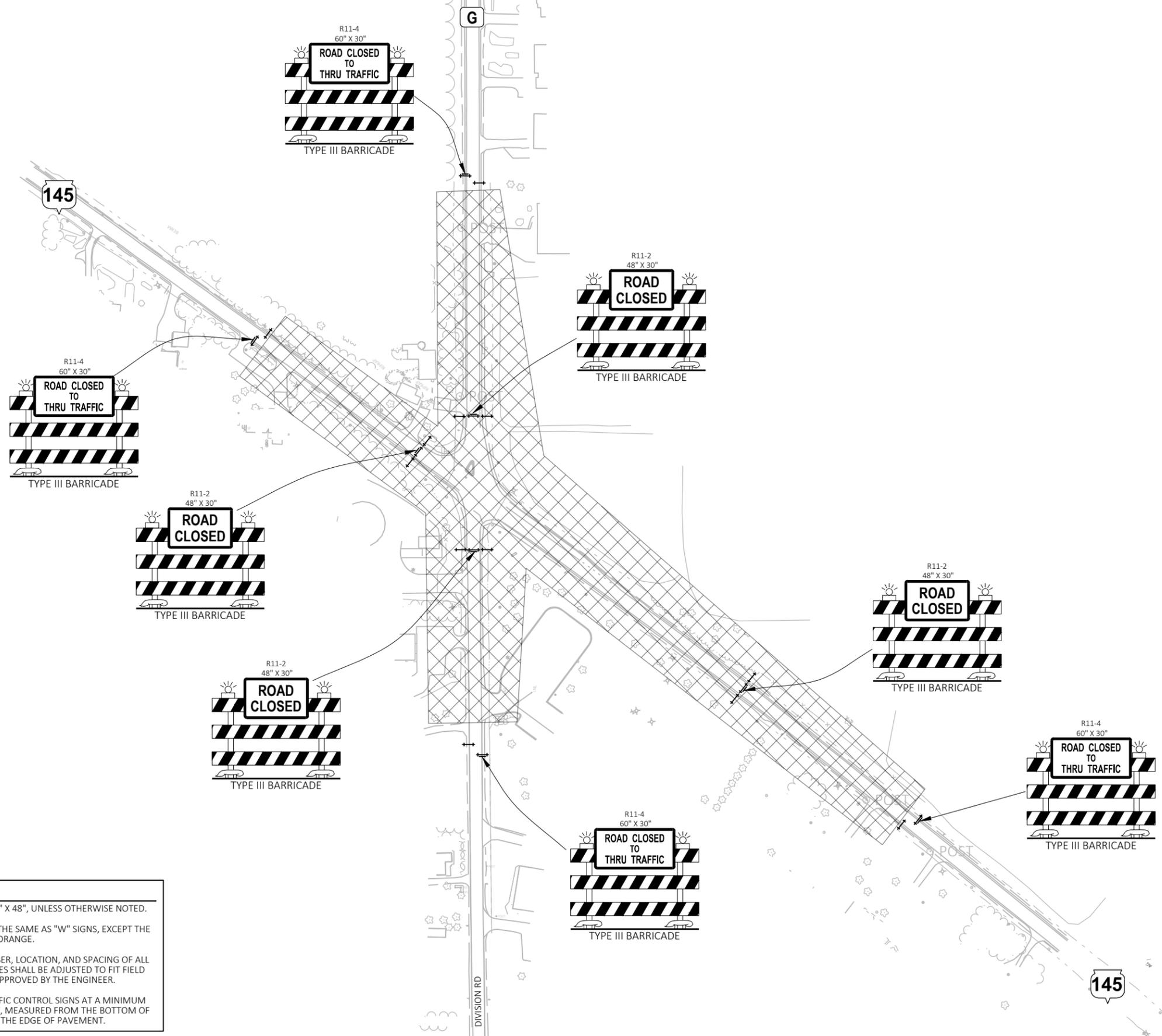
ALL SIGNS ARE 48" X 48", UNLESS OTHERWISE NOTED.

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

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

MOUNT ALL TRAFFIC CONTROL SIGNS AT A MINIMUM HEIGHT OF 5 FEET, MEASURED FROM THE BOTTOM OF THE SIGN, ABOVE THE EDGE OF PAVEMENT.

DO NOT PLACE ANY ITEMS WITHIN 50 FEET OF RAILROAD RIGHT-OF-WAY.



LEGEND:

- WORK AREA
- DETOUR ROUTE
- TRAFFIC CONTROL SIGNS
- TRAFFIC CONTROL BARRICADE TYPE III WITH SIGN/WITHOUT SIGN
- PORTABLE CHANGEABLE MESSAGE BOARD

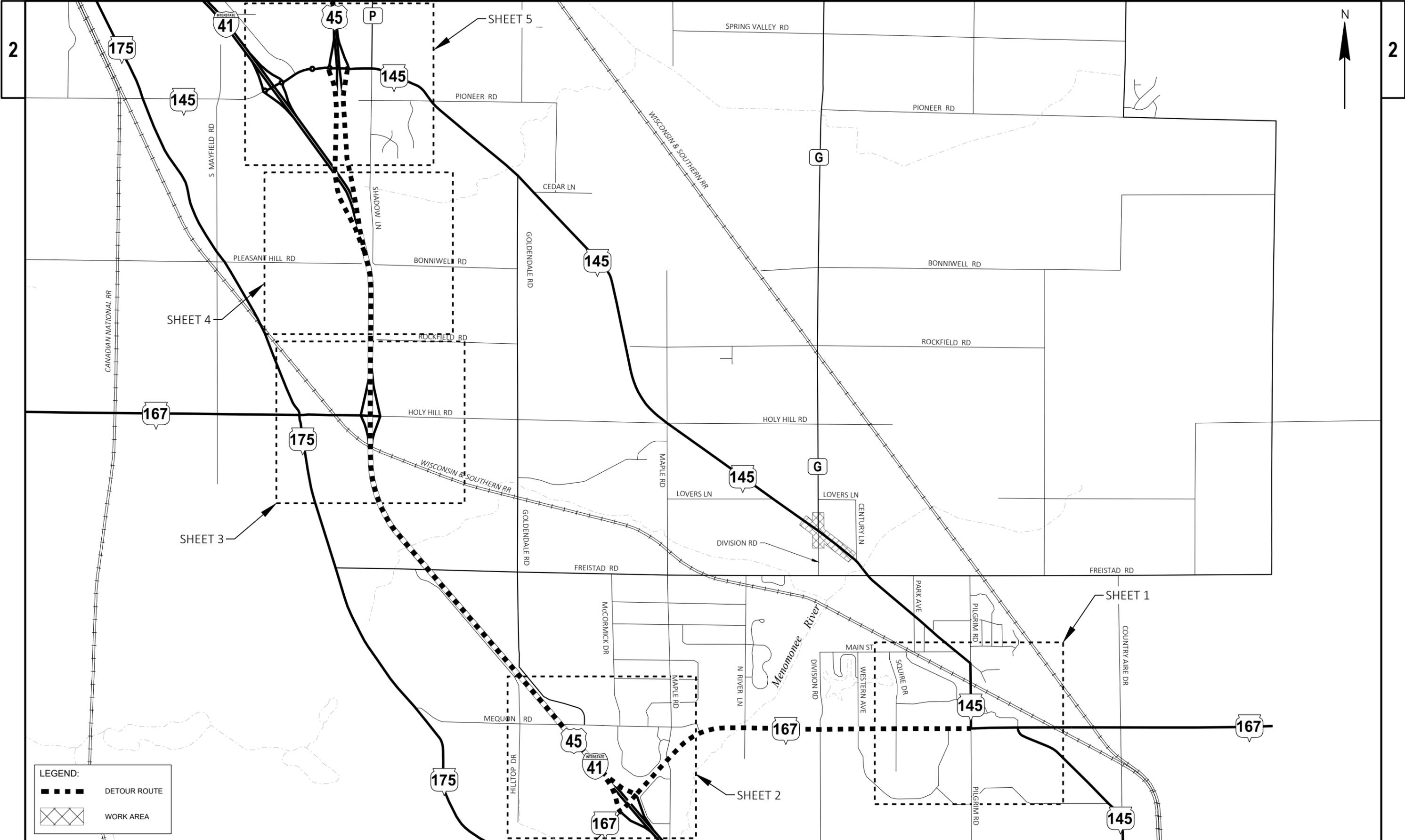
NOTES:

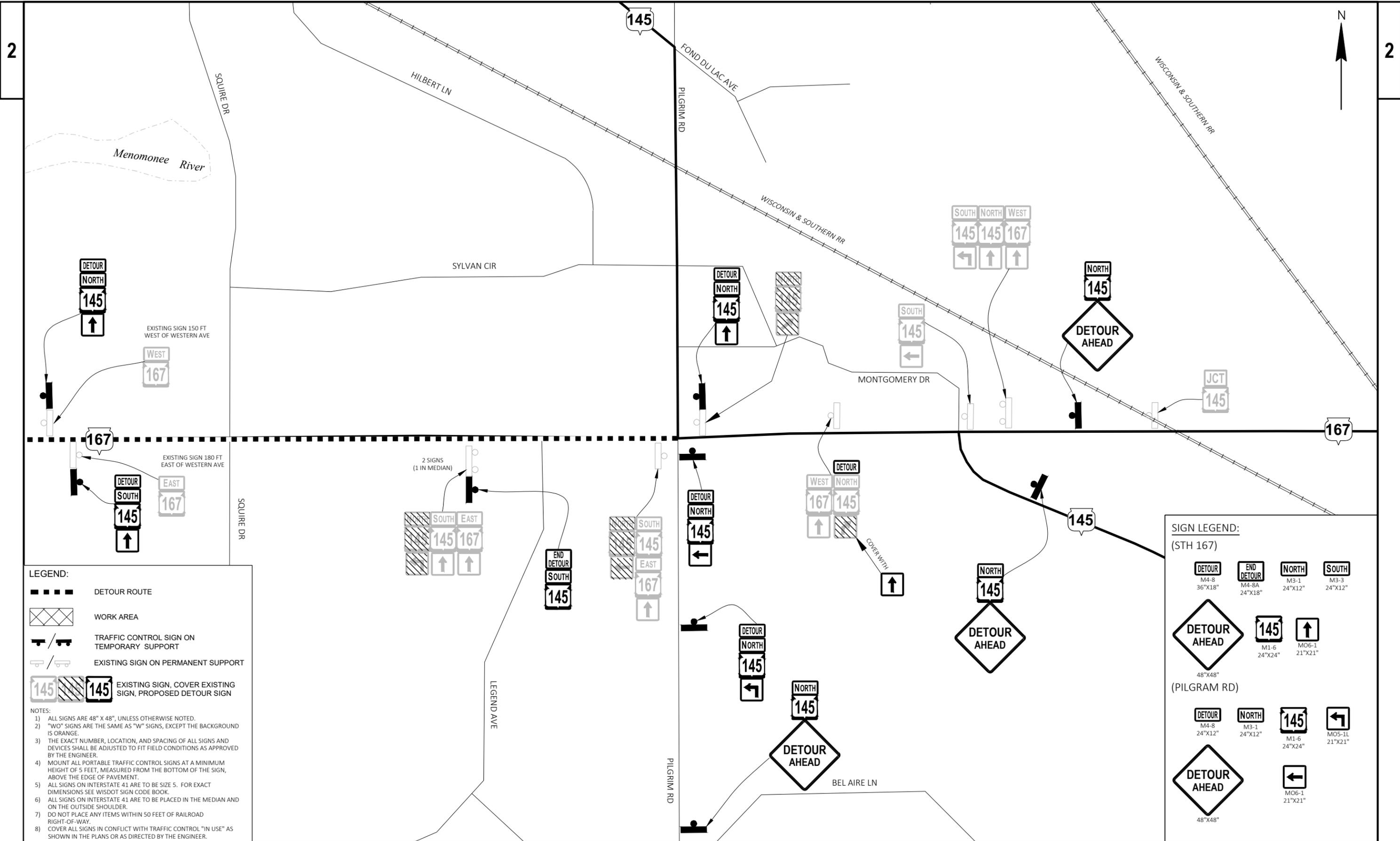
ALL SIGNS ARE 48" X 48", UNLESS OTHERWISE NOTED.

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

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

MOUNT ALL TRAFFIC CONTROL SIGNS AT A MINIMUM HEIGHT OF 5 FEET, MEASURED FROM THE BOTTOM OF THE SIGN, ABOVE THE EDGE OF PAVEMENT.





LEGEND:

- DETOUR ROUTE
- WORK AREA
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- EXISTING SIGN ON PERMANENT SUPPORT
- EXISTING SIGN, COVER EXISTING SIGN, PROPOSED DETOUR SIGN

- NOTES:**
- 1) ALL SIGNS ARE 48" X 48", UNLESS OTHERWISE NOTED.
 - 2) "WO" SIGNS ARE THE SAME AS "W" SIGNS, EXCEPT THE BACKGROUND IS ORANGE.
 - 3) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
 - 4) MOUNT ALL PORTABLE TRAFFIC CONTROL SIGNS AT A MINIMUM HEIGHT OF 5 FEET, MEASURED FROM THE BOTTOM OF THE SIGN, ABOVE THE EDGE OF PAVEMENT.
 - 5) ALL SIGNS ON INTERSTATE 41 ARE TO BE SIZE 5. FOR EXACT DIMENSIONS SEE WISDOT SIGN CODE BOOK.
 - 6) ALL SIGNS ON INTERSTATE 41 ARE TO BE PLACED IN THE MEDIAN AND ON THE OUTSIDE SHOULDER.
 - 7) DO NOT PLACE ANY ITEMS WITHIN 50 FEET OF RAILROAD RIGHT-OF-WAY.
 - 8) COVER ALL SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

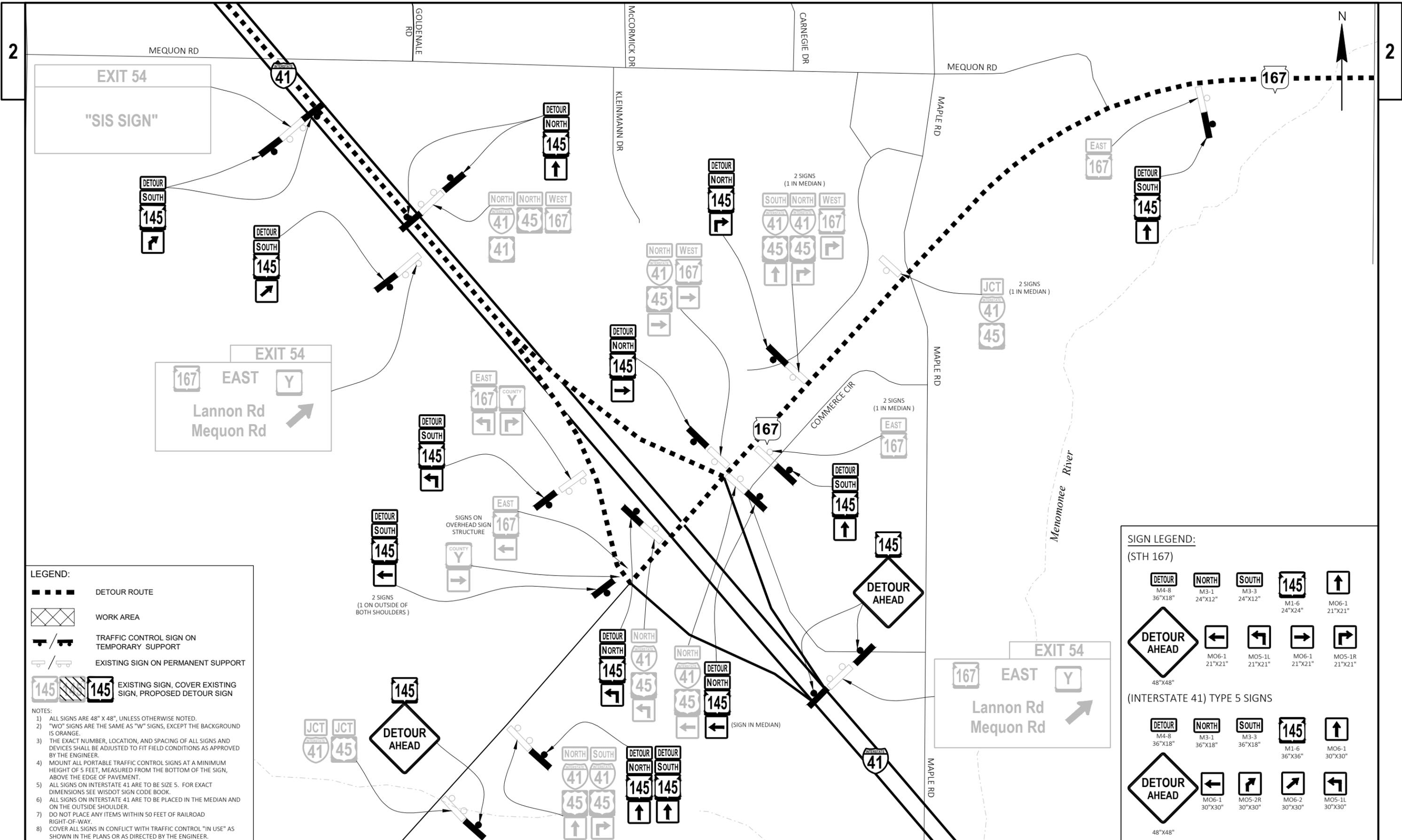
SIGN LEGEND:

(STH 167)

36"x18"	24"x18"	24"x12"	24"x12"

(PILGRAM RD)

24"x12"	24"x12"	24"x24"	21"x21"



LEGEND:

- DETOUR ROUTE
- WORK AREA
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- EXISTING SIGN ON PERMANENT SUPPORT
- EXISTING SIGN, COVER EXISTING SIGN, PROPOSED DETOUR SIGN

- NOTES:**
- 1) ALL SIGNS ARE 48" X 48", UNLESS OTHERWISE NOTED.
 - 2) "WO" SIGNS ARE THE SAME AS "W" SIGNS, EXCEPT THE BACKGROUND IS ORANGE.
 - 3) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
 - 4) MOUNT ALL PORTABLE TRAFFIC CONTROL SIGNS AT A MINIMUM HEIGHT OF 5 FEET, MEASURED FROM THE BOTTOM OF THE SIGN, ABOVE THE EDGE OF PAVEMENT.
 - 5) ALL SIGNS ON INTERSTATE 41 ARE TO BE SIZE 5. FOR EXACT DIMENSIONS SEE WISDOT SIGN CODE BOOK.
 - 6) ALL SIGNS ON INTERSTATE 41 ARE TO BE PLACED IN THE MEDIAN AND ON THE OUTSIDE SHOULDER.
 - 7) DO NOT PLACE ANY ITEMS WITHIN 50 FEET OF RAILROAD RIGHT-OF-WAY.
 - 8) COVER ALL SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

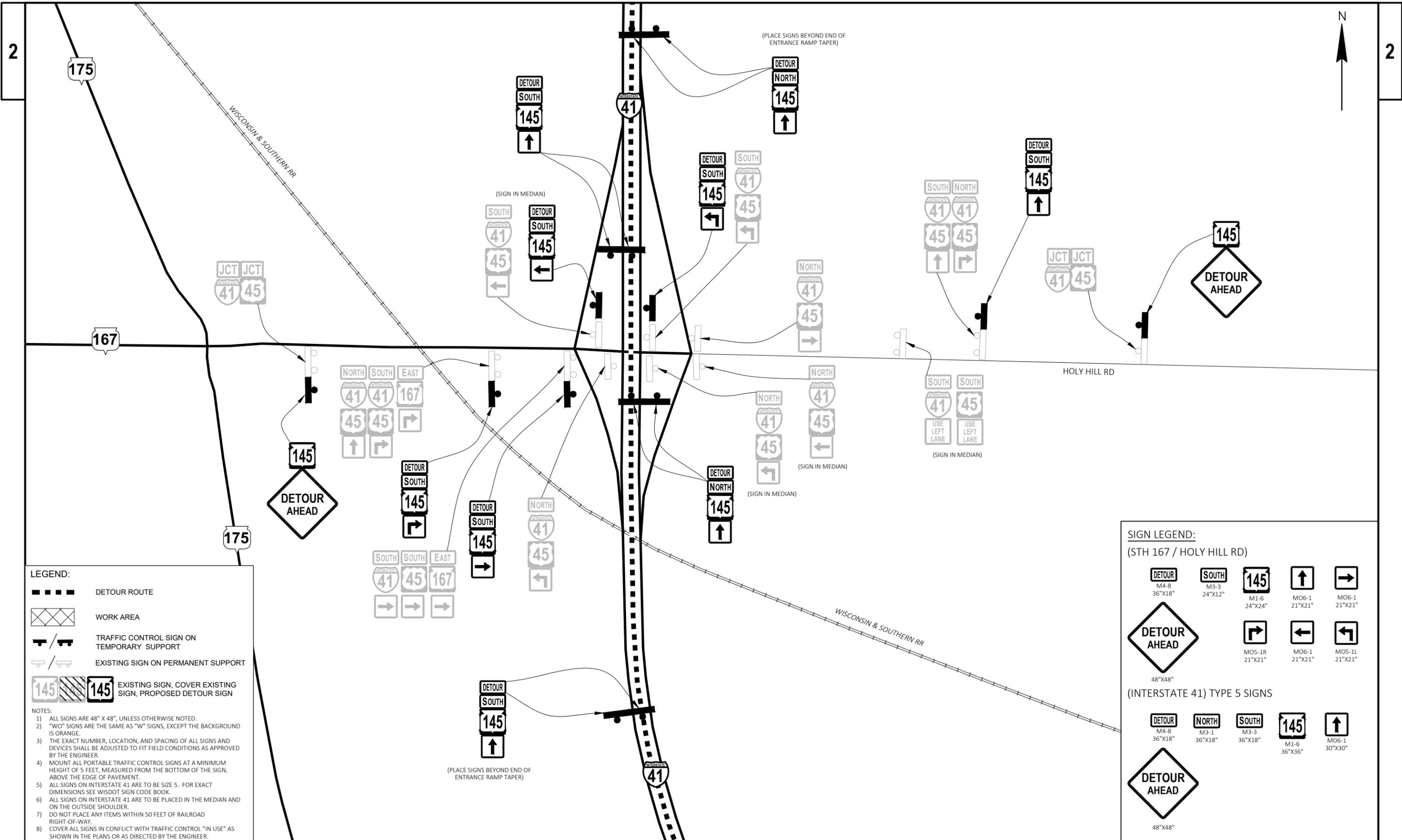
SIGN LEGEND:

(STH 167)

M4-8 36"x18"	M3-1 24"x12"	M3-3 24"x12"	M1-6 24"x24"	MO6-1 21"x21"
48"x48"	MO6-1 21"x21"	MO5-1L 21"x21"	MO6-1 21"x21"	MO5-1R 21"x21"

(INTERSTATE 41) TYPE 5 SIGNS

M4-8 36"x18"	M3-1 36"x18"	M3-3 36"x18"	M1-6 36"x36"	MO6-1 30"x30"
48"x48"	MO6-1 30"x30"	MO5-2R 30"x30"	MO6-2 30"x30"	MO5-1L 30"x30"



LEGEND:

- DETOUR ROUTE
- WORK AREA
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- EXISTING SIGN ON PERMANENT SUPPORT
- EXISTING SIGN, COVER EXISTING SIGN, PROPOSED DETOUR SIGN

NOTES:

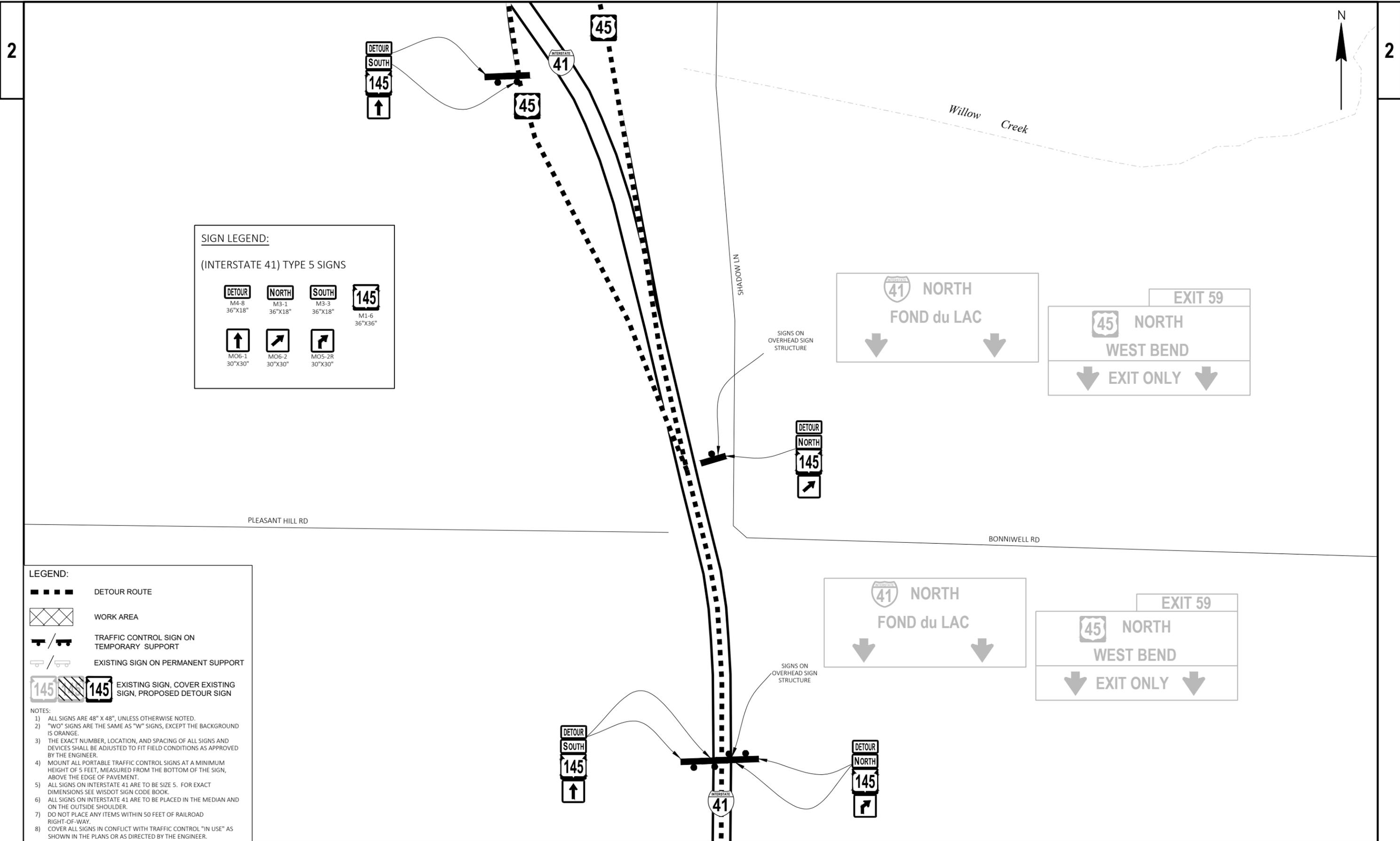
- 1) ALL SIGNS ARE 48" X 48", UNLESS OTHERWISE NOTED.
- 2) "WO" SIGNS ARE THE SAME AS "W" SIGNS, EXCEPT THE BACKGROUND IS ORANGE.
- 3) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- 4) MOUNT ALL PORTABLE TRAFFIC CONTROL SIGNS AT A MINIMUM HEIGHT OF 5 FEET, MEASURED FROM THE BOTTOM OF THE SIGN, ABOVE THE EDGE OF PAVEMENT.
- 5) ALL SIGNS ON INTERSTATE 41 ARE TO BE SIZE 5. FOR EXACT DIMENSIONS SEE WISDOT SIGN CODE BOOK.
- 6) ALL SIGNS ON INTERSTATE 41 ARE TO BE PLACED IN THE MEDIAN AND ON THE OUTSIDE SHOULDER.
- 7) DO NOT PLACE ANY ITEMS WITHIN 50 FEET OF RAILROAD RIGHT-OF-WAY.
- 8) COVER ALL SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

SIGN LEGEND:
(STH 167 / HOLY HILL RD)

M4-8 36"x18"	M3-3 24"x12"	M1-6 24"x24"	MO6-1 21"x21"	MO6-1 21"x21"
48"x48"	MO5-1R 21"x21"	MO6-1 21"x21"	MO5-1L 21"x21"	

(INTERSTATE 41) TYPE 5 SIGNS

M4-8 36"x18"	M3-1 36"x18"	M3-3 36"x18"	M1-6 36"x36"	MO6-1 30"x30"
48"x48"				



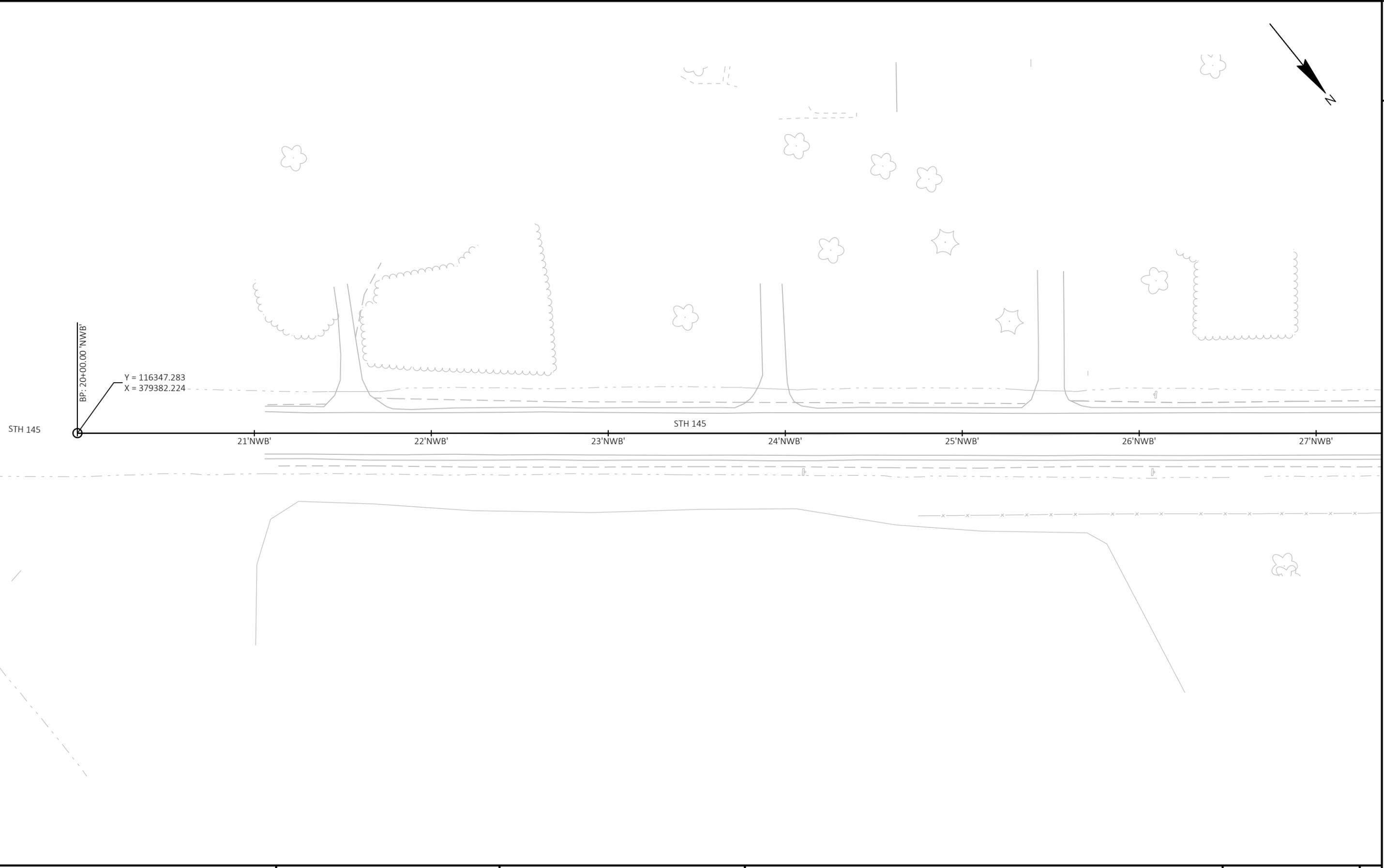
SIGN LEGEND:
(INTERSTATE 41) TYPE 5 SIGNS

LEGEND:

- DETOUR ROUTE
- WORK AREA
- TRAFFIC CONTROL SIGN ON TEMPORARY SUPPORT
- EXISTING SIGN ON PERMANENT SUPPORT
- EXISTING SIGN, COVER EXISTING SIGN, PROPOSED DETOUR SIGN

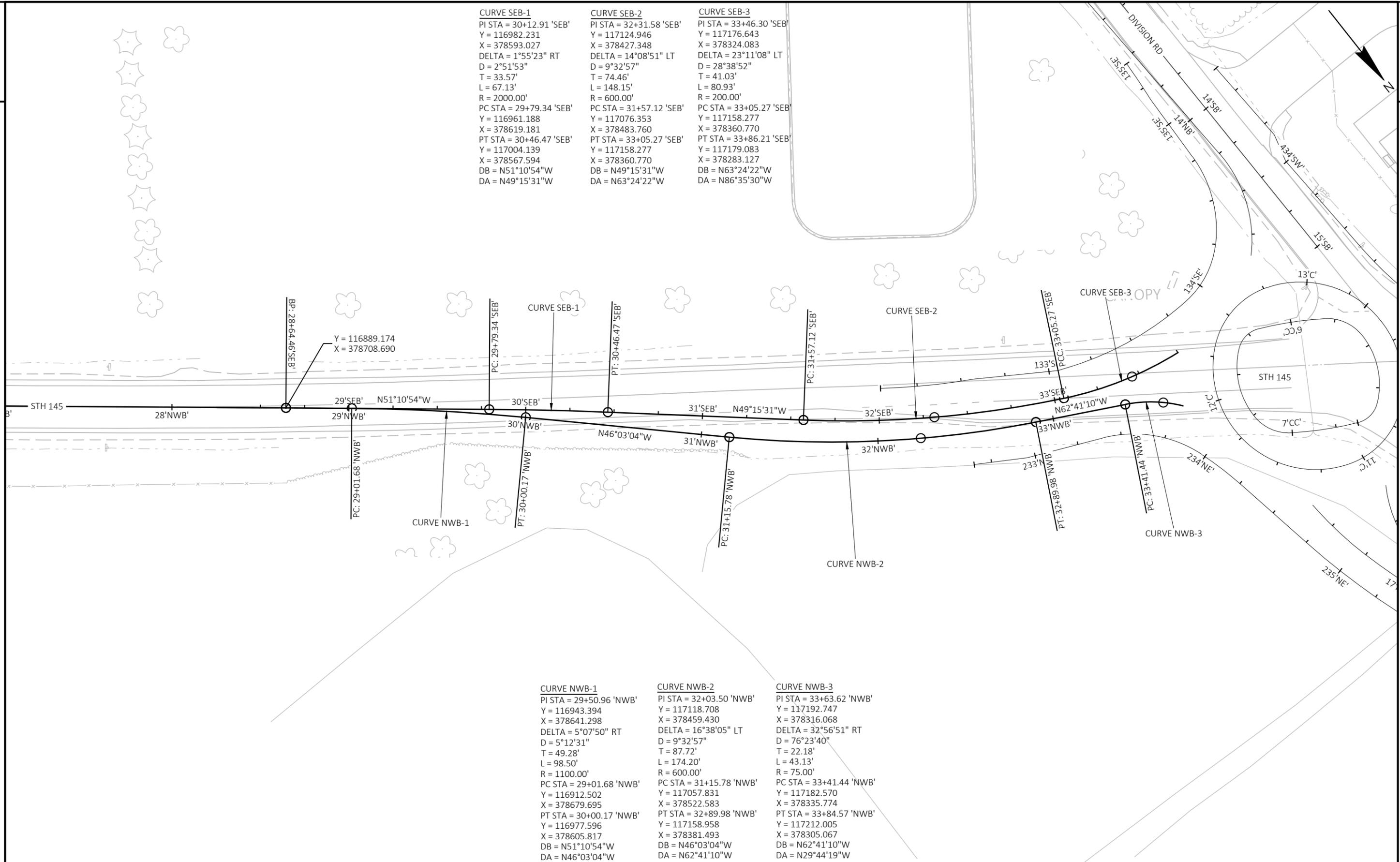
NOTES:

- 1) ALL SIGNS ARE 48" X 48", UNLESS OTHERWISE NOTED.
- 2) "WO" SIGNS ARE THE SAME AS "W" SIGNS, EXCEPT THE BACKGROUND IS ORANGE.
- 3) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- 4) MOUNT ALL PORTABLE TRAFFIC CONTROL SIGNS AT A MINIMUM HEIGHT OF 5 FEET, MEASURED FROM THE BOTTOM OF THE SIGN, ABOVE THE EDGE OF PAVEMENT.
- 5) ALL SIGNS ON INTERSTATE 41 ARE TO BE SIZE 5. FOR EXACT DIMENSIONS SEE WISDOT SIGN CODE BOOK.
- 6) ALL SIGNS ON INTERSTATE 41 ARE TO BE PLACED IN THE MEDIAN AND ON THE OUTSIDE SHOULDER.
- 7) DO NOT PLACE ANY ITEMS WITHIN 50 FEET OF RAILROAD RIGHT-OF-WAY.
- 8) COVER ALL SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.



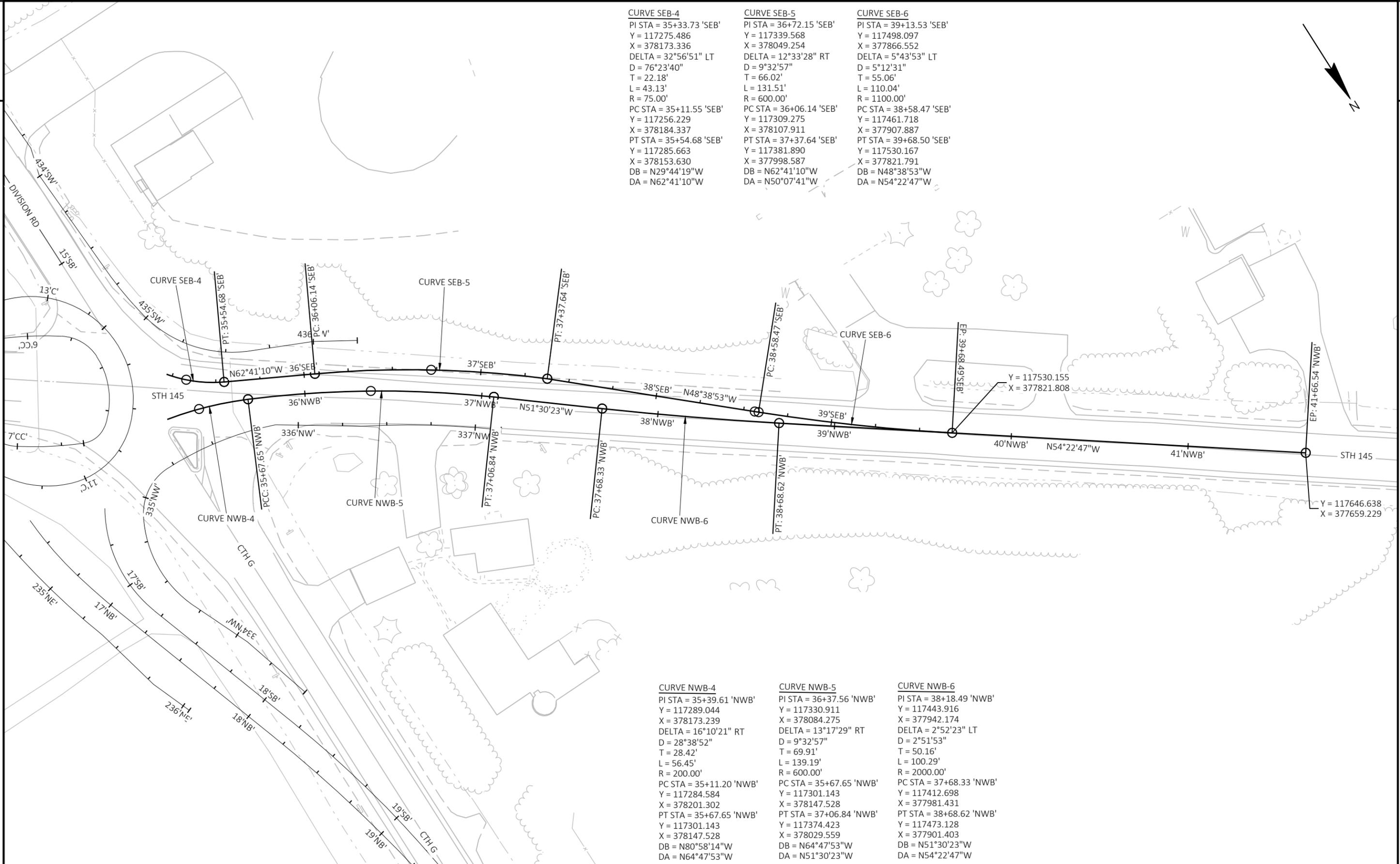
PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	ALIGNMENT DIAGRAM	SHEET 66	E
------------------------	--------------	--------------------	-------------------	----------	----------

CURVE SEB-1	CURVE SEB-2	CURVE SEB-3
PI STA = 30+12.91 'SEB'	PI STA = 32+31.58 'SEB'	PI STA = 33+46.30 'SEB'
Y = 116982.231	Y = 117124.946	Y = 117176.643
X = 378593.027	X = 378427.348	X = 378324.083
DELTA = 1°55'23" RT	DELTA = 14°08'51" LT	DELTA = 23°11'08" LT
D = 2°51'53"	D = 9°32'57"	D = 28°38'52"
T = 33.57'	T = 74.46'	T = 41.03'
L = 67.13'	L = 148.15'	L = 80.93'
R = 2000.00'	R = 600.00'	R = 200.00'
PC STA = 29+79.34 'SEB'	PC STA = 31+57.12 'SEB'	PC STA = 33+05.27 'SEB'
Y = 116961.188	Y = 117076.353	Y = 117158.277
X = 378619.181	X = 378483.760	X = 378360.770
PT STA = 30+46.47 'SEB'	PT STA = 33+05.27 'SEB'	PT STA = 33+86.21 'SEB'
Y = 117004.139	Y = 117158.277	Y = 117179.083
X = 378567.594	X = 378360.770	X = 378283.127
DB = N51°10'54"W	DB = N49°15'31"W	DB = N63°24'22"W
DA = N49°15'31"W	DA = N63°24'22"W	DA = N86°35'30"W

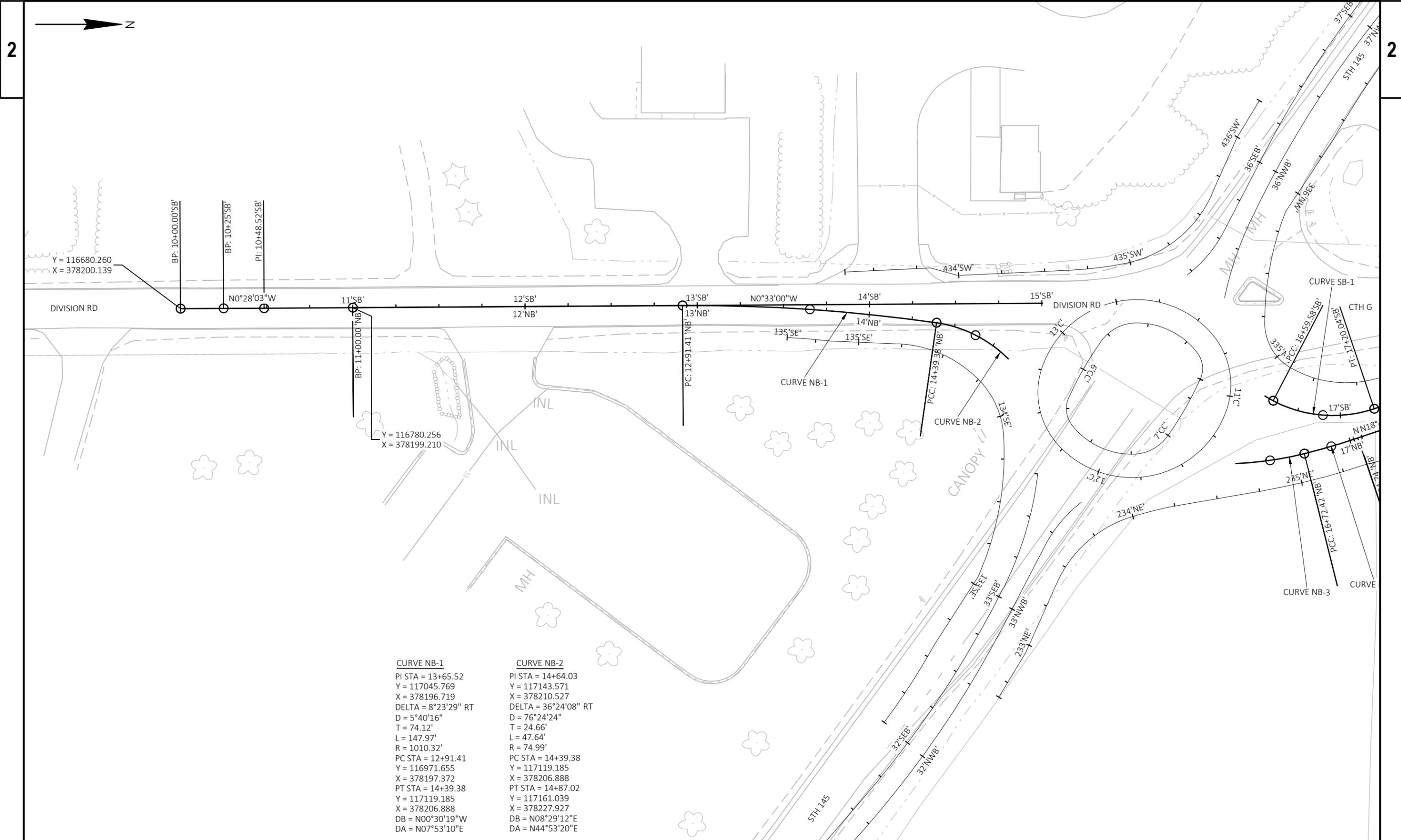


CURVE NWB-1	CURVE NWB-2	CURVE NWB-3
PI STA = 29+50.96 'NWB'	PI STA = 32+03.50 'NWB'	PI STA = 33+63.62 'NWB'
Y = 116943.394	Y = 117118.708	Y = 117192.747
X = 378641.298	X = 378459.430	X = 378316.068
DELTA = 5°07'50" RT	DELTA = 16°38'05" LT	DELTA = 32°56'51" RT
D = 5°12'31"	D = 9°32'57"	D = 76°23'40"
T = 49.28'	T = 87.72'	T = 22.18'
L = 98.50'	L = 174.20'	L = 43.13'
R = 1100.00'	R = 600.00'	R = 75.00'
PC STA = 29+01.68 'NWB'	PC STA = 31+15.78 'NWB'	PC STA = 33+41.44 'NWB'
Y = 116912.502	Y = 117057.831	Y = 117182.570
X = 378679.695	X = 378522.583	X = 378335.774
PT STA = 30+00.17 'NWB'	PT STA = 32+89.98 'NWB'	PT STA = 33+84.57 'NWB'
Y = 116977.596	Y = 117158.958	Y = 117212.005
X = 378605.817	X = 378381.493	X = 378305.067
DB = N51°10'54"W	DB = N46°03'04"W	DB = N62°41'10"W
DA = N46°03'04"W	DA = N62°41'10"W	DA = N29°44'19"W

CURVE SEB-4	CURVE SEB-5	CURVE SEB-6
PI STA = 35+33.73 'SEB'	PI STA = 36+72.15 'SEB'	PI STA = 39+13.53 'SEB'
Y = 117275.486	Y = 117339.568	Y = 117498.097
X = 378173.336	X = 378049.254	X = 377866.552
DELTA = 32°56'51" LT	DELTA = 12°33'28" RT	DELTA = 5°43'53" LT
D = 76°23'40"	D = 9°32'57"	D = 5°12'31"
T = 22.18'	T = 66.02'	T = 55.06'
L = 43.13'	L = 131.51'	L = 110.04'
R = 75.00'	R = 600.00'	R = 1100.00'
PC STA = 35+11.55 'SEB'	PC STA = 36+06.14 'SEB'	PC STA = 38+58.47 'SEB'
Y = 117256.229	Y = 117309.275	Y = 117461.718
X = 378184.337	X = 378107.911	X = 377907.887
PT STA = 35+54.68 'SEB'	PT STA = 37+37.64 'SEB'	PT STA = 39+68.50 'SEB'
Y = 117285.663	Y = 117381.890	Y = 117530.167
X = 378153.630	X = 377998.587	X = 377821.791
DB = N29°44'19"W	DB = N62°41'10"W	DB = N48°38'53"W
DA = N62°41'10"W	DA = N50°07'41"W	DA = N54°22'47"W



CURVE NWB-4	CURVE NWB-5	CURVE NWB-6
PI STA = 35+39.61 'NWB'	PI STA = 36+37.56 'NWB'	PI STA = 38+18.49 'NWB'
Y = 117289.044	Y = 117330.911	Y = 117443.916
X = 378173.239	X = 378084.275	X = 377942.174
DELTA = 16°10'21" RT	DELTA = 13°17'29" RT	DELTA = 2°52'23" LT
D = 28°38'52"	D = 9°32'57"	D = 2°51'53"
T = 28.42'	T = 69.91'	T = 50.16'
L = 56.45'	L = 139.19'	L = 100.29'
R = 200.00'	R = 600.00'	R = 2000.00'
PC STA = 35+11.20 'NWB'	PC STA = 35+67.65 'NWB'	PC STA = 37+68.33 'NWB'
Y = 117284.584	Y = 117301.143	Y = 117412.698
X = 378201.302	X = 378147.528	X = 377981.431
PT STA = 35+67.65 'NWB'	PT STA = 37+06.84 'NWB'	PT STA = 38+68.62 'NWB'
Y = 117301.143	Y = 117374.423	Y = 117473.128
X = 378147.528	X = 378029.559	X = 377901.403
DB = N80°58'14"W	DB = N64°47'53"W	DB = N51°30'23"W
DA = N64°47'53"W	DA = N51°30'23"W	DA = N54°22'47"W

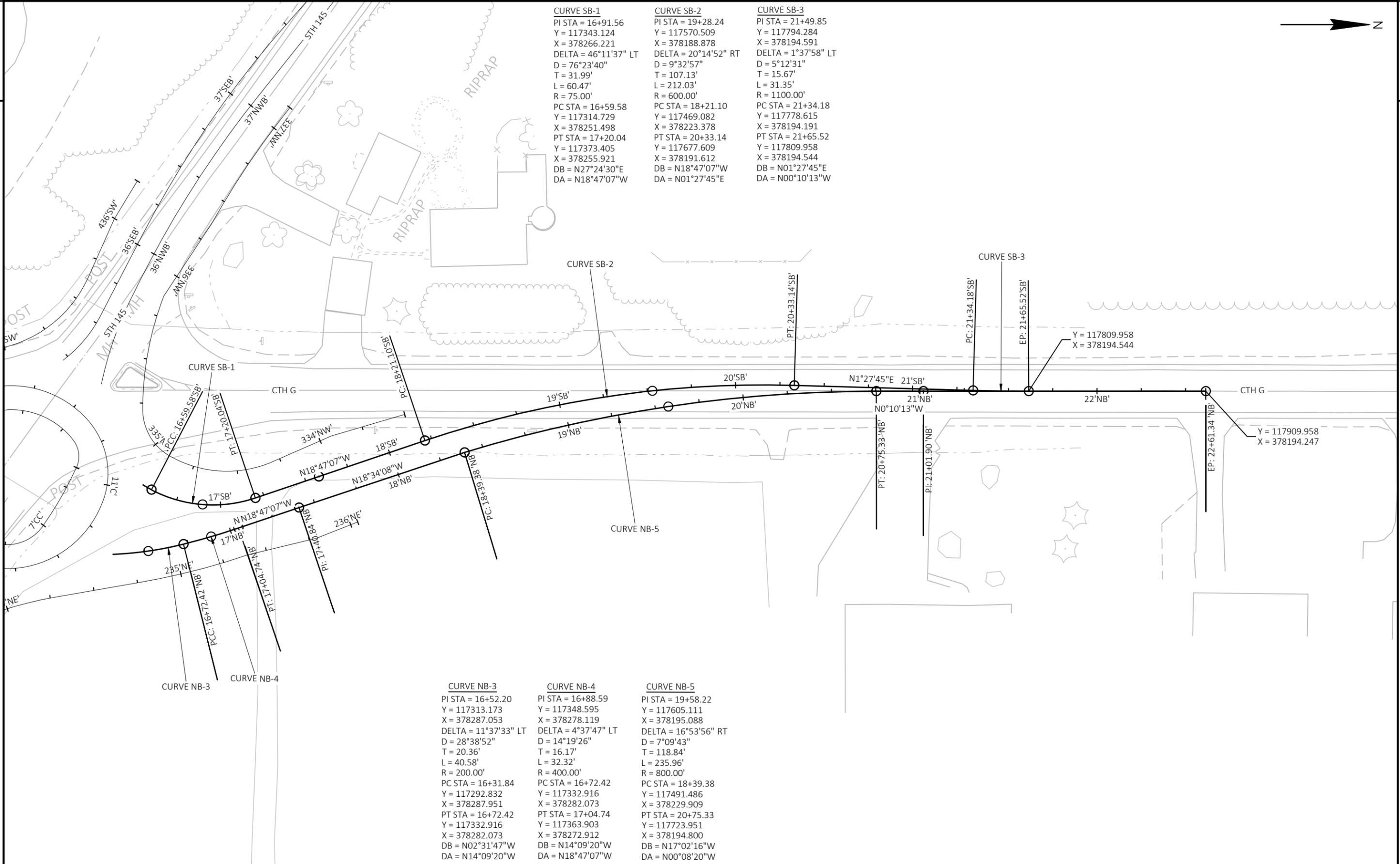


CURVE NB-1
 PI STA = 13+65.52
 Y = 117045.769
 X = 378196.719
 DELTA = 8°23'29" RT
 D = 5°40'16"
 T = 74.12'
 L = 147.97'
 R = 1010.32'
 PC STA = 12+91.41
 Y = 116971.655
 X = 378197.372
 PT STA = 14+39.38
 Y = 117119.185
 X = 378206.888
 DB = N00°30'19"W
 DA = N07°53'10"E

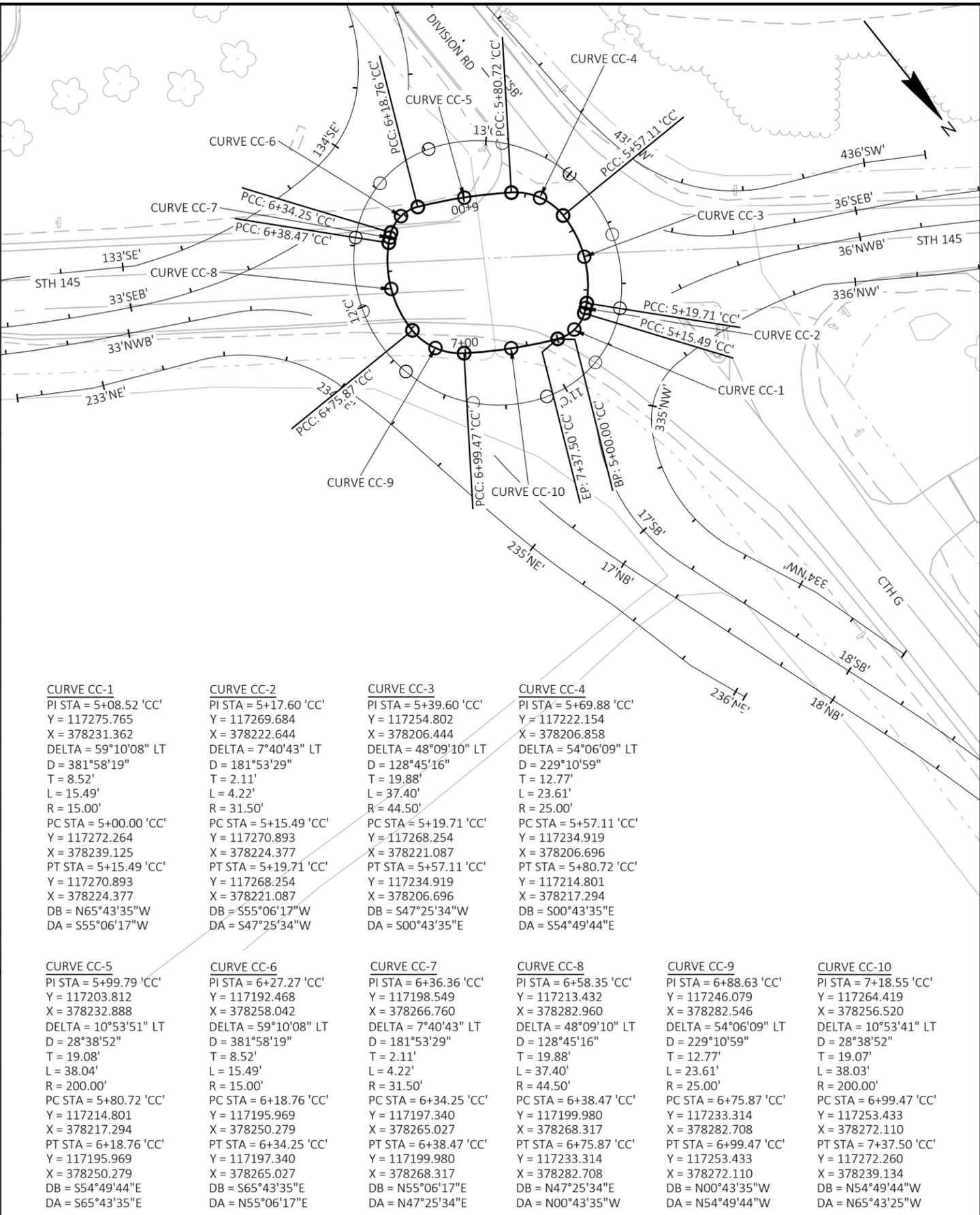
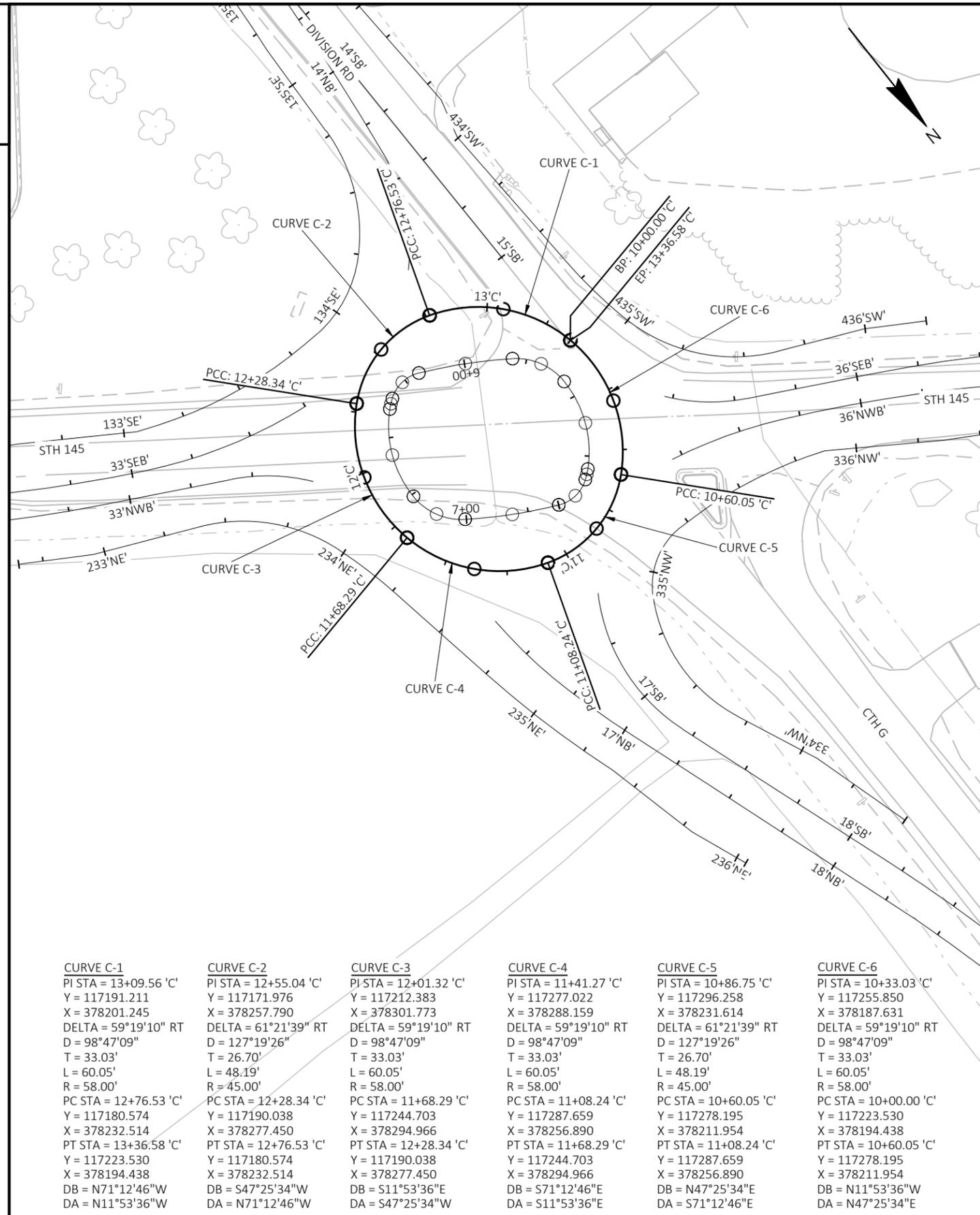
CURVE NB-2
 PI STA = 14+64.03
 Y = 117143.571
 X = 378210.527
 DELTA = 36°24'08" RT
 D = 76°24'24"
 T = 24.66'
 L = 47.64'
 R = 74.99'
 PC STA = 14+39.38
 Y = 117119.185
 X = 378206.888
 PT STA = 14+87.02
 Y = 117161.039
 X = 378227.927
 DB = N08°29'12"E
 DA = N44°53'20"E



CURVE SB-1	CURVE SB-2	CURVE SB-3
PI STA = 16+91.56	PI STA = 19+28.24	PI STA = 21+49.85
Y = 117343.124	Y = 117570.509	Y = 117794.284
X = 378266.221	X = 378188.878	X = 378194.591
DELTA = 46°11'37" LT	DELTA = 20°14'52" RT	DELTA = 1°37'58" LT
D = 76°23'40"	D = 9°32'57"	D = 5°12'31"
T = 31.99'	T = 107.13'	T = 15.67'
L = 60.47'	L = 212.03'	L = 31.35'
R = 75.00'	R = 600.00'	R = 1100.00'
PC STA = 16+59.58	PC STA = 18+21.10	PC STA = 21+34.18
Y = 117314.729	Y = 117469.082	Y = 117778.615
X = 378251.498	X = 378223.378	X = 378194.191
PT STA = 17+20.04	PT STA = 20+33.14	PT STA = 21+65.52
Y = 117373.405	Y = 117677.609	Y = 117809.958
X = 378255.921	X = 378191.612	X = 378194.544
DB = N27°24'30"E	DB = N18°47'07"W	DB = N01°27'45"E
DA = N18°47'07"W	DA = N01°27'45"E	DA = N00°10'13"W

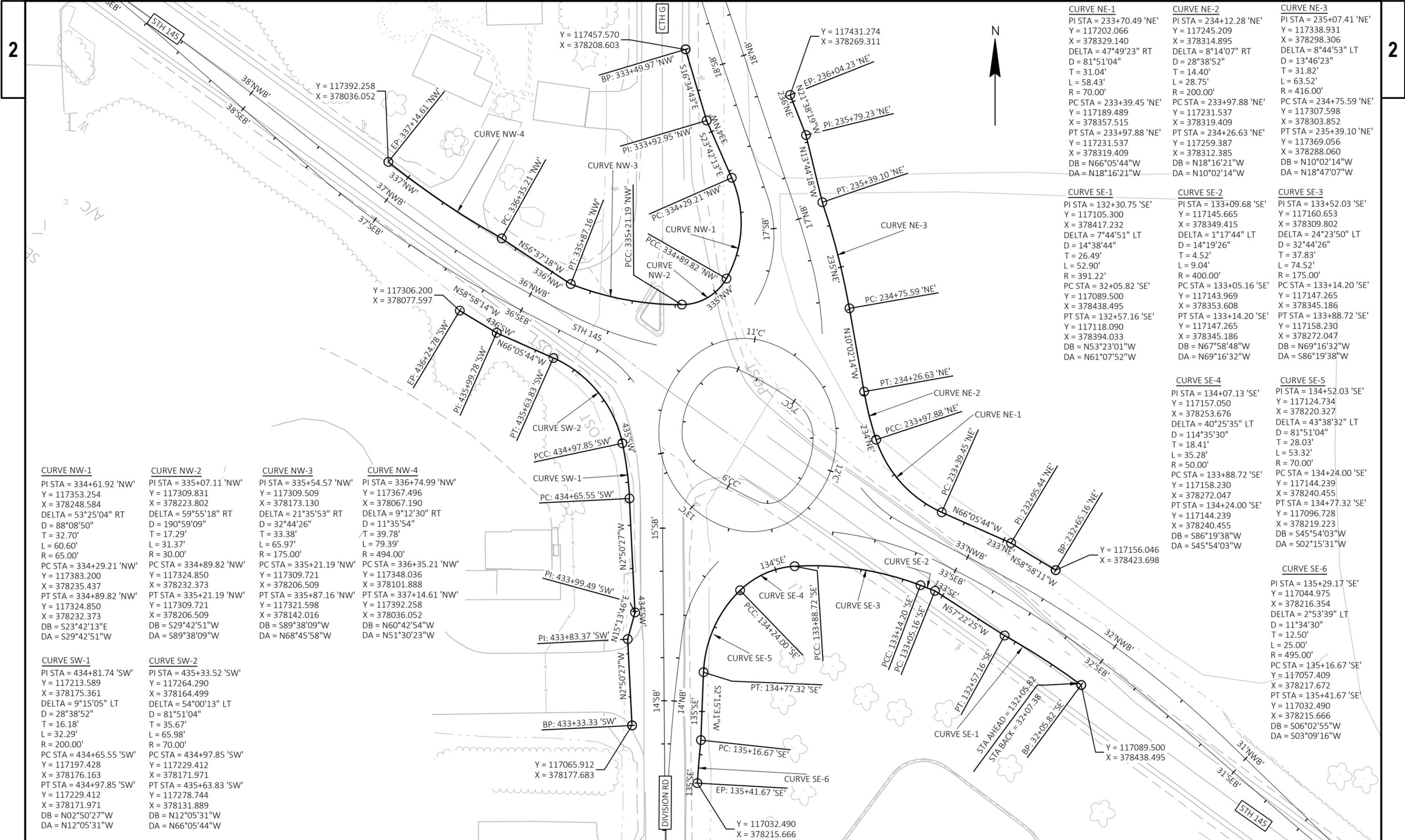


CURVE NB-3	CURVE NB-4	CURVE NB-5
PI STA = 16+52.20	PI STA = 16+88.59	PI STA = 19+58.22
Y = 117313.173	Y = 117348.595	Y = 117605.111
X = 378287.053	X = 378278.119	X = 378195.088
DELTA = 11°37'33" LT	DELTA = 4°37'47" LT	DELTA = 16°53'56" RT
D = 28°38'52"	D = 14°19'26"	D = 7°09'43"
T = 20.36'	T = 16.17'	T = 118.84'
L = 40.58'	L = 32.32'	L = 235.96'
R = 200.00'	R = 400.00'	R = 800.00'
PC STA = 16+31.84	PC STA = 16+72.42	PC STA = 18+39.38
Y = 117292.832	Y = 117332.916	Y = 117491.486
X = 378287.951	X = 378282.073	X = 378229.909
PT STA = 16+72.42	PT STA = 17+04.74	PT STA = 20+75.33
Y = 117332.916	Y = 117363.903	Y = 117723.951
X = 378282.073	X = 378272.912	X = 378194.800
DB = N02°31'47"W	DB = N14°09'20"W	DB = N17°02'16"W
DA = N14°09'20"W	DA = N18°47'07"W	DA = N00°08'20"W



CURVE CC-1 PI STA = 5+08.52 'CC' Y = 117275.765 X = 378231.362 DELTA = 59°10'08" LT D = 381'58"19" T = 8.52' L = 15.49' R = 15.00' PC STA = 5+00.00 'CC' Y = 117272.264 X = 378239.125 PT STA = 5+15.49 'CC' Y = 117270.893 X = 378224.377 DB = N65°43'35"W DA = S55°06'17"W	CURVE CC-2 PI STA = 5+17.60 'CC' Y = 117269.684 X = 378222.644 DELTA = 7°40'43" LT D = 181°53'29" T = 2.11' L = 4.22' R = 31.50' PC STA = 5+15.49 'CC' Y = 117270.893 X = 378224.377 PT STA = 5+19.71 'CC' Y = 117268.254 X = 378221.087 DB = S55°06'17"W DA = S47°25'34"W	CURVE CC-3 PI STA = 5+39.60 'CC' Y = 117254.802 X = 378206.444 DELTA = 48°09'10" LT D = 128°45'16" T = 19.88' L = 37.40' R = 44.50' PC STA = 5+19.71 'CC' Y = 117268.254 X = 378221.087 PT STA = 5+57.11 'CC' Y = 117234.919 X = 378206.696 DB = S47°25'34"W DA = S00°43'35"E	CURVE CC-4 PI STA = 5+69.88 'CC' Y = 117222.154 X = 378206.858 DELTA = 54°06'09" LT D = 229°10'59" T = 12.77' L = 23.61' R = 25.00' PC STA = 5+57.11 'CC' Y = 117234.919 X = 378206.696 PT STA = 5+80.72 'CC' Y = 117214.801 X = 378217.294 DB = S00°43'35"E DA = S54°49'44"E
---	---	--	--

CURVE C-1 PI STA = 13+09.56 'C' Y = 117191.211 X = 378201.245 DELTA = 59°19'10" RT D = 98°47'09" T = 33.03' L = 60.05' R = 58.00' PC STA = 12+28.34 'C' Y = 117180.574 X = 378232.514 PT STA = 13+36.58 'C' Y = 117223.530 X = 378194.438 DB = N71°12'46"W DA = N11°53'36"W	CURVE C-2 PI STA = 12+55.04 'C' Y = 117171.976 X = 378257.790 DELTA = 61°21'39" RT D = 127°19'26" T = 26.70' L = 48.19' R = 45.00' PC STA = 12+28.34 'C' Y = 117190.038 X = 378277.450 PT STA = 12+76.53 'C' Y = 117180.574 X = 378232.514 DB = S47°25'34"W DA = N71°12'46"W	CURVE C-3 PI STA = 12+01.32 'C' Y = 117212.383 X = 378301.773 DELTA = 59°19'10" RT D = 98°47'09" T = 33.03' L = 60.05' R = 58.00' PC STA = 11+68.29 'C' Y = 117244.703 X = 378294.966 PT STA = 12+28.34 'C' Y = 117190.038 X = 378277.450 DB = S11°53'36"E DA = S47°25'34"W	CURVE C-4 PI STA = 11+41.27 'C' Y = 117277.022 X = 378288.159 DELTA = 59°19'10" RT D = 98°47'09" T = 33.03' L = 60.05' R = 58.00' PC STA = 11+08.24 'C' Y = 117287.659 X = 378256.890 PT STA = 11+68.29 'C' Y = 117244.703 X = 378294.966 DB = S71°12'46"E DA = S11°53'36"E	CURVE C-5 PI STA = 10+86.75 'C' Y = 117296.258 X = 378231.614 DELTA = 59°19'10" RT D = 127°19'26" T = 26.70' L = 48.19' R = 45.00' PC STA = 10+60.05 'C' Y = 117278.195 X = 378211.954 PT STA = 11+08.24 'C' Y = 117287.659 X = 378256.890 DB = N47°25'34"E DA = S71°12'46"E	CURVE C-6 PI STA = 10+33.03 'C' Y = 117255.850 X = 378187.631 DELTA = 59°19'10" RT D = 98°47'09" T = 33.03' L = 60.05' R = 58.00' PC STA = 10+00.00 'C' Y = 117223.530 X = 378194.438 PT STA = 10+60.05 'C' Y = 117278.195 X = 378211.954 DB = N11°53'36"W DA = N47°25'34"E
--	---	--	--	---	--



CURVE NW-1	CURVE NW-2	CURVE NW-3	CURVE NW-4
PI STA = 334+61.92 'NW'	PI STA = 335+07.11 'NW'	PI STA = 335+54.57 'NW'	PI STA = 336+74.99 'NW'
Y = 117353.254	Y = 117309.831	Y = 117309.509	Y = 117367.496
X = 378248.584	X = 378223.802	X = 378173.130	X = 378067.190
DELTA = 53°25'04" RT	DELTA = 59°55'18" RT	DELTA = 21°35'53" RT	DELTA = 9°12'30" RT
D = 88°08'50"	D = 190°59'09"	D = 32°44'26"	D = 11°35'54"
T = 32.70'	T = 17.29'	T = 33.38'	T = 39.78'
L = 60.60'	L = 31.37'	L = 65.97'	L = 79.39'
R = 65.00'	R = 30.00'	R = 175.00'	R = 494.00'
PC STA = 334+29.21 'NW'	PC STA = 334+89.82 'NW'	PC STA = 335+21.19 'NW'	PC STA = 336+35.21 'NW'
Y = 117383.200	Y = 117324.850	Y = 117309.721	Y = 117348.036
X = 378235.437	X = 378232.373	X = 378206.509	X = 378101.888
PT STA = 334+89.82 'NW'	PT STA = 335+21.19 'NW'	PT STA = 335+87.16 'NW'	PT STA = 337+14.61 'NW'
Y = 117324.850	Y = 117309.721	Y = 117321.598	Y = 117392.258
X = 378232.373	X = 378206.509	X = 378142.016	X = 378036.052
DB = S23°42'13"E	DB = S29°42'51"W	DB = S89°38'09"W	DB = N60°42'54"W
DA = S29°42'51"W	DA = S89°38'09"W	DA = N68°45'58"W	DA = N51°30'23"W

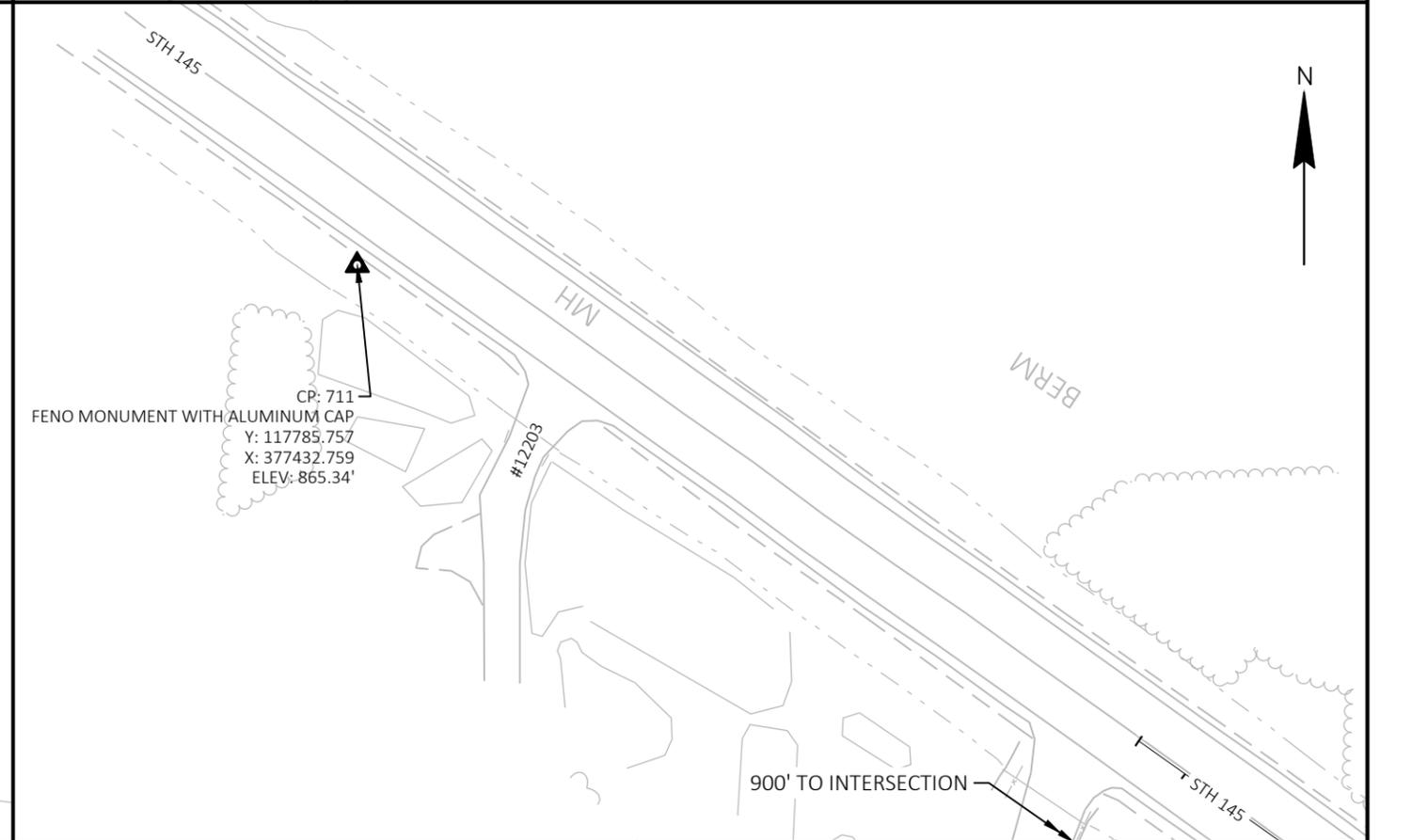
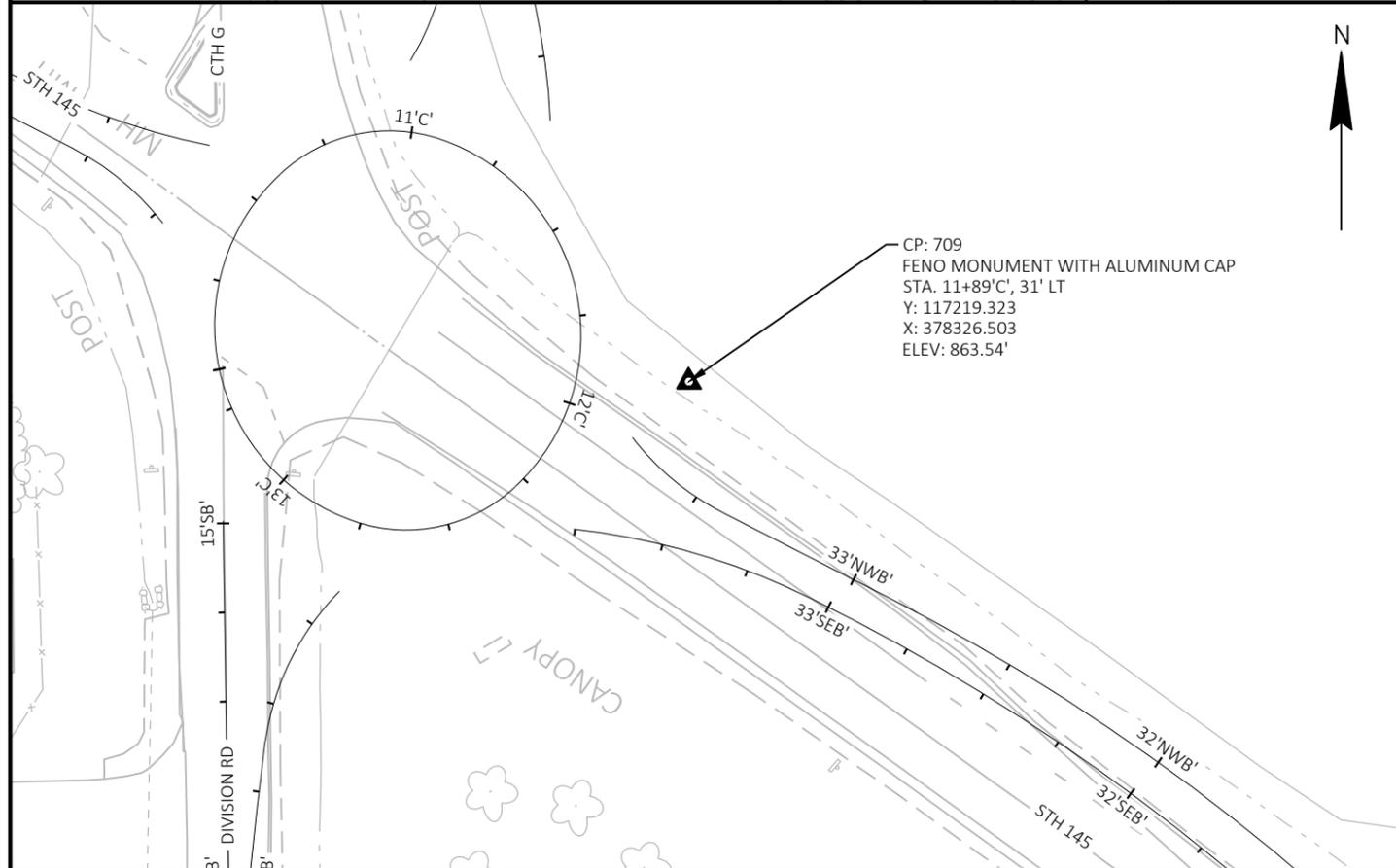
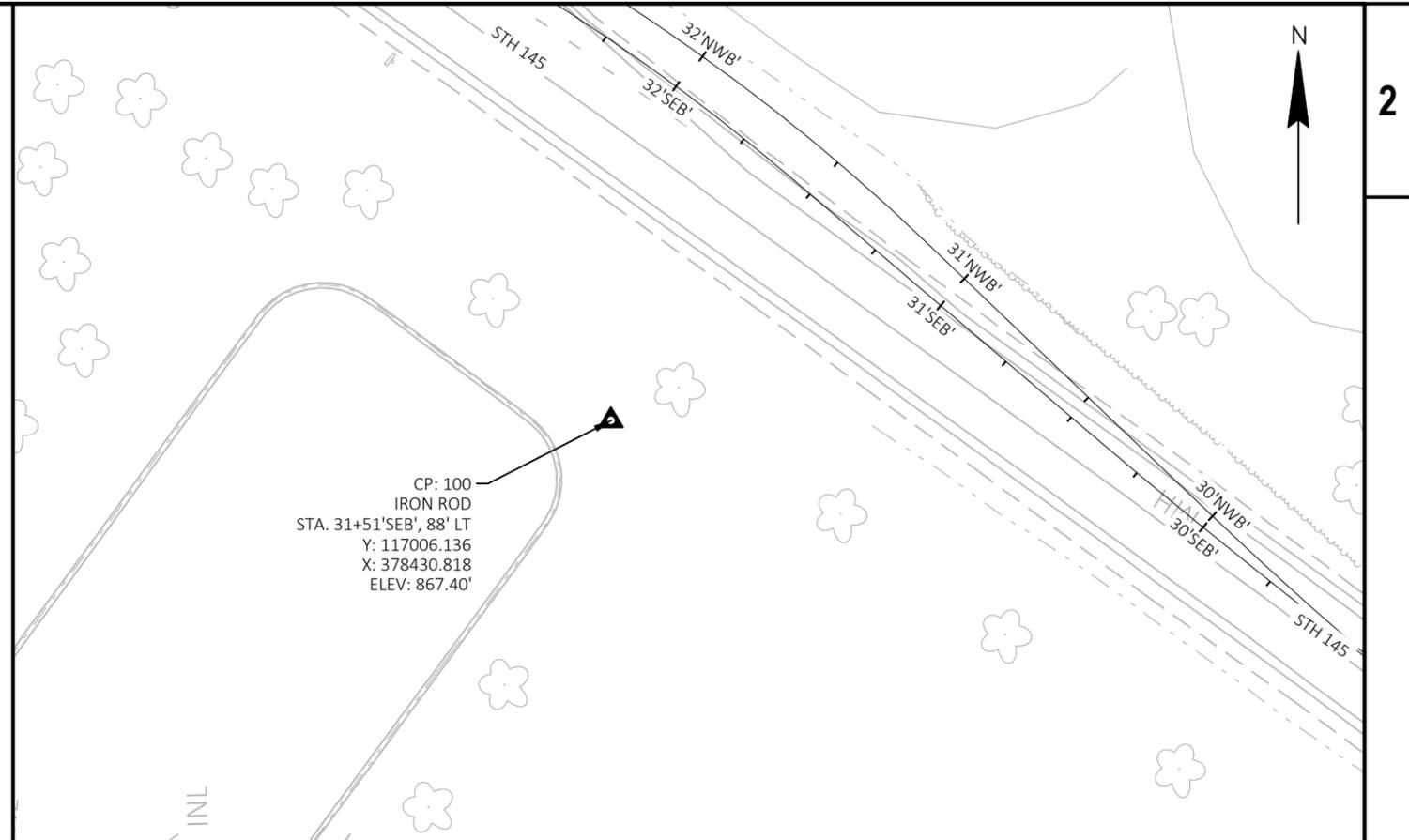
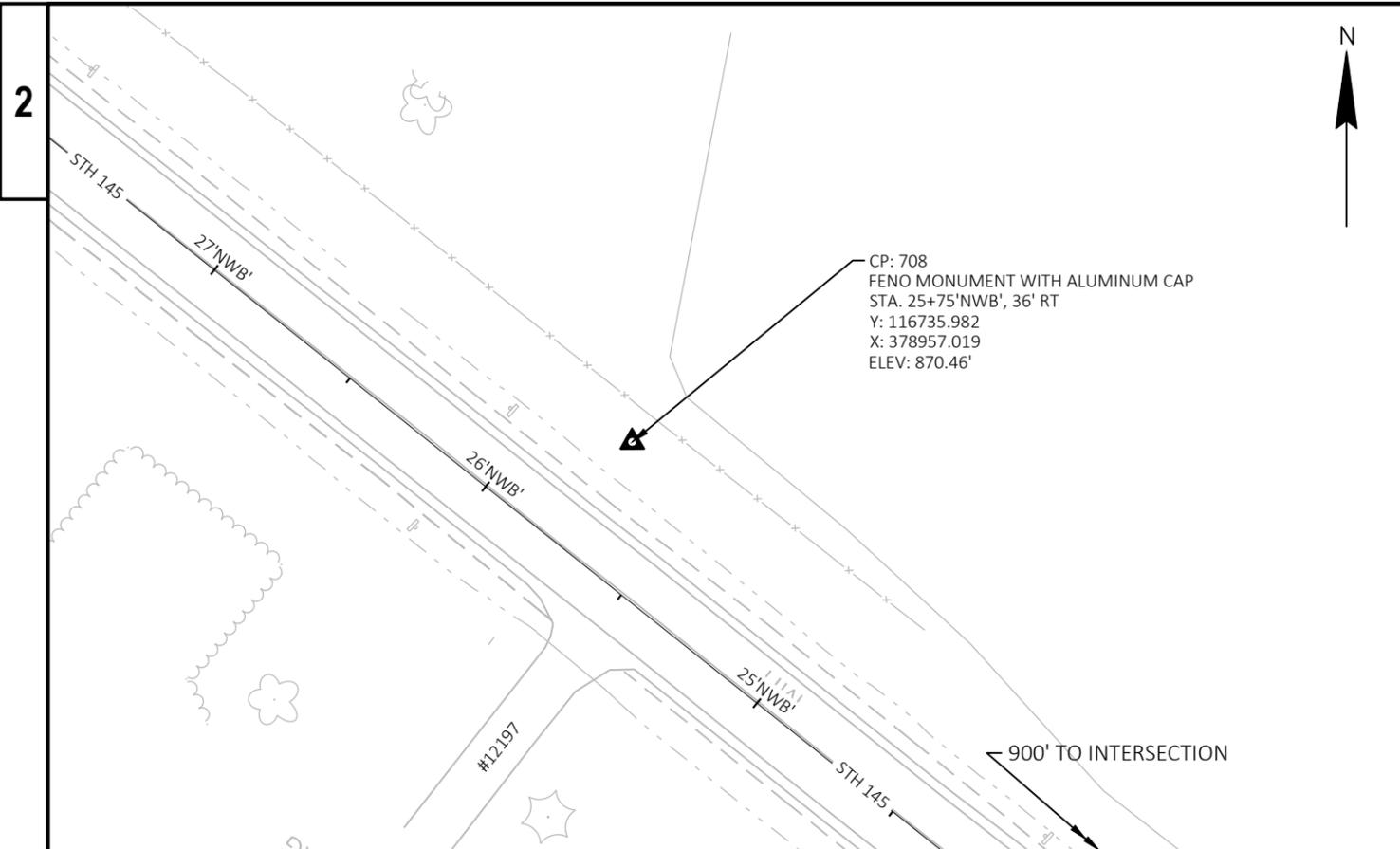
CURVE SW-1	CURVE SW-2
PI STA = 434+81.74 'SW'	PI STA = 435+33.52 'SW'
Y = 117213.589	Y = 117264.290
X = 378175.361	X = 378164.499
DELTA = 9°15'05" LT	DELTA = 54°00'13" LT
D = 28°38'52"	D = 81°51'04"
T = 16.18'	T = 35.67'
L = 32.29'	L = 65.98'
R = 200.00'	R = 70.00'
PC STA = 434+65.55 'SW'	PC STA = 434+97.85 'SW'
Y = 117197.428	Y = 117229.412
X = 378176.163	X = 378171.971
PT STA = 434+97.85 'SW'	PT STA = 435+63.83 'SW'
Y = 117229.412	Y = 117278.744
X = 378171.971	X = 378131.889
DB = N02°50'27"W	DB = N12°05'31"W
DA = N12°05'31"W	DA = N66°05'44"W

CURVE NE-1	CURVE NE-2	CURVE NE-3
PI STA = 233+70.49 'NE'	PI STA = 234+12.28 'NE'	PI STA = 235+07.41 'NE'
Y = 117202.066	Y = 117245.209	Y = 117338.931
X = 378329.140	X = 378314.895	X = 378298.306
DELTA = 47°49'23" RT	DELTA = 8°14'07" RT	DELTA = 8°44'53" LT
D = 81°51'04"	D = 28°38'52"	D = 13°46'23"
T = 31.04'	T = 14.40'	T = 31.82'
L = 58.43'	L = 28.75'	L = 63.52'
R = 70.00'	R = 200.00'	R = 416.00'
PC STA = 233+39.45 'NE'	PC STA = 233+97.88 'NE'	PC STA = 234+75.59 'NE'
Y = 117189.489	Y = 117231.537	Y = 117307.598
X = 378357.515	X = 378319.409	X = 378303.852
PT STA = 233+97.88 'NE'	PT STA = 234+26.63 'NE'	PT STA = 235+39.10 'NE'
Y = 117231.537	Y = 117259.387	Y = 117369.056
X = 378319.409	X = 378312.385	X = 378288.060
DB = N66°05'44"W	DB = N18°16'21"W	DB = N10°02'14"W
DA = N18°16'21"W	DA = N10°02'14"W	DA = N18°47'07"W

CURVE SE-1	CURVE SE-2	CURVE SE-3
PI STA = 132+30.75 'SE'	PI STA = 133+09.68 'SE'	PI STA = 133+52.03 'SE'
Y = 117105.300	Y = 117145.665	Y = 117160.653
X = 378417.232	X = 378349.415	X = 378309.802
DELTA = 7°44'51" LT	DELTA = 1°17'44" LT	DELTA = 24°23'50" LT
D = 14°38'44"	D = 14°19'26"	D = 32°44'26"
T = 26.49'	T = 4.52'	T = 37.83'
L = 52.90'	L = 9.04'	L = 74.52'
R = 391.22'	R = 400.00'	R = 175.00'
PC STA = 132+05.82 'SE'	PC STA = 133+05.16 'SE'	PC STA = 133+14.20 'SE'
Y = 117089.500	Y = 117143.969	Y = 117147.265
X = 378438.495	X = 378353.608	X = 378345.186
PT STA = 132+57.16 'SE'	PT STA = 133+14.20 'SE'	PT STA = 133+88.72 'SE'
Y = 117118.090	Y = 117147.265	Y = 117158.230
X = 378394.033	X = 378345.186	X = 378272.047
DB = N53°23'01"W	DB = N67°58'48"W	DB = N69°16'32"W
DA = N61°07'52"W	DA = N69°16'32"W	DA = S86°19'38"W

CURVE SE-4	CURVE SE-5
PI STA = 134+07.13 'SE'	PI STA = 134+52.03 'SE'
Y = 117157.050	Y = 117124.734
X = 378253.676	X = 378220.327
DELTA = 40°25'35" LT	DELTA = 43°38'32" LT
D = 114°35'30"	D = 81°51'04"
T = 18.41'	T = 28.03'
L = 53.32'	L = 53.32'
R = 50.00'	R = 70.00'
PC STA = 133+88.72 'SE'	PC STA = 134+24.00 'SE'
Y = 117158.230	Y = 117144.239
X = 378272.047	X = 378240.455
PT STA = 134+24.00 'SE'	PT STA = 134+77.32 'SE'
Y = 117144.239	Y = 117096.728
X = 378240.455	X = 378219.223
DB = S86°19'38"W	DB = S45°54'03"W
DA = S45°54'03"W	DA = S02°15'31"W

CURVE SE-6
PI STA = 135+29.17 'SE'
Y = 117044.975
X = 378216.354
DELTA = 2°53'39" LT
D = 11°34'30"
T = 12.50'
L = 25.00'
R = 495.00'
PC STA = 135+16.67 'SE'
Y = 117057.409
X = 378217.672
PT STA = 135+41.67 'SE'
Y = 117032.490
X = 378215.666
DB = S06°02'55"W
DA = S03°09'16"W



PROJECT NO: 2475-04-71

HWY: STH 145

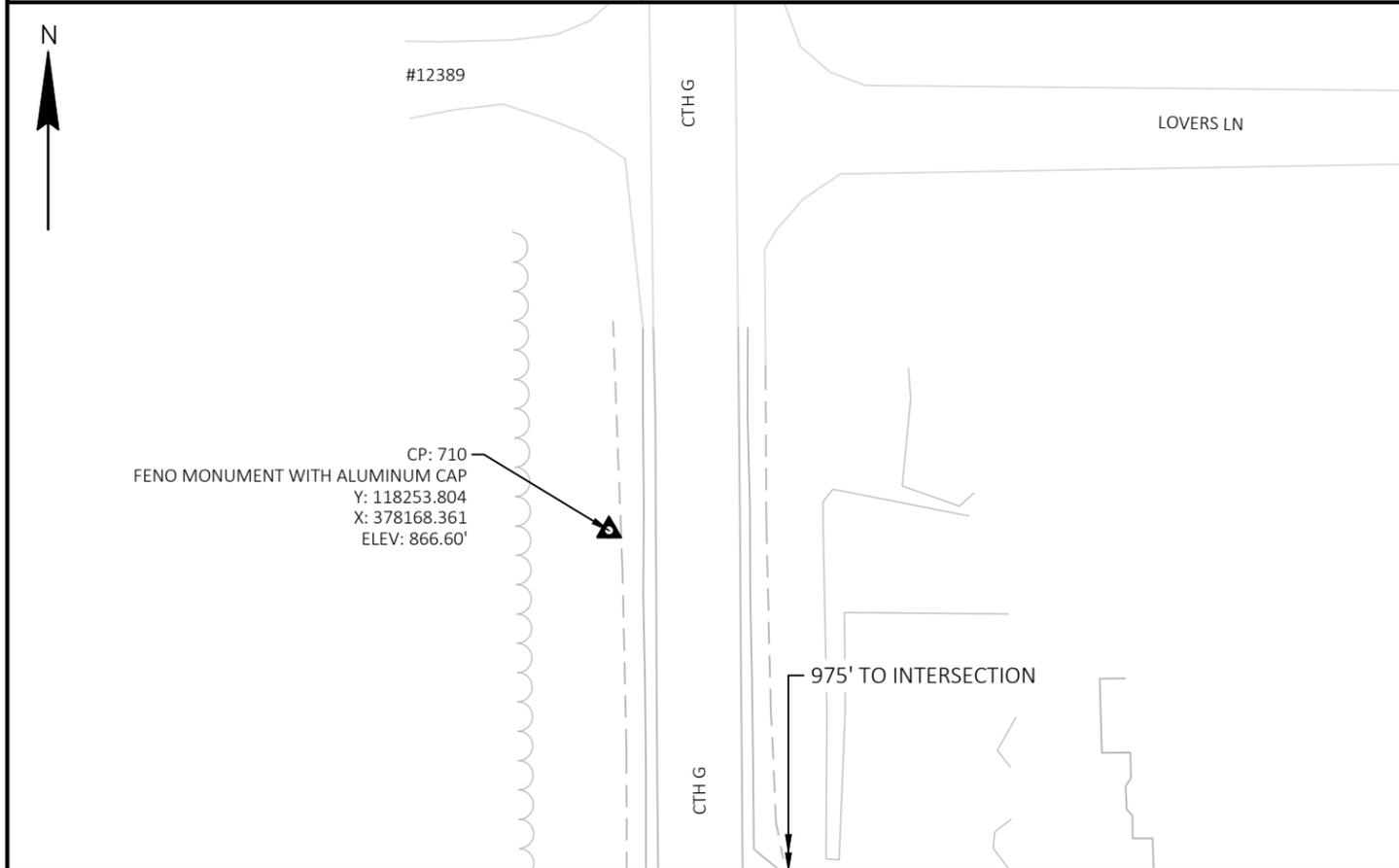
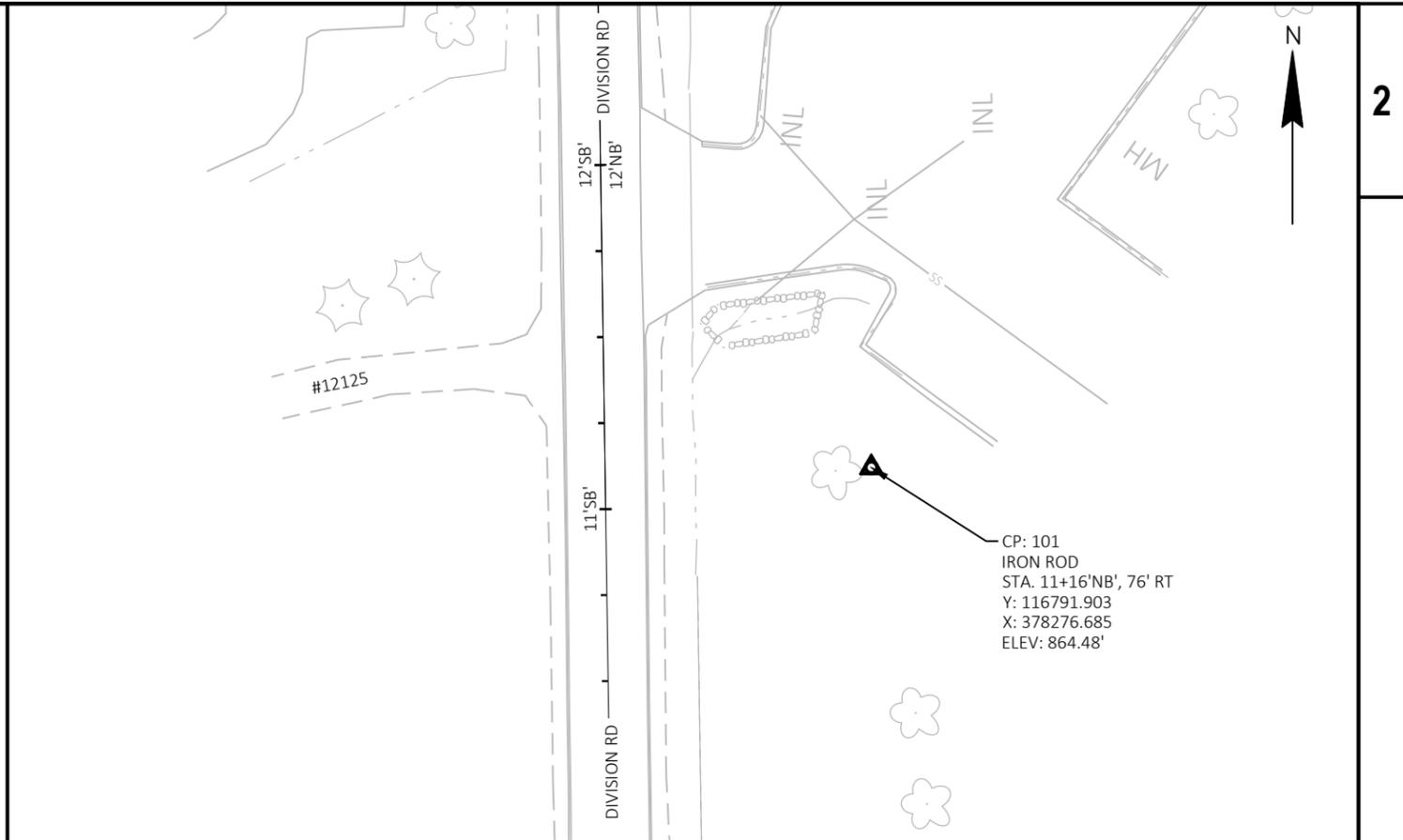
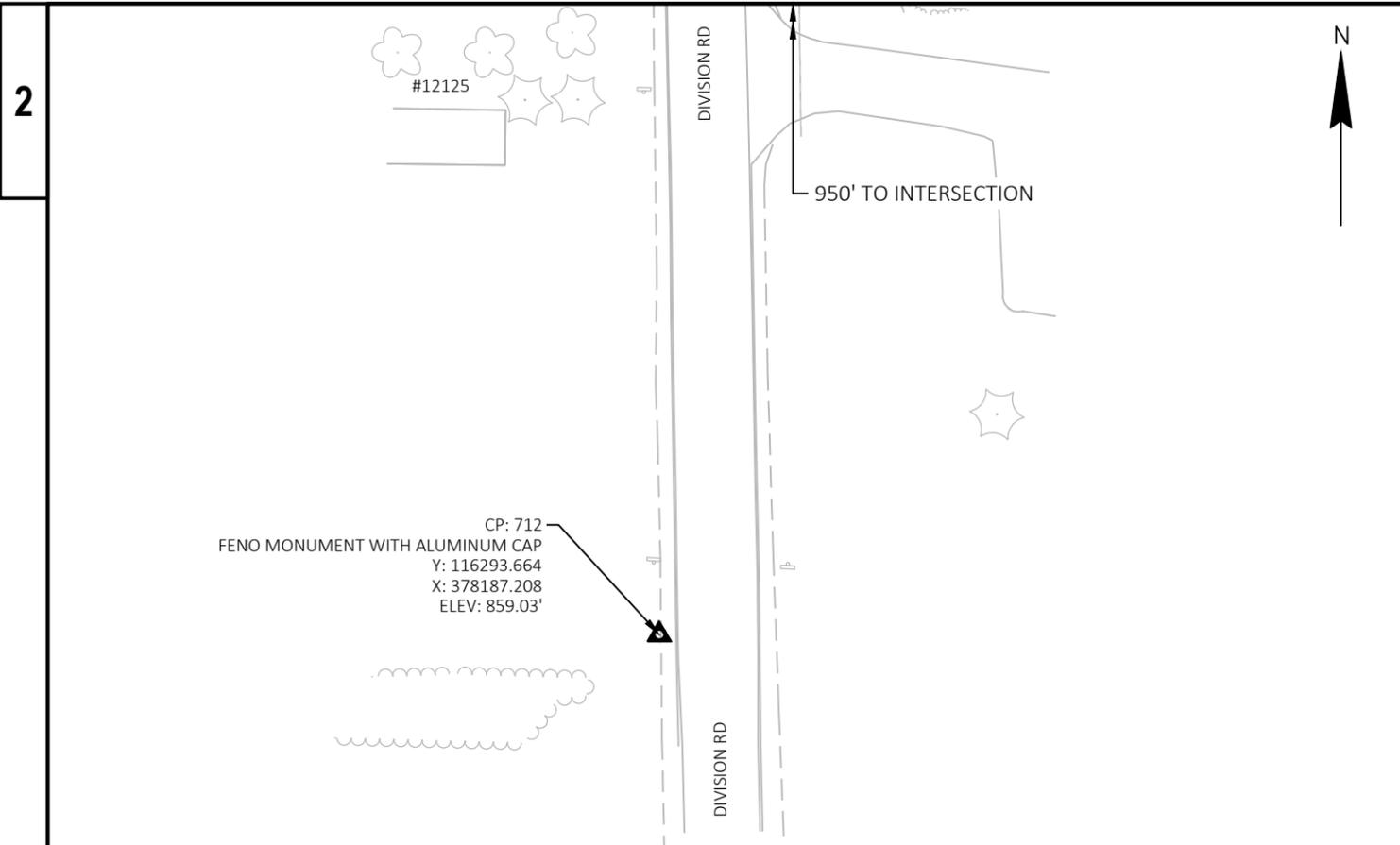
COUNTY: WASHINGTON

