WKE | SEPT 2024

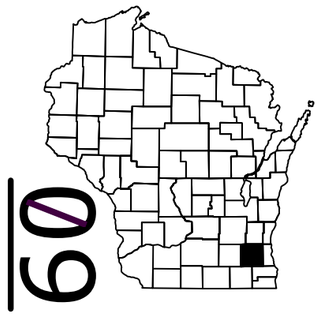
PROJECT ID: **2810-08-70**

COUNTY: **WAUKESHA**

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 = 258



N

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

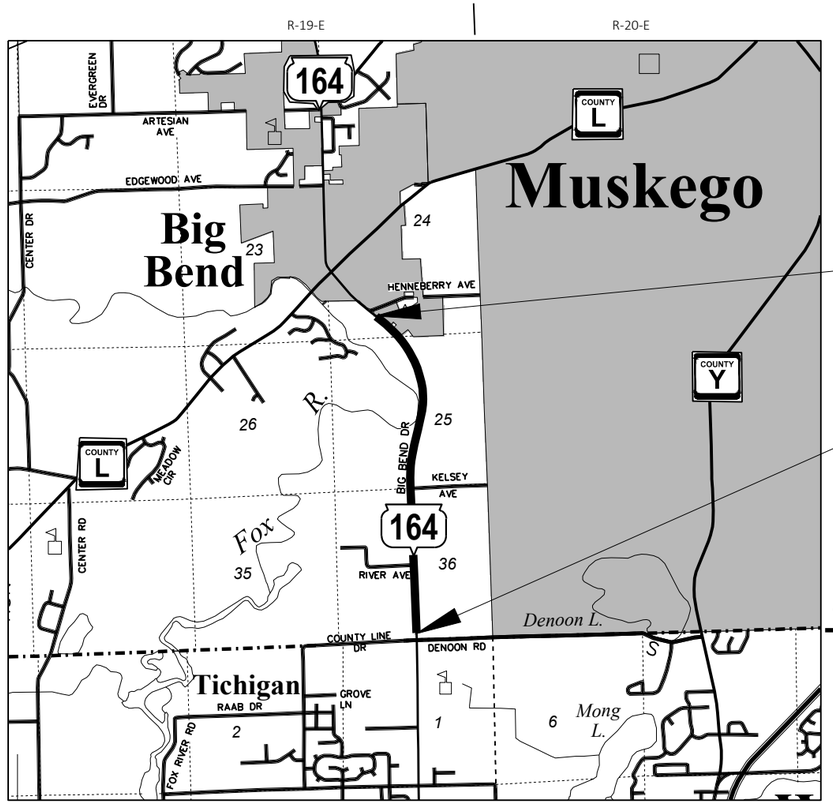
WATERFORD - WAUKESHA

HENNEBERRY AVE TO DENOON RD

STH 164
WAUKESHA COUNTY

STATE PROJECT NUMBER
2810-08-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2810-08-70	WISC 2024435	1



END PROJECT
STA 1322+74.00
T-5-N

BEGIN PROJECT
STA 1209+00.00
Y = 99956.78
X = 692243.55

WAUKESHA COUNTY
RACINE COUNTY

T-4-N

LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 2.154 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), WAUKESHA 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.

DESIGN DESIGNATION

A.A.D.T.	(2026)	=	9,100
A.A.D.T.	(2046)	=	10,900
D.H.V.		=	1300
D.D.		=	59/41
T.		=	14.6%
DESIGN SPEED		=	60 MPH
ESALS		=	2,100,000

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 (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

ORIGINAL PLANS PREPARED BY

AYRES

WISCONSIN
BENJAMIN M. DEBAKER
39046-006
GREEN BAY, WI
PROFESSIONAL ENGINEER

DATE: 1/31/2024 (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES ASSOCIATES
Designer	AYRES ASSOCIATES
Project Manager	NGUYEN LY, P.E.
Regional Examiner	STEVE CHOJNACKI
Regional Supervisor	BEN ERUCHALU, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 1/31/2024 Nguyen K. Ly (Signature)

E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\010101-TI.DWG PLOT DATE : 1/16/2024 3:55 PM PLOT BY : KERNS, JAMES PLOT NAME :

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.

TRAFFIC CONTROL DEVICES AS SHOWN IN THE PLAN ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

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.

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, TEMPORARY SEED AND MULCH, OR AS DIRECTED BY THE ENGINEER. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.

DO NOT USE FERTILIZER OR TEMPORARY SEED WITHIN 20' OF WATERWAYS OR WETLAND AREAS. USE SEED MIXTURE NO. 30 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.

DO NOT PUMP WATER FROM THE CONSTRUCTION SITE WITHOUT THE WATER FIRST PASSING THROUGH A SEDIMENT TRAP OR FILTER BAG IN ACCORDANCE WITH CONSTRUCTION DETAIL "TEMPORARY SETTLING BASIN WITH SEDIMENT BAG."

THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC MONUMENT.

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.

PROPERTY LINES AS SHOWN IN THE PLANS ARE APPROXIMATE.

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

ELEVATIONS SHOWN ON THE ROADWAY CROSS SECTIONS ARE SUBGRADE AND FINISHED ELEVATIONS.

CURB ELEVATIONS SHOWN ARE AT THE FLANGE.

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

UTILITIES CONTACTS

AT&T WISCONSIN - COMMUNICATION LINE
TYLER FLECK
220 WISCONSIN AVE
WAUKESHA, WI 53186
PHONE: (414) 248-6803
TF8394@ATT.COM

ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION
TONY MARCINIAK
801 O'KEEFE ROAD
PO BOX 6113
DE PERE, WI 54115-6113
PHONE: (262) 506-6814
TMARCINIAK@ATCLLC.COM

MCIMETRO - COMMUNICATION LINE
RANDY CICATELLO
15725 WEST RYERSON ROAD
NEW BERLIN, WI 53151
PHONE: (262) 232-1323
RANDY.CICATELLO@VERIZON.COM

SPECTRUM - COMMUNICATION LINE
BEAU ABUYA
1320 N DR MARTIN LUTHER KING DRIVE
MILWAUKEE, WI 53212
PHONE: (414) 758-9241
BEAU.ABUYA@CHARTER.COM

WE ENERGIES - ELECTRIC
ERICK KICKHAVER
500 S 116TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 944-5917
ERIC.KICKHAVER@WE-ENERGIES.COM

WE ENERGIES - GAS
SCOTT HOLSTEIN
700 S KANE STREET
BURLINGTON, WI 53105
PHONE: (262) 763-1084
SCOTT.HOLSTEIN@WE-ENERGIES.COM

* DENOTES NOT A MEMBER OF DIGGERS HOTLINE

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

PROJECT CONTACTS

DNR LIAISON
CRAIG WEBSTER
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
DNR SERVICE CENTER
141 NW BARSTOW STREET, ROOM 180
WAUKESHA, WI 53188
PHONE: (262) 574-2141
CRAIG.WEBSTER@WISCONSIN.GOV

DESIGN PROJECT MANAGER
AYRES ASSOCIATES
BEN DEBAKER, P.E.
20975 SWENSON DRIVE
SUITE 200
WAUKESHA, WI 53186
PHONE: (262) 522-4916
DEBAKERB@AYRESASSOCIATES.COM

WISDOT PROJECT MANAGER
NGUYEN LY, P.E.
141 NW BARSTOW STREET
WAUKESHA, WI 53187
PHONE: (262) 548-8739
NGUYEN.LY@DOT.WI.GOV

WAUKESHA COUNTY DEPARTMENT OF PUBLIC WORKS
BRETT WALLACE, P.E.
515 W. MORELAND BLVD., ROOM 220
WAUKESHA, WI 53188
PHONE: (262) 548-7740
BWALLACE@WAUKESHACOUNTY.GOV

SEWRPC
ROB MERRY
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187
PHONE: (262) 953-4289
RMERRY@SEWRPC.ORG

2

SECTION 2 ORDER OF SHEETS

GENERAL NOTES/UTILITY CONTACTS
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLAN
INTERSECTION DETAILS
PLAN DETAILS
EROSION CONTROL PLAN
DRAINAGE PLAN
PERMANENT SIGNING
PAVEMENT MARKING
TRAFFIC CONTROL PLAN
DETOUR PLAN
ALIGNMENT DIAGRAM

2

TICHIGAN

2

N

COUNTY LINE DR.

RIVER AVE.

KELSEY AVE.

STH 164

1210 1220 1230 1240 1250 1260 1270

DENOON RD.

RACINE COUNTY

WAUKESHA COUNTY

BEGIN PROJECT
STA 1209+00

MATCH LINE 1273+50

N

STA AHEAD=1324+98.53
STA BACK=1325+00.00

END PROJECT
STA 1322+74

1280 1290 1300 1310 1320 1330 1340

FOX RIVER

CARTWRIGHT CT.

STH 164

HENNEBERRY AVE.

MATCH LINE 1273+50

CITY OF
MUSKEGO

VILLAGE OF
BIG BEND

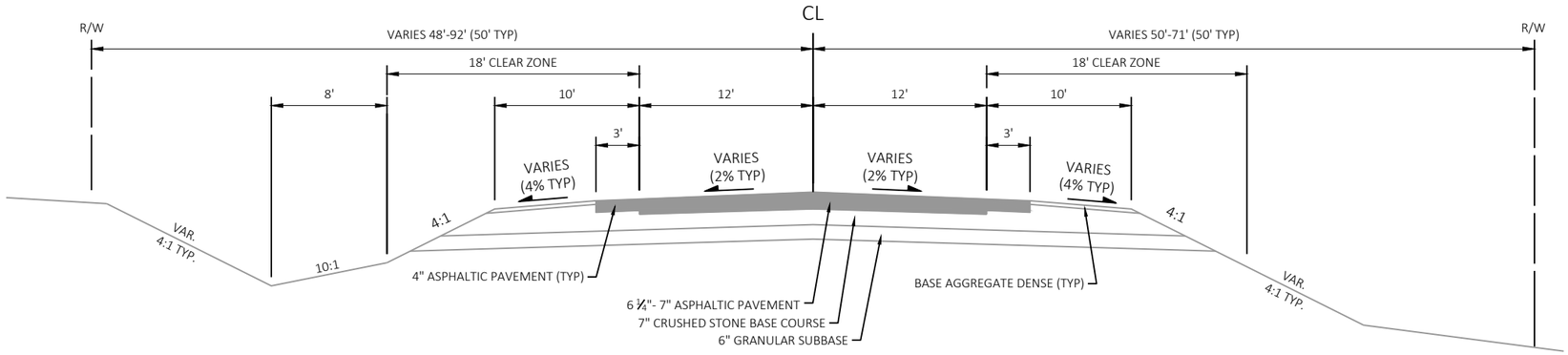
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - PO01

PLOT DATE : 1/16/2024 3:29 PM PLOT BY : KERNS, JAMES PLOT NAME : PLOT SCALE : 1 IN:500 FT

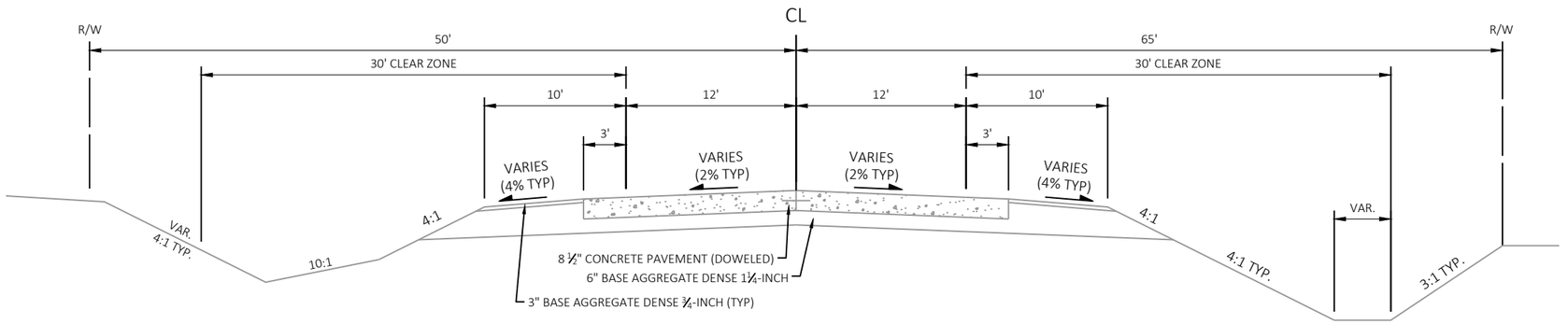
WISDOT/CADDS SHEET 44

2



EXISTING TYPICAL SECTION - STH 164

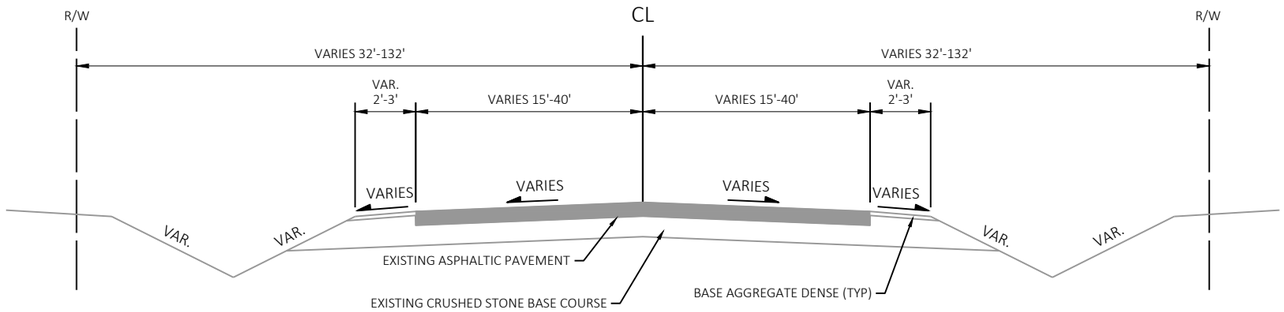
STA 1209+00 - STA 1277+48
STA 1279+98 - STA 1322+75



EXISTING TYPICAL SECTION - STH 164

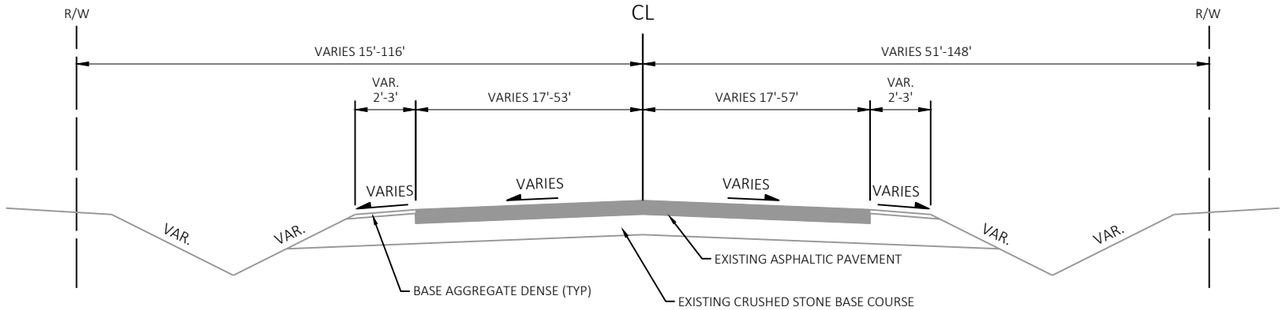
STA 1277+48 - STA 1279+98

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TYPICAL SECTIONS	SHEET 4	E



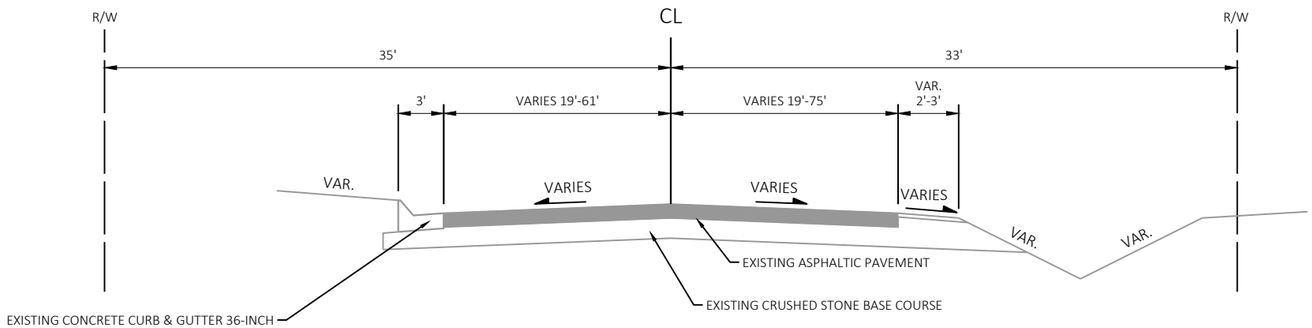
EXISTING TYPICAL SECTION - RIVER AVENUE

STA 9+50 - STA 9+78



EXISTING TYPICAL SECTION - KELSEY AVENUE

STA 20+22 - STA 20+60



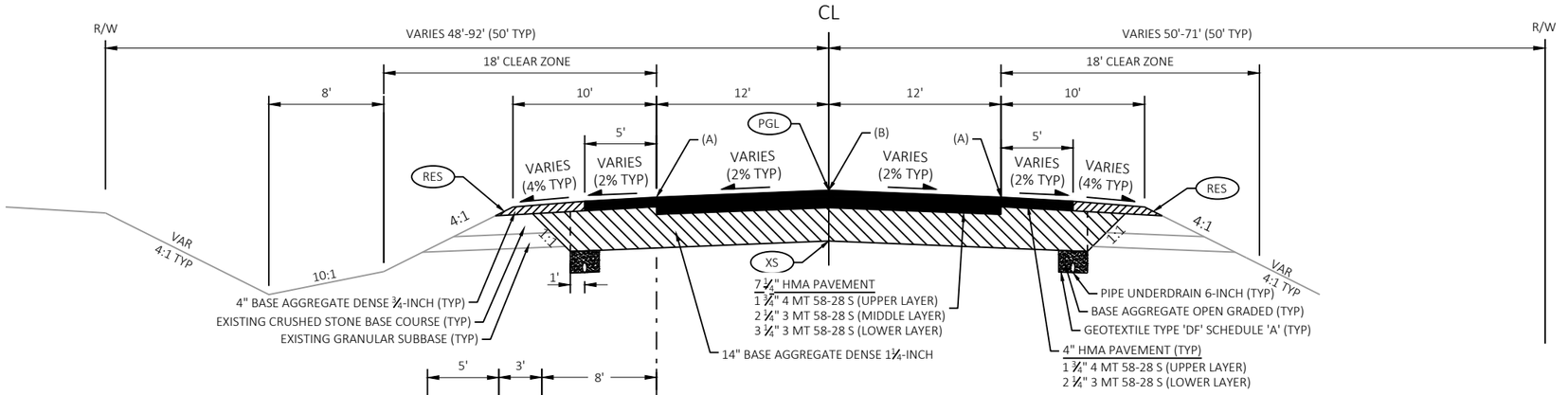
EXISTING TYPICAL SECTION - CARTWRIGHT COURT

STA 30+22 - STA 30+65

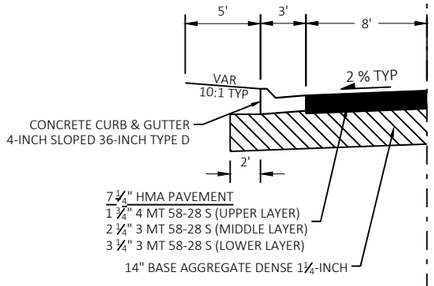
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TYPICAL SECTIONS	SHEET 5	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020302-ts

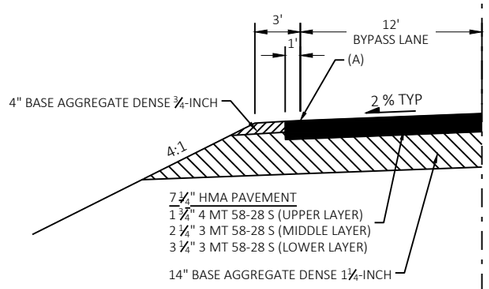
PLOT DATE : 7/24/2024 1:00 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : Custom



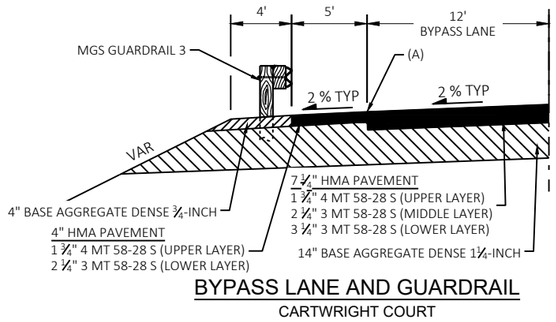
STA 1248+50 - STA 1254+00, LT/RT
PIPE UNDERDRAIN LOCATIONS
FOR ADDITIONAL INFORMATION
SEE "PIPE UNDERDRAIN DETAIL"



CURB AND GUTTER
STA 1244+75 - STA 1246+50, LT



BYPASS LANE
KELSEY AVENUE



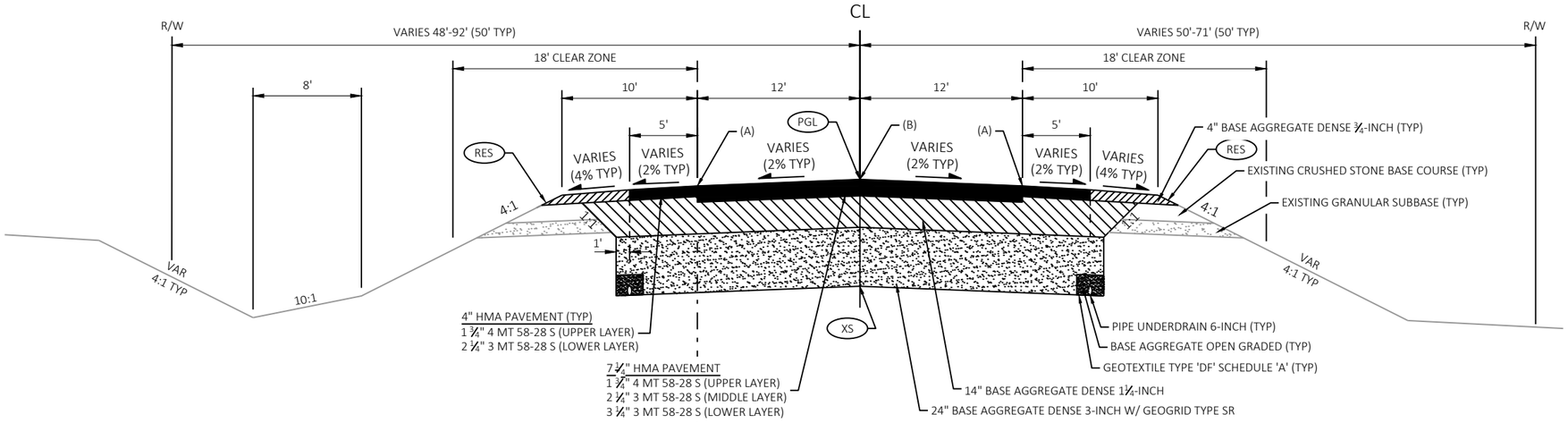
BYPASS LANE AND GUARDRAIL
CARTWRIGHT COURT

FINISHED TYPICAL SECTION - STH 164
STA 1209+00 - STA 1212+50
STA 1215+50 - STA 1277+48
STA 1284+00 - STA 1322+75

LEGEND

- (XS) POINT REFERRED TO ON CROSS SECTION
- (PGL) POINT REFERRED TO ON PROFILE
- (RES) RESTORATION (SEE EROSION CONTROL SHEETS FOR LIMITS)
  - SEEDING MIXTURE NO. 30 WITHIN 15' OF SHOULDERS
  - SEEDING MIXTURE NO. 40 BEYOND 15' OF SHOULDER
  - FERTILIZER TYPE B
  - REFER TO EROSION CONTROL PLAN SHEETS FOR LOCATIONS OF EROSION MAT URBAN CLASS 1 TYPE B.
  - ALL OTHER LOCATIONS REQUIRE MULCH OR EROSION MAT AS DIRECTED BY THE ENGINEER.
- (A) SHOULDER RUMBLE STRIPS - ASPHALT, SINUSOIDAL
- (B) CENTERLINE RUMBLE STRIPS - ASPHALT, SINUSOIDAL

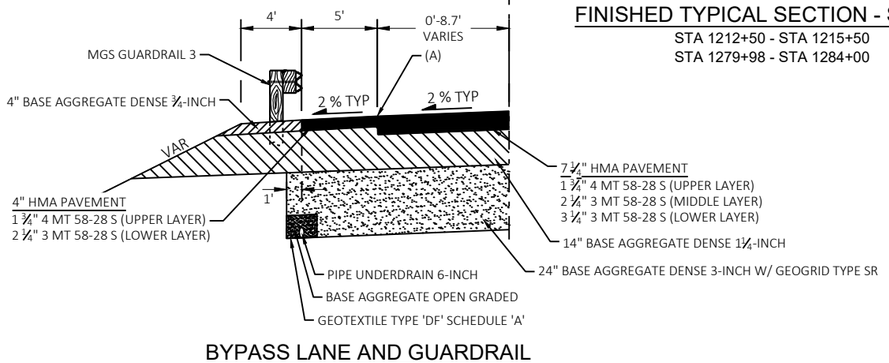
NOTE:
SEE SDD 13A10-03c AND SDD 13A11-04c FOR MORE DETAILS.



FINISHED TYPICAL SECTION - STH 164

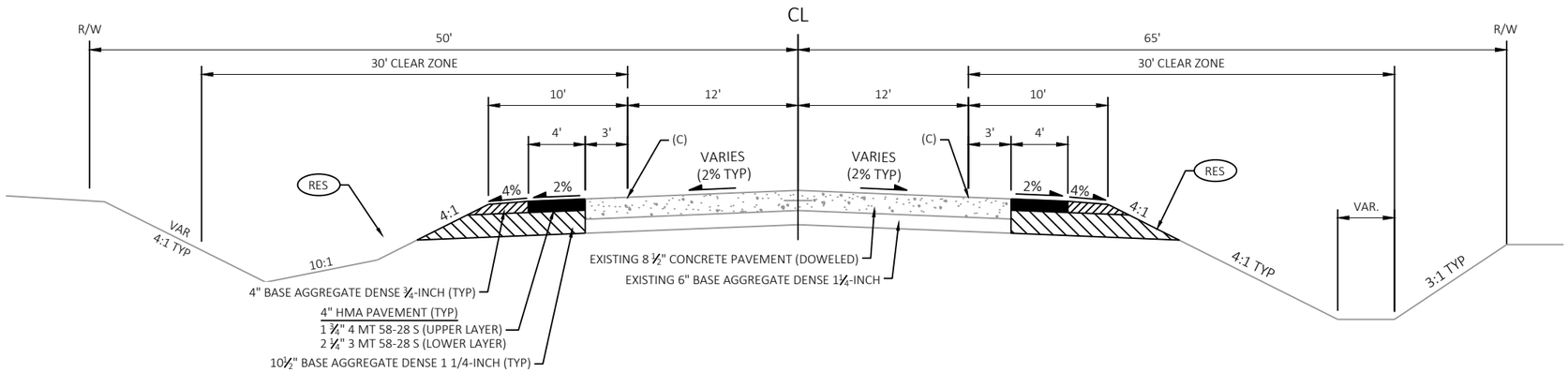
STA 1212+50 - STA 1215+50
STA 1279+98 - STA 1284+00

STA 1212+50 - STA 1215+50, LT/RT
STA 1280+00 - STA 1284+00, LT
STA 1280+00 - STA 1282+50, RT
PIPE UNDERDRAIN LOCATIONS
FOR ADDITIONAL INFORMATION
SEE "PIPE UNDERDRAIN DETAIL"



BYPASS LANE AND GUARDRAIL

STA 1281+75 - STA 1284+00



FINISHED TYPICAL SECTION - STH 164

STA 1277+48 - STA 1279+98

LEGEND

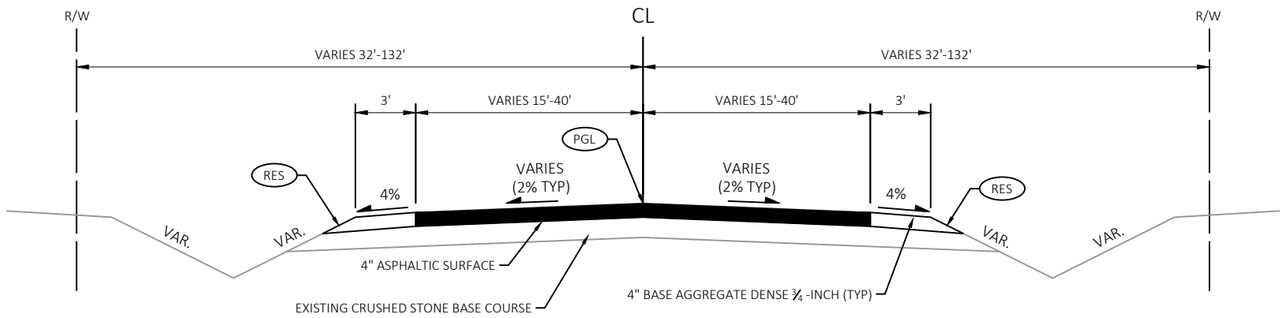
XS	POINT REFERRED TO ON CROSS SECTION
PGL	POINT REFERRED TO ON PROFILE
RES	RESTORATION (SEE EROSION CONTROL SHEETS FOR LIMITS)

- SEEDING MIXTURE NO. 30 WITHIN 15' OF SHOULDERS
- SEEDING MIXTURE NO. 40 BEYOND 15' OF SHOULDER
- FERTILIZER TYPE B
- REFER TO EROSION CONTROL PLAN SHEETS FOR LOCATIONS OF EROSION MAT URBAN CLASS 1 TYPE B.
- ALL OTHER LOCATIONS REQUIRE MULCH OR EROSION MAT AS DIRECTED BY THE ENGINEER.

(A) SHOULDER RUMBLE STRIPS - ASPHALT, SINUSOIDAL

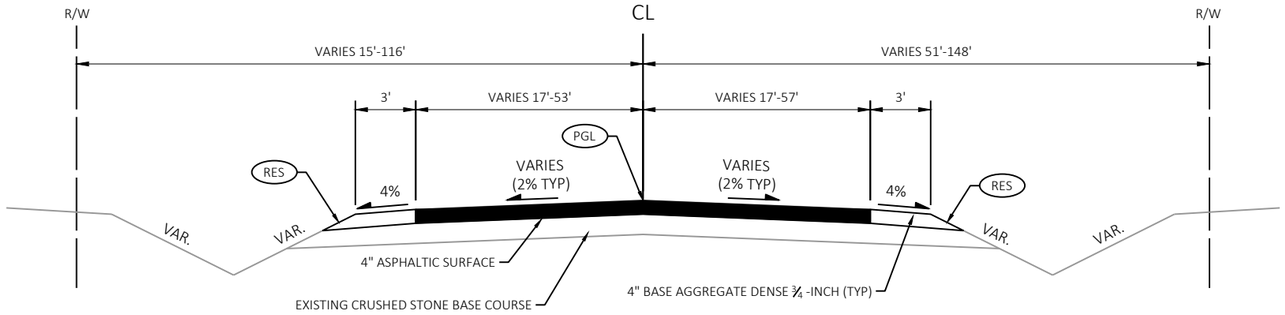
(B) CENTERLINE RUMBLE STRIPS - ASPHALT, SINUSOIDAL

NOTE:
SEE SDD 13A10-03c AND SDD 13A11-04c FOR MORE DETAILS.



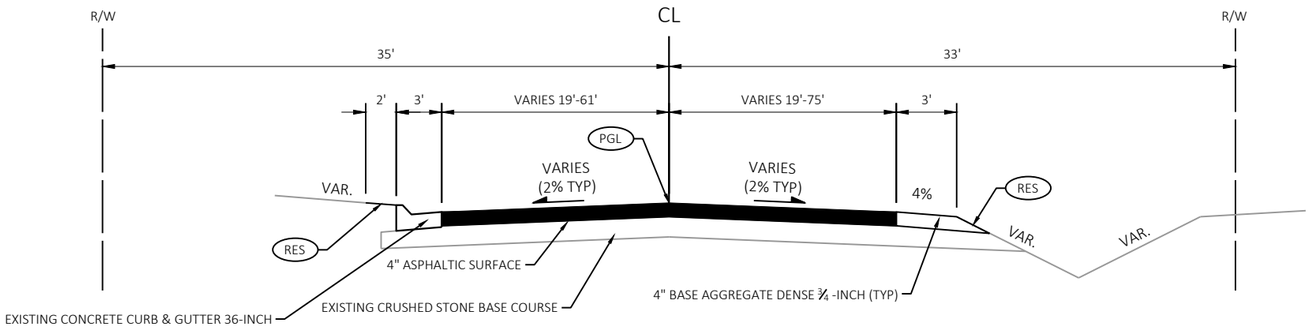
FINISHED TYPICAL SECTION - RIVER AVENUE

STA 9+50 - STA 9+78



FINISHED TYPICAL SECTION - KELSEY AVENUE

STA 20+22 - STA 20+60



FINISHED TYPICAL SECTION - CARTWRIGHT COURT

STA 30+22 - STA 30+65

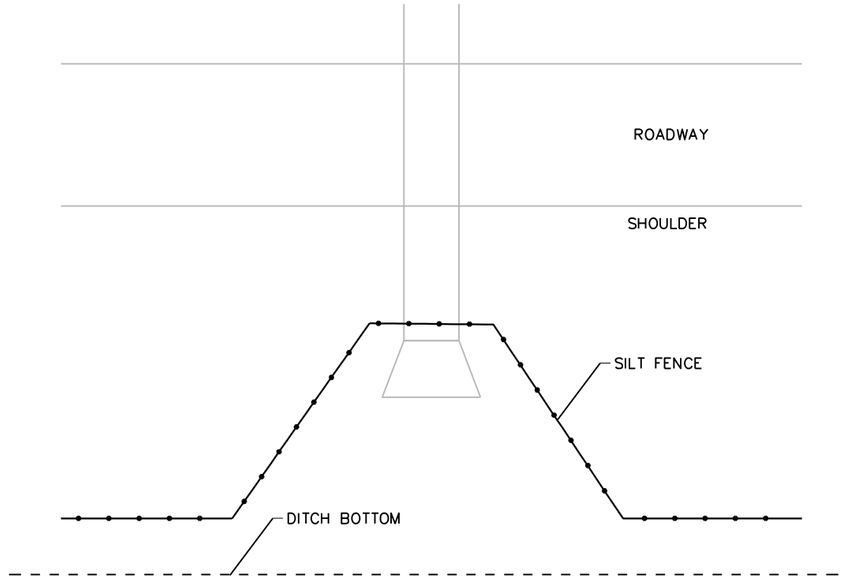
LEGEND

- PGL — POINT REFERRED TO ON PROFILE
- RES — RESTORATION (SEE EROSION CONTROL SHEETS FOR LIMITS)
  - SEEDING MIXTURE NO. 30 WITHIN 15' OF SHOULDERS
  - SEEDING MIXTURE NO. 40 BEYOND 15' OF SHOULDER
  - FERTILIZER TYPE B
  - REFER TO EROSION CONTROL PLAN SHEETS FOR LOCATIONS OF EROSION MAT URBAN CLASS 1 TYPE B.
  - ALL OTHER LOCATIONS REQUIRE MULCH OR EROSION MAT AS DIRECTED BY THE ENGINEER.

RUNOFF COEFFICIENT TABLE

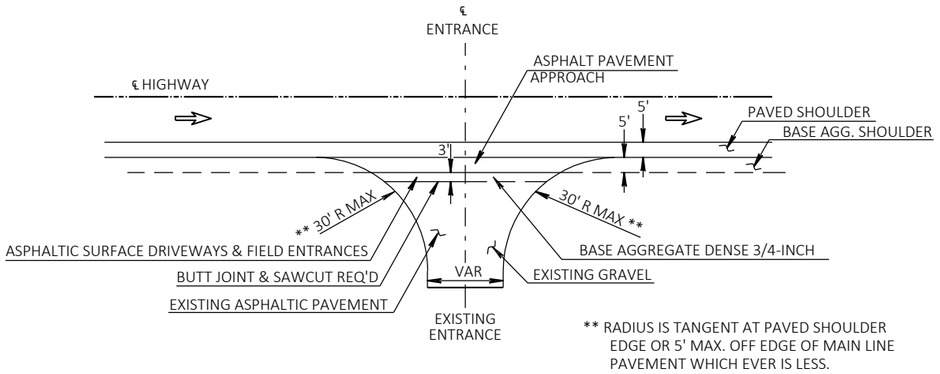
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA = ___14___ ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = ___14___ACRES

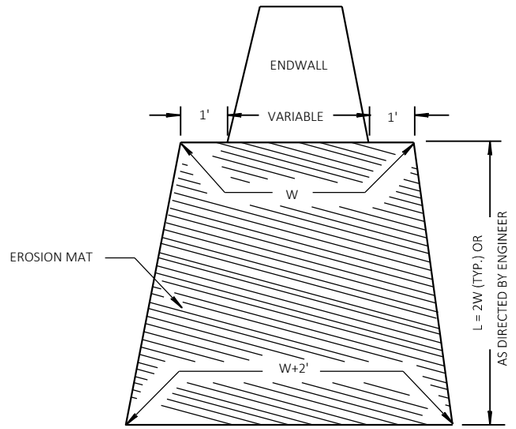


TYPICAL SILT FENCE DETAIL AT PIPE INLET

NOTE
SEE SILT FENCE SDD FOR ADDITIONAL INFORMATION.

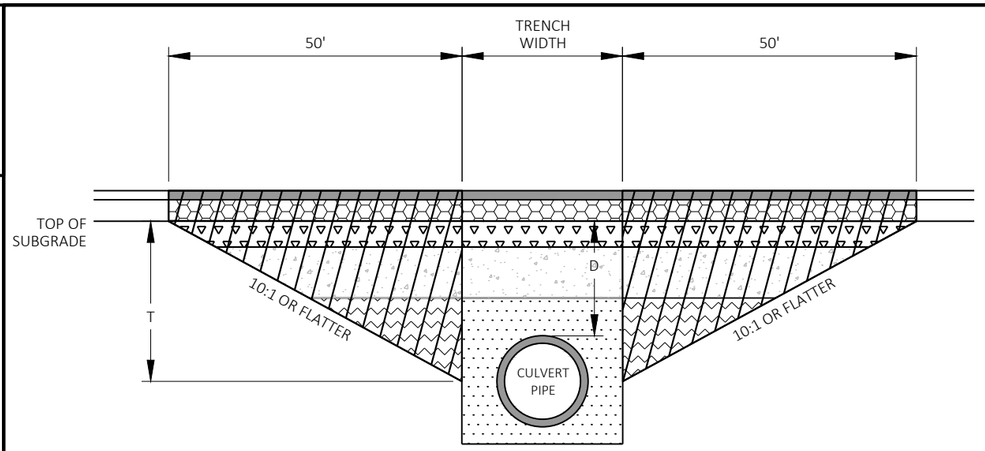


RURAL DRIVEWAY DETAIL



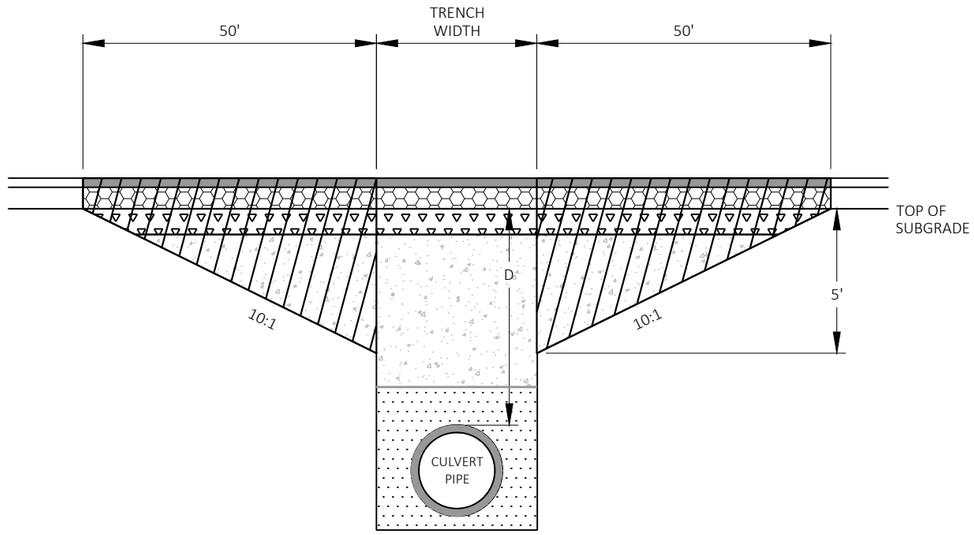
EROSION MAT TREATMENT AT CULVERTS

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 9	E



DEPTH D < 6 FT

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



DEPTH D ≥ 6 FT

LEGEND

- PROPOSED SURFACE
- PROPOSED BASE
- PROPOSED SUBBASE
- TRENCH BACKFILL
- TRENCH OR FOUNDATION BACKFILL
- FOUNDATION BACKFILL
- TRANSITION CUT

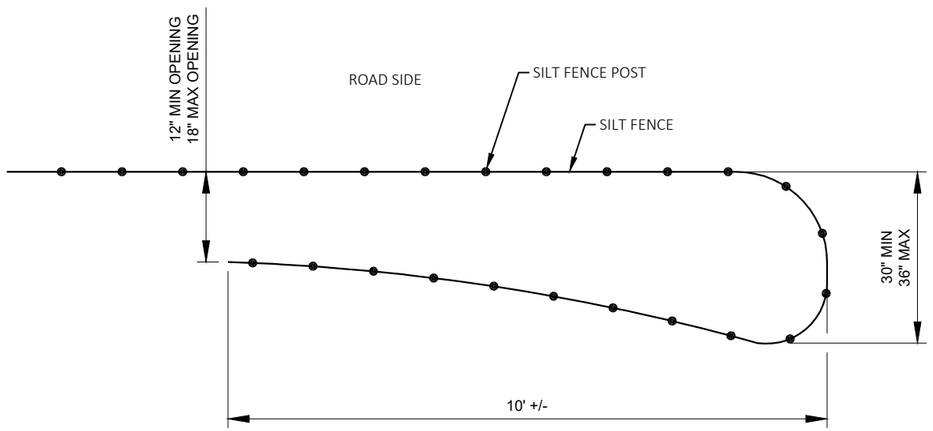
CULVERT PIPE TRANSITION

NOTES

TRANSITION CUT IS PAID AS COMMON EXCAVATION.

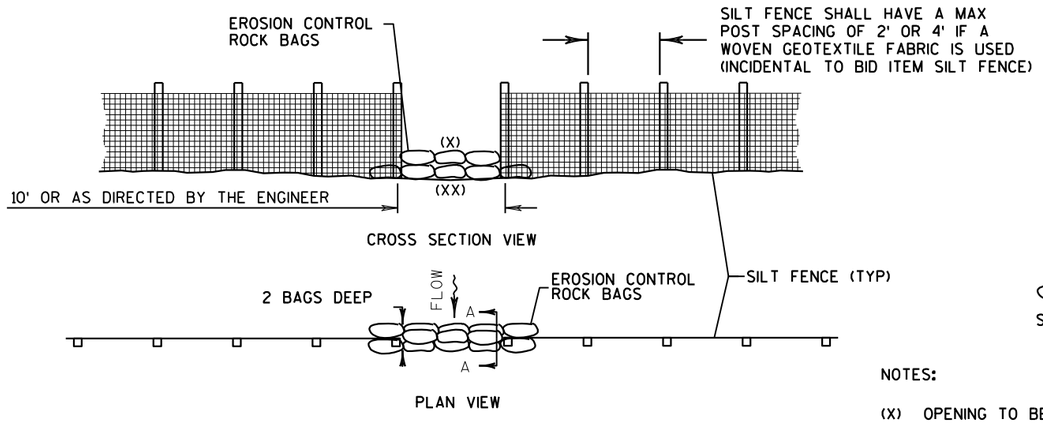
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.

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



SILT FENCE TURN-AROUND DETAIL

LOCATIONS SHOWN ON EROSION CONTROL PLANS OR AS DIRECTED BY THE ENGINEER.



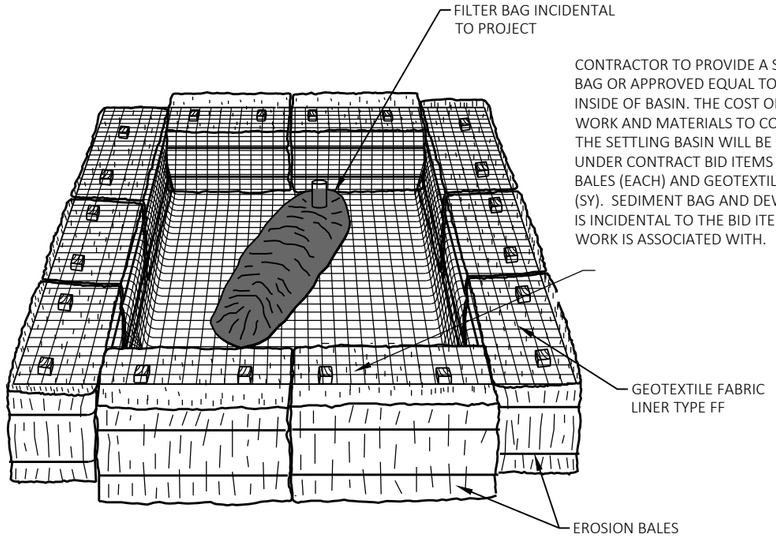
EROSION CONTROL ROCK BAG OPENING IN SILT FENCE

LOCATIONS DETERMINED BY ENGINEER

NOTES:

(X) OPENING TO BE PLACED AT LOW POINTS AS DIRECTED BY ENGINEER.

(XX) OPENING IN SILT FENCE NOT TO BE PLACED WITHIN 25' OF THE END OF THE SILT FENCE UNLESS DIRECTED BY THE ENGINEER.



CONTRACTOR TO PROVIDE A SEDIMENT BAG OR APPROVED EQUAL TO BE PLACED INSIDE OF BASIN. THE COST OF ALL WORK AND MATERIALS TO CONSTRUCT THE SETTLING BASIN WILL BE PAID UNDER CONTRACT BID ITEMS EROSION BALES (EACH) AND GEOTEXTILE TYPE FF (SY). SEDIMENT BAG AND DEWATERING IS INCIDENTAL TO THE BID ITEMS THE WORK IS ASSOCIATED WITH.

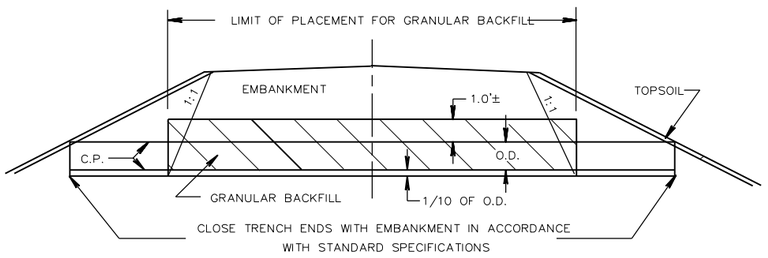
TEMPORARY SETTLING BASIN

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

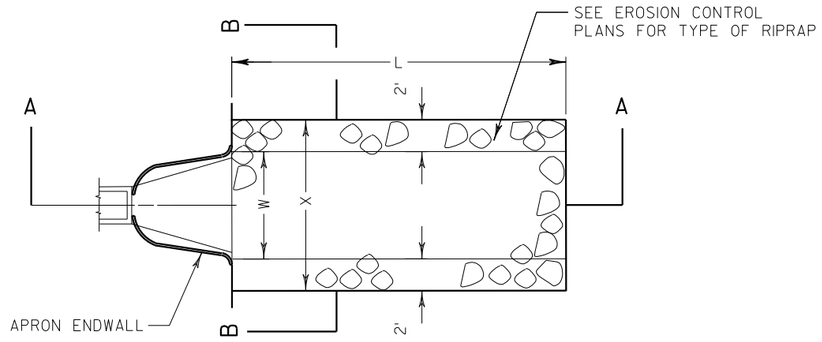
STORAGE VOLUME (CF) = 16 X GPM (PUMP RATE)

EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5'

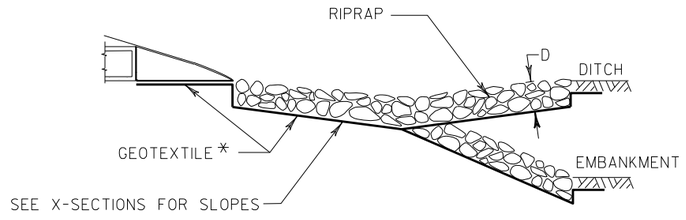
SOLUTION:
SV (CF) = 16 X 50
SV = 800 CF
800 CF/1.5' = 533 SF
USE A 20' X 27' BASIN



CULVERT BACKFILL DETAIL



PLAN VIEW



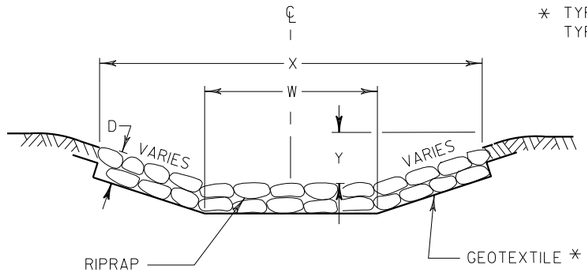
SECTION A-A

L = 3 x W (NOR) OR 10' MIN

D = 12" FOR RIPRAP LIGHT
18" FOR RIPRAP MEDIUM
24" FOR RIPRAP HEAVY

X = W+4' FOR TYPICAL CULVERT DISCHARGE INTO DITCH
W+6' FOR CULVERT DISCHARGE DOWN EMBANKMENT SLOPE

Y = 0' FOR TYPICAL CULVERT DISCHARGE INTO DITCH
6" FOR CULVERT DISCHARGE DOWN EMBANKMENT SLOPE



SECTION B-B

* TYPE R (FOR RIPRAP LIGHT ONLY)
TYPE HR (FOR RIPRAP HEAVY AND MEDIUM ONLY)

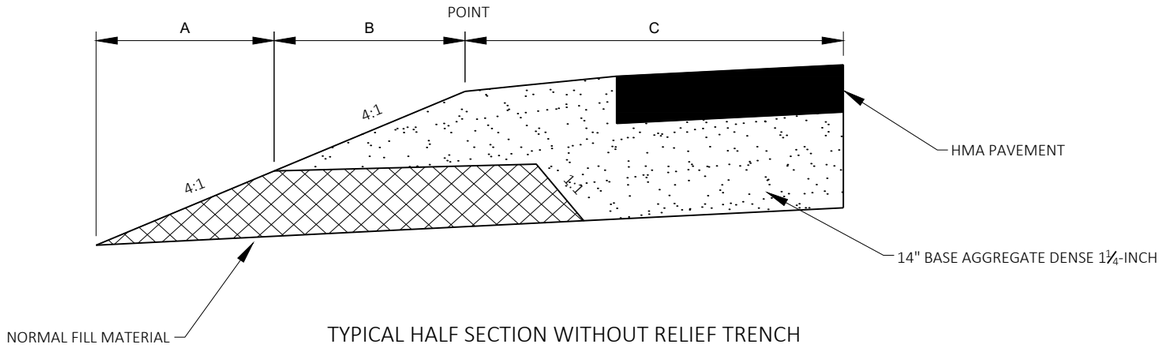
RIPRAP AND GEOTEXTILE DETAIL AT APRON ENDWALLS

SEE EROSION CONTROL PLAN FOR LOCATIONS

CONSTRUCTION NOTES:

1. GEOTEXTILE SHALL EXTEND BENEATH THE ENTIRE LENGTH OF THE APRON ENDWALL SECTION. INSTALL ON PREPAVED FOUNDATION. GRADE PRIOR TO END WALL INSTALLATION.
2. COMPLETE GEOTEXTILE AND RIPRAP SECTION INSTALLATION PRIOR TO STORM WATER FLOW.

2



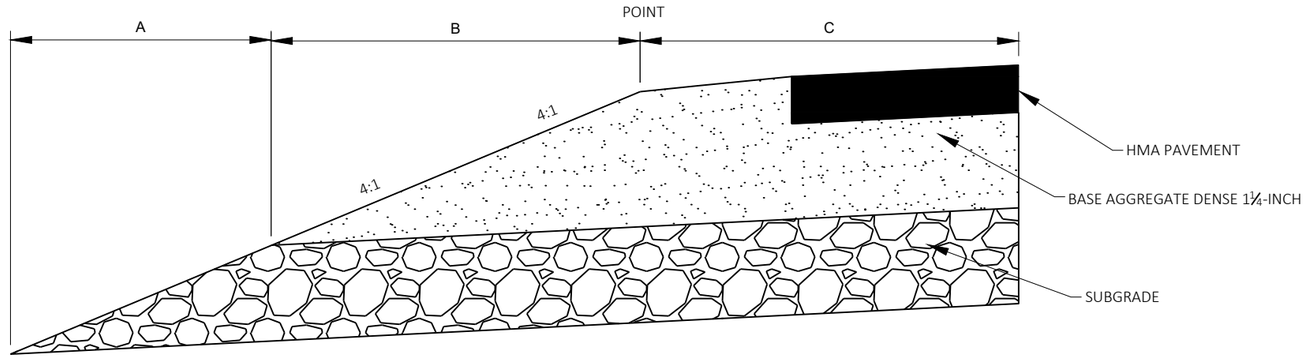
TYPICAL HALF SECTION WITHOUT RELIEF TRENCH

NOTES:

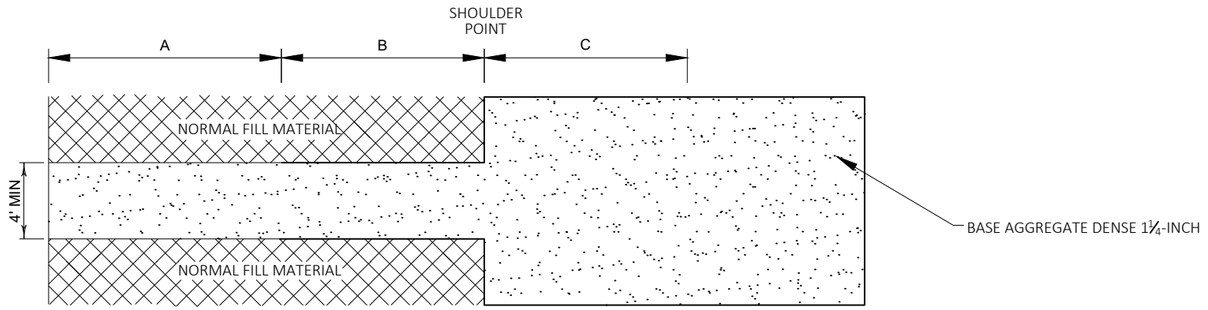
1. CONSTRUCT RELIEF TRENCH AT SAG POINT AND IN 300 FEET INCREMENTS FROM CENTER OF SAG POINT.

RELIEF TRENCH APPROXIMATE LOCATIONS:

1. STA 1215+50 - STA 1248+50 LT & RT
2. STA 1254+00 - STA 1259+00 LT & RT
3. STA 1259+25 - STA 1273+25 RT
4. STA 1273+50 - STA 1277+48 LT & RT
5. STA 1284+00 - STA 1332+74 LT

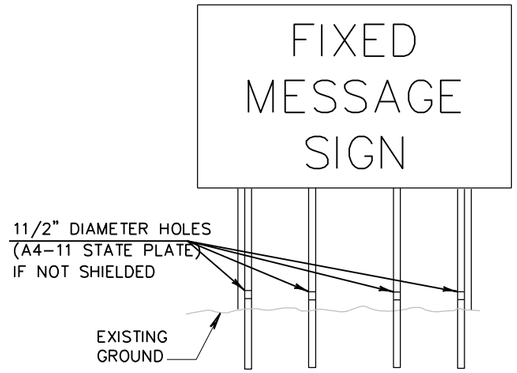


TYPICAL HALF SECTION WITH RELIEF TRENCH



RELIEF TRENCH PLAN VIEW

RELIEF TRENCH



NOTES

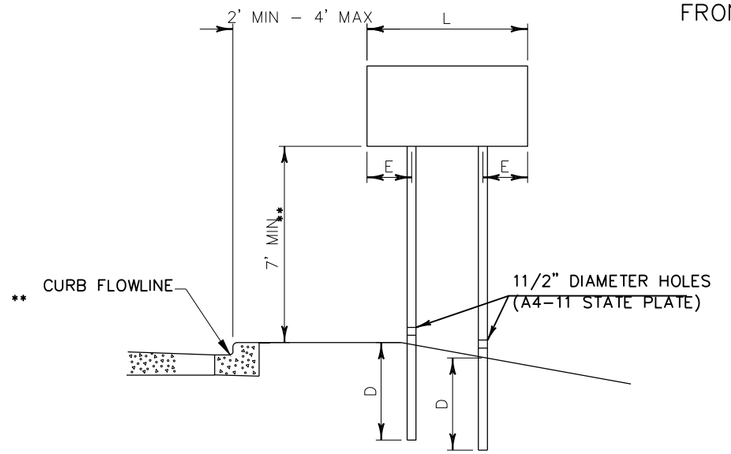
1. SEE TRAFFIC CONTROL SHEETS FOR SIGN LOCATIONS.
2. SEE TABLES BELOW FOR REQUIRED NUMBER OF POSTS.

* 6' FROM EDGE OF A PAVED SHOULDER OR 12' FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) OR 2' FROM OUTSIDE EDGE OF GRAVEL, WHICHEVER IS GREATER UNLESS DIRECTED BY PROJECT ENGINEER.

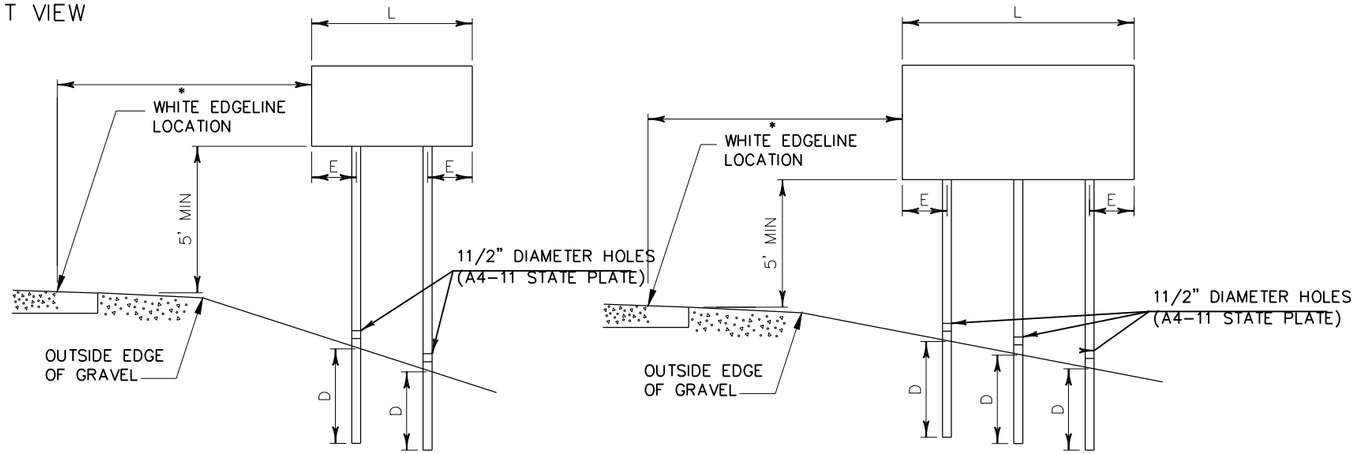
** THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5' MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

3. 4X6 WOOD POSTS SHALL HAVE TWO HOLES PER STATE PLATE A4-11

FRONT VIEW



URBAN AREA



RURAL AREA

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
GREATER THAN 48" LESS THAN 60"	12"
60" TO 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
GREATER THAN 120" LESS THAN 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" AND GREATER	12"

POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

NOTE TO DESIGNERS: SHOW POSTS ON FMS SIGN DETAILS.

POST MOUNTING DETAIL FOR TRAFFIC CONTROL FIXED MESSAGE SIGNS

2

2

LEGEND

TEMPORARY SAND BAG DIKE

SURFACE WATER FLOW

NOTES:

TEMPORARY BYPASS PUMPING IS ALLOWABLE. BYPASS PUMPING SHALL NOT BE PERFORMED FOR MORE THAN 14 CONSECUTIVE DAYS. DO NOT FILTER CHANNEL BYPASS PUMPING.

ALTERNATIVE METHODS FOR MAINTAINING FLOW ARE ALLOWED WITH ENGINEER APPROVAL.

ALL COSTS ASSOCIATED WITH MAINTAINING TEMPORARY DRAINAGE, UNLESS SPECIFIED OTHERWISE ARE INCIDENTAL TO BID ITEM "CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 53x83-INCH"

ANTICIPATE 170 CFS FOR 2 YEAR STORM AT RIPPLE BROOK IF PUMPING.

BYPASS PUMPING MAY BE USED ACROSS ROADWAY OR TO CULVERT AT STA 1314+01.

N

1313+00

1312+00

SLOPE INTERCEPT

SLOPE INTERCEPT

TLE

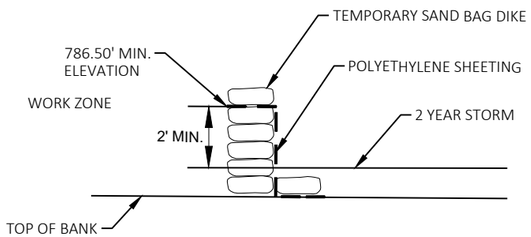
TLE

EX. R/W

EX. R/W

RIPPLE BROOK

RIPPLE BROOK



TEMPORARY SAND BAG DIKE

THE CONTRACTOR MAY ALTER THE DIKE LOCATION AND CONFIGURATION WITH APPROVAL OF THE ENGINEER.

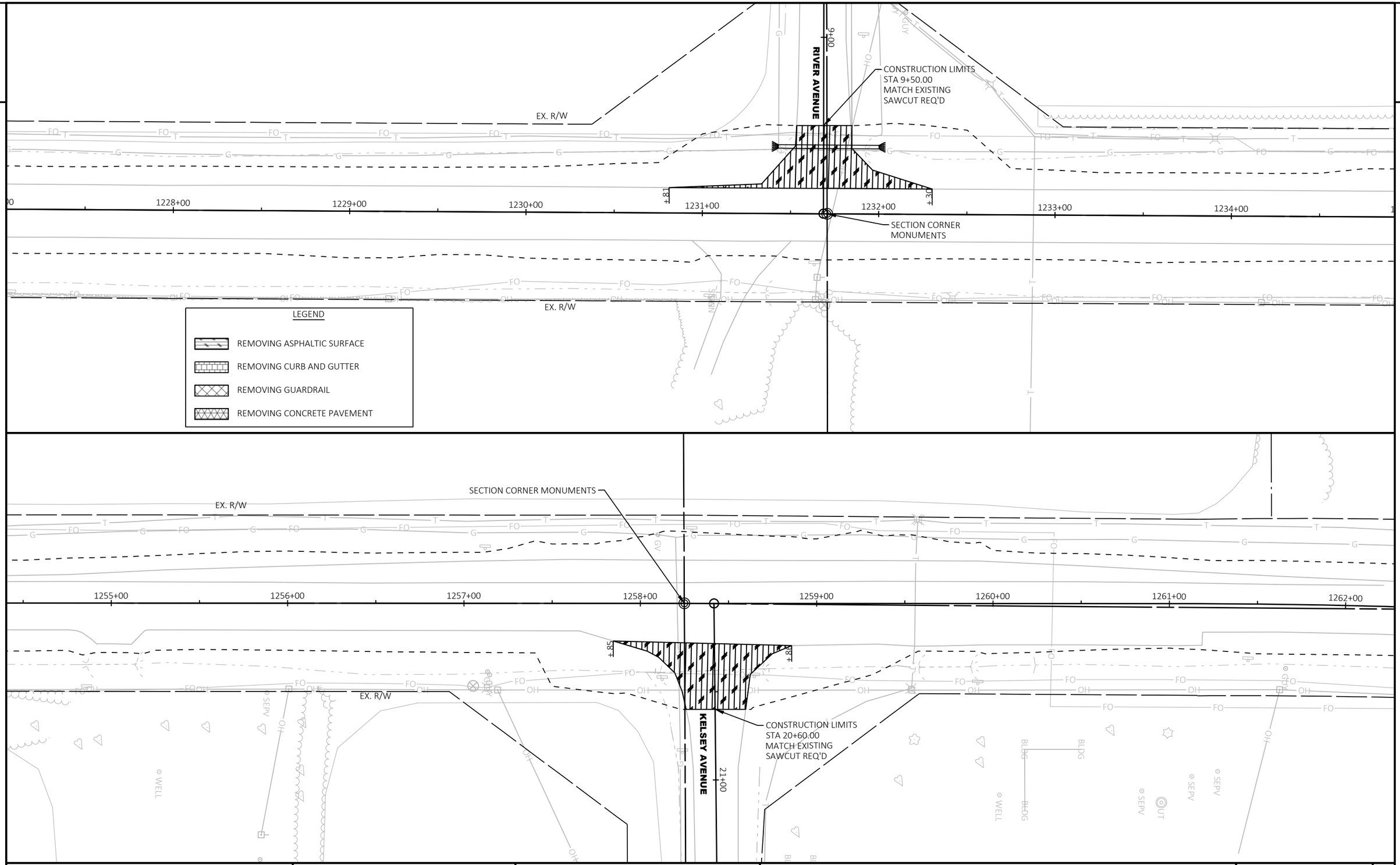
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CONSTRUCTION DETAILS - RIPPLE BROOK	SHEET 14	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021001-CD-RIPPLE BROOK.DWG
LAYOUT NAME - 05

PLOT DATE : 1/31/2024 10:23 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	REMOVAL PLAN	SHEET 15	E

2

EX. R/W

1280+00 1281+00 1282+00 1283+00 1284+00 1285+00 1286+00 1287+00

STH 164

±83 ±75

±32 ±38 ±54 ±61

CARTWRIGHT COURT

31+00

CONSTRUCTION LIMITS
STA 30+65.00
MATCH EXISTING
SAWCUT REQ'D

EX. R/W

LEGEND

- REMOVING ASPHALTIC SURFACE
- REMOVING CURB AND GUTTER
- REMOVING GUARDRAIL
- REMOVING CONCRETE PAVEMENT

TLE

EX. R/W

1288+00 1289+00 1290+00 1291+00 1292+00 1293+00 1294+00 1295+00

STH 164

±08 ±27

EX. R/W

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	REMOVAL PLAN	SHEET 16	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021002-RD.DWG
LAYOUT NAME - 021002-rd

PLOT DATE : 1/31/2024 10:21 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

2

N

RIVER AVENUE

8+00

9+00

N88°39'01"E

CONSTRUCTION LIMITS
STA 9+50.00
MATCH EXISTING
SAWCUT REQ'D

EX. R/W

STA 1231+28.53 LT

STA 1232+08.52 LT

SLOPE INTERCEPT

STA 1230+29 LT

STA 1233+59 LT

15'

15'

40'

40'

22'

22'

5'

5'

12'

12'

5'

5'

1229+00

1230+00

1231+00

1232+00

1233+00

1234+00

N1°12'37"W

STH 164

SLOPE INTERCEPT

XXXXXXXXXXXXXX

STA 1231+68.68, STH 164 =
STA 10+00.00 , RIVER AVE
CONSTRUCT INTERSECTION
TYPE C MODIFIED

SECTION CORNER

EX. R/W

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	INTERSECTION DETAILS	SHEET 17	E

2

N

EX. R/W

SLOPE INTERCEPT

STA 1254+17 LT

STA 1257+42 LT

SECTION CORNER

STA 1258+41.79, STH 164 =
STA 20+00.00 , KELSEY AVE
CONSTRUCT INTERSECTION
TYPE C MODIFIED

STA 1259+92 LT

5'
5'
12'
1'
2'
12'
12'

1254+00 1255+00 1256+00 1257+00 1258+00 1259+00 1260+00

STH 164

N1°12'37"W

STA 1257+85.49 RT

22'

57'

53'

22'

12'
5'
5'

STA 1256+35 RT

STA 1258+95.50 RT

STA 1259+96 RT

SLOPE INTERCEPT

EX. R/W

17' 17'

CONSTRUCTION LIMITS
STA 20+60.00
MATCH EXISTING
SAWCUT REQ'D

N88°09'12"E

KELSEY AVENU

21+00

N

SLOPE INTERCEPT

STA 1262+09 LT

5'
5'
12'

1261+00 1262+00 1263+00 1264+00 1265+00 1266+00

N1°12'37"W

STH 164

12'
5'
5'

SLOPE INTERCEPT

EX. R/W

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	INTERSECTION DETAILS	SHEET 18	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021101-ID.DWG
LAYOUT NAME - 021102-id

PLOT DATE : 1/31/2024 9:45 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

POST #9 1282+25.00
-22.0' LT

POST #5 1282+00.00
-23.0' LT

POST #1 1281+75.00
-24.0' LT

EX. R/W

1282+99.34
-22.0' LT

SLOPE INTERCEPT

STA 1285+88.67, STH 164 =
STA 30+00.00 , CARTWRIGHT CT
CONSTRUCT INTERSECTION
TYPE C MODIFIED

15:1 TAPER

STA 1281+00 LT

STA 1281+64 LT

STA 1284+89 LT

MGS GUARDRAIL
TERMINAL EAT

STH 164

N14°41'02"E

STA 1286+53.81
22.26' RT
ELEV. 795.96

STA 1286+85
18.79' RT
ELEV. 795.88

STA 1283+69 RT

STA 1285+18.89 RT

CARTWRIGHT COURT

STA 1286+29.50
34.78' RT
ELEV. 797.15

CONCRETE CURB
& GUTTER 4-INCH
SLOPED 36-INCH TYPE D

CONSTRUCTION LIMITS
STA 30+65.00
MATCH EXISTING
SAWCUT REQ'D

STA 1286+19.20
60.28' RT
ELEV. 799.62

SLOPE INTERCEPT

EX. R/W

POST #1 1291+25.00
-24.0' LT

POST #5 1291+00.00
-23.0' LT

POST #9 1290+75.00
-22.0' LT

MGS GUARDRAIL 3

SLOPE INTERCEPT

EX. R/W

STA 1287+39 LT

1288+65.72
-22.0' LT

STA 1289+56 LT

STA 1292+30 LT

MGS GUARDRAIL
TERMINAL EAT

STH 164

STA 1287+58 RT

EX. R/W

SLOPE INTERCEPT

EX. R/W

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	INTERSECTION DETAILS	SHEET 19	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021101-ID.DWG
LAYOUT NAME - 021103-id

PLOT DATE : 1/31/2024 9:45 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

LEGEND

GRUBBING BY STATION

N

MATCH LINE 1249+25

2

MCI

SPECTRUM

WE ENERGIES - GAS

SLOPE INTERCEPT

EX. R/W

MCI

GRUBBING

SPECTRUM

WE ENERGIES - GAS

1236 1238 1240 1242 1244 1246 1248

STH 164

SLOPE INTERCEPT

EX. R/W

AT&T WISCONSIN

WE ENERGIES - ELECTRIC
(OVERHEAD LINE)

MATCH LINE 1234+50

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAILS - GRUBBING	SHEET 20	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 14

PLOT DATE : 7/24/2024 1:11 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

2

LEGEND

GRUBBING BY STATION

N

MATCH LINE 1283+50

STA 1278+90
EXISTING 5'6" X 8'0"
SINGLE CELL BOX
CULVERT (C-67-0070)
TO REMAIN

WE ENERGIES - GAS

SLOPE INTERCEPT

SPECTRUM

GRUBBING

TLE FOR SLOPES

EX. R/W

1280

1282

1284

1286

1288

1290

1292

MCI

AT&T WISCONSIN

WE ENERGIES - ELECTRIC
(OVERHEAD LINE)

18-INCH CPCS PIPE

24-INCH CPRC PIPE

SLOPE INTERCEPT

GRUBBING

EX. R/W

CARTWRIGHT COURT

WE ENERGIES - ELECTRIC

MATCH LINE 1278+75

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAILS - GRUBBING	SHEET 21	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 17

PLOT DATE : 7/24/2024 1:11 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

LEGEND

GRUBBING BY STATION

N

MATCH LINE 1308+25

MATCH LINE 1293+50

SLOPE INTERCEPT

WE ENERGIES - GAS

SPECTRUM

TLE FOR PIPE

GRUBBING

MCI

CAUTION

STH 164

EX. R/W

1294

1296

1298

1300

1302

1304

1306

1308

WE ENERGIES - ELECTRIC
(OVERHEAD LINE)

AT&T WISCONSIN

SLOPE INTERCEPT

24-INCH CPRC PIPE

30-INCH CPRC PIPE

TLE FOR PIPE

GRUBBING

EX. R/W

CLEARING AND GRUBBING

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAILS - GRUBBING	SHEET 22	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 18

PLOT DATE : 7/24/2024 1:11 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

LEGEND

GRUBBING BY STATION

N

MATCH LINE 1308+25

EX. R/W

STH 164

EX. R/W

GRUBBING

TLE FOR PIPE

TLE FOR PIPE

SPECTRUM

WE ENERGIES - GAS

MCI

SLOPE INTERCEPT

53 X 83-INCH CPRCHE PIPE

TLE FOR PIPE

TLE FOR PIPE

36-INCH CPRC PIPE

SLOPE INTERCEPT

WE ENERGIES - ELECTRIC
(OVERHEAD LINE)

AT&T WISCONSIN

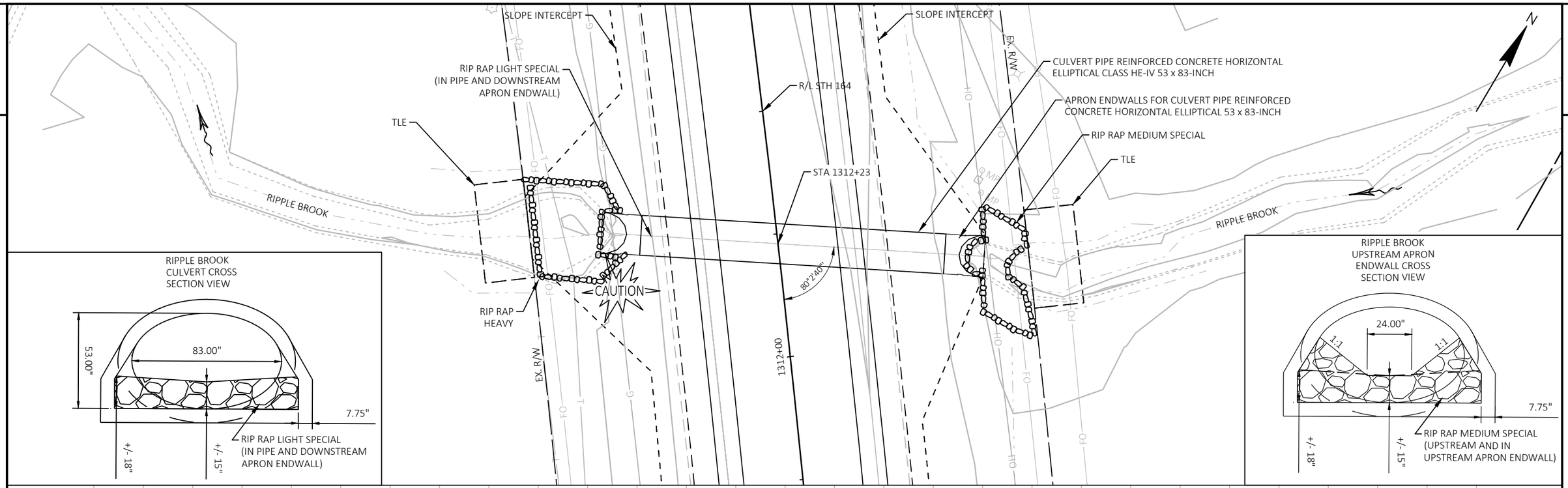
END PROJECT
STA 1322+74

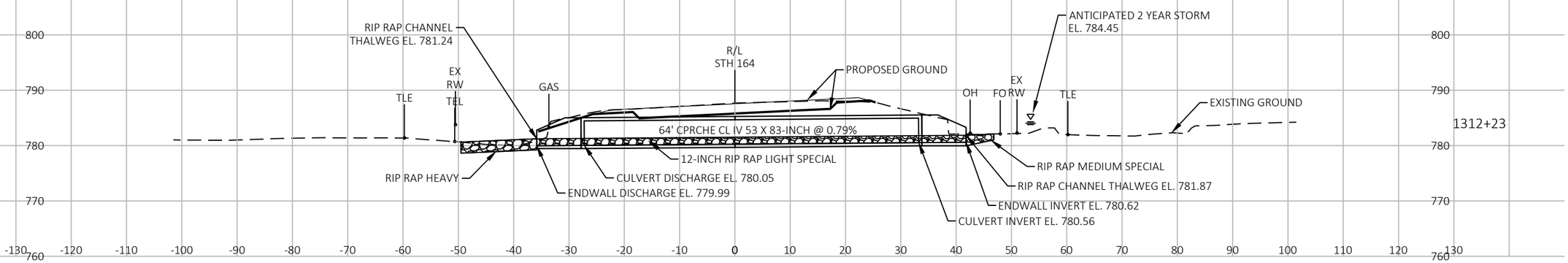
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAILS - GRUBBING	SHEET 23	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 19

PLOT DATE : 7/24/2024 1:11 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT

2





CULVERT - SKEWED SECTION ALONG CENTERLINE OF CULVERT

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAILS - RIPPLE BROOK	SHEET 24	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021202-PD-RIPPLE BROOK.DWG
LAYOUT NAME - 05

PLOT DATE : 7/24/2024 1:34 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:20 FT

2

R/L STH 164

SLOPE INTERCEPT

EX. RW

TLE

A
5' 0"

MATCH 1 FOOT
INSIDE R/W

STA 1312+23

RIPPLE BROOK

80°2'40"

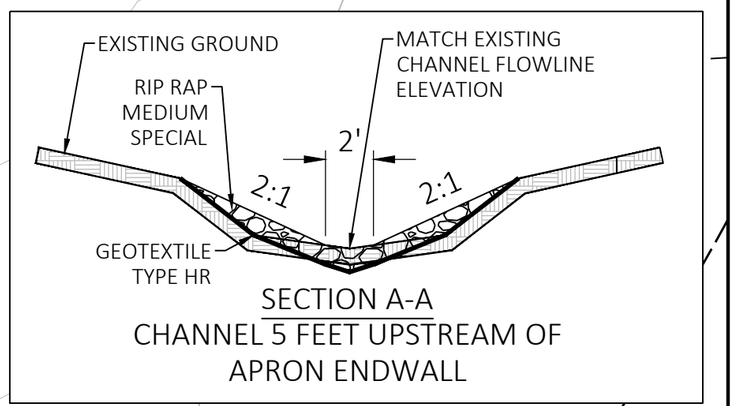
1312+00

A

RIP RAP MEDIUM SPECIAL

APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 53 x 83-INCH

CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 53 x 83-INCH



SECTION A-A
CHANNEL 5 FEET UPSTREAM OF APRON ENDWALL

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAILS - RIPPLE BROOK	SHEET 25	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\021202-PD-RIPPLE BROOK.DWG
LAYOUT NAME - 06

PLOT DATE : 7/24/2024 1:34 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT

2

2

COUNTY LINE ROAD

DENOON ROAD

STH 164

N

SLOPE INTERCEPT

EX. R/W

SLOPE INTERCEPT

EX. R/W

1206+00 1207+00 1208+00 1209+00 1210+00 1211+00 1212+00

BEGIN PROJECT
STA 1209+00

MATCH LINE 1212+37

EX. R/W

EROSION MAT URBAN CL.I TYPE B (TYP)

PIPE UNDERDRAIN

EROSION MAT URBAN CL.I TYPE B (TYP)

SLOPE INTERCEPT

SILT FENCE

SLOPE INTERCEPT

WETLAND BOUNDARY

1213+00 1214+00 1215+00 1216+00 1217+00 1218+00 1219+00

STH 164

N

MATCH LINE 1219+24

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 26	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 46

PLOT DATE : 2/1/2024 9:46 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 44

2

N

EX. R/W

SLOPE INTERCEPT

1220+00 1221+00 1222+00 1223+00 1224+00 1225+00 1226+00

STH 164

SLOPE INTERCEPT

SILT FENCE

EX. R/W

WETLAND BOUNDARY

MATCH LINE 1219+24

MATCH LINE 1226+11

2

N

RIPRAP MEDIUM
W=10' , L=14'

GEOTEXTILE
TYPE HR

9+00

RIVER AVENUE

CULVERT PIPE CHECKS

EROSION MAT URBAN CL.I TYPE B (TYP)

EX. R/W

SLOPE INTERCEPT

1227+00 1228+00 1229+00 1230+00 1231+00 1232+00 1233+00

STH 164

SLOPE INTERCEPT

EX. R/W

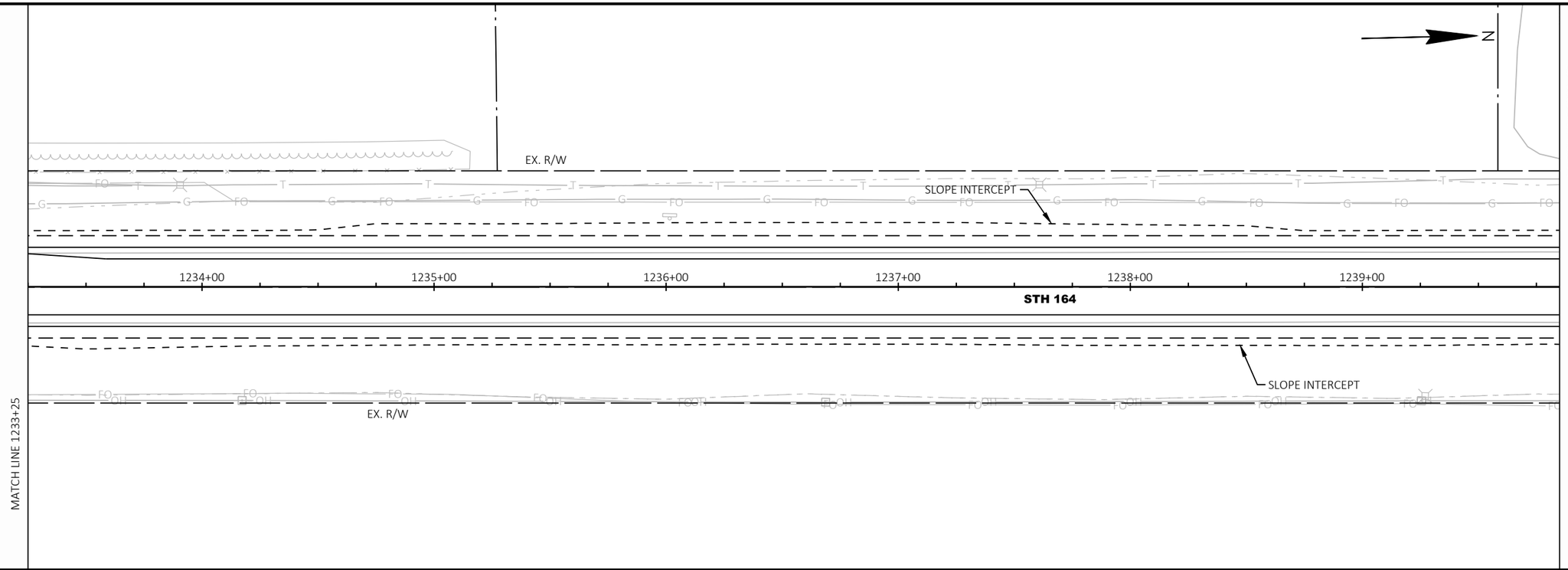
MATCH LINE 1226+11

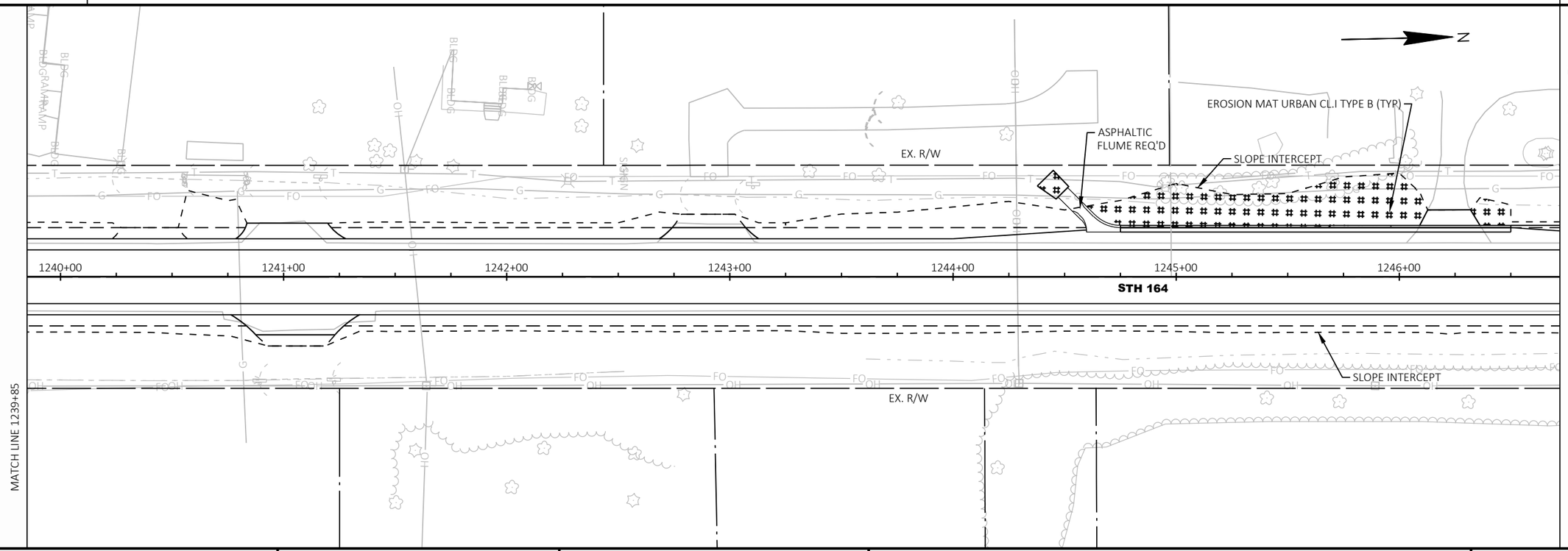
MATCH LINE 1233+25

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 27	E

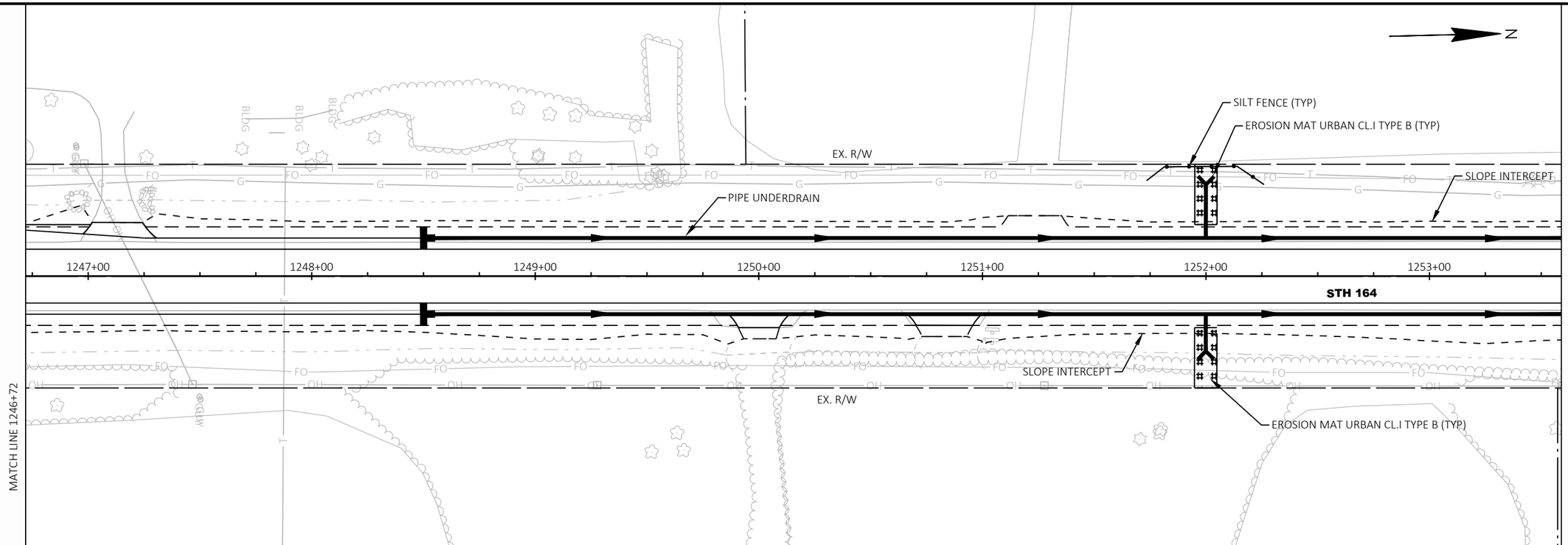
FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 47

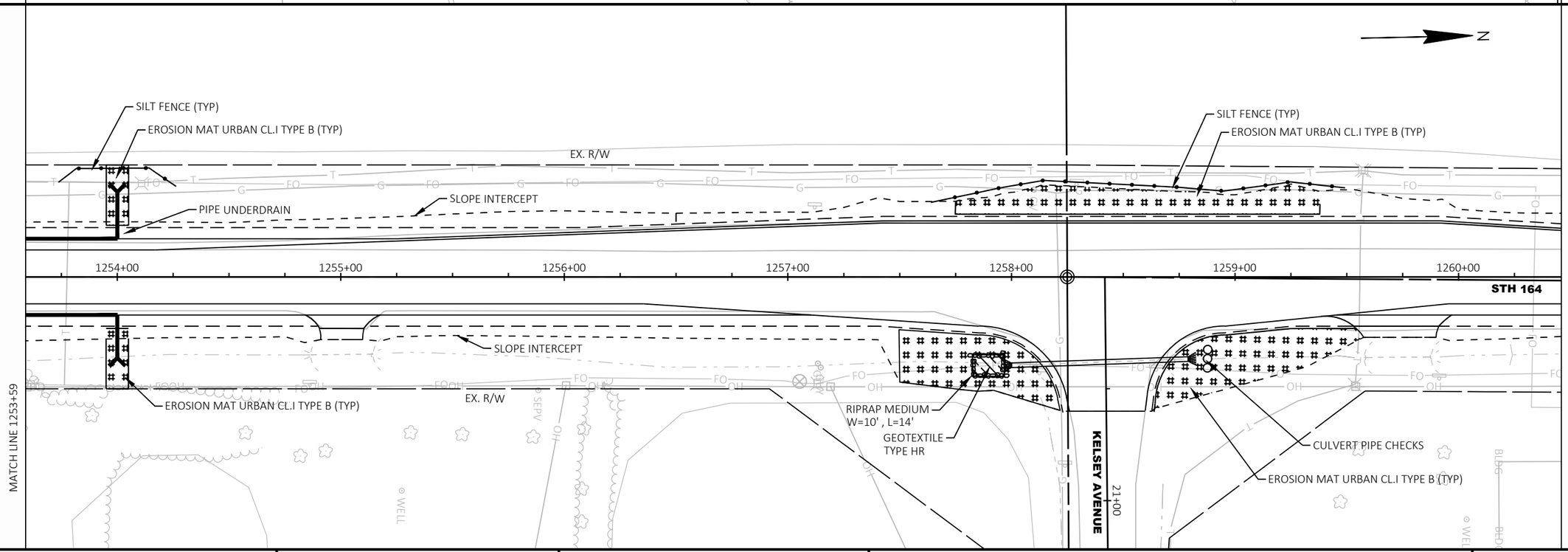
PLOT DATE : 2/1/2024 9:46 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT





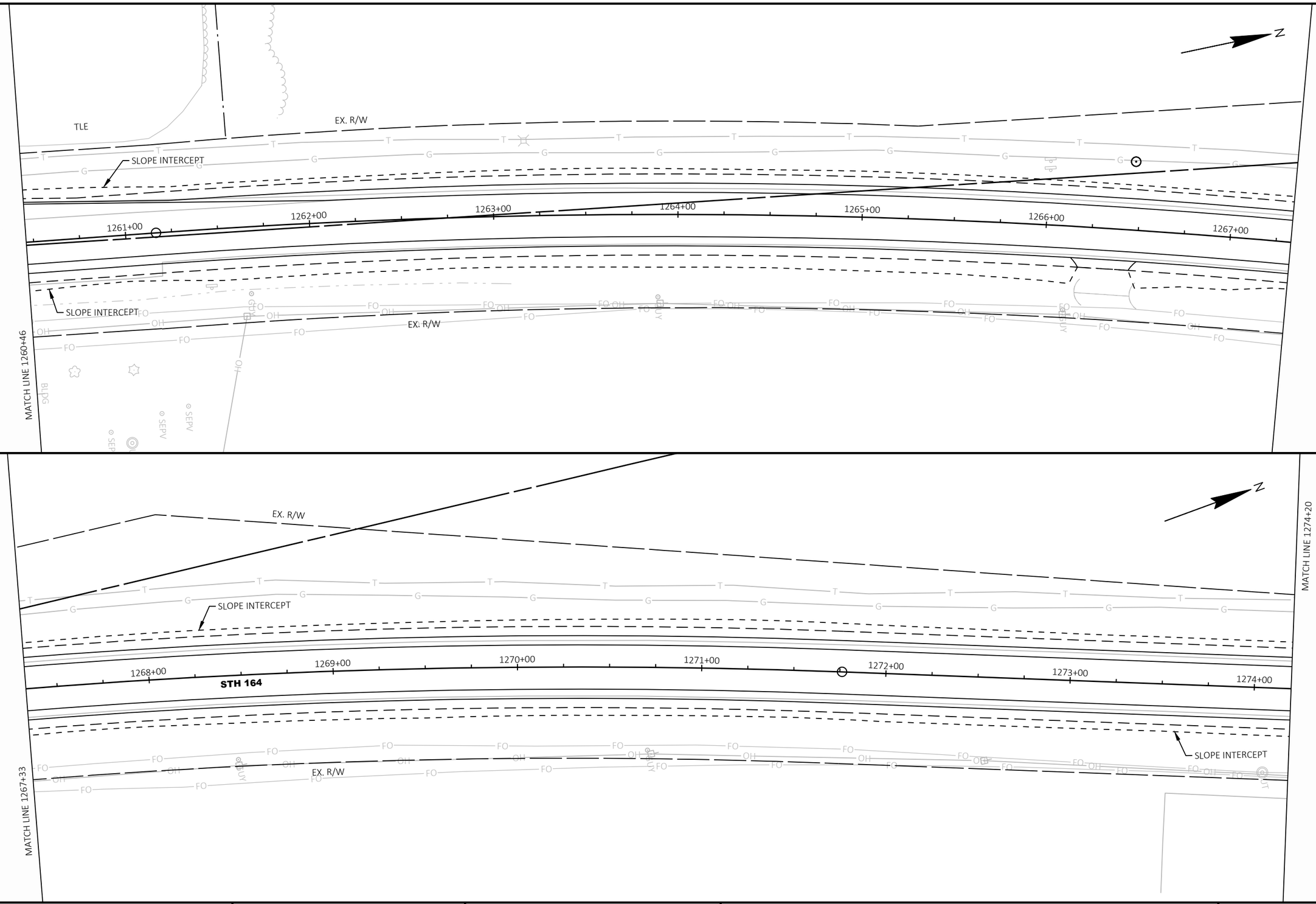
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 28	E



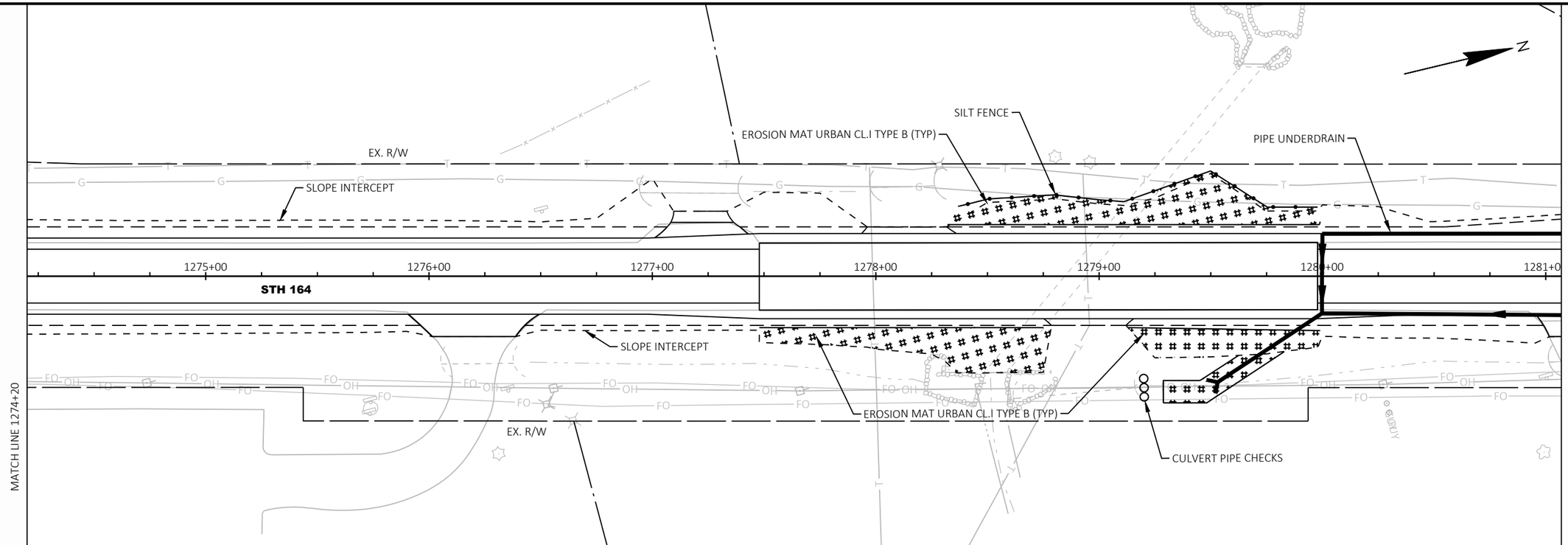


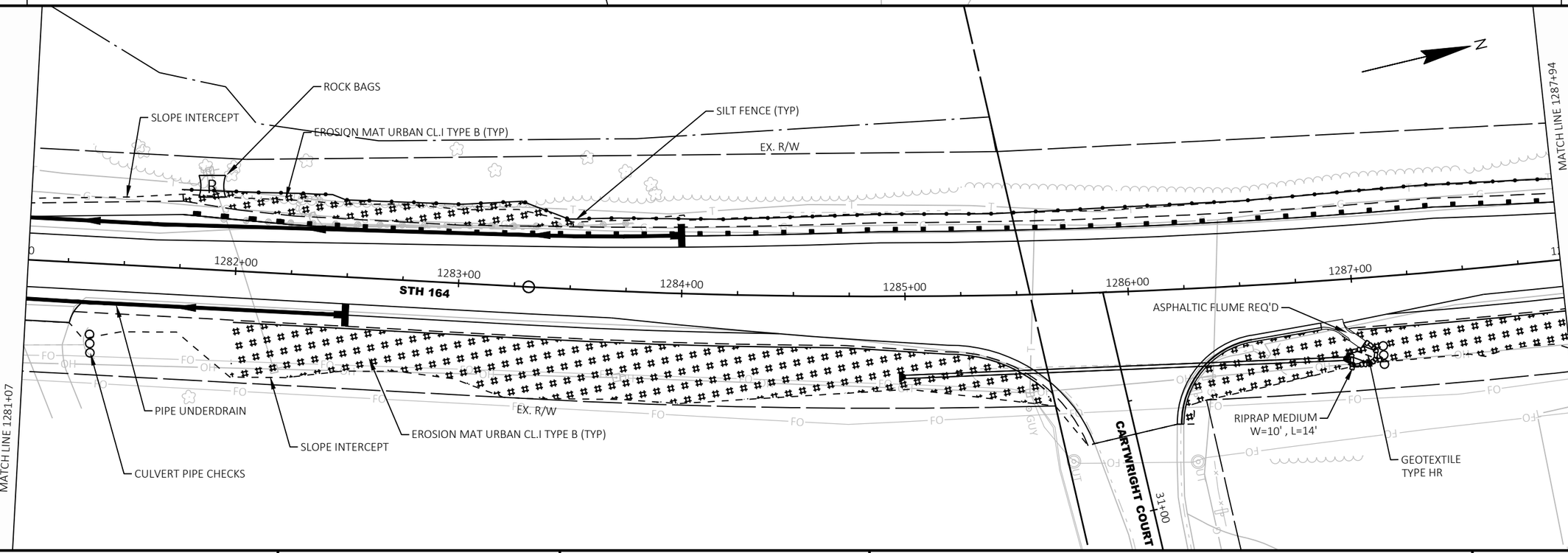
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 29	E

2



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 30	E

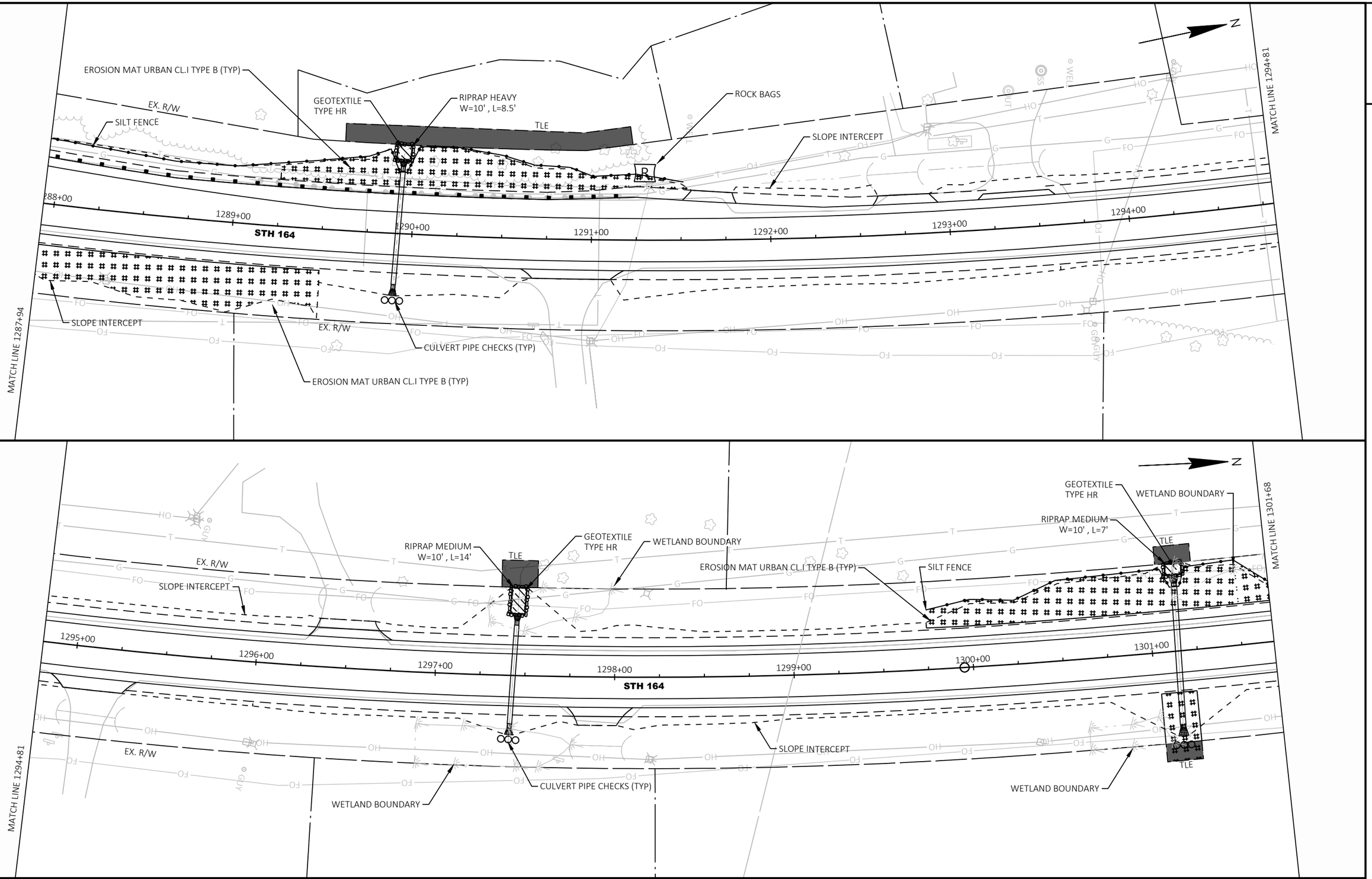




PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 31	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 51

PLOT DATE : 2/1/2024 9:46 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 32	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 52

PLOT DATE : 2/1/2024 9:46 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

SILT FENCE

EROSION MAT URBAN CL.I TYPE B (TYP)

EX. R/W

SLOPE INTERCEPT

1302+00 1303+00 1304+00 1305+00 1306+00 1307+00 1308+00

STH 164

EX. R/W

SLOPE INTERCEPT

MATCH LINE 1301+68

MATCH LINE 1308+55

N

WETLAND BOUNDARY

RIPRAP HEAVY W=14' , L=20'

GEOTEXTILE TYPE HR

RIPRAP MEDIUM W=11' , L=14'

GEOTEXTILE TYPE HR

SILT FENCE

EX. R/W

SLOPE INTERCEPT

MATCH LINE 1315+50

1309+00 1310+00 1311+00 1312+00 1313+00 1314+00 1315+00

STH 164

SLOPE INTERCEPT

EX. R/W

CULVERT PIPE CHECKS (TYP)

SILT FENCE (TYP)

MATCH LINE 1308+55

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 33	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 53

PLOT DATE : 2/1/2024 9:46 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

EX. R/W

MATCH LINE 1319+53.58

SLOPE INTERCEPT

1316+00 1317+00 1318+00 1319+00 1320+00 1321+00 1322+00

STH 164

SLOPE INTERCEPT

MATCH LINE 1315+50

EX. R/W

N

EX. R/W

SLOPE INTERCEPT

1323+00 1324+00 1325+00 1326+00 1327+00 1328+00 1329+00 1330+00

R/L STH 164

STA BACK = 1325+00.00
STA AHEAD = 1324+98.53

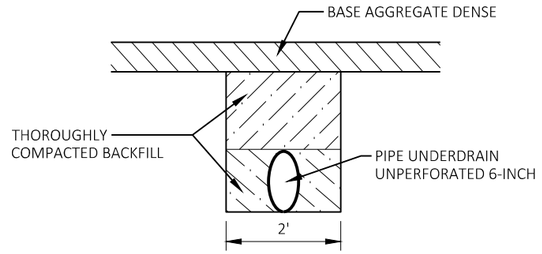
EX. R/W

END PROJECT
STA 1322+75

HENNEBERRY AVENUE

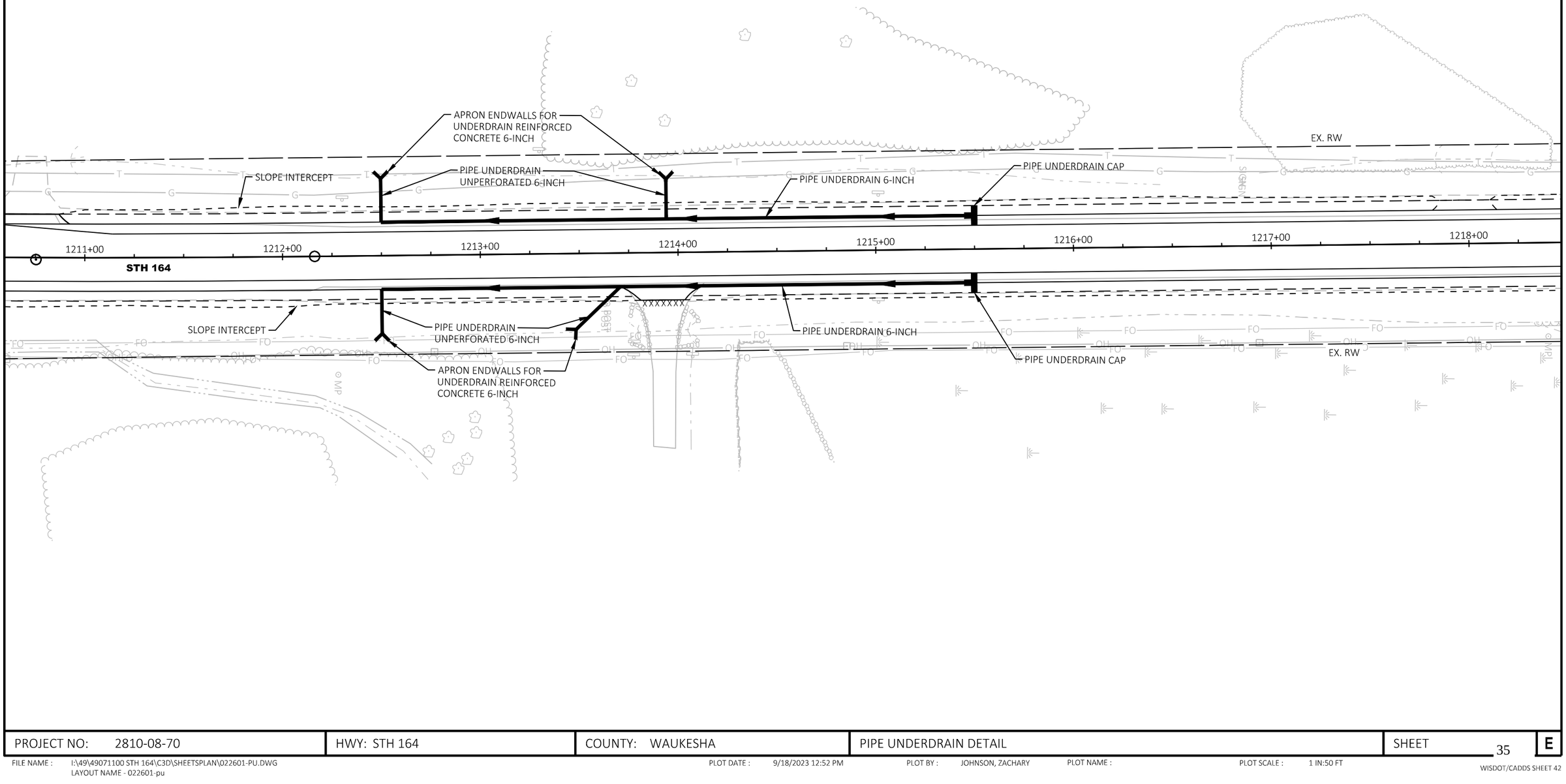
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 34	E

STA 1212+50 TO 1215+50		
STA	SIDE	P.U.D INVERT ELEVATION
STA 1212+50	RT,LT	788.16 FT
STA 1213+00	RT,LT	788.24 FT
STA 1213+50	RT,LT	788.32 FT
STA 1214+00	RT,LT	788.40 FT
STA 1214+50	RT,LT	788.48 FT
STA 1215+00	RT,LT	788.56 FT
STA 1215+50	RT,LT	788.61 FT



TRENCH FOR OUTFALL PIPE

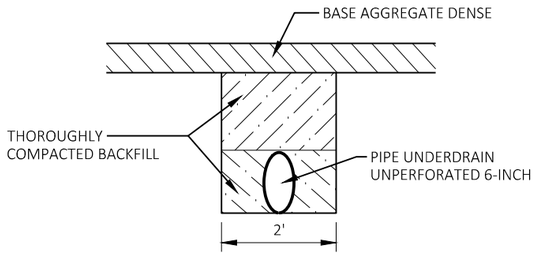
N



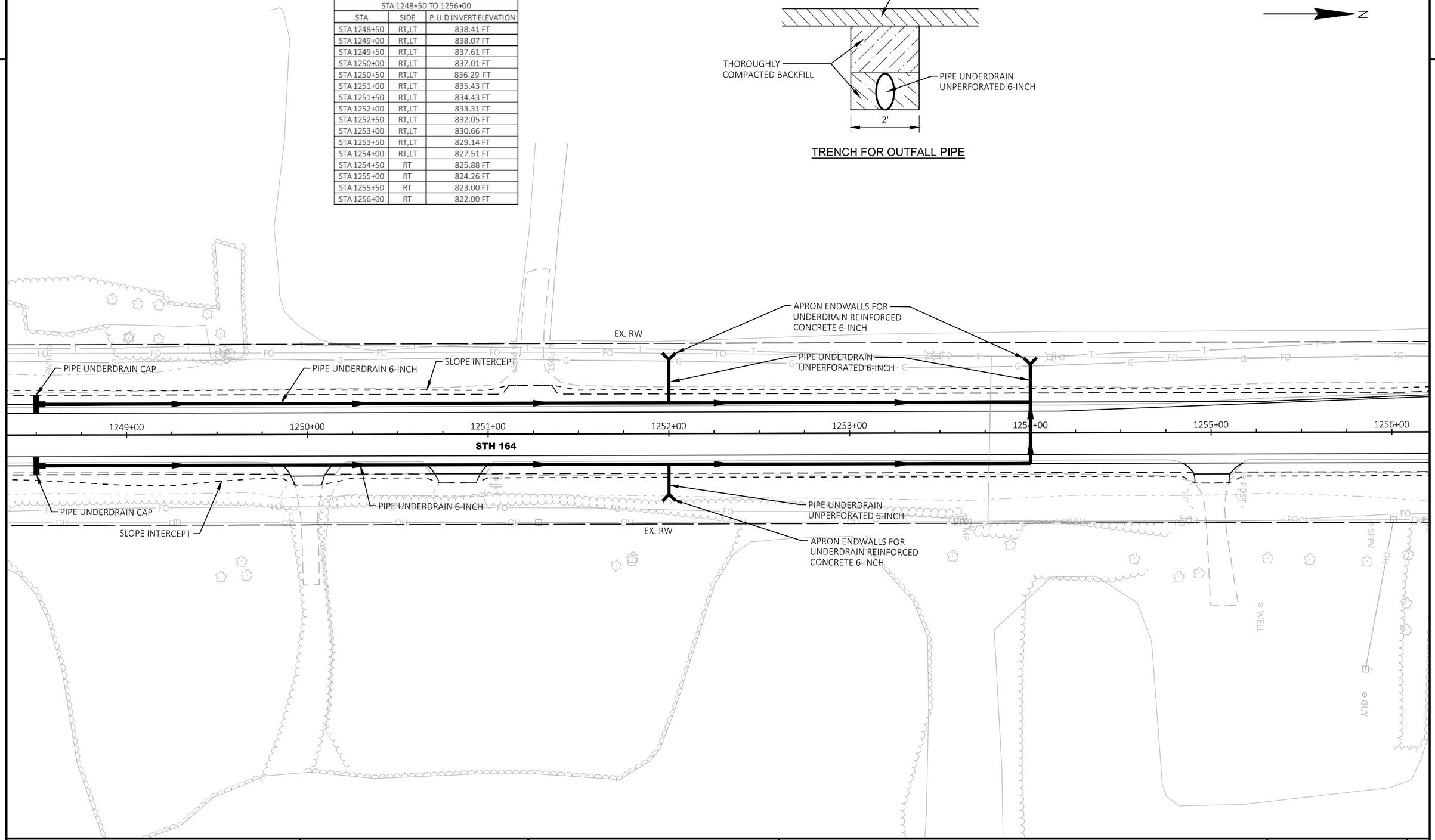
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PIPE UNDERDRAIN DETAIL	SHEET 35	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\022601-PU.DWG
LAYOUT NAME - 022601-pu
PLOT DATE : 9/18/2023 12:52 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT

STA 1248+50 TO 1256+00		
STA	SIDE	P.U.D INVERT ELEVATION
STA 1248+50	RT,LT	838.41 FT
STA 1249+00	RT,LT	838.07 FT
STA 1249+50	RT,LT	837.61 FT
STA 1250+00	RT,LT	837.01 FT
STA 1250+50	RT,LT	836.29 FT
STA 1251+00	RT,LT	835.43 FT
STA 1251+50	RT,LT	834.43 FT
STA 1252+00	RT,LT	833.31 FT
STA 1252+50	RT,LT	832.05 FT
STA 1253+00	RT,LT	830.66 FT
STA 1253+50	RT,LT	829.14 FT
STA 1254+00	RT,LT	827.51 FT
STA 1254+50	RT	825.88 FT
STA 1255+00	RT	824.26 FT
STA 1255+50	RT	823.00 FT
STA 1256+00	RT	822.00 FT



TRENCH FOR OUTFALL PIPE

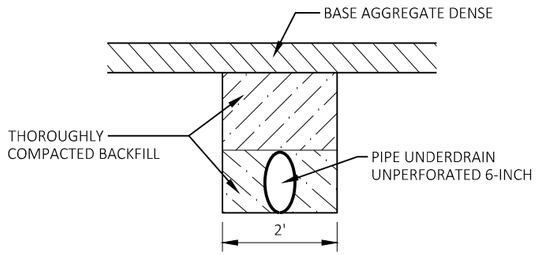


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PIPE UNDERDRAIN DETAIL	SHEET 36	E

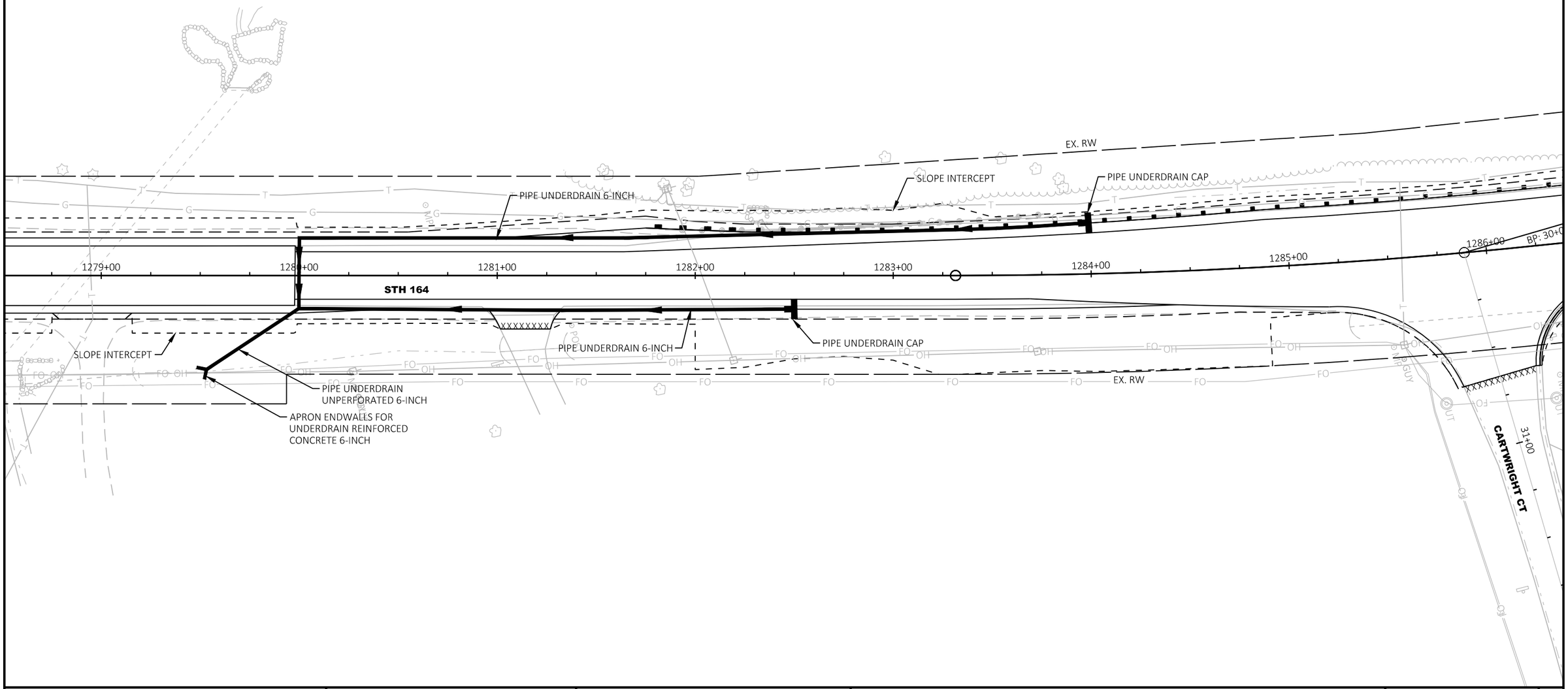
FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\022601-PU.DWG
LAYOUT NAME - 022602-pu

PLOT DATE : 9/18/2023 12:52 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT

STA 1280+00 TO 1284+00		
STA	SIDE	P.U.D INVERT ELEVATION
STA 1280+00	RT	783.45 FT
STA 1280+00	LT	783.67 FT
STA 1280+50	RT	784.12 FT
STA 1280+50	LT	784.12 FT
STA 1281+00	RT	785.05 FT
STA 1281+00	LT	784.99 FT
STA 1281+50	RT	785.91 FT
STA 1281+50	LT	785.79 FT
STA 1282+00	RT	786.81 FT
STA 1282+00	LT	786.60 FT
STA 1282+50	RT	787.95 FT
STA 1282+50	LT	787.37 FT
STA 1283+00	LT	788.00 FT
STA 1283+50	LT	788.07 FT
STA 1284+00	LT	788.24 FT



TRENCH FOR OUTFALL PIPE



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PIPE UNDERDRAIN DETAIL	SHEET 37	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\022601-PU.DWG
LAYOUT NAME - 022603-pu

PLOT DATE : 9/18/2023 12:52 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:50 FT

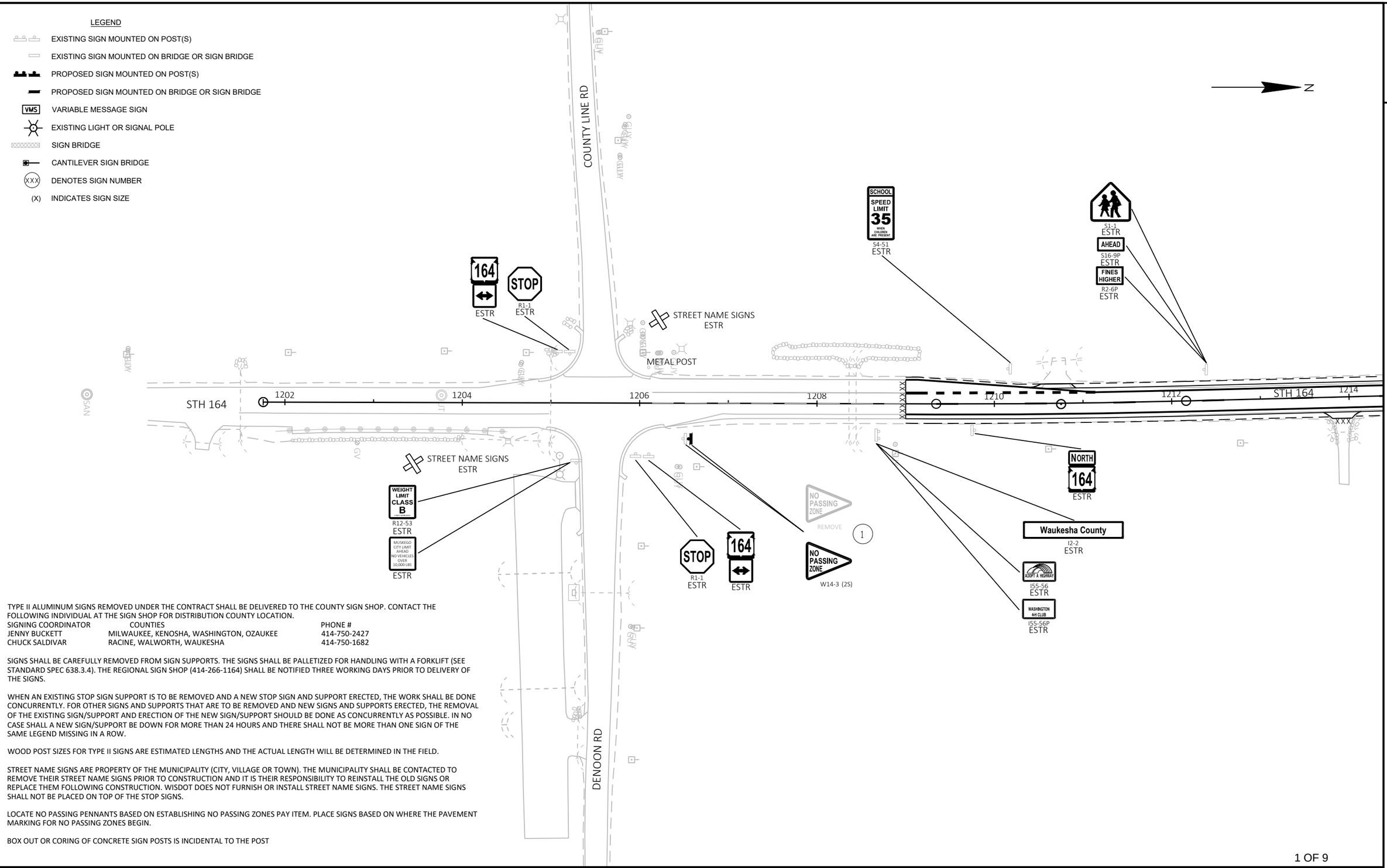
WISDOT/CADDS SHEET 42

2

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE



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	COUNTIES	PHONE #
JENNY BUCKETT	MILWAUKEE, KENOSHA, WASHINGTON, OZAUKEE	414-750-2427
CHUCK SALDIVAR	RACINE, 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 (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 AND 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 POST SIZES FOR TYPE II SIGNS ARE ESTIMATED LENGTHS AND THE ACTUAL 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.

LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.

