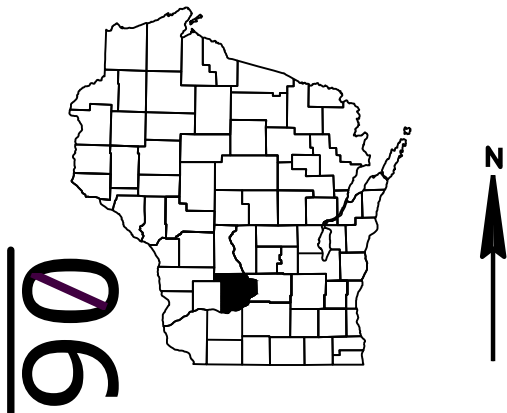


LAX WITH: PROJECT ID: 5680-04-60 COUNTY: SAUK

APRIL 2020

| 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 Plan            |
| 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 =  |   | 160                          |



|                    |                  |
|--------------------|------------------|
| DESIGN DESIGNATION | 5680-04-30       |
| A.A.D.T.           | 2017 = 1,500 VPD |
| A.A.D.T.           | 2039 = 1,800 VPD |
| D.H.V.             | = 8.9            |
| D.D.               | = 60/40          |
| T.                 | = 10.6%          |
| DESIGN SPEED       | = 55 MPH         |
| ESALS              | = 380,000        |

CONVENTIONAL SYMBOLS

**PLAN**

CORPORATE LIMITS

PROPERTY LINE

LOT LINE

LIMITED HIGHWAY EASEMENT

EXISTING RIGHT OF WAY

PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT

REFERENCE LINE

EXISTING CULVERT

PROPOSED CULVERT (Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

**PROFILE**

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE (To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

**UTILITIES**

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE

ROCK

LABEL

95.36

90 00

2,000,000'

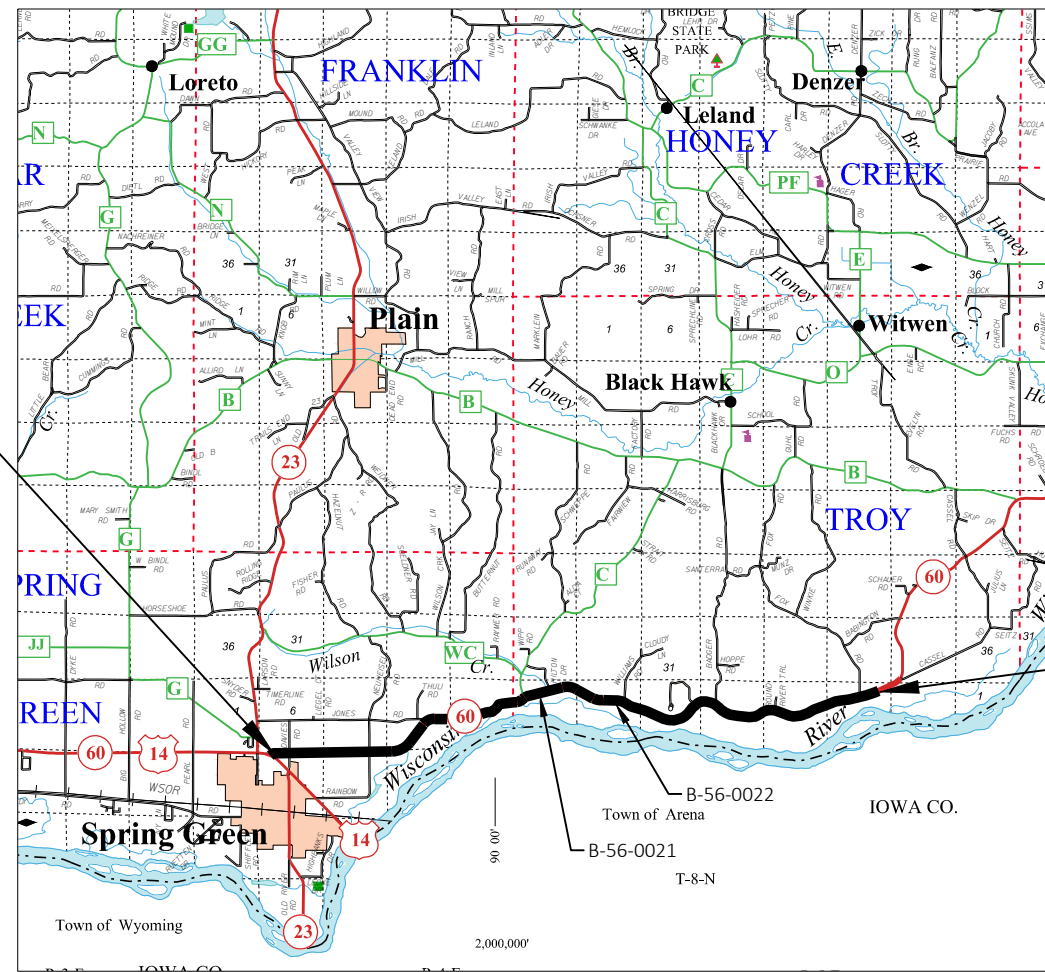
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

SPRING GREEN - SAUK CITY

USH 14 TO FOX RD  
STH 60  
SAUK COUNTY

|                      |
|----------------------|
| STATE PROJECT NUMBER |
| 5680-04-60           |



BEGIN PROJECT LIMITS:  
STA. 0+93  
Y: 134,803.52  
X: 563,670.34

END PROJECT LIMITS:  
STA. 549+63

LAYOUT  
SCALE 0 3 MI  
TOTAL NET LENGTH OF CENTERLINE = 10.39 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, SAUK COUNTY, NAD83 ( 2011 ), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

| STATE PROJECT | FEDERAL PROJECT |          |
|---------------|-----------------|----------|
|               | PROJECT         | CONTRACT |
| 5680-04-60    | WISC 2020129    | 1        |
|               |                 |          |
|               |                 |          |

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor WISDOT

Designer NATHANIEL SCHUMAKER

Project Manager DANIEL KLEINERTZ

Regional Examiner SW REGION

Regional Supervisor JOSEPH GREGAS

APPROVED FOR THE DEPARTMENT

DATE: 10/22/2019

*Daniel M. Kleinertz*  
(Signature)

E

GENERAL NOTES

- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- RIGHT OF WAY LINES SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.
- PRIOR TO THE PLACEMENT OF STEEL PLATE BEAM GUARD OR MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
- THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING OR TURNING LANES.
- CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

ORDER OF SECTION 2 SHEETS

GENERAL NOTES  
PROJECT OVERVIEW  
TYPICAL SECTIONS  
SOIL BORINGS SUMMARY  
CONSTRUCTION DETAILS  
PLAN DETAILS  
EROSION CONTROL AND DRAINAGE  
TRAFFIC CONTROL AND CONSTRUCTION STAGING  
ALIGNMENT  
SUPER-ELEVATION TABLES  
CONTROL POINTS



UTILITY CONTACTS

MIKE OLSEN  
ATC MANAGEMENT, INC. - ELECTRICITY TRANSMISSION  
801 O'KEEFE RD  
P.O. BOX 6113  
DE PERE, WI 54115-6113  
(920) 338-6582  
molsen@atcllc.com

DOUGLAS FEINER  
PRAIRIE SANITARY DISTRICT-SEWER  
506 N. BALTIMORE ST.  
SPRING GREEN, WI 53588-0734  
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doujay@frontier.com

MARY MONTGOMERY  
ALLIANT ENGERY - ELECTRICITY  
4902 NORTH BILTMORE LN  
MADISON, WI 53713  
(319) 786-4768  
marymontgomery@alliantenergy.com

RUSS RYAN  
FRONTIER COMMUNICATIONS OF WI LLC - COMMUNICATION LINE  
107 PLEASANTVIEW DR.  
PLYMOUTH, WI 53073  
(920) 893-7212  
russell.w.ryan@ftr.com

KEVIN PARRIS  
WINDSTREAM KDL, LLC COMMUNICATION LINE  
1858 WRIGHT ST  
MADISON, WI 53704  
(608) 819-5016  
kevin.j.parris@windstream.com

STANDARD ABBREVIATIONS

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

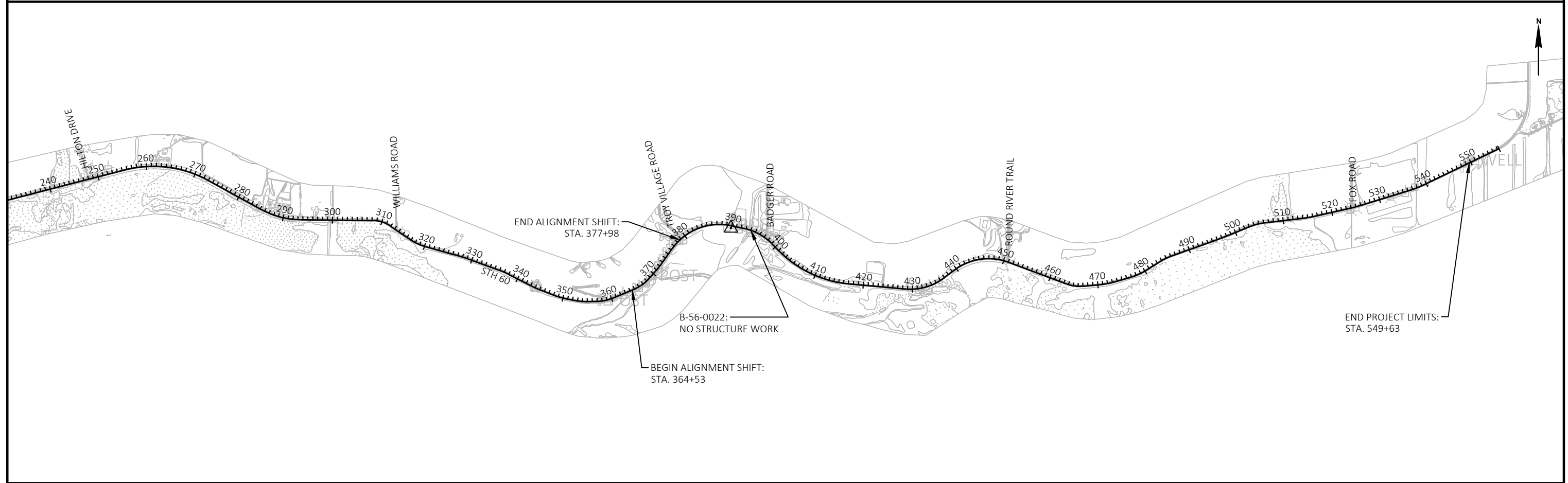
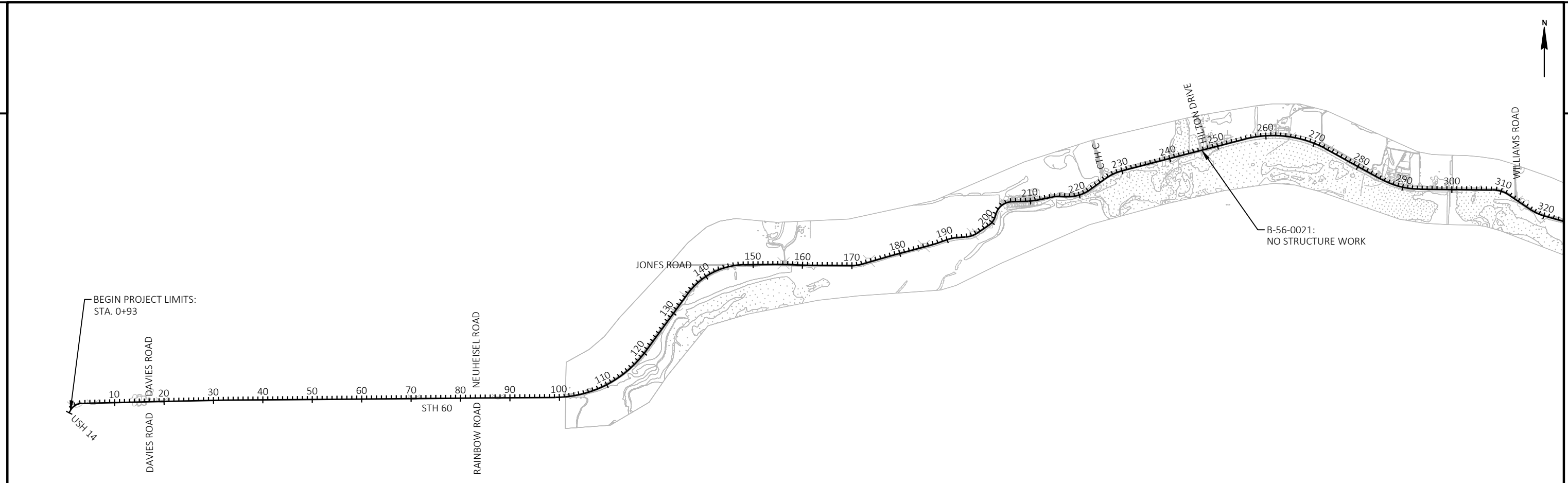
DNR LIAISON

ANDY BARTA  
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST  
WISCONSIN DNR  
SOUTH CENTRAL REGION  
3911 FISH HATCHERY ROAD  
FITCHBURG, WI 53711  
608-275-3308

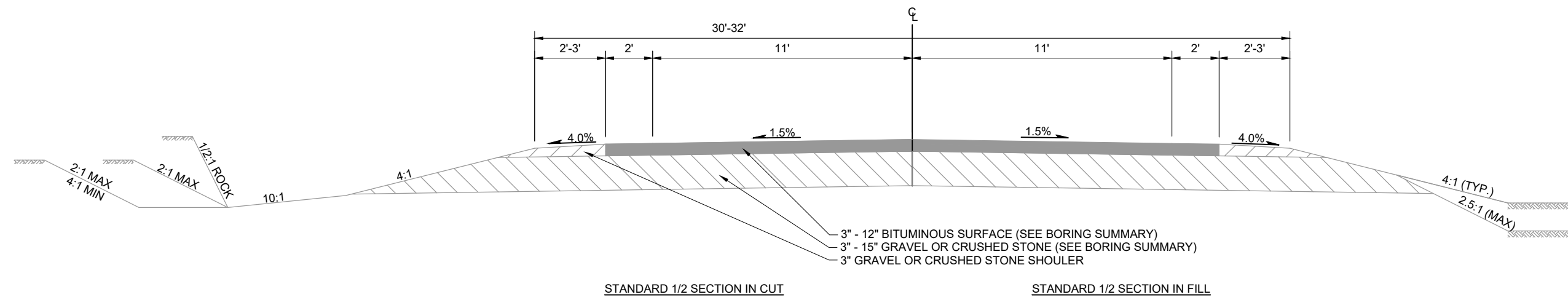
DESIGN CONTACTS

DANIEL KLEINERTZ  
PROJECT MANAGER  
WISDOT SW REGION  
3550 MORMON COULDEE ROAD  
LA CROSSE, WI 54601  
(608) 789-5709  
daniel.kleinertz@dot.wi.gov

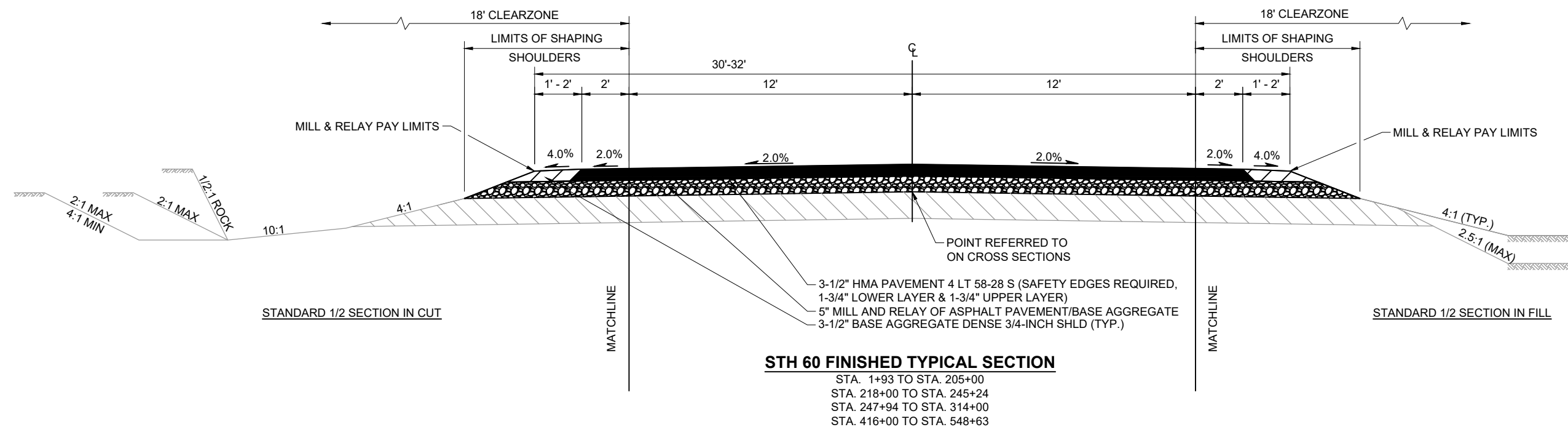




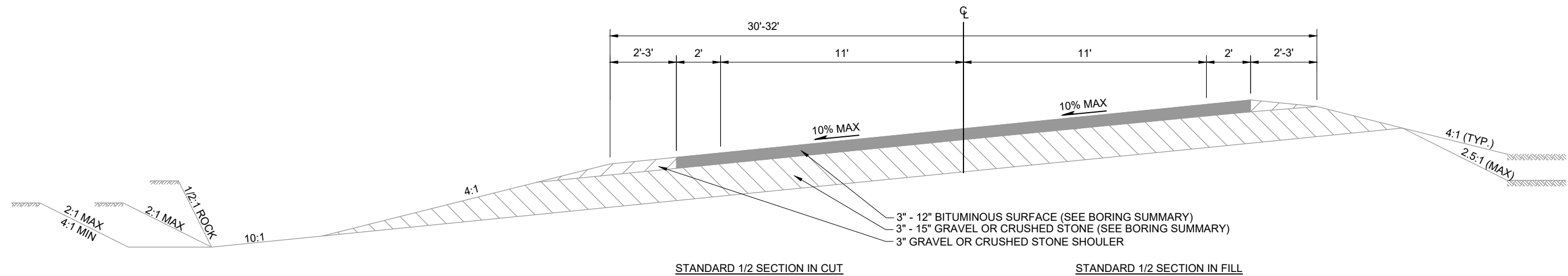
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|------------------------|-------------|--------------|------------------|---------|---|
| PROJECT NO: 5680-04-60 | HWY: STH 60 | COUNTY: SAUK | PROJECT OVERVIEW | SHEET 3 | E |
|------------------------|-------------|--------------|------------------|---------|---|

**STH 60 EXISTING TYPICAL SECTION**

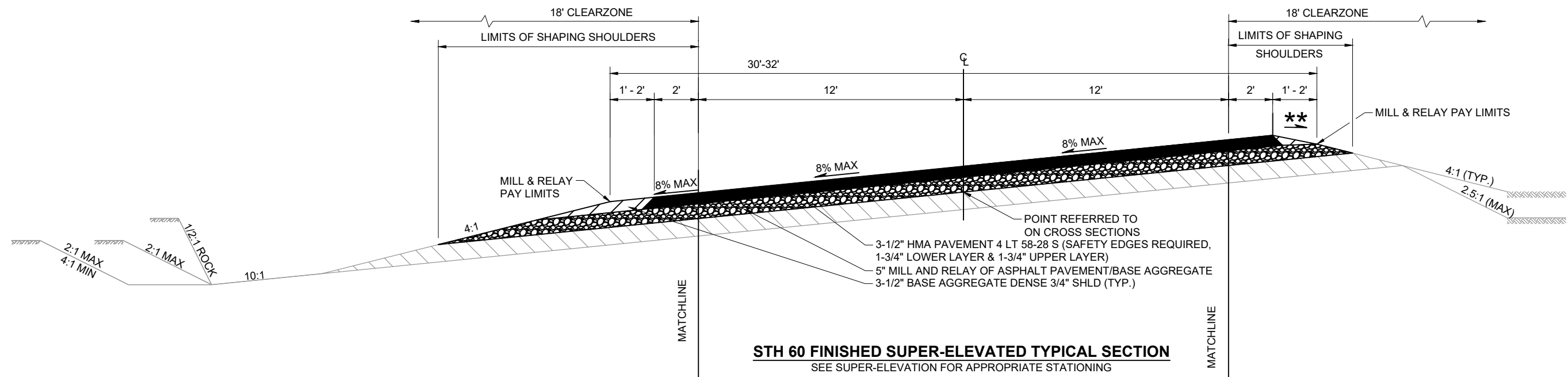
STA. 0+93 TO STA. 205+00  
STA. 218+00 TO STA. 314+00  
STA. 416+00 TO STA. 549+63

**STH 60 FINISHED TYPICAL SECTION**

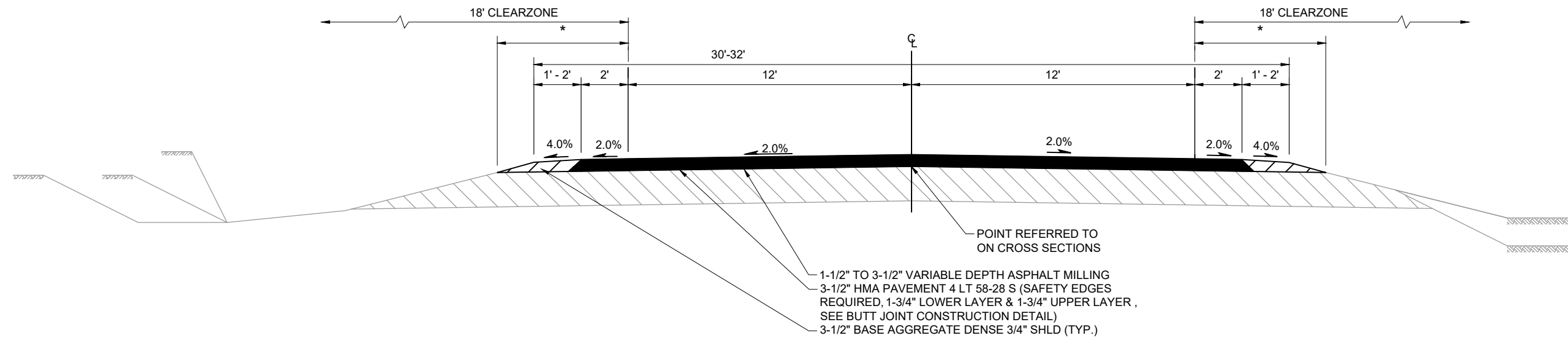
STA. 1+93 TO STA. 205+00  
STA. 218+00 TO STA. 245+24  
STA. 247+94 TO STA. 314+00  
STA. 416+00 TO STA. 548+63



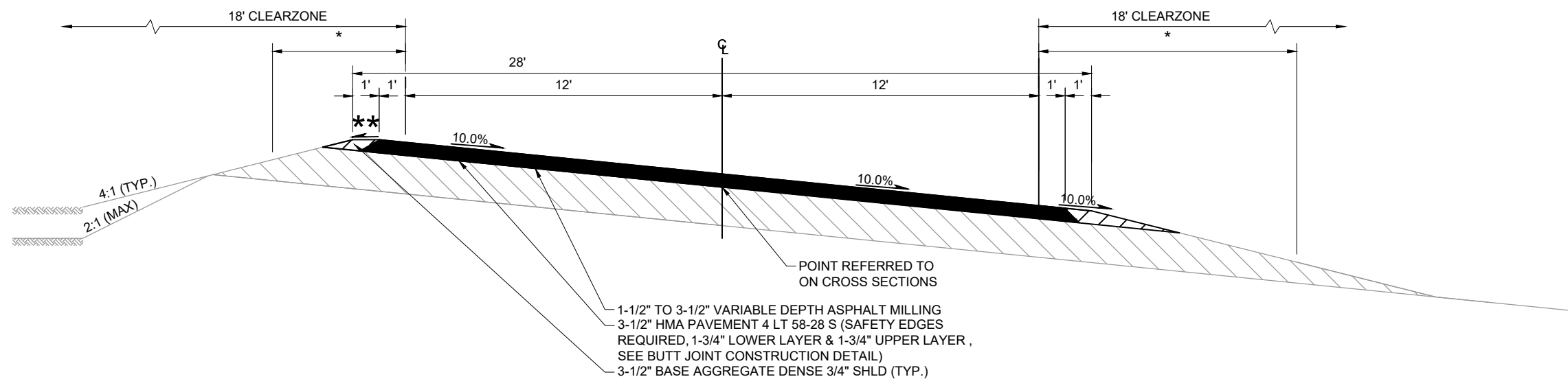
**STH 60 EXISTING SUPER-ELEVATED TYPICAL SECTION**  
SEE SUPER-ELEVATION TABLES FOR APPROPRIATE STATIONING



\*\* 8% MAXIMUM ROLL-OVER RATE

**STH 60 BUTT JOINT FINISHED TYPICAL SECTION**

STA. 0+93 TO STA. 1+93  
STA. 245+24 TO STA. 246+24  
STA. 246+94 TO STA. 247+94  
STA. 548+63 TO STA. 549+63

**STH 60 BUTT JOINT FINISHED TYPICAL SECTION**

STA. 392+49 TO STA. 393+49  
STA. 394+22 TO STA. 395+22

\* LIMITS OF PREPARE FOUNDATION  
FOR ASPHALTIC SHOULDERS

\*\* 8% MAXIMUM ROLL-OVER RATE

PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

TYPICAL SECTIONS

SHEET

6

E

FILE NAME : N:\PDS\C3D\56800430\SHEETSP\020301\_TS.DWG  
LAYOUT NAME - 03

PLOT DATE : 2/10/2020 11:25 AM

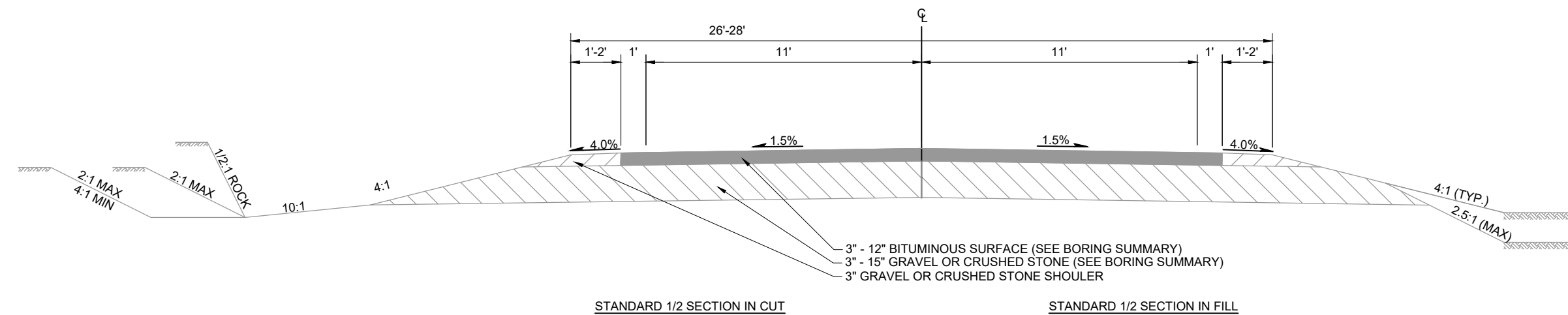
PLOT BY : SCHUMAKER, NATHANIEL

PLOT NAME :

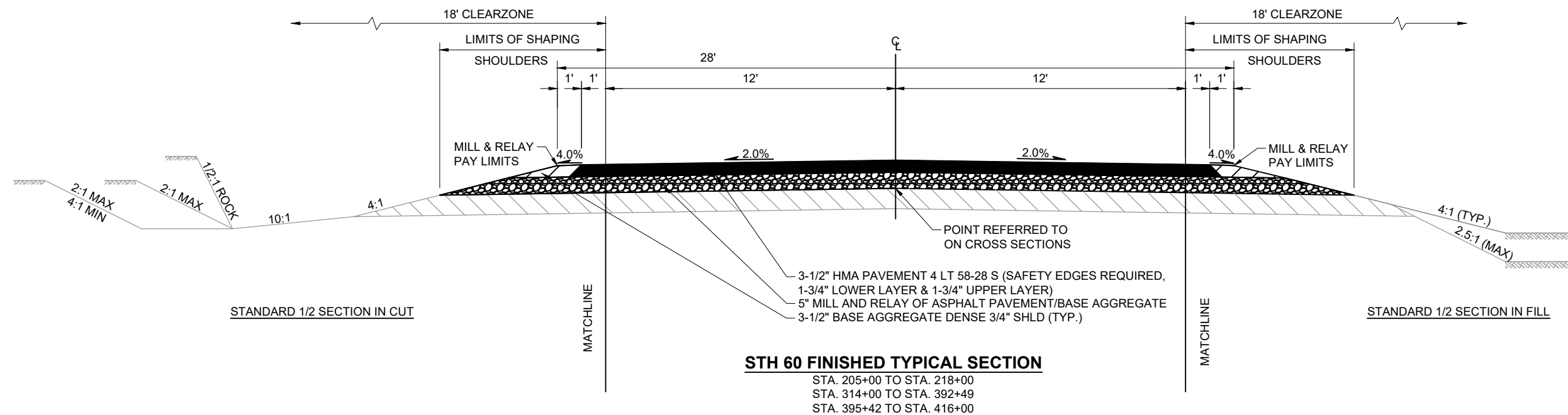
PLOT SCALE : 1 IN:5 FT

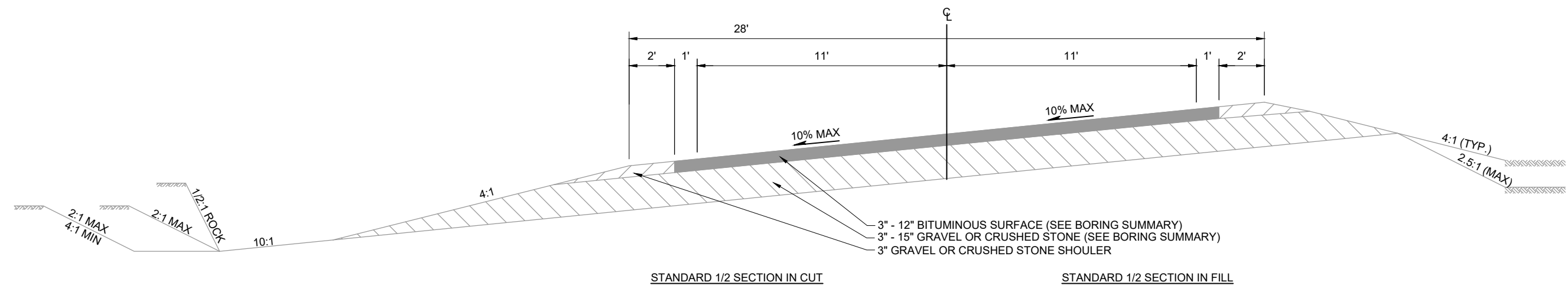
WISDOT/CADDs SHEET 42



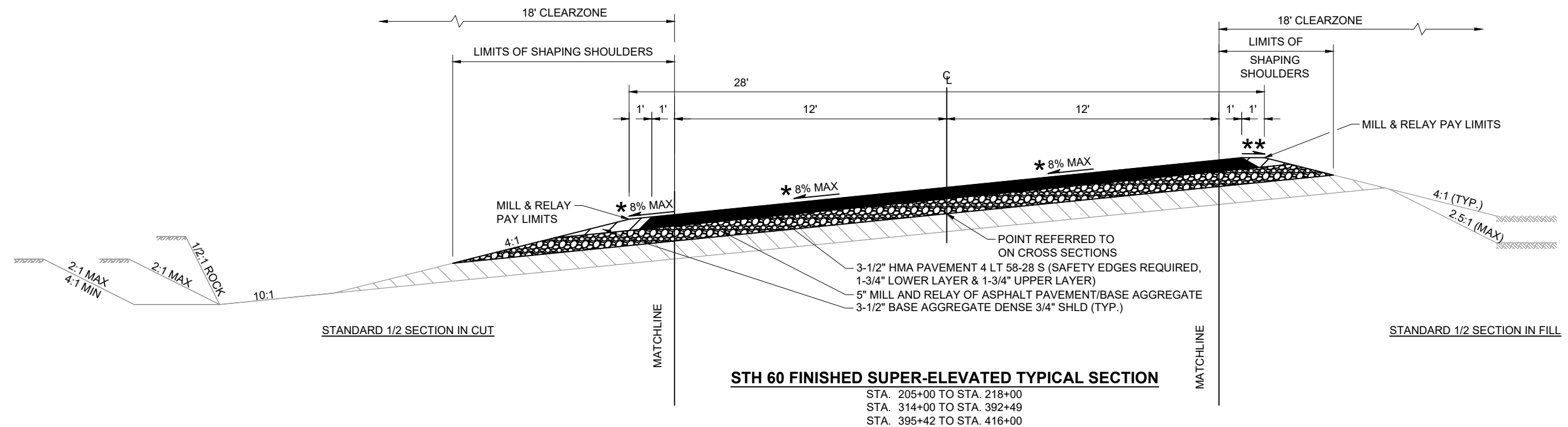
**STH 60 EXISTING TYPICAL SECTION**

STA. 205+00 TO STA. 218+00  
STA. 314+00 TO STA. 416+00



**STH 60 EXISTING SUPER-ELEVATED TYPICAL SECTION**

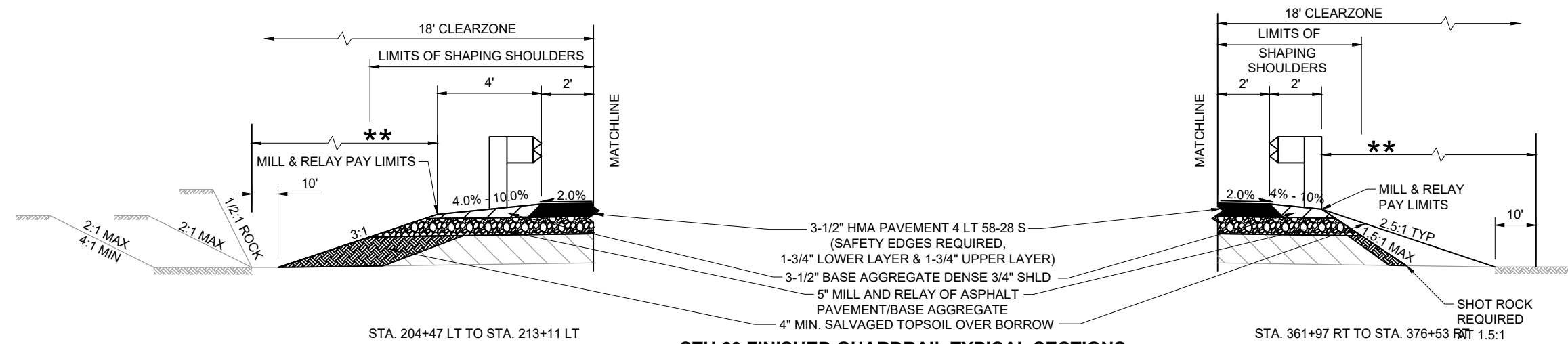
STA. 205+00 TO STA. 218+00  
STA. 314+00 TO STA. 416+00

**STH 60 FINISHED SUPER-ELEVATED TYPICAL SECTION**

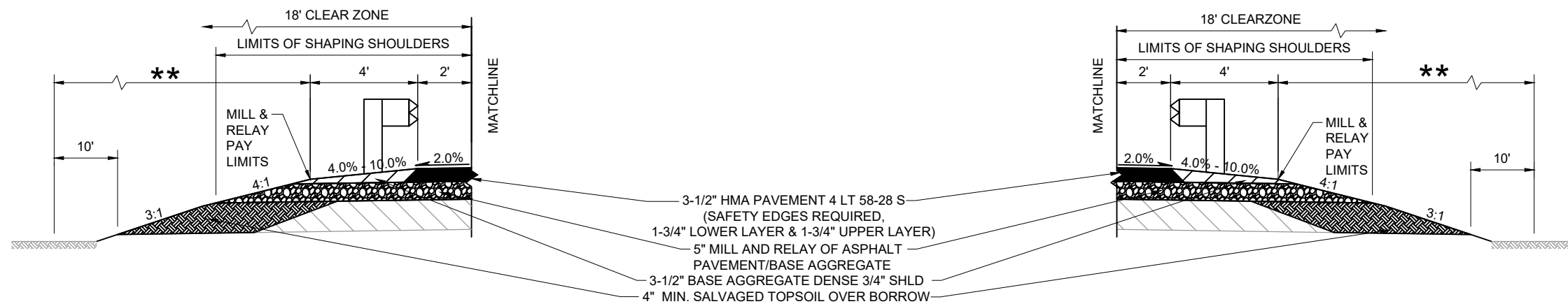
STA. 205+00 TO STA. 218+00  
STA. 314+00 TO STA. 392+49  
STA. 395+42 TO STA. 416+00

\* 10% SUPER-ELEVATION FROM  
STA. 392+43 TO STA. 395+98 TO  
MATCH B-56-0022.

\*\* 8% MAXIMUM ROLL-OVER RATE

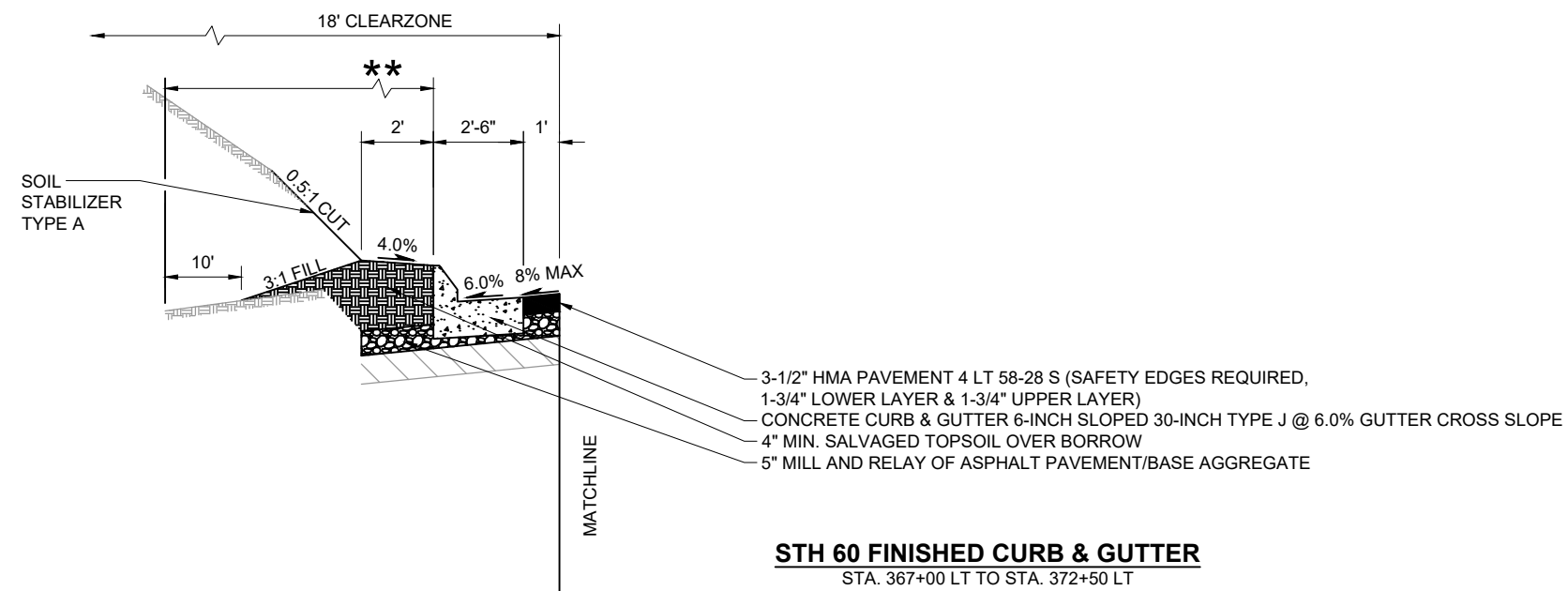


**STH 60 FINISHED GUARDRAIL TYPICAL SECTIONS**



**STH 60 FINISHED GUARDRAIL TYPICAL SECTIONS**

STA. 245+37 TO STA. 247+84  
STA. 392+67 TO STA. 395+07



**STH 60 FINISHED CURB & GUTTER**

STA. 367+00 LT TO STA. 372+50 LT

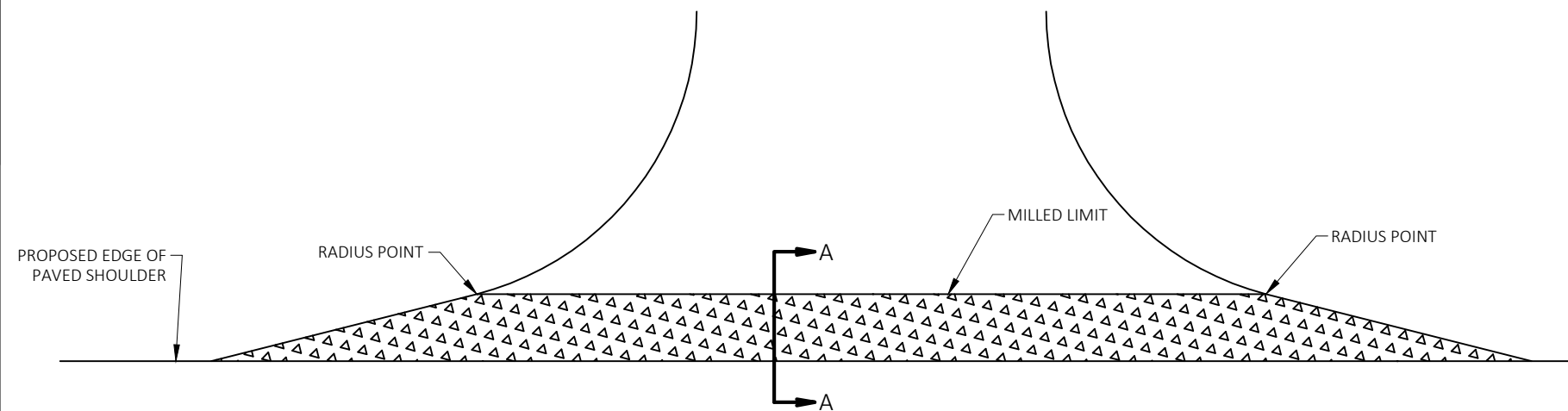
**\*\* LIMITS OF SEEDING, FERTILIZER, AND  
EMAT END 10 FEET BEYOND TOE OF  
SLOPE EXCEPT WHEN ADJACENT TO  
WATER.**

Boring Summary (Page 1 of 2)

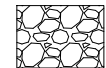
| BORING<br>NUMBER | LOG<br>MILE | STATION | OFFSET | EXISTING<br>ASPHALT<br>DEPTH | BASE<br>AGGREGATE<br>DEPTH | PAVEMENT<br>STRUCTURE<br>DEPTH | SUBGRADE<br>TYPE | COMMENT                    |
|------------------|-------------|---------|--------|------------------------------|----------------------------|--------------------------------|------------------|----------------------------|
|                  | 0.00        | 0+00    |        |                              |                            |                                |                  | STH 60/USH 14 INTERSECTION |
| B-1              | 0.11        | 5+81    | 6' RT  | 10"                          | 5"                         | 15"                            | SAND             |                            |
| B-2              | 0.35        | 18+48   | 9' RT  | 10"                          | 5"                         | 15"                            | SILT             |                            |
| B-3              | 0.55        | 29+04   | 6' LT  | 9"                           | 5"                         | 14"                            | SAND             |                            |
| B-4              | 0.79        | 41+71   | 5' LT  | 8.5"                         | 5.5"                       | 14"                            | SAND             |                            |
| B-5              | 1.00        | 52+80   | 9' LT  | 9"                           | 5"                         | 14"                            | SILT             |                            |
| B-6              | 1.24        | 65+47   | 6' RT  | 5"                           | 7"                         | 12"                            | SAND             |                            |
| B-7              | 1.46        | 77+09   | 9' RT  | 9"                           | 6"                         | 15"                            | SAND             |                            |
|                  | 1.56        | 82+37   |        |                              |                            |                                |                  | NEUHIESL ROAD              |
| B-8              | 1.68        | 88+70   | 5' RT  | 5"                           | 10"                        | 15"                            | SAND             |                            |
| B-9              | 1.93        | 101+90  | 6' RT  | 11"                          | -                          | 11"                            | SAND             |                            |
| B-10             | 2.19        | 115+63  | 6' LT  | 8.5"                         | 5"                         | 13.5"                          | SAND             |                            |
| B-11             | 2.42        | 127+78  | 9' LT  | 10"                          | 6"                         | 16"                            | SAND             |                            |
| B-12             | 2.69        | 142+03  | 5' LT  | 11"                          | 4"                         | 15"                            | SAND             |                            |
| B-13             | 2.87        | 151+54  | 6' RT  | 12"                          | 3"                         | 15"                            | SAND             |                            |
| B-14             | 3.08        | 162+62  | 9' RT  | 10"                          | -                          | 10"                            | SAND             |                            |
| B-15             | 3.29        | 173+71  | 5' RT  | 11"                          | 6"                         | 17"                            | SILT             |                            |
| B-16             | 3.53        | 186+38  | 4' LT  | 9.5"                         | 7"                         | 16.5"                          | SILT             |                            |
| B-17             | 3.80        | 200+64  | 9' RT  | 10"                          | 4"                         | 14"                            | SILT             |                            |
| B-18             | 3.99        | 210+67  | 6' LT  | 9.5"                         | 4"                         | 13.5"                          | SILT             |                            |
| B-19             | 4.25        | 224+40  | 9' LT  | 9.5"                         | -                          | 9.5"                           | SAND             |                            |
|                  | 4.28        | 225+98  |        |                              |                            |                                |                  | CTH C                      |
| B-20             | 4.46        | 235+49  | 6' RT  | 10"                          | 4"                         | 14"                            | SAND             |                            |
| B-21             | 4.71        | 248+69  | 9' RT  | 10"                          | 4"                         | 14"                            | SILT             |                            |
| B-22             | 4.92        | 259+78  | 5' RT  | 8"                           | 6"                         | 14"                            | SAND             |                            |
| B-23             | 5.14        | 271+39  | 6' LT  | 4.5"                         | 7.5"                       | 12"                            | SAND             |                            |
| B-24             | 5.32        | 280+90  | 8' LT  | 4.5"                         | 7"                         | 11.5"                          | SAND             |                            |
| B-25             | 5.52        | 291+46  | 4' LT  | 5.5"                         | 5"                         | 10.5"                          | SAND             |                            |
| B-26             | 5.73        | 302+54  | 6' RT  | 4"                           | 8"                         | 12"                            | SAND             |                            |
|                  | 5.92        | 312+58  |        |                              |                            |                                |                  | WILLIAMS ROAD              |

Boring Summary (Page 2 of 2)

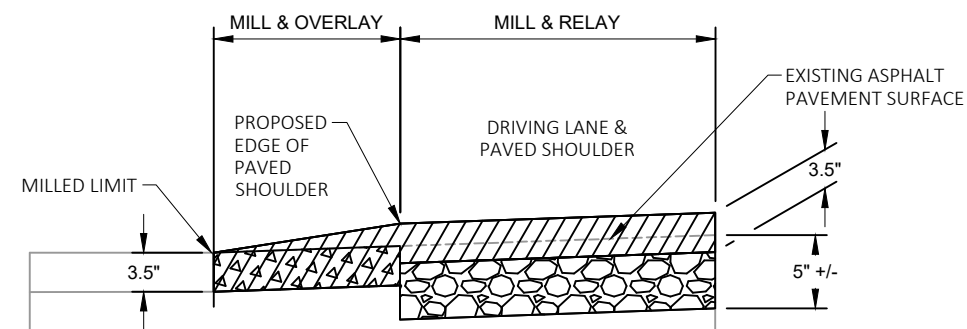
| BORING<br>NUMBER | LOG<br>MILE | STATION | OFFSET | EXISTING<br>ASPHALT<br>DEPTH | BASE<br>AGGREGATE<br>DEPTH | PAVEMENT<br>STRUCTURE<br>DEPTH | SUBGRADE<br>TYPE | COMMENT           |
|------------------|-------------|---------|--------|------------------------------|----------------------------|--------------------------------|------------------|-------------------|
| B-27             | 6.00        | 316+80  | 9' RT  | 10"                          | 3"                         | 13"                            | SAND             |                   |
| B-28             | 6.20        | 327+36  | 5' RT  | 11"                          | 4"                         | 15"                            | SILT             |                   |
| B-29             | 6.41        | 338+45  | 8' LT  | 8"                           | 6"                         | 14"                            | SAND             |                   |
| B-30             | 6.61        | 349+01  | 6' LT  | 8.5"                         | 3.5"                       | 12"                            | SAND             |                   |
| B-31             | 6.83        | 360+62  | 5' LT  | 12"                          | 4"                         | 16"                            | SILT             |                   |
| B-32             | 7.05        | 372+24  | 6' RT  | 5"                           | 7"                         | 12"                            | SAND             |                   |
|                  | 7.18        | 379+10  |        |                              |                            |                                |                  | TROY VILLAGE ROAD |
| B-33             | 7.26        | 383+33  | 9' RT  | 5"                           | 7"                         | 12"                            | SAND             |                   |
|                  | 7.52        | 397+06  |        |                              |                            |                                |                  | BADGER ROAD       |
| B-34             | 7.56        | 399+17  | 5' RT  | 5.5"                         | 6"                         | 11.5"                          | SAND             |                   |
| B-35             | 7.77        | 410+26  | 6' LT  | 5"                           | 12"                        | 17"                            | SAND             |                   |
| B-36             | 7.99        | 421+87  | 9' LT  | 5"                           | 7"                         | 12"                            | SAND             |                   |
| B-37             | 8.21        | 433+49  | 5' LT  | 5"                           | 7"                         | 12"                            | SAND             |                   |
| B-38             | 8.45        | 446+16  | 12' RT | 10"                          | 6"                         | 16"                            | SAND             |                   |
|                  | 8.53        | 450+38  |        |                              |                            |                                |                  | ROUND RIVER ROAD  |
| B-39             | 8.67        | 457+78  | 6' RT  | 6"                           | 7"                         | 13"                            | SAND             |                   |
| B-40             | 8.93        | 471+50  | 9' RT  | 7"                           | 2"                         | 9"                             | SAND             |                   |
| B-41             | 9.14        | 482+59  | 5' RT  | 11"                          | 3"                         | 14"                            | SAND             |                   |
| B-42             | 9.37        | 494+74  | 6' LT  | 10"                          | 4"                         | 14"                            | SILT             |                   |
| B-43             | 9.58        | 505+82  | 9' LT  | 7"                           | 5"                         | 12"                            | SAND             |                   |
| B-44             | 9.82        | 518+50  | 5' LT  | 7"                           | 7"                         | 14"                            | SILT             |                   |
|                  | 9.92        | 523+78  |        |                              |                            |                                |                  | FOX ROAD          |
| B-45             | 10.06       | 531+17  | 6' RT  | 7.5"                         | 5"                         | 12.5"                          | SAND             |                   |



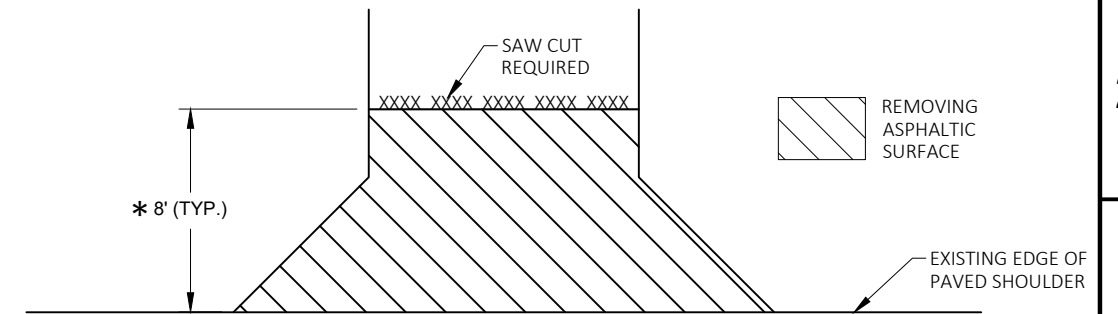
## LEGEND

REMOVING  
ASPHALTIC  
SURFACE  
MILLING (3.5")MILLED AND  
RELAID ASPHALT  
PAVEMENT  
BASEHMA PAVEMENT  
4 LT 58-28S

## INTERSECTION MILLING LIMITS DETAIL



## SECTION A-A

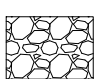
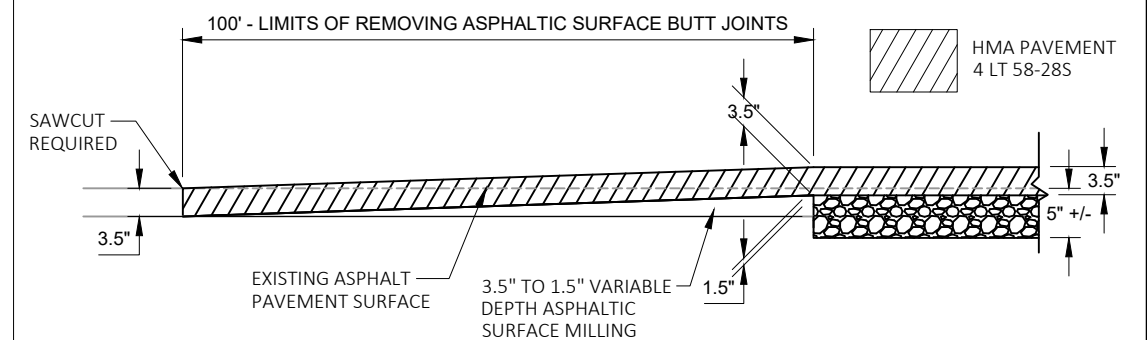


## ASPHALT DRIVEWAY REMOVAL DETAIL

MATCH EXISTING DRIVEWAY LIMITS AND EDGE RADII.

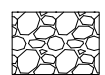
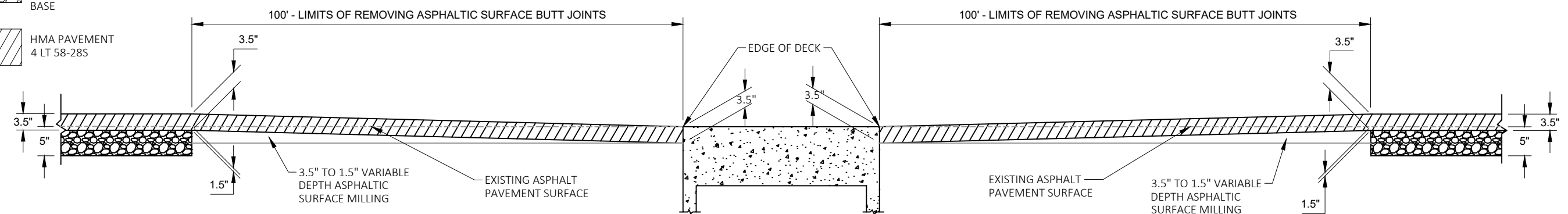
\* SETBACK MAY NEED TO BE DETERMINED BY THE ENGINEER  
IN THE FIELD TO CONNECT EXISTING DRIVEWAYS TO  
EXPANDED PROPOSED EDGE OF SHOULDER.

## LEGEND

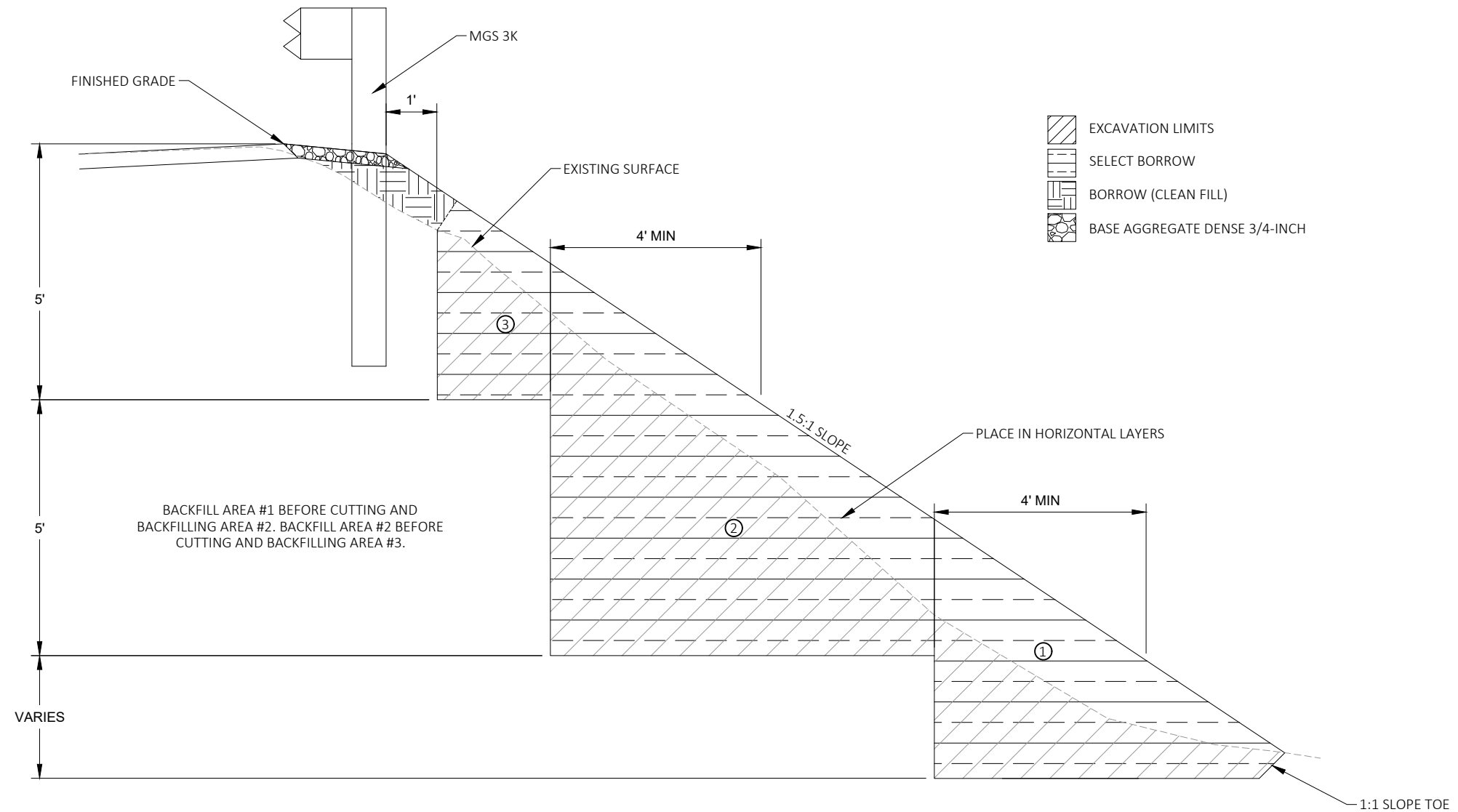
MILLED AND  
RELAID ASPHALT  
PAVEMENT  
BASEHMA PAVEMENT  
4 LT 58-28S

## CENTERLINE PROFILE BUTT JOINT REQUIRED AT BEGINNING &amp; END PROJECT LIMITS

## LEGEND

MILLED AND  
RELAID ASPHALT  
PAVEMENT  
BASEHMA PAVEMENT  
4 LT 58-28S

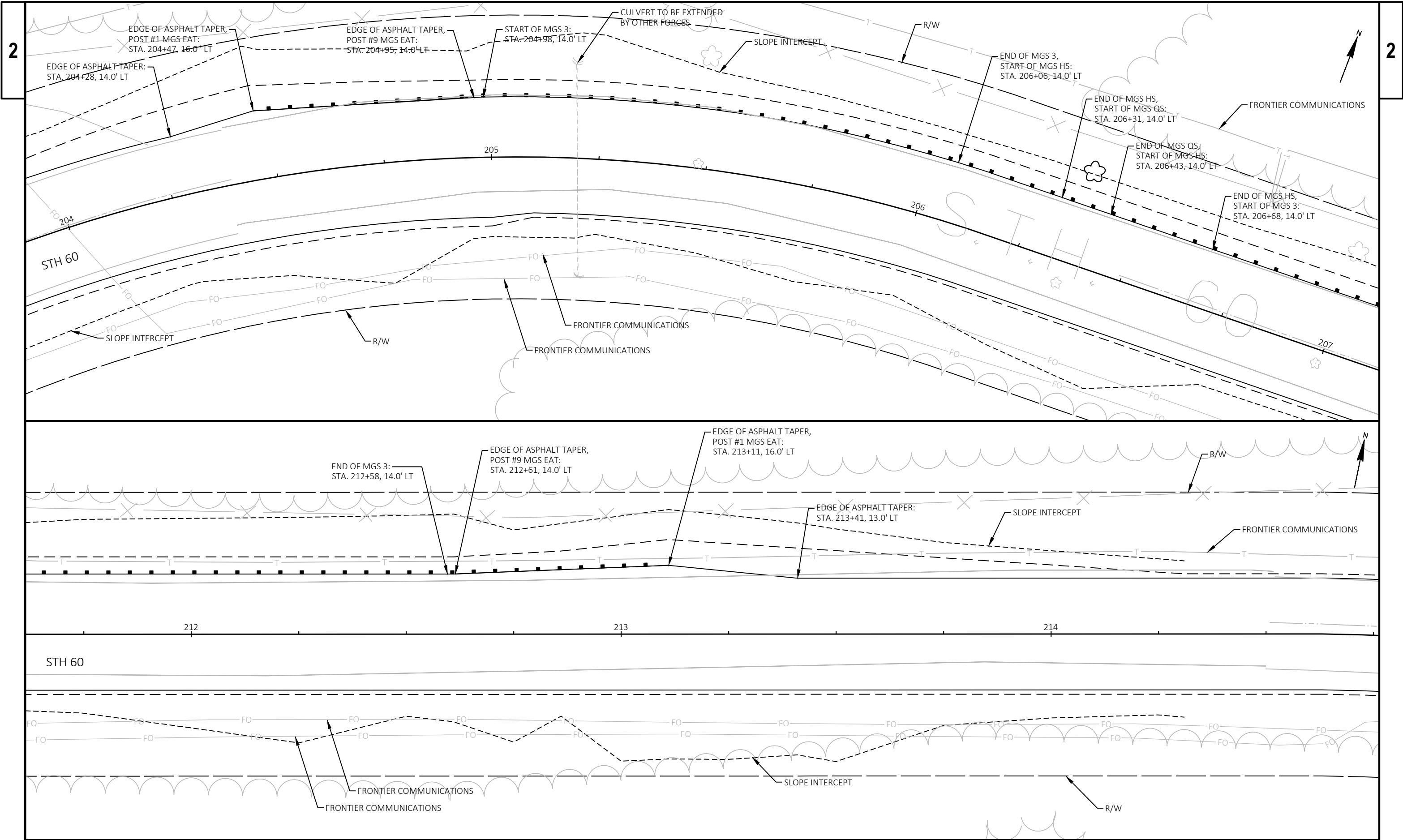
## CENTERLINE PROFILE BUTT JOINT AT STRUCTURES

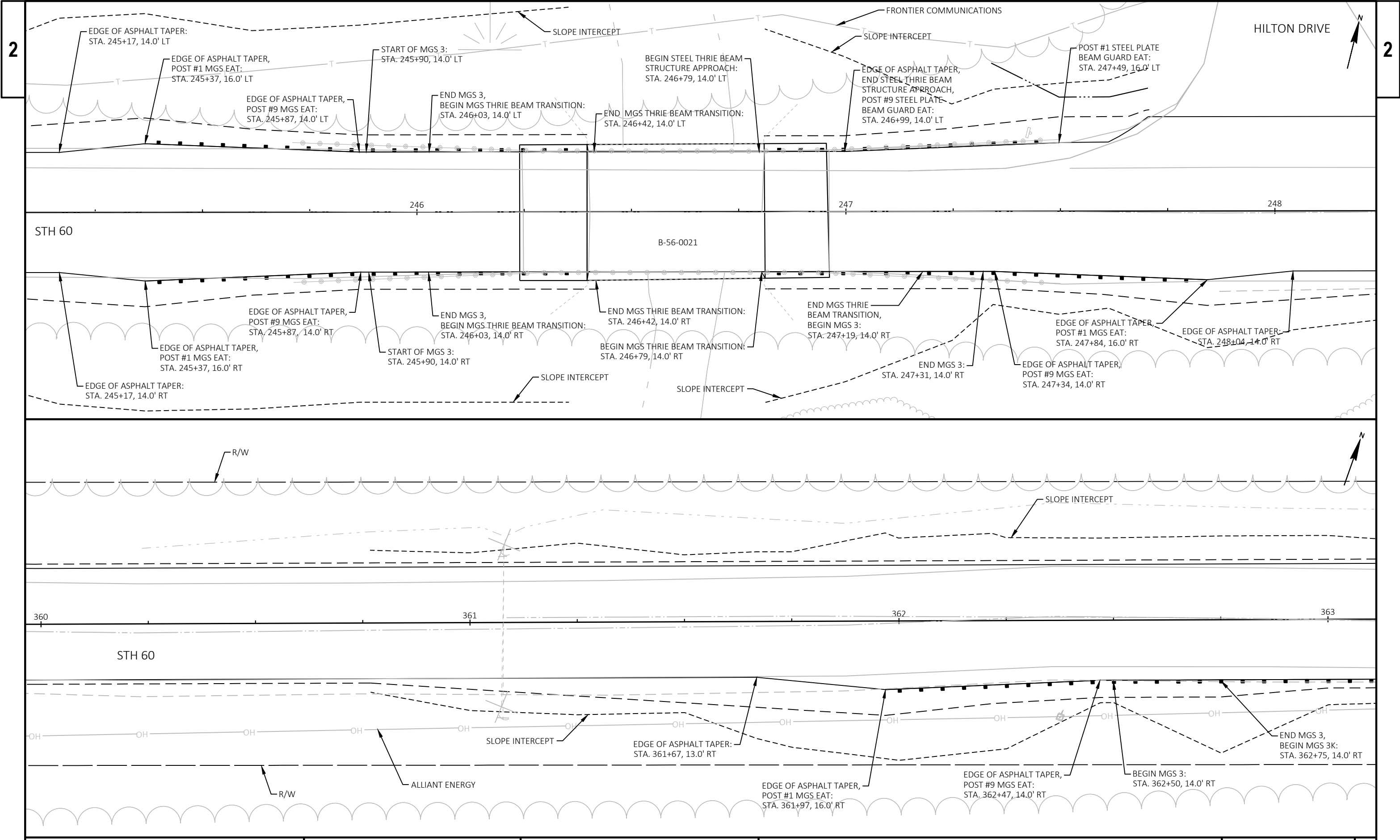


#### SELECT BORROW BACKFILLING DETAIL

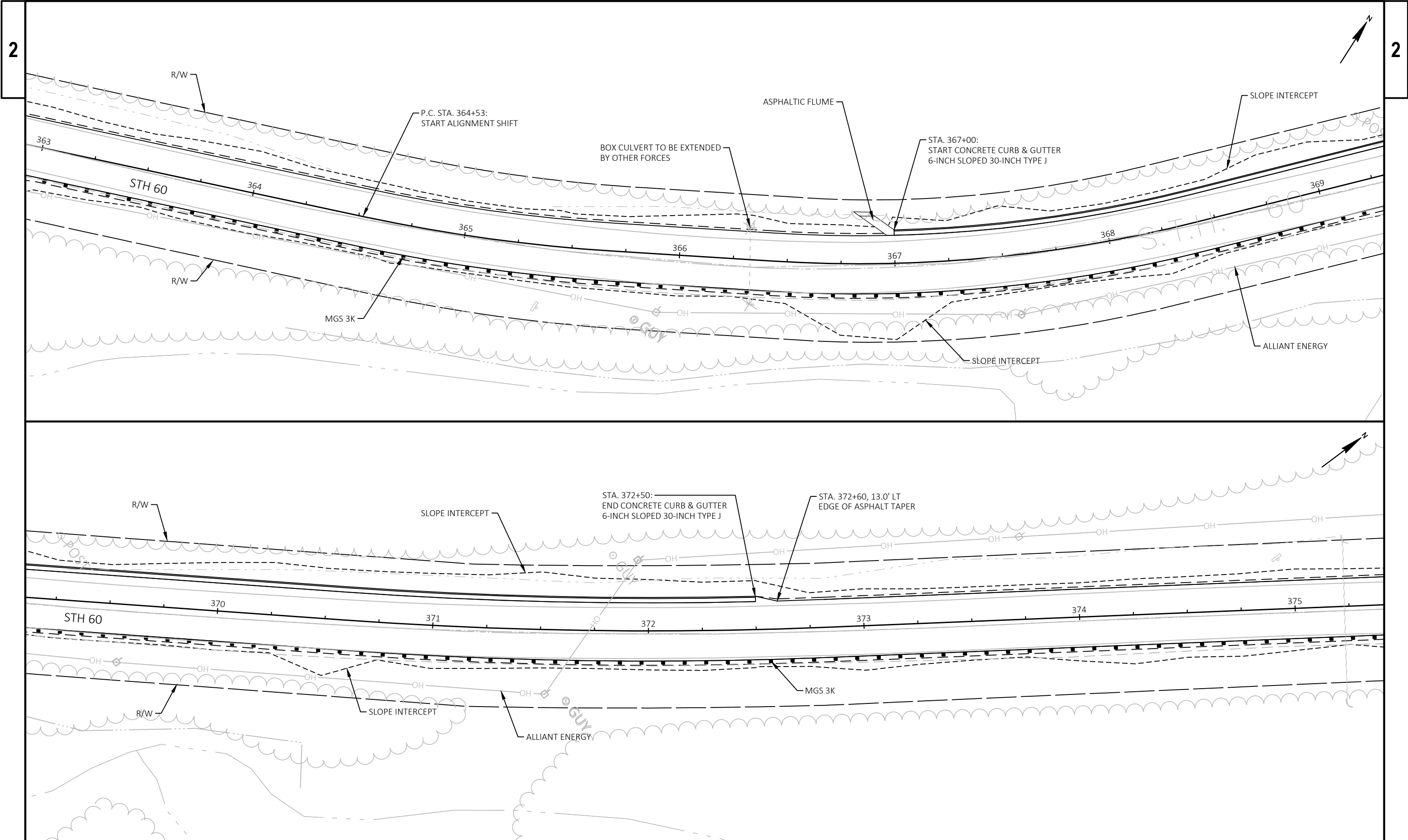
STA. 366+00 TO STA. 370+00  
STA. 371+50 TO STA. 373+25

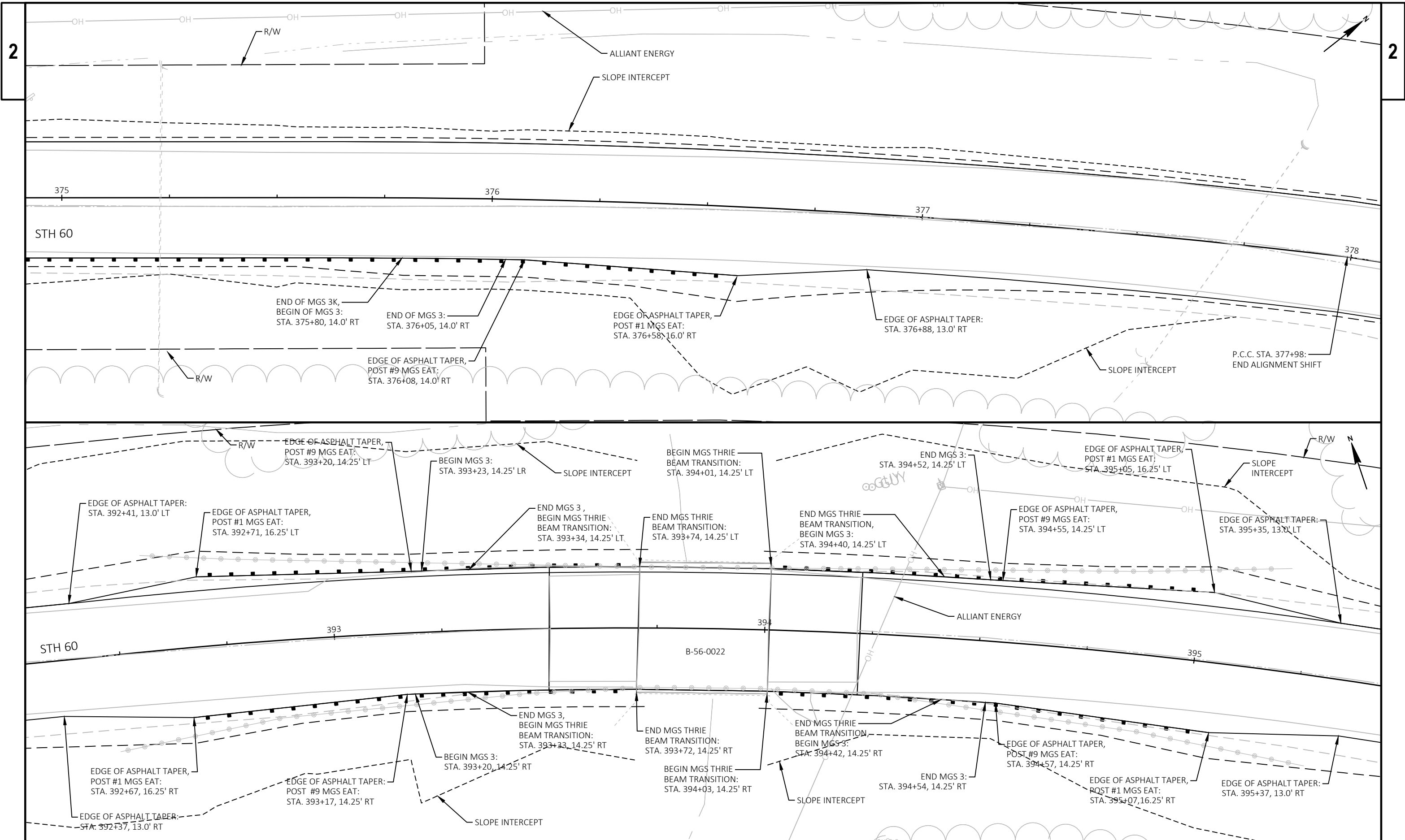






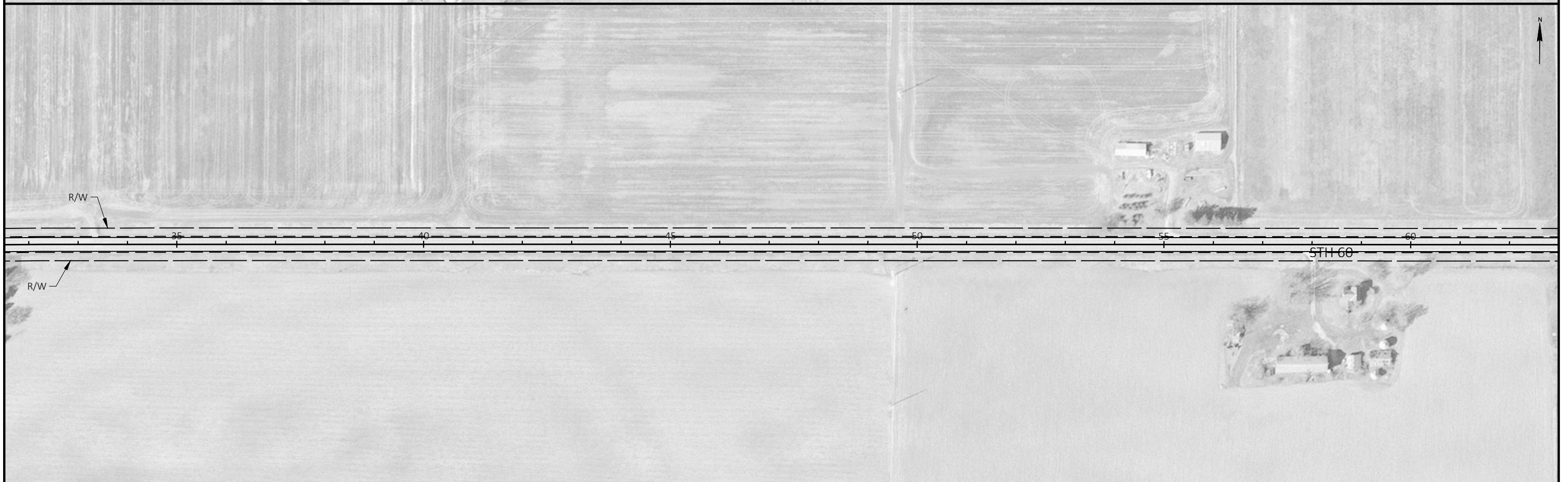








\*FINAL LOCATIONS OF W14-3 "NO PASSING ZONE" SIGNS TO BE DETERMINED AFTER LOCATING OF NO PASSING ZONES IS COMPLETED.



PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

PLAN DETAILS

SHEET

17

E

FILE NAME : N:\PDS\C3D\56800430\SHEETSPLAN\021201\_PD.DWG  
LAYOUT NAME - 01

PLOT DATE : 10/9/2019 8:00 AM

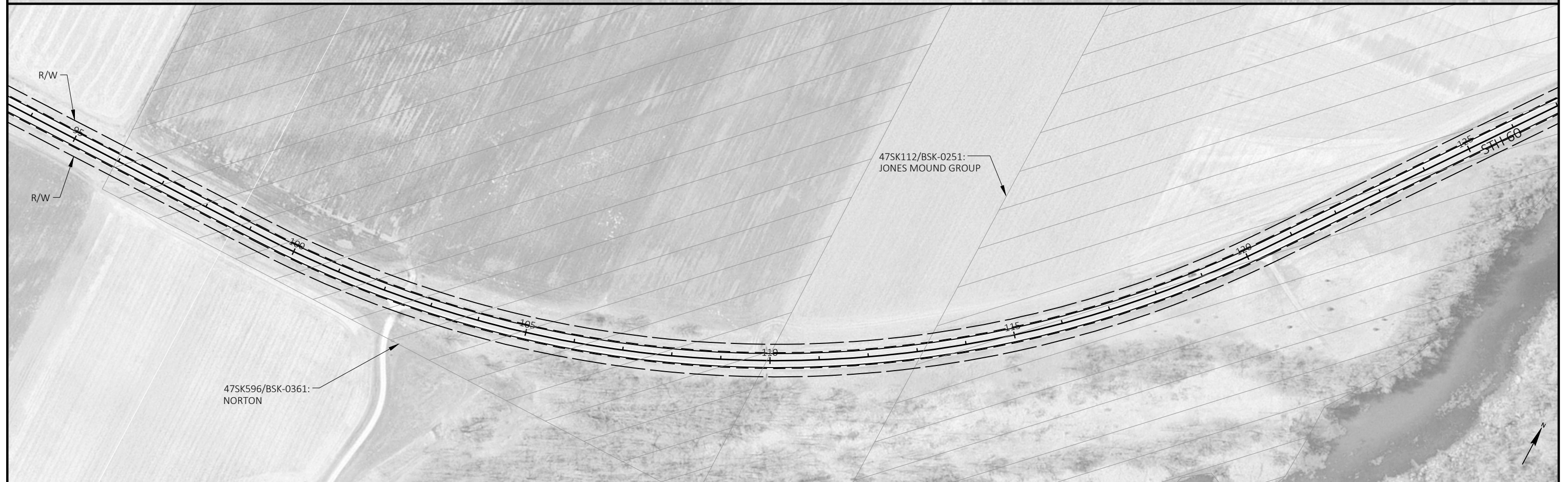
PLOT BY : SCHUMAKER, NATHANIEL

PLOT NAME :

PLOT SCALE : 1 IN:200 FT

WISDOT/CADDs SHEET 44





PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

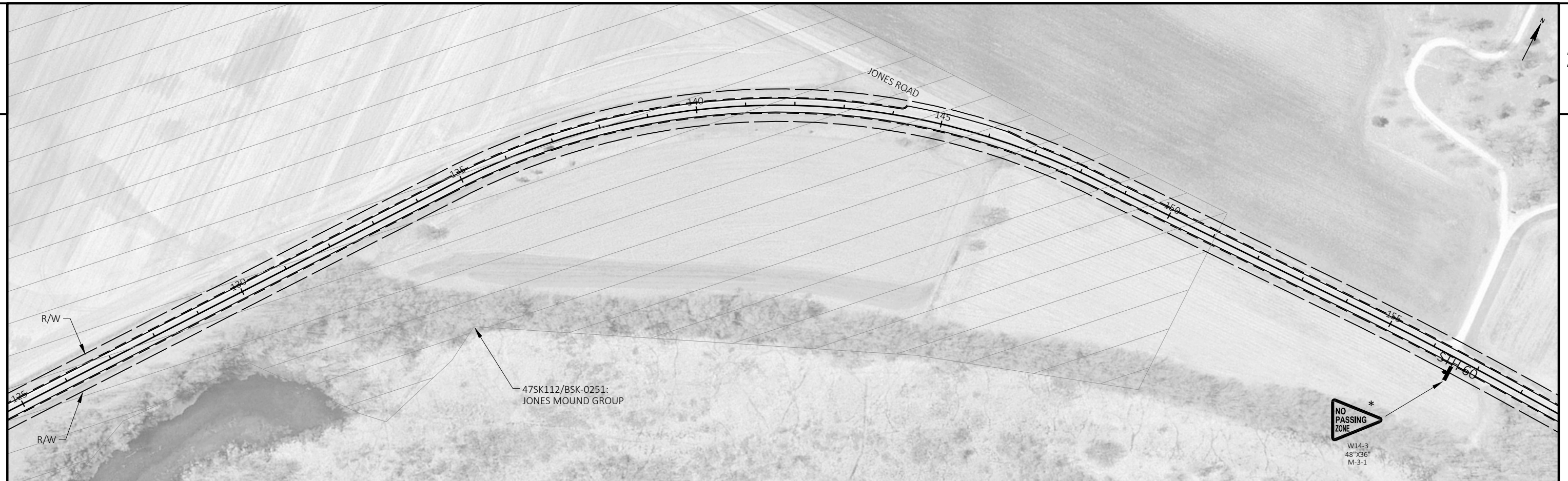
PLAN DETAILS

SHEET

18

E





PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

PLAN DETAILS

SHEET

19

E

FILE NAME : N:\PDS\C3D\56800430\SHEETSPLAN\021201\_PD.DWG  
LAYOUT NAME - 03

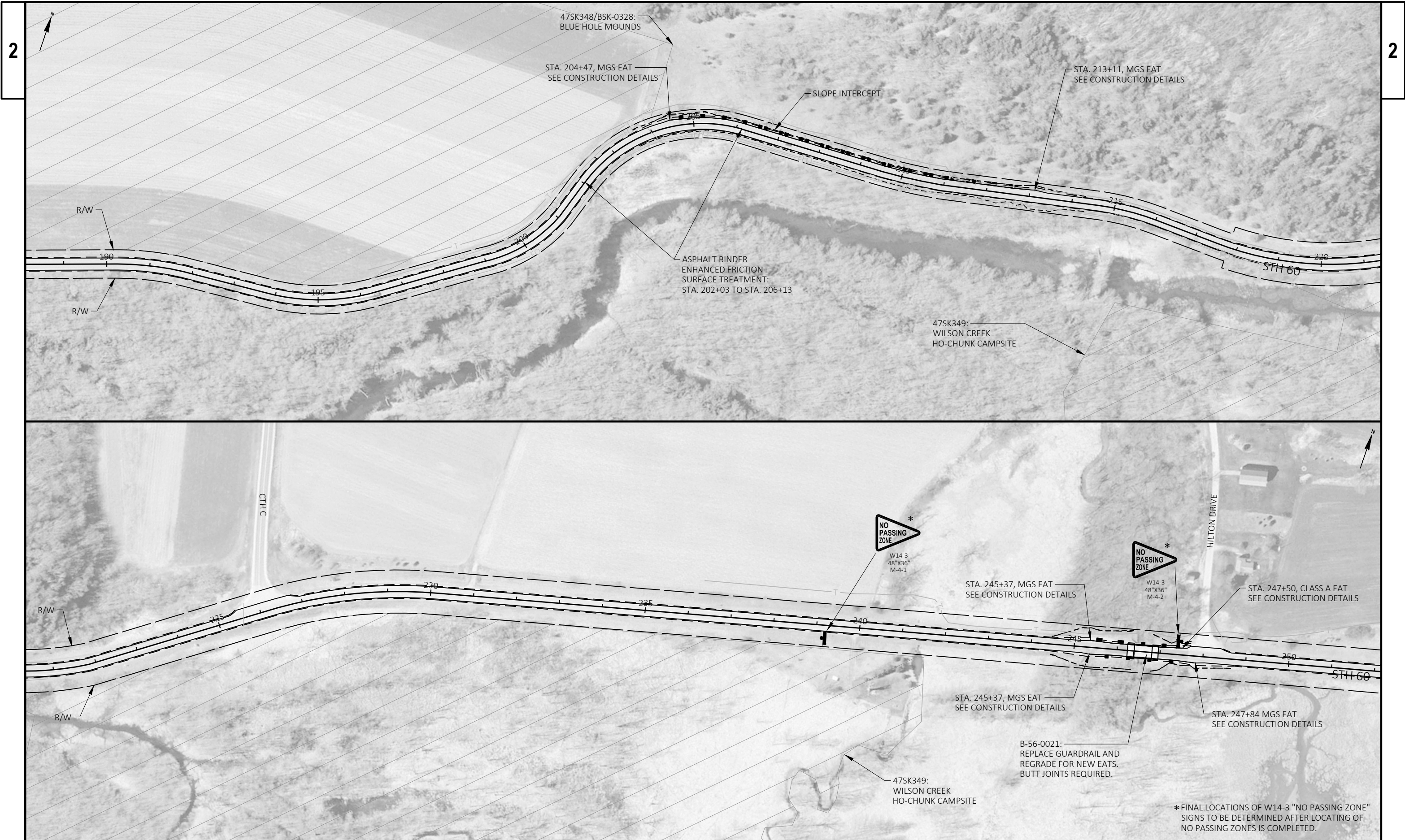
PLOT DATE : 10/9/2019 8:00 AM

PLOT BY : SCHUMAKER, NATHANIEL PLOT NAME :

PLOT SCALE : 1 IN:200 FT

WISDOT/CADDs SHEET 44









PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

PLAN DETAILS

SHEET

21

E

FILE NAME : N:\PDS\C3D\56800430\SHEETSP\021201\_PD.DWG  
LAYOUT NAME - 05

PLOT DATE : 10/9/2019 8:00 AM

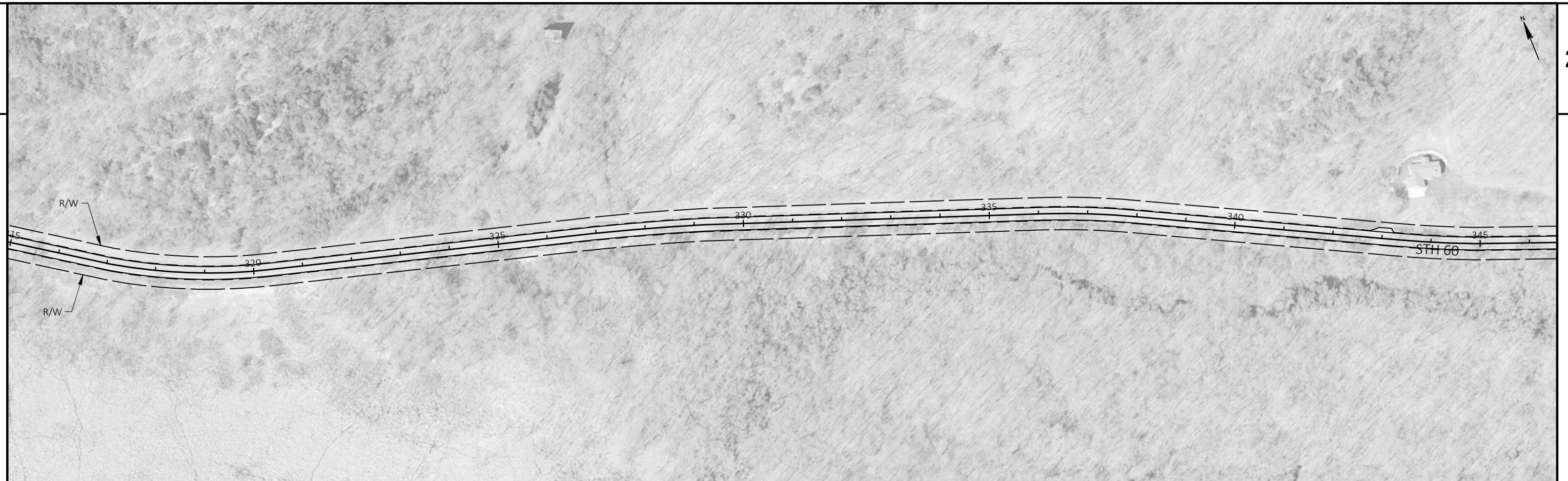
PLOT BY : SCHUMAKER, NATHANIEL

PLOT NAME :

PLOT SCALE : 1 IN=200 FT

WISDOT/CADDs SHEET 44





PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

PLAN DETAILS

SHEET

22

E

FILE NAME : N:\PDS\C3D\56800430\SHEETS\PLAN\021201\_PD.DWG  
LAYOUT NAME - 06

PLOT DATE : 10/9/2019 8:00 AM

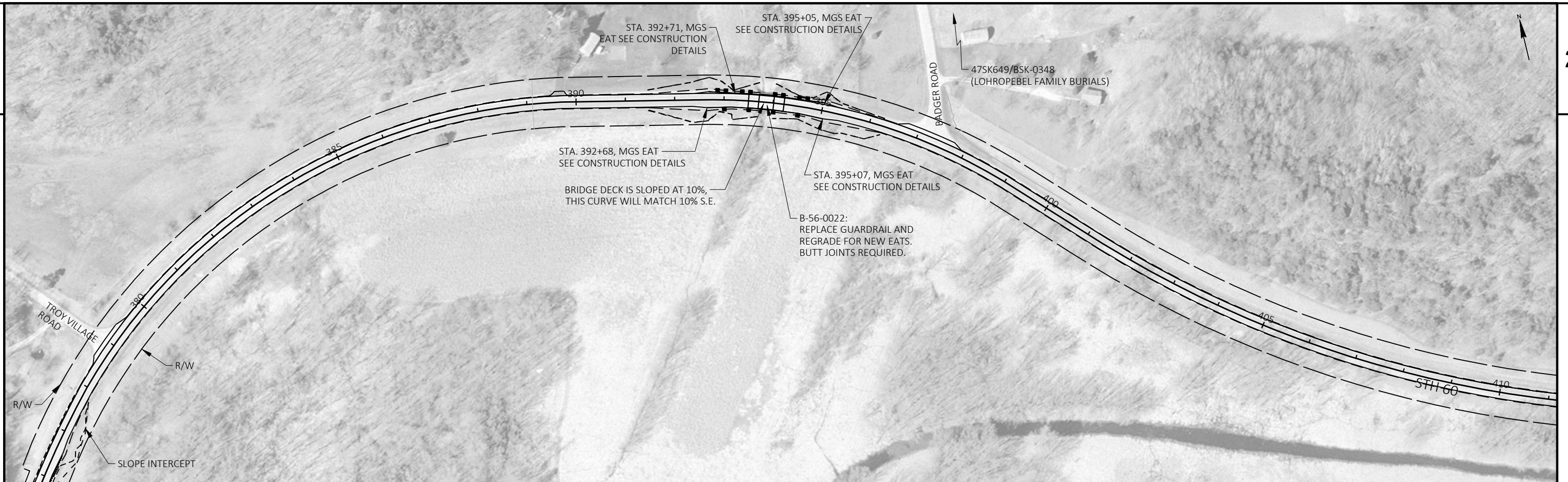
PLOT BY : SCHUMAKER, NATHANIEL

PLOT NAME :

PLOT SCALE : 1 IN:200 FT

WISDOT/CADDs SHEET 44





PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

PLAN DETAILS

SHEET

23

E

FILE NAME : N:\PDS\C3D\56800430\SHEETSPLAN\021201\_PD.DWG  
LAYOUT NAME - 07

PLOT DATE : 10/9/2019 8:00 AM

PLOT BY : SCHUMAKER, NATHANIEL

PLOT NAME :

PLOT SCALE : 1 IN:200 FT

WISDOT/CADDs SHEET 44









PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

PLAN DETAILS

SHEET

25

E

FILE NAME : N:\PDS\C3D\56800430\SHEETSPLAN\021201\_PD.DWG  
LAYOUT NAME - 09

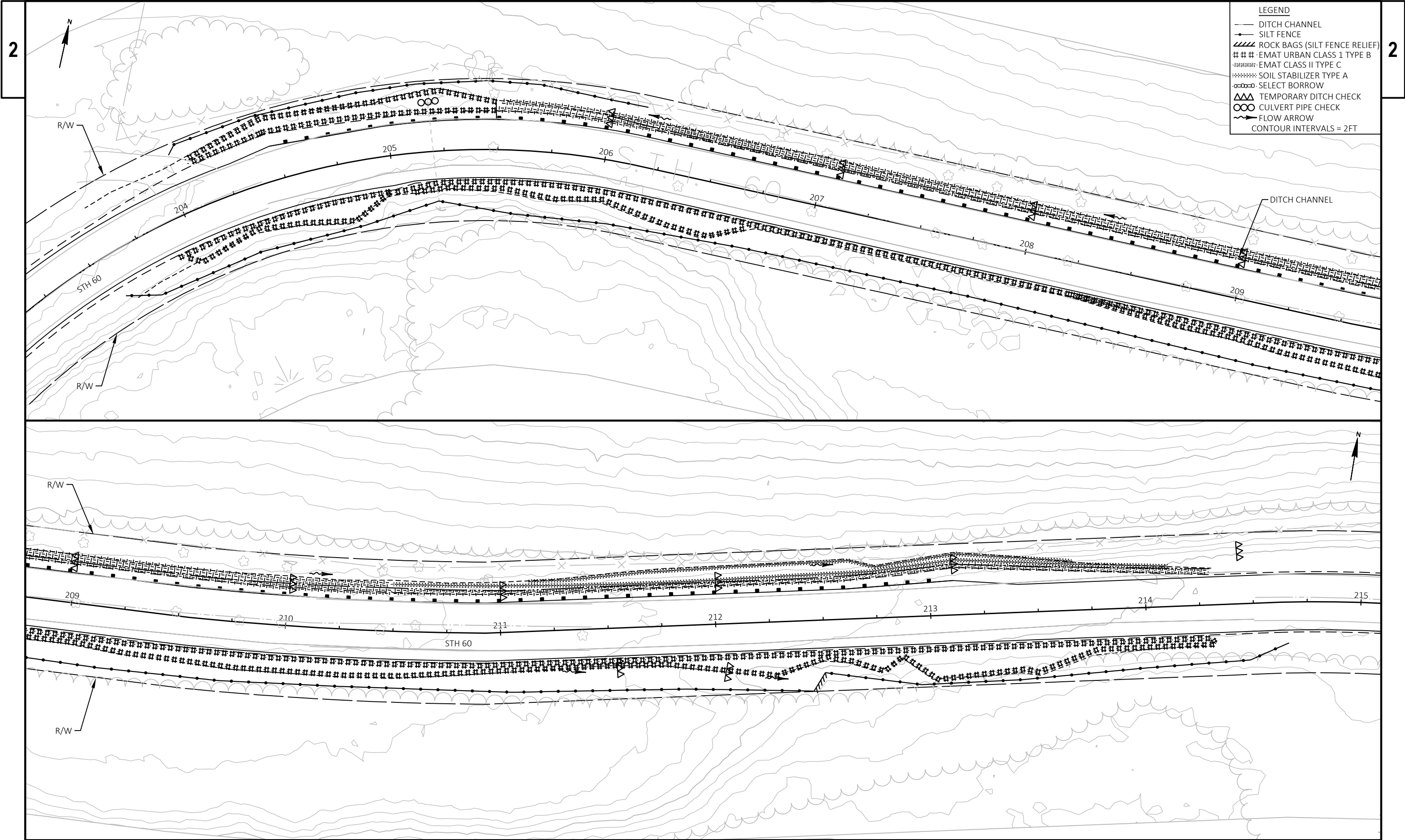
PLOT DATE : 10/9/2019 8:00 AM

PLOT BY : SCHUMAKER, NATHANIEL

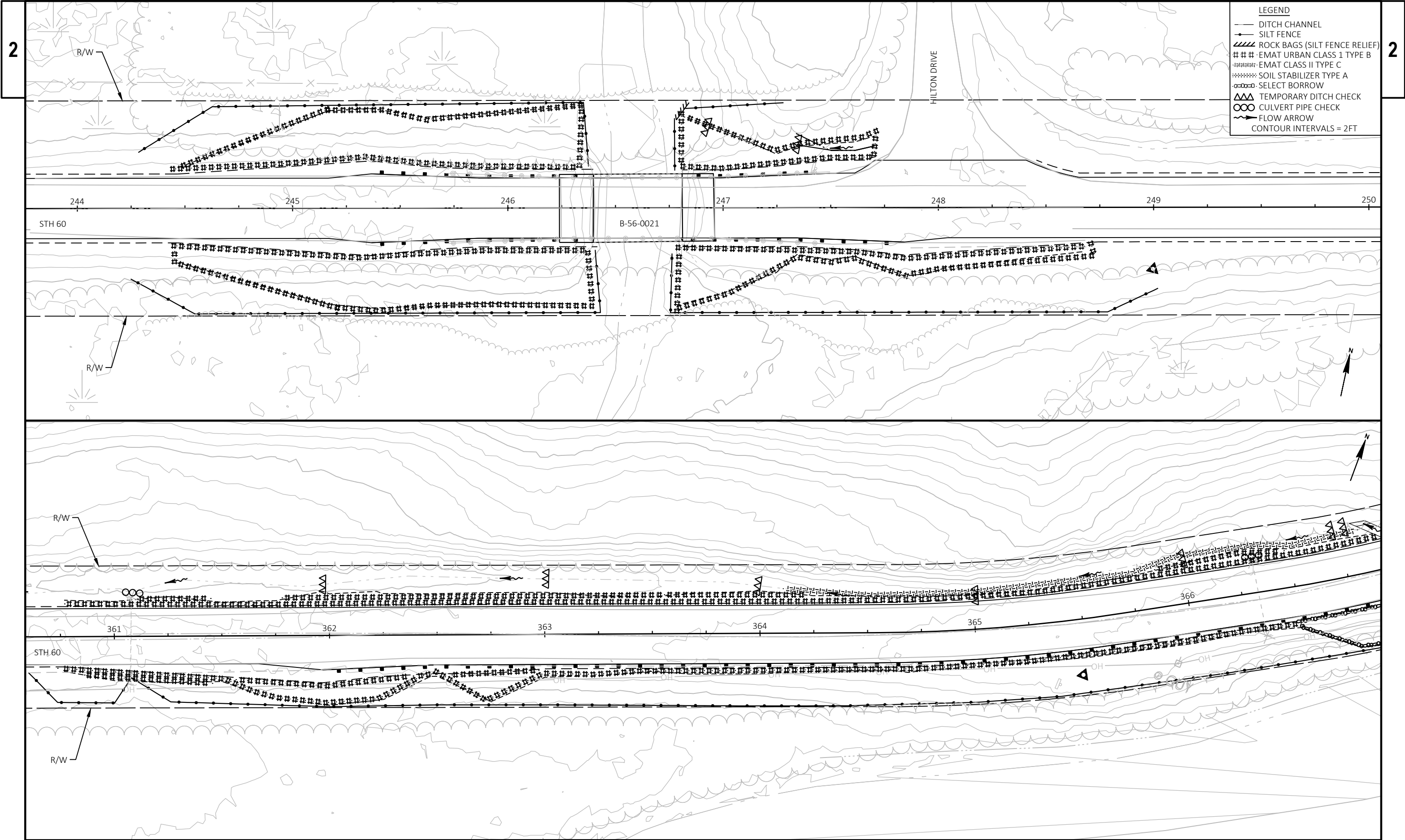
PLOT NAME :

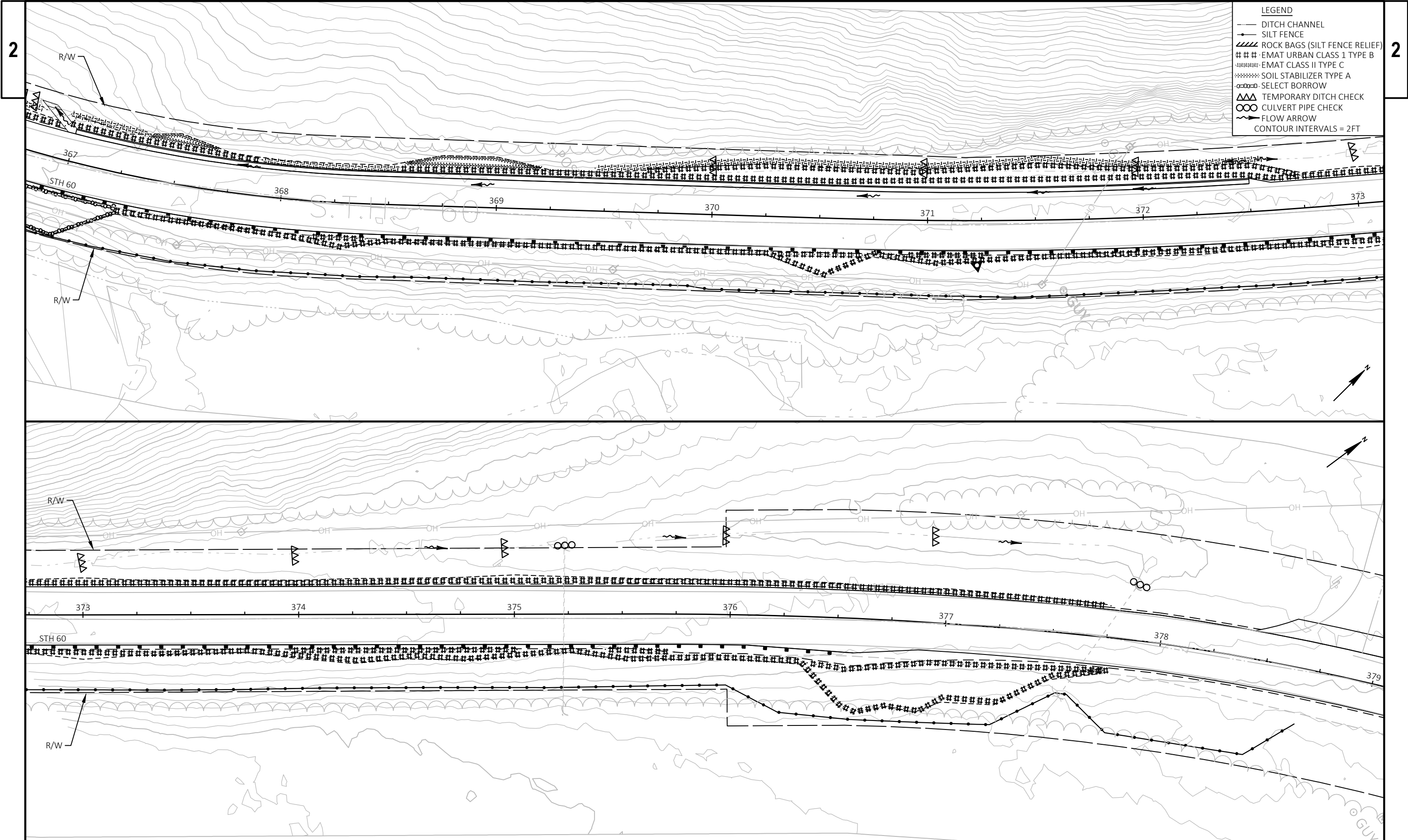
PLOT SCALE : 1 IN:200 FT

WISDOT/CADDs SHEET 44

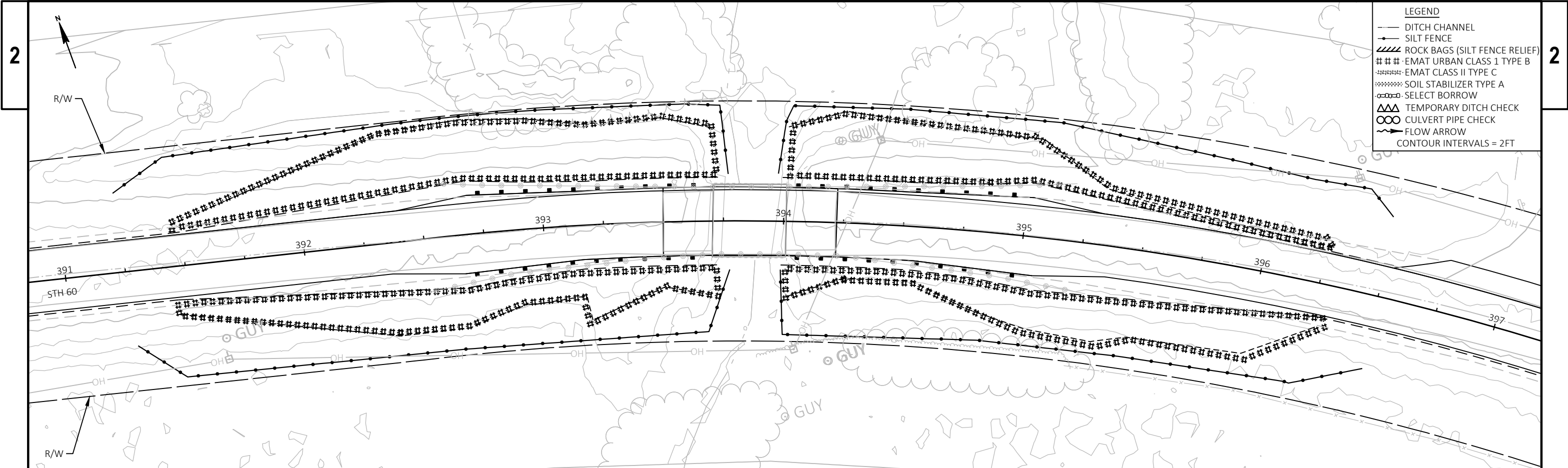




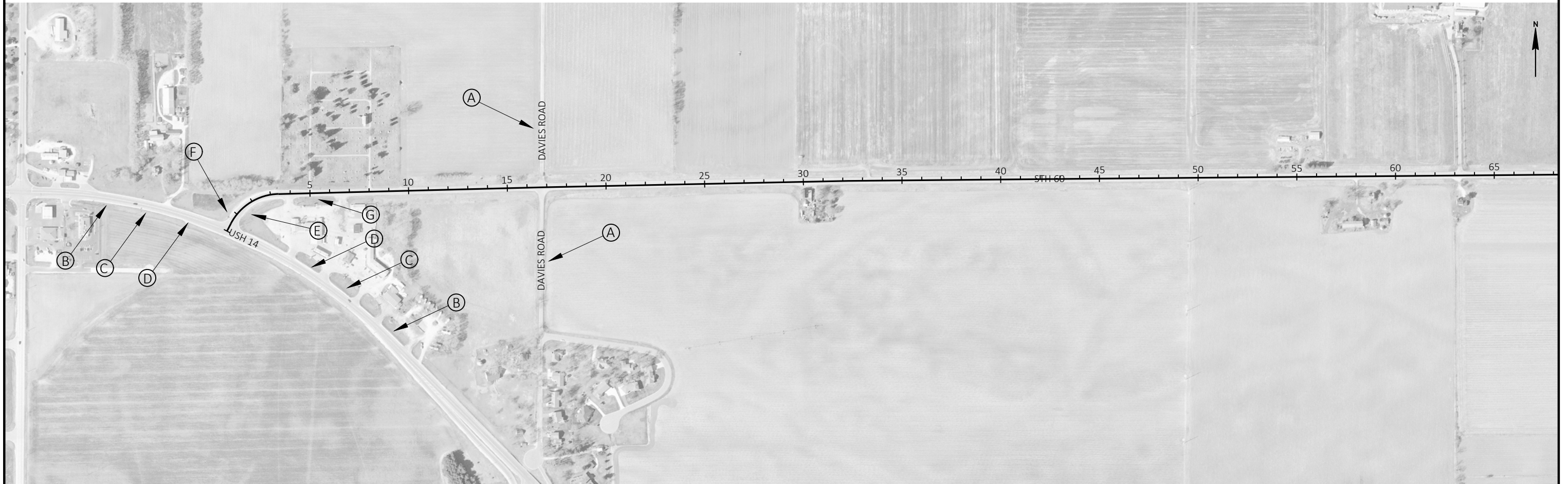
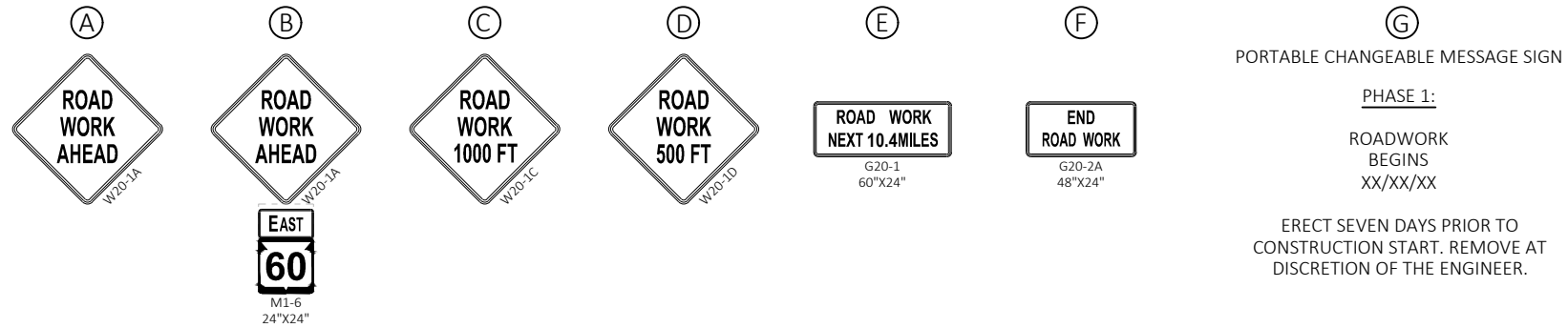




- LEGEND
- DITCH CHANNEL
  - SILT FENCE
  - ROCK BAGS (SILT FENCE RELIEF)
  - EMAT URBAN CLASS 1 TYPE B
  - EMAT CLASS II TYPE C
  - SOIL STABILIZER TYPE A
  - SELECT BORROW
  - TEMPORARY DITCH CHECK
  - CULVERT PIPE CHECK
  - FLOW ARROW
  - CONTOUR INTERVALS = 2FT







SIGN LOCATIONS ARE NOT TO SCALE. REFER TO  
STANDARD DETAIL DRAWING 15 C4: TRAFFIC CONTROL,  
ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER,  
TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC.



SIGN LOCATIONS ARE NOT TO SCALE. REFER TO  
STANDARD DETAIL DRAWING 15 C4: TRAFFIC CONTROL,  
ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER,  
TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC.  
ENSURE SIGN LOCATIONS ARE VISIBLE WITHIN  
HORIZONTAL CURVES LOCATIONS.

PI STA = 2+07.59  
Y = 134987.164  
X = 563767.129  
DELTA = 60°45'21"  
D = 10°13'53"  
T = 164.13'  
L = 296.91'  
R = 280.00'  
PC STA = 0+43.46  
PT STA = 3+40.37  
S.E. = 1.8%, REGION #1

PT: 3+40.37

DAVIES ROAD

PT: 16+75.10

PI STA = 16+75.10  
Y = 135025.178  
X = 565265.508

DAVIES ROAD

STH 60

PC: 0+43.46

USH 14

START OF STH 60 ALIGNMENT:  
STA. 0+00.00  
Y = 134803.516  
X = 563670.340



PI: 32+26.79

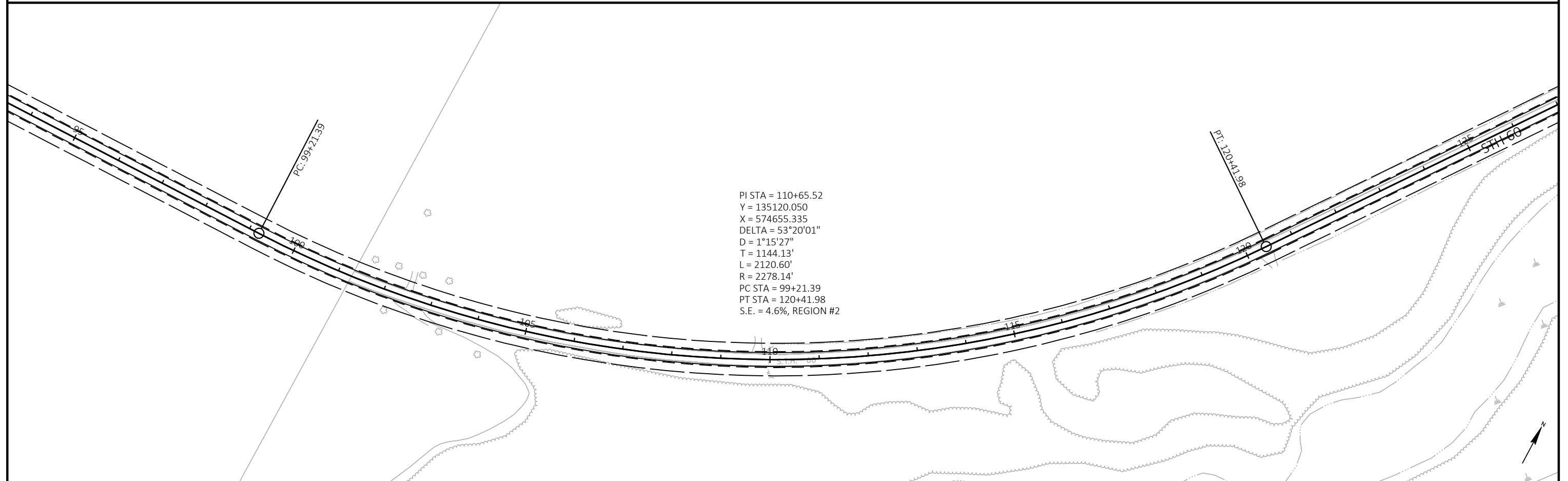
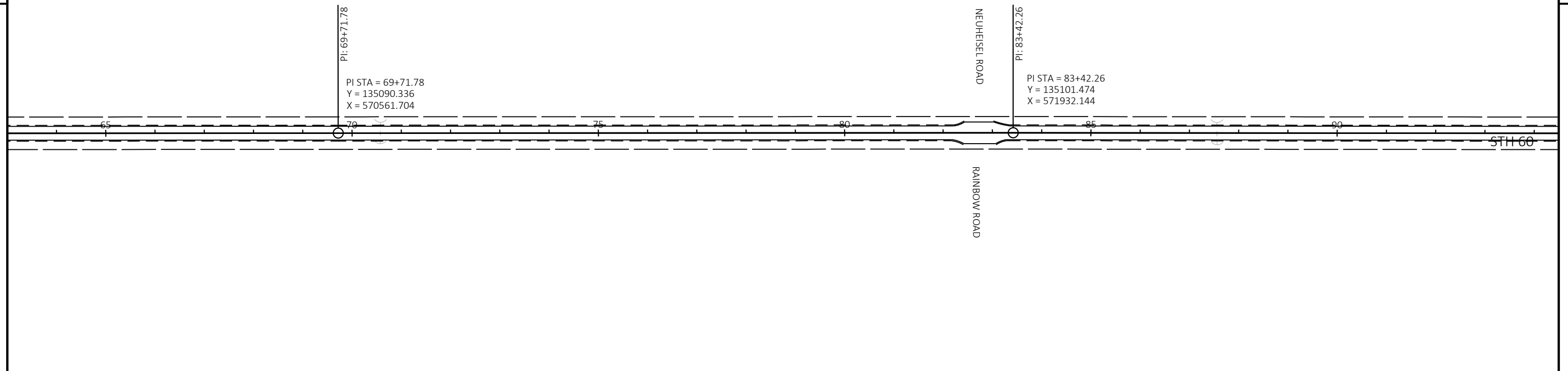
PI STA = 32+26.79  
Y = 135057.411  
X = 566816.858

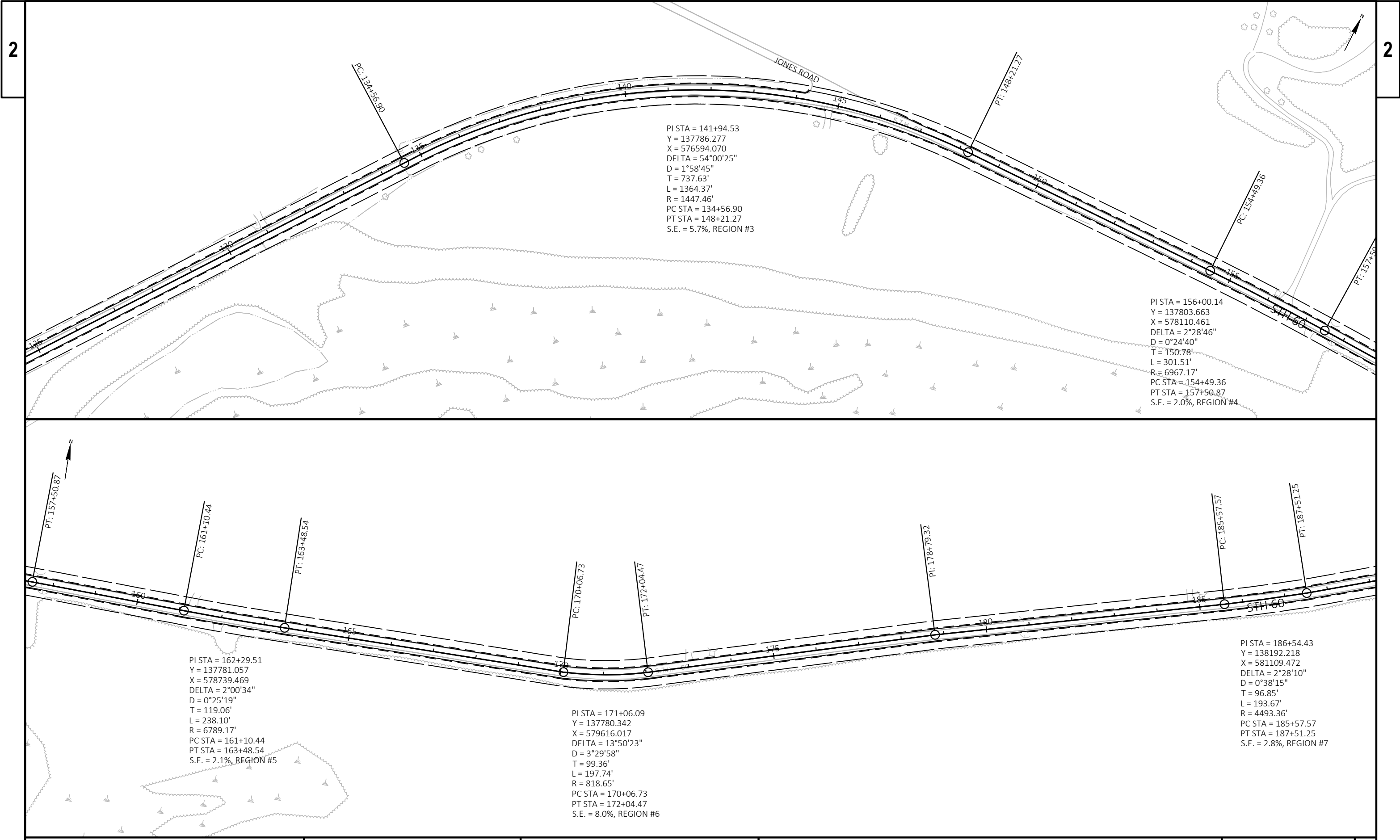
PI: 46+03.80

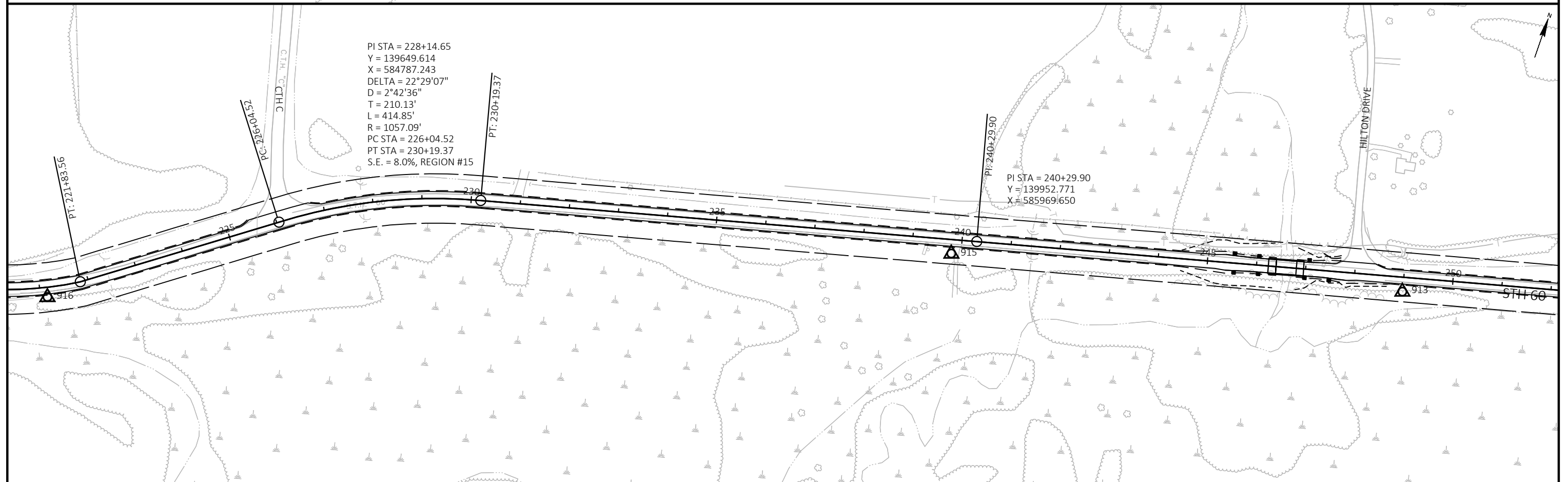
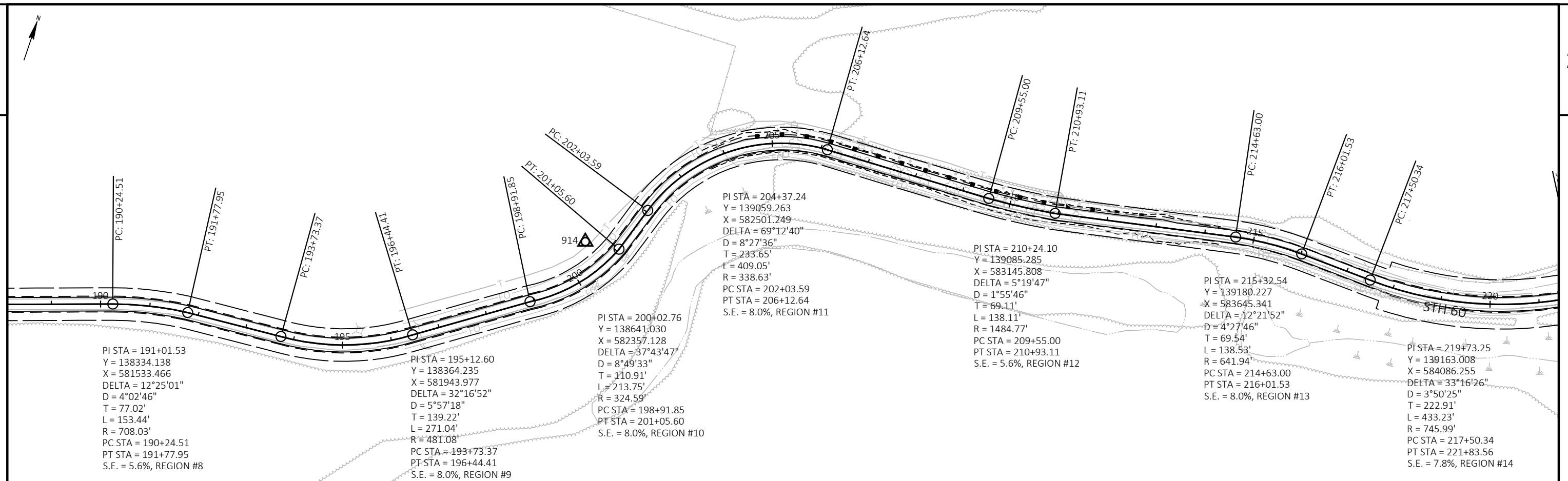
PI STA = 46+03.80  
Y = 135070.369  
X = 568193.807

STH 60









PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

ALIGNMENT: STH 60

SHEET

35

E

FILE NAME : N:\PDS\C3D\56800430\SHEETSPLAN\027201\_AD.DWG  
LAYOUT NAME - 185-250

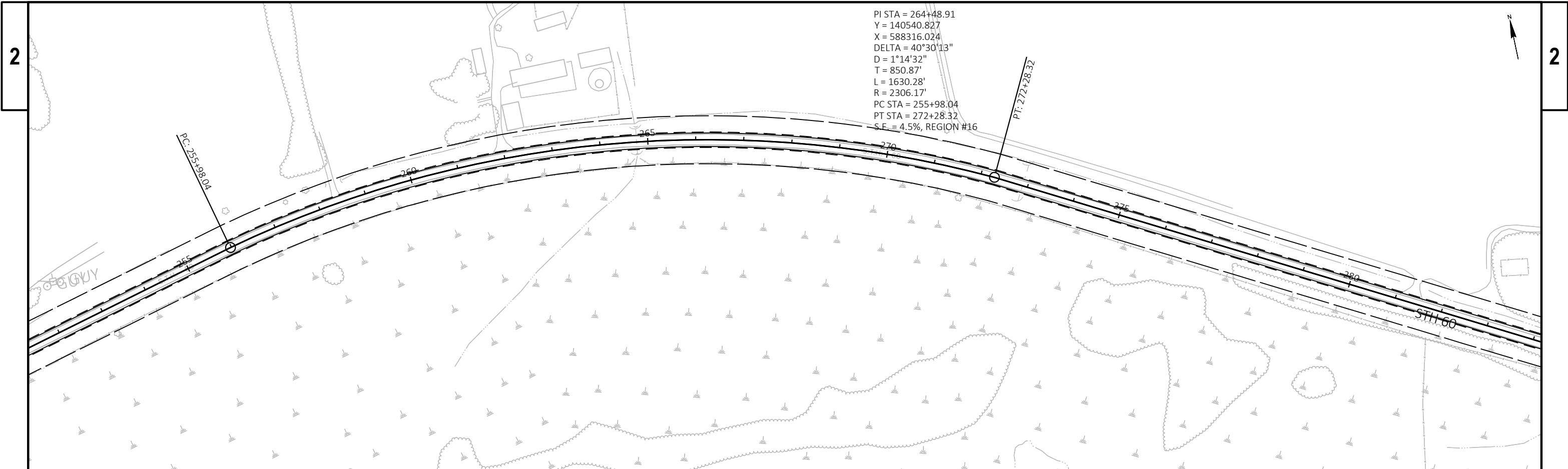
PLOT DATE : 10/9/2019 1:30 PM

PLOT BY : SCHUMAKER, NATHANIEL

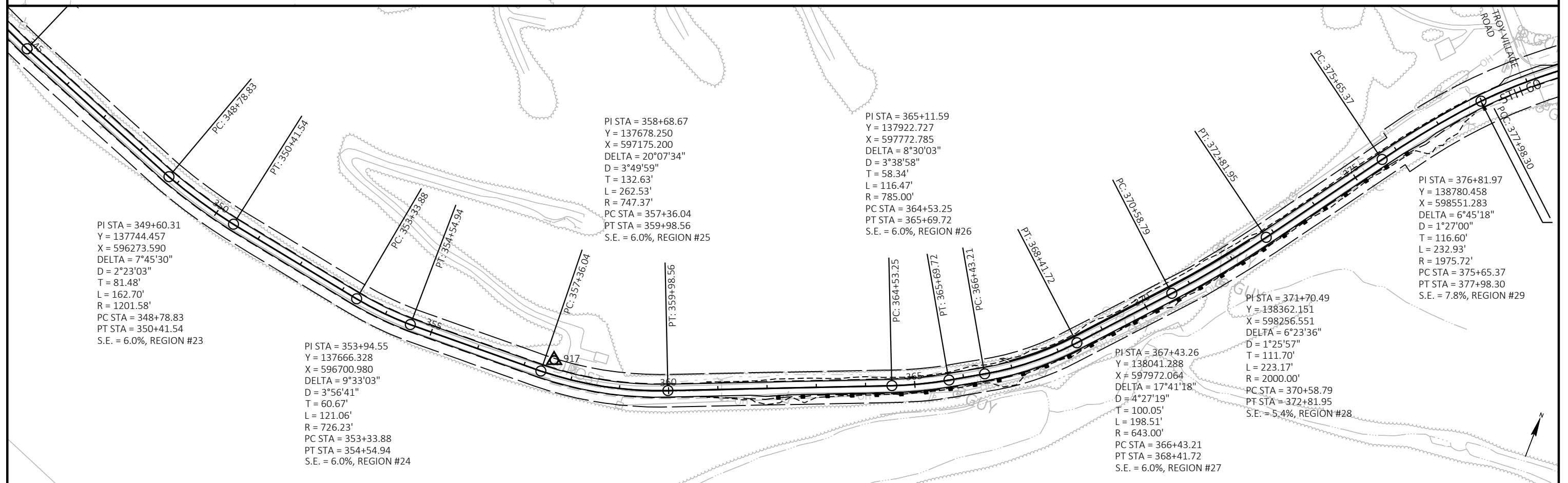
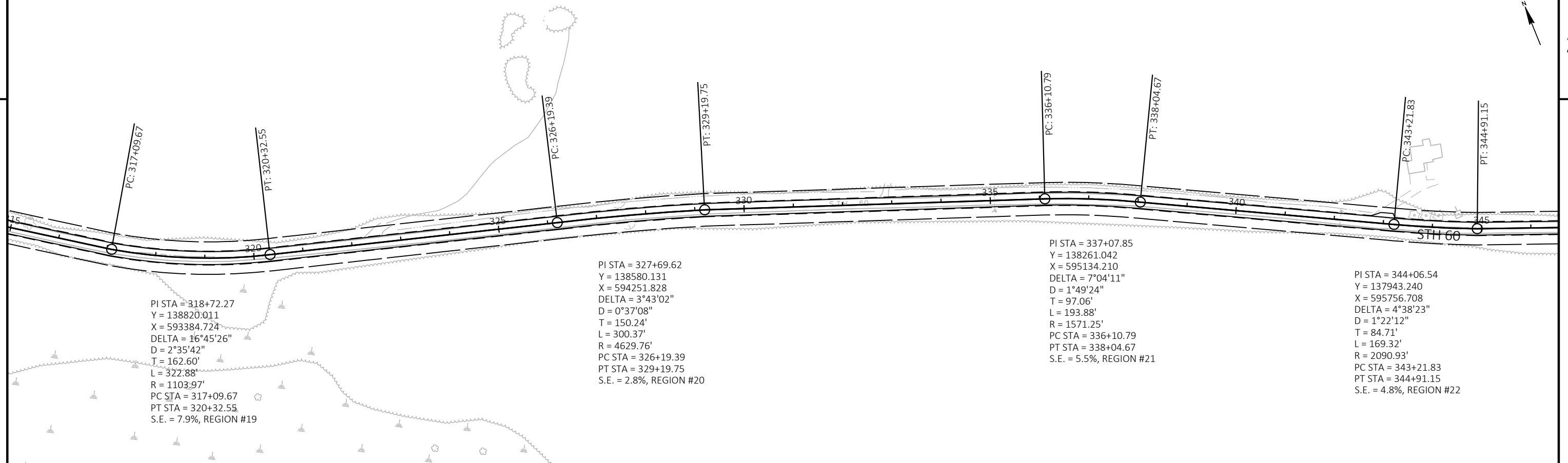
PLOT NAME :

PLOT SCALE : 1 IN=200 FT

WISDOT/CADDs SHEET 44







PROJECT NO: 5680-04-60

HWY: STH 60

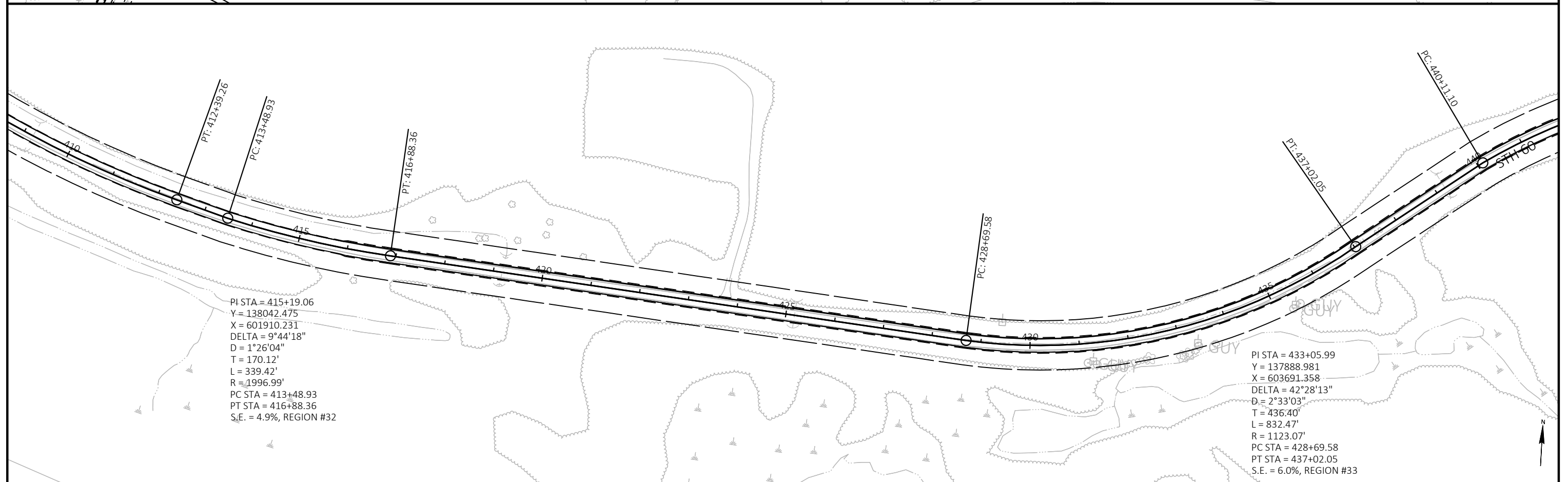
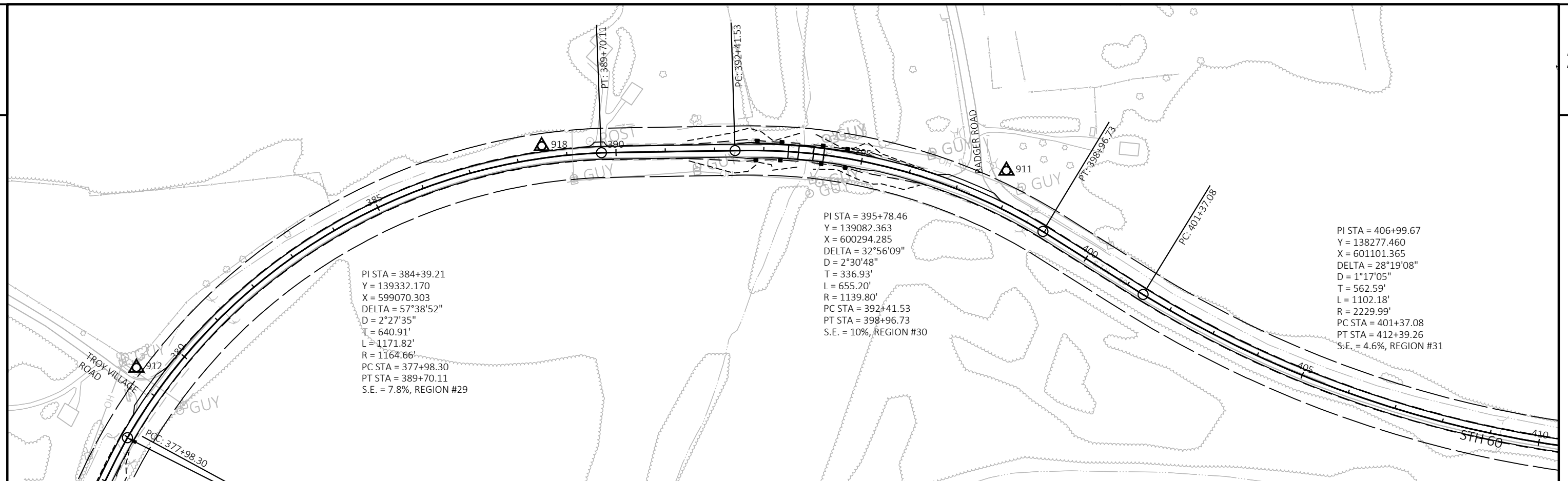
COUNTY: SAUK

ALIGNMENT: STH 60

SHEET

37

E



PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

ALIGNMENT: STH 60

SHEET

38

E

FILE NAME : N:\PDS\VC3D\56800430\SHEETSPLAN\027201\_AD.DWG  
LAYOUT NAME - 380-440

PLOT DATE : 10/9/2019 1:31 PM

PLOT BY : SCHUMAKER, NATHANIEL

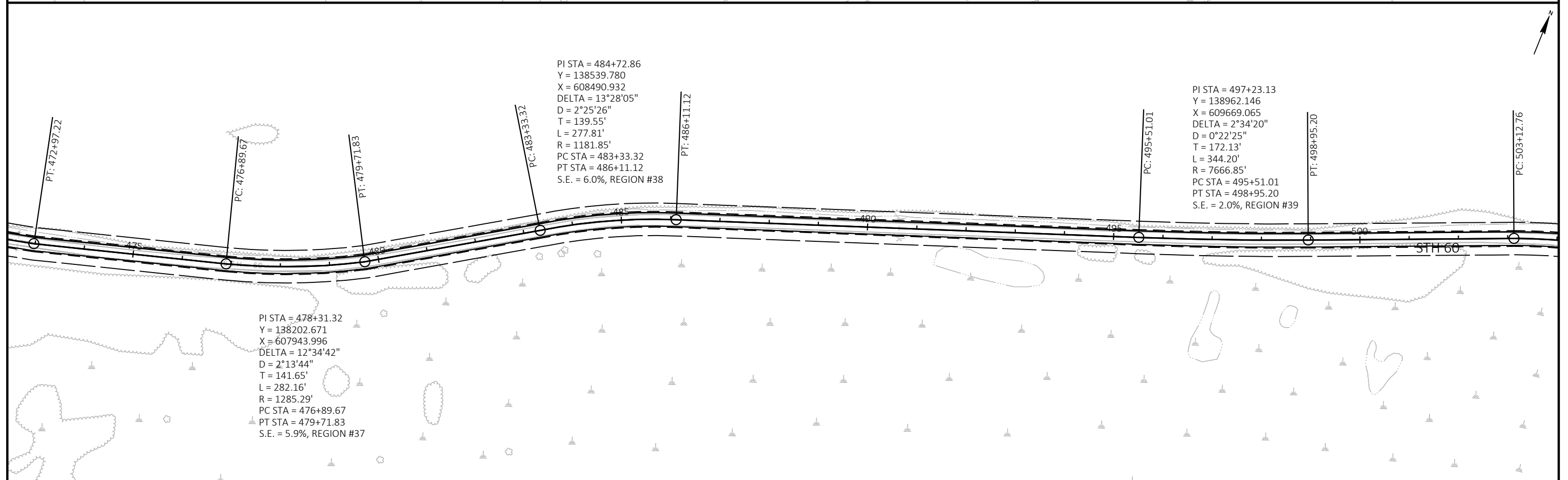
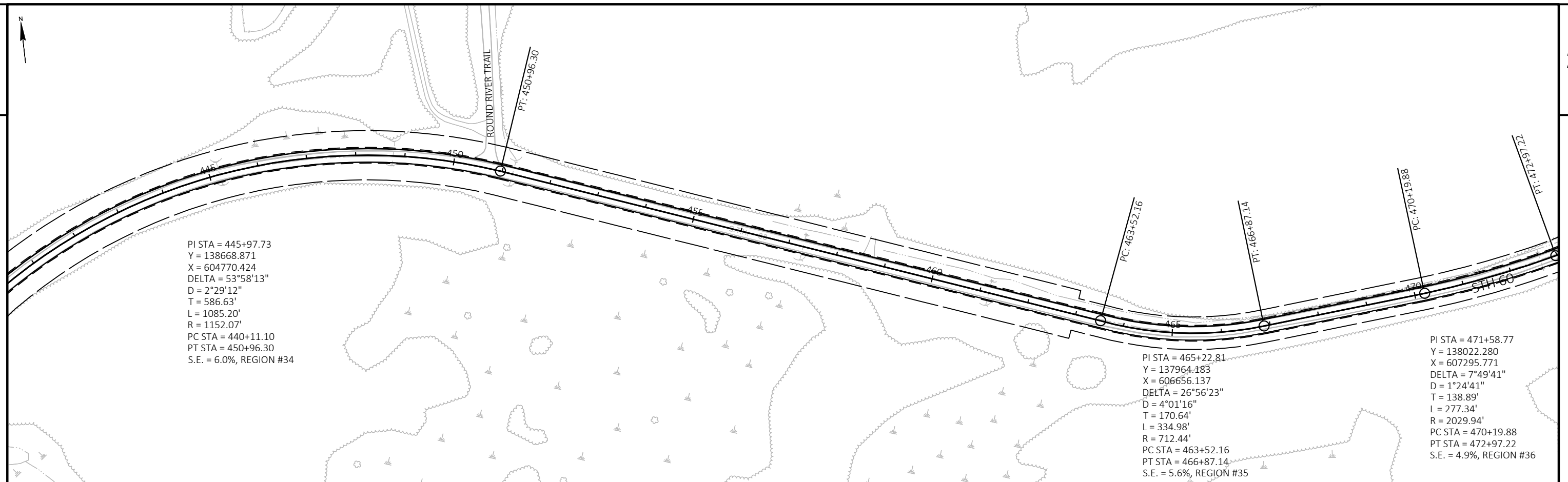
PLOT NAME :

PLOT SCALE : 1 IN:200 FT

WISDOT/CADDs SHEET 44

2

2



PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

ALIGNMENT: STH 60

SHEET 39

E

FILE NAME : N:\PDS\C3D\56800430\SHEETSPLAN\027201\_AD.DWG  
LAYOUT NAME - 440-500

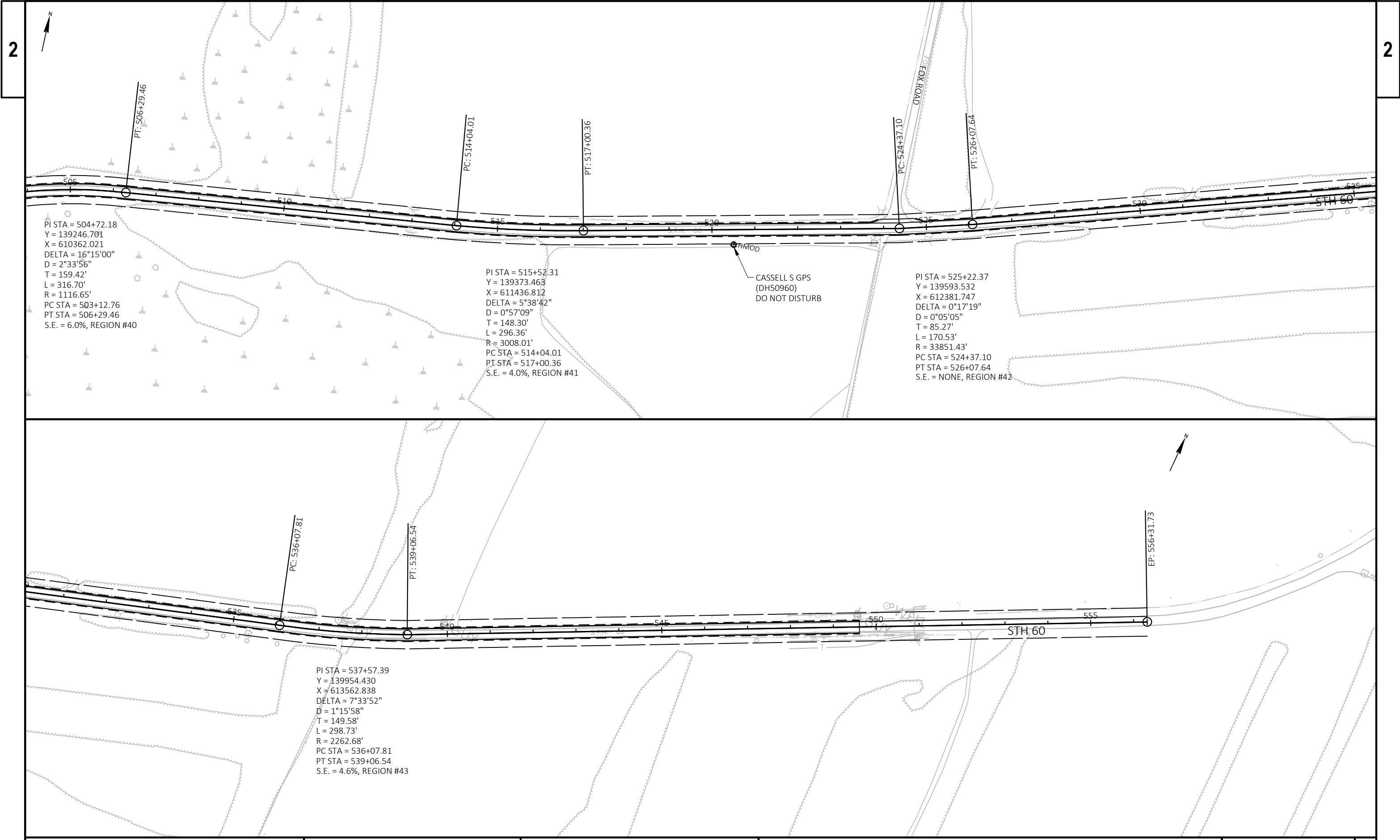
PLOT DATE : 10/9/2019 1:32 PM

PLOT BY : SCHUMAKER, NATHANIEL

PLOT NAME :

PLOT SCALE : 1 IN:200 FT

WISDOT/CADDs SHEET 44





| SUPER-ELEVATION REGION | STATION    | DESCRIPTION             | LEFT SHOULDER | LEFT LANE | RIGHT LANE | RIGHT SHOULDER |
|------------------------|------------|-------------------------|---------------|-----------|------------|----------------|
| 1                      | 0+93.00'   | MATCH EXISTING          | --            | --        | --         | --             |
| 1                      | 2+93.04'   | END FULL SUPER          | -4.00%        | 1.80%     | -2.00%     | -4.00%         |
| 1                      | 4+35.04'   | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 1                      | 4+71.45'   | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 2                      | 97+91.00'  | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 2                      | 98+42.00'  | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 2                      | 98+93.00'  | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 2                      | 99+44.00'  | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 2                      | 99+60.00'  | BEGIN FULL SUPER        | -4.60%        | -4.60%    | 4.60%      | -3.40%         |
| 2                      | 120+03.00' | END FULL SUPER          | -4.60%        | -4.60%    | 4.60%      | -3.40%         |
| 2                      | 120+19.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 2                      | 120+70.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 2                      | 121+21.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 2                      | 121+72.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 3                      | 133+08.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 3                      | 133+59.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 3                      | 134+11.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 3                      | 134+62.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 3                      | 135+05.00' | BEGIN FULL SUPER        | -2.30%        | 5.70%     | -5.70%     | -5.70%         |
| 3                      | 147+73.00' | END FULL SUPER          | -2.30%        | 5.70%     | -5.70%     | -5.70%         |
| 3                      | 148+16.00' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 3                      | 148+67.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 3                      | 149+19.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 3                      | 149+70.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 4                      | 153+64.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 4                      | 154+15.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 4                      | 154+66.00' | BEGIN FULL SUPER        | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 4                      | 157+34.00' | END FULL SUPER          | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 4                      | 157+85.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 4                      | 158+36.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 5                      | 160+23.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 5                      | 160+74.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 5                      | 161+25.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 5                      | 161+28.00' | BEGIN FULL SUPER        | -4.00%        | -2.10%    | 2.10%      | -4.00%         |
| 5                      | 163+31.00' | END FULL SUPER          | -4.00%        | -2.10%    | 2.10%      | -4.00%         |
| 5                      | 163+34.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 5                      | 163+85.00' | LEVEL CROWN             | -4.00%        | -2.00%    | -0.05%     | -4.00%         |
| 5                      | 164+36.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 6                      | 168+30.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 6                      | 168+78.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 6                      | 169+26.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 6                      | 169+74.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 6                      | 170+70.00' | BEGIN FULL SUPER        | -8.00%        | -8.00%    | 8.00%      | 0.00%          |
| 6                      | 171+41.00' | END FULL SUPER          | -8.00%        | -8.00%    | 8.00%      | 0.00%          |
| 6                      | 172+37.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 6                      | 172+85.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 6                      | 173+33.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 6                      | 173+81.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 7                      | 184+59.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 7                      | 185+10.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 7                      | 185+61.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 7                      | 185+82.00' | BEGIN FULL SUPER        | -4.00%        | -2.80%    | 2.80%      | -4.00%         |
| 7                      | 187+27.00' | END FULL SUPER          | -4.00%        | -2.80%    | 2.80%      | -4.00%         |
| 7                      | 187+48.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 7                      | 187+99.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 7                      | 188+50.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |

NOTE: SOME SUPERELEVATIONS MAY NOT BE OBTAINABLE. THE PROJECT ENGINEER WILL MAKE THAT DETERMINATION.

| SUPER-ELEVATION REGION | STATION    | DESCRIPTION             | LEFT SHOULDER | LEFT LANE | RIGHT LANE | RIGHT SHOULDER |
|------------------------|------------|-------------------------|---------------|-----------|------------|----------------|
| 8                      | 189+06.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 8                      | 189+47.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 8                      | 189+89.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 8                      | 190+30.00' | Begin Shoulder Rollver  | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 8                      | 190+63.00' | BEGIN FULL SUPER        | -2.40%        | 5.60%     | -5.60%     | -5.60%         |
| 9                      | 194+28.00' | BEGIN FULL SUPER        | -8.00%        | -8.00%    | 8.00%      | 0.00%          |
| 9                      | 195+89.00' | END FULL SUPER          | -8.00%        | -8.00%    | 8.00%      | 0.00%          |
| 9                      | 197+14.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 10                     | 198+28.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 10                     | 199+43.00' | BEGIN FULL SUPER        | -8.00%        | -8.00%    | 8.00%      | 0.00%          |
| 10                     | 200+55.00' | END FULL SUPER          | -8.00%        | -8.00%    | 8.00%      | 0.00%          |
| 11                     | 202+55.00' | BEGIN FULL SUPER        | 0.00%         | 8.00%     | -8.00%     | -8.00%         |
| 11                     | 205+62.00' | END FULL SUPER          | 0.00%         | 8.00%     | -8.00%     | -8.00%         |
| 11                     | 206+39.00' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 11                     | 206+78.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 11                     | 207+17.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 11                     | 207+55.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 12                     | 208+08.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 12                     | 208+59.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 12                     | 209+10.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 12                     | 209+61.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 12                     | 210+02.00' | BEGIN FULL SUPER        | -5.60%        | -5.60%    | 5.60%      | -2.40%         |
| 12                     | 210+46.00' | END FULL SUPER          | -5.60%        | -5.60%    | 5.60%      | -2.40%         |
| 12                     | 210+87.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 12                     | 211+38.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 12                     | 211+89.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 12                     | 212+40.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 13                     | 212+99.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 13                     | 213+44.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 13                     | 213+88.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 13                     | 214+29.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 13                     | 215+22.00' | BEGIN FULL SUPER        | 0.00%         | 8.00%     | -8.00%     | -8.00%         |
| 13                     | 215+43.00' | END FULL SUPER          | 0.00%         | 8.00%     | -8.00%     | -8.00%         |
| 14                     | 218+07.00' | BEGIN FULL SUPER        | -7.80%        | -7.80%    | 7.80%      | -0.20%         |
| 14                     | 221+27.00' | END FULL SUPER          | -7.80%        | -7.80%    | 7.80%      | -0.20%         |
| 14                     | 222+11.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 14                     | 222+56.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 14                     | 223+00.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 14                     | 223+45.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 15                     | 224+17.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 15                     | 224+68.52' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 15                     | 225+19.52' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 15                     | 225+70.52' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 15                     | 226+72.52' | BEGIN FULL SUPER        | 0.00%         | 8.00%     | -8.00%     | -8.00%         |
| 15                     | 229+51.38' | END FULL SUPER          | 0.00%         | 8.00%     | -8.00%     | -8.00%         |
| 15                     | 230+53.38' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 15                     | 231+04.38' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 15                     | 231+55.38' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 15                     | 232+06.38' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 16                     | 254+70.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 16                     | 255+21.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 16                     | 255+72.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 16                     | 256+23.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 16                     | 256+36.00' | BEGIN FULL SUPER        | -3.50%        | 4.50%     | -4.50%     | -4.50%         |
| 16                     | 271+90.00' | END FULL SUPER          | -3.50%        | 4.50%     | -4.50%     | -4.50%         |
| 16                     | 272+03.00' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 16                     | 272+54.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 16                     | 273+05.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 16                     | 273+56.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |

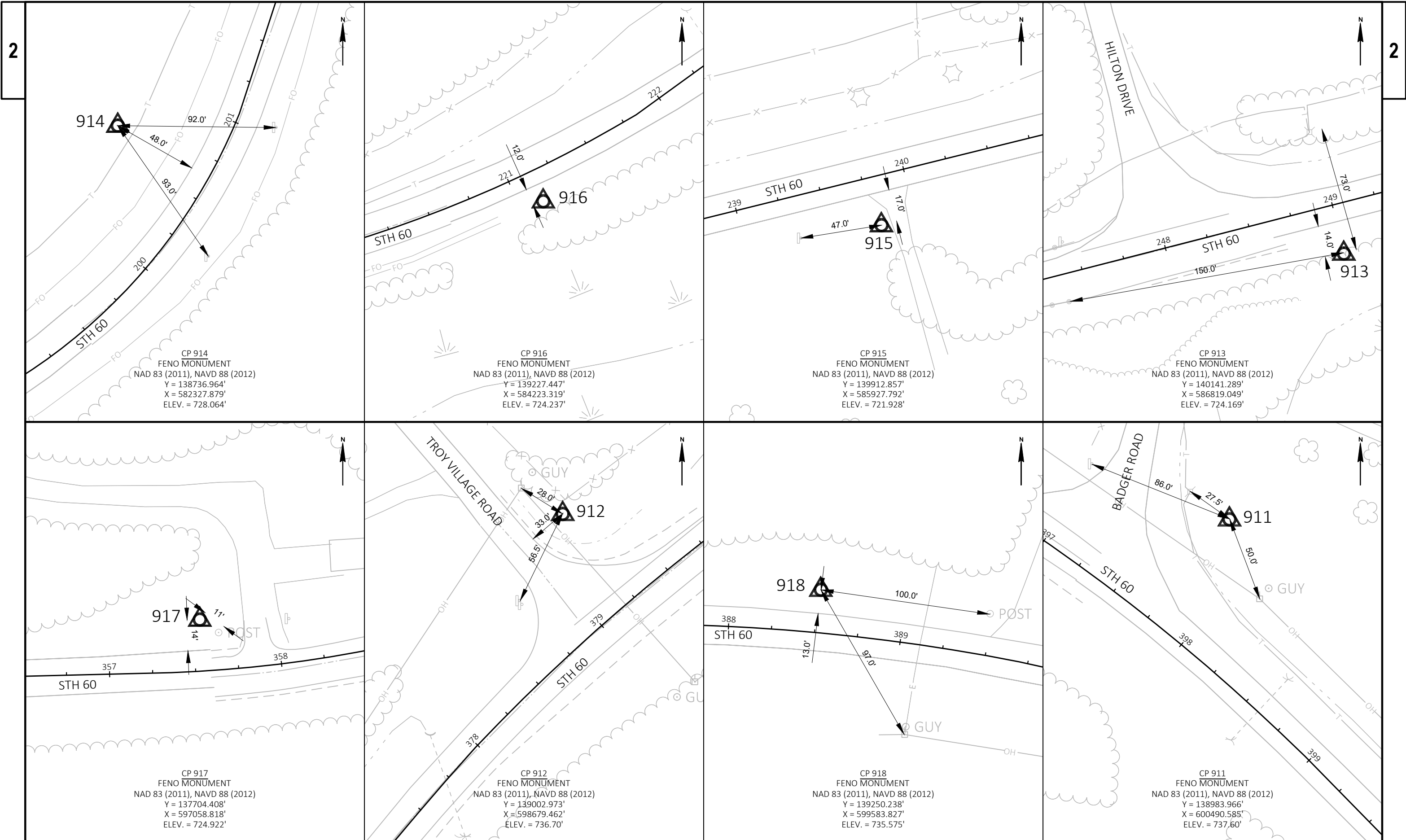
| SUPER-ELEVATION REGION | STATION    | DESCRIPTION             | LEFT SHOULDER | LEFT LANE | RIGHT LANE | RIGHT SHOULDER |
|------------------------|------------|-------------------------|---------------|-----------|------------|----------------|
| 17                     | 284+09.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 17                     | 284+60.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 17                     | 285+11.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 17                     | 285+62.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 17                     | 285+97.00' | BEGIN FULL SUPER        | -5.40%        | -5.40%    | 5.40%      | -2.60%         |
| 17                     | 293+05.00' | END FULL SUPER          | -5.40%        | -5.40%    | 5.40%      | -2.60%         |
| 17                     | 293+40.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 17                     | 293+91.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.12%      | -4.00%         |
| 17                     | 294+42.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.06%      | -4.00%         |
| 17                     | 294+93.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 18                     | 306+73.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 18                     | 307+15.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 18                     | 307+56.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 18                     | 307+97.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 18                     | 308+72.00' | BEGIN FULL SUPER        | -0.40%        | 7.60%     | -7.60%     | -7.60%         |
| 18                     | 311+52.00' | END FULL SUPER          | -0.40%        | 7.60%     | -7.60%     | -7.60%         |
| 18                     | 312+27.00' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 18                     | 312+68.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 18                     | 313+09.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 18                     | 313+51.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 19                     | 315+24.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 19                     | 315+75.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 19                     | 316+26.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 19                     | 316+75.66' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 19                     | 317+77.00' | BEGIN FULL SUPER        | -7.90%        | -7.90%    | 7.90%      | -0.10%         |
| 19                     | 319+66.00' | END FULL SUPER          | -7.90%        | -7.90%    | 7.90%      | -0.10%         |
| 19                     | 320+66.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 19                     | 321+17.55' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 19                     | 321+68.55' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 19                     | 322+19.55' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 20                     | 325+20.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 20                     | 325+71.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 20                     | 326+22.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 20                     | 326+43.00' | BEGIN FULL SUPER        | -4.00%        | 2.80%     | -2.80%     | -4.00%         |
| 20                     | 328+94.09' | END FULL SUPER          | -4.00%        | 2.80%     | -2.80%     | -4.00%         |
| 20                     | 329+16.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 20                     | 329+67.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 20                     | 330+18.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 21                     | 334+66.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 21                     | 335+17.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 21                     | 335+68.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 21                     | 336+19.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 21                     | 336+57.00' | BEGIN FULL SUPER        | -2.50%        | 5.50%     | -5.50%     | -5.50%         |
| 21                     | 337+59.00' | END FULL SUPER          | -2.50%        | 5.50%     | -5.50%     | -5.50%         |
| 21                     | 337+97.00' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 21                     | 338+48.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 21                     | 338+99.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 21                     | 339+50.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 22                     | 341+89.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 22                     | 342+40.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 22                     | 342+91.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%</       |

| SUPER-ELEVATION REGION | STATION    | DESCRIPTION             | LEFT SHOULDER | LEFT LANE | RIGHT LANE | RIGHT SHOULDER |
|------------------------|------------|-------------------------|---------------|-----------|------------|----------------|
| 23                     | 347+25.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 23                     | 347+76.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 23                     | 348+27.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 23                     | 348+78.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 23                     | 349+30.00' | BEGIN FULL SUPER        | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 23                     | 349+91.00' | END FULL SUPER          | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 23                     | 350+43.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 23                     | 350+94.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 23                     | 351+45.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 23                     | 351+96.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 24                     | 352+00.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 24                     | 352+45.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 24                     | 352+89.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 24                     | 353+34.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 24                     | 353+78.00' | BEGIN FULL SUPER        | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 24                     | 354+11.00' | END FULL SUPER          | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 24                     | 354+55.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 24                     | 355+00.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 24                     | 355+44.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 24                     | 355+89.00' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 25                     | 356+02.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 25                     | 356+47.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 25                     | 356+91.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 25                     | 357+36.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 25                     | 357+80.00' | BEGIN FULL SUPER        | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 25                     | 359+54.40' | END FULL SUPER          | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 25                     | 359+98.40' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 25                     | 360+43.40' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 25                     | 360+87.40' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 25                     | 361+32.40' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 26                     | 363+19.00' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 26                     | 363+64.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 26                     | 364+08.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 26                     | 364+53.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 26                     | 364+97.00' | BEGIN FULL SUPER        | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 27                     | 367+88.80' | END FULL SUPER          | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 27                     | 368+42.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 27                     | 368+87.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 28                     | 370+18.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 28                     | 370+69.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 28                     | 371+04.00' | BEGIN FULL SUPER        | -5.40%        | -5.40%    | 5.40%      | -2.60%         |
| 28                     | 372+37.00' | END FULL SUPER          | -5.40%        | -5.40%    | 5.40%      | -2.60%         |
| 28                     | 372+72.00' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 28                     | 373+23.00' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 28                     | 373+74.00' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 29                     | 374+32.00' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 29                     | 374+83.00' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 29                     | 375+34.00' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 29                     | 376+31.00' | BEGIN FULL SUPER        | -0.20%        | 7.80%     | -7.80%     | -7.80%         |
| 29                     | 389+03.81' | END FULL SUPER          | -0.20%        | 7.80%     | -7.80%     | -7.80%         |
| 30                     | 393+26.81' | BEGIN FULL SUPER        | 2.00%         | 10.00%    | -10.00%    | -10.00%        |
| 30                     | 398+13.81' | END FULL SUPER          | 2.00%         | 10.00%    | -10.00%    | -10.00%        |
| 31                     | 401+77.81' | BEGIN FULL SUPER        | -4.60%        | -4.60%    | 4.60%      | -3.40%         |
| 31                     | 412+01.81' | END FULL SUPER          | -4.60%        | -4.60%    | 4.60%      | -3.40%         |
| 31                     | 412+17.81' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 31                     | 412+68.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 32                     | 413+17.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 32                     | 413+68.81' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 32                     | 413+91.81' | BEGIN FULL SUPER        | -4.90%        | -4.90%    | 4.90%      | -3.10%         |
| 32                     | 416+48.81' | END FULL SUPER          | -4.90%        | -4.90%    | 4.90%      | -3.10%         |
| 32                     | 416+71.81' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 32                     | 417+22.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 32                     | 417+73.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 32                     | 418+24.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |

| SUPER-ELEVATION REGION | STATION    | DESCRIPTION             | LEFT SHOULDER | LEFT LANE | RIGHT LANE | RIGHT SHOULDER |
|------------------------|------------|-------------------------|---------------|-----------|------------|----------------|
| 33                     | 427+16.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 33                     | 427+67.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 33                     | 428+18.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 33                     | 428+69.81' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 33                     | 429+21.81' | BEGIN FULL SUPER        | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 33                     | 436+52.81' | END FULL SUPER          | -6.00%        | -6.00%    | 6.00%      | -2.00%         |
| 33                     | 437+04.81' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 33                     | 437+55.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 33                     | 438+06.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 33                     | 438+53.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 34                     | 438+55.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 34                     | 439+09.81' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 34                     | 439+60.81' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 34                     | 440+11.81' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 34                     | 440+63.81' | BEGIN FULL SUPER        | -2.00%        | 6.00%     | -6.00%     | -6.00%         |
| 34                     | 450+46.81' | END FULL SUPER          | -2.00%        | 6.00%     | -6.00%     | -6.00%         |
| 34                     | 450+98.81' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 34                     | 451+49.81' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 34                     | 452+00.81' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 34                     | 452+51.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 35                     | 462+34.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 35                     | 462+75.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 35                     | 463+17.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 35                     | 463+58.81' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 35                     | 463+91.81' | BEGIN FULL SUPER        | -5.60%        | -5.60%    | 5.60%      | -2.40%         |
| 35                     | 466+50.81' | END FULL SUPER          | -5.60%        | -5.60%    | 5.60%      | -2.40%         |
| 35                     | 466+83.81' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 35                     | 467+24.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 35                     | 467+66.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 35                     | 468+07.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 36                     | 468+86.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 36                     | 469+37.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 36                     | 469+88.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 36                     | 470+39.61' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 36                     | 470+62.81' | BEGIN FULL SUPER        | -4.90%        | -4.90%    | 4.90%      | -3.10%         |
| 36                     | 472+57.81' | END FULL SUPER          | -4.90%        | -4.90%    | 4.90%      | -3.10%         |
| 36                     | 472+80.81' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 36                     | 473+31.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 36                     | 473+82.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 36                     | 474+33.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 37                     | 475+38.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 37                     | 475+89.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 37                     | 476+40.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 37                     | 476+91.81' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 37                     | 477+40.81' | BEGIN FULL SUPER        | -5.90%        | -5.90%    | 5.90%      | -2.10%         |
| 37                     | 479+23.81' | END FULL SUPER          | -5.90%        | -5.90%    | 5.90%      | -2.10%         |
| 37                     | 479+72.81' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 37                     | 480+23.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 37                     | 480+74.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 37                     | 481+25.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |

| SUPER-ELEVATION REGION | STATION    | DESCRIPTION             | LEFT SHOULDER | LEFT LANE | RIGHT LANE | RIGHT SHOULDER |
|------------------------|------------|-------------------------|---------------|-----------|------------|----------------|
| 38                     | 481+80.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 38                     | 482+31.81' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 38                     | 482+82.81' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 38                     | 483+33.81' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 38                     | 483+85.81' | BEGIN FULL SUPER        | -2.00%        | 6.00%     | -6.00%     | -6.00%         |
| 38                     | 485+61.81' | END FULL SUPER          | -2.00%        | 6.00%     | -6.00%     | -6.00%         |
| 38                     | 486+13.81' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 38                     | 486+64.81' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 38                     | 487+15.81' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 38                     | 487+66.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 39                     | 494+67.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 39                     | 495+18.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 39                     | 495+69.81' | BEGIN FULL SUPER        | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 39                     | 498+79.81' | END FULL SUPER          | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 39                     | 499+30.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 39                     | 499+81.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 40                     | 501+59.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 40                     | 502+10.81' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 40                     | 502+61.81' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 40                     | 503+12.81' | BEGIN SHOULDER ROLLOVER | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 40                     | 503+64.81' | BEGIN FULL SUPER        | -2.00%        | 6.00%     | -6.00%     | -6.00%         |
| 40                     | 505+79.81' | END FULL SUPER          | -2.00%        | 6.00%     | -6.00%     | -6.00%         |
| 40                     | 506+31.81' | END SHOULDER ROLLOVER   | -4.00%        | 4.00%     | -4.00%     | -4.00%         |
| 40                     | 506+82.81' | REVERSE CROWN           | -4.00%        | 2.00%     | -2.00%     | -4.00%         |
| 40                     | 507+33.81' | LEVEL CROWN             | -4.00%        | 0.00%     | -2.00%     | -4.00%         |
| 40                     | 507+84.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 41                     | 512+87.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 41                     | 513+38.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 41                     | 513+89.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 41                     | 514+41.34' | BEGIN FULL SUPER        | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 41                     | 516+68.81' | END FULL SUPER          | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 41                     | 517+17.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 41                     | 517+75.04' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 41                     | 518+25.94' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 42                     | 524+37.10' | POINT OF CURVATURE      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 42                     | 526+07.64' | POINT OF TANGENT        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
|                        |            |                         |               |           |            |                |
| 43                     | 534+79.81' | END NORMAL CROWN        | -4.00%        | -2.00%    | -2.00%     | -4.00%         |
| 43                     | 535+30.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 43                     | 535+81.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 43                     | 536+32.81' | BEGIN SHOULDER ROLLOVER | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 43                     | 536+48.81' | BEGIN FULL SUPER        | -4.60%        | -4.60%    | 4.60%      | -3.40%         |
| 43                     | 538+69.81' | END FULL SUPER          | -4.60%        | -4.60%    | 4.60%      | -3.40%         |
| 43                     | 538+85.81' | END SHOULDER ROLLOVER   | -4.00%        | -4.00%    | 4.00%      | -4.00%         |
| 43                     | 539+36.81' | REVERSE CROWN           | -4.00%        | -2.00%    | 2.00%      | -4.00%         |
| 43                     | 539+87.81' | LEVEL CROWN             | -4.00%        | -2.00%    | 0.00%      | -4.00%         |
| 43                     | 540+38.81' | BEGIN NORMAL CROWN      | -4.00%        | -2.00%    | -2.00%     | -4.00%         |

NOTE: SOME SUPERELEVATIONS MAY NOT BE OBTAINABLE. THE PROJECT ENGINEER WILL MAKE THAT DETERMINATION.