ALIGNMENT LAYOUT SURVEY CONTROL

SHEET

73

E



Estimate Of Quantities

2475-04-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	5.000	5.000
0004	203.0100	Removing Small Pipe Culverts	EACH	7.000	7.000
0006	204.0100	Removing Concrete Pavement	SY	3,660.000	3,660.000
0008	204.0150	Removing Curb & Gutter	LF	70.000	70.000
0010	204.0210	Removing Manholes	EACH	1.000	1.000
0012	204.0245	Removing Storm Sewer (size) 01. 18-Inch	LF	30.000	30.000
0014	204.0245	Removing Storm Sewer (size) 02. 24-Inch By 24-Inch	LF	50.000	50.000
0016	205.0100	Excavation Common	CY	12,800.000	12,800.000
0018	205.0200	Excavation Rock	CY	200.000	200.000
0020	213.0100	Finishing Roadway (project) 01. 2475-04-71	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	310.000	310.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	11,530.000	11,530.000
0026	310.0110	Base Aggregate Open-Graded	TON	102.000	102.000
0028	313.0110	Pit Run	TON	11,300.000	11,300.000
0030	405.0100	Coloring Concrete WisDOT Red	CY	160.000	160.000
0032	415.2010	Concrete Truck Apron 12-Inch	SY	460.000	460.000
0034	455.0605	Tack Coat	GAL	1,460.000	1,460.000
0036	460.2000	Incentive Density HMA Pavement	DOL	2,130.000	2,130.000
0038	460.6223	HMA Pavement 3 MT 58-28 S	TON	2,910.000	2,910.000
0040	460.6424	HMA Pavement 4 MT 58-28 H	TON	1,020.000	1,020.000
0042	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	90.000	90.000
0044	465.0315	Asphaltic Flumes	SY	70.000	70.000
0046	520.1015	Apron Endwalls for Culvert Pipe 15-Inch	EACH	2.000	2.000
0048	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	10.000	10.000
0050	520.3315	Culvert Pipe Class III-A 15-Inch	LF	36.000	36.000
0052	520.3318	Culvert Pipe Class III-A 18-Inch	LF	134.000	134.000
0054	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	3.000	3.000
0056	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0058	522.2624	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	EACH	2.000	2.000
0060	601.0405	Concrete Curb & Gutter 18-Inch Type A	LF	240.000	240.000
0062	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	1,310.000	1,310.000
0064	601.0551	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type A	LF	110.000	110.000
0066	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	2,880.000	2,880.000
0068	601.0581	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type R	LF	340.000	340.000
0070	602.0405	Concrete Sidewalk 4-Inch	SF	5,540.000	5,540.000
0072	606.0100	Riprap Light	CY	22.000	22.000
0074	606.0200	Riprap Medium	CY	16.000	16.000
0076	608.0005	Storm Sewer Rock Excavation	CY	70.000	70.000
0078	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	190.000	190.000
0080	608.0418	Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	LF	441.000	441.000
0082	608.0424	Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	LF	415.000	415.000
0084	608.2424	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 24x38-Inch	LF	98.000	98.000
0086	611.0530	Manhole Covers Type J	EACH	2.000	2.000
0088	611.0624	Inlet Covers Type H	EACH	7.000	7.000
0090	611.0627	Inlet Covers Type HM	EACH	5.000	5.000
0092	611.0636	Inlet Covers Type HM-S	EACH	1.000	1.000
0094	611.0639	Inlet Covers Type H-S	EACH	3.000	3.000
0096	611.0642	Inlet Covers Type MS	EACH	1.000	1.000
0098	611.0652	Inlet Covers Type T	EACH	3.000	3.000

Estimate Of Quantities

2475-04-71

Line	Item	Item Description	Unit	Total	Qty
0100	611.1004	Catch Basins 4-FT Diameter	EACH	1.000	1.000
0102	611.2005	Manholes 5-FT Diameter	EACH	5.000	5.000
0104	611.2006	Manholes 6-FT Diameter	EACH	2.000	2.000
0106	611.3004	Inlets 4-FT Diameter	EACH	4.000	4.000
0108	611.3225	Inlets 2x2.5-FT	EACH	2.000	2.000
0110	611.3230	Inlets 2x3-FT	EACH	7.000	7.000
0112	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000
0114	612.0106	Pipe Underdrain 6-Inch	LF	3,030.000	3,030.000
0116	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	120.000	120.000
0118	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	3.000	3.000
0120	618.0100	Maintenance and Repair of Haul Roads (project) 01. 2475-04-71	EACH	1.000	1.000
0122	619.1000	Mobilization	EACH	1.000	1.000
0124	620.0300	Concrete Median Sloped Nose	SF	680.000	680.000
0126	624.0100	Water	MGAL	180.000	180.000
0128	625.0100	Topsoil	SY	11,530.000	11,530.000
0130	628.1504	Silt Fence	LF	2,190.000	2,190.000
0132	628.1520	Silt Fence Maintenance	LF	2,190.000	2,190.000
0134	628.1905	Mobilizations Erosion Control	EACH	9.000	9.000
0136	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0138	628.2002	Erosion Mat Class I Type A	SY	550.000	550.000
0140	628.2004	Erosion Mat Class I Type B	SY	5,260.000	5,260.000
0142	628.2008	Erosion Mat Urban Class I Type B	SY	5,710.000	5,710.000
0144	628.7005	Inlet Protection Type A	EACH	1.000	1.000
0146	628.7010	Inlet Protection Type B	EACH	1.000	1.000
0148	628.7015	Inlet Protection Type C	EACH	13.000	13.000
0150	628.7020	Inlet Protection Type D	EACH	12.000	12.000
0152	628.7504	Temporary Ditch Checks	LF	280.000	280.000
0154	628.7555	Culvert Pipe Checks	EACH	26.000	26.000
0156	628.7570	Rock Bags	EACH	40.000	40.000
0158	629.0210	Fertilizer Type B	CWT	7.000	7.000
0160	630.0140	Seeding Mixture No. 40	LB	490.000	490.000
0162	630.0500	Seed Water	MGAL	263.000	263.000
0164	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	7.000	7.000
0166	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	23.000	23.000
0168	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	17.000	17.000
0170	634.0620	Posts Wood 4x6-Inch X 20-FT	EACH	9.000	9.000
0172	634.0622	Posts Wood 4x6-Inch X 22-FT	EACH	3.000	3.000
0174	634.0812	Posts Tubular Steel 2x2-Inch X 12-FT	EACH	4.000	4.000
0176	634.0814	Posts Tubular Steel 2x2-Inch X 14-FT	EACH	6.000	6.000
0178	637.2210	Signs Type II Reflective H	SF	523.420	523.420
0180	637.2230	Signs Type II Reflective F	SF	97.750	97.750
0182	638.2602	Removing Signs Type II	EACH	30.000	30.000
0184	638.3000	Removing Small Sign Supports	EACH	26.000	26.000
0186	642.5001	Field Office Type B	EACH	1.000	1.000
0188	643.0300	Traffic Control Drums	DAY	1,600.000	1,600.000
0190	643.0420	Traffic Control Barricades Type III	DAY	3,360.000	3,360.000
0192	643.0705	Traffic Control Warning Lights Type A	DAY	4,160.000	4,160.000
0194	643.0715	Traffic Control Warning Lights Type C	DAY	1,600.000	1,600.000
0196	643.0900	Traffic Control Signs	DAY	22,640.000	22,640.000

Estimate Of Quantities

2475-04-71

Line	Item	Item Description	Unit	Total	Qty
0198	643.0920	Traffic Control Covering Signs Type II	EACH	25.000	25.000
0200	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0202	643.5000	Traffic Control	EACH	1.000	1.000
0204	645.0111	Geotextile Type DF Schedule A	SY	1,300.000	1,300.000
0206	645.0120	Geotextile Type HR	SY	72.000	72.000
0208	645.0130	Geotextile Type R	SY	90.000	90.000
0210	645.0220	Geogrid Type SR	SY	15,000.000	15,000.000
0212	646.1020	Marking Line Epoxy 4-Inch	LF	3,680.000	3,680.000
0214	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	7,440.000	7,440.000
0216	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	260.000	260.000
0218	646.5520	Marking Outfall Epoxy	EACH	3.000	3.000
0220	646.6320	Marking Dotted Extension Epoxy 18-Inch	LF	80.000	80.000
0222	646.7120	Marking Diagonal Epoxy 12-Inch	LF	220.000	220.000
0224	646.8120	Marking Curb Epoxy	LF	80.000	80.000
0226	646.8220	Marking Island Nose Epoxy	EACH	8.000	8.000
0228	650.4000	Construction Staking Storm Sewer	EACH	29.000	29.000
0230	650.4500	Construction Staking Subgrade	LF	2,450.000	2,450.000
0232	650.5000	Construction Staking Base	LF	2,450.000	2,450.000
0234	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	4,880.000	4,880.000
0236	650.8501	Construction Staking Electrical Installations (project) 01. 2475-04-71	EACH	1.000	1.000
0238	650.9911	Construction Staking Supplemental Control (project) 01. 2475-04-71	EACH	1.000	1.000
0240	650.9920	Construction Staking Slope Stakes	LF	2,450.000	2,450.000
0242	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	1,455.000	1,455.000
0244	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	250.000	250.000
0246	653.0140	Pull Boxes Steel 24x42-Inch	EACH	9.000	9.000
0248	654.0105	Concrete Bases Type 5	EACH	13.000	13.000
0250	654.0230	Concrete Control Cabinet Bases Type L30	EACH	1.000	1.000
0252	655.0610	Electrical Wire Lighting 12 AWG	LF	1,908.000	1,908.000
0254	655.0620	Electrical Wire Lighting 8 AWG	LF	9,905.000	9,905.000
0256	655.0640	Electrical Wire Lighting 1 AWG	LF	18.000	18.000
0258	656.0201	Electrical Service Meter Breaker Pedestal (location) 01. HL-66-DG	EACH	1.000	1.000
0260	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	14.000	14.000
0262	657.0322	Poles Type 5-Aluminum	EACH	14.000	14.000
0264	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	4.000	4.000
0266	657.0715	Luminaire Arms Truss Type 4 1/2-Inch Clamp 15-FT	EACH	10.000	10.000
0268	659.1115	Luminaires Utility LED A	EACH	14.000	14.000
0270	659.2130	Lighting Control Cabinets 120/240 30-Inch	EACH	1.000	1.000
0272	690.0150	Sawing Asphalt	LF	270.000	270.000
0274	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	138.000	138.000
0276	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	250.000	250.000
0278	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	900.000	900.000
0280	SPV.0060	Special 01. Spread Footing Concrete Base Type 5	EACH	1.000	1.000
0282	SPV.0060	Special 02. Temporary Lighting System, STH 145 Roundabout	EACH	1.000	1.000
0284	SPV.0060	Special 10. Lighting System Integrator (2475-04-71)	EACH	1.000	1.000
0286	SPV.0060	Special 20. Lighting System Survey (2475-04-71)	EACH	1.000	1.000
0288	SPV.0085	Special 01. Seeding No Mow Fescue	LB	25.000	25.000

2475-04-71

GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0205 GRUBBING STA
0010	35+00 'SEB'	-	39+00 'SEB'	LT	4
	13+00 'SB'	-	14+00 'SB'	LT	1
TOTAL 0010					5

CONCRETE REMOVAL

CATEGORY	STATION	TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY
0010	25+00 'NWB'	-	39+75 'NWB'	STH 145	3,660
TOTAL 0010					3,660

REMOVALS

CATEGORY	STATION	OFFSET	LOCATION	203.0100	204.0150	204.0210	204.0245.01	204.0245.02	REMARKS
				REMOVING SMALL PIPE CULVERTS	REMOVING CURB & GUTTER	REMOVING MANHOLES	REMOVING STORM SEWER (SIZE) (01. 18-INCH)	REMOVING STORM SEWER (SIZE) (02. 24- INCH BY 24-INCH)	
0010	25+50 'NWB'	23' LT	STH 145	1	-	-	-	-	25' - 18" CMPC
	34+45 'NWB'	4' LT	STH 145	1	-	-	-	-	75' - 36" CMPC
	35+58 'NWB'	6' RT	STH 145	-	-	1	-	-	-
	35+60 'NWB'	8' LT	STH 145	-	-	-	-	50	-
	35+67 'NWB'	29' RT	STH 145	-	-	-	30	-	-
	13+01 'NB'	25' LT	CTH G	1	-	-	-	-	30' - 15" RCCP
	14+00 'NB'	33.7' LT	CTH G	1	-	-	-	-	104' - 12" CMPC
	16+00 'NB'	94' LT	CTH G	-	70	-	-	-	-
	17+96 'NB'	85' LT	CTH G	1	-	-	-	-	28' - 18" CMPC
	19+31 'NB'	47' LT	CTH G	1	-	-	-	-	28' - 18" CMPC
	20+14 'NB'	34' RT	CTH G	1	-	-	-	-	28' - 18" CMPC
TOTAL 0010				7	70	1	30	50	

EARTHWORK SUMMARY (PROJECT ID 2475-04-71)

CATEGORY 0010

FROM/TO STATION	LOCATION	205.0100 EXCAVATION COMMON (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	205.0200 ROCK EXCAVATION (7)	EXPANDED ROCK (12) FACTOR 1.10	UNEXPANDED FILL	EXPANDED FILL (13) FACTOR 1.30	MASS ORDINATE +/- (14)	WASTE	COMMENT
		CUT (2)	EBS EXCAVATION (3)									
24+39 'NWB' - 39+75 'NWB'	STH 145 'NWB'	5,187	0	586	4,601	200	220	878	1,141	3,460	3,680	ROCK TO BE WASTE
30+00 'SEB' - 39+72 'SEB'	STH 145 'SEB'	2,425	0	286	2,139	-	-	791	1,028	1,111	1,111	
12+17 'NB' - 21+73 'NB'	CTH G / DIVISION ROAD 'NB'	1,453	0	141	1,312	-	-	1,018	1,323	-11	-	
12+17 'SB' - 21+66 'SB'	CTH G / DIVISION ROAD 'SB'	2,171	0	135	2,036	-	-	667	867	1,169	1,169	
10+00 'C' - 13+37 'C'	ROUNDABOUT	564	0	283	281	-	-	1,810	2,353	-2,072	-	SURF - SURF
-	UNDISTRIBUTED	-	1,000	-	1,000	-	-	-	-	-	1,000	
GRAND TOTAL		11,800	1,000	1,431	11,369	200	220	5,164	6,713	3,656	6,959	
TOTAL COMMON EXC		12,800										

NOTES:

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (3) EBS EXCAVATION TO BE BACKFILLED WITH PIT RUN.
- (4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (7) ROCK EXCAVATION ITEM NUMBER 205.0200
- (12) EXPANDED ROCK FACTOR = 1.10
- (13) EXPANDED FILL FACTOR = 1.3 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
- (14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
- (15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

BASE AGGREGATE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	313.0110	624.0100	645.0220	REMARKS
					AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	PIT RUN TON	WATER MGAL	GEOGRID TYPE SR SY	
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	46	3,901	3,620	58	4,790	
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	51	2,232	1,990	33	2,656	
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	27	1,202	1,025	18	1,356	
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	119	2,674	2,220	41	2,936	
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB	-	1,369	1,325	24	1,755	
	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	-	32	-	1	-	DRIVEWAYS
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	-	20	-	1	-	DRIVEWAYS
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	43	56	-	2	-	DRIVEWAYS
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	24	44	-	2	-	DRIVEWAYS
			PROJECT WIDE		-	-	100	-	133	RELIEF TRENCH
			PROJECT WIDE		-	-	1,020	-	1,374	UNDISTRIBUTED FOR EBS
TOTAL 0010					310	11,530	11,300	180	15,000	

CONCRETE PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	405.0100	415.2010	602.0405
					COLORING CONCRETE WISDOT RED CY	CONCRETE TRUCK APRON 12-INCH SY	CONCRETE SIDEWALK 4-INCH SF
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	-	-	1616
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	-	-	1290
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	4	10	677
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	6	20	1,957
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB	150	430	-
TOTAL 0010					160	460	5,540

HMA PAVEMENT AND SHOULDERS

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	460.6223	460.6424
					TACK COAT GAL	HMA PAVEMENT 3 MT 58-28 S TON	HMA PAVEMENT 4 MT 58-28 H TON
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	510	1,020	357
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	285	565	198
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	165	325	113
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	323	645	226
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB	177	355	126
TOTAL 0010					1,460	2,910	1,020

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

ASPHALTIC SURFACE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0315 ASPHALTIC FLUMES SY
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	15	17
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	15	11
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	36	21
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	24	21
TOTAL 0010					90	70

RIPRAP ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	606.0100 RIPRAP LIGHT CY	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY	645.0130 GEOTEXTILE TYPE R SY	REMARKS
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, RT	2	-	-	7	RIPRAP LIGHT AT FLUME ENDS (TYP.)
	35+25 'NWB'	-	39+75 'NWB'	STH 145, RT	-	-	-	-	
	12+16.70 'NB'	-	14+75 'NB'	CTH G, RT	2	3	13	10	
	16+50 'NB'	-	21+77.12 'NB'	CTH G, RT	3	-	-	11	
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB RT	-	3	12	-	SE QUADRANT
	29+00 'SEB'	-	33+75 'SEB'	STH 145, LT	2	-	-	9	
	35+22 'SEB'	-	39+68 'SEB'	STH 145, LT	2	-	-	9	
	12+91 'SB'	-	15+01 'SB'	CTH G, LT	4	4	17	16	
	16+41 'SB'	-	21+66 'SB'	CTH G, LT	7	-	-	28	
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB LT	-	6	30	-	NW QUADRANT
TOTAL 0010					22	16	72	90	

CULVERT PIPE ITEMS

CATEGORY	STATION	SIDE	LOCATION	520.1015 APRON ENDWALLS FOR CULVERT PIPE 15-INCH EACH	520.1018 APRON ENDWALLS FOR CULVERT PIPE 18-INCH EACH	520.3315 CULVERT PIPE CLASS III-A 15-INCH LF	520.3318 CULVERT PIPE CLASS III-A 18-INCH LF
0010	25+49 'NWB'	LT	STH 145	-	2	-	24
	39+29 'NWB'	LT	STH 145	2	-	36	-
	13+02 'NB'	LT	DIVISION RD	-	2	-	26
	17+90 'NB'	LT	CTH G	-	2	-	34
	19+32 'NB'	LT	CTH G	-	2	-	24
	20+18 'SB'	RT	CTH G	-	2	-	26
TOTAL 0010				2	10	36	134

CONCRETE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	601.0405 CONCRETE CURB & GUTTER 18- INCH TYPE A LF	601.0411 CONCRETE CURB & GUTTER 30- INCH TYPE D LF	601.0551 CONCRETE CURB & GUTTER 4- INCH SLOPED 36- INCH TYPE A LF	601.0553 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D LF	601.0581 CONCRETE CURB & GUTTER 4- INCH SLOPED 30- INCH TYPE R LF	620.0300 CONCRETE MEDIAN SLOPED NOSE SF
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, RT	-	120	-	750	-	-
	35+25 'NWB'	-	39+75 'NWB'	STH 145, RT	-	-	60	420	-	-
	12+16.70 'NB'	-	14+75 'NB'	CTH G, RT	-	-	-	110	-	-
	16+50 'NB'	-	21+77.12 'NB'	CTH G, RT	-	190	-	-	-	-
	29+00 'SEB'	-	33+75 'SEB'	STH 145, LT	-	-	50	580	-	-
	35+22 'SEB'	-	39+68 'SEB'	STH 145, LT	-	-	-	145	-	-
	12+91 'SB'	-	15+01 'SB'	CTH G, LT	-	-	-	150	-	-
	16+41 'SB'	-	21+66 'SB'	CTH G, LT	-	-	-	125	-	-
	31+25 'NWB'	-	33+75 'NWB'	STH 145, MEDIAN	-	321	-	210	-	110
	35+25 'NWB'	-	37+75 'NWB'	STH 145, MEDIAN	-	250	-	190	-	230
	14+40 'NB'	-	14+85 'NB'	CTH G, MEDIAN	-	150	-	-	-	110
	16+40 'NB'	-	19+00 'NB'	CTH G, MEDIAN	-	279	-	200	-	230
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB	240	-	-	-	340	-
TOTAL 0010					240	1,310	110	2,880	340	680

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

STORM SEWER PIPES

608.0412 608.0418 608.0424 608.2424

STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH LF STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 24X38-INCH LF

CATEGORY	FROM	TO	LF	LF	LF	LF
0010	100	- 200	-	132	-	-
	100	- 110	51	-	-	-
	310	- 200	-	41	-	-
	310	- 300	-	-	-	26
	320	- 310	-	-	-	21
	330	- 320	-	-	-	7
	340	- 330	-	-	-	19
	340	- 341	24	-	-	-
	350	- 340	-	-	-	25
	410	- 400	-	42	-	-
	410	- 420	9	-	-	-
	540	- 530	-	55	-	-
	540	- 541	9	-	-	-
	550	- 540	-	68	-	-
	560	- 550	11	-	-	-
	560	- 570	11	-	-	-
	610	- 600	-	-	13	-
	620	- 610	-	-	267	-
	621	- 620	-	24	-	-
	630	- 620	-	-	114	-
	631	- 630	-	-	21	-
	640	- 630	-	79	-	-
	641	- 640	23	-	-	-
	642	- 641	8	-	-	-
	650	- 640	44	-	-	-

TOTAL 0010 190 441 415 98

ROCK REMOVAL

608.0005
STORM SEWER
ROCK
EXCAVATION
CY

CATEGORY	STATION	TO	STATION	LOCATION	CY	REMARKS
0010	35+50 'NWB'	-	37+00 'NWB'	STH 145 RT	70	STORM SEWER RUN 650 - 630 AND 642 - 640
TOTAL 0010					70	

MOBILIZATION

628.1905 628.1910
MOBILIZATIONS MOBILIZATIONS
EROSION CONTROL EMERGENCY
EROSION CONTROL

CATEGORY	LOCATION	EACH	EACH
0010	PROJECT WIDE	9	4
TOTAL 0010		9	4

EROSION CONTROL

628.1504 628.1520 628.7005 628.7010 628.7015 628.7020 628.7504 628.7555 628.7570

CATEGORY	STATION	TO	STATION	LOCATION	SILT FENCE LF	SILT FENCE MAINTENANCE LF	INLET PROTECTION TYPE A EACH	INLET PROTECTION TYPE B EACH	INLET PROTECTION TYPE C EACH	INLET PROTECTION TYPE D EACH	TEMPORARY DITCH CHECKS LF	CULVERT PIPE CHECKS EACH	ROCK BAGS EACH	REMARKS
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	830	830	-	-	4	4	80	5	15	
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	437	437	1	1	2	2	40	5	15	
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	75	75	-	-	2	-	30	5	-	
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	410	410	-	-	2	-	40	6	-	
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB	-	-	-	-	-	3	30	-	-	
	UNDISTRIBUTED *				438	438	0	0	3	3	60	5	10	ROCK BAGS FOR SILT FENCE RELIEF
TOTAL 0010					2,190	2,190	1	1	13	12	280	26	40	

*UNDISTRIBUTED APPROXIMATELY 25% OF TOTAL

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

STORM SEWER STRUCTURES

CATEGORY	STRUCTURE	* STATION	OFFSET	522.1018	522.1024	522.2624	611.0530	611.0624	611.0627	611.0636	611.0639	611.0642	611.0652	611.1004	611.2005	611.2006	611.3004	611.3225	611.3230	611.3901	650.4000	
				APRON ENDWALLS FOR CULVERT PIPE	APRON ENDWALLS FOR CULVERT PIPE	APRON ENDWALLS FOR CULVERT PIPE	MANHOLE COVERS	INLET COVERS	INLET COVERS	INLET COVERS	INLET COVERS	INLET COVERS	INLET COVERS	CATCH BASINS 4-FT DIAMETER	MANHOLES 5-FT DIAMETER	MANHOLE S 6-FT DIAMETER	INLETS 4-FT DIAMETER	INLETS 2X2.5-FT	INLETS 2X3-FT	INLETS MEDIAN 1 GRATE	CONSTRUCTION STAKING STORM SEWER	
				CONCRETE 18-INCH EACH	D CONCRETE 24-INCH EACH	ELLIPTICAL 24X38-INCH EACH		TYPE J EACH	TYPE H EACH	TYPE HM EACH	TYPE HM-S EACH	TYPE H-S EACH	TYPE MS EACH	TYPE T EACH								
0010	100	31+26 'SEB'	19.5' LT	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	1
	110	31+25 'NWB'	19.5' RT	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	1
	200	32+61 'SEB'	20.4' LT	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	1
	300	33+16 'SEB'	41.8' LT	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	310	33+04 'SEB'	17.7' LT	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1
	320	33+12 'SEB'	1.5' RT	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1
	330	33+15 'NWB'	1.5' LT	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1
	340	33+15 'NWB'	17.7' RT	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1
	341	32+91 'NWB'	19.7' RT	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	350	33+26 'NWB'	40.3' RT	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	400	17+48 'SB'	40.4' LT	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	410	17+52 'SB'	1.5' RT	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	420	17+53 'NB'	3.1' LT	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	530	13+98 'NB'	30.7' RT	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	540	14+44 'NB'	1.5' LT	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	1
	541	14+44 'SB'	1.5' RT	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	550	12+64 'C'	1.2' RT	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	1
	560	12+52 'C'	1.2' RT	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1
	570	12+41 'C'	1.2' RT	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1
	600	12+46 'SB'	19.1' LT	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	610	12+55 'SB'	9.0' LT	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
	620	13+23 'C'	22.1' LT	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
	621	13+29 'C'	44.6' LT	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	630	35+52 'NWB'	21.3' RT	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	1
	631	35+55 'NWB'	41.7' RT	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	640	36+35 'NWB'	21.1' RT	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	1
	641	36+32 'NWB'	1.50' LT	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	642	36+33 'SEB'	2.1' RT	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	650	36+80 'NWB'	29.2' RT	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1
TOTAL 0010				3	2	2	2	7	5	1	3	1	3	1	5	2	4	2	7	1	29	

* STATION AND OFFSET ARE TO CENTER OF STRUCTURE
OR
* STATION AND OFFSET ARE TO END OF CULVERT PIPE

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

3

PIPE UNDERDRAIN ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	310.0110	612.0106	612.0206	612.0806	645.0111	646.5520	REMARKS FOR BEGIN STATION	REMARKS FOR END STATION
					BASE AGGREGATE OPEN-GRADED TON	PIPE UNDERDRAIN 6-INCH LF	PIPE UNDERDRAIN UNPERFORATED 6-INCH LF	APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH EACH	GEOTEXTILE TYPE DF SCHEDULE A SY	MARKING OUTFALL EPOXY EACH		
0010	24+50 'NWB'	-	25+00 'NWB'	STH 145 , LT	2	-	50	1	21	1	OUTFALL	25+00 'NWB' LT
	25+00 'NWB'			STH 145	2	36	-	-	15	-	25+00 'NWB' LT	25+00 'NWB' RT
	25+00 'NWB'	-	28+00 'NWB'	STH 145,RT	9	300	-	-	122	-	25+00 'NWB' RT	HIGHPOINT
	28+00 'NWB'	-	31+25 'NWB'	STH 145,RT	10	328	-	-	134	-	HIGHPOINT	STRUCTURE 110
	28+00 'SEB'	-	31+26 'SEB'	STH 145 , LT	10	330	-	-	135	-	HIGHPOINT	STRUCTURE 100
	31+25 'NWB'	-	32+91 'NWB'	STH 145,RT	5	176	-	-	72	-	STRUCTURE 110	STRUCTURE 341
	32+91 'NWB'	-	33+15 'NWB'	STH 145,RT	2	30	-	-	13	-	STRUCTURE 341	STRUCTURE 340
	32+62 'SEB'	-	33+03 'SEB'	STH 145, LT	2	45	-	-	19	-	STRUCTURE 200	STRUCTURE 310
	33+15 'NWB'	-	16+45 'NB'	NE CORNER	5	144	-	-	59	-	STRUCTURE 340	END CAP REQUIRED
	33+13 'NWB'	-	14-79 'NB'	SE CORNER	5	120	26	1	60	-	STRUCTURE 310	END CAP REQUIRED
	14+87 'SB'	-	36+22 'SEB'	SW CORNER	5	144	16	1	66	1	END CAP REQUIRED	OUTFALL
	16+60 'SB'	-	35+52 'NWB'	NW CORNER	2	65	-	-	27	-	END CAP REQUIRED	STRUCTURE 630
	36+22 'NWB'	-	36+43 'NWB'	STH 145,RT	1	30	-	-	13	-	-	STRUCTURE 630
	36+80 'NWB'	-	39+75 'NWB'	STH 145,RT	9	300	-	-	122	-	STRUCTURE 640	HIGHPOINT
	12+13 'NB'	-	12+63 'NB'	DIVISION ROAD, RT	2	50	-	-	21	-	HIGHPOINT	LOWPOINT
	12+63 'NB'	-	12+46 'SB'	DIVISION ROAD, LT	1	29	-	-	12	-	LOWPOINT	STRUCTURE 610
	12+46 'SB'	-	14+05 'NB'	DIVISION ROAD, RT	4	140	-	-	57	-	LOWPOINT	HIGHPOINT
	17+56 'SB'	-	18+28 'SB'	CTH G, LT	3	75	-	-	31	-	HIGHPOINT	LOWPOINT
	18+28 'SB'	-	18+20 'SB'	CTH G, LT	1	-	28	-	12	1	LOWPOINT	OUTFALL
	18+28 'SB'	-	21+75 'SB'	CTH G, LT	11	360	-	-	147	-	LOWPOINT	HIGHPOINT
	10+84 'C'	-	12+41 'C'	ROUNDAABOUT CENTER	5	156	-	-	64	-	HIGHPOINT	STRUCTURE 570
	10+00 'C'	-	10+84 'C'	ROUNDAABOUT CENTER	2	70	-	-	29	-	-	HIGHPOINT
	12+41 'C'	-	12+52 'C'	ROUNDAABOUT CENTER	1	16	-	-	10	-	STRUCTURE 570	STRUCTURE 560
	12+52 'C'	-	12+64 'C'	ROUNDAABOUT CENTER	1	16	-	-	10	-	STRUCTURE 560	STRUCTURE 550
	13+36 'C'	-	12+64 'C'	ROUNDAABOUT CENTER	2	70	-	-	29	-	-	STRUCTURE 550
TOTAL 0010					102	3,030	120	3	1,300	3		

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

PERMANENT SIGNING ITEMS

CATEGORY	SIGN NUMBER	SIGN CODE	SIZE		DESCRIPTION	634.0612	634.0614	634.0616	634.0620	634.0622	634.0812	634.0814	637.2210	637.2230	
			(INCH)	(INCH)		POSTS	POSTS	POSTS	POSTS	POSTS	POSTS	POSTS	POSTS	SIGNS TYPE II	SIGNS TYPE II
						WOOD 4X6- INCH X 12-FT	WOOD 4X6- INCH X 14-FT	WOOD 4X6- INCH X 16-FT	WOOD 4X6- INCH X 20-FT	WOOD 4X6- INCH X 22-FT	TUBULAR STEEL 2X2- INCH X 12-FT	TUBULAR STEEL 2X2- INCH X 14-FT	REFLECTIVE H	REFLECTIVE F	
0010	01-01	J1-1	24	39	NEW TRAFFIC PATTERN AHEAD	-	-	1	-	-	-	-	6.50	-	
	01-02	W23-2	36	36	JCT CTH G	-	-	1	-	-	-	-	-	9.00	
	01-03	W2-6	30	30	CIRCULAR INTERSECTION SIGN	-	-	1	-	-	-	-	-	6.25	
	01-04	W13-1	18	18	ADVISORY SPEED PLATE 20 MPH	-	-	-	-	-	-	-	-	2.25	
	02-01	D1-62	120	66	ROUNDAABOUT DESTINATION	-	-	-	3	-	-	-	55.00	-	
	02-02	R5-1	30	30	DO NOT ENTER	-	-	-	-	-	-	-	6.25	-	
	02-03	R2-1	24	30	SPEED LIMIT 45 MPH	-	1	-	-	-	-	-	5.00	-	
	02-04	R4-7	36	48	KEEP RIGHT	-	1	-	-	-	-	-	12.00	-	
	02-05	W5-54	18	18	CLEARANCE MARKER	-	-	-	-	-	-	-	-	2.25	
	02-06	W14-3	48	36	NO PASSING ZONE	-	-	-	-	-	-	-	-	6.00	
	02-07	R5-1A	36	24	WRONG WAY	-	-	1	-	-	-	-	6.00	-	
	02-08	J4-1	24	36	SOUTH STH 145	-	-	-	-	-	-	-	6.00	-	
	03-01	R1-2	36	31	YIELD	-	1	-	-	-	-	-	3.88	-	
	03-02	R1-2	36	31	YIELD	-	-	-	-	-	-	1	3.88	-	
	03-03	D1-67	84	30	STH 145 SOUTH FOND DU LAC AVE	-	-	-	-	-	-	2	17.50	-	
	03-04	R1-2	36	31	YIELD	-	1	-	-	-	-	-	3.88	-	
	03-05	R1-2	36	31	YIELD	-	1	-	-	-	-	-	3.88	-	
	03-06	D1-67	78	15	DIVISION RD	-	2	-	-	-	-	-	8.13	-	
	03-07	R1-2	36	31	YIELD	-	1	-	-	-	-	-	3.88	-	
	03-08	R1-2	36	31	YIELD	-	-	-	-	-	-	1	3.88	-	
	03-09	D1-67	84	30	STH 145 NORTH FOND DU LAC AVE	-	-	-	-	-	-	2	17.50	-	
	03-10	R1-2	36	31	YIELD	-	1	-	-	-	-	-	3.88	-	
	03-11	R1-2	36	31	YIELD	-	1	-	-	-	-	-	3.88	-	
	03-12	D1-67	36	18	CTH G	-	2	-	-	-	-	-	4.50	-	
	03-13	W5-54	18	18	CLEARANCE MARKER	2	-	-	-	-	-	-	-	2.25	
	03-14	R6-1R	48	18	ONE WAY RIGHT	-	-	-	-	-	-	-	6.00	-	
	03-15	W5-54	18	18	CLEARANCE MARKER	-	-	-	-	-	-	-	-	2.25	
	03-16	R6-1R	48	18	ONE WAY RIGHT	-	-	-	-	-	2	-	6.00	-	
	03-17	W5-54	18	18	CLEARANCE MARKER	2	-	-	-	-	-	-	-	2.25	
	03-18	R6-1R	48	18	ONE WAY RIGHT	-	-	-	-	-	-	-	6.00	-	
	03-19	W5-54	18	18	CLEARANCE MARKER	-	-	-	-	-	2	-	-	2.25	
	03-20	R6-1R	48	18	ONE WAY RIGHT	-	-	-	-	-	-	-	6.00	-	
	04-01	J4-1	24	36	NORTH STH 145	-	-	1	-	-	-	-	6.00	-	
	04-02	R5-1A	36	24	WRONG WAY	-	-	-	-	-	-	-	6.00	-	
	04-03	R4-7	36	48	KEEP RIGHT	-	1	-	-	-	-	-	12.00	-	

PAGE 1/2 - SUBTOTALS

4 13 5 3 0 4 6 223.42 34.75

CONTINUED ON NEXT PAGE

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

3

CATEGORY	SIGN NUMBER	SIGN CODE	SIZE		DESCRIPTION	634.0612	634.0614	634.0616	634.0620	634.0622	634.0812	634.0814	637.2210	637.2230	
			(INCH)	(INCH)		POSTS	POSTS	POSTS	POSTS	POSTS	POSTS	POSTS	POSTS	SIGNS TYPE II	SIGNS TYPE II
			INCH X 12-FT	INCH X 14-FT		WOOD 4X6- EACH	STEEL 2X2- TUBULAR EACH	STEEL 2X2- TUBULAR EACH	REFLECTIVE H SF	REFLECTIVE F SF					
0010	04-04	R4-7	36	48	KEEP RIGHT	-	1	-	-	-	-	-	12.00	-	
	04-05	W14-3	48	36	NO PASSING ZONE	-	1	-	-	-	-	-	-	6.00	
	04-06	R4-7	36	48	KEEP RIGHT	-	-	-	-	-	-	-	12.00	-	
	04-07	W5-54	18	18	CLEARANCE MARKER	-	-	-	-	-	-	-	-	2.25	
	04-08	R2-1	24	30	SPEED LIMIT 45 MPH	-	1	-	-	-	-	-	5.00	-	
	04-09	R5-1	30	30	DO NOT ENTER	-	-	-	-	-	-	-	6.25	-	
	04-10	D1-62	120	66	ROUNDABOUT DESTINATION	-	-	-	2	1	-	-	55.00	-	
	04-11	I2-3	84	24	VILLAGE OF GERMANTOWN POPULATION SIGN	-	2	-	-	-	-	-	14.00	-	
	04-12	W2-6	30	30	CIRCULAR INTERSECTION SIGN	-	-	1	-	-	-	-	-	6.25	
	04-13	W13-1	18	18	ADVISORY SPEED PLATE 20 MPH	-	-	-	-	-	-	-	-	2.25	
	05-01	J1-1	24	39	JCT CTH G	-	-	1	-	-	-	-	6.50	-	
	05-02	W23-2	36	36	NEW TRAFFIC PATTERN AHEAD	-	-	1	-	-	-	-	-	9.00	
	06-01	W23-2	36	36	NEW TRAFFIC PATTERN AHEAD	-	-	1	-	-	-	-	-	9.00	
	06-02	J1-1	24	39	JCT STH 145	-	-	1	-	-	-	-	6.50	-	
	06-03	W2-6	30	30	CIRCULAR INTERSECTION SIGN	-	-	-	-	-	-	-	-	6.25	
	06-04	W13-1	18	18	ADVISORY SPEED PLATE 20 MPH	-	-	1	-	-	-	-	-	2.25	
	06-05	R2-1	24	30	SPEED LIMIT 35 MPH	-	1	-	-	-	-	-	5.00	-	
	06-06	D1-62	120	66	ROUNDABOUT DESTINATION	-	-	-	2	1	-	-	55.00	-	
	06-07	D1-61	90	24	FOND DU LAC AVE ADVANCED CROSSROAD WITH ARROWS	-	1	1	-	-	-	-	15.00	-	
	06-08	R4-7	24	30	KEEP RIGHT	1	-	-	-	-	-	-	5.00	-	
	07-01	R4-7	24	30	KEEP RIGHT	1	-	-	-	-	-	-	5.00	-	
	07-02	M1-5A	24	24	CTH G	-	1	-	-	-	-	-	4.00	-	
	07-03	R5-1A	36	24	WRONG WAY	-	-	-	-	-	-	-	6.00	-	
	07-04	R4-7	24	30	KEEP RIGHT	1	-	-	-	-	-	-	5.00	-	
	07-05	D1-62	108	60	ROUNDABOUT DESTINATION	-	-	-	2	1	-	-	45.00	-	
	07-06	R4-7	24	30	KEEP RIGHT	-	1	-	-	-	-	-	5.00	-	
	07-07	W5-54	18	18	CLEARANCE MARKER	-	-	-	-	-	-	-	-	2.25	
	07-08	R2-1	24	30	SPEED LIMIT 45 MPH	-	-	1	-	-	-	-	5.00	-	
	07-09	R5-1	30	30	DO NOT ENTER	-	-	-	-	-	-	-	6.25	-	
	07-10	D1-61	90	24	FOND DU LAC AVE ADVANCED CROSSROAD WITH ARROWS	-	1	1	-	-	-	-	15.00	-	
	07-11	W2-6	30	30	CIRCULAR INTERSECTION SIGN	-	-	-	-	-	-	-	-	6.25	
	07-12	W13-1	18	18	ADVISORY SPEED PLATE 20 MPH	-	-	1	-	-	-	-	-	2.25	
	07-13	J1-1	24	39	JCT STH 145	-	-	1	-	-	-	-	6.50	-	
	07-14	W23-2	36	36	NEW TRAFFIC PATTERN AHEAD	-	-	1	-	-	-	-	-	9.00	
					PAGE 2/2 - SUBTOTALS	3	10	12	6	3	0	0	300.00	63.00	
					TOTAL 0010	7	23	17	9	3	4	6	523.42	97.75	

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

SIGN REMOVAL

CATEGORY	SIGN NUMBER	SIGN MESSAGE	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
0010	R-01	JCT CTH G	1	1
	R-02	SPEED LIMIT 45 MPH	1	1
	R-03	SPEED LIMIT 45 MPH	1	1
	R-04	CROSS ROAD	1	1
	R-05	CROSS ROAD	1	1
	R-06	SOUTH STH 145	1	1
	R-07	CTH G RIGHT	1	1
	R-08	STOP	1	1
	R-09	TRAFFIC ON 145 DOES NOT STOP	1	-
	R-10	KEEP RIGHT	1	1
	R-11	KEEP RIGHT	1	1
	R-12	TILT DOWN RIGHT	1	-
	R-13	STOP	1	1
	R-14	TRAFFIC ON 145 DOES NOT STOP	1	-
	R-15	STOP	1	1
	R-16	CTH G LEFT	1	1
	R-17	STOP	1	1
	R-18	TRAFFIC ON 145 DOES NOT STOP	1	-
	R-19	DO NOT ENTER	1	1
	R-20	NORTH STH 145	1	1
	R-21	SPEED LIMIT 45 MPH	1	1
	R-22	CROSS ROAD	1	1
	R-23	CROSS ROAD	1	1
	R-24	JCT CTH G	1	1
	R-25	STOP AHEAD	1	1
	R-26	STH 145/LEFT AND RIGHT ARROW	1	1
	R-27	SPEED LIMIT 45 MPH	1	1
	R-28	CTH G	1	1
	R-29	STOP AHEAD	1	1
	R-30	JCT 145/END CTH G	1	1
TOTAL 0010			30	26

LANDSCAPING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	628.2002 EROSION MAT CLASS I TYPE A SY	628.2004 EROSION MAT CLASS I TYPE B SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0140 SEEDING MIXTURE NO. 40 LB	630.0500 SEED WATER MGAL	SPV.0085.01 SPECIAL (01. SEEDING NO MOW FESCUE) LB	REMARKS
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	3,420	-	1,890	1,530	2.00	156	77	-	
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	1,430	-	390	1,040	1.00	60	33	-	
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	900	-	310	590	1.00	48	21	-	
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	3,030	-	1,620	1,410	2.00	128	69	-	
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB	440	440	-	-	-	-	10	20	RAB CENTER ISLAND
				UNDISTRIBUTED*	2,310	110	1,050	1,140	1.00	98	53	5	PROJECT WIDE
TOTAL 0010					11,530	550	5,260	5,710	7.00	490	263	25	

*UNDISTRIBUTED APPROXIMATELY 25% OF TOTAL

TRAFFIC CONTROL

CATEGORY	LOCATION	APPROXIMATE SERVICE PERIOD DAYS	TRAFFIC CONTROL DRUMS EACH	TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0300 TRAFFIC CONTROL EACH	643.0420 TRAFFIC CONTROL TYPE A DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0920 TRAFFIC COVERING SIGNS TYPE II EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH	
0010	ADVANCED WARNING	7	-	-	-	-	-	-	-	-	4	28
	DETOUR ROUTE	80	-	-	-	-	-	-	256	20,480	25	-
	TRAFFIC CONTROL	80	20	1,600	42	3,360	52	4,160	27	2,160	-	-
TOTAL 0010			1,600	3,360	4,160	1,600	22,640	25	28			

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

3

3

PAVEMENT MARKING

		646.1020				646.2040				646.4040	646.6320	646.7120	646.8120	646.8220			
		MARKING LINE EPOXY 4-INCH				MARKING LINE GROOVED WET REF EPOXY 6-INCH				MARKING LINE GROOVED WET REF EPOXY 10-INCH	MARKING DOTTED EXTENSION EPOXY 18-INCH	MARKING DIAGONAL EPOXY 12-INCH	MARKING CURB EPOXY	MARKING ISLAND NOSE EPOXY			
CATEGORY	STATION	TO	STATION	LOCATION	(SKIP WHITE) LF	(SOLID WHITE) LF	(SKIP YELLOW) LF	(SOLID YELLOW) LF	(SKIP WHITE) LF	(SOLID WHITE) LF	(SKIP YELLOW) LF	(SOLID YELLOW) LF	(SOLID WHITE) LF	(SKIP WHITE) LF	(SOLID YELLOW) LF	(SOLID YELLOW) LF	EACH
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	-	-	-	-	30	1,555	-	2,822	30	-	62	10	1
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	-	-	-	-	33	715	50	2,235	30	-	51	30	3
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	30	380	-	825	-	-	-	-	30	-	32	10	1
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	30	835	75	1,505	-	-	-	-	30	-	75	30	3
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB	-	-	-	-	-	-	-	-	140	80	-	-	-
				SUBTOTALS	60	1215	75	2330	63	2,270	50	5,057	260	80	220	80	8
				TOTAL 0010		3,680				7,440			260	80	220	80	8

STAKING ITEMS

		650.4500	650.5000	650.5500	650.8501.01	650.9911.01	650.9920
		CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING CURB GUTTER AND	CONSTRUCTION ELECTRICAL INSTALLATIONS (PROJECT) (01. 2475-04-71)	CONSTRUCTION STAKING CONTROL (PROJECT) (01. 2475-04-71)	CONSTRUCTION STAKING SLOPE STAKES
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	875	875	2,031
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	450	450	1,065
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	258	258	410
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	527	527	794
	10+00 'C'	-	13+36.51 'C'	STH 145 RAB	340	340	580
				PROJECT WIDE	-	-	-
				TOTAL 0010	2,450	2,450	4,880

690 SAWING

CATEGORY	STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF
0010	25+00 'NWB'	-	33+75 'NWB'	STH 145, SOUTH LEG	42
	35+25 'NWB'	-	39+75 'NWB'	STH 145, NORTH LEG	80
	12+16.70 'NB'	-	14+75 'NB'	CTH G, SOUTH LEG	93
	16+50 'NB'	-	21+77.12 'NB'	CTH G, NORTH LEG	55
				TOTAL 0010	270

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

3

LIGHTING CONDUIT AND WIRE

SYSTEM	CIRCUIT	FROM	TO	652.0225	652.0235	655.0620*
				CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	ELECTRICAL WIRE LIGHTING 8 AWG
				LF	LF	LF
HL-67-LD	A/N/B/GND	HL-66-DG	LPB-DG-1	55	--	440
		LPB-DG-1	LPB-DG-2	--	65	260
		LPB-DG-2	ADG1	125	--	375
		LPB-DG-2	BDG1	30	--	240
		BDG1	ADG2	140	--	1,120
		ADG2	LPB-DG-3	90	--	720
		LPB-DG-3	LPB-DG-4	--	55	220
		LPB-DG-4	BDG2	120	--	360
		LPB-DG-4	ADG3	35	--	280
		ADG3	BDG3	105	--	840
		BDG3	LPB-DG-5	80	--	--
		LPB-DG-5	LPB-DG-6	--	65	--
		C/N/D/GND	HL-66-DG	LPB-DG-9	10	--
	LPB-DG-9		CDG1	10	--	80
	CDG1		DDG1	80	--	640
	DDG1		LPB-DG-8	45	--	360
	LPB-DG-8		CDG2	110	--	330
	LPB-DG-8		LPB-DG-7	--	65	260
	LPB-DG-7		DDG2	105	--	840
	DDG2		CDG3	160	--	1,280
	CDG3		LPB-DG-6	45	--	360
	LPB-DG-6		DDG3	110	--	330
	TOTAL				1,455	250

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ALL ITEMS CATEGORY 0010

PROJECT NO: 2475-04-01

HWY: STH 145

COUNTY: WASHINGTON

MISCELLANEOUS QUANTITIES

SHEET:

89

E

FILE NAME :

PLOT DATE : 10/23/2025

PLOT BY : SINGH AND ASSOCIATES

PLOT NAME :

PLOT SCALE : 1:1

LIGHTING LUMINAIRE ARMS AND POLES

654.0105	655.0610	657.0255	657.0322	657.0610	657.0715	659.1115	SPV.0060.01
CONCRETE BASES TYPE 5	ELECTRICAL WIRE LIGHTING 12 AWG	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	POLES TYPE 5 ALUMINUM	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT	LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 15-FT	LUMINAIRES UTILITY LED A	SPREAD FOOTING CONCRETE BASE TYPE 5

SYSTEM	DESCRIPTION	STATION	OFFSET	EACH	LF	EACH	EACH	EACH	EACH	EACH	EACH	
HL-67-LD	ADG1	37+25	34' LT	--	117	1	1	1	--	1	1	
	BDG1	35+82	31' LT	1	144	1	1	--	1	1	--	
	ADG2	10+02	36' LT	1	144	1	1	--	1	1	--	
	BDG2	14+70	30' LT	1	144	1	1	--	1	1	--	
	ADG3	12+63	22' RT	1	117	1	1	1	--	1	--	
	BDG3	14+16	33' RT	1	144	1	1	--	1	1	--	
	ADG4	33+52	37' LT	1	144	1	1	--	1	1	--	
	CDG1	35+55	38' RT	1	144	1	1	--	1	1	--	
	DDG1	17+32	33' LT	1	144	1	1	--	1	1	--	
	CDG2	18+79	20' LT	1	117	1	1	1	--	1	--	
	DDG2	16+68	34' RT	1	144	1	1	--	1	1	--	
	CDG3	11+68	38' LT	1	144	1	1	--	1	1	--	
	DDG3	33+12	32' RT	1	144	1	1	--	1	1	--	
	CDG4	31+70	25' RT	1	117	1	1	1	--	1	--	
	TOTAL				13	1908	14	14	4	10	14	1

ALL ITEMS CATEGORY 0010

LIGHTING PULL BOXES

653.0140 655.0620*
 PULL ELECTRICAL
 BOXES WIRE
 STEEL LIGHTING
 24X42-INCH 8 AWG

SYSTEM	DESCRIPTION	STATION	OFFSET	EACH	LF
HL-66-DG	LPB-DG-1	36+21	26' RT	1	50
	LPB-DG-2	36+07	24' LT	1	30
	LPB-DG-3	13+82	25' LT	1	90
	LPB-DG-4	13+82	26' RT	1	35
	LPB-DG-5	32+66	25' LT	1	80
	LPB-DG-6	32+73	25' RT	1	45
	LPB-DG-7	17+63	23' RT	1	105
	LPB-DG-8	17+71	25' LT	1	45
	LPB-DG-9	35+55	37' RT	1	10
TOTAL				9	490

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

LIGHTING CONTROL AND SERVICES

654.0230 655.0640 656.0201 659.2130 SPV.0060.10 SPV.0060.20
 CONCRETE ELECTRICAL ELECTRICAL LIGHTING LIGHTING LIGHTING
 CONTROL WIRE METER CONTROL SYSTEM SYSTEM
 CABINET LIGHTING BREAKER CABINETS INTEGRATOR SURVEY
 BASES 1 AWG PEDESTAL 120/240 (2475-04-71) (2475-04-71)
 TYPE L30 (HL-66-DG) 30-INCH

SYSTEM	STATION	OFFSET	EACH	LF	EACH	EACH	EACH	EACH
HL-66-DG	35+55	32.3' RT	1	18	--	1	--	--
	PROJECT (2475-04-71)		--	--	1	--	1	1
TOTAL			1	18	1	1	1	1

PLAQUE TEXT LIGHTING CONTROL
 STH 145/CTH G
 2-240 VAC WARNING (2 REQUIRED PER LOCATION; METER PEDESTAL AND CABINET DOOR)

ALL ITEMS CATEGORY 0010

TRANSPORTATION PROJECT PLAT NO: 2475-04-21-4.01

THAT PART OF LOT 2 OF CSM 2626, VOLUME 14, ON PAGES 204-206, DOCUMENT NUMBER 464758, IN AND INCLUDING THAT PART OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4, AND THAT PART OF LOT 1 OF CSM 1180, VOLUME 6, ON PAGES 131-132, DOCUMENT NUMBER 364531, LOCATED IN PART OF THE SOUTHEAST QUARTER OF SECTION 16, IN TOWNSHIP 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN

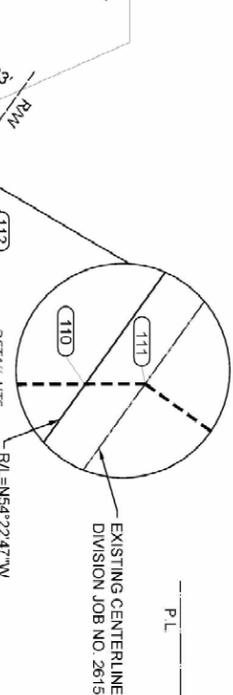
RELOCATION ORDER - STH 145 - V. GERMANTOWN-FOND DU LAC AVENUE, INTERSECTION WITH CTH G, WASHINGTON COUNTY TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 94.02 (3), 94.09, AND 94.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAY OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.

2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 94.09 (1) OR (2), WISCONSIN STATUTES.

WEST LIMITS
STA=575+61.91
STH 145
Y=117566.495
X=377771.087

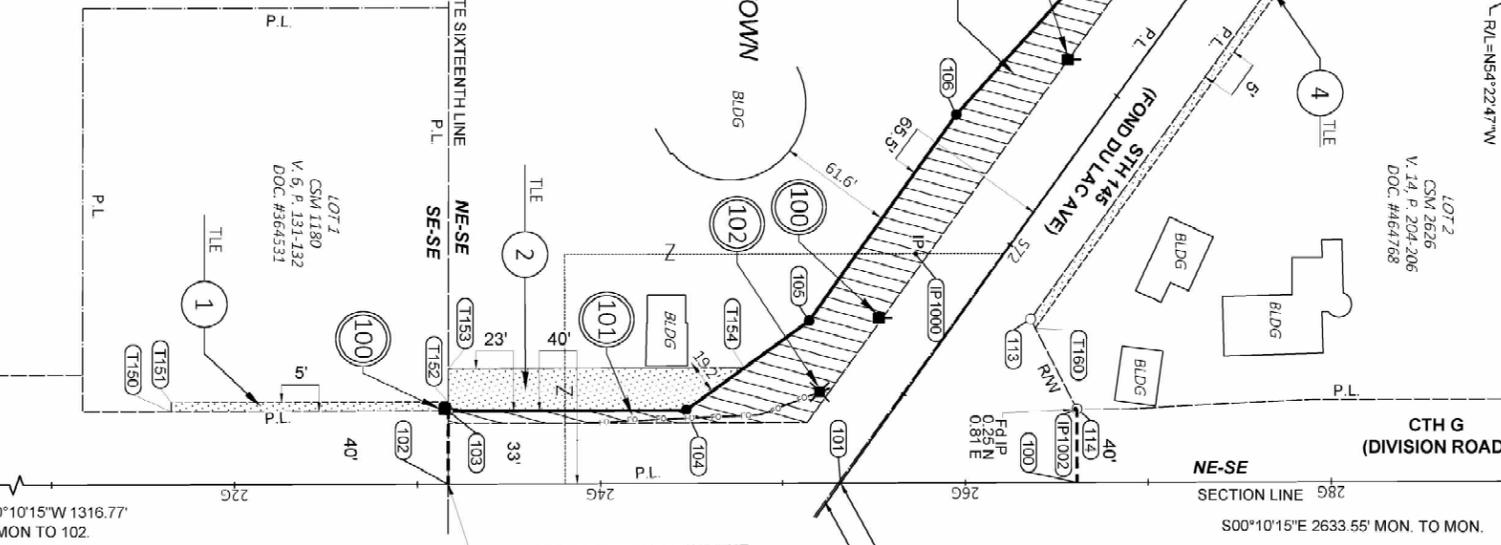


R/W STATION & OFFSET TABLE

POINT	STATION	OFFSET
100	26+61.11 G	0.00' RT
101	25+31.69 G	0.00' RT
102	23+16.77 G	0.00' RT
103	23+16.93 G	40.00' LT
104	24+47.33 G	40.00' LT
105	571+02.40	65.50' LT
106	572+40.63	65.50' LT
107	574+18.94	44.89' LT
108	574+46.81	32.64' LT
109	575+38.51	32.32' RT
110	575+61.91	0.00' RT
111	575+62.47	0.77' RT
112	575+62.47	33.77' RT
113	571+73.74	32.40' RT
114	571+48.57	81.59' RT

TILE STATION & OFFSET TABLE

POINT	STATION	OFFSET
T150	21+65.57 G	40.00' LT
T151	21+65.59 G	45.00' LT
T152	23+16.95 G	45.00' LT
T153	23+17.02 G	63.00' LT
T154	24+79.27 G	63.00' LT
T155	574+35.35	37.58' LT
T156	575+07.98	37.43' LT
T157	575+07.96	32.43' RT
T158	575+08.00	33.58' RT
T159	575+07.98	38.58' RT
T160	571+71.19	37.39' RT



EAST LIMITS
STA=23+16.77
CTH G
Y=117047.869
X=378195.634

EXISTING IRON POINT TABLE

POINT	Y COORDS	X COORDS	DESCRIPTION
IP1000	117303.880	378070.253	HD 1 1/4" IRON PIPE
IP1001	117461.084	377862.021	HD 1 1/4" IRON PIPE
IP1002	117391.268	378154.860	HD 1 1/4" IRON PIPE
IP1003	117713.989	378149.005	HD 1 1/4" IRON PIPE

UTILITY INTERESTS REQUIRED

UTILITY NO.	OWNER	INTEREST REQUIRED
100	WE-ENERGIES - ELEC	RELEASE OF RIGHTS
101	WE-ENERGIES - GAS	RELEASE OF RIGHTS
102	AT&T	RELEASE OF RIGHTS

SCHEDULE OF LANDS & INTERESTS REQUIRED

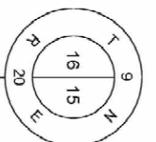
PARCEL NUMBER	OWNER(S)	INTEREST(S) REQUIRED	FEE R/W (SF) REQUIRED	NEW	EXISTING	TOTAL	TILE SF
1	MARTIN JOHN PROPERTIES LLC	TILE	---	---	---	---	757
2	VILLAGE OF GERMANTOWN	FEE & TILE	12125	19692	31817	3365	
3	LYNN R. CONROGAN	FEE & TILE	116	3655	3771	334	
4	PHILLIP G. & LAURIE A. PULVERMACHER	TILE	---	---	---	1678	

PURPOSE OF ALL THE TILES ARE FOR SLOPING AND GRADING UNLESS NOTED.

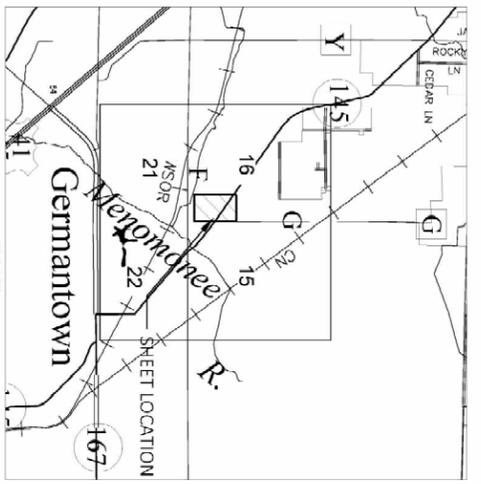
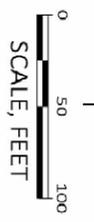
NOTES:
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY SYSTEM, WASHINGTON COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES. GRID BEARINGS AND GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS AND PERMANENT EASEMENT MONUMENTS WILL BE TYPE 2 (TYPICAL) 7/4 X 24" ROUND REBAR, UNLESS OTHERWISE NOTED AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.
FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN WAUKESHA.

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



FOUND CAST IRON CAP MONUMENT
Y = 118364.637
X = 378191.711

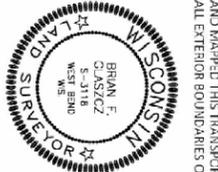


R/W COURSE TABLE

COURSE	BEARING	DISTANCE
100-101	S00°10'15"E	129.42'
101-102	S00°10'15"E	214.91'
102-103	N89°56'37"W	40.00'
103-104	N00°10'15"W	130.39'
104-105	N35°55'15"W	83.13'
105-106	N54°22'47"W	138.23'
106-107	N47°47'11"W	179.50'
107-108	N30°39'09"W	30.24'
108-109	N54°10'42"W	91.70'
109-110	N00°17'01"W	39.90'
110-111	N00°17'01"W	0.95'
111-112	N35°49'18"E	33.00'
112-113	S54°10'42"E	388.61'
113-114	N62°43'31"E	55.25'
114-100	N89°49'45"E	40.00'

UTILITY EASEMENTS

UTILITY NO.	OWNER	EASEMENTS
100	WE-ENERGIES - ELEC	NO EASEMENTS OF RECORD - PARCEL 1
100	WE-ENERGIES - ELEC	V. 518 P. 234, DOC. 331292 - PARCEL 2
101	WE-ENERGIES - GAS	NO EASEMENTS OF RECORD - PARCEL 2
102	AT&T	NO EASEMENTS OF RECORD - PARCEL 2



SIGNATURE: [Signature]
DATE: 04/07/2025
PRINT NAME: BRIAN F. GLASZCZ
REGISTRATION NUMBER: S3118

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PROJECT PLAT TITLE SHEET
2475-04-21
V. GERMANTOWN-FOND DU LAC AVENUE
 INTERSECTION WITH CTH G
STH 145
WASHINGTON COUNTY



4

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 SURVEY MONUMENT (SEE FOUND MONUMENT TABLE)	IP
NEW REFERENCE LINE	---	SIGN	IP SIGN	PERMITTED SIGN	⬠
NEW R/W LINE	---	BRIDGE	⌢	CULVERT	⌢
EXISTING R/W OR HE LINE	---	TO BE REMOVED	⌢	PARALLEL OFFSETS	---
PROPLRIY LINL	---	BRIDGE	⌢	CULVERT	⌢
LOT, TIE & OTHER MINOR LINES	---	BRIDGE	⌢	CULVERT	⌢
EXISTING CENTERLINE	---	BRIDGE	⌢	CULVERT	⌢
CORPORATE LIMITS	---	BRIDGE	⌢	CULVERT	⌢
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)	---	BRIDGE	⌢	CULVERT	⌢
TEMPORARY LIMITED EASEMENT AREA	---	BRIDGE	⌢	CULVERT	⌢
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)	---	BRIDGE	⌢	CULVERT	⌢
BUILDING	⌢	BRIDGE	⌢	CULVERT	⌢
BRIDGE	⌢	BRIDGE	⌢	CULVERT	⌢

CONVENTIONAL ABBREVIATIONS

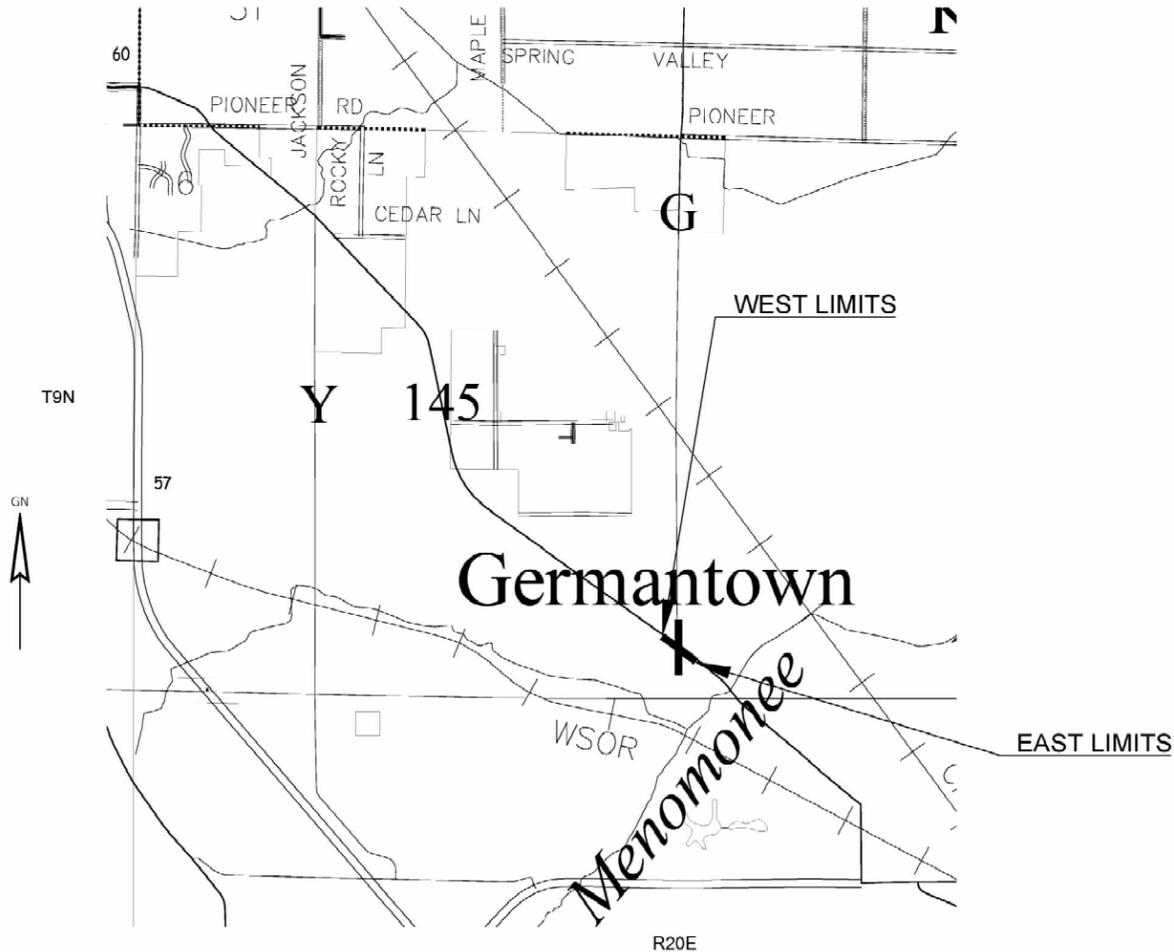
ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS (100')	R/A
AND OTHERS	ET AL	REEL / IMAGE	R/I
BACK	BK	REFERENCE LINE	R/L
BLOCK	BLK	REMAINING	REM
CENTERLINE	C/L	RESTRICTIVE DEVELOPMENT	RDE
CERTIFIED SURVEY MAP	CSM	EASEMENT	
CONCRETE	CONC	RIGHT	RT
COUNTY	CO	RIGHT OF WAY	R/W
COUNTY TRUNK HIGHWAY	CTH	SECTION	SEC
DISIANCE	DISI	SLP/VLN	SLPV
CORNER	COR	SQUARE FEET	SF
DOCUMENT NUMBER	DOC	STATE TRUNK HIGHWAY	STH
EASEMENT	EASE	STATION	STA
EXISTING	EX	TELEPHONE PEDESTAL	IP
GAS VALVE	GV	TEMPORARY LIMITED EASEMENT	TLE
GRID NORTH	GN	TRANSPORTATION PROJECT PLAT	TPP
HIGHWAY EASEMENT	HE	UNITED STATES HIGHWAY	USH
IDENTIFICATION	ID	VOLUME	V
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GLOBAL LOC SURVLY NUMBER	NGS		
OUTLOT	OL		
PAGE	P		
POINT OF ANGLNCLY	PI		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		

CURVE DATA ABBREVIATIONS

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

CONVENTIONAL UTILITY SYMBOLS

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



COMPENSABLE	NON-COMPENSABLE
⊗	⊗

THE NOTES, CONVENTIONAL SIGNS, AND ABBREVIATIONS ARE ASSOCIATED WITH EACH TRANSPORTATION PROJECT PLAT FOR PROJECT 2475-04-21.

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, WASHINGTON 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 AND PERMANENT EASEMENT MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

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

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

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

A PERMANENT LIMITED EASEMENT (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND 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, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHTS TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

AN EASEMENT FOR HIGHWAY PURPOSES (HE), AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE.

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

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN WAUKESHA.

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 RELINQUISHMENT AND ACCESS CONTROL ARE LISTED ON THE TPP DETAIL PAGES.

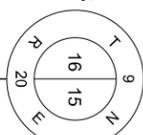
PROJECT NUMBER	2475-04-21	- 4.01
SHEET	2 OF 2	

TRANSPORTATION PROJECT PLAT NO: 2475-04-21-4.01 AMENDMENT NO. 1

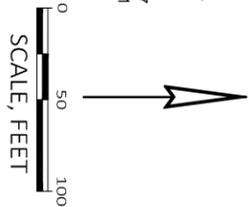
AMENDMENT REMOVES PARCEL 2, ADDS PARCEL 8, AND AMENDS UTILITY NUMBER 100, 101 AND 102 OF TRANSPORTATION PROJECT PLAT NO. 2475-04-21-4.01 RECORDED AS DOCUMENT NUMBER 1611721. THAT PART OF LOT 2 OF CSM 2626, VOLUME 14, ON PAGES 204-206, DOCUMENT NUMBER 464768, IN AND INCLUDING THAT PART OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4, AND THAT PART OF LOT 1 OF CSM 1180, VOLUME 6, ON PAGES 131-132, DOCUMENT NUMBER 364531, LOCATED IN PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 16, IN TOWNSHIP 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN RELOCATION ORDER - STH 145 - V. GERMANTOWN-FOND DU LAC AVENUE, INTERSECTION WITH CTH G, WASHINGTON COUNTY TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE. THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

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

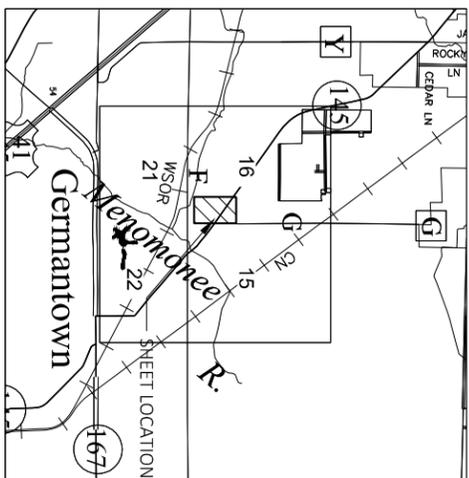
- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAY OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE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



FOUND CAST IRON CAP MONUMENT
Y = 118364.637
X = 378191.711

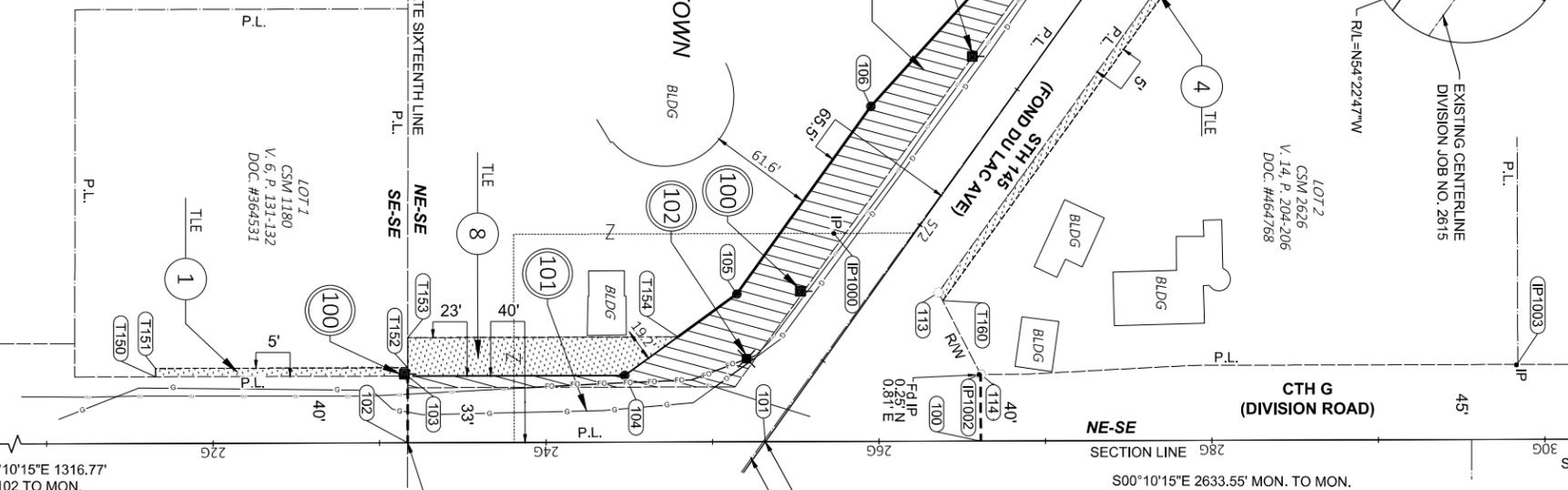


REQUIRED FOR REGISTER OF DEEDS
PROJECT NUMBER 2475-04-21-4.01
SHEET 1 OF 1
AMENDMENT NO. 1



POINT	STATION	OFFSET
100	26+61.11 G	0.00' RT
101	25+31.69 G	0.00' RT
102	23+16.77 G	0.00' RT
103	23+16.93 G	40.00' LT
104	24+47.33 G	40.00' LT
105	571+02.40	65.50' LT
106	572+40.63	65.50' LT
107	574+18.94	44.89' LT
108	574+46.81	32.64' LT
109	575+38.51	32.32' RT
110	575+61.91	0.00' RT
111	575+62.47	0.77' RT
112	575+62.47	33.77' RT
113	571+73.74	32.40' RT
114	571+48.57	81.59' RT

POINT	STATION	OFFSET
T150	21+65.57 G	40.00' LT
T151	21+65.59 G	45.00' LT
T152	23+16.95 G	45.00' LT
T153	23+17.02 G	63.00' LT
T154	24+79.27 G	63.00' LT
T155	574+35.35	37.68' LT
T156	575+07.98	37.43' LT
T157	575+07.96	32.43' RT
T158	575+08.00	33.58' RT
T159	575+07.98	38.58' RT
T160	571+71.19	37.39' RT



COURSE	BEARING	DISTANCE
100-101	S00°10'15"E	129.42'
101-102	S00°10'15"E	214.91'
102-103	N89°56'37"W	40.00'
103-104	N00°10'15"W	130.39'
104-105	N35°55'15"W	83.13'
105-106	N54°22'47"W	138.23'
106-107	N47°47'11"W	179.50'
107-108	N30°39'09"W	30.44'
108-109	N54°10'42"W	91.70'
109-110	N00°17'01"W	39.90'
110-111	N00°17'01"W	0.95'
111-112	N35°49'18"E	33.00'
112-113	S54°10'42"E	388.61'
113-114	N62°43'31"E	55.25'
114-100	N89°49'45"E	40.00'

POINT	Y COORDS	X COORDS	DESCRIPTION
IP1000	117303.880	378070.253	FD 1-1/4" IRON PIPE
IP1001	117461.084	377862.021	FD 1-1/4" IRON PIPE
IP1002	117391.268	378154.860	FD 1-1/4" IRON PIPE
IP1003	117713.989	378149.005	FD 1-1/4" IRON PIPE

UTILITY NO.	OWNER	INTEREST REQUIRED
100	WE-ENERGIES - ELEC	RELEASE OF RIGHTS
101	WE-ENERGIES - GAS	RELEASE OF RIGHTS
102	AT&T	RELEASE OF RIGHTS

PARCEL NUMBER	OWNER(S)	INTEREST(S) REQUIRED	FEE R/W (SF) REQUIRED	NEW EXISTING TOTAL	TILE SF
1	MARTIN JOHN PROPERTIES LLC	TILE	---	---	757
3	LYNN R. CORCORAN	FEE & TILE	116	3655	3771
4	PHILLIP G. & LAURIE A. PULVERMACHER	TILE	---	---	1678
8	VILLAGE OF GERMANTOWN	FEE & TILE	12125	19692	31817

PURPOSE OF ALL THE TILES ARE FOR SLOPING AND GRADING UNLESS NOTED.

FOUND CONCRETE MONUMENT WITH BRASS CAP
Y = 115731.100
X = 378198.589



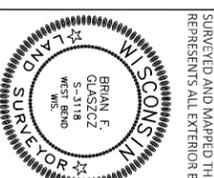
UTILITY NO.	OWNER	EASEMENTS
100	WE-ENERGIES - ELEC	NO EASEMENTS OF RECORD - PARCEL 1
100	WE-ENERGIES - ELEC	V. 518, P. 234, DOC. 331292 - PARCEL 8
101	WE-ENERGIES - GAS	NO EASEMENTS OF RECORD - PARCEL 8
102	AT&T	NO EASEMENTS OF RECORD - PARCEL 8

NOTES:
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY SYSTEM, WASHINGTON 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 AND BERMANTMENT EASEMENT MONUMENTS WILL BE TYPE 2 (TYPICALLY 1/2" X 24" ROUND REBAR), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.
FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN WAUKESHA.

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2 OF DOCUMENT NUMBER 1611721.

HWY	BASIS OF EXISTING R/W	R/W WIDTH	YEAR
STH 145 (FOND DU LAC AVE)	PROJECT 352B-DIVISION JOB NO. 2615	66'	1925
STH 145 (FOND DU LAC AVE)	CSM 2626	33'	1994
CTH G (DIVISION ROAD)	CSM 1180	40'	1975
CTH G (DIVISION ROAD)	CSM 2626	40', 45'	1984
CTH G (DIVISION ROAD)	PROJECT 2744-2-71	40', 45'	1973



SIGNATURE: *Brian F. Glaszcz* DATE: 08/05/2025
 PRINT NAME: BRIAN F. GLASZCZ
 REGISTRATION NUMBER: 53118
 THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION SE REGION - WAUKESHA
 SIGNATURE: _____ DATE: 08/05/2025
 PRINT NAME: BAO TRAN

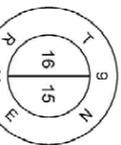
TRANSPORTATION PROJECT PLAT NO: 2475-04-21-4.02

THAT PART OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN

RELOCATION ORDER - 5TH 145 - V. GERMANTOWN- FOND DU LAC AVENUE, INTERSECTION WITH CTH G, WASHINGTON COUNTY TO PROPERTY ESTABLISH LAYOUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.05, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HAS CAUSED THIS PLAT TO BE PREPARED AND THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS Laid OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.

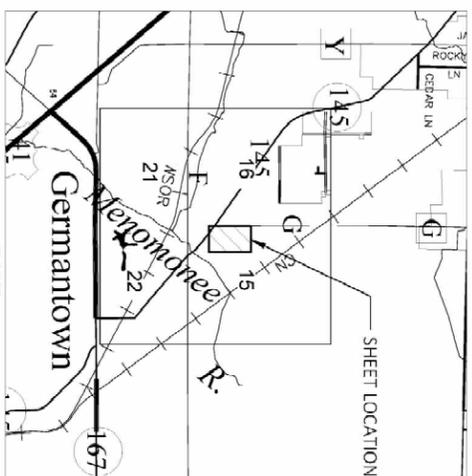
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.



FOUND CAST IRON CAP MONUMENT
Y = 118364.637
X = 378191.711

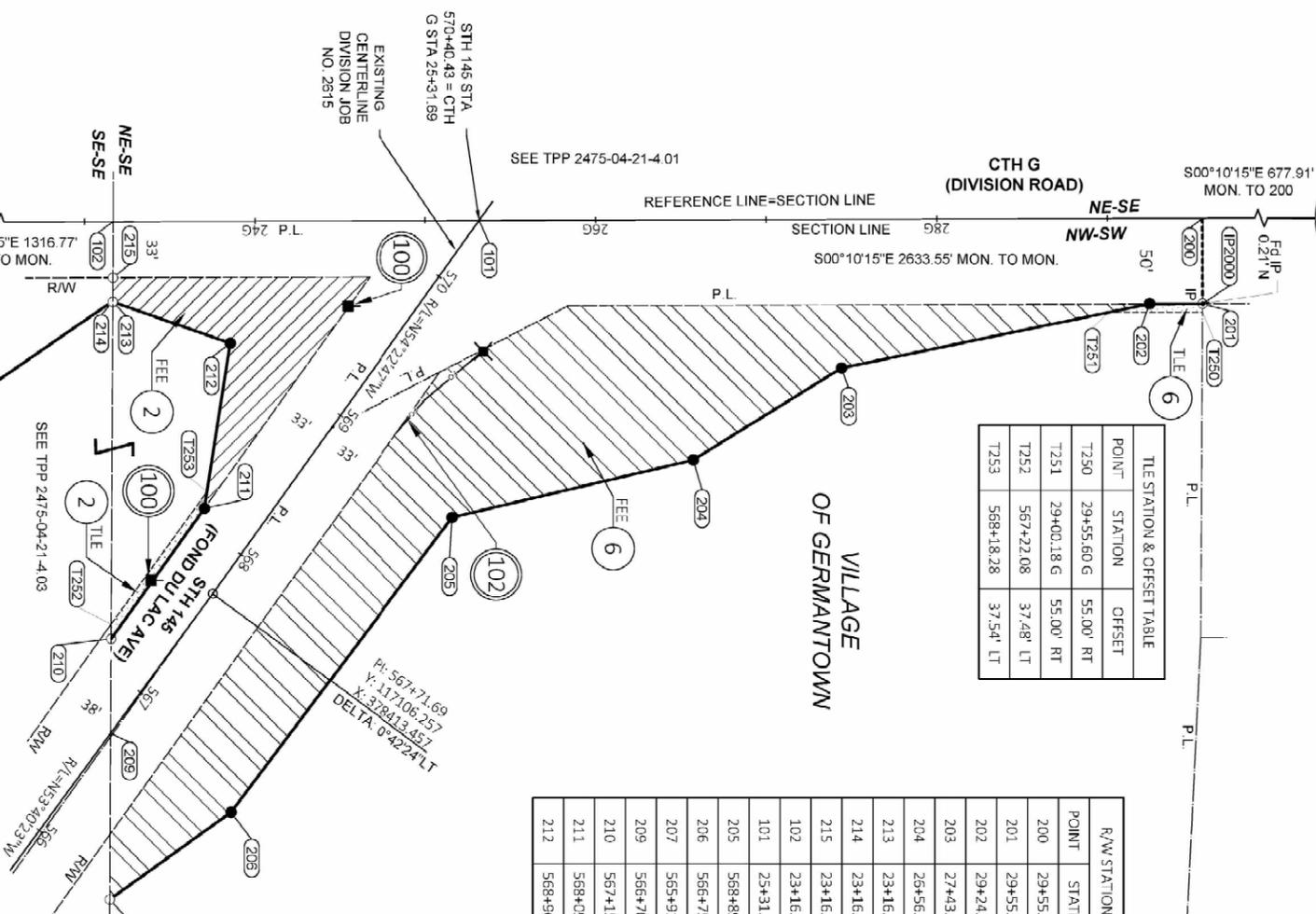
TILE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
T250	29+55.60 G	55.00' RT
T251	29+00.18 G	55.00' RT
T252	567+22.08	37.48' LT
T253	568+18.28	37.54' LT

R/W STATION & OFFSET TABLE		
POINT	STATION	OFFSET
200	29+55.64 G	0.00'
201	29+55.64 G	50.00' RT
202	29+24.57 G	50.00' RT
203	27+43.94 G	87.02' RT
204	26+56.84 G	140.56' RT
213	23+16.55 G	47.03' RT
214	23+16.40 G	47.03' RT
215	23+16.51 G	33.00' RT
102	23+16.77 G	0.00'
101	25+31.69 G	0.00'
205	568+89.89	88.32' RT
206	566+75.21	84.22' RT
207	565+91.97	57.18' RT
209	566+70.56	0.00'
210	567+15.09	32.40' LT
211	568+09.44	33.09' LT
212	568+96.73	77.06' LT



SCALE 0 1 MI

COURSE	BEARING	DISTANCE
200-201	N89°49'45"E	50.00'
201-202	S00°10'15"E	31.07'
202-203	S11°45'11"E	184.38'
203-204	S31°45'00"E	102.24'
204-205	S13°22'22"E	145.40'
205-206	S52°58'28"E	215.78'
206-207	S35°40'17"E	87.52'
207-209	N89°42'35"W	97.19'
208-210	N89°42'35"W	55.07'
210-211	N54°22'42"W	93.94'
211-212	N81°06'58"W	97.74'
212-213	S19°27'48"W	72.81'
213-214	S00°10'15"E	0.16'
214-215	N89°42'35"W	14.03'
215-102	N89°42'35"W	33.00'
102-101	N00°10'15"W	129.42'
101-200	N00°10'15"W	509.45'



POINT NAME	Y COORDS	X COORDS	DESCRIPTION
IP2000	117687.094	378243.727	FD SPIKE WITH RIBBON

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

UTILITY NO.	OWNER(S)	INTEREST REQUIRED
100	WE-ENERGIES - ELEC	RELEASE OF RIGHTS
102	AT&T	RELEASE OF RIGHTS

UTILITY NO.	OWNER	EASEMENTS
100	WE-ENERGIES - ELEC	V. 518 P. 234, DOC. 331292 - PARCEL 2
102	AT&T	NO EASEMENTS OF RECORD - PARCEL 6

PARCEL NUMBER	OWNER(S)	INTEREST(S) REQUIRED	FEE NEW	FEE EXISTING	TILE TOTAL SF
2	VILLAGE OF GERMANTOWN	FEE & TILE	7040	16454	23494
6	LITTLE ACRES, LLC	FEE & TILE	39003	9139	48142

PURPOSE OF ALL THE TILES ARE FOR SLOPING AND GRADING UNLESS NOTED

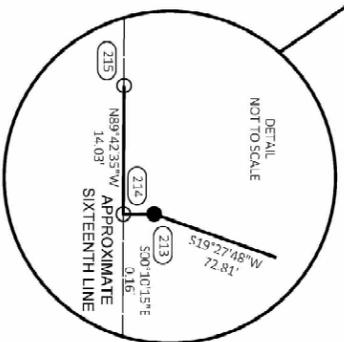
NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY SYSTEM, WASHINGTON 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 AND PERMANENT EASEMENT MONUMENTS WILL BE TYPE 2 (TYPICALLY 2" X 24" IRON REBAR), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

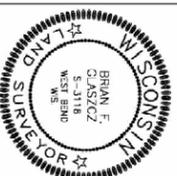
FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN WAUKESHA.

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2 IN DOCUMENT NUMBER 1511721.



HWY	BASIS OF EXISTING R/W	R/W WIDTH	YEAR
5TH 145 (FOND DU LAC AVE)	PROJECT 352B-DIVISION JOB NO. 2615	66'	1925
CTH G (DIVISION ROAD)	PROJECT 2744-2-71	60'	1973
CTH G (DIVISION ROAD)	BY STATE STATUTE 82.31(2)	33'	

AYRES



SIGNATURE: *Brian F. Glaszc* DATE: 05/21/2025
PRINT NAME: BRIAN F. GLASZC
REGISTRATION NUMBER: 53118

TRANSPORTATION PROJECT PLAT NO: 2475-04-21-4.03

THAT PART OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN

RELOCATION ORDER - STH 145 - V. GERMANTOWN-FOND DU LAC AVENUE, INTERSECTION WITH CTH G, WASHINGTON COUNTY

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

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

HWY	BASIS OF EXISTING R/W	R/W WIDTH	YEAR
STH 145 (FOND DU LAC AVE)	PROJECT 352B-DIVISION JOB NO. 2615	66', 71'	1925
STH 145 (FOND DU LAC AVE)	CSM 489	65'	1972
CTH G (DIVISION ROAD)	BY STATE STATUTE 82.31(2)	33'	

Document # 1614806
WASHINGTON COUNTY WISCONSIN
2025-06-03 9:08:00 AM
Lisa Budish
LISA BUDISH
WASHINGTON COUNTY
REGISTER OF DEEDS
Fee: \$25.00

The above recording information verifies this document has been electronically recorded
Returned to WisDOT - SE Region - Waukesha PO#3
Pages: 1

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 2475-04-21-4.03
SHEET 1 OF 1

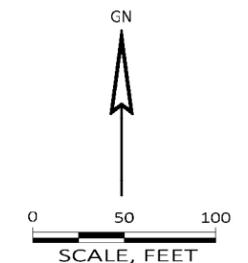
SCHEDULE OF LANDS & INTERESTS REQUIRED		OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.			
PARCEL NUMBER	OWNER(S)	INTEREST(S) REQUIRED	FEE R/W (SF) REQUIRED		
			NEW	EXISTING	TOTAL
2	VILLAGE OF GERMANTOWN	FEE & TLE	2113	17170	19283
6	LITTLE ACRES, LLC	FEE & TLE	1061	24229	25290
7	ERIC HUBER	FEE	509	4785	5294

PURPOSE OF ALL THE TLEs ARE FOR SLOPING AND GRADING UNLESS NOTED.

UTILITY EASEMENTS		
UTILITY NO.	OWNER	EASEMENTS
100	WE-ENERGIES - ELEC	V. 984, P. 425, DOC. 527510 - PARCEL 2
100	WE-ENERGIES - ELEC	V. 518, P. 234, DOC. 331292 - PARCEL 2
102	AT&T	NO EASEMENTS OF RECORD - PARCEL 2

EXISTING IRONS POINT TABLE			
POINT NAME	Y	X	DESCRIPTION
IP3001	116642.898	378958.942	FD 1" IRON PIPE

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

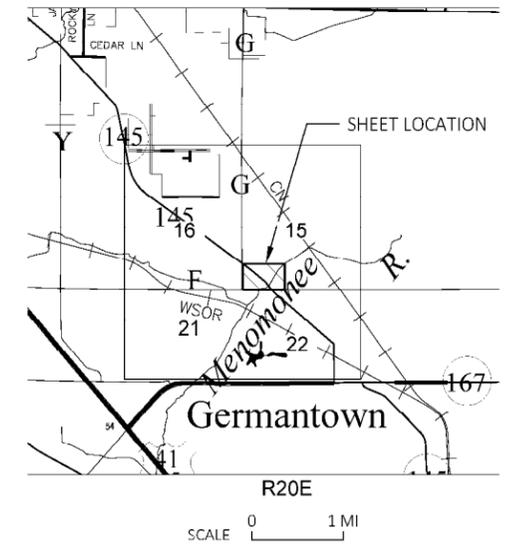


R/W COURSE TABLE		
COURSE	BEARING	DISTANCE
102-215	S89°42'35"E	33.00'
215-214	S89°42'35"E	14.03'
214-303	S00°10'15"E	150.56'
303-304	S89°49'46"W	14.03'
304-305	S89°49'46"W	33.00'
305-102	N00°10'15"W	150.93'
306-209	S89°42'35"E	63.72'
209-207	S89°42'35"E	97.19'
207-310	S35°40'17"E	68.75'
310-311	S54°22'42"E	75.68'
311-312	S50°42'15"E	521.18'
312-313	N39°17'45"E	6.00'
313-314	S50°42'15"E	16.01'
314-315	S39°17'45"W	36.36'
315-325	S39°17'45"W	2.64'
325-316	S30°36'45"W	33.38'
316-317	N50°42'15"W	72.50'
317-318	N62°00'06"W	71.74'
318-319	S30°36'45"W	18.15'
319-320	N50°42'15"W	294.30'
320-321	N31°47'45"E	32.28'
321-322	N50°42'15"W	101.49'
322-323	N54°22'42"W	71.94'
323-324	S35°37'18"W	5.00'
324-306	N54°22'42"W	198.02'

R/W STATION & OFFSET TABLE		
POINT	STATION	OFFSET
102	23+16.77 G	0.00' RT
215	23+16.51 G	33.00' RT
214	23+16.40 G	47.03' RT
303	21+65.84 G	47.03' RT
304	21+65.84 G	33.00' RT
305	21+65.84 G	0.00'
306	567+22.08	37.48' LT
209	566+70.56	0.00'
207	565+91.97	57.18' RT
310	565+26.59	35.93' RT
311	564+50.91	36.86' RT
312	559+31.31	30.50' RT
313	559+31.26	36.50' RT
314	559+21.21	36.41' RT
315	559+15.96	0.00'
316	559+10.81	35.68' LT
317	559+83.30	35.07' LT
318	560+53.77	48.54' LT
319	560+51.18	66.51' LT
320	563+45.47	64.06' LT
321	563+49.41	32.02' LT
322	564+52.21	29.16' LT
323	565+24.14	30.05' LT
324	565+24.08	35.05' LT
325	559+15.58	2.64' LT

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
T350	565+56.71	45.56' RT
T351	564+50.39	46.85' RT
T352	560+40.78	41.41' RT
T353	560+40.78	31.41' RT
T354	563+47.44	48.04' LT
T355	564+17.86	46.92' LT

UTILITY INTERESTS REQUIRED		
UTILITY NO.	OWNER	INTEREST REQUIRED
100	WE-ENERGIES - ELEC	RELEASE OF RIGHTS
102	AT&T	RELEASE OF RIGHTS



AVRES

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

SIGNATURE: *Brian F. Glaszcz* DATE: 06/02/2025
 PRINT NAME: BRIAN F. GLASZCZ
 REGISTRATION NUMBER: S-3118

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION SE REGION - WAUKESHA

SIGNATURE: *Robert L. Duffeck* DATE: 06/02/2025
 PRINT NAME: ROBERT L. DUFFECK 96

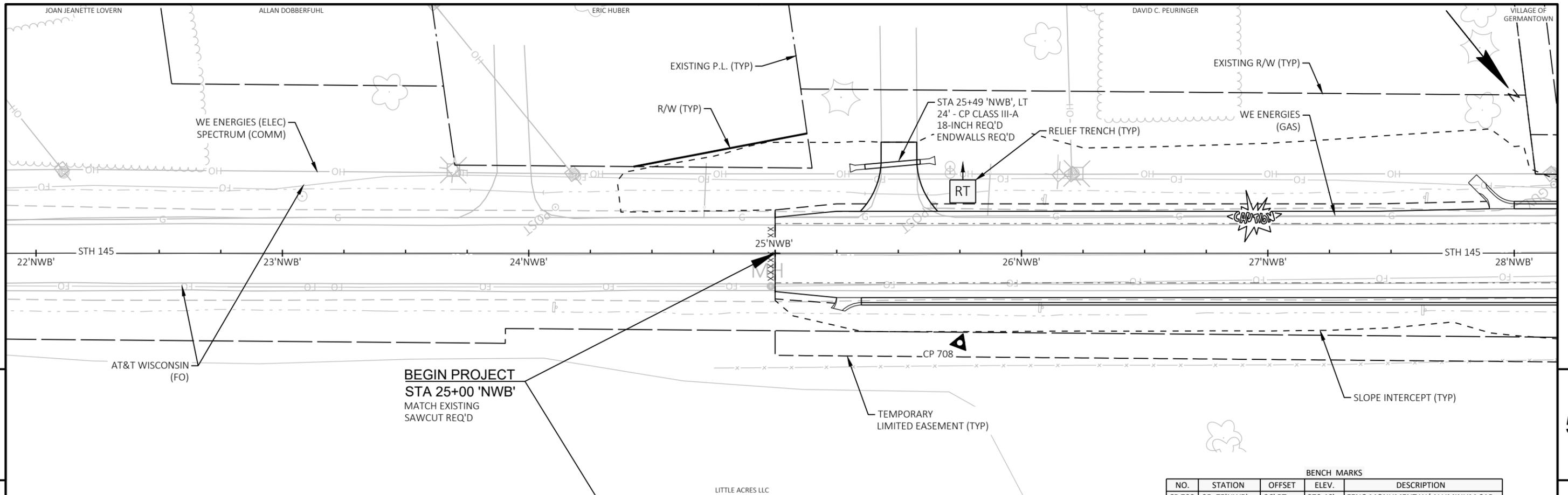
NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY SYSTEM, WASHINGTON 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.

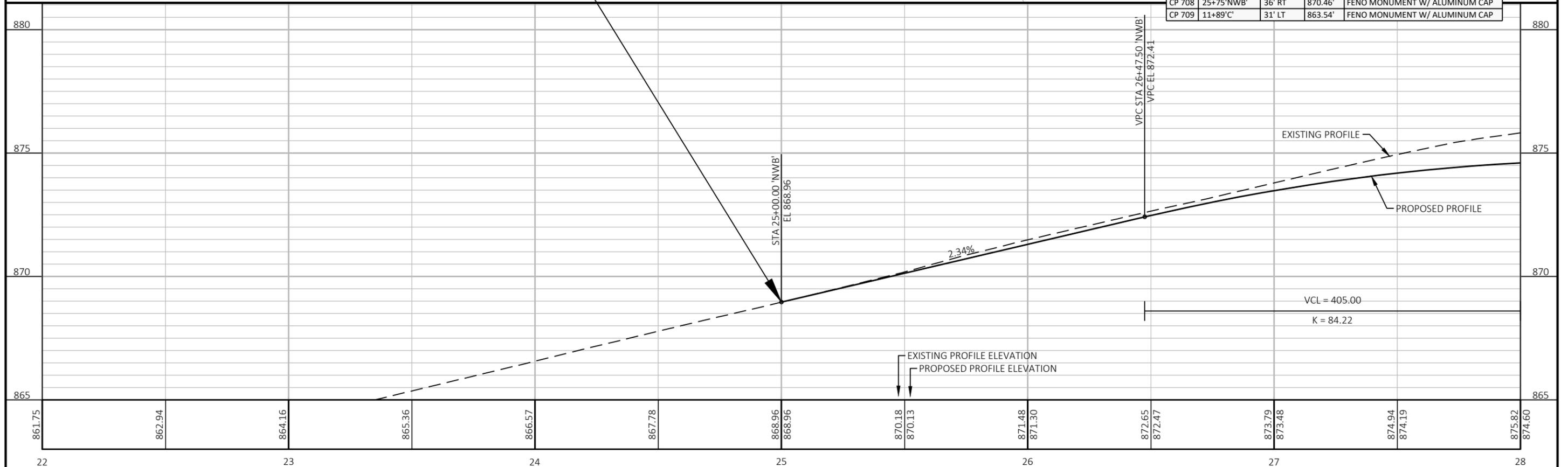
ALL NEW RIGHT-OF-WAY MONUMENTS AND PERMANENT EASEMENT MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBAR), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

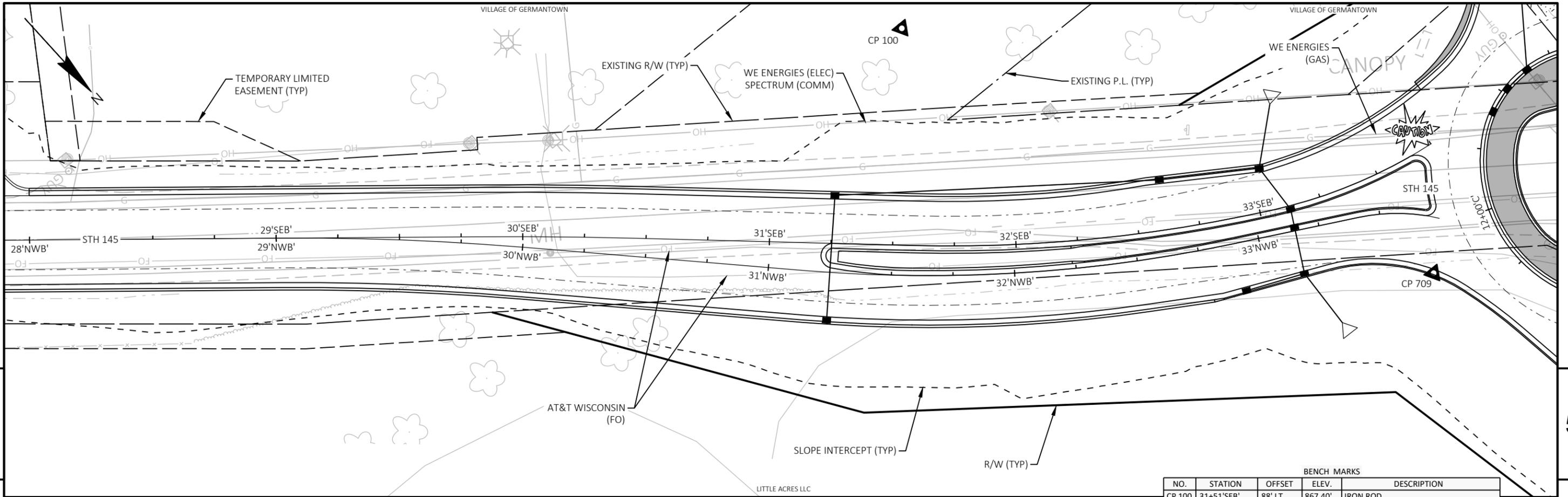
FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN WAUKESHA.

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2 IN DOCUMENT NUMBER 1611721.