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

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 38	E

FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 01

PLOT DATE : 6/7/2023 10:36 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT

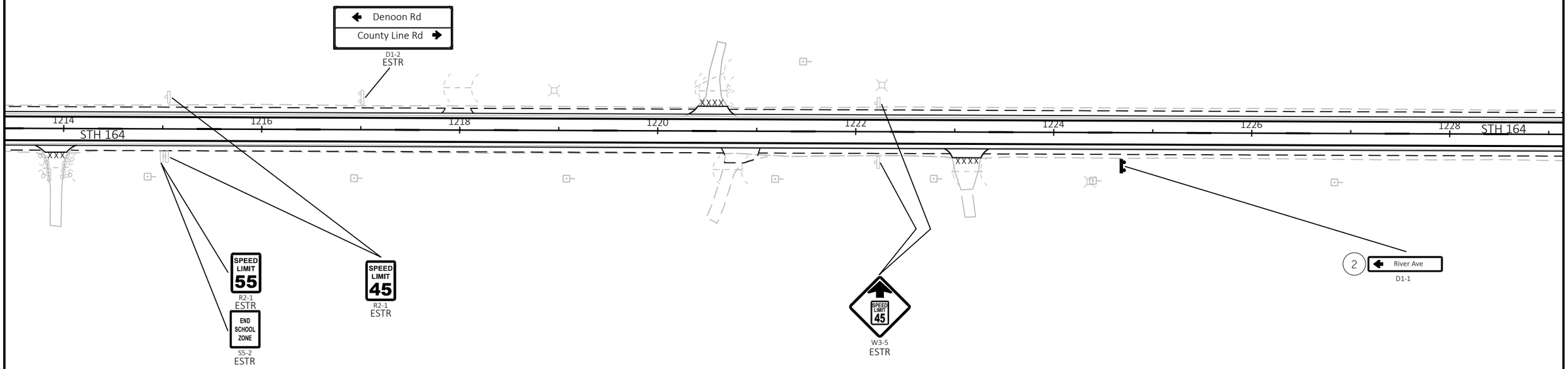
2

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

N



2 OF 9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 39	E

FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 02

PLOT DATE : 6/7/2023 10:36 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N

RIVER AVE

BP: 6+00.00

7+00

8+00

9+00

SPEED LIMIT 25
R2-1
ESTR

DEAD END
W14-1
ESTR

WEIGHT LIMIT CLASS B
R12-53
ESTR

3 STOP
R1-1
MOVE

STREET NAME SIGNS
MOVE BY VILLAGE

XXXX

4 NO PASSING ZONE
REMOVE

NO PASSING ZONE
W14-3 (2S)

5 River Ave
D1-1

1230 1232 1234 1236 1238 1240 1242 1244

STH 164

EP: 10+00.00

STH 164

XXXXXX

W1-7
ESTR

3 OF 9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 40	E

FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 03

PLOT DATE : 6/7/2023 10:36 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

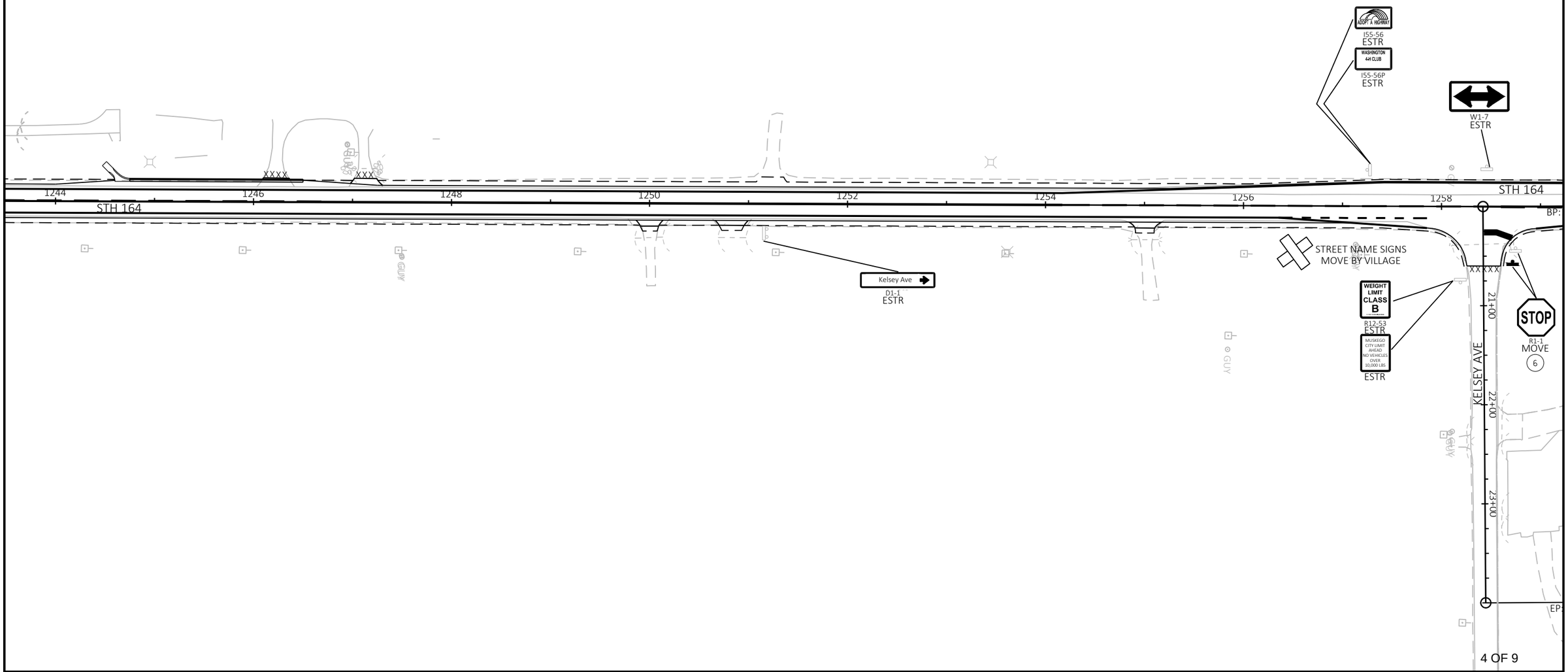
2

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N



4 OF 9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 41	E

FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 04

PLOT DATE : 6/7/2023 10:36 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

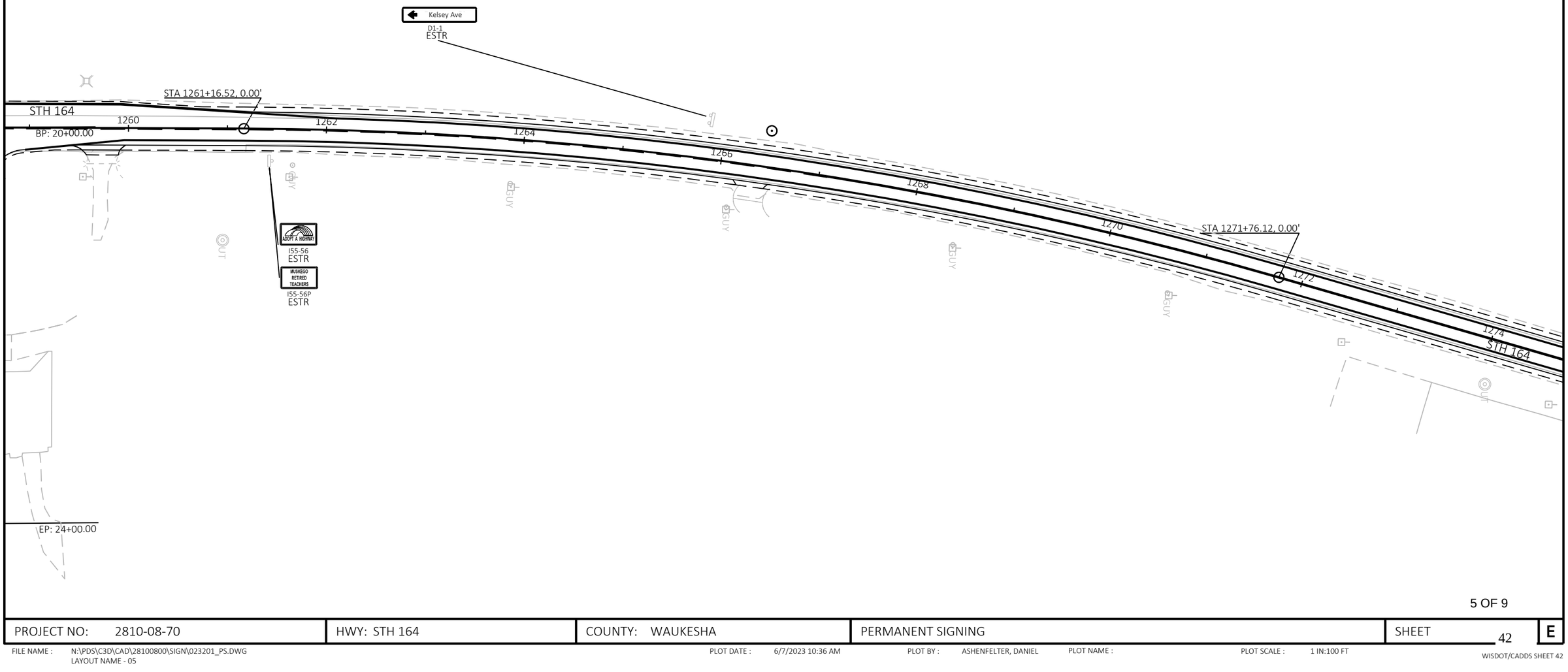
2

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

N



5 OF 9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 42	E

FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 05

PLOT DATE : 6/7/2023 10:36 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

N

7
NO PASSING ZONE
REMOVE
NO PASSING ZONE
W14-3 (2S)

STH 164
1276
1278
1280
1282
1284
1286
1288
STA 1283+31.39, 0.00'
BP: 30+00.00
STH 164
XXXXX
XXXXX
XXXXXX
GUY
GUY
OUT
OUT

8
NO PASSING ZONE
REMOVE
NO PASSING ZONE
W14-3 (2S)

STREET NAME SIGNS
MOVE BY VILLAGE

STOP
R1-1
MOVE
9

NO OUTLET
W14-2
ESTR

CARTWRIGHT CT
31+00
32+00
33+00

SPEED LIMIT 25
R2-1
ESTR

MUSKEGO CITY LIMIT AHEAD NO VEHICLES OVER 10,000 LBS
ESTR

EP: 34+00.00

6 OF 9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 43	E

FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 06

PLOT DATE : 6/7/2023 10:36 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT

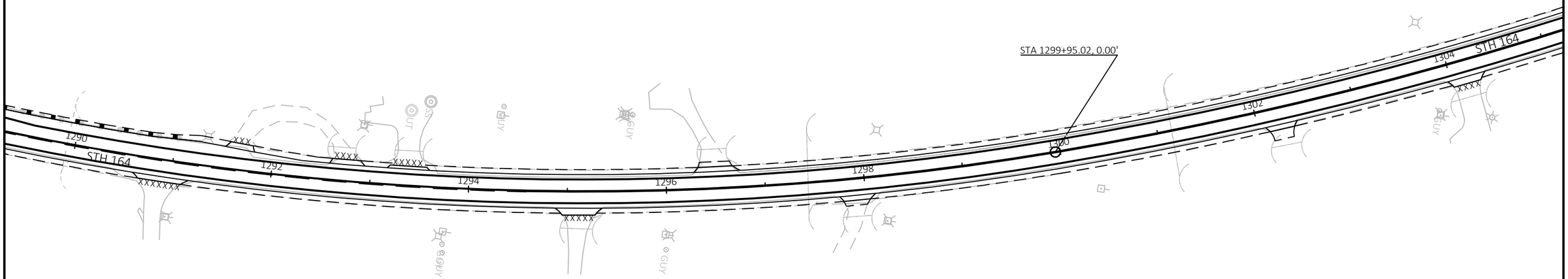
2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

N

NO SIGNS ON THIS SHEET



2

7 OF 9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 44	E

FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 07

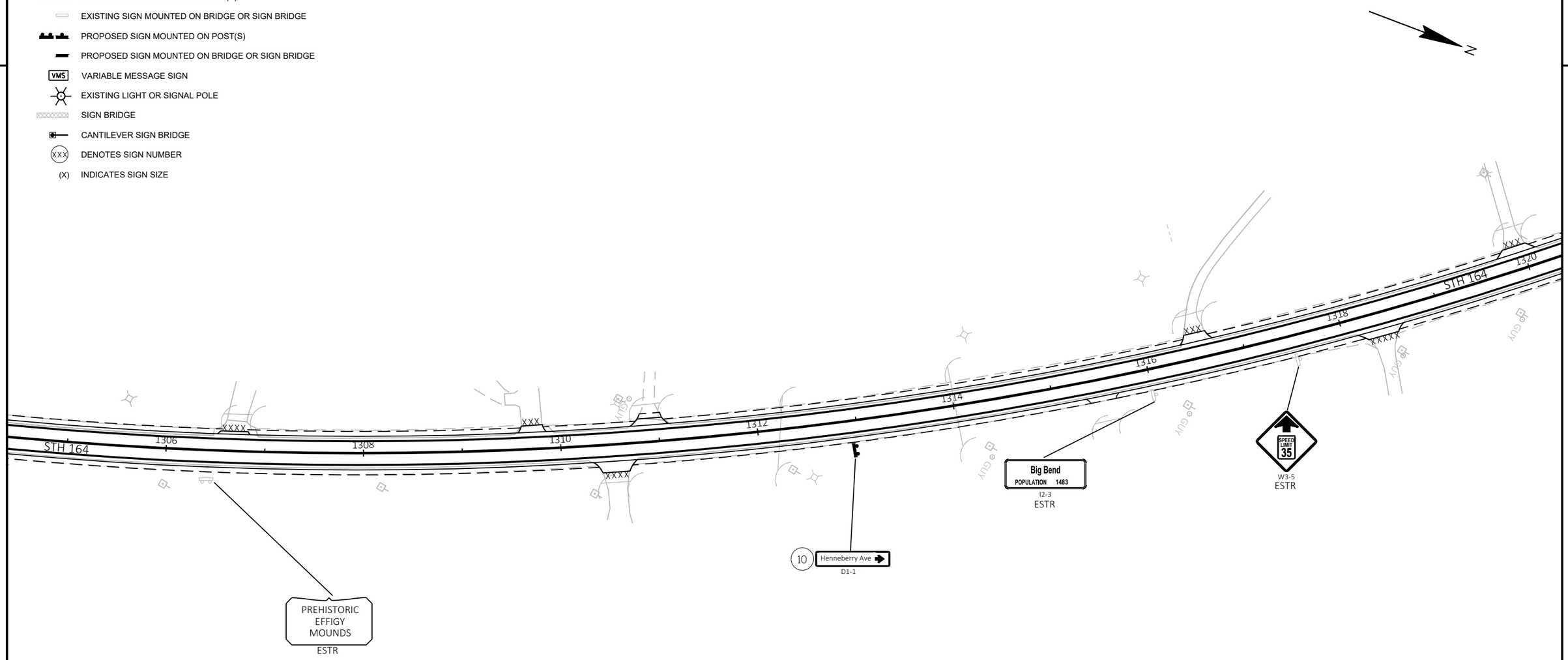
PLOT DATE : 6/7/2023 10:36 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE



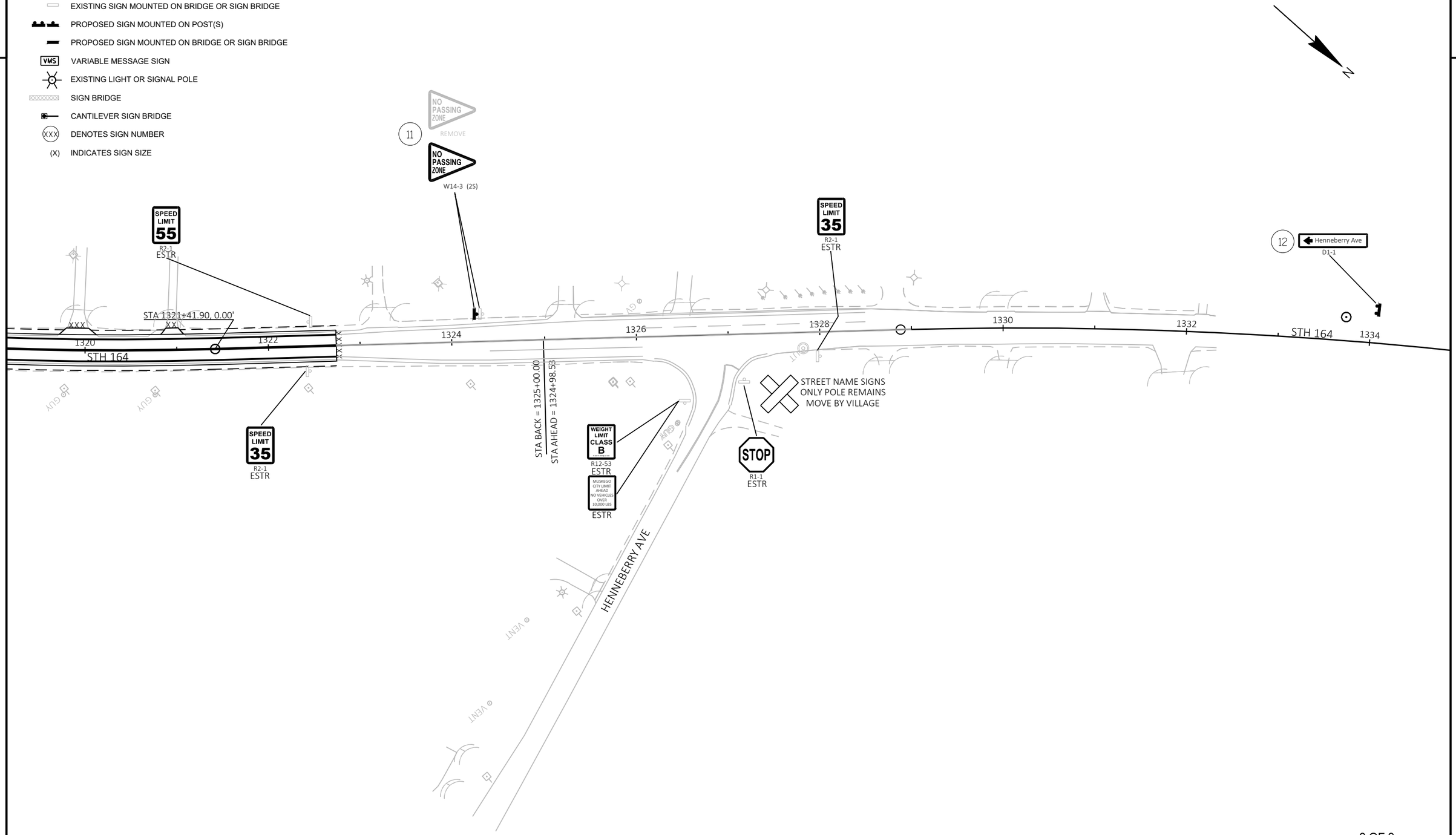
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 45	E

FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 08

PLOT DATE : 6/7/2023 10:36 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

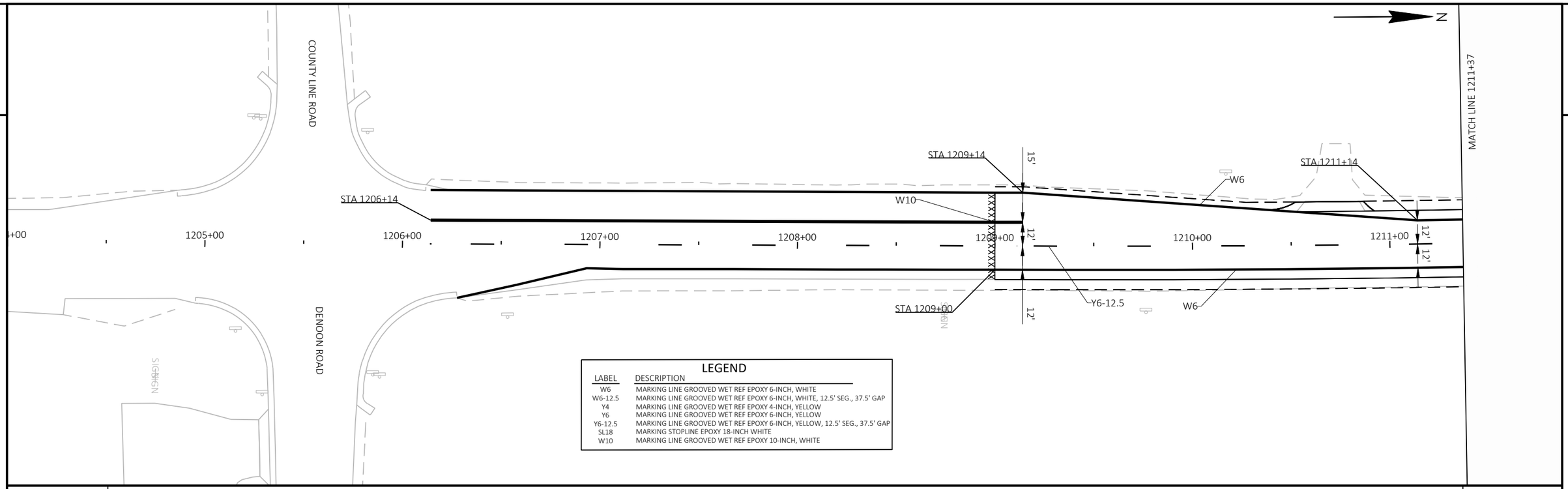


9 OF 9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 46	E

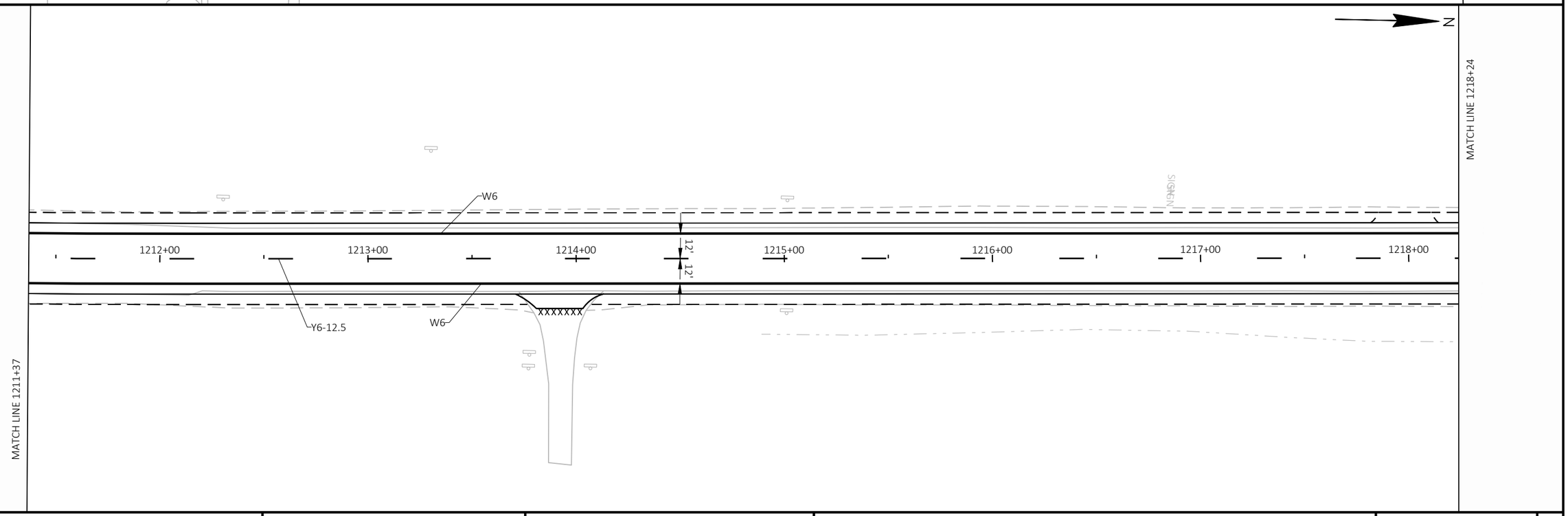
FILE NAME : N:\PDS\C3D\CAD\28100800\SIGN\023201_PS.DWG
LAYOUT NAME - 09

PLOT DATE : 6/7/2023 10:37 AM PLOT BY : ASHENFELTER, DANIEL PLOT NAME : PLOT SCALE : 1 IN:100 FT



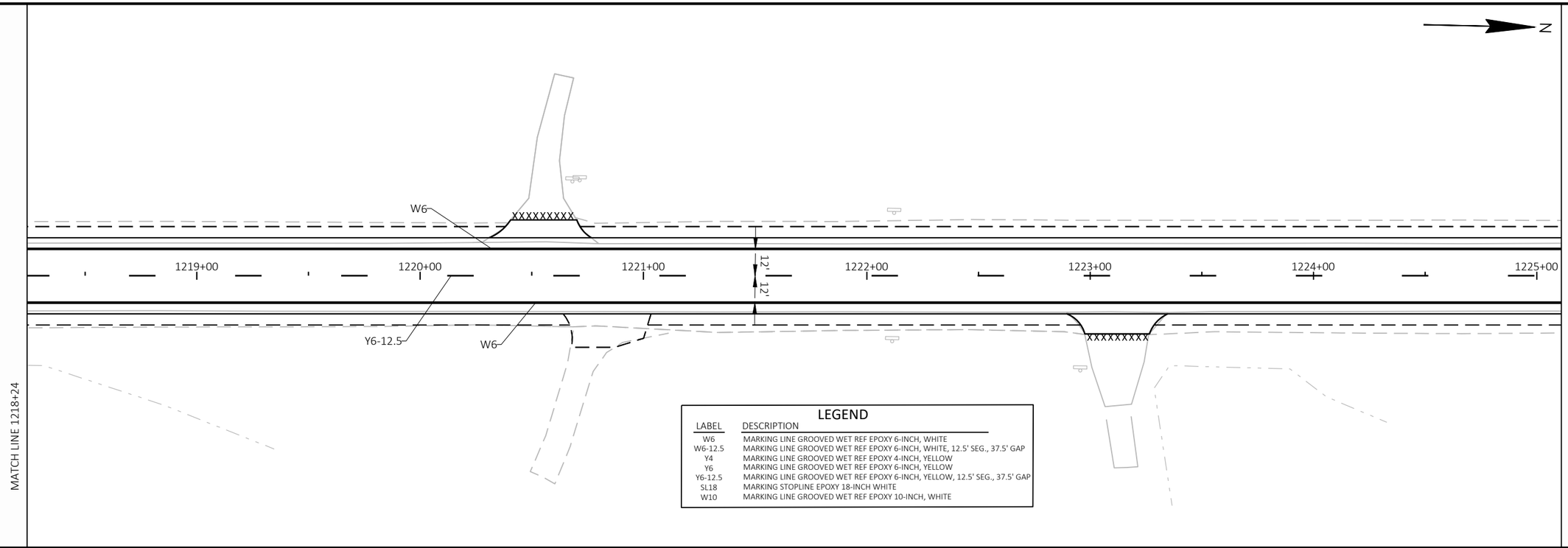
LEGEND

LABEL	DESCRIPTION
W6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE
W6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE, 12.5' SEG., 37.5' GAP
Y4	MARKING LINE GROOVED WET REF EPOXY 4-INCH, YELLOW
Y6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW
Y6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW, 12.5' SEG., 37.5' GAP
SL18	MARKING STOPLINE EPOXY 18-INCH WHITE
W10	MARKING LINE GROOVED WET REF EPOXY 10-INCH, WHITE



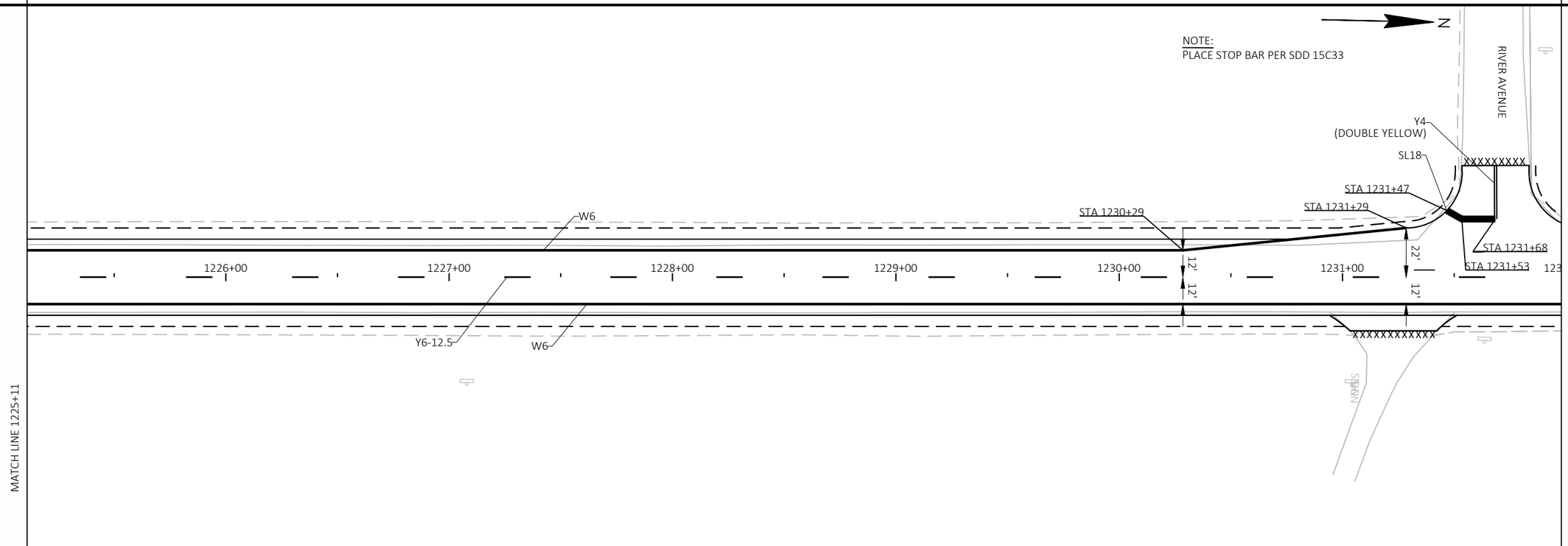
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 47	E

2



LEGEND

LABEL	DESCRIPTION
W6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE
W6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE, 12.5' SEG., 37.5' GAP
Y4	MARKING LINE GROOVED WET REF EPOXY 4-INCH, YELLOW
Y6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW
Y6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW, 12.5' SEG., 37.5' GAP
SL18	MARKING STOPLINE EPOXY 18-INCH WHITE
W10	MARKING LINE GROOVED WET REF EPOXY 10-INCH, WHITE



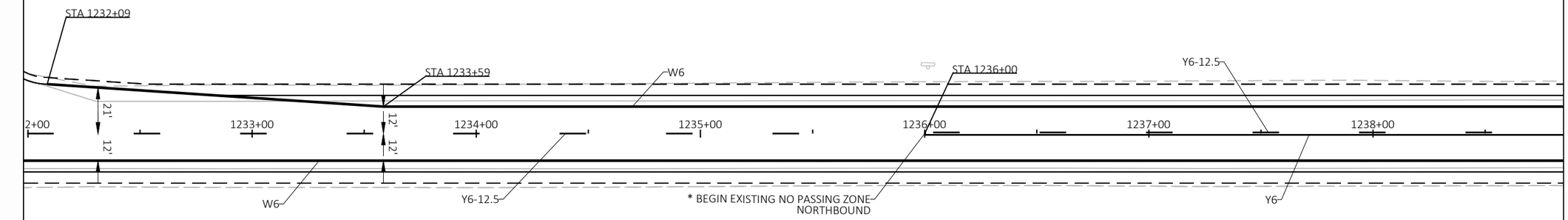
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 48	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 23

PLOT DATE : 1/16/2024 3:58 PM PLOT BY : KERNS, JAMES PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 44

*NO PASSING ZONES APPROXIMATE, CONTRACTOR TO VERIFY LOCATION IN THE FIELD.

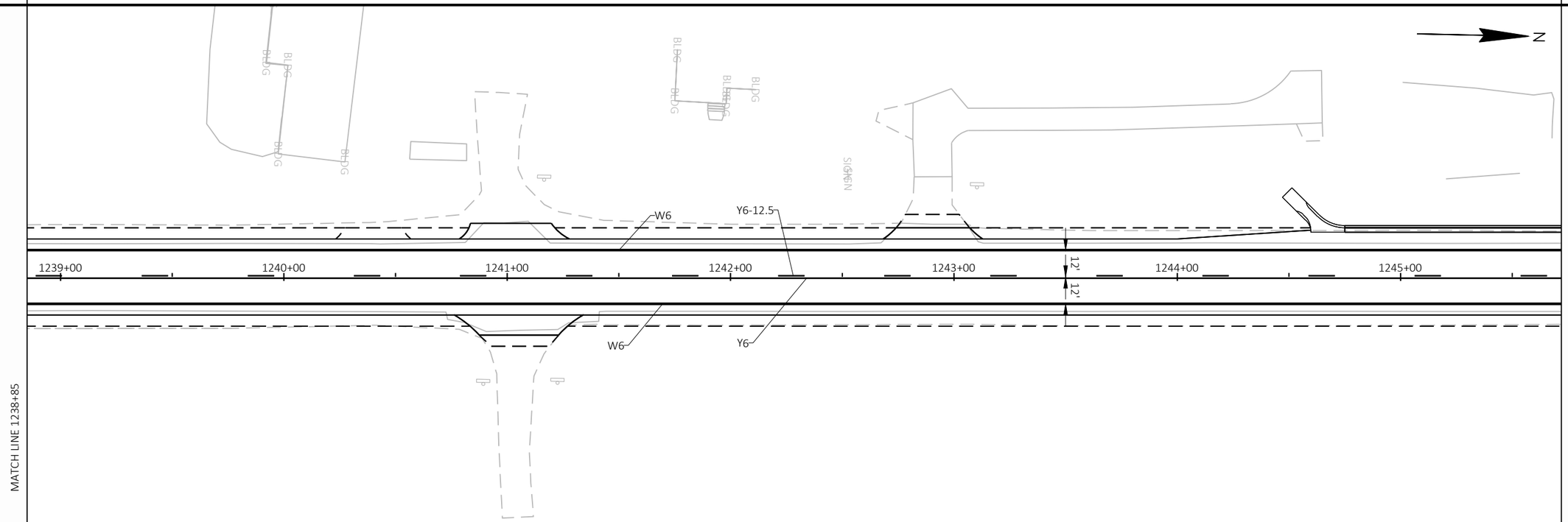


MATCH LINE 1231+98

MATCH LINE 1238+85

LEGEND

LABEL	DESCRIPTION
W6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE
W6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE, 12.5' SEG., 37.5' GAP
Y4	MARKING LINE GROOVED WET REF EPOXY 4-INCH, YELLOW
Y6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW
Y6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW, 12.5' SEG., 37.5' GAP
SL18	MARKING STOPLINE EPOXY 18-INCH WHITE
W10	MARKING LINE GROOVED WET REF EPOXY 10-INCH, WHITE



MATCH LINE 1238+85

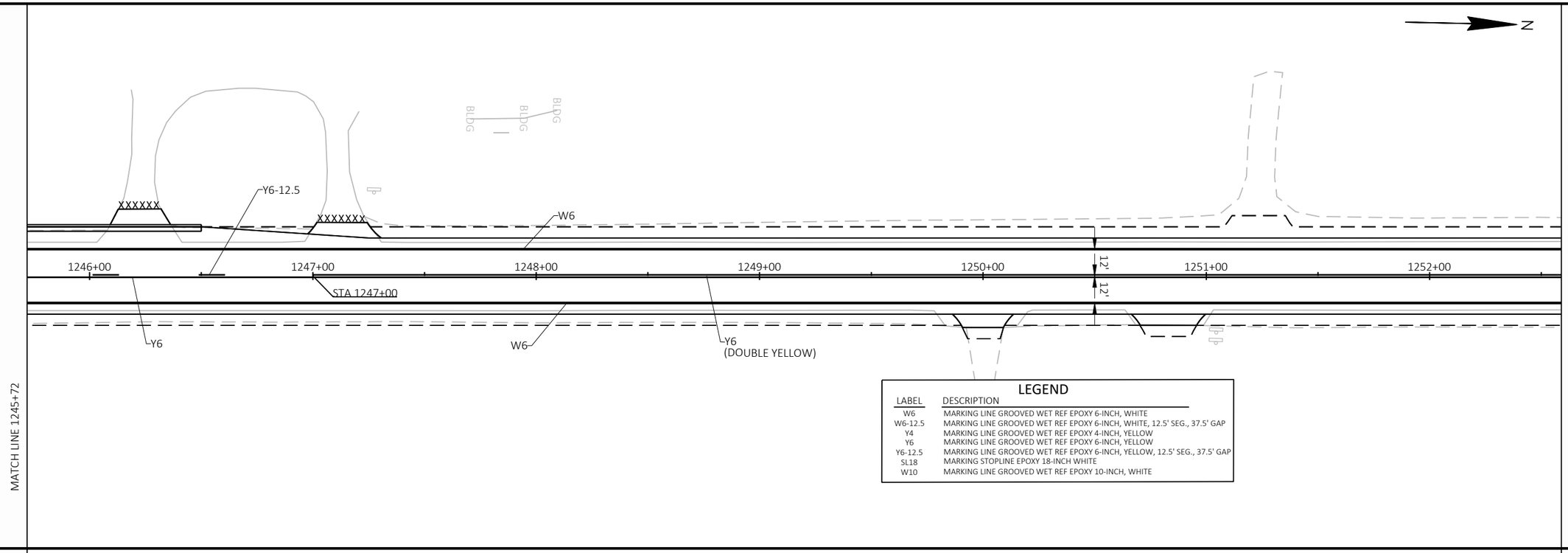
MATCH LINE 1245+72

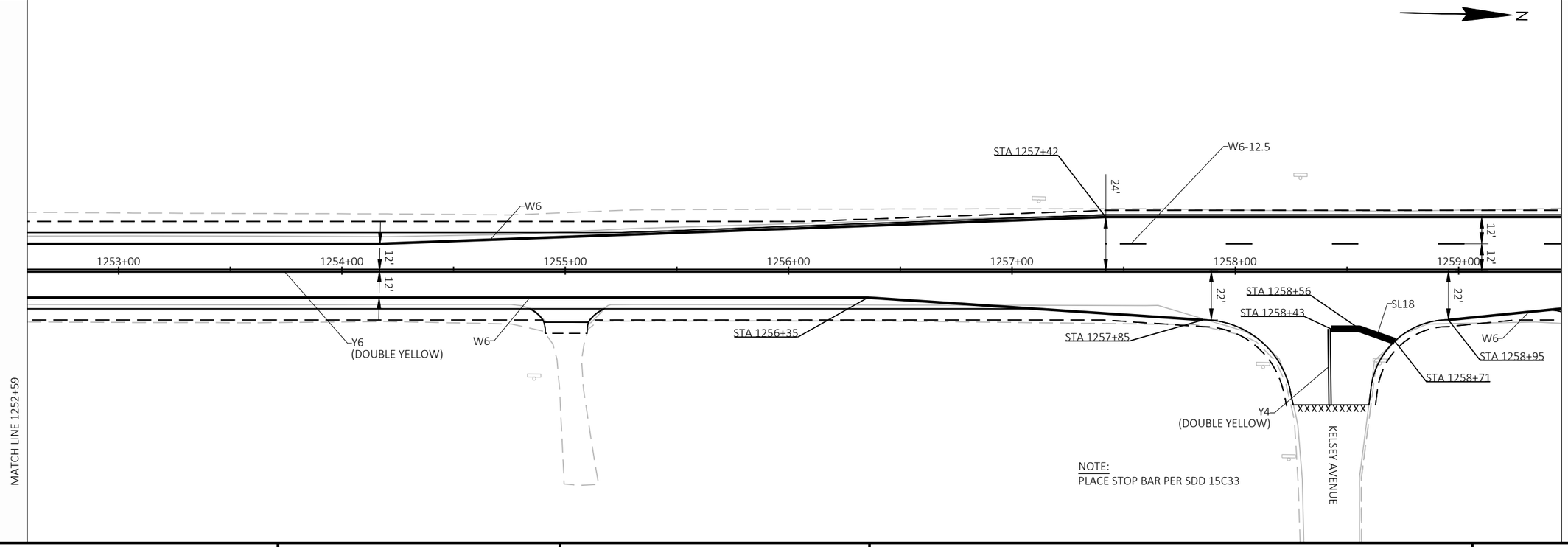
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 49	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 24

PLOT DATE : 1/16/2024 3:59 PM PLOT BY : KERNS, JAMES PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 44

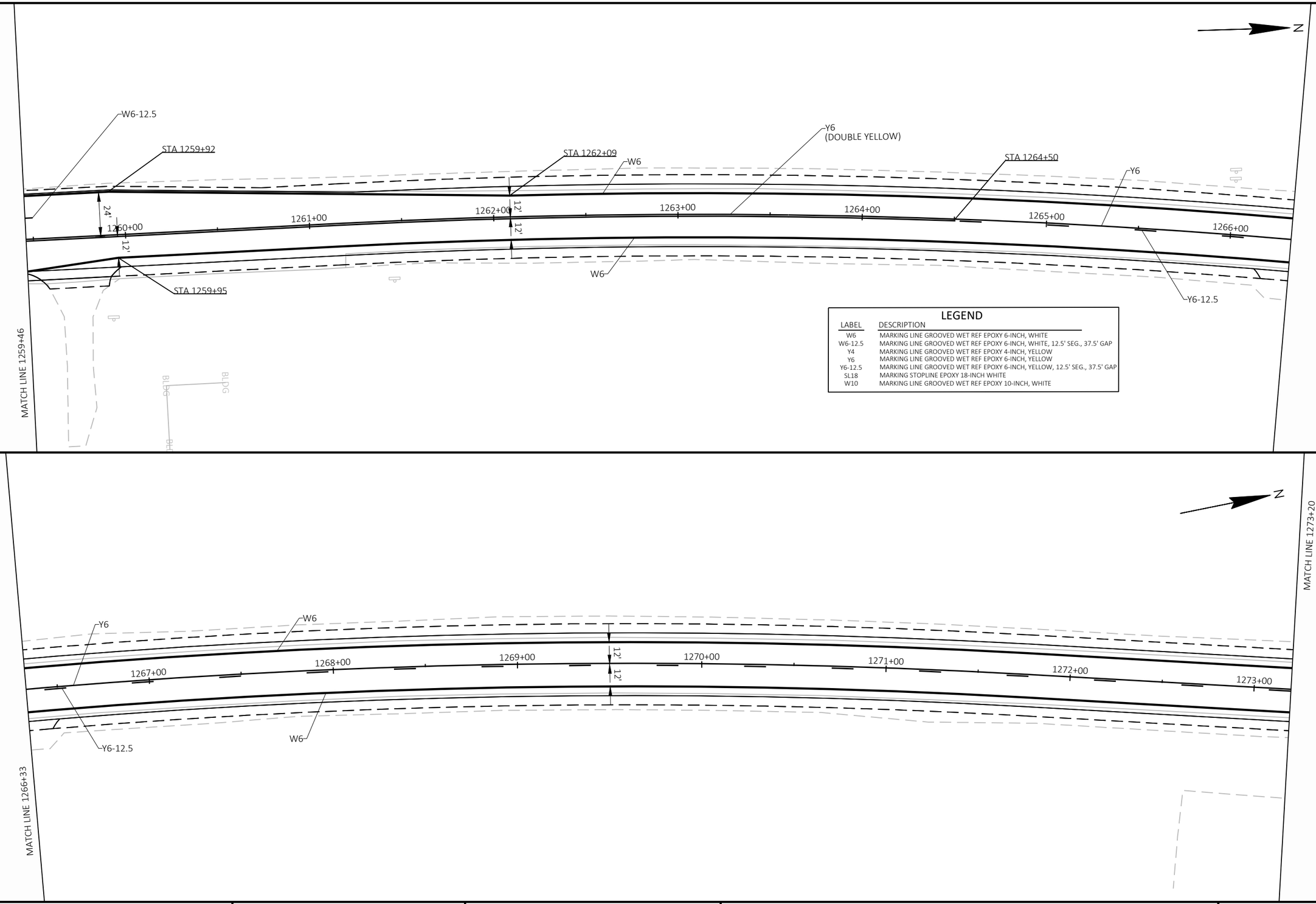




PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 50	E

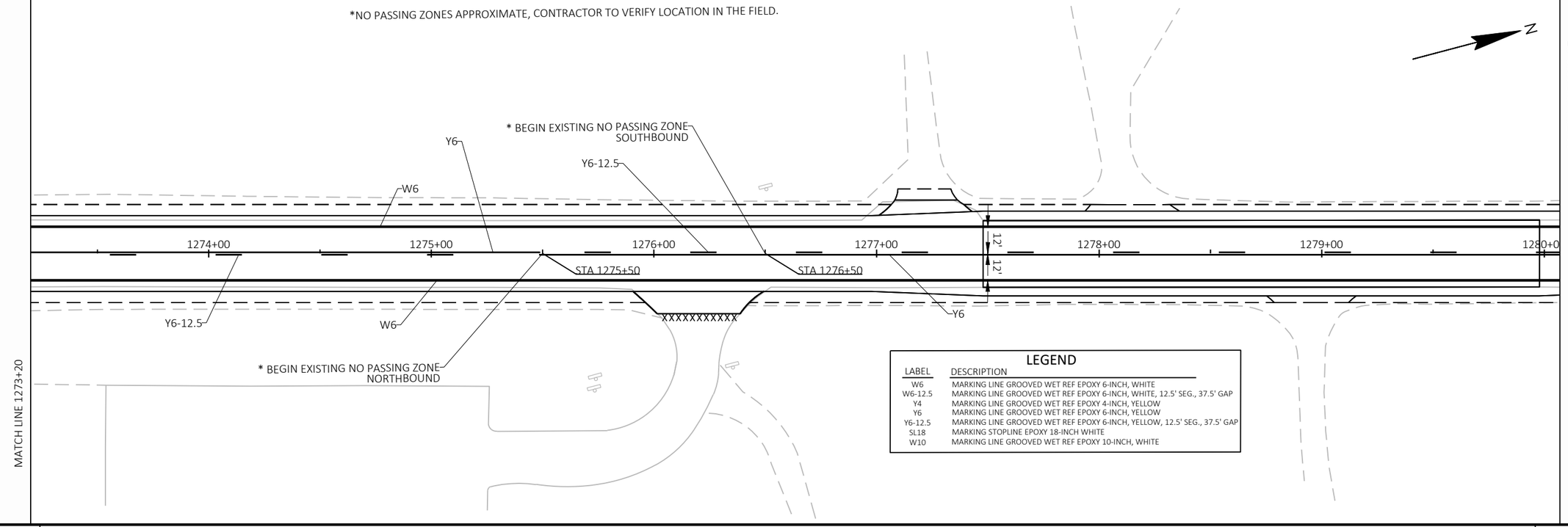
FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 25

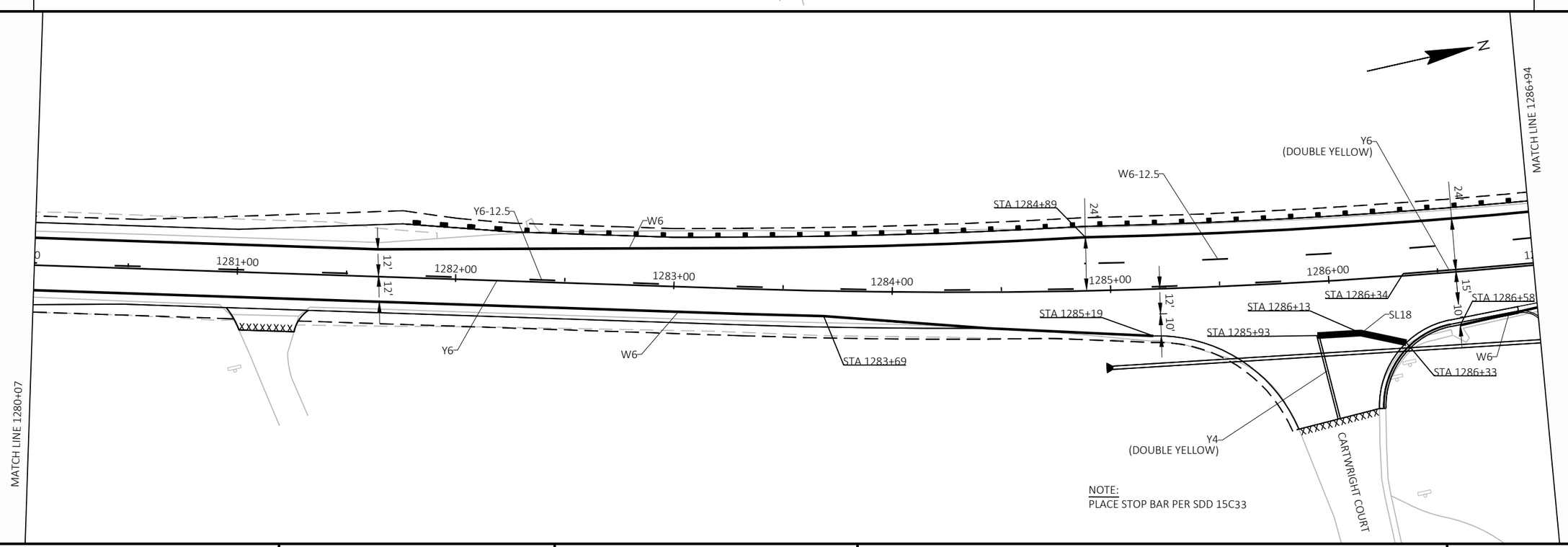
PLOT DATE : 1/16/2024 3:59 PM PLOT BY : KERNS, JAMES PLOT NAME : PLOT SCALE : 1 IN:50 FT



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 51	E

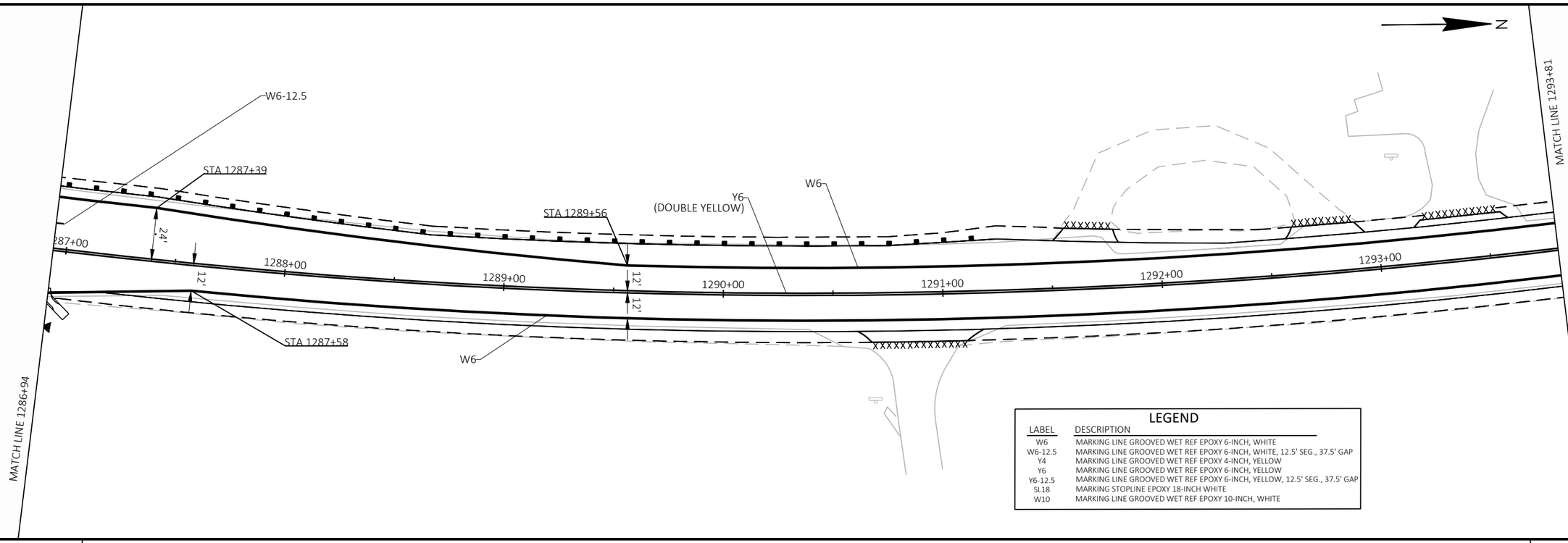
*NO PASSING ZONES APPROXIMATE, CONTRACTOR TO VERIFY LOCATION IN THE FIELD.



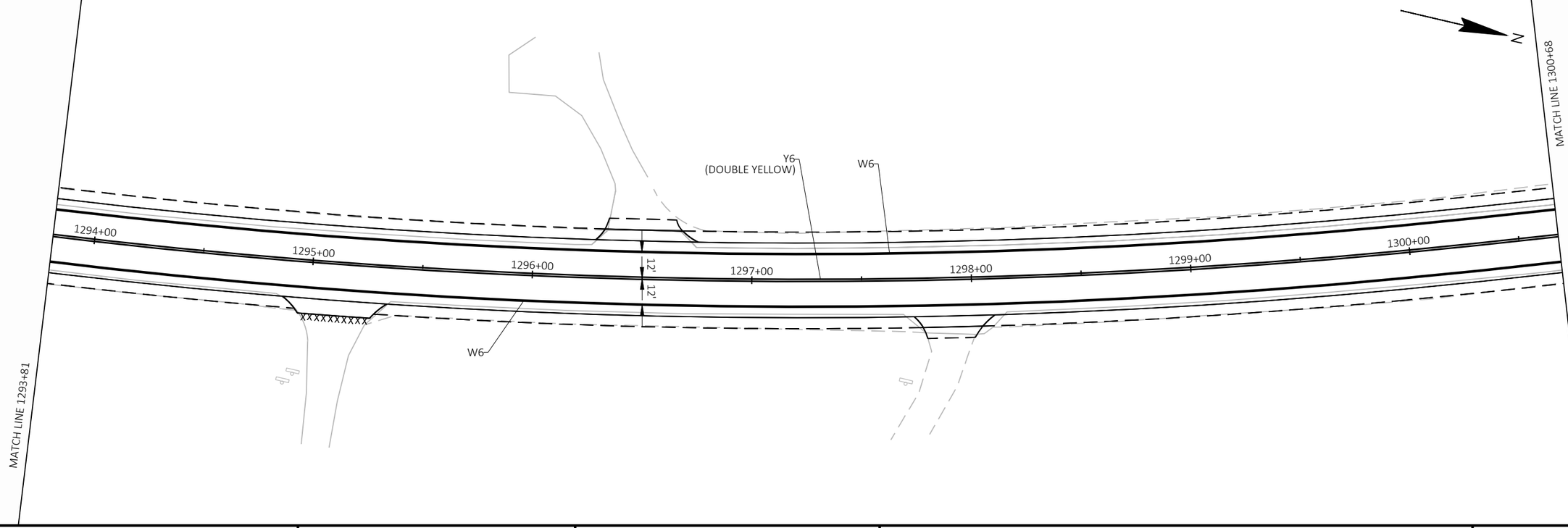


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 52	E

2



LEGEND	
LABEL	DESCRIPTION
W6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE
W6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE, 12.5' SEG., 37.5' GAP
Y4	MARKING LINE GROOVED WET REF EPOXY 4-INCH, YELLOW
Y6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW
Y6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW, 12.5' SEG., 37.5' GAP
SL18	MARKING STOPLINE EPOXY 18-INCH WHITE
W10	MARKING LINE GROOVED WET REF EPOXY 10-INCH, WHITE



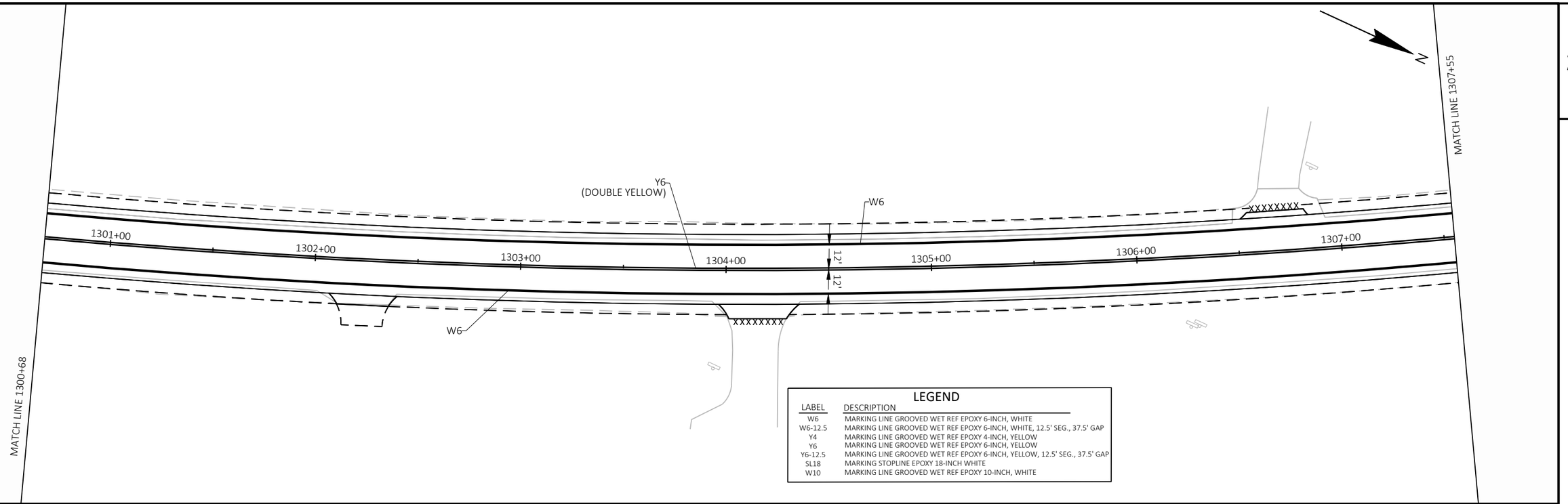
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 53	E

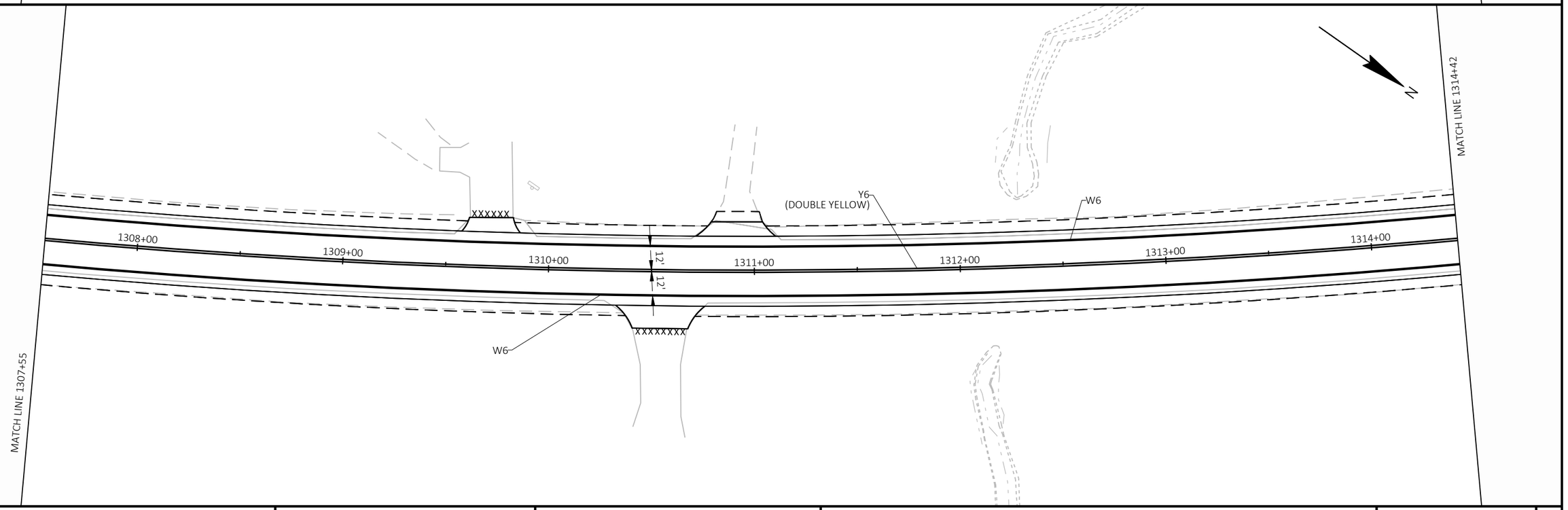
FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 28

PLOT DATE : 1/16/2024 3:59 PM PLOT BY : KERNS, JAMES PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

2





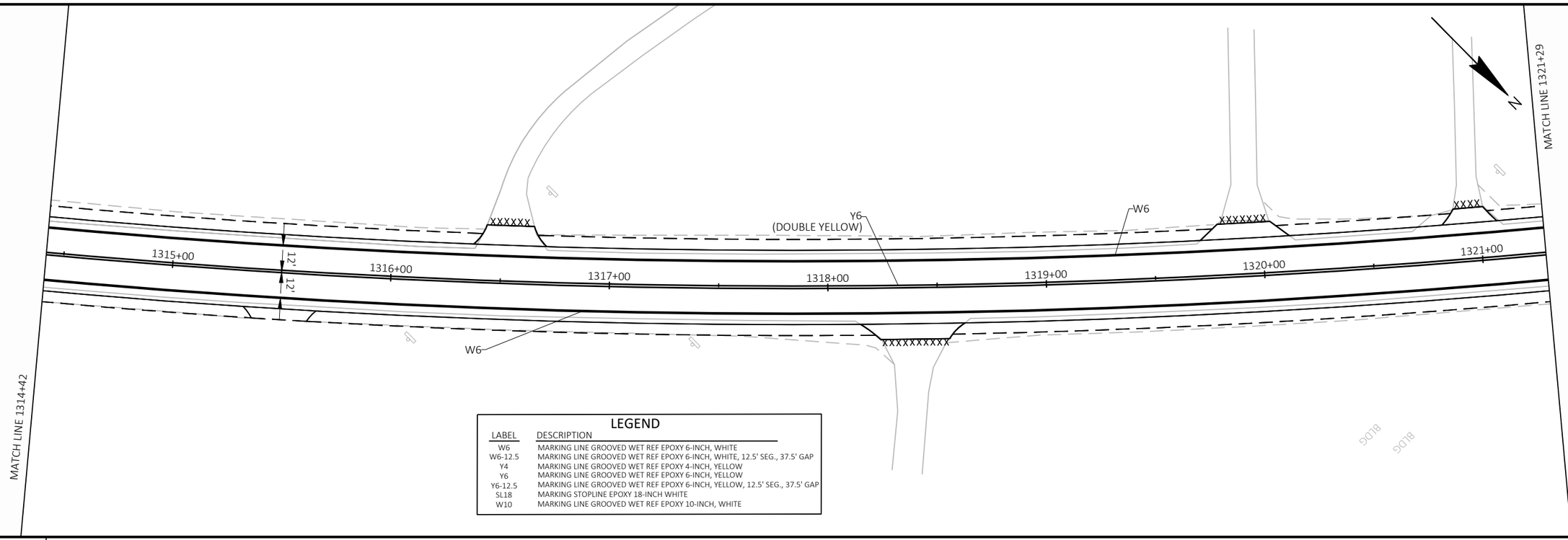
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 54	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 29

PLOT DATE : 1/16/2024 3:59 PM PLOT BY : KERNS, JAMES PLOT NAME : PLOT SCALE : 1 IN:50 FT

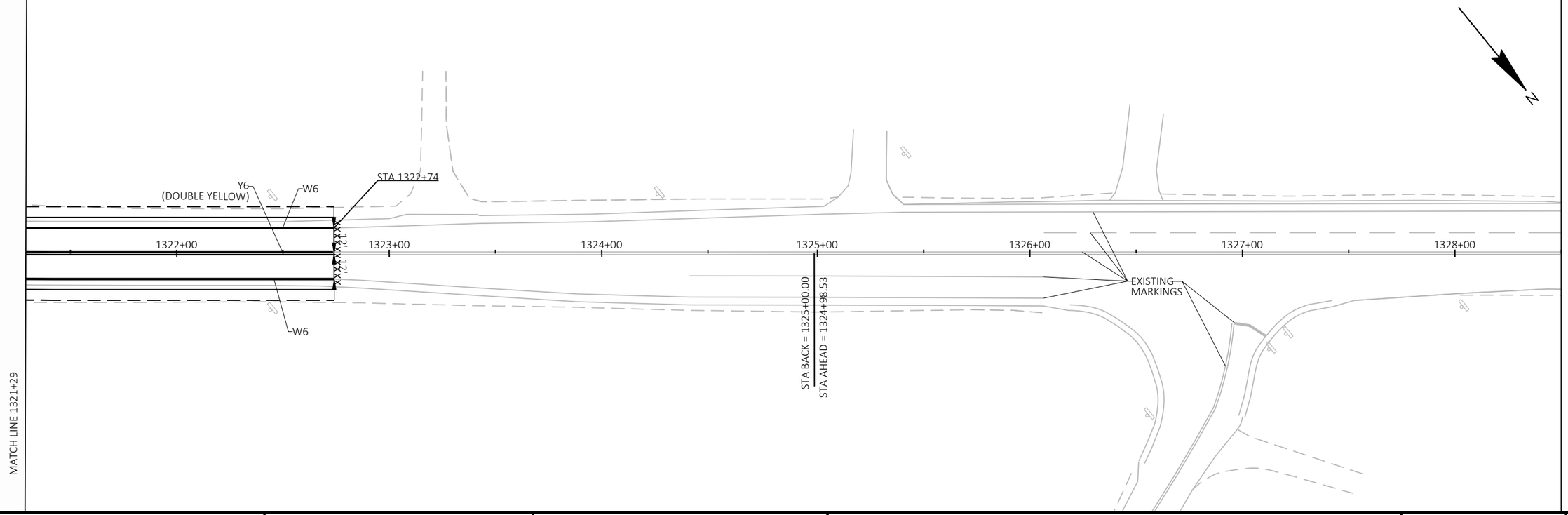
WISDOT/CADDS SHEET 44

2



LEGEND

LABEL	DESCRIPTION
W6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE
W6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, WHITE, 12.5' SEG., 37.5' GAP
Y4	MARKING LINE GROOVED WET REF EPOXY 4-INCH, YELLOW
Y6	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW
Y6-12.5	MARKING LINE GROOVED WET REF EPOXY 6-INCH, YELLOW, 12.5' SEG., 37.5' GAP
SL18	MARKING STOPLINE EPOXY 18-INCH WHITE
W10	MARKING LINE GROOVED WET REF EPOXY 10-INCH, WHITE



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 55	E

OVERVIEW:
CONSTRUCTION
- CONSTRUCT CULVERT REPLACEMENT
- PAVEMENT REPLACEMENT

TRAFFIC
- STH 164 CLOSED TO TRAFFIC. LOCAL TRAFFIC ONLY. THROUGH TRAFFIC TO FOLLOW DETOUR.
- MAINTAIN EMERGENCY ACCESS TO THE PROJECT AREA AT ALL TIMES.
- LOCAL TRAFFIC SHALL ALWAYS BE MAINTAINED WITHIN THE ROADWAY CLOSED TO THROUGH TRAFFIC. THE FOLLOWING REQUIREMENTS SHALL BE MET UNLESS APPROVED BY THE ENGINEER IN WRITING:
  - -MAINTAIN ONE 10-FOOT LANE IN EACH DIRECTION.
  - -FLAGGERS SHALL BE USED WHEN WORK OPERATIONS INTERFERE WITH MAINTAINING TWO LANES OF TRAFFIC.
  - -ACCEPTABLE DRIVING SURFACES INCLUDE SIX INCHES OR MORE OF COMPACTED AND GRADED BASE AGGREGATE DENSE, ASPHALTIC SURFACE AND PERMANENT HMA PAVEMENT.
  - -DO NOT CLOSE SIDE ROADS.
  - -KEEP ALL PRIVATE ENTRANCES AND FIELD ENTRANCES ACCESSIBLE AT ALL TIMES, UNLESS WRITTEN PERMISSION IS OBTAINED FROM THE PROPERTY OWNER 48 HOURS IN ADVANCE OF CLOSING THE ACCESS.
  - -USE FLAGGERS, SIGNS, AND BARRICADES AS NECESSARY TO SAFEGUARD AND DIRECT TRAFFIC AT ALL LOCATIONS WHERE CONSTRUCTION OPERATIONS MAY INTERFERE OR RESTRICT LOCAL TRAFFIC.

END PROJECT
STA 1322+75

BEGIN PROJECT
STA 1209+00

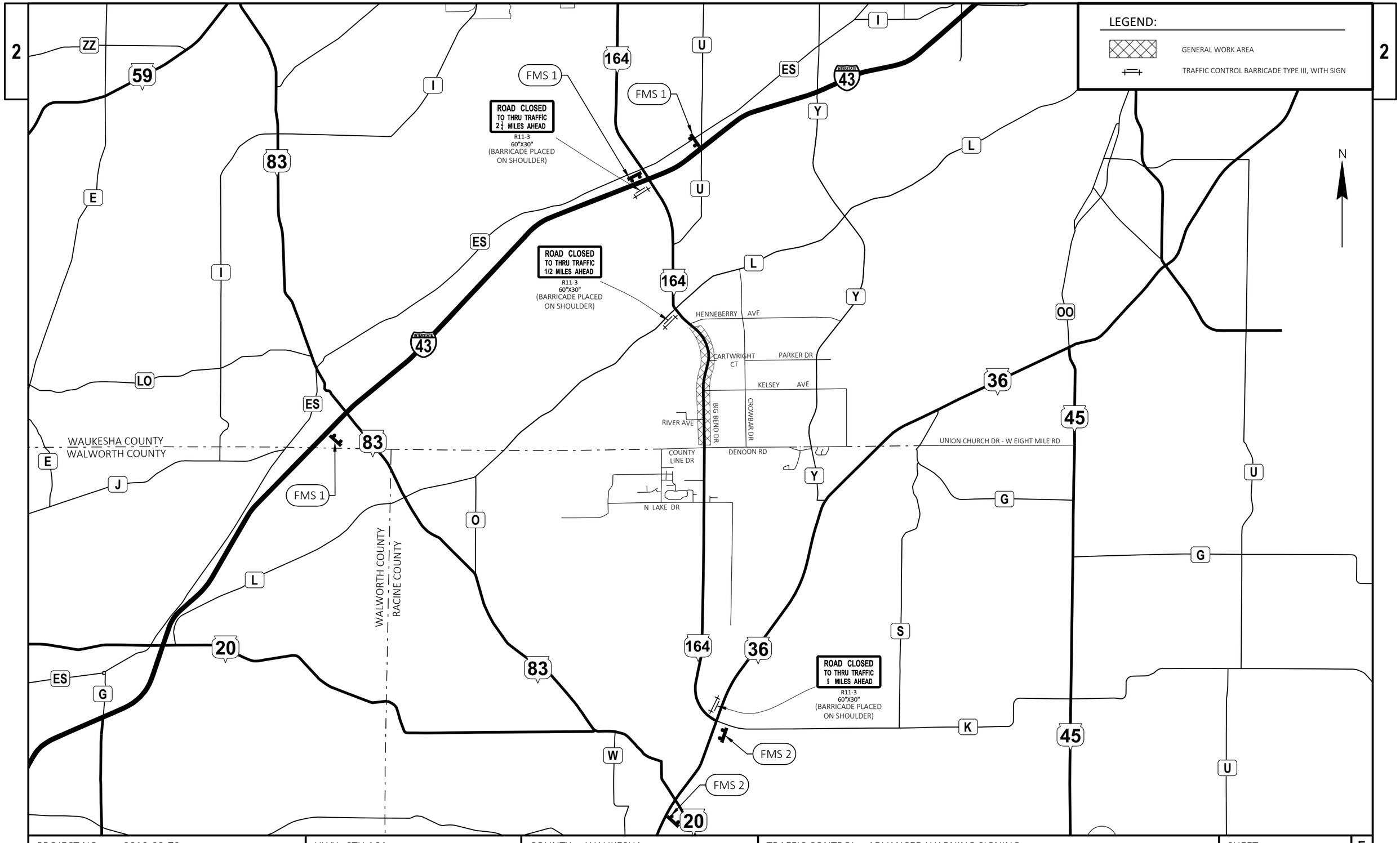
HENNEBERRY AVE
CARTWRIGHT CT
PARKER DR
KELSEY AVE
BIG BEND DR
CROWBAR DR
RIVER AVE
COUNTY LINE DR
DENOON RD
N LAKE DR
UNION CHURCH DR - W EIGHT MILE RD

WAUKESHA COUNTY
WALWORTH COUNTY
WALWORTH COUNTY
RACINE COUNTY

N

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TRAFFIC CONTROL - OVERVIEW SHEET	SHEET 56 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\025000-TC.DWG
LAYOUT NAME - - OVERVIEW SHEET
PLOT DATE : 1/31/2024 9:08 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:1 MI



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TRAFFIC CONTROL - ADVANCED WARNING SIGNING	SHEET 57	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\025001-TC.DWG
LAYOUT NAME - - ADVANCED WARNING SIGNING

PLOT DATE : 1/31/2024 9:08 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:1.5 MI

2

N

LEGEND:

- GENERAL WORK AREA
- TRAFFIC CONTROL BARRICADE TYPE III, WITH/WITHOUT SIGN
- SIGN ON TEMPORARY SUPPORT (MOVEABLE SUPPORT MAY BE USED)
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN

KELSEY AVE

164

RIVER RD

CROWBAR RD

FRAME A	FRAME B
HWY 164 TO CLOSE	D.O.W. MM–DD

(IN PLACE AT EDGE OF PROPOSED CONSTRUCTION ZONE 7 DAYS PRIOR TO STARTING DETOUR)

R11-4
60" X 30"
ROAD CLOSED TO THRU TRAFFIC
TYPE III BARRICADE

PCMS

50'

500'

500'

DENOON RD

COUNTY LINE RD

ROAD CLOSED 500 FT W20-3D

ROAD CLOSED 1000 FT W20-3C

ROAD CLOSED AHEAD W20-3A

JENSEN PKWY

164

L

ROAD CLOSED AHEAD W20-3A

ROAD CLOSED 1000 FT W20-3C

ROAD CLOSED 500 FT W20-3D

500'

500'

50'

HENNEBERRY AVE

PCMS

R11-4
60" X 30"
ROAD CLOSED TO THRU TRAFFIC
TYPE III BARRICADE

FRAME A	FRAME B
HWY 164 TO CLOSE	D.O.W. MM–DD

(IN PLACE AT EDGE OF PROPOSED CONSTRUCTION ZONE 7 DAYS PRIOR TO STARTING DETOUR)

CARTWRIGHT CT

164

KELSEY AVE

N

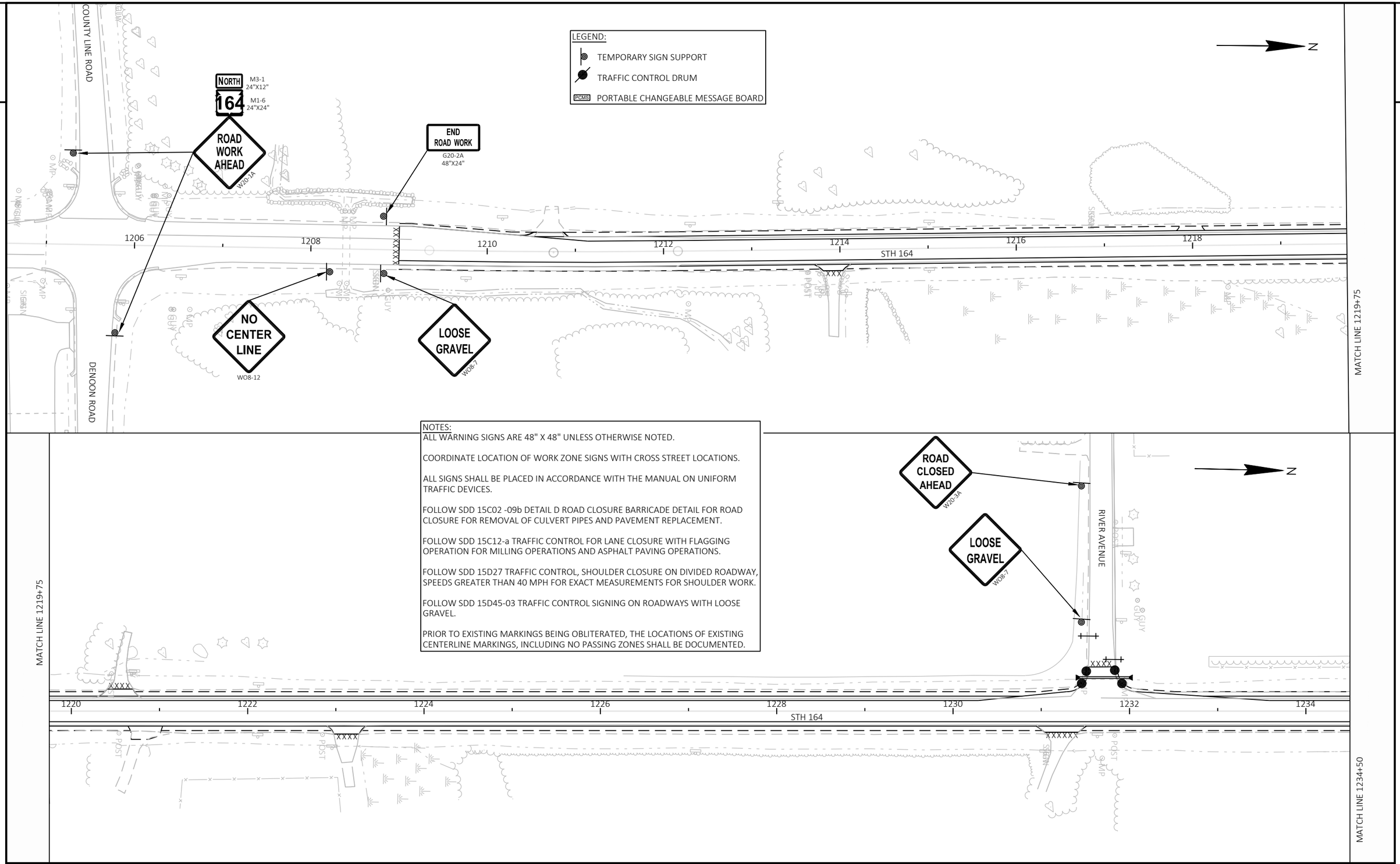
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TRAFFIC CONTROL - ADVANCED WARNING SIGNING	SHEET 58	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\025001-TC.DWG
LAYOUT NAME - - ADVANCED WARNING SIGNING 2

PLOT DATE : 1/31/2024 9:08 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:1000 FT

WISDOT/CADDS SHEET 42



NOTES:
ALL WARNING SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

COORDINATE LOCATION OF WORK ZONE SIGNS WITH CROSS STREET LOCATIONS.

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC DEVICES.

FOLLOW SDD 15C02 -09b DETAIL D ROAD CLOSURE BARRICADE DETAIL FOR ROAD CLOSURE FOR REMOVAL OF CULVERT PIPES AND PAVEMENT REPLACEMENT.

FOLLOW SDD 15C12-a TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION FOR MILLING OPERATIONS AND ASPHALT PAVING OPERATIONS.

FOLLOW SDD 15D27 TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH FOR EXACT MEASUREMENTS FOR SHOULDER WORK.

FOLLOW SDD 15D45-03 TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL.

PRIOR TO EXISTING MARKINGS BEING OBLITERATED, THE LOCATIONS OF EXISTING CENTERLINE MARKINGS, INCLUDING NO PASSING ZONES SHALL BE DOCUMENTED.

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TRAFFIC CONTROL	SHEET 59	E

2

LEGEND:

- TEMPORARY SIGN SUPPORT
- TRAFFIC CONTROL DRUM
- PCMS PORTABLE CHANGEABLE MESSAGE BOARD

MATCH LINE 1234+50

MATCH LINE 1249+25

N

50' SPACING

PASS WITH CARE
R4-2

DO NOT PASS
R4-1

1236 1238 1240 1242 1244 1246 1248

STH 164

NOTES:
ALL WARNING SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

COORDINATE LOCATION OF WORK ZONE SIGNS WITH CROSS STREET LOCATIONS.

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC DEVICES.

FOLLOW SDD 15C02 -09b DETAIL D ROAD CLOSURE BARRICADE DETAIL FOR ROAD CLOSURE FOR REMOVAL OF CULVERT PIPES AND PAVEMENT REPLACEMENT.

FOLLOW SDD 15C12-a TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION FOR MILLING OPERATIONS AND ASPHALT PAVING OPERATIONS.

FOLLOW SDD 15D27 TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH FOR EXACT MEASUREMENTS FOR SHOULDER WORK.

FOLLOW SDD 15D45-03 TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL.

PRIOR TO EXISTING MARKINGS BEING OBLITERATED, THE LOCATIONS OF EXISTING CENTERLINE MARKINGS, INCLUDING NO PASSING ZONES SHALL BE DOCUMENTED.

MATCH LINE 1249+25

50' SPACING

NO CENTER LINE
W08-12

DO NOT PASS
R4-1

1250 1252 1254 STH 164 1256 1258 1260 1262

KELSEY AVENUE

LOOSE GRAVEL
W08-7

DO NOT PASS
R4-1

NO CENTER LINE
W08-12

MATCH LINE 1264+00

* ROAD CLOSED 500 FT
W20-3D

* SIGN PLACEMENT APPROXIMATE, PLACE SIGN 500' AWAY FROM BARRICADES.

** ROAD CLOSED AHEAD
W20-3A

** PLACE SIGN AT NORTHWEST CORNER OF CROWBAR DRIVE AND KELSEY DRIVE. INTERSECTION IS APPROXIMATELY 3,800 FEET TO THE EAST.

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TRAFFIC CONTROL	SHEET 60	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\025102-TC.DWG
LAYOUT NAME - 025102-tc

PLOT DATE : 1/31/2024 9:09 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

2

LEGEND:

- TEMPORARY SIGN SUPPORT
- TRAFFIC CONTROL DRUM
- PCMS PORTABLE CHANGEABLE MESSAGE BOARD

MATCH LINE 1264+00

DO NOT PASS R4-1

PASS WITH CARE R4-2

STH 164

1264 1266 1268 1270 1272 1274 1276 1278

MATCH LINE 1278+75

NOTES:
ALL WARNING SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

COORDINATE LOCATION OF WORK ZONE SIGNS WITH CROSS STREET LOCATIONS.

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC DEVICES.

FOLLOW SDD 15C02 -09b DETAIL D ROAD CLOSURE BARRICADE DETAIL FOR ROAD CLOSURE FOR REMOVAL OF CULVERT PIPES AND PAVEMENT REPLACEMENT.

FOLLOW SDD 15C12-a TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION FOR MILLING OPERATIONS AND ASPHALT PAVING OPERATIONS.

FOLLOW SDD 15D27 TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH FOR EXACT MEASUREMENTS FOR SHOULDER WORK.

FOLLOW SDD 15D45-03 TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL.

PRIOR TO EXISTING MARKINGS BEING OBLITERATED, THE LOCATIONS OF EXISTING CENTERLINE MARKINGS, INCLUDING NO PASSING ZONES SHALL BE DOCUMENTED.

MATCH LINE 1278+75

NO CENTER LINE WO8-12

PASS WITH CARE R4-2

5' SPACING

DIP WO8-2

LOOSE GRAVEL WO8-7

STH 164

1280 1282 1284 1286 1288 1290 1292

CARTWRIGHT COURT

LOOSE GRAVEL WO8-7

DO NOT PASS R4-1

NO CENTER LINE WO8-12

DIP WO8-2

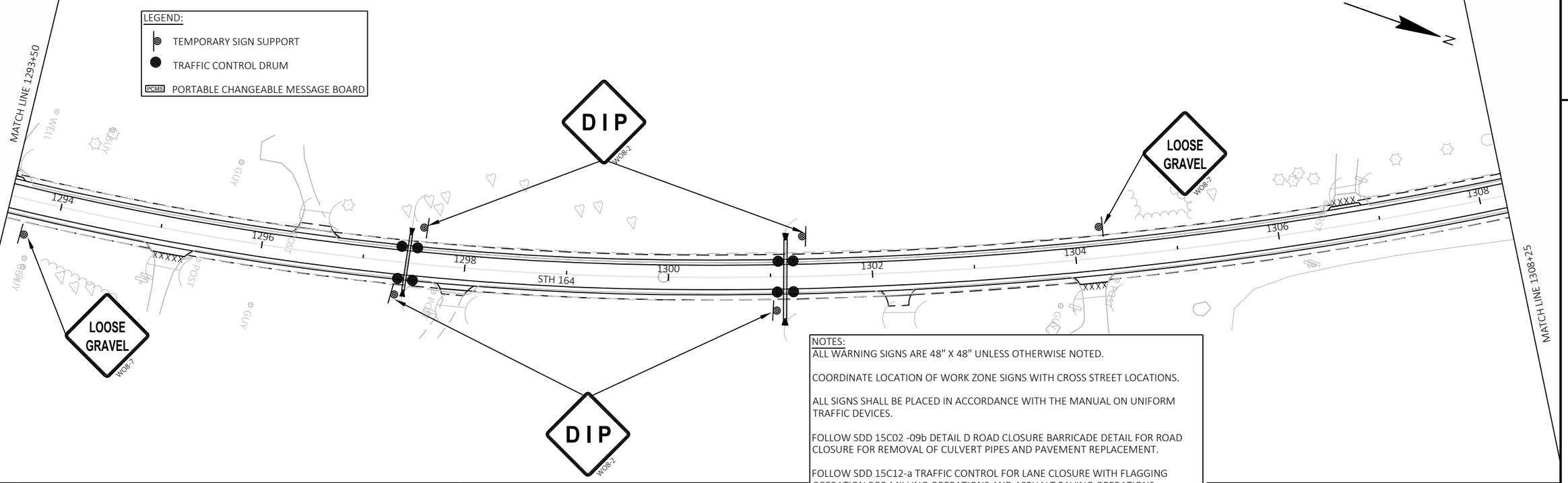
ROAD CLOSED AHEAD W20-3A

MATCH LINE 1293+50

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TRAFFIC CONTROL	SHEET 61	E

LEGEND:

- TEMPORARY SIGN SUPPORT
- TRAFFIC CONTROL DRUM
- PCMS PORTABLE CHANGEABLE MESSAGE BOARD



NOTES:

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

COORDINATE LOCATION OF WORK ZONE SIGNS WITH CROSS STREET LOCATIONS.

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC DEVICES.

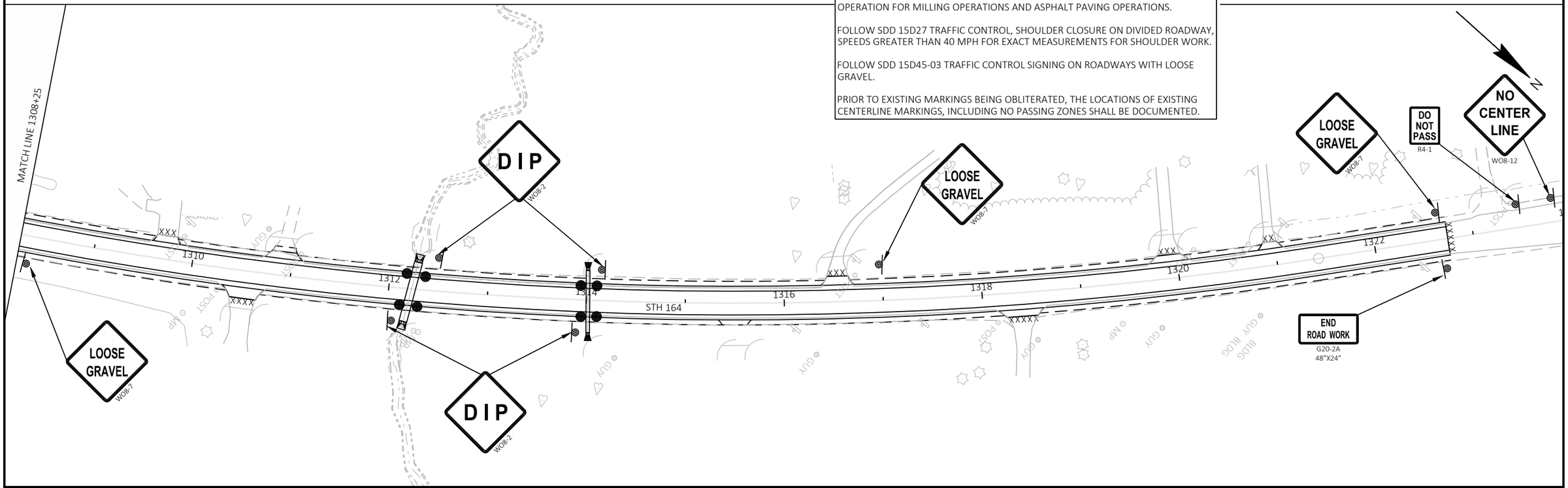
FOLLOW SDD 15C02 -09b DETAIL D ROAD CLOSURE BARRICADE DETAIL FOR ROAD CLOSURE FOR REMOVAL OF CULVERT PIPES AND PAVEMENT REPLACEMENT.

FOLLOW SDD 15C12-a TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION FOR MILLING OPERATIONS AND ASPHALT PAVING OPERATIONS.

FOLLOW SDD 15D27 TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH FOR EXACT MEASUREMENTS FOR SHOULDER WORK.

FOLLOW SDD 15D45-03 TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL.

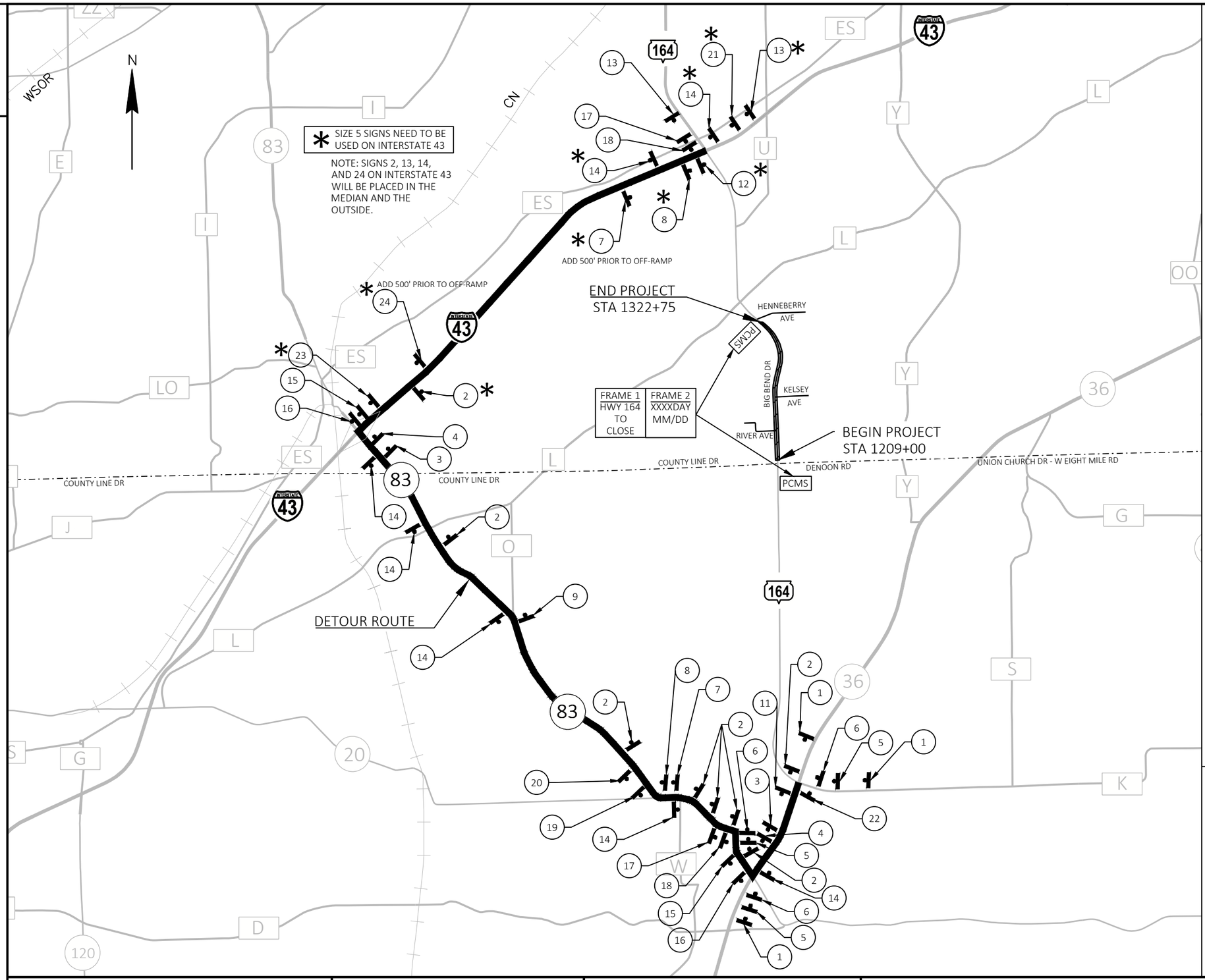
PRIOR TO EXISTING MARKINGS BEING OBLITERATED, THE LOCATIONS OF EXISTING CENTERLINE MARKINGS, INCLUDING NO PASSING ZONES SHALL BE DOCUMENTED.



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	TRAFFIC CONTROL	SHEET 62	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\025102-TC.DWG
LAYOUT NAME - 025104-tc

PLOT DATE : 1/31/2024 9:09 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT



1 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / DETOUR AHEAD W20-2A

2 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO6-1 21"X21"

3 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO5-1R 21"X21"

4 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO6-1 21"X21"

5 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO5-1L 21"X21"

6 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO6-1 21"X21"

7 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO5-2R 21"X21"

8 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO6-2 21"X21"

9 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO6-2 21"X21"

10 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24" / MO5-2L 21"X21"

11 DETOUR M4-8 24"X12" / NORTH M3-1 24"X12" / 164 M1-6 24"X24"

12 END DETOUR M4-8A 24"X18" / NORTH M3-1 24"X12" / 164 M1-6 24"X24"

13 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / DETOUR AHEAD W20-2A

14 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO6-1 21"X21"

15 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO5-1L 21"X21"

16 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO6-1 21"X21"

17 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO5-1R 21"X21"

18 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO6-1 21"X21"

19 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO6-2 21"X21"

20 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO5-2L 21"X21"

21 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24"

22 END DETOUR M4-8A 24"X18" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24"

23 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO6-2 21"X21"

24 DETOUR M4-8 24"X12" / SOUTH M3-3 24"X12" / 164 M1-6 24"X24" / MO5-2R 21"X21"

GENERAL NOTES

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

ANY SIGNS, TEMPORARY OR EXISTING, THAT CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED. COVERING OF SIGNS IS INCLUDED UNDER ITEM "TRAFFIC CONTROL COVERING SIGNS TYPE II". IN LIEU OF COVERING SIGNS, THE CONTRACTOR MAY CHOOSE TO REMOVE AND REINSTALL THEM.

ALL "W" SIGNS SHALL BE 48"X48" UNLESS OTHERWISE NOTED.

IMMEDIATELY RE-ESTABLISHED "STOP" SIGNS THAT ARE REMOVED FOR A CONSTRUCTION OPERATION.

DO NOT PLACE ANY TRAFFIC CONTROL WITHIN 50 FEET OF THE RAILROAD RIGHT OF WAY.

LEGEND

SIGN ON PERMANENT SUPPORT

PCMS — PORTABLE CHANGEABLE MESSAGE SIGN

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	DETOUR ROUTE	SHEET 63	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\027002-DT.DWG
LAYOUT NAME - Plan 1 IN 1.5 MI

PLOT DATE : 1/25/2024 9:50 AM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:1.5 MI

WISDOT/CADDS SHEET 42

2

CURVE 1

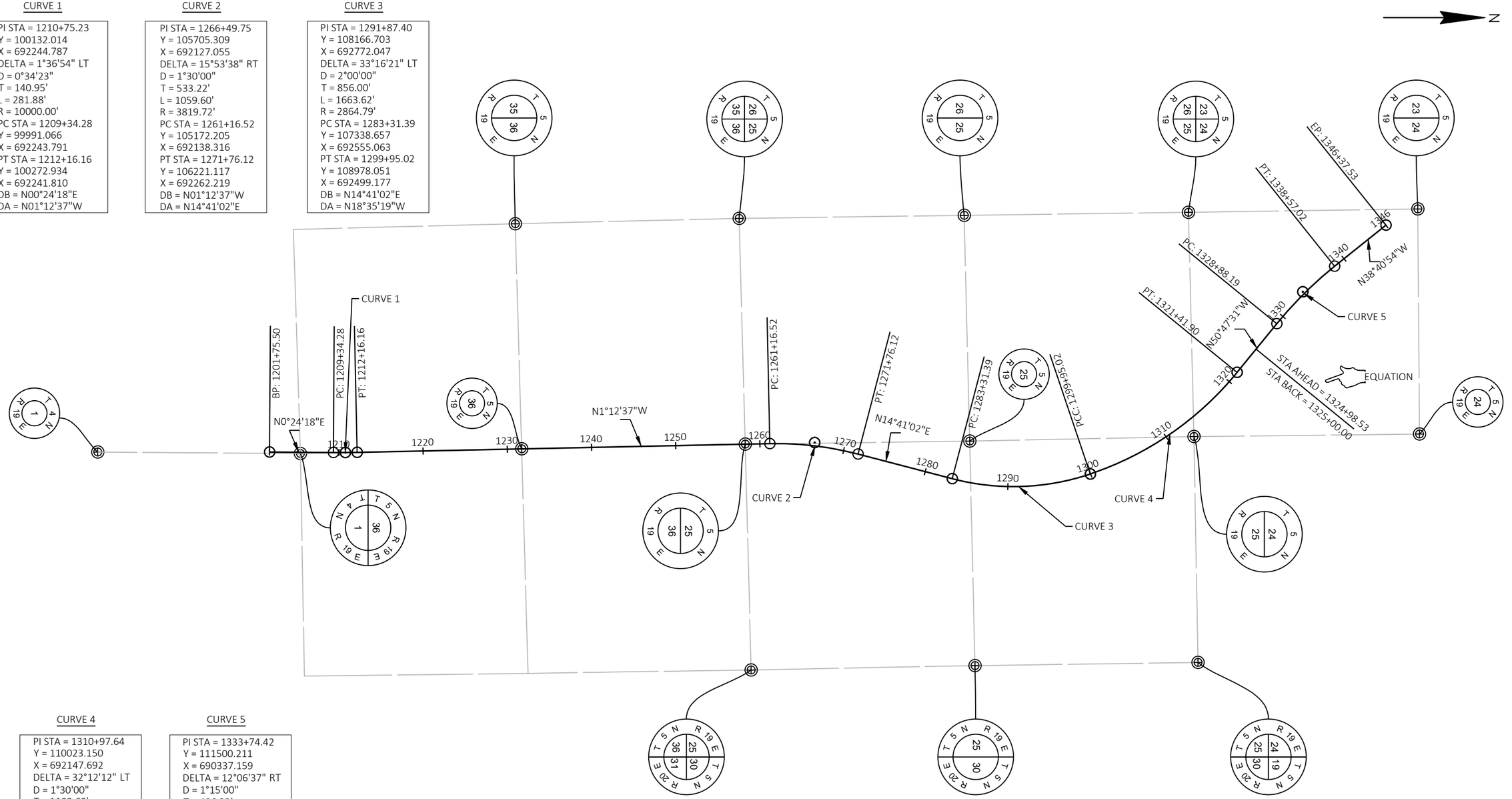
PI STA = 1210+75.23
Y = 100132.014
X = 692244.787
DELTA = 1°36'54" LT
D = 0°34'23"
T = 140.95'
L = 281.88'
R = 10000.00'
PC STA = 1209+34.28
Y = 99991.066
X = 692243.791
PT STA = 1212+16.16
Y = 100272.934
X = 692241.810
DB = N00°24'18"E
DA = N01°12'37"W

CURVE 2

PI STA = 1266+49.75
Y = 105705.309
X = 692127.055
DELTA = 15°53'38" RT
D = 1°30'00"
T = 533.22'
L = 1059.60'
R = 3819.72'
PC STA = 1261+16.52
Y = 105172.205
X = 692138.316
PT STA = 1271+76.12
Y = 106221.117
X = 692262.219
DB = N01°12'37"W
DA = N14°41'02"E

CURVE 3

PI STA = 1291+87.40
Y = 108166.703
X = 692772.047
DELTA = 33°16'21" LT
D = 2°00'00"
T = 856.00'
L = 1663.62'
R = 2864.79'
PC STA = 1283+31.39
Y = 107338.657
X = 692555.063
PT STA = 1299+95.02
Y = 108978.051
X = 692499.177
DB = N14°41'02"E
DA = N18°35'19"W



CURVE 4

PI STA = 1310+97.64
Y = 110023.150
X = 692147.692
DELTA = 32°12'12" LT
D = 1°30'00"
T = 1102.62'
L = 2146.88'
R = 3819.72'
PC STA = 1299+95.02
Y = 108978.051
X = 692499.177
PT STA = 1321+41.90
Y = 110720.160
X = 691293.320
DB = N18°35'19"W
DA = N50°47'31"W

CURVE 5

PI STA = 1333+74.42
Y = 111500.211
X = 690337.159
DELTA = 12°06'37" RT
D = 1°15'00"
T = 486.23'
L = 968.83'
R = 4583.66'
PC STA = 1328+88.19
Y = 111192.849
X = 690713.914
PT STA = 1338+57.02
Y = 111879.774
X = 690033.272
DB = N50°47'31"W
DA = N38°40'54"W

PI STA = 1333+74.42

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	ALIGNMENT DIAGRAM	SHEET 64	E

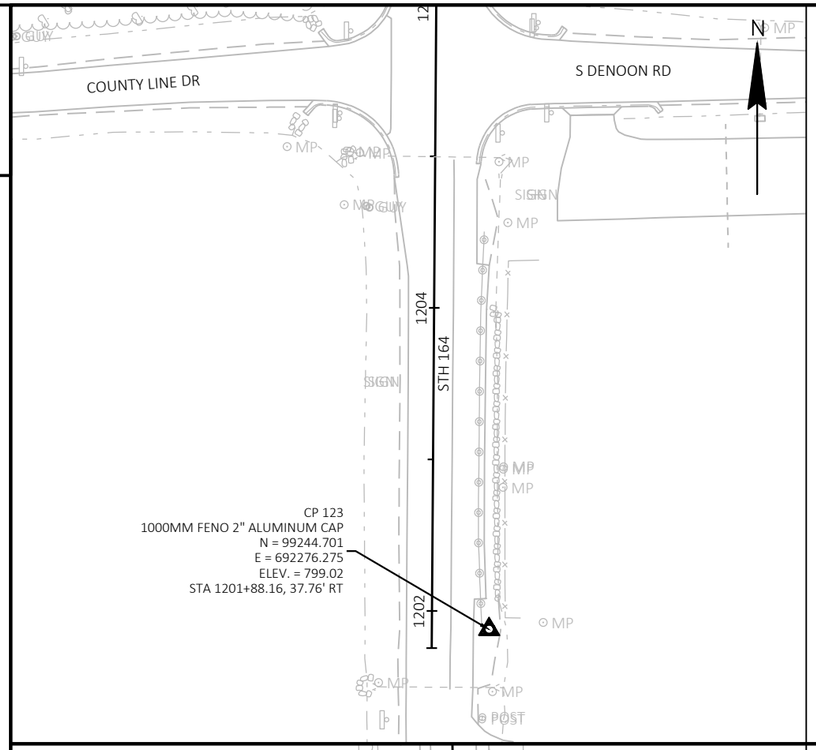
FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\027201-AD.DWG
LAYOUT NAME - 01
PLOT DATE : 4/25/2022 5:02 PM
PLOT BY : JOHNSON, ZACHARY
PLOT NAME :
PLOT SCALE : 1 IN: 1200 FT
WISDOT/CADDS SHEET 42

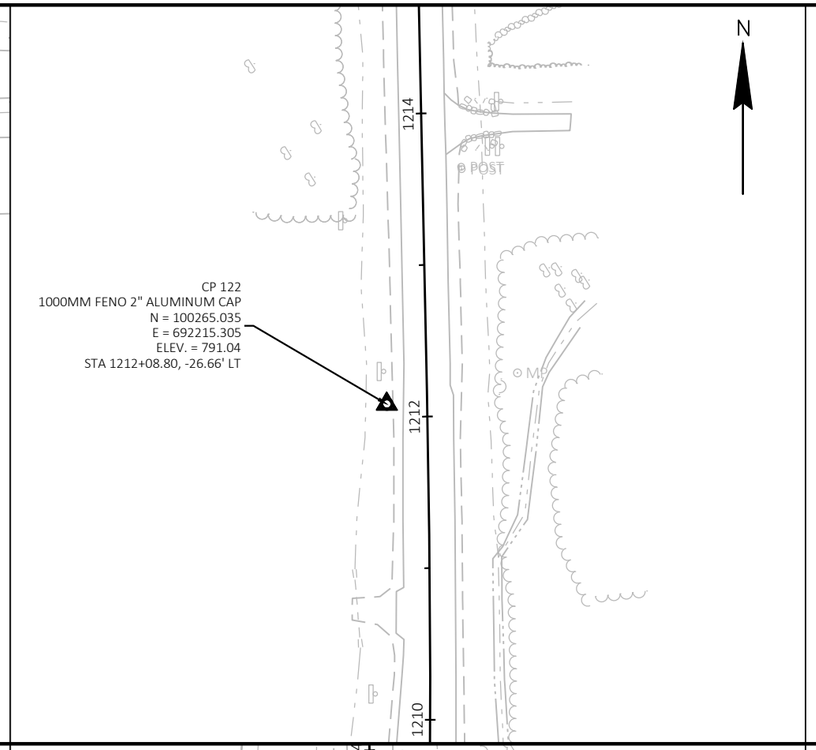
STH 164 - Curve 2					
SUPERELEVATION TRANSITION EVENT POINTS		RATE			
LOCATION	STATION	LEFT OF CROWNLINE		RIGHT OF CROWNLINE	
		LEFT SHOULDER	LEFT LANE	RIGHT LANE	RIGHT SHOULDER
EndNormalShoulder	1259+23.00	-4.00%	-2.00%	-2.00%	-4.00%
EndNormalCrown	1259+81.00	-2.00%	-2.00%	-2.00%	-4.00%
LevelCrown	1260+39.00	.00%	.00%	-2.00%	-4.00%
ReverseCrown	1260+97.00	2.00%	2.00%	-2.00%	-4.00%
BeginFullSuper	1261+55.00	4.00%	4.00%	-4.00%	-4.00%
EndFullSuper	1271+37.00	4.00%	4.00%	-4.00%	-4.00%
ReverseCrown	1271+95.00	2.00%	2.00%	-2.00%	-4.00%
LevelCrown	1272+53.00	.00%	.00%	-2.00%	-4.00%
BeginNormalCrown	1273+11.00	-2.00%	-2.00%	-2.00%	-4.00%
BeginNormalShoulder	1273+69.00	-4.00%	-2.00%	-2.00%	-4.00%

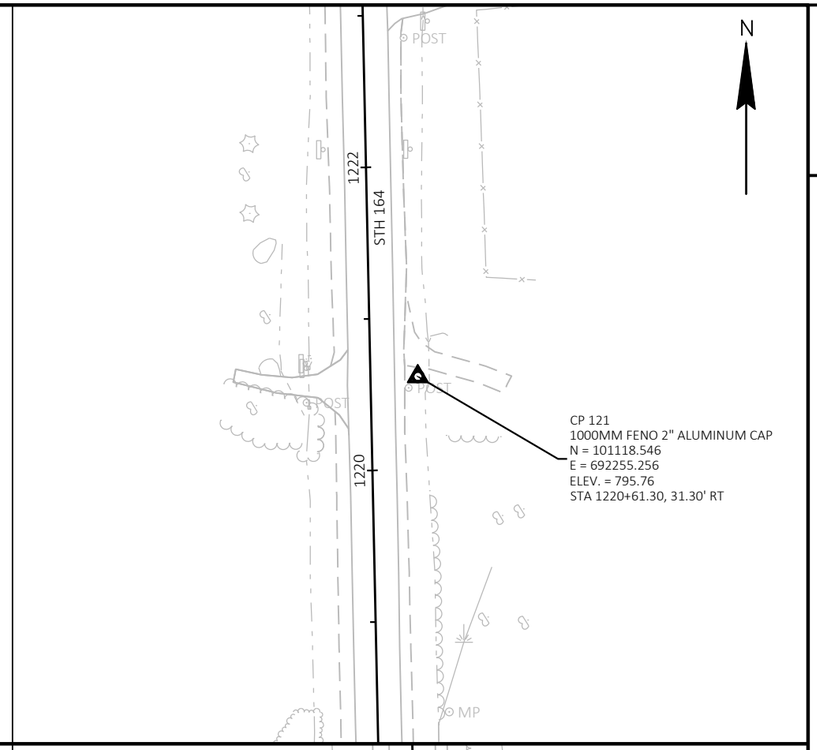
STH 164 - Curve 3					
SUPERELEVATION TRANSITION EVENT POINTS		RATE			
LOCATION	STATION	LEFT OF CROWNLINE		RIGHT OF CROWNLINE	
		LEFT SHOULDER	LEFT LANE	RIGHT LANE	RIGHT SHOULDER
EndNormalShoulder	1281+33.00	-4.00%	-2.00%	-2.00%	-4.00%
EndNormalCrown	1281+87.00	-4.00%	-2.00%	-2.00%	-2.00%
LevelCrown	1282+41.00	-4.00%	-2.00%	.00%	.00%
ReverseCrown	1282+95.00	-4.00%	-2.00%	2.00%	2.00%
BeginShoulderRollover	1283+49.00	-4.00%	-4.00%	4.00%	4.00%
BeginFullSuper	1283+76.00	-5.00%	-5.00%	5.00%	5.00%

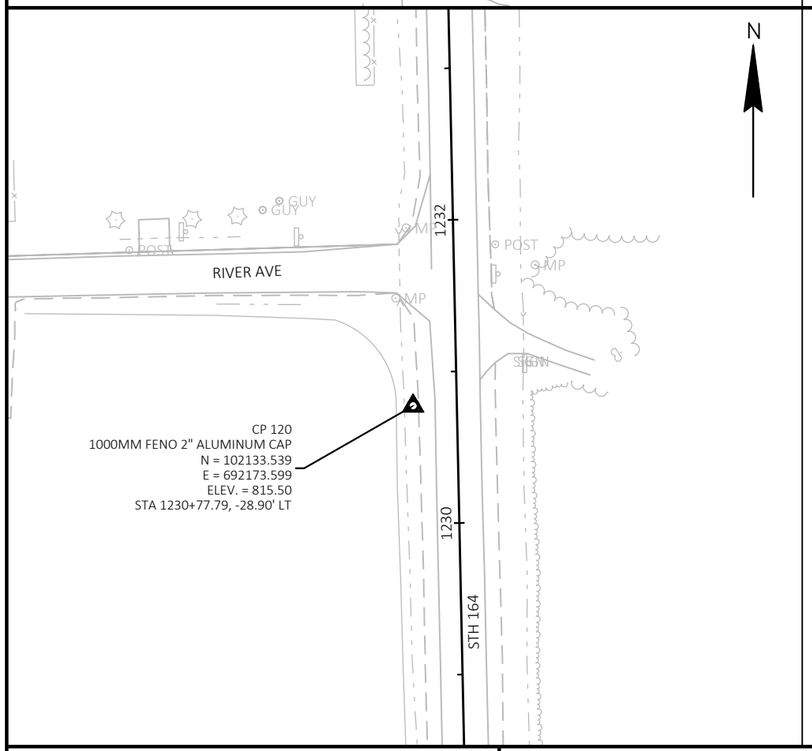
STH 164 - Curve 4					
SUPERELEVATION TRANSITION EVENT POINTS		RATE			
LOCATION	STATION	LEFT OF CROWNLINE		RIGHT OF CROWNLINE	
		LEFT SHOULDER	LEFT LANE	RIGHT LANE	RIGHT SHOULDER
EndFullSuper	1320+97.00	-5.00%	-5.00%	5.00%	5.00%
EndShoulderRollover	1321+24.00	-4.00%	-4.00%	4.00%	4.00%
ReverseCrown	1321+78.00	-4.00%	-2.00%	2.00%	2.00%
LevelCrown	1322+32.00	-4.00%	-2.00%	.00%	.00%
BeginNormalCrown	1322+86.00	-4.00%	-2.00%	-2.00%	-2.00%
BeginNormalShoulder	1323+40.00	-4.00%	-2.00%	-2.00%	-4.00%

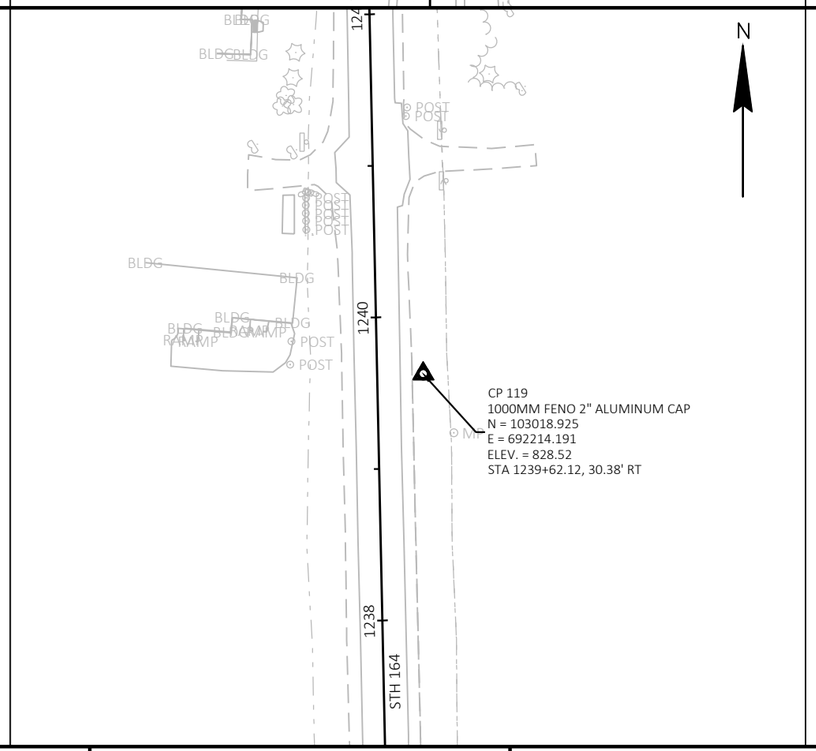
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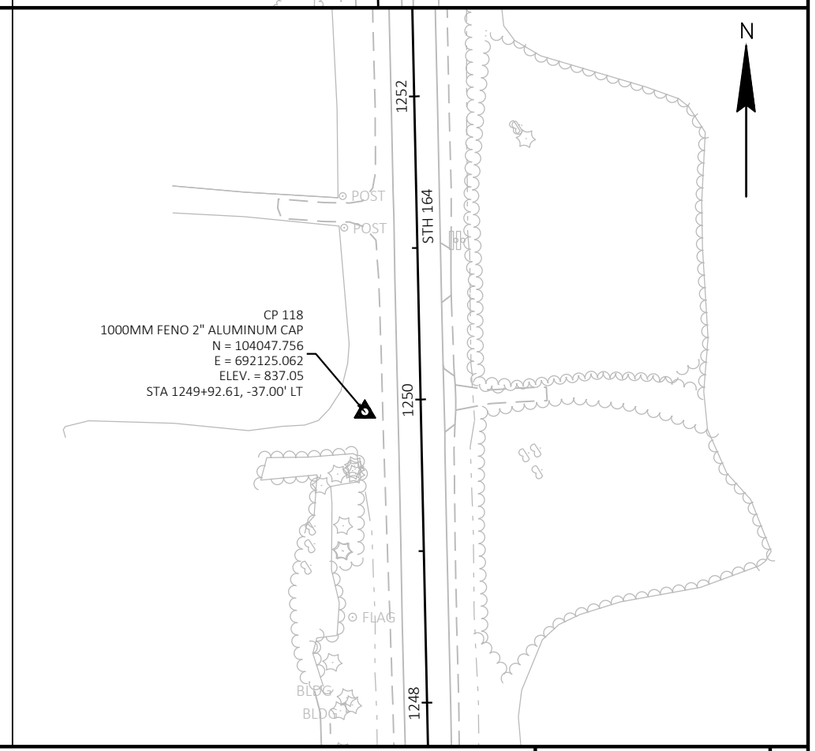












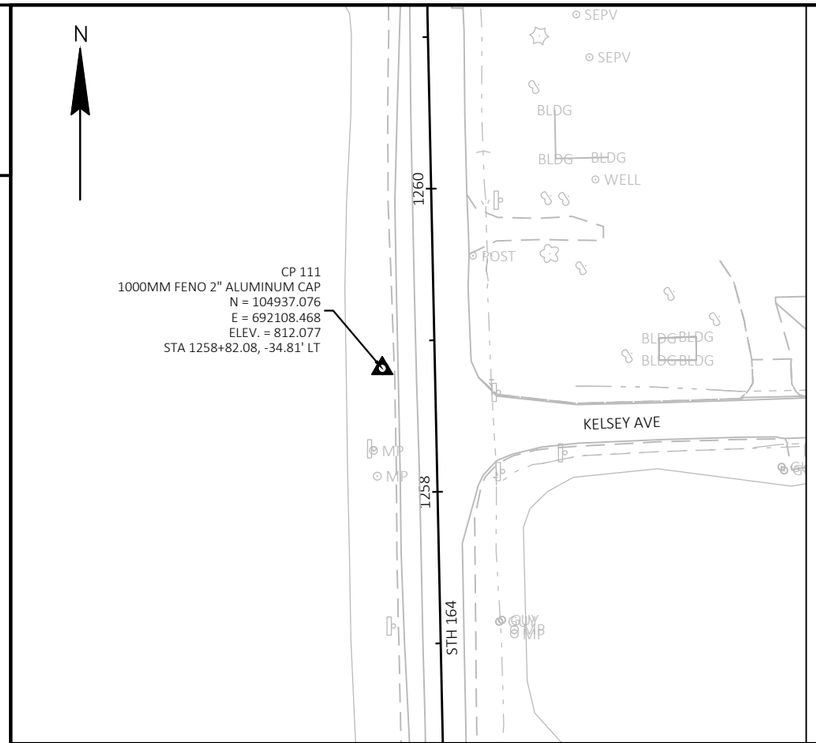
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	ALIGNMENT LAYOUT SURVEY CONTROL	SHEET 66	E

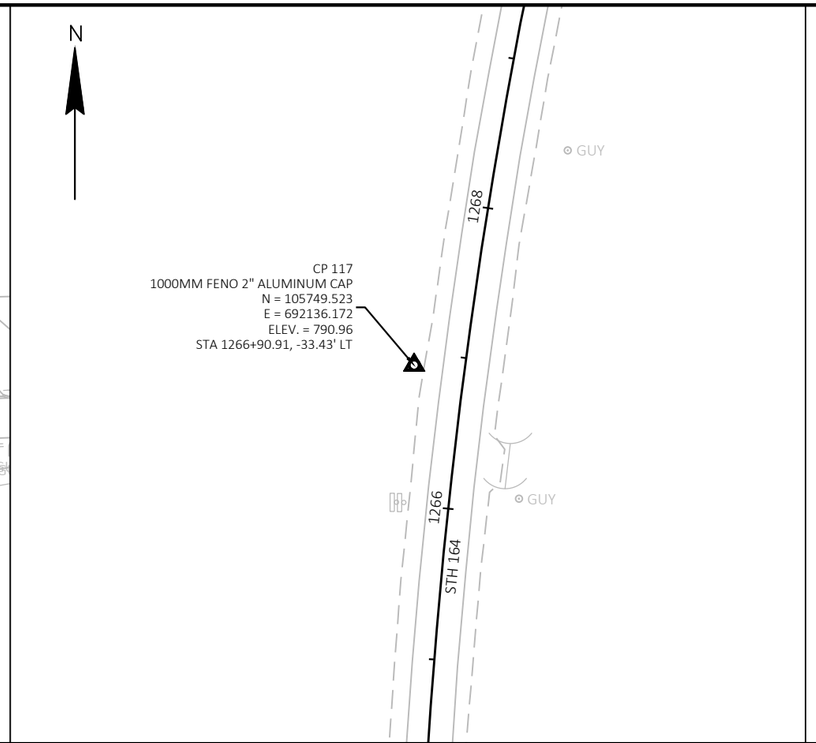
FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\027203-AD.DWG
LAYOUT NAME - SC01

PLOT DATE : 4/25/2022 5:04 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT

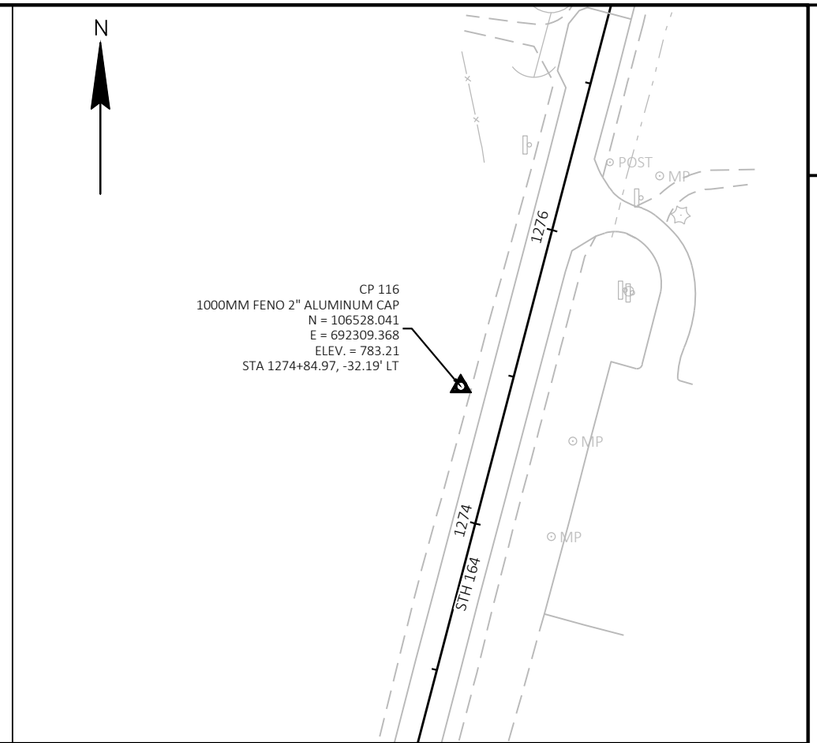
WISDOT/CADDS SHEET 44



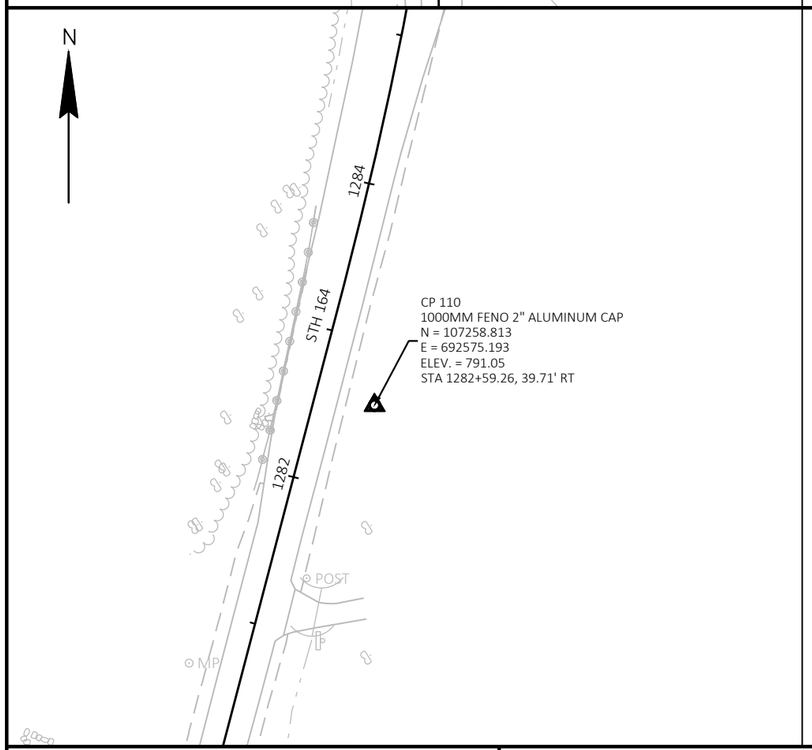
CP 111
1000MM FENO 2" ALUMINUM CAP
N = 104937.076
E = 692108.468
ELEV. = 812.077
STA 1258+82.08, -34.81' LT



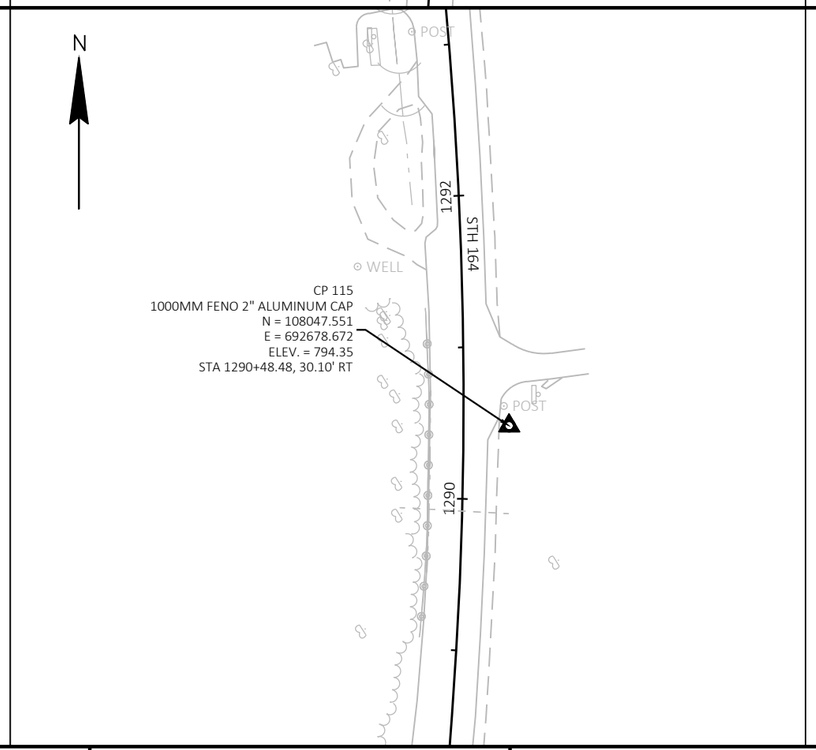
CP 117
1000MM FENO 2" ALUMINUM CAP
N = 105749.523
E = 692136.172
ELEV. = 790.96
STA 1266+90.91, -33.43' LT



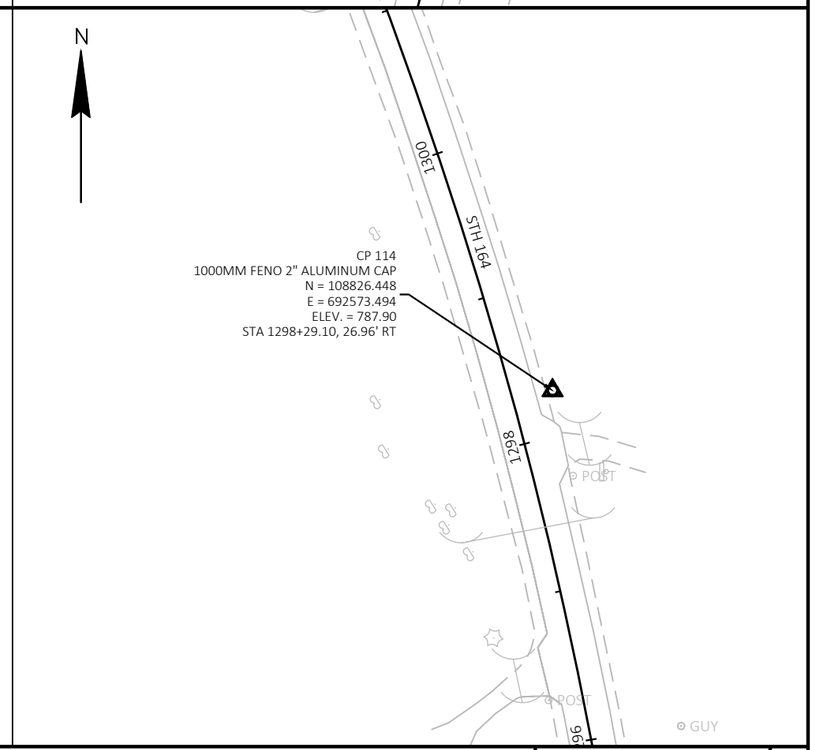
CP 116
1000MM FENO 2" ALUMINUM CAP
N = 106528.041
E = 692309.368
ELEV. = 783.21
STA 1274+84.97, -32.19' LT



CP 110
1000MM FENO 2" ALUMINUM CAP
N = 107258.813
E = 692575.193
ELEV. = 791.05
STA 1282+59.26, 39.71' RT



CP 115
1000MM FENO 2" ALUMINUM CAP
N = 108047.551
E = 692678.672
ELEV. = 794.35
STA 1290+48.48, 30.10' RT



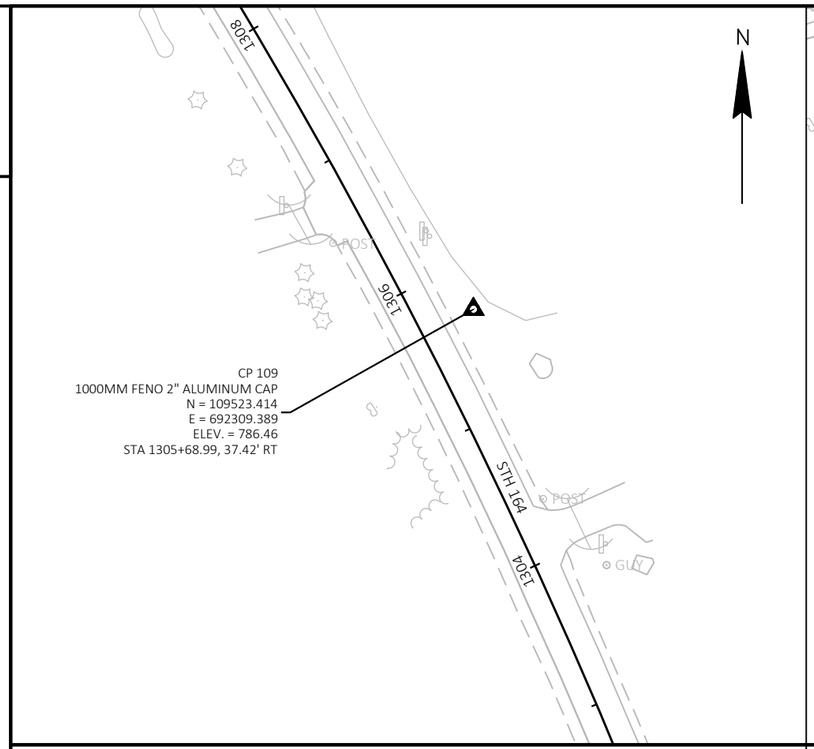
CP 114
1000MM FENO 2" ALUMINUM CAP
N = 108826.448
E = 692573.494
ELEV. = 787.90
STA 1298+29.10, 26.96' RT

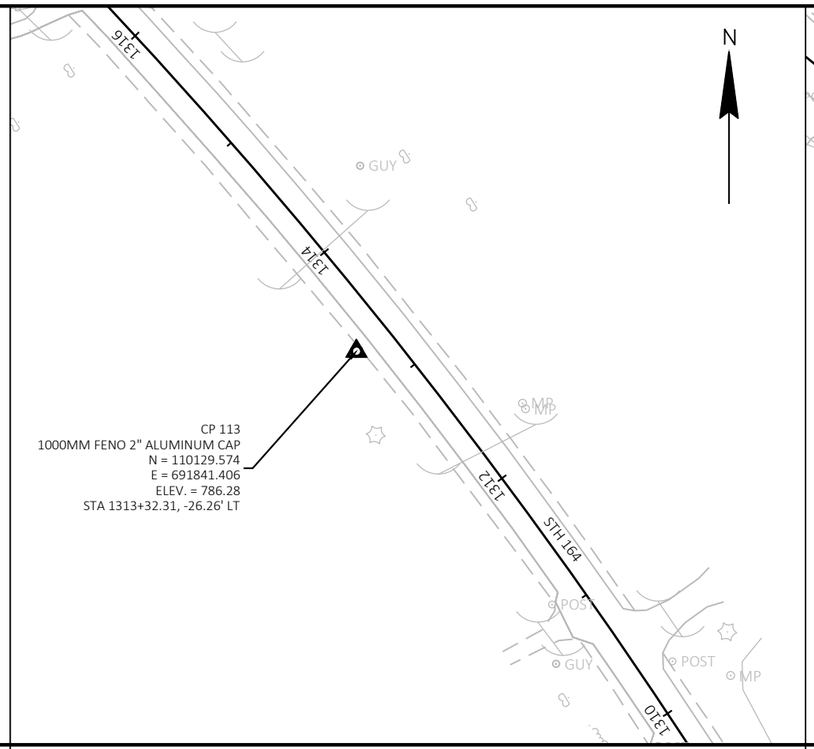
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	ALIGNMENT LAYOUT SURVEY CONTROL	SHEET 67	E

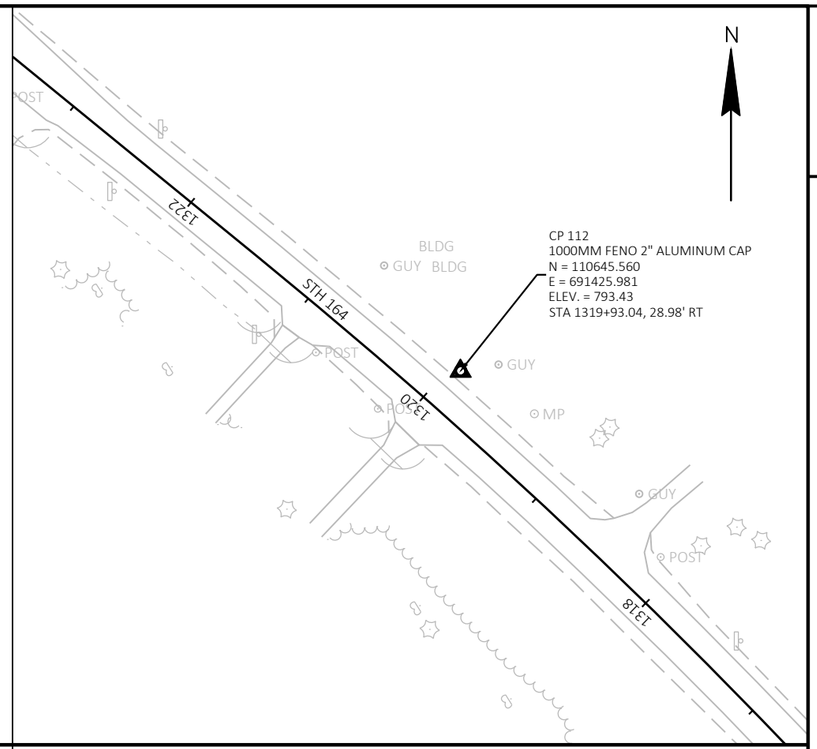
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LAYOUT NAME - SC02

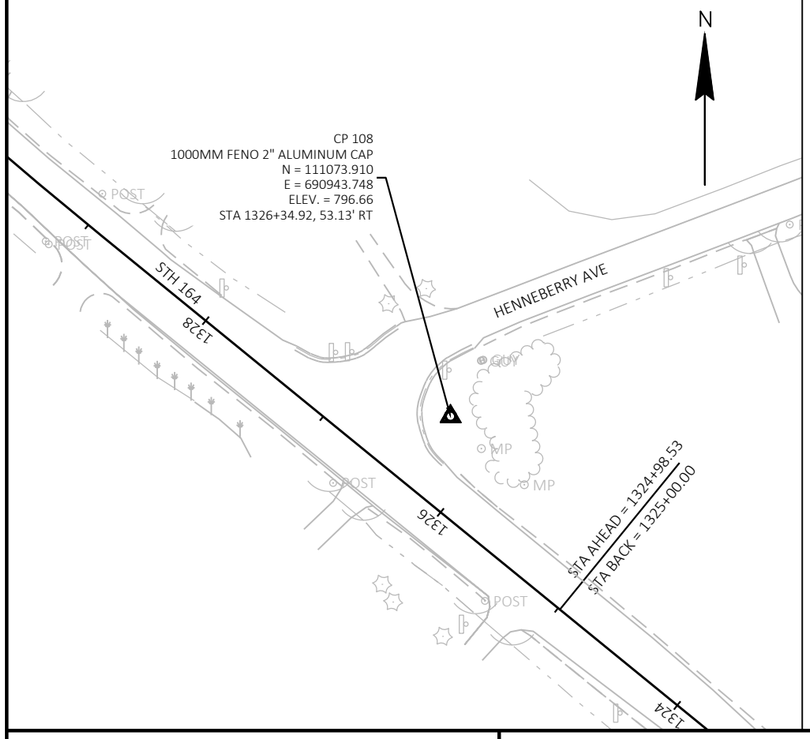
PLOT DATE : 4/25/2022 5:04 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 44









PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	ALIGNMENT LAYOUT SURVEY CONTROL	SHEET 68	E

Estimate Of Quantities

2810-08-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	19.000	19.000
0004	203.0100	Removing Small Pipe Culverts	EACH	8.000	8.000
0006	204.0100	Removing Concrete Pavement	SY	25.000	25.000
0008	204.0110	Removing Asphaltic Surface	SY	700.000	700.000
0010	204.0150	Removing Curb & Gutter	LF	52.000	52.000
0012	204.0165	Removing Guardrail	LF	410.000	410.000
0014	205.0100	Excavation Common	CY	36,500.000	36,500.000
0016	208.0100	Borrow	CY	750.000	750.000
0018	209.2500	Backfill Granular Grade 2	TON	3,000.000	3,000.000
0020	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 2810-08-70	EACH	1.000	1.000
0022	213.0100	Finishing Roadway (project) 01. 2810-08-70	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	2,650.000	2,650.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	35,400.000	35,400.000
0028	305.0130	Base Aggregate Dense 3-Inch	TON	5,200.000	5,200.000
0030	310.0110	Base Aggregate Open-Graded	TON	770.000	770.000
0032	371.2000.S	QMP Base Aggregate Dense 1 1/4-Inch Compaction	EACH	32.000	32.000
0034	455.0605	Tack Coat	GAL	5,230.000	5,230.000
0036	460.2000	Incentive Density HMA Pavement	DOL	10,640.000	10,640.000
0038	460.6223	HMA Pavement 3 MT 58-28 S	TON	12,030.000	12,030.000
0040	460.6224	HMA Pavement 4 MT 58-28 S	TON	4,590.000	4,590.000
0042	465.0105	Asphaltic Surface	TON	160.000	160.000
0044	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	210.000	210.000
0046	465.0315	Asphaltic Flumes	SY	25.000	25.000
0048	465.0525	Asphaltic Rumble Strips, Shoulder Sinusoidal	LF	14,900.000	14,900.000
0050	465.0565	Asphaltic Rumble Strips, Centerline Sinusoidal	LF	9,950.000	9,950.000
0052	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	2.000	2.000
0054	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	4.000	4.000
0056	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	200.000	200.000
0058	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	136.000	136.000
0060	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	120.000	120.000
0062	522.0430	Culvert Pipe Reinforced Concrete Class IV 30-Inch	LF	80.000	80.000
0064	522.0436	Culvert Pipe Reinforced Concrete Class IV 36-Inch	LF	64.000	64.000
0066	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	4.000	4.000
0068	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000	2.000
0070	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	2.000	2.000
0072	522.2653	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 53x83-Inch	EACH	2.000	2.000
0074	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	86.000	86.000
0076	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	175.000	175.000
0078	602.0810	Concrete Driveway 6-Inch	SY	34.000	34.000
0080	602.3225	Concrete Rumble Strips, Shoulder Sinusoidal	LF	370.000	370.000
0082	606.0200	Riprap Medium	CY	75.000	75.000
0084	606.0300	Riprap Heavy	CY	38.000	38.000
0086	612.0106	Pipe Underdrain 6-Inch	LF	2,400.000	2,400.000
0088	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	187.000	187.000
0090	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	8.000	8.000
0092	614.2330	MGS Guardrail 3 K	LF	837.500	837.500
0094	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0096	619.1000	Mobilization	EACH	1.000	1.000
0098	624.0100	Water	MGAL	1,320.000	1,320.000

2810-08-70

Line	Item	Item Description	Unit	Total	Qty
0100	625.0100	Topsoil	SY	5,730.000	5,730.000
0102	627.0200	Mulching	SY	2,310.000	2,310.000
0104	628.1504	Silt Fence	LF	3,510.000	3,510.000
0106	628.1520	Silt Fence Maintenance	LF	3,510.000	3,510.000
0108	628.1905	Mobilizations Erosion Control	EACH	12.000	12.000
0110	628.1910	Mobilizations Emergency Erosion Control	EACH	8.000	8.000
0112	628.2008	Erosion Mat Urban Class I Type B	SY	5,810.000	5,810.000
0114	628.7555	Culvert Pipe Checks	EACH	50.000	50.000
0116	628.7570	Rock Bags	EACH	30.000	30.000
0118	629.0210	Fertilizer Type B	CWT	1.700	1.700
0120	630.0130	Seeding Mixture No. 30	LB	140.000	140.000
0122	630.0140	Seeding Mixture No. 40	LB	130.000	130.000
0124	630.0500	Seed Water	MGAL	135.000	135.000
0126	633.5200	Markers Culvert End	EACH	16.000	16.000
0128	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	18.000	18.000
0130	637.2210	Signs Type II Reflective H	SF	144.050	144.050
0132	638.2102	Moving Signs Type II	EACH	5.000	5.000
0134	638.2602	Removing Signs Type II	EACH	5.000	5.000
0136	638.3000	Removing Small Sign Supports	EACH	12.000	12.000
0138	642.5001	Field Office Type B	EACH	1.000	1.000
0140	643.0300	Traffic Control Drums	DAY	5,110.000	5,110.000
0142	643.0420	Traffic Control Barricades Type III	DAY	580.000	580.000
0144	643.0705	Traffic Control Warning Lights Type A	DAY	1,150.000	1,150.000
0146	643.0900	Traffic Control Signs	DAY	28,270.000	28,270.000
0148	643.1000	Traffic Control Signs Fixed Message	SF	183.000	183.000
0150	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0152	643.3165	Temporary Marking Line Paint 6-Inch	LF	43,704.000	43,704.000
0154	645.0111	Geotextile Type DF Schedule A	SY	536.000	536.000
0156	645.0120	Geotextile Type HR	SY	228.000	228.000
0158	645.0220	Geogrid Type SR	SY	3,550.000	3,550.000
0160	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	196.000	196.000
0162	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	38,739.000	38,739.000
0164	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	300.000	300.000
0166	646.6120	Marking Stop Line Epoxy 18-Inch	LF	95.000	95.000
0168	650.4500	Construction Staking Subgrade	LF	11,375.000	11,375.000
0170	650.5000	Construction Staking Base	LF	11,375.000	11,375.000
0172	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	261.000	261.000
0174	650.6000	Construction Staking Pipe Culverts	EACH	8.000	8.000
0176	650.9911	Construction Staking Supplemental Control (project) 01. 2810-08-70	EACH	1.000	1.000
0178	650.9920	Construction Staking Slope Stakes	LF	11,375.000	11,375.000
0180	690.0150	Sawing Asphalt	LF	760.000	760.000
0182	690.0250	Sawing Concrete	LF	35.000	35.000
0184	740.0440	Incentive IRI Ride	DOL	8,620.000	8,620.000
0186	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	450.000	450.000
0188	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	900.000	900.000
0190	SPV.0035	Special 01. Rip Rap Medium Special	CY	9.000	9.000
0192	SPV.0060	Special 01. Section Corner Monuments	EACH	2.000	2.000
0194	SPV.0090	Special 01. Ditching and Shaping	LF	950.000	950.000
0196	SPV.0090	Special 02. Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 53X83-	LF	64.000	64.000

2810-08-70

Line	Item	Item Description	Unit	Total	Qty
		Inc			
0198	SPV.0090	Special 03. Riprap Light Special in Culvert Pipe	LF	80.000	80.000

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

CLEARING AND GRUBBING

STATION	TO	STATION	LOCATION	201.0205 GRUBBING STA	REMARKS
1244+50	-	1246+50	LT	2	SLOPE (200' x 5')
1250+00	-	1252+00	RT	2	SLOPE (200' x 5')
1281+75	-	1291+75	LT	10	GUARDRAIL SECTION (1000' x 10')
1289+92			RT	1	CULVERT PIPE REPLACEMENT (20' x 15')
1297+43			LT	1	CULVERT PIPE REPLACEMENT (20' x 10')
1301+14			LT/RT	1	CULVERT PIPE REPLACEMENT (20' x 15')
1312+23			LT	1	CULVERT PIPE REPLACEMENT (20' x 15")
1314+02			LT	1	CULVERT PIPE REPLACEMENT (20' x 15')
		TOTAL 0010		**19**	

PROJECT WIDE ITEMS

LOCATION	211.0101.01 PREPARE FOUNDATION FOR ASPHALTIC PAVING 01. 2810-08-70 EACH	213.0100.01 FINISHING ROADWAY 01. 2810-08-70 EACH	619.1000 MOBILIZATION EACH	642.5001 FIELD OFFICE TYPE B EACH
STH 164	1	1	1	1
TOTAL 0010	**1**	**1**	**1**	**1**

DIVISION	FROM/TO STATION	205.0100 COMMON EXCAVATION (1) CUT (2)	205.0100 COMMON EXCAVATION (1) EBS EXCAVATION (3)	AVAILABLE MATERIAL (4)	REDUCED EBS IN FILL (5) FACTOR 0.80	EXPANDED EBS BACKFILL (6) FACTOR 1.30	UNEXPANDED FILL	EXPANDED FILL (7) FACTOR 1.25	MASS ORDINATE +/- (8)	WASTE	208.0100 BORROW	COMMENT
DIVISION 1												
EARTWORKSTH164	1209+00/1322+74	32,694	2,300	32,694	1,840	2,990	466	-1,718	34,412	34,412	0	EXCAVATION INCLUDES CULVERT PIPE EXCAVATION QUANTITY
UNDISTRIBUTED		1,306	200	1,306							750	
DIVISION 1 SUBTOTAL		34,000	2,500	34,000	1,840	2,990	466	-1,718	34,412	34,412	750	
GRAND TOTAL		34,000	2,500	34,000	1,840	2,990	466	-1,718	34,412	34,412	750	
TOTAL COMMON EXC		36,500										

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.