Estimate Of Quantities

5680-04-60

| Line | Item       | Item Description                                              | Unit | Total       | Qty         |
|------|------------|---------------------------------------------------------------|------|-------------|-------------|
| 0002 | 204.0110   | Removing Asphaltic Surface                                    | SY   | 335.000     | 335.000     |
| 0004 | 204.0115   | Removing Asphaltic Surface Butt Joints                        | SY   | 1,768.000   | 1,768.000   |
| 0006 | 204.0120   | Removing Asphaltic Surface Milling                            | SY   | 1,160.000   | 1,160.000   |
| 0008 | 204.0165   | Removing Guardrail                                            | LF   | 764.000     | 764.000     |
| 0010 | 205.0100   | Excavation Common                                             | CY   | 328.000     | 328.000     |
| 0012 | 208.0100   | Borrow                                                        | CY   | 1,763.000   | 1,763.000   |
| 0014 | 208.1100   | Select Borrow                                                 | CY   | 154.000     | 154.000     |
| 0016 | 211.0400   | Prepare Foundation for Asphaltic Shoulders                    | STA  | 22.000      | 22.000      |
| 0018 | 213.0100   | Finishing Roadway (project) 01. 5680-04-60                    | EACH | 1.000       | 1.000       |
| 0020 | 305.0110   | Base Aggregate Dense 3/4-Inch                                 | TON  | 5,386.000   | 5,386.000   |
| 0022 | 305.0120   | Base Aggregate Dense 1 1/4-Inch                               | TON  | 2,173.000   | 2,173.000   |
| 0024 | 305.0500   | Shaping Shoulders                                             | STA  | 1,078.000   | 1,078.000   |
| 0026 | 305.0504.S | Hauling Excess Shoulder Material                              | CY   | 100.000     | 100.000     |
| 0028 | 330.0100   | Mill and Relay                                                | SY   | 187,534.000 | 187,534.000 |
| 0030 | 374.1010.S | QMP Mill and Relay Compaction                                 | SY   | 187,534.000 | 187,534.000 |
| 0032 | 455.0605   | Tack Coat                                                     | GAL  | 8,452.000   | 8,452.000   |
| 0034 | 460.0105.S | HMA Percent Within Limits (PWL) Test Strip Volumetrics        | EACH | 1.000       | 1.000       |
| 0036 | 460.0110.S | HMA Percent Within Limits (PWL) Test Strip Density            | EACH | 2.000       | 2.000       |
| 0038 | 460.2005   | Incentive Density PWL HMA Pavement                            | DOL  | 28,591.000  | 28,591.000  |
| 0040 | 460.2010   | Incentive Air Voids HMA Pavement                              | DOL  | 33,131.000  | 33,131.000  |
| 0042 | 460.5224   | HMA Pavement 4 LT 58-28 S                                     | TON  | 33,131.000  | 33,131.000  |
| 0044 | 465.0110   | Asphaltic Surface Patching                                    | TON  | 20.000      | 20.000      |
| 0046 | 465.0120   | Asphaltic Surface Driveways and Field Entrances               | TON  | 73.000      | 73.000      |
| 0048 | 465.0315   | Asphaltic Flumes                                              | SY   | 8.000       | 8.000       |
| 0050 | 465.0475   | Asphalt Centerline Rumble Strips 2-Lane Rural                 | LF   | 48,600.000  | 48,600.000  |
| 0052 | 601.0415   | Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J           | LF   | 546.000     | 546.000     |
| 0054 | 614.0200   | Steel Thrie Beam Structure Approach                           | LF   | 21.000      | 21.000      |
| 0056 | 614.0370   | Steel Plate Beam Guard Energy Absorbing Terminal              | EACH | 1.000       | 1.000       |
| 0058 | 614.2300   | MGS Guardrail 3                                               | LF   | 838.000     | 838.000     |
| 0060 | 614.2310   | MGS Guardrail 3 HS                                            | LF   | 50.000      | 50.000      |
| 0062 | 614.2320   | MGS Guardrail 3 QS                                            | LF   | 13.000      | 13.000      |
| 0064 | 614.2330   | MGS Guardrail 3 K                                             | LF   | 1,313.000   | 1,313.000   |
| 0066 | 614.2500   | MGS Thrie Beam Transition                                     | LF   | 280.000     | 280.000     |
| 0068 | 614.2610   | MGS Guardrail Terminal EAT                                    | EACH | 11.000      | 11.000      |
| 0070 | 618.0100   | Maintenance And Repair of Haul Roads (project) 01. 5680-04-60 | EACH | 1.000       | 1.000       |
| 0072 | 619.1000   | Mobilization                                                  | EACH | 1.000       | 1.000       |
| 0074 | 624.0100   | Water                                                         | MGAL | 877.000     | 877.000     |
| 0076 | 625.0500   | Salvaged Topsoil                                              | SY   | 6,346.000   | 6,346.000   |
| 0078 | 628.1104   | Erosion Bales                                                 | EACH | 10.000      | 10.000      |



Estimate Of Quantities

5680-04-60

| Line | Item     | Item Description                                                   | Unit | Total       | Qty         |
|------|----------|--------------------------------------------------------------------|------|-------------|-------------|
| 0080 | 628.1504 | Silt Fence                                                         | LF   | 5,634.000   | 5,634.000   |
| 0082 | 628.1520 | Silt Fence Maintenance                                             | LF   | 5,634.000   | 5,634.000   |
| 0084 | 628.1905 | Mobilizations Erosion Control                                      | EACH | 4.000       | 4.000       |
| 0086 | 628.1910 | Mobilizations Emergency Erosion Control                            | EACH | 1.000       | 1.000       |
| 0088 | 628.2008 | Erosion Mat Urban Class I Type B                                   | SY   | 6,222.000   | 6,222.000   |
| 0090 | 628.2027 | Erosion Mat Class II Type C                                        | SY   | 1,140.000   | 1,140.000   |
| 0092 | 628.6505 | Soil Stabilizer Type A                                             | ACRE | 0.070       | 0.070       |
| 0094 | 628.7504 | Temporary Ditch Checks                                             | LF   | 400.000     | 400.000     |
| 0096 | 628.7555 | Culvert Pipe Checks                                                | EACH | 31.000      | 31.000      |
| 0098 | 628.7560 | Tracking Pads                                                      | EACH | 1.000       | 1.000       |
| 0100 | 628.7570 | Rock Bags                                                          | EACH | 189.000     | 189.000     |
| 0102 | 629.0210 | Fertilizer Type B                                                  | CWT  | 5.510       | 5.510       |
| 0104 | 630.0120 | Seeding Mixture No. 20                                             | LB   | 79.000      | 79.000      |
| 0106 | 630.0171 | Seeding Mixture No. 70A                                            | LB   | 21.000      | 21.000      |
| 0108 | 630.0200 | Seeding Temporary                                                  | LB   | 157.300     | 157.300     |
| 0110 | 630.0400 | Seeding Nurse Crop                                                 | LB   | 42.000      | 42.000      |
| 0112 | 630.0500 | Seed Water                                                         | MGAL | 213.000     | 213.000     |
| 0114 | 634.0616 | Posts Wood 4x6-Inch X 16-FT                                        | EACH | 1.000       | 1.000       |
| 0116 | 638.2102 | Moving Signs Type II                                               | EACH | 8.000       | 8.000       |
| 0118 | 638.4000 | Moving Small Sign Supports                                         | EACH | 7.000       | 7.000       |
| 0120 | 642.5201 | Field Office Type C                                                | EACH | 1.000       | 1.000       |
| 0122 | 643.0300 | Traffic Control Drums                                              | DAY  | 1,050.000   | 1,050.000   |
| 0124 | 643.0900 | Traffic Control Signs                                              | DAY  | 1,015.000   | 1,015.000   |
| 0126 | 643.1050 | Traffic Control Signs PCMS                                         | DAY  | 14.000      | 14.000      |
| 0128 | 643.5000 | Traffic Control                                                    | EACH | 1.000       | 1.000       |
| 0130 | 646.1020 | Marking Line Epoxy 4-Inch                                          | LF   | 82,286.000  | 82,286.000  |
| 0132 | 646.1040 | Marking Line Grooved Wet Ref Epoxy 4-Inch                          | LF   | 109,697.000 | 109,697.000 |
| 0134 | 648.0100 | Locating No-Passing Zones                                          | MI   | 10.390      | 10.390      |
| 0136 | 649.0105 | Temporary Marking Line Paint 4-Inch                                | LF   | 78,894.000  | 78,894.000  |
| 0138 | 649.0120 | Temporary Marking Line Epoxy 4-Inch                                | LF   | 82,286.000  | 82,286.000  |
| 0140 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter                 | LF   | 546.000     | 546.000     |
| 0142 | 650.8000 | Construction Staking Resurfacing Reference                         | LF   | 54,870.000  | 54,870.000  |
| 0144 | 650.9910 | Construction Staking Supplemental Control (project) 01. 5680-04-60 | LS   | 1.000       | 1.000       |
| 0146 | 650.9920 | Construction Staking Slope Stakes                                  | LF   | 3,552.000   | 3,552.000   |
| 0148 | 690.0150 | Sawing Asphalt                                                     | LF   | 220.000     | 220.000     |
| 0150 | 740.0440 | Incentive IRI Ride                                                 | DOL  | 33,131.000  | 33,131.000  |
| 0152 | SPV.0070 | Special 01. Sprayed Asphaltic Surface Treatment                    | GAL  | 210.000     | 210.000     |
| 0154 | SPV.0180 | Special 01. Resin Binder High Friction Surface Treatment           | SY   | 3,508.000   | 3,508.000   |

5680-04-60

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| REMOVING ASPHALTIC SURFACE BUTT JOINTS |         |    |         |          |       |                      |
|----------------------------------------|---------|----|---------|----------|-------|----------------------|
| 204.0115                               |         |    |         |          |       |                      |
| CATEGORY                               | STATION | TO | STATION | LOCATION | SY    | REMARKS              |
| 0010                                   | 0+93    | -  | 1+93    | STH 60   | 367   | BEGIN PROJECT LIMITS |
| 0010                                   | 245+24  | -  | 246+24  | STH 60   | 289   | B-56-0021            |
| 0010                                   | 246+94  | -  | 247+94  | STH 60   | 289   | B-56-0021            |
| 0010                                   | 392+49  | -  | 393+49  | STH 60   | 267   | B-56-0022            |
| 0010                                   | 394+22  | -  | 395+22  | STH 60   | 267   | B-56-0022            |
| 0010                                   | 548+63  | -  | 549+63  | STH 60   | 289   | END PROJECT LIMITS   |
|                                        |         |    |         |          | 1,768 |                      |

| REMOVING ASPHALTIC SURFACE MILLING |         |    |         |           |       |                   |
|------------------------------------|---------|----|---------|-----------|-------|-------------------|
| 204.0120                           |         |    |         |           |       |                   |
| CATEGORY                           | STATION | TO | STATION | LOCATION  | SY    | REMARKS           |
| 0010                               | 16+04   | -  | 17+44   | STH 60 RT | 62    | S. DAVIES ROAD    |
| 0010                               | 16+38   | -  | 17+17   | STH 60 LT | 54    | N. DAVIES ROAD    |
| 0010                               | 82+27   | -  | 83+20   | STH 60 RT | 60    | RAINBOW ROAD      |
| 0010                               | 82+36   | -  | 83+19   | STH 60 LT | 50    | NEUHEISEL ROAD    |
| 0010                               | 143+96  | -  | 147+00  | STH 60 LT | 162   | JONES ROAD        |
| 0010                               | 225+36  | -  | 226+88  | STH 60 LT | 145   | CTH C             |
| 0010                               | 247+55  | -  | 248+65  | STH 60 LT | 86    | HILTON DRIVE      |
| 0010                               | 312+45  | -  | 313+45  | STH 60 LT | 90    | WILLIAMS ROAD     |
| 0010                               | 378+50  | -  | 379+55  | STH 60 LT | 92    | TROY VILLAGE ROAD |
| 0010                               | 396+50  | -  | 397+96  | STH 60 LT | 150   | BADGER ROAD       |
| 0010                               | 450+17  |    | 451+42  | STH 60 LT | 84    | ROUND RIVER TRAIL |
| 0010                               | 523+75  |    | 542+90  | STH 60 LT | 126   | FOX ROAD          |
| TOTAL 0010                         |         |    |         |           | 1,160 |                   |

| REMOVING GUARDRAIL |         |    |         |           |     |                       |
|--------------------|---------|----|---------|-----------|-----|-----------------------|
| 204.0165           |         |    |         |           |     |                       |
| CATEGORY           | STATION | TO | STATION | LOCATION  | LF  | REMARKS               |
| 0010               | 245+71  | -  | 246+32  | STH 60 RT | 71  | B-56-0021 SW QUADRANT |
| 0010               | 245+71  | -  | 246+32  | STH 60 LT | 71  | B-56-0021 NW QUADRANT |
| 0010               | 246+92  | -  | 247+63  | STH 60 RT | 71  | B-56-0021 SE QUADRANT |
| 0010               | 246+92  | -  | 247+63  | STH 60 LT | 71  | B-56-0021 NE QUADRANT |
| 0010               | 392+60  | -  | 393+50  | STH 60 RT | 120 | B-56-0022 SW QUADRANT |
| 0010               | 392+60  | -  | 393+50  | STH 60 LT | 115 | B-56-0022 NW QUADRANT |
| 0010               | 394+21  | -  | 395+11  | STH 60 RT | 125 | B-56-0022 SE QUADRANT |
| 0010               | 394+21  | -  | 395+11  | STH 60 LT | 120 | B-56-0022 NE QUADRANT |
| TOTAL 0010         |         |    |         |           | 764 |                       |

| SELECT BORROW |         |    |         |           |                |               |
|---------------|---------|----|---------|-----------|----------------|---------------|
| CATEGORY      | STATION | TO | STATION | LOCATION  | 208.1100<br>CY | REMARKS       |
| 0010          | 360+77  | -  | 377+75  | STH 60 RT | 154            | NEW GUARDRAIL |
| TOTAL 0010    |         |    |         |           | 154            |               |

| SHOULDER PREPARATION |         |    |         |           |     |       |
|----------------------|---------|----|---------|-----------|-----|-------|
| 211.0400             |         |    |         |           |     |       |
| CATEGORY             | STATION | TO | STATION | LOCATION  | STA | STA   |
| 0010                 | 0+93    | -  | 2+00    | STH 60 RT | 2   | -     |
| 0010                 | 0+93    | -  | 2+00    | STH 60 LT | 2   | -     |
| 0010                 | 2+00    | -  | 245+00  | STH 60 RT | -   | 243   |
| 0010                 | 2+00    | -  | 245+00  | STH 60 LT | -   | 243   |
| 0010                 | 245+00  | -  | 248+00  | STH 60 RT | 3   | -     |
| 0010                 | 245+00  | -  | 248+00  | STH 60 LT | 3   | -     |
| 0010                 | 248+00  | -  | 392+00  | STH 60 RT | -   | 144   |
| 0010                 | 248+00  | -  | 392+00  | STH 60 LT | -   | 144   |
| 0010                 | 392+00  | -  | 396+00  | STH 60 RT | 4   | -     |
| 0010                 | 392+00  | -  | 396+00  | STH 60 LT | 4   | -     |
| 0010                 | 396+00  | -  | 548+00  | STH 60 RT | -   | 152   |
| 0010                 | 396+00  | -  | 548+00  | STH 60 LT | -   | 152   |
| 0010                 | 548+00  | -  | 549+63  | STH 60 RT | 2   | -     |
| 0010                 | 548+00  | -  | 549+63  | STH 60 LT | 2   | -     |
| TOTAL 0010           |         |    |         |           | 22  | 1,078 |

| BASE AGGREGATE DENSE 1 1/4-INCH |         |    |         |          |       |                         |
|---------------------------------|---------|----|---------|----------|-------|-------------------------|
| 305.0120                        |         |    |         |          |       |                         |
| CATEGORY                        | STATION | TO | STATION | LOCATION | TON   | REMARKS                 |
| 0010                            | 151+00  | -  | 177+00  | STH 60   | 369   | SLOPE CORRECTION        |
| 0010                            | 185+00  | -  | 232+00  | STH 60   | 668   | SLOPE CORRECTION        |
| 0010                            | 203+47  | -  | 214+11  | STH 60   | 150   | BEAM GUARD INSTALLATION |
| 0010                            | 283+00  | -  | 295+00  | STH 60   | 170   | SLOPE CORRECTION        |
| 0010                            | 307+00  | -  | 321+00  | STH 60   | 199   | SLOPE CORRECTION        |
| 0010                            | 327+00  | -  | 345+00  | STH 60   | 256   | SLOPE CORRECTION        |
| 0010                            | 360+97  | -  | 377+53  | STH 60   | 233   | BEAM GUARD INSTALLATION |
| 0010                            | 470+00  | -  | 473+00  | STH 60   | 43    | SLOPE CORRECTION        |
| 0010                            | 477+00  | -  | 480+00  | STH 60   | 43    | SLOPE CORRECTION        |
| 0010                            | 483+00  | -  | 486+00  | STH 60   | 43    | SLOPE CORRECTION        |
| TOTAL 0010                      |         |    |         |          | 2,173 |                         |

| DIVISION                                | FROM/TO STATION                         | LOCATION         | 205.0100<br>COMMON EXCAVATION<br>(1) |                       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>(4) | AVAILABLE<br>MATERIAL<br>(5) | 205.0500<br>MARSH<br>EXCAVATION<br>(6) | 205.0200<br>ROCK<br>EXCAVATION<br>(7) | REDUCED<br>MARSH<br>IN FILL<br>(8) | REDUCED<br>EBS<br>IN FILL<br>(9) | EXPANDED<br>MARSH<br>BACKFILL<br>(10) | EXPANDED<br>EBS<br>BACKFILL<br>(11) | EXPANDED<br>ROCK<br>(12) | UNEXPANDED<br>FILL | EXPANDED<br>FILL<br>(13) | MASS<br>ORDINATE +/-<br>(14) | WASTE  | 208.0100<br>BORROW | COMMENT:    |
|-----------------------------------------|-----------------------------------------|------------------|--------------------------------------|-----------------------|-----------------------------------------------|------------------------------|----------------------------------------|---------------------------------------|------------------------------------|----------------------------------|---------------------------------------|-------------------------------------|--------------------------|--------------------|--------------------------|------------------------------|--------|--------------------|-------------|
|                                         |                                         |                  | CUT<br>(2)                           | EBS<br>EXCAVATION (3) |                                               |                              |                                        |                                       | FACTOR<br>0.60                     | FACTOR<br>0.80                   | FACTOR<br>1.50                        | FACTOR<br>1.30                      | FACTOR<br>1.10           |                    | FACTOR<br>1.25           |                              |        |                    |             |
| DIVISION 1                              |                                         |                  |                                      |                       |                                               |                              |                                        |                                       |                                    |                                  |                                       |                                     |                          |                    |                          |                              |        |                    |             |
| STA. 203+62 TO STA. 214+00<br>B-56-0021 | 203+61.74/214+00<br>244+46.59/248+66.8  | STH 60<br>STH 60 | 188<br>0                             | 0<br>0                | 0<br>0                                        | 188<br>0                     | 0<br>0                                 | 0<br>0                                | 0<br>0                             | 0<br>0                           | 0<br>0                                | 0<br>0                              | 0<br>0                   | 248<br>736         | 311<br>920               | -122<br>-920                 | 0<br>0 | 122<br>920         |             |
| STA. 360+77 TO STA. 377+74<br>B-56-0022 | 360+76.78/377+75<br>391+45.72/396+26.97 | STH 60<br>STH 60 | 126<br>14                            | 0<br>0                | 0<br>0                                        | 126<br>14                    | 0<br>0                                 | 0<br>0                                | 0<br>0                             | 0<br>0                           | 0<br>0                                | 0<br>0                              | 0<br>0                   | 361<br>451         | 452<br>564               | -326<br>-549                 | 0<br>0 | 172<br>549         |             |
| DIVISION 1 SUBTOTAL                     |                                         |                  | 328                                  | 0                     | 0                                             | 328                          | 0                                      | 0                                     | 0                                  | 0                                | 0                                     | 0                                   | 0                        | 1,796              | 2,246                    | -1,917                       | 0      | 1,763              | SEE NOTE 15 |
| GRAND TOTAL                             |                                         |                  | 328                                  | 0                     | 0                                             | 328                          | 0                                      | 0                                     | 0                                  | 0                                | 0                                     | 0                                   | 0                        | 1,796              | 2,246                    | -1,917                       | 0      | 1,763              |             |
| TOTAL COMMON EXC                        |                                         |                  | 0                                    |                       |                                               |                              |                                        |                                       |                                    |                                  |                                       |                                     |                          |                    |                          |                              |        |                    |             |

NOTES:  
(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100  
(2) SALVAGED/UNSUALE 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) SALVAGED/UNUSABLE PAVEMENT MATERIAL  
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUALE PAVEMENT MATERIAL  
(6) MARSH EXCAVATION - TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL. ITEM NUMBER 205.0500  
(7) ROCK EXCAVATION ITEM NUMBER 205.0200  
(8) REDUCED MARSH IN FILL - EXCAVATED MARSH MATERIAL IS USUALE IN FILLS OUTSIDE THE 1:1 SLOPE. MARSH IN FILL REDUCTION FACTOR = X.1X  
(9) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USUALE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = X.2X  
(10) EXPANDED MARSH BACKFILL - THIS IS TO BE FILLED WITH SELECT BORROW MATERIAL. MARSH BACKFILL FACTOR = X.3X. ITEM NUMBER 208.1100  
(11) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH SELECT BORROW MATERIAL. EBS BACKFILL FACTOR = X.4X. ITEM NUMBER 208.1100  
(12) EXPANDED ROCK FACTOR = X.5X  
(13) EXPANDED FILL FACTOR = X.6X  
DEPENDING ON SELECTIONS:      **EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) \* FILL FACTOR**  
                                         OR      EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) \* FILL FACTOR  
                                         OR      EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) \* FILL FACTOR  
                                         OR      EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) \* FILL FACTOR  
  
(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.  
(15) No Borrow Needed



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| BASE AGGREGATE DENSE 3/4-INCH |            |          |           |          |                       |  |
|-------------------------------|------------|----------|-----------|----------|-----------------------|--|
|                               |            |          |           | 305.0110 |                       |  |
| CATEGORY                      | STATION TO | STATION  | LOCATION  | TON      | REMARKS               |  |
| 0010                          | 0+93       | - 16+75  | STH 60 RT | 76.2     | DAVIES ROAD           |  |
| 0010                          | 16+75      | - 82+73  | STH 60 RT | 317.7    | NEUHEISEL ROAD        |  |
| 0010                          | 82+73      | - 145+00 | STH 60 RT | 299.8    | JONES ROAD            |  |
| 0010                          | 145+00     | - 226+00 | STH 60 RT | 390.0    | CTH C                 |  |
| 0010                          | 226+00     | - 248+10 | STH 60 RT | 106.4    | HILTON DRIVE          |  |
| 0010                          | 248+10     | - 313+00 | STH 60 RT | 312.5    | WILLIAMS ROAD         |  |
| 0010                          | 313+00     | - 379+00 | STH 60 RT | 317.8    | TROY VILLAGE ROAD     |  |
| 0010                          | 379+00     | - 397+40 | STH 60 RT | 88.6     | BADGER ROAD           |  |
| 0010                          | 397+40     | - 450+75 | STH 60 RT | 256.9    | ROUND RIVER TRAIL     |  |
| 0010                          | 450+75     | - 550+00 | STH 60 RT | 477.9    | END OF PROJECT LIMITS |  |
| 0010                          | 0+93       | - 16+75  | STH 60 LT | 76.2     | DAVIES ROAD           |  |
| 0010                          | 16+75      | - 82+73  | STH 60 LT | 317.7    | NEUHEISEL ROAD        |  |
| 0010                          | 82+73      | - 145+00 | STH 60 LT | 299.8    | JONES ROAD            |  |
| 0010                          | 145+00     | - 226+00 | STH 60 LT | 390.0    | CTH C                 |  |
| 0010                          | 226+00     | - 248+10 | STH 60 LT | 106.4    | HILTON DRIVE          |  |
| 0010                          | 248+10     | - 313+00 | STH 60 LT | 312.5    | WILLIAMS ROAD         |  |
| 0010                          | 313+00     | - 379+00 | STH 60 LT | 317.8    | TROY VILLAGE ROAD     |  |
| 0010                          | 379+00     | - 397+40 | STH 60 LT | 88.6     | BADGER ROAD           |  |
| 0010                          | 397+40     | - 450+75 | STH 60 LT | 256.9    | ROUND RIVER TRAIL     |  |
| 0010                          | 450+75     | - 549+63 | STH 60 LT | 476.1    | END OF PROJECT LIMITS |  |
| 0010                          | 0+93       | 549+63   | STH 60    | 100.0    | AGGREGATE DRIVEWAYS   |  |
| TOTAL 0010                    |            |          |           | 5,386    |                       |  |

| MILL AND RELAY |            |          |          |                |                  |                       |
|----------------|------------|----------|----------|----------------|------------------|-----------------------|
|                |            |          |          | 330.0100       | 374.1010.S       |                       |
|                |            |          |          | MILL AND RELAY | QMP MILL & RELAY |                       |
|                |            |          |          |                | COMPACTION       |                       |
| CATEGORY       | STATION TO | STATION  | LOCATION | SY             | SY               | REMARKS               |
| 0010           | 1+93       | - 16+75  | STH 60   | 5,251          | 5,251            | DAVIES ROAD           |
| 0010           | 16+75      | - 82+73  | STH 60   | 23,408         | 23,408           | NEUHEISEL ROAD        |
| 0010           | 82+73      | - 145+00 | STH 60   | 22,091         | 22,091           | JONES ROAD            |
| 0010           | 145+00     | - 226+00 | STH 60   | 28,155         | 28,155           | CTH C                 |
| 0010           | 226+00     | - 245+24 | STH 60   | 6,820          | 6,820            | B-56-0021             |
| 0010           | 247+94     | - 313+00 | STH 60   | 23,105         | 23,105           | WILLIAMS ROAD         |
| 0010           | 313+00     | - 379+00 | STH 60   | 20,567         | 20,567           | TROY VILLAGE ROAD     |
| 0010           | 379+00     | - 392+49 | STH 60   | 4,197          | 4,197            | B-56-0022             |
| 0010           | 395+22     | - 450+75 | STH 60   | 18,829         | 18,829           | ROUND RIVER TRAIL     |
| 0010           | 450+75     | - 524+25 | STH 60   | 26,110         | 26,110           | FOX ROAD              |
| 0010           | 524+25     | 548+63   | STH 60   | 9,001          | 9,001            | END OF PROJECT LIMITS |
| TOTAL 0010     |            |          |          | 187,534        | 187,534          |                       |

| HAULING EXCESS SHOULDER MATERIAL |            |          |          |            |               |  |
|----------------------------------|------------|----------|----------|------------|---------------|--|
|                                  |            |          |          | 305.0504.S |               |  |
| CATEGORY                         | STATION TO | STATION  | LOCATION | CY         | REMARKS       |  |
| 0010                             | 0+93       | - 549+63 | STH 60   | 100        | UNDISTRIBUTED |  |
| TOTAL 0010                       |            |          |          | 100        |               |  |

| HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMENTRICS |            |          |          |            |                        |  |
|---------------------------------------------------------|------------|----------|----------|------------|------------------------|--|
|                                                         |            |          |          | 460.0105.S |                        |  |
| CATEGORY                                                | STATION TO | STATION  | LOCATION | EACH       | REMARKS                |  |
| 0010                                                    | 0+93       | - 549+61 | STH 60   | 1          | BINDER & SURFACE LAYER |  |
| TOTAL 0010                                              |            |          |          | 1          |                        |  |

| HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY |            |          |          |            |               |  |
|----------------------------------------------------|------------|----------|----------|------------|---------------|--|
|                                                    |            |          |          | 460.0110.S |               |  |
| CATEGORY                                           | STATION TO | STATION  | LOCATION | EACH       | REMARKS       |  |
| 0010                                               | 0+93       | - 549+61 | STH 60   | 1          | BINDER LAYER  |  |
| 0010                                               | 0+93       | - 549+61 | STH 60   | 1          | SURFACE LAYER |  |
| TOTAL 0010                                         |            |          |          | 2          |               |  |

| ASPHALTIC SURFACE PATCHING                                      |            |          |          |     |                         |  |
|-----------------------------------------------------------------|------------|----------|----------|-----|-------------------------|--|
| 465.0110                                                        |            |          |          |     |                         |  |
| CATEGORY                                                        | STATION TO | STATION  | LOCATION | TON | REMARKS                 |  |
| 0010                                                            | 0+93       | - 1+03   | STH 60   | 2   | WEDGE ABOVE LOWER LAYER |  |
| 0010                                                            | 246+14     | - 246+24 | STH 60   | 2   | WEDGE ABOVE LOWER LAYER |  |
| 0010                                                            | 246+94     | - 247+04 | STH 60   | 2   | WEDGE ABOVE LOWER LAYER |  |
| 0010                                                            | 393+39     | - 393+49 | STH 60   | 2   | WEDGE ABOVE LOWER LAYER |  |
| 0010                                                            | 394+52     | - 394+62 | STH 60   | 2   | WEDGE ABOVE LOWER LAYER |  |
| 0010                                                            | 249+51     | - 249+61 | STH 60   | 2   | WEDGE ABOVE LOWER LAYER |  |
| UNDISTRIBUTED                                                   |            |          |          | 10  |                         |  |
| TOTAL 0010                                                      |            |          |          | 20  |                         |  |
| ASPHALT PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN. |            |          |          |     |                         |  |

| HMA PAVEMENT |            |          |          |       |          |                    |                       |  |
|--------------|------------|----------|----------|-------|----------|--------------------|-----------------------|--|
|              |            |          | 455.0605 |       | 460.5224 | SPV.0090.01        |                       |  |
|              |            |          | TACK     |       | HMA      | REMOVING HMA       |                       |  |
|              |            |          | COAT     |       | PAVEMENT | PAVEMENT NOTCHED   |                       |  |
|              |            |          |          |       | 4 LT     | WEDGE LONGITUDINAL |                       |  |
|              |            |          |          |       | 58-28S   | JOINT MILLING      |                       |  |
| CATEGORY     | STATION TO | STATION  | LOCATION | GAL   | TON      | LF                 | REMARKS               |  |
| 0010         | 0+93       | - 16+75  | STH 60   | 252   | 987      | 1,582              | DAVIES ROAD           |  |
| 0010         | 16+75      | - 82+73  | STH 60   | 1,032 | 4,044    | 6,598              | NEUHEISEL ROAD        |  |
| 0010         | 82+73      | - 145+00 | STH 60   | 974   | 3,818    | 6,227              | JONES ROAD            |  |
| 0010         | 145+00     | - 226+00 | STH 60   | 1,253 | 4,911    | 8,100              | CTH C                 |  |
| 0010         | 226+00     | - 246+24 | STH 60   | 319   | 1,250    | 2,024              | B-56-0021             |  |
| 0010         | 246+94     | - 313+00 | STH 60   | 1,037 | 4,065    | 6,606              | WILLIAMS ROAD         |  |
| 0010         | 313+00     | - 379+00 | STH 60   | 959   | 3,759    | 6,600              | TROY VILLAGE ROAD     |  |
| 0010         | 379+00     | - 393+49 | STH 60   | 212   | 831      | 1,449              | B-56-0022             |  |
| 0010         | 394+22     | - 450+75 | STH 60   | 868   | 3,401    | 5,653              | ROUND RIVER TRAIL     |  |
| 0010         | 450+75     | - 524+25 | STH 60   | 1,150 | 4,506    | 7,350              | FOX ROAD              |  |
| 0010         | 524+25     | 549+63   | STH 60   | 397   | 1,556    | 2,538              | END OF PROJECT LIMITS |  |
| TOTAL 0010   |            |          |          | 8,452 | 33,131   | 54,727             |                       |  |

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.  
APPLY TACK COAT BETWEEN HMA LAYERS AT 0.05 GAL/SY AND BETWEEN MILLED SURFACES AND HMA LAYERS AT 0.07 GAL/SY.

| PWL MIXTURE USE TABLE     |                |              |                                |                                             |        |            |                                            |                                                                  |
|---------------------------|----------------|--------------|--------------------------------|---------------------------------------------|--------|------------|--------------------------------------------|------------------------------------------------------------------|
| LOCATION                  | STATION        | MIXTURE USE  | UNDERLYING SURFACE             | BID ITEM                                    | TONS   | THINK-NESS | QUALITY MANAGEMENT PROGRAM TO BE USED FOR: |                                                                  |
|                           |                |              |                                |                                             |        |            | MIXTURE ACCEPTANCE                         | DENSITY ACCEPTANCE                                               |
| 12 FOOT DRIVING LANE      | 0+93 TO 549+63 | UPPER LAYER  | 4 LT 58-28S                    | 4 LT 58-28S                                 | 14,295 | 1.75"      | INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010  | INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005                      |
| 12 FOOT DRIVING LANE      | 0+93 TO 549+63 | LOWER LAYER  | MILLED AND RELAID ASPHALT PAVT | 4 LT 58-28S                                 | 14,295 | 1.75"      | INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010  | INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005                      |
| 1 - 2 FOOT PAVED SHOULDER | 0+93 TO 549+63 | UPPER LAYER  | 4 LT 58-28S                    | 4 LT 58-28S                                 | 2,264  | 1.75"      | INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010  | ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE |
| 1 - 2 FOOT PAVED SHOULDER | 0+93 TO 549+63 | LOWER LAYER  | MILLED AND RELAID ASPHALT PAVT | 4 LT 58-28S                                 | 2,264  | 1.75"      | INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010  | ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE |
| DRIVEWAYS                 | 0+93 TO 549+61 | SINGLE LAYER | BASE AGGREGATE                 | ASHPALT SURFACE DRIVEWAYS & FIELD ENTRANCES | 73     | 3"         | QMP AS PER SS 465                          | ACCEPTANCE BY ORDINARY COMPACTION                                |

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| ASPHALTIC FLUMES |         |           |                |    |                      |
|------------------|---------|-----------|----------------|----|----------------------|
| CATEGORY         | STATION | LOCATION  | 465.0315<br>SY | SF | REMARKS              |
| 0010             | 367+00  | STH 60 LT | 8              | 70 | END OF CURB & GUTTER |
| TOTAL 0010       |         |           | 8              |    |                      |

| PAVED PRIVATE & COMMERCIAL ENTRANCES |         |          |                                                    |                                                                                 |         |
|--------------------------------------|---------|----------|----------------------------------------------------|---------------------------------------------------------------------------------|---------|
| CATEGORY                             | STATION | LOCATION | 204.0110<br>REMOVING<br>ASPHALTIC<br>SURFACE<br>SY | 465.0120<br>ASPHALTIC<br>SURFACE<br>DRIVEWAYS<br>AND FIELD<br>ENTRANCES<br>TONS | REMARKS |
| 0010                                 | 3+92    | RT       | 111                                                | 24                                                                              | C.E.    |
| 0010                                 | 5+00    | LT       | 17                                                 | 4                                                                               | C.E.    |
| 0010                                 | 6+60    | RT       | 103                                                | 22                                                                              | C.E.    |
| 0010                                 | 8+05    | LT       | 16                                                 | 4                                                                               | C.E.    |
| 0010                                 | 343+05  | LT       | 40                                                 | 8                                                                               | P.E.    |
| 0010                                 | 357+88  | LT       | 21                                                 | 4                                                                               | P.E.    |
| 0010                                 | 389+70  | LT       | 27                                                 | 6                                                                               | P.E.    |
| TOTAL 0010                           |         |          | 335                                                | 73                                                                              |         |

SPHALT PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN

| ASPHALT CENTER LINE RUMBLE STRIPS 2-LANE RURAL |            |          |          |                |                       |
|------------------------------------------------|------------|----------|----------|----------------|-----------------------|
| CATEGORY                                       | STATION TO | STATION  | LOCATION | 465.0475<br>LF | REMARKS               |
| 0010                                           | 7+60       | - 14+75  | STH 60   | 715            | DAVIES ROAD           |
| 0010                                           | 18+75      | - 80+73  | STH 60   | 6,198          | NEUHEISEL ROAD        |
| 0010                                           | 84+73      | - 143+00 | STH 60   | 5,827          | JONES ROAD            |
| 0010                                           | 147+00     | - 202+47 | STH 60   | 5,547          | NEW GUARDRAIL         |
| 0010                                           | 213+11     | - 224+00 | STH 60   | 1,089          | CTH C                 |
| 0010                                           | 228+00     | - 244+35 | STH 60   | 1,635          | HILTON DRIVE          |
| 0010                                           | 250+10     | - 311+00 | STH 60   | 6,090          | WILLIAMS ROAD         |
| 0010                                           | 315+00     | - 377+00 | STH 60   | 6,200          | TROY VILLAGE ROAD     |
| 0010                                           | 381+00     | - 391+70 | STH 60   | 1,070          | BADGER ROAD           |
| 0010                                           | 399+32     | - 448+75 | STH 60   | 4,943          | ROUND RIVER TRAIL     |
| 0010                                           | 452+75     | - 522+25 | STH 60   | 6,950          | FOX ROAD              |
| 0010                                           | 526+25     | 549+61   | STH 60   | 2,336          | END OF PROJECT LIMITS |
| TOTAL 0010                                     |            |          |          | 48,600         |                       |

| CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J |            |          |           |                |         |
|-----------------------------------------------------|------------|----------|-----------|----------------|---------|
| CATEGORY                                            | STATION TO | STATION  | LOCATION  | 601.0415<br>LF | REMARKS |
| 0010                                                | 367+00     | - 372+50 | STH 60 LT | 546            |         |
| TOTAL 0010                                          |            |          |           | 546            |         |

| WATER      |            |          |          |                  |                              |
|------------|------------|----------|----------|------------------|------------------------------|
| CATEGORY   | STATION TO | STATION  | LOCATION | 624.0100<br>MGAL | REMARKS                      |
| 0010       | 0+93       | - 549+63 | STH 60   | 33               | 1 1/4-INCH B.A.D. COMPACTION |
| 0010       | 0+93       | - 549+63 | STH 60   | 844              | MILL & RELAY COMPACTION      |
| TOTAL 0010 |            |          |          | 877              |                              |

| CULVERT PIPE CHECKS |         |           |                  |                     |  |
|---------------------|---------|-----------|------------------|---------------------|--|
| CATEGORY            | STATION | LOCATION  | 628.7555<br>EACH | REMARKS             |  |
| 0010                | 205+20  | STH 60 LT | 5                | 18" X 36" CMCP      |  |
| 0010                | 215+28  | STH 60 LT | 3                | 24" CMCP            |  |
| 0010                | 361+05  | STH 60 LT | 8                | 2' X 2' BOX CULVERT |  |
| 0010                | 366+30  | STH 60 LT | 9                | 2' X 3' BOX CULVERT |  |
| 0010                | 375+23  | STH 60 LT | 3                | 24" CMCP            |  |
| 0010                | 377+85  | STH 60 LT | 3                | 24" CMCP            |  |
| TOTAL 0010          |         |           |                  | 31                  |  |

| TRACKING PADS |            |          |          |                  |              |
|---------------|------------|----------|----------|------------------|--------------|
| CATEGORY      | STATION TO | STATION  | LOCATION | 628.7560<br>EACH | REMARKS      |
| 0010          | 0+93       | - 549+63 | STH 60   | 1                | LOCATION TBD |
| TOTAL 0010    |            |          |          | 1                |              |

| EROSION CONTROL MOBILIZATIONS |            |          |          |                                                         |                                                                      |         |
|-------------------------------|------------|----------|----------|---------------------------------------------------------|----------------------------------------------------------------------|---------|
| CATEGORY                      | STATION TO | STATION  | LOCATION | 628.1905<br>MOBILIZATIONS<br>EROSION<br>CONTROL<br>EACH | 628.1910<br>MOBILIZATIONS<br>EMERGENCY<br>EROSION<br>CONTROL<br>EACH | REMARKS |
| 0010                          | 0+93       | - 549+63 | STH 60   | 4                                                       | 1                                                                    |         |
| TOTAL 0010                    |            |          |          | 4                                                       | 1                                                                    |         |

PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

MISCELLANEOUS QUANTITIES

SHEET NO: 51

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| MGS GUARDRAIL & CLASS A BEAMGUARD |            |          |           |                                              |                                                        |     |                       |                          |                          |                         |                                 |                                     |                       |  |  |  |  |
|-----------------------------------|------------|----------|-----------|----------------------------------------------|--------------------------------------------------------|-----|-----------------------|--------------------------|--------------------------|-------------------------|---------------------------------|-------------------------------------|-----------------------|--|--|--|--|
|                                   |            |          |           | 614.0200                                     | 614.0370                                               |     | 614.2300              | 614.2310                 | 614.2320                 | 614.2330                | 614.2500                        | 614.2610                            |                       |  |  |  |  |
|                                   |            |          |           | STEEL THRIE<br>BEAM<br>STRUCTURE<br>APPROACH | STEEL PLATE BEAM<br>GUARD ENERGY<br>ABSORBING TERMINAL |     | MGS<br>GUARDRAIL<br>3 | MGS<br>GUARDRAIL<br>3 HS | MGS<br>GUARDRAIL<br>3 QS | MGS<br>GUARDRAIL<br>3 K | MGS THRIE<br>BEAM<br>TRANSITION | MGS<br>GUARDRAIL<br>TERMINAL<br>EAT |                       |  |  |  |  |
| CATEGORY                          | STATION TO | STATION  | LOCATION  | LF                                           | EACH                                                   | LF  | LF                    | LF                       | LF                       | LF                      | LF                              | EACH                                | REMARKS               |  |  |  |  |
| 0010                              | 204+47     | 213+11   | STH 60 LT | -                                            | -                                                      | 700 | 50                    | 13                       | -                        | -                       | -                               | 2                                   | TREE BARRIER          |  |  |  |  |
| 0010                              | 245+36     | - 246+32 | STH 60 RT | -                                            | -                                                      | 13  | -                     | -                        | -                        | 40                      | 1                               | B-56-0021 SW QUADRANT               |                       |  |  |  |  |
| 0010                              | 245+36     | - 246+32 | STH 60 LT | -                                            | -                                                      | 13  | -                     | -                        | -                        | 40                      | 1                               | B-56-0021 NW QUADRANT               |                       |  |  |  |  |
| 0010                              | 246+81     | - 247+84 | STH 60 RT | -                                            | -                                                      | 13  | -                     | -                        | -                        | 40                      | 1                               | B-56-0021 SE QUADRANT               |                       |  |  |  |  |
| 0010                              | 246+81     | - 247+49 | STH 60 LT | 21                                           | 1                                                      | -   | -                     | -                        | -                        | -                       | -                               | -                                   | B-56-0021 NE QUADRANT |  |  |  |  |
| 0010                              | 361+97     | 376+58   | STH 60 RT | -                                            | -                                                      | 50  | -                     | -                        | 1,313                    | -                       | 2                               | SLOPE PROTECTION                    |                       |  |  |  |  |
| 0010                              | 392+68     | - 393+72 | STH 60 RT | -                                            | -                                                      | 13  | -                     | -                        | -                        | 40                      | 1                               | B-56-0022 SW QUADRANT               |                       |  |  |  |  |
| 0010                              | 392+71     | - 393+72 | STH 60 LT | -                                            | -                                                      | 13  | -                     | -                        | -                        | 40                      | 1                               | B-56-0022 NW QUADRANT               |                       |  |  |  |  |
| 0010                              | 394+03     | - 395+07 | STH 60 RT | -                                            | -                                                      | 13  | -                     | -                        | -                        | 40                      | 1                               | B-56-0022 SE QUADRANT               |                       |  |  |  |  |
| 0010                              | 394+03     | - 395+04 | STH 60 LT | -                                            | -                                                      | 13  | -                     | -                        | -                        | 40                      | 1                               | B-56-0022 NE QUADRANT               |                       |  |  |  |  |
| TOTAL 0010                        |            |          |           | 21                                           | 1                                                      | 838 | 50                    | 13                       | 1,313                    | 280                     | 11                              |                                     |                       |  |  |  |  |

| EROSION CONTROL |               |          |           |                     |               |                           |                                        |                                   |                              |                              |           |                      |                             |                               |                      |                          |               |           |
|-----------------|---------------|----------|-----------|---------------------|---------------|---------------------------|----------------------------------------|-----------------------------------|------------------------------|------------------------------|-----------|----------------------|-----------------------------|-------------------------------|----------------------|--------------------------|---------------|-----------|
|                 |               |          |           | 625.0500            | 628.1504      | 628.1520                  | 628.2008                               | 628.2027                          | 628.6505                     | 628.7504                     | 628.7570  | 629.0210             | 630.0120                    | 630.0171                      | 630.0200             | 630.0400                 | 630.0500      |           |
|                 |               |          |           | SALVAGED<br>TOPSOIL | SILT<br>FENCE | SILT FENCE<br>MAINTENANCE | EROSION MAT<br>URBAN CLASS I<br>TYPE B | EROSION<br>MAT CLASS<br>II TYPE C | SOIL<br>STABILIZER<br>TYPE A | TEMPORARY<br>DITCH<br>CHECKS | ROCK BAGS | FERTILIZER<br>TYPE B | SEEDING<br>MIXTURE<br>NO.20 | SEEDING<br>MIXTURE<br>NO. 70A | SEEDING<br>TEMPORARY | SEEDING<br>NURSE<br>CROP | SEED<br>WATER |           |
| CATEGORY        | STATION TO    | STATION  | LOCATION  | SY                  | LF            | LF                        | SY                                     | SY                                | ACRE                         | LF                           | EACH      | CWT                  | LB                          | LB                            | LB                   | LB                       | MGAL          | REMARKS   |
| 0010            | 203+56        | - 214+31 | STH 60 RT | 729                 | 1,100         | 1,100                     | 802                                    | -                                 | -                            | 25                           | 42        | 0.51                 | -                           | 2.9                           | 21.7                 | 5.8                      | 22            |           |
| 0010            | 204+12        | - 214+31 | STH 60 LT | 646                 | 233           | 233                       | 146                                    | 613                               | 0.05                         | 113                          | -         | 0.62                 | 26.7                        | -                             | -                    | -                        | 17            |           |
| 0010            | 244+45        | - 246+40 | STH 60 RT | 470                 | 250           | 250                       | 517                                    | -                                 | -                            | -                            | -         | 0.33                 | -                           | 1.9                           | 14.0                 | 3.7                      | 15            | B-56-0021 |
| 0010            | 244+45        | - 246+40 | STH 60 LT | 437                 | 250           | 250                       | 480                                    | -                                 | -                            | -                            | -         | 0.30                 | -                           | 1.7                           | 13.0                 | 3.5                      | 13            | B-56-0021 |
| 0010            | 246+80        | - 248+70 | STH 60 RT | 190                 | 250           | 250                       | 209                                    | -                                 | -                            | -                            | -         | 0.13                 | -                           | 0.8                           | 5.7                  | 1.5                      | 6             | B-56-0021 |
| 0010            | 246+80        | - 247+70 | STH 60 LT | 123                 | 75            | 75                        | 135                                    | -                                 | -                            | 25                           | 21        | 0.09                 | -                           | 0.5                           | 3.7                  | 1.0                      | 4             | B-56-0021 |
| 0010            | 360+75        | - 366+50 | STH 60 RT | 248                 | 650           | 650                       | 273                                    | -                                 | -                            | -                            | 21        | 0.17                 | -                           | 1.0                           | 7.4                  | 2.0                      | 8             |           |
| 0010            | 360+75        | 367+00   | STH 60 LT | 247                 | -             | -                         | 272                                    | 240                               | -                            | 88                           | -         | 0.32                 | 13.8                        | -                             | -                    | -                        | 9             |           |
| 0010            | 367+25        | 377+75   | STH 60 RT | 631                 | 1,213         | 1,213                     | 570                                    | -                                 | -                            | -                            | 42        | 0.36                 | -                           | 2.1                           | 15.4                 | 4.1                      | 16            |           |
| 0010            | 367+00        | 377+75   | STH 60 LT | 524                 | -             | -                         | 576                                    | 183                               | 0.02                         | 100                          | -         | 0.53                 | 22.6                        | -                             | -                    | -                        | 14            |           |
| 0010            | 391+25        | - 393+74 | STH 60 RT | 333                 | 275           | 275                       | 367                                    | -                                 | -                            | -                            | -         | 0.23                 | -                           | 1.3                           | 9.9                  | 2.6                      | 10            | B-56-0022 |
| 0010            | 391+25        | - 393+74 | STH 60 LT | 531                 | 275           | 275                       | 585                                    | -                                 | -                            | -                            | -         | 0.37                 | -                           | 2.1                           | 15.8                 | 4.2                      | 16            | B-56-0022 |
| 0010            | 394+02        | - 396+50 | STH 60 RT | 312                 | 275           | 275                       | 343                                    | -                                 | -                            | -                            | -         | 0.22                 | -                           | 1.2                           | 9.3                  | 2.5                      | 10            | B-56-0022 |
| 0010            | 394+02        | - 396+50 | STH 60 LT | 346                 | 275           | 275                       | 380                                    | -                                 | -                            | -                            | -         | 0.24                 | -                           | 1.4                           | 10.3                 | 2.7                      | 11            | B-56-0022 |
| 0010            | UNDISTRIBUTED |          |           | 577                 | 512           | 512                       | 566                                    | 104                               | 0.01                         | 50                           | 63        | 1.1                  | 15.8                        | 4.2                           | 31.5                 | 8.4                      | 43            |           |
| TOTAL 0010      |               |          |           | 6,346               | 5,634         | 5,634                     | 6,222                                  | 1,140                             | 0.07                         | 400                          | 189       | 5.51                 | 79.0                        | 21.0                          | 157.3                | 42.0                     | 213           |           |

| EROSION BALES |            |          |          |          |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------|------------|----------|----------|----------|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
|               |            |          |          | 628.1104 |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CATEGORY      | STATION TO | STATION  | LOCATION | EACH     | REMARKS       |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0010          | 0+93       | - 549+63 | STH 60   | 10       | UNDISTRUBUTED |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TOTAL 0010    |            |          |          | 10       |               |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                        |  |  |  |             |  |  |  |              |  |  |  |                          |  |  |  |              |  |  |  |   |
|------------------------|--|--|--|-------------|--|--|--|--------------|--|--|--|--------------------------|--|--|--|--------------|--|--|--|---|
| PROJECT NO: 5680-04-60 |  |  |  | HWY: STH 60 |  |  |  | COUNTY: SAUK |  |  |  | MISCELLANEOUS QUANTITIES |  |  |  | SHEET NO: 52 |  |  |  | E |
|------------------------|--|--|--|-------------|--|--|--|--------------|--|--|--|--------------------------|--|--|--|--------------|--|--|--|---|



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| TRAFFIC CONTROL |          |          |          |          |                        |
|-----------------|----------|----------|----------|----------|------------------------|
|                 |          | 643.0300 | 643.0900 | 643.1050 |                        |
|                 |          | TRAFFIC  | TRAFFIC  | TRAFFIC  |                        |
|                 |          | CONTROL  | CONTROL  | CONTROL  |                        |
|                 |          | DRUM     | SIGNS    | SIGNS    |                        |
|                 |          |          |          | PCMS     |                        |
| CATEGORY        | LOCATION | DAY      | DAY      | DAY      | REMARKS                |
| 0010            | STH 60   | 35       | 420      | 7        | WEST PROJECT LIMITS    |
| 0010            | STH 60   | -        | 70       | -        | DAVIES ROAD            |
| 0010            | STH 60   | -        | 70       | -        | NEUHEISEL/RAINBOW ROAD |
| 0010            | STH 60   | -        | 35       | -        | JONES ROAD             |
| 0010            | STH 60   | -        | 35       | -        | CTH C                  |
| 0010            | STH 60   | 140      | -        | -        | B-56-0021              |
| 0010            | STH 60   | -        | 35       | -        | HILTON DRIVE           |
| 0010            | STH 60   | -        | 35       | -        | WILLIAMS ROAD          |
| 0010            | STH 60   | -        | 35       | -        | TROY VILLAGE ROAD      |
| 0010            | STH 60   | 140      | -        | -        | B-56-0022              |
| 0010            | STH 60   | -        | 35       | -        | BADGER ROAD            |
| 0010            | STH 60   | -        | 35       | -        | ROUND RIVER TRAIL      |
| 0010            | STH 60   | -        | 35       | -        | FOX ROAD               |
| 0010            | STH 61   | 35       | 175      | 7        | EAST PROJECT LIMITS    |
| 0010            | STH 60   | 700      | -        | -        | UNDISTRIBUTED          |
| TOTAL 0010      |          | 1,050    | 1,015    | 14       |                        |

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| LOCATING NO-PASSING ZONES |            |         |          |          |         |
|---------------------------|------------|---------|----------|----------|---------|
|                           |            |         |          | 648.0100 |         |
| CATEGORY                  | STATION TO | STATION | LOCATION | MI       | REMARKS |
| 0010                      | 0+93 -     | 549+63  | STH 60   | 10.39    |         |
| TOTAL 0010                |            |         |          | 10.39    |         |

| CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER |            |         |           |          |         |
|----------------------------------------------------|------------|---------|-----------|----------|---------|
|                                                    |            |         |           | 650.5500 |         |
| CATEGORY                                           | STATION TO | STATION | LOCATION  | LF       | REMARKS |
| 0010                                               | 367+00 -   | 372+50  | STH 60 LT | 546      |         |
| TOTAL 0010                                         |            |         |           | 546      |         |

| PERMANENT SIGNING |  |  |  |  |  |  |  |  |  |  |
|-------------------|--|--|--|--|--|--|--|--|--|--|
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| PAVEMENT MARKING |            |          |          |          |              |           |           |                    |
|------------------|------------|----------|----------|----------|--------------|-----------|-----------|--------------------|
|                  |            |          |          | 646.1020 | 646.1040     | 649.0105  | 649.0120  |                    |
|                  |            |          |          | MARKING  | MARKING LINE | TEMPORARY | TEMPORARY |                    |
|                  |            |          |          | LINE     | GROOVED WET  | MARKING   | MARKING   |                    |
|                  |            |          |          | EPOXY    | REFLECTIVE   | LINE      | LINE      |                    |
|                  |            |          |          | 4-INCH   | EPOXY        | PAINT     | EPOXY     |                    |
|                  |            |          |          | 4-INCH   | 4-INCH       | 4-INCH    | 4-INCH    |                    |
|                  |            |          |          | YELLOW   | WHITE        | YELLOW    | YELLOW    |                    |
| CATEGORY         | STATION TO | STATION  | LOCATION | LF       | LF           | LF        | LF        | REMARKS            |
| 0010             | 0+93       | - 16+73  | STH 60   | 1,817    | 3,051        | 1,584     | 1,817     | DAVIES ROAD        |
| 0010             | 16+73      | - 82+73  | STH 60   | 1,650    | 12,977       | 528       | 1,650     | RAINBOW ROAD       |
| 0010             | 82+73      | - 145+00 | STH 60   | 9,953    | 12,268       | 9,602     | 9,953     | JONES ROAD         |
| 0010             | 145+00     | - 226+13 | STH 60   | 14,074   | 16,012       | 13,670    | 14,074    | CTH C              |
| 0010             | 226+13     | - 248+03 | STH 60   | 2,073    | 4,247        | 1,741     | 2,073     | HILTON DRIVE       |
| 0010             | 248+03     | - 313+00 | STH 60   | 12,202   | 12,870       | 12,022    | 12,202    | WILLIAMS ROAD      |
| 0010             | 313+00     | - 379+00 | STH 60   | 13,199   | 13,111       | 13,199    | 13,199    | TROY VILLAGE ROAD  |
| 0010             | 379+00     | - 397+25 | STH 60   | 3,649    | 3,577        | 3,649     | 3,649     | BADGER ROAD        |
| 0010             | 397+25     | - 450+67 | STH 60   | 10,686   | 10,591       | 10,686    | 10,686    | ROUND RIVER TRAIL  |
| 0010             | 450+67     | - 461+76 | STH 60   | 12,340   | 14,632       | 12,006    | 12,340    | FOX ROAD           |
| 0010             | 461+76     | 470+21   | STH 60   | 644      | 6,361        | 206       | 644       | END PROJECT LIMITS |
| TOTAL 0010       |            |          |          | 82,286   | 109,697      | 78,894    | 82,286    |                    |

| CONSTRUCTION STAKING RESURFACING REFERENCE |            |          |          |          |                    |  |
|--------------------------------------------|------------|----------|----------|----------|--------------------|--|
|                                            |            |          |          | 650.8000 |                    |  |
| CATEGORY                                   | STATION TO | STATION  | LOCATION | LF       | REMARKS            |  |
| 0010                                       | 0+93       | - 549+63 | STH 60   | 54,870   | 100' MAX INTERVALS |  |
| TOTAL 0010                                 |            |          |          | 54,870   |                    |  |

| CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (5680-04-60) |            |          |          |          |         |
|--------------------------------------------------------|------------|----------|----------|----------|---------|
|                                                        |            |          |          | 650.9910 |         |
| CATEGORY                                               | STATION TO | STATION  | LOCATION | LS       | REMARKS |
| 0010                                                   | 0+93       | - 550+00 | STH 60   | 1        |         |
| TOTAL 0010                                             |            |          |          | 1        |         |

| SPECIAL .01 SPRAYED ASPHALTIC SURFACE TREATMENT |            |          |           |             |                     |
|-------------------------------------------------|------------|----------|-----------|-------------|---------------------|
|                                                 |            |          |           | SPV.0070.01 |                     |
| CATEGORY                                        | STATION TO | STATION  | LOCATION  | GAL         | REMARKS             |
| 0010                                            | 362+50     | - 376+00 | STH 60 LT | 210         | MGS 3K INSTALLATION |
| TOTAL 0010                                      |            |          |           | 210         |                     |

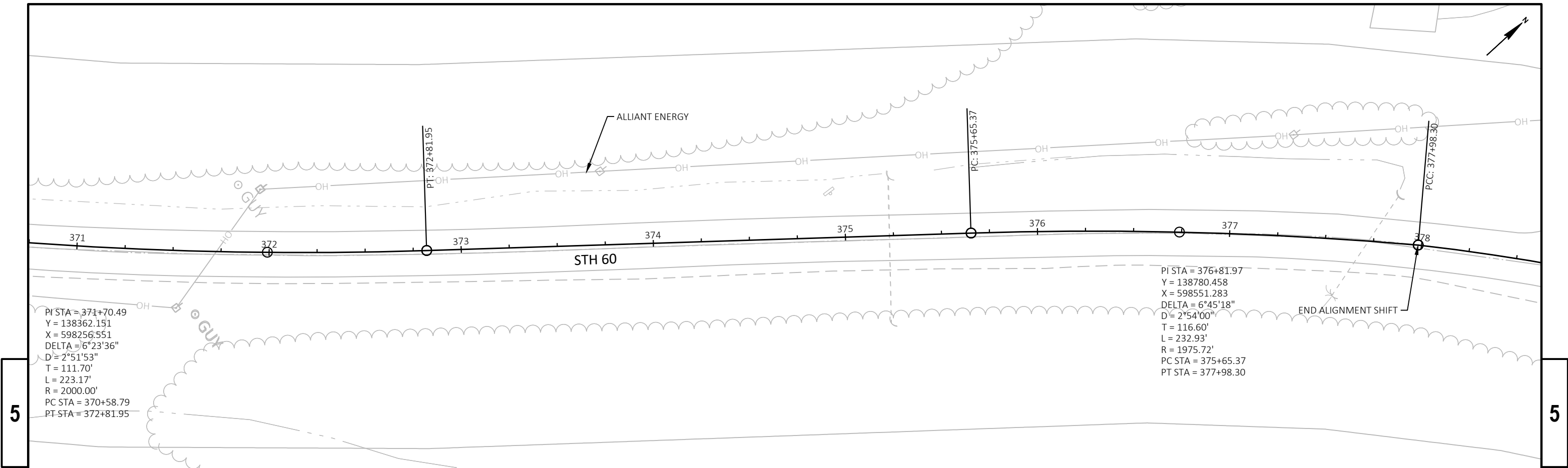
| CONSTRUCTION STAKING SLOPE STAKES |            |          |          |          |           |
|-----------------------------------|------------|----------|----------|----------|-----------|
|                                   |            |          |          | 650.9920 |           |
| CATEGORY                          | STATION TO | STATION  | LOCATION | LF       | REMARKS   |
| 0010                              | 204+00     | - 214+32 | STH 60   | 1,032    |           |
| 0010                              | 244+46     | - 246+35 | STH 60   | 189      | B-56-0021 |
| 0010                              | 246+80     | - 248+67 | STH 60   | 187      | B-56-0021 |
| 0010                              | 360+77     | - 377+75 | STH 60   | 1,698    |           |
| 0010                              | 391+47     | - 393+70 | STH 60   | 223      | B-56-0022 |
| 0010                              | 394+04     | - 396+27 | STH 60   | 223      | B-56-0022 |
| TOTAL 0010                        |            |          |          | 3,552    |           |

| SAWING ASPHALT |         |           |          |                      |
|----------------|---------|-----------|----------|----------------------|
|                |         |           | 690.0150 |                      |
| CATEGORY       | STATION | LOCATION  | LF       | REMARKS              |
| 0010           | 0+93    | STH 60    | 42       | PROJECT START LIMITS |
| 0010           | 3+92    | STH 60 RT | 46       | C.E.                 |
| 0010           | 5+00    | STH 60 LT | 18       | C.E.                 |
| 0010           | 8+04    | STH 60 LT | 18       | C.E.                 |
| 0010           | 343+06  | STH 60 LT | 35       | P.E.                 |
| 0010           | 357+87  | STH 60 LT | 14       | P.E.                 |
| 0010           | 389+70  | STH 60 LT | 23       | P.E.                 |
| 0010           | 541+00  | STH 60    | 24       | PROJECT END LIMITS   |
| TOTAL 0010     |         |           | 220      |                      |

| SPECIAL .01 RESIN BINDER HIGH FRICTION SURFACE TREATMENT |            |          |          |             |                  |
|----------------------------------------------------------|------------|----------|----------|-------------|------------------|
|                                                          |            |          |          | SPV.0180.01 |                  |
| CATEGORY                                                 | STATION TO | STATION  | LOCATION | SY          | REMARKS          |
| 0010                                                     | 202+03     | - 206+13 | STH 60   | 1,272       | HORIZONTAL CURVE |
| 0010                                                     | 308+20     | - 312+04 | STH 60   | 1,193       | HORIZONTAL CURVE |
| 0010                                                     | 463+54     | - 466+89 | STH 60   | 1,042       | HORIZONTAL CURVE |
| TOTAL 0010                                               |            |          |          | 3,508       |                  |

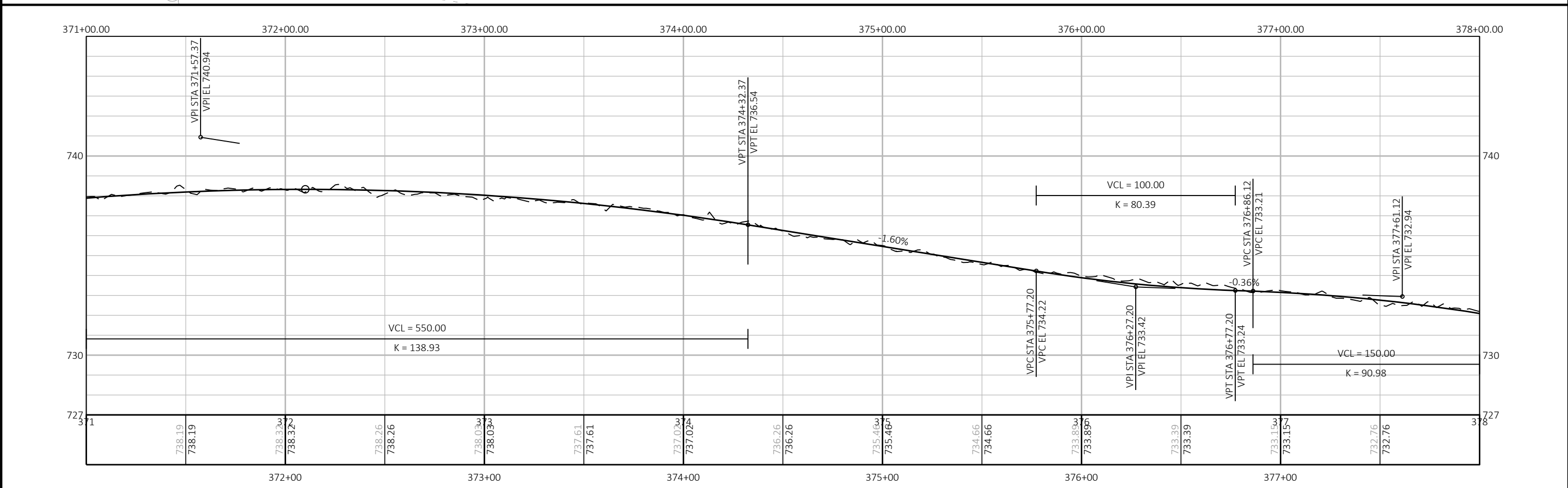
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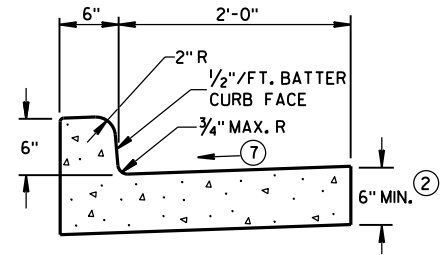
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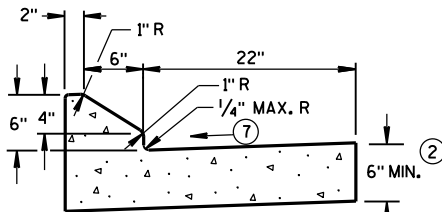
Standard Detail Drawing List

|           |                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------|
| 08D01-20A | CONCRETE CURB & GUTTER                                                                             |
| 08D01-20B | CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS                                               |
| 08D04-05  | CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES                                                         |
| 08E08-03  | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS                                    |
| 08E09-06  | SILT FENCE                                                                                         |
| 08E14-01  | TRACKING PAD                                                                                       |
| 08E15-01  | CULVERT PIPE CHECK                                                                                 |
| 13A11-03A | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 13A11-03B | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 14B15-11A | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS                                          |
| 14B15-11B | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS                                          |
| 14B15-11C | STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS                                         |
| 14B20-11A | STEEL THRIE BEAM STRUCTURE APPROACH                                                                |
| 14B20-11E | STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"                |
| 14B24-09A | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL                                                   |
| 14B24-09B | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL                                                   |
| 14B24-09C | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL                                                   |
| 14B29-01  | SAFETY EDGE                                                                                        |
| 14B42-06A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-06B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-06C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-06D | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B44-04A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                                           |
| 14B44-04B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                                           |
| 14B44-04C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                                           |
| 14B45-05A | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05B | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05C | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05D | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05E | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05F | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05G | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05H | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05I | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05J | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05K | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 14B45-05L | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                                               |
| 15C04-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C06-09  | SIGNING & MARKING FOR TWO LANE BRIDGES                                                             |
| 15C08-19A | LONGITUDINAL MARKING (MAINLINE)                                                                    |
| 15C12-07  | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION                                           |
| 15C19-05A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY                                         |
| 15D38-02A | TEMPORARY TRAFFIC CONTROL SIGN MOUNTING                                                            |
| 15D38-02B | ATTACHMENT OF SIGNS TO POSTS                                                                       |

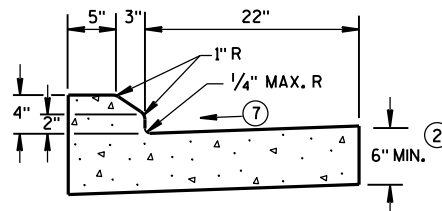




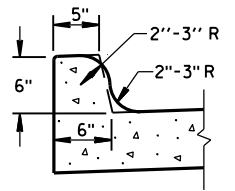
TYPES A<sup>①</sup> & D



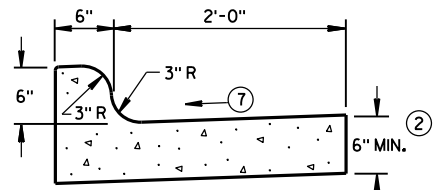
6" SLOPED CURB TYPES G<sup>①</sup> & J



4" SLOPED CURB TYPES G<sup>①</sup> & J

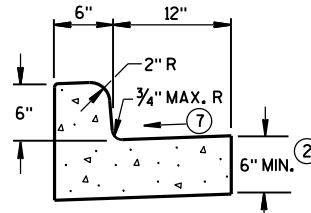


TYPES K<sup>①</sup> & L  
(OPTIONAL CURB SHAPE)



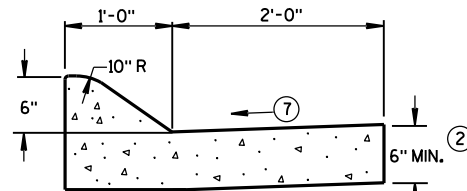
TYPES K<sup>①</sup> & L

CONCRETE CURB & GUTTER 30"

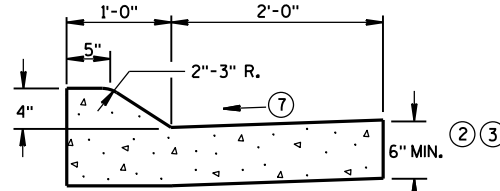


TYPES A<sup>①</sup> & D

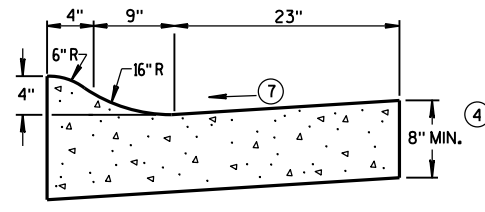
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A<sup>①</sup> & D

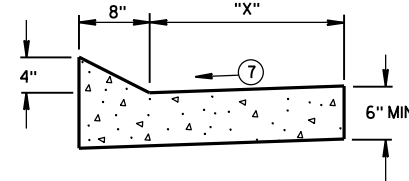


4" SLOPED CURB TYPES A<sup>①</sup> & D



4" SLOPED CURB TYPES R<sup>①</sup> & T<sup>⑤</sup>

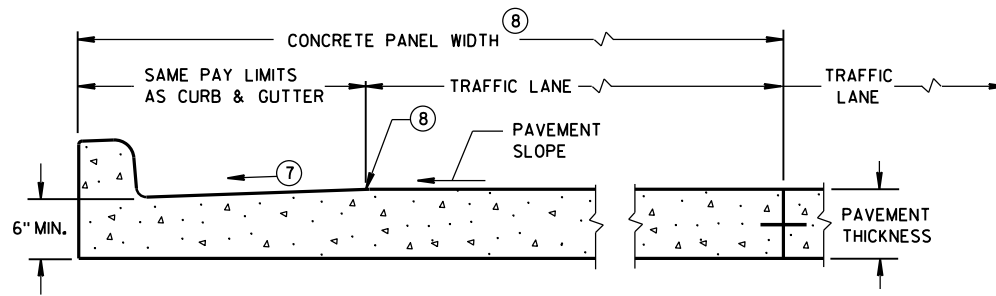
CONCRETE CURB & GUTTER 36"



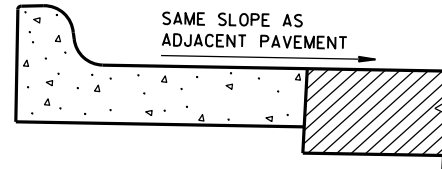
TYPES TBT & TBTT<sup>①</sup>

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT  
WITH INTEGRAL CURB & GUTTER



REVERSE SLOPE GUTTER<sup>⑥</sup>  
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS 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 & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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 GUTTER 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 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.

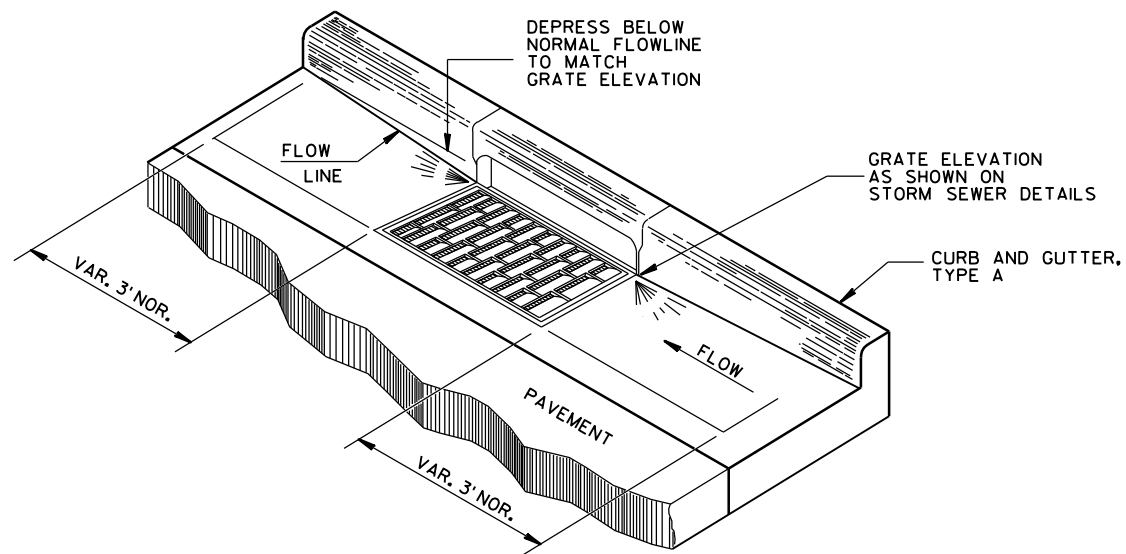
PAVEMENT THICKNESS  
AND MAXIMUM CONCRETE  
PANEL WIDTH TABLE

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

\* BIKE LANE IS NOT SHOWN.

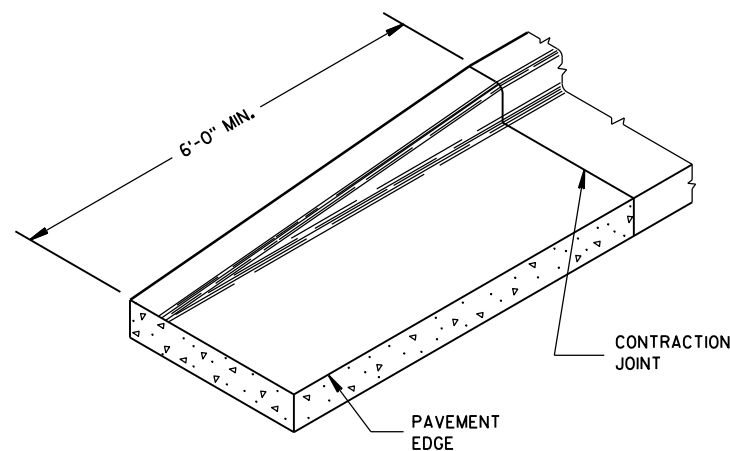
CONCRETE CURB & GUTTER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

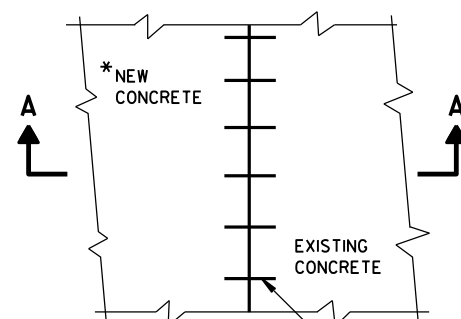


**DETAIL OF CURB AND GUTTER AT INLETS**

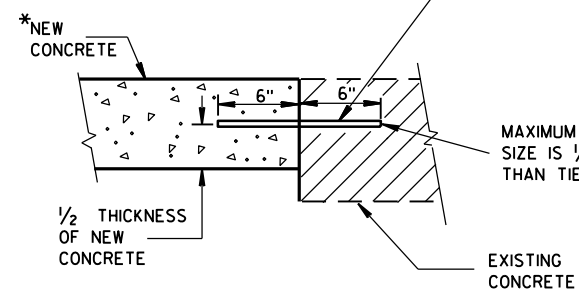
(TYPE H INLET COVER SHOWN)



**END SECTION CURB & GUTTER**



**PLAN VIEW**



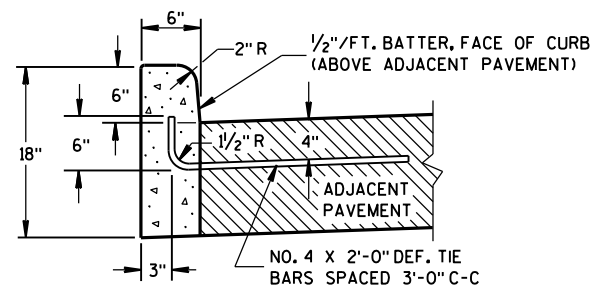
**SECTION A-A  
TIE BARS DRILLED  
INTO EXISTING PAVEMENT**

\*NEW CURB & GUTTER,  
SURFACE DRAINS,  
CONCRETE PAVEMENT  
OR OTHER NEW CONCRETE.

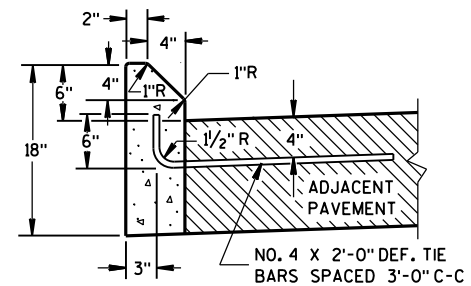
NO. 6 TIE BARS SPACED 2'-6" C-C,  
INSTALLED PERPENDICULAR  
TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE  
SIZE IS 1/8" GREATER  
THAN TIE BAR DIAMETER

EXISTING  
CONCRETE



**TYPES A<sup>①</sup> & D**



**TYPES G<sup>①</sup> & J**

## GENERAL NOTES

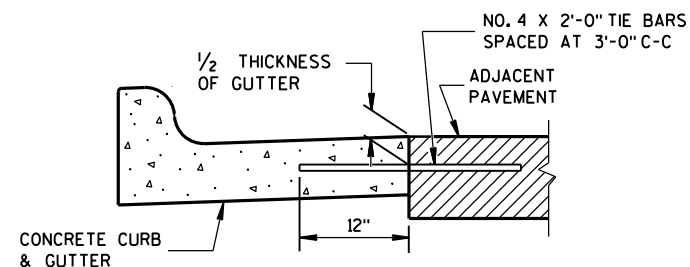
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

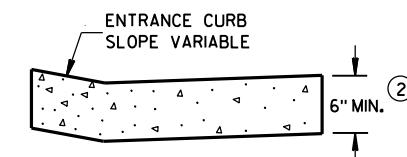
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER 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.
- ⑨ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

## CONCRETE CURB



**TYPICAL TIE BAR LOCATION<sup>①</sup>**



**DRIVEWAY ENTRANCE CURB<sup>⑨</sup>**  
(WHEN DIRECTED BY THE ENGINEER)

## CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2017

DATE

FHWA

/S/ Rodney Taylor

ROADWAY STANDARDS 59 ENT

UNIT SUPERVISOR

## 6



**S.D.D. 8 D 4-5**



## 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.

WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ### ③ CONCRETE SURFACE DRAIN



## 6

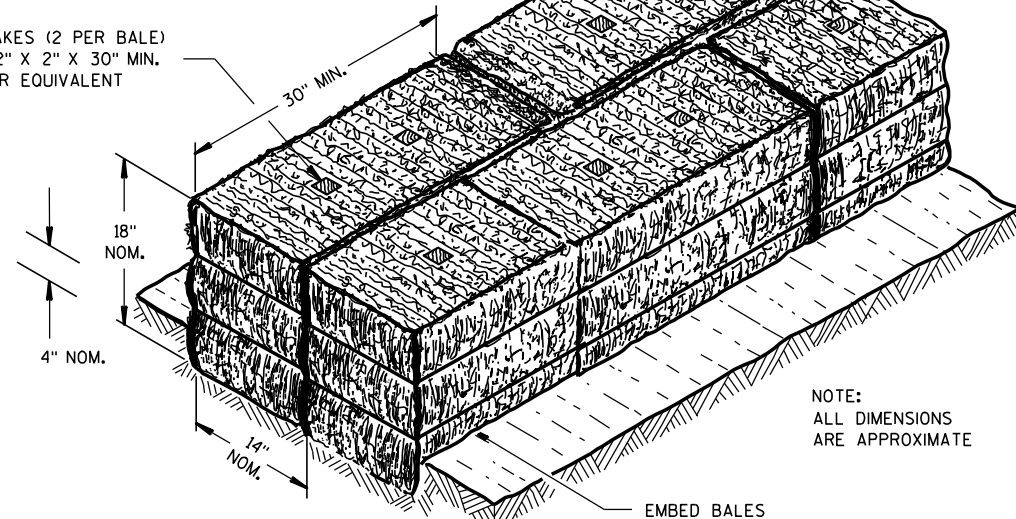


## CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
9-4-08 /S/ Jerry H. Zoon  
DATE ROADWAY STANDARDS 60  
ENGINEER

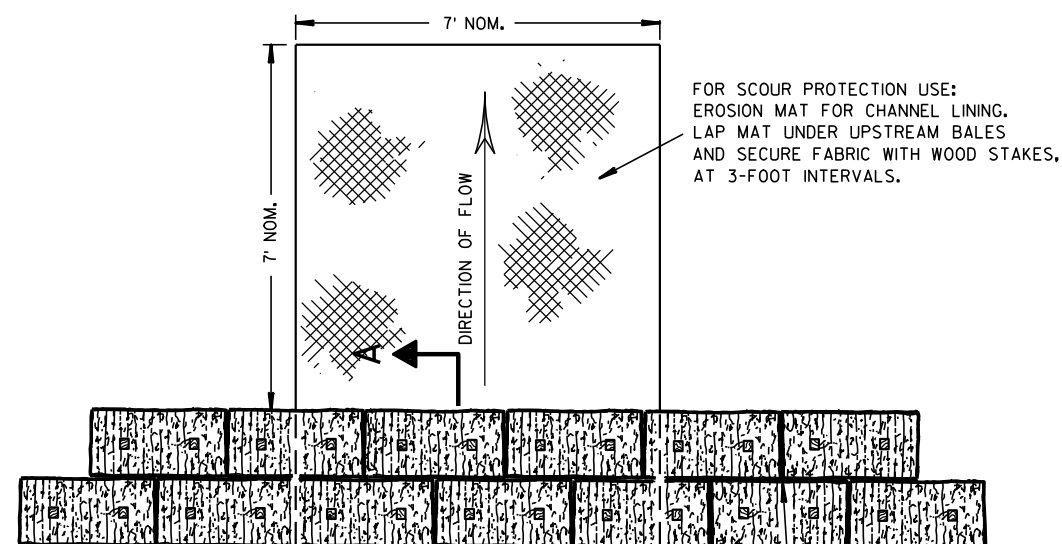
WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT



NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

EMBED BALES

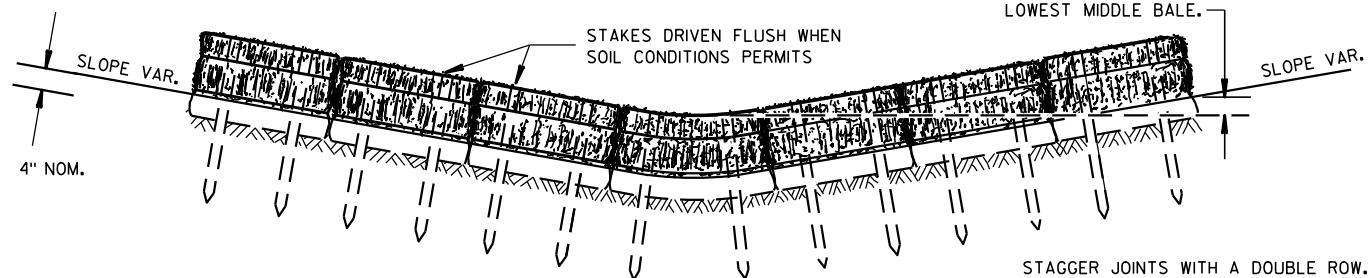
SECTION A-A



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT  
ROWS OF BALES.

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



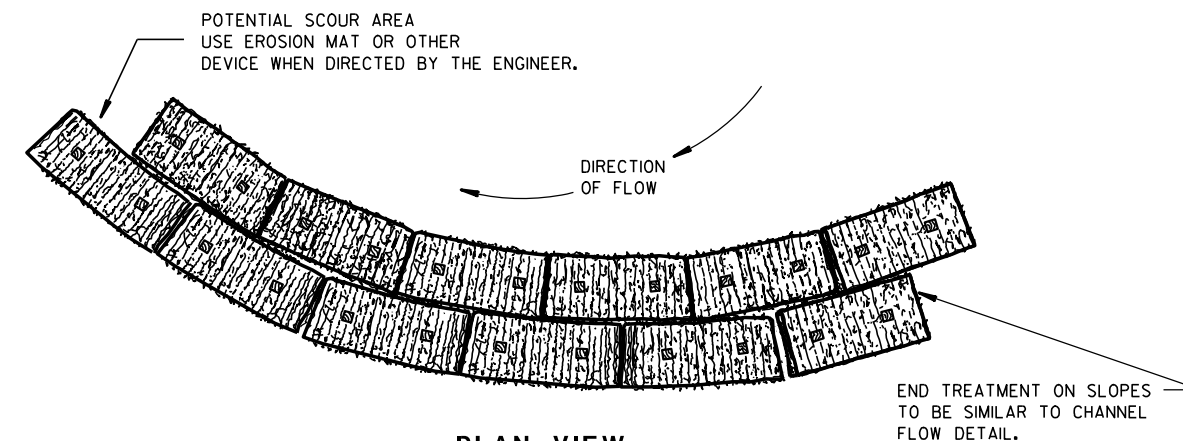
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

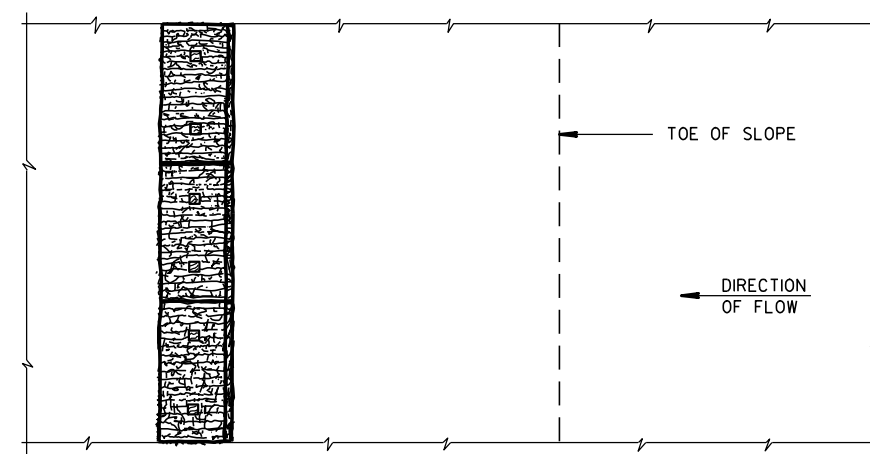
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

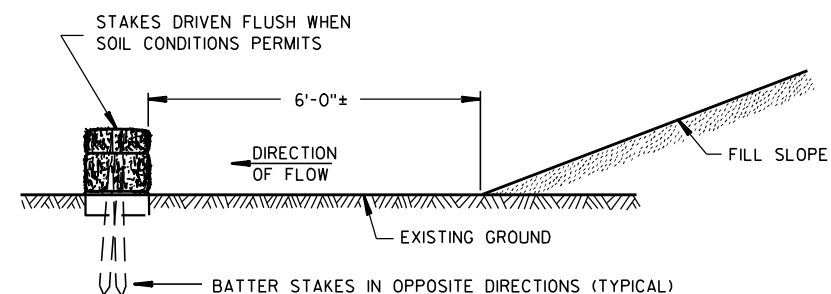


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

## TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02  
DATE

/S/ Beth Conn  
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA

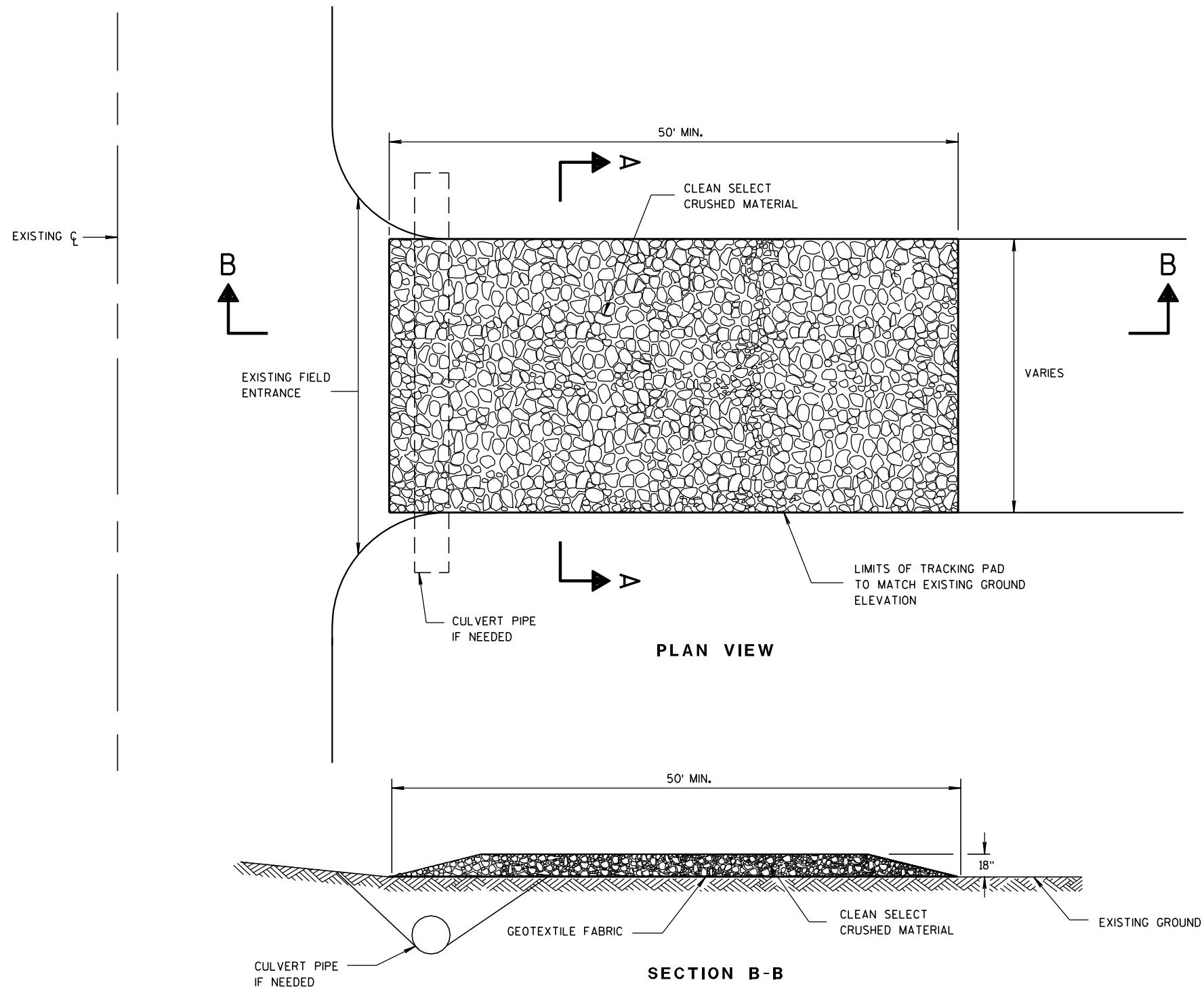


- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



|                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <h1 style="margin: 0;">SILT FENCE</h1>                                                                                                                                                                                                                                                                                                                                                                |
| <h2 style="margin: 0;">STATE OF WISCONSIN</h2> <h3 style="margin: 0;">DEPARTMENT OF TRANSPORTATION</h3>                                                                                                                                                                                                                                                                                               |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>APPROVED</p> <p><u>4-29-05</u></p> <p>DATE</p> </div> <div style="width: 40%; text-align: center;"> <p><u>/S/ Beth Connolly</u></p> <p>CHIEF ROADWAY DEVELOPER</p> </div> <div style="width: 30%; text-align: right;"> <p><u>62</u></p> <p>ENGINEER</p> </div> </div> <p style="margin-top: 10px;">FHWA</p> |





TRACKING PAD

**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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

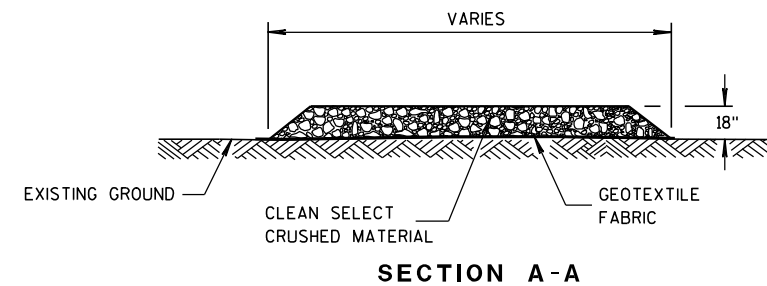
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A-A

**TRACKING PAD**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011

DATE

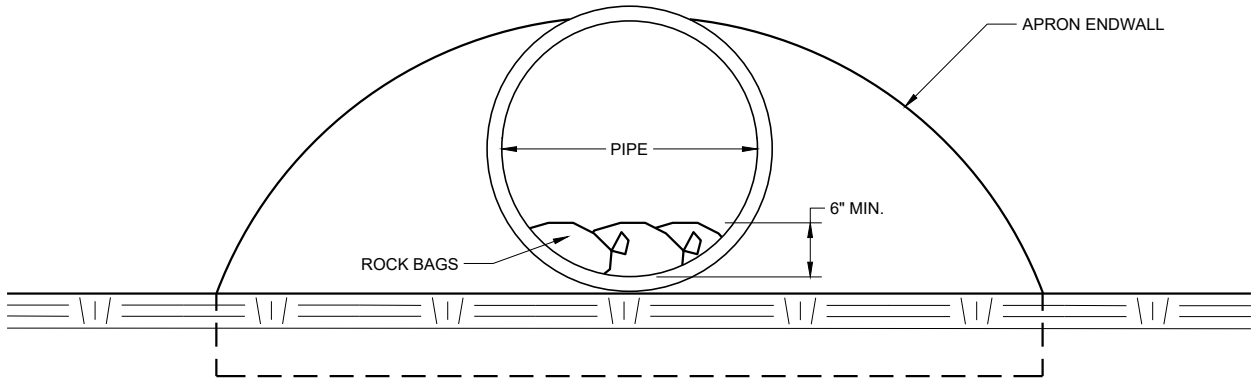
FHWA

/S/ Jerry H. Zogg

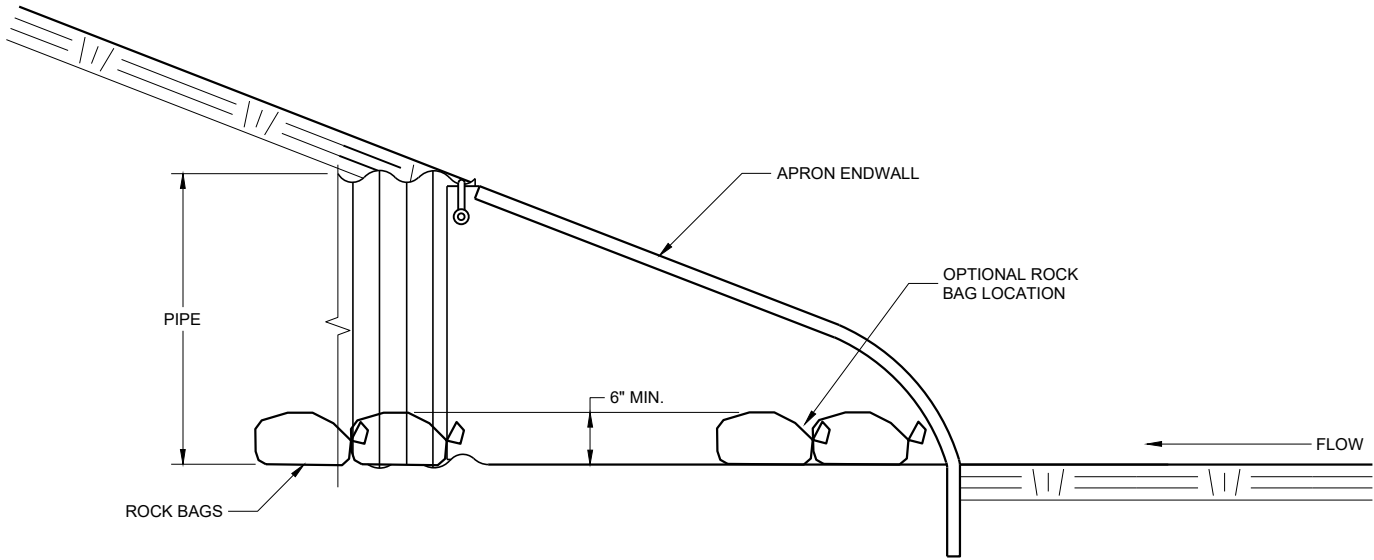
ROADWAY STANDARDS 63

ENGINEER

ENT



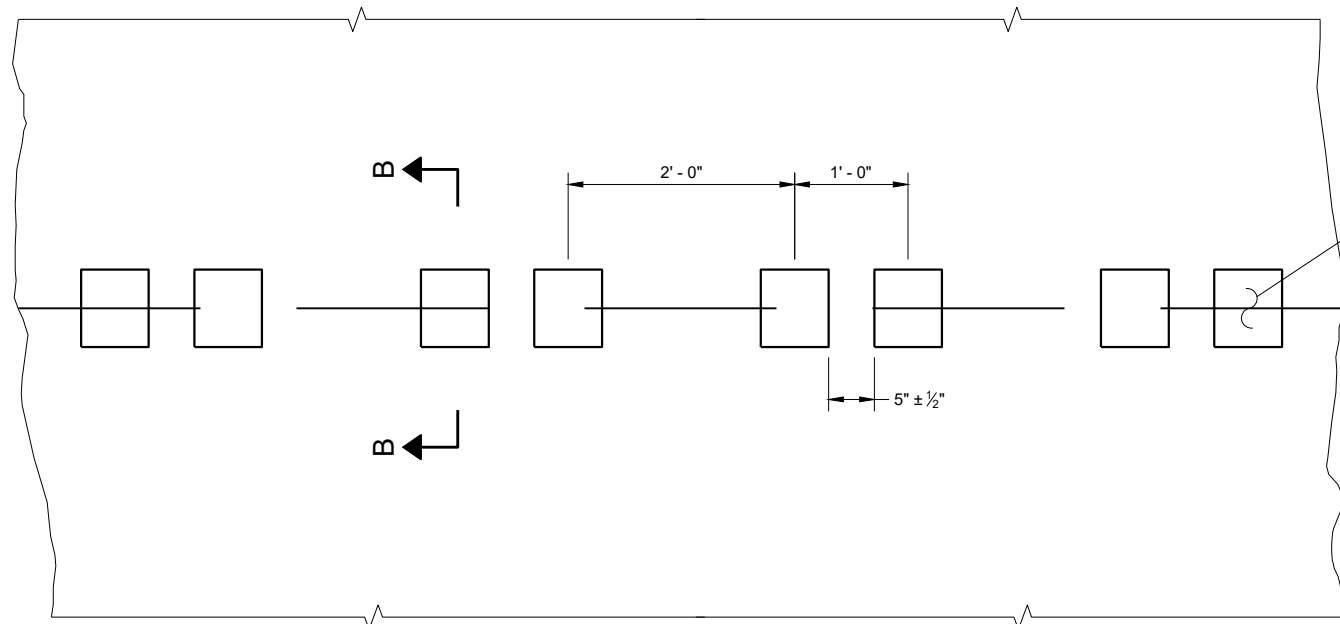
END VIEW



SIDE VIEW

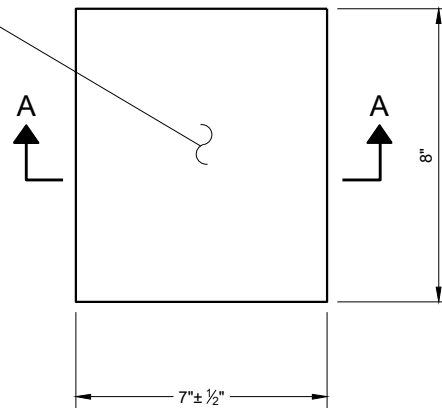
**CULVERT PIPE CHECK**  
(INSTALL ON INLET END ONLY)

|                                                    |                                              |
|----------------------------------------------------|----------------------------------------------|
| <b>CULVERT PIPE CHECK</b>                          |                                              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                              |
| APPROVED<br>May 2019<br>DATE                       | /S/ Daniel Schave<br>EROSION CONTROL ENGI 64 |
| FHWA                                               |                                              |