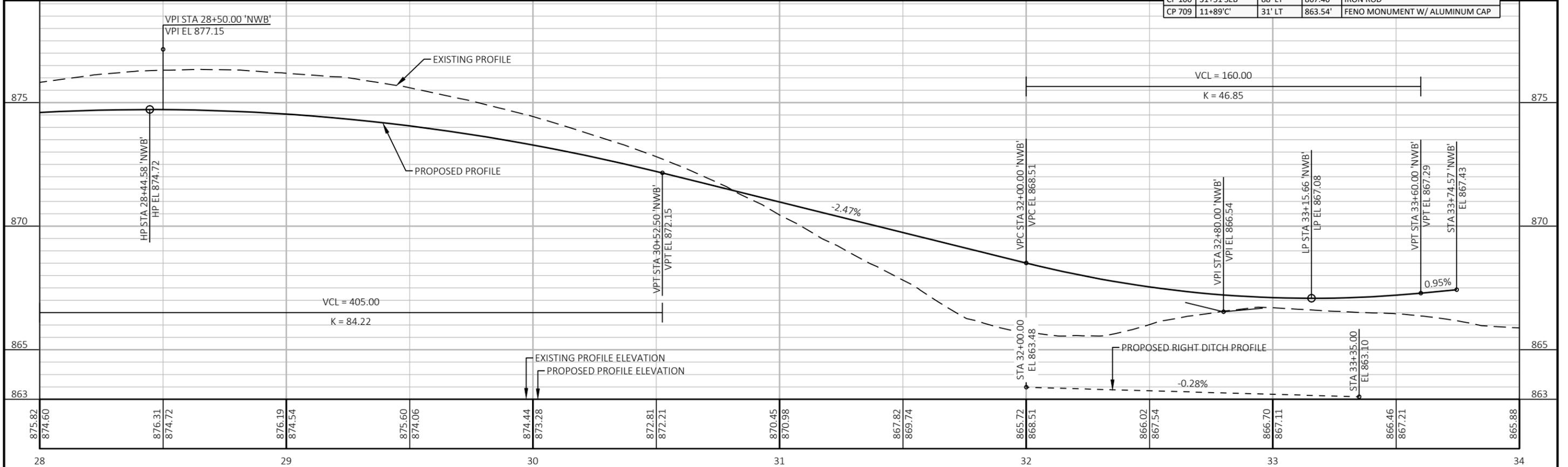


BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 708	25+75'NWB'	36' RT	870.46'	FENO MONUMENT W/ ALUMINUM CAP
CP 709	11+89'C	31' LT	863.54'	FENO MONUMENT W/ ALUMINUM CAP

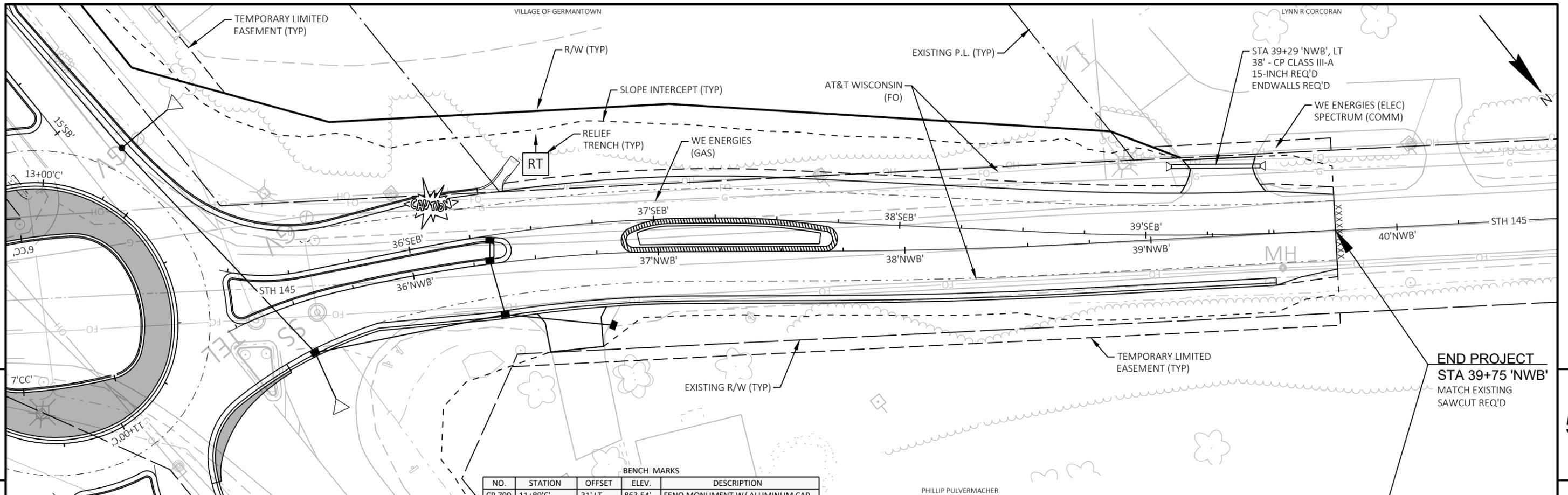




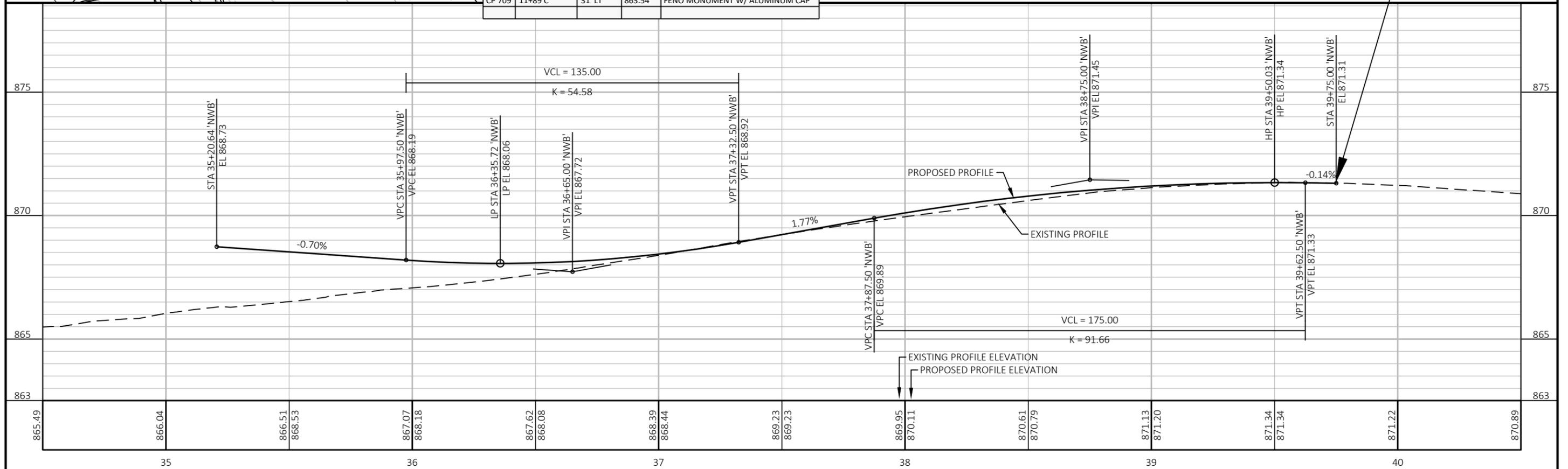
BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 100	31+51'SEB'	88' LT	867.40'	IRON ROD
CP 709	11+89'C	31' LT	863.54'	FENO MONUMENT W/ ALUMINUM CAP



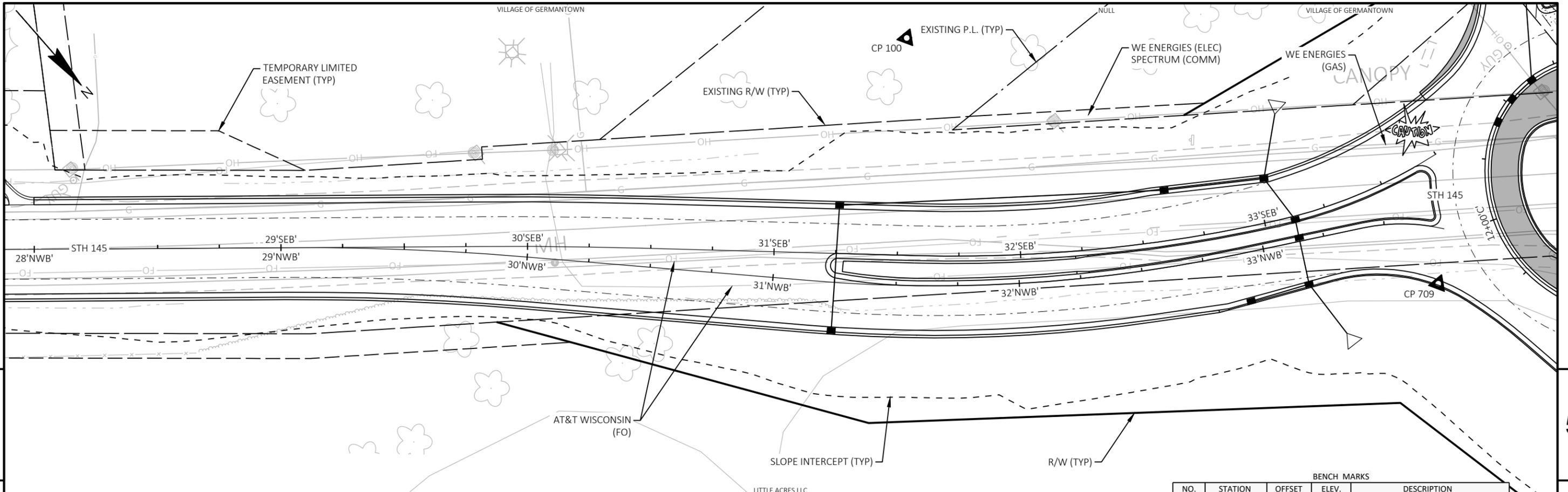
PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	PLAN AND PROFILE: NWB STH 145	SHEET 98
------------------------	--------------	--------------------	-------------------------------	----------



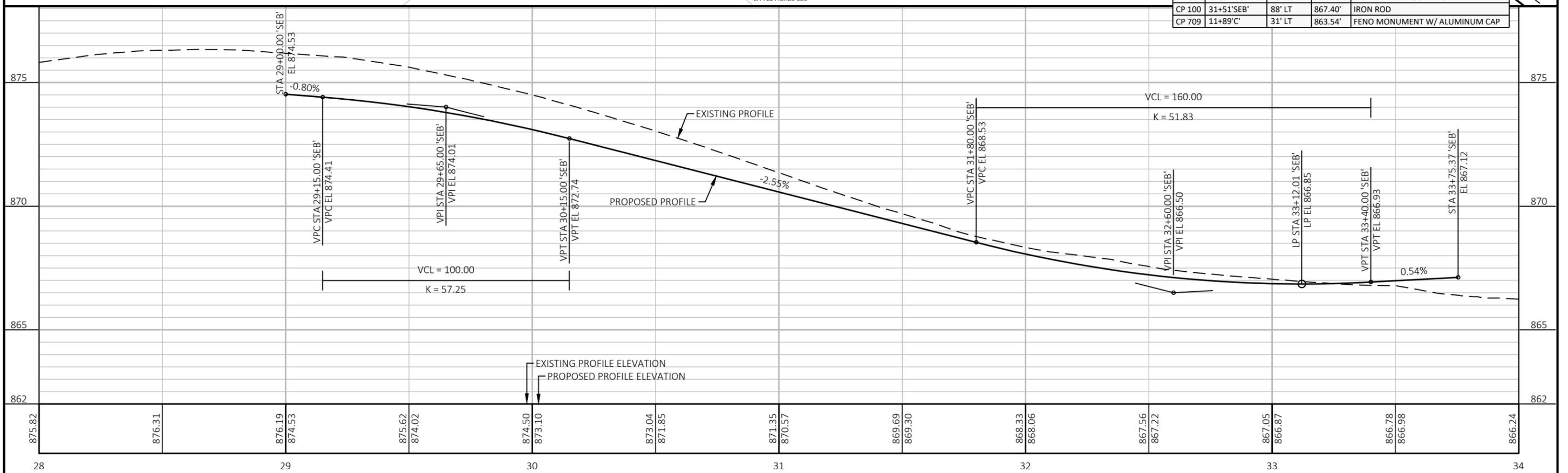
BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 709	11+89'C	31' LT	863.54'	FENO MONUMENT W/ ALUMINUM CAP



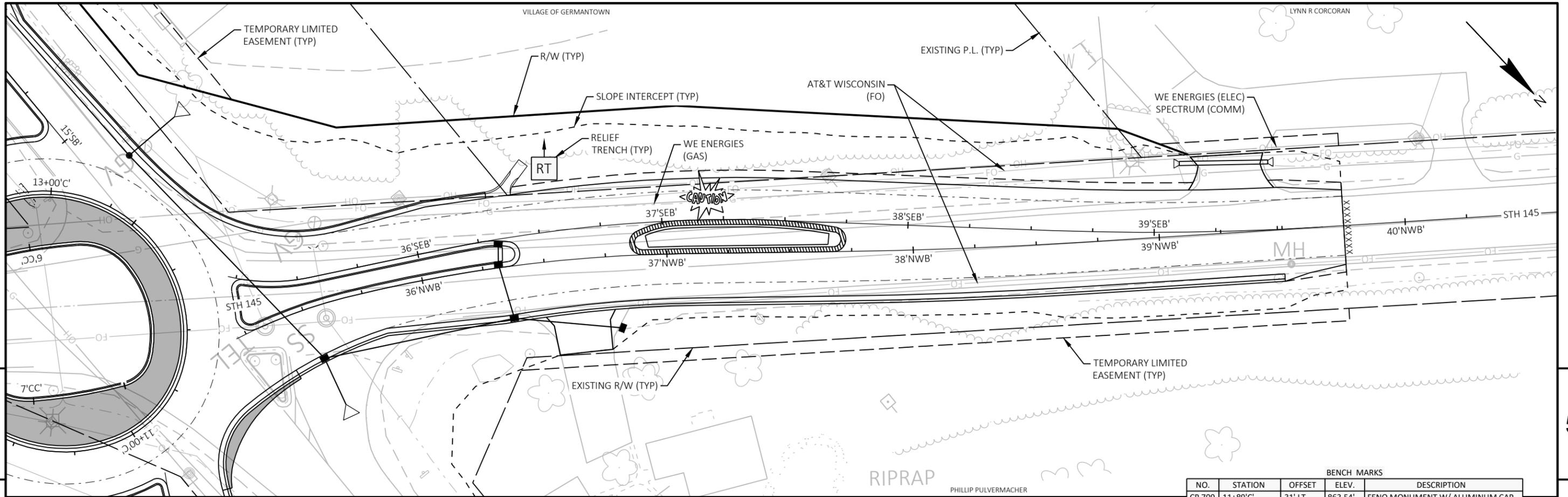
PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	PLAN AND PROFILE: NWB STH 145	SHEET 99
------------------------	--------------	--------------------	-------------------------------	----------



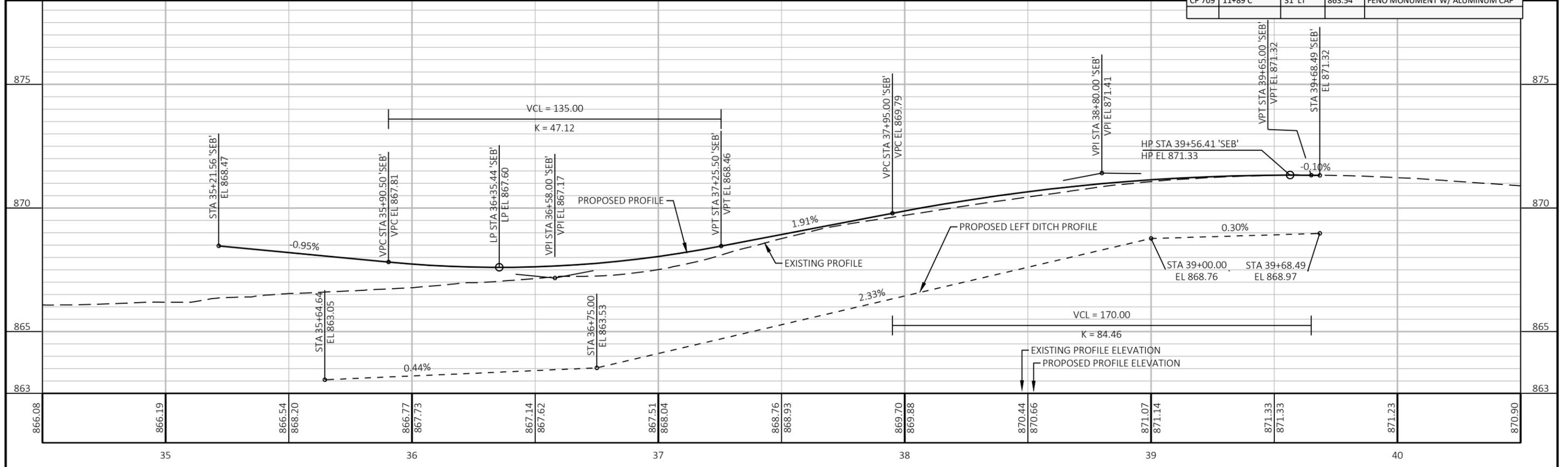
BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 100	31+51'SEB'	88' LT	867.40'	IRON ROD
CP 709	11+89'C	31' LT	863.54'	FENO MONUMENT W/ ALUMINUM CAP



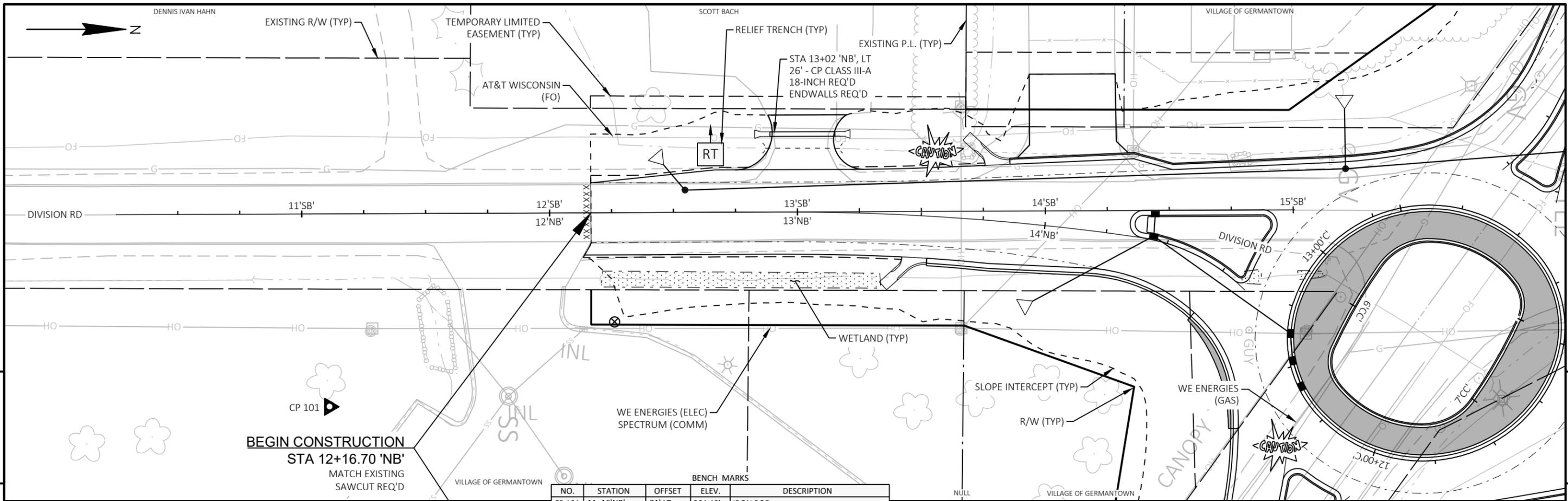
PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON PLAN AND PROFILE: SEB STH 145 SHEET 100



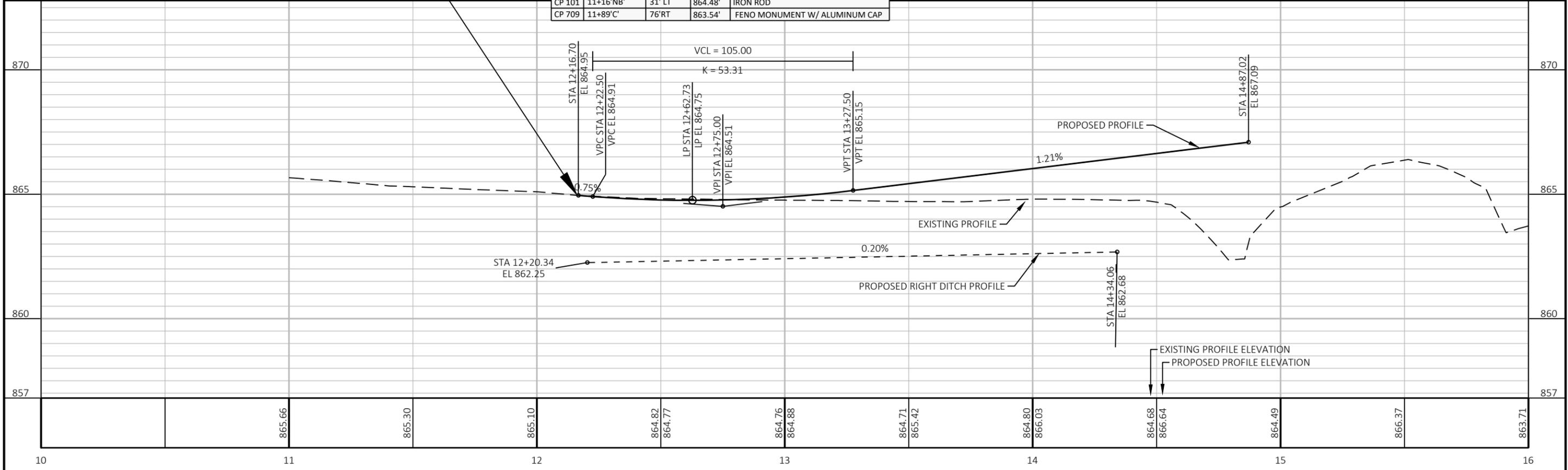
BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 709	11+89'C	31' LT	863.54'	FENO MONUMENT W/ ALUMINUM CAP



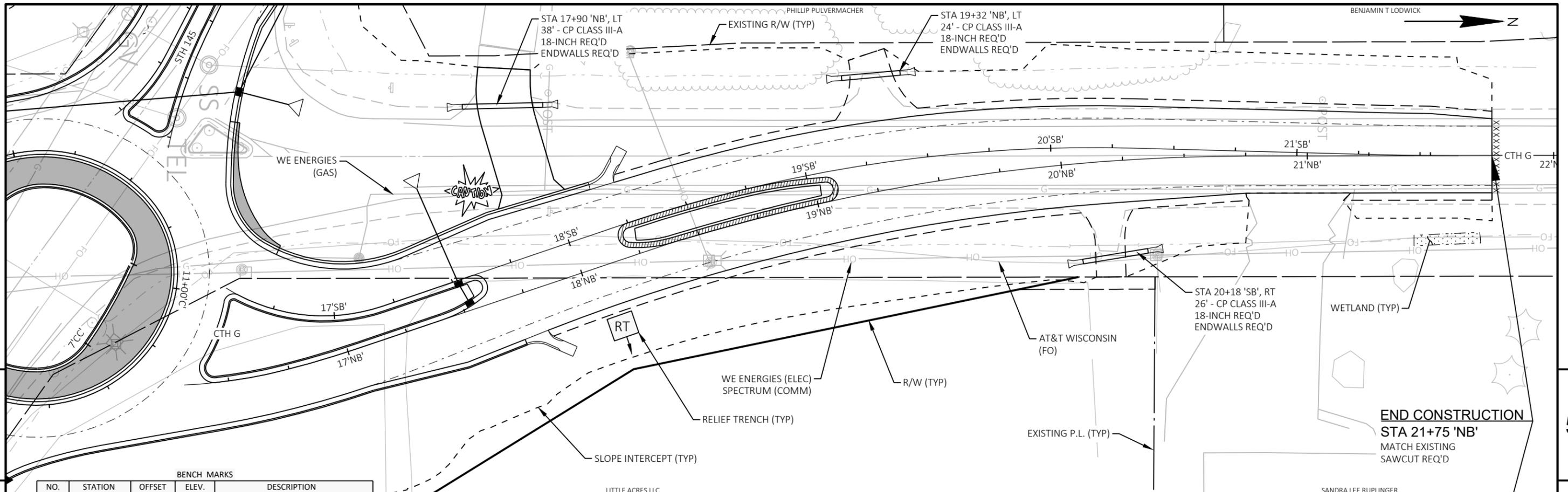
PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	PLAN AND PROFILE: SEB STH 145	SHEET 101	E
------------------------	--------------	--------------------	-------------------------------	-----------	---



BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 101	11+16'NB'	31' LT	864.48'	IRON ROD
CP 709	11+89'C'	76' RT	863.54'	FENO MONUMENT W/ ALUMINUM CAP

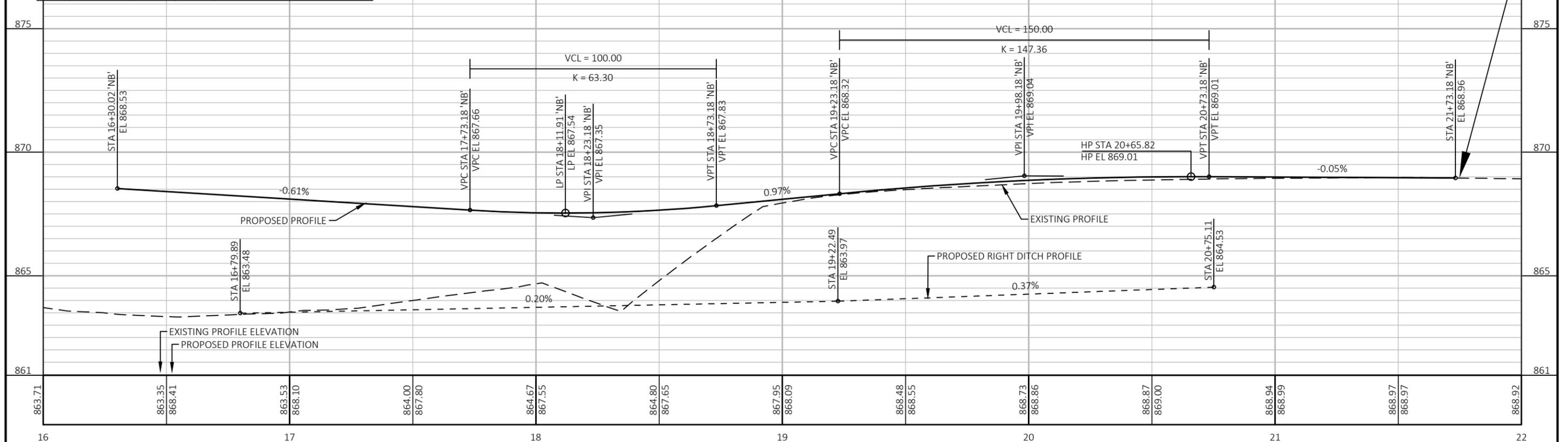


PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	PLAN AND PROFILE: NB CTH G	SHEET 102	E
------------------------	--------------	--------------------	----------------------------	-----------	----------

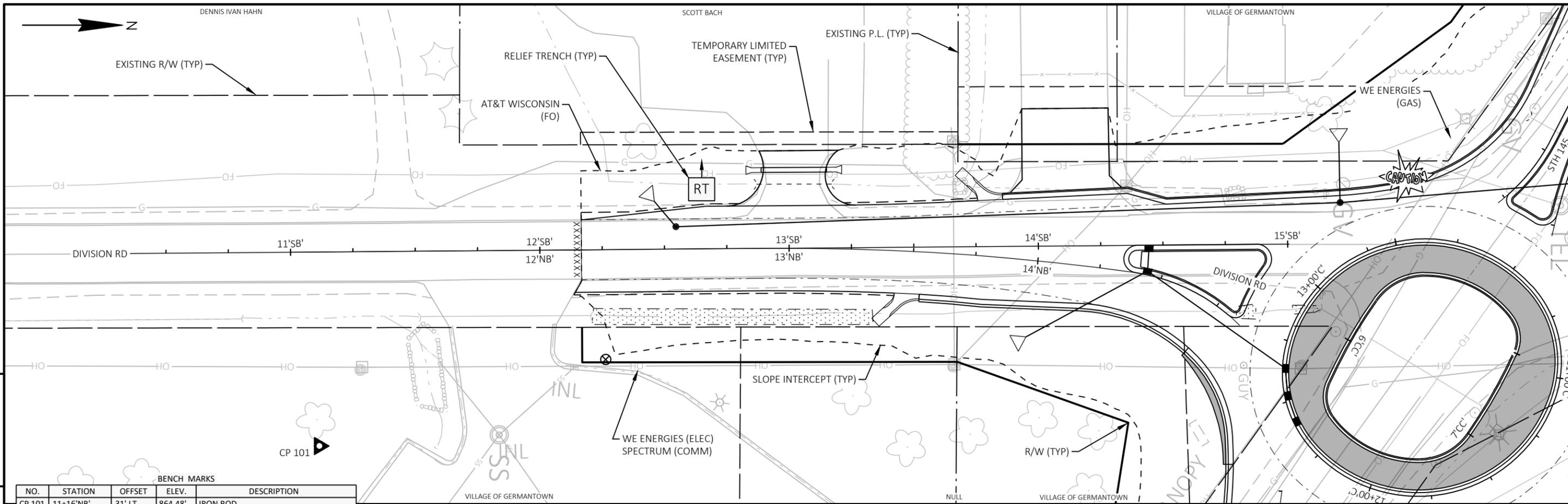


BENCH MARKS

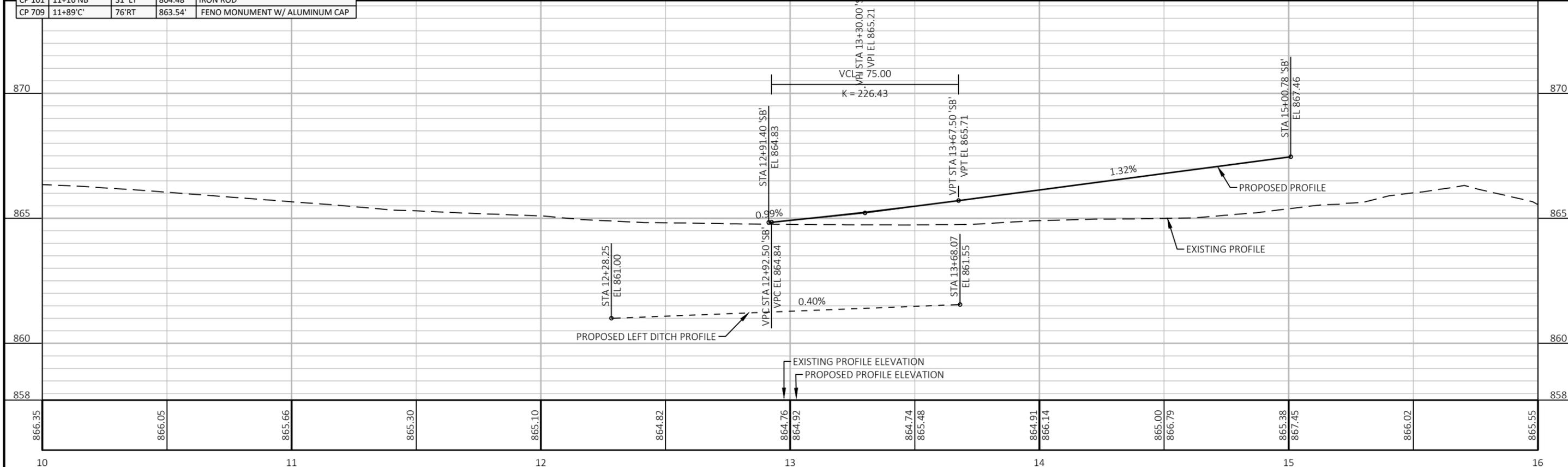
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 709	11+89'C	31' LT	863.54'	FENO MONUMENT W/ ALUMINUM CAP



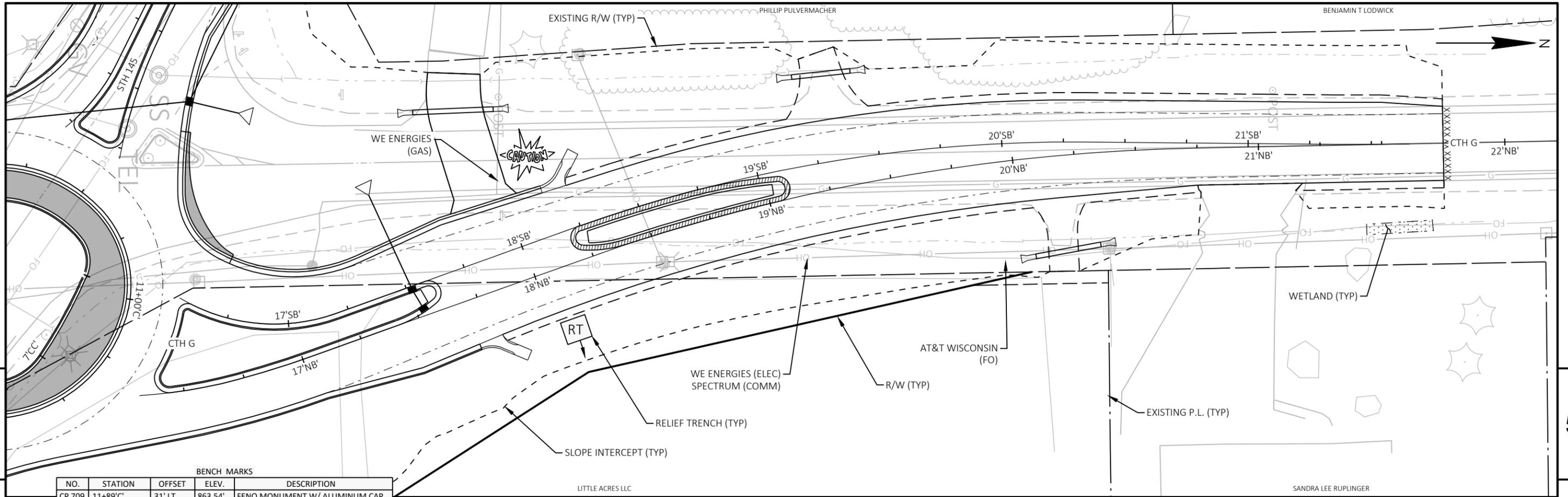
PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	PLAN AND PROFILE: NB CTH G	SHEET 103
------------------------	--------------	--------------------	----------------------------	-----------



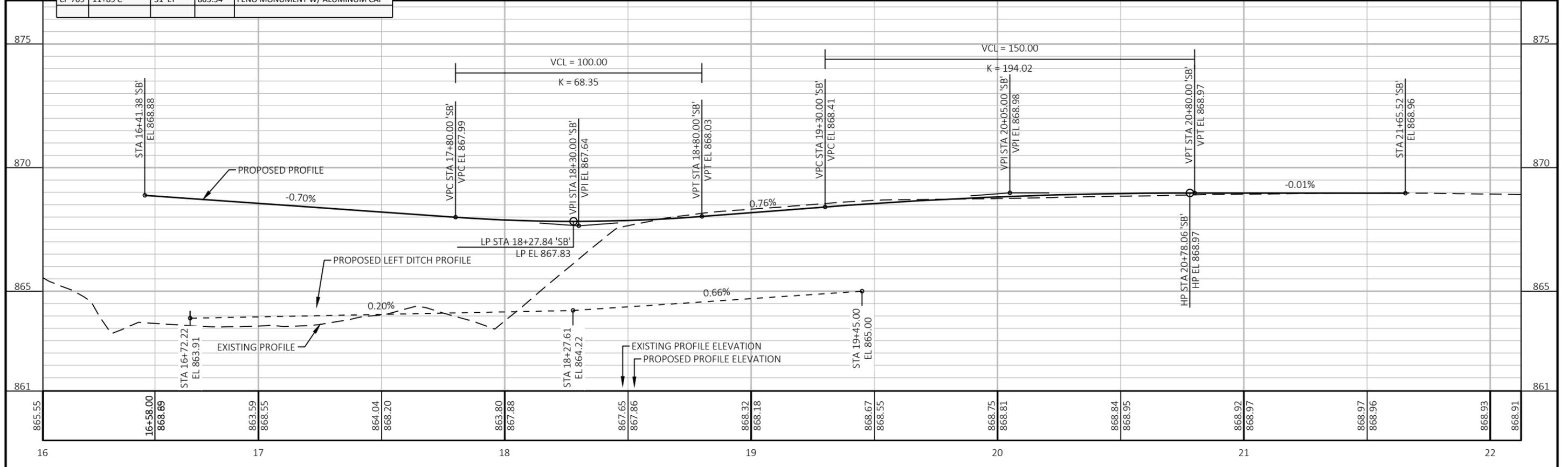
BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 101	11+16'NB'	31' LT	864.48'	IRON ROD
CP 709	11+89'C	76' RT	863.54'	FENO MONUMENT W/ ALUMINUM CAP



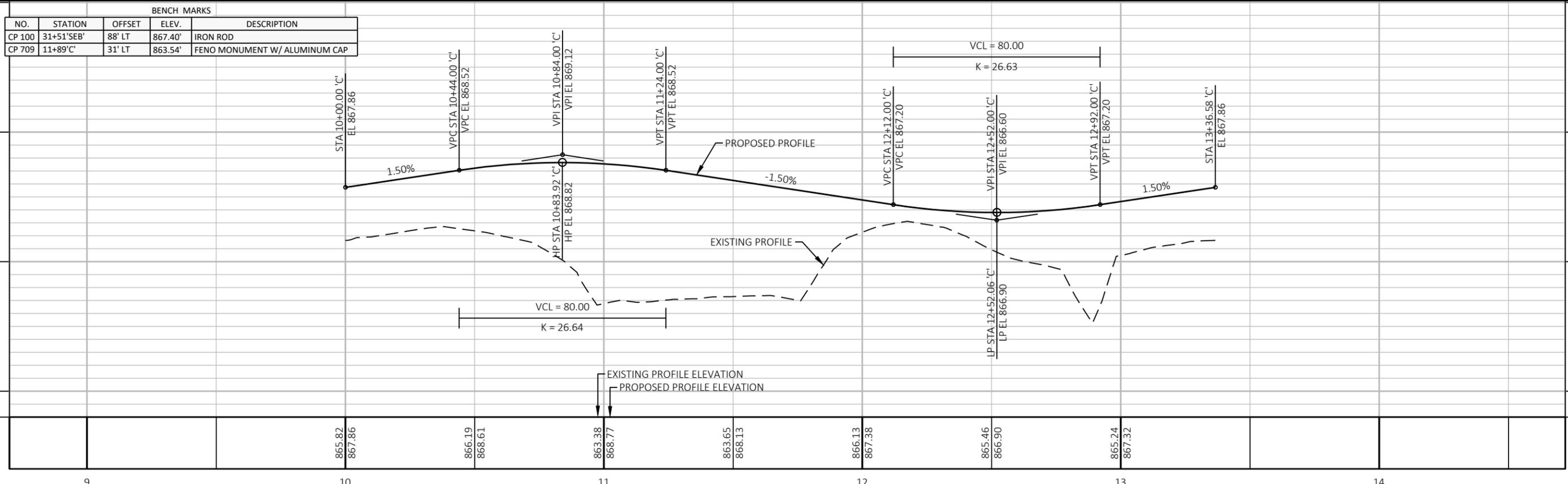
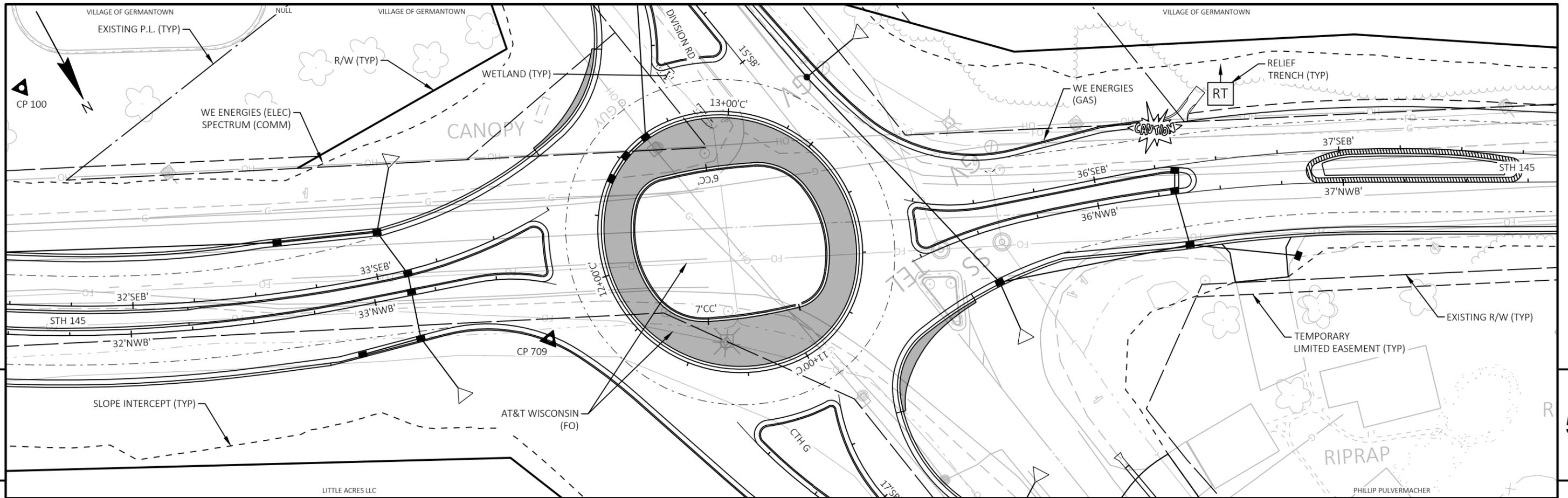
PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	PLAN AND PROFILE: SB CTH G	SHEET 104
------------------------	--------------	--------------------	----------------------------	-----------



BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
CP 709	11+89'C	31' LT	863.54'	FENO MONUMENT W/ ALUMINUM CAP



PROJECT NO: 2475-04-71	HWY: STH 145	COUNTY: WASHINGTON	PLAN AND PROFILE: SB CTH G	SHEET 105
------------------------	--------------	--------------------	----------------------------	-----------

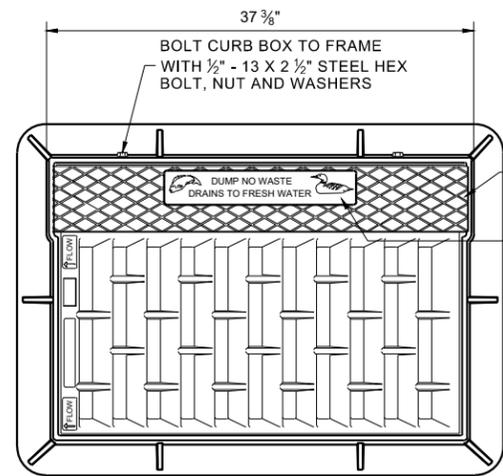


Standard Detail Drawing List

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
08A05-22D	INLET COVERS TYPE V, V-B, & VV-B
08A05-22E	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08A08-03	CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER
08A09-03	CATCH BASINS 2X3-FT AND 2.5X3-FT
08B09-04	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08C07-03	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT, 2.5X3-FT & 2X3.5-FT
08C08-03	INLETS MEDIAN 1 AND 2 GRATE
08D01-24A	CONCRETE CURB & GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D15-05A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-05B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-05C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D16-11	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
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
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
09B02-10	CONDUIT
09B04-13	PULL BOX
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C05-10	CONCRETE CONTROL CABINET BASES
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D04-03	LIGHTING CONTROL CABINET 120/240 VOLT
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
11B02-02	CONCRETE MEDIAN NOSE
13C19-03	HMA LONGITUDINAL JOINTS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
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
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-10A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C18-09A	MEDIAN ISLAND PAVEMENT MARKINGS
15C18-09B	PAVEMENT MARKINGS, MEDIAN ISLAND NOSE
15C22-01	DOTTED EXTENSION FOR ROUNDABOUT
15D37-03	TRAFFIC CONTROL, 2-LANE ROUNDABOUT

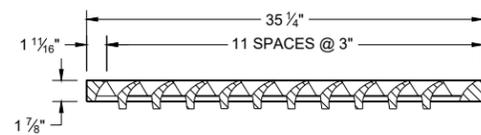
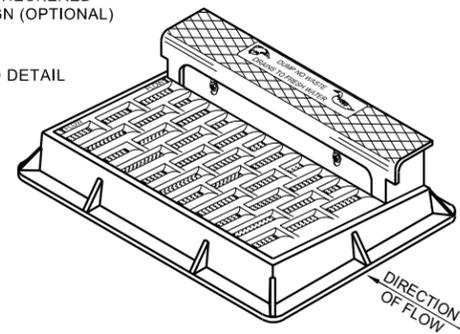
6

6

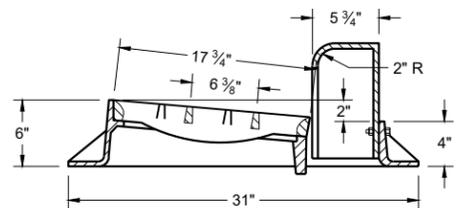
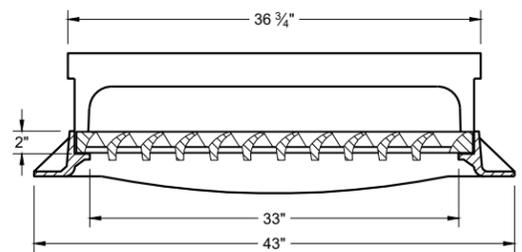
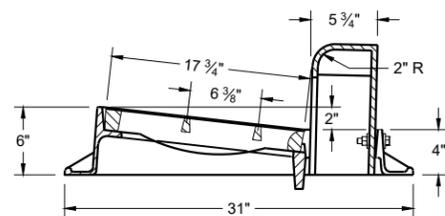
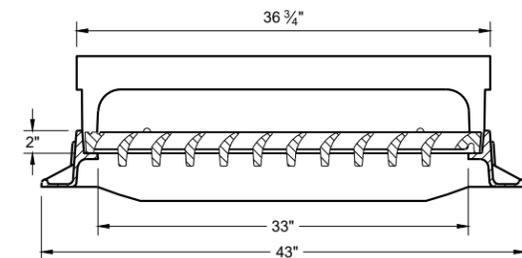


NOTE: EITHER CASTING IS ACCEPTABLE

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



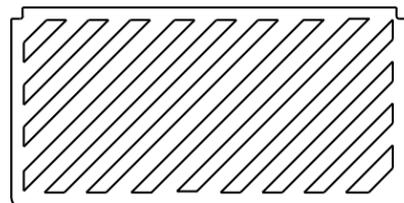
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"



TYPE "H"

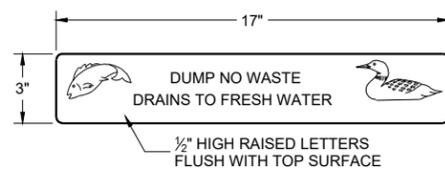
NOTE: EITHER CASTING IS ACCEPTABLE

1 1/8" DIAGONAL BARS WITH 1 5/8" OPENINGS



SPECIAL GRATE FOR TYPE "H" COVER

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



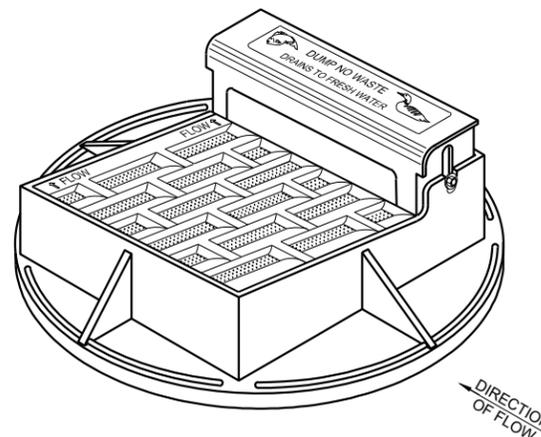
LOGO DETAIL

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.

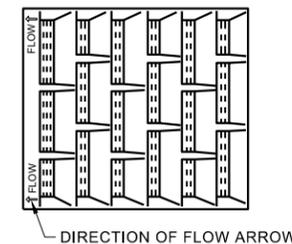
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

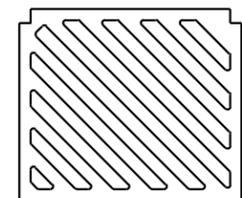


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

NOTE: EITHER CASTING IS ACCEPTABLE

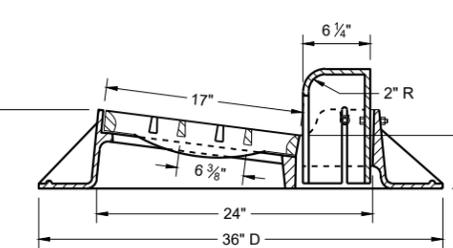
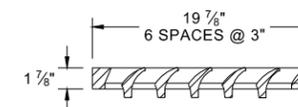
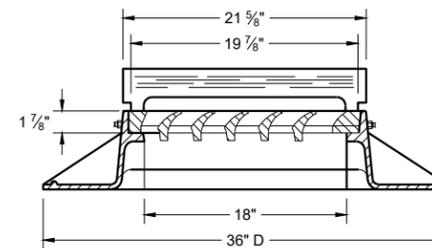


1" DIAGONAL BARS WITH 1 1/2" OPENINGS

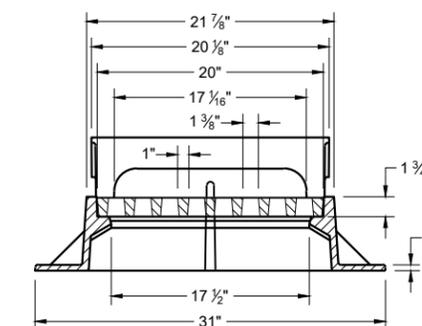
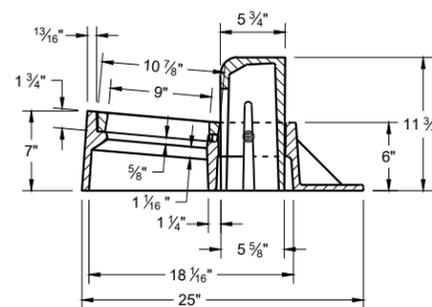


SPECIAL GRATE FOR TYPE "A" COVER

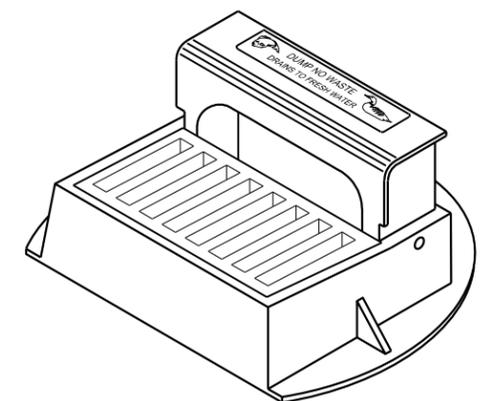
(MEASURES 19 3/4" X 17" X 1 7/8")
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"



TYPE "Z"

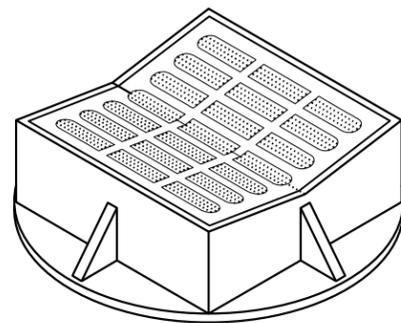
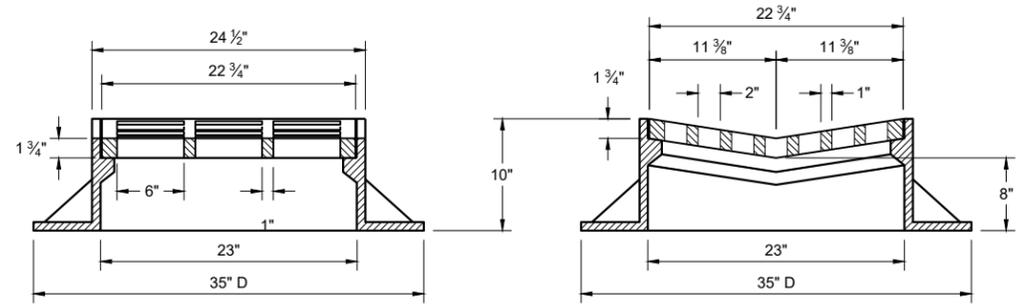


INLET COVERS TYPES A, H, A-S, H-S AND Z

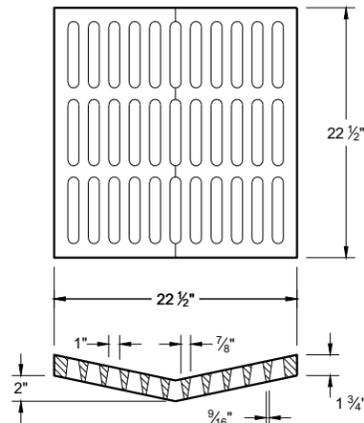
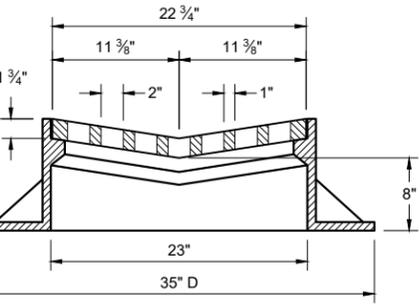
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

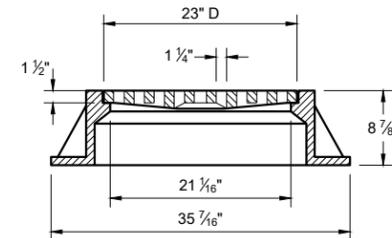
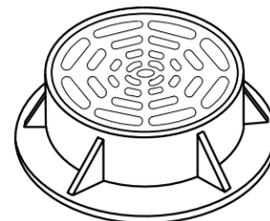
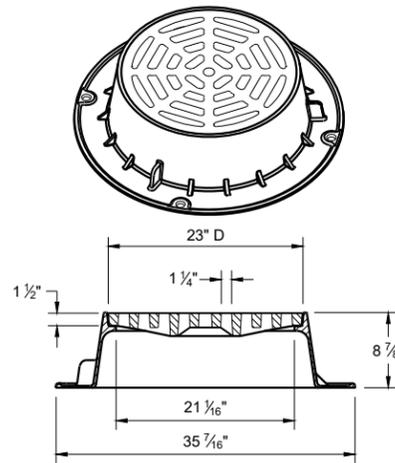


TYPE "B"



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"

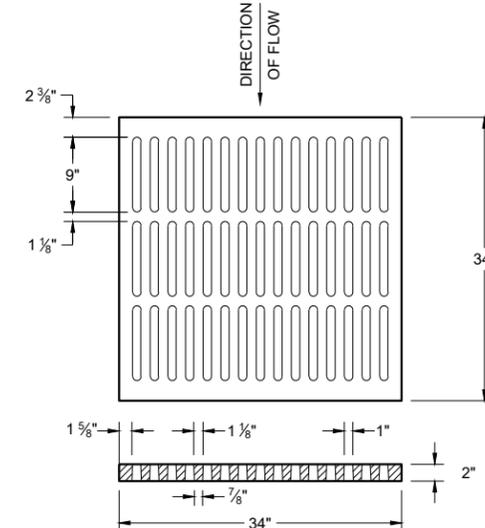
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

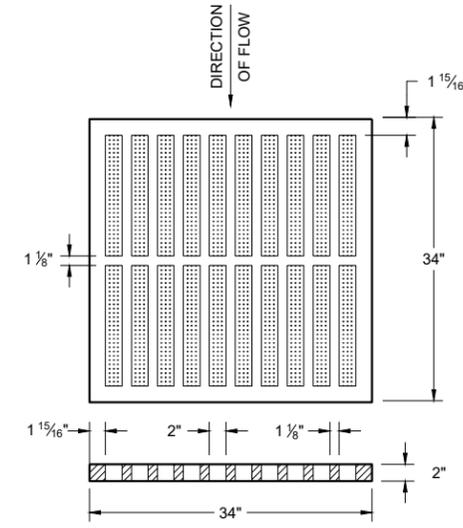
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

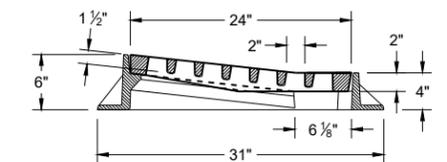
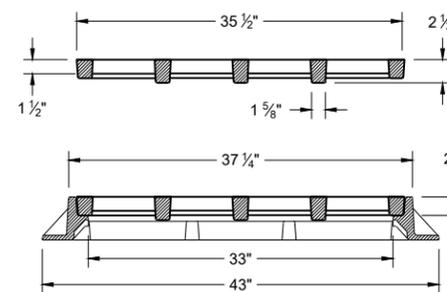
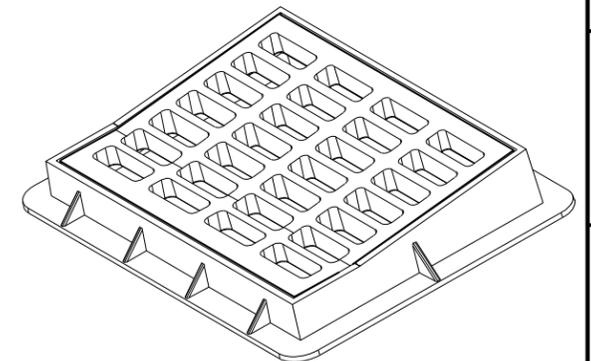
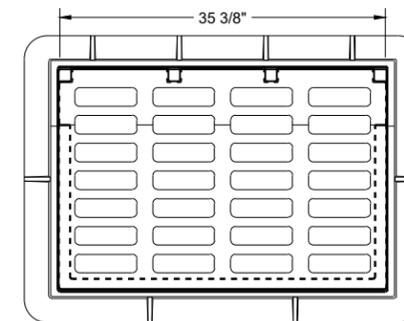
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



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

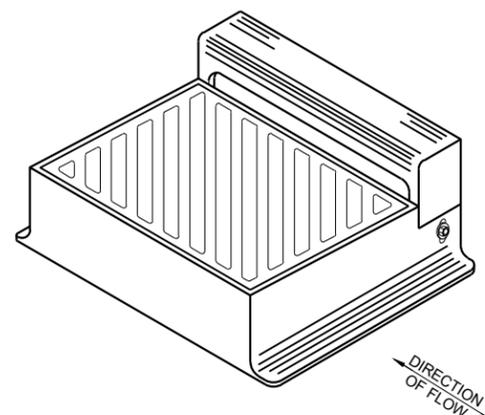
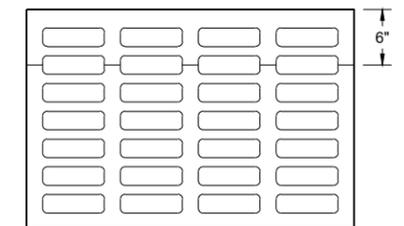


TYPE "MS"
 USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON THE DRAINAGE TABLE

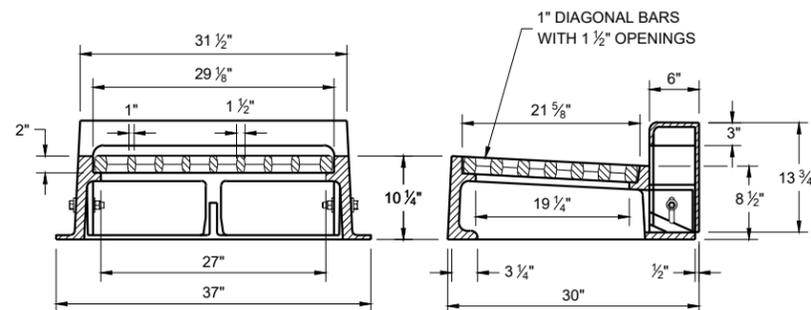


TYPE "DW"

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



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"

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

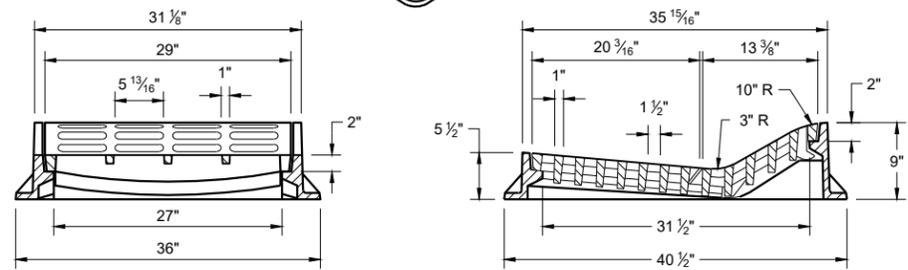
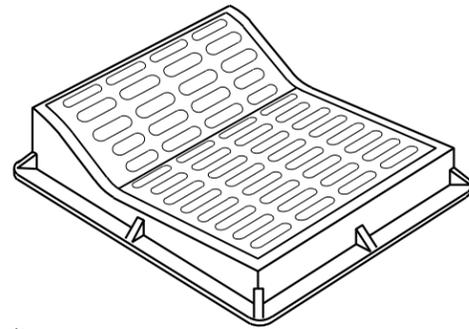
FHWA

109

GENERAL NOTES

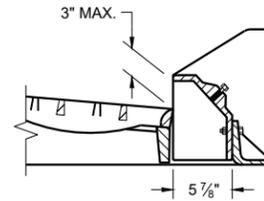
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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"

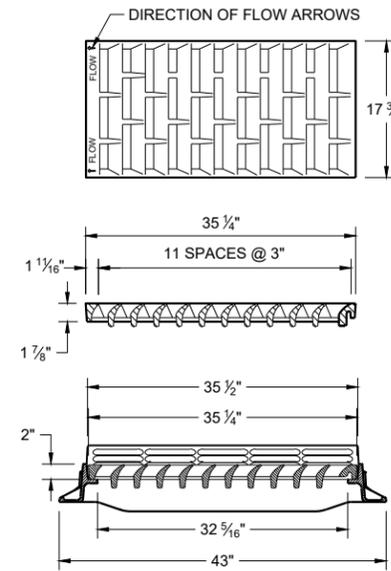


ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

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

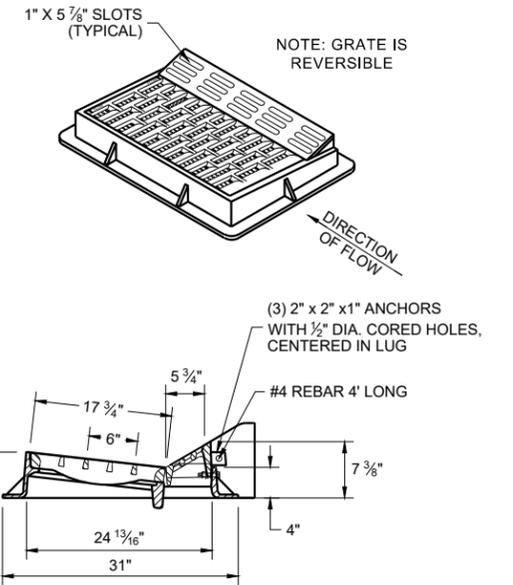
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

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



TYPE "HM"

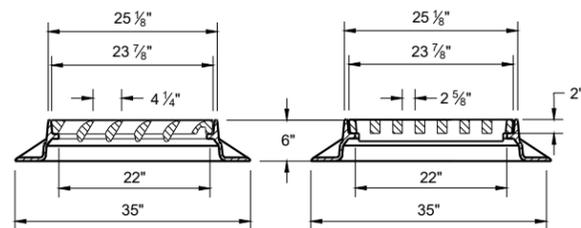
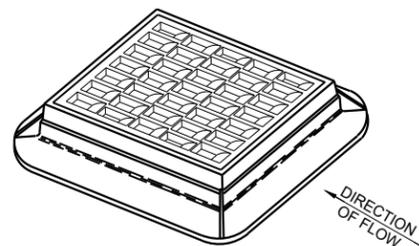
USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"



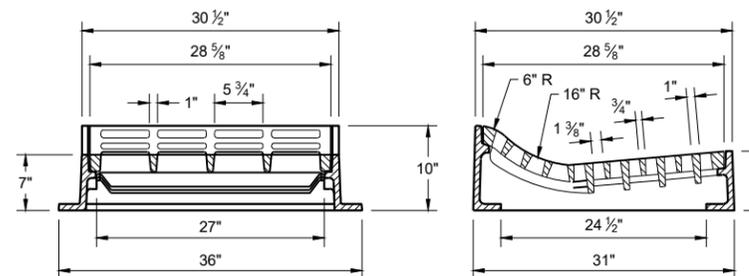
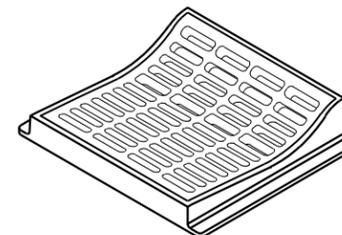
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

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

6



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**

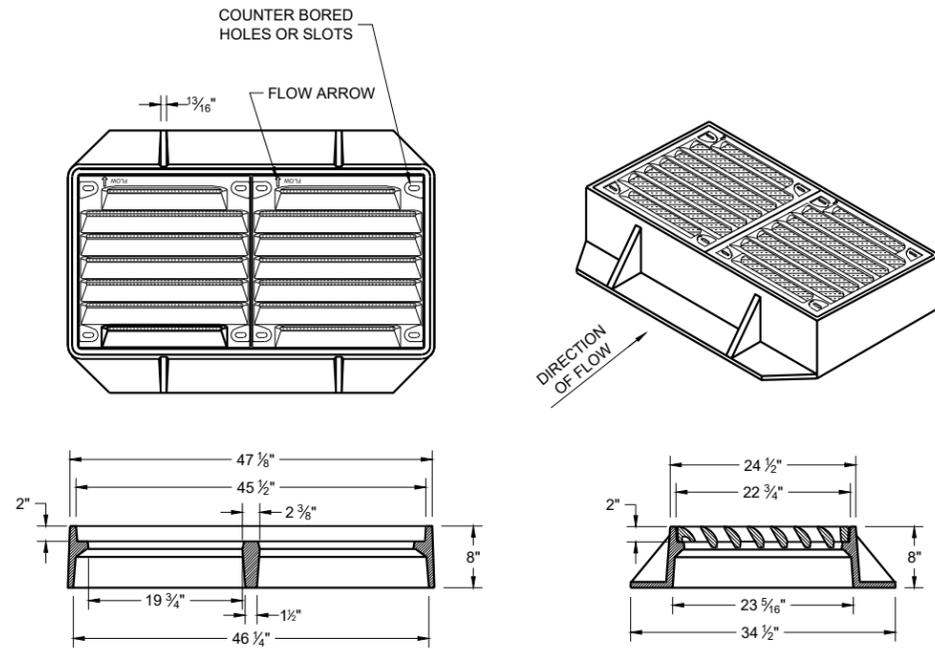
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

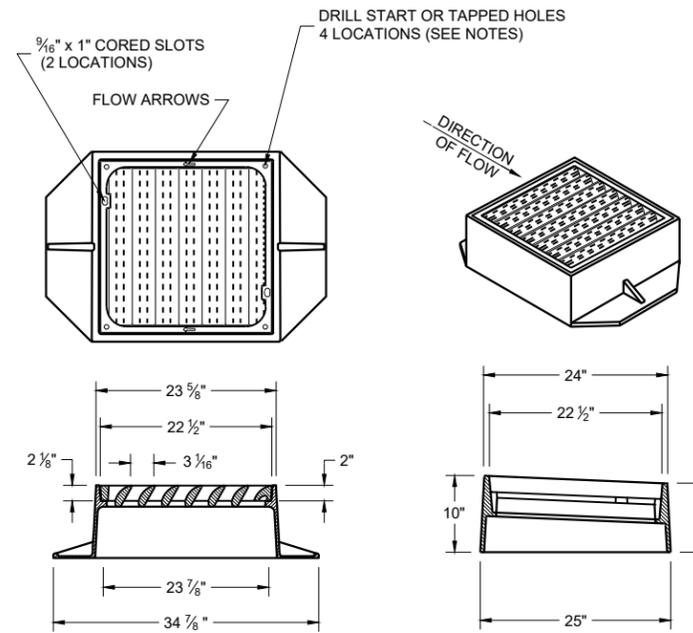
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



TYPE "VV-B"

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER
ALL DRILLING AND TAPPING GRATES AND FRAMES BY CASTING MANUFACTURER

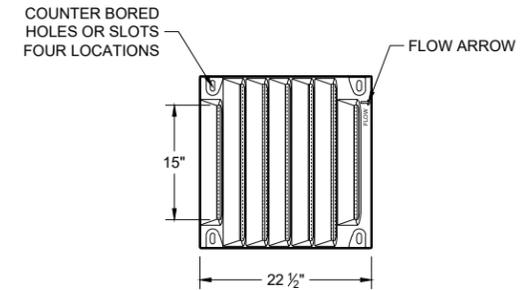
TYPE V
FRAME - CAST GRAY IRON ASTM A48 CLASS 35B
3/8" DIA. X 1/16" DRILL START IN 8 LOCATIONS
GRATE - CAST GRAY IRON ASTM A-48, CLASS 35B



TYPE "V"

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER ALL DRILLING AND TAPPING GRATES AND FRAMES BY CASTING MANUFACTURER

TYPE V
FRAME - CAST GRAY IRON ASTM A48 CLASS 40A
3/8" DIA. X 1/16" DRILL START IN 4 LOCATIONS
GRATE - CAST GRAY IRON ASTM A-48, CLASS 35B



BOLT DOWN GRATE FOR TYPE "V" AND "VV-B" COVER

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER NOTED AS TYPE "V-B" OR "VV-B" (FOR DOUBLE GRATE) ON DRAINAGE TABLE

TAP 1/2" -13 HOLES IN FOUR LOCATIONS PER GRATE IN FRAME TO BOLT GRATE(S).
FRAME - CAST GRAY IRON ASTM A48 CLASS 40A

GRATE - CAST DUCTILE IRON ASTM A536, 55+KSI YIELD
BOLTS - 1/2" -13 STAINLESS STEEL BOLTS WITH WASHERS
TORQUE BOLTS TO MANUFACTURER SPECIFICATION DO NOT OVERTIGHTEN.

6

6

SDD 08A05-22d

SDD 08A05-22d

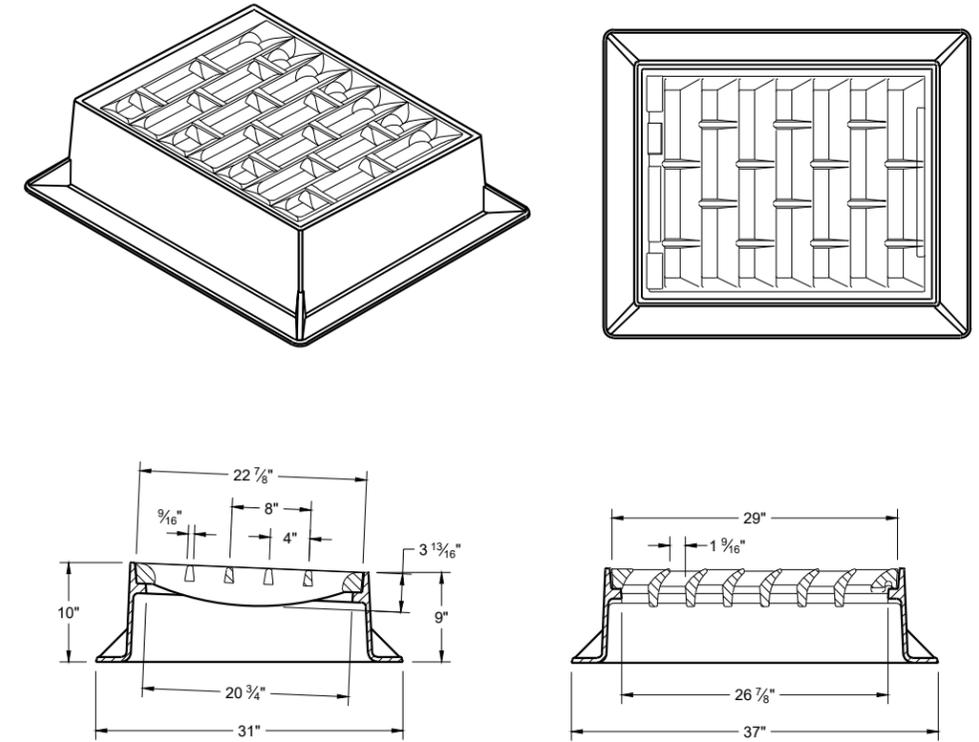
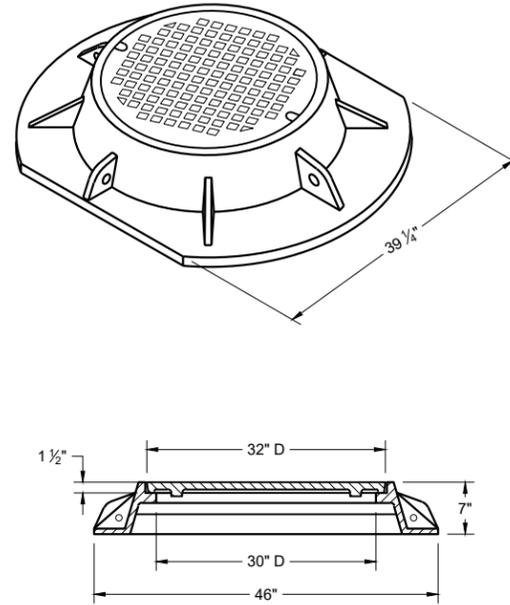
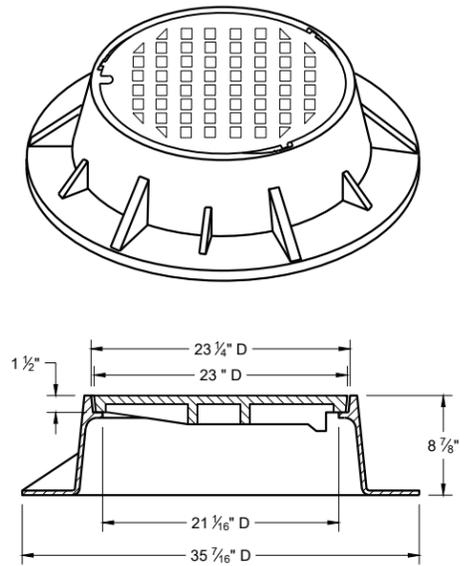
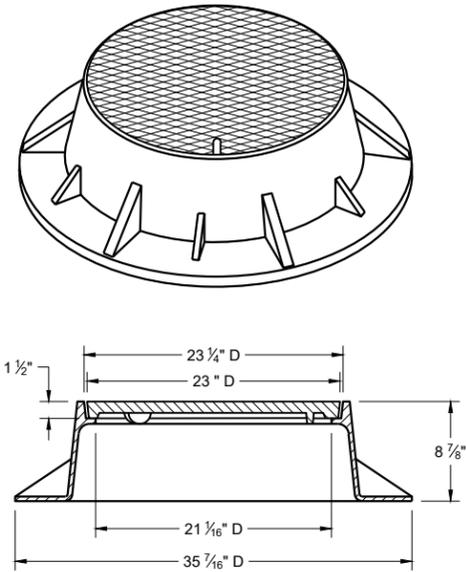
INLET COVERS TYPES V, V-B, AND VV-B	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2025 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 111	

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.

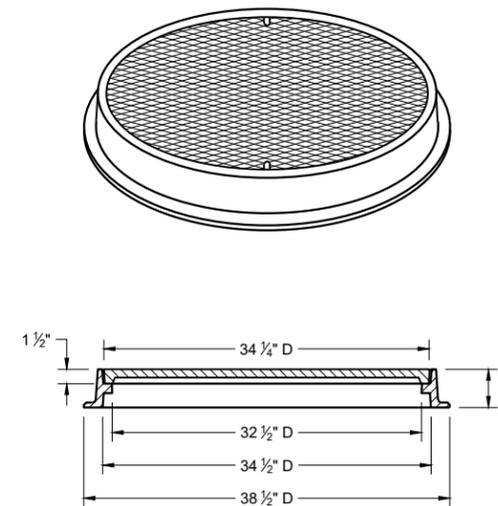
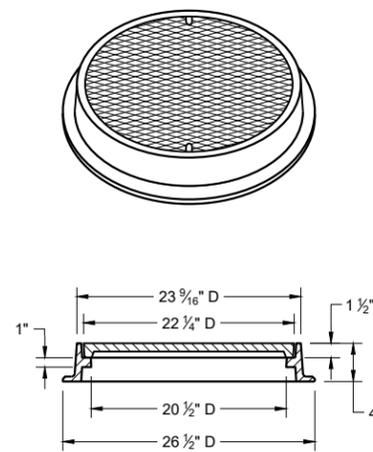
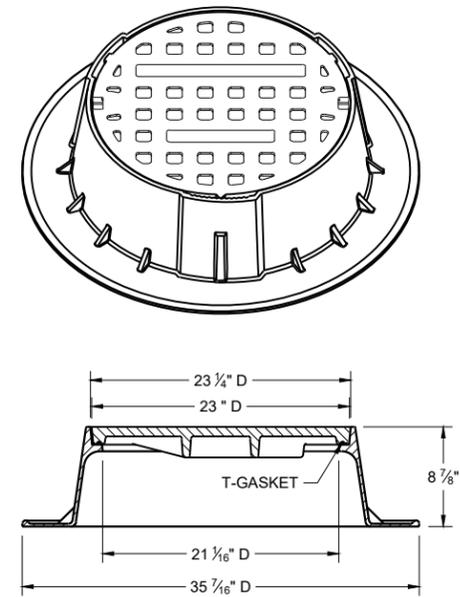
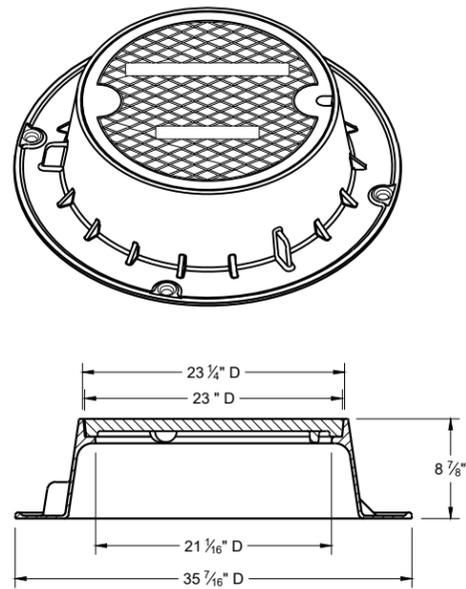
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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"

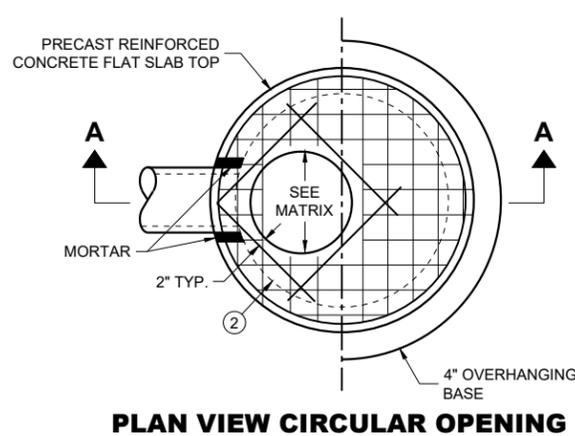
TYPE "M"

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

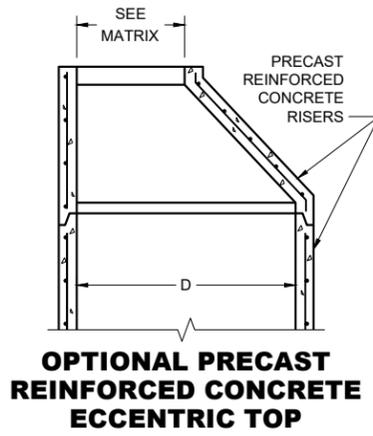
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

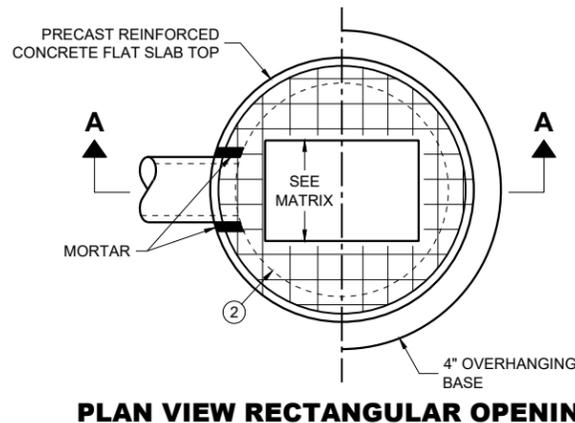
FHWA 112



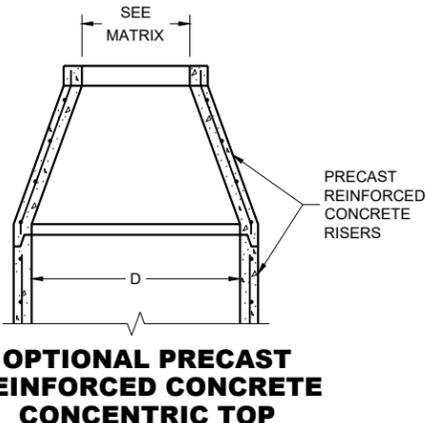
PLAN VIEW CIRCULAR OPENING



OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP



PLAN VIEW RECTANGULAR OPENING



OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

COVER MATRIX

CATCH BASIN SIZE	INLET COVER TYPE OPENING SIZE (FT.)	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V V-B	VV-B	WM	Z
		3-FT	2 X 2	X	X					X		X	
	2 DIA.				X								X
4-FT TO 6-FT	2 X 2	X	X					X		X			
	2 X 2.5			X				X	X	X		X	
	2 DIA.				X								X
	2 X 3						X						
	2.5 X 3					X							
	2 X 3.5*										X*		

* REQUIRES 5-FT DIAMETER OR LARGER STRUCTURE

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	30

**CATCH BASINS
3-FT, 4-FT, 5-FT AND 6-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 CATCH BASIN 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 USE ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

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

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

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

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

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

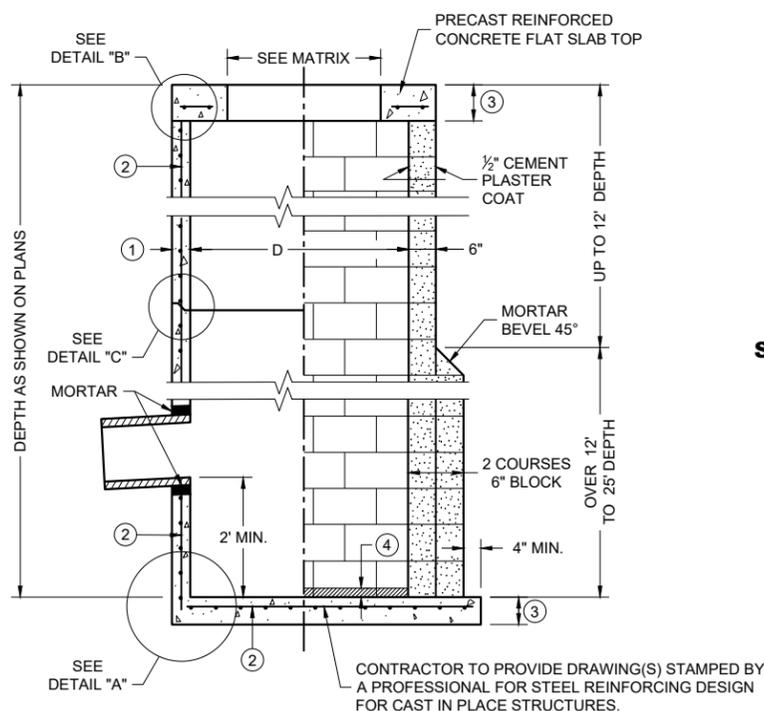
PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

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".

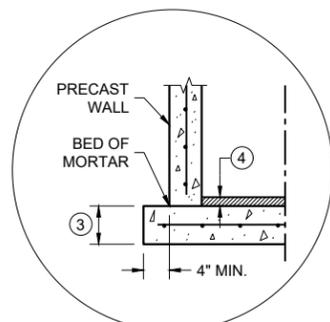
- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.
- ② FOR PRECAST CATCH BASINS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".
- ④ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.
- ⑤ 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.



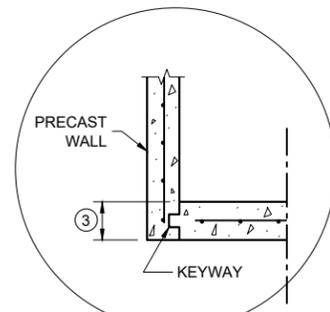
SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

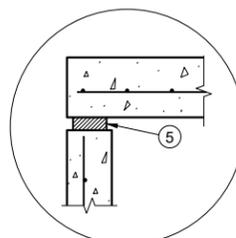
CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE ②



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

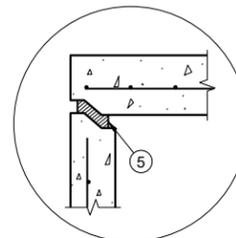


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

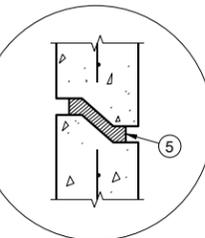


TOP WITH PLAIN END JOINT

DETAIL "B"

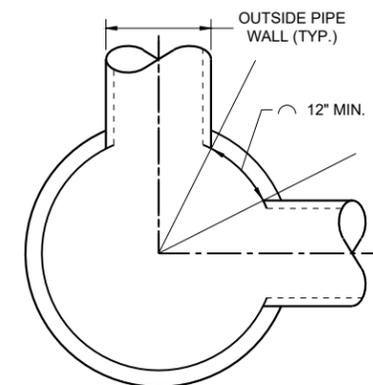


TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "C"



MINIMUM HORIZONTAL PIPE SEPARATION

DETAIL "D"

6

6

SDD 08A08-03

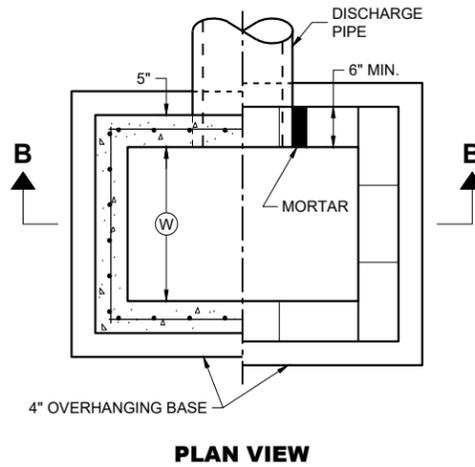
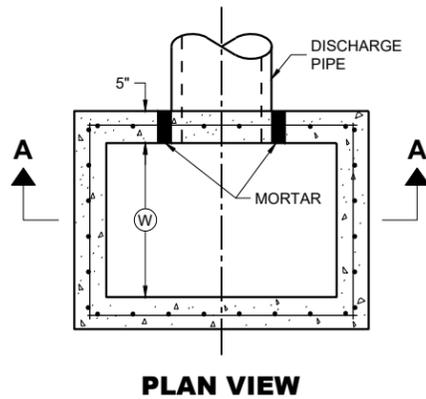
SDD 08A08-03

**CATCH BASINS, 3-FT.
4-FT., 5 FT., AND
6-FT. DIAMETER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA 113



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 CATCH BASIN 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 CATCH BASIN 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.

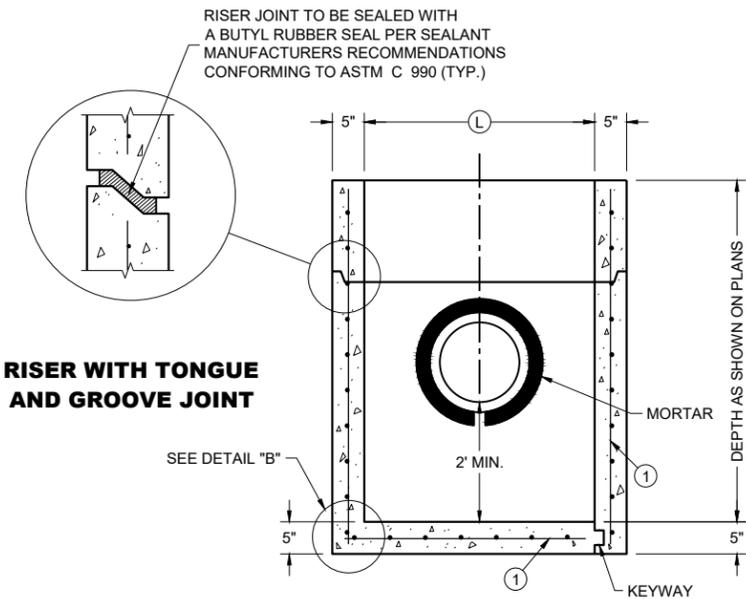
ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

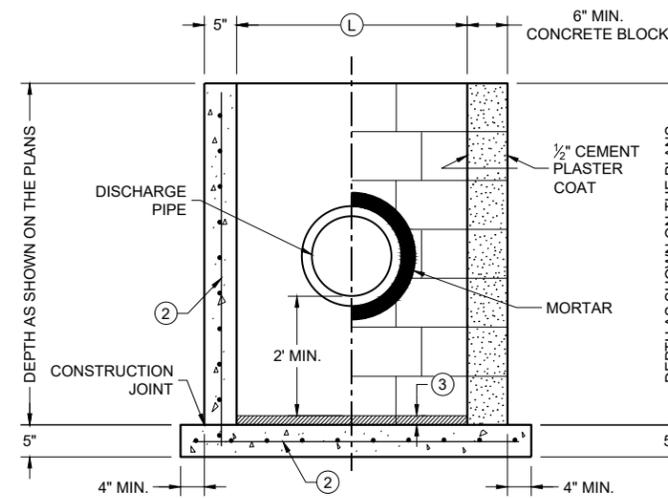
4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

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 CATCH BASINS 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.
- ③ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.



PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE
SECTION A - A



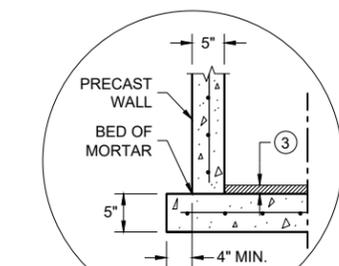
CAST IN PLACE REINFORCED CONCRETE
CONCRETE BLOCK ON CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE ①
SECTION B - B

CATCH BASIN COVER MATRIX

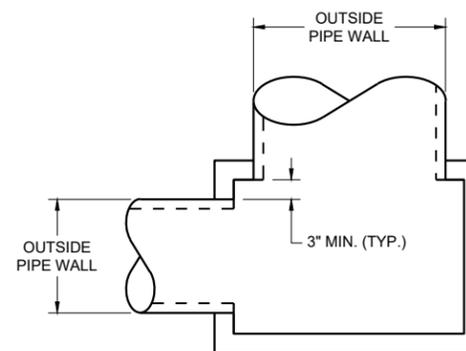
CATCH BASIN SIZE	WIDTH (W) (FT.)	LENGTH (L) (FT.)	INLET COVER TYPE	
			F	ALL H'S
2 X 3-FT	2	3		X
2.5 X 3-FT	2.5	3	X	

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER (IN)	
	WIDTH (W) (IN)	LENGTH (L) (IN)
2 X 3-FT	12	24
2.5 X 3-FT	18	24



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION
DETAIL "B"



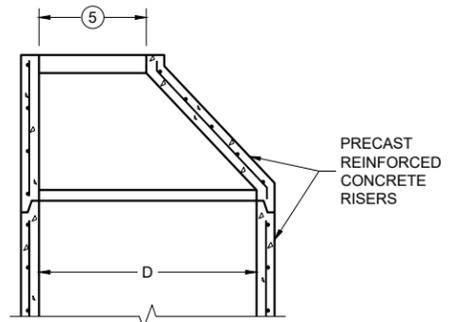
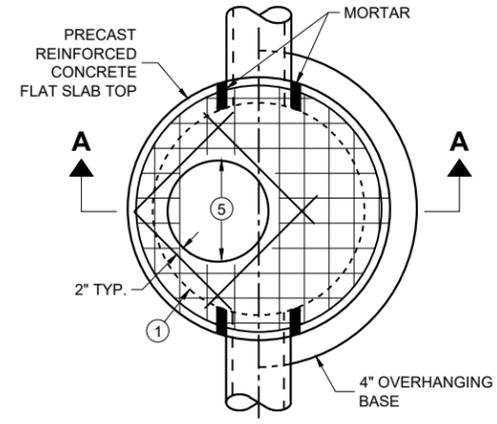
DETAIL "A"

CATCH BASINS 2X3-FT AND 2.5X3-FT

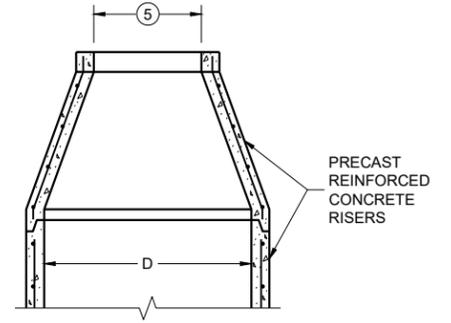
CATCH BASINS
2 X 3-FT AND 2.5 X 3-FT

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 December 2023 /S/ RODNEY TAYLOR
 DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
 FHWA



OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP



OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

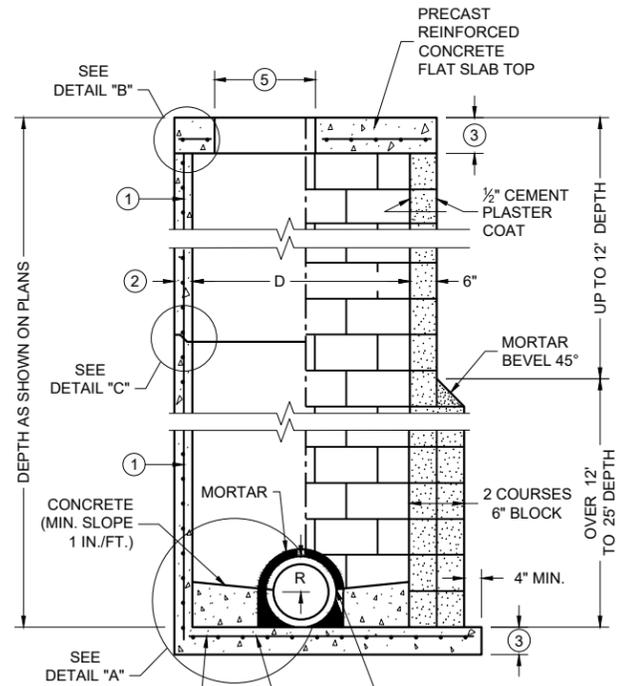
MANHOLE COVER OPENING MATRIX

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

PIPE MATRIX

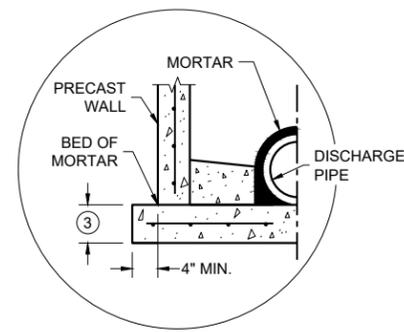
MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42 *	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT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

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

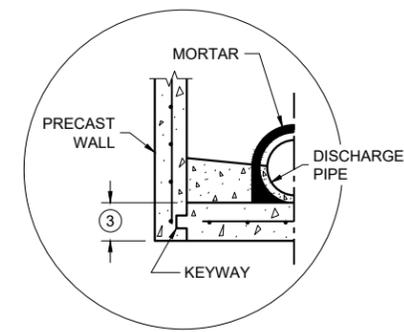


SECTION A - A

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

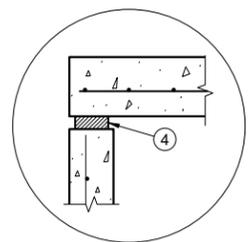


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

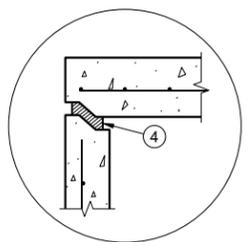


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

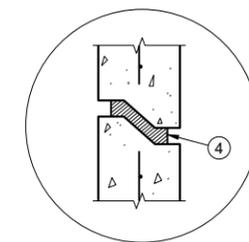
DETAIL "A"



TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

DETAIL "C"

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

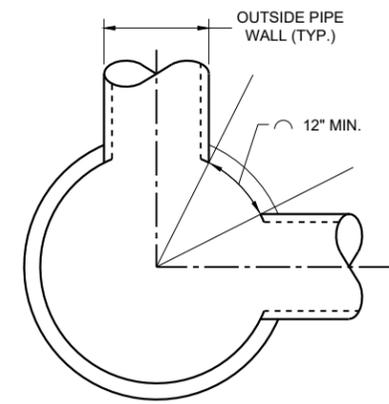
PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

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

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

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

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



MINIMUM HORIZONTAL PIPE SEPARATION
DETAIL "D"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

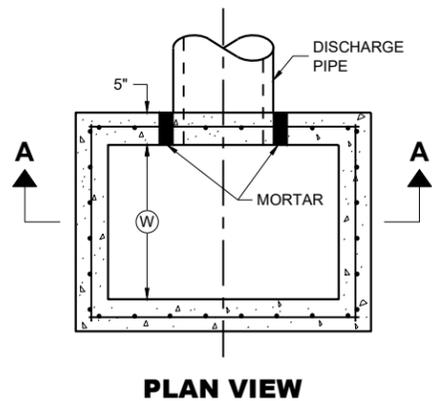
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT AND 10-FT DIAMETER

6

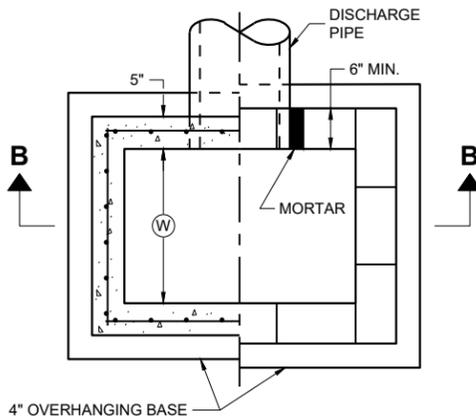
6

SDD 08B09-04

SDD 08B09-04

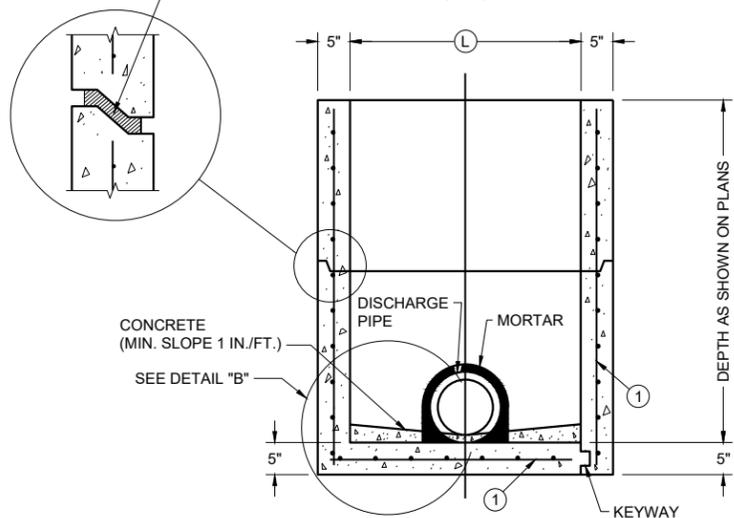


PLAN VIEW



PLAN VIEW

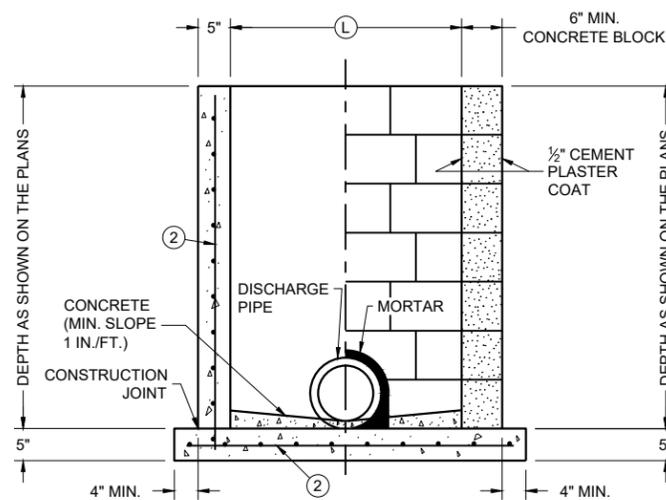
RISER JOINT TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP.)



PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE

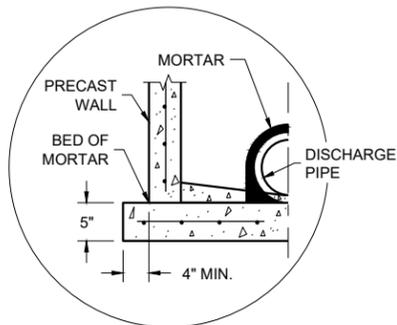
SECTION A - A



CAST IN PLACE REINFORCED CONCRETE

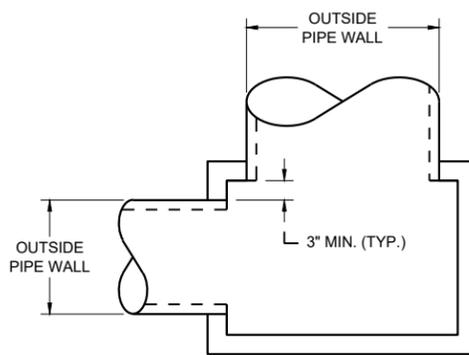
CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE ①

SECTION B - B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "B"



DETAIL "A"

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

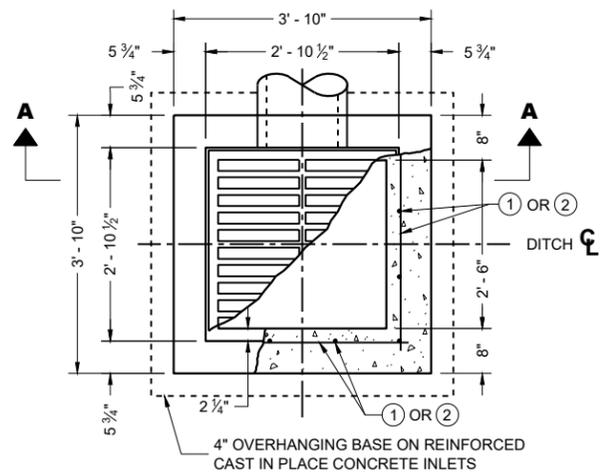
CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	WIDTH (IN)	LENGTH (IN)
2 X 2-FT	12	12
2 X 2.5-FT	12	18
2 X 3-FT	12	24
2.5 X 3-FT	18	24
2 X 3.5-FT	12	30

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

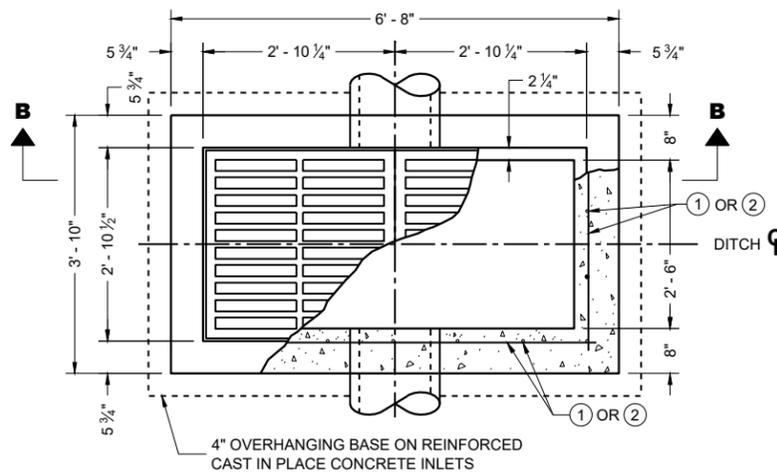
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



PLAN VIEW



PLAN VIEW

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 INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE 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.

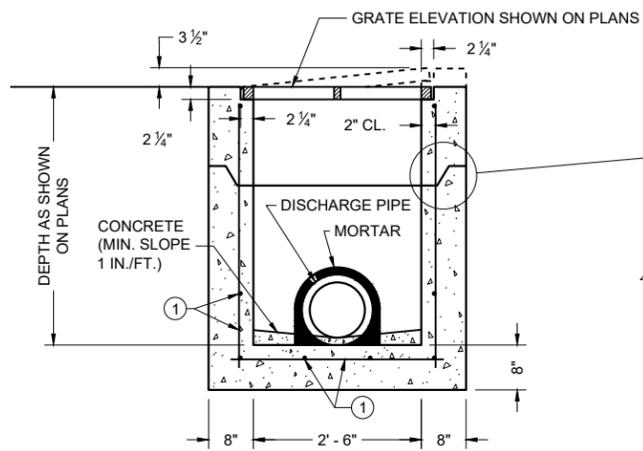
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

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

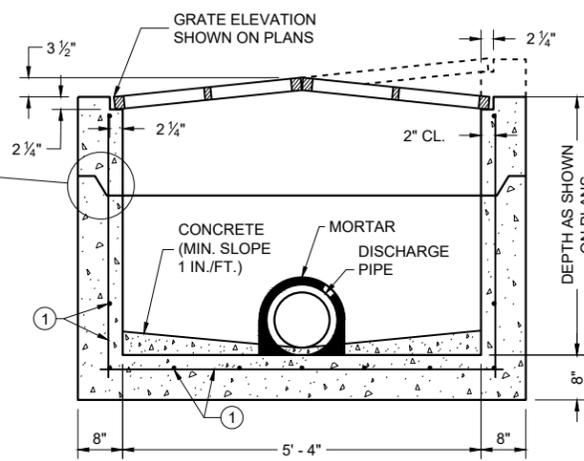
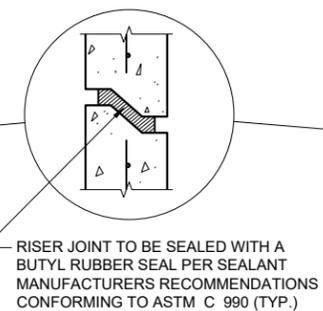
PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

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.

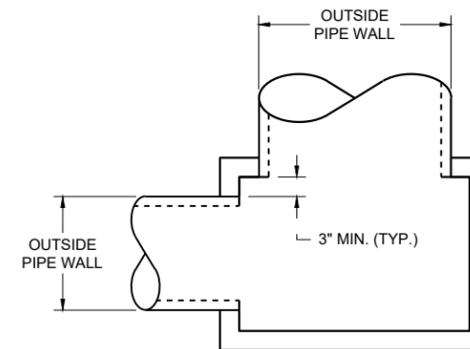
- ① FOR PRECAST INLETS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.



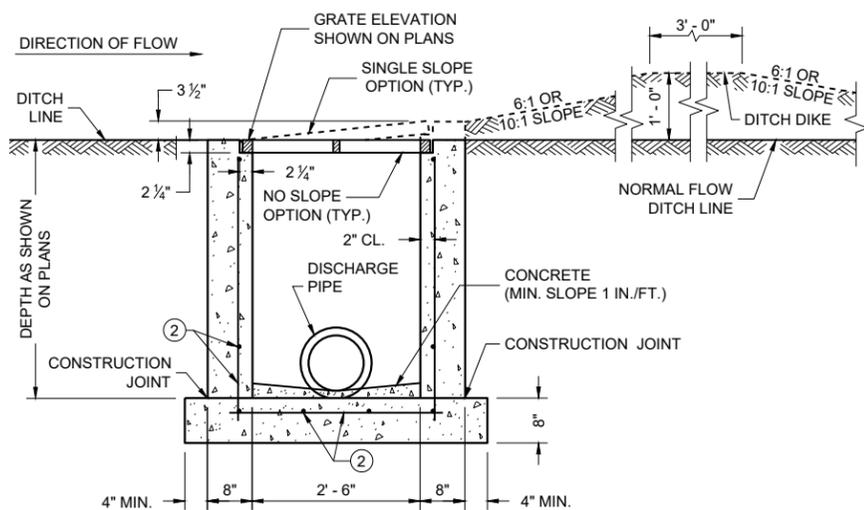
PRECAST REINFORCED CONCRETE SECTION A - A



PRECAST REINFORCED CONCRETE SECTION B - B

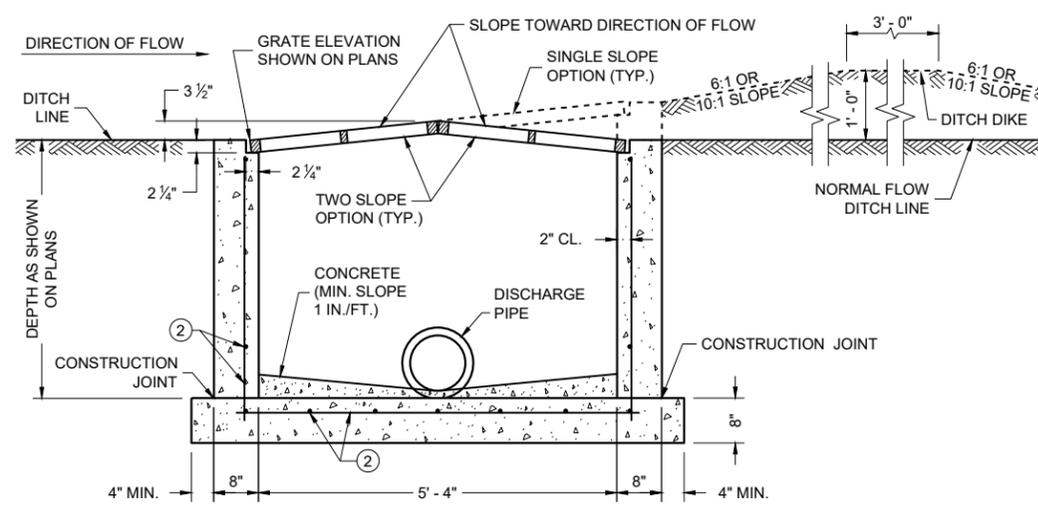


DETAIL "A"



REINFORCED CAST IN PLACE CONCRETE SECTION A - A

INLETS MEDIAN 1 GRATE



REINFORCED CAST IN PLACE CONCRETE SECTION B - B

INLETS MEDIAN 2 GRATE

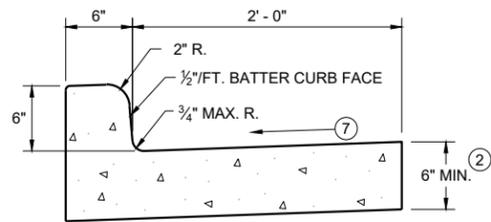
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42

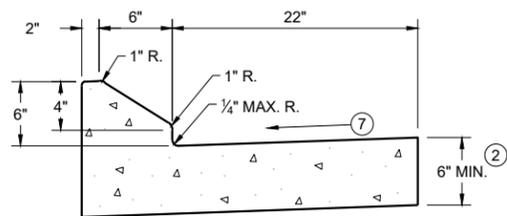
**INLETS
MEDIAN 1 AND 2 GRATE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

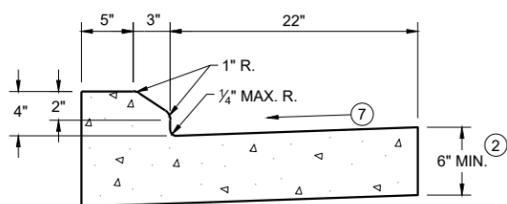
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



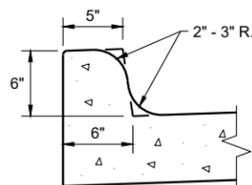
TYPES A^① & D



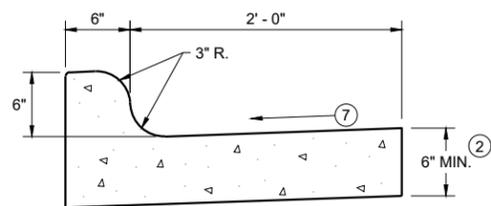
6" SLOPED CURB TYPES G^① & J



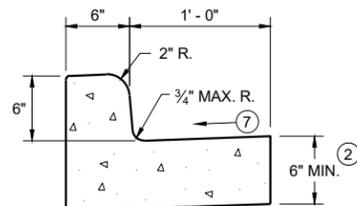
4" SLOPED CURB TYPES G^① & J



TYPES K^① & L
(OPTIONAL CURB SHAPE)

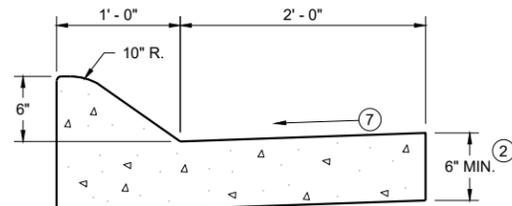


TYPES K^① & L
CONCRETE CURB AND GUTTER 30"

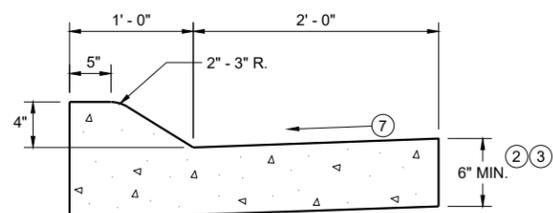


TYPES A^① & D

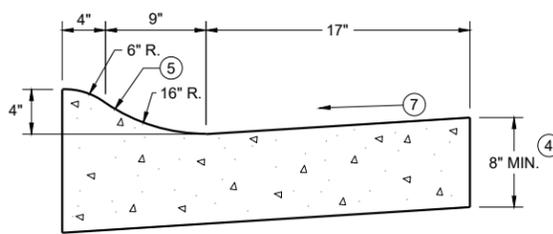
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D

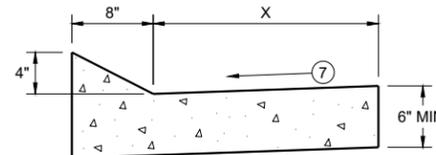


4" SLOPED CURB TYPES A^① & D
CONCRETE CURB AND GUTTER 36"



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

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

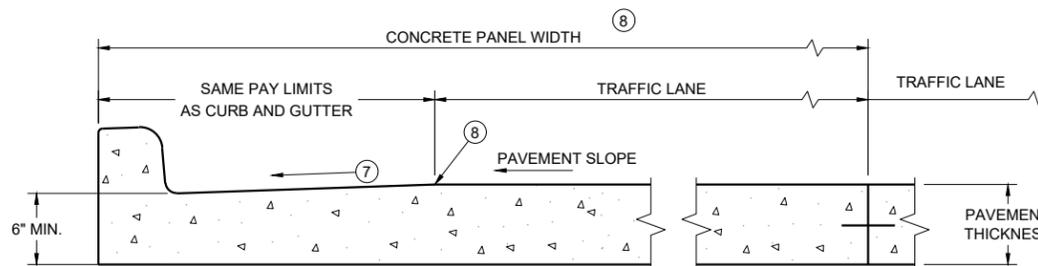


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

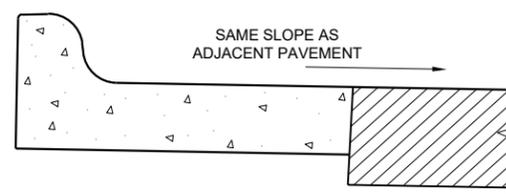
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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)

GENERAL NOTES

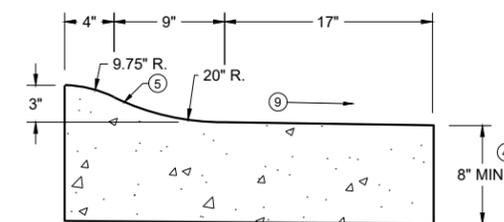
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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.