(4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(5) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USUABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = X.2X

(6) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH SELECT BORROW MATERIAL. EBS BACKFILL FACTOR = X.4X. ITEM NUMBER 208.1100

(7) EXPANDED FILL FACTOR = X.6X

DEPENDING ON SELECTIONS: **EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR**

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) * FILL FACTOR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) * FILL FACTOR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) * FILL FACTOR

(8) 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.

3

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

REMOVALS

STATION	TO	STATION	LOCATION	* 203.0100 REMOVING SMALL PIPE CULVERTS EACH	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0150 REMOVING CURB & GUTTER LF	204.0165 REMOVING GUARDRAIL LF	REMARKS
1231+69			RIVER AVENUE	1	--	203	--	--	24" CMCP PIPE
1258+42			KELSEY AVENUE	1	--	208	--	--	24" CMCP PIPE
1281+14			RT	--	22	--	--	--	
1285+89			CARTWRIGHT COURT	1	--	237	--	--	15" CMCP PIPE
1289+92			STH 164	1	--	--	--	--	24" CMCP PIPE
1297+43			STH 164	1	--	--	--	--	24" CMCP PIPE
1302+24			STH 164	1	--	--	--	--	30" CMCP PIPE
1281+85	--	1283+77	STH 164	--	--	--	--	193	
1286+21	--	1286+55	CARTWRIGHT COURT	--	--	--	52	--	
1289+07	--	1291+26	STH 164	--	--	--	--	217	
			UNDISTRIBUTED	--	3	52	--	--	
			TOTAL 0010	**6**	**25**	**700**	**52**	**410**	

BASE AGGREGATE DENSE

STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0130 BASE AGGREGATE DENSE 3-INCH TON	310.0110 BASE AGGREGATE OPEN-GRADED TON	371.2000.S QMP BASE AGGREGATE DENSE 1 1/4-INCH COMPACTION EACH	645.0220 GEOGRID TYPE SR SY
1209+00	-	1231+55	LT	251	102	--	--	--	--
1209+00	-	1258+26	RT	587	225	--	--	--	--
1209+00	-	1279+98	LT/RT	--	20,119	--	--	--	--
1212+50	-	1215+50	LT/RT	--	--	1,760	193	--	1,200
1231+83	-	1244+60	LT	146	55	--	--	--	--
1246+50	-	1322+75	LT	814	336	--	--	--	--
1248+50	-	1254+00	LT/RT		--	--	337	--	--
1258+60	-	1285+82	RT	302	105	--	--	--	--
1279+98	-	1284+00	LT/RT	--	--	2,720	206	--	1,854
1279+98	-	1322+75	LT/RT	--	12,643	--	--	--	--
1286+95	-	1322+75	RT	427	171	--	--	--	--
			UNDISTRIBUTED	123	1,644	720	34	32	496
			TOTAL 0010	**2,650**	**35,400**	**5,200**	**770**	**32**	**3,550**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

ASPHALTIC ITEMS

STATION	TO	STATION	LOCATION	* 455.0605 TACK COAT GAL	* 460.6223 HMA PAVEMENT 3 MT 58-28 S TON	* 460.6224 HMA PAVEMENT 4 MT 58-28 S TON	465.0105 ASPHALTIC SURFACE TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0315 ASPHALTIC FLUMES SY
1209+00	-	1230+78	RT	111	200	156	--	--	--
1209+00	-	1277+48	LT/RT	2,750	6,050	1,930	--	--	--
1209+50	-	1257+10	LT	46	82	64	--	--	--
1210+70			LT	--	--	--	--	6	--
1213+92			RT	--	--	--	--	6	--
1220+55			LT	--	--	--	--	8	--
1223+11			RT	--	--	--	--	8	--
1231+23			RT	--	--	--	--	9	--
1231+70			LT	--	--	--	28	--	--
1232+83	-	1277+48	LT	94	169	132	--	--	--
1241+02			LT	--	--	--	--	8	--
1241+03			RT	--	--	--	--	11	--
1242+90			LT	--	--	--	--	5	--
1245+65			LT	--	--	--	--	--	10
1246+50			LT	--	--	--	--	1	--
1247+13			LT	--	--	--	--	5	--
1250+00			RT	--	--	--	--	4	--
1250+84			RT	--	--	--	--	4	--
1255+00			RT	--	--	--	--	4	--
1258+42			RT	--	--	--	48	--	--
1259+46	-	1277+48	RT	42	58	74	--	--	--
1259+72			RT	--	--	--	--	6	--
1276+20			RT	--	--	--	--	12	--
1277+22			LT	--	--	--	--	6	--
1279+98	-	1322+75	LT	100	179	139	--	--	--
1279+98	-	1322+75	LT/RT	1,340	3,820	1,220	--	--	--
1279+98	-	1284+24	RT	10	17	13	--	--	--
1281+14			RT	--	--	--	--	--	--
1285+88			RT	--	--	--	69	--	--
1286+90			RT	--	--	--	--	--	10
1287+32	-	1322+75	RT	83	149	116	--	--	--
1290+89			RT	--	--	--	--	7	--
1291+67			LT	--	--	--	--	4	--
1292+75			LT	--	--	--	--	5	--
1293+38			LT	--	--	--	--	4	--
1295+11			RT	--	--	--	--	7	--
1296+50			LT	--	--	--	--	5	--
1297+90			RT	--	--	--	--	4	--
1302+24			RT	--	--	--	--	4	--
1304+15			RT	--	--	--	--	6	--
1306+69			LT	--	--	--	--	3	--
1309+71			LT	--	--	--	--	5	--
1310+54			RT	--	--	--	--	10	--
1310+92			LT	--	--	--	--	6	--
1316+54			LT	--	--	--	--	6	--
1318+40			LT	--	--	--	--	7	--
1319+92			LT	--	--	--	--	6	--
1320+95			LT	--	--	--	--	4	--
UNDISTRIBUTED				284	626	216	15	14	5
TOTAL 0010				**4,860**	**11,350**	**4,060**	**160**	**210**	**25**

RUMBLE STRIPS

STATION	TO	STATION	LOCATION	465.0525 ASPHALTIC RUMBLE STRIPS, SHOULDER SINUSOIDAL LF	465.0565 ASPHALTIC RUMBLE STRIPS, CENTERLINE SINUSOIDAL LF	602.3225 CONCRETE RUMBLE STRIPS, SHOULDER SINUSOIDAL LF
1209+00		1229+69	CENTERLINE	--	2,069	--
1209+00	-	1210+27	LT	103	--	--
1209+00	-	1213+56	RT	372	--	--
1211+12	-	1220+15	LT	723	--	--
1214+28	-	1222+73	RT	676	--	--
1220+95	-	1229+63	LT	700	--	--
1223+51	-	1230+78	RT	583	--	--
1231+67	-	1240+62	RT	715	--	--
1233+59	-	1240+51	LT	560	--	--
1233+68	-	1256+42	CENTERLINE	--	2,274	--
1241+45	-	1242+49	LT	93	--	--
1241+48	-	1249+57	RT	653	--	--
1243+32	-	1244+37	LT	93	--	--
1247+49	-	1276+69	LT	2100	--	--
1251+21	-	1254+61	RT	280	--	--
1255+35	-	1256+35	RT	88	--	--
1260+42	-	1277+48	CENTERLINE	--	1,707	--
1260+46	-	1275+62	RT	1213	--	--
1276+64	-	1277+48	RT	72	--	--
1277+48	-	1279+98	RT	199	--	190
1277+61	-	1279+91	LT	181	--	180
1279+98	-	1283+89	CENTERLINE	--	391	--
1279+98	-	1280+77	RT	67	--	--
1279+98	-	1291+31	LT	900	--	--
1281+52	-	1283+69	RT	181	--	--
1287+89	-	1322+74	CENTERLINE	--	3,486	--
1288+08	-	1290+30	RT	187	--	--
1291+36	-	1294+70	RT	276	--	--
1292+04	-	1292+35	LT	31	--	--
1293+82	-	1296+05	LT	187	--	--
1295+52	-	1297+53	RT	165	--	--
1296+93	-	1306+23	LT	747	--	--
1298+30	-	1306+68	RT	280	--	--
1302+62	-	1303+66	RT	93	--	--
1304+54	-	1310+16	RT	456	--	--
1307+08	-	1309+31	LT	187	--	--
1310+06	-	1310+54	LT	47	--	--
1310+93	-	1317+83	RT	560	--	--
1311+29	-	1316+18	LT	392	--	--
1316+90	-	1319+54	LT	215	--	--
1318+80	-	1322+74	RT	323	--	--
1320+29	-	1320+76	LT	47	--	--
1321+27	-	1322+74	LT	123	--	--
UNDISTRIBUTED				32	23	--
TOTAL 0010				**14,900**	**9,950**	**370**

CONCRETE ITEMS

STATION	TO	STATION	LOCATION	601.0553 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D LF	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D LF	602.0810 CONCRETE DRIVEWAY 6-INCH SY
1244+75	-	1246+50	LT	--	175	--
1281+14			RT	--	--	34
1286+21	-	1286+85	CARTWRIGHT COURT	86	--	--
			TOTAL 0010	**86**	**175**	**34**

612-Pipe Underdrain

STATION	TO	STATION	LOCATION	612.0106 PIPE UNDERDRAIN 6-INCH LF	612.0206 PIPE UNDERDRAIN UNPERFORATED 6-INCH LF	612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH EACH	645.0111 GEOTEXTILE TYPE DF SCHEDULE A SY
1212+50	-	1215+50	LT	295	13	2	66
1212+50	-	1215+50	RT	295	55	2	66
1248+50	-	1254+00	CENTER/LT	584	46	2	130
1248+50	-	1254+00	RT	550	17	1	123
1280+00	-	1284+00	CENTER/LT	430	--	--	96
1280+00	-	1282+50	RT	246	56	1	55
			TOTAL 0010	**2,400**	**187**	**8**	**536**

GUARDRAIL

STATION	TO	STATION	LOCATION	614.2330 MGS GUARDRAIL 3 K LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
1281+75	-	1291+25	LT	837.5	2
			TOTAL 0010	**837.5**	**2**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

CULVERT PIPES

STATION	TO	STATION	LOCATION	521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH	521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH EACH	521.3118 (1) CULVERT PIPE CORRUGATED STEEL 18-INCH LF	521.3124 (1) CULVERT PIPE CORRUGATED STEEL 24-INCH LF	522.0424 CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	522.0430 CULVERT PIPE REINFORCED CONCRETE CLASS IV 30-INCH LF	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH EACH	* 633.5200 MARKERS CULVERT END EACH	SPV.0090.01 SPECIAL 01. DITCHING AND SHAPING LF
1231+69	-	1232+04	RIVER AVENUE	--	2	--	56	--	--	--	--	2	230
1258+00	-	1258+79	KELSEY AVENUE	--	2	--	80	--	--	--	--	2	230
1285+00	-	1286+94	CARTWRIGHT COURT	2	--	200	--	--	--	--	--	2	230
1289+92			STH 164	--	--	--	--	64	--	2	--	2	50
1297+43			STH 164	--	--	--	--	56	--	2	--	2	50
1301+15			STH 164	--	--	--	--	--	80	--	2	2	50
1312+23			STH 164	--	--	--	--	--	--	--	--	--	60
1314+01			STH 164	--	--	--	--	--	--	--	--	--	50
			TOTAL 0010	**2**	**4**	**200**	**136**	**120**	**80**	**4**	**2**	**12**	**950**

(1) - MINIMUM STEEL THICKNESS REQUIRED FOR CORRUGATED STEEL CULVERTS IS 0.064.

RIP RAP

STATION	TO	STATION	LOCATION	* 606.0200 RIPRAP MEDIUM CY	* 606.0300 RIPRAP HEAVY CY	* 645.0120 GEOTEXTILE TYPE HR SY
1231+69	-	1232+04	RIVER AVENUE	12	--	25
1258+00	-	1258+79	KELSEY AVENUE	12	--	25
1285+00	-	1287+00	CARTWRIGHT COURT	12	--	10
1289+92			STH 164	--	12	20
1297+43			STH 164	12	--	25
1301+15			STH 164	7	--	15
			UNDISTRIBUTED	12	5	17
			TOTAL 0010	**67**	**17**	**137**

WATER

LOCATION	624.0100 WATER MGAL
COMPACTION	660
DUST CONTROL	660
TOTAL 0010	**1,320**

RESTORATION

STATION	TO	STATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0140 SEEDING MIXTURE NO. 40 LB	630.0500 SEED WATER MGAL
1211+50	-	1219+00	128	--	--	--	6	3
1226+50	-	1234+00	300	--	0.20	14	--	7
1241+50	-	1249+00	308	288	0.10	1	14	7
1249+00	-	1256+50	120	--	--	--	6	3
1256+50	-	1264+00	561	192	0.20	17	9	13
1271+50	-	1279+00	270	270	--	--	13	7
1279+00	-	1286+50	1,403	322	0.50	49	15	32
1286+50	-	1294+00	989	357	0.30	29	17	23
1294+00	-	1301+50	453	369	--	--	21	11
1301+50	-	1309+00	53	53	--	--	--	2
UNDISTRIBUTED			1,145	459	0.40	30	29	27
		TOTAL 0010	**5,730**	**2,310**	**1.70**	**140**	**130**	**135**

EROSION CONTROL MOBILIZATION

PROJECT	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
2810-08-70	12	8
TOTAL 0010	**12**	**8**

EROSION CONTROL

STATION	TO	STATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH
1211+50	-	1219+00	400	400	128	--	--
1219+00	-	1226+50	122	122	--	--	--
1226+50	-	1234+00	--	--	300	3	--
1241+50	-	1249+00	--	--	300	--	--
1249+00	-	1256+50	116	116	120	--	--
1256+50	-	1264+00	187	187	561	3	--
1271+50	-	1279+00	64	64	270	--	--
1279+00	-	1286+50	572	572	1,403	6	15
1286+50	-	1294+00	514	514	989	6	15
1294+00	-	1301+50	190	190	523	6	--
1301+50	-	1309+00	53	53	54	--	--
1309+00	-	1316+50	591	591	--	16	--
UNDISTRIBUTED			701	701	1,162	10	--
		TOTAL 0010	**3,510**	**3,510**	**5,810**	**50**	**30**

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ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TRAFFIC CONTROL

LOCATION	APPROXIMATE SERVICE DAYS	TREE CLEARING DAYS	643.0300 TRAFFIC CONTROL DRUMS IN SERVICE	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III IN SERVICE	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A IN SERVICE	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0900 TRAFFIC CONTROL SIGNS IN SERVICE	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	643.1050 TRAFFIC CONTROL SIGNS PCMS IN SERVICE	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	REMARKS
STH 164	--	2	20	40	--	--	--	--	6	12	--	--	--	TREE CLEARING QUANTITY, FOLLOW SDD 15D27
STH 164	110	--	43	4730	5	550	10	1,100	36	3,960	183	2	14	TRAFFIC CONTROL
STH 164	110	--	--	--	--	--	--	--	220	24,200	--	--	--	DETOUR ROUTE
STH 164	5	--	20	100	2	10	4	20	8	40	--	--	--	TRAFFIC CONTROL MILLING AND PAVING OPERATIONS
RIVER AVENUE	2	--	4	8	2	4	4	8	2	4	--	--	--	TRAFFIC CONTROL AROUND CULVERT PIPE
STA 1245 - STA 1254	2	--	21	42	--	--	--	--	--	--	--	--	--	TRAFFIC CONTROL CURB AND GUTTER SECTION
KELSEY AVENUE	2	--	4	8	2	4	4	8	3	6	--	--	--	TRAFFIC CONTROL AROUND CULVERT PIPE
CARTWRIGHT COURT	2	--	15	30	2	4	4	8	2	4	--	--	--	TRAFFIC CONTROL AROUND CULVERT PIPE
1289+92	2	--	10	20	--	--	--	--	4	8	--	--	--	TRAFFIC CONTROL AROUND CULVERT PIPE
1297+43	2	--	10	20	--	--	--	--	4	8	--	--	--	TRAFFIC CONTROL AROUND CULVERT PIPE
1301+15	2	--	10	20	--	--	--	--	4	8	--	--	--	TRAFFIC CONTROL AROUND CULVERT PIPE
1312+23	2	--	10	20	--	--	--	--	4	8	--	--	--	TRAFFIC CONTROL AROUND CULVERT PIPE
1314+01	2	--	10	20	--	--	--	--	4	8	--	--	--	TRAFFIC CONTROL AROUND CULVERT PIPE
UNDISTRIBUTED	--	--	52	52	8	8	6	6	4	4	--	--	--	
TOTAL 0010				**5,110**		**580**		**1,150**		**28,270**	**183**		**14**	

PAVEMENT MARKING

STATION TO STATION	643.3165 TEMPORARY MARKING LINE PAINT 6-INCH (WHITE) LF	643.3165 TEMPORARY MARKING LINE PAINT 6-INCH (YELLOW) LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE) LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH (YELLOW) LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE) LF	646.2040 MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW) LF	646.4040 MARKING LINE GROOVED WET REF EPOXY 10-INCH LF	646.6120 STOP LINE EPOXY 18-INCH LF
1206+14 - 1211+37	--	126	--	--	1032	131	300	--
1211+37 - 1218+24	--	165	--	--	1374	172	--	--
1218+24 - 1225+11	--	165	--	--	1374	172	--	--
1225+11 - 1231+98	--	165	--	48	1306	172	--	23
1231+98 - 1238+85	--	1020	--	--	1363	456	--	--
1238+85 - 1245+72	--	2226	--	--	1374	859	--	--
1245+72 - 1252+59	--	3771	--	--	1374	1278	--	--
1252+59 - 1259+46	--	4122	--	68	1316	1374	--	30
1259+46 - 1266+33	--	3618	--	--	1387	1238	--	--
1266+33 - 1273+20	--	2226	--	--	1374	859	--	--
1273+20 - 1280+07	--	2226	--	--	1374	859	--	--
1280+07 - 1286+94	--	2394	--	80	1285	903	--	42
1286+94 - 1293+81	--	4122	--	--	1387	1374	--	--
1293+81 - 1300+68	--	4122	--	--	1374	1374	--	--
1300+68 - 1307+55	--	4122	--	--	1374	1374	--	--
1307+55 - 1314+42	--	4122	--	--	1374	1374	--	--
1314+42 - 1321+29	--	4122	--	--	1374	1374	--	--
1321+29 - 1322+75	--	870	--	--	290	290	--	--
SUBTOTAL	--	43,704	--	196	23,106	15,633	--	--
TOTAL 0010	**43,704**		**196**		**38,739**		**300**	**95**

SECTION CORNER MONUMENTS

LOCATION	SPV.0060.01 SPECIAL 01. SECTION CORNER MONUMENTS EACH
RIVER AVENUE	1
KELSEY AVENUE	1
TOTAL 0010	**2**

SAWING

STATION TO STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
1209+00	LT/RT	44	--
1213+92	RT	23	--
1220+55	LT	30	--
1223+11	RT	29	--
1231+23	RT	39	--
1231+54 - 1231+84	RIVER AVENUE	30	--
1246+25	LT	20	--
1247+13	LT	23	--
1258+67 - 1258+67	KELSEY AVENUE	34	--
1276+20	RT	38	--
1281+14	RT	--	26
1285+81 - 1286+20	RT	40	--
1286+21	CARTWRIGHT COURT	--	3
1290+89	RT	44	--
1291+67	LT	23	--
1292+75	LT	29	--
1293+38	LT	37	--
1295+11	RT	34	--
1304+15	RT	29	--
1306+69	LT	28	--
1309+71	LT	22	--
1310+54	RT	28	--
1316+54	LT	22	--
1318+40	LT	32	--
1319+92	LT	25	--
1320+95	LT	14	--
1322+75	LT/RT	34	--
UNDISTRIBUTED		9	6
TOTAL 0010		**760**	**35**

STAKING

STATION TO STATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.6000 * CONSTRUCTION STAKING PIPE CULVERTS EACH	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 01. 2810-08-70 EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
1209+00 - 1214+00	500	500	--	--	--	500
1214+00 - 1229+00	1500	1500	--	--	--	1500
1229+00 - 1244+00	1500	1500	--	1	--	1500
1244+00 - 1259+00	1500	1500	175	1	--	1500
1259+00 - 1274+00	1500	1500	--	--	--	1500
1274+00 - 1289+00	1500	1500	86	1	--	1500
1289+00 - 1304+00	1500	1500	--	3	--	1500
1304+00 - 1319+00	1500	1500	--	--	--	1500
1319+00 - 1322+75	375	375	--	--	--	375
PROJECT WIDE	--	--	--	--	1	--
TOTAL 0010	**11,375**	**11,375**	**261**	**6**	**1**	**11,375**

3

ALL ITEMS ARE CATEGORY 0020 UNLESS OTHERWISE STATED

SHOULDER WIDENING

STATION	TO	STATION	LOCATION	* 455.0605 TACK COAT GAL	* 460.6223 HMA PAVEMENT 3 MT 58-28 S TON	* 460.6224 HMA PAVEMENT 4 MT 58-28 S TON
1209+00	-	1257+11	RT	75	135	105
1210+53	-	1230+79	LT	32	56	44
1232+83	-	1254+17	LT	42	74	58
1259+46	-	1284+44	RT	43	77	60
1262+09	-	1322+75	LT	117	210	164
1287+16	-	1322+75	RT	56	100	78
		UNDISTRIBUTED		5	28	21
			TOTAL 0020	**370**	**680**	**530**

ALL ITEMS ARE CATEGORY 0030 UNLESS OTHERWISE STATED

REMOVALS

STATION	LOCATION	* 203.0100 REMOVING SMALL PIPE CULVERTS EACH	REMARKS
1312+23	STH 164	1	30" CMCP PIPE
1314+02	STH 164	1	24" CMCP PIPE
	TOTAL 0030	**2**	

CULVERT PIPES

STATION	LOCATION	522.0436 CULVERT PIPE REINFORCED CONCRETE CLASS IV 36-INCH LF	522.1036 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH EACH	522.2653 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 53X83-INCH EACH	* 633.5200 MARKERS CULVERT END EACH	SPV.0090.02 SPECIAL 02. CULVERT REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 53X83-INCH LF
1312+23	STH 164	--	--	2	2	64
1314+01	STH 164	64	2	--	2	--
	TOTAL 0030	**64**	**2**	**2**	**4**	**64**

RIP RAP

STATION	LOCATION	* 606.0200 RIPRAP MEDIUM CY	* 606.0300 RIPRAP HEAVY CY	* 645.0120 GEOTEXTILE TYPE HR SY	SPV.0035.01 RIP RAP MEDIUM SPECIAL CY	SPV.0090.03 RIPRAP LIGHT SPECIAL IN CULVERT PIPE LF
1312+23	STH 164	--	21	48	--	80
1312+23 RT	STH 164	--	--	17	9	--
1314+01	STH 164	8	--	26	--	--
	TOTAL 0030	**8**	**21**	**91**	**9**	**80**

STAKING

STATION	TO	STATION	* 650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH
1304+00	-	1319+00	2
		TOTAL 0030	**2**

3

TYPE II PERMANENT SIGNING -

2810-08-70 WIS 164

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	X	H [IN.]	**637.2210** SIGNS TYPE II REFLC H [SF]	**638.2602** REMOVING SIGNS TYPE II [EA]	**638.3000** REMOVING SMALL SIGN SUPPORTS [EA]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**638.2102** MOVE SIGNS TYPE II [EA]	REMARKS / NEW SIGN LOCATION
1	W14-3 (2S)		48	X	36	5.560	1	1	1		SHEET 1 OF 9
2	D1-1	[LA] RIVER AVE	72	X	15	7.500			2		SHEET 2 OF 9
3	R1-1							1	1	1	SHEET 3 OF 9
4	W14-3 (2S)		48	X	36	5.560	1	1	1		
5	D1-1	RIVER AVE [RA]	72	X	15	7.500			2		
6	R1-1							1	1	1	SHEET 4 OF 9
7	W14-3 (2S)		48	X	36	5.560	1	1	1		SHEET 6 OF 9
8	W14-3 (2S)		48	X	36	5.560	1	1	1		
9	R1-1							1	1	1	
10	D1-1	HENNEBERRY AVE [RA]	102	X	15	10.625			2		SHEET 8 OF 9
11	W14-3 (2S)		48	X	36	5.560	1	1	1		SHEET 9 OF 9
12	D1-1	[LA] HENNEBERRY AVE	102	X	15	10.625					
		UNDISTRIBUTED				80.000		4	4	2	
TOTALS						144.050	5	12	18	5	

SHEET 1 OF 1

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

THIS TLE IS FOR THE RIGHT TO CONSTRUCT, CUT, AND/OR FILL SLOPES, INCLUDING FOR SUCH PURPOSE THE RIGHT TO OPERATE THE 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 DEEM NECESSARY OR DESIRABLE.

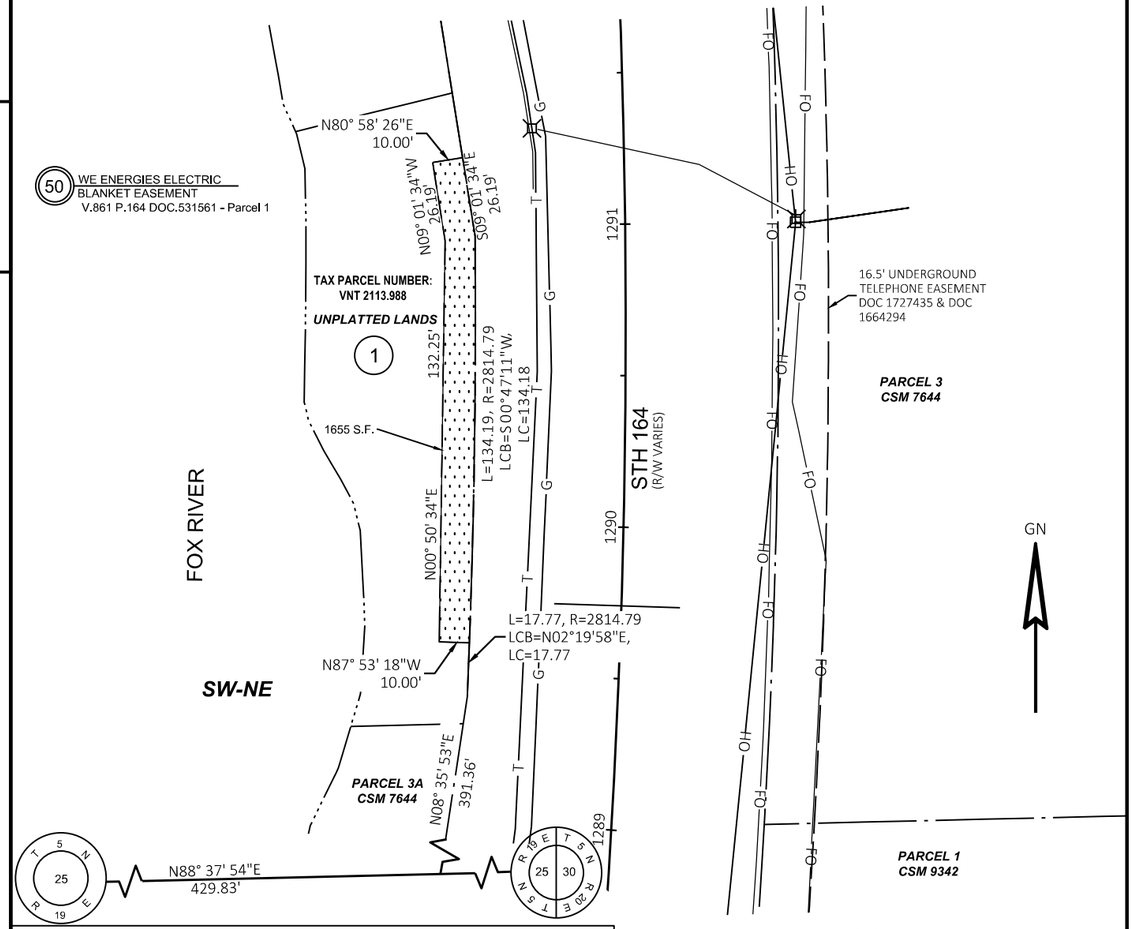
EXISTING R/W FOR STH 164 ESTABLISHED FROM S 0475(2)

R/W PROJECT NUMBER: 2810-08-20	SHEET NUMBER: 4.01

TLE ACQUISITION EXHIBIT
TOWN OF VERNON, STH 164
HENNEBERRY AVE TO DENOON RD

STH 164 — WAUKESHA COUNTY

PART OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 25, T5N, R19E, VILLAGE OF VERNON, WAUKESHA COUNTY, WISCONSIN.



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS 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 REQUIRED	PLE S.F.	TLE S.F.
1	RODNEY & LORRAINE HAINES	TLE	0	1,655

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	WE ENERGIES ELECTRIC	RELEASE OF RIGHTS

THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION SOUTHEAST REGION - WAUKESHA

SIGNATURE: Robert L Duffeck DATE: 12/05/22

PRINT NAME: Robert L. Duffeck

REVISION 1

FILE NAME : ERW_STH-164_TLE EXHIBITS.DWG PLOT DATE : 11/16/2022 9:26 PM R/W PROJECT: 2810-08-20

4

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

THIS TLE IS FOR THE RIGHT TO CONSTRUCT, CUT, AND/OR FILL SLOPES, INCLUDING FOR SUCH PURPOSE THE RIGHT TO OPERATE THE 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 DEEM NECESSARY OR DESIRABLE.

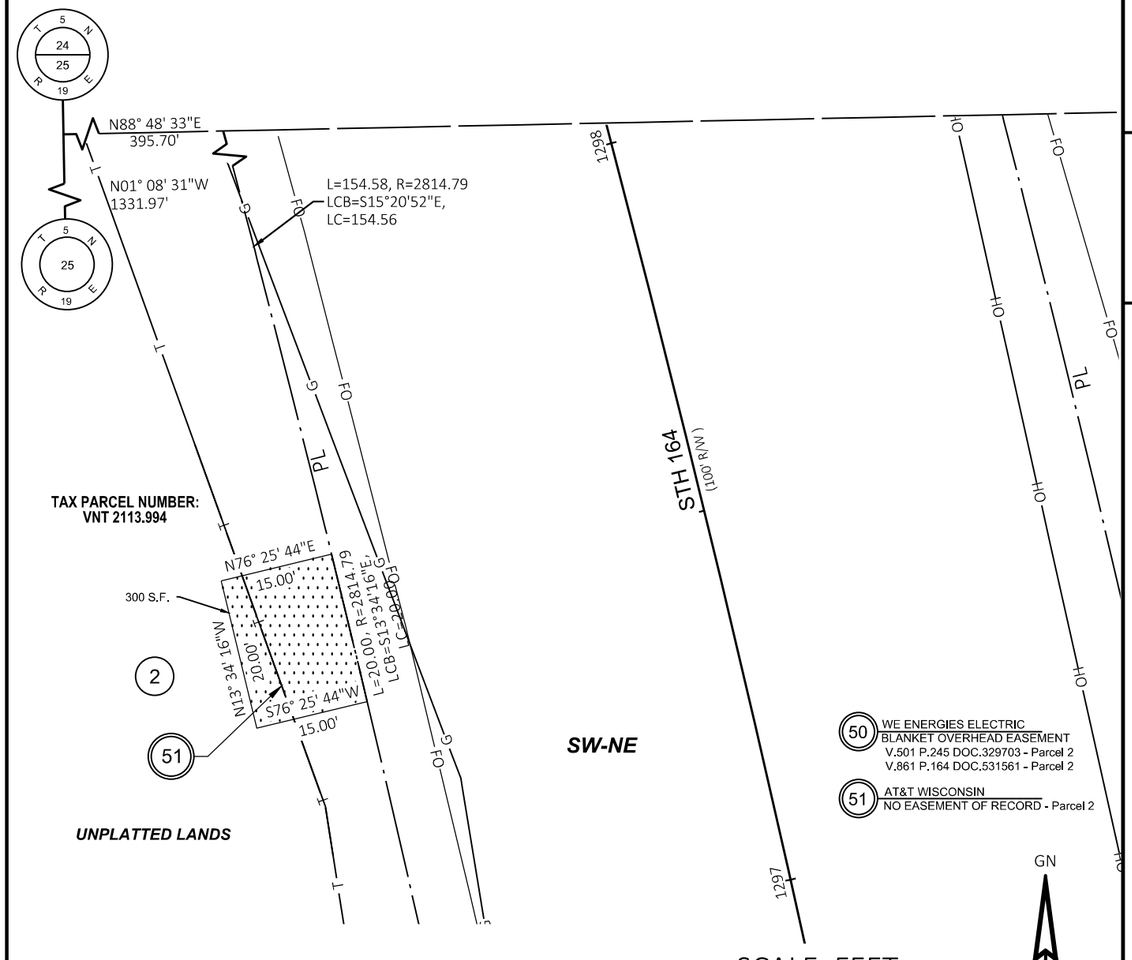
EXISTING R/W FOR STH 164 ESTABLISHED FROM S 0475(2)

R/W PROJECT NUMBER: 2810-08-20	SHEET NUMBER: 4.02

TLE ACQUISITION EXHIBIT
TOWN OF VERNON, STH 164
HENNEBERRY AVE TO DENOON RD

STH 164 — WAUKESHA COUNTY

PART OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 25, T5N, R19E, VILLAGE OF VERNON, WAUKESHA COUNTY, WISCONSIN.



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS 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 REQUIRED	PLE S.F.	TLE S.F.
2	DONNA M. BRESNAHAN	TLE	0	300

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	WE ENERGIES ELECTRIC	RELEASE OF RIGHTS
51	AT&T WISCONSIN	RELEASE OF RIGHTS

REVISION 1

FILE NAME : ERW_STH-164_TLE EXHIBITS.DWG PLOT DATE : 11/16/2022 9:26 PM R/W PROJECT: 2810-08-20

NOTES:
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EXISTING R/W FOR STH 164 ESTABLISHED FROM S 0475(2)

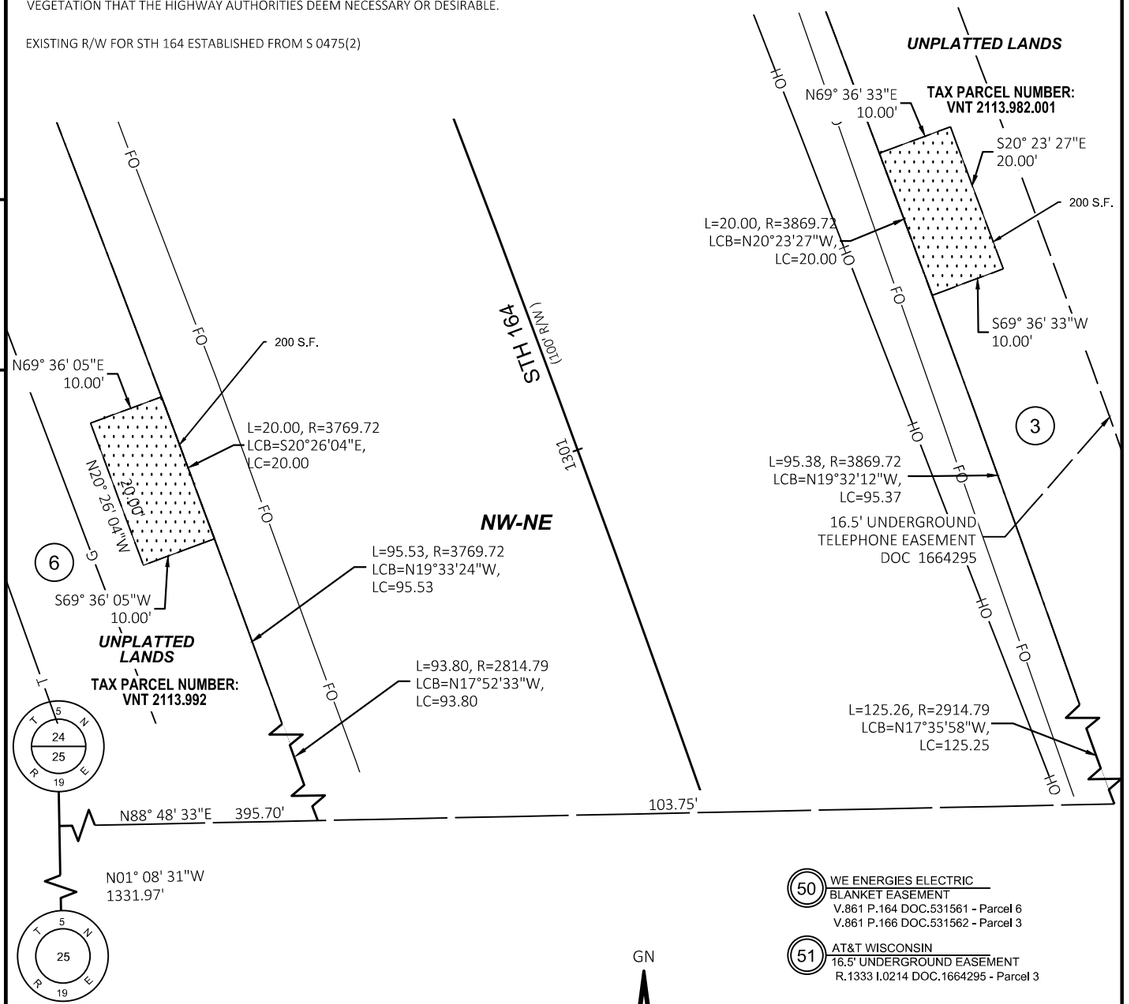
R/W PROJECT NUMBER: 2810-08-20	SHEET NUMBER: 4.03

TLE ACQUISITION EXHIBIT
TOWN OF VERNON, STH 164
HENNEBERRY AVE TO DENOON RD

STH 164 — WAUKESHA COUNTY

PART OF THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 25, T5N, R19E, VILLAGE OF VERNON, WAUKESHA COUNTY, WISCONSIN.

4



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS 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 REQUIRED	PLE S.F.	TLE S.F.
6	RODNEY & LORRAINE HAINES	TLE	0	200
3	JOYCE F. KING	TLE	0	200

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	WE ENERGIES ELECTRIC	RELEASE OF RIGHTS
51	AT&T WISCONSIN	RELEASE OF RIGHTS

REVISION 1

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

THIS TLE IS FOR THE RIGHT TO CONSTRUCT, CUT, AND/OR FILL SLOPES, INCLUDING FOR SUCH PURPOSE THE RIGHT TO OPERATE THE 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 DEEM NECESSARY OR DESIRABLE.

EXISTING R/W FOR STH 164 ESTABLISHED FROM S 0475(2)

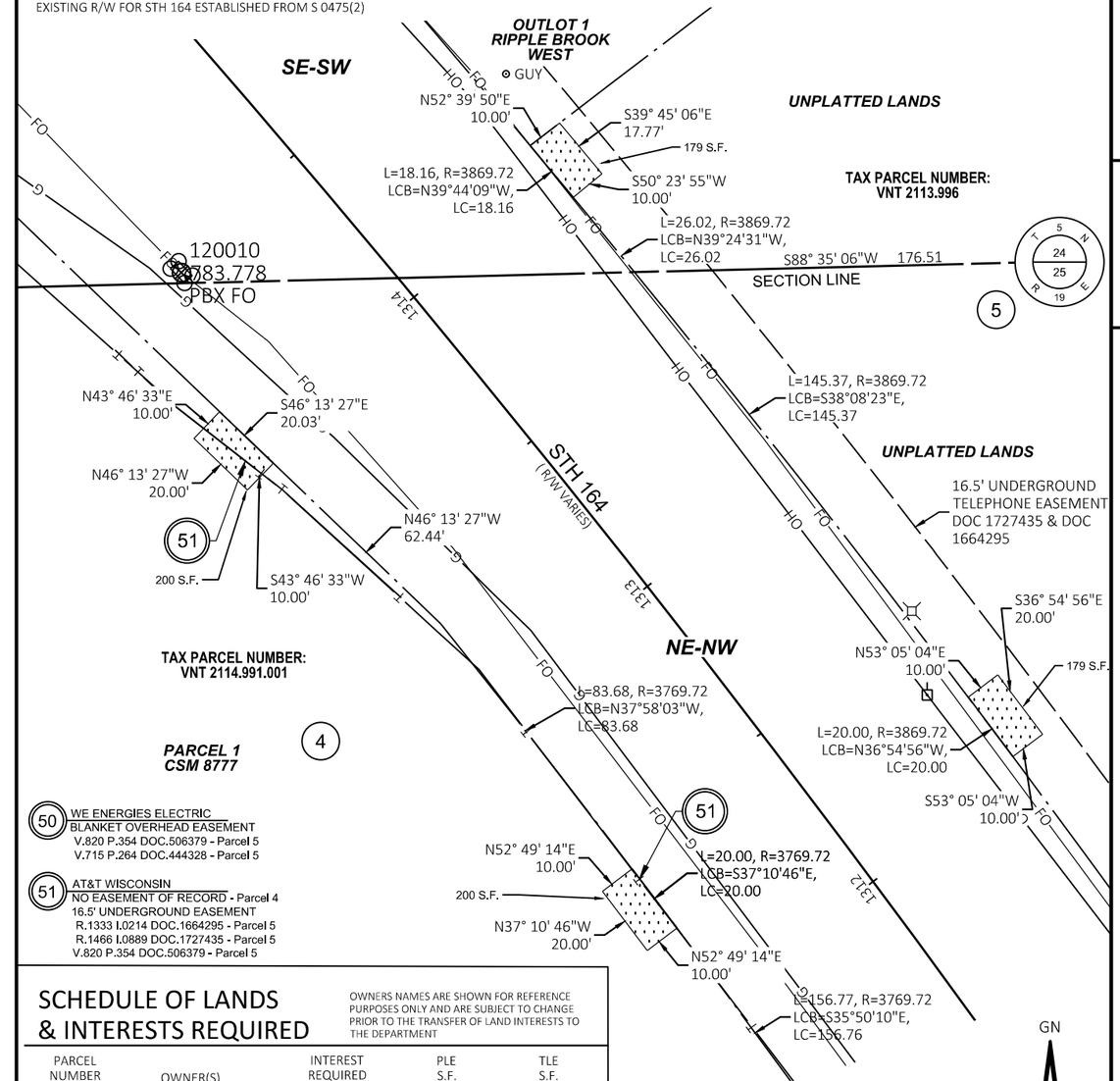
R/W PROJECT NUMBER: 2810-08-20	SHEET NUMBER: 4.04

TLE ACQUISITION EXHIBIT
TOWN OF VERNON, STH 164
HENNEBERRY AVE TO DENOON RD

STH 164 — WAUKESHA COUNTY

PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 25 AND THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 24, T5N, R19E, VILLAGE OF VERNON, WAUKESHA COUNTY, WISCONSIN.

4



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS 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 REQUIRED	PLE S.F.	TLE S.F.
4	DAVID J. CRAIG & AMY L. CRAIG	TLE	0	400
5	JOSEPH M. PETERSON	TLE	0	379

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	WE ENERGIES ELECTRIC	RELEASE OF RIGHTS
51	AT&T WISCONSIN	RELEASE OF RIGHTS

REVISION 1

PI DATA
STA 1201+75.50
Y = 99232.31
X = 692238.43

COUNTY LINE ROAD

BP: 1201+75.50

STA 1210+70
CONSTRUCT FE (34' GRAVEL)
EXISTING CMCP TO REMAIN

CP 122
STA 1212+08.80, -26.66' LT
Y = 100265.04
X = 692215.30
ELEV = 791.04
1000MM FENO 2" ALUM CAP

PC: 1209+34.28

PT: 1212+16.16

MATCH LINE 1214+00

SPECTRUM

WE ENERGIES - GAS
EX. R/W

SLOPE INTERCEPT

CP 122

1202 1204 1206 1208 1210 1212

N0°24'18"E

STH 164

N1°12'37"W

CP 123

EX. R/W

SLOPE INTERCEPT

PI STA = 1210+75.23
Y = 100132.01
X = 692244.79
DELTA = 1°36'54" LT
D = 0°34'23"
T = 140.95'
L = 281.88'
R = 10000.00'
PC STA = 1209+34.28
Y = 99991.07
X = 692243.79
PT STA = 1212+16.16
Y = 100272.93
X = 692241.81
DB = N00°24'18"E
DA = N01°12'37"W

AT&T WISCONSIN

WE ENERGIES - ELECTRIC

DENOON ROAD

CP 123
STA 1201+88.16, 37.76' RT
Y = 99244.70
X = 692276.28
ELEV = 799.02
1000MM FENO 2" ALUM CAP

BEGIN PROJECT
STA 1209+00.00
Y = 99956.78
X = 692243.55
MATCH EXISTING
SAWCUT REQ'D

STA 1213+92
CONSTRUCT PE (23' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

5

5

VCL = 200.00
K = 296.03

STA 1209+00.00
EL 792.97

STA 1212+00.00
EL 792.89

EXISTING PROFILE

LP STA 1210+44.56
LP EL 792.62

-0.45%

0.22%

-0.04%

PROPOSED PROFILE

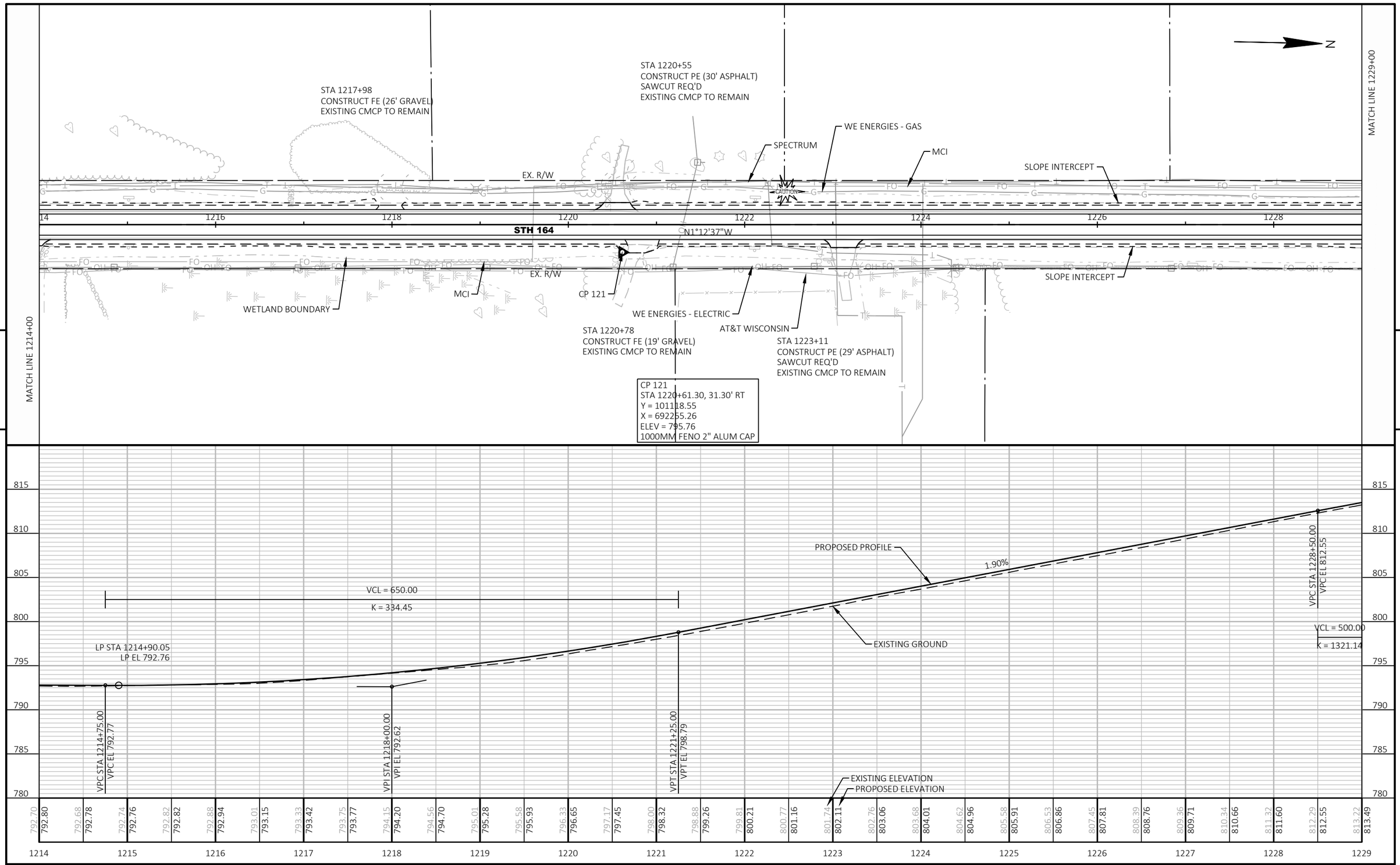
VPC STA 1209+10.00
VPC EL 792.92

VPI STA 1210+10.00
VPI EL 792.47

VPT STA 1211+10.00
VPT EL 792.69

EXISTING ELEVATION
PROPOSED ELEVATION

| | | |

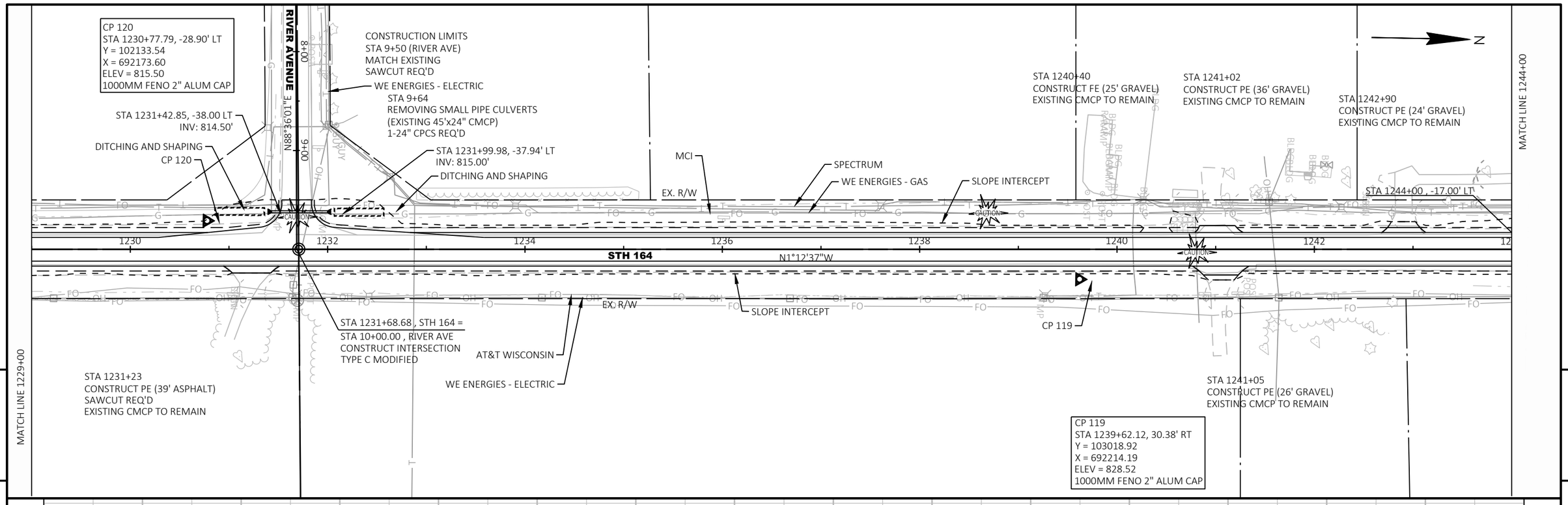


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN AND PROFILE: STH 164	SHEET 83	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - 050102-pp

PLOT DATE : 7/24/2024 12:49 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN AND PROFILE: STH 164	SHEET 84	E

MATCH LINE 1244+00

5

CP 118
STA 1249+92.61, -37.00' LT
Y = 104047.76
X = 692125.06
ELEV = 837.05
1000MM FENO 2" ALUM CAP

CP 111
STA 1258+82.08, -34.81' LT
Y = 104937.08
X = 692108.47
ELEV = 812.08
1000MM FENO 2" ALUM CAP

N

STA 1246+50
CONSTRUCT PE (20' ASPHALT)
SAWCUT REQ'D

STA 1247+13
CONSTRUCT PE (22' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

STA 1251+26
CONSTRUCT FE (24' GRAVEL)

ASPHALTIC
FLUME REQ'D

STA 1244+75 - STA 1246+50
CONCRETE CURB & GUTTER 4-INCH
SLOPED 35-INCH TYPE D

STA 1244+75
-20.00' LT
ELEV. 839.05'

STA 1246+50
-20.00' LT
ELEV. 840.79'

STA 1247+25 , -17.00' LT

CP 118

EX. R/W

MCI

SPECTRUM

WE ENERGIES - GAS

SLOPE INTERCEPT

STA 1258+41.79 , STH 164 =
STA 20+00.00 , KELSEY AVE
CONSTRUCT INTERSECTION
TYPE C MODIFIED
W/BYPASS LANE

CP 111

MATCH LINE 1259+00

1244 1246 1248 1250 1252 1254 1256 1258

N1°12'37"W

STH 164

EX. R/W

SLOPE INTERCEPT

AT&T WISCONSIN

WE ENERGIES - ELECTRIC

DITCHING AND SHAPING

STA 1258+00.11, 39.47' RT
INV: 812.95'

STA 1258+78.97, 36.75' RT
INV: 810.50

STA 1250+00
CONSTRUCT FE (15' GRAVEL)
EXISTING CMCP TO REMAIN

STA 1250+84
CONSTRUCT FE (20' GRAVEL)
EXISTING CMCP TO REMAIN

STA 1255+00
CONSTRUCT PE (19' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

STA 20+38
REMOVING SMALL PIPE CULVERTS
(EXISTING 58'x24" CMCP)
1-24" CPCS REQ'D

CONSTRUCTION LIMITS
STA 20+60 (KELSEY AVE)
MATCH EXISTING
SAWCUT REQ'D

SPECTRUM

KELSEY AVENUE 22'

N88°16'12"E

5

VPC STA 1244+35.00
VPC EL 838.83

VPI STA 1249+00.00
VPI EL 846.58

HP STA 1247+49.91
HP EL 841.45

EXISTING GROUND

VPT STA 1253+65.00
VPT EL 831.43

STA 1256+50.00
EL 822.15

PROPOSED PROFILE

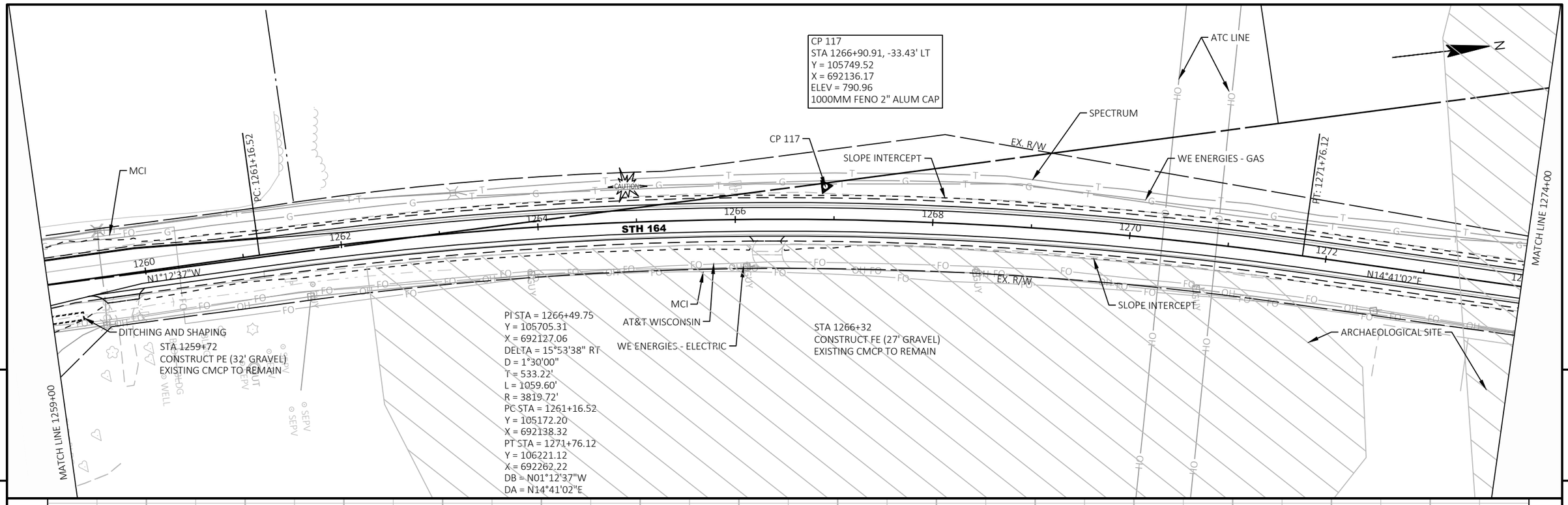
-3.26%

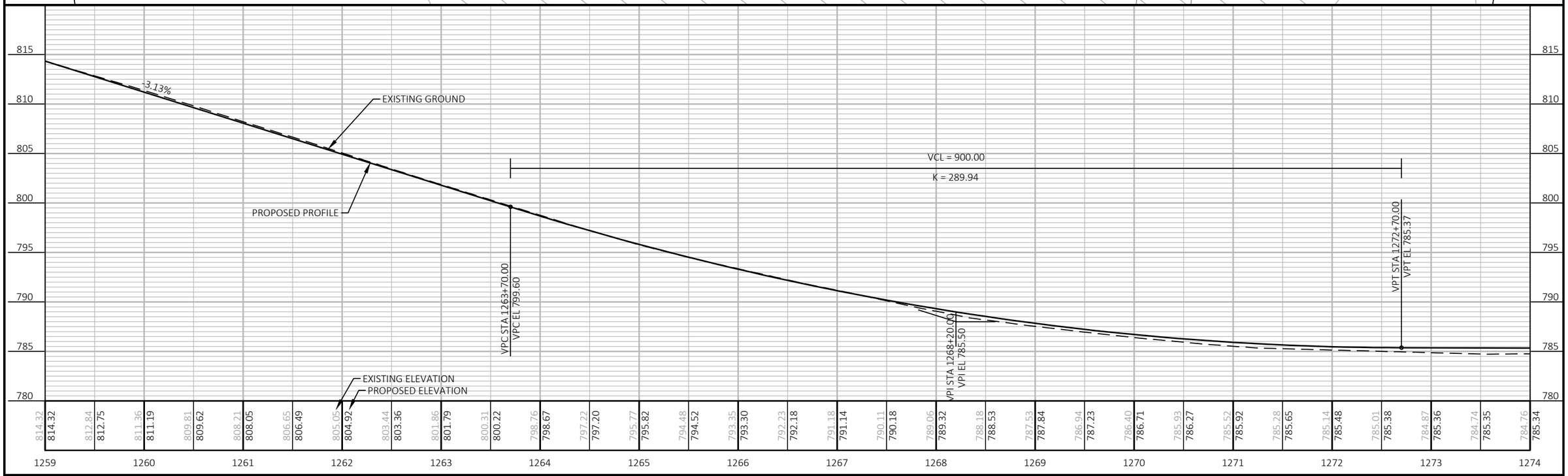
VCL = 930.00

K = 188.83

EXISTING ELEVATION
PROPOSED ELEVATION

| | | |





PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN AND PROFILE: STH 164	SHEET 86	E

CP 116
STA 1274+84.97, 32.19' LT
Y = 106528.04
X = 692309.37
ELEV = 783.21
1000MM FENO 2" ALUM CAP

STA 1277+22
CONSTRUCT FE (24' GRAVEL)
EXISTING CMCP TO REMAIN

CP 116

STA 1278+14
CONSTRUCT CE (35' GRAVEL)
EXISTING CMCP TO REMAIN

STA 1278+90
EXISTING 5'6" X 8'0"
SINGLE CELL BOX
CULVERT (C-67-0070)
TO REMAIN

STA 1281+85 - STA 1283+77
REMOVING GUARDRAIL

WE ENERGIES - GAS

SLOPE INTERCEPT

SPECTRUM

PC 1283+31.39

MGS GUARDRAIL 3 REQ'D

STA 1285+88.67 , STH 164 =
STA 30+00.00 , CARTWRIGHT CT
CONSTRUCT INTERSECTION
TYPE C MODIFIED
W/BYPASS LANE

EX. R/W

MATCH LINE 1289+00

1276 1278 1280 1282 1284 1286 1288

N14°41'02"E

STH 164

EX. R/W

MATCH LINE 1274+00

STA 1277+48
CONCRETE PAVEMENT TO REMAIN
MATCH EXISTING

SLOPE INTERCEPT

STA 1279+98
CONCRETE PAVEMENT TO REMAIN
MATCH EXISTING

MCI

CP 110

AT&T WISCONSIN
WE ENERGIES - ELECTRIC

DITCHING AND SHAPING

STA 1285+00, 36.05' RT
INV: 791.81'

STA 1286+94.12, 35.52' RT
INV: 792.67'

DITCHING AND SHAPING

STA 30+65 - STA 1286+54
REMOVING CURB & GUTTER
SAWCUT REQ'D

STA 30+33
REMOVING SMALL PIPE CULVERTS
(EXISTING 137'x15" CMCP)
1-18" CPCS REQ'D

CONSTRUCTION LIMITS
STA 30+65 (CARTWRIGHT CT)
MATCH EXISTING
SAWCUT REQ'D

WE ENERGIES - ELECTRIC

CARTWRIGHT COURT

STA 1276+20
CONSTRUCT CE (37' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

STA 1278+95
CONSTRUCT PE (33' GRAVEL)
EXISTING CMCP TO REMAIN

STA 1281+14
CONSTRUCT PE (25' CONCRETE)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

ARCHAEOLOGICAL SITE

CP 110
STA 1282+59.26, 39.71' RT
Y = 107258.81
X = 692575.19
ELEV = 791.05
1000MM FENO 2" ALUM CAP

5

5

805
800
795
790
785
780
775
770

VCL = 250.00
K = 126.14

STA 1277+00.00
EL 785.25

LP STA 1277+65.51
LP EL 785.20

VPC STA 1280+65.00
VPC EL 788.61

VPI STA 1285+90.00
VPI EL 798.58

HP STA 1287+39.65
HP EL 795.02

PROPOSED PROFILE

EXISTING PROFILE

-0.03%

-0.08%

1.90%

VCL = 1050.00
K = 355.34

VPC STA 1277+55.00
VPC EL 785.20

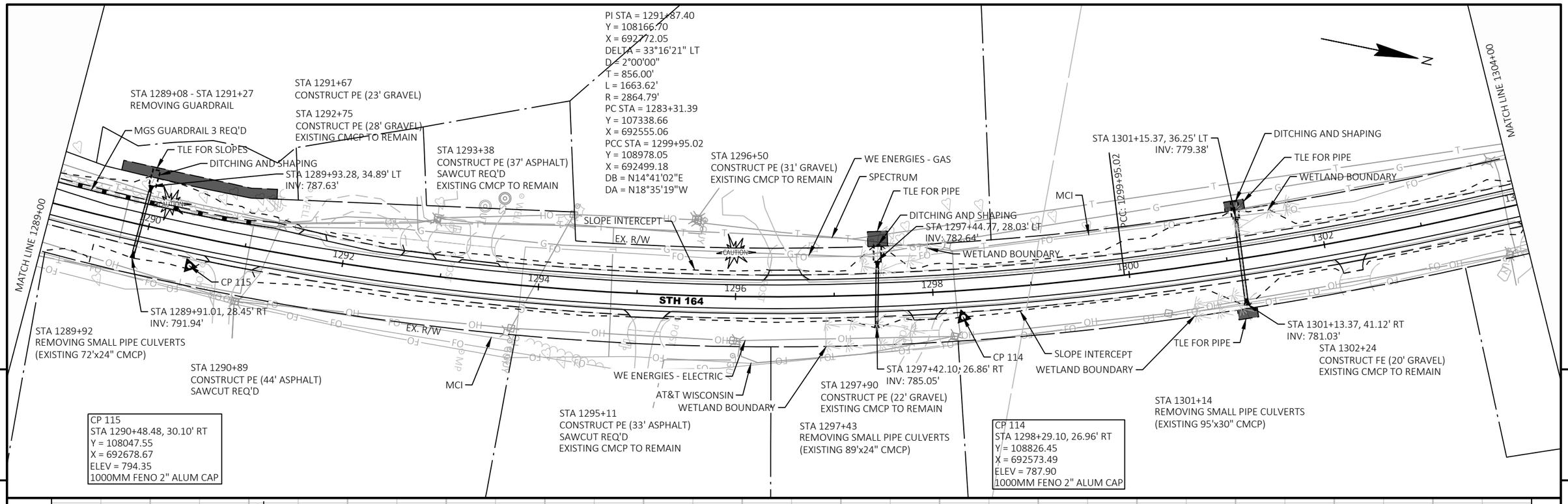
VPI STA 1278+80.00
VPI EL 785.10

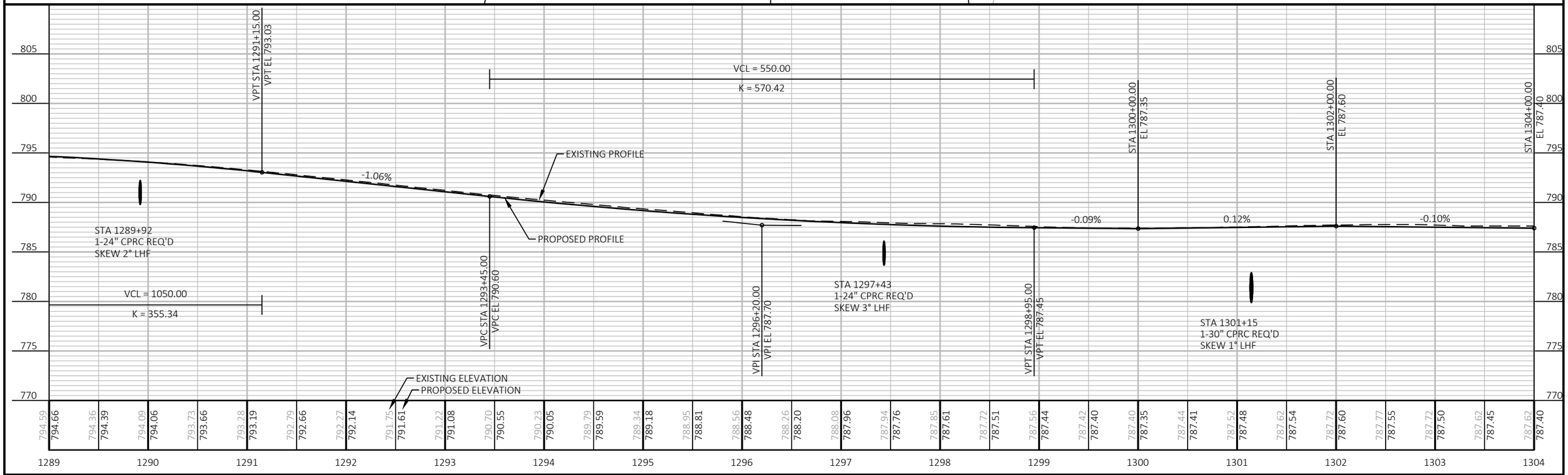
VPT STA 1280+05.00
VPT EL 787.47

EXISTING ELEVATION
PROPOSED ELEVATION

1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289
784.76	784.84	784.86	784.85	784.86	784.92	785.03	785.27	785.21	785.48	785.91	786.44	787.34	788.17	789.03	789.93	790.72	791.42	792.12	792.74	793.28	793.72	794.06	794.38	794.69	794.87	794.95	794.94	794.89	794.78	794.59
785.34	785.32	785.31	785.29	785.28	785.26	785.25	785.21	785.25	785.48	785.92	786.55	787.38	788.33	789.26	790.12	790.92	791.64	792.30	792.88	793.39	793.84	794.21	794.51	794.74	794.90	794.99	795.02	794.97	794.85	794.66

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN AND PROFILE: STH 164	SHEET 87	E





PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN AND PROFILE: STH 164	SHEET 88 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - 050107-pp
PLOT DATE : 7/24/2024 12:50 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:100 FT

MATCH LINE 1304+00

MATCH LINE 1319+00

N

STA 1306+69
CONSTRUCT PE (28' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

SPECTRUM

WE ENERGIES - GAS

STA 1309+71
CONSTRUCT PE (21' ASPHALT)
SAWCUT REQ'D

MCI

STA 1310+92
CONSTRUCT PE (21' GRAVEL)
EXISTING CMCP TO REMAIN

DITCHING AND SHAPING

SLOPE INTERCEPT

STA 1312+27.85, 27.38' LT
INV: 780.00'

EX. R/W

PI STA = 1310+97.64
Y = 110023.15
X = 692147.69
DELTA = 32°12'12" LT
D = 1°30'00"
T = 1102.62'
L = 2146.88'
R = 3819.72'
PCC STA = 1299+95.02
Y = 108978.05
X = 692499.18
PT STA = 1321+41.90
Y = 110720.16
X = 691293.32
DB = N18°35'19"W
DA = N50°47'31"W

TLE FOR PIPE

WETLAND BOUNDARY

CP 113
STA 1313+32.31, -26.26' LT
Y = 110129.57
X = 691841.41
ELEV = 786.28
1000MM FENO 2" ALUM CAP

STA 1314+00.69, 29.96' LT
INV: 781.75'

DITCHING AND SHAPING

CP 113

STA 1316+54
CONSTRUCT PE (22' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

STH 164

CP 109

SLOPE INTERCEPT

WE ENERGIES - ELECTRIC

AT&T WISCONSIN

STA 1304+15
CONSTRUCT PE (28' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

CP 109
STA 1305+68.99, 37.42' RT
Y = 109523.41
X = 692309.39
ELEV = 786.46
1000MM FENO 2" ALUM CAP

STA 1310+54
CONSTRUCT PE (27' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

STA 1312+17.24, 33.32' RT
INV: 780.50'

EX. R/W

TLE FOR PIPE

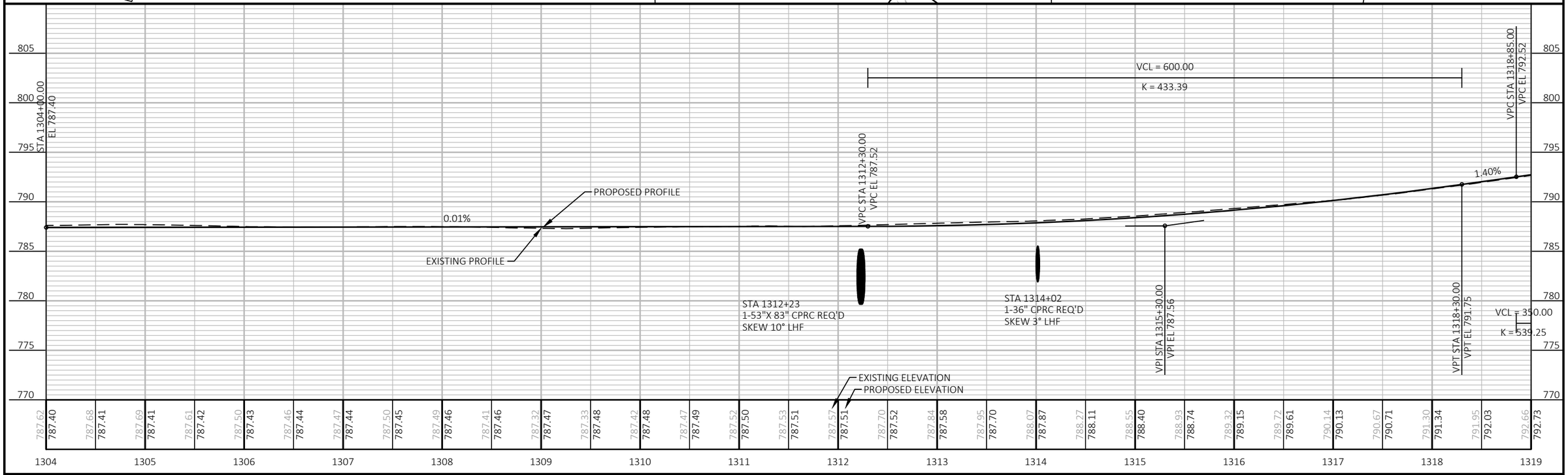
STA 1314+02.67, 32.69' RT
INV: 782.74'

STA 1315+50
CONSTRUCT FE (25' GRAVEL)
EXISTING CMCP TO REMAIN

STA 1318+40
CONSTRUCT PE (32' ASPHALT)
SAWCUT REQ'D

STA 1312+23
REMOVING SMALL PIPE CULVERTS
(EXISTING 76'x30" CMCP)

STA 1314+02
REMOVING SMALL PIPE CULVERTS
(EXISTING 82'x24" CMCP)



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN AND PROFILE: STH 164	SHEET 89	E

STA 1319+92
CONSTRUCT PE (24' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

STA 1320+95
CONSTRUCT PE (14' ASPHALT)
SAWCUT REQ'D
EXISTING CMCP TO REMAIN

PI DATA
STA 1324+98.53
Y = 110946.53
X = 691015.84

WE ENERGIES - GAS
SPECTRUM
MCI
PT: 1321+41.90
EX. R/W
SLOPE INTERCEPT
PC: 1328+88.19
STH 164
N50°47'31"W
CP 112
SLOPE INTERCEPT
EX. R/W
WE ENERGIES - ELECTRIC
AT&T WISCONSIN
STA BACK = 1325+00.00
STA AHEAD = 1324+98.53
CP 108
MATCH LINE 1319+00

CP 112
STA 1319+93.04, 28.98' RT
Y = 110645.56
X = 691425.98
ELEV = 793.43
1000MM FENO 2" ALUM CAP

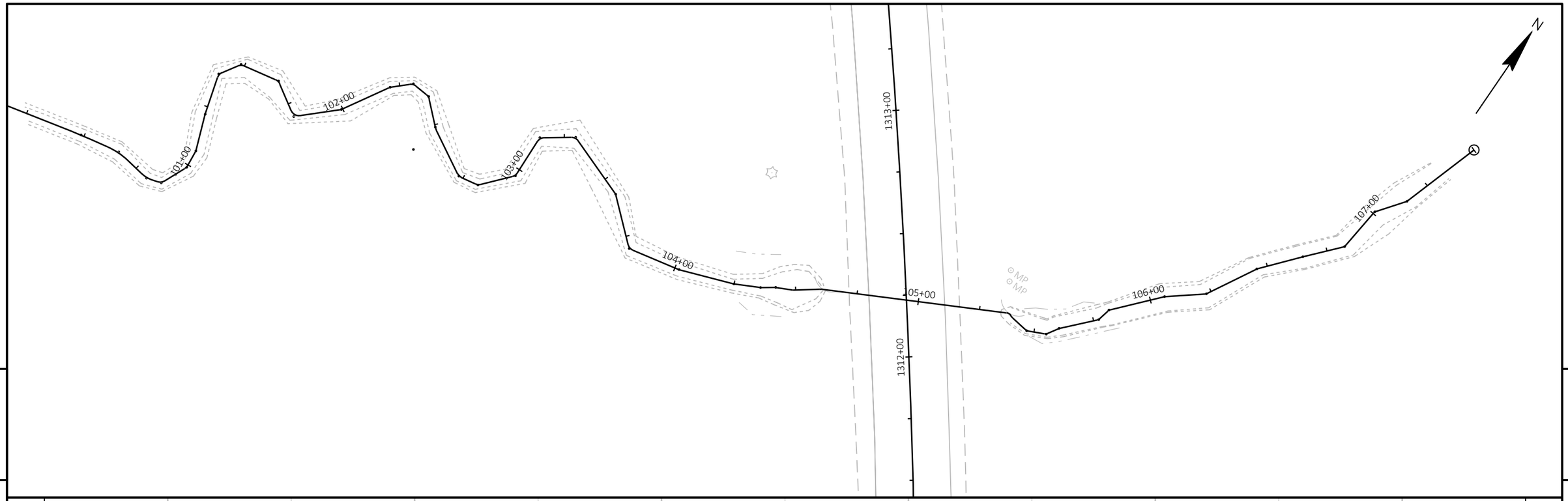
END PROJECT
STA 1322+74
Y=110803.67
X=691190.96
MATCH EXISTING
SAWCUT REQ'D

HENNEBERRY AVENUE

CP 108
STA 1326+34.92, 53.13' RT
Y = 111073.91
X = 690943.75
ELEV = 796.66
1000MM FENO 2" ALUM CAP

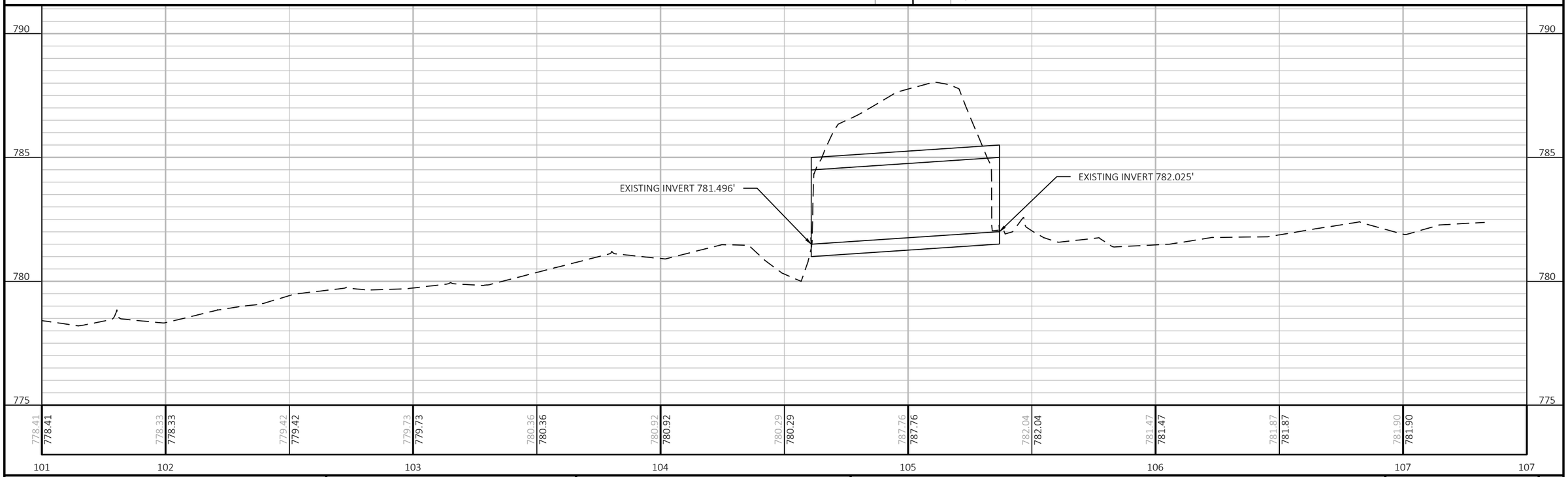
VPI STA 1320+60.00
VPI EL 794.97
VPT STA 1322+35.00
VPT EL 796.28
STA 1322+74.00
EL 796.57
EXISTING PROFILE
0.75%
PROPOSED PROFILE
VCL = 350.00
K = 539.25
EXISTING ELEVATION
PROPOSED ELEVATION

| | | |



5

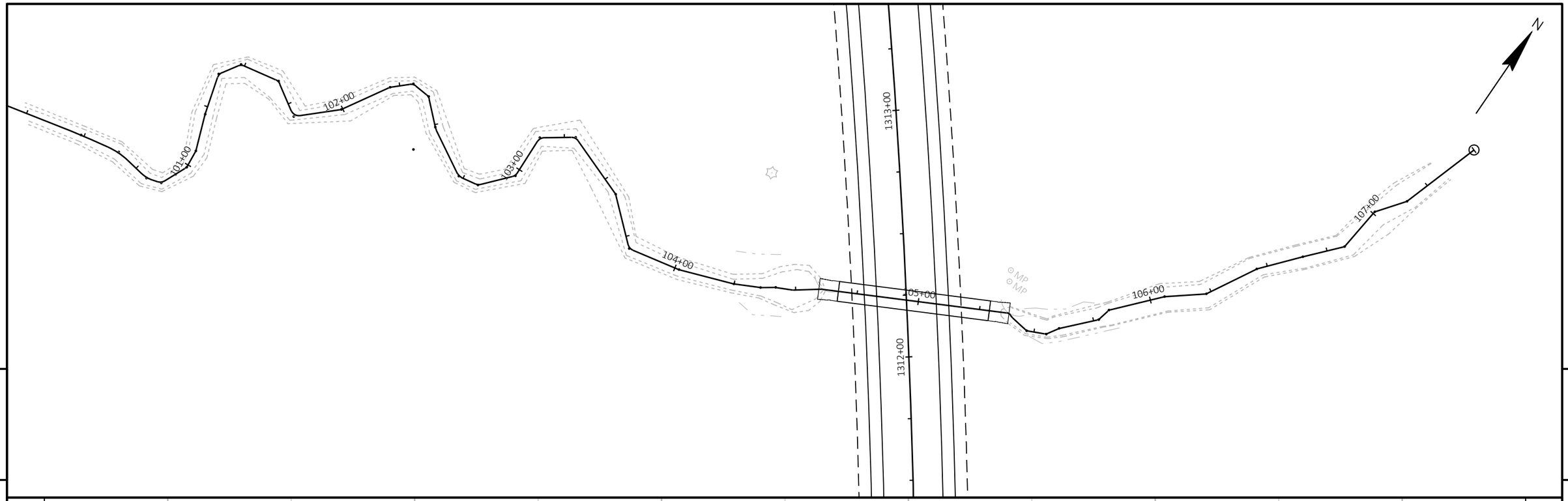
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN AND PROFILE: RIPPLE BROOK - EXISTING CONDITIONS	SHEET 91 E

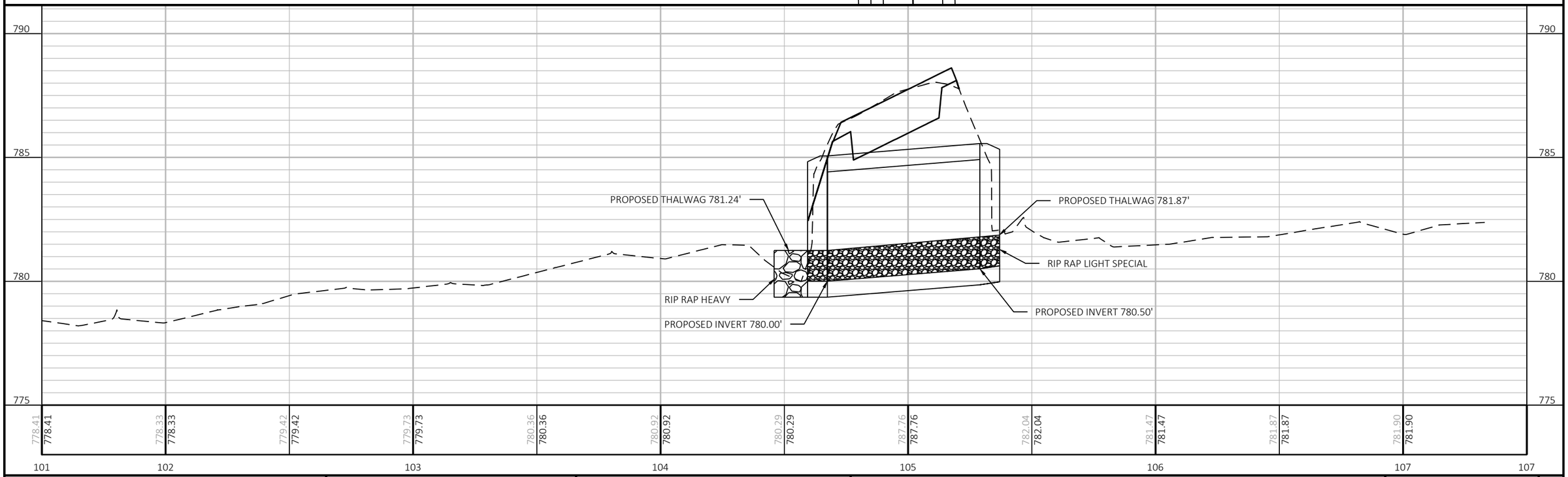
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LAYOUT NAME - 05

PLOT DATE : 1/16/2024 4:07 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:40 FT



5

5



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	PLAN AND PROFILE: RIPPLE BROOK - PROPOSED CONDITIONS	SHEET 92	E

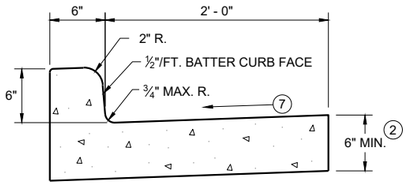
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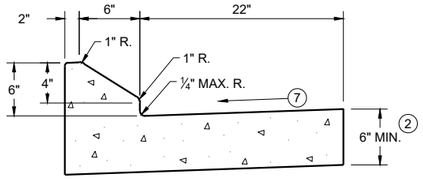
Standard Detail Drawing List

08D01-23A	CONCRETE CURB & GUTTER
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
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E09-06	SILT FENCE
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
09A01-14A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09A01-14B	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"
13A10-03C	SHOULDER RUMBLE STRIPS - ASPHALT SINUSOIDAL
13A10-03D	SHOULDER RUMBLE STRIPS - CONCRETE SINUSOIDAL
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A10-03H	SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES
13A11-04B	CENTERLINE RUMBLE STRIPS - CONCRETE
13A11-04C	CENTERLINE RUMBLE STRIPS - ASPHALT SINUSOIDAL
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-23C	PAVEMENT MARKING (TURN LANES)
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-08A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS

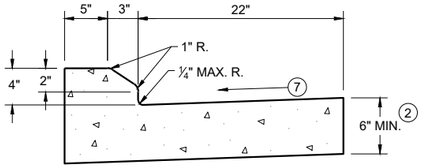
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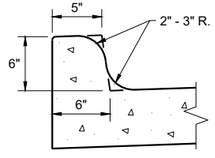
TYPES A (1) & D



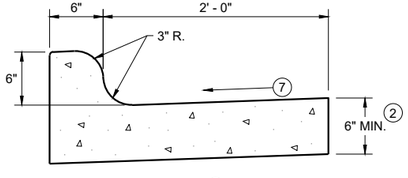
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

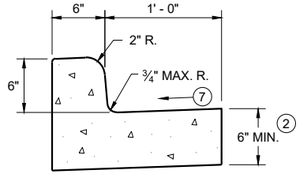


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



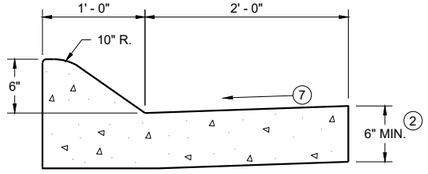
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

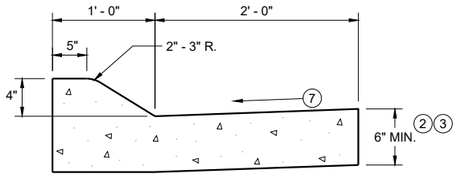


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

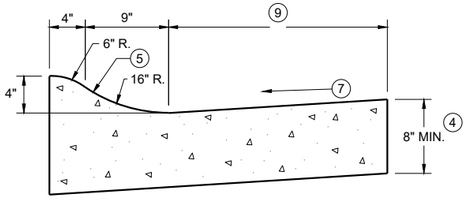


6" SLOPED CURB TYPES A (1) & D



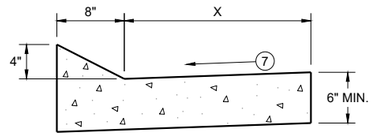
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

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

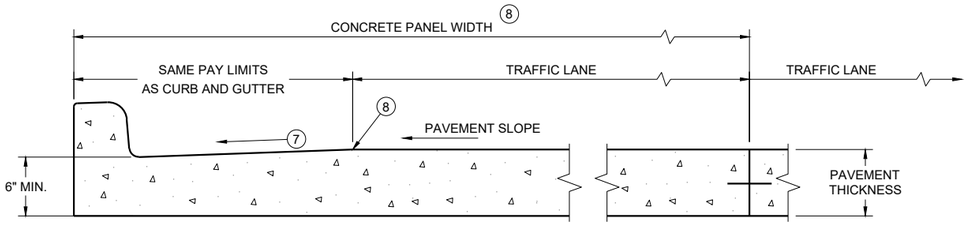


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

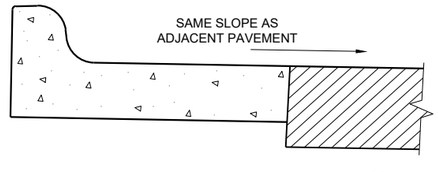
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

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

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

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

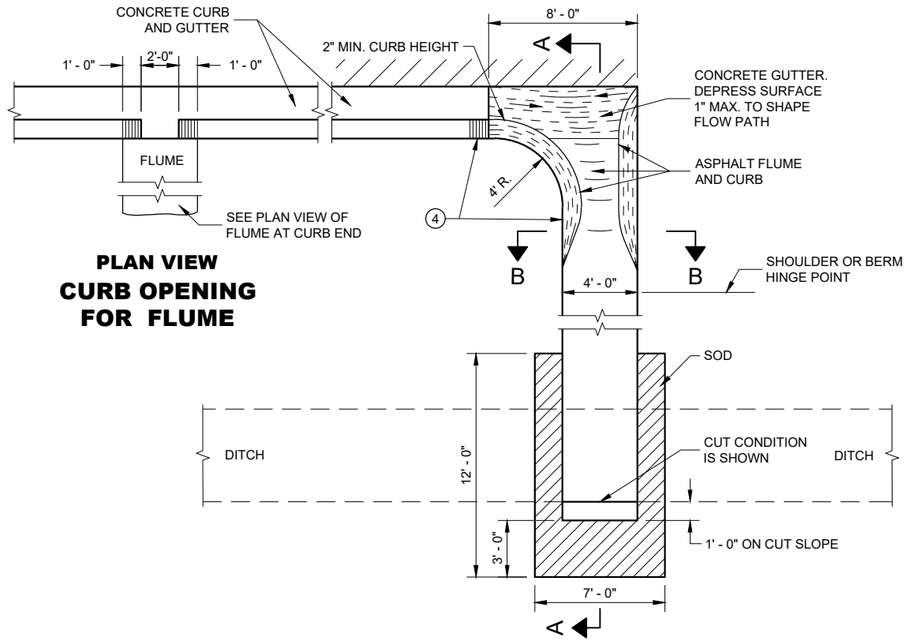
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D01-23a

6

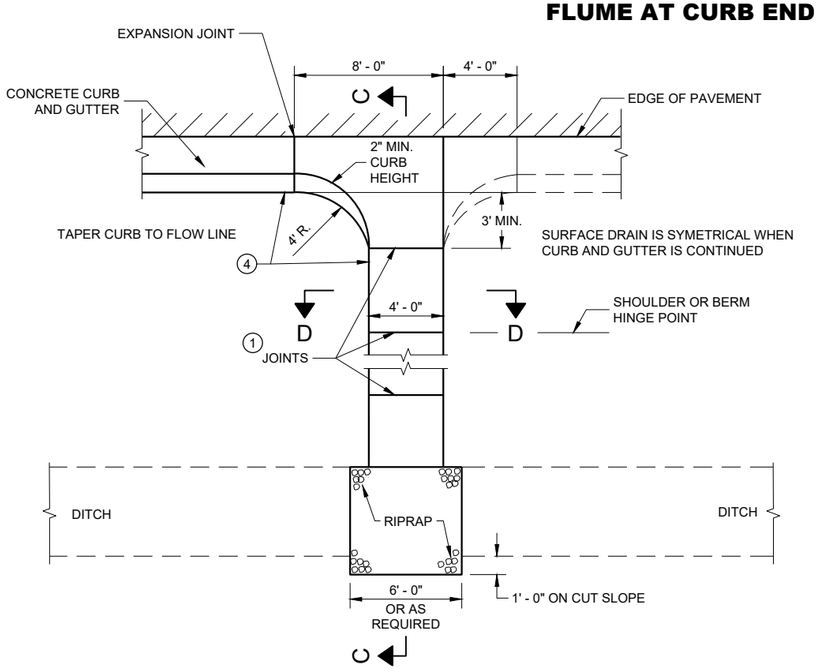
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



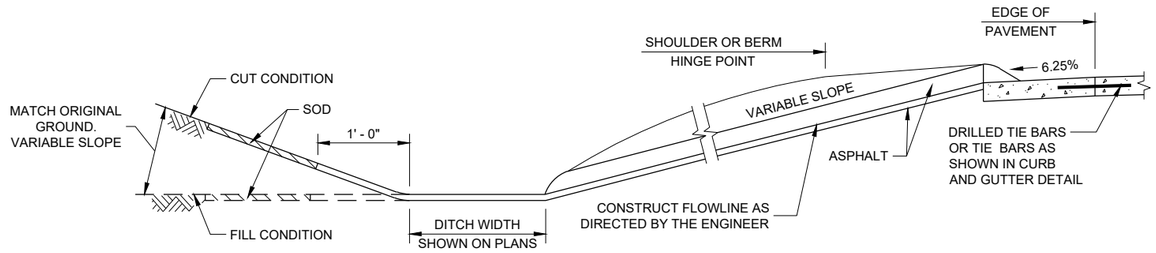
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

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

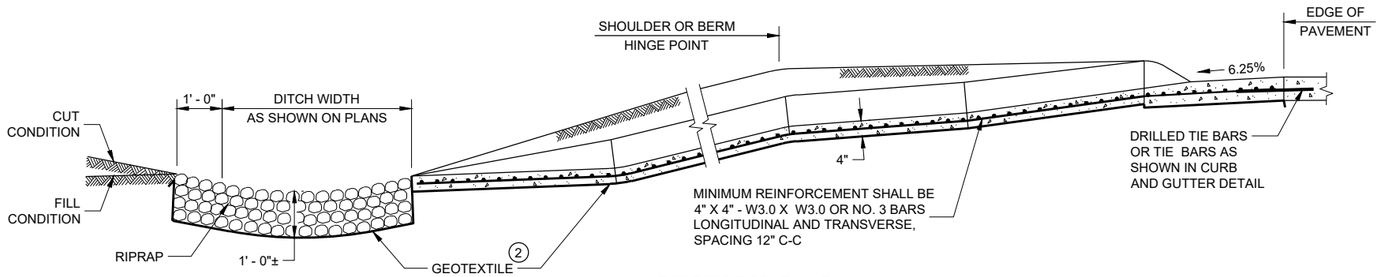
4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

1. JOINTS SHALL BE ⅛" TO ¼" WIDE BY 1½" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
2. GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
3. CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
4. ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.

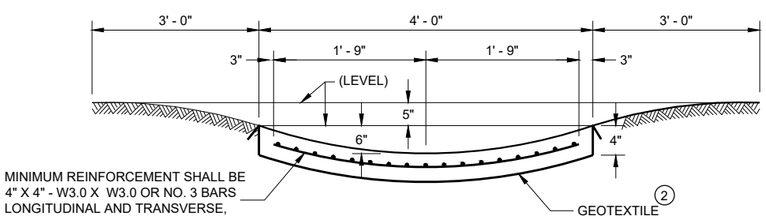


SECTION A - A

SECTION B - B



SECTION C - C



SECTION D - D

CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

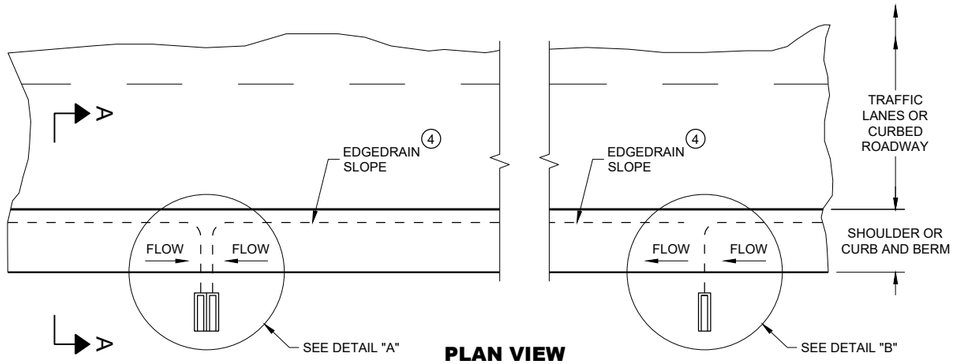
FHWA

6

SDD 08D04 - 07

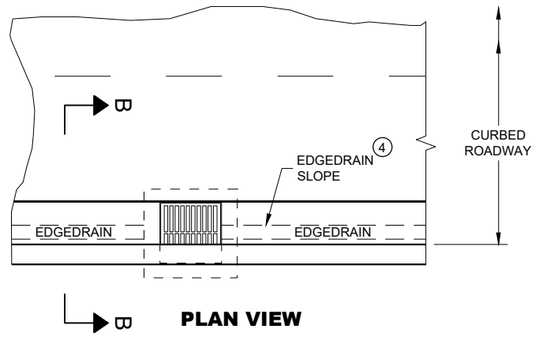
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SDD 08D04 - 07



PLAN VIEW

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



PLAN VIEW

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:

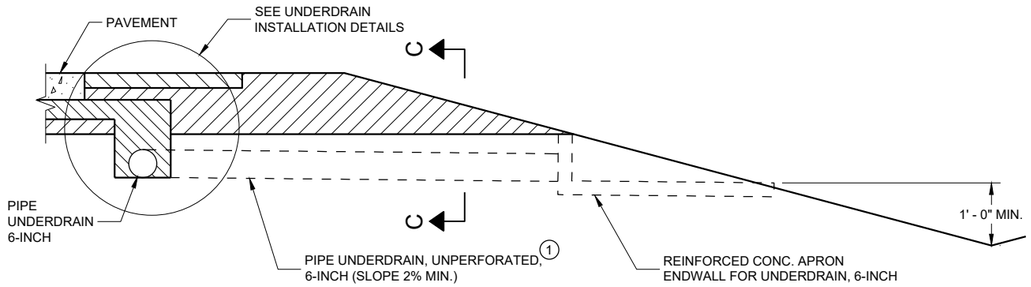
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

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.

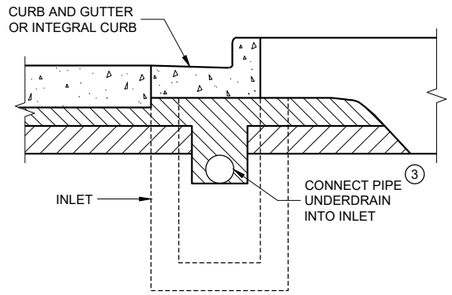
(3) EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.

(4) EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



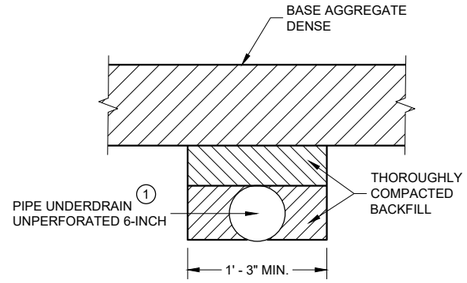
SECTION A - A

RURAL CROSS SECTION



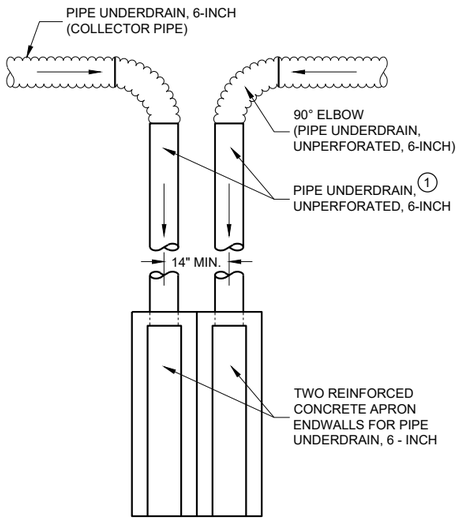
SECTION B - B

URBAN CROSS SECTION

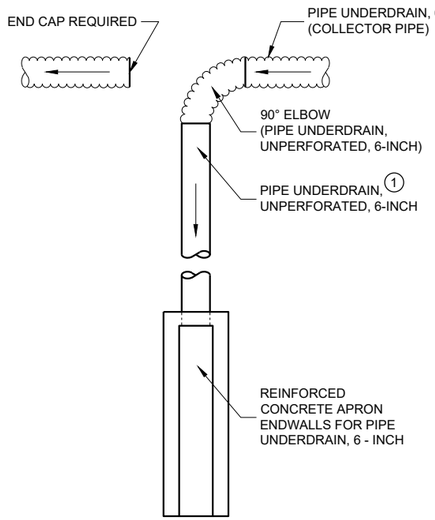


SECTION C - C

TRENCH FOR OUTFALL PIPE

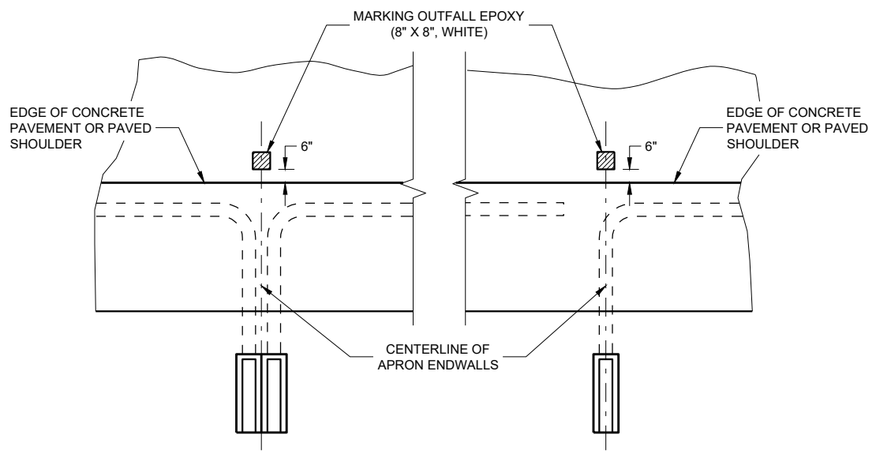


DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS



DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



LOW POINT LOCATIONS — INTERMEDIATE LOCATIONS

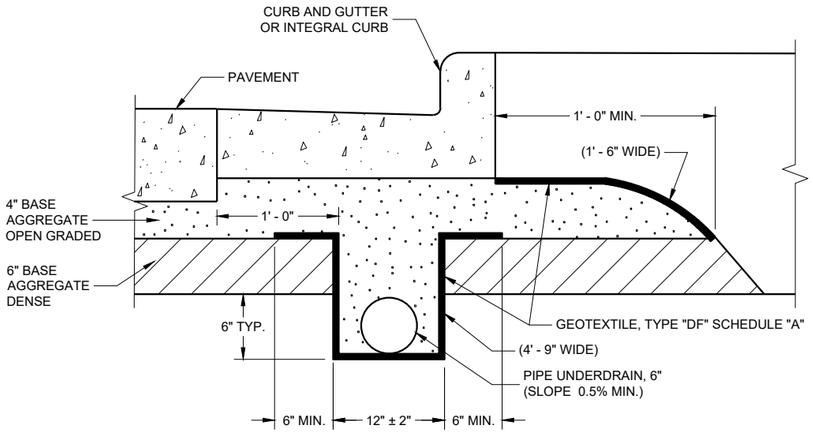
PAVEMENT MARKINGS FOR OUTFALL MARKERS

EDGEDRAIN OUTLET AND OUTFALL MARKERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD08D15 - 05a
SDD08D15 - 05a



EDGEDRAIN IN URBAN ROADWAY

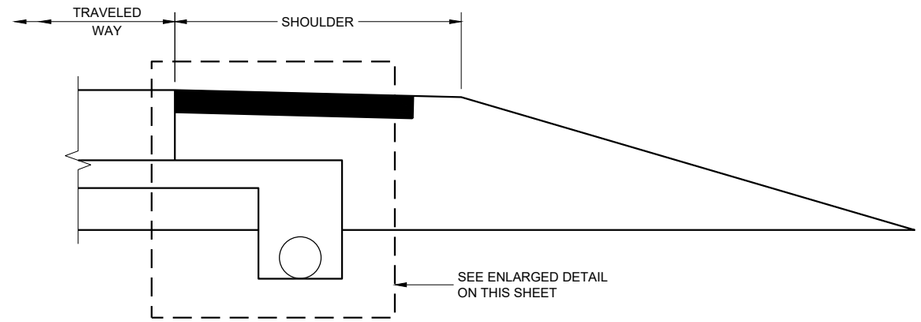
GENERAL NOTES

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.

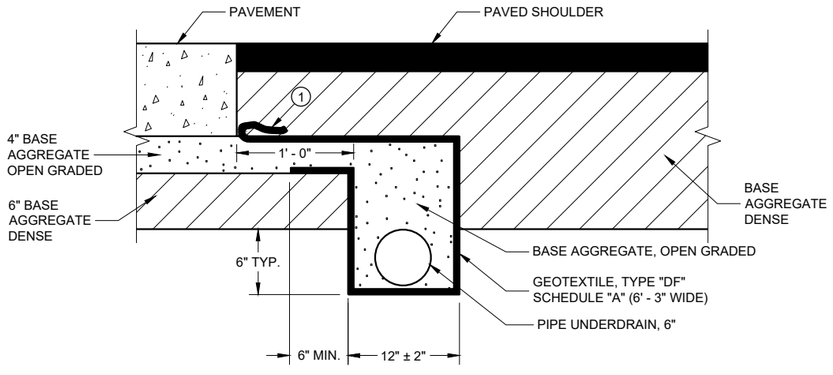
(1) FOLD OVER EXCESS GEOTEXTILE AT THIS LOCATION.

(2) TOTAL GEOTEXTILE WIDTH IS 6'-3" FOR PAYMENT.



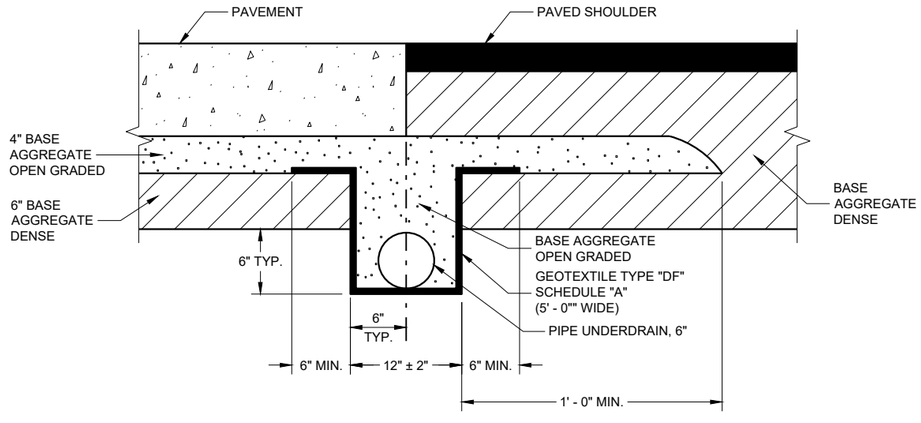
RURAL CROSS SECTION

6



POST PAVING INSTALLATION

(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

6

SDD 08D15 - 05b

EGEDRAIN AND BASE AGGREGATE OPEN GRADED

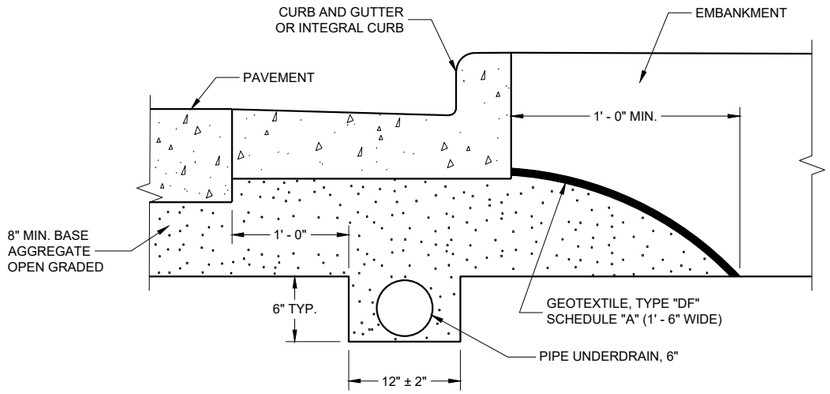
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

SDD 08D15 - 05b

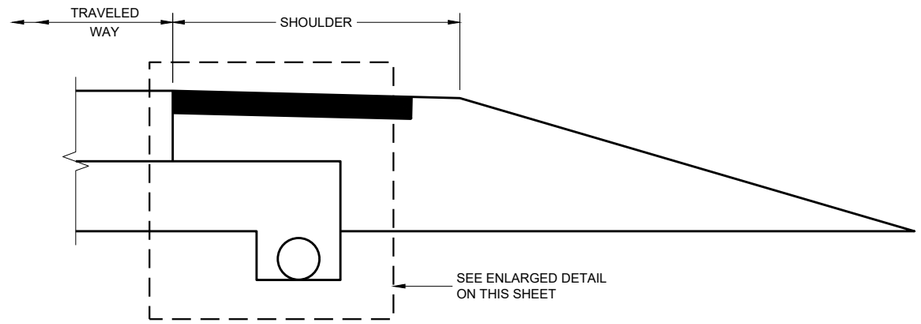
GENERAL NOTES

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

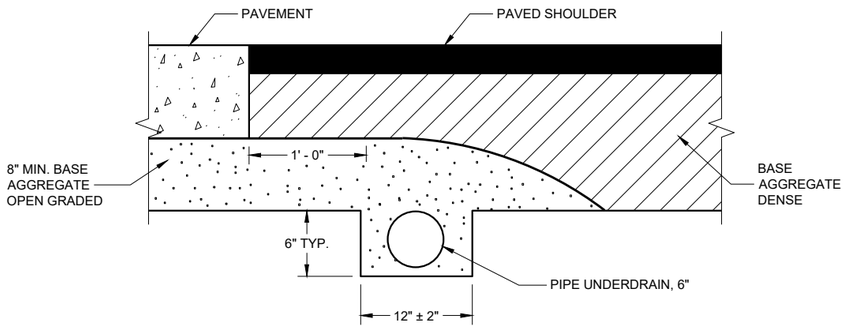
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.