PLAN VIEW  
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW  
(SINGLE GROOVE)

GENERAL NOTES

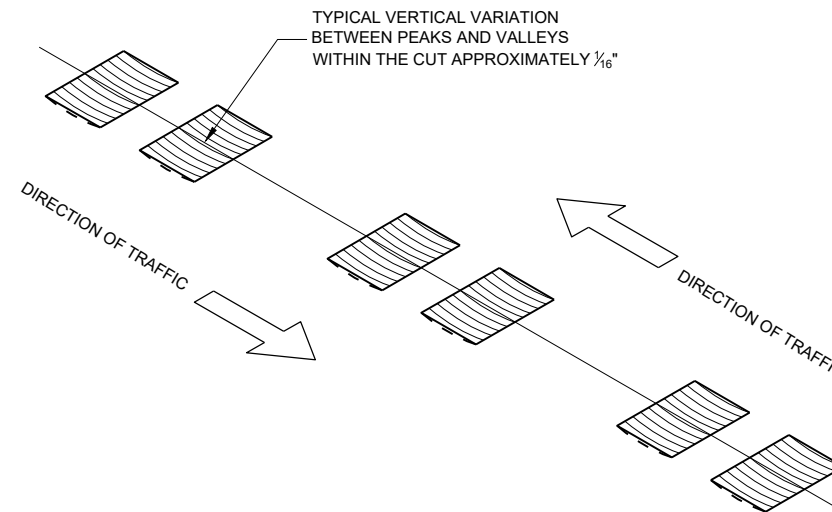
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

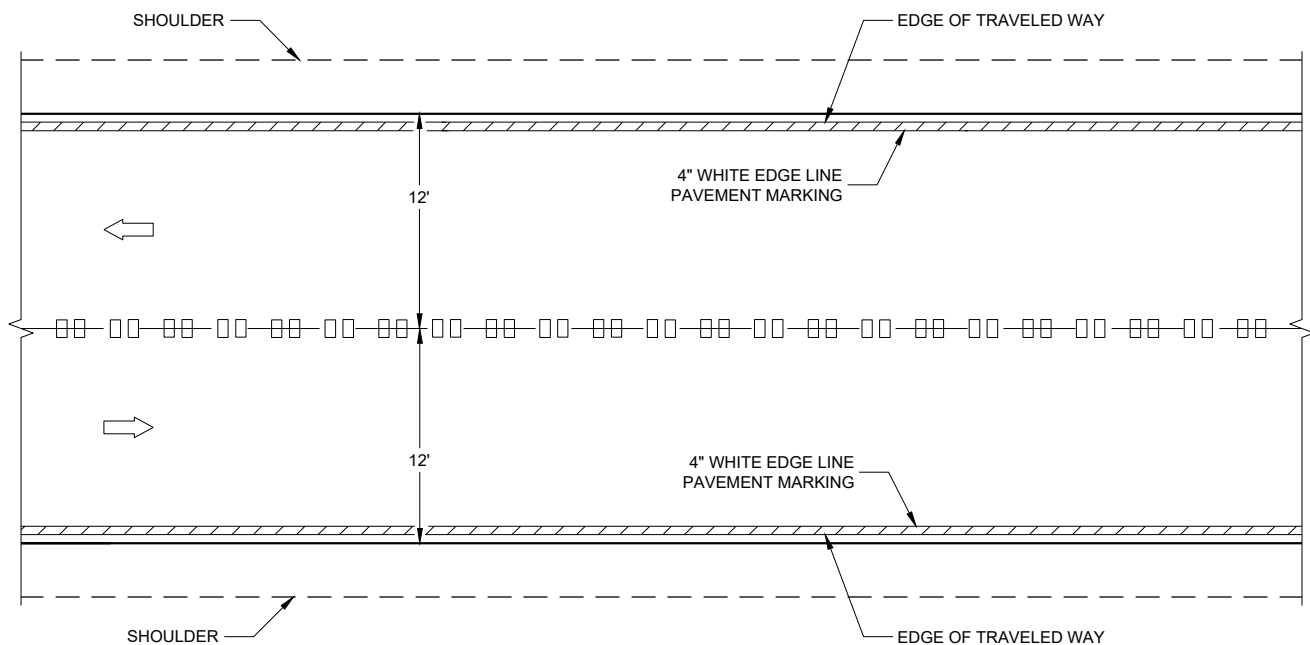
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

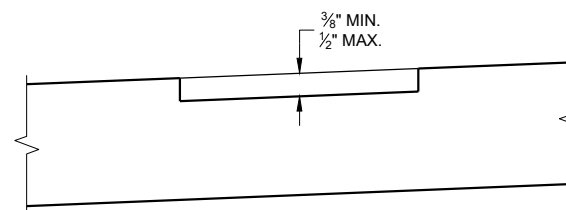
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



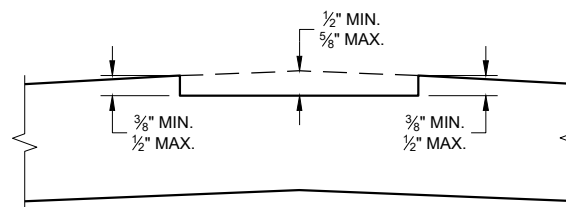
ISOMETRIC



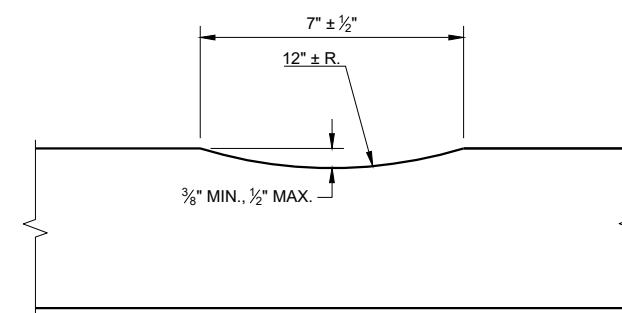
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B  
SUPERELEVATED ROADWAY



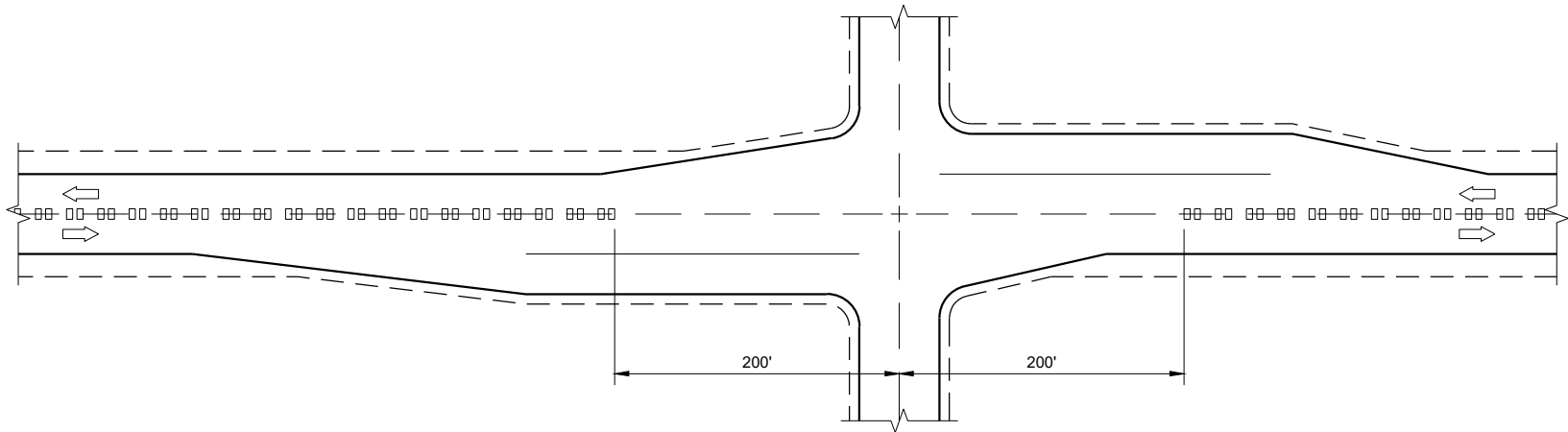
SECTION B - B  
CROWNED ROADWAY



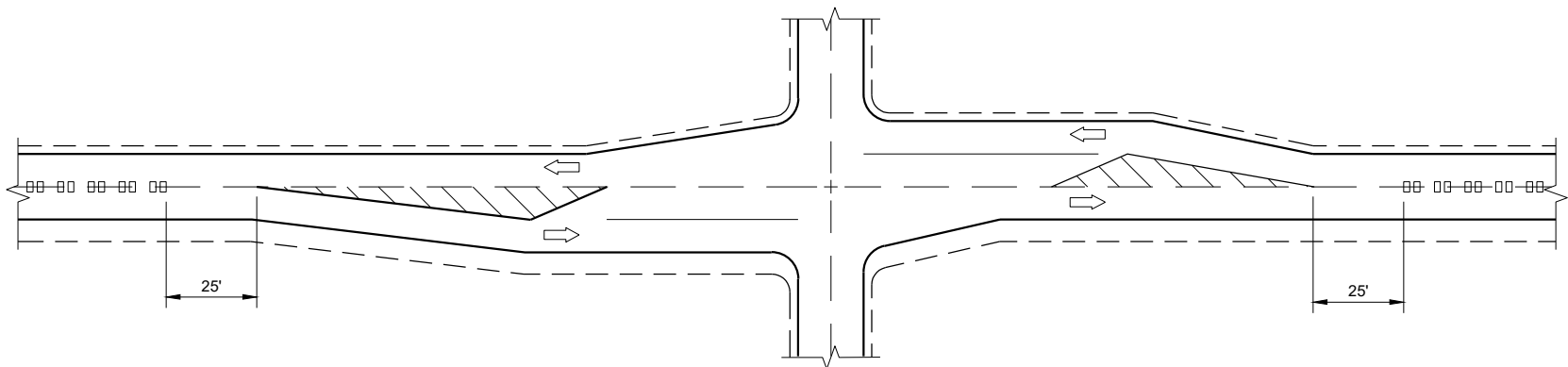
SECTION A - A

2-LANE RURAL  
CENTER LINE RUMBLE STRIP,  
MILLING

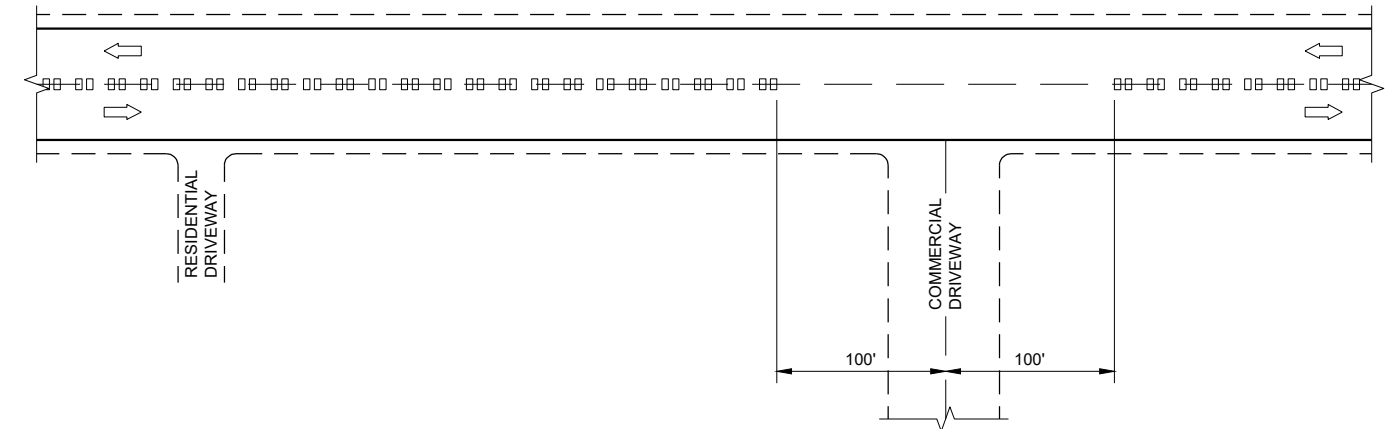
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 65



CENTERLINE GROOVES AT INTERSECTIONS



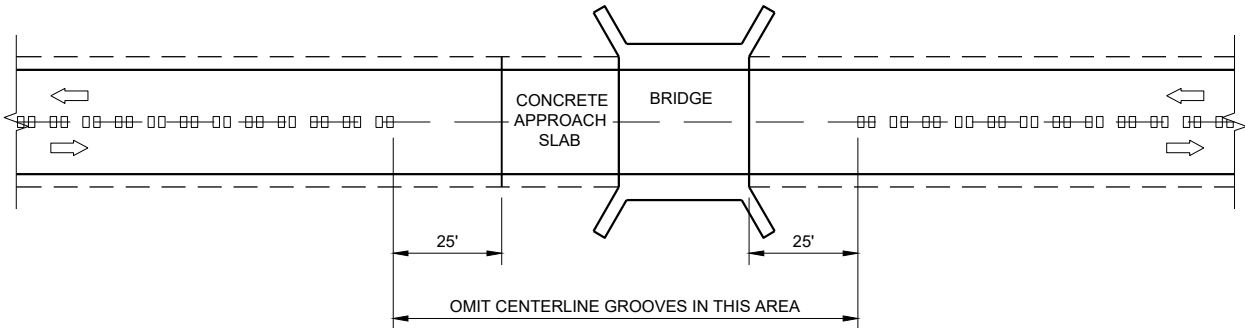
CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)



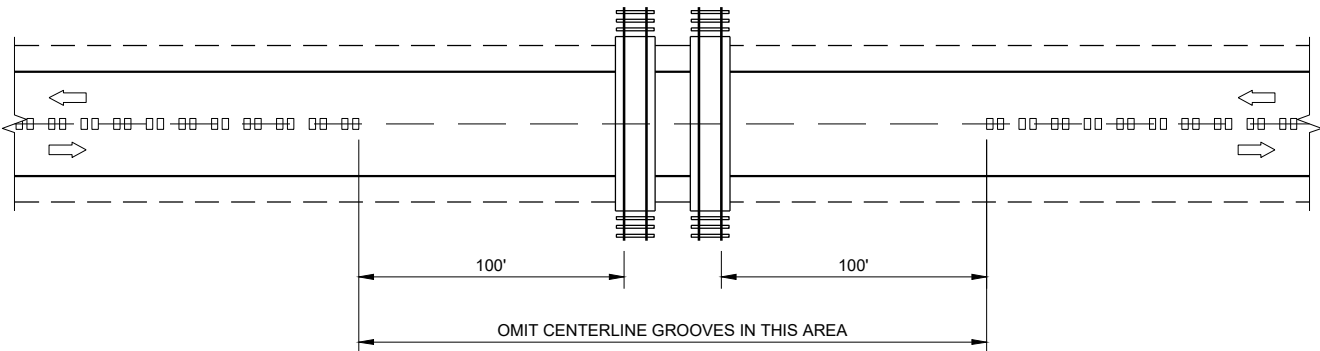
CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>

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

2-LANE RURAL  
CENTERLINE RUMBLE STRIP,  
MILLING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/2018  
DATE  
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

FHWA

## 6

- S.D.D. 14 B 15-11a**

**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**

**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**



**S.D.D. 14 B 15-11a**

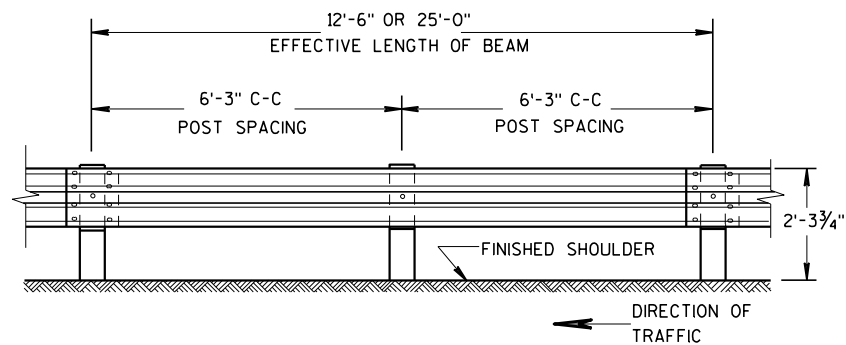


**S.D.D. 14 B 15-11a**

**S.D.D. 14 B 15-11a**

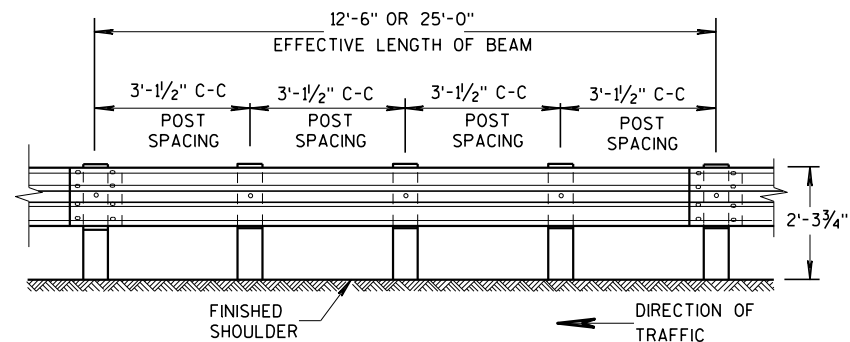
**S.D.D. 14 B 15-11a**





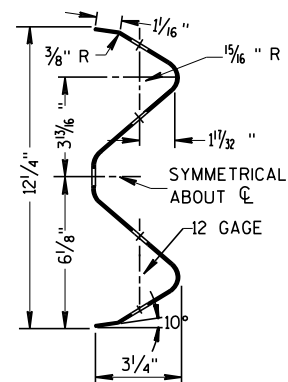
FRONT VIEW

POST SPACING STANDARD INSTALLATION

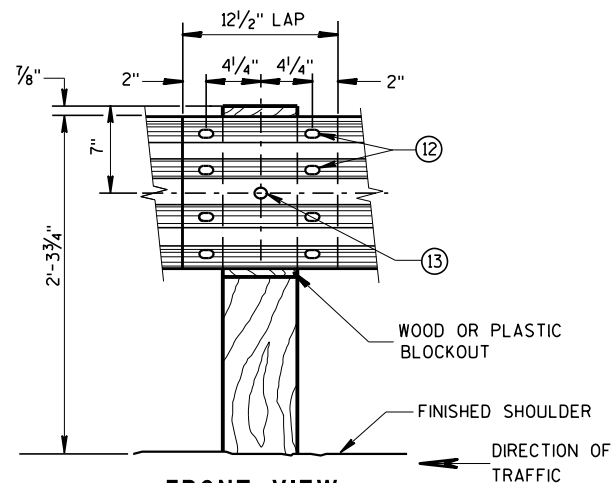


FRONT VIEW

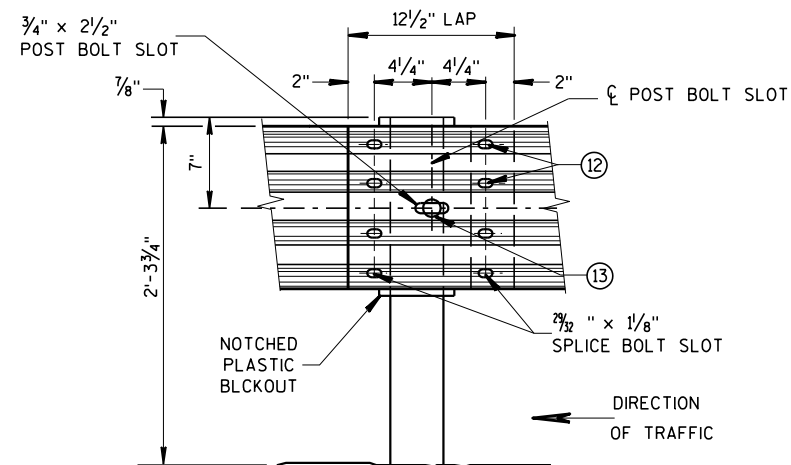
POST SPACING FOR LONGER POST  
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW  
BEAM SPLICE AT WOOD POST  
AND POST MOUNTING DETAIL

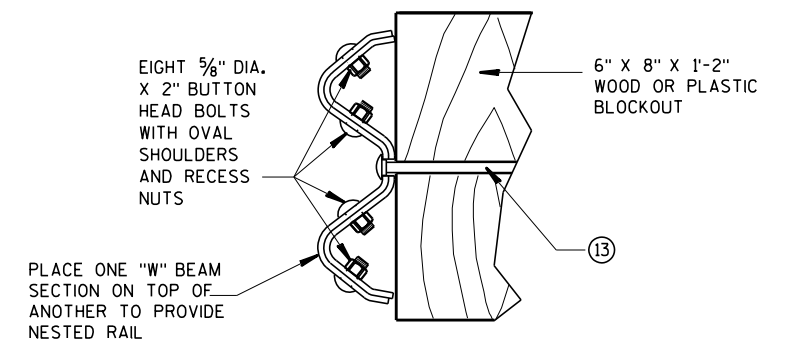


FRONT VIEW  
BEAM SPLICE AT STEEL POST  
TYPICAL SPlicing DETAILS  
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

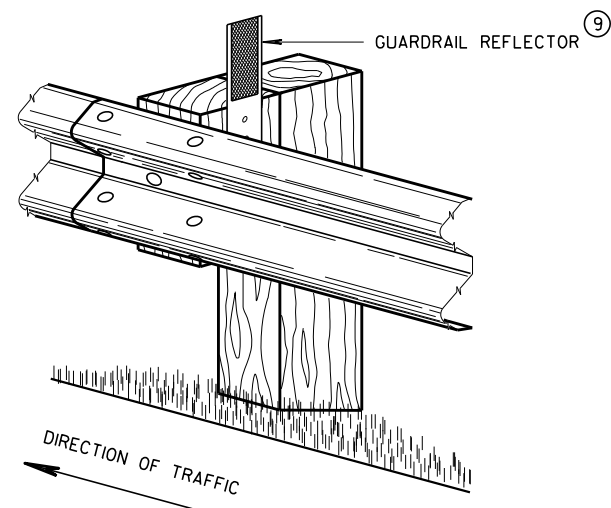
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8"  $\phi$  X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS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



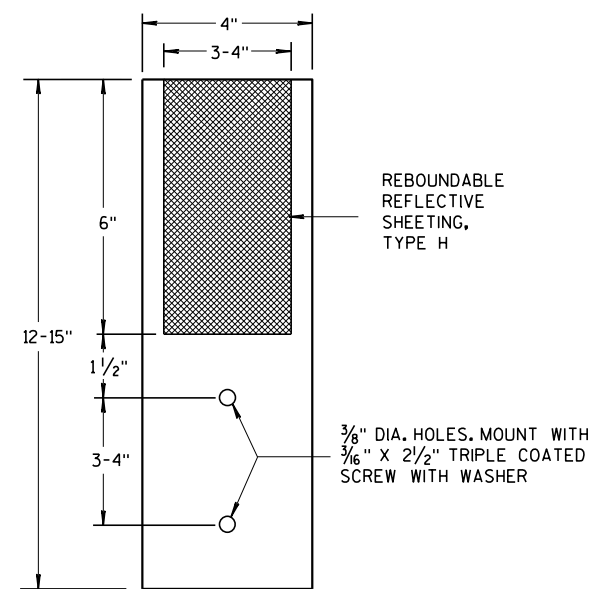
NESTED W BEAM (NW)

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

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



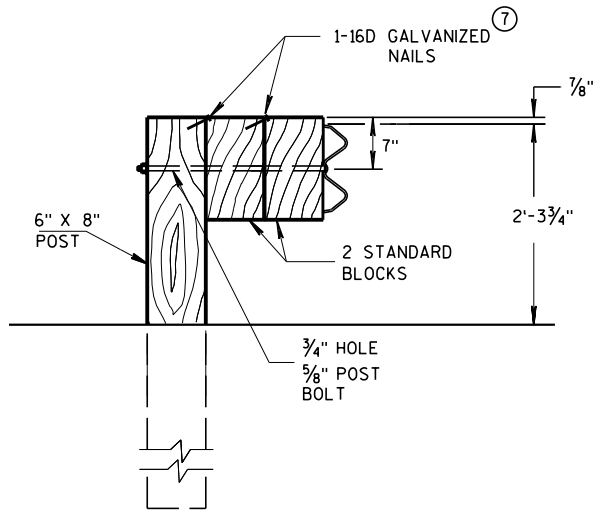
4" X 12" GUARDRAIL REFLECTOR DETAIL  
AND TYPICAL INSTALLATION \*



4"x 12" GUARDRAIL REFLECTOR

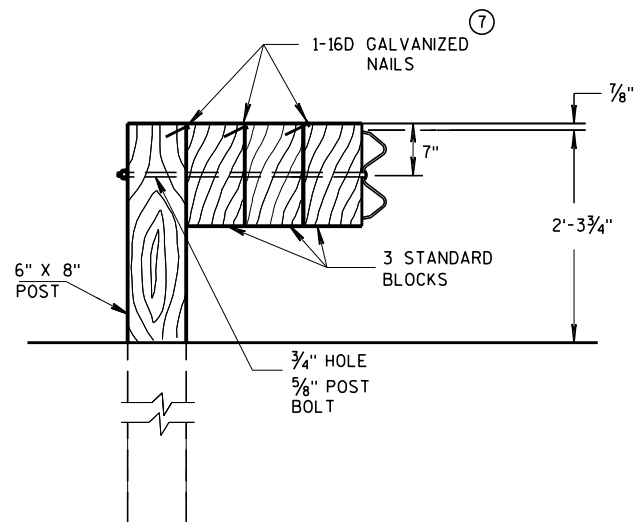
STEEL PLATE BEAM GUARD,  
CLASS "A",  
INSTALLATION & ELEMENTS

STATE OF WISCO<sup>68</sup>  
DEPARTMENT OF TRANSPORTATION



#### DETAIL FOR DOUBLE BLOCKS

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

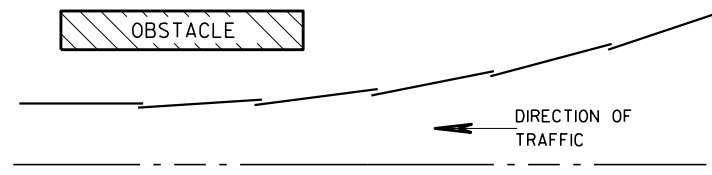


#### DETAIL FOR TRIPLE BLOCKS

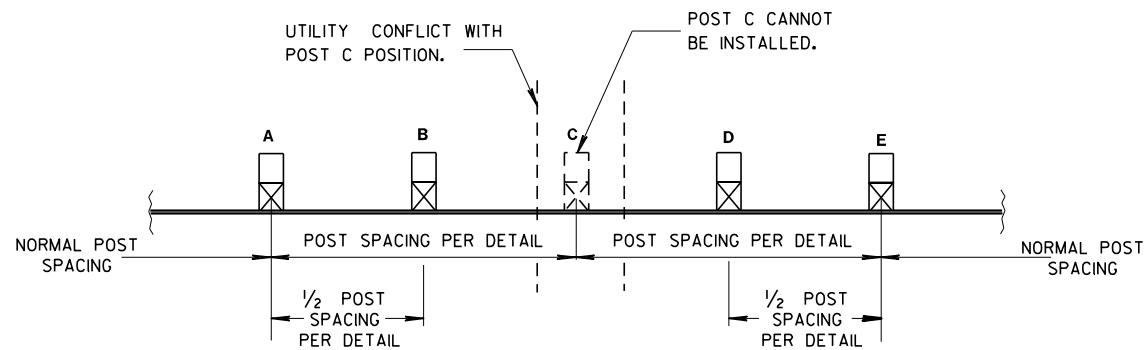
TRIPLE BLOCK DETAIL IS LIMITED TO ONE  
LOCATION WITHIN A BEAM GUARD RUN.

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

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



#### PLAN VIEW BEAM LAPPING DETAIL



#### POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

|           |                      |      |
|-----------|----------------------|------|
| APPROVED  |                      |      |
| June 2017 | /S/ Rodney Taylor    |      |
| DATE      | ROADWAY STANDARDS 69 | MENT |
| FHWA      | UNIT SUPERVISOR      |      |

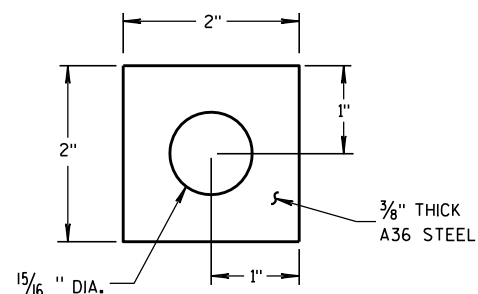
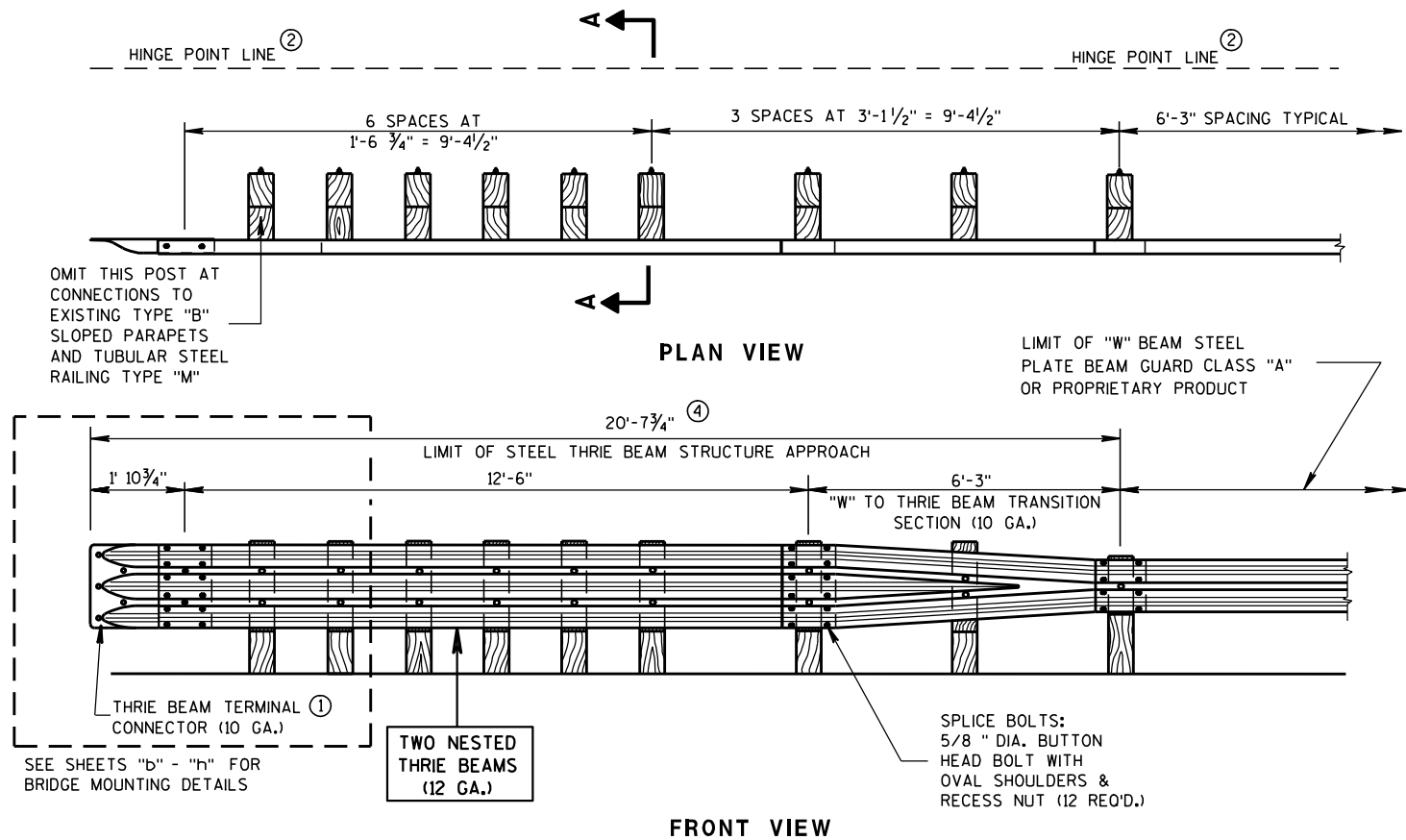


PLATE WASHER DETAIL

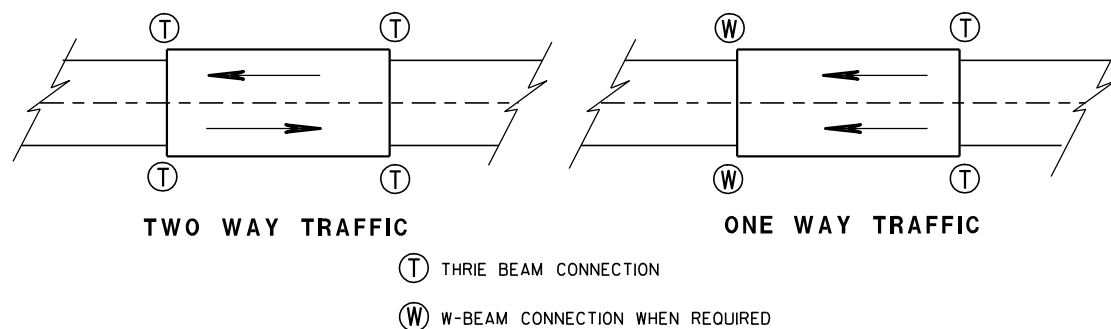
## GENERAL NOTES

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

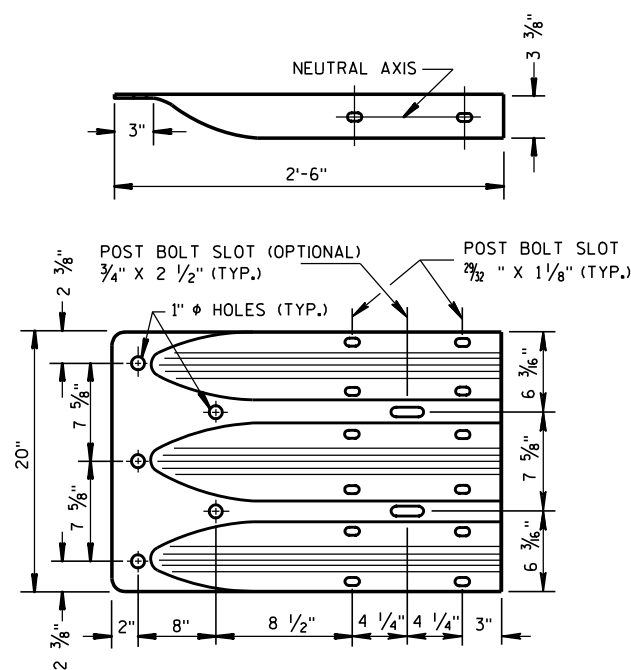
DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

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

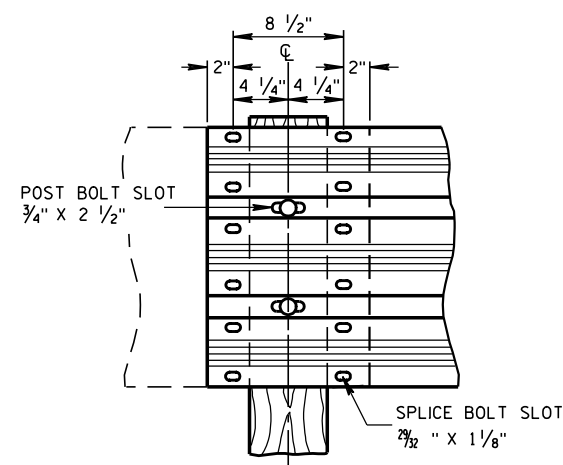
- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



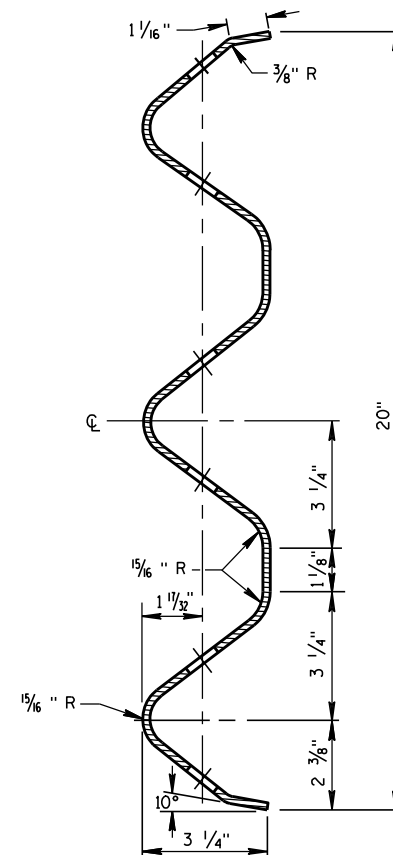
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



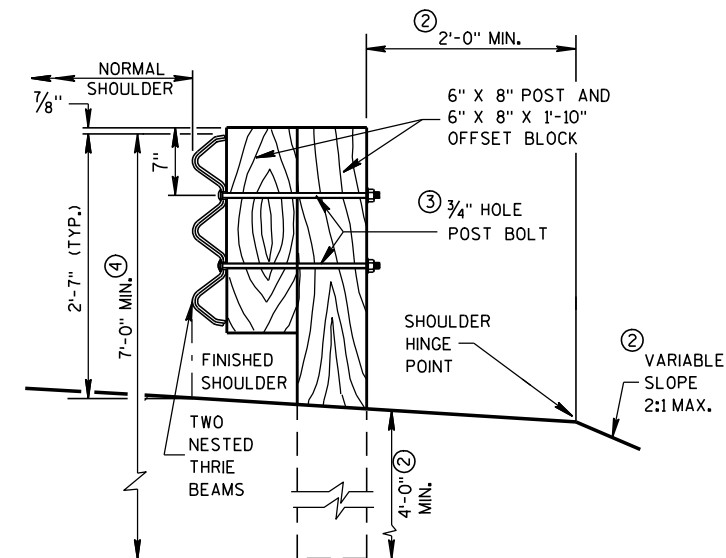
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION A-A

## STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

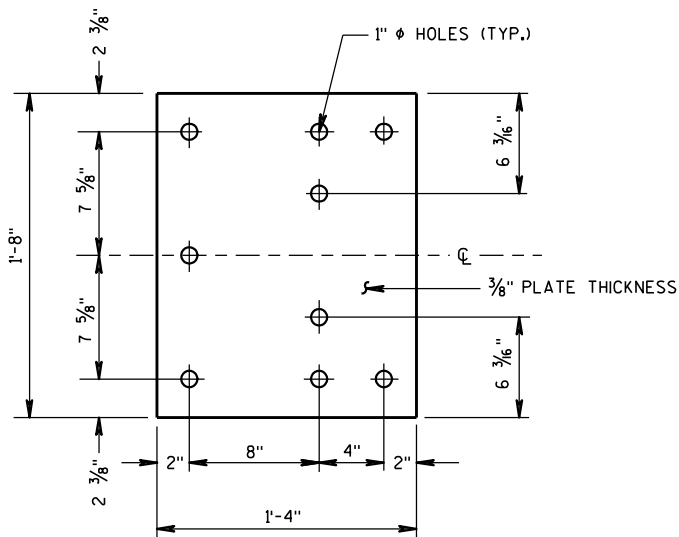
FHWA

/s/ Jerry H. Zoon

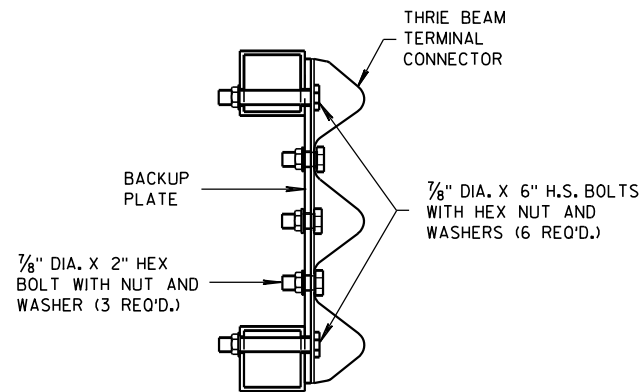
ROADWAY STANDARDS 170

ENGINEER

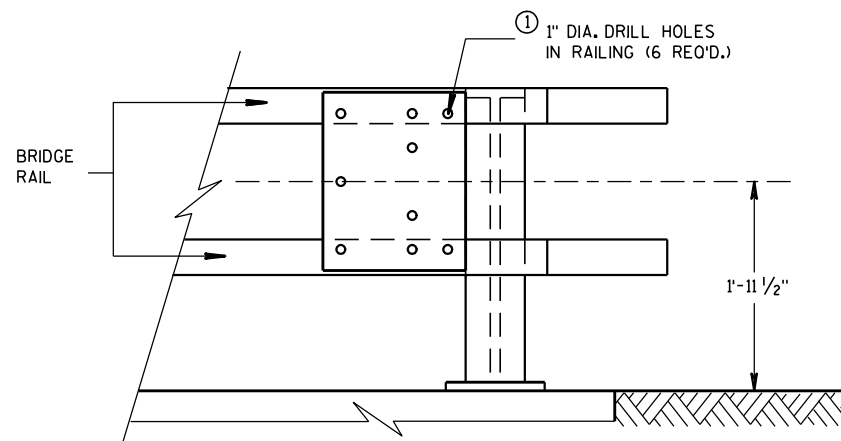
ENT



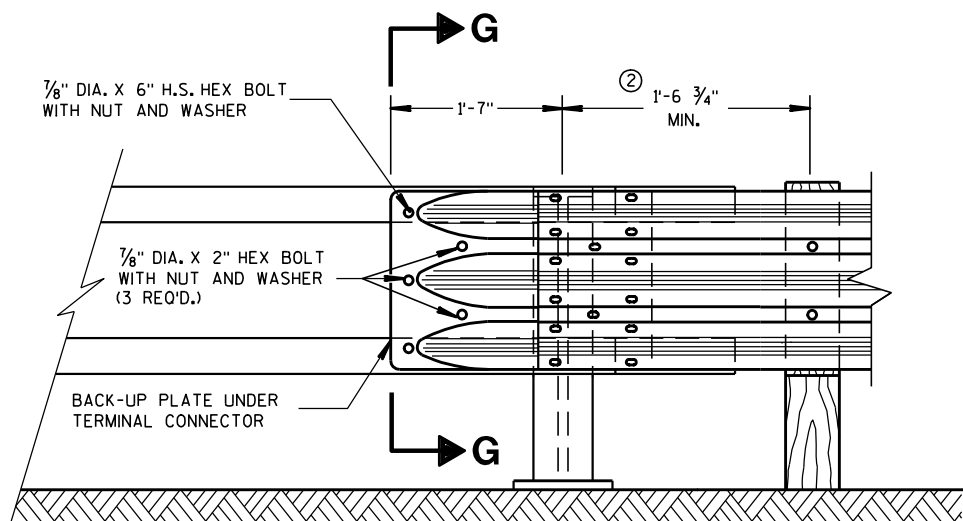
BACK-UP PLATE DETAIL



SECTION G-G

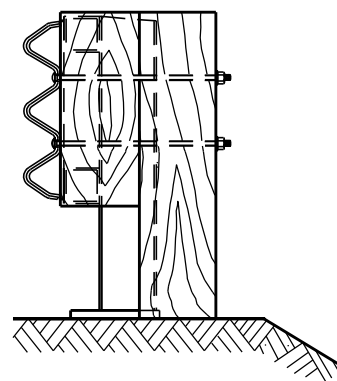


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

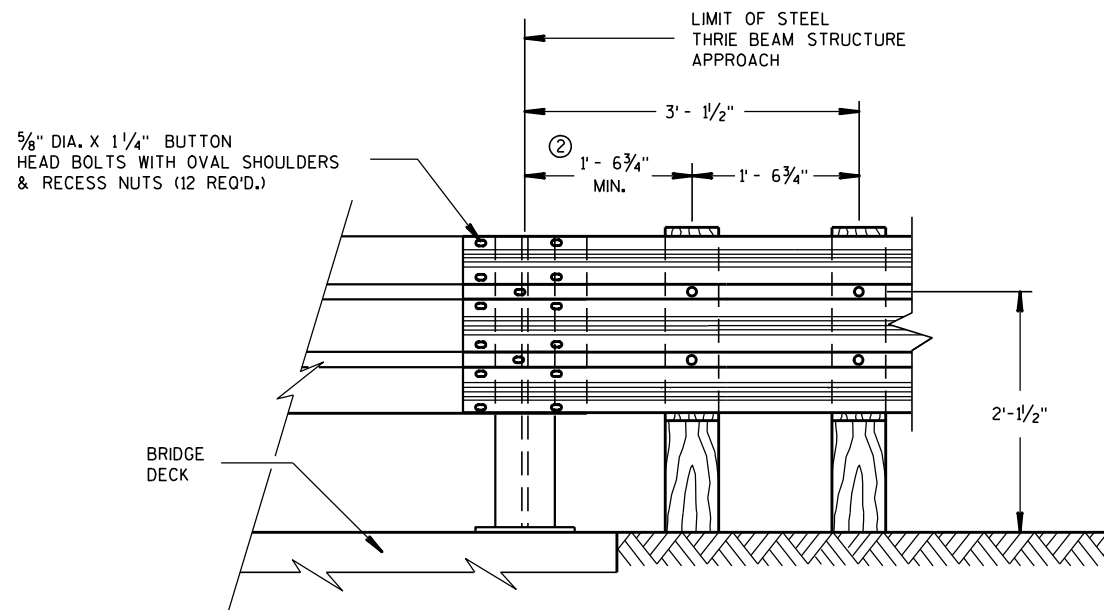


END VIEW

## GENERAL NOTES

BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
8/31/2012 DATE /S/ Jerry H. 7000  
ROADWAY STANDARDS 71 ENT  
ENGINEER  
FHWA

BILL OF MATERIALS

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

GENERAL NOTES

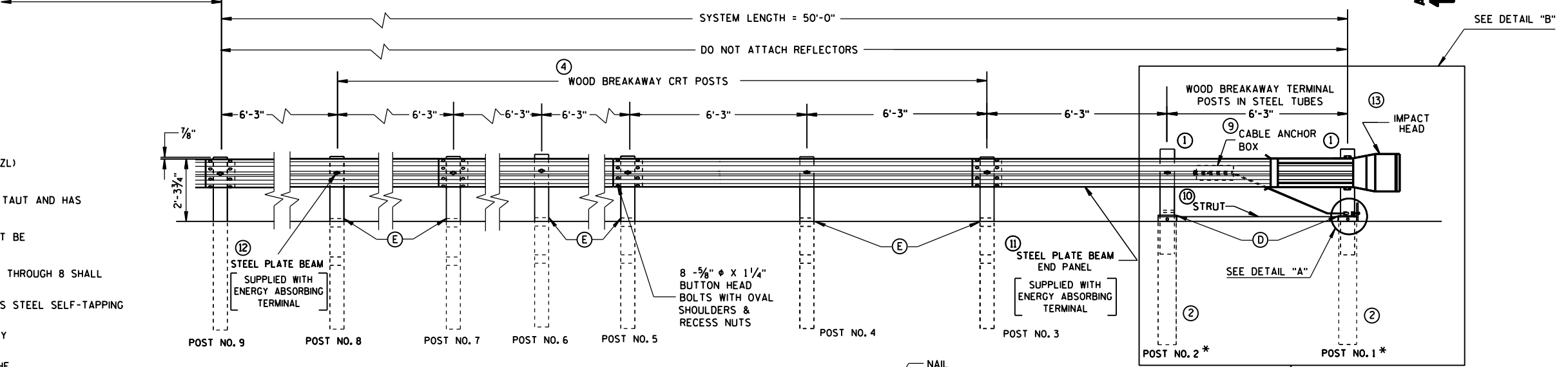
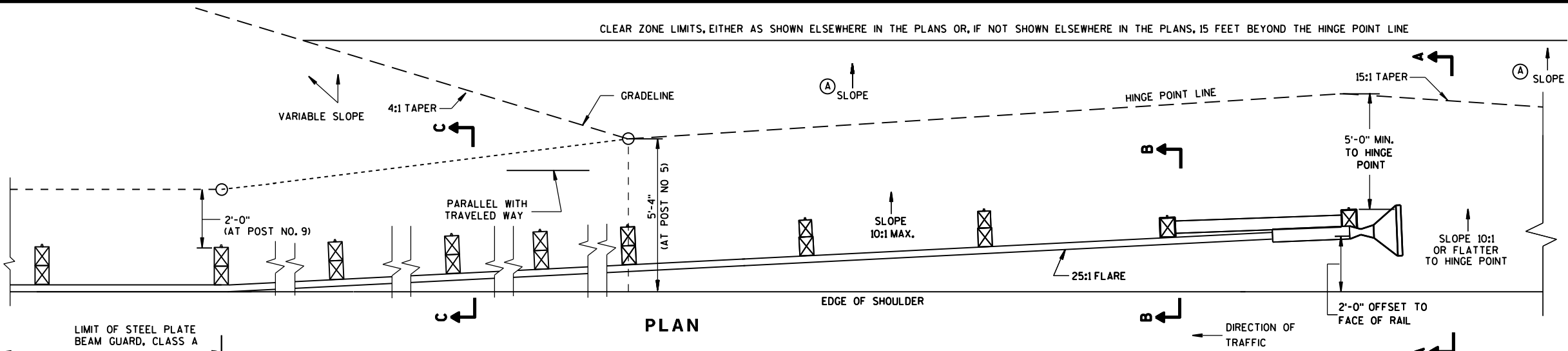
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

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

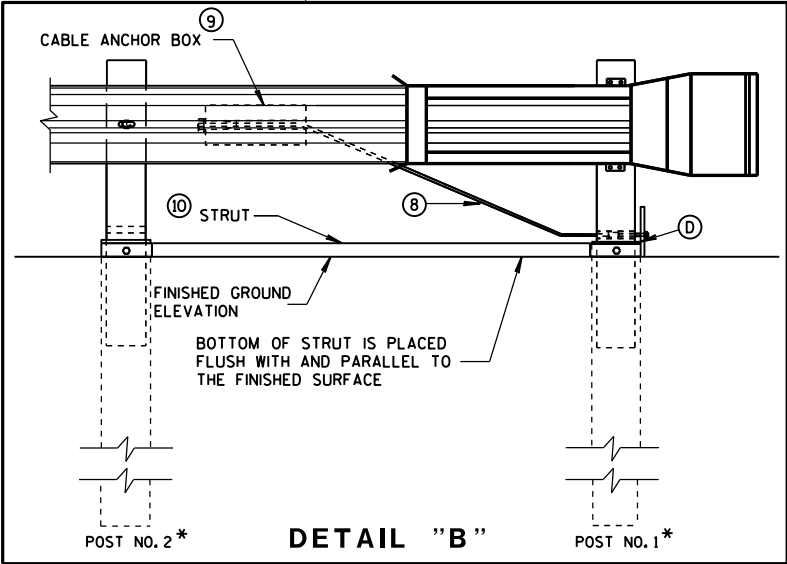
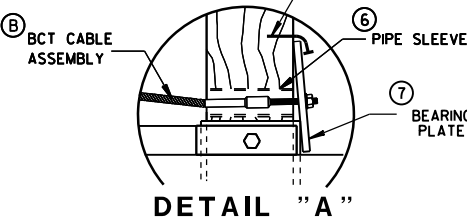
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

\*DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



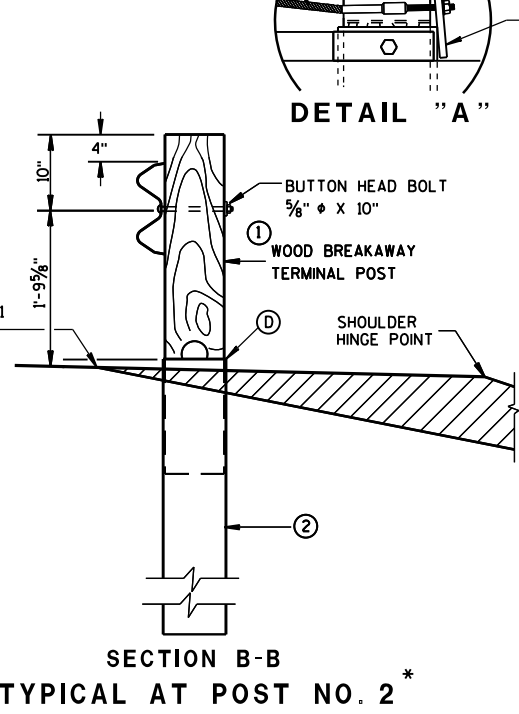
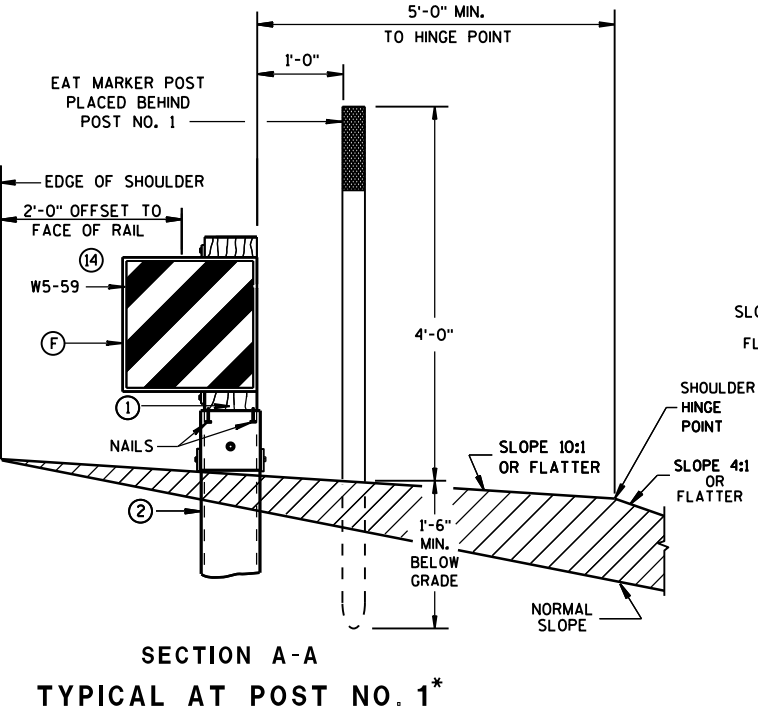
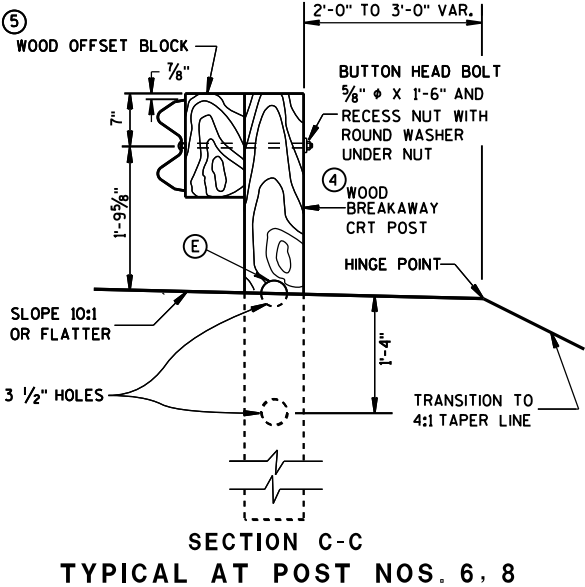
ELEVATION

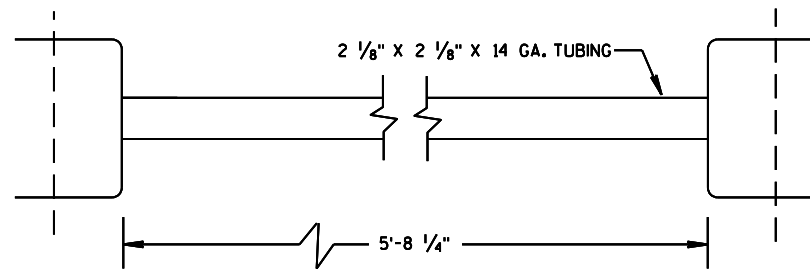


DETAIL "B"

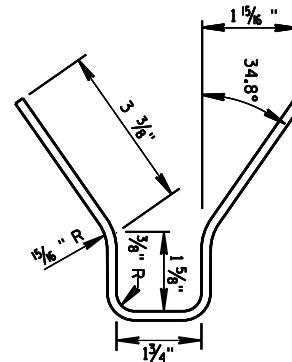
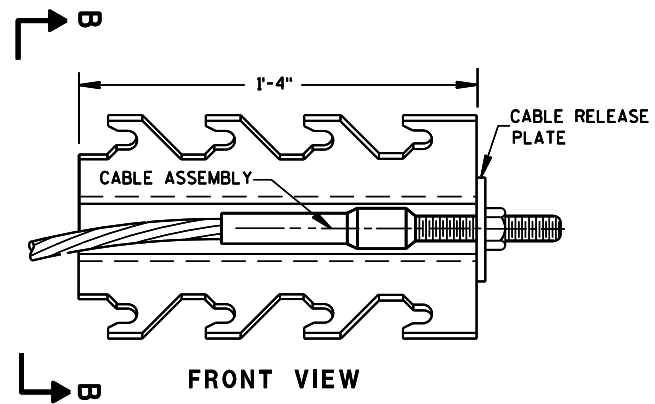
STEEL PLATE BEAM GUARD  
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

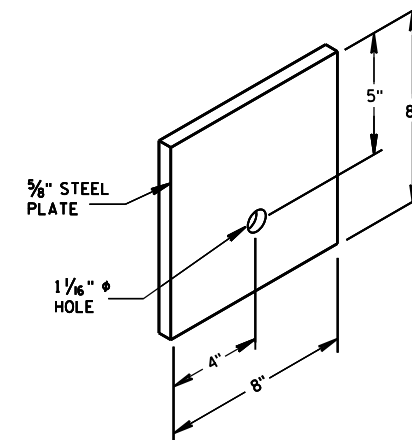




⑩ STRUT DETAIL



⑨ CABLE ANCHOR BOX

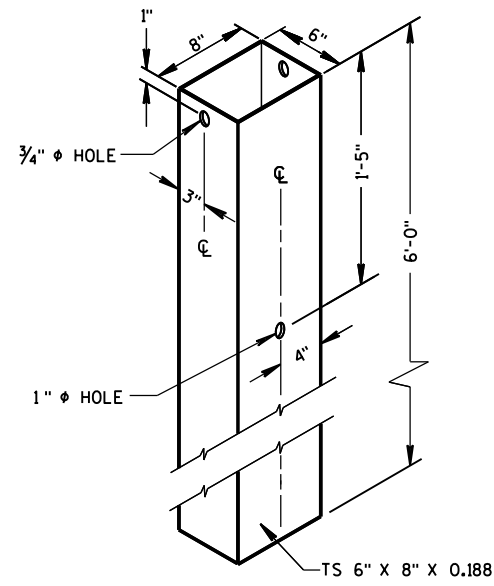


⑦ STEEL BEARING PLATE

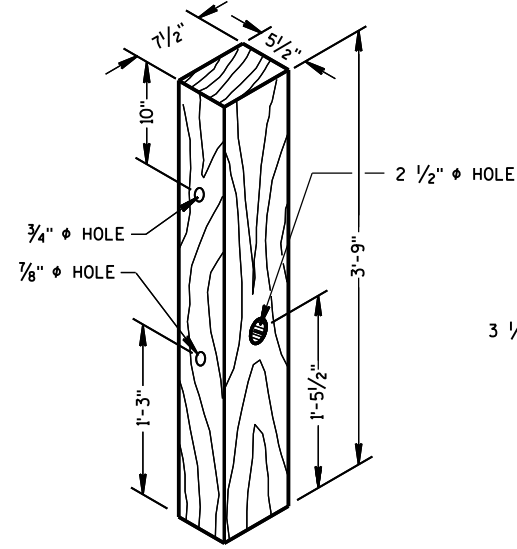
STEEL PLATE BEAM GUARD  
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

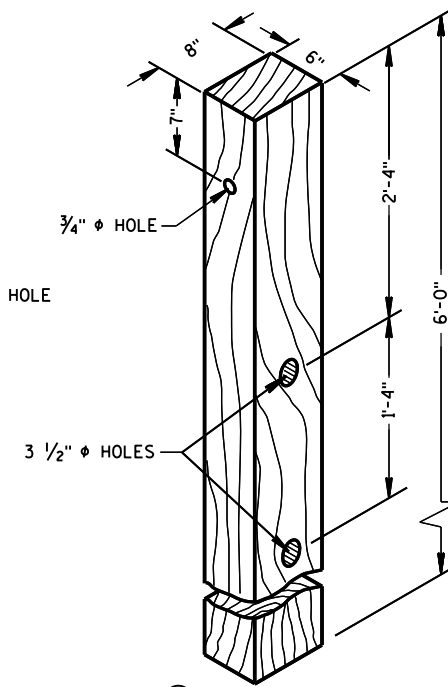




② **72" STEEL TUBE**  
(POSTS NO. 1-4)



① **TERMINAL POST**

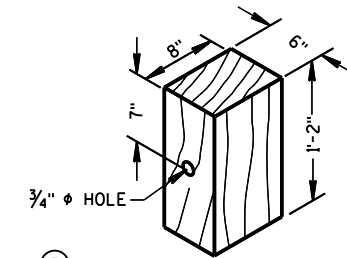


④ **CRT POST**  
(POSTS NO'S 5-8)

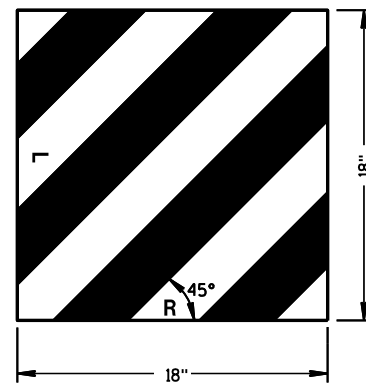
### WOOD BREAKAWAY POSTS

### GENERAL NOTES

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



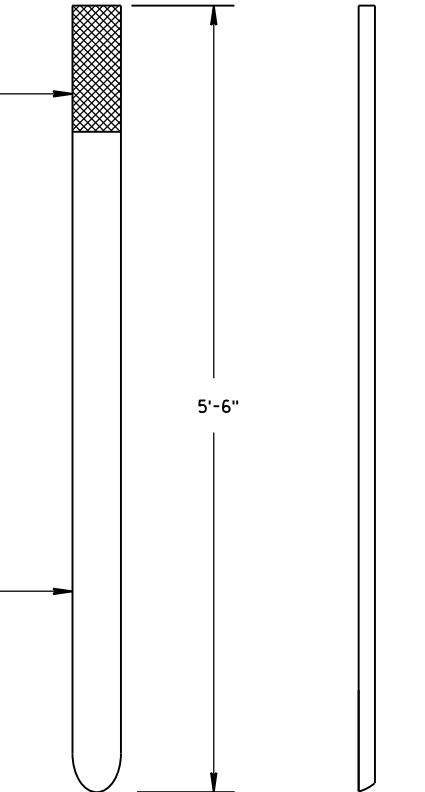
⑤ **WOOD OFFSET BLOCK**  
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ **REFLECTIVE SHEETING DETAILS**

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

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



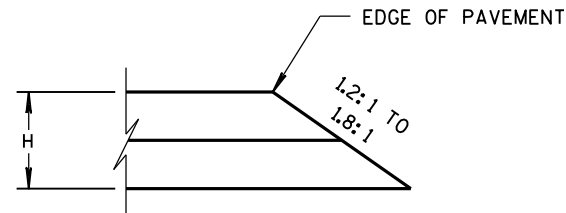
FRONT VIEW SIDE VIEW

**E.A.T. MARKER POST**

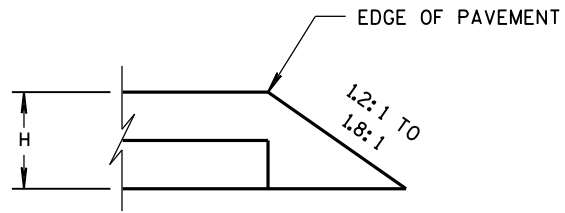
**STEEL PLATE BEAM GUARD  
ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

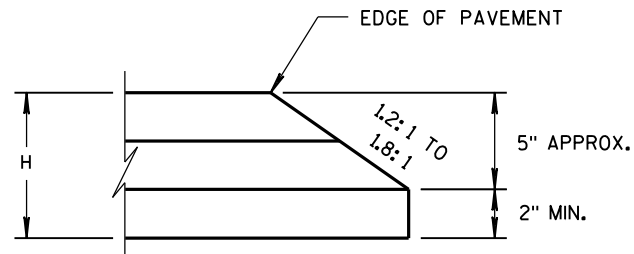
APPROVED  
June 2017 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS 74 ENT  
FHWA UNIT SUPERVISOR



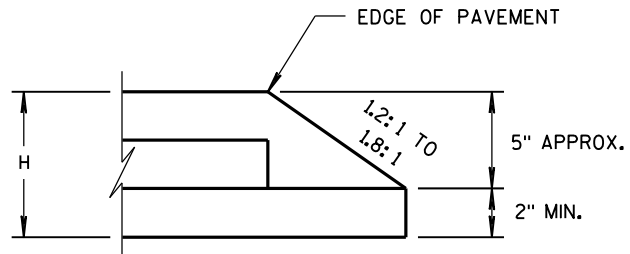
CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER  
FOR H 5" OR LESS

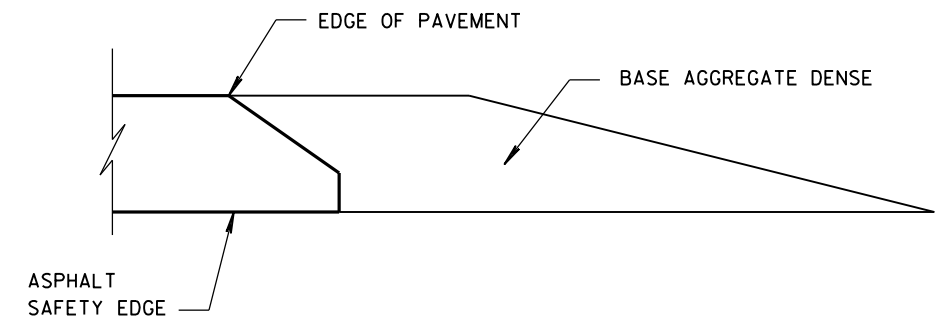


CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER  
FOR H GREATER THAN 5"

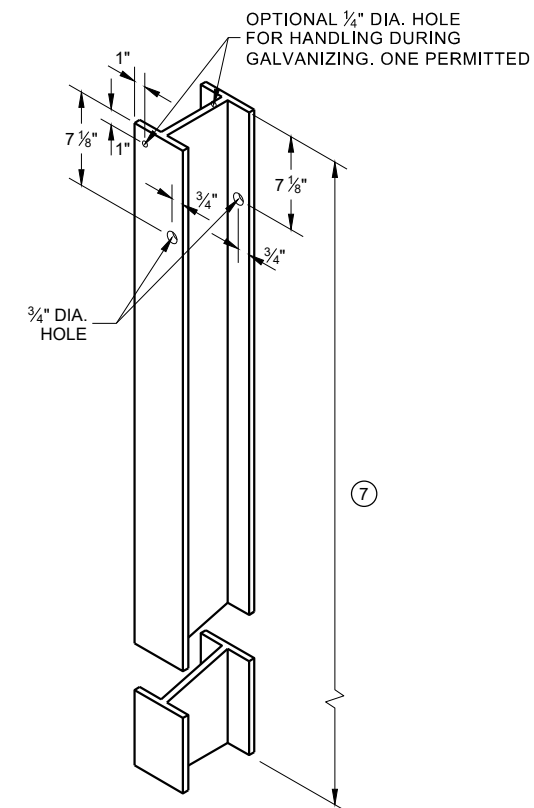
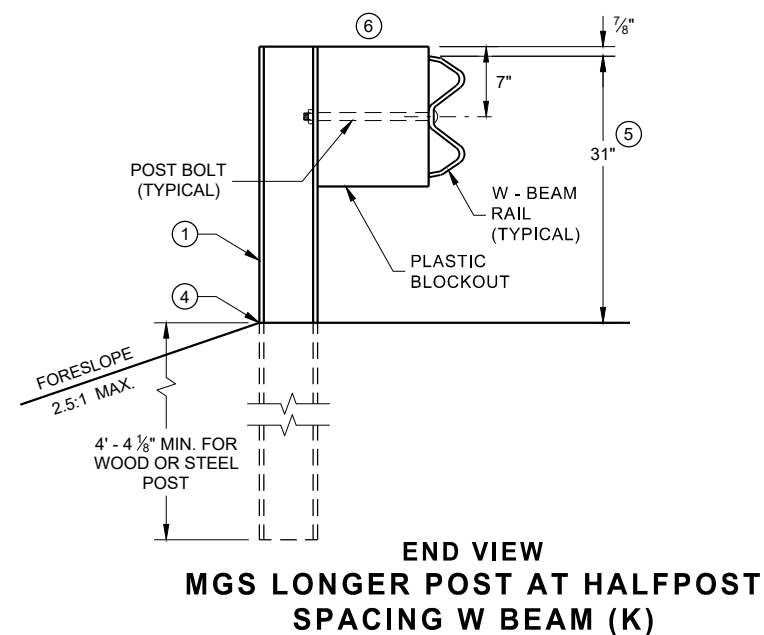
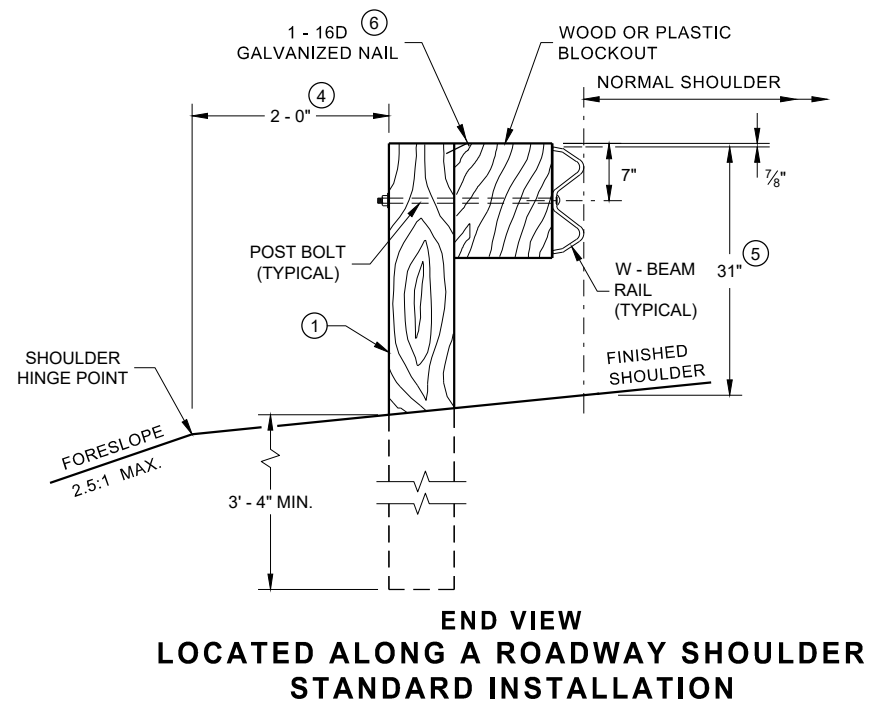
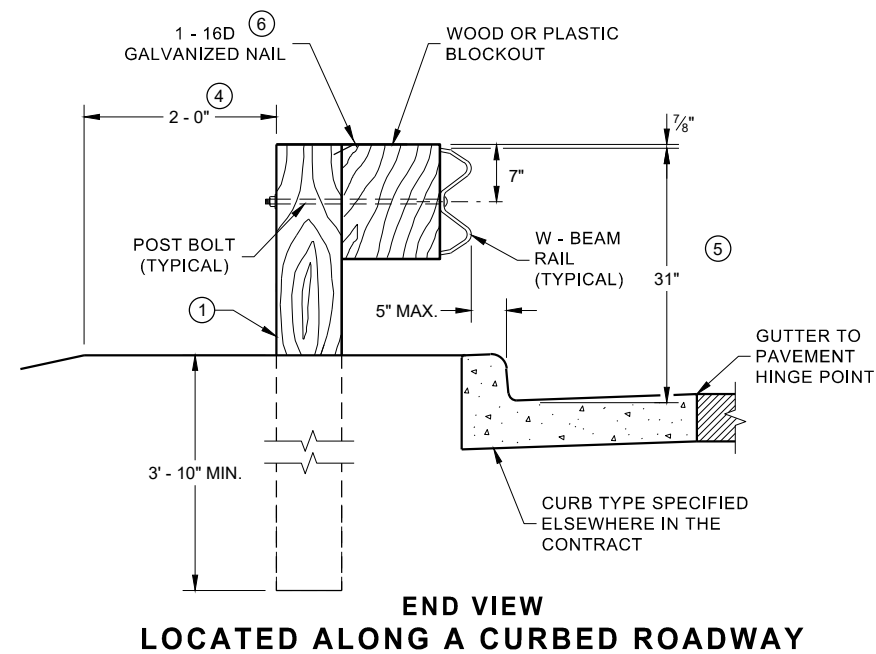
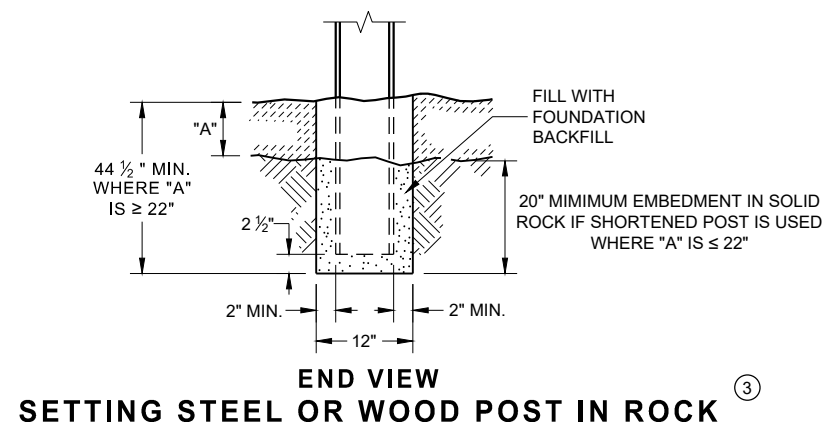
### HMA PAVEMENT AND HMA OVERLAYS



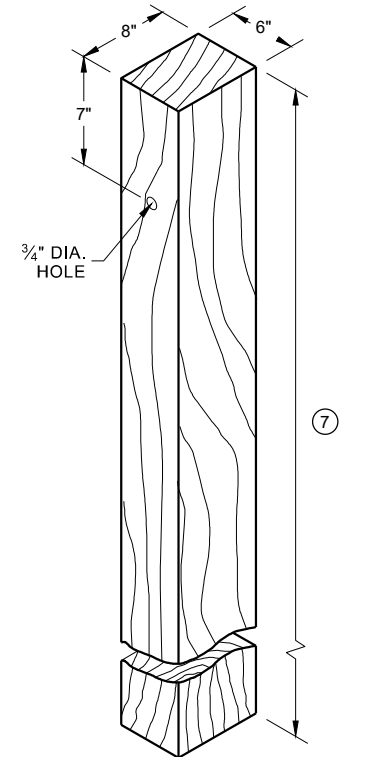
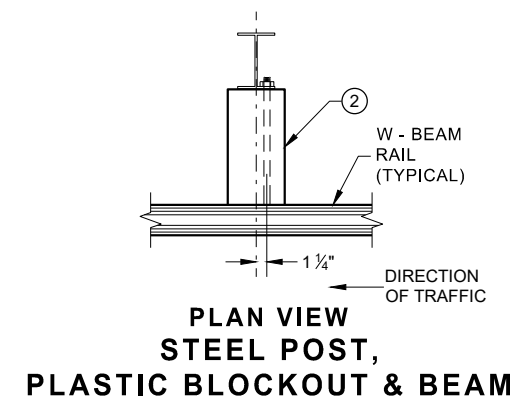
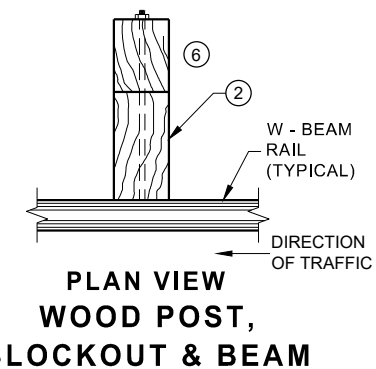
### FINISHED SHOULDER AGGREGATE PLACEMENT

|                                                    |                                                  |        |
|----------------------------------------------------|--------------------------------------------------|--------|
| SAFETY EDGE <sub>SM</sub>                          |                                                  |        |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                  |        |
| APPROVED<br>DATE 11/30/2012                        | /S/ Jerry H. Zoaga<br>ROADWAY STANDARDS ENGINEER | 75 ENT |
| FHWA                                               |                                                  |        |

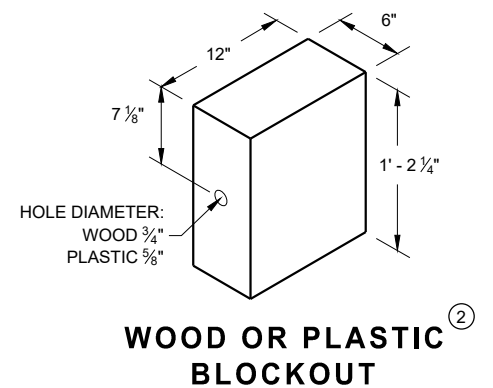
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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 AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".  
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

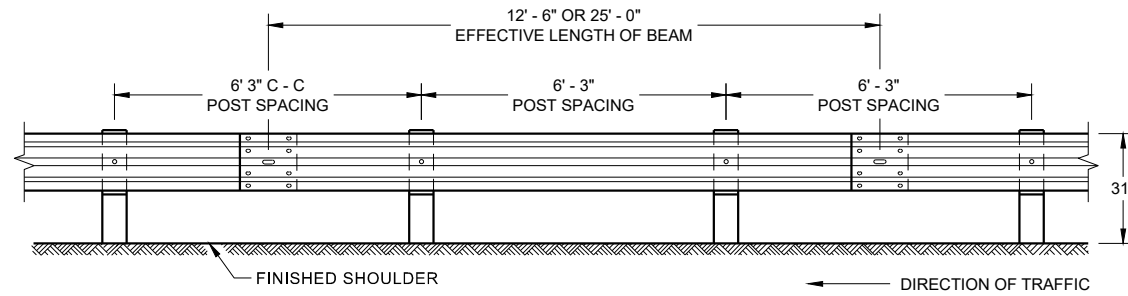


**STEEL POST & HOLE  
PUNCHING DETAIL  
(W 6 X 9) ①**

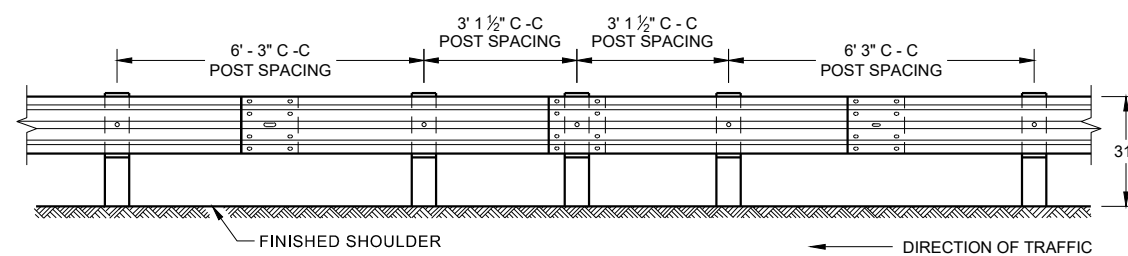


**WOOD POST (6" X 8") NOMINAL** <sup>(1)</sup>

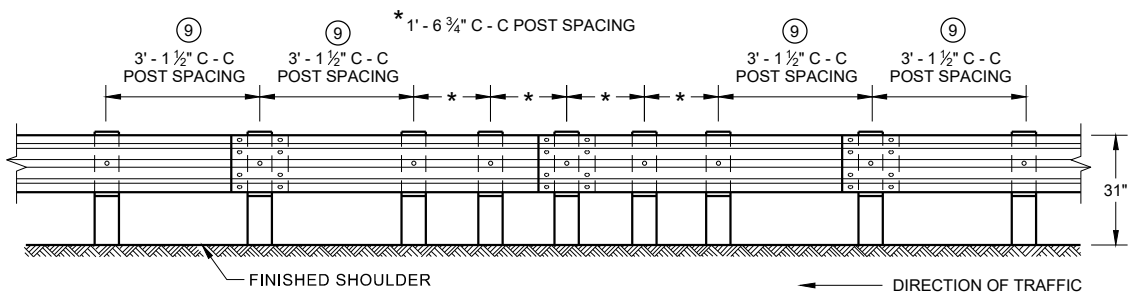




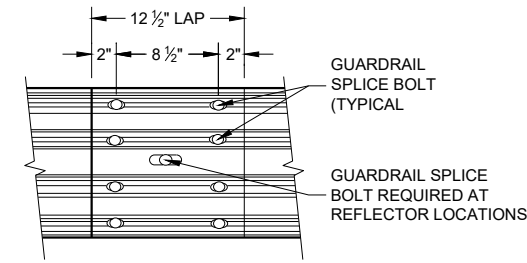
**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



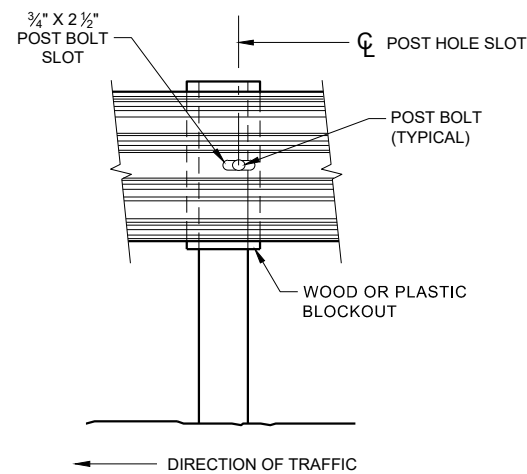
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



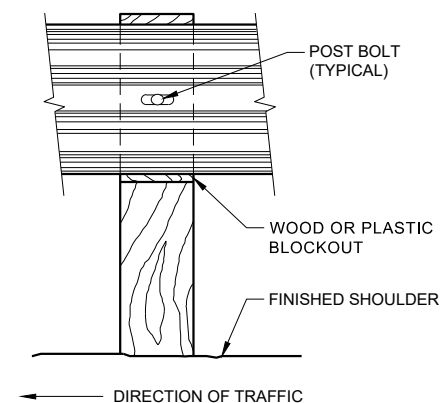
**FRONT VIEW  
QUARTER POST SPACING (QS)**



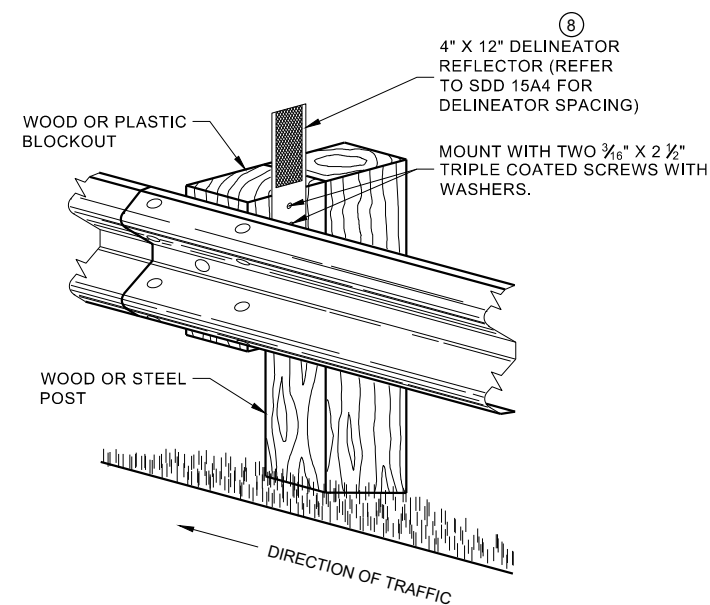
**FRONT VIEW  
MID-SPAN BEAM SPLICE**



**FRONT VIEW AT STEEL POST**



**FRONT VIEW AT WOOD POST**



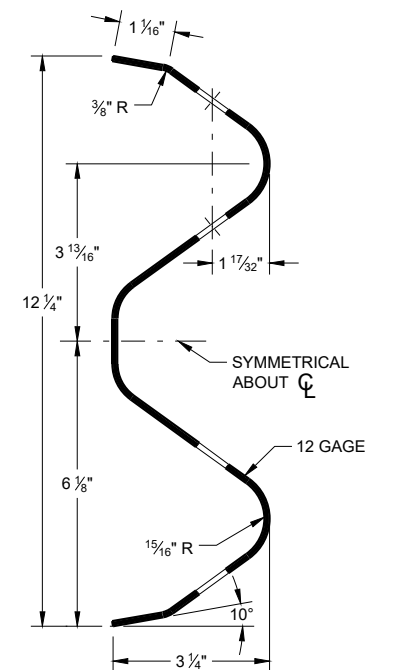
**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

## GENERAL NOTES

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

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

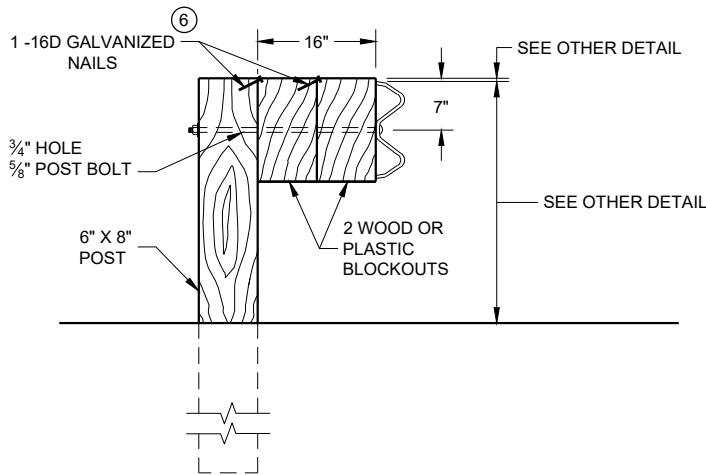
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