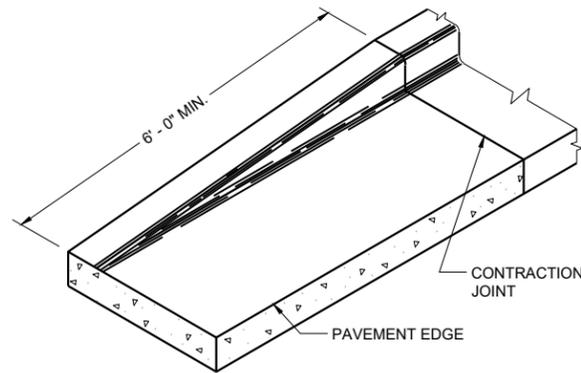
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH 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



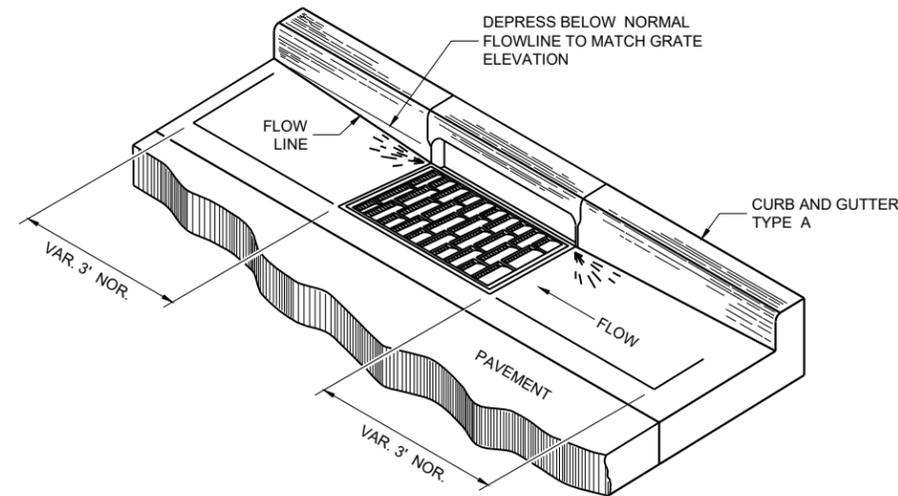
3" SLOPED CURB TYPES R^① & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

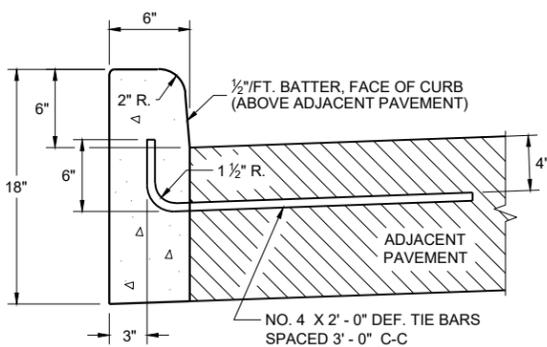
GENERAL NOTES

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

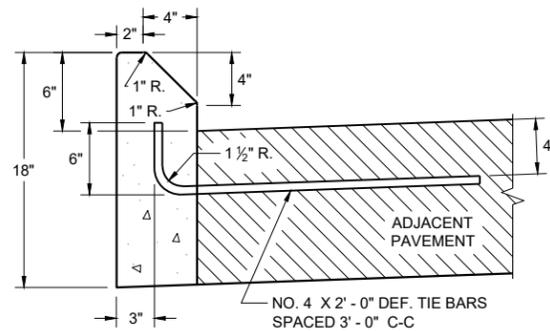
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

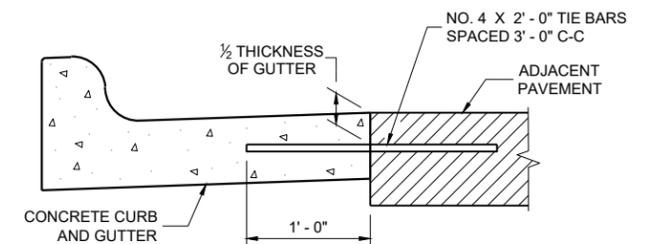
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL 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.



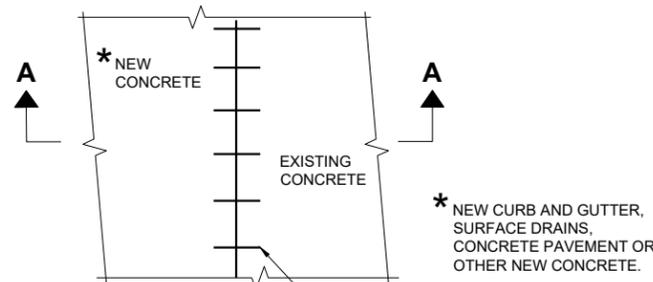
TYPES A ① & D



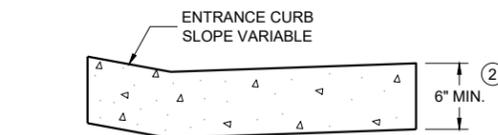
**TYPES G ① & J
CONCRETE CURB**



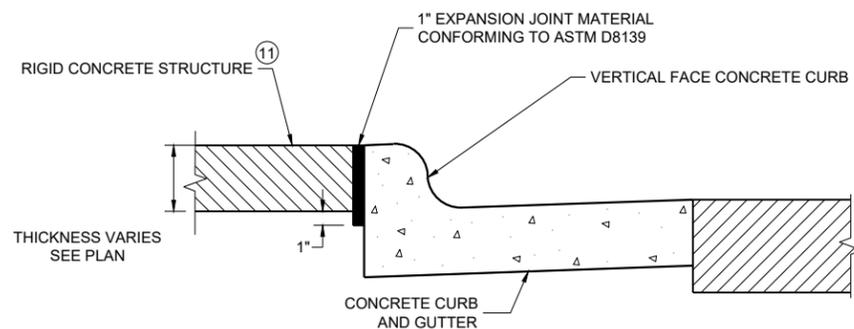
TYPICAL TIE BAR LOCATION ①



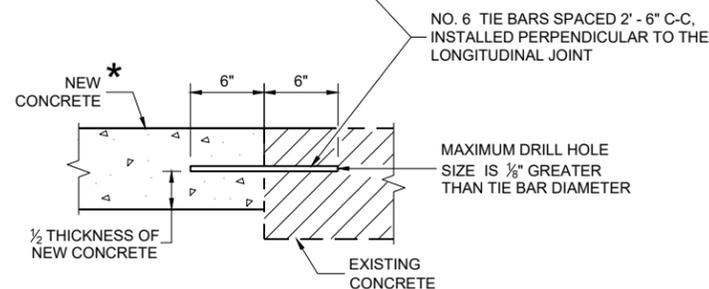
PLAN VIEW



**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**

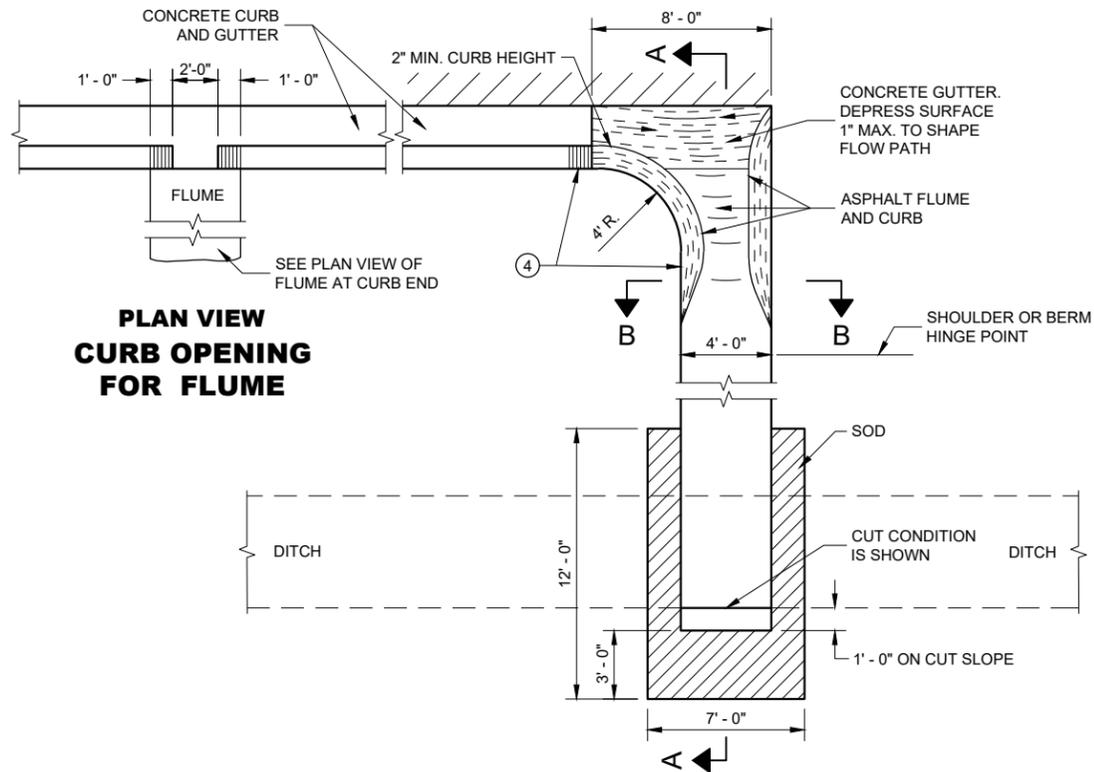
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

ASPHALTIC FLUME



**PLAN VIEW
CURB OPENING
FOR FLUME**

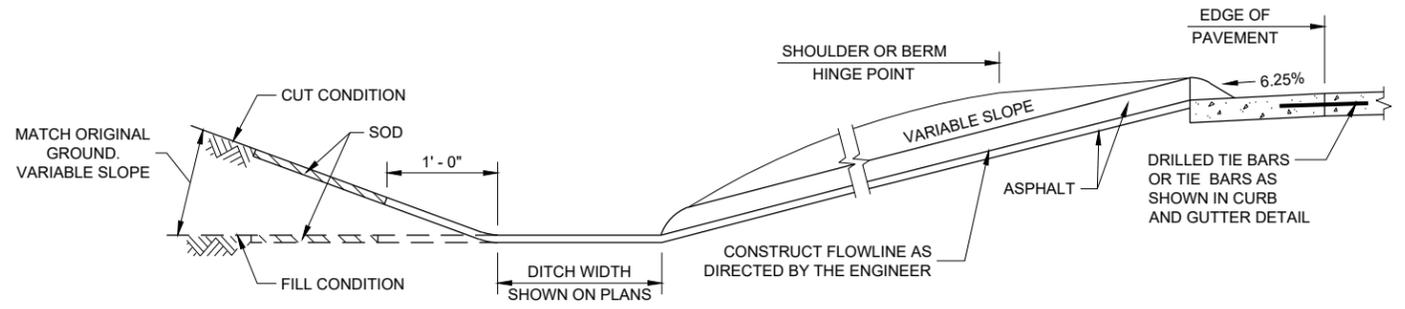
**PLAN VIEW
FLUME AT CURB END**

GENERAL NOTES

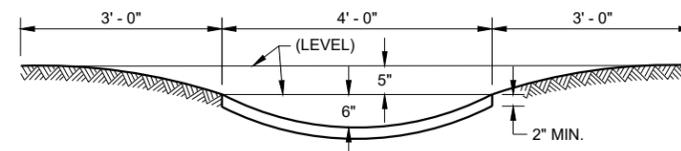
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

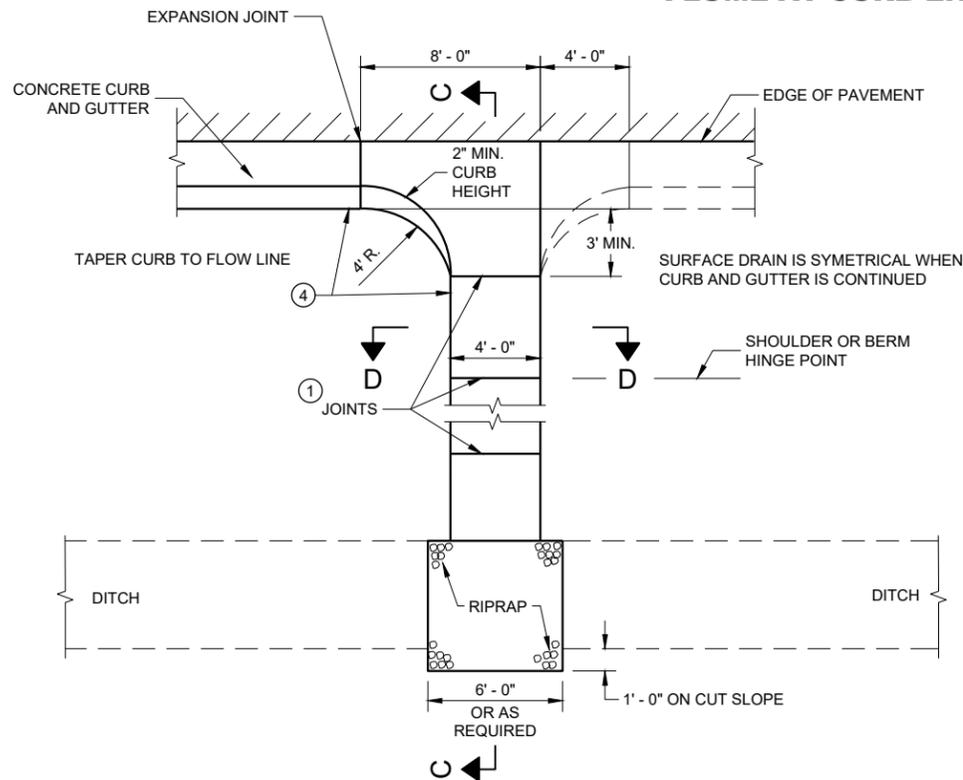
- ① JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.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



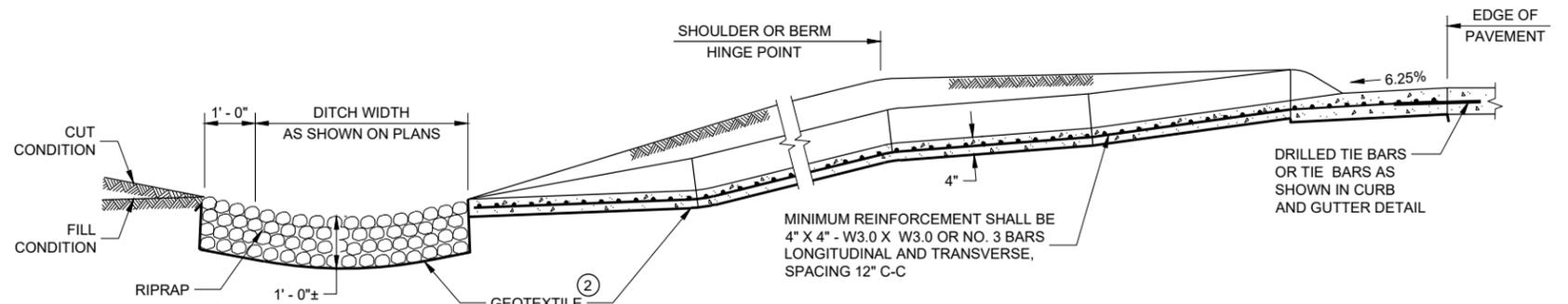
SECTION A - A



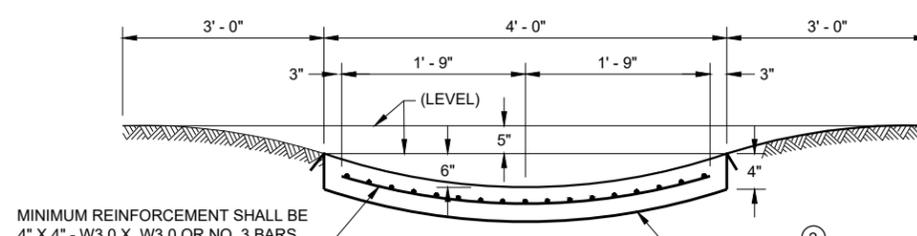
SECTION B - B



**PLAN VIEW
CONCRETE SURFACE DRAIN**



SECTION C - C



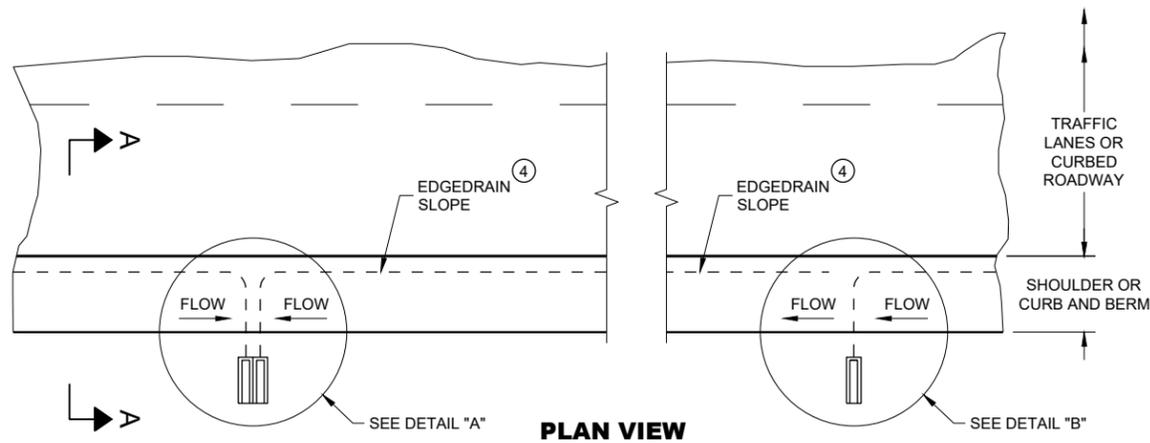
SECTION D - D

CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

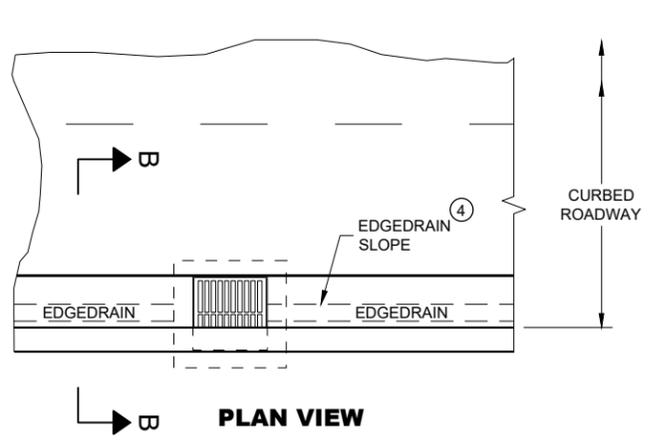
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 120

FHWA



**ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN CONNECTS TO ROADSIDE) ②**



**ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)**

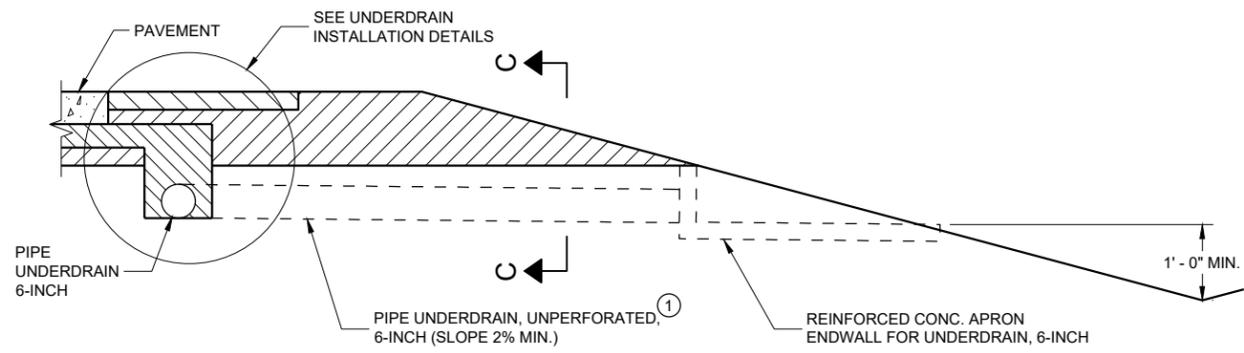
GENERAL NOTES

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.

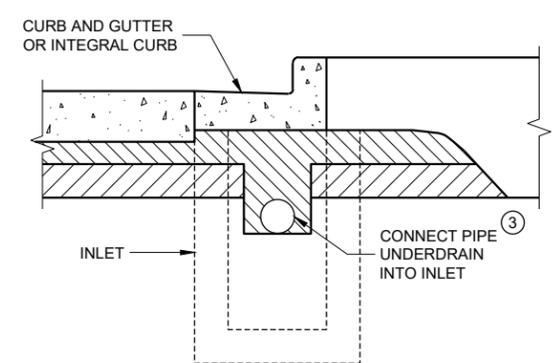
- ① UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

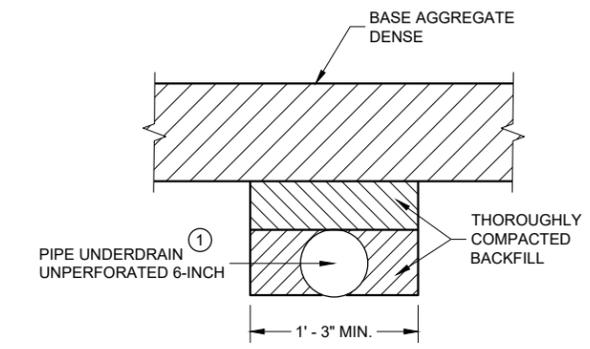
TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.
- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



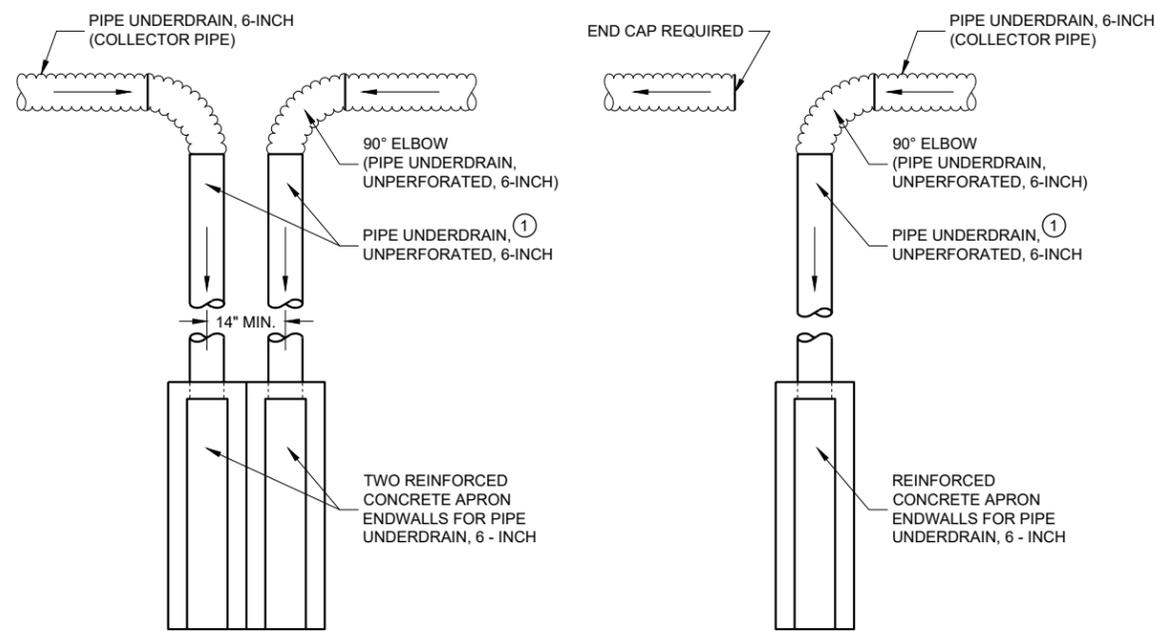
**SECTION A - A
RURAL CROSS SECTION**



**SECTION B - B
URBAN CROSS SECTION**



**SECTION C - C
TRENCH FOR OUTFALL PIPE**



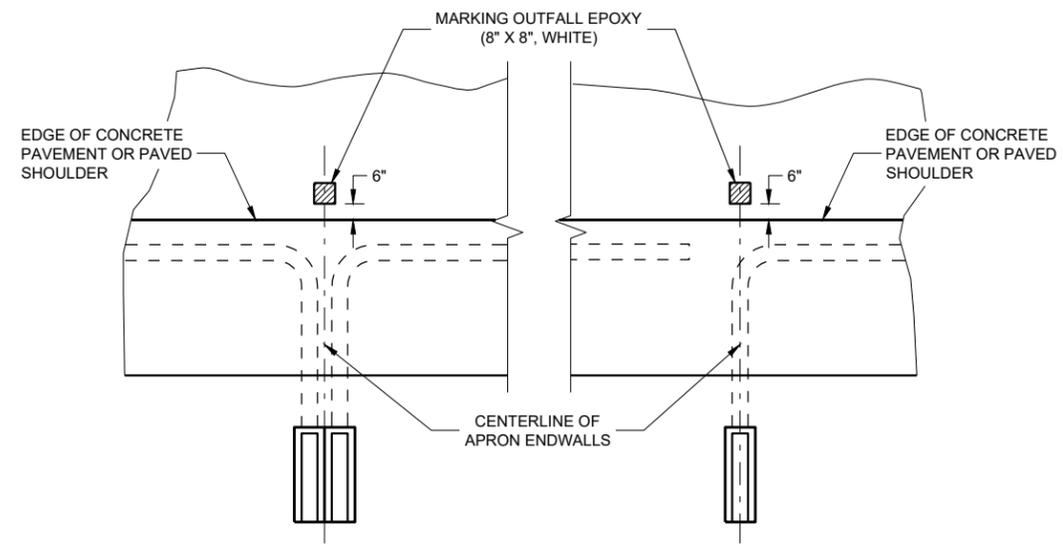
DETAIL "A"

TO BE USED AT LOW POINT LOCATIONS

DETAIL "B"

TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



PAVEMENT MARKINGS FOR OUTFALL MARKERS

**EDGEDRAIN OUTLET
AND OUTFALL MARKERS**

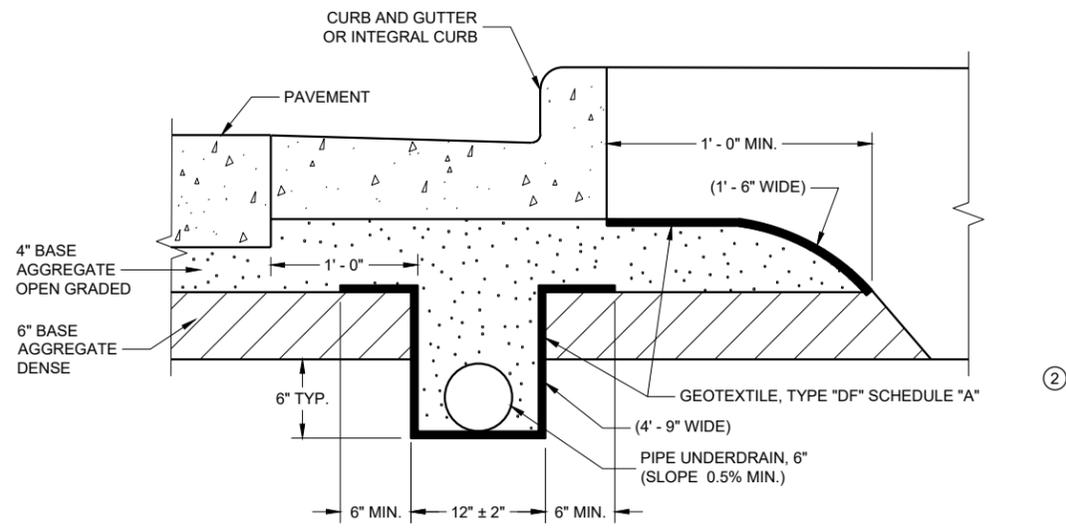
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 121

GENERAL NOTES

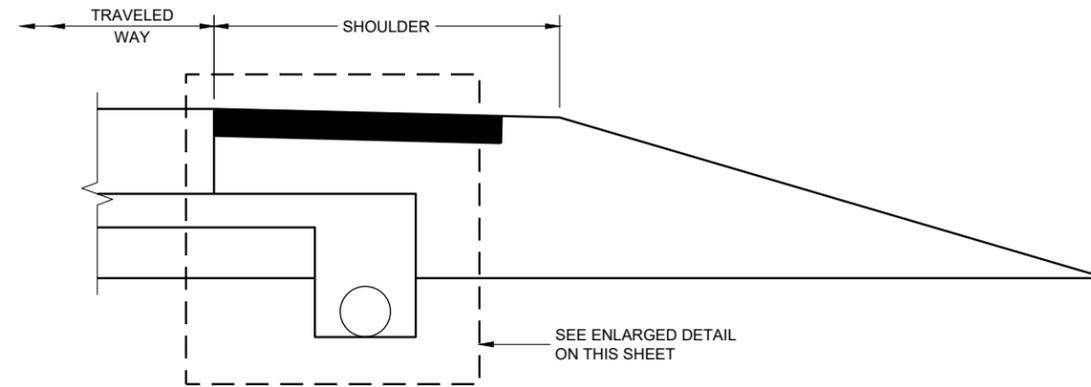
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

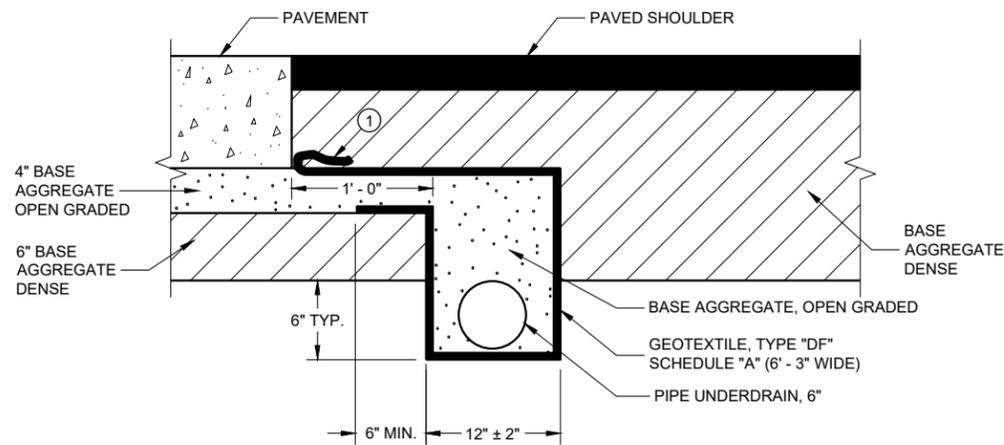
- ① FOLD OVER EXCESS GEOTEXTILE AT THIS LOCATION.
- ② TOTAL GEOTEXTILE WIDTH IS 6'-3" FOR PAYMENT.



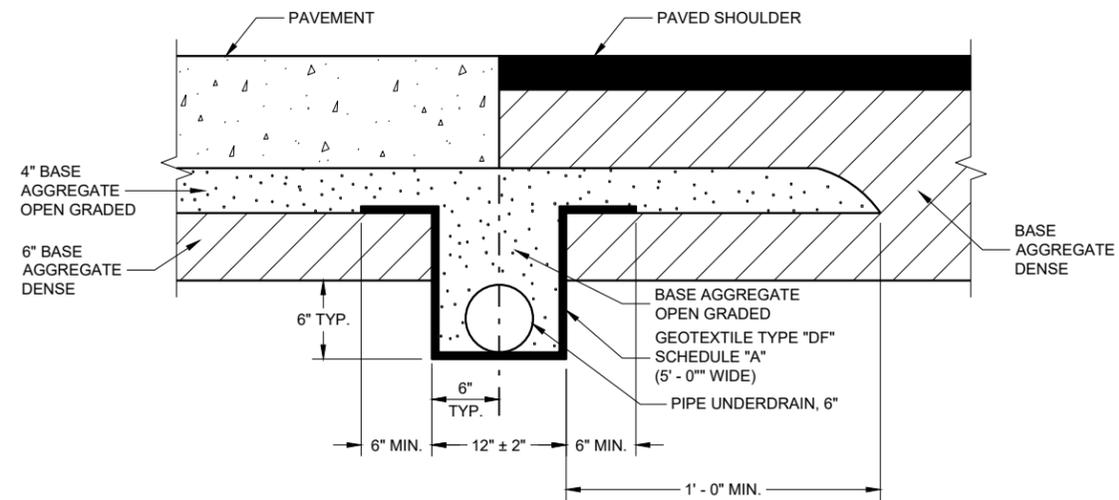
EGEDRAIN IN URBAN ROADWAY



RURAL CROSS SECTION



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EGEDRAIN IN RURAL ROADWAY

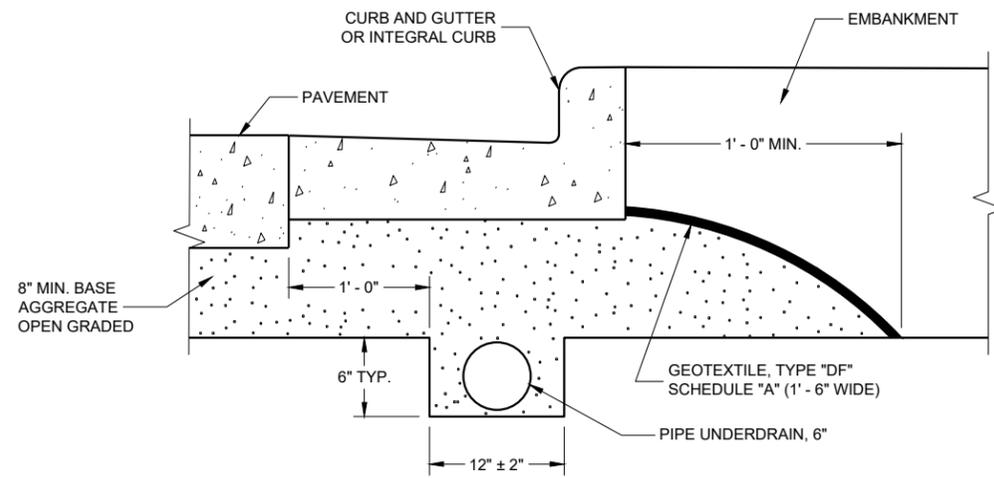
**EGEDRAIN AND BASE
AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 122

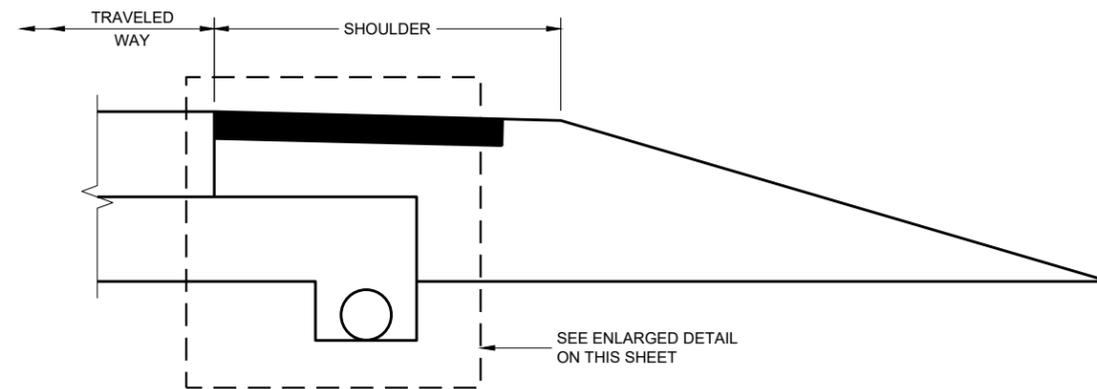
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

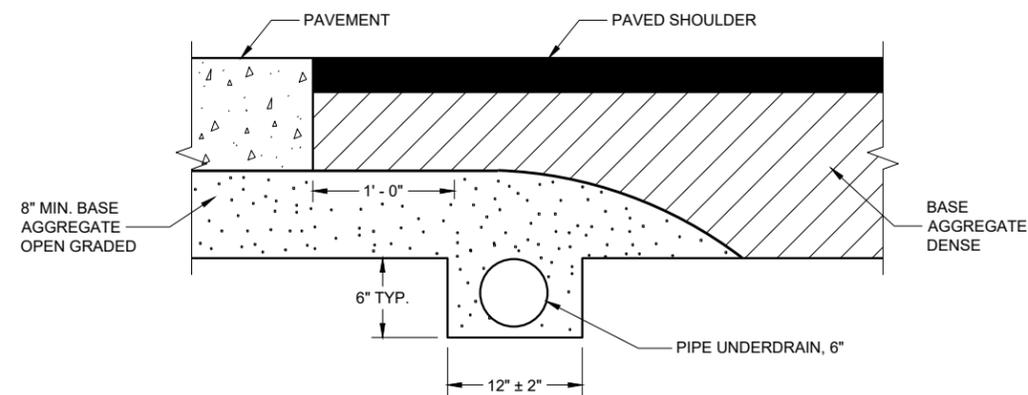
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.



EDGEDRAIN IN URBAN ROADWAY

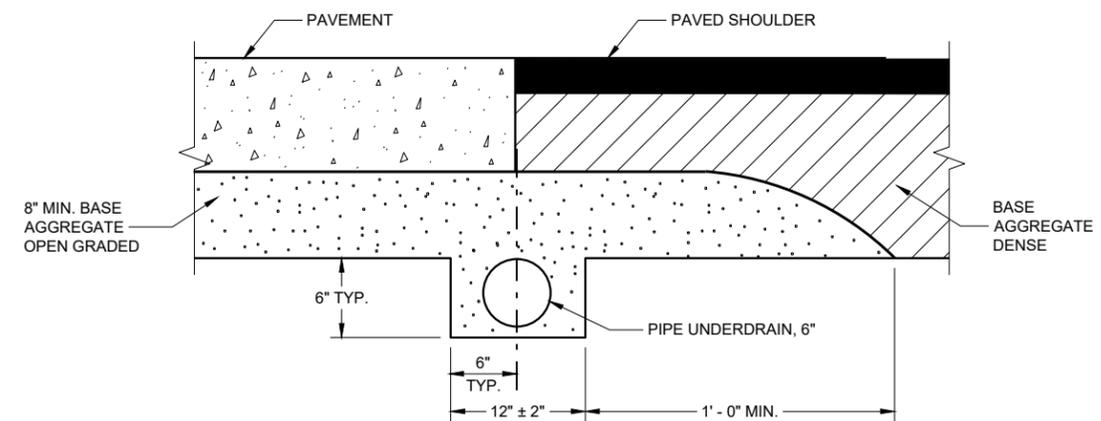


RURAL CROSS SECTION



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)

EDGEDRAIN IN RURAL ROADWAY



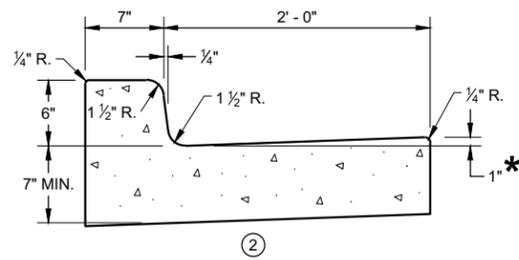
PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

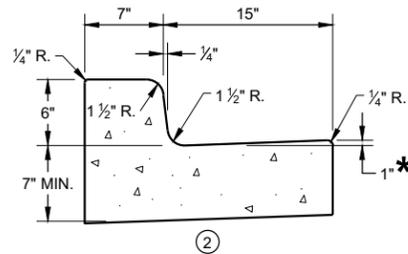
APPROVED
September 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR 123

FHWA

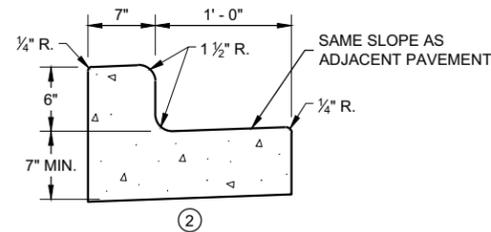


CONCRETE CURB AND GUTTER 31" ①

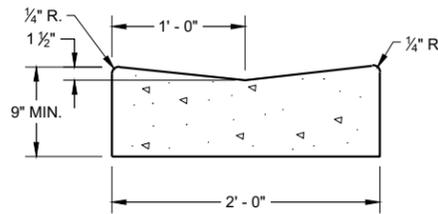
* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



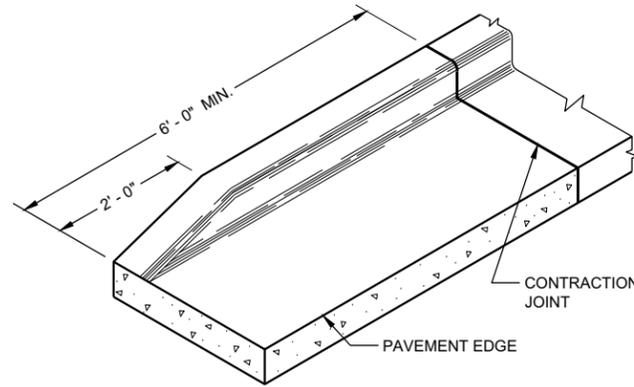
CONCRETE CURB AND GUTTER 22" ①



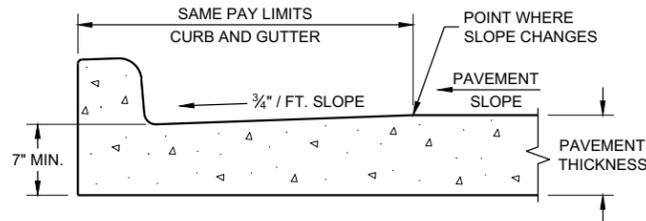
CONCRETE CURB AND GUTTER 19" ①



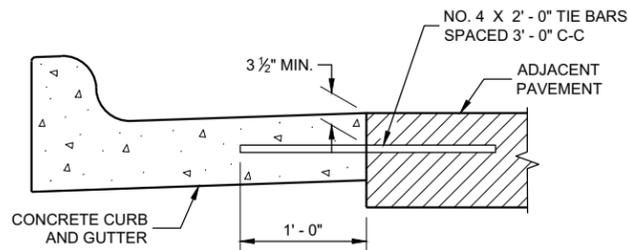
CONCRETE GUTTER 24" ①



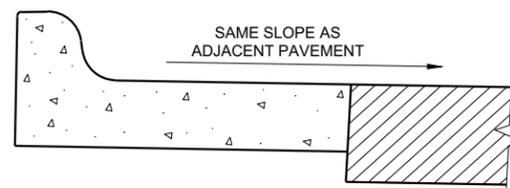
END SECTION CURB AND GUTTER



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



TYPICAL TIE BAR LOCATION ①



HIGH SIDE SECTION ③
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

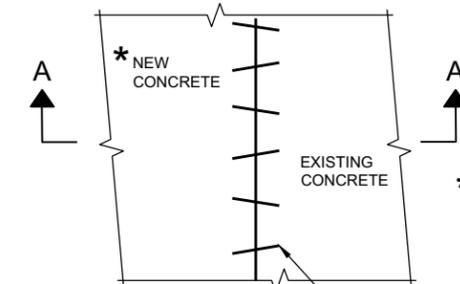
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

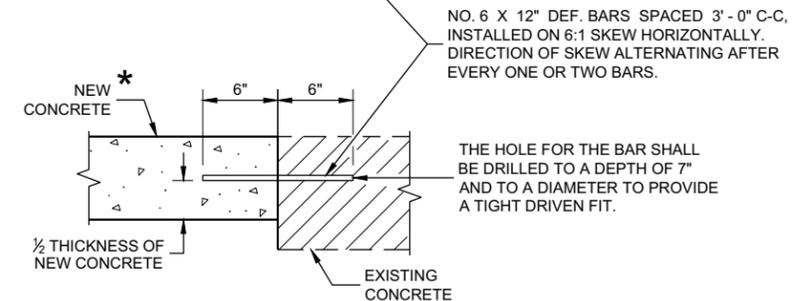
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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

- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



PLAN VIEW

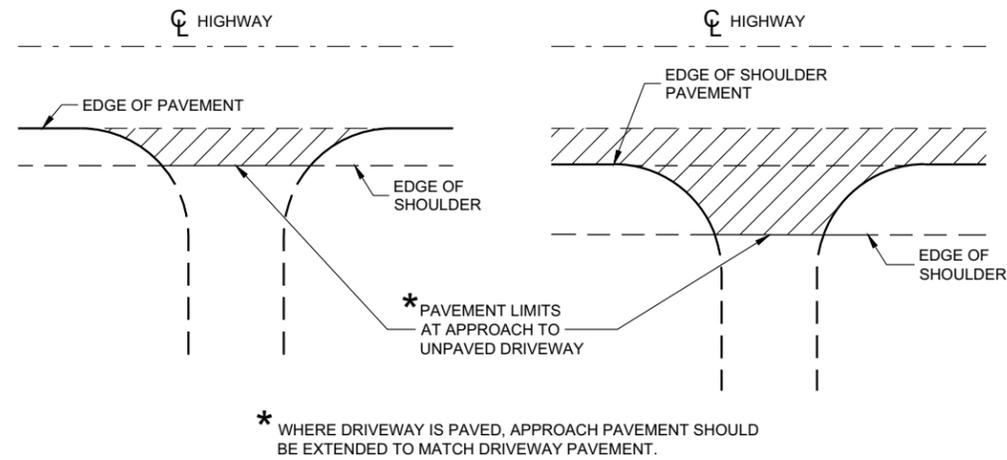


**SECTION A - A
PAVEMENT TIES**

**CONCRETE GUTTER,
CURB AND GUTTER AND
PAVEMENT TIES**
(For Optional use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

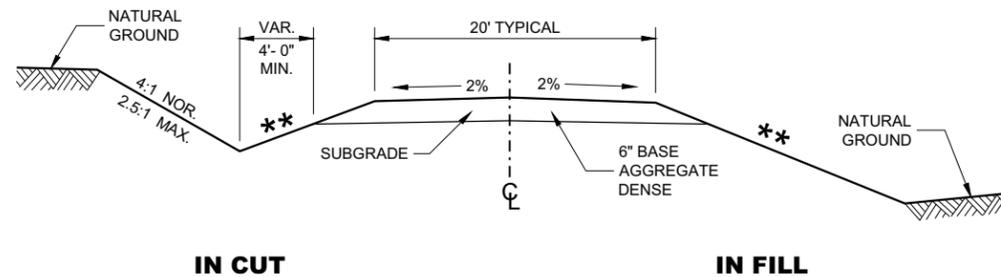
APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE ENGINEER 124
FHWA



PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

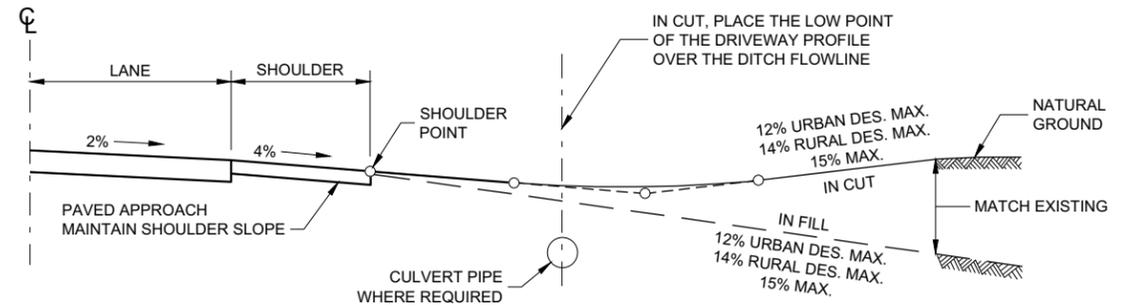
**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**



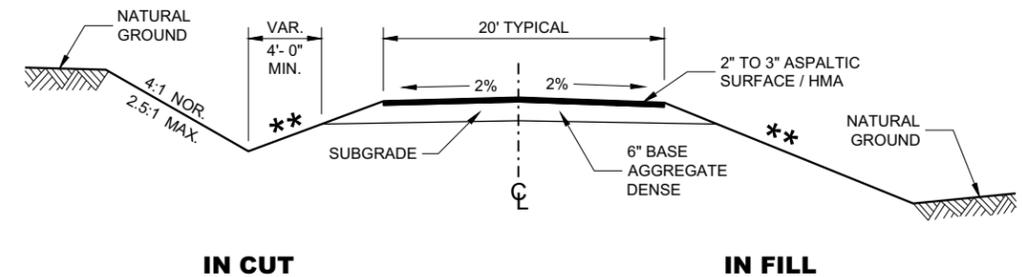
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

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

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



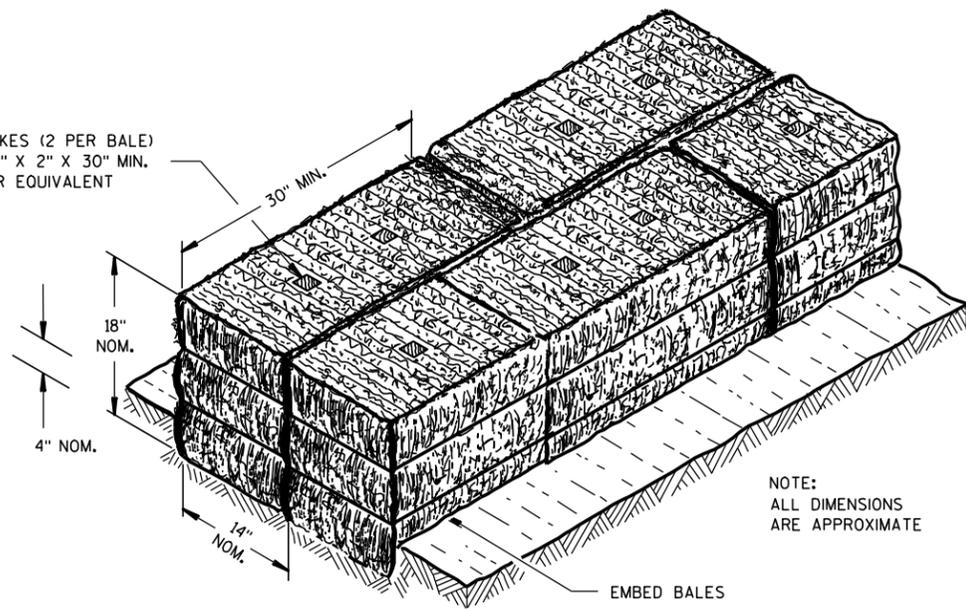
TYPICAL DRIVEWAY PROFILES



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

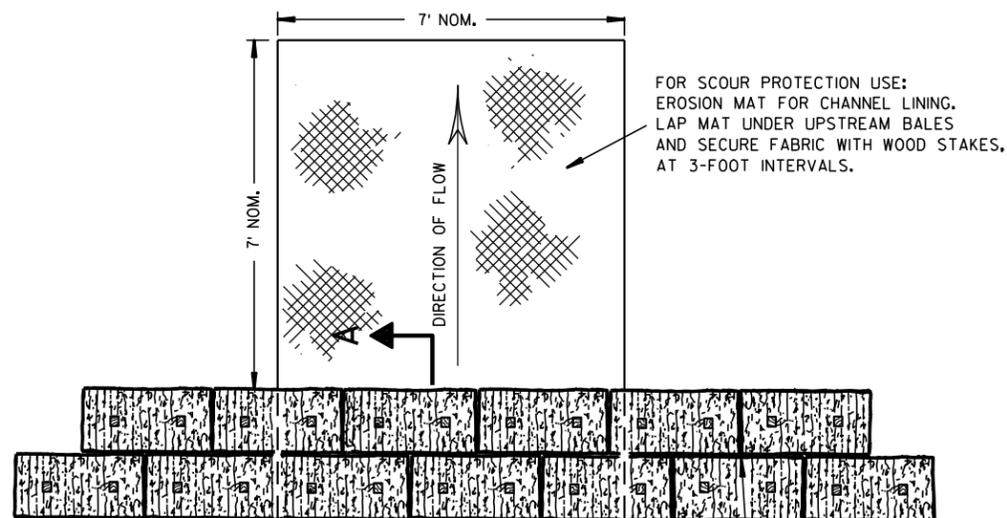
DRIVEWAYS WITHOUT CURB AND GUTTER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
125	

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

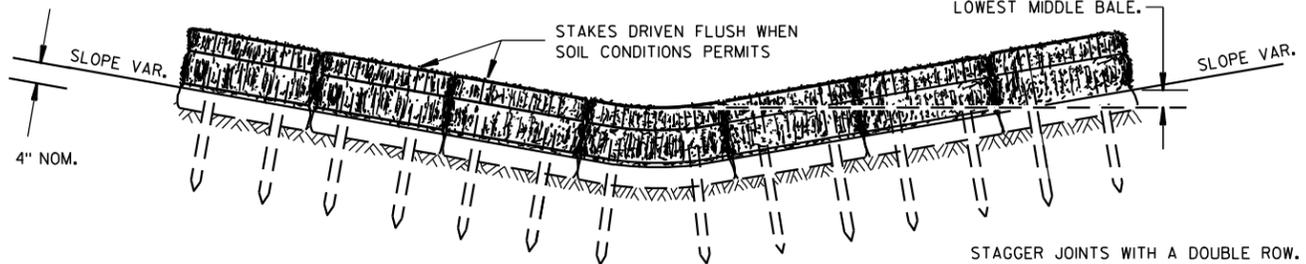
SECTION A-A



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



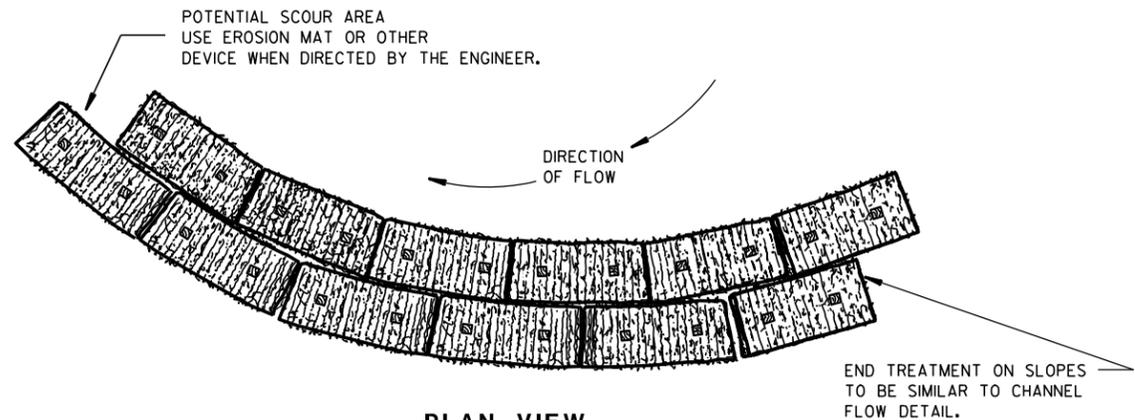
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

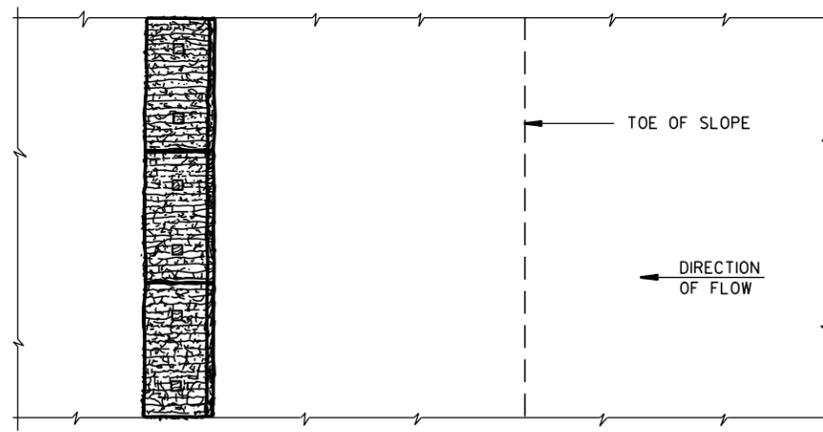
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

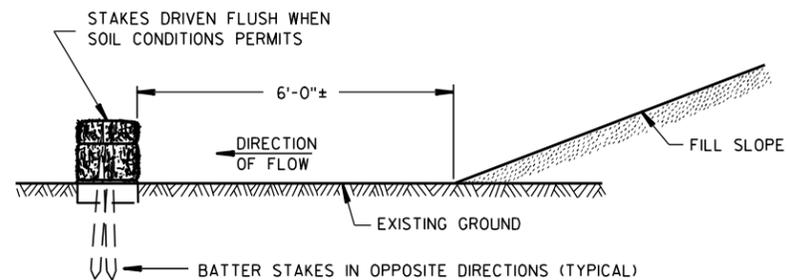


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

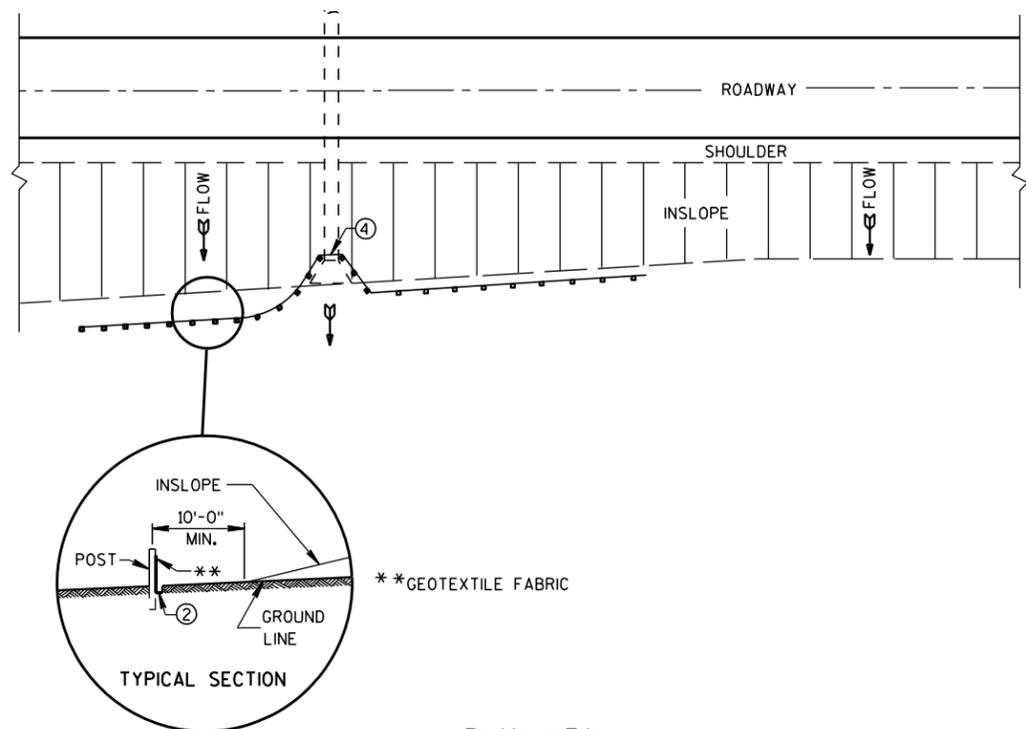
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

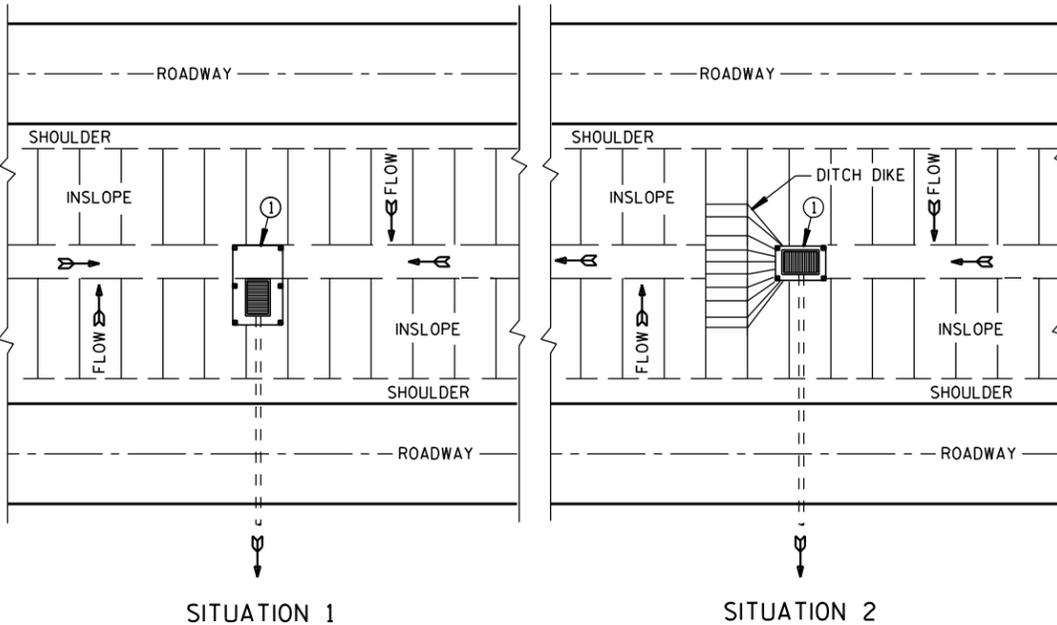
**TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 /S/ Beth Cann
DATE CHIEF ROADWAY DEVELOP 126 ENGINEER
FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

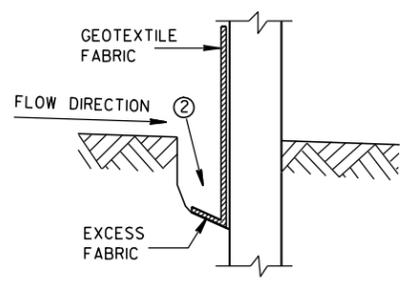


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

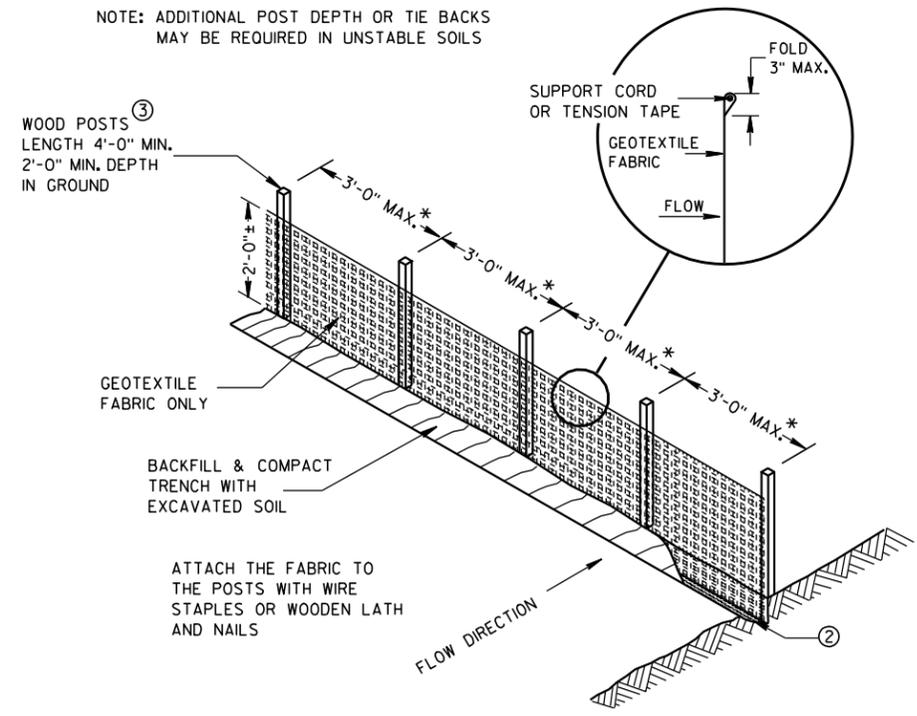
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



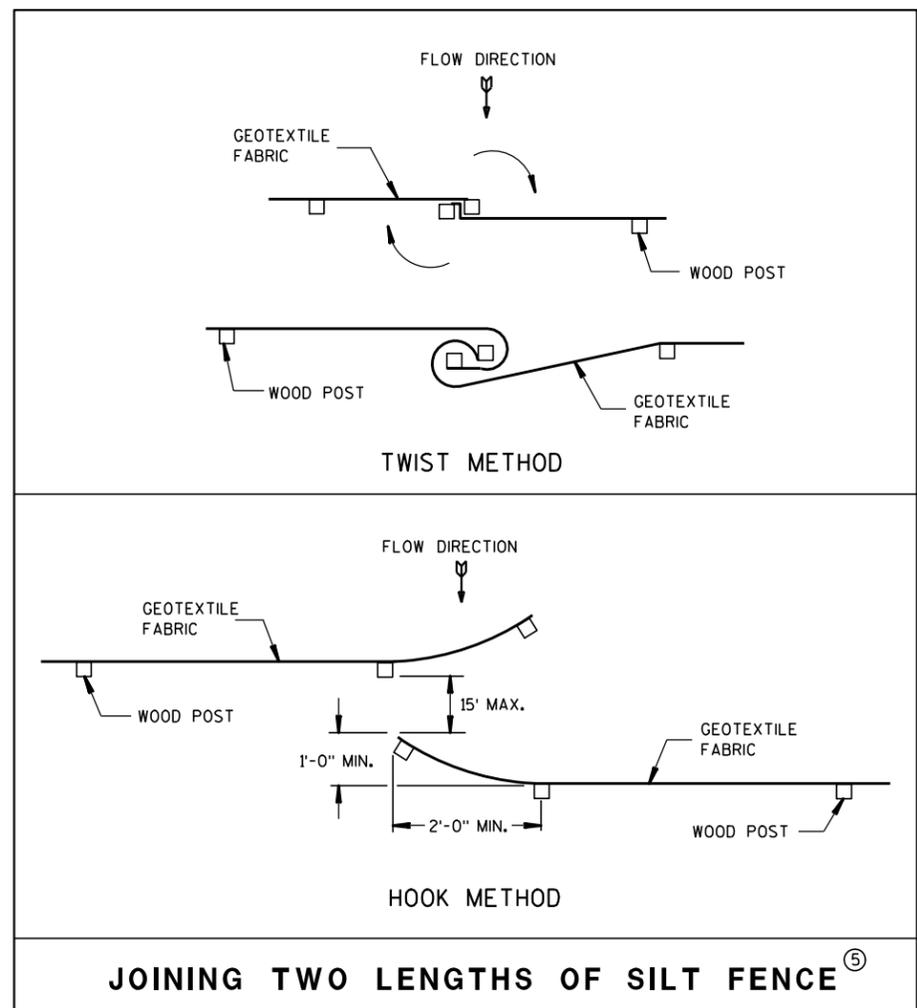
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

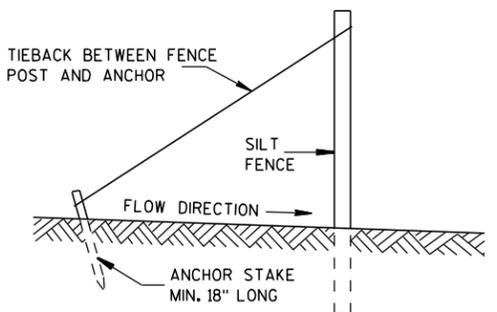


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

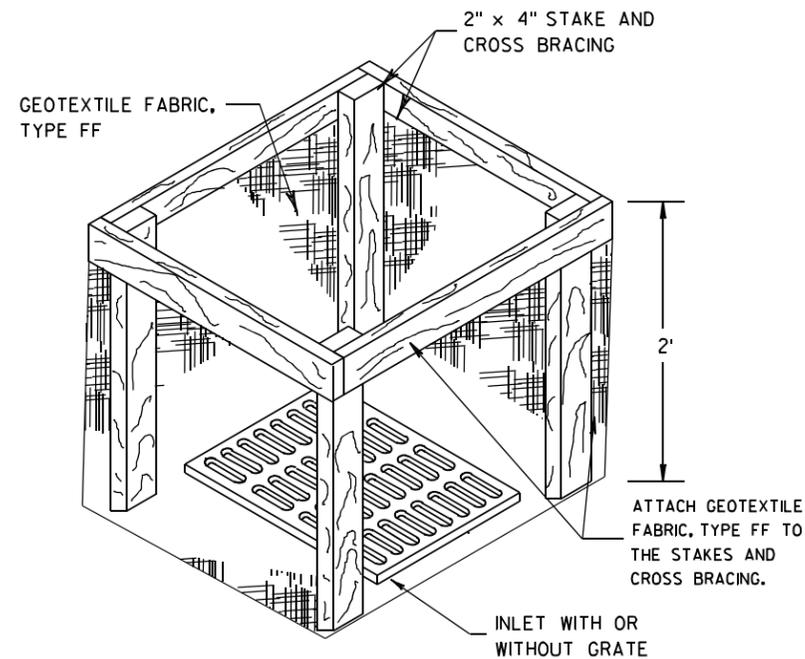
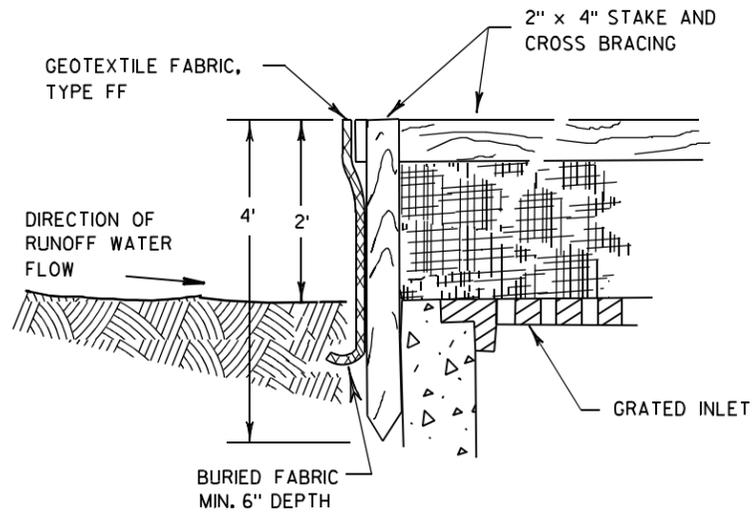


JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Cann CHIEF ROADWAY DEVELOP 127 ENGINEER
FHWA	



INLET PROTECTION, TYPE A

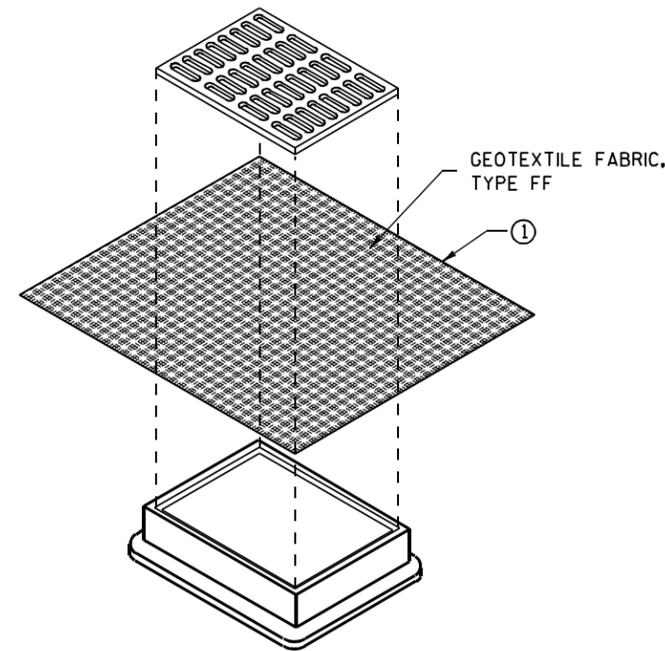
GENERAL NOTES

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

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

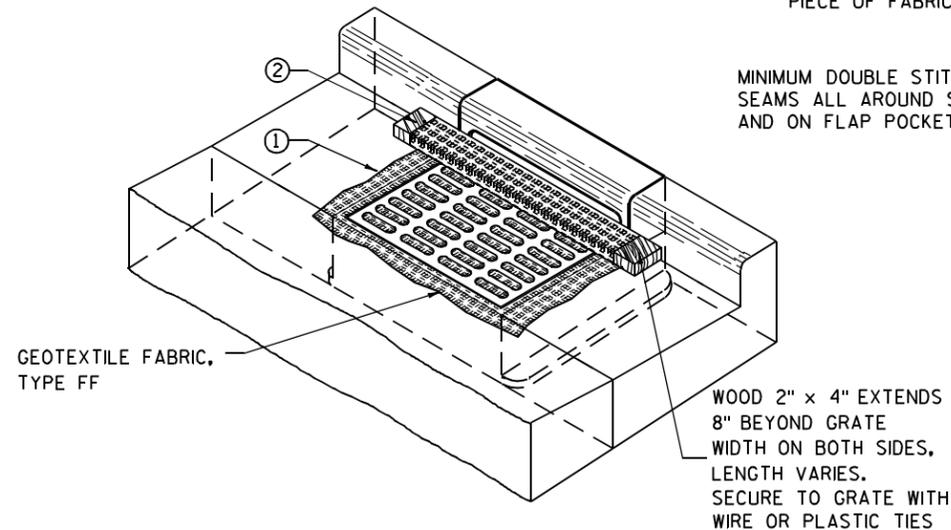
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

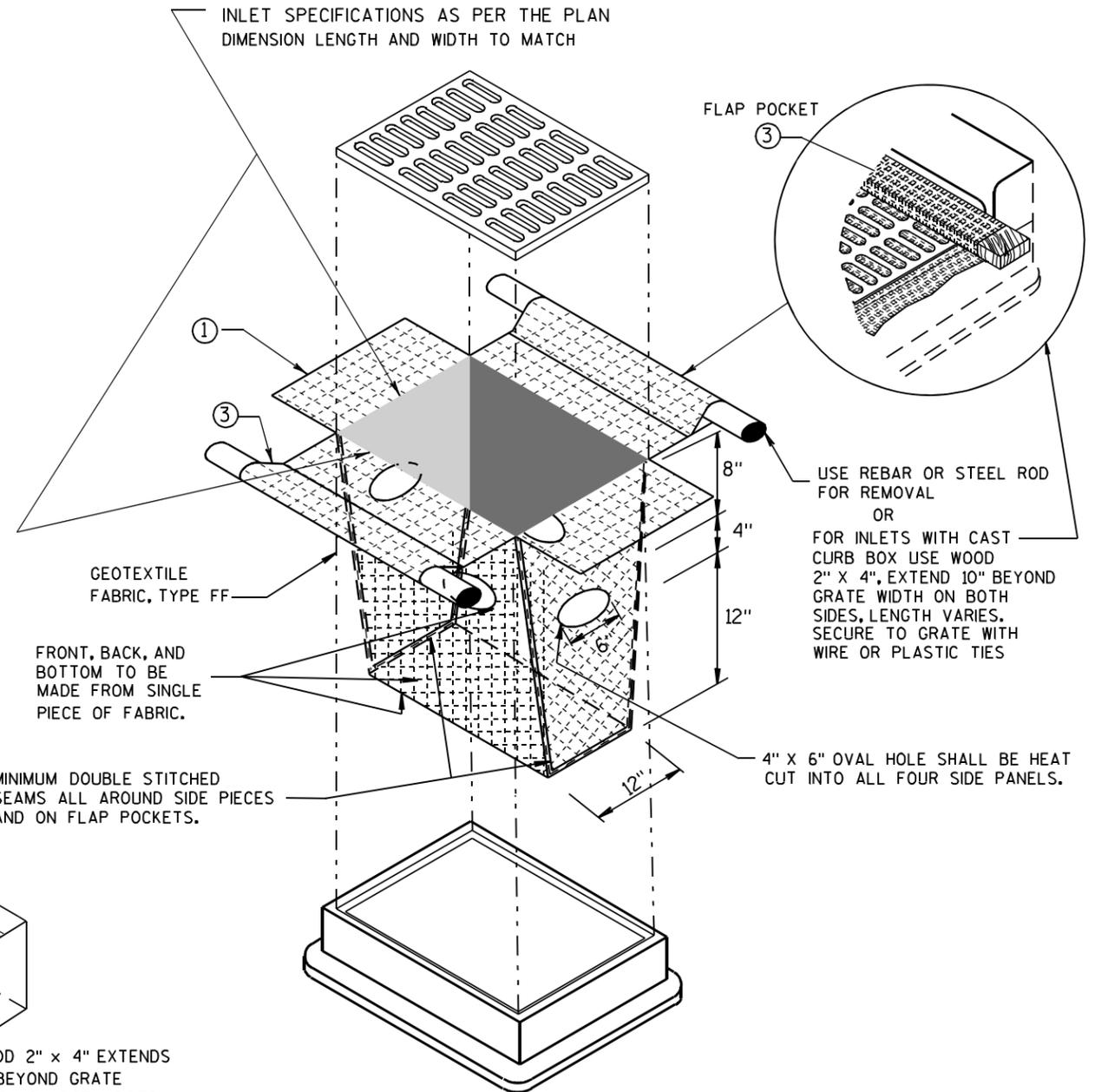
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



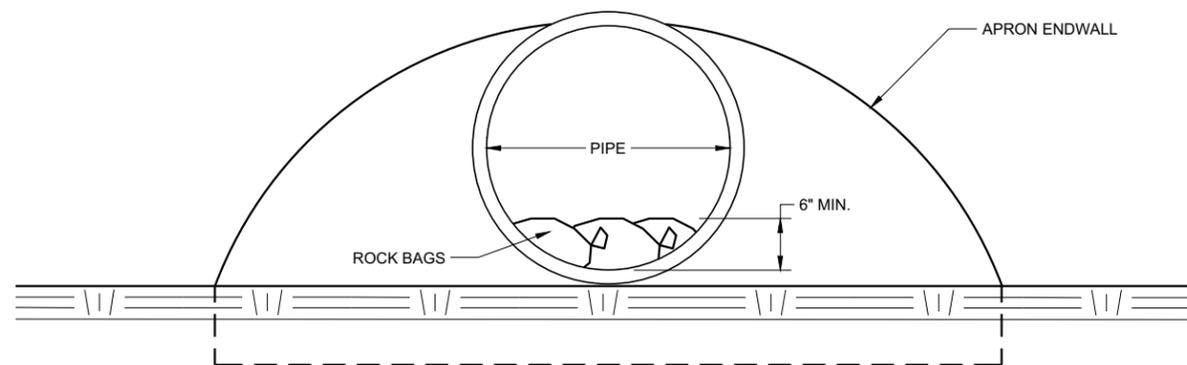
INLET PROTECTION, TYPE D

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

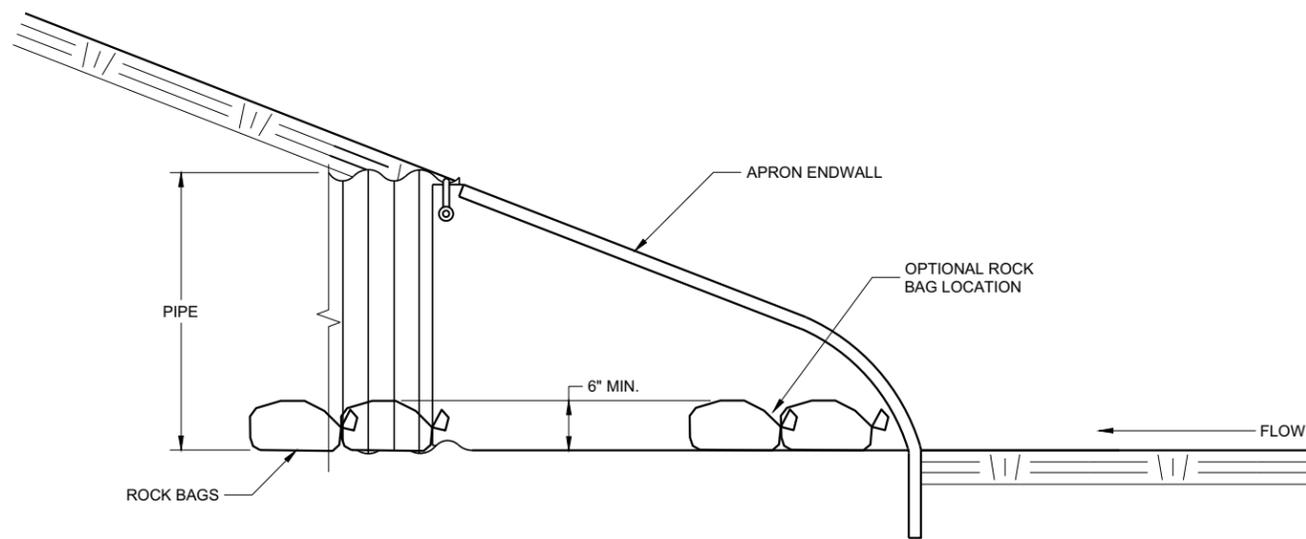
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connors
DATE 128
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



SIDE VIEW

CULVERT PIPE CHECK
 (INSTALL ON INLET END ONLY)

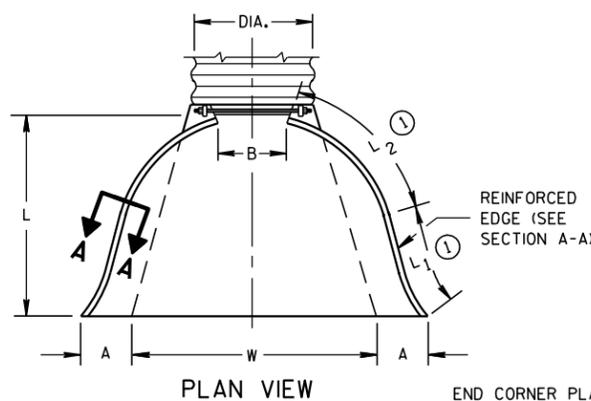
CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 129
<small>FHWA</small>	

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	L2	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.

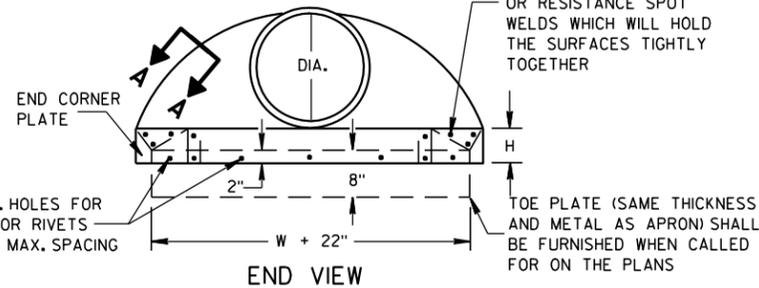
* EXCEPT CENTER PANEL SEE GENERAL NOTES

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

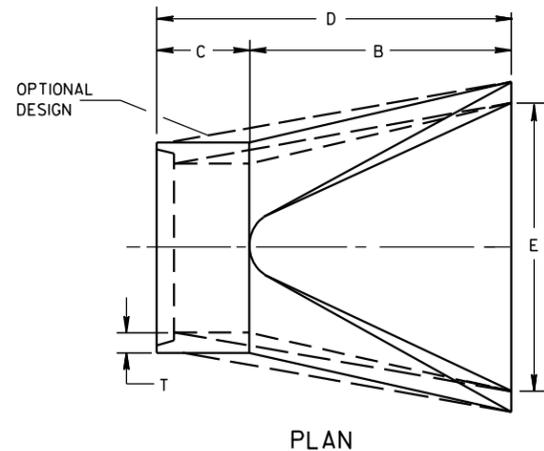
* MINIMUM
** MAXIMUM



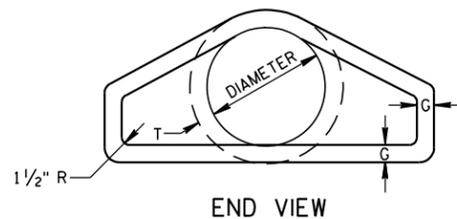
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



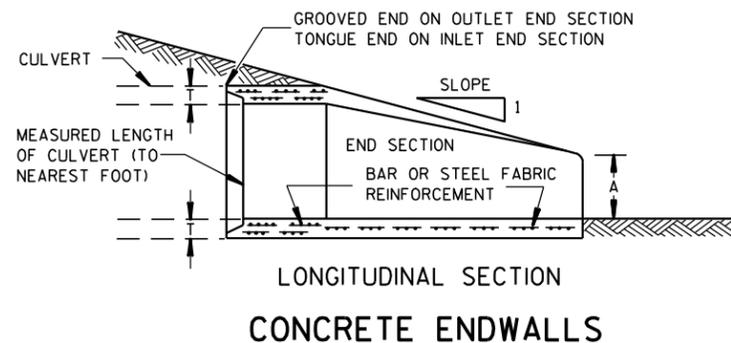
SIDE ELEVATION
METAL ENDWALLS



PLAN

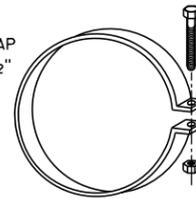


END VIEW

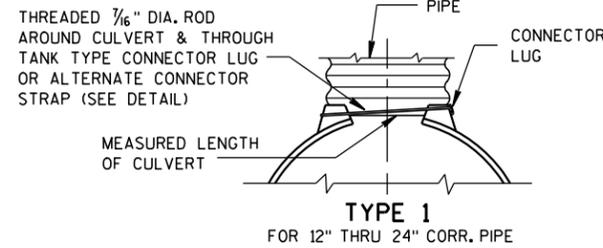


LONGITUDINAL SECTION
CONCRETE ENDWALLS

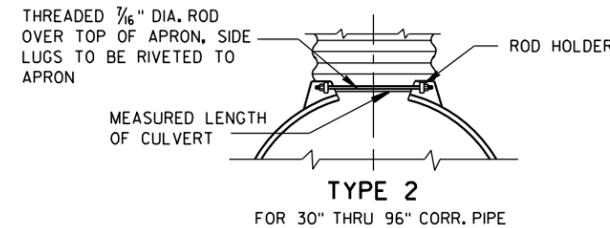
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



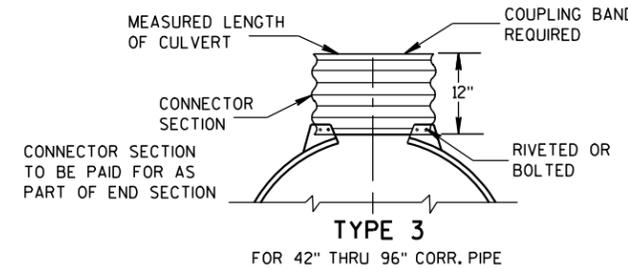
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



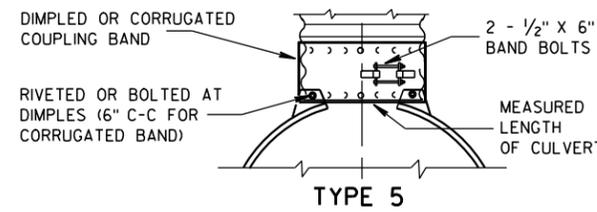
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

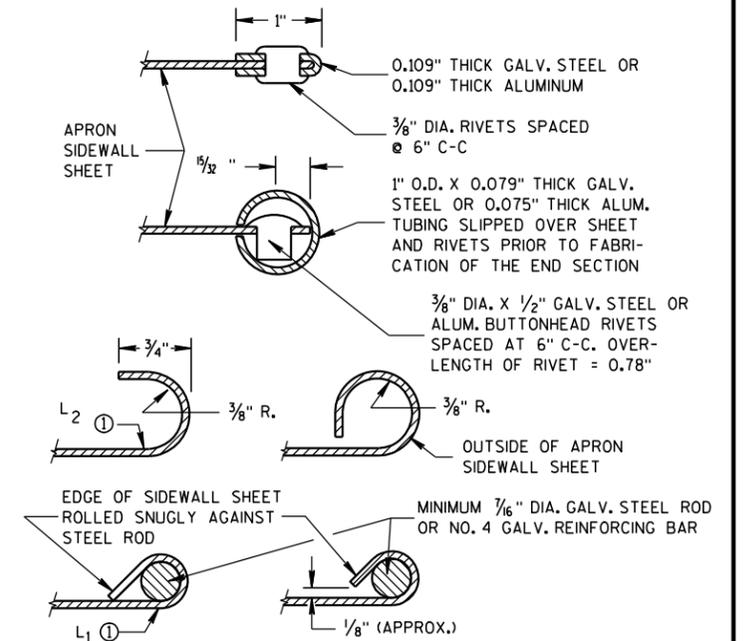
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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 VICE 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.

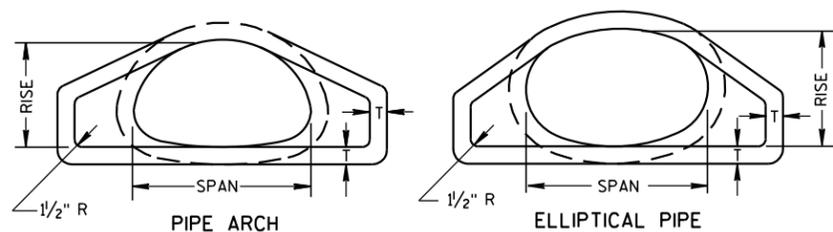
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

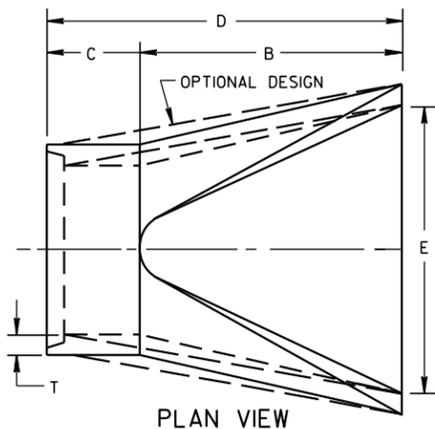
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

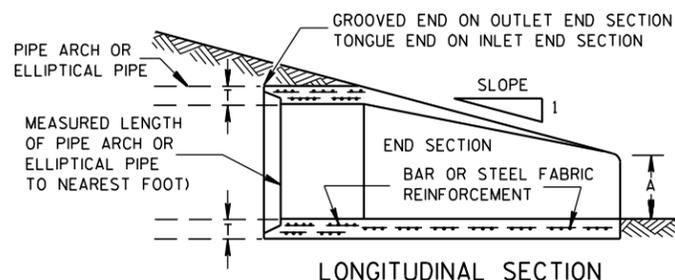
APPROVED
11/30/94 DATE /S/ Rory L. Rhine Chief Roadway Develop 130 NEER
FHWA



END VIEW

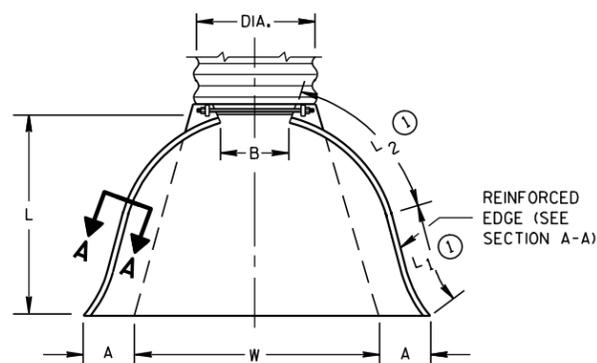


PLAN VIEW



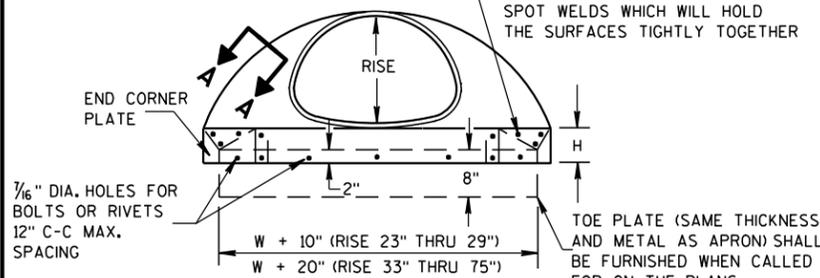
LONGITUDINAL SECTION

CONCRETE ENDWALLS

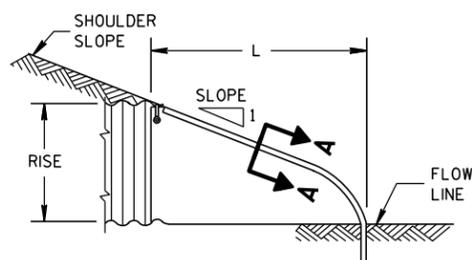


PLAN VIEW

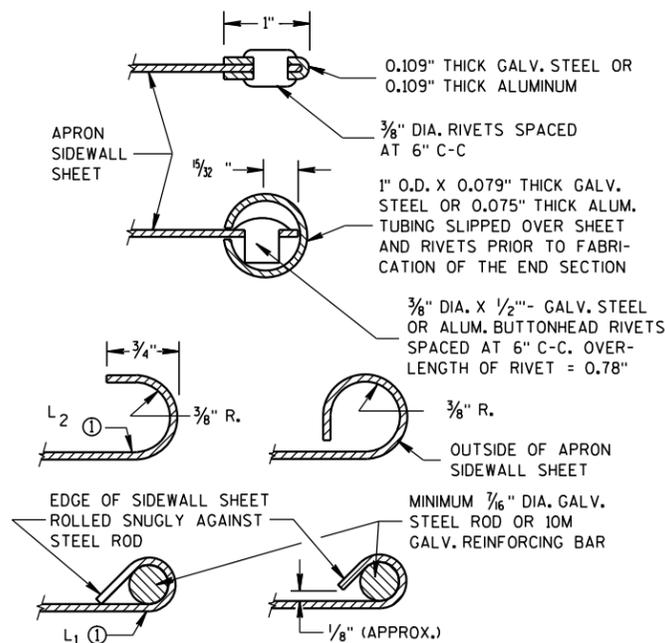
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW



SIDE ELEVATION
METAL ENDWALLS



SECTION A-A

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

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

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED. * EXCEPT CENTER PANEL SEE GENERAL NOTES

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

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

**NOMINAL SIZE

GENERAL NOTES

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

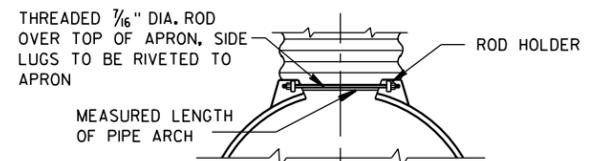
CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

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

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

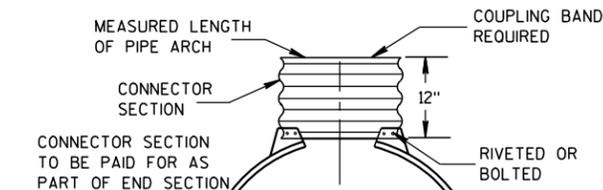
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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



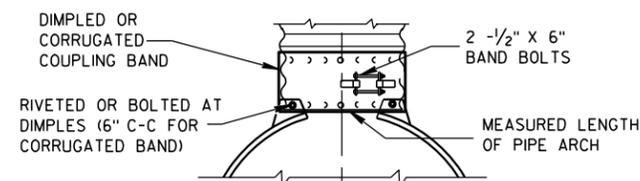
TYPE 2

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



TYPE 3

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



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHES

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

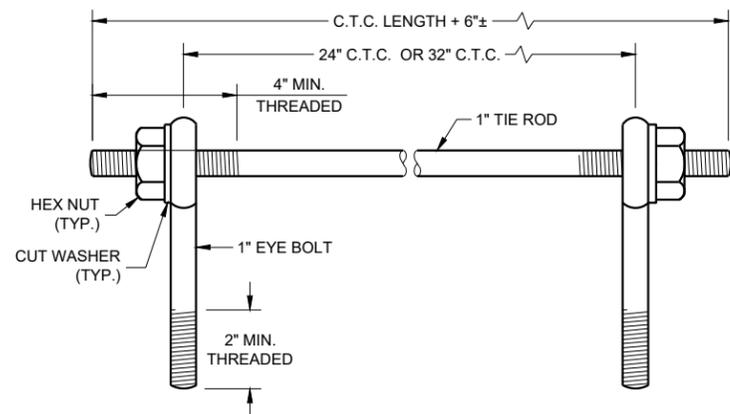
CONNECTION DETAILS

**APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

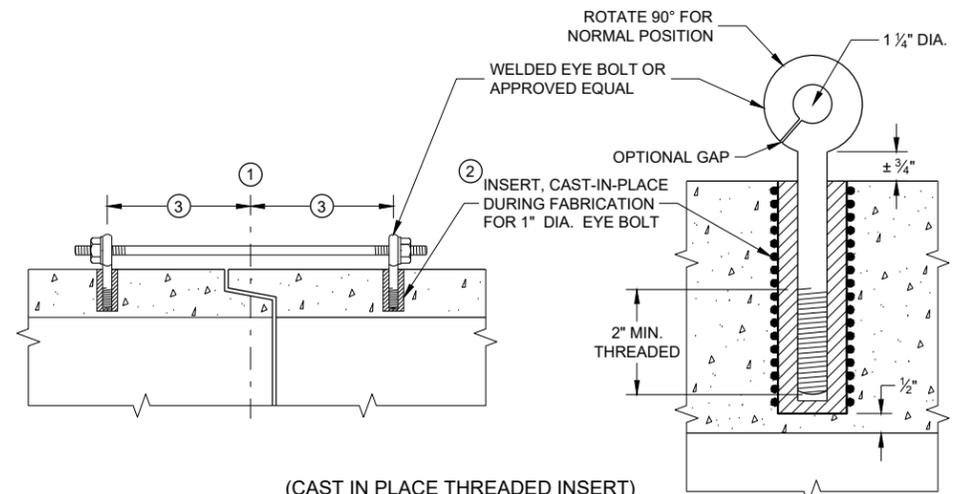
APPROVED
11/30/94 /S/ Rory L. Rhinehart
DATE CHIEF ROADWAY DEVELOPER

FHWA 131 JINEER



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

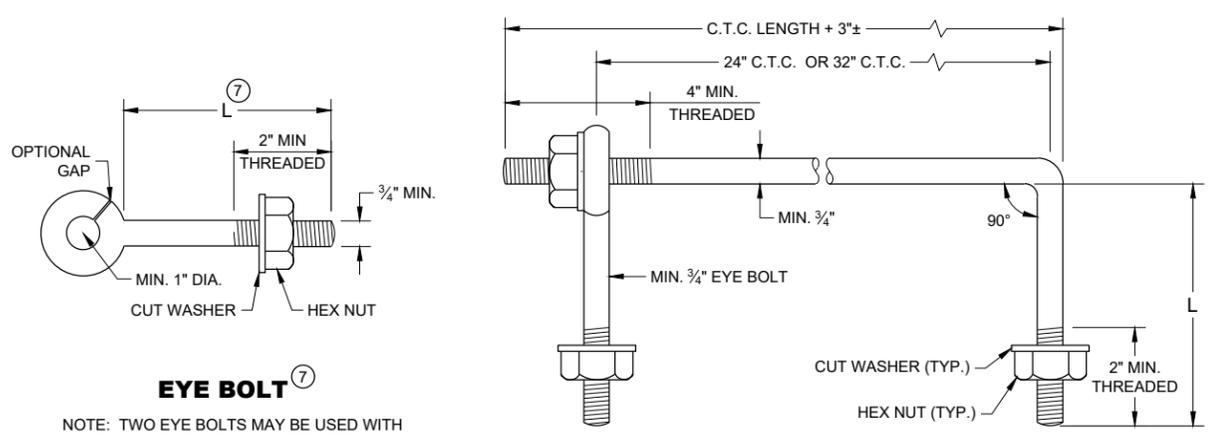
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

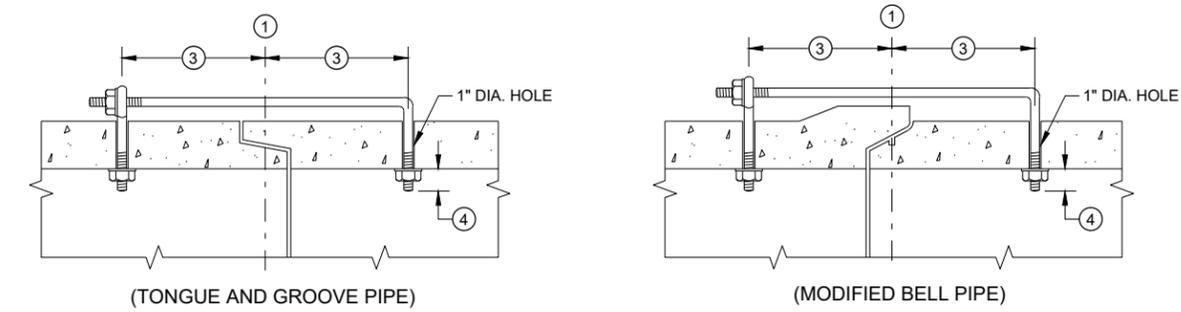


EYE BOLT AND TIE ROD

EYE BOLT AND TIE ROD

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.