EDGEDRAIN IN URBAN ROADWAY

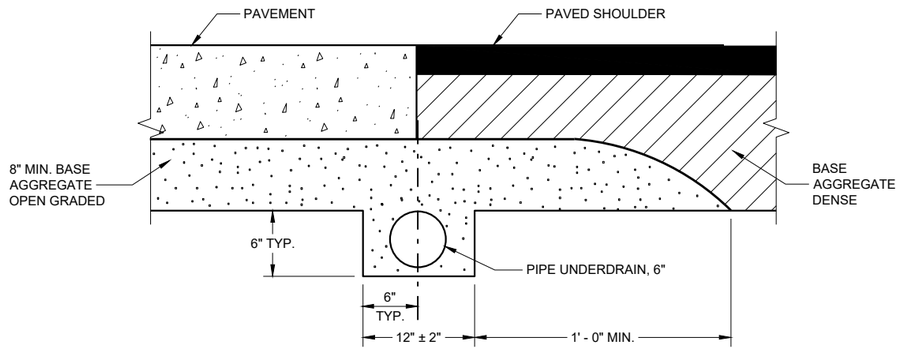


RURAL CROSS SECTION



POST PAVING INSTALLATION

(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

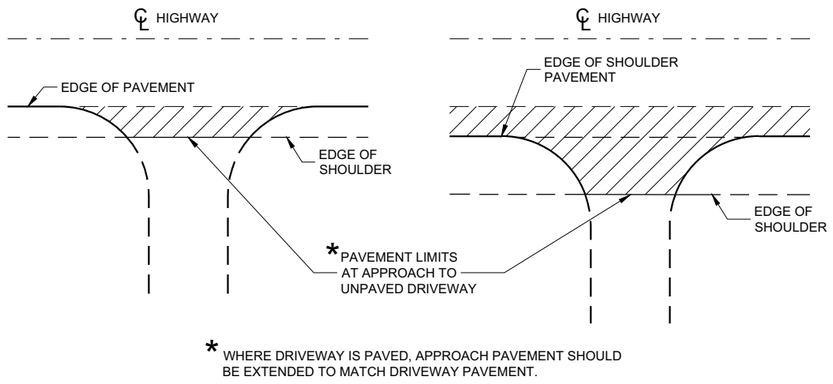
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

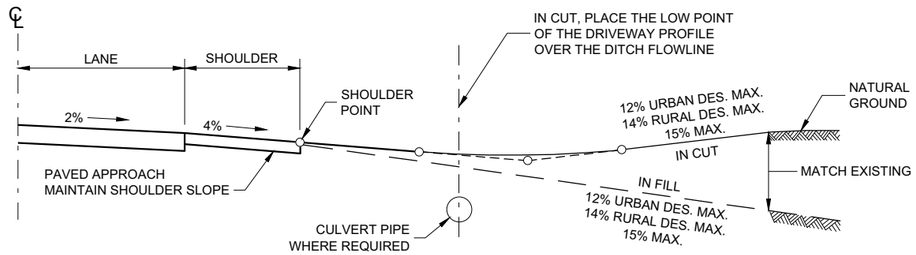
SDD 08D15 - 05c



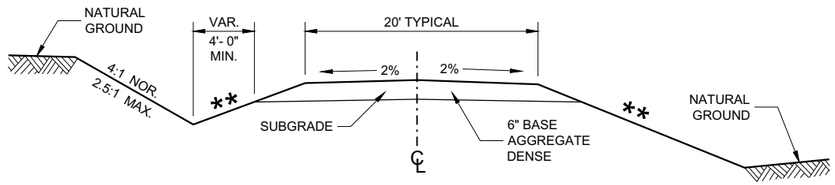
PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

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



TYPICAL DRIVEWAY PROFILES

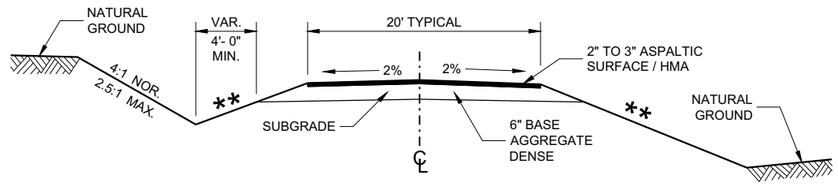


IN CUT **IN FILL**

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



IN CUT **IN FILL**

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE ASPHALTIC SURFACE

6

SDD 08D21 - 01

6

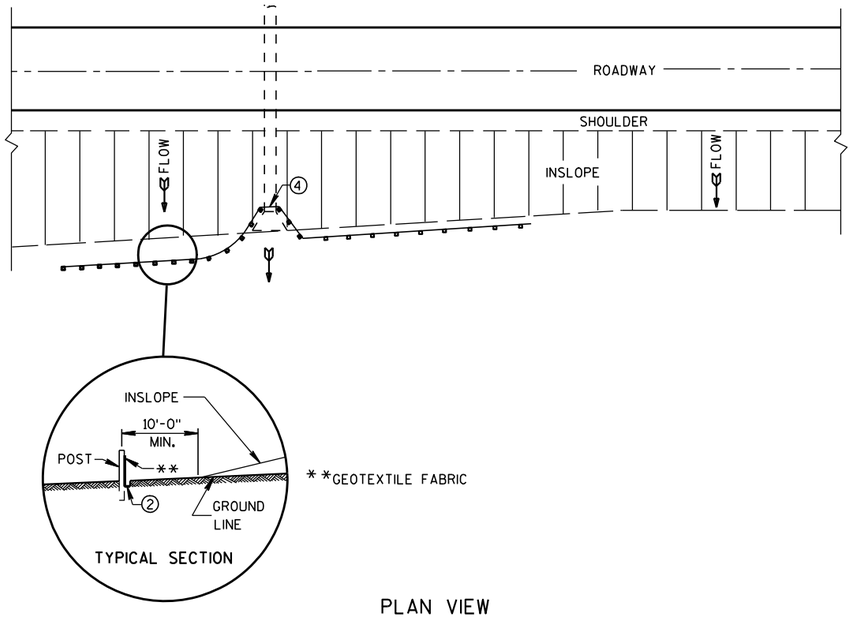
SDD 08D21 - 01

DRIVEWAYS WITHOUT CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

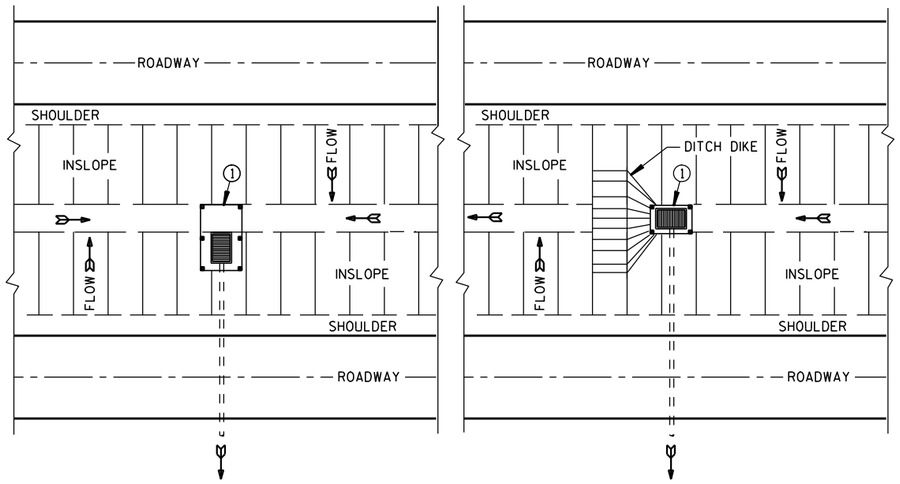
APPROVED
December 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

FHWA



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



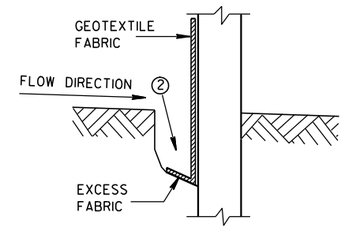
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

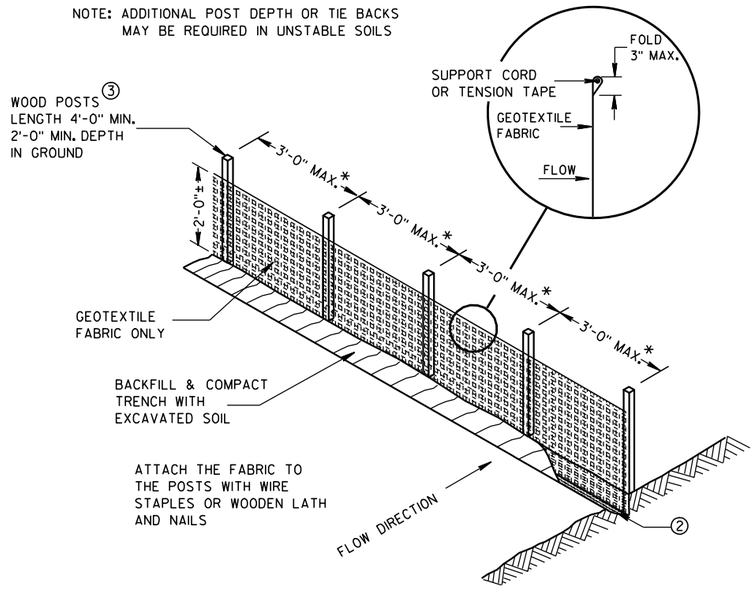
GENERAL NOTES

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

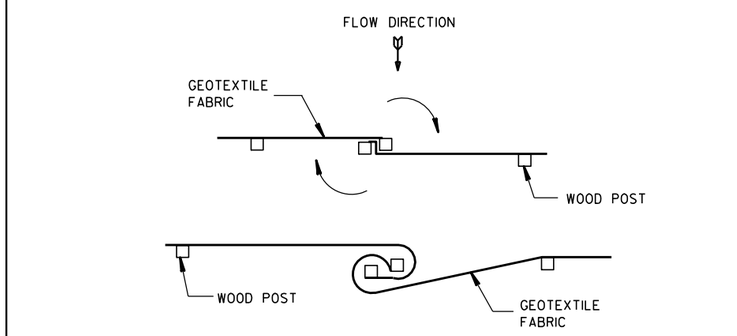
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



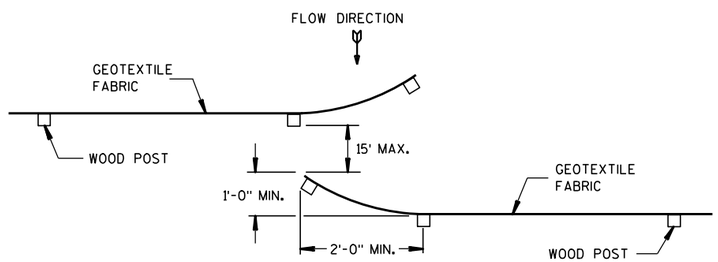
TRENCH DETAIL



SILT FENCE

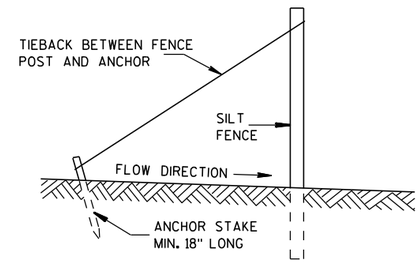


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

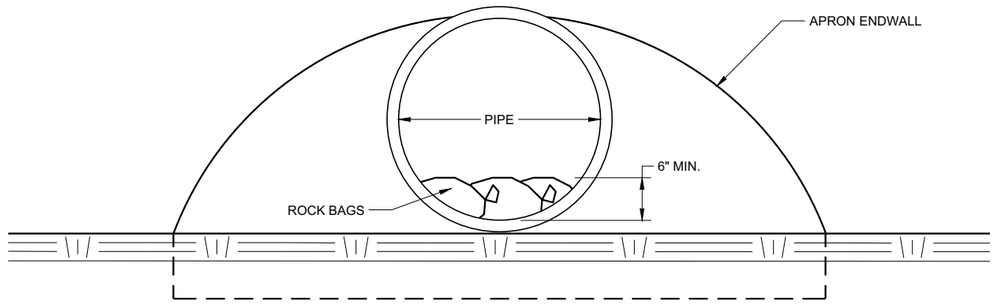
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

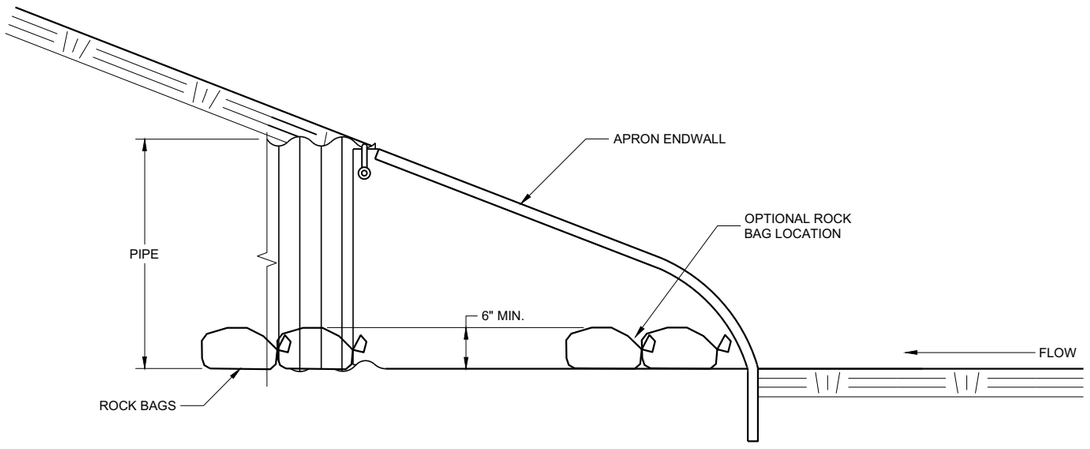
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



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
FHWA	101

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SDD 08E15 - 01

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SDD 08E15 - 01

METAL APRON ENDWALLS

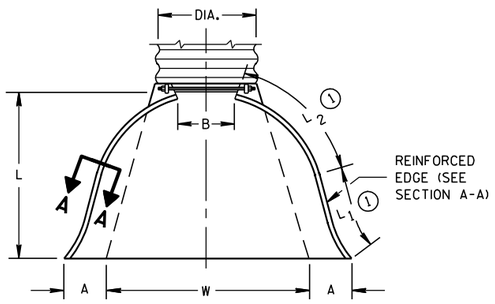
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

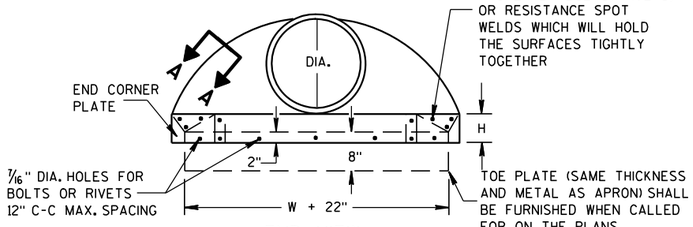
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	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 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

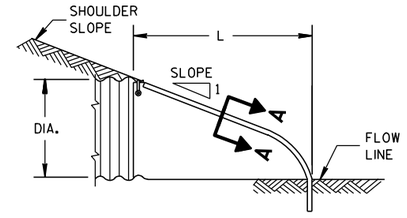
*MINIMUM
**MAXIMUM



PLAN VIEW

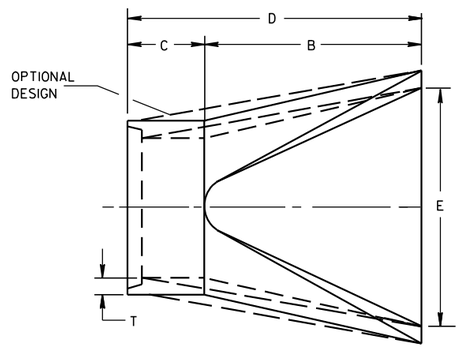


END VIEW

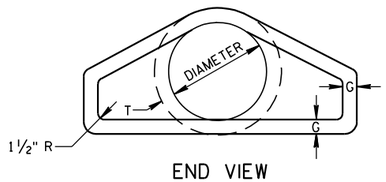


SIDE ELEVATION

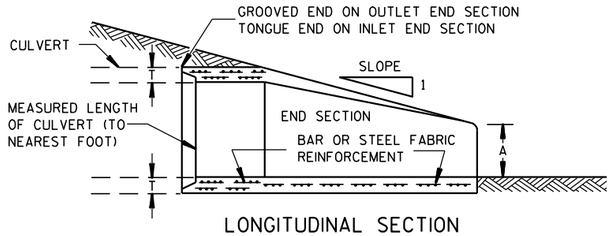
METAL ENDWALLS



PLAN

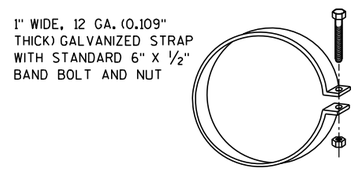


END VIEW



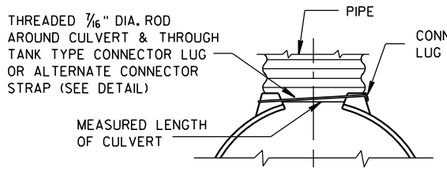
LONGITUDINAL SECTION

CONCRETE ENDWALLS

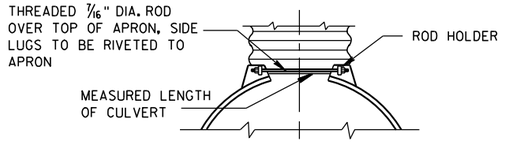


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

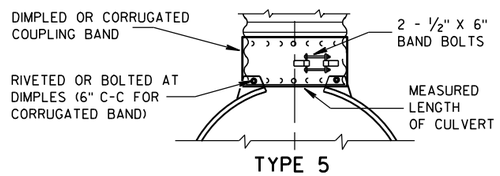


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

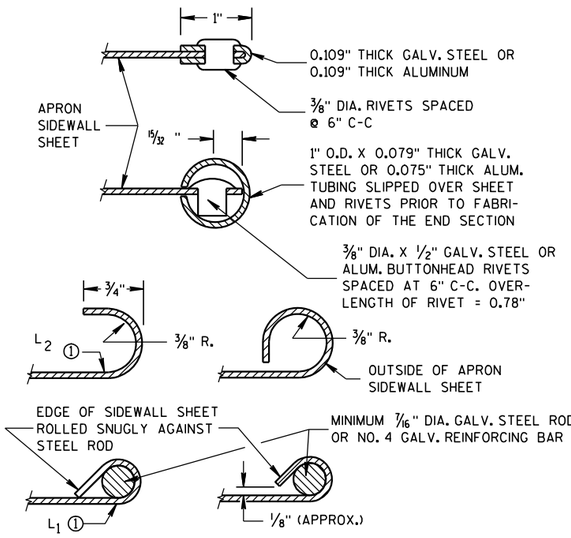
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

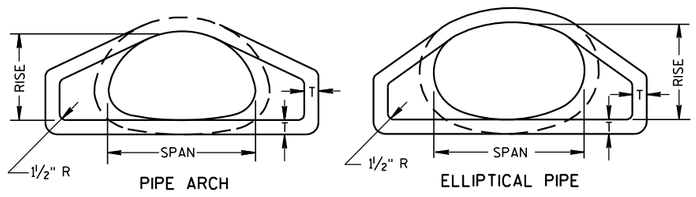
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

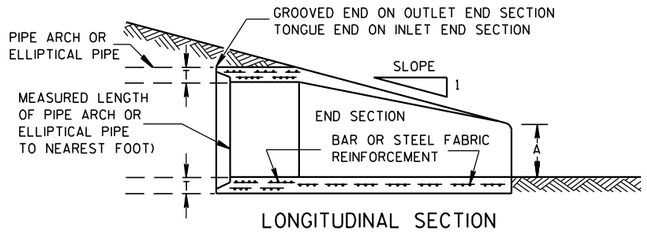
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

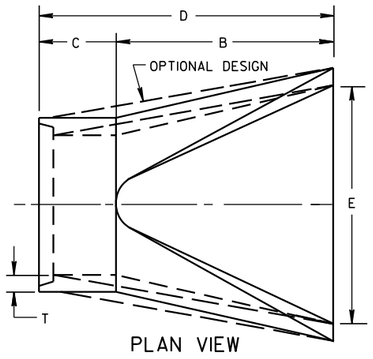
6
S.D.D. 8 F 1-11



END VIEW

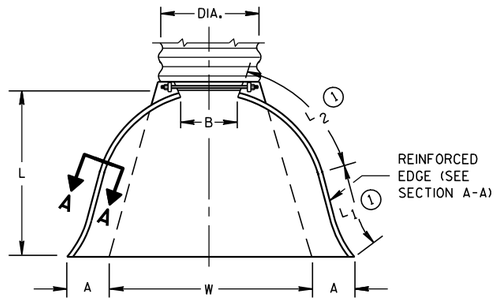


LONGITUDINAL SECTION

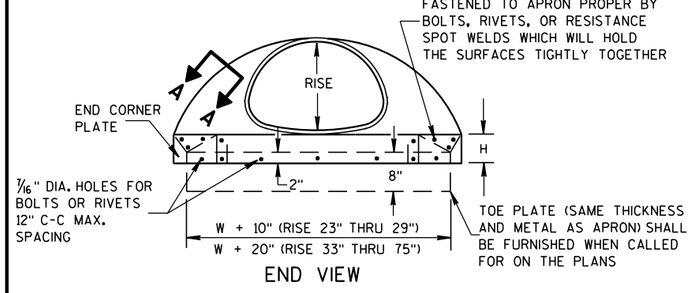


PLAN VIEW

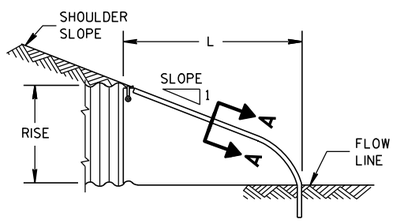
CONCRETE ENDWALLS



PLAN VIEW

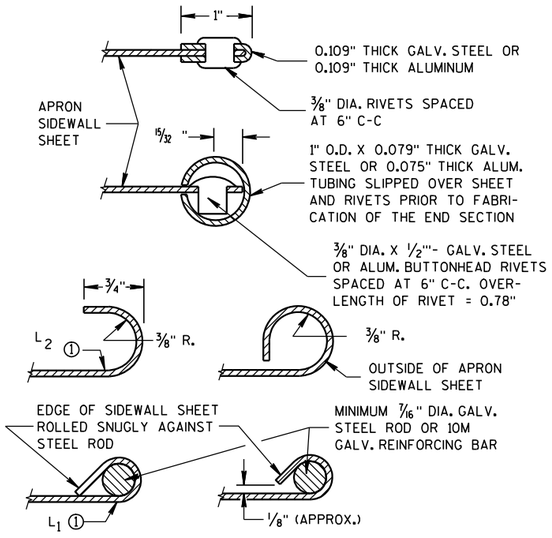


END VIEW



SIDE ELEVATION

METAL ENDWALLS



SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
15	17	13	.064	.060	7	9	6	19	14	16	30	2½ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19⅜	36	2½ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21¾	42	2½ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27½	48	2½ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37⅝	60	2½ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45⅜	75	2½ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54¾	85	2½ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2½ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72¾	102	2¼ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82¼	114	2¼ 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) SPAN	(Inches) RISE	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ 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	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

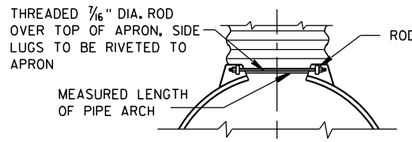
REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	29	18	3	8½	39	33	72	48	3 to 1
30	36	22	3½	9½	50	46	96	60	3 to 1
36	44	27	4	11⅛	60	36	96	72	3 to 1
42	51	31	4½	15 13/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5½	25½	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	28½	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

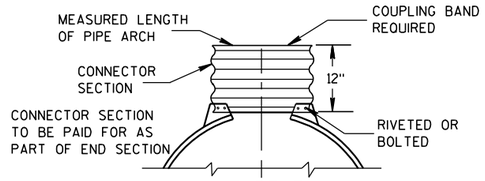
EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	30	19	3¼	8½	39	33	72	48	3 to 1
30	38	24	3¾	9½	54	18	72	60	3 to 1
36	45	29	4½	11⅛	60	24	84	72	2½ to 1
42	53	34	5	15¾	60	36	96	78	2½ to 1
48	60	38	5½	21	60	36	96	84	2½ to 1
54	68	43	6	25½	60	36	96	90	2½ to 1
60	76	48	6½	30	60	36	96	96	2½ to 1

**NOMINAL SIZE



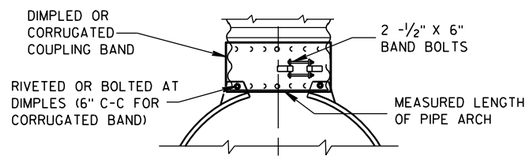
TYPE 2

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

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER

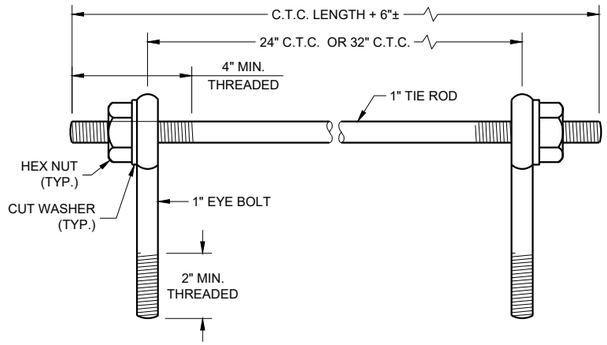
FHWA

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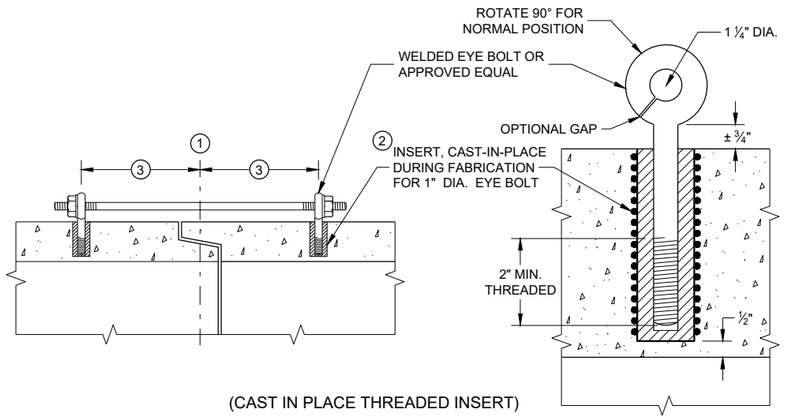
S.D.D. 8 F 2-1

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S.D.D. 8 F 2-1



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 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 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.

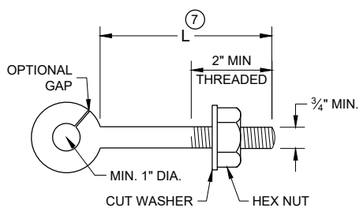
(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

(4) BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

(5) OPENING TO BE ROD DIAMETER PLUS 1 INCH.

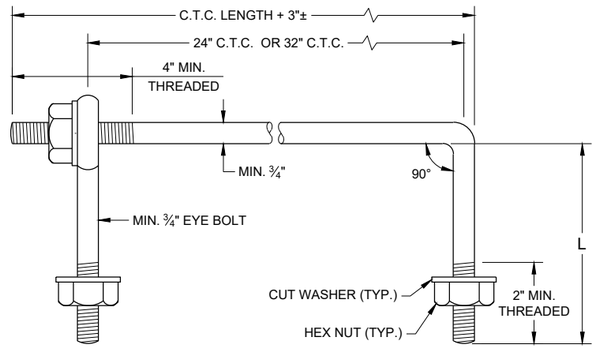
(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

(7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

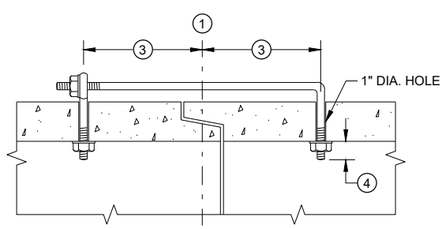


EYE BOLT (7)

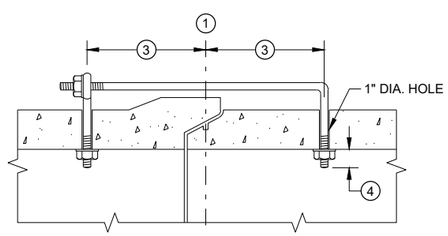
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

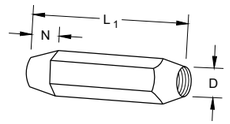
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

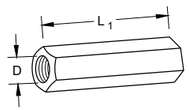
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



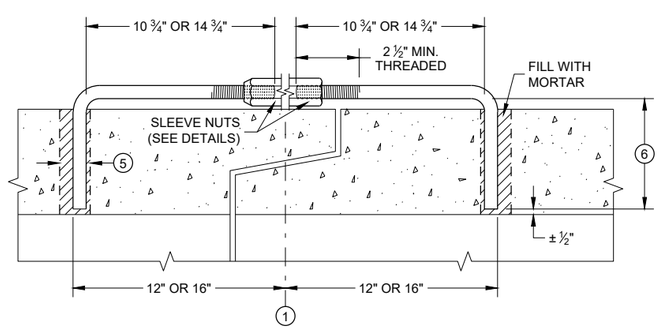
TAPERED



PLAIN

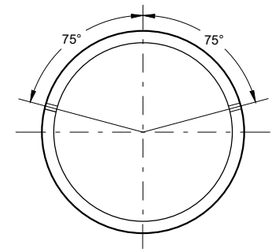
RIGHT AND LEFT THREADS

SLEEVE NUTS



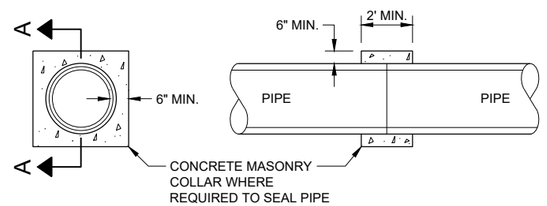
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

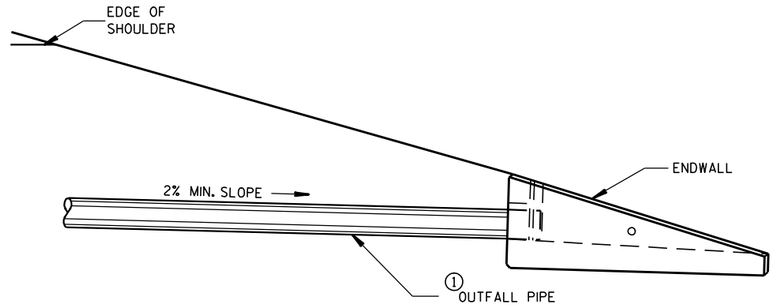
FHWA

SDD 08F04 - 08

SDD 08F04 - 08

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.

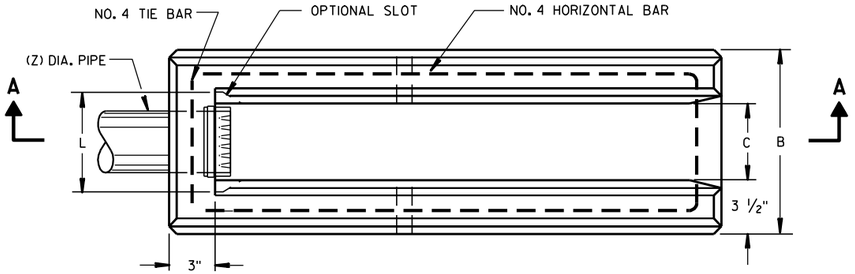
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

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.

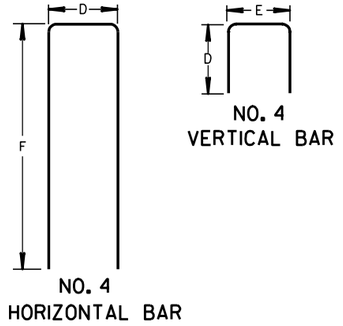
① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE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

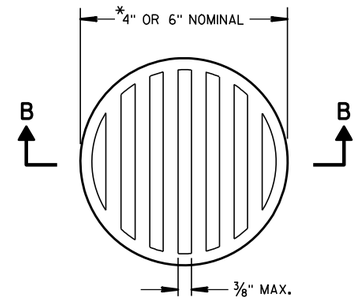
② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL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

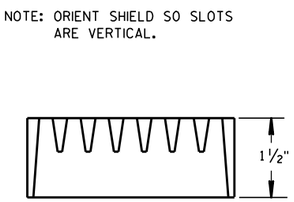


PLAN VIEW



BAR STEEL REINFORCEMENT DETAILS

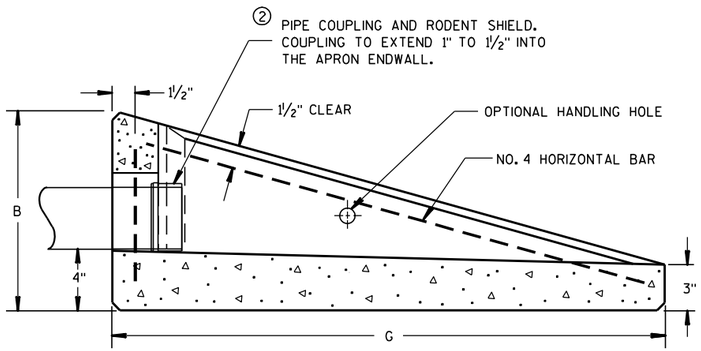




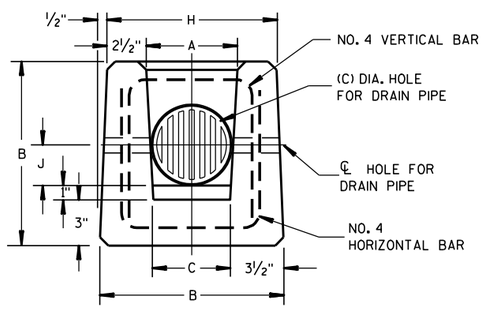
SECTION B-B

② RODENT SHIELD

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



SECTION A-A



END VIEW

CONCRETE APRON ENDWALL FOR UNDERDRAIN

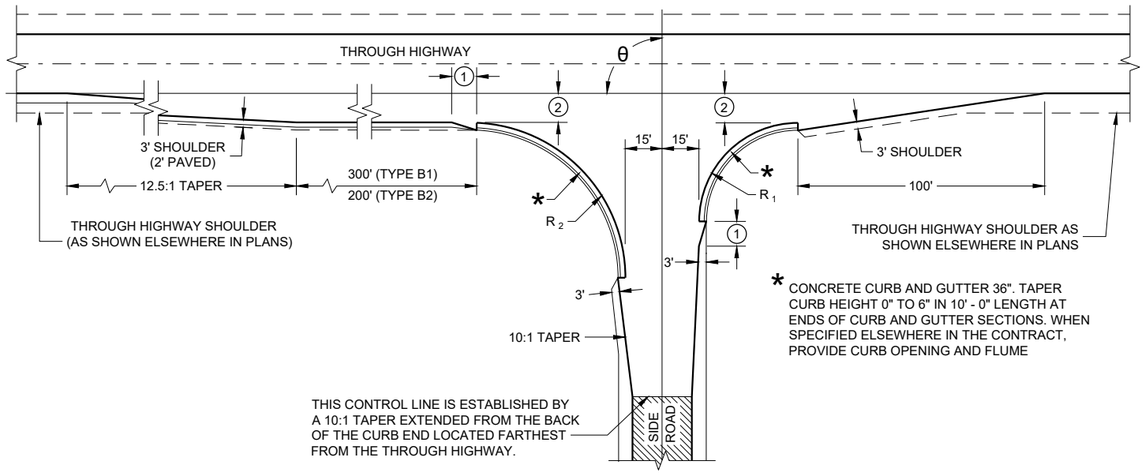
REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/10/98 DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 6-4



* CONCRETE CURB AND GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10' - 0" LENGTH AT ENDS OF CURB AND GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME

TYPE "B1" AND "B2"

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

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

GENERAL NOTES

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

SIDE ROAD SURFACING NOTE

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

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

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

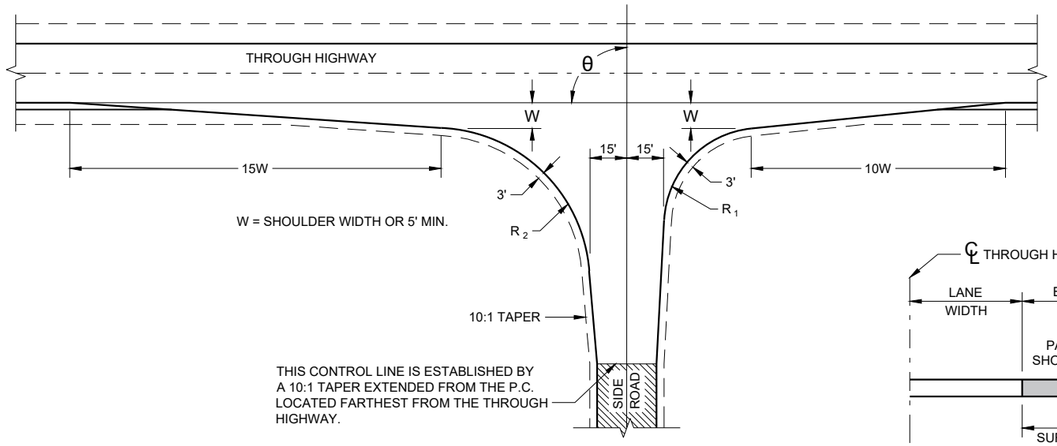
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

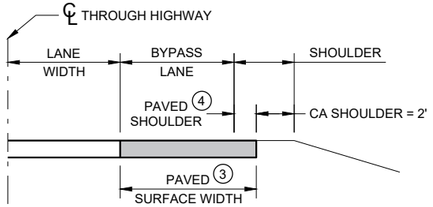
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
- ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH
- PC CONCRETE = 13-FT PLUS PAVED SHOULDER WIDTH

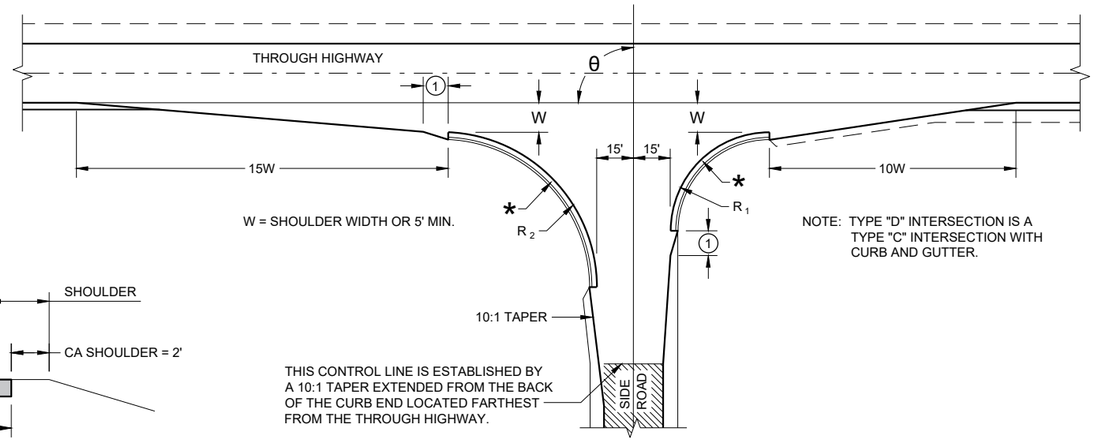
(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



TYPE "C"

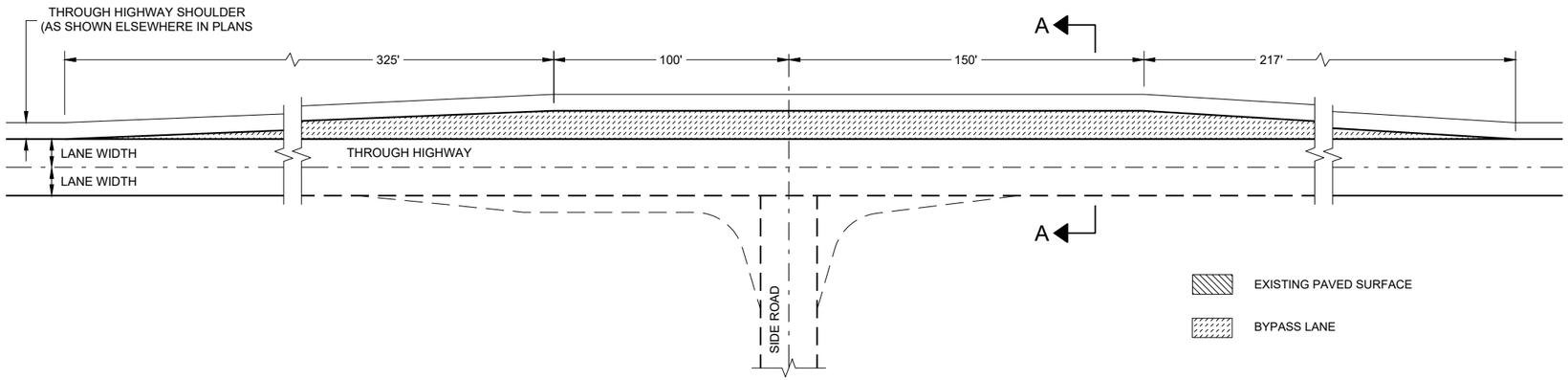


SECTION A - A
(SHOWING BYPASS LANE AND SHOULDER)



NOTE: TYPE "D" INTERSECTION IS A TYPE "C" INTERSECTION WITH CURB AND GUTTER.

TYPE "D"



TEE INTERSECTION BYPASS LANE DETAIL

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

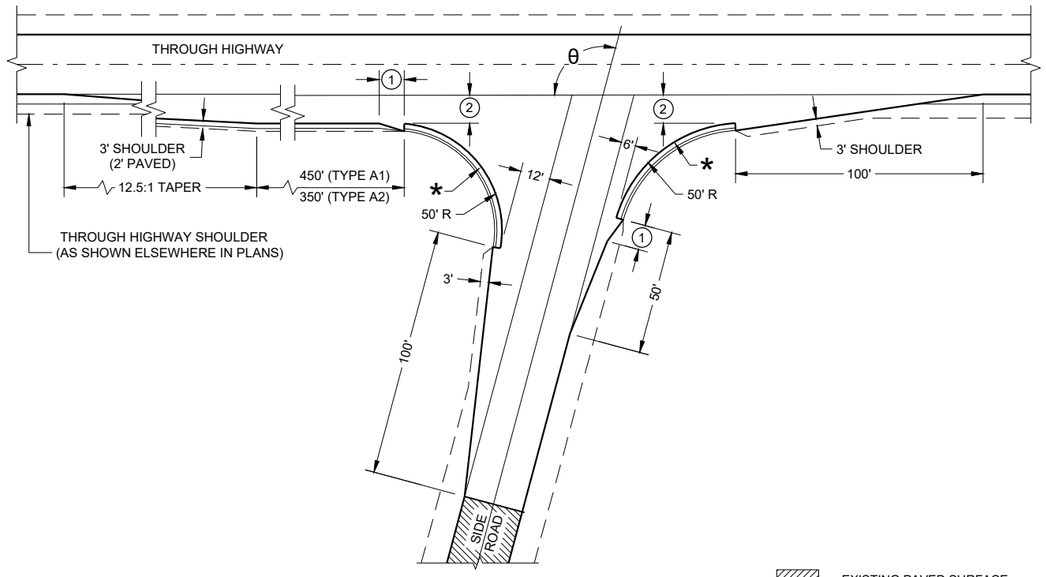
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

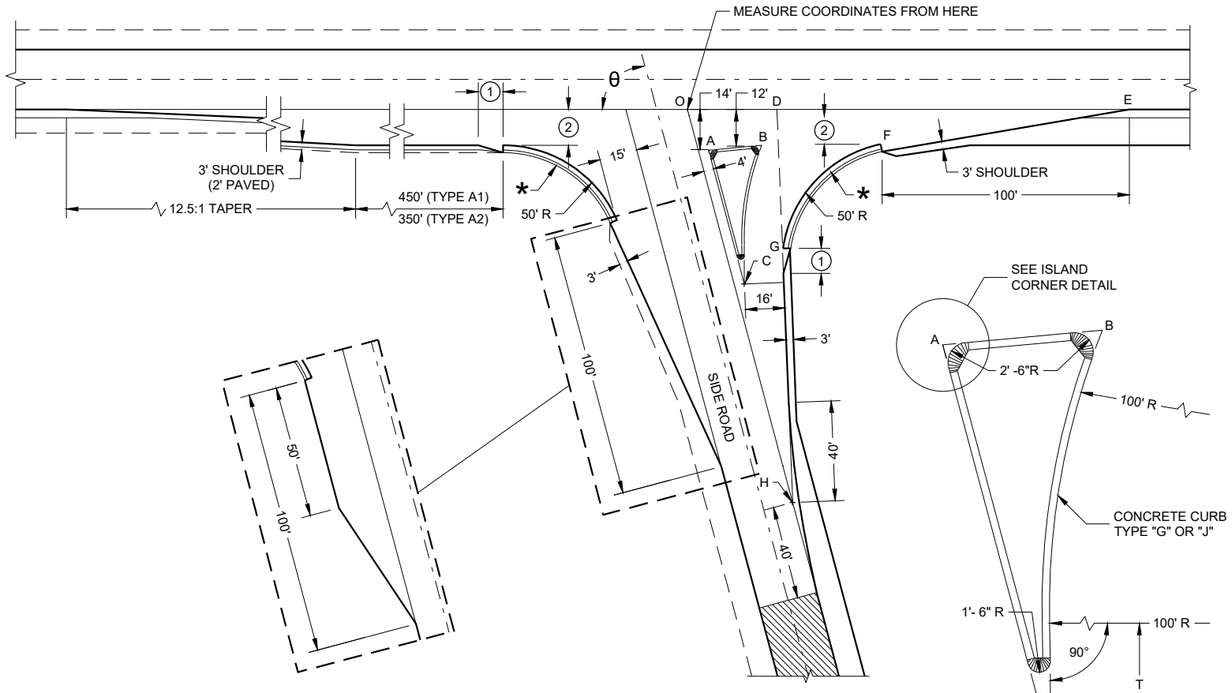
SDD 09A01 - 14a

6

SDD 09A01 - 14a

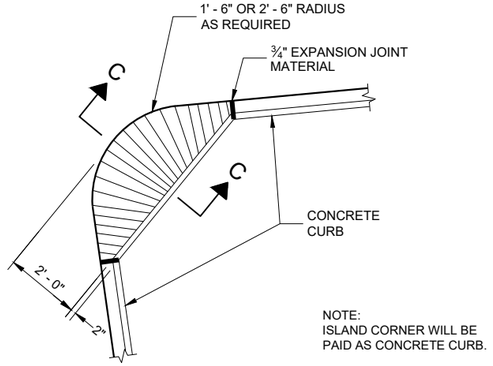


θ = MORE THAN 80°



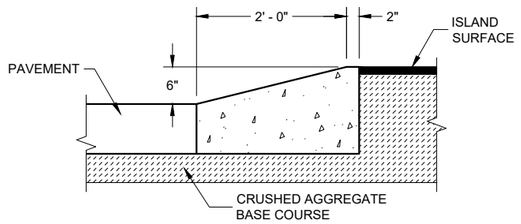
SIDE ROAD WIDENING AND TAPER REQUIRED WHERE THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC
θ = ACUTE ANGLES 70° OR LESS

θ = ACUTE ANGLES 80° OR LESS



NOTE:
ISLAND CORNER WILL BE
PAID AS CONCRETE CURB.

PLAN VIEW



SECTION C - C

ISLAND CORNER DETAIL

(TO BE CONSTUCTED AT ALL ISLAND CORNERS)

TABLE OF DIMENSIONS FOR VARIABLE SIDE ROAD INTERSECTION ANGLES

(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

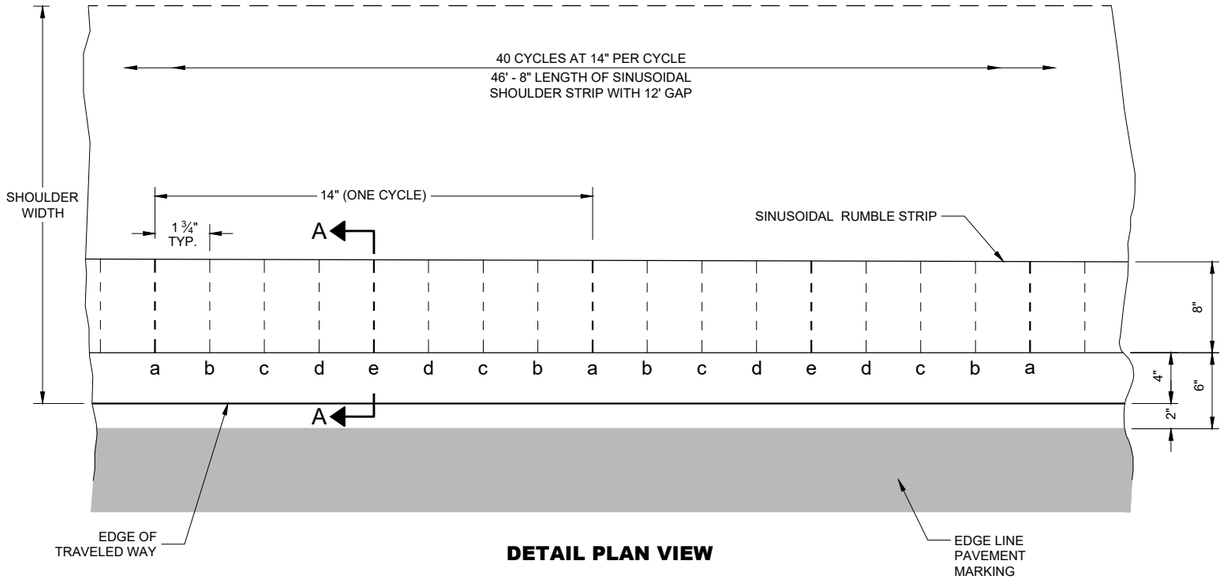
APPROVED
November 2022 — DATE
/S/ John Jenkins — ROADWAY STANDARDS DEVE ENGINEER

FHWA

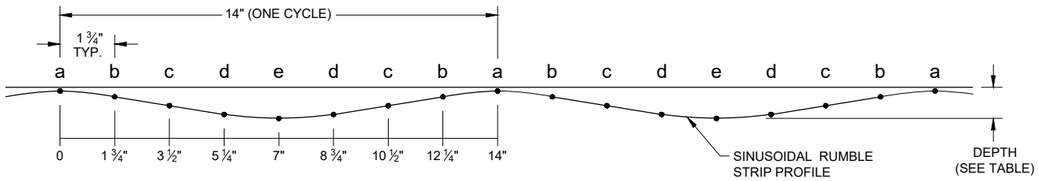
SDD 09A01 - 14b

6

SDD 09A01 - 14b



DETAIL PLAN VIEW



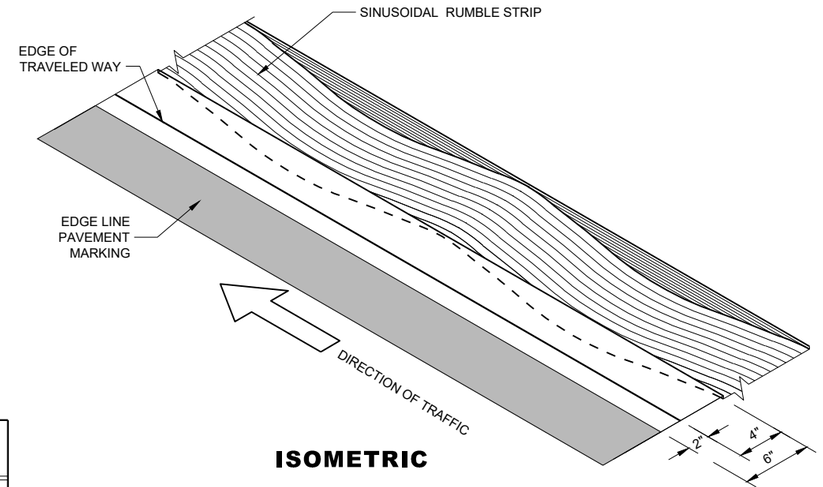
PROFILE VIEW

LOCATION	DEPTH (INCHES)
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"

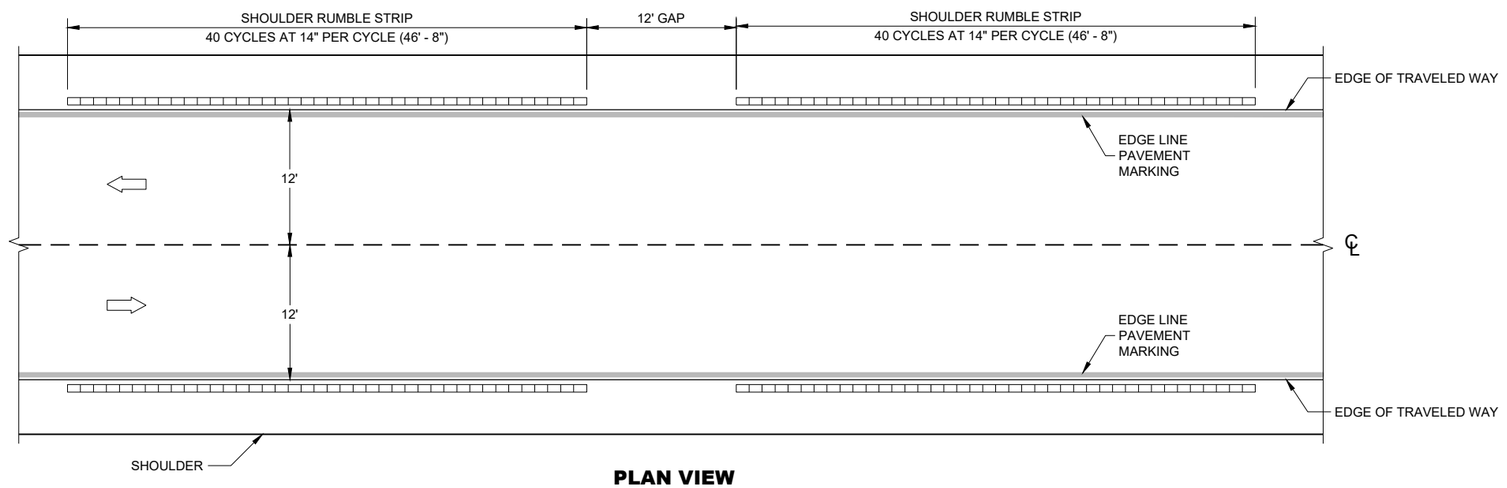
GENERAL NOTES

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

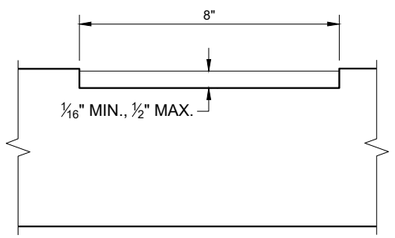
SHOULDER RUMBLE STRIPS MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



PLAN VIEW



SECTION A - A

SHOULDER RUMBLE STRIPS - ASPHALT, SINUSOIDAL

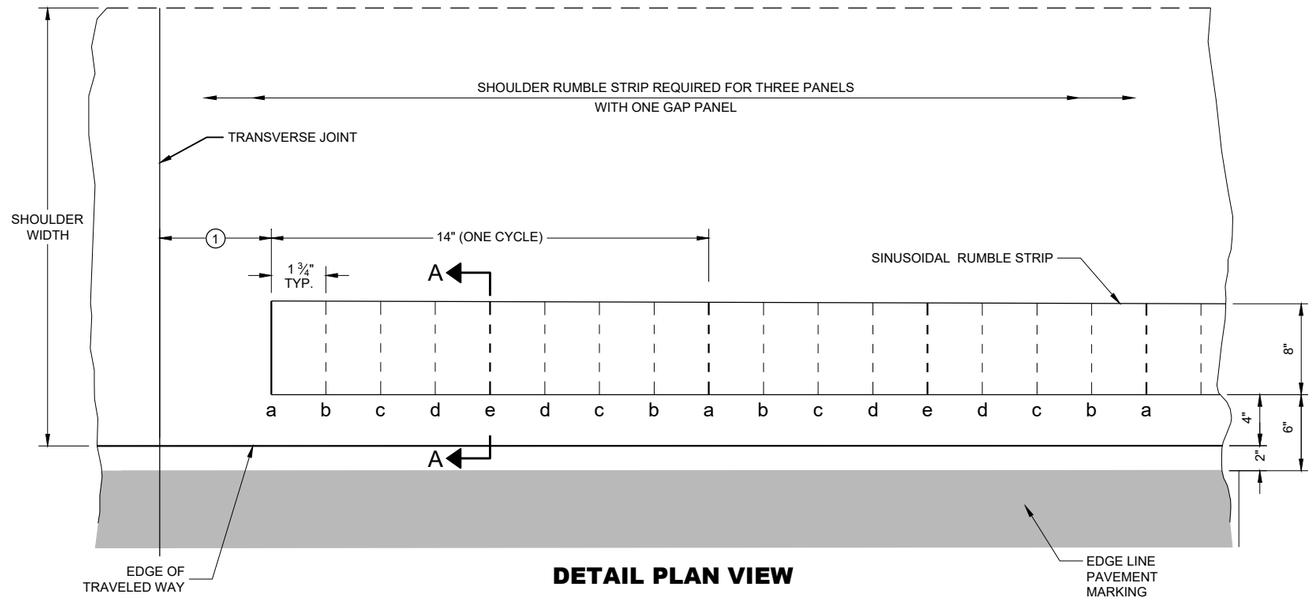
SHOULDER RUMBLE STRIPS - ASPHALT, SINUSOIDAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

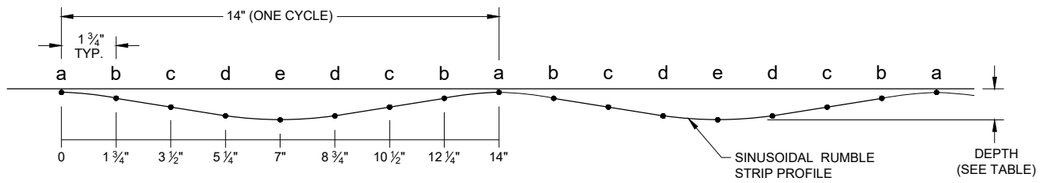
6

SDD 13A10 - 03c

SDD 13A10 - 03c



DETAIL PLAN VIEW



DETAIL PROFILE VIEW

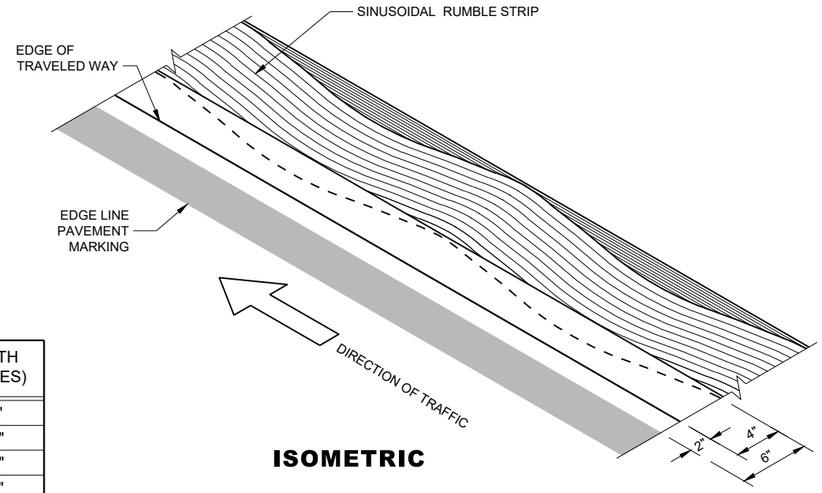
LOCATION	DEPTH (INCHES)
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"

GENERAL NOTES

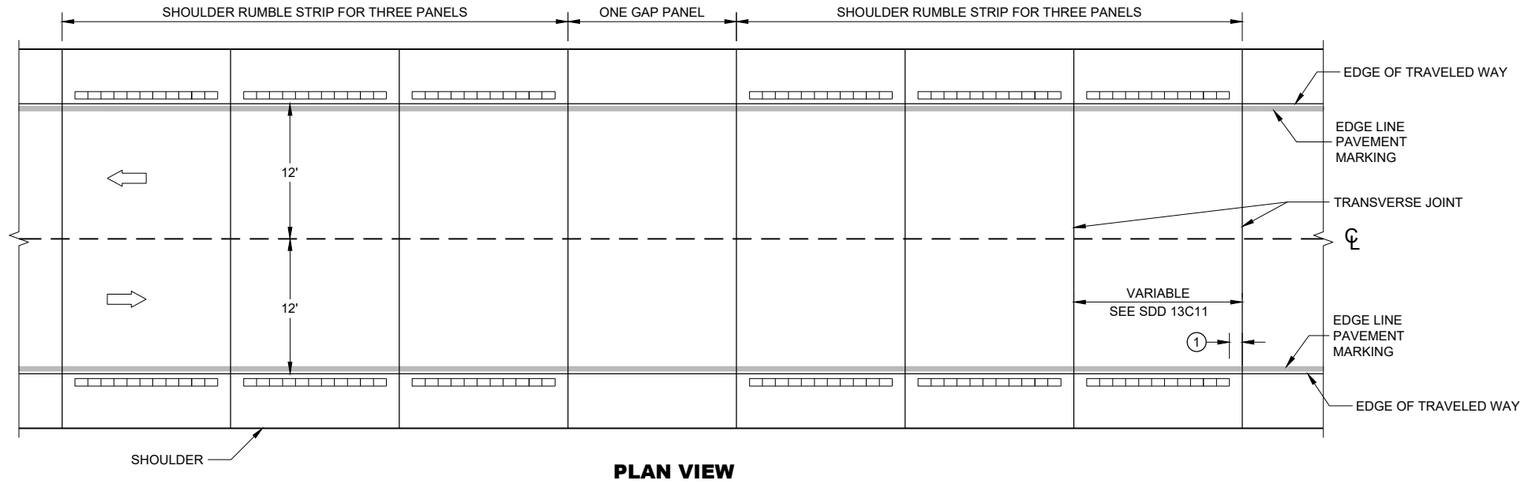
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

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

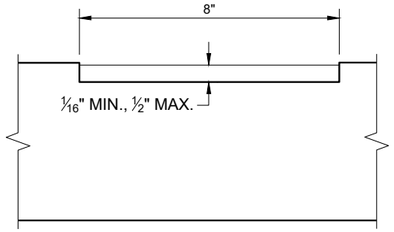
(1) FOR CONCRETE PAVEMENTS, RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES AWAY FROM A TRANSVERSE JOINT.



ISOMETRIC



PLAN VIEW



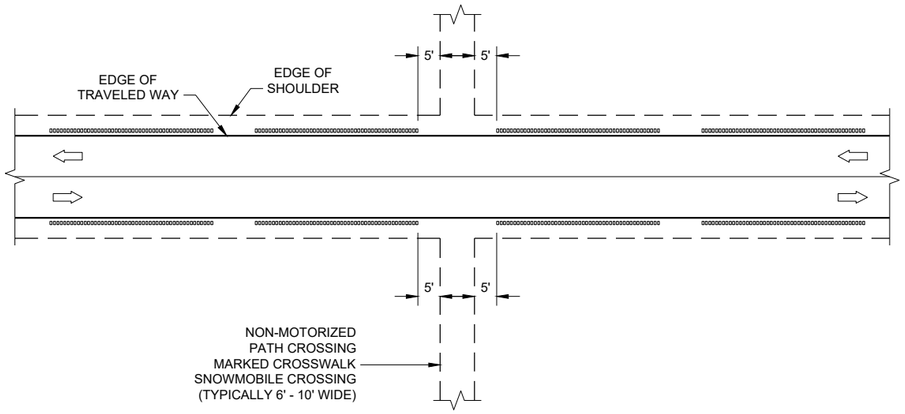
SECTION A - A

SHOULDER RUMBLE STRIPS - CONCRETE, SINUSOIDAL

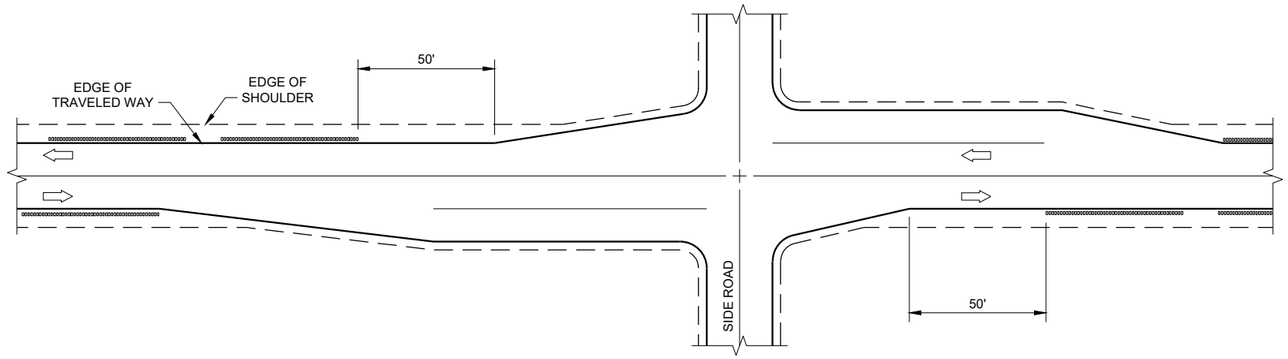
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

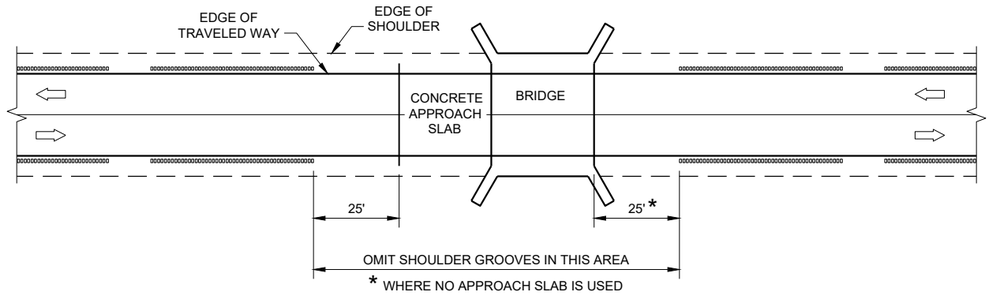
SDD 13A10 - 03d



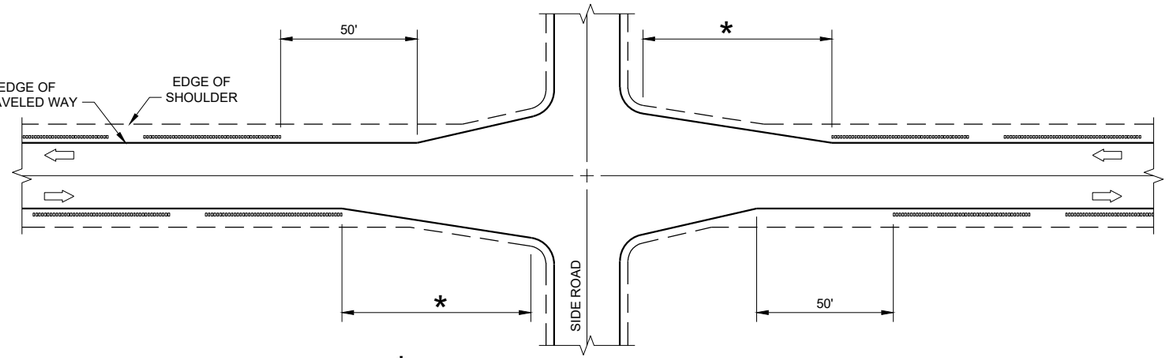
GROOVES AT MISCELLANEOUS CROSSINGS



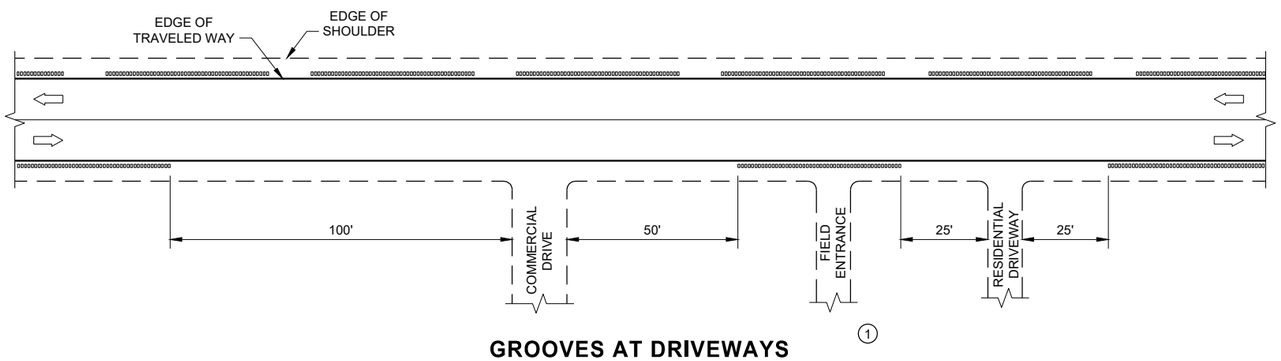
GROOVES AT RIGHT TURN LANE



GROOVES AT BRIDGES



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



GROOVES AT DRIVEWAYS ①

GENERAL NOTES

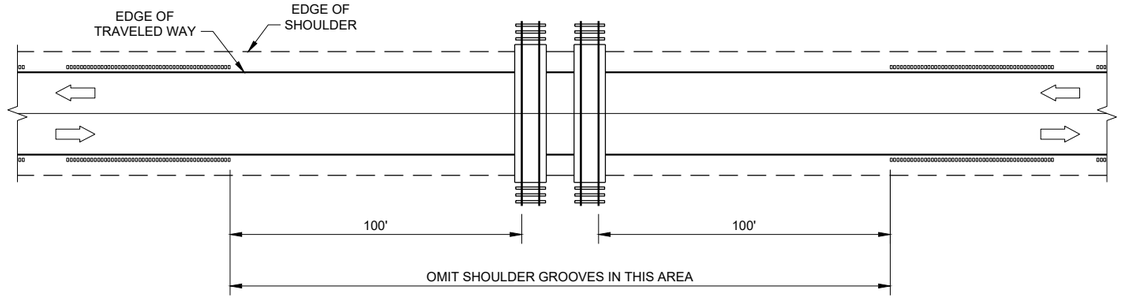
① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

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

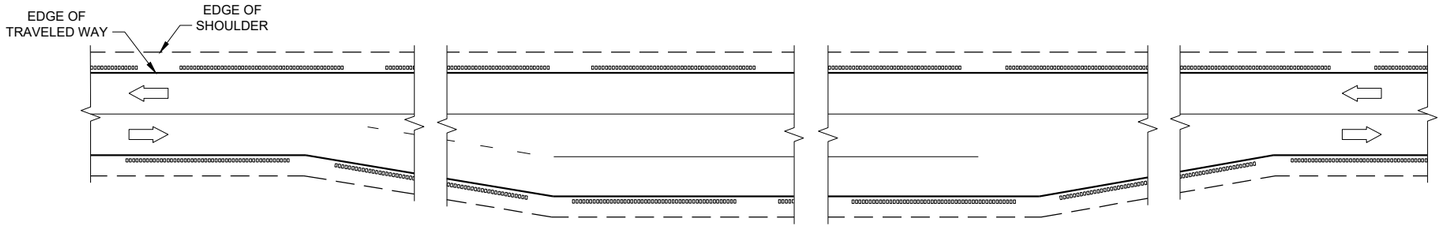
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

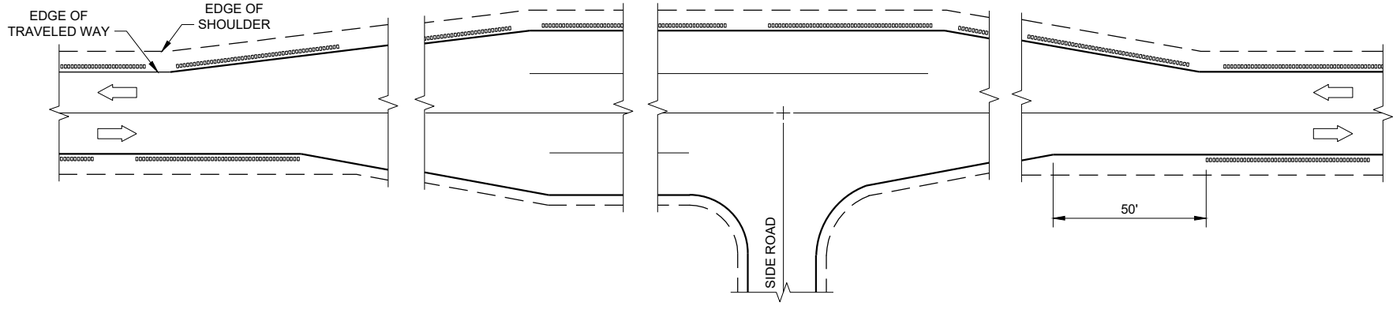
SDD 13A10 - 03g



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES



GROOVES AT BYPASS LANES

6

SDD 13A10 - 03h

6

SDD13A10 - 03h

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

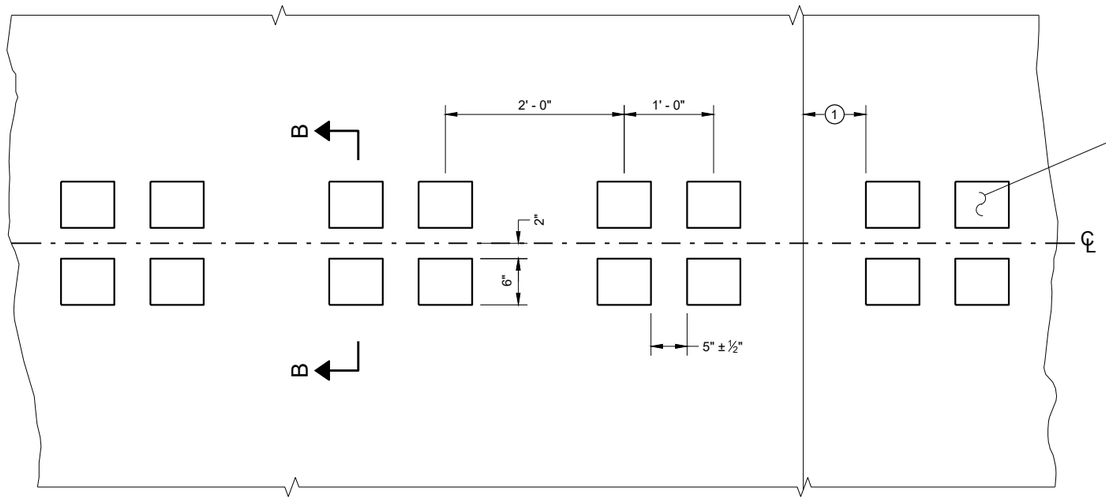
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

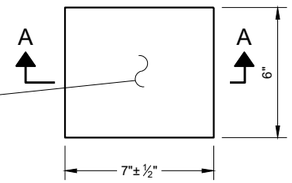
May 2023
DATE

/S/ John Jenkins
ROADWAY STANDARDS DEVE ENGINEER

FHWA



PLAN DETAIL VIEW



PLAN VIEW
(SINGLE GROOVE)

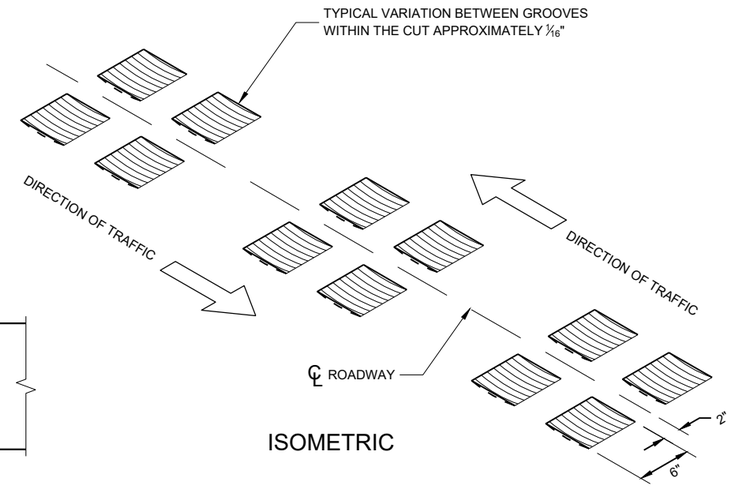
GENERAL NOTES

SDD 13A11, SHEET "d" SHOWS THE LOCATION OF RUMBLE STRIPS AT INTERSECTIONS, INTERSECTIONS WITH LEFT TURN LANES, BRIDGES, COMMERCIAL AND RESIDENTIAL DRIVEWAYS AND RAILROAD CROSSINGS.

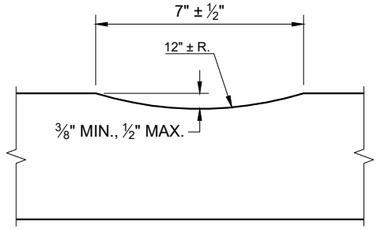
TEMPORARY PAVEMENT MARKINGS ARE TYPICALLY PLACED PRIOR TO RUMBLE STRIP INSTALLATION. PERMANENT MARKINGS ARE INSTALLED AFTER RUMBLE STRIP INSTALLATION.

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

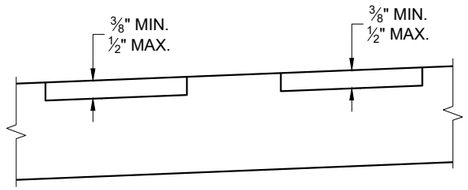
(1) CONCRETE PAVEMENT RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES FROM TRANSVERSE JOINTS.



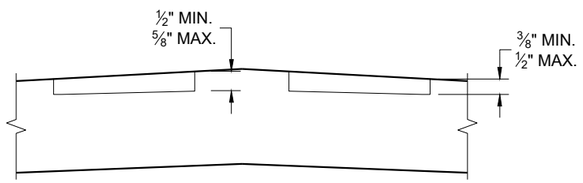
ISOMETRIC



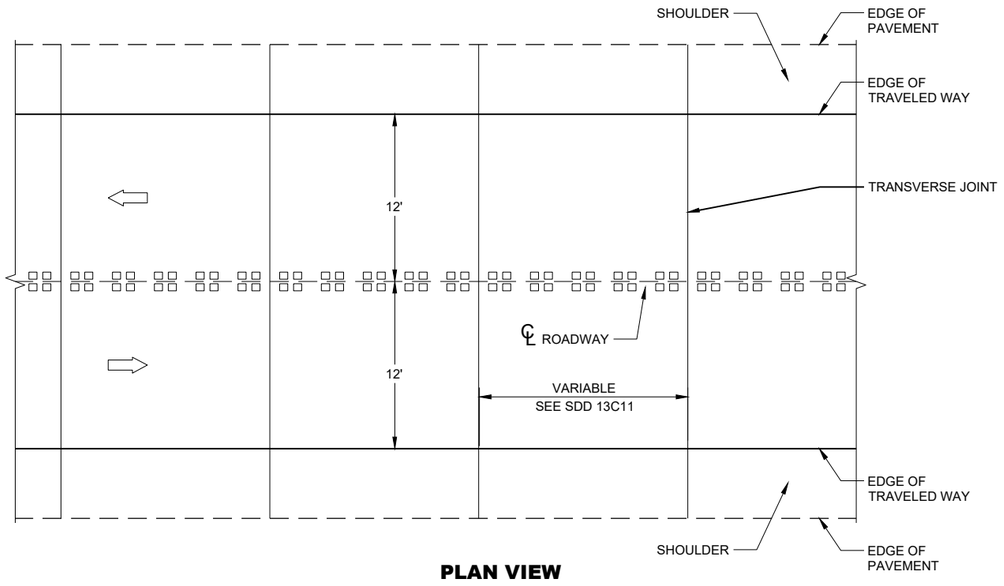
SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY



SECTION B - B
CROWNED ROADWAY



PLAN VIEW

CENTERLINE RUMBLE STRIPS - CONCRETE

CENTERLINE RUMBLE STRIPS - CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

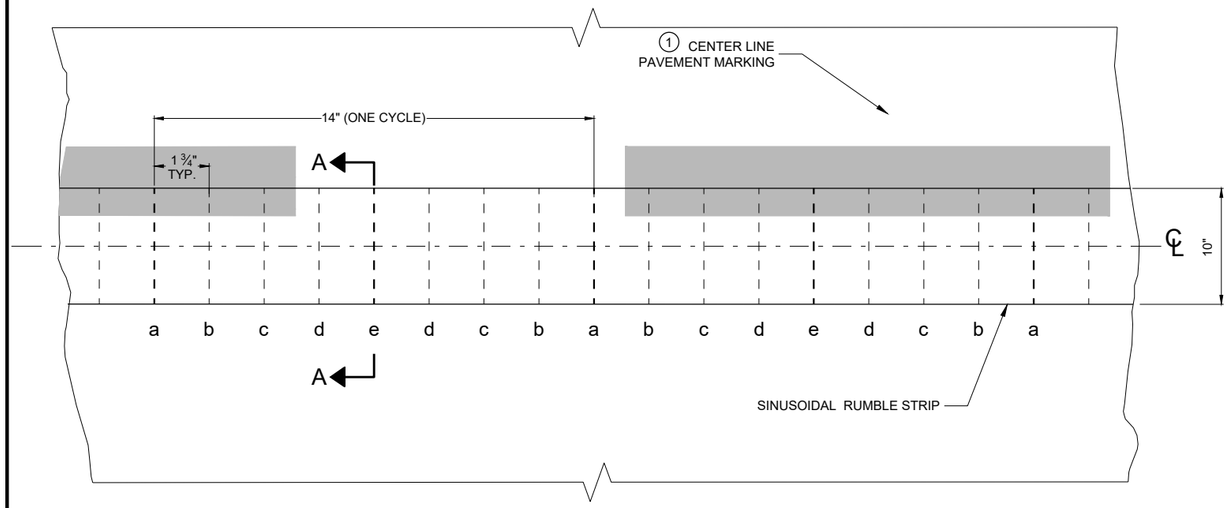
SDD 13A11 - 04b

GENERAL NOTES

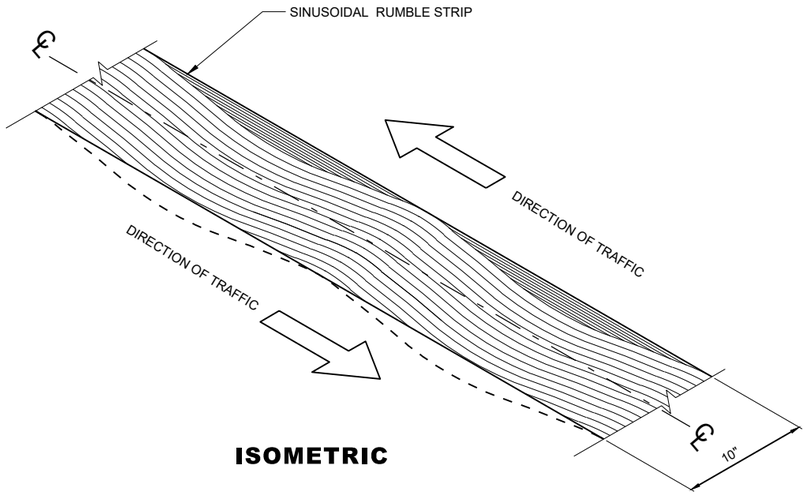
SDD 13A11, SHEET "d" SHOWS THE LOCATIONS OF RUMBLE STRIPS AT INTERSECTIONS, INTERSECTIONS WITH LEFT TURN LANES, BRIDGES, COMMERCIAL AND RESIDENTIAL DRIVEWAYS AND RAILROAD CROSSINGS.

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

(1) CENTERLINE PAVEMENT MARKINGS SHALL BE PLACED PARTIALLY IN RUMBLE STRIP GROOVE AND PARTIALLY OUT OF THE RUMBLE STRIP GROOVE.



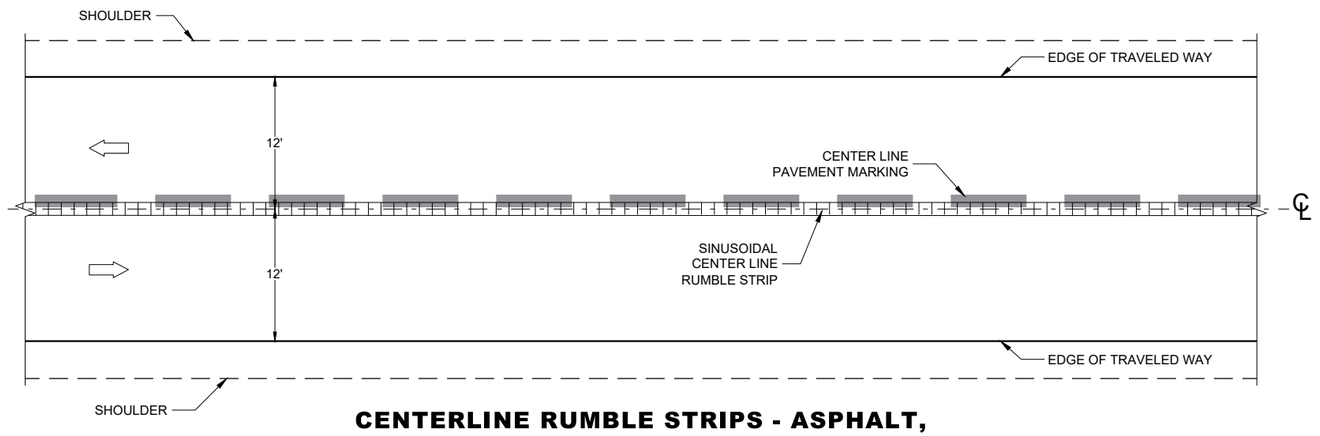
PLAN DETAIL VIEW



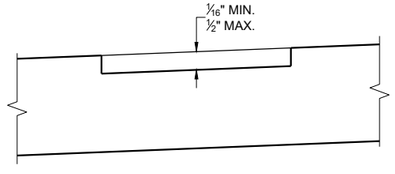
ISOMETRIC

PROFILE VIEW
SINUSOIDAL CENTERLINE RUMBLE STRIPS

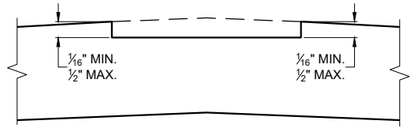
LOCATION	DEPTH (INCHES)
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"



CENTERLINE RUMBLE STRIPS - ASPHALT, SINUSOIDAL



SECTION A - A
SUPERELEVATED ROADWAY



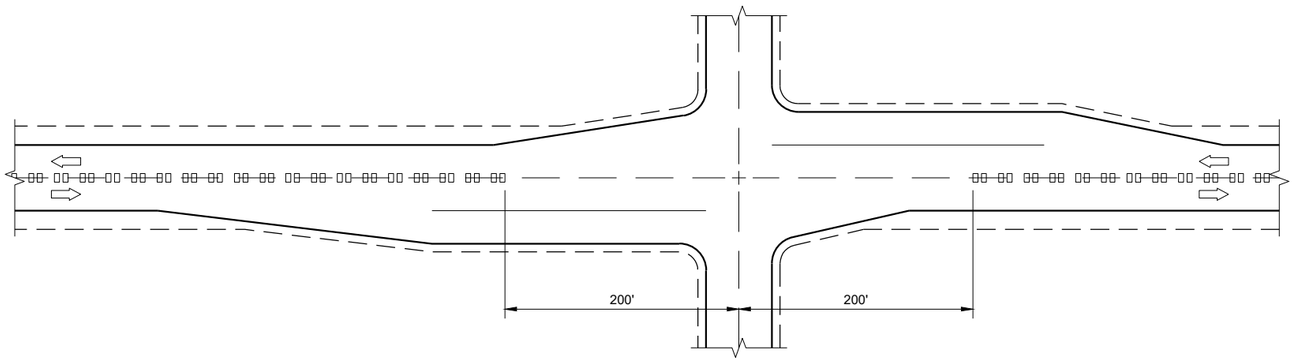
SECTION A - A
CROWNED ROADWAY

CENTERLINE RUMBLE STRIPS - ASPHALT, SINUSOIDAL

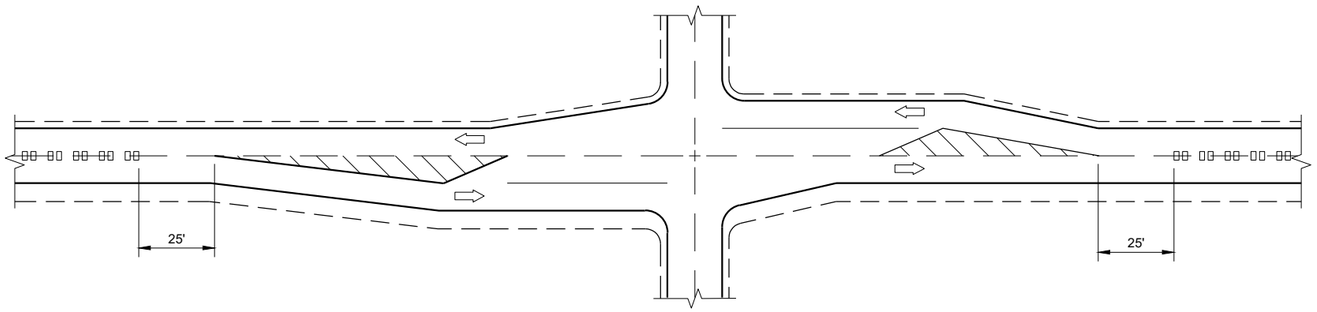
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

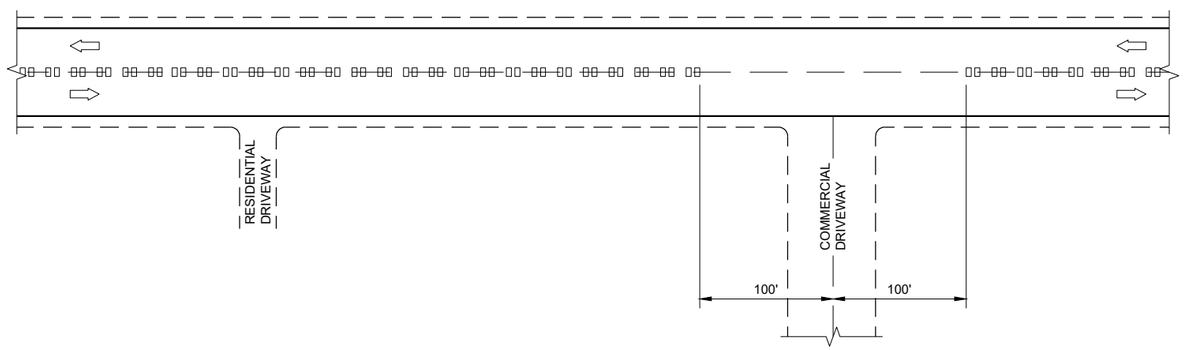
SDD 13A11 - 04c



CENTERLINE GROOVES AT INTERSECTIONS



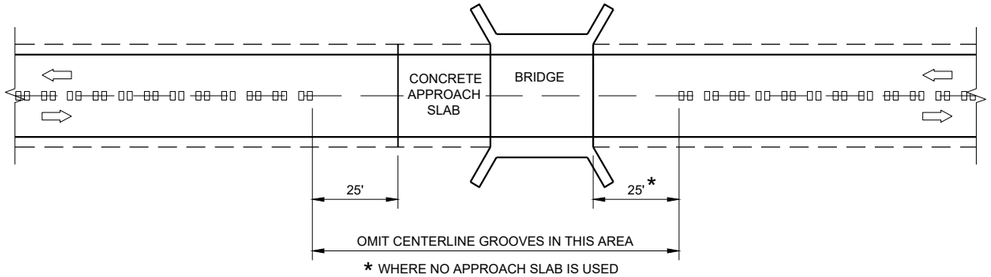
CENTERLINE GROOVES AT INTERSECTIONS (WITH LEFT TURN LANES)



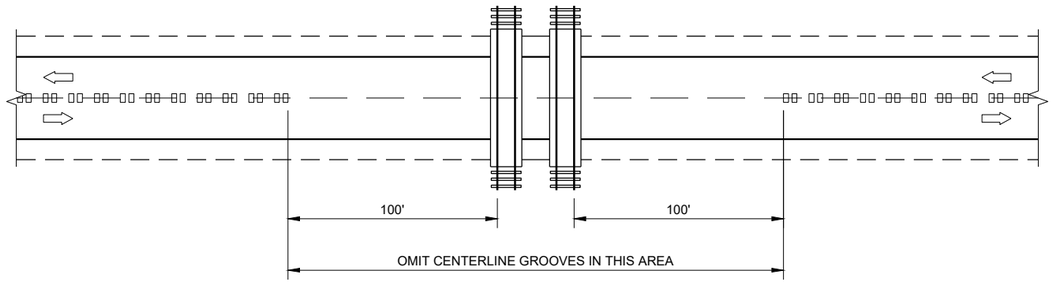
CENTERLINE GROOVES AT DRIVEWAYS (1)

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ John Jenkins — ROADWAY STANDARDS DEVE ENGINEER

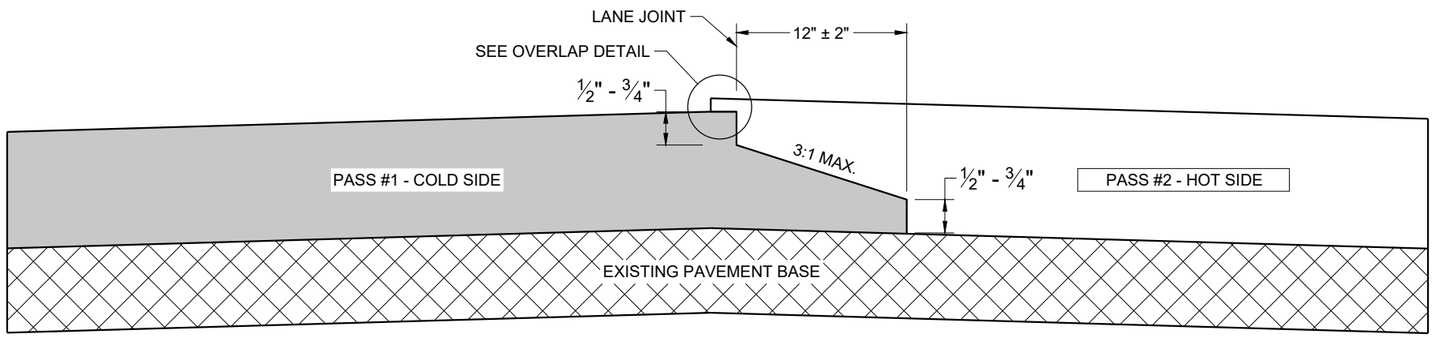
FHWA

6

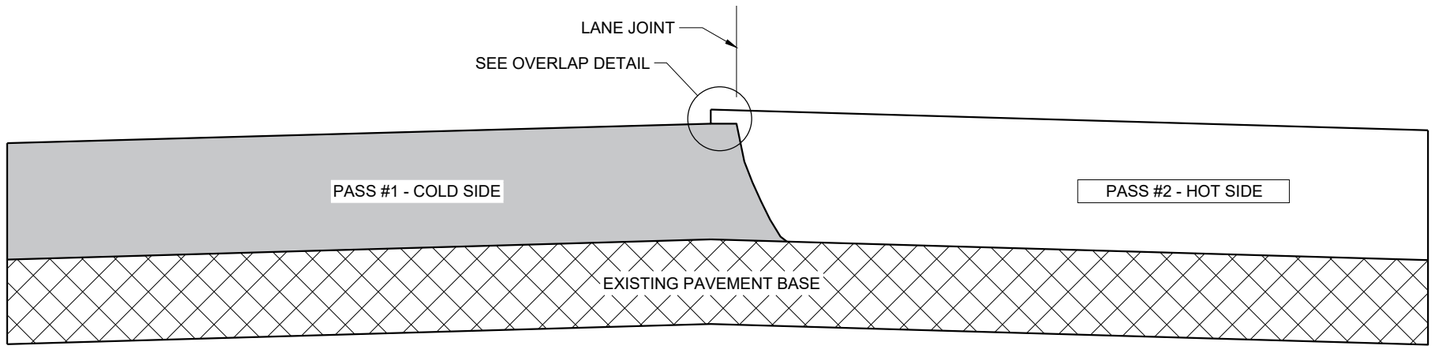
SDD 13A11 - 04d

6

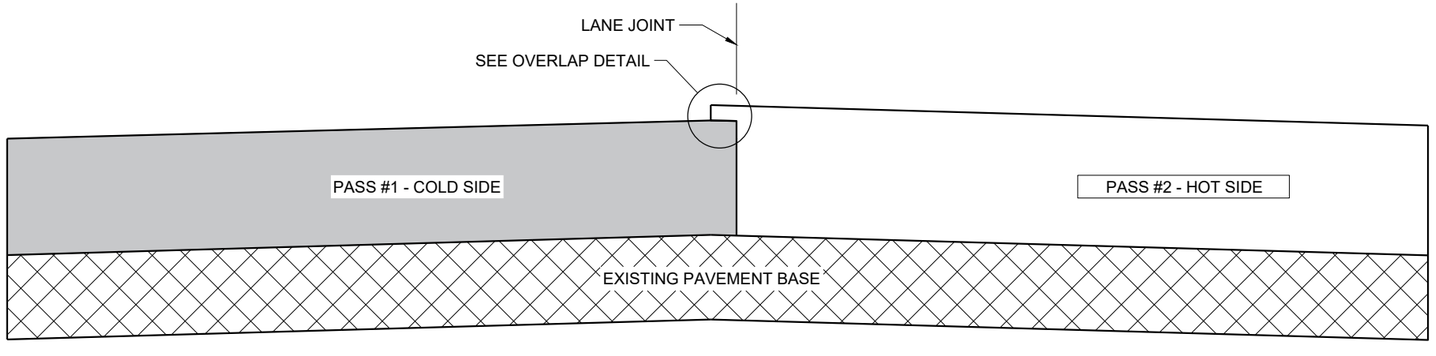
SDD 13A11 - 04d



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

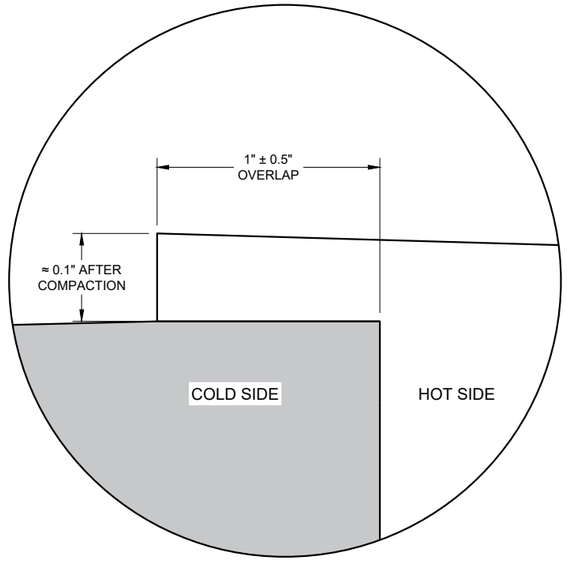
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

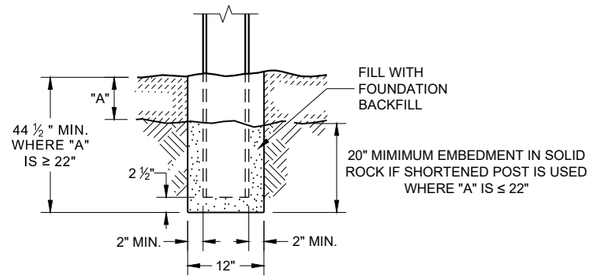
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

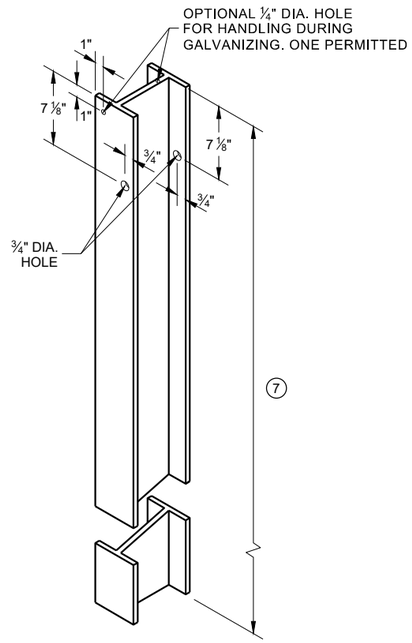
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

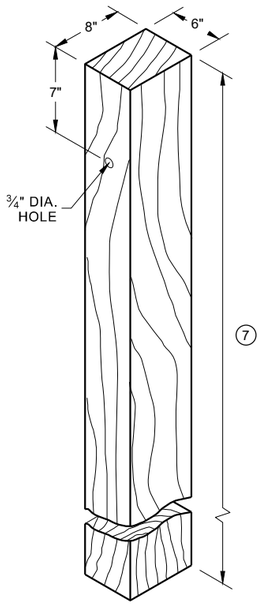
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



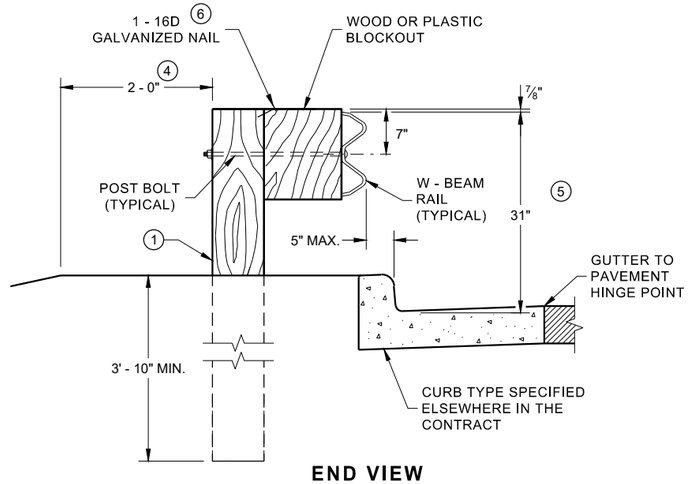
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



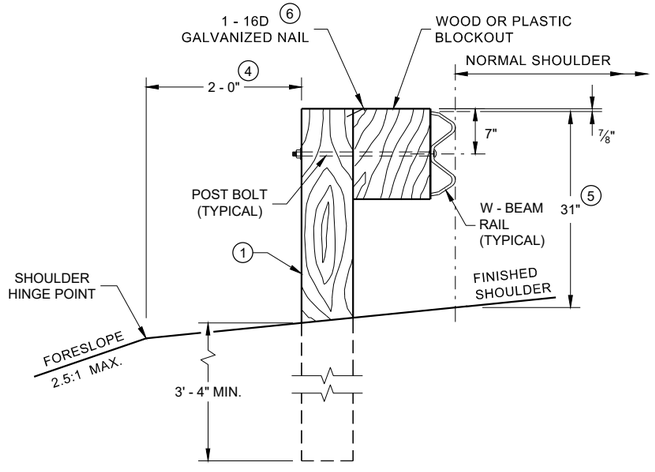
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



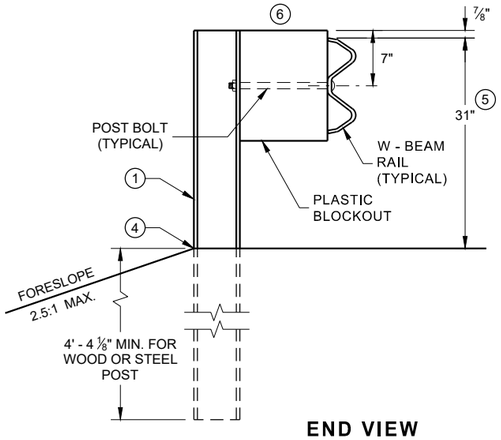
WOOD POST (6" X 8") NOMINAL (1)



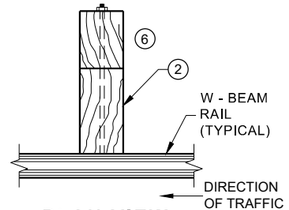
END VIEW
LOCATED ALONG A CURBED ROADWAY



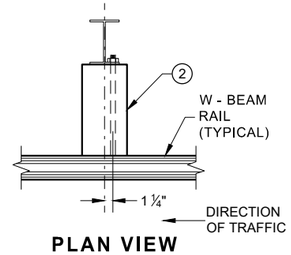
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



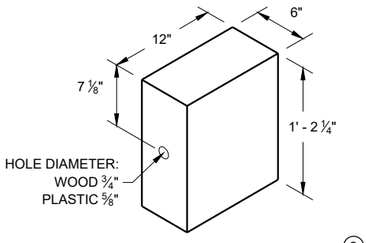
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

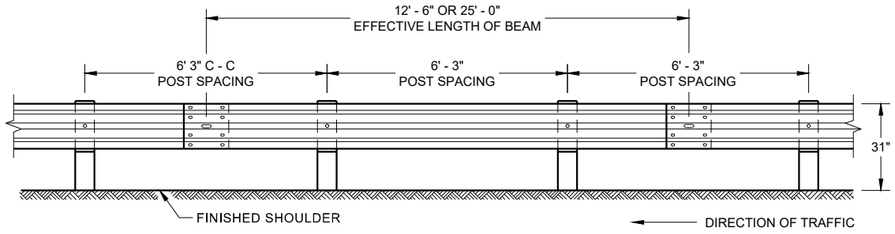
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

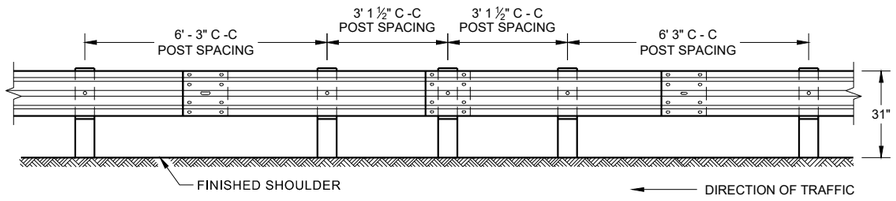
SDD 14B42 - 07a

6

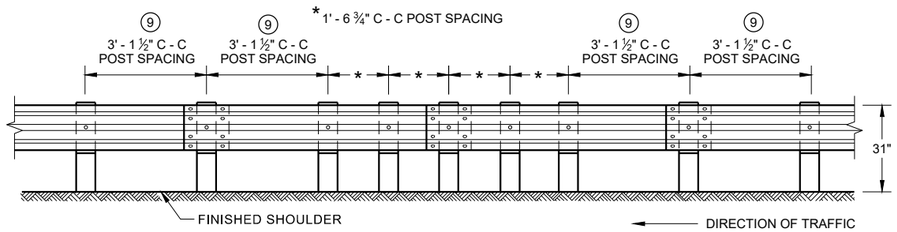
SDD 14B42 - 07a



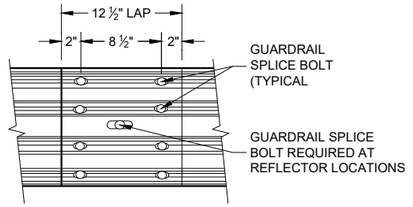
FRONT VIEW
POST SPACING STANDARD INSTALLATION



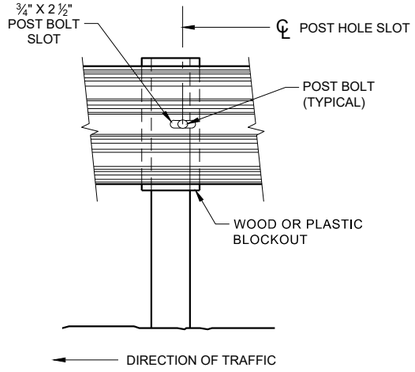
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



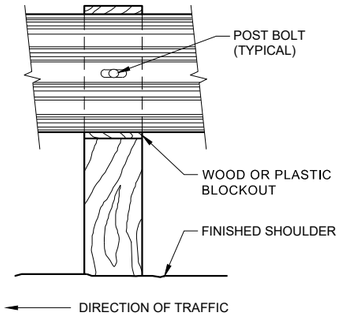
FRONT VIEW
QUARTER POST SPACING (QS)



FRONT VIEW
MID-SPAN BEAM SPLICE



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST

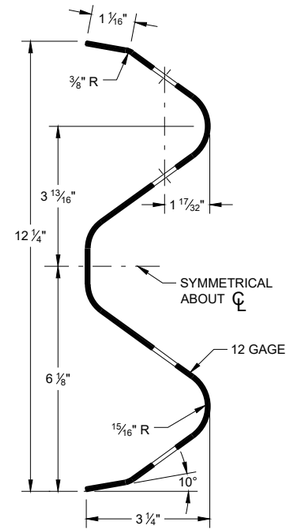
GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

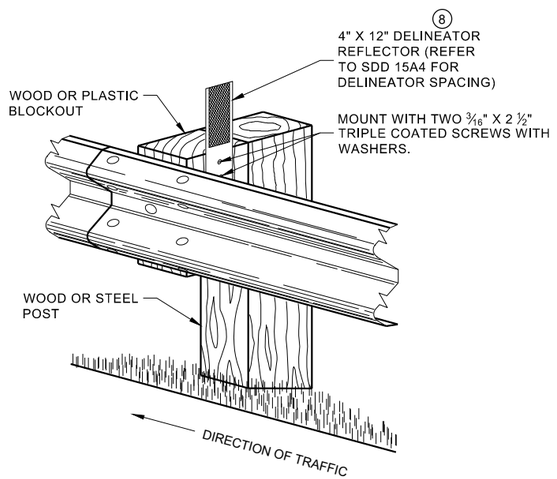
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL



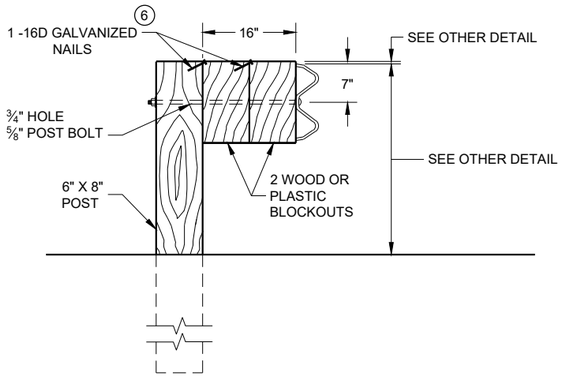
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07b

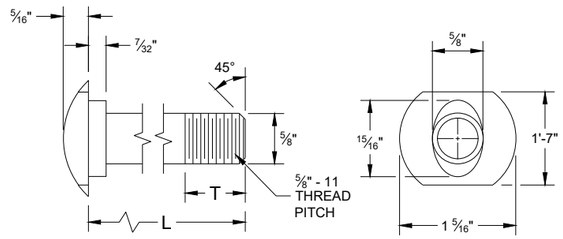


DETAIL FOR 16" BLOCKOUT DEPTH

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

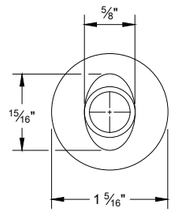
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

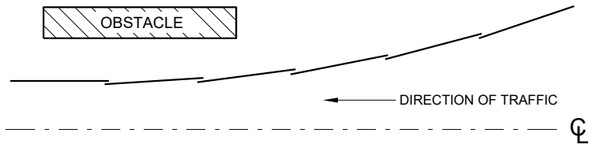


POST BOLT TABLE

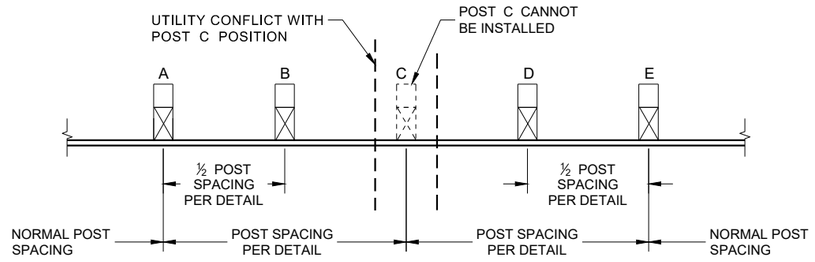
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



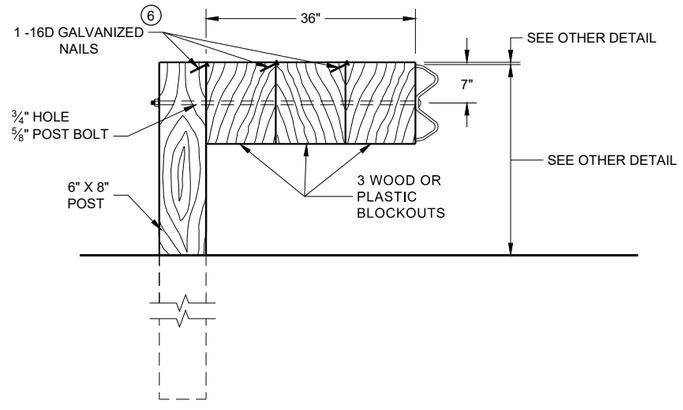
ALTERNATE BOLT HEAD



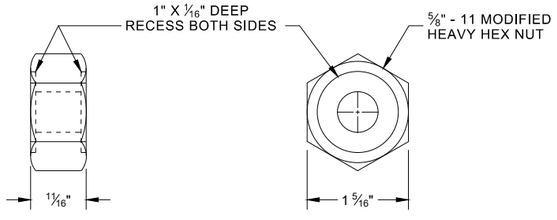
PLAN VIEW
BEAM LAPPING DETAIL



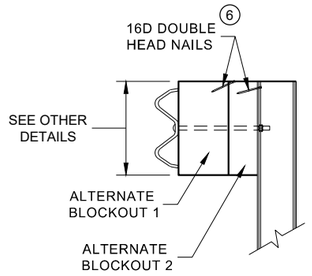
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



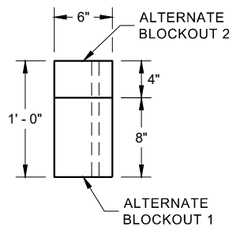
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

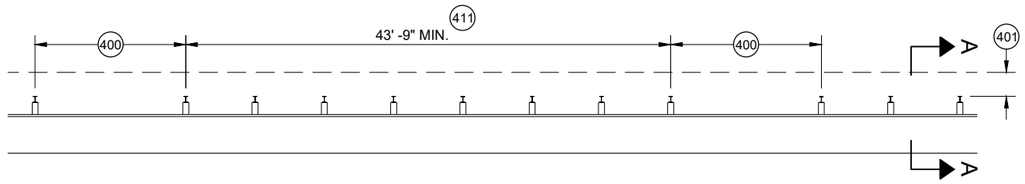
ALTERNATE WOOD BLOCKOUT DETAIL

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

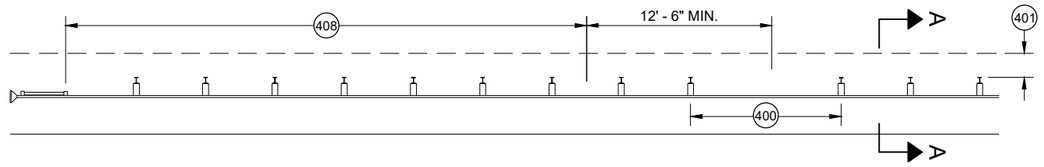
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

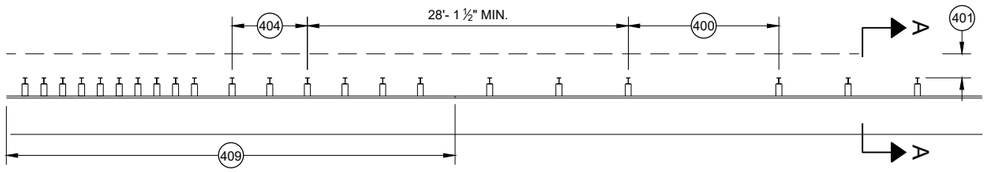
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



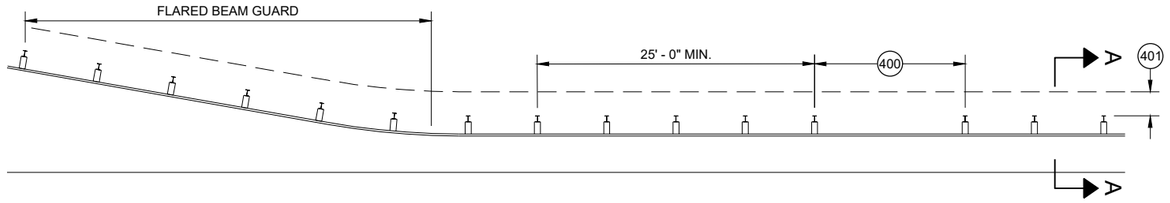
MISSING POST IN MGS GUARDRAIL



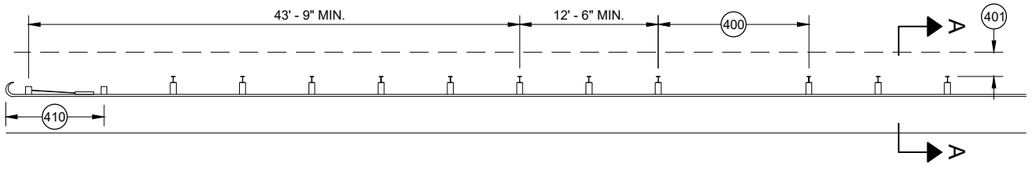
MISSING POST IN MGS GUARDRAIL NEAR EAT



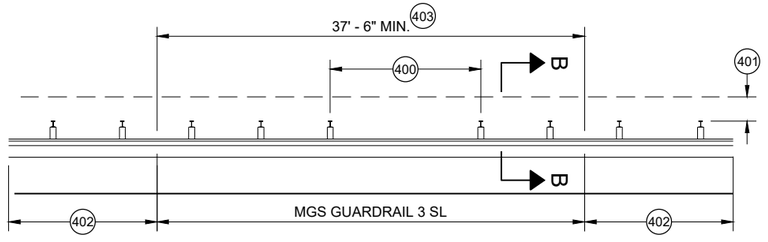
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

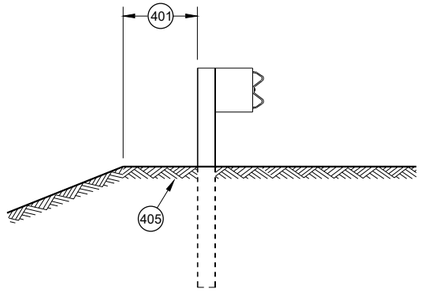


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

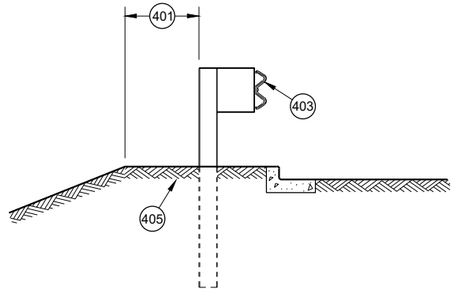


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

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



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B42 - 07d

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

(D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

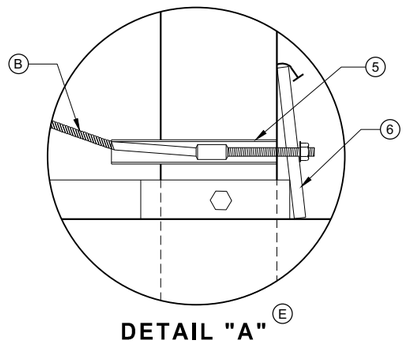
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

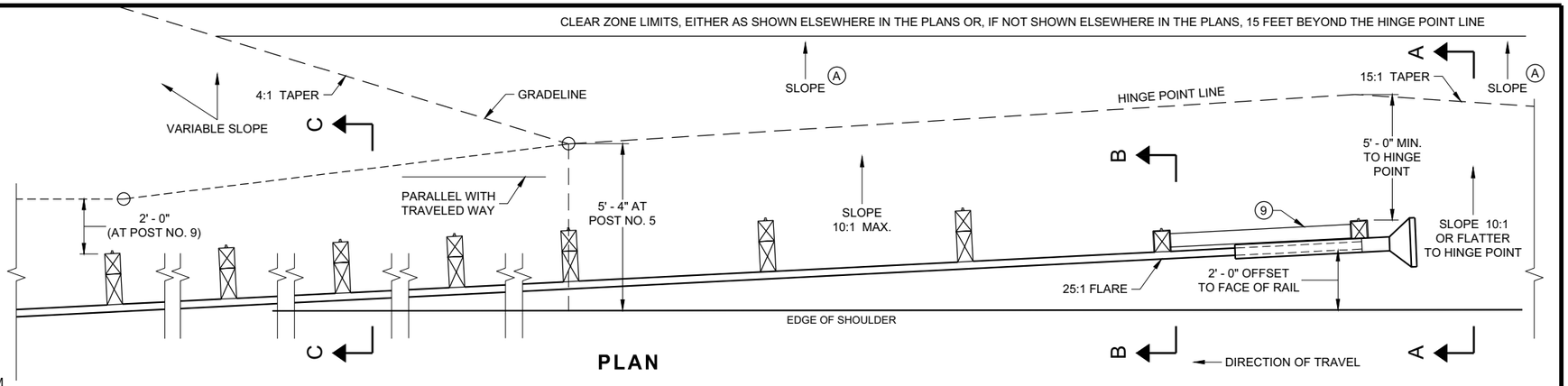
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

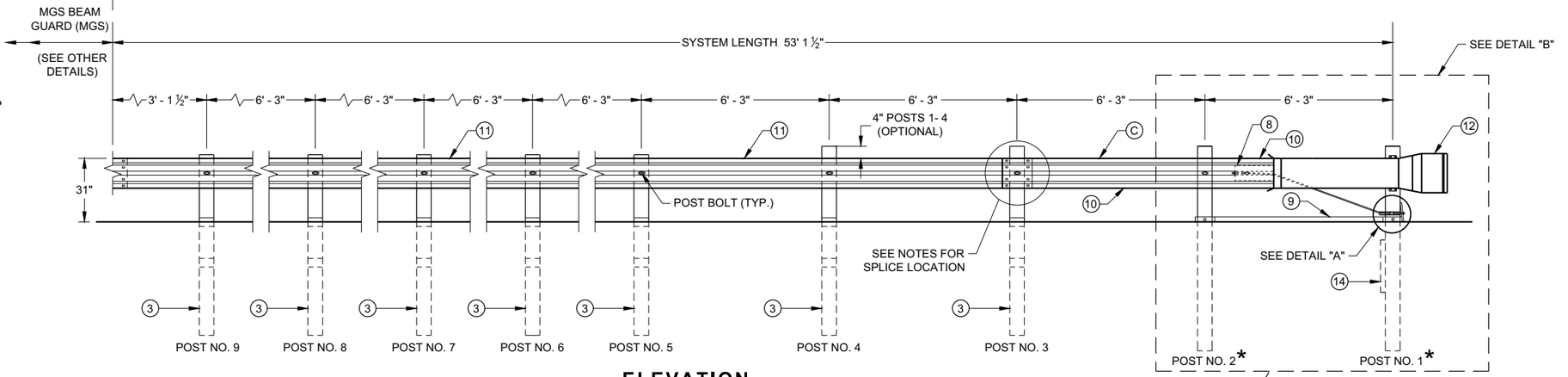
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

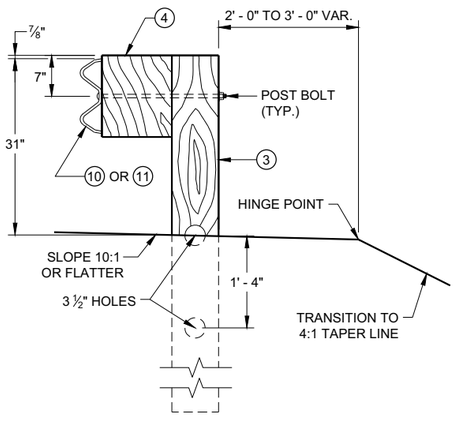
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



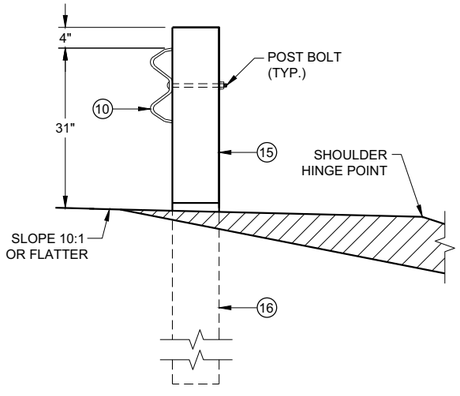
DETAIL "A" (E)



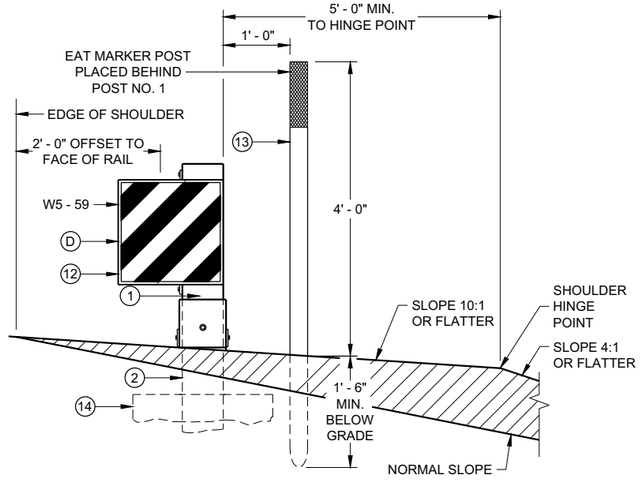




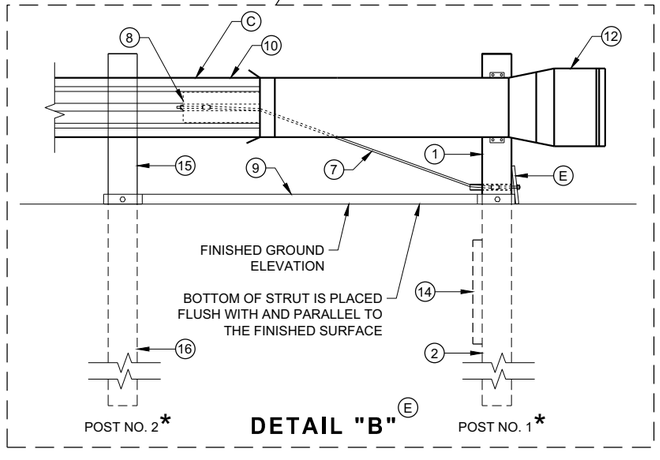
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



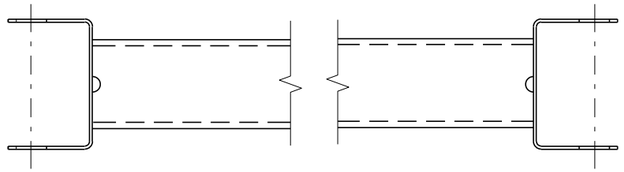
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

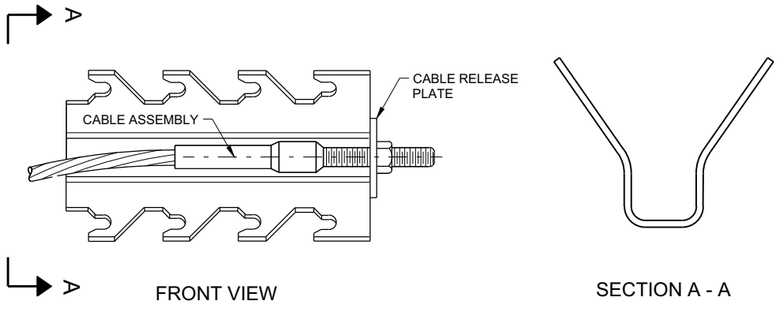
SDD 14B44 - 04a



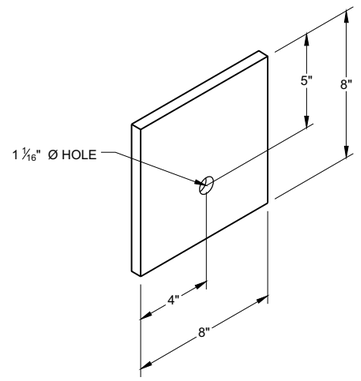
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑨ Ⓔ



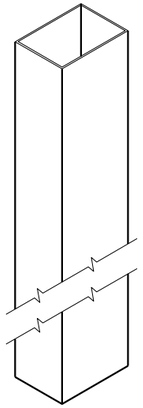
BEARING PLATE ⑥ Ⓔ

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

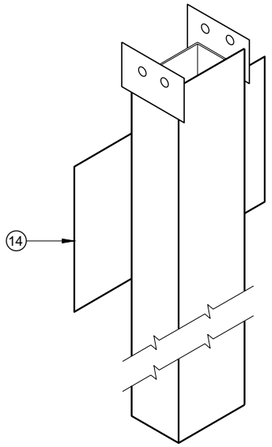
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

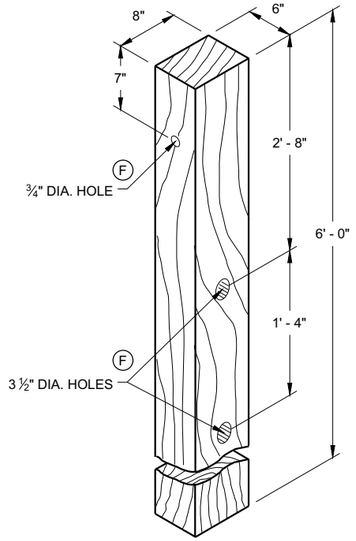
SDD 14B44 - 04b



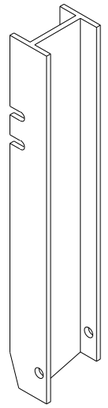
UPPER POST NO. 1 (1) (E)



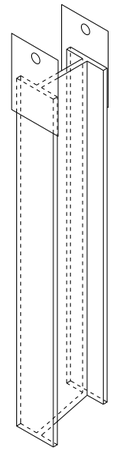
LOWER POST NO. 1 (2) (E)



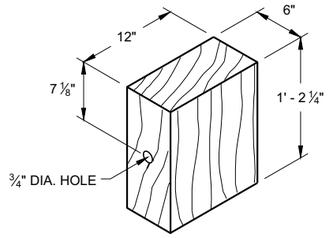
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



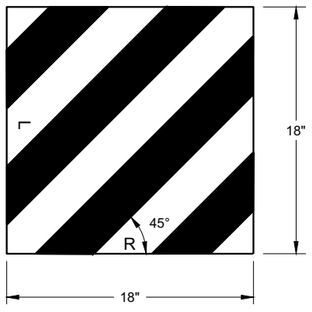
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

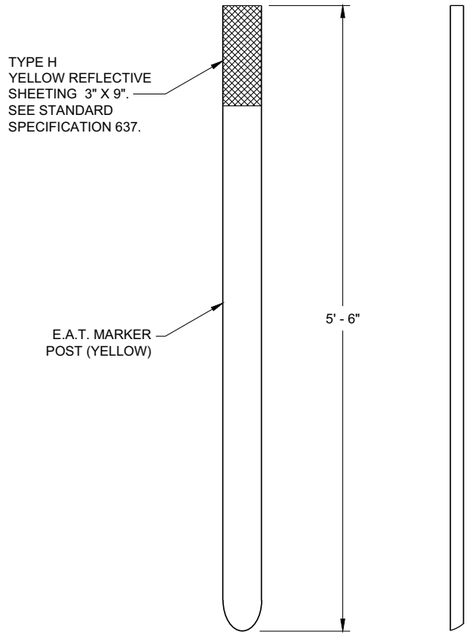


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



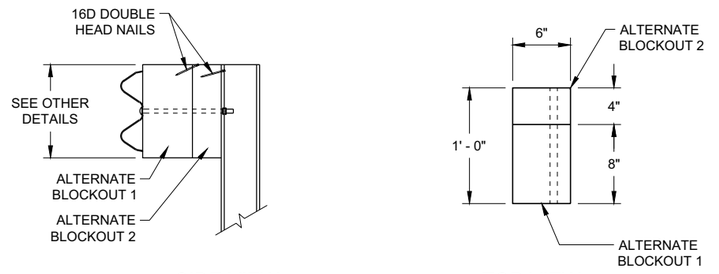
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

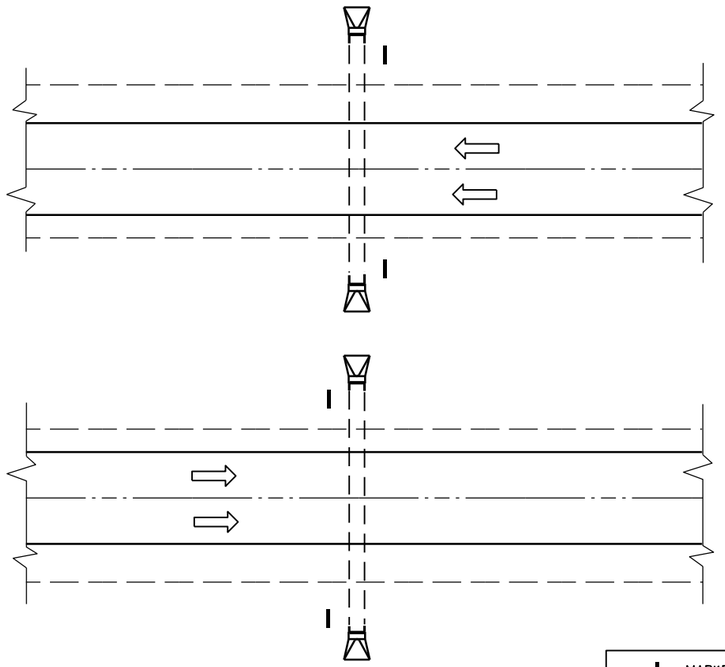
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

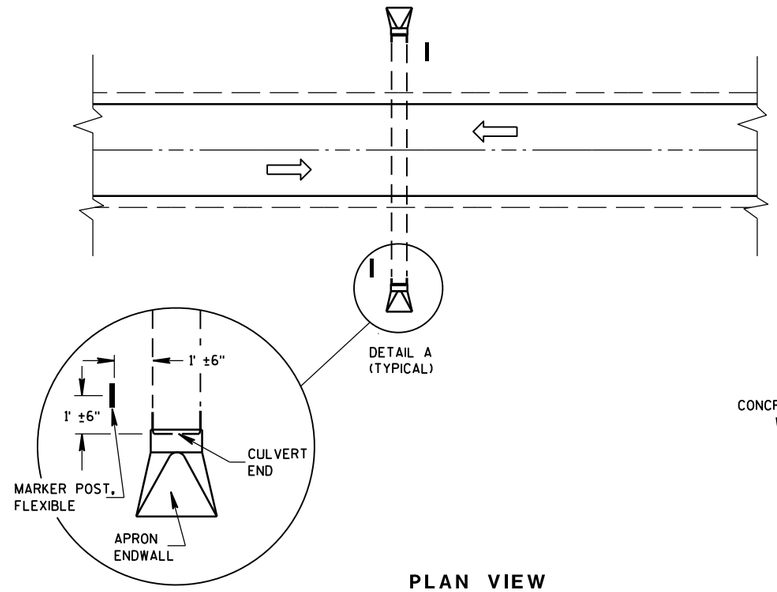
6

SDD 14B44 - 04c



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

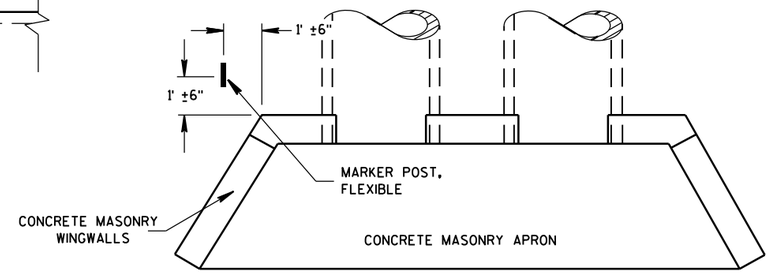
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

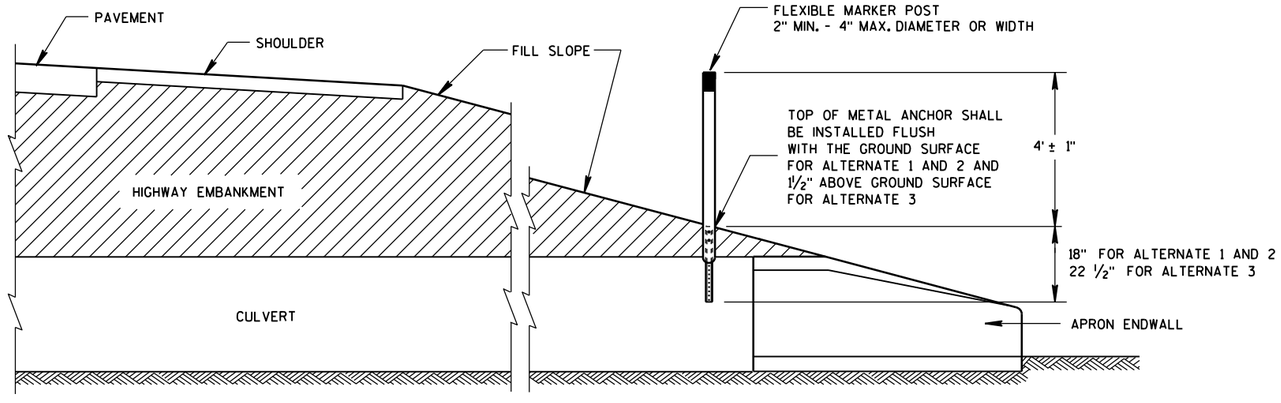
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

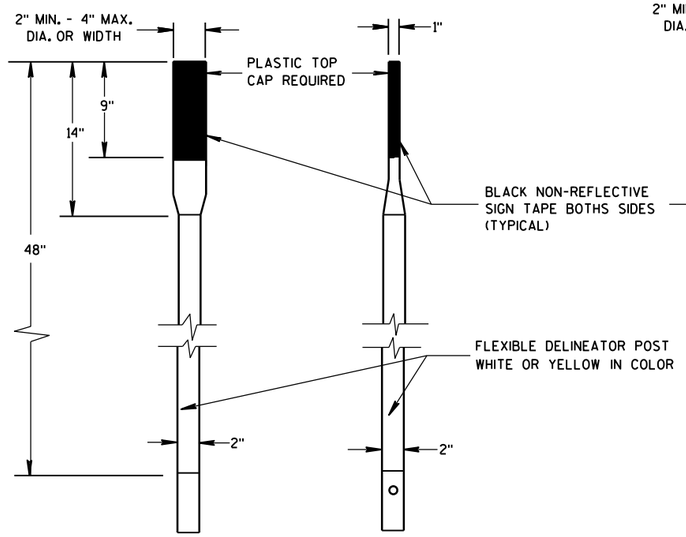
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

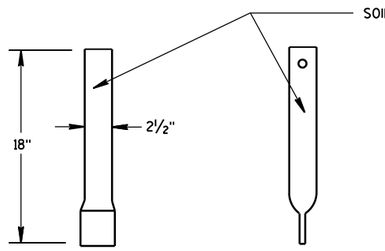
6

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

6

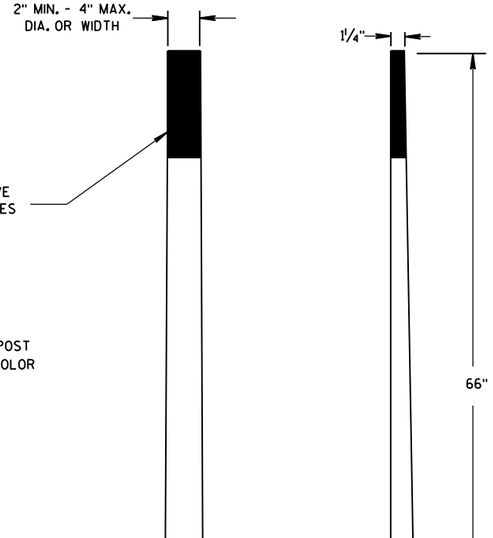
S.D.D. 15 A 3-2a





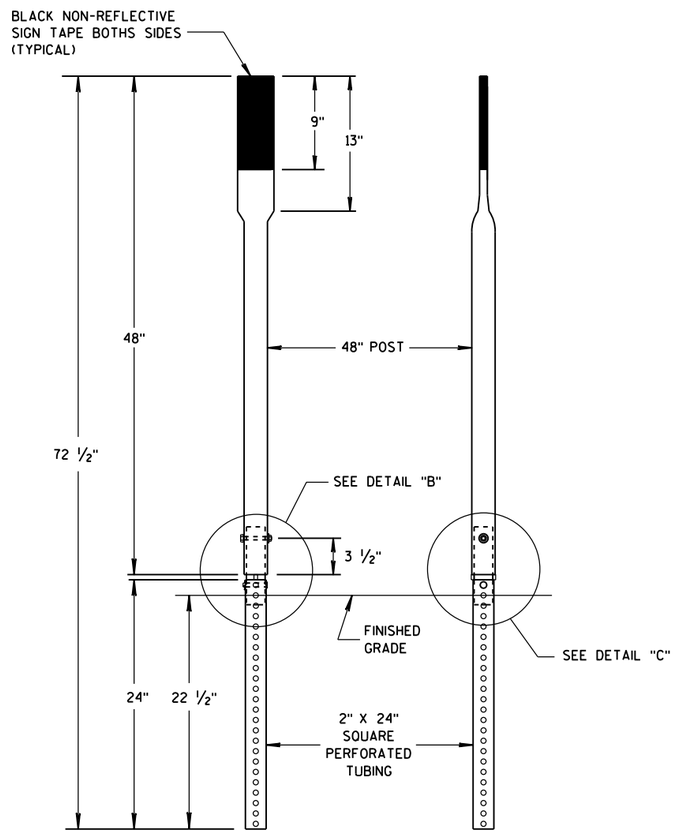
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

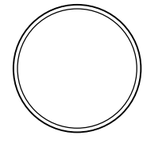
ALTERNATE 2



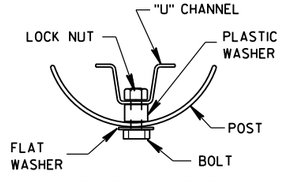
FRONT VIEW SIDE VIEW

ALTERNATE 3

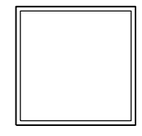
FLEXIBLE MARKER POSTS



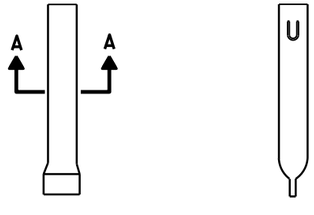
SECTION A-A



SECTION B-B

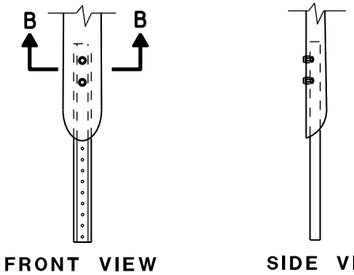


SECTION C-C



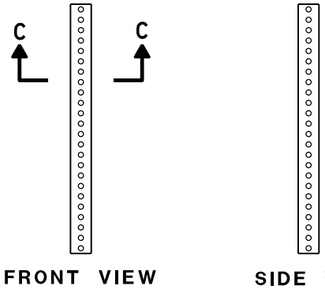
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