**SECTION THRU W-BEAM RAIL**

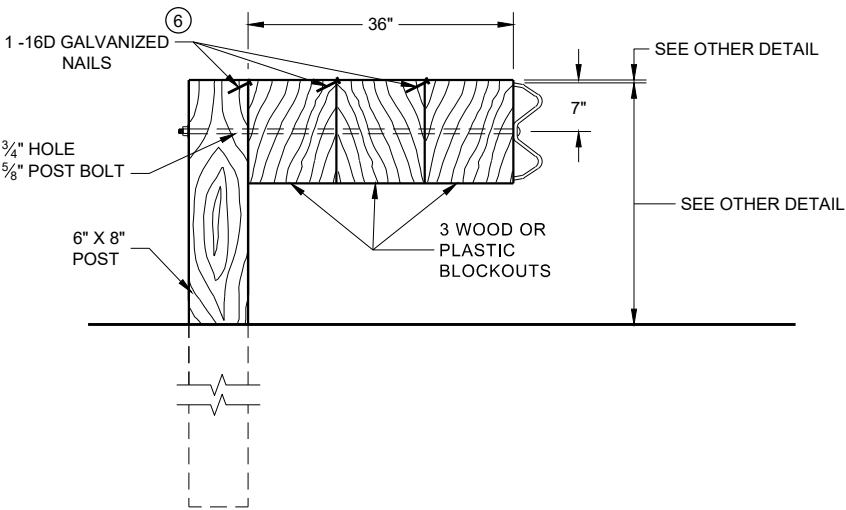
**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 77



DETAIL FOR 16" BLOCKOUT DEPTH

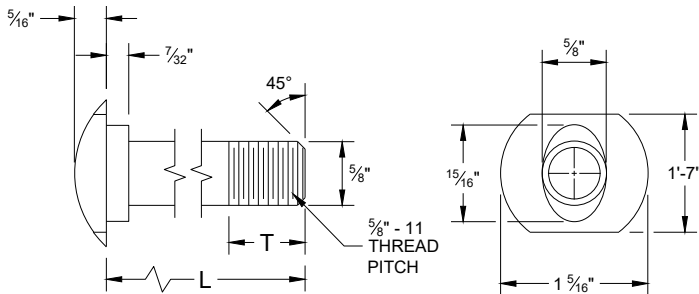
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

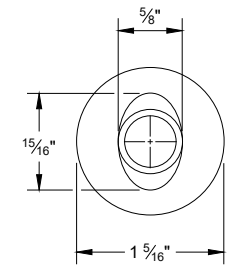
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.  
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE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

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

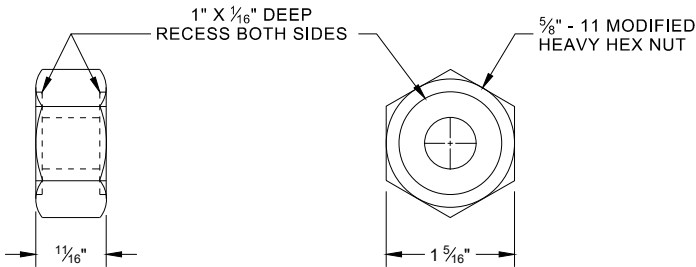


POST BOLT TABLE

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

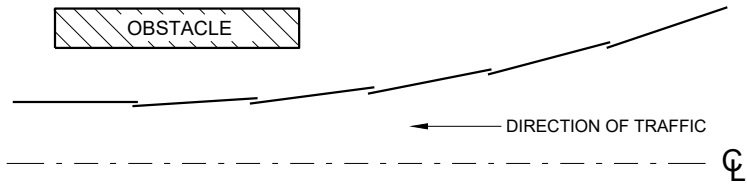


ALTERNATE BOLT HEAD

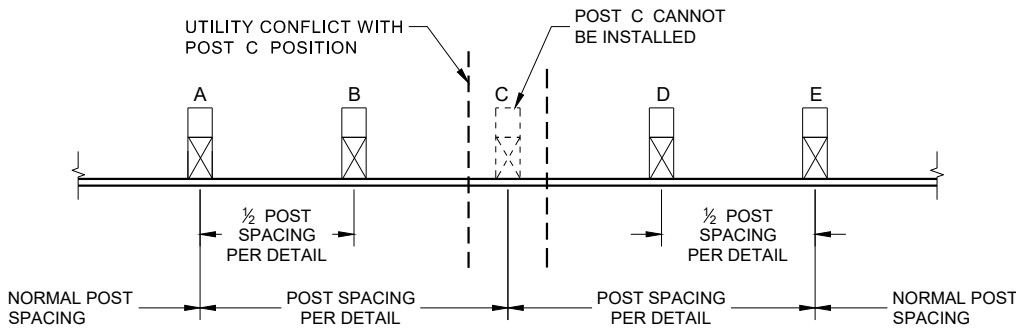


POST BOLT, SPLICE BOLT  
AND RECESS NUT

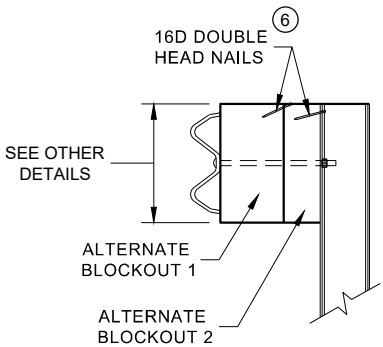
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



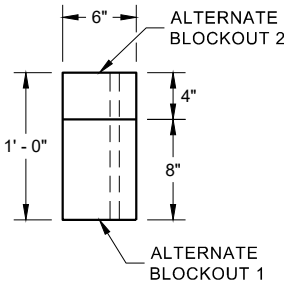
PLAN VIEW  
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION



SIDE VIEW

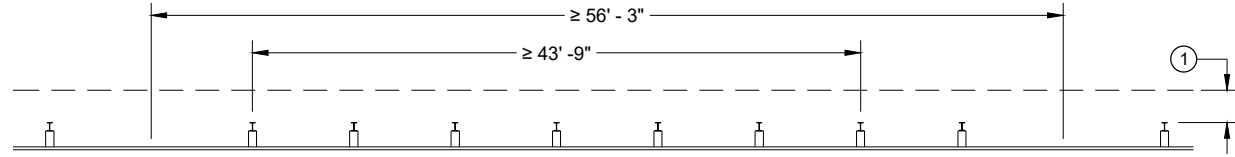


PLAN VIEW

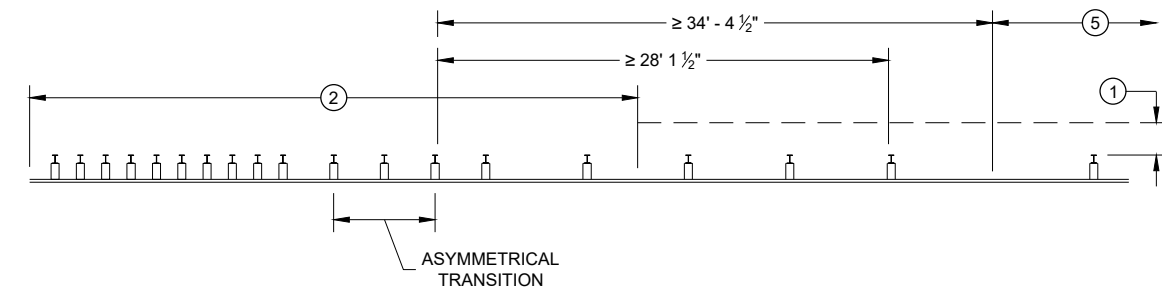
ALTERNATE WOOD  
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL

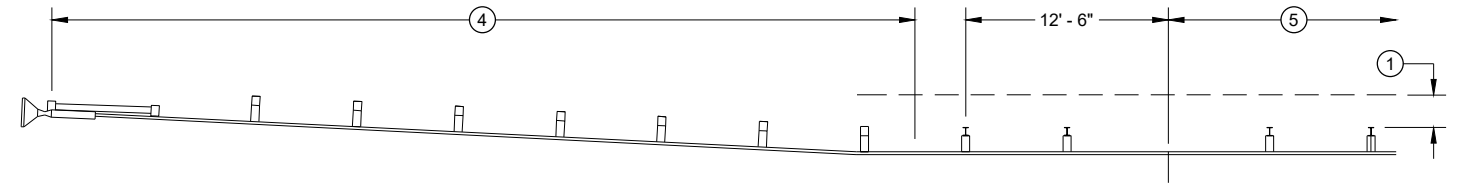
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



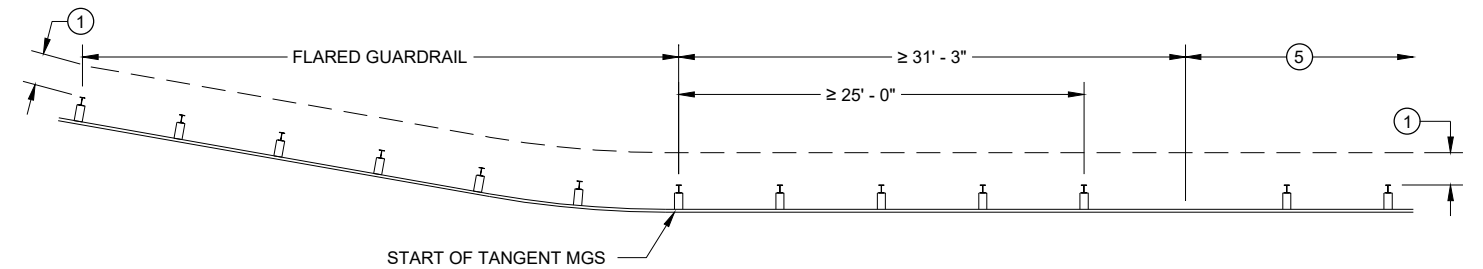
MISSING POST IN NORMAL BEAM GUARD RUN



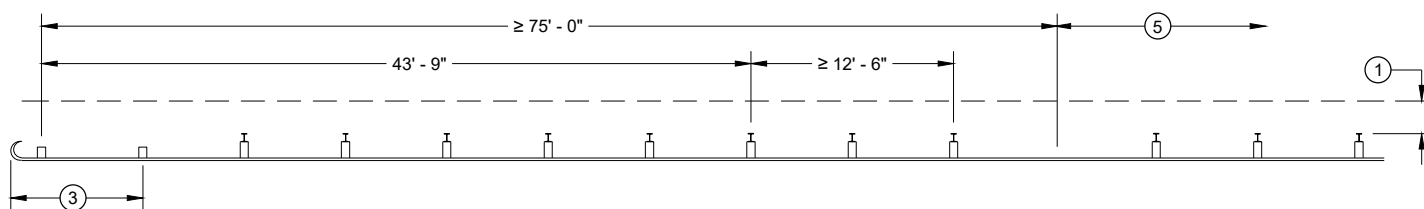
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



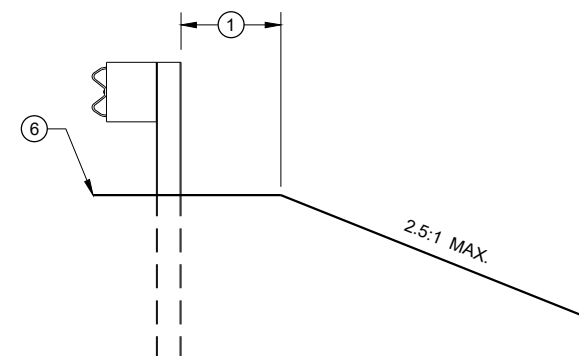
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN  
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN  
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

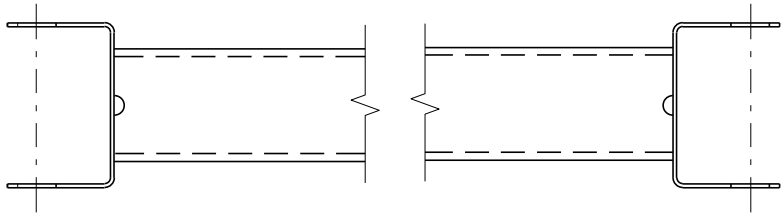


- A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

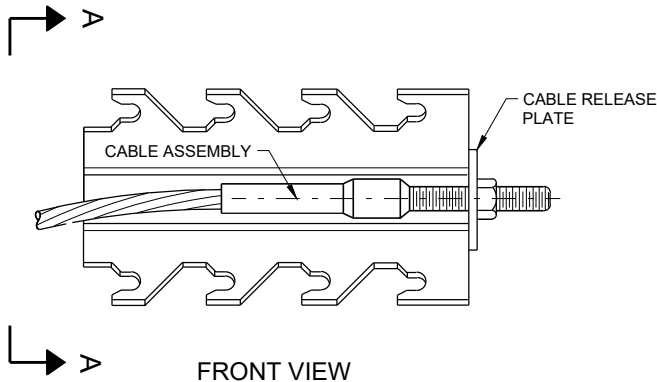
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 80

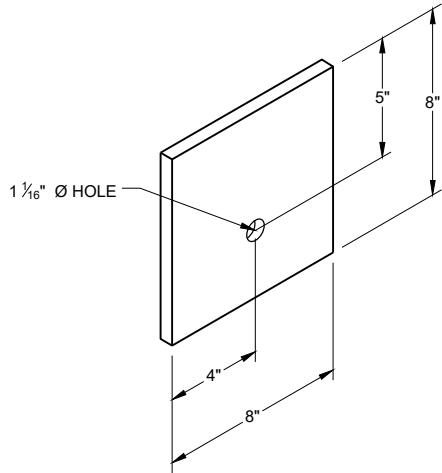
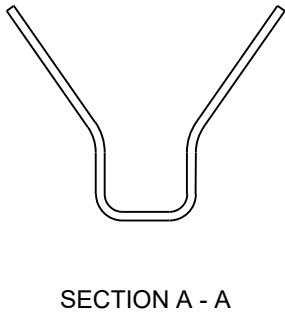


GENERIC GROUND STRUT<sup>9</sup> E

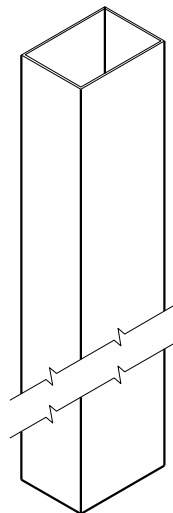
| BILL OF MATERIALS |                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------|
| PART NO.          | DESCRIPTION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



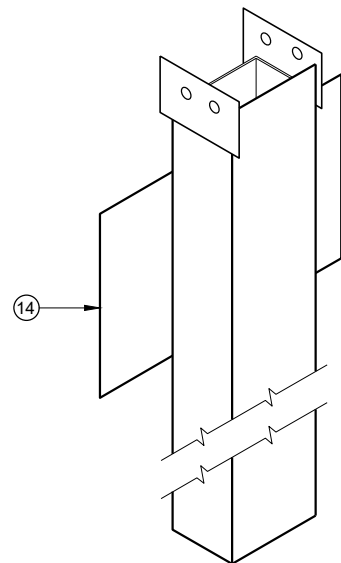
GENERIC ANCHOR CABLE BOX<sup>9</sup> E



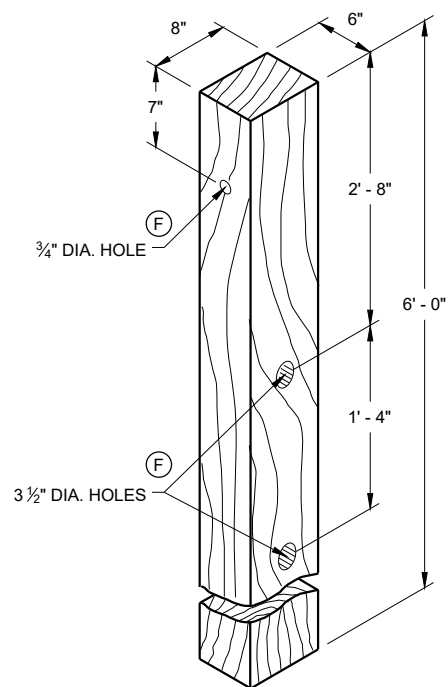
BEARING PLATE<sup>6</sup> E



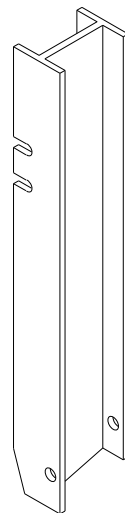
UPPER POST NO. 1 <sup>(1)</sup> (E)



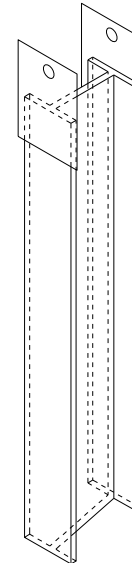
LOWER POST NO. 1 <sup>(2)</sup> (E)



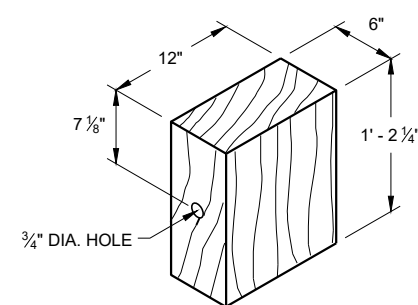
WOOD CRT POST <sup>(3)</sup> (E)  
POSTS NUMBER 3-9



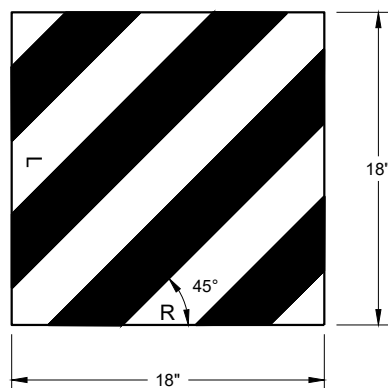
UPPER POST NO. 2 <sup>(15)</sup> (E)



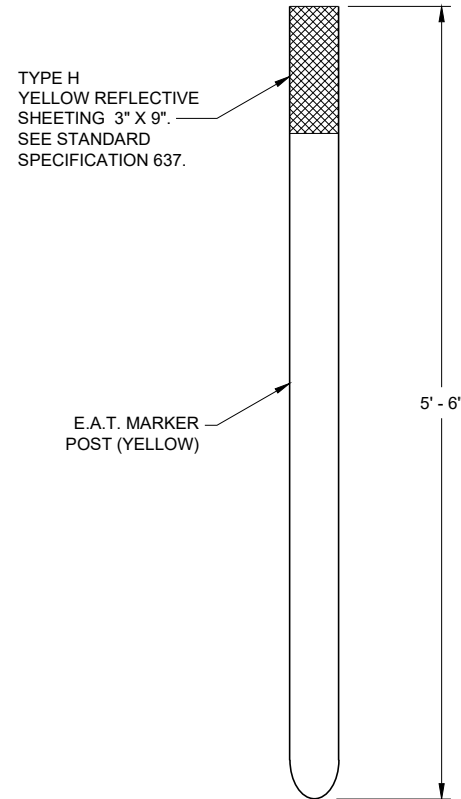
LOWER POST NO. 2 <sup>(16)</sup> (E)



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



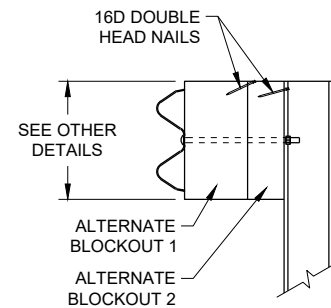
REFLECTIVE SHEETING DETAIL <sup>(E)</sup>



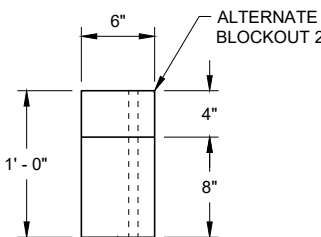
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST <sup>(13)</sup>



SIDE VIEW



TOP VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

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

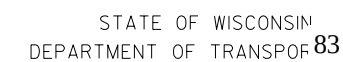
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



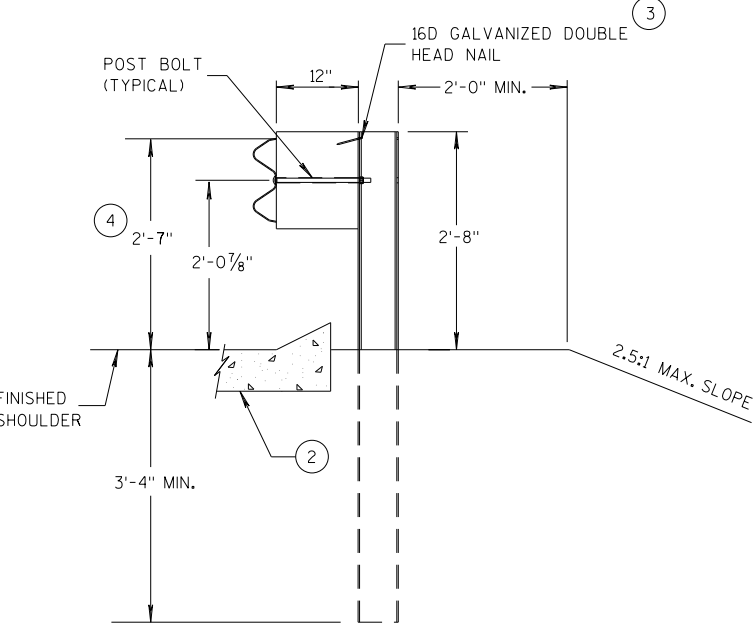
(W) W-BEAM CONNECTION WHEN REQUIRED

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

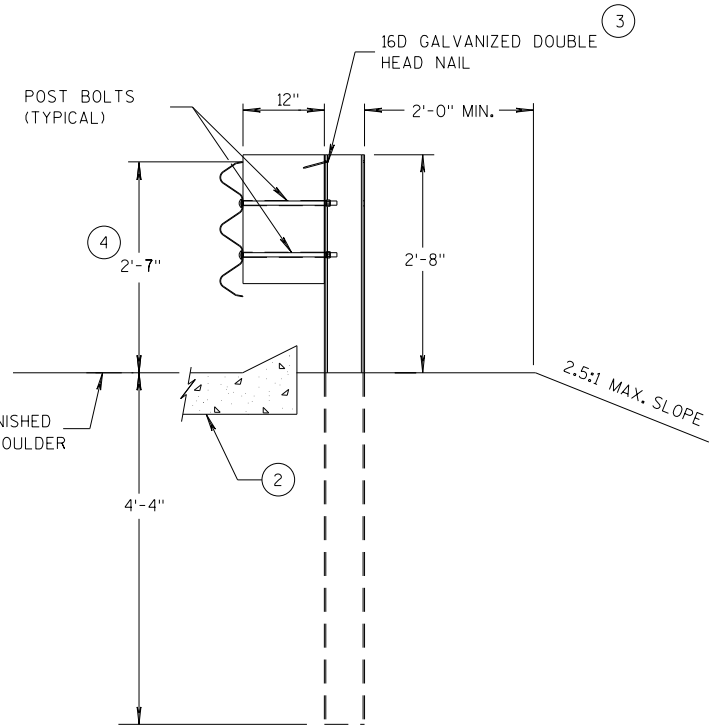


GENERAL NOTES

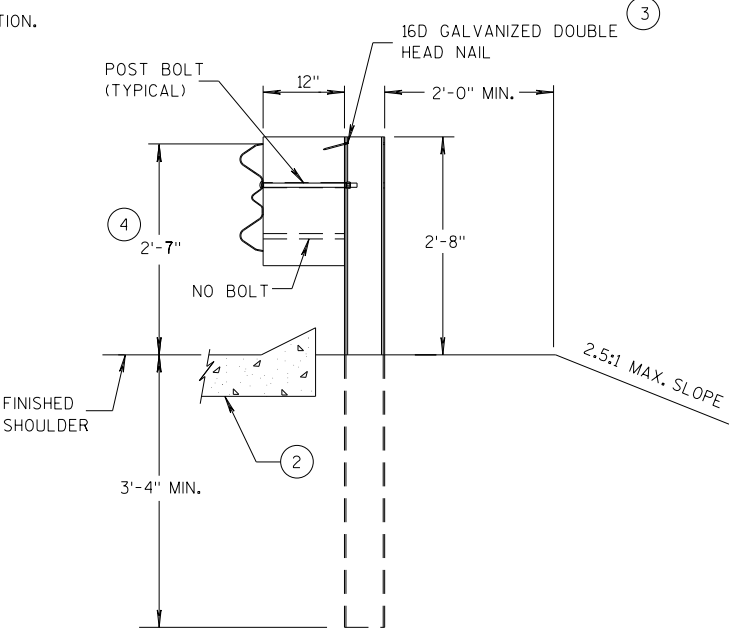
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS  $\pm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



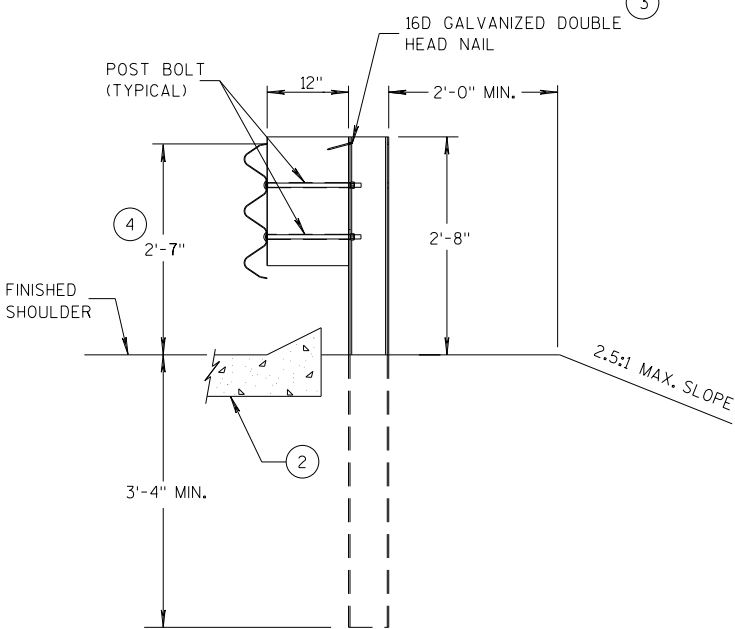
SECTION A-A  
POSTS 1-5



SECTION D-D  
POSTS 12-17



SECTION B-B  
POST 6



SECTION C-C  
POSTS 7-11

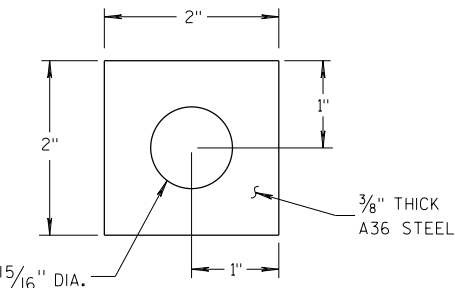
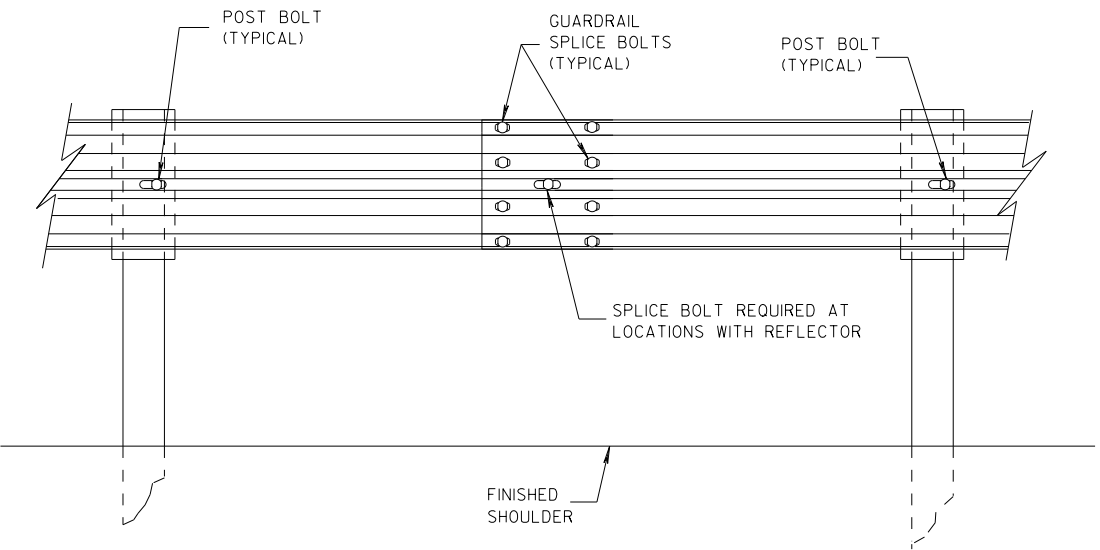
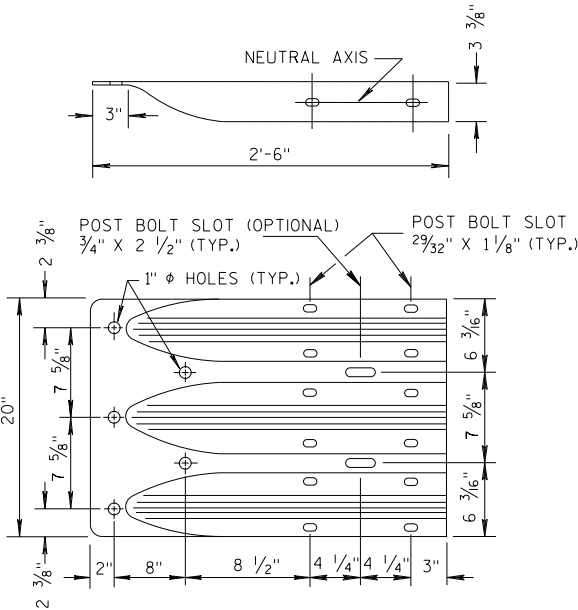


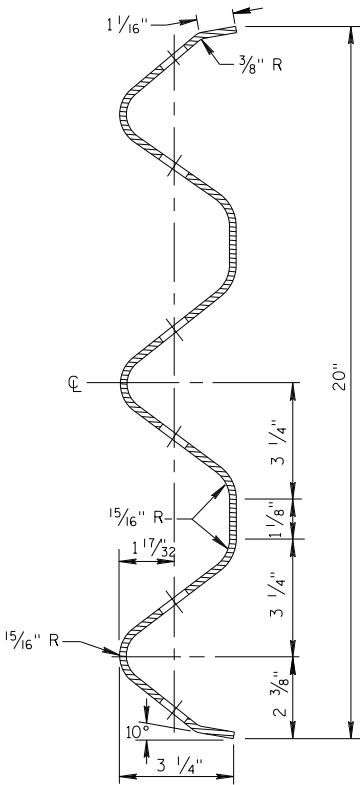
PLATE WASHER DETAIL



SPLICE DETAIL



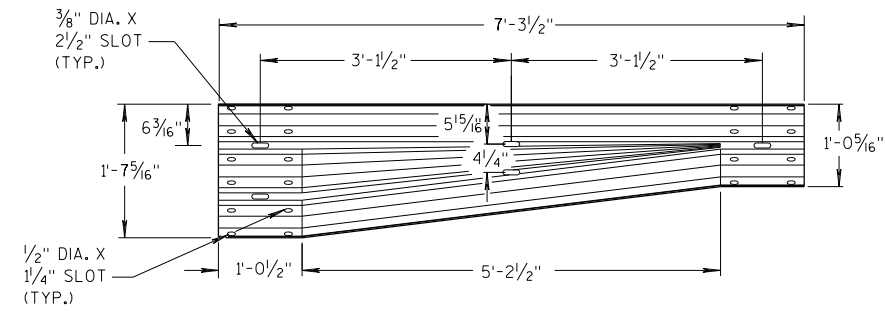
THRIE BEAM  
TERMINAL CONNECTOR



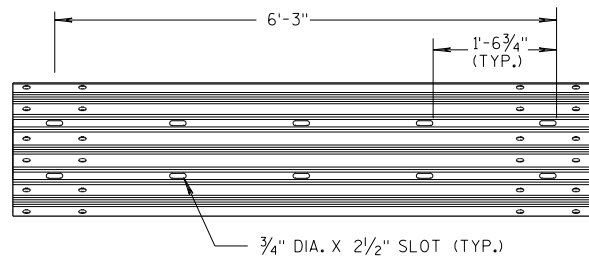
SECTION THRU THRIE  
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

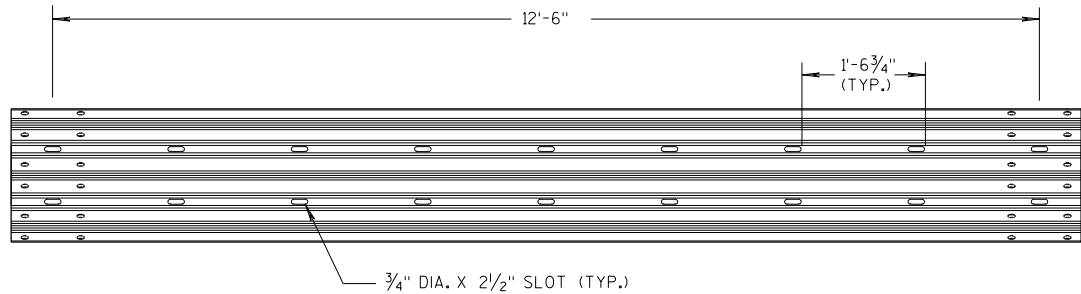
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



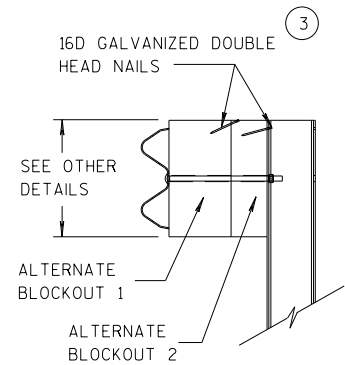
W-BEAM TO THRIE BEAM TRANSITION SECTION



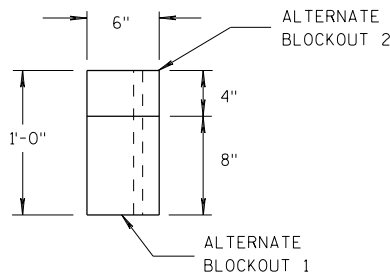
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

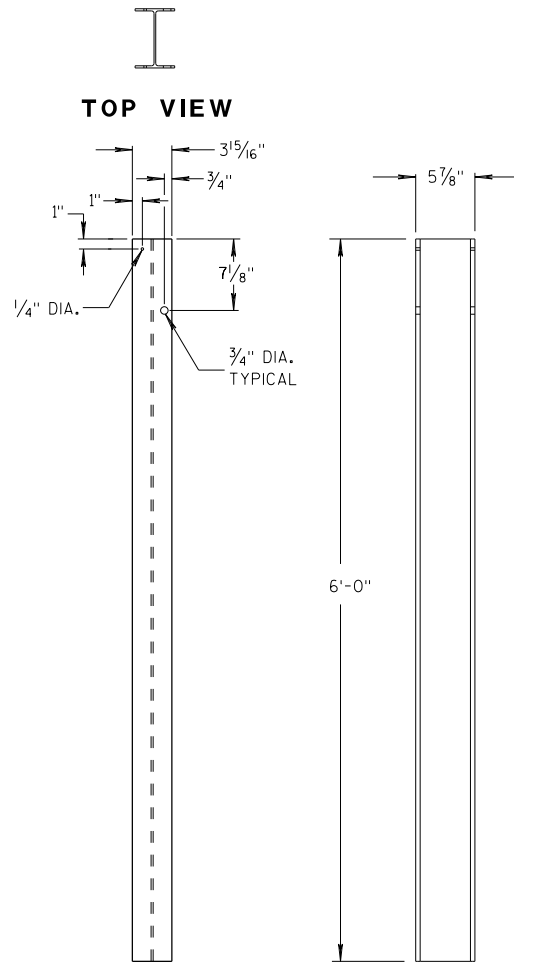


SIDE VIEW



TOP VIEW

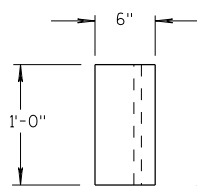
ALTERNATE WOOD BLOCKOUT DETAIL



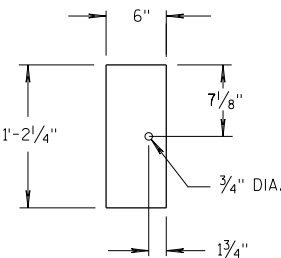
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

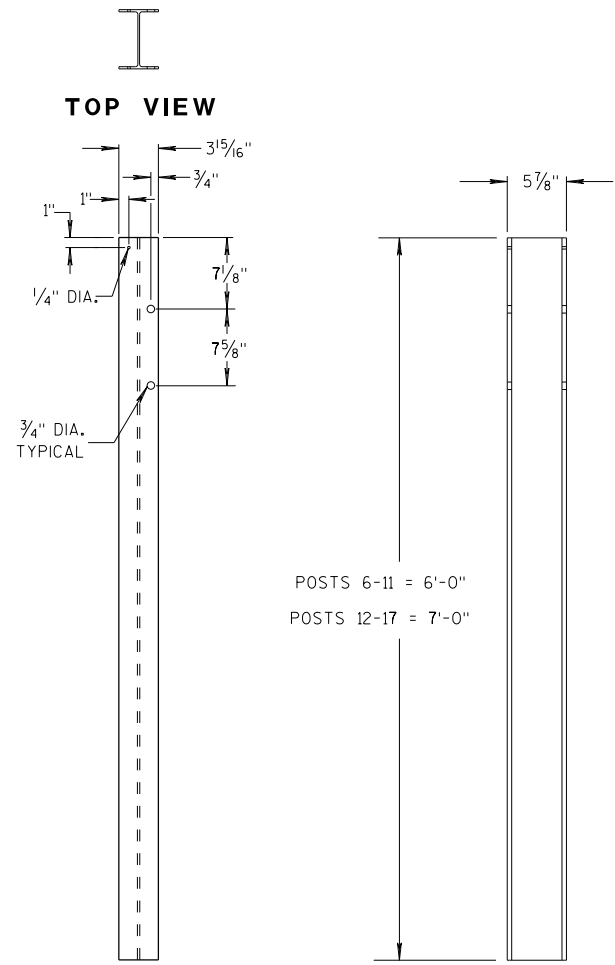


TOP VIEW



FRONT VIEW

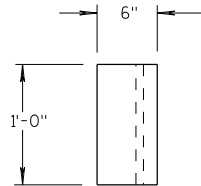
BLOCKOUT POSTS 1-5



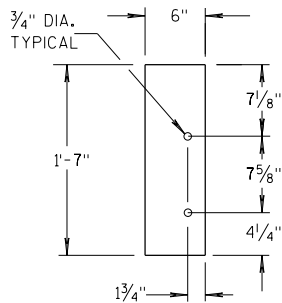
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

### GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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

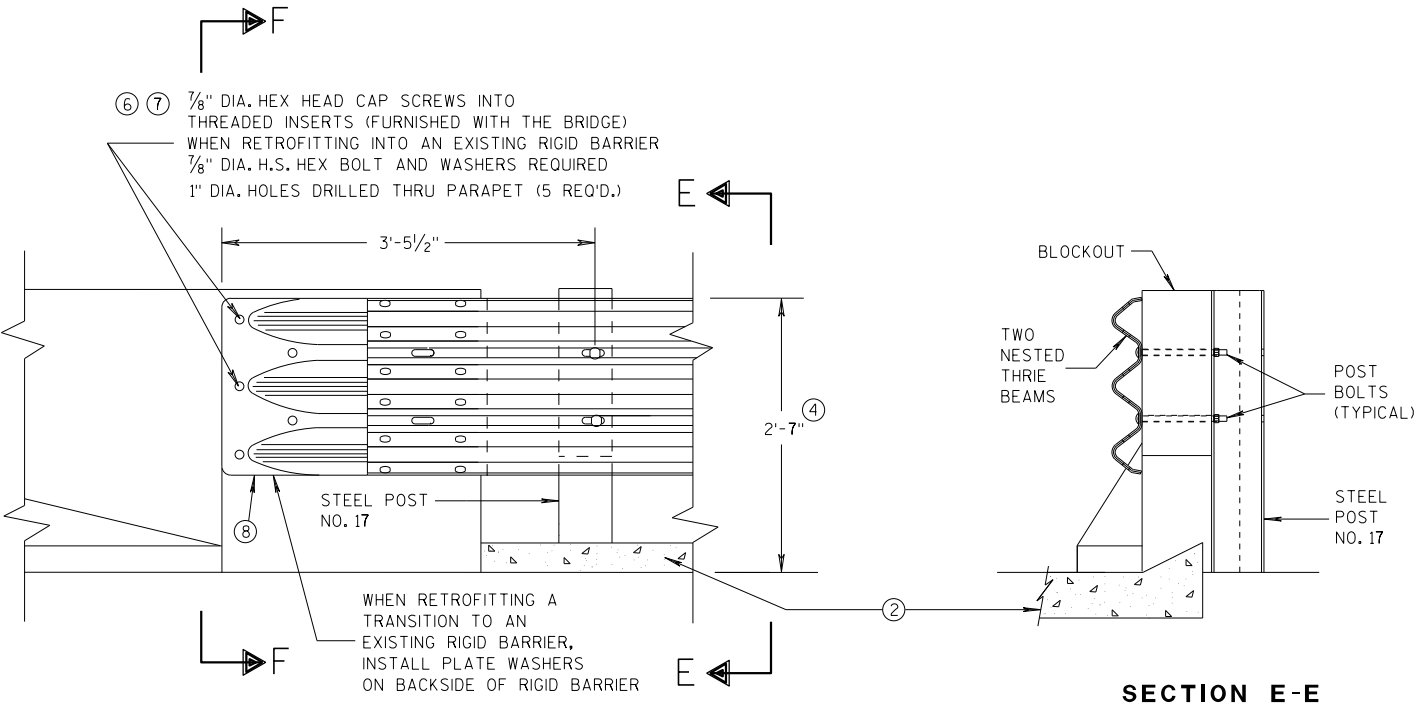
5 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

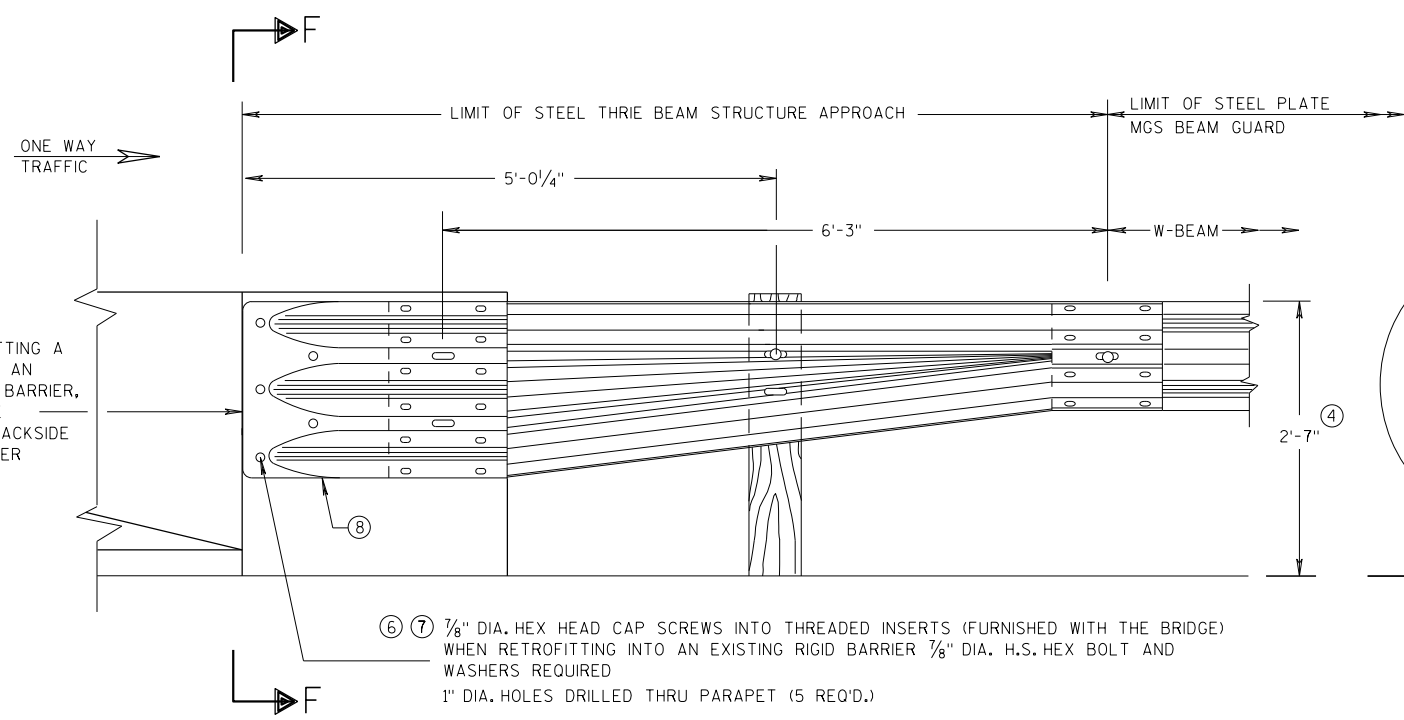
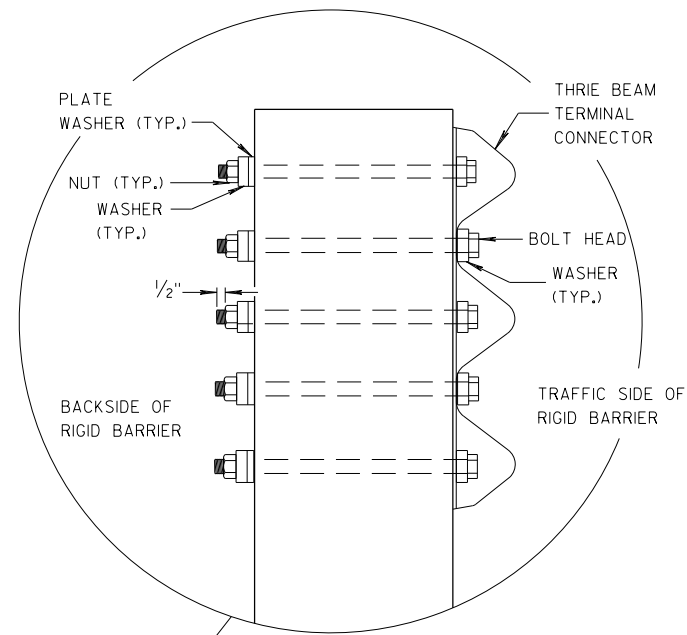
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



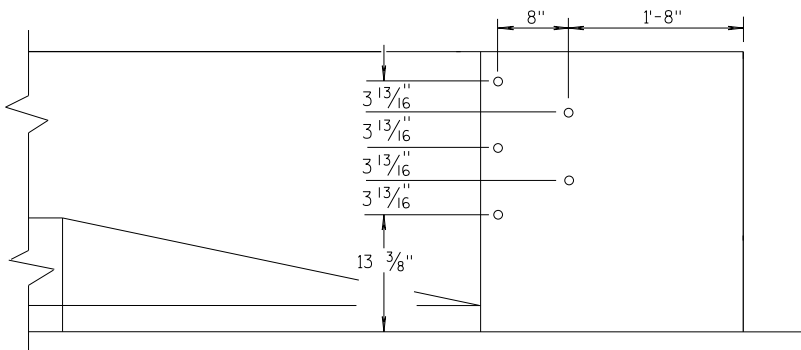


**GENERAL NOTES**

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



**SECTION F-F**



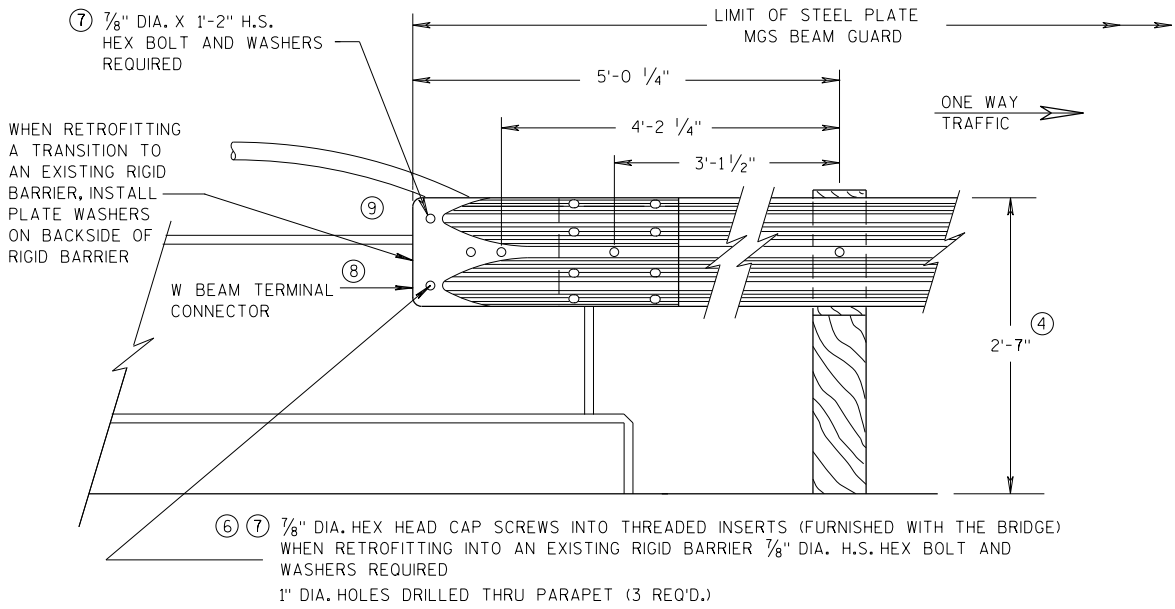
**DRILL HOLE LOCATION**

| MIDWEST GUARDRAIL SYSTEM<br>THRIE BEAM TRANSITION (MGS) |                                                        |    |  |
|---------------------------------------------------------|--------------------------------------------------------|----|--|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION      |                                                        |    |  |
| APPROVED<br>07/2018<br>DATE                             | /S/ Rodney Taylor<br>ROADWAY STANDARDS UNIT SUPERVISOR |    |  |
| FHWA                                                    | 86                                                     | NT |  |

GENERAL NOTES

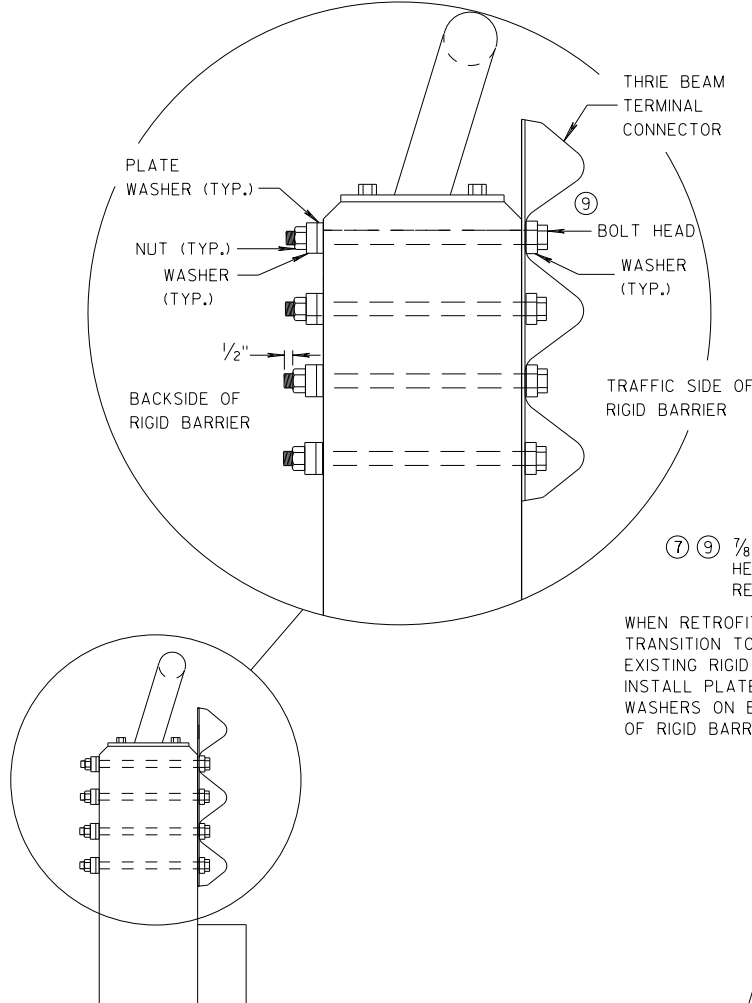
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ②
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④
- TOLERANCE FOR TOP OF BEAM IS ± 1".
- ⑥
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦
- BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧
- THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ⑨
- BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

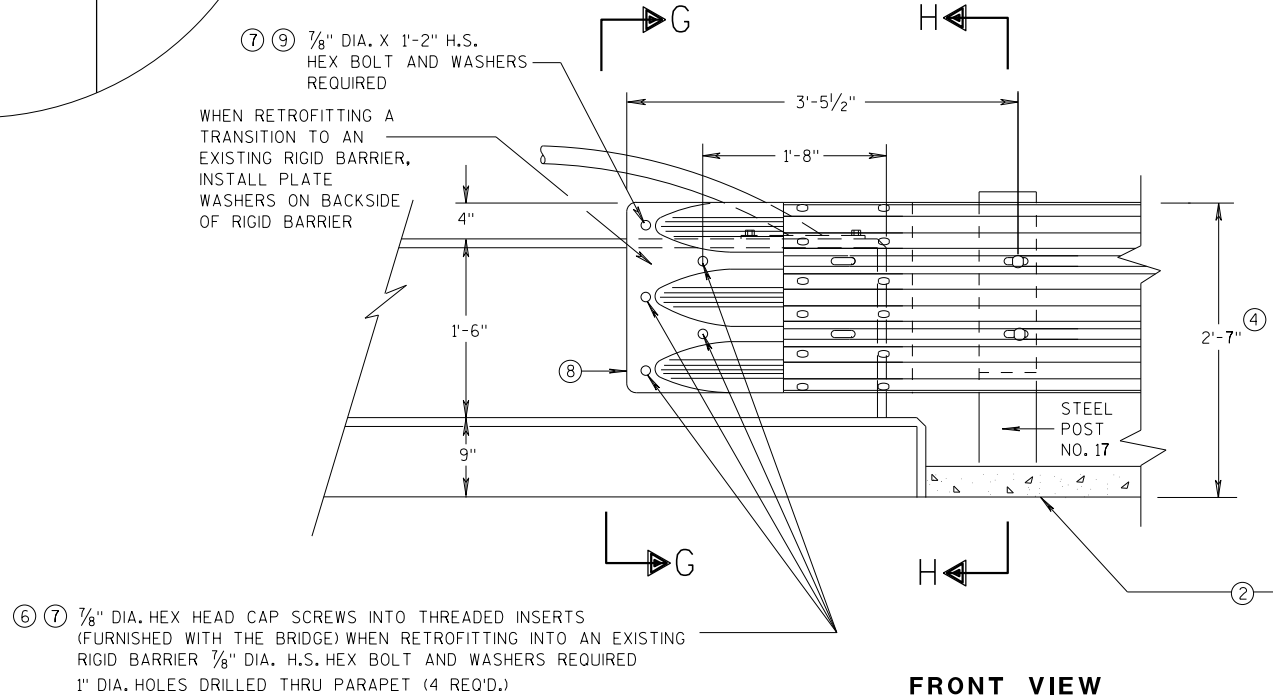


FRONT VIEW

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

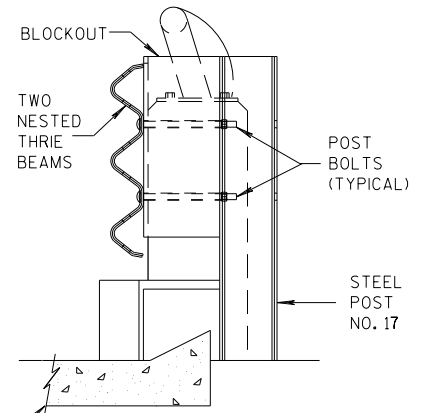


SECTION G-G



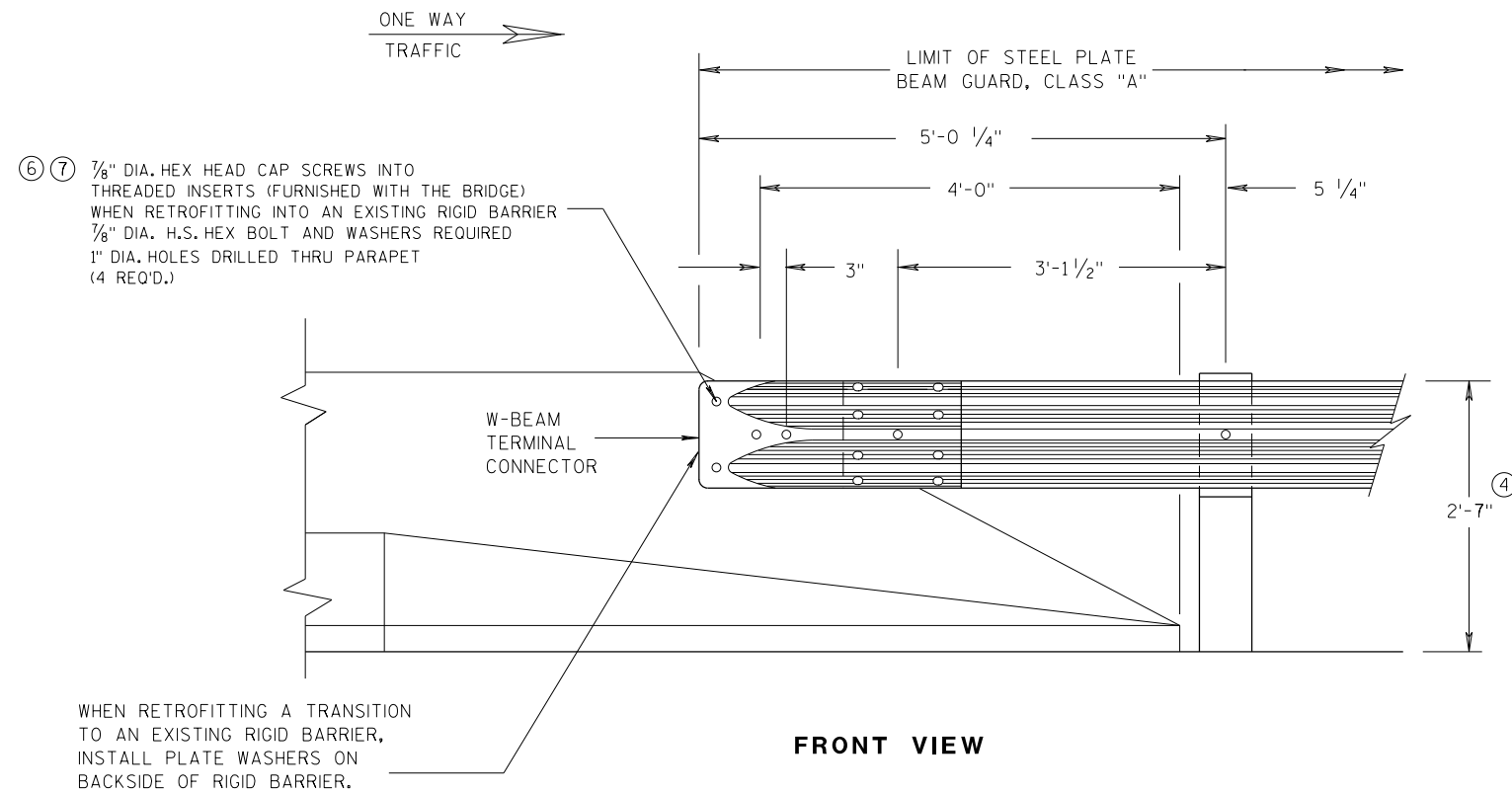
FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



SECTION H-H

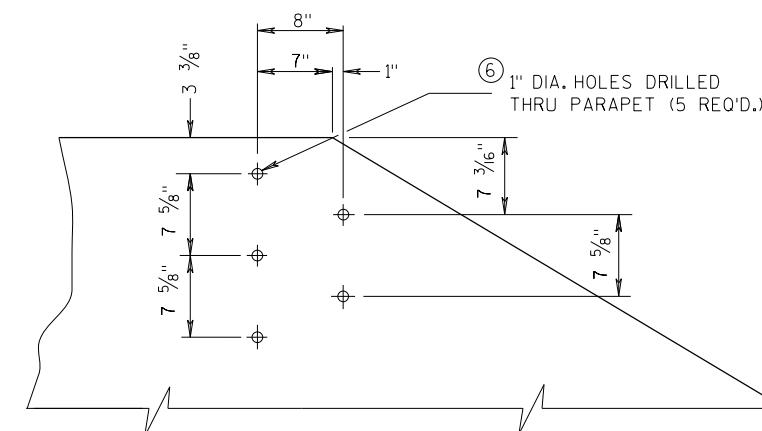
|                                                         |                   |    |     |
|---------------------------------------------------------|-------------------|----|-----|
| MIDWEST GUARDRAIL SYSTEM<br>THRIE BEAM TRANSITION (MGS) |                   |    |     |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION      |                   |    |     |
| APPROVED<br>07/2018                                     | /S/ Rodney Taylor |    |     |
| DATE                                                    | ROADWAY STANDARDS | 87 | INT |
| FHWA                                                    | UNIT SUPERVISOR   |    |     |



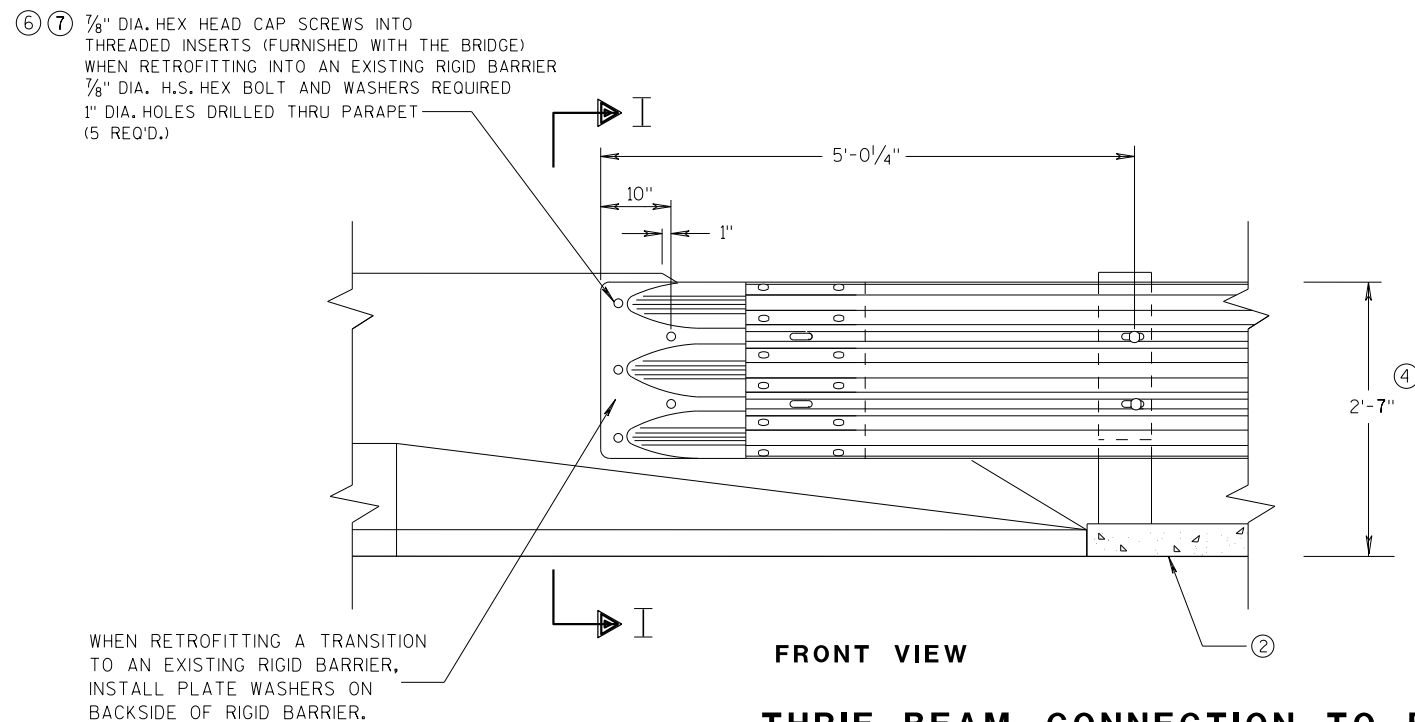
**W BEAM CONNECTION TO  
PARAPETS WITH SLOPED ENDS**  
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

## GENERAL NOTES

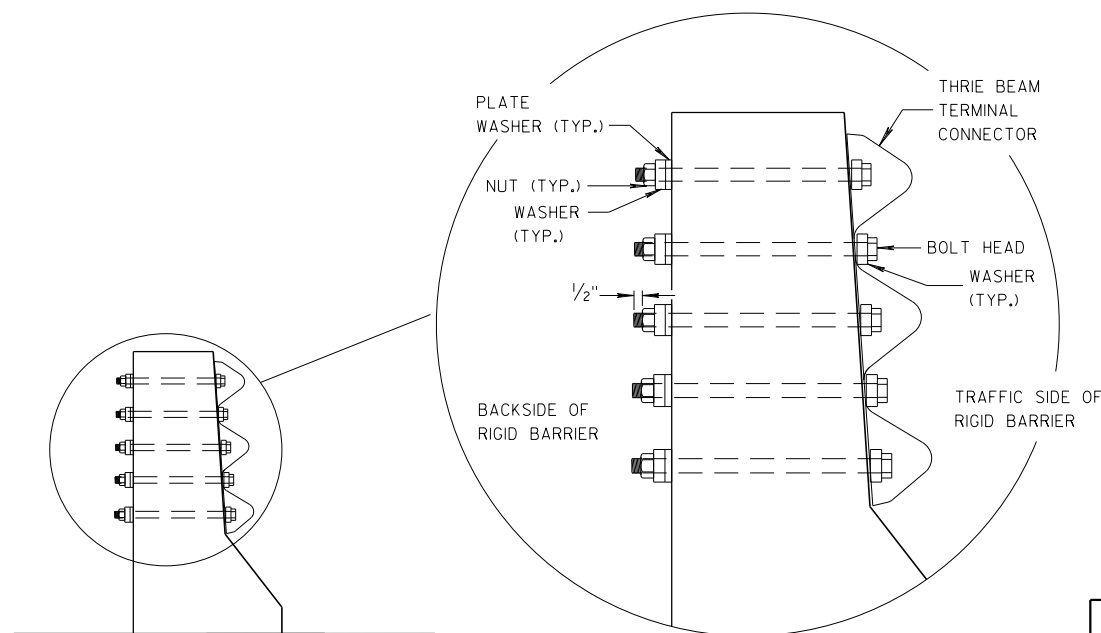
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



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



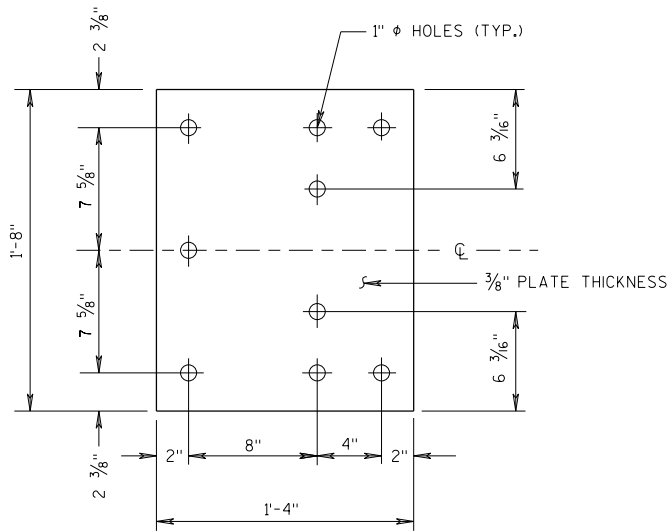
**THRIE BEAM CONNECTION TO BRIDGE  
PARAPETS WITH SLOPED ENDS**



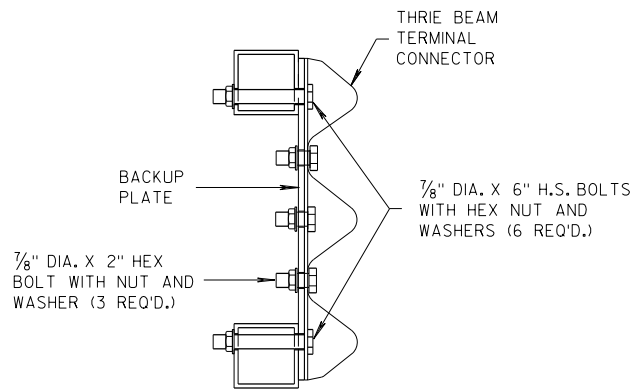
**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

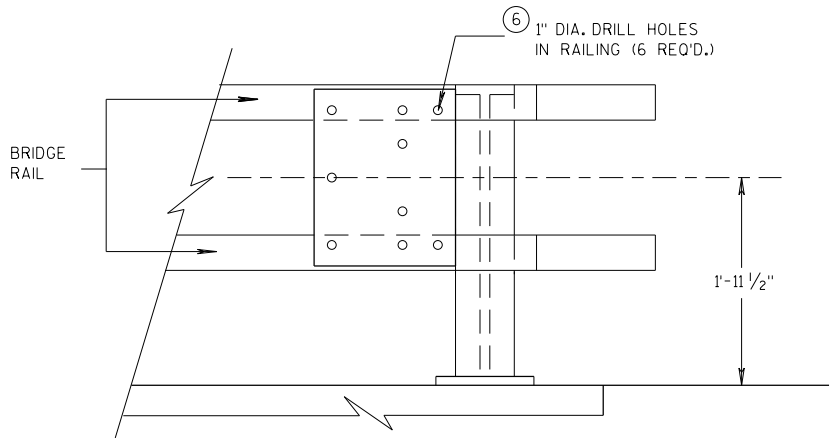
APPROVED  
DATE 07/2018 /S/ Rodney Taylor  
ROADWAY STANDARDS UNIT SUPERVISOR  
FHWA 88 INT



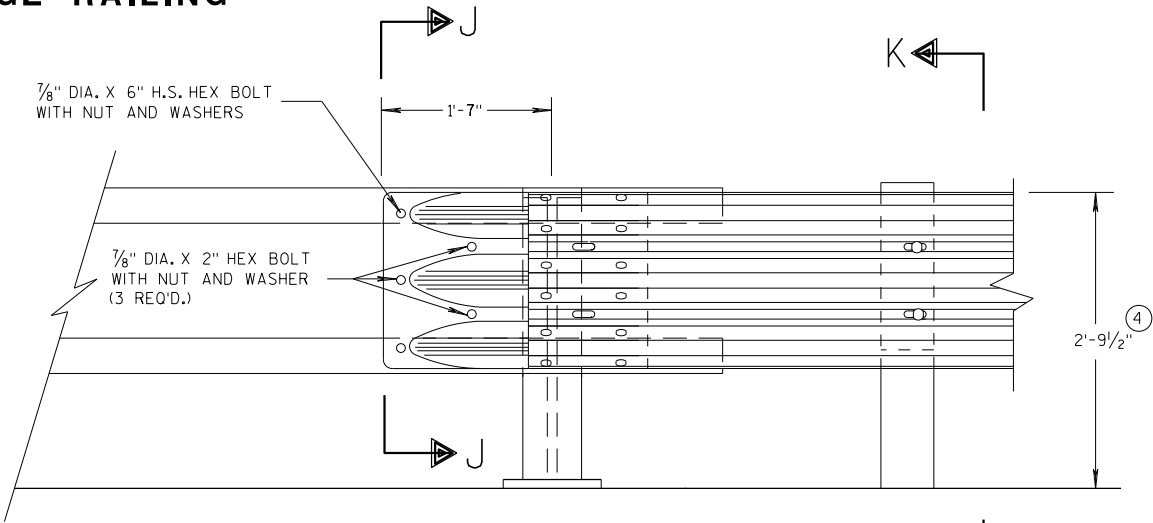
BACK-UP PLATE DETAIL



SECTION J-J

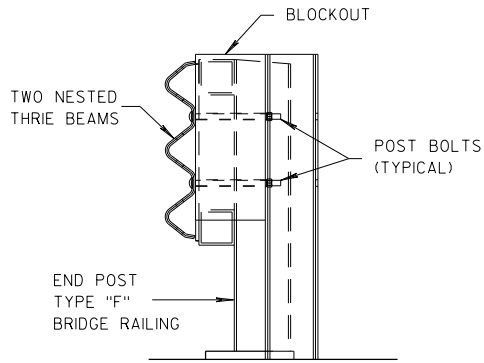


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

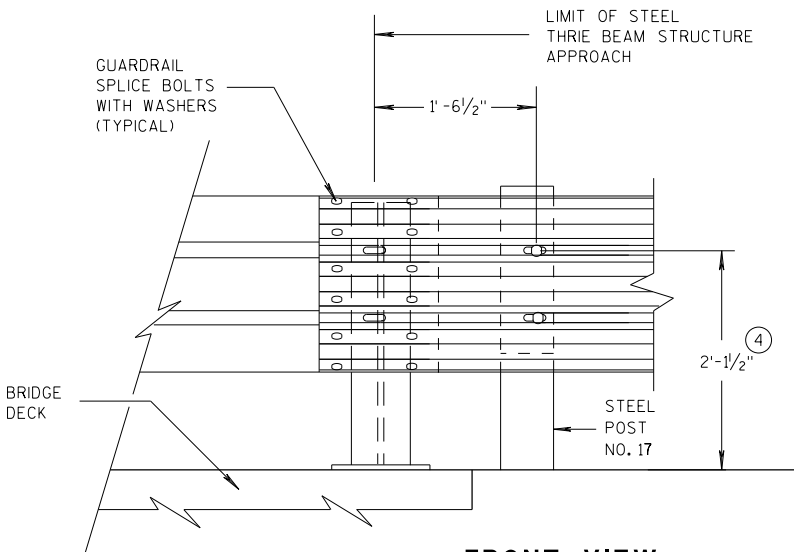
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

|                                                         |                               |                 |
|---------------------------------------------------------|-------------------------------|-----------------|
| MIDWEST GUARDRAIL SYSTEM<br>THRIE BEAM TRANSITION (MGS) |                               |                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION      |                               |                 |
| APPROVED<br>07/2018                                     | /S/ Rodney Taylor             | 89              |
| DATE                                                    | ROADWAY STANDARDS DEVELOPMENT | UNIT SUPERVISOR |
| FHWA                                                    |                               |                 |

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



### ANCHOR PLATE DETAIL, TYPE "M"



**FRONT VIEW**

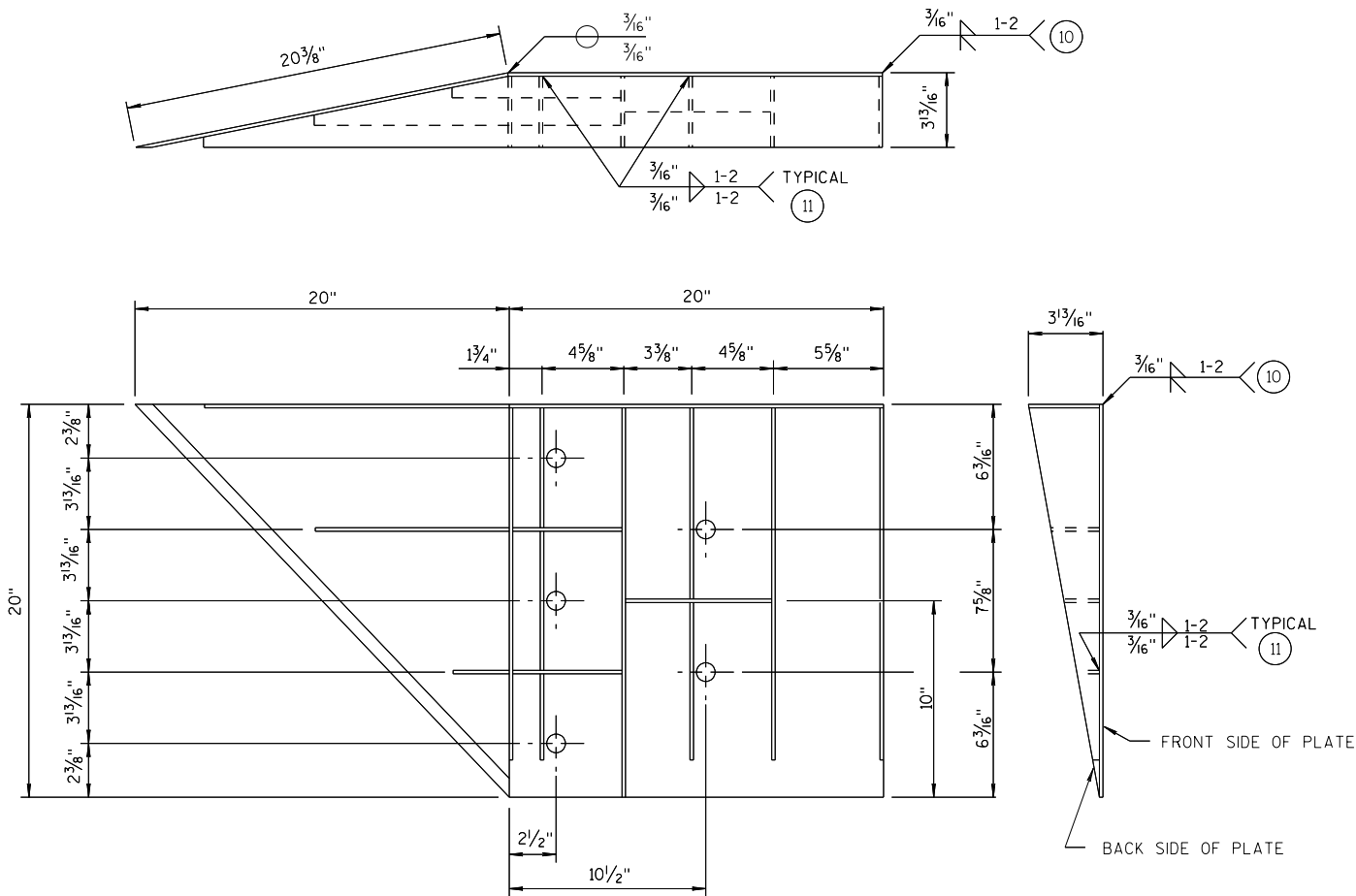


### THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

|          |                                   |        |
|----------|-----------------------------------|--------|
| APPROVED |                                   |        |
| 07/2018  | /S/ Rodney Taylor                 |        |
| DATE     | ROADWAY STANDARDS UNIT SUPERVISOR | 90 ENT |
| FHWA     |                                   |        |

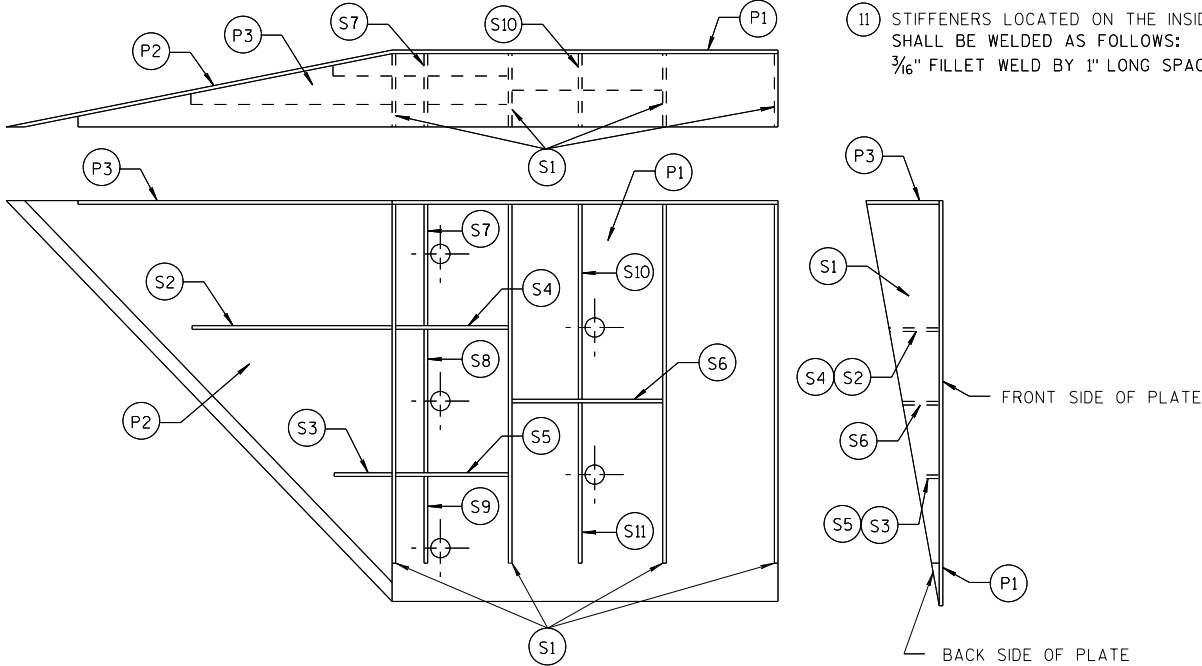


WELDING INSTRUCTION  
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

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

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



GENERAL NOTES

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

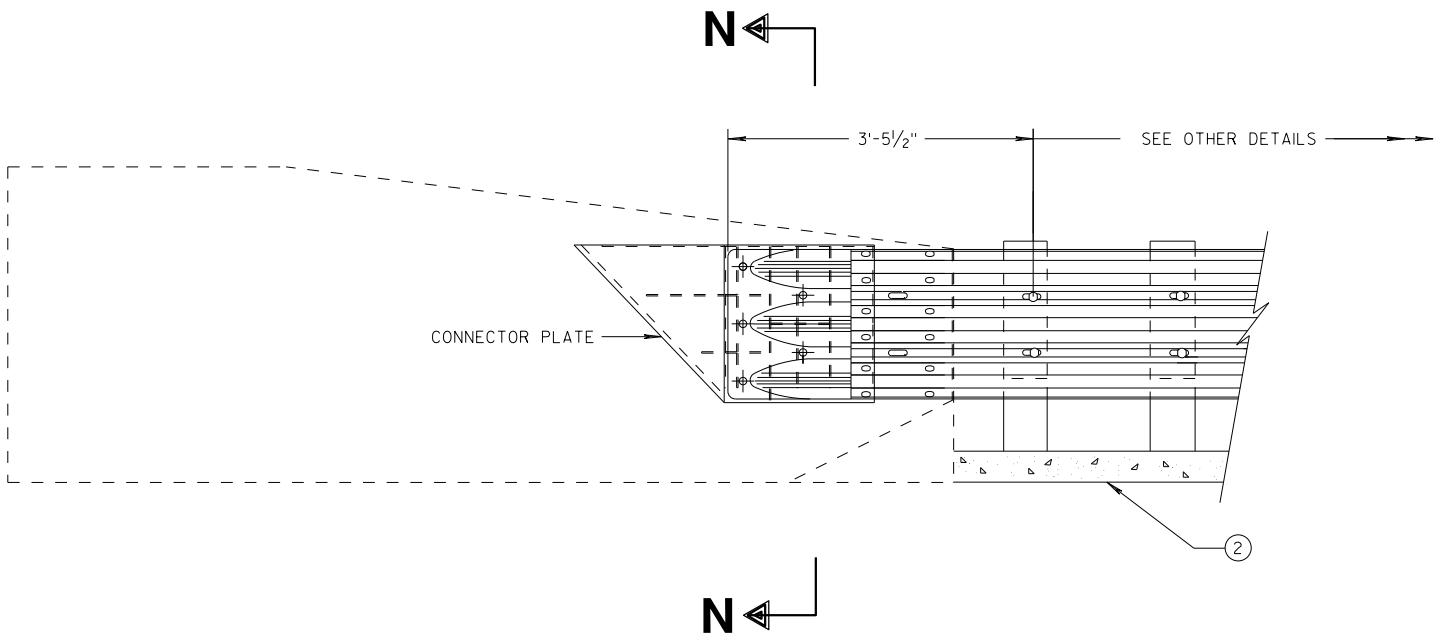
- STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:  
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:  
3/16" FILLET WELD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

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

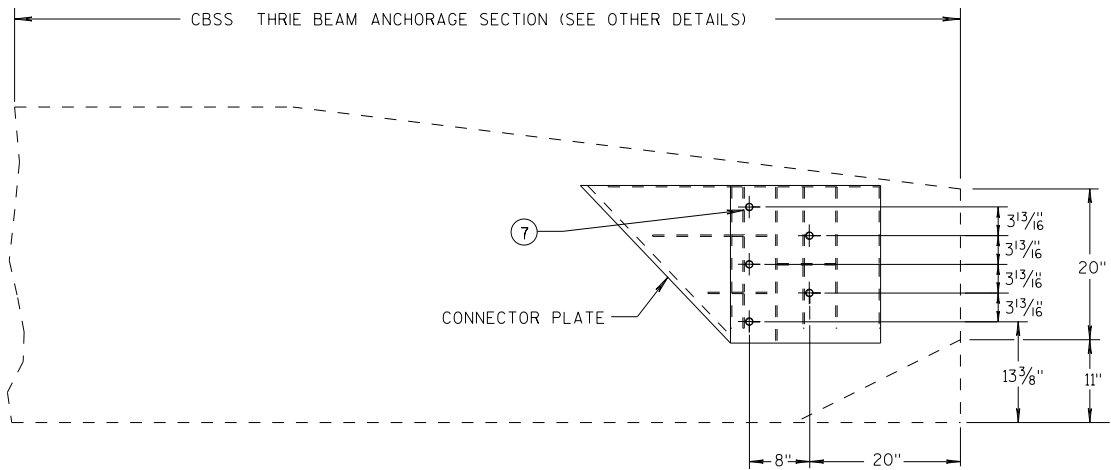
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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





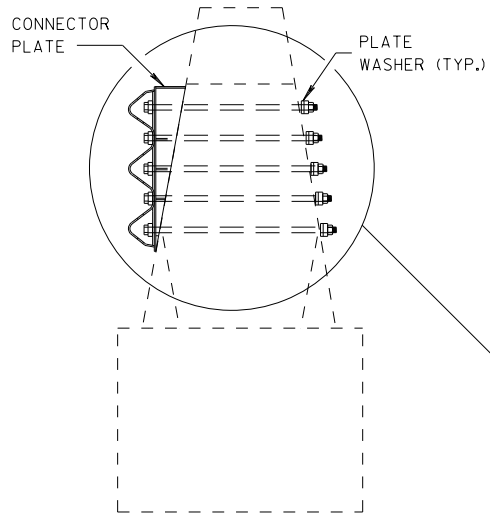
THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



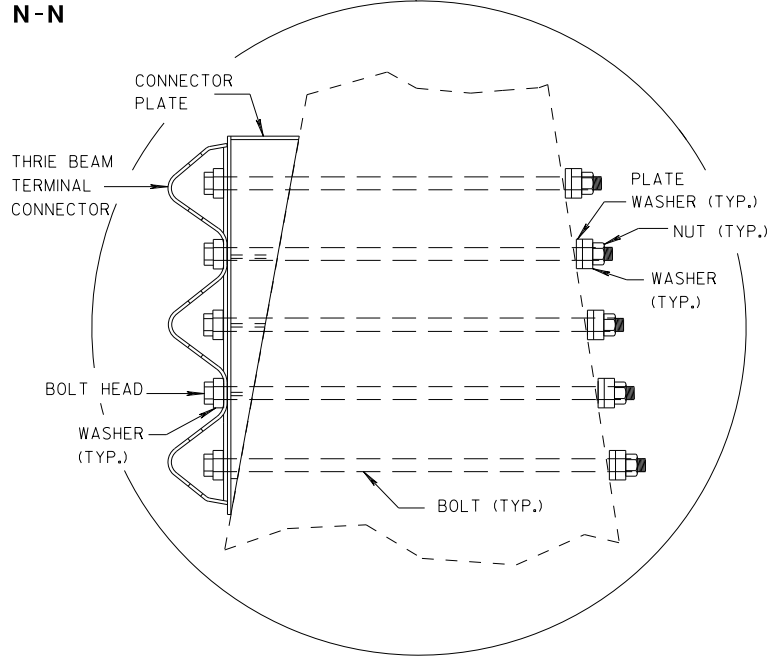
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

- CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



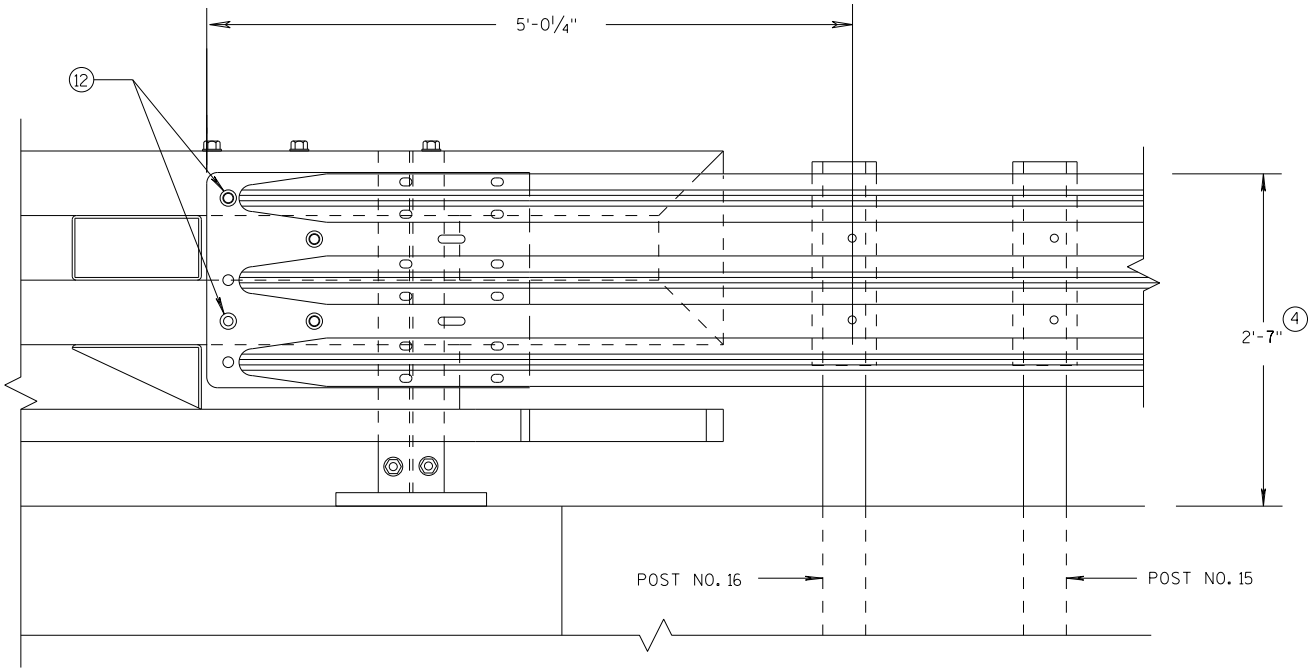
SECTION N-N



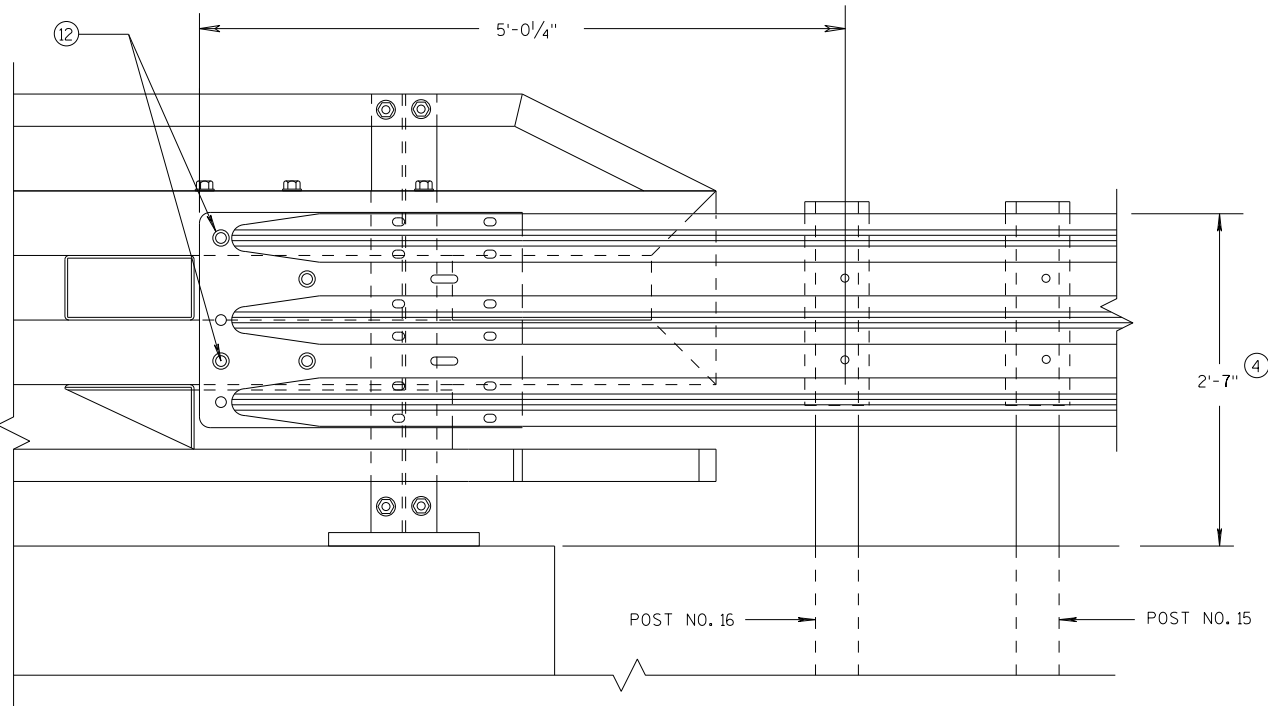
| MIDWEST GUARDRAIL SYSTEM<br>THRIE BEAM TRANSITION (MGS) |                            |    |                 |
|---------------------------------------------------------|----------------------------|----|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION      |                            |    |                 |
| APPROVED<br>7/2018                                      | /S/ Rodney Taylor          |    |                 |
| DATE                                                    | ROADWAY STANDARDS DISTRICT | 92 | UNIT SUPERVISOR |
| FHWA                                                    |                            |    |                 |

GENERAL NOTES

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



ELEVATION OF DETAIL AT NY3 END POST  
THRIE BEAM RAIL ATTACHMENT

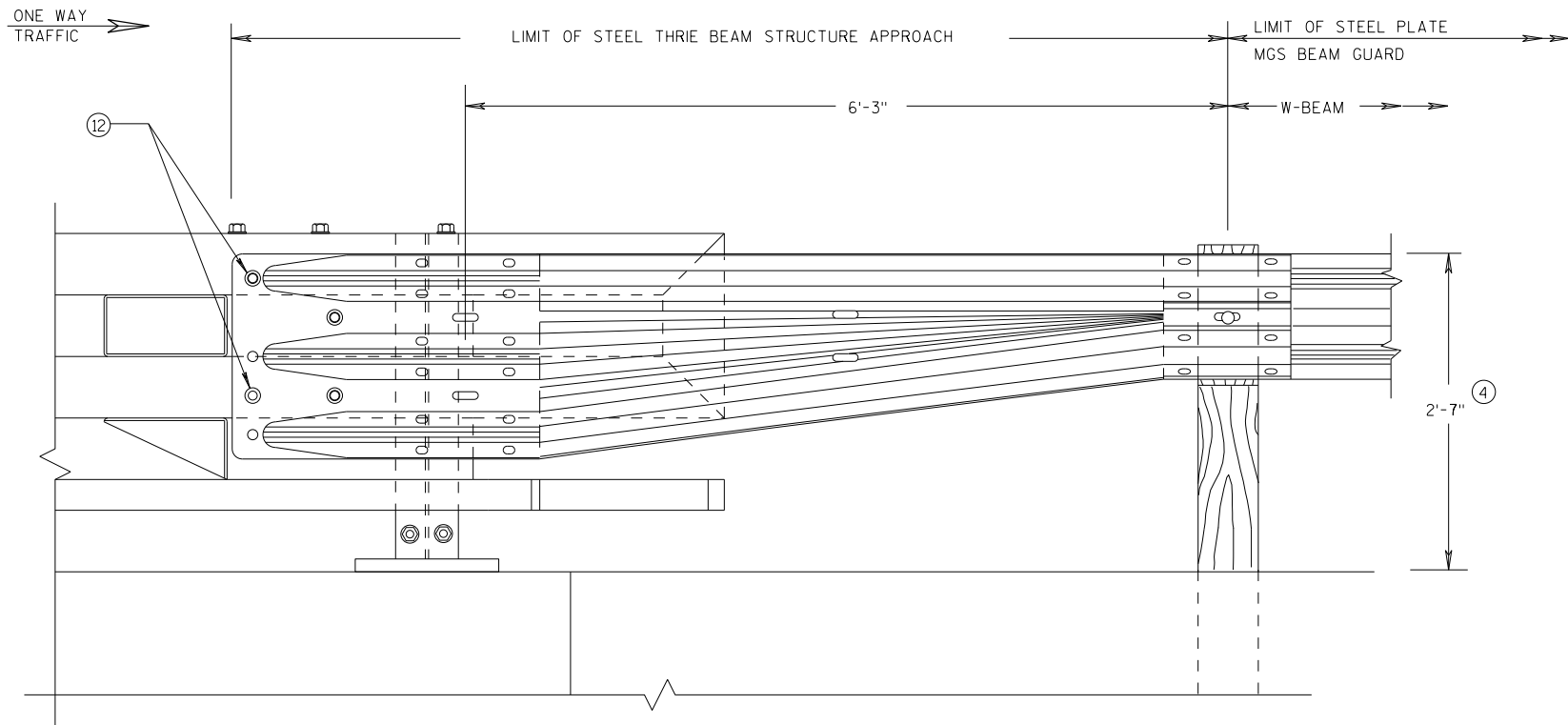


ELEVATION OF DETAIL AT NY4 END POST  
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

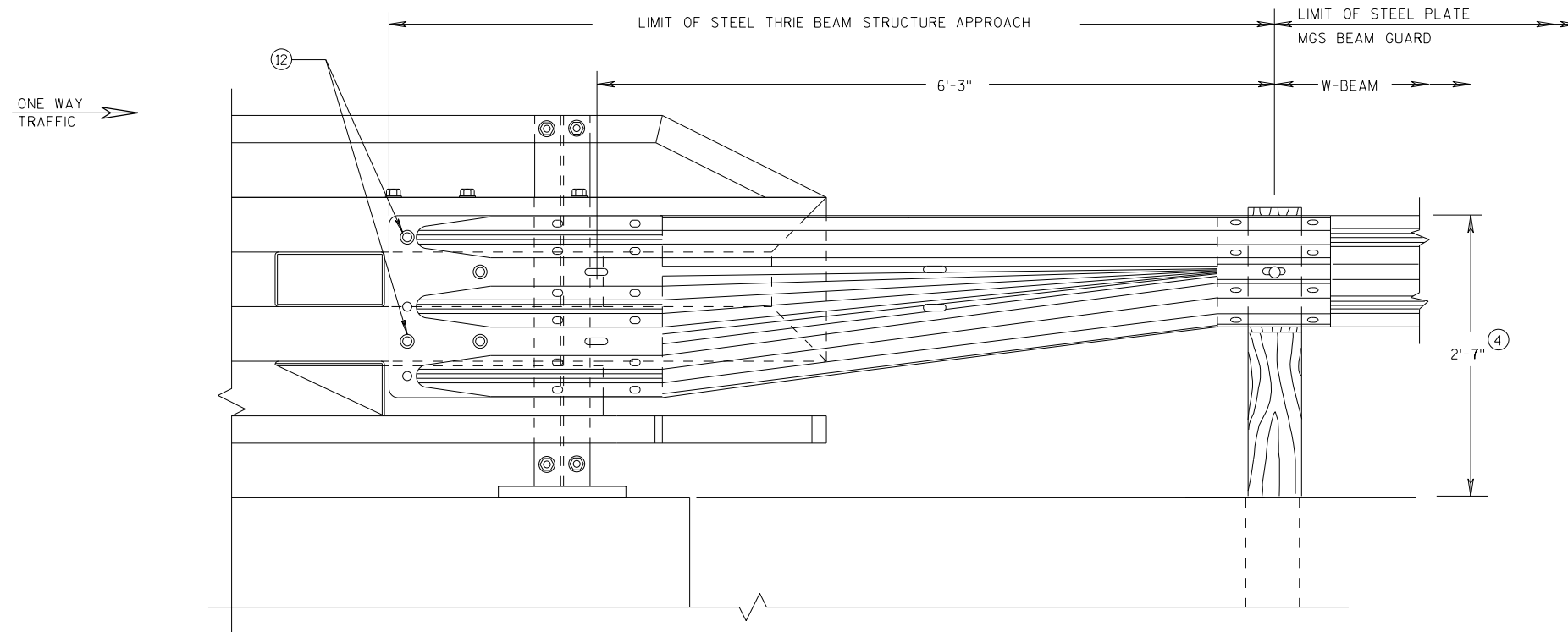
|          |                   |                 |
|----------|-------------------|-----------------|
| APPROVED | /S/ Rodney Taylor | NT              |
| DATE     | 7/2018            | 93              |
| FHWA     | ROADWAY STANDARDS | UNIT SUPERVISOR |



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

## GENERAL NOTES

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



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

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

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

|          |                        |                 |
|----------|------------------------|-----------------|
| APPROVED | /S/ Rodney Taylor      |                 |
| DATE     | 7/2018                 | NT              |
| FHWA     | ROADWAY STANDARDS C 94 | UNIT SUPERVISOR |

GENERAL NOTES

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

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

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

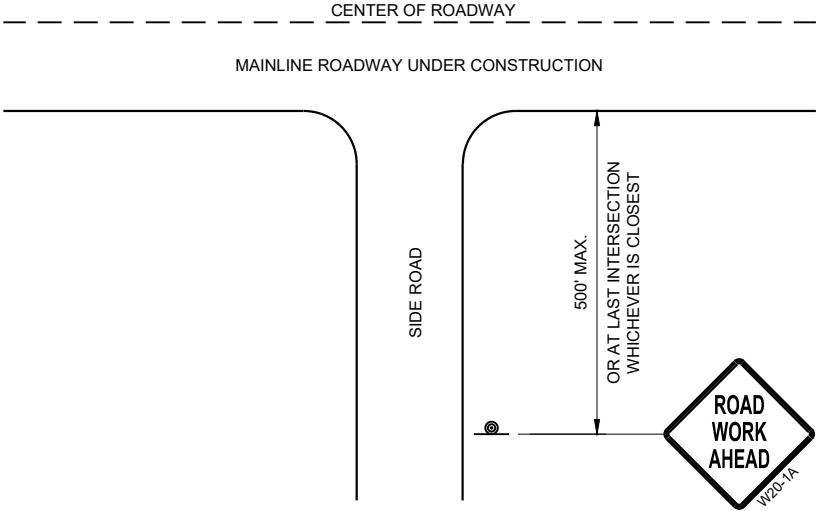
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

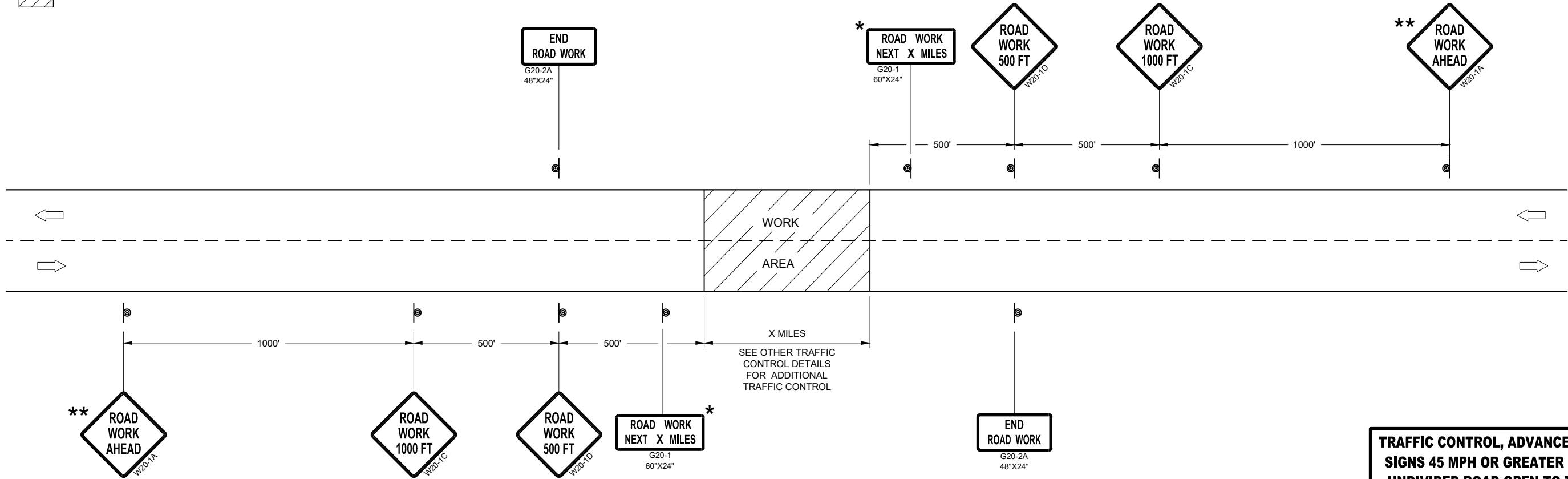
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL



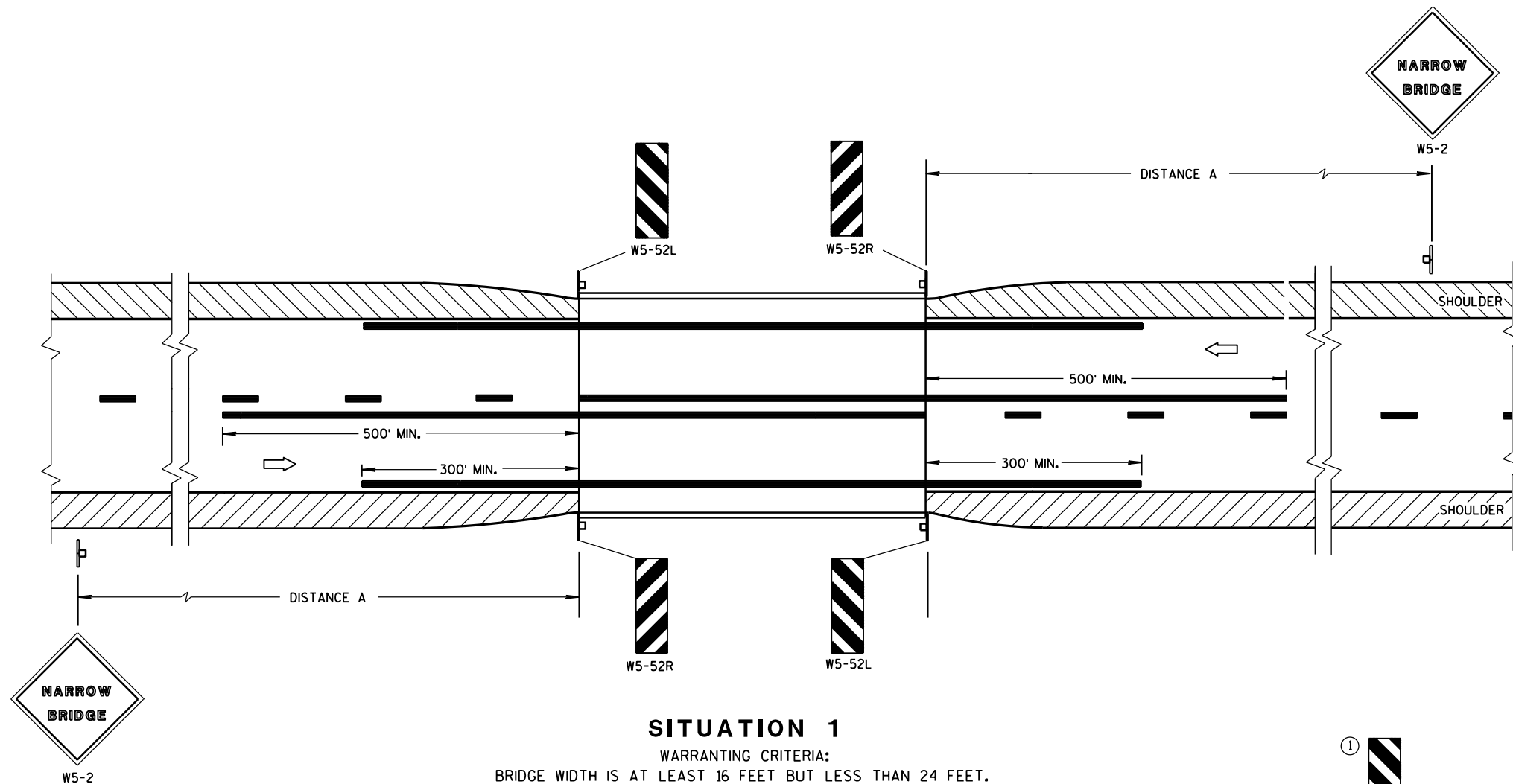
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
July 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 95

FHWA



DISTANCE TABLE

| POSTED OR 85th<br>PERCENTILE SPEED | DISTANCE "A" |
|------------------------------------|--------------|
| 25                                 | 150'         |
| 30                                 | 200'         |
| 35                                 | 250'         |
| 40                                 | 300'         |
| 45                                 | 400'         |
| 50                                 | 550'         |
| 55                                 | 750'         |

## GENERAL NOTES

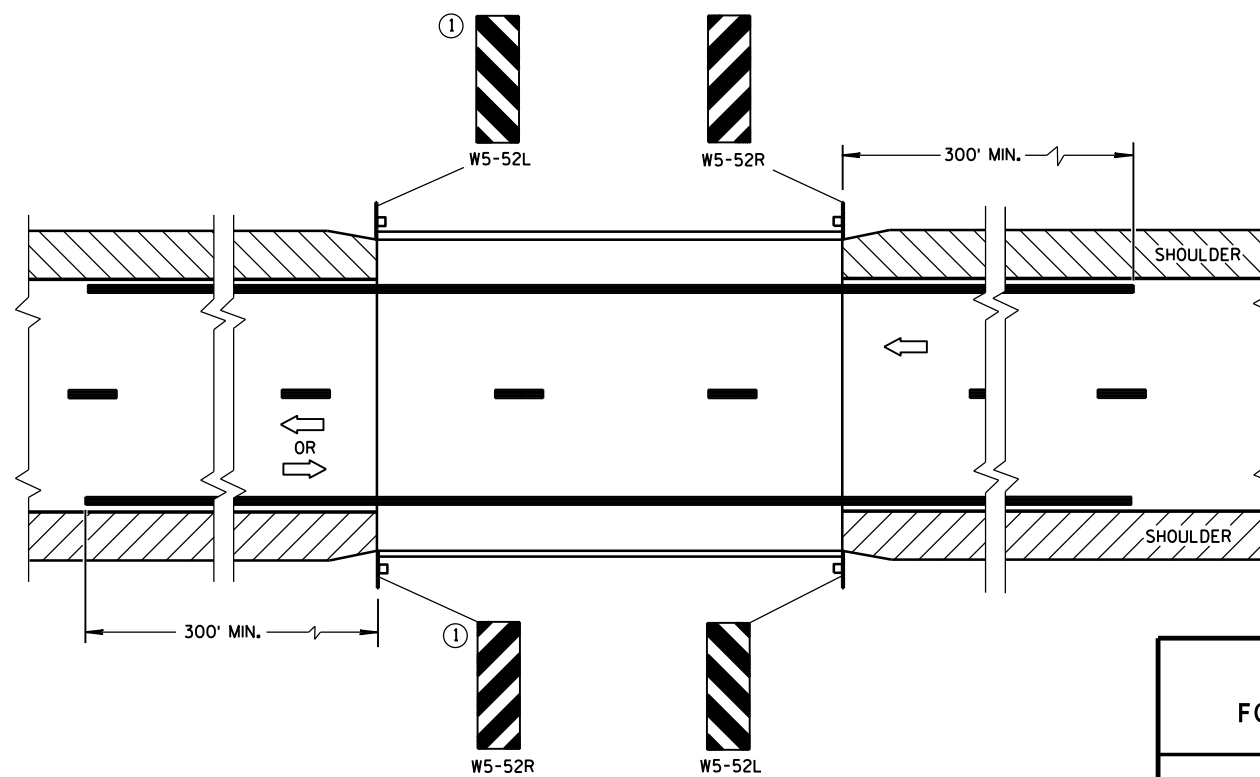
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC

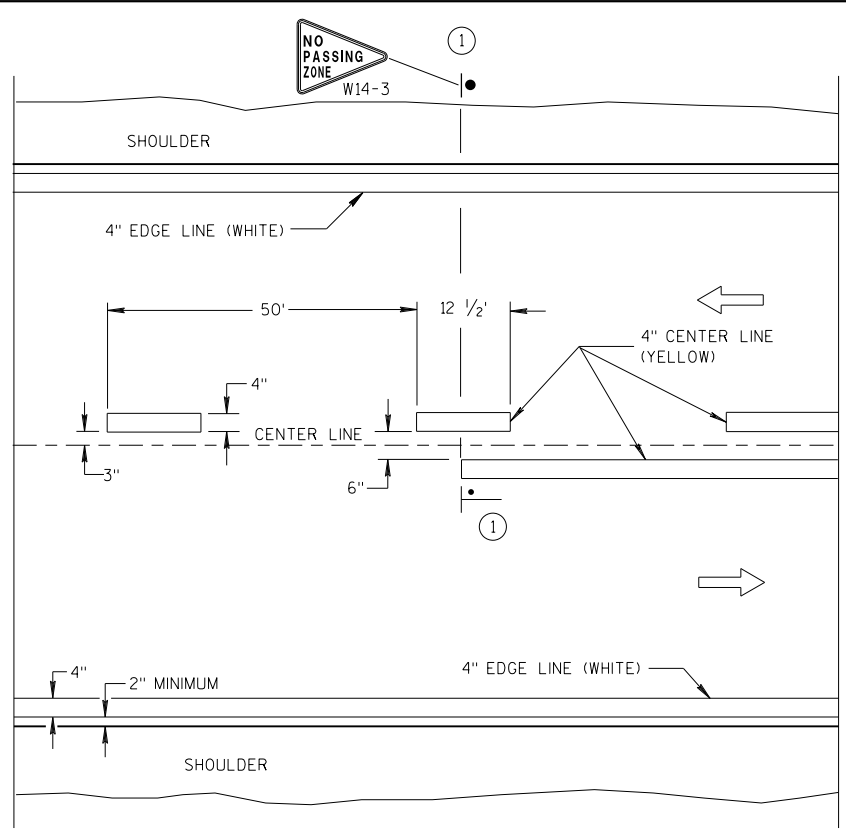
SIGNING & MARKING  
FOR TWO LANE BRIDGES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

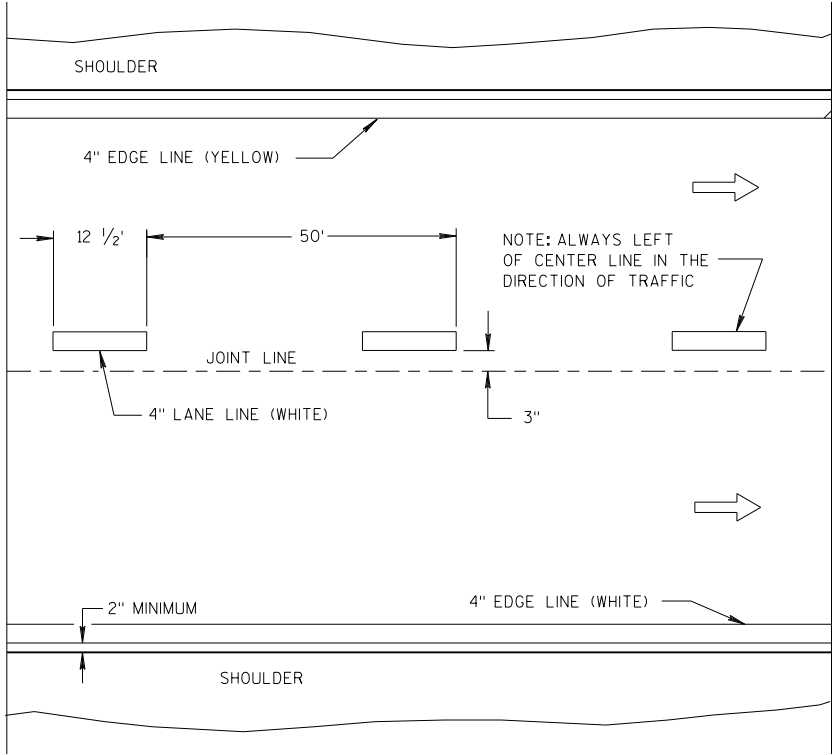
## APPROVED

June 2017 /S/ Matthew R. Rauch  
DATE STATE SIGNING AND MAR 96 JEER

FHWA

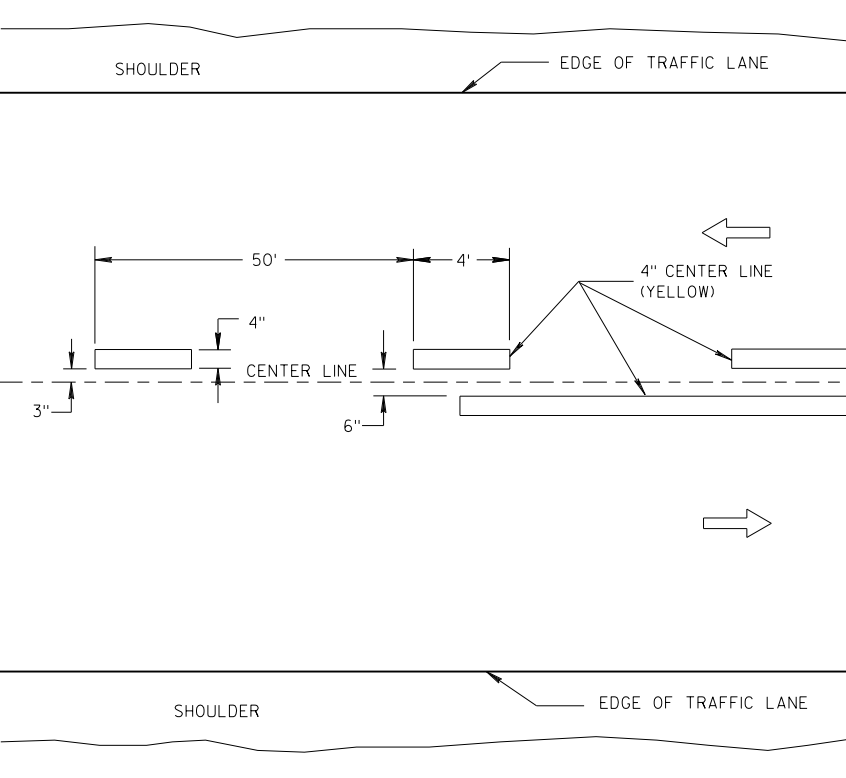


TWO WAY TRAFFIC

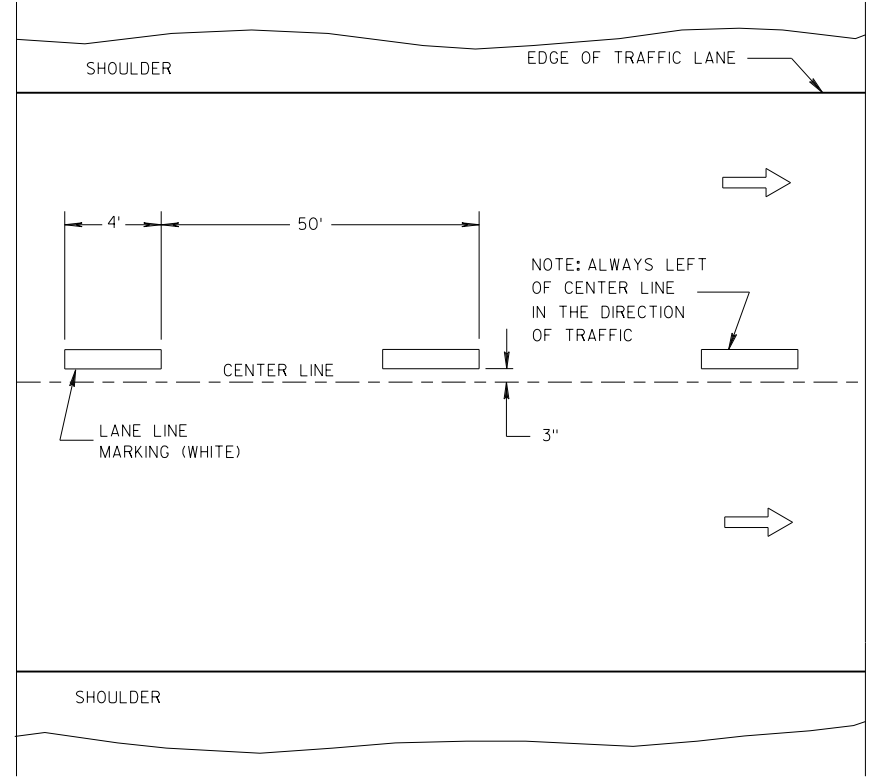


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

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.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

| LONGITUDINAL MARKING (MAINLINE)                    |                          |  |  |
|----------------------------------------------------|--------------------------|--|--|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                          |  |  |
| APPROVED                                           |                          |  |  |
| 7/2018                                             | /S/ Matthew R. Rauch     |  |  |
| DATE                                               | STATE SIGNING AND MAR 97 |  |  |
| FHWA                                               | INEER                    |  |  |



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.

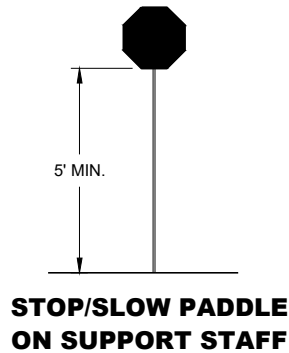
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND LOCATION OF ALL FLAGGERS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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.
- 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.
  - 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.
- EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

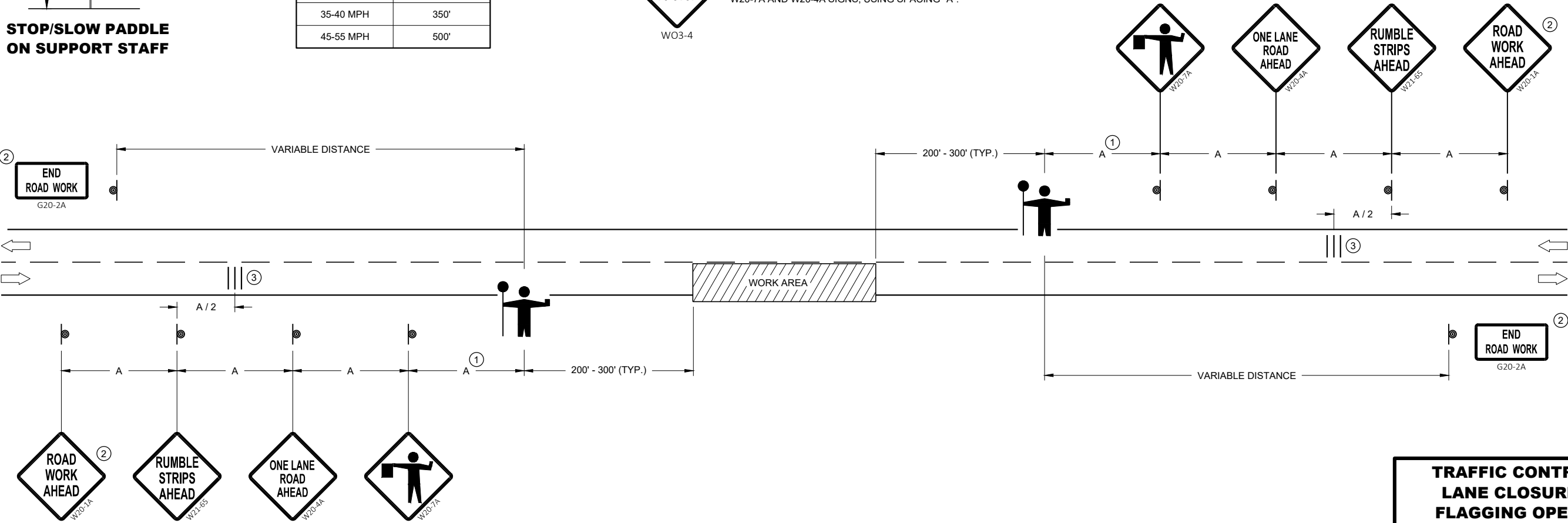


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

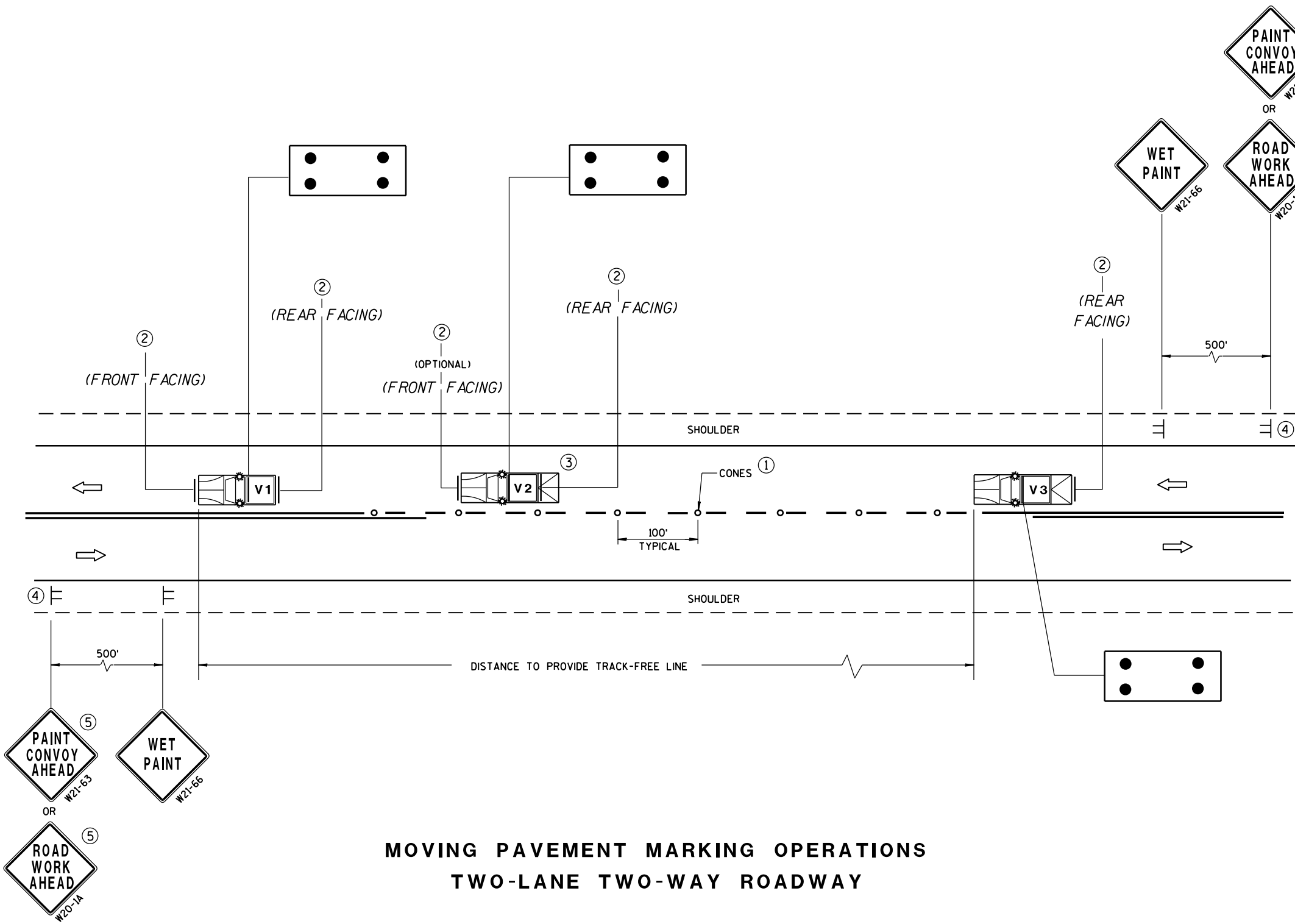
**TRAFFIC CONTROL FOR  
LANE CLOSURE WITH  
FLAGGING OPERATION**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2019 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 98

FHWA





MOVING PAVEMENT MARKING OPERATIONS  
TWO-LANE TWO-WAY ROADWAY

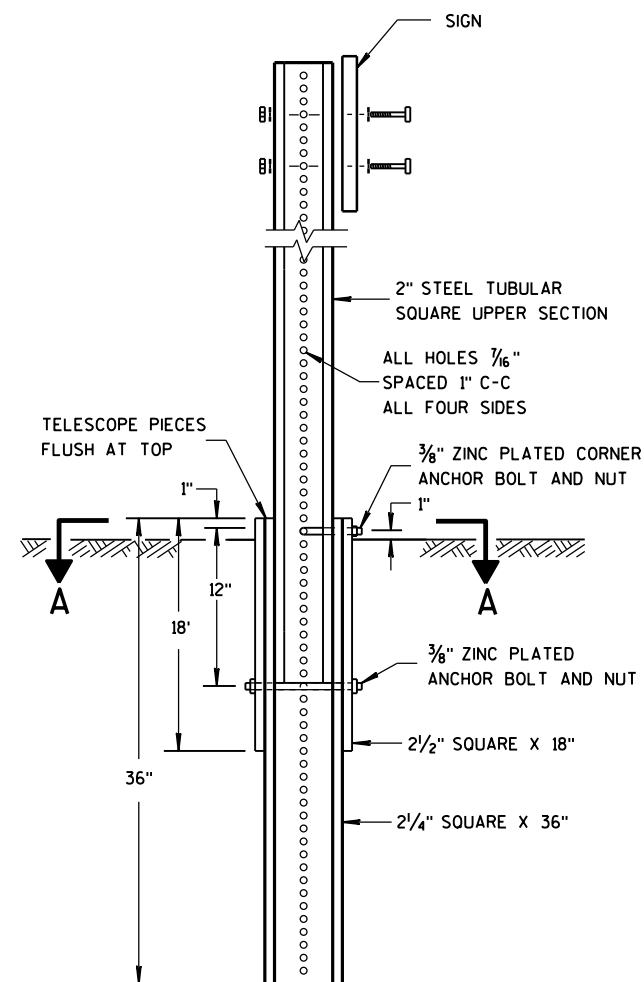
GENERAL NOTES

- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- 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.
- IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.
- ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.
- 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 OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.
- THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.
- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

- V1** LEAD VEHICLE
- V2** SHADOW VEHICLE
- V3** TRAIL VEHICLE WITH TMA
- TMA** TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (CAUTION)

|                                                                  |                                          |
|------------------------------------------------------------------|------------------------------------------|
| MOVING PAVEMENT MARKING<br>OPERATION<br>TWO-LANE TWO-WAY ROADWAY |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION               |                                          |
| APPROVED<br>Sept., 2017<br>DATE                                  | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                                             |                                          |



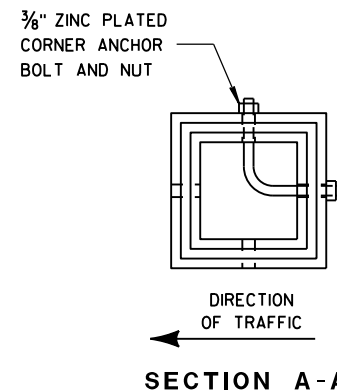
DETAIL OF TUBULAR  
STEEL SIGN POST

TUBULAR STEEL POSTS

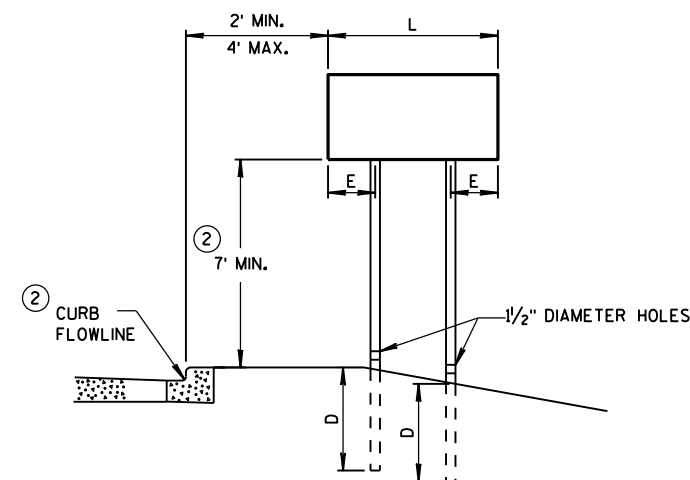
| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.)      | NUMBER OF<br>REQUIRED TUBULAR<br>STEEL POSTS |
|------------------------------------------------|----------------------------------------------|
| 9 OR LESS                                      | 1                                            |
| GREATER THAN 9<br>LESS THAN OR EQUAL<br>TO 18  | 2                                            |
| GREATER THAN 18<br>LESS THAN OR EQUAL<br>TO 27 | 3                                            |

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL  
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED  
ON TUBULAR STEEL POSTS.



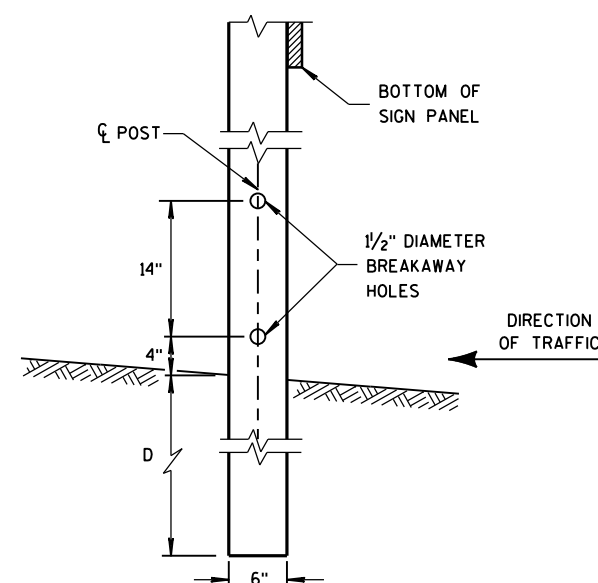
SECTION A-A



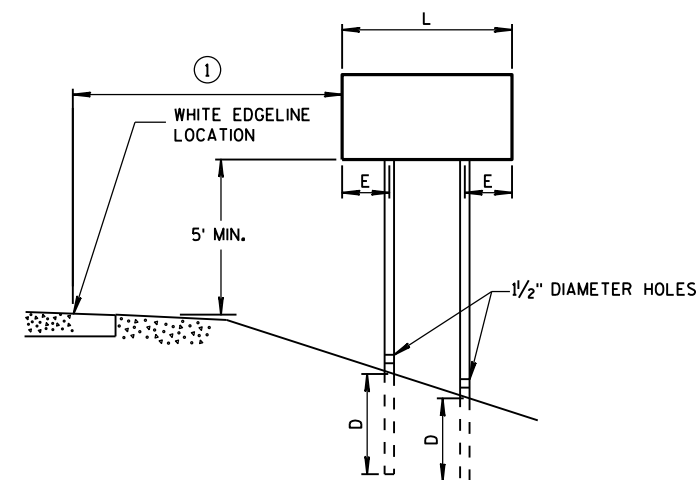
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

| WOOD POST<br>EMBEDMENT DEPTH              |            |
|-------------------------------------------|------------|
| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.) | D<br>(MIN) |
| 20 OR LESS                                | 4'         |
| GREATER THAN 20                           | 5'         |



4 "x6 " WOOD POST  
MODIFICATION



RURAL AREA

| POST SPACING REQUIREMENTS               |     | NUMBER OF<br>WOOD POSTS<br>REQUIRED |
|-----------------------------------------|-----|-------------------------------------|
| L                                       | E   |                                     |
| 48" OR LESS AND<br>LESS THAN 20 SQ. FT. | -   | 1                                   |
| LESS THAN 60"                           | 12" | 2                                   |
| 60" TO 120"                             | L/5 | 2                                   |
| GREATER THAN 120"<br>LESS THAN 168"     | 12" | 3                                   |
| 168" AND GREATER                        | 12" | 4                                   |

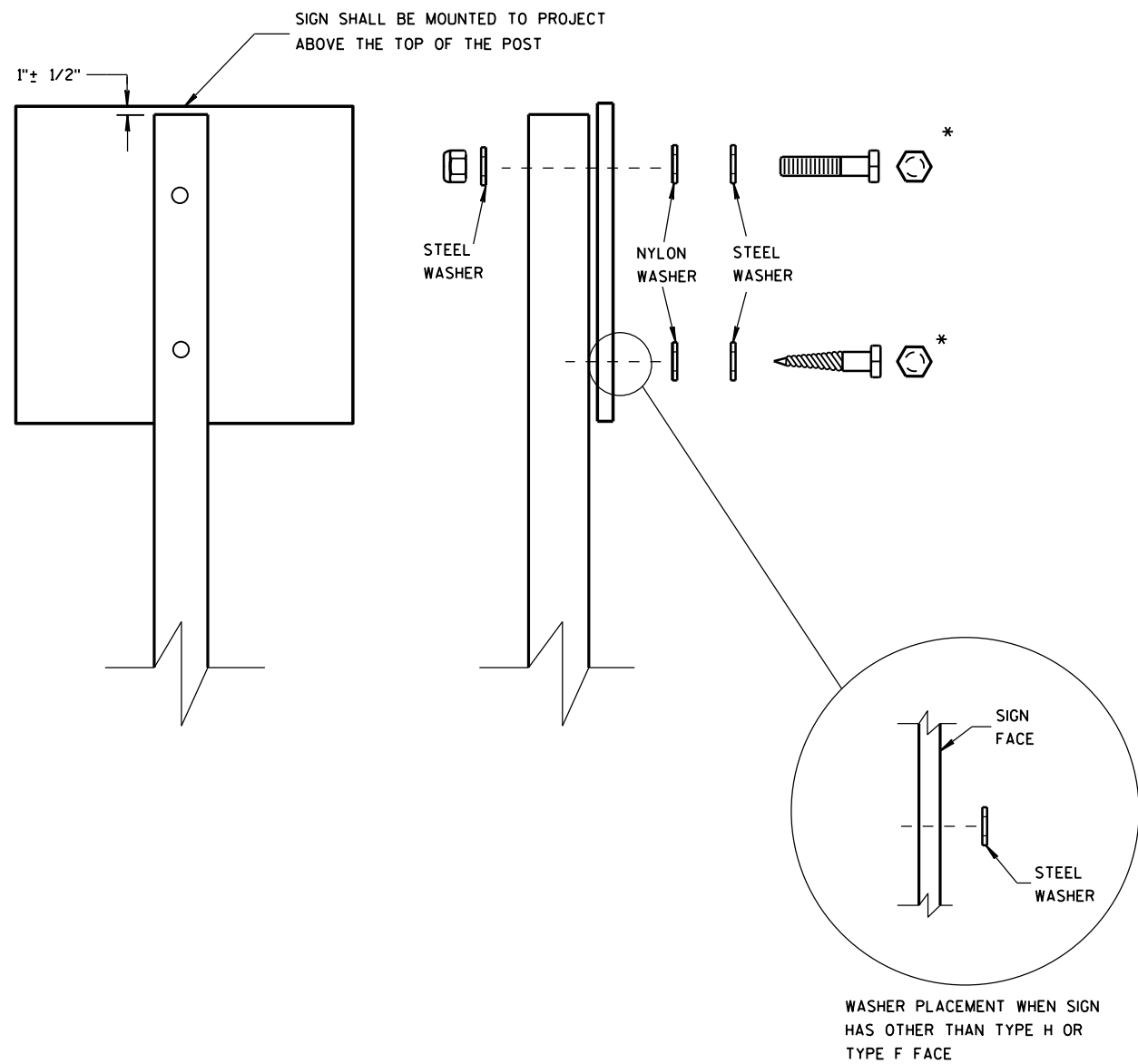
SEE NOTE ③

## GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL  
SIGN MOUNTING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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.

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
  - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
  - 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 FOR ALL TYPE H SIGNS

\* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

|                                                    |                                         |
|----------------------------------------------------|-----------------------------------------|
| ATTACHMENT OF SIGNS<br>TO POSTS                    |                                         |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                         |
| APPROVED<br>June 2017<br>DATE                      | /S/ Andrew Heidtke<br>WORK ZONE ENC 101 |
| FHWA                                               |                                         |

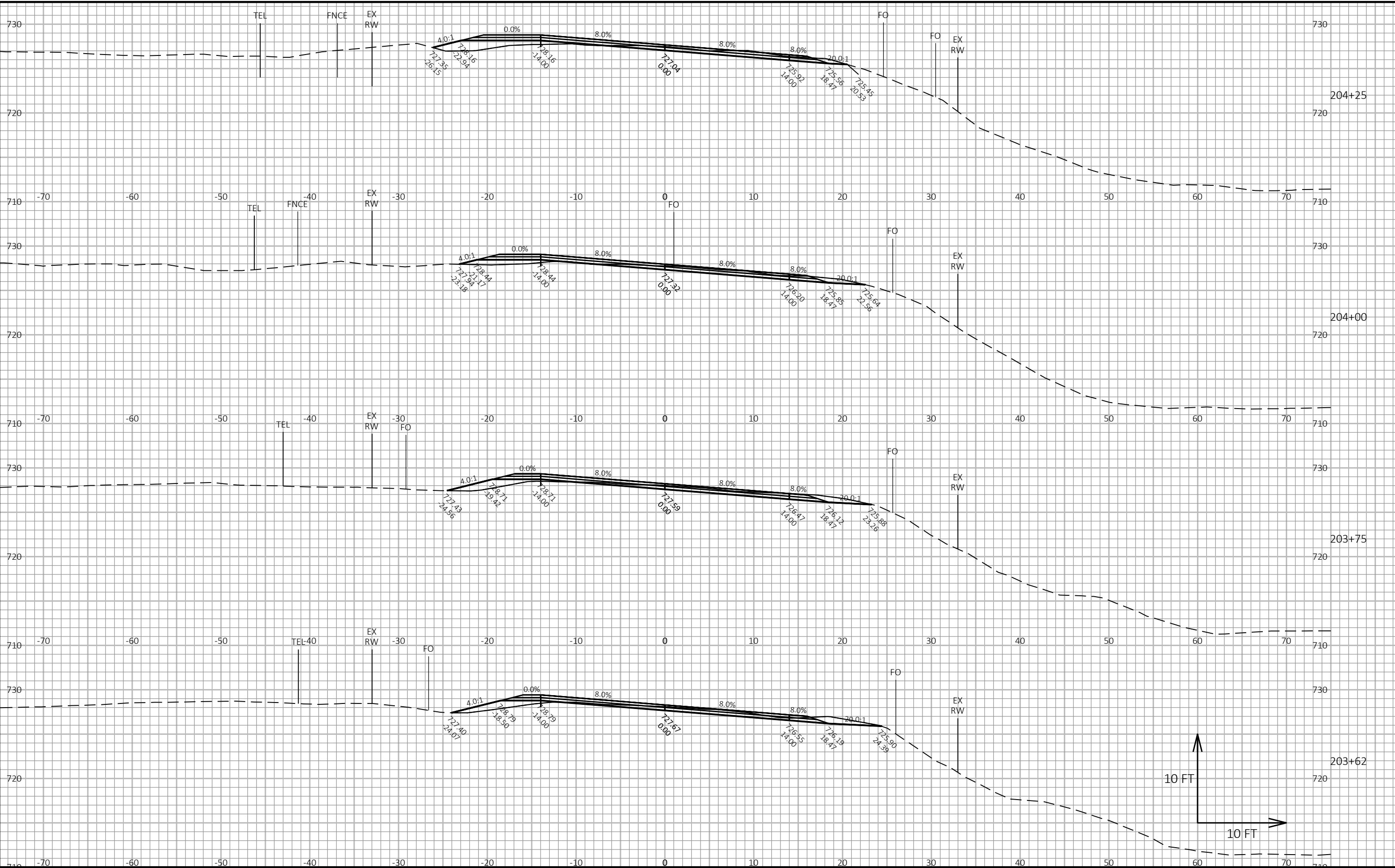


DIVISION 1

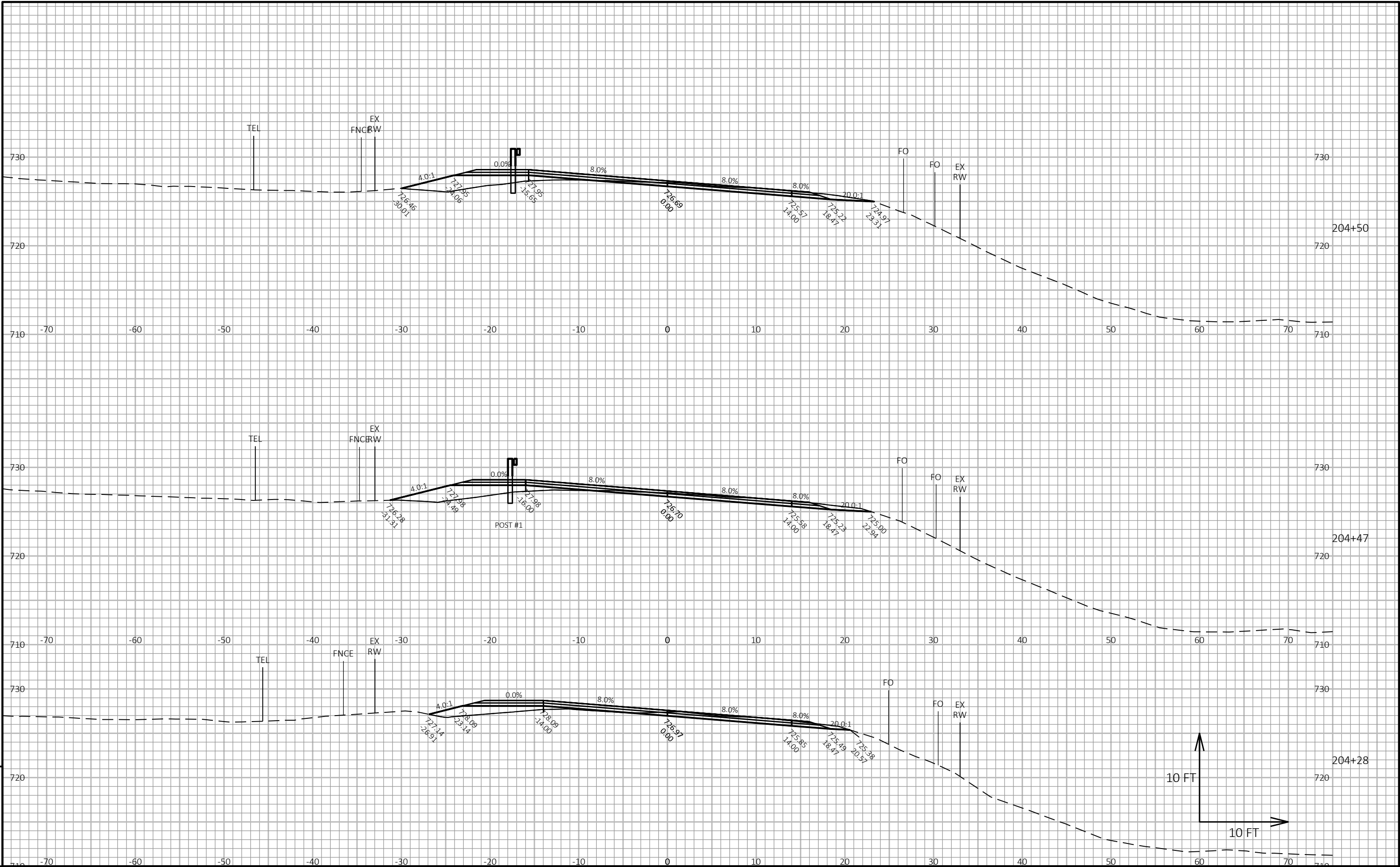
| STATION   | REAL STATION | DISTANCE | AREA (SF) |                   |          |       |           |          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |          |          |      |           |                  |              |                                    |                          |                                  | CUMULATIVE VOL (CY)              |                                |              |          |     |   |   |   |      |  |
|-----------|--------------|----------|-----------|-------------------|----------|-------|-----------|----------|------|-----------------------------------|----------|----------|------|-----------|------------------|--------------|------------------------------------|--------------------------|----------------------------------|----------------------------------|--------------------------------|--------------|----------|-----|---|---|---|------|--|
|           |              |          | CUT       | SALVAGED/UNUSABLE |          |       |           |          | CUT  | SALVAGED/UNUSABLE                 |          |          |      |           | EXPANDED<br>1.00 | FILL<br>1.25 | EXPANDED<br>MARSH BACKFILL<br>1.50 | EXPANDED<br>ROCK<br>1.10 | EXPANDED<br>EBS/BACKFILL<br>1.30 | REDUCED MARSH<br>IN FILL<br>0.60 | REDUCED EBS<br>IN FILL<br>0.80 | MASS ORDNATE |          |     |   |   |   |      |  |
|           |              |          |           | PAVEMENT          | MATERIAL | FILL  | MARSH EXC | ROCK EXC |      | EBS                               | PAVEMENT | MATERIAL | FILL | MARSH EXC |                  |              |                                    |                          |                                  |                                  |                                |              | ROCK EXC | EBS |   |   |   |      |  |
|           |              |          |           |                   |          |       |           |          |      |                                   |          |          |      |           |                  |              |                                    |                          |                                  |                                  |                                |              |          |     |   |   |   |      |  |
|           |              |          | NOTE 1    | NOTE 2            |          |       |           | NOTE 3   |      |                                   |          | NOTE 4   |      | NOTE 5    |                  | NOTE 6       |                                    | NOTE 7                   |                                  | NOTE 8                           |                                |              |          |     |   |   |   |      |  |
| 360+76.78 | 36076.78     | 0.00     | 0.00      |                   | 0.00     | 0.29  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 0    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | 0    |  |
| 361+66.88 | 36166.88     | 90.09    | 0.00      | 0.00              | 0.00     | 1.98  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 4    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -5   |  |
| 361+96.9  | 36196.90     | 30.02    | 0.00      | 0.00              | 0.00     | 6.82  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 5    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -11  |  |
| 362+21.88 | 36221.88     | 24.98    | 0.00      | 0.00              | 0.00     | 2.65  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 4    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -16  |  |
| 362+46.88 | 36246.88     | 25.00    | 0.00      | 0.00              | 0.00     | 1.65  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 2    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -19  |  |
| 362+75    | 36275.00     | 28.12    | 0.00      | 0.00              | 0.00     | 4.11  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 3    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -23  |  |
| 363+00    | 36300.00     | 25.00    | 0.00      | 0.00              | 0.00     | 1.90  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 3    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -26  |  |
| 364+00    | 36400.00     | 100.00   | 0.00      | 0.00              | 0.00     | 5.12  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 13   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -42  |  |
| 365+00    | 36500.00     | 100.00   | 0.00      | 0.00              | 0.00     | 0.49  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 10   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -55  |  |
| 366+00.03 | 36600.03     | 100.03   | 0.00      | 0.00              | 0.00     | 3.59  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 8    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -65  |  |
| 366+25    | 36625.00     | 24.97    | 0.00      | 0.00              | 0.00     | 4.74  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 4    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -70  |  |
| 366+50    | 36650.00     | 25.00    | 3.03      | 0.00              | 0.00     | 7.83  | 0.00      | 0.00     | 0.00 | 1                                 |          | 0        | 6    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -75  |  |
| 366+75    | 36675.00     | 25.00    | 56.64     | 0.00              | 0.00     | 72.66 | 0.00      | 0.00     | 0.00 | 28                                |          | 0        | 37   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -94  |  |
| 367+00    | 36700.00     | 25.00    | 73.65     | 0.00              | 0.00     | 86.65 | 0.00      | 0.00     | 0.00 | 60                                |          | 0        | 74   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -126 |  |
| 367+25    | 36725.00     | 25.00    | 2.53      | 0.00              | 0.00     | 5.41  | 0.00      | 0.00     | 0.00 | 35                                |          | 0        | 43   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -144 |  |
| 367+50    | 36750.00     | 25.00    | 0.00      | 0.00              | 0.00     | 1.16  | 0.00      | 0.00     | 0.00 | 1                                 |          | 0        | 3    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -147 |  |
| 367+75    | 36775.00     | 25.00    | 0.00      | 0.00              | 0.00     | 0.42  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 1    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -148 |  |
| 368+00    | 36800.00     | 25.00    | 0.00      | 0.00              | 0.00     | 0.04  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 0    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -148 |  |
| 368+25    | 36825.00     | 25.00    | 0.00      | 0.00              | 0.00     | 1.56  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 1    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -149 |  |
| 368+50    | 36850.00     | 25.00    | 0.00      | 0.00              | 0.00     | 0.33  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 1    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -150 |  |
| 368+75    | 36875.00     | 25.00    | 0.00      | 0.00              | 0.00     | 0.41  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 0    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -150 |  |
| 369+00    | 36900.00     | 25.00    | 0.00      | 0.00              | 0.00     | 1.07  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 1    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -151 |  |
| 369+25    | 36925.00     | 25.00    | 0.00      | 0.00              | 0.00     | 2.31  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 2    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -153 |  |
| 369+50    | 36950.00     | 25.00    | 0.00      | 0.00              | 0.00     | 3.33  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 3    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -157 |  |
| 369+75    | 36975.00     | 25.00    | 0.00      | 0.00              | 0.00     | 7.03  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 5    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -163 |  |
| 370+00    | 37000.00     | 25.00    | 0.00      | 0.00              | 0.00     | 9.65  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 8    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -172 |  |
| 371+00    | 37100.00     | 100.00   | 0.00      | 0.00              | 0.00     | 7.41  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 32   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -212 |  |
| 371+75    | 37175.00     | 75.00    | 0.00      | 0.00              | 0.00     | 6.13  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 19   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -235 |  |
| 372+00    | 37200.00     | 25.00    | 0.00      | 0.00              | 0.00     | 5.97  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 6    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -242 |  |
| 372+25    | 37225.00     | 25.00    | 0.00      | 0.00              | 0.00     | 3.97  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 5    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -248 |  |
| 372+50    | 37250.00     | 25.00    | 0.00      | 0.00              | 0.00     | 5.97  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 5    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -254 |  |
| 372+75    | 37275.00     | 25.00    | 0.00      | 0.00              | 0.00     | 2.14  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 4    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -258 |  |
| 373+00    | 37300.00     | 25.00    | 0.00      | 0.00              | 0.00     | 2.95  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 2    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -261 |  |
| 374+00    | 37400.00     | 100.00   | 0.00      | 0.00              | 0.00     | 0.00  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 5    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -268 |  |
| 375+00    | 37500.00     | 100.00   | 0.00      | 0.00              | 0.00     | 2.33  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 4    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -274 |  |
| 375+54.37 | 37554.37     | 54.37    | 0.00      | 0.00              | 0.00     | 0.96  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 3    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -278 |  |
| 375+79.47 | 37579.47     | 25.10    | 0.00      | 0.00              | 0.00     | 1.10  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 1    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -279 |  |
| 376+07.79 | 37607.79     | 28.33    | 0.00      | 0.00              | 0.00     | 0.38  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 1    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -280 |  |
| 376+32.79 | 37632.79     | 25.00    | 0.00      | 0.00              | 0.00     | 0.68  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 0    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -280 |  |
| 376+57.79 | 37657.79     | 25.00    | 0.00      | 0.00              | 0.00     | 12.70 | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 6    | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -288 |  |
| 376+87.97 | 37687.97     | 30.17    | 0.00      | 0.00              | 0.00     | 10.51 | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 13   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -304 |  |
| 377+75    | 37775.00     | 87.03    | 0.00      | 0.00              | 0.00     | 0.15  | 0.00      | 0.00     | 0.00 | 0                                 |          | 0        | 17   | 0         | 0                | 0            | 0                                  | 0                        | 0                                | 0                                | 0                              | 0            | 0        | 0   | 0 | 0 | 0 | -326 |  |

DIVISION 1

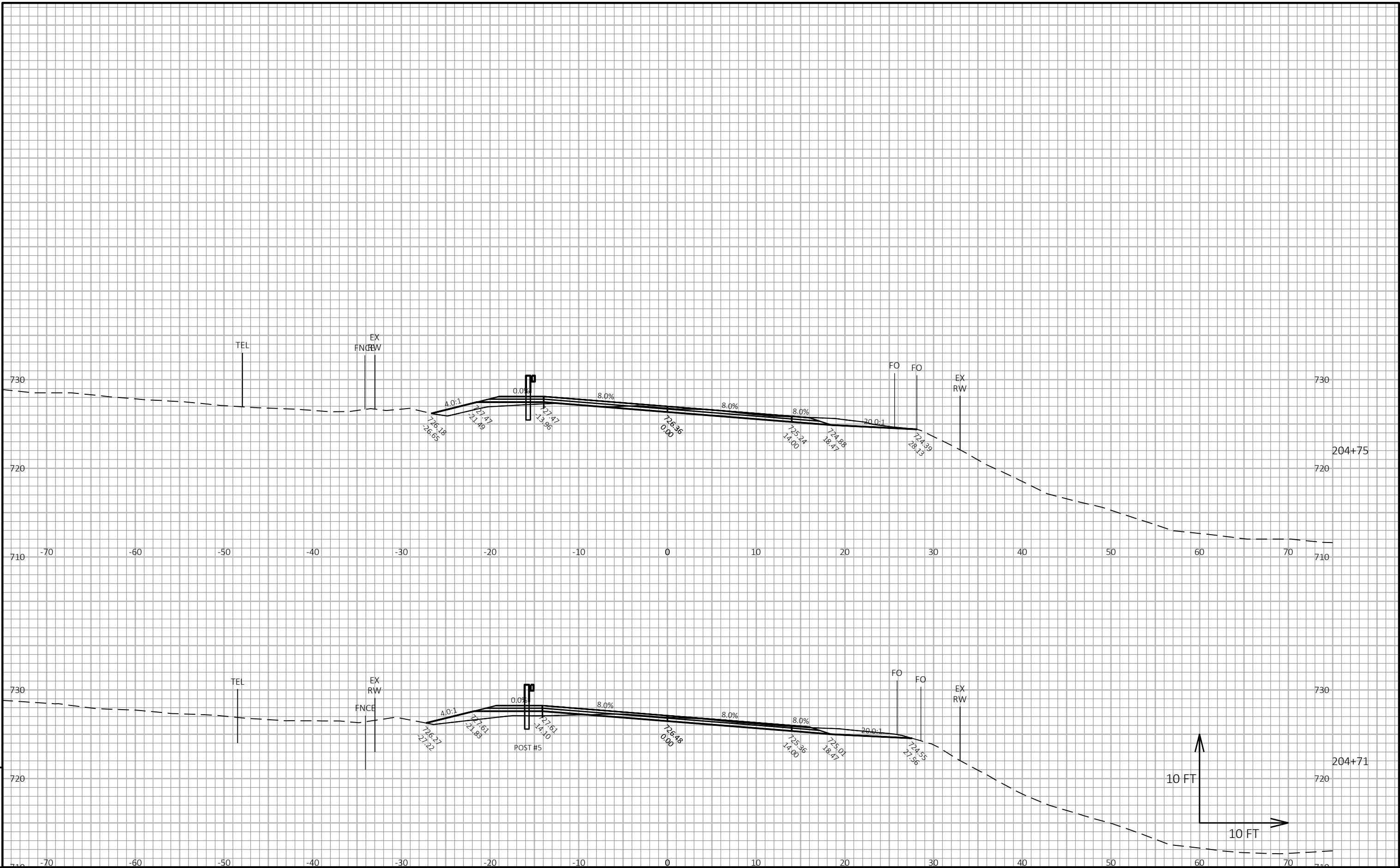
| STATION   | REAL STATION | DISTANCE | AREA (SF) |                                     |      |       |      |      | INCREMENTAL VOL (CY) (UNADJUSTED) |           |          |     |     |                                     |      |         |      |        | CUMULATIVE VOL (CY) |           |          |     |     |          |        |                |               |                       |      |               |        |             |        |              |        |        |
|-----------|--------------|----------|-----------|-------------------------------------|------|-------|------|------|-----------------------------------|-----------|----------|-----|-----|-------------------------------------|------|---------|------|--------|---------------------|-----------|----------|-----|-----|----------|--------|----------------|---------------|-----------------------|------|---------------|--------|-------------|--------|--------------|--------|--------|
|           |              |          | CUT       | SALVAGED/UNUSABLE PAVEMENT MATERIAL |      |       |      |      | FILL                              | MARSH EXC | ROCK EXC | EBS | CUT | SALVAGED/UNUSABLE PAVEMENT MATERIAL |      |         |      |        | FILL                | MARSH EXC | ROCK EXC | EBS | CUT | EXPANDED |        | MARSH BACKFILL | EXPANDED ROCK | EXPANDED EBS/BACKFILL | 1.30 | REDUCED MARSH |        | REDUCED EBS |        | MASS ORDNATE |        |        |
|           |              |          |           | 1.00                                | FILL | 1.25  | 1.50 | 1.10 |                                   |           |          |     |     | IN FILL                             | 0.60 | IN FILL | 0.80 |        |                     |           |          |     |     |          |        |                |               |                       |      |               |        |             |        |              |        |        |
|           |              |          |           |                                     |      |       |      |      |                                   |           |          |     |     |                                     |      |         |      | NOTE 1 |                     |           |          |     |     | NOTE 2   | NOTE 3 |                |               |                       |      | NOTE 1        | NOTE 4 | NOTE 5      | NOTE 6 |              | NOTE 7 | NOTE 8 |
| 391+45.72 | 39145.72     | 0.00     | 1.77      | 0.00                                |      | 1.39  | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 0                                   | 0    | 0       | 0    | 0      | 0                   | 0         | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | 0            | 0      | 0      |
| 392+35.73 | 39235.73     | 90.01    | 0.00      | 0.00                                |      | 32.38 | 0.00 | 0.00 | 0.00                              | 3         |          | 0   |     | 56                                  | 0    | 0       | 0    | 0      | 0                   | 3         | 70       | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | 0            | -67    |        |
| 392+39.32 | 39239.32     | 3.59     | 0.00      | 0.00                                |      | 33.69 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 4                                   | 0    | 0       | 0    | 0      | 3                   | 76        | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -73          |        |        |
| 392+65.82 | 39265.82     | 26.50    | 0.00      | 0.00                                |      | 55.63 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 44                                  | 0    | 0       | 0    | 0      | 3                   | 131       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -128         |        |        |
| 392+69.19 | 39269.19     | 3.37     | 0.00      | 0.00                                |      | 57.29 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 7                                   | 0    | 0       | 0    | 0      | 3                   | 139       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -137         |        |        |
| 392+91.16 | 39291.16     | 21.97    | 0.00      | 0.00                                |      | 26.95 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 34                                  | 0    | 0       | 0    | 0      | 3                   | 182       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -179         |        |        |
| 392+94    | 39294.00     | 2.84     | 0.00      | 0.00                                |      | 24.12 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 3                                   | 0    | 0       | 0    | 0      | 3                   | 186       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -183         |        |        |
| 393+16.46 | 39316.46     | 22.45    | 6.05      | 0.00                                |      | 6.53  | 0.00 | 0.00 | 0.00                              | 3         |          | 0   |     | 13                                  | 0    | 0       | 0    | 0      | 5                   | 202       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -196         |        |        |
| 393+18.5  | 39318.50     | 2.04     | 10.49     | 0.00                                |      | 5.06  | 0.00 | 0.00 | 0.00                              | 1         |          | 0   |     | 0                                   | 0    | 0       | 0    | 0      | 6                   | 202       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -196         |        |        |
| 393+50    | 39350.00     | 31.50    | 2.31      | 0.00                                |      | 21.74 | 0.00 | 0.00 | 0.00                              | 7         |          | 0   |     | 16                                  | 0    | 0       | 0    | 0      | 14                  | 222       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -208         |        |        |
| 393+69.85 | 39369.85     | 19.85    | 0.00      | 0.00                                |      | 72.04 | 0.00 | 0.00 | 0.00                              | 1         |          | 0   |     | 34                                  | 0    | 0       | 0    | 0      | 14                  | 265       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -250         |        |        |
| 394+01.53 | 39401.53     | 31.68    | 0.00      | 0.00                                |      | 99.71 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 101                                 | 0    | 0       | 0    | 0      | 14                  | 391       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -376         |        |        |
| 394+25    | 39425.00     | 23.48    | 0.00      | 0.00                                |      | 15.75 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 50                                  | 0    | 0       | 0    | 0      | 14                  | 453       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -439         |        |        |
| 394+53.6  | 39453.60     | 28.60    | 0.00      | 0.00                                |      | 8.63  | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 13                                  | 0    | 0       | 0    | 0      | 14                  | 470       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -455         |        |        |
| 394+54.78 | 39454.78     | 1.18     | 0.00      | 0.00                                |      | 8.73  | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 0                                   | 0    | 0       | 0    | 0      | 14                  | 470       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -456         |        |        |
| 394+78.28 | 39478.28     | 23.50    | 0.00      | 0.00                                |      | 13.10 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 10                                  | 0    | 0       | 0    | 0      | 14                  | 482       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -468         |        |        |
| 394+80.08 | 39480.08     | 1.80     | 0.00      | 0.00                                |      | 13.79 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 1                                   | 0    | 0       | 0    | 0      | 14                  | 483       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -469         |        |        |
| 395+02.91 | 39502.91     | 22.83    | 0.00      | 0.00                                |      | 26.98 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 17                                  | 0    | 0       | 0    | 0      | 14                  | 505       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -490         |        |        |
| 395+05.42 | 39505.42     | 2.50     | 0.00      | 0.00                                |      | 25.40 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 2                                   | 0    | 0       | 0    | 0      | 14                  | 508       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -493         |        |        |
| 395+32.55 | 39532.55     | 27.13    | 0.00      | 0.00                                |      | 10.37 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 18                                  | 0    | 0       | 0    | 0      | 14                  | 530       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -516         |        |        |
| 395+35.76 | 39535.76     | 3.22     | 0.00      | 0.00                                |      | 9.31  | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 1                                   | 0    | 0       | 0    | 0      | 14                  | 532       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -517         |        |        |
| 395+48.3  | 39548.30     | 12.53    | 0.00      | 0.00                                |      | 6.44  | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 4                                   | 0    | 0       | 0    | 0      | 14                  | 536       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -522         |        |        |
| 395+98.3  | 39598.30     | 50.00    | 0.00      | 0.00                                |      | 11.05 | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 16                                  | 0    | 0       | 0    | 0      | 14                  | 556       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -542         |        |        |
| 396+26.97 | 39626.97     | 28.68    | 0.00      | 0.00                                |      | 0.03  | 0.00 | 0.00 | 0.00                              | 0         |          | 0   |     | 6                                   | 0    | 0       | 0    | 0      | 14                  | 564       | 0        | 0   | 0   | 0        | 0      | 0              | 0             | 0                     | 0    | 0             | 0      | 0           | 0      | -549         |        |        |