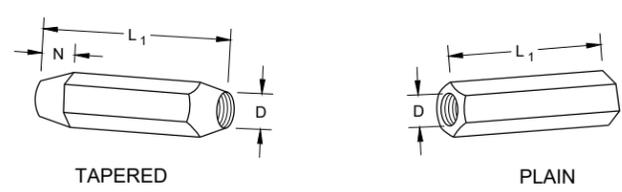
LONGITUDINAL SECTION
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

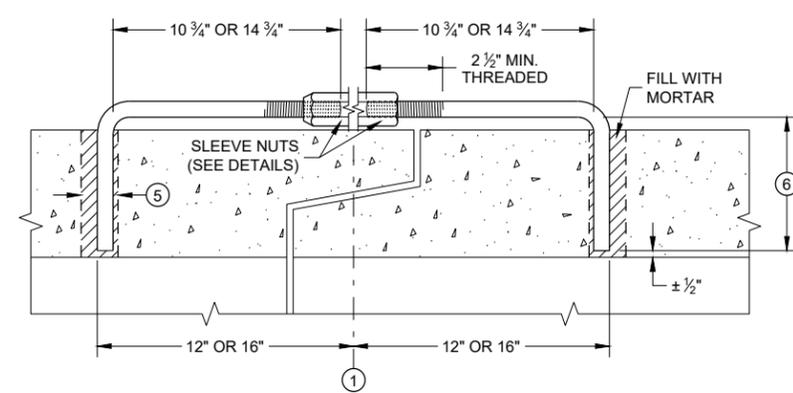
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES

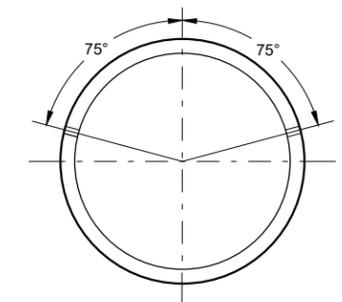


RIGHT AND LEFT THREADS SLEEVE NUTS



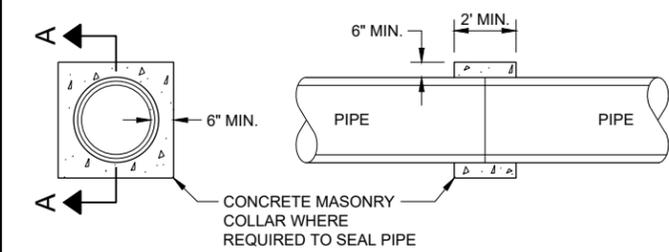
LONGITUDINAL SECTION

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

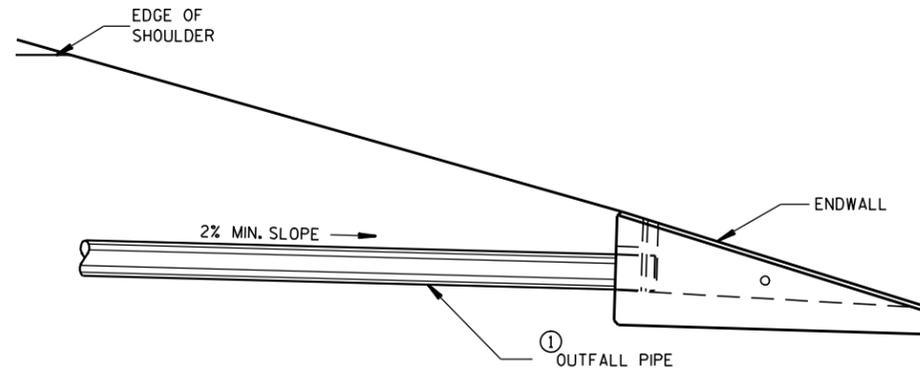
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE ENGINEER 132
FHWA

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



INSTALLATION 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.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

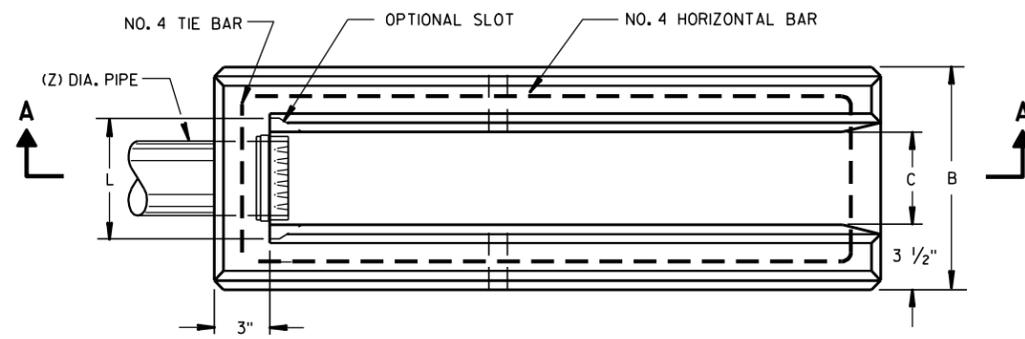
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

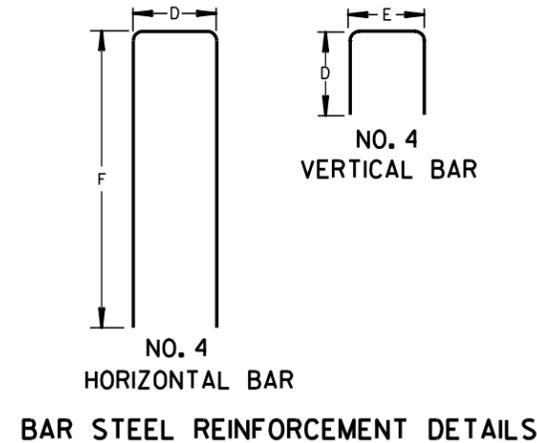
① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

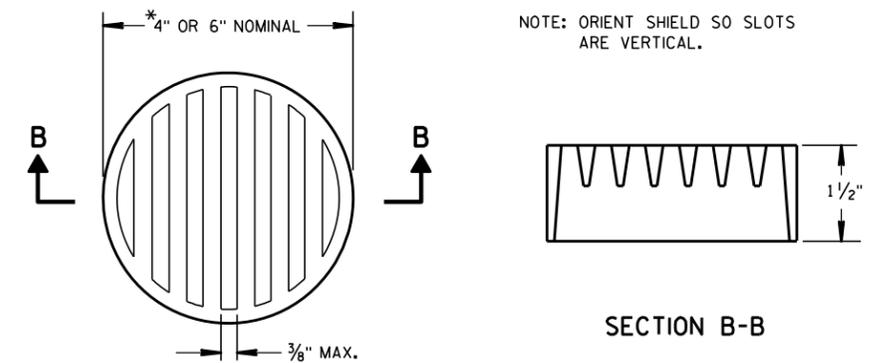
② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



PLAN VIEW

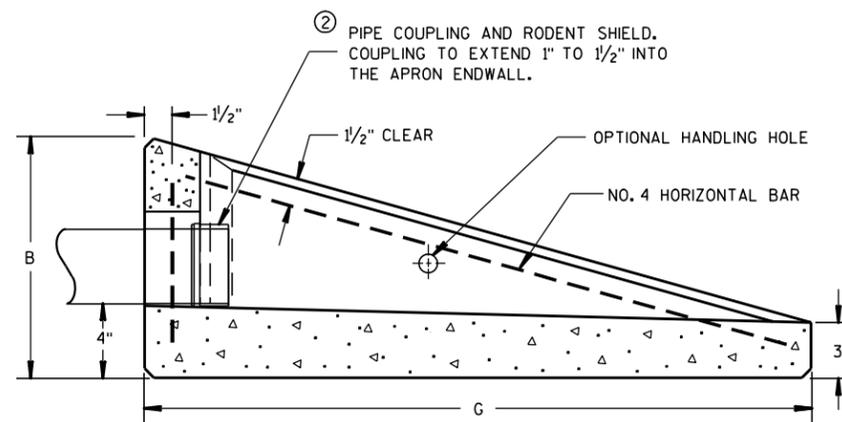


BAR STEEL REINFORCEMENT DETAILS



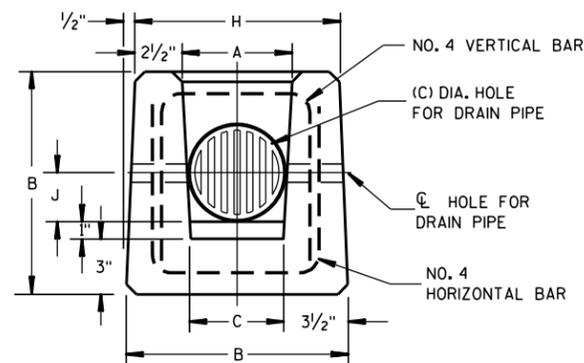
② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN

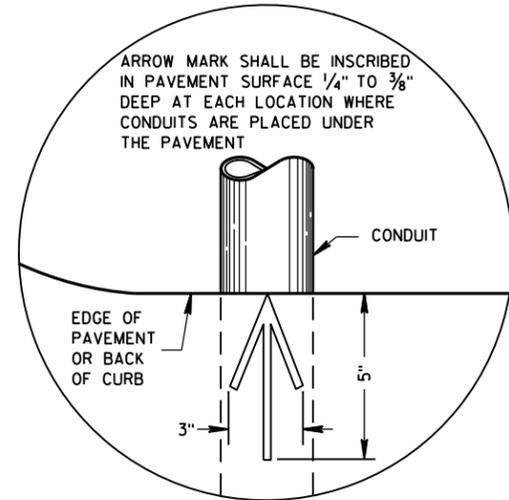


END VIEW

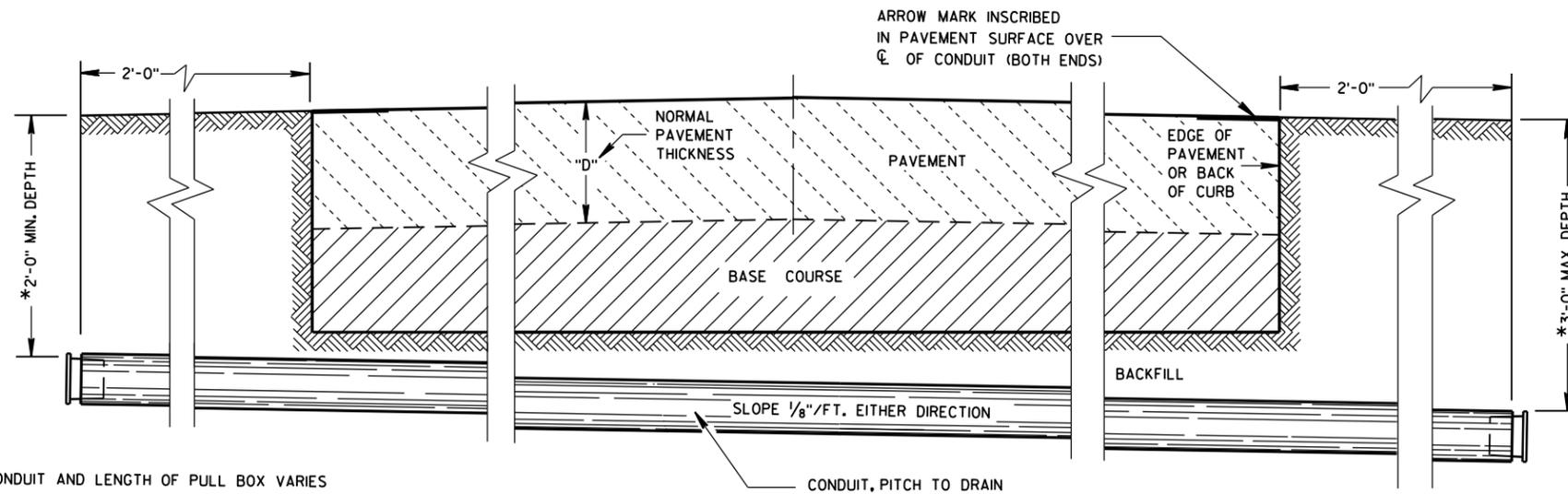
**REINFORCED
CONCRETE APRON ENDWALL
FOR PIPE UNDERDRAIN**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/10/98 /S/ Rory L. Rhin...
DATE CHIEF ROADWAY DEVELOPER 133 INEER
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 EMERSON 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.

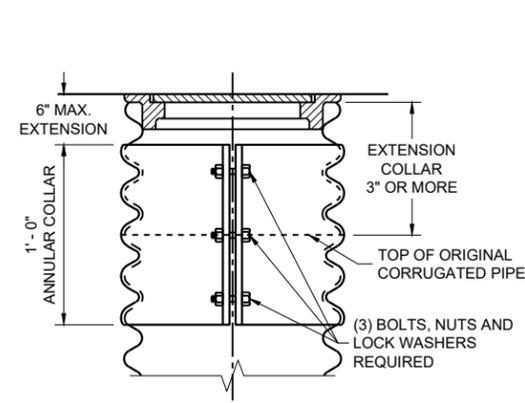
6

6

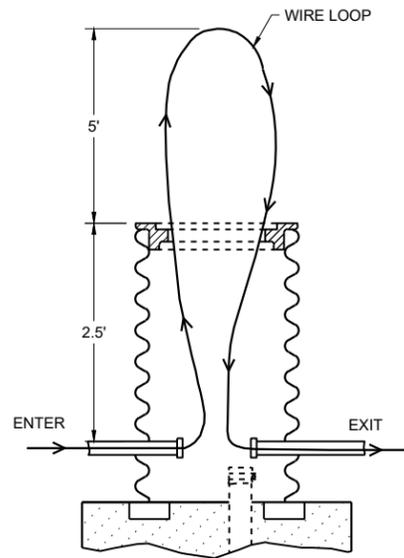
S.D.D. 9 B 2-10

S.D.D. 9 B 2-10

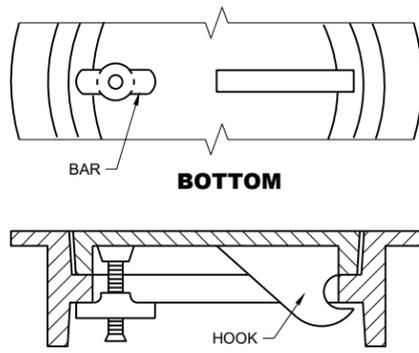
CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL 134
FHWA	



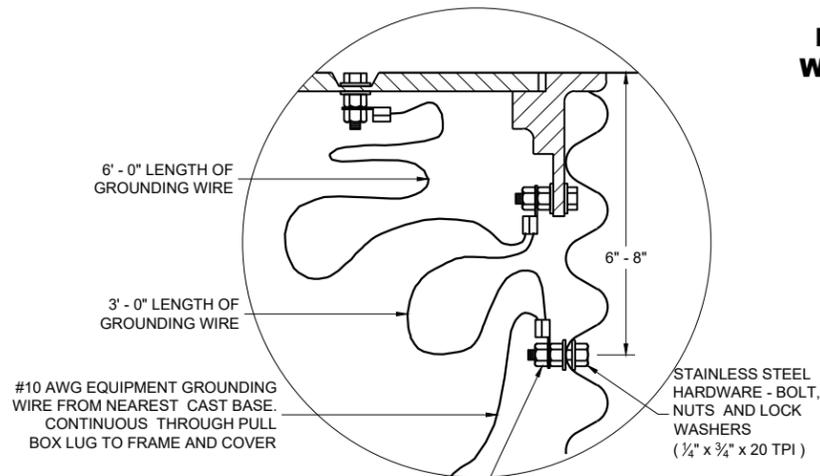
CORRUGATED PIPE EXTENDER



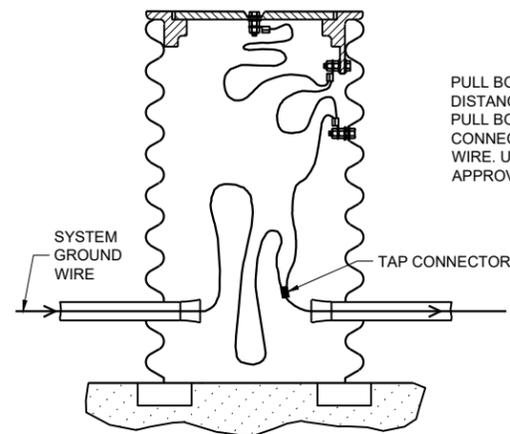
MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE

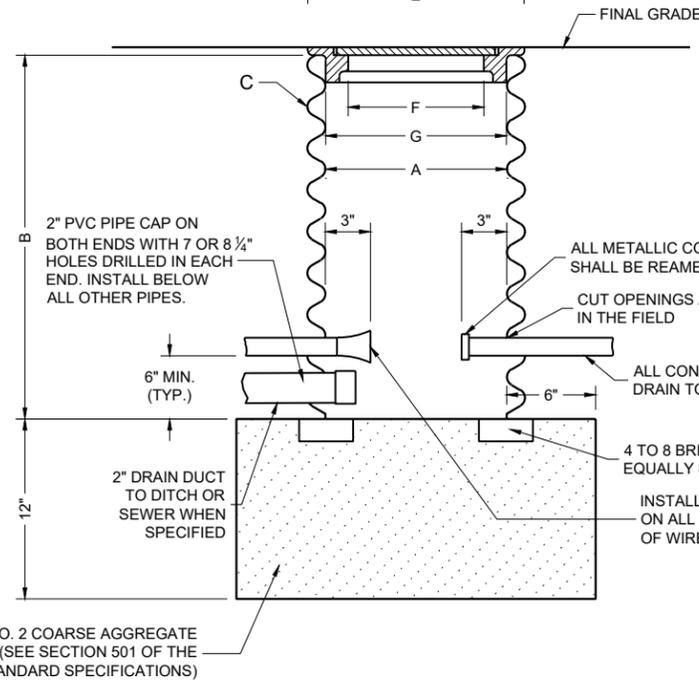
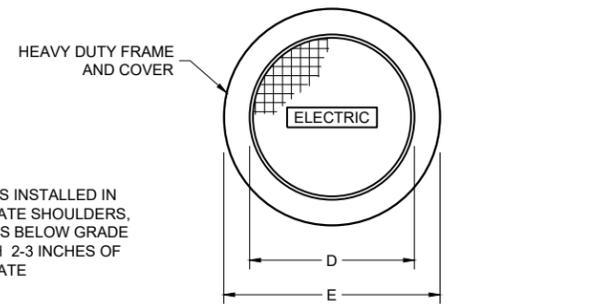


EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

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



PULL BOX

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/8".

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

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

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

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

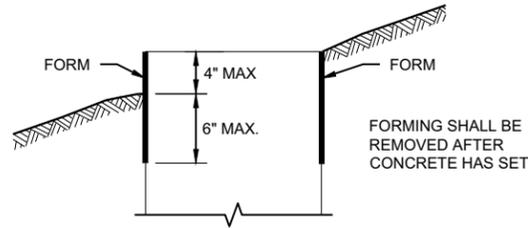
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
		12	12	12	18	18	18	24	24	24
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
		WEIGHT IN POUNDS*								
FRAME AND COVER		60	60	60	110	110	110	155	155	155

*THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.

PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2024 DATE	/s/ Ahmet Demirebilek STATE ELECTRICAL ENGINEER
FHWA	

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



FORMING DETAIL

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

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

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

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

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

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

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

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

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

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

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

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

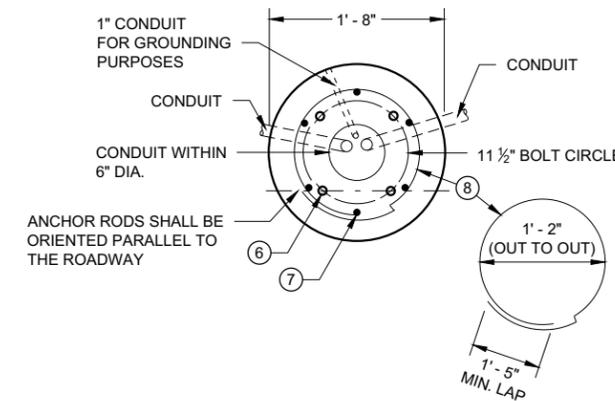
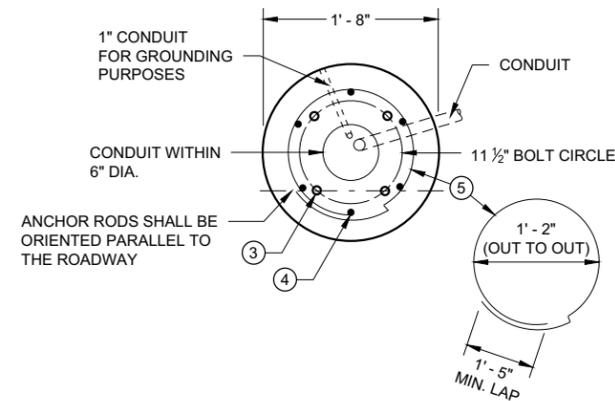
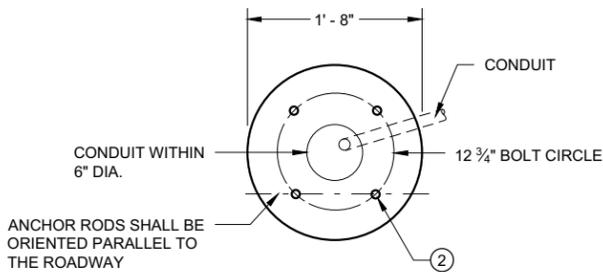
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

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

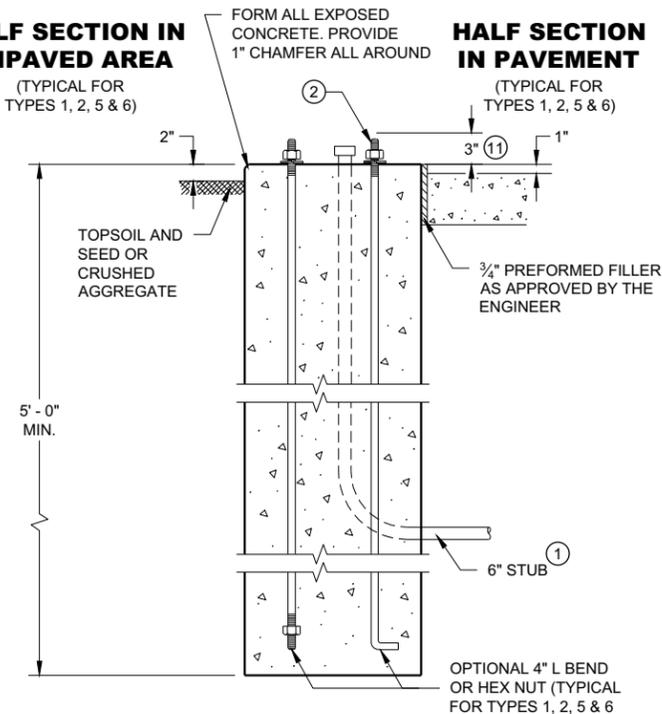
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

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

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

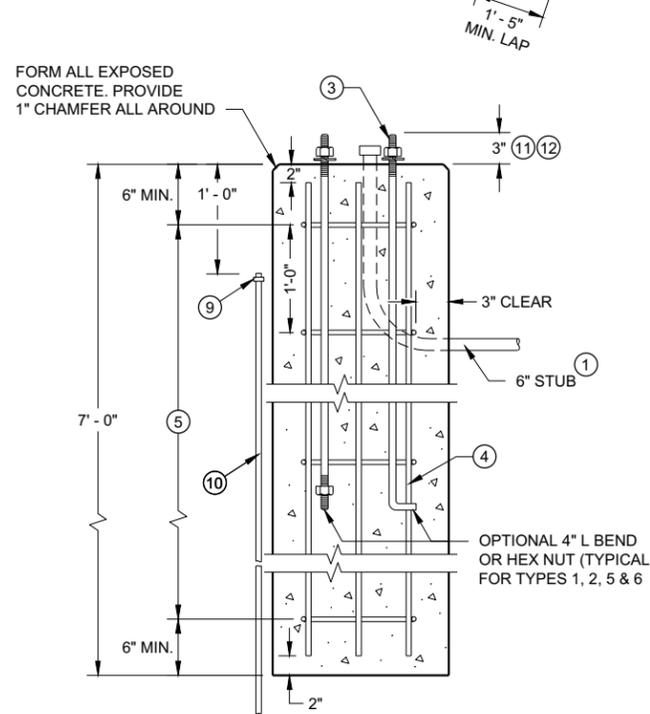


HALF SECTION IN UNPAVED AREA

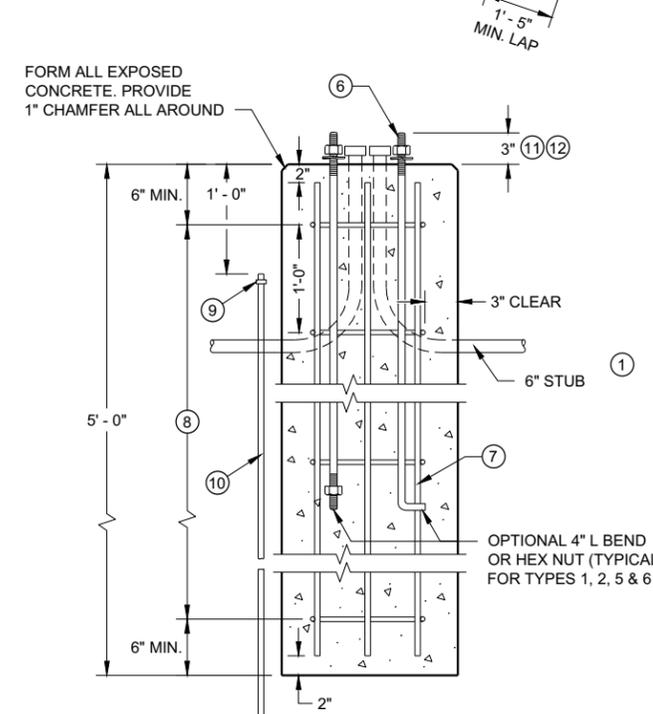


TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2



TYPE 5 & 6

CONCRETE BASES

**CONCRETE BASES
TYPES 1, 2, 5, & 6**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGI 136

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.

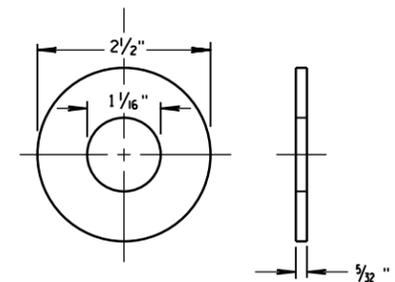
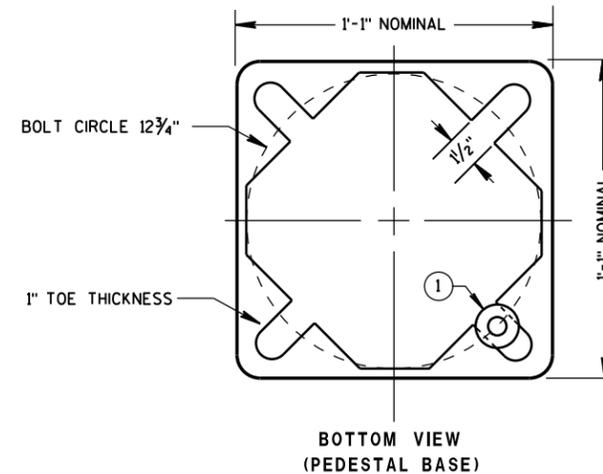
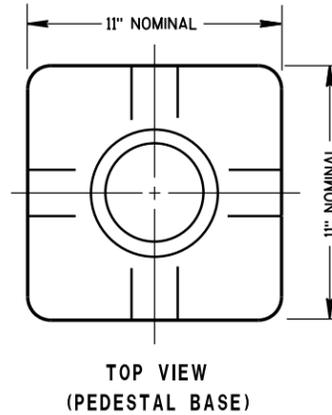
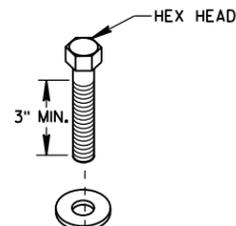
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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.

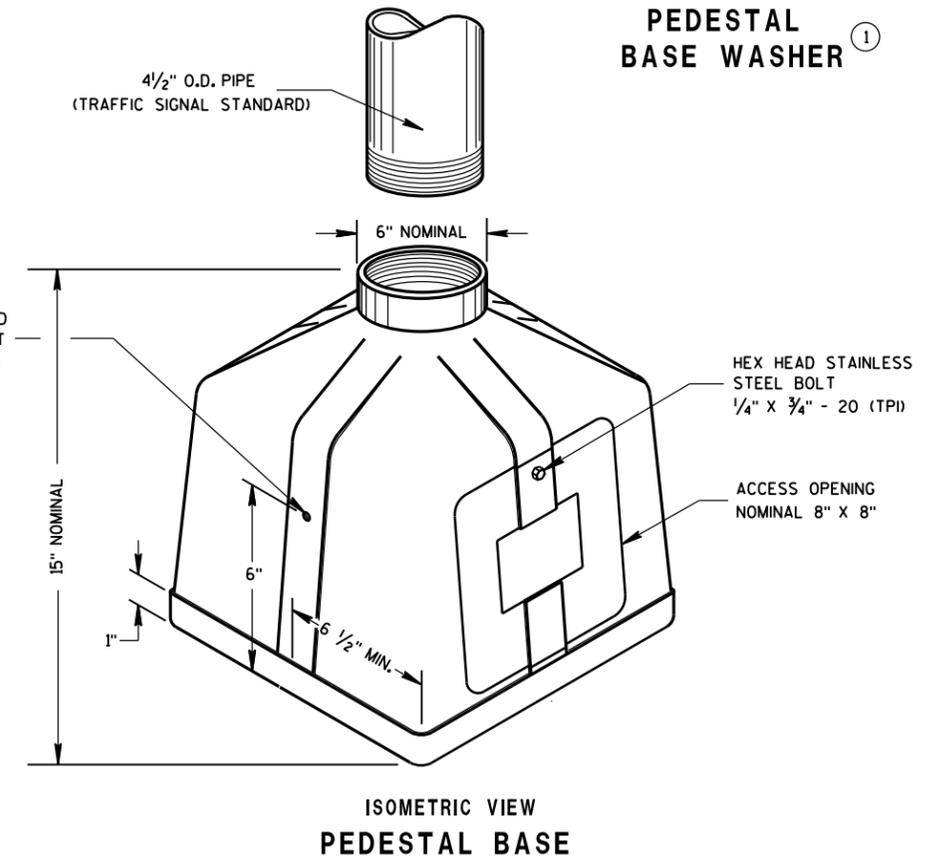
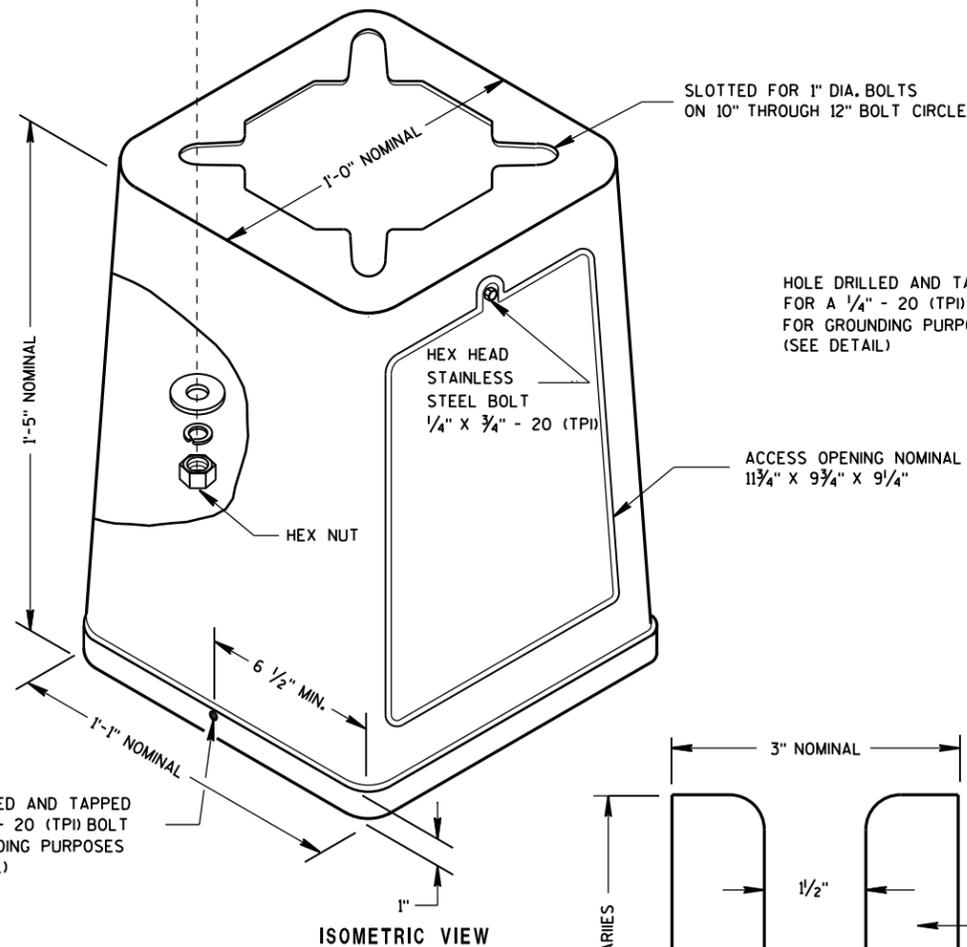
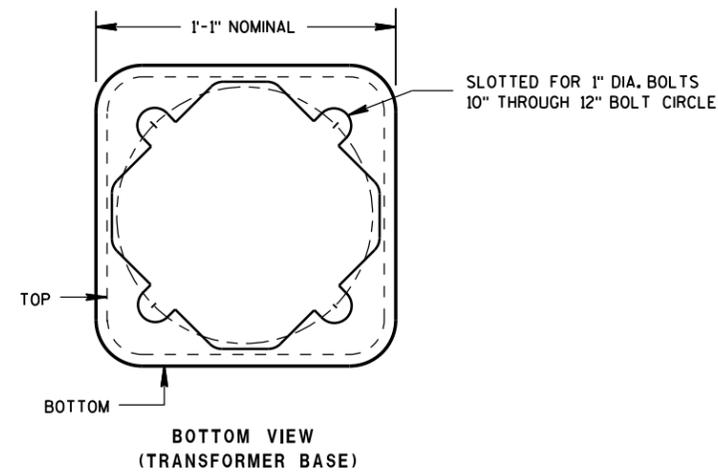
PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

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.

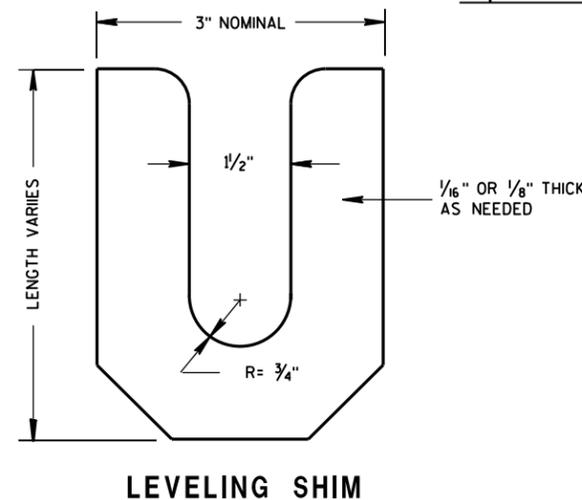


ZINC COATED STEEL WASHER TO BE PROVIDED BY THE CONTRACTOR
PEDESTAL BASE WASHER ①



TYPICAL MECHANICAL CONNECTOR LUG
TO BE FURNISHED WITH EACH BASE

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



6

6

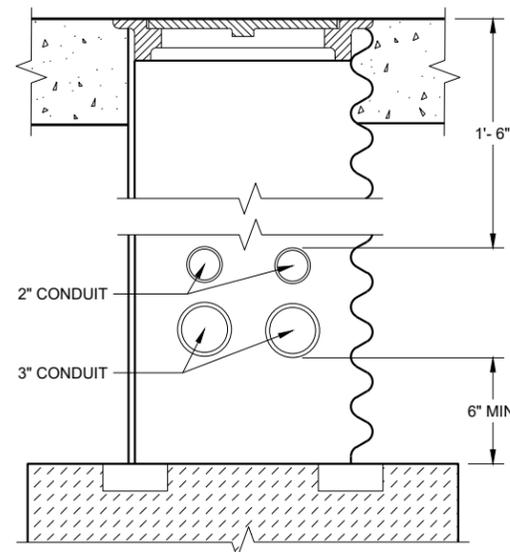
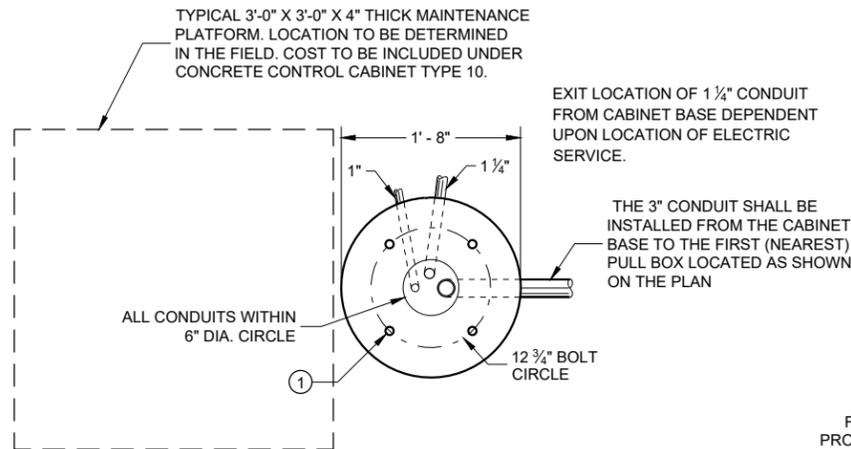
S.D.D. 9 C 3-4

S.D.D. 9 C 3-4

TRANSFORMER/PEDESTAL BASES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL 137
FHWA	

CONTROL CABINET BASE TYPE	DIMENSIONS				CUBIC YARD CONCRETE (APPROX.)
	H	I	J	K	
TYPE 6 - 30" CABINET	34"	60"	10"	17"	.64
TYPE 7 - 38" CABINET	42"	60"	10"	21"	.93
TYPE 8 - 38" CABINET	42"	72"	12"	21"	1.29
TYPE 9 - VARIABLE	54"	72"	14"	27"	1.56
TYPE 10 - POST MOUNT	AS SHOWN				.65*

* INCLUDES MAINTENANCE PLATFORM.



CONDUIT LOCATIONS IN 24" X 36" PULL BOX

(LEADING TO CONTROLLER CABINET BASE TYPE 6, 7, 8 AND 9)

GENERAL NOTES

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

INSTALL FOUR (4) 1/2" INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS 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.

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

WHEN A TYPE 10 CONTROL CABINET BASE IS USED TO POST MOUNT A CONTROL CABINET, A 36" SQUARE 4" THICK CONCRETE MAINTENANCE PLATFORM SHALL BE REQUIRED ON THE DOOR SIDE OF THE CABINET. THE TOP 1 INCH SHALL BE ABOVE FINISHED GRADE AND BE 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.

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.

ALL FOUR (TWO INCH AND THREE INCH) CONDUIT SHALL BE INSTALLED FROM THE CABINET BASE TO THE FIRST (NEAREST PULL BOX LOCATED AS SHOWN ON THE PLANS).

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

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

WHEN ANCHOR RODS USING THE ALTERNATE L BEND ARE FURNISHED FOR THE TYPE 10 BASE, THE 4" L BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH.

THE "L" BEND SHALL NOT BE THREADED.

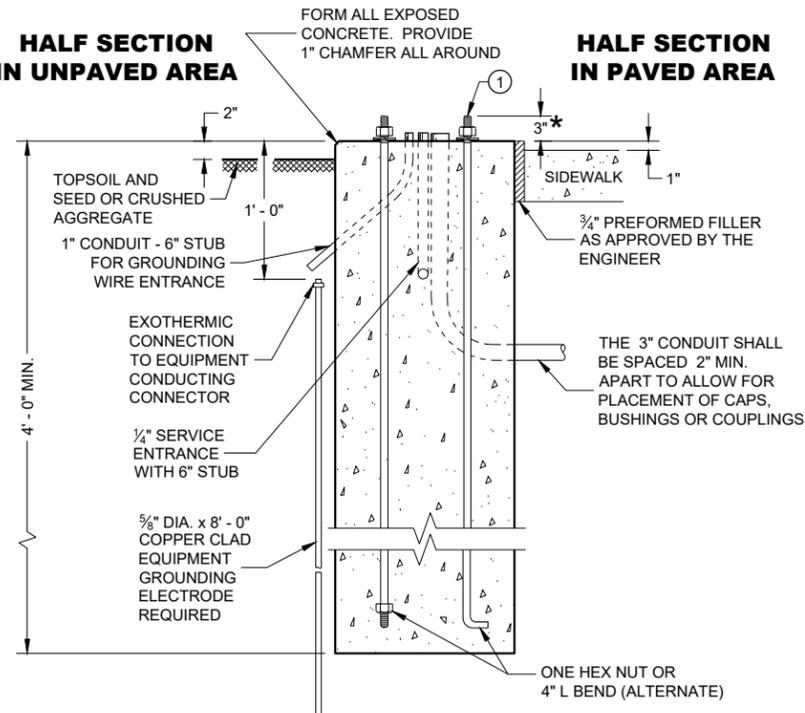
STRAIGHT ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD.

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

① FOUR (4) ANCHOR RODS, 1" DIA. X 3'-6". ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2 OF THE STANDARD SPECIFICATIONS.

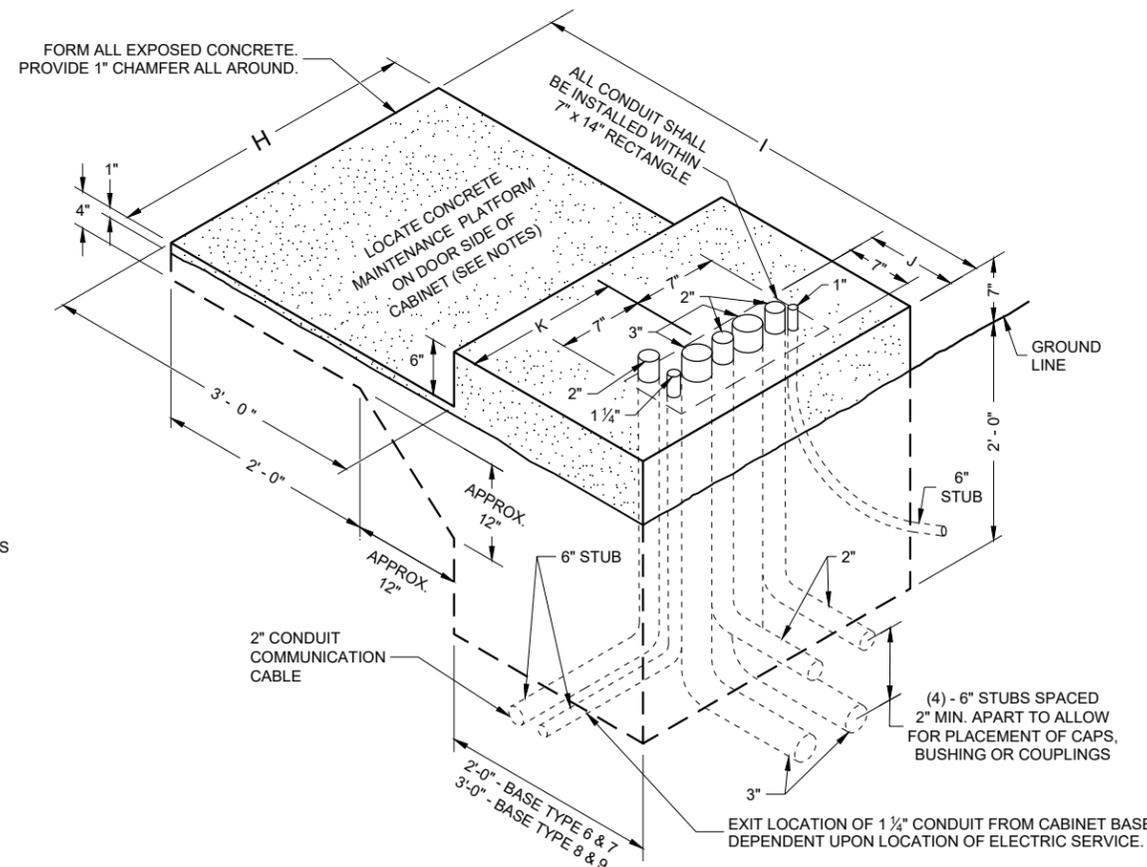
HALF SECTION IN UNPAVED AREA

HALF SECTION IN PAVED AREA



TYPE 10

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/2" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.



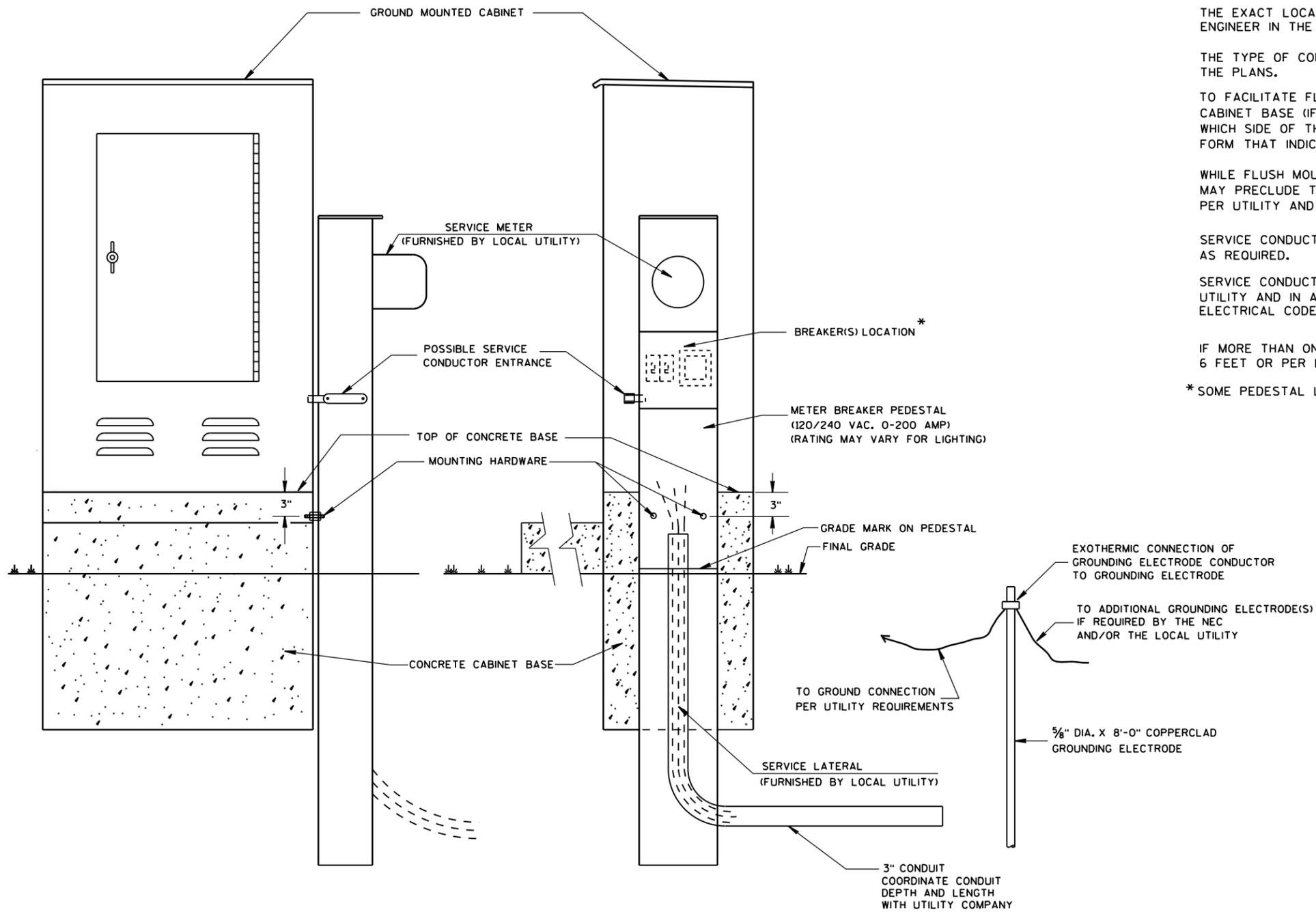
**ISOMETRIC VIEW
TYPE 6, 7, 8 AND 9**

CONCRETE CABINET CONTROL BASES

**CONCRETE CABINET
CONTROL BASES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2016 /S/ Ahmet Demerbilek
DATE STATE ELECTRICAL ENGI 138
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.

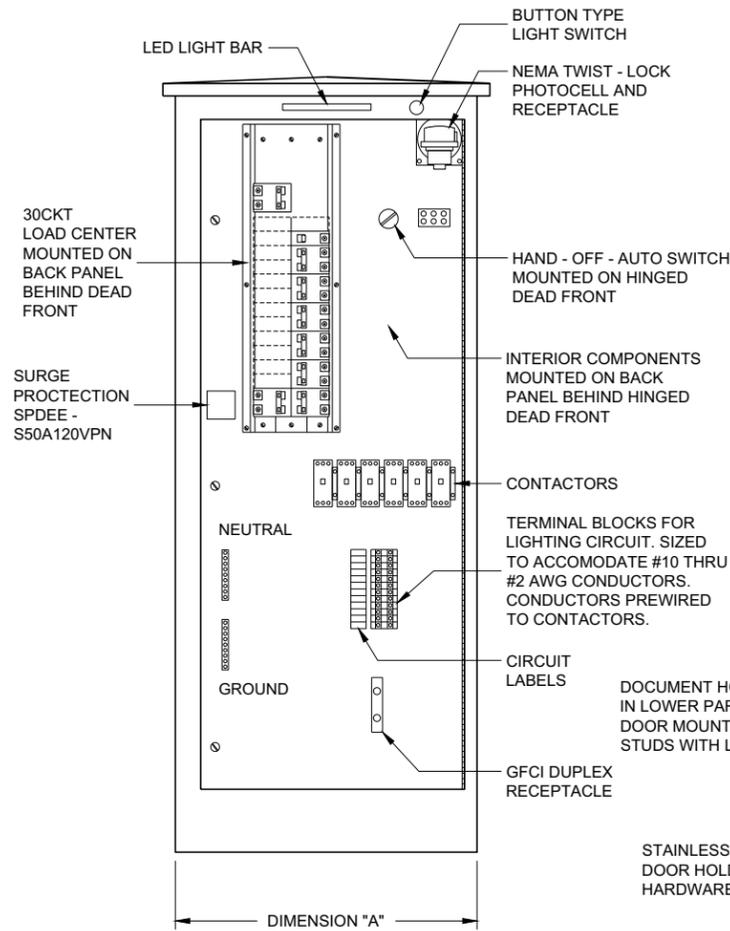
SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

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 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL 139
FHWA	

FRONT INTERIOR ELEVATION



SIDE VIEW

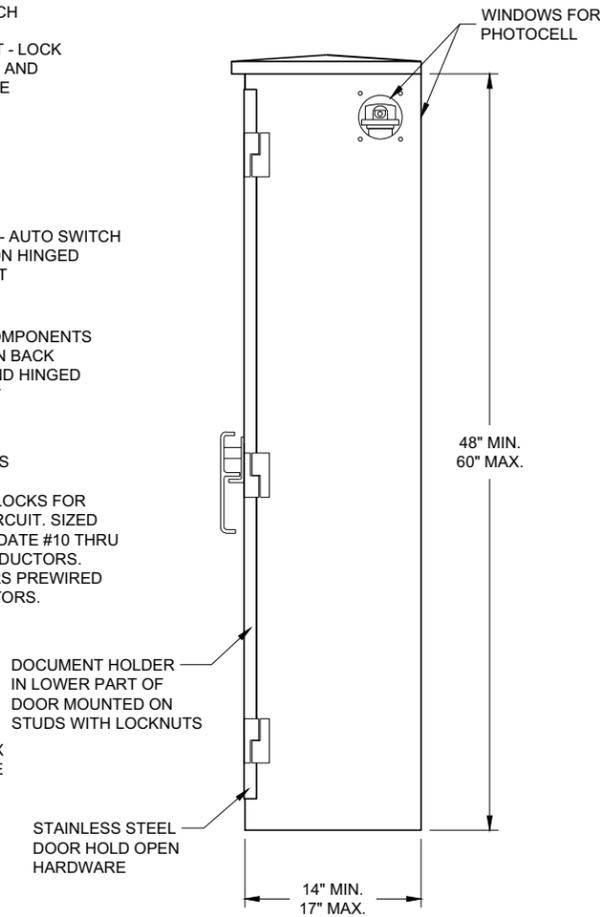
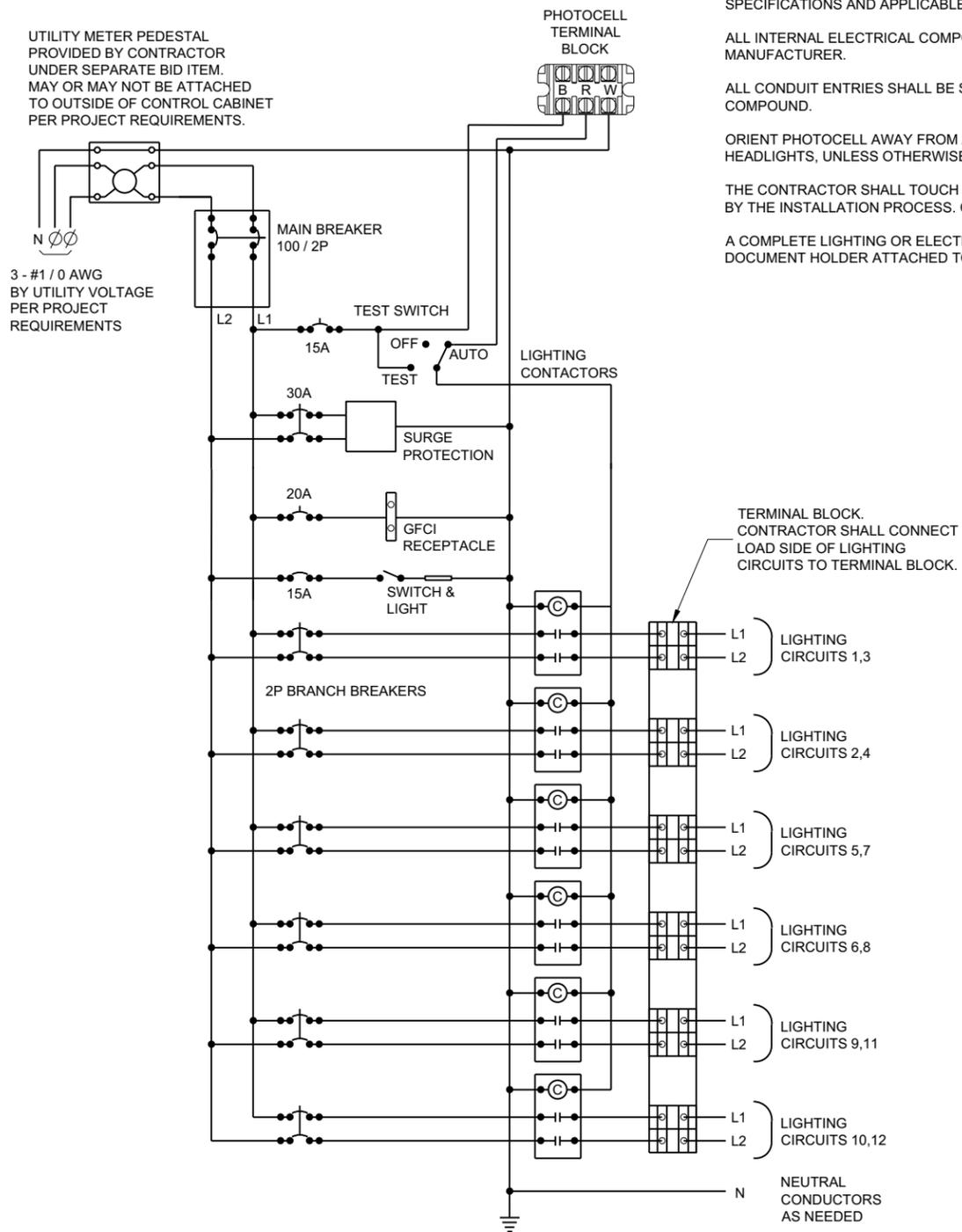


TABLE OF DIMENSIONS (INCHES)		
CONCRETE BASE TYPE	CABINET WIDTH	DIMENSION "A"
L24	24"	24"
L30	30"	30"

LIGHTING CONTROL CABINET



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

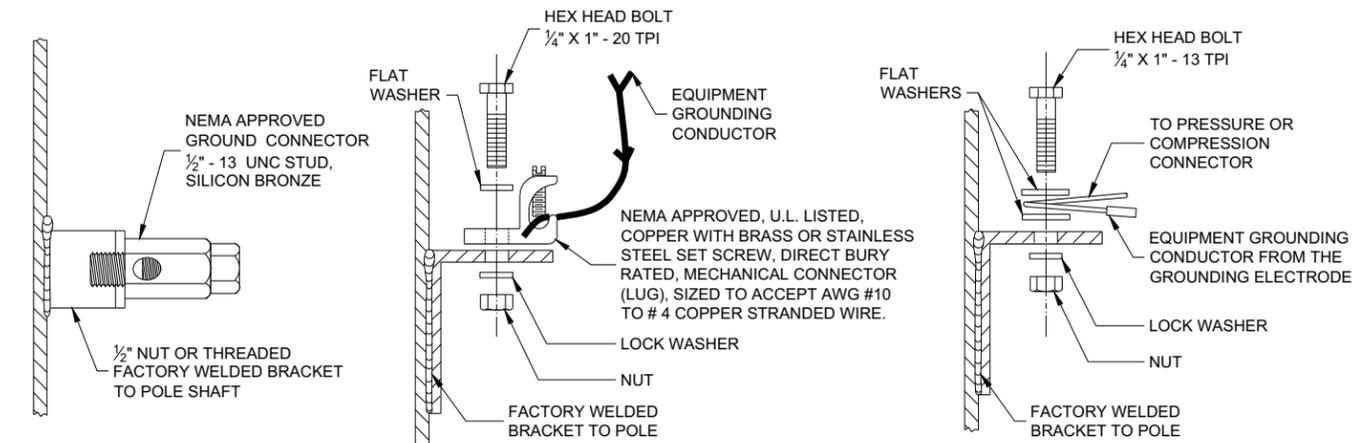
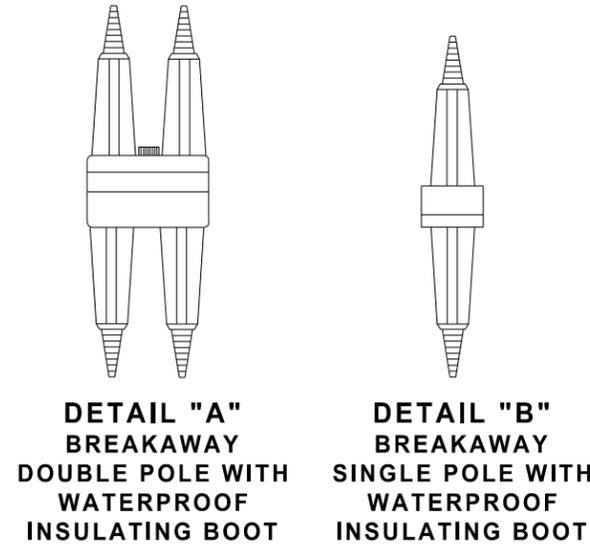
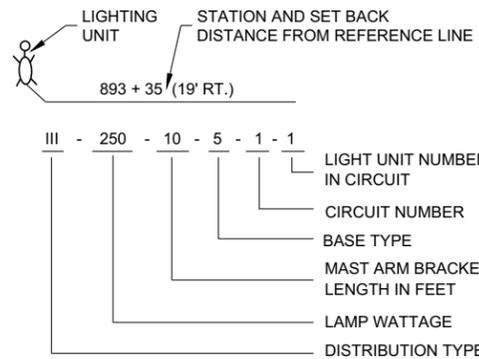
APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 140
FHWA

GENERAL NOTES

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

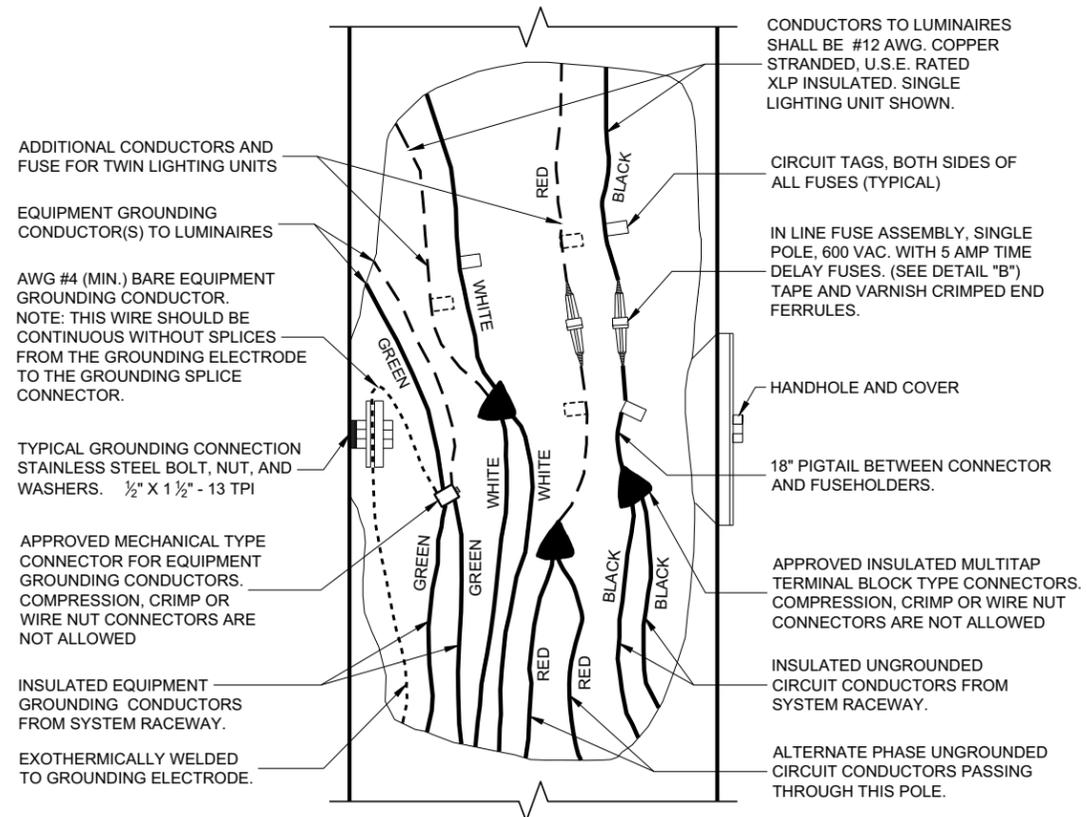
THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

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

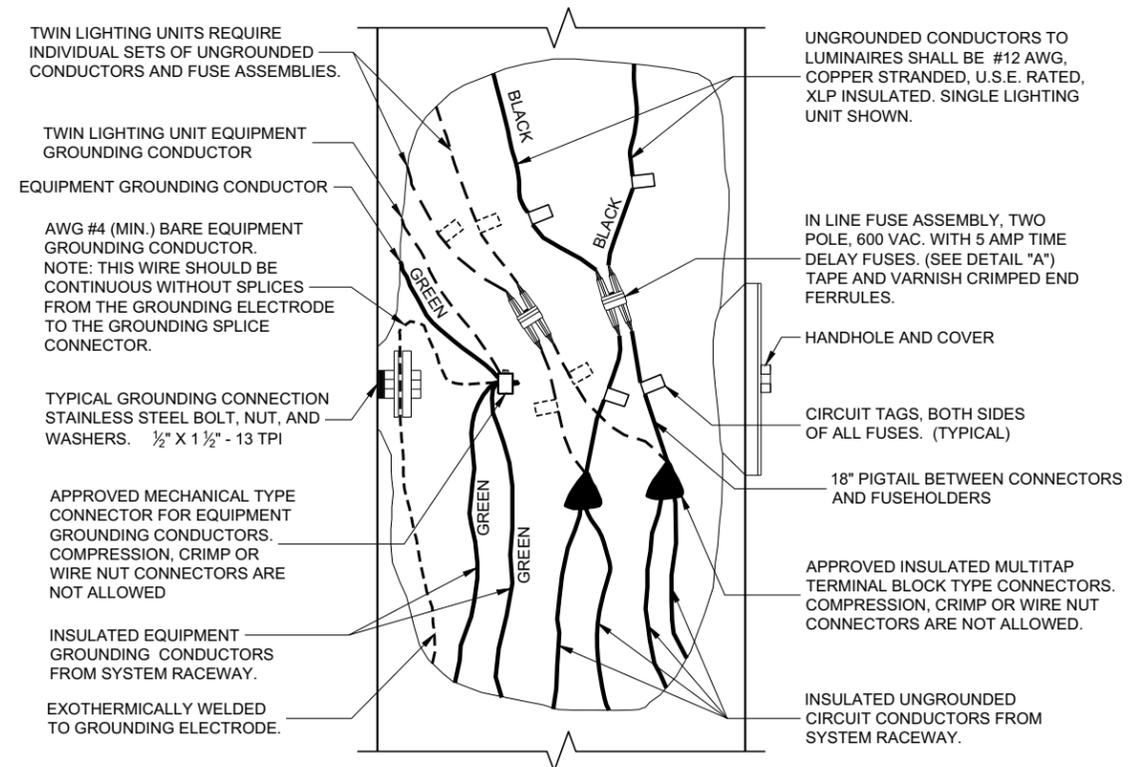


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

LIGHTING UNIT CODE (TYPICAL)



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



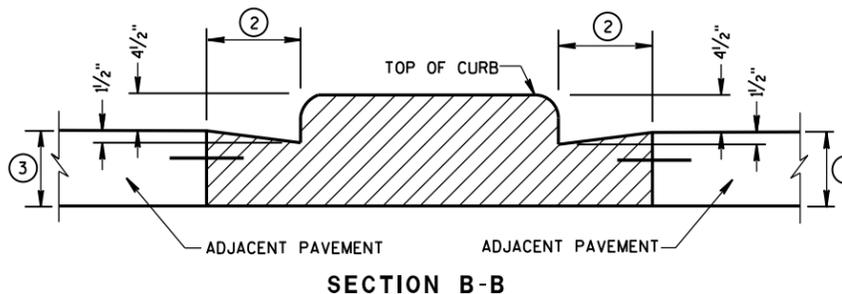
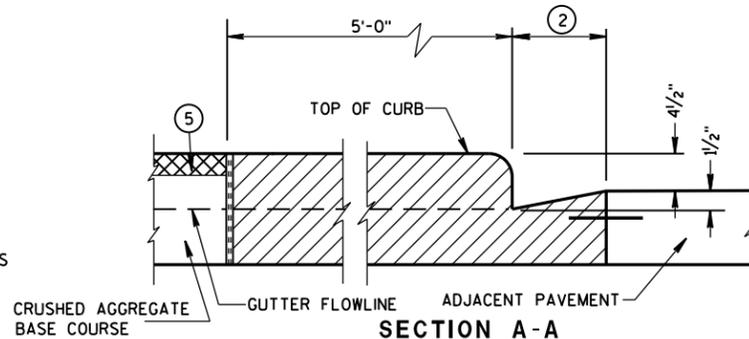
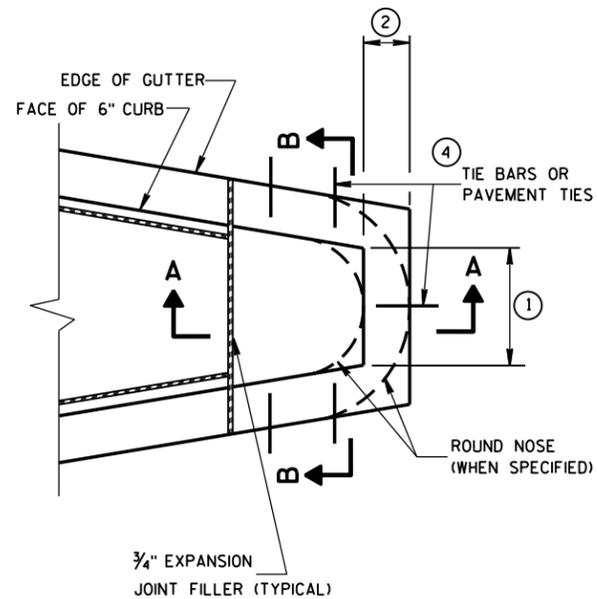
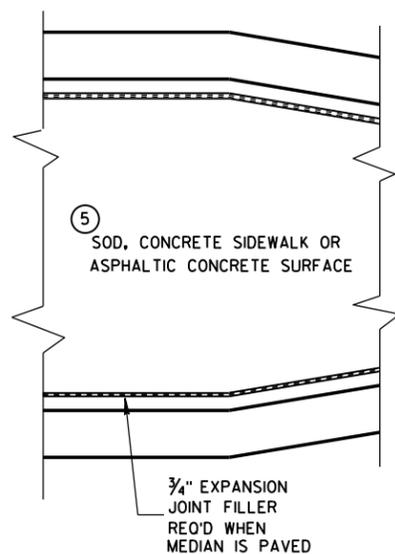
2 WIRE - 240 OR 480 VAC (UNGROUNDING CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

NON - FREEWAY LIGHTING UNIT POLE WIRING

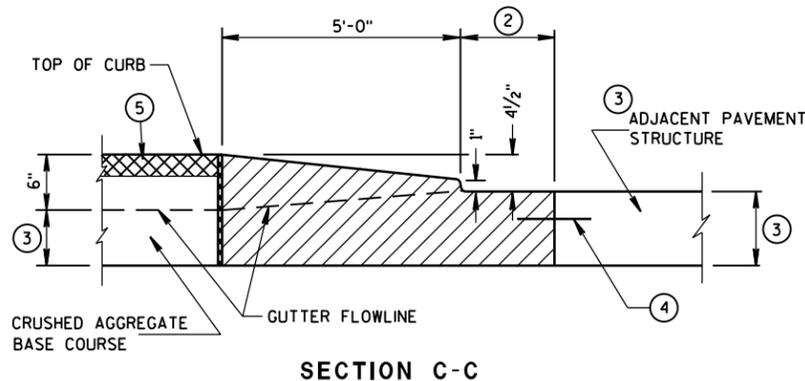
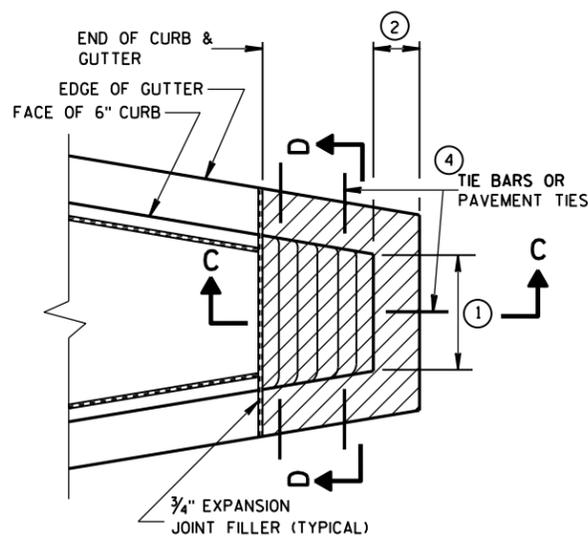
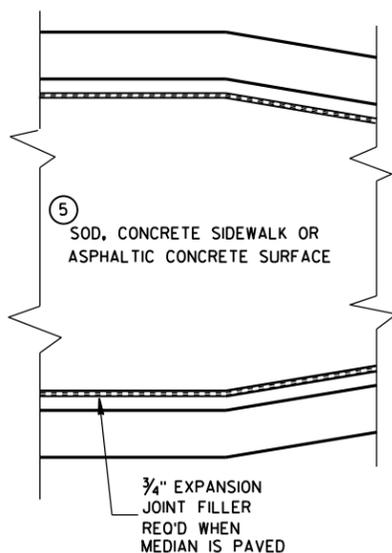
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirebilek
DATE STATE ELECTRICAL ENGI 141

FHWA



CONCRETE MEDIAN BLUNT NOSE DETAIL

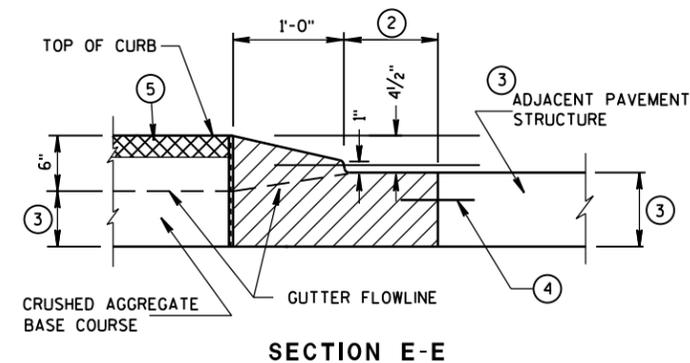
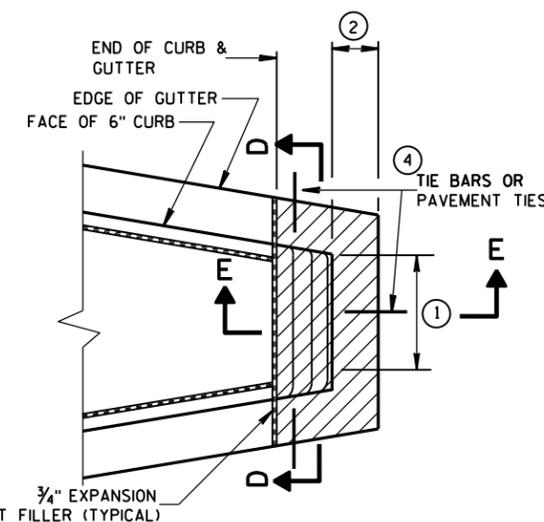


CONCRETE MEDIAN SLOPED NOSE TYPE 1

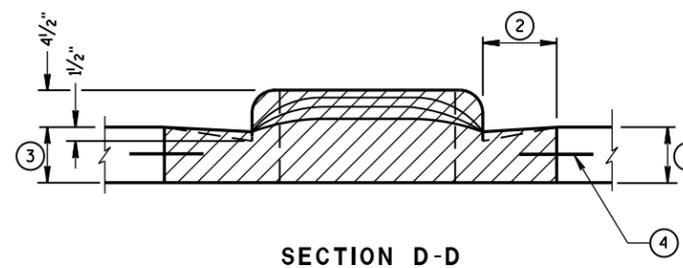
GENERAL NOTES

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.



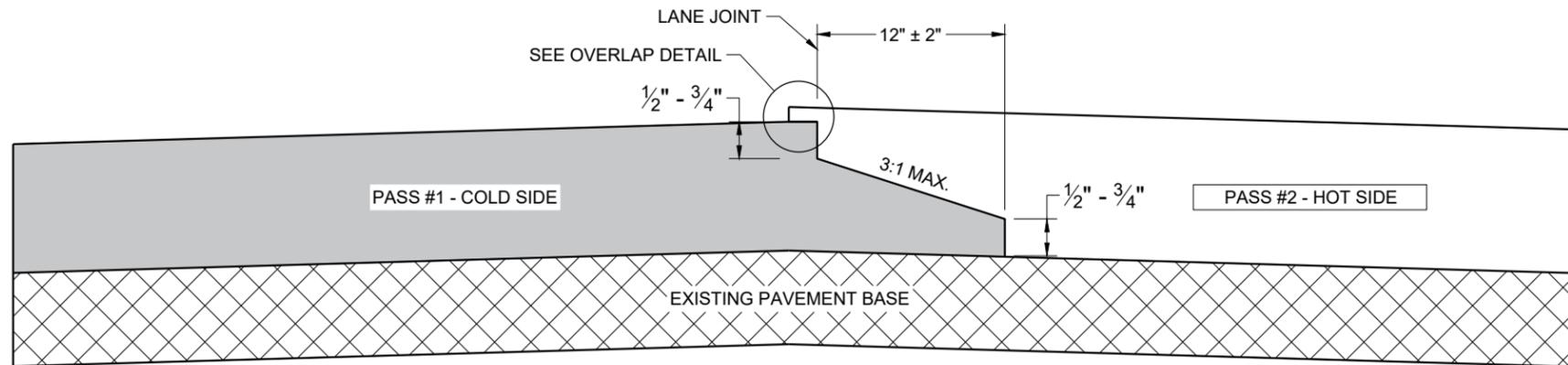
CONCRETE MEDIAN SLOPED NOSE TYPE 2



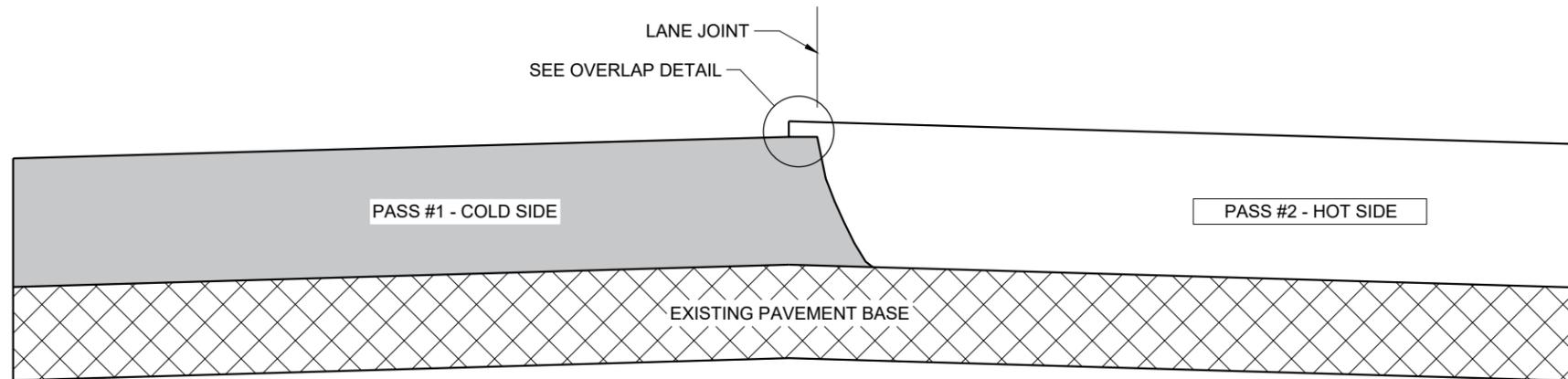
CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

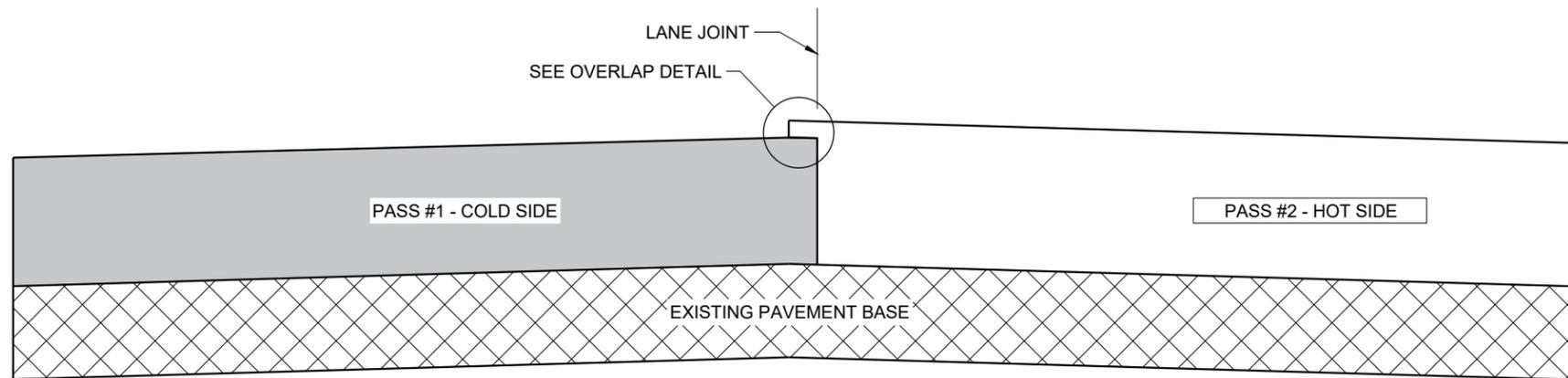
APPROVED
6/8/2006 /S/ Jerry H. Zoog
DATE ROADWAY STANDARDS 0 142
FHWA ENGINEER



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

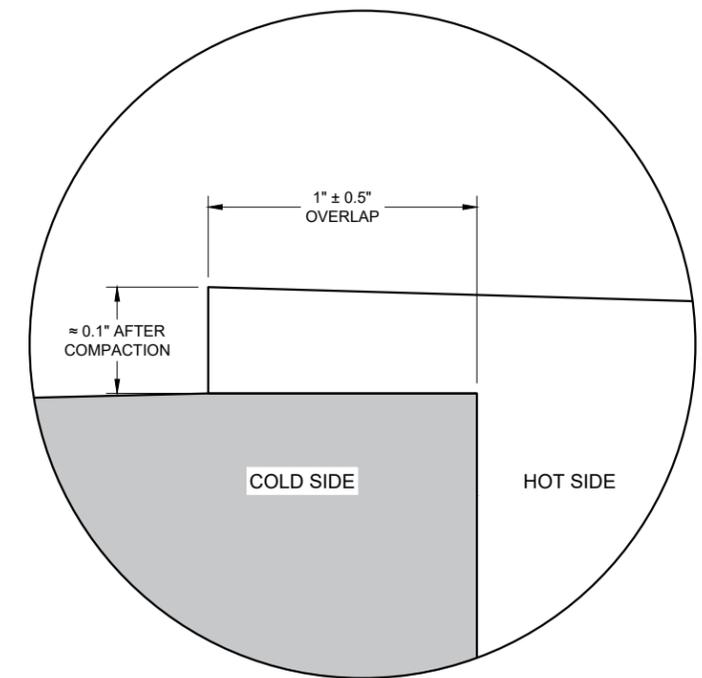
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

6

6

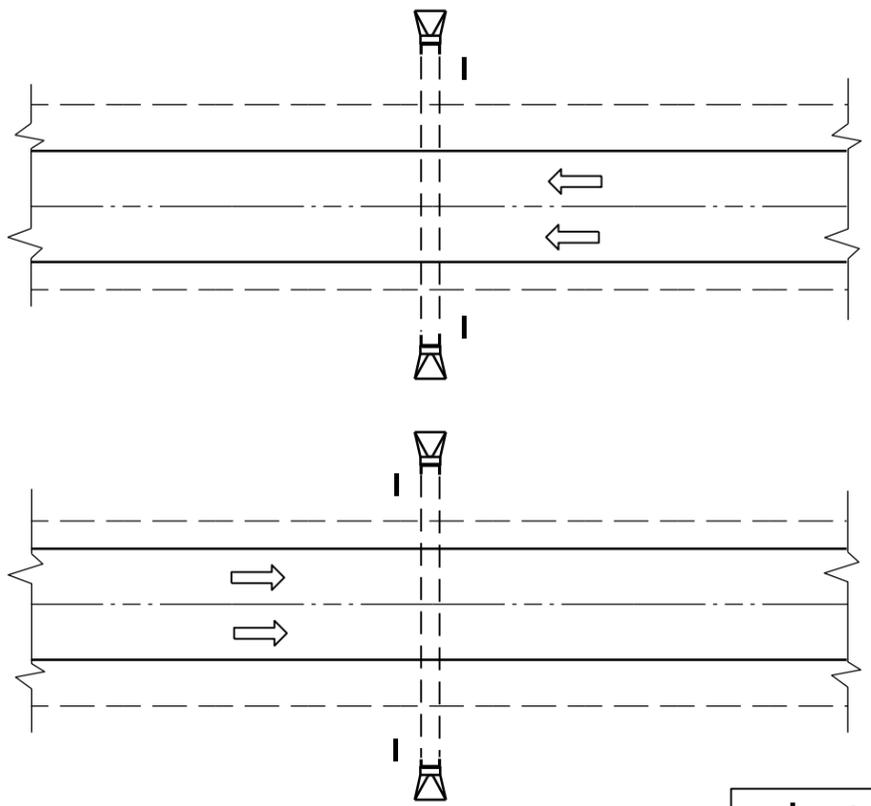
SDD 13C19 - 03

SDD 13C19 - 03

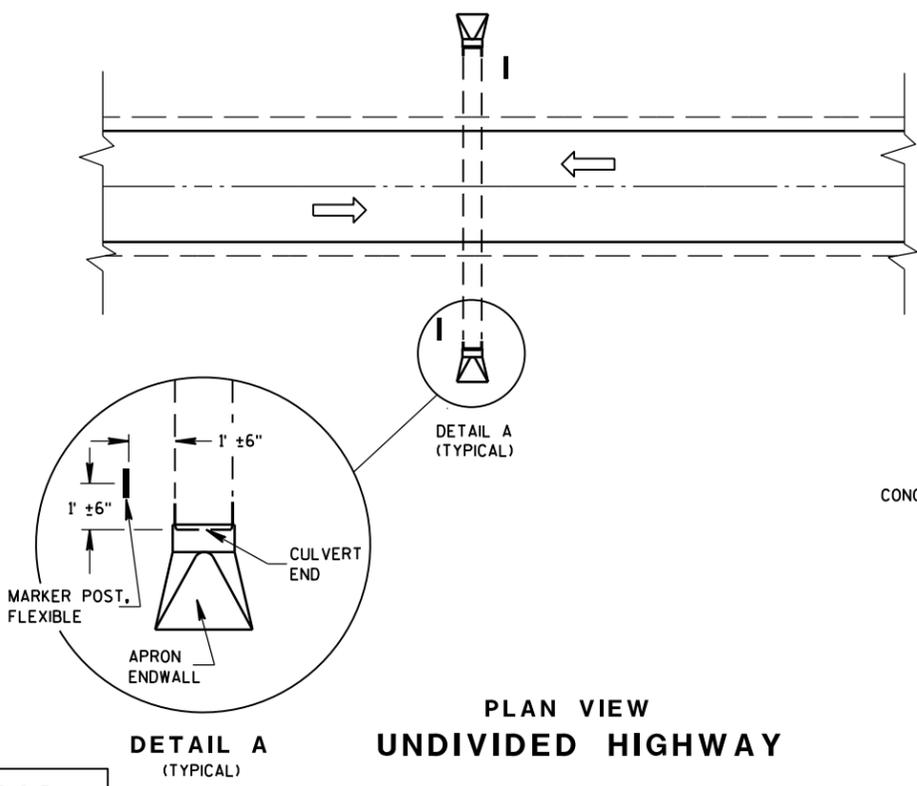
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 143
FHWA



PLAN VIEW
DIVIDED HIGHWAY



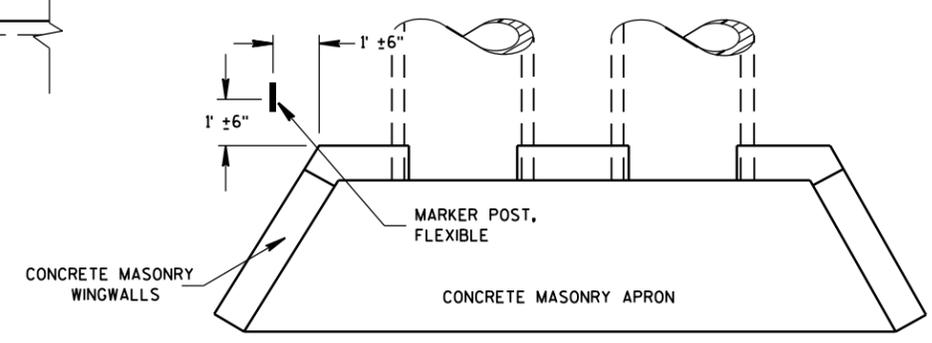
PLAN VIEW
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE
DIRECTION OF TRAFFIC FLOW

FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

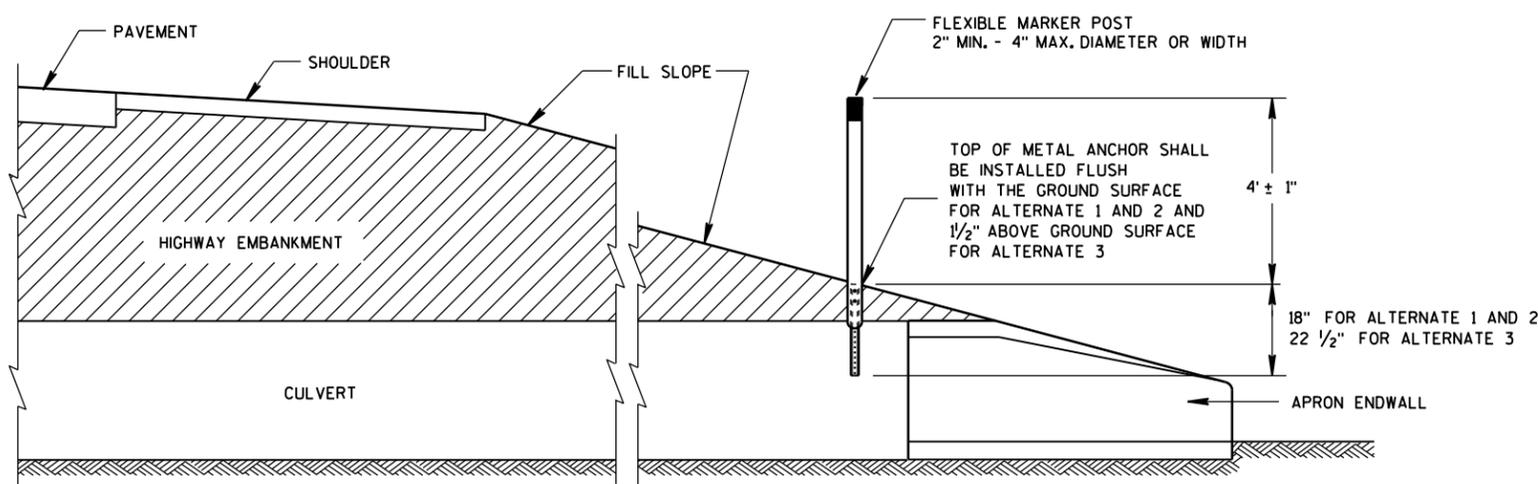
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

6

6

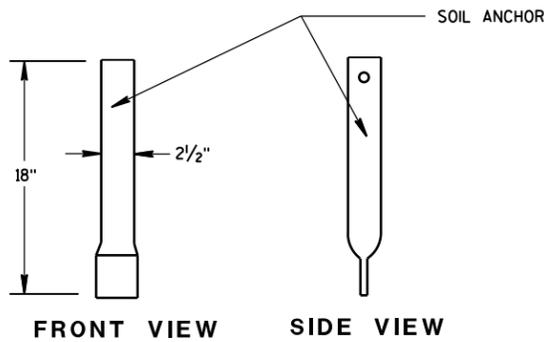
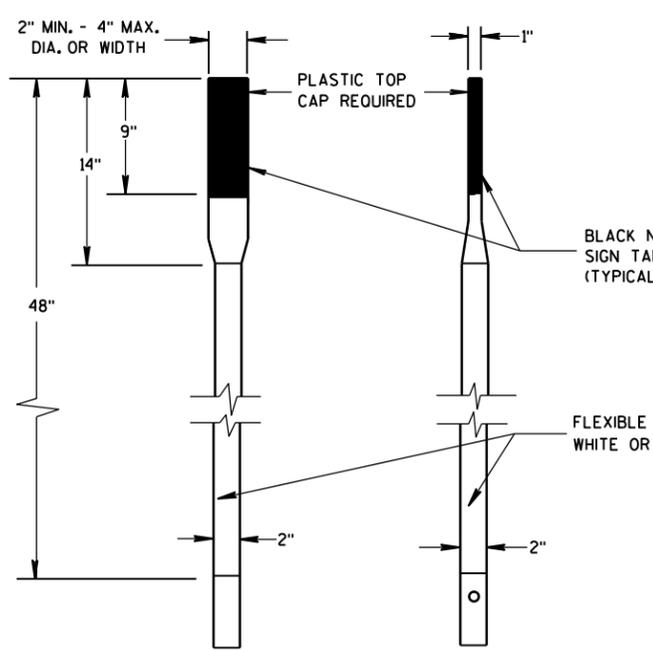


CROSS SECTION
FLEXIBLE MARKER POST

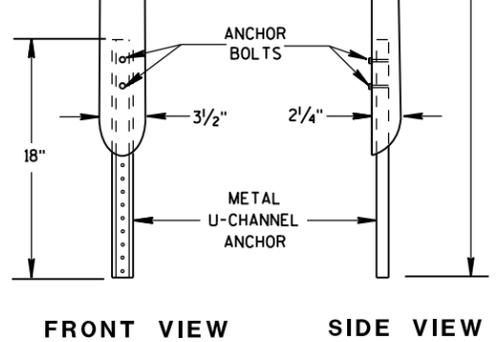
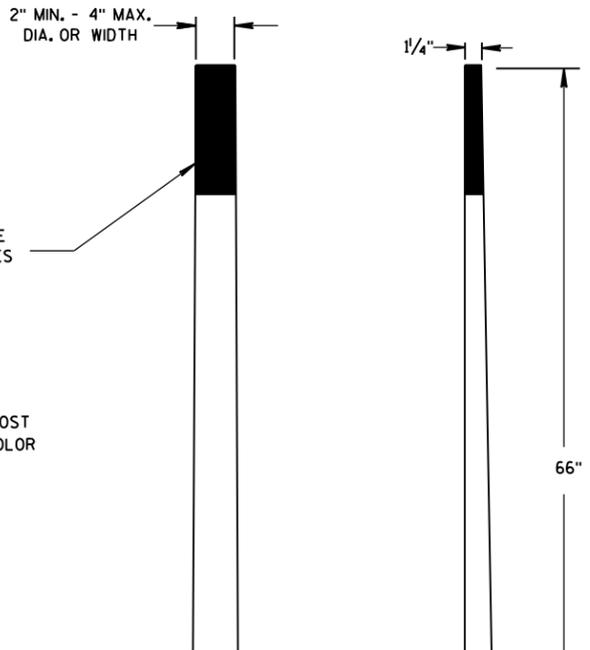
FLEXIBLE MARKER POST
FOR CULVERT END
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 144

S.D.D. 15 A 3-2a

S.D.D. 15 A 3-2a

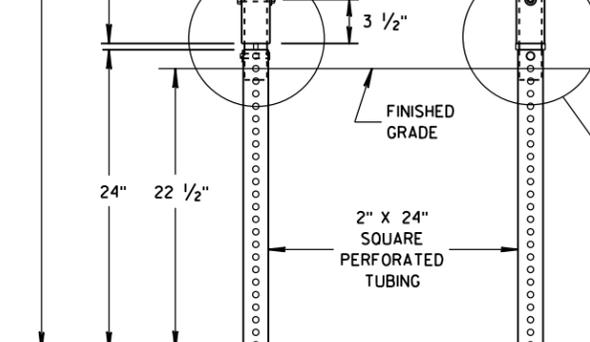
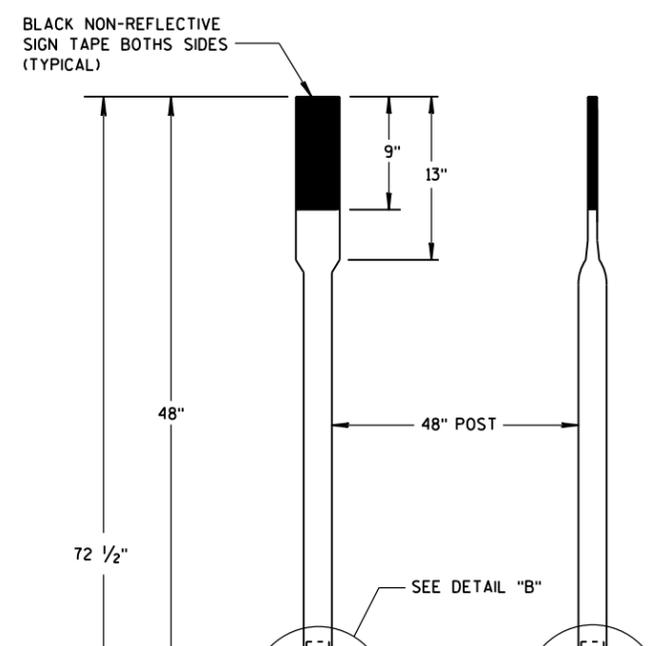


FRONT VIEW SIDE VIEW
ALTERNATE 1

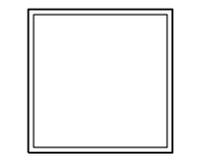


FRONT VIEW SIDE VIEW
ALTERNATE 2

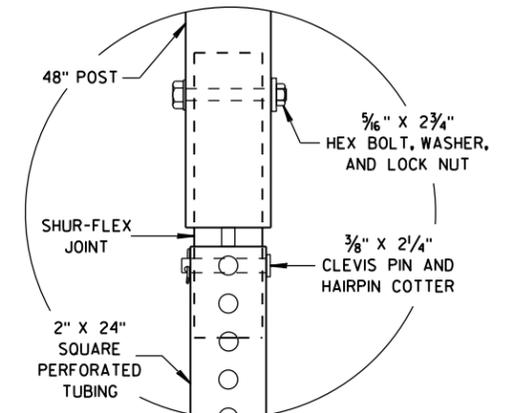
FLEXIBLE MARKER POSTS



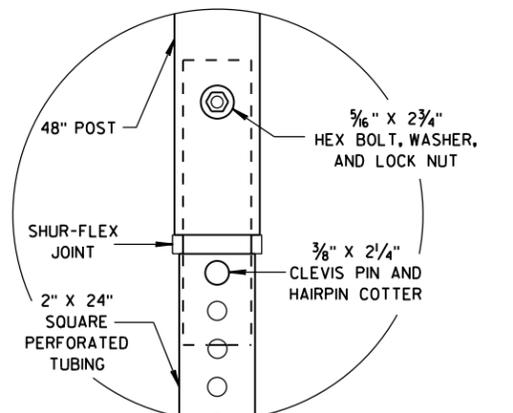
FRONT VIEW SIDE VIEW
ALTERNATE 3



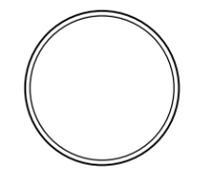
SECTION C-C



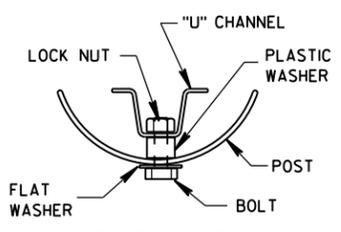
DETAIL B



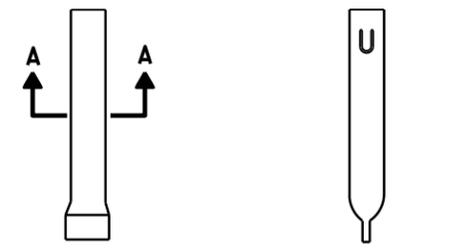
DETAIL C



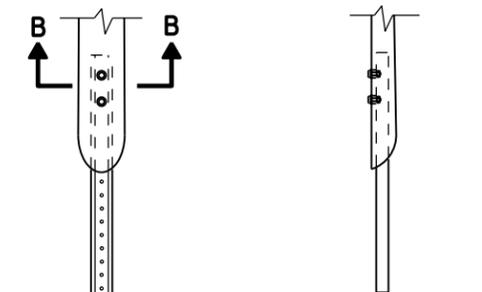
SECTION A-A



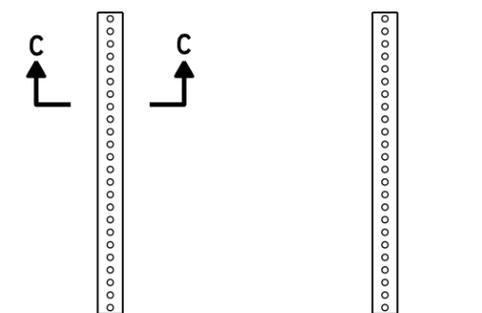
SECTION B-B



FRONT VIEW SIDE VIEW
ALTERNATE 1



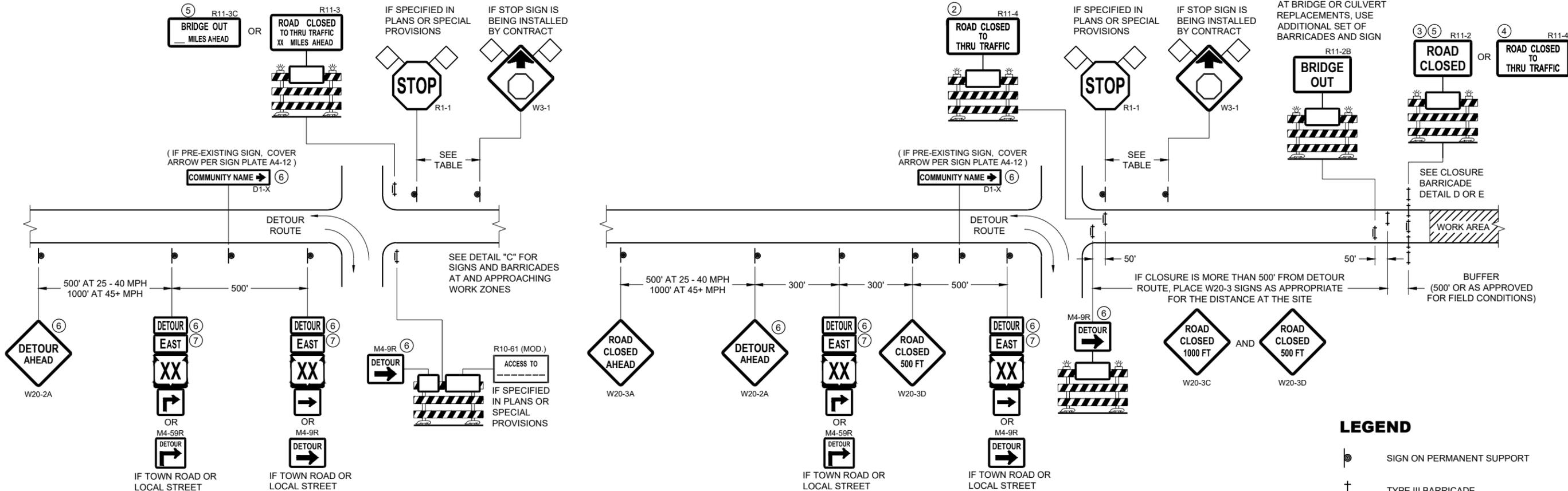
FRONT VIEW SIDE VIEW
ALTERNATE 2



FRONT VIEW SIDE VIEW
ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST FOR CULVERT END		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 145	IGN
FHWA		



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

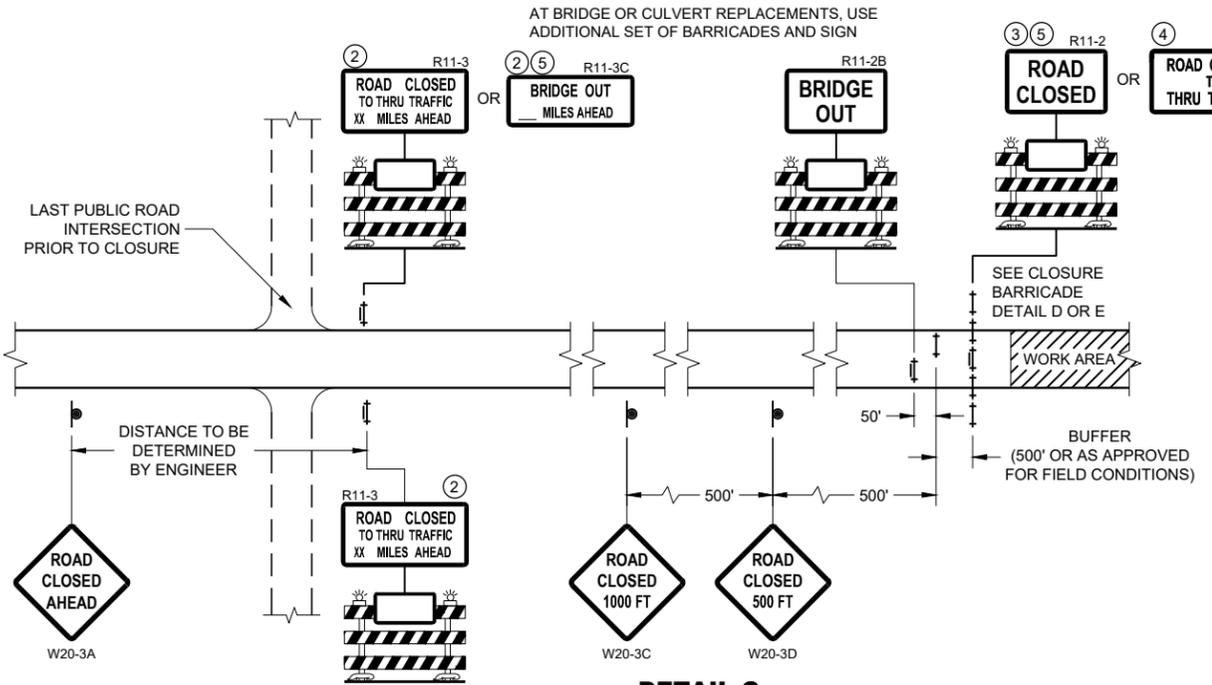
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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)

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



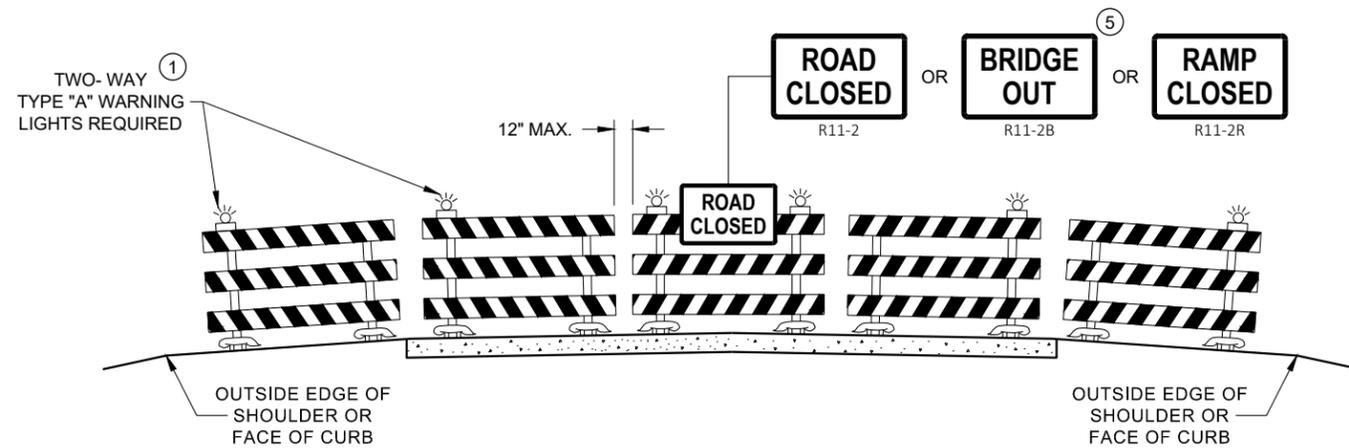
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

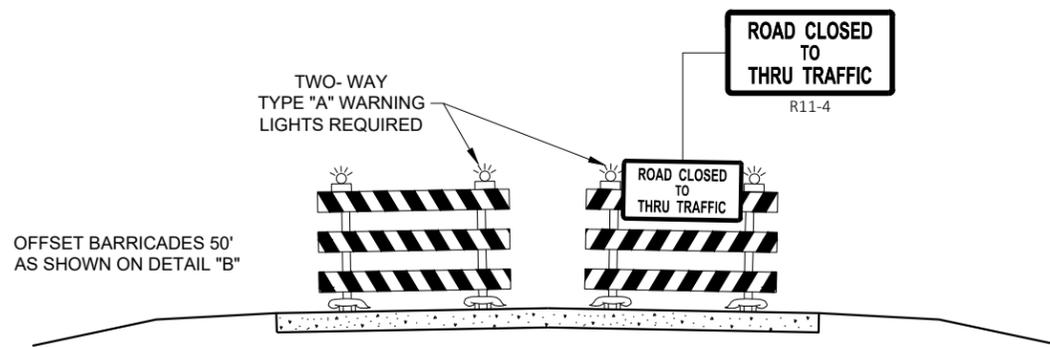
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 146
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:

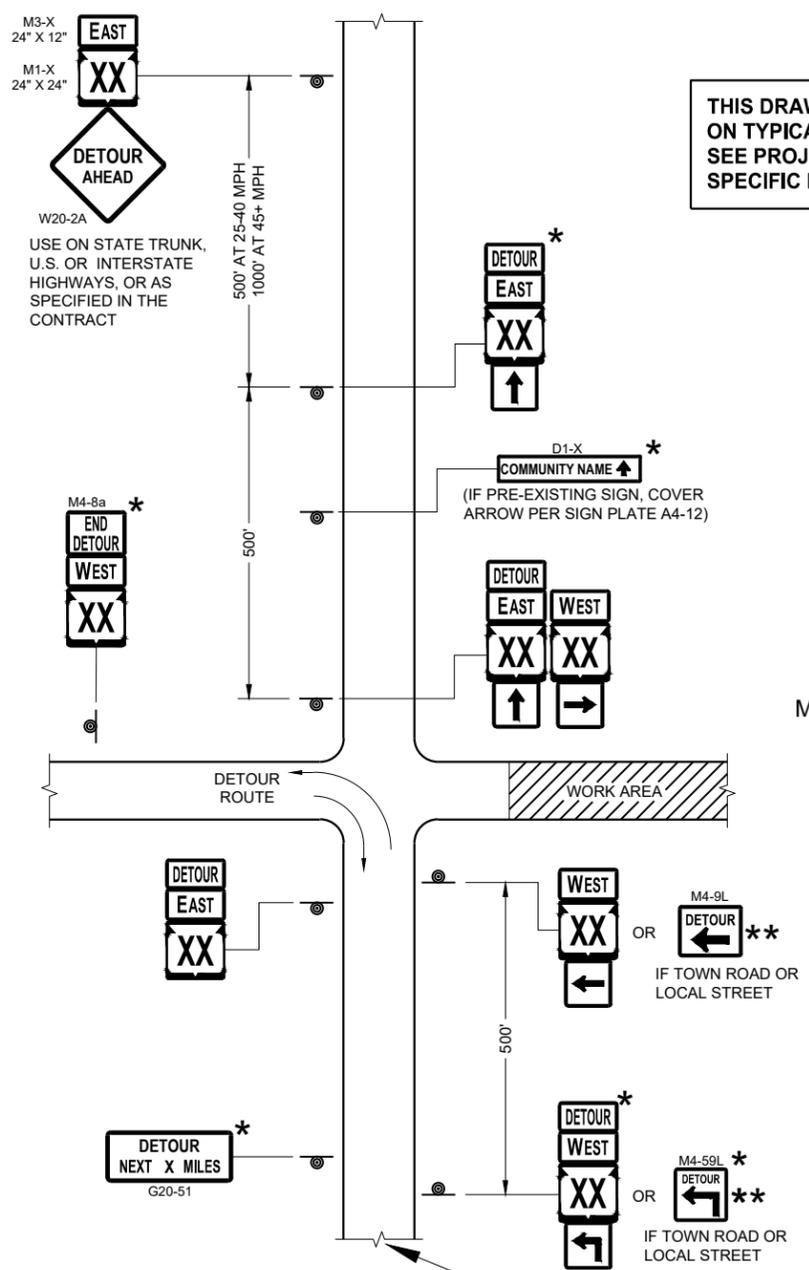
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" 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 147
FHWA



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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- 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.