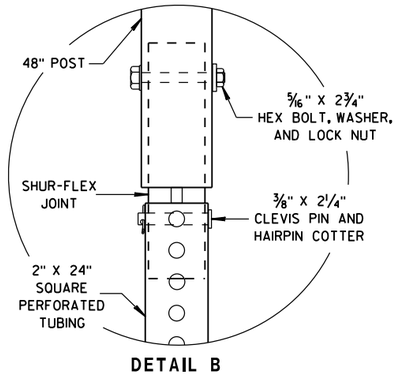
ALTERNATE 2



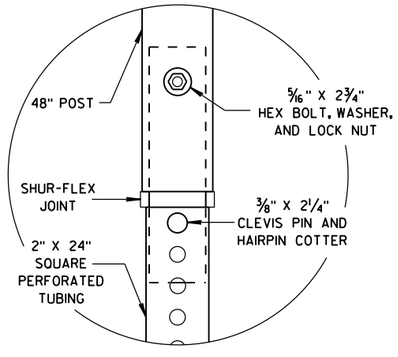
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

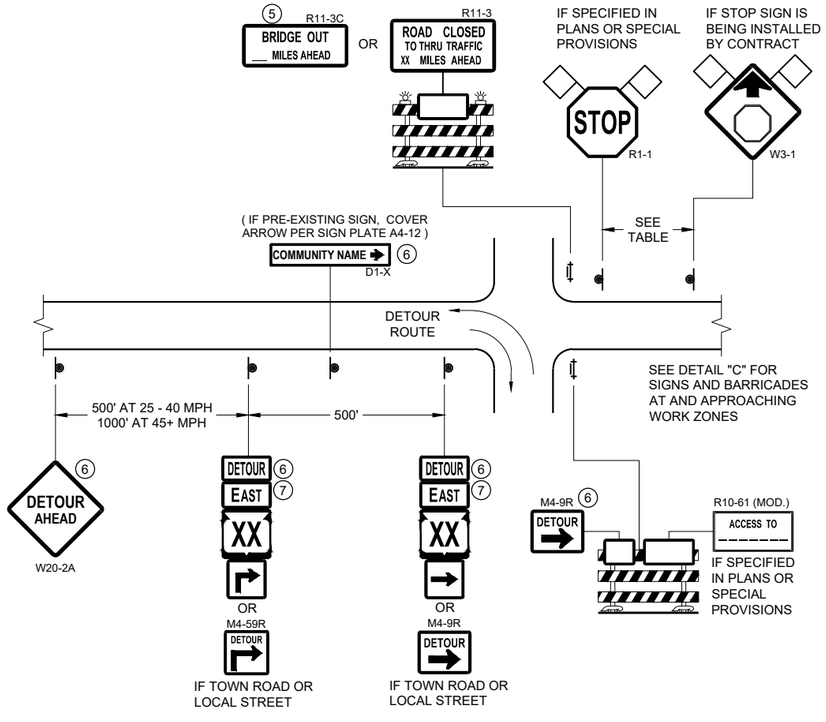
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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

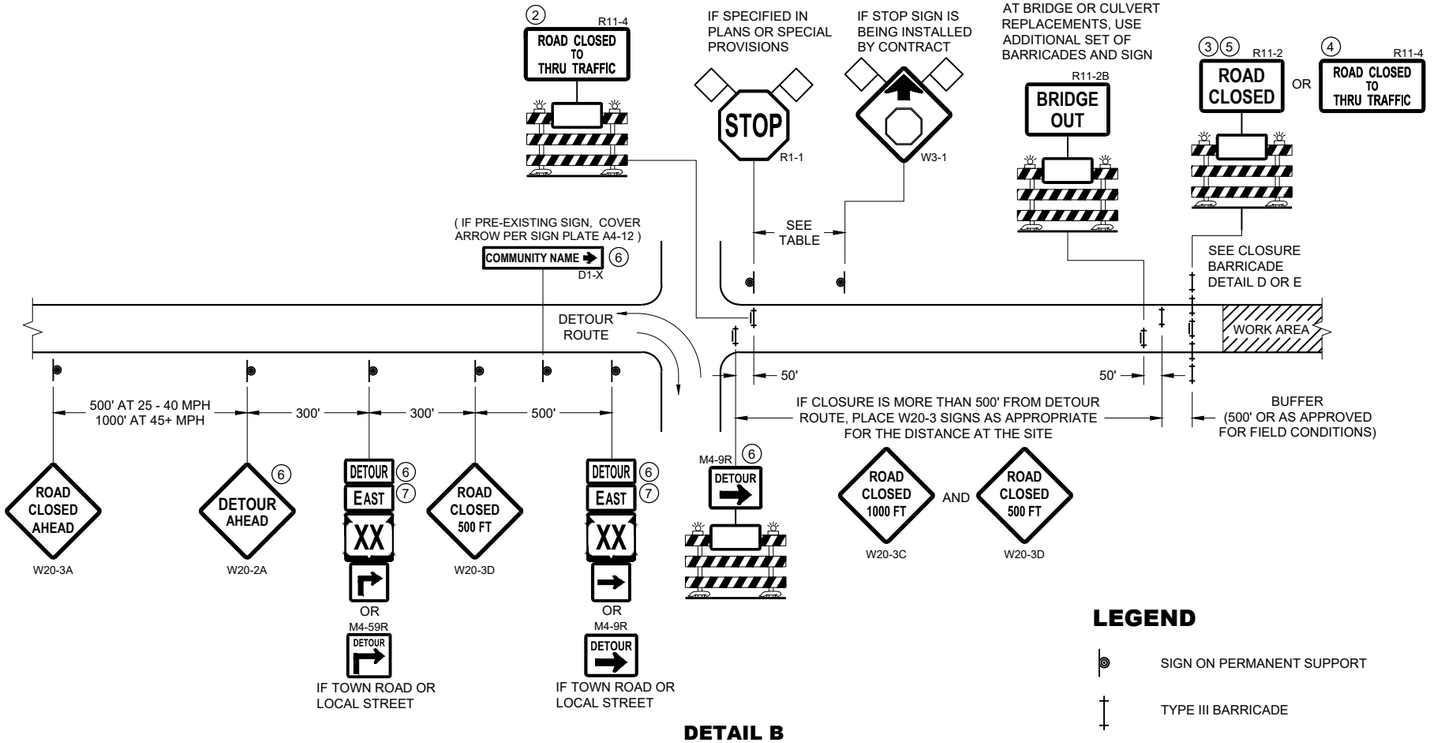
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S.D.D. 15 A 3-2b



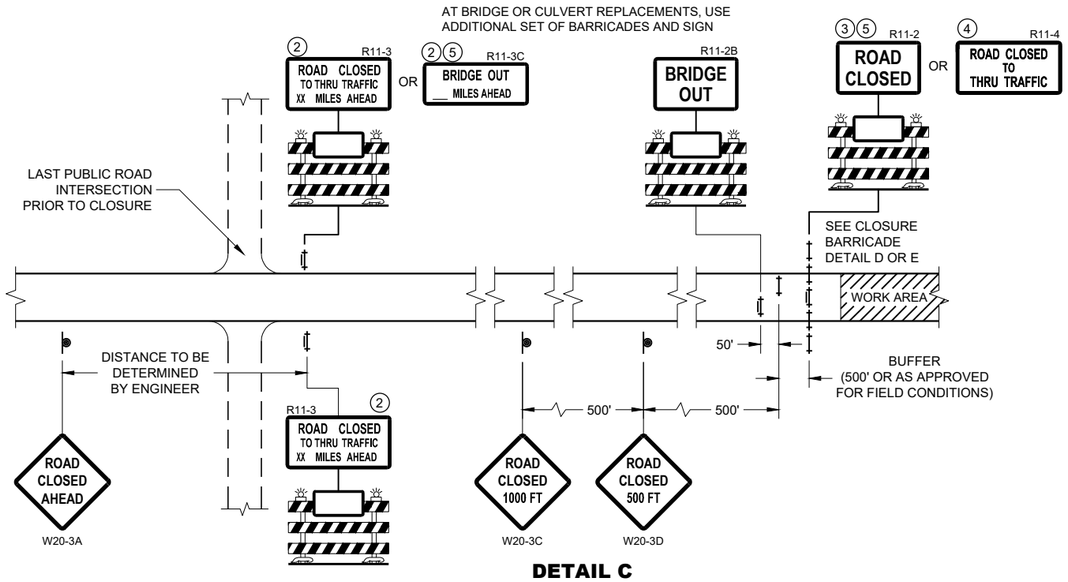
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

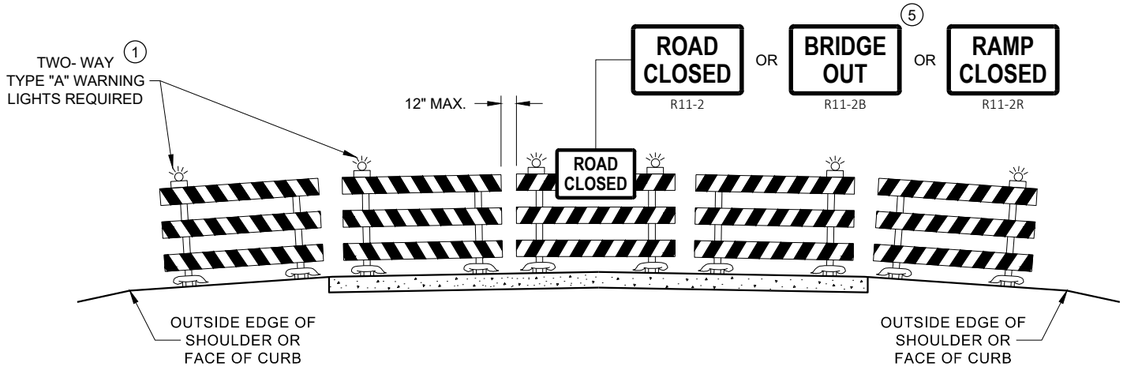
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

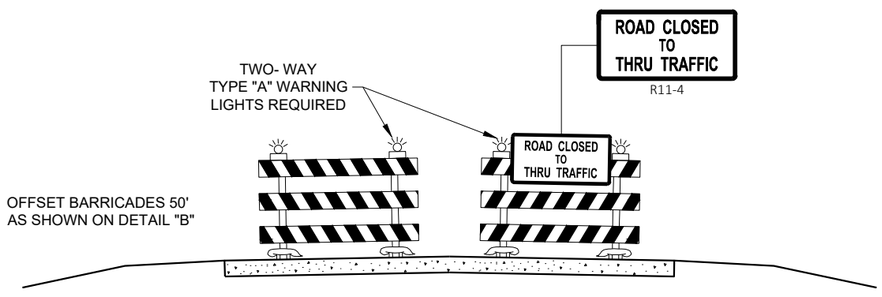
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SDD 15C02 - 09a



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
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

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SDD 15C02 - 09b

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SDD 15C02 - 09b

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

GENERAL NOTES

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

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

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

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

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

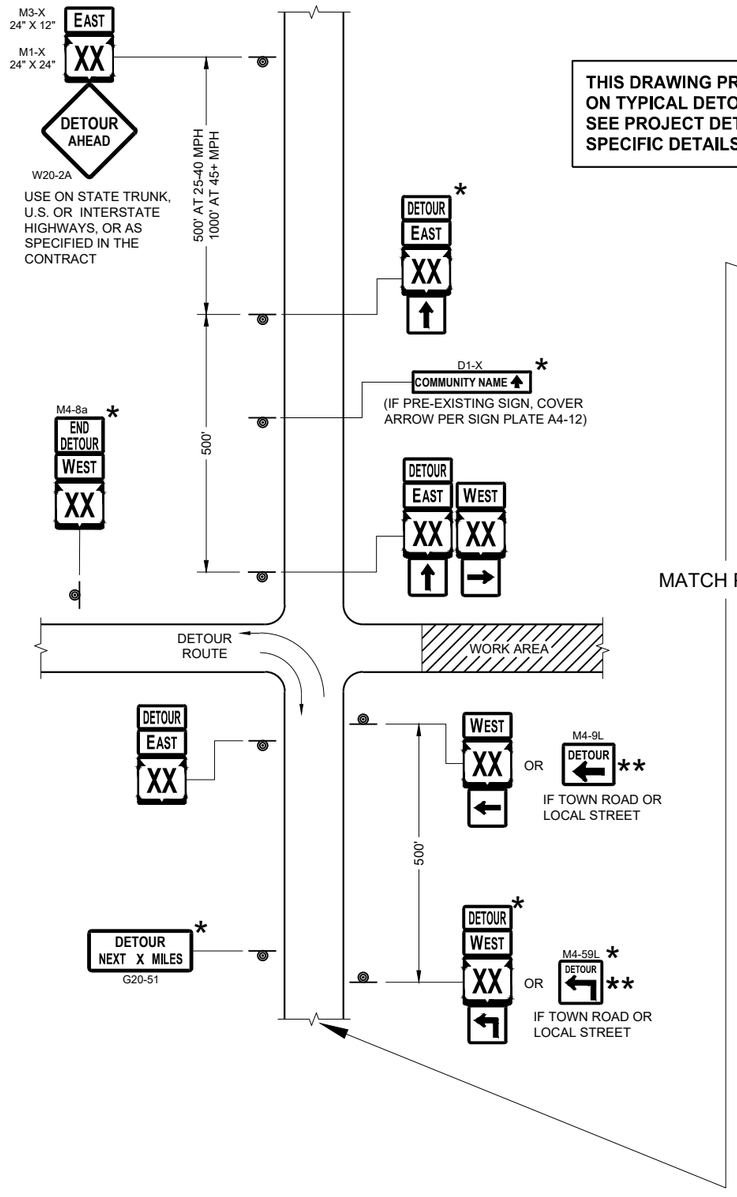
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

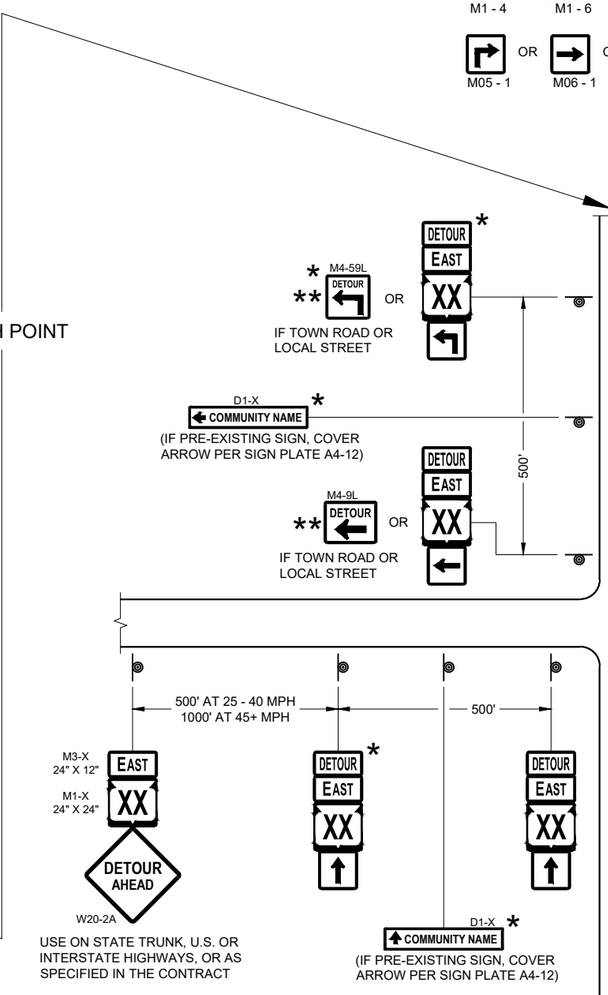
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

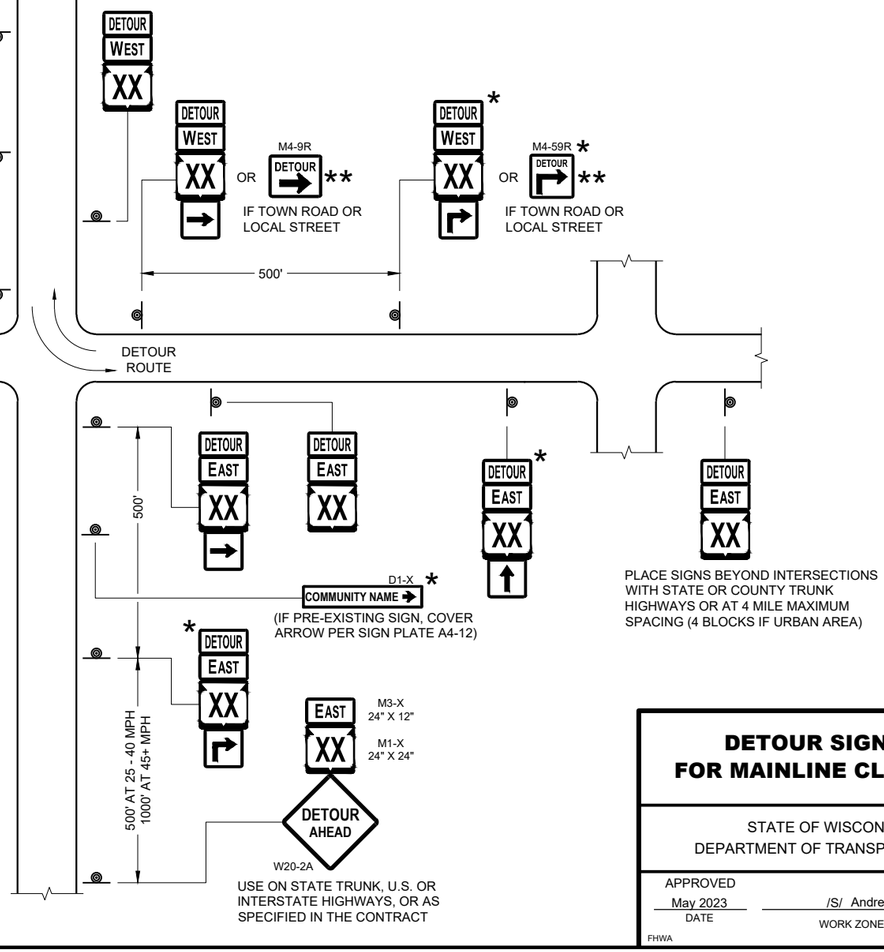
* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT



MATCH POINT





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

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

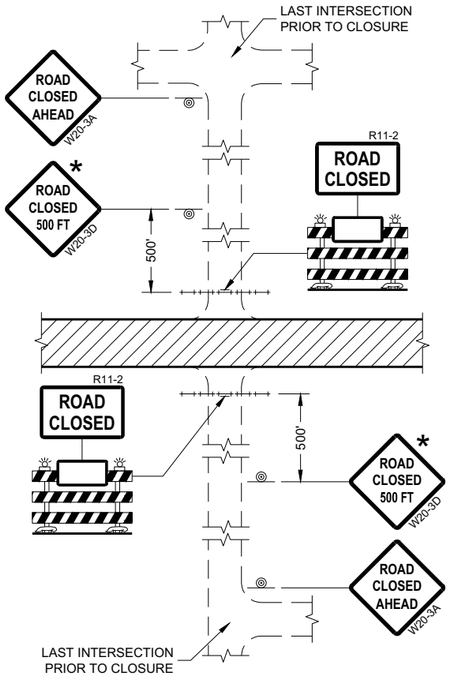
APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

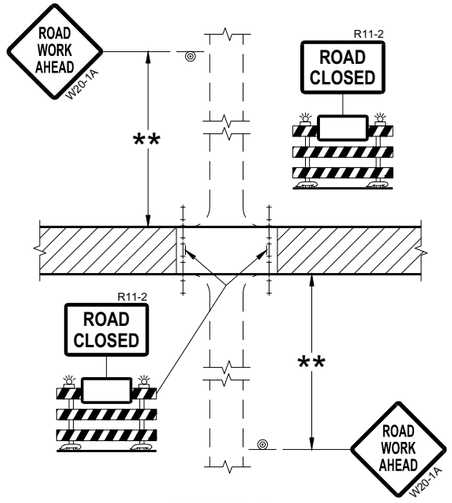
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SDD 15C02 - 09c



DETAIL 1
(NO ACCESS TO PROJECT)



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

GENERAL NOTES

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

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

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

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

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

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

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

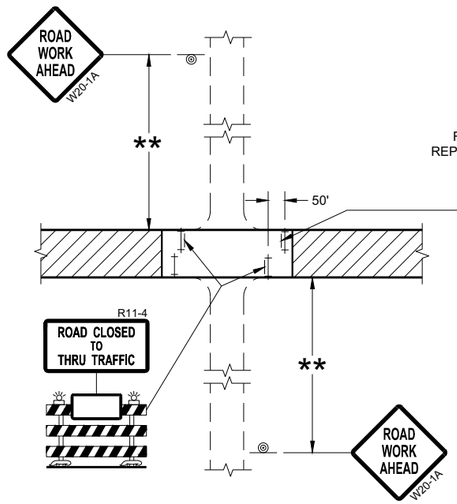
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

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

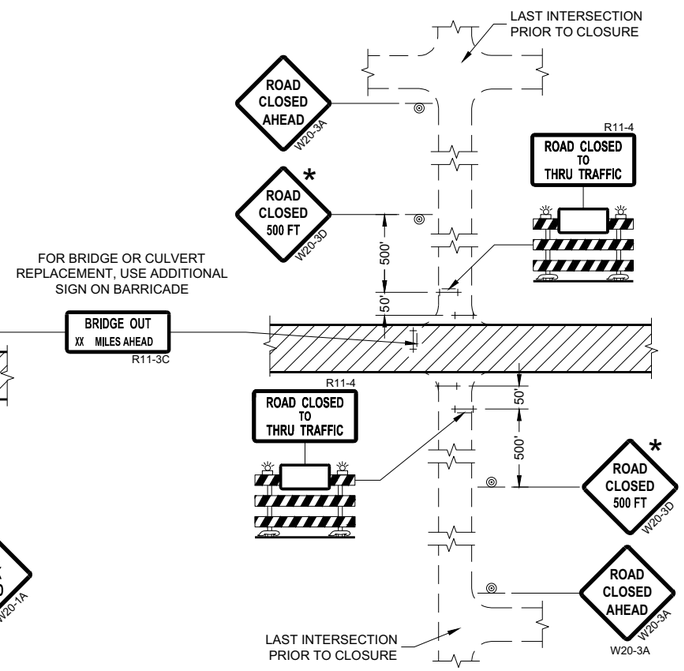
ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.



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



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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C03 - 05

SDD 15C03 - 05

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.

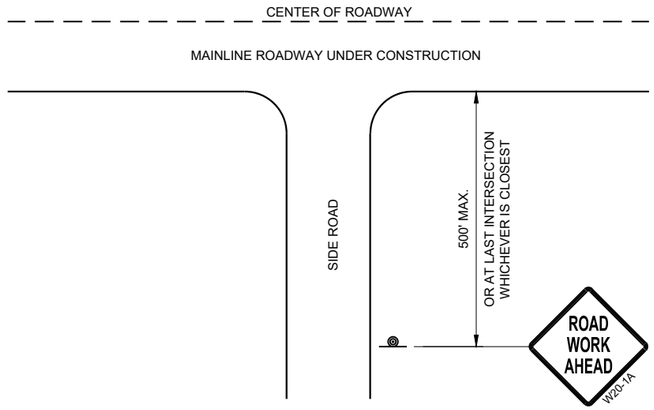
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

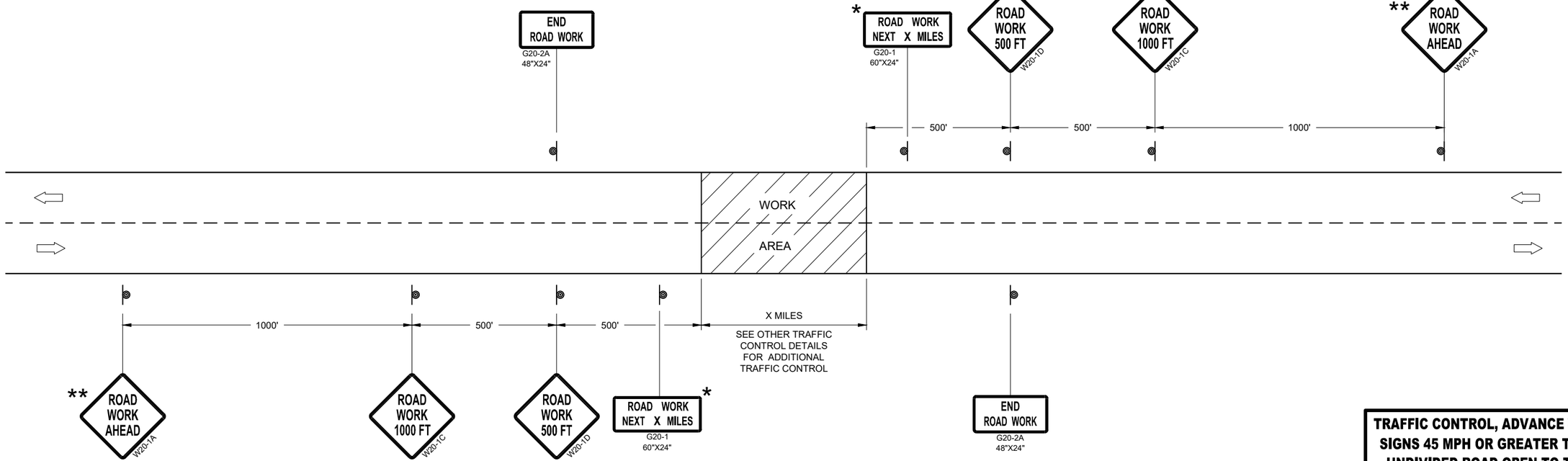
** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

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



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C04 - 05

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.

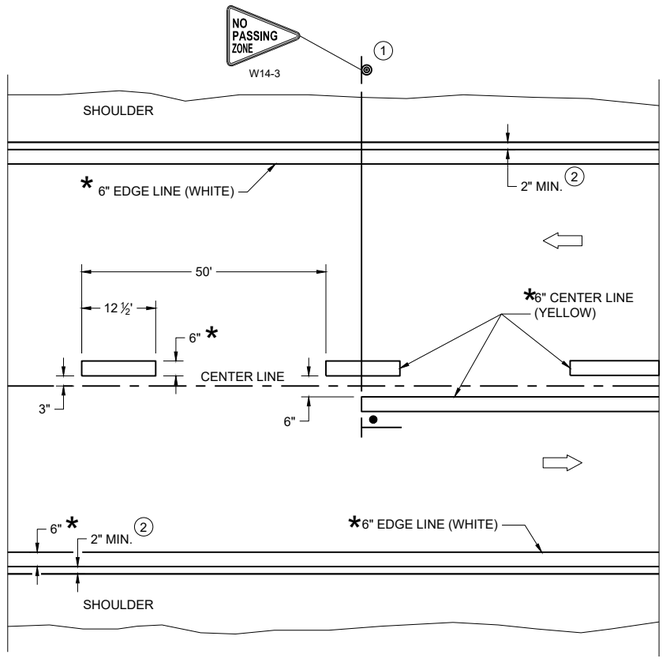
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

LEGEND

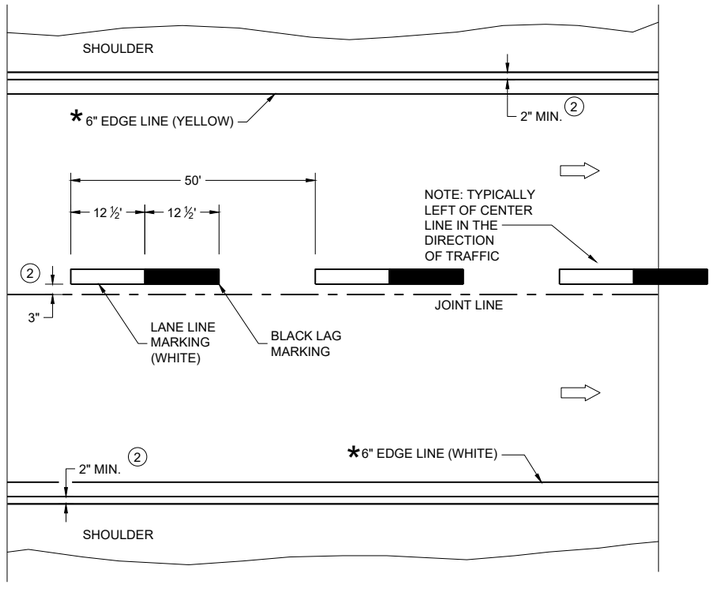
"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

6

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

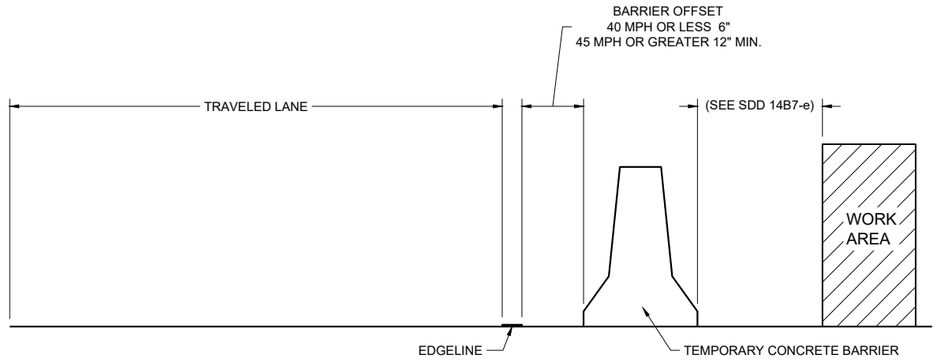
APPROVED

May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA

SDD 15C08-23a



TEMPORARY BARRIER OFFSET FROM EDGELINE

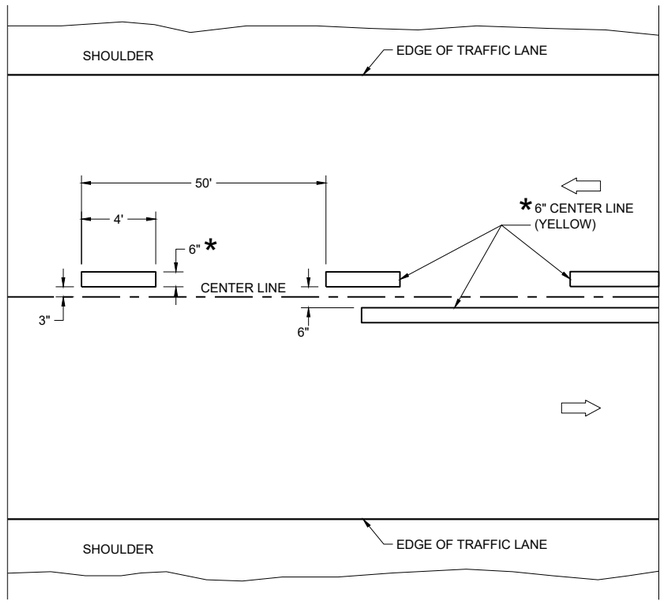
GENERAL NOTES

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

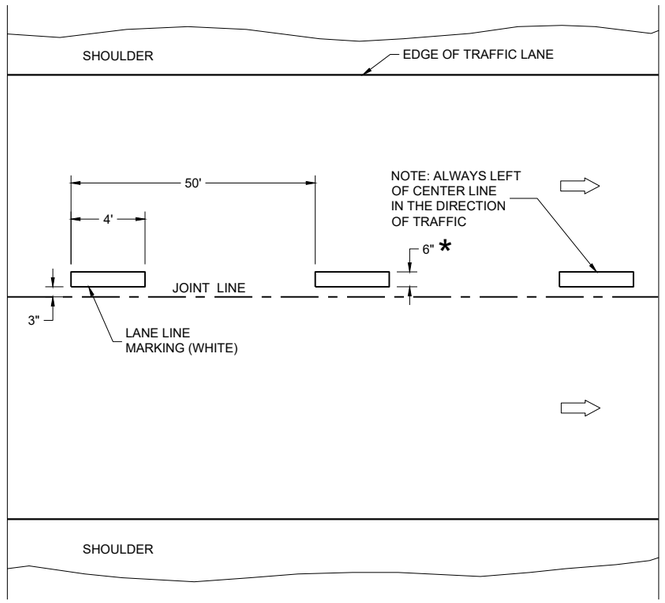
LEGEND

DIRECTION OF TRAFFIC

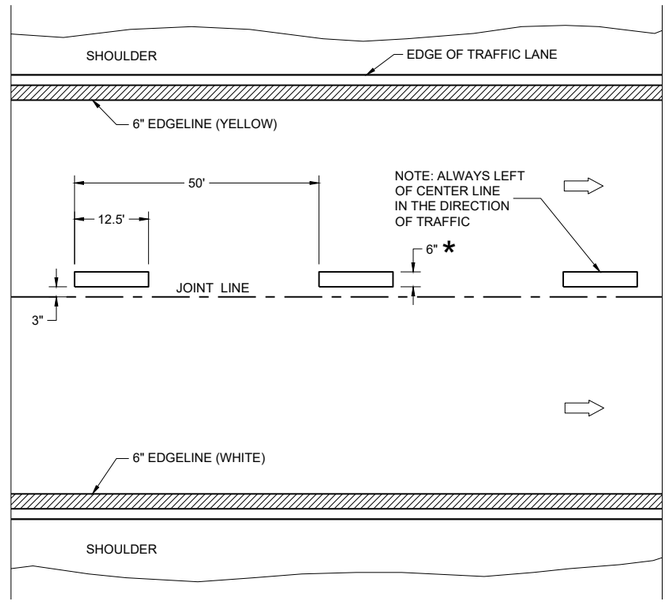
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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SDD 15C08-23b

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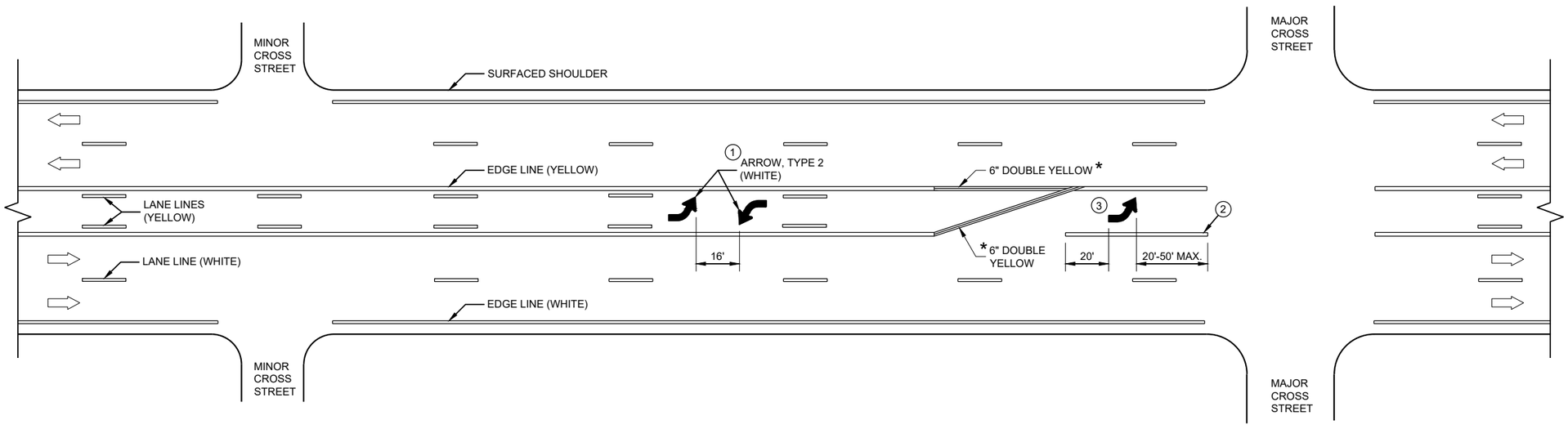
SDD 15C08-23b

GENERAL NOTES

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

DIRECTION OF TRAFFIC

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



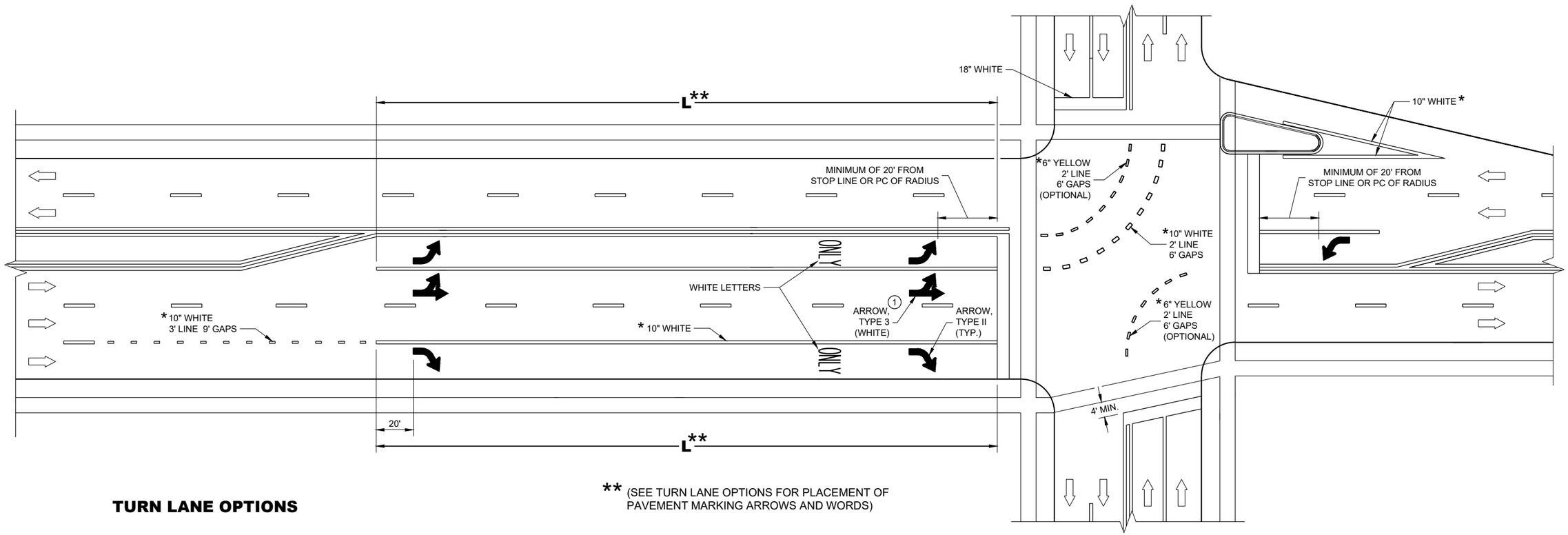
TWO WAY LEFT TURN LANE

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA· 132

SDD 15C08-23c

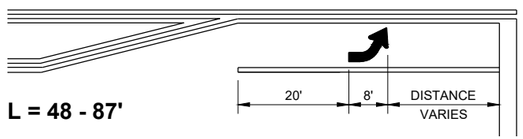
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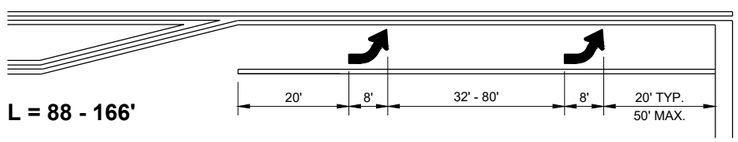
** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

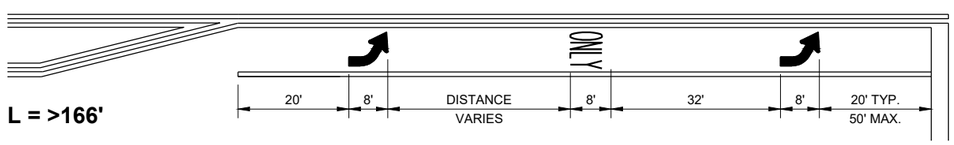
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

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

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING (TURN LANES)

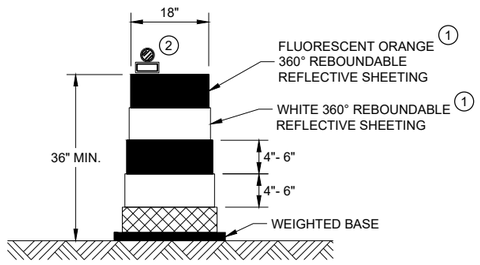
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15C08-23d

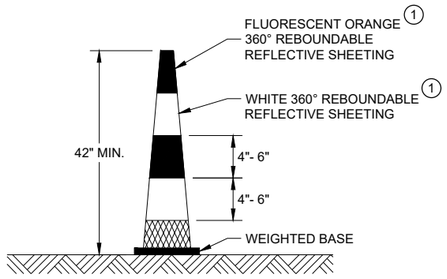
GENERAL NOTES

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.



DRUM

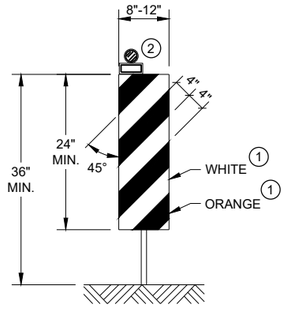
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

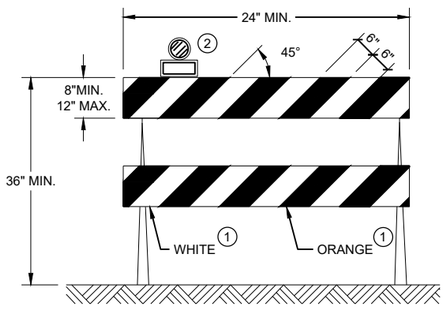
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

BALLAST WIDTHS
RANGE FROM 14"-20"



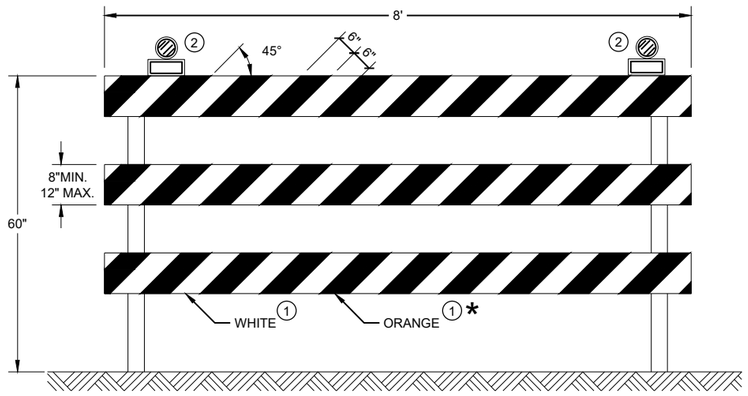
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C11 - 10b

6

SDD 15C11 - 10b

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

DIRECTION OF TRAFFIC

WORK AREA

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

(1) FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

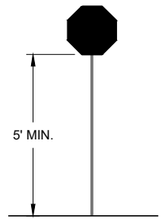
(3) EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



STOP/SLOW PADDLE ON SUPPORT STAFF

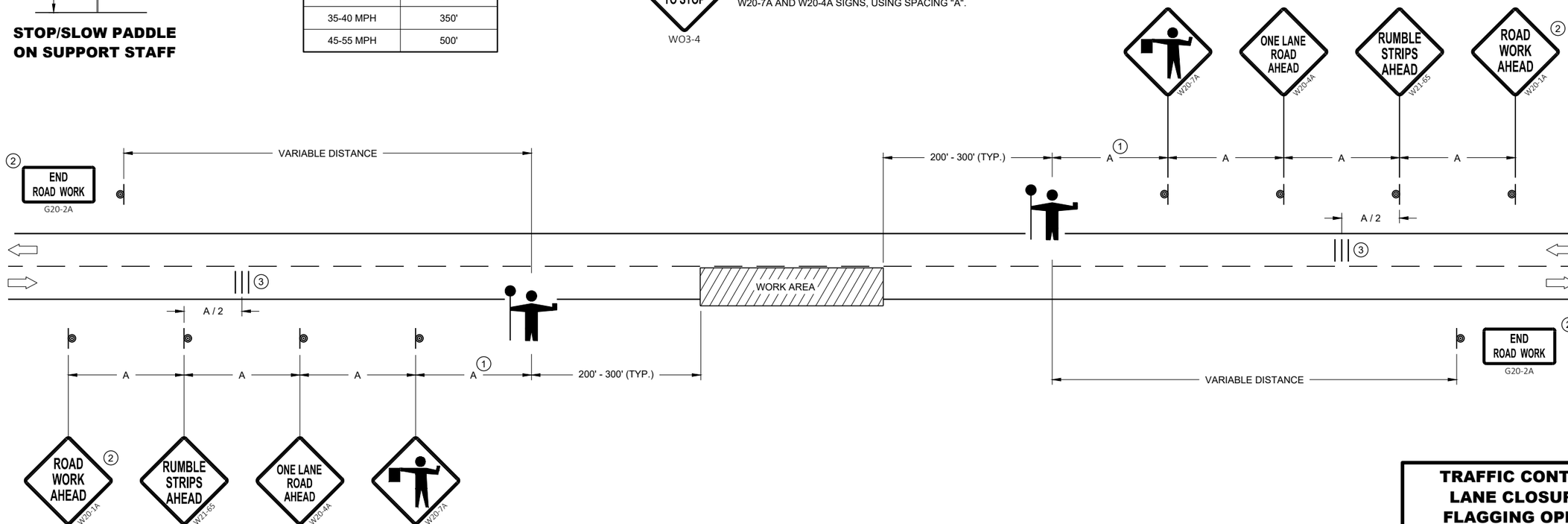
SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



WO3-4

USE OF WO3-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

SDD 15C12 - 09a

SDD 15C12 - 09a

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

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

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

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

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

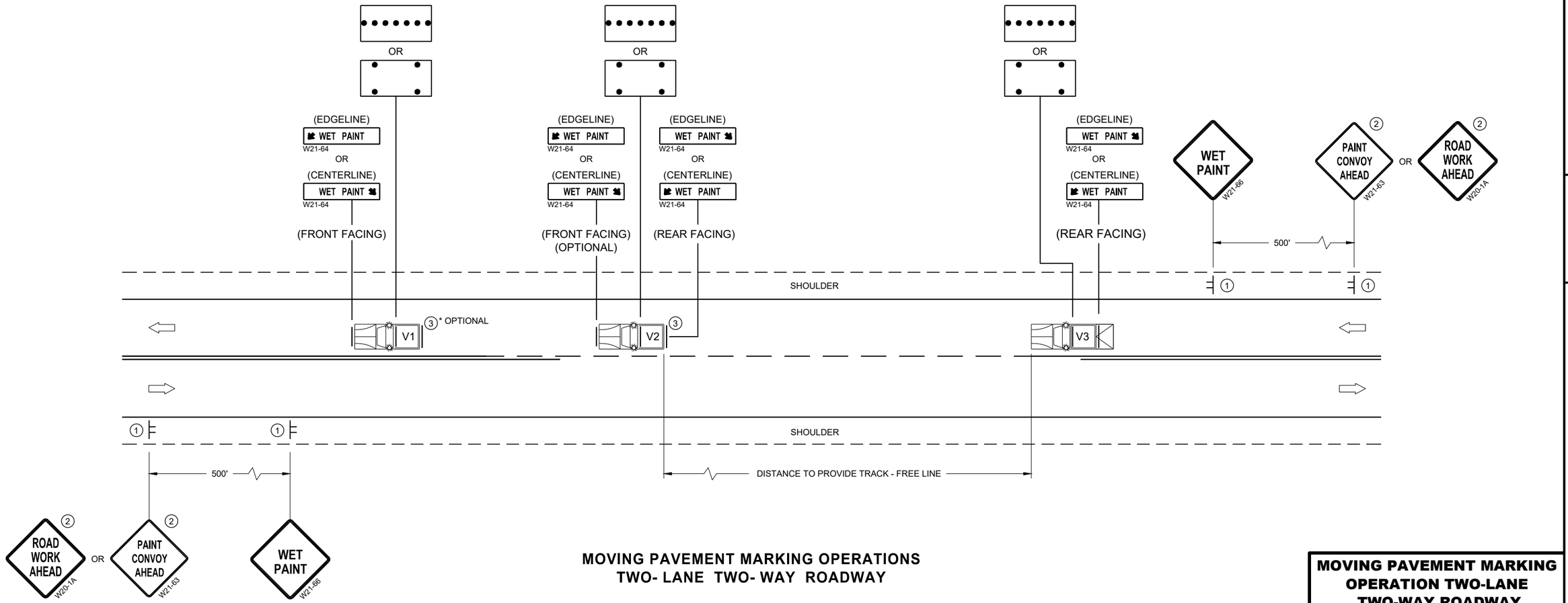
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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

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

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



MOVING PAVEMENT MARKING OPERATIONS
TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023
DATE

/S/ Andrew I
WORK ZONE EN

FHWA

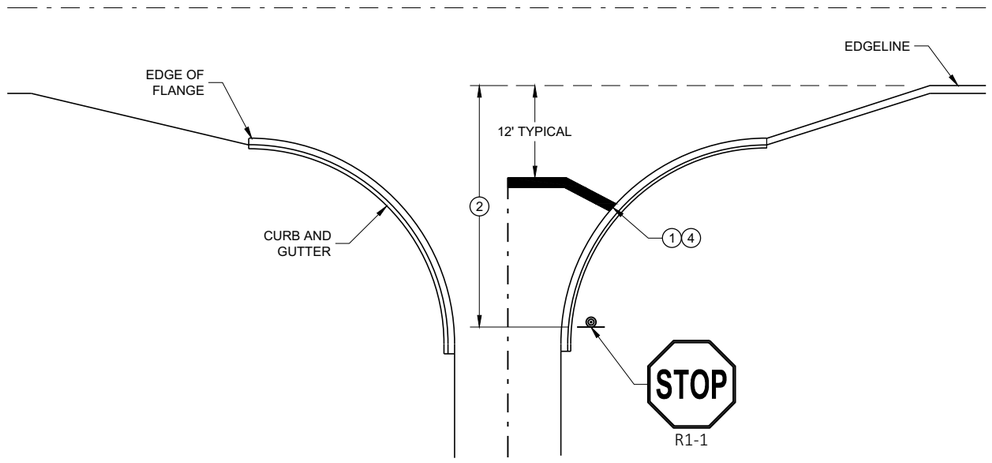
SDD 15C19-08a

SDD 15C19-08a

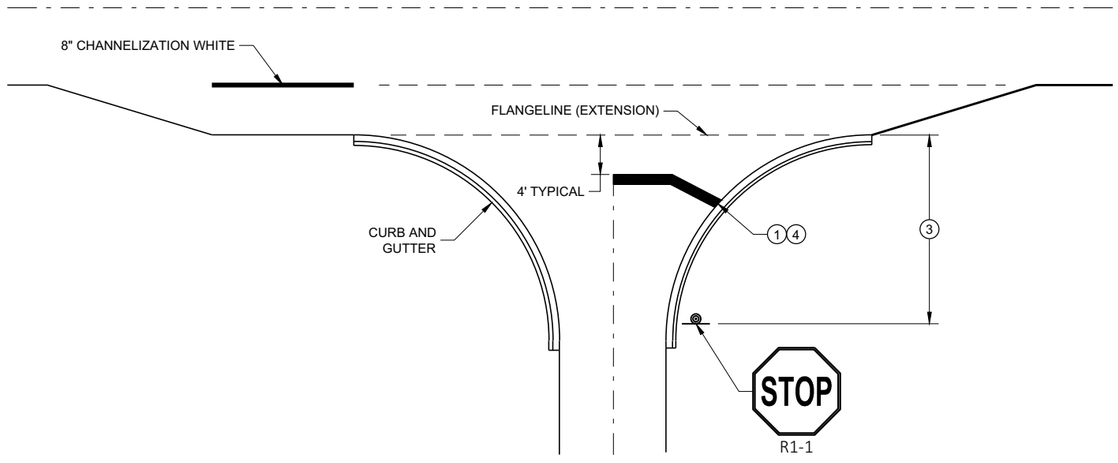
GENERAL NOTES

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

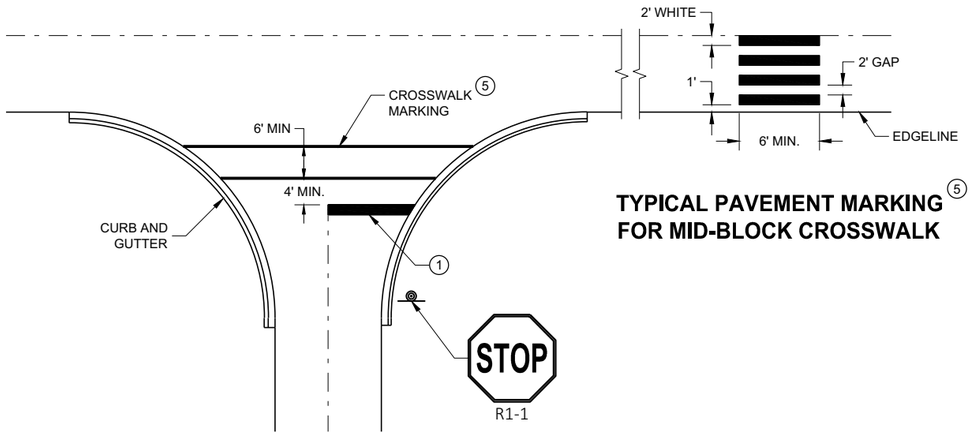
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE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



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

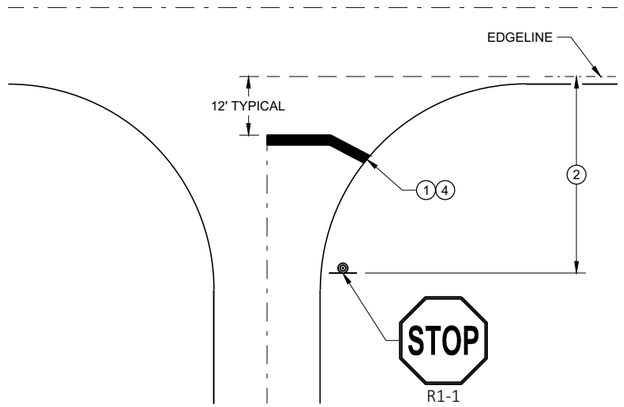


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK 5

TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

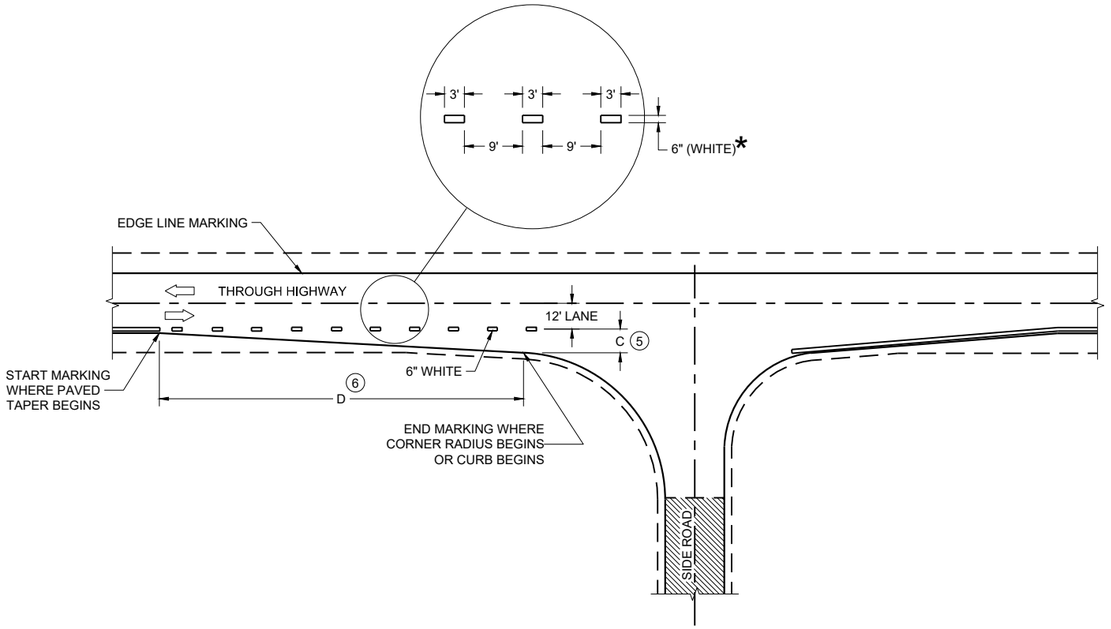
FHWA

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SDD 15C33 - 04

6

SDD 15C33 - 04



MINOR INTERSECTION

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

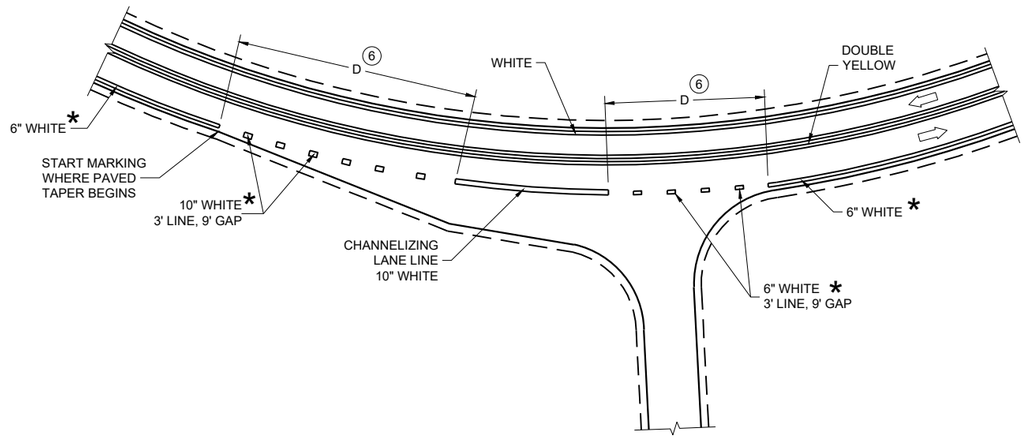
GENERAL NOTES

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

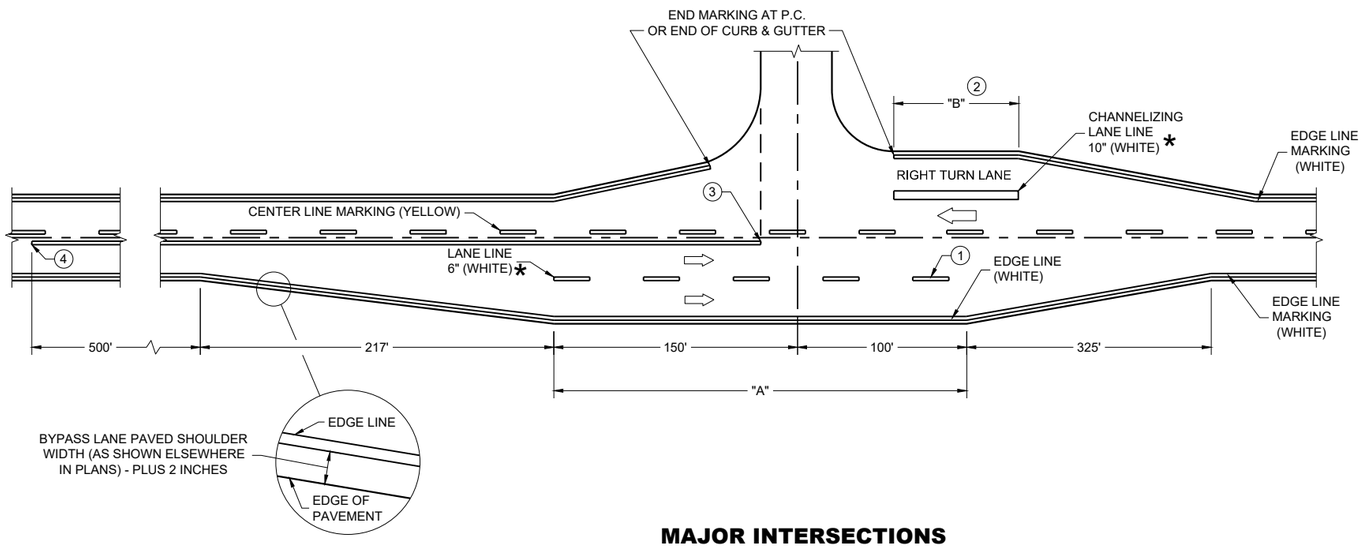
1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
5. WHEN DISTANCE "C" IS LESS THAN 4 FEET,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

LEGEND

DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

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

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

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

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

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

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

(1) PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

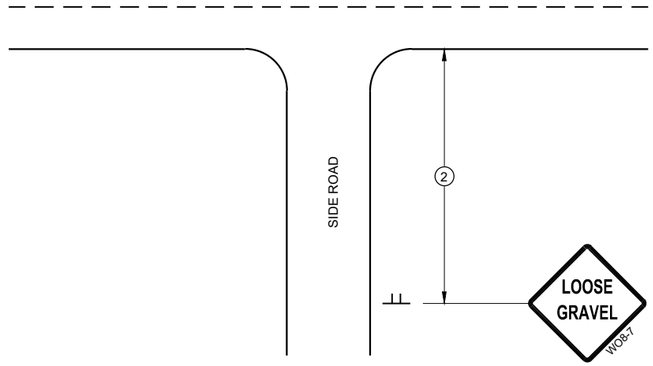
(2) PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

(3) ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

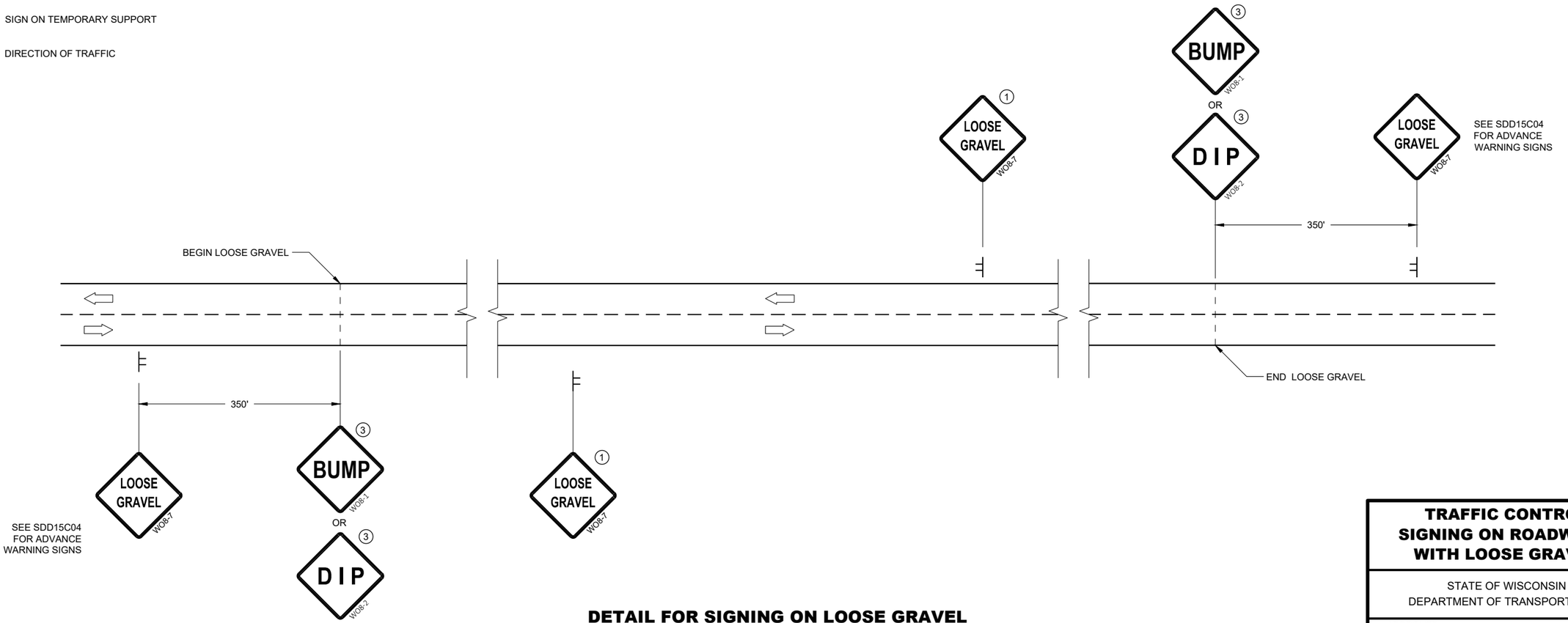
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON LOOSE GRAVEL OR CHIP SEALED SURFACES

TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

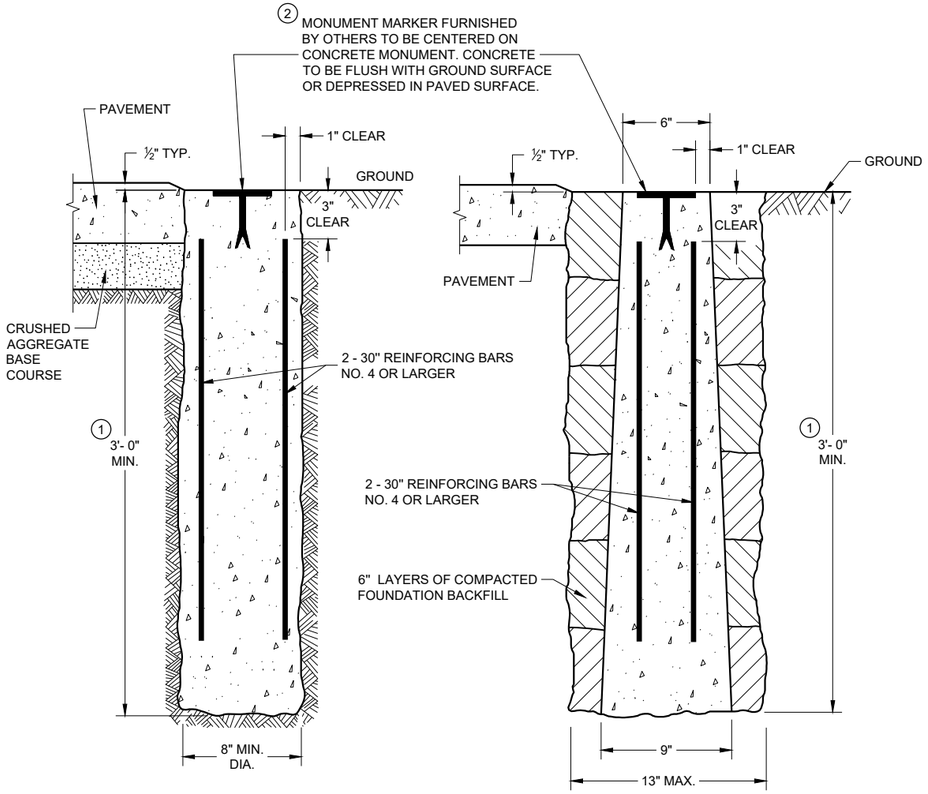
FHWA

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SDD 15D45 - 03

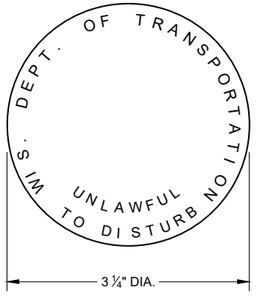
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SDD 15D45 - 03



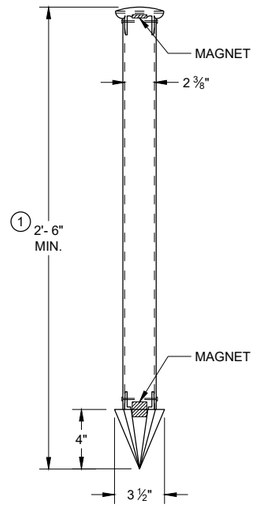
CAST-IN-PLACE **PRECAST**

CONCRETE MONUMENTS
TYPE A

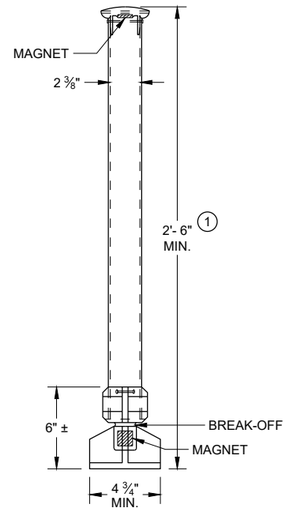


② **WIS DOT MONUMENT MARKER LOGO**

FOR TYPES "A", "C" & "D"

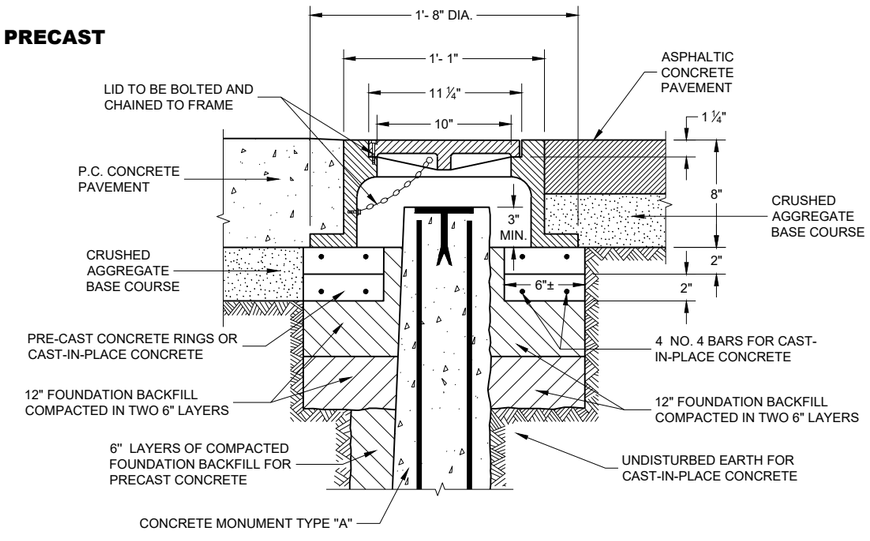


TYPE C DRIVEN MONUMENT



TYPE D NON-DRIVEN BREAK-OFF MONUMENT

ALUMINUM MONUMENTS
(INCLUDES MARKER)



CAST IRON MONUMENT COVER
(APPROXIMATE WEIGHT 95 LBS)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

PERMANENT MAGNETS SHALL BE INSERTED NEAR THE TOP AND BOTTOM OF ALL ALUMINUM MONUMENTS SO THE MONUMENT CAN EASILY BE DETECTED BY A METAL DETECTOR.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

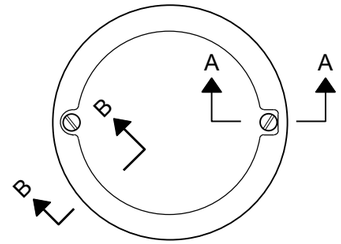
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

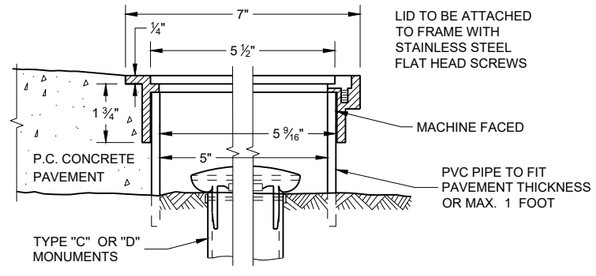
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WISDOT MARKER.



TOP VIEW



SECTION B-B **SECTION A-A**

ALUMINUM MONUMENT COVER
(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Raymond A. Kumapayii
CHIEF SURVEYING AND MA
ENGINEER

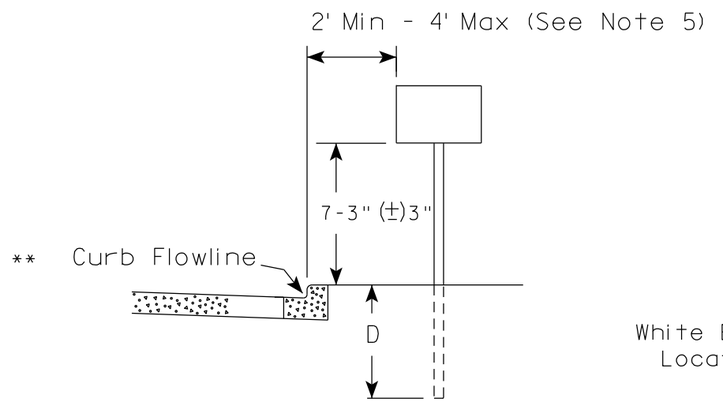
FHWA

6

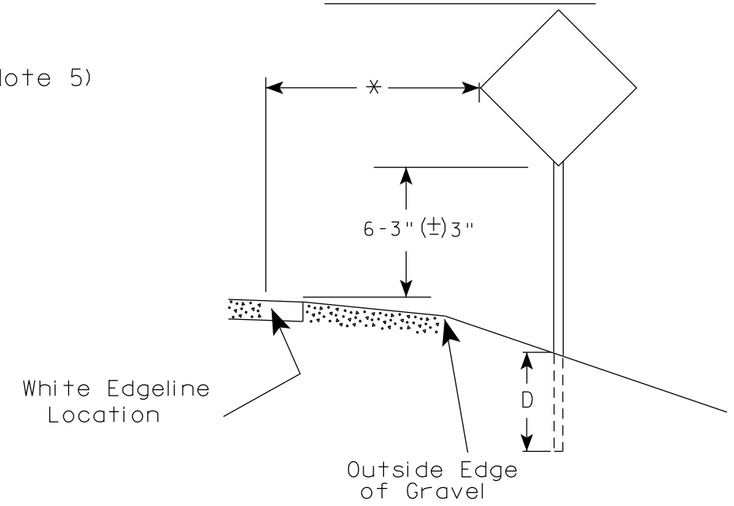
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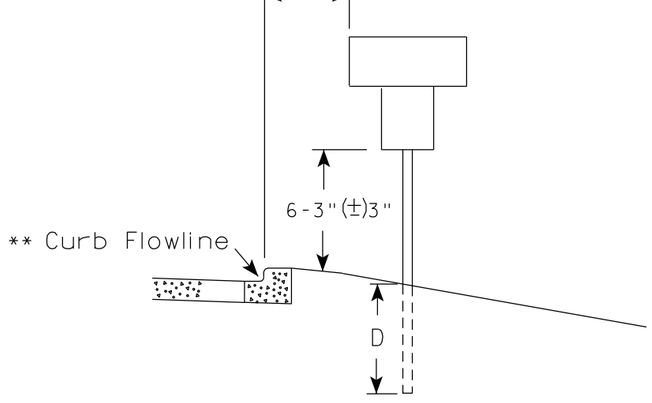
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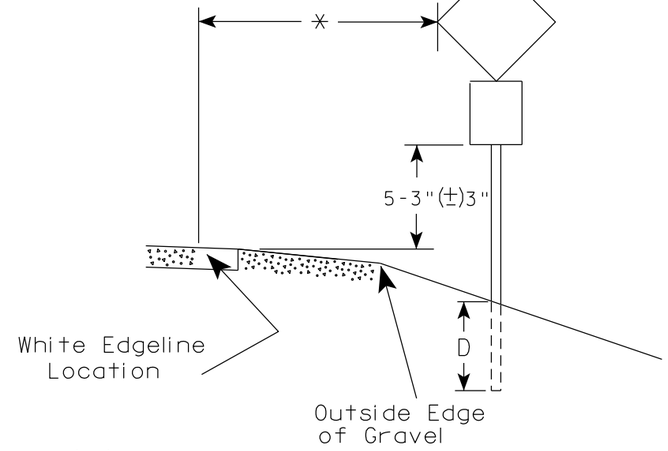
URBAN AREA



RURAL AREA (See Note 2)







** 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.

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 directd by the Engineer.

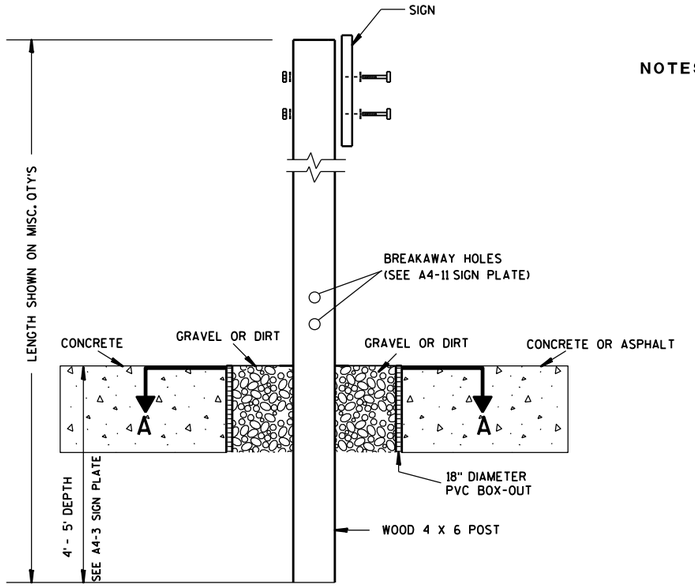
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

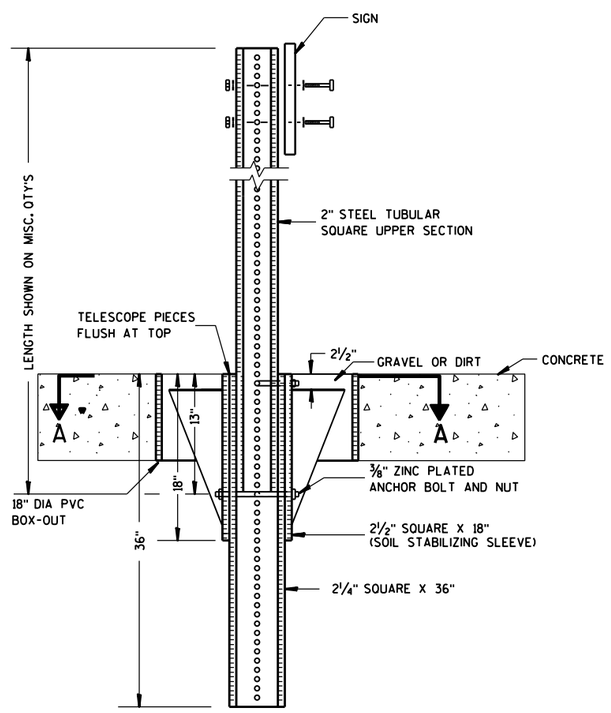
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 141	E



ELEVATION VIEW

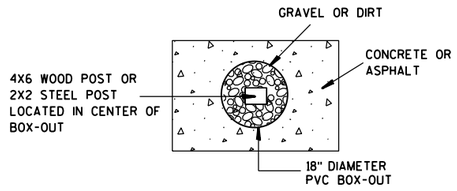
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

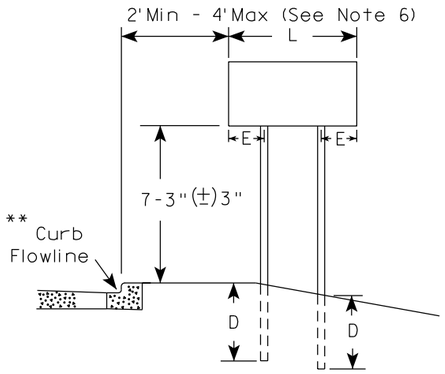
APPROVED Matthew R Rauch
for State Traffic Engineer

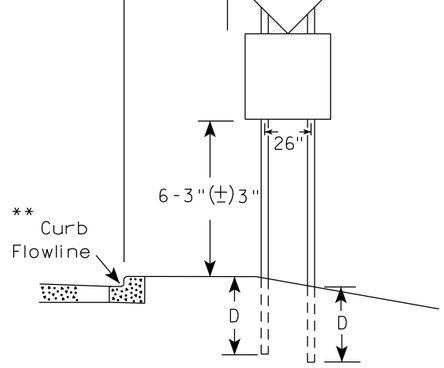
DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

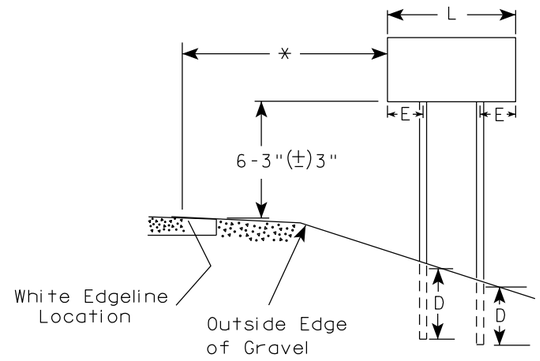
URBAN AREA

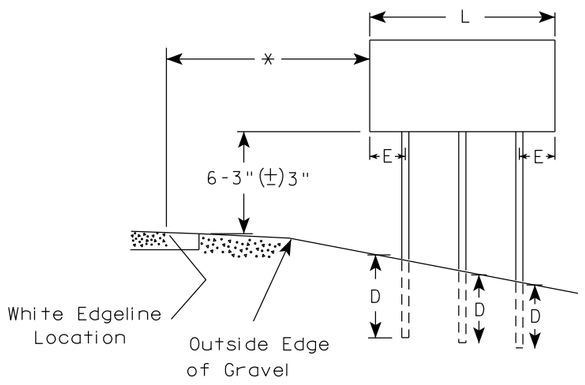


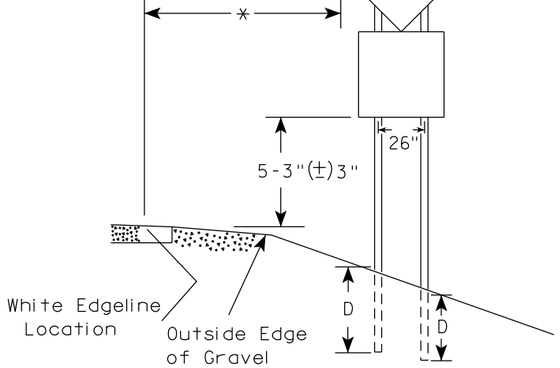


48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

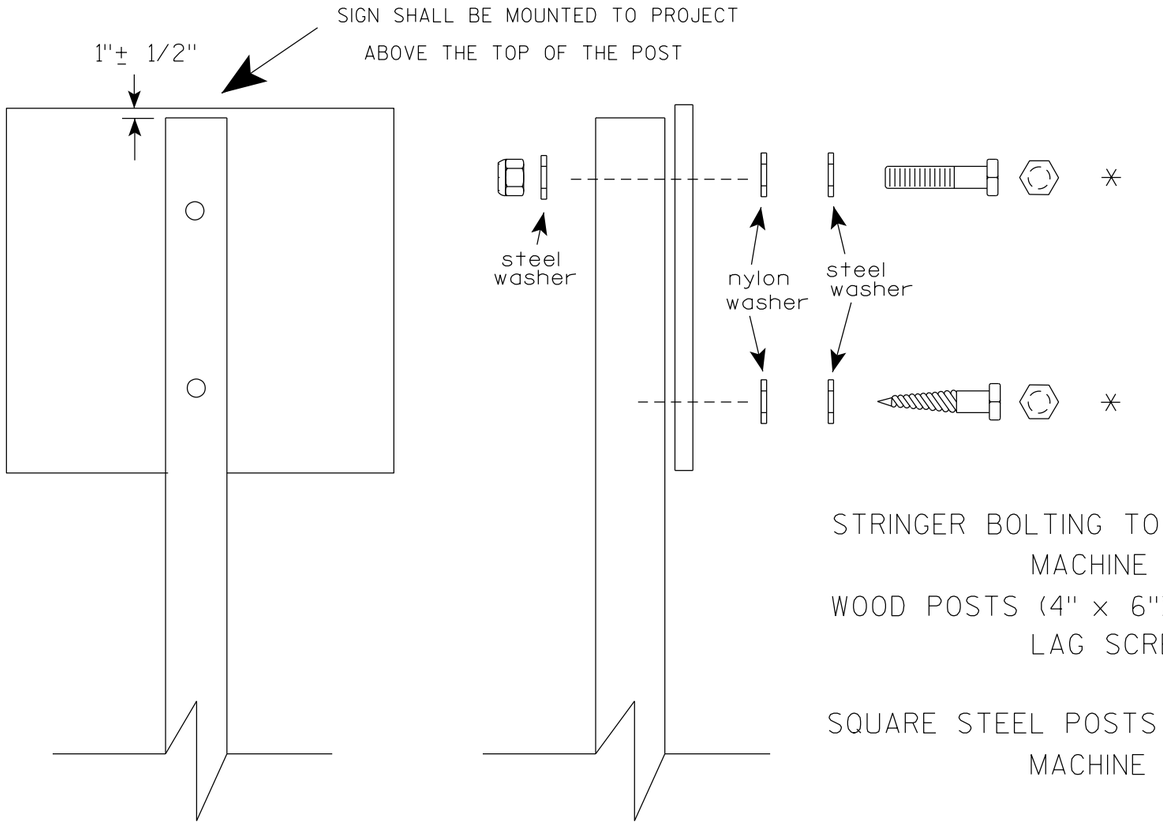
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

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: 143	E



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

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

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 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

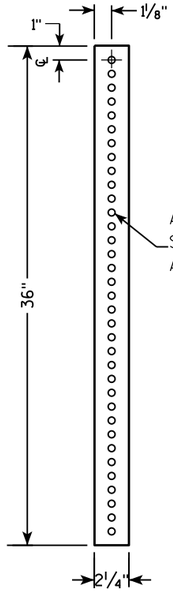
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

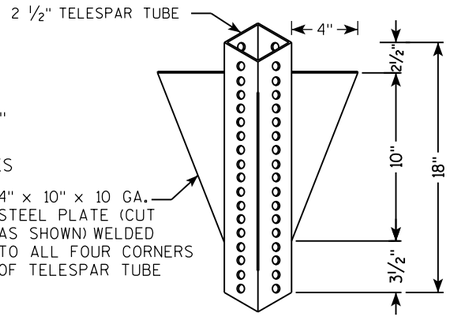
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

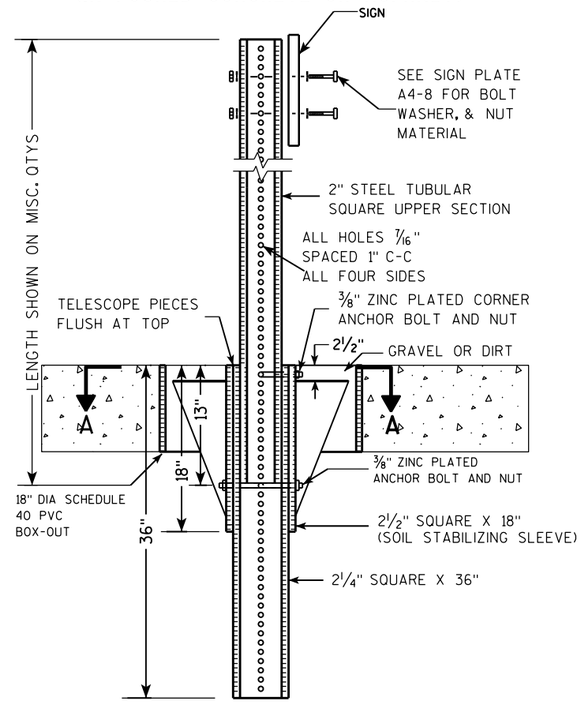
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



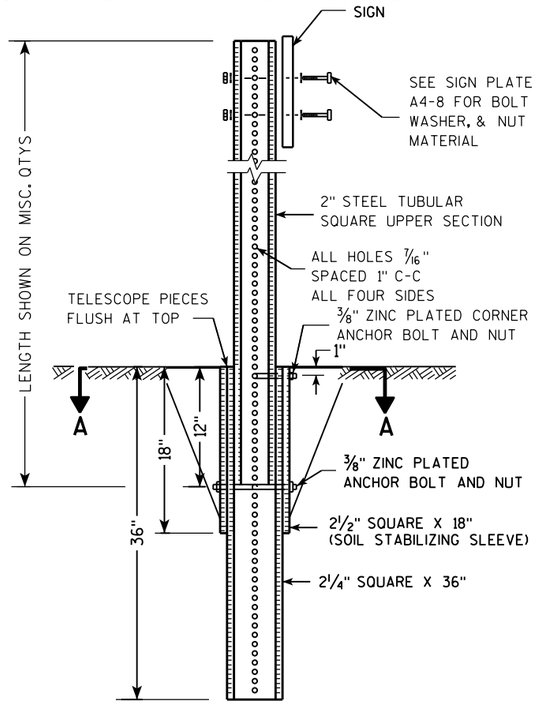
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

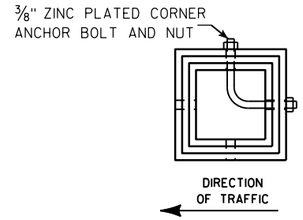


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

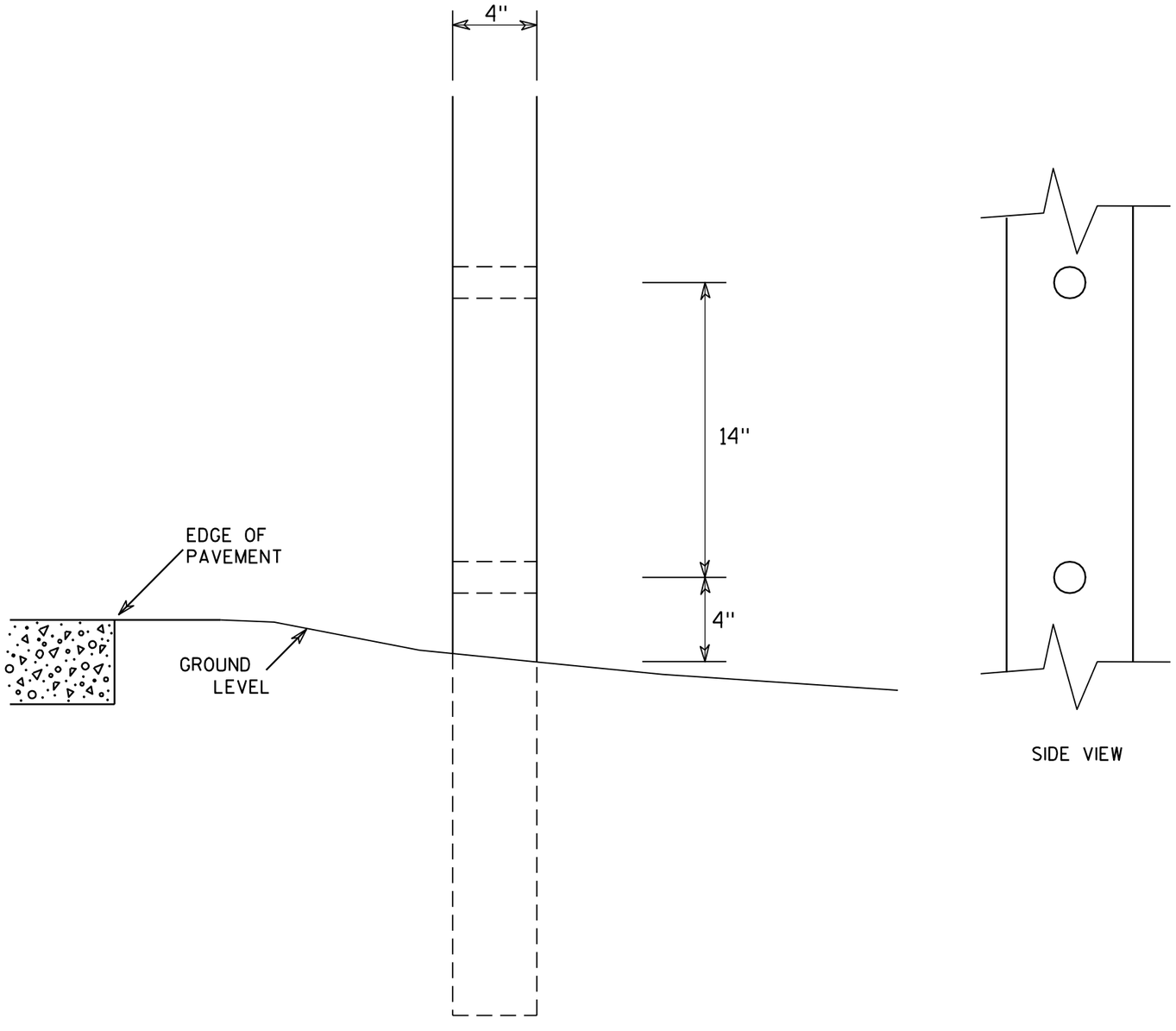
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

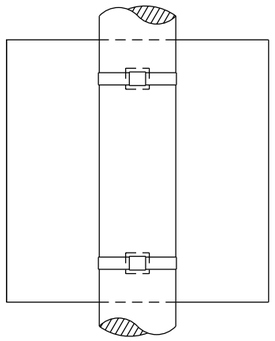
APPROVED Chester J Spang for State Traffic Engineer

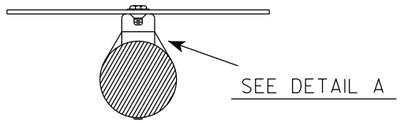
DATE 3/27/97 PLATE NO. A4-11.2

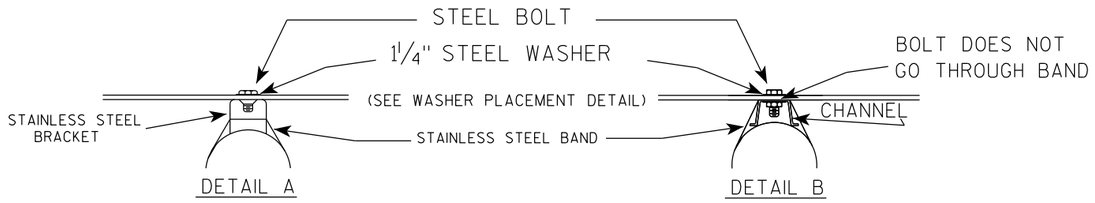
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 146	E

BANDING

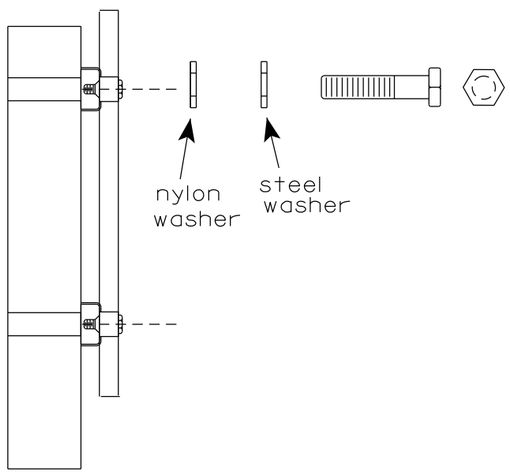
SINGLE SIGN







WASHER PLACEMENT

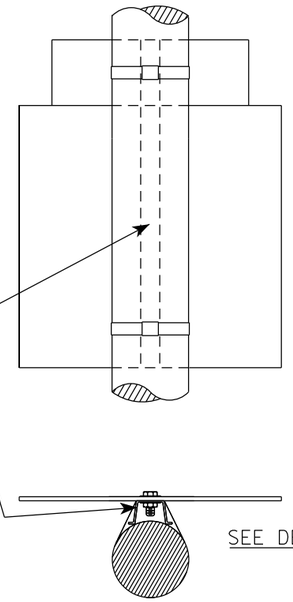


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

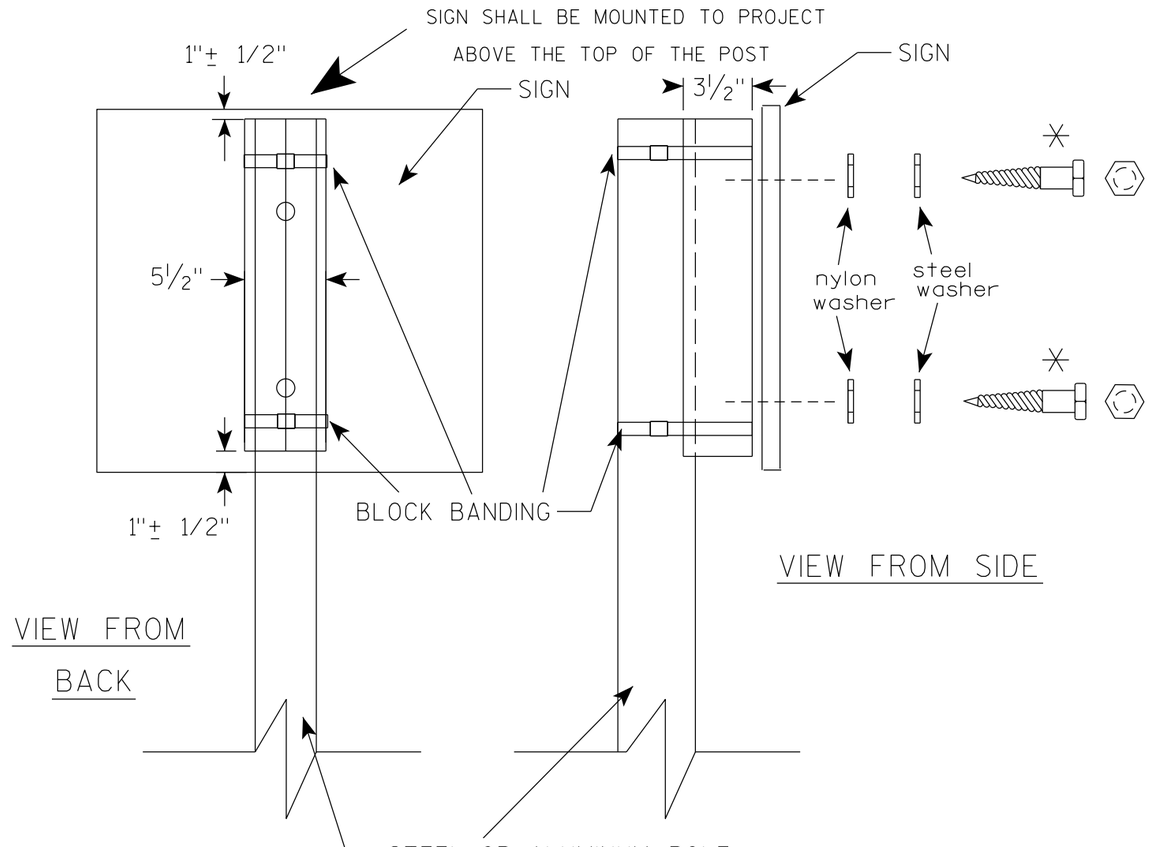
DATE 6/10/19 PLATE NO. A5-9.4

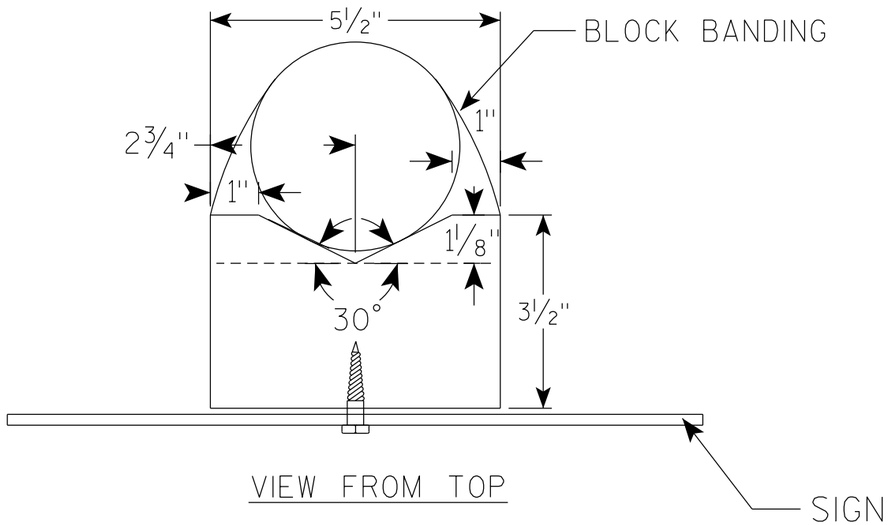
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 147	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





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, ¾" 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 NORNALLY 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 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

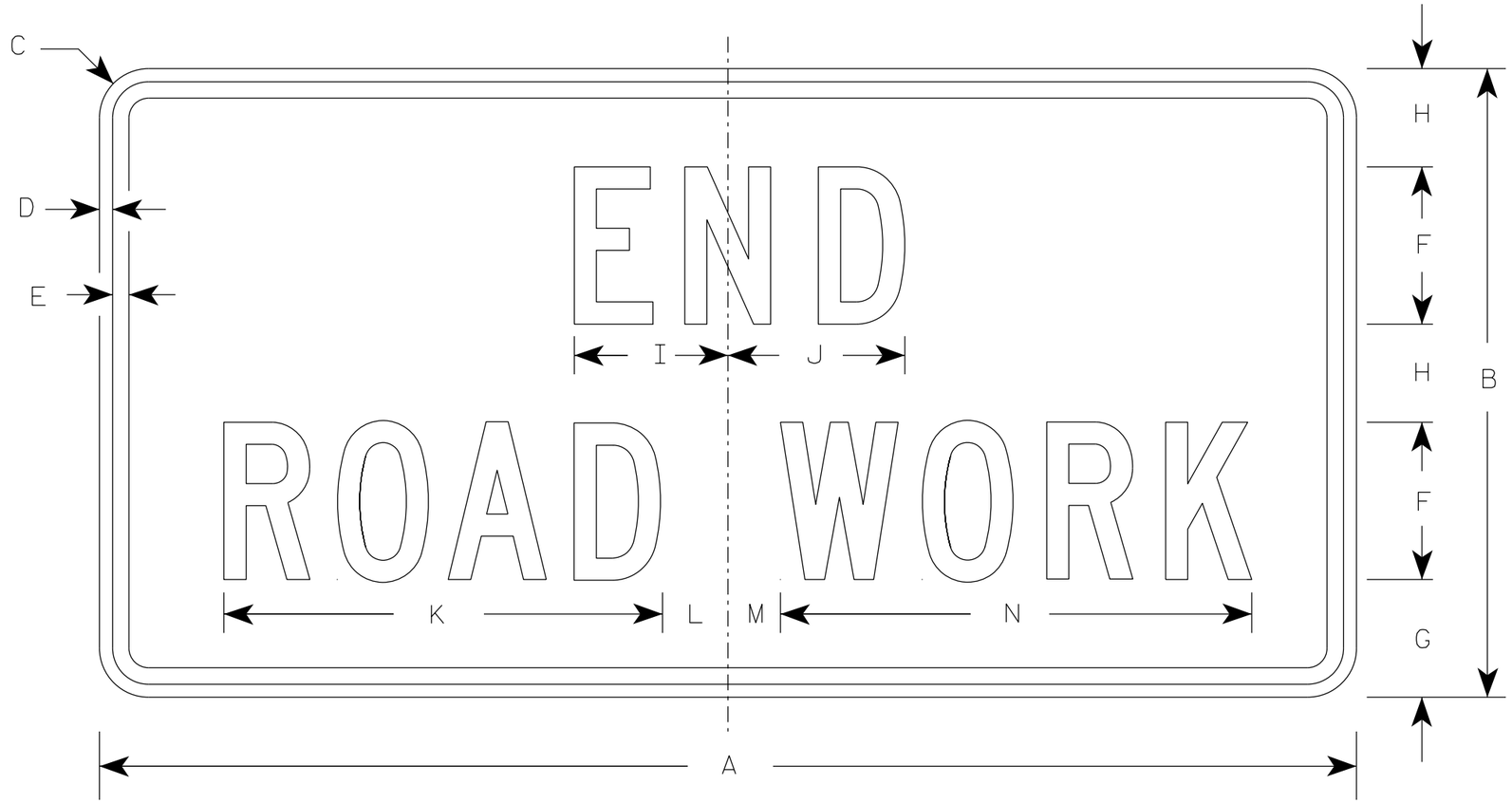
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 148 E



G20-2A

NOTES

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

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

STANDARD SIGN

G20-2A

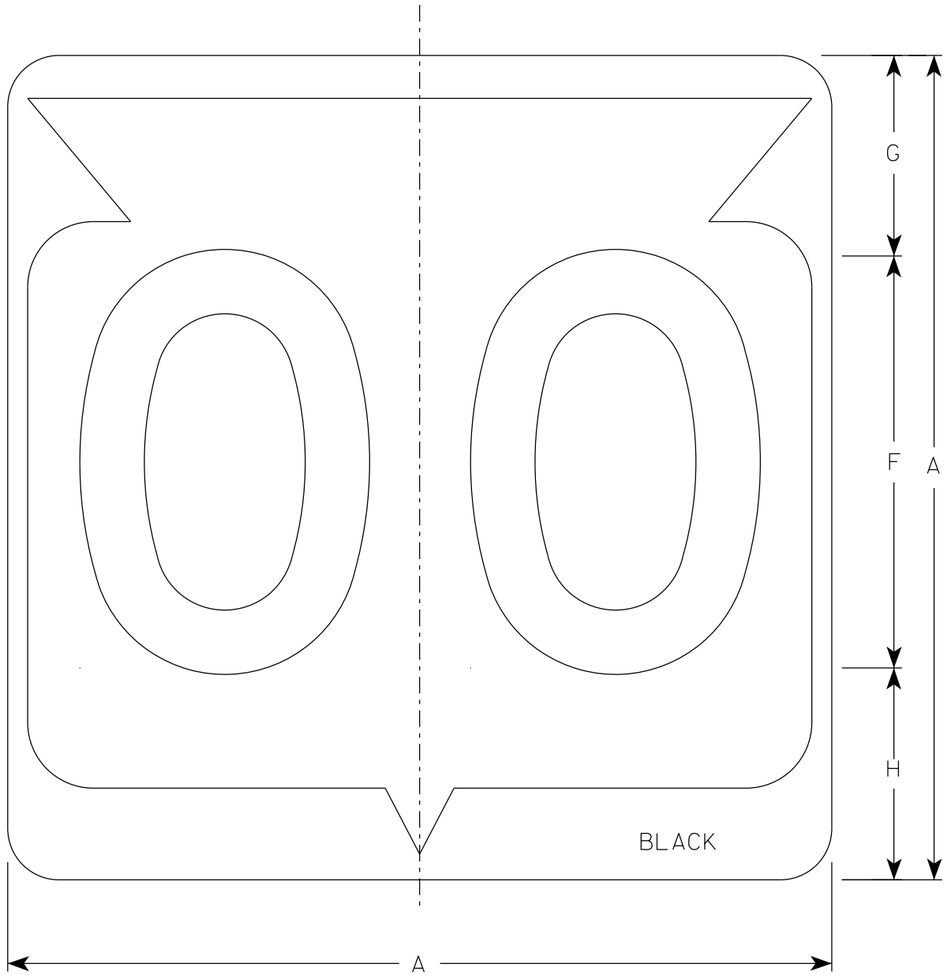
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

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

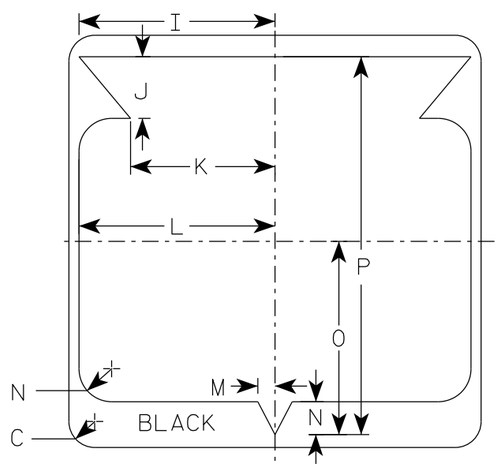
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\G202A.dgn PLOT DATE : 26-JAN 2023 8:27 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42



M1-6

NOTES

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



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

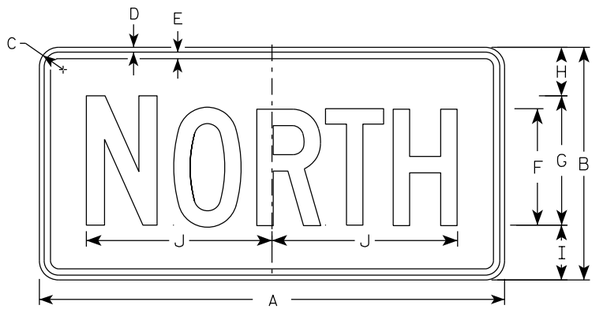
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

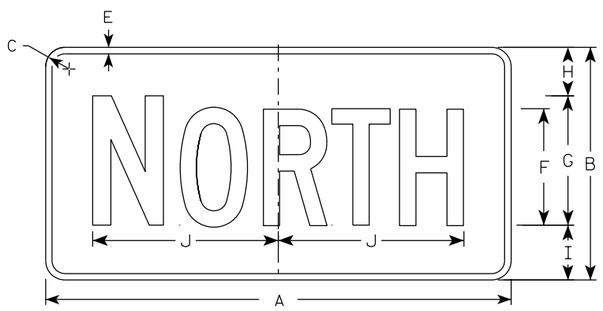
APPROVED Matthew R Rauch
for State Traffic Engineer

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

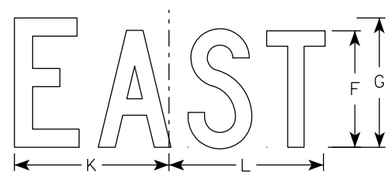
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 150	E



M3-1
MM3-1
MP3-1



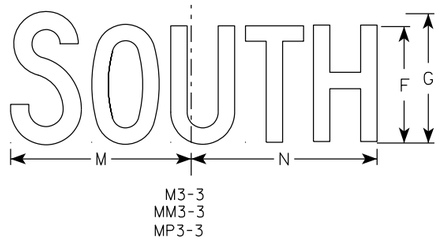
MB3-1
MK3-1
MN3-1



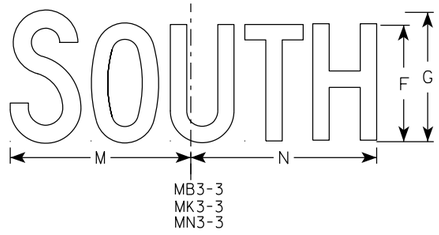
M3-2
MM3-2
MP3-2



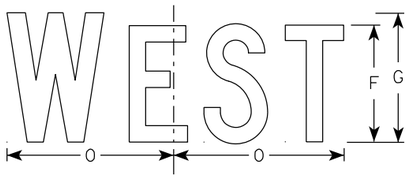
MB3-2
MK3-2
MN3-2



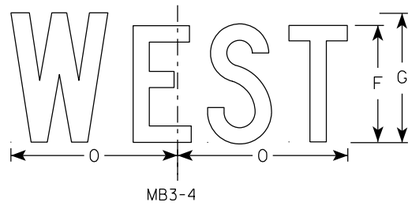
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
   Background - See note 5
   Message - See note 5
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. 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
6. Note the first letter of each direction is larger than the remainder of the message.

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

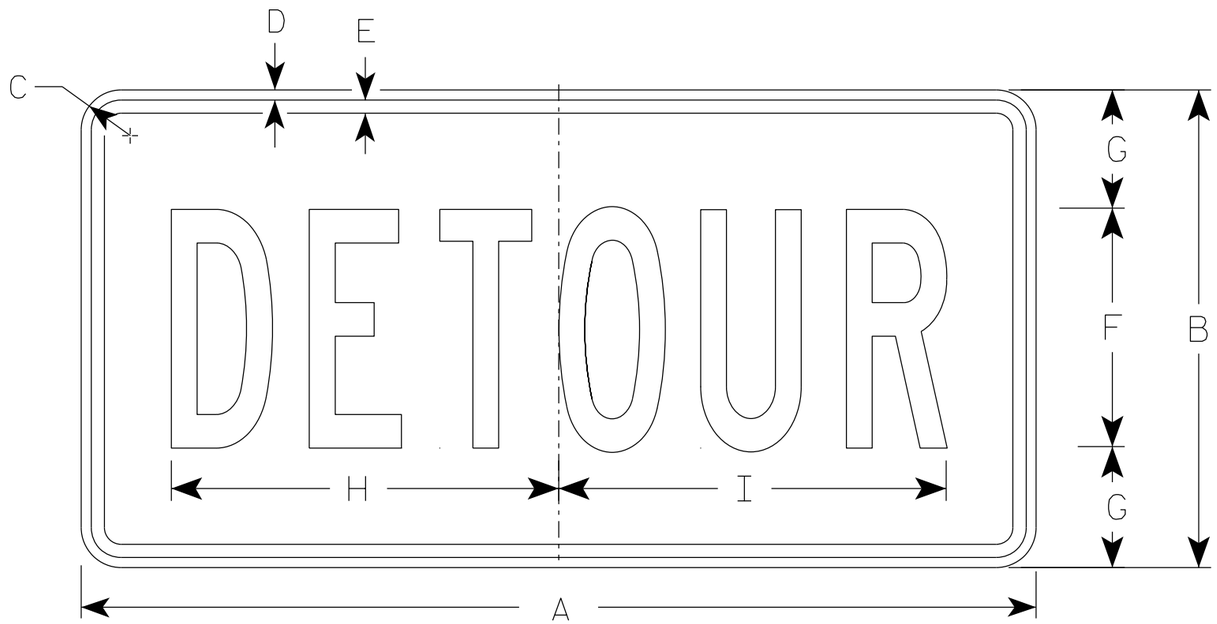
STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 151 | E



M4-8

NOTES

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

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

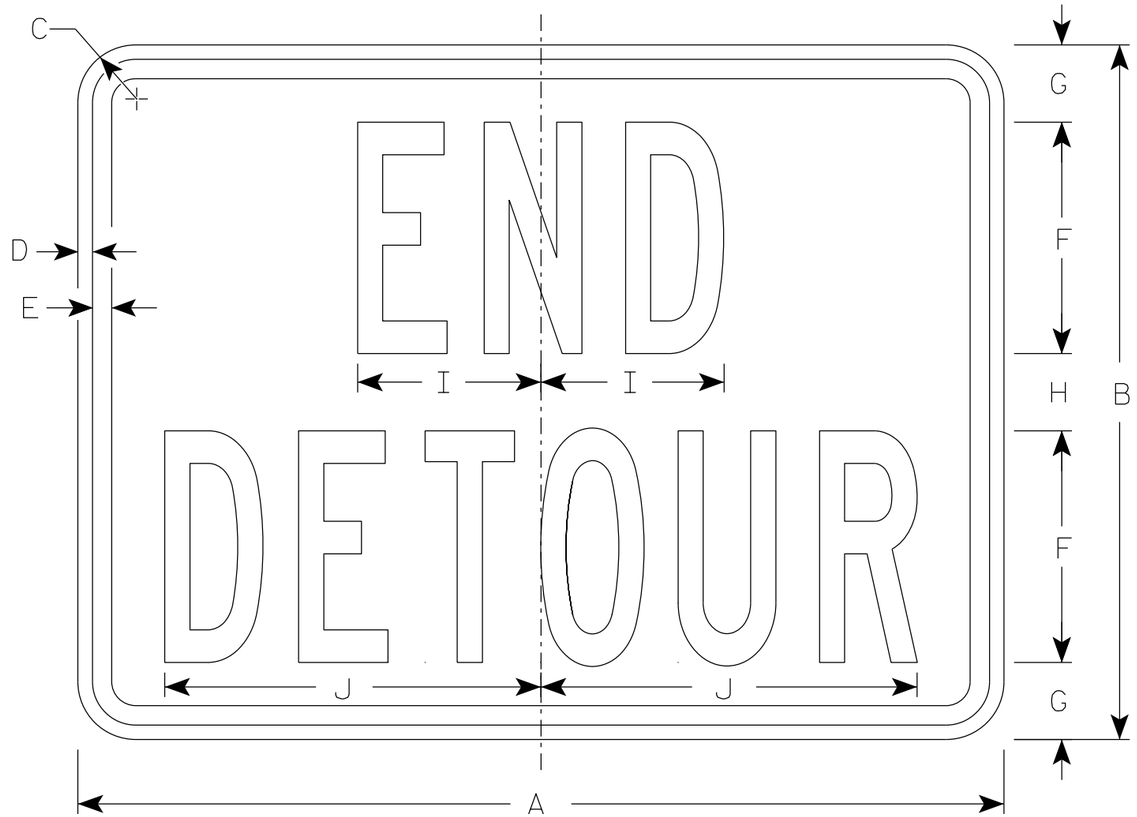
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



M4-8A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 ½	⅜	½	6	2	2	4 ¾	9 ¾																	3.0
2M	24	18	1 ½	⅜	½	6	2	2	4 ¾	9 ¾																	3.0
3	30	24	1 ½	⅜	½	8	2 ½	3	6 ¾	13																	5.0
4	30	24	1 ½	⅜	½	8	2 ½	3	6 ¾	13																	5.0
5	30	24	1 ½	⅜	½	8	2 ½	3	6 ¾	13																	5.0

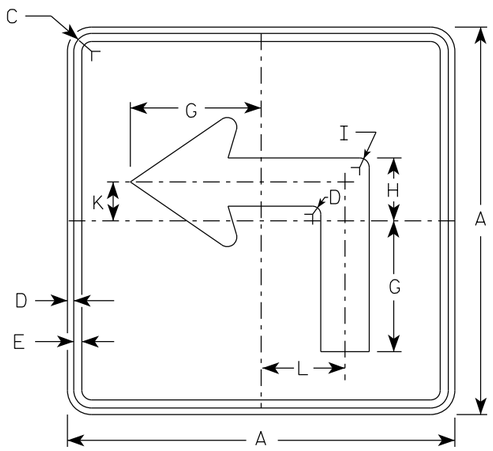
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

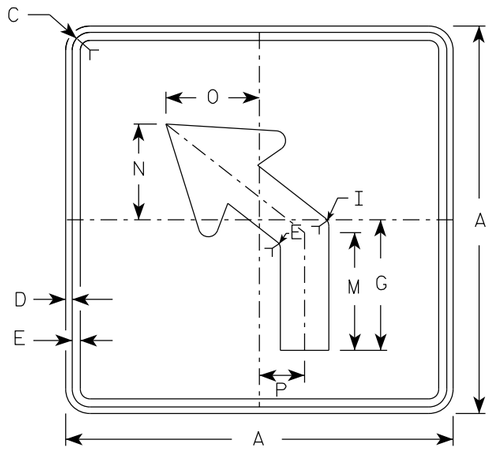
APPROVED Matthew R Rauch
for State Traffic Engineer

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

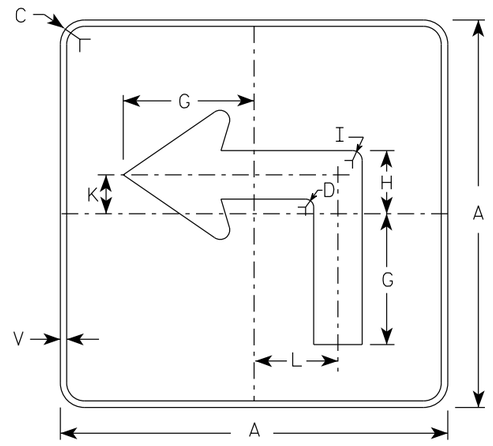
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 153 | E



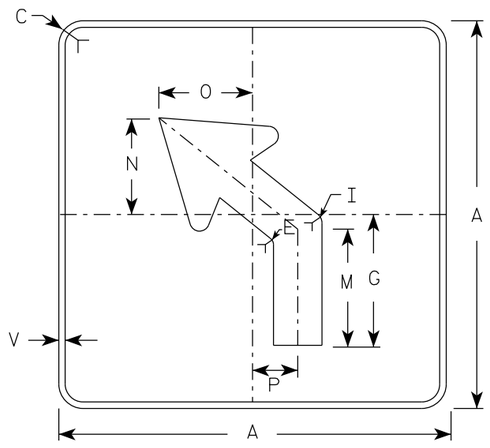
M5-1L
MM5-1L
MO5-1L
MP5-1L



M5-2L
MM5-2L
MO5-2L
MP5-2L



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

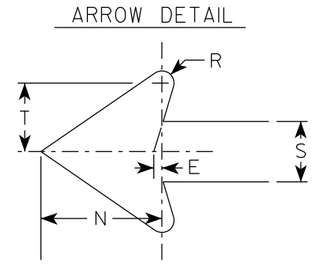


MB5-2L
MK5-2L
MN5-2L
MR5-2L

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. 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
   MO5-1 and MO5-2 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
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

ARROW DETAIL



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

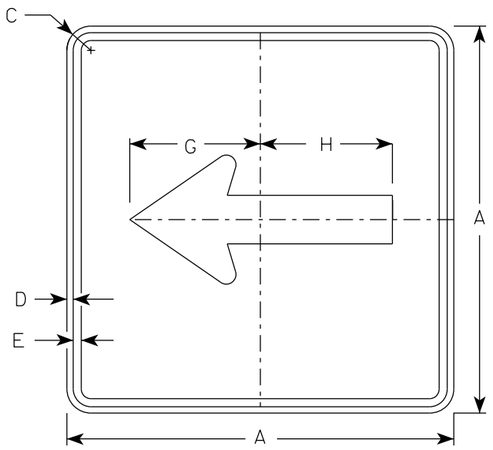
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

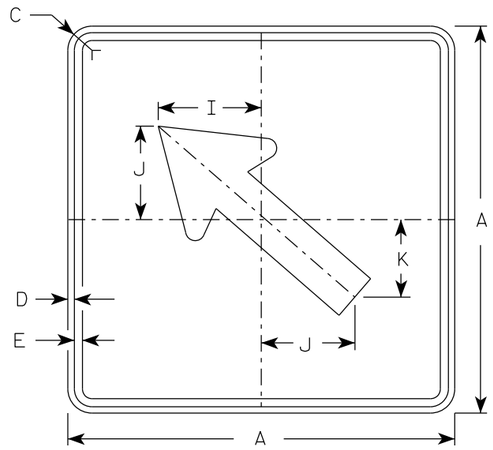
APPROVED Matthew R Rauch
for State Traffic Engineer

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

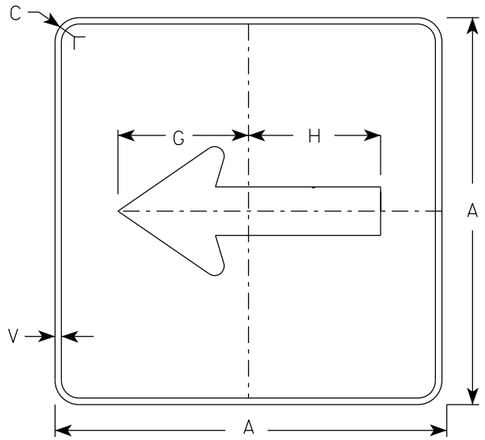
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 154 | E



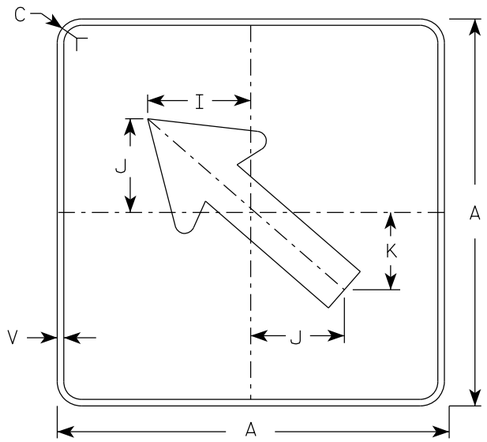
M6-1
MM6-1
MO6-1
MP6-1



M6-2
MM6-2
MO6-2
MP6-2



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

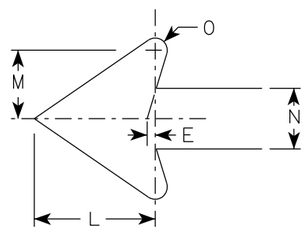


MB6-2
MK6-2
MN6-2
MR6-2

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
   MO6-1 and MO6-2 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

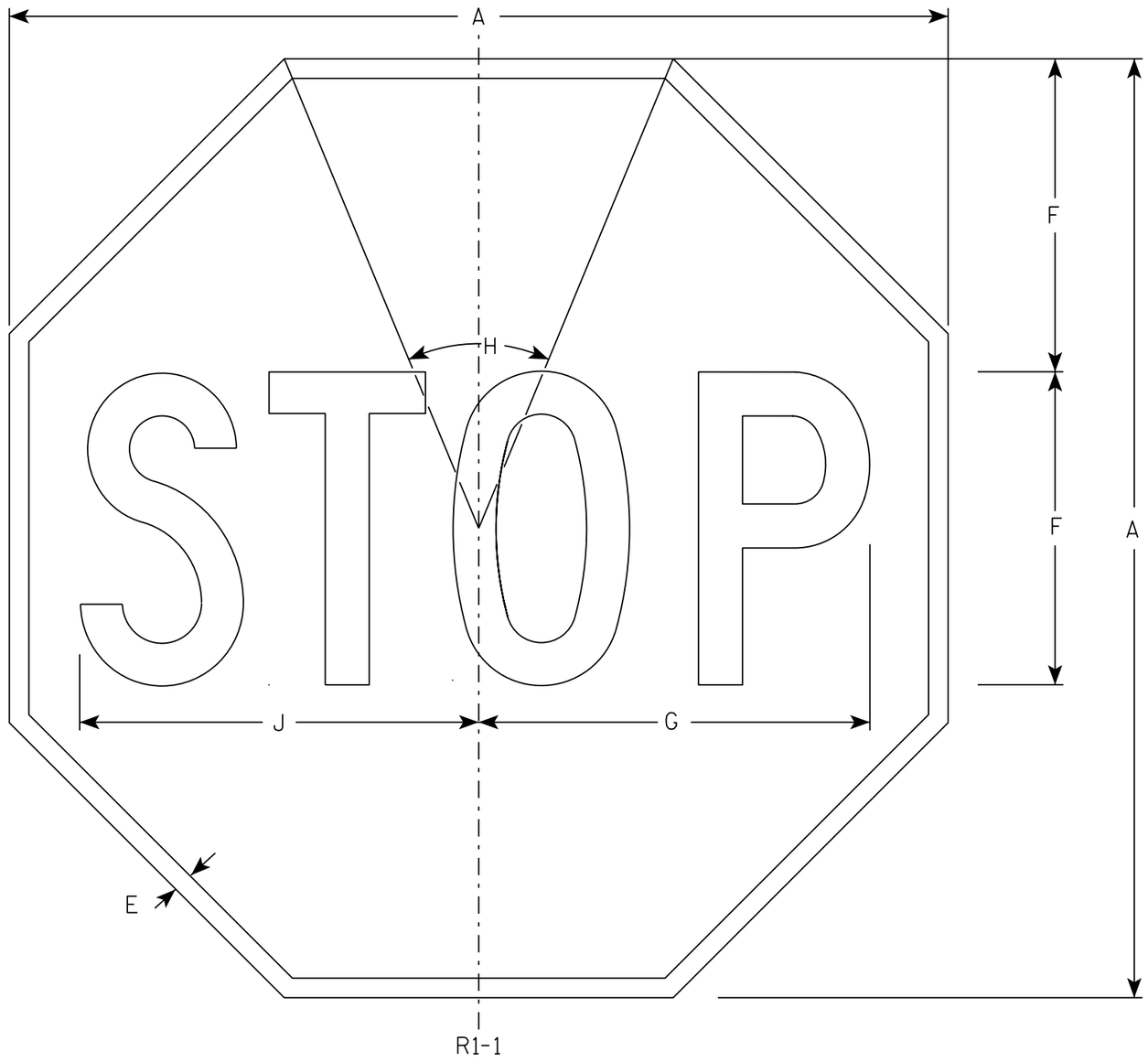
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 155 | E



NOTES

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

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

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

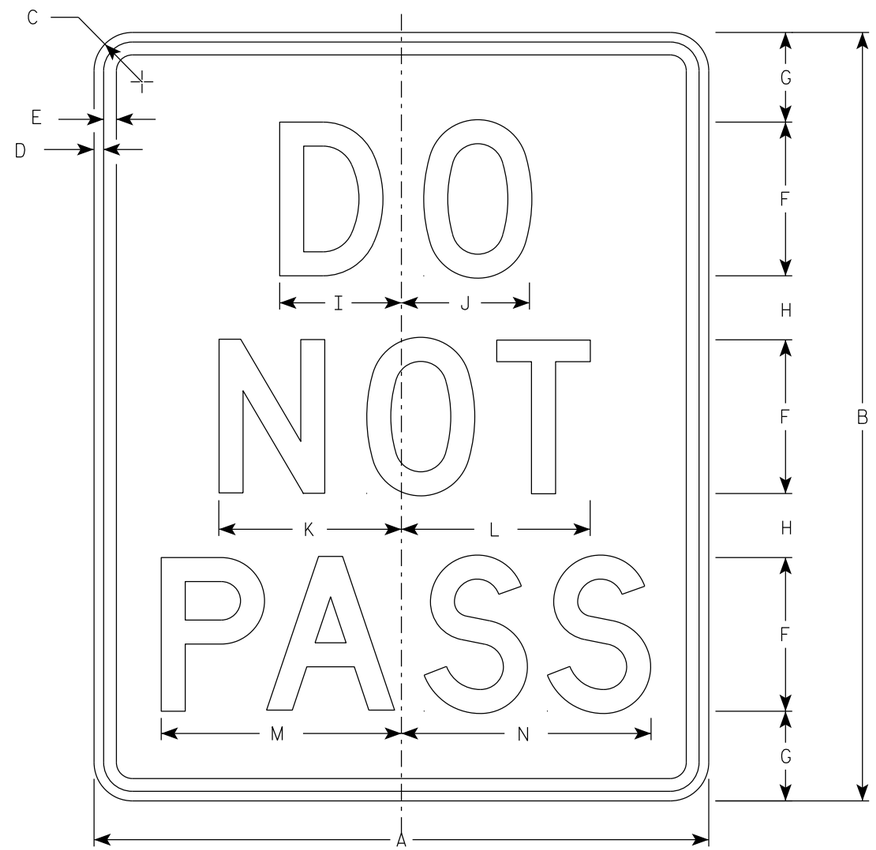
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 156	E

NOTES

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



R4-1

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	4	3 1/2	2 1/2	3 1/8	3 1/4	4 3/4	4 7/8	6 1/4	6 1/2													3.0
2S	24	30	1 1/2	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
2M	24	30	1 1/2	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
3	36	48	1 7/8	5/8	3/4	8	7	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13													12.0
4	36	48	1 7/8	5/8	3/4	8	7	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13													12.0
5	48	60	3	3/4	1	10	8	7	7 3/4	8 3/8	11 7/8	12 1/4	15 5/8	16 1/4													20.0

STANDARD SIGN
R4-1

WISCONSIN DEPT OF TRANSPORTATION

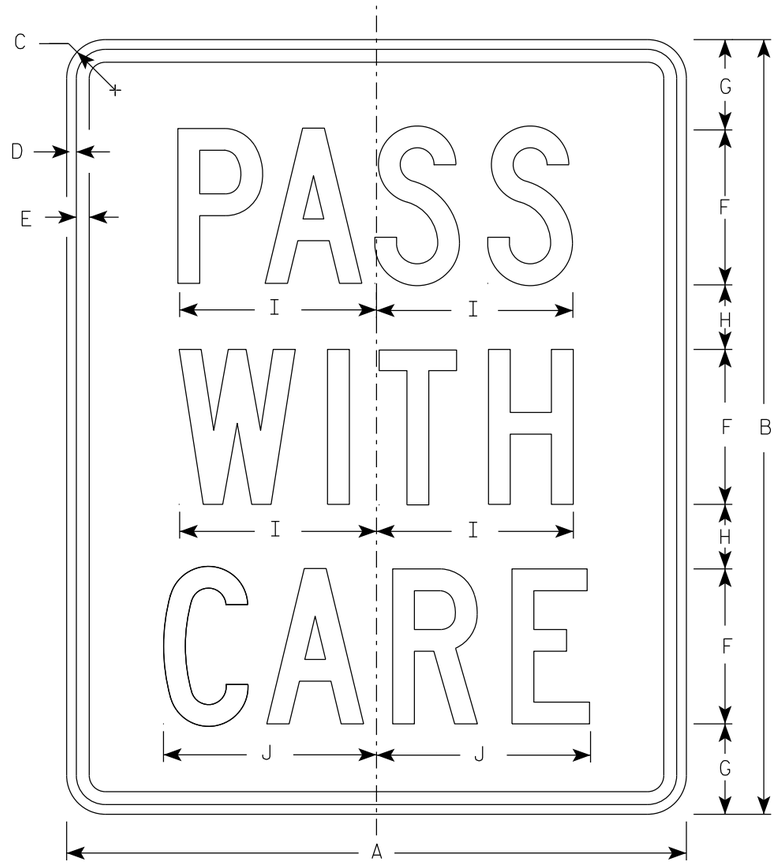
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/23 PLATE NO. R4-1.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 157 | E

NOTES

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



R4-2

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	5	2 3/4	1 3/4	6 3/8	6 7/8																	3.0
2S	24	30	1 1/2	3/8	1/2	6	3 1/2	2 1/2	7 5/8	8 1/4																	5.0
2M	24	30	1 1/2	3/8	1/2	6	3 1/2	2 1/2	7 5/8	8 1/4																	5.0
3	36	48	1 7/8	1/2	5/8	10	5 1/2	3 1/2	12 3/4	13 3/4																	12.0
4																											
5																											

STANDARD SIGN
R4-2

WISCONSIN DEPT OF TRANSPORTATION

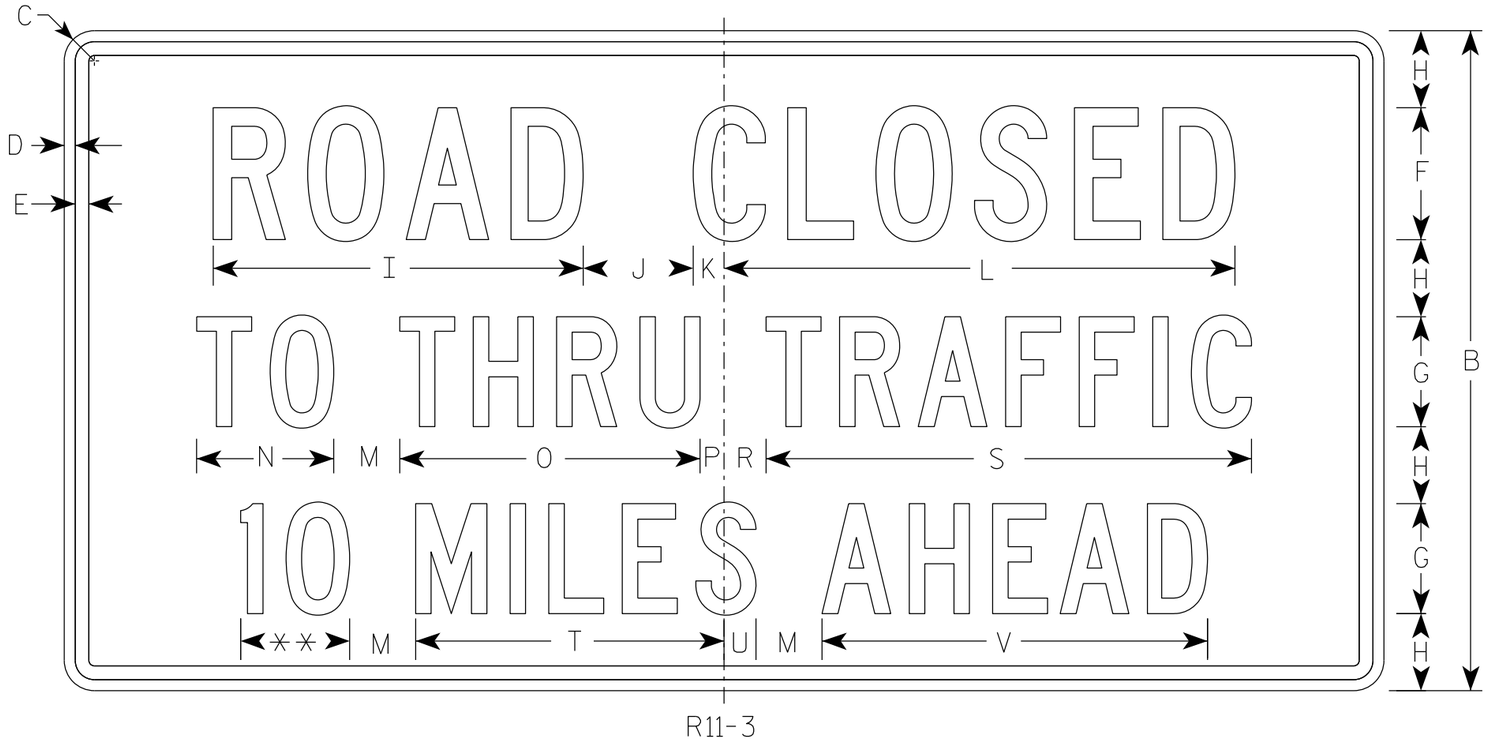
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/23 PLATE NO. R4-2.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 158 | E

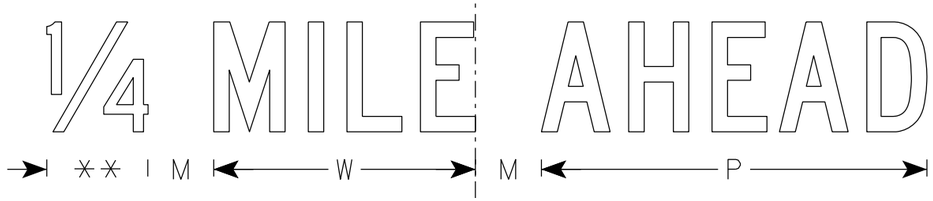
NOTES

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																											

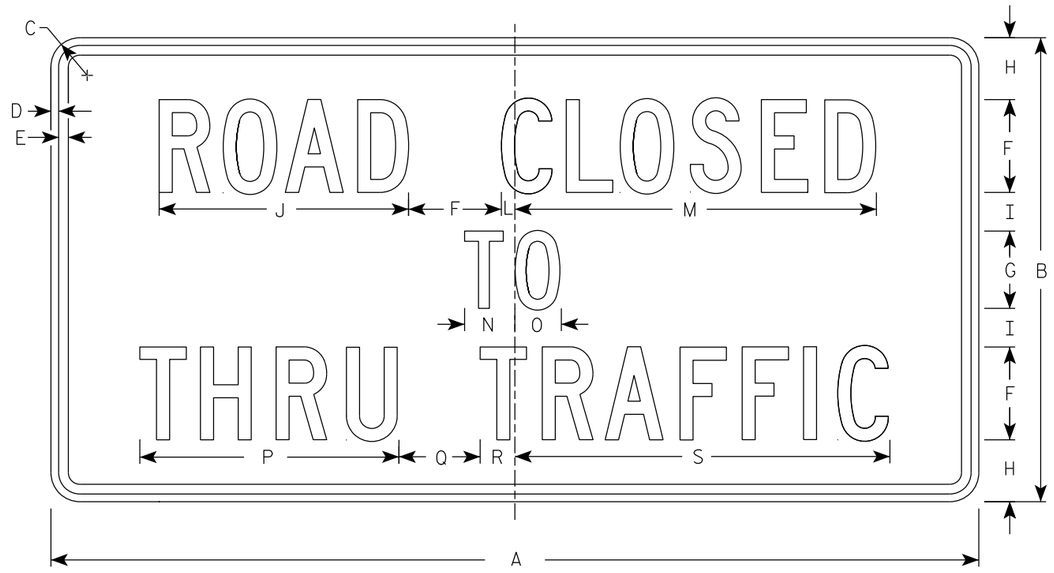
STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 159	E



R11-4

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.