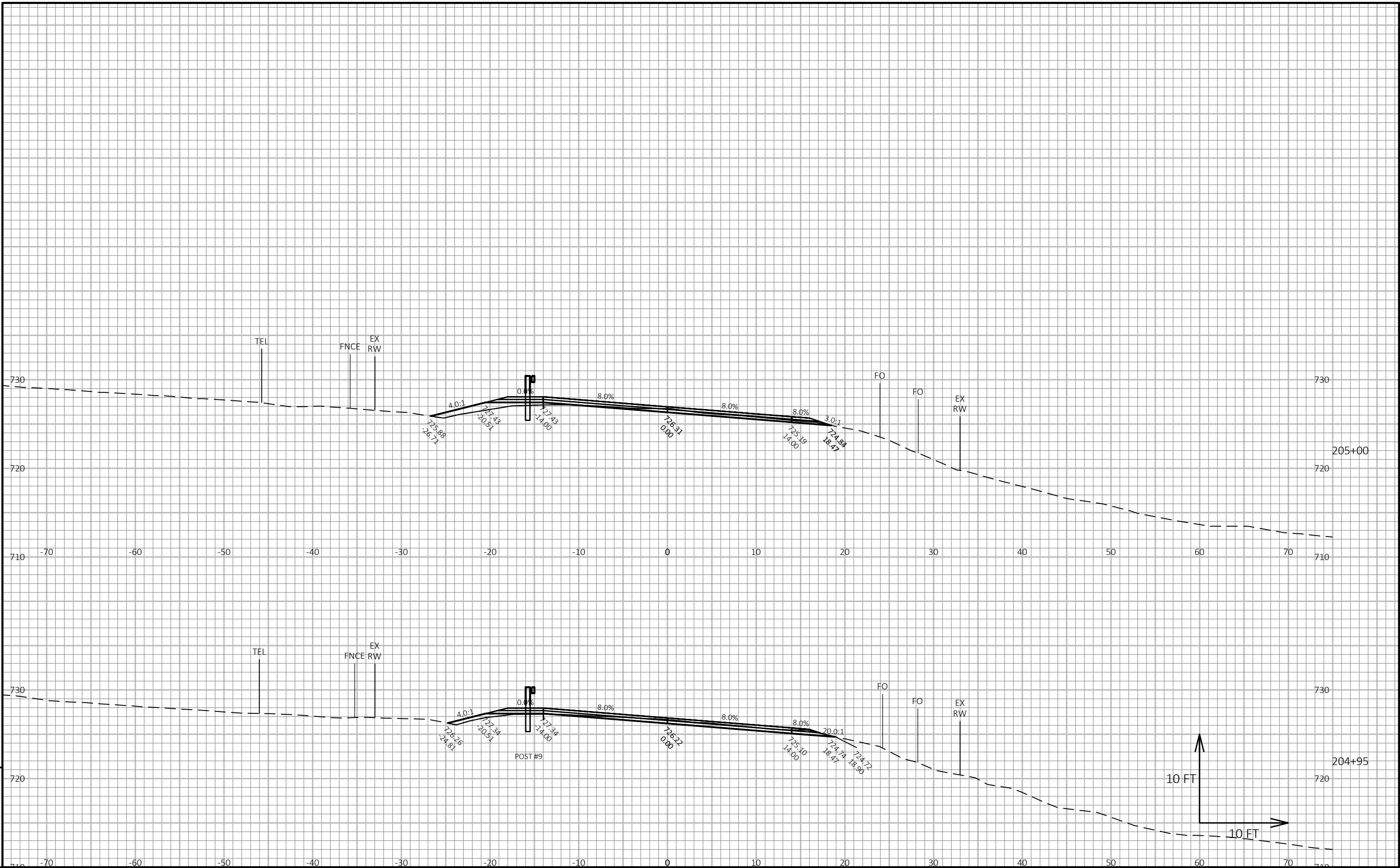


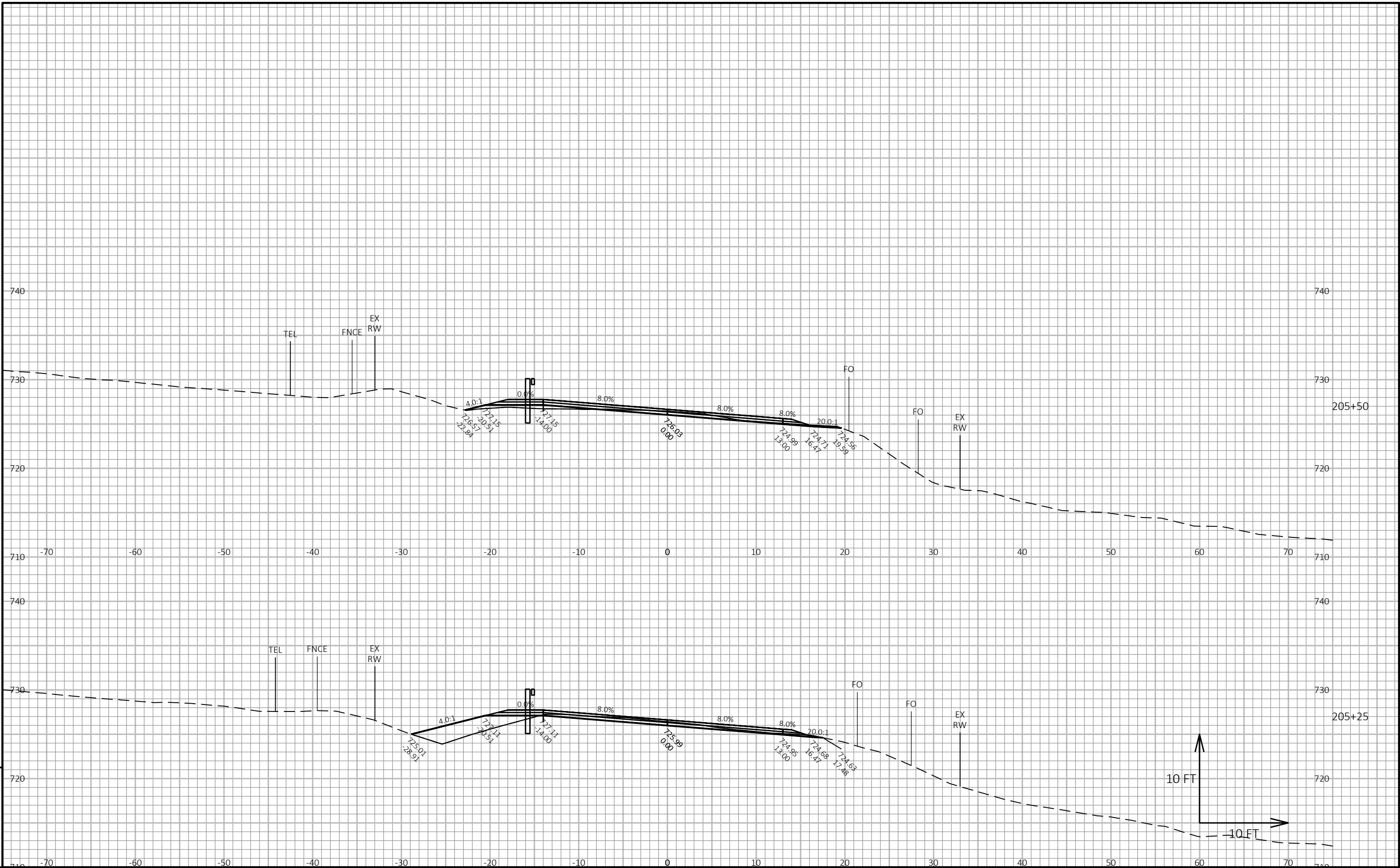


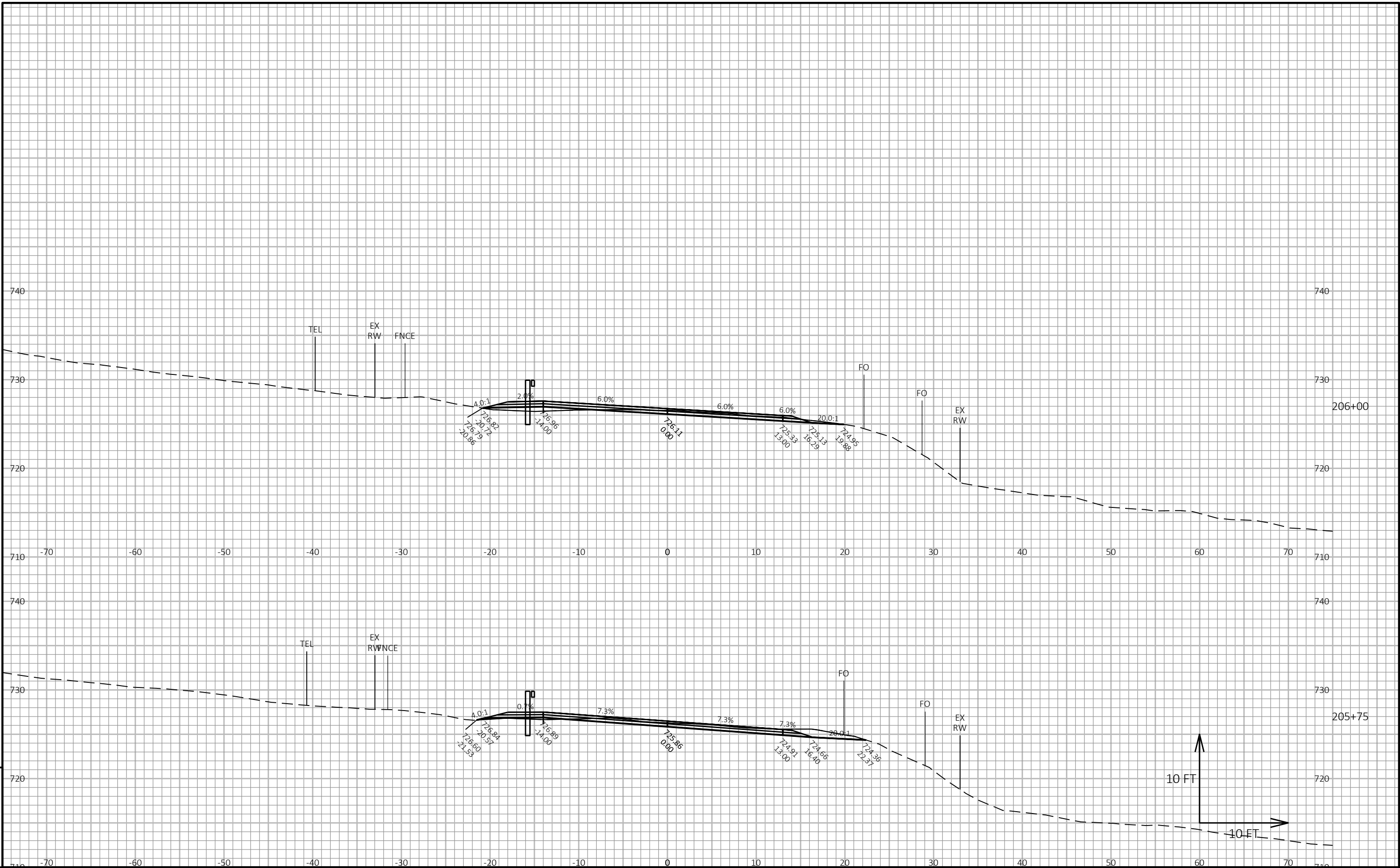


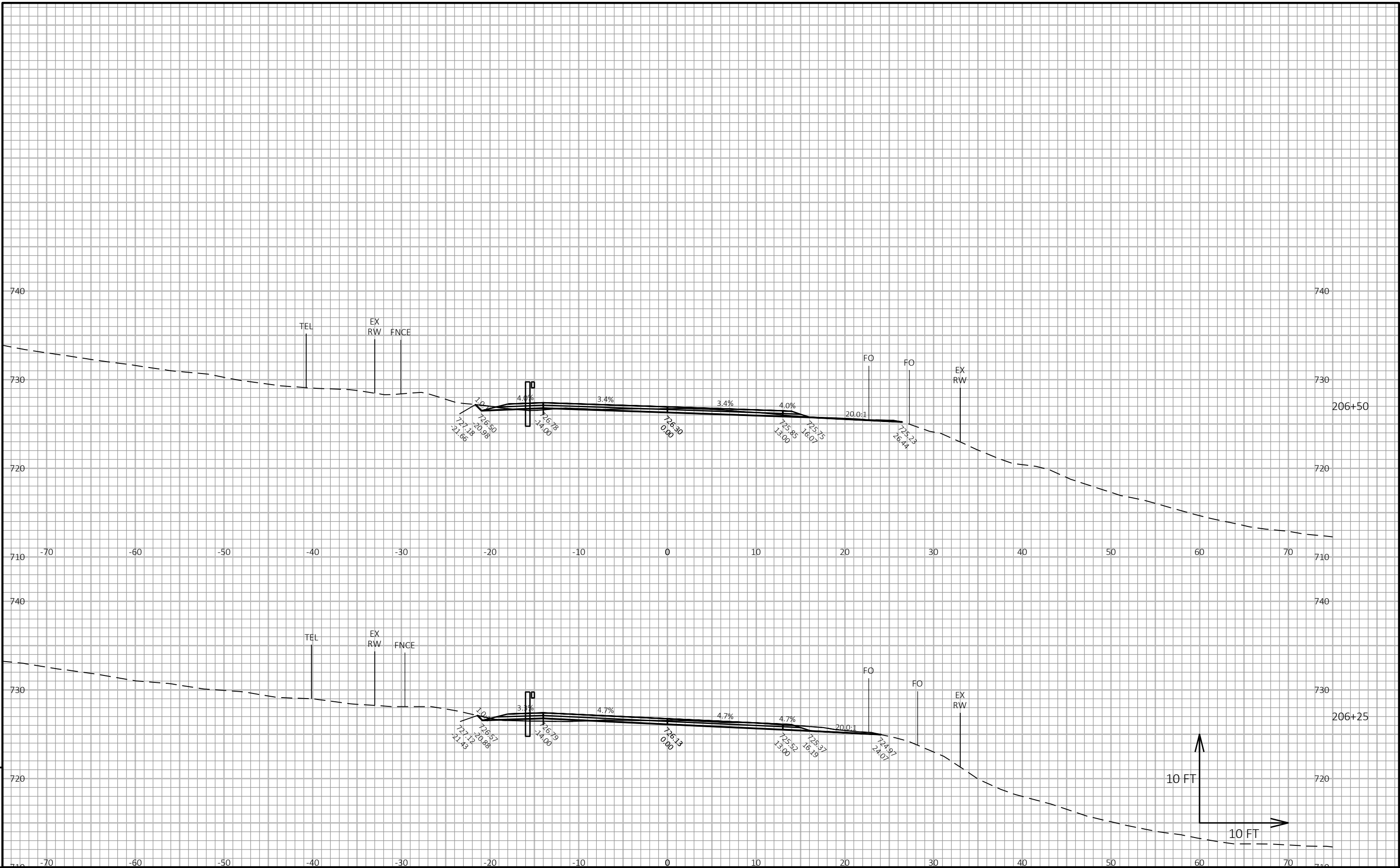


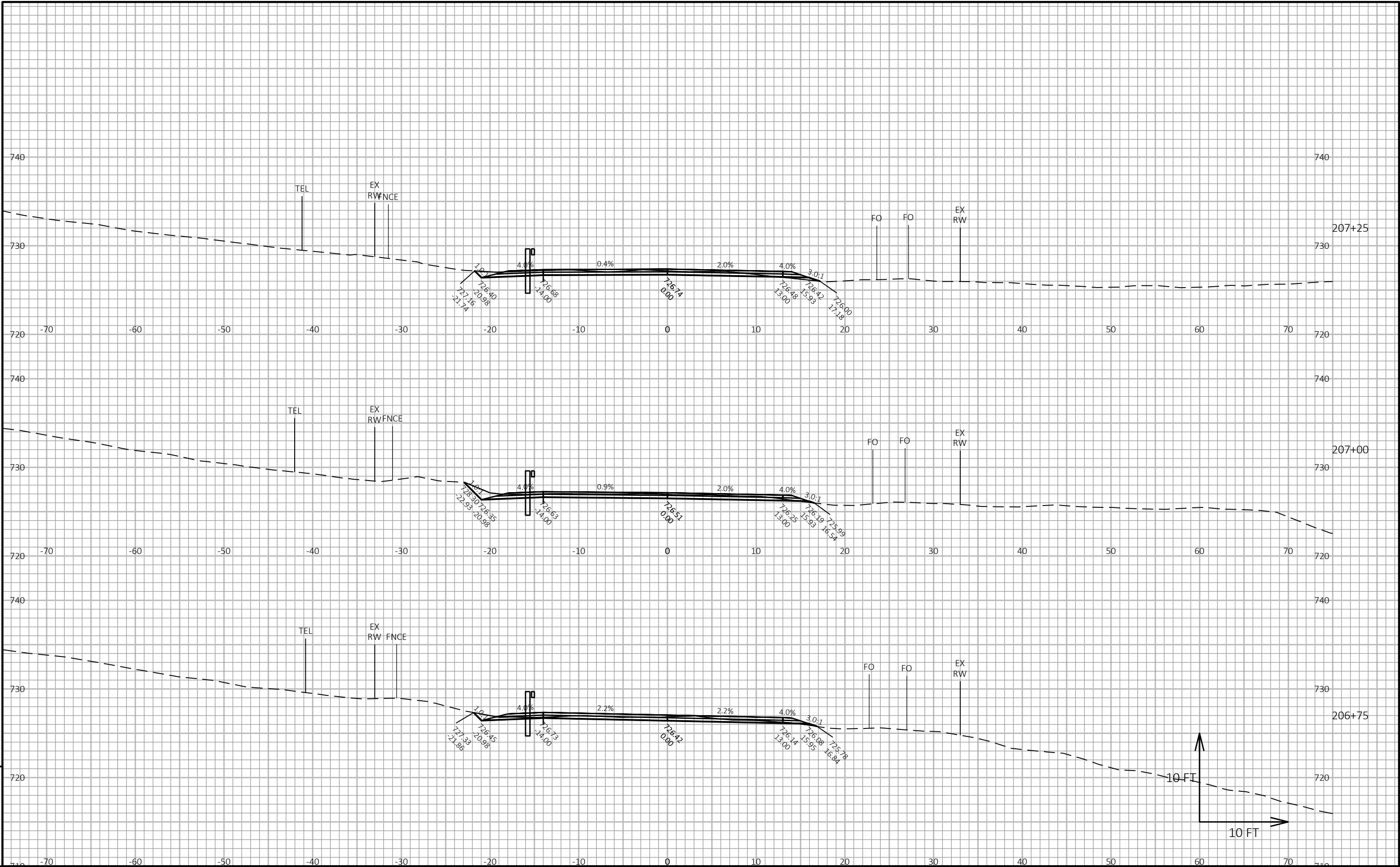




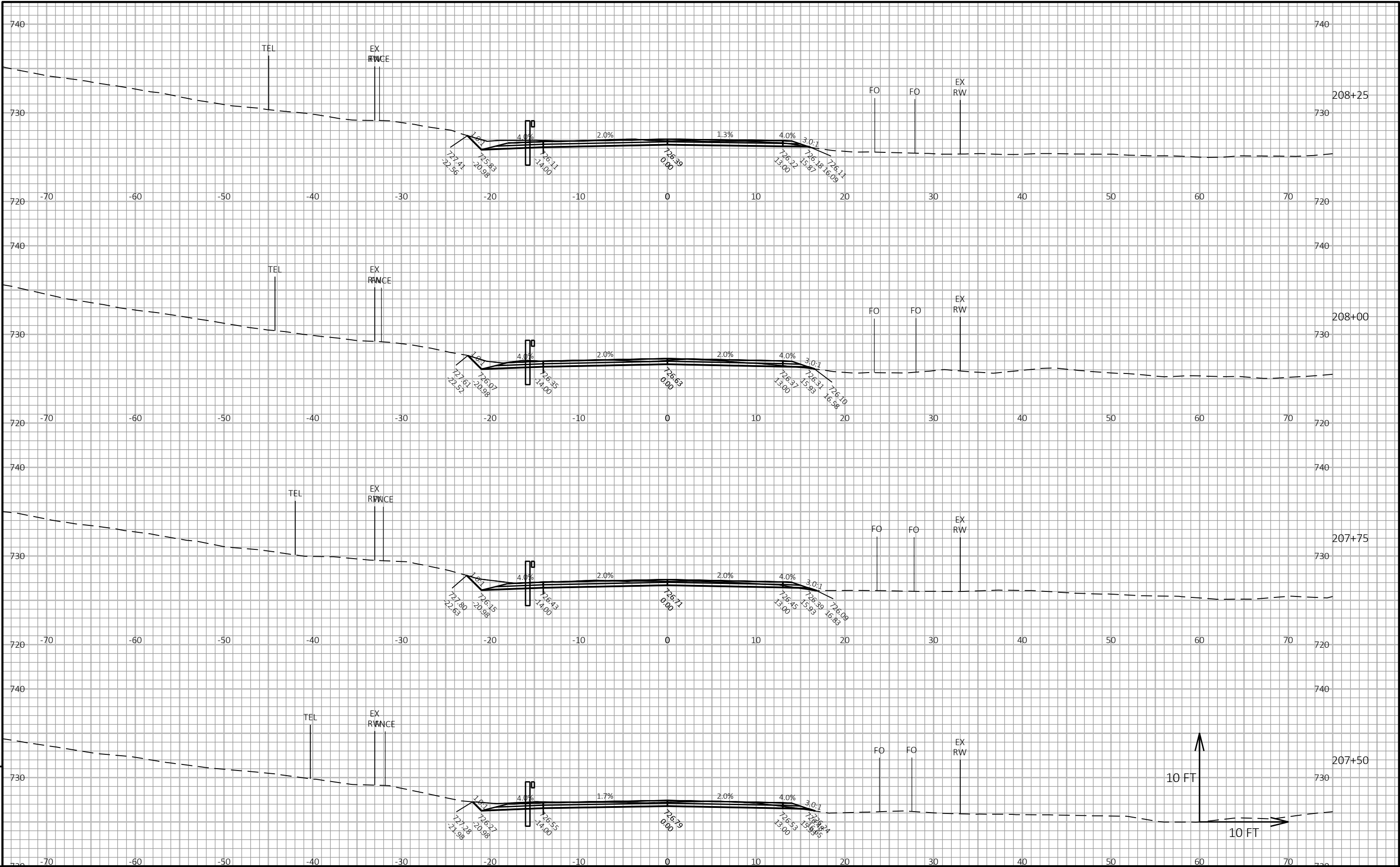




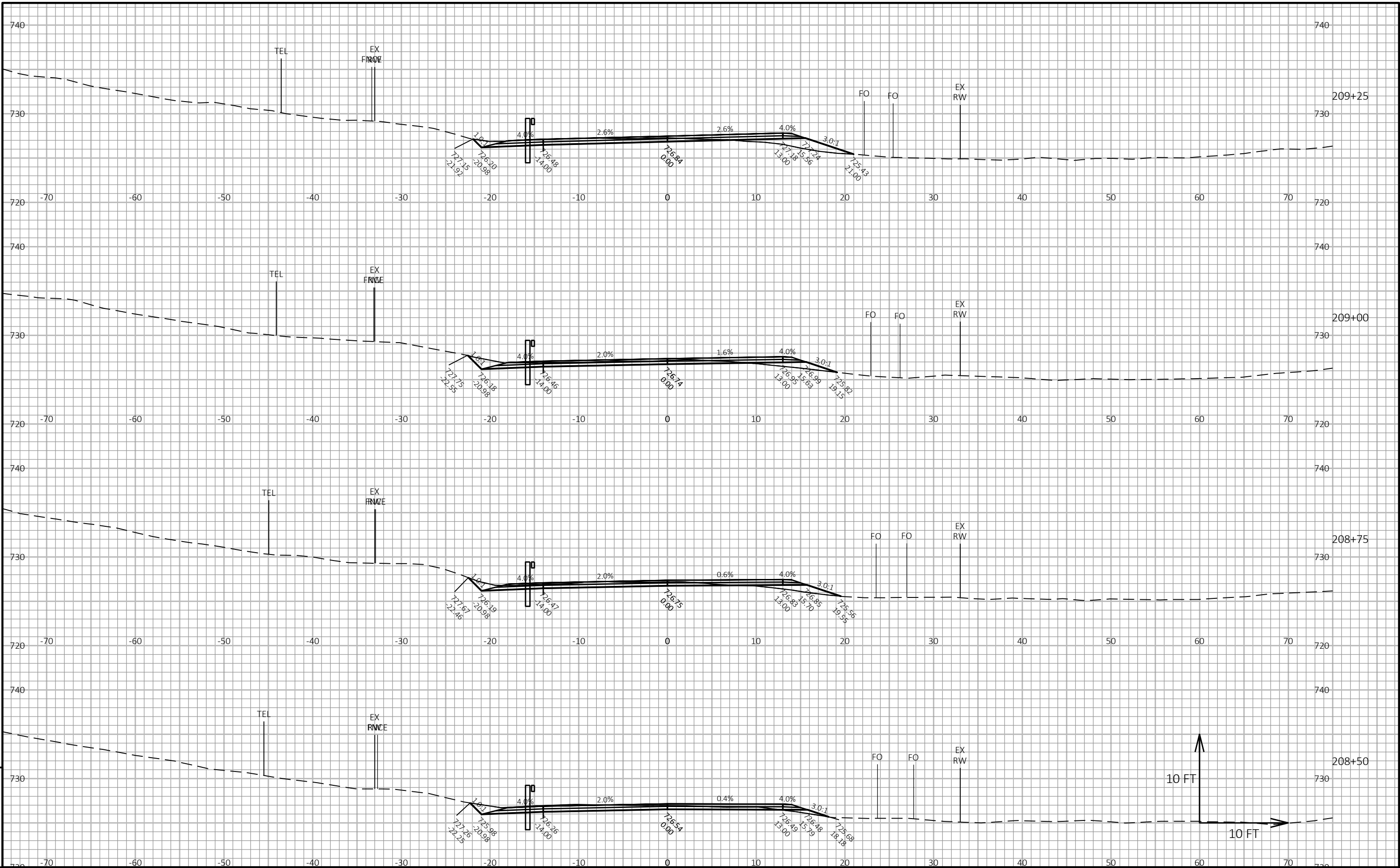


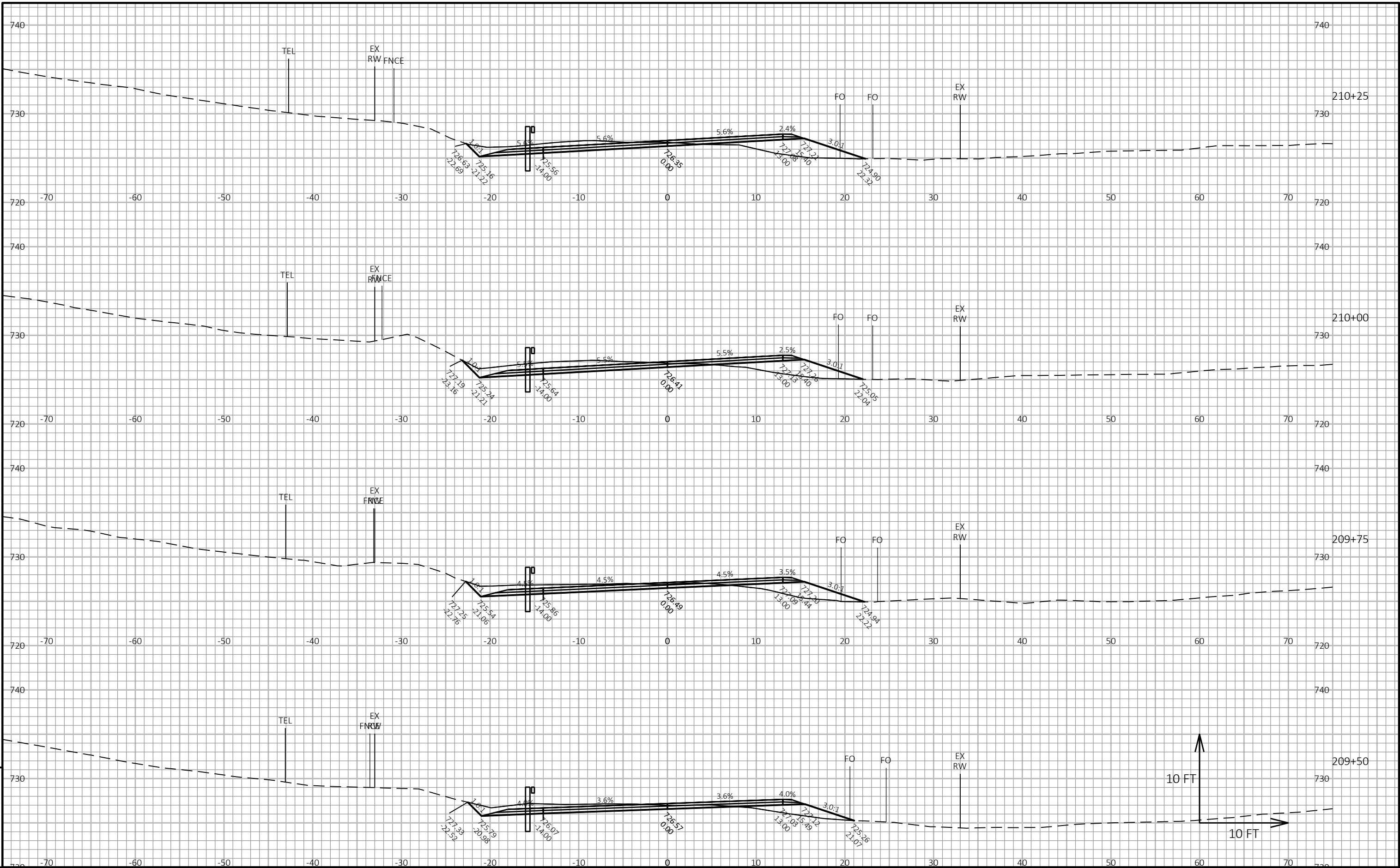












PROJECT NO: 5680-04-60

HWY: STH 60

COUNTY: SAUK

CROSS SECTIONS: STA. 203+62 TO STA. 214+00

SHEET

114

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LAYOUT NAME - 11

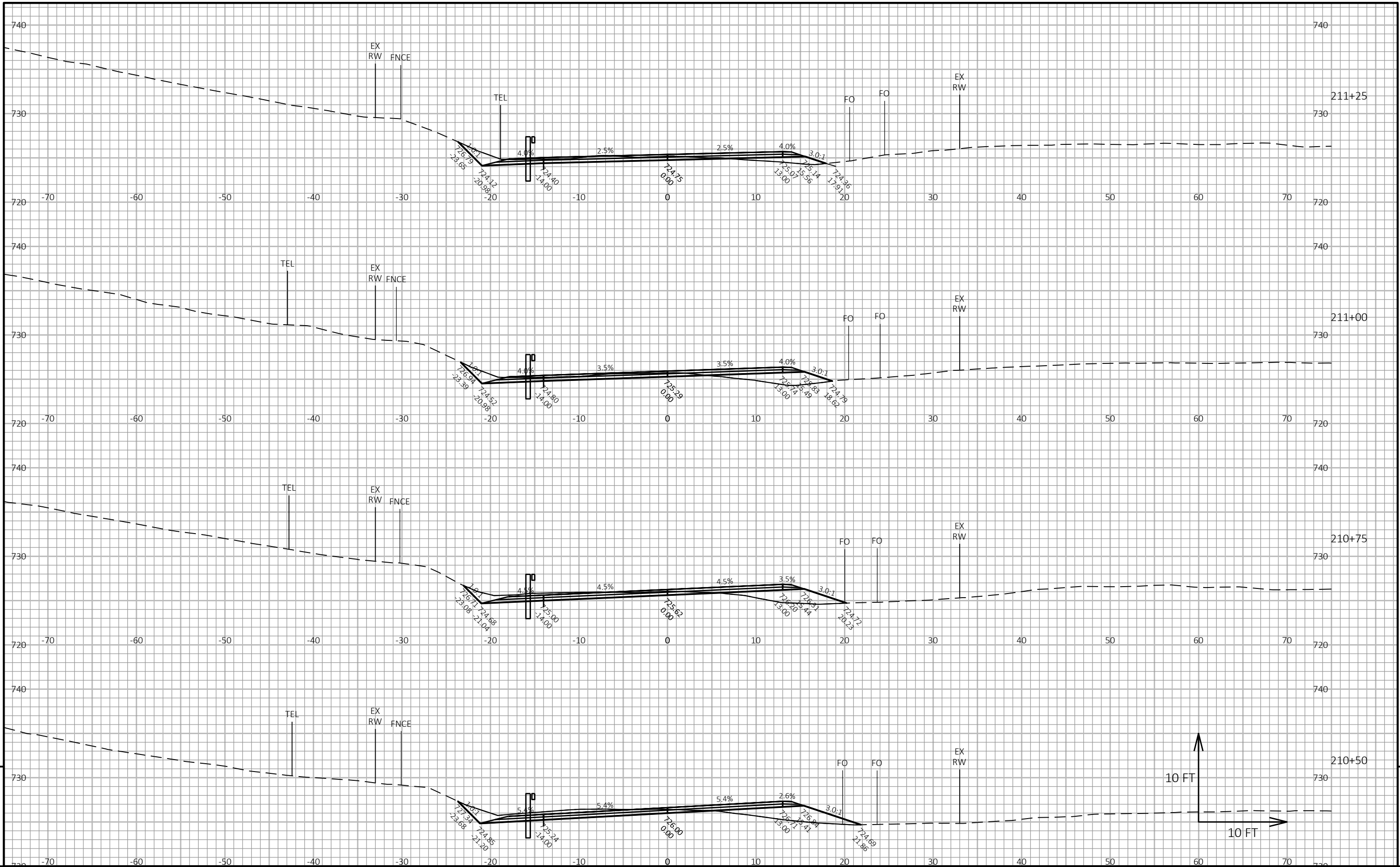
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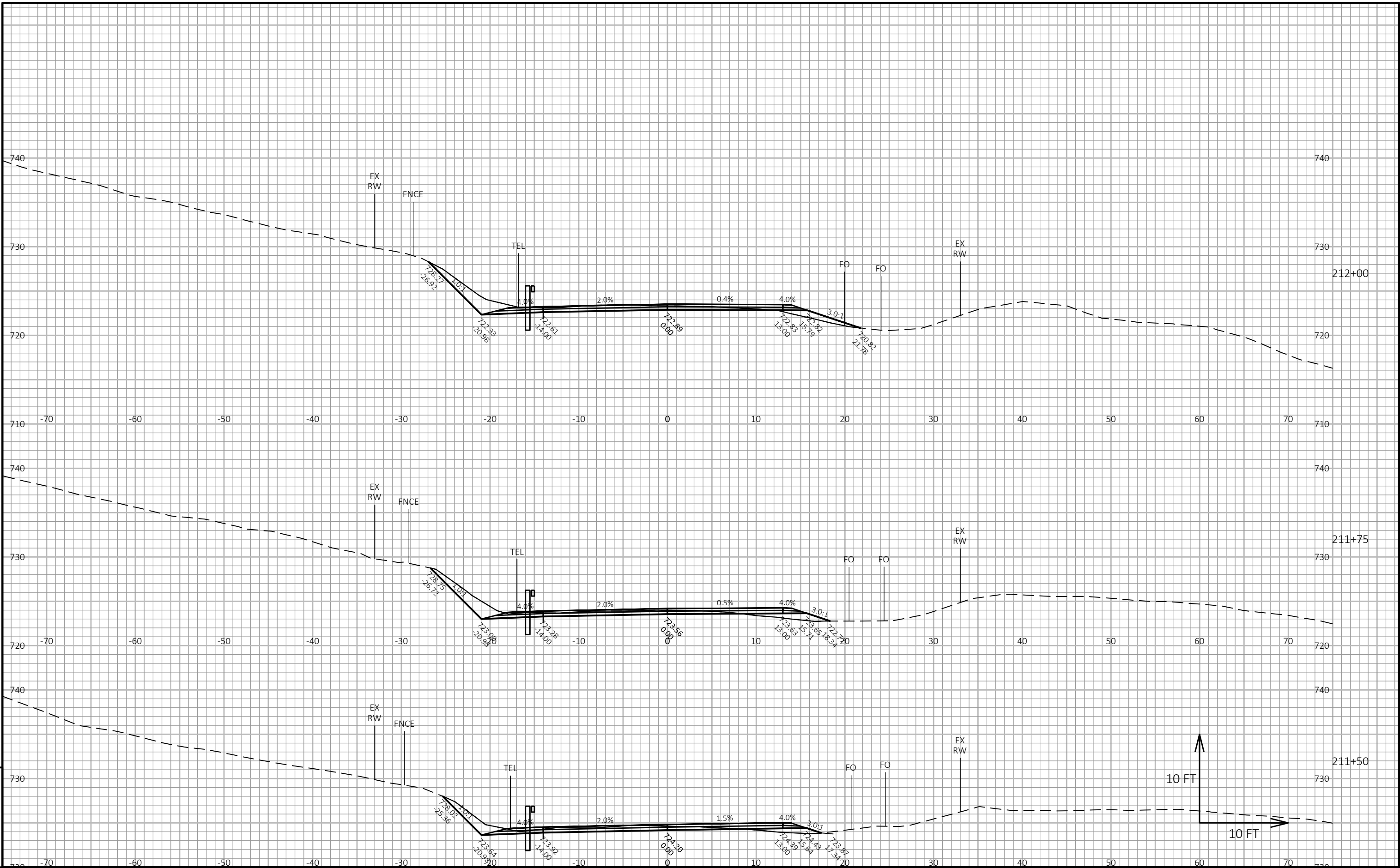
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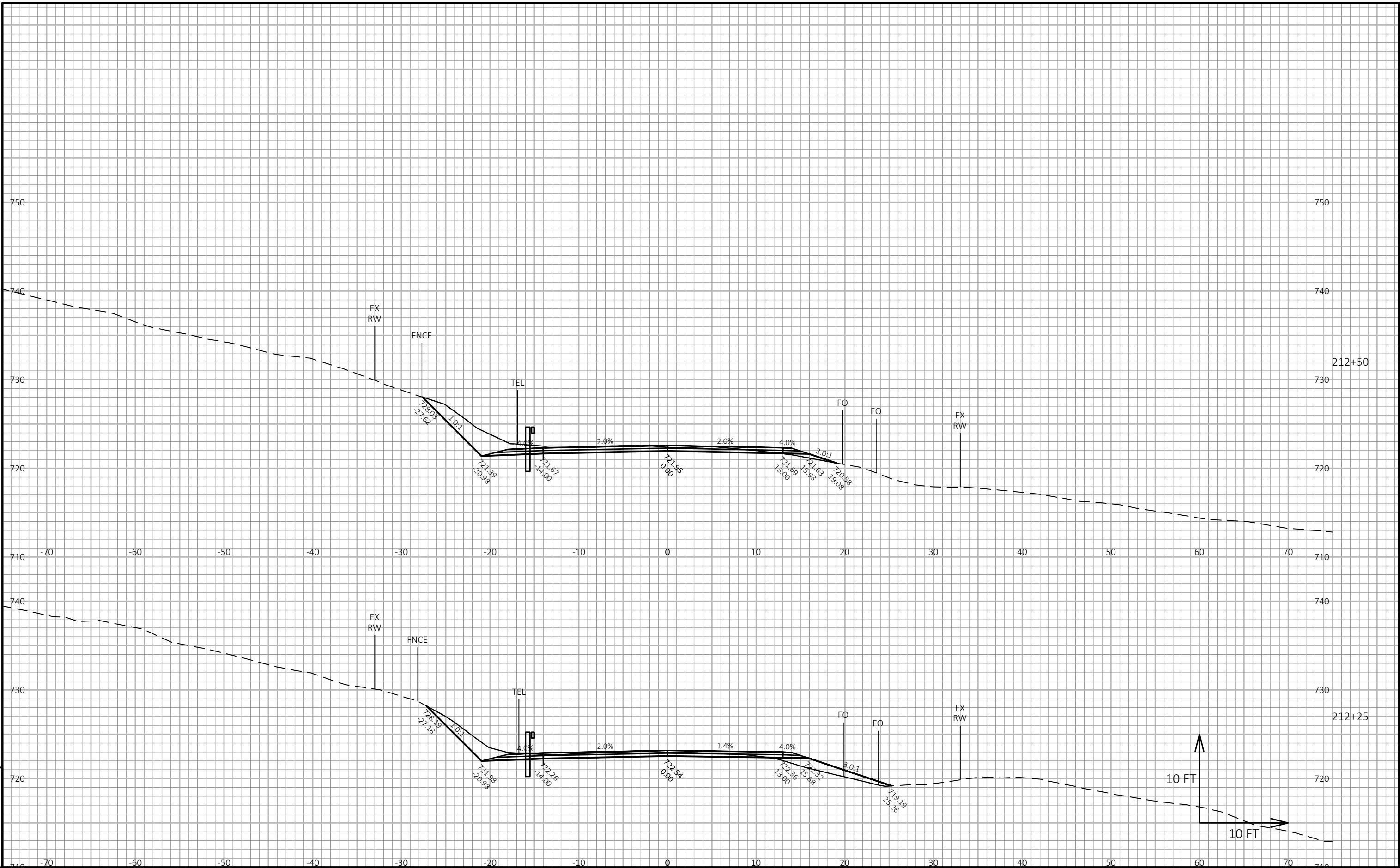
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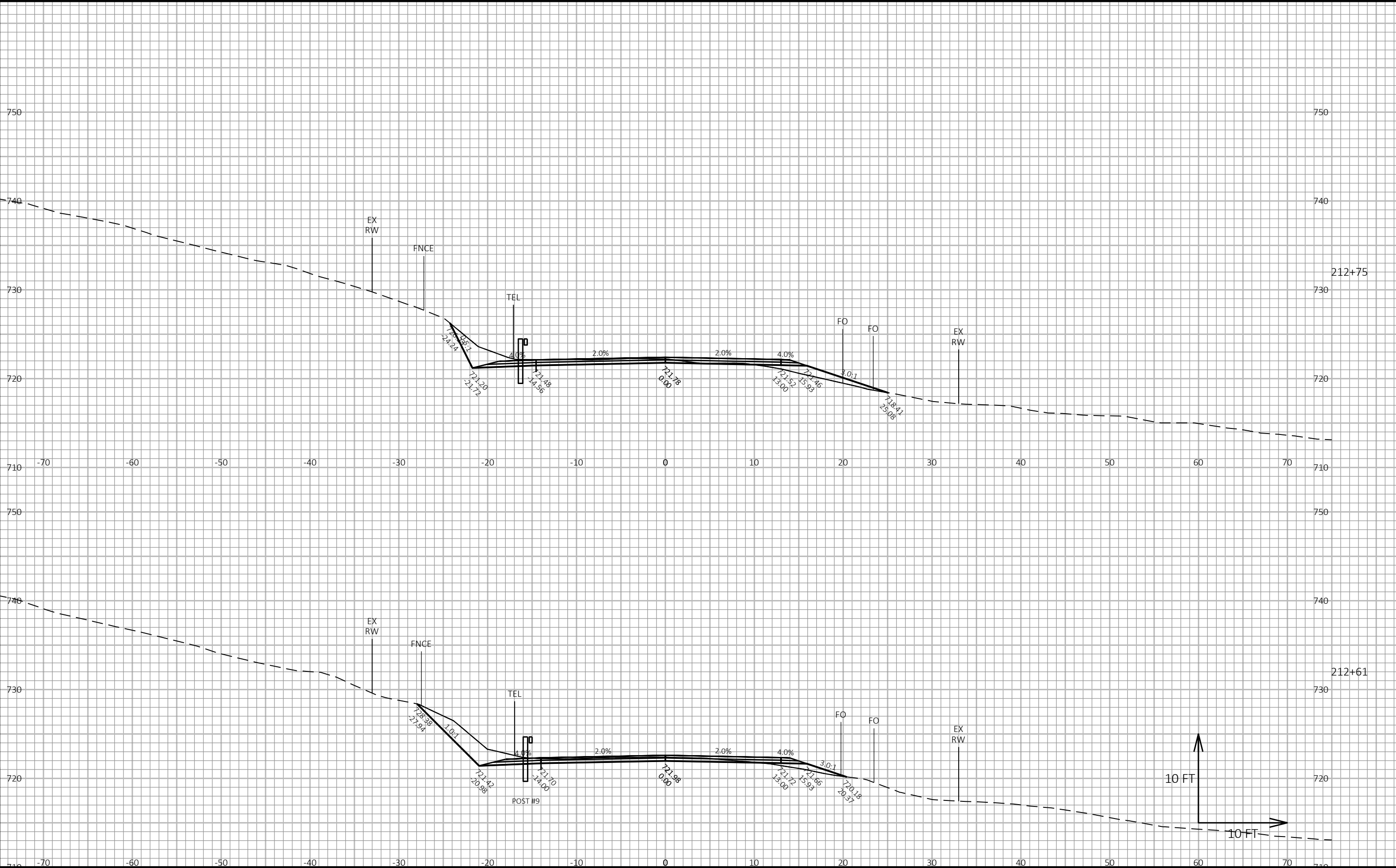
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WISDOT/CADDs SHEET 49

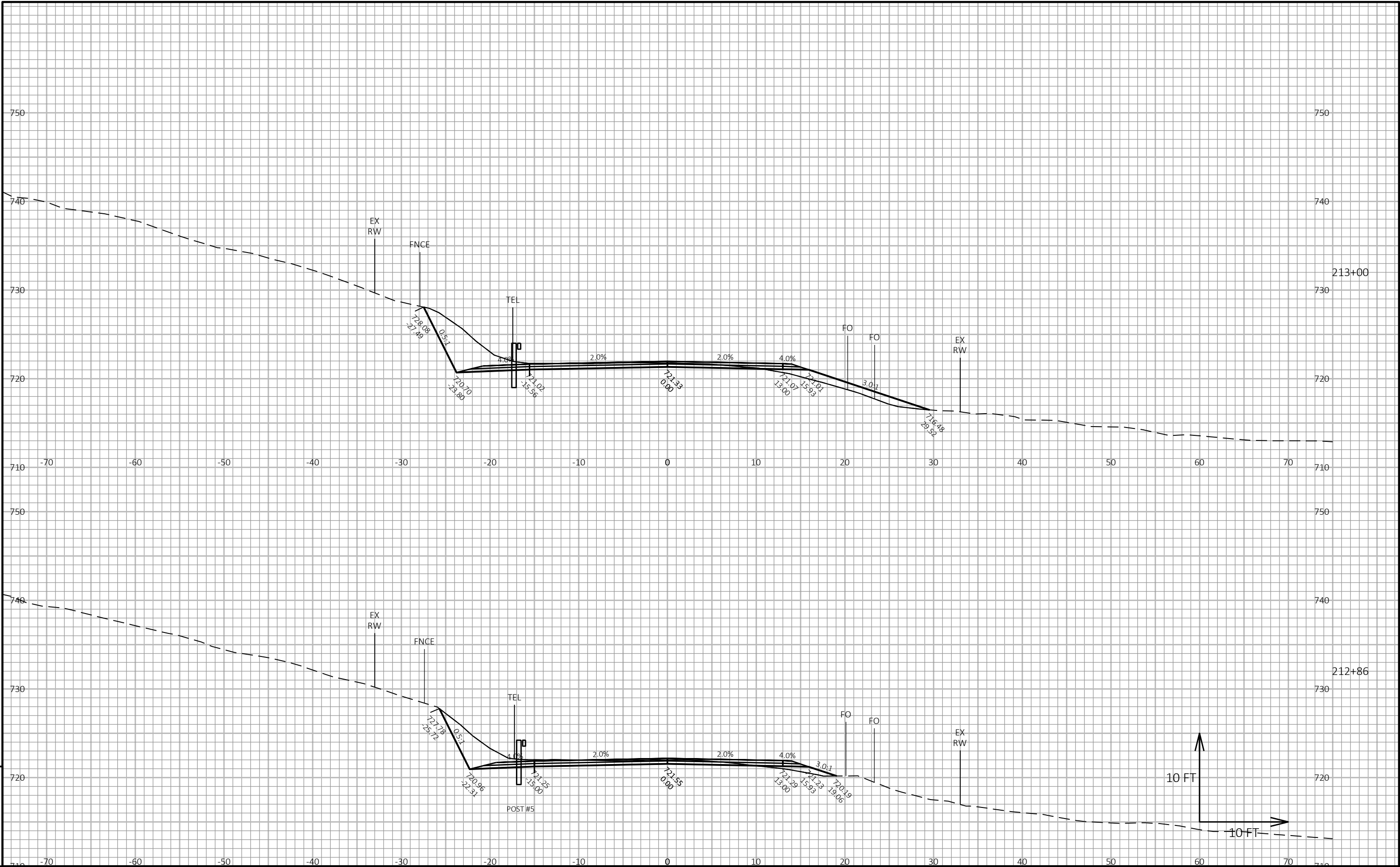


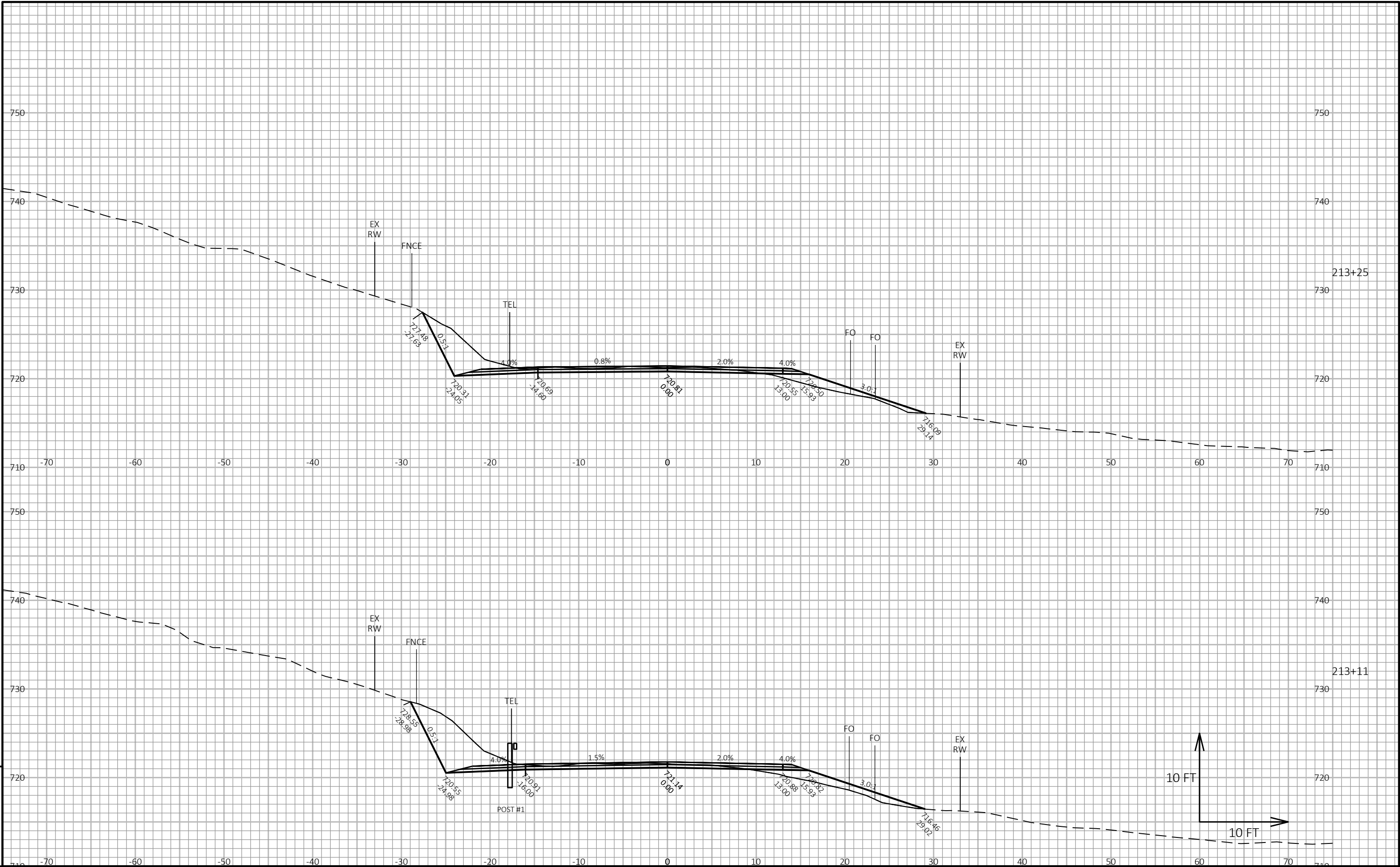




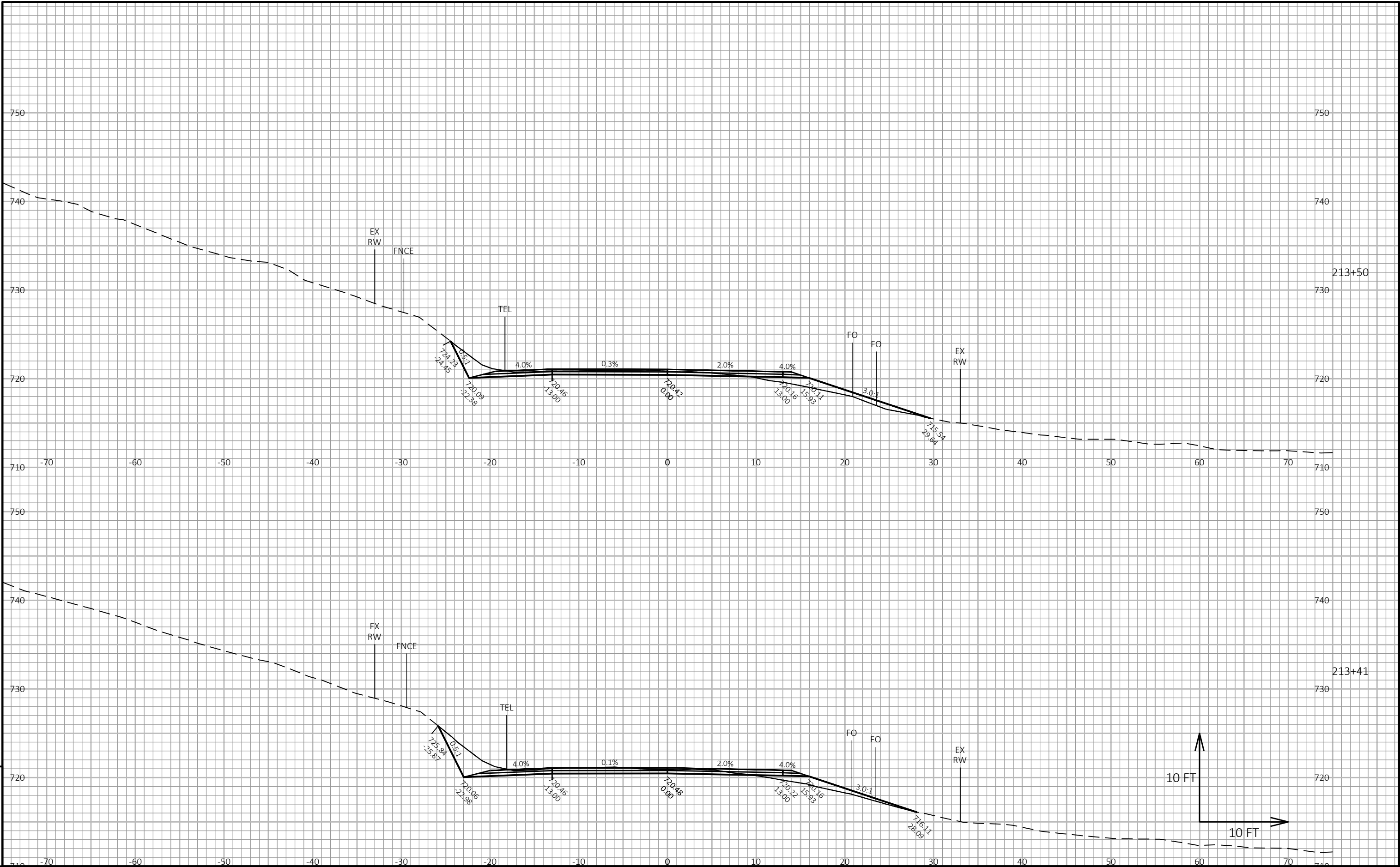


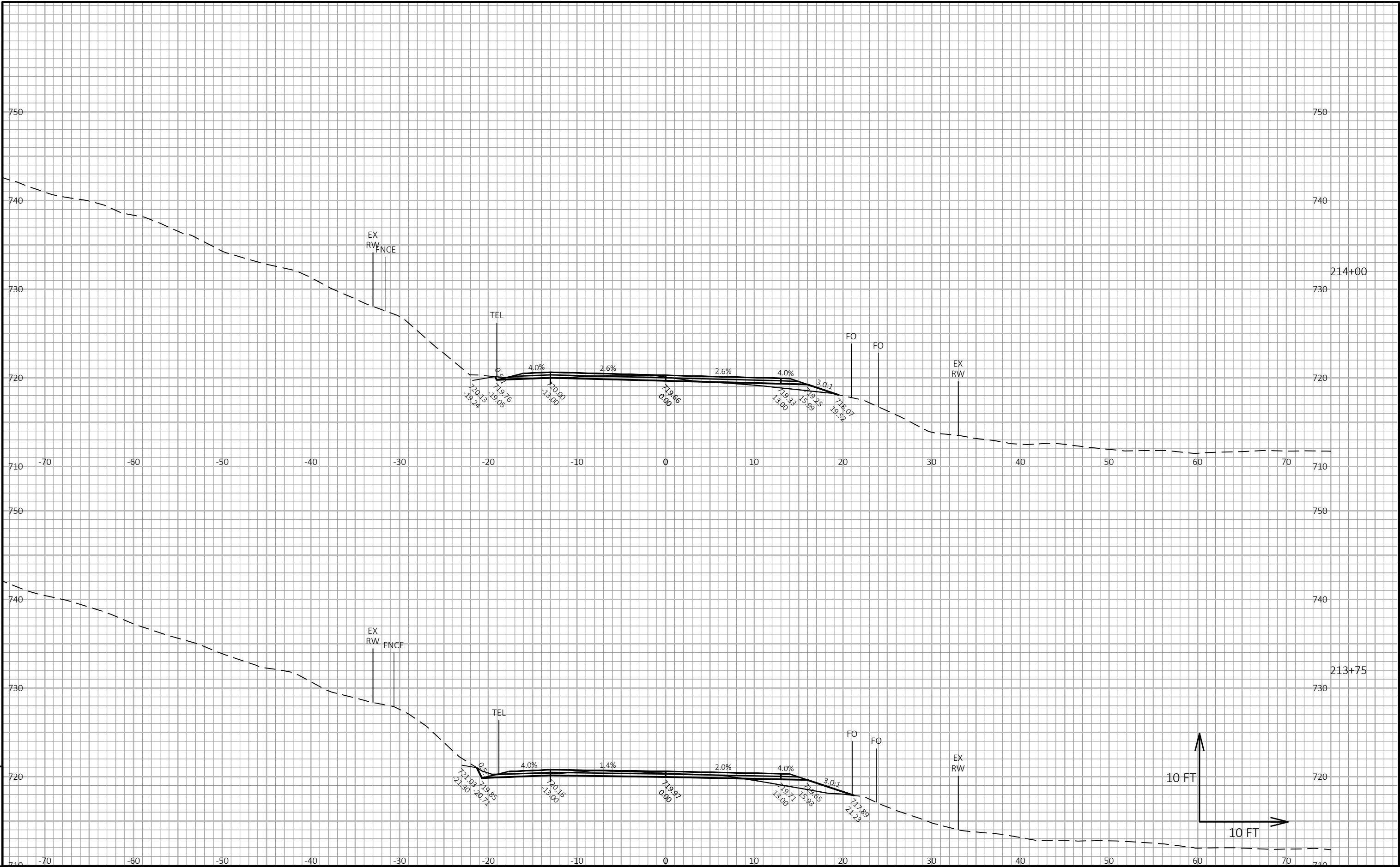


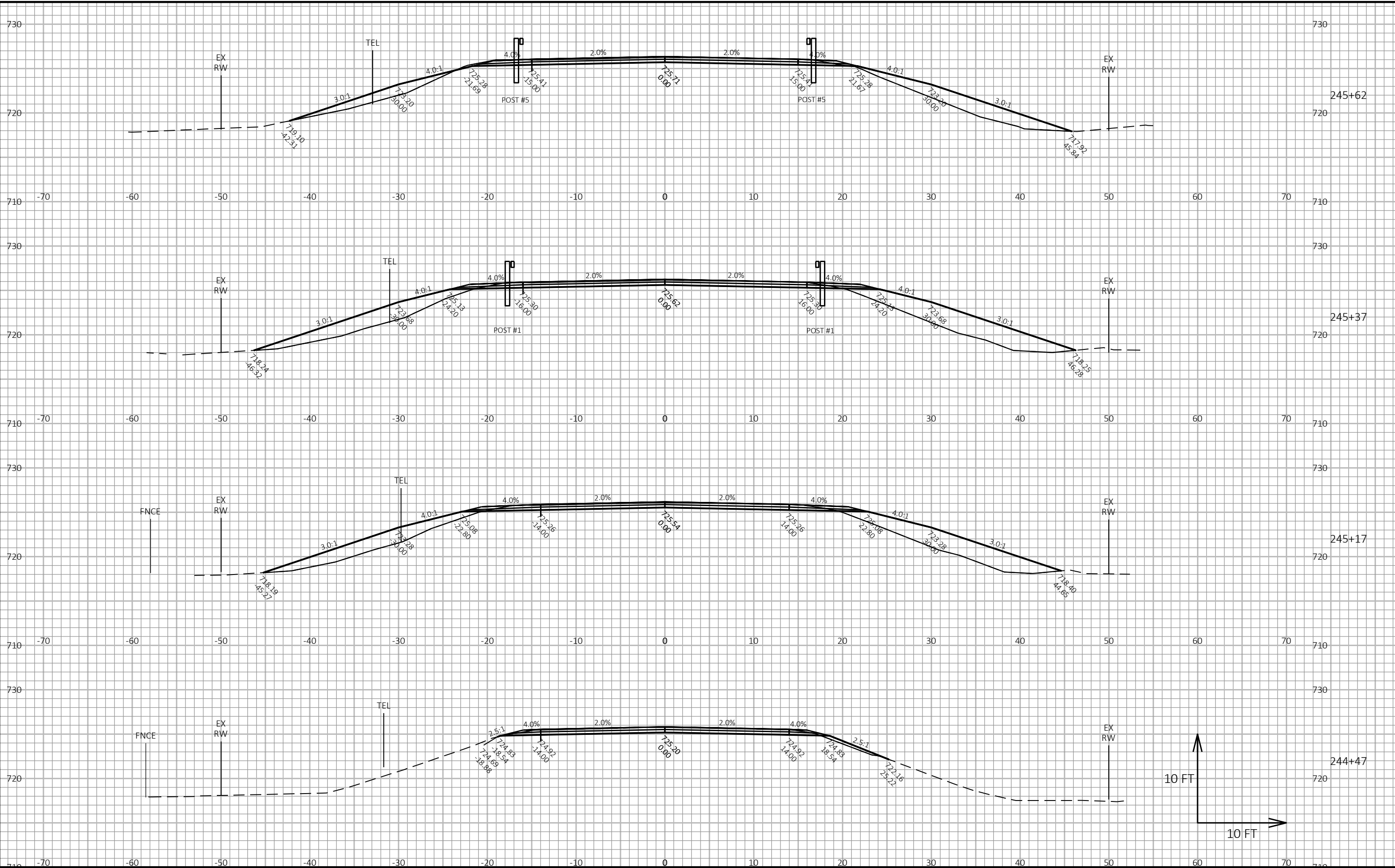




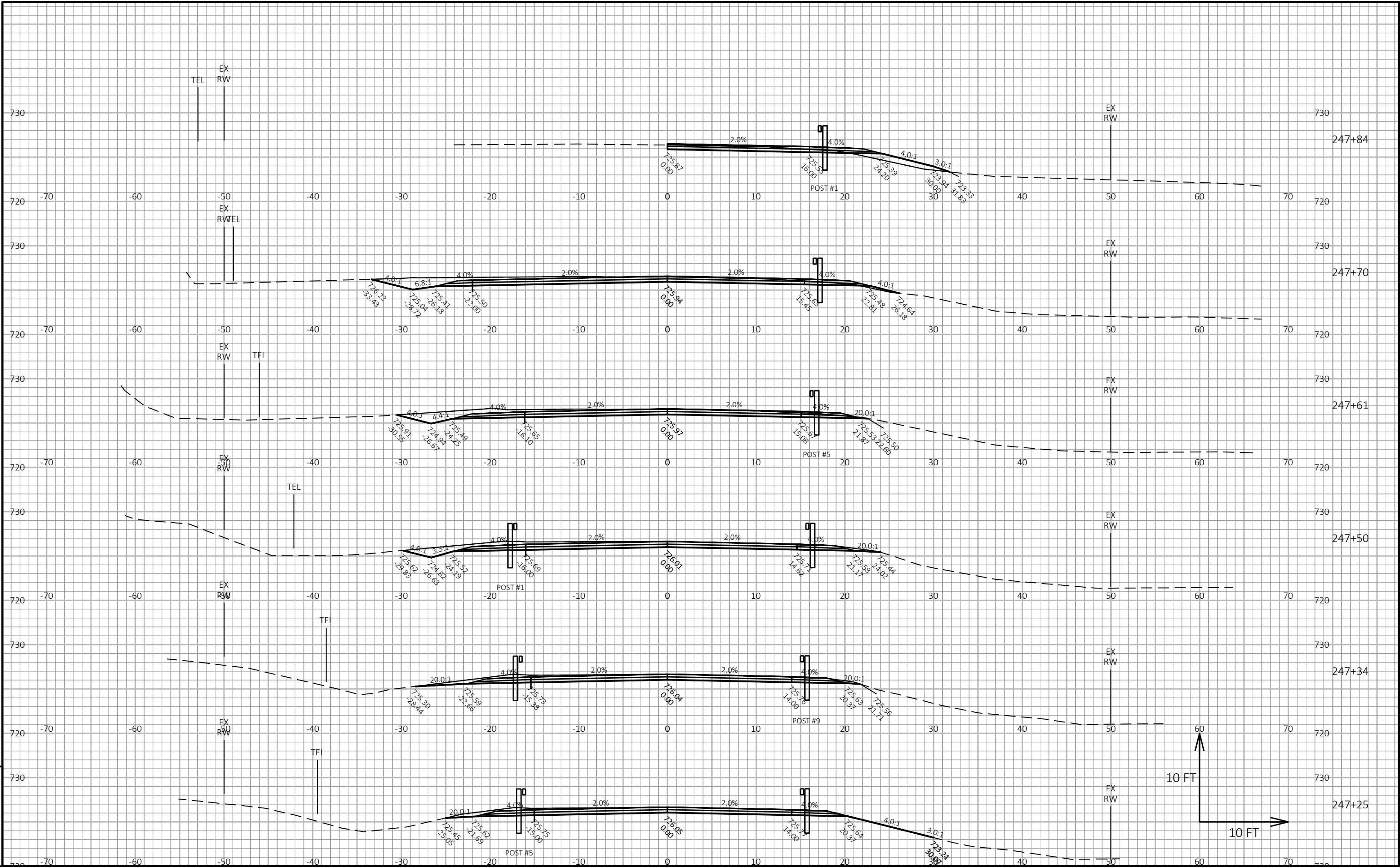




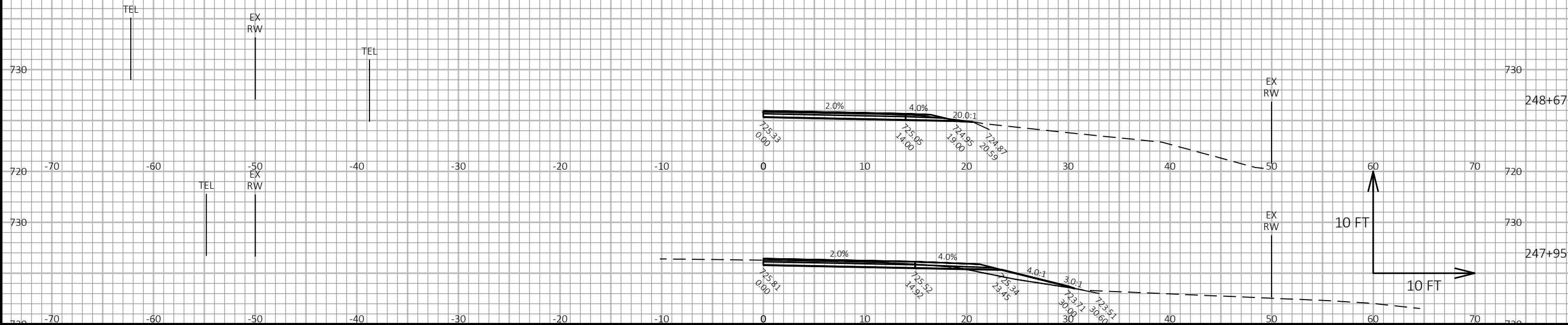






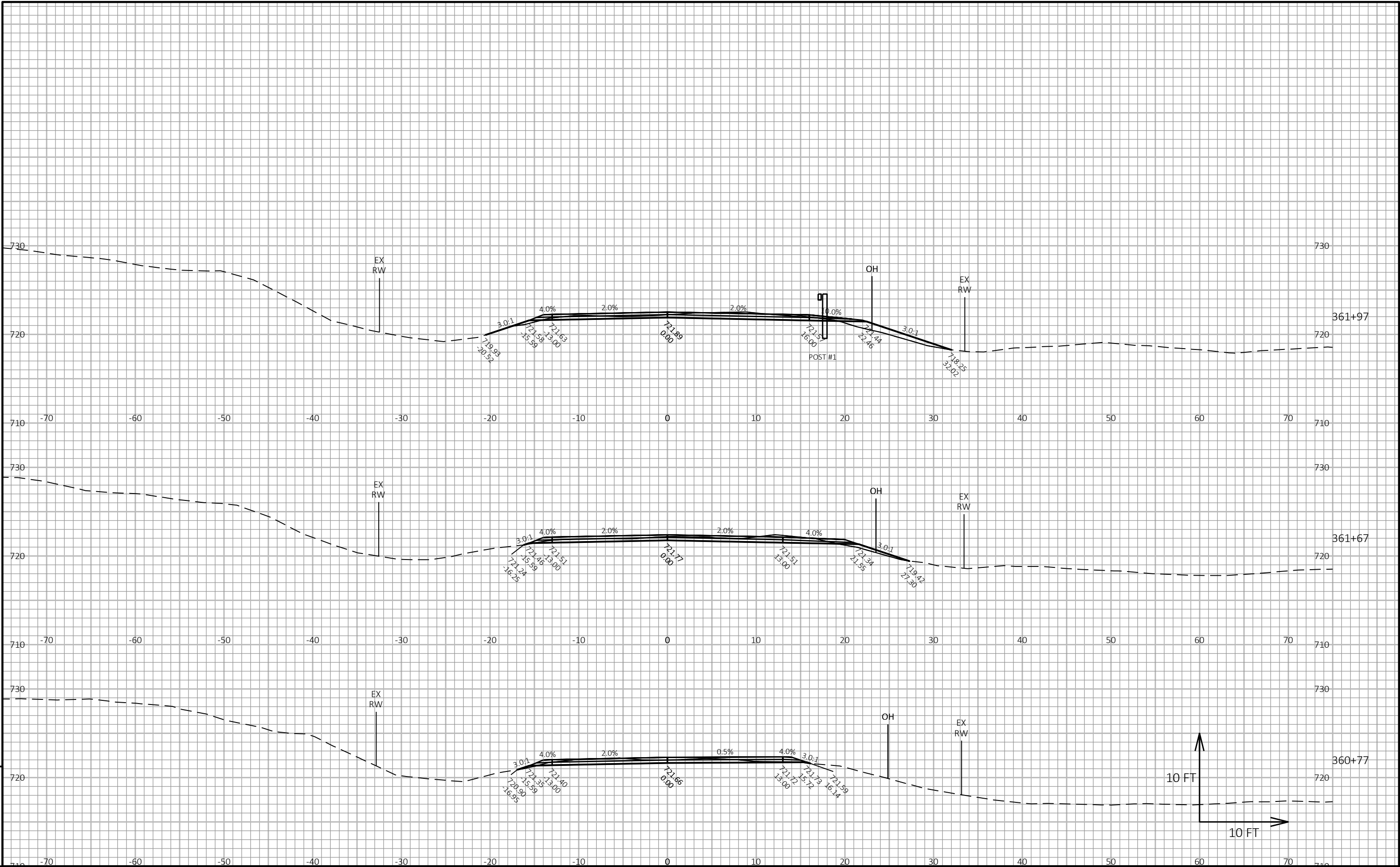


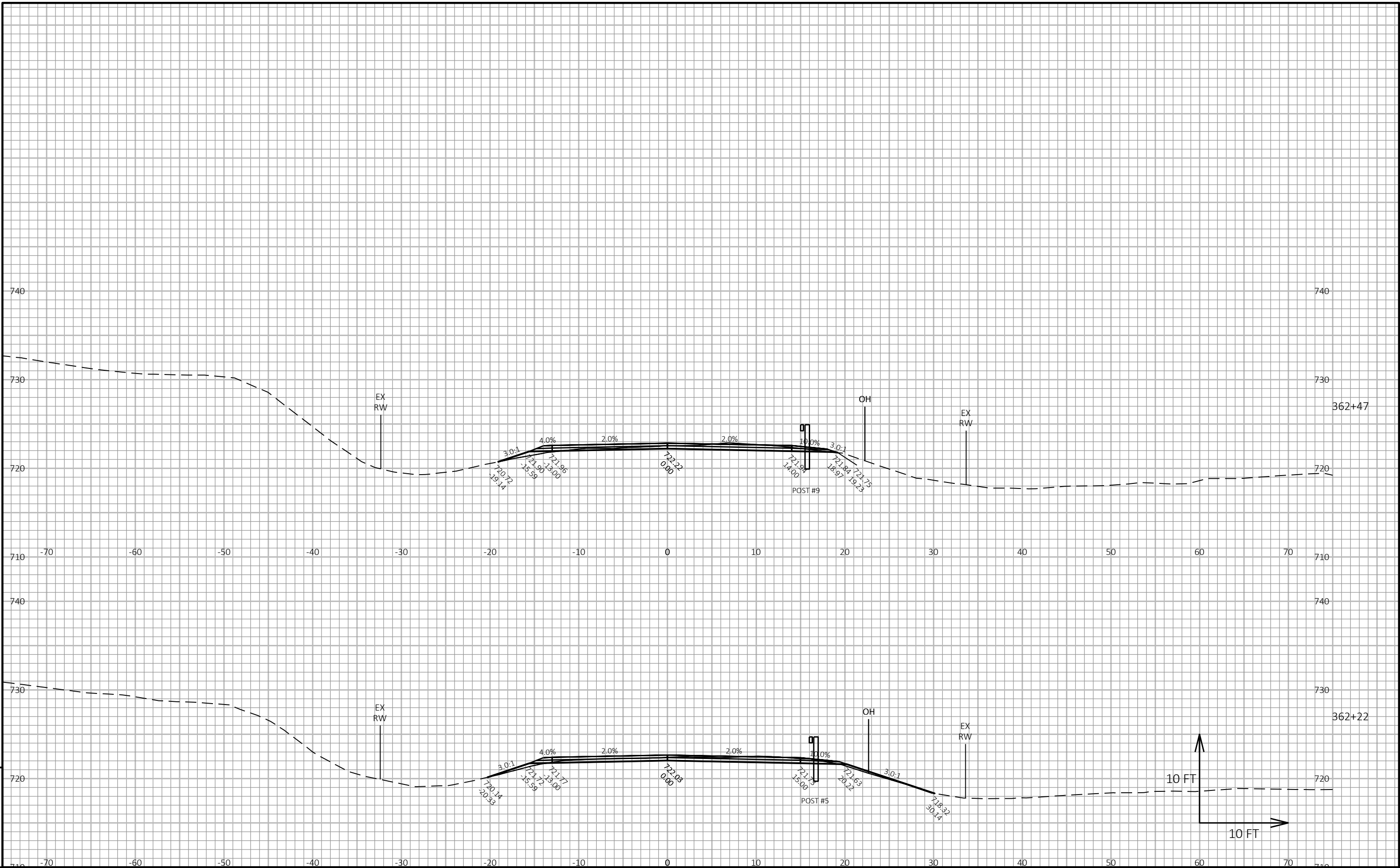
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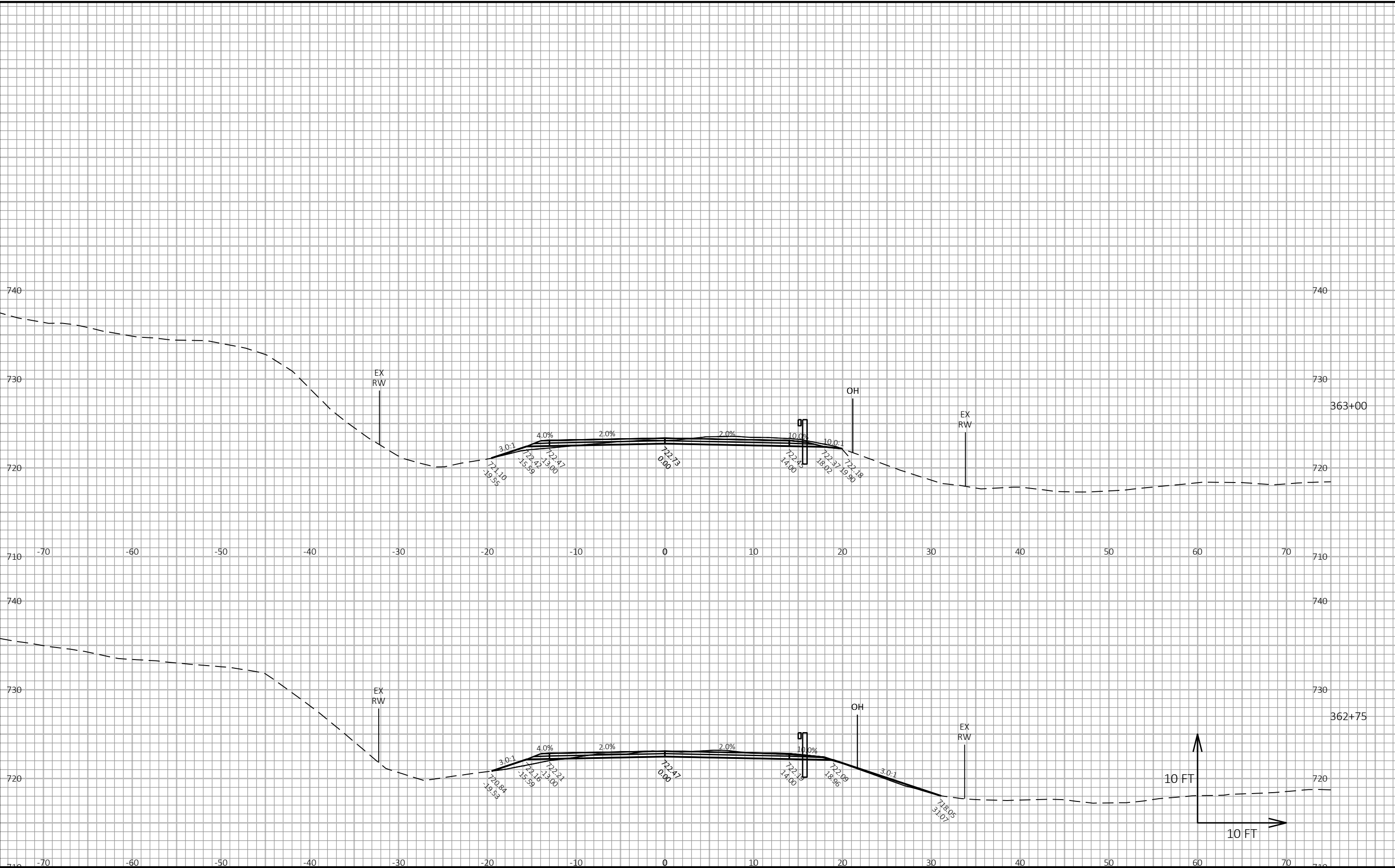
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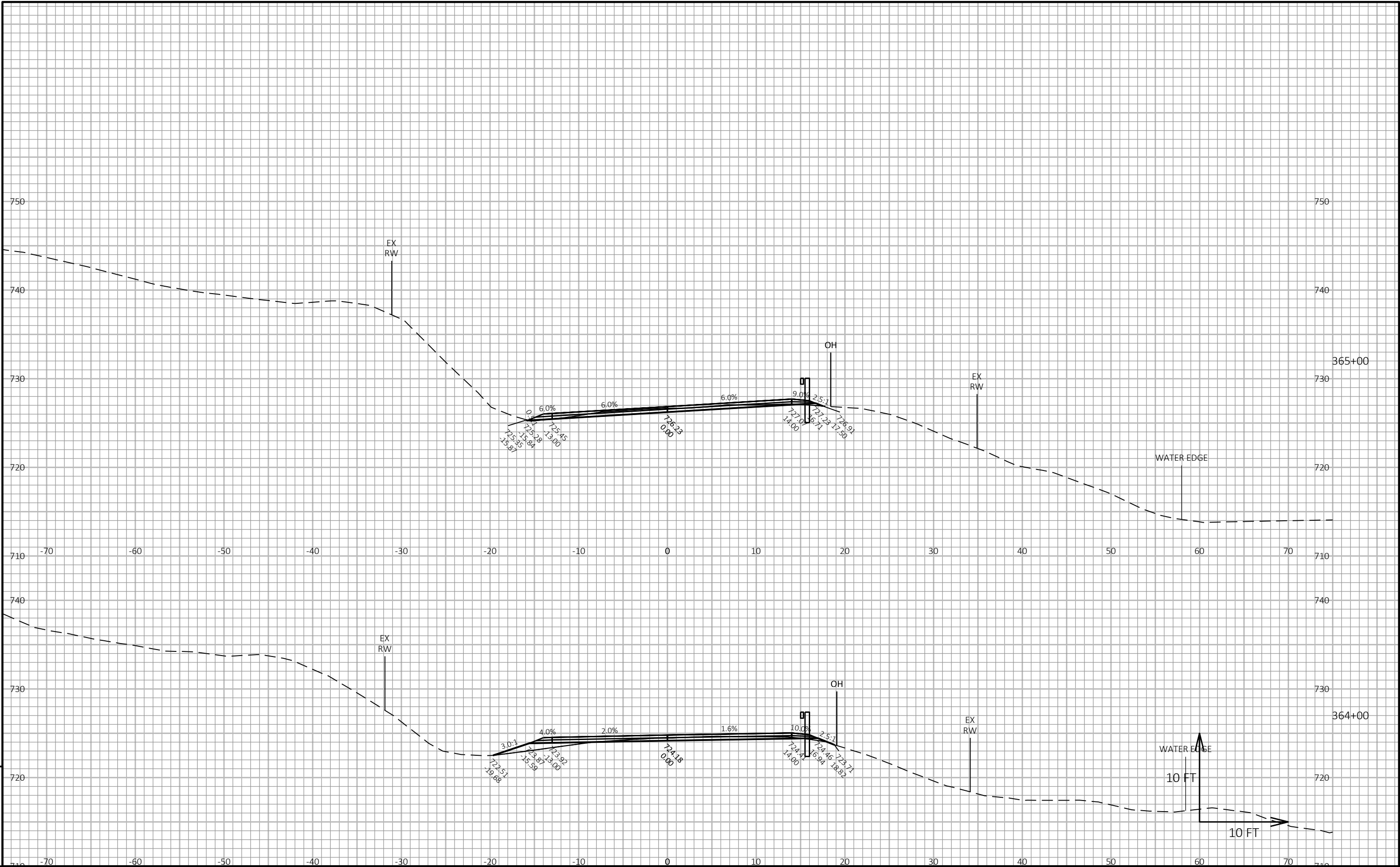


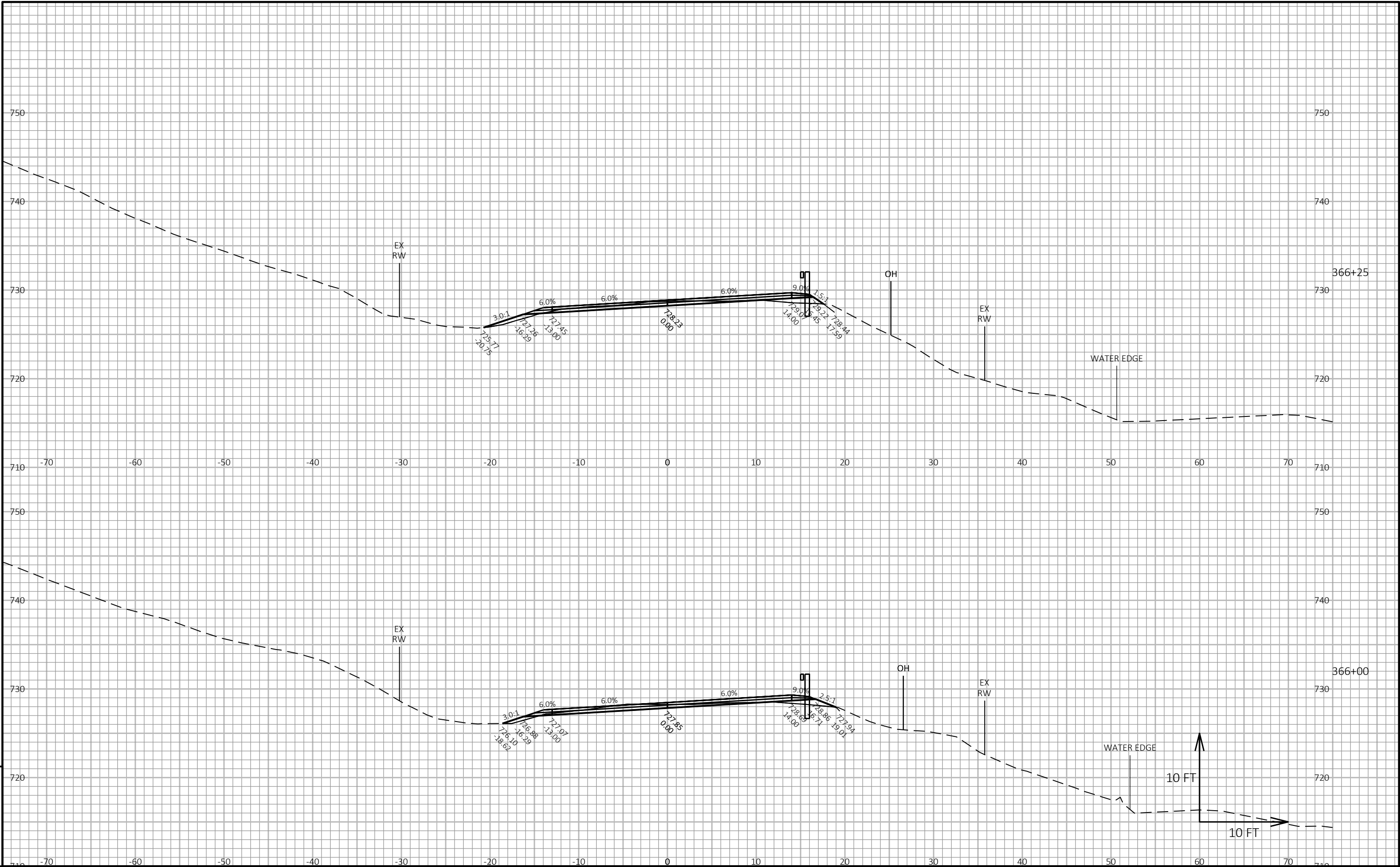


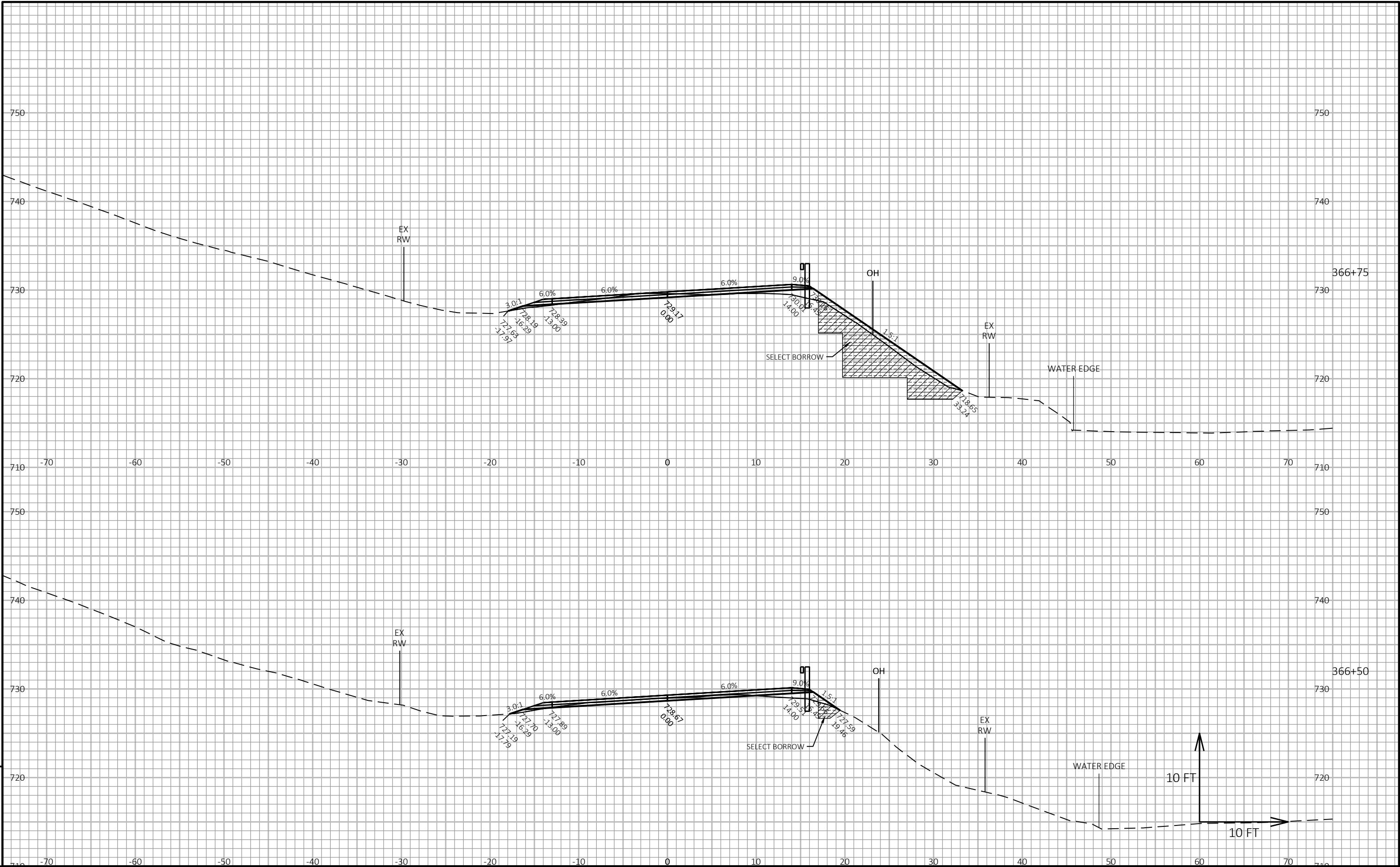


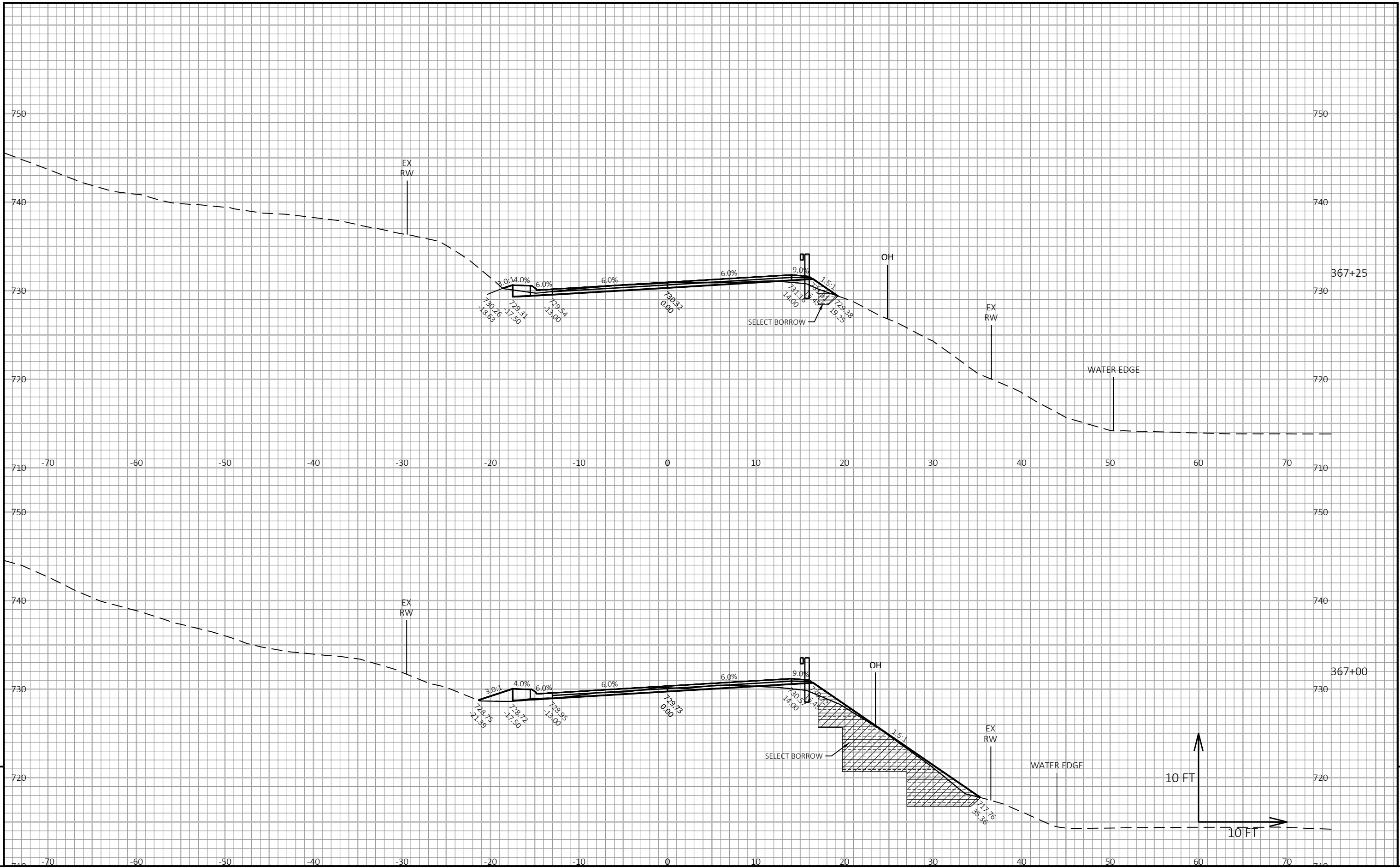


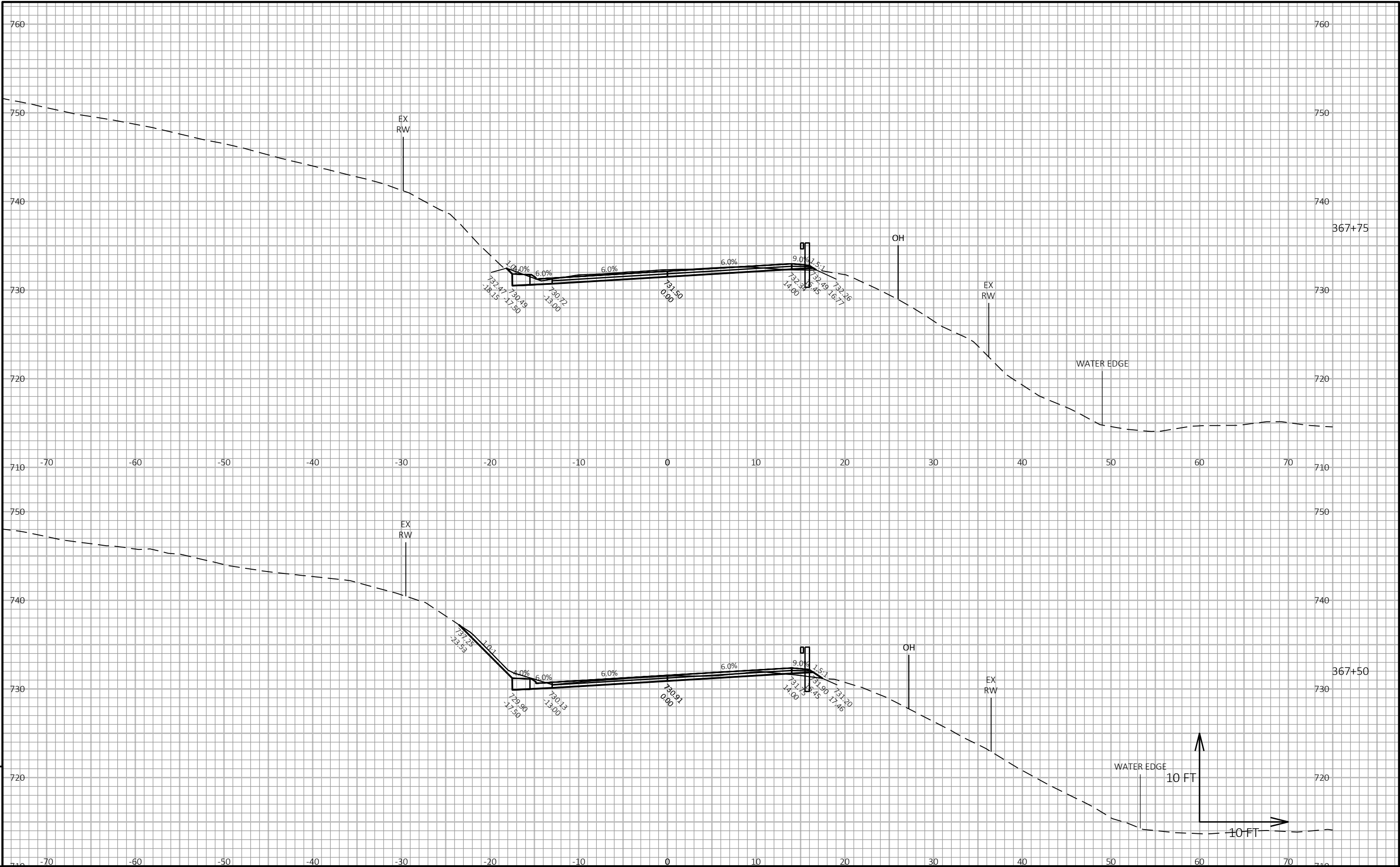




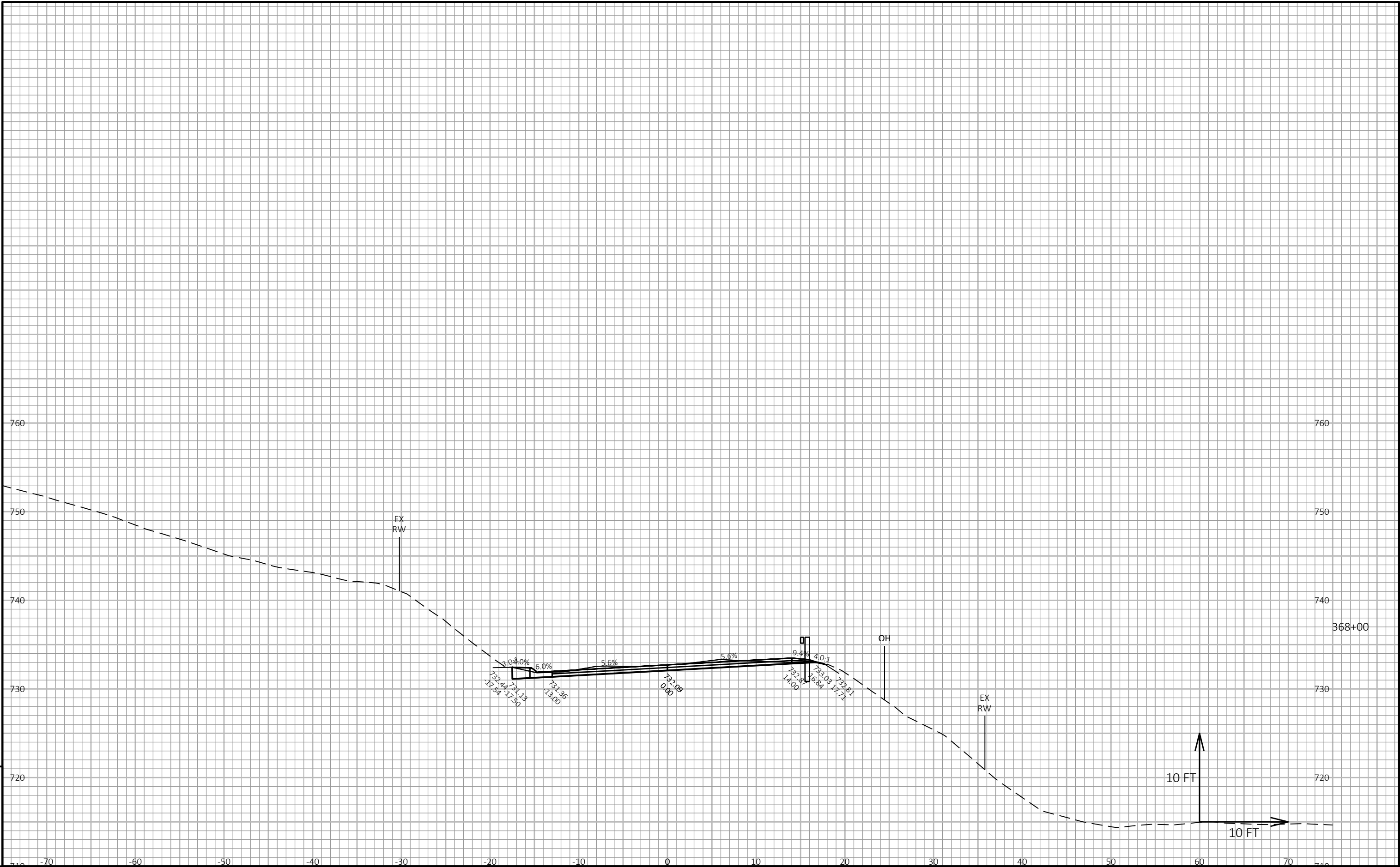


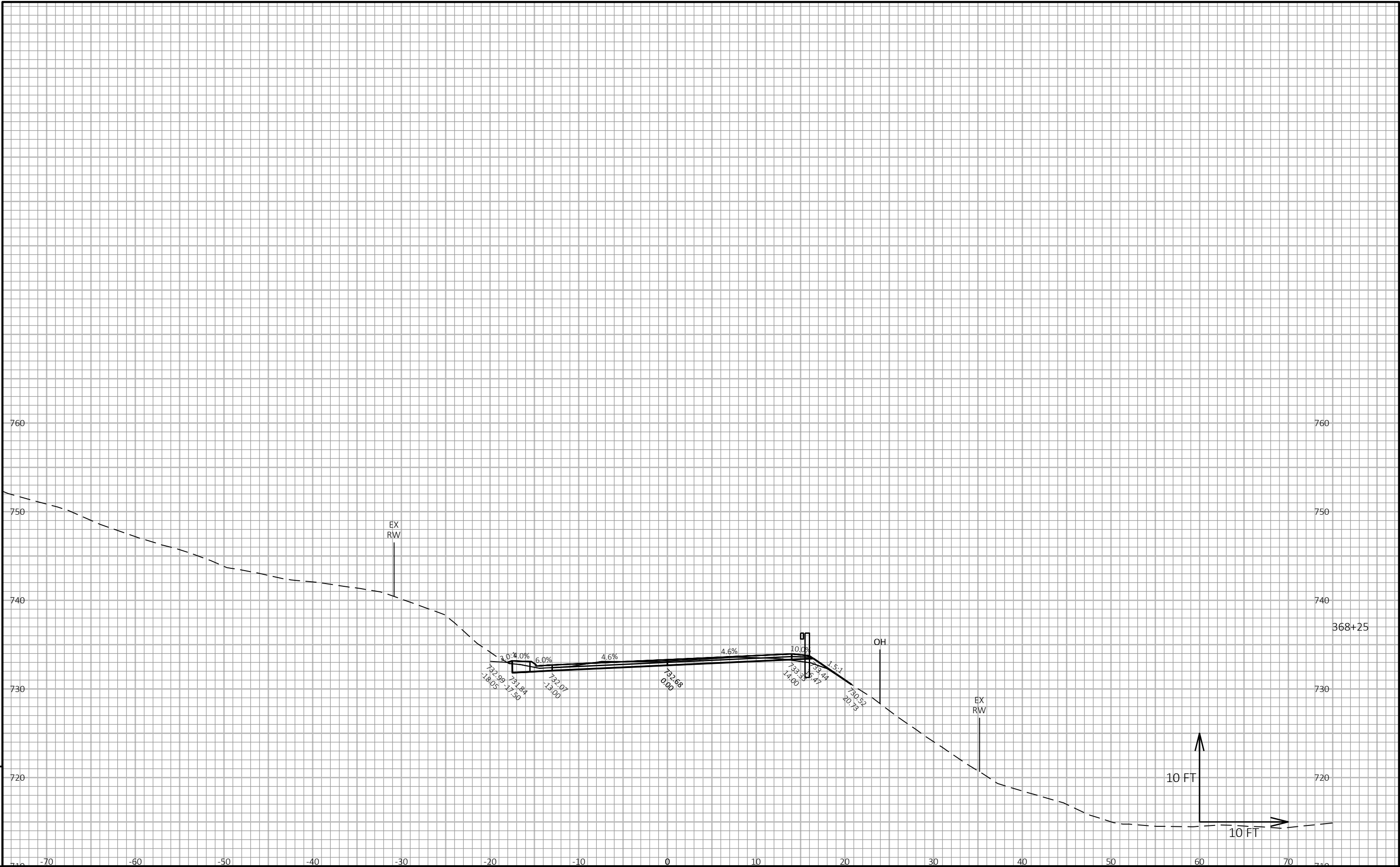




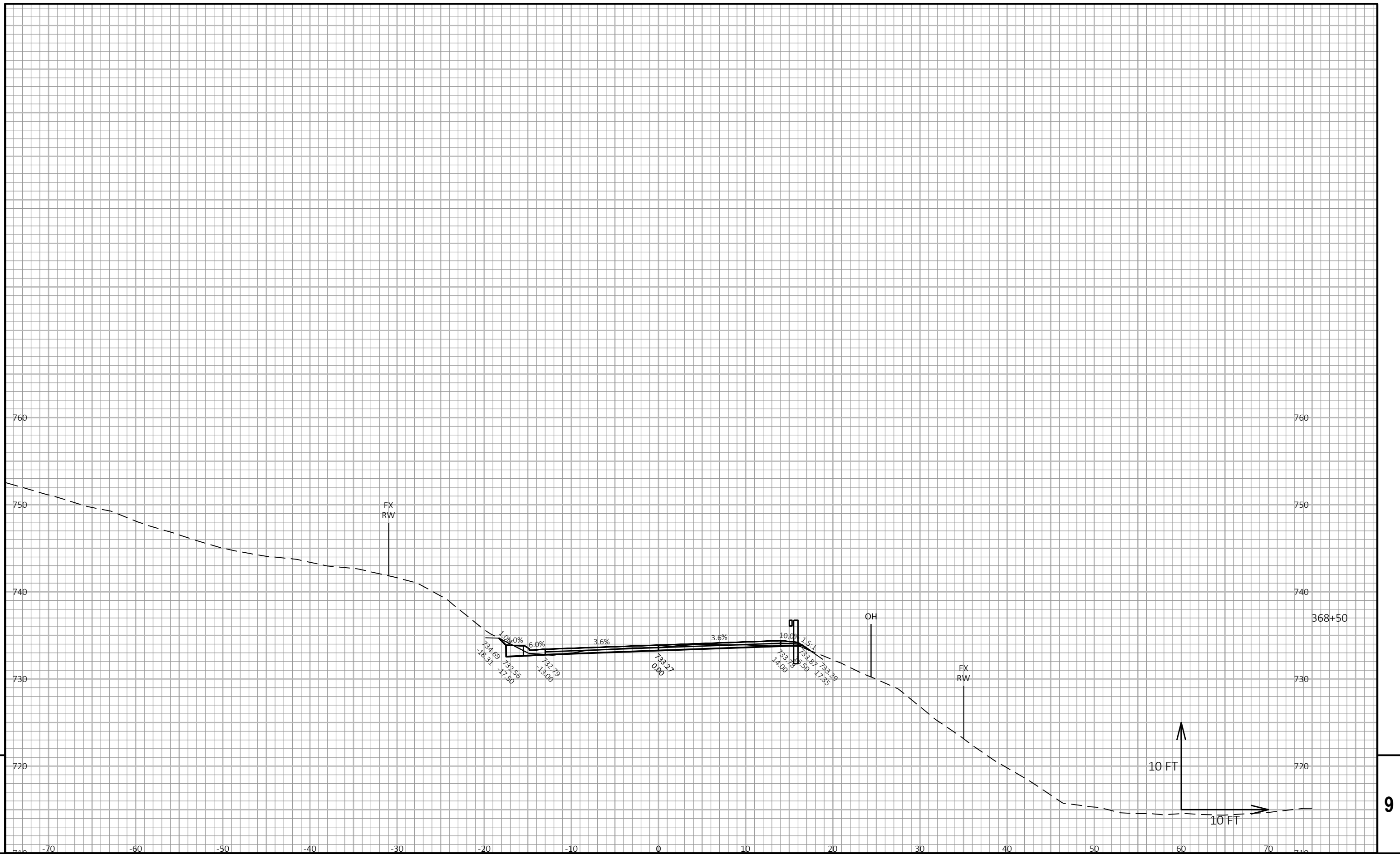












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| PROJECT NO: | 5680-04-60 |
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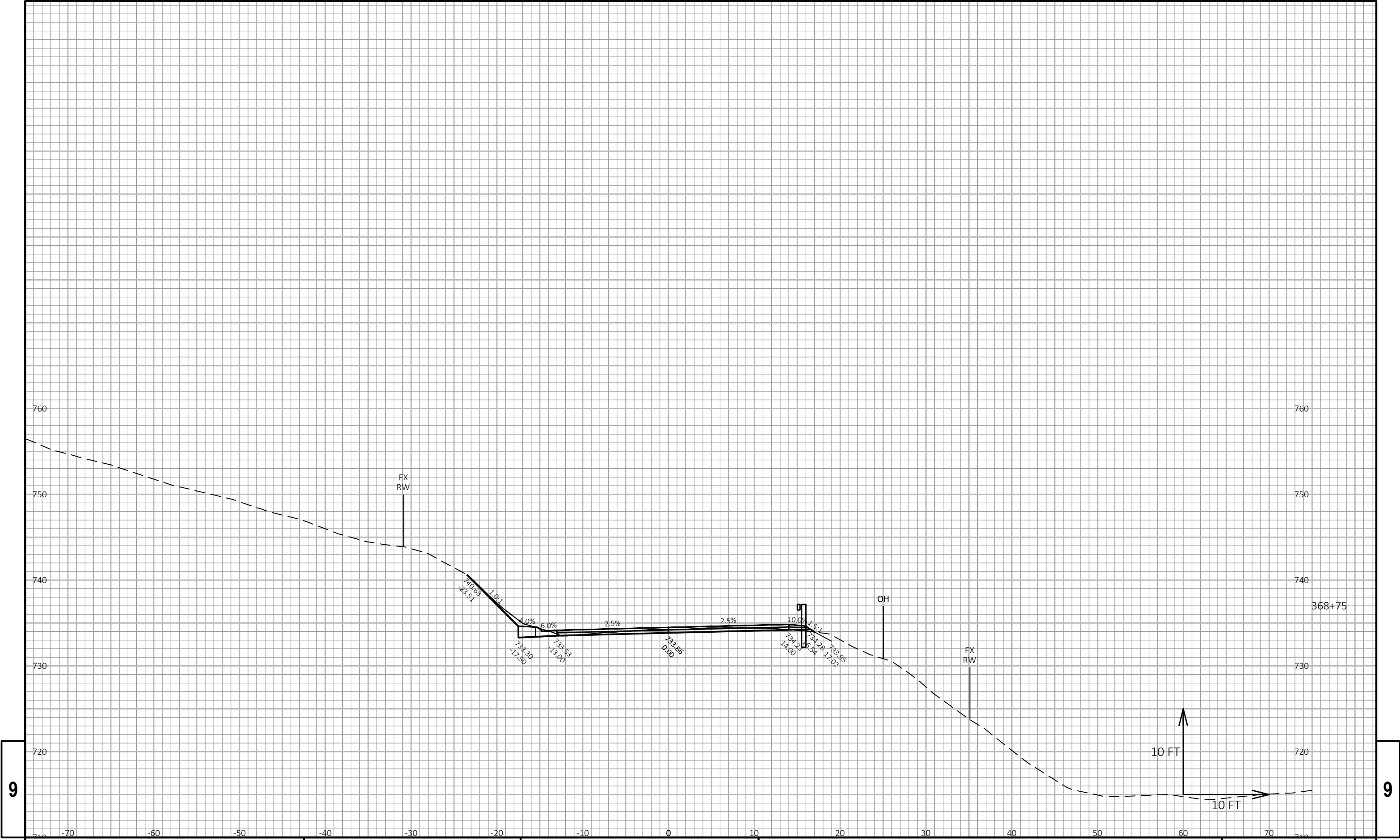
HWY: STH 60

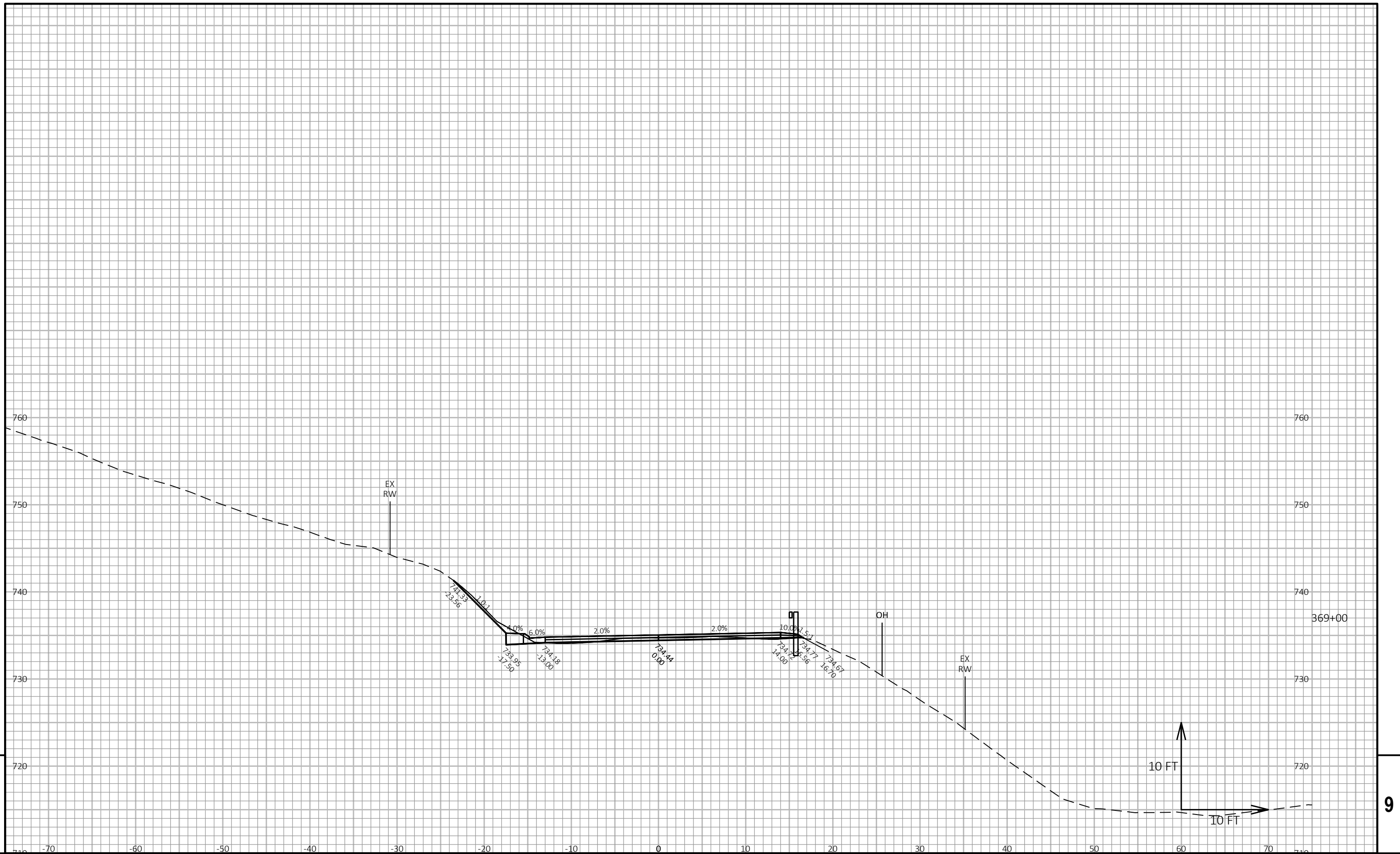
COUNTY: SAUK

CROSS SECTIONS: STA. 360+77 TO STA. 377+75

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| SHEET | 137 |
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|             |            |
|-------------|------------|
| PROJECT NO: | 5680-04-60 |
|-------------|------------|

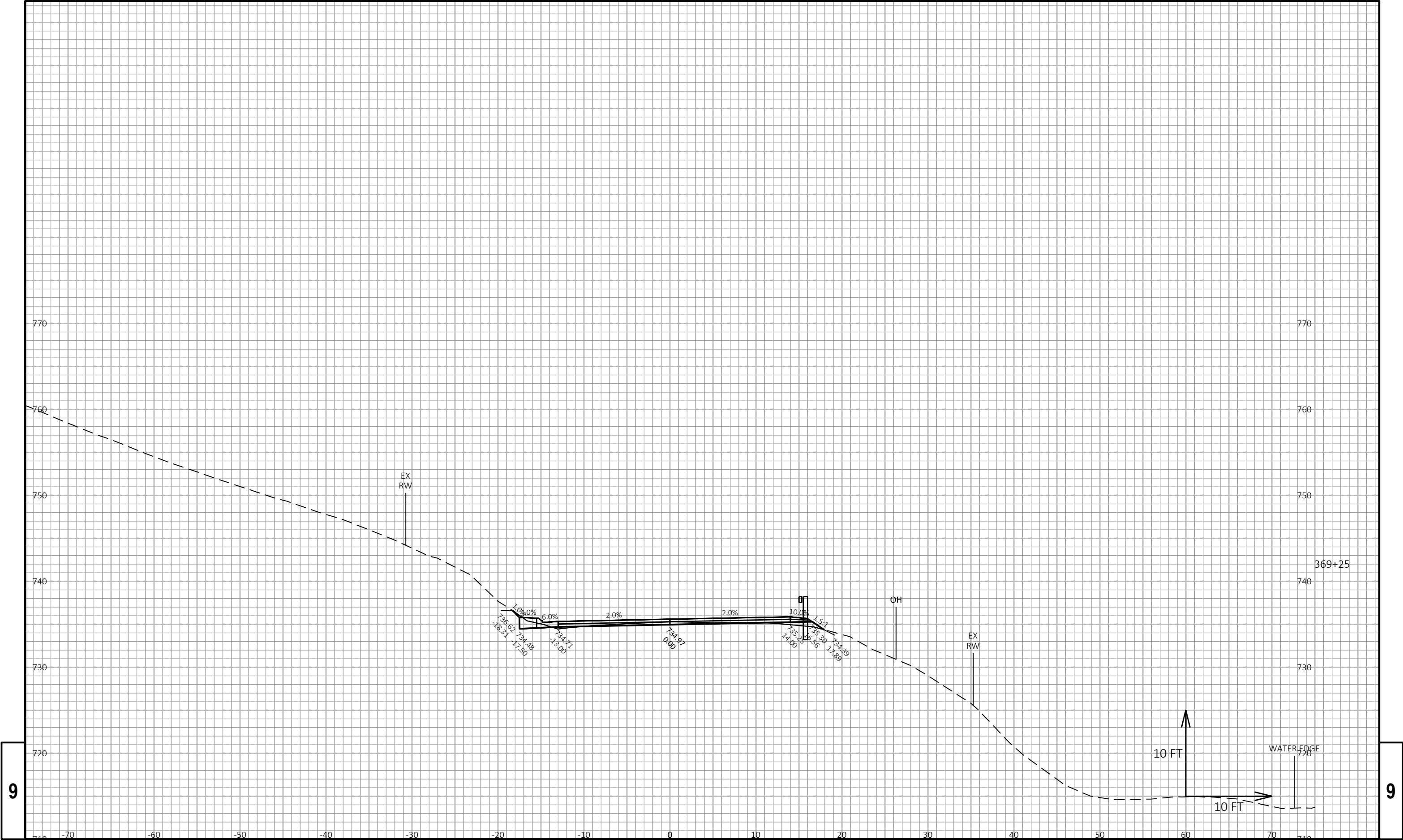
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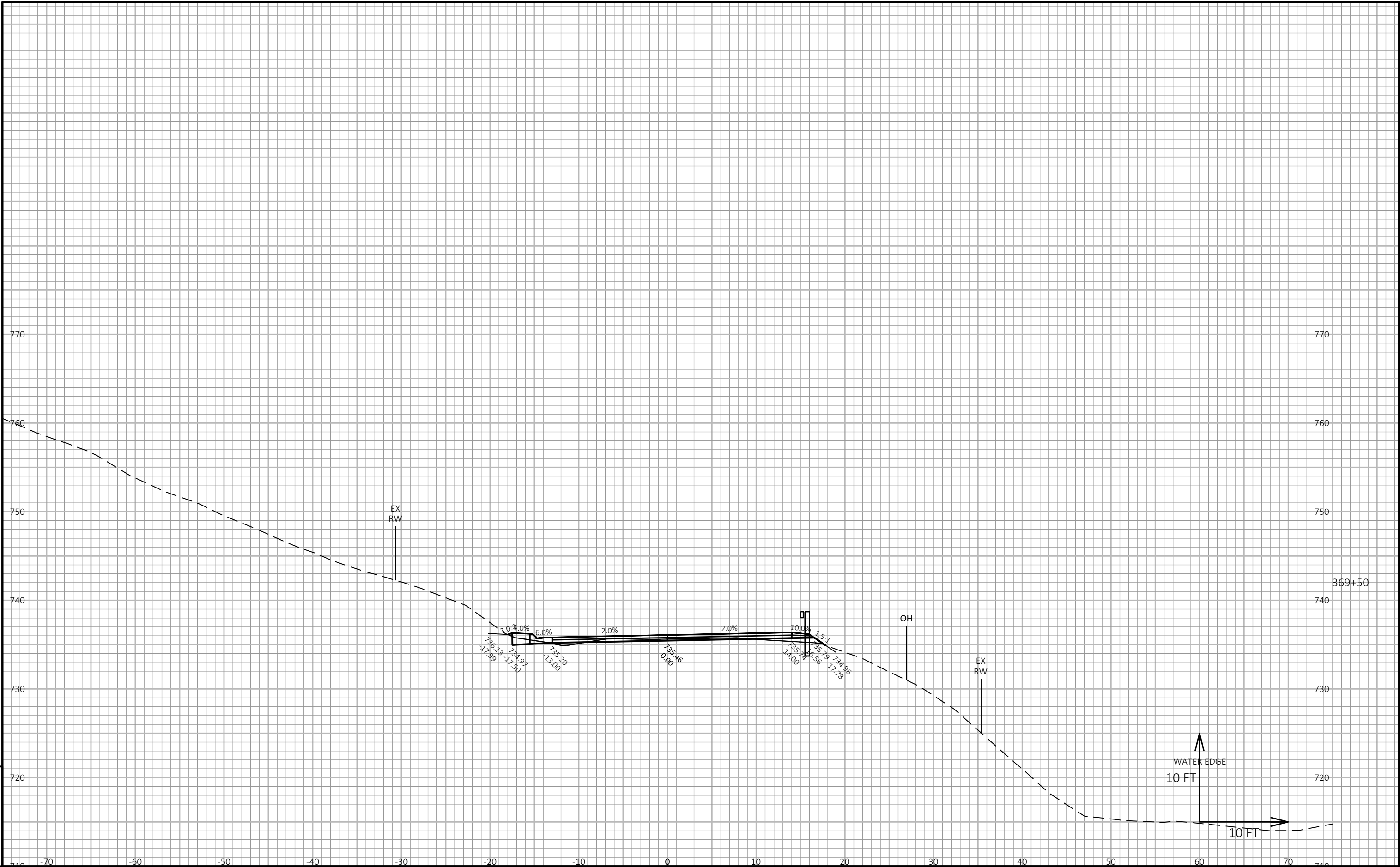
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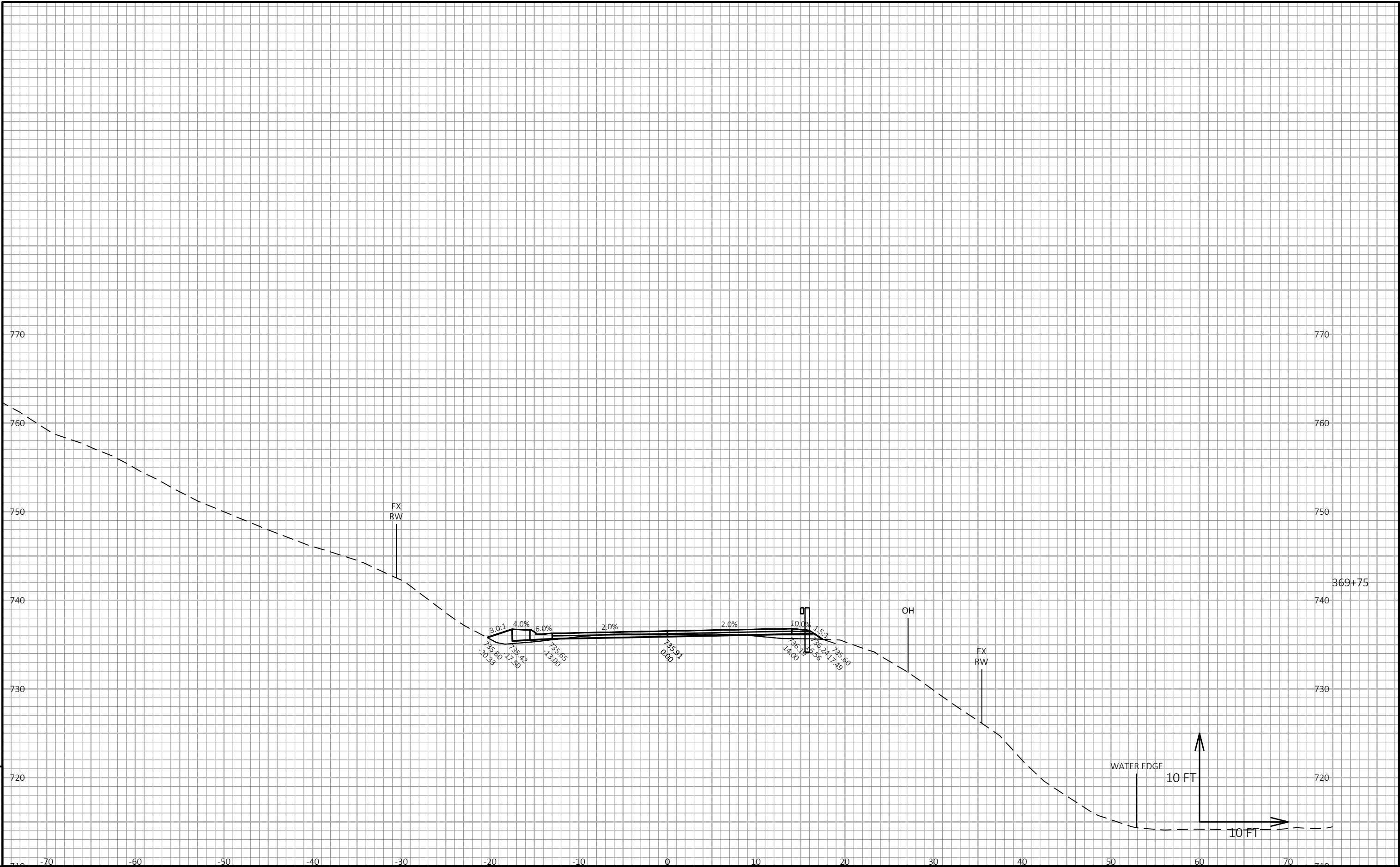
CROSS SECTIONS: STA. 360+77 TO STA. 377+75

SHEET 139

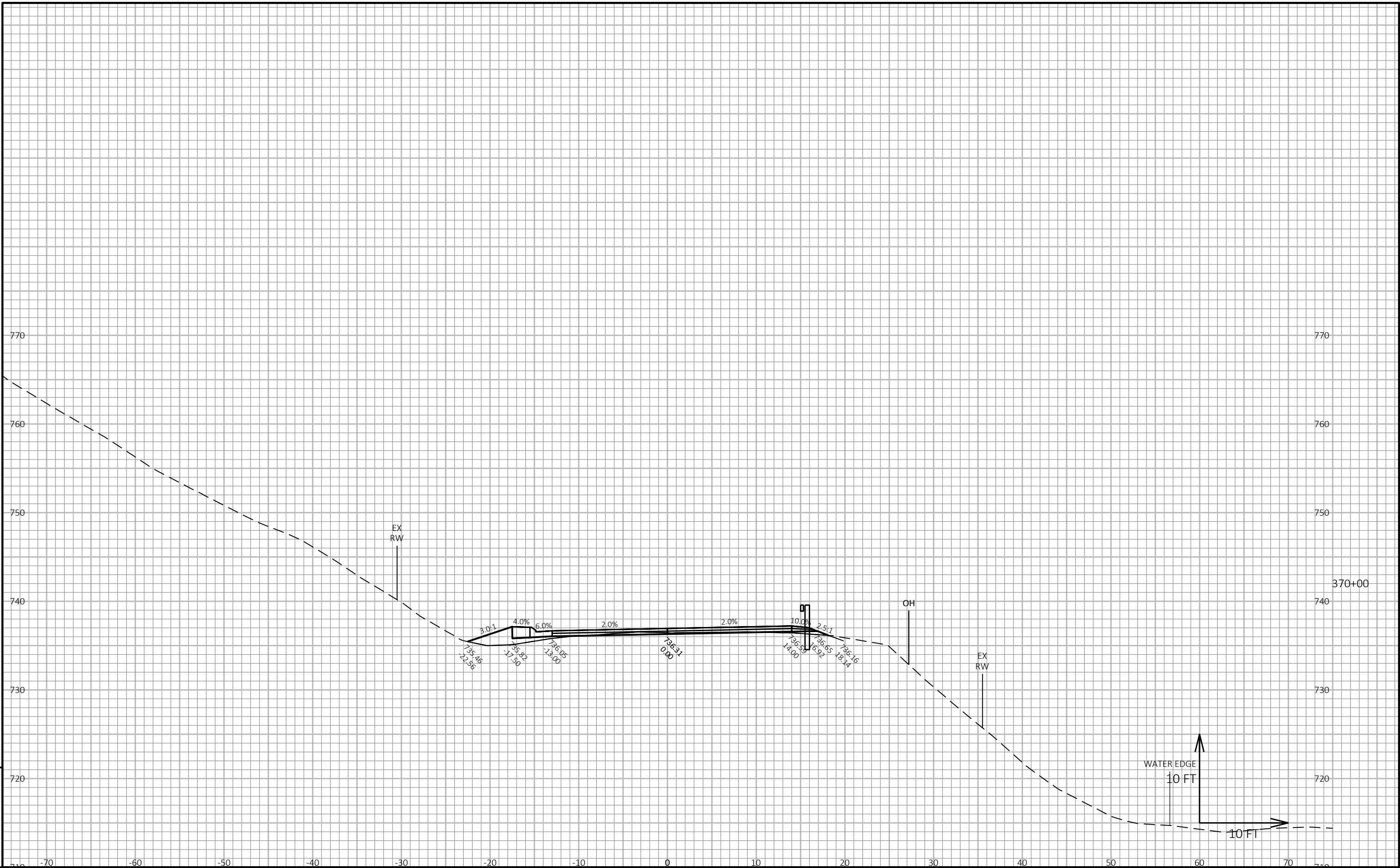
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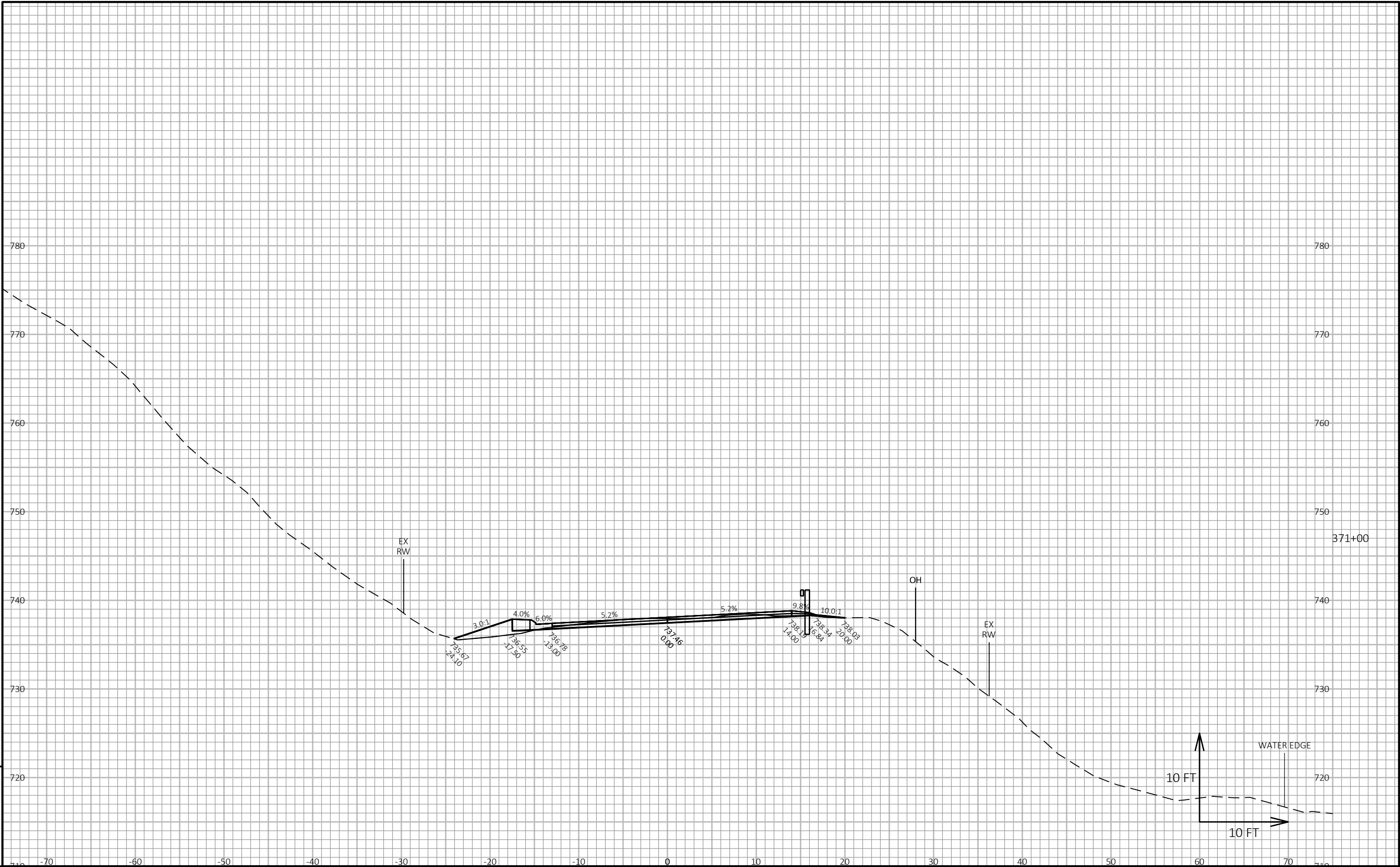




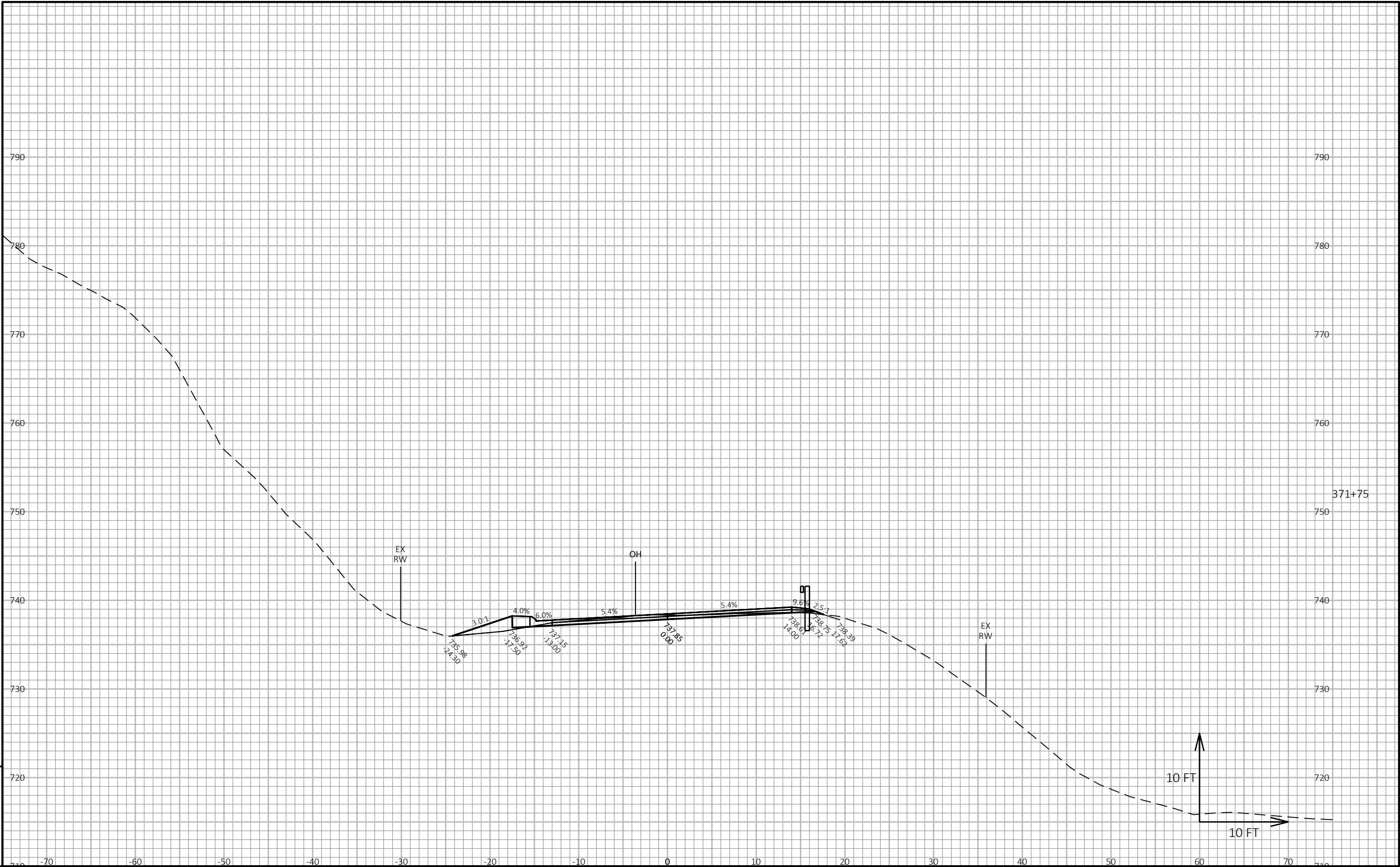


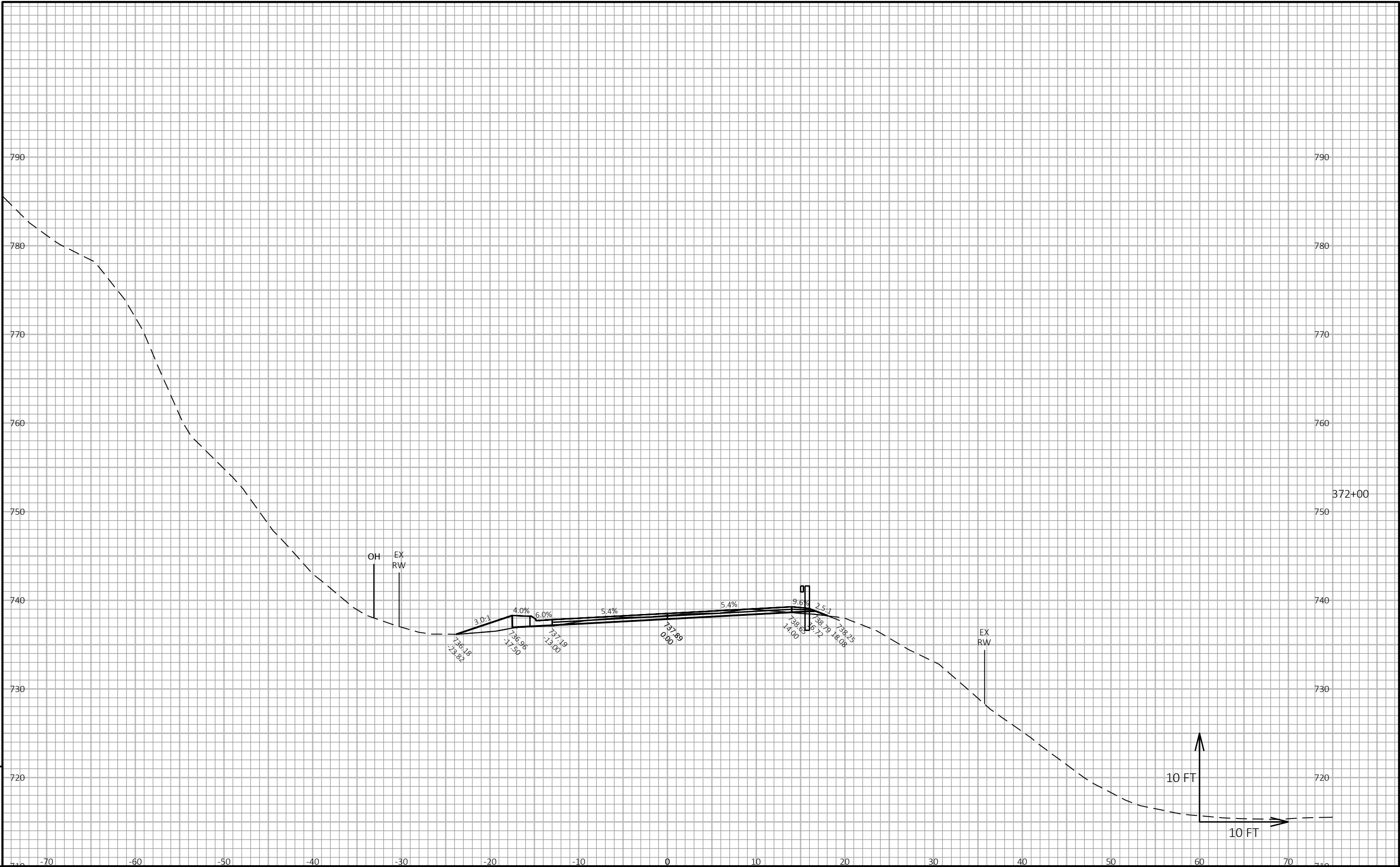


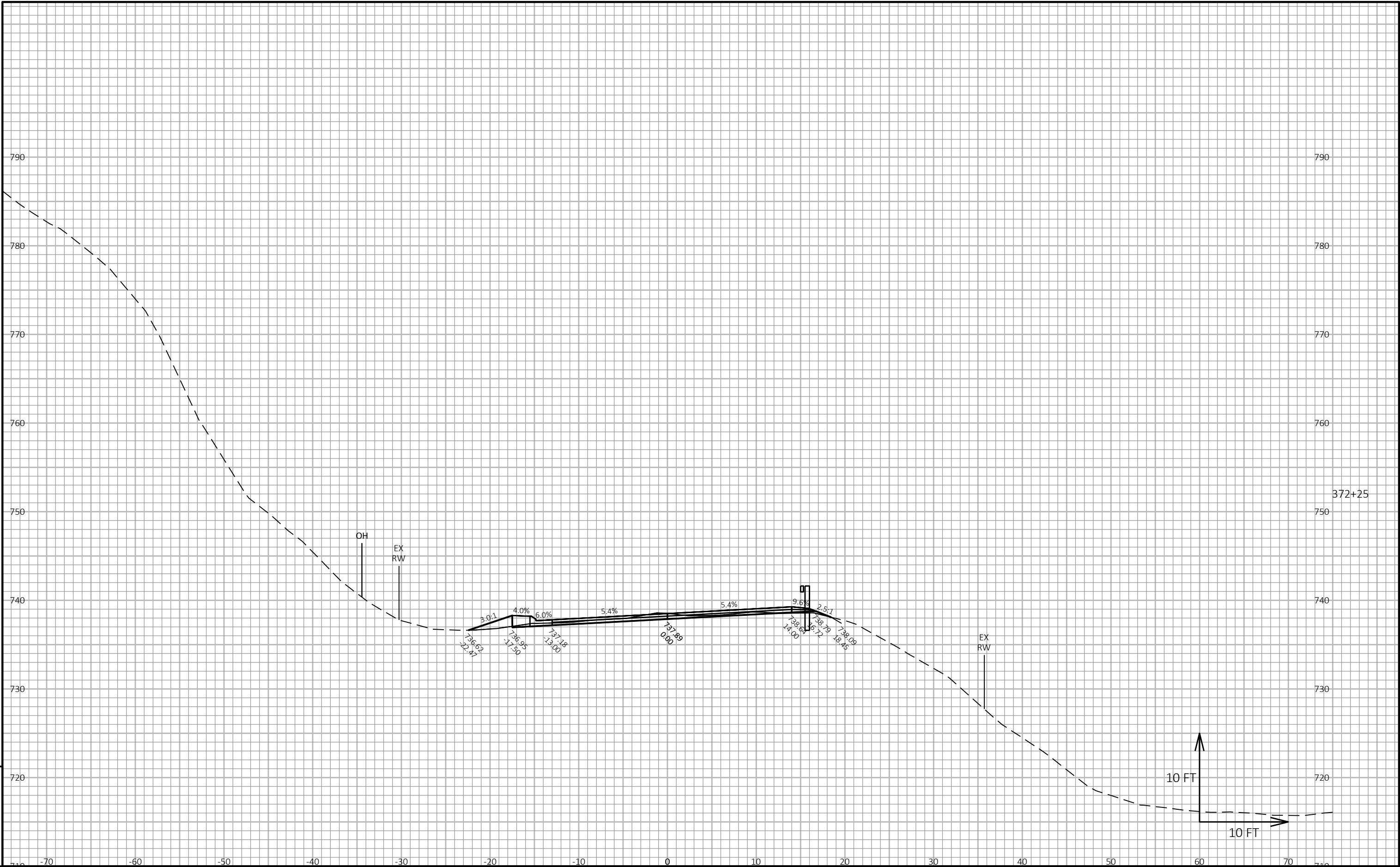


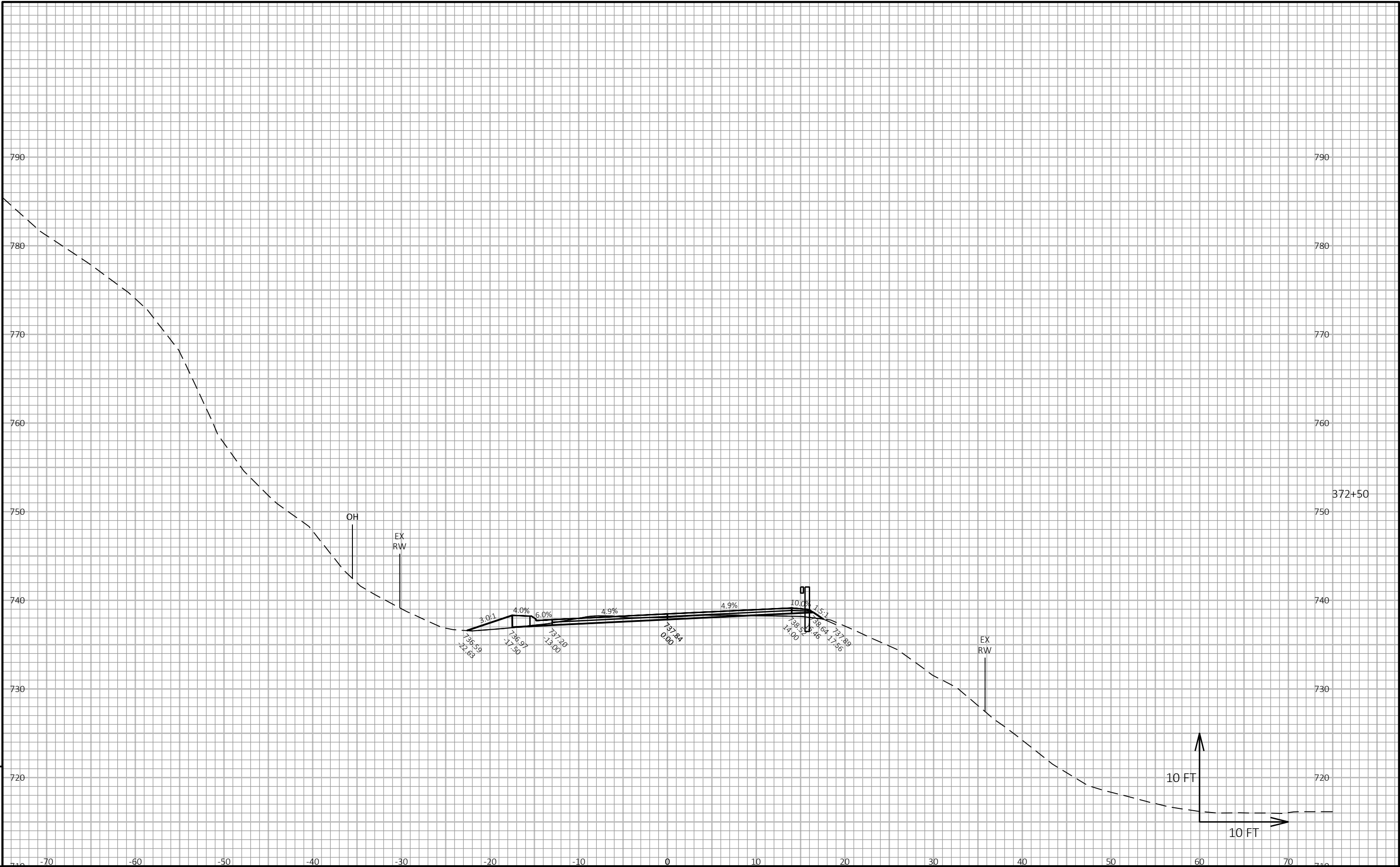


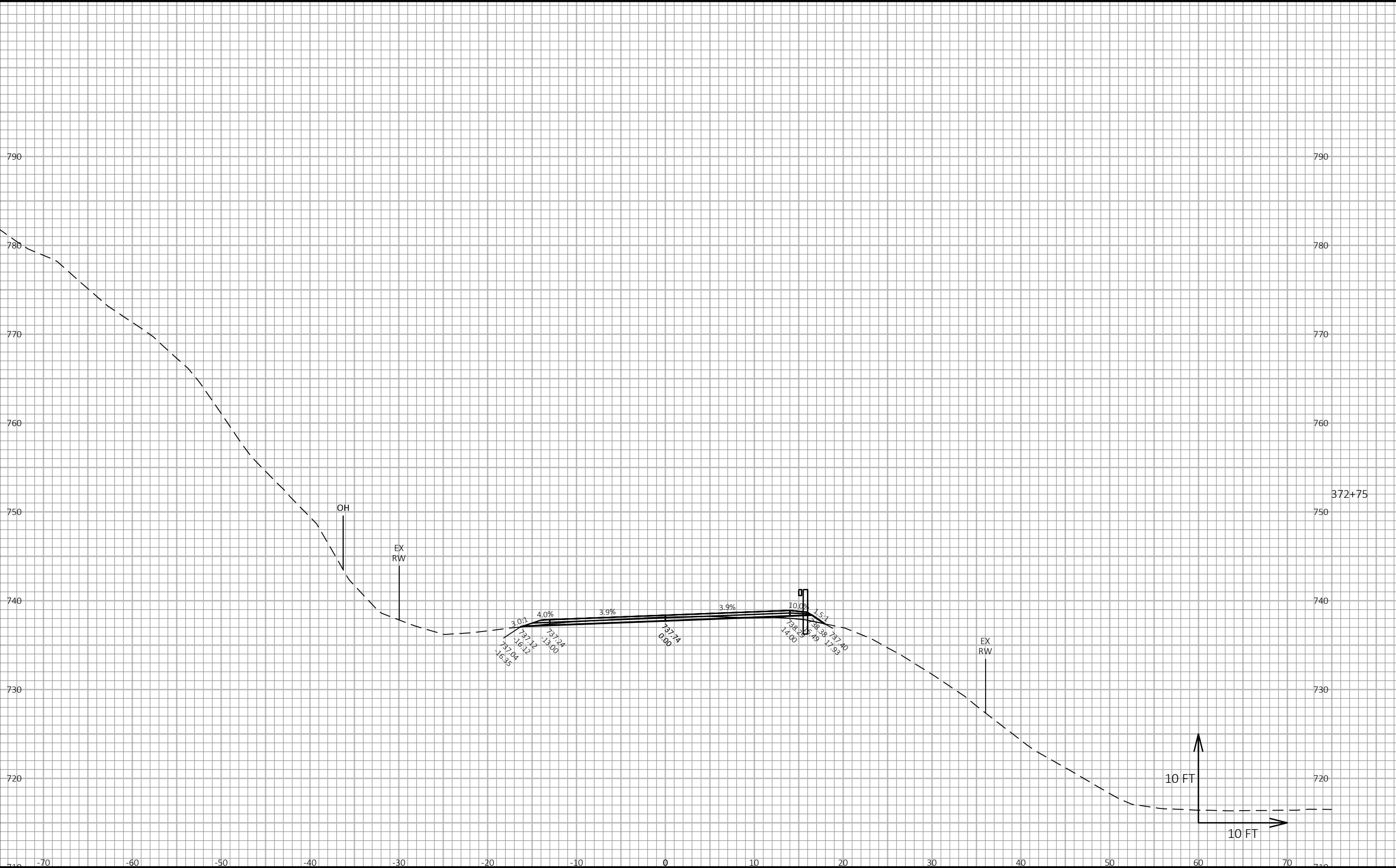


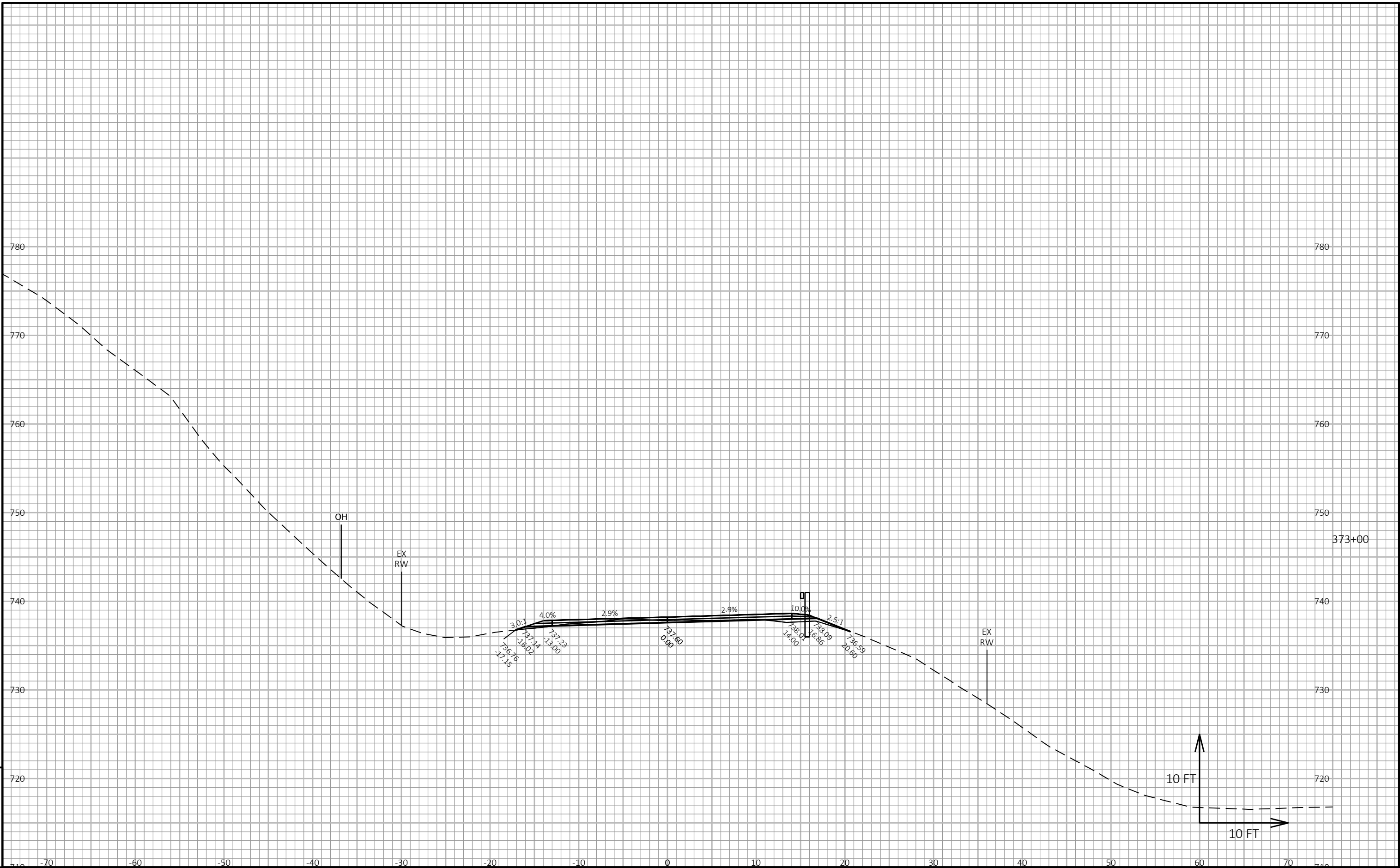






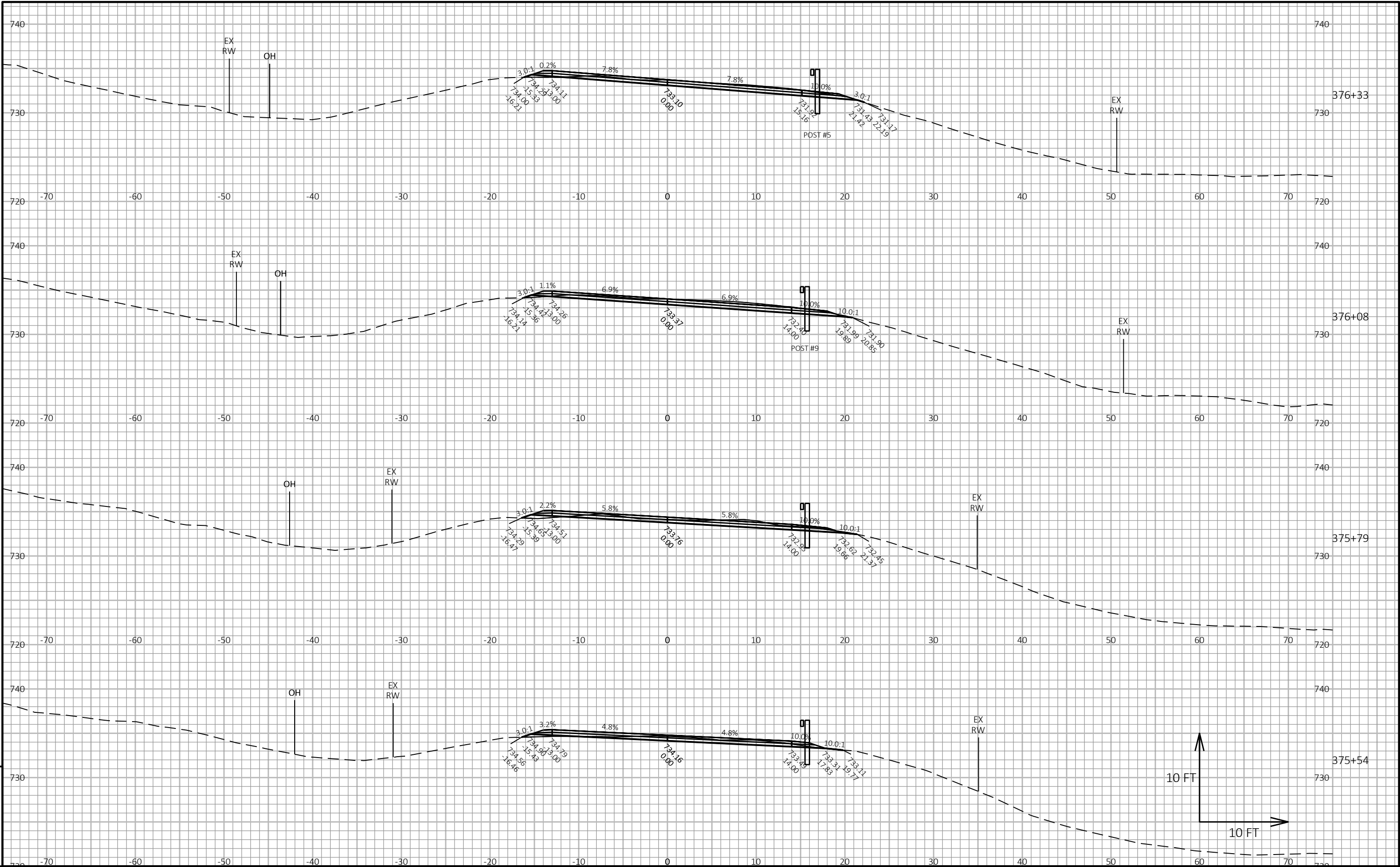




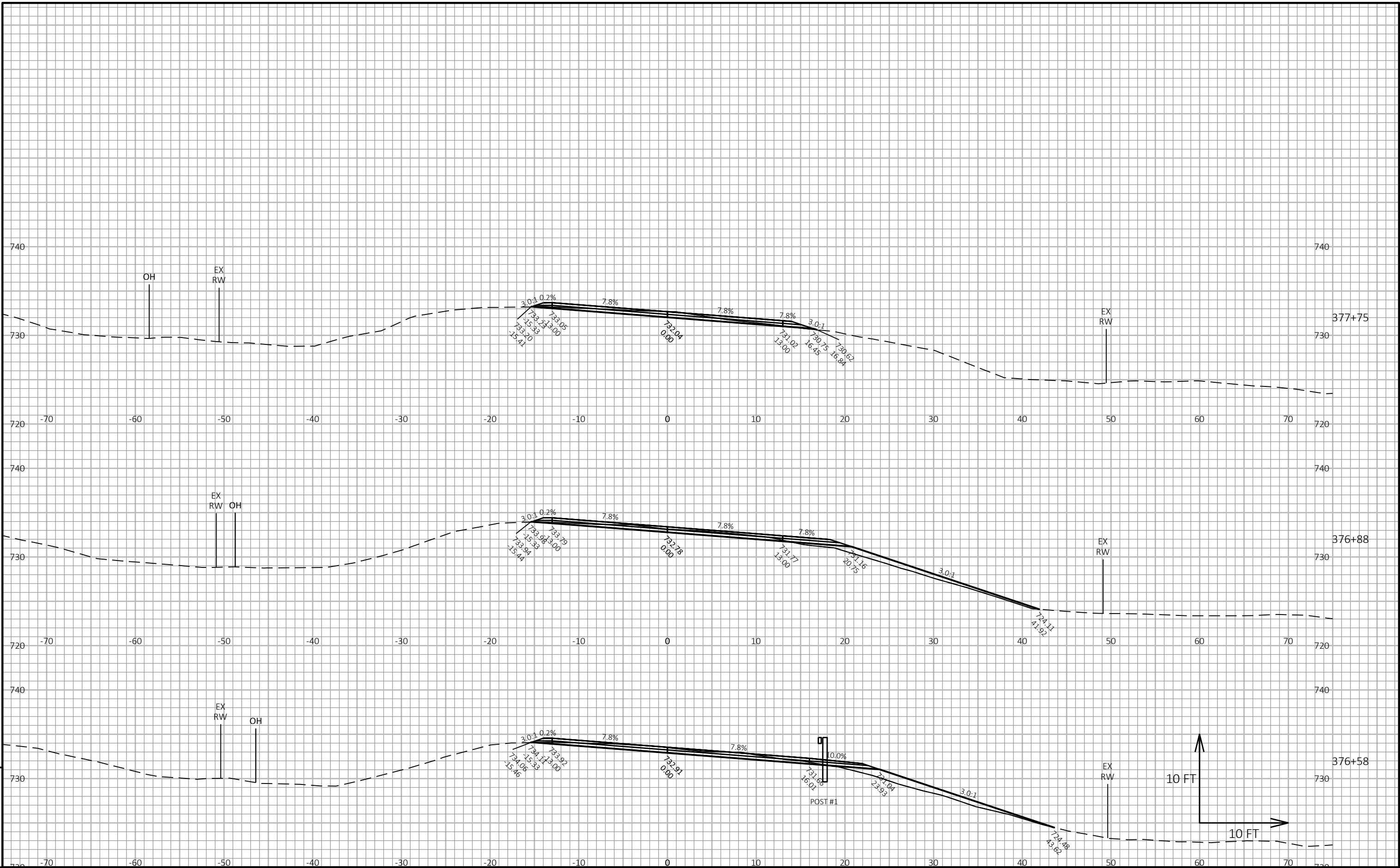


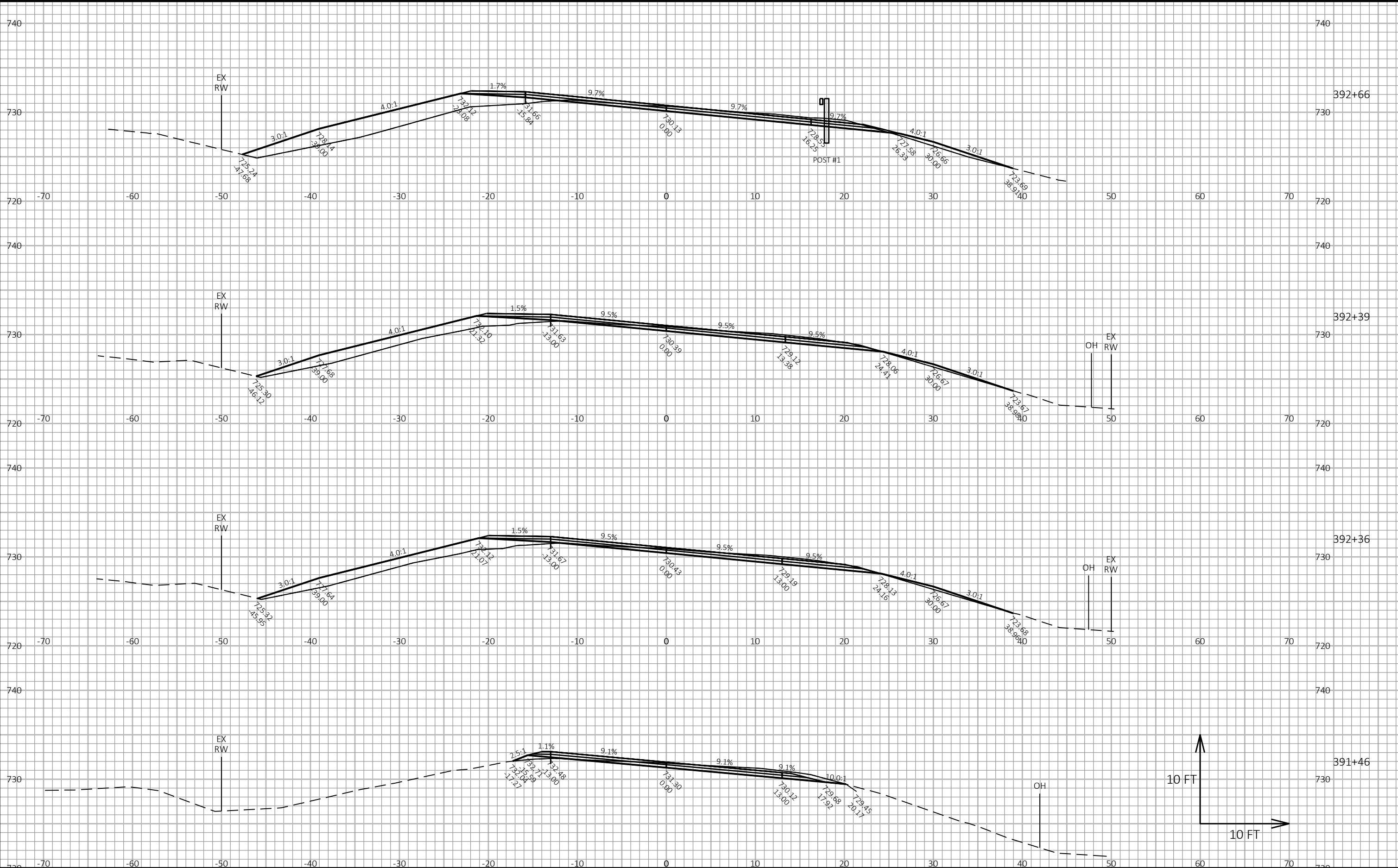


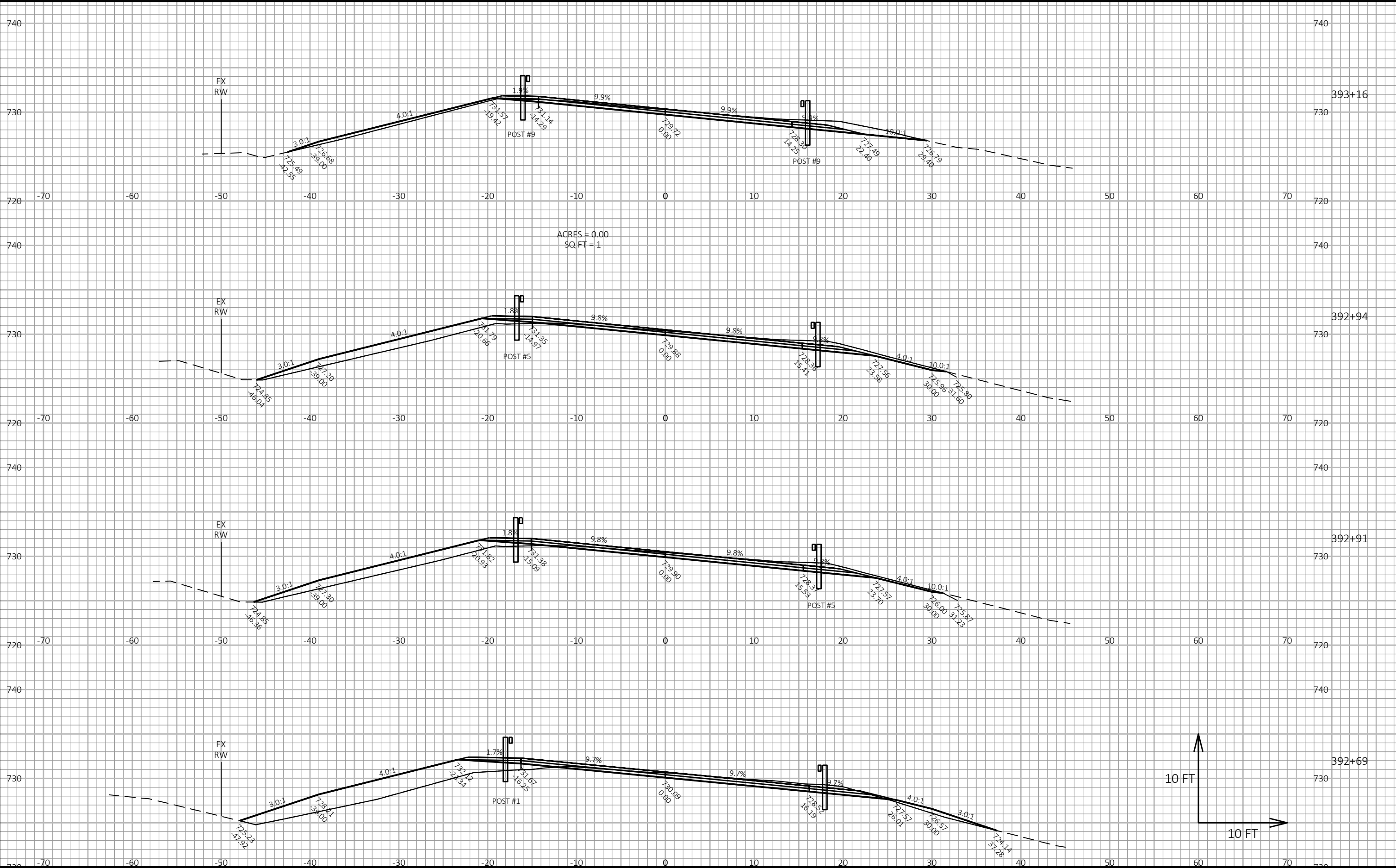


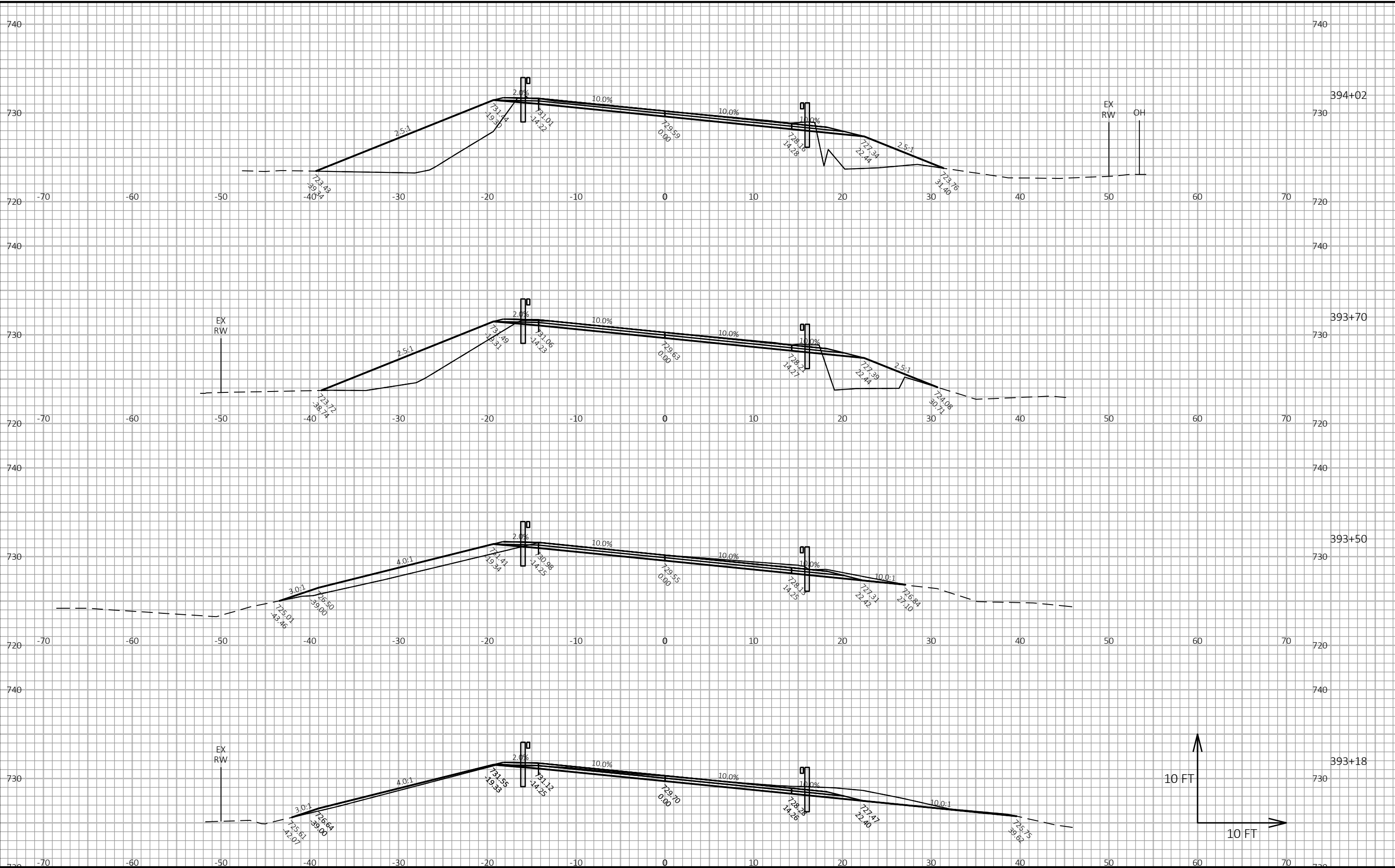


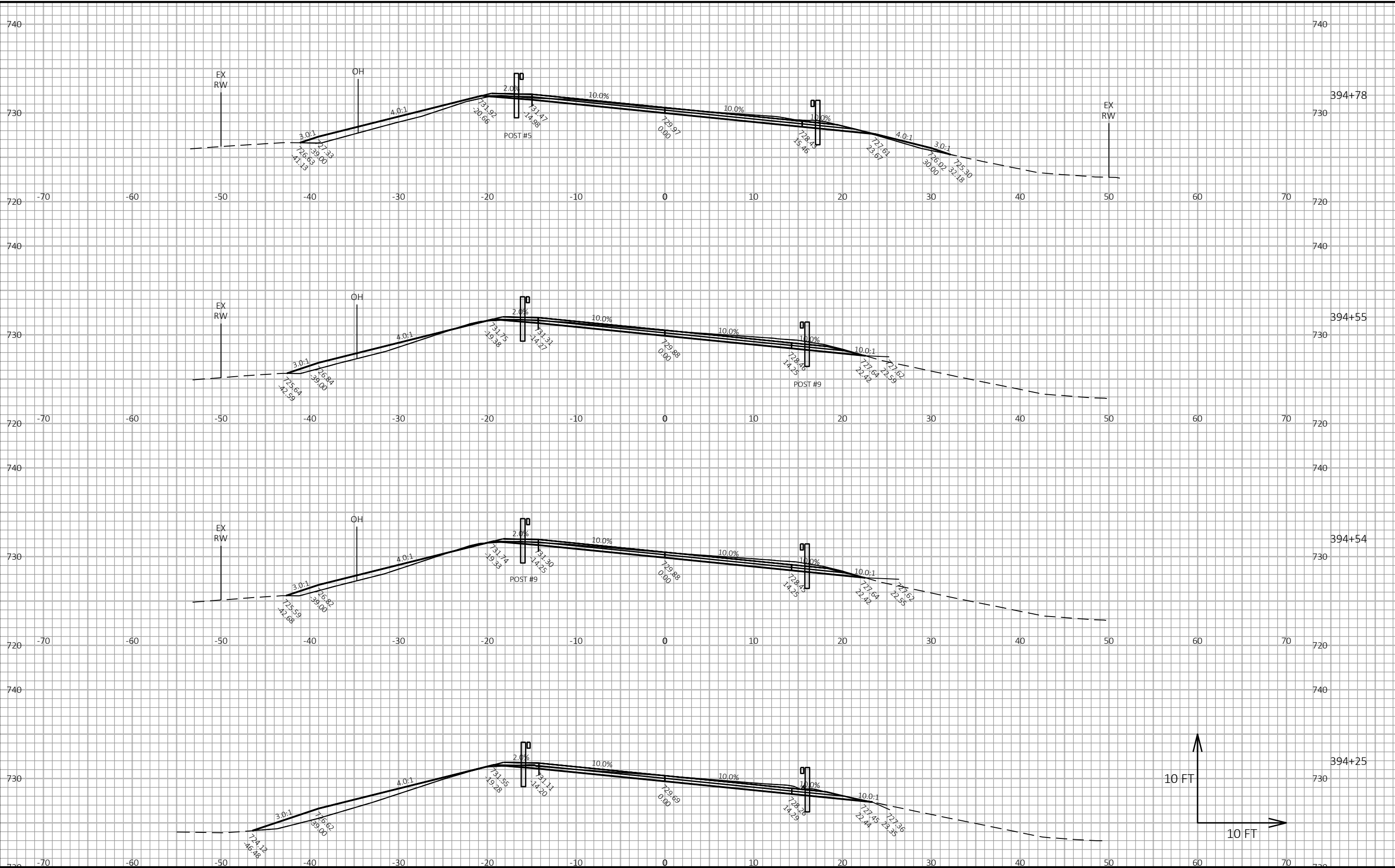


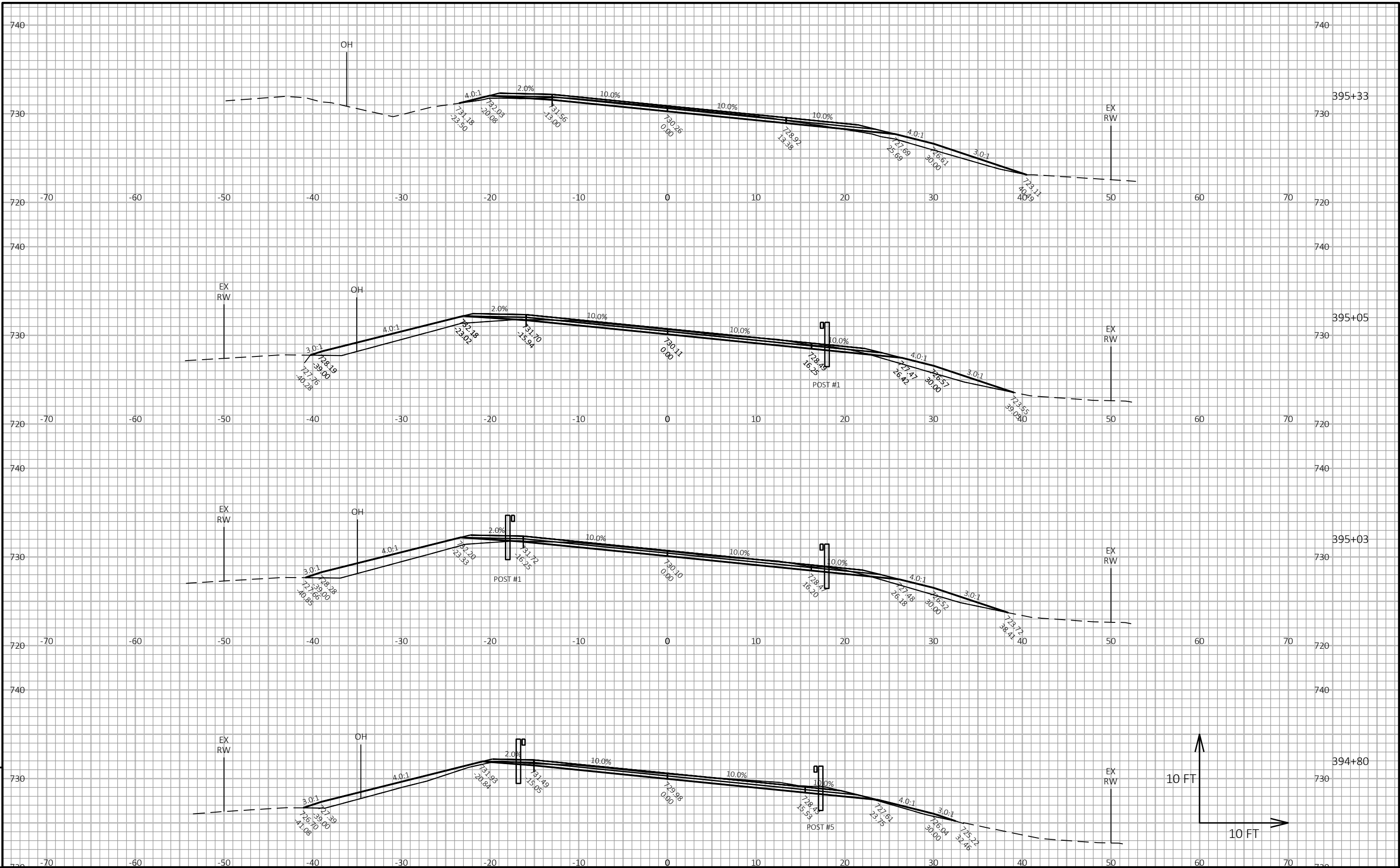




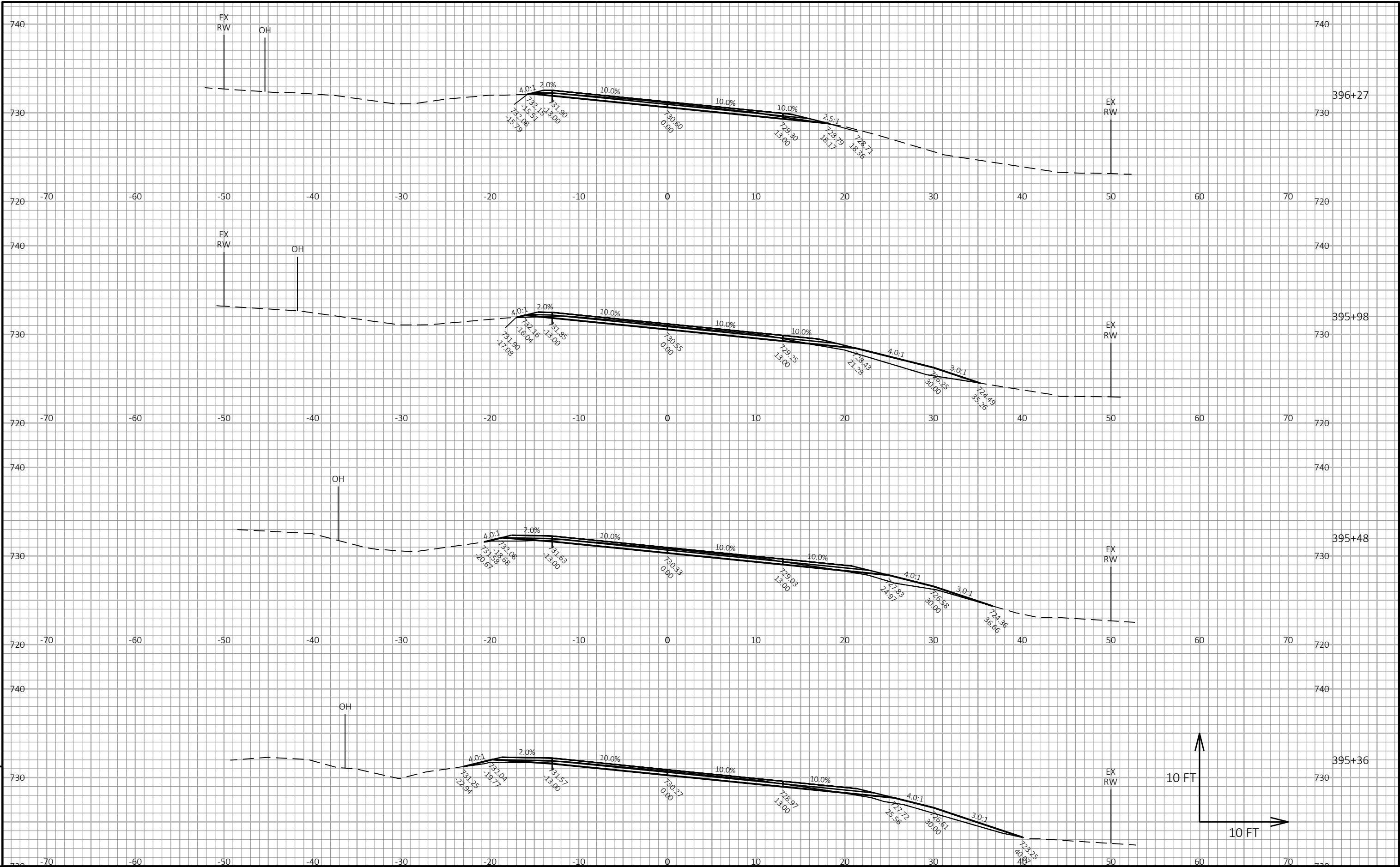


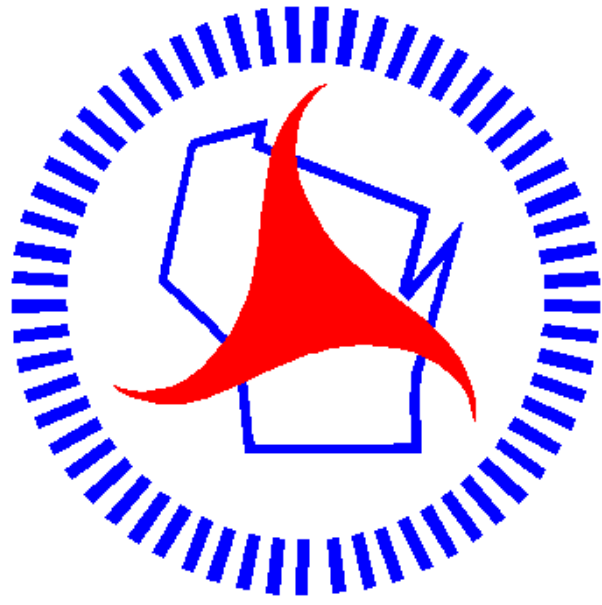












## *Wisconsin Department of Transportation*

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