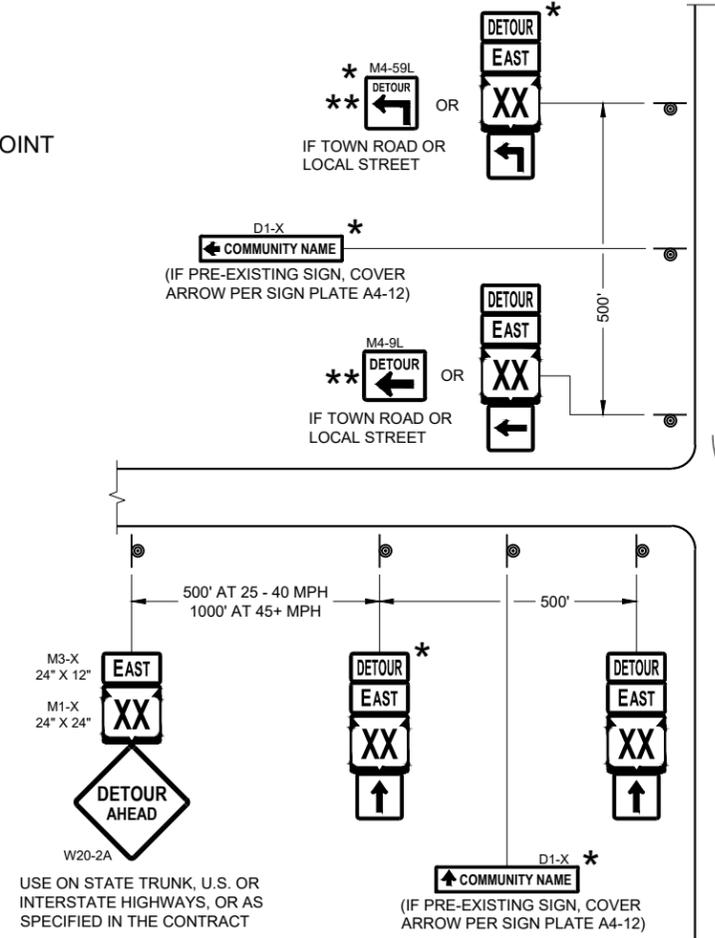
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

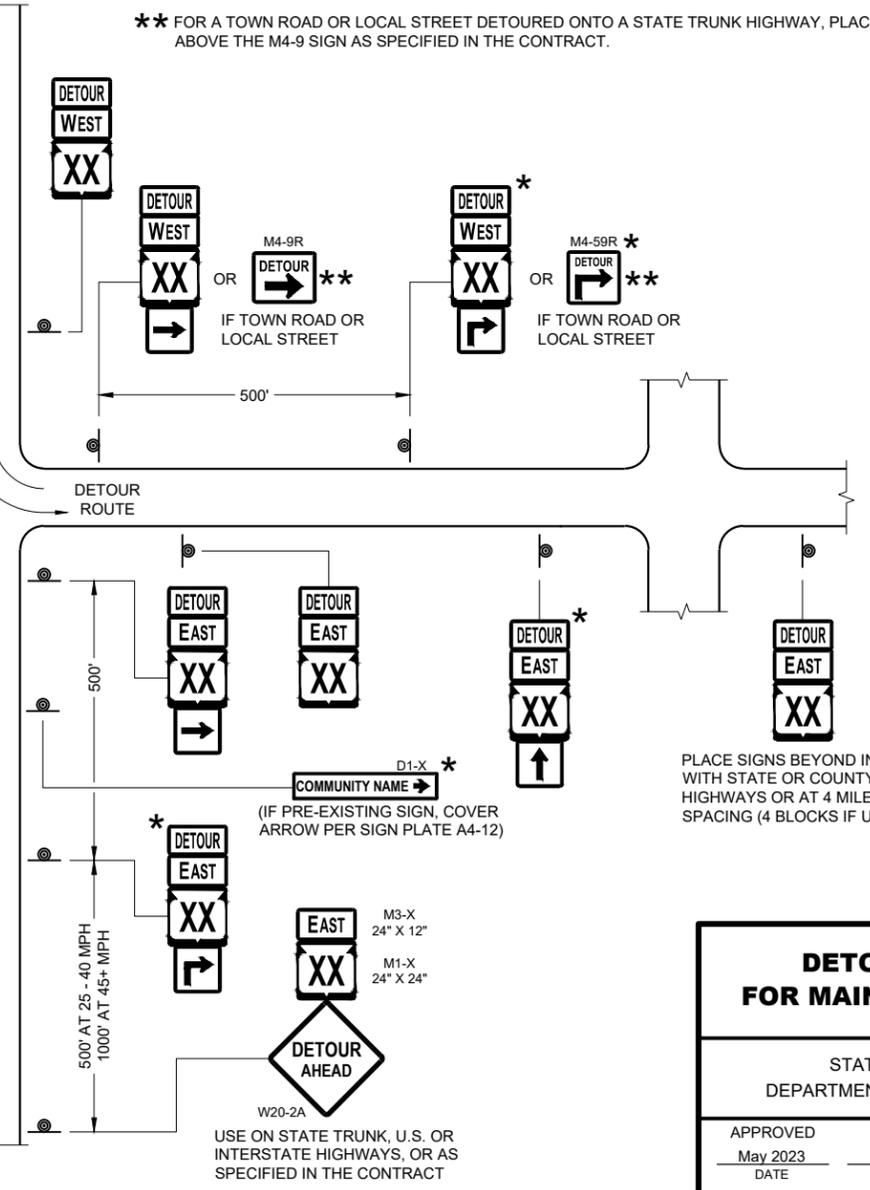
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-9R 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.

MATCH POINT



**DETAIL F
DETOUR SIGNING**



**DETOUR SIGNING
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 148

FHWA

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

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

GENERAL NOTES

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

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

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

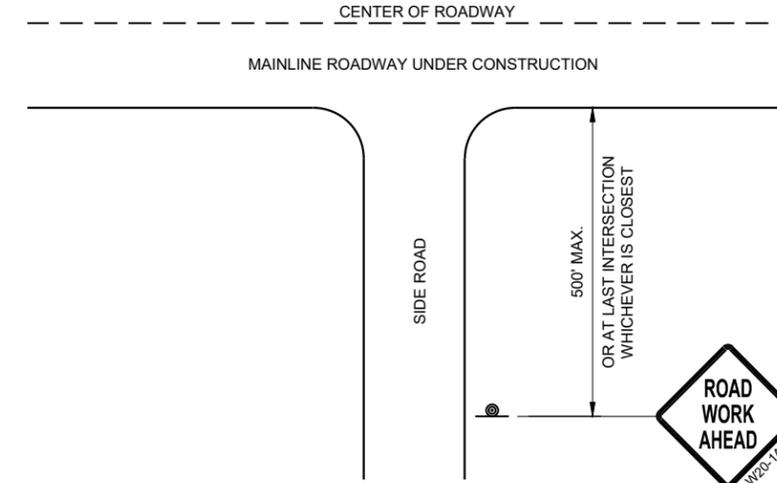
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

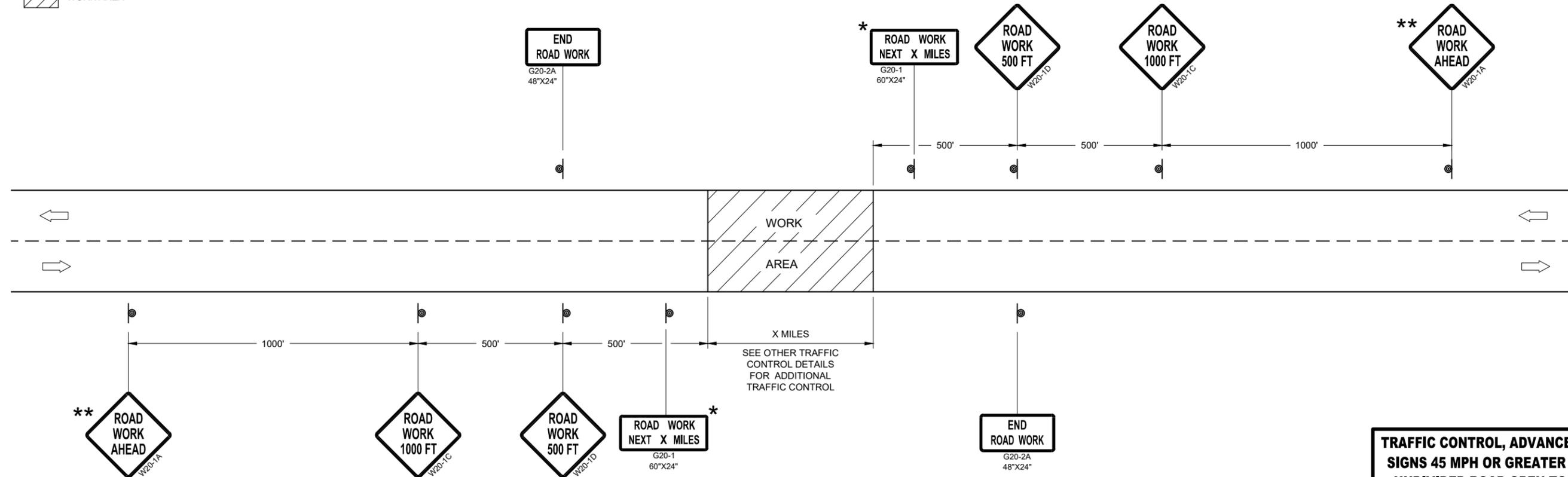
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE July 2018 /S/ Andrew Heidtke
WORK ZONE ENGINEER 149

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.

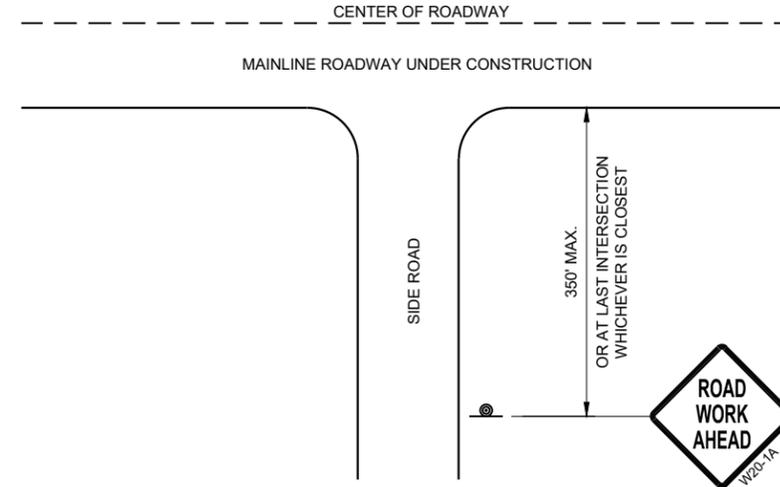
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

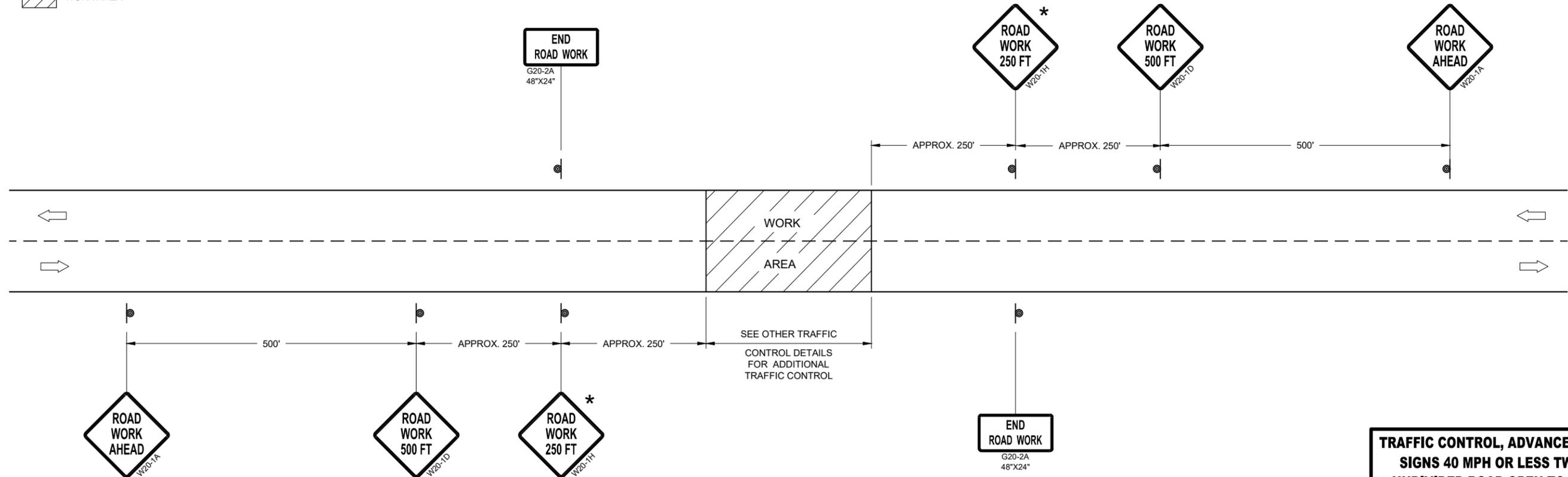
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

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
DATE July 2018 /S/ Andrew Heidtke
WORK ZONE ENGINEER 150

FHWA

GENERAL NOTES

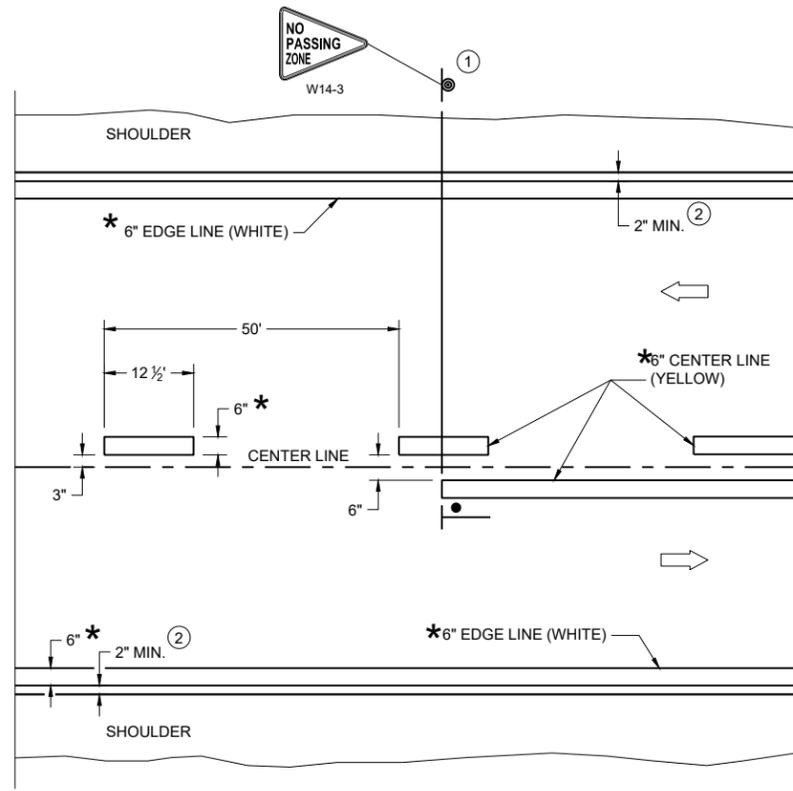
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- 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.

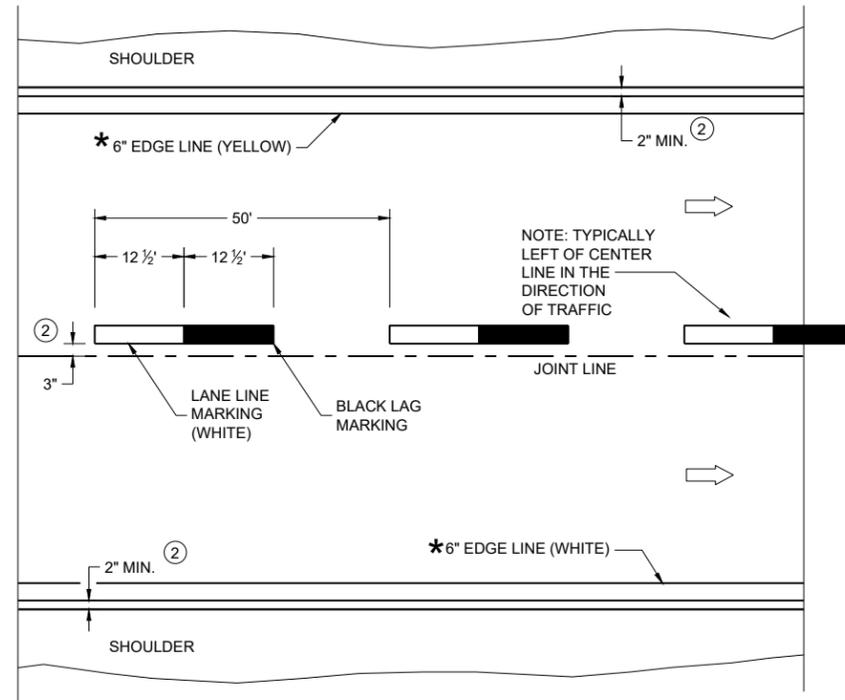
LEGEND

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

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

6

6

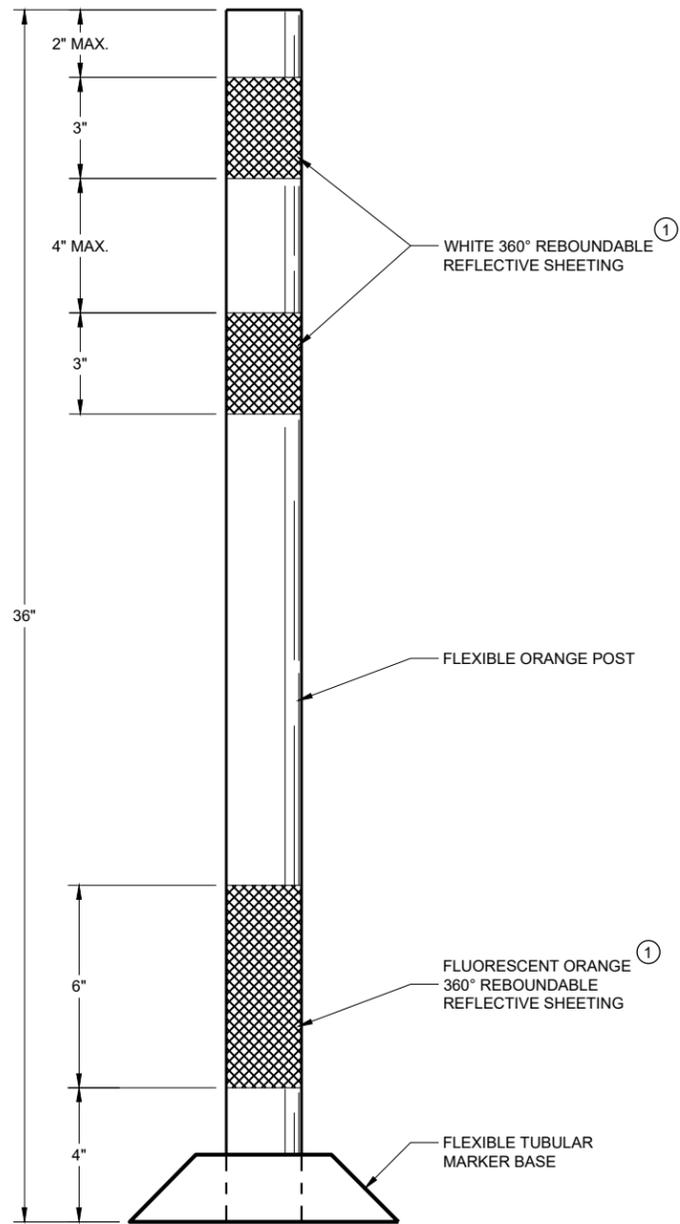
SDD 15C08-24a

SDD 15C08-24a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



FLEXIBLE TUBULAR MARKER POST WORK ZONE

GENERAL NOTES

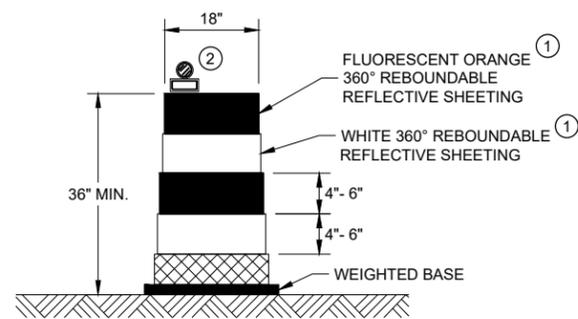
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

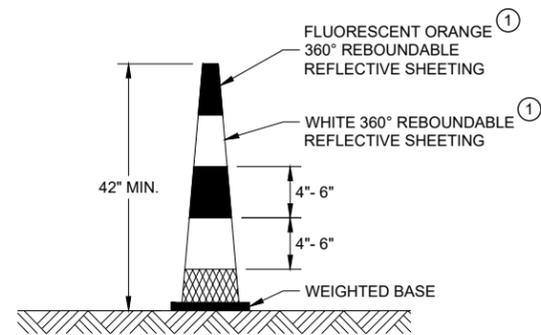
① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 152
FHWA	



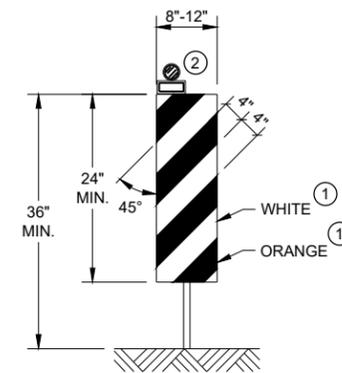
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

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

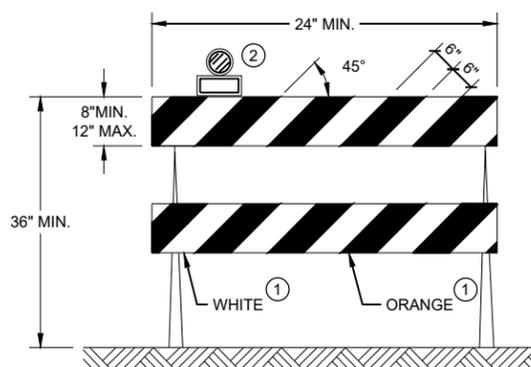


VERTICAL PANEL

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

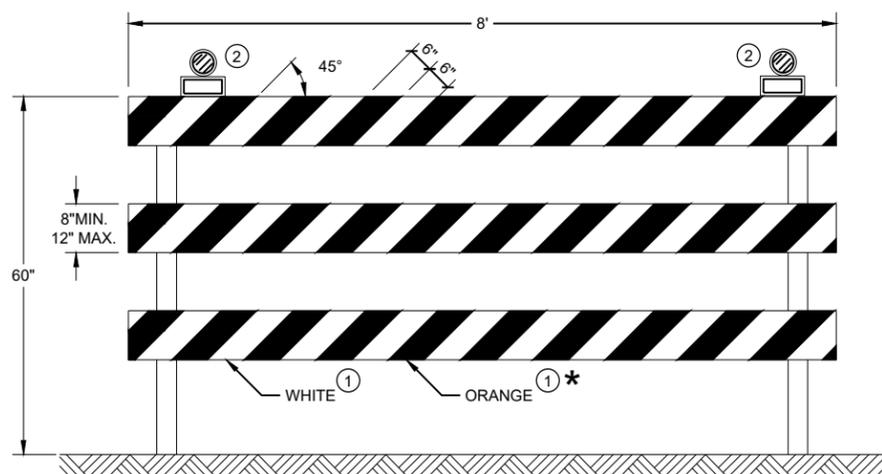
GENERAL NOTES

- 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.



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.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

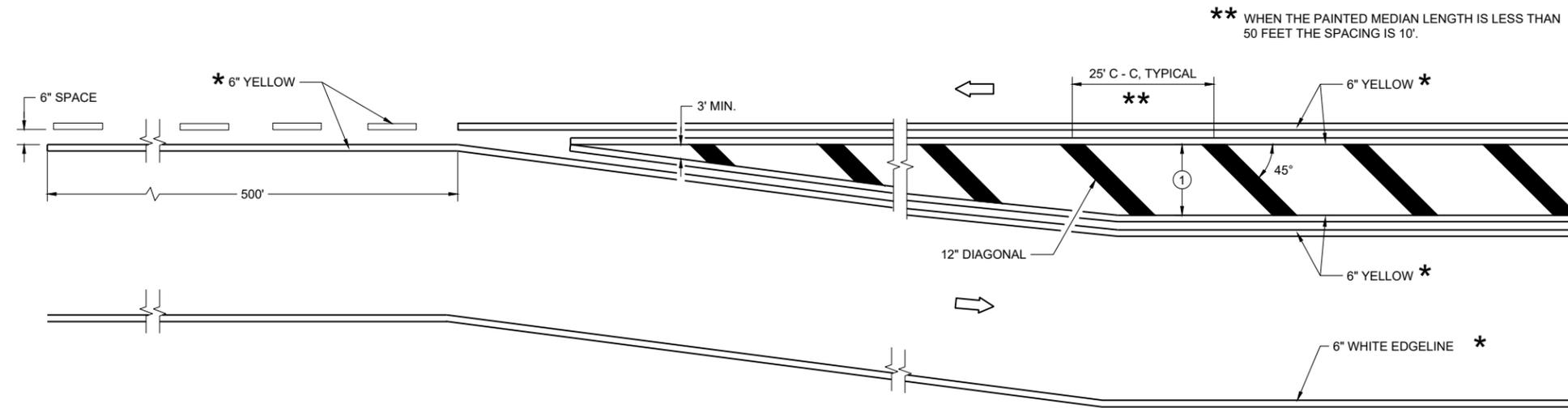
APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 153
FHWA

GENERAL NOTES

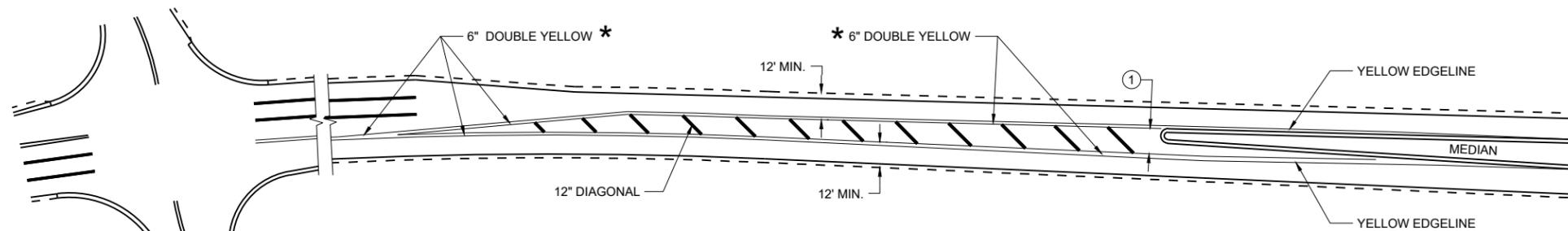
- ① DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT THE WIDEST POINT. OMIT DIAGONALS IF WIDTH IS LESS THAN 4 FEET.

➔ DIRECTION OF TRAVEL

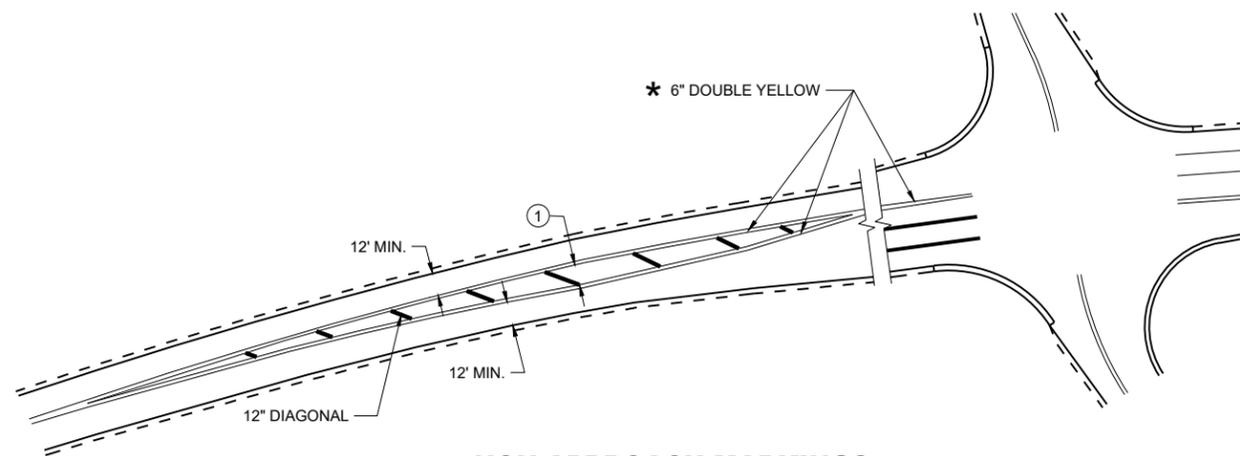
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

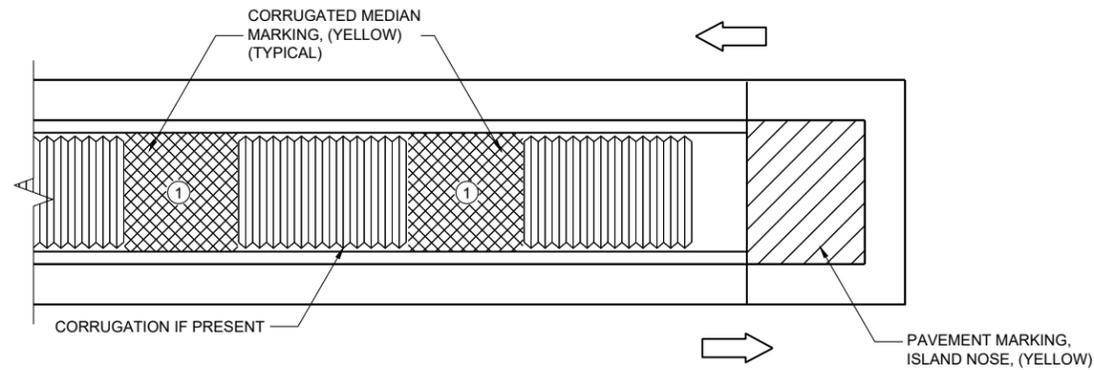
6

6

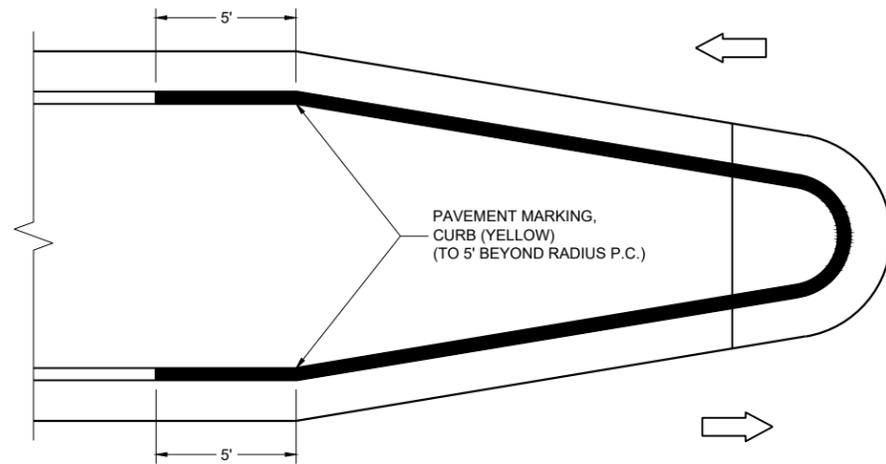
SDD 15C18-09a

SDD 15C18-09a

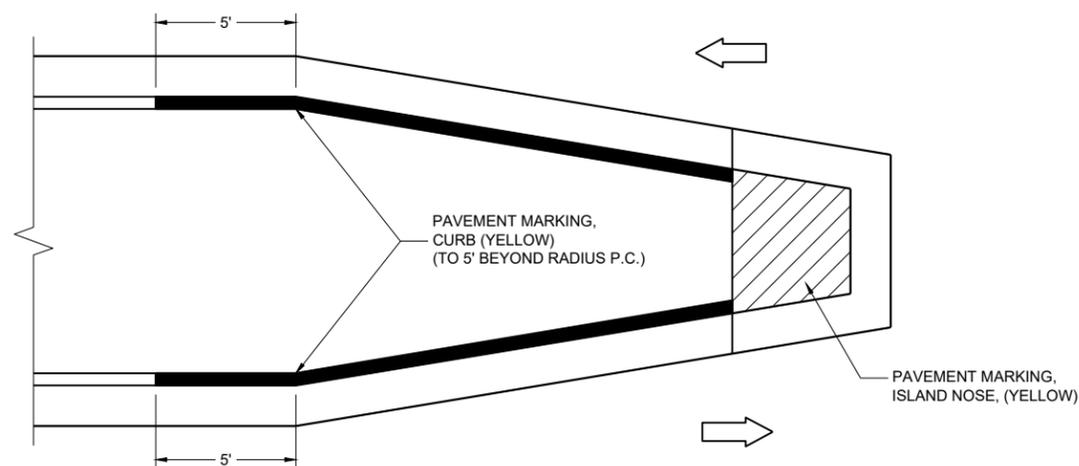
MEDIAN ISLAND PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA 154	



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

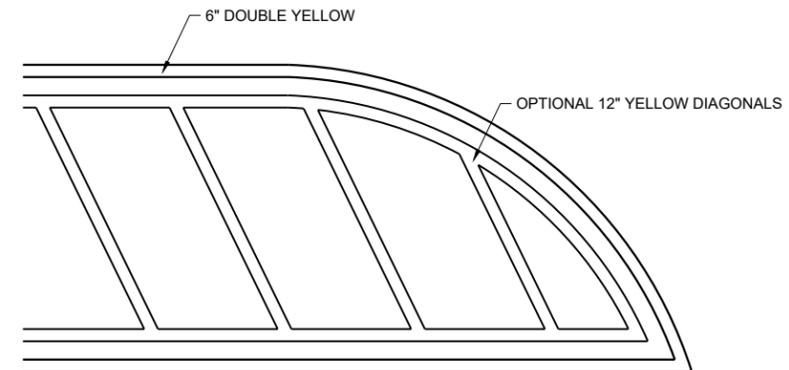
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

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

6

SDD 15C18-09b

6

SDD 15C18-09b

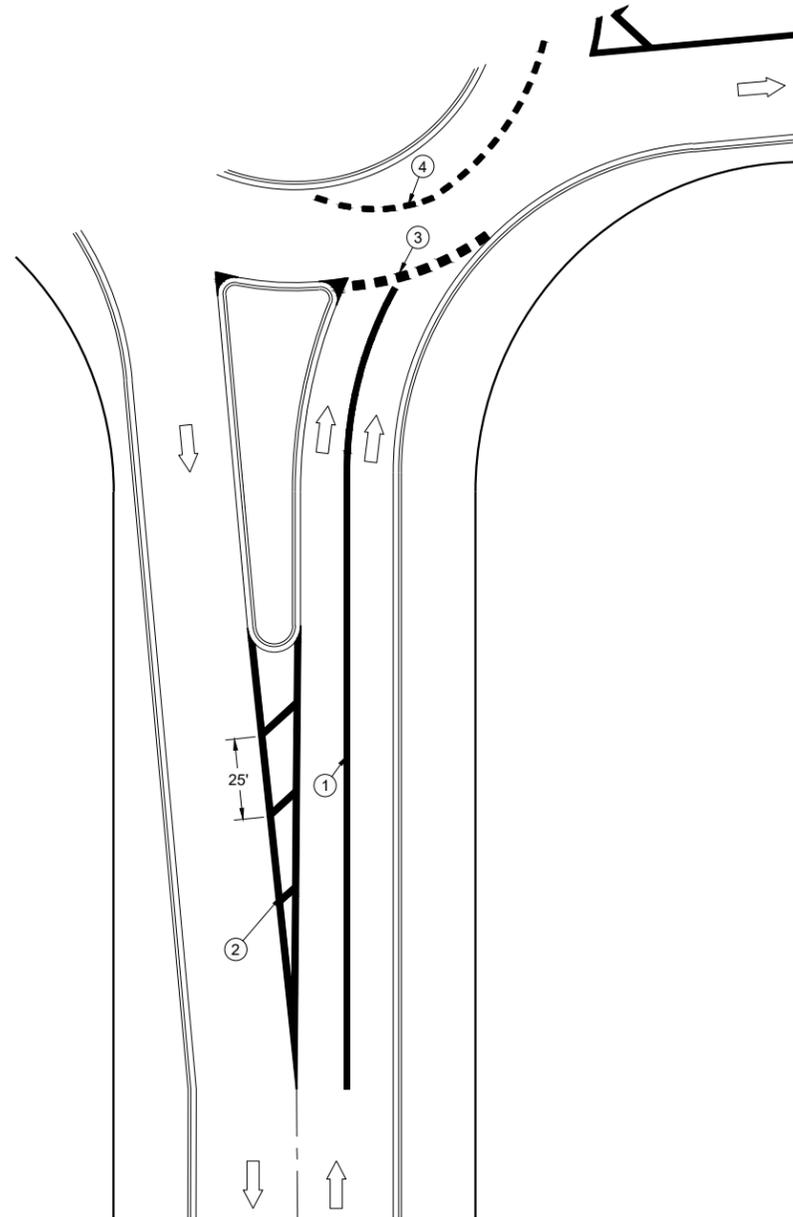
**PAVEMENT MARKINGS,
MEDIAN ISLAND NOSE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

- ① 10" WHITE
- ② 12" DIAGONALS AT 25' SPACING.
(CAN BE OMITTED IF LESS THAN 6')
- ③ 18" WHITE, 2' LINE, 2' GAP
- ④ 6" LINE (6 FT LINE, 3'GAP)
- ➡ DIRECTION OF TRAFFIC
- ≡≡≡ CURB AND GUTTER
- RIGHT OF WAY



6

6

SDD 15C22-01

SDD 15C22-01

**DOTTED EXTENSION FOR
ROUNDBOUT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2024 /S/ Matthew Rauch
DATE ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

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.

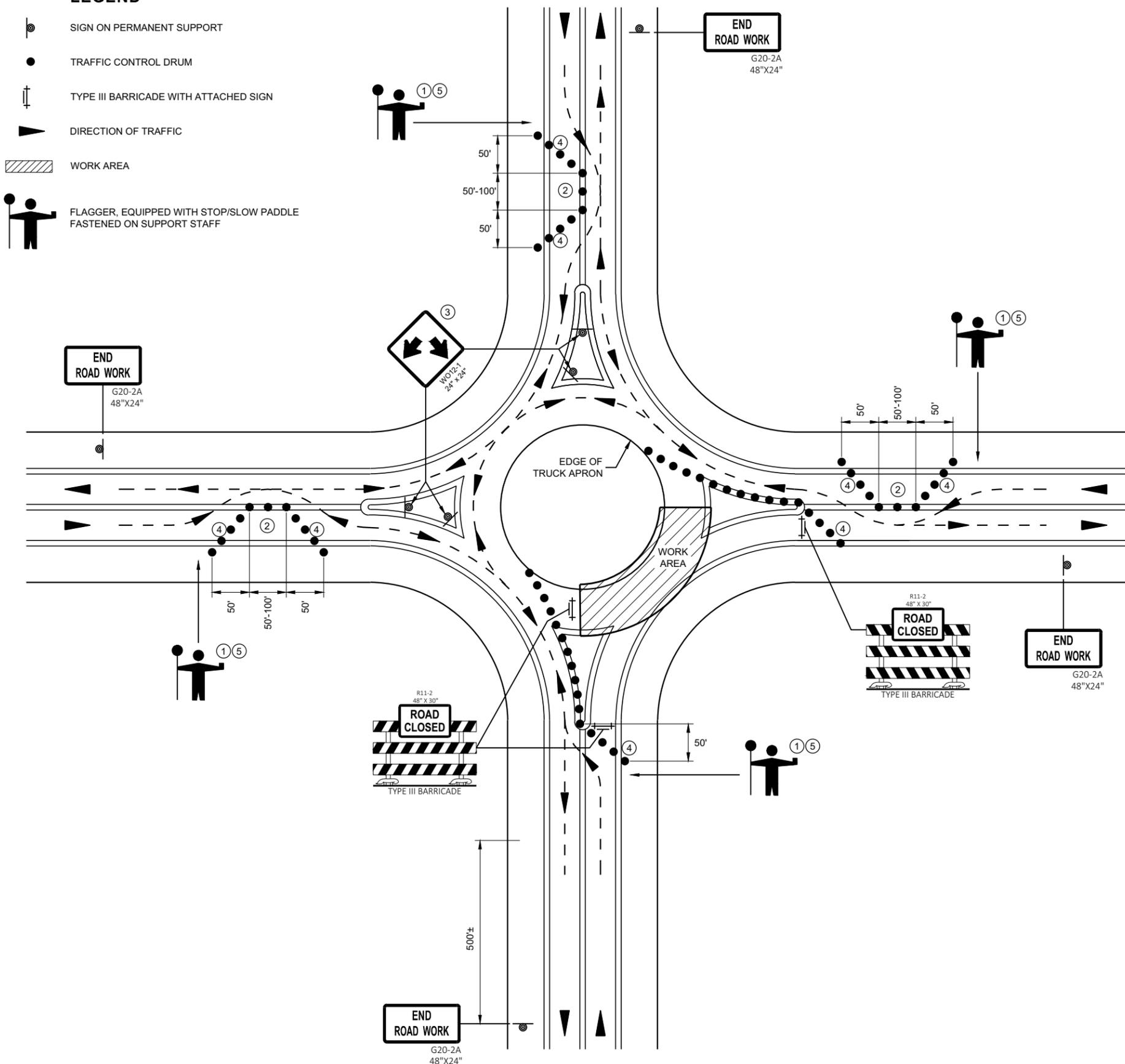
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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

6

6

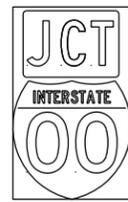
TRAFFIC CONTROL, FLAGGING OPERATION, ROUNDABOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

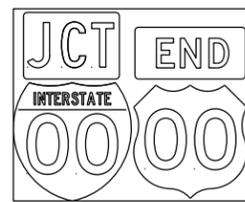
APPROVED
DATE May 2020 /S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER 157

FHWA

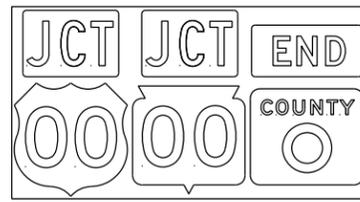
TYPICAL ASSEMBLIES



J1-1



J1-2



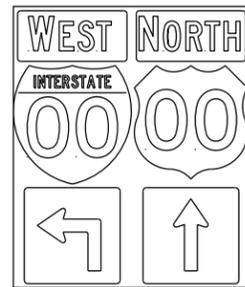
J1-3



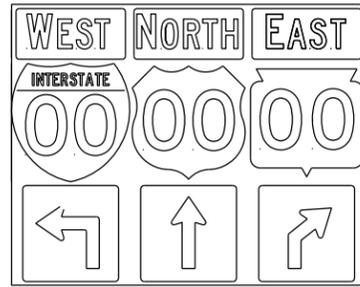
JR1-1



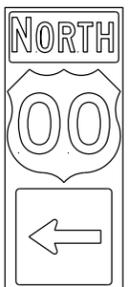
J2-1



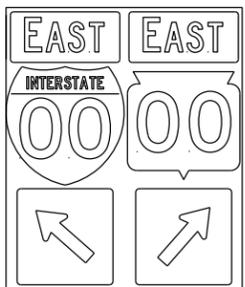
J2-2



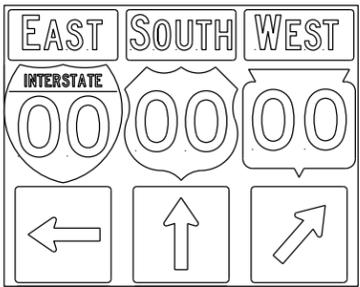
J2-3



J3-1



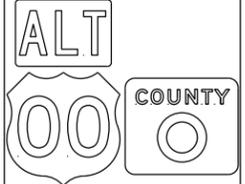
J3-2



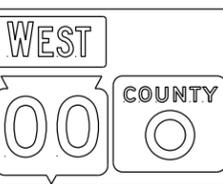
J3-3



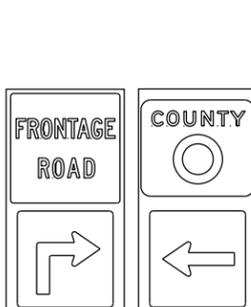
J4-1



J4-2



J4-2



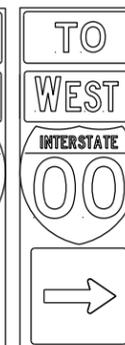
J12-1



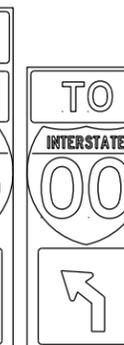
J13-1



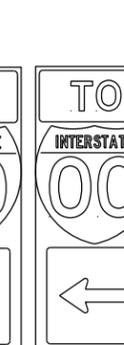
J32-1



J33-1



J22-1



J23-1



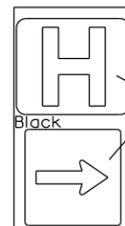
JR13-1



JR23-1



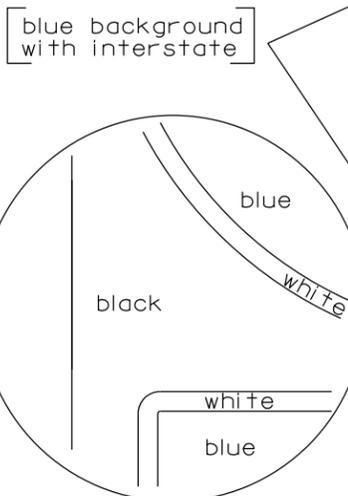
JR99-1



JH-1

Blue Background

Black



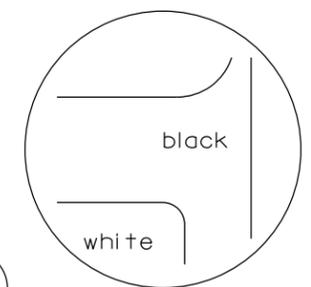
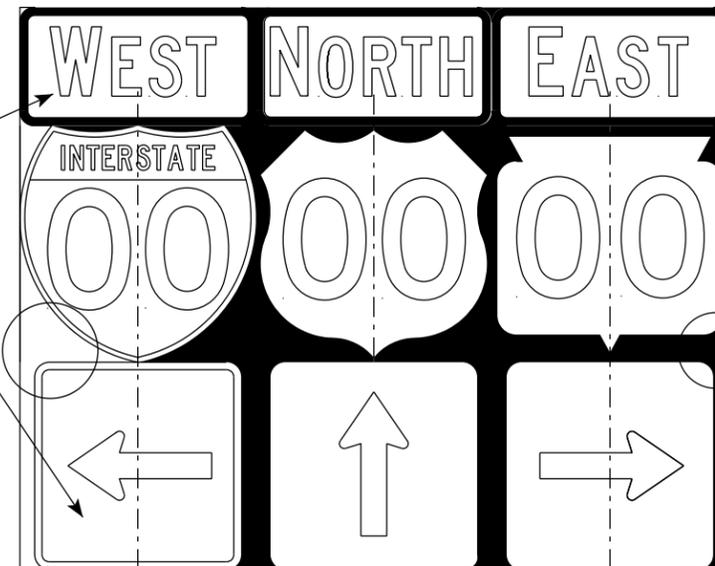
(Typical Vertical J-Assembly See Note 10 and 11)



JV

NOTES

- Signs are Type II - Type H Reflective
- Color:
 - Background - Black Non-reflective
 - Message - see Note 4
- Message Series - See Note 4
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- Certain marker heads require the component pieces to be the same color. As an example, all the components used with an MI-1 Interstate marker shall be blue.
- Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
- Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- All Vertical J Assemblies are given a Sign Code of JV
- For JV Assemblies that have a mixture of Interstate and Non-Interstate shields, arrows and cardinals shall be white on blue.
- For JV Assemblies that have a mixture of Non-Interstate and Auto-Tour shields, arrows and cardinals shall be black on white.



black background

ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES

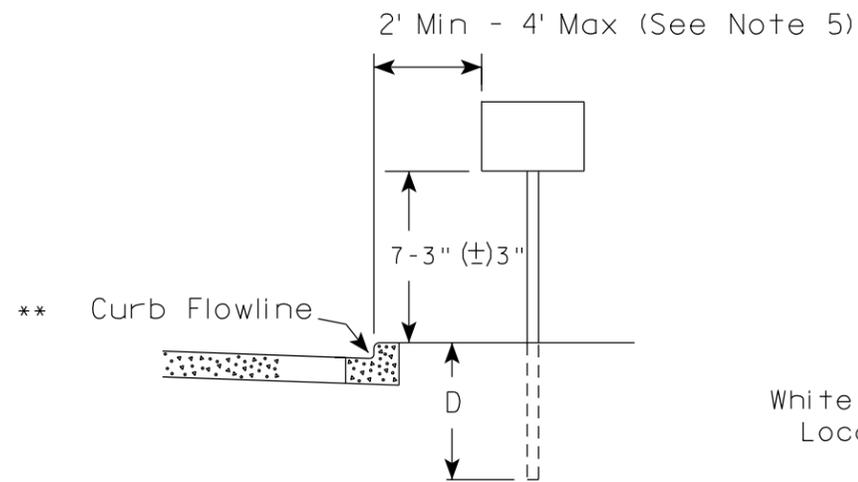
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
For State Traffic Engineer

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

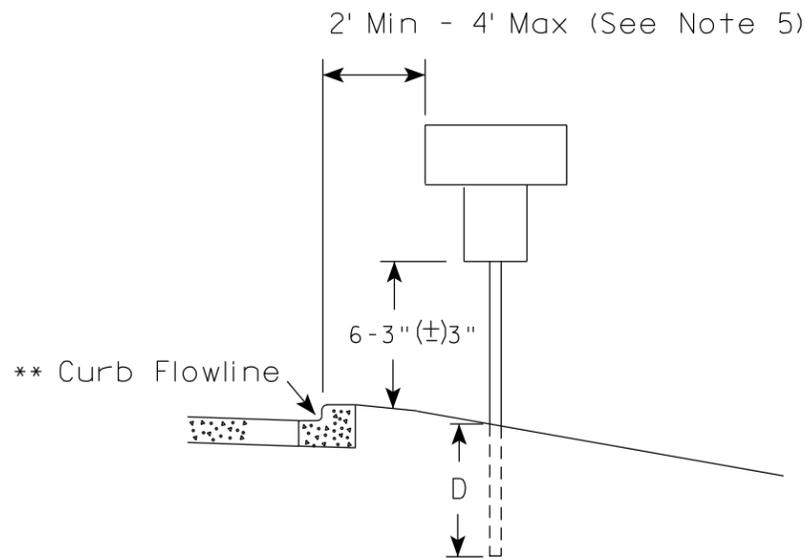
URBAN AREA

RURAL AREA (See Note 2)



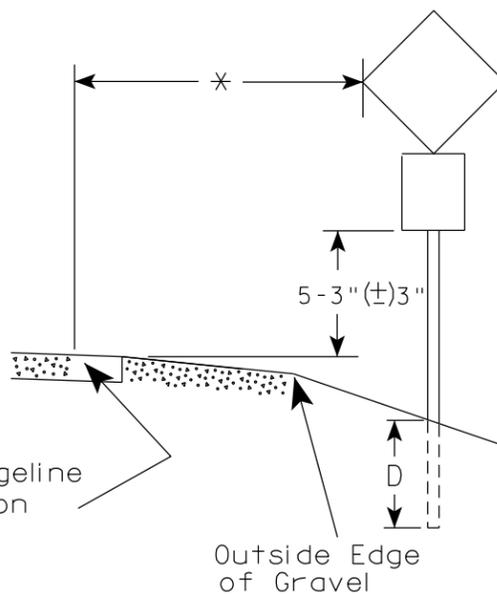
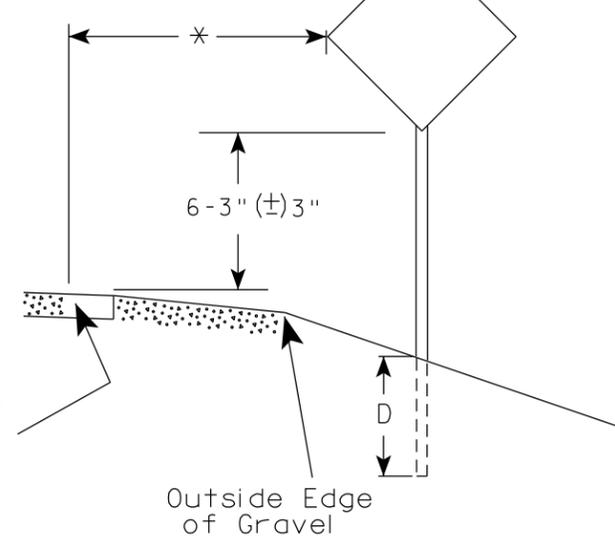
White Edgeline Location

Outside Edge of Gravel



White Edgeline Location

Outside Edge of Gravel



POST EMBEDMENT DEPTH

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

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.

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

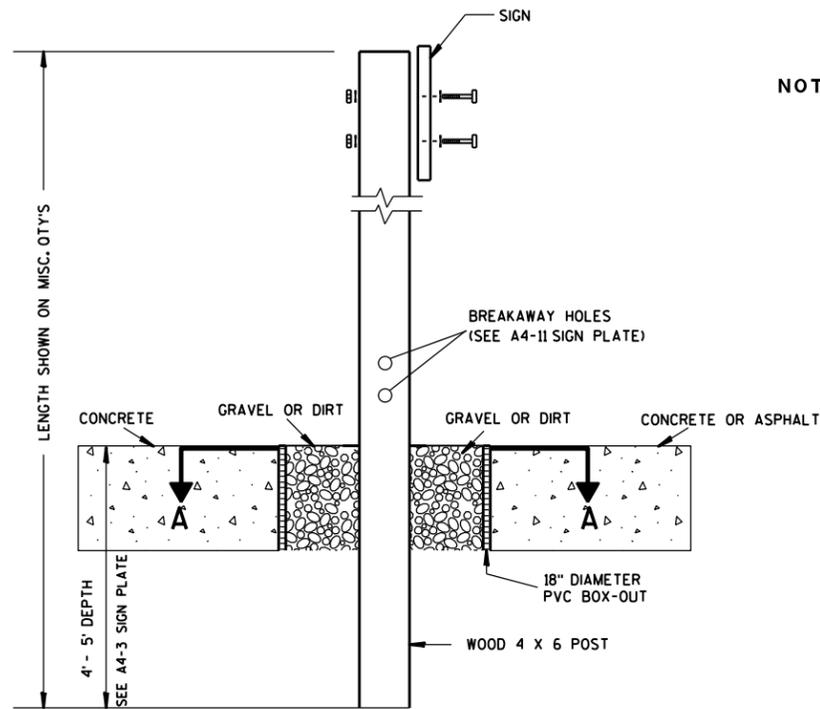
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R Raub
for State Traffic Engineer

DATE 12/6/23

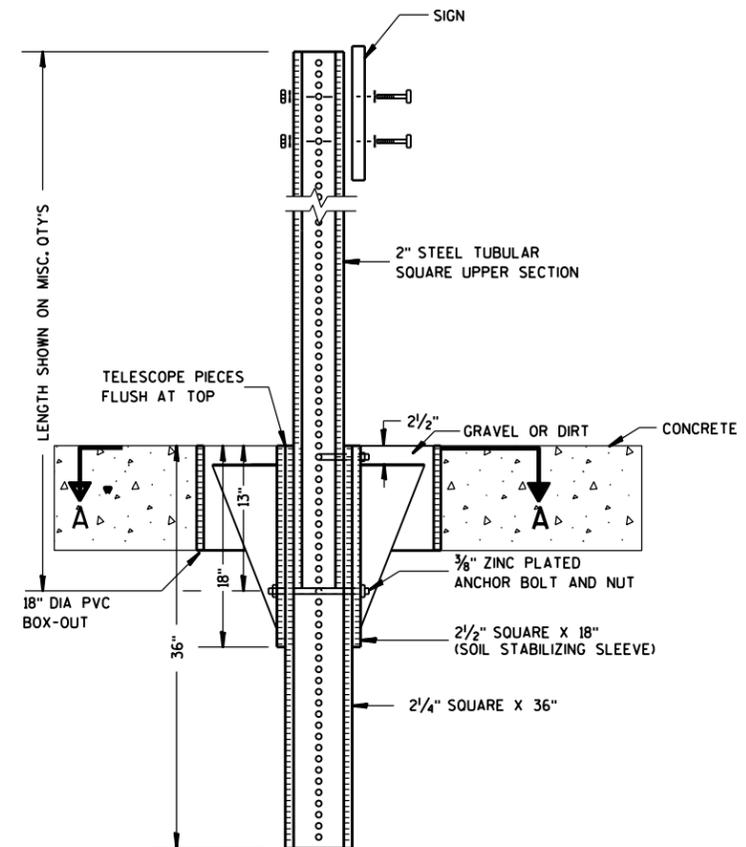
PLATE NO. A4-3.23



ELEVATION VIEW

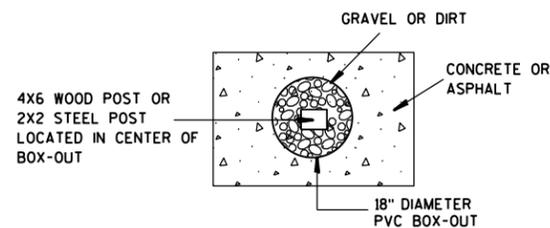
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
DATE <u>1/27/14</u>	PLAT <u>160</u> A4-3B.1

GENERAL NOTES

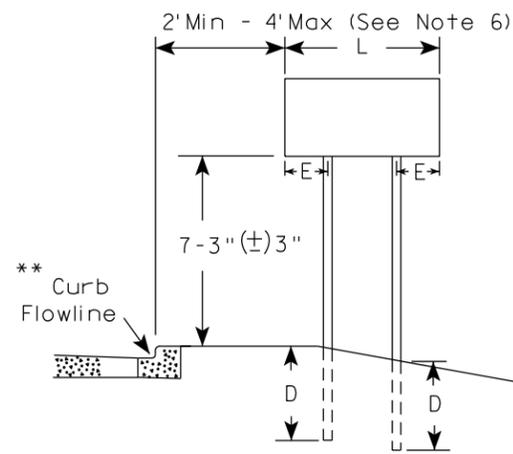
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (\pm 3") or 6'-3" (\pm 3") depending upon existence of sub-sign.
- The (\pm) tolerance for mounting height is 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" (\pm 3") or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (\pm 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" (\pm 3").

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

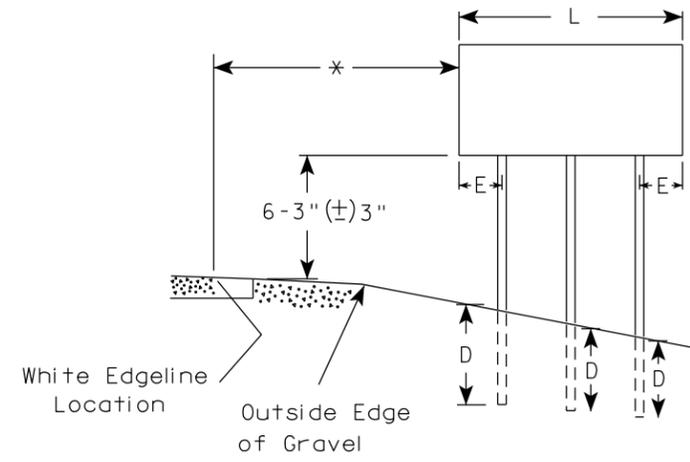
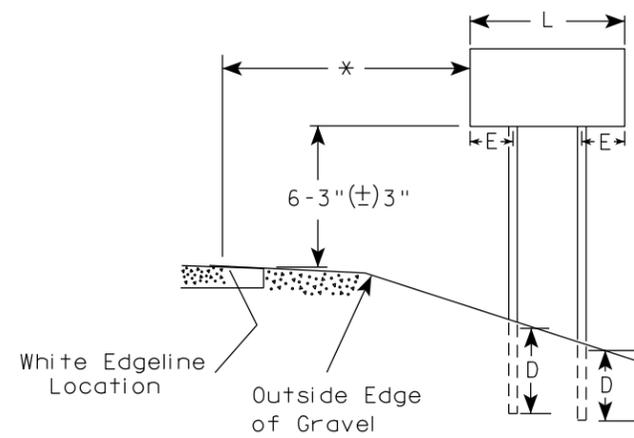
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs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

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

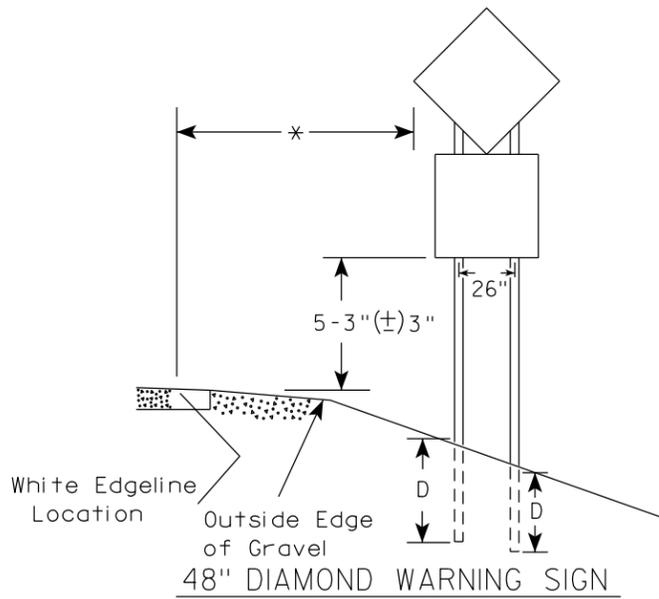
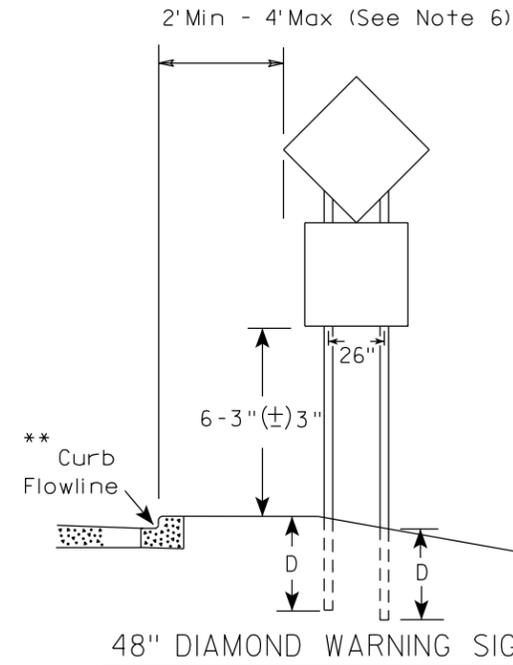
URBAN AREA



RURAL AREA (See Note 3)



URBAN AREA



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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

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

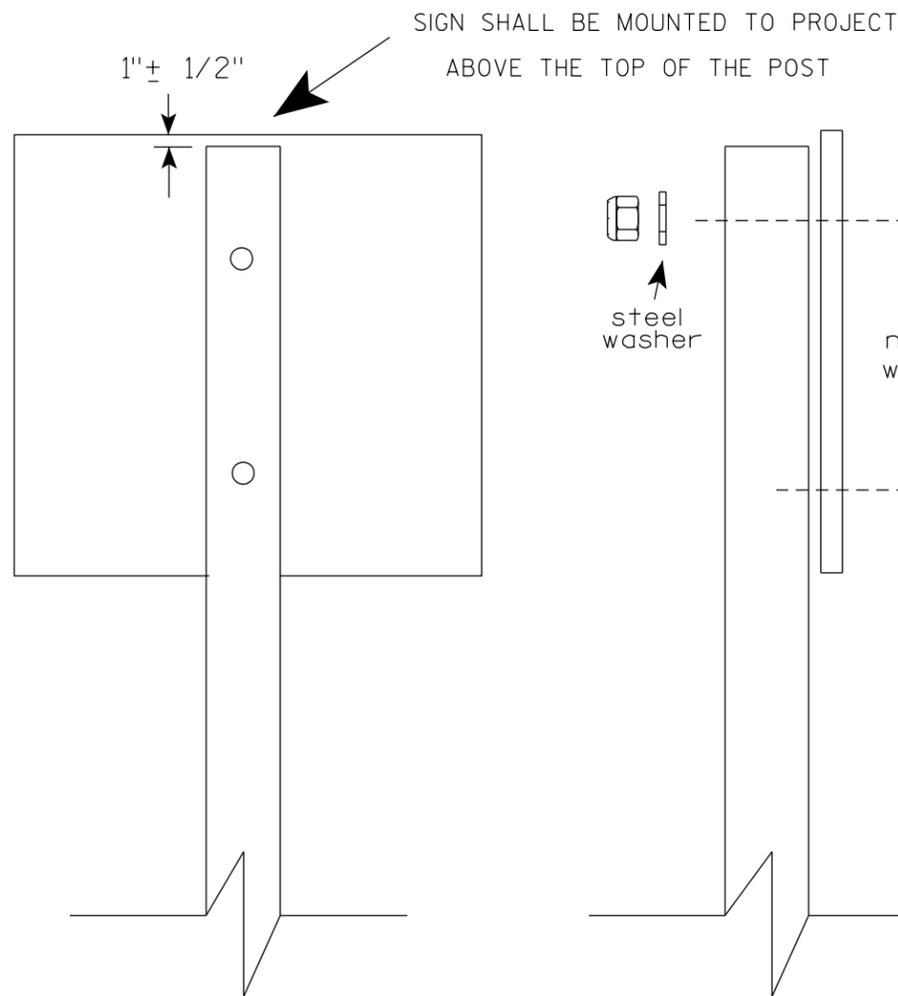
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 161

E



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

- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- 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.

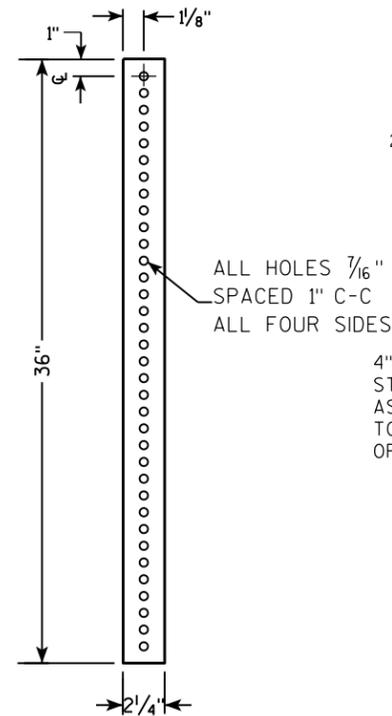
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 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 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

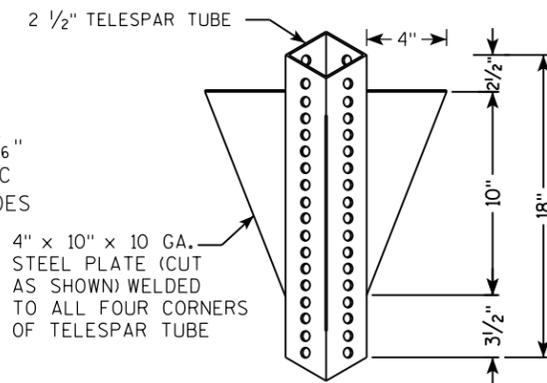
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

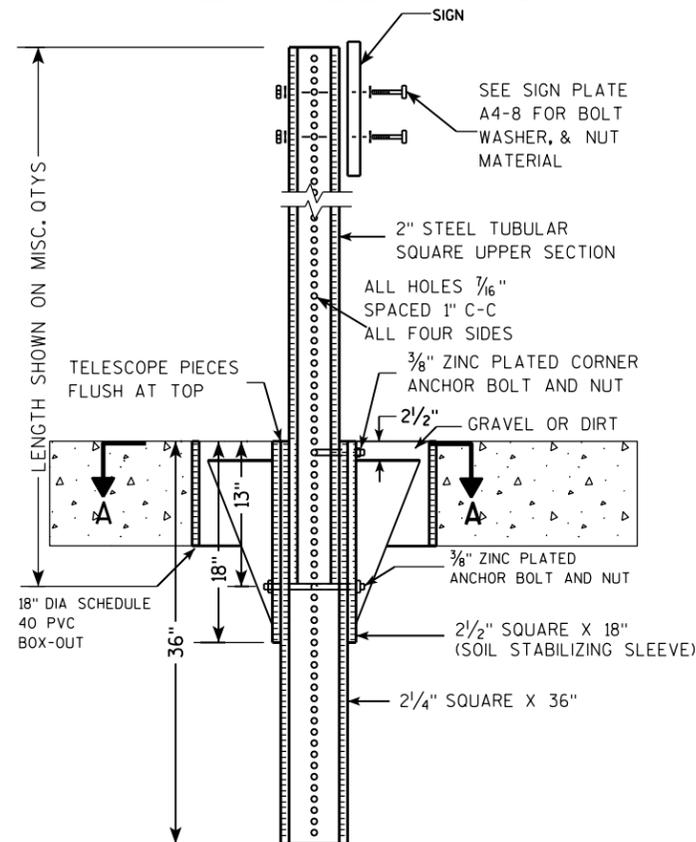
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



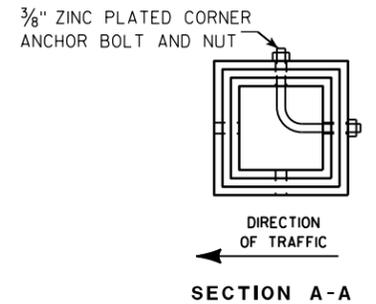
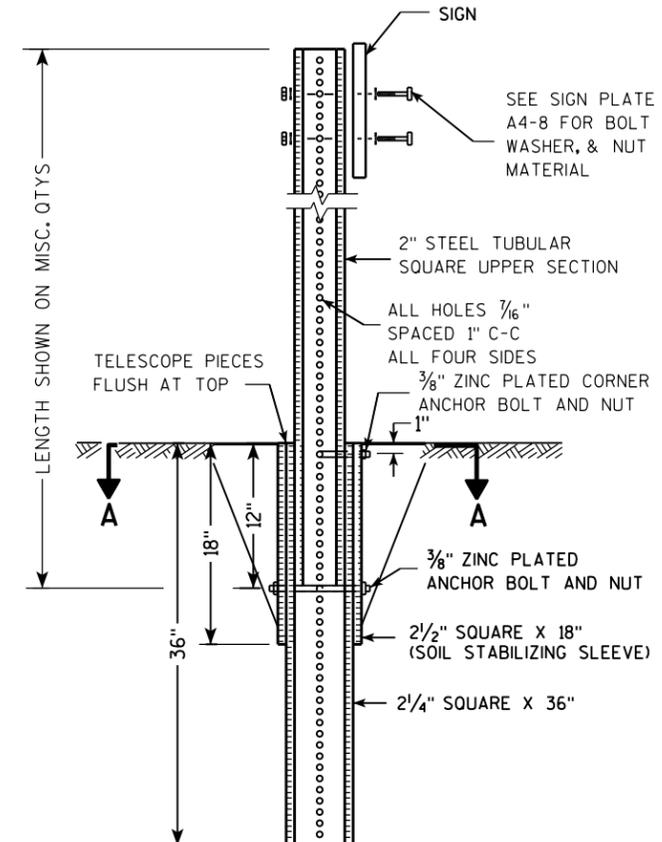
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



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

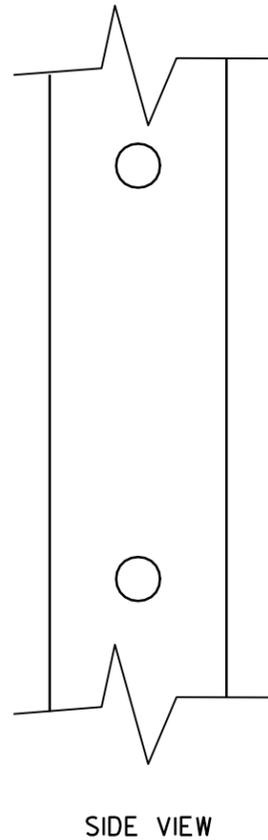
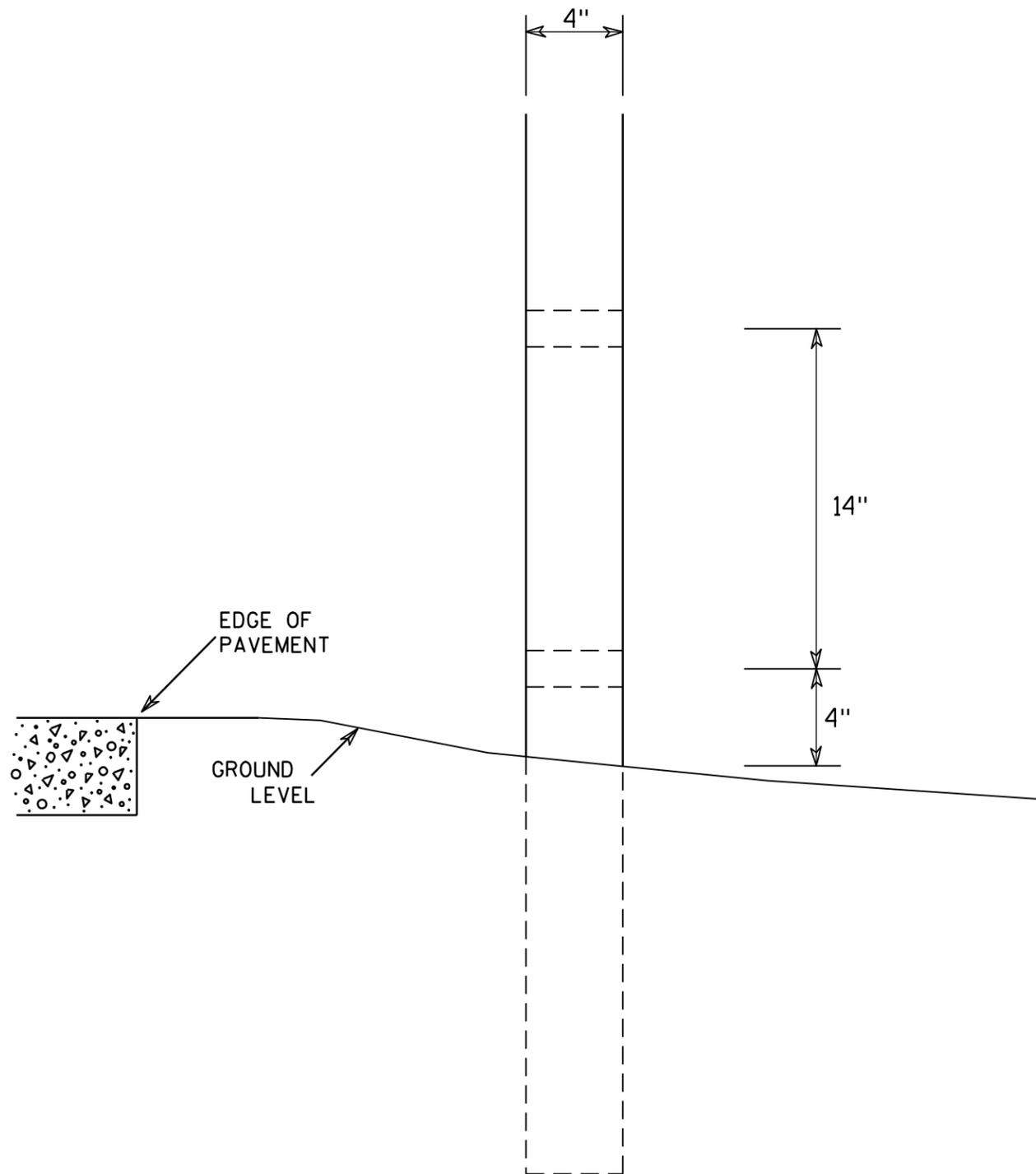
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 163 14-9.9



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

7

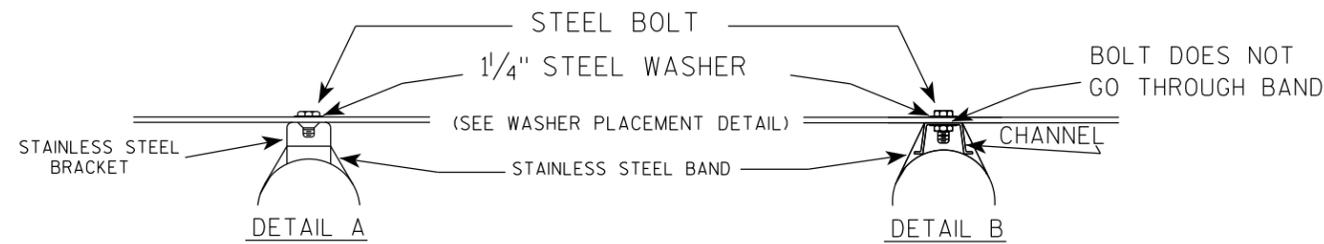
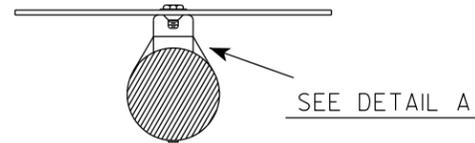
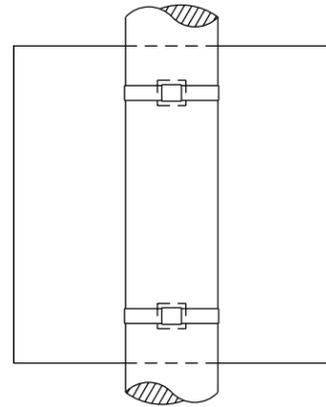
4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

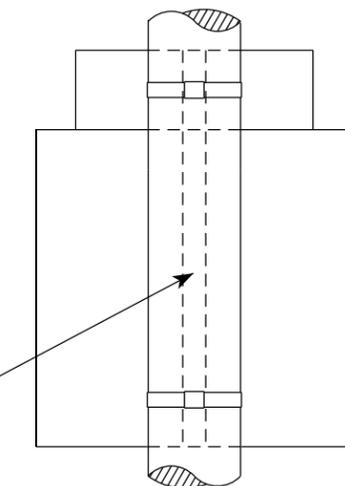
GENERAL NOTES

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 $\frac{3}{4}$ " 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

SINGLE SIGN



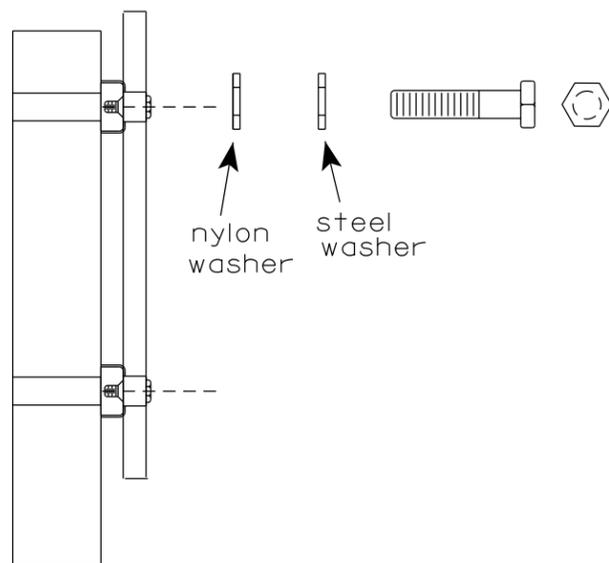
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

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

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

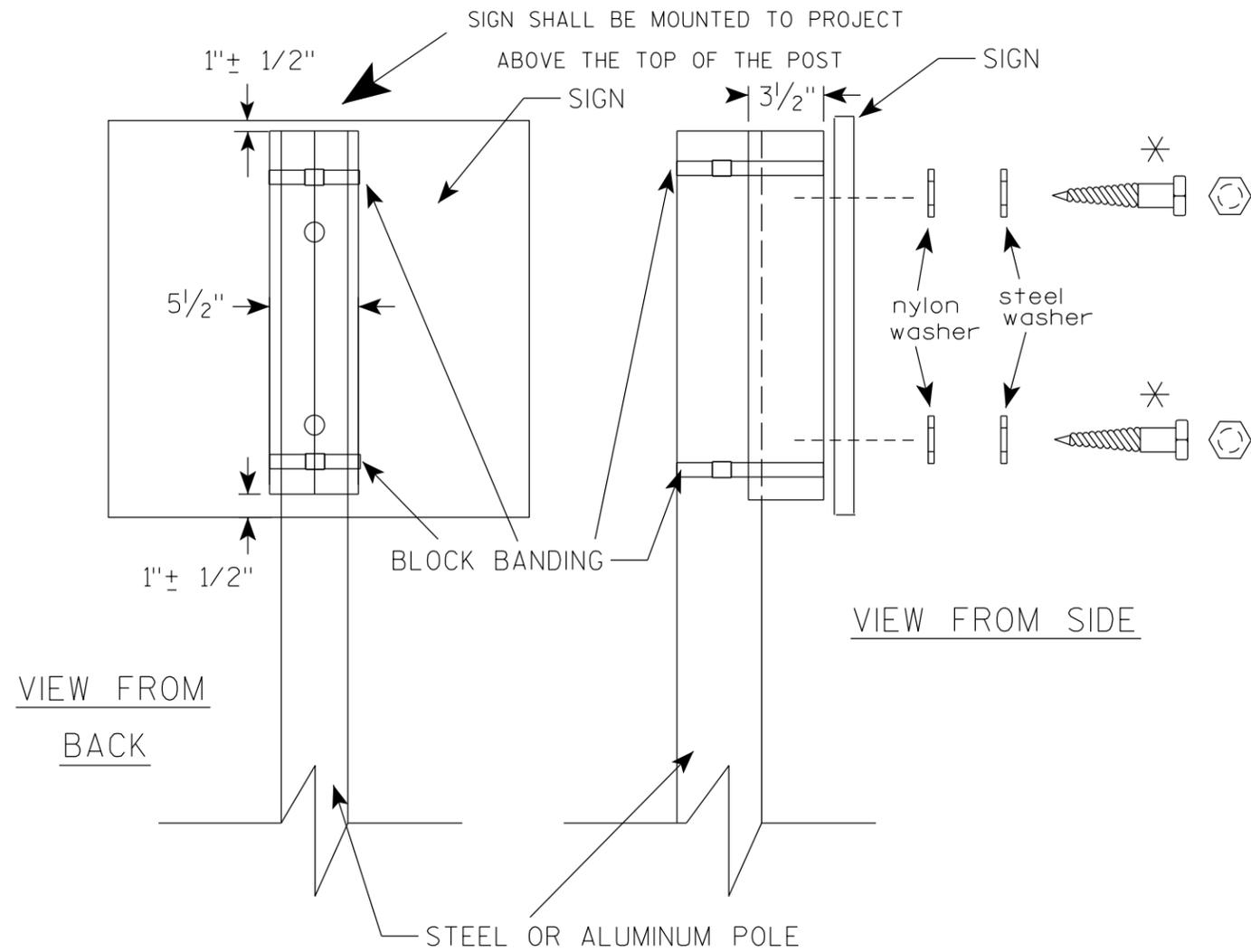
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 165

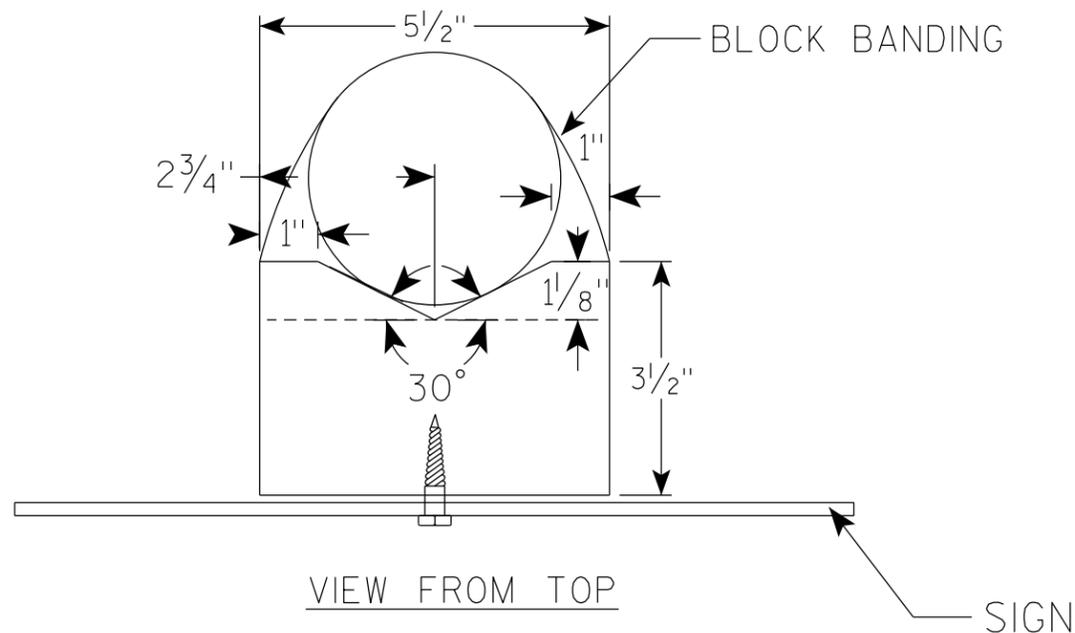
E



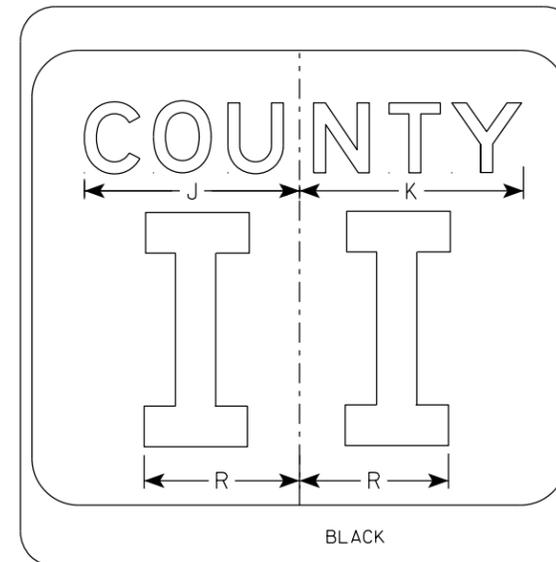
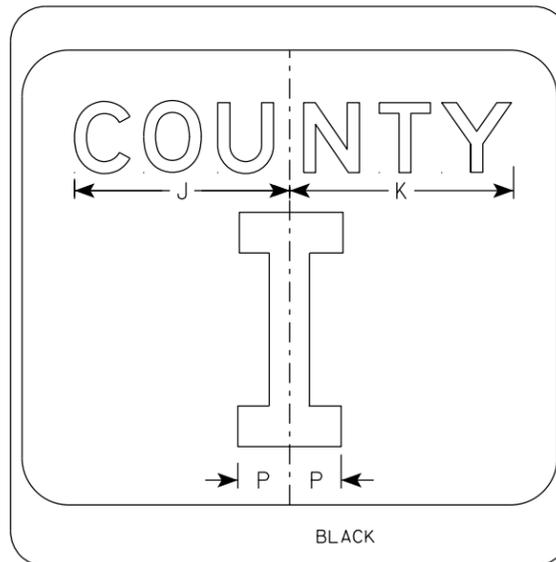
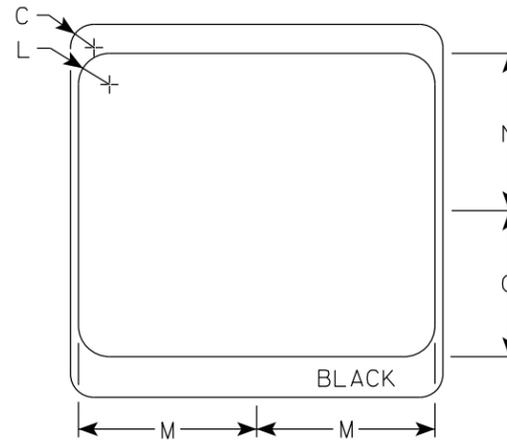
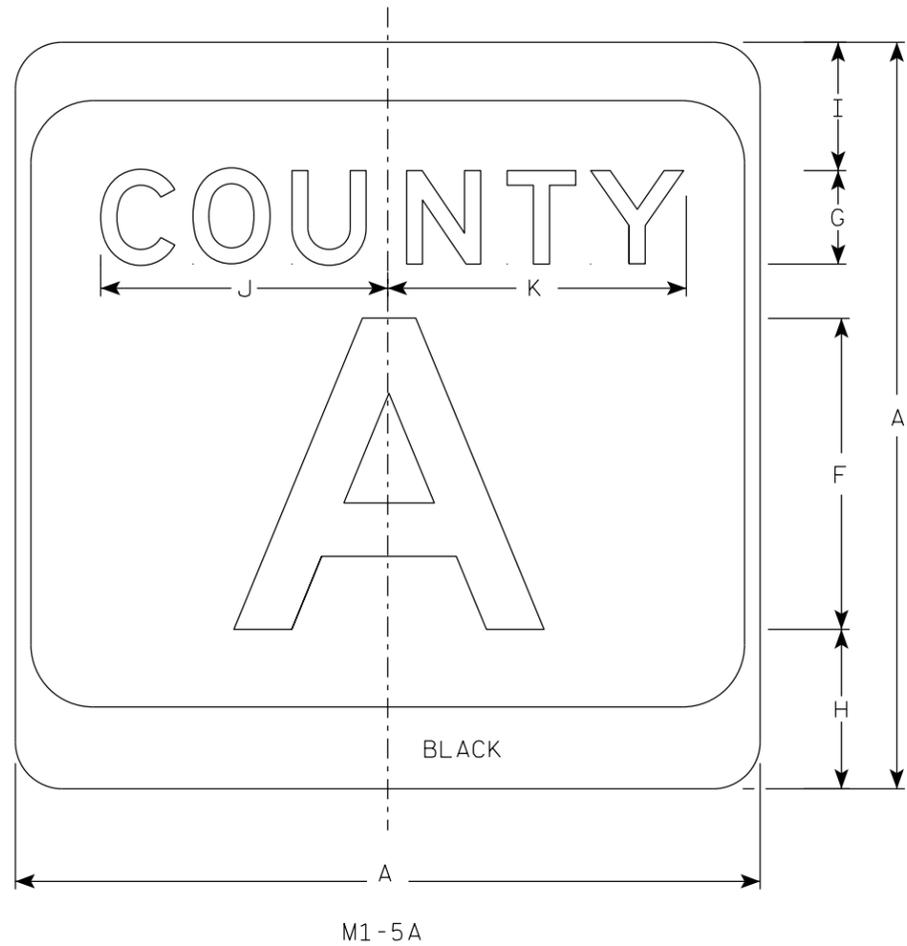
GENERAL NOTES

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, 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 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3



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.