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																											

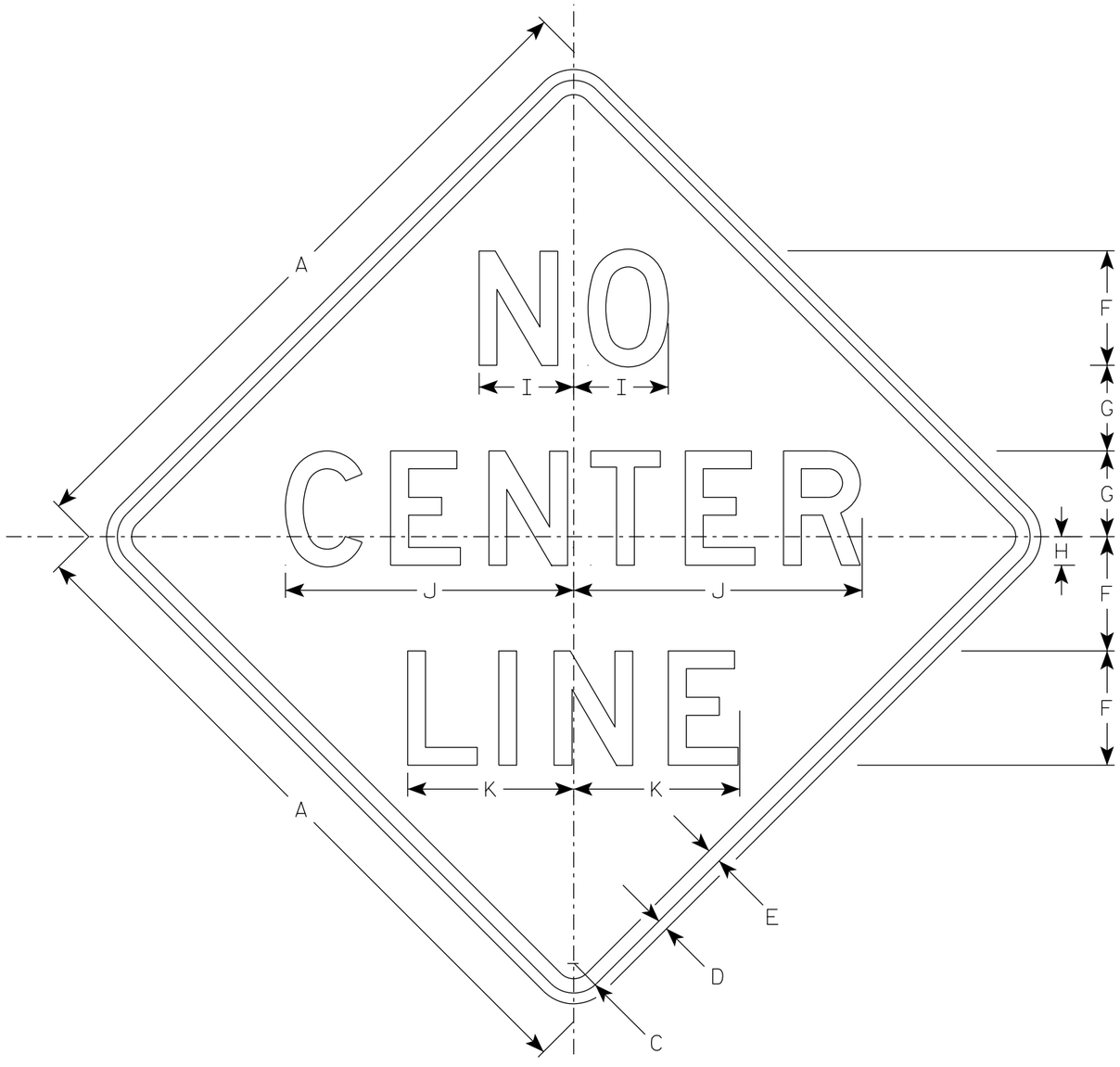
STANDARD SIGN
R11 - 4

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: 160 | E



W8-12

NOTES

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

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	4 1/2	1 1/2	5 1/8	16	9																9.0
2S	48		3	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0
2M	48		3	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0
3	48		3	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0
4	48		3	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0
5	48		3	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8																16.0

STANDARD SIGN
W8-12

WISCONSIN DEPT OF TRANSPORTATION

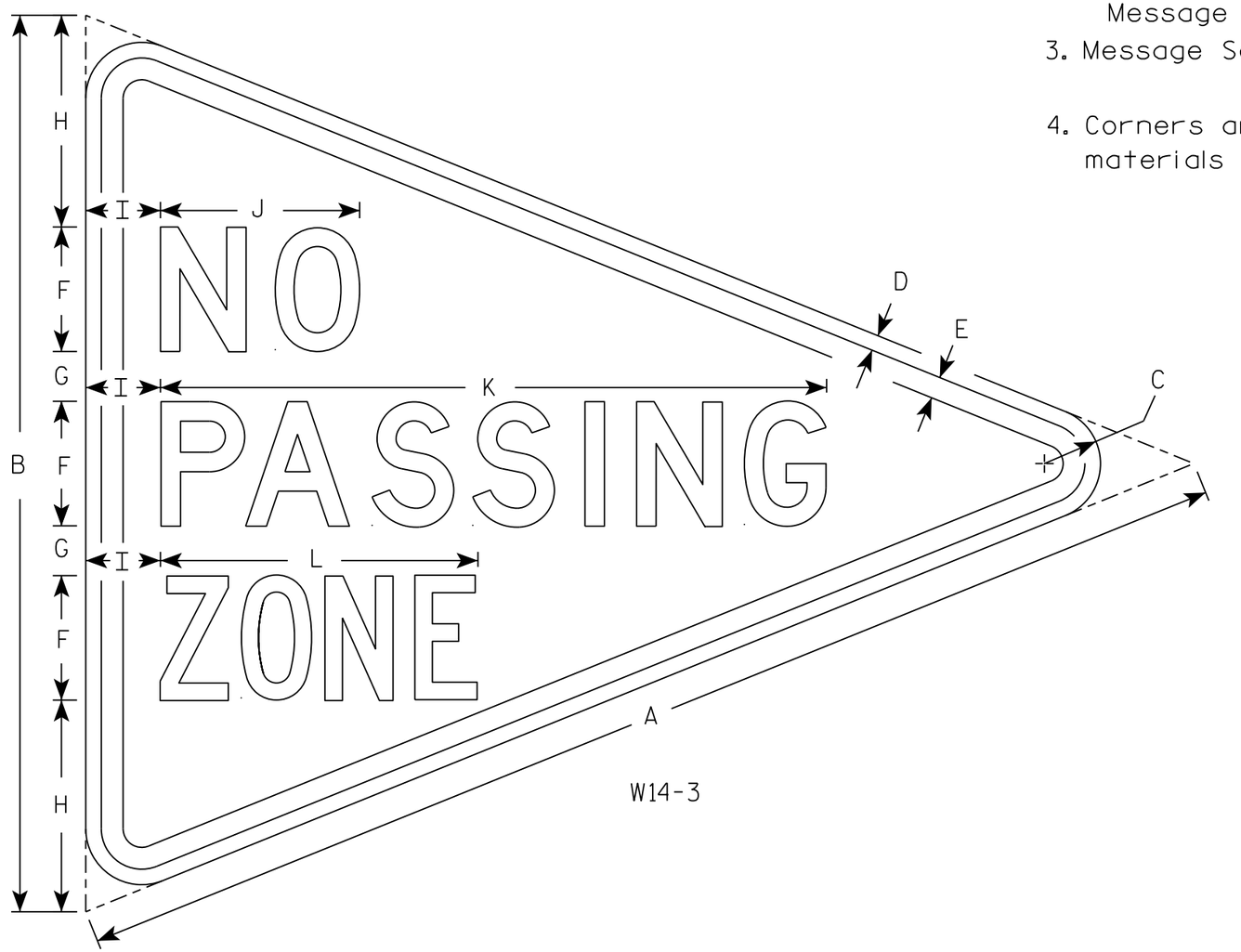
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/26/2023 PLATE NO. W8-12.5

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 161 E

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.



W14-3

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																											

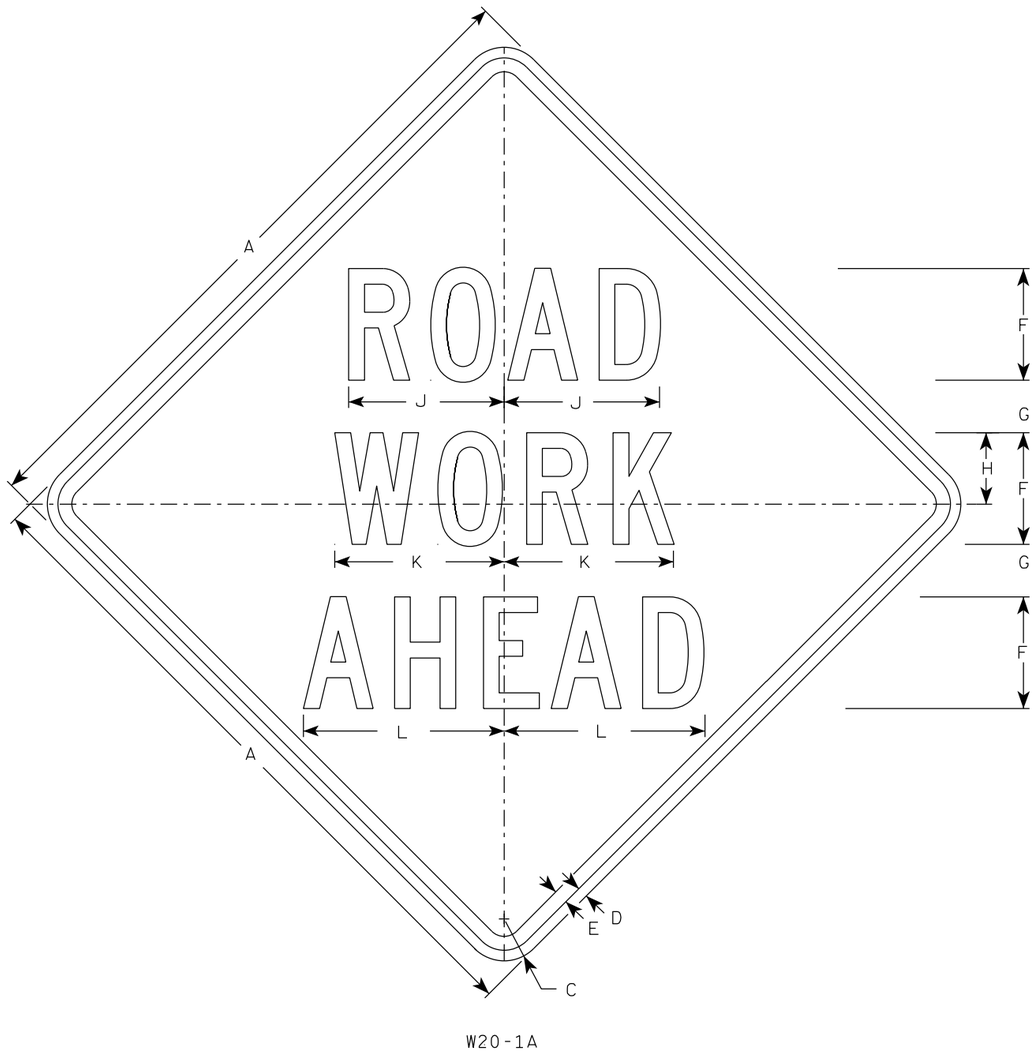
STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

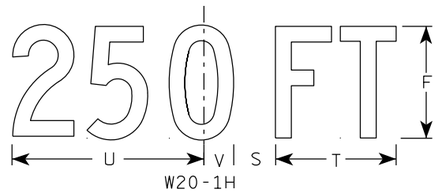
APPROVED Matthew R Rauch
for State Traffic Engineer

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

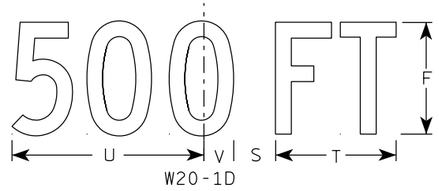
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 162	E



W20-1A



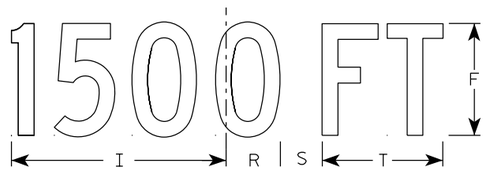
W20-1H



W20-1D



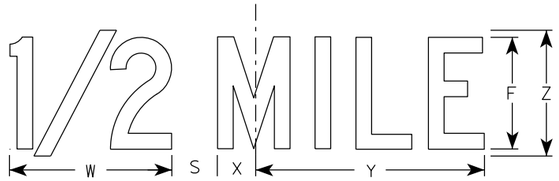
W20-1C



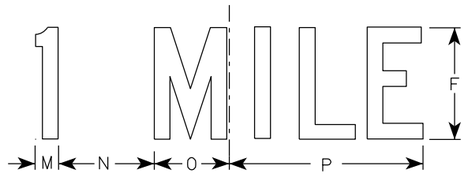
W20-1B

NOTES

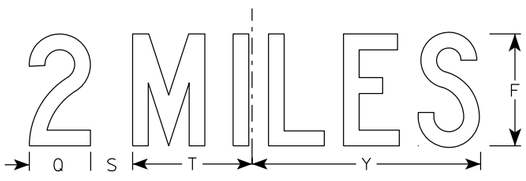
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-1.12

PROJECT NO:

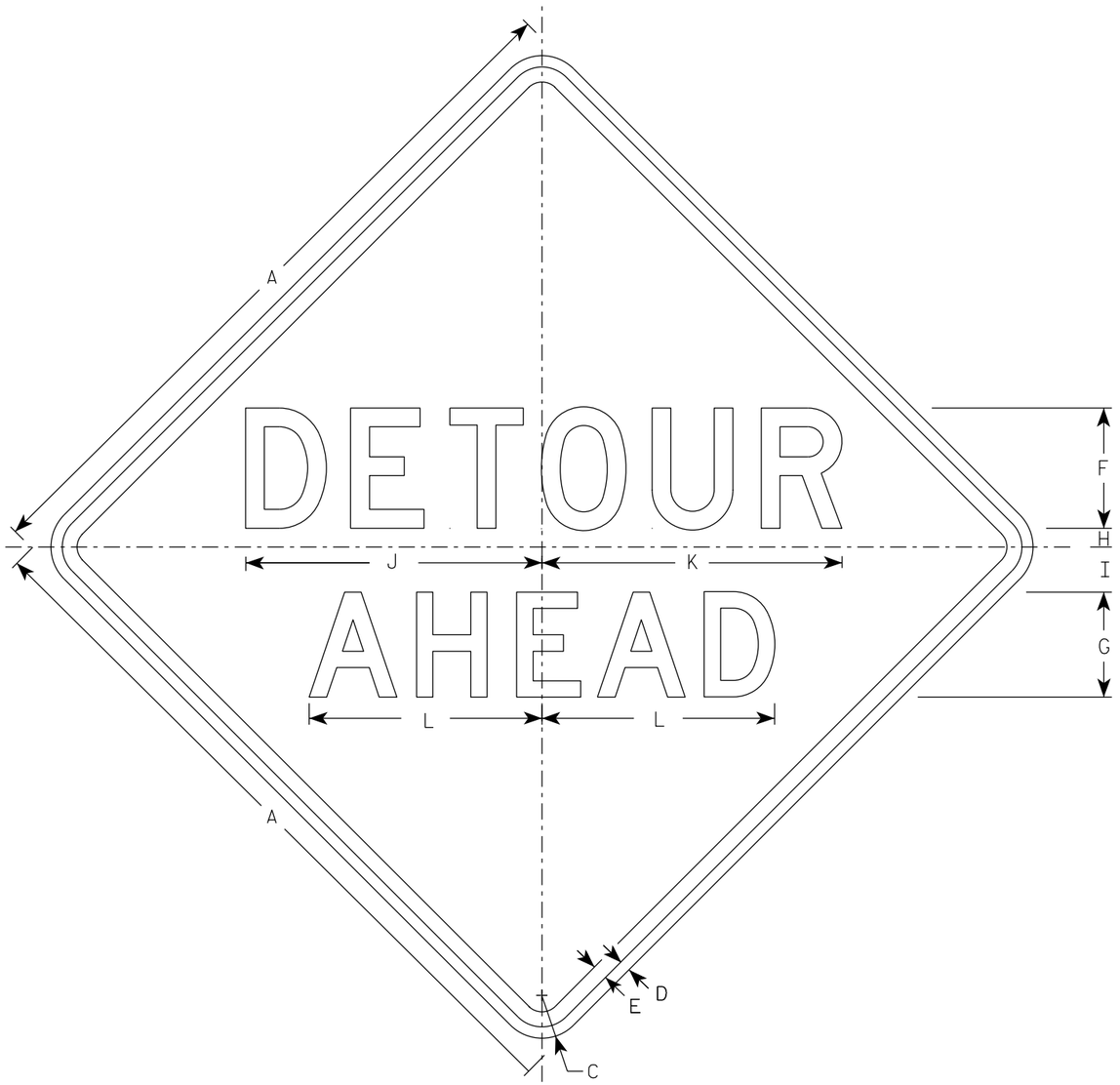
SHEET NO: 163 E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 10-JAN 2024 11:16 PLOT BY : dotc4c

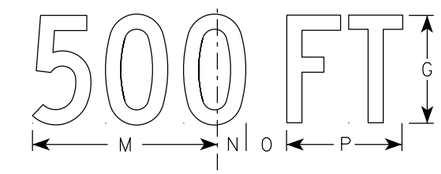
WISDOT/CADDS SHEET 42

7

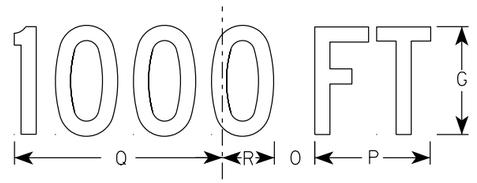
7



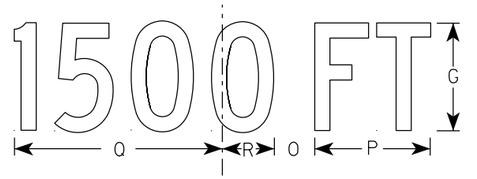
W20-2A



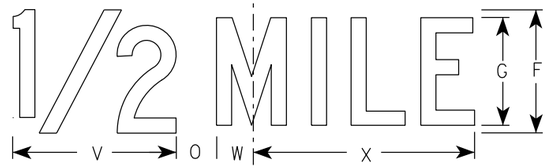
W20-2D



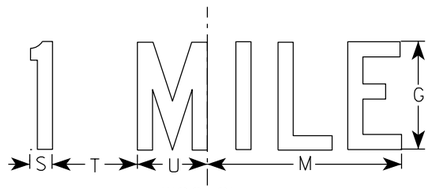
W20-2C



W20-2B



W20-2G



W20-2F

NOTES

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

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

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

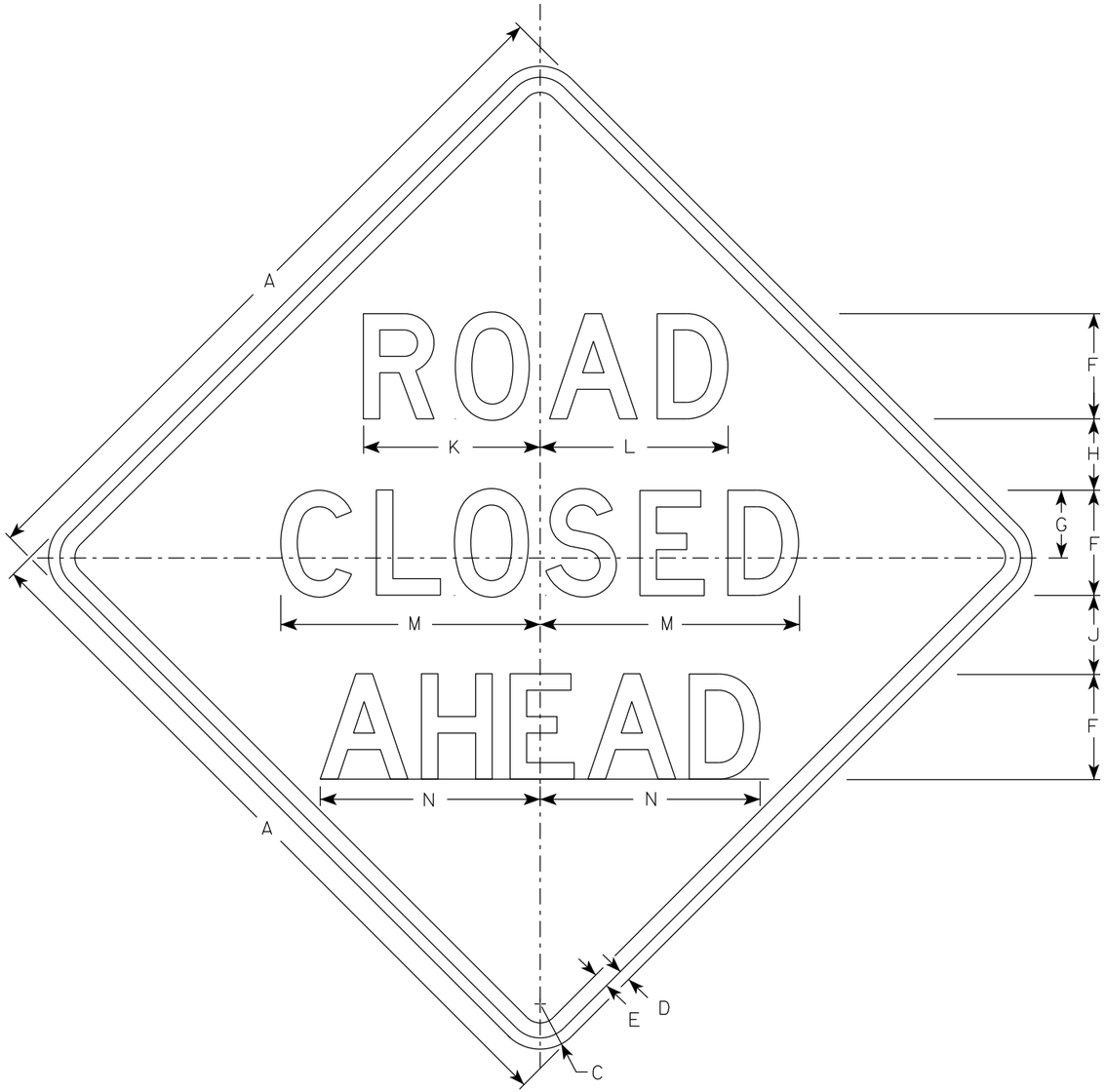
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

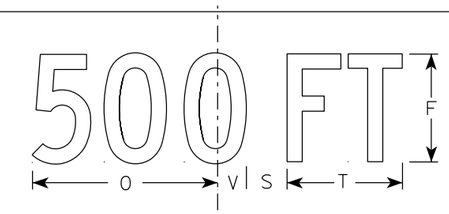
DATE 1/10/2024 PLATE NO. W20-2.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: E

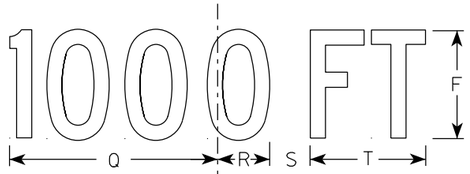
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W202.DGN PLOT DATE : 10-JAN 2024 11:36 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42



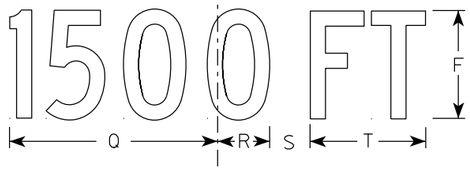
W20-3A



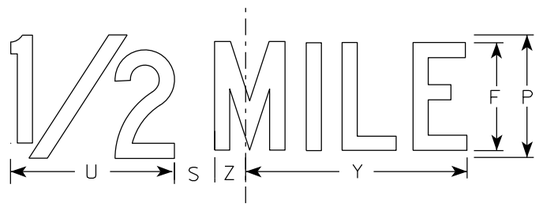
W20-3D



W20-3C



W20-3B



W20-3G



W20-3F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

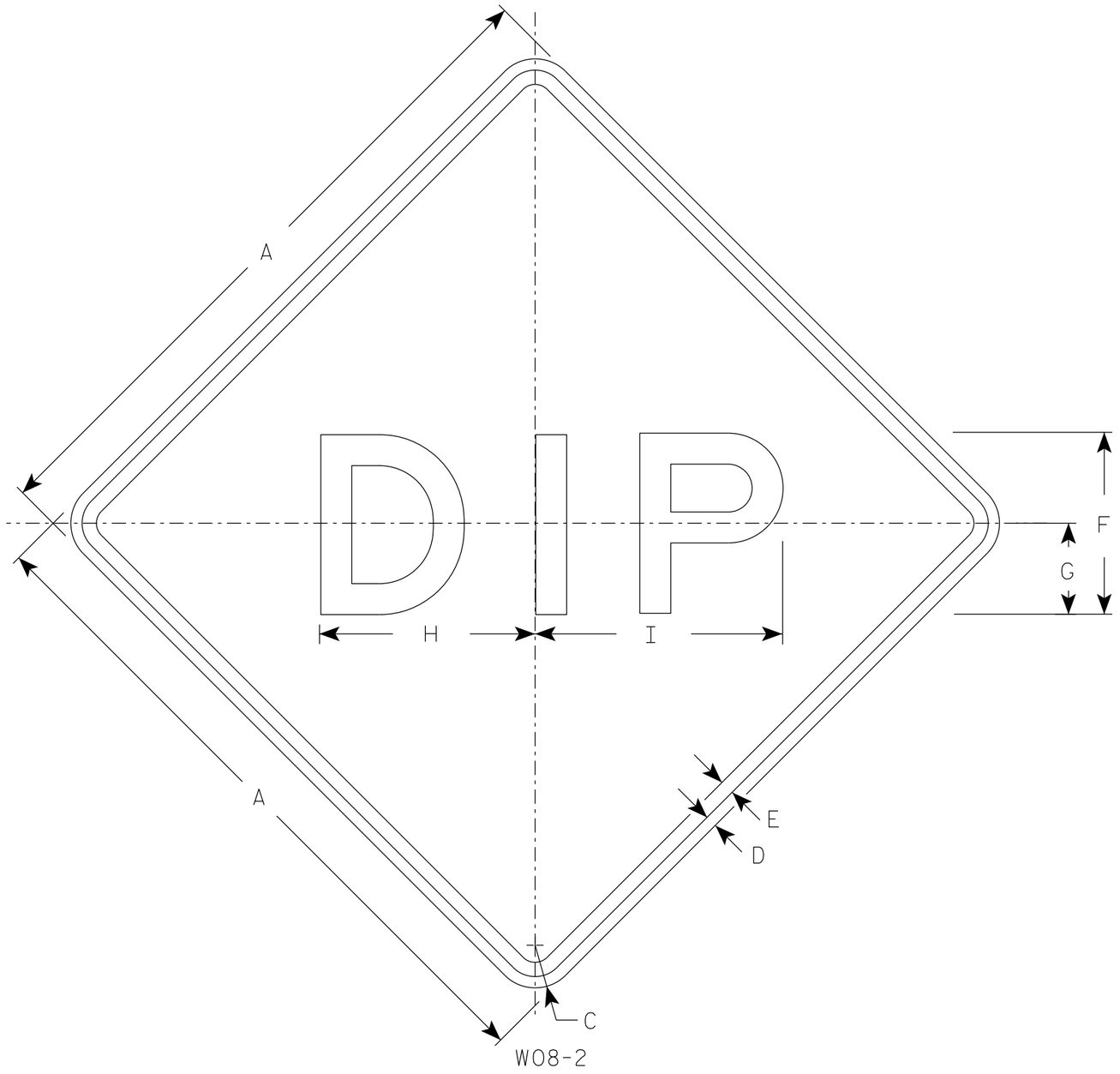
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-3.8

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W203.DGN PLOT DATE : 10-JAN 2024 12:02 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

7



W08-2

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	10	5	11 7/8	13 1/2																		9.0
2S	48		3	3/4	1	12	6	14 1/4	16 1/4																		16.0
2M	48		3	3/4	1	12	6	14 1/4	16 1/4																		16.0
3	48		3	3/4	1	12	6	14 1/4	16 1/4																		16.0
4	48		3	3/4	1	12	6	14 1/4	16 1/4																		16.0
5	48		3	3/4	1	12	6	14 1/4	16 1/4																		16.0

STANDARD SIGN

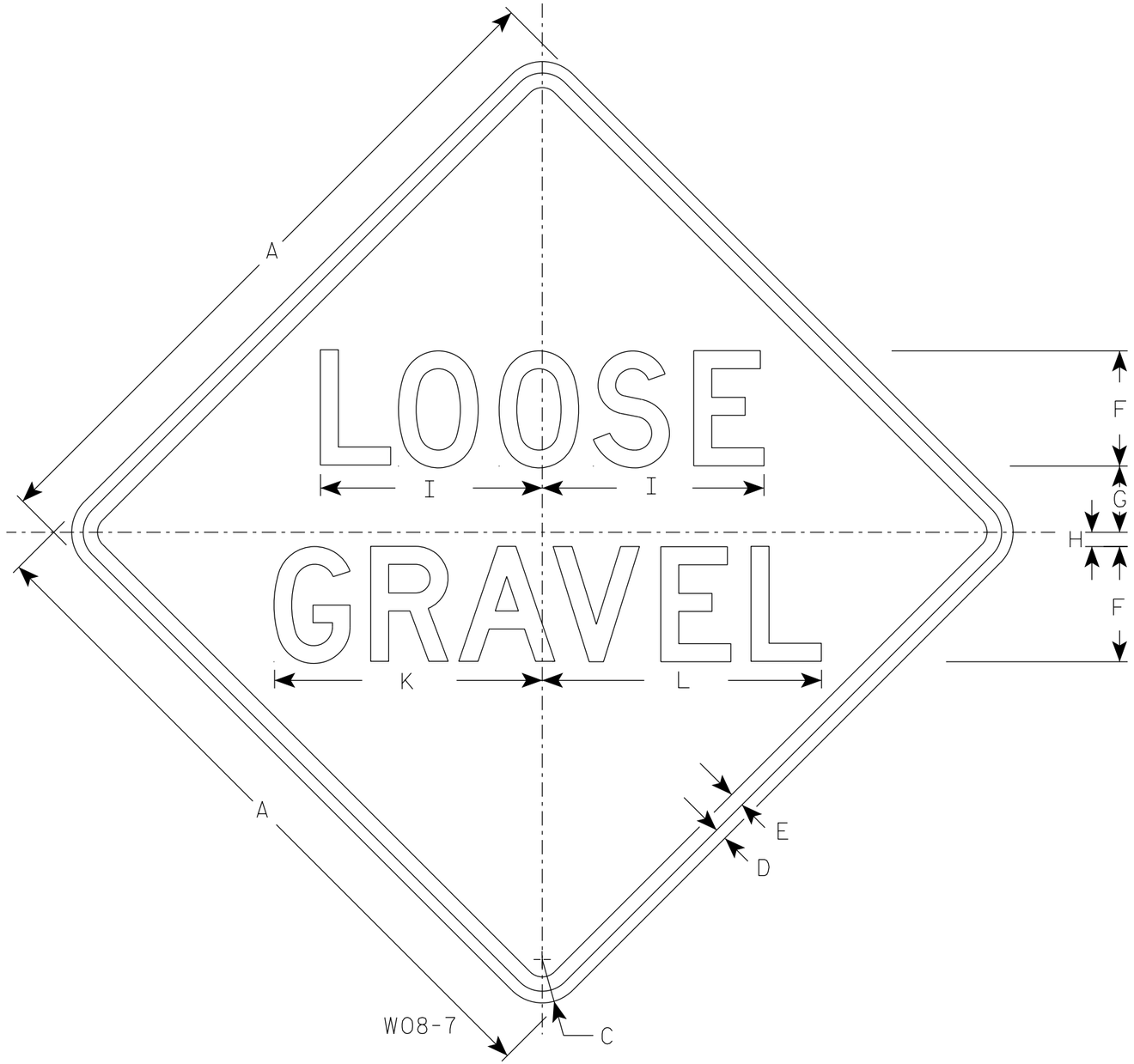
W08-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/30/2024 PLATE NO. W08-2.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 166 | E



NOTES

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

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	4 1/8	3/4	11 5/8		14	14 1/2															9.0
2S	48		3	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
2M	48		3	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
3	48		3	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
4	48		3	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0
5	48		3	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0

STANDARD SIGN
W08-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

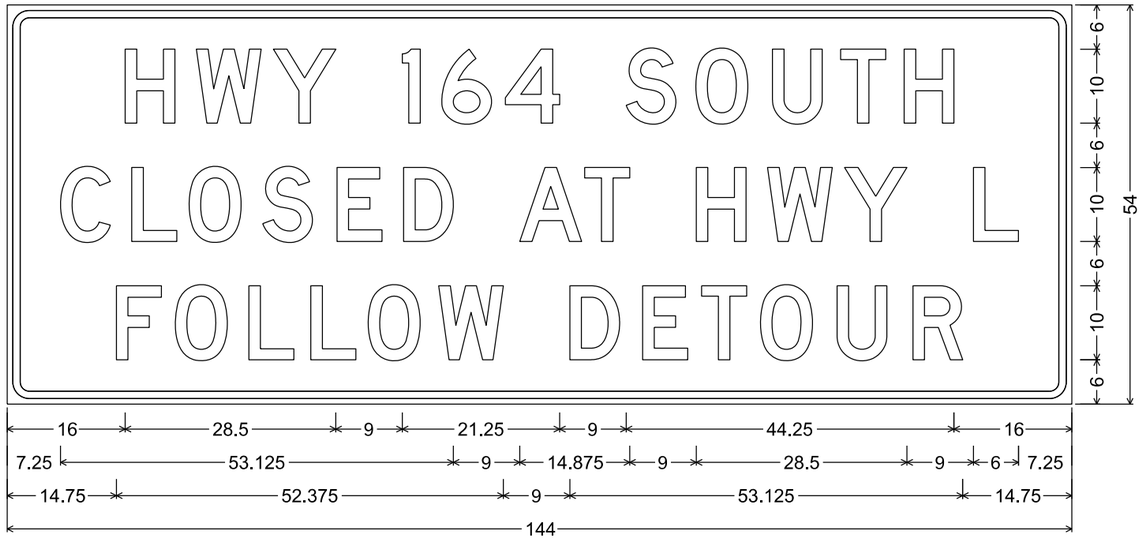
DATE 1/31/2024 PLATE NO. W08-7.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 167 E

NOTES

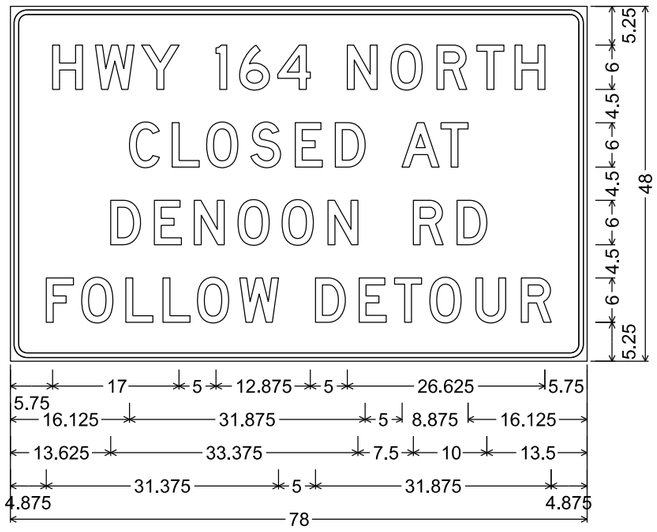
1. Fixed Message Signs are Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D

FMS 1



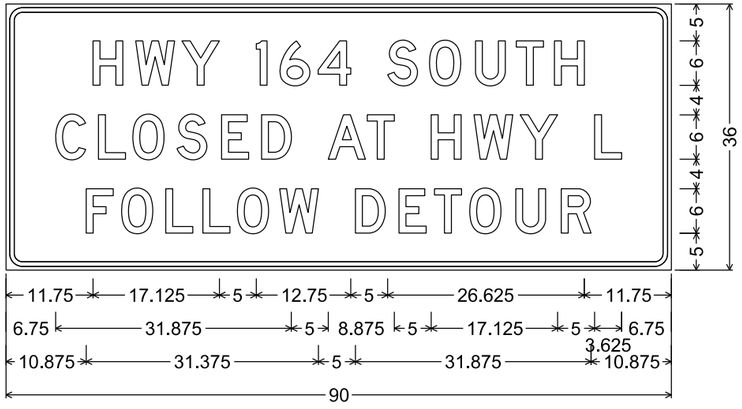
3.000" Radius, 1.000" Border, 0.750" Indent

FMS 2

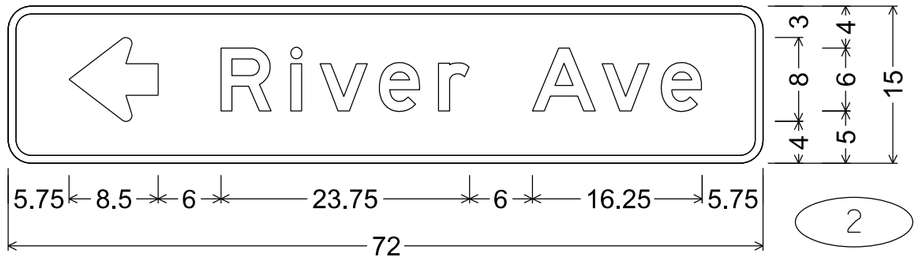


2.250" Radius, 0.625" Border, 0.500" Indent

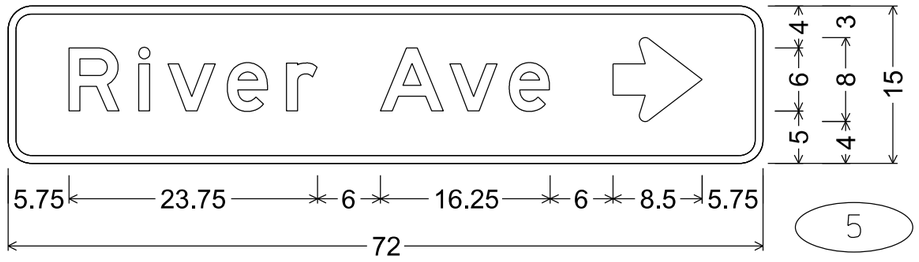
FMS 3



2.250" Radius, 0.625" Border, 0.500" Indent



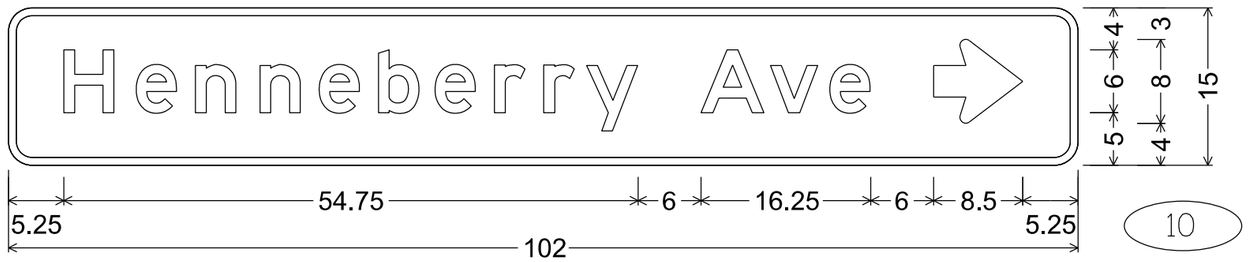
D1-1; 2.250" Radius, 0.750" Border



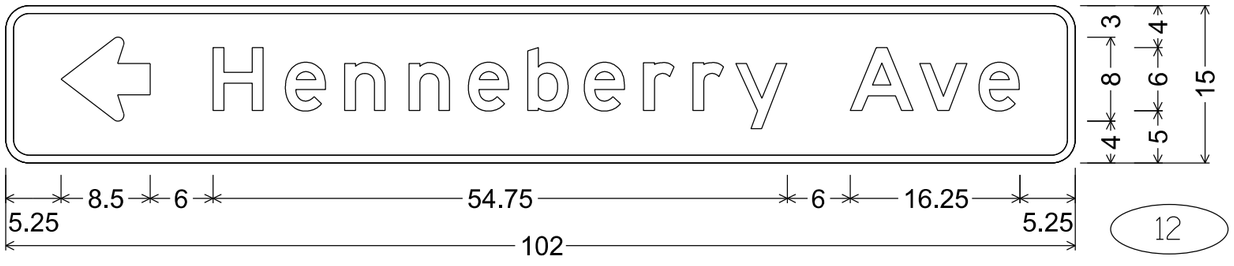
D1-1; 2.250" Radius, 0.750" Border

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E



D1-1; 2.250" Radius, 0.750" Border



D1-1; 2.250" Radius, 0.750" Border

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)				
			CUT	FILL	EBS	CUT	FILL	EBS	CUT	EXPANDED FILL	EXPANDED EBS BACKFILL	REDUCED EBS IN FILL	MASS ORDINATE
									1.00	1.25	1.30	0.80	
						NOTE 1	NOTE 3		NOTE 1		NOTE 5		NOTE 8
1209+00	120900.00	0.00	85.64	0.01	0.00	0.00	0.00	0	0	0	0	0	0
1209+50	120950.00	50.00	80.79	0.00	0.00	154.00	0.00	0	154	0	0	0	154
1210+00	121000.00	50.00	75.68	0.00	0.00	145.00	0.00	0	299	0	0	0	299
1210+50	121050.00	50.00	69.19	0.04	0.00	134.00	0.00	0	433	0	0	0	433
1210+70	121070.00	20.00	69.69	0.03	0.00	51.00	0.00	0	484	0	0	0	484
1211+00	121100.00	30.00	72.15	0.00	0.00	79.00	0.00	0	563	0	0	0	563
1211+50	121150.00	50.00	70.33	0.03	0.00	132.00	0.00	0	695	0	0	0	695
1212+00	121200.00	50.00	64.09	0.30	0.00	124.00	0.00	0	819	0	0	0	819
1212+50	121250.00	50.00	67.28	0.02	72.00	122.00	0.00	67	941	-67	87	54	1,008
1213+00	121300.00	50.00	67.60	0.06	72.00	125.00	0.00	133	1,066	-200	260	160	1,266
1213+50	121350.00	50.00	64.11	0.12	72.00	122.00	0.00	133	1,188	-333	433	266	1,521
1213+92	121392.00	42.00	65.38	0.07	72.00	101.00	0.00	112	1,289	-445	579	356	1,734
1214+00	121400.00	8.00	64.65	0.07	72.00	19.00	0.00	21	1,308	-466	606	373	1,774
1214+50	121450.00	50.00	62.22	0.08	72.00	117.00	0.00	133	1,425	-599	779	479	2,024
1215+00	121500.00	50.00	65.30	0.01	72.00	118.00	0.00	133	1,543	-732	952	586	2,275
1215+50	121550.00	50.00	66.15	0.04	72.00	122.00	0.00	133	1,665	-865	1,125	692	2,530
1216+00	121600.00	50.00	61.40	0.35	0.00	118.00	0.00	67	1,783	-932	1,212	746	2,715
1216+50	121650.00	50.00	57.74	0.47	0.00	110.00	1.00	0	1,893	-931	1,212	746	2,824
1217+00	121700.00	50.00	58.77	0.07	0.00	108.00	0.00	0	2,001	-931	1,212	746	2,932
1217+50	121750.00	50.00	64.45	0.00	0.00	114.00	0.00	0	2,115	-931	1,212	746	3,046
1218+00	121800.00	50.00	60.16	0.57	0.00	115.00	1.00	0	2,230	-930	1,212	746	3,160
1218+50	121850.00	50.00	57.89	0.07	0.00	109.00	1.00	0	2,339	-928	1,212	746	3,267
1219+00	121900.00	50.00	52.11	0.53	0.00	102.00	1.00	0	2,441	-927	1,212	746	3,368
1219+50	121950.00	50.00	48.89	0.78	0.00	94.00	1.00	0	2,535	-926	1,212	746	3,461
1220+00	122000.00	50.00	50.38	0.20	0.00	92.00	1.00	0	2,627	-925	1,212	746	3,552
1220+50	122050.00	50.00	55.24	0.00	0.00	98.00	0.00	0	2,725	-925	1,212	746	3,650
1220+55	122055.00	5.00	54.85	0.00	0.00	10.00	0.00	0	2,735	-925	1,212	746	3,660
1220+78	122078.00	22.99	50.28	2.59	0.00	45.00	1.00	0	2,780	-923	1,212	746	3,703
1221+00	122100.00	22.00	49.27	2.14	0.00	41.00	2.00	0	2,821	-921	1,212	746	3,742
1221+50	122150.00	50.00	47.88	1.43	0.00	90.00	3.00	0	2,911	-917	1,212	746	3,828
1222+00	122200.00	50.00	47.04	1.73	0.00	88.00	3.00	0	2,999	-913	1,212	746	3,912
1222+50	122250.00	50.00	48.65	1.21	0.00	89.00	3.00	0	3,088	-910	1,212	746	3,998
1223+00	122300.00	50.00	52.05	1.63	0.00	93.00	3.00	0	3,181	-906	1,212	746	4,087
1223+11	122311.00	11.00	52.43	1.45	0.00	21.00	1.00	0	3,202	-905	1,212	746	4,107
1223+50	122350.00	39.00	50.45	1.06	0.00	74.00	2.00	0	3,276	-902	1,212	746	4,178
1224+00	122400.00	50.00	51.35	0.60	0.00	94.00	2.00	0	3,370	-900	1,212	746	4,270
1224+50	122450.00	50.00	50.20	0.56	0.00	94.00	1.00	0	3,464	-898	1,212	746	4,362
1225+00	122500.00	50.00	49.84	0.28	0.00	93.00	1.00	0	3,557	-897	1,212	746	4,454
1225+50	122550.00	50.00	50.05	0.23	0.00	92.00	0.00	0	3,649	-897	1,212	746	4,546
1226+00	122600.00	50.00	49.75	0.33	0.00	92.00	1.00	0	3,741	-896	1,212	746	4,637
1226+50	122650.00	50.00	49.58	0.55	0.00	92.00	1.00	0	3,833	-895	1,212	746	4,728
1227+00	122700.00	50.00	50.17	0.65	0.00	92.00	1.00	0	3,925	-893	1,212	746	4,818
1227+50	122750.00	50.00	51.79	0.35	0.00	94.00	1.00	0	4,019	-892	1,212	746	4,911
1228+00	122800.00	50.00	54.20	0.09	0.00	98.00	0.00	0	4,117	-892	1,212	746	5,009

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
5 - EXPANDED EBS	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)				
			CUT	FILL	EBS	CUT	FILL	EBS	CUT	EXPANDED FILL	EXPANDED EBS BACKFILL	REDUCED EBS IN FILL	MASS ORDINATE
									1.00	1.25	1.30	0.80	
						NOTE 1	NOTE 3		NOTE 1		NOTE 5		NOTE 8
1250+84	125084.00	34.00	65.65	0.11	0.00	83.00	0.00	0	9,937	-840	1,212	746	10,777
1251+00	125100.00	16.00	68.47	0.00	0.00	40.00	0.00	0	9,977	-840	1,212	746	10,817
1251+26	125126.00	26.00	63.95	0.97	0.00	64.00	0.00	0	10,041	-840	1,212	746	10,881
1251+50	125150.00	24.00	65.26	0.00	0.00	57.00	0.00	0	10,098	-840	1,212	746	10,938
1252+00	125200.00	50.00	65.41	0.02	0.00	121.00	0.00	0	10,219	-840	1,212	746	11,059
1252+50	125250.00	50.00	65.66	0.04	0.00	121.00	0.00	0	10,340	-840	1,212	746	11,180
1253+00	125300.00	50.00	69.53	0.00	0.00	125.00	0.00	0	10,465	-840	1,212	746	11,305
1253+50	125350.00	50.00	66.58	0.05	0.00	126.00	0.00	0	10,591	-840	1,212	746	11,431
1254+00	125400.00	50.00	62.77	0.09	0.00	120.00	0.00	0	10,711	-840	1,212	746	11,551
1254+50	125450.00	50.00	61.16	0.00	0.00	115.00	0.00	0	10,826	-840	1,212	746	11,666
1255+00	125500.00	50.00	64.57	0.06	0.00	116.00	0.00	0	10,942	-840	1,212	746	11,782
1255+50	125550.00	50.00	69.61	0.00	0.00	124.00	0.00	0	11,066	-840	1,212	746	11,906
1256+00	125600.00	50.00	76.20	0.00	0.00	135.00	0.00	0	11,201	-840	1,212	746	12,041
1256+50	125650.00	50.00	79.57	0.00	0.00	144.00	0.00	0	11,345	-840	1,212	746	12,185
1257+00	125700.00	50.00	79.47	0.00	0.00	147.00	0.00	0	11,492	-840	1,212	746	12,332
1257+50	125750.00	50.00	99.41	0.28	0.00	166.00	0.00	0	11,658	-840	1,212	746	12,498
1258+00	125799.67	49.67	83.06	9.85	0.00	168.00	9.00	0	11,826	-828	1,212	746	12,654
1258+42	125842.00	42.33	149.35	3.26	0.00	182.00	10.00	0	12,008	-816	1,212	746	12,824
1258+50	125850.00	8.00	143.68	3.04	0.00	43.00	1.00	0	12,051	-815	1,212	746	12,866
1259+00	125900.00	50.00	84.27	1.94	0.00	211.00	5.00	0	12,262	-808	1,212	746	13,070
1259+50	125950.00	50.00	81.29	0.60	0.00	153.00	2.00	0	12,415	-806	1,212	746	13,221
1259+72	125972.00	22.00	85.55	0.28	0.00	68.00	0.00	0	12,483	-806	1,212	746	13,289
1260+00	126000.00	28.00	86.32	0.00	0.00	89.00	0.00	0	12,572	-806	1,212	746	13,378
1260+50	126050.00	50.00	78.01	0.00	0.00	152.00	0.00	0	12,724	-806	1,212	746	13,530
1261+00	126100.00	50.00	67.97	0.00	0.00	135.00	0.00	0	12,859	-806	1,212	746	13,665
1261+50	126150.00	50.00	66.53	0.22	0.00	125.00	0.00	0	12,984	-806	1,212	746	13,790
1262+00	126200.00	50.00	64.67	0.05	0.00	121.00	0.00	0	13,105	-806	1,212	746	13,911
1262+50	126250.00	50.00	62.37	0.12	0.00	118.00	0.00	0	13,223	-806	1,212	746	14,029
1263+00	126300.00	50.00	62.25	0.47	0.00	115.00	1.00	0	13,338	-805	1,212	746	14,143
1263+50	126350.00	50.00	63.11	0.75	0.00	116.00	1.00	0	13,454	-803	1,212	746	14,257
1264+00	126400.00	50.00	63.89	0.31	0.00	118.00	1.00	0	13,572	-802	1,212	746	14,374
1264+50	126450.00	50.00	61.49	0.24	0.00	116.00	1.00	0	13,688	-801	1,212	746	14,489
1265+00	126500.00	50.00	59.04	0.59	0.00	112.00	1.00	0	13,800	-800	1,212	746	14,600
1265+50	126550.00	50.00	59.80	0.45	0.00	110.00	1.00	0	13,910	-798	1,212	746	14,708
1266+00	126600.00	50.00	63.72	0.18	0.00	114.00	1.00	0	14,024	-797	1,212	746	14,821
1266+32	126632.00	32.00	61.17	0.45	0.00	74.00	0.00	0	14,098	-797	1,212	746	14,895
1266+50	126650.00	18.00	64.42	0.09	0.00	42.00	0.00	0	14,140	-797	1,212	746	14,937
1267+00	126700.00	50.00	62.62	0.22	0.00	118.00	0.00	0	14,258	-797	1,212	746	15,055
1267+50	126750.00	50.00	55.98	0.77	0.00	110.00	1.00	0	14,368	-796	1,212	746	15,164
1268+00	126800.00	50.00	49.27	1.60	0.00	97.00	2.00	0	14,465	-793	1,212	746	15,258
1268+50	126850.00	50.00	45.45	2.87	0.00	88.00	4.00	0	14,553	-788	1,212	746	15,341
1269+00	126900.00	50.00	46.83	2.85	0.00	85.00	5.00	0	14,638	-782	1,212	746	15,420
1269+50	126950.00	50.00	47.62	3.63	0.00	87.00	6.00	0	14,725	-775	1,212	746	15,500
1270+00	127000.00	50.00	46.39	4.18	0.00	87.00	7.00	0	14,812	-766	1,212	746	15,578
1270+50	127050.00	50.00	44.76	4.63	0.00	84.00	8.00	0	14,896	-756	1,212	746	15,652
1271+00	127100.00	50.00	42.92	5.02	0.00	81.00	9.00	0	14,977	-745	1,212	746	15,722
1271+50	127150.00	50.00	44.34	4.88	0.00	81.00	9.00	0	15,058	-733	1,212	746	15,791
1272+00	127200.00	50.00	46.79	4.46	0.00	84.00	9.00	0	15,142	-722	1,212	746	15,864
1272+50	127250.00	50.00	46.53	3.72	0.00	86.00	8.00	0	15,228	-712	1,212	746	15,940
1273+00	127300.00	50.00	44.06	2.88	0.00	84.00	6.00	0	15,312	-705	1,212	746	16,017

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
5 - EXPANDED EBS	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)				
			CUT	FILL	EBS	CUT	FILL	EBS	CUT	EXPANDED FILL	EXPANDED EBS BACKFILL	REDUCED EBS IN FILL	MASS ORDINATE
									1.00	1.25	1.30	0.80	
						NOTE 1	NOTE 3		NOTE 1		NOTE 5		NOTE 8
1250+84	125084.00	34.00	65.65	0.11	0.00	83.00	0.00	0	9,937	-840	1,212	746	10,777
1251+00	125100.00	16.00	68.47	0.00	0.00	40.00	0.00	0	9,977	-840	1,212	746	10,817
1251+26	125126.00	26.00	63.95	0.97	0.00	64.00	0.00	0	10,041	-840	1,212	746	10,881
1251+50	125150.00	24.00	65.26	0.00	0.00	57.00	0.00	0	10,098	-840	1,212	746	10,938
1252+00	125200.00	50.00	65.41	0.02	0.00	121.00	0.00	0	10,219	-840	1,212	746	11,059
1252+50	125250.00	50.00	65.66	0.04	0.00	121.00	0.00	0	10,340	-840	1,212	746	11,180
1253+00	125300.00	50.00	69.53	0.00	0.00	125.00	0.00	0	10,465	-840	1,212	746	11,305
1253+50	125350.00	50.00	66.58	0.05	0.00	126.00	0.00	0	10,591	-840	1,212	746	11,431
1254+00	125400.00	50.00	62.77	0.09	0.00	120.00	0.00	0	10,711	-840	1,212	746	11,551
1254+50	125450.00	50.00	61.16	0.00	0.00	115.00	0.00	0	10,826	-840	1,212	746	11,666
1255+00	125500.00	50.00	64.57	0.06	0.00	116.00	0.00	0	10,942	-840	1,212	746	11,782
1255+50	125550.00	50.00	69.61	0.00	0.00	124.00	0.00	0	11,066	-840	1,212	746	11,906
1256+00	125600.00	50.00	76.20	0.00	0.00	135.00	0.00	0	11,201	-840	1,212	746	12,041
1256+50	125650.00	50.00	79.57	0.00	0.00	144.00	0.00	0	11,345	-840	1,212	746	12,185
1257+00	125700.00	50.00	79.47	0.00	0.00	147.00	0.00	0	11,492	-840	1,212	746	12,332
1257+50	125750.00	50.00	99.41	0.28	0.00	166.00	0.00	0	11,658	-840	1,212	746	12,498
1258+00	125799.67	49.67	83.06	9.85	0.00	168.00	9.00	0	11,826	-828	1,212	746	12,654
1258+42	125842.00	42.33	149.35	3.26	0.00	182.00	10.00	0	12,008	-816	1,212	746	12,824
1258+50	125850.00	8.00	143.68	3.04	0.00	43.00	1.00	0	12,051	-815	1,212	746	12,866
1259+00	125900.00	50.00	84.27	1.94	0.00	211.00	5.00	0	12,262	-808	1,212	746	13,070
1259+50	125950.00	50.00	81.29	0.60	0.00	153.00	2.00	0	12,415	-806	1,212	746	13,221
1259+72	125972.00	22.00	85.55	0.28	0.00	68.00	0.00	0	12,483	-806	1,212	746	13,289
1260+00	126000.00	28.00	86.32	0.00	0.00	89.00	0.00	0	12,572	-806	1,212	746	13,378
1260+50	126050.00	50.00	78.01	0.00	0.00	152.00	0.00	0	12,724	-806	1,212	746	13,530
1261+00	126100.00	50.00	67.97	0.00	0.00	135.00	0.00	0	12,859	-806	1,212	746	13,665
1261+50	126150.00	50.00	66.53	0.22	0.00	125.00	0.00	0	12,984	-806	1,212	746	13,790
1262+00	126200.00	50.00	64.67	0.05	0.00	121.00	0.00	0	13,105	-806	1,212	746	13,911
1262+50	126250.00	50.00	62.37	0.12	0.00	118.00	0.00	0	13,223	-806	1,212	746	14,029
1263+00	126300.00	50.00	62.25	0.47	0.00	115.00	1.00	0	13,338	-805	1,212	746	14,143
1263+50	126350.00	50.00	63.11	0.75	0.00	116.00	1.00	0	13,454	-803	1,212	746	14,257
1264+00	126400.00	50.00	63.89	0.31	0.00	118.00	1.00	0	13,572	-802	1,212	746	14,374
1264+50	126450.00	50.00	61.49	0.24	0.00	116.00	1.00	0	13,688	-801	1,212	746	14,489
1265+00	126500.00	50.00	59.04	0.59	0.00	112.00	1.00	0	13,800	-800	1,212	746	14,600
1265+50	126550.00	50.00	59.80	0.45	0.00	110.00	1.00	0	13,910	-798	1,212	746	14,708
1266+00	126600.00	50.00	63.72	0.18	0.00	114.00	1.00	0	14,024	-797	1,212	746	14,821
1266+32	126632.00	32.00	61.17	0.45	0.00	74.00	0.00	0	14,098	-797	1,212	746	14,895
1266+50	126650.00	18.00	64.42	0.09	0.00	42.00	0.00	0	14,140	-797	1,212	746	14,937
1267+00	126700.00	50.00	62.62	0.22	0.00	118.00	0.00	0	14,258	-797	1,212	746	15,055
1267+50	126750.00	50.00	55.98	0.77	0.00	110.00	1.00	0	14,368	-796	1,212	746	15,164
1268+00	126800.00	50.00	49.27	1.60	0.00	97.00	2.00	0	14,465	-793	1,212	746	15,258
1268+50	126850.00	50.00	45.45	2.87	0.00	88.00	4.00	0	14,553	-788	1,212	746	15,341
1269+00	126900.00	50.00	46.83	2.85	0.00	85.00	5.00	0	14,638	-782	1,212	746	15,420
1269+50	126950.00	50.00	47.62	3.63	0.00	87.00	6.00	0	14,725	-775	1,212	746	15,500
1270+00	127000.00	50.00	46.39	4.18	0.00	87.00	7.00	0	14,812	-766	1,212	746	15,578
1270+50	127050.00	50.00	44.76	4.63	0.00	84.00	8.00	0	14,896	-756	1,212	746	15,652
1271+00	127100.00	50.00	42.92	5.02	0.00	81.00	9.00	0	14,977	-745	1,212	746	15,722
1271+50	127150.00	50.00	44.34	4.88	0.00	81.00	9.00	0	15,058	-733	1,212	746	15,791
1272+00	127200.00	50.00	46.79	4.46	0.00	84.00	9.00	0	15,142	-722	1,212	746	15,864
1272+50	127250.00	50.00	46.53	3.72	0.00	86.00	8.00	0	15,228	-712	1,212	746	15,940
1273+00	127300.00	50.00	44.06	2.88	0.00	84.00	6.00	0	15,312	-705	1,212	746	16,017

NOTES:	
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3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
5 - EXPANDED EBS	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)				
			CUT	FILL	EBS	CUT	FILL	EBS	CUT	EXPANDED FILL	EXPANDED EBS BACKFILL	REDUCED EBS IN FILL	MASS ORDINATE
									1.00	1.25	1.30	0.80	
						NOTE 1	NOTE 3		NOTE 1		NOTE 5		NOTE 8
1273+50	127350.00	50.00	40.99	3.02	0.00	79.00	5.00	0	15,391	-698	1,212	746	16,089
1274+00	127400.00	50.00	42.60	2.86	0.00	77.00	5.00	0	15,468	-692	1,212	746	16,160
1274+50	127450.00	50.00	45.53	1.99	0.00	82.00	4.00	0	15,550	-687	1,212	746	16,237
1275+00	127500.00	50.00	46.60	1.54	0.00	85.00	3.00	0	15,635	-683	1,212	746	16,318
1275+50	127550.00	50.00	46.28	1.65	0.00	86.00	3.00	0	15,721	-680	1,212	746	16,401
1276+00	127600.00	50.00	48.35	0.50	0.00	88.00	2.00	0	15,809	-677	1,212	746	16,486
1276+20	127620.00	20.00	53.04	0.23	0.00	38.00	0.00	0	15,847	-677	1,212	746	16,524
1276+50	127650.00	30.00	51.96	0.01	0.00	58.00	0.00	0	15,905	-677	1,212	746	16,582
1277+00	127700.00	50.00	58.75	0.03	0.00	103.00	0.00	0	16,008	-677	1,212	746	16,685
1277+22	127722.00	22.00	64.56	0.06	0.00	50.00	0.00	0	16,058	-677	1,212	746	16,735
1277+50	127750.00	28.00	43.17	0.00	0.00	56.00	0.00	0	16,114	-677	1,212	746	16,791
1278+00	127800.00	50.00	28.43	0.00	0.00	66.00	0.00	0	16,180	-677	1,212	746	16,857
1278+14	127814.00	14.00	28.97	0.12	0.00	15.00	0.00	0	16,195	-677	1,212	746	16,872
1278+50	127850.00	36.00	41.51	0.00	0.00	47.00	0.00	0	16,242	-677	1,212	746	16,919
1279+00	127900.00	50.00	28.40	0.00	0.00	65.00	0.00	0	16,307	-677	1,212	746	16,984
1279+50	127950.00	50.00	42.66	0.00	0.00	66.00	0.00	0	16,373	-677	1,212	746	17,050
1280+00	128000.00	50.00	74.43	0.00	79.82	108.00	0.00	74	16,481	-751	1,308	805	17,232
1280+50	128050.00	50.00	66.53	0.00	75.99	131.00	0.00	144	16,612	-895	1,495	920	17,507
1281+00	128100.00	50.00	64.24	0.00	76.16	121.00	0.00	141	16,733	-1,036	1,678	1,033	17,769
1281+14	128114.00	14.00	67.70	0.00	77.86	34.00	0.00	40	16,767	-1,076	1,730	1,065	17,843
1281+50	128150.00	36.00	69.44	0.00	82.67	91.00	0.00	107	16,858	-1,183	1,869	1,150	18,041
1281+75	128175.00	25.00	71.00	1.87	86.00	65.00	1.00	78	16,923	-1,260	1,971	1,213	18,183
1282+00	128200.00	25.00	82.01	3.27	84.00	71.00	2.00	79	16,994	-1,336	2,074	1,276	18,330
1282+25	128225.00	25.00	78.42	3.15	82.00	74.00	3.00	77	17,068	-1,410	2,174	1,338	18,478
1282+50	128250.00	25.00	72.76	2.60	82.00	70.00	3.00	76	17,138	-1,482	2,272	1,398	18,620
1283+00	128300.00	50.00	62.89	3.20	82.05	126.00	5.00	152	17,264	-1,628	2,470	1,520	18,892
1283+50	128350.00	50.00	77.72	2.68	85.68	130.00	5.00	155	17,394	-1,776	2,672	1,644	19,170
1284+00	128400.00	50.00	76.47	4.15	89.50	143.00	6.00	162	17,537	-1,931	2,882	1,774	19,468
1284+50	128450.00	50.00	68.81	4.50	0.00	135.00	8.00	83	17,672	-2,004	2,990	1,840	19,676
1285+00	128500.47	50.47	72.11	2.20	0.00	132.00	6.00	0	17,804	-1,996	2,990	1,840	19,800
1285+50	128550.00	49.53	76.24	2.97	0.00	136.00	5.00	0	17,940	-1,990	2,990	1,840	19,930
1286+00	128600.00	50.00	117.70	0.44	0.00	180.00	3.00	0	18,120	-1,986	2,990	1,840	20,106
1286+50	128650.00	50.00	81.82	3.24	0.00	185.00	3.00	0	18,305	-1,983	2,990	1,840	20,288
1286+50	128650.00	0.00	0.00	0.00	0.00	0.00	0.00	0	18,305	-1,983	2,990	1,840	20,288
1287+00	128700.30	50.30	72.55	3.89	0.00	68.00	4.00	0	18,373	-1,978	2,990	1,840	20,351
1287+50	128750.00	49.70	72.52	6.39	0.00	134.00	9.00	0	18,507	-1,966	2,990	1,840	20,473
1288+00	128800.00	50.00	68.21	7.09	0.00	130.00	12.00	0	18,637	-1,951	2,990	1,840	20,588
1288+50	128850.00	50.00	66.04	6.18	0.00	124.00	12.00	0	18,761	-1,936	2,990	1,840	20,697
1289+00	128900.00	50.00	67.56	4.86	0.00	124.00	10.00	0	18,885	-1,924	2,990	1,840	20,809
1289+50	128950.00	50.00	68.92	6.61	0.00	126.00	11.00	0	19,011	-1,910	2,990	1,840	20,921
1290+00	129000.00	50.00	71.26	29.65	0.00	130.00	34.00	0	19,141	-1,868	2,990	1,840	21,009
1290+50	129050.00	50.00	73.34	17.76	0.00	134.00	44.00	0	19,275	-1,813	2,990	1,840	21,088
1290+75	129075.00	25.00	76.33	4.56	0.00	69.00	10.00	0	19,344	-1,800	2,990	1,840	21,144
1290+89	129089.00	14.00	81.49	1.60	0.00	41.00	2.00	0	19,385	-1,798	2,990	1,840	21,183
1291+00	129100.00	11.00	81.64	1.08	0.00	33.00	1.00	0	19,418	-1,796	2,990	1,840	21,214
1291+25	129125.00	25.00	85.35	0.50	0.00	77.00	1.00	0	19,495	-1,795	2,990	1,840	21,290
1291+50	129150.00	25.00	76.11	0.01	0.00	75.00	0.00	0	19,570	-1,795	2,990	1,840	21,365
1291+67	129167.00	17.00	75.13	0.00	0.00	48.00	0.00	0	19,618	-1,795	2,990	1,840	21,413
1292+00	129200.00	33.00	68.94	0.03	0.00	88.00	0.00	0	19,706	-1,795	2,990	1,840	21,501
1292+50	129250.00	50.00	67.03	0.00	0.00	126.00	0.00	0	19,832	-1,795	2,990	1,840	21,627
1292+75	129275.00	25.00	67.89	0.00	0.00	62.00	0.00	0	19,894	-1,795	2,990	1,840	21,689

NOTES:

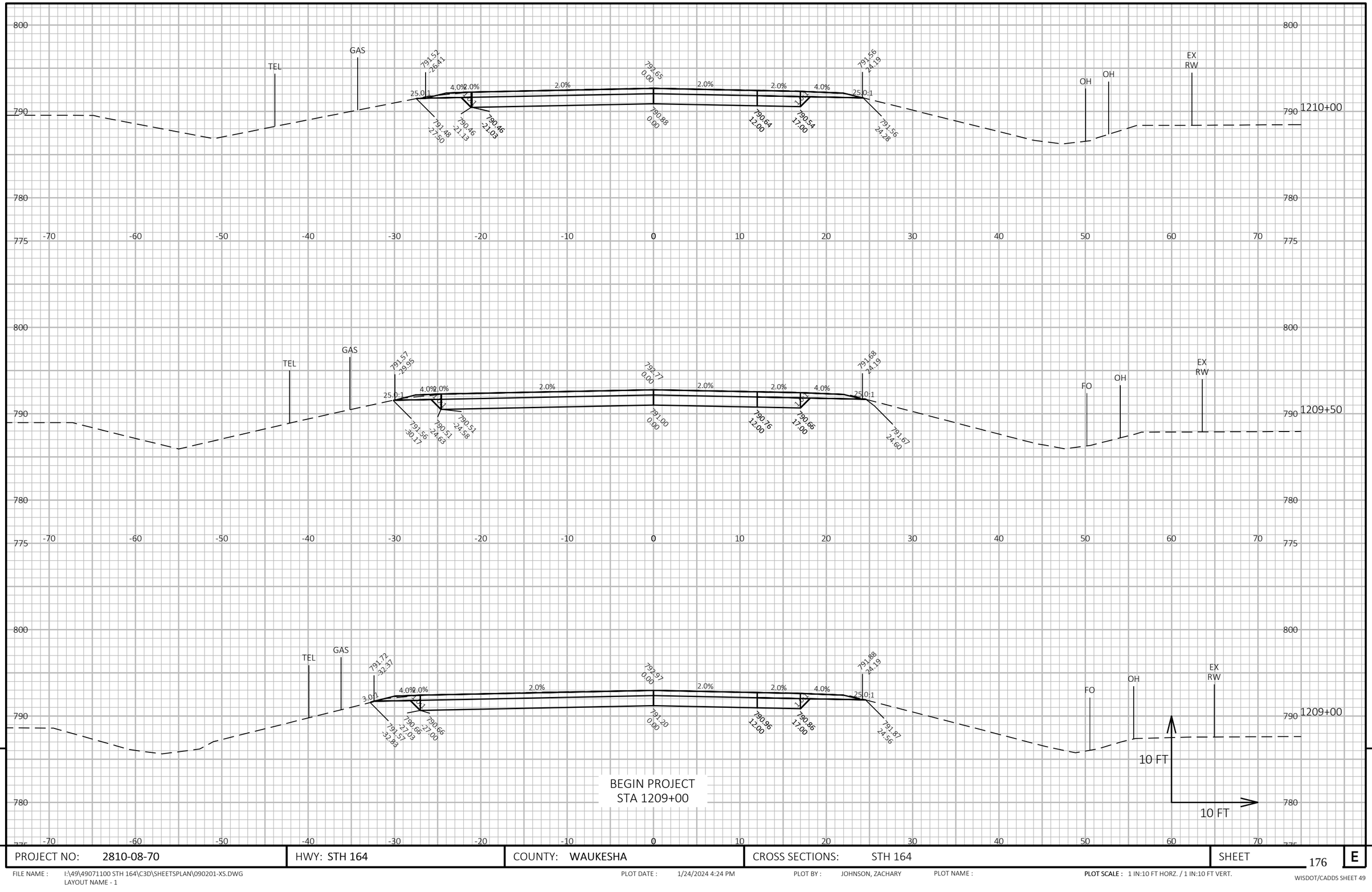
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
5 - EXPANDED EBS	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)				
			CUT	FILL	EBS	CUT	FILL	EBS	CUT	EXPANDED FILL	EXPANDED EBS BACKFILL	REDUCED EBS IN FILL	MASS ORDINATE
									1.00	1.25	1.30	0.80	
						NOTE 1	NOTE 3		NOTE 1		NOTE 5		NOTE 8
1293+00	129300.00	25.00	70.10	0.00	0.00	64.00	0.00	0	19,958	-1,795	2,990	1,840	21,753
1293+38	129338.00	38.00	66.06	0.00	0.00	96.00	0.00	0	20,054	-1,795	2,990	1,840	21,849
1293+50	129350.00	12.00	66.41	0.00	0.00	29.00	0.00	0	20,083	-1,795	2,990	1,840	21,878
1294+00	129400.00	50.00	69.60	0.00	0.00	126.00	0.00	0	20,209	-1,795	2,990	1,840	22,004
1294+50	129450.00	50.00	69.60	0.00	0.00	129.00	0.00	0	20,338	-1,795	2,990	1,840	22,133
1295+00	129500.00	50.00	70.02	0.00	0.00	129.00	0.00	0	20,467	-1,795	2,990	1,840	22,262
1295+11	129511.00	11.00	71.00	0.00	0.00	29.00	0.00	0	20,496	-1,795	2,990	1,840	22,291
1295+50	129550.00	39.00	67.65	0.01	0.00	100.00	0.00	0	20,596	-1,795	2,990	1,840	22,391
1296+00	129600.00	50.00	62.17	0.17	0.00	120.00	0.00	0	20,716	-1,795	2,990	1,840	22,511
1296+50	129650.00	50.00	64.05	0.39	0.00	117.00	1.00	0	20,833	-1,794	2,990	1,840	22,627
1297+00	129700.00	50.00	65.82	0.27	0.00	120.00	1.00	0	20,953	-1,793	2,990	1,840	22,746
1297+50	129750.00	50.00	69.09	0.11	0.00	125.00	0.00	0	21,078	-1,793	2,990	1,840	22,871
1297+90	129790.00	40.00	71.37	0.33	0.00	104.00	0.00	0	21,182	-1,793	2,990	1,840	22,975
1298+00	129800.00	10.00	71.44	0.42	0.00	26.00	0.00	0	21,208	-1,793	2,990	1,840	23,001
1298+50	129850.00	50.00	69.46	0.00	0.00	130.00	0.00	0	21,338	-1,793	2,990	1,840	23,131
1299+00	129900.00	50.00	64.88	0.00	0.00	124.00	0.00	0	21,462	-1,793	2,990	1,840	23,255
1299+50	129950.00	50.00	59.78	0.16	0.00	115.00	0.00	0	21,577	-1,793	2,990	1,840	23,370
1300+00	130000.00	50.00	61.11	2.09	0.00	112.00	2.00	0	21,689	-1,790	2,990	1,840	23,479
1300+50	130050.00	50.00	64.14	0.67	0.00	116.00	3.00	0	21,805	-1,786	2,990	1,840	23,591
1301+00	130100.00	50.00	66.17	0.66	0.00	121.00	1.00	0	21,926	-1,785	2,990	1,840	23,711
1301+50	130150.00	50.00	78.00	0.36	0.00	133.00	1.00	0	22,059	-1,784	2,990	1,840	23,843
1302+00	130200.00	50.00	66.06	0.00	0.00	133.00	0.00	0	22,192	-1,784	2,990	1,840	23,976
1302+24	130224.00	24.00	68.08	0.83	0.00	60.00	0.00	0	22,252	-1,784	2,990	1,840	24,036
1302+50	130250.00	26.00	70.81	0.00	0.00	67.00	0.00	0	22,319	-1,784	2,990	1,840	24,103
1303+00	130300.00	50.00	70.80	0.02	0.00	131.00	0.00	0	22,450	-1,784	2,990	1,840	24,234
1303+50	130350.00	50.00	70.17	0.00	0.00	131.00	0.00	0	22,581	-1,784	2,990	1,840	24,365
1304+00	130400.00	50.00	72.61	0.00	0.00	132.00	0.00	0	22,713	-1,784	2,990	1,840	24,497
1304+15	130415.00	15.00	73.49	0.00	0.00	41.00	0.00	0	22,754	-1,784	2,990	1,840	24,538
1304+50	130450.00	35.00	73.99	0.00	0.00	96.00	0.00	0	22,850	-1,784	2,990	1,840	24,634
1305+00	130500.00	50.00	73.01	0.00	0.00	136.00	0.00	0	22,986	-1,784	2,990	1,840	24,770
1305+50	130550.00	50.00	68.58	0.03	0.00	131.00	0.00	0	23,117	-1,784	2,990	1,840	24,901
1306+00	130600.00	50.00	64.48	0.30	0.00	123.00	0.00	0	23,240	-1,784	2,990	1,840	25,024
1306+50	130650.00	50.00	66.91	0.19	0.00	122.00	0.00	0	23,362	-1,784	2,990	1,840	25,146
1306+69	130669.00	19.00	62.47	0.20	0.00	46.00	0.00	0	23,408	-1,784	2,990	1,840	25,192
1307+00	130700.00	31.00	64.58	0.28	0.00	73.00	0.00	0	23,481	-1,784	2,990	1,840	25,265
1307+50	130750.00	50.00	64.82	0.18	0.00	120.00	0.00	0	23,601	-1,784	2,990	1,840	25,385
1308+00	130800.00	50.00	64.05	0.10	0.00	119.00	0.00	0	23,720	-1,784	2,990	1,840	25,504
1308+50	130850.00	50.00	60.04	0.34	0.00	115.00	0.00	0	23,835	-1,784	2,990	1,840	25,619
1309+00	130900.00	50.00	55.70	0.84	0.00	107.00	1.00	0	23,942	-1,783	2,990	1,840	25,725
1309+50	130950.00	50.00	57.26	0.37	0.00	105.00	1.00	0	24,047	-1,781	2,990	1,840	25,828
1309+71	130971.00	21.00	60.01	0.12	0.00	46.00	0.00	0	24,093	-1,781	2,990	1,840	25,874
1310+00	131000.00	29.00	61.26	0.03	0.00	65.00	0.00	0	24,158	-1,781	2,990	1,840	25,939
1310+50	131050.00	50.00	66.74	0.00	0.00	119.00	0.00	0	24,277	-1,781	2,990	1,840	26,058
1310+92	131092.00	42.00	66.99	0.39	0.00	104.00	0.00	0	24,381	-1,781	2,990	1,840	26,162
1311+00	131100.00	8.00	66.19	0.55	0.00	20.00	0.00	0	24,401	-1,781	2,990	1,840	26,182
1311+50	131150.00	50.00	62.93	1.06	0.00	120.00	1.00	0	24,521	-1,780	2,990	1,840	26,301
1312+00	131200.00	50.00	63.66	0.78	0.00	117.00	2.00	0	24,638	-1,778	2,990	1,840	26,416
1312+50	131250.00	50.00	68.63	0.45	0.00	122.00	1.00	0	24,760	-1,776	2,990	1,840	26,536
1313+00	131300.00	50.00	71.32	0.46	0.00	130.00	1.00	0	24,890	-1,775	2,990	1,840	26,665
1313+50	131350.00	50.00	70.62	0.59	0.00	131.00	1.00	0	25,021	-1,774	2,990	1,840	26,795

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
5 - EXPANDED EBS	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)				
			CUT	FILL	EBS	CUT	FILL	EBS	CUT	EXPANDED FILL	EXPANDED EBS BACKFILL	REDUCED EBS IN FILL	MASS ORDINATE
									1.00	1.25	1.30	0.80	
						NOTE 1	NOTE 3		NOTE 1		NOTE 5		NOTE 8
1314+50	131450.00	100.00	66.95	0.44	0.00	255.00	2.00	0	25,276	-1,771	2,990	1,840	27,047
1315+00	131500.00	50.00	66.75	0.62	0.00	124.00	1.00	0	25,400	-1,770	2,990	1,840	27,170
1315+50	131550.00	50.00	65.79	0.75	0.00	123.00	1.00	0	25,523	-1,769	2,990	1,840	27,292
1316+00	131600.00	50.00	66.60	0.73	0.00	123.00	1.00	0	25,646	-1,768	2,990	1,840	27,414
1316+50	131650.00	50.00	66.00	0.95	0.00	123.00	2.00	0	25,769	-1,765	2,990	1,840	27,534
1317+00	131700.00	50.00	60.34	1.13	0.00	117.00	2.00	0	25,886	-1,763	2,990	1,840	27,649
1317+50	131750.00	50.00	57.94	1.02	0.00	110.00	2.00	0	25,996	-1,760	2,990	1,840	27,756
1318+00	131800.00	50.00	57.35	1.85	0.00	107.00	3.00	0	26,103	-1,756	2,990	1,840	27,859
1318+40	131840.00	40.00	60.65	0.00	0.00	87.00	1.00	0	26,190	-1,755	2,990	1,840	27,945
1318+50	131850.00	10.00	60.31	0.00	0.00	22.00	0.00	0	26,212	-1,755	2,990	1,840	27,967
1319+00	131900.00	50.00	57.86	1.88	0.00	109.00	2.00	0	26,321	-1,753	2,990	1,840	28,074
1319+50	131950.00	50.00	59.51	2.04	0.00	109.00	4.00	0	26,430	-1,748	2,990	1,840	28,178
1319+92	131992.00	42.00	60.41	2.28	0.00	93.00	3.00	0	26,523	-1,744	2,990	1,840	28,267
1320+00	132000.00	8.00	59.95	2.33	0.00	18.00	1.00	0	26,541	-1,743	2,990	1,840	28,284
1320+50	132050.00	50.00	60.34	3.06	0.00	111.00	5.00	0	26,652	-1,736	2,990	1,840	28,388
1321+00	132100.00	50.00	59.78	4.19	0.00	111.00	7.00	0	26,763	-1,728	2,990	1,840	28,491
1321+50	132150.00	50.00	58.38	1.71	0.00	109.00	5.00	0	26,872	-1,721	2,990	1,840	28,593
1322+00	132200.00	50.00	58.93	0.57	0.00	109.00	2.00	0	26,981	-1,719	2,990	1,840	28,700
1322+50	132250.00	50.00	67.02	0.02	0.00	117.00	1.00	0	27,098	-1,718	2,990	1,840	28,816
1322+74	132274.00	24.00	69.07	0.00	0.00	60.00	0.00	0	27,158	-1,718	2,990	1,840	28,876
RIVER AVENUE CULVERT		40.00	370.00	--	--	548	0.00	0	27,706	0	0	0	29,424
KELSEY AVENUE CULVERT		56.00	370.00	--	--	767	0.00	0	28,473	0	0	0	30,191
CARTWRIGHT COURT CULVERT		83.00	370.00	--	--	1,137	0.00	0	29,610	0	0	0	31,328
STA 1289+92 CULVERT		48.00	370.00	--	--	658	0.00	0	30,268	0	0	0	31,986
STA 1297+43 CULVERT		44.00	370.00	--	--	603	0.00	0	30,871	0	0	0	32,589
STA 1301+15 CULVERT		44.00	370.00	--	--	603	0.00	0	31,474	0	0	0	33,192
STA 1312+23 CULVERT		45.00	370.00	--	--	617	0.00	0	32,091	0	0	0	33,809
STA 1314+02 CULVERT		44.00	370.00	--	--	603	0.00	0	32,694	0	0	0	34,412

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
5 - EXPANDED EBS	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]



9

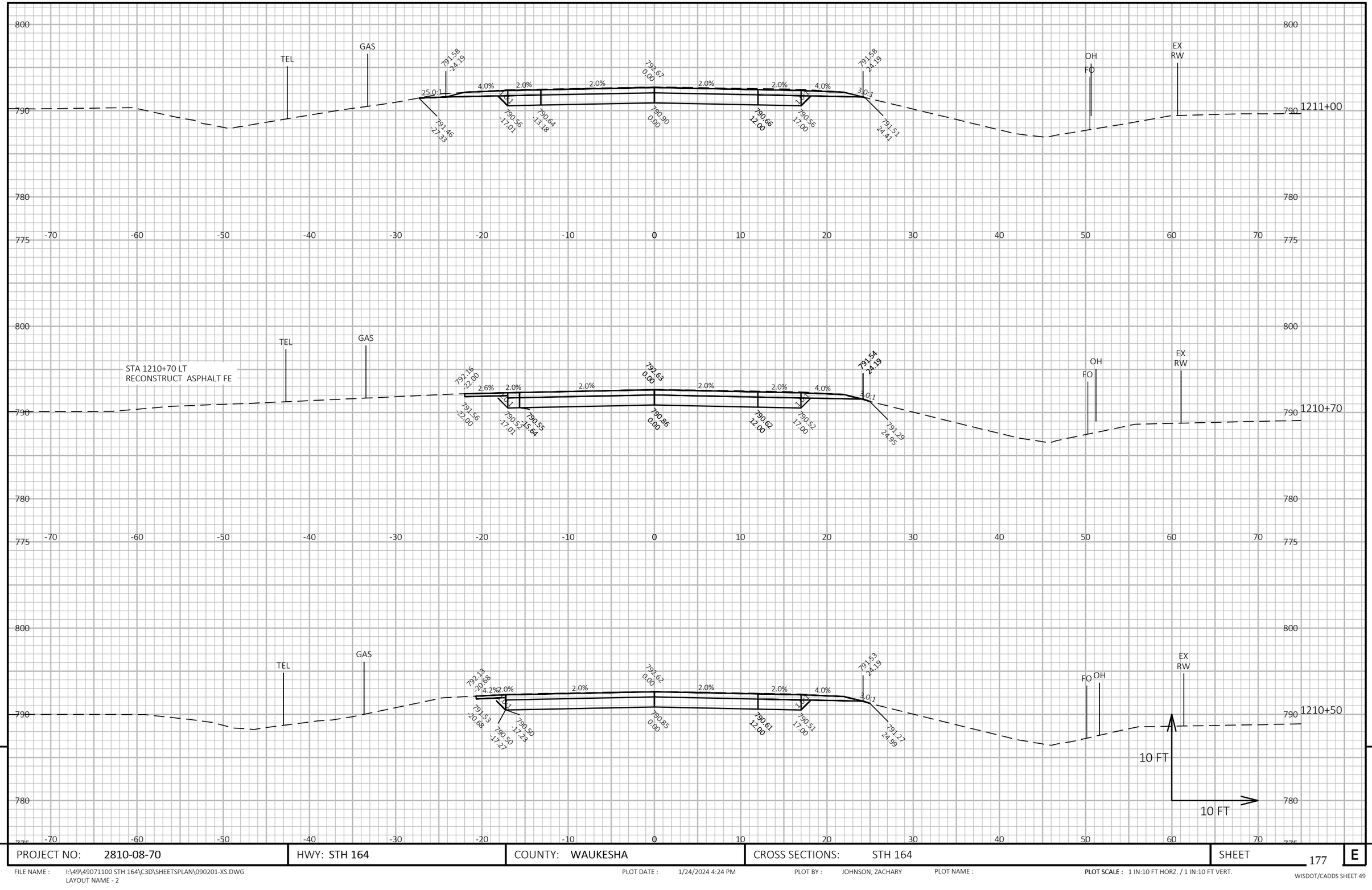
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 176	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 1

PLOT DATE : 1/24/2024 4:24 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

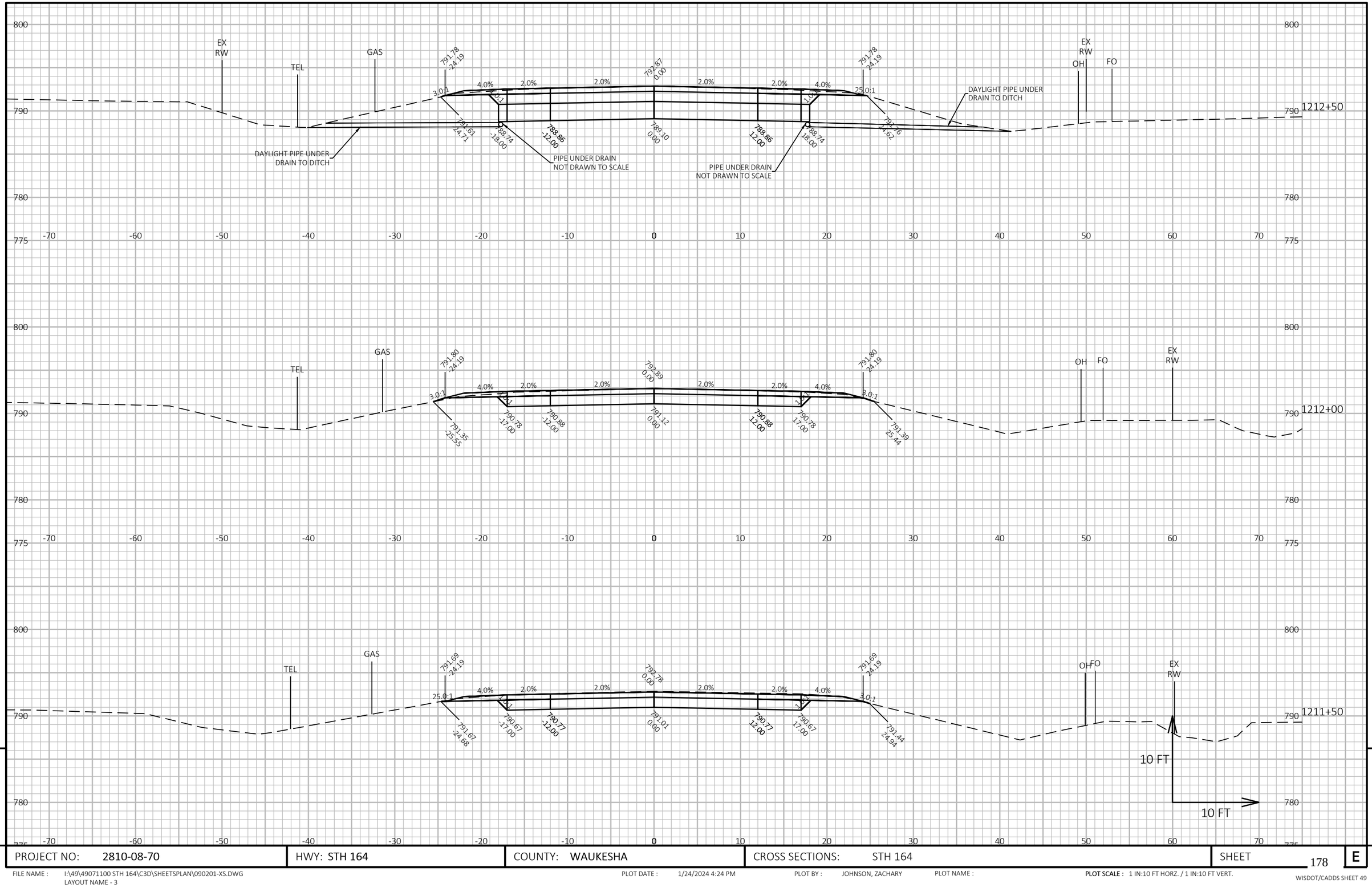
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 177	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 2

PLOT DATE : 1/24/2024 4:24 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

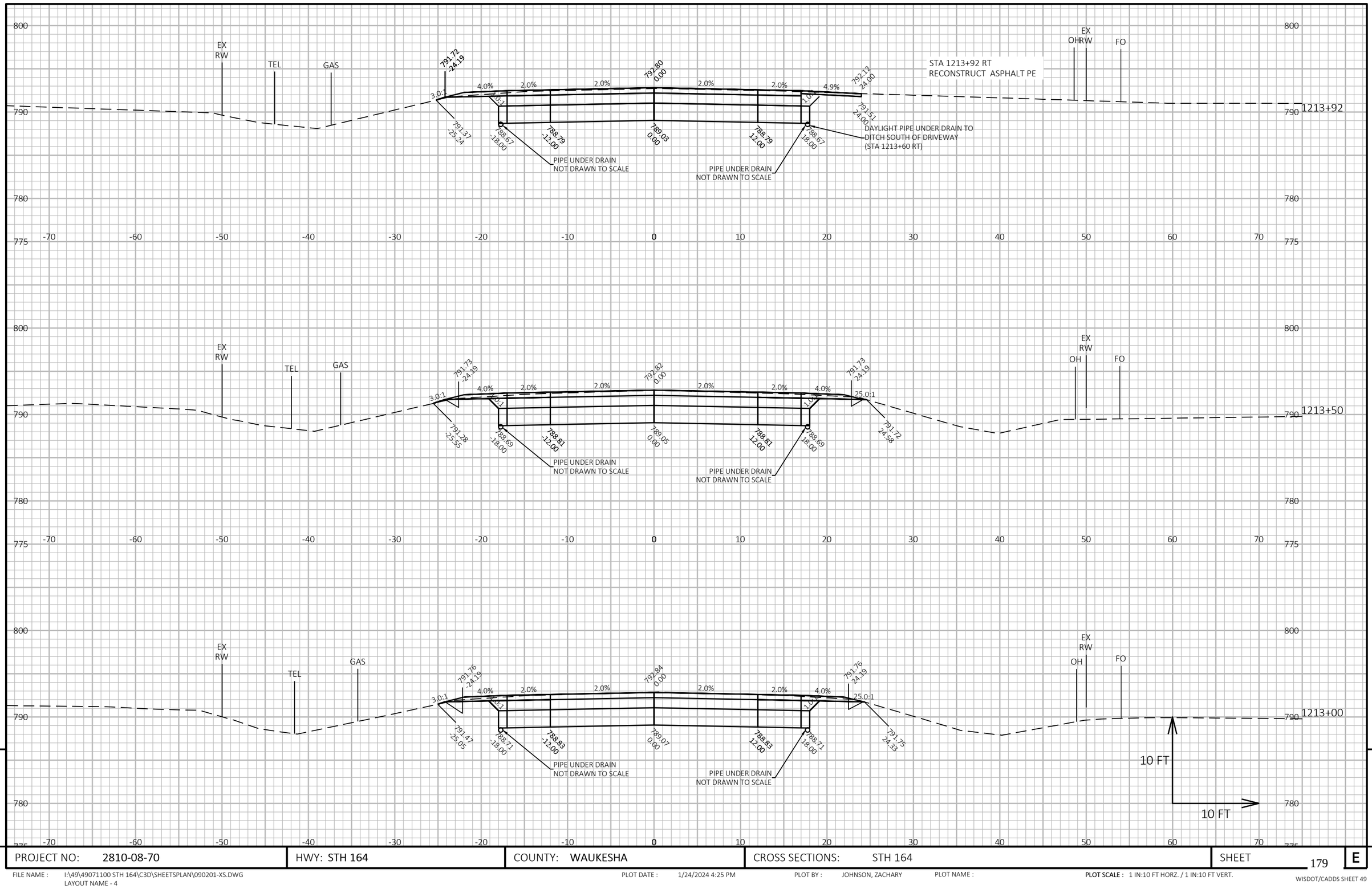
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 178	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 3

PLOT DATE : 1/24/2024 4:24 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



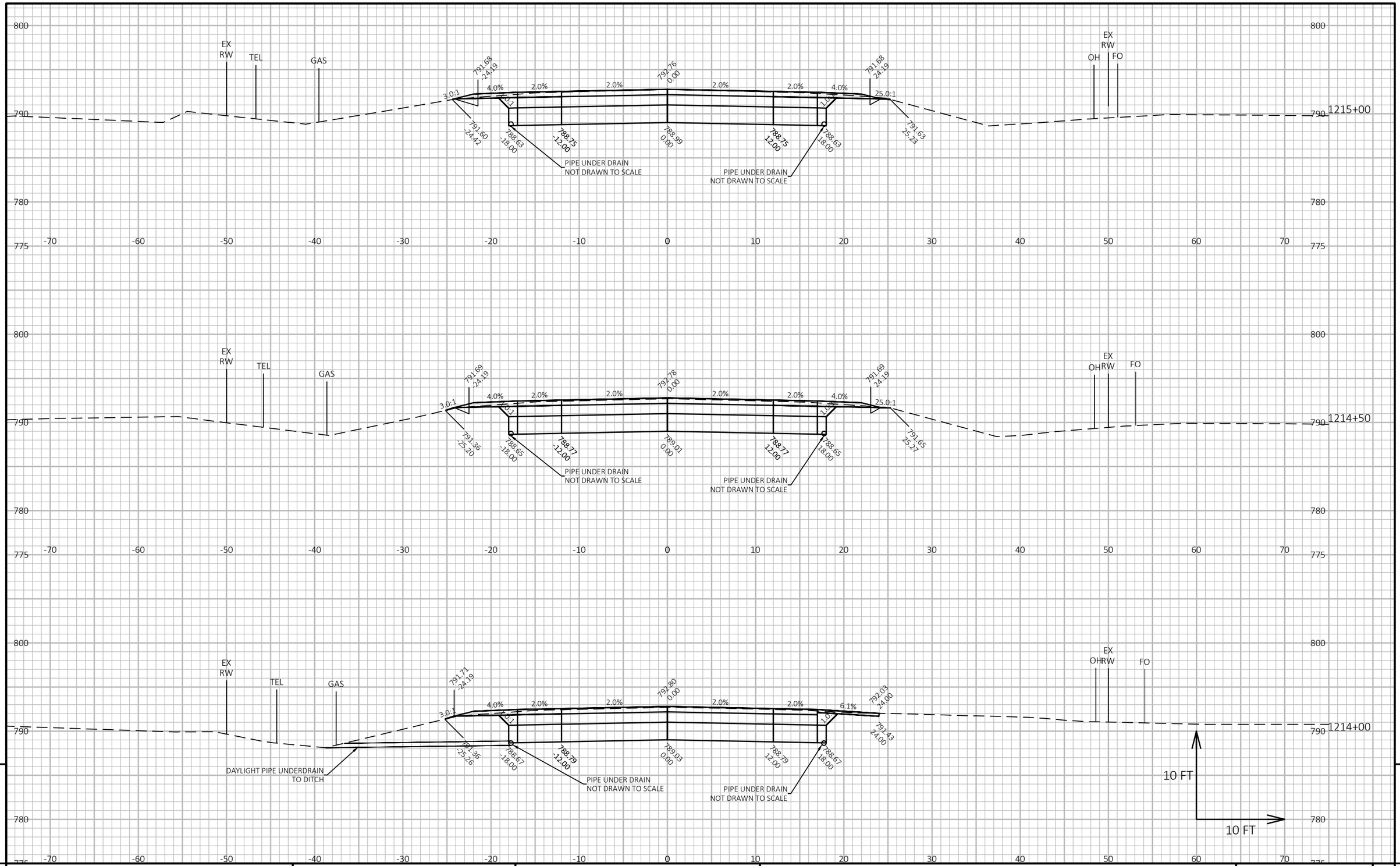
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 179	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 4

PLOT DATE : 1/24/2024 4:25 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



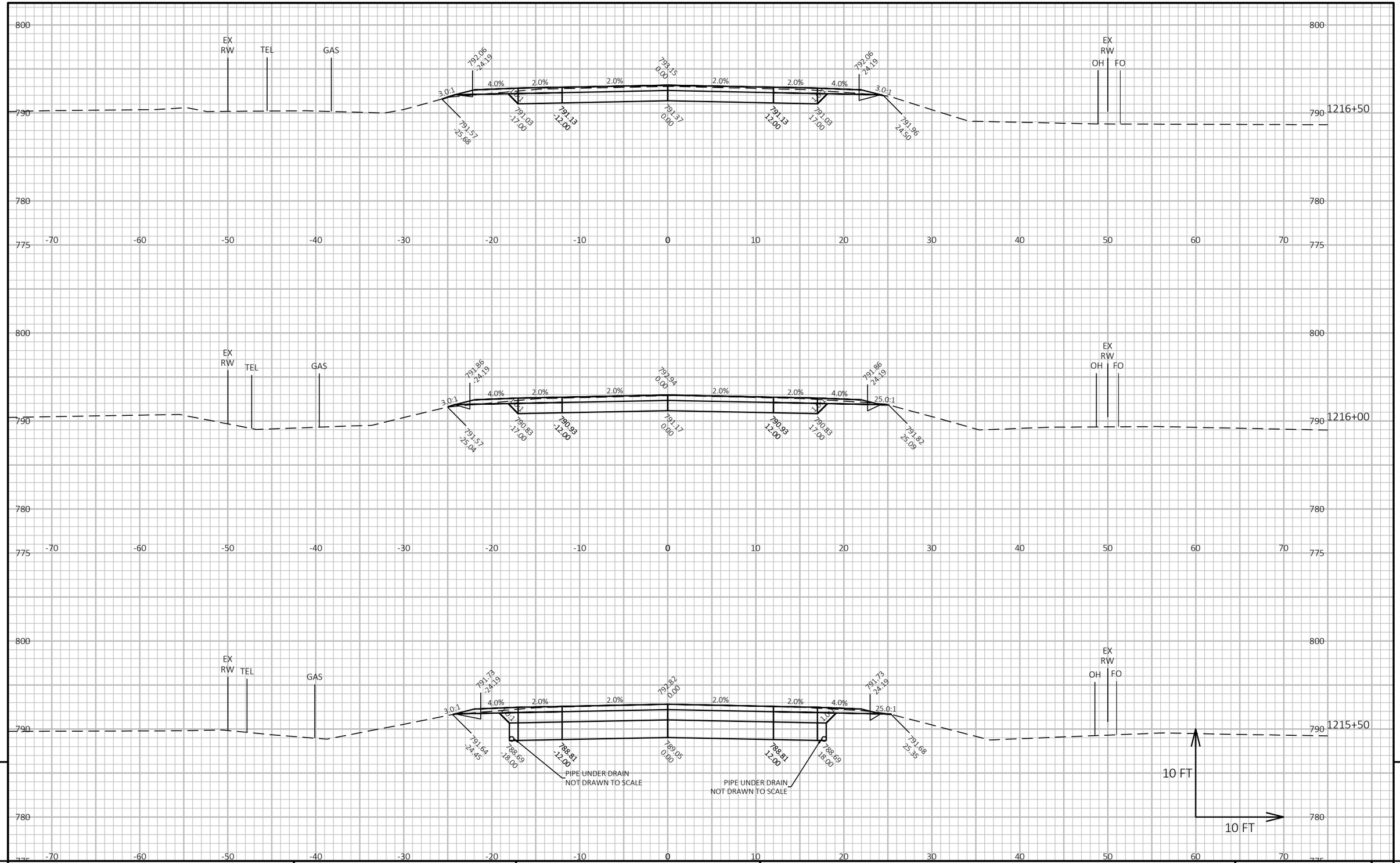
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FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 5

PLOT DATE : 1/24/2024 4:25 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

9 9 E



9

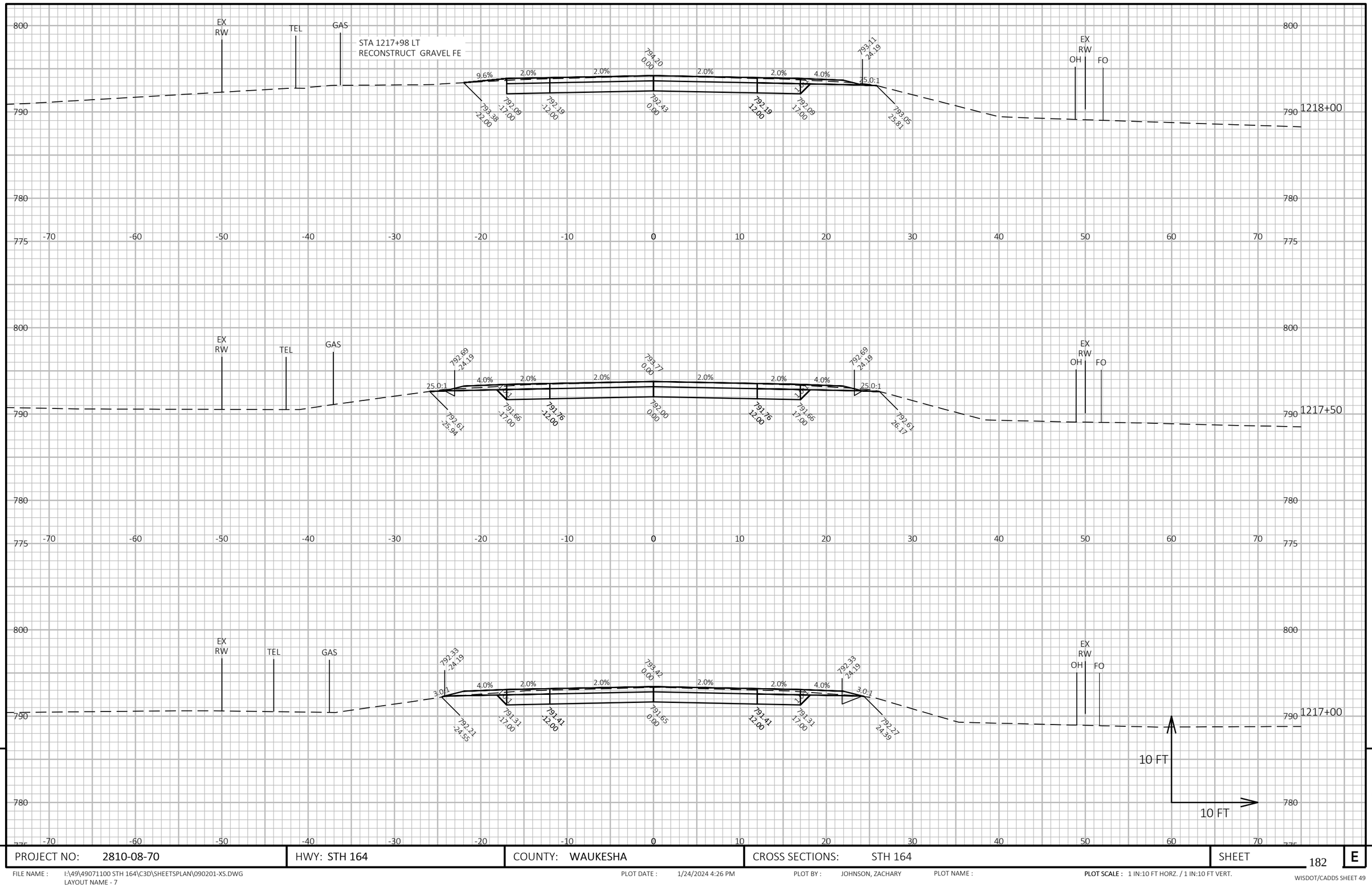
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 181	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 6

PLOT DATE : 1/24/2024 4:25 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



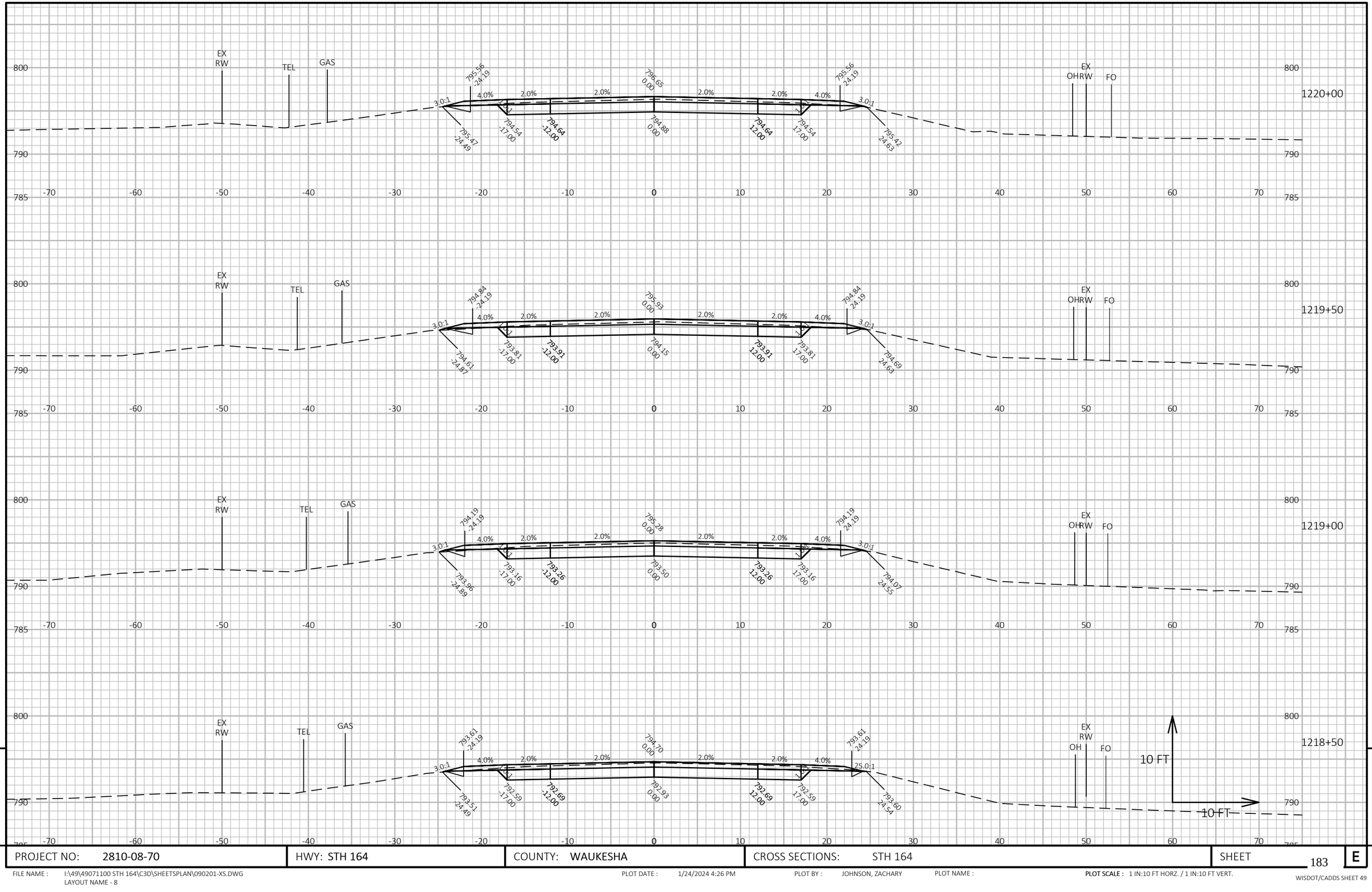
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 182 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 7

PLOT DATE : 1/24/2024 4:26 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

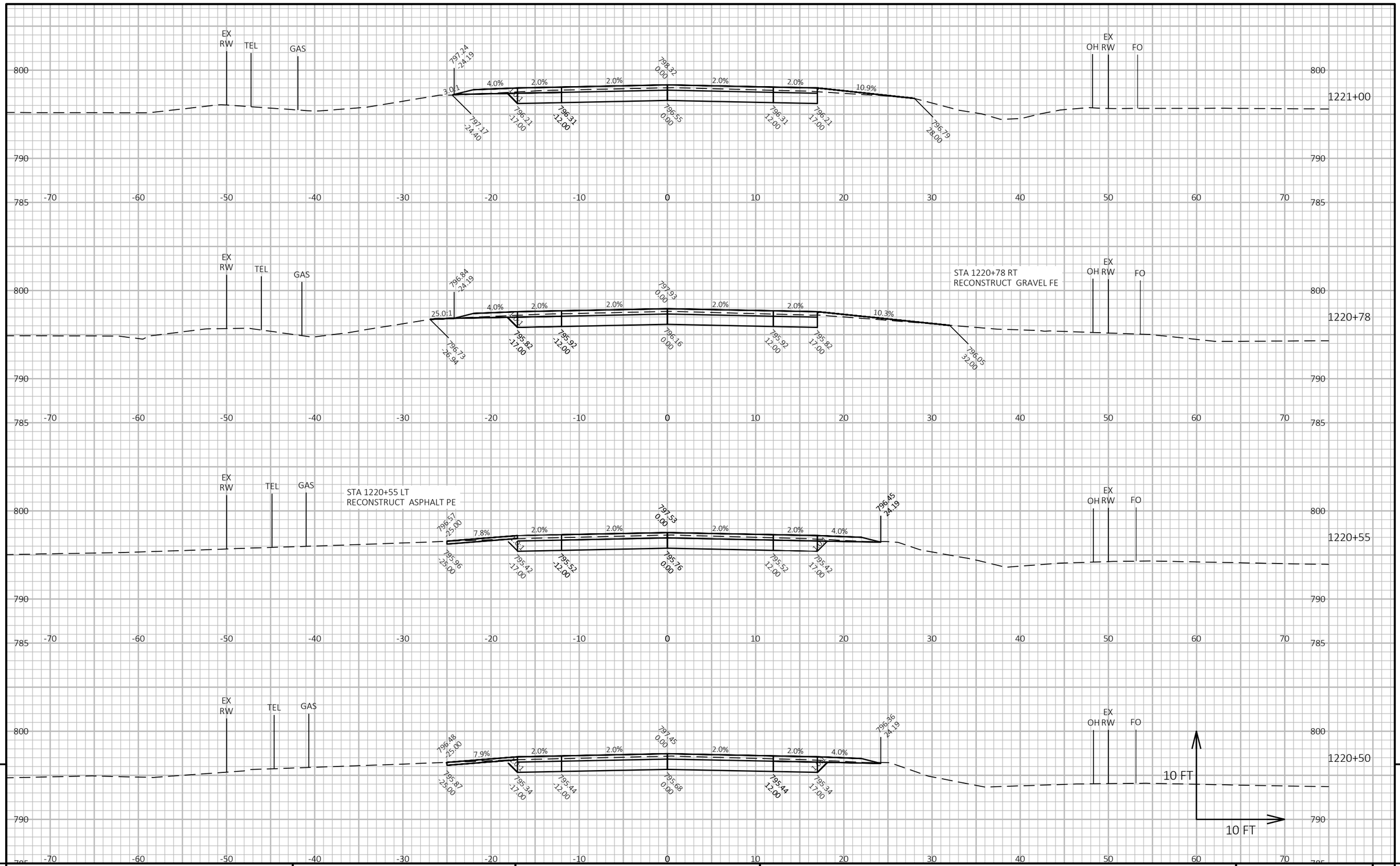
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 183	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 8

PLOT DATE : 1/24/2024 4:26 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

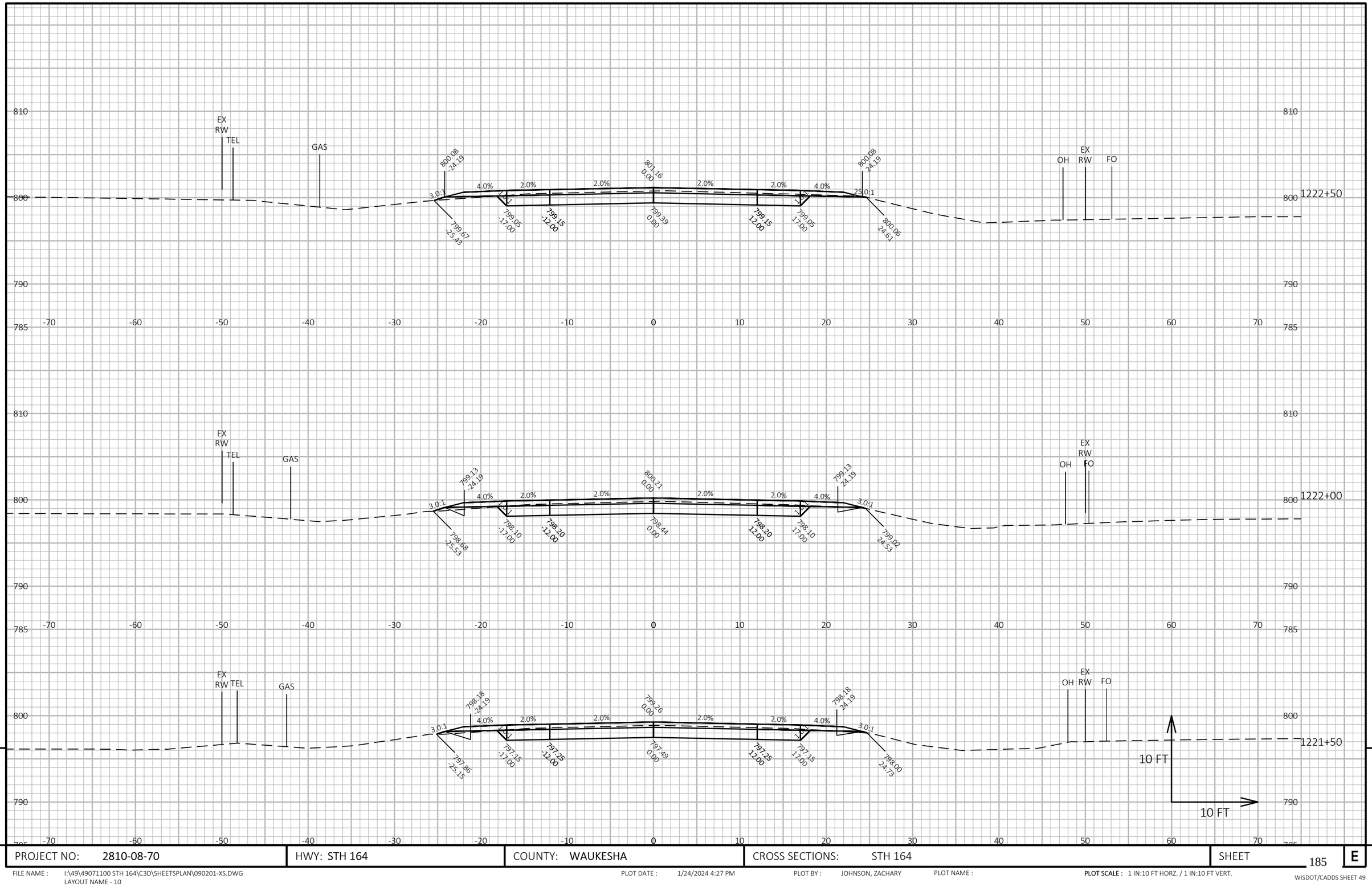
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 184	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 9

PLOT DATE : 1/24/2024 4:26 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49

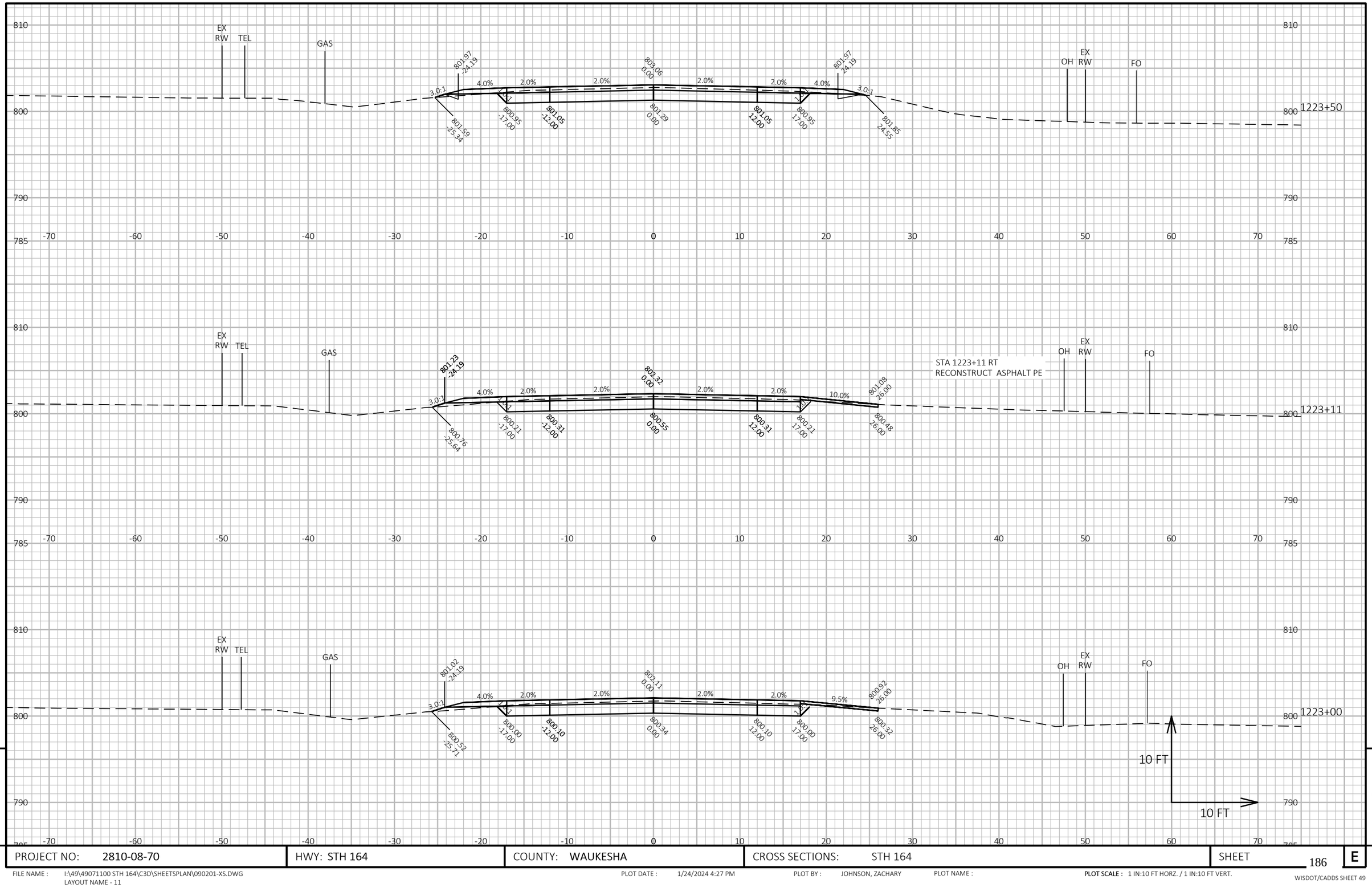


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 185	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 10

PLOT DATE : 1/24/2024 4:27 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 186	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 11

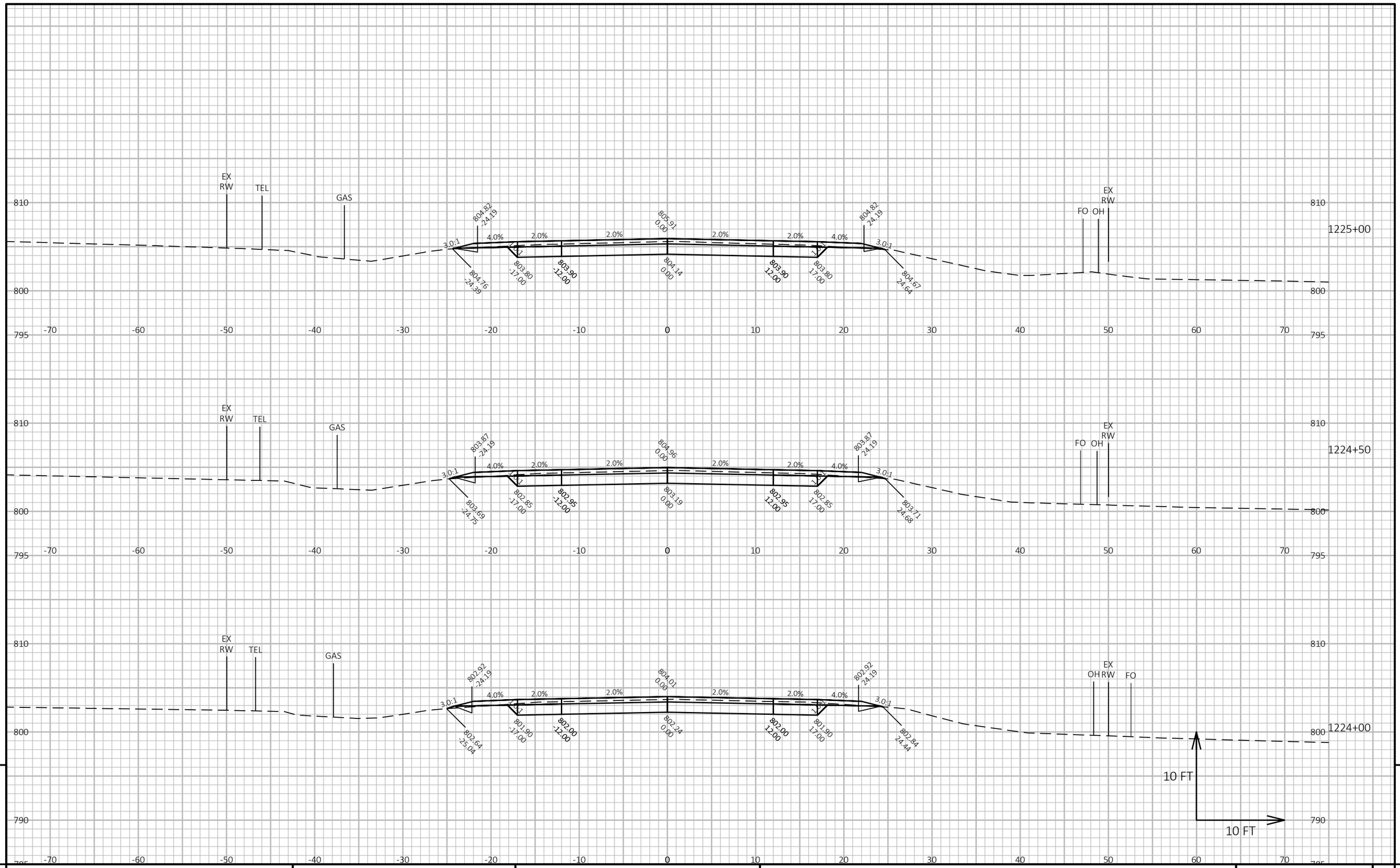
PLOT DATE : 1/24/2024 4:27 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 187	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 12