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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
2M	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

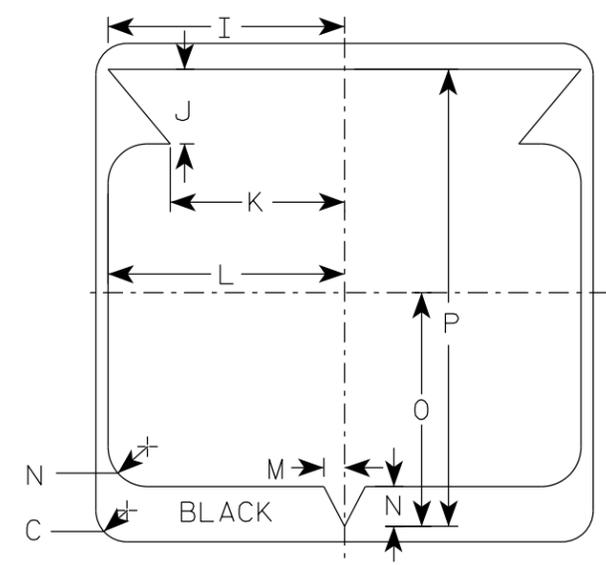
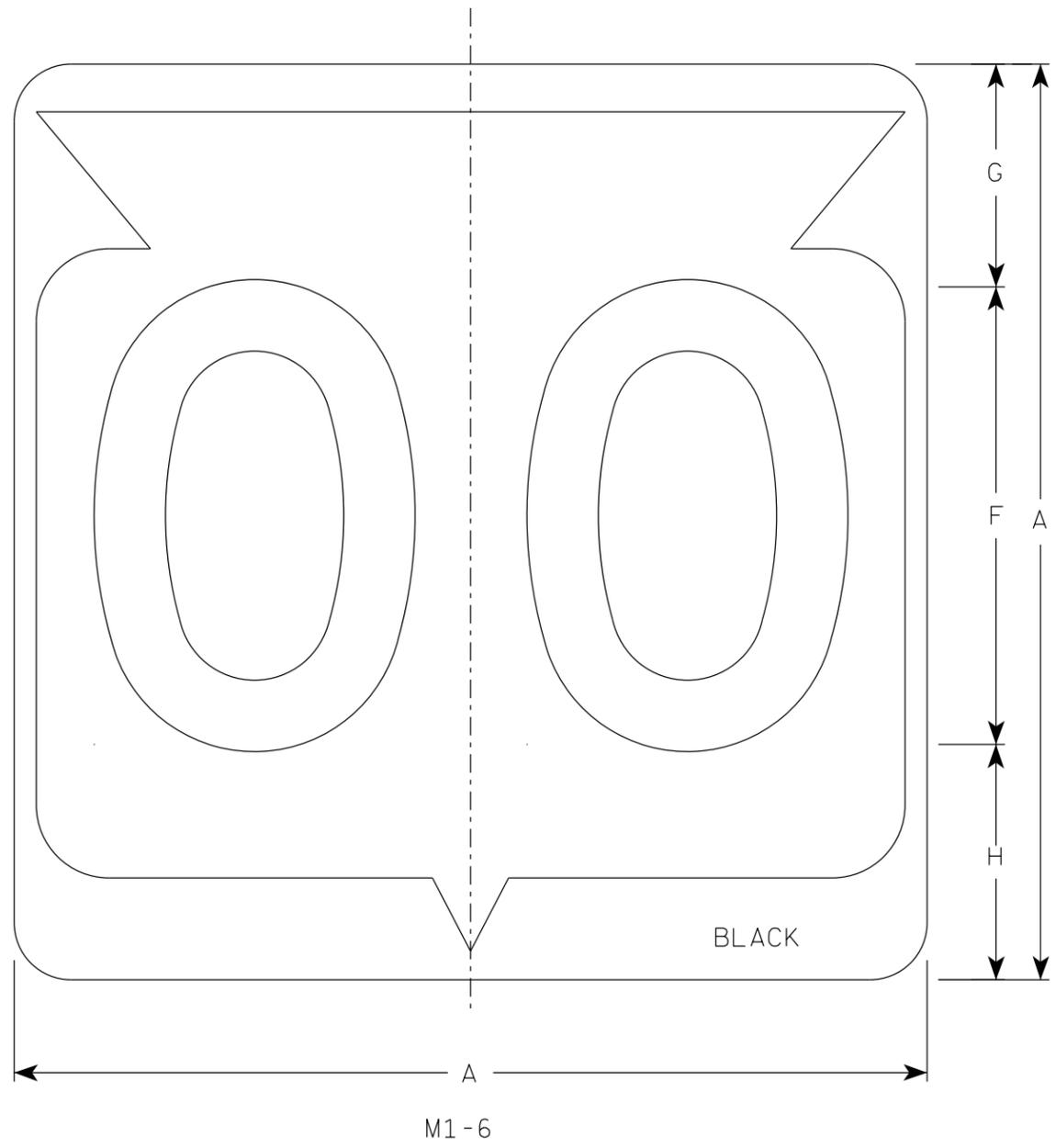
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-5A.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 167 **E**

NOTES

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



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																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
2M	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

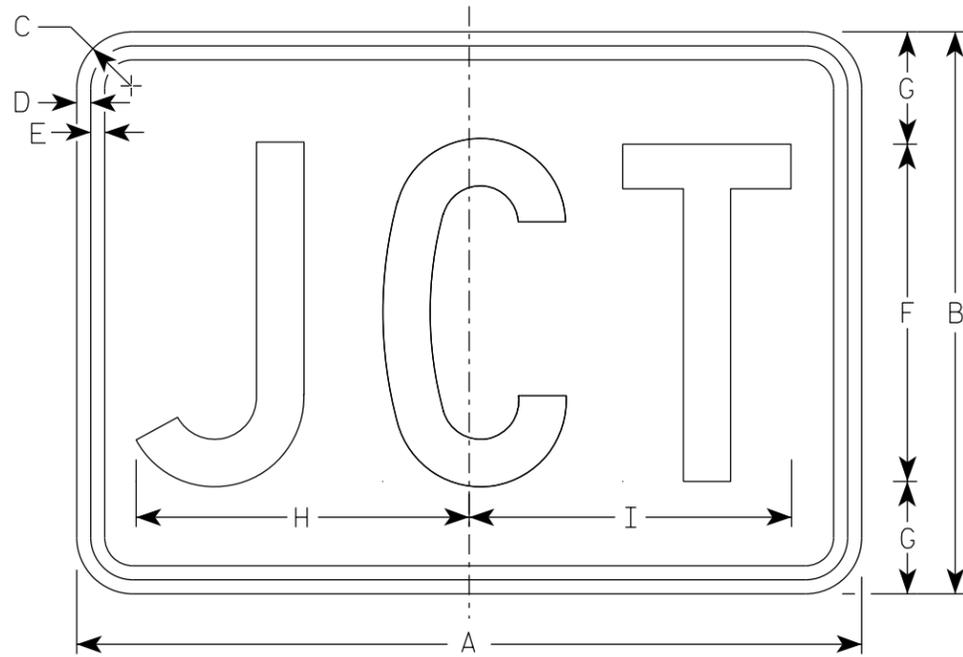
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
for State Traffic Engineer

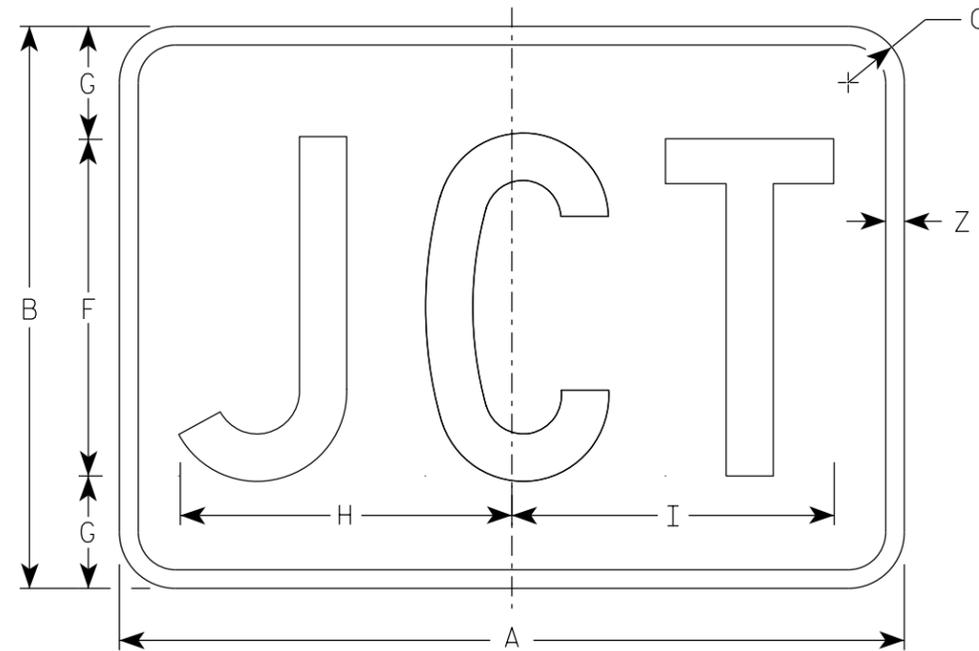
DATE 11/8/2022 PLATE NO. M1-6.11

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
 - Background - See note 5
 - Message - See note 5
3. Message Series - C
4. M2-1 Background - White
Message - Black
- MB2-1 Background - Blue
Message - White
- MK2-1 Background - Green
Message - White
- MM2-1 Background - White
Message - Green
- MN2-1 Background - Brown
Message - White
- MP2-1 Background - White
Message - Blue
- MR2-1 Background - Brown
Message - Yellow



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

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																											
2S	21	15	1 1/2	3/8	3/8	9	3	8 7/8	8 5/8																	1/2	2.20
2M	21	15	1 1/2	3/8	3/8	9	3	8 7/8	8 5/8																	1/2	2.20
3	30	21	1 1/2	3/8	3/8	13	4	12 7/8	12 3/8																	1/2	4.40
4	30	21	1 1/2	3/8	3/8	13	4	12 7/8	12 3/8																	1/2	4.40
5	30	21	1 1/2	3/8	3/8	13	4	12 7/8	12 3/8																	1/2	4.40

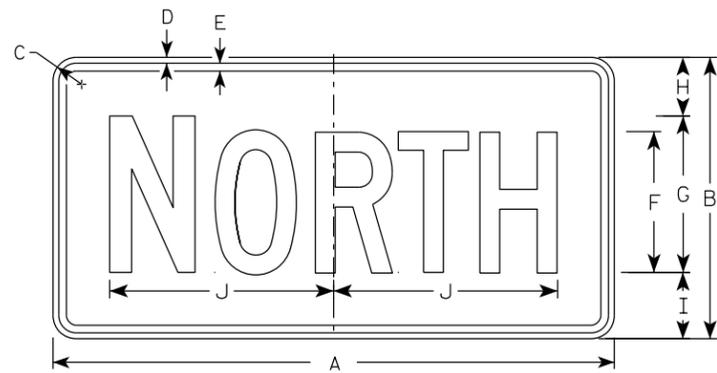
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

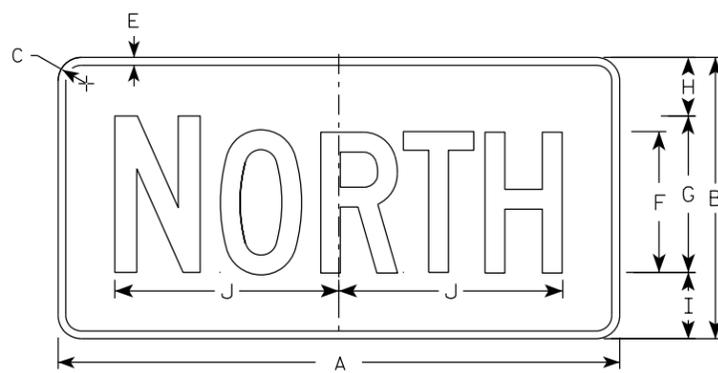
APPROVED *Matthew R. Rauch*
State Traffic Engineer

DATE 2/8/2023 PLATE NO. M2-1.14

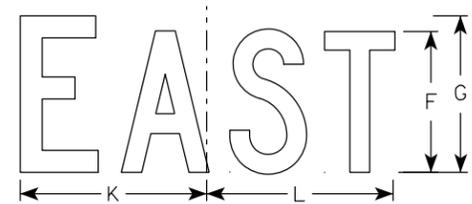
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 169 **E**



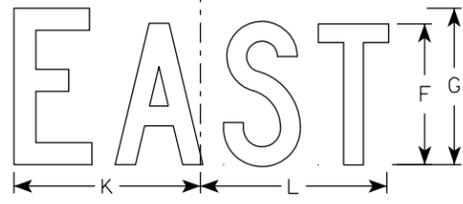
M3-1
MM3-1
MP3-1



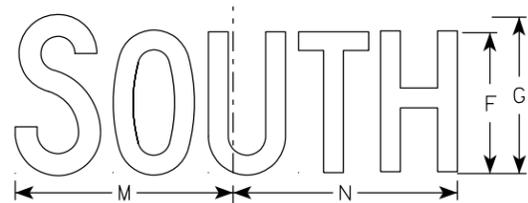
MB3-1
MK3-1
MN3-1



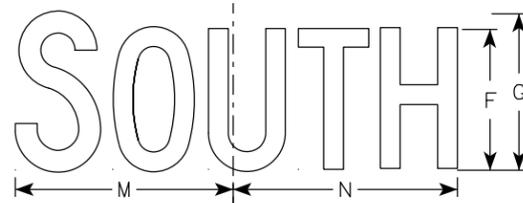
M3-2
MM3-2
MP3-2



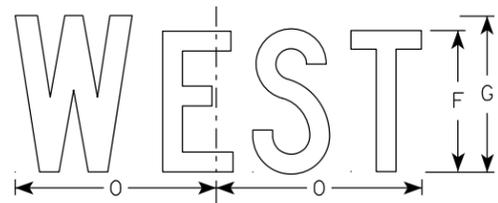
MB3-2
MK3-2
MN3-2



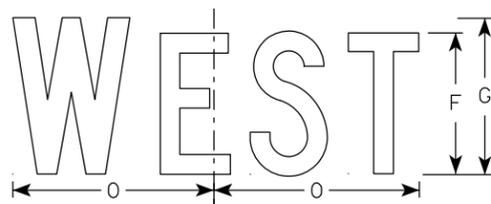
M3-3
MM3-3
MP3-3



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

STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

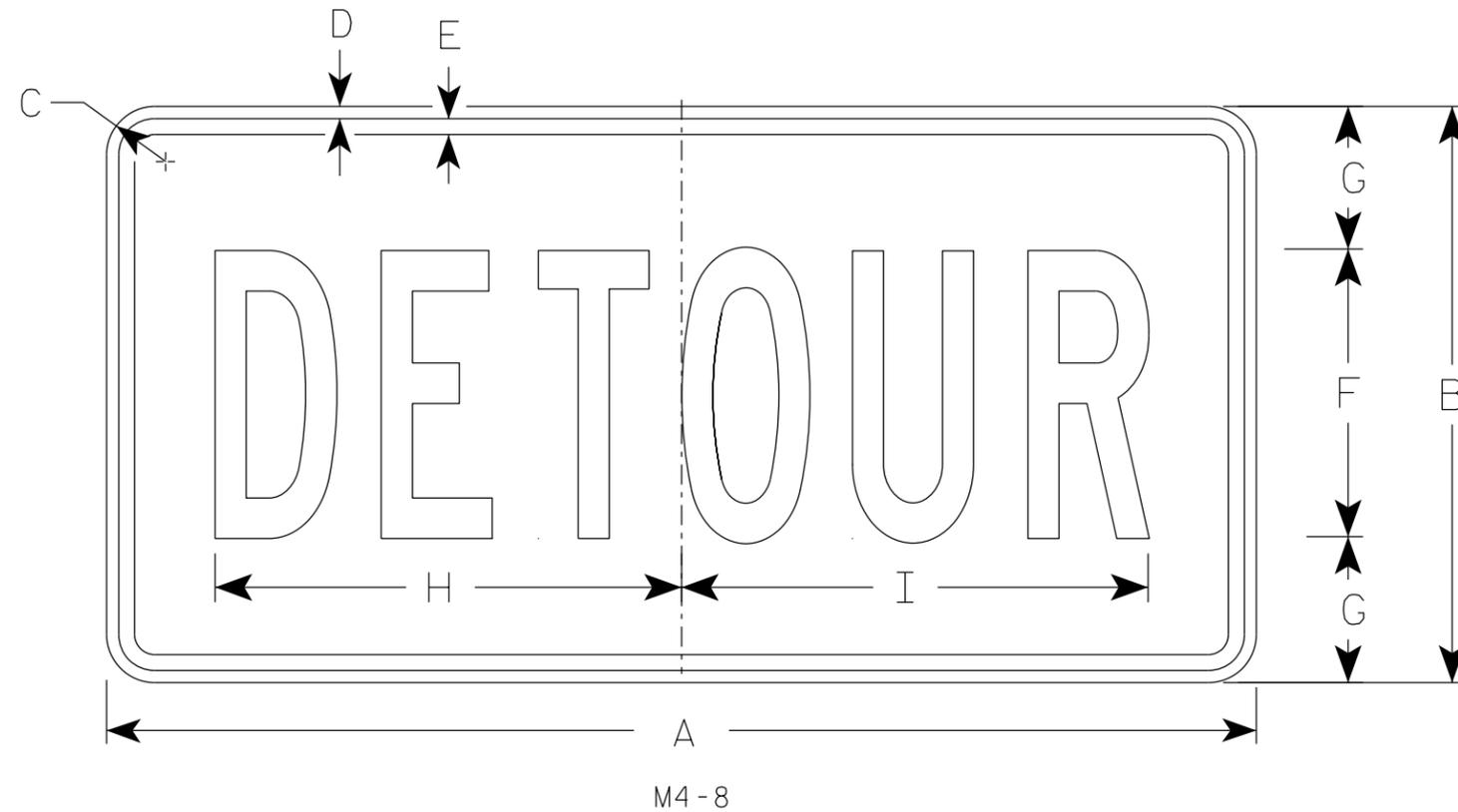
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 170 **E**

NOTES

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



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	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

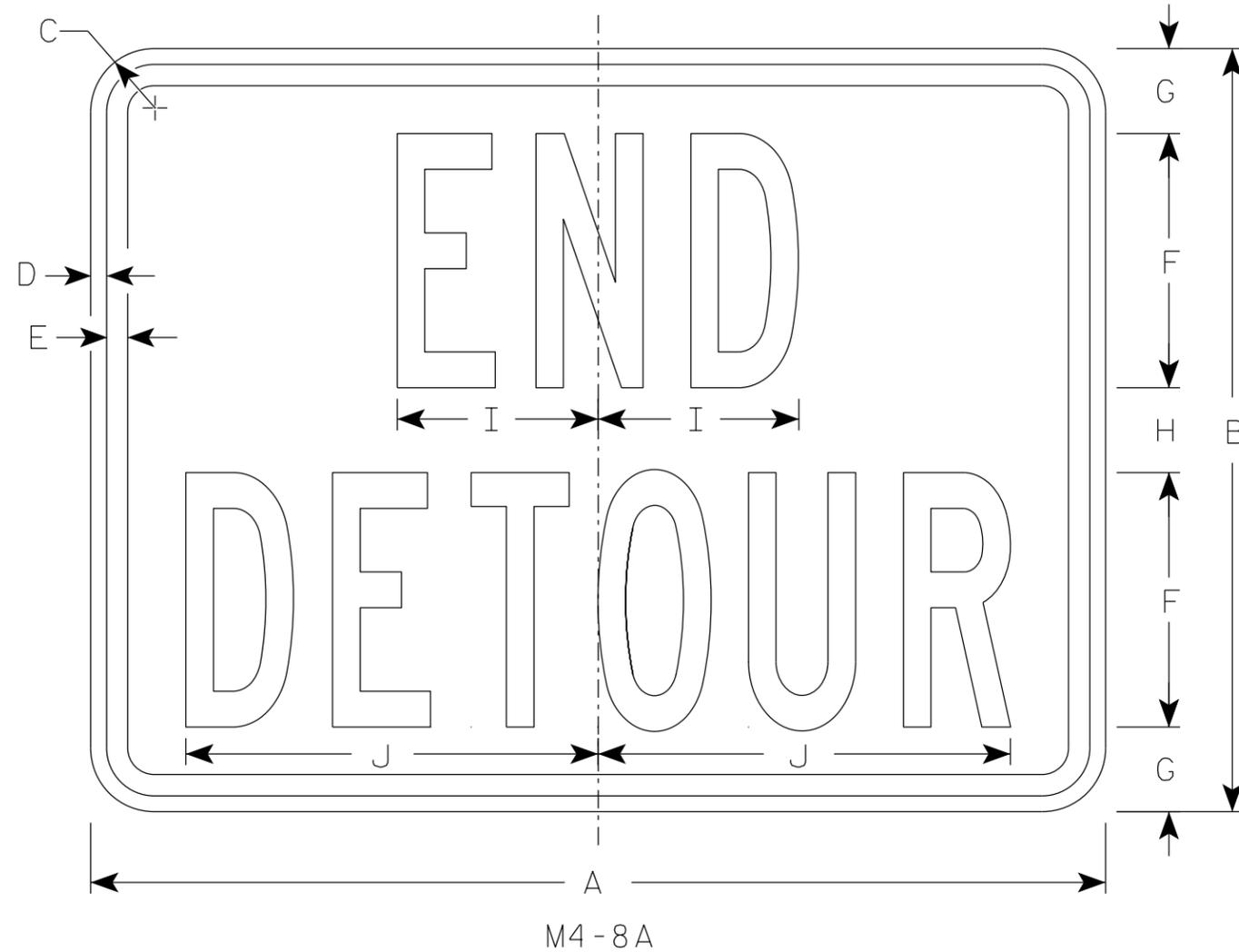
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 171 **E**

NOTES

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



7

7

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

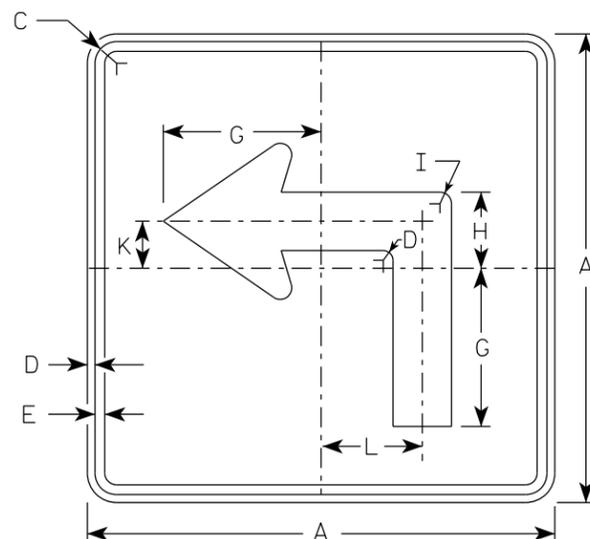
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

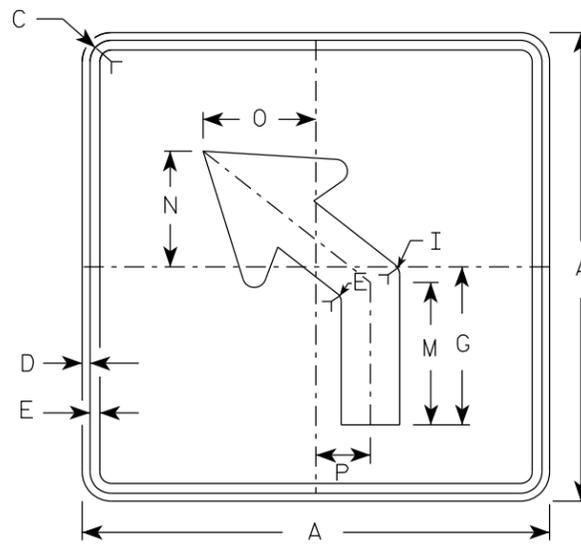
APPROVED *Matthew R Rauch*
For State Traffic Engineer

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

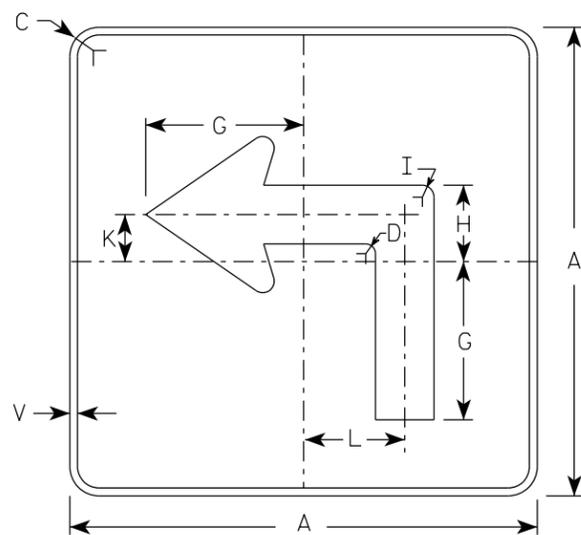
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 172 **E**



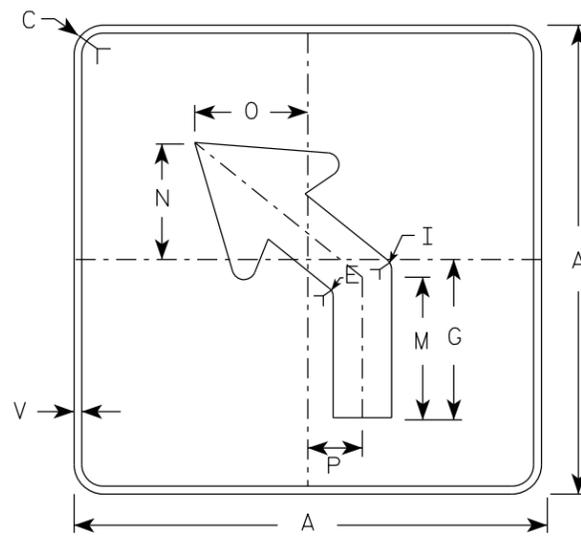
M5-1L
MM5-1L
M05-1L
MP5-1L



M5-2L
MM5-2L
M05-2L
MP5-2L

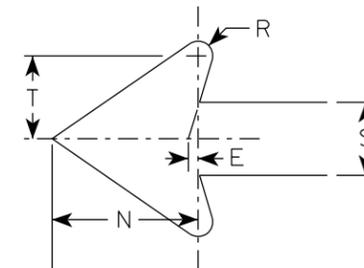


MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L

ARROW DETAIL



NOTES

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

7

7

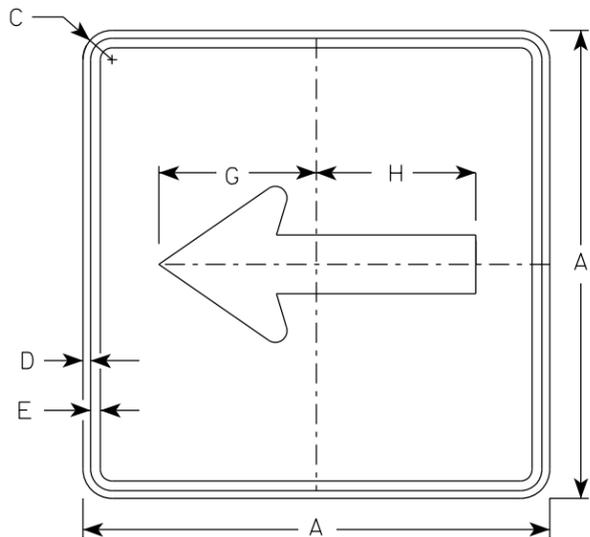
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2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

STANDARD SIGN
M5-1 & M5-2

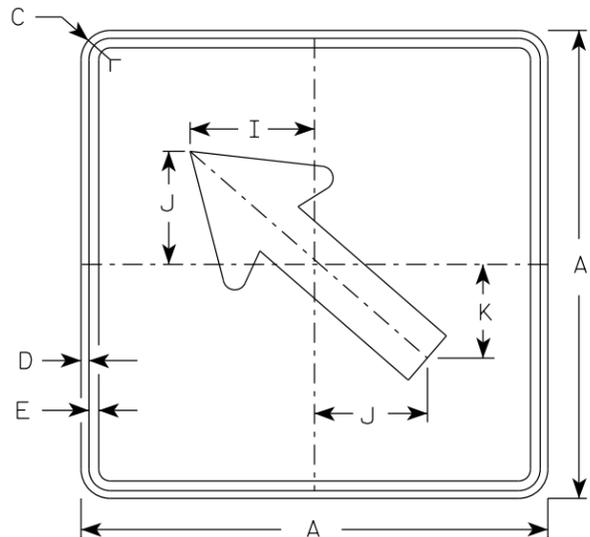
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

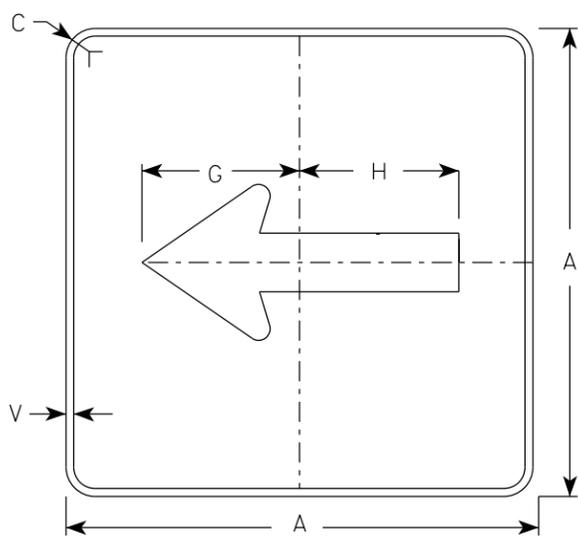
DATE 2/13/2023 PLATE NO. M5-1.15



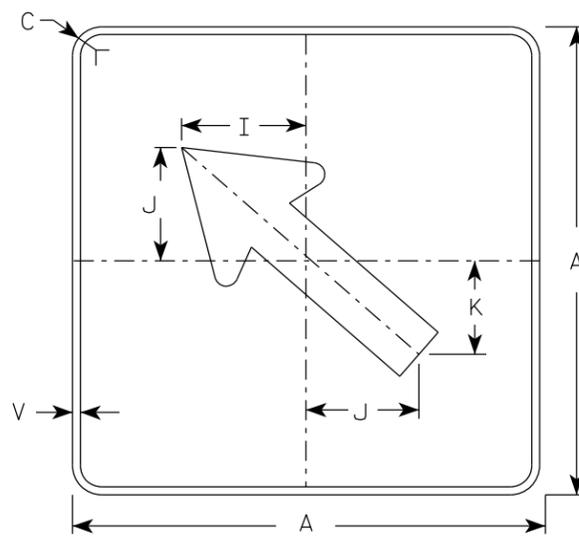
M6-1
MM6-1
M06-1
MP6-1



M6-2
MM6-2
M06-2
MP6-2



MB6-1
MK6-1
MN6-1
MR6-1

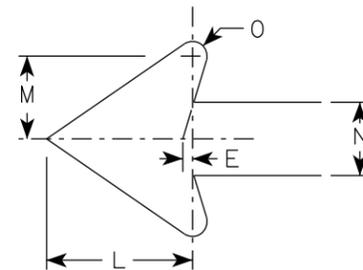


MB6-2
MK6-2
MN6-2
MR6-2

NOTES

1. Signs are Type II - Type H Reflective except as Shown
2. Color:
 - Background - See note 4
 - Message - See note 4
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. 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

ARROW DETAIL



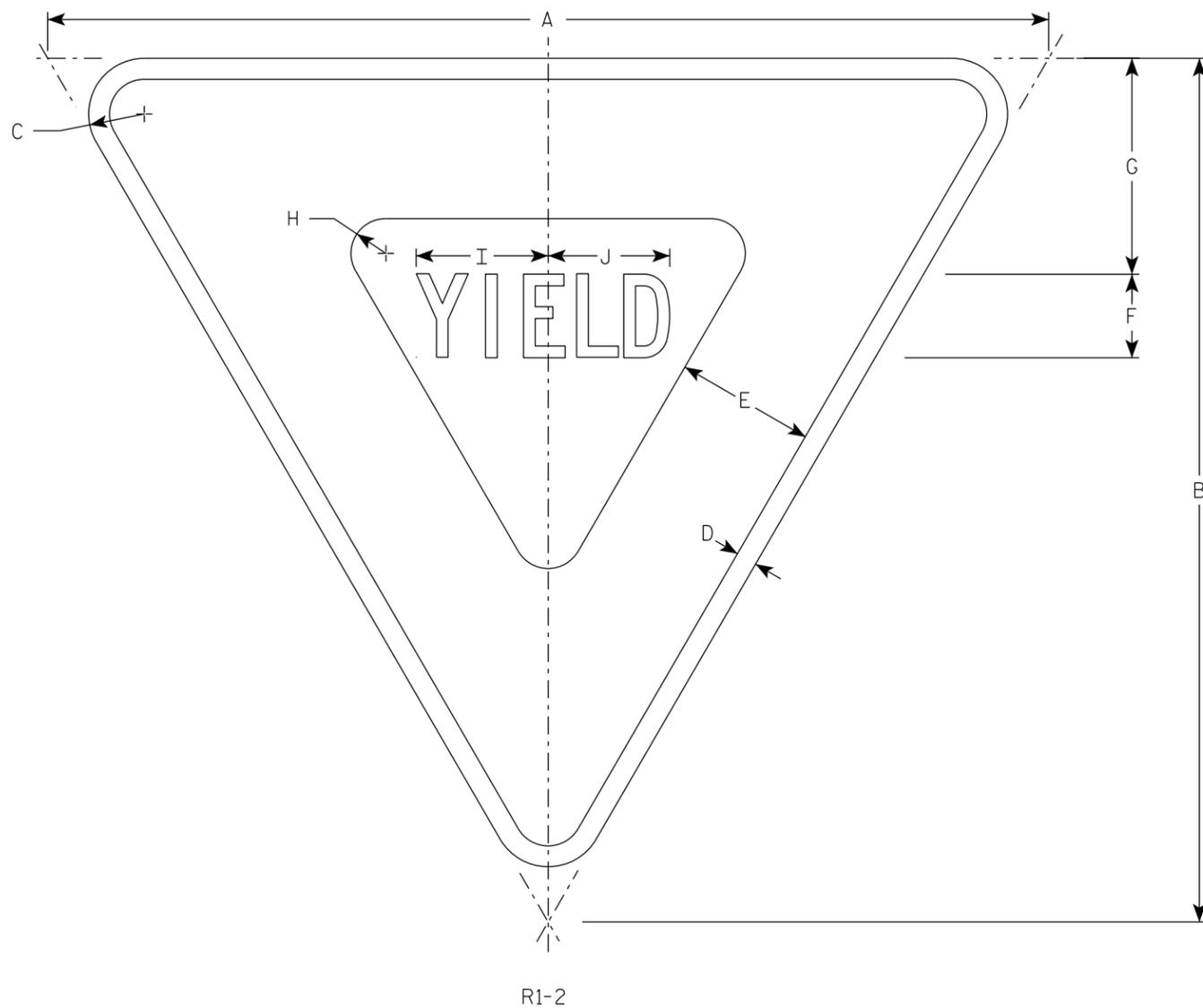
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2					3.06
2M	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2					3.06
3	30		1 7/8	1/2	5/8		10 3/4	10 1/4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

STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 2/13/2023 PLATE NO. M6-1.16



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

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	

STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

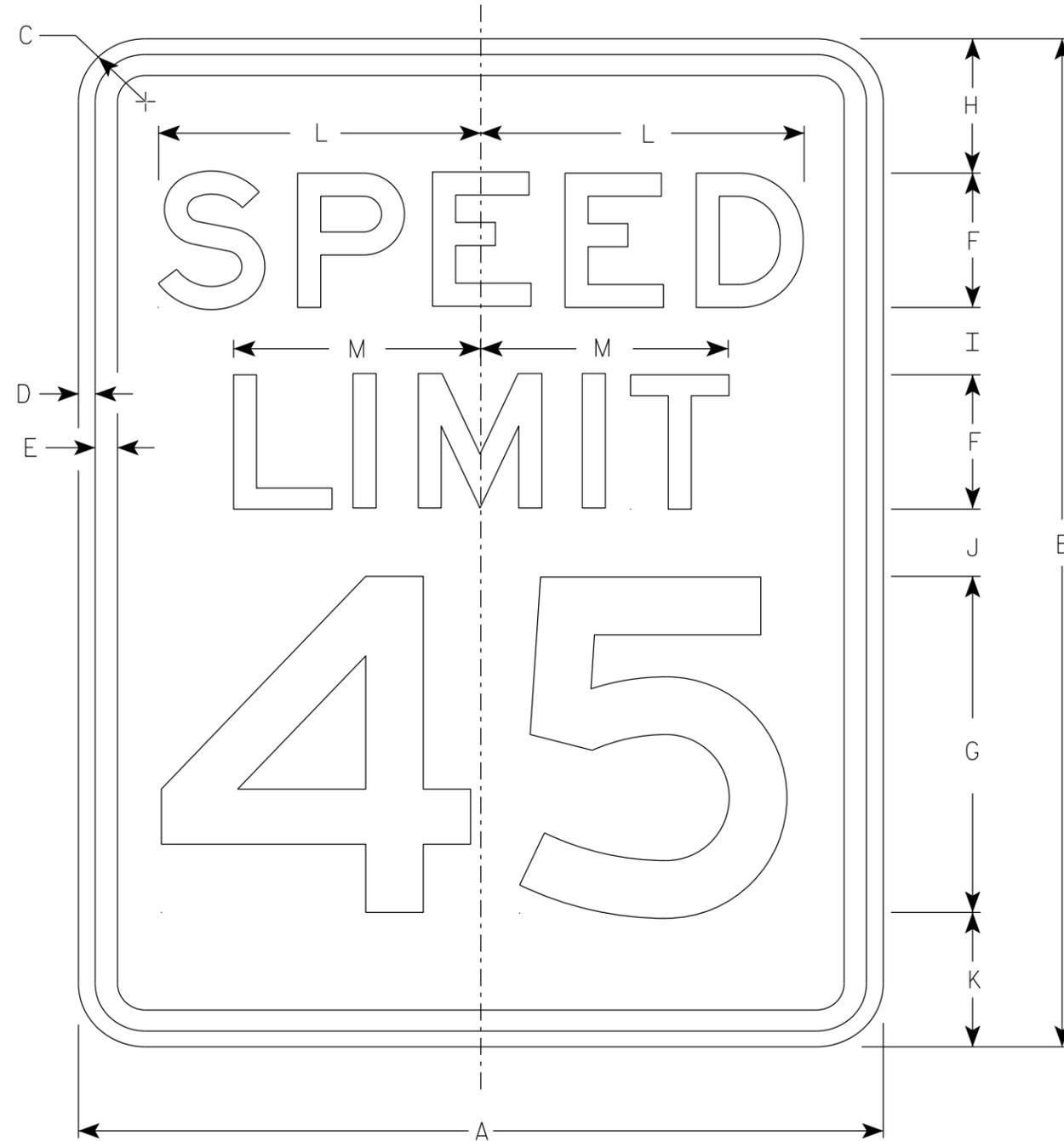
APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 9/10/2024 PLATE NO. R1-2.13

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 175 **E**

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.



R2-1

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	18	24	1 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/2	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	3	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
State Traffic Engineer

DATE 2/1/23 PLATE NO. R2-1.14

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 176 **E**

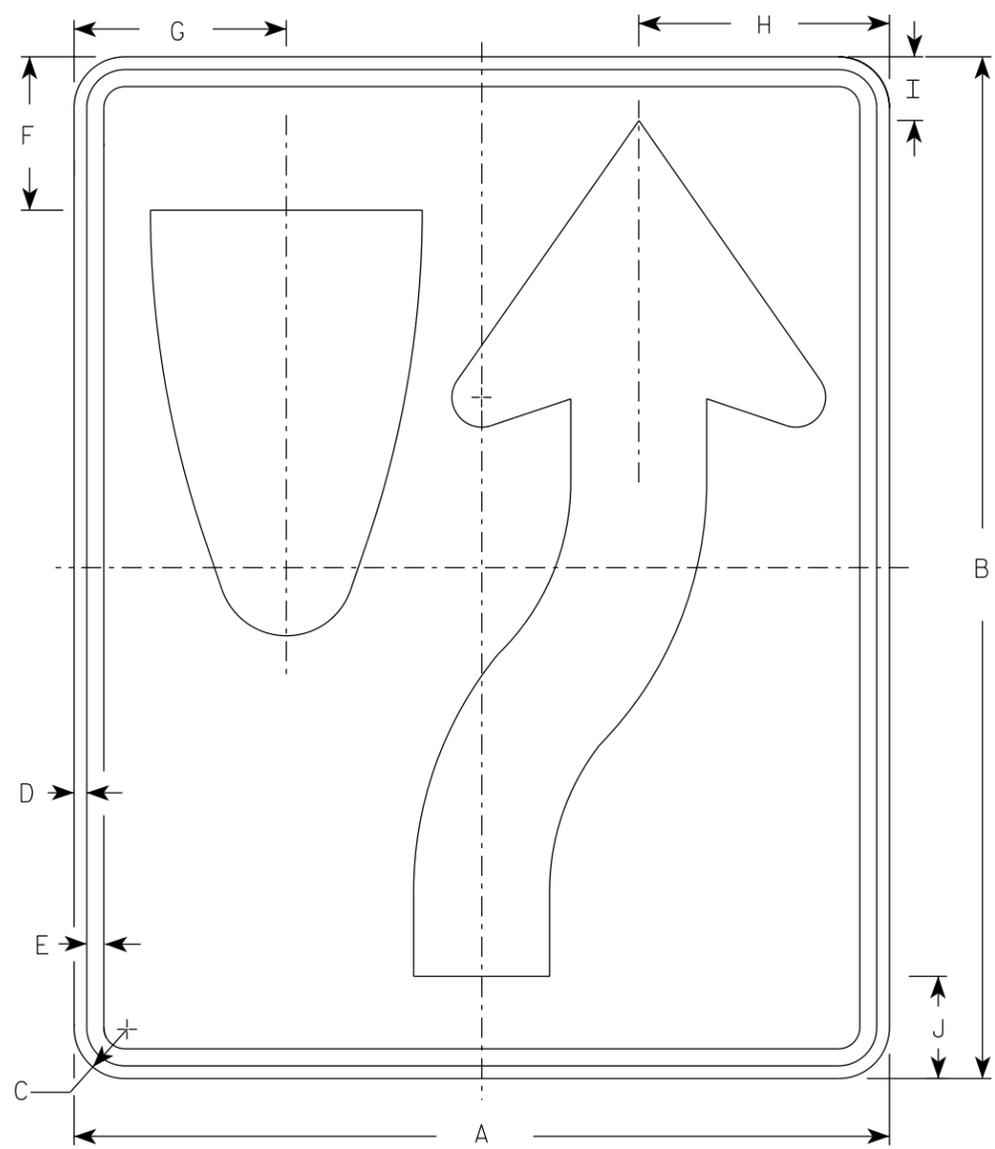
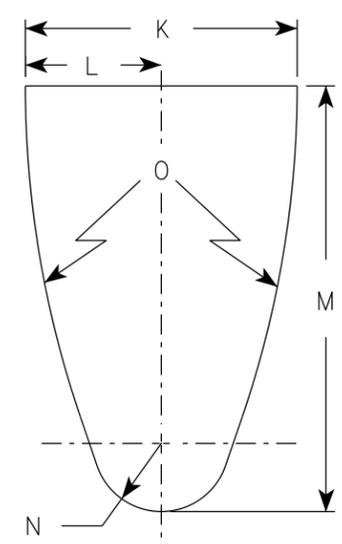
7

7

NOTES

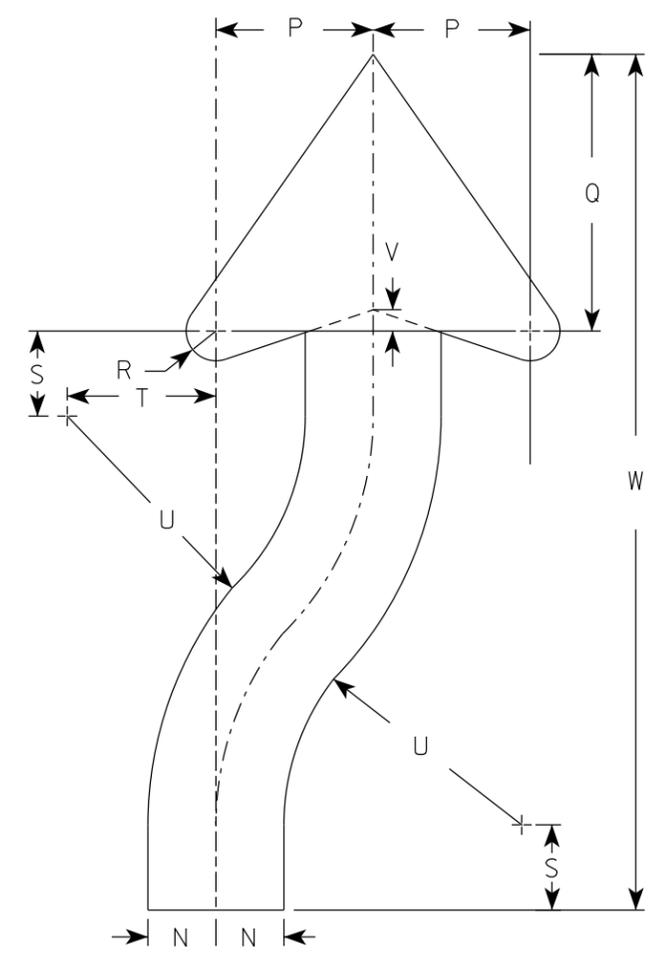
1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. R4-8 is the same as R4-7 except Legend is reversed.

DIVIDER DETAIL



R4-7

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

STANDARD SIGN
R4-7 & R4-8

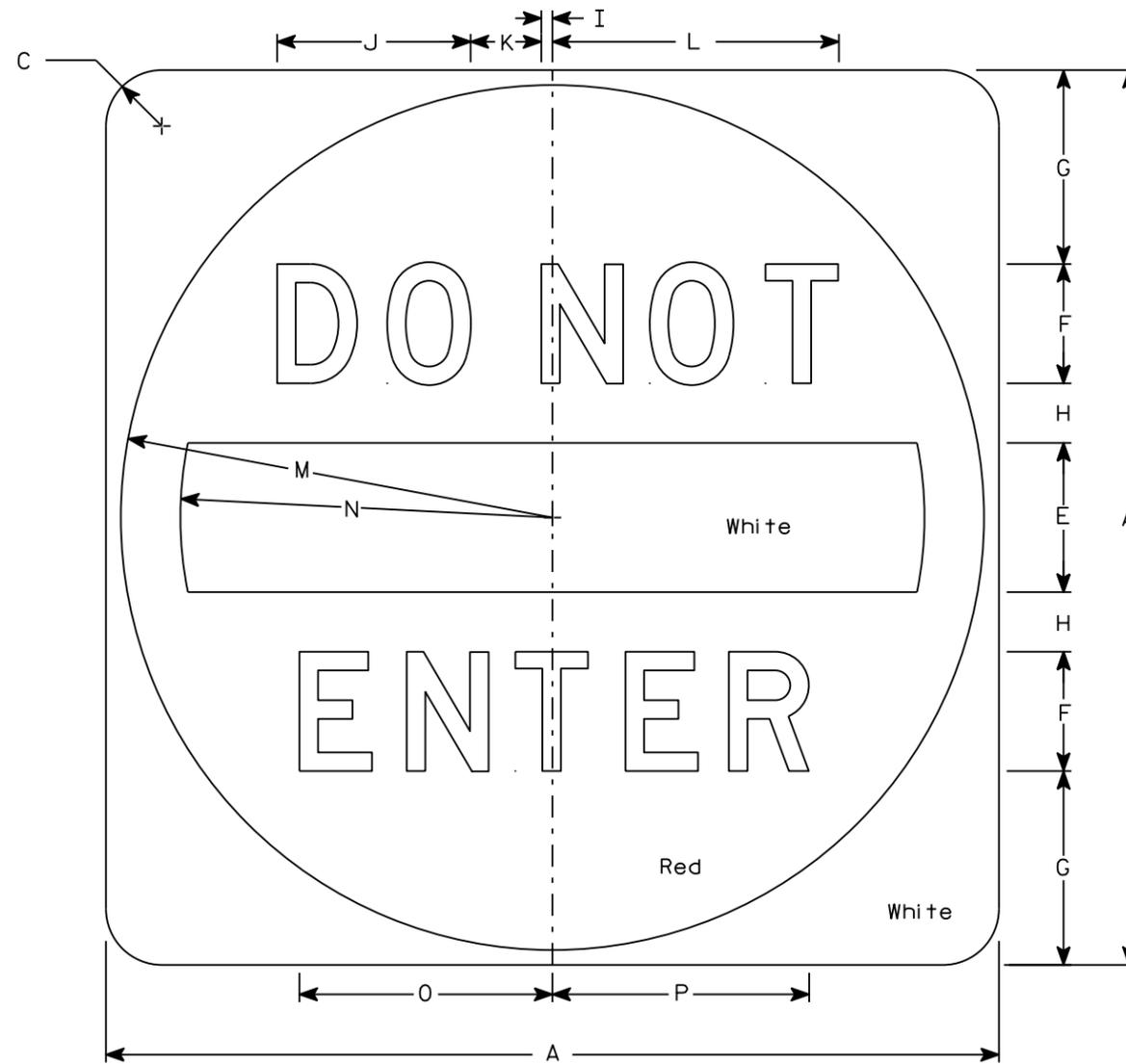
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/17/23 PLATE NO. R4-7.9

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See detail
Message - White
3. Message Series - D



R5-1

7

7

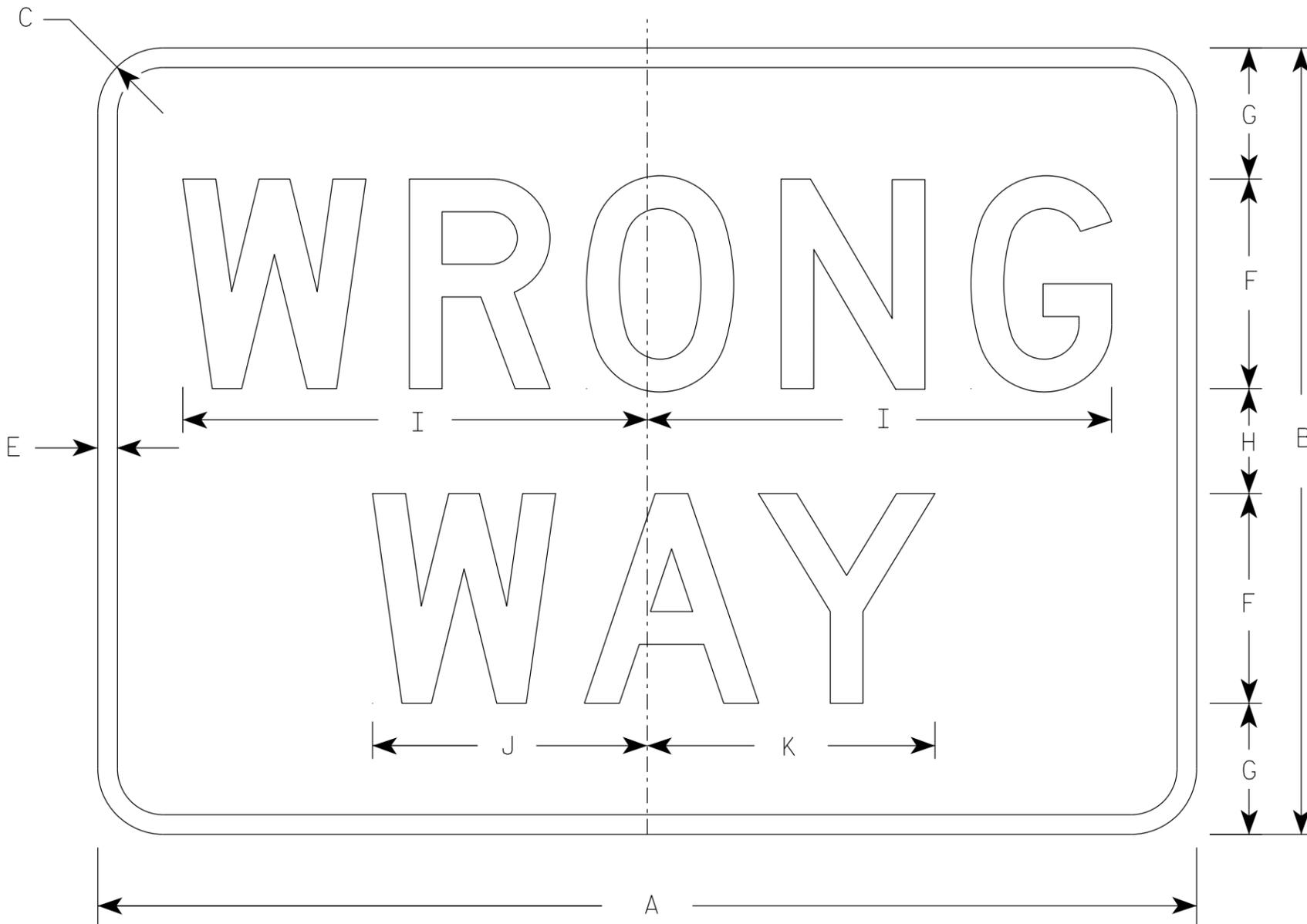
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.25
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/15/18 PLATE NO. R5-1.16



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - Red
Message - White
3. Message Series - D

R5-1A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8															3.75	
2S	36	24	1 1/2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4															6.00	
2M	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11															8.75	
3	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11															8.75	
4	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11															8.75	
5	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11															8.75	

STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

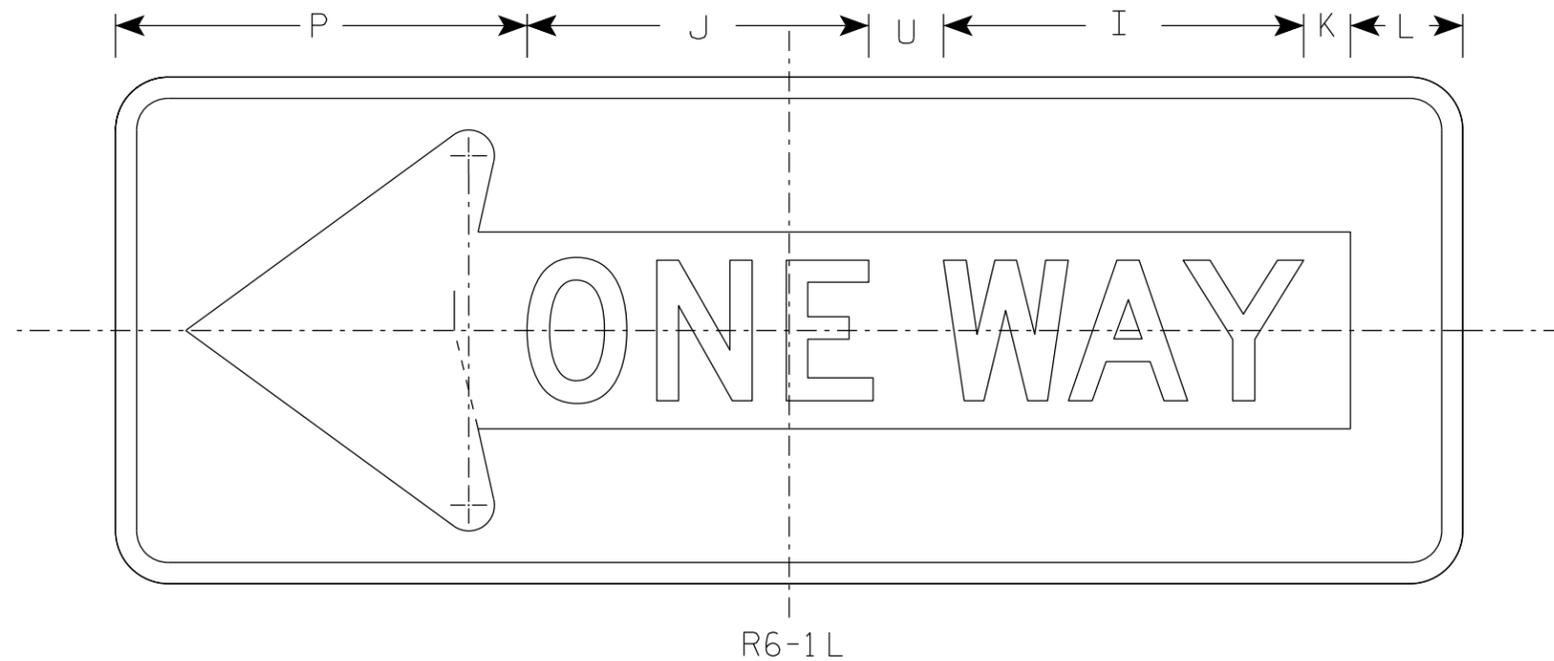
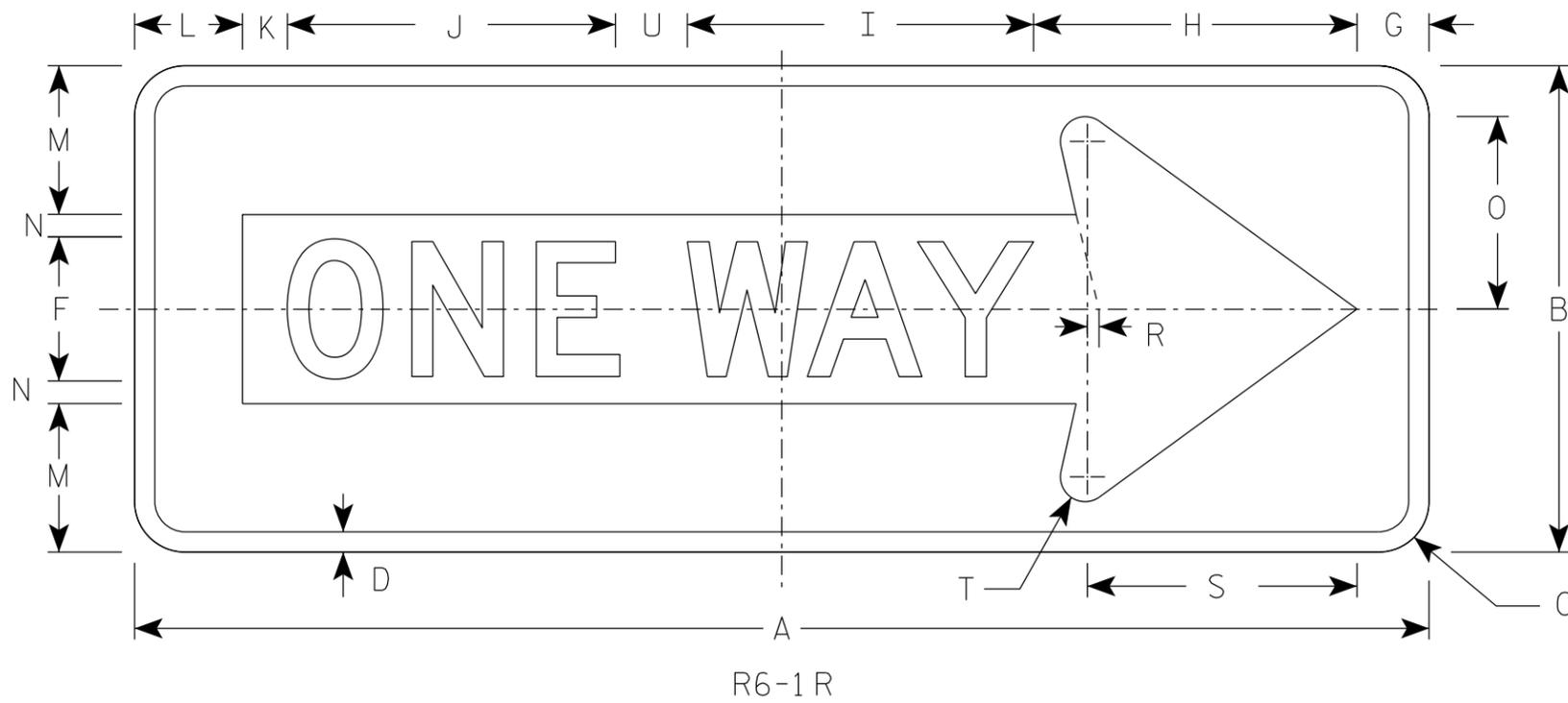
DATE 8/17/23 PLATE NO. R5-1A.3

7

7

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

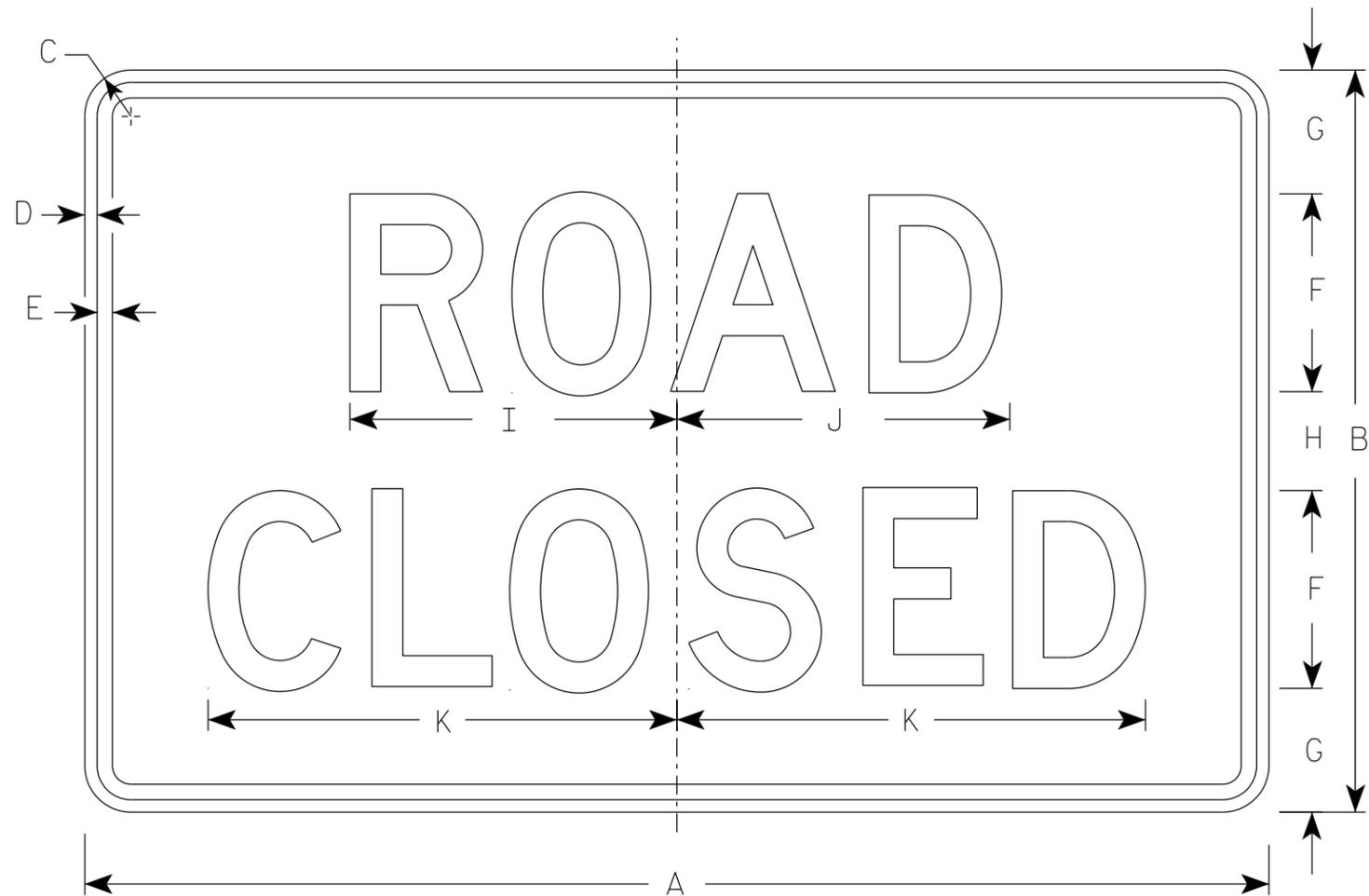
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO:

SHEET NO: 180

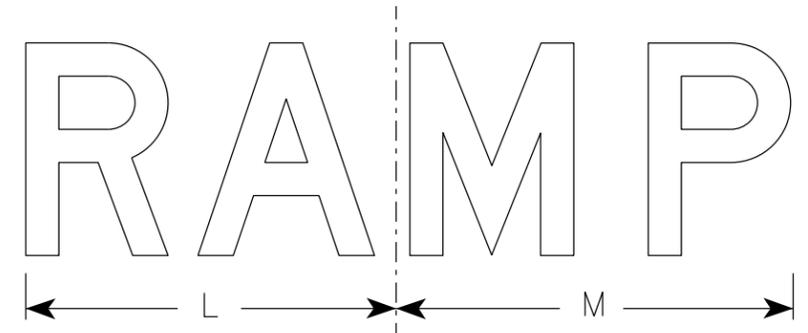
E



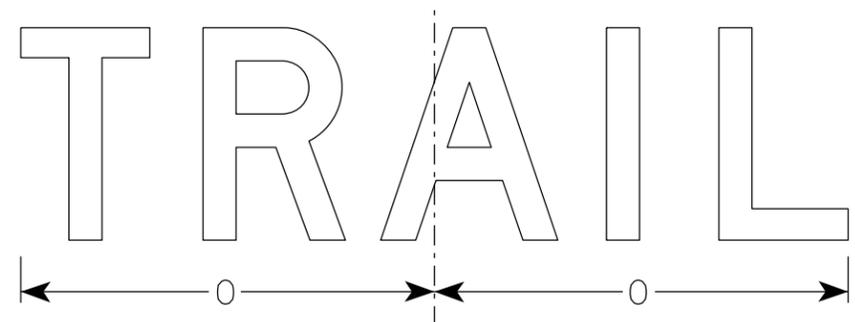
R11-2

NOTES

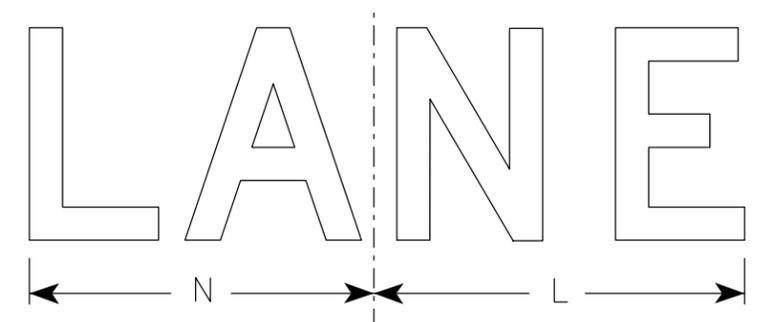
1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message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



R11-2R



R11-2T



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

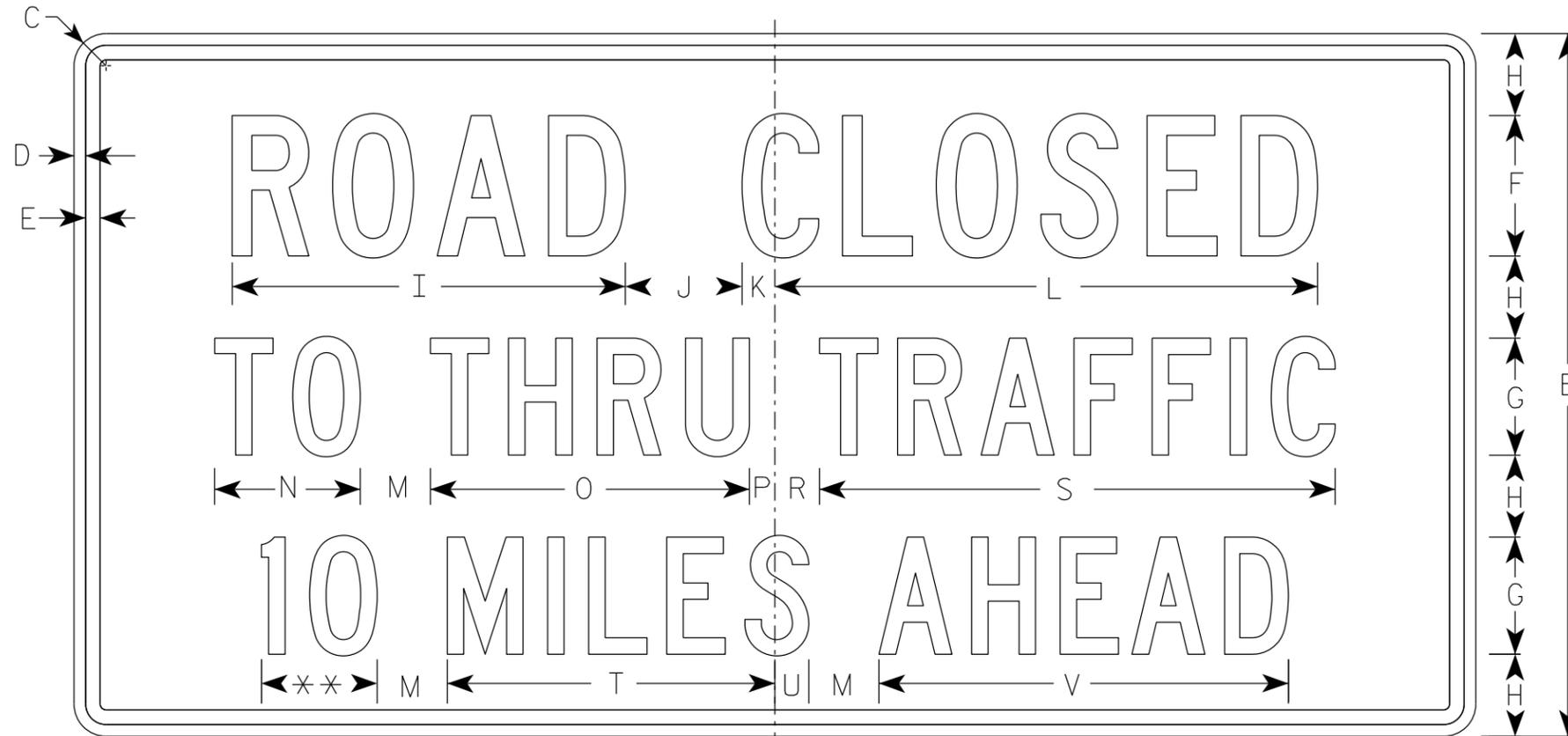
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-2.12

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 181 **E**

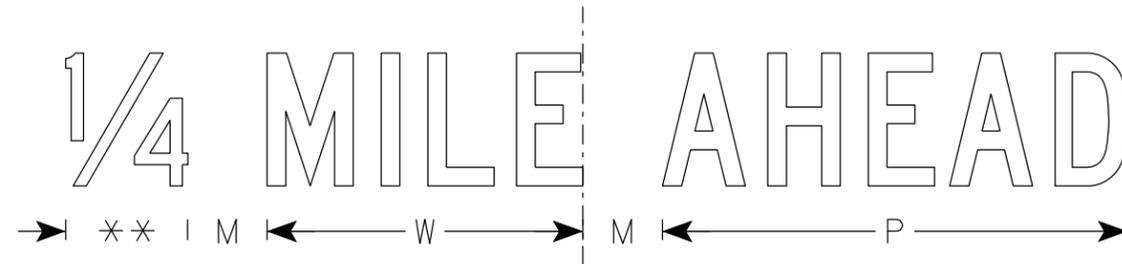
NOTES

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



R11-3

** See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	
1	36	18	1 1/2	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8				4.5	
2S	60	30	1 7/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5	
2M	60	30	1 7/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5	
3																												
4																												
5																												

STANDARD SIGN
R11-3

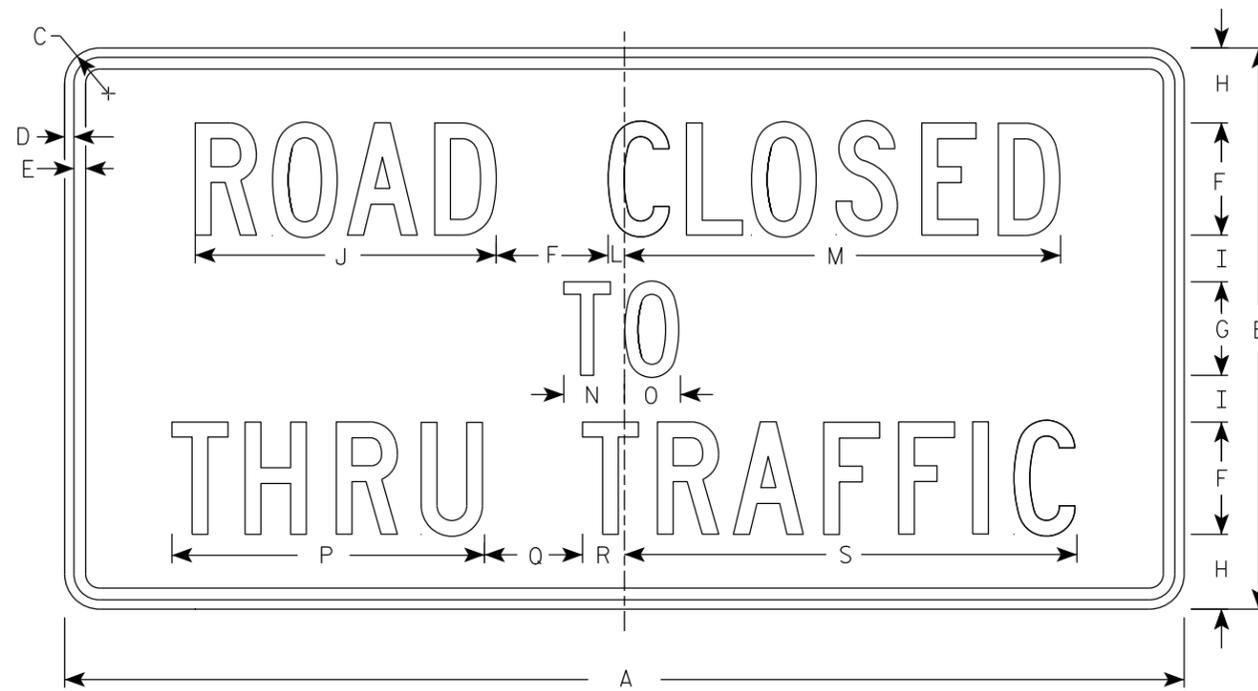
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-3.10

NOTES

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



R11-4

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	60	30	1 7/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 7/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

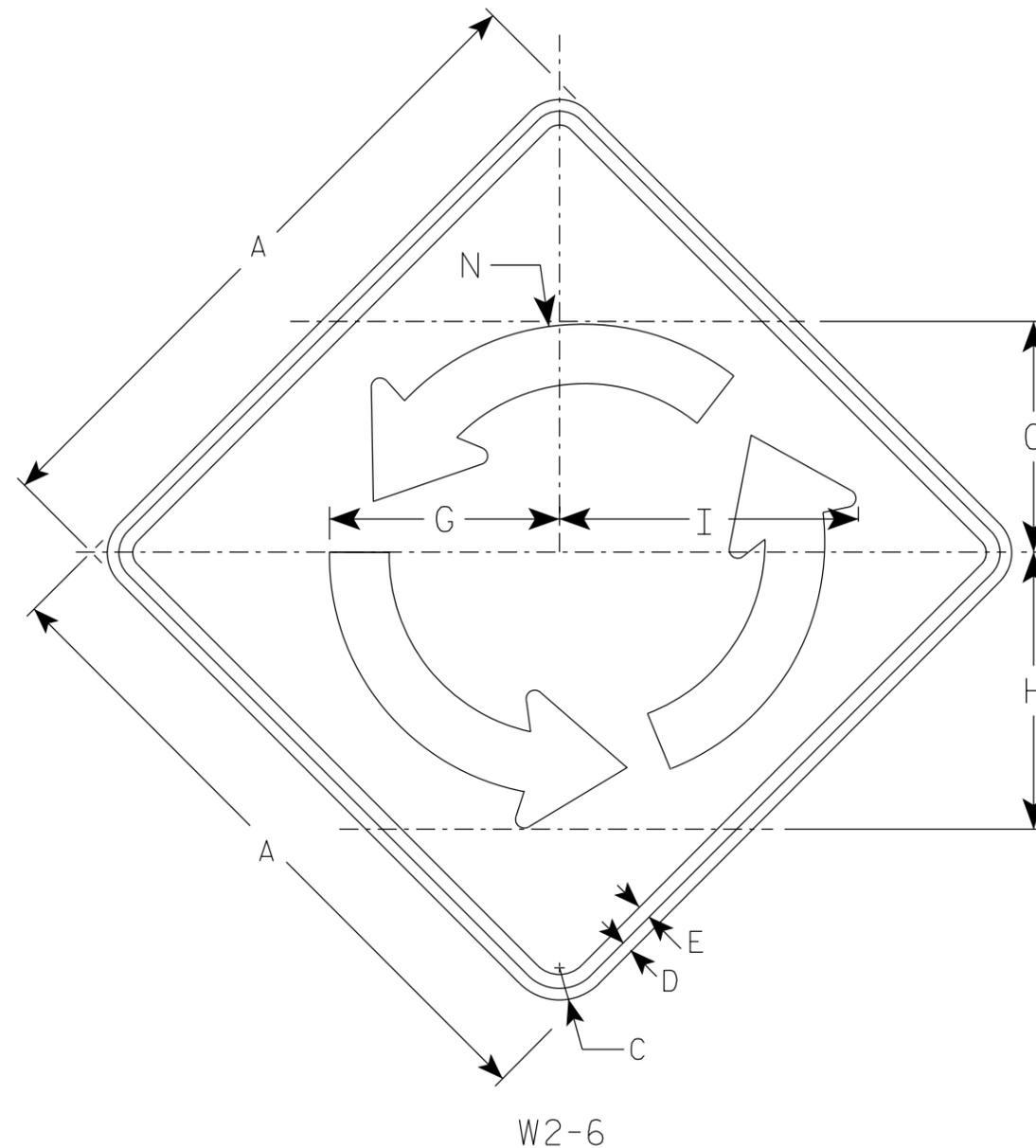
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-4.4

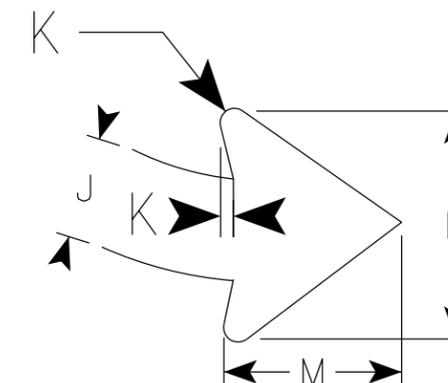
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 183 **E**

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																									

STANDARD SIGN
W2-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/17/2023 PLATE NO. W2-6.8

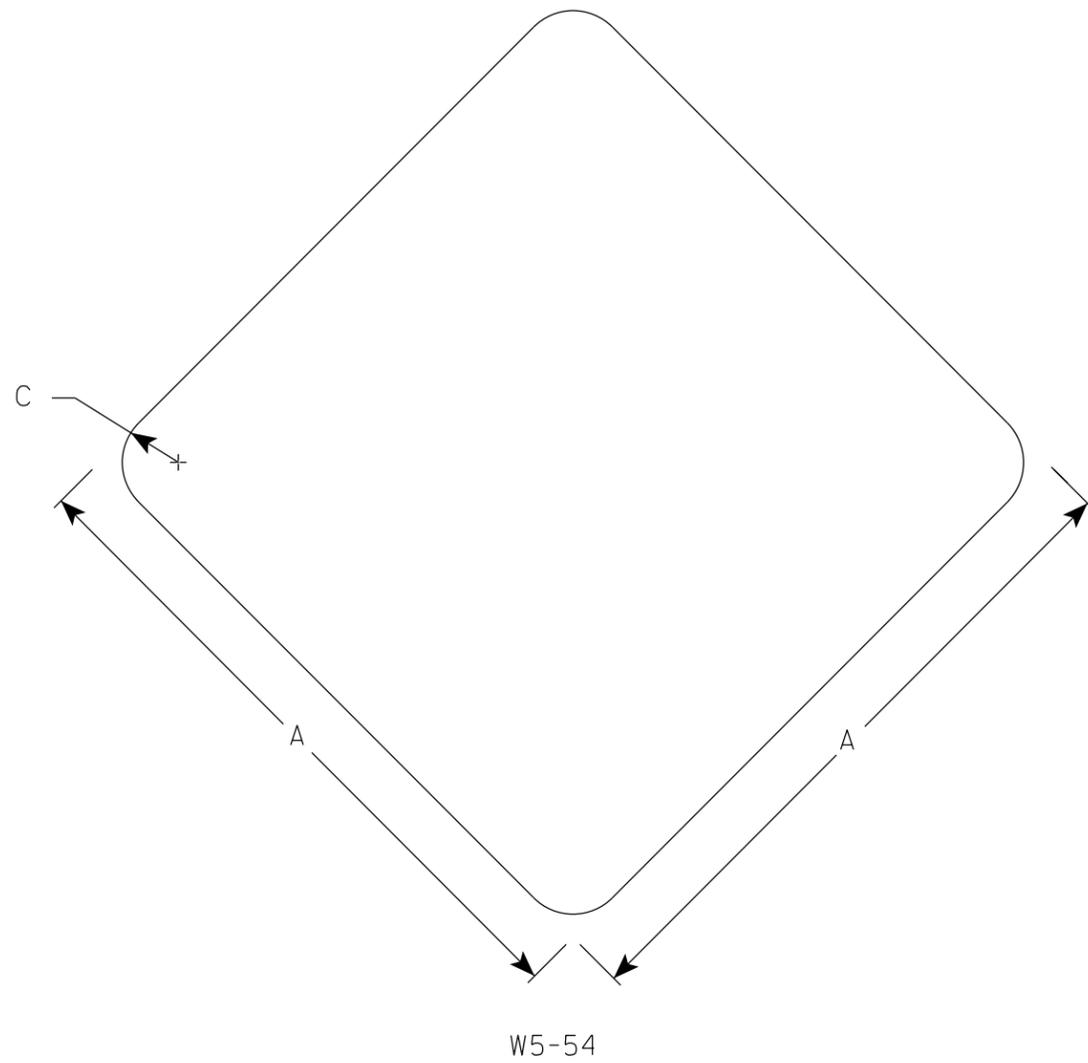
PROJECT NO:

SHEET NO: 184

E

NOTES

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



7

7

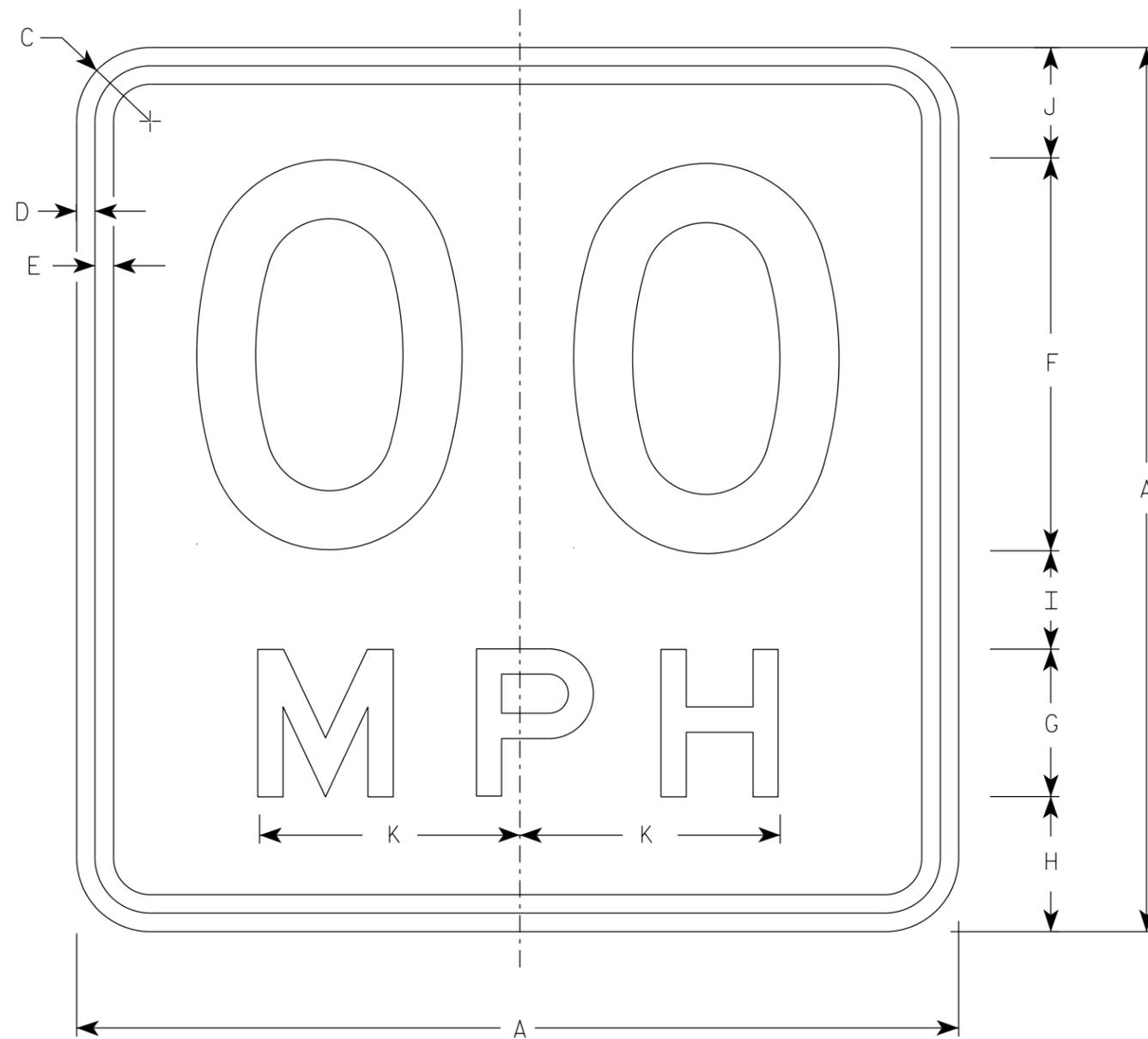
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12		1 1/2																								1.0
2S	18		1 1/2																								2.25
2M	18		1 1/2																								2.25
3																											
4																											
5																											

STANDARD SIGN
W5-54

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/5/2024 PLATE NO. W5-54.9



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

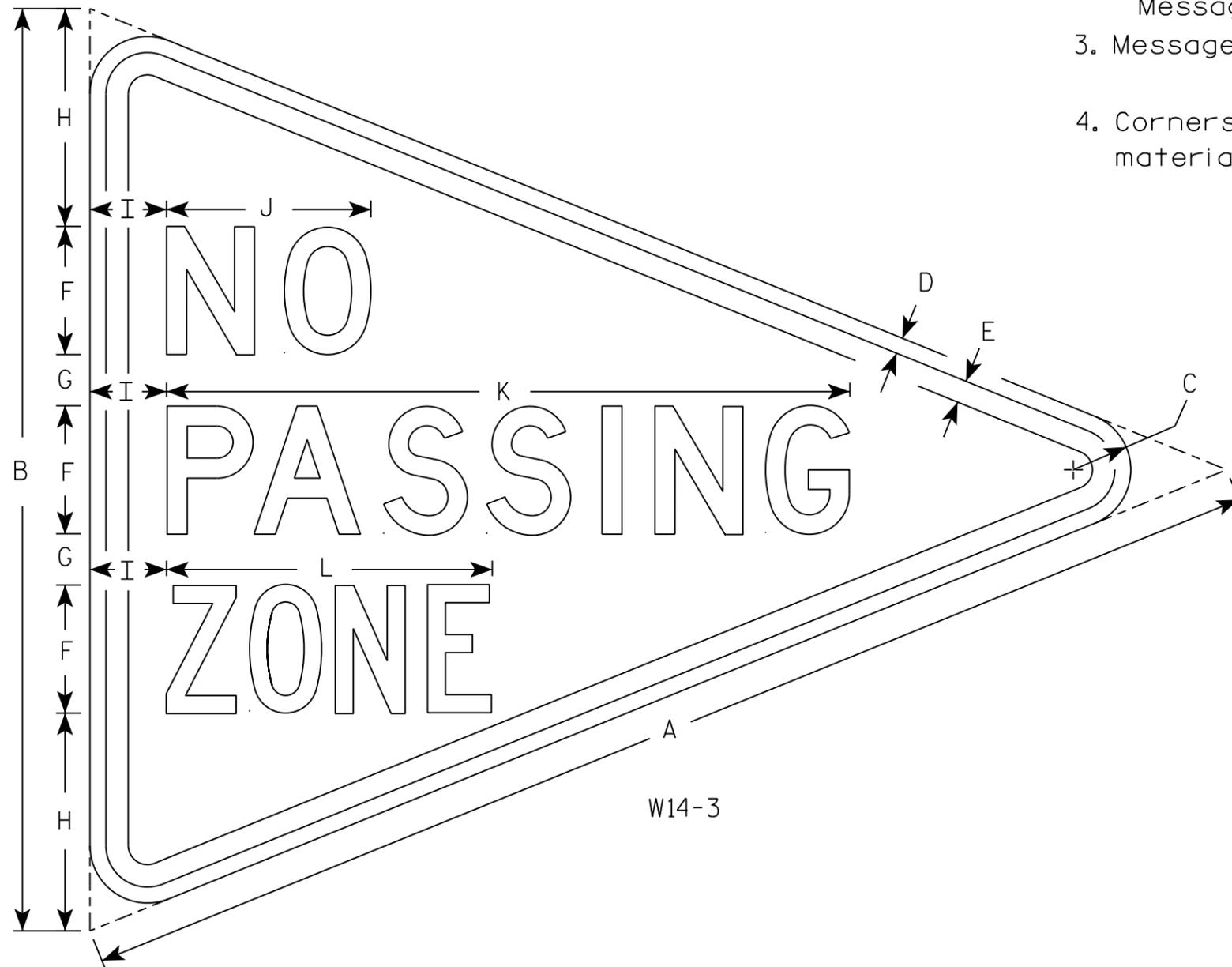
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

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

NOTES

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



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	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

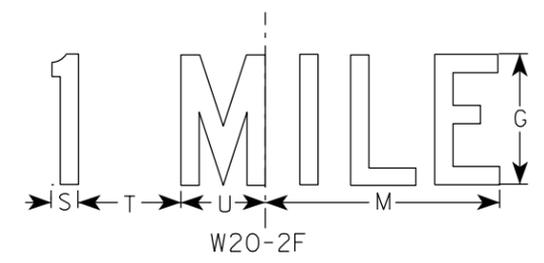
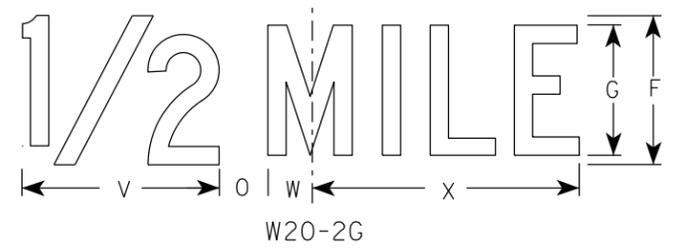
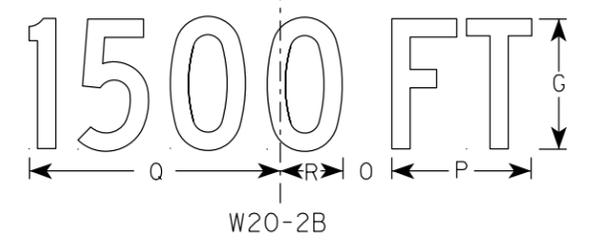
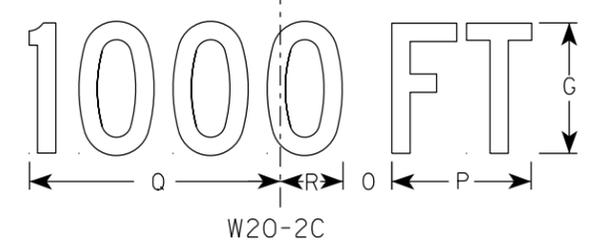
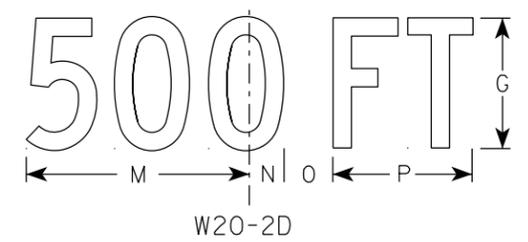
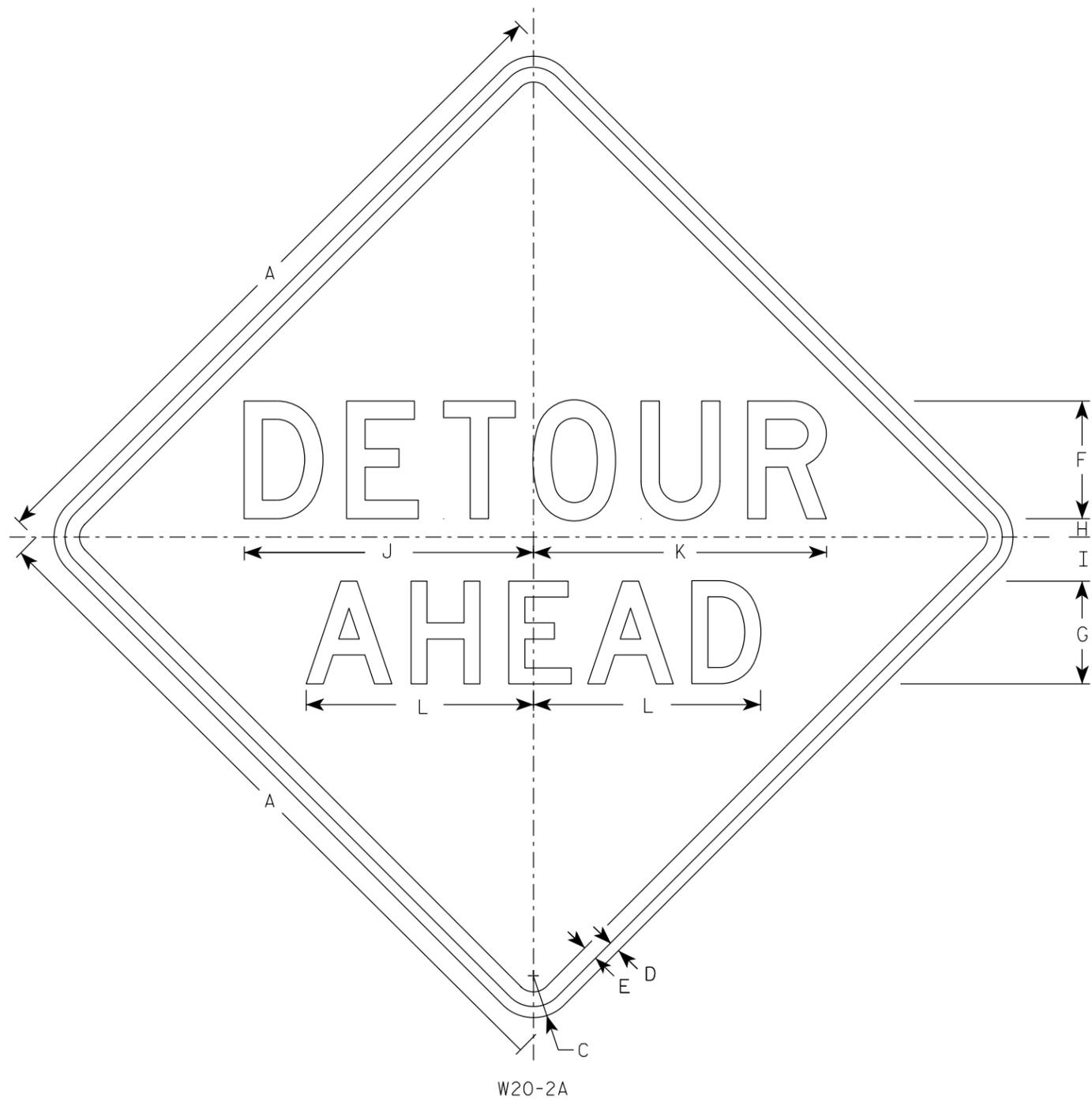
STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W14-3.10

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 187 **E**



NOTES

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

7

7

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

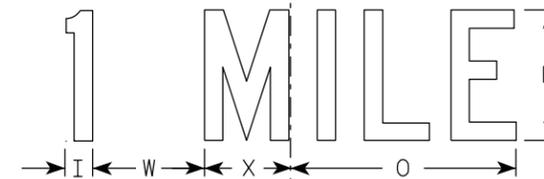
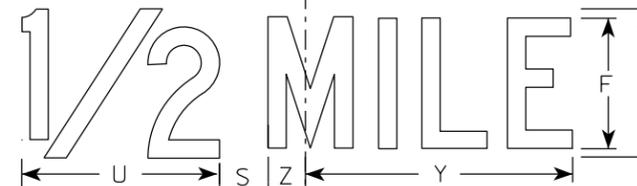
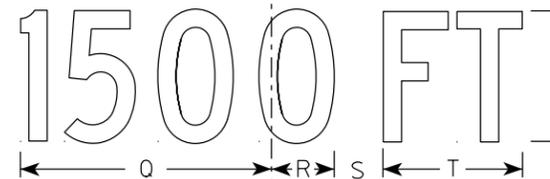
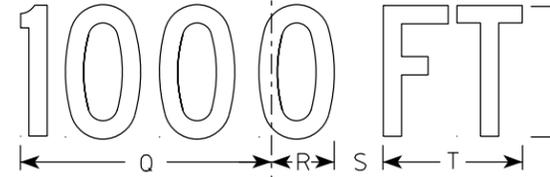
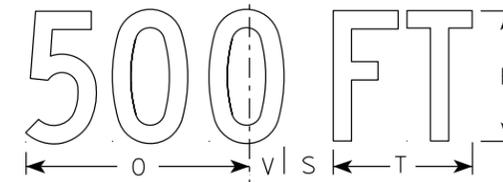
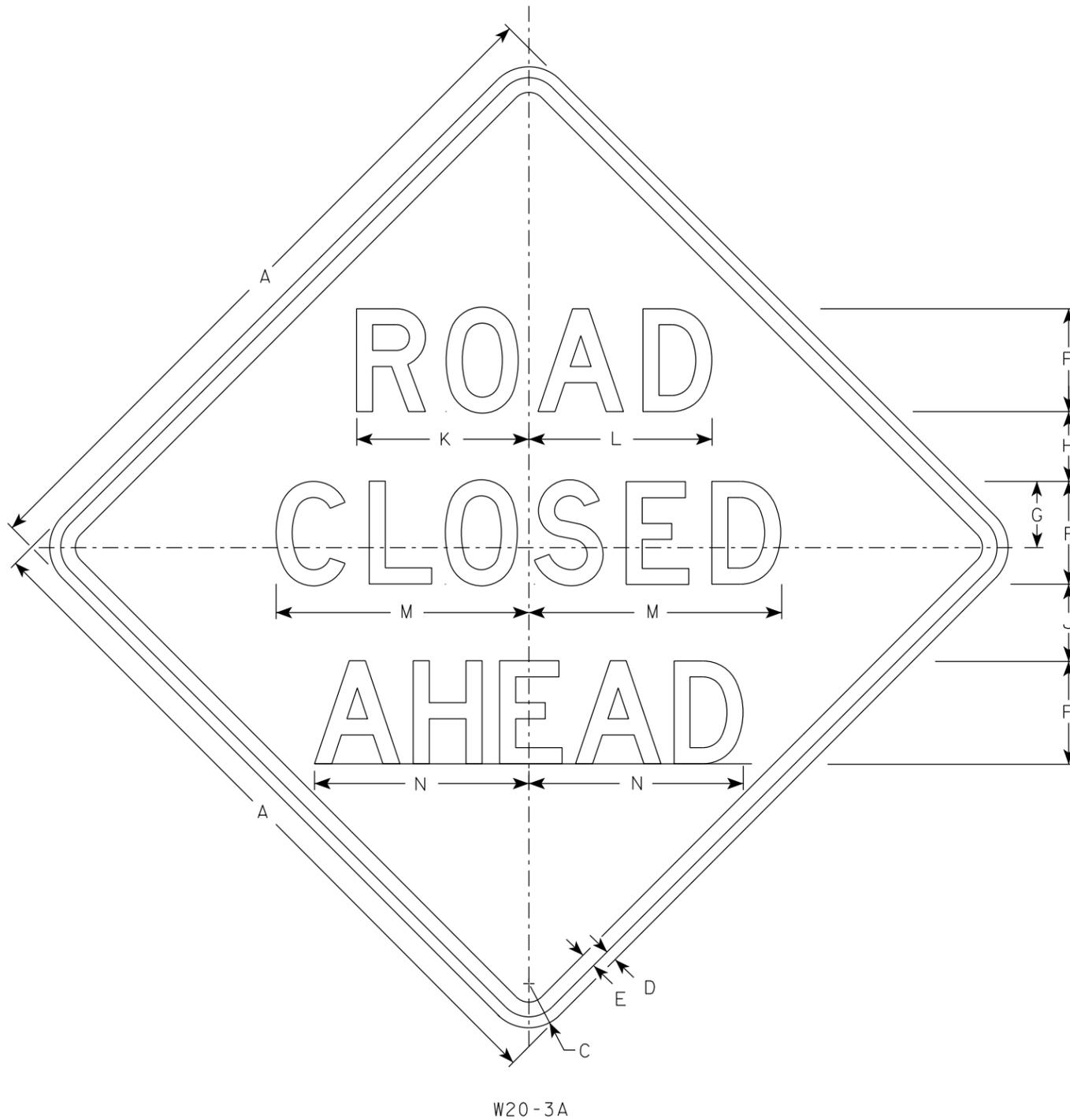
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ 188 **E**

STANDARD SIGN
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-2.7



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.