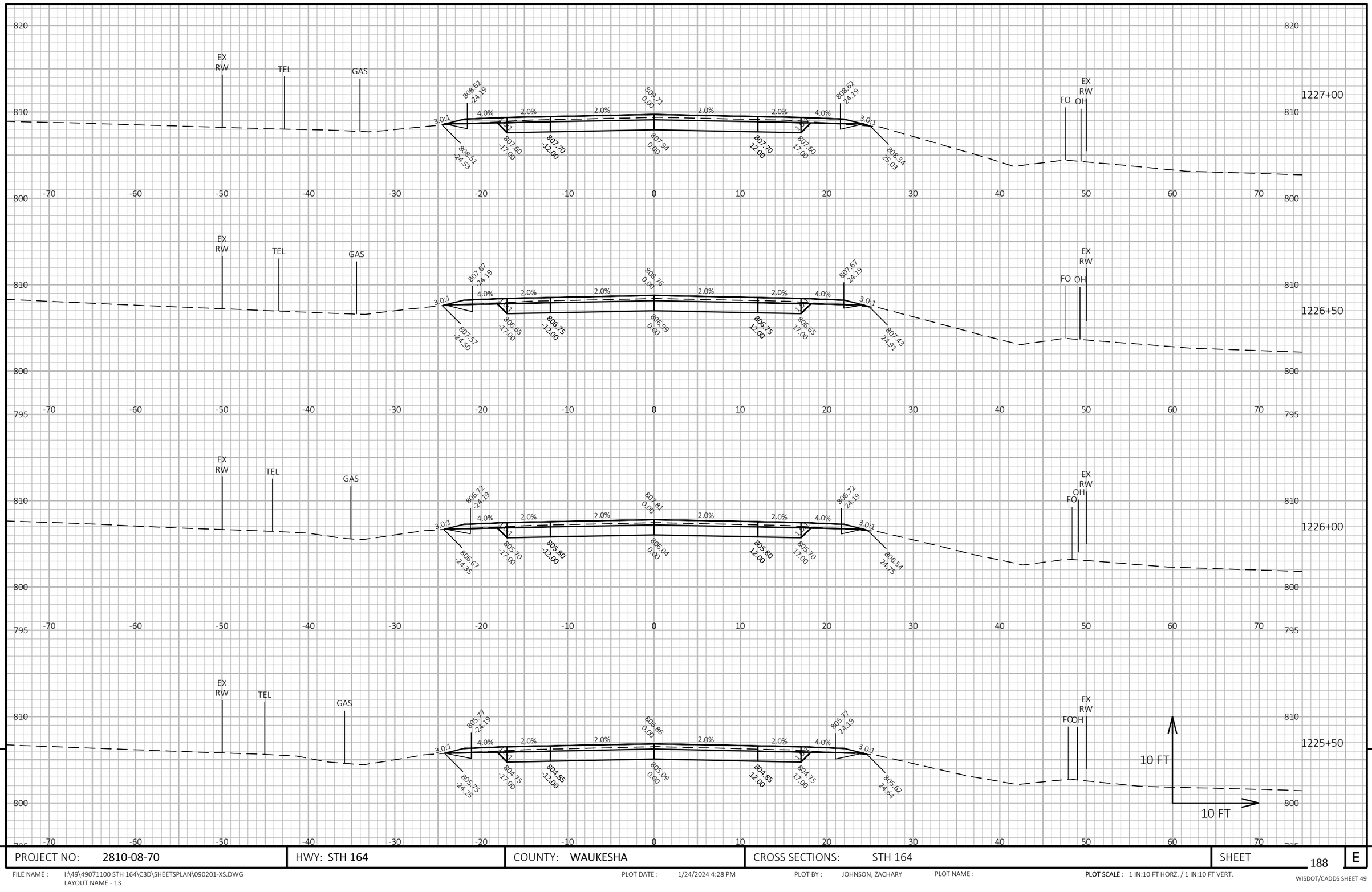
PLOT DATE : 1/24/2024 4:27 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49

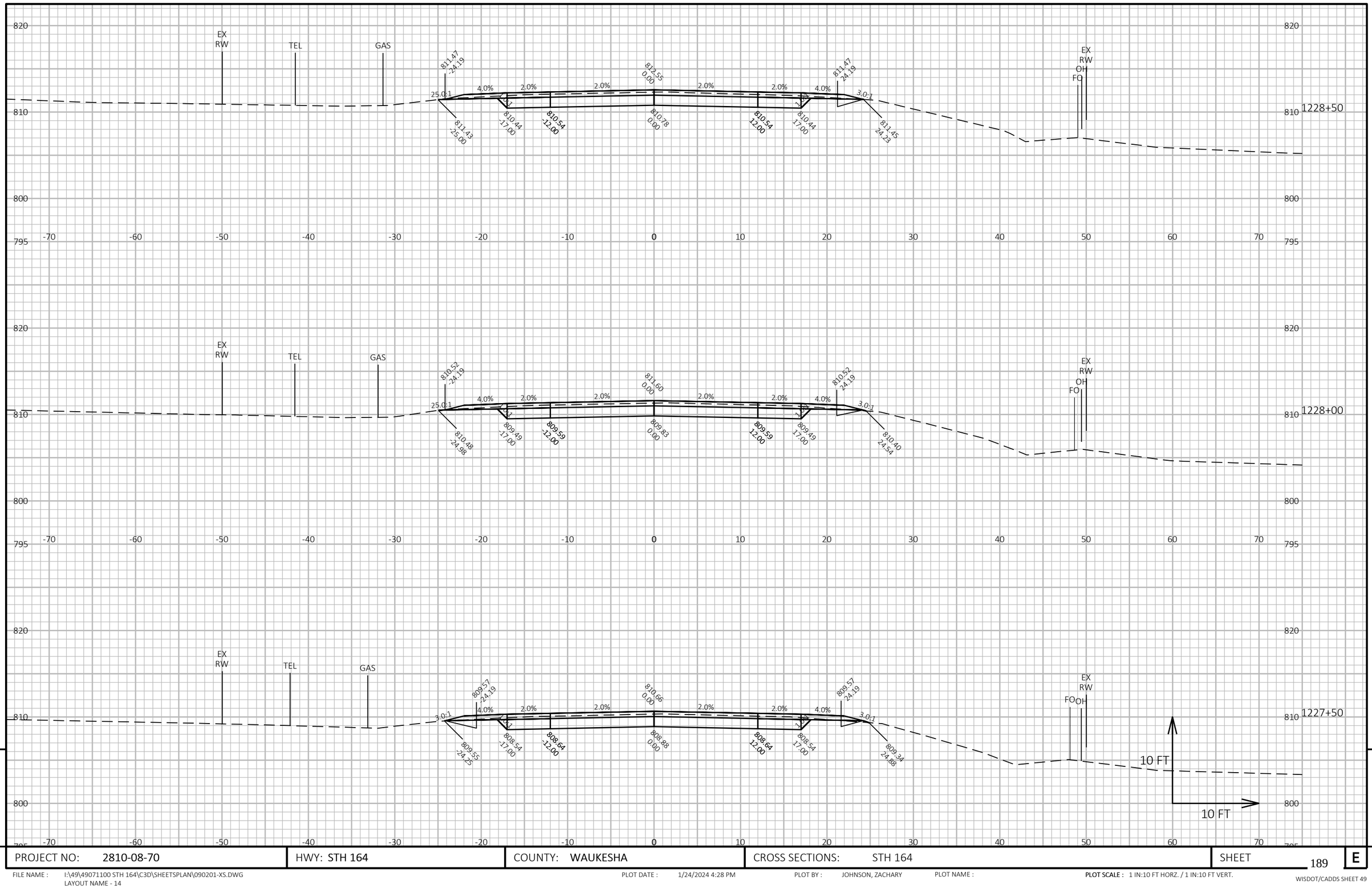


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 188 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 13

PLOT DATE : 1/24/2024 4:28 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

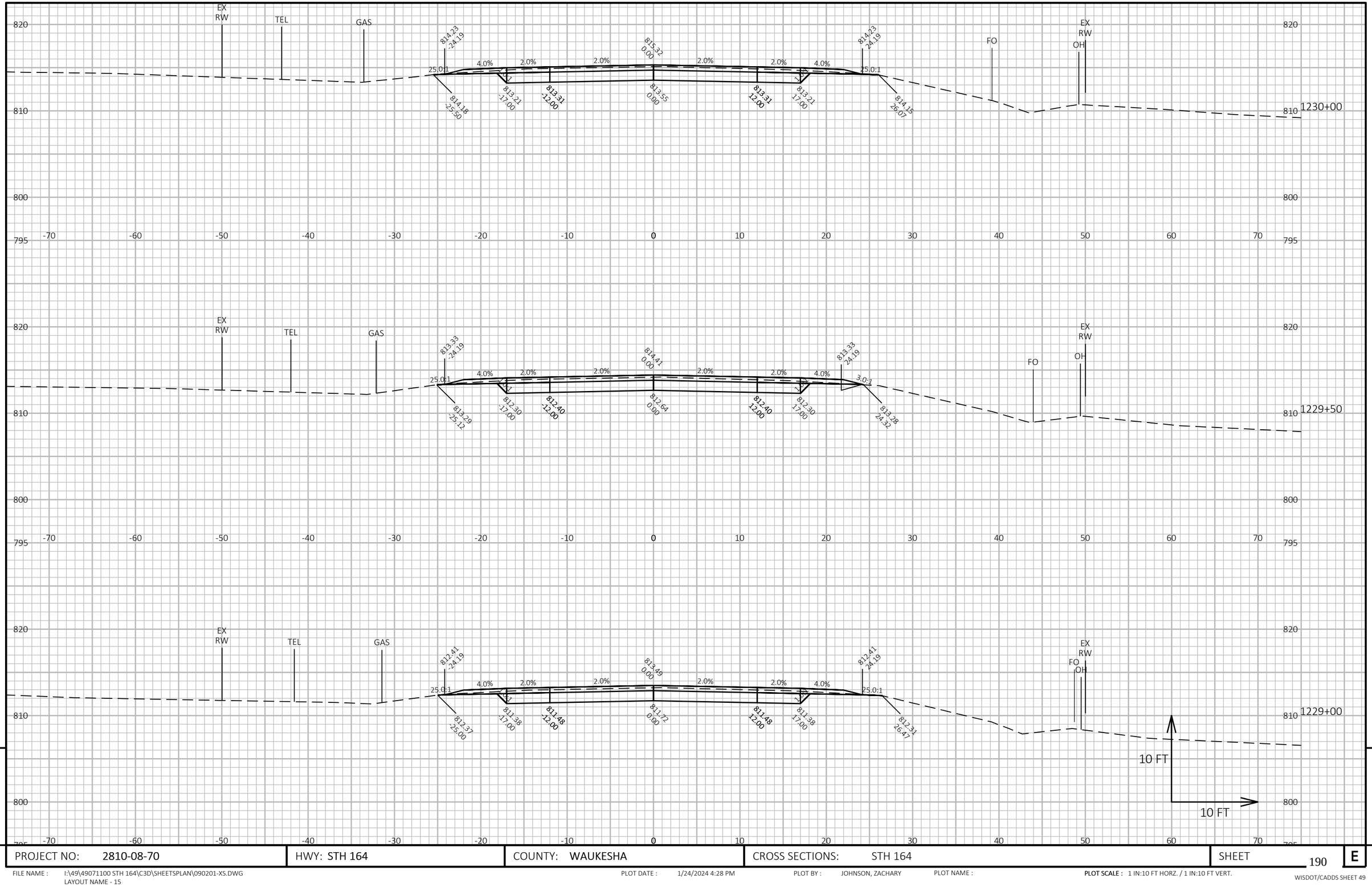
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 189	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 14

PLOT DATE : 1/24/2024 4:28 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

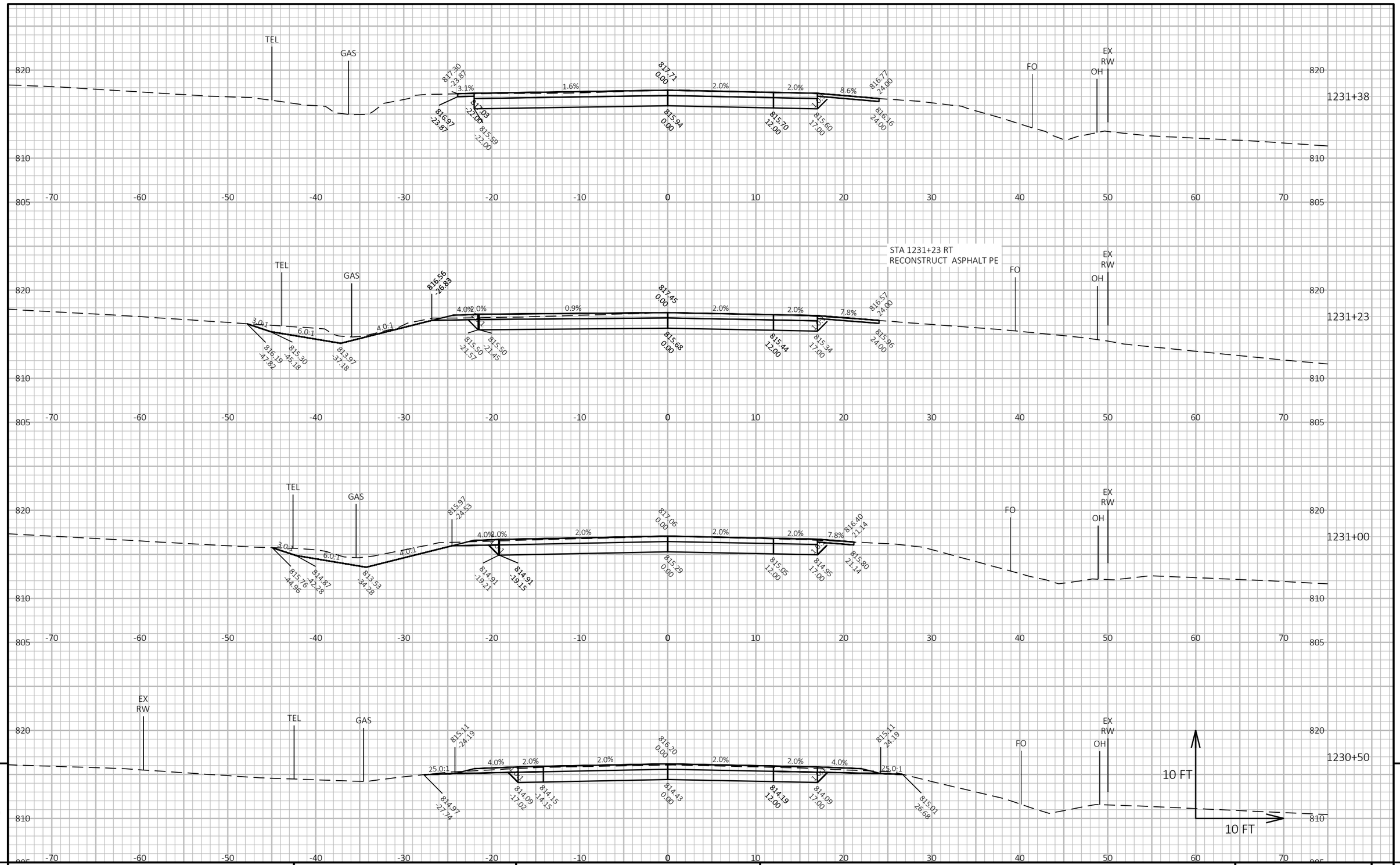
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 190	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 15

PLOT DATE : 1/24/2024 4:28 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

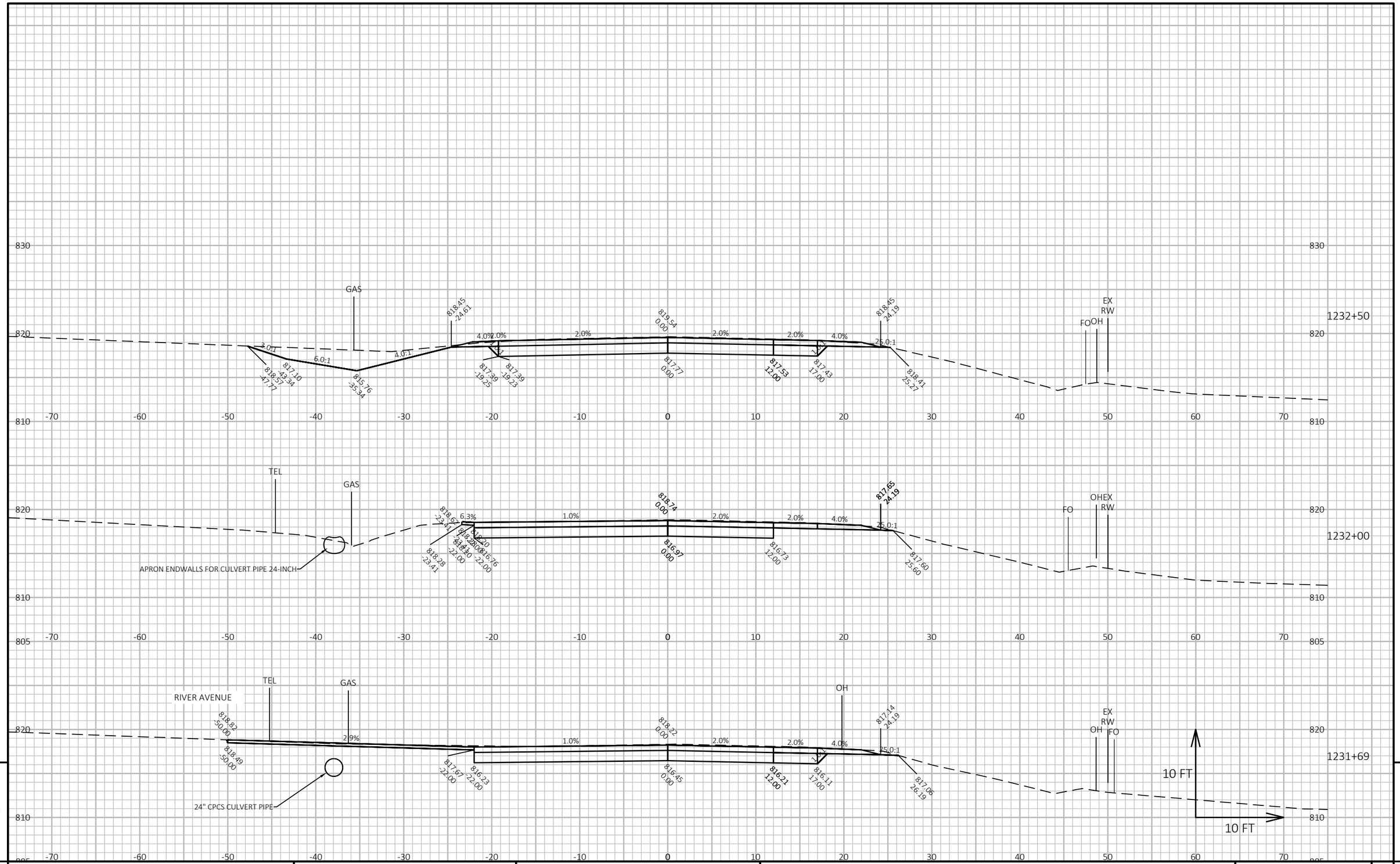
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 191	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 16

PLOT DATE : 1/24/2024 4:29 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

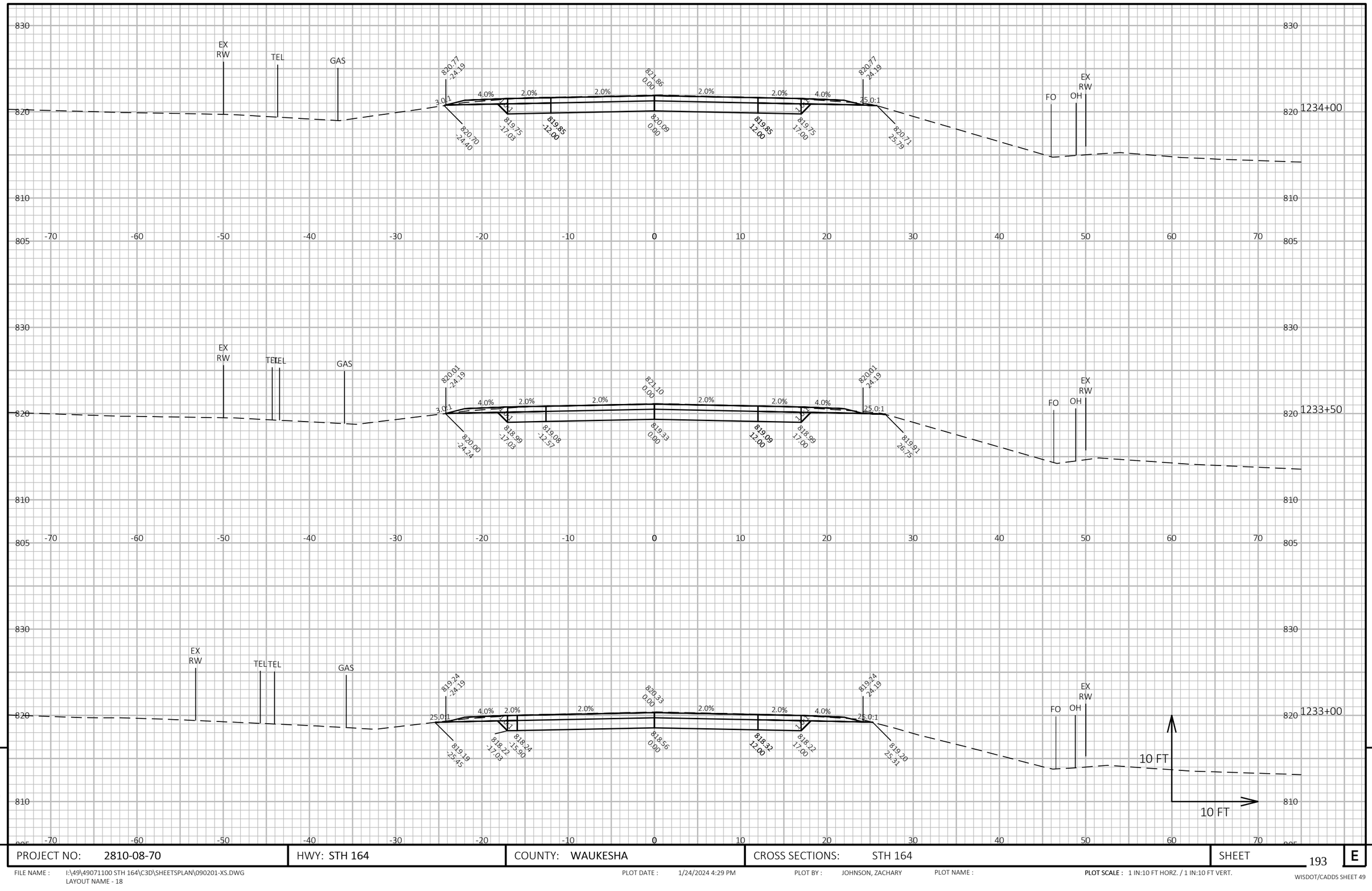


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 192	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 17

PLOT DATE : 1/24/2024 4:29 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

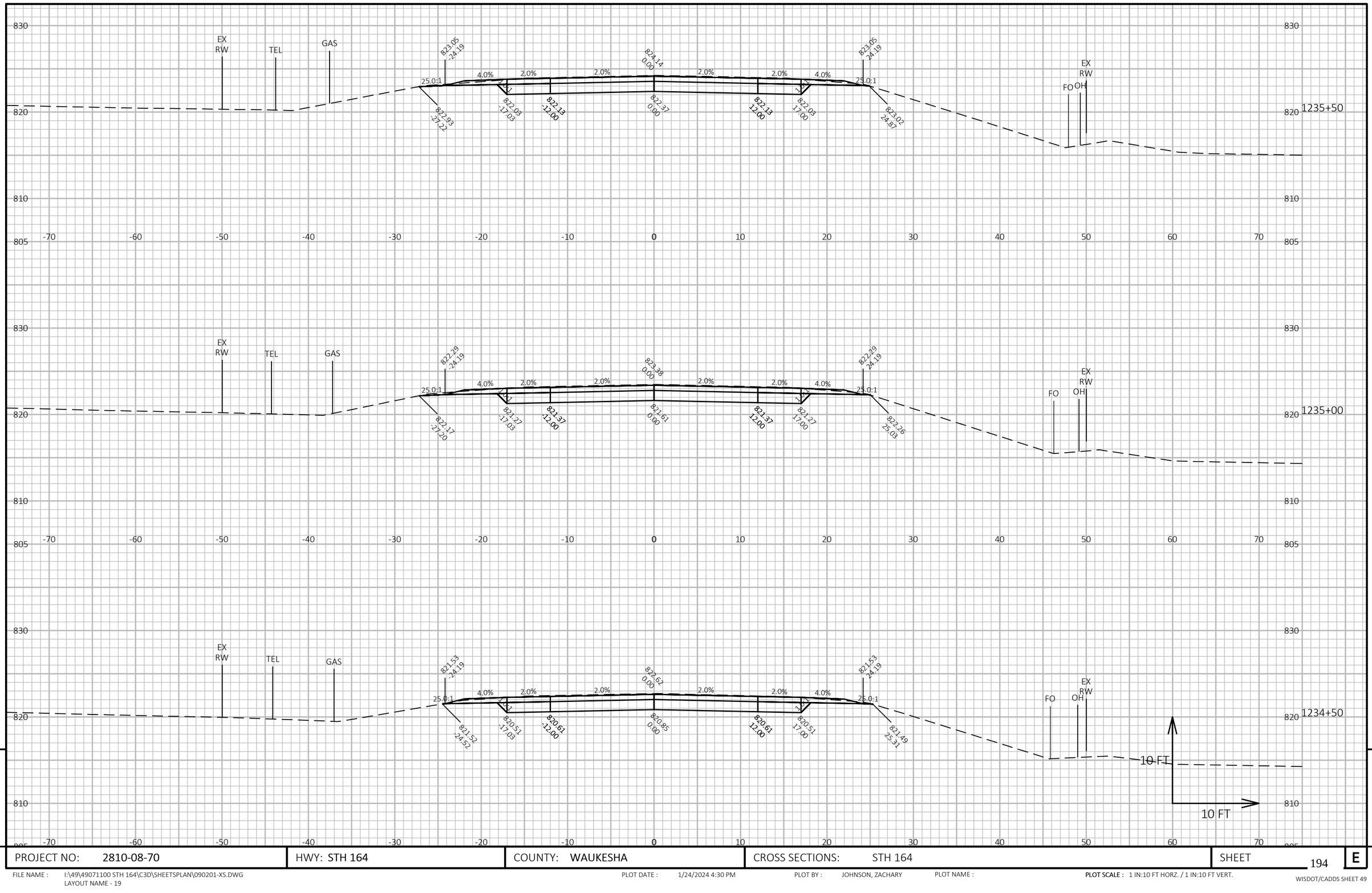


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 193	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 18

PLOT DATE : 1/24/2024 4:29 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

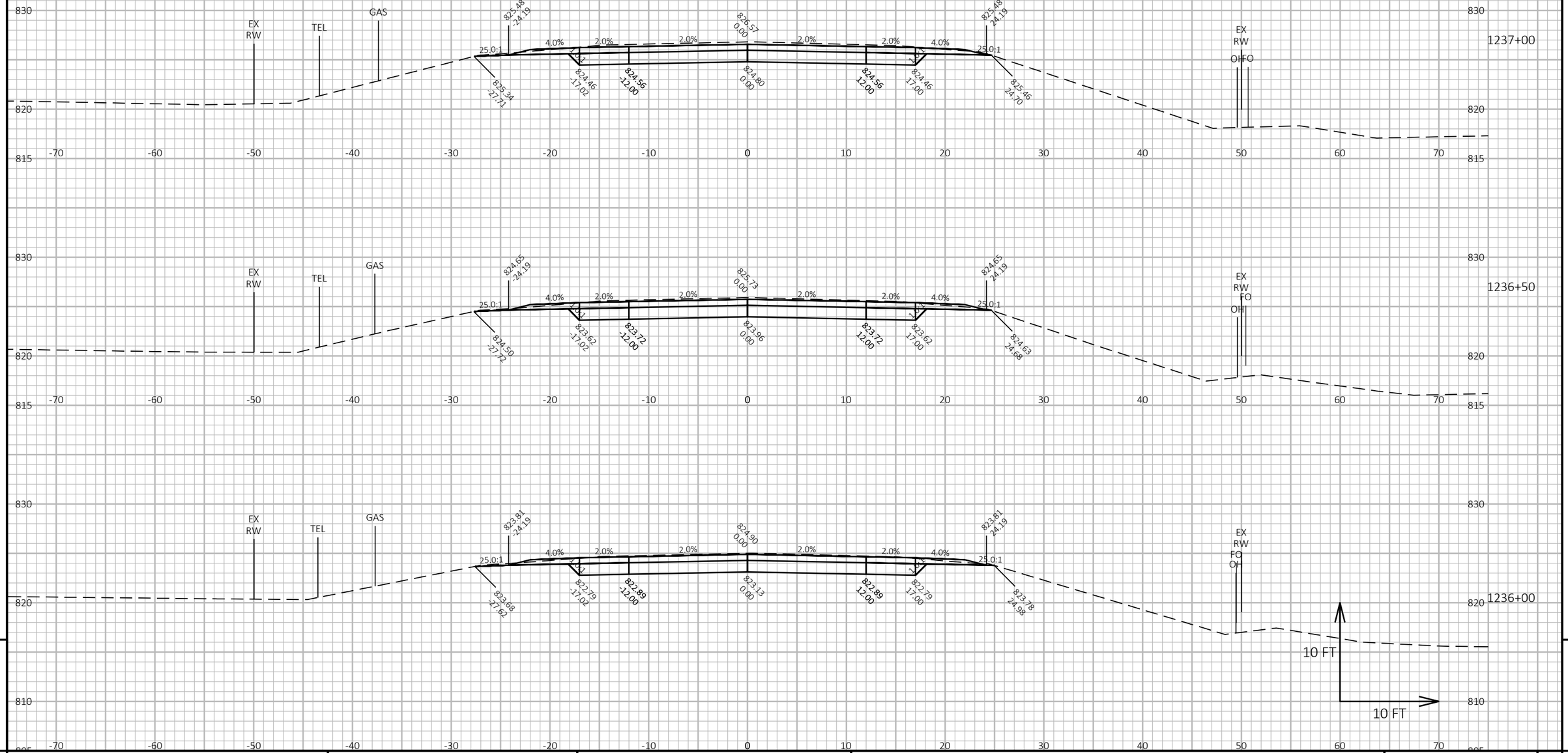


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 194	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 19

PLOT DATE : 1/24/2024 4:30 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

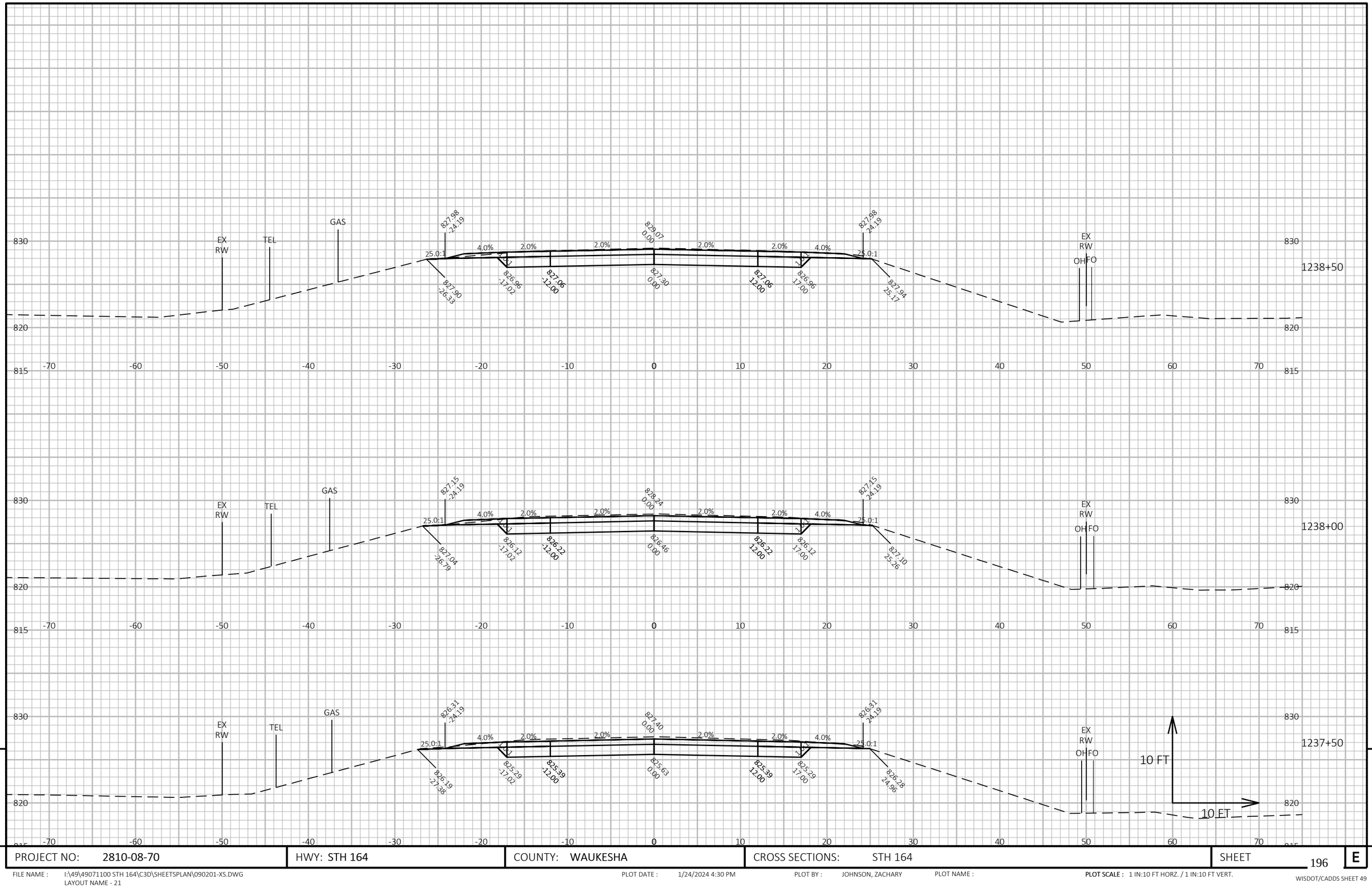
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 195	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 20

PLOT DATE : 1/24/2024 4:30 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

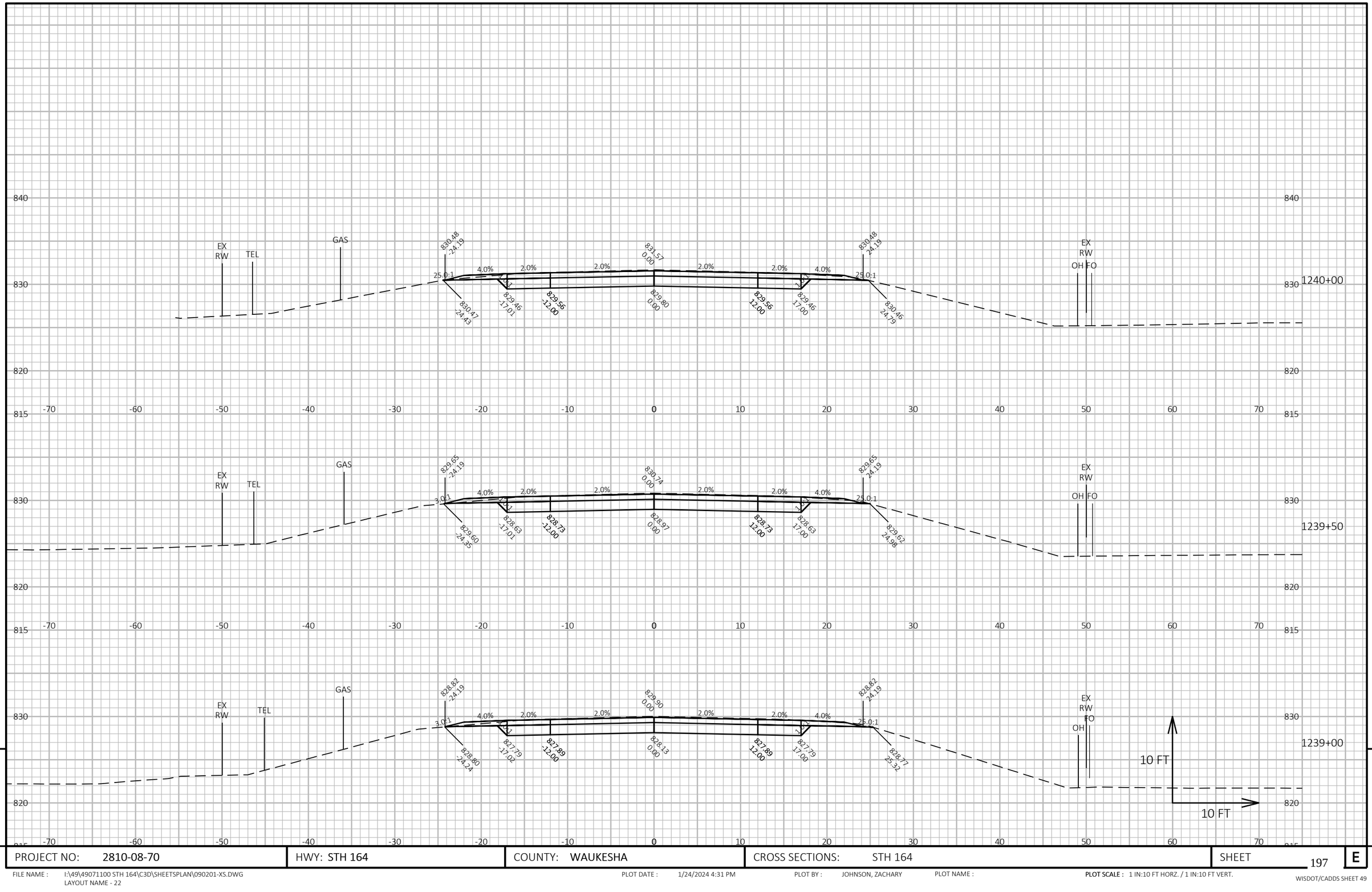
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 196	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 21

PLOT DATE : 1/24/2024 4:30 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 197	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 22

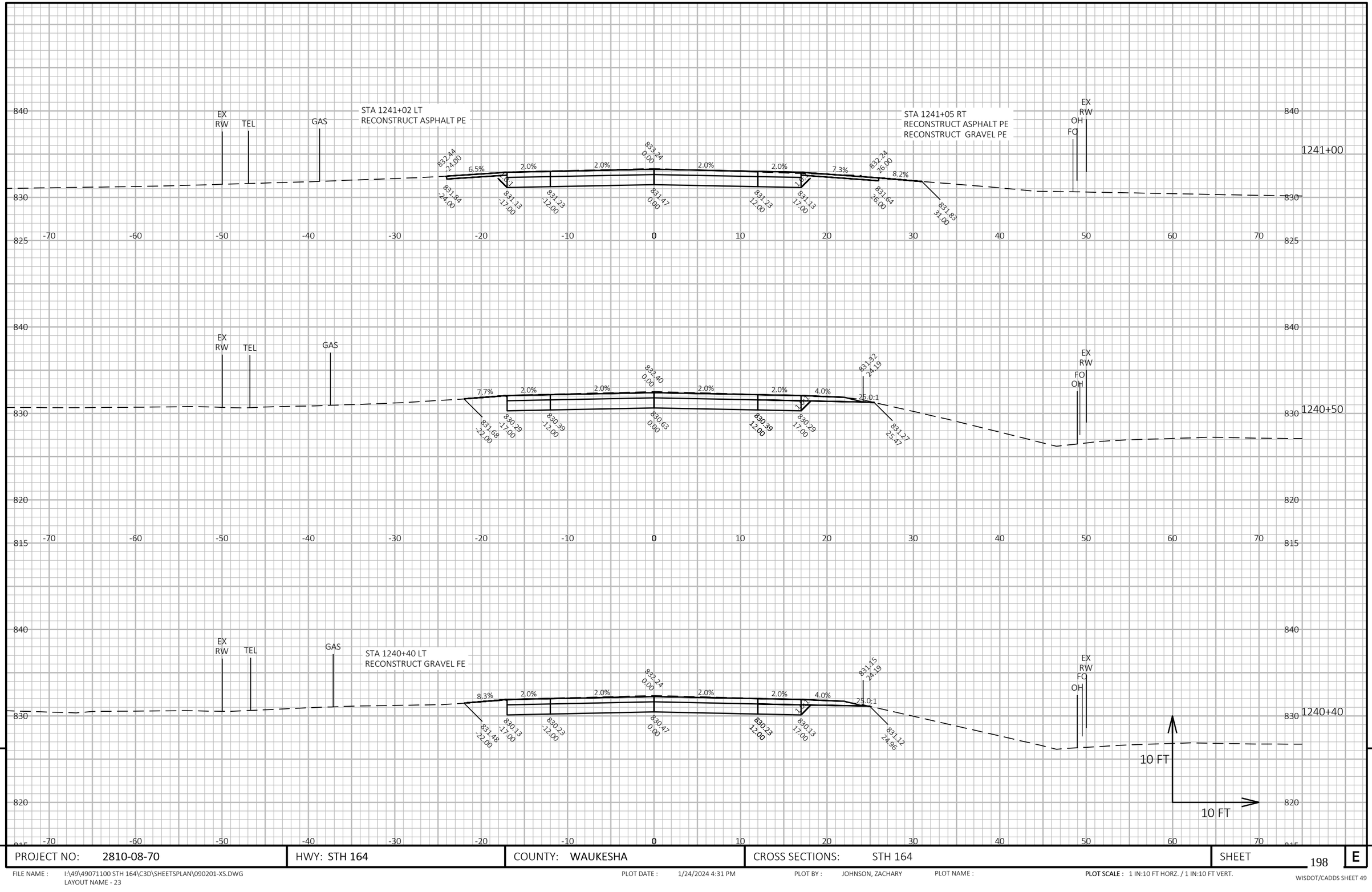
PLOT DATE : 1/24/2024 4:31 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

STA 1241+02 LT
RECONSTRUCT ASPHALT PE

STA 1241+05 RT
RECONSTRUCT ASPHALT PE
RECONSTRUCT GRAVEL PE

STA 1240+40 LT
RECONSTRUCT GRAVEL FE

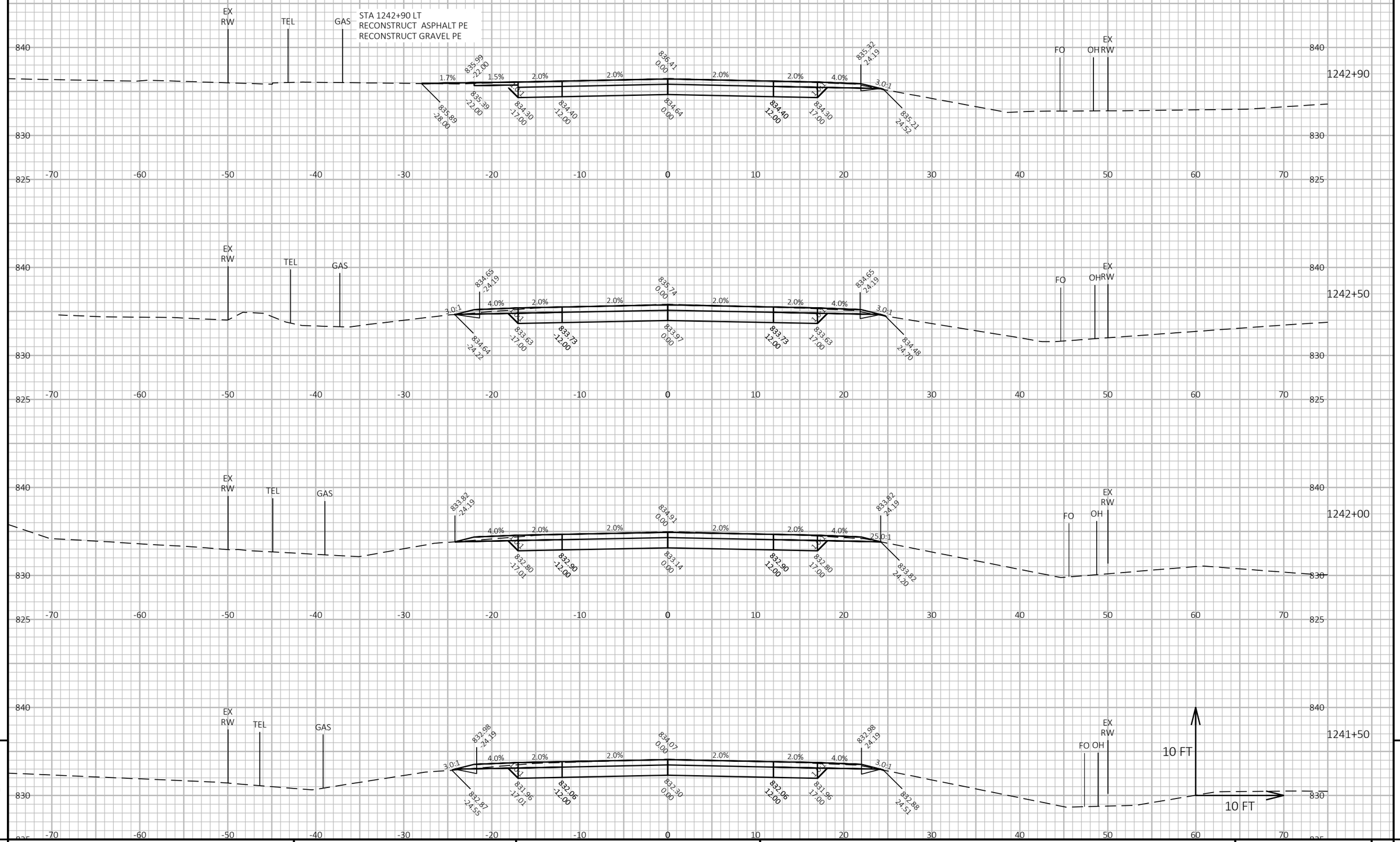


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 198	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 23

PLOT DATE : 1/24/2024 4:31 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

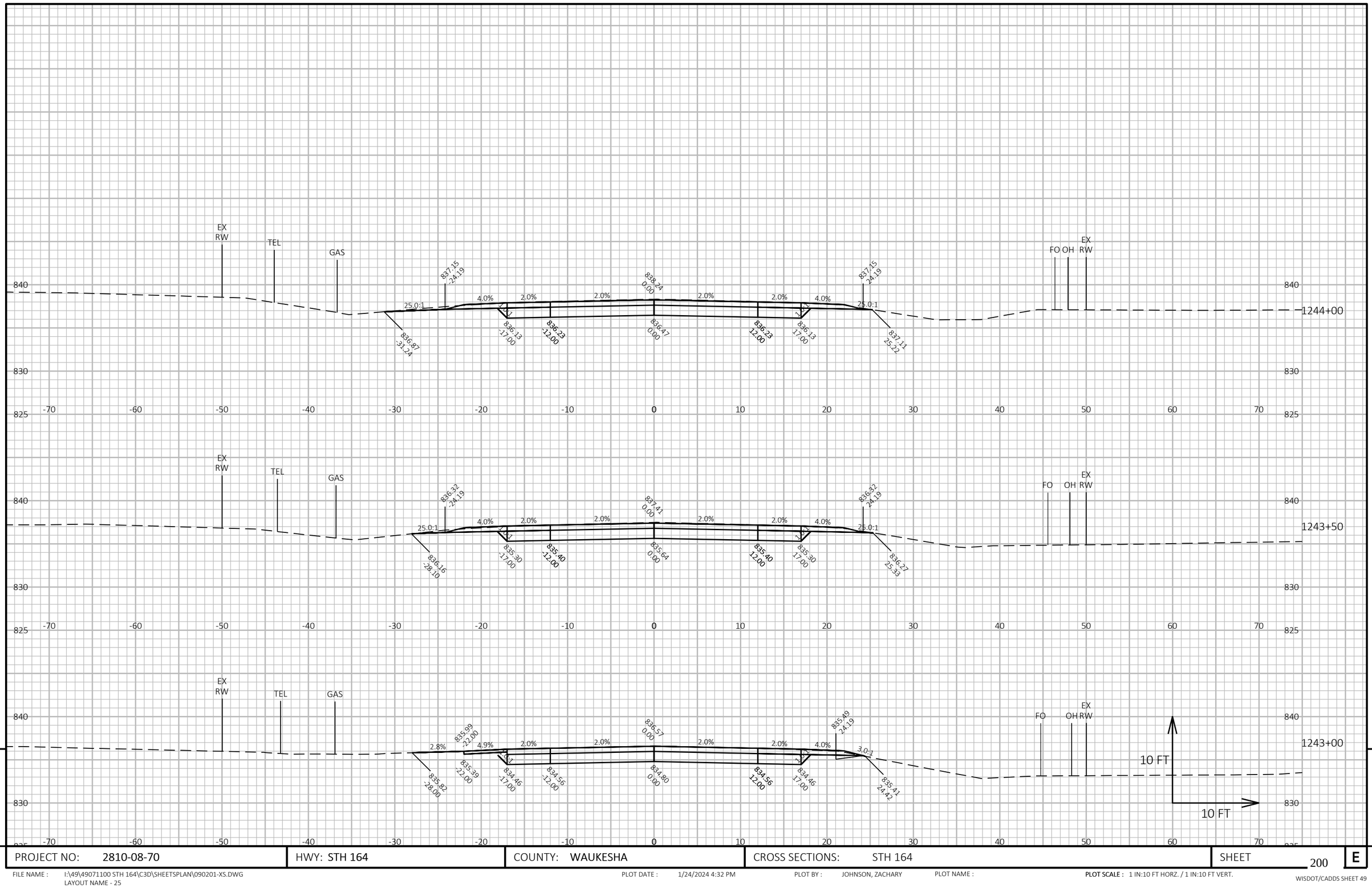
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 199	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 24

PLOT DATE : 1/24/2024 4:31 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

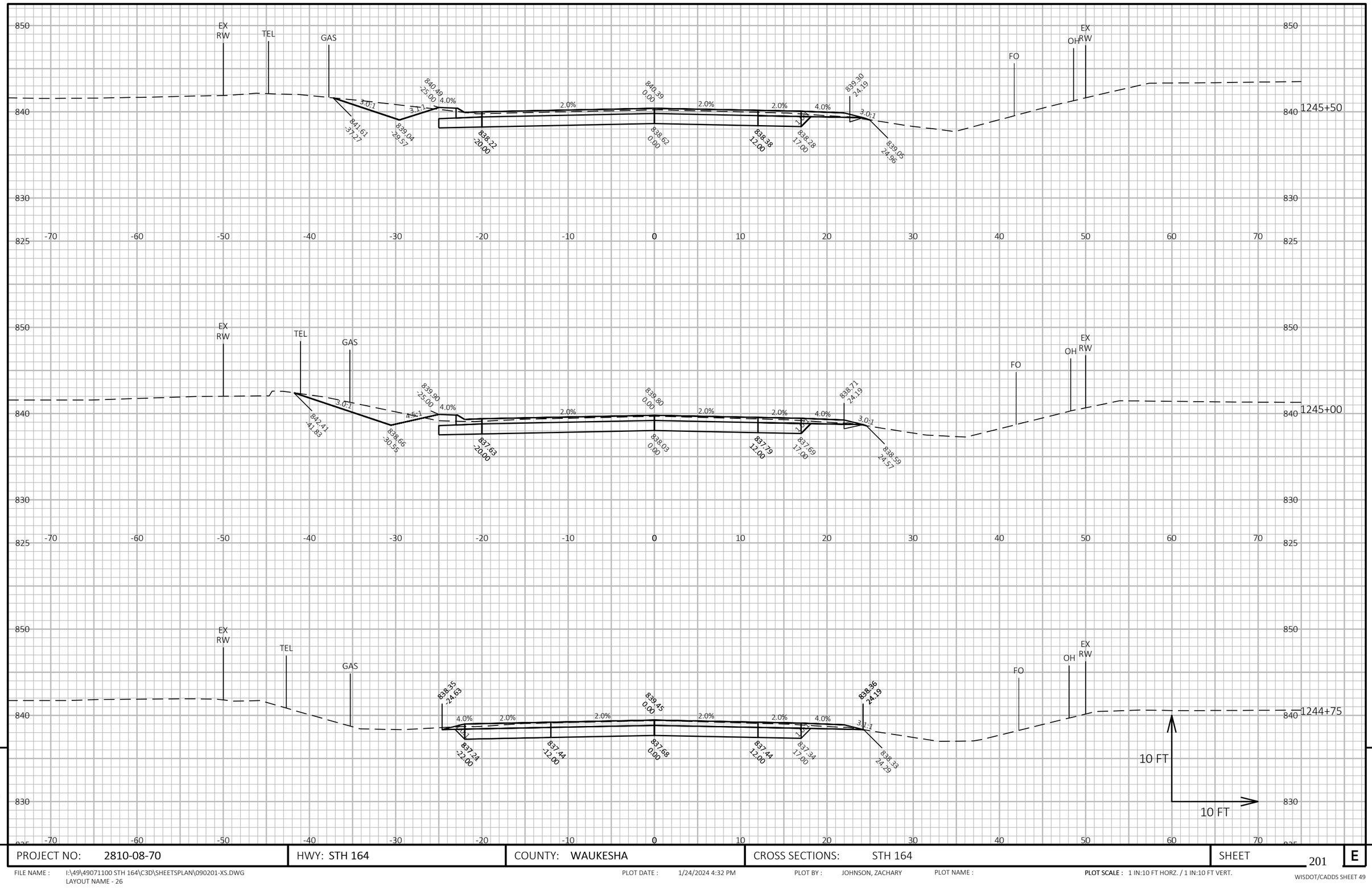


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 200	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 25

PLOT DATE : 1/24/2024 4:32 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



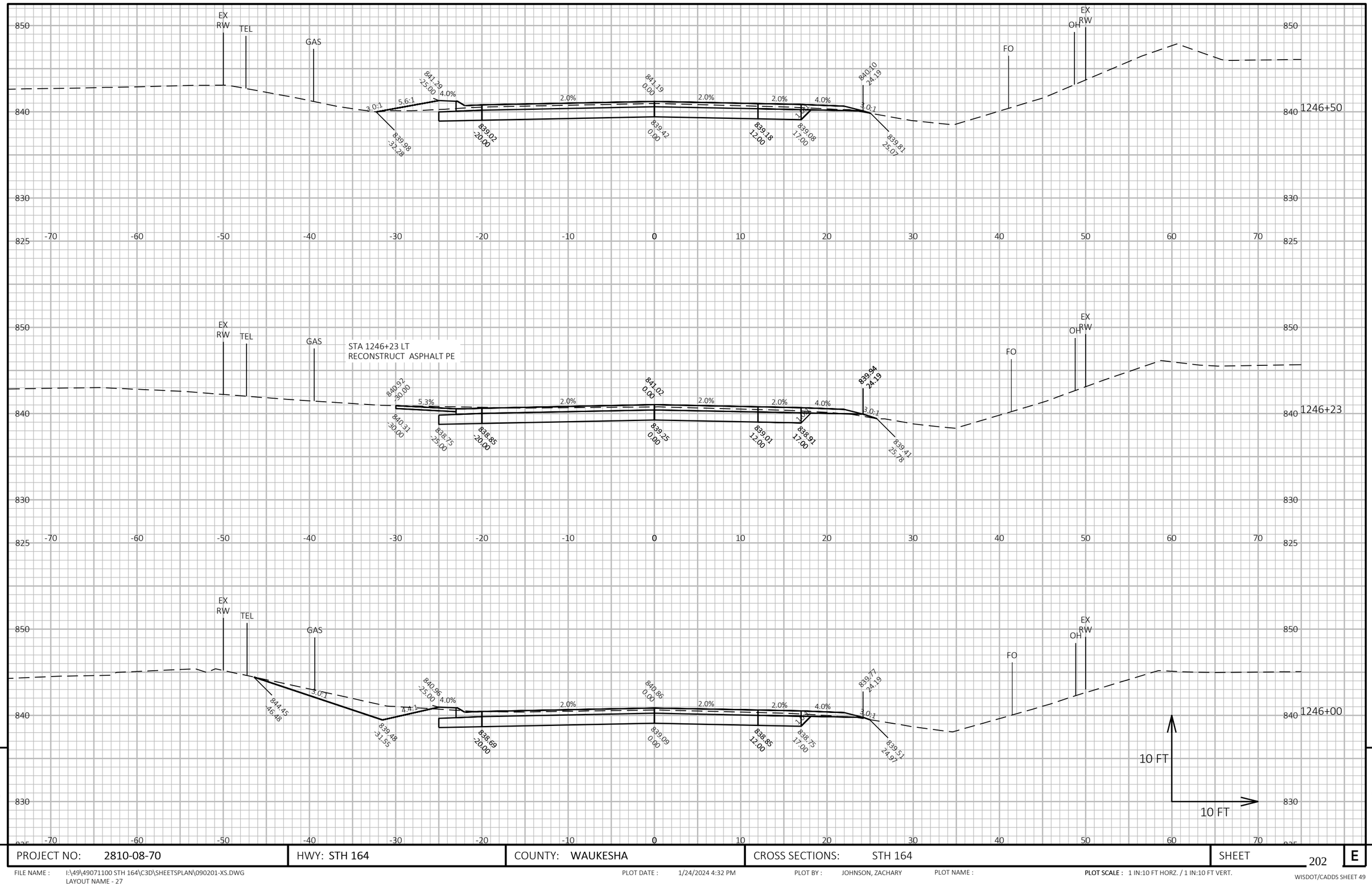
9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 201	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 26

PLOT DATE : 1/24/2024 4:32 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

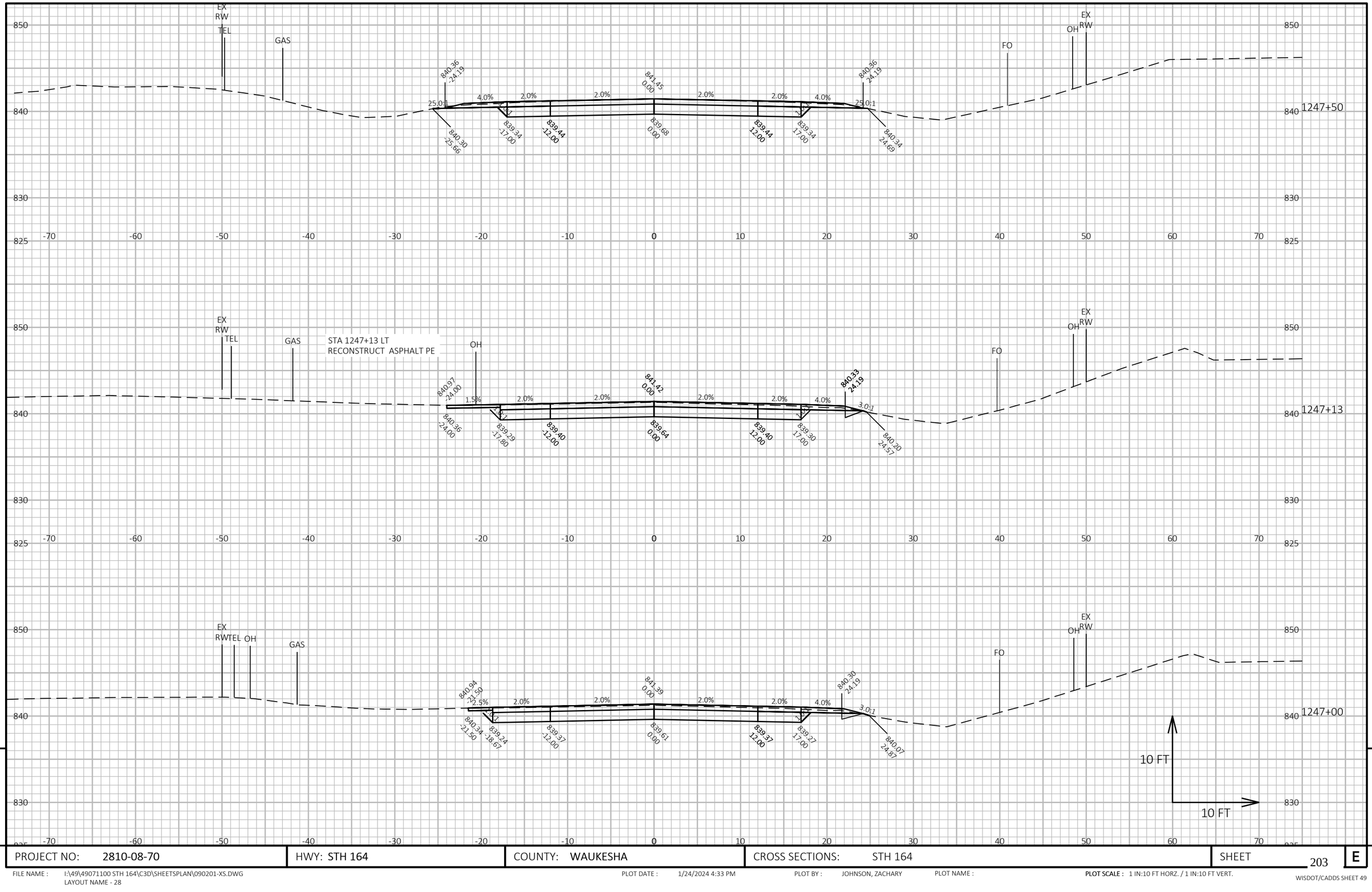
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 202	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 27

PLOT DATE : 1/24/2024 4:32 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 203	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 28

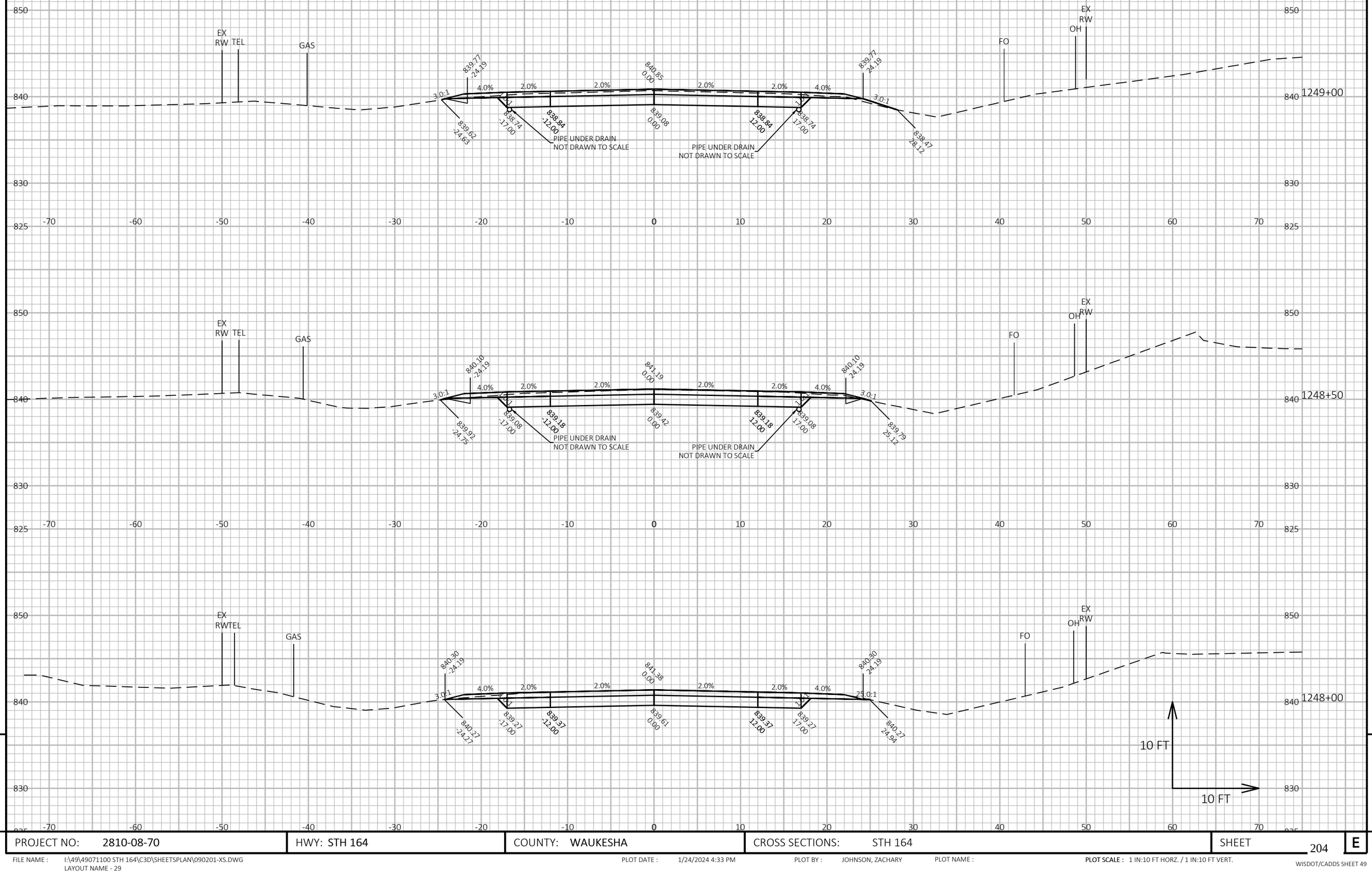
PLOT DATE : 1/24/2024 4:33 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

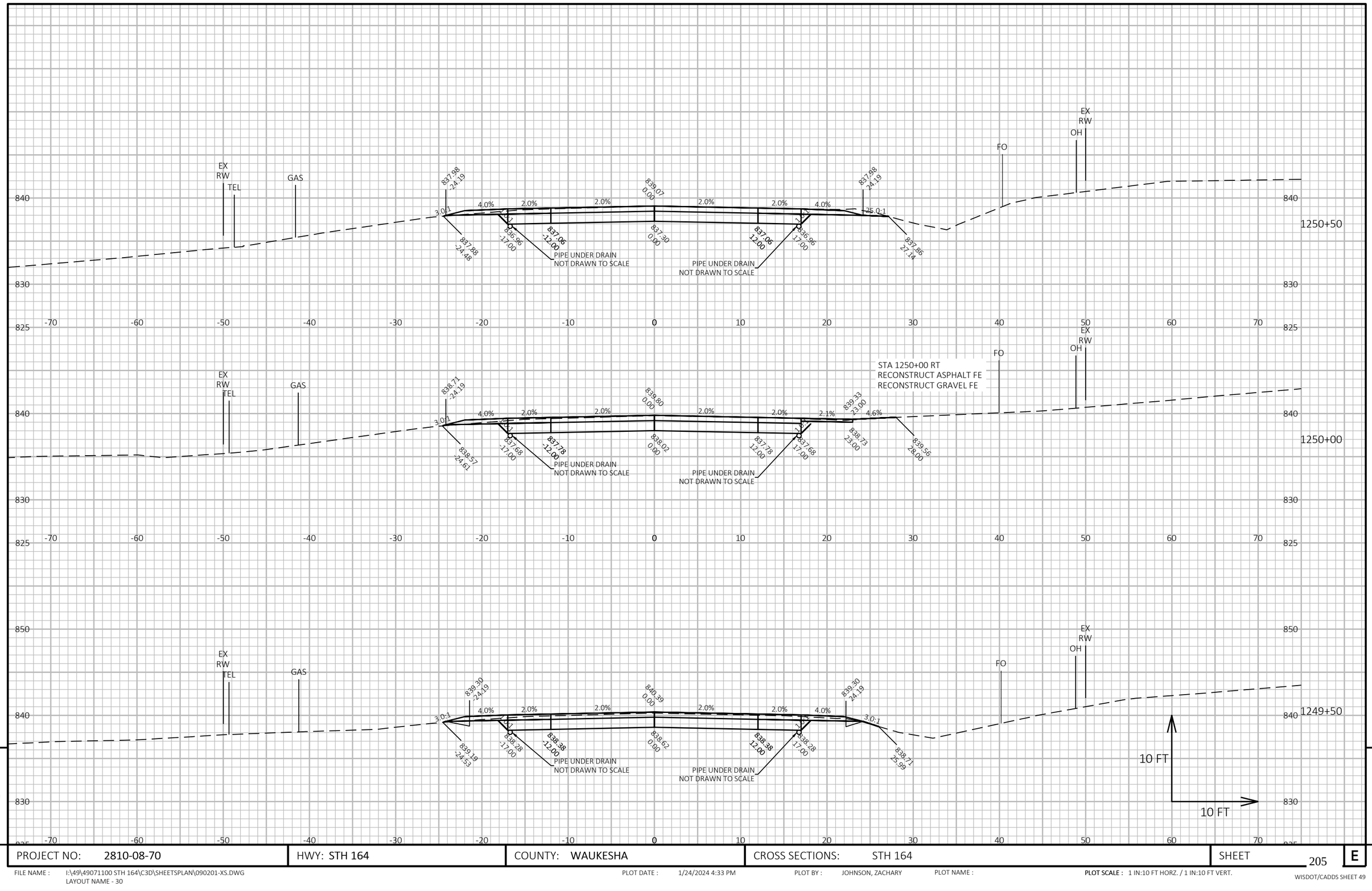
9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 204	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 29

PLOT DATE : 1/24/2024 4:33 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



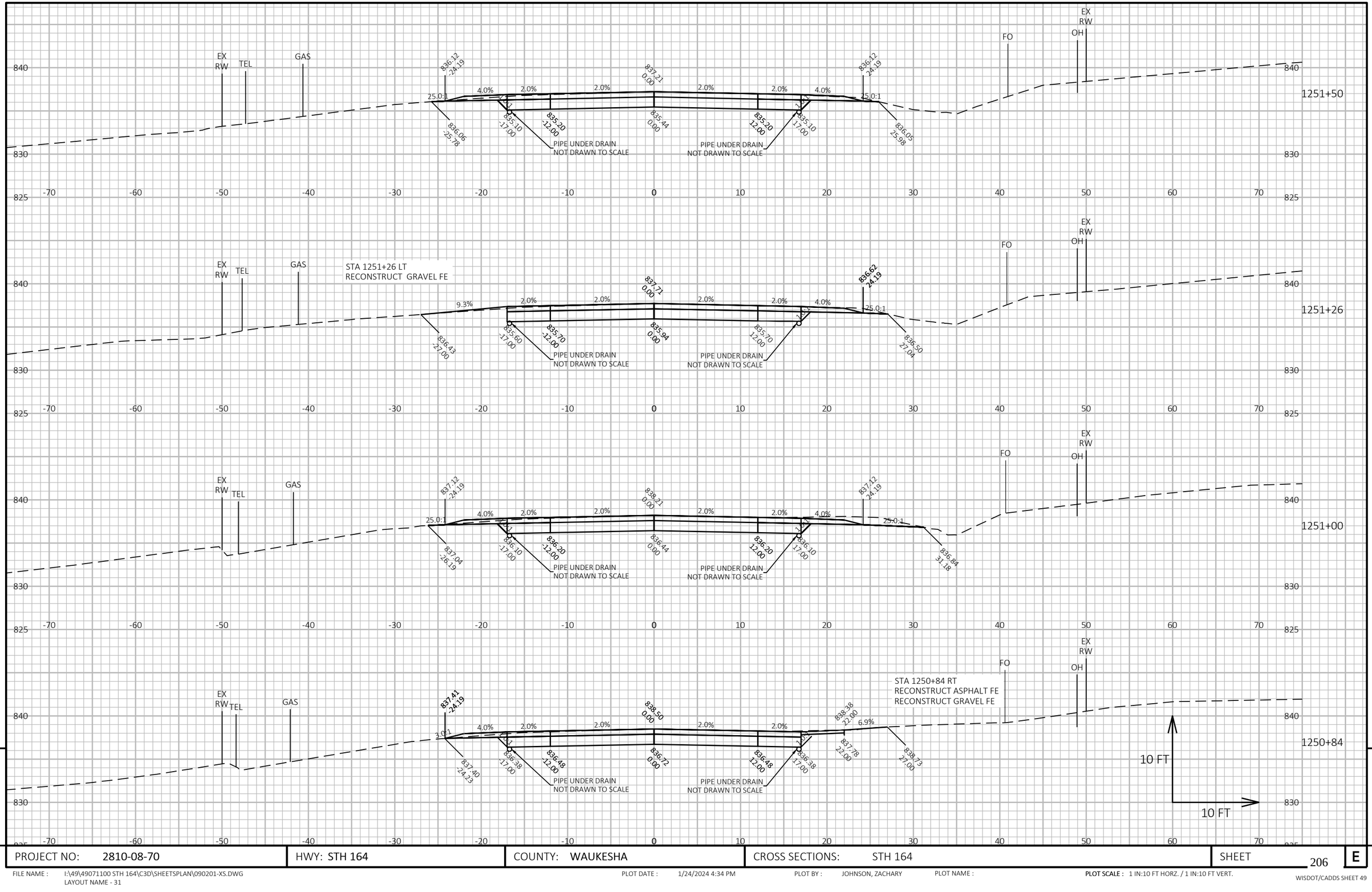
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 205	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 30

PLOT DATE : 1/24/2024 4:33 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

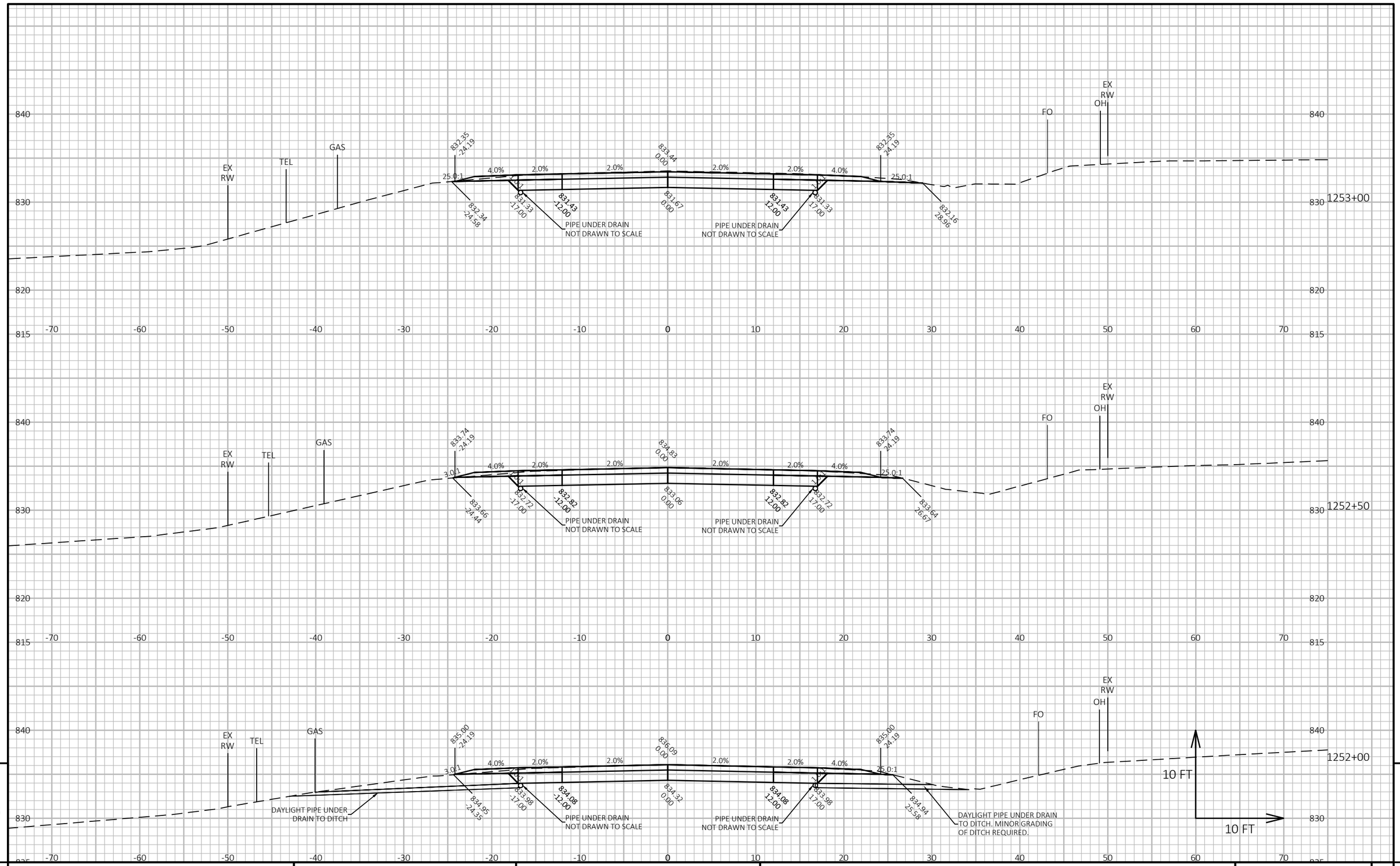
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 206	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 31

PLOT DATE : 1/24/2024 4:34 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

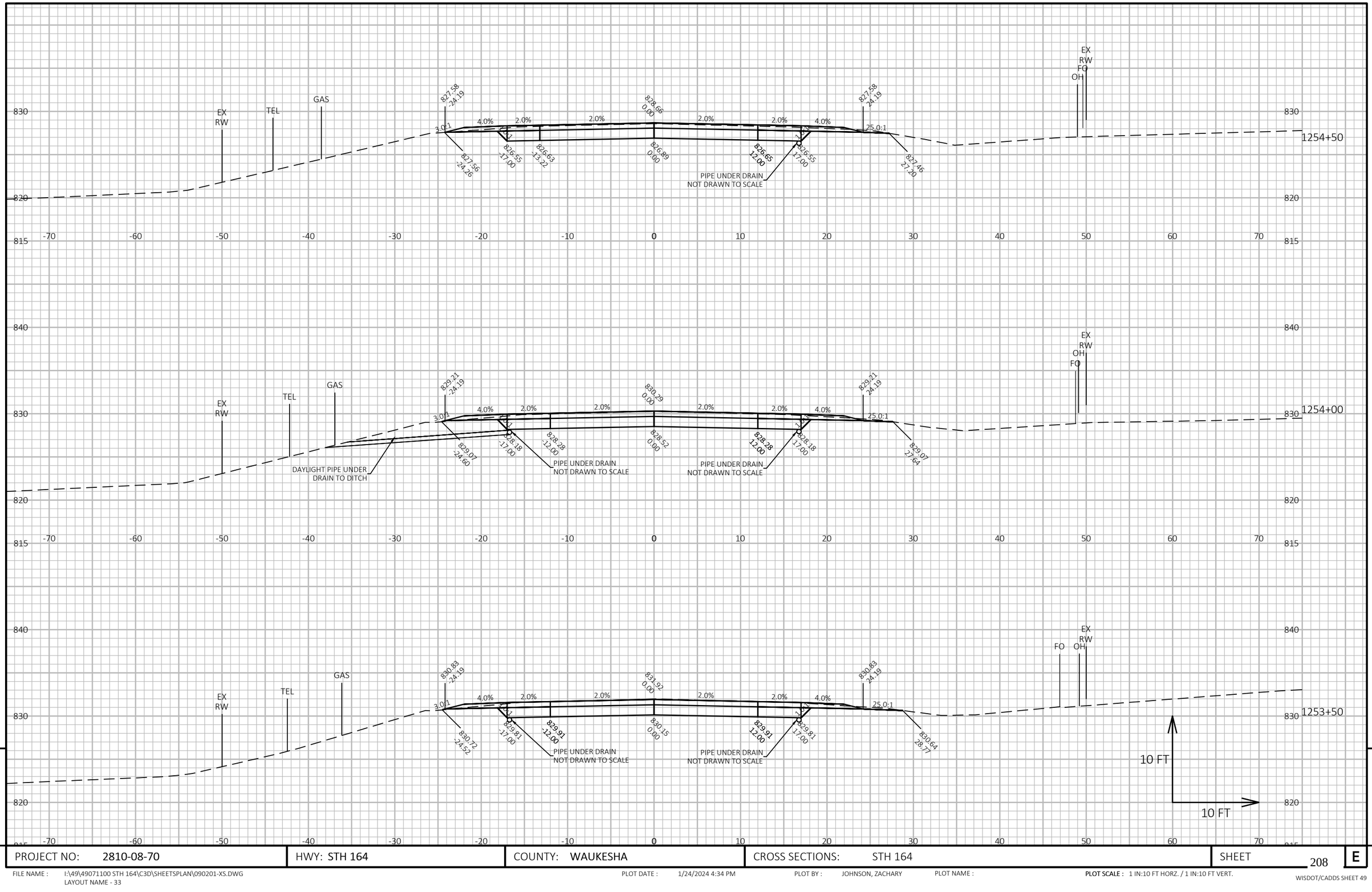
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 207	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 32

PLOT DATE : 1/24/2024 4:34 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49



PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 208 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 33

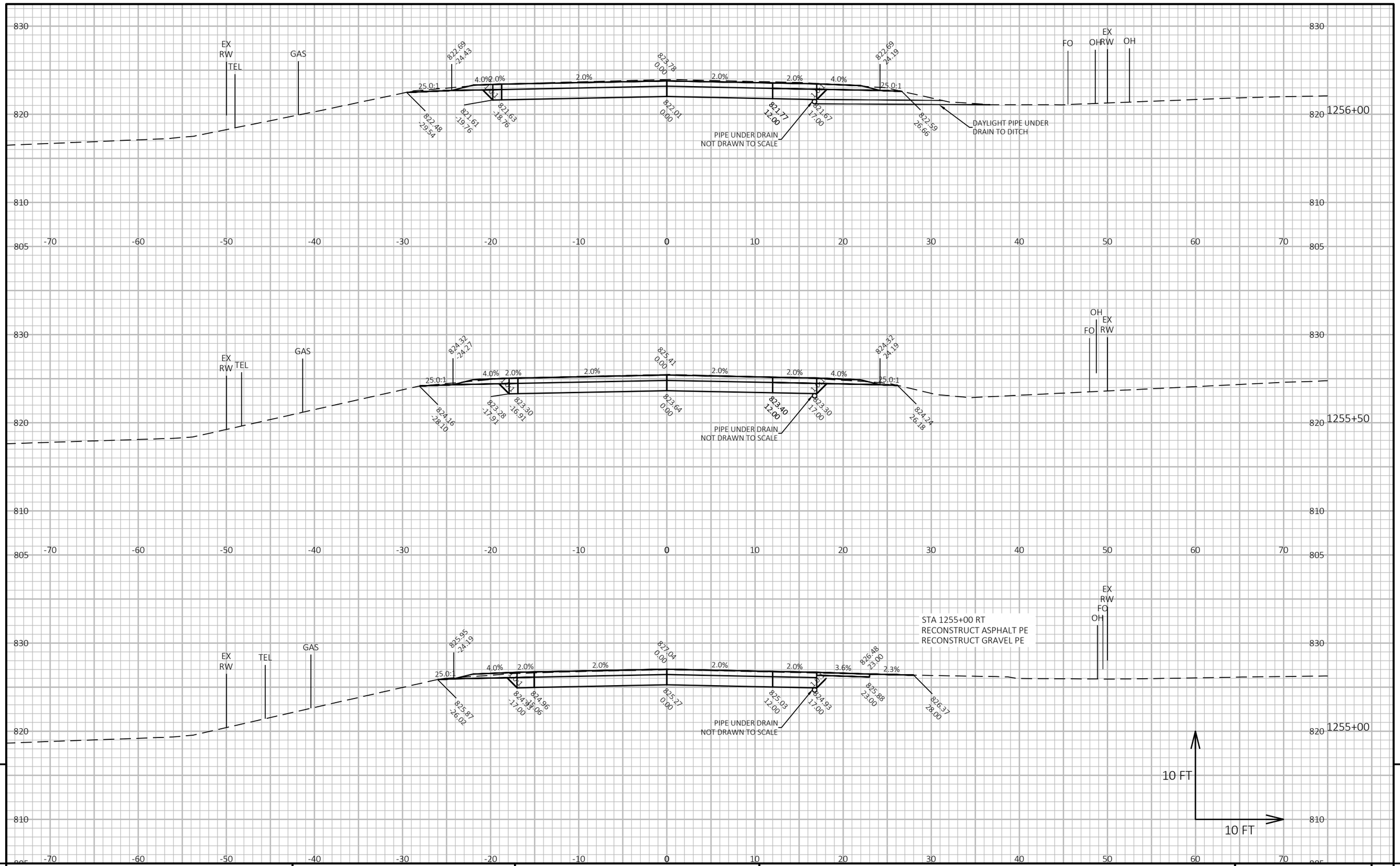
PLOT DATE : 1/24/2024 4:34 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

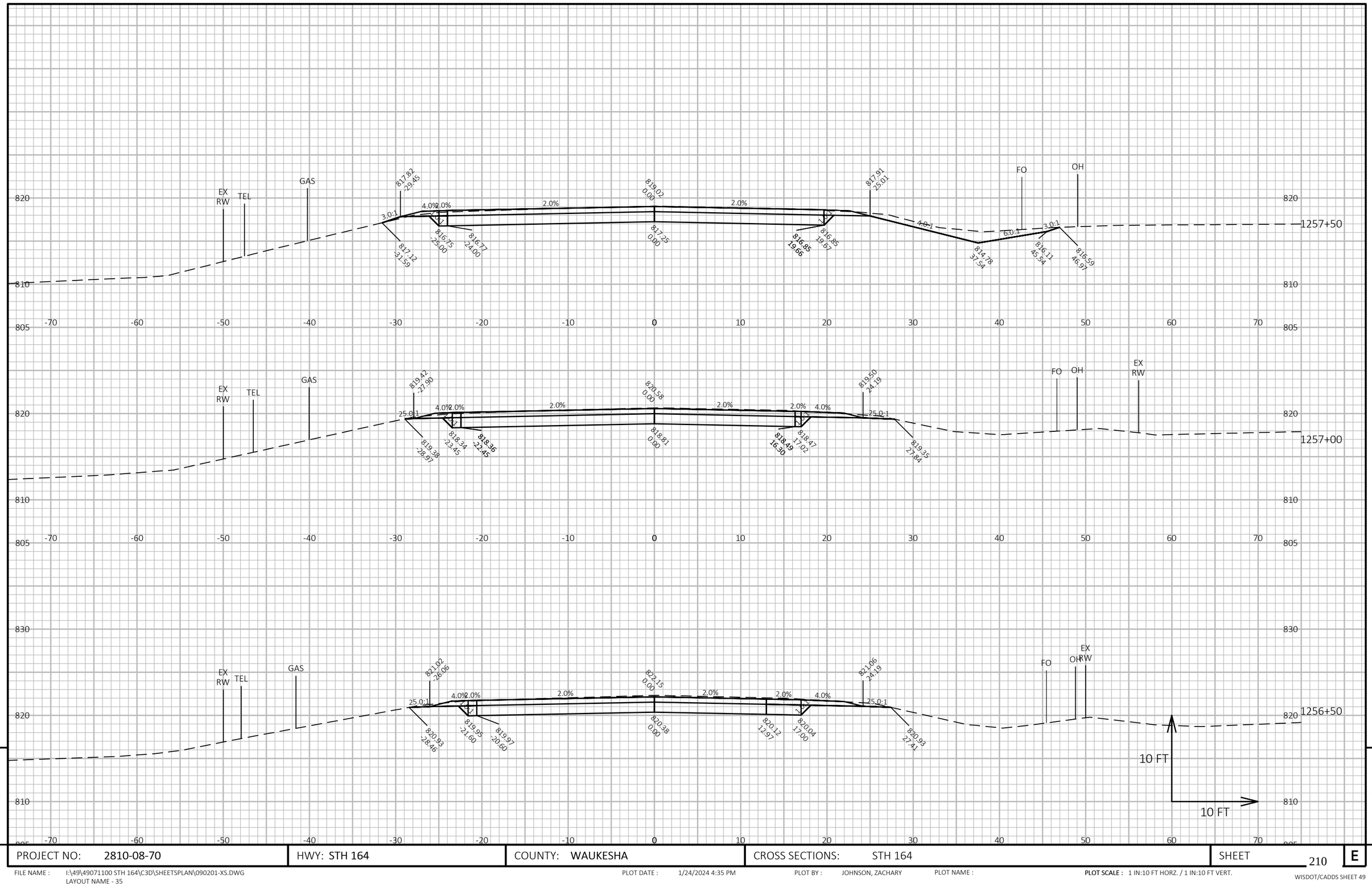
9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 209	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 34

PLOT DATE : 1/24/2024 4:35 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

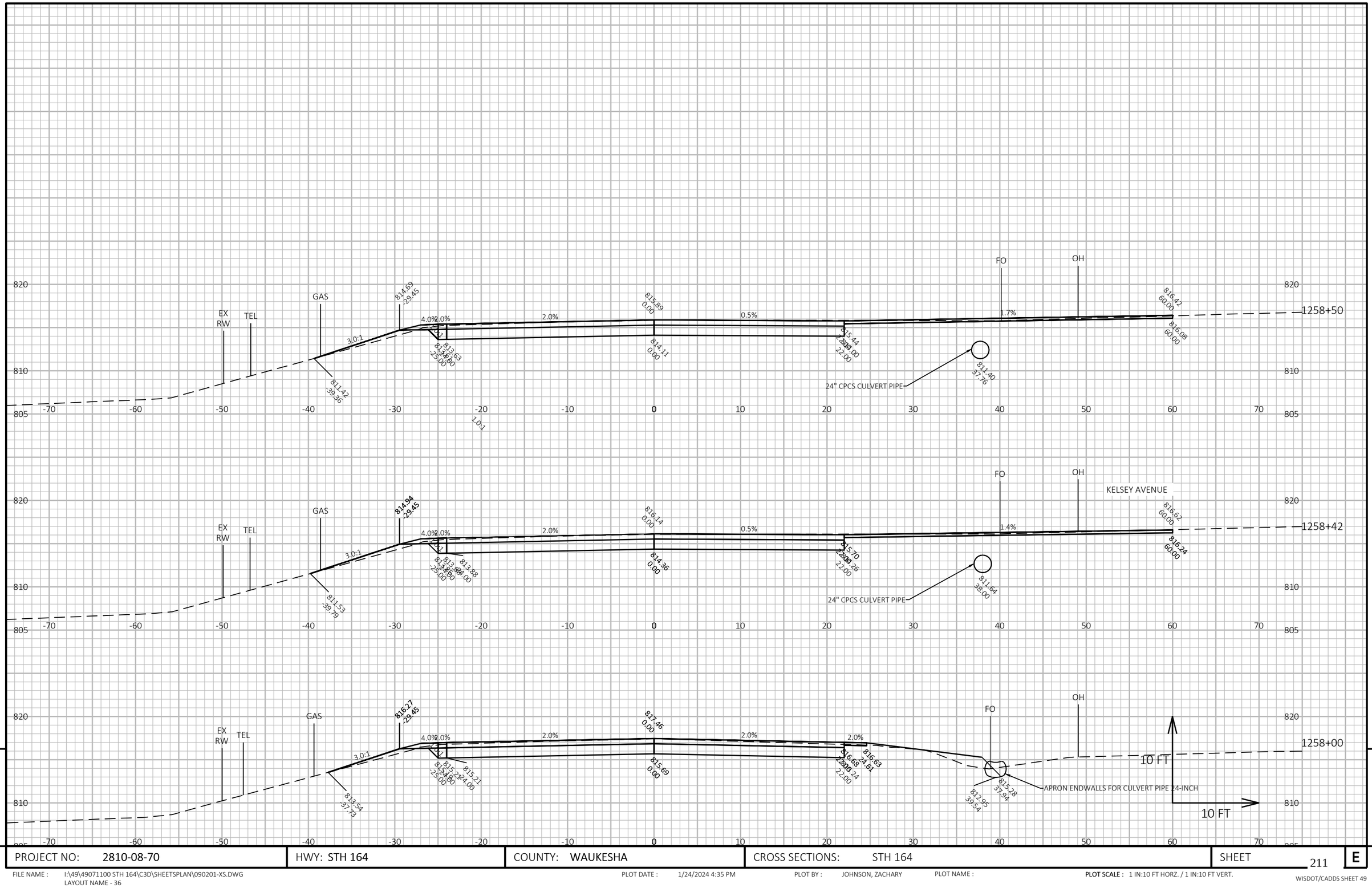


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 210	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 35

PLOT DATE : 1/24/2024 4:35 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

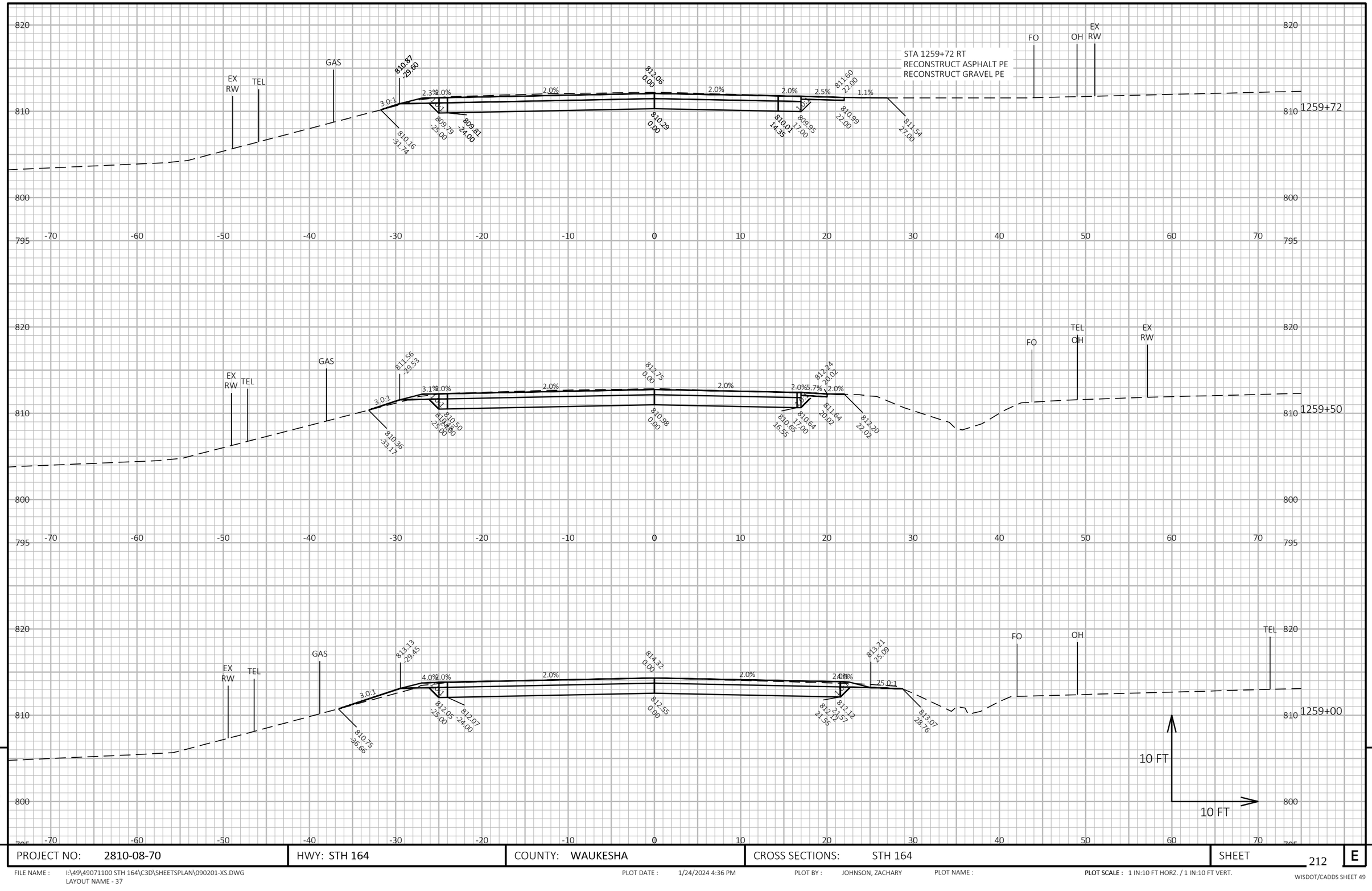


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 211	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 36

PLOT DATE : 1/24/2024 4:35 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 212	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 37

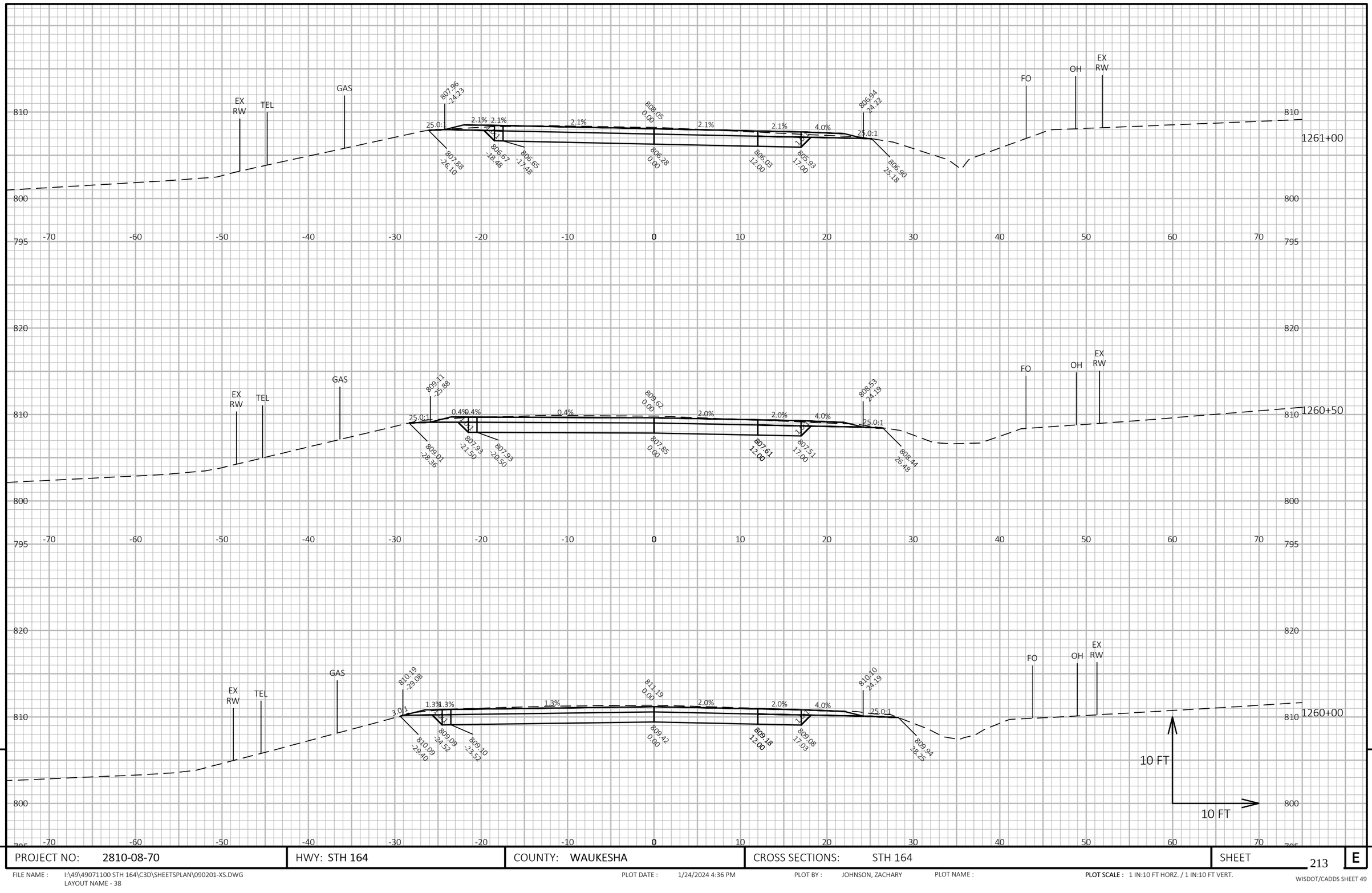
PLOT DATE : 1/24/2024 4:36 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49

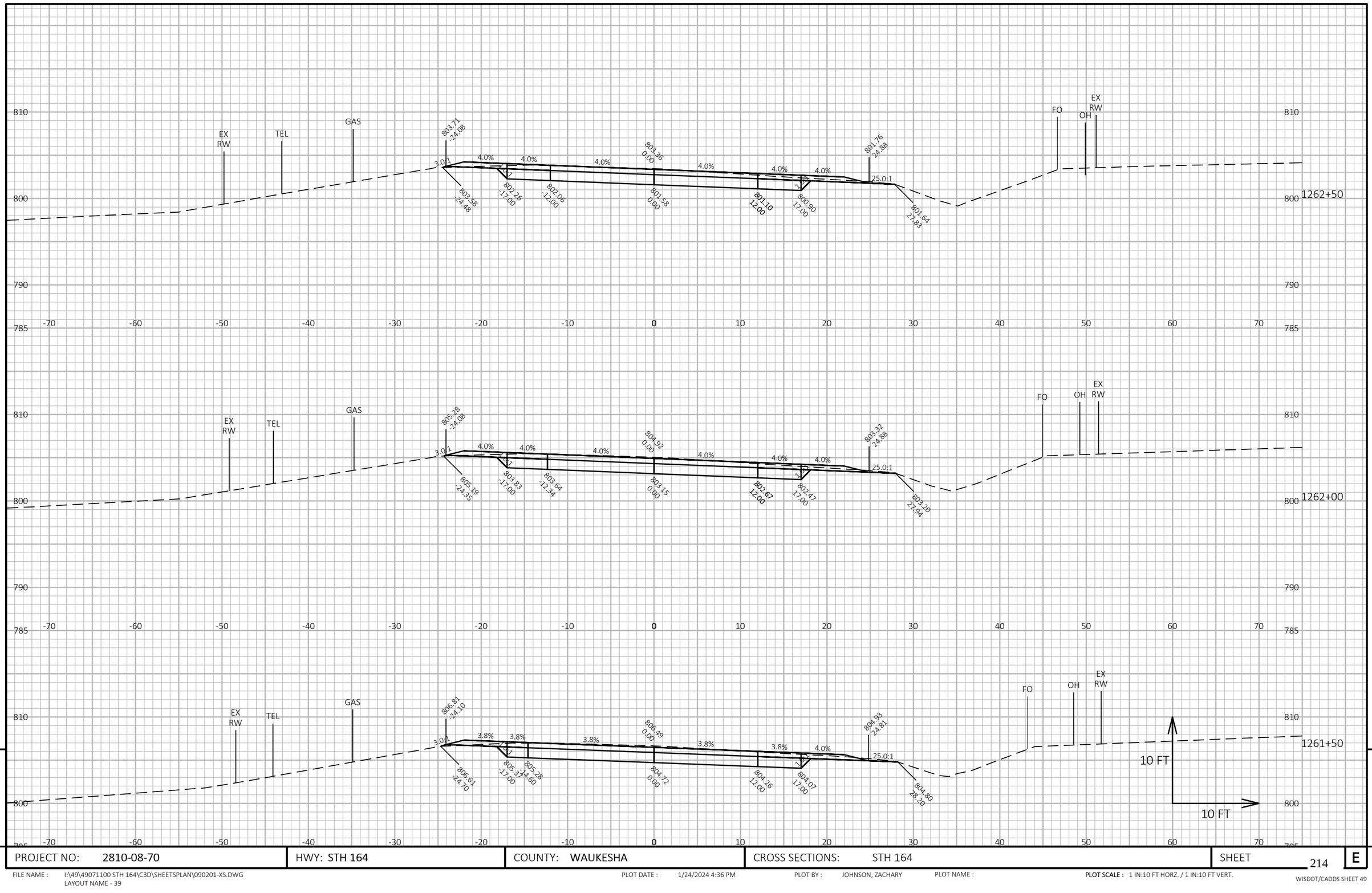


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 213	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 38

PLOT DATE : 1/24/2024 4:36 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

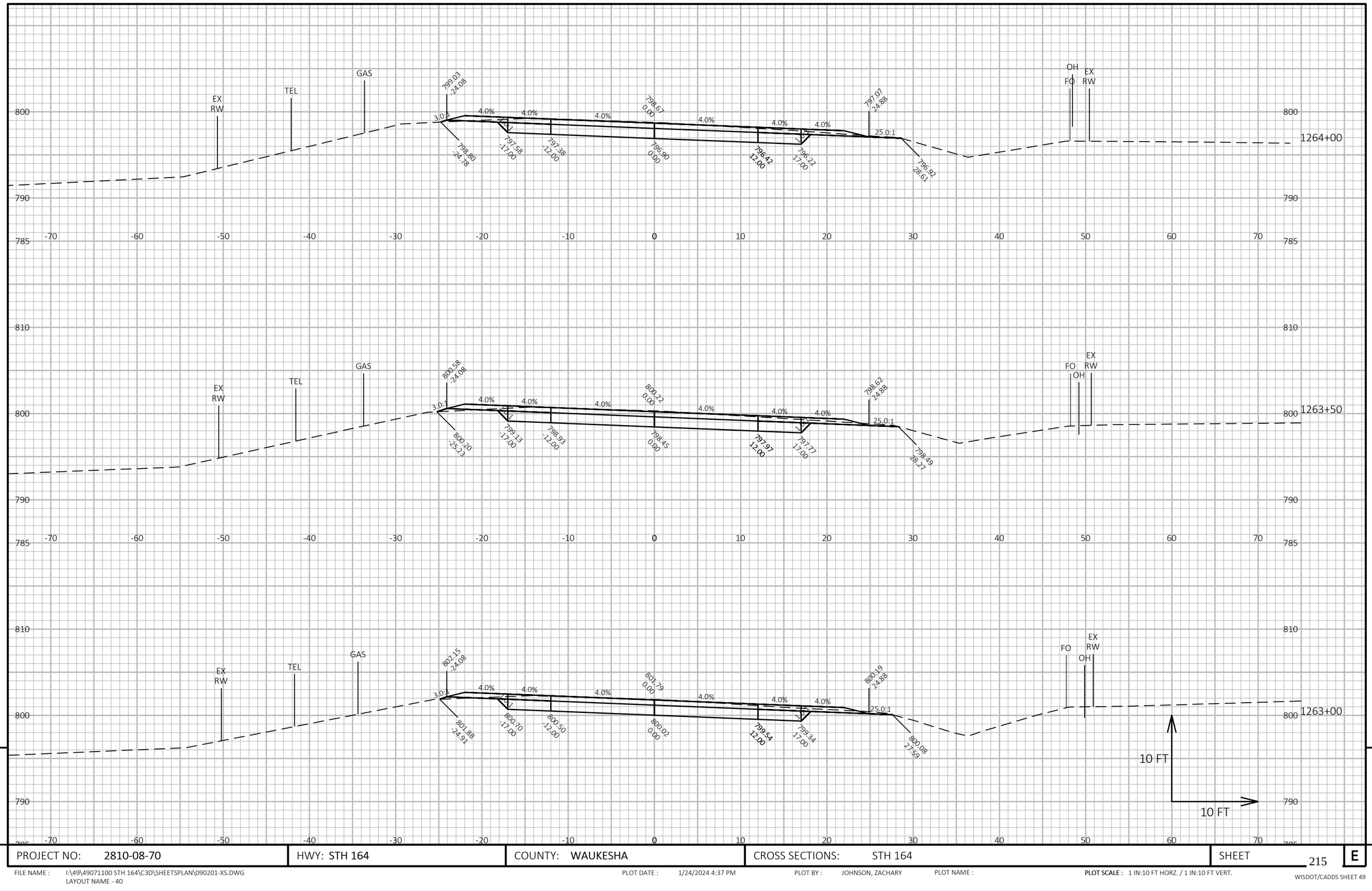
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 214	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 39

PLOT DATE : 1/24/2024 4:36 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

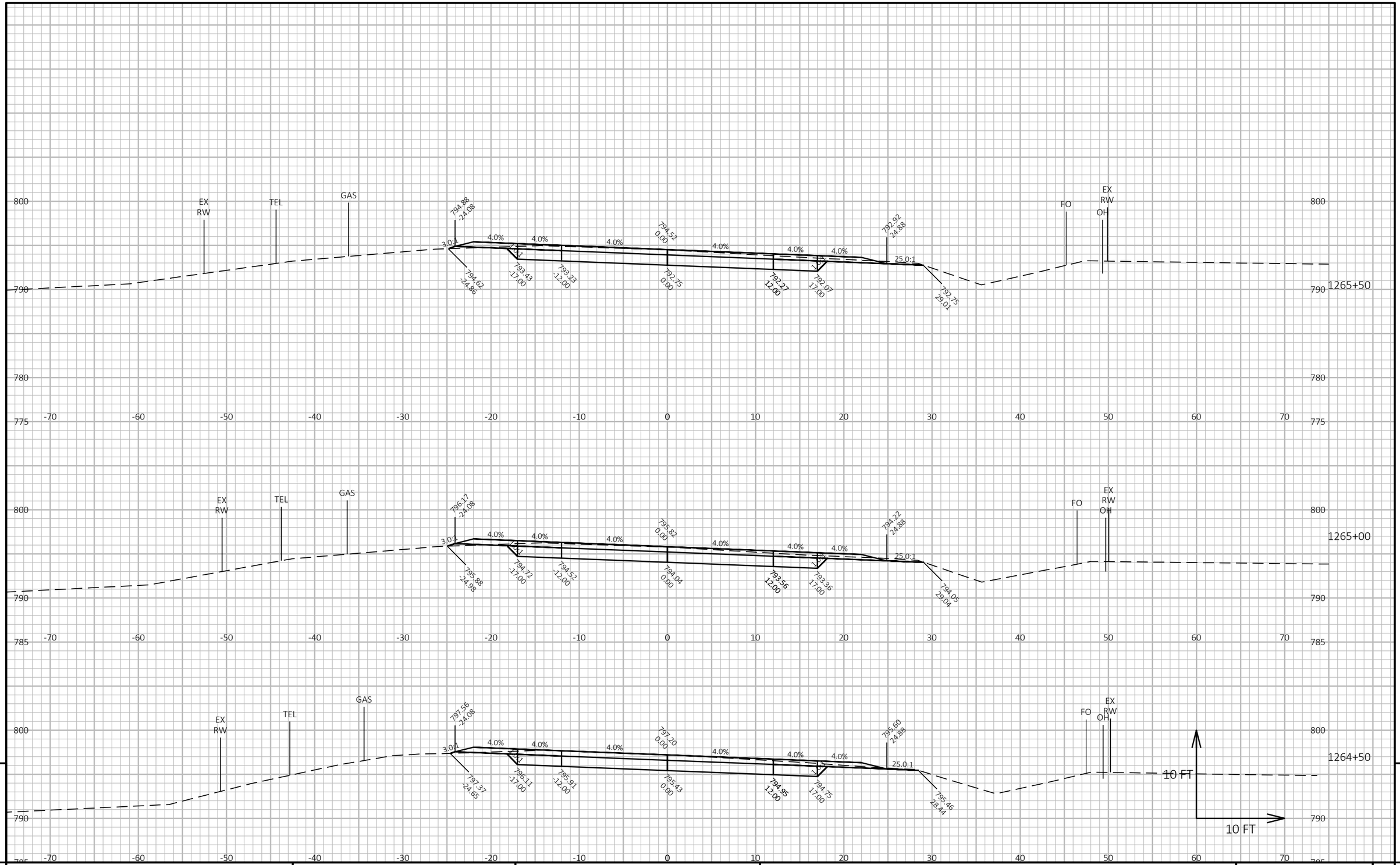


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 215	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 40

PLOT DATE : 1/24/2024 4:37 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

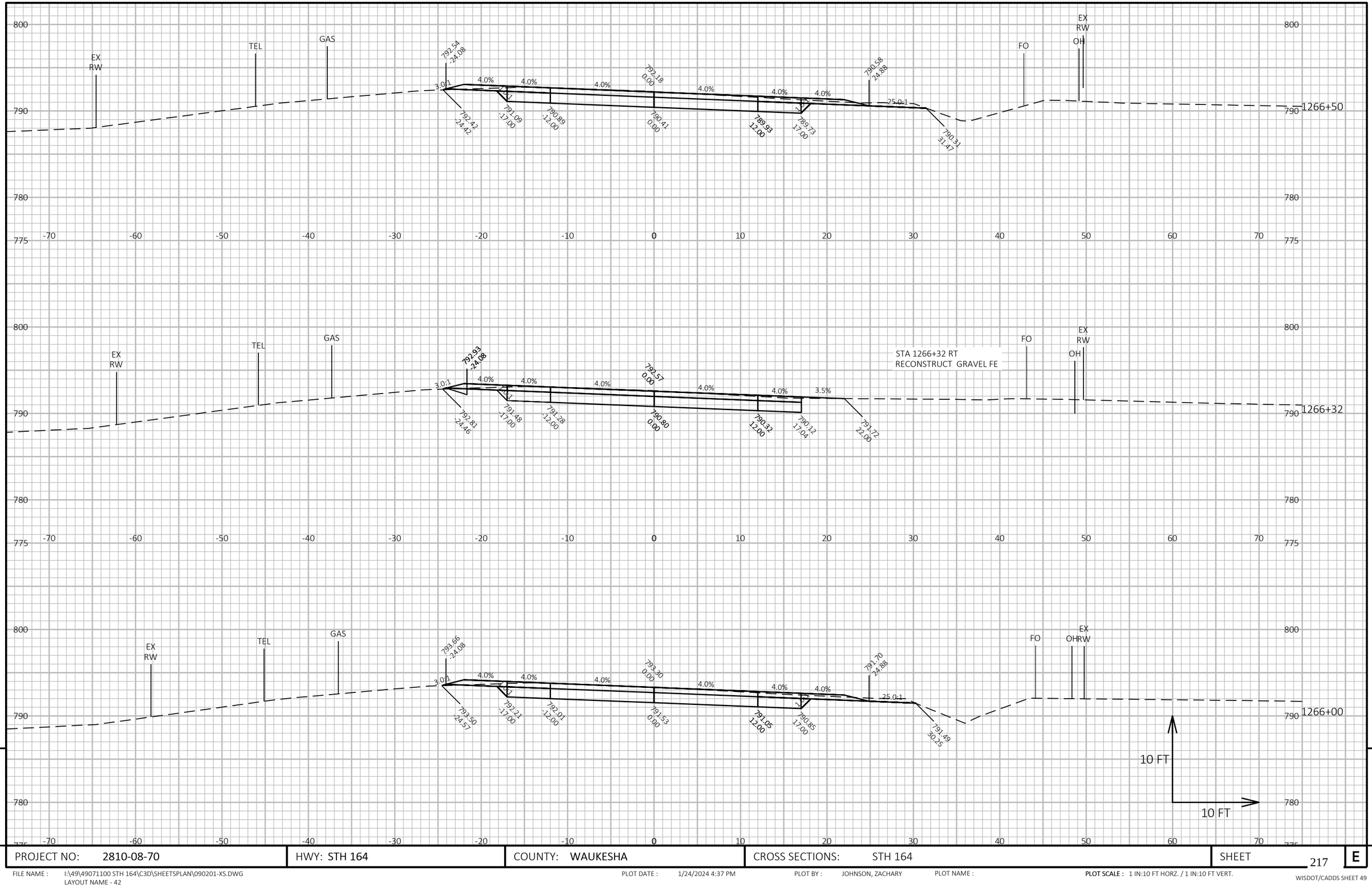


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 216	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 41

PLOT DATE : 1/24/2024 4:37 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

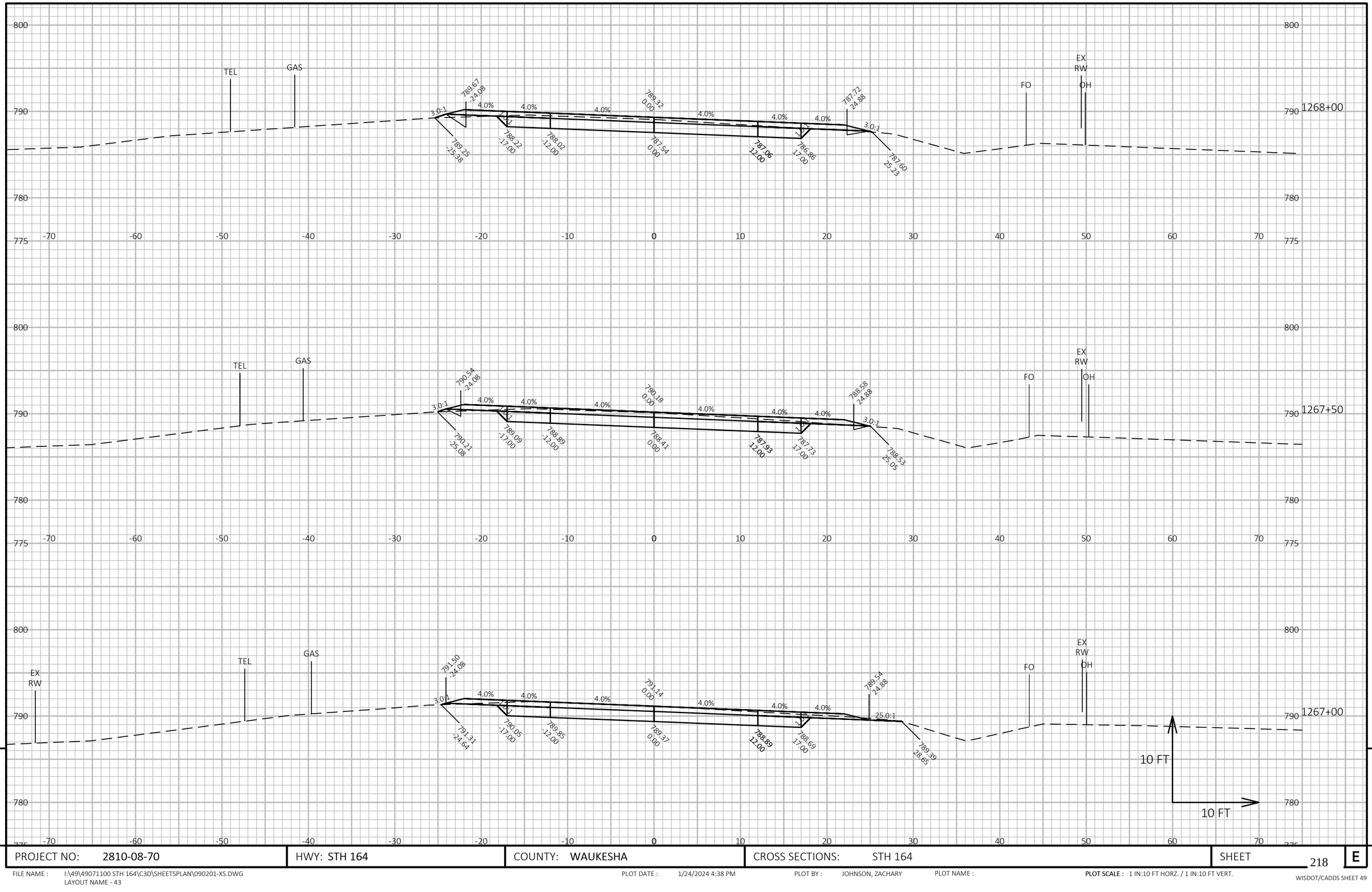


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 217	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 42

PLOT DATE : 1/24/2024 4:37 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

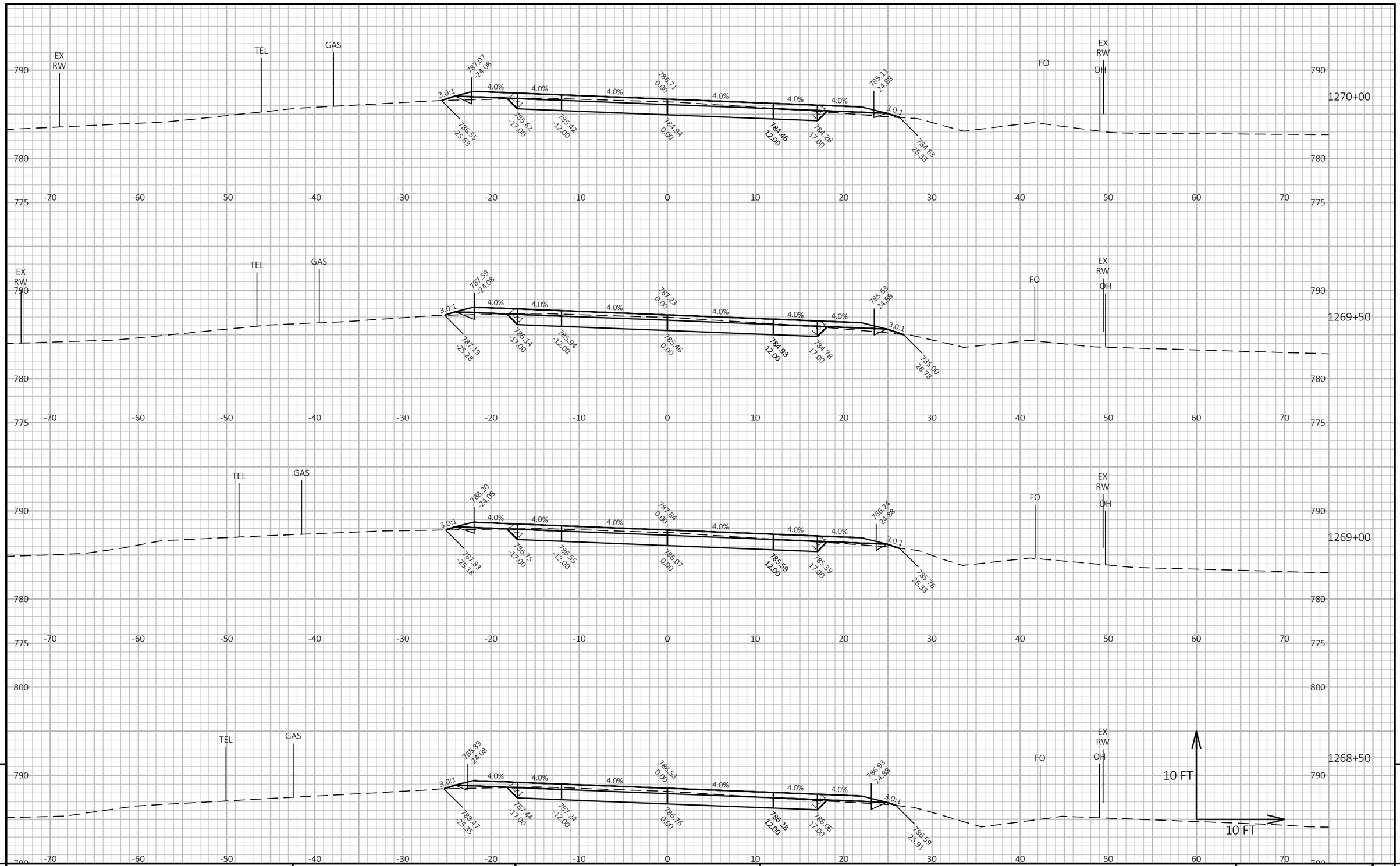


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 218 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 43

PLOT DATE : 1/24/2024 4:38 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

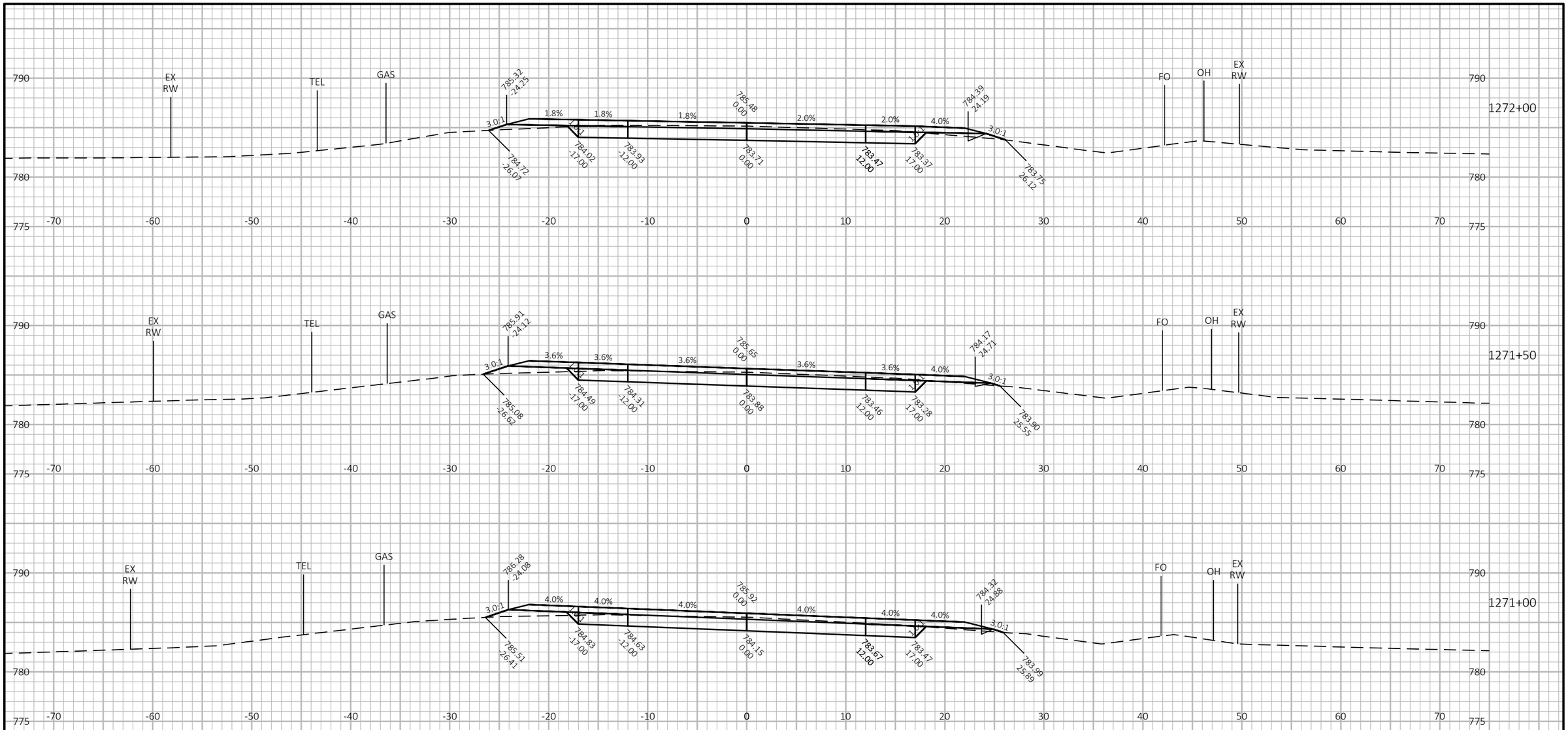


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 219 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 44

PLOT DATE : 1/24/2024 4:38 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

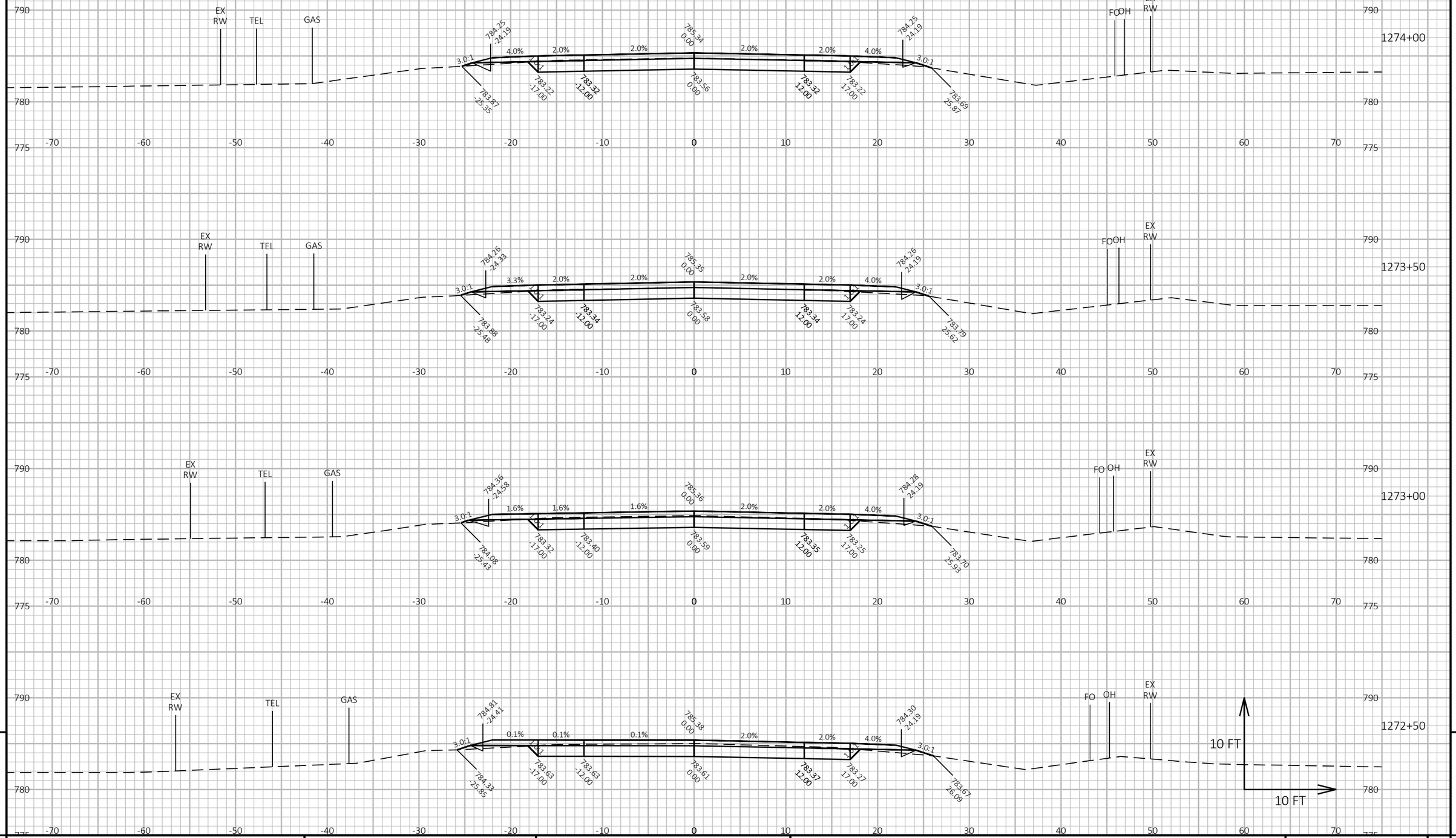


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 220	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 45