7

7

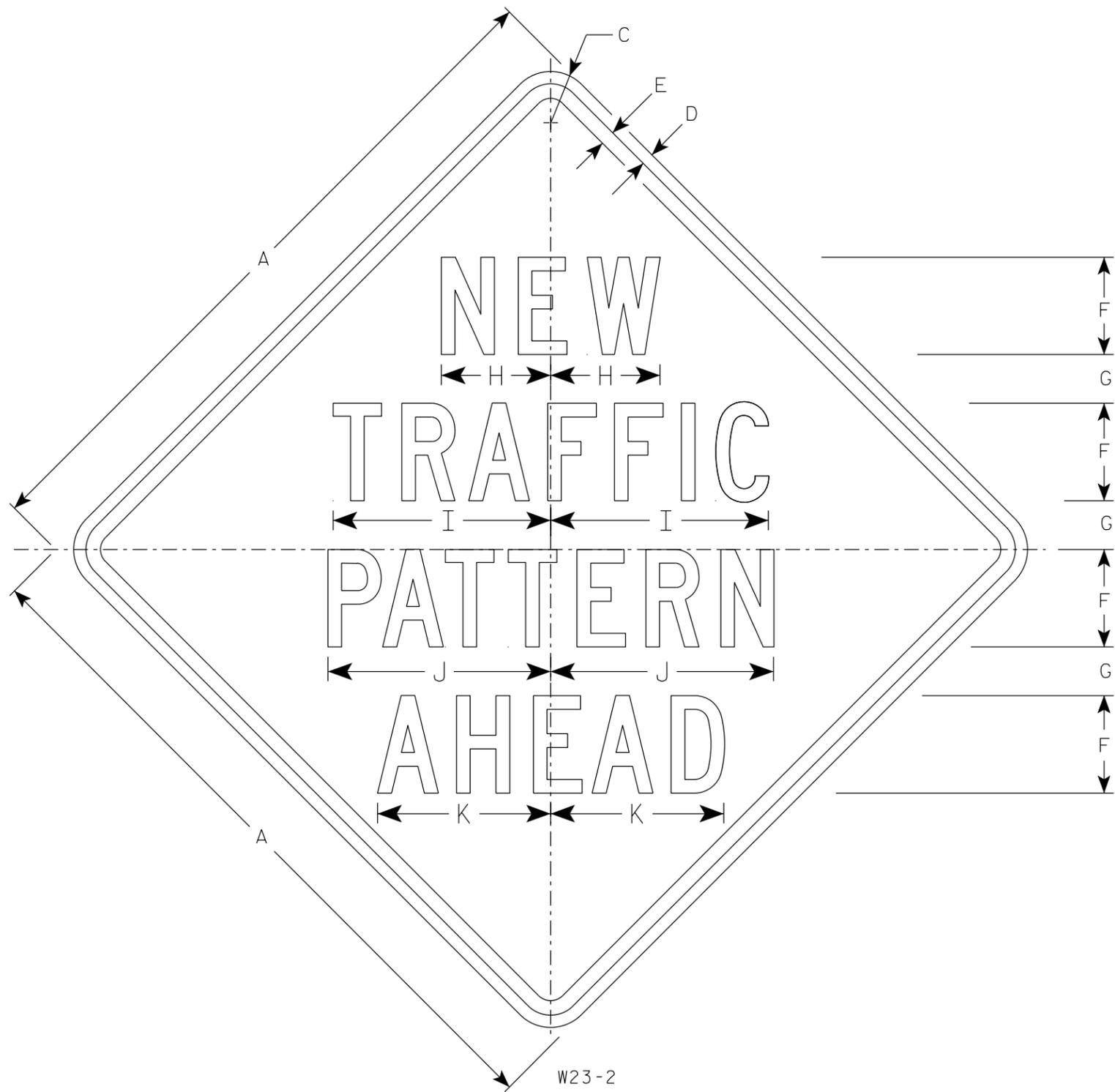
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 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 - Yellow
Message - Black
3. Message Series - C

7

7

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

W23-2

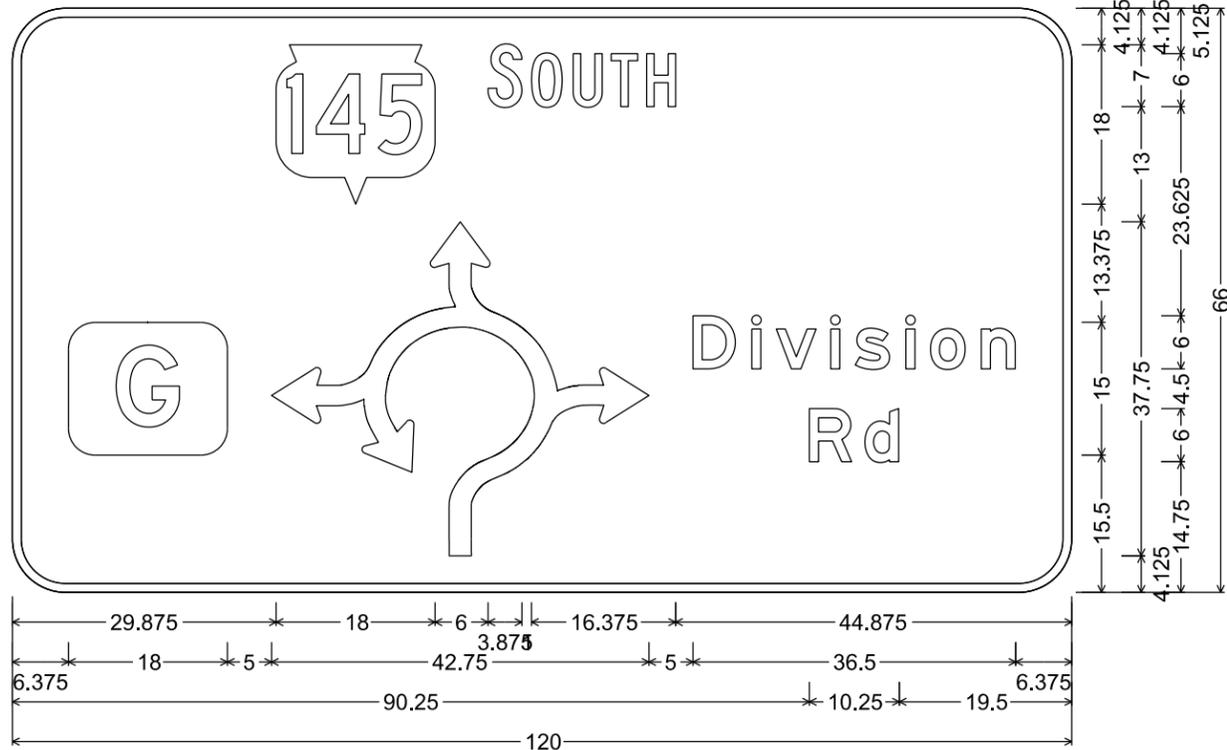
STANDARD SIGN
W23-2

WISCONSIN DEPT OF TRANSPORTATION

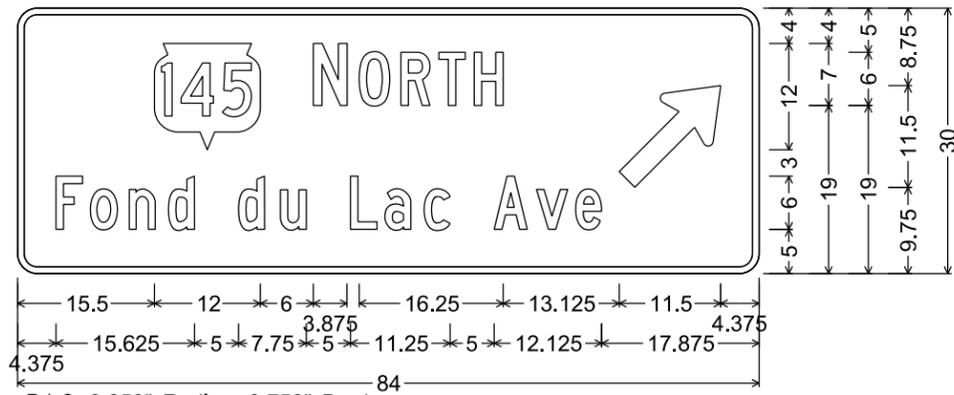
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/22/2024 PLATE NO. W23-2.2

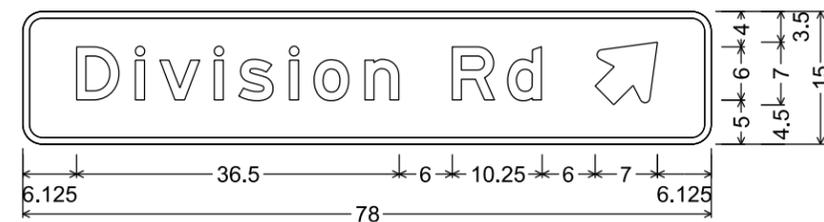
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 190 E



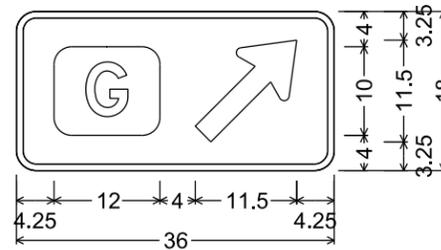
D1-62: 6.000" Radius, 1.000" Border,
"SOUTH", C; "Division", E; "Rd", E



D1-2; 2.250" Radius, 0.750" Border



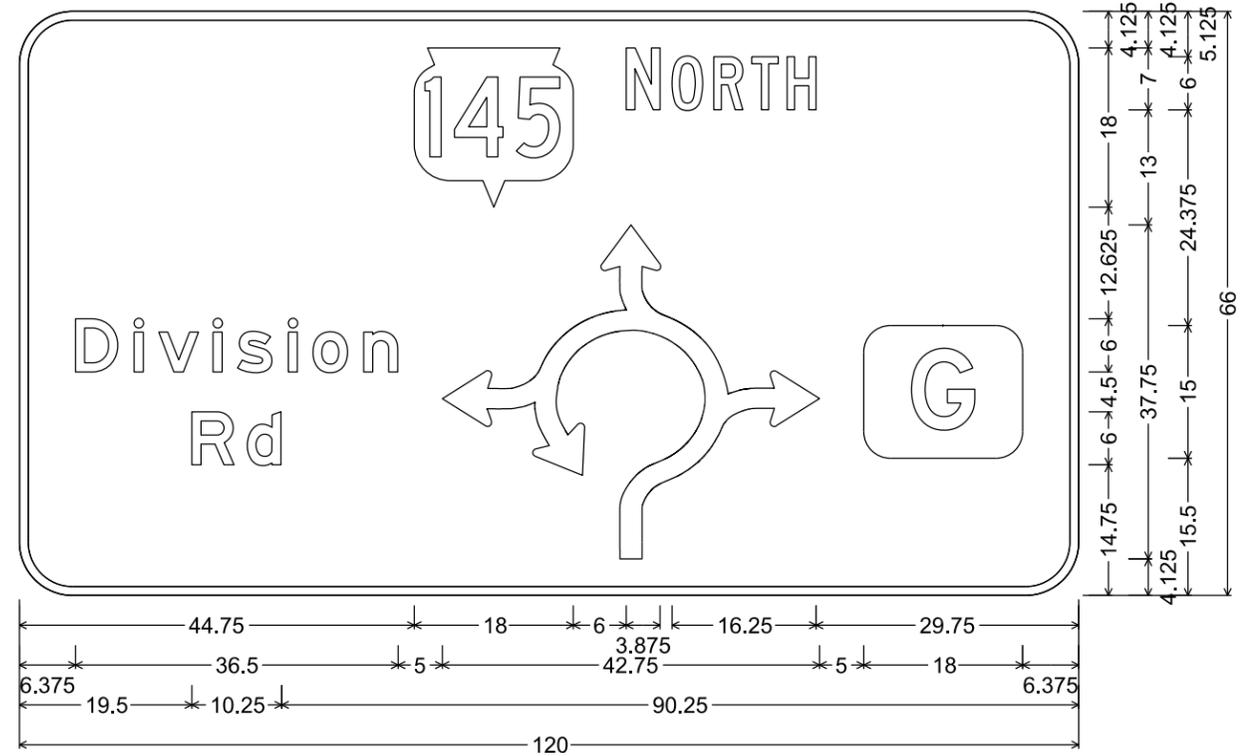
D1-1; 2.250" Radius, 0.750" Border,
"Division", E; "Rd", E



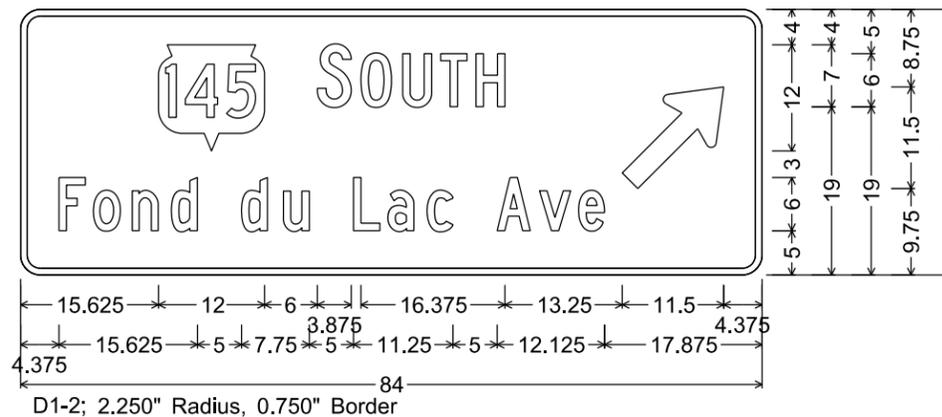
D1-1; 2.250" Radius, 0.750" Border

NOTES

1. Signs are Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - C except as noted



D1-62; 6.000" Radius, 1.000" Border,
"NORTH", C; "Division", E; "Rd", E



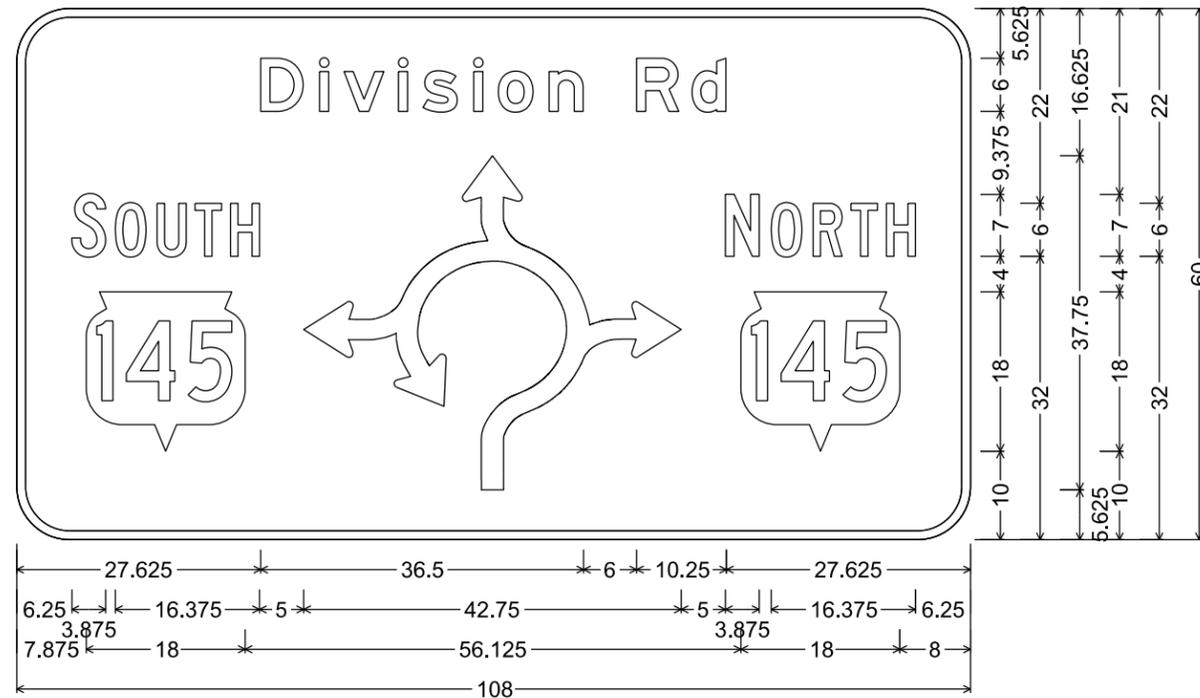
D1-2; 2.250" Radius, 0.750" Border

7

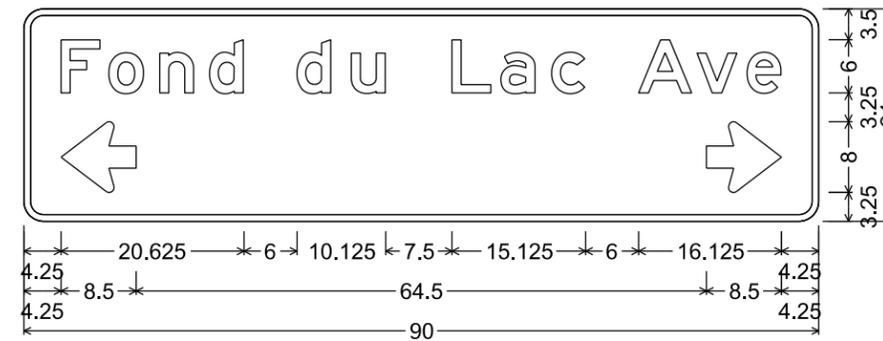
7

NOTES

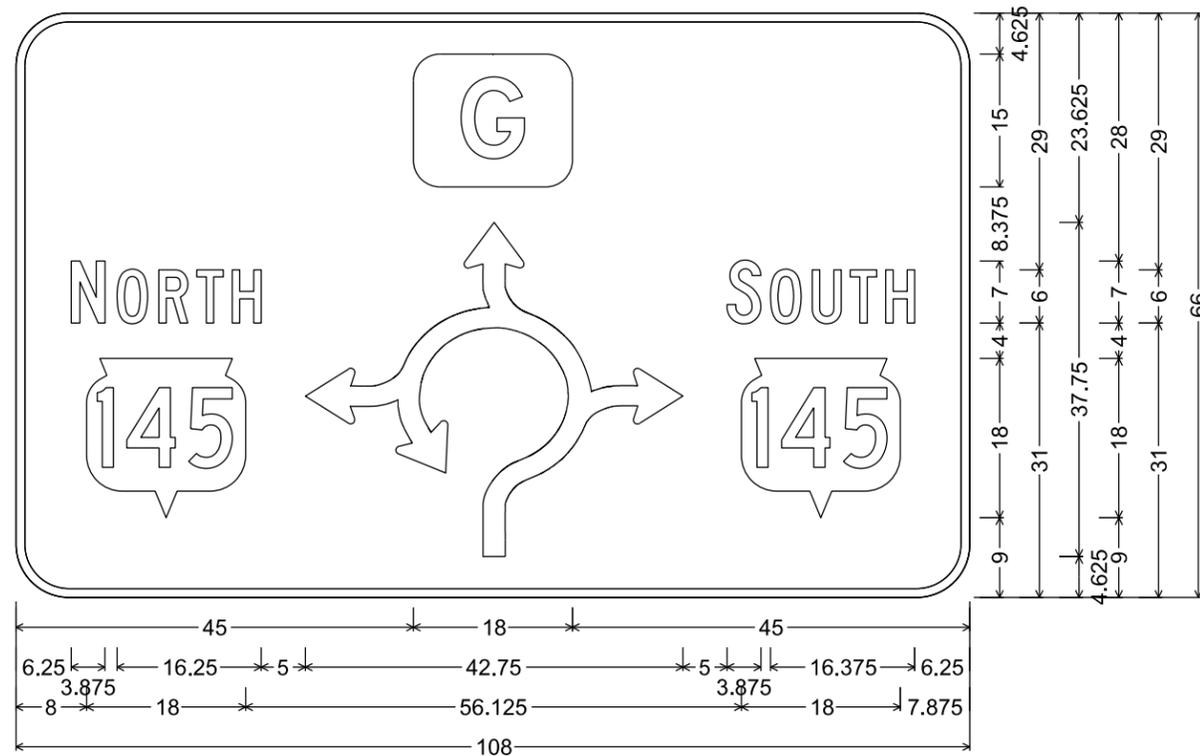
1. Signs are Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - As noted



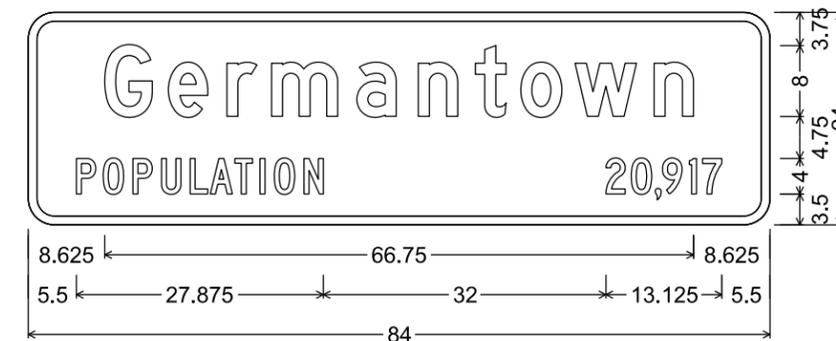
D1-62; 6.000" Radius, 1.000" Border,
"Division", E; "Rd", E; "SOUTH", C; "NORTH", C



D1-61; 2.250" Radius, 0.750" Border,
"Fond", E; "du", E; "Lac", E; "Ave", E



D1-62; 6.000" Radius, 1.000" Border,
"NORTH", C; "SOUTH", C



I2-3; 3.000" Radius, 1.000" Border,
"Germantown", D; "POPULATION", C; "20,917", C

7

7

DIVISION 1 - RDBT-STH 145 NW

STATION	REAL 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
24+39.00	2439.00	0.00	2.87	12.00	0.00	0	0	0	0	0	0
24+96.00	2496.00	57.00	21.31	12.00	1.52	26	25	2	26	3	-2
25+00.00	2500.00	4.00	134.88	12.00	0.06	12	2	0	38	3	8
25+50.00	2550.00	50.00	143.80	12.00	9.72	258	22	9	296	14	233
26+00.00	2600.00	50.00	169.55	12.00	10.19	290	22	18	586	38	477
26+50.00	2650.00	50.00	155.64	12.00	6.77	301	22	16	887	59	736
27+00.00	2700.00	50.00	119.71	12.00	6.15	255	22	12	1142	74	953
27+50.00	2750.00	50.00	208.25	12.00	4.16	304	22	10	1446	87	1222
28+00.00	2800.00	50.00	214.68	12.00	0.33	392	22	4	1838	92	1587
28+50.00	2850.00	50.00	241.13	12.00	0.00	422	22	0	2260	92	1987
29+00.00	2900.00	50.00	242.62	12.00	0.00	448	22	0	2708	92	2413
29+50.00	2950.00	50.00	229.09	12.00	0.00	437	22	0	3145	92	2828
30+00.00	3000.00	50.00	11.99	12.00	0.00	223	22	0	3368	92	3029
30+50.00	3050.00	50.00	93.70	12.00	9.94	98	22	9	3466	104	3093
31+00.00	3100.00	50.00	58.30	12.00	33.27	141	22	40	3607	156	3160
31+50.00	3150.00	50.00	11.99	12.00	87.29	65	22	112	3672	302	3057
32+00.00	3200.00	50.00	9.13	12.00	74.27	20	22	150	3692	497	2860
32+50.00	3250.00	50.00	17.24	12.00	43.72	24	22	109	3716	638	2721
33+00.00	3300.00	50.00	37.61	12.00	38.26	51	22	76	3767	737	2651
33+63.00	3363.00	63.00	38.89	12.00	94.53	89	28	155	3856	939	2510
35+33.00	3533.00	0.00	73.40	12.00	43.11	0	0	0	3856	939	2510
35+50.00	3550.00	17.00	60.85	12.00	37.54	42	8	25	3898	971	2512
36+00.00	3600.00	50.00	57.96	12.00	28.78	110	22	61	4008	1050	2521
36+50.00	3650.00	50.00	87.55	12.00	0.07	135	22	27	4143	1086	2599
37+00.00	3700.00	50.00	93.03	12.00	0.94	167	22	1	4310	1087	2742
37+50.00	3750.00	50.00	91.73	10.00	1.00	171	20	2	4481	1089	2891
38+00.00	3800.00	50.00	96.77	10.00	1.35	175	19	2	4656	1092	3044
38+50.00	3850.00	50.00	83.24	10.00	2.46	167	19	4	4823	1097	3187
39+00.00	3900.00	50.00	73.17	10.00	9.63	145	19	11	4968	1112	3299
39+50.00	3950.00	50.00	69.25	10.00	9.68	132	19	18	5100	1135	3388
39+75.00	3975.00	25.00	119.49	10.00	0.37	87	9	5	5187	1141	3460
						5,187	586	878			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUE INDICATES SHORTAGE OF MATERIAL: ((CUT - SALVAGED PAVT) - (FILL * FILL FACTOR))

DIVISION 1 - RDBT-STH 145-SE

STATION	REAL 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
NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 1	NOTE 8						
30+00.00	3000.00	0.00	19.46	8.00	0.00	0	0	0	0	0	0
30+50.00	3050.00	50.00	107.77	8.00	0.00	118	15	0	118	0	103
31+00.00	3100.00	50.00	100.28	8.00	0.00	193	15	0	311	0	281
31+50.00	3150.00	50.00	126.27	8.00	0.00	210	15	0	521	0	476
32+00.00	3200.00	50.00	129.22	8.00	0.00	237	15	0	758	0	698
32+50.00	3250.00	50.00	128.45	8.00	0.00	239	15	0	997	0	922
33+00.00	3300.00	50.00	95.73	8.00	3.01	208	15	3	1205	4	1111
33+60.00	3360.00	60.00	74.62	8.00	49.00	189	18	58	1394	79	1207
35+33.00	3533.00	173.00	26.91	8.00	107.32	325	51	501	1719	731	829
35+50.00	3550.00	0.00	31.91	8.00	95.70	0	0	0	1719	731	829
36+00.00	3600.00	50.00	35.66	8.00	44.69	63	15	130	1782	900	708
36+50.00	3650.00	50.00	35.77	8.00	9.24	66	15	50	1848	965	694
37+00.00	3700.00	50.00	43.52	8.00	5.46	73	15	14	1921	983	734
37+50.00	3750.00	50.00	44.33	8.00	7.10	81	15	12	2002	998	785
38+00.00	3800.00	50.00	34.04	8.00	5.68	73	15	12	2075	1014	827
38+50.00	3850.00	50.00	49.50	8.00	1.56	77	15	7	2152	1023	880
39+00.00	3900.00	50.00	59.77	8.00	1.22	101	15	3	2253	1027	962
39+50.00	3950.00	50.00	70.81	8.00	0.00	121	15	1	2374	1028	1067
39+72.00	3972.00	22.00	54.88	8.00	0.88	51	7	0	2425	1028	1111
						2,425	286	791			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUE INDICATES SHORTAGE OF MATERIAL: ((CUT - SALVAGED PAVT) - (FILL * FILL FACTOR))

DIVISION 1 - RDBT-CTH G-NB

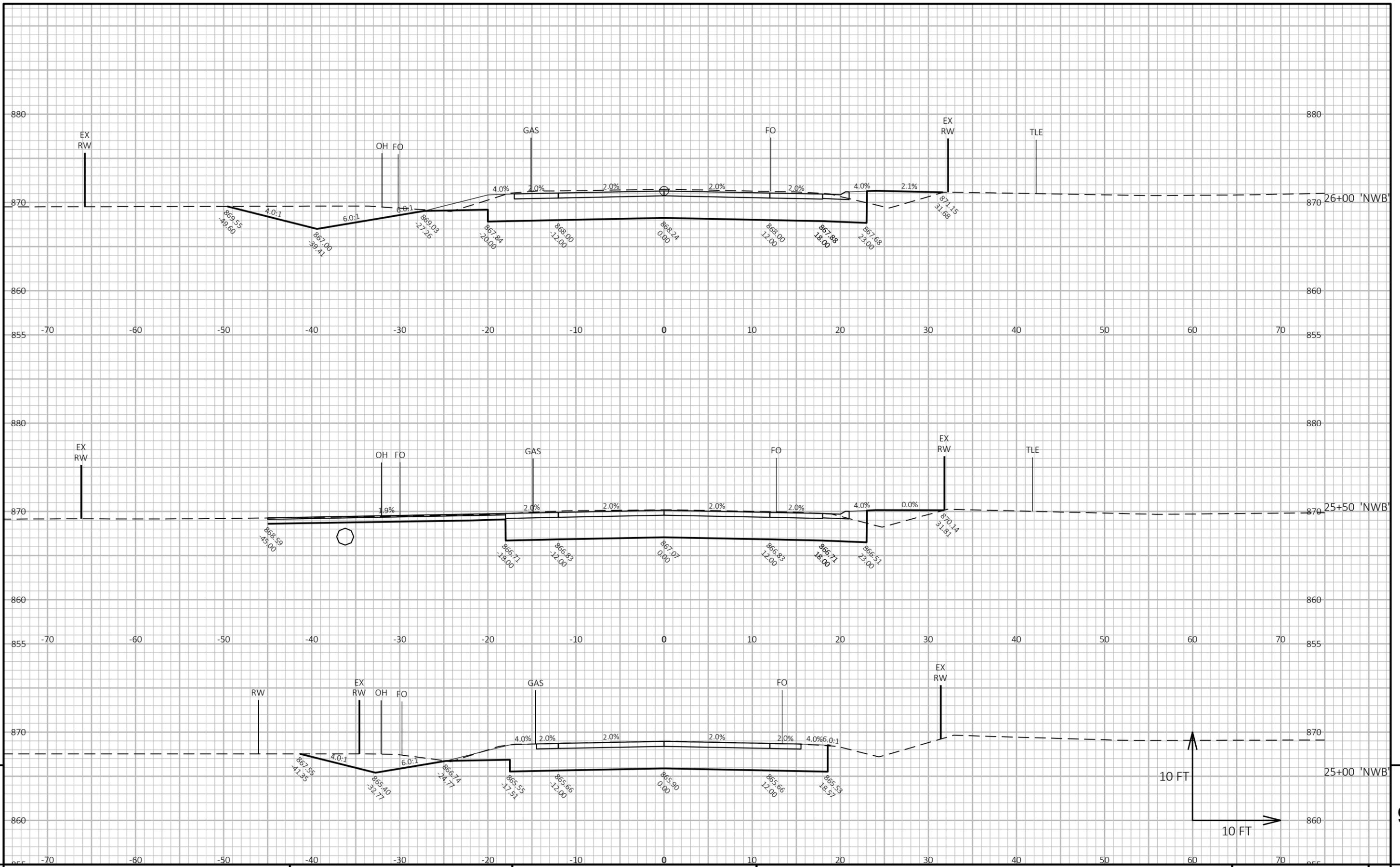
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
12+16.74	1216.74	0.00	82.40	5.00	0.05	0	0	0	0	0	0
12+50.00	1250.00	33.26	88.72	5.00	0.00	105	6	0	105	0	99
13+00.00	1300.00	50.00	100.00	5.00	0.42	175	9	0	280	0	265
13+50.00	1350.00	50.00	81.87	5.00	5.48	168	9	5	448	7	418
14+00.00	1400.00	50.00	49.46	5.00	41.26	122	9	43	570	62	475
14+50.00	1450.00	50.00	11.12	5.00	89.74	56	9	121	626	220	364
14+80.00	1480.00	30.00	0.91	5.00	146.40	7	6	131	633	390	195
16+55.00	1655.00	0.00	0.50	5.00	232.93	0	0	0	633	390	195
17+00.00	1700.00	45.00	0.78	5.00	168.35	1	8	334	634	824	-246
17+50.00	1750.00	50.00	1.38	5.00	55.50	2	9	207	636	1093	-522
18+00.00	1800.00	50.00	7.62	5.00	17.24	8	9	67	644	1180	-610
18+50.00	1850.00	50.00	16.68	5.00	8.19	23	9	24	667	1212	-628
19+00.00	1900.00	50.00	46.41	5.00	11.31	58	9	18	725	1235	-602
19+50.00	1950.00	50.00	87.73	5.00	18.08	124	9	27	849	1270	-522
20+00.00	2000.00	50.00	88.75	5.00	10.79	163	9	27	1012	1305	-403
20+50.00	2050.00	50.00	70.11	5.00	1.95	147	9	12	1159	1321	-281
21+00.00	2100.00	50.00	48.85	5.00	0.00	110	9	2	1269	1323	-182
21+50.00	2150.00	50.00	61.34	5.00	0.00	102	9	0	1371	1323	-89
21+73.00	2173.00	23.00	130.42	5.00	0.02	82	4	0	1453	1323	-11
						1,453	141	1,018			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUE INDICATES SHORTAGE OF MATERIAL: ((CUT - SALVAGED PAVT) - (FILL * FILL FACTOR))

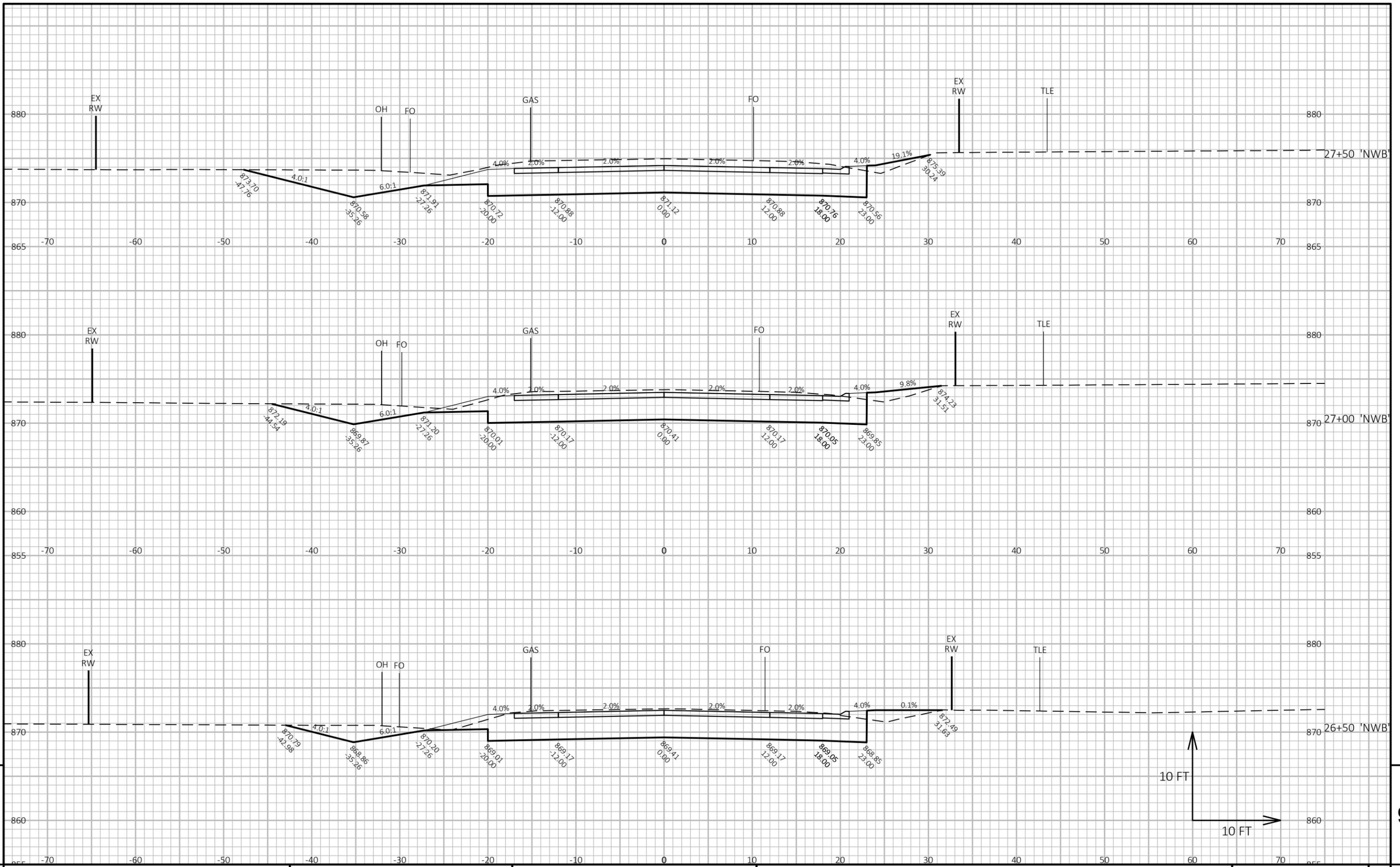
DIVISION 1 - RDBT-CTH G-SB

STATION	REAL 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
NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 1	NOTE 8						
12+16.74	1216.74	0.00	56.99	4.00	0.00	0	0	0	0	0	0
12+50.00	1250.00	33.26	77.31	4.00	2.79	83	5	2	83	3	75
13+00.00	1300.00	50.00	56.28	4.00	0.00	124	7	3	207	7	189
13+50.00	1350.00	50.00	47.05	4.00	11.35	96	7	11	303	21	263
14+00.00	1400.00	50.00	48.64	5.00	4.92	89	8	15	392	40	325
14+50.00	1450.00	50.00	31.82	5.00	45.37	75	9	47	467	101	330
14+85.00	1485.00	35.00	23.60	5.00	81.33	36	6	82	503	208	253
16+65.00	1655.00	0.00	76.22	5.00	186.11	0	0	0	503	208	253
17+00.00	1700.00	45.00	40.16	5.00	134.83	97	8	267	600	555	-5
17+50.00	1750.00	50.00	90.67	5.00	59.34	121	9	180	721	789	-127
18+00.00	1800.00	50.00	102.98	5.00	2.04	179	9	57	900	863	-31
18+50.00	1850.00	50.00	162.49	5.00	0.49	246	9	2	1146	866	203
19+00.00	1900.00	50.00	131.55	5.00	0.00	272	9	0	1418	866	466
19+50.00	1950.00	50.00	75.09	5.00	0.01	191	9	0	1609	866	648
20+00.00	2000.00	50.00	65.41	5.00	0.00	130	9	0	1739	866	769
20+50.00	2050.00	50.00	64.84	5.00	0.02	121	9	0	1860	866	881
21+00.00	2100.00	50.00	66.97	5.00	0.34	122	9	0	1982	866	994
21+50.00	2150.00	50.00	71.74	5.00	0.27	128	9	1	2110	867	1112
21+65.00	2173.00	23.00	71.37	5.00	0.08	61	4	0	2171	867	1169
						2,171	135	667			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUE INDICATES SHORTAGE OF MATERIAL: ((CUT - SALVAGED PAVT) - (FILL * FILL FACTOR))



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'NWB' SHEET 197



9

9

PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'NWB' SHEET 198 E

FILE NAME : I:\49\49074100 STH_145_&_CTHG\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - NW2

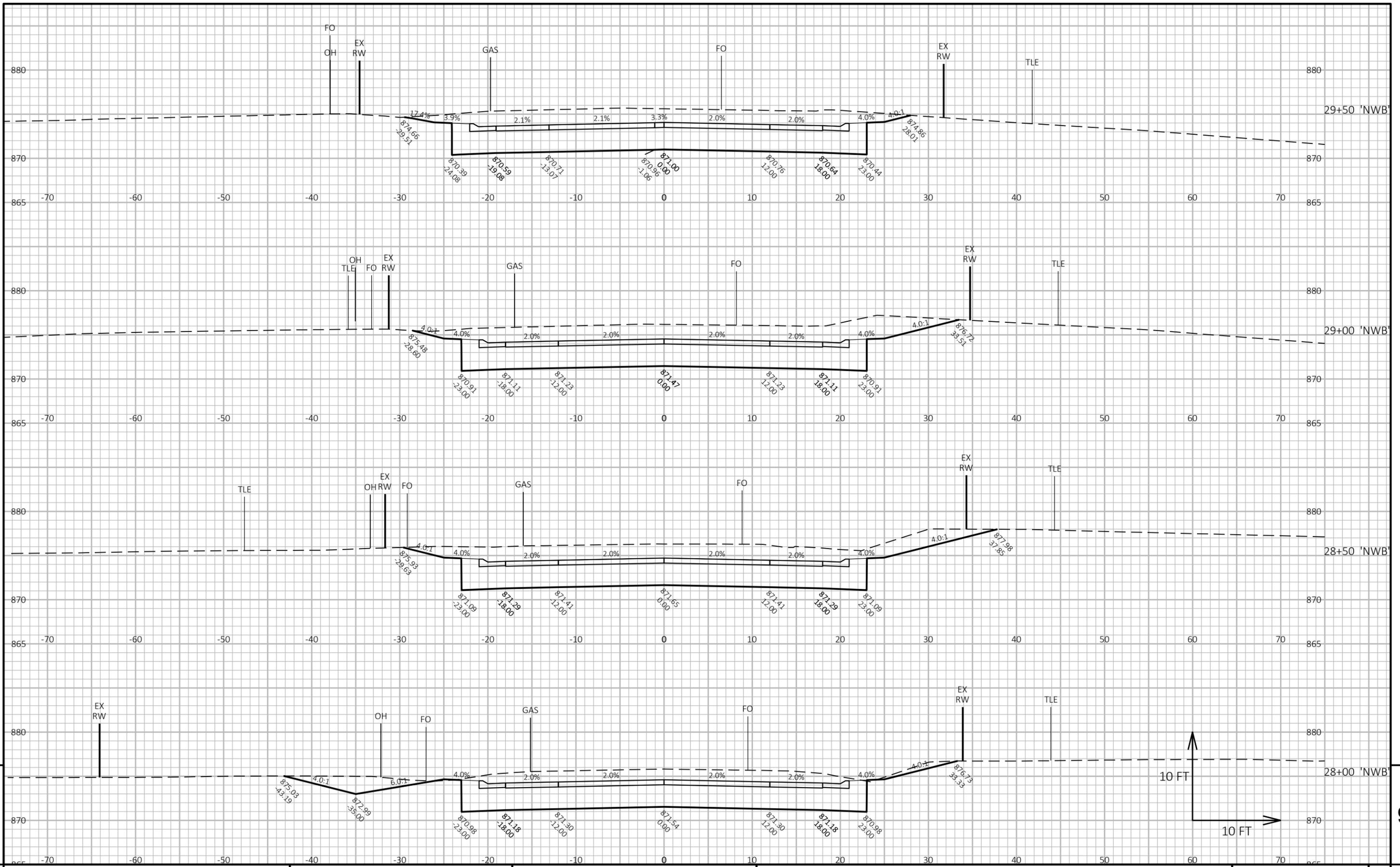
PLOT DATE : 10/21/2025 11:48 AM

PLOT BY : JOHNSON, ZACHARY

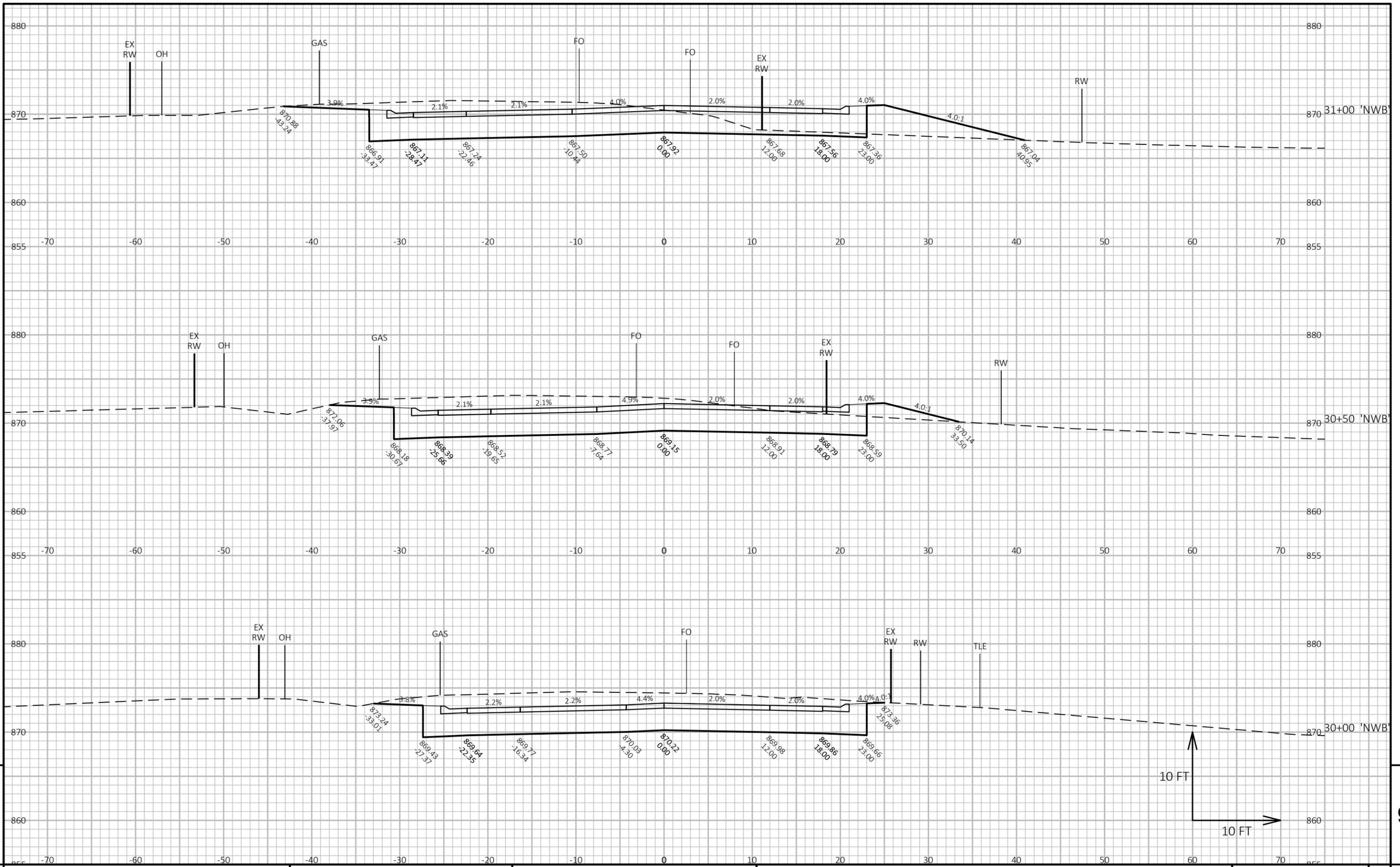
PLOT NAME :

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

WISDOT/CADD SHEET 49



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'NWB' SHEET 199

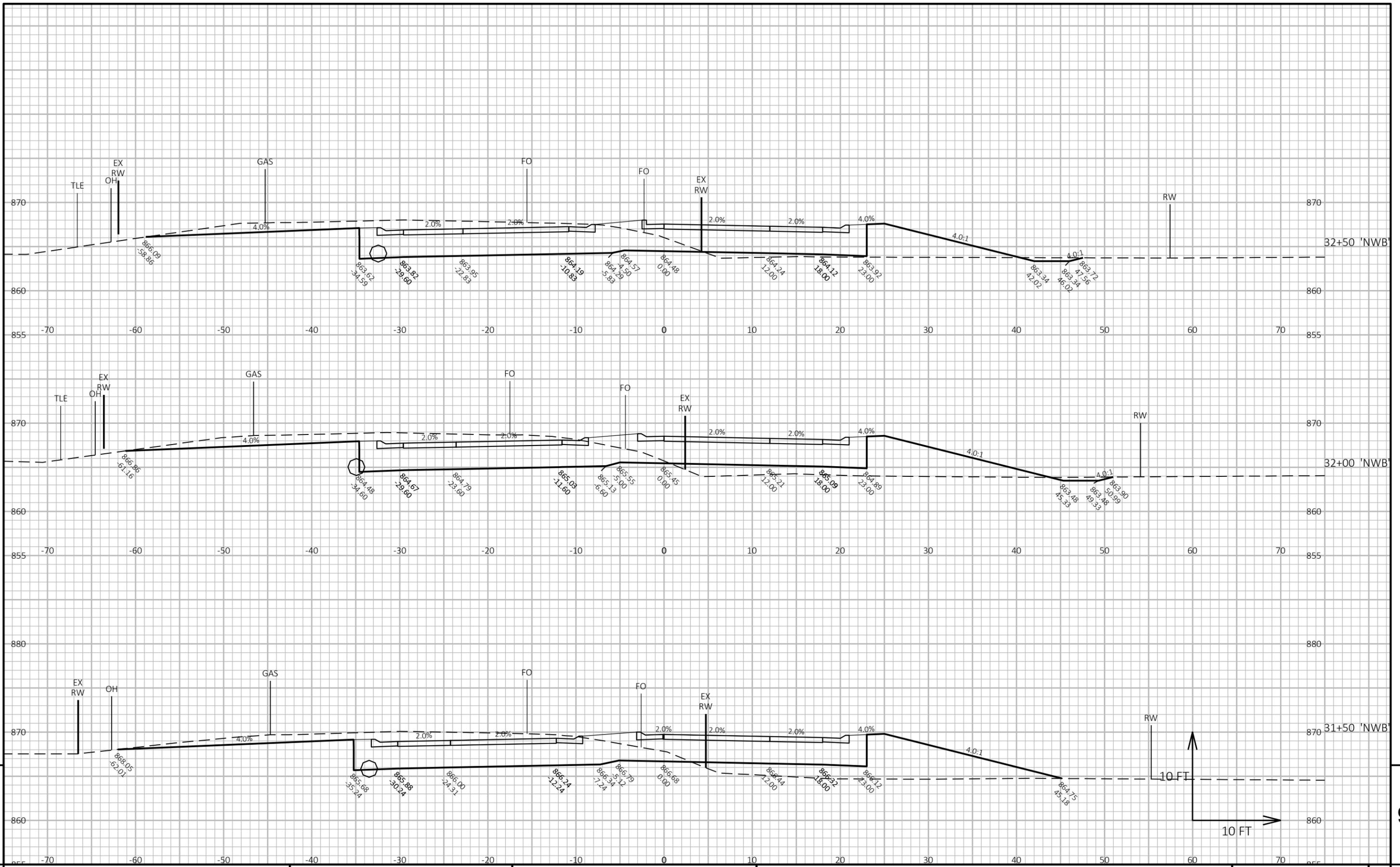


9

9

PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'NWB' SHEET 200 E

FILE NAME: I:\49\49074100 STH_145_&_CTHG\C3D\SHEETSPLAN\090201-XS.DWG PLOT DATE: 10/21/2025 11:48 AM PLOT BY: JOHNSON, ZACHARY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



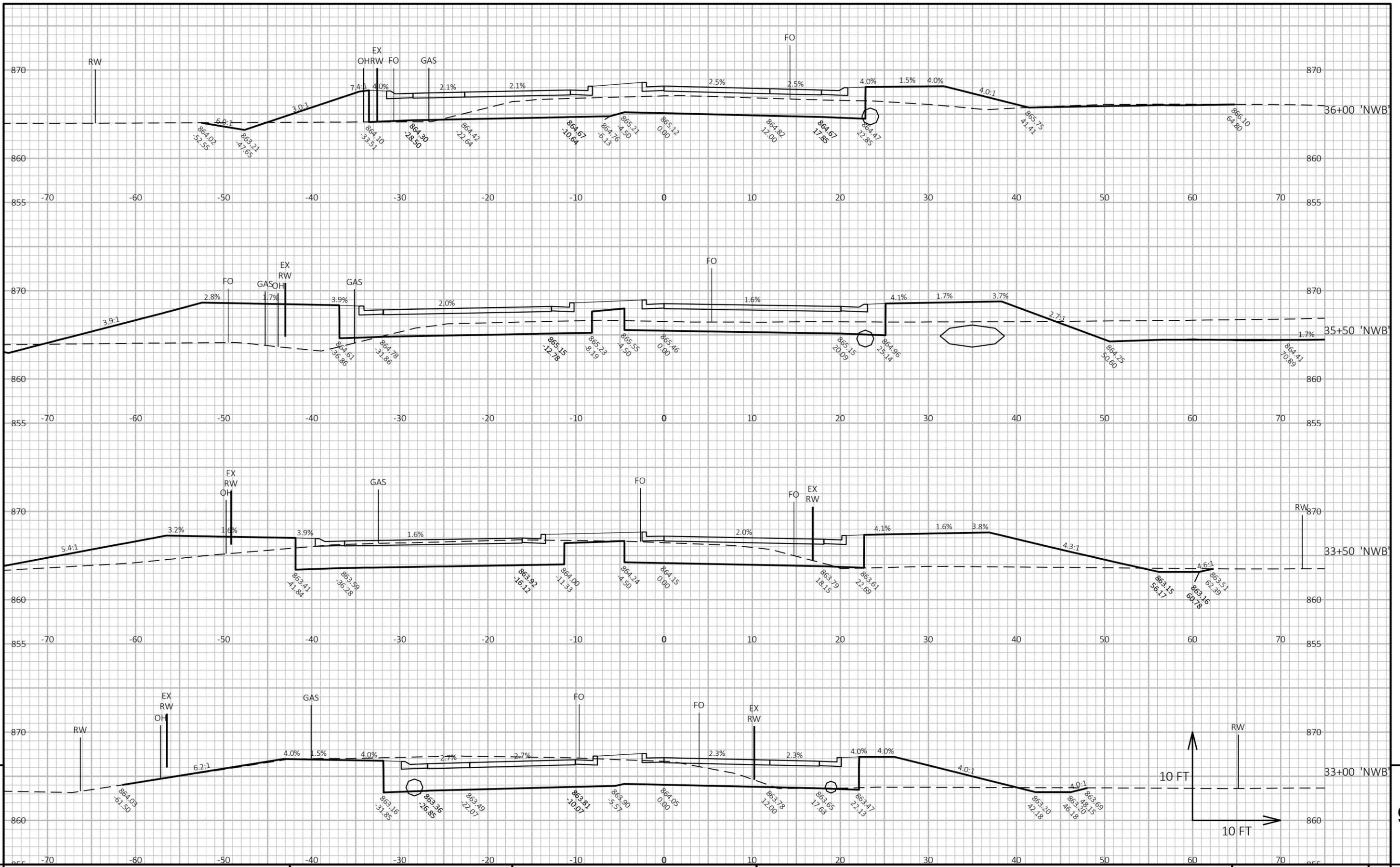
PROJECT NO: 2475-04-71

HWY: STH 145

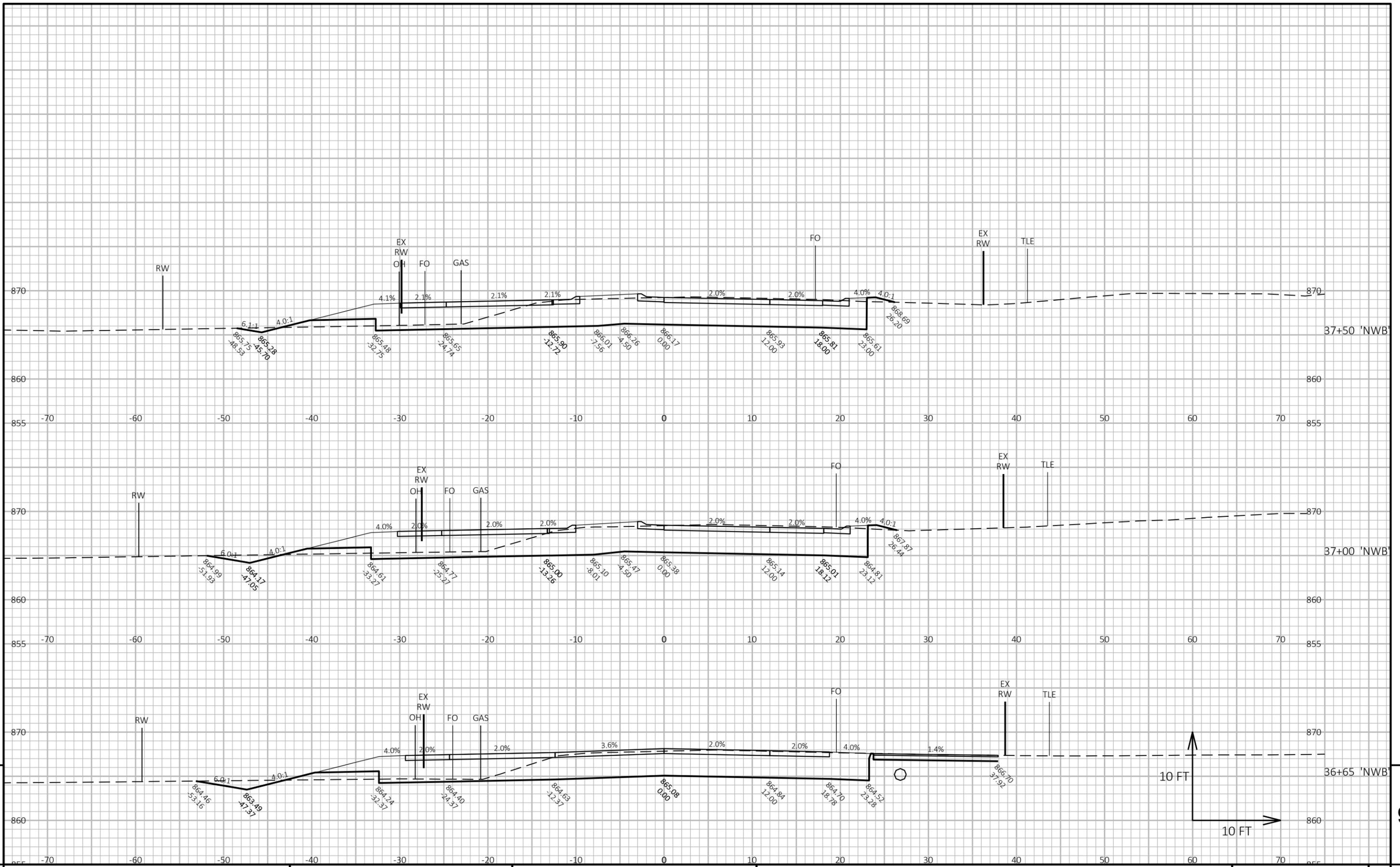
COUNTY: WASHINGTON

CROSS SECTIONS: STH 145 'NWB'

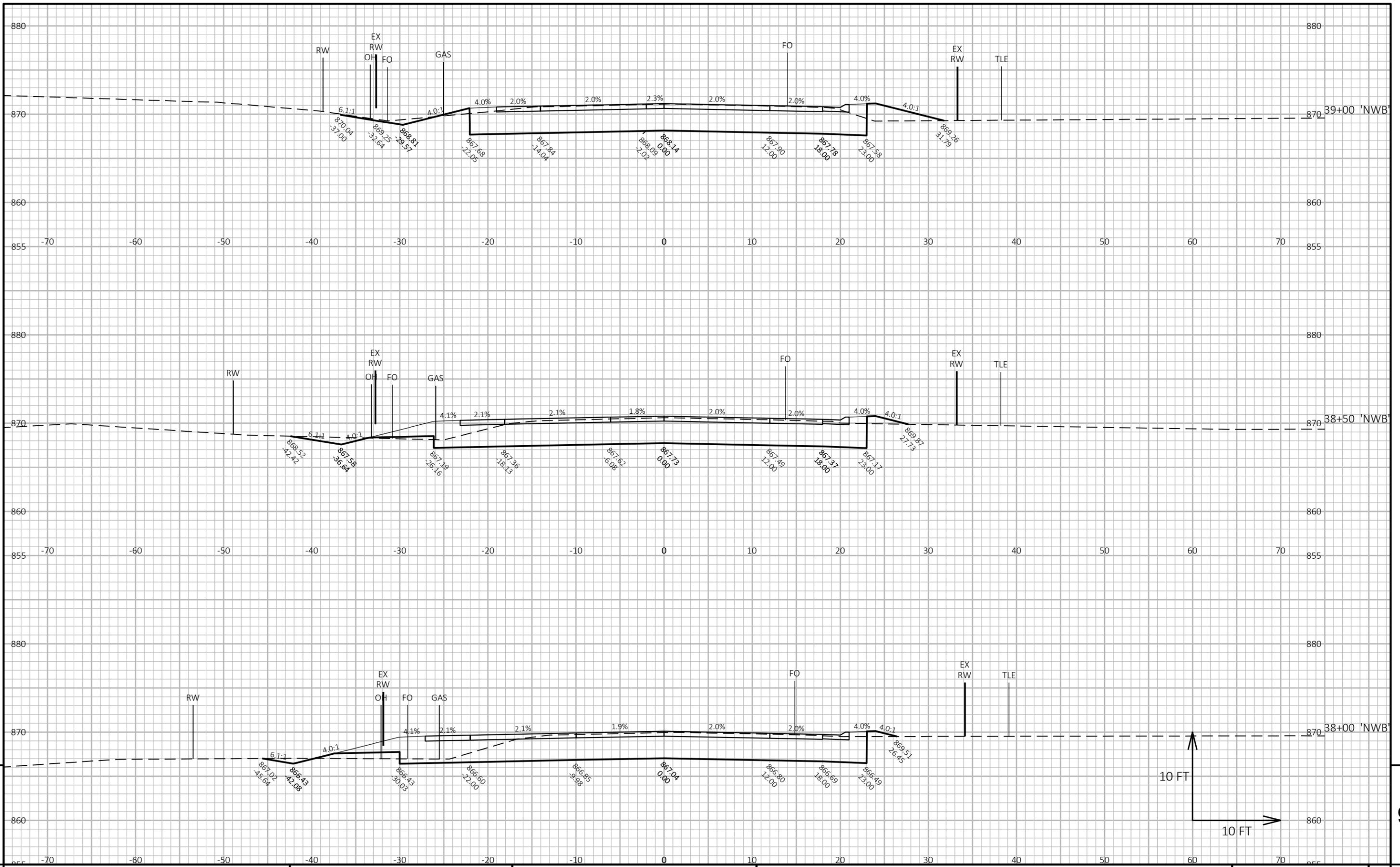
SHEET 201



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'NWB' SHEET 202



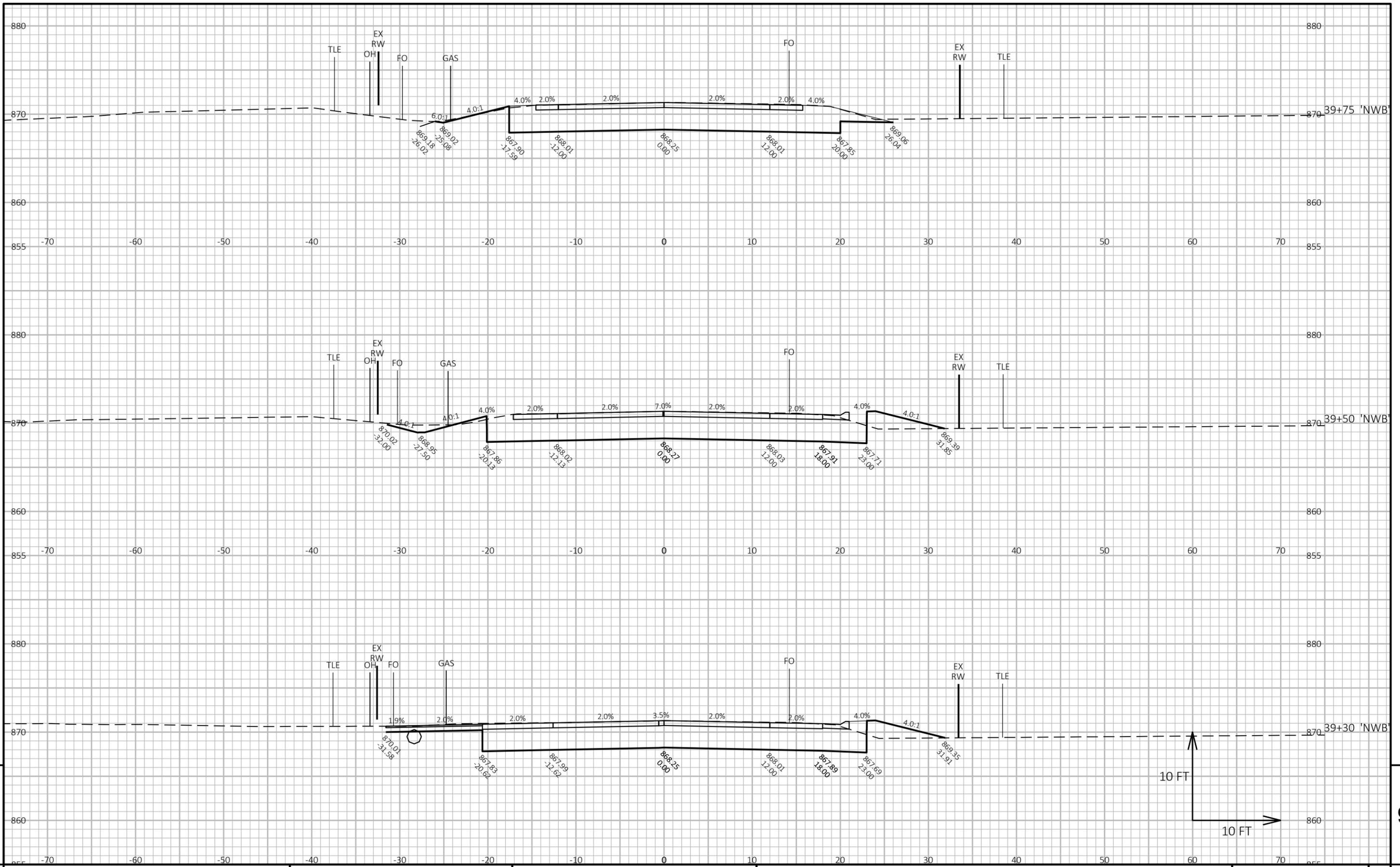
PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'NWB' SHEET 203 E



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'NWB' SHEET 204 E

FILE NAME: I:\49\49074100_STH_145_&_CTHG\C3D\SHEETSPLAN\090201-XS.DWG PLOT DATE: 10/21/2025 11:49 AM PLOT BY: JOHNSON, ZACHARY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - NW8



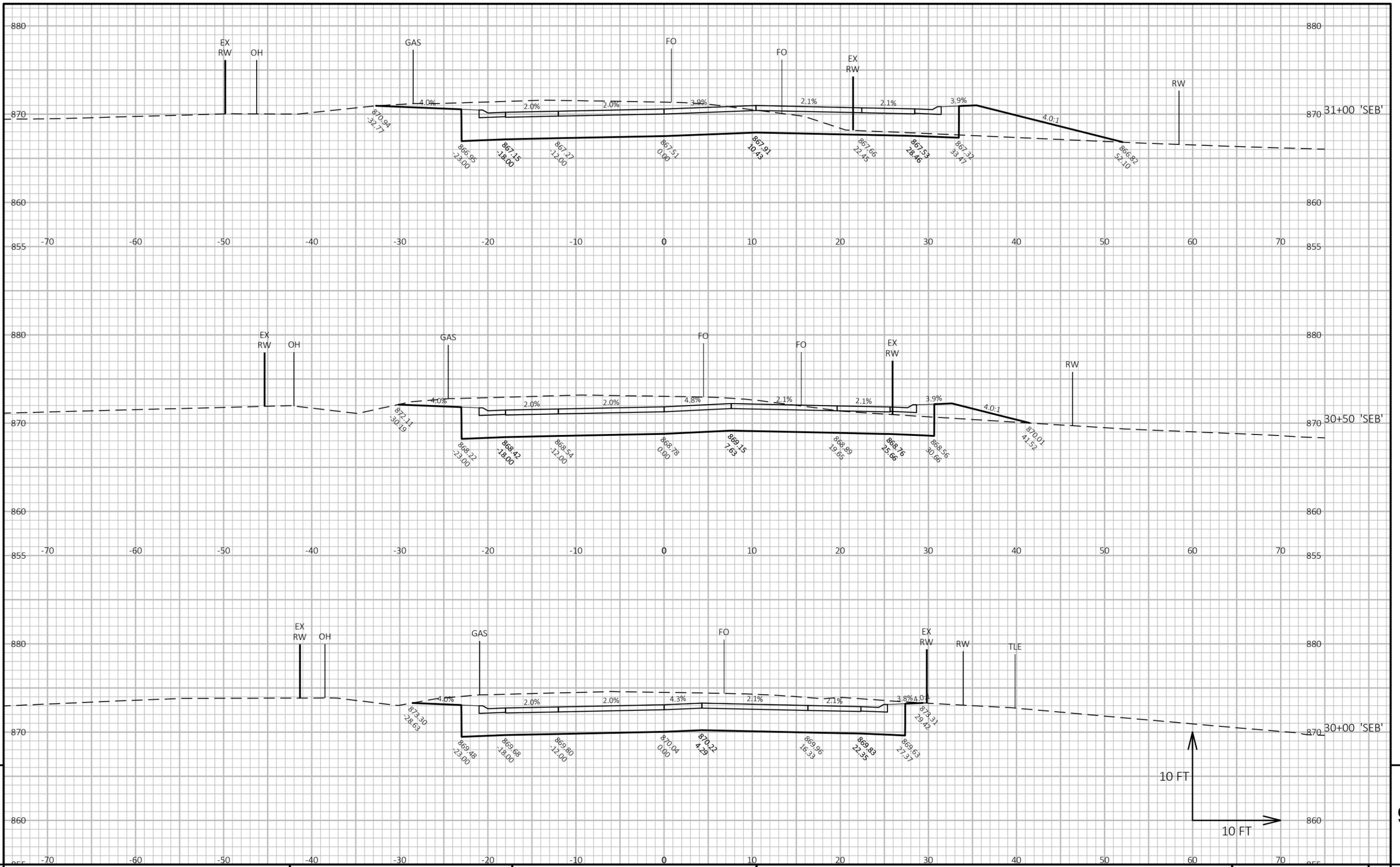
9

9

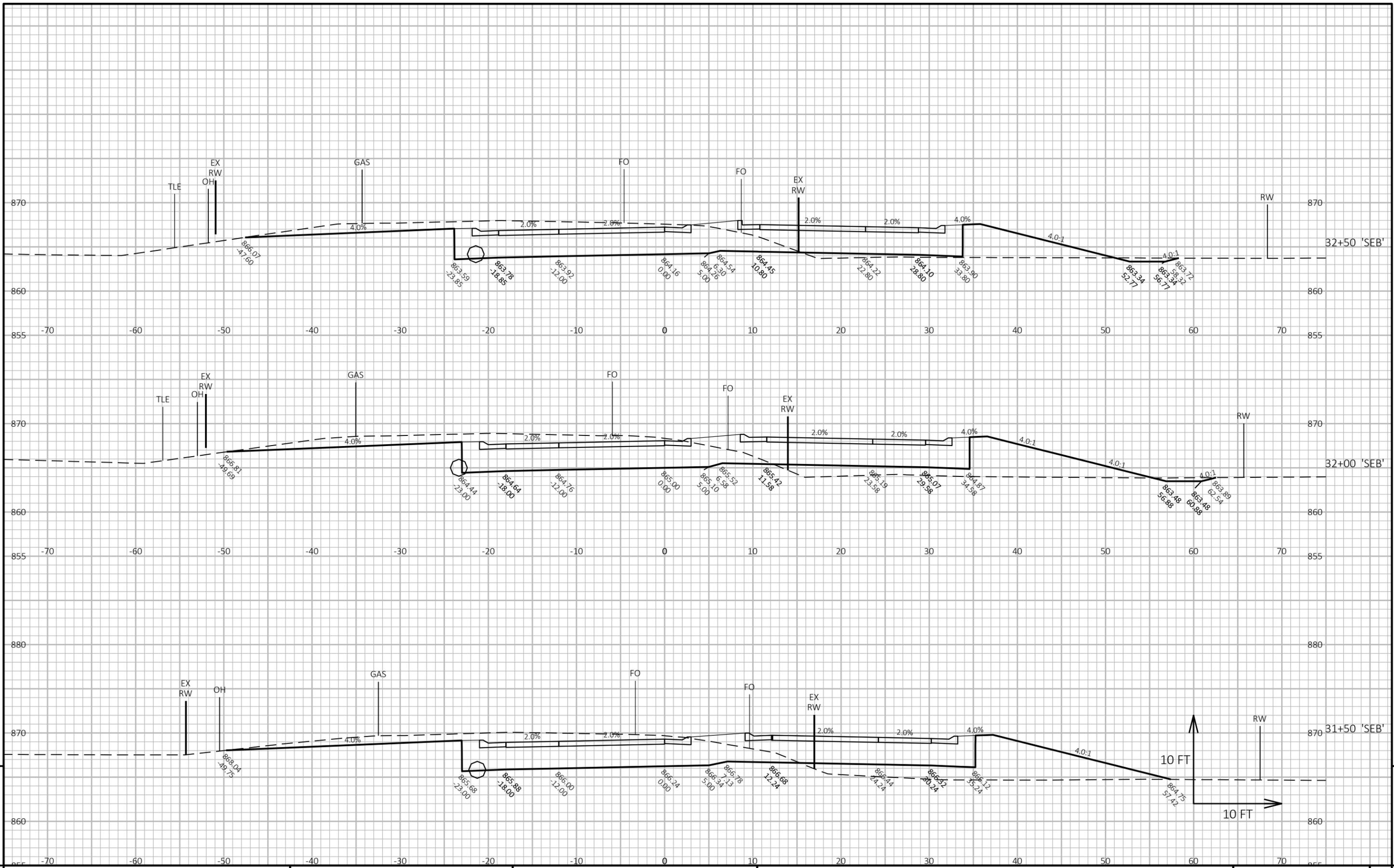
PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'NWB' SHEET 205 E

FILE NAME: I:\49\49074100_STH_145_&_CTHG\C3D\SHEETSPLAN\090201-XS.DWG PLOT DATE: 10/21/2025 11:49 AM PLOT BY: JOHNSON, ZACHARY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

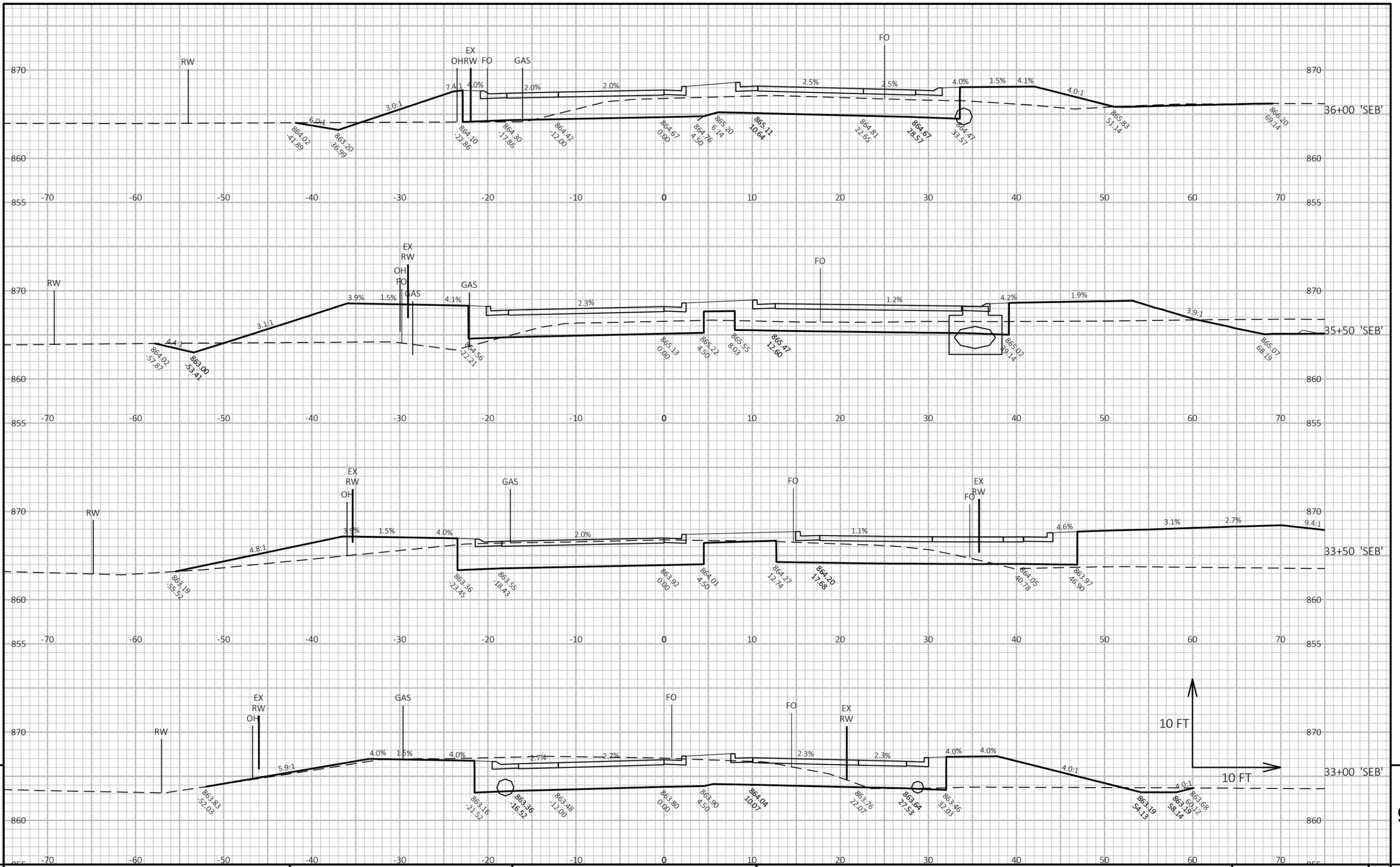
LAYOUT NAME - NW9



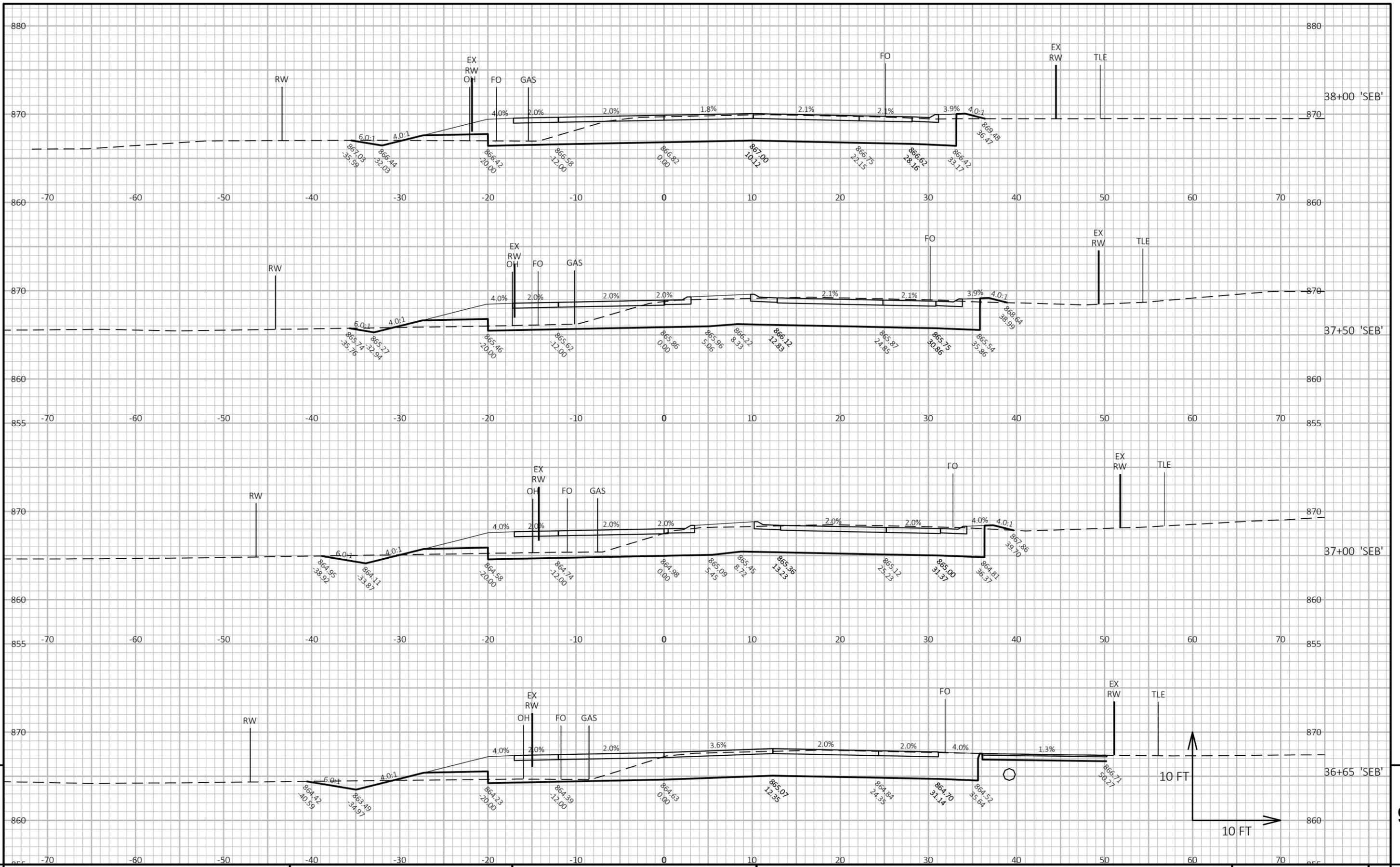
PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'SEB' SHEET 206



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'SEB' SHEET 207



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'SEB' SHEET 208



PROJECT NO: 2475-04-71

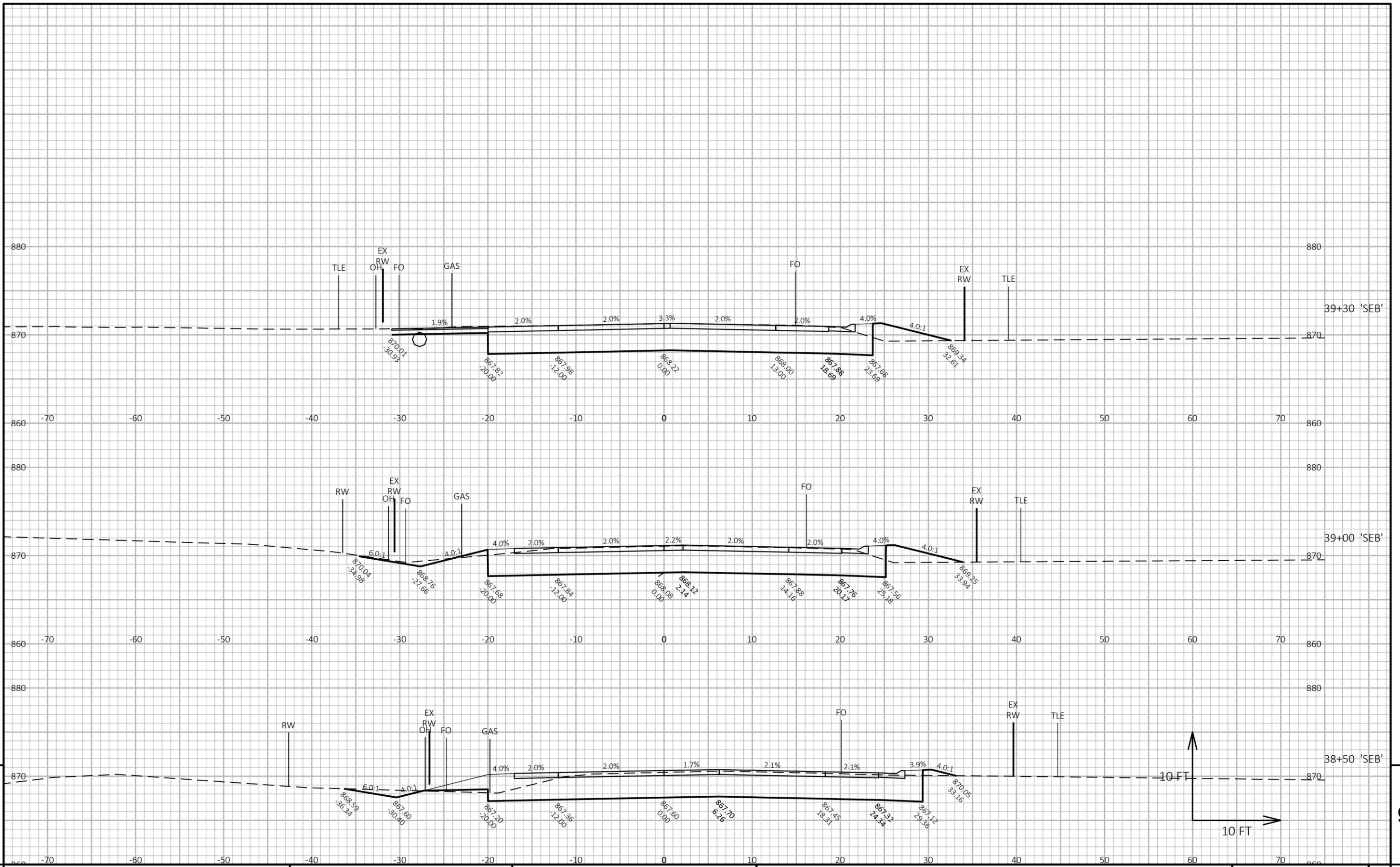
HWY: STH 145

COUNTY: WASHINGTON

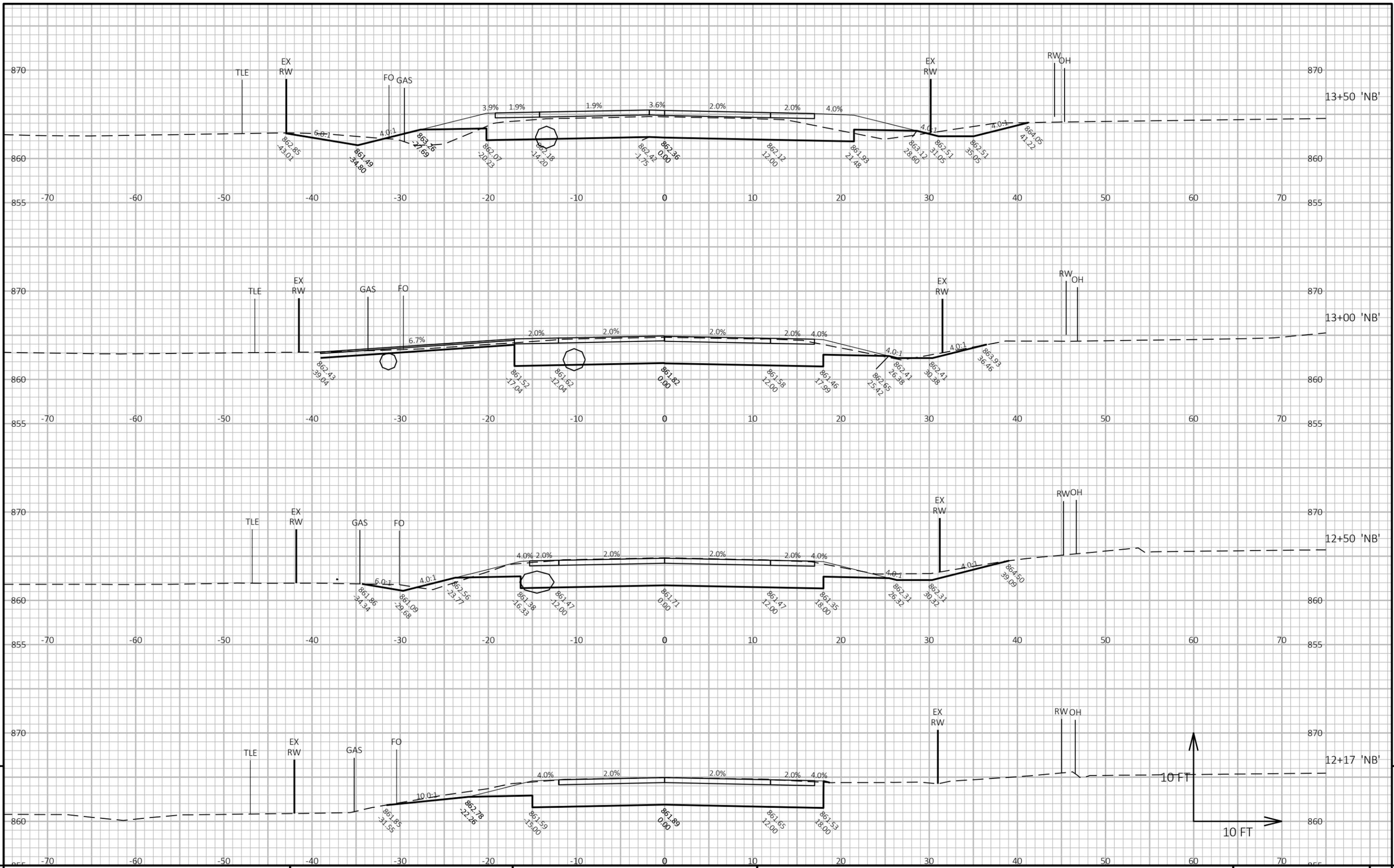
CROSS SECTIONS: STH 145 'SEB'

SHEET 209

E



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: STH 145 'SEB' SHEET 210



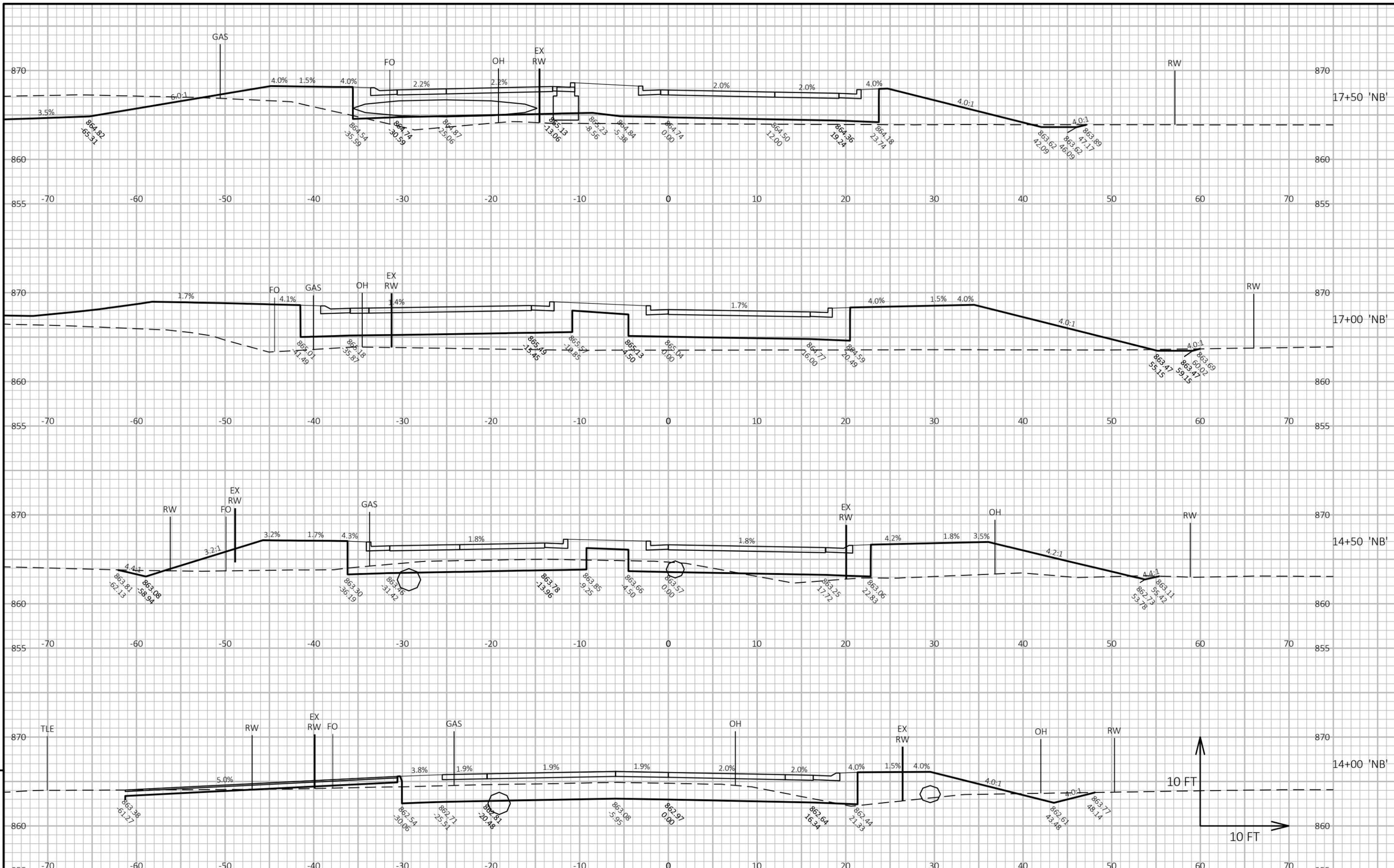
PROJECT NO: 2475-04-71

HWY: STH 145

COUNTY: WASHINGTON

CROSS SECTIONS: CTH G 'NB'

SHEET 211



PROJECT NO: 2475-04-71

HWY: STH 145

COUNTY: WASHINGTON

CROSS SECTIONS: CTH G 'NB'

SHEET 212

FILE NAME: I:\49\49074100 STH_145_&_CTHG\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - NB7

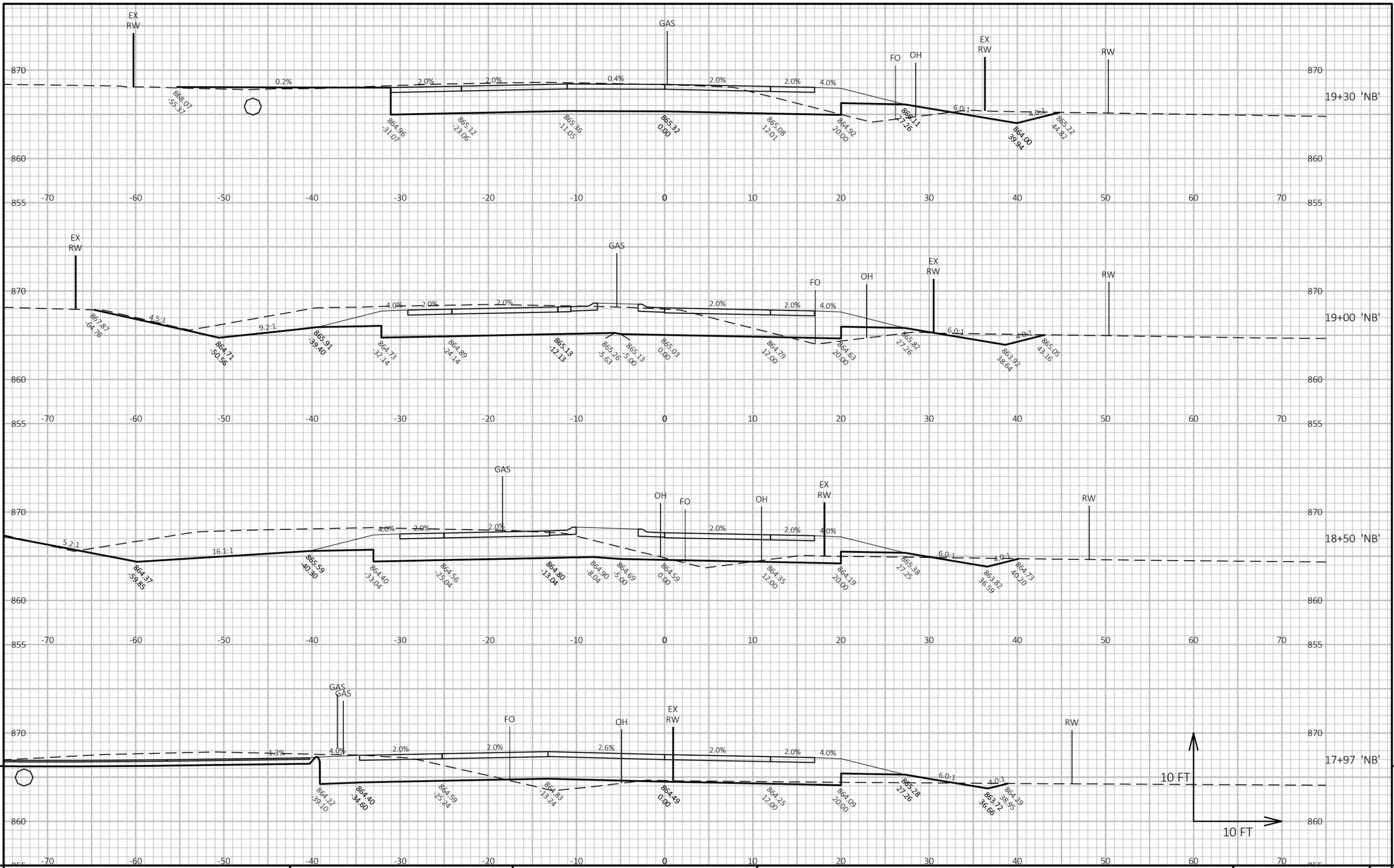
PLOT DATE: 10/21/2025 11:50 AM

PLOT BY: JOHNSON, ZACHARY

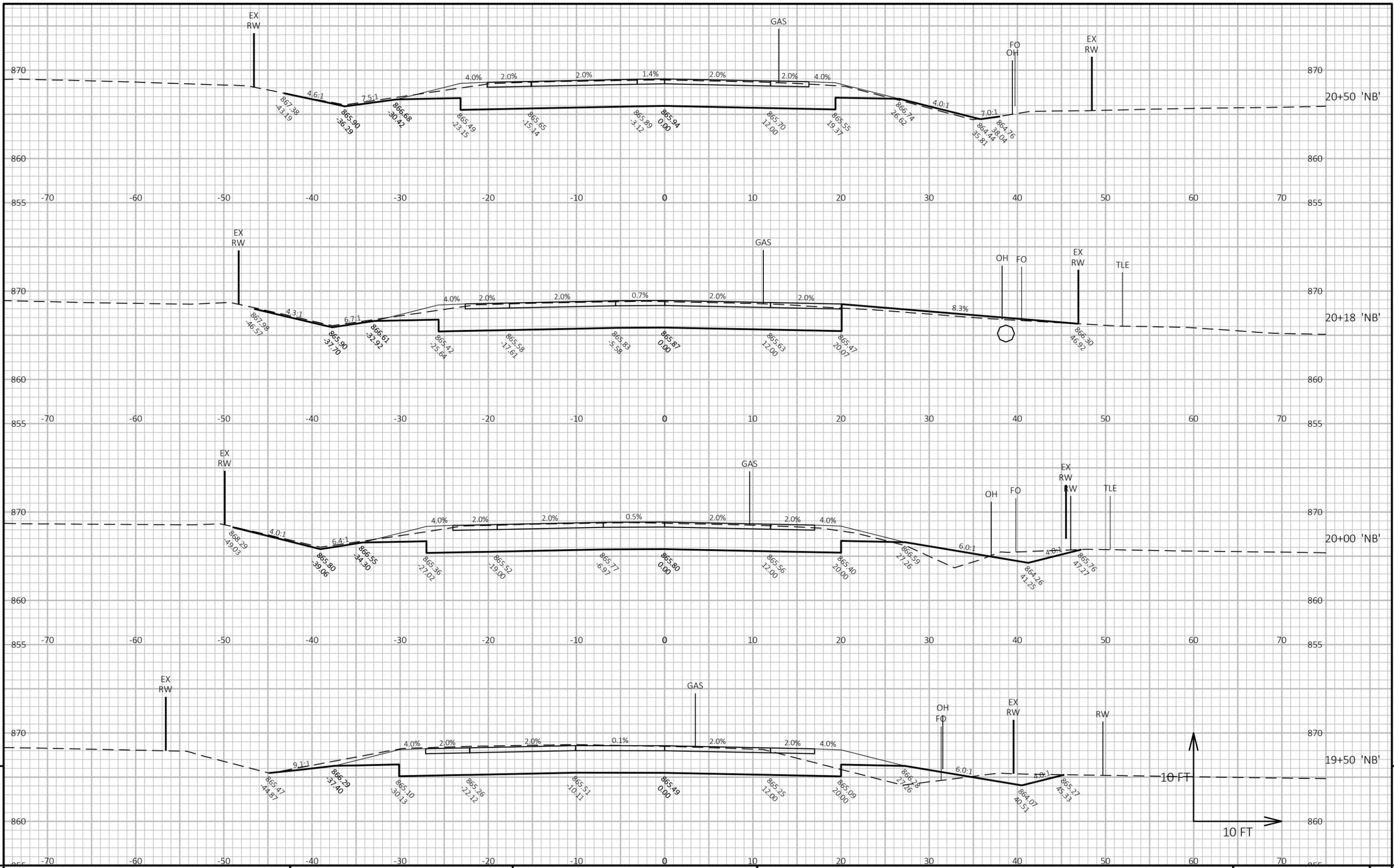
PLOT NAME:

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

WISDOT/CADD SHEET 49



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: CTH G 'NB' SHEET 213

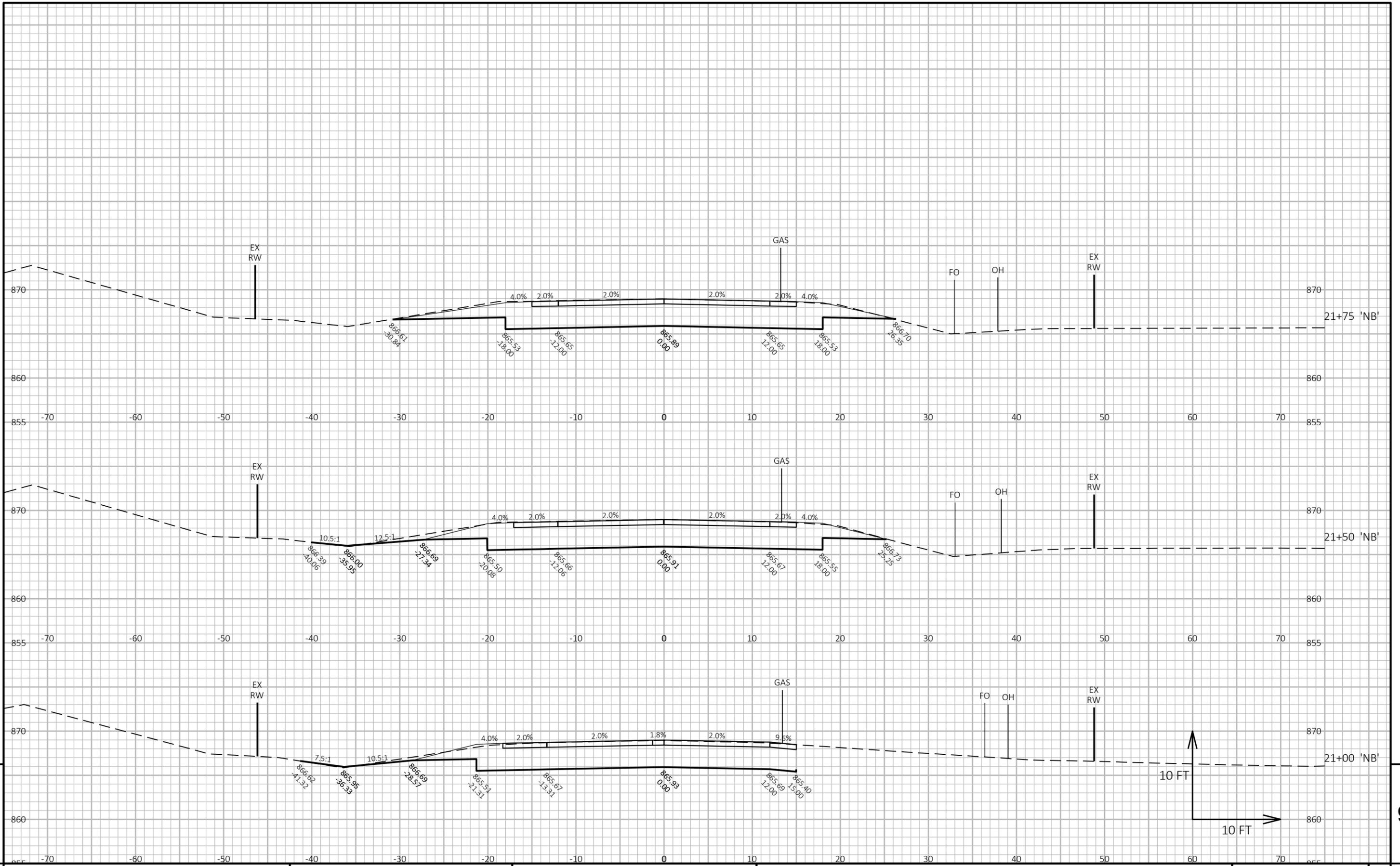


PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: CTH G 'NB' SHEET 214

FILE NAME: I:\49\49074100 STH_145_&_CTHG\C3D\SHEETSPLAN\090201-XS.DWG PLOT DATE: 10/21/2025 11:50 AM PLOT BY: JOHNSON, ZACHARY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

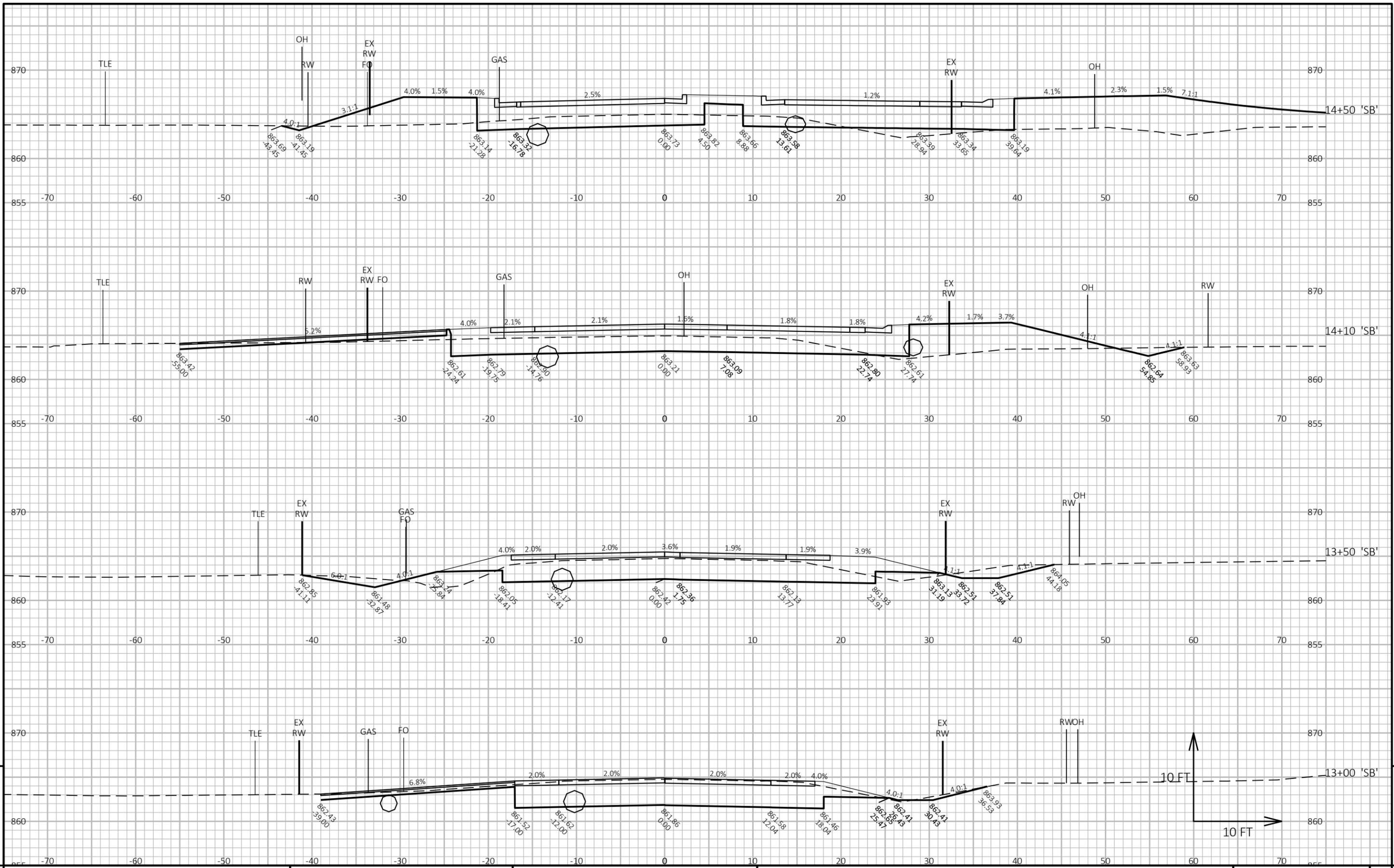
9

9

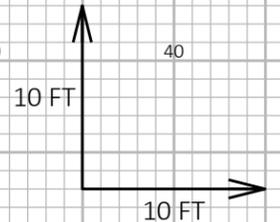
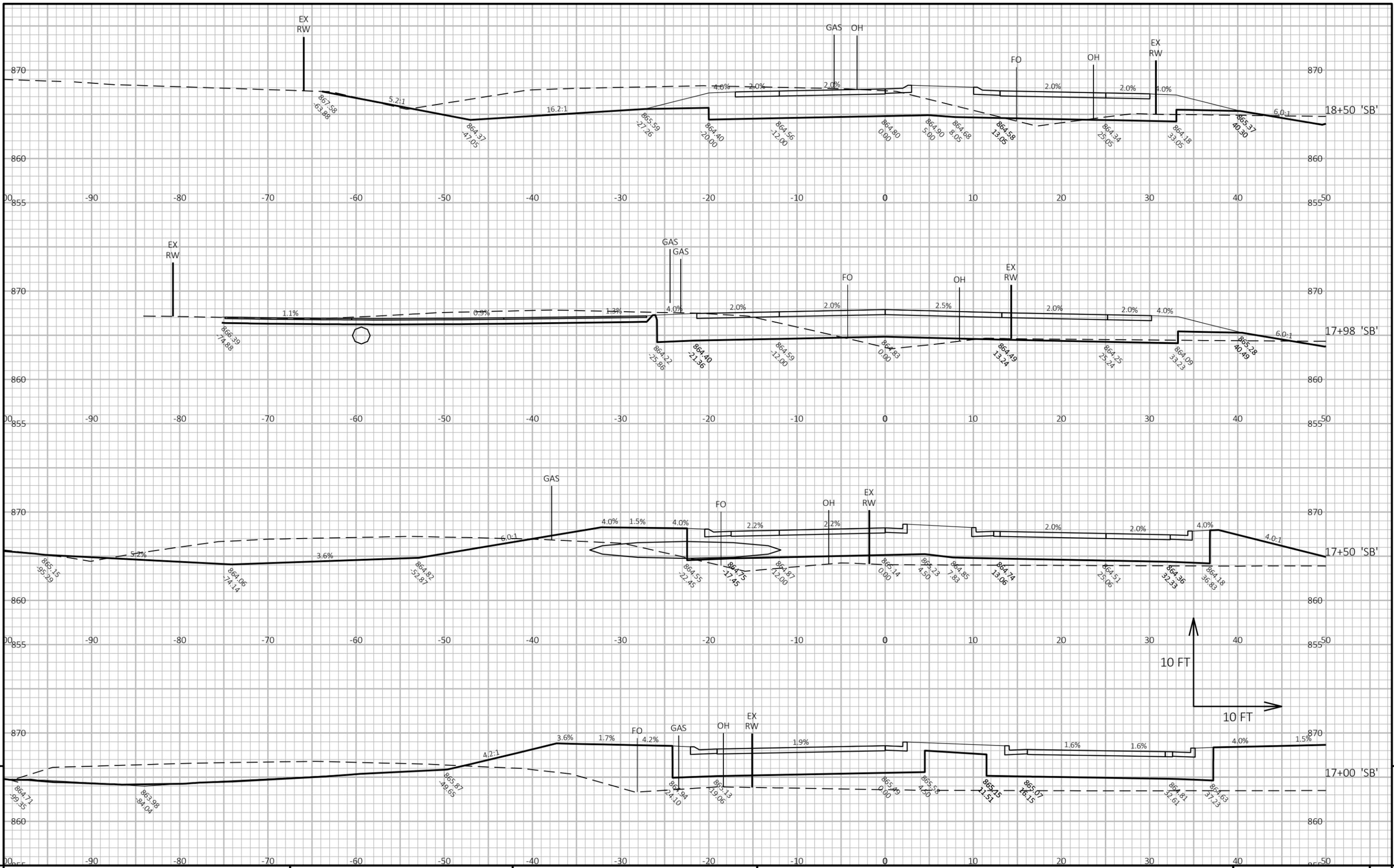


9

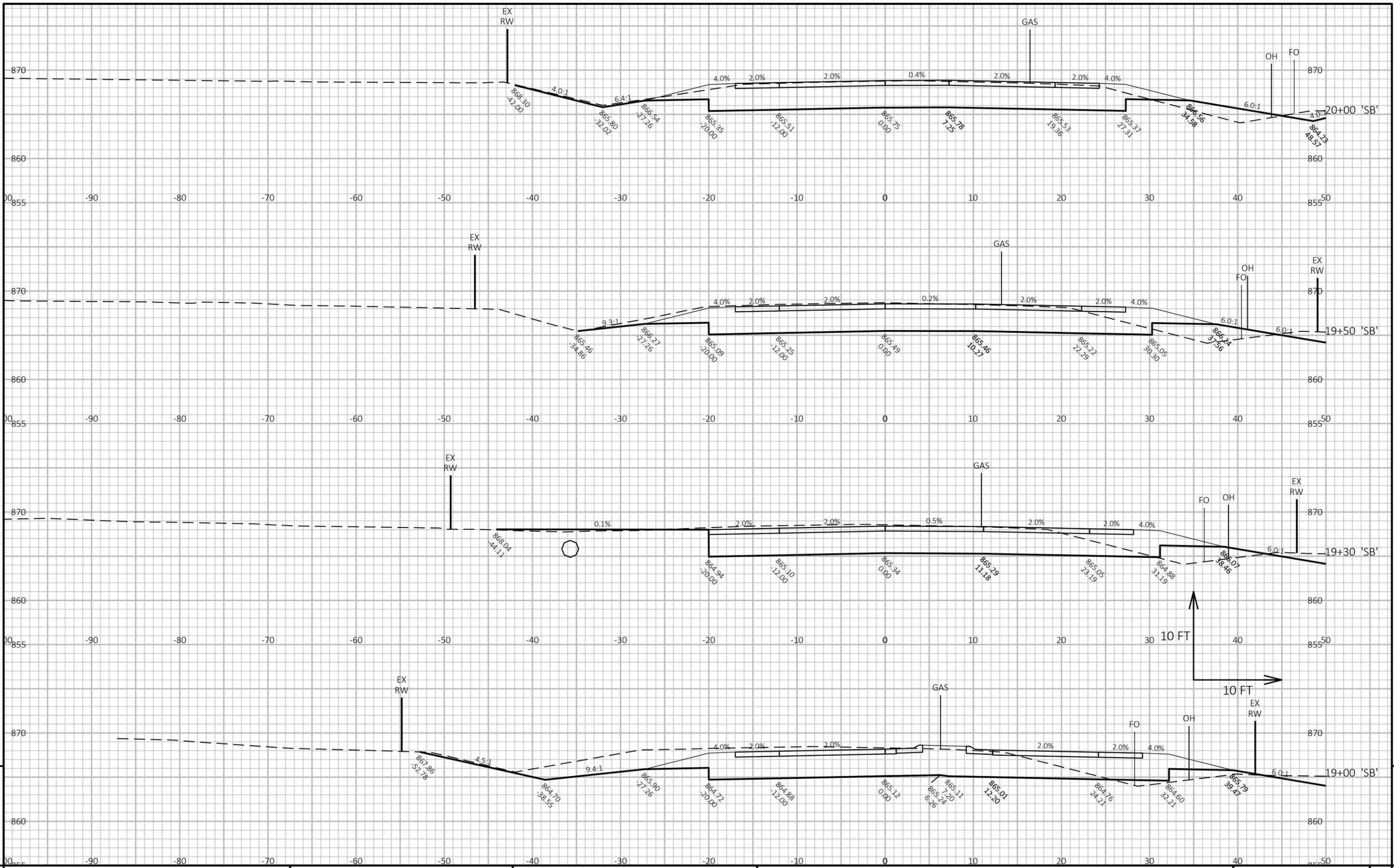
9



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: CTH G 'SB' SHEET 216



9



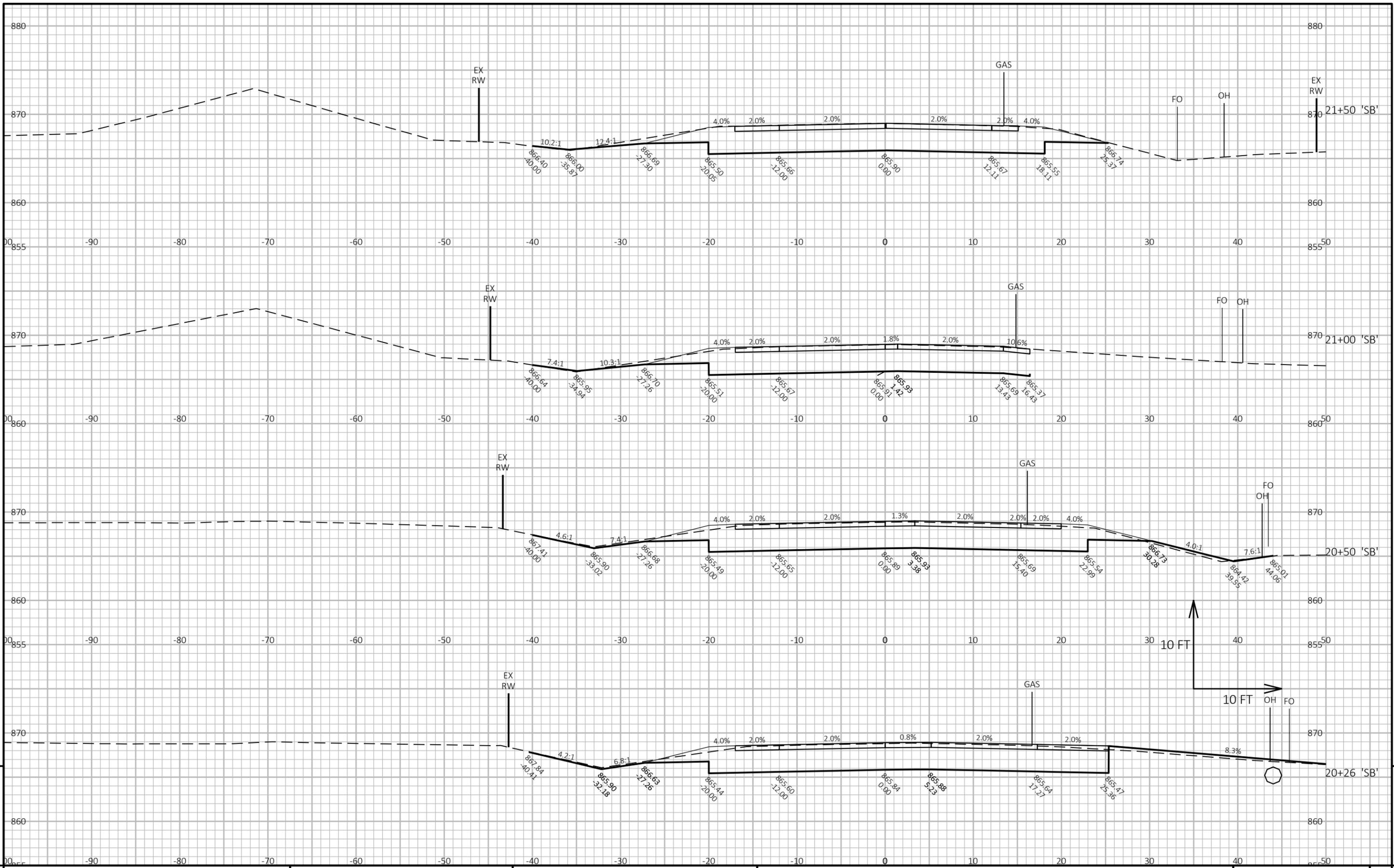
9

9

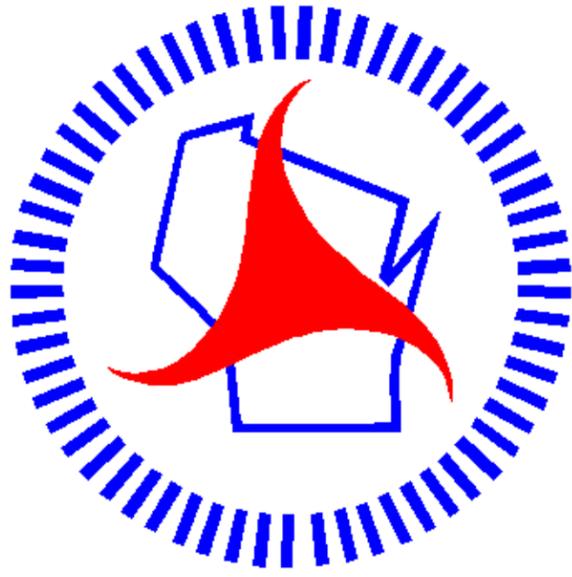
PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: CTH G 'SB' SHEET 218 E

FILE NAME: I:\49\49074100 STH_145_&_CTHG\C3D\SHEETS\PLAN\090201-XS.DWG PLOT DATE: 10/21/2025 11:50 AM PLOT BY: JOHNSON, ZACHARY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - SB7



PROJECT NO: 2475-04-71 HWY: STH 145 COUNTY: WASHINGTON CROSS SECTIONS: CTH G 'SB' SHEET 219



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>