PLOT DATE : 1/24/2024 4:38 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

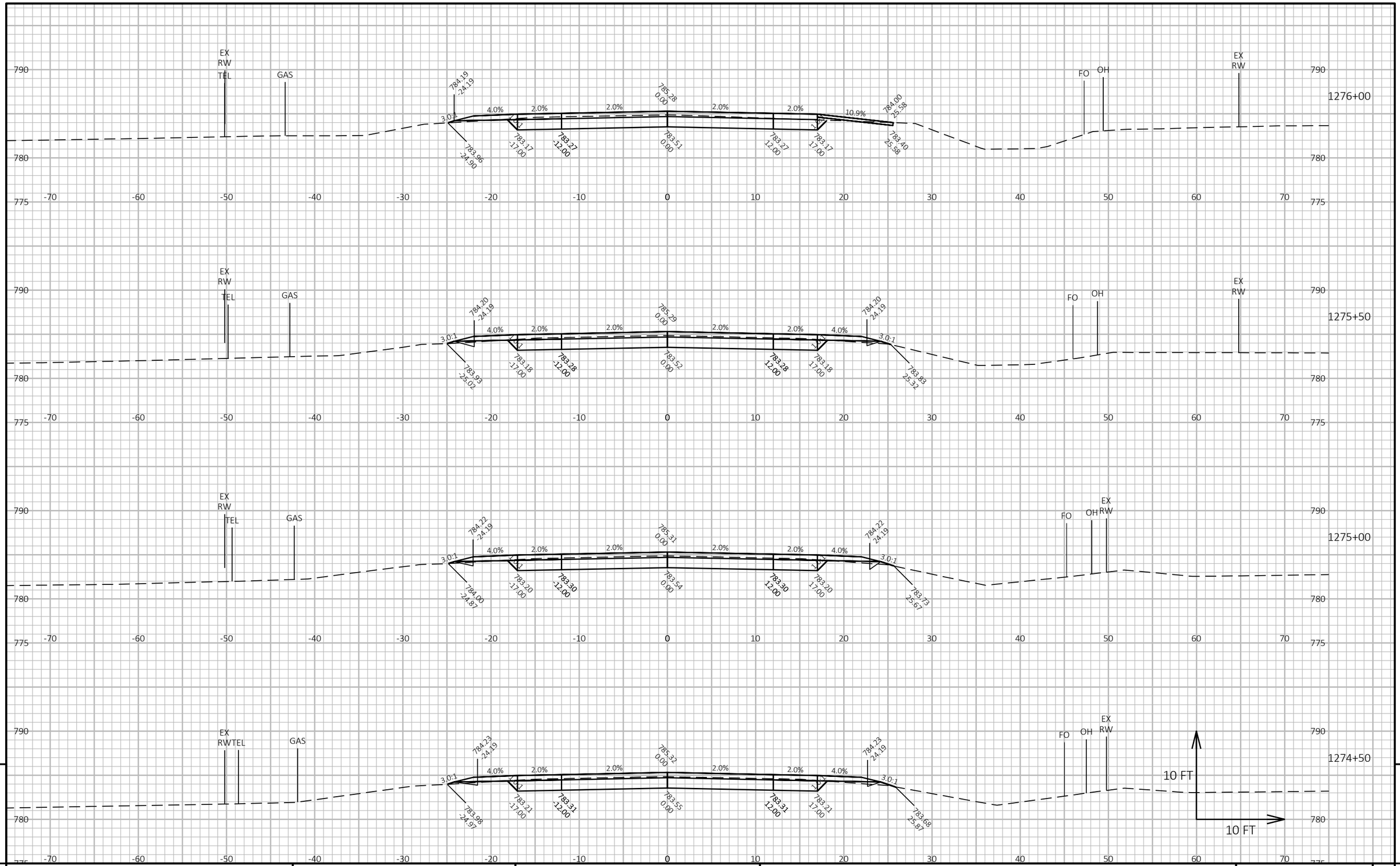


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 221	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 46

PLOT DATE : 1/24/2024 4:39 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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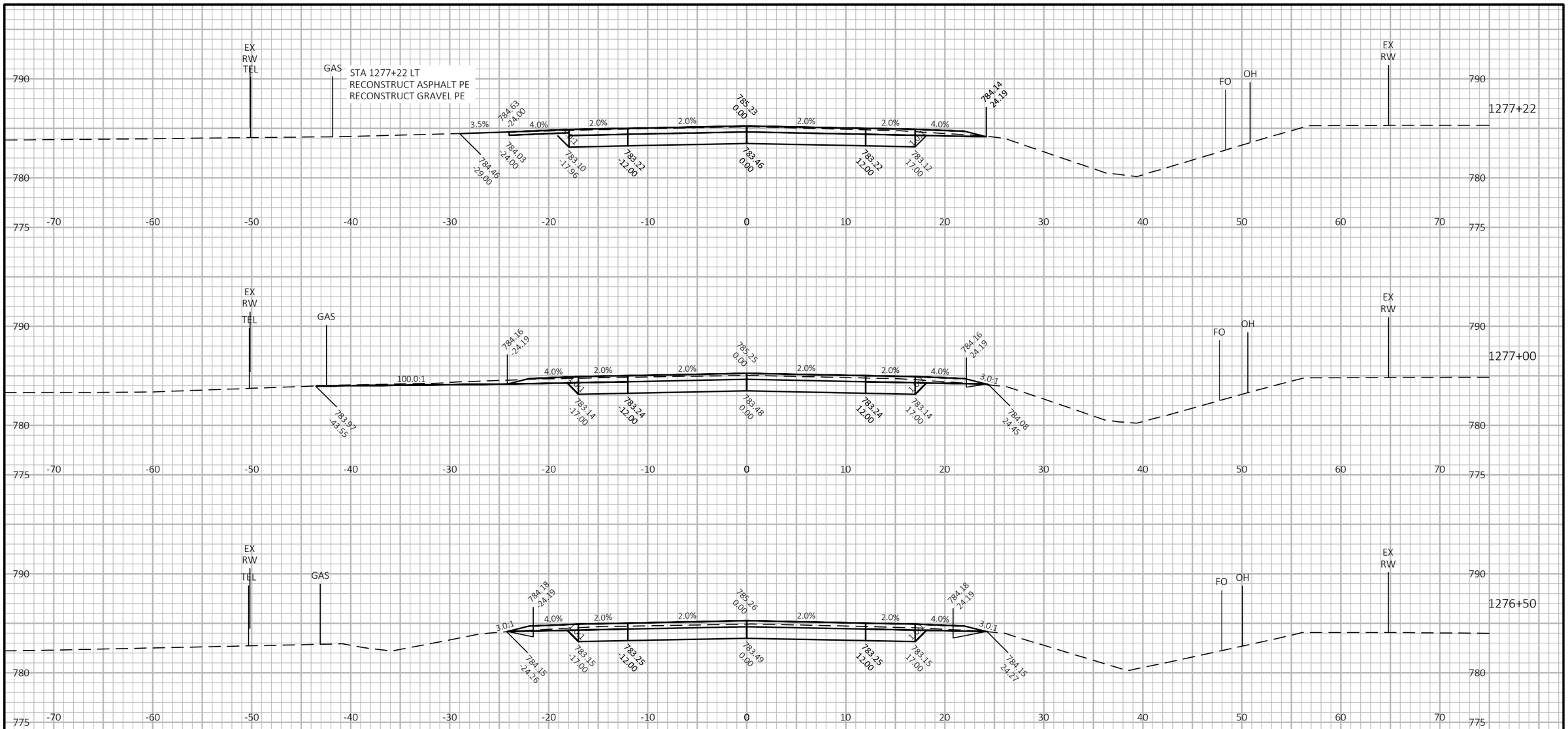
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 222	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 47

PLOT DATE : 1/24/2024 4:39 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

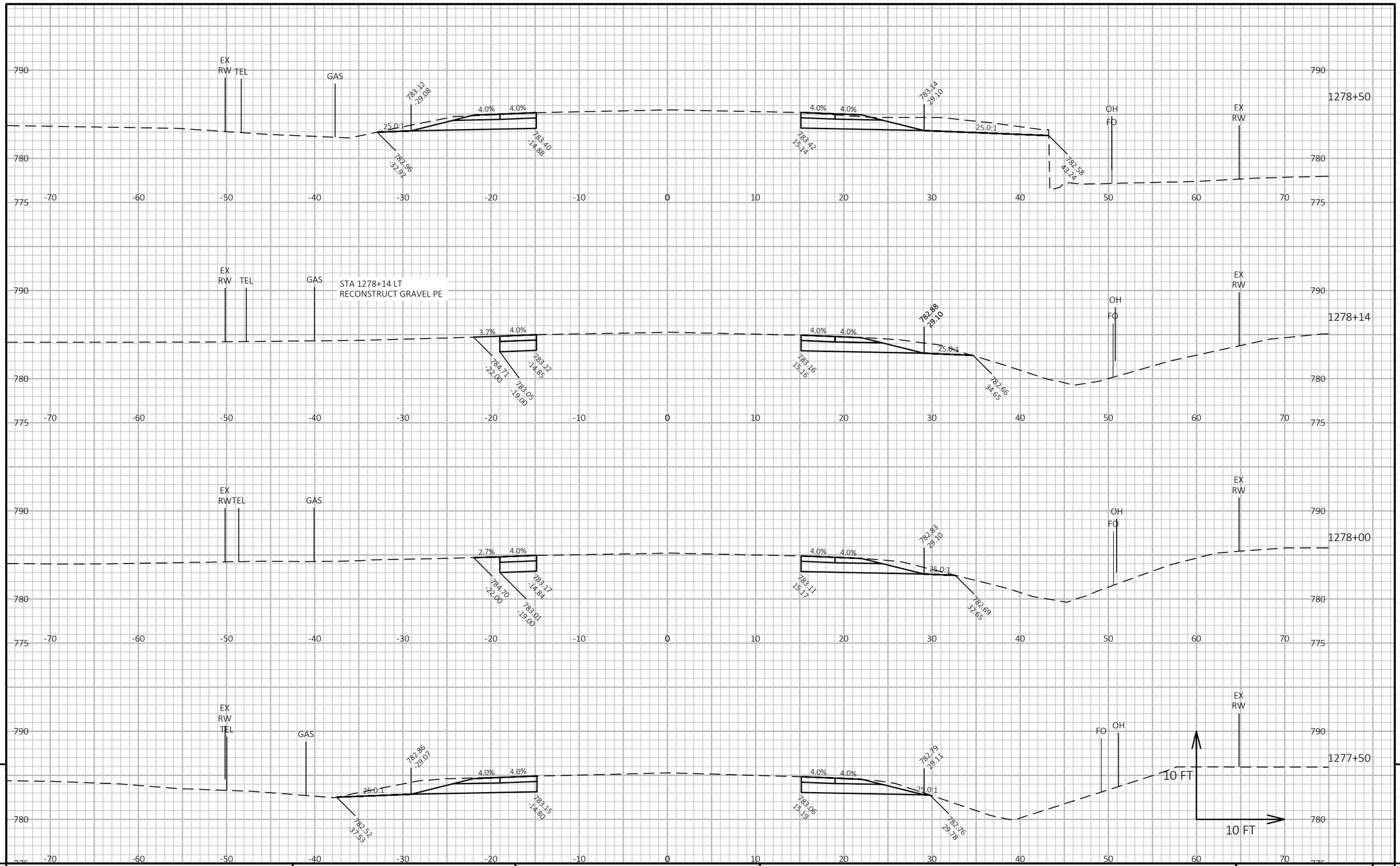
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 223	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 48

PLOT DATE : 1/24/2024 4:39 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

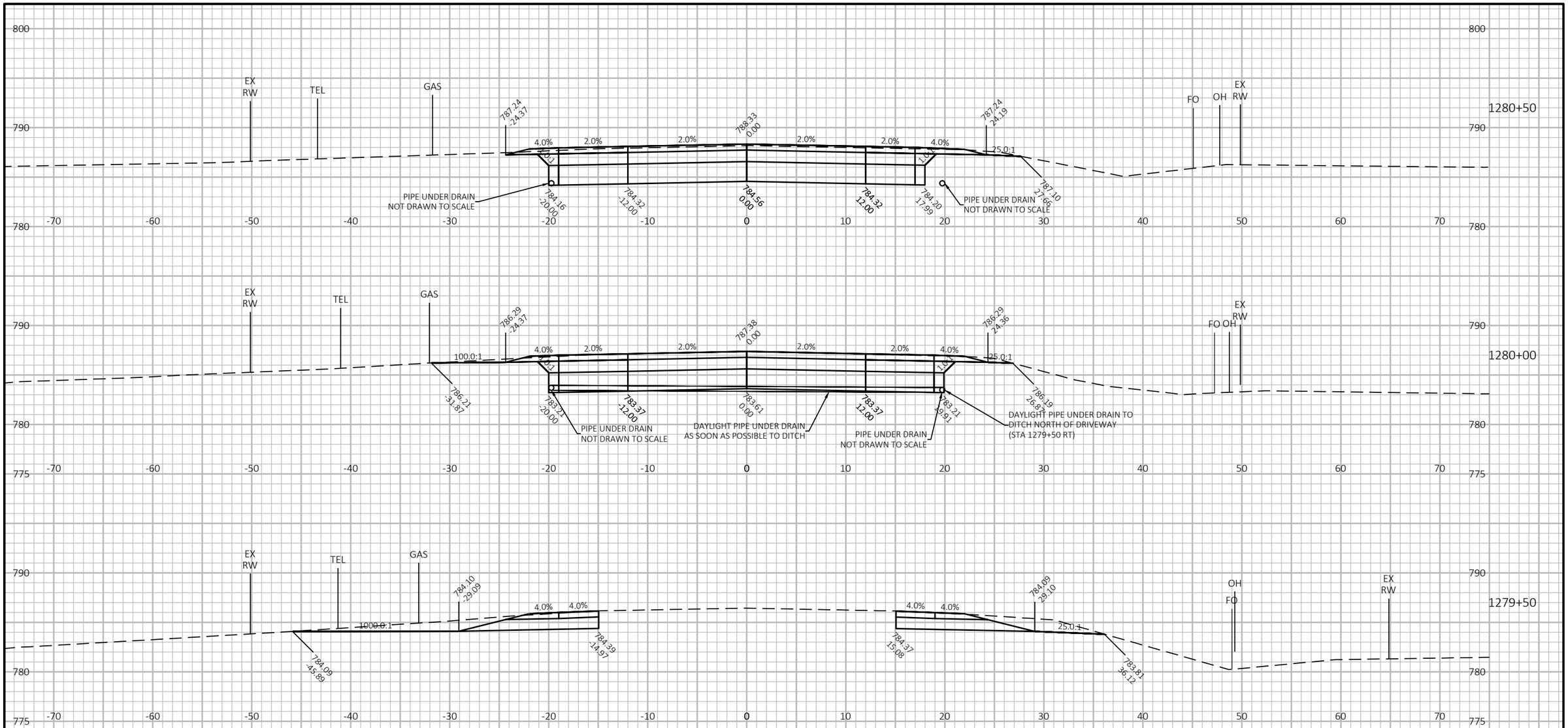


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 224	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 49

PLOT DATE : 1/24/2024 4:40 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

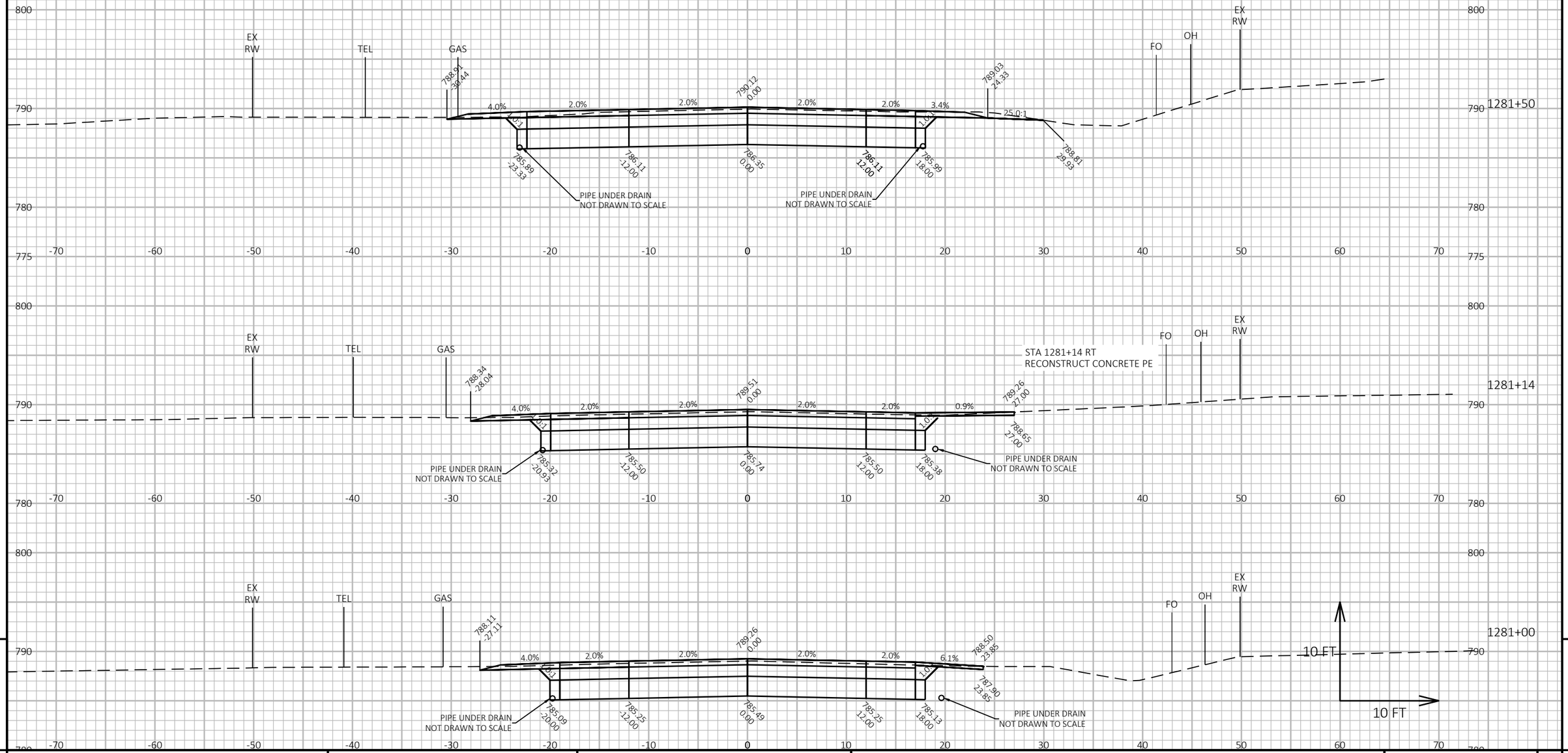


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 225	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 50

PLOT DATE : 1/24/2024 4:40 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

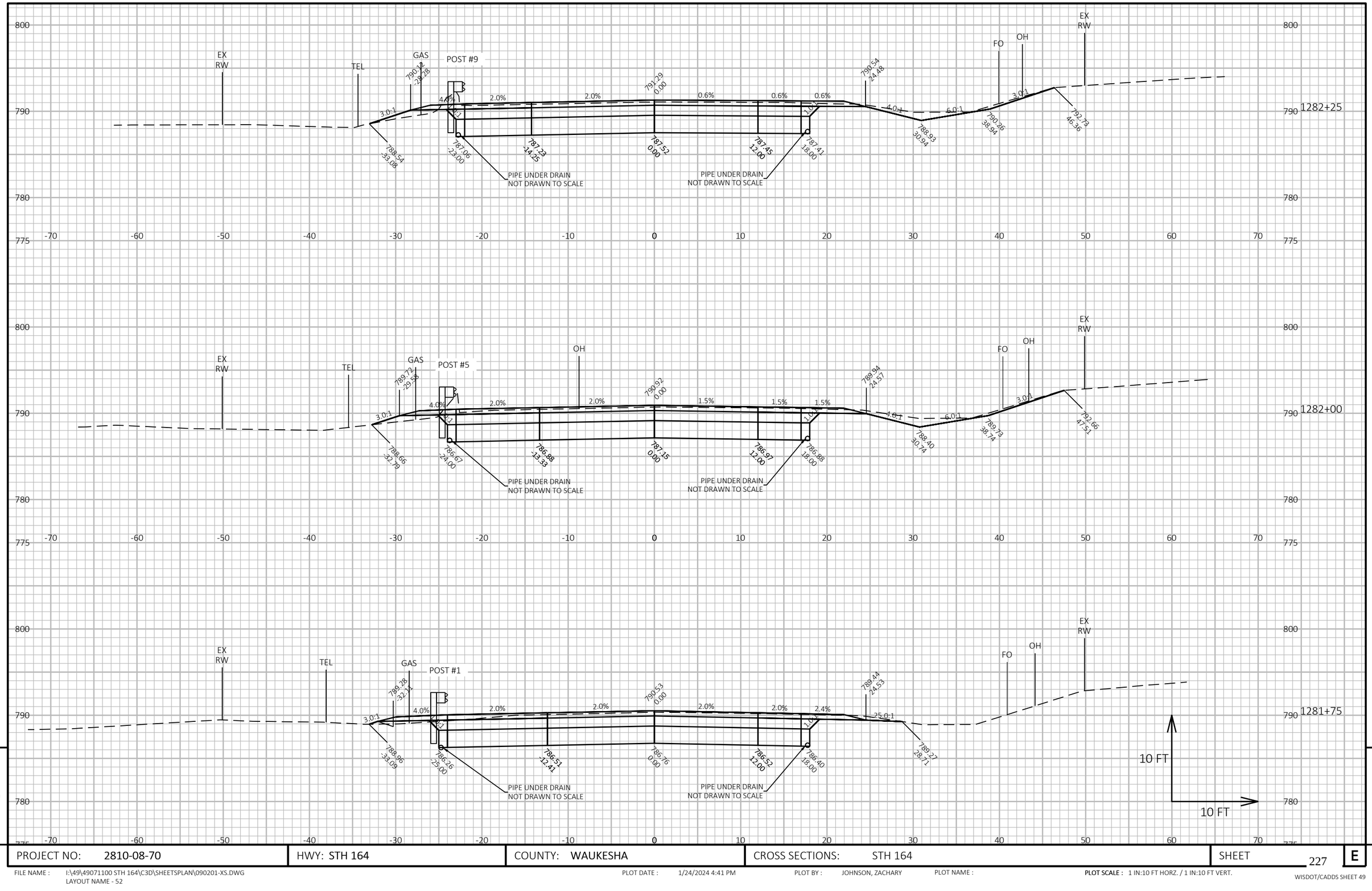


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 226 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 51

PLOT DATE : 1/24/2024 4:40 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 227	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 52

PLOT DATE : 1/24/2024 4:41 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

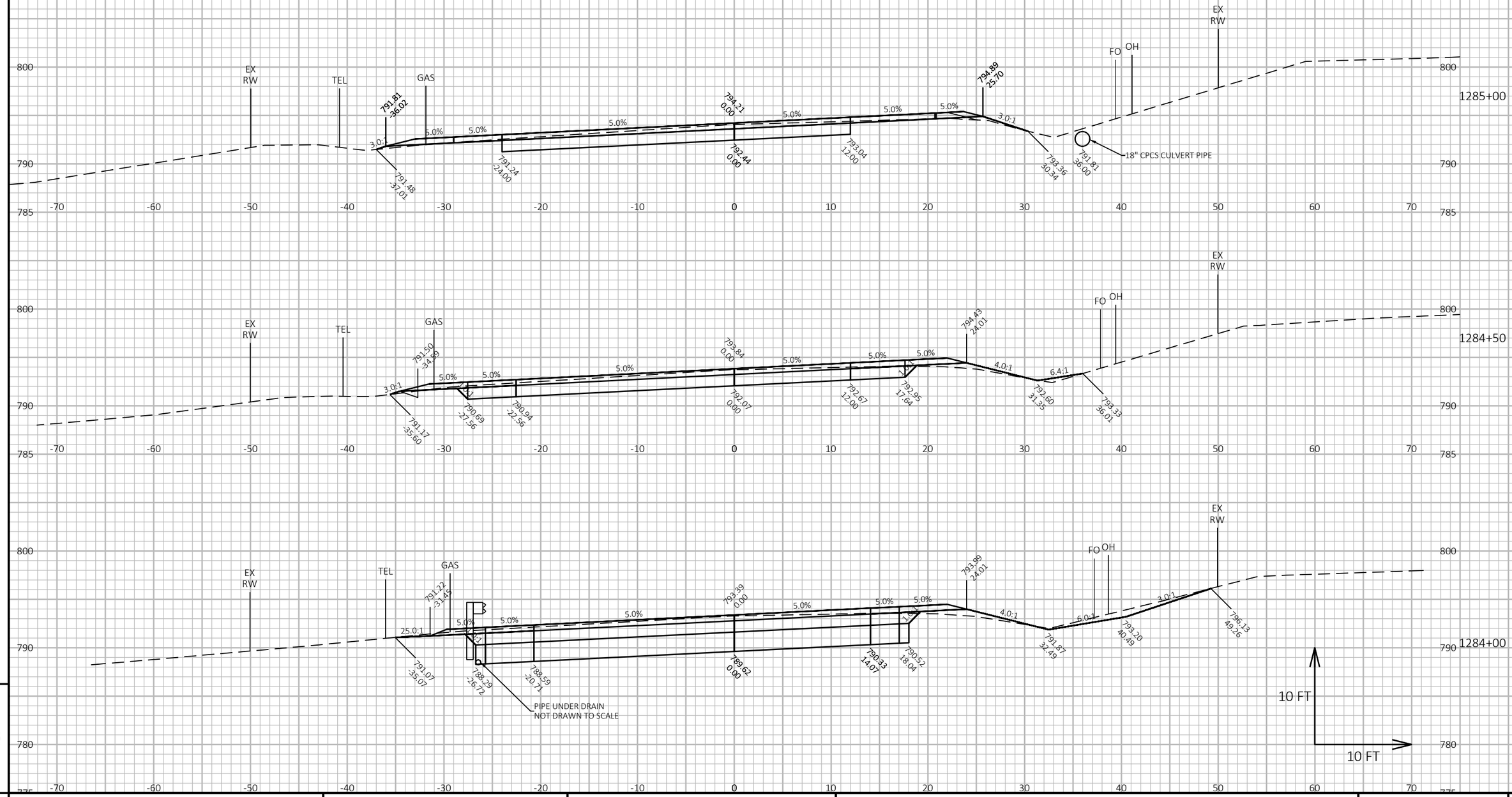
WISDOT/CADDS SHEET 49

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 228	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 53

PLOT DATE : 1/24/2024 4:41 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

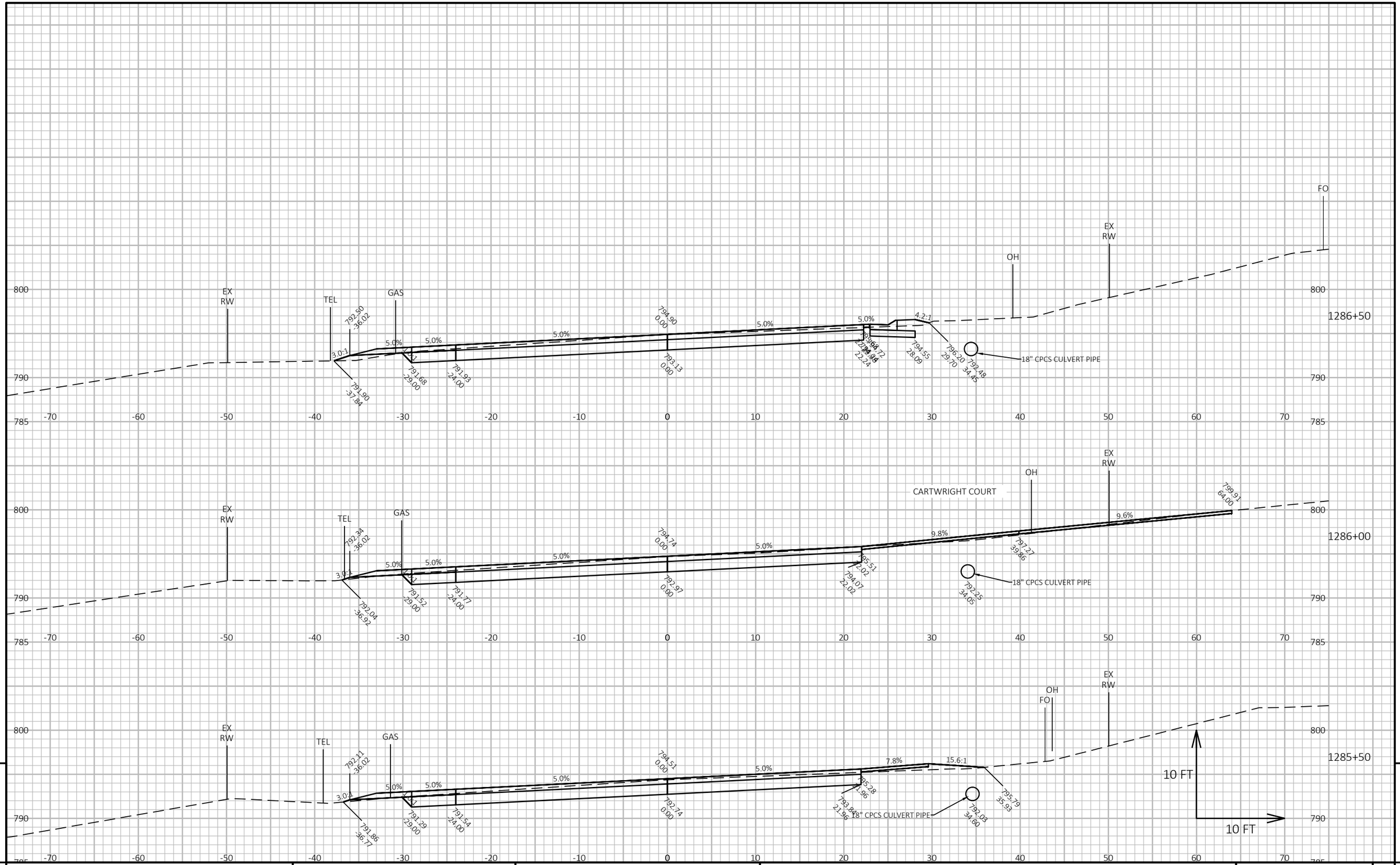


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 229	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 54

PLOT DATE : 1/24/2024 4:41 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

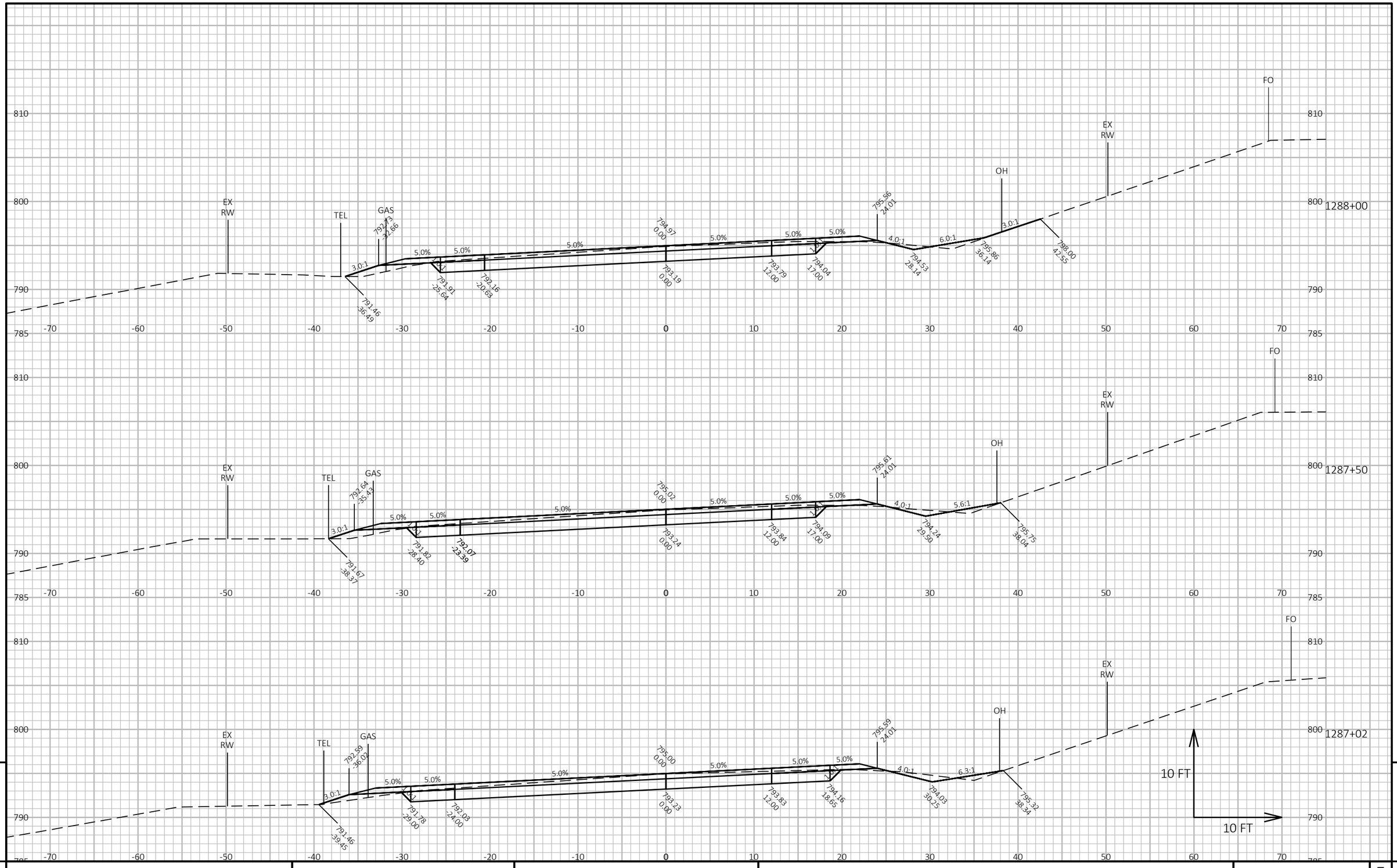


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 230	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 55

PLOT DATE : 1/24/2024 4:42 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



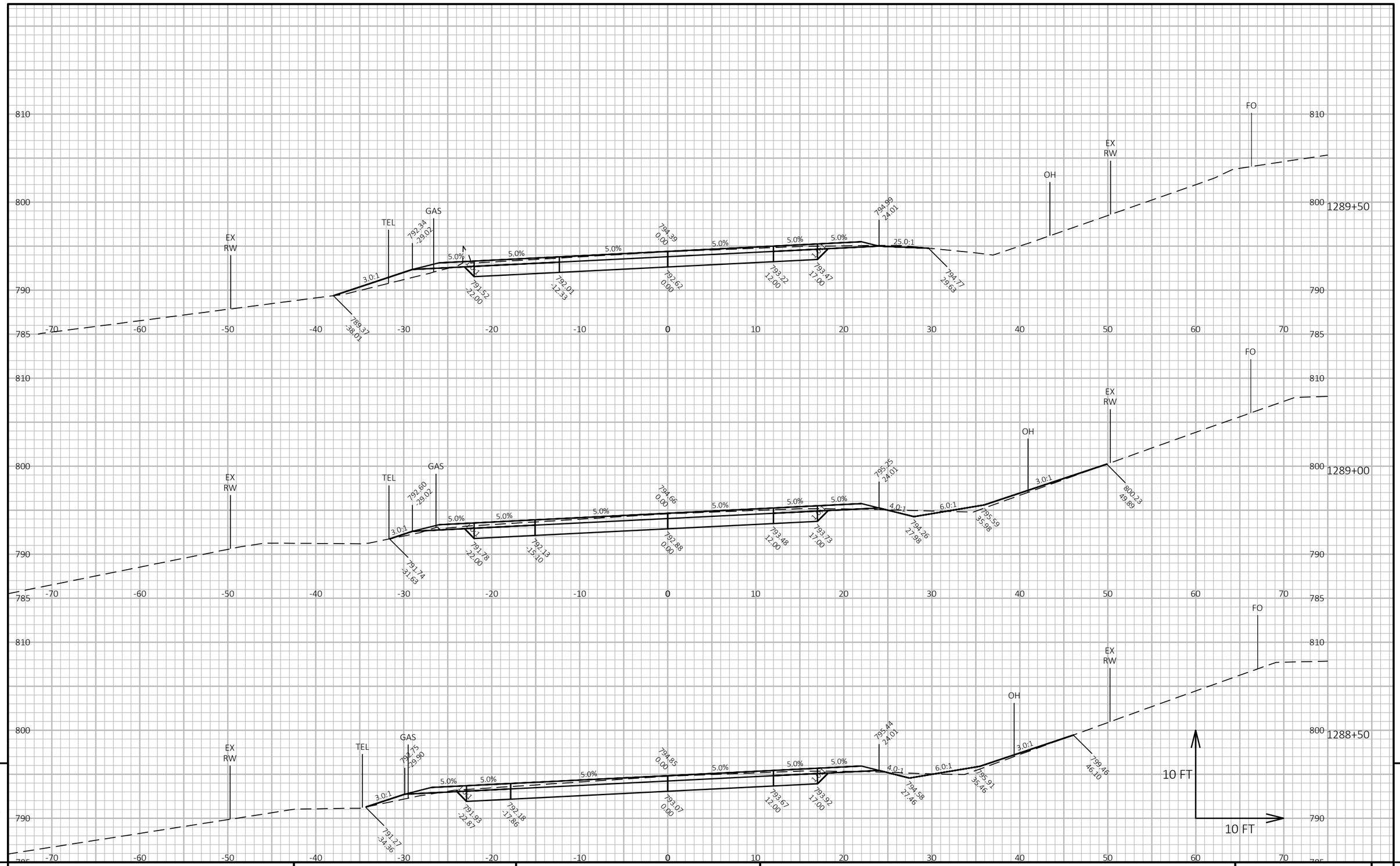
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 231	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 56

PLOT DATE : 1/24/2024 4:42 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 232	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 57

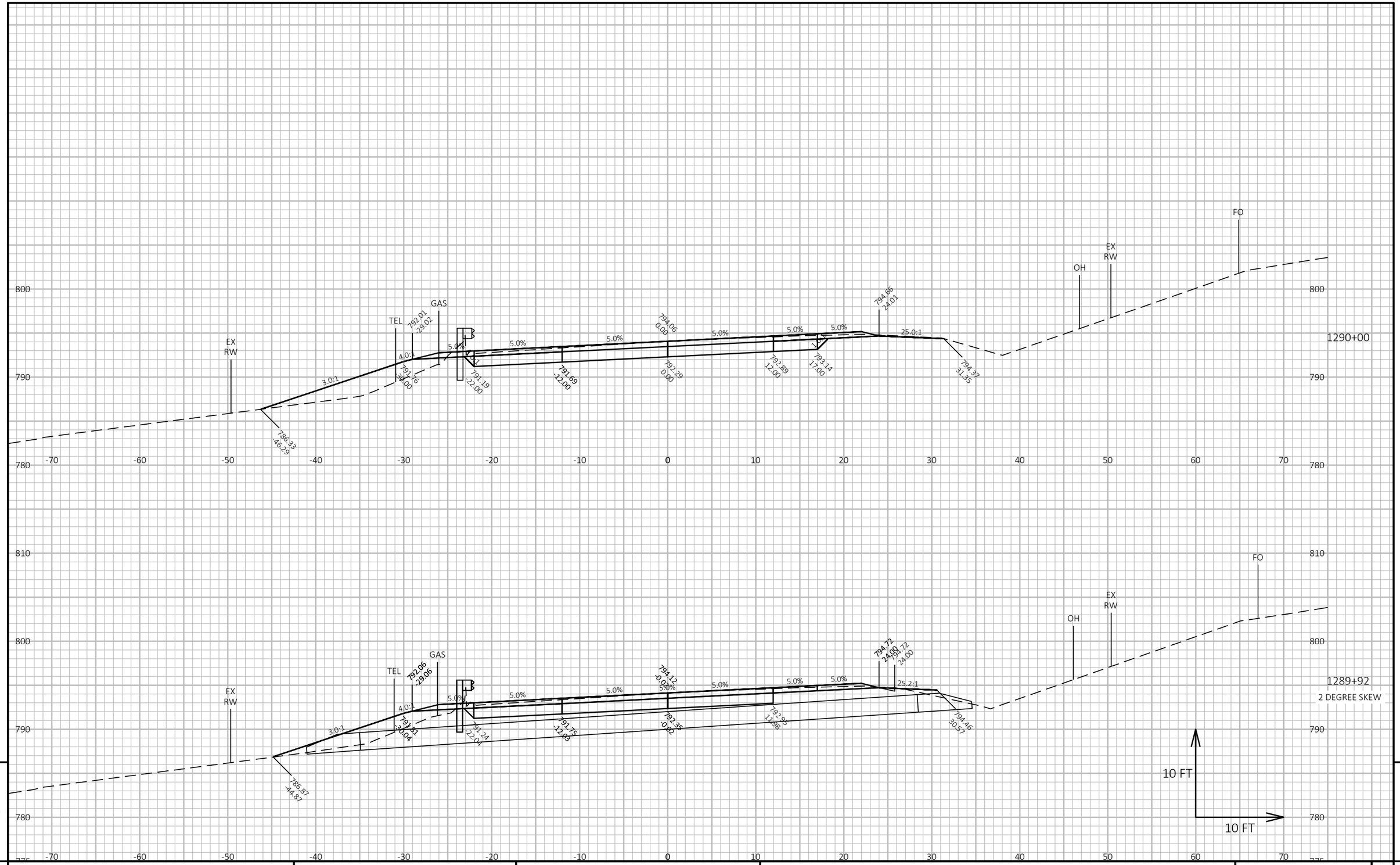
PLOT DATE : 1/24/2024 4:42 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

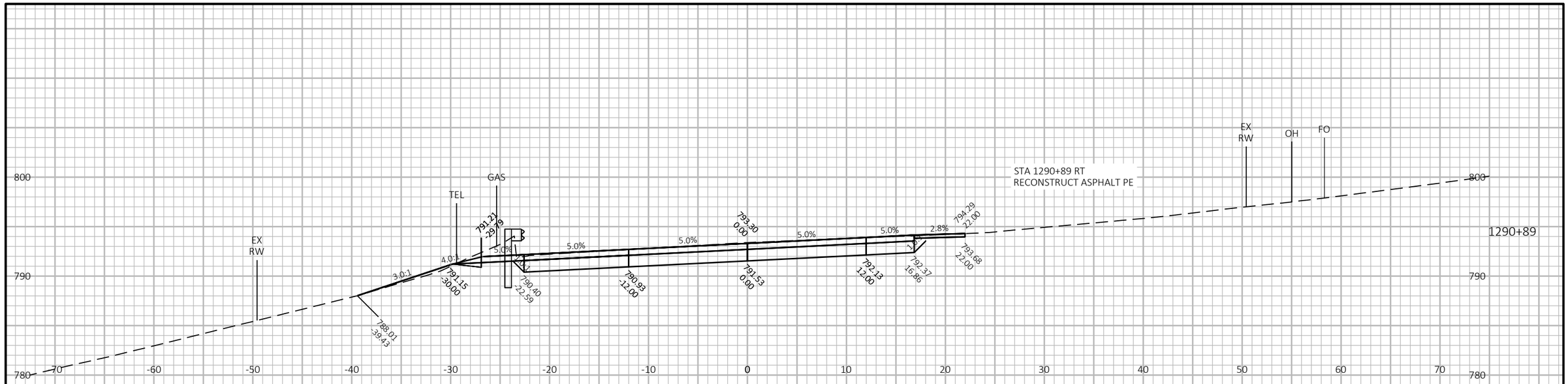
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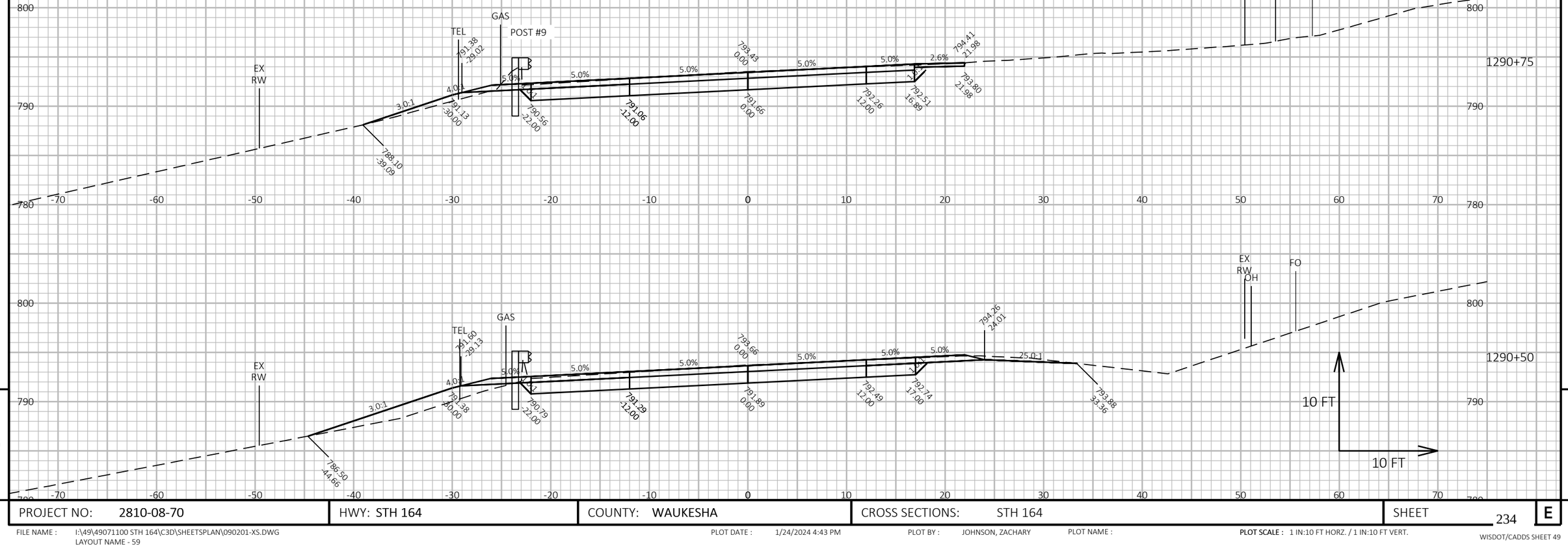
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 233	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 58

PLOT DATE : 1/24/2024 4:43 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49





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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 234	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 59

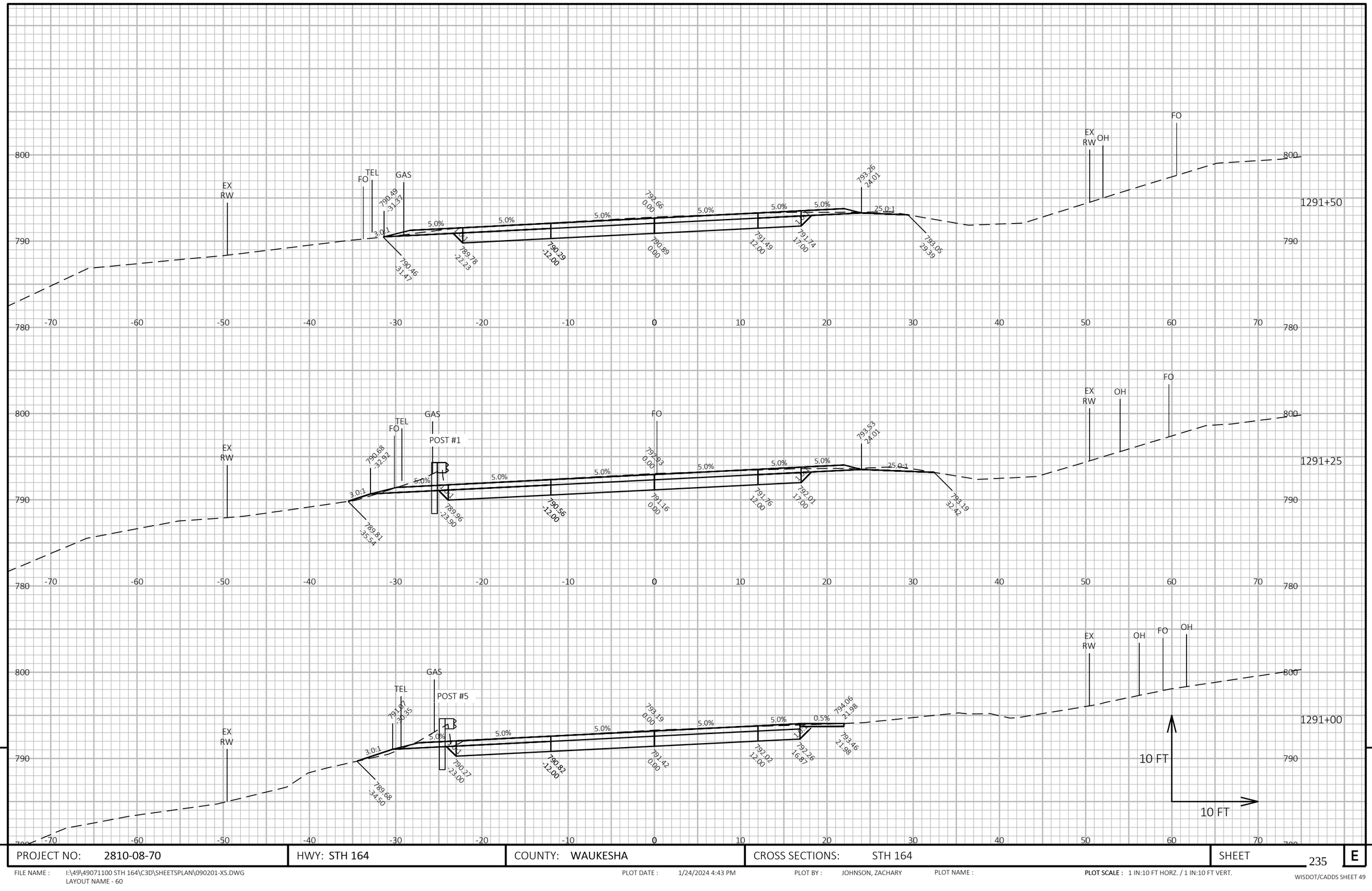
PLOT DATE : 1/24/2024 4:43 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

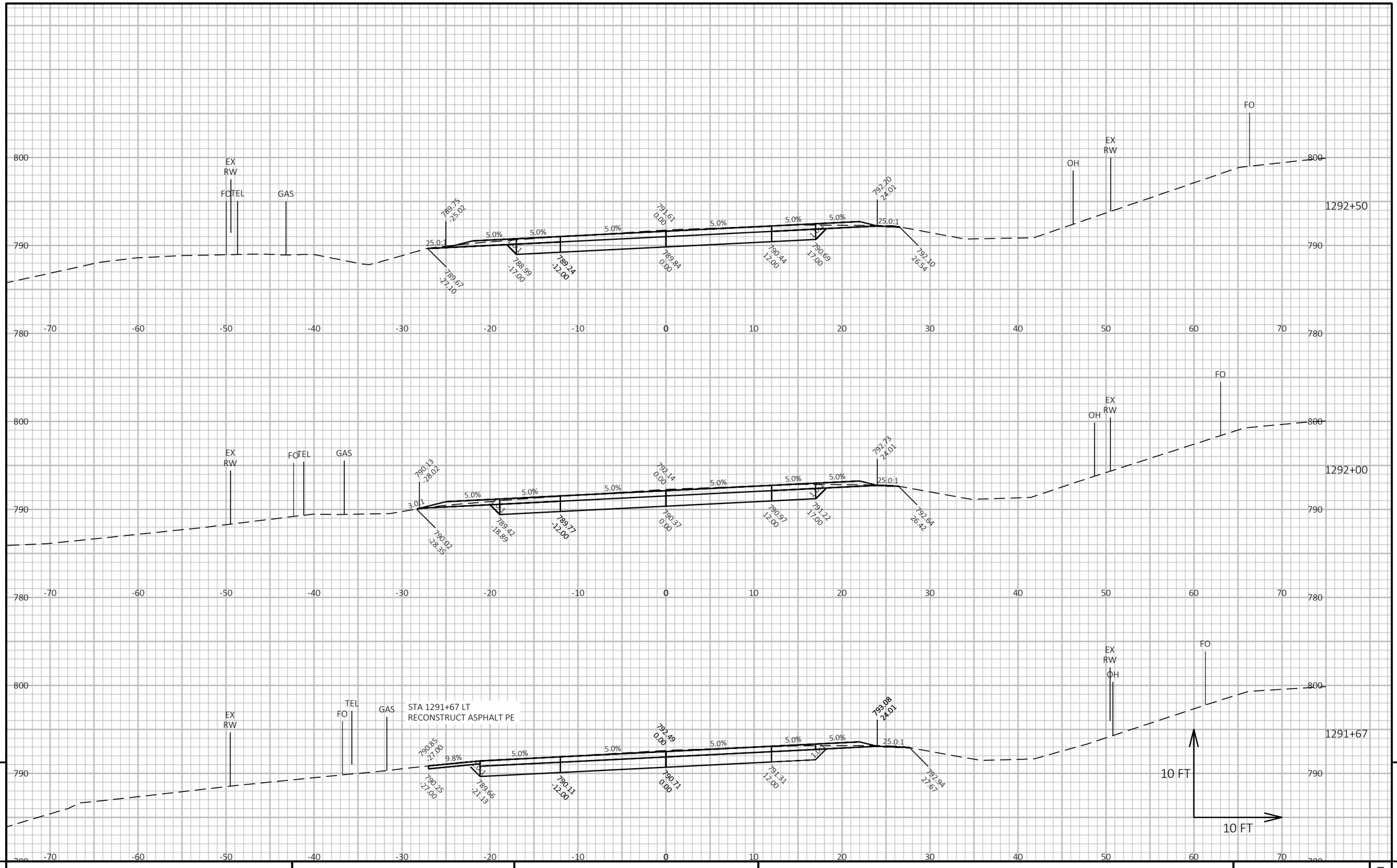
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 235	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 60

PLOT DATE : 1/24/2024 4:43 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

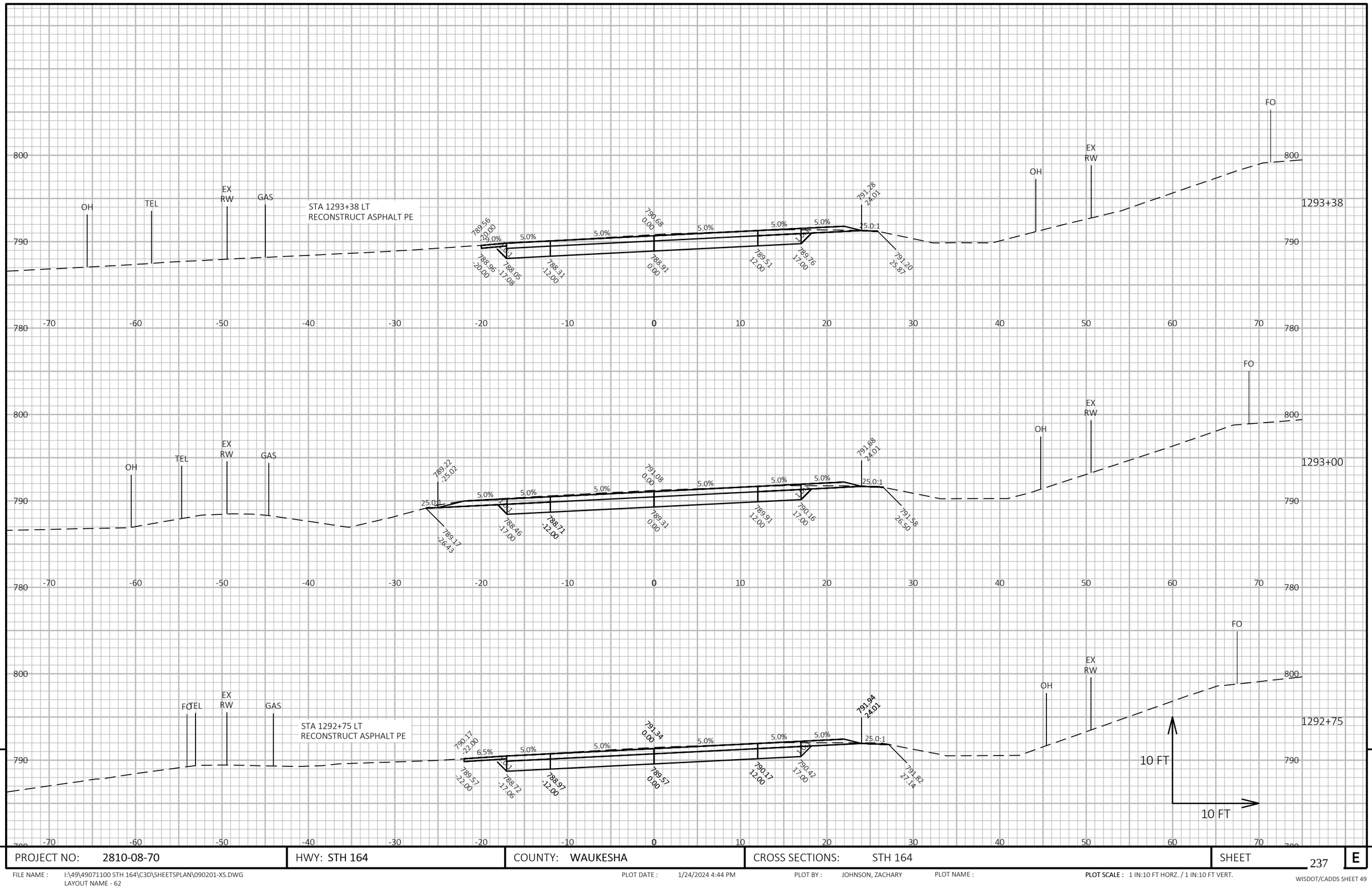


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 236 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 61

PLOT DATE : 1/24/2024 4:43 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 237	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 62

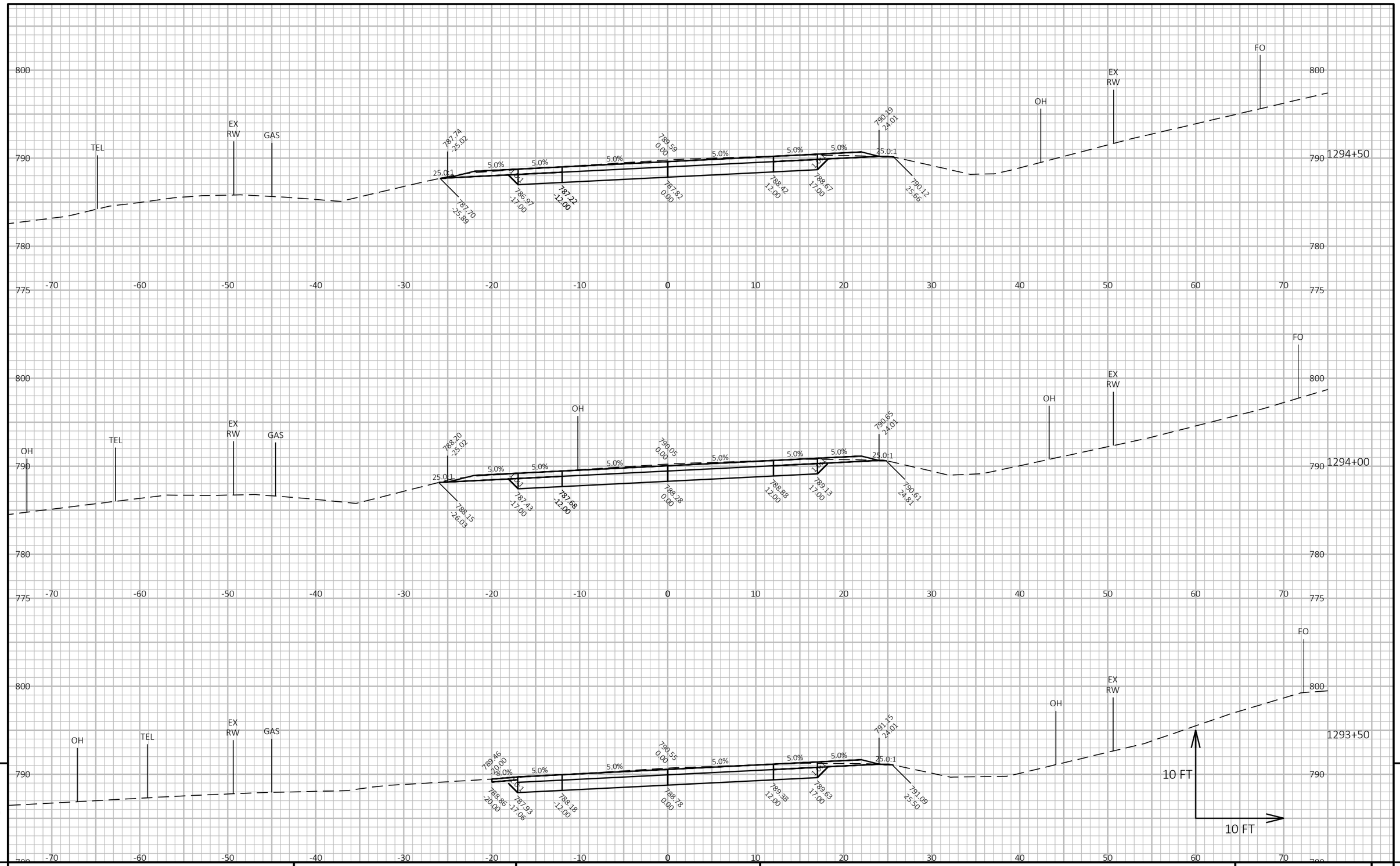
PLOT DATE : 1/24/2024 4:44 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 238	E

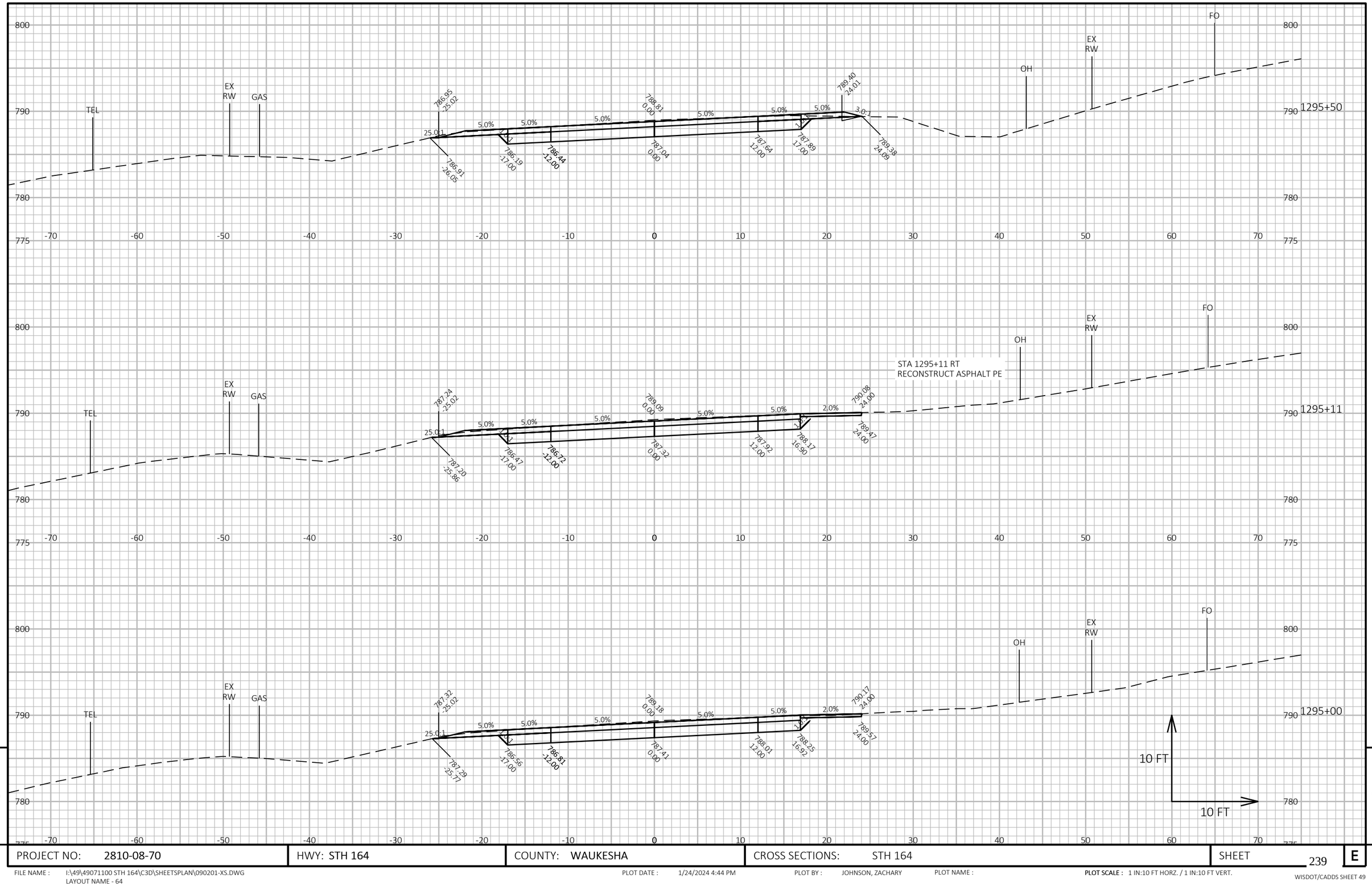
FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 63

PLOT DATE : 1/24/2024 4:44 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49

9



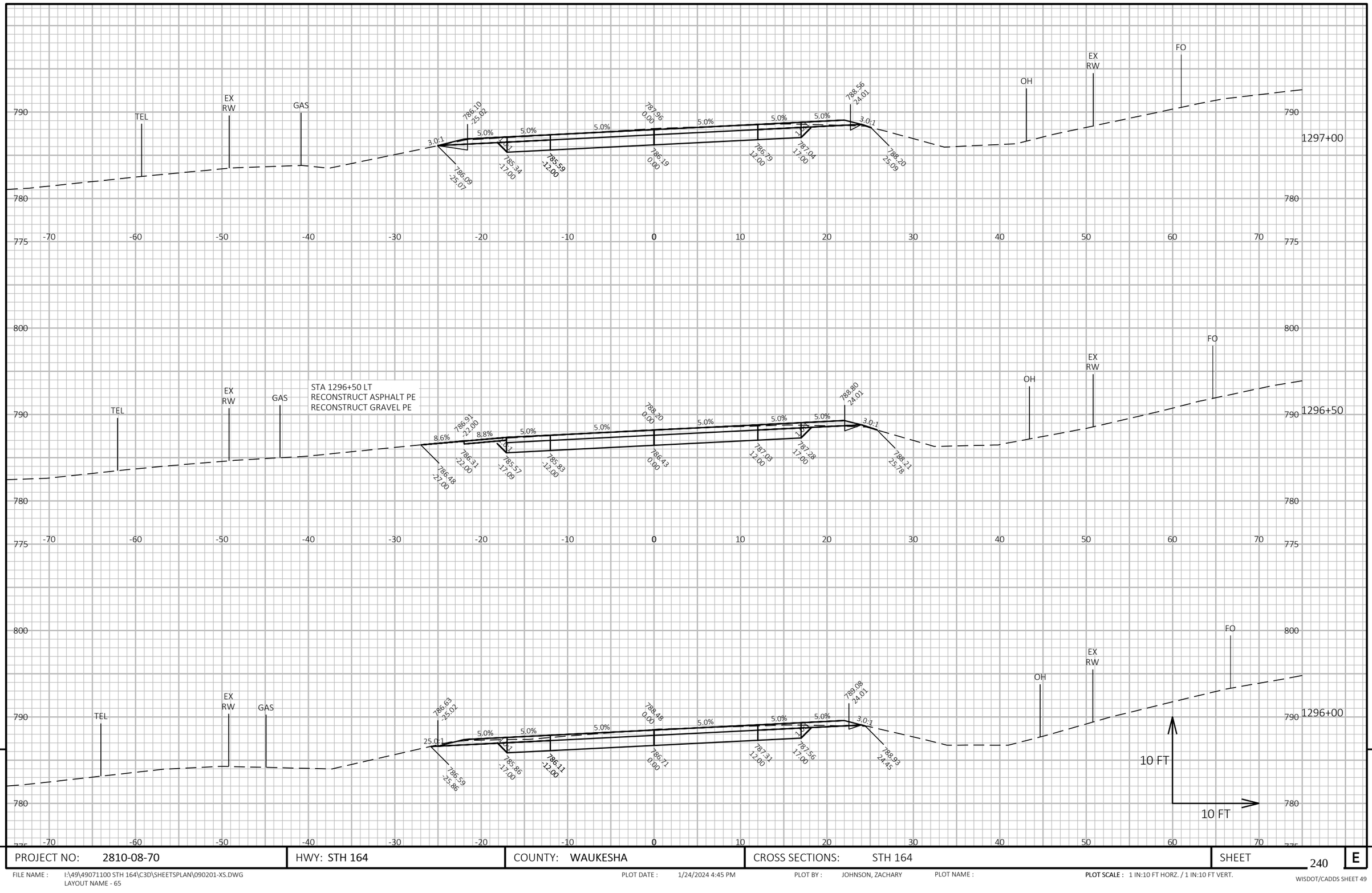
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 239	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 64

PLOT DATE : 1/24/2024 4:44 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



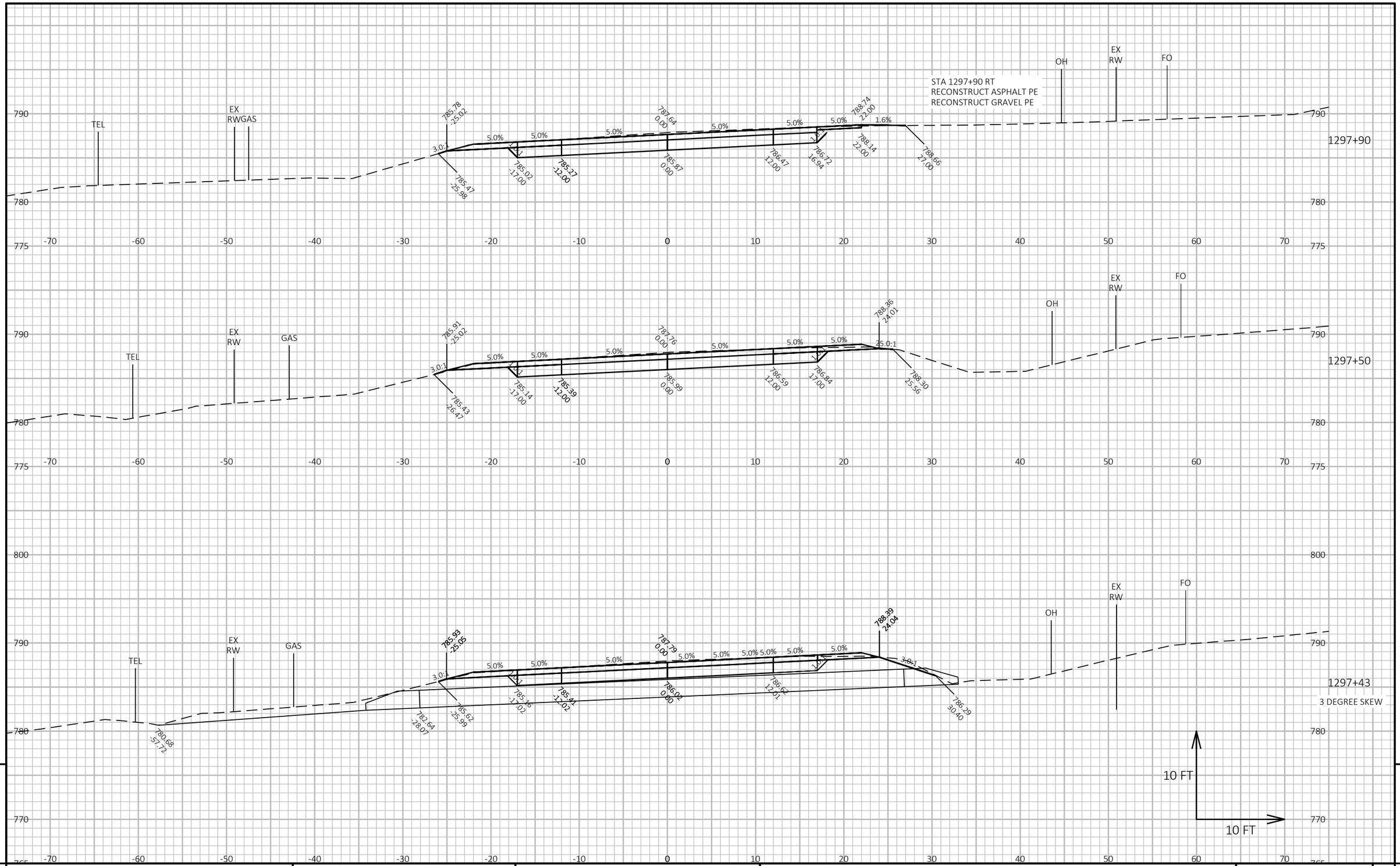
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 240	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 65

PLOT DATE : 1/24/2024 4:45 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

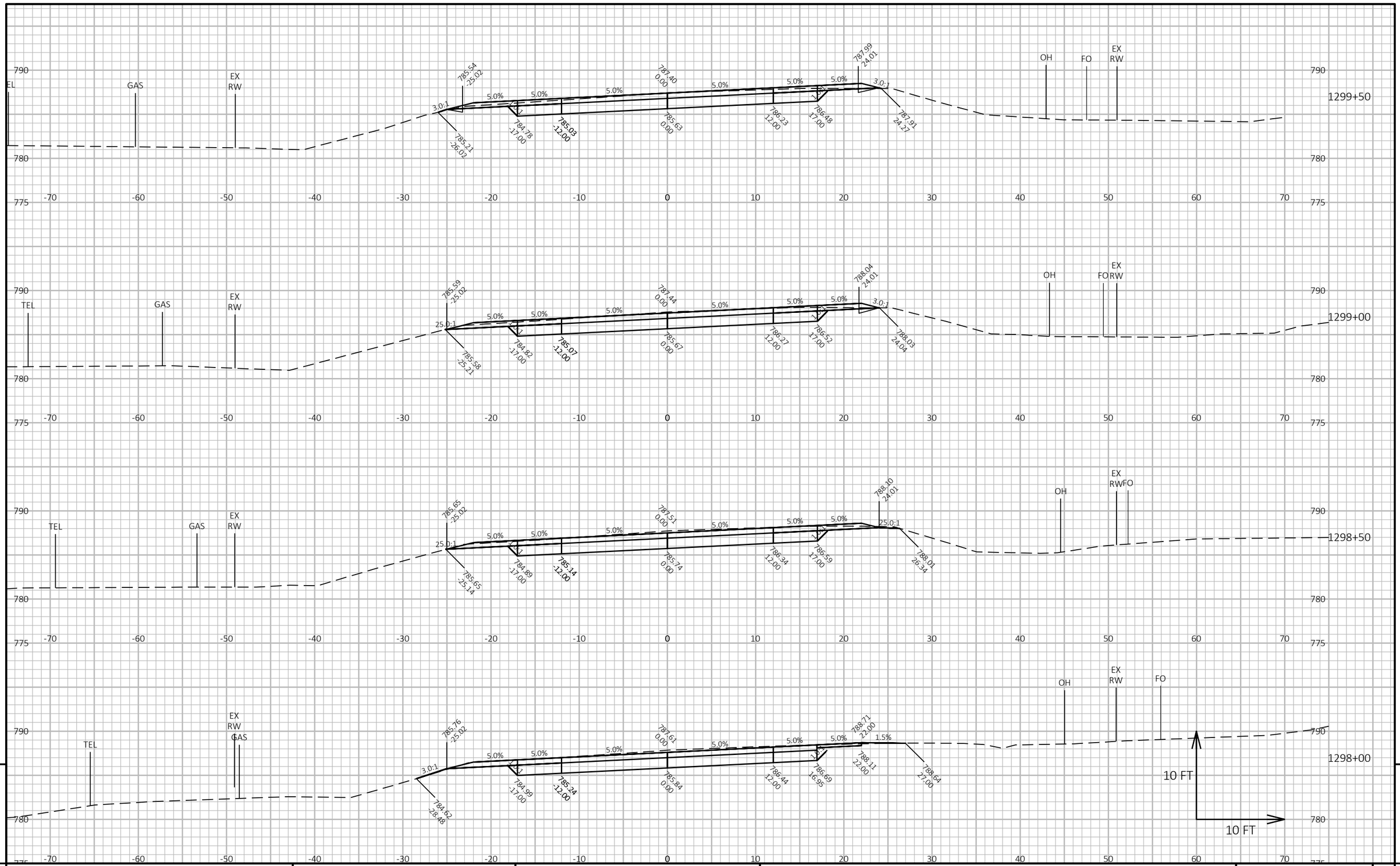
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 241	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 66

PLOT DATE : 1/24/2024 4:45 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49



9

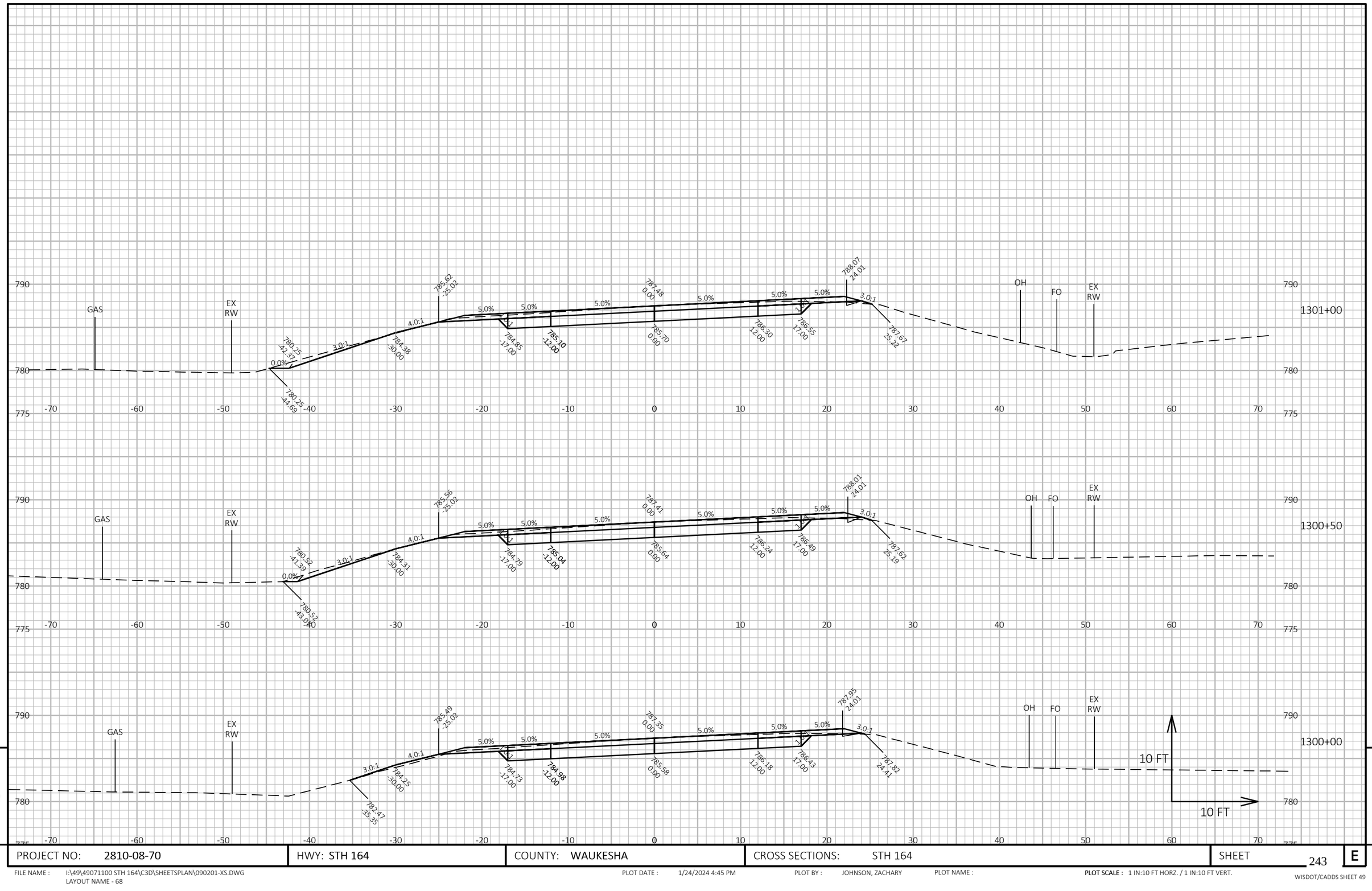
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 242	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 67

PLOT DATE : 1/24/2024 4:45 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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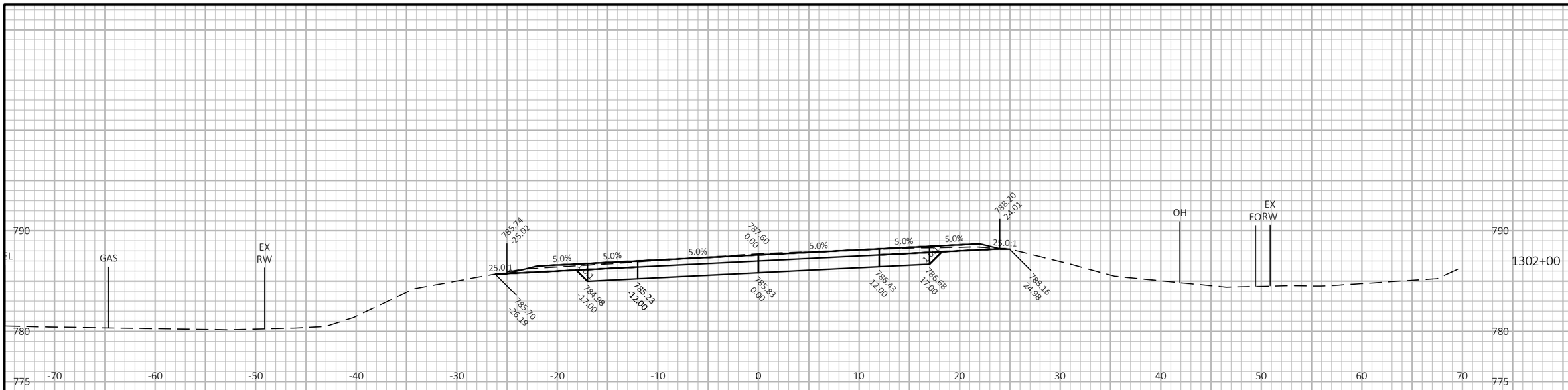
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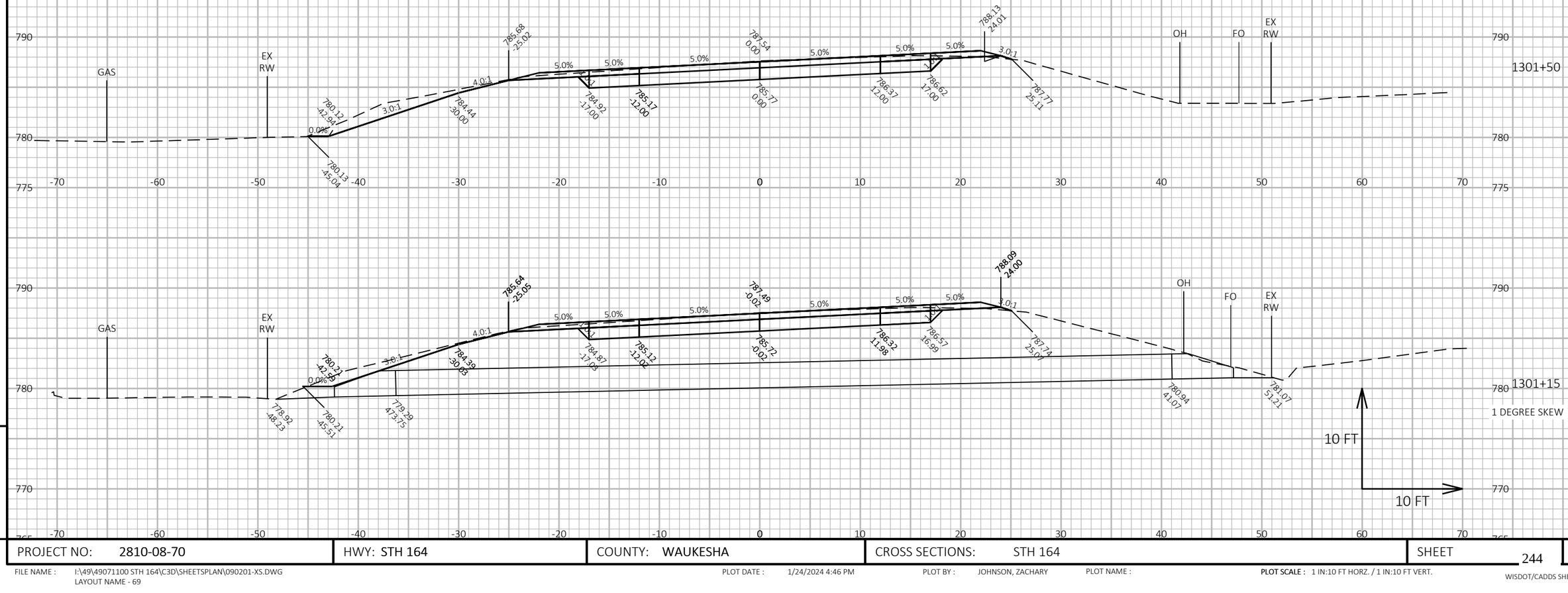
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 243	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 68

PLOT DATE : 1/24/2024 4:45 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49





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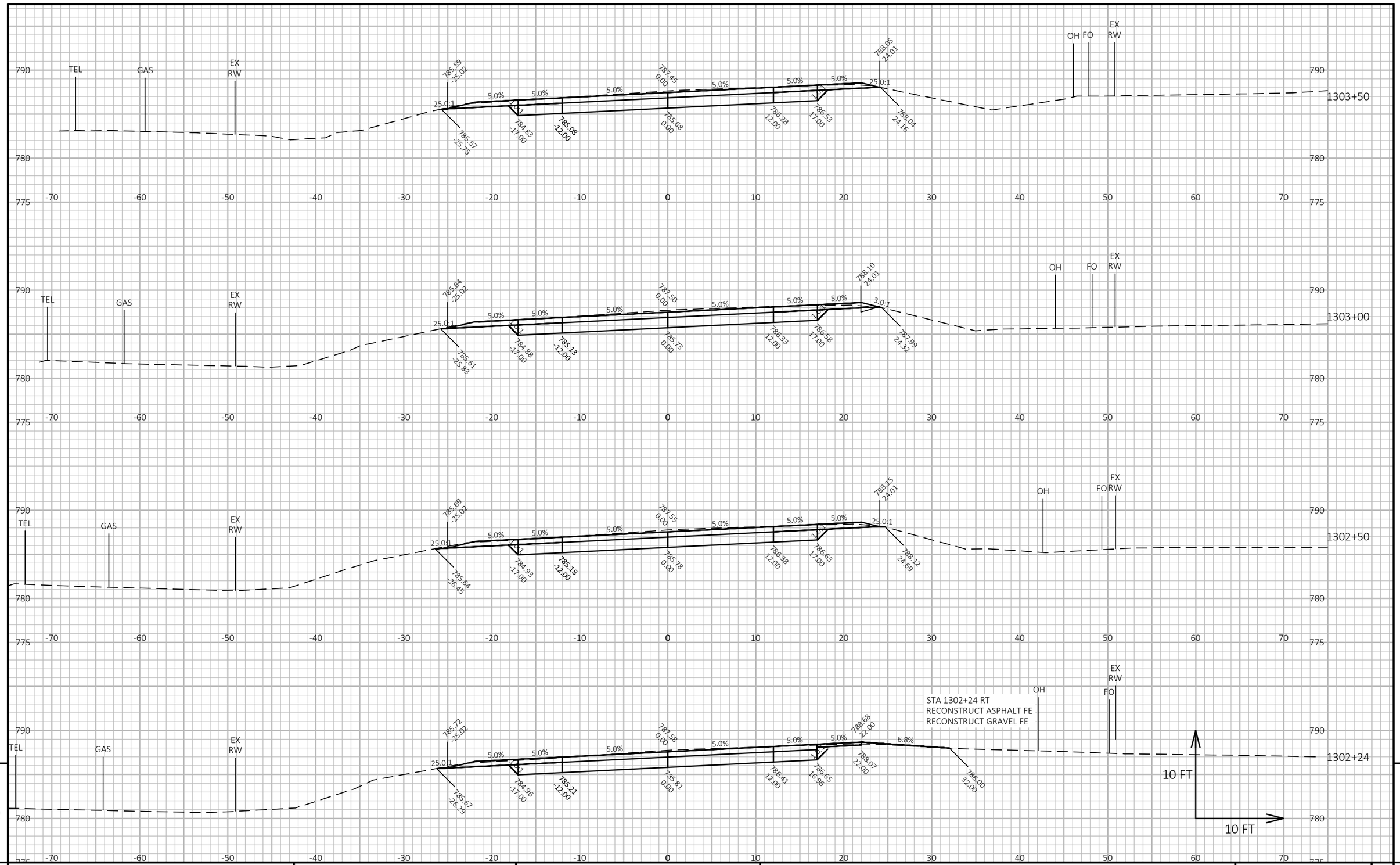
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 244	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 69

PLOT DATE : 1/24/2024 4:46 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 245	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 70

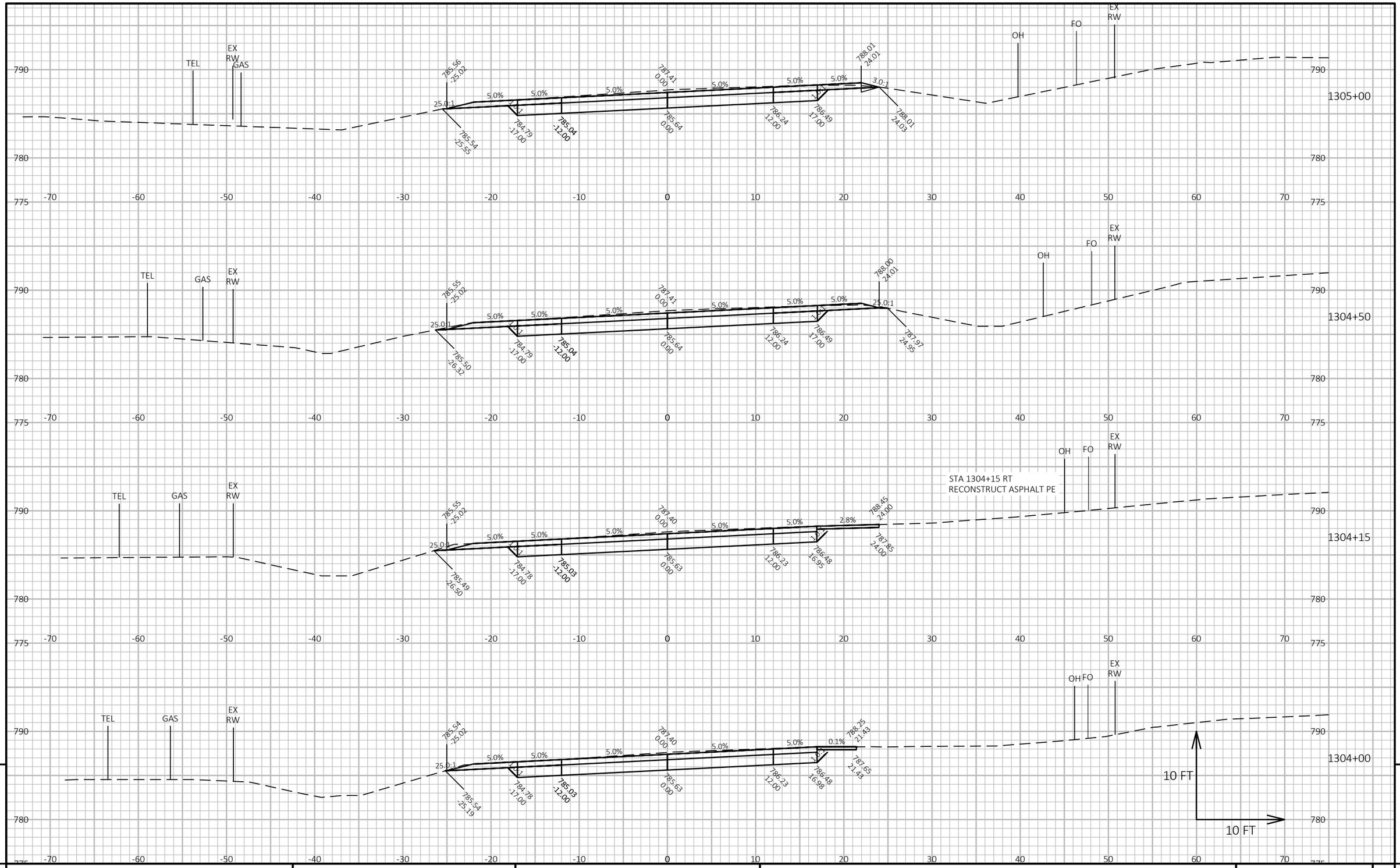
PLOT DATE : 1/24/2024 4:46 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 246	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 71

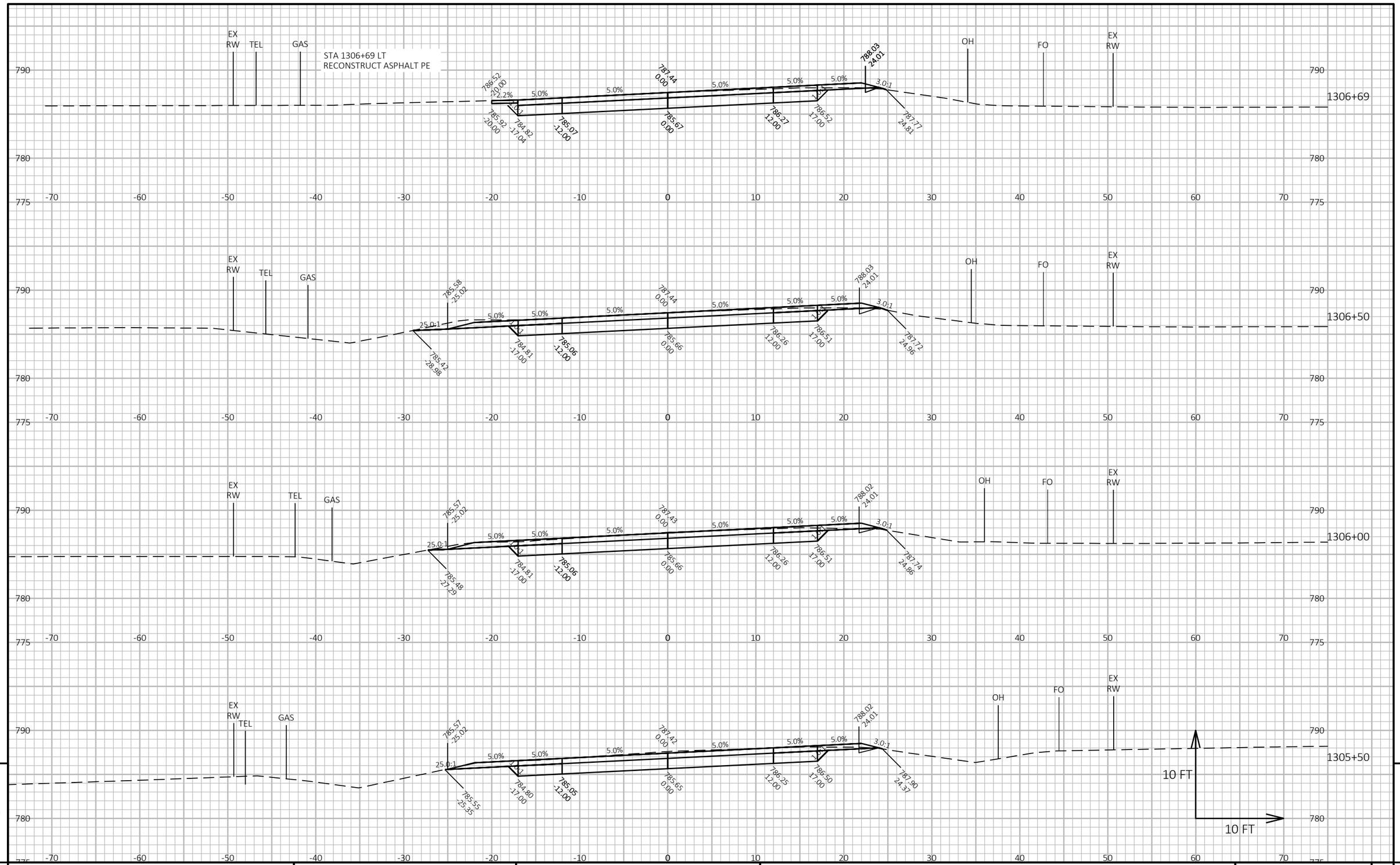
PLOT DATE : 1/24/2024 4:46 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 247	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 72

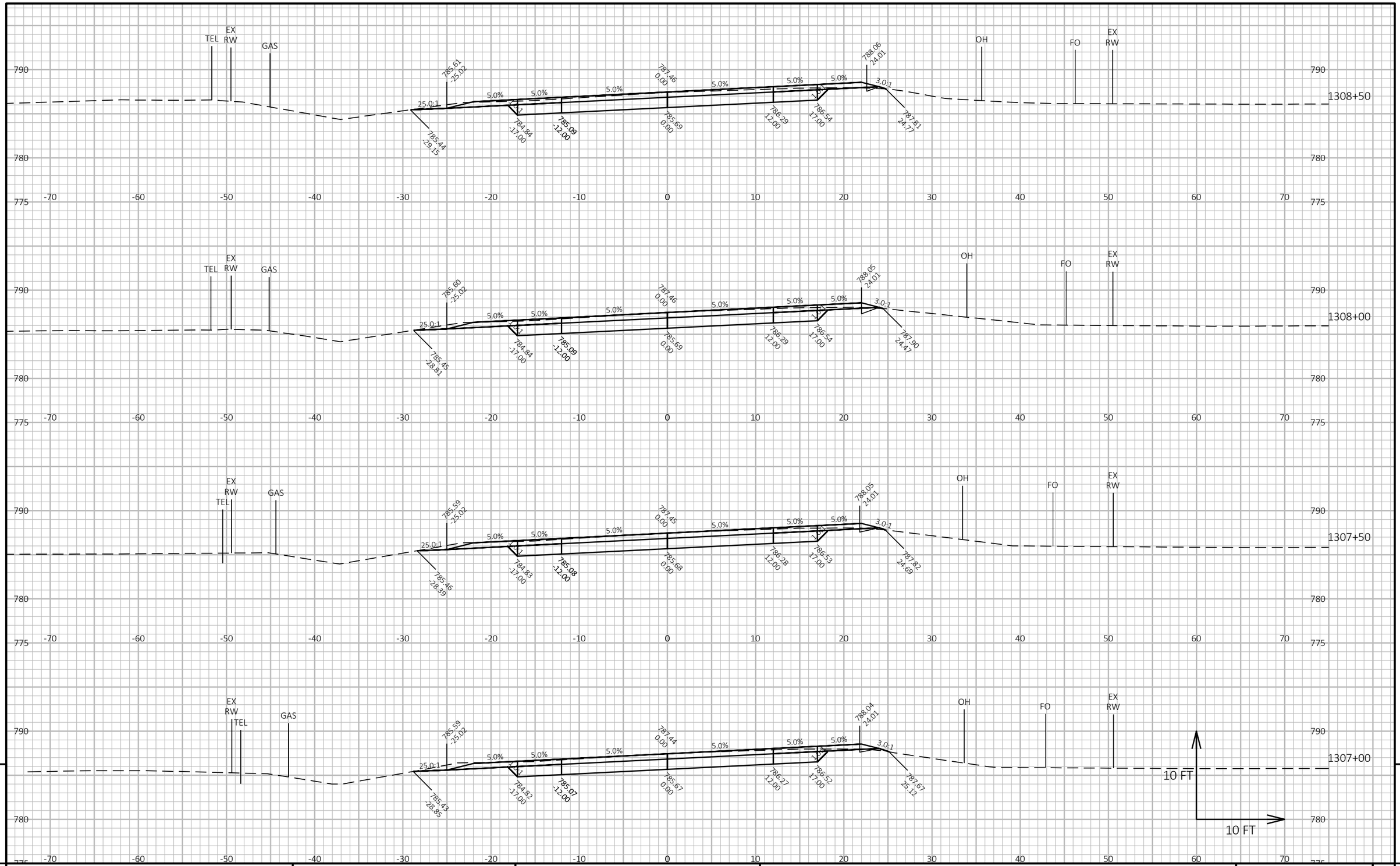
PLOT DATE : 1/24/2024 4:46 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 248	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 73

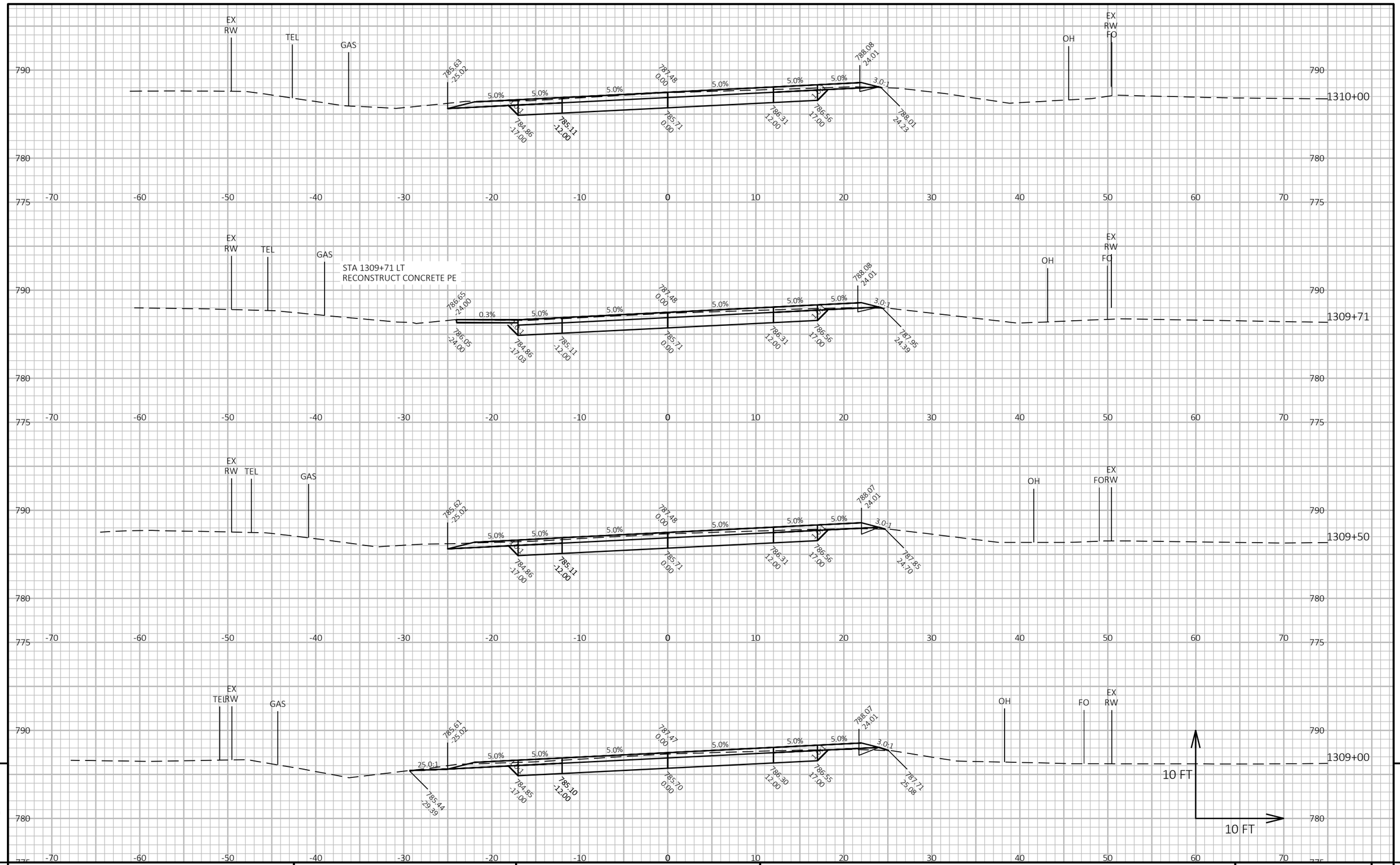
PLOT DATE : 1/24/2024 4:47 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 249	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 74

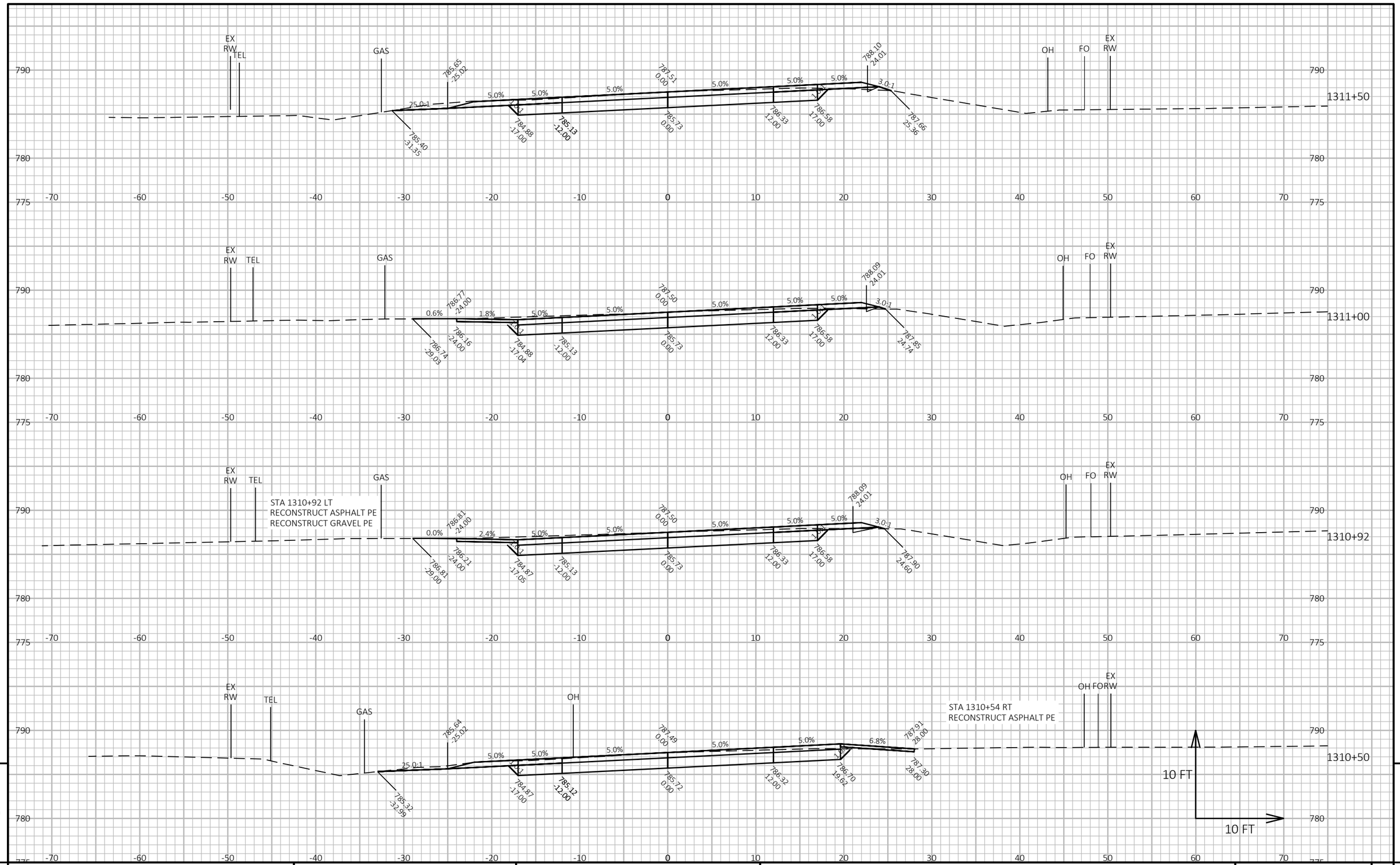
PLOT DATE : 1/24/2024 4:47 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 250	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 75

PLOT DATE : 1/24/2024 4:47 PM

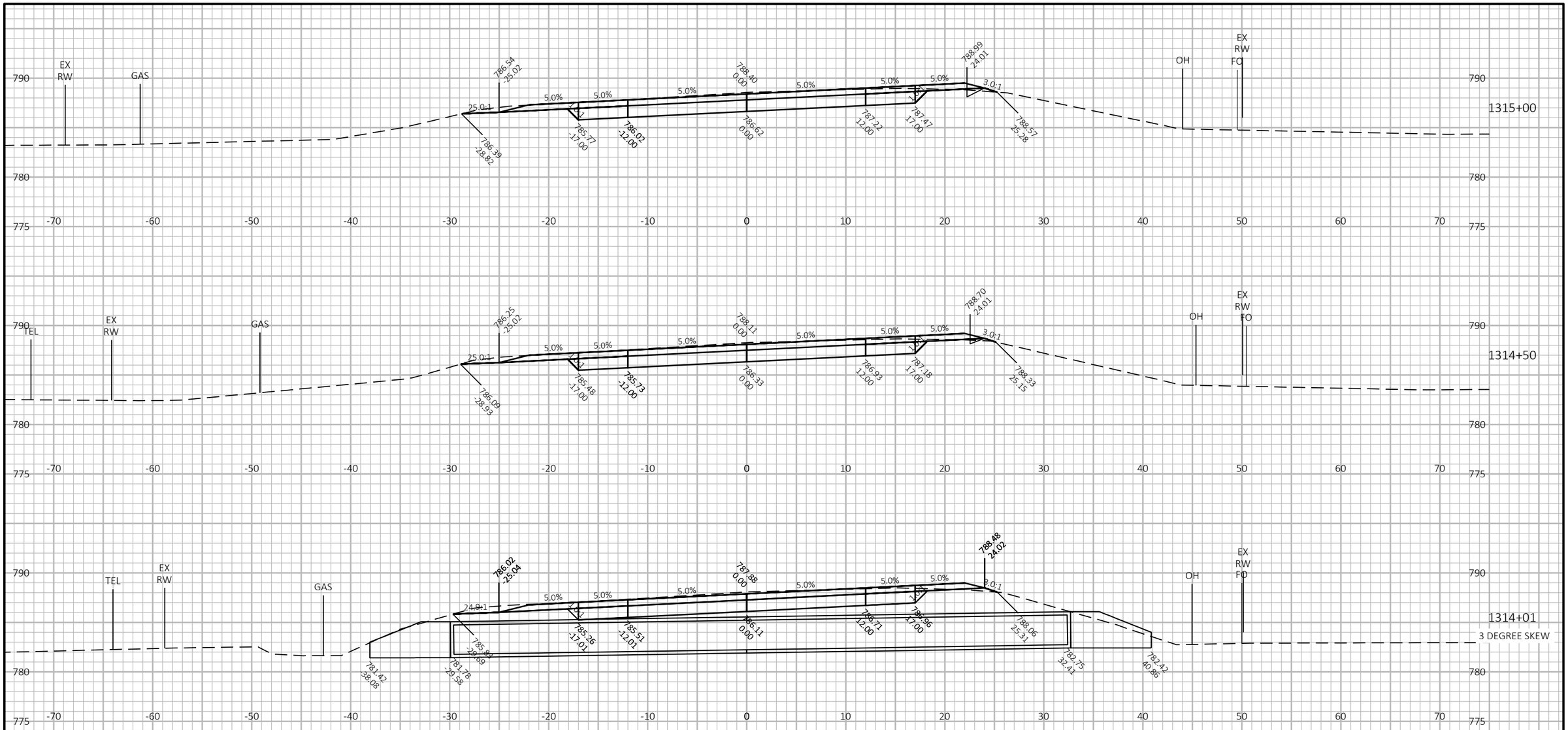
PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49

PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 251 E



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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 252	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 77

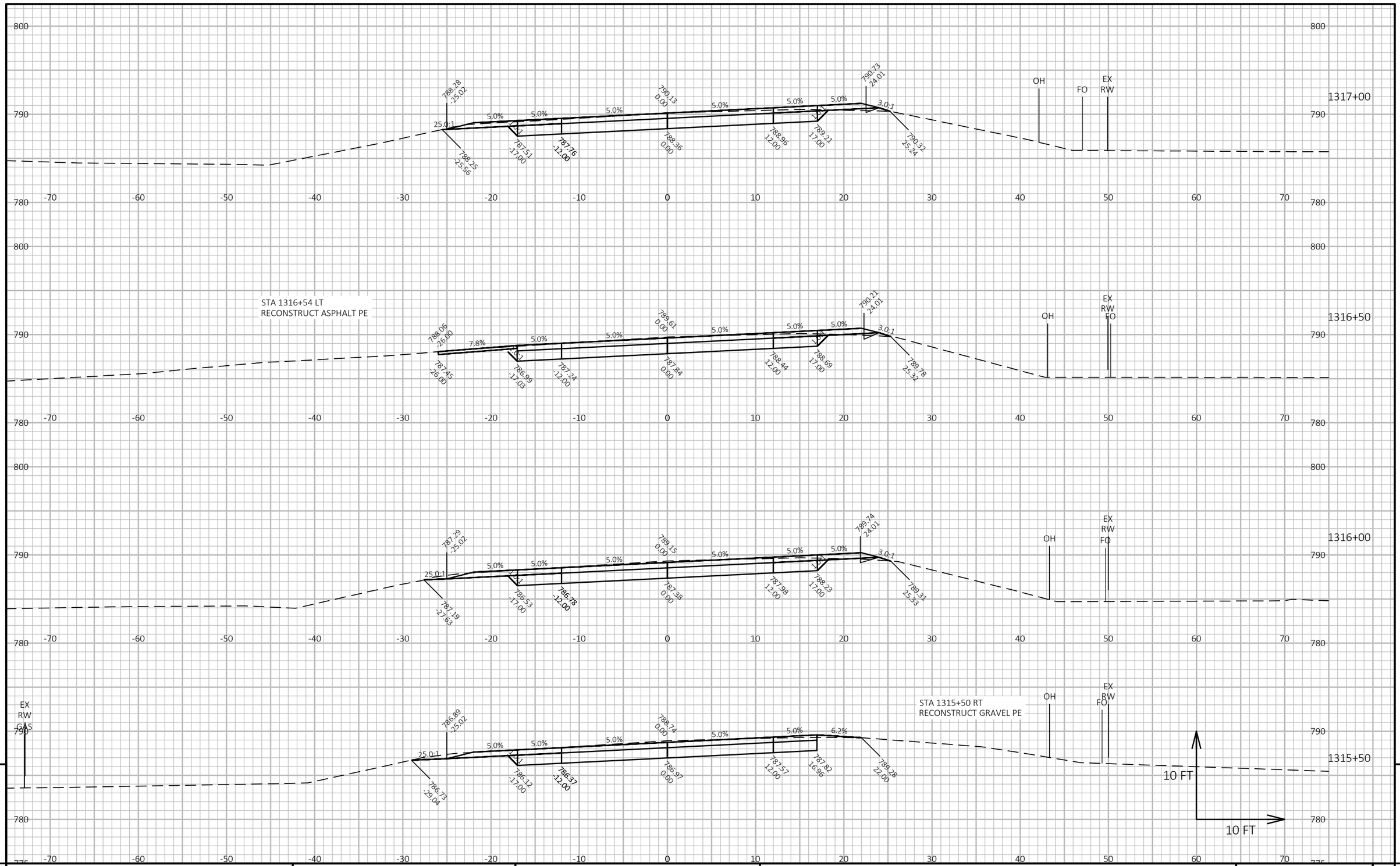
PLOT DATE : 1/24/2024 4:48 PM

PLOT BY : JOHNSON, ZACHARY

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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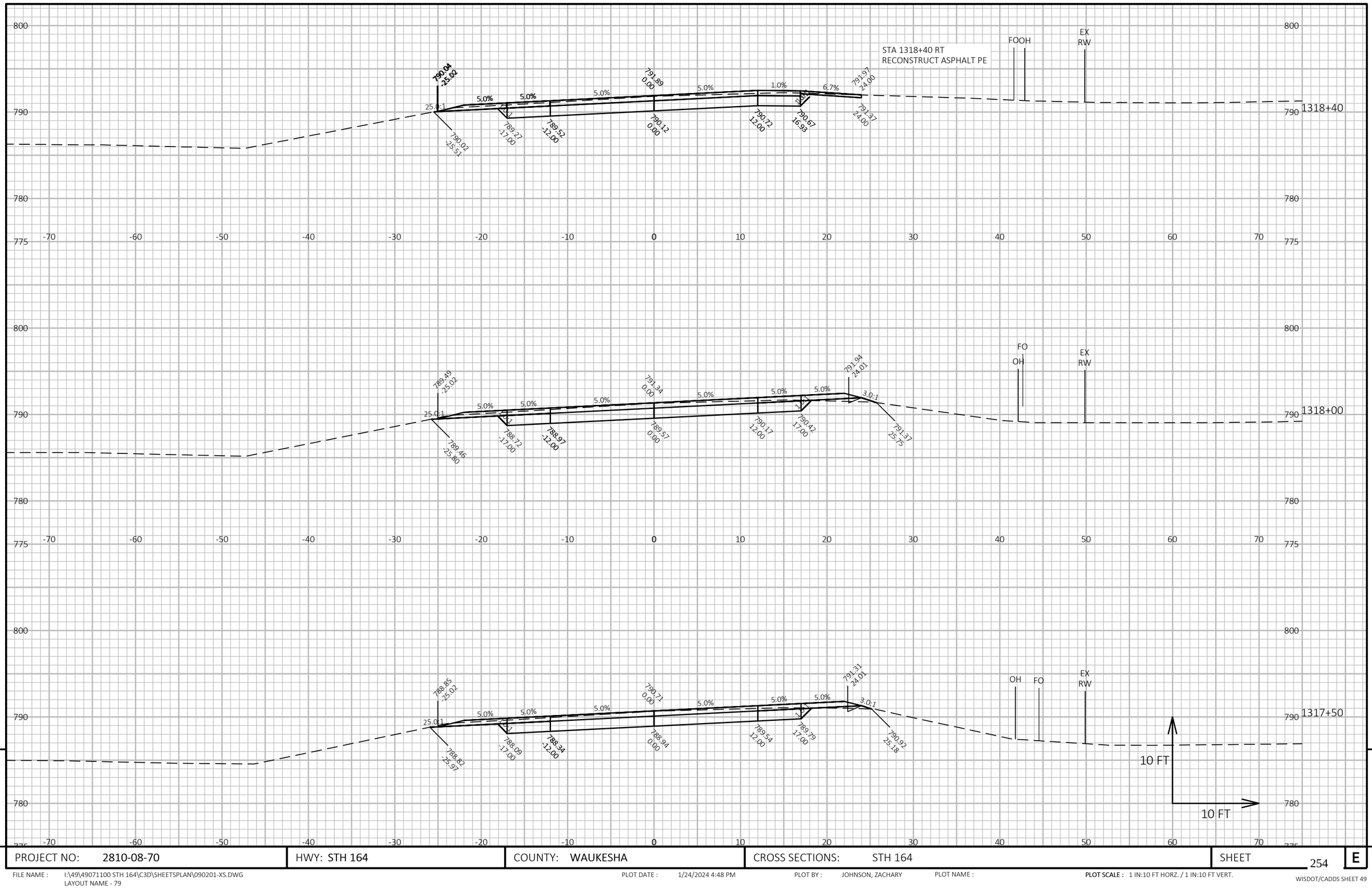
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 253	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 78

PLOT DATE : 1/24/2024 4:48 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME :

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

WISDOT/CADDS SHEET 49



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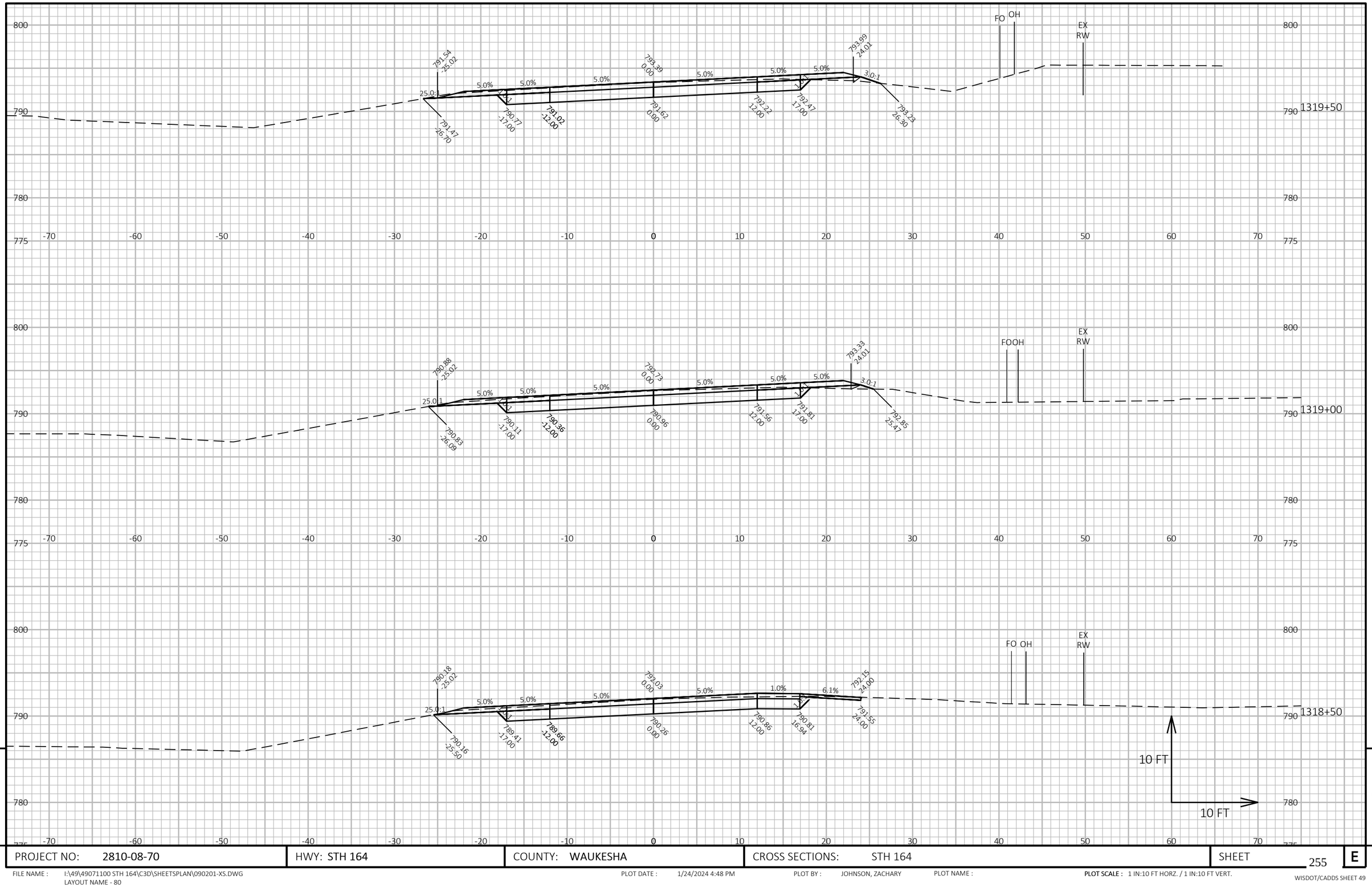
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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 254	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 79

PLOT DATE : 1/24/2024 4:48 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

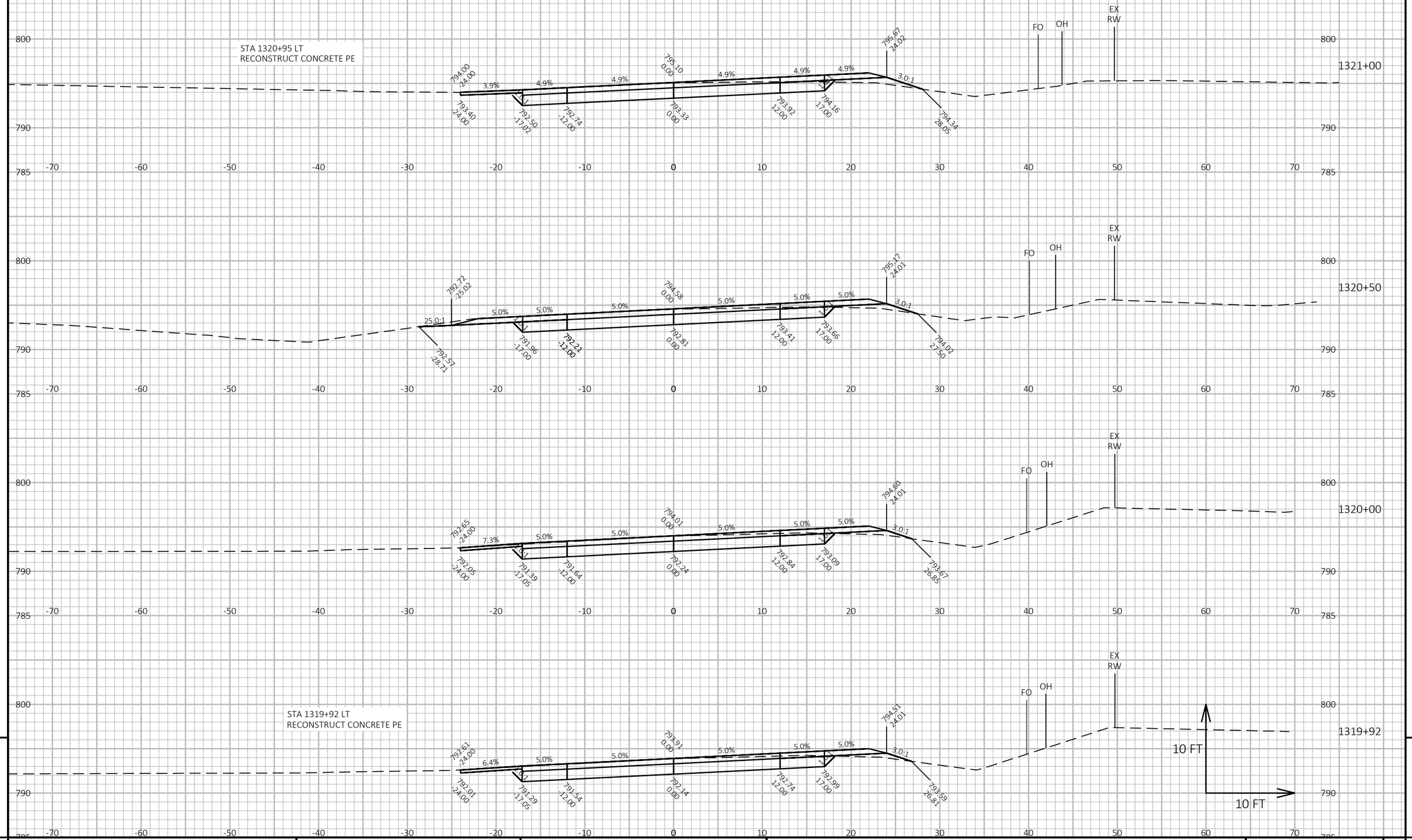


PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 255 E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 80

PLOT DATE : 1/24/2024 4:48 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



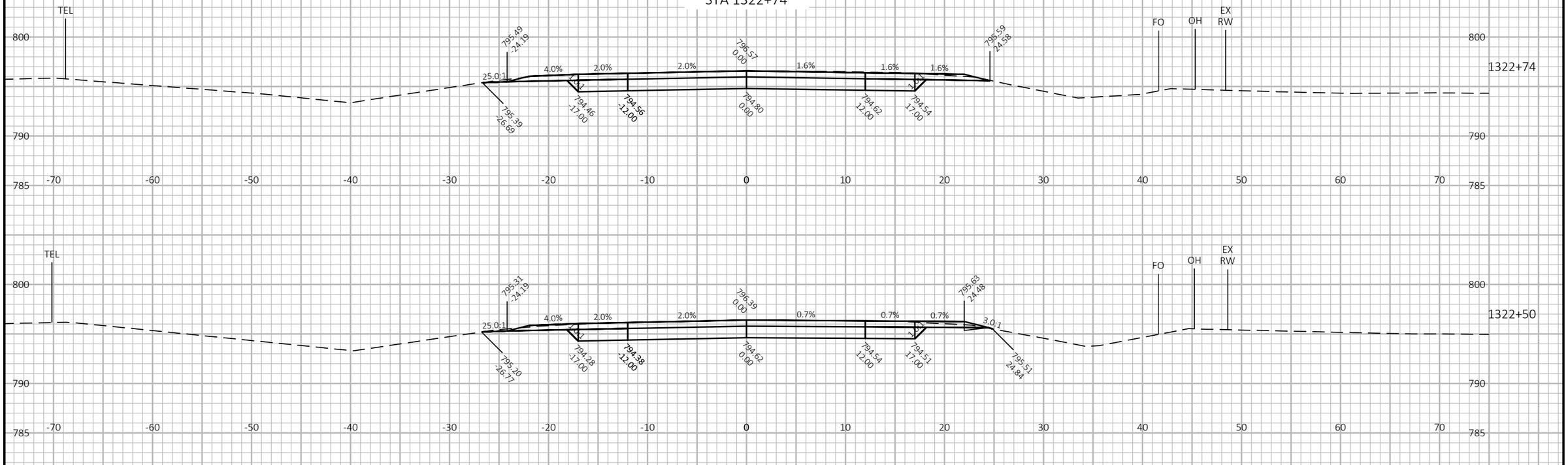
PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 256	E

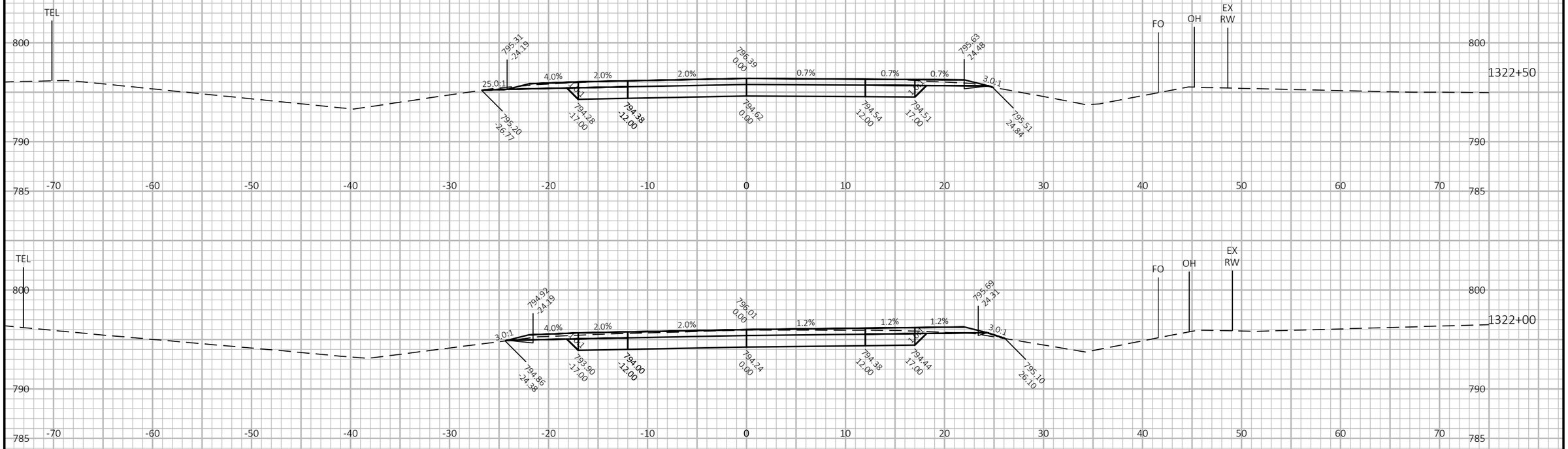
FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 81

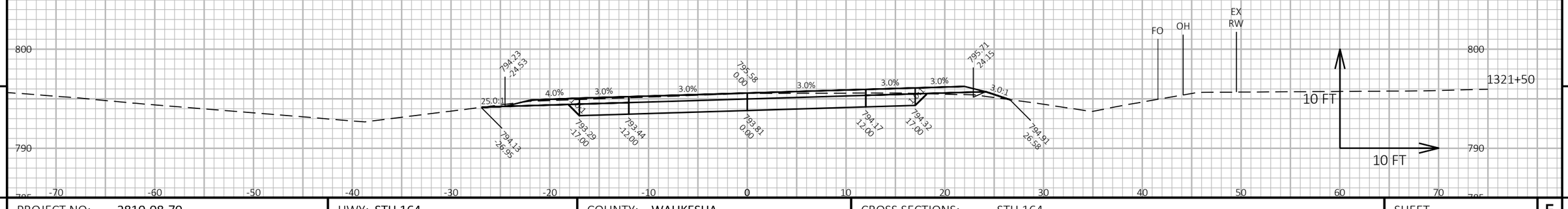
PLOT DATE : 1/24/2024 4:49 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END PROJECT
STA 1322+74







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PROJECT NO: 2810-08-70	HWY: STH 164	COUNTY: WAUKESHA	CROSS SECTIONS: STH 164	SHEET 257	E

FILE NAME : I:\49\49071100 STH 164\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 82

PLOT DATE : 1/24/2024 4:49 PM PLOT BY : JOHNSON, ZACHARY